LAKE HAVASU CITY, ARIZONA
ADMINISTRATIVE SERVICES DEPARTMENT
♦ PROCUREMENT ♦

ITB B24-PW-103006-500431
Lake Havasu Police Department Rehabilitation Project
ADDENDUM NO. FOUR
December 7, 2023

Attention is called to the following changes, additions, clarifications and/or deletions to the original solicitation and they shall be taken into account in preparing submissions:

There is no change in the opening date. **Submissions are due no later than 3:00 p.m., Arizona Time, December 13, 2023** at the City Clerk's Office, 2330 McCulloch Blvd. N., Lake Havasu City, AZ 86403.

ITEM	ACTION	DESCRIPTION or ISSUE
1	**Clarification**	Question & Answers arising from Second Pre-Bid Meeting & Job Walk
2	**Clarifications**	Additional Plan Sets Attached

DATE: 12/7/2023

BY: *Susie Fox*
Contract Specialist – ASD/Procurement

1. Will security clearances/background checks be required?

   Previously answered in Addendum 2

2. Will there be portable restrooms/trailer restrooms, who is to provide?

   Portable restrooms will be required for Construction employees, contractor to provide.

3. Are there ceiling plans/specs referencing T-Bar vs Hard lid

   See plan sheet in Addendum 4 - A301 & A302

4. Do the lockers in the locker rooms get painted (near the gym)

   No

5. There is a condensate line in room C121 (Janitor closet), the condensate drains to the mop sink. The mop sink is to be removed. Were do we relocate the condensate drain to?

   Replace Mop sink, plumbing fixture, and p-trap, Do not remove mop sink.

   (SAI - Floor Sink in room C121 to remain. Once the mechanical scope is complete in the second phase, we will address the routing of condensation lines and consider if removal of the floor sink is necessary.)

6. Can we use a combination of epoxy & lining in pipes or does it have to be just epoxy?

   Yes, the general contractor and his subcontractor may elect to use alternative lining methods provided the warranty requirements of the specification book are met. If a combination of methods is used, an as built plan should be provided locating which lines have the liner.

7. Thickness of slab in the jail area?

   See sheet S2.3 of existing structural Drawings attached.

8. Sound restrictions when it comes to demolition work

   The project owner understands that some construction activity may exceed the max allowable level. This should be coordinated with Project Manager when in sensitive areas.

9. What will be the hours of operation?

   Previously answered in Addendum 2

10. Color match for the structural repairs?

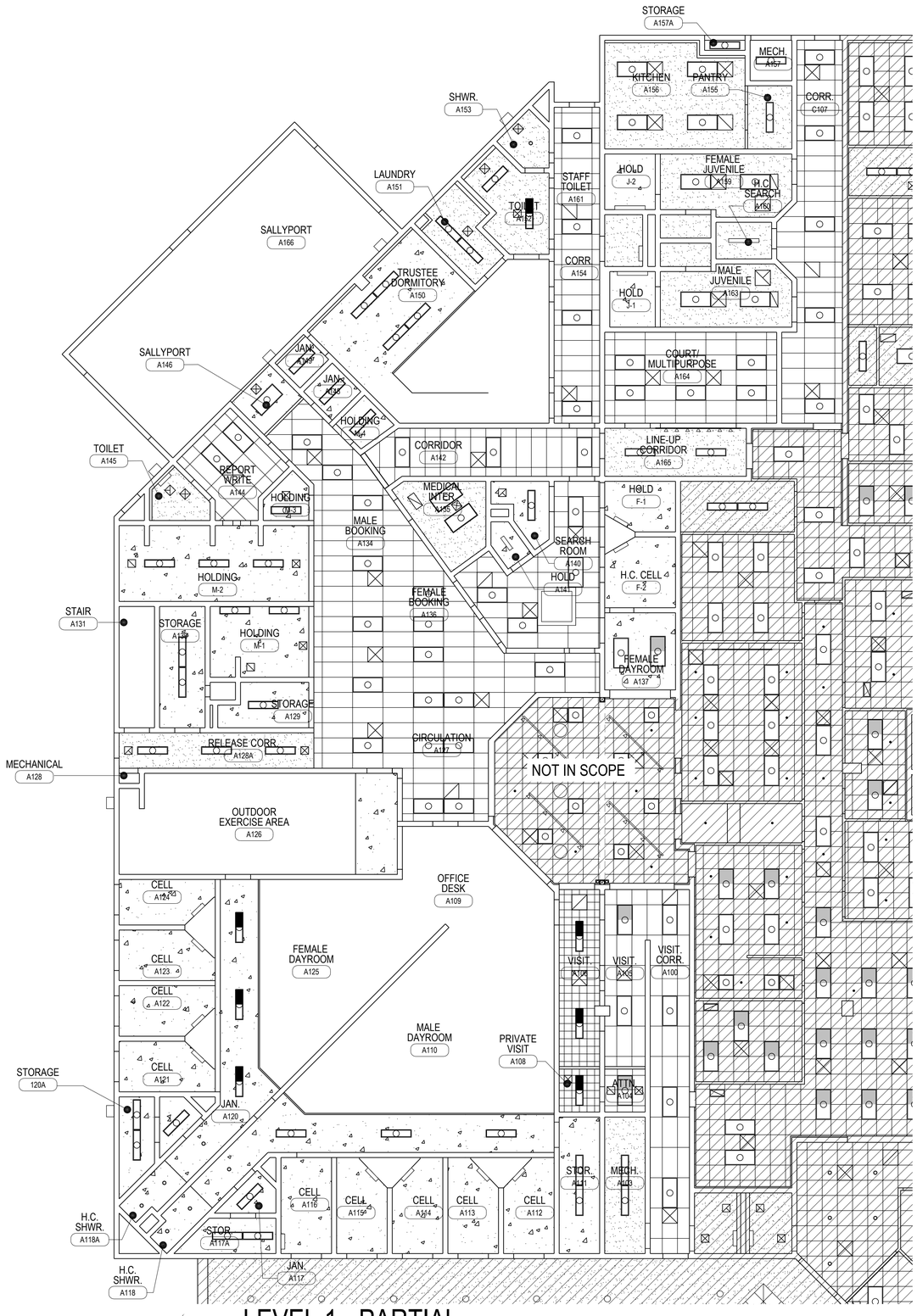
    Structural repairs to CMU and foundation, shall be color matched. Color submittals to be approved by project owner.

11. Are we keeping the stainless steel countertop at cabinetry across the M-1/M-3 holding cells?

    The stainless countertop shall be removed and saved for reinstallation.

12. Who will be the installer for the cell doors mechanism?

    Consult cell mechanism manufacturer at airteq.com



LEVEL 1 - PARTIAL REFLECTED CEILING PLAN

1 — 1/8"=1'-0"

GENERAL NOTE

- EXISTING CEILING GRID SYSTEM, LIGHTING, DIFFUSERS, RETURNS AND EXHAUST FANS TO REMAIN.
- JAIL AREA GYPSUM AND CONCRETE CEILING TO BE PAINTED. INTERIOR PAINT TO BE MANUFACTURED BY SHERWIN WILLIAMS OR APPROVED EQUAL BY OWNER. COLOR TO BE EXTRA WHITE SW7006.

CEILING LEGEND

SYMBOL	DESCRIPTION
	EXISTING DROP CEILING
	EXISTING GYPSUM BOARD
	EXISTING CONCRETE CEILING TO REMAIN

SEAL

REGISTERED ARCHITECT
87567
TODD M. BRAUTIGAM
ARIZONA U.S.A.

PROJECT NAME:
LHC POLICE DEPARTMENT REHABILITATION
2360 McCULLOCH BLVD. N, LAKE HAVASU CITY, AZ 86403
APN: 108-27-041A

ARCHITECT OF RECORD

SELBERG ASSOCIATES INC.
ARCHITECTURE & PLANNING
2130 MESQUITE AVE. | SUITE 204
LAKE HAVASU CITY | ARIZONA | 86403
(928) 855-8544

PROJECT NO. 23005

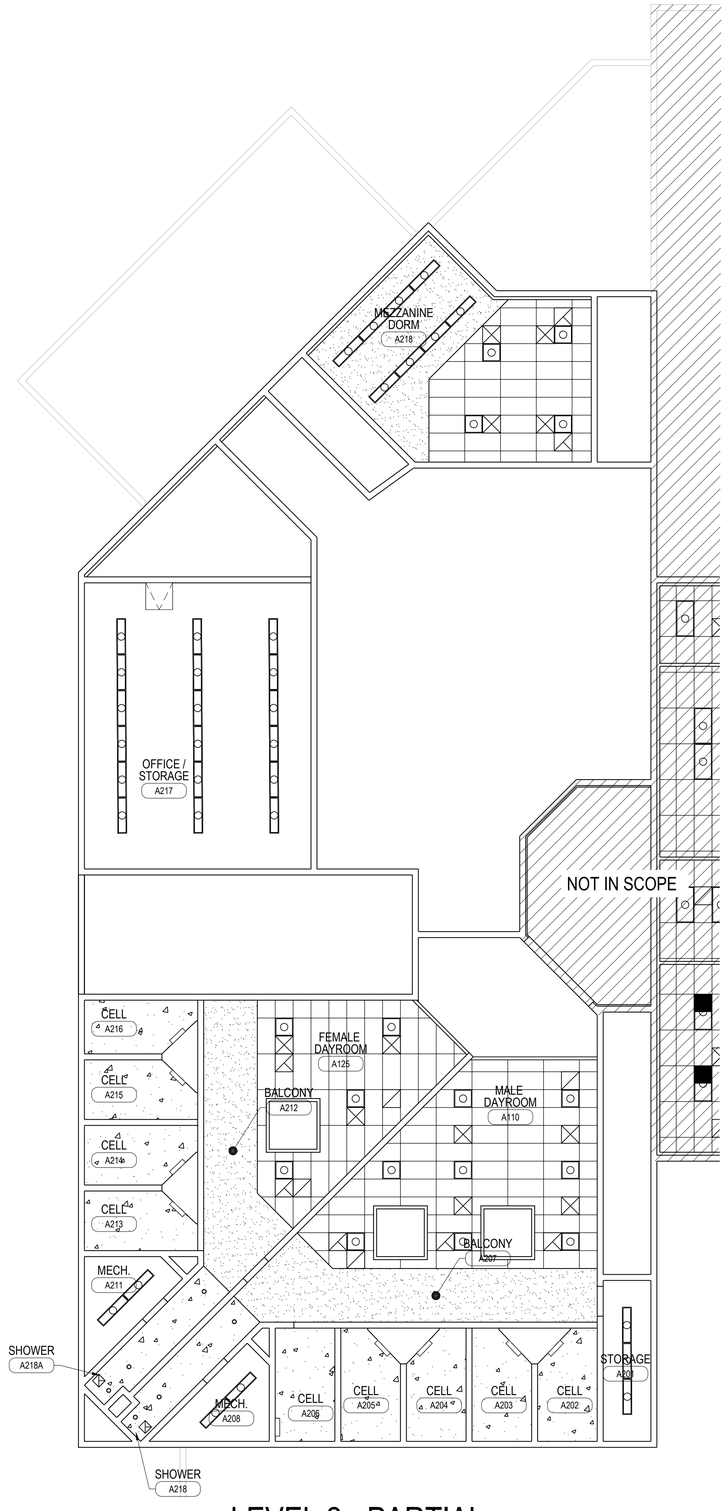
ISSUED FOR: PERMIT SET

ISSUED DATE: SEPTEMBER 29, 2023

REVISION		ISSUE DATE
A	BID ADDENDUM NO. 2	11/03/2023
B	BID ADDENDUM NO. 4	12/07/2023

SHEET TITLE:
PARTIAL REFLECTED CEILING PLAN
LEVEL 1

SHEET NO.
A3.01



1 LEVEL 2 - PARTIAL REFLECTED CEILING PLAN

1/8"=1'-0"

GENERAL NOTE

- EXISTING CEILING GRID SYSTEM, LIGHTING, DIFFUSERS, RETURNS AND EXHAUST FANS TO REMAIN.
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LAKE HAVASU CITY | ARIZONA | 86403
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PROJECT NO. 23005

ISSUED FOR: PERMIT SET

ISSUED DATE: SEPTEMBER 29, 2023

REVISION		ISSUE DATE
A	BID ADDENDUM NO. 2	11/03/2023
B	BID ADDENDUM NO. 4	12/07/2023

SHEET TITLE:

PARTIAL REFLECTED CEILING PLAN LEVEL 2

SHEET NO.

A3.02

GENERAL STRUCTURAL NOTES

GENERAL STRUCTURAL NOTES

APPLY UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS

CODE: COMPLY WITH 1988 UNIFORM BUILDING CODE AND AMENDMENTS BY LAKE HAVASU CITY.

SEISMIC: ZONE 2B, V = .15 x W, ESSENTIAL FACILITIES, I = 1.25

WIND: BASIC WIND SPEED 80 M.P.H., EXPOSURE C, I = 1.15
STEEL JOIST: NET WIND UPLIFT = 12 P.S.F.

SUPERIMPOSED DEAD LOADS:

LIVE LOADS: PER CODE. FOR EXCEPTIONS AND CLARIFICATION, SEE PLANS.

MECHANICAL LOADS: SEE PLANS.

SHOP DRAWINGS:

1. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL COSTS ASSOCIATED WITH COMPLIANCE OF THE FOLLOWING PRE-SHOP DRAWING MEETING(S):
   A. CONTRACTOR SHALL SCHEDULE AND CARRY OUT PRE-SHOP DRAWING MEETINGS WITH THE PROJECT STRUCTURAL ENGINEER.
   B. ALL SUCH MEETINGS SHALL BE HELD AT AEG PHOENIX OFFICES.
   C. EACH TRADE DETAILER REQUIRED TO SUBMIT SHOP DRAWINGS FOR STRUCTURAL REVIEW SHALL PARTICIPATE.
2. THE STRUCTURAL SHOP DRAWING REVIEW IS INTENDED TO HELP THE ENGINEER VERIFY HIS DESIGN CONCEPT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHECK HIS OWN SHOP DRAWINGS.
3. THE STRUCTURAL SHOP DRAWINGS WILL BE RETURNED FOR RESUBMITTAL IF A CURSORY REVIEW SHOWS MAJOR ERRORS WHICH SHOULD HAVE BEEN FOUND BY THE CONTRACTOR'S CHECKING.
4. CONCRETE MIX DESIGNS: SUBMITTALS SHALL BE PREPARED OR CERTIFIED TO CONFORM TO ACI CODE BY AN INDEPENDENT TESTING LABORATORY PRIOR TO SUBMITTING TO ARCHITECT. EACH SEPARATE MIX DESIGN SHALL BE INCLUDED WITH A COVER LETTER INDICATING ALL LOCATIONS ON THE PROJECT WHERE THE MIX WILL BE USED.
5. FOLLOWING SHOP DRAWINGS ARE NOT REQUIRED FOR SUBMITTAL FOR STRUCTURAL REVIEW.
   1. SHORING AND BRACING.
   2. WINDOW MULLIONS AND ARCHITECTURAL ITEMS NORMALLY ENGINEERED BY THE CONTRACTOR.
   3. UNSPLICED REBAR OF SLAB ON GRADE AND SPREAD FOOTINGS.
   4. STRUCTURAL STEEL MILL REPORTS.
   5. MESH OR REBAR FOR CONCRETE OVER COMPOSITE STEEL DECK.
6. FOLLOWING SHOP DRAWINGS AND CALCULATIONS WHEN APPLICABLE, ARE REQUIRED FOR SUBMITTAL FOR STRUCTURAL REVIEW. ALLOW THREE DAYS FOR PROCESSING AND ADDITIONAL DAY PER EACH FOUR 24 X 36 SHOP DRAWING SHEETS TO DETERMINE TURN AROUND TIME IN THE STRUCTURAL OFFICE:
   1. STRUCTURAL STEEL AND DECK.
   2. MISCELLANEOUS STRUCTURAL STEEL.
   3. CONCRETE & REINFORCING.
   4. STEEL JOISTS.
   5. MASONRY & REINFORCING.
7. ANY RESUBMITTAL OF A DETAIL SHEET WITH ADDED INFORMATION SHALL BE ACCOMPANIED BY LOCATION PLAN IDENTIFYING THE MEMBERS INVOLVED, AND CLOUDING AROUND ADDED INFORMATION.
8. DIMENSION CHECKING AND CHECKING OF DESIGN CHANGES PROPOSED BY CONTRACTOR WITHOUT PRIOR CONSULTATION WITH THE ENGINEER SHALL BE CHECKED ONLY IF THE CONTRACTOR WISHES THEM TO BE CHECKED AT HIS COST.
9. ANY ENGINEERING SUBMITTED FOR REVIEW SHALL BE APPROPRIATELY SEALED. FULL RESPONSIBILITY OF SUCH ENGINEERING RESTS WITH THE PERSON SEALING THE DESIGN.

SPECIAL INSPECTION:

SPECIAL INSPECTION BY SPECIAL INSPECTORS SATISFACTORY TO THE BUILDING OFFICIAL IS REQUIRED FOR THE FOLLOWING TYPES OF WORK IN CONFORMANCE WITH SECTION 306 OF THE 1988 UNIFORM BUILDING CODE:

1. CONCRETE: DURING THE TAKING OF TEST SPECIMENS AND PLACING OF REINFORCED CONCRETE EXCEPT SLABS ON GRADE.
2. BOLTS INSTALLED IN CONCRETE: DURING INSTALLATION OF EMBEDDED BOLTS IN CONCRETE AND DURING INSTALLATION OF EXPANSION BOLTS AND EPOXY BOLTS/REBAR INTO EXISTING CONCRETE.
3. REINFORCING STEEL:
   A. DURING PLACING OF REINFORCING STEEL, FOR ALL CONCRETE REQUIRED TO HAVE SPECIAL INSPECTION BY ITEM 1. ABOVE AND PLACING REINFORCING STEEL IN EPOXIED HOLES PER ITEM 2 ABOVE.
4. WELDING:
   A. DURING ALL STRUCTURAL WELDING, INCLUDING WELDING OF REINFORCING STEEL.

   NOT REQUIRED FOR:
   1. WELDING DONE IN AN APPROVED FABRICATOR'S SHOP.
   2. DECK WELDING AND HEADED STUDS - PERIODIC INSPECTION ONLY.
5. HIGH-STRENGTH BOLTING: DURING ALL BOLT INSTALLATIONS AND TIGHTENING OPERATIONS EXCEPT AT "SNUG TIGHT" BEARING BOLTS WHERE INSPECTION TAKES PLACE AFTER INSTALLATION.
6. STRUCTURAL MASONRY: DURING PREPARATION OF MASONRY WALL PRISMS, SAMPLING AND PLACING OF ALL MASONRY UNITS, PLACEMENT OF REINFORCING, INSPECTION OF GROUT SPACE IMMEDIATELY PRIOR TO CLOSING OF CLEANOUTS, AND DURING ALL GROUTING OPERATIONS.

   NOT REQUIRED FOR:
   1. F'M < 1,500 P.S.I. FOR CONCRETE MASONRY UNITS THEN ONLY NEEDS PERIODIC OBSERVATION.
7. SPRAY-APPLIED FIREPROOFING: PER UBC STANDARD 43-8.

FOUNDATIONS:

SOIL REPORT BY: LAW ENGINEERING, REPORT NO. P1-2502, DATED JULY 9, 1991 FOLLOW-UP LETTER, DATED AUGUST 8, 1991, AND JAN. 20, 1992.

SPREAD FOOTINGS SHALL BEAR ON MINIMUM OF 2'-0" OF COMPACTED EARTH, AT DEPTHS SHOWN ON DRAWINGS. FOR EXTENT AND NATURE OF COMPACTED EARTH, SEE SOIL REPORT; STRUCTURAL DETAILS AND SPECIFICATIONS. ALLOWABLE SOIL BEARING = 3,000 P.S.F.

CONCRETE

SHALL MEET ALL THE REQUIREMENTS OF ACI 301-90 WITH TYPE II CEMENT. MINIMUM 28 DAY STRENGTH 3,000 P.S.I., EXCEPT AS FOLLOWS:

ABOVE GRADE SLABS AND BEAMS.....4,000 P.S.I.

SIDEWALKS, CURBS, AND GUTTERS.....2,500 P.S.I.

NO ADMIXTURES WITHOUT APPROVAL. ADMIXTURES CONTAINING CHLORIDES SHALL NOT BE USED. CONCRETE SHALL NOT BE IN CONTACT WITH ALUMINUM.

FLY ASH SHALL NOT BE USED.

MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED, EXCEPT THAT SLABS ON GRADE NEED BE VIBRATED ONLY AROUND EMBEDDED ITEMS. SLUMP 4 INCHES FOR SLABS NOT ON GRADE AND 5 INCHES FOR OTHER CONCRETE. DO NOT TAMP SLABS. USE ROLLER SLAB, VIBRATING SCREED OR BULL FLOAT TO FINISH. DO NOT ADD WATER TO CONCRETE AT SITE.

ALL REINFORCING, INCLUDING DOWELS AND ANCHOR BOLTS, SHALL BE SECURELY TIED IN LOCATION BEFORE PLACING CONCRETE OR GROUT. DOWELS WILL NOT BE ALLOWED TO BE "STABBED" IN.

CURE UNCOVERED SLABS ON GRADE WITH POLYETHYLENE FOR 5 DAYS. TAPE JOINTS WITH 6 INCH LAPS AND COVER WITH SAND. CURING COMPOUND FOR OTHER WORK SHALL BE COMPATIBLE WITH APPLIED FINISH, CONFORM TO ASTM C-309 AND SHALL BE CLEAR ON UNCOVERED STRUCTURE AND WHITE PIGMENTED ON COVERED STRUCTURE. APPLY AT A RATE SUFFICIENT TO RETAIN MOISTURE, BUT NOT LESS THAN 1 GALLON PER 200 SQUARE FEET.

CAST SLABS ON GRADE IN ALTERNATE SECTIONS, UNLESS PERMANENT FORMS ARE USED. WAIT 48 HOURS BETWEEN ALL ADJACENT CONCRETE CASTINGS. DO NOT PLACE CONCRETE IN LENGTHS EXCEEDING 96 FEET.

THE CONTRACTOR SHALL FIX ALL CRACKS AND DISPLACEMENTS LARGER THAN 1/16" UP TO THE PROJECT COMPLETION.

MINIMUM STRENGTH FOR REMOVAL OF BOTTOM FORMS AND SHORING SHALL BE 75% OF SPECIFIED STRENGTH AT 28 DAYS.

WHEN SPAN L EXCEEDS 10'-0", CAMBER UP ALL CONCRETE SLABS L/400 AT MIDSPAN. CAMBER UP ALL OVERHANGS L/300 AT EDGE OF CANTILEVER. RECORD CAMBERS AT UNDERSIDES OF STRUCTURE IMMEDIATELY BEFORE AND AFTER RESHORING AND IMMEDIATELY AFTER DESHORING.

ANTICIPATED DEFLECTIONS OF STEEL FLOOR BEAMS AND GIRDERS UNDER WEIGHT OF WET CONCRETE ARE L/400. SET SCREEDS TO COMPENSATE FOR THE DEFLECTIONS AND ANY CONSTRUCTION DEVIATIONS WITHIN SPECIFIED TOLERANCES, SO THAT THE FINISHED FLOOR IS LEVEL. ALLOW 1/2 INCH ADDITIONAL CONCRETE IN THE BID FOR LEVELLING.

REINFORCING:

ASTM A-615 GRADE 60 EXCEPT AS FOLLOWS:

#7 AND LARGER BARS TO BE WELDED..... A-706

WIRE MESH, FLAT SHEETS..... A-185

WELDED ANCHORS..... GRADE 40, CHEMICAL ANALYSIS LIMITED PER ANS SPEC FOR WELD WITHOUT PREHEAT. ALSO SEE "WELDING" BELOW.

ALL REINFORCING BARS DEFORMED EXCEPT #2 BARS AND WIRE MESH. LATEST ACI CODE AND DETAILING MANUAL APPLY. CLEAR CONCRETE COVERAGES TO ANY REINFORCING INCLUDING TIES ARE AS FOLLOWS:

CONCRETE PLACED AGAINST ROUGH EARTH..... 3"

* SLABS AND JOISTS NOT EXPOSED TO WEATHER..... 1"

* ALL OTHER..... 1-1/2"

*2" COVERAGE FOR FORMED CONCRETE EXPOSED TO EARTH OR WEATHER IS REQUIRED FOR #6 OR LARGER REBAR.

LAP SPLICES IN MASONRY: SHALL BE 48 DIAMETERS.

MESH SPLICES: WIRE SPACING PLUS 2 INCHES.

LAP SPLICES IN CONCRETE: SEE TYPICAL DETAIL 5/S3.6.

WHERE BARS ARE SHOWN SPLICED, THEY MAY RUN CONTINUOUS AT CONTRACTOR'S OPTION.

ALL SPLICE LOCATIONS SUBJECT TO APPROVAL. PROVIDE REQUIRED SHOP DRAWINGS AND FABRICATE AFTER THE ARCHITECT'S REVIEW. SEE SHOP DRAWING SECTION ABOVE. PLACE REBAR PER CRSI MANUAL.

REBAR SPACINGS GIVEN ARE MAXIMUM ON CENTER WHETHER STATED AS "O.C." OR NOT, AND ALL REBAR IS CONTINUOUS WHETHER STATED AS "CONT." OR NOT. PROVIDE BENT CORNER REBAR TO MATCH AND LAP WITH HORIZONTAL REBARS AT CORNERS AND INTERSECTION OF WALLS, BEAMS, BOND BEAMS AND FOOTINGS PER ACI MANUAL. DOWEL ALL VERTICAL REBAR TO FOUNDATIONS. SECURELY TIE ALL REBAR, INCLUDING DOWELS, IN LOCATION BEFORE PLACING CONCRETE OR GROUT.

WHERE REINFORCING IS SHOWN CONTINUOUS THRU CONSTRUCTION JOINTS, LENTON FORM SAVERS DOWEL BAR SPLICE DEVICES AS MANUFACTURED BY ERICO PRODUCTS, INC. (OR EQUIVALENT) MAY BE USED. SIZES AND TYPES SHALL BE SELECTED TO DEVELOP THE FULL TENSION STRENGTH OF THE BAR PER ICBO RESEARCH REPORT.

"FIBERMESH" OR "GRACE FIBERS" OR "FORTA CR" OR EQUIVALENT INDEPENDENTLY TESTED POLYPROPYLENE FIBERS MBAY BE SUBSTITUTED AT A RATE OF 1.5 POUNDS PER CUBIC YARD OF CONCRETE FOR WELDED WIRE FABRIC IN SLABS ON GRADE. SUBMIT SHOP DRAWINGS AND I.C.B.O. REPORT FOR PROPOSED SUBSTITUTION.

FOR "WELDING" SEE BELOW.

MASONRY:

HOLLOW BRICK UNITS PER A.S.T.M. C652, F'm = 4000 PSI MIN.
BLOCK UNITS GRADE N-1 LIGHTWEIGHT CONCRETE, F'm = 1350 PSI (1500 PSI AT SOLID GROUTED AREAS). RUNNING BOND. MORTAR TYPE S. GROUT 2,000 P.S.I. ROD AND REROD GROUT IN VERTICAL SPACES. MAXIMUM GROUT LIFT WITHOUT CLEANOUTS 4'-0" IN BLOCK WALLS. STAY EACH END AND AT 8'-0" O.C. VERTICALLY EACH VERTICAL REBAR USING SINGLE WIRE AND LOOP TYPE TIES.

DO NOT BUILD WHEN AIR TEMPERATURE IS LESS THAN 40 DEGREES F. PLACE PIPES OR CONDUITS IN SLEEVES OR HOLLOW UNFILLED CELLS ONLY.

SEE ARCHITECTURAL DRAWINGS FOR EXPANSION OR CONTROL JOINTS. HOWEVER, THE SPACING SHALL NOT EXCEED 24 FEET. DO NOT LOCATE A JOINT AT LESS THAN 2'-0" FROM BEARING OF BEAM, FRAMING, PERPENDICULAR TO WALL.

8" C.M.U. WALL AND 12" C.M.U. WALL VERTICAL REINFORCING: IN CENTER OF GROUT AT CENTER OF WALL, CONTINUOUS FULL HEIGHT OF WALL AS FOLLOWS:

1 - #5 AT ALL CORNERS, INTERSECTIONS, WALL ENDS, AND EACH SIDE OF JOINTS.

1 - #5 AT JAMBS OF OPENING UP TO 3'-0" WIDE.

1 - #5 IN EACH OF 2 CELLS AT JAMBS OF OPENING UP TO 12'-0" WIDE.

1 - #5 AT 32" O.C. ELSEWHERE, U.N.O.

DOWEL ALL REBAR TO FOUNDATION. AT LOCATIONS APPROVED BY THE ARCHITECT, THE REBAR MAY BE DOWELLED BY EMBEDDING BAR 6" INTO THE FOUNDATION, IN EPOXY GROUT, IN A 1-1/4" DIAMETER HOLE DRILLED WITH A ROTOHAMMER.

HORIZONTAL REINFORCING: IN MINIMUM 8" DEEP GROUTED BOND BEAM TWO #5, AT TOP OF PARAPETS AND STRUCTURALLY CONNECTED ROOF AND FLOOR LEVELS. ADD A MID-HEIGHT BOND BEAM WHEN THE WALL IS HIGHER THAN 12'-0" TO BEARING, OR HIGHER THAN 16'-0" TO TOP OF PARAPET. PROVIDE LADDER TYPE #9 JOINT REINFORCING AT 16" O.C. PLACE BOND BEAM BARS AT ROOF AND FLOOR LINES CONTINUOUS THROUGH JOINTS. CUT OTHER BARS AND JOINT REINFORCING AT WALL JOINTS. GROUT BARRIER BELOW BOND BEAMS SHALL BE CONTINUOUS WIRE LATH.

WALL OPENINGS: 1 - #4 IN 8" BOND BEAM BELOW OPENINGS EXTENDING 24" BEYOND JAMBS. SEE LINTEL SECTION FOR REINFORCING OR STEEL ABOVE ALL OPENINGS.

LINTELS:

UNLESS NOTED OTHERWISE OR SHOWN, PROVIDE LINTELS AT ALL MASONRY OPENINGS PER DETAIL 7/S3.4. SEE PLANS FOR LOCATIONS OF NOT-TYPICAL STEEL LINTELS.

STRUCTURAL STEEL:

ASTM A-36 EXCEPT AS FOLLOWS: TUBE STEEL: ASTM A-500 GRADE B (FY = 46 KSI) FOR SIZES UP TO 5/8" THICK. BOLTS AND PLAIN ANCHORS ASTM A-307. HIGH STRENGTH BOLTS, ASTM A-325-N. HIGH STRENGTH BOLTS SHALL BE TIGHTENED TO "SNUG TIGHT" CONDITION PER A.I.S.C. SPECIFICATION FOR STRUCTURAL JOINTS, UNLESS SPECIFICALLY CALLED OUT TO BE "TORQUED AND TESTED" BY A CALIBRATED TORQUE WRENCH. OPEN WEB JOISTS PER STEEL JOIST INSTITUTE SPECIFICATIONS. 1989 AISC MANUAL PARTS 1 THROUGH 4 AND AISC SPECIFICATIONS APPLY (EXCEPT SECTION AT AND CHAPTER N) AND EXCLUDING 'AISC CODE OF STANDARD PRACTICE.'

MINIMUM EMBEDMENT OF ALL HORIZONTAL BOLTS AND PLAIN ANCHORS IN GROUT OR CONCRETE SHALL BE 5 INCHES INCLUDING HEAD OR 5 INCHES WITH A 3 INCH HOOK. VERTICAL BOLTS SHALL HAVE 8 INCHES VERTICAL EMBEDMENT AND 4 INCHES HOOK. WELDED "ANCHORS" AND WELDED ANCHOR BOLTS SHALL BE HEADED STUDS, WELDED ALL AROUND WITH 5/16 INCH FILLET WELD AND SHALL NOT CONTAIN THREADS. "HEADED ANCHOR STUDS (H.A.S.)" AND "SHEAR CONNECTORS" SHALL BE USED ONLY WHERE SPECIFICALLY CALLED FOR AND SHALL BE NELSON OR KSM INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. THEY SHALL BE 3/4 INCH DIAMETER X 5 INCHES LONG (4" LONG ON TOP OF STEEL BEAMS) UNLESS NOTED OTHERWISE.

SEE MECHANICAL DRAWINGS FOR MECHANICAL EQUIPMENT SUPPORT FRAMING AND SPREADERS.

CAMBER UP ALL STEEL BEAMS AND GIRDERS WHERE INDICATED ON PLANS WITH NOTATION C = CAMBER IN INCHES.

PROVISIONS FOR TEMPERATURE EXPANSION DURING ERECTION: STRUCTURAL STEEL SHALL BE SO DETAILED AND ERECTED SO THAT DURING ERECTION, BEFORE THE DECK IS COVERED AND INSULATED, TEMPERATURE CHANGES ANTICIPATED, DO NOT CAUSE UNACCEPTABLE PERMANENT MISALIGNMENT AND DO NOT THRUST OR PULL AGAINST WALLS SUCH PROVISIONS CAN BE MADE BY PROVIDING TEMPORARY SLIP CONNECTIONS AT SUFFICIENT INTERVALS.

STEEL STAIRS AND RAILINGS SHALL CONFORM TO THE CURRENT EDITION OF THE METAL STAIRS MANUAL BY NAAMM, 221 NORTH LASALLE STREET, CHICAGO, ILLINOIS. IN CASE OF CONFLICT SEE SUPPLEMENTARY SECTION THIS SHEET.

FOR "WELDING", SEE BELOW.

SEE "SHOP DRAWING" SECTION ABOVE, FOR SPECIAL REQUIREMENTS.

OPEN WEB STEEL JOISTS:

DESIGN, FABRICATION AND ERECTION IN ACCORDANCE WITH LATEST EDITION OF STEEL JOIST INSTITUTE AND APPLICABLE BUILDING CODE BY A MEMBER OF SJI OR AISC APPROVED FOR THE TYPE OF JOIST BEING USED. TOP AND BOTTOM CHORDS SHALL BE HOT ROLLED ANGLES. BRIDGING SHALL BE PER SJI SPECIFICATIONS. PROVIDE ADDED BRIDGING TO BRACE THE BOTTOM CHORDS FOR THE NET UPLIFT WIND LOAD. PROVIDE CAMBER FOR ROOF DEAD LOAD DEFLECTION. LH JOISTS SHALL HAVE END BEARINGS SPECIALLY DESIGNED PER SJI.

WHERE BRIDGING INTERFERES WITH MECHANICAL OR OTHER INSTALLATIONS REMOVE BRIDGING AFTER DECK IS IN PLACE AND REPLACE AS DIRECTED BY STRUCTURAL ENGINEER THROUGH THE ARCHITECT. DO NOT SUPPORT LOADS FROM BRIDGING - SEE DETAILS FOR SUPPORTING MECHANICAL OR PLUMBING LOADS.

DO NOT DRILL THROUGH OR WELD TO JOIST MEMBERS WITHOUT PRIOR APPROVAL. SEE "STRUCTURAL STEEL" NOTES OR DETAIL FOR ADDITIONAL WEB ANGLE REQUIREMENTS AT MISCELLANEOUS FRAMING CONNECTIONS.

THE CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS AND DETAILED SHOP DRAWINGS BEARING THE SEAL OF AN ENGINEER REGISTERED IN ARIZONA FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS SHALL INDICATE MEMBER SIZES AND JOINT WELDING.

1-1/2", TYPE B, METAL ROOF DECK:

STEEL DECK INSTITUTE SPECIFICATIONS AND RECOMMENDATIONS APPLY, EXCEPT AS NOTED OTHERWISE. DECK SHALL BE GALVANIZED, MINIMUM 20 GAGE, 1-1/2" DEEP, WITH MINIMUM S = .228 INCH CUBED PER FOOT OF WIDTH. DECK UNITS SHALL BE CONTINUOUS OVER THREE SPANS, EXCEPT THAT SIMPLE SPANS ARE REQUIRED WHERE DECK WARPS TO MEET ROOF SLOPES. USE NEXT HEAVIER GAGE FOR SIMPLE OR TWO SPAN CONTINUOUS CONDITIONS.

SUSPEND CEILING FROM DECK FLUTES. HOWEVER, DO NOT SUSPEND PLASTERED CEILING FROM DECK. MINIMUM ALLOWABLE DIAPHRAGM SHEAR PER ICBO REPORT SHALL BE 600 POUNDS PER FOOT. PROVIDE ALL NECESSARY DETAILS SUCH AS EDGE FORM, SPLICE PLATES, PROFILE PLATES, ETC. ERECT IN ACCORDANCE WITH THE REPORT TO MEET THE SHEAR REQUIREMENTS SPECIFIED ABOVE, EXCEPT THAT IN NO CASE SHALL CONNECTION TO STEEL MEMBERS BE LESS THAN NOTED BELOW. PUDDLE WELD TO STEEL, USING 1/2" DIAMETER FUSION AREA, 3/4" TO 1" WELD DIMENSION AT TOP, AS FOLLOWS:

1. TO ALL TRANSVERSE SUPPORTS: JOISTS, BEAMS, ANGLES, PLATES, ETC. SEVEN WELDS PER SHEET. WELD EACH SIDE OF SEAM AND FIVE INTERMEDIATE.
2. TO ALL STEEL PARALLEL TO FLUTES, 18" O.C.
3. TO EACH FLUTE AND AT 6" ON CENTERS AT OPENING EDGES.
4. STANDING SEAM SIDE LAPS 1-1/2" LONG, TOP SEAM WELD AT 12" O.C.

ALL SHEETS TO BE 36" WIDE. NARROWER CLOSURE STRIPS SHALL NOT BE LESS THAN 1'-6" WIDE AND SHALL BE WELDED TO ADJACENT FULL SHEET WITH 1" LONG SEAM WELDS AT 12" O.C.

SHOP DRAWINGS SHALL SHOW THE ERECTION PROCEDURE AND DETAILS, THE ICBO REPORT NUMBER, AND DIAPHRAGM SHEAR FURNISHED AND SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION.

FOR "WELDING" SEE BELOW.

STEEL FLOOR DECK COMPOSITE WITH CONCRETE SLAB:

STEEL DECK INSTITUTE SPECIFICATIONS AND RECOMMENDATIONS APPLY, EXCEPT AS NOTED OTHERWISE. DECK SHALL BE 2" MAXIMUM DEPTH WITH DEFORMATIONS TO PROVIDE STRUCTURAL BOND WITH CONCRETE. DECKING SHALL BOND TO CONCRETE AND BE TREATED PER CURRENT ICBO RESEARCH RECOMMENDATION FOR RUST PREVENTION. DECK SHALL BE GALVANIZED. DECK, ACTING COMPOSITE WITH CONCRETE SLAB EXCEPT AS NOTED BELOW, SHALL BE MINIMUM 20 GAGE OR HEAVIER AS REQUIRED BY FIRE RATING AND CONSTRUCTION LOAD REQUIREMENTS. FOR EXCEPTIONS, SEE PLAN NOTES. THE LOAD AND SHEAR CAPACITY SHALL BE EQUIVALENT TO THAT LISTED FOR VERCO DECK (ICBO #2078) AS DEMONSTRATED BY CURRENT ICBO REPORT FOR THE DECK. FIRE RATING OF THE ASSEMBLY, INCLUDING THE SPRAYED ON FIREPROOFING REQUIRED, IF ANY, SHALL NOT BE LESS THAN ONE HOUR PER CURRENT U.L. RECOMMENDATIONS. PROVIDE ALL NECESSARY DETAILS, SUCH AS FILLER AND SPLICE PLATES AND EDGE FORM PLATES TO COMPLETE THE JOB.

ERECT IN ACCORDANCE WITH THE CURRENT INTERNATIONAL CONFERENCE OF BUILDING OFFICIAL RESEARCH COMMITTEE RECOMMENDATIONS TO MEET THE LOAD AND SHEAR REQUIREMENTS STATED ABOVE, EXCEPT THAT IN NO CASE SHALL CONNECTIONS TO STEEL MEMBERS BE LESS THAN SHOWN AS FOLLOWS:

PUDDLE WELD DECK TO SUPPORTING STEEL WITH 1/2" DIAMETER FUSION AREA, 3/4" TO 1" WELD DIMENSION AS FOLLOWS:

1. EACH FLUTE TO ALL TRANSVERSE SUPPORTS.
2. 12" O.C. TO STEEL PARALLEL TO FLUTES.
3. EACH FLUTE AND AT 12" ON CENTERS AT OPENING EDGES.
4. WELD SIDE SEAMS AT 3'-0" O.C. WITH 1-1/2" LONG TOP SEAM WELD.

SHOP DRAWINGS SHALL SHOW THE ERECTION PROCEDURE AND DETAILS, THE ICBO REPORT NUMBER, DIAPHRAGM SHEAR AND LOAD CAPABILITY FURNISHED, AND SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION.

PROVIDE SHORING IF REQUIRED TO SUPPORT CONSTRUCTION LOADS.

WELDING:

ALL CONSTRUCTION AND TESTING PER AMERICAN WELDING SOCIETY CODES AND RECOMMENDATIONS. ALL WELDING SHALL BE BY WELDERS HOLDING CURRENT VALID CERTIFICATES AND HAVING CURRENT EXPERIENCE IN TYPE OF WELD CALLED FOR.

WELDING RODS TO BE LOW HYDROGEN TYPE, E70 SERIES, PER ANS D1.1 TYPICALLY EXCEPT E-6010 SERIES FOR STEEL SHEET METAL PER ANS D1.3 AND REINFORCING WELDMENTS PER ANS D1.4. USE E90 SERIES WELDING RODS FOR A706 REBAR.

ALL FULL-PENETRATION GROOVE OR BUTT WELDED SPLICES IN MATERIAL THICKER THAN 5/16" SHALL BE INSPECTED BY AN INDEPENDENT TESTING LABORATORY, WHICH SHALL TEST ULTRASONICALLY A SUFFICIENT NUMBER OF WELDS BUT NOT LESS THAN 25 PERCENT OF TOTAL PER WELDER, TO CERTIFY ALL SPLICES AS MEETING OR EXCEEDING STRENGTH OF MATERIAL SPLICED. TWO COPIES OF ALL TEST REPORTS AND A LETTER OF SUCH CERTIFICATION SHALL BE SUBMITTED TO THE ARCHITECT.

SHOP INDICATED WELDS MAY BE DONE IN FIELD WITH APPROVAL.

SUPPLEMENTARY NOTES:

PROVIDE ALL TEMPORARY BRACING, SHORING, GUYING OR OTHER MEANS TO AVOID EXCESSIVE STRESSES AND TO HOLD STRUCTURAL ELEMENTS IN PLACE DURING CONSTRUCTION.

ANY MEMBERS REQUIRED TO SUPPORT EQUIPMENT FROM THE FRAMING SHOWN SHALL BE DESIGNED AND PROVIDED BY THE EQUIPMENT CONTRACTOR.

FOR CONNECTIONS, SEE DETAILS. IF NOT SHOWN OR NOTED, MINIMUM CONNECTIONS TO BE INCLUDED IN COST SHALL BE TWO 3/4" DIAMETER BOLTS OR 3/16" FILLET WELD 4" LONG USING 1/4" CONNECTION MATERIAL AND DETAILED TO MINIMIZE BENDING IN CONNECTION. PROCEED AFTER CLARIFICATION THROUGH SHOP DRAWING SUBMITTAL.

EXPANSION BOLTS IN CONCRETE SHOWN IN DRAWINGS SHALL BE KWIK-BOLTS OR HDI BY HILTI, OR APPROVED EQUIVALENT WITH ALLOWABLE VALUES EQUAL TO OR EXCEEDING THOSE FOR HILTI, PER CURRENT ICBO RESEARCH RECOMMENDATION. EMBED 3-1/4" MINIMUM FOR 3/4" DIAMETER BOLTS. WHERE SPALLING IS ANTICIPATED DUE TO INSUFFICIENT EDGE DISTANCE, USE THREADED ANCHOR ROD EPOXIED INTO DRILLED HOLE.

"COMPRESSIBLE MATERIAL" SHALL BE SPONGE RUBBER.

OPTIONS AND APPROVED SUBSTITUTIONS ARE FOR CONTRACTOR'S CONVENIENCE. HE SHALL BE RESPONSIBLE FOR ALL CHANGES AND ADDITIONAL COSTS NECESSARY AND HE SHALL COORDINATE ALL DETAILS.

ANY ENGINEERING DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BE BY AN INSURED REGISTERED ENGINEER WITH CONTINUOUS FIVE YEARS OF EXPERIENCE IN THE TYPE OF DESIGN SUBMITTED.

UNLESS NOTED OTHERWISE, DETAILS ON STRUCTURAL DRAWINGS ARE TYPICAL AS INDICATED BY CUTS, REFERENCES, OR TITLES.

IN CASE OF CONFLICTS, MORE COSTLY REQUIREMENTS GOVERN FOR BIDDING. SUBMIT CLARIFICATION REQUEST PRIOR TO PROCEEDING WITH WORK.

VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.

CONTRACTOR SHALL ESTABLISH AND VERIFY IN FIELD ALL EXISTING CONDITIONS AFFECTING NEW CONSTRUCTION. CONTACT ARCHITECT AND GEOTECHNICAL ENGINEER IMMEDIATELY IF EXISTING CONDITIONS ARE NOT AS DEPICTED IN DRAWINGS.

DRY PACK IN SPACES LARGER THAN 3/8" SHALL BE ONE PART CEMENT AND 2-1/2 PARTS SAND WITH JUST ENOUGH WATER TO HYDRATE CEMENT AND FORM A BALL SHOWING MOISTURE ON THE SURFACE WHEN SQUEEZED. IT SHALL BE RAMMED IN TIGHT TO MAXIMUM DENSITY ATTAINABLE. MINIMUM 28 DAY STRENGTH TO BE 5,000 P.S.I.

GROUT OTHER THAN FOR FILLING MASONRY CELLS, SHALL BE NON-SHRINK, NON-METALLIC, MEETING ASTM C-827, C-191, AND C-109, MIXED AND INSTALLED PER MANUFACTURER'S SPECIFICATIONS. MINIMUM COMPRESSIVE STRENGTH 5,000 P.S.I. IN TWO DAYS.

ENGINEERING DESIGN TO BE PROVIDED BY CONTRACTOR:

THE CONTRACTOR SHALL INCLUDE IN HIS BID, CONSTRUCTION COSTS AND STRUCTURAL DESIGN BY AN INSURED ARIZONA REGISTERED ENGINEER OR THE ENGINEER'S BONA FIDE EMPLOYEE FOR THE FOLLOWING PHASES OF CONSTRUCTION, IF APPLICABLE.

THE DESIGN ENGINEER SHALL HAVE CONTINUOUS FIVE YEARS OF EXPERIENCE IN THE TYPE OF DESIGN SUBMITTED, OR SHALL BE PREQUALIFIED BY THE ARCHITECT.

A. CORRECTIVE MEASURES FOR ERRORS IN CONSTRUCTION, WHEN SUCH MEASURES ARE ACCEPTABLE TO THE ARCHITECT.
B. SUPPORT SYSTEM FOR MECHANICAL EQUIPMENT INCLUDING SPRINKLERS, PIPING CONCENTRATIONS. DESIGN TO BE WITHIN ASSUMED LOADS PER GENERAL STRUCTURAL NOTES.
C. STEEL JOISTS.

STRUCTURAL DRAWING LIST

SHT. NO.	SHEET TITLE
S1.1	GENERAL STRUCTURAL NOTES
S1.2	INTERPRETAION OF DRAWINGS
S2.1	FOUNDATION PLAN - AREA A
S2.2	FOUNDATION PLAN - AREA B
S2.3	CONCRETE "CAP" SLAB PLAN & STRUCTURAL DETAILS
S2.4	SECOND FLOOR FRAMING PLAN - AREA A
S2.5	SECOND FLOOR FRAMING PLAN - AREA B
S2.6	ROOF FRAMING PLAN
S2.7	SUPPORT BUILDING FOUNDATION & FRAMING PLANS
S3.1	STRUCTURAL DETAILS
S3.2	STRUCTURAL DETAILS
S3.3	STRUCTURAL DETAILS
S3.4	STRUCTURAL DETAILS
S3.5	STRUCTURAL DETAILS
S3.6	STRUCTURAL DETAILS

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POLICE HEADQUARTERS
LAKE HAVASU CITY, ARIZONA

DATE 1-7-92

ISSUED FOR	DATE
1 CITY PLAN CHECK	4-3-92

SHEET TITLE

GENERAL STRUCTURAL NOTES

SHEET NO.

S1.1

R/DA PROJECT NO.

91006

INTERPRETATION OF DRAWINGS

ABBREVIATIONS

Abbreviation	Meaning
A.B.	ANCHOR BOLT(S)
@	AT
ABC	AGGREGATE BASE COURSE
ACI	AMERICAN CONCRETE INSTITUTE
ADDN'L.	ADDITIONAL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ANCH.	ANCHOR
APPROX.	APPROXIMATE
ARCH.	ARCHITECT OR ARCHITECTURAL DOCUMENTS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
AVG	AVERAGE
BLDG.	BUILDING
BLK.	BLOCK
BM.	BEAM
BOT. OR B.	BOTTOM
BRG.	BEARING
BTWN.	BETWEEN
BW	BUTT WELD
CALCS	CALCULATIONS
CANT.	CANTILEVER
C-C	CENTER TO CENTER
CEIL. OR CLG.	CEILING
C.I.P.	CAST IN PLACE
C.J.	CONTROL JOINT OR CONSTRUCTION JOINT
CL OR CLR	CLEAR
C.M.U.	CONCRETE MASONRY UNIT
℄	CENTER LINE
CLOS.	CLOSURE
CLR.	CLEAR
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION
CONSTR.	CONSTRUCTION
CONT.	CONTINUE OR CONTINUOUS
CONTR.	CONTRACTOR
CTR. OR CNTR.	CENTER
CTR'D.	CENTERED
DBL.	DOUBLE
DEPR	DEPRESSION
DET OR DTL	DETAIL
DIA. OR Φ	DIAMETER
DIAG.	DIAGONAL
DIM.	DIMENSION
DL	DEAD LOAD
DN.	DOWN
DP	DEEP OR DEPTH
DWG.	DRAWING(S)
DWL.	DOWEL
E (psi)	MODULUS OF ELASTICITY
EA.	EACH
E.F.	EACH FACE
E.J.	EXPANSION JOINT
E. OR ELECT'L.	ELECTRICAL
EL. OR ELEV.	ELEVATION
ENGR	ENGINEER
EQ.	EQUAL
ES	EACH SIDE
EW	EACH WAY
E-W	EAST-WEST
EXC	EXCAVATE
EXIST.	EXISTING
EXP.	EXPANSION
EXT.	EXTERIOR
FAB	FABRICATE
FND	FOUNDATION
F.F.	FAR FACE
FIN.	FINISH
FLG.	FLANGE
FLR.	FLOOR
F.O.M.	FACE OF MASONRY
FRMG.	FRAMING
FS	FAR SIDE
FT.	FOOT-FEET
FTG.	FOOTING
FW	FILLET WELD
FY	YIELD STRESS OF STEEL
GA.	GAGE OR GUAGE
GALV.	GALVANIZED
GC OR GEN CONTR	GENERAL CONTRACTOR
GLU-LAM	GLUE LAMINATED
GR OR GRD	GRADE
G.S.N.	GENERAL STRUCTURAL NOTES
H.A.S.	HEADED ANCHOR STUD
HORIZ.-HOR.	HORIZONTAL
H.S.	HIGH STRENGTH
HT.	HEIGHT
I (in ^{4})	MOMENT OF INERTIA
ICBO	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS
I.D.	INSIDE DIAMETER
I.F.	INSIDE FACE
IN	INCH
INCL	INCLUDE
INFO	INFORMATION
INT	INTERIOR
JT.	JOINT
K	KIP = 1000 LBS.
LB OR #	POUND(S)
LG.	LONG
LL	LIVE LOAD
L.L.H.	LONG LEG HORIZONTAL
L.L.V.	LONG LEG VERTICAL
LOC.	LOCATION
LT.-LGT.	LIGHT
LWC	LIGHT WEIGHT CONCRETE
MACH	MACHINE
MAS	MASONRY
MATL.	MATERIAL
MAX.	MAXIMUM
MECH.	MECHANICAL
MEMB.	MEMBRANE
MEZZ.	MEZZANINE
MRF. OR MFRR.	MANUFACTURER
MID.	MIDDLE
MIN.	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MPE	MECHANICAL, PLUMBING, ELECTRICAL
MTL.	METAL
NAAMM	NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS
NF	NEAR FACE
No. OR #	NUMBER
NO	NORTH
NS	NEAR SIDE
N-S	NORTH-SOUTH
N.T.S.	NOT TO SCALE
O.C. OR O/C	ON CENTER
O.D.	OUTSIDE DIAMETER
O.F.	OUTSIDE FACE
O.H.	OVERHANG
OPNG.	OPENING
OPP	OPPOSITE
OPP HD	OPPOSITE HAND
PCF	POUNDS PER CUBIC FOOT
PEN	PENETRATION
ℙ	PLATE
PERP.	PERPENDICULAR
P.L.	PROPERTY LINE
PLF	POUNDS PER LINEAL FOOT
PP	PANEL POINT OR PARTIAL PENETRATION
PRELIM	PRELIMINARY
PSI	POUNDS PER SQUARE INCH
R. OR RAD.	RADIUS
R	RISER (STAIR)
REINF.	REINFORCED OR REINFORCING
REQ'D.	REQUIRED
RM	ROOM
S (in ^{3})	SECTION MODULUS
SCHED.	SCHEDULE
SECT	SECTION
SH OR SHT	SHEET
SIM.	SIMILAR
SLV	SLEEVE OR SHORT LEG VERTICAL
SLH	SHORT LEG HORIZONTAL
SO	SOUTH
SJI	STEEL JOIST INSTITUTE
SOG	SLAB ON GRADE
SP OR SPCS	SPACES
SPCG	SPACING
SPEC.	SPECIFICATION
SQ.	SQUARE
STD.	STANDARD
STIFF.	STIFFENER
STL.	STEEL
STRUCT.	STRUCTURE OR STRUCTURAL
SYMM.	SYMMETRICAL
T.	TOP OR TREAD (STAIR)
T & B	TOP AND BOTTOM
THK	THICK OR THICKNESS
THK'ND	THICKENED
TL	TOTAL LOAD
TOC	TOP OF CONCRETE
TOPG	TOPPING
TOS	TOP OF STEEL
TR	TRUSS
TYP.	TYPICAL
UBC	UNIFORM BUILDING CODE
U.N.O.	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
W/	WITH
W/O	WITHOUT
W.P.	WORKING POINT
WT.-WGT.	WEIGHT
W.W.F. OR W.W.M.	WELDED WIRE FABRIC
X-BRACE	CROSS BRACING
X-STRONG	EXTRA STRONG
XX-STRONG	DOUBLE EXTRA STRONG

PLAN LEGEND

SYMBOL	DESCRIPTION	REMARKS
	INTERIOR NON-BEARING MASONRY WALL	SEE G.S.N. FOR REINFORCING SEE DETAIL 14/S3.1 FOR FOOTING
	MASONRY BEARING WALL AND FOOTING	SEE G.S.N., SHEET S1.1 AND TYPICAL DETAIL 12/S3.1
#4@12" (B)	BOTTOM REINFORCING BAR IN CONCRETE SLAB	#4@12" - INDICATES SIZE AND SPACING OF REINF. BARS. (B) - INDICATES BOTTM BARS
#4@12" (T)	TOP REINFORCING BAR IN CONCRETE SLAB	#4@12" - INDICATES SIZE AND SPACING OF REINF. BARS. (T) - INDICATES TOP BARS
W21 X 44 [10] (C=1")	STEEL BEAM	W21 X 44 - INDICATES BEAM SIZE [10] - INDICATES NUMBER OF SHEAR STUDS EQUALLY SPACED (C=1") - INDICATES BEAM CAMBER
-3"	DEPRESSED OR SLOPING SLAB	-3" - INDICATES DEPTH OF DEPRESSION, OR SEE ARCH'L. DRW'G. FOR SLOPE.
	OPENING IN FRAMING PLAN	SEE NOTE 3 IN "TYPICAL NOTES" SECTION AT RIGHT.
4000#	MECHANICAL EQUIPMENT HUNG FROM STRUCTURE	4000# - INDICATES MAXIMUM OPERATING WEIGHT INCLUDING WATER, IF ANY.
4000#	MECHANICAL EQUIPMENT BEARING ON TOP OF STRUCTURE	4000# - INDICATES MAXIMUM OPERATING WEIGHT INCLUDING WATER, IF ANY.
T.O.S. +15'	TOP OF STEEL ELEVATION	+15' - INDICATES HEIGHT ABOVE DATUM ELEVATION
+0'-0"	TOP OF CONCRETE SLAB ELEVATION	INDICATES HEIGHT ABOVE/BELOW DATUM ELEVATION
	INDICATES STEEL BEAM OR COLUMN IN POLICE BUILDING TO RECEIVE SPRAYED-ON FIREPROOFING.	SEE DETAILS 11 & 12/A4.7 NOTE: ALL BEAMS/JOISTS IN JAIL BUILDING RECEIVE FIREPROOFING PER ARCHITECTURAL DRAWINGS.

1

GENERAL DETAIL REFERENCES

DETAIL	DETAIL NO./SHEET
CONSTRUCTION JOINT (C.J.) IN SLAB ON GRADE	2/S3.1
SUPPLEMENTARY REINFORCEMENT REQUIRED AT SMALL OPENING IN SLAB	6/S2.3
STAIR STRINGER DETAILS	17/S3.3
SLAB EDGES	4/S3.1
METAL DECK TO COMPOSITE STEEL BEAM	12/S3.2
STEP IN FOOTING	7/S3.1
SLOPING FOOTING	8/S3.1
MECHANICAL EQUIPMENT HOUSEKEEPING PAD	11/S3.6
MAXIMUM SLOPES BETWEEN ADJACENT EXCAVATIONS	9/S3.1
DETAILS OF PIPE AT CONCRETE FOOTING	17/S3.1
JOIST REINFORCING FOR CONCENTRATED LOAD	7/S3.2
MISC. FRAMING TO TOP OF JOIST	9/S3.2
LARGE OPENINGS IN METAL DECK	10/S3.2
SMALL OPENING IN METAL DECK	11/S3.2
SMALL OPENINGS IN METAL DECK AND SLAB	13/S3.2
FOOTING CONTINUOUS UNDER WALL OPENING	19/S3.5
STANDARD STIFFENER	3/S3.2
TYPICAL REINFORCING BAR DETAILS	9/S3.3
MINIMUM SIZE FILLET WELDS	1/S3.2
TYPICAL REBAR TENSION LAP SPLICES	5/S3.6
DOUBLE ANGLE FRAMED BEAM CONNECTION	18/S3.2
CONSTRUCTION JOINT IN ABOVE GRADE SLAB	4/S3.3
STEPPED BOND BEAM	11/S3.3
LINTELS AT MASONRY WALLS	7/S3.4
CONTROL JOINTS AT LINTELS	4/S3.4
MECHANICAL CURB SUPPORT	20/S3.4
HORIZONTAL MASONRY WALL REINFORCING DETAILS	14/S3.6

TYPICAL NOTES

1. SEE "GENERAL DETAIL REFERENCES" ABOVE FOR TYPICAL DETAILS AND GENERAL REFERENCES THAT MAY NOT BE CUT ON PLANS.
2. ALL DIMENSIONS AND ELEVATIONS ON STRUCTURAL DRAWINGS SHALL BE VERIFIED WITH ARCHITECTURAL DRAWINGS. RESOLVE ALL DISCREPANCIES WITH ARCHITECT PRIOR TO START OF CONSTRUCTION.
3. FOR CLARITY, ALL OPENINGS MAY NOT BE SHOWN ON FRAMING PLANS. SEE ALSO ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING PLANS. ALL OPENINGS AND PENETRATIONS SHALL BE LOCATED AND VERIFIED BY ALL TRADES FROM DRAWINGS MADE BY THEM. CONTRACTOR SHALL NOT PROCEED WITH ANY WORK SHOWN ON DRAWINGS IF IN CONFLICT UNTIL RECEIVING CLARIFICATION FROM THE ARCHITECT. FOR FRAMING AT OPENING, SEE TYPICAL STRUCTURAL DETAILS.
4. FIREPROOFING OF STRUCTURAL ELEMENTS IS SHOWN ON ARCHITECTURAL PLANS.
5. DO NOT SCALE DRAWINGS. SEE ARCHITECTURAL FOR DIMENSIONS.
6. ALL COLUMNS CENTERED ON GRID LINES, U.N.O.
7. ALL FOOTING CENTERED BELOW COLUMNS/WALLS, U.N.O.
8. ALL BEAMS CENTERED ON COLUMN LINES, U.N.O.
9. SEE ARCHITECTURAL & CIVIL DRAWINGS FOR EXTERIOR PAVING NOT SHOWN ON THESE DRAWINGS.

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ISSUED FOR	DATE
1 CITY PLAN CHECK	4-3-92

SHEET TITLE

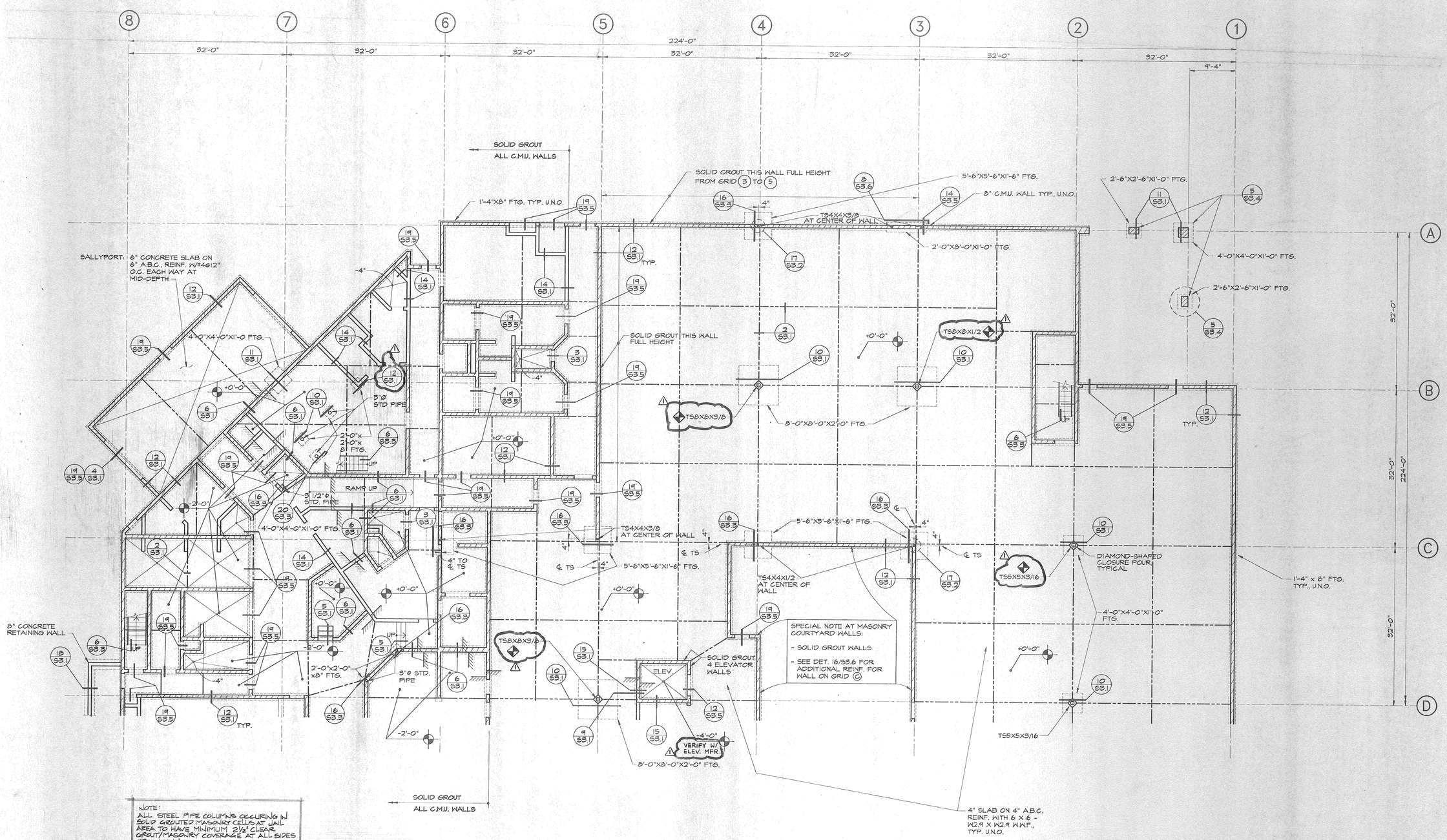
INTERPRETATION OF DRAWINGS

SHEET NO.

S1.2

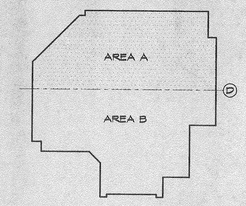
R/DA PROJECT NO.

91006



NOTE:
ALL STEEL PIPE COLUMNS OCCURRING IN SOLID GROUTED MASONRY CELLS AT WALL AREA TO HAVE MINIMUM 2½" CLEAR GROUT/MASONRY COVERAGE AT ALL SIDES OF COLUMN.

FOUNDATION PLAN - AREA A



KEY PLAN
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SHEET TITLE

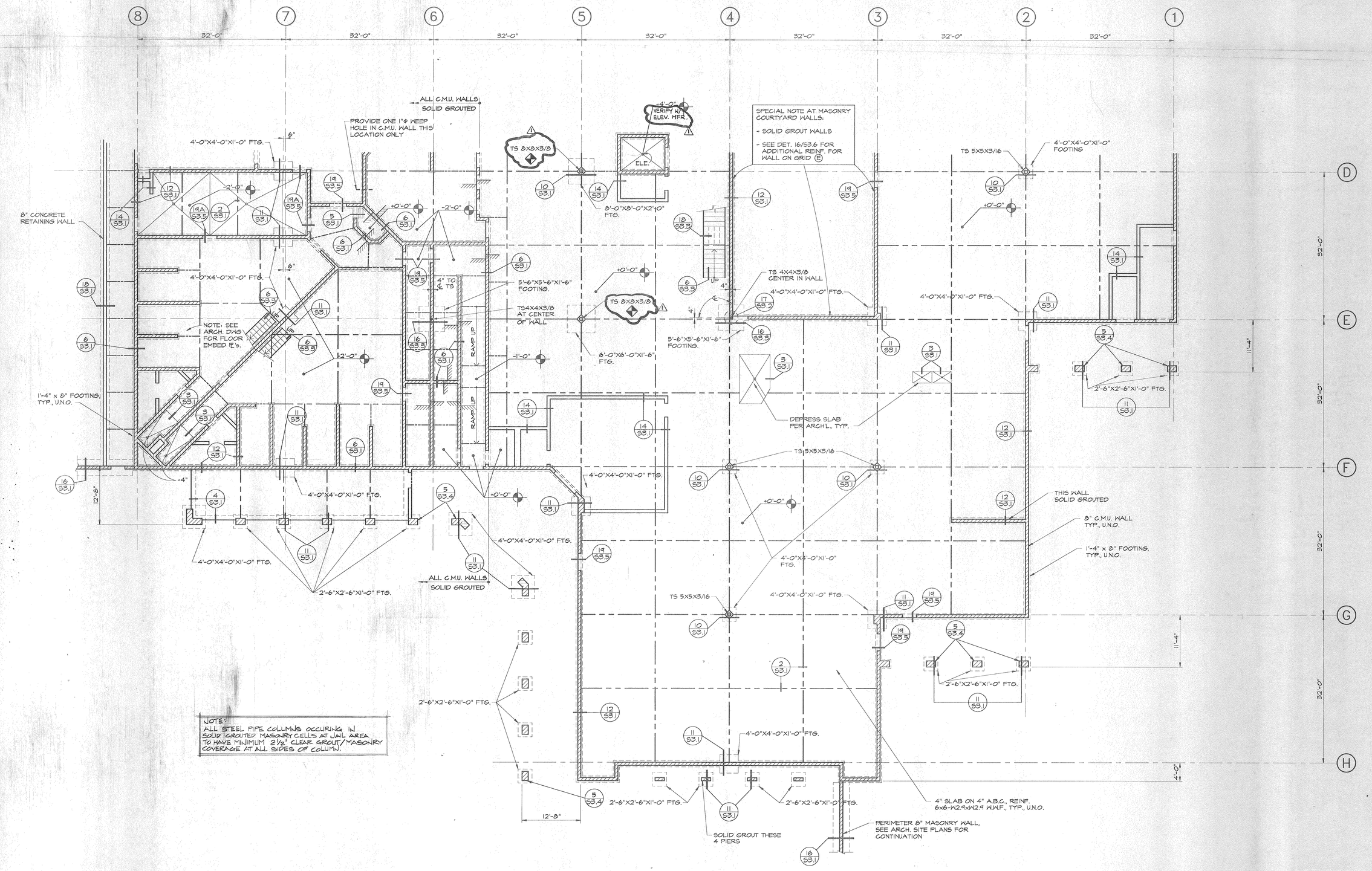
FOUNDATION PLAN - AREA A

SHEET NO.

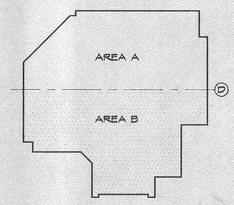
S2.1

R/DA PROJECT NO.

91006



FOUNDATION PLAN - AREA B



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LAKE HAVASU CITY, ARIZONA

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SHEET TITLE

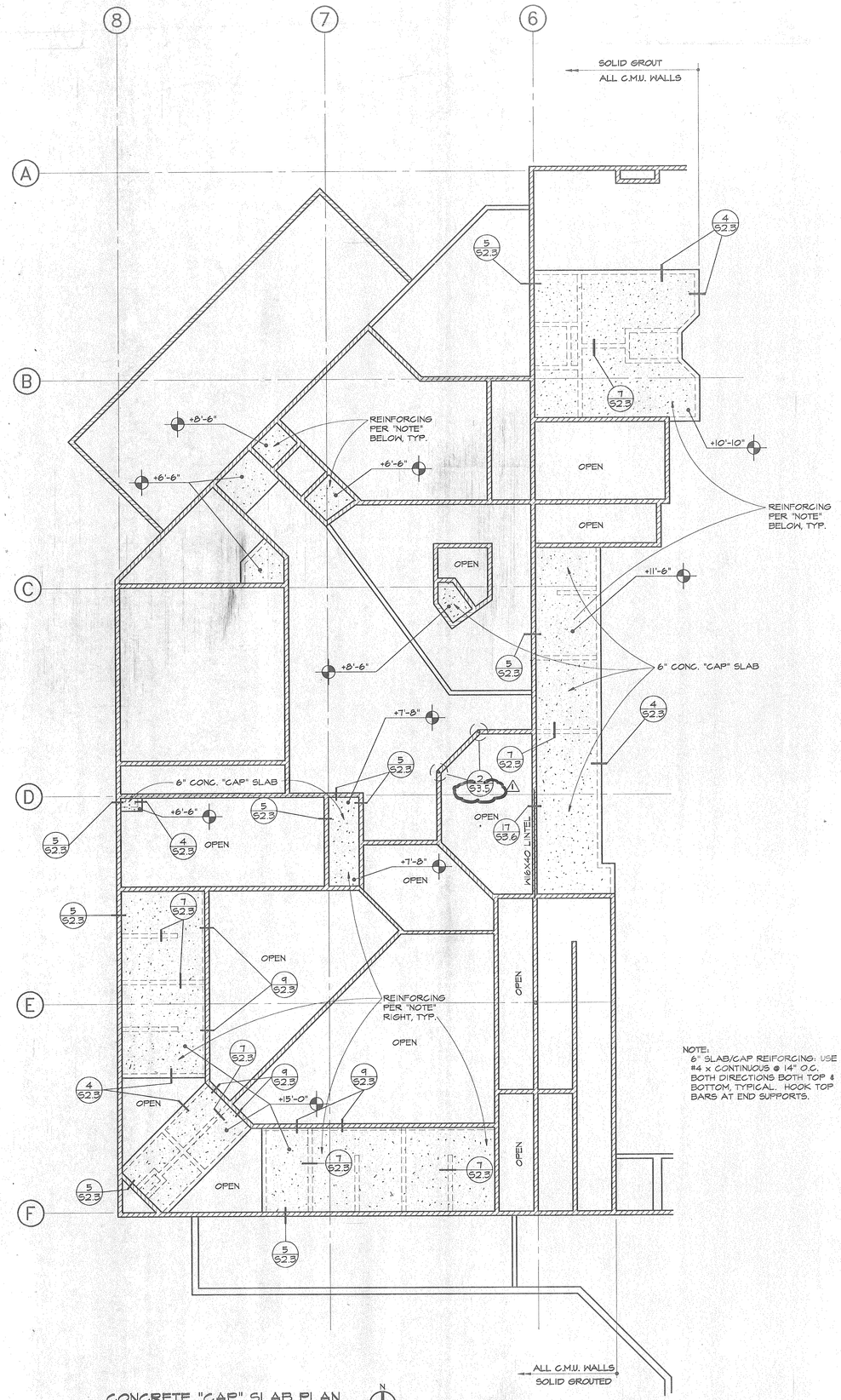
FOUNDATION PLAN - AREA B

SHEET NO.

S2.2

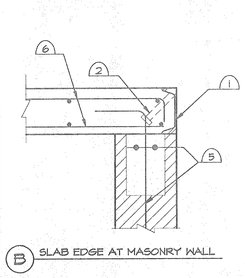
R/DA PROJECT NO.

91006

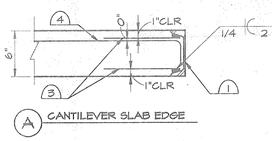


CONCRETE "CAP" SLAB PLAN

NOTE:
6" SLAB/CAP REIFORGING: USE #4 x CONTINUOUS @ 14" O.C. BOTH DIRECTIONS BOTH TOP & BOTTOM, TYPICAL. HOOK TOP BARS AT END SUPPORTS.



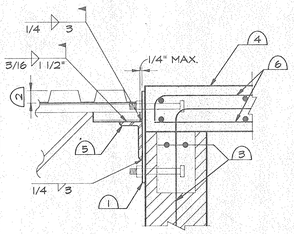
B SLAB EDGE AT MASONRY WALL



A CANTILEVER SLAB EDGE

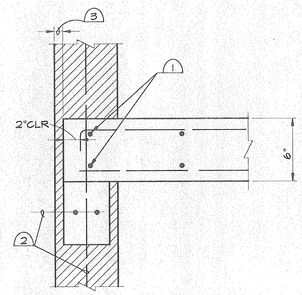
1. C 6 X 8.2 CONT.
2. 3/4"Ø X 5" H.A.S. @ 24"
3. #4 X 2'-0" @ 18"
4. SLAB TOP BARS PER PLAN.
5. SEE G.S.N.
6. SLAB REINFORCING PER PLANS.

1 SLAB EDGE



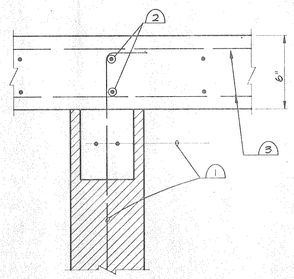
1. 1/2"X1'-0"X1'-0" PLATE W/4-3/4"Ø X 8" ANCHOR BOLTS @ 9" O.C. E.W.
2. 1 1/2" ROOF DECK.
3. SEE G.S.N.
4. 6" CONCRETE SLAB PER PLANS.
5. L 5" X 3" X 3/8" X 0'-8" (LLV)
6. SLAB REINFORCING PER PLANS.

3 SLAB TO JOIST CONNECTION



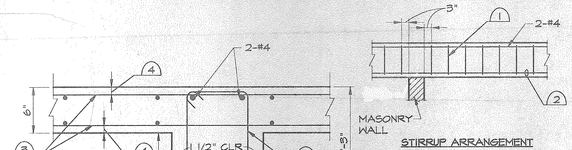
1. 2 - #4 x CONTINUOUS.
2. SEE G.S.N.
3. FACE SHELL IF MASONRY FINISH IS TO BE EXPOSED TO VIEW. PLACE CONCRETE SLAB TO WALL FACE OTHERWISE.

5 SLAB END INTO MASONRY WALL



1. SEE G.S.N.
2. 2-#4 CONT.
3. SEE PLAN.

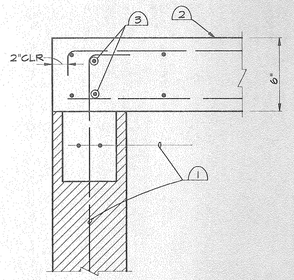
7 SLAB PERPENDICULAR TO MASONRY WALL



STIRRUP ARRANGEMENT

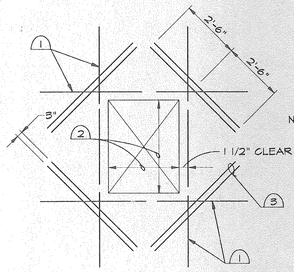
1. #3 TIES x ☐ @ 6" O.C.
2. 5 - #5
3. SLAB REINF., SEE PLAN.
4. SEE G.S.N.
5. 1" CLR. MINIMUM.
6. FACE OF MASONRY WALL BEYOND.

2 CONCRETE BEAM



1. SEE G.S.N.
2. 6" SLAB PER PLANS.
3. 2-#4 CONT. THRU SLAB AND MASONRY.

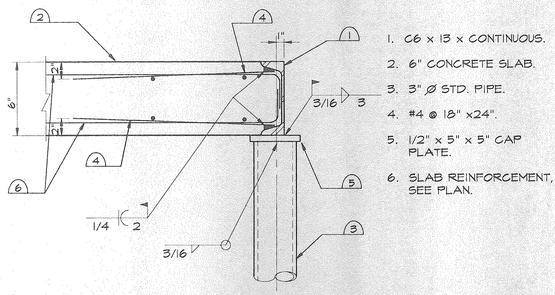
4 SLAB END TO MASONRY WALL



1. 1-#5 BAR AT TOP. EXTEND TRIMMER BARS 2'-6" BEYOND SIDES OF OPENING OR AS FAR AS POSSIBLE AND HOOK.
2. 4'-0" MAXIMUM.
3. 2-#5 BARS AT CENTER OF SLAB, TYPICAL.

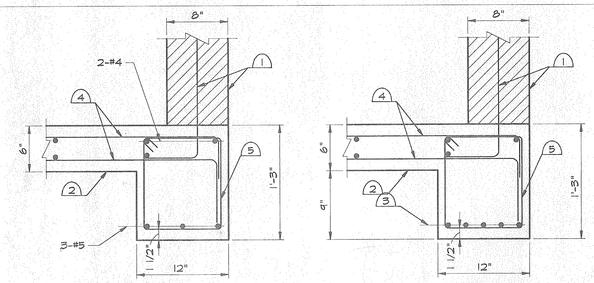
NOTES:
A. OPENING MAY HAVE ANY SHAPE OTHER THAN SHOWN HERE. USE CIRCUMSCRIBING RECTANGLE FOR REINFORCING APPLICATION.
B. PROVIDE EXTRA BARS (NOT SHOWN) PARALLEL TO SIDES OF OPENING, EQUAL TO AREA OF INTERRUPTED SLAB BARS. EXTEND FULL LENGTH OF SPAN OR OF TOP BARS AS APPLICABLE.
C. THIS DETAIL IS TYPICAL AT OPENINGS UP TO 4'-0" MAX. DIMENSIONS UNLESS NOTED OTHERWISE ON PLANS.

6 SUPPLEMENTARY REINF. REQ'D AT SMALL OPENING IN SLAB



1. C6 x 13 x CONTINUOUS.
2. 6" CONCRETE SLAB.
3. 3" Ø STD. PIPE.
4. #4 @ 18" x24".
5. 1/2" x 5" x 5" CAP PLATE.
6. SLAB REINFORCEMENT, SEE PLAN.

8 SLAB TO BEAM ON COLUMN



1. MASONRY WALL & REINF. PER G.S.N.
2. REINFORCED CONCRETE SLAB.
3. 5-#5. HOOK AT BEAM END INTO C.M.U. WALL.
4. SLAB REINFORCEMENT, SEE PLANS.
5. #3 x ☐ @ 6".

A NEAR SUPPORT

B AT CENTER

9 WALL ON BEAM-SLAB

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REGISTERED ARCHITECT
22971
TIMOTHY S. SEPPER
1-7-92

PROJECT NAME

LAKE HAVASU CITY POLICE HEADQUARTERS

LAKE HAVASU CITY, ARIZONA

DATE	1-7-92
ISSUED FOR	DATE
⚠1 CITY PLAN CHECK	4-3-92

SHEET TITLE

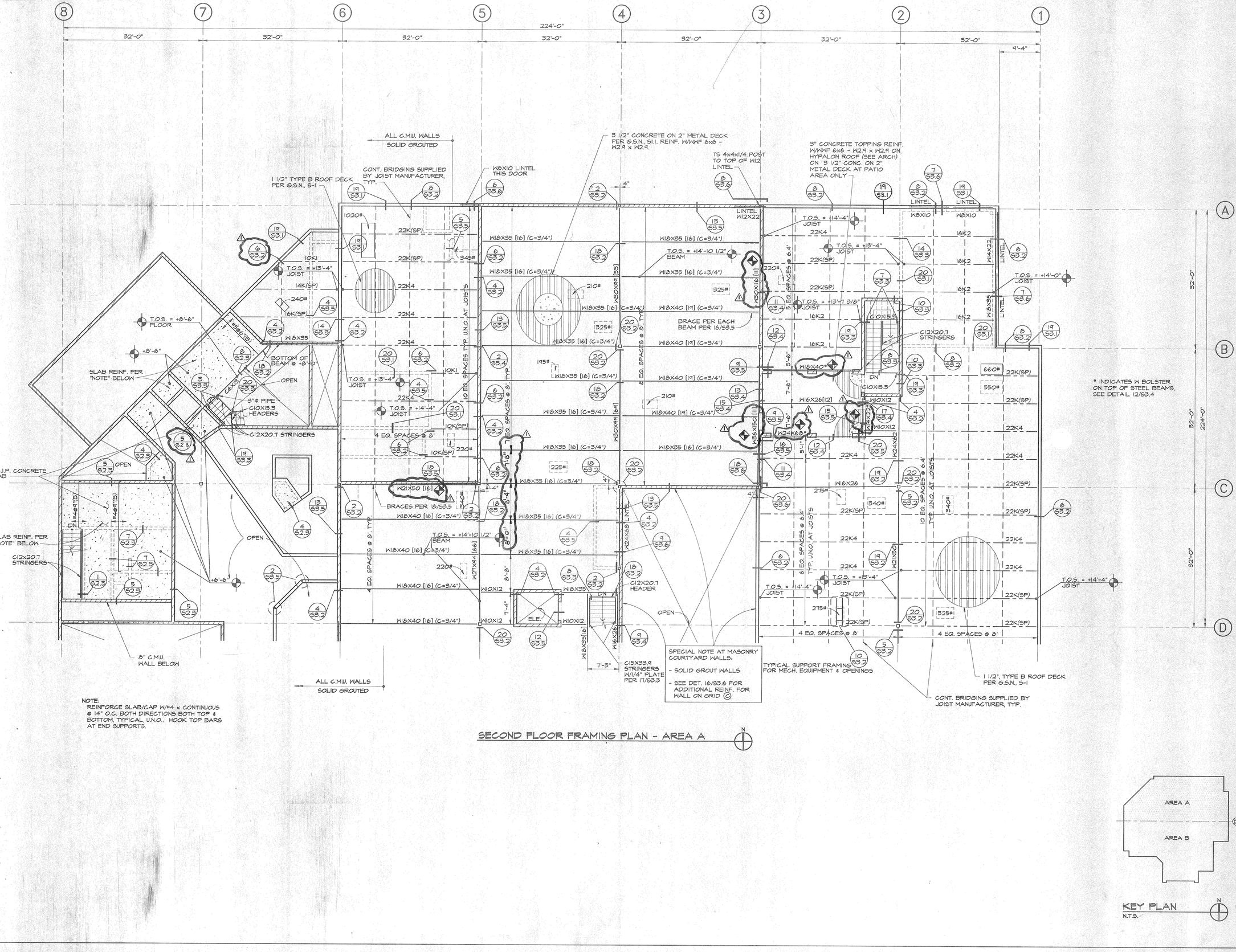
CONCRETE "CAP" SLAB PLAN & STRUCTURAL DETAILS

SHEET NO.

S2.3

R/DA PROJECT NO.

91006



* INDICATES W BOLSTER ON TOP OF STEEL BEAMS, SEE DETAIL 12/S3.4

NOTE:
REINFORCE SLAB/CAP W/#4 x CONTINUOUS @ 14" O.C. BOTH DIRECTIONS BOTH TOP & BOTTOM, TYPICAL, U.N.O., HOOK TOP BARS AT END SUPPORTS.

SECOND FLOOR FRAMING PLAN - AREA A

KEY PLAN
N.T.S.

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TIMOTHY S. SEPPER
1-7-92
REGISTERED ARCHITECT
STATE OF ARIZONA

PROJECT NAME

LAKE HAVASU CITY POLICE HEADQUARTERS

LAKE HAVASU CITY, ARIZONA

DATE	1-7-91
ISSUED FOR	DATE
⚠1 CITY PLAN CHECK	4-3-92

SHEET TITLE

SECOND FLOOR FRAMING PLAN AREA A

SHEET NO.

S2.4

R/DA PROJECT NO.

91006

SECOND FLOOR FRAMING PLAN - AREA B

SECTION AT ARCHED ROOF FRAMING

KEY PLAN

R/DA

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PROJECT NAME

LAKE HAVASU CITY POLICE HEADQUARTERS

LAKE HAVASU CITY, ARIZONA

DATE	1-7-92
ISSUED FOR	DATE
⚠1 CITY PLAN CHECK	4-3-92

SHEET TITLE

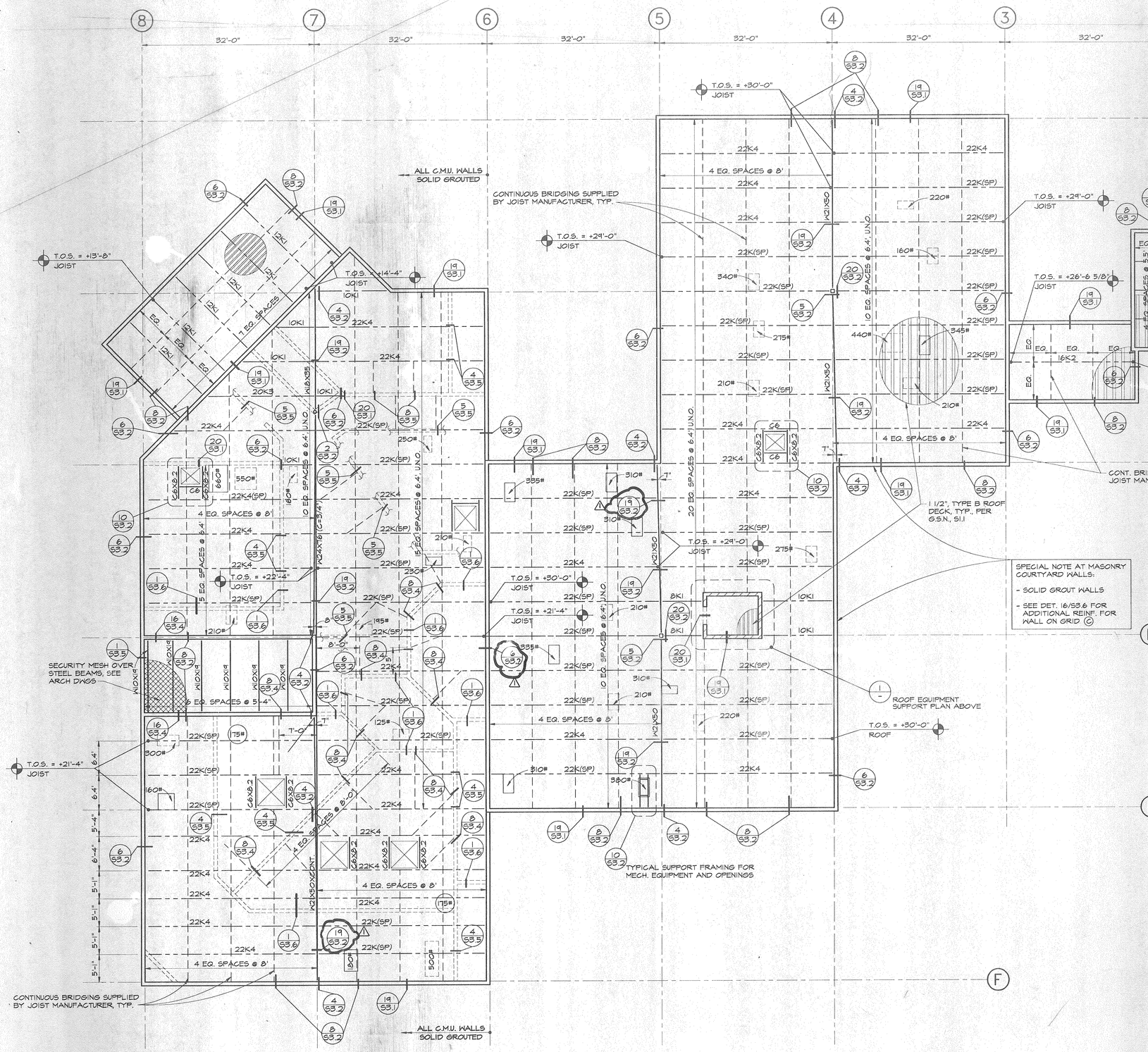
SECOND FLOOR FRAMING PLAN AREA B

SHEET NO.

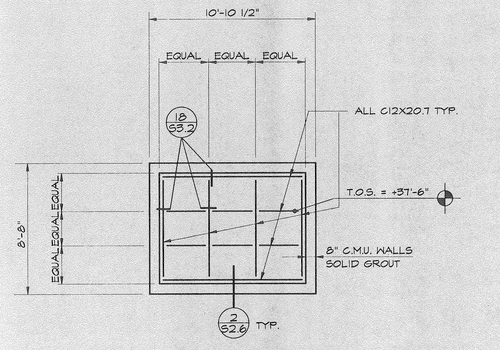
S2.5

R/DA PROJECT NO.

91006

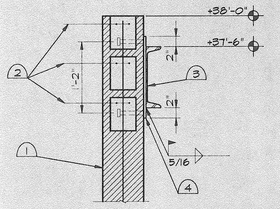


ROOF FRAMING PLAN



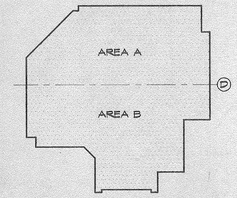
1 ROOF EQUIPMENT SUPPORT FRAMING PLAN

SCALE: 1/4" = 1'-0"



1. 8" MASONRY WALL & REINF. PER PLANS & G.S.N.
2. 2 - #5 X CONT. IN 8" DEEP BOND BEAM AT TOP THREE 8" COURSES.
3. C 12X20.7, TYP.
4. EMBEDED PLATE: 1/2" X 8" X 1'-4" WITH 4 - 3/4"ø X 5" H.A.S. SPACE EMBEDS AT MAX. 24" O.C. AND NO FURTHER THAN 1'-0" FROM END OF CHANNEL AT CORNER.

2 CHANNEL TO MASONRY WALL



KEY PLAN
N.T.S.

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REGISTERED PROFESSIONAL ENGINEER
22871
TIMOTHY S. SEPPER
1-7-92
DATE SIGNED
ARIZONA, U.S.A.

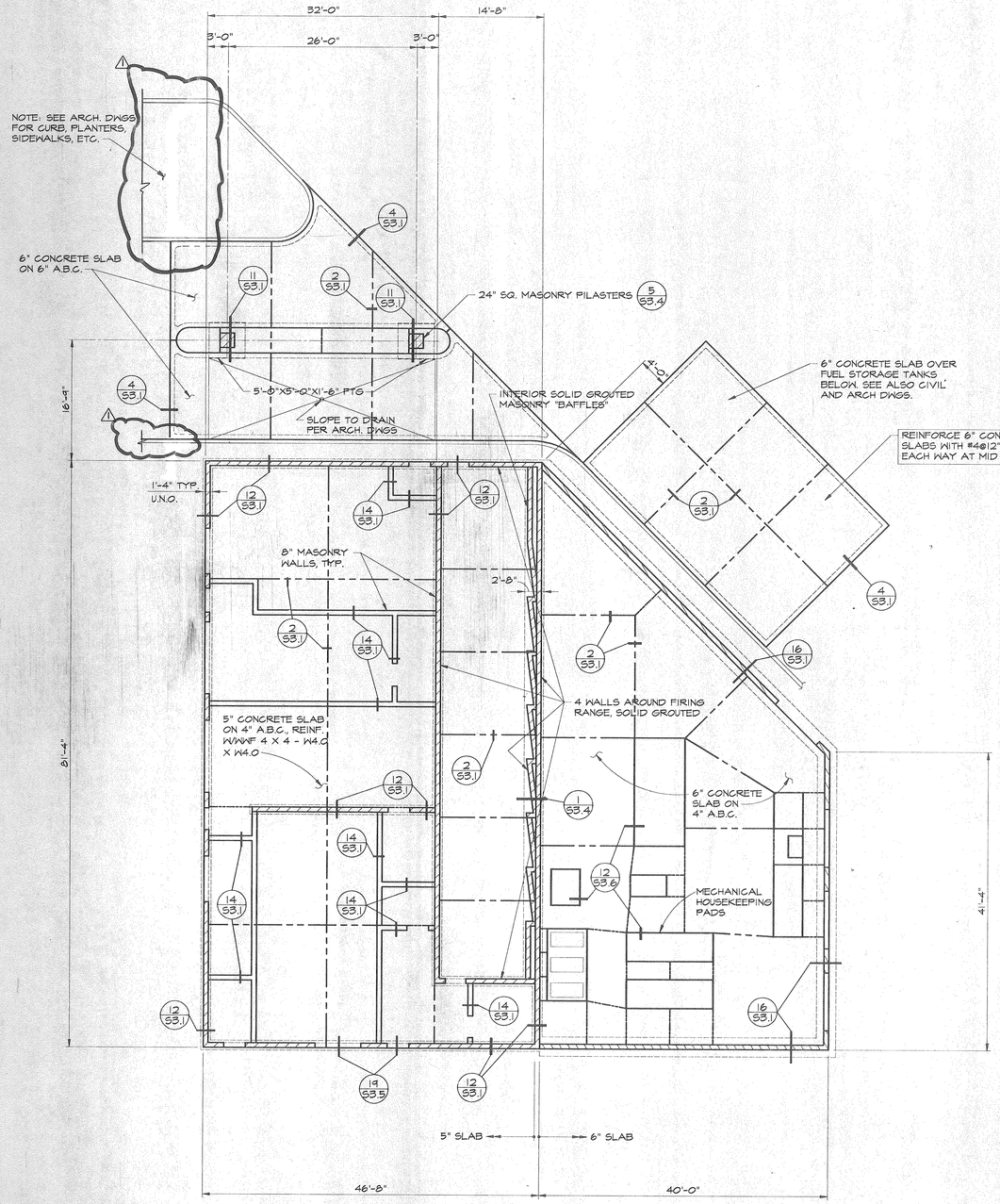
PROJECT NAME
LAKE HAVASU CITY POLICE HEADQUARTERS
LAKE HAVASU CITY, ARIZONA

DATE	1-6-92
ISSUED FOR	DATE
⚠1 CITY PLAN CHECK	4-3-92

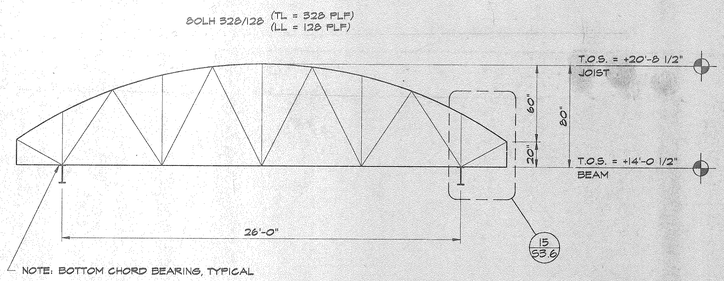
SHEET TITLE
ROOF FRAMING PLAN

SHEET NO.
S2.6

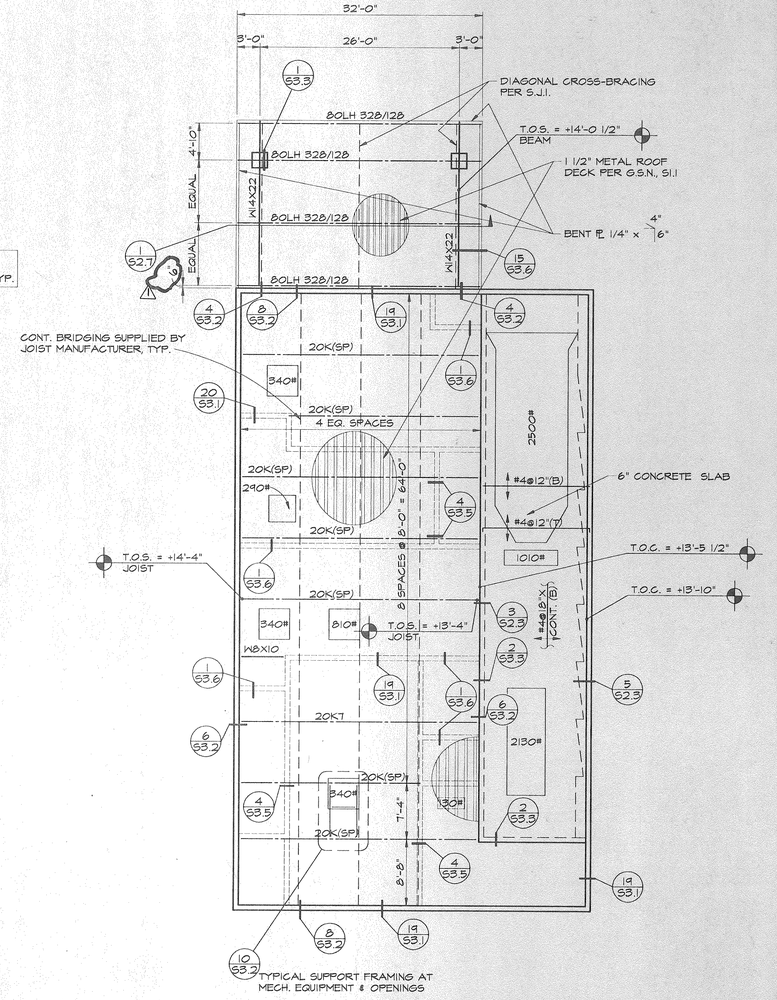
R/DA PROJECT NO.
91006



SUPPORT BUILDING FOUNDATION PLAN



1 JOIST ELEVATION



SUPPORT BUILDING ROOF FRAMING PLAN

R/DA

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22471 TIMOTHY S. SEPPER

PROJECT NAME

LAKE HAVASU CITY POLICE HEADQUARTERS

LAKE HAVASU CITY, ARIZONA

DATE	1-7-92
ISSUED FOR	DATE
1 CITY PLAN CHECK	4-3-92

SHEET TITLE

SUPPORT BUILDING FOUNDATION & FRAMING PLANS

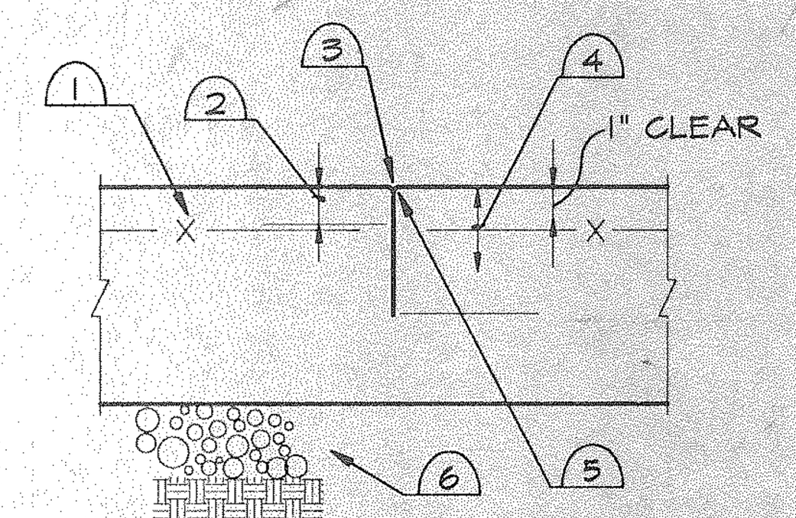
SHEET NO.

S2.7

R/DA PROJECT NO.

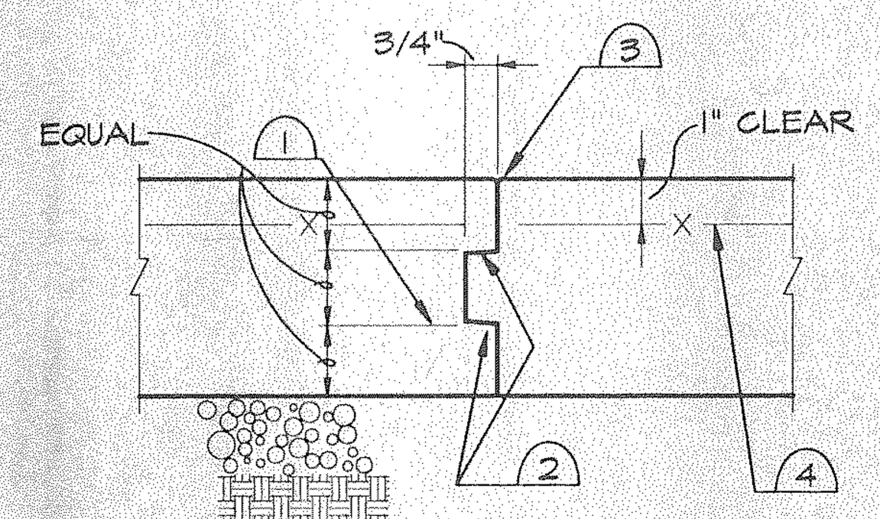
91006

1. 6 X 6-W2.9 X W2.9 W.W.F. CUT @ JOINT.
2. 1" TOOL DEPTH.
3. CUT FRESH CONCRETE JUST AFRETE IT HAS BEGUN TO HARDEN, WITH 1/4" THICK ANGLE. REMOVE AND TOOL JOINT.
4. 2-1/2" DEPTH OF CUT.
5. 1/8" TOOLED RADIUS AT EXPOSED AREA.
6. PLACE CONCRETE ON 4" ABC OVER COMPACTED EARTH BASE.



NOTE: AT CONTRACTOR'S OPTION, THIS DETAIL ANTICIPATES "STRIP" PLACING WITH THE CONTROL JOINTS CUTTING ACROSS THE STRIP. IF OTHER PLACING PATTERNS ARE USED, DO NOT USE THIS TYPE OF CONTROL JOINT. AT COVERED FLOORS, "ZIP STRIP" AND 1-1/2" DEEP SAWCUTTING ARE ACCEPTABLE AS A CONTROL JOINT. SAW-CUTTING SHALL BE MADE AS SOON AS POSSIBLE SO THAT IT IS DONE PRIOR TO THE SHRINKAGE CRACKING.

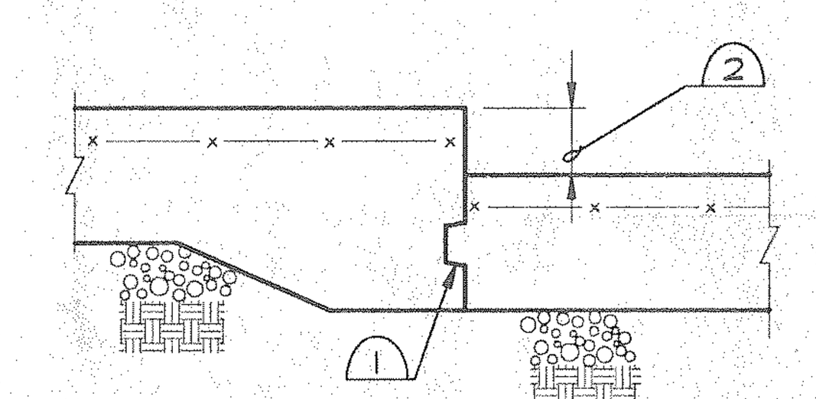
1 SHRINKAGE CONTROL JOINT OPTION (S.J.) IN SLAB ON GRADE



1. PLASTIC KEY NAILED TO WOOD FORM. STEEL FORMED KEY MAY BE USED AT COVERED FLOORS.
2. BEVEL TO BE 1/8" MAXIMUM TO REDUCE CURL.
3. TOOL JOINT AT EXPOSED AREA WITH 1/8" RADIUS.
4. 6X6 - W2.9 X W2.9 W.W.F. CUT AT JOINT.

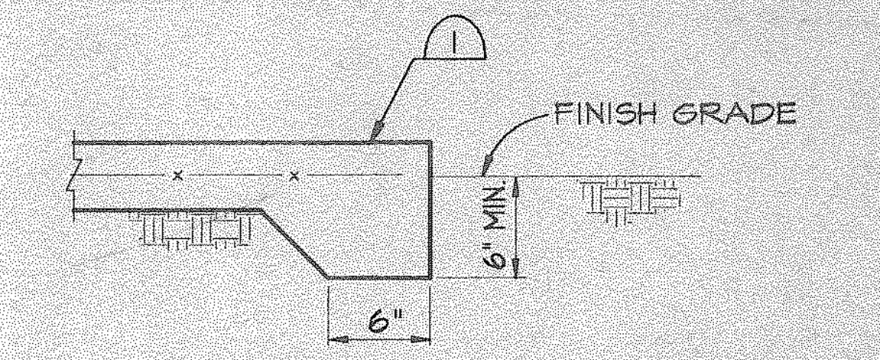
NOTE: FOR OPTION, SEE "SHRINKAGE CONTROL JOINT OPTION IN SLAB ON GRADE", 1/S3.1.

2 CONSTRUCTION JOINT (C.J.) AND SHRINKAGE CONTROL JOINT (S.J.) IN SLAB ON GRADE



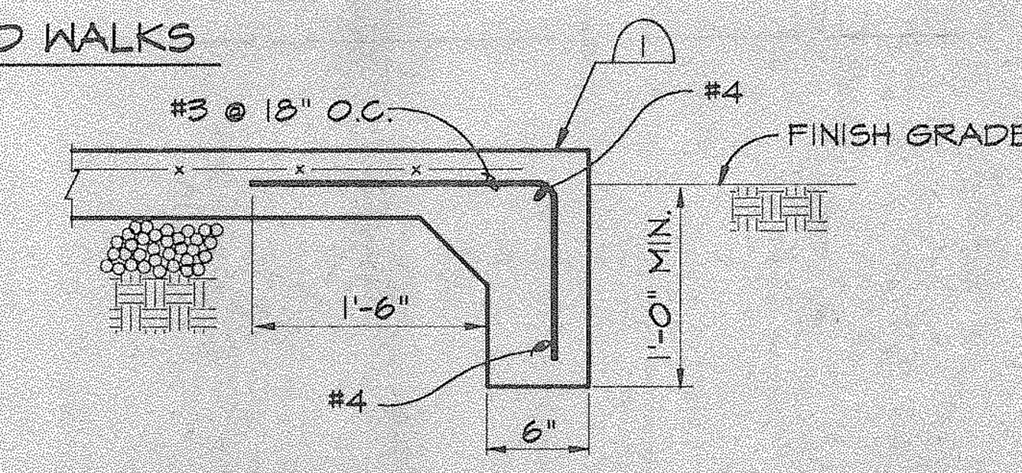
1. PERMISSIBLE SLAB CONSTRUCTION JOINT PER DETAIL 2/S3.1.
2. SEE ARCHITECTURAL DRAWINGS FOR STEP DIMENSION. DO NOT EXCEED 8".

3 SMALL STEP IN SLAB ON GRADE



AT CONC. PAVING AND WALKS

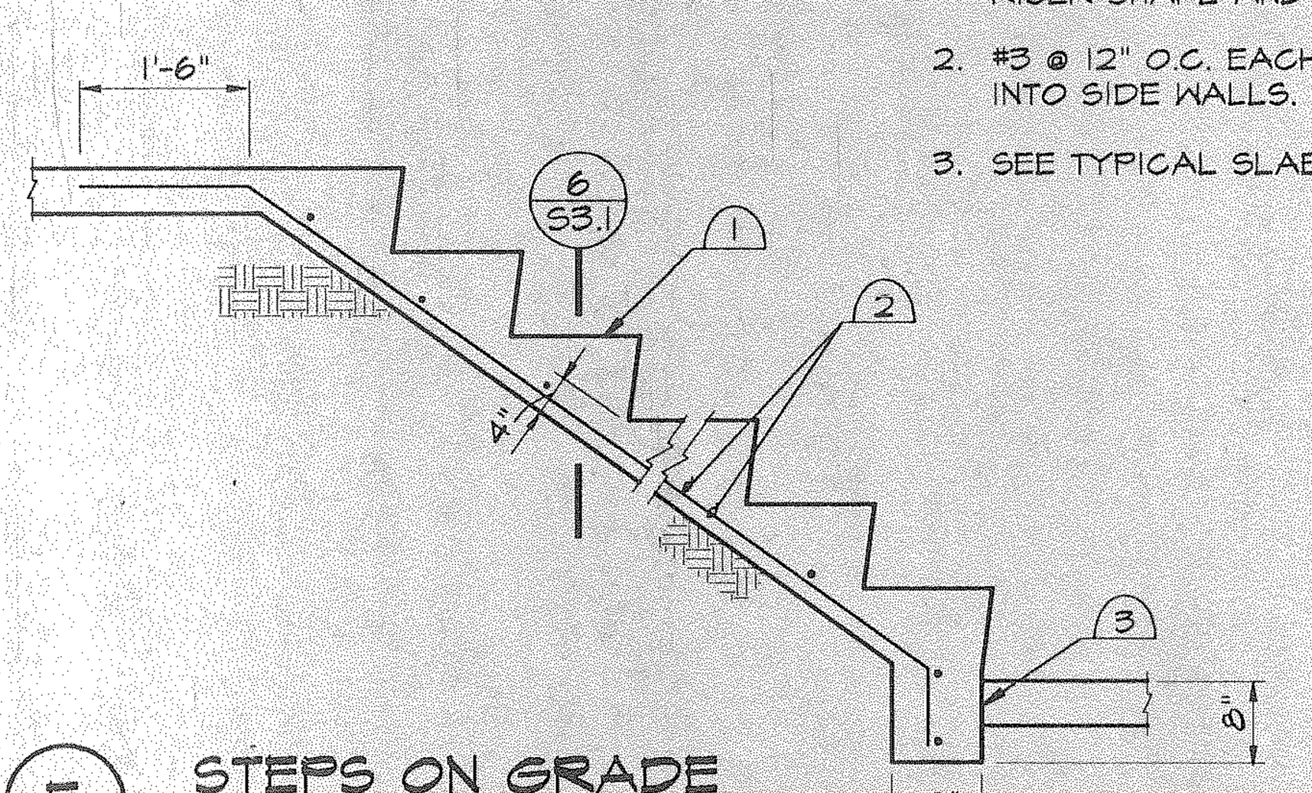
1. SEE TYPICAL SLAB JOINT DETAIL FOR SLAB CONSTRUCTION (DET. 2/S3.1) INCLUDING REBAR IF ANY.



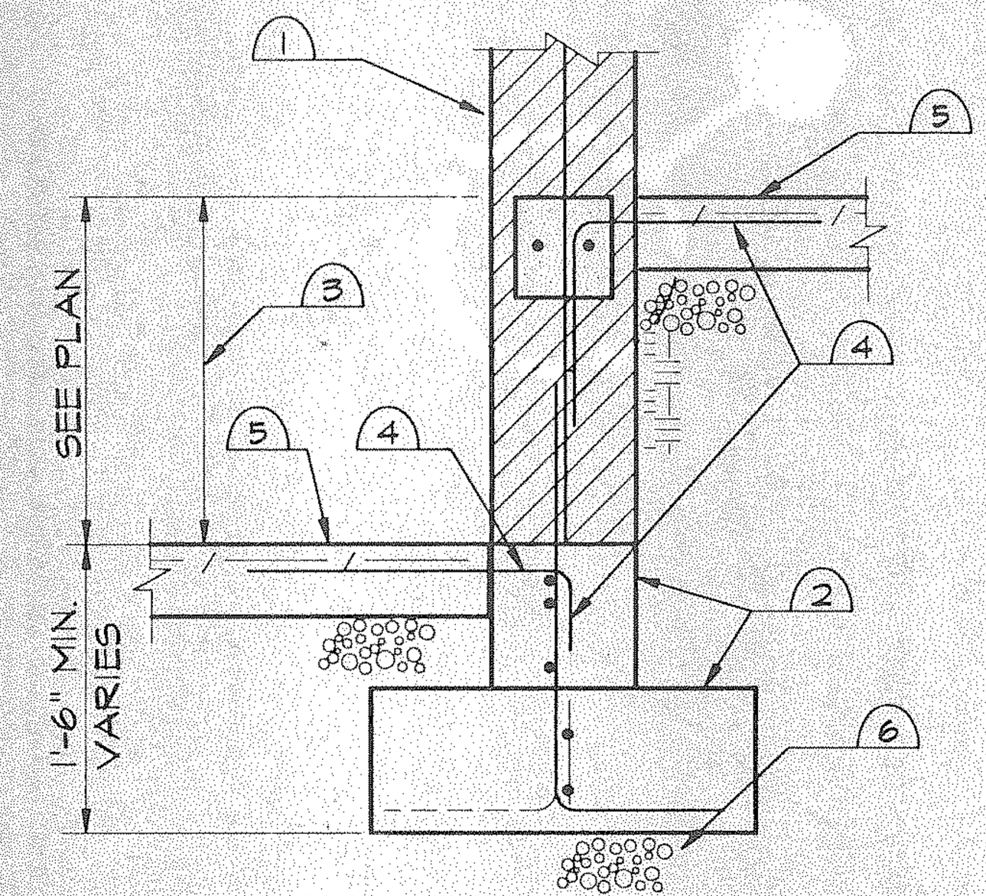
AT BLDG. SLAB EDGE

4 SLAB EDGES

1. SEE ARCHITECTURAL DRAWINGS FOR NUMBER OF TREAD AND RISER SHAPE AND TREATMENT.
2. #3 @ 12" O.C. EACH WAY, DOWEL INTO SIDE WALLS.
3. SEE TYPICAL SLAB JOINT DETAIL 2/S3.1

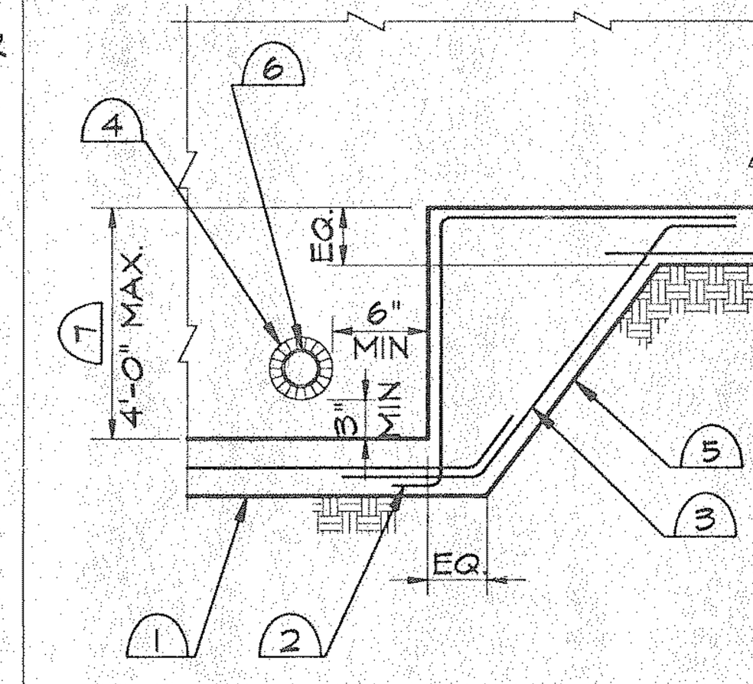


5 STEPS ON GRADE



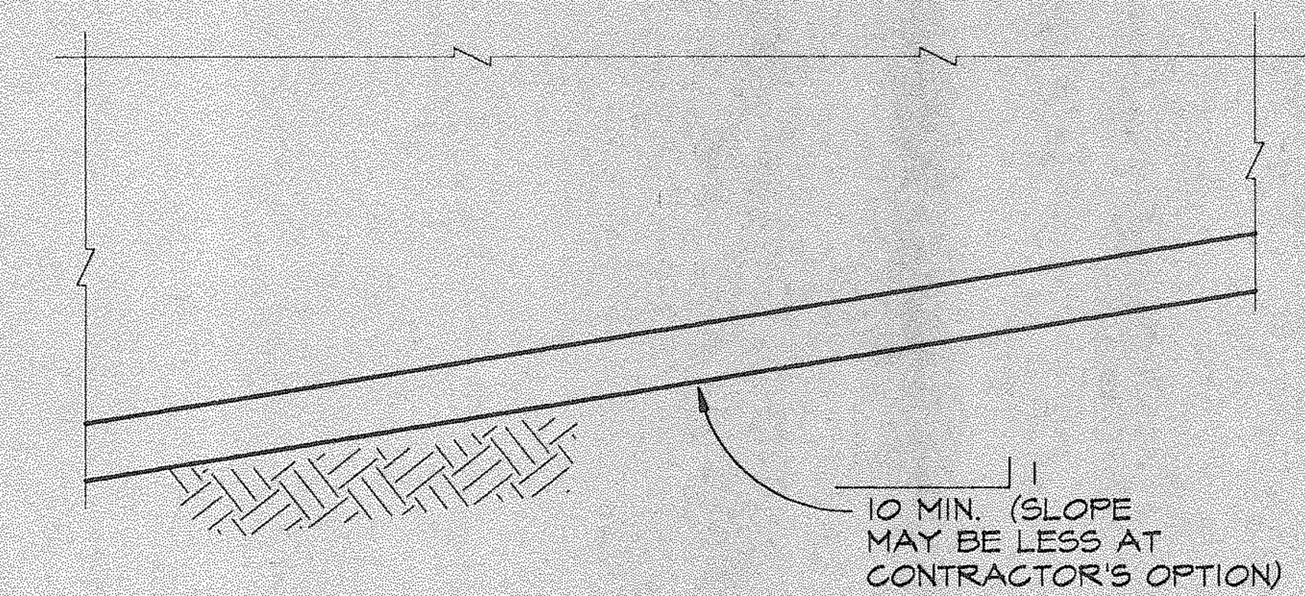
1. 8" MASONRY WALLS PER PLANS.
2. FOOTINGS AND STEM WALLS PER 12/S3.1, STEP FOOTING AS REQUIRED PER 7/S3.1.
3. SOLID GROUT BELOW GRADE, TYPICAL.
4. #4 DOWELS x 24" / 10" AT 32" ON CENTER.
5. SLAB ON A.B.C. PER PLANS.
6. COMPACTED BACKFILL PER SPECS. AND GEOTECHINICAL ENGINEER.

6 CHANGE IN SLAB ELEVATION AT MASONRY WALL

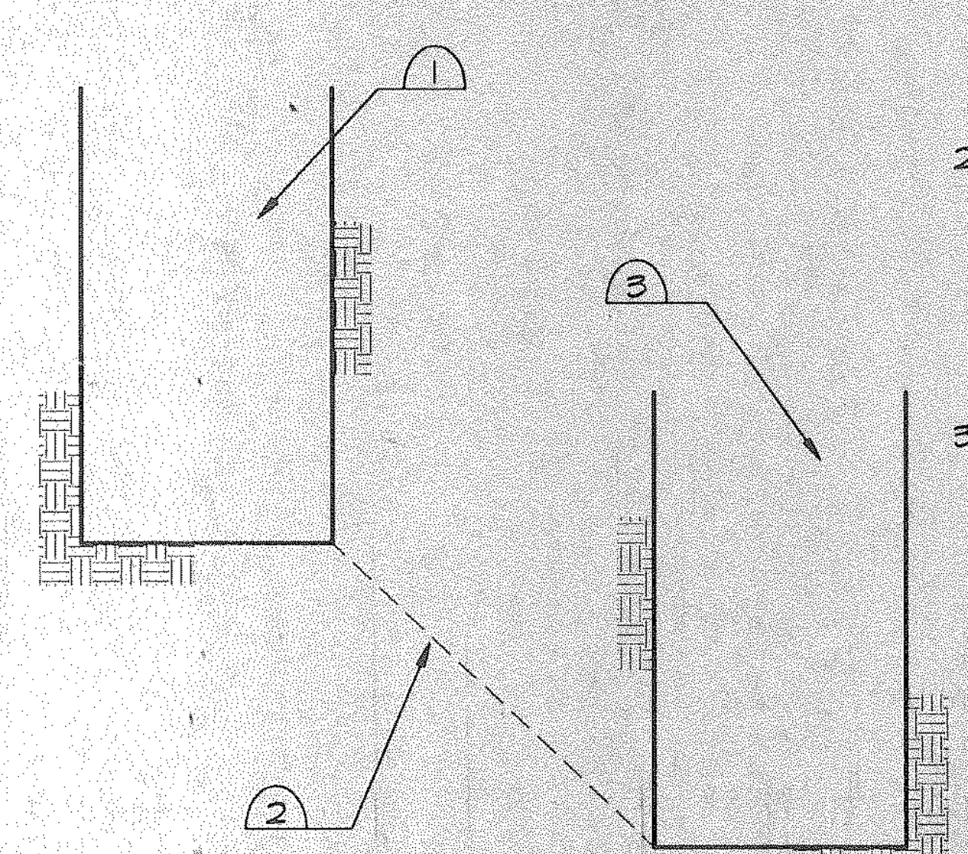


1. PLACE ALL CONCRETE AGAINST UN-DISTURBED OR COMPACTED SOIL. IF SOIL IS OR COMPACTED DURING CONCRETE PLACING REPLACE DISTURBED SOIL WITH CONCRETE.
2. REBAR MAY BE LAP SPLICED AT CONTRACTORS OPTION.
3. REBAR TO MATCH AND LAP WITH TYPICAL FOOTING REINFORCEMENT.
4. 1" SPONGE RUBBER AROUND PIPE WHEN APPLICABLE.
5. SLOPE AS REQUIRED FOR EARTH STABILITY.
6. SEE "DETAILS OF PIPE AT CONCRETE FTG" (DET. 17/S3.1) FOR PIPE PLACEMENT CRITERIA.
7. STEP FOOTING AS REQUIRED TO DEPRESS FOOTING TO FIRM BEARING, OR TO GET BELOW UNDERGROUND PIPING, OR WHEN-EVER CHANGE IN FOOTING ELEVATION OCCURS. SEE DETAIL "MAXIMUM SLOPES BETWEEN ADJACENT EXCAVATIONS" (DET. 9/S3.1) WHICH MAY REQUIRE LOWERING OF FOOTING ELEVATION. SPACE STEPS NO CLOSER THAN 4'-0" CLEAR.

7 STEP IN FOOTING

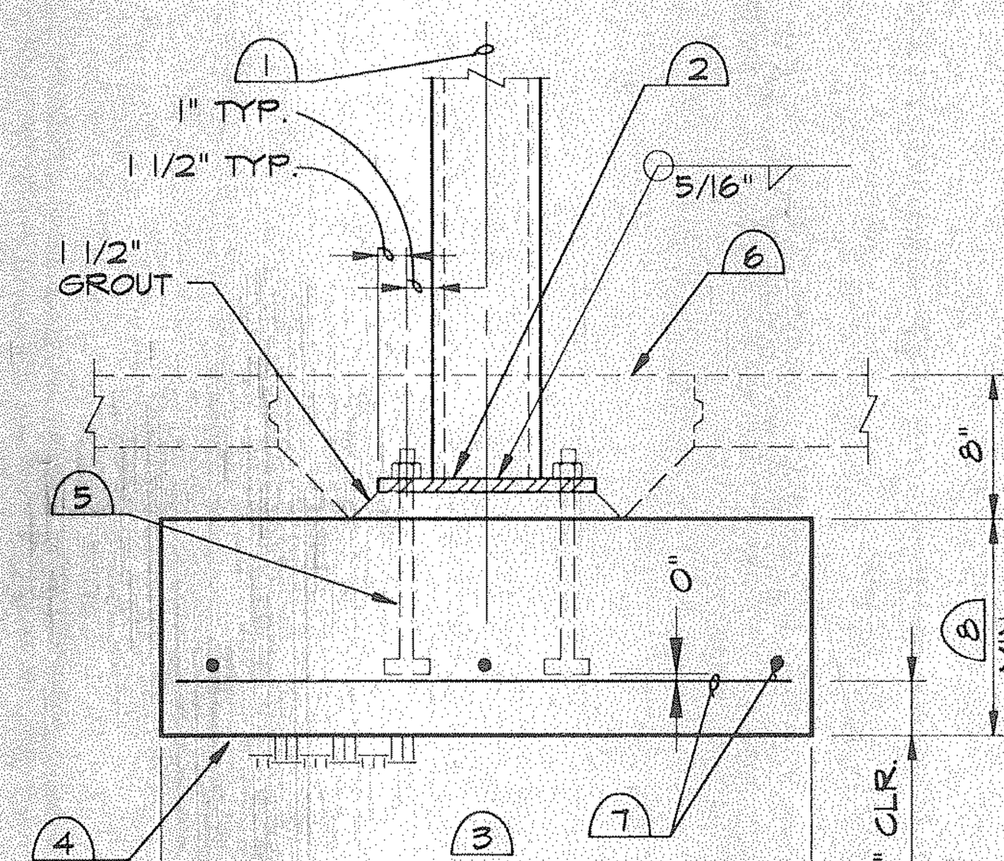


8 SLOPING FOOTING



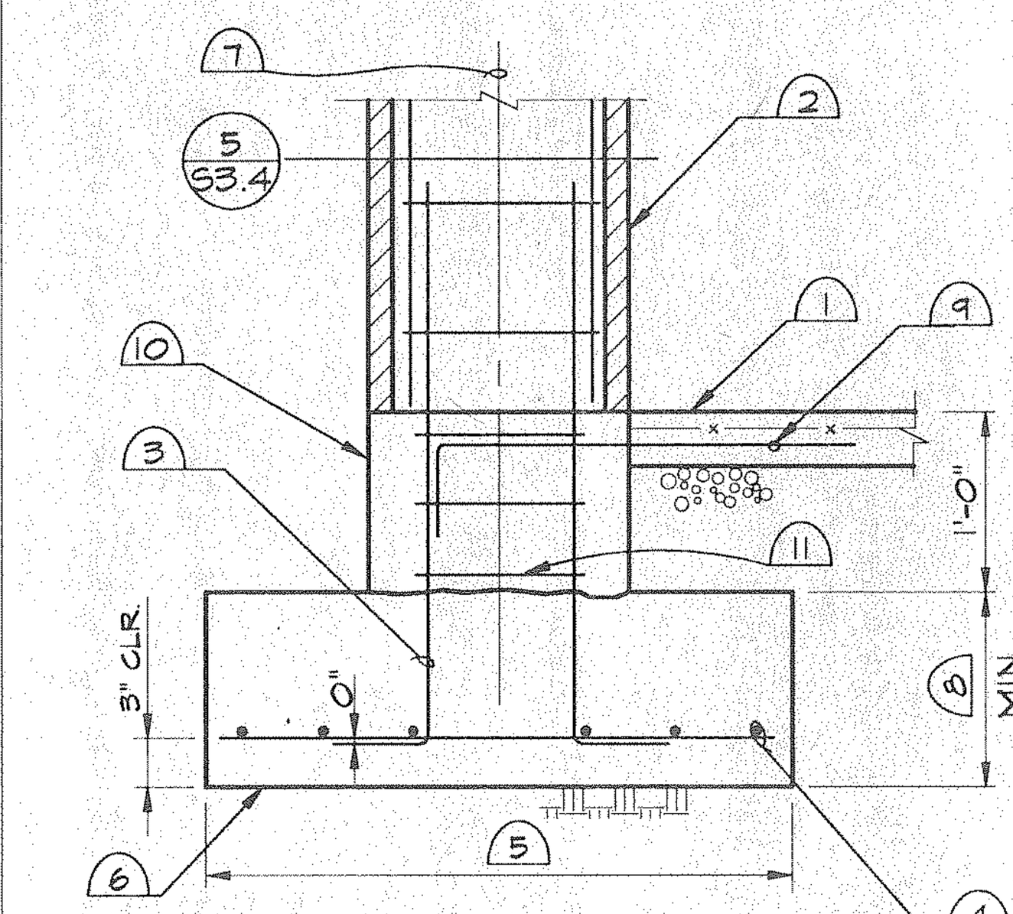
1. FOOTING.
2. THESE SLOPES SHALL NOT BE STEEPER THAN 1 VERTICAL TO 1 HORIZONTAL, IF EXCAVATION STAND VERTICALLY WITHOUT SHORING AND 1 VERTICAL TO 1 1/2 HORIZONTAL IF EXCAVATIONS NEED TO BE SLOPE OR SHORED.
3. EXCAVATION AND BACKFILL UNDERMINNING FOOTING ABOVE.

9 MAXIMUM SLOPES BETWEEN ADJACENT EXCAVATIONS



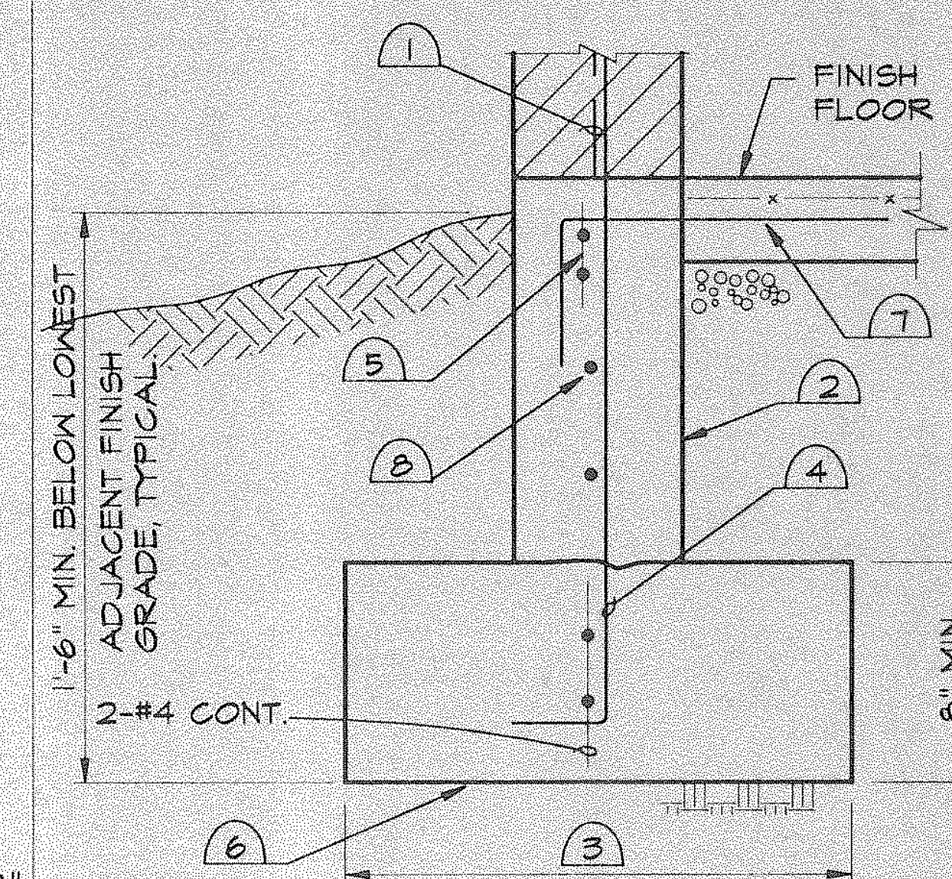
1. SYMMETRICAL ABOUT CENTER LINE.
2. BASE PLATE 3/4" THICK FOR FOOTING SIZE OF 6'-0" x 6'-0" OR GREATER PROVIDE 1" THICK BASE PLATE.
3. SEE PLAN. CENTER ON COLUMN EACH WAY.
4. COMPACTED FILL PER SPECIFICATIONS AND GEOTECHNICAL ENGINEER.
5. 4-3/4"Φ ANCHOR BOLTS WITH HEAVY HEX HEAD.
6. DIAMOND SHAPE CLOSURE CONCRETE, SEE PLANS.
7. PROVIDE:
   3-#5 E.W. FOR 2'-0"X2'-0"X8" FTG.
   4-#5 E.W. FOR 4'-0"X4'-0"X1'-0" FTG.
   11-#5 E.W. FOR 6'-0"X6'-0"X1'-6" FTG.
   12-#5 E.W. FOR 8'-0"X8'-0"X2'-0" FTG.
8. SEE PLAN.

10 SHALLOW FOOTING FOR STEEL COLUMN



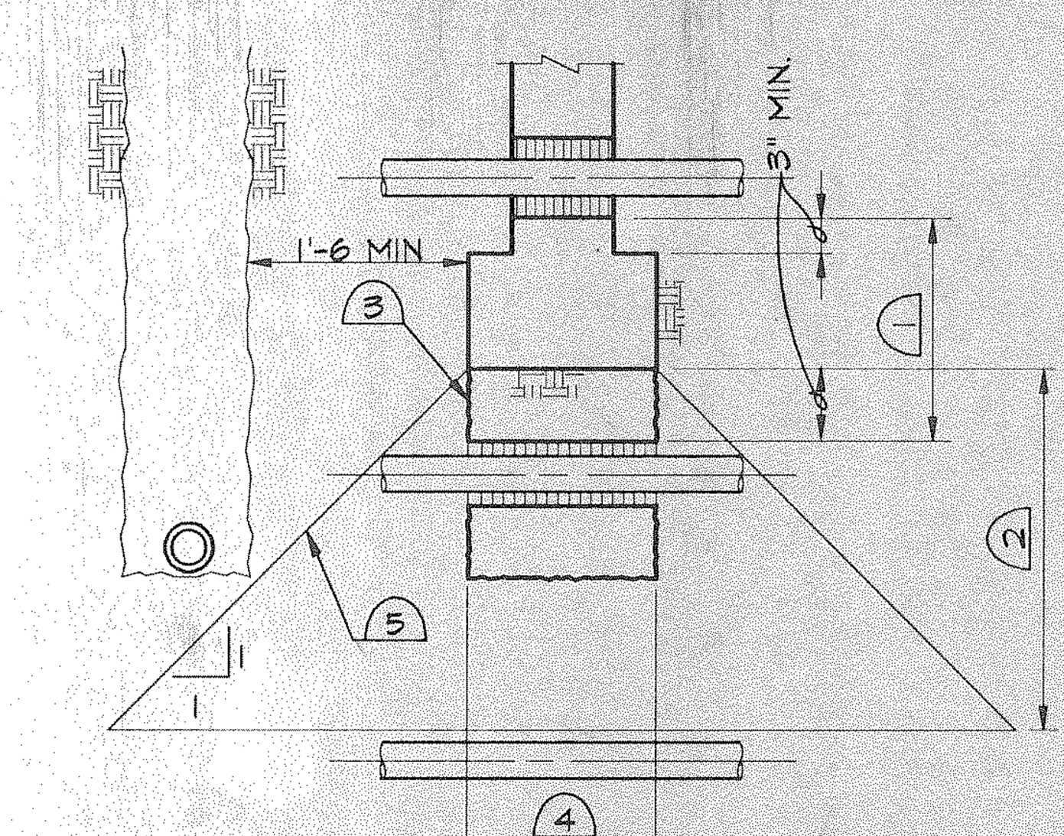
1. FINISH FLOOR OR LOWEST ADJACENT FINISHED GRADE.
2. SOLID GROUT MASONRY COLUMN FULL HEIGHT.
3. DOWELS TO MATCH AND LAP COLUMN REINFORCING.
4. PROVIDE MIN. 2-#5 EACH WAY FOR 2'-6"X2'-6" FTG.
   PROVIDE MIN. 3-#5 EACH WAY FOR 3'-0"X3'-0" FTG.
   PROVIDE MIN. 4-#5 EACH WAY FOR 4'-0"X4'-0" FTG.
   PROVIDE MIN. 5-#5 EACH WAY FOR 5'-0"X5'-0" FTG.
5. CENTER UNDER COLUMN, SEE PLAN.
6. SEE G.S.N. - COMPACTED FILL PER SPECS. & GEOTECHINICAL ENGINEER.
7. SYMMETRICAL ABOUT CENTER LINE EACH WAY.
8. SEE PLAN
9. SLAB DOWELS: #4 x 10" / 24" @ 32".
10. CONC. PEDESTAL, WITH SAME SIZE AND SHAPE AS MASONRY COLUMN.
11. 3 - #4 TIES.

11 SHALLOW FOOTING FOR MASONRY COLUMN



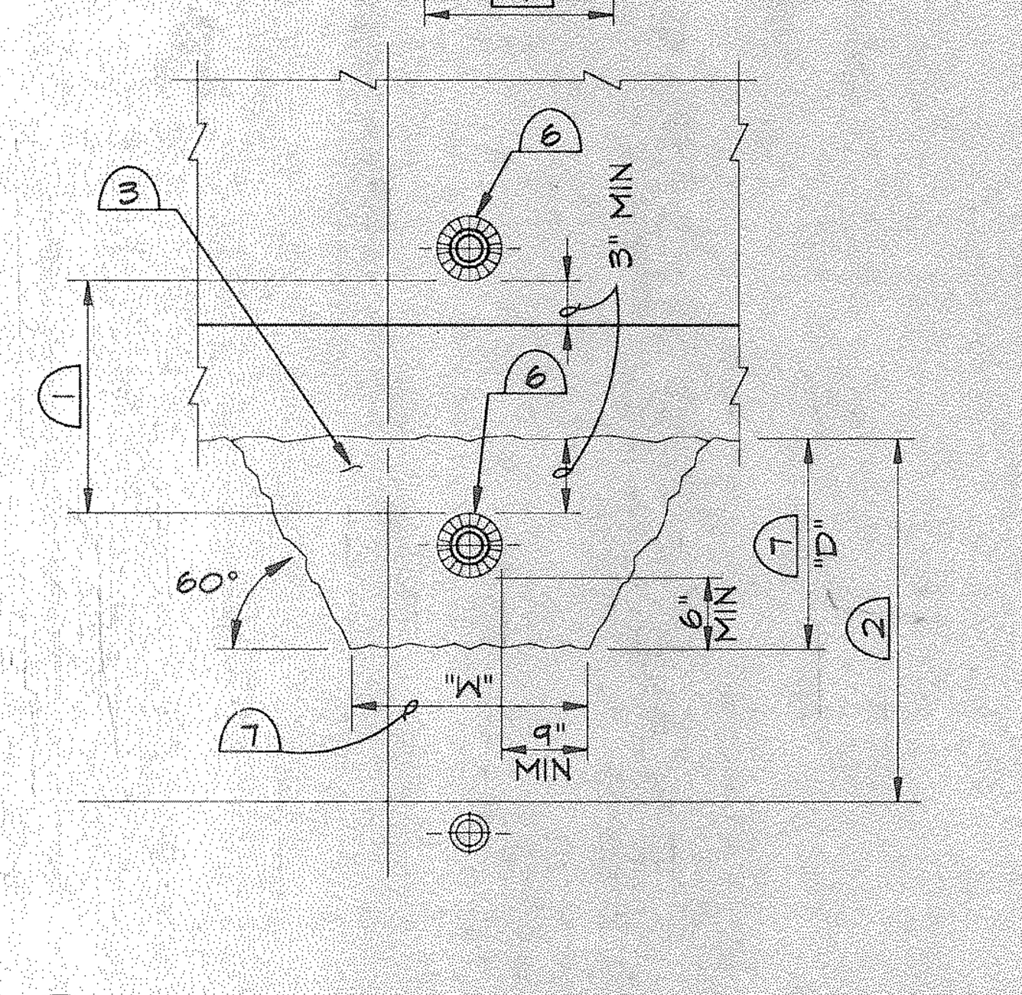
1. SEE G.S.N. FOR MASONRY WALL REINFORCING.
2. 8" THICK CONC. SYEM WALL.
3. 1'-4" UNLESS NOTED OTHERWISE ON PLAN. CENTER UNDER WALL.
4. DOWELS TO MATCH AND LAP WITH WALL REINFORCING.
5. 2-#5 IN TOP OF STEM WALL.
6. SEE G.S.N. ESTABLISH AND VERIFY FOOTING BOTTOM. MAINTAIN REQD. SLOPE BETWEEN EXCAVATIONS. FINISH GRADE IS FINISH FLOOR AT INTERIOR FOOTING. COMPACTED FILL PER SPECS. AND GEOTECHNICICAL ENGINEER.
7. SLAB DOWELS: #4 x 10" / 24" @ 32".
8. #4 x CONT. AT 8".

12 FOOTING FOR MASONRY

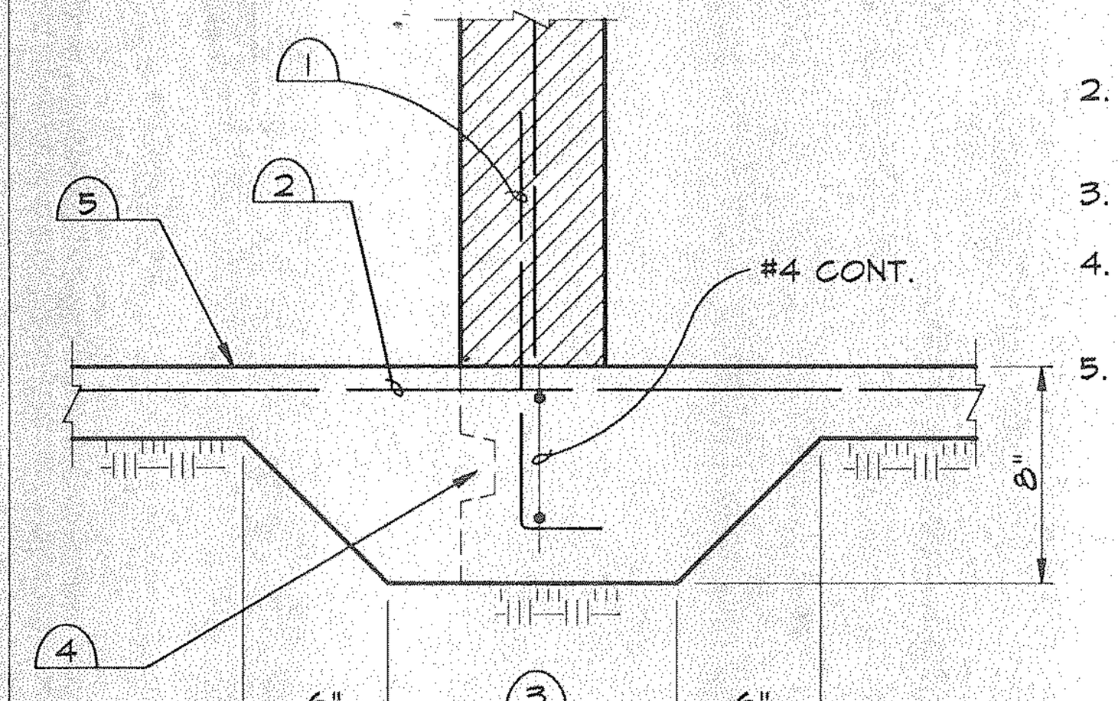


1. STEP FOOTING IF PIPE OCCURS WITHIN THIS AREA.
2. 1-1/2 X FOOTING WIDTH, ENCASE PIPE IN CONCRETE WITHIN THIS AREA.
3. CONCRETE FILL SHALL BE PLACED BEFORE FOOTING IS CAST.
4. CONCRETE PIPE ENCASE-MENT SAME WIDTH AS FOOTING.
5. NO EXCAVATION FOR PIPE TRENCH PARALLEL TO FOOTING BELOW THIS LINE.
6. 1" SPONGE RUBBER.
7. CONCRETE ENCASEMENT DIMENSIONS "W" (WIDTH) AND "D" (DEPTH) DETERMINED BY SIZE OF PIPE PLUS NOTED MINIMUM EDGE DIMENSIONS AND 60" SLOPE.

NOTE: NO PIPES SHALL PASS THRU COLUMNS & FOOTINGS. NO PIPES SHALL PASS UNDER COLUMN FOOTINGS.

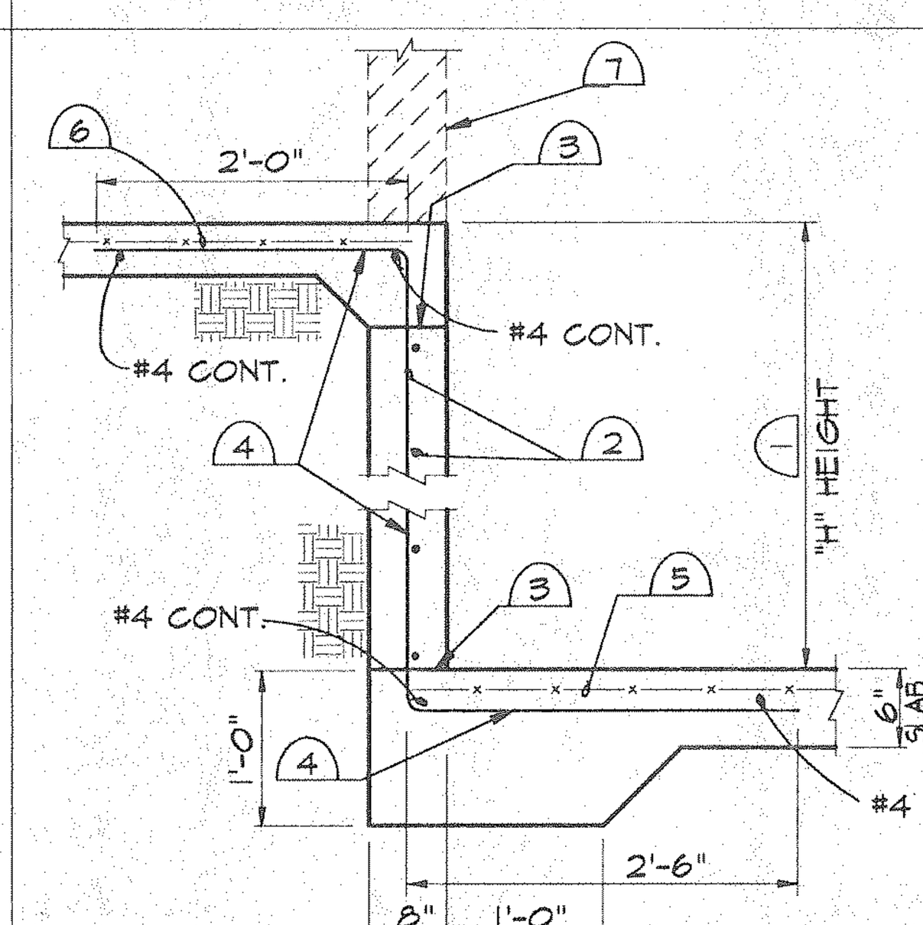


17 DETAILS OF PIPE AT CONCRETE FOOTING



1. DOWELS TO MATCH AND LAP MASONRY WALL REINFORCING.
2. #4 X 5'-0" @ 18", CENTER ON WALL.
3. CENTER UNDER WALL.
4. PERMISSIBLE CONSTRUCTION JOINT.
5. FOR SLAB CONSTRUCTION NOT SHOWN, SEE SLAB JOINT DETAIL 2/S3.1

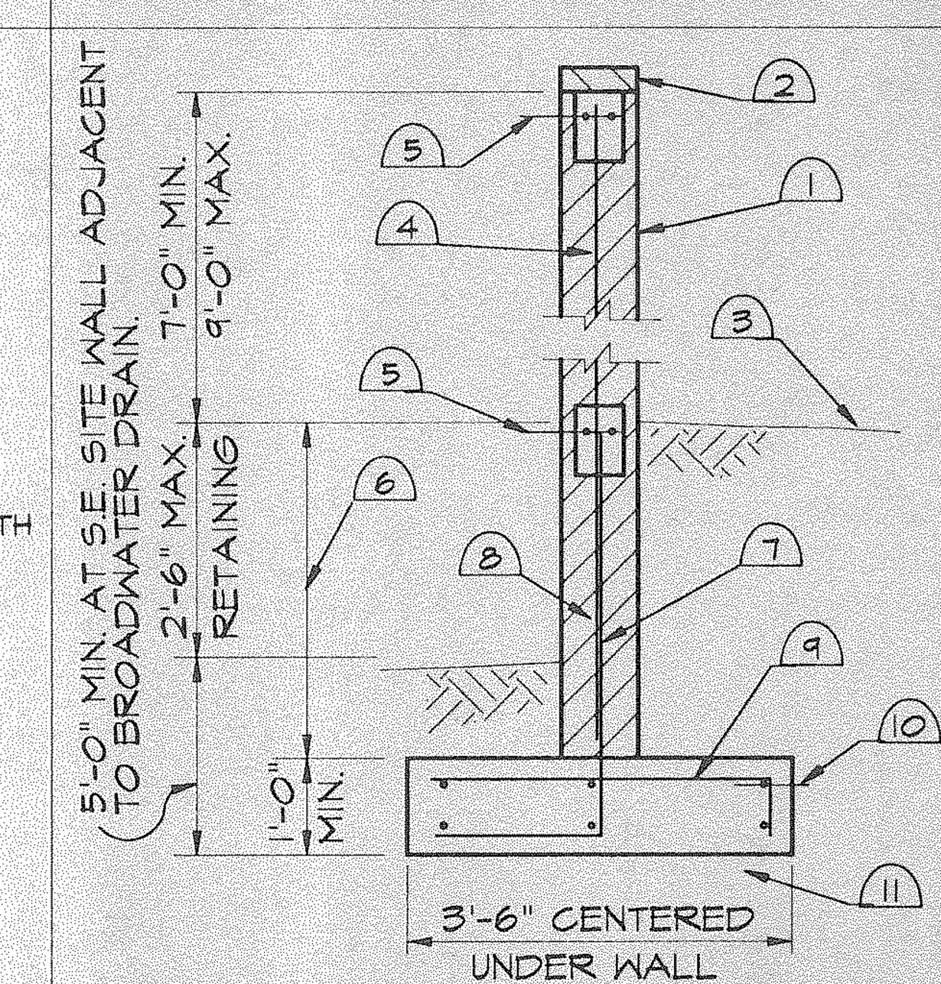
14 MASONRY NON-BEARING WALL AT SLAB ON GRADE



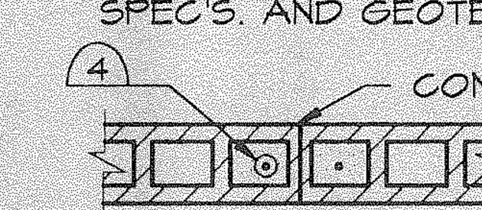
1. SEE ARCHITECTURAL DRAWINGS FOR HEIGHT DIMENSION.
2. #4 @ 12" EACH WAY. SPLICE AS REQUIRED PER GENERAL STRUCTURAL NOTES.
3. PERMISSIBLE CONSTRUCTION JOINTS.
4. CENTER REINFORCING IN CONCRETE AT TOP, BOTTOM AND IN WALL.
5. 4 x 4-W4.0 x W4.0 W.W.F. @ MID-DEPTH OF SLAB.
6. 6 x 6-W2.9 x W2.9 W.W.F. EXTENDED TO ADJACENT SLAB JOINT.
7. MASONRY WALL AND DOWELS WHERE SHOWN ON PLAN.

NOTE: SLOPE BOTTOM OF SLAB TO DRAIN, IF DRAIN IS SHOWN ON ARCHITECTURAL DRAWINGS.

15 INTERIOR RETAINING WALL AND SLAB

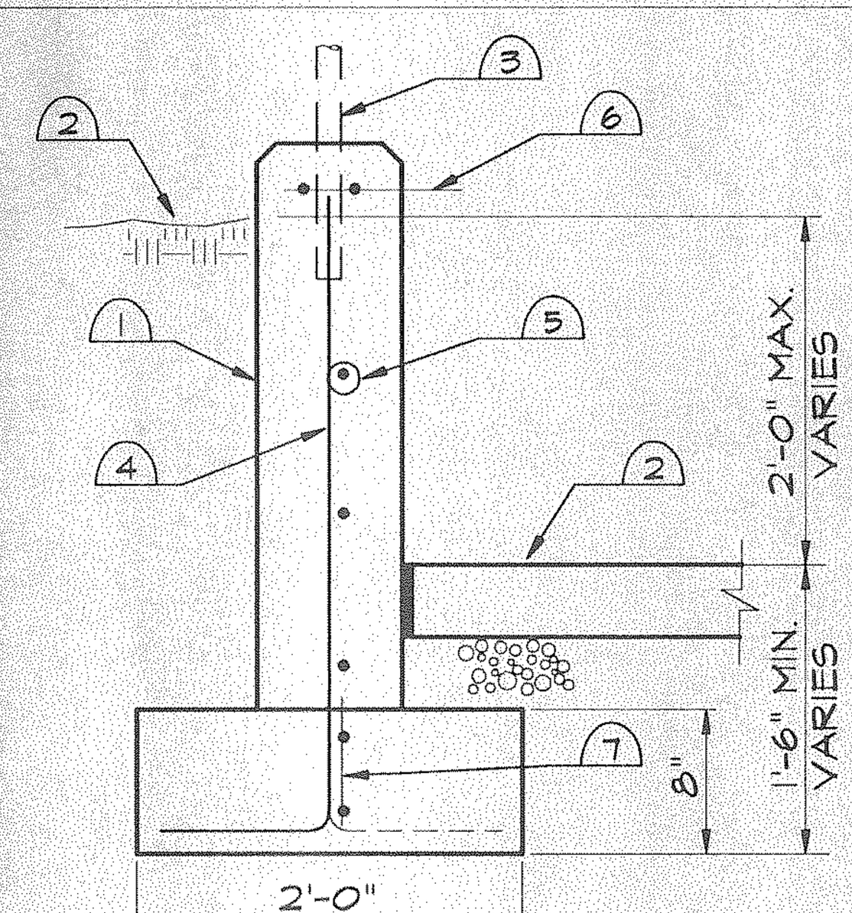


1. 8" MASONRY WALL PER ARCH'L. DWG.
2. 2" CAP BLOCK PER ARCH'L. DWGS.
3. FINISH GRADES PER CIVIL DRAWINGS
4. #5 AT 32" O.C. AND BOTH SIDES OF CONTROL JOINTS.
5. 2-#5 x CONT. IN BOND BEAM AT TOP OF WALL AND AT FINISH GRADE. (CUT TOP BARS AT CONTROL JOINTS).
6. SOLID GROUT BELOW GRADE, TYPICAL.
7. #5 AT 16" ON CENTER.
8. LAP LENGTH PER G.S.N.
9. #5 AT 16" ON CENTER AT TOP.
10. 6 - #4 x CONTINUOUS.
11. COMPACTED FILL BELOW FOOTING PER SPEC'S. AND GEOTECHNICAL ENGINEER.



X AT JOINT

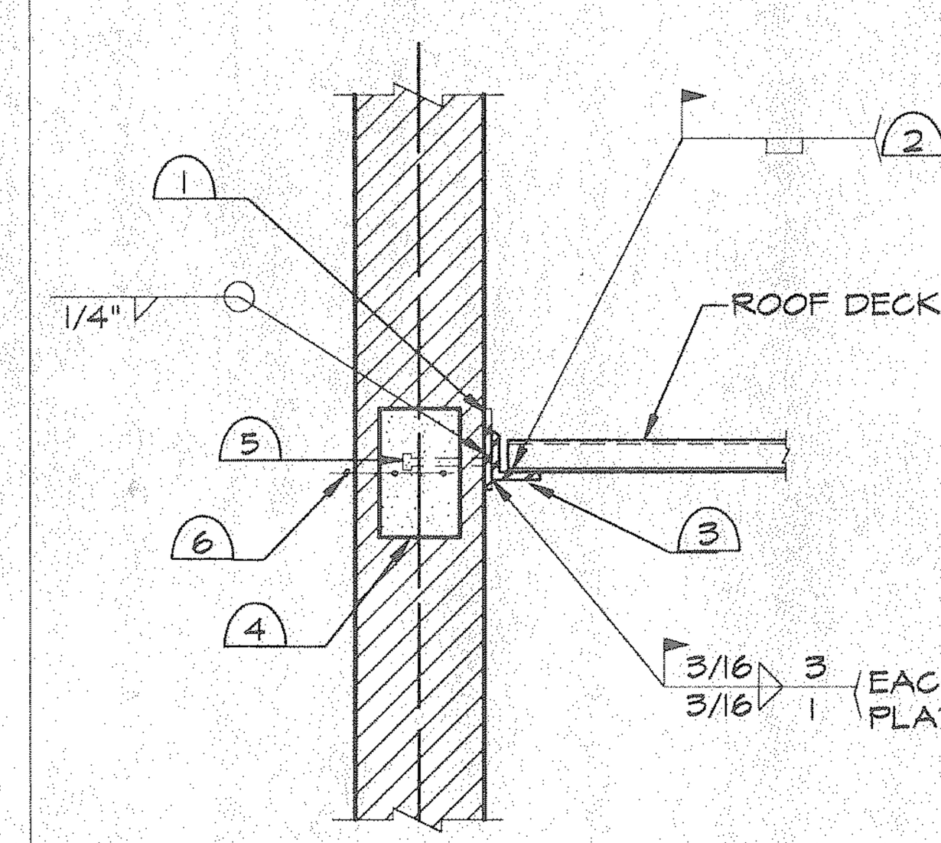
16 PERIMETER SITE WALL



1. 8" CONCRETE RETAINING WALL.
2. FINISH GRADE AND SIDEWALK PER CIVIL PLANS.
3. FENCE PER ARCHITECTURAL DRAWINGS.
4. #4 AT 12" O.C. - ALTERNATE HOOK AT BOTTOM.
5. #4 AT 12" O.C.
6. 2- #4 x CONTINUOUS, TOP.
7. 2- #4 x CONTINUOUS, FOOTING.

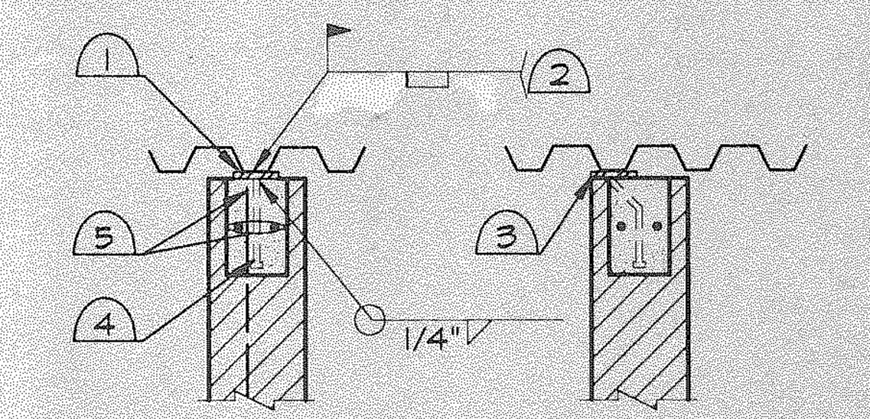
NOTE: PROVIDE CONSTRUCTION JOINT AT 20 FEET ON CENTER MAX. SPACING PER 13/S3.6.

18 LOW RETAINING WALL

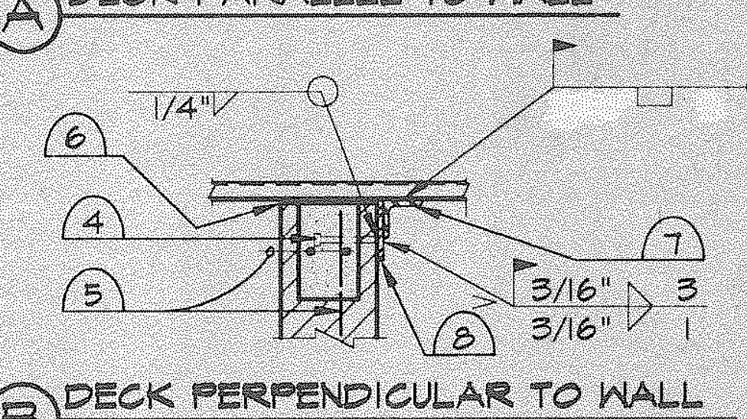


1. PLATE 1/4" x 5" x 0'-5" AT 32" ON CENTER NOT MORE THAN 1'-0' FROM END OF ANGLE. MINIMUM 2 PLATES PER ANGLE LENGTH.
2. DECK END WELD PER GENERAL STRUCTURAL NOTES.
3. CONTINUOUS ANGLE 3" X 3" X 1/4".
4. SEE GENERAL STRUCTURAL NOTES.
5. 3/4" DIA. X 5" HEADED STUD. CENTER ON PLATE.
6. REINFORCING PER G.S.N., IN CONTINUOUS BOND BEAM.

19 ROOF DECK CONNECTION AT MASONRY WALL



A DECK PARALLEL TO WALL



B DECK PERPENDICULAR TO WALL

1. CONTINUOUS PLATE 1/4" X 3". LOCATE UNDER FLUTE.
2. DECK WELD TO PLATE PER GENERAL STRUCTURAL NOTES.
3. SHIFT PLATE IF REQUIRED.
4. 3/4" DIA. X 6" HEADED STUDS AT 4'-0' ON CENTER. CENTER ON PLATE.
5. SEE GENERAL STRUCTURAL NOTES.
6. FILL SPACE WITH MATERIAL SPECIFIED BY ARCHITECT.
7. CONTINUOUS L 3" X 3" X 1/4".
8. PLATE 1/4" X 5" X 0'-5" AT 32" ON CENTER NOT MORE THAN 1'-0" FROM END OF ANGLE. MINIMUM 2 PLATES PER ANGLE LENGTH.

20 ROOF DECK OVER MASONRY WALL

R/DA

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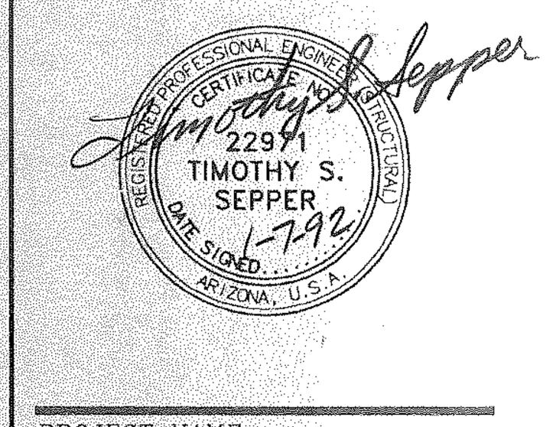

PROJECT NAME

LAKE HAVASU CITY POLICE HEADQUARTERS

LAKE HAVASU CITY, ARIZONA

DATE 1-7-92

ISSUED FOR	DATE

SHEET TITLE

STRUCTURAL DETAILS

SHEET NO.

S3.1

R/DA PROJECT NO.

91006

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22971 TIMOTHY S. SEPPER 1-7-92 ARIZONA U.S.A.

PROJECT NAME

LAKE HAVASU CITY POLICE HEADQUARTERS

LAKE HAVASU CITY, ARIZONA

DATE 1-7-92

ISSUED FOR	DATE
1 CITY PLAN CHECK	4-3-92

SHEET TITLE

STRUCTURAL DETAILS

SHEET NO.

S3.2

R/DA PROJECT NO.
91006

1 MINIMUM SIZE FILLET WELDS

TABLE

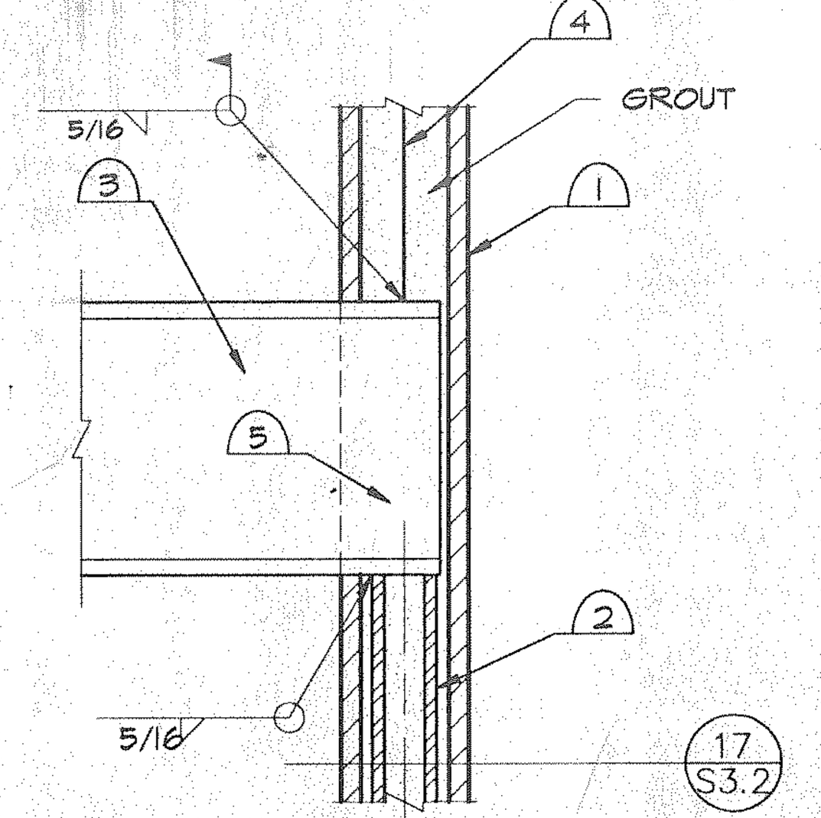
MATERIAL THICKNESS OF THICKER PART JOINED (IN)	MINIMUM SIZE OF FILLET WELD (IN)
TO 1/4" INCLUSIVE	1/8
OVER 1/4" TO 1/2"	3/16
OVER 1/2" TO 3/4"	1/4
OVER 3/4"	5/16

NOTES: USE THESE WELD SIZES ONLY WHEN WELD SIZES ARE NOT CALLED OUT OR THOSE CALLED OUT ARE LESS THAN SHOWN BY THIS TABLE.

FILLET WELD SIZES NEED NOT EXCEED THICKNESS OF THINNER PIECE JOINED.

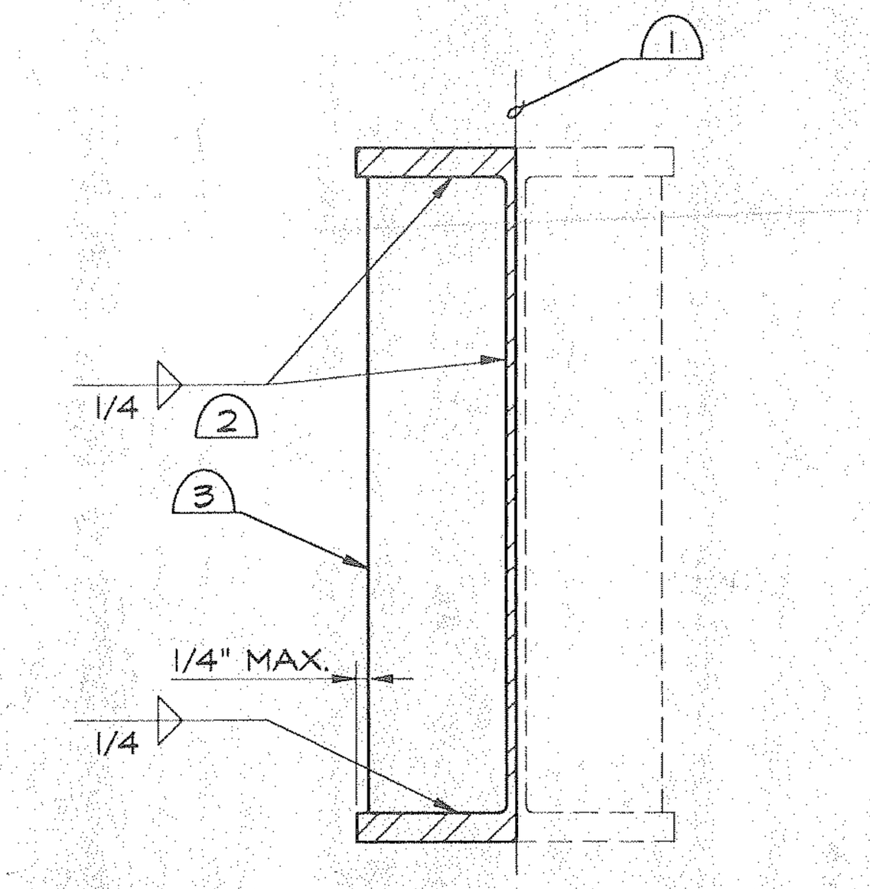
USE E-70 ELECTRODES.

2 BEAM AT COLUMN IN MASONRY



1. MASONRY WALL.
2. TS COL. PER PLAN, CENTER WITHIN WALL.
3. SEE PLAN FOR BEAM SIZE.
4. REBAR IN GROUTED CELL; WELD TO TOP FLANGE OF BEAM.
5. DRYPACK SOLID OR GROUT AFTER BEAM IS SET.

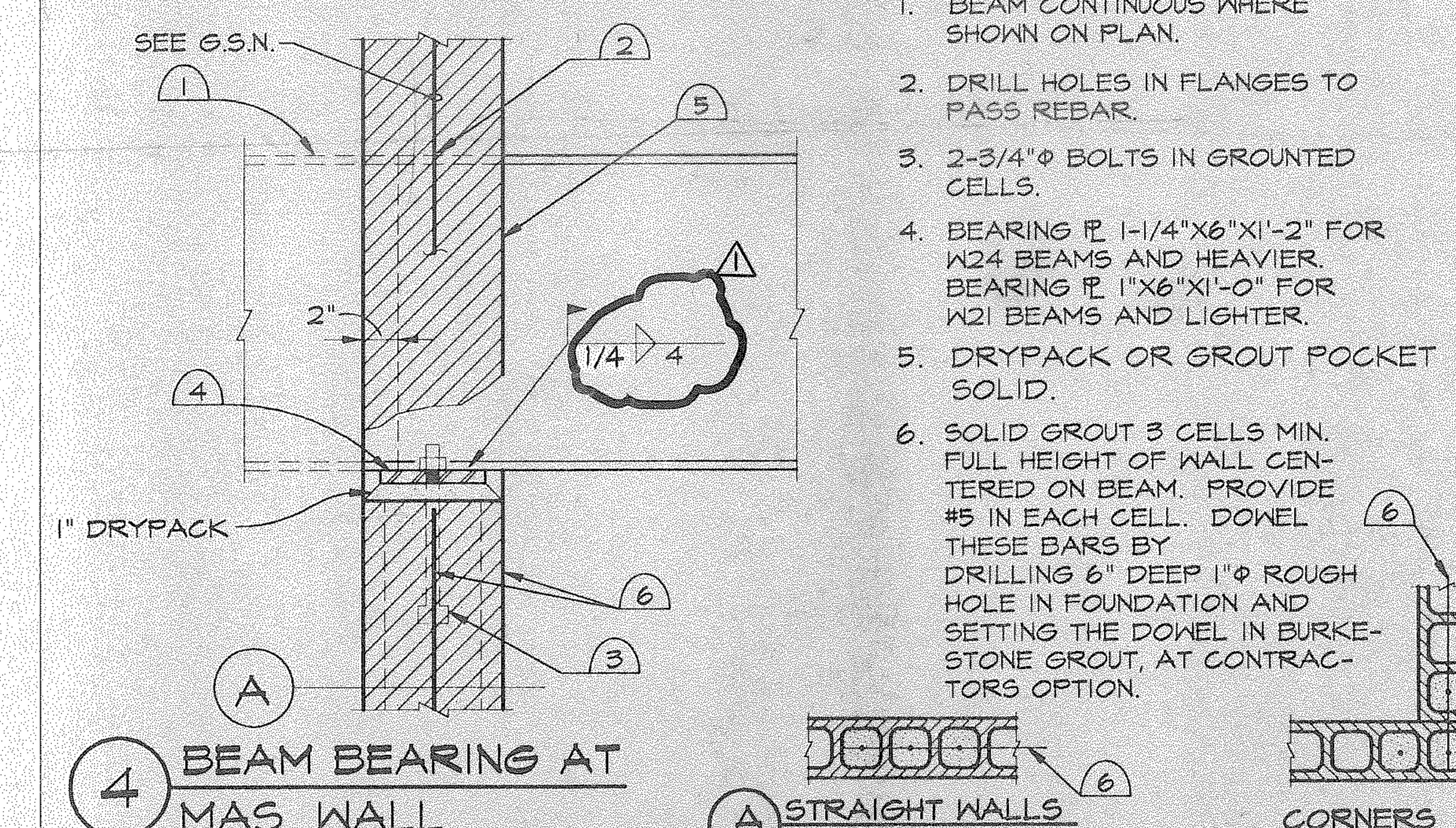
3 STANDARD STIFFENER



1. CENTER LINE OF BEAM OR BACK OF CHANNEL.
2. 2-6 AT WEB, CONTINUOUS AT FLANGES.
3. STIFFENER PLATE THICKNESS:
1/4" UP TO W6
5/16" W8 TO W16
3/8" W18 TO W21
1/2" W24 TO W30
5/8" W33 TO W36

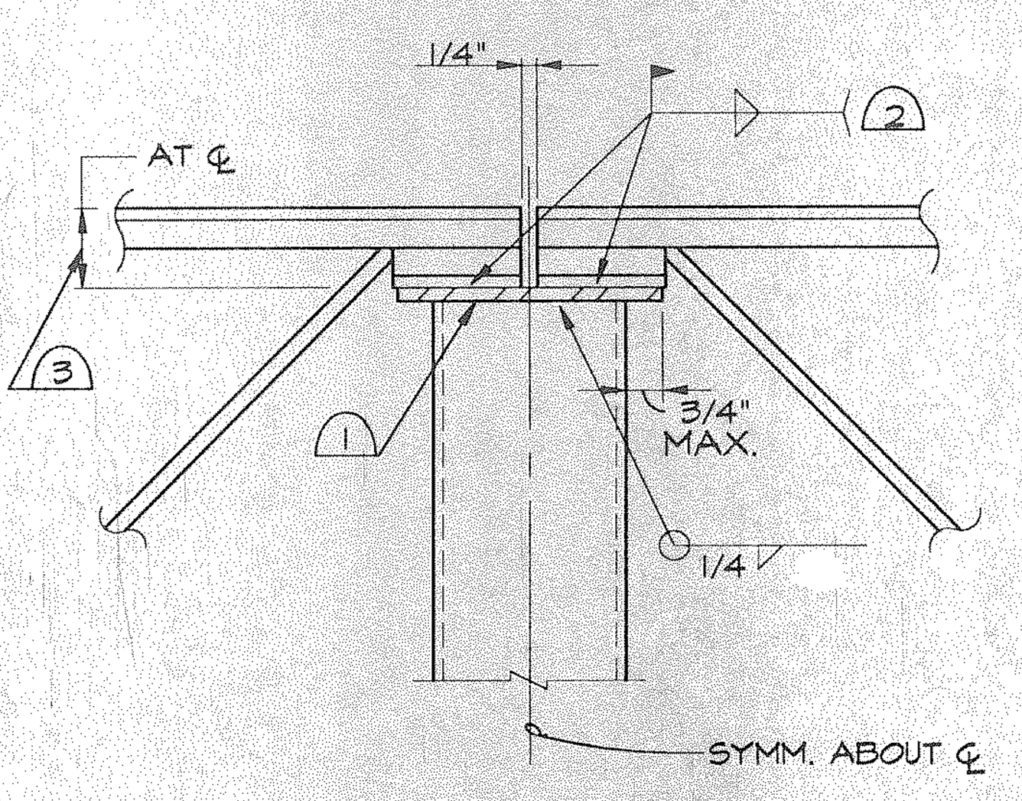
NOTES
PROVIDE STIFFENER BOTH SIDE OF BEAM WEB UNLESS NOTED OTHERWISE ON PLAN. USE THIS DETAIL WHEN STIFFENER INFORMATION NOT OTHERWISE NOTED.

4 BEAM BEARING AT MAS. WALL



1. BEAM CONTINUOUS WHERE SHOWN ON PLAN.
2. DRILL HOLES IN FLANGES TO PASS REBAR.
3. 2-3/4"⌀ BOLTS IN GROUNTED CELLS.
4. BEARING ℙ 1-1/4"X6"X1'-2" FOR W24 BEAMS AND HEAVIER. BEARING ℙ 1"X6"X1'-0" FOR W21 BEAMS AND LIGHTER.
5. DRYPACK OR GROUT POCKET SOLID.
6. SOLID GROUT 3 CELLS MIN. FULL HEIGHT OF WALL CENTERED ON BEAM. PROVIDE #5 IN EACH CELL. DOWEL THESE BARS BY DRILLING 6" DEEP 1"⌀ ROUGH HOLE IN FOUNDATION AND SETTING THE DOWEL IN BURKESTONE GROUT, AT CONTRACTORS OPTION.

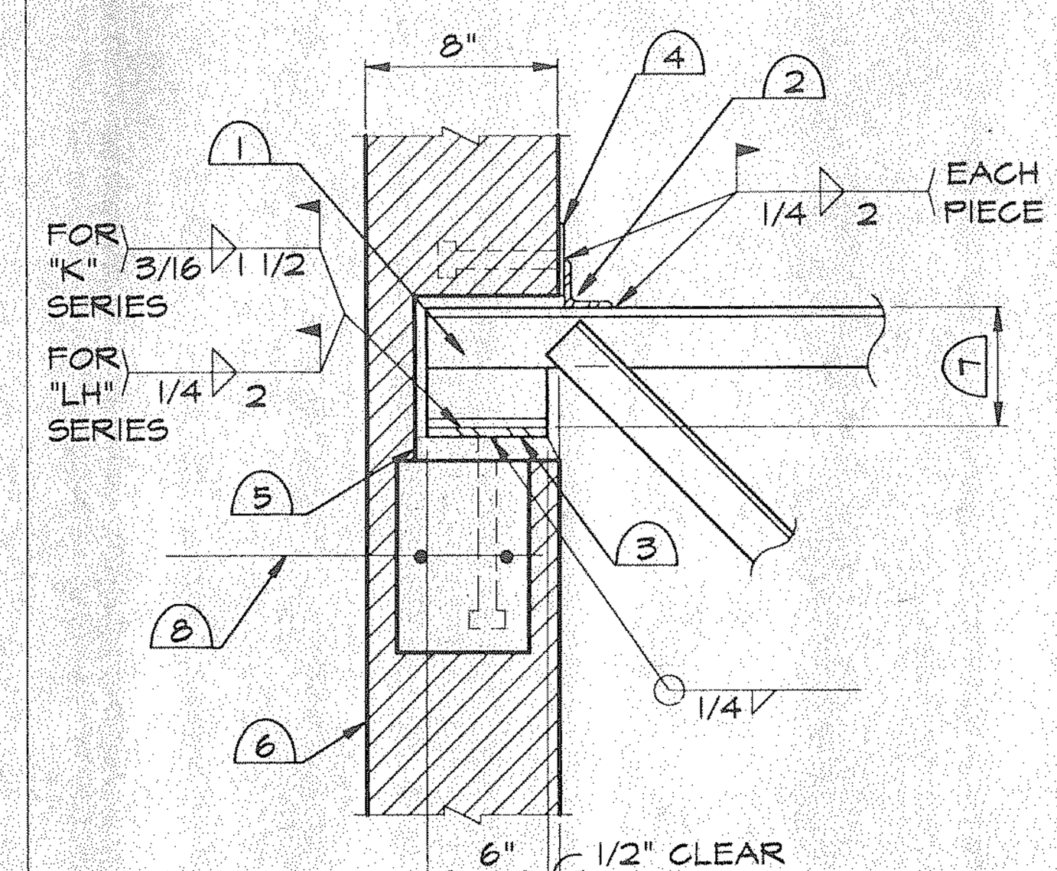
5 JOIST TO COLUMN CONNECTION



1. 1/2" PLATE OVER ENTIRE COLUMN.
2. FILLET WELD 3/16"X1 1/2" FOR "K" SERIES & 1/4"X2" FOR "LH" SERIES.
3. 2-1/2" FOR "K" SERIES JOISTS. 5" FOR "LH" SERIES JOISTS.

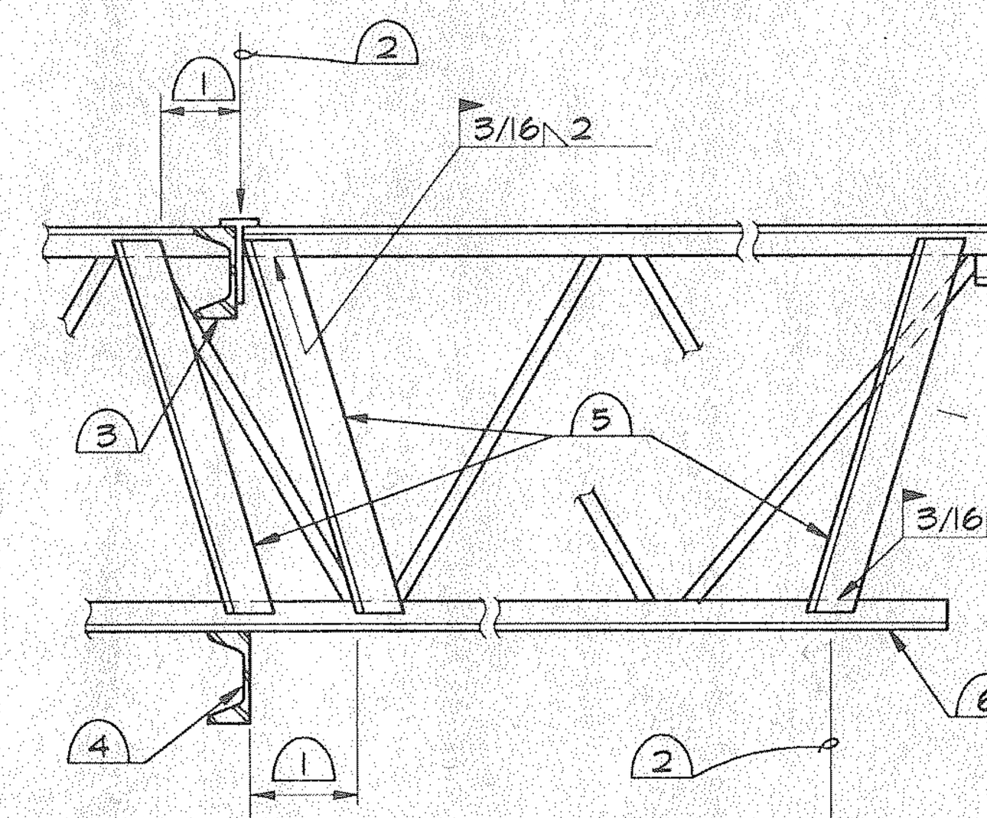
NOTE:
ROOF SLOPES NOT SHOWN. WHEN GAP BETWEEN BEARING SHOE AND TOP OF PLATE EXCEEDS 1/16", STEEL SHIMS SHALL BE PROVIDED TO FILL THE GAP. WHERE SLOPE EXCEEDS 1/4"/FOOT, PROVIDE SLOPED SHOES.

6 JST. BRG. AT MAS. WALL



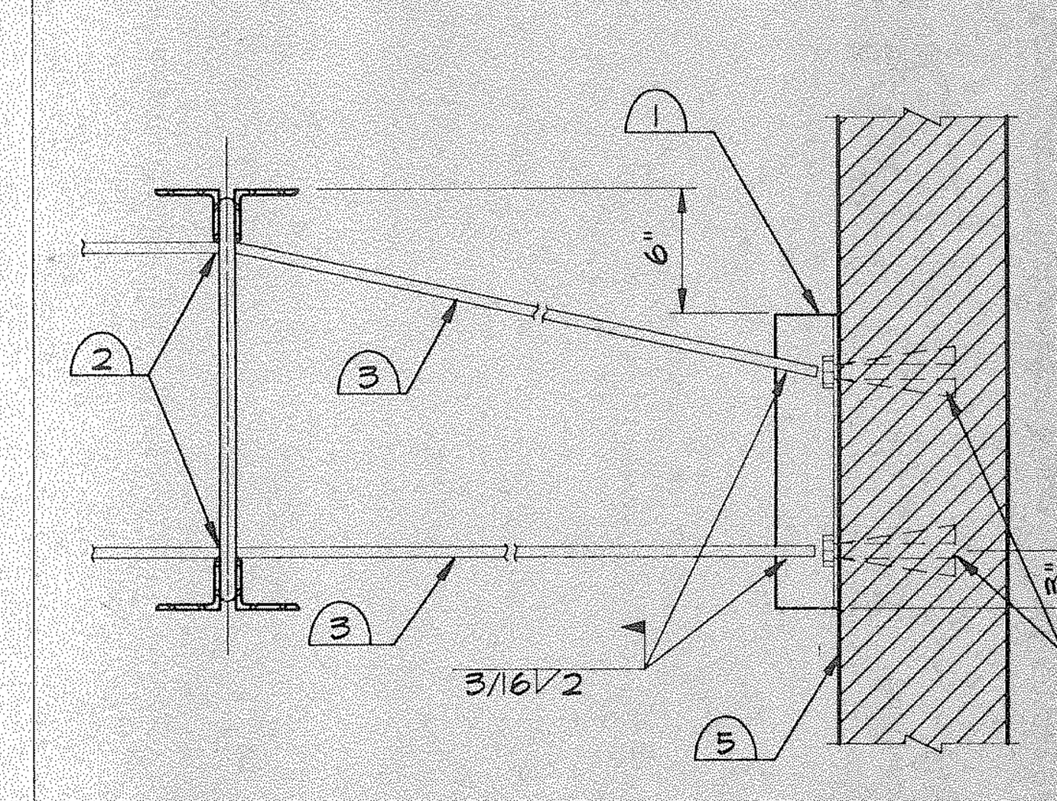
1. FILL JOIST POCKETS SOLID WITH DRYPACK OR GROUT.
2. ANGLE 3" X 3" X 1/4". BUTT SPLICE OVER JOIST CENTER LINE. WELD DECK TO ANGLE PER G.S.N.
3. PLATE 1/2" X 6" X 0'-10" WITH 2-3/4"⌀ X 8" H.A.S. AT 8".
4. EMBED PLATE BEYOND PER (9/S3.1) AT 32" O.C. AT GROUTED CELLS.
5. 3/4" MINIMUM DRYPACK. SET PLATE ON DRYPACK TO ACCOMADATE ROOF SLOPE.
6. WALL REINFORCING NOT SHOWN, SEE G.S.N.
7. 2 1/2" FOR "K" SERIES 5" FOR "LH" SERIES.
8. REINF. PER G.S.N. IN CONTINOUS BOND BEAM.

7 JOIST REINF. FOR CONCENTRATED LOAD



1. GREATER THAN 3".
2. CONCENTRATED LOAD ON JOIST.
3. SUPPORT CHANNEL BY TRADE CONTRACTOR CONNECTION. SEE "MISC. FRAMING TO TOP OF JOIST", DETAIL 9/S3.2
4. SUPPORT CHANNEL BY TRADE CONTRACTOR CONNECTION.
5. WHERE CENTER OF LOAD IS MORE THAN 3" FROM JOIST PANEL POINT, WELD EXTRA WEB MEMBER 2-1/2" X 2-1/2" X 3/16" ANGLE TO CHORD PANEL POINT. (NOT REQUIRED FOR LOADS LESS THAN 200 LBS.)
6. JOIST EXTENSION AS REQUIRED.

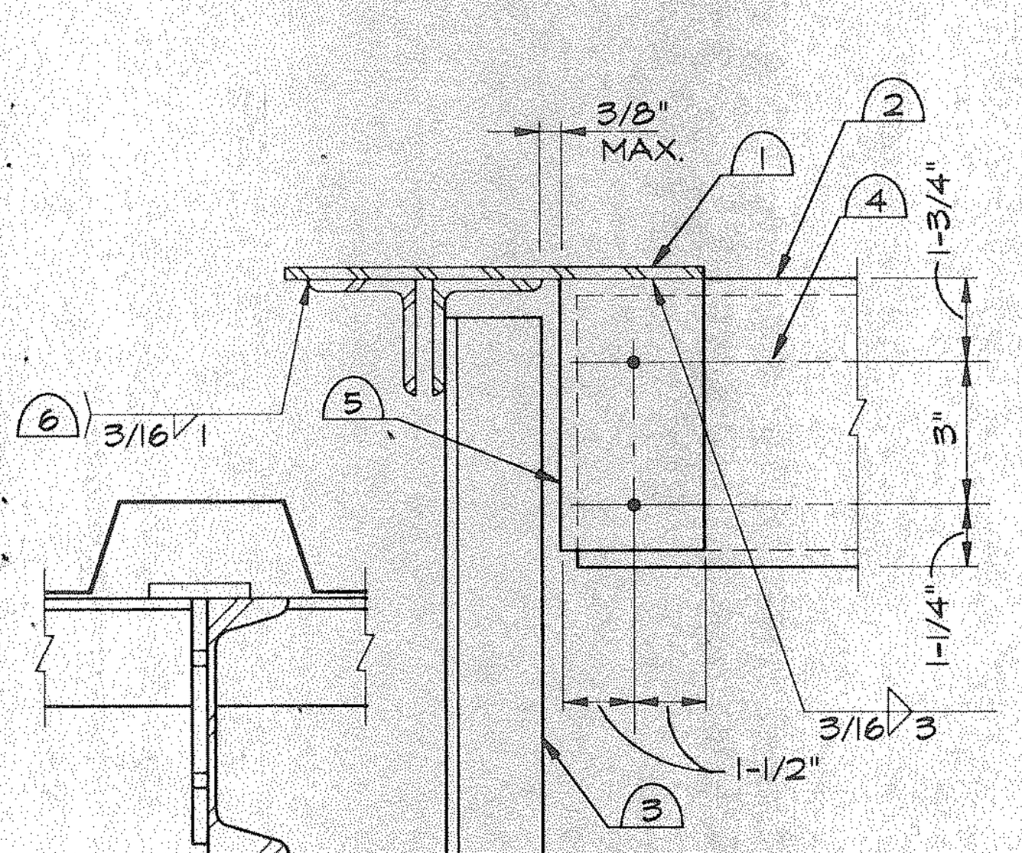
8 HORIZONTAL BRIDGING AT MASONRY WALL



1. 3" X 3" X 1/4" ANGLE.
2. WELD TO CHORD TYPICAL.
3. BRIDGING PER SJI SPEC.
4. 3/4" DIA. HILTI EXPANSION BOLTS IN GROUTED CELL.
5. MASONRY WALL REINFORCING NOT SHOWN.

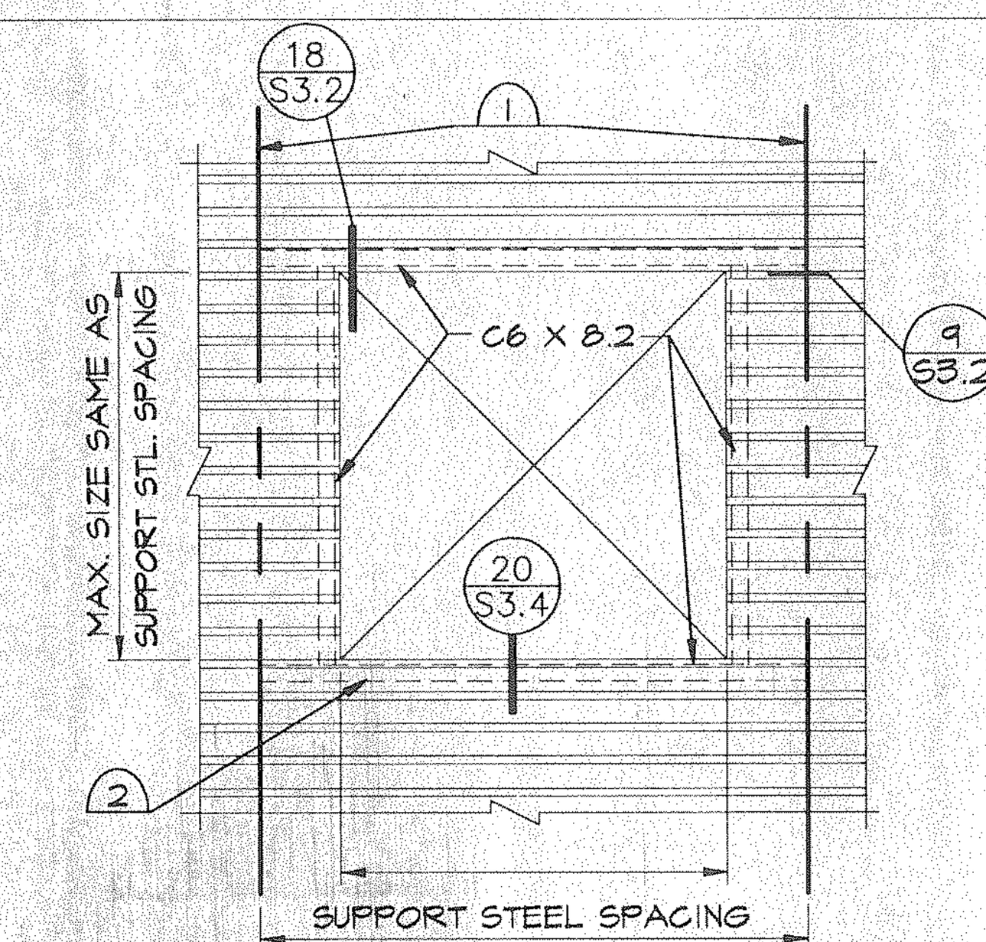
NOTE:
DECK NOT SHOWN.

9 MISC. FRAMING TO TOP OF JOIST



1. BAR TO FIT BETWEEN DECK FLUTES, 2" WIDE X 1/2" THICK.
2. BEAM PER PLANS, OR ADDITIONAL EQUIPMENT SUPPORT MEMBER DESIGNED AND PAID FOR BY TRADE CONTRACTOR AND COORDINATED WITH GENERAL CONTRACTOR.
3. PROVIDE EXTRA WEB MEMBER IN JOIST PER DETAIL "JOIST REINFORCING FOR CONCENTRATED LOAD". (DET. 7/S3.2)
4. 2-3/4" DIA. A325 BOLTS.
5. 3/8" PLATE.
6. WELD OR CLAMP.

10 LARGE OPENINGS IN METAL DECK



1. SUPPORTING STEEL, SEE FRAMING PLAN.
2. WELD METAL DECK TO ⊏ FRAMING AROUND OPENING PER G.S.N. FIELD BEND DECK TO TOP OF ⊏ AND WELD IF FLUTE MISSES ANGLE.

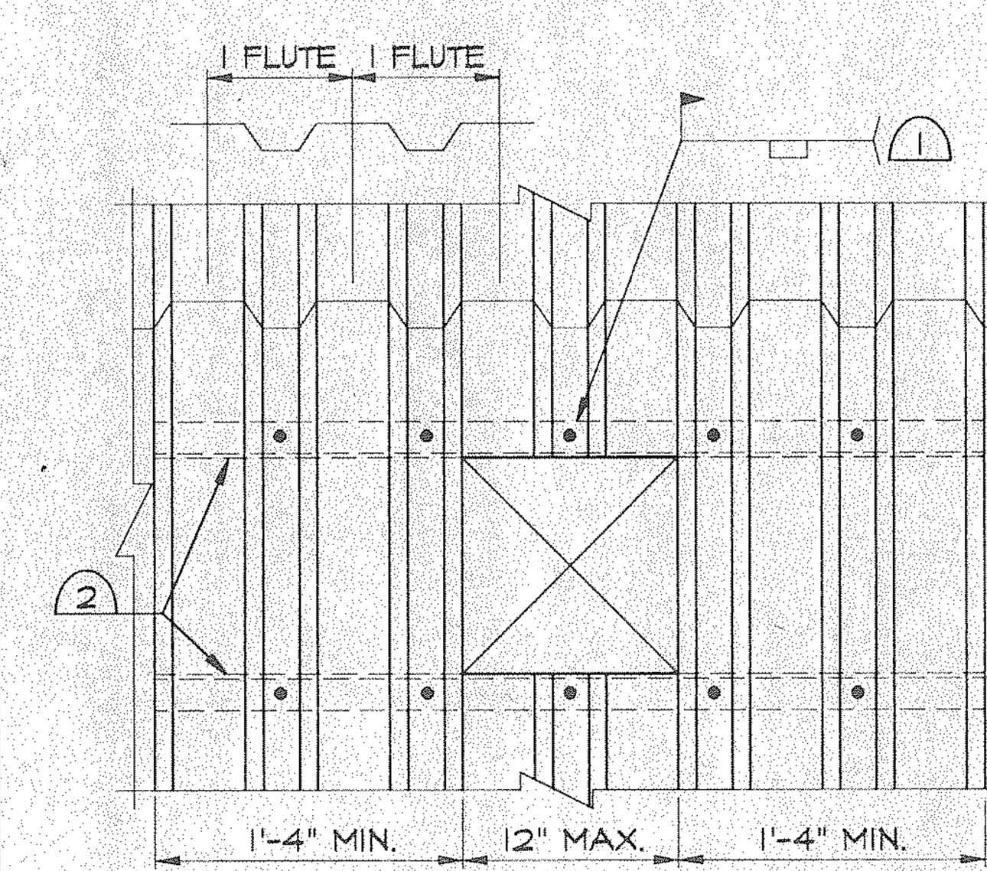
NOTES:
SEE MECHANICAL OR ARCH'L DRAWINGS FOR SIZE AND LOCATION OF OPENINGS.

USE THIS DETAIL FOR OPENINGS WHERE DETAIL FOR SMALL OPENINGS DOES NOT APPLY.

WHEN CLEAR DISTANCE BETWEEN EDGE OF BM. (BEAM NORMAL TO DECK) AND EDGE OF OPENINGS IS LESS THAN 5" PARALLEL CHANEL MAY BE OMITTED.

ALL OPENINGS AND THEIR FRAMING PER ABOVE ARE NOT NECESSARILY SHOWN ON FRAMING PLANS. SEE PLANS BY OTHER TRADES.

11 SMALL OPENINGS IN METAL ROOF DECK



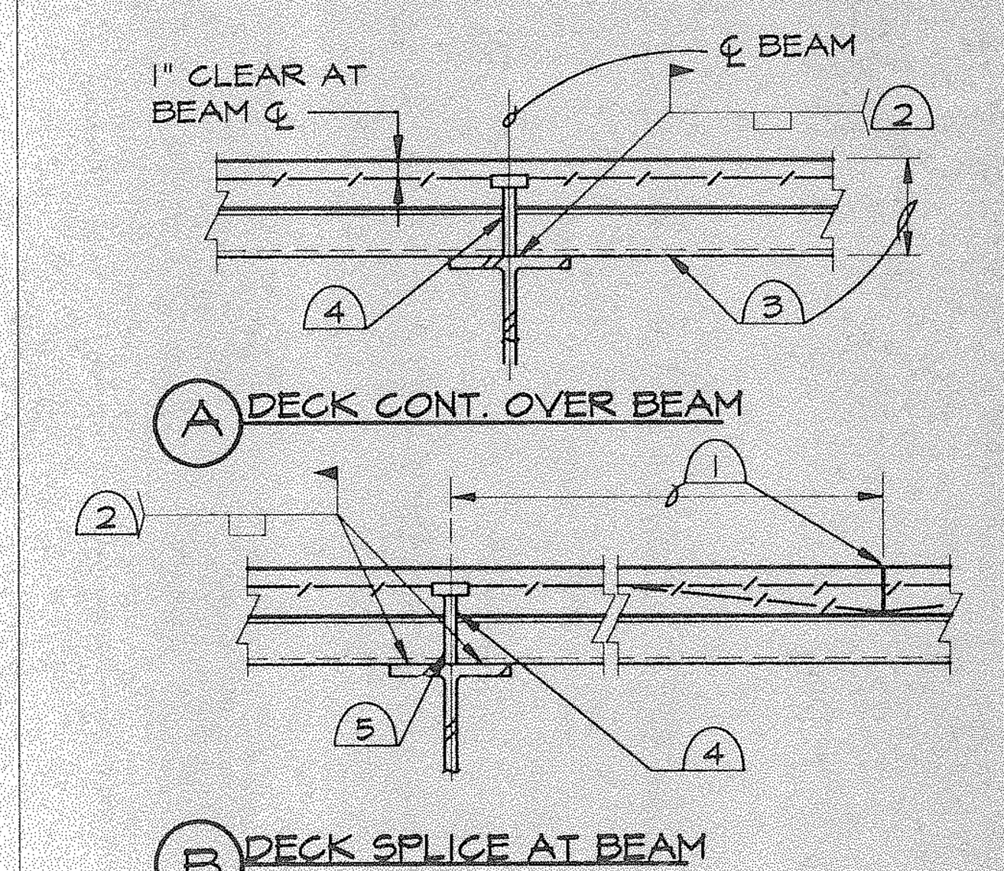
1. WELD ANGLES TO DECK IN LIEU OF SCREW AT CONTRACTORS OPTION. SEE G.S.N. FOR WELDING.
2. REINFORCING ANGLE 1 1/2" X 1 1/2" X 3/16" WITH #14 SCREWS TO EACH FLUTE. EXTEND ANGLE FOR TWO FLUTES EACH SIDE OF OPENING. PLACE ANGLES BENEATH DECK.

NOTE:
REINFORCING ANGLES NOT REQUIRED AT OPENING LESS THAN 6" OR WHEN ONE DECK FLUTE IS CUT.

USE AT OPENINGS UP TO 12" WIDE WHEN NO MORE THAN TWO DECK FLUTES HAVE BEEN CUT. DECK SHALL BE CONTINUOUS OVER MINIMUM ON ADJACENT SPAN.

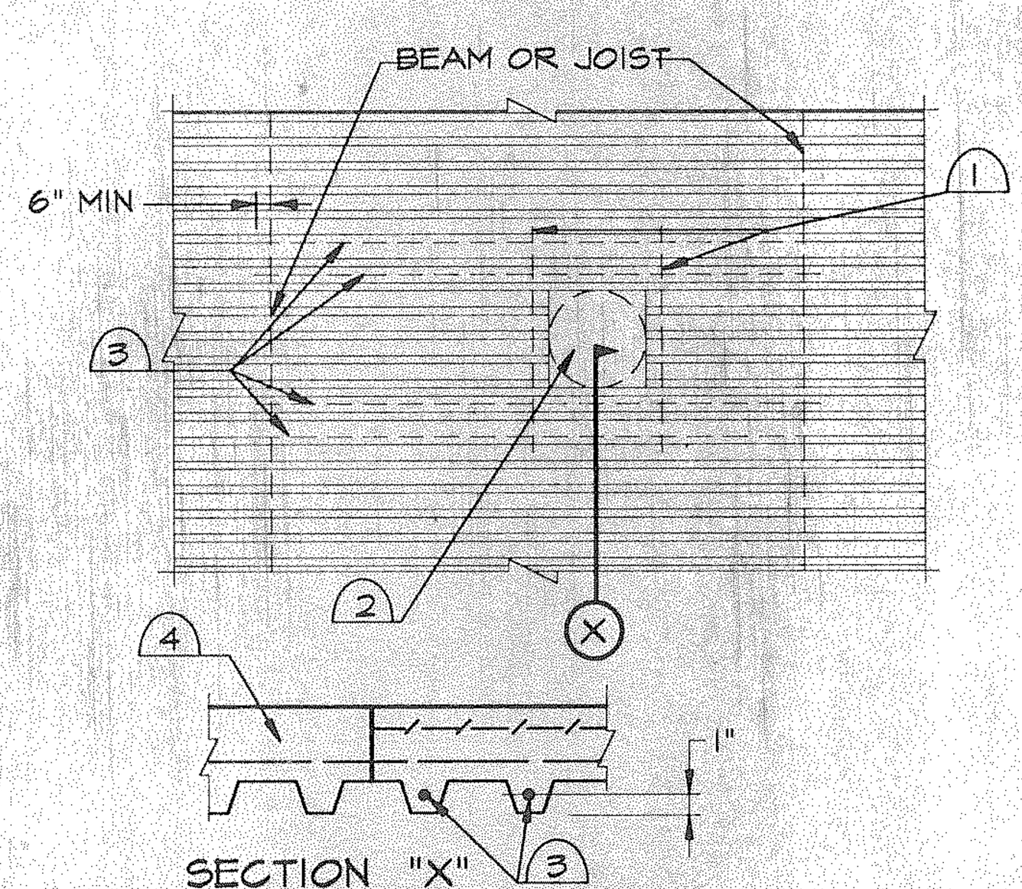
FOR LARGE OPENINGS IN METAL DECK SEE DETAIL 10/S3.2.

12 METAL DECK TO COMPOSITE STEEL BEAM



1. PERMISSIBLE CONSTRUCTION JOINT IN SLAB; LOCATE HALFWAY BETWEEN BEAMS. RUN W.W.F. THROUGH JOINT BY LAYING 4'-0" WIDE X CONTINUOUS SPLICE PIECE ON DECK, CENTERED ON JOINT, AND DRAPING UP TO TIE TO TYPICAL REINFORCING.
2. SEE G.S.N.
3. SEE FRAMING PLAN NOTES.
4. 3/4"⌀ X 4" H.A.S. SPACED EQUALLY ALONG BEAM. SEE PLANS FOR NUMBER REQUIRED PER BEAM.
5. WHERE DECK IS SPLICED AT BEAM, PROVIDE 1 3/4" MIN. BEARING EACH DECK PIECE (MAX. 1/2" GAP ALLOWED).

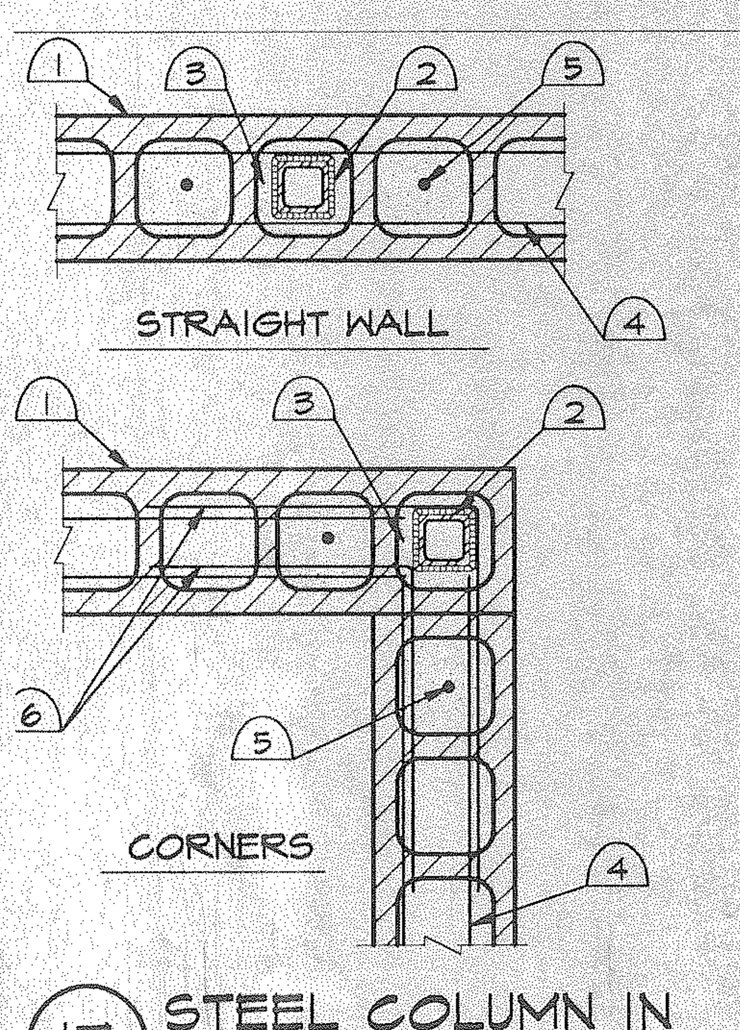
13 SMALL OPENING IN METAL DECK & SLAB



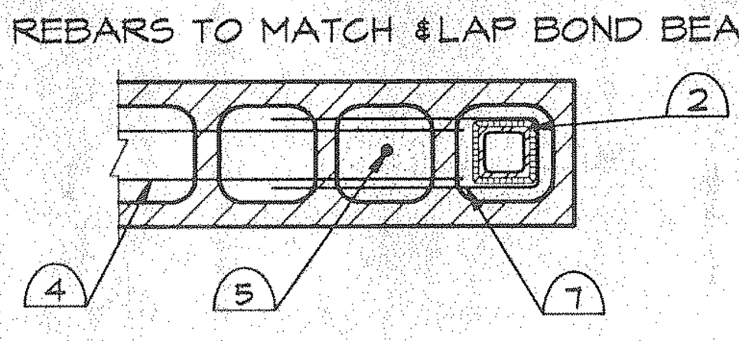
1. #5 X 3'-0" EACH SIDE OF OPENING.
2. PROVIDE TRIM REBAR AS INDICATED WHEN OPENING CUTS TWO ADJACENT FLUTES MAX, NO CLOSER THAN 4'-0" SPACING. 1-#5 TRIM REBAR EACH SIDE REQUIRED WHEN ONE FLUTE IS CUT NO CLOSER THAN 4'-0" O.C. WHEN MORE THAN TWO FLUTES ARE CUT OR OPENINGS ARE CLOSER THAN 4'-0" O.C. FRAME OPENINGS PER DETAIL "LARGE OPENING IN METAL DECK".(DET. 10/S3.2)
3. 2-#5 EACH SIDE BETWEEN BEAMS OR JOISTS AT CENTER LINE FLUTES.
4. BLOCKOUT CONCRETE FOR OPENING. DO NOT CUT DECK UNTIL AFTER ADJACENT CONCRETE HAS REACHED DESIGN STRENGTH.

NOTE: ALSO APPLIES AT FUTURE OPENINGS, WHEN NOTED ON PLANS.

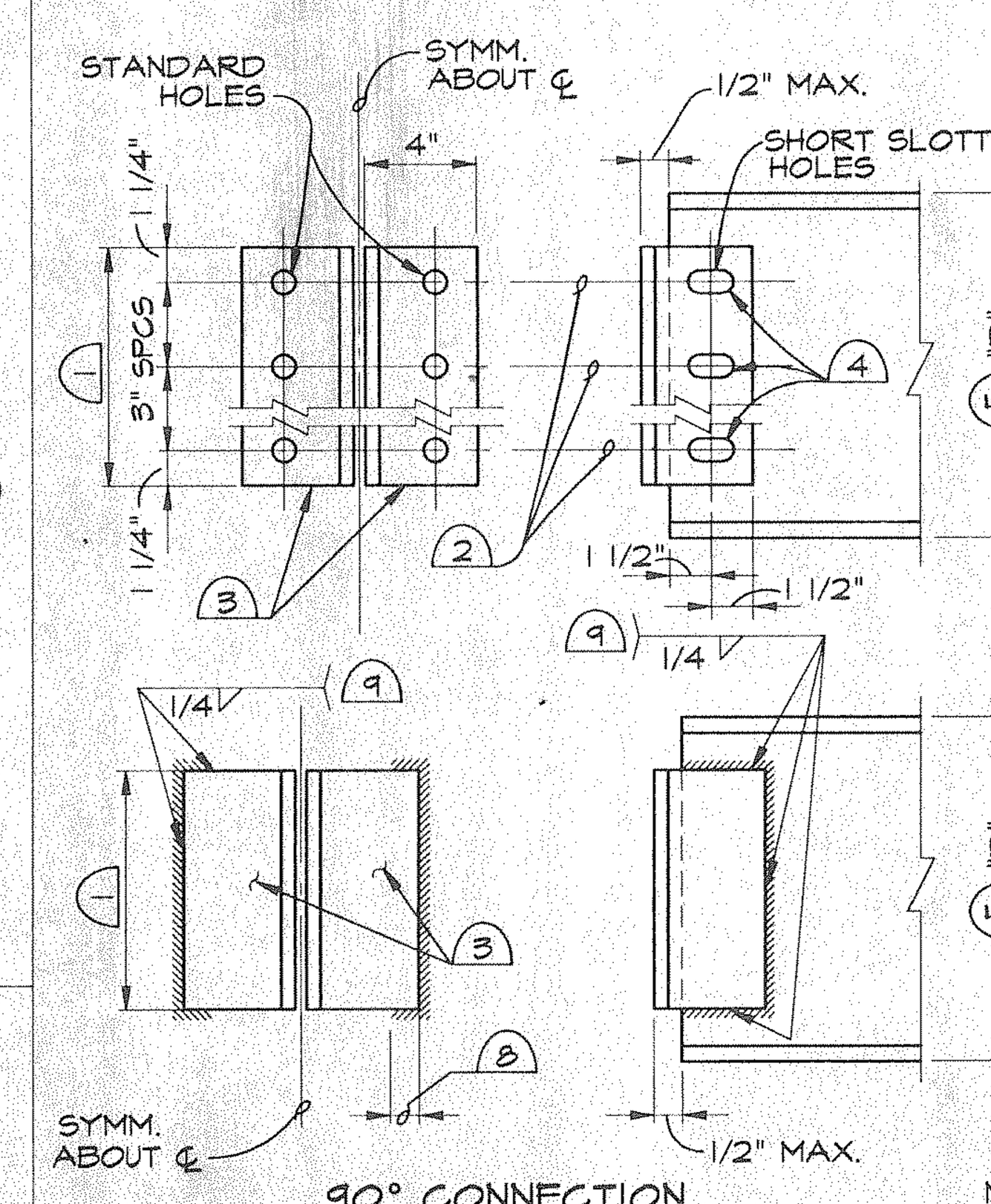
17 STEEL COLUMN IN MASONRY WALL



1. MASONRY WALL PER PLAN.
2. STEEL TS4 X 4 COLUMN PER PLAN, WRAPPED WITH 1/4" COMPRESSIBLE MATERIAL.
3. GROUT CELL AROUND COLUMN WITH FINE GROUT PER SPECS.
4. CONTINUOUS BOND BEAM REINFORCING, DO NOT CUT AT COLUMN.
5. ONE #5 VERT. IN GROUTED CELL BOTH SIDES OF STEEL COLUMN.
6. CORNER BARS TO MATCH & LAP BOND BEAM REBAR. LAP LENGTH PER G.S.N.
7. HAIRPIN REBARS TO MATCH & LAP BOND BEAM REBAR.



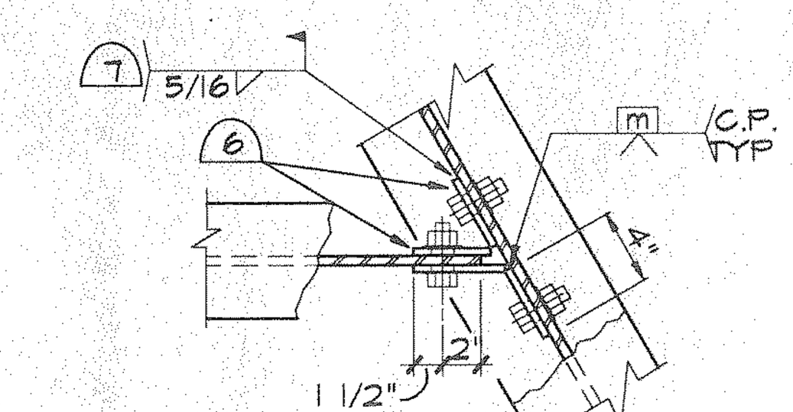
18 DOUBLE ANGLE FRAMED BEAM CONNECTION



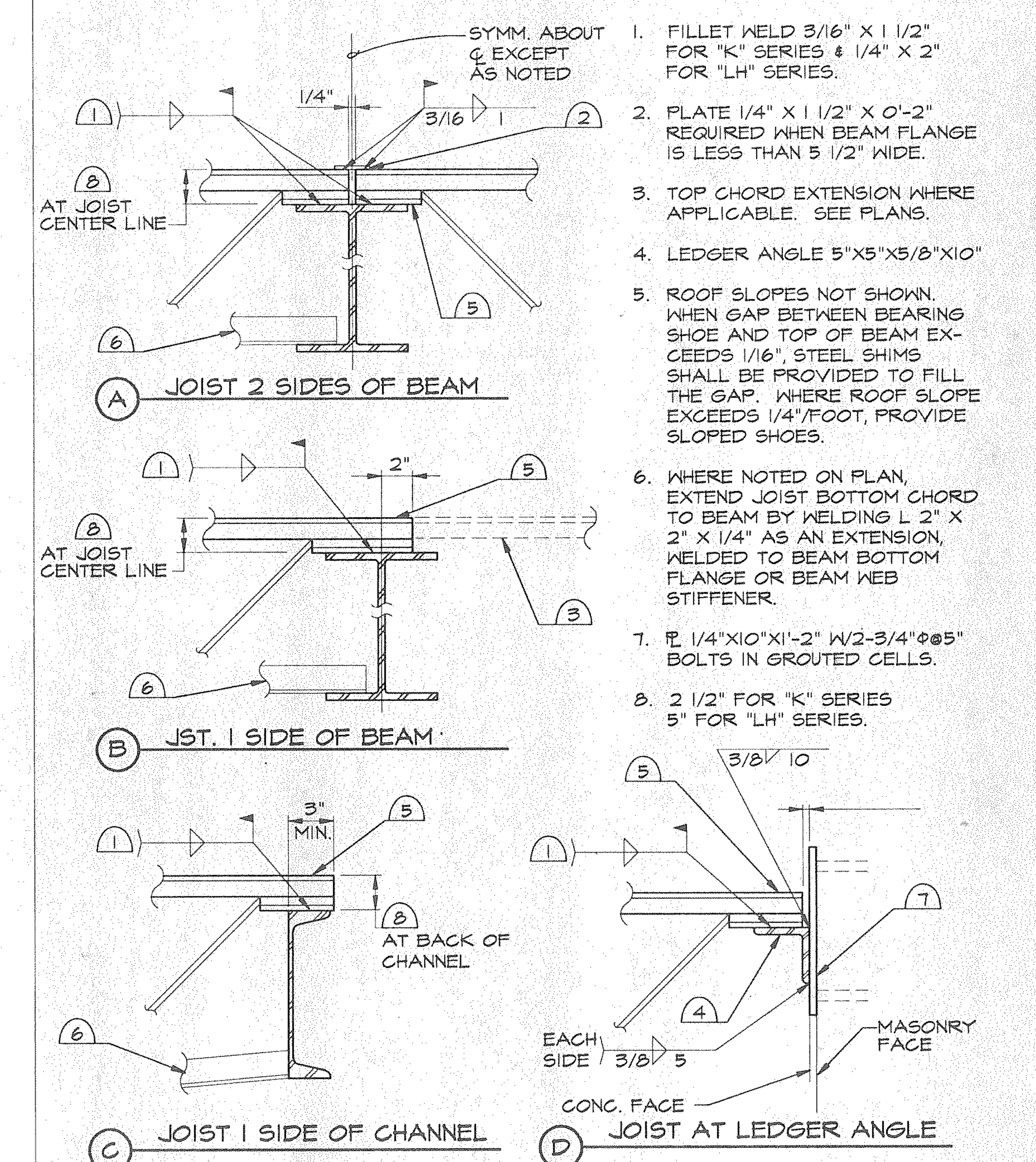
CONNECTION SIZE 3/4" DIA. A-325 BOLTS	
NOMINAL DEPTH "D" IN INCHES	NUMBER OF ROWS
UP TO 7	1 6"-14"
8 - 11	2
12 - 14	3
15 - 17	4
18 - 20	5
21 - 23	6
24 - 29	7
30 - 32	8
33 - 35	9
36	10

1. EQUAL LENGTHS OF DOUBLE ANGLES.
2. ROWS, SEE TABLE FOR BOLT SIZE AND TYPE. SHORT SLOTTED HOLES IN ANGLES.
3. MIN. SIZE ANGLES 4" X 3 1/2" X 3/8", SEE NOTE 4 BELOW.
4. 2 BOLTS MIN. USE ANGLES 6" X 4" X 3/8" X 0'-4" FOR "D" LESS THAN OR EQUAL TO 7". USE SHORT SLOTTED HOLES IN ANGLES.
5. BEAM DEPTH. (LESSER OF TWO BEAM DEPTHS WHERE APPLICABLE).
6. 3/8" PLATE. FOR LENGTH, NUMBER OF BOLTS AND SPACING, SEE 90° CONN.
7. WELD PLATES TO BEAM WHEN ANGLE OF SKEW PROHIBITS. 1" RETURN OF WELD, TOP AND BOTTOM.
8. LENGTH OF RETURN = 2 TIMES WELD SIZE.
9. INCREASE SIZE TO 3/8" IF MATERIAL THICKNESS EXCEEDS 3/4".

NOTES:
1. WELD OR BOLT AT CONTRACTORS OPTION. SEE ALSO G.S.N. CONN. DOUBLE ANGLE SIZE SAME FOR WELDING AS SHOWN FOR BOLTING
2. TIGHTEN BOLTS PER G.S.N.

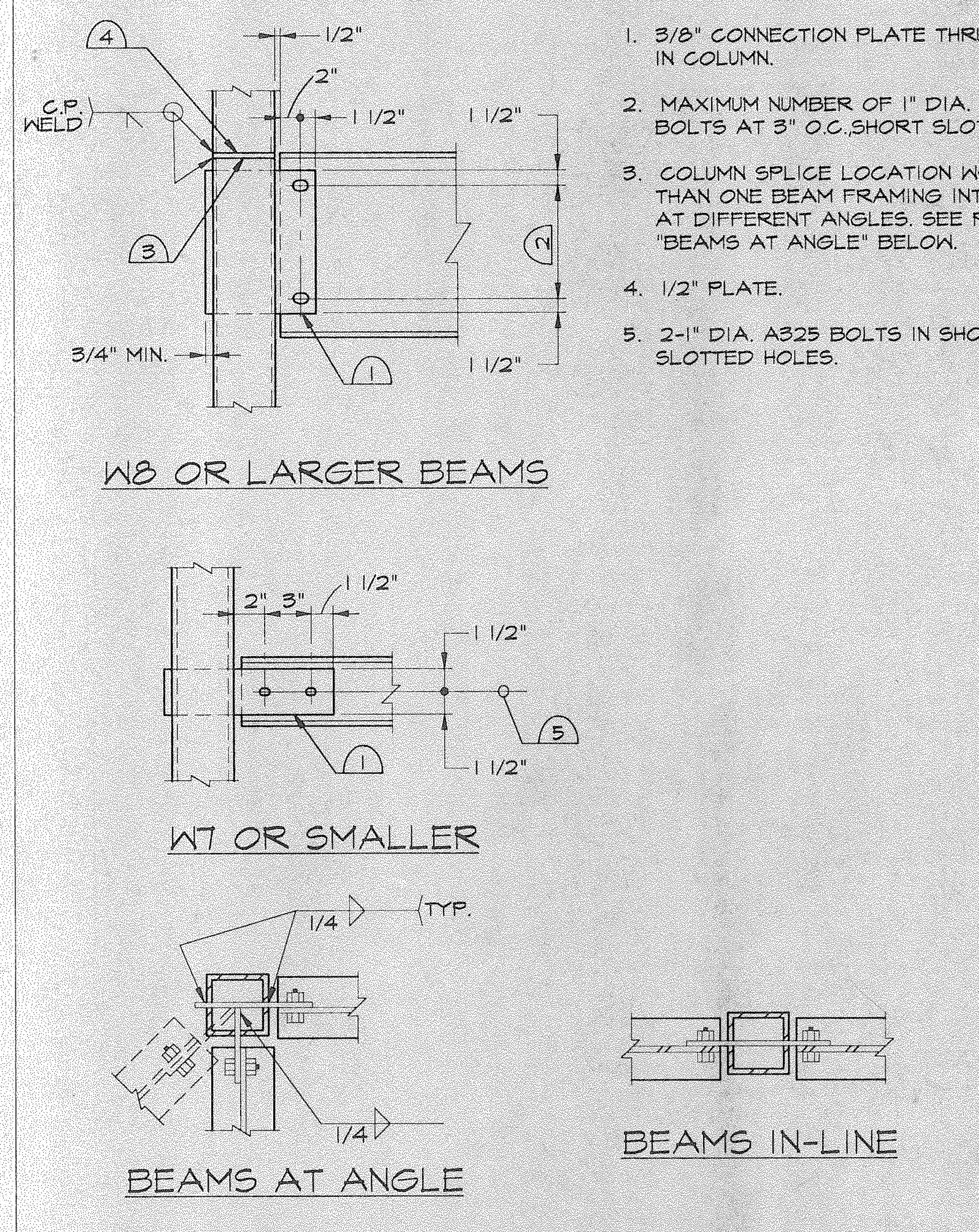


19 JOISTS AT BEAMS

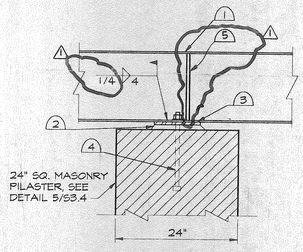


1. FILLET WELD 3/16" X 1 1/2" FOR "K" SERIES & 1/4" X 2" FOR "LH" SERIES.
2. PLATE 1/4" X 1 1/2" X 0'-2" REQUIRED WHEN BEAM FLANGE IS LESS THAN 5 1/2" WIDE.
3. TOP CHORD EXTENSION WHERE APPLICABLE. SEE PLANS.
4. LEDGER ANGLE 5"X5"X5/8"X10"
5. ROOF SLOPES NOT SHOWN. WHEN GAP BETWEEN BEARING SHOE AND TOP OF BEAM EXCEEDS 1/16", STEEL SHIMS SHALL BE PROVIDED TO FILL THE GAP. WHERE ROOF SLOPE EXCEEDS 1/4"/FOOT, PROVIDE SLOPED SHOES.
6. WHERE NOTED ON PLAN, EXTEND JOIST BOTTOM CHORD TO BEAM BY WELDING L 2" X 2" X 1/4" AS AN EXTENSION, WELDED TO BEAM BOTTOM FLANGE OR BEAM WEB STIFFENER.
7. ℙ 1/4"X10"X1'-2" W/2-3/4"⌀#5" BOLTS IN GROUTED CELLS.
8. 2 1/2" FOR "K" SERIES 5" FOR "LH" SERIES.

20 BEAM TO TS COLUMN

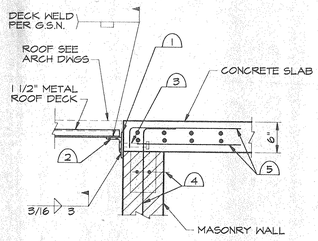


1. 3/8" CONNECTION PLATE THRU SLOT IN COLUMN.
2. MAXIMUM NUMBER OF 1" DIA. A325 BOLTS AT 3" O.C. SHORT SLOTTED HOLES.
3. COLUMN SPLICE LOCATION WHEN MORE THAN ONE BEAM FRAMING INTO COLUMN AT DIFFERENT ANGLES. SEE PLAN "BEAMS AT ANGLE" BELOW.
4. 1/2" PLATE.
5. 2-1" DIA. A325 BOLTS IN SHORT SLOTTED HOLES.



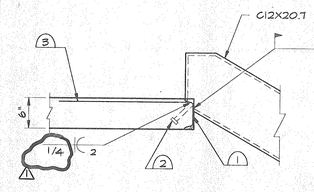
1. W 14 BEAM PER PLAN.
2. 1 1/2" MINIMUM DRY-PACK.
3. BEARING PLATE 9/16"X6"X9"
4. 2-3/4ø BOLTS
5. STD. STIFFENER EA. SIDE PER 3/S3.2.

1 BEAM BEARING ON MASONRY PILASTER



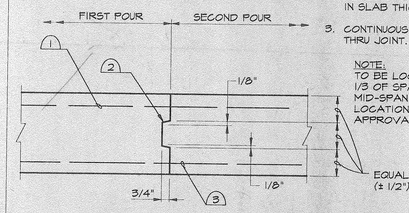
1. 1/4"X5"X5" PLATE @ 32" O.C. NOT MORE THAN 1'-0" FROM END OF ANGLE. MINIMUM 2 PLATES PER ANGLE LENGTH.
2. CONTINUOUS ANGLE 3"X3"X1/4"
3. 3/4"ø X5" H.A.S. CENTER ON PLATE.
4. SEE G.S.N.
5. SLAB REINFORCEMENT. SEE PLANS.

2 ROOF DECK CONNECTION TO SLAB ON MASONRY WALL



1. C 6X13 X CONT.
2. 3/4"ø X5" H.A.S.
3. #4X2'-0"
4. WELD PER 17/S3.3.

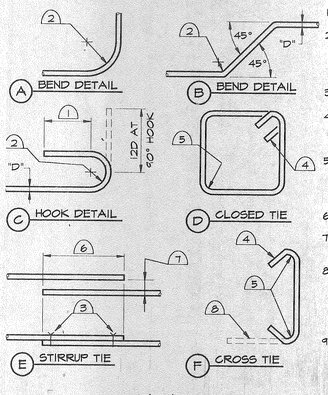
3 STRINGER TO SLAB



1. #5 X 4'-0" AT 18" O.C. CENTERED ON JOINT WHEN NO OTHER SCHEDULE REBAR CROSSED THE JOINT.
2. PLASTIC KEY FORM. CENTER IN SLAB THICKNESS.
3. CONTINUOUS SLAB REINFORCING THRU JOINT.

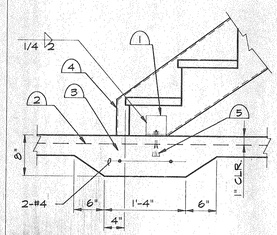
NOTE:
TO BE LOCATED IN MIDDLE 1/3 OF SPAN AS CLOSE TO MID-SPAN AS POSSIBLE. LOCATION SUBJECT TO APPROVAL OF THE ARCHITECT.

4 CONSTRUCTION JOINT IN SLAB



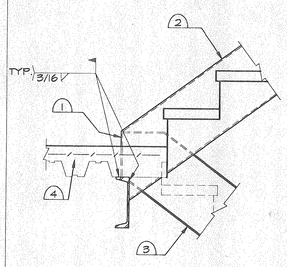
1. 4D (2 1/2" MINIMUM).
2. INSIDE BAR BEND RADIUS:
   R = 3D AT #3 THRU #8
   R = 4D AT #9 THRU #11
   R = 5D AT #14 THRU #18
3. WIRE TIES.
4. 135° HOOK WITH 10D EXTENSION IS REQUIRED AT BOTH ENDS.
5. INSIDE TIE BEND RADIUS:
   R = 2D AT #3 THRU #5
   R = PER NOTE 2 WHEN LARGER THAN #5
6. LAP LENGTH. SEE DETAIL 5/S3.6.
7. MAX. 1/3 LAP BUT NOT MORE THAN 6".
8. 90° HOOK PERMISSIBLE ON ONE END, ARE ALTERNATED.
9. CLOSED STIRRUPS IN BEAMS AND FOUNDATION MAY BE REPLACED BY OPEN STIRRUPS WITH HOOKS AT EACH TOP CORNER AND A MATCHING CAP BAR WITH 135° HOOKS AT EACH END.
10. KEYNOTES 8 AND 9 ALLOW ALTERNATE TIE SHAPES AND CORRESPONDING CRITERIA. THEY MAY BE USED AT CONTRACTORS OPTION TO FACILITATE PLACEMENT.

9 TYPICAL REINFORCING BAR DETAILS



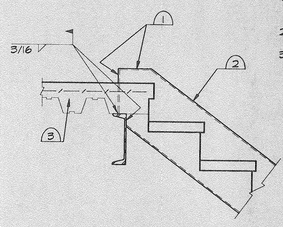
1. ANGLE 4" X 4" X 5/16" X 0'-3".
2. #4 X 5'-0" @ 12" O.C.
3. EXTEND THICKENED SLAB CONTINUOUS BETWEEN STRINGERS AND 1'-0" BEYOND STRINGER OR WALL.
4. 1/4" CLOSURE PLATE. CONTINUOUS BUTT WELD AND GRIND SMOOTH.
5. 1-3/4" DIA. EXPANSION BOLT.

6 STAIR STRINGER TO SLAB



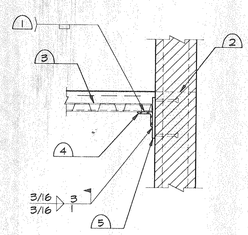
1. 1/4" END CLOSURE PLATE.
2. STRINGER UP.
3. STRINGER BEYOND.
4. FLOOR LANDINGS: SAME CONCRETE OVER METAL DECK CONSTRUCTION AS TYPICAL FLOOR; SEE PLAN.
   INTERMEDIATE LANDINGS: 18/S3.3.

7 STRINGER TO HEADER AT FLOOR STRINGER UP OR DOWN



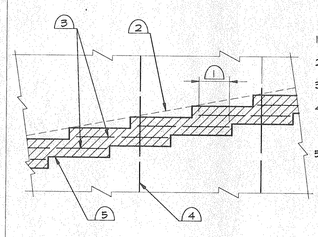
1. END AND TOP CLOSURE PLATES, 1/4" BY WIDTH OF STRINGER.
2. STRINGER DOWN.
3. FLOOR LANDINGS: SAME CONCRETE OVER METAL DECK CONSTRUCTION AS TYPICAL FLOOR; SEE PLAN.
   INTERMEDIATE LANDINGS: 18/S3.3.

8 STRINGER AT FLOOR SLAB STRINGER DOWN



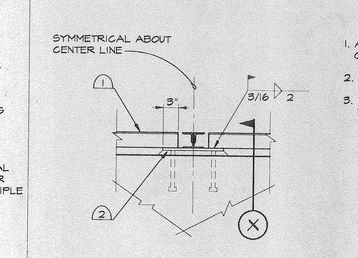
1. TYPICAL DECK WELD PER GENERAL STRUCTURAL NOTES.
2. TOP OF SLAB AT OPENING. SEE NOTE 6.
3. FOR DECK SPAN DIRECTION SEE PLAN.
4. 3" X 3" X 1/4" ANGLE X CONT..
5. 1/4" X 3" X 0'-8" EMBED PLATE WITH 2-3/4" DIA. X 0'-5" WELDED ANCHORS AT 6" O.C. SPACE AT 48" O.C., NOT MORE THAN 6" FROM END OF ANGLE, MINIMUM 2 PLATES PER PIECE OF ANGLE.
6. #4 X 6" AT 24" O.C. AT OPENING IN WALL. WHERE SLAB CONTINUES, PROVIDE #4 TOP DOWELS IN LIEU OF BENT DOWELS EXTENDING 2'-6" EACH SIDE OF WALL SPACED AT 12" ON CENTER.

10 LANDING SLAB TO MASONRY WALL



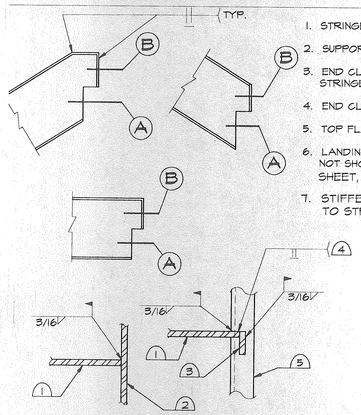
1. 48 DIAMETER LAP.
2. TOP OF WALL WHERE SHOWN ON PLANS.
3. BOND BEAM REINFORCING.
4. CONTINUE VERTICAL WALL REINFORCING THROUGH BOND BEAM WHEN WALL EXTENDS ABOVE.
5. GROUTED BOND BEAM MINIMUM DEPTH PER DETAILS AND GENERAL STRUCTURAL NOTES. DETAILS SHOWN FOR ONE LAYER OF BOND BEAM BAR. DETAIL FOR MULTIPLE COURSE BOND BEAM SIMILAR.

11 STEPPED BOND BEAM



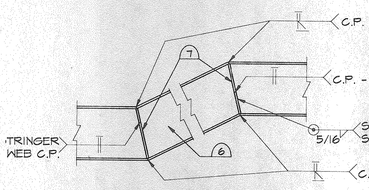
1. ANGLE OR BENT PL, 3" X 1/4" X DEPTH OF JOIST BEARING END.
2. SEE DETAIL 14/S3.3 & 8/S3.4 & 15/S3.3.
3. MOUND MORTAR BETWEEN EMBEDS TO SEAL SPACE OFF.

12 SHEAR CONNECTION

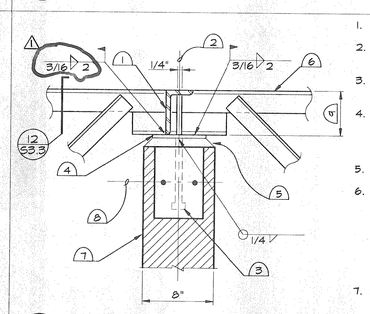


1. STRINGER WEB.
2. SUPPORTING WEB OF HEADER.
3. END CLOSURE PLATE 1/4" X WIDTH OF STRINGER FLANGE.
4. END CLOSURE TO WEB.
5. TOP FLANGE OF HEADER.
6. LANDING, TREAD AND RISER CONSTRUCTION NOT SHOWN; SEE OTHER DETAILS THIS SHEET, AND PLANS.
7. STIFFENER PLATE - THICKNESS EQUAL TO STRINGER FLANGE THICKNESS.

A SECTION
B SECTION
C STRINGER AT ELEVATOR LOBBY

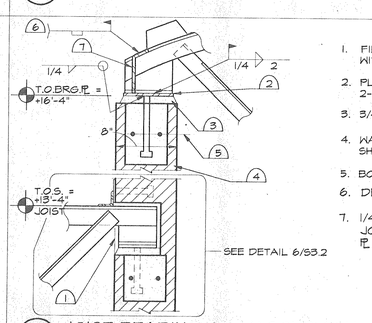


17 STRINGER DETAILS



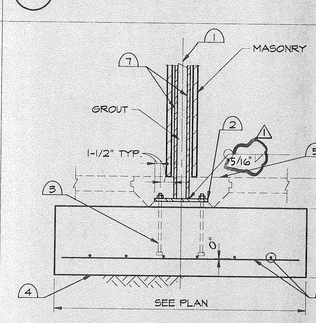
1. SEE DETAIL 12/S3.3
2. SYMMETRICAL ABOUT CENTER LINE EXCEPT AS NOTED.
3. 2-3/4"ø X 6" ANCHOR BOLTS AT 8" ON CENTER.
4. BEARING PLATE 5/8" X 6" X 0'-10". SET ON SLOPE WHERE ROOF SLOPES, WHEN SLOPE IS IN SAME PLANE.
5. 3/4" MINIMUM DRYPACK.
6. ROOF SLOPE NOT SHOWN. WHERE GAP BETWEEN JOIST BEARING SHOE AND TOP OF WALL PLATE EXCEEDS 1/16", STEEL SHIMS SHALL BE PROVIDED. WHERE SLOPE EXCEEDS 1/4"/FOOT, PROVIDE SLOPED BEARING SHOES.
7. WALL REINFORCING NOT SHOWN, SEE G.S.N.
8. SEE G.S.N.
9. 2 1/2" FOR "K" SERIES.
   5" FOR "LH" SERIES.

14 JOIST BEARING AT TOP OF MASONRY WALL



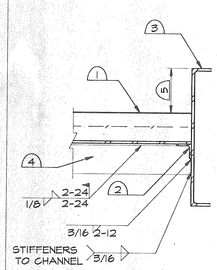
1. FILL JOIST POCKETS SOLID WITH DRYPACK OR GROUT.
2. PLATE 1/2" X 6" X 0'-10" WITH 2-3/4"ø X 8" H.A.S. AT 8".
3. 3/4" MINIMUM DRYPACK.
4. WALL REINFORCING NOT SHOWN, SEE G.S.N.
5. BOND BEAM SEE G.S.N.
6. DECK WELD TO PL PER G.S.N.
7. 1/4" BENT PL X 3" BETWEEN JOISTS. WELD TO EMBEDED PL PER DETAIL 12/S3.3.

15 JOIST BEARING AT MASONRY WALL



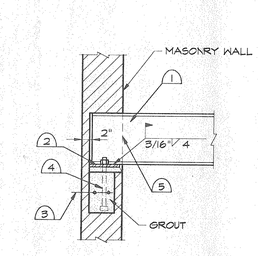
1. SYMMETRICAL ABOUT CENTERLINE.
2. BASE PLATE PER 10/S3.1
3. 4-3/4"ø ANCHOR BOLTS W/ HEAVY HEX HEAD.
4. COMPACTED FILL PER SPECS AND GEOTECHNICAL ENGINEER.
5. DIAMOND SHAPE CLOSURE CONC.
6. PROVIDE:
   3-#5 E.W. FOR 2'-0"X2'-0"X8" FTG.
   4-#5 E.W. FOR 4'-0"X4'-0"X 1'-0" FTG.
   10-#5 E.W. FOR 5'-6"X 5'-6"X 1'-6" FTG.
7. PIPE OR TUBE COLUMN PER PLANS.

16 FOOTING FOR TUBE/PIPE IN MASONRY COLUMN



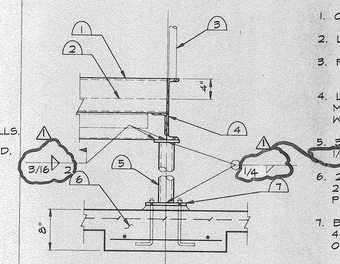
1. 2" CONCRETE FILL WITH 6 X 6 W1.4 X W1.4 W.W.F. OVER 12 GAGE LANDING PAN.
2. L2" X 2" X 1/4" FOR PAN EDGE SUPPORT.
3. STEEL CHANNEL, SEE PLAN.
4. L3" X 3" X1/4" STIFFENERS AT 24" O.C.
5. SEE ARCH. DRAWINGS, 1" MIN.

18 INTERMEDIATE LANDING TO CHANNEL



1. HEADER/STRINGER
2. BEARING PLATE 1/2" X 6" X 8"
3. SEE G.S.N. FOR WALL REINF.
4. 2-3/4"ø BOLTS IN GROUTED CELLS.
5. DRYPACK OR GROUT POCKET SOLID.

19 STRINGER/HEADER BRG. AT MASONRY WALL



1. C12 X 20.7 STRINGER AT LANDING.
2. LANDING SLAB PER DETAIL 18/S3.3
3. PIPE HANDRAIL, SEE ARCH. DWG.
4. LANDING EDGE CHANNEL PER DETAIL 18/S3.3 MITER AND WELD AT CORNER INTERSECTING WITH STRINGER.
5. 3" DIA. STANDARD PIPE COLUMN WITH 1/2" X 6" X 0'-6" CAP PLATE.
6. 2'-0" X 2'-0" THICKENED SLAB WITH 2-#5 EACH WAY BOTTOM CENTER ON PIPE COLUMN ABOVE.
7. BASE PLATE 3/4" X 7" X 0'-7" WITH 4-3/4" DIA. ANCHOR BOLTS. SET PLATE ON 1 1/2" MIN. DRYPACK.

20 OUTSIDE STRINGER AT PIPE COLUMN AT LANDING

R/DA

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22971
TIMOTHY S. SEPPER
1-7-92
REGISTERED ARIZONA U.S.A.

PROJECT NAME

LAKE HAVASU CITY POLICE HEADQUARTERS

LAKE HAVASU CITY, ARIZONA

DATE	1-7-92
ISSUED FOR	DATE
⚠ CITY PLAN CHECK	4-3-92

SHEET TITLE

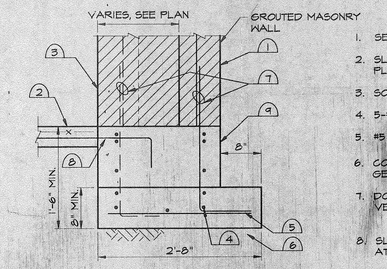
STRUCTURAL DETAILS

SHEET NO.

S3.3

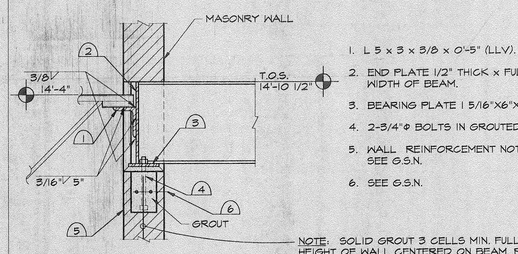
R/DA PROJECT NO.

91006



1. SEE G.S.N. FOR MASONRY REINF.
2. SLAB ON GRADE, SEE PLAN AND PLAN NOTES.
3. SOLID GROUTED MASONRY BAFFLE.
4. 5-#4 CONTINUOUS AS SHOWN.
5. #5 @ 12" O.C. BOTTOM.
6. COMPACTED FILL PER SPECS. AND GEOTECHNICAL ENGEER.
7. DOWELS TO MATCH AND LAP VERTICAL WALL REINFORCING.
8. SLAB DOWELS: #4 x 10" AT 32" O.C.
9. CONCRETE STEM WALL, REINF. PER DETAIL 12/S3.1 IN TWO CURTAINS.

1 BAFFLE WALL FOOTING AT FIRING RANGE

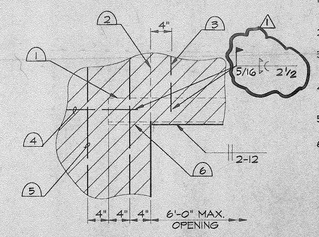


1. L 5 x 3 x 3/8 x 0'-5" (LLV).
2. END PLATE 1/2" THICK x FULL WIDTH OF BEAM.
3. BEARING PLATE 1 5/16"X6"X1'-4".
4. 2-3/4"ø BOLTS IN GROUTED CELLS.
5. WALL REINFORCEMENT NOT SHOWN. SEE G.S.N.
6. SEE G.S.N.

NOTE: SOLID GROUT 3 CELLS MIN. FULL HEIGHT OF WALL CENTERED ON BEAM. PROVIDE #5 IN EACH CELL. DOWELING OF THESE BARS MAY BE DRILLED 6" DEEP 1"ø ROUGH HOLE IN FOUNDATION AND SEETING THE DOWEL IN BURKE-STONE GROUT AT CONTRACTORS OPTION.

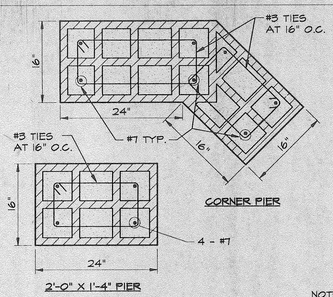
2 JOIST TO BEAM AT MASONRY WALL

LINTEL SCHEDULE				
SPAN	"H" INCHES	TOP REINF.	BOTTOM REINF.	VERTICAL REINF.
0'-0" TO 3'-4"	16"	2 - #5	2 - #5	NONE
3'-5" TO 12'-0"	32"	2 - #5	2 - #5	#3 AT 8"



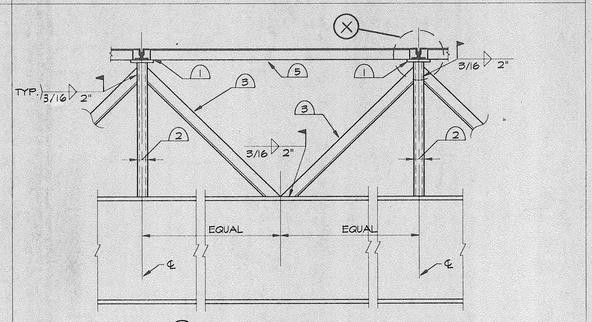
1. STEEL LINTEL BEAM. DO NOT USE BLOCK LINTEL.
2. CONTROL JOINT.
3. #5 BAR IN GROUTED CELL. WELD TO LINTEL.
4. #5 BAR X 4'-0" IN GROUTED 8" DEEP BOND BEAM.
5. ADDITIONAL #5 JAMB BAR.
6. DRILL THROUGH EACH LEG TO PASS VERTICAL #5 X 4'-0" BAR TO LAP WITH #5 JAMB BAR. CENTER ON LINTEL.

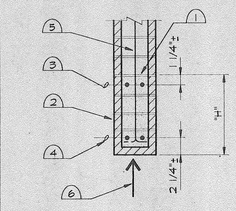
4 CONTROL JOINT AT JAMB STEEL LINTEL ONLY



NOTE: SEE DETAIL 11/S3.1 FOR FOOTINGS.

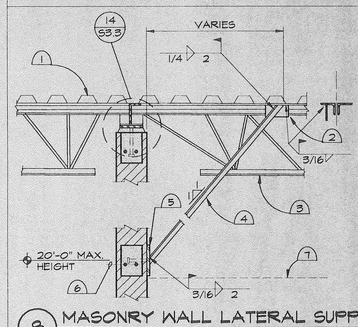
5 PIER SECTIONS





1. TOP OF SOLID GROUT, FULL DEPTH.
2. USE OPEN END MASONRY UNITS AT ALL LINTELS EXTENDED 8" BEYOND JAMB. SAWCUT STANDARD BLOCK IF NECESSARY.
3. TOP REINFORCEMENT - SEE SCHEDULE, EXTEND 2'-0" BEYOND JAMB, U.N.O.
4. BOTTOM REINFORCMENT - SEE SCHEDULE, EXTEND 2'-0" BEYOND JAMB, U.N.O.
5. LINTEL VERTICAL REINFORCMENT - SEE SCHEDULE, ALTERNATE HOOKS AROUND BOTTOM BARS. WHERE TYPICAL WALL VERTICAL REINFORCING OCCURES, HOOK THIS REINFORCING AROUND BOTTOM BARS ALSO.
6. SHORE LINTEL UNTIL GROUT REACHES REQUIRED STRENGTH PER G.S.N.

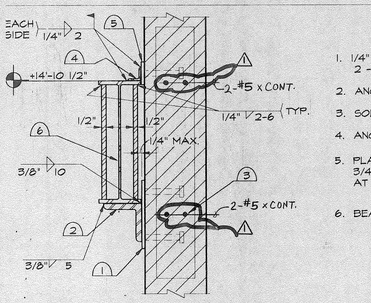
7 MASONRY LINTEL



1. METAL DECKING, SEE PLAN FOR PLAN INFORMATION.
2. PLATE 1/4" x 4" x 4".
3. STEEL JOIST, SEE PLAN.
4. WALL BRACES: ANGLE 2 x 2 x 3/16 AT 8' O.C.
5. PLATE 1/4" x 4" x 4" W/ 1-3/4"ø X 5" H.A.S.
6. BOND BEAM, SEE PLAN.
7. ARCHITECTURAL CEILING

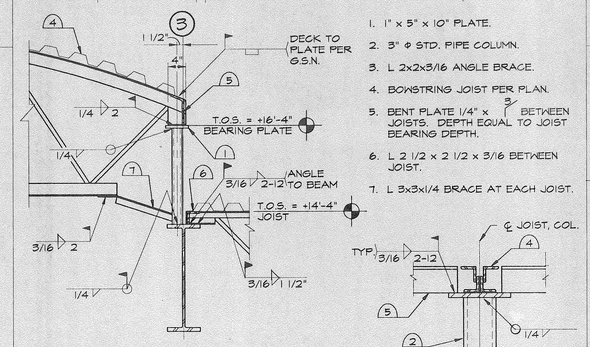
NOTE: PROVIDE WALL BRACES WHERE C.M.U. WALL EXCEEDS 20'-0" TO LATERAL SUPPORT, TYPICAL

8 MASONRY WALL LATERAL SUPPORT WALL PERPENDECULAR TO JOIST OR BEAM



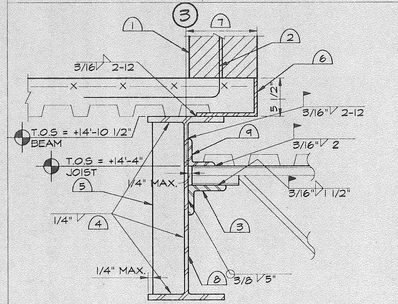
1. 1/4" PLATE 10" x 0'-10" WITH 2 - 3/4" ø x 5" LONG H.A.S.
2. ANGLE 5 x 5 x 1/2" x 8" AT 32"O.C.
3. SOLID GROUTED SEE G.S.N.
4. ANGLE 3 x 3 x 1/4 x CONT.
5. PLATE 1/4" x 5" x 0'-5" WITH 3/4" ø x 5" WELDED ANCHOR AT 32" O.C.
6. BEAM PER PLANS.

9 BEAM AT MASONRY WALL



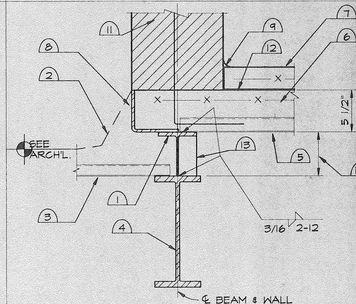
1. 1" x 5" x 10" PLATE.
2. 3" ø STD. PIPE COLUMN.
3. L 2x2x3/16 ANGLE BRACE.
4. BOWSTRING JOIST PER PLAN.
5. BENT PLATE 1/4" x 5" BETWEEN JOISTS. DEPTH EQUAL TO JOIST BEARING DEPTH.
6. L 2 1/2 x 2 1/2 x 3/16 BETWEEN JOIST.
7. L 3x3x1/4 BRACE AT EACH JOIST.

10 JOIST ON BEAM



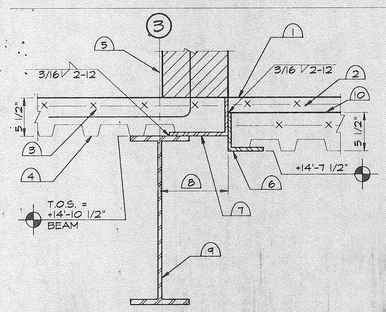
1. 8" MASONRY WALL.
2. DOWELS TO MATCH AND LAP WALL REINFORCING.
3. L 5 x 3 x 1/2 x 0'-8" (LLV)
4. 2-6 AT WEB. CONTINUOUS AT FLANGE.
5. STIFFENER PLATE 3/8" THICK.
6. 5/16" BENT PLATE.
7. VARIES: MIN. 8" MAX. 12"
8. SEE PLANS.
9. L 3 x 3 x 1/4 x CONT. FOR DECK WELDING.

11 FLOOR ON BEAM AND JOIST CONNECTION



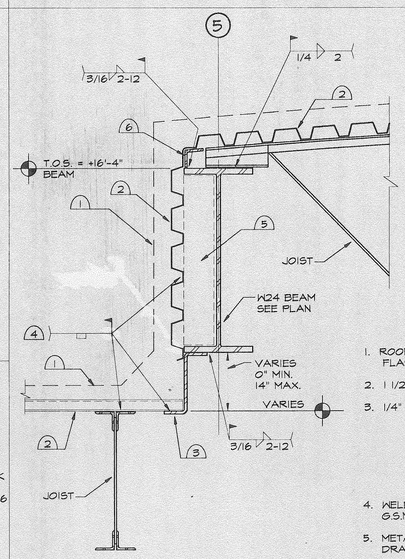
1. BEAM BOLSTER CUT AS REQ'D. FROM W16 x 26.
2. ROOFING, INSULATION AND FLASHING. SEE ARCH'L. DWGS.
3. 1 1/2" ROOF DECK, PER PLAN.
4. STEEL BEAM, SEE PLAN.
5. 2" FLOOR DECK.
6. 3 1/2" CONCRETE.
7. 3" CONC. TOPPING AT PATIO.
8. 5/16" X 5 1/2" X 7" BENT PLATE x CONTINUOUS.
9. CAULK PER ARCH'L. DWGS.
10. VARIES: 6" MIN. 15" MAX.
11. 12" MASONRY WALL.
12. WATERPROOF LAYER PER ARCH'L.
13. STIFFENER ONE SIDE PER S/S3.2 AT 24" O.C.

12 ROOF TO PATIO



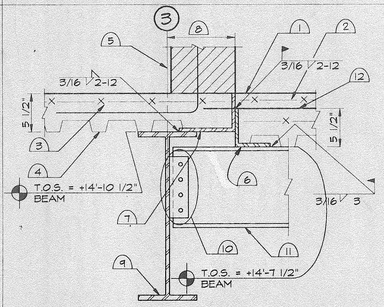
1. PATIO SURFACE.
2. 3" CONCRETE TOPPING.
3. 3 1/2" CONCRETE.
4. 2" METAL DECK.
5. 8" MASONRY WALL.
6. 1/4" x 4" x 5 1/2" BENT PLATE.
7. 5/16" BENT PLATE.
8. VARIES: MIN. 8" MAX. 12"
9. W 36 x 150
10. WATERPROOF MEMBRANE, SEE ARCH. DWGS.

13 FLOOR TO PATIO JOINT



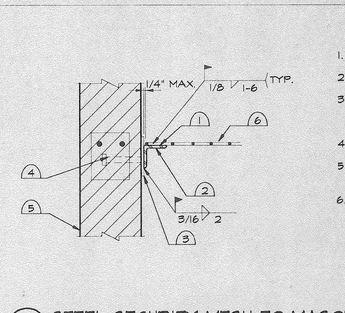
1. ROOFING, INSULATION AND FLASHING, SEE ARCH'L.
2. 1 1/2" METAL ROOF DECK.
3. 1/4" BENT PLATE x CONTINUOUS x 3" VARIES 3"
4. WELD DECK TO SUPPORTS PER G.S.N.
5. METAL STUD WALL PER ARCH'L. DRAWINGS.
6. 1/4" BENT PLATE x 3" x CONT. DEPTH EQUAL TO DEPTH OF JOIST BEARING.

18 ROOFING CONNECTION TO BEAM



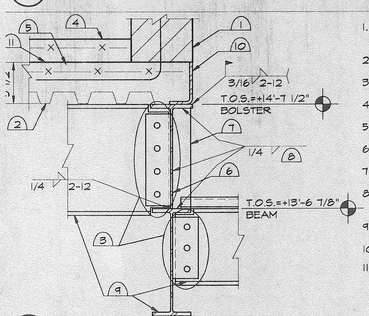
1. PATIO SURFACE.
2. 3" CONCRETE TOPPING.
3. 3 1/2" CONCRETE.
4. 2" METAL DECK.
5. 8" MASONRY WALL.
6. 1/4" x 4" x 5 1/2" BENT PLATE.
7. 5/16" BENT PLATE.
8. VARIES: MIN. 8" MAX. 12"
9. W 36 x 150
10. BEAM CONN., SEE DETAIL 18/S3.2.
11. W 16 x 26
12. WATERPROOF MEMBRANE, SEE ARCH. DWGS.

15 FLOOR TO PATIO JOINT



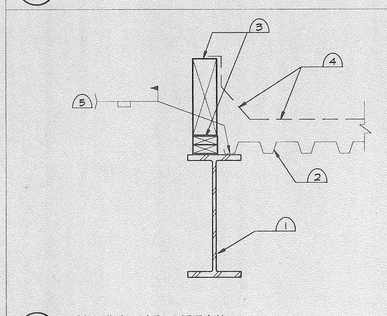
1. WELD MESH TO ANGLE.
2. 3"x3"x1/4" ANGLE x CONT.
3. 1/4"x5"x0'-5" EMBED PLATE W/1-3/4"ø x5" WELDED ANCHORS SPACE AT 32" O.C.
4. BOND BEAM, SEE G.S.N.
5. MASONY WALL, SEE G.S.N. FOR REINFORCEMENT.
6. STEEL SECURITY MESH PER ARCH'L. DRAWINGS.

16 STEEL SECURITY MESH TO MASONRY WALL



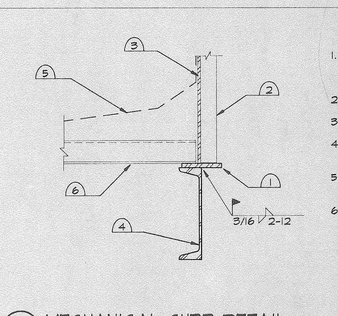
1. MASONRY WALL. SEE G.S.N. FOR REINFORCING.
2. 2" METAL FLOOR DECK.
3. SEE DETAIL 18/S3.2.
4. CONCRETE TOPPING.
5. 3 1/2" CONCRETE ON METAL DECK
6. BEAM BOLSTER CUT FROM W16X26
7. STIFFENER PLATE 5/16" THICK.
8. 2-6 AT WEB. CONTINUOUS AT FLANGE.
9. W BEAM, SEE PLAN.
10. 5/16" x 5 1/2" x 4" BENT PLATE.
11. WATERPROOF MEMBRANE, SEE ARCH. DWGS.

17 PATIO FLOOR ON BEAM BOLSTER TO BEAM



1. W BEAM AT PERIMETER.
2. 1 1/2" ROOF DECK.
3. WOOD BLOCKING, SEE ARCH'L.
4. ROOFING, INSULATION AND FLASHING. SEE ARCH'L.
5. WELD DECK TO BEAM PER G.S.N. - TYPICAL.

19 SKYLIGHT DETAIL



1. 1/4" PLATE x WIDTH AS REQUIRED BY MECHANICAL CONTRACTOR. SEE ARCH'L. DRAWINGS.
2. INSULATION. SEE ARCH'L. DWGS.
3. STEEL MECHANICAL CURB.
4. STEEL CHANNEL. PER DETAIL 10/S3.2.
5. ROOFING, INSULATION AND FLASHING. SEE ARCH'L. DRAWINGS.
6. 1 1/2" ROOF DECK.

20 MECHANICAL CURB DETAIL

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PROJECT NAME

LAKE HAVASU CITY POLICE HEADQUARTERS

LAKE HAVASU CITY, ARIZONA

DATE 1-7-92

ISSUED FOR	DATE
△CITY PLAN CHECK	4-3-92

SHEET TITLE

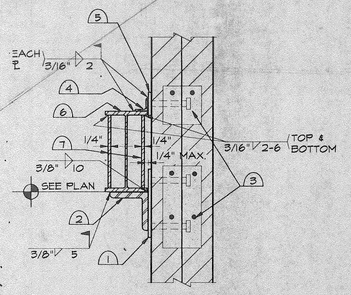
STRUCTURAL DETAILS

SHEET NO.

S3.4

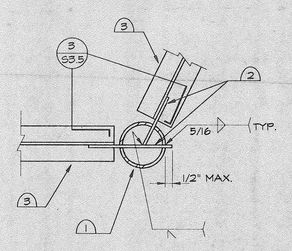
R/DA PROJECT NO.

91006



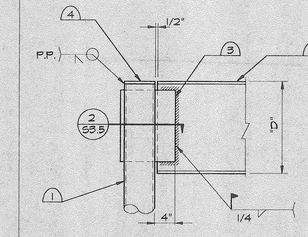
1. 1/4" PLATE 10" x 0'-10" WITH 4 - 3/4" Ø x 5" LONG H.A.S. @ 32" O.C.
2. ANGLE 5" X 5" X 1/2" X 8" AT 32" O.C.
3. GROUTED SEE G.S.N.
4. ANGLE 3" X 3" X 1/4" X CONT.
5. PLATE 1/4" X 5" X 0'-5" WITH ONE 3/4" Ø X 5" WELDED ANCHOR @ 32" O.C.
6. W10 BEAM SEE PLAN.
7. 1/4" THICK PLATE.

1 BEAM ALONG MASONRY WALL



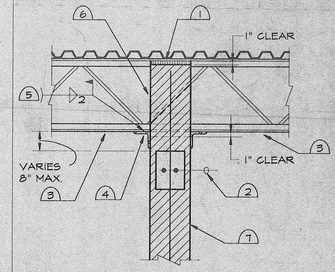
1. STEEL PIPE, SEE PLAN.
2. 3/8" SHEAR PLATE.
3. LINTEL W8x15 WITH 3/16" PLATE.

2 PLAN - W BEAM CONNECTION TO PIPE COLUMN



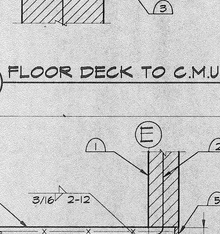
1. STEEL PIPE COLUMN PER PLAN.
2. LINTEL W8x15 WITH 3/16" PLATE.
3. 3/8" SHEAR PLATE.
4. 3/8" CAP PLATE.

3 W BEAM AT PIPE COLUMN



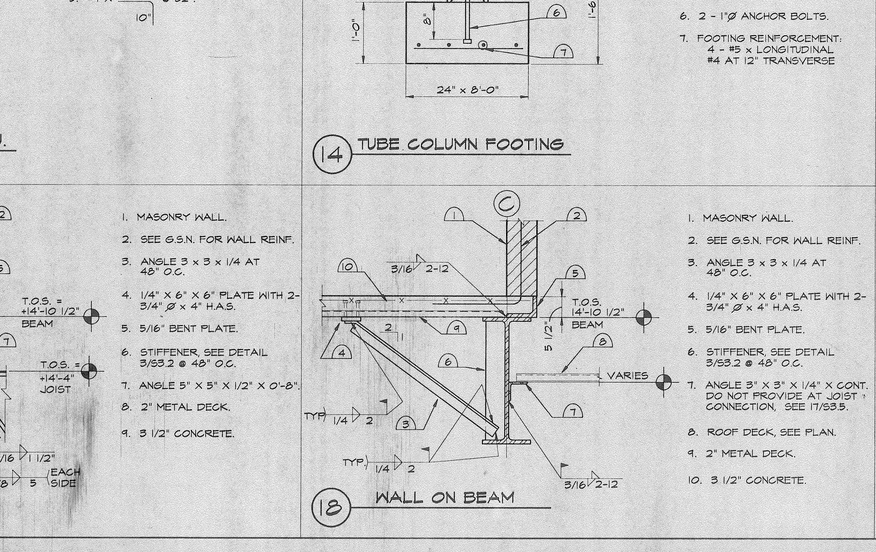
1. COMPRESSIBLE FIRE SAFING AND SOUND PROOFING MATERIAL.
2. BOND BEAM.
3. JOIST OR STEEL BEAM, SEE PLAN.
4. ANGLE 3" x 3" x 1/4" x 0'-6" EACH SIDE. ATTACH TO STEEL ONLY. NOT LESS THAN TWO SETS OF ANGLES PER WALL RUN.
5. MINIMUM FILLET PER 1/S3.2.
6. BLOCK-OUT WALL FOR STEEL JOISTS OR BEAM. DO NOT BEAR ON WALL.
7. SEE ARCHITECTURAL DRAWINGS FOR MASONRY WALL LOCATIONS.

4 MASONRY WALL LATERAL SUPPORT
WALL PERPENDICULAR TO JOIST OR BEAM

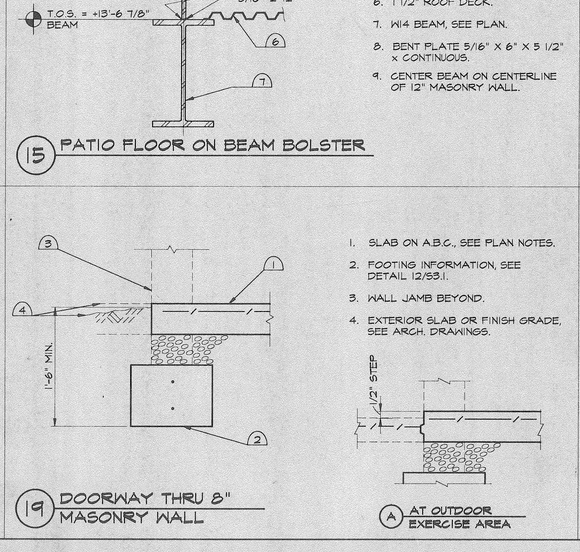


1. SEE ARCHITECTURAL DRAWINGS FOR WALL HEIGHT ABOVE CEILING.
2. PROVIDE ANGLE 2" X 2" X 3/16", MAX. SPACING 8'-0".
3. 1/4" X 4" X 4" PLATE WITH 3/4"Ø BOLT AT CENTER.
4. BOND BEAM PER GENERAL STRUCTURAL NOTES.
5. CEILING, SEE ARCHITECTURAL DRAWINGS.

5 MASONRY WALL BRACE

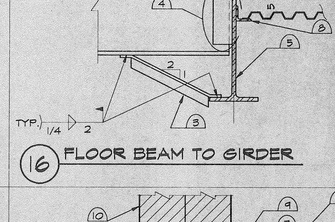


10 BEAMS TO COLUMN AT E-5



1. MASONRY WALL. SEE G.S.N. FOR REINFORCING.
2. TS 4" X 4" X 3/8".
3. BEARING PLATE PER 4/S3.2.
4. 2 - 3/4" Ø BOLTS IN GROUTED CELL.
5. W21 ROOF BEAM PER PLANS.
6. TOP OF BEAM IS +21'-8 1/2" MINUS JOIST BRG. DEPTH.
7. 4-#6 X CONTINUOUS IN DOUBLE HORIZONTAL BOND BEAM.

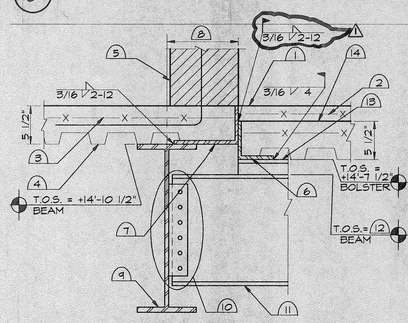
11 BEAMS ON MASONRY WALL AT E-4



1. BOND BEAM, SEE G.S.N.
2. PLATE 1/4" X 4" X 4" W/ 1- 3/4"Ø H.A.S. x 5".
3. WALL BRACES, L 2 x 2 x 3/16. MAX. SPACING- 8'-0".
4. 1/4" PLATE.
5. SEE ARCH'L. DRAWINGS FOR LOCATION OF WALL.
6. JOIST, SEE PLAN.
7. ARCHITECTURAL CEILING.

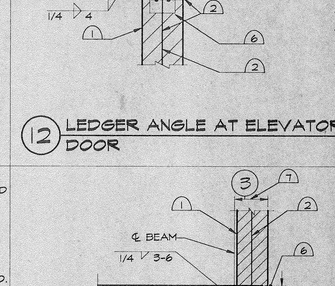
NOTE: PROVIDE WALL BRACES WHERE C.M.U. WALL EXCEEDS 20'-0". TO LATERAL SUPPORT, TYPICAL

8 MASONRY WALL LATERAL SUPPORT
WALL PARALLEL TO JOIST OR BEAM



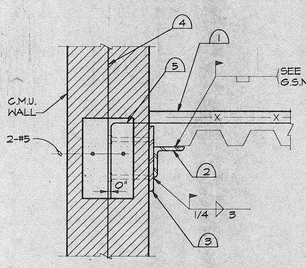
1. PATIO SURFACE.
2. 3" CONCRETE TOPPING.
3. 3 1/2" CONCRETE.
4. 2" METAL DECK.
5. 8" MASONRY AND REINF.
6. 1/4" X 4" X 5 1/2" BENT PLATE.
7. 5/16" BENT PLATE.
8. VARIES: MIN. 8" MAX. 12"
9. W 36X150.
10. BEAM CONN., SEE DETAIL 18/S3.2.
11. W 16X26
12. VARIES, SEE PLAN.
13. BOLSTER, SEE DETAIL 12/S3.4.
14. WATERPROOF MEMBRANE, SEE ARCH. DWGS.

9 FLOOR TO PATIO JOINT



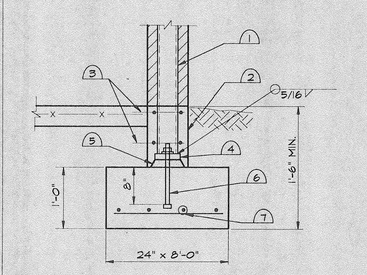
1. MASONRY WALL.
2. WALL REINF. SEE G.S.N.
3. EMBED PLATE 3/8" X 4" X 6" @ 24" O.C. WITH 2 3/4" Ø x 5" H.A.S. @ 4" O.C.
4. ELEVATOR SILL ANGLE 5 x 3 1/2 x 5/16 CONTINUOUS (L.L.H.).
5. #4 AT 8" O.C. x 24" / 24"
6. BOND BEAM, SEE G.S.N.
7. ANGLE TO C.M.U. WALL PER DETAIL 13/S3.5.

12 LEDGER ANGLE AT ELEVATOR DOOR



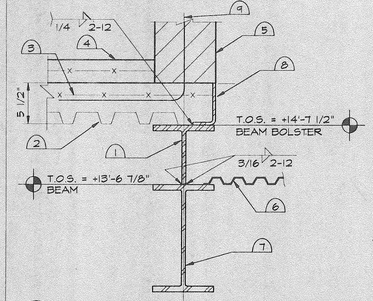
1. CONCRETE ON METAL DECK PER PLAN AND G.S.N.
2. ANGLE 3" X 3" X 1/4" X CONTINUOUS.
3. PLATE 1/2" X 7" X 0'-7" WITH 2-3/4"Ø X 5" H.A.S. AT 5". MINIMUM 2 PLATES PER ANGLE. SPACE PLATES AT 32" MAX. O.C. NOT MORE THAN 1'-0" FROM END OF ANGLE.
4. WALL REINFORCING. SEE G.S.N.
5. #4 X 24" / 10" @ 32".

13 FLOOR DECK TO C.M.U.



1. TS 4 x 4 PER PLANS.
2. 8" CONC. STEM WALL PER 12/S3.1.
3. 2 - #4 x CONT. TO LAP WITH STEM WALL REBAR.
4. PLATE 1 1/4" x 5" x 12".
5. 1 1/2" GROUT SPACE.
6. 2 - 1"Ø ANCHOR BOLTS.
7. FOOTING REINFORCEMENT: 4 - #5 x LONGITUDINAL #4 AT 12" TRANSVERSE

14 TUBE COLUMN FOOTING



1. BEAM BOLSTER CUT AS REQUIRED FROM W16 x 26.
2. 2" METAL DECK.
3. 3 1/2" CONCRETE TOPPING AT PATIO.
4. 3" CONCRETE TOPPING AT PATIO.
5. 12" MASONRY WALL, SEE G.S.N. FOR REINFORCING.
6. 1 1/2" ROOF DECK.
7. W14 BEAM, SEE PLAN.
8. BENT PLATE 5/16" X 6" X 5 1/2" x CONTINUOUS.
9. CENTER BEAM ON CENTERLINE OF 12" MASONRY WALL.

15 PATIO FLOOR ON BEAM BOLSTER

1. 8" MASONRY WALL.
2. SEE G.S.N.
3. ANGLE 3 x 3 x 1/4" AT EACH BEAM.
4. SEE DETAIL 18/S3.2.
5. W BEAM, SEE PLAN.
6. 5/16" BENT PLATE.
7. VARIES - 8" MIN. TO 12" MAX.
8. L3"X3"X1/4"X CONT. PER 11/S3.4.

16 FLOOR BEAM TO GIRDER

1. MASONRY WALL.
2. SEE G.S.N. FOR WALL REINF.
3. ANGLE 3 x 3 x 1/4 AT 48" O.C.
4. 1/4" X 6" X 6" PLATE WITH 2-3/4" Ø x 4" H.A.S.
5. 5/16" BENT PLATE.
6. STIFFENER, SEE DETAIL 3/S3.2 @ 48" O.C.
7. ANGLE 5" x 5" X 1/2" X 0'-8".
8. 2" METAL DECK.
9. 3 1/2" CONCRETE.

17 WALL ON BEAM

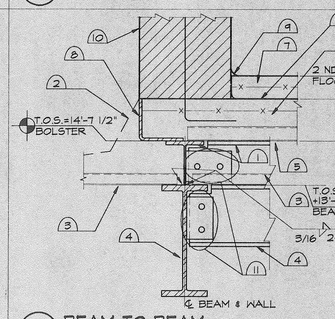
1. MASONRY WALL.
2. SEE G.S.N. FOR WALL REINF.
3. ANGLE 3 x 3 x 1/4 AT 48" O.C.
4. 1/4" X 6" X 6" PLATE WITH 2-3/4" Ø x 4" H.A.S.
5. 5/16" BENT PLATE.
6. STIFFENER, SEE DETAIL 3/S3.2 @ 48" O.C.
7. ANGLE 3" X 3" X 1/4" X CONT. DO NOT PROVIDE AT JOIST CONNECTION, SEE 17/S3.5.
8. ROOF DECK, SEE PLAN.
9. 2" METAL DECK.
10. 3 1/2" CONCRETE.

18 WALL ON BEAM

1. SLAB ON A.B.C., SEE PLAN NOTES.
2. FOOTING INFORMATION, SEE DETAIL 12/S3.1.
3. WALL JAMB BEYOND.
4. EXTERIOR SLAB OR FINISH GRADE, SEE ARCH. DRAWINGS.

19 DOORWAY THRU 8" MASONRY WALL

A AT OUTDOOR EXERCISE AREA



1. BEAM BOLSTER CUT AS REQ'D. FROM W16 x 26.
2. ROOFING, INSULATION AND FLASHING. SEE ARCH'L.
3. 1 1/2" ROOF DECK.
4. STEEL BEAM, SEE PLAN.
5. 2" FLOOR DECK.
6. 3 1/2" CONCRETE.
7. 3" CONCRETE TOPPING AT PATIO.
8. 5/16" X 5 1/2" X 7" BENT PLATE X CONTINUOUS. (LLH).
9. CAULK PER ARCH'L.
10. 12" MASONRY WALL.
11. SEE DETAIL 18/S3.2.
12. WATERPROOF MEMBRANE, SEE ARCH. DWGS.

20 BEAM TO BEAM AT PATIO

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1-7-92
REGISTERED PROFESSIONAL ENGINEER
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STATE OF ARIZONA

PROJECT NAME

LAKE HAVASU CITY POLICE HEADQUARTERS

LAKE HAVASU CITY, ARIZONA

DATE	1-7-92
ISSUED FOR	DATE
1 CITY PLAN CHECK	4-3-92

SHEET TITLE

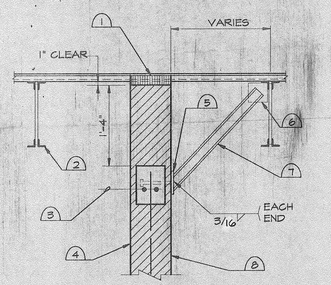
STRUCTURAL DETAILS

SHEET NO.

S3.5

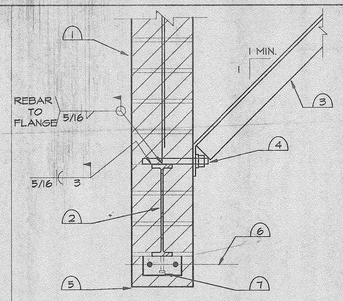
R/DA PROJECT NO.

91006



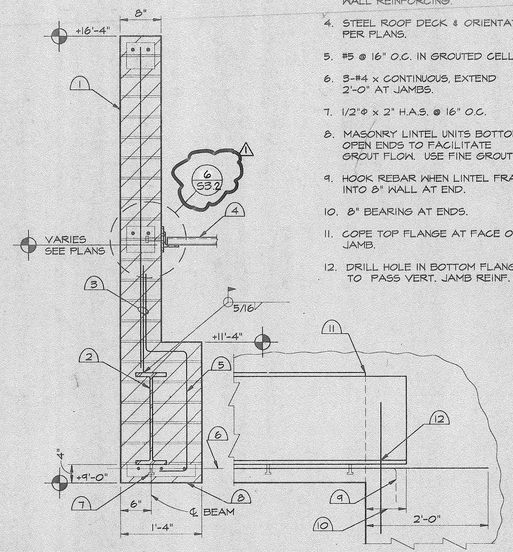
1. COMPRESSIBLE FIRESAFING AND SOUNDPROOFING MATERIAL.
2. JOIST OR BEAM, SEE PLAN.
3. BOND BEAM, SEE G.S.N..
4. SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF WALL.
5. STEEL PLATE 1/4" X 4" X 0'-4" WITH 1- 3/4"ø x 5" H.A.S. .
6. 1/4" STEEL PLATE.
7. ANGLE 2 x 2 x 3/16 AT 8' O.C. NOT LESS THAN TWO SETS OF ANGLES PER WALL RUN.
8. WALL FACE FARTHEST FROM ADJACENT JOIST OR BEAM.

1 MAS. WALL LATERAL SUPPORT
Wall Parallel to Joist or Beam



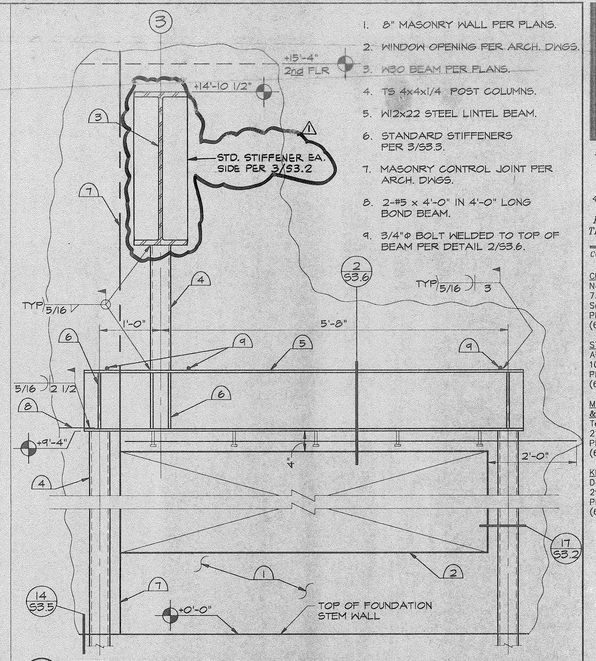
1. 8" MASONRY WALL PER PLAN.
2. W12 x 22 LINTEL BEAM.
3. L 3 x 3 x 1/4 BRACE UP TO TOP FLANGE OF STEEL FLOOR BEAM OR ROOF JOIST.
4. 3/4" Ø x 8" BOLT THREADED ONE END (QUANITY: 3).
5. MASONRY LINTEL UNIT AT BOTTOM WITH OPEN ENDS TO FACILITATE GROUT FLOW. USE FINE GROUT.
6. 2 - #4 x 8'-0" - CUT AT MASONRY COTROL JOINT.
7. 1/2" Ø x 2" H.A.S. AT 16" O.C.

2 STEEL LINTEL BEAM



1. MASONRY WALL & REINFORCING PER PLANS & G.S.N.
2. STEEL BEAM LINTEL PER PLANS.
3. DOWELS TO MATCH & LAP VERT. WALL REINFORCING.
4. STEEL ROOF DECK & ORIENTATION PER PLANS.
5. #5 @ 16" O.C. IN GROUTED CELLS.
6. 3-#4 x CONTINUOUS, EXTEND 2'-0" AT JAMBS.
7. 1/2"ø x 2" H.A.S. @ 16" O.C.
8. MASONRY LINTEL UNITS BOTTOM OPEN ENDS TO FACILITATE GROUT FLOW. USE FINE GROUT.
9. HOOK REBAR WHEN LINTEL FRAMES INTO 8" WALL AT END.
10. 8" BEARING AT ENDS.
11. COPE TOP FLANGE AT FACE OF JAMB.
12. DRILL HOLE IN BOTTOM FLANGE TO PASS VERT. JAMB REINF.

7 STEEL LINTEL AT EXTERIOR AREAS



1. 8" MASONRY WALL PER PLANS.
2. WINDOW OPENING PER ARCH. DWGS.
3. W30 BEAM PER PLANS.
4. TS 4x4x1/4 POST COLUMNS.
5. W12x22 STEEL LINTEL BEAM.
6. STANDARD STIFFENERS PER 3/S3.3.
7. MASONRY CONTROL JOINT PER ARCH. DWGS.
8. 2-#5 x 4'-0" IN 4'-0" LONG BOND BEAM.
9. 3/4"ø BOLT WELDED TO TOP OF BEAM PER DETAIL 2/S3.6.

8 STEEL FRAMING AROUND OPENING IN WALL ON GRID Ⓐ

REBAR / CONC. STRENGTH	BEAMS AND COLUMNS ① 3000 P.S.I.	BEAMS AND COLUMNS ① 4000 P.S.I.	ALL OTHER REINFORCING 3000 P.S.I.	ALL OTHER REINFORCING 4000 P.S.I.
#3	16"	16"	16"	16"
#4	22"	19"	22"	19"
#5	27"	23"	27"	23"
#6	32"	28"	35"	31"
#7	38"	33"	48"	42"
#8	45"	39"	63"	55"
#9	57"	50"	80"	69"
#10	73"	63"	102"	88"
#11	89"	77"	125"	108"

FOOTNOTE①: APPLIES AS LONG AS CLEAR SPACING BETWEEN BARS IS THREE DIAMETERS OR MORE.

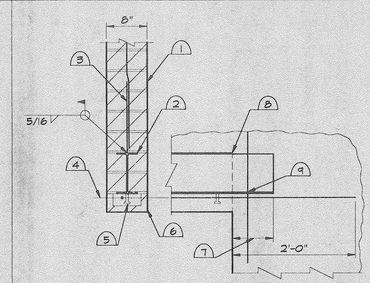
NOTES: BASED ON 1991 U.B.C./1989 A.C.I. 318). A.C.I. CLASS B LAP SPLICE. FOR "TOP BARS", MULTIPLY LENGTH BY 1.3.

THESE LAP SPLICE LENGTHS APPLY TYPICALLY UNLESS NOTED OTHERWISE ON PLANS AND DETAILS.

TYPICAL ALL REBAR:
-CLEAR SPACING BETWEEN BARS MUST BE MORE THAN TWO BAR DIAMETERS.

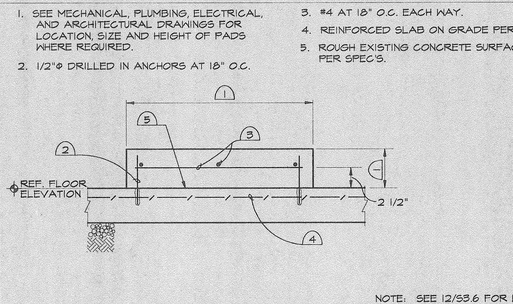
-CLEAR COVER MUST BE MORE THAN ONE BAR DIAMETER.

5 TYPICAL REBAR TENSION LAP SPLICES FOR HARDROCK CONCRETE



1. MASONRY WALL & REINFORCE PER PLANS.
2. W8 STEEL LINTEL PER PLANS.
3. DOWELS TO MATCH & LAP VERT. WALL REINFORCING.
4. 1-#5 x CONTINUOUS, EXTEND 2'-0" AT JAMBS.
5. 1/2"ø x 2" H.A.S. @ 16" O.C. IN CENTER OF MASONRY CELL.
6. MASONRY LINTEL UNIT AT BOTTOM WITH OPEN ENDS TO FACILITATE GROUT FLOW. USE FINE GROUT.
7. 8" BEARING AT ENDS.
8. COPE TOP FLANGE AT FACE OF JAMB.
9. DRILL HOLE AT BEAM BOTTOM FLANGE TO PASS VERTICAL JAMB REBAR.

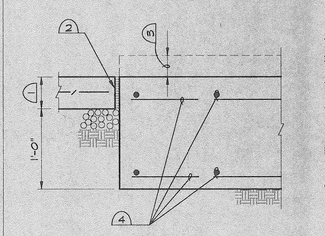
6 STEEL LINTEL BEAM



1. SEE MECHANICAL, PLUMBING, ELECTRICAL, AND ARCHITECTURAL DRAWINGS FOR LOCATION, SIZE AND HEIGHT OF PADS WHERE REQUIRED.
2. 1/2"ø DRILLED IN ANCHORS AT 18" O.C.
3. #4 AT 18" O.C. EACH WAY.
4. REINFORCED SLAB ON GRADE PER PLAN.
5. ROUGH EXISTING CONCRETE SURFACE PER SPEC'S.

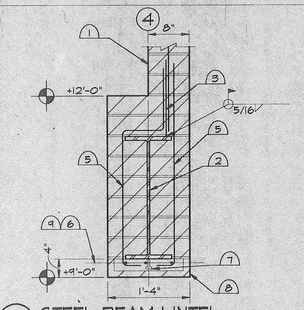
11 TYPICAL HOUSEKEPPING PAD

NOTE: SEE 12/S3.6 FOR LARGER ISOLATED PADS, IF REQUIRED.



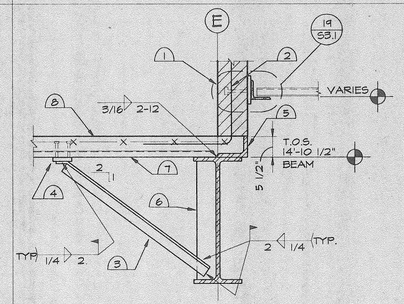
1. SEE PLAN FOR SLAB THICKNESS.
2. 1/2" PREMOLD JOINT MATERIAL.
3. SEE MECHANICAL DRAWINGS.
4. #4 @ 12" EACH WAY TOP & BOTTOM.
A. NOTE: EQUIPMENT FOOTING TO EXTEND 1'-0" MINIMUM BEYOND EDGE OF MECHANICAL EQUIPMENT ON ALL SIDES.
B. NOTE: SEE MECHANICAL AND ARCHITECTURAL FOR EQUIPMENT LOCATIONS.
C. NOTE: PROVIDE ANCHOR BOLTS FOR EQUIPMENT AS REQUIRED BY MANUFACTURER.

12 DEEP EQUIPMENT PAD



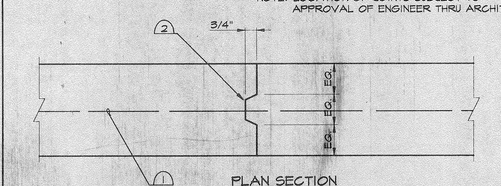
1. MASONRY WALL & REINFORCING PER PLANS & G.S.N.
2. W24x68 STEEL LINTEL BEAM.
3. DOWELS TO MATCH & LAP VERT. WALL REINFORCING.
4. NOT USED.
5. #5 @ 16" O.C. IN GROUTED CELLS.
6. 3-#4 x CONTINUOUS, EXTEND 2'-0" AT JAMBS.
7. 1/2"ø x 2" H.A.S. @ 16" O.C.
8. MASONRY LINTEL UNITS BOTTOM OPEN ENDS TO FACILITATE GROUT FLOW. USE FINE GROUT.
9. HOOK REBAR WHEN LINTEL FRAMES INTO 8" WALL AT END.

9 STEEL BEAM LINTEL



1. MASONRY WALL.
2. SEE G.S.N. FOR WALL REINFORCING.
3. ANGLE 3 x 3 x 1/4 AT 48" O.C.
4. 1/4" x 6" x 6" PLATE WITH 2-3/4" Ø x 4" H.A.S.
5. 5/16" BENT PLATE.
6. STIFFENER, SEE DETAIL 3/S3.2 AT 48" O.C.
7. 2" METAL DECK.
8. 3 1/2" CONCRETE.

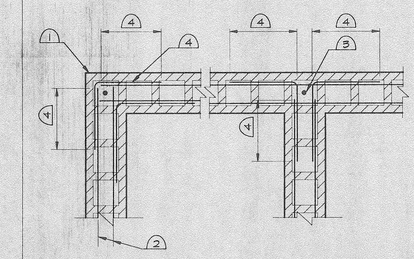
10 WALL ON BEAM



1. CONTINUOUS REINFORCING THRU JOINTS.
2. LENGTH OF KEY EQUALS CLEAR BAR SPACING. LOCATE AT ALTERNATE REBAR SPACE.

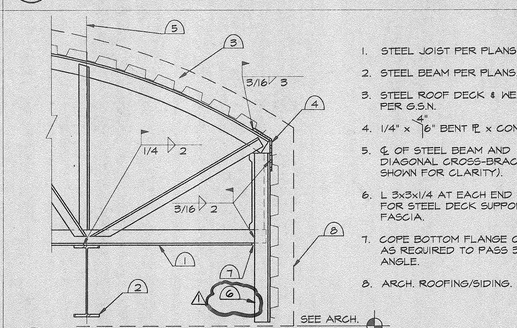
NOTE: LOCATION OF JOINTS SUBJECT TO APPROVAL OF ENGINEER THRU ARCHITECT.

13 CONSTRUCTION JOINT IN CONCRETE WALL TYPICAL



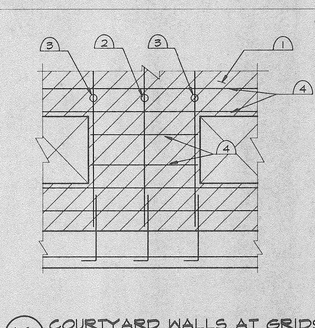
1. MASONRY WALL PER PLANS AND G.S.N.
2. BOND BEAM REINFORCING PER G.S.N.
3. VERTICAL REBAR IN GOUTED CELL AT CORNERS, INTERSECTION AND AT MAX. SPACING PER G.S.N. ,
4. BENT CORNER REBAR TO MATCH AND LAP BOND BEAM REINFORCING. SEE G.S.N. FOR LAP LENGTHS, TYPICAL.

14 HORIZONTAL MASONRY WALL REINFORCING DETAIL



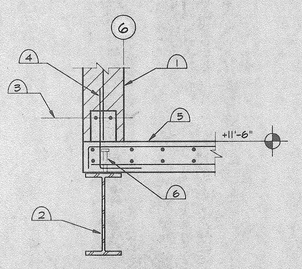
1. STEEL JOIST PER PLANS.
2. STEEL BEAM PER PLANS.
3. STEEL ROOF DECK & WELDING PER G.S.N.
4. 1/4" x 6" BENT PL x CONTINUOUS.
5. ℄ OF STEEL BEAM AND DIAGONAL CROSS-BRACING (NOT SHOWN FOR CLARITY).
6. L 3x3x1/4 AT EACH END OF JOIST FOR STEEL DECK SUPPORT AT FASCIA.
7. COPE BOTTOM FLANGE OF JOIST AS REQUIRED TO PASS 3x3 ANGLE.
8. ARCH. ROOFING/SIDING.

15 JOIST BOTTOM CHORD BEARING AT STEEL BEAM



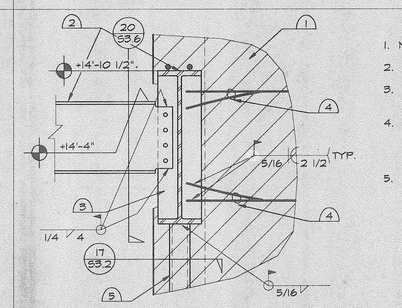
1. 8" MASONRY WALL - SOLID GROUTED.
2. TYPICAL VERTICAL REINFORCING AND DOWELS TO FOUNDATION PER G.S.N., SI.I.
3. ONE #8 VERTICAL AT JAMBS AND DOWELS TO MATCH AND LAP AT FOUNDATION.
4. 2-#5 x CONTINUOUS AT TOP AND BOTTOM OF OPENINGS AND AT 24" O.C. MAX. SPACING TYPICALLY.

16 COURTYARD WALLS AT GRIDS Ⓒ & Ⓔ



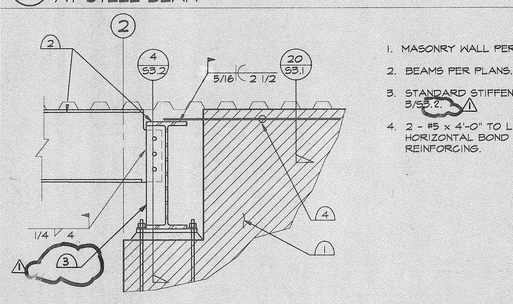
1. MASONRY WALL PER PLANS.
2. W16 x 40 STEEL LINTEL BEAM, MIN. 8" BEARING ONTO MASONRY AT ENDS. CETER BEAM UNDER WALL.
3. 2 - #5 x CONTINUOUS IN HORIZ. BOND BEAM.
4. DOWELS TO MATCH AND LAP VERTICAL WALL REINFORCING.
5. 6" CAP SLAB AND REINFORCING PER PLAN.
6. 3/4" Ø x 5" H.A.S. AT 24" O.C.

17 STEEL LINTEL BEAM



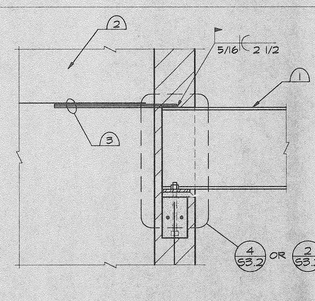
1. MASONRY WALL PER PLANS.
2. BEAMS PER PLANS.
3. STANDARD STIFFENERS PER 3/S3.2.
4. 2 - #5 x CONTINUOUS IN HORIZ. BOND BEAM - BEND AT END IN ORDER TO WELD TO INSIDE FACE OF STIFFENER.
5. TS 4 x 4 PER PLANS.

18 DRAG TIE CONNECTION TO WALL AT GRIDS Ⓒ & Ⓑ



1. MASONRY WALL PER PLANS.
2. BEAMS PER PLANS.
3. STANDARD STIFFENER PER 3/S3.2.
4. 2 - #5 x 4'-0" TO LAP WITH HORIZONTAL BOND BEAM REINFORCING.

19 DRAG TIE CONNECTION TO WALL AT GRIDS Ⓔ & ②



1. STEEL BEAM PER PLANS.
2. MASONRY WALL PER PLANS.
3. 2-#5 x 4'-0" TO LAP W/ 2-#5 x CONTINUOUS IN HORIZ. BOND BEAM.

20 STEEL BEAM DRAG TIE TO MASONRY WALL

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REGISTERED PROFESSIONAL ENGINEER
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TIMOTHY S. SEPPER
12-31-92
ARIZONA, U.S.A.

PROJECT NAME

LAKE HAVASU CITY POLICE HEADQUARTERS

LAKE HAVASU CITY, ARIZONA

DATE	1-7-92
ISSUED FOR	DATE
1 CITY PLAN CHECK	4-3-92

SHEET TITLE

STRUCTURAL DETAILS

SHEET NO.

S3.6

R/DA PROJECT NO.

91006