



KENNEDY SCHOOL OF GOVERNMENT
HARVARD UNIVERSITY

SCALE: NONE
JOB NO: 70611
DRAWN: JWS
DATE: 15 MAY 1977

REVISIONS:
DATE: 15 MAY 1977



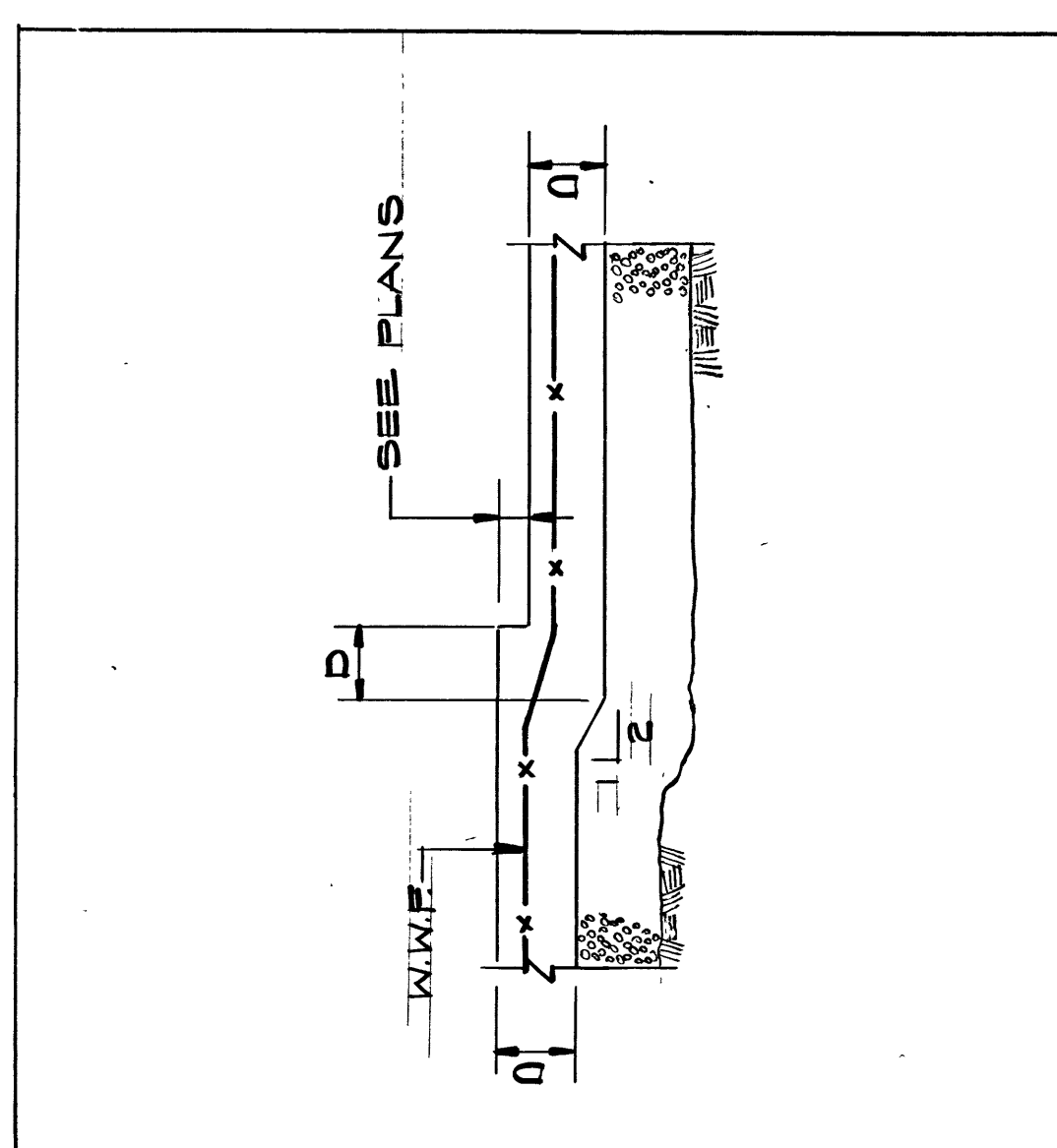
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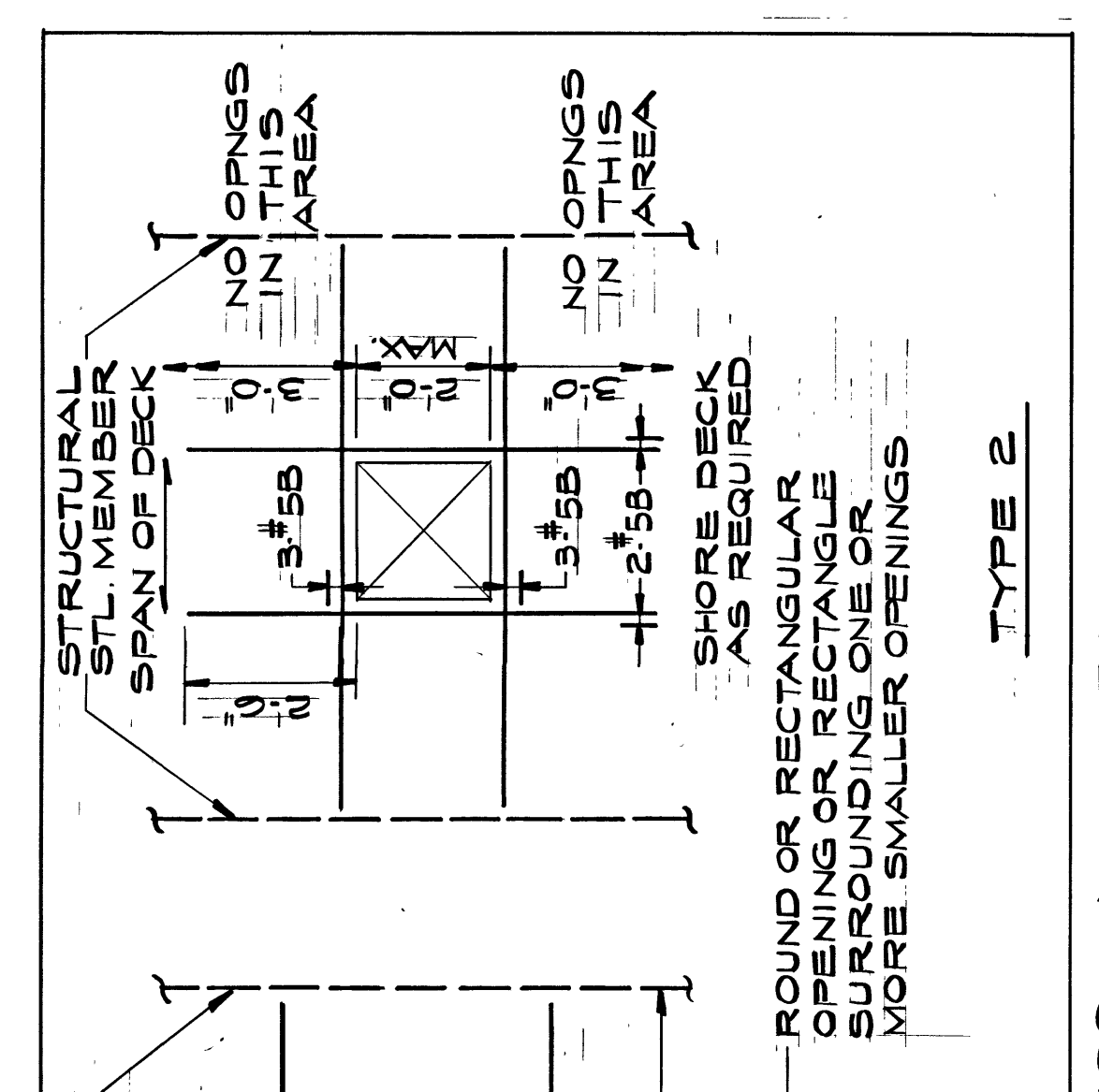
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GENERAL NOTES

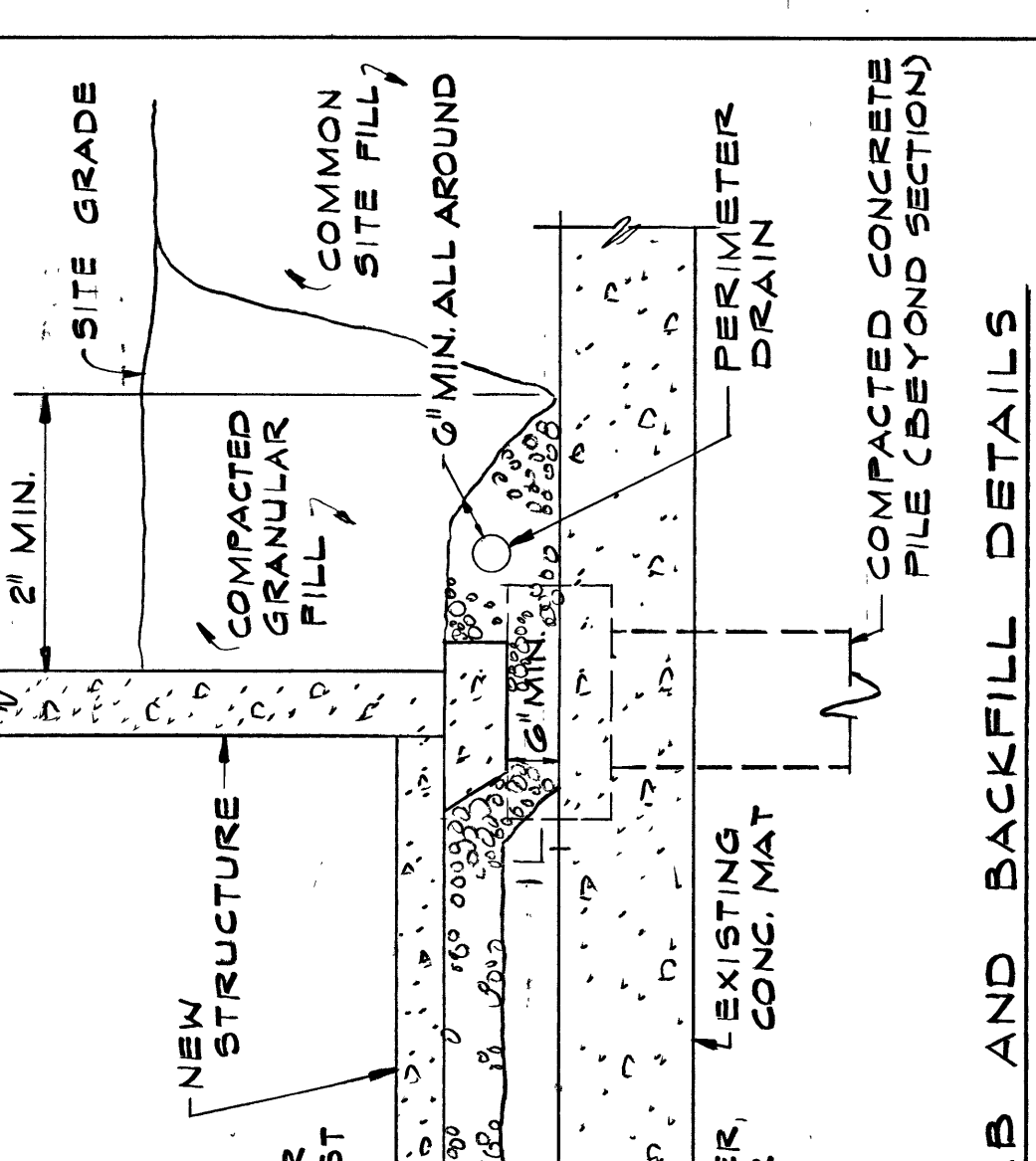
- FOUNDATIONS**
- ALL SHALL BE STEEL REINFORCED 18 GAGE MINIMUM CYLINDRICAL CORRUGATED STEEL CASING, 17-5/8" NOMINAL DIA., COMPACTED CONCRETE PILES WITH MINIMUM DESIGN LOAD CAPACITY OF 120 TONS.
 - IMMEDIATELY BEFORE FILLING WITH CONCRETE, PILE STEEL CASING SHALL BE SUBJECTED TO VISUAL INSPECTION AND APPROVED BY ARCHITECT.
 - UNLESS OTHERWISE SPECIFIED, PILE CAP DIMENSIONS SHALL NOT BE LESS THAN 9", THERE SHALL BE 2" OF CONCRETE BETWEEN TOP OF PILE AND STEEL REINFORCING BARS. PILE CAP DIMENSIONS SHALL BE ADJUSTED ACCORDINGLY.
 - EXTERIOR CONSTRUCTION SHALL IN GENERAL BE CARRIED DOWN NOT LESS THAN 4'-0" BELOW FINISHED EXTERIOR GRADE, EXCEPT THERE SHALL BE A MINIMUM OF 6" BETWEEN BOTTOM OF CONCRETE AND TOP OF EXISTING CONCRETE MAT, UNLESS SHOWN OTHERWISE.
 - CONCRETE SHALL CONTAIN 4% AIR ENTRAINMENT AND SHORING CONSTRUCTION SHALL BE CONDUCTED TO PREVENT SETTLEMENT AND CRACKING.
 - EXCAVATIONS FOR PILE CAPS, FOOTINGS, AND GRADE BEAMS SHALL BE FINISHED BY HAND.
 - FINISHED EXCAVATIONS SHALL BE REINFORCED BY ARCHITECT BEFORE ANY CONCRETE IS PLACED.
 - BACKFILL UNDER ANY PORTION OF STRUCTURE SHALL BE COMPACTED IN 6" LIFTS.
 - DO NOT BACKFILL AGAINST ANY CONCRETE WALLS UNTIL PERMANENT LATERAL STRUCTURAL SUPPORT SYSTEM IS IN PLACE AND OF FULL STRENGTH.
 - SHEETING, SHORING, BRACING, AND UNDERPINNING OF EXISTING STRUCTURES (INCLUDING UTILITY TUNNELS AND TRENCHES), AND DESIGN OF SAME, SHALL BE SOLE RESPONSIBILITY OF CONTRACTOR.
- CONCRETE**
- CONCRETE WORK SHALL CONFORM TO BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-71) AND SPECIFICATIONS FOR STRUCTURAL CONCRETE (ACI 301-72, REVISED 1975).
 - CONCRETE SHALL BE CONTROLLED CONCRETE, MIXED AND PLACED UNDER INSPECTION BY OWNER'S TESTING AGENCY.
 - CONCRETE SHALL ATTAIN MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AGE AS FOLLOWS:
 (A) ENLARGED PILE BASES 4000 PSI (NORMALWEIGHT)
 (B) PILE CAPS 5000 PSI (NORMALWEIGHT)
 (C) PILE CASINGS 5000 PSI (NORMALWEIGHT)
 (D) GRADE BEAMS, SLABS, CHIMNEYS 4000 PSI (NORMALWEIGHT)
 (E) OTHER CONCRETE 4000 PSI (NORMALWEIGHT)
 (F) OTHER CONCRETE 4000 PSI (NORMALWEIGHT)
 - APPROVAL OF ARCHITECT
 - CONCRETE SHALL BE PLACED WITHOUT HORIZONTAL CONSTRUCTION JOINTS EXCEPT WHERE SHOWN OR NOTED. VERTICAL CONSTRUCTION JOINTS AND STOPS IN CONCRETE WORK SHALL BE MADE AT MIDSPAN OR AT POINTS OF MINIMUM SHEAR.
 - CONTRACTOR SHALL VERIFY ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR PERFECTION OF LOCATION AND DIMENSIONS BEFORE CONSTRUCTION.
 - SIZE OF CONCRETE PLACEMENT, UNLESS SHOWN OTHERWISE, SHALL BE AS FOLLOWS:
 MAX. LENGTH (FT.) MAX. AREA (SQ. FT.)
 (A) WALLS AND FOOTINGS 40 1200
 (B) GRADE BEAMS 50 2500
 (C) CONCRETE ON STEEL DECK 60 2600
 - MINIMUM OF 72 HOURS SHALL ELAPSE BETWEEN ADJACENT CONCRETE PLACEMENTS.
- REINFORCING STEEL**
- REINFORCING STEEL SHALL CONFORM TO BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-71) AND MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (ACI 315).
 - REINFORCING STEEL SHALL BE NEW STEEL CONFORMING TO THE FOLLOWING:
 BARS, COLUMN TIES ASTM A615 GRADE 60
 WELDED WIRE FABRIC, ASTM A615 GRADE 60
 - PROVIDE WIRE 2 X 2 - 16168 (CALCULATED) IN MIDDLE OF CONCRETE FILL FOR STEEL STAIRS.
 - PROVIDE WIRE 4 X 4 - 10110 AROUND STRUCTURAL STEEL MEMBERS TO BE ENCASED IN CONCRETE.
 - PROVIDE AND SCHEDULE ON SHOP DRAWINGS SUPPORT BARS AND ACCESSORIES REQUIRED TO HOLD REINFORCING SECURELY IN POSITION.
 - WHERE CALLED FOR, CONTINUOUS REINFORCING BARS SHALL BE RUN CONTINUOUSLY AROUND CORNERS AND LAPPED AT REQUIRED SPACES OR WOKED AT DISCONTINUOUS ENDS. MINIMUM LENGTH OF LAP SHALL BE CLASS B TENSION LAP SPICE.
 - REINFORCING STEEL SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS.
 - REINFORCING STEEL IS CALLED FOR IN SECTION. SUCH REINFORCING SHALL ALSO BE CONSIDERED TO APPLY TYPICALLY AT SIMILAR OR SIMILAR SHEAR SECTION ELSEWHERE.
 - REINFORCING STEEL IS NOT SHOWN ON DRAWINGS. PROVIDE REINFORCEMENT IN ACCORDANCE WITH APPLICABLE TYPICAL DETAILS OR SIMILAR TO THAT SHOWN FOR MOST NEARLY SIMILAR CONDITIONS, AS DETERMINED BY ARCHITECT. IN NO CASE SHALL REINFORCEMENT BE LESS THAN MINIMUM REINFORCEMENT PERMITTED BY APPLICABLE CODES, NOR LESS THAN:
 (A) BEAM STRIPPS - #3 @ 12" O.C.
 (B) BEAM STRIPPS SUPPORTS - #3 @ 12" O.C.
 (C) WALLS - #4 @ 16" O.C.
 (D) STRUCTURAL SLABS - #4 @ 16" O.C.
 (E) WALLS - #4 @ 16" O.C.
 (F) MINIMUM CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS:
 (A) UNFORMED SURFACES IN CONTACT WITH GROUND OR EXPOSED TO WEATHER (PILE CAPS, FOOTINGS) 3"
 (B) FORMED SURFACES IN CONTACT WITH GROUND OR EXPOSED TO WEATHER (WALLS, GRADE BEAMS) 1-1/2"
 (C) INTERIOR WALL SURFACES AND SLABS 1"
 (D) EXTERIOR SLABS 1"
 (E) CLEARANCE TO COLUMN TIES OR BEAM STRIPPS 1-1/2"
 (F) CLEARANCE TO COLUMN TIES OR BEAM STRIPPS 1-1/2"
 MAXIMUM DEVIATION FROM THESE REQUIREMENTS SHALL BE: 1/2" FOR SECTIONS OVER 10" THICK
 - REINFORCING STEEL INSTALLED IN FINAL POSITION SHALL BE REVIEWED AND APPROVED BY ARCHITECT PRIOR TO CONCRETE PLACEMENT.
- STRUCTURAL STEEL**
- STRUCTURAL STEEL SHALL CONFORM TO SPECIFICATION FOR BRIGES AND CONNECTIONS FOR STEEL BUILDINGS AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS (AISC 1989); CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIGES (AISC 1976); AND CODE FOR WELDING IN BUILDING CONSTRUCTION (AWS D1.1-75).
 - STRUCTURAL STEEL SHALL BE NEW STEEL CONFORMING TO ASTM A36. STEEL TUBES SHALL CONFORM TO ASTM A500 GRADE B - Fy = 46 KSI.
 - STRUCTURAL STEEL SHALL BE DETAILING AND DESIGNED, WHERE REQUIRED, IN ACCORDANCE WITH ALSO MANUAL OF STEEL CONSTRUCTION AND ALSO HORIZONTAL WELLS IN AREA OF NEW.
 - WELDED CONNECTIONS SHALL BE MADE BY APPROVED CERTIFIED WELDERS USING FULLER METAL CONFORMING TO E70XX OR F70-EXXX (AISC PERMISSIBLE STRESS OF 21 KSI). PROVIDE END RETURNS ON FILLET WELDS.
 - ANCHOR BOLTS, LEVELING PLATES, OR BEARING PLATES SHALL BE LOCATED AND BUILT INTO CONNECTING WORK, PRESET BY TEMPLATES OR SIMILAR METHODS. PLATES SHALL BE SET IN FULL BEDS OF NON-SHRINK GROUT.
 - WHERE STRUCTURAL STEEL IS NOT SHOWN ON DRAWINGS PROVIDE CONNECTIONS TO STRUCTURAL STEEL SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL BY ARCHITECT FOR EACH SPECIFIC CASE.
 - FIELD SETTING OF STRUCTURAL STEEL OR ANY FIELD MODIFICATIONS TO STRUCTURAL STEEL SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL BY ARCHITECT FOR EACH SPECIFIC CASE.
 - STRUCTURAL STEEL FRAMING SHALL BE TRUE AND PLUMB BEFORE CONNECTIONS ARE FINALLY BOLTED OR WELDED.
 - TEMPORARY ERECTION BRACING AND SUPPORTS SHALL BE PROVIDED TO HOLD STRUCTURAL STEEL FRAMING SECURELY IN POSITION. SUCH TEMPORARY BRACING AND SUPPORTS SHALL NOT BE REMOVED UNTIL PERMANENT BRACING HAS BEEN INSTALLED AND FLOOR SLABS HAVE ATTAINED 75 PERCENT OF SPECIFIED CONCRETE STRENGTH.
- STEEL DECK AND SHEAR CONNECTORS**
- STEEL DECK AND SHEAR CONNECTOR WORK SHALL CONFORM TO SPECIFICATION FOR DESIGN OF LIGHT GAGE COLD-FORMED STEEL STRUCTURAL MEMBERS IN BUILDING CONSTRUCTION (AWS D1.1-75).
 - STEEL DECK SLAB CONSTRUCTION CONSISTS OF LIGHTWEIGHT CONCRETE CAST ON 3" COMPOSITE STEEL DECK (20 GAGE).
 - GROSS SECTIONS OF STEEL DECK ARE ONLY REPRESENTED DIAGRAMMATICALLY ON DRAWINGS.
 - STRUCTURAL SLAB THICKNESS GIVEN (E.G., 6-1/4") IS DIMENSION FROM TOP OF CONCRETE TO BOTTOM OF STEEL DECK.
 - IN ADDITION TO SHEAR CONNECTORS, STEEL DECK SHALL BE FASTENED BY 3/4" DIA. X 6" HEADED STUDS CONFORMING TO ASTM A108, GRADES 1010, 1015, 1017, OR 1020.
 - NUMBER OF SHEAR CONNECTORS REQUIRED PER BEAM IS INDICATED BY "X" S.C. THIS NUMBER IS BASED ON AN INDIVIDUAL SHEAR CONNECTOR DESIGN CAPACITY OF 3.6 KIPS. FOR BEAMS OVER 12'-0" LONG, WHERE SHEAR CONNECTORS ARE NOT INDICATED, PROVIDE SHEAR CONNECTORS AT 2'-0" O.C.
 - SHEAR CONNECTORS SHALL BE EQUALLY SPACED OVER LENGTH OF BEAM AND CENTERED THEREON. WHERE NUMBER OF STEEL DECK CORRUGATIONS AVAILABLE IS LESS THAN NUMBER OF SHEAR CONNECTORS STARTING FROM EACH END OF BEAM AND CONTINUING TOWARD CENTER UNTIL IT IS POSSIBLE TO BELIEVE TO SINGLE CONNECTOR IN EACH CORRUGATION. CONNECTORS SHALL NOT BE SPACED CLOSER THAN 3" TRANSVERSE AND NOT LESS THAN 4-1/2" LONGITUDINAL.
- GENERAL**
- STRUCTURAL WORK SHALL CONFORM TO COMMONWEALTH OF MASSACHUSETTS STATE BUILDING CODE (1975), INCLUDING LATEST AMENDS, AND CONTRACT DOCUMENTS. IN CASE OF CONFLICT, MOST STRINGENT REQUIREMENT SHALL GOVERN.
 - UNLESS SHOWN, NOTED, OR REQUIRED ELSEWHERE IN CONTRACT DOCUMENTS, REQUIREMENTS NOTED BELOW SHALL APPLY.
 - CONTRACTOR SHALL VERIFY AND COORDINATE DIMENSIONS RELATED TO THIS PROJECT.
 - CONTRACTOR SHALL VERIFY ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR PERFECTION OF LOCATION AND DIMENSIONS BEFORE CONSTRUCTION. DIMENSIONS, HEIGHTS, SLOPES, OFFSETS, AND OTHER PROJECT REQUIREMENTS NOT SHOWN ON STRUCTURAL DRAWINGS SHALL BE THE RESPONSIBILITY OF CONTRACTOR.
 - OPERINGS WITH DIMENSION LESS THAN 12" ARE GENERALLY NOT SHOWN IN SLABS AND WALLS.
- DESIGN LOADS**
- STRUCTURE IS DESIGNED TO SUPPORT ITS OWN DEAD LOAD AND AN ALLOWANCE FOR PARTITION LOADS (28 PSF) PLUS LIVE LOADS AS FOLLOWS:
 (A) ROOFS: SNOW DRIFTS UP TO 50 PSF
 (B) MECHANICAL ROOMS 150 PSF
 (C) FORM STAIRS, CORRIDORS 100 PSF
 (D) TYPICAL FLOOR 75 PSF
 (E) FIXED SEAT CLASSROOMS 60 PSF
 (F) WIND: ZONE 3, EXPOSURE B
 LESS THAN 30 FT 17 PSF
 30 FT 25 PSF
 50 FT 25 PSF
 100 FT 31 PSF
 - SEISMIC: IN ACCORDANCE WITH SECTION 718.0 EARTHQUAKE LOAD, COMMONWEALTH OF MASSACHUSETTS STATE BUILDING CODE.



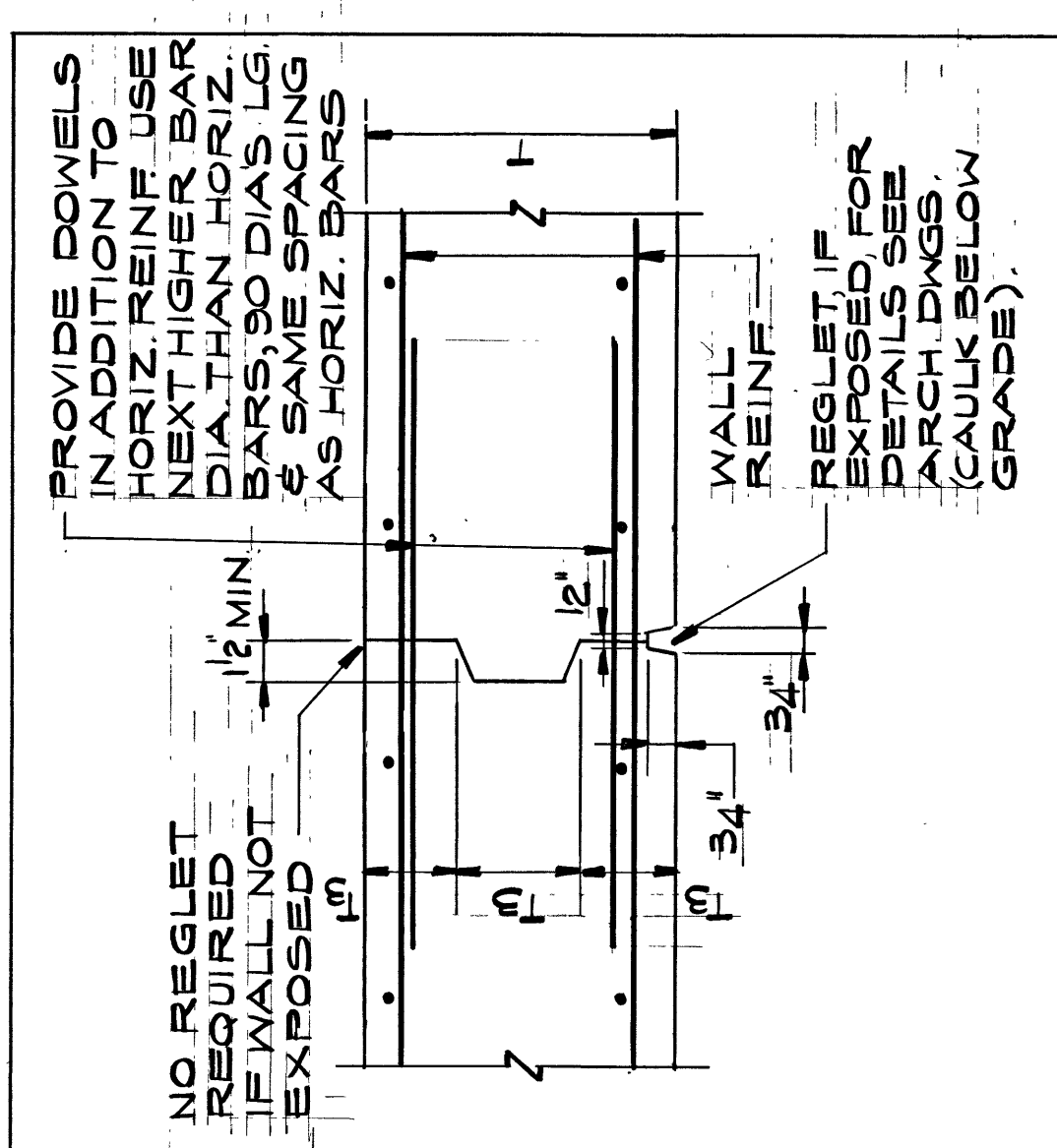
DEPRESSED SLAB ON GRADE



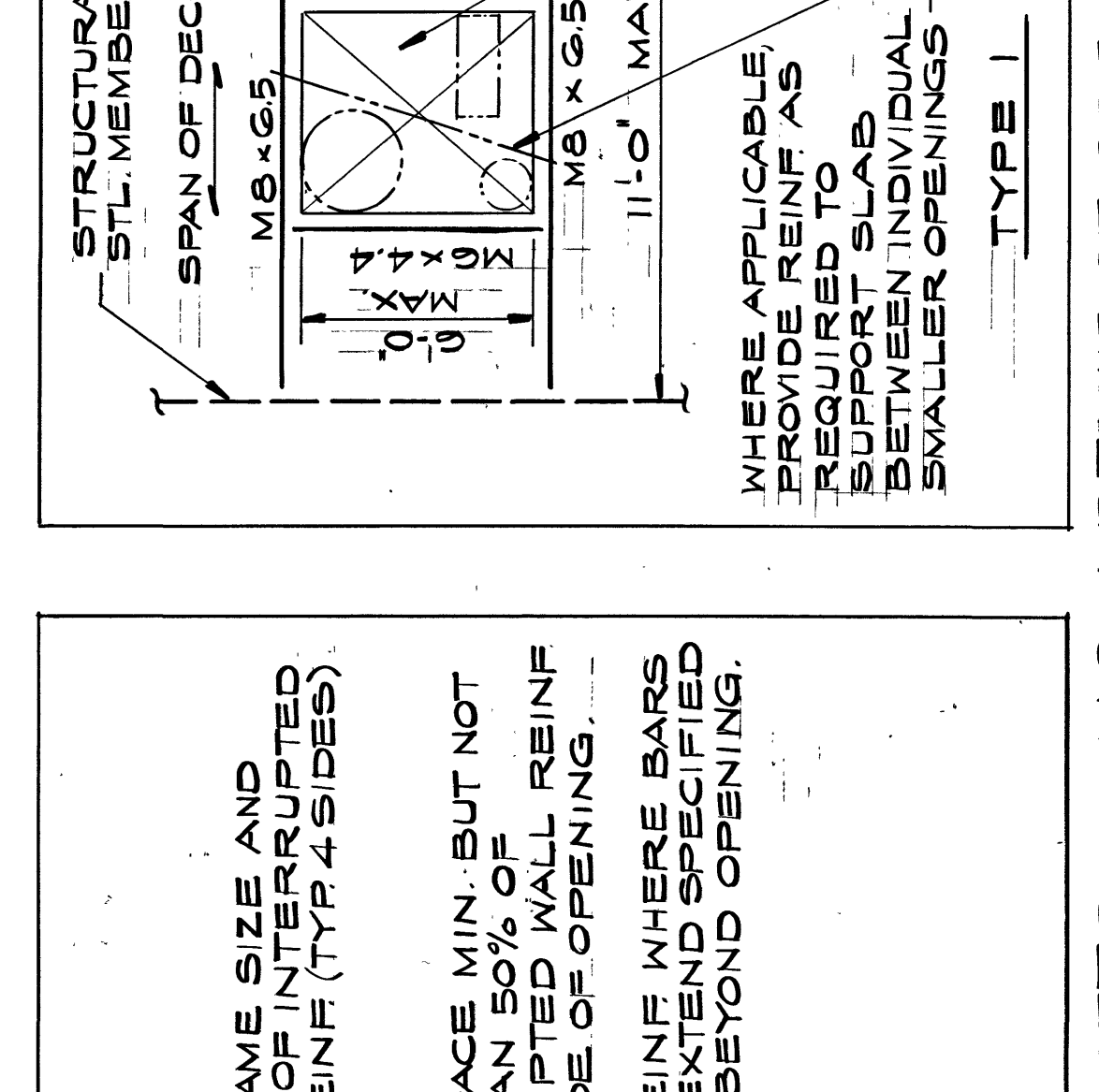
WALL CONSTRUCTION JOINT



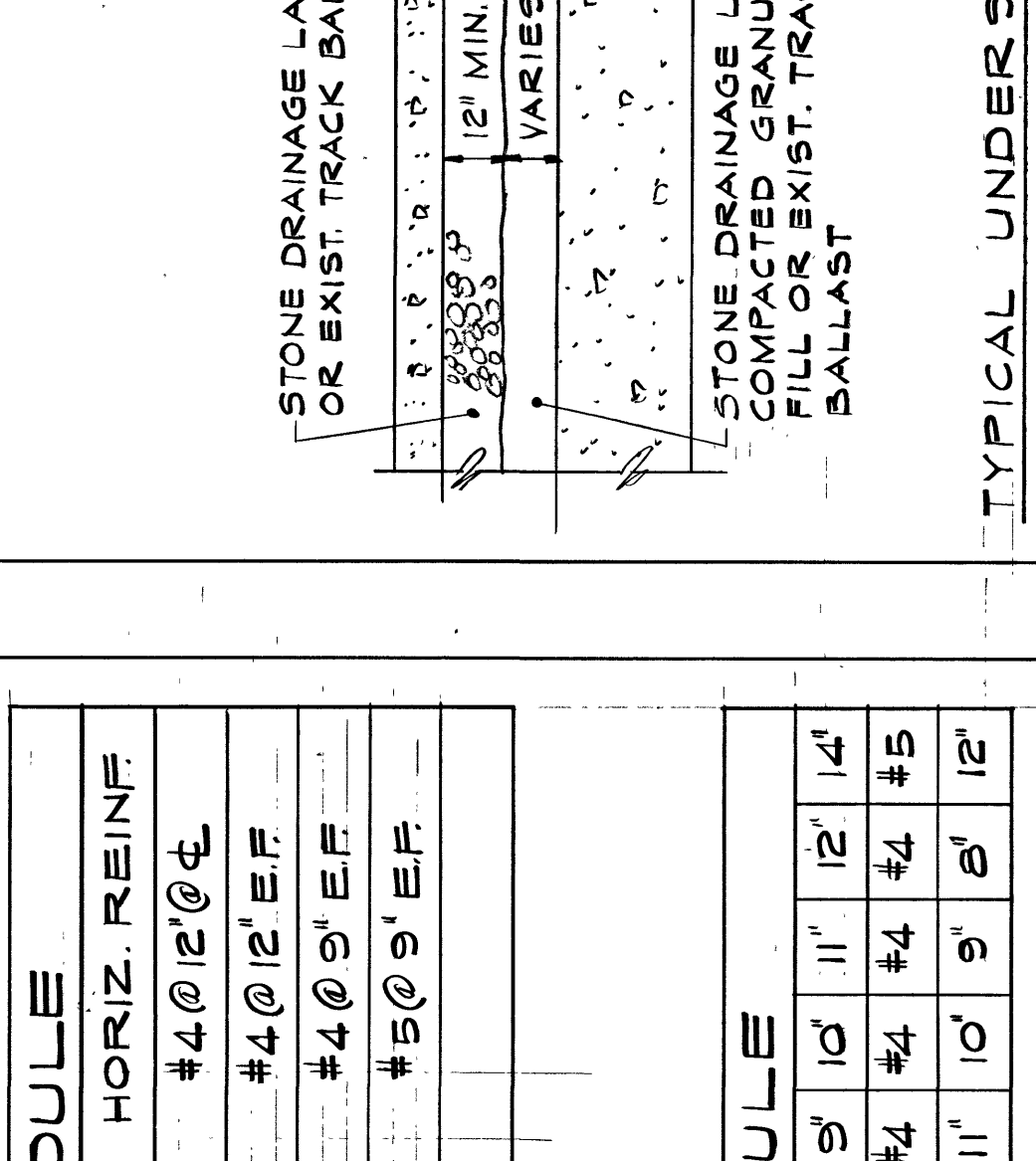
REINFORCEMENT IN COMPOSITE STEEL DECK



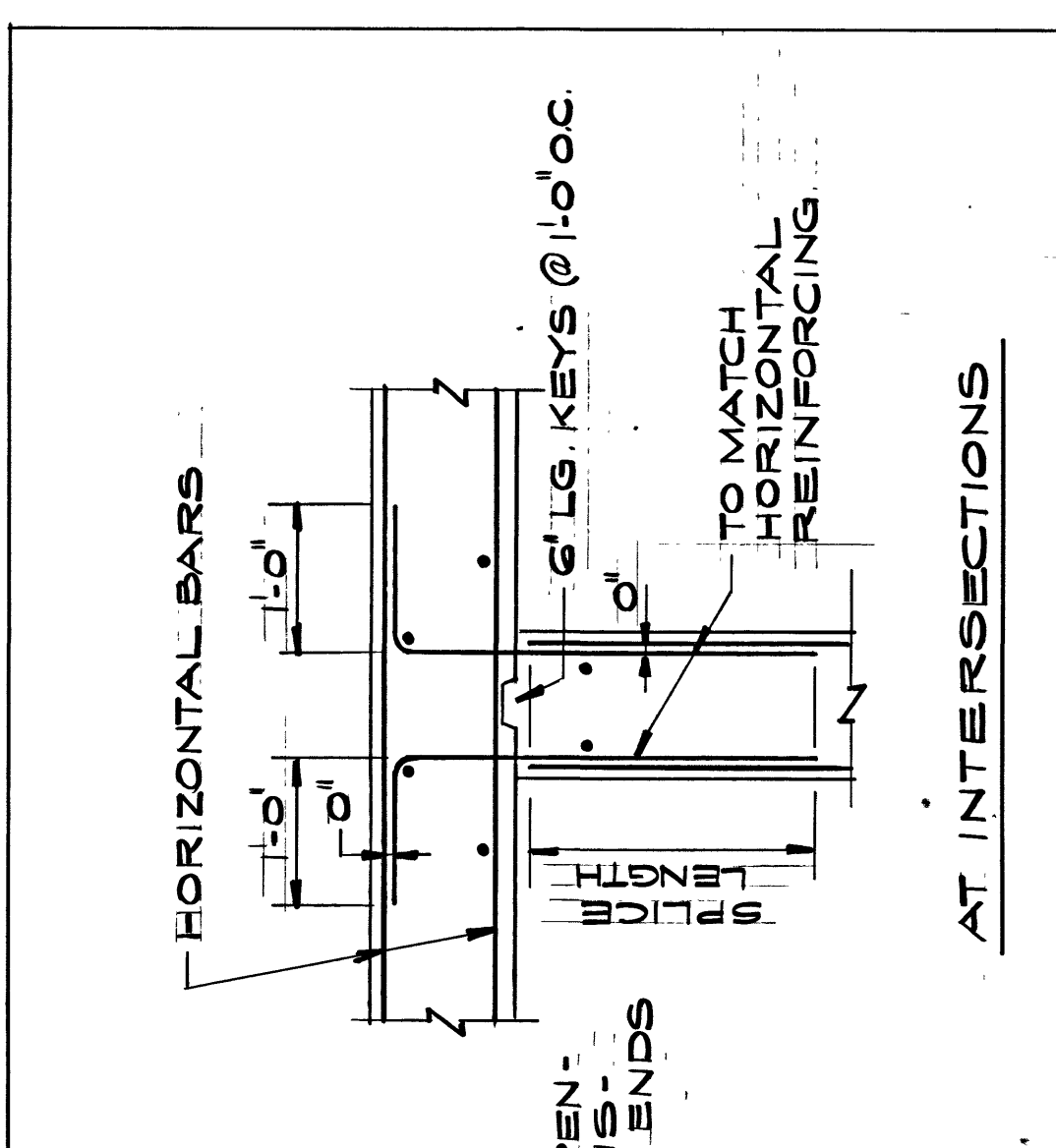
PLAN OF HORIZONTAL REINFORCEMENT OF CONCRETE WALLS



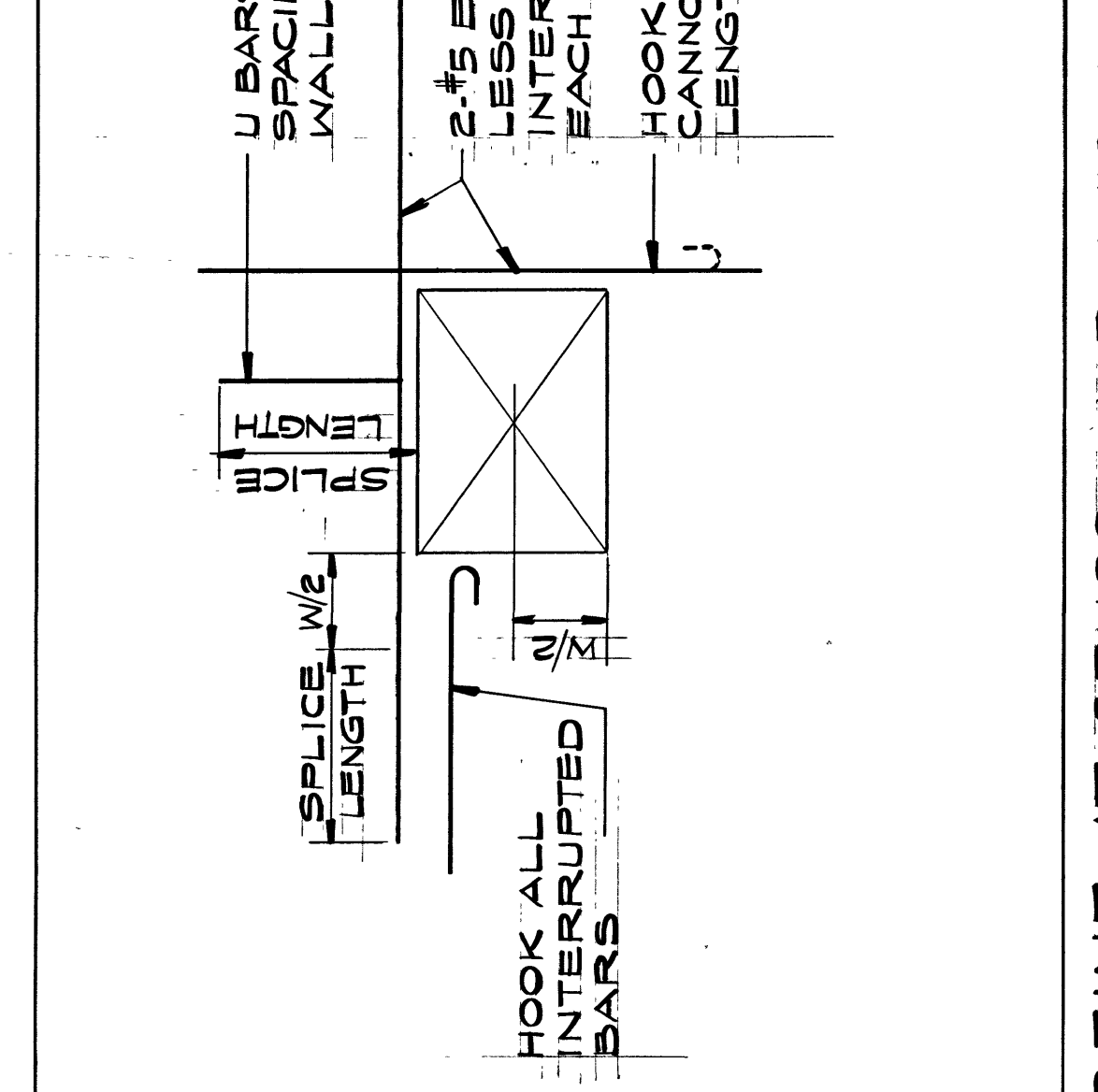
WALL CONSTRUCTION JOINT



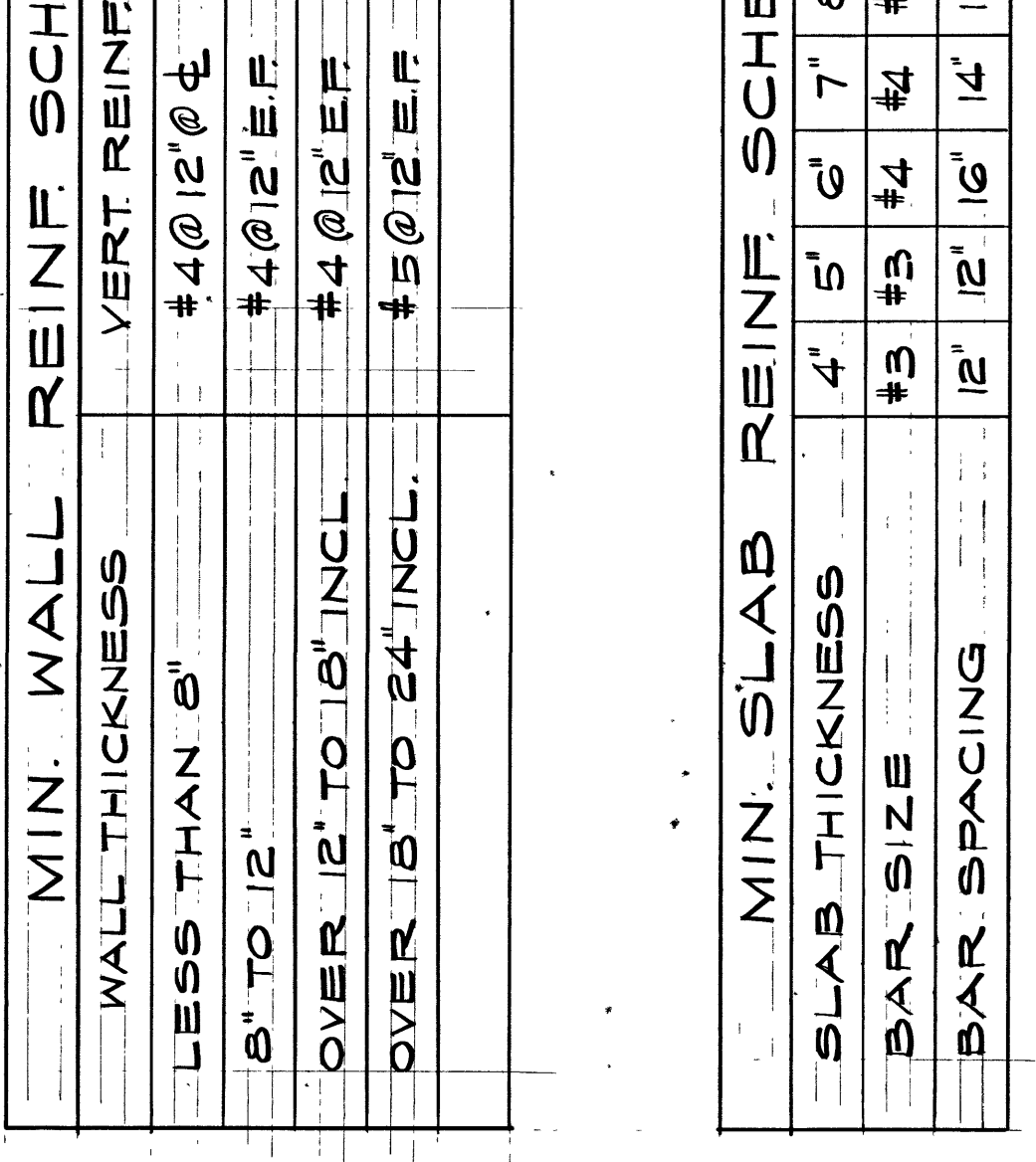
REINFORCEMENT IN COMPOSITE STEEL DECK



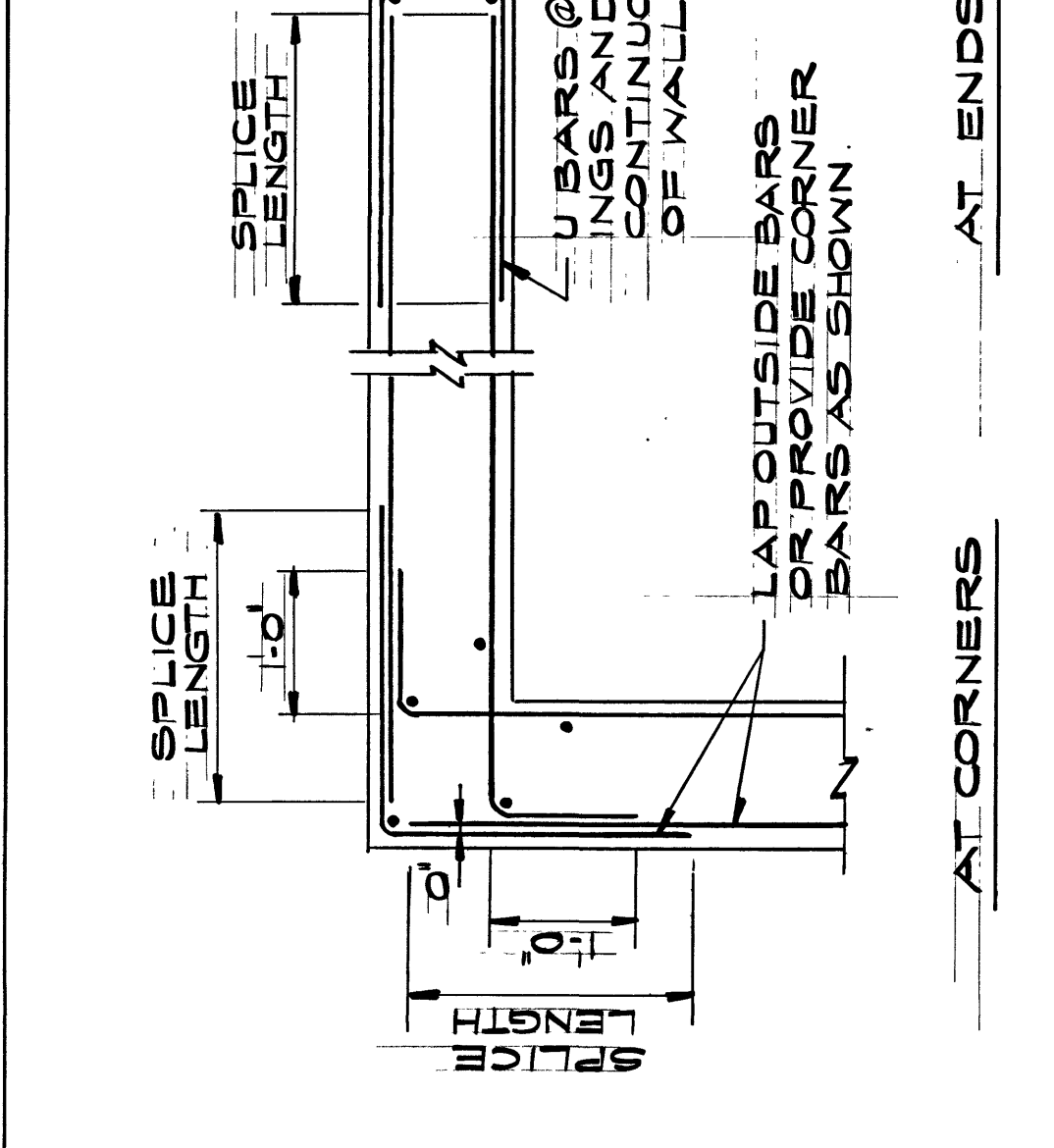
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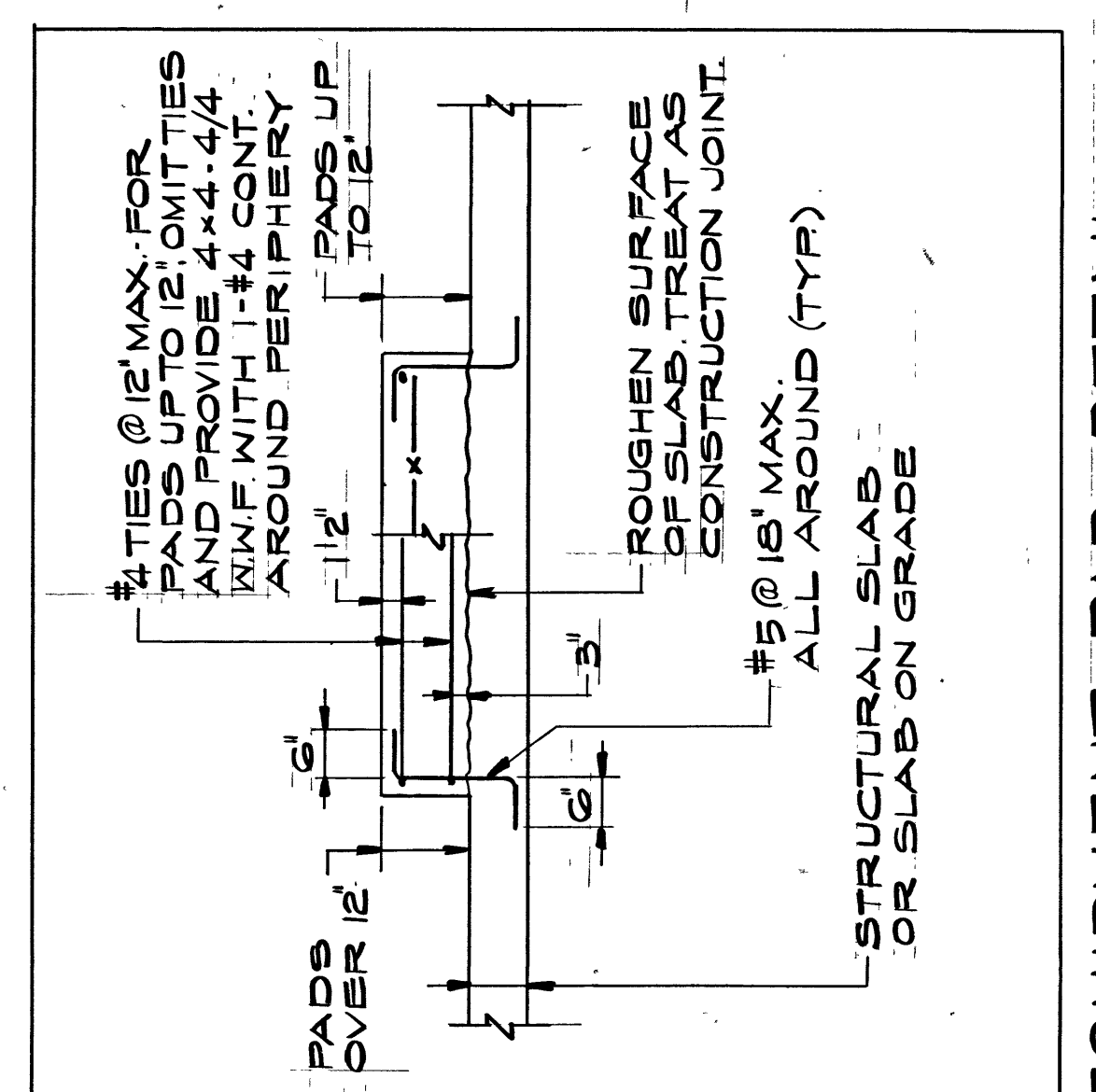
WALL CONSTRUCTION JOINT



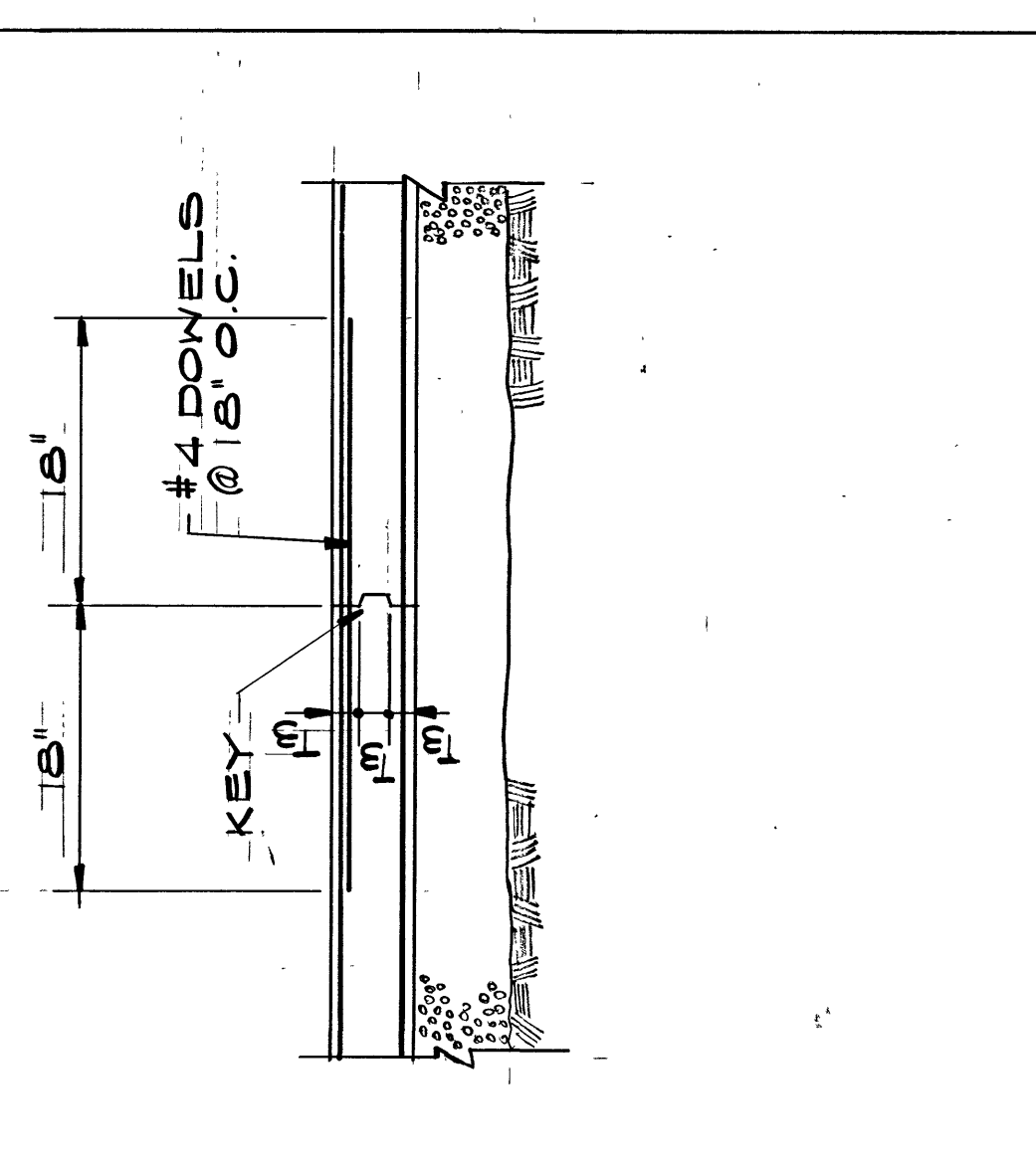
REINFORCEMENT IN COMPOSITE STEEL DECK



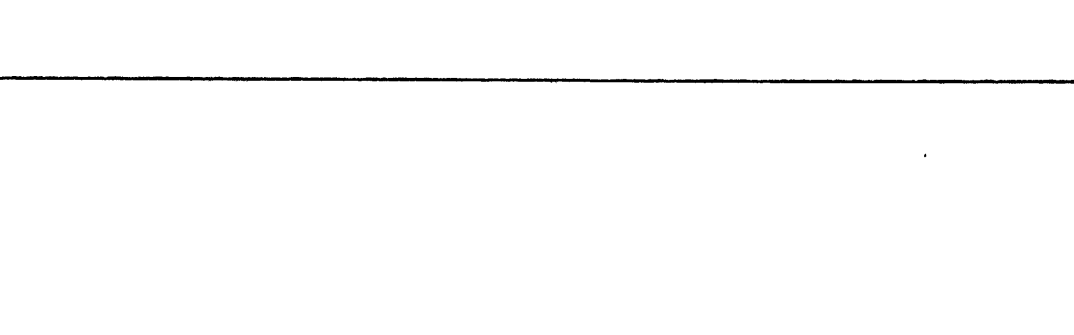
PLAN OF HORIZONTAL REINFORCEMENT OF CONCRETE WALLS



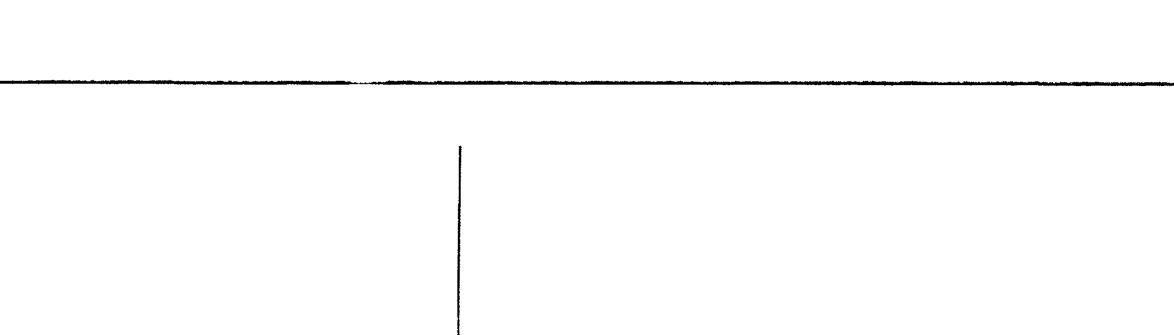
WALL CONSTRUCTION JOINT



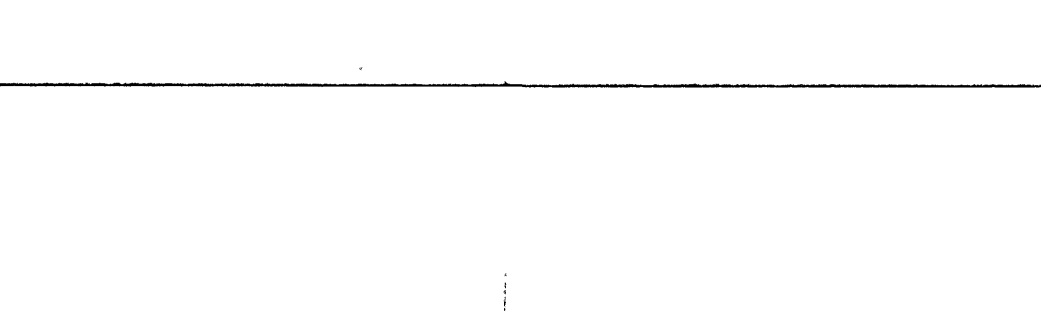
REINFORCEMENT IN COMPOSITE STEEL DECK



PLAN OF HORIZONTAL REINFORCEMENT OF CONCRETE WALLS



WALL CONSTRUCTION JOINT



REINFORCEMENT IN COMPOSITE STEEL DECK

STEEL LINTEL SCHEDULE
UNLESS OTHERWISE SPECIFIED ON THE DRGS, PROVIDE AND INSTALL LINTEL ANGLES FOR MSRY OPENINGS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE (INSTALL LONG LEG VERTICAL)

MAX. MASONRY OPENING	4" WALLS	6" WALLS	8" WALLS	12" WALLS	WHERE MALL THICKNESS IS LARGER THAN
5'-0" & LESS	1L-3" x 3" x 1/2"	2L-3" x 3" x 1/2"	2L-3" x 3" x 1/2"	2L-3" x 3" x 1/2"	2L-3" x 3" x 1/2"
5'-0"	1L-4" x 3" x 1/2"	2L-4" x 3" x 1/2"	2L-4" x 3" x 1/2"	2L-4" x 3" x 1/2"	2L-4" x 3" x 1/2"
6'-0"	1L-5" x 3" x 1/2"	2L-5" x 3" x 1/2"	2L-5" x 3" x 1/2"	2L-5" x 3" x 1/2"	2L-5" x 3" x 1/2"
6'-0"	1L-5" x 3" x 1/2"	2L-5" x 3" x 1/2"	2L-5" x 3" x 1/2"	2L-5" x 3" x 1/2"	2L-5" x 3" x 1/2"

PROVIDE 6" MIN. BEARING AT EACH END BUT NOT LESS THAN 1" PER FOOT OF SPAN. FILL 2 COURSES OF MSRY BELOW BEARING WITH MORTAR, WHERE LINTELS CONNECT TO EXISTING STRUCTURE OR WELDED CONNECTION PLATES. (SUBMIT SHOP DRAWINGS FOR APPROVAL)

CONCRETE BLOCK LINTELS	REINFORCING CLEAR SPAN
6" x 6"	2'-0" MAX.
8" x 8"	2'-0" MAX.
8" x 8"	2'-0" MAX.
8" x 8"	2'-0" MAX.

5000 PSI CONCRETE FILL
SEE SCHED. BELOW

MIN. WALL REINFORCEMENT SCHEDULE

WALL THICKNESS	VERT REINF	HORIZ REINF
LESS THAN 6"	4 @ 12" @ 0	4 @ 12" @ 0
6" TO 12"	4 @ 12" @ 0	4 @ 12" @ 0
OVER 12" TO 18" INCL	4 @ 12" @ 0	4 @ 12" @ 0
OVER 18" TO 24" INCL	5 @ 12" @ 0	5 @ 12" @ 0

MIN. SLAB REINFORCEMENT SCHEDULE

SLAB THICKNESS	4'	5'	6'	7'	8'	9'	10'	11'	12'	14'
BAR SIZE	#3	#3	#4	#4	#4	#4	#4	#4	#4	#5
BAR SPACING	12"	12"	12"	16"	14"	12"	11"	10"	9"	8"

CONST. JT. FOR SLAB ON GRADE SCHEDULES

MIN. WALL REINFORCEMENT SCHEDULE	MIN. SLAB REINFORCEMENT SCHEDULE
WALL THICKNESS	SLAB THICKNESS
LESS THAN 6"	4'
6" TO 12"	5'
OVER 12" TO 18" INCL	6'
OVER 18" TO 24" INCL	7'
	8'
	9'
	10'
	11'
	12'
	14'

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