

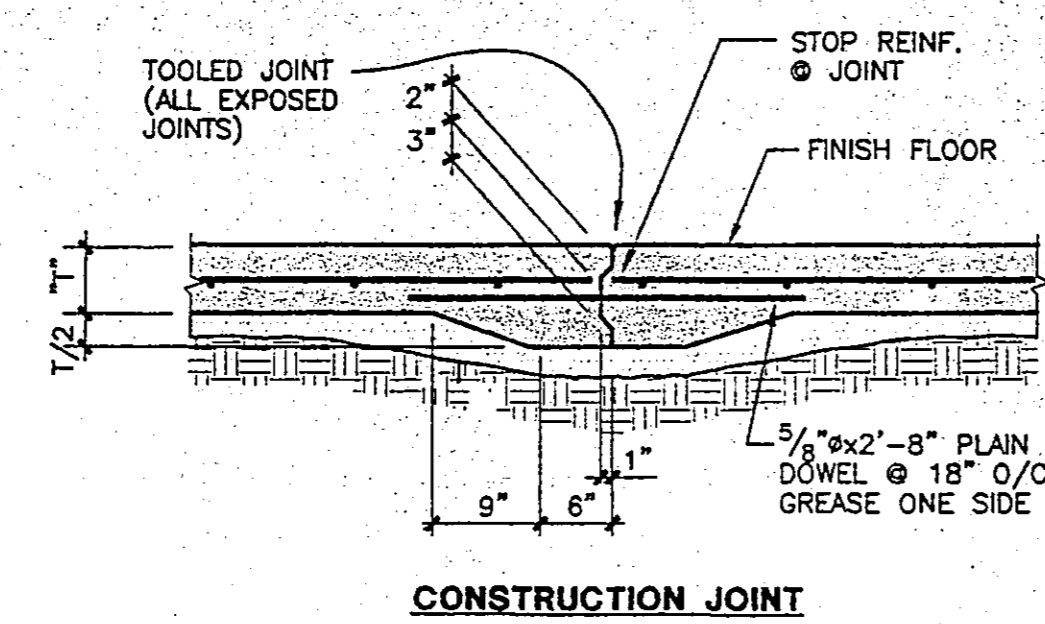
**NOTES:**

- 6" DIA. SLEEVES AND SMALLER, SCHEDULE 40 STEEL PIPE OR SCHEDULE 60 PVC PIPE
- 8" DIA. SLEEVE AND LARGER, .25" THICK STEEL PIPE.
- STEEL PIPE SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
- SLEEVE MAY BE OMITTED IF HOLE IS CORE DRILLED. CORE DRILLING IS SUBJECT TO ENGINEER'S APPROVAL.

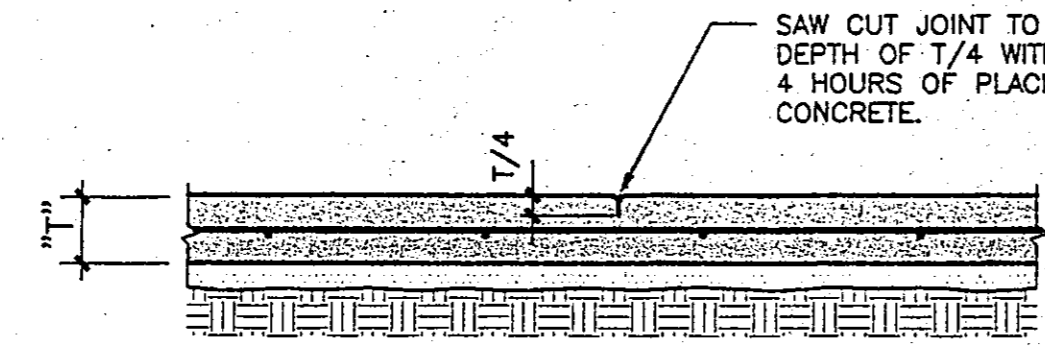
**SLEEVE INSTALLATION THRU WALL**

17

**SLAB JOINTS**



**CONSTRUCTION JOINT**

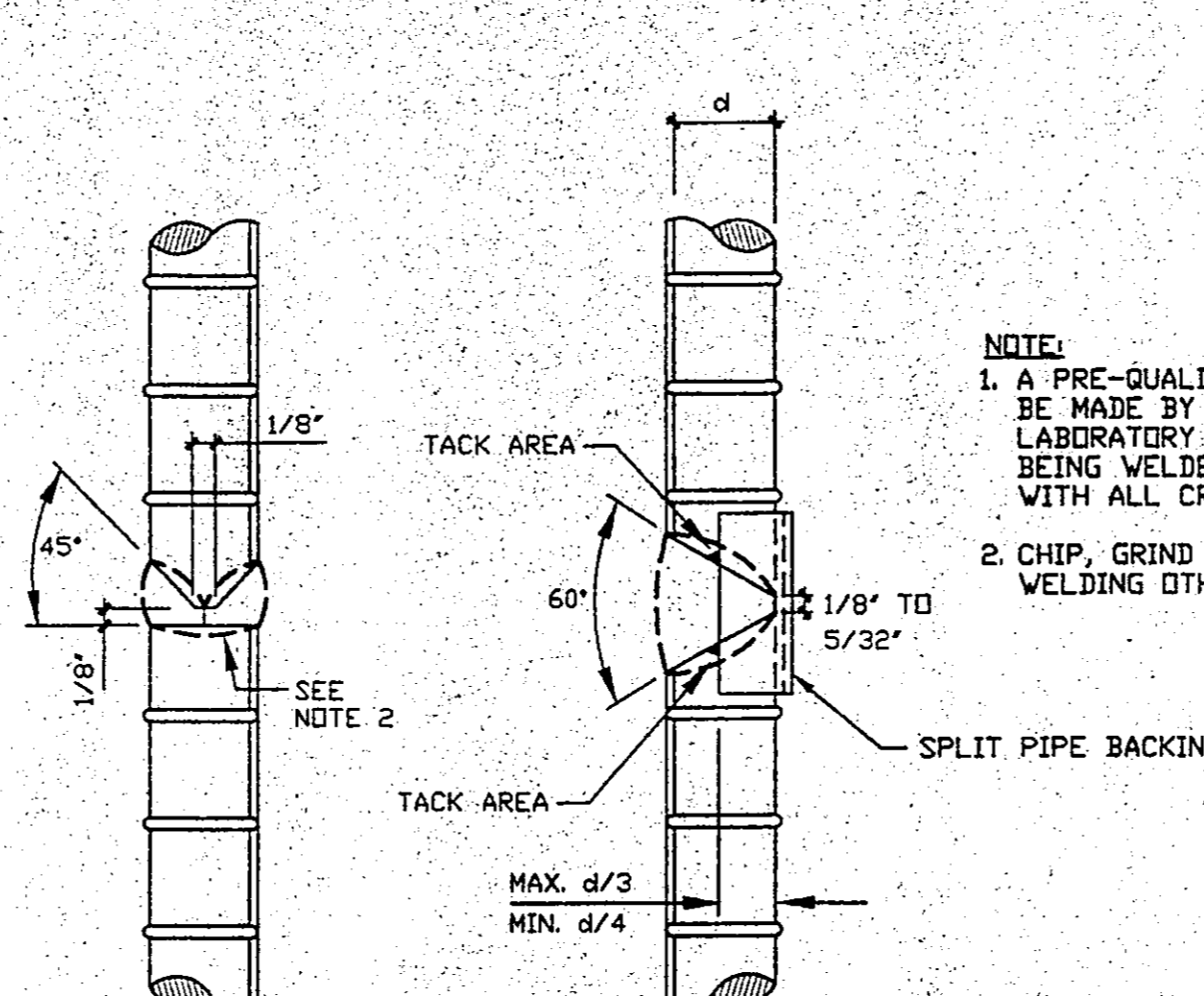


**CONTROL JOINT**

LOCATE JOINTS PER PLAN, TYPICALLY ON COLUMN LINES AND REINFRANT CORNERS. JOINT SPACING SHALL NOT EXCEED 15'-0" FOR 6" SLABS, 18'-0" FOR 6" SLABS AND SHALL HAVE A MAXIMUM LENGTH TO WIDTH RATIO OF 2:1 TYP. U.N.O.

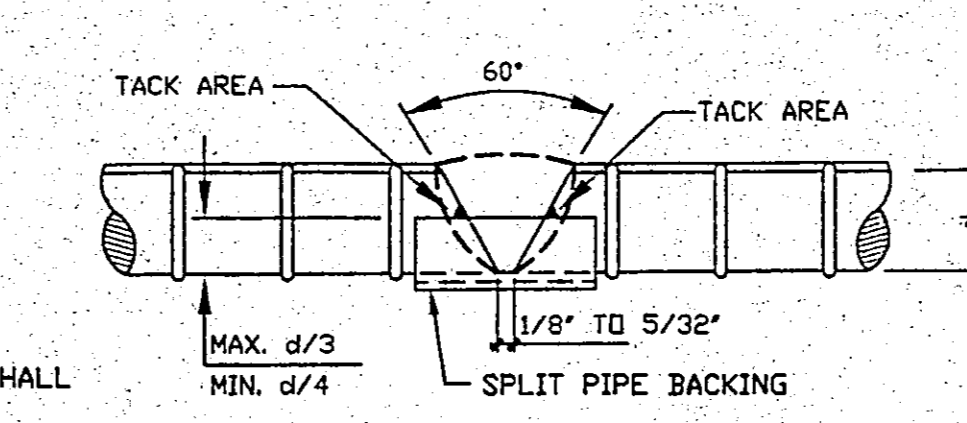
13

**TYPICAL REBAR WELDING**



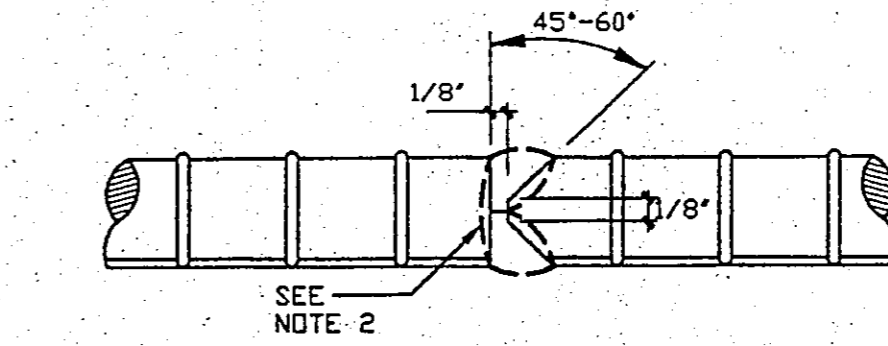
**VERT. REINF. (no. 9 AND LARGER)**  
CADWELL C-SERIES MAY BE SUBSTITUTED FOR VERT. BAR SPLICE

**VERT. REINF. (no. 8 AND SMALLER)**  
CADWELL C-SERIES MAY BE SUBSTITUTED FOR VERT. BAR SPLICE



**HORIZ. REINF. (no. 8 AND SMALLER)**

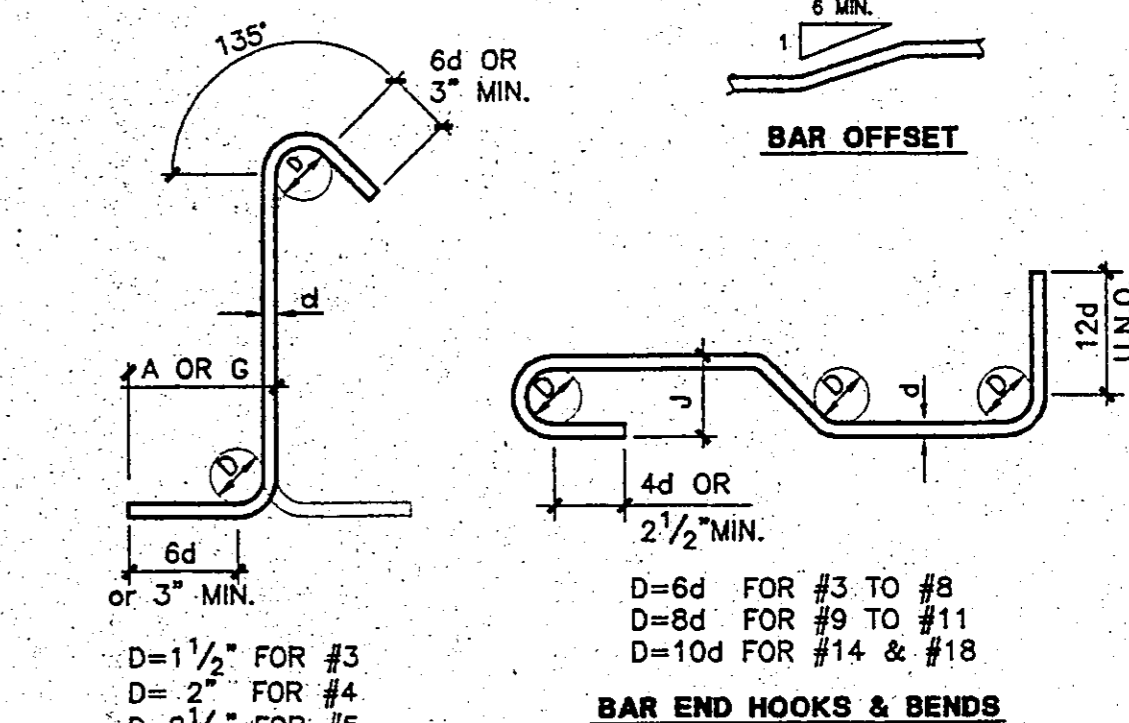
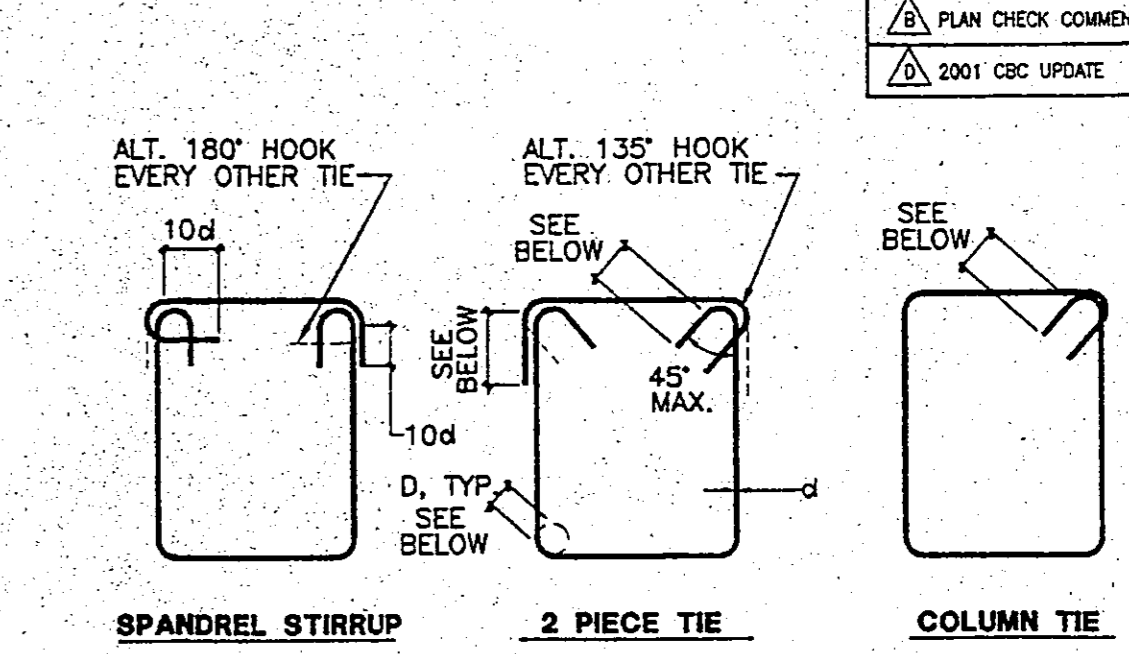
CADWELL T-SERIES MAY BE SUBSTITUTED FOR HORIZ. BAR SPLICE



**HORIZ. REINF. (no. 9 AND LARGER)**

CADWELL T-SERIES MAY BE SUBSTITUTED FOR HORIZ. BAR SPLICE

5



BAR SIZE	D	180° HOOKS
#3	2 1/4"	3"
#4	3"	4"
#5	3 3/4"	5"
#6	4 1/2"	6"
#7	5 1/4"	7"
#8	6"	8"
#9	6 3/4"	11 1/4"
#10	10 1/4"	13 1/4"

**REBAR BENDS**

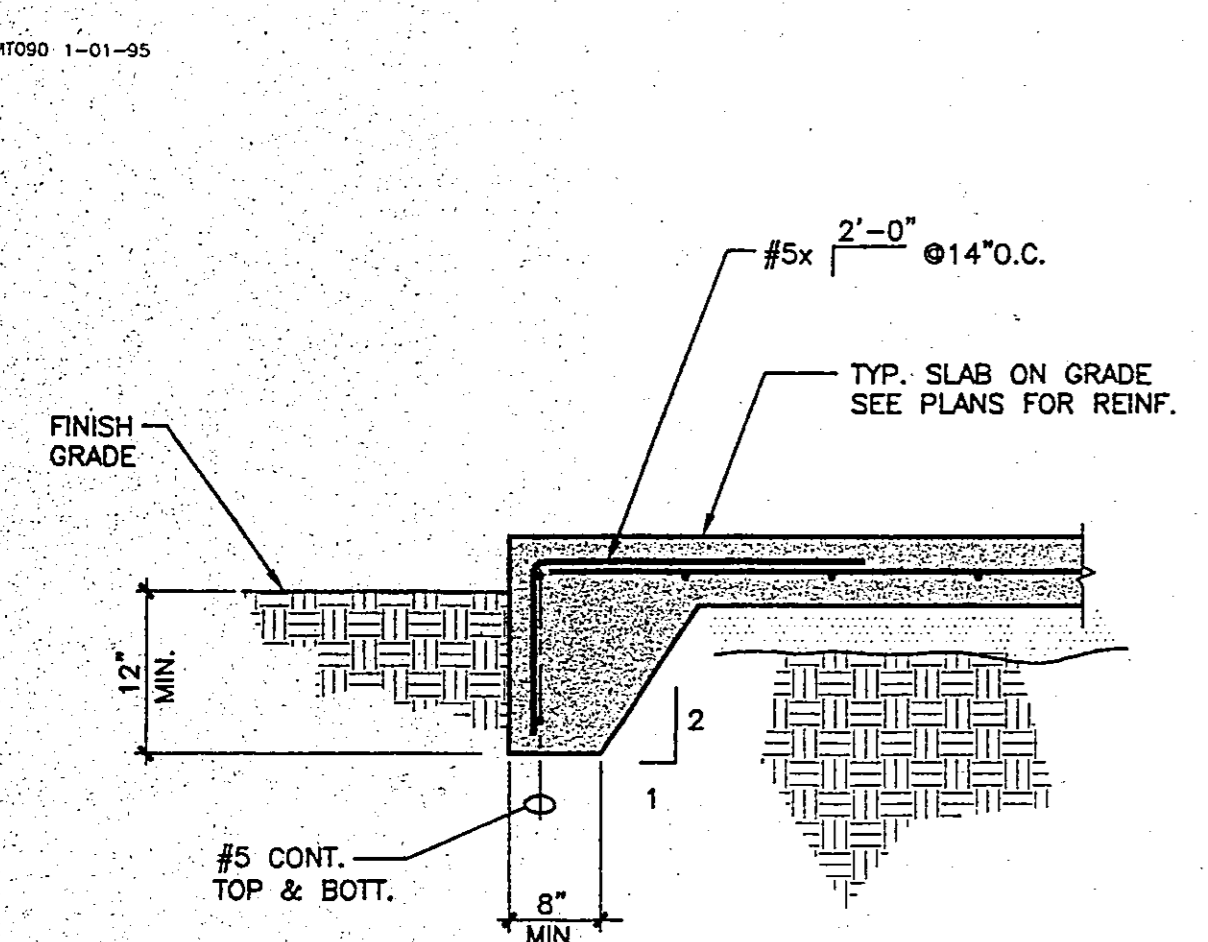
2

**REINFORCEMENT DEVELOPMENT LENGTH, L<sub>d</sub> AND LAP LENGTH, L<sub>s</sub> (INCHES)**

TYPE	f <sub>c</sub> or f' <sub>m</sub> (PSI)	DEVELOPMENT OR LAP	REINFORCEMENT SIZE									
			#3	#4	#5	#6	#7	#8	#9	#10	#11	
NORMAL WT. CONC.	3,000	STD. DEV.	17	22	28	33	48	55	62	70	78	
		TOP DEV.	22	29	36	43	63	72	81	91	101	
		STD. LAP	22	29	36	43	63	72	81	91	101	
NORMAL WT. CONC.	4,000	STD. DEV.	15	19	24	29	42	48	54	61	67	
		TOP DEV.	19	25	31	37	54	62	70	79	87	
		STD. LAP	19	25	31	37	54	62	70	79	87	
NORMAL WT. CONC.	5,000	STD. DEV.	13	17	22	26	38	43	48	54	60	
		TOP DEV.	17	23	28	34	49	56	63	71	78	
		STD. LAP	17	23	28	34	49	56	63	71	78	
NORMAL WT. CONC.	6,000	STD. DEV.	12	16	20	24	34	39	44	50	55	
		TOP DEV.	16	21	26	31	45	51	57	64	71	
		STD. LAP	16	21	26	31	45	51	57	64	71	
LT. WT. CONC.	3,000	STD. DEV.	22	29	36	43	63	72	81	91	101	
		TOP DEV.	28	38	47	56	81	93	105	118	131	
		STD. LAP	28	38	47	56	81	93	105	118	131	
LT. WT. CONC.	4,000	STD. DEV.	19	25	31	37	54	62	70	79	87	
		TOP DEV.	25	33	41	49	71	81	91	102	114	
		STD. LAP	25	33	41	49	71	81	91	102	114	
CMU	1,500	DEV./LAP	37	49	61	73	85	97	110	-	-	
		2,000	DEV./LAP	32	42	53	63	74	85	95	-	-
		2,500	DEV./LAP	29	38	47	57	66	75	85	-	-
3,000	DEV./LAP	26	35	43	52	60	69	78	-	-		

**NOTES:**

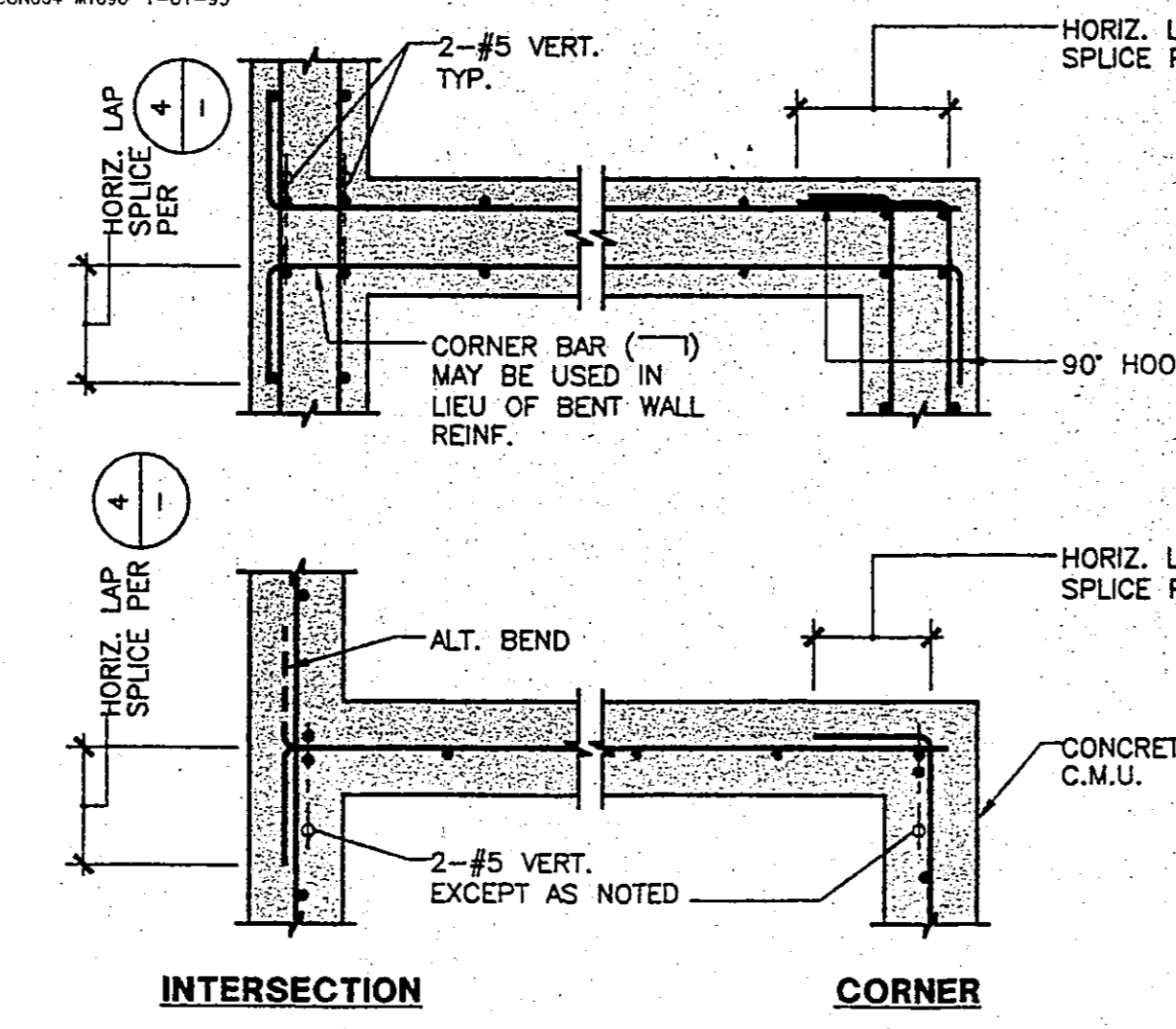
- ALL DETAILING OF REINFORCING SHALL COMPLY WITH THIS SCHEDULE UNLESS SPECIFICALLY DETAILED OTHERWISE ON THE DRAWINGS.
- REINFORCEMENT DEVELOPMENT LENGTH AND SPLICE TABLE IS BASED ON UNCOATED GRADE 60 STEEL PER 2001 CALIFORNIA BUILDING CODE (CBC) SECTIONS 1812A AND 1921A.5.4 (CONCRETE) AND SECTION 2108A (CMU).
- d<sub>b</sub> INDICATES BAR DIAMETER.
- TOP REINFORCING IS HORIZONTAL REINFORCEMENT THAT HAS MORE THAN TWELVE INCHES OF CONCRETE PLACED BELOW IT.
- LAP LENGTHS SHOWN MEET REQUIREMENTS FOR A CLASS "B" SPLICE.
- CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED SHALL NOT BE LESS THAN THE LARGER OF 2 BAR DIA. OR 2" CLEAR COVER SHALL NOT BE LESS THAN THE LARGER OF THE BAR DIA. SIZE OR PER GENERAL NOTES. OTHERWISE BARS SHALL BE SPLICED BY WELDING OR MECHANICAL CONNECTORS.
- TYPE 1 - WELDED SPLICE (DIRECT BUTT SPLICES-FULL PENETRATION) #5 AND SMALLER SINGLE-BEVEL GROOVE WELD #6 AND LARGER DOUBLE-BEVEL GROOVE WELD WELDS SHALL HAVE THE ABILITY TO DEVELOP 125 PERCENT OF THE YIELD STRENGTH FOR THE SPLICED REINFORCEMENT (75 KSI)
- TYPE 1 - MECHANICAL CONNECTORS MECHANICAL CONNECTORS SHALL BE TENSION-COMPRESSION TYPE WITH THE ABILITY TO DEVELOP 125 PERCENT OF THE YIELD STRENGTH FOR THE SPLICED REINFORCEMENT (75KSI). ALSO, MECHANICAL CONNECTORS SHALL HAVE AND BE INSTALLED PER AN EVALUATION REPORT FROM ICBO EVALUATION SERVICE, INC.
- A STANDARD HOOK SHALL BE PROVIDED WHERE L<sub>d</sub> IS UNATTAINABLE DUE TO SPACE RESTRICTIONS (REFER TO HOOKED BAR SCHEDULE).
- SMALLER BAR LAP LENGTH SHALL BE USED WHEN SPLICING DIFFERENT BAR SIZES.
- AT CONCRETE WALLS, SPLICES IN HORIZONTAL REINFORCEMENT SHALL BE STAGGERED.



**SLAB EDGE**

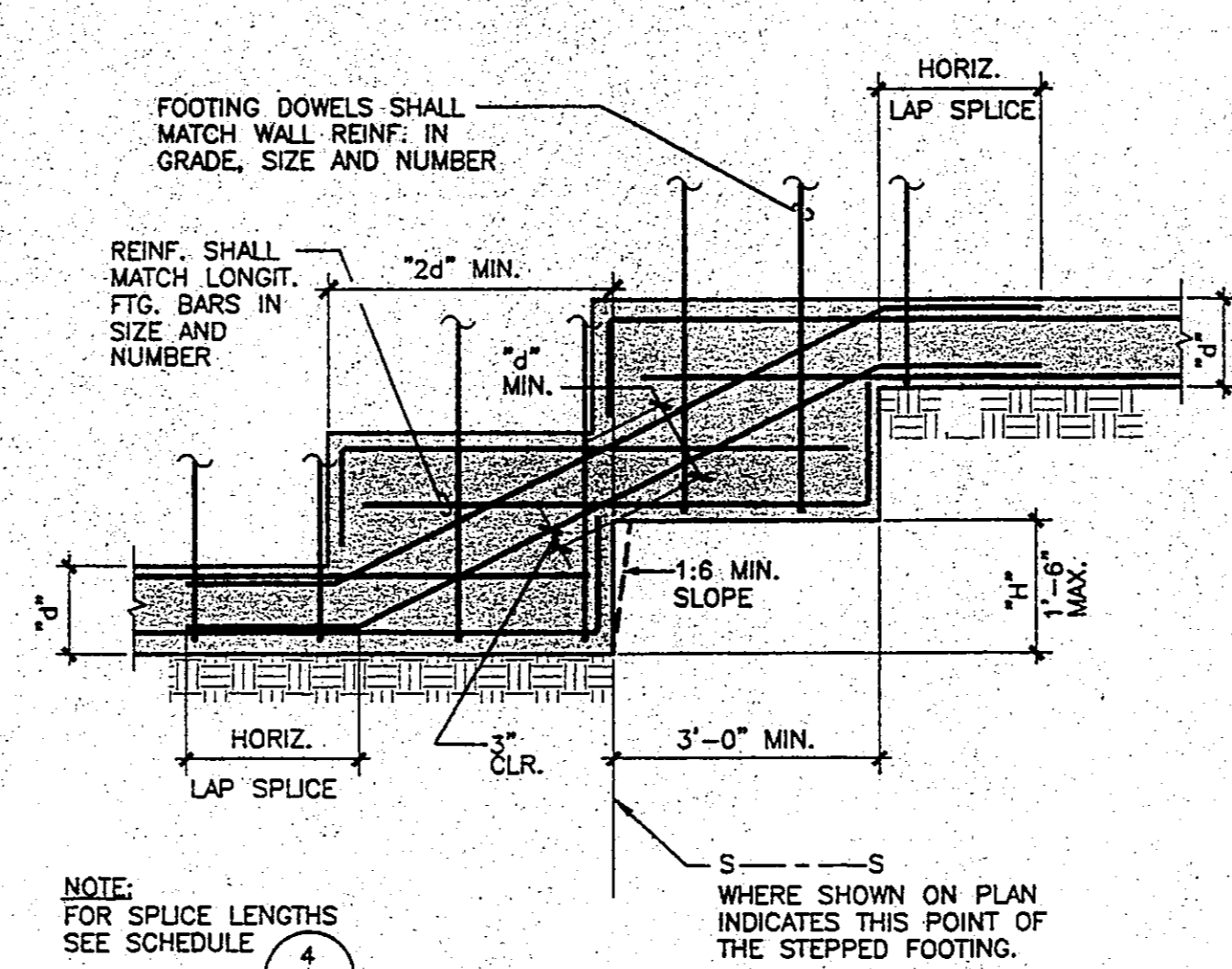
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**REINFORCING AT CONC. WALLS AND FOOTINGS**



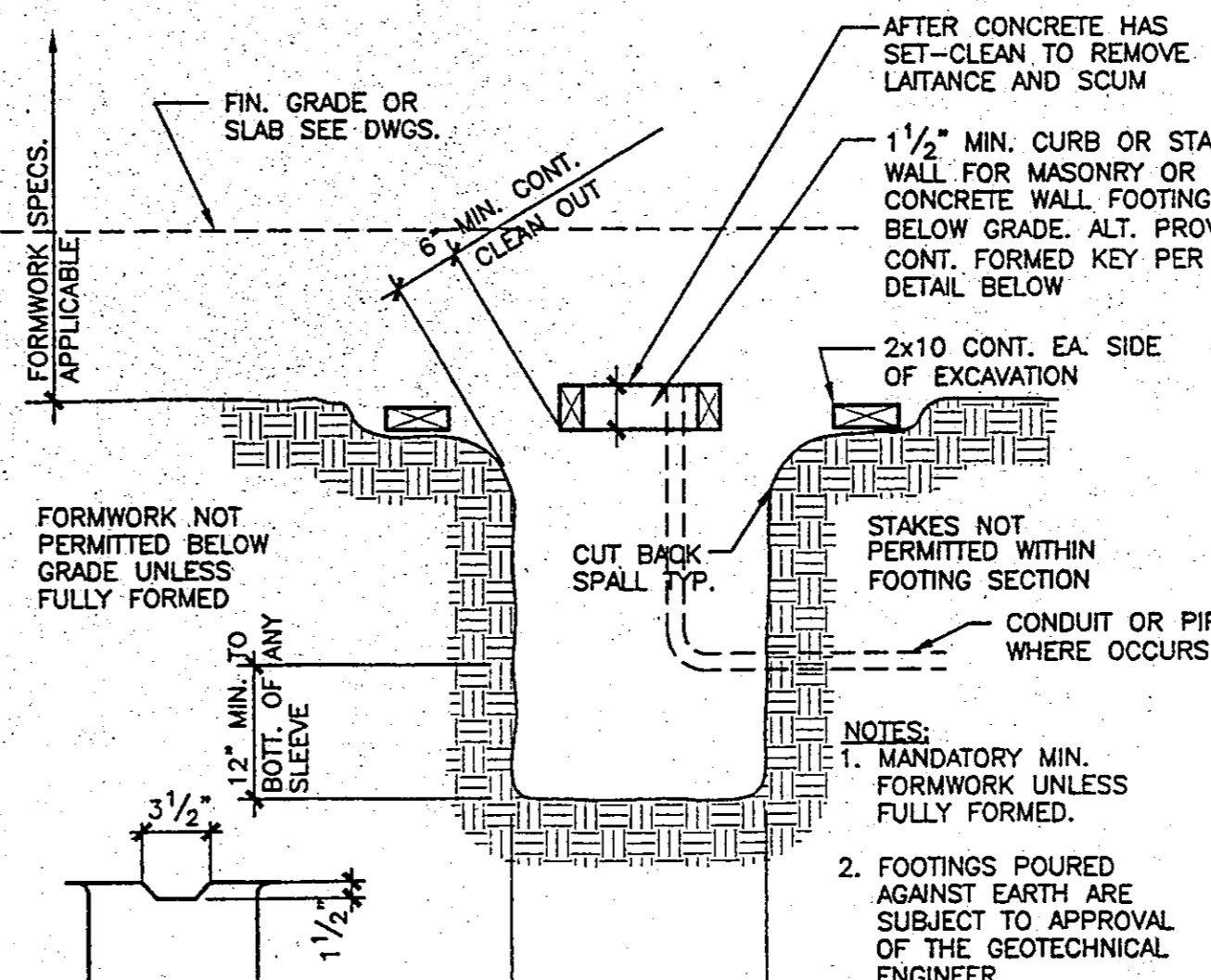
14

**STEPPED FOOTING**

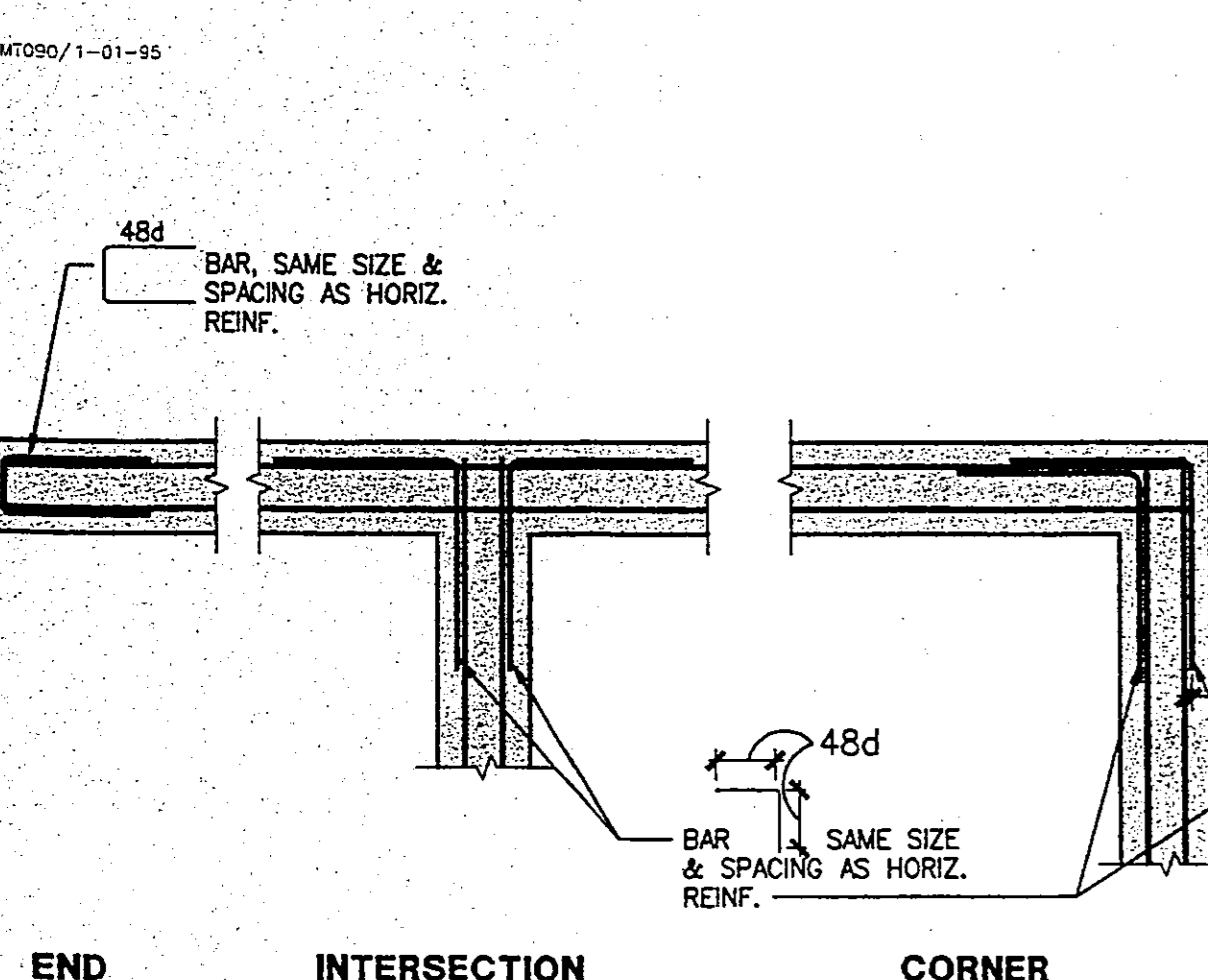


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**CONTINUOUS FOOTING PREPARATION**



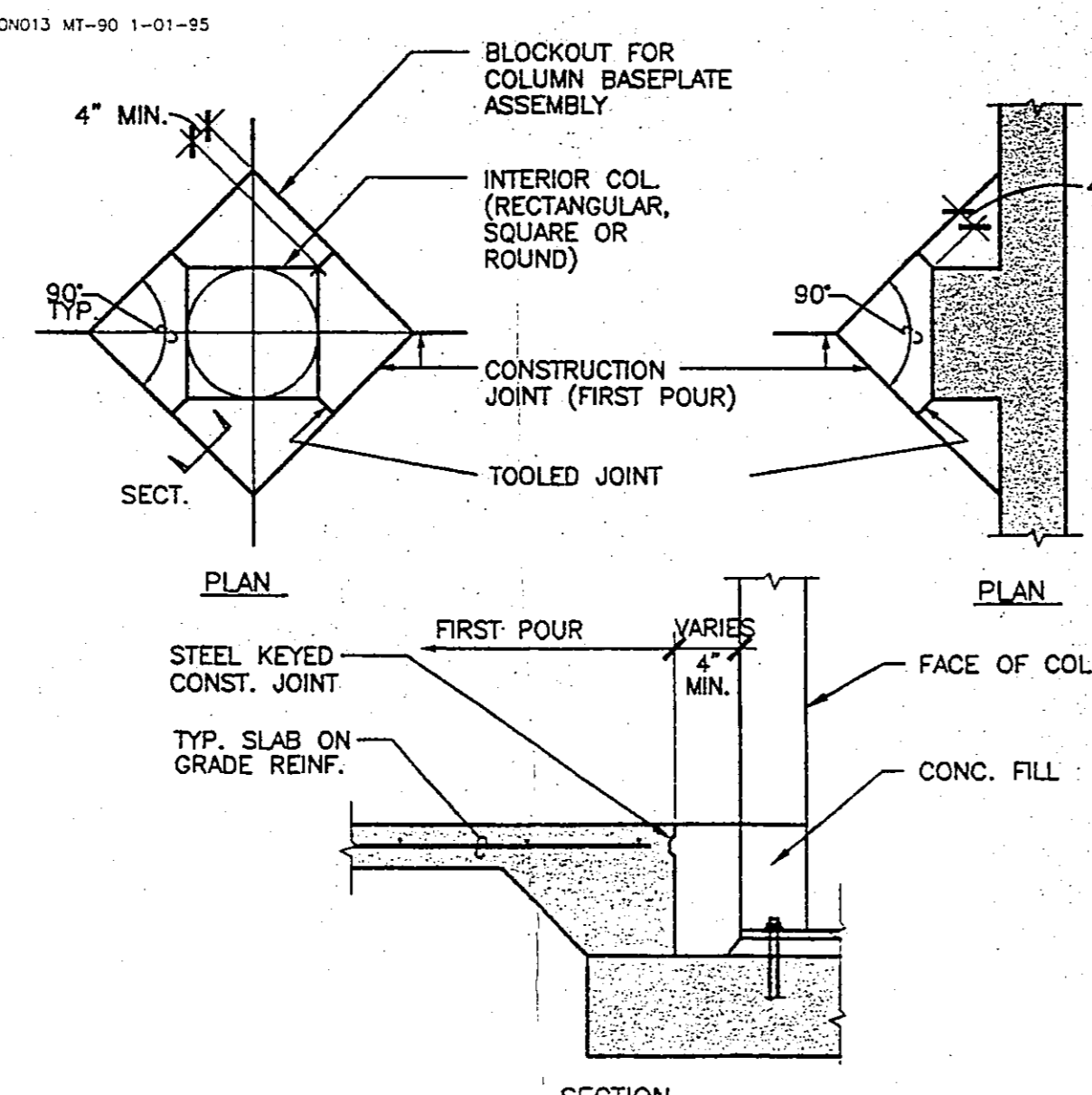
6



**REBAR LAYOUT AT CONCRETE FOOTING**

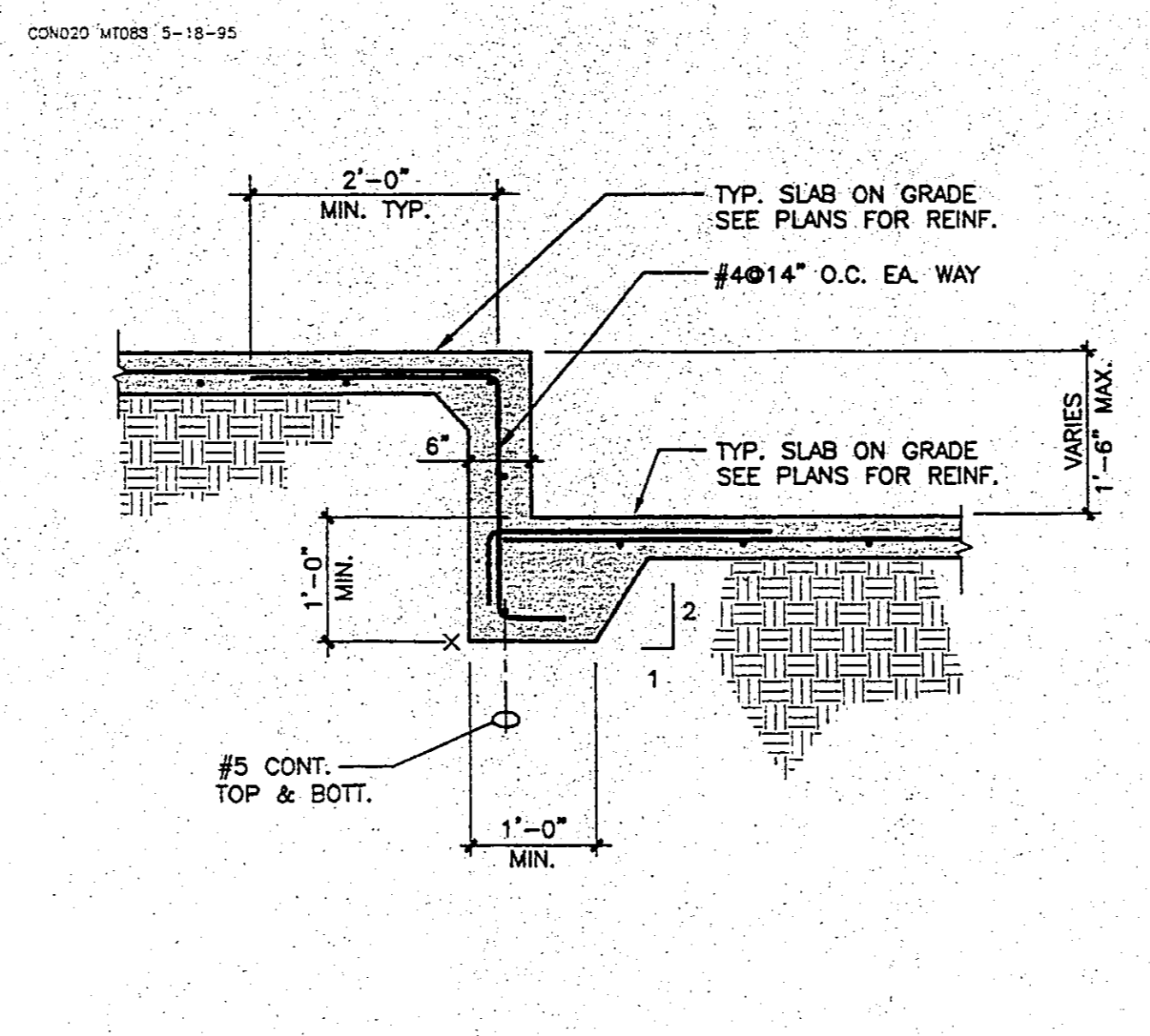
19

**ISOLATION JOINT**



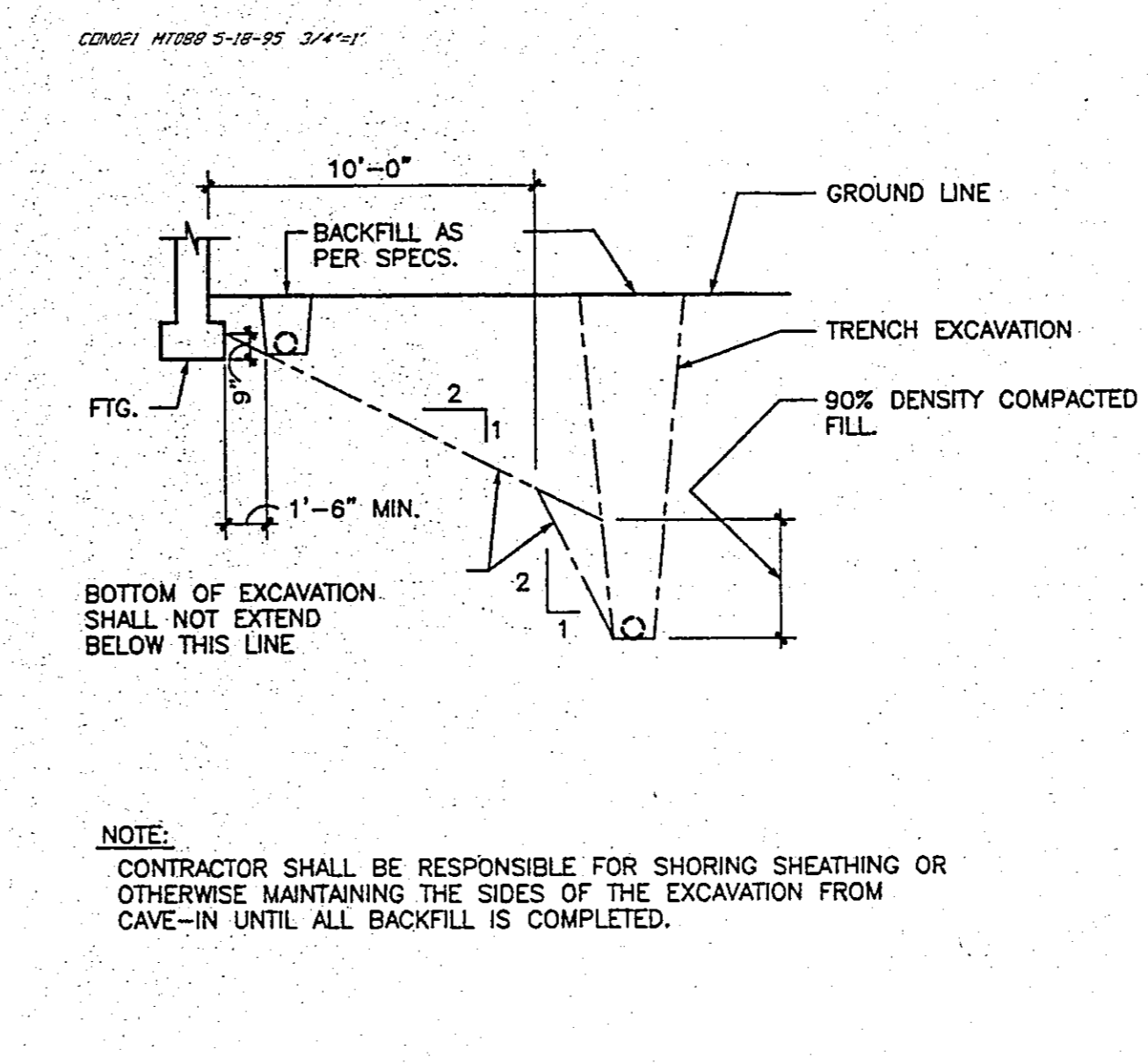
15

**GRADE CHANGES (1'-6" MAX.)**

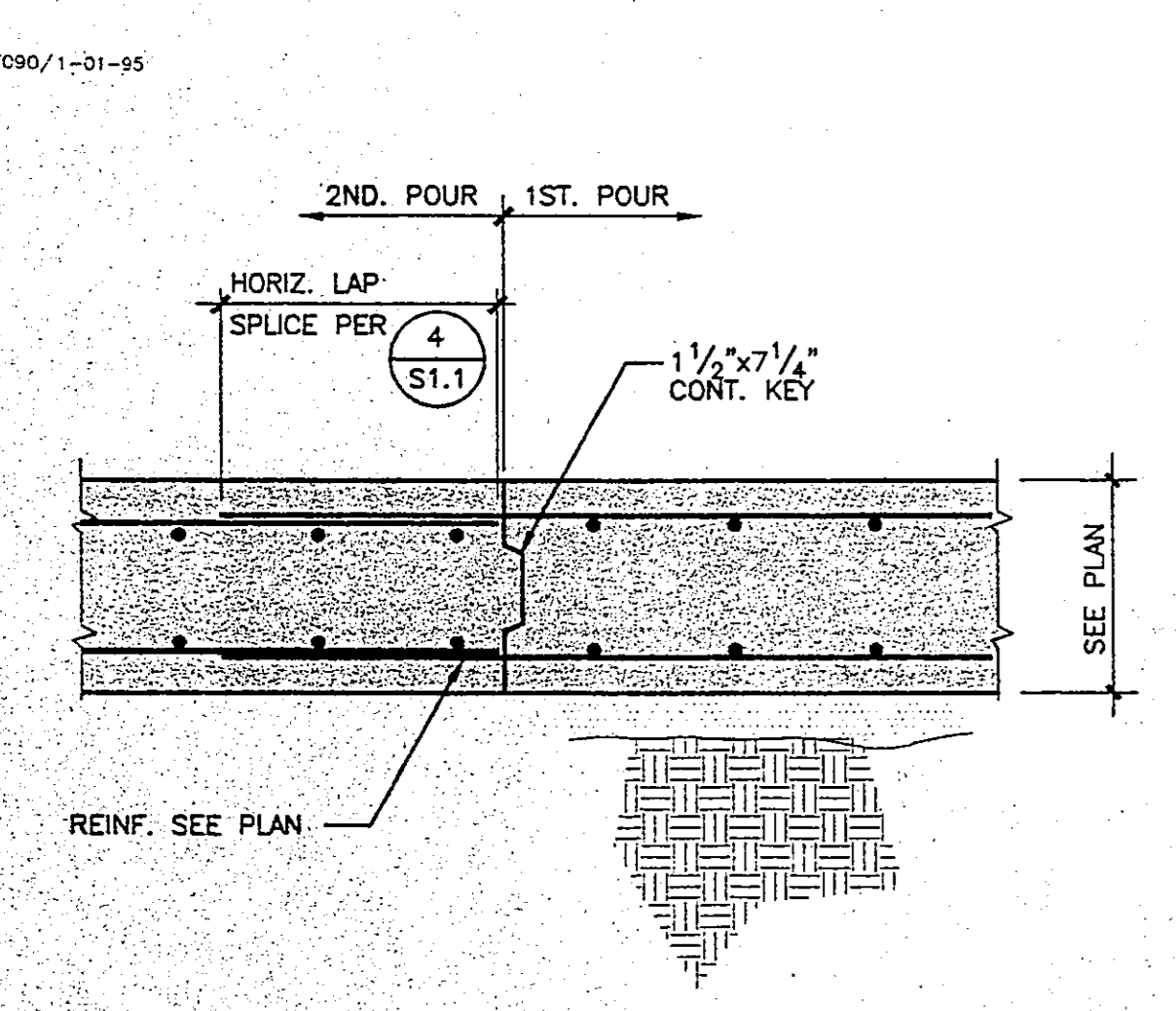


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**EXCAVATION PARALLEL TO FOOTING**



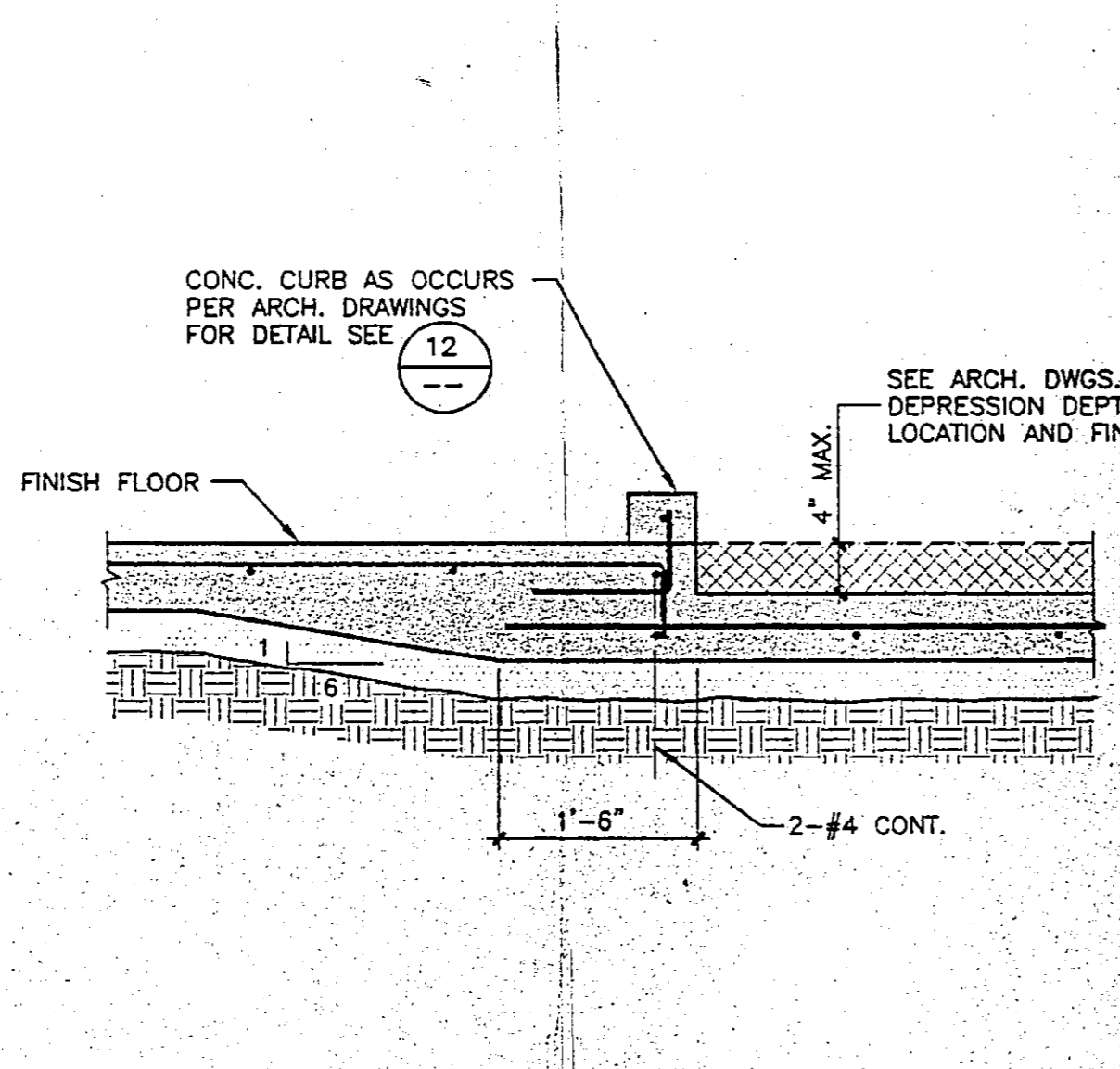
7



**FOOTING SPLICE**

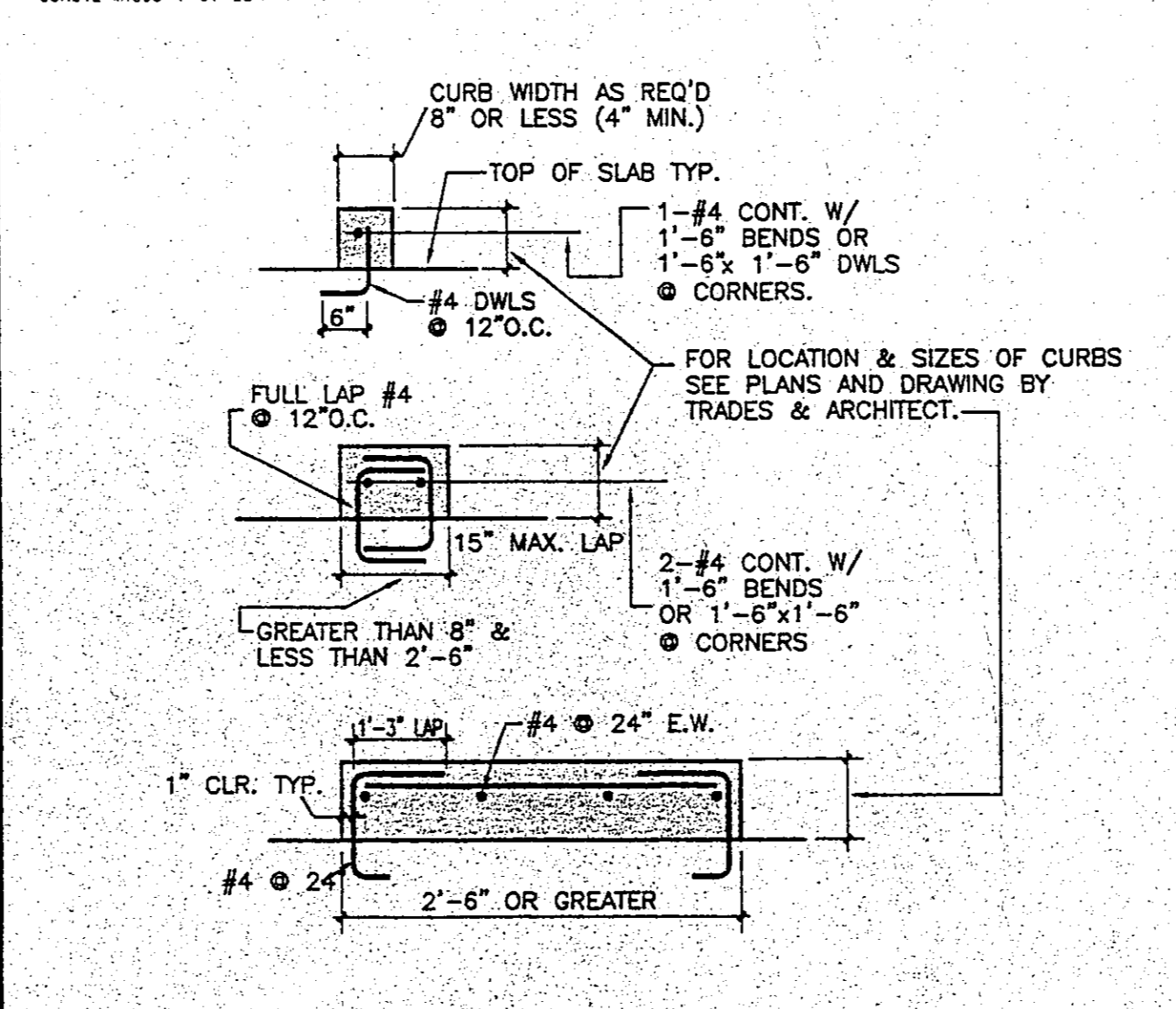
20

**DEPRESSED SLAB**



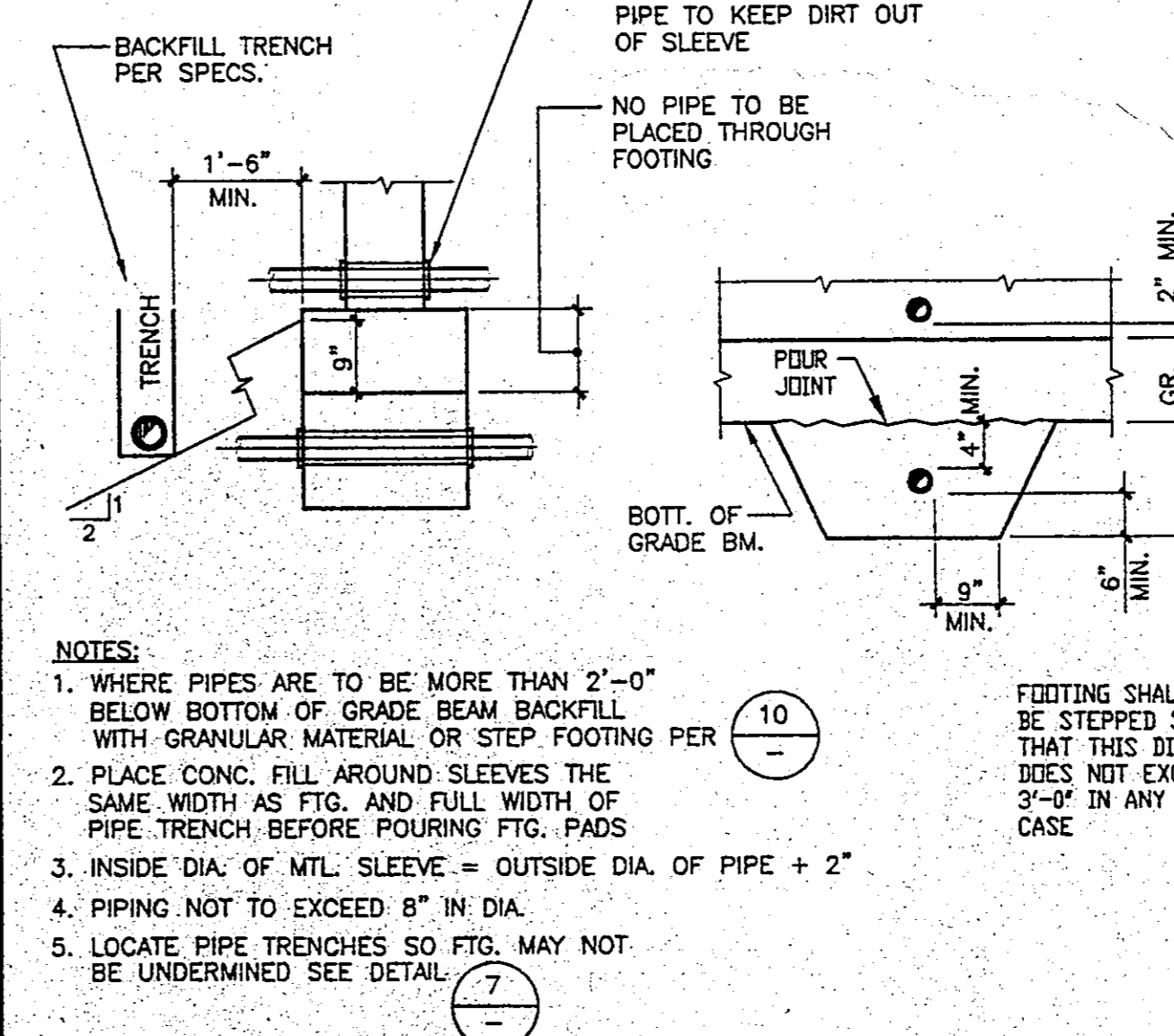
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**CURB REINFORCING**



12

**PIPE THRU FOOTING**



8

**REBAR SPLICES**

4

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 Fax (714) 794-4972

**POINT VICENTE INTERPRETIVE CENTER EXPANSION**  
 31501 Palos Verdes Drive West  
 Rancho Palos Verdes, CA

**TYPICAL DETAILS**

DRAWN: DW  
 CHECKED: SA  
 DATE: \_\_\_\_\_  
 SCALE: (as noted)  
 JOB NO.: 2623401  
 SHEET

**S1.1**  
 36 OF 69 SHEETS

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THESE DRAWINGS DO NOT CONTAIN THE NECESSARY CONDITIONS FOR CONSTRUCTION.