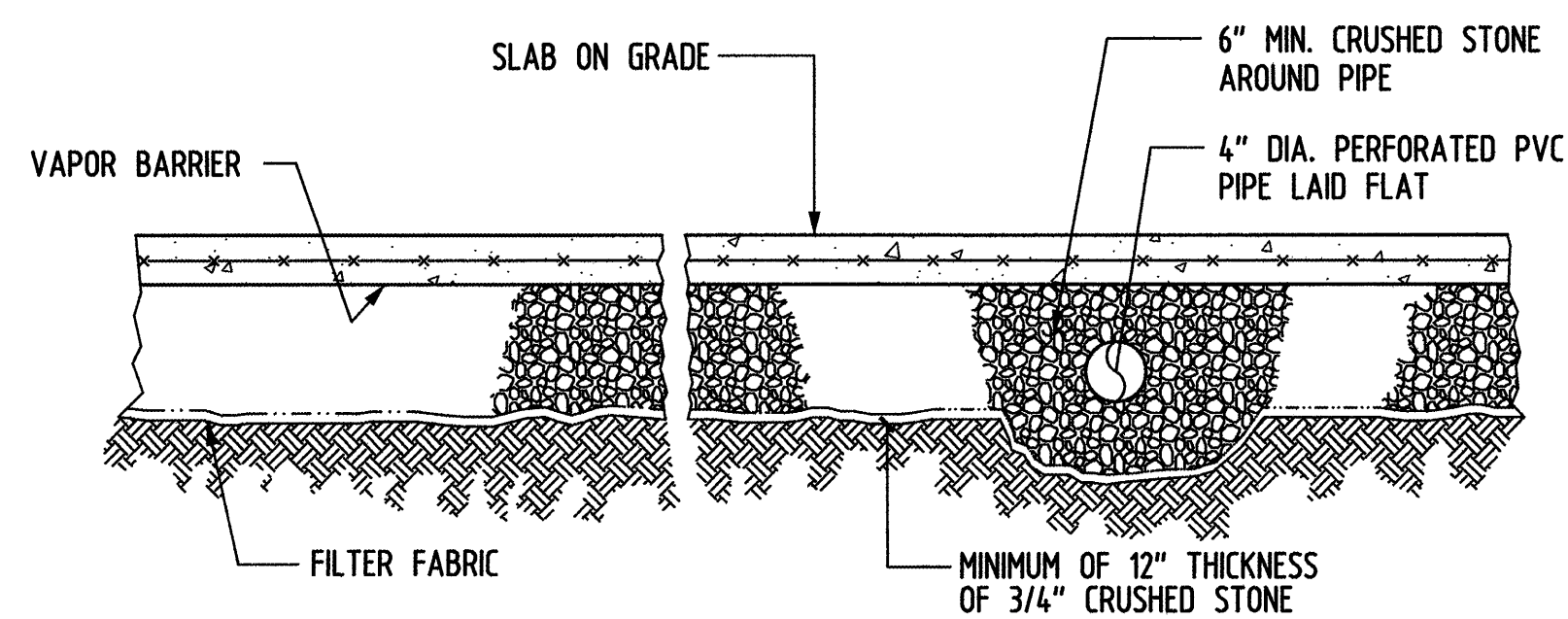


TENSION DEVELOPMENT LENGTH (Lap Class A) AND LAP SPLICE LENGTHS (Lap Class B)
FOR GRADE 60 DEFORMED REINFORCING BARS (inches)

$f'_c = 4000$ PSI, NORMAL WEIGHT CONCRETE

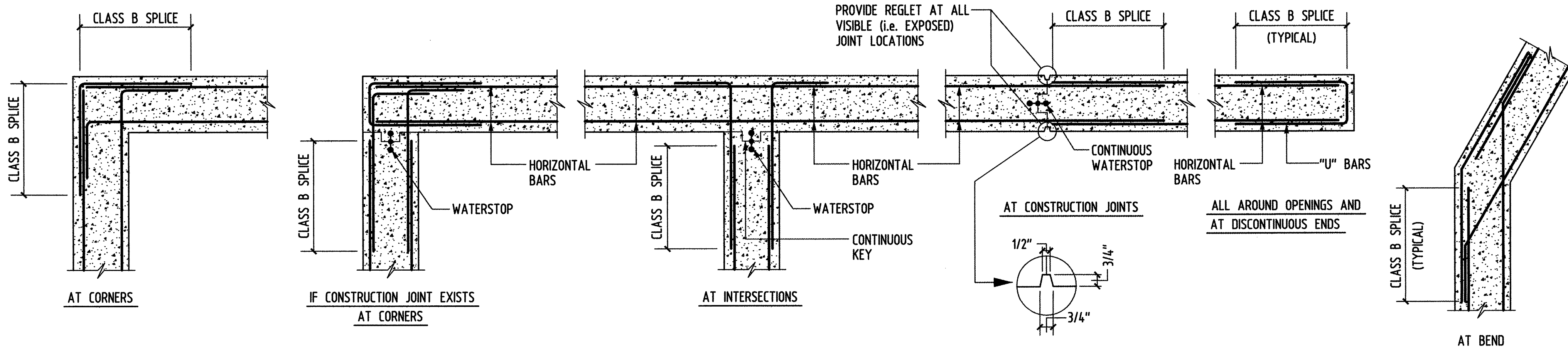
BAR SIZE	LAP CLASS	CONCRETE COVER ≥ 0.75 in. CLEAR BAR SPACING ² ≥ 1.5 in.				CONCRETE COVER ≥ 1.00 in. CLEAR BAR SPACING ² ≥ 2.0 in.				CONCRETE COVER ≥ 1.50 in. CLEAR BAR SPACING ² ≥ 3.0 in.				CONCRETE COVER ≥ 2.00 in. CLEAR BAR SPACING ² ≥ 4.0 in.				CONCRETE COVER ≥ 3.00 in. CLEAR BAR SPACING ² ≥ 6.0 in.			
		UNCOATED		EPOXY-COATED		UNCOATED		EPOXY-COATED		UNCOATED		EPOXY-COATED		UNCOATED		EPOXY-COATED		UNCOATED		EPOXY-COATED	
		TOP ¹	OTHER	TOP ¹	OTHER	TOP ¹	OTHER	TOP ¹	OTHER	TOP ¹	OTHER	TOP ¹	OTHER	TOP ¹	OTHER	TOP ¹	OTHER	TOP ¹	OTHER	TOP ¹	OTHER
#3	A	12	12	15	13	12	12	15	13	12	12	14	12	12	12	14	12	12	12	14	12
	B	16	16	19	17	16	16	19	17	16	16	18	16	16	16	18	16	16	16	18	16
#4	A	19	15	24	22	15	12	20	17	15	12	18	14	15	12	18	14	15	12	18	14
	B	24	19	32	28	20	16	25	22	20	16	23	18	20	16	23	18	20	16	23	18
#5	A	28	21	36	32	22	17	29	26	19	15	24	22	19	15	22	17	19	15	22	17
	B	36	28	47	41	29	22	38	33	24	19	32	28	24	19	29	22	24	19	29	22
#6	A	37	29	49	43	31	24	40	35	22	17	29	26	22	17	29	26	22	17	27	21
	B	48	37	63	56	40	31	52	46	29	22	38	34	29	22	38	34	29	22	35	27
#7	A	60	46	78	69	50	38	65	57	37	28	48	42	33	25	43	38	33	25	39	30
	B	78	60	102	90	64	50	84	74	48	37	62	55	42	33	55	49	42	33	51	39
#8	A	74	57	97	86	62	48	81	71	47	36	61	54	37	29	49	43	37	29	45	34
	B	96	74	126	111	80	62	105	93	60	47	79	70	48	37	63	56	48	37	58	45
#9	A	90	69	117	104	76	58	99	87	57	44	75	66	46	36	60	53	42	32	55	48
	B	117	90	153	135	98	76	128	113	74	57	97	86	60	46	78	69	55	42	71	63
#10	A	108	83	141	125	92	70	120	106	70	54	92	81	57	44	74	66	47	36	62	55
	B	140	108	183	162	119	92	155	137	91	70	119	105	74	57	97	85	61	47	80	71
#11	A	127	98	166	146	108	83	141	125	84	64	109	97	68	53	89	79	52	40	69	60
	B	165	127	215	190	141	108	184	162	109	84	142	125	89	68	116	102	68	52	89	79

- NOTES:
1. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.



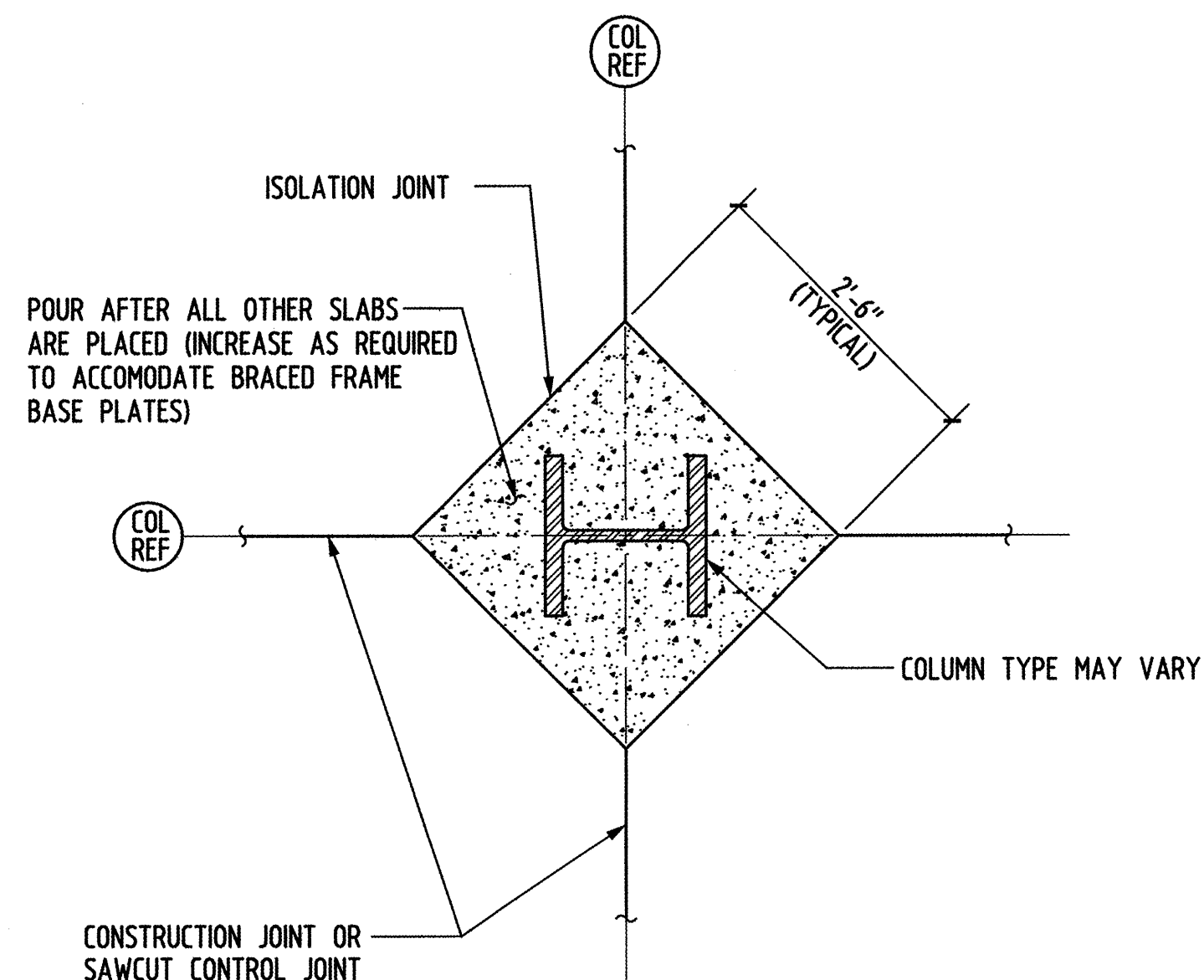
TYPICAL UNDERSLAB DRAINAGE PIPE

(REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL REQUIREMENTS)



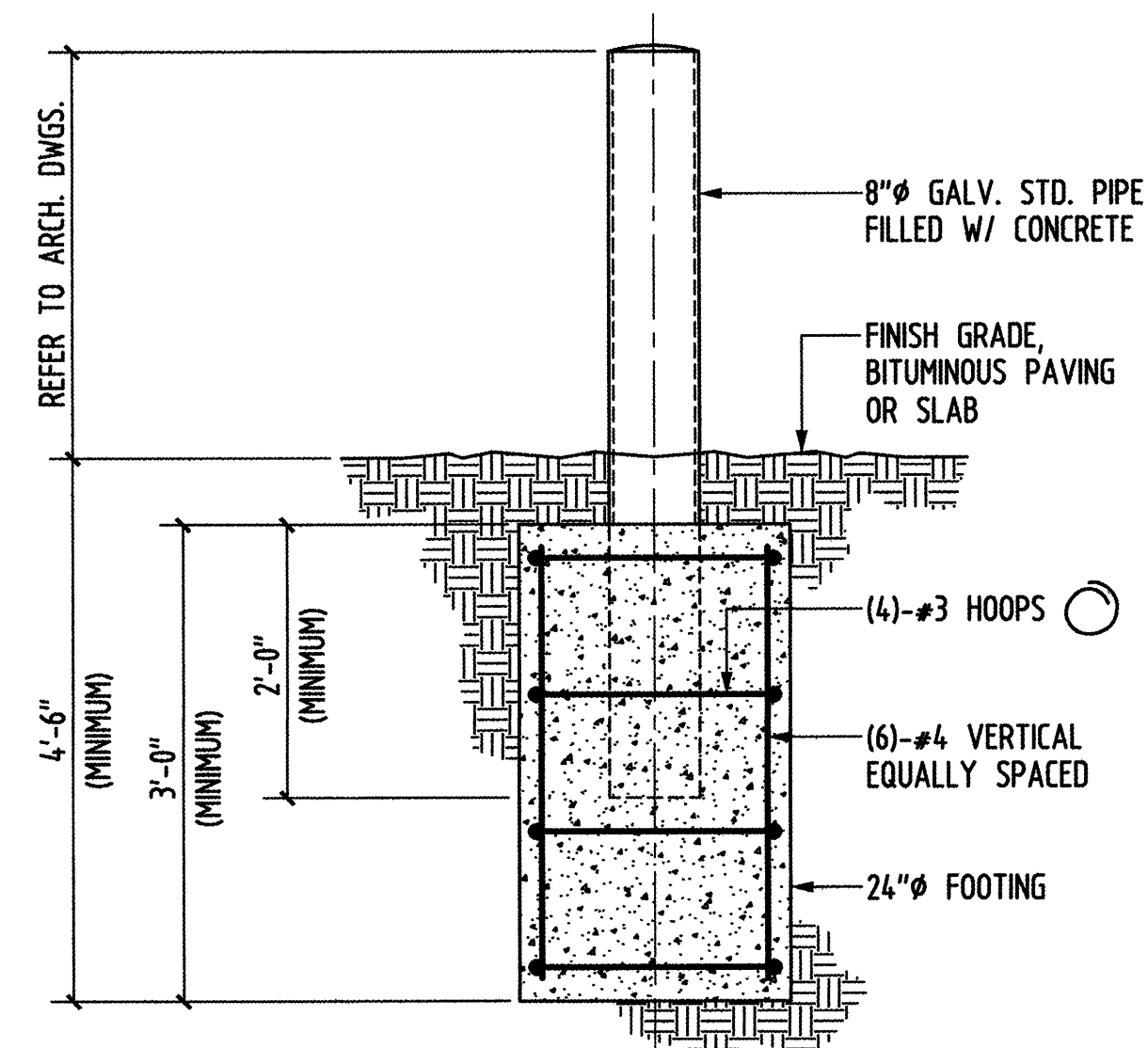
TYPICAL CONCRETE WALL DETAILS

- NOTES:
1. ALL HOOKS STANDARD U.N.O.
2. VERTICAL BARS NOT SHOWN FOR CLARITY



ISOLATION JOINT DETAIL AT COLUMN AT SLAB ON GRADE

NO SCALE



TYPICAL BOLLARD AT GRADE DETAIL

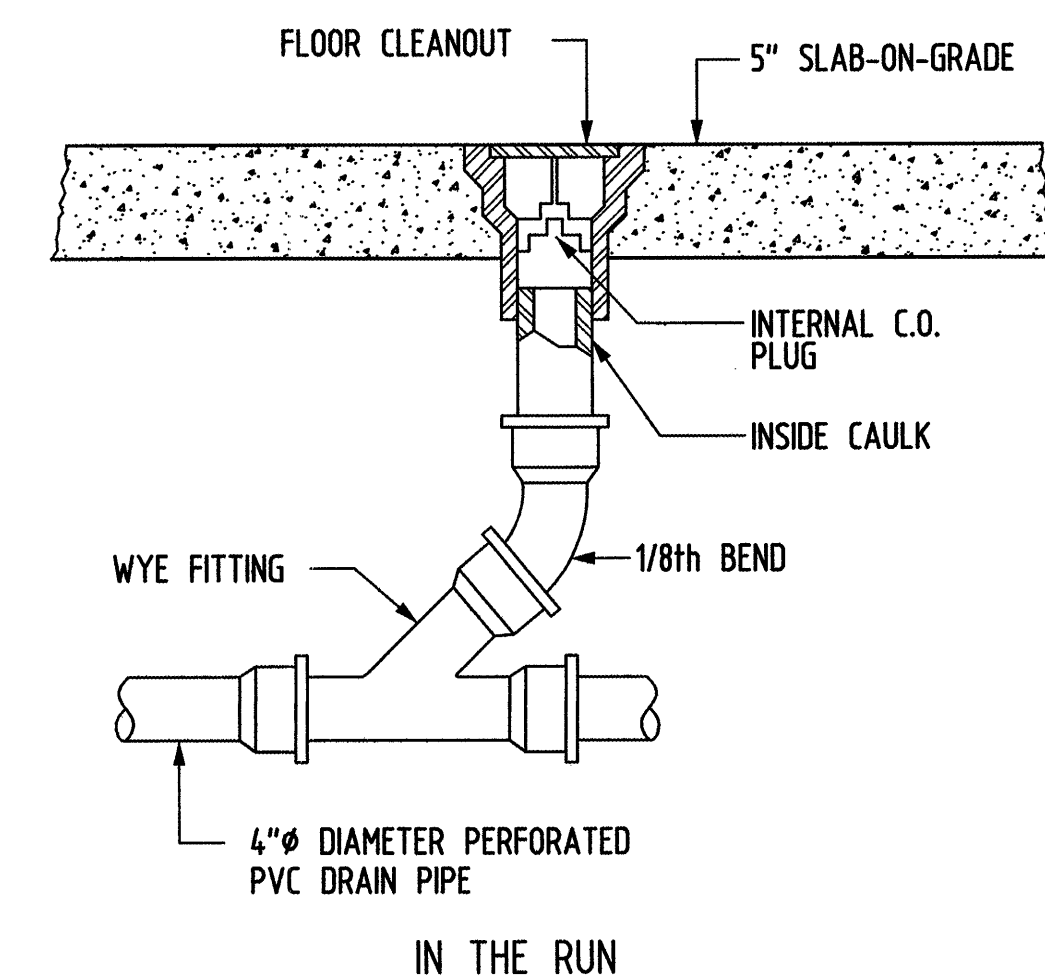
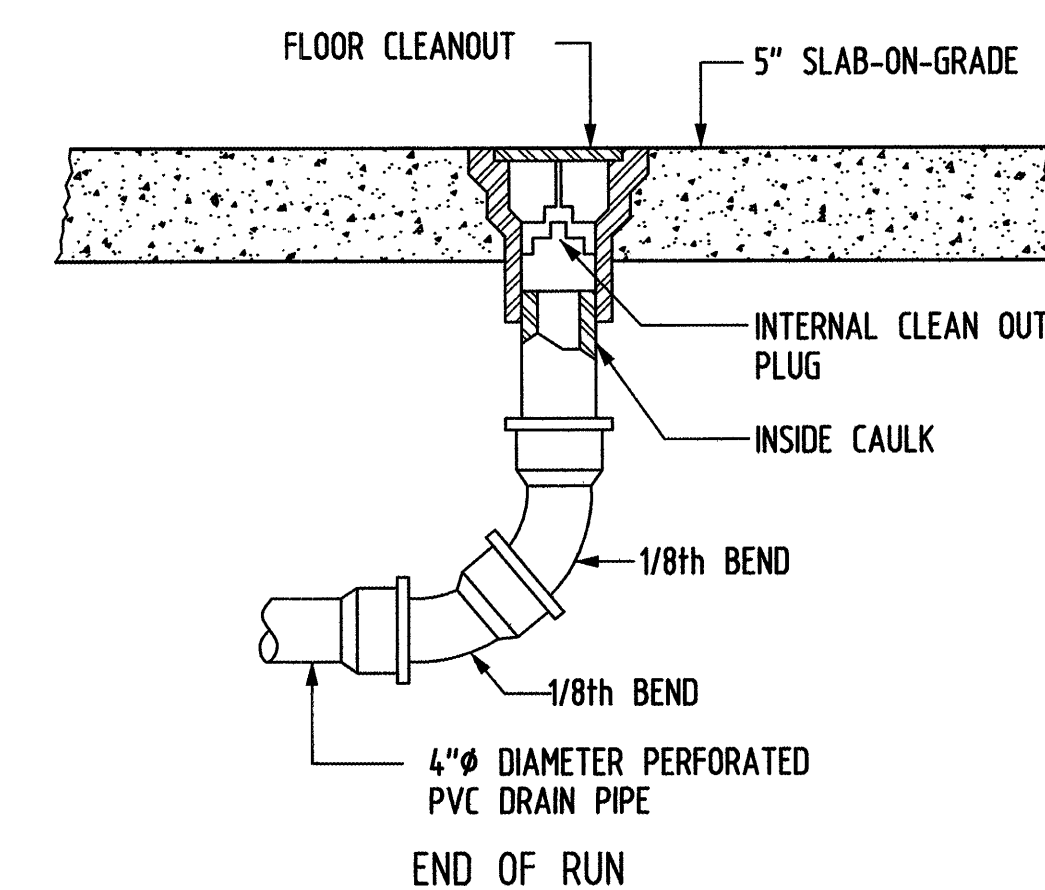
SCALE: 3/4"=1'-0"

DRILLED-IN AND EPOXY DOWEL EMBEDMENT SCHEDULE

REINFORCING SIZE	EMBEDMENT DEPTH (INCHES)
#4 BAR	6
#5 BAR	7
#6 BAR	8
#7 BAR	10
#8 BAR	12
#9 BAR	13
#10 BAR	16

NOTES:

1. TO BE USED WHERE CAST IN PLACE DOWELS ARE OMITTED. USE PER ENGINEER OF RECORD DIRECTION ONLY.
2. FOR EPOXY COATED BARS INCREASE EMBED x1.3.

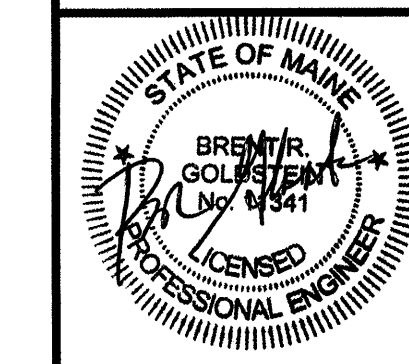


FOUNDATION DRAIN CLEANOUT DETAILS

NOTE:
ALL COVERS IN TILE FLOORS SHALL BE RECESSED

PERMIT ISSUE - 09/27/07

NO.	REVISION	DATE
SCALE: AS NOTED	DRAWN BY: FTV	
DATE: 09/27/07	CHECKED BY: BRG	



PROJECT

RESIDENCE INN BY MARRIOTT

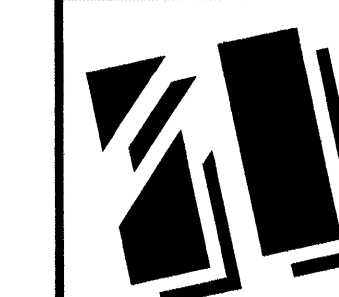
PORTLAND, ME.

JOB # 27089.00

TITLE

CONCRETE DETAILS I

GROUP ONE
21 W. THIRD STREET, BOSTON, MA 02127
TEL. (617)268-7000 FAX: (617)268-0209



DRAWING NO.

S4.0