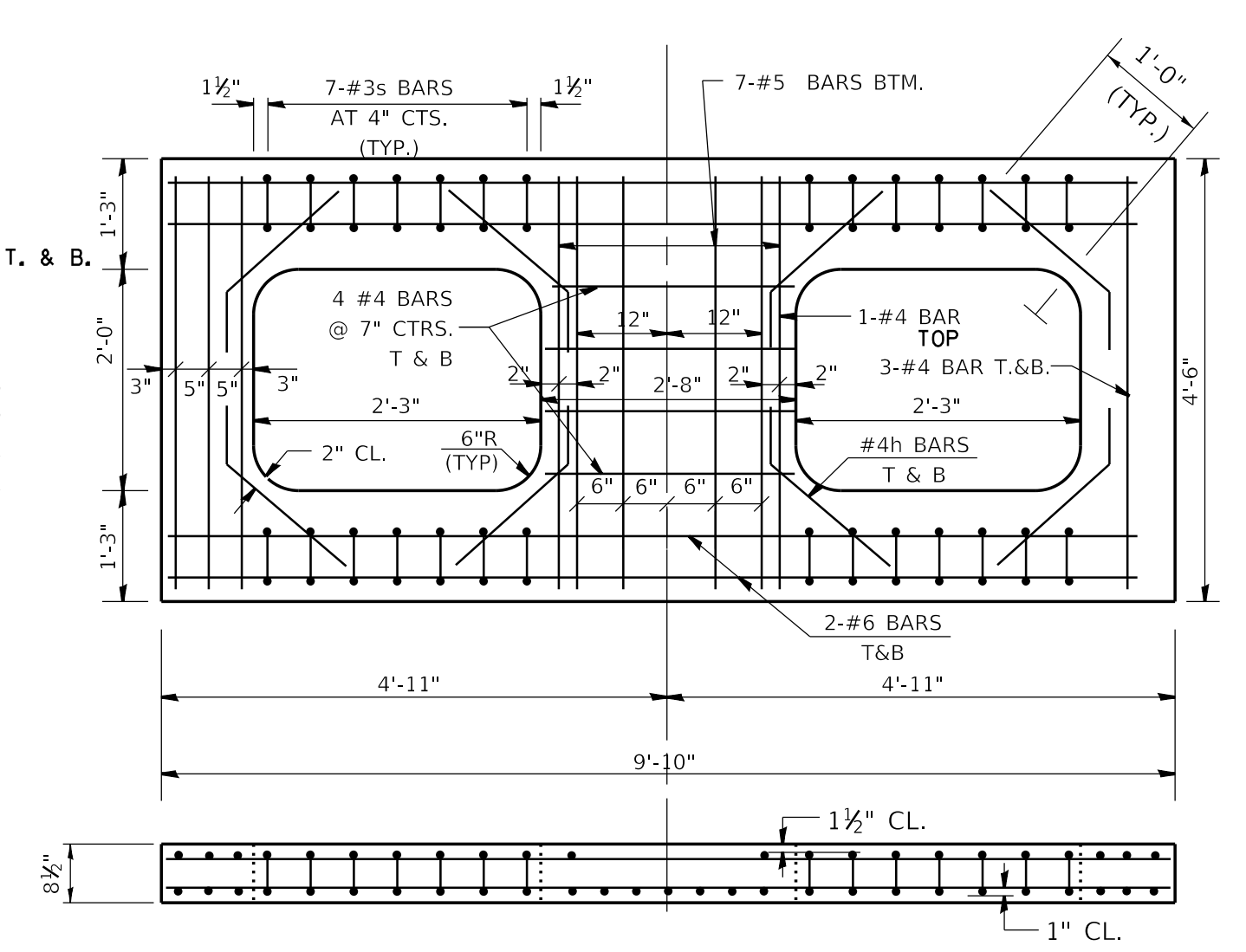
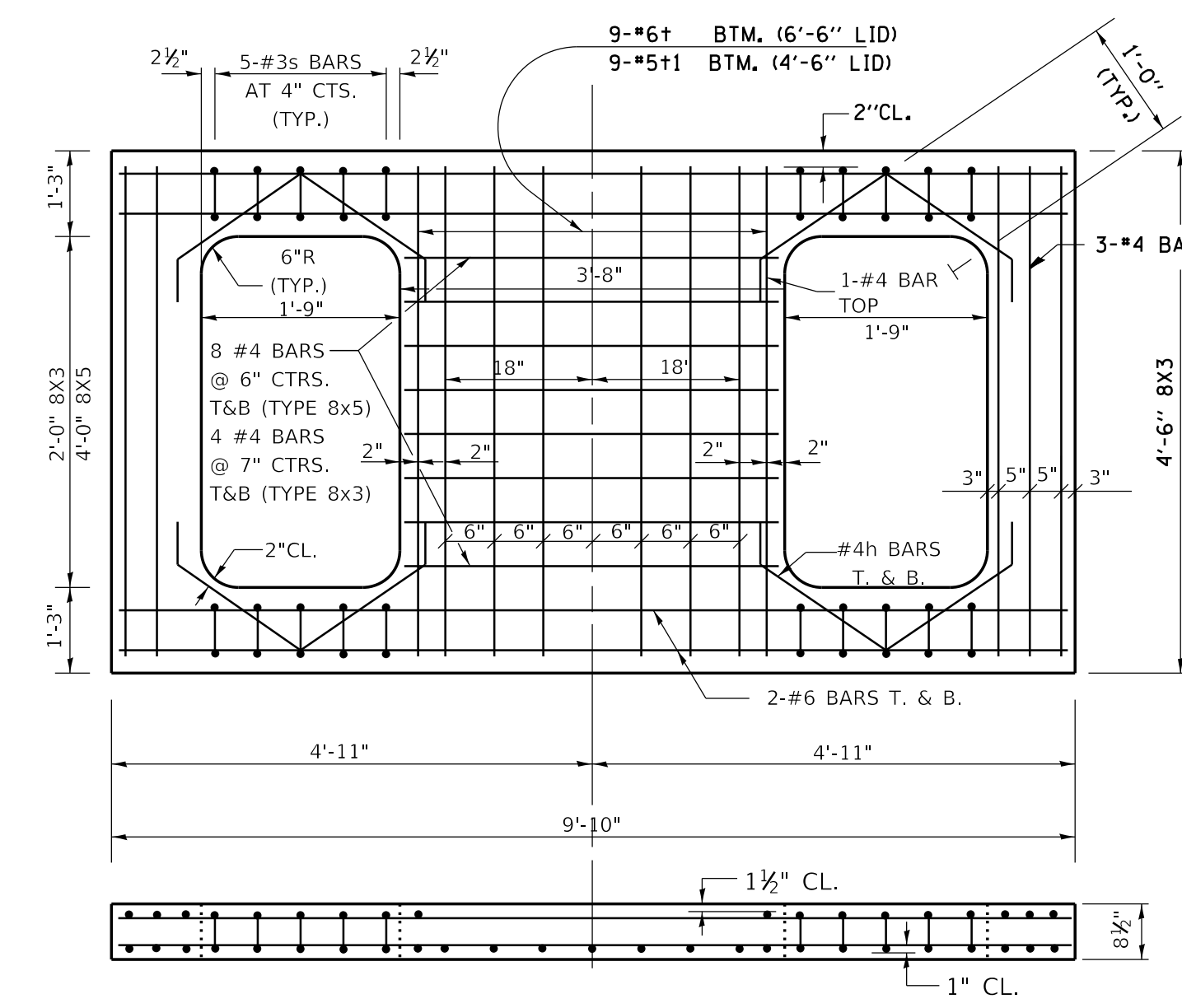


DRAINAGE STRUCTURE TYPE 8x3

REINFORCEMENT BARS SCHEDULE

TYPE	H IN. FT.	a ₁ BARS			b ₁ BARS			h ₁ BARS			h ₂ BARS			h ₃ BARS			n ₁ BARS			n ₂ BARS			v ₁ BARS			v ₂ BARS		
		SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH
1	>8.0	#5	16	4'-0"	#4	8	9'-0"	#5	16	14'-6"	#5	16	6'-0"	#5	16	11'-0"	#5	30	5'-0"	#4	30	3'-7"	#5	30	7'-3"	#4	30	7'-3"
2	8.5	#5	16	4'-0"	#4	8	9'-0"	#5	18	14'-6"	#5	18	6'-0"	#5	18	11'-0"	#5	30	5'-0"	#4	30	3'-7"	#5	30	7'-9"	#4	30	7'-9"
3	9.0	#5	16	4'-0"	#4	8	9'-0"	#5	18	14'-6"	#5	18	6'-0"	#5	18	11'-0"	#5	30	5'-0"	#4	30	3'-7"	#5	30	8'-3"	#4	30	8'-3"
4	9.5	#5	16	4'-0"	#4	8	9'-0"	#5	20	14'-6"	#5	20	6'-0"	#5	20	11'-0"	#5	30	5'-0"	#4	30	3'-7"	#5	30	8'-9"	#4	30	8'-9"
5	10.0	#5	16	4'-0"	#4	8	9'-0"	#5	20	14'-6"	#5	20	6'-0"	#5	20	11'-0"	#6	30	5'-0"	#4	30	3'-7"	#6	30	9'-3"	#4	30	9'-3"
6	10.5	#5	16	4'-0"	#4	8	9'-0"	#5	22	14'-6"	#5	22	6'-0"	#5	22	11'-0"	#6	30	5'-0"	#4	30	3'-7"	#6	30	9'-9"	#4	30	9'-9"
7	11.0	#5	16	4'-0"	#4	8	9'-0"	#5	22	14'-6"	#5	22	6'-0"	#5	22	11'-0"	#6	30	5'-0"	#4	30	3'-7"	#6	30	10'-3"	#4	30	10'-3"
8	11.5	#5	16	4'-0"	#4	8	9'-0"	#5	24	14'-6"	#5	24	6'-0"	#5	24	11'-0"	#6	30	5'-0"	#4	30	3'-7"	#6	30	10'-9"	#4	30	10'-9"
9	12.0	#5	16	4'-0"	#4	8	9'-0"	#5	24	14'-6"	#5	24	6'-0"	#5	24	11'-0"	#6	30	5'-0"	#4	30	3'-7"	#6	30	11'-3"	#4	30	11'-3"
10	12.5	#5	16	4'-0"	#4	8	9'-0"	#5	26	14'-6"	#5	26	6'-0"	#5	26	11'-0"	#6	30	5'-0"	#4	30	3'-7"	#6	30	11'-9"	#4	30	11'-9"
11	13.0	#5	16	4'-0"	#4	8	9'-0"	#5	26	14'-6"	#5	26	6'-0"	#5	26	11'-0"	#6	30	5'-0"	#4	30	3'-7"	#6	30	12'-3"	#4	30	12'-3"
12	13.5	#5	16	4'-0"	#4	8	9'-0"	#5	28	14'-6"	#5	28	6'-0"	#5	28	11'-0"	#6	30	5'-0"	#4	30	3'-7"	#6	30	12'-9"	#4	30	12'-9"
13	14.0	#5	16	4'-0"	#4	8	9'-0"	#5	56	14'-6"	#6	28	6'-0"	#6	28	11'-0"	#6	48	5'-0"	#5	30	3'-7"	#6	48	13'-3"	#5	30	13'-3"
14	16.0	#5	16	4'-0"	#4	8	9'-0"	#5	64	14'-6"	#6	32	6'-0"	#6	32	11'-0"	#6	48	5'-0"	#5	30	3'-7"	#6	48	15'-3"	#5	30	15'-3"
15	18.0	#5	16	4'-0"	#4	8	9'-0"	#5	72	14'-6"	#6	36	6'-0"	#6	36	11'-0"	#6	48	5'-0"	#5	30	3'-7"	#6	48	17'-3"	#5	30	17'-3"
16	20.0	#5	16	4'-0"	#4	8	9'-0"	#5	78	14'-6"	#6	40	6'-0"	#6	40	11'-0"	#6	48	5'-0"	#5	30	3'-7"	#6	48	19'-3"	#5	30	19'-3"
17	22.0	#5	16	4'-0"	#4	8	9'-0"	#5	86	14'-6"	#6	44	6'-0"	#6	44	11'-0"	#6	48	5'-0"	#5	30	3'-7"	#6	48	21'-3"	#5	30	21'-3"



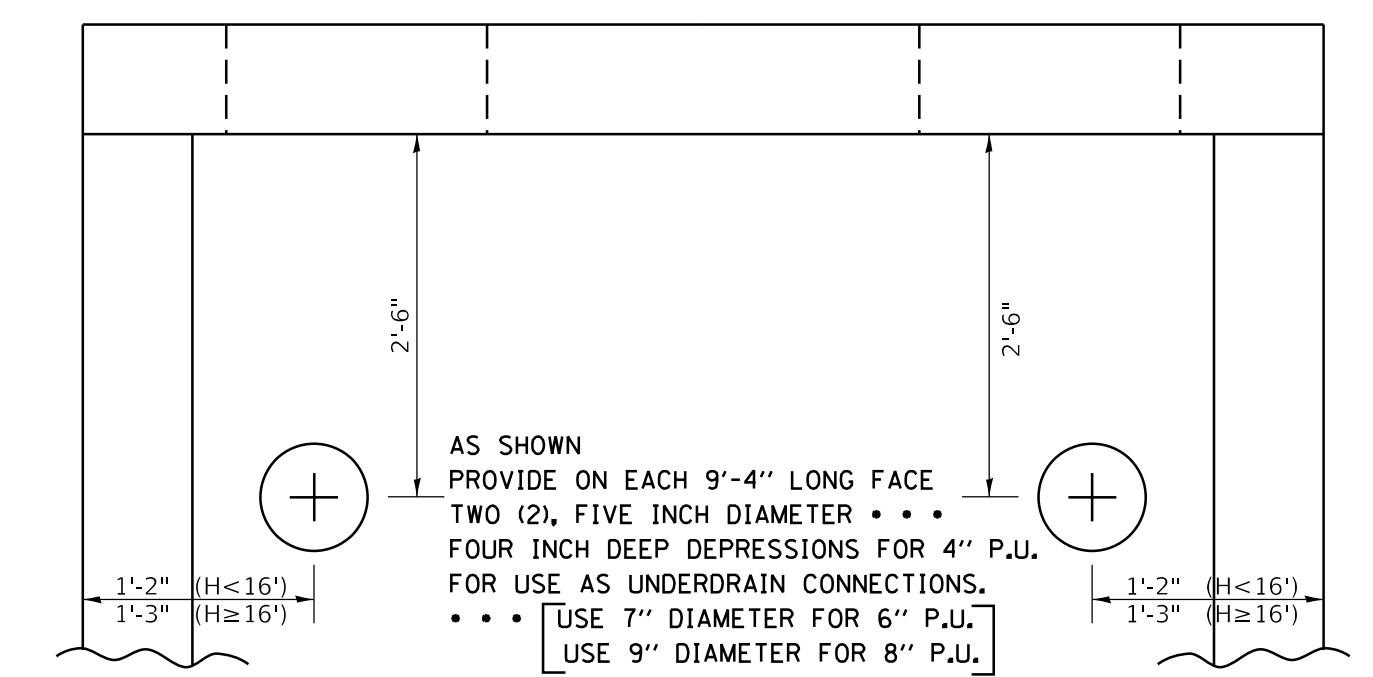
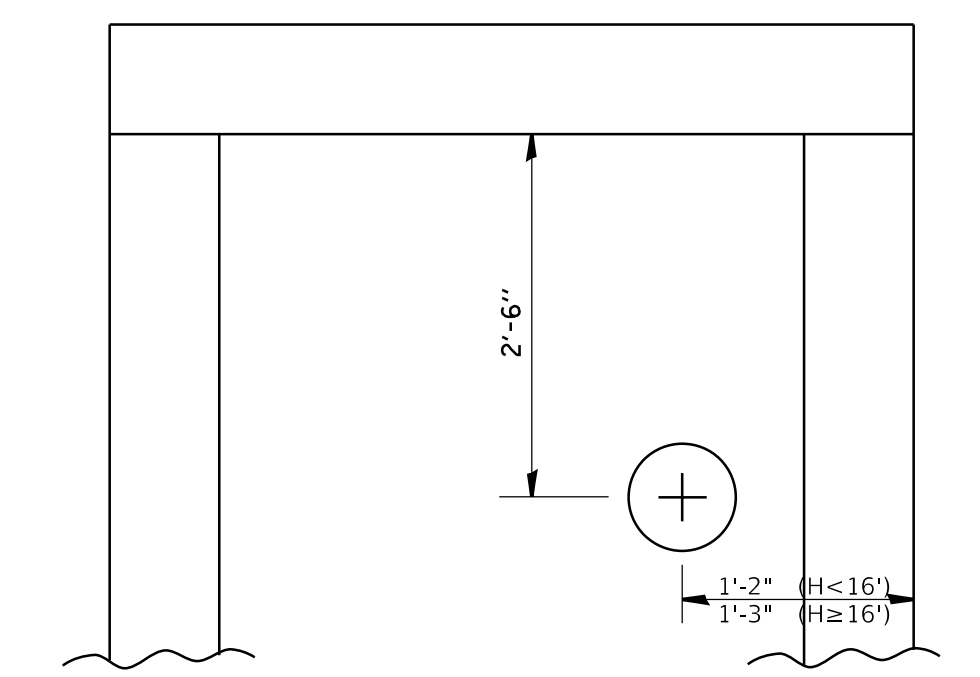
**REINFORCED LID FOR
TYPE 21 FRAME & GRATE
(FOR USE IN SAG AREAS)**

**REINFORCED LID FOR
TYPE 20 & 22 FRAME & GRATE**

DRAINAGE STRUCTURE TYPE 8x5

REINFORCEMENT BARS SCHEDULE

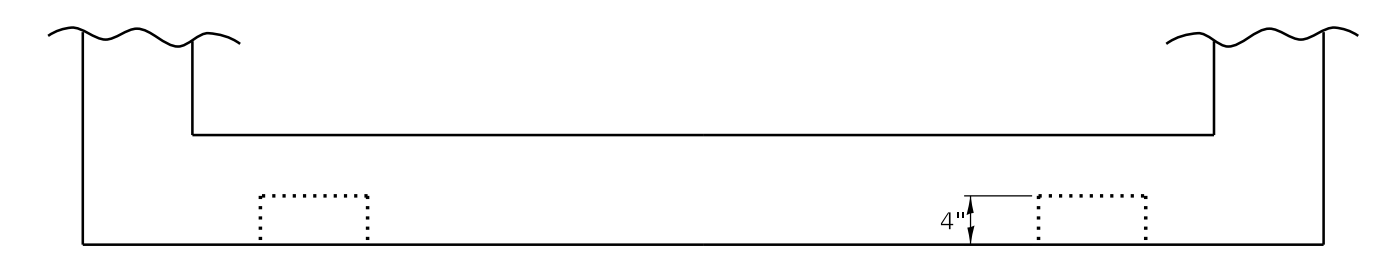
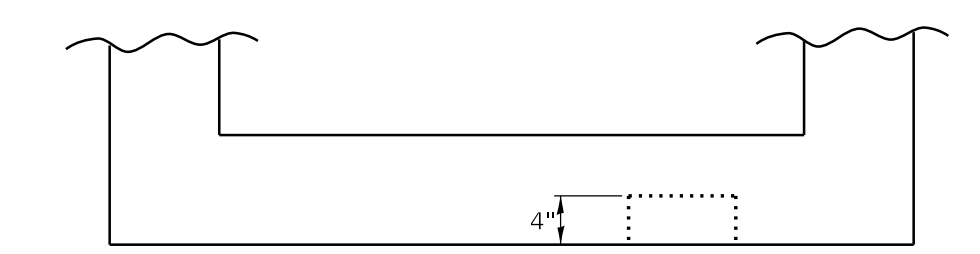
TYPE	H IN. FT.	a ₁ BARS			b ₁ BARS			h ₁ BARS			h ₂ BARS			h ₃ BARS			n ₁ BARS			n ₂ BARS			v ₁ BARS			v ₂ BARS		
		SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH
1	>8.0	#5	16	6'-0"	#4	12	9'-0"	#5	16	16'-6"	#5	16	8'-0"	#5	16	11'-0"	#5	34	5'-0"	#4	34	3'-7"	#5	34	7'-3"	#4	34	7'-3"
2	8.5	#5	16	6'-0"	#4	12	9'-0"	#5	18	16'-6"	#5	18	8'-0"	#5	18	11'-0"	#5	34	5'-0"	#4	34	3'-7"	#5	34	7'-9"	#4	34	7'-9"
3	9.0	#5	16	6'-0"	#4	12	9'-0"	#5	18	16'-6"	#5	18	8'-0"	#5	18	11'-0"	#5	34	5'-0"	#4	34	3'-7"	#5	34	8'-3"	#4	34	8'-3"
4	9.5	#5	16	6'-0"	#4	12	9'-0"	#5	20	16'-6"	#5	20	8'-0"	#5	20	11'-0"	#5	34	5'-0"	#4	34	3'-7"	#5	34	8'-9"	#4	34	8'-9"
5	10.0	#5	16	6'-0"	#4	12	9'-0"	#5	20	16'-6"	#5	20	8'-0"	#5	20	11'-0"	#5	34	5'-0"	#4	34	3'-7"	#6	34	9'-3"	#4	34	9'-3"
6	10.5	#5	16	6'-0"	#4	12	9'-0"	#5	22	16'-6"	#5	22	8'-0"	#5	22	11'-0"	#6	34	5'-0"	#4	34	3'-7"	#6	34	9'-9"	#4	34	9'-9"
7	11.0	#5	16	6'-0"	#4	12	9'-0"	#5	22	16'-6"	#5	22	8'-0"	#5	22	11'-0"	#6	34	5'-0"	#4	34	3'-7"	#6	34	10'-3"	#4	34	10'-3"
8	11.5	#5	16	6'-0"	#4	12	9'-0"	#5	24	16'-6"	#5	24	8'-0"	#5	24	11'-0"	#6	34	5'-0"	#4	34	3'-7"	#6	34	10'-9"	#4	34	10'-9"
9	12.0	#5	16	6'-0"	#4	12	9'-0"	#5	24	16'-6"	#5	24	8'-0"	#5	24	11'-0"	#6	34	5'-0"	#4	34	3'-7"	#6	34	11'-3"	#4	34	11'-3"
10	12.5	#5	16	6'-0"	#4	12	9'-0"	#5	26	16'-6"	#5	26	8'-0"	#5	26	11'-0"	#6	34	5'-0"	#4	34	3'-7"	#6	34	11'-9"	#4	34	11'-9"
11	13.0	#5	16	6'-0"	#4	12	9'-0"	#5	26	16'-6"	#5	26	8'-0"	#5	26	11'-0"	#6	34	5'-0"	#4	34	3'-7"	#6	34	12'-3"	#4	34	12'-3"
12	13.5	#5	16	6'-0"	#4	12	9'-0"	#5	28	16'-6"	#5	28	8'-0"	#5	28	11'-0"	#6	34	5'-0"	#4	34	3'-7"	#6	34	12'-9"	#4	34	12'-9"
13	14.0	#5	16	6'-0"	#4	12	9'-0"	#5	56	16'-6"	#6	28	8'-0"	#6	28	11'-0"	#6	52	5'-0"	#5	34	3'-7"	#6	52	13'-3"	#5	34	13'-3"
14	16.0	#5	16	6'-0"	#4	12	9'-0"	#5	64	16'-6"	#6	32	8'-0"	#6	32	11'-0"	#6	52	5'-0"	#5	34	3'-7"	#6	52	15'-3"	#5	34	15'-3"
15	18.0	#5	16	6'-0"	#4	12	9'-0"	#5	72	16'-6"	#6	36	8'-0"	#6	36	11'-0"	#6	52	5'-0"	#5	34	3'-7"	#6	52	17'-3"	#5	34	17'-3"
16	20.0	#5	16	6'-0"	#4	12	9'-0"	#5	78	16'-6"	#6	40	8'-0"	#6	40	11'-0"	#6	52	5'-0"	#5	34	3'-7"	#6	52	19'-3"	#5	34	19'-3"
17	22.0	#5	16	6'-0"	#4	12	9'-0"	#5	86	16'-6"	#6	44	8'-0"	#6	44	11'-0"	#6	52	5'-0"	#5	34	3'-7"	#6	52	21'-3"	#5	34	21'-3"



AS SHOWN
PROVIDE ON EACH 9'-4" LONG FACE
TWO (2), FIVE INCH DIAMETER . . .
FOUR INCH DEEP DEPRESSIONS FOR 4" P.U.
FOR USE AS UNDERDRAIN CONNECTIONS.
. . . [USE 7" DIAMETER FOR 6" P.U.,
[USE 9" DIAMETER FOR 8" P.U.]

ELEVATION

ELEVATION



PLAN

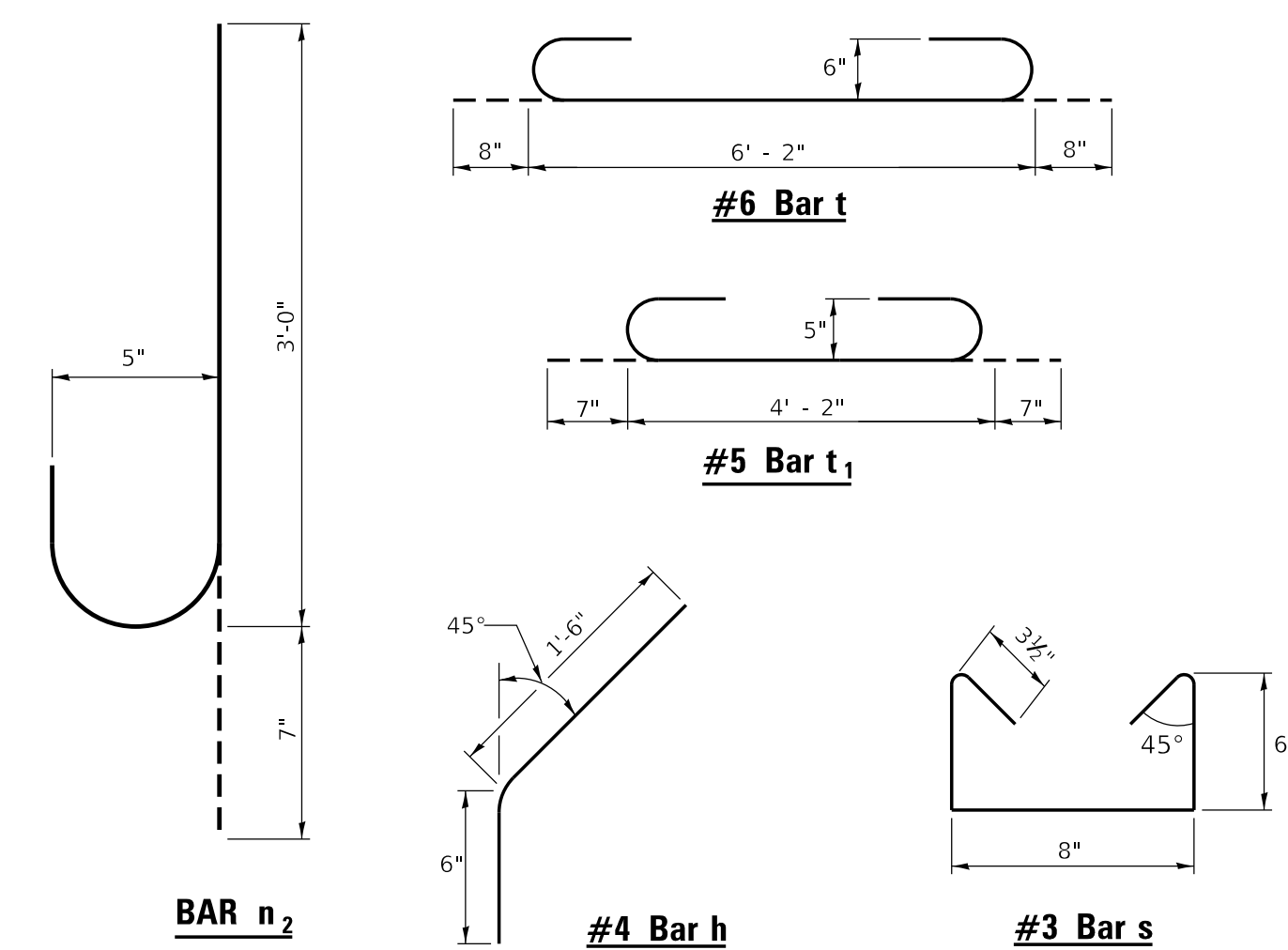
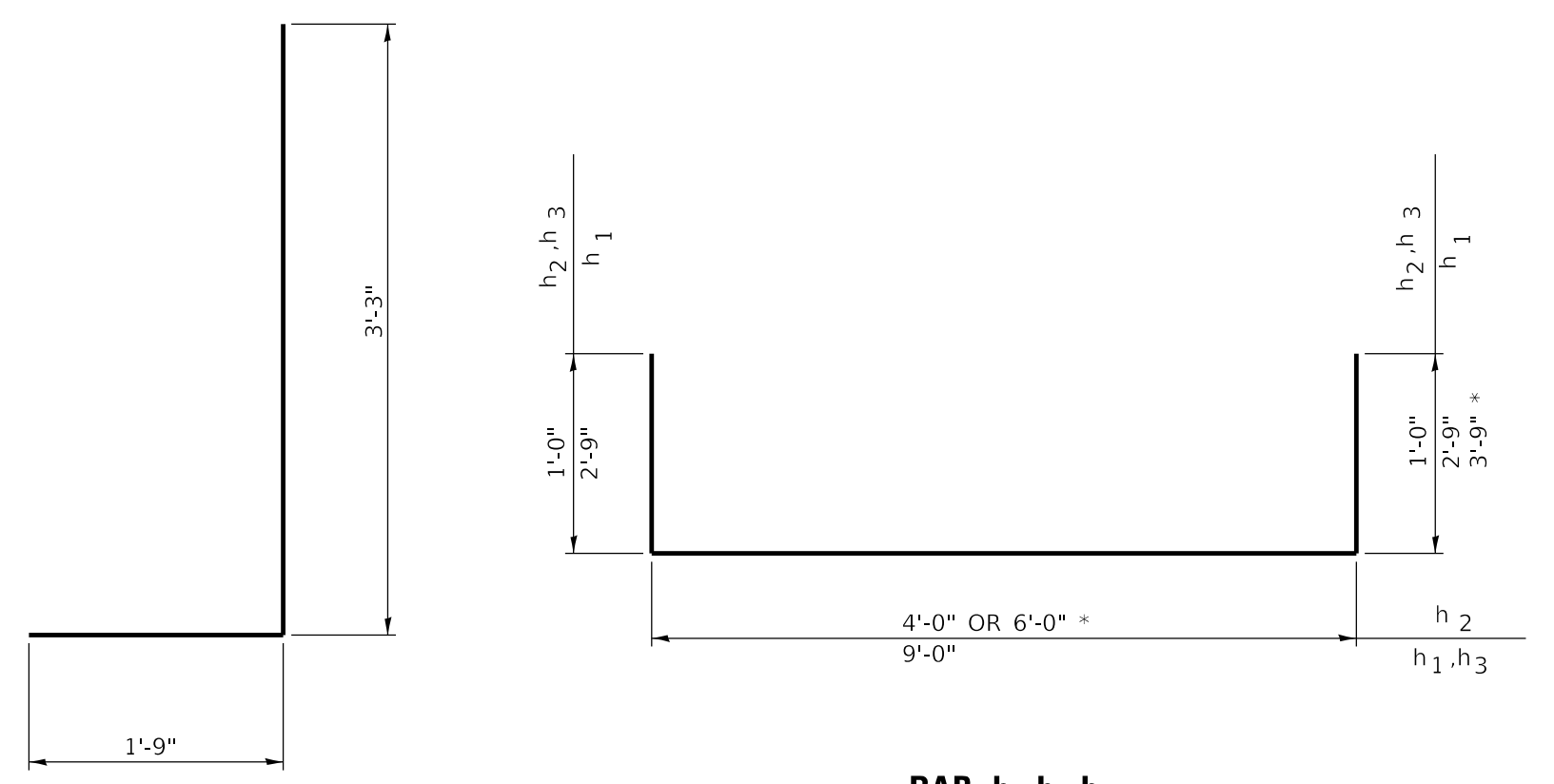
PLAN

AS SHOWN PROVIDE ON EACH FACE
ONE (1) 4" DEEP DEPRESSION
FOR USE AS UNDERDRAIN CONNECTIONS.

USE: 5" DIAMETER FOR 4" P.U.
7" DIAMETER FOR 6" P.U.
9" DIAMETER FOR 8" P.U.

REFER TO PLANS FOR SIZE & LOCATION OF PIPE UNDERDRAINS.

PIPE UNDERDRAIN CONNECTION DETAIL



* FOR TYPE 22 F & G

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**DRAINAGE STRUCTURES CATCH BASINS 8x3 & 8x5
(FOR DEPTHS WHERE H > 8'-0")**

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	CS-10			
CONTRACT NO.		ILLINOIS FED. AID PROJECT		

SCALE: NONE SHEET 1 OF 1 SHEETS STA. TO STA.