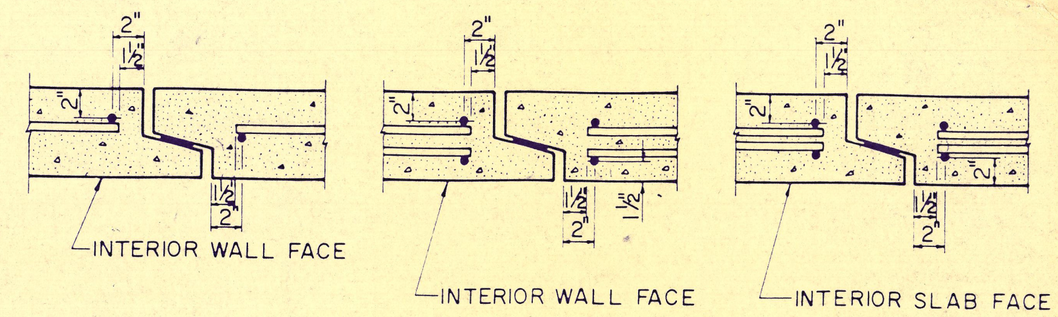
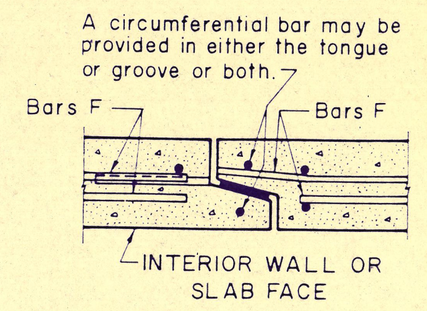
BILL OF REINFORCING STEEL FOR L = 8'

CULV. SIZE		TYPE SECT.	DIMENSIONS		MAX. FILL	TOTAL QUANTITIES FOR L=8'		QUANTITIES P.L.F. OF BARREL		BARS A TOP SLAB					BARS B BOTTOM SLAB					BARS C					#4 BARS D @18"± C. TO C.			#4 BARS F @ 18" MAX. LENGTH L-7"									LIFT. WEIGHT L=8'
S	H		T	U		CONC. C.Y.	REINF. LBS.	CONC. C.Y.	REINF. LBS.	NO.	SIZE	SPA.	LG.	WT.	NO.	SIZE	SPA.	LG.	WT.	NO.	SIZE	SPA.	LG.	WT.	NO.	LG.	WT.	F1	SPA.	F2	SPA.	F3	SPA.	TOTAL	WT.	LBS.
3	2	1	4"	4"	16'	1.185	204	.1481	25.50											12	#5	8½"	12'-4"	154												
	3	1	4"	4"	16'	1.383	253	.1728	31.63											13	#5	7½"	14'-4"	194						8	14"	2	15"	10	50	4,940
4	2	1	5"	5"	16'	1.790	322	.2238	40.25											17	#5	6"	14'-10"	263						8	14"	4	14"	12	59	5,780
	3	1	5"	5"	16'	2.037	398	.2546	49.75											13	#6	7½"	16'-10"	329						10	14"	2	15"	12	59	7,470
	4	1	5"	5"	16'	2.284	493	.2855	61.63											15	#6	6½"	18'-10"	424						10	14"	4	14"	14	69	8,520
5	2	2	6"	6"	8'	2.518	385	.3148	48.13	10	#5	10"	5'-6"	57	11	#5	9½"	5'-6"	63															10	14"	4	18"	14	69	9,590
	3	2	6"	6"	8'	2.815	426	.3519	53.25	11	#5	9½"	5'-6"	63	12	#5	8½"	5'-6"	69	9	#5	11"	17'-8"	166				8	17"	10	17"	2	15"	20	99	10,460
	4	2	6"	6"	8'	3.111	422	.3889	52.75	11	#5	9"	5'-6"	63	12	#5	8"	5'-6"	69	9	#5	12"	19'-8"	185				8	17"	10	17"	4	14"	22	109	11,700
	5	3	6"	6"	8'	3.407	533	.4259	66.63	12	#5	8½"	5'-6"	69	13	#5	7½"	5'-6"	75	8	#5	13"	21'-8"	181				8	17"	10	17"	4	18"	22	109	12,890
6	3	2	7"	7"	8'	3.714	498	.4643	62.25	11	#5	9"	6'-8"	76	12	#5	8½"	6'-8"	83	9	#5	14"	23'-8"	197	12	5'-6"	44	8	17"	10	17"	12	17"	30	148	14,170
	4	2	7"	7"	8'	4.060	523	.5075	65.38	12	#5	8½"	6'-8"	83	12	#5	8"	6'-8"	83	9	#5	11"	22'-4"	210				10	16"	12	16"	4	15"	26	129	15,390
	5	3	7"	7"	8'	4.405	605	.5506	75.63	12	#5	8"	6'-8"	83	13	#5	7½"	6'-8"	90	8	#5	13"	26'-4"	220	12	5'-6"	44	10	16"	12	16"	4	18"	26	129	16,800
	6	3	7"	7"	8'	4.751	656	.5939	82.00	12	#5	8"	6'-8"	83	14	#5	7"	6'-8"	97	8	#5	13"	28'-4"	236	12	6'-6"	52	10	16"	12	16"	12	17"	34	168	18,260
7	3	2	8"	8"	6'	4.742	605	.5928	75.63	12	#5	8½"	7'-10"	98	12	#5	8½"	7'-10"	98	10	#5	10"	25'-0"	261				12	16"	14	16"	4	15"	30	148	19,690
	4	2	8"	8"	6'	5.138	616	.6423	77.00	12	#5	8"	7'-10"	98	13	#5	7½"	7'-10"	106	9	#5	11"	27'-0"	253				12	16"	14	16"	6	15"	32	159	19,620
	5	3	8"	8"	6'	5.533	716	.6916	89.50	12	#5	8"	7'-10"	98	14	#5	7"	7'-10"	114	9	#5	11"	29'-0"	272	12	5'-6"	44	12	16"	14	16"	12	18"	38	188	21,230
	6	3	8"	8"	6'	5.928	771	.7410	96.38	13	#5	7½"	7'-10"	106	14	#5	7"	7'-10"	114	9	#5	12"	31'-0"	291	12	6'-6"	52	12	16"	14	16"	16	17"	42	208	22,900
	7	3	8"	8"	6'	6.323	827	.7904	103.38	13	#5	7½"	7'-10"	106	15	#5	6½"	7'-10"	123	9	#5	12"	33'-0"	310	12	7'-6"	60	12	16"	14	16"	20	16"	46	228	24,540
8	4	2	8"	8"	6'	5.533	798	.6916	99.75	15	#5	6½"	8'-10"	138	15	#5	6½"	8'-10"	138	12	#5	8½"	29'-0"	363				12	18"	14	18"	6	15"	32	159	22,960
	5	3	8"	8"	6'	5.928	873	.7410	109.13	15	#5	6½"	8'-10"	138	16	#5	6"	8'-10"	147	11	#5	9"	31'-0"	356	12	5'-6"	44	12	18"	14	18"	12	18"	38	188	24,610
	6	3	8"	8"	6'	6.323	933	.7904	116.63	16	#5	6"	8'-10"	147	16	#5	6"	8'-10"	147	11	#5	9½"	33'-0"	379	12	6'-6"	52	12	18"	14	18"	16	17"	42	208	26,250
	7	3	8"	8"	6'	6.719	994	.8399	124.25	16	#5	6"	8'-10"	147	17	#5	5½"	8'-10"	157	11	#5	9½"	35'-0"	402	12	7'-6"	60	12	18"	14	18"	20	16"	46	228	27,900
	8	3	8"	8"	6'	7.114	1025	.8893	128.13	16	#5	6"	8'-10"	147	17	#5	5½"	8'-10"	157	11	#5	9½"	37'-0"	425	12	8'-6"	68	12	18"	14	18"	20	18"	46	228	29,520
9	5	3	9"	9"	6'	7.222	996	.9028	124.50	15	#5	6½"	10'-0"	156	16	#5	6"	10'-0"	167	12	#5	8"	33'-8"	421	12	5'-6"	44	14	18"	16	18"	12	18"	42	208	29,940
	6	3	9"	9"	6'	7.665	1070	.9581	133.75	16	#5	6"	10'-0"	167	17	#5	5½"	10'-0"	177	12	#5	8½"	35'-8"	446	12	6'-6"	52	14	18"	16	18"	16	17"	46	228	31,780
	7	3	9"	9"	6'	8.111	1123	1.014	140.38	16	#5	6"	10'-0"	167	17	#5	5½"	10'-0"	177	12	#5	8½"	37'-8"	471	12	7'-6"	60	14	18"	16	18"	20	16"	50	248	33,620
	8	3	9"	9"	6'	8.555	1187	1.069	148.38	12	#6	8½"	10'-0"	180	13	#6	7½"	10'-0"	195	12	#5	8½"	39'-8"	496	12	8'-6"	68	14	18"	16	18"	20	18"	50	248	35,470
	9	3	9"	9"	6'	8.999	1256	1.125	157.00	12	#6	8½"	10'-0"	180	14	#6	7"	10'-0"	210	12	#5	8½"	41'-8"	522	12	9'-6"	76	14	18"	16	18"	24	17"	54	268	37,310
10	5	3	10"	10"	6'	8.640	1223	1.080	152.88	11	#6	9"	11'-2"	184	12	#6	8"	11'-2"	201	10	#6	10½"	36'-4"	546	12	5'-6"	44	16	17"	18	17"	16	15"	50	248	35,840
	6	3	10"	10"	6'	9.133	1220	1.142	152.50	12	#6	8½"	11'-2"	201	12	#6	8"	11'-2"	201	9	#6	11"	38'-4"	518	12	6'-6"	52	16	17"	18	17"	16	18"	50	248	37,830
	7	3	10"	10"	6'	9.627	1292	1.203	161.50	12	#6	8"	11'-2"	201	13	#6	7½"	11'-2"	218	9	#6	11½"	40'-4"	545	12	7'-6"	60	16	17"	18	17"	20	17"	54	268	39,880
	8	3	10"	10"	6'	10.120	1363	1.265	170.38	12	#6	8"	11'-2"	201	14	#6	7"	11'-2"	235	9	#6	11½"	42'-4"	572	12	8'-6"	68	16	17"	18	17"	24	18"	58	287	41,930
	9	3	10"	10"	6'	10.614	1398	1.327	174.75	12	#6	8"	11'-2"	201	14	#6	7"	11'-2"	235	9	#6	11½"	44'-4"	599	12	9'-6"	76	16	17"	18	17"	24	18"	58	287	43,950
	10	3	10"	10"	6'	11.108	1470	1.389	183.75	12	#6	8"	11'-2"	201	15	#6	6½"	11'-2"	252	9	#6	11½"	46'-4"	626	12	10'-6"	84	16	17"	18	17"	28	17"	62	307	46,000



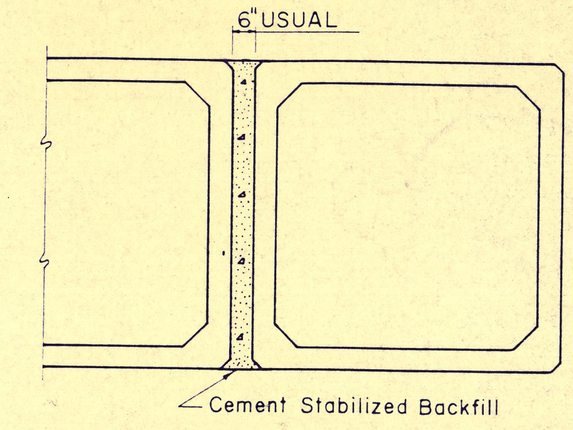
SINGLE MAT PLACEMENT

DOUBLE MAT PLACEMENT

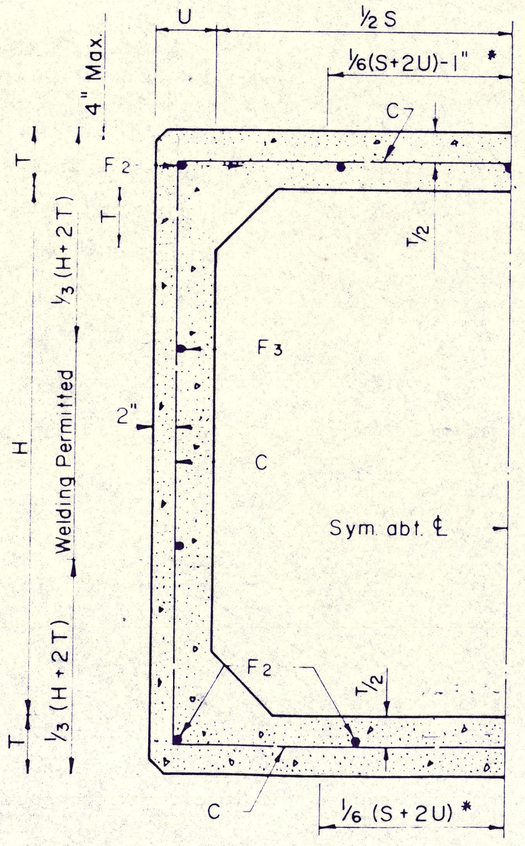


STEEL SUPPORT DETAIL

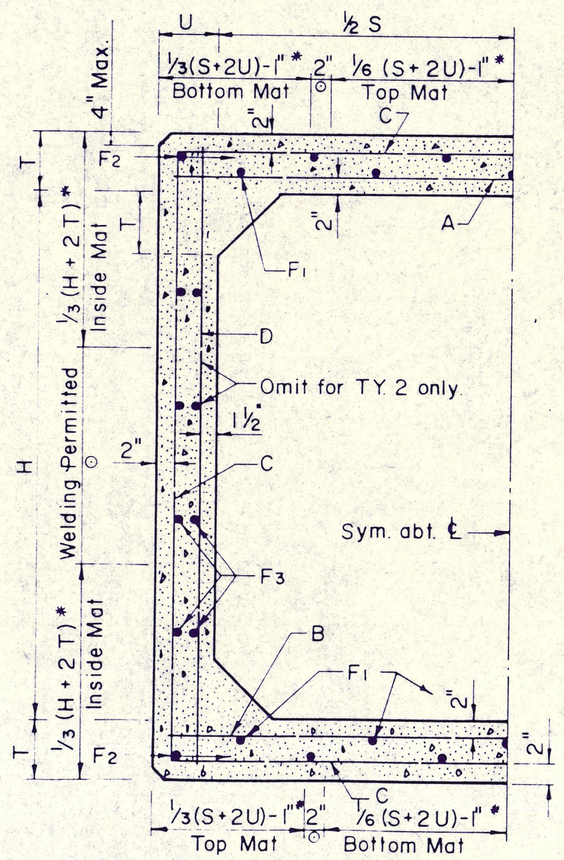
NOTE: As many Bars F as necessary may be extended to end of box to support steel during manufacture. Bars may be slightly bent to clear slope on groove lip as shown in detail. Alternatively the steel may be supported by bar extensions welded to Bars F.



MULTIPLE UNIT PLACEMENT

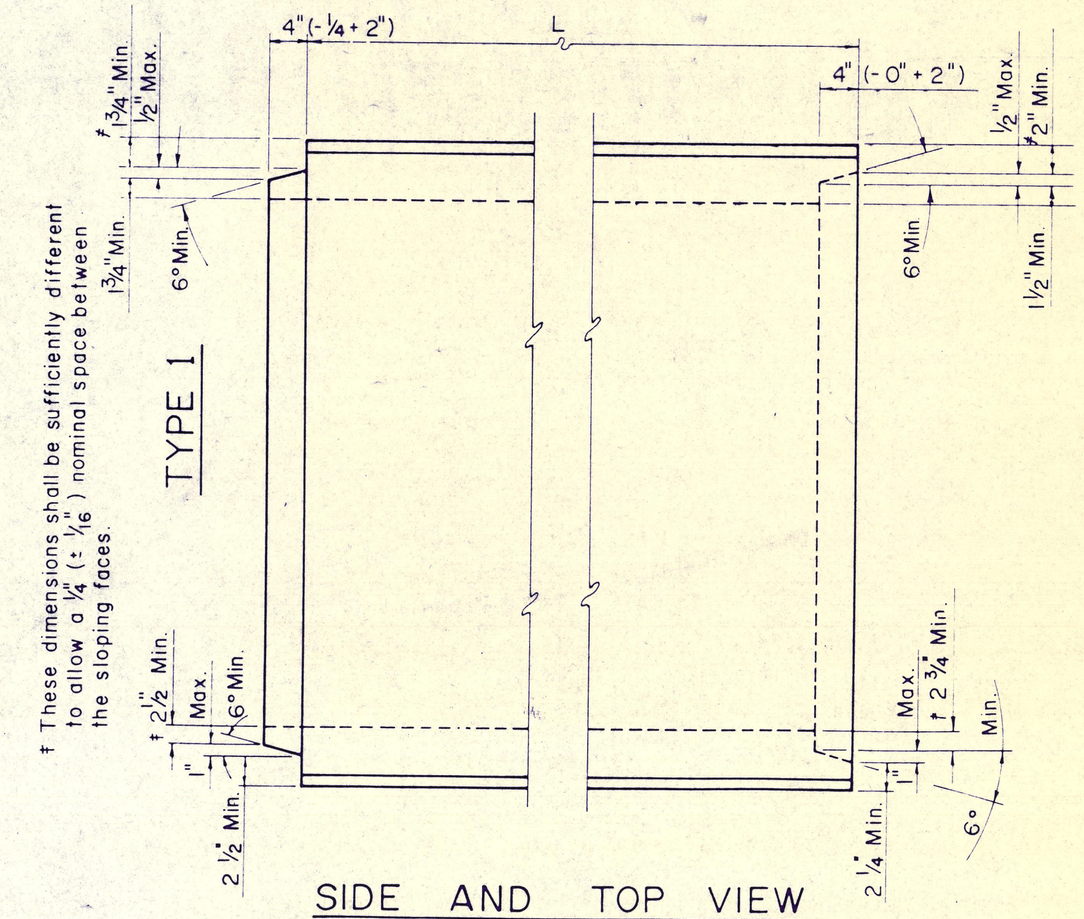


HALF SECTION TYPE 1



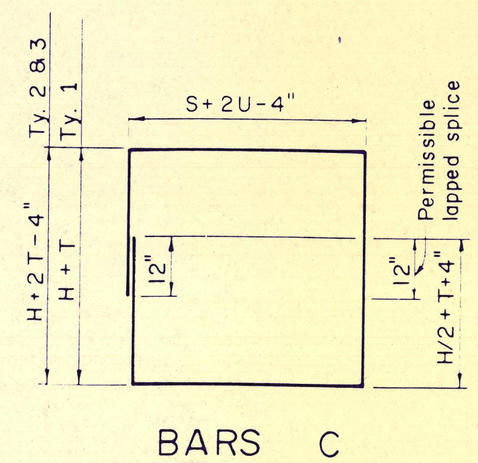
HALF SECTION TYPES 2 & 3

* Permissible tack welding on mats shown.
○ Permissible tack welding both mats.



SIDE AND TOP VIEW

NOTE. Tongue and groove dimensional controls shown are intended to allow either a 4" long 1" slope joint, a 6" long 6° slope joint or any joint configuration within these limits. Dimensions shown as minimums shall be maintained around the perimeter of the box.



BARS C

GENERAL NOTES:

Cement Stabilized Backfill shall be considered subsidiary to the unit price bid for Concrete Box.

All welding to be done by qualified welder.

Additional splices in reinforcing steel not shown hereon, must be submitted to the Bridge Division for approval prior to fabrication.

Grade 60 Bars or Wire Fabric may be used in place of Grade 40 Steel by supplying 82% of the area of steel per linear foot shown in the Tables for Bars A, B, C and D.

Longitudinal steel shall have at least as much area as Bars F and shall be spaced at 18" c.c. maximum.

These designs are adequate for HS 20 live loading and any fill depth from 2'-0" to the maximum shown in the the tables.

In lieu of furnishing the designs shown on this detail the contractor may use designs from either Standard PC-1 or ASTM C 789, Table 1. For boxes reinforced with wire fabric the minimum cover shall be three times the wire diameter but not less than one inch. Placing of reinforcment shall otherwise conform to specification "Reinforcing Steel."

REPRODUCED FROM
TEXAS STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION
STANDARD DRAWING PC-3
3/83

NO.	REVISION	BY	DATE

TEXAS TURNPIKE AUTHORITY

DALLAS NORTH TOLLWAY

PRECAST CONCRETE BOX CULVERTS

Gibbs & Hill, Inc.
ENGINEERS DESIGNERS CONSTRUCTORS
DALLAS

SECTION VII

DRAWN ____ DATE ____ DESIGNED ____ DATE ____
CHECKED DWC DATE 7/13/84 SCALE ____

CONTRACT NO. DNT-115 STANDARD DRAWING NO. 61