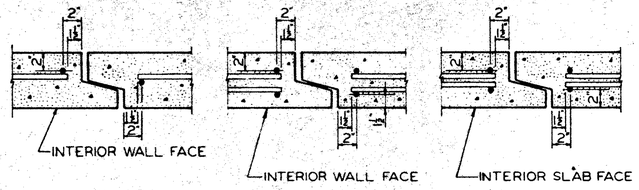
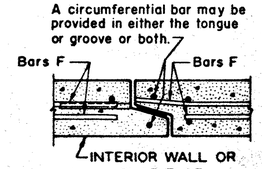
BILL OF REINFORCING STEEL FOR L=8'

CULV. SIZE S	CULV. SIZE H	TYPE SECT.	DIMENSIONS T	DIMENSIONS U	MAX. FILL	TOTAL QUANTITIES FOR L=8' CONC. C.Y.	TOTAL QUANTITIES FOR L=8' REINF. LBS.	QUANTITIES P.L.F. OF BARREL CONC. C.Y.	QUANTITIES P.L.F. OF BARREL REINF. LBS.	BARS A TOP SLAB NO.	SIZE	SPA.	LG.	WT.	BARS B BOTTOM SLAB NO.	SIZE	SPA.	LG.	WT.	BARS C NO.	SIZE	SPA.	LG.	WT.	#4 BARS D @18"± C. TO C. NO.	LG.	WT.	#4 BARS F @ 18" MAX. LENGTH L-7" F_1	SPA.	F_2	SPA.	F_3	SPA.	TOTAL	WT.	LIFT. WEIGHT L=8' LBS.
3	2	1	6"	6"	14'	1.778	193	.2222	24.13	9	#4	12"	3'-6"	21						12	#4	8½"	13'-6"	108						3	14"	8	14"	2	15"	13	64	7,330
	3	1	6"	6"	14'	2.074	230	.2592	28.88	9	#4	11½"	3'-6"	21						13	#4	7½"	15'-6"	135						3	14"	8	14"	4	14"	15	74	8,560
4	2	1	6"	6"	12'	2.074	295	.2592	36.88	8	#5	14"	4'-6"	38						11	#5	9"	15'-6"	178						4	18"	10	18"	2	15"	16	79	8,600
	3	1	6"	6"	12'	2.370	346	.2963	43.75	8	#5	12"	4'-6"	38						12	#5	8"	17'-6"	219						4	18"	10	18"	4	14"	18	89	9,840
	4	1	6"	6"	12'	2.667	395	.3333	49.38	9	#5	12"	4'-6"	42						13	#5	7½"	19'-6"	264						4	18"	10	18"	4	18"	18	89	11,070
5	2	2	6"	6"	8'	2.370	385	.2963	48.25	10	#5	10"	5'-6"	57	11	#5	9"	5'-6"	63	9	#5	11"	17'-8"	166						8	17"	10	17"	2	15"	20	99	9,860
	3	2	6"	6"	8'	2.667	426	.3333	53.25	11	#5	9"	5'-6"	63	12	#5	8½"	5'-6"	69	9	#5	12"	19'-8"	185						8	17"	10	17"	4	14"	22	109	11,100
	4	2	6"	6"	8'	2.963	444	.3704	57.00	11	#5	8½"	5'-6"	63	12	#5	7½"	5'-6"	69	9	#5	12"	21'-8"	203						8	17"	10	17"	4	18"	22	109	12,310
	5	3	6"	7"	8'	3.556	548	.4445	68.50	11	#5	9"	5'-8"	65	12	#5	8"	5'-8"	71	8	#5	13"	24'-0"	200	12	5'-6"	44	10	17"	12	17"	12	18"	34	168	14,780
6	3	2	6"	6"	8'	2.963	568	.3704	71.00	14	#5	7"	6'-6"	95	14	#5	7"	6'-6"	95	11	#5	9"	21'-8"	249						10	15"	12	15"	4	14"	26	129	12,390
	4	2	6"	6"	8'	3.259	605	.4074	75.63	15	#5	6½"	6'-6"	102	15	#5	6½"	6'-6"	102	11	#5	9½"	23'-8"	272						10	15"	12	15"	4	18"	26	129	13,620
	5	3	6"	7"	8'	3.852	684	.4815	85.50	14	#5	7"	6'-8"	97	15	#5	6½"	6'-8"	104	10	#5	10"	26'-0"	271	12	5'-6"	44	10	16"	12	16"	12	18"	34	168	16,070
	6	3	6"	7"	8'	4.198	746	.5248	93.25	15	#5	6½"	6'-8"	102	16	#5	6"	6'-8"	111	10	#5	10"	28'-0"	292	12	6'-6"	52	10	16"	12	16"	16	16"	38	189	17,520
7	3	2	6½"	6"	6'	3.457	746	.4321	93.25	11	#6	9"	7'-6"	124	12	#6	8"	7'-6"	135	10	#6	10"	23'-10"	358						10	18"	12	18"	4	14"	26	129	14,520
	4	2	6½"	6"	6'	3.753	778	.4691	97.25	12	#6	8"	7'-6"	135	13	#6	7½"	7'-6"	146	9	#6	11"	25'-10"	349						12	18"	14	18"	4	18"	30	148	15,740
	5	3	6½"	7"	6'	4.350	879	.5438	109.88	11	#6	9"	7'-8"	127	12	#6	8	7'-8"	138	9	#6	11½"	28'-2"	381	12	5'-6"	44	12	17"	14	17"	12	18"	38	189	18,220
	6	3	6½"	7"	6'	4.695	956	.5869	119.50	12	#6	8½"	7'-8"	138	13	#6	8½"	7'-8"	150	9	#6	12"	30'-2"	408	12	6'-6"	52	12	17"	14	17"	16	16"	42	208	19,670
	7	3	6½"	7"	6'	5.041	1011	.6301	126.38	12	#6	8½"	7'-8"	138	13	#6	7½"	7'-8"	150	9	#6	11½"	32'-2"	435	12	7'-6"	60	12	17"	14	17"	20	15"	46	228	21,110
8	4	2	6½"	6"	6'	4.074	979	.5093	122.38	15	#6	6½"	8'-6"	192	14	#6	7"	8'-6"	179	11	#6	9"	27'-10"	460						12	17"	14	17"	4	18"	30	148	17,180
	5	3	6½"	7"	6'	4.671	1050	.5838	131.25	14	#6	7"	8'-8"	182	14	#6	7"	8'-8"	182	10	#6	10"	30'-2"	453	12	5'-6"	44	12	17"	14	17"	12	18"	38	189	19,640
	6	3	6½"	7"	6'	5.017	1107	.6271	138.38	14	#6	7"	8'-8"	182	14	#6	7"	8'-8"	182	10	#6	10"	32'-2"	483	12	6'-6"	52	12	17"	14	17"	16	16"	42	208	21,080
	7	3	6½"	7"	6'	5.362	1178	.6703	147.25	14	#6	7"	8'-8"	182	15	#6	6½"	8'-8"	195	10	#6	10"	34'-2"	513	12	7'-6"	60	12	17"	14	17"	20	15"	46	228	22,530
	8	3	6½"	8"	6'	6.157	1202	.7696	150.25	13	#6	7½"	8'-10"	172	14	#6	7"	8'-10"	186	10	#6	10½"	36'-6"	548	12	8'-6"	68	12	18"	14	18"	20	18"	46	228	25,770
9	5	3	7"	7"	6'	5.242	1222	.6553	152.75	15	#6	6½"	9'-8"	218	15	#6	6½"	9'-8"	218	11	#6	9"	32'-4"	534	12	5'-6"	44	14	17"	16	17"	12	18"	42	208	22,070
	6	3	7"	7"	6'	5.588	1297	.6985	162.13	16	#6	6"	9'-8"	232	15	#6	6½"	9'-8"	218	11	#6	9"	34'-4"	567	12	6'-6"	52	14	17"	16	17"	16	16"	46	228	23,530
	7	3	7"	7"	6'	5.934	1372	.7417	171.50	16	#6	6"	9'-8"	232	16	#6	6"	9'-8"	232	11	#6	9"	36'-4"	600	12	7'-6"	60	14	17"	16	17"	20	15"	50	248	24,980
	8	3	7"	8"	6'	6.733	1399	.8416	174.88	15	#6	6½"	9'-10"	222	15	#6	6½"	9'-10"	222	11	#6	9½"	38'-8"	639	12	8'-6"	68	14	17"	16	17"	20	18"	50	248	28,230
	9	3	7"	8"	6'	7.128	1460	.8909	182.50	15	#6	6½"	9'-10"	222	15	#6	6½"	9'-10"	222	11	#6	9"	40'-8"	672	12	9'-6"	76	14	17"	16	17"	24	17"	54	268	29,880
10	5	3	7"	7"	6'	5.588	1470	.6985	183.75	17	#6	5½"	10'-8"	272	16	#6	6"	10'-8"	256	13	#6	7½"	34'-4"	670	12	5'-6"	44	16	16"	18	16"	12	18"	46	228	23,650
	6	3	7"	7"	6'	5.934	1537	.7417	192.13	17	#6	5½"	10'-8"	272	16	#6	6"	10'-8"	256	13	#6	7½"	36'-4"	709	12	6'-6"	52	16	16"	18	16"	16	16"	50	248	25,090
	7	3	7"	7"	6'	6.279	1604	.7849	200.50	17	#6	5½"	10'-8"	272	17	#6	5½"	10'-8"	256	13	#6	7½"	38'-4"	748	12	7'-6"	60	16	16"	18	16"	20	15"	54	268	26,540
	8	3	7"	8"	6'	7.078	1623	.8848	202.88	17	#6	5½"	10'-10"	277	17	#6	5½"	10'-10"	277	12	#6	8"	40'-8"	733	12	8'-6"	68	16	16"	18	16"	20	18"	54	268	29,790
	9	3	7"	8"	6'	7.473	1686	.9342	210.75	17	#6	5½"	10'-10"	277	17	#6	5½"	10'-10"	277	12	#6	8"	42'-8"	769	12	9'-6"	76	16	16"	18	16"	24	17"	58	287	31,430
	10	3	7"	8"	6'	7.868	1817	.9835	227.13	17	#6	5½"	10'-10"	277	17	#6	5½"	10'-10"	277	13	#6	7½"	44'-8"	872	12	10'-6"	84	16	16"	18	16"	28	16"	62	307	33,120



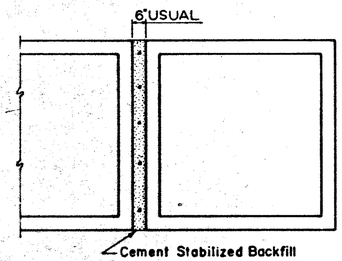
SINGLE MAT PLACEMENT

DOUBLE MAT PLACEMENT

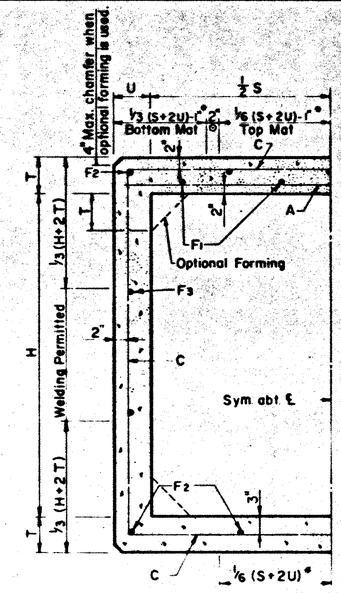


STEEL SUPPORT DETAIL

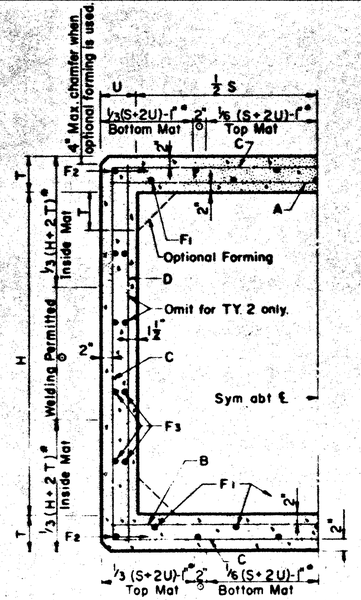
NOTE: As many Bars F as necessary may be extended to end of box to support steel during manufacture. Bars may be slightly bent to clear slope on groove tip as shown in detail. Alternatively the steel may be supported by bar extensions welded to Bars F.



MULTIPLE UNIT PLACEMENT



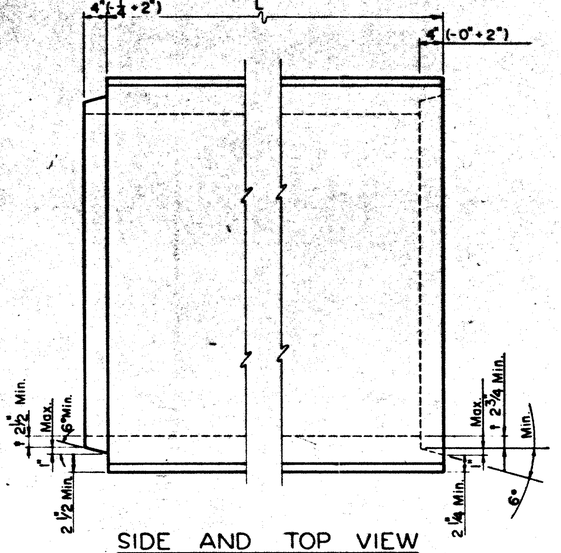
HALF SECTION TYPE 1



HALF SECTION TYPES 2 & 3

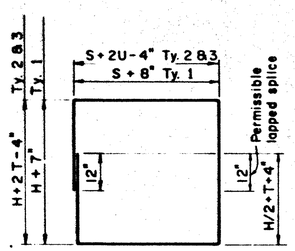
* Permissible tack welding on mats shown
○ Permissible tack welding butn mats.

† These dimensions shall be sufficiently different to allow a ¼ (± 1/16") nominal space between the sloping faces.



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-3 or ASTM C-789, Table I. 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."

TEXAS HIGHWAY DEPARTMENT
BRIDGE DIVISION

PRECAST CONCRETE BOX CULVERTS

PC-1

ORIGINAL DRAWING DATE DEC. 1977		STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT		SHEET
DN.-ADC	REVISIONS		6			
CK.-CCT	REV. 6-80 GEN. NOTE	COUNTY		CONTROL	SECTION	JOB	HIGHWAY
DW.-EDS							
CK.-CCT							

Sht. 31