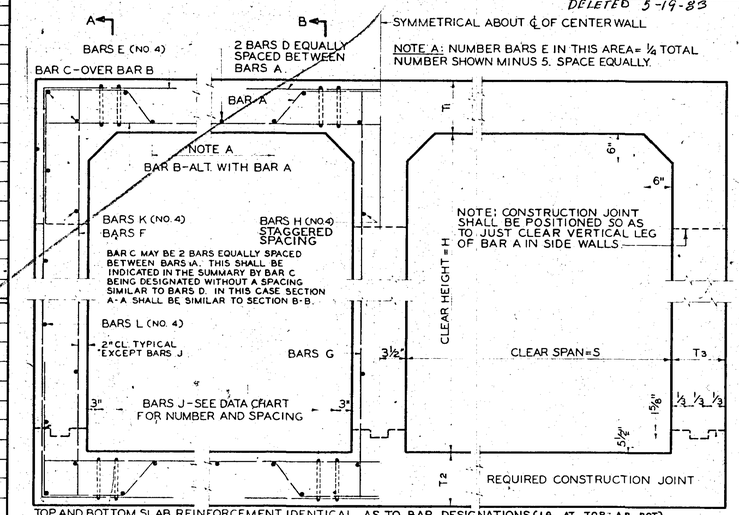
DESIGN (S;H; FILL OVER TOP)	DBL 5-4-10	DBL 5-4-20	DBL 5-4-30	DBL 5-4-40	DBL 5-4-50	DBL 5-4-60 △3	DBL 5-4-70 △2
T_1	7"	7½"	8¾"	9¾"	10½"	11 1/4"	12"
T_2	7"	7¾"	8¾"	9¾"	10¾"	11 1/4"	12"
T_3	7"	7"	7"	7"	7¾"	7 1/2"	7 1/2"
BARS AT	--	406T @ 10½"	407 @ 9"	503 @ 10½"	506 @ 10½"	509 @ 10 1/2"	512 @ 10 1/2"
BARS BT	401 @ 9"	401 @ 10½"	502 @ 9"	502 @ 10½"	505 @ 10½"	508 @ 10 1/2"	510 @ 10 1/2"
BARS DT	402 @ 4½"	1-402; 1-501	1-402; 1-501	1-501; 1-601	2-601	2-601	2-601
NO. BARS JT EXT. CORNER	--	--	--	1	1	1	1
NO. BARS JT INT. CORNER	--	1	2 @ 4"	2 @ 6"	3 @ 4"	3 @ 4"	4 @ 3 1/2"
BARS AB	--	406B @ 10½"	407 @ 9"	503 @ 10½"	506B @ 10½"	509 @ 10 1/2"	512 @ 10 1/2"
BARS BB	401 @ 9"	401 @ 10½"	502 @ 9"	502 @ 10½"	505 @ 10½"	508 @ 10 1/2"	510 @ 10 1/2"
BARS DB	402 @ 4½"	1-402; 1-501	1-402; 1-501	1-501; 1-601	2-601	2-601	2-601
NO. BARS JB EXT. CORNER	--	--	--	1	1	1	1
NO. BARS JB INT. CORNER	--	1	2 @ 4"	2 @ 6"	3 @ 4"	3 @ 4"	4 @ 3 1/2"
BARS C	403 @ 8"	405 @ 10½"	408 @ 9"	504 @ 10½"	507 @ 10½"	511 @ 10 1/2"	513 @ 10 1/2"
NO. BARS E IN 2 SLABS	36	36	36	36	36	36	36
BARS F	402 @ 10½"	404 @ 10½"	409 @ 10½"	410 @ 10½"	411 @ 10½"	416 @ 10 1/2"	417 @ 10 1/2"
BARS G	402 @ 10½"	404 @ 10½"	409 @ 10½"	410 @ 10½"	411 @ 10½"	416 @ 10 1/2"	417 @ 10 1/2"
NO. BARS H IN INT. WALL	7	7	7	7	7	7	7
NO. BARS K IN 2 EXT. WALLS	6	6	6	6	6	6	6
NO. BARS L IN 2 EXT. WALLS	8	8	8	8	8	8	8
CU. YDS. CONC. PER FT.	.786	.905	.987	1.059	1.095	1.112	1.167
LB. REINF. STEEL PER FT.	108.09	128.23	160.45	181.50	202.26	208.04	211.09
	△1	△4	△4	△4	△4	△4	△4

DESIGN (S;H; FILL OVER TOP)	DBL 4-4-10	DBL 4-4-20	DBL 4-4-30	DBL 4-4-40	DBL 4-4-50	DBL 4-4-60	DBL 4-4-70	DBL 4-4-80	DBL 4-4-90	DBL 4-4-100
T_1	7"	8"	8"	8"	8½"	9"	10"	10½"	11"	11½"
T_2	7"	8"	8"	8"	8½"	9"	10"	10½"	11"	11½"
T_3	7"	8"	8"	8"	8"	8"	9"	10½"	11½"	13"
BARS AT	412 @ 18"	418 @ 12"	418 @ 12"	418 @ 12"	422 @ 12"	515 @ 12"	516 @ 12"	517 @ 12"	519 @ 12"	522 @ 12"
BARS BT	413 @ 18"	419 @ 12"	419 @ 12"	514 @ 12"	514 @ 12"	514 @ 12"	525 @ 12"	518 @ 12"	520 @ 12"	523 @ 12"
BARS DT	414 @ 6"	420 @ 4"	420 @ 41	420 @ 4"	1-420; 1-521	420 @ 4"	1-420 1-521	1-420; 1-521	1-427; 1-526	524 @ 4"
NO. BAR JT EXT. CORNER	——			1	1	1	1	1	1	1
NO. BAR JT INT. CORNER	——		1	2 @ 4"	2 @ 5"	3 @ 4"	3 @ 3"	3 @ 3"	4 @ 3"	4 @ 2½"
BARS AB	412 @ 18"	418 @ 12"	418 @ 12"	418 @ 12"	422 @ 12"	515 @ 12"	516 @ 12"	517 @ 12"	519 @ 12"	522 @ 12"
BARS BB	413 @ 18"	419 @ 12"	419 @ 12"	514 @ 12"	514 @ 12"	514 @ 12"	525 @ 12"	518 @ 12"	520 @ 12"	523 @ 12"
BARS DB	414 @ 6"	420 @ 4"	420 @ 4"	420 @ 4"	1-420; 1-521	420 @ 4"	1-420; 1-521	1-420; 1-521	1-427; 1-526	524 @ 4"
NO. BARS JB EXT. CORNER	——			1	1	1	1	1	1	1
NO. BARS JB INT. CORNER	——		1	2 @ 4"	2 @ 5"	3 @ 4"	3 @ 3"	3 @ 3"	4 @ 3"	4 @ 3"
BARS C	508 @ 18"	421 @ 12"	421 @ 12"	421 @ 12"	423 @ 12"	425 @ 12"	428 @ 12"	430 @ 12"	432 @ 12"	434 @ 12"
NO. BARS E IN 2 SLABS	36	36	36	36	36	36	36	36	36	36
BARS F	415 @ 12"	436 @ 12"	436 @ 12"	436 @ 12"	424 @ 12"	426 @ 12"	429 @ 12"	431 @ 12"	433 @ 12"	435 @ 12"
BARS G	415 @ 12"	436 @ 12"	436 @ 12"	436 @ 12"	424 @ 12"	426 @ 12"	429 @ 12"	431 @ 12"	433 @ 12"	435 @ 12"
NO. BARS H IN INT. WALL	7	7	7	7	7	7	7	7	7	7
NO. BARS K IN 2 EXT. WALL	6	6	6	6	6	6	6	6	6	6
NO. BARS L IN 2 EXT. WALL	8	8	8	8	8	8	8	8	8	8
CU. YDS. CONC. PER FT.	0.699	0.792	0.792	0.792	0.823	0.853	0.950	1.009	1.102	1.189
LB. REINF. STEEL PER FT.	95.24	106.32	110.16	125.03	128.89	140.96	147.09	148.79	156.11	161.64

NOTE: BEND LONGITUDINAL BARS INTO WINGS AND PARAPETS SIMILAR TO STANDARDS. IF CULVERT IS SKEWED CUT TRANSVERSE STEEL AND BEND 12" INTO PARAPET OR TOEWALL AND HOOK

STATE	PROJECT NUMBER	SHEET No.	TOTAL SHEETS
GA.	TSAP 193 (9)	91	135

DELETED 5-19-83

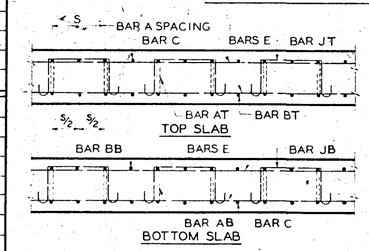


SYMMETRICAL ABOUT ℄ OF CENTER WALL

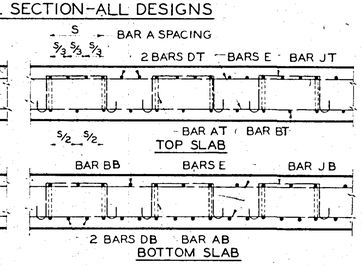
NOTE A: NUMBER BARS E IN THIS AREA = ¼ TOTAL NUMBER SHOWN MINUS 5. SPACE EQUALLY.

TOP AND BOTTOM SLAB REINFORCEMENT IDENTICAL. AS TO BAR DESIGNATIONS (I.E. AT TOP; AB BOT.)

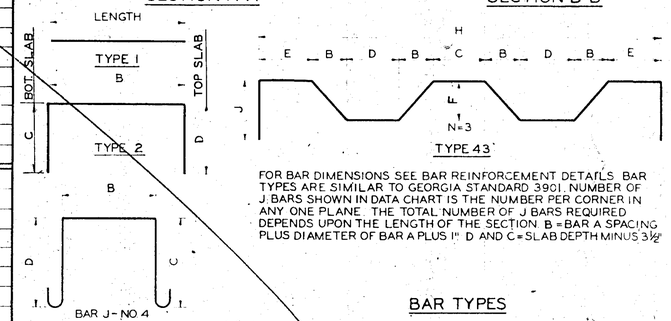
TYPICAL BARREL SECTION-ALL DESIGNS



SECTION A-A



SECTION B-B



FOR BAR DIMENSIONS SEE BAR REINFORCEMENT DETAILS. BAR TYPES ARE SIMILAR TO GEORGIA STANDARD 3901. NUMBER OF J BARS SHOWN IN DATA CHART IS THE NUMBER PER CORNER IN ANY ONE PLANE. THE TOTAL NUMBER OF J BARS REQUIRED DEPENDS UPON THE LENGTH OF THE SECTION. B = BAR A SPACING PLUS DIAMETER OF BAR A PLUS 1" D AND C = SLAB DEPTH MINUS 3½"

BAR TYPES

REVISIONS	BY	DATE
△1 ADDED 4-4-10	S.L.W.	9-29-75
△2 ADDED 5-4-60 & 5-4-70	R.J.S.	2-28-80
△3 DELETE BAR INCREASE TO 8	R.J.S.	2-11-81
△4 ADDED 4-4-20 THROUGH 100		

GEORGIA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION - BRIDGE DESIGN

SHEET 1 of 2

SPECIAL DESIGN DOUBLE BOX CULVERTS
5-4, 4-4

NO SCALE — APRIL 1971

(12)

DESIGNED E.E.L. — TRACED G.L.G. — REVIEWED F.B.
DRAWN E.E.L. — CHECKED R.L.M. — APPROVED