NOTE: THE DESIGN OF CULVERT SHALL BE DETERMINED BY THE MAXIMUM HEIGHT OF FILL WITH ONLY A SINGLE DESIGN BEING USED FOR THE ENTIRE INSTALLATION.

FED. ROAD DIV. No.	STATE	FED. AID PROJ. No.	STATE AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
	GA.					

DATA CHART

DESIGN	6-4-10	6-4-20	6-4-30	6-4-40	6-4-50	6-4-60	6-4-70	6-4-80
CLEAR SPAN "S"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"	6'-0"
CLEAR HEIGHT "H"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"
T_1	8"	8"	9¼"	10½"	11½"	12¼"	13¼"	14¼"
T_2	9"	9"	9"	9¼"	10"	10¾"	11½"	12¼"
BARS "A"	585 @ 12"	2-585 BTWN.	2-616 BTWN.	2-654 BTWN.	2-710 BTWN.	2-711 BTWN.	2-712 BTWN.	2-714 BTWN.
BARS "B"	462 @ 12"	462 @ 12"	465 @ 12"	588 @ 12"	589 @ 12"	655 @ 12"	713 @ 12"	715 @ 12"
BARS "C"	463 @ 12"	586 @ 12"	2-466 BTWN.	2-473 BTWN.	2-474 BTWN.	2-475 BTWN.	2-508 BTWN.	2-591 BTWN.
NO. BARS "D" IN 2 SLABS	24	24	24	24	24	24	24	24
BARS "E"	444 @ 12"	444 @ 12"	409 @ 12"	468 @ 12"	470 @ 12"	472 @ 12"	414 @ 12"	448 @ 12"
NO. BARS "F" IN 2 WALLS	6 @ 16"	6 @ 16"	6 @ 16"	6 @ 16"	6 @ 16"	6 @ 16"	6 @ 16"	6 @ 16"
NO. BARS "G" IN 2 WALLS	4 @ 16"	4 @ 16"	4 @ 16"	4 @ 16"	4 @ 16"	4 @ 16"	4 @ 16"	4 @ 16"
BARS "H"	464 @ 12"	587 @ 12"	2-467 BTWN.	2-469 BTWN.	2-471 BTWN.	2-476 BTWN.	2-590 BTWN.	2-590 BTWN.
NO. BARS "J" PER CORNER	0	0	1 (8" BAR SP)	1 (7" BAR SP)	2 @ 5" O.C.	3 @ 4½" O.C.	4 @ 3½" O.C.	4 @ 3½" O.C.
CU. YDS. CONCRETE PER FT.	0.602	0.602	0.660	0.735	0.800	0.876	0.941	1.019
LBS. REINF. STEEL PER FT.	73.90	97.24	123.55	134.11	156.15	177.37	214.80	218.32
HEIGHT OF FILL OVER TOP	10'	20'	30'	40'	50'	60'	70'	80'

DESIGN	7-4-10	7-4-20	7-4-30	7-4-40	7-4-50	7-4-60	7-4-70
CLEAR SPAN "S"	7'-0"	7'-0"	7'-0"	7'-0"	7'-0"	7'-0"	7'-0"
CLEAR HEIGHT "H"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"
T_1	9"	9"	10¼"	11½"	12⅜"	13⅜"	14⅜"
T_2	9"	9"	9¼"	10½"	11½"	12¼"	13¼"
BARS "A"	592 @ 12"	2-592 BTWN.	2-635 BTWN.	2-716 BTWN.	2-717 BTWN.	2-801 BTWN.	2-802 BTWN.
BARS "B"	477 @ 12"	593 @ 12"	594 @ 12"	595 @ 12"	656 @ 12"	657 @ 12"	718 @ 12"
BARS "C"	478 @ 12"	2-478 BTWN.	2-478 BTWN.	2-479 BTWN.	2-481 BTWN.	2-482 BTWN.	2-596 BTWN.
NO. BARS "D" IN 2 SLABS	26	26	26	26	26	26	26
BARS "E"	409 @ 12"	409 @ 12"	423 @ 12"	470 @ 12"	472 @ 12"	483 @ 12"	430 @ 12"
NO. BARS "F" IN 2 WALLS	6 @ 16"	6 @ 16"	6 @ 16"	6 @ 16"	6 @ 16"	6 @ 16"	6 @ 16"
NO. BARS "G" IN 2 WALLS	4 @ 16"	4 @ 16"	4 @ 16"	4 @ 16"	4 @ 16"	4 @ 16"	4 @ 16"
BARS "H"	458 @ 12"	2-458 BTWN.	2-458 BTWN.	2-480 BTWN.	2-467 BTWN.	2-484 BTWN.	2-597 BTWN.
NO. BARS "J" PER CORNER	0	0	1 (10" BAR SP)	2 @ 6" O.C.	3 @ 5" O.C.	4 @ 4" O.C.	5 @ 3½" O.C.
CU. YDS. CONCRETE PER FT.	0.704	0.704	0.787	0.890	0.995	1.089	1.175
LBS. REINF. STEEL PER FT.	79.60	120.74	140.65	167.49	193.45	221.76	266.03
HEIGHT OF FILL OVER TOP	10'	20'	30'	40'	50'	60'	70'

DESIGN	5-7-10	5-7-20	5-7-30
BARREL DIMENSION	S=5', H=7'	S=5', H=7'	S=5', H=7'
T_1	8"	8"	10"
T_2	8"	8"	9¼"
BARS "A"	2-411 @ 10" B'TWN. BARS "B"	2-411 @ 5" B'TWN. BARS "B"	2-521 @ 7" B'TWN. BARS "B"
BARS "B"	413 @ 30" E=14", G=20"	413 @ 15" E=13", G=20"	513 @ 21" E=13", G=22"
BARS "C"	A=24" 450 @ 30"	A=24" 450 @ 15"	A=26" 451 @ 21"
NO. BARS "D" IN 2 SLABS	22	22	22
BARS "E"	401 @ 18"	401 @ 18"	401 @ 18"
NO. BARS "F" IN 2 WALLS	14 @ 16"	14 @ 16"	14 @ 16"
NO. BARS "G" IN 2 WALLS	12 @ 18"	12 @ 18"	12 @ 18"
BARS "H"	403 @ 30"	403 @ 15"	421 @ 21"
NO. BARS "J" PER CORNER	0	0	0
CU. YDS. CONCRETE PER FT.	.668	.668	.812
LBS. REINF. STEEL PER FT.	57.44	75.58	76.74
HEIGHT OF FILL OVER TOP	10'	20'	30'

DESIGN	5-8-10
CLEAR SPAN "S"	5'-0"
CLEAR HEIGHT "H"	8'-0"
T_1 AND T_2	8"
BARS "A"	448 @12"
BARS "B"	489@. 12"
BARS "C"	490 @12"
NO BARS "D" IN 2SLABS	22
BARS "E"	491@ 12"
NO BARS "F" IN 2SLABS	12 @ 16"
NO BARS "G" IN 2SLABS	10 @ 16"
BARS "H"	492 @. 12"
NO BARS "J" PER CORNER	0
CU YDS CONC PER FT	0.717
LBS REINF STEEL PER FT	82.76
HT OF FILL OVER TOP	10'

BOX CULVERT REQUIREMENTS:

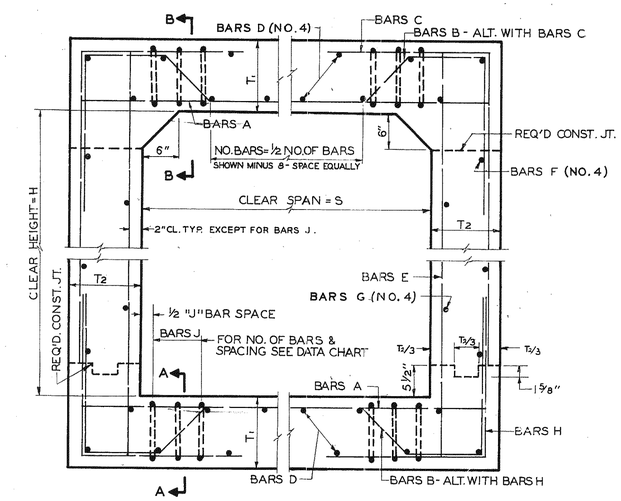
MINIMUM FILL HEIGHT FROM TOP OF CULVERT TO BOTTOM OF BASE WITHIN TRAVELWAY SHALL BE 12 INCHES.

MAXIMUM POUR LENGTH SHALL NOT EXCEED 30 FEET ALONG THE LENGTH OF THE CULVERT.

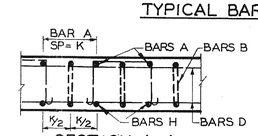
TRANSVERSE CONSTRUCTION JOINTS SHALL BE PLACED IN THE BARREL NORMAL TO THE CENTERLINE OF CULVERT, AT THE OUTSIDE SHOULDER BREAK POINTS. LONGITUDINAL BARREL REINFORCING STEEL SHALL NOT BE CONTINUOUS THROUGH THESE JOINTS, PROVIDED THAT THE JOINTS ARE MORE THAN 15 FEET FROM THE BARREL ENDS.
WHEN TRANSVERSE CONSTRUCTION JOINTS OCCUR WITHIN 15 FEET OF THE BARREL ENDS OR WITHIN THE LIMITS OF THE PAVEMENT, THE LONGITUDINAL BARREL REINFORCING SHALL THEN BE CONTINOUS THROUGH SUCH JOINTS. THE MINIMUM LENGTH OF LAP SPLICE FOR LONGITUDINAL REINFORCING SHALL BE 24 INCHES.

TRANSVERSE CONSTRUCTION JOINTS PLACED AT ANY OTHER LOCATION NOT SPECIFIED ABOVE SHALL BE FORMED WITH NO LONGITUDINAL REINFORCING STEEL PASSING THROUGH THE JOINTS.

NOTE: BARS "A" THAT ARE SHOWN AS TWO SHALL BE EQUALLY SPACED BETWEEN BARS "B" TOP AND BOTTOM SLABS.



TYPICAL BARREL SECTION - ALL DESIGNS

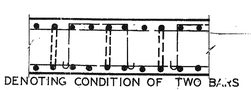


SECTION A-A

DENOTING CONDITION OF TWO BARS A & TWO BARS H B'TWN BARS B

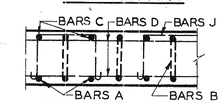
SECTION A-A

NOTE: NO. OF "J" BARS SHOWN IN DATA CHART IS THE NO. PER CORNER IN ANY ONE PLANE. THE TOTAL NO. OF "J" BARS REQUIRED DEPENDS UPON THE LENGTH OF THE SECTION.



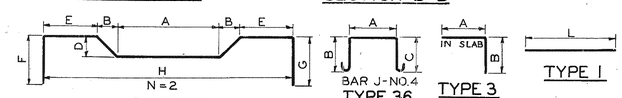
DENOTING CONDITION OF TWO BARS A & TWO BARS G B'TWN BARS B

SECTION B-B



NOTE: BAR SPACINGS ARE THE SAME AS IN SECTION A-A.

SECTION B-B



TYPE 50 TYPE 36 TYPE 3 TYPE 1

BAR TYPES

BAR "A": $L = S + 2T_2 - 4''$
BAR "B": $B\&D = T_1 - 4''$; $H = S + 2T_2 - 4''$; $A = H - 2E - 2B$; $G = F$
BAR "C": $B = H + T_1 - 7\frac{1}{2}''$
BAR "E": $L = H + 2T_1 - 4''$
BAR "H": $B = T_1 + 3\frac{1}{2}'' + 16.67d$. NOTE: d = DIAMETER OF BAR "H"; A = DIM. A OF BAR "C".
BAR "J": A = SPACING OF BAR "B" + 1" + DIAMETER OF BAR "C"; $B\&C = T_1 - 3\frac{1}{2}''$

NOTE: SEE DATA CHART FOR DIMENSIONS OF BAR DETAILS NOT INDICATED ABOVE.

REINFORCEMENT DETAILS

REVISIONS	BY	DATE
ADD 6"x7" & 5"x7" NOTE	RTC	1-23-86
ADD FILL HT. NOTE	RMU	10-25-91
ADD REINFORCEMENT NOTE		11-16-91

STATE HIGHWAY DEPARTMENT OF GEORGIA
BRIDGE DEPARTMENT

SPECIAL DESIGN BOX CULVERTS
SHEET 1A OF 3
6-4; 7-4; 5-7; 5-8

NO SCALE

(2)

BRIDGE SHEET OF

DESIGNED J.T.K. DRAWN J.M.B. TRACED C.U. CHECKED REVIEWED APPROVED