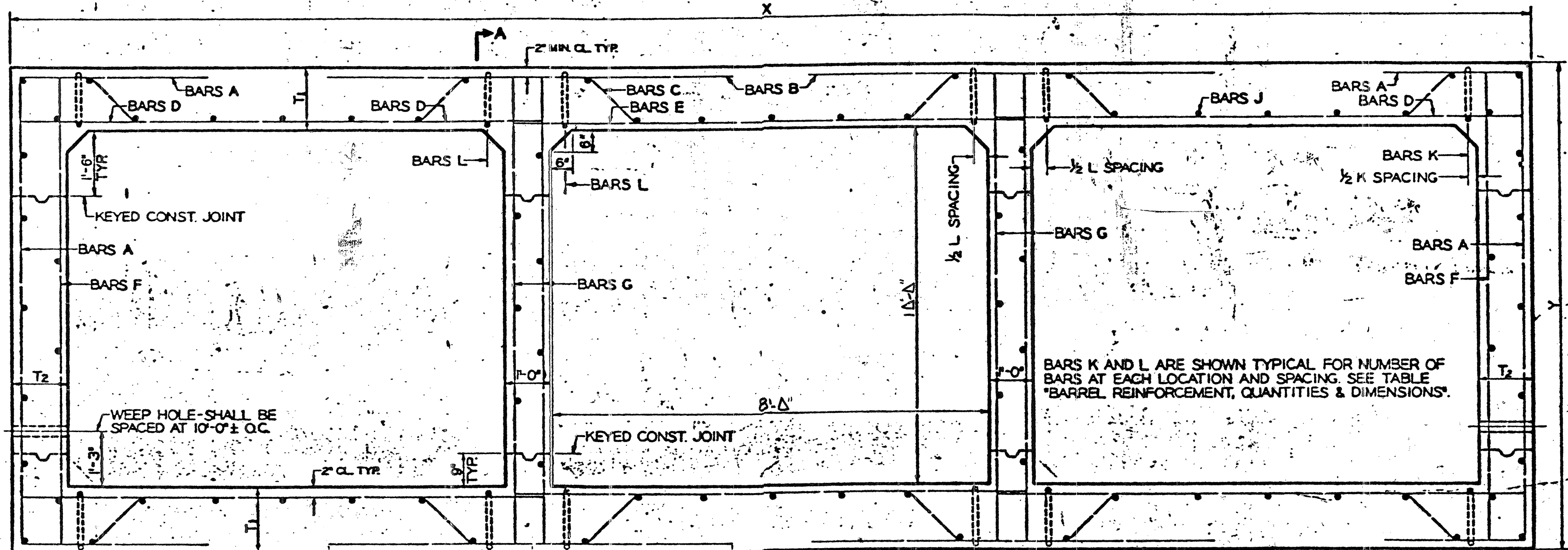


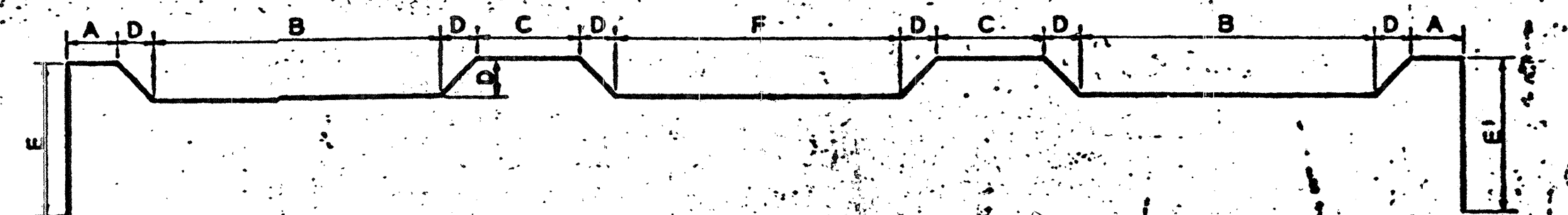
TRIPLE 8'x10' BOX CULVERT				
BARREL REINF. QUANTITIES AND DIMENSIONS				
DESIGN	1	2	3	4
T ₁	9"	11 1/2"	1'-1 1/2"	1'-3 1/4"
T ₂	8 1/2"	10 3/4"	1'-0 3/4"	1'-2 1/2"
X	27'-5"	27'-9 1/2"	28'-1 1/2"	28'-5"
Y	11'-6"	11'-11"	12'-3"	12'-6 1/2"
BAR A	4Δ1 @ 12"	4Δ2 @ 12"	4Δ3 @ 12"	4Δ4 @ 16"
BAR B	6Δ1 @ 12"	2-6Δ1	2-6Δ1	1-6Δ1
BAR C	5Δ1 @ 12"	5Δ2 @ 12"	5Δ3 @ 12"	6Δ2 @ 8"
BAR D	5Δ4 @ 12"	7Δ1 @ 12"	2-6Δ3	6Δ4 @ 8"
BAR E	4Δ5 @ 12"	4Δ5 @ 12"	5Δ5 @ 12"	4Δ5 @ 8"
BAR F	4Δ6 @ 12"	4Δ7 @ 12"	4Δ8 @ 12"	4Δ9 @ 16"
BAR G	4Δ6 @ 12"	4Δ7 @ 12"	4Δ8 @ 12"	4Δ9 @ 16"
BAR J	78-4Δ1Δ	78-4Δ1Δ	78-4Δ1Δ	78-4Δ1Δ
BAR K	Not Req'd	1-4Δ1 @ 11"	1-4Δ2 @ 9"	1-4Δ3 @ 7"
BAR L	"	2-4Δ1 @ 8"	4-4Δ2 @ 5"	5-4Δ3 @ 4"
NO. J BARS IN TWO SLABS	5Δ	5Δ	5Δ	5Δ
Cu. Yds. Class "A" Conc.	2.82	3.41	3.9Δ	4.34
Lbs. Bar Reinf. Steel	277	382	455	494

BARREL SECTION BAR REINF. DETAILS								
MARK	LENGTH	TYPE	A	B	C	D	E	F
4Δ1	17'-Δ"	8	11'-2"	2'-11"	2'-11"			
4Δ2	17'-5"	8	11'-7"	2'-11"	2'-11"			
4Δ3	17'-11"	8	11'-11"	3'-Δ"	3'-Δ"			
4Δ4	18'-4 1/2"	8	12'-2 1/2"	3'-1"	3'-1"			
4Δ5	9'-8"	1						
4Δ6	11'-2"	1						
4Δ7	11'-7"	1						
4Δ8	11'-11"	1						
4Δ9	12'-2 1/2"	1						
4Δ1Δ	1'-4"	1	(78 BARS REQ'D)					
4Δ11	3'-6"	6	1'-2"	Δ'-8"	Δ'-8"			
4Δ12	3'-1Δ"	6	1'-2"	Δ'-1Δ"	Δ'-1Δ"			
4Δ13	4'-1 1/2"	6	1'-2"	Δ'-11 3/4"	Δ'-11 3/4"			
5Δ1	32'-3 3/8"	7	1'-5"	5'-Δ"	3'-7"	Δ'-5"	2'-1"	4'-7"
5Δ2	33'-7"	7	1'-4"	4'-11 3/4"	3'-4"	Δ'-7 1/2"	2'-3 1/2"	4'-5"
5Δ3	34'-8"	7	1'-4"	4'-9 3/4"	3'-4"	Δ'-9 1/2"	2'-5 1/2"	4'-1"
5Δ4	9'-4 1/2"	1						
5Δ5	9'-8"	1						
6Δ1	6'-4"	1	3'-2"	3'-2"				
6Δ2	35'-7"	7	1'-4"	4'-9"	3'-2"	Δ'-11 1/4"	2'-7"	3'-11 1/2"
6Δ3	9'-8 3/8"	1						
6Δ4	9'-1Δ 1/2"	1						
7Δ1	9'-6 3/4"	1						

NOTE: BARS B, Δ, D THAT ARE SHOWN AS TWO BETWEEN BARS C SHALL BE EQUALLY SPACED BETWEEN BARS C.



BOTTOM SLAB REINFORCEMENT SAME AS TOP
BARREL SECTION



TRIPLE BOX CULVERT ONLY
TYPE 7

STRAIGHT
TYPE 1

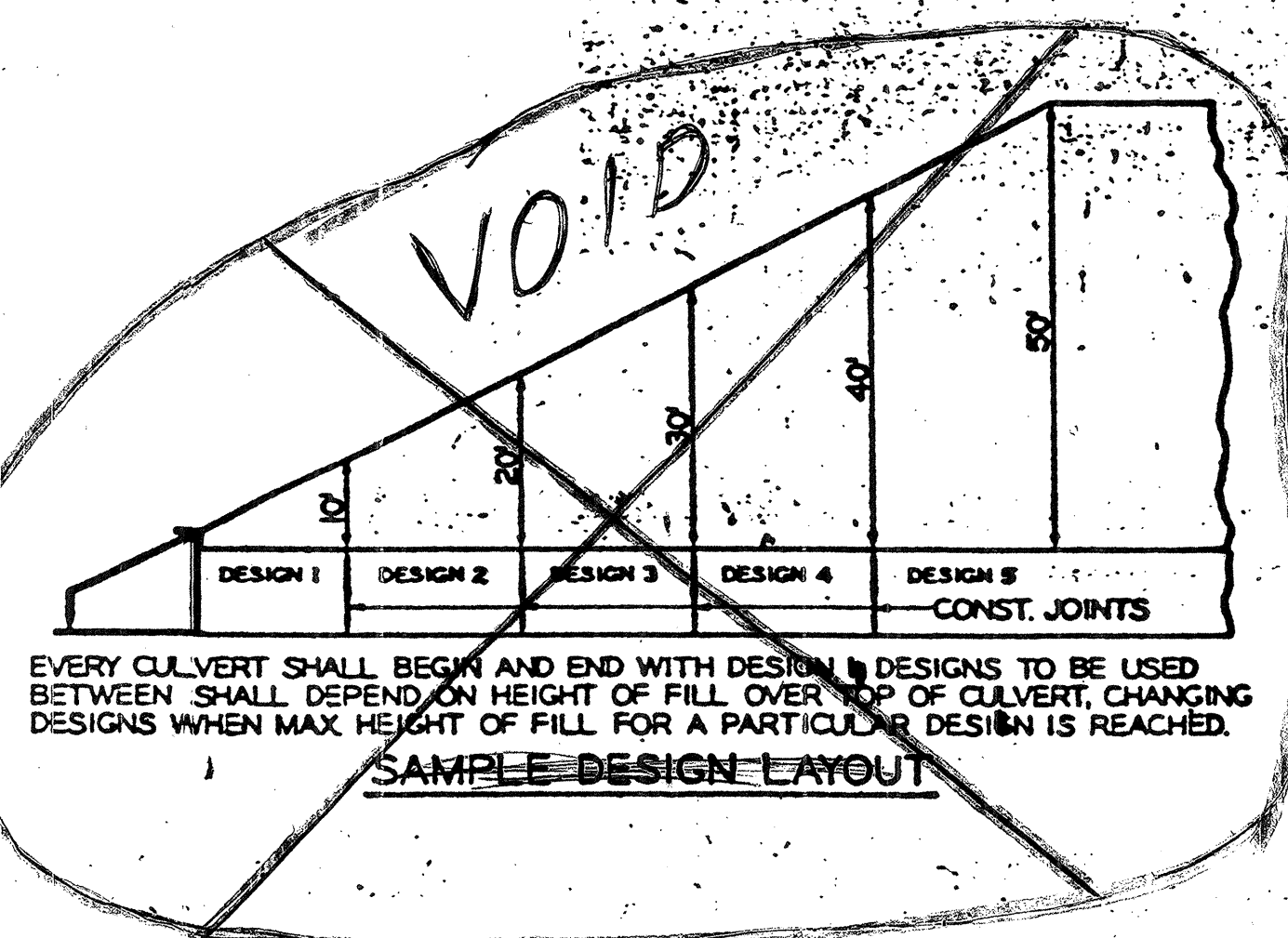
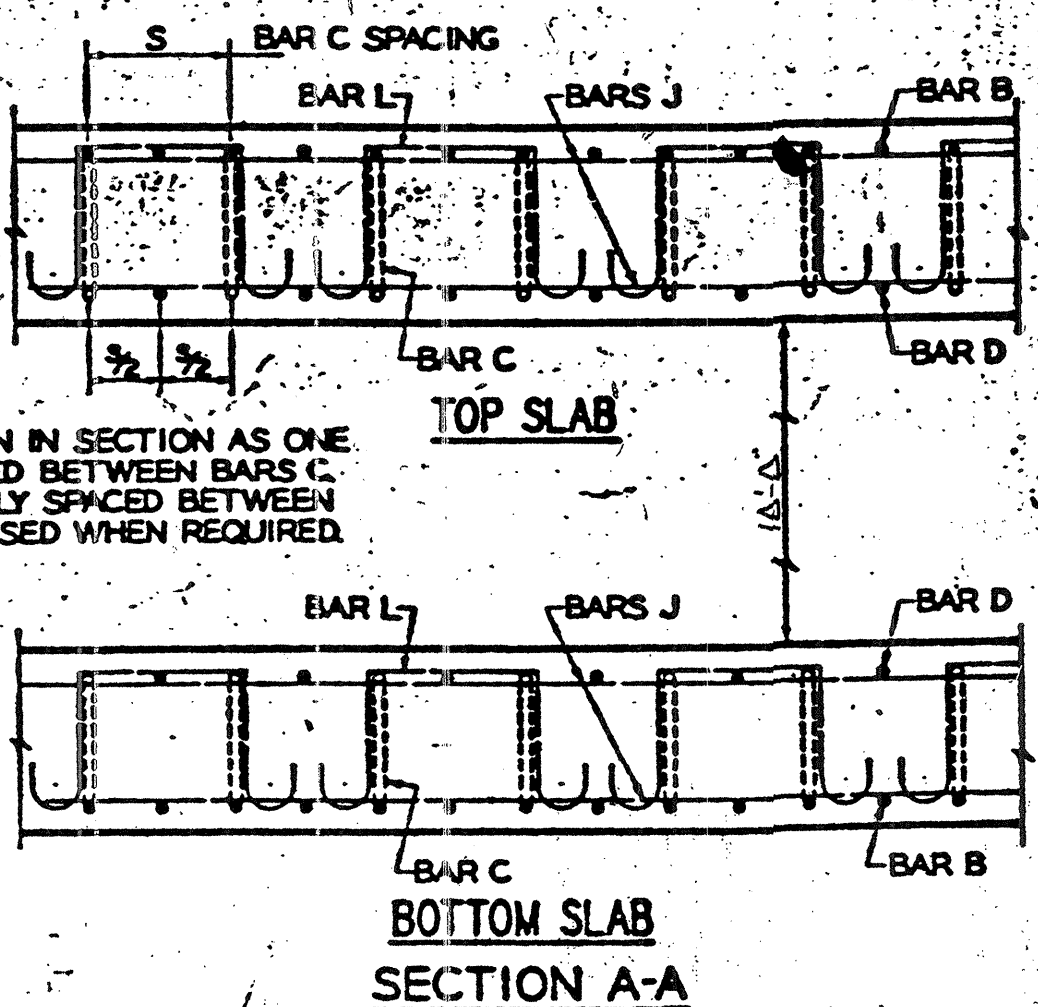
TYPE 6

TYPE 8

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

NOTE: PARAPETS AND WINGWALLS TO BE GA. STD. NO. 2327

NOTE: BARS B SHOWN IN SECTION AS ONE BAR EQUALLY SPACED BETWEEN BARS C. TWO BARS B EQUALLY SPACED BETWEEN BARS C SHALL BE USED WHEN REQUIRED.



EVERY CULVERT SHALL BEGIN AND END WITH DESIGN 1 DESIGNS TO BE USED BETWEEN SHALL DEPEND ON HEIGHT OF FILL OVER TOP OF CULVERT, CHANGING DESIGNS WHEN MAX. HEIGHT OF FILL FOR A PARTICULAR DESIGN IS REACHED.

SAMPLE DESIGN LAYOUT

NOTE:
The Design of culvert shall be determined by the maximum height of fill over culvert top with only a single Design being used for the entire installation.

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 CONTINUOUS 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.

DATE		REVISIONS		BY		REVIEWED		APPROVED	
MAY 1986		PVL-BDM		RUS		RHC		RHC	
DESIGNED		TRACED		DRAWN		CHECKED		APPROVED	
RUS		RHC		RHC		RHC		RHC	
SCALE		MARCH 1986		DESIGNED		TRACED		APPROVED	
RUS		RHC		RHC		RHC		RHC	