

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO	TOTAL SHEETS
HAWAII	HAW.				

Revised: June 1965
Revised: August 1967

Note: To Resident Engineer
1) Consider economy of reinf. conc for high retaining walls which did not originate on plan layout.
2) Elevation of weep holes to be determined by Resident Engineer. Holes to be placed as close to the existing ground line as local conditions permit.

DATA FOR OUTLET DITCH				
D	W	H	T+H+H	
18"	24"	2'-0"	4'-0"	
24"	30"	2'-0"	4'-6"	
30"	30"	2'-6"	5'-0"	
36"	36"	3'-0"	6'-0"	

DETAIL OF OUTLET DITCH

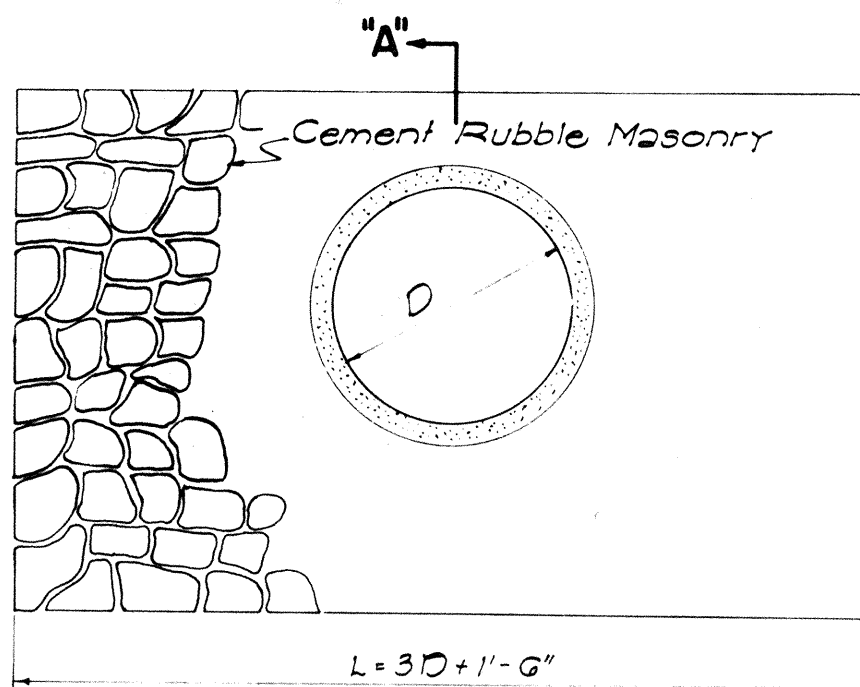
Scale: 1/2" = 1'-0"

DATA FOR MASONRY DROP INTAKE					Where Variables Equal
D	D	L+D+G	Cu Yds		
23"	18"	2'-5"	3.02	4'-6"	
30"	24"	3'-0"	3.61	5'-0"	
37"	30"	3'-7"	4.21	5'-6"	
44"	36"	4'-2"	4.85	6'-0"	

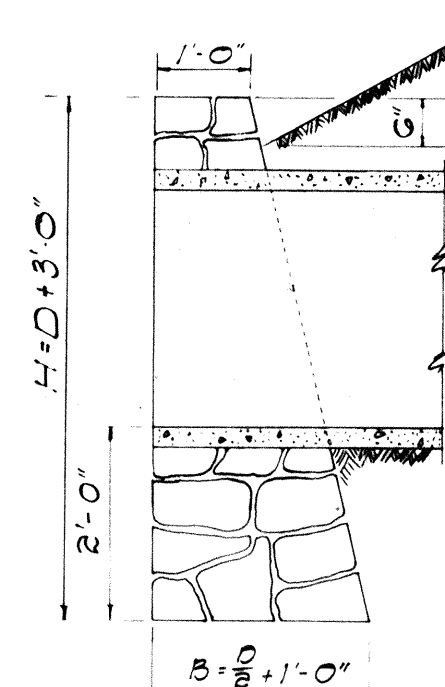
NOTE:

Dimension "X" is assumed as 2'-4" in figuring the above quantities.

DATA - MASONRY HEADWALL					CRM For RCCP	CRM For CGMP
D	H	B	L	Cu Yds		
18"	4'-6"	1'-0"	6'-0"	1.24	1.29	
24"	5'-0"	2'-0"	7'-6"	1.83	1.98	
30"	5'-6"	2'-3"	9'-0"	2.56	2.70	
36"	6'-0"	2'-6"	10'-6"	3.45	3.66	



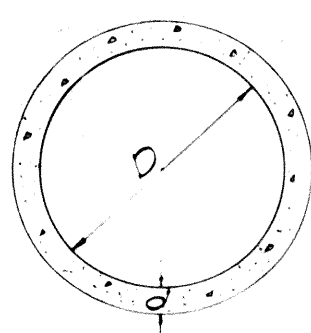
ELEVATION



SECT. "A-A"

DETAIL OF MASONRY HEADWALL

Scale: 1/2" = 1'-0"

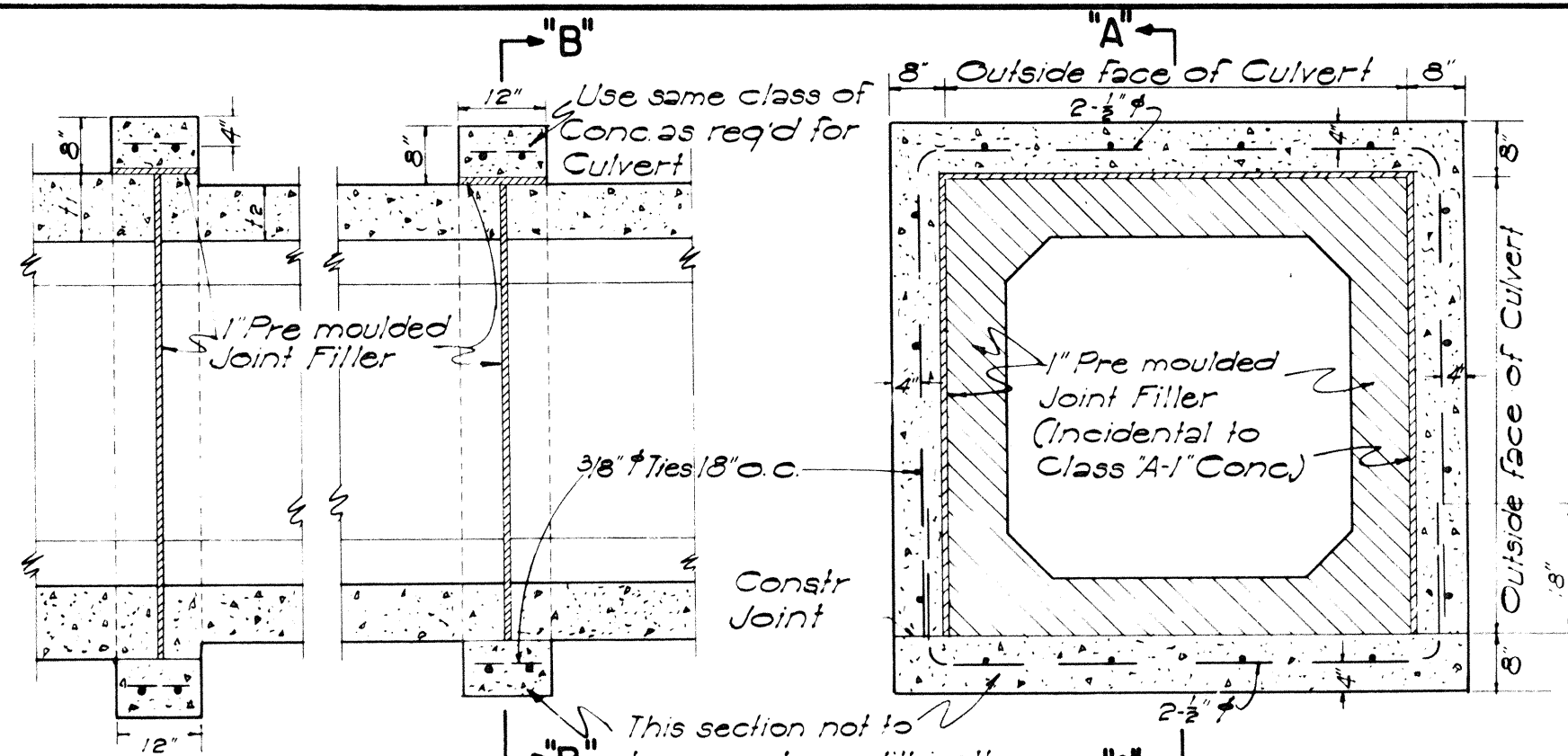


SECTION

CONC. PIPE CULVERT

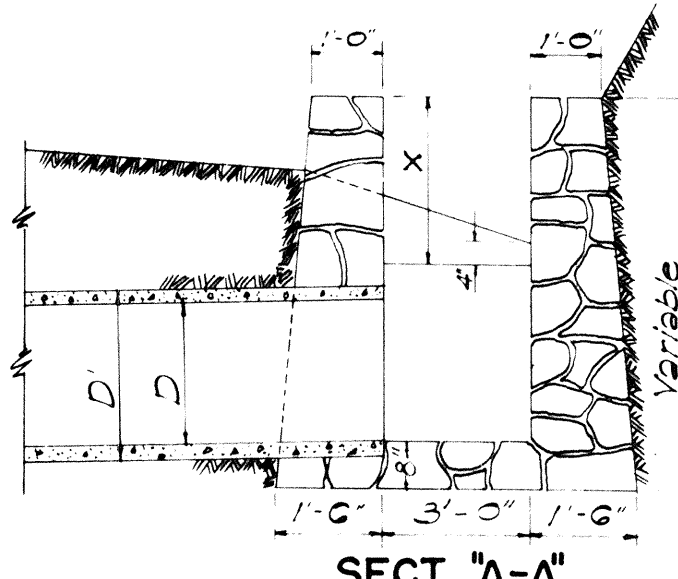
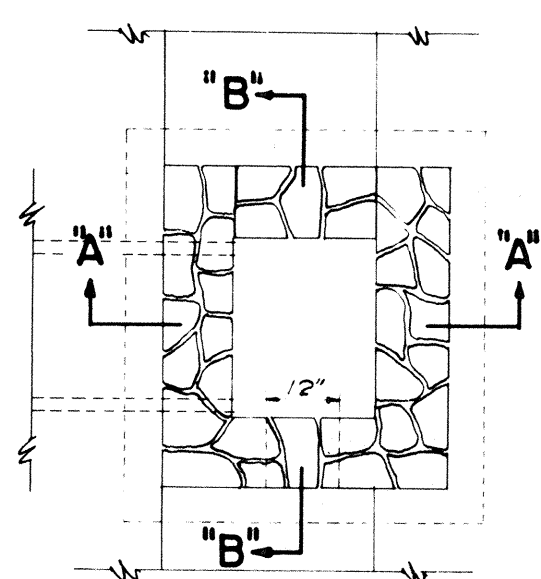
NOTE:

Thickness of reinforcing and concrete used are to conform with the approved design as provided by the Specifications.



SECTION "A-A" SECTION "B-B" CONC. COLLAR FOR CONC. BOX CULVERT

Scale: 1/2" = 1'-0"

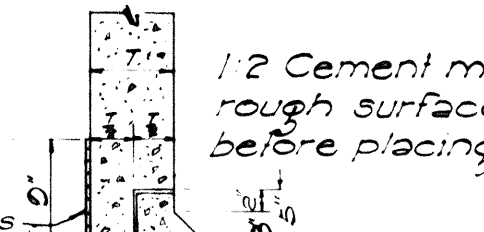


SECT. "A-A"

SECT. "B-B"

DETAIL OF MASONRY DROP INTAKE

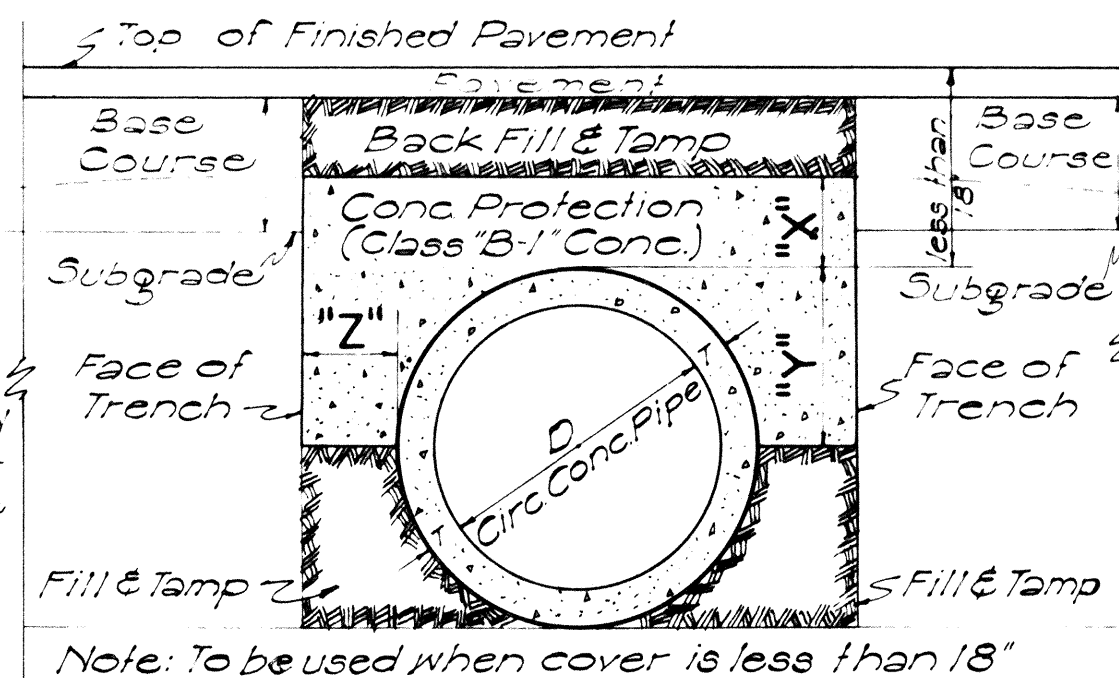
Scale: 3/8" = 1'-0"



CONSTR. JOINT DETAILS

NOTE: Construction joints may only be used where indicated by the plans or permitted in writing by the Engineer.

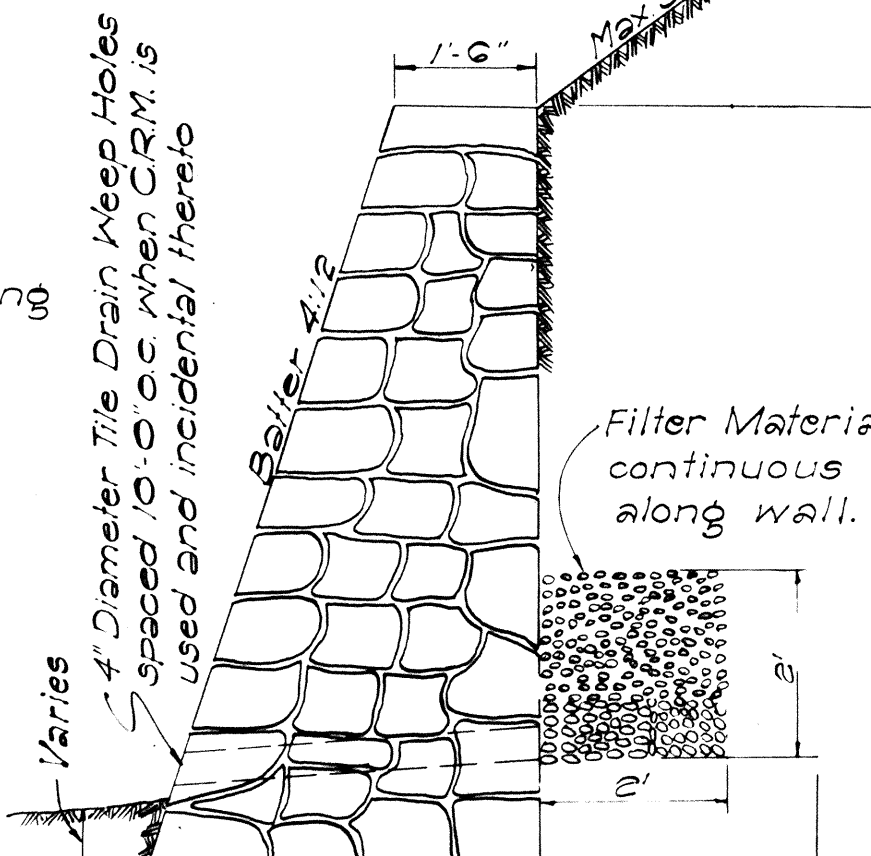
Note: When subgrade is below top of jacket, it shall be fully compacted to this line and then re-excavated (struck) to proper subgrade. This surface shall be rolled again.



DATA FOR CONCRETE PROTECTION OVER CULVERTS		
X	Y	Z
6" for 18"D		Z must be from pipe to face of trench
7" " 24"D		
8" " 30"D		
9" " 36"D		
10" " 42"D		
11" " 48"D		
12" " 54"D		

SECT. OF CULVERT WITH CONC. PROTECTION

Scale: 1" = 1'-0"



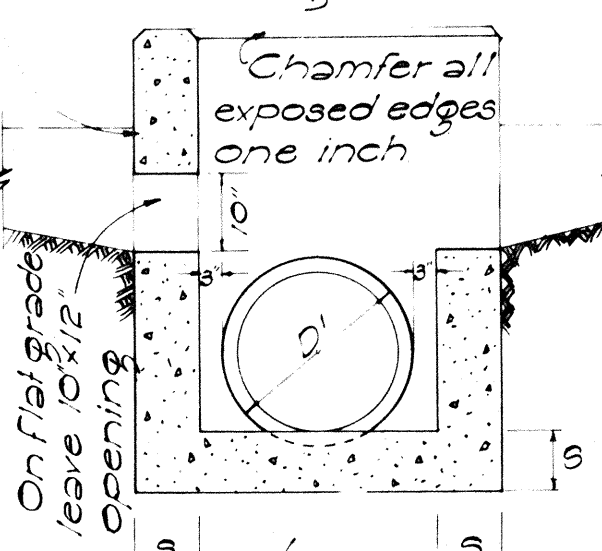
SECTION OF HIGH CEMENT RUBBLE MASONRY RETAINING WALL OR SEAWALL

SECTION OF LOW MASONRY RETAINING WALL OR SEAWALL

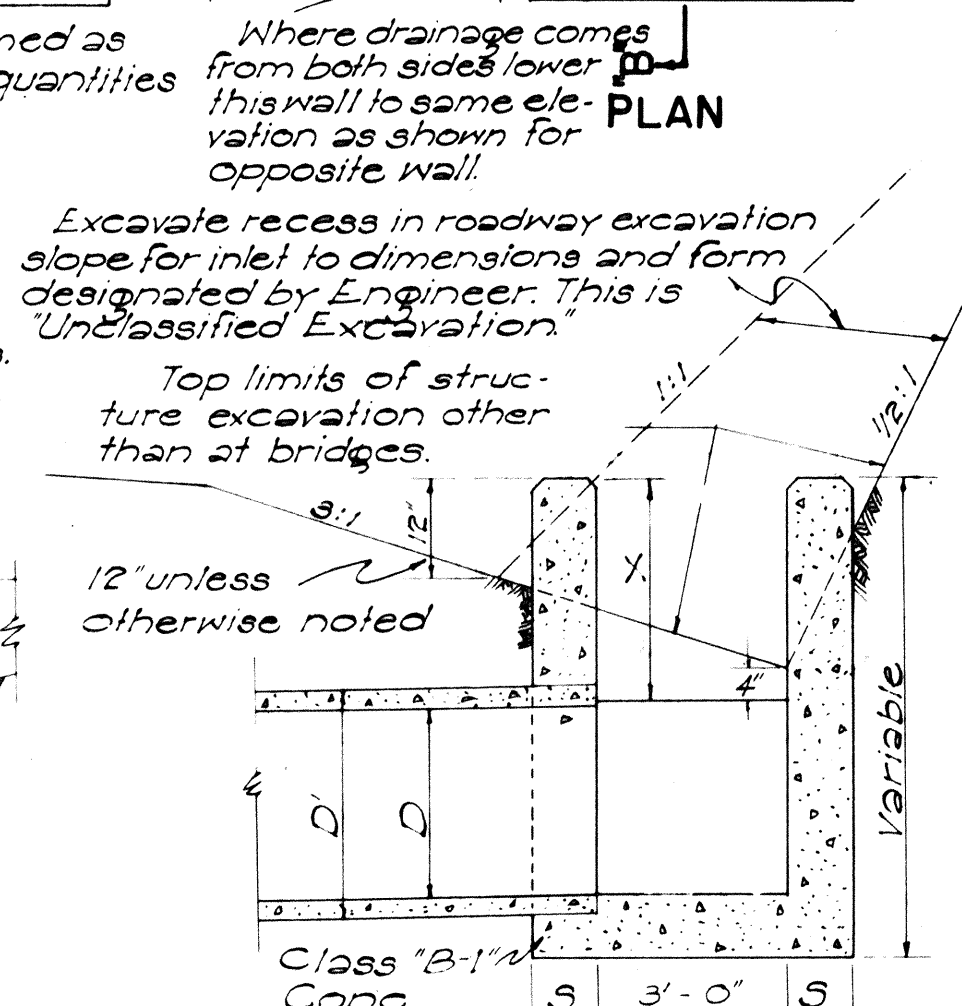
DATA - CONC. DROP INTAKE					Where Variables Equal
D	D	L+D+G	Cu Yds		
23"	18"	2'-5"	1.41	4'-6"	
30"	24"	3'-0"	1.72	5'-0"	
37"	30"	3'-7"	2.32	5'-6"	
44"	36"	4'-2"	2.73	6'-0"	
51"	42"	4'-9"	3.54	6'-6"	
58"	48"	5'-4"	4.01	7'-0"	

Note: Dimension "X" is assumed as 2'-4" in figuring the above quantities.

Note: This type of structure shall also be used for the Drop Intakes of Siphons connected with Irrigation Ditches or Flumes with appropriate changes to dimensions. In this case all joints must be made water tight.



SECTION "B-B"



SECTION "A-A"

DETAIL OF CONCRETE DROP INTAKE

Scale: 1/2" = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
DROP INTAKES, RETAINING WALLS,
HEADWALLS, CONSTRUCTION JOINTS
SCALES AS NOTED