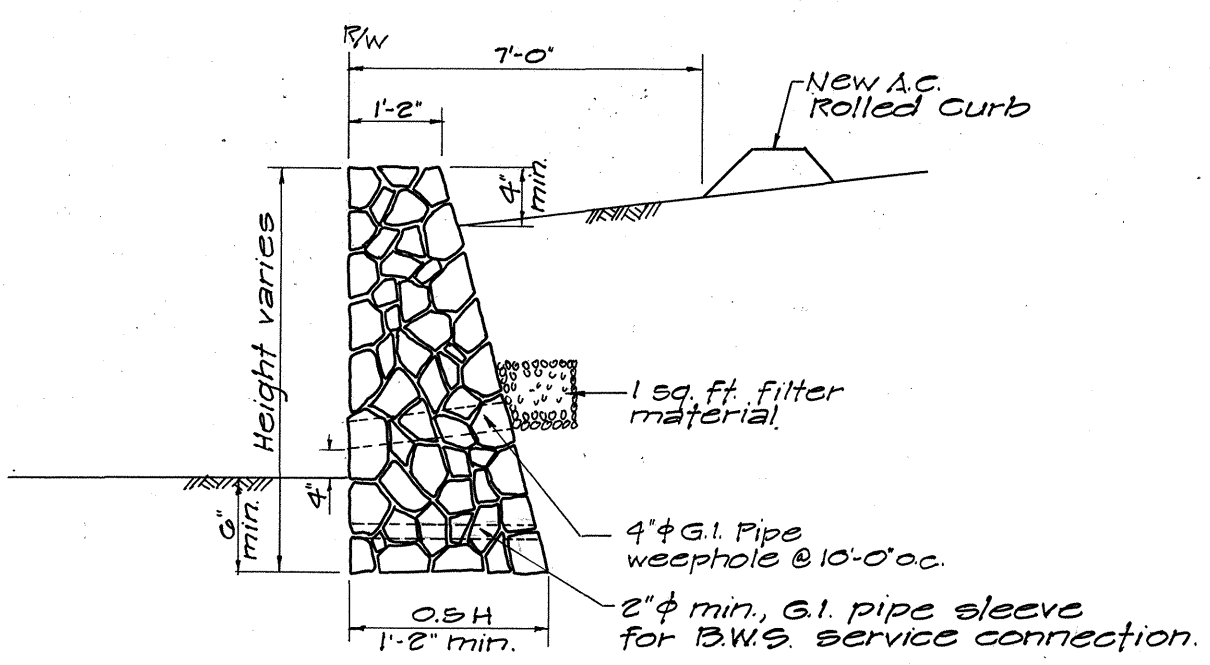


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO	TOTAL SHEETS
HAWAII	HAW.		1967	47	76

PROJECT NO. B-900-01-64 UNIT 1
Revised: June 1965
Revised: August 1967

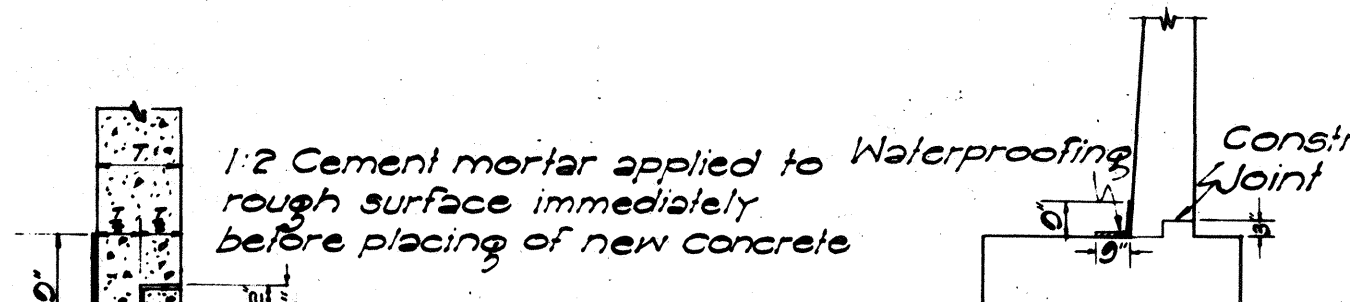
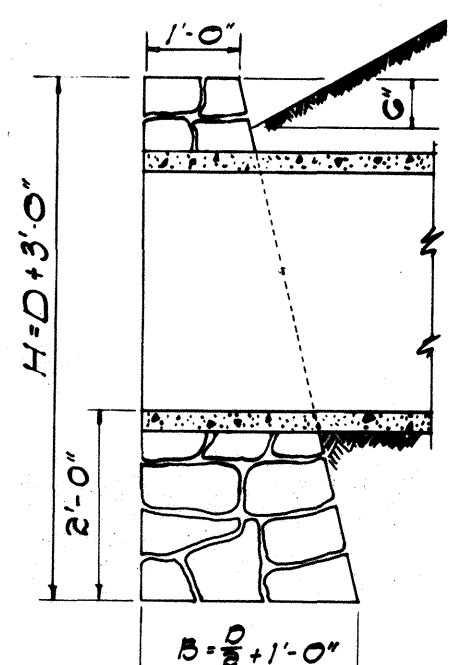
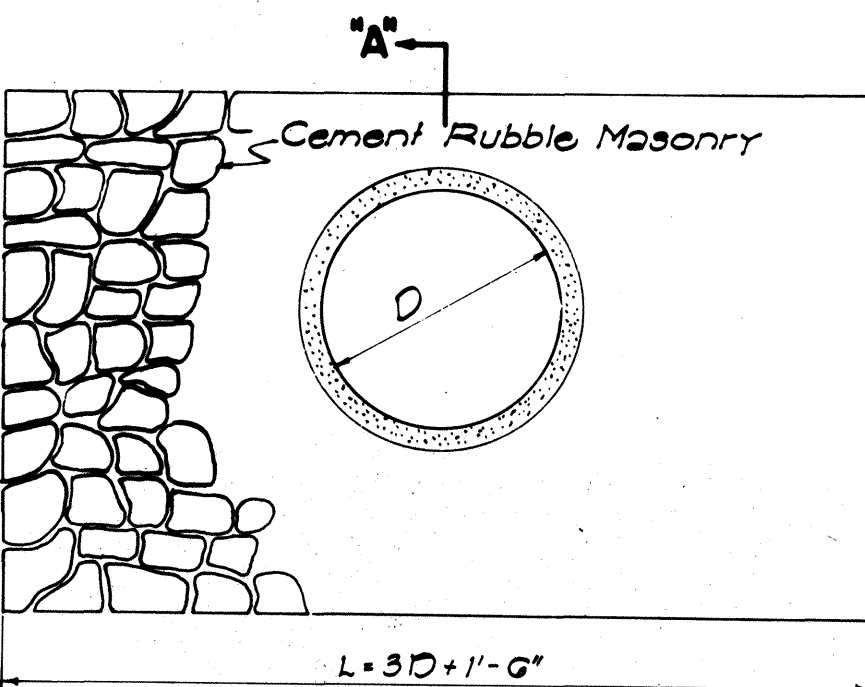
CRM WALL ELEVATION SCHEDULE								
BEGIN WALL			POINT ALONG WALL			END WALL		
STA.	TOP ELEVATION	BOTTOM ELEVATION	STA.	TOP ELEVATION	BOTTOM ELEVATION	STA.	TOP ELEVATION	BOTTOM ELEVATION
184+68	11.50	10.00	184+90	11.50	9.50	185+30	12.00	10.00
185+70	12.50	10.50	186+00	13.00	10.50	186+18	13.00	10.50
205+75	22.00	19.90				205+75	22.00	19.90
206+64	22.00	19.80				206+64	22.00	19.80
206+88	23.00	20.50	206+50	23.00	19.50	206+78.6	23.00	20.80
207+87	24.30	22.00	208+50	24.50	20.50	208+73.0	25.20	21.80
208+08	25.00	23.00	207+70	24.20	22.00	209+07	26.20	23.50
209+28	26.40	23.50				209+05	26.50	23.80
209+01	26.80	23.80	210+50	28.20	25.00	210+65	29.50	27.10
211+12	30.20	27.30	212+00	32.40	28.60	211+31.7	30.20	27.40
211+62	31.50	28.50	212+50	33.10	30.40	212+85	35.50	32.60
212+12	37.00	34.00				212+80	38.50	37.50



TYPICAL CRM WALL SECTION
Not to scale

- NOTES:
- For location of CRM walls, see Plan & Profile sheets 4 and 6.
 - Install galvanized iron pipe sleeves (2 inch minimum diameter) thru CRM Wall for B.W.S. service connections. Size of sleeves and locations in CRM wall shall be approved by the Engineer.
 - Filter material, 4" G.I. pipe weepholes and G.I. pipe sleeve shall not be paid for separately but shall be considered incidental to Cement Rubble Masonry.

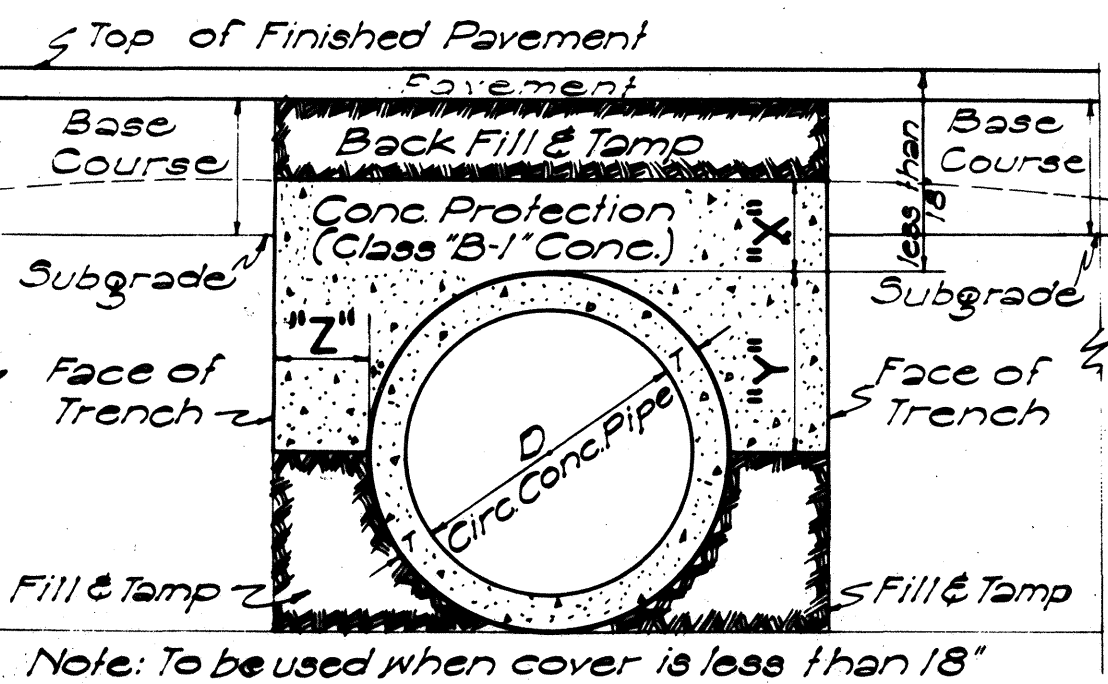
DATA - MASONRY HEADWALL				CRM For RCCP	CRM For CGMP
D	H	B	L	Cu. Yds.	Cu. Yds.
18"	4'-6"	1'-0"	6'-0"	1.24	1.20
24"	5'-0"	2'-0"	7'-6"	1.83	1.98
30"	5'-6"	2'-3"	9'-0"	2.56	2.70
36"	6'-0"	2'-6"	10'-6"	3.45	3.66



CONSTR. JOINT DETAILS

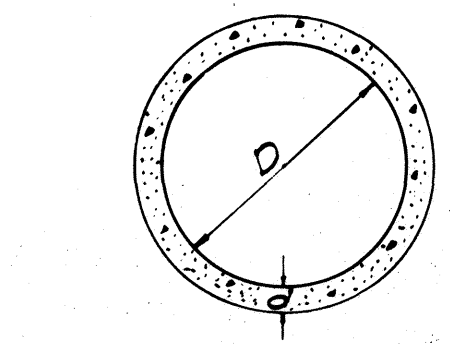
NOTE: Construction joints may only be used where indicated by the plans or permitted in writing by the Engineer

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



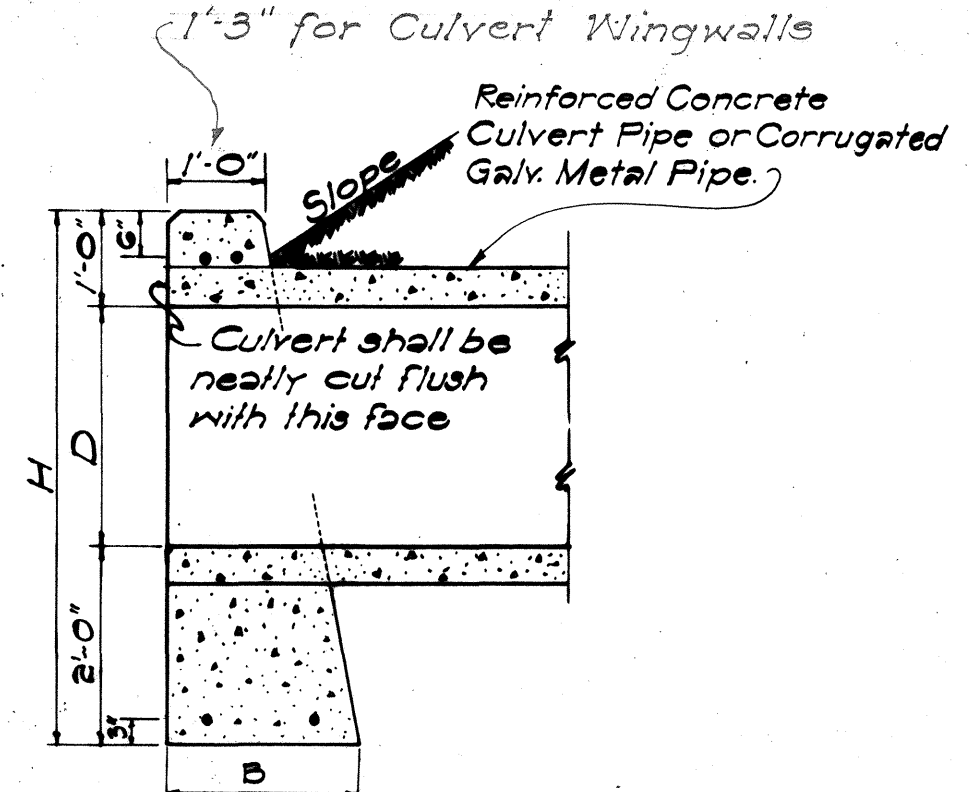
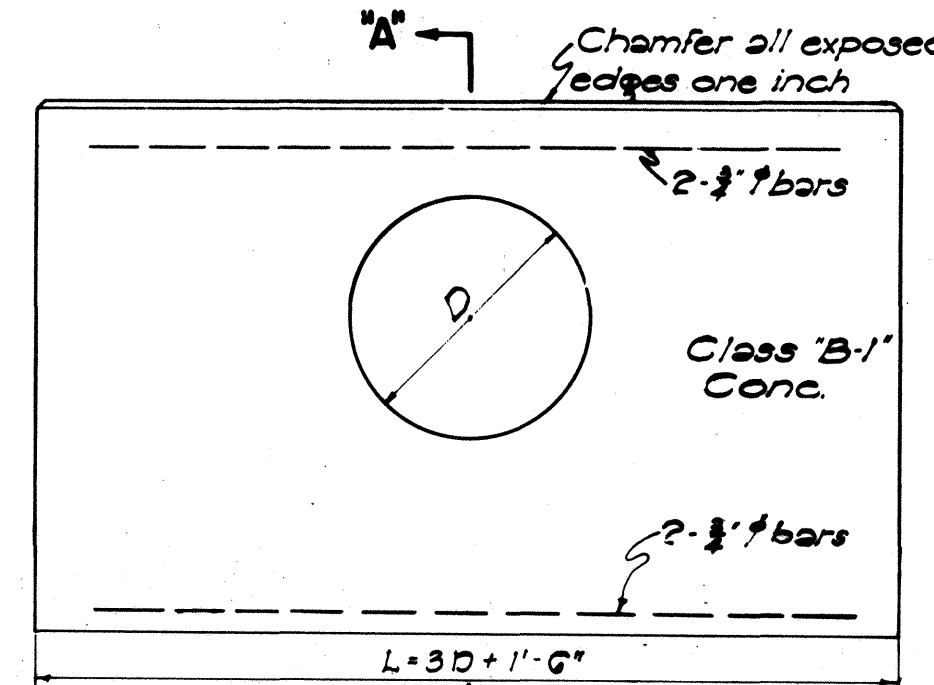
DATA FOR CONCRETE PROTECTION OVER CULVERTS		
X	Y	Z
6" for 18"D	$\frac{D}{2} + T$	Z must be from pipe to face of trench
7" " 24"D		
8" " 30"D		Minimum = X
9" " 36"D		Maximum pay quantity will be Z = 12"
10" " 42"D		
11" " 48"D		
12" " 54"D		

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.



DATA FOR CONC. HEADWALL				Class 'B-1' Conc. For RCCP	Class 'B-1' Conc. For CGMP	Steel For One Headwall		
D	B	L	H	Cu. Yds.	Cu. Yds.	No. of Bars	Size	Lbs.
18"	1'-6"	6'-0"	4'-6"	1.18	1.17	4	3/4"	33
24"	1'-6"	7'-6"	5'-0"	1.52	1.60	4	3/4"	42
30"	2'-0"	9'-0"	5'-6"	2.36	2.49	4	1 1/4"	51
36"	2'-0"	10'-6"	6'-0"	2.94	3.13	4	1 1/4"	60
42"	2'-6"	12'-0"	6'-6"	4.19	4.47	4	1 1/4"	69
48"	2'-6"	13'-6"	7'-0"	5.01	5.36	4	1 1/4"	78

DETAIL OF CONCRETE HEADWALL AND WINGWALL
Scale: 1/2" = 1'-0"

SECT. OF CULVERT WITH CONC. PROTECTION
Scale: 1" = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAIL OF CONCRETE
HEADWALL & WINGWALL

SCALES AS NOTED

SHEET NO. OF SHEETS

DATE: _____
SURVEY PLOTTED BY: _____
DESIGNED BY: _____
DRAWN BY: L. Calisiro
CHECKED BY: _____
ORIGINAL PLAN: _____
NOTE BOOK: _____
No. _____