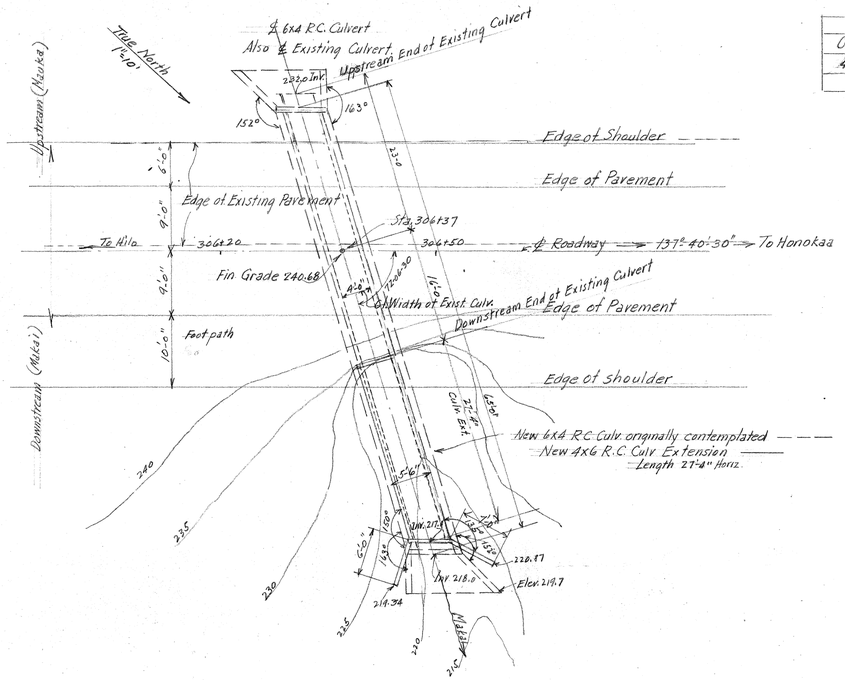
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEARS	SHEET NO.	TOTAL SHEETS
HAWA.11	HAW	NRH-14C	1933	7-A	30

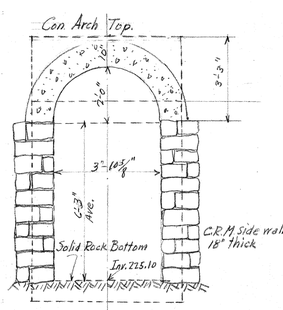
Supercedes Sheet No 7
June 7, 1934

QUANTITIES

Structure	Str. Exc	Concrete	Reinf	Chan. Exc
Original 6x4 R.C. Culv.	250 C.Y	33.29 C.Y	7209.5 lbs	50. C.Y.
4X6 RC Culv. Ext.	16.2 C.Y	23.66 C.Y	3654.66 "	34. C.Y.
Difference	-233.8	-29.63 C.Y.	-3535.44 "	-16. C.Y.

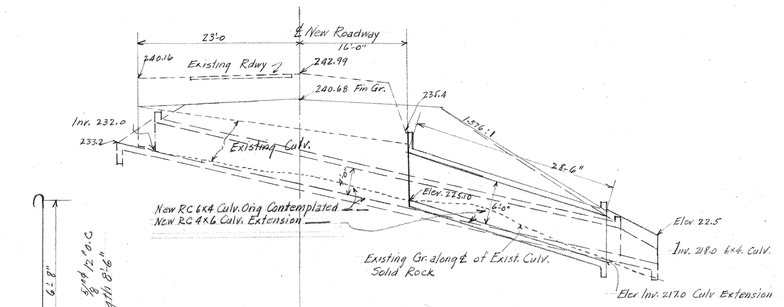


LOCATION PLAN SHOWING 6x4 R.C. CULVERT & EXISTING 4x8 C.R.M. AND CONCRETE CULVERT AND 4x6 R.C. CULVERT EXTENSION
1"=10'

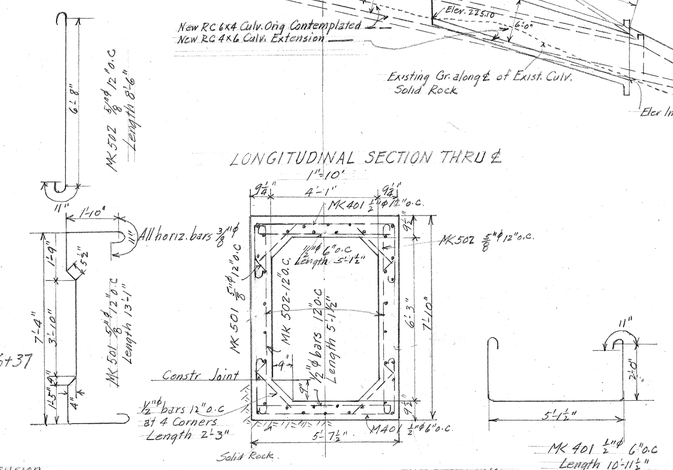


TYPICAL SECTION OF EXISTING CULVERT AT STA. 306+37
3/8"= 1Ft.

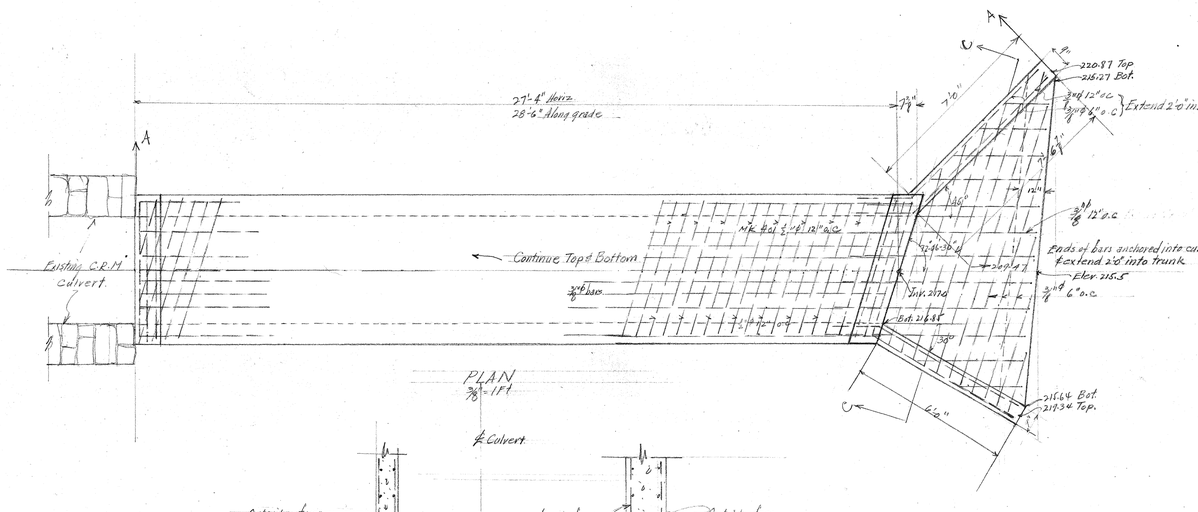
This structure is in excellent condition
Has been in service for the past 20 years
Serves overflow of spring above
Flow is continuous.
Bottom is solid rock throughout.
Dotted Lines show position of 4x6 R.C. Culvert Extension at connection with Existing Culvert



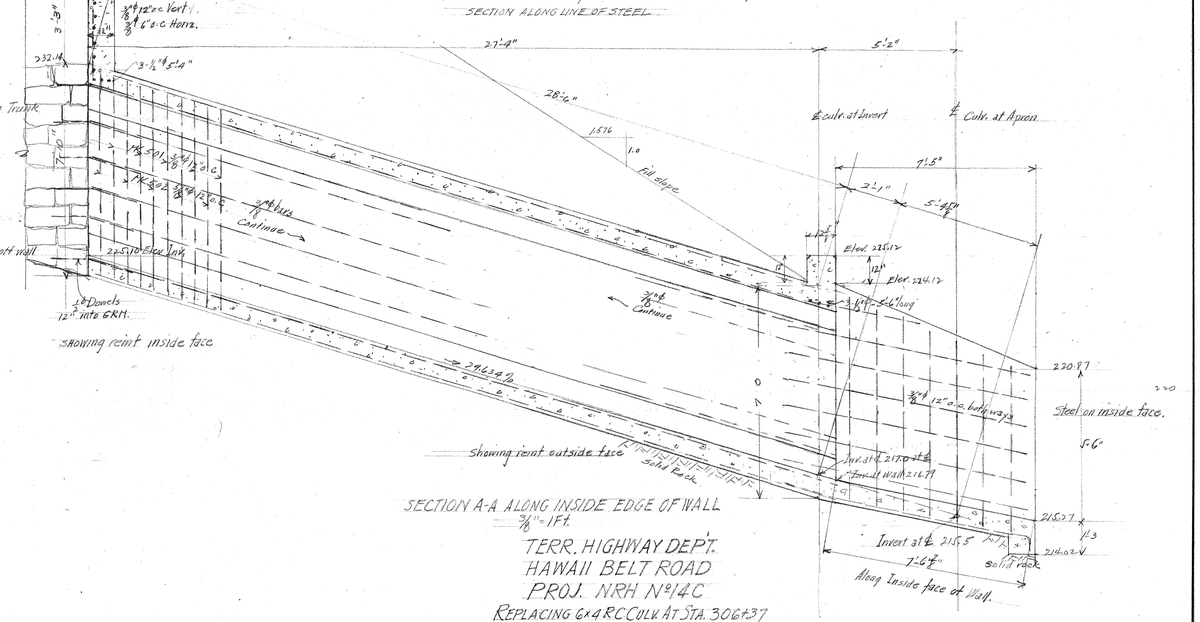
LONGITUDINAL SECTION THRU ℄
1"=10'



TYPICAL SECTION THRU TRUNK
3/8"= 1Ft.
Note:- This section was adopted so as not to alter steel lengths.



TYPICAL SECTION C-C. 3/8"=1Ft



SECTION A-A ALONG INSIDE EDGE OF WALL
3/8"= 1Ft.

TERR. HIGHWAY DEPT.
HAWAII BELT ROAD
PROJ. NRH N°14C
REPLACING 6x4 RC CULV AT STA. 306+37
WITH 4x6 RC CULV. EXTENSION

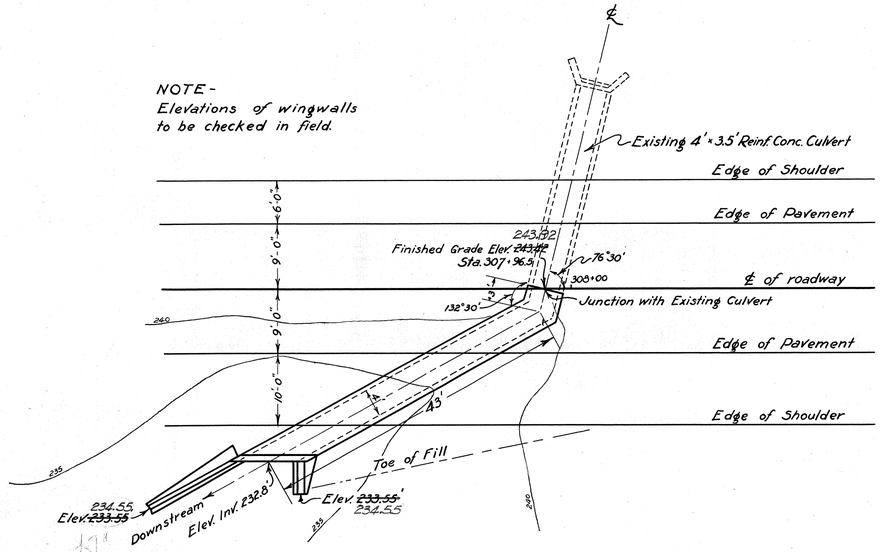
W.O. #6

J.O.Y. Res. Engr.

4306.7A

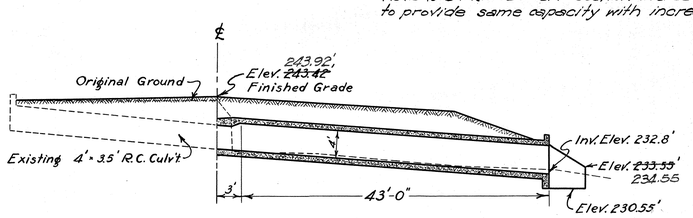
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	N.R.H. 14C	1933	8	30

NOTE - Elevations of wingwalls to be checked in field.

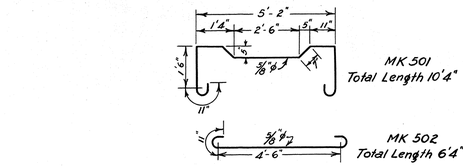


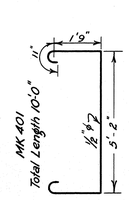
LOCATION PLAN
Scale 1"=10'

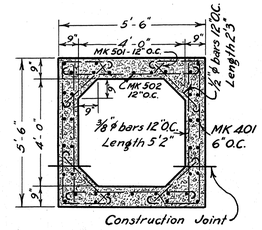
NOTE to B.P.R. - Culvert section increased 6" in height to provide same capacity with increased length.

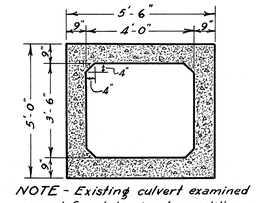


LONG'T SECT. THRU CULVERT ON ℄
Scale 1"=10'



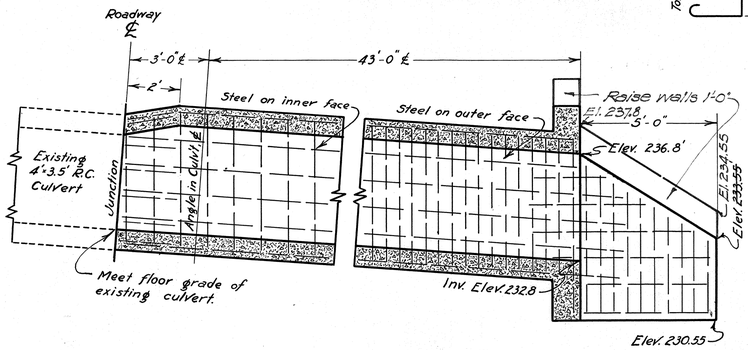






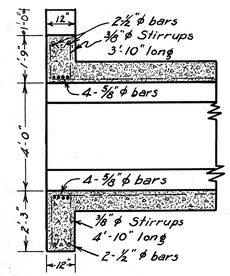
NOTE - Existing culvert examined and found in good condition, with same sect & approx. same reinf.

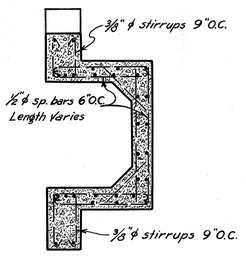
SECTION of NEW TRUNK
SECTION of EXISTING TRUNK
Scale 3/8"=1'



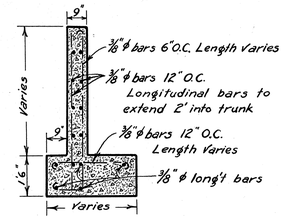
SECTION "A-A"
Scale 3/8"=1'

NOTE -
All horizontal bars are 3/8"ϕ - 12" OC. or as noted.
All horizontal 3/8"ϕ bars to extend 2'0 into wingwalls.
Center of steel bars to be 2½" from face of concrete.

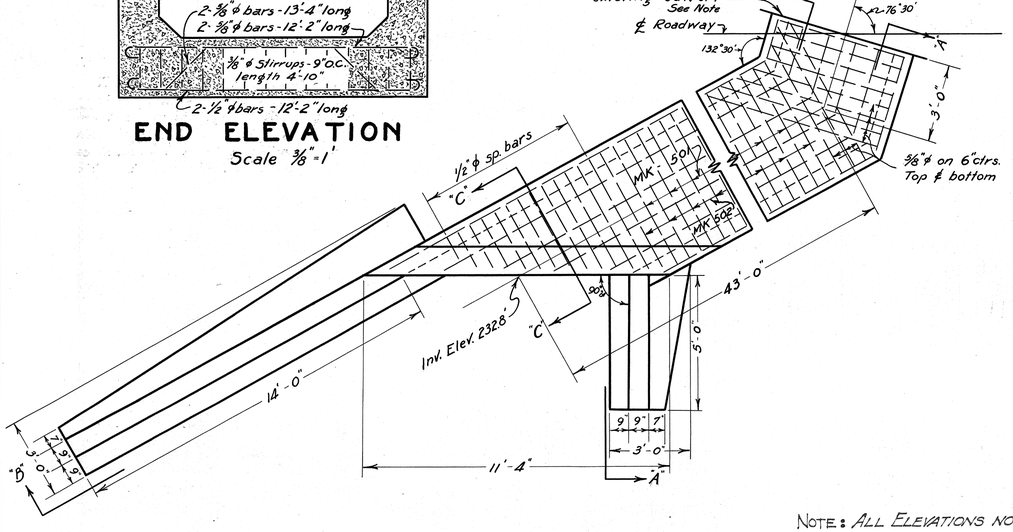




SECTION THRU END
SECTION "C-C"
Scale 3/8"=1'



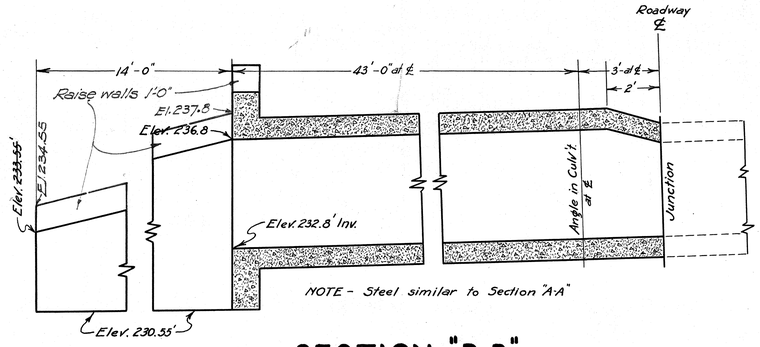
TYPICAL WINGWALL SECT.



END ELEVATION
Scale 3/8"=1'

PLAN of CULVERT
Scale 3/8"=1'

NOTE -
Trunk of existing culvert to be broken down and removed for at least 2', exposing reinforcing for that length. New section to be joined as indicated making splices between old and new steel.



SECTION "B-B"
Scale 3/8"=1'

NOTE: ALL ELEVATIONS NOT CHANGED ARE SATISFACTORY FOR REVISED CONDITIONS

QUANTITIES

Concrete	~~32.70~~ ~~31.752~~	cu.yds.
Steel	4057.1	lbs.
Struct. Exc.	40.0	cu.yds.
Channel Exc.	10.0	cu.yds.

ORIGINAL PLAN	SURVEY PLOTTED BY	J.O.K.	DATE 8/33
	DESIGNED BY	J.M.J.	" 9/33
NOTE BOOK	DRAWN BY	J.M.J.	" 10/33
	TRACED BY	J.M.J.	" 11/33
	QUANTITIES BY	J.M.J.	" 11/33
No.	CHECKED BY	J.M.M.	

REVISED BY J.C.M. 2.34

DETAILS of 4'×4' CULVERT EXTENSION
STA. 307+96.5
N.R.H. 14C

4306.8

NOTE

QUANTITIES

Structure	Str. Exc.	Concrete	Reinf	Chan. Exc	CRM Paving
Original Plans	490. C.Y.	304.71 C.Y.	58457.1 lbs	200. C.Y.	30.0 C.Y.
Revised Plans	336.16 C.Y.	356.00 C.Y.	65846.13 lbs.	100 C.Y.	21.53 C.Y.
Difference	-153.84 C.Y.	+51.29 C.Y.	+7389.03 lbs.	-100 C.Y.	-8.47 C.Y.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	NRH-14C	1933	9A	30

Supercedes Sheet № 9
May 28, 1934

TERR. HIGHWAY DEPT.
HAWAII BELT ROAD
PROJ. NRH № 14C

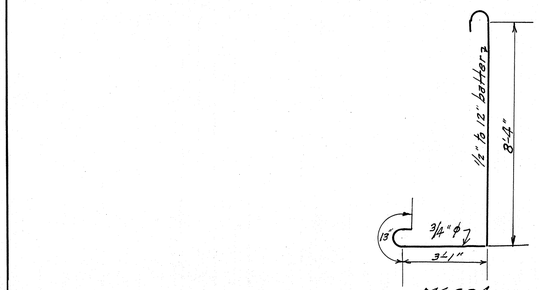
CHANGES IN CONSTRUCTION OF
8° x 10° R.C. CULVERT AT STA. 319+25

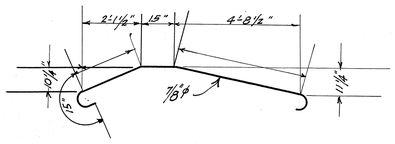
W.C. № 5
Res. Engr.

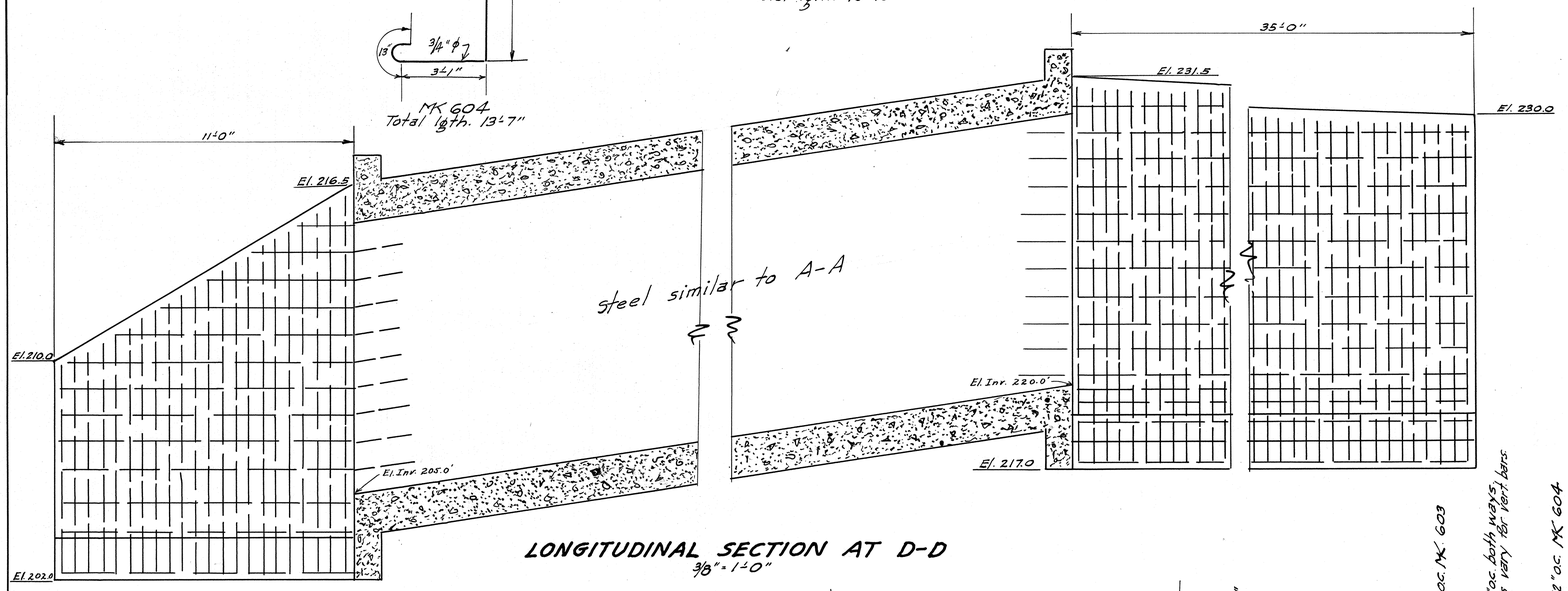
SUPERCEDES SHEETS 4306.9 & 4306.10

4306.9A

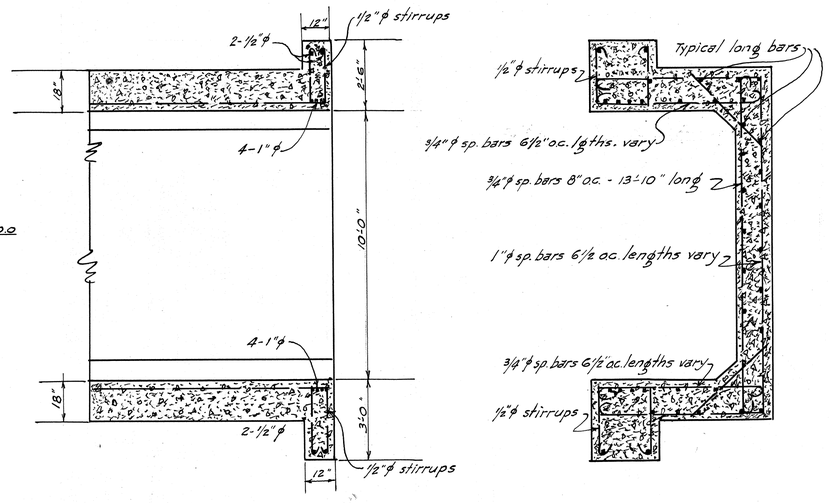
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw.	N.R.H. 14 c	1933	10	30





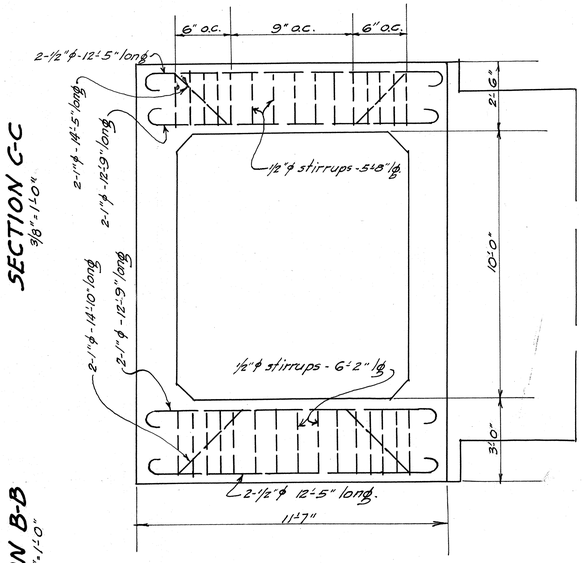


LONGITUDINAL SECTION AT D-D
3/8" = 1'-0"

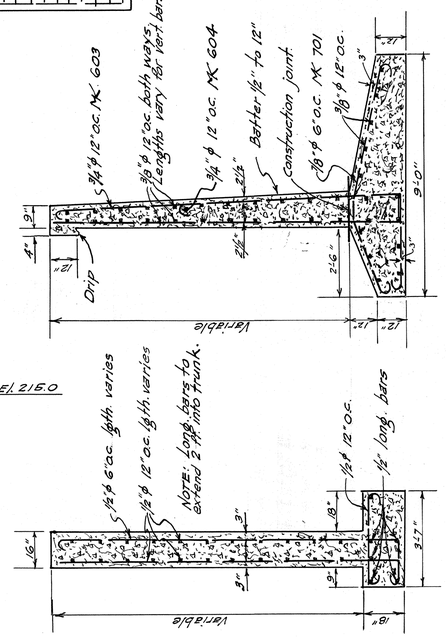


SECTION THRU END
3/8" = 1'-0"

SECTION E-E
3/8" = 1'-0"

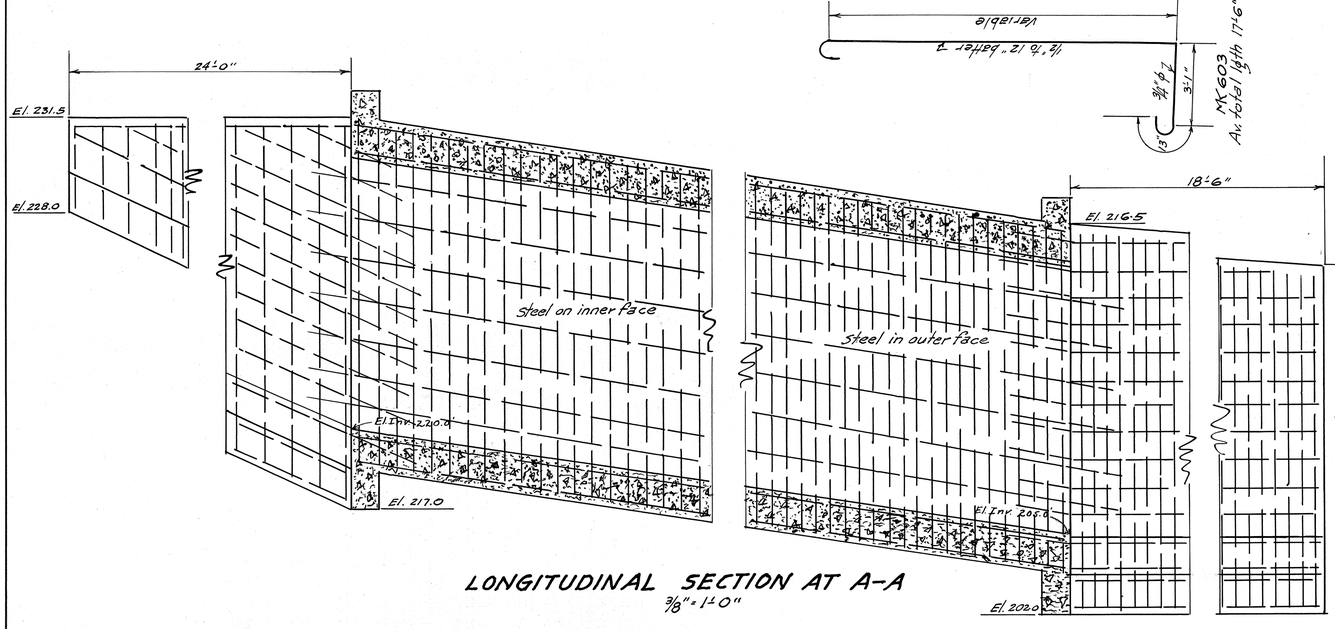


FRONT ELEV. HEADWALL
3/8" = 1'-0"



SECTION C-C
3/8" = 1'-0"

SECTION B-B
3/8" = 1'-0"



LONGITUDINAL SECTION AT A-A
3/8" = 1'-0"

8'×10' REINFORCED CONC. BOX CULVERT
STA 319+25

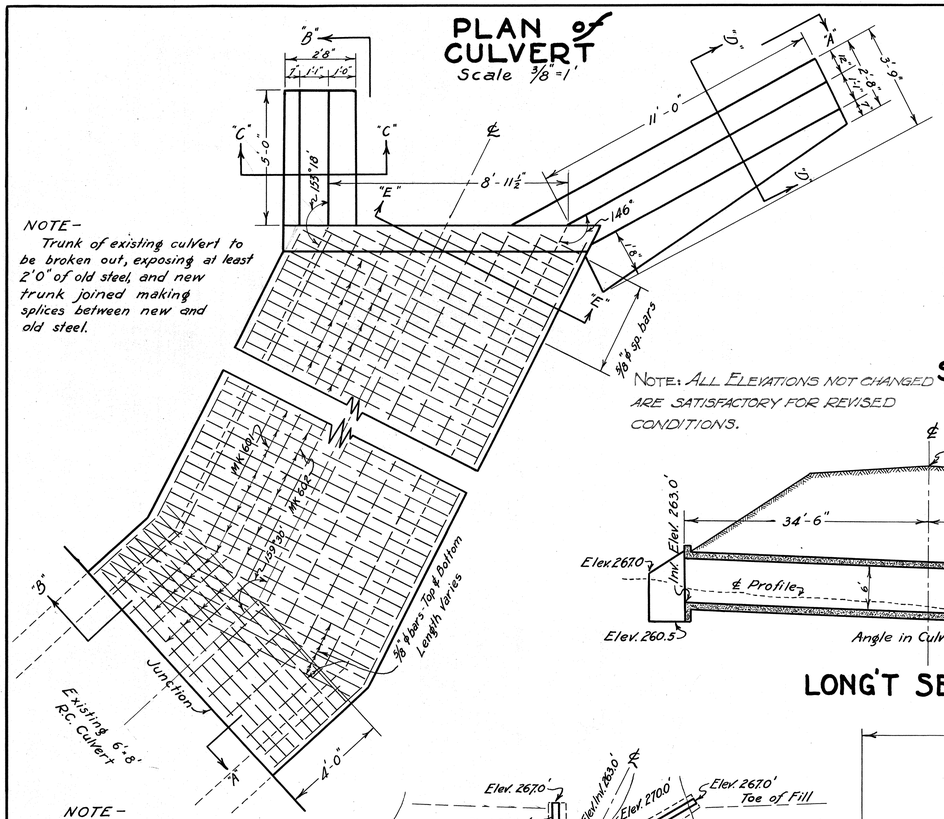
SHEET 2 OF 2 SHEETS.

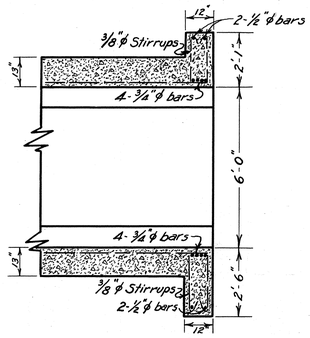
4306.10

ORIGINAL PLAN	SHEET PLOTTED BY	J.A.V.	DATE	8-33
	DESIGNED BY	J.A.M.Jr.	"	10-33
	DRAWN BY	J.A.M.Jr.	"	10-33
NOTE BOOK	TRACED BY	J.A.V.	"	11-33
	QUANTITIES BY	J.A.M.Jr.	"	11-33
No.	CHECKED BY	J.A.M.Jr.	"	11-33

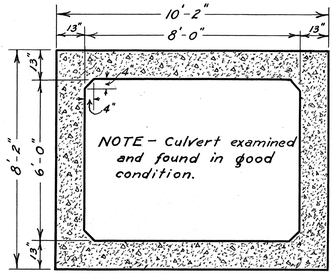
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	N.R.H. 14C	1933	11	30

PLAN of CULVERT
Scale 3/8"=1'



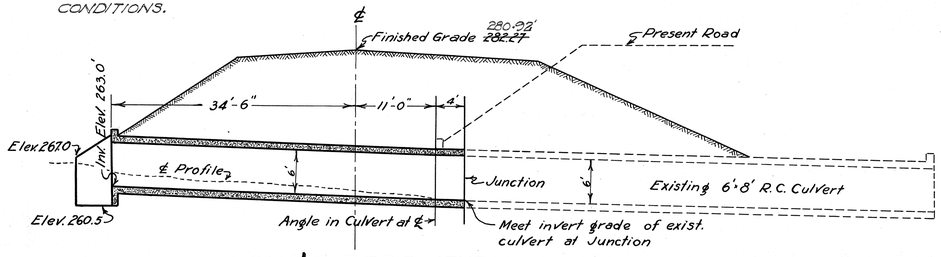


NOTE - Steel is similar to new trunk section.

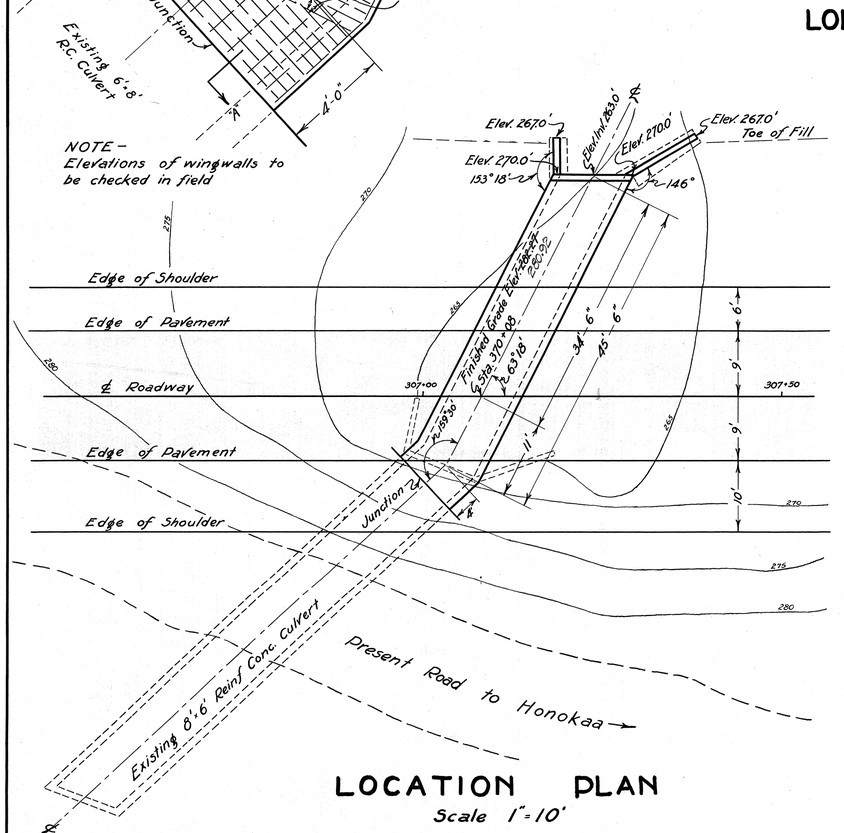


SECTION THRU END SECTION of EXISTING TRUNK
Scale 3/8"=1'

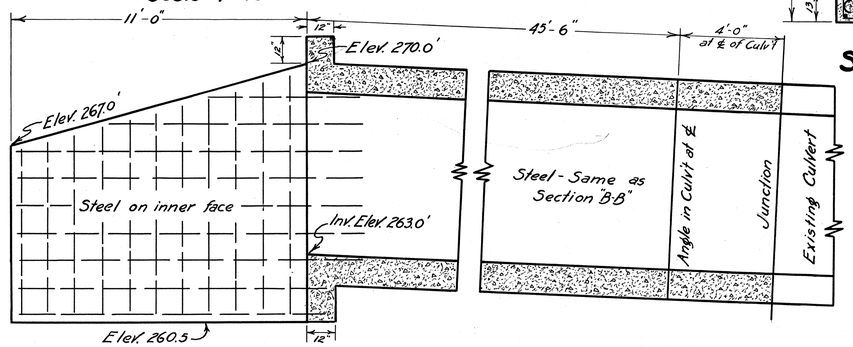
NOTE: ALL ELEVATIONS NOT CHANGED ARE SATISFACTORY FOR REVISED CONDITIONS.



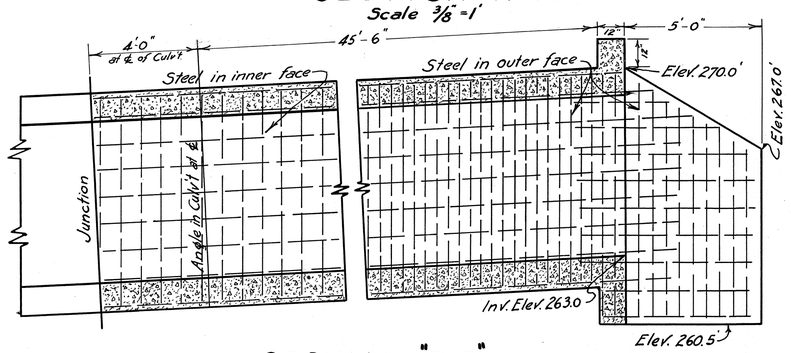
LONG'T SECT. THRU CULVERT ON ℄
Scale 1"=10'



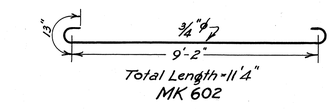
LOCATION PLAN
Scale 1"=10'

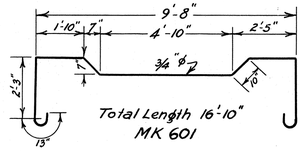


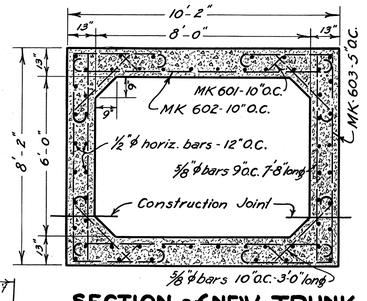
SECTION "A-A"
Scale 3/8"=1'



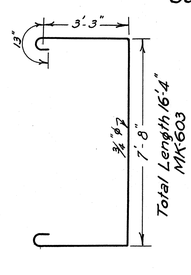
SECTION "B-B"
Scale 3/8"=1'

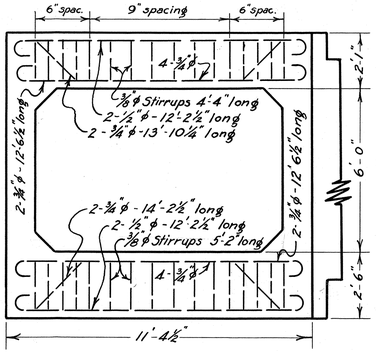






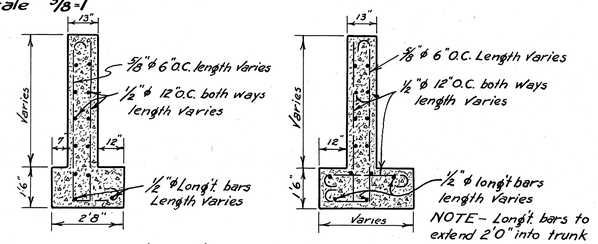
SECTION of NEW TRUNK
Scale 3/8"=1'



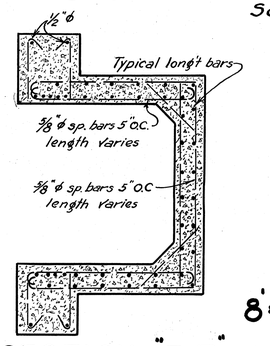


END ELEVATION
Scale 3/8"=1'

NOTE -
All horizontal bars - ½"ϕ.
All ½"ϕ horizontal bars in sidewalls to extend 2'0" into wingwalls.
Center of steel bars to be 3" from face of concrete.



SECTION "C-C" SECTION "D-D"
Scale 3/8"=1'



SECTION "E-E"
Scale 3/8"=1'

QUANTITIES

Concrete	75.307 cu. yds.
Steel	15,620.4 lbs.
Struct. Exc.	96.0 cu. yds.
Channel Exc.	10.0 cu. yds.

DETAILS of 8'×6' CULVERT EXTENSION
STA. 370+08
N.R.H. 14C

4306.11

ORIGINAL PLAN	STRUCTURE PLOTTED BY	JOK	DATE	8/33
	DESIGNED BY	J.M.S.		10/33
	DRAWN BY	J.M.S.		"
	TRACED BY	O.H.K.		11/33
NOTE BOOK	QUANTITIES BY	J.M.S.		"
No.	CHECKED BY	J.M.S.		"

REVISED BY J.C.M. 2/34