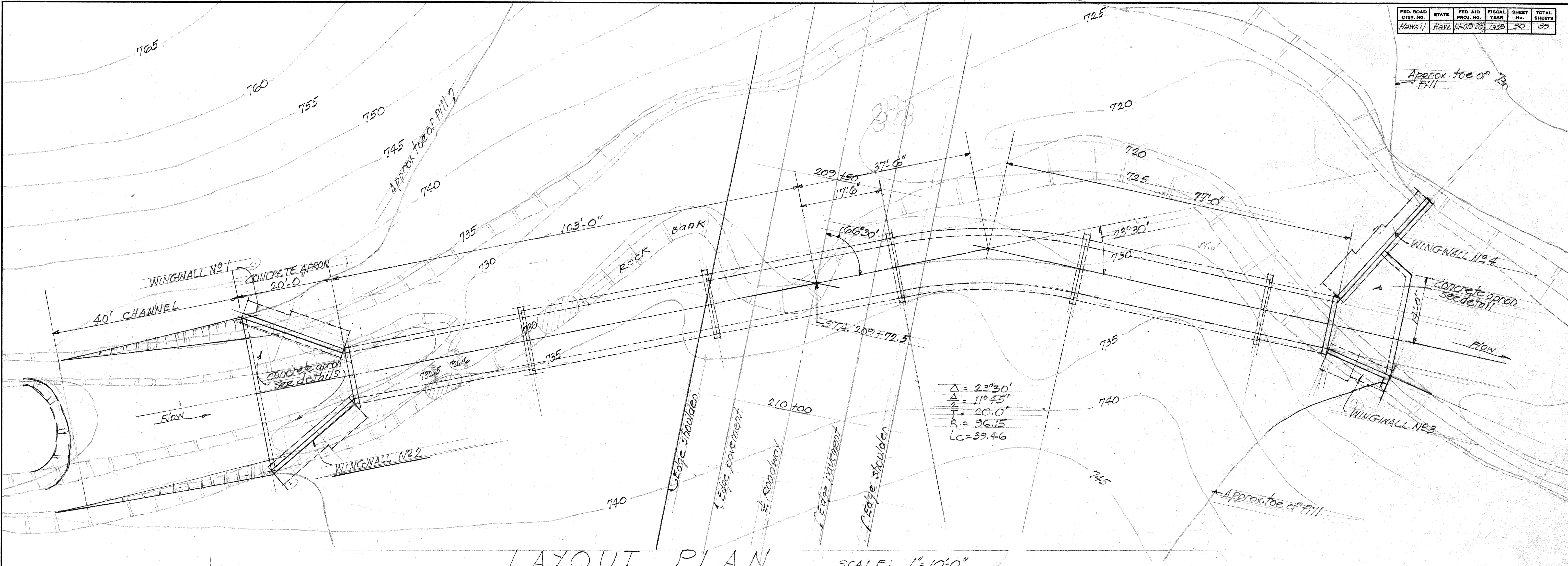
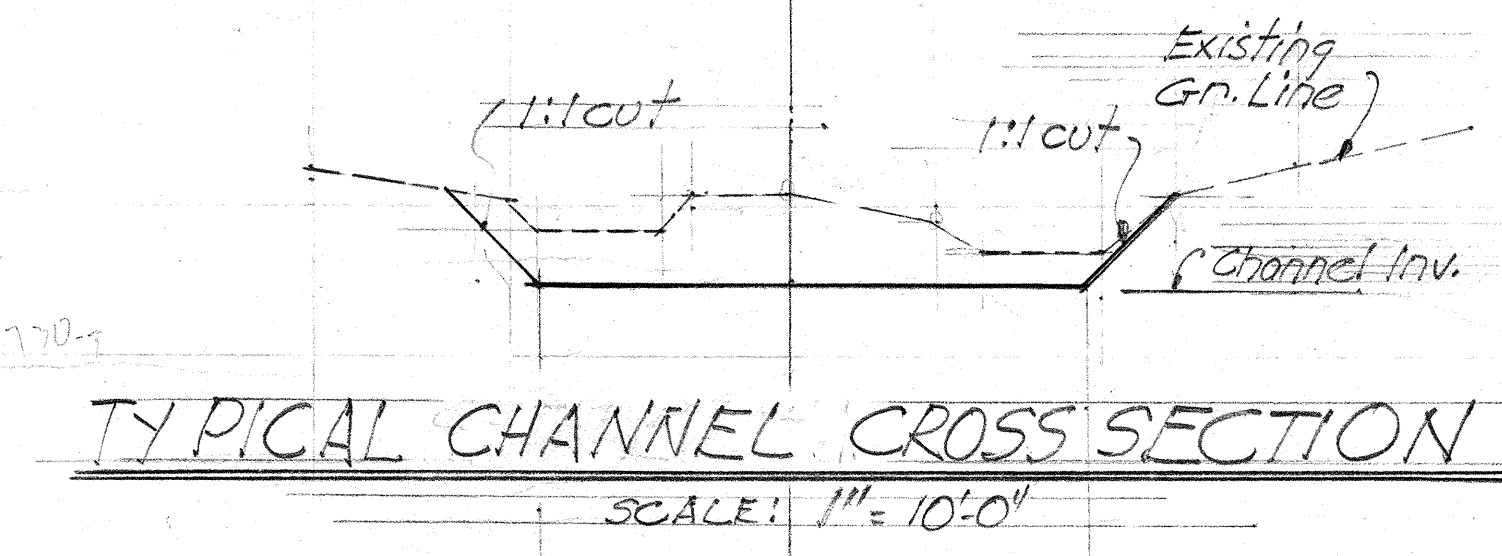


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	DF-019-215	1958	30	85



LAYOUT PLAN SCALE: 1" = 10'-0"



TYPICAL CHANNEL CROSS SECTION SCALE: 1" = 10'-0"

ESTIMATED QUANTITIES

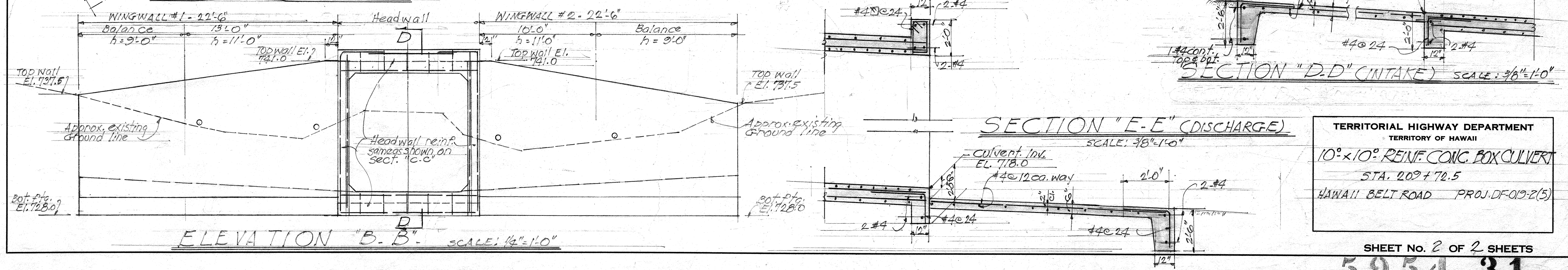
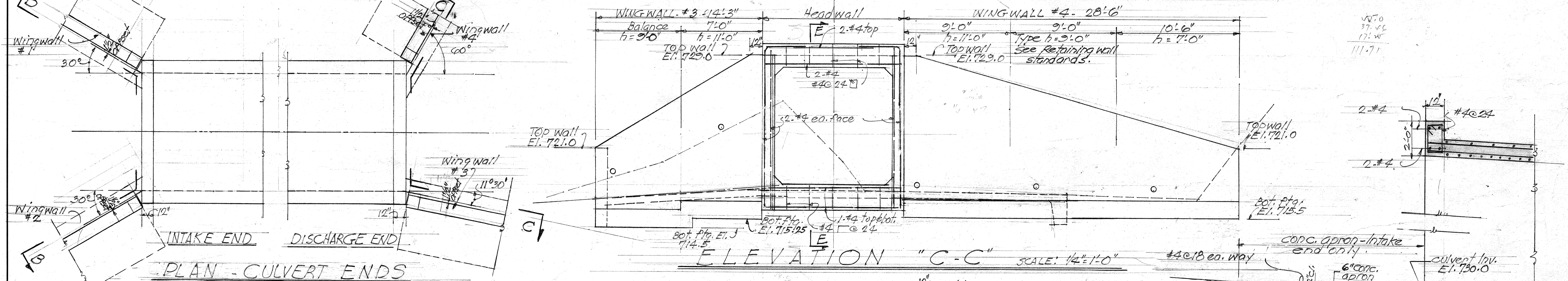
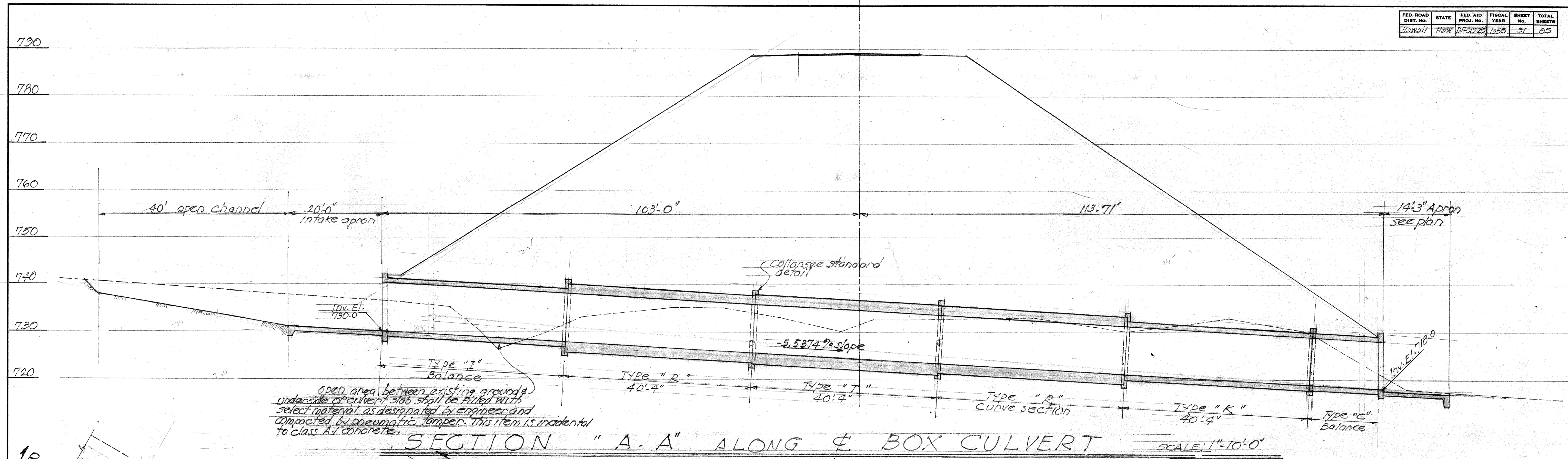
CLASS A-1 CONCRETE	Lump Sum
REINFORCING STEEL	Lump Sum
STRUCTURAL EXCAVATION	1,290 + 1,390 cu.yds.
CHANNEL EXCAVATION	200 + 190 c.yds.
FILTER MATERIAL	25 c.yds.

GENERAL NOTES

See corresponding standard detail of culvert types and retaining wall sections.

DATE	3-27-58
DESIGNED BY	W. J. J. J.
TRACED BY	W. J. J. J.
QUANTITIES BY	W. J. J. J.
CHECKED BY	W. J. J. J.
ORIGINAL PLAN	No.

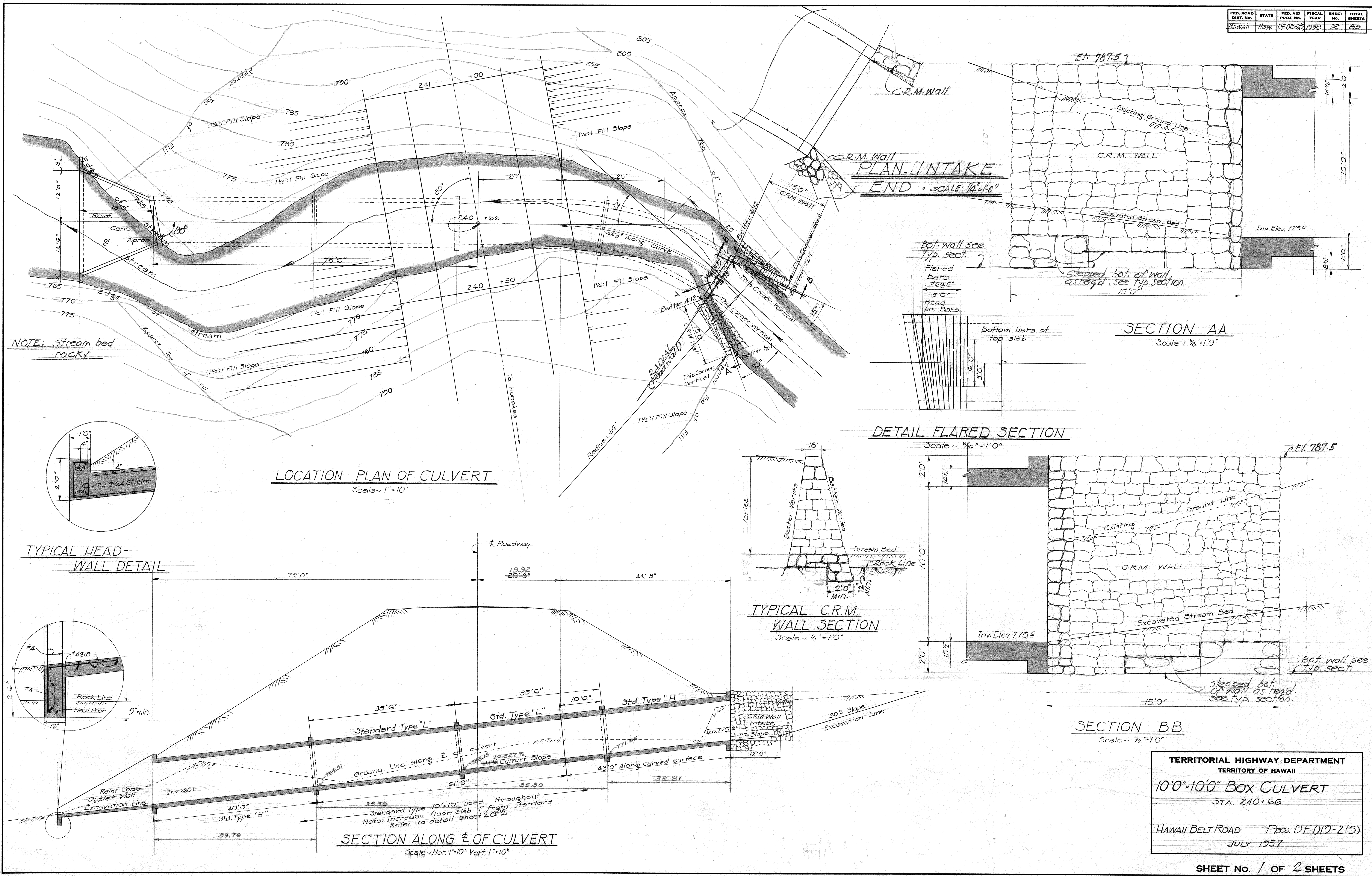
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
10'x10' REINF. CONC. BOX CULVERT
STA. 209+72.5
HAWAII BELT ROAD PROJ. DF-019-215



TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
10' x 10' REINF. CONC. BOX CULVERT
STA. 209 + 72.5
HAWAII BELT ROAD PROJ. DF-013-2(5)

DESIGNED BY: J. K. ADAMS
CHECKED BY: J. K. ADAMS
DATE: 9-27-67
ORIGINAL PLAN NO. 3-57
NOTE BOOK NO. 3-57

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	DF-012-2(5)	1955	32	85

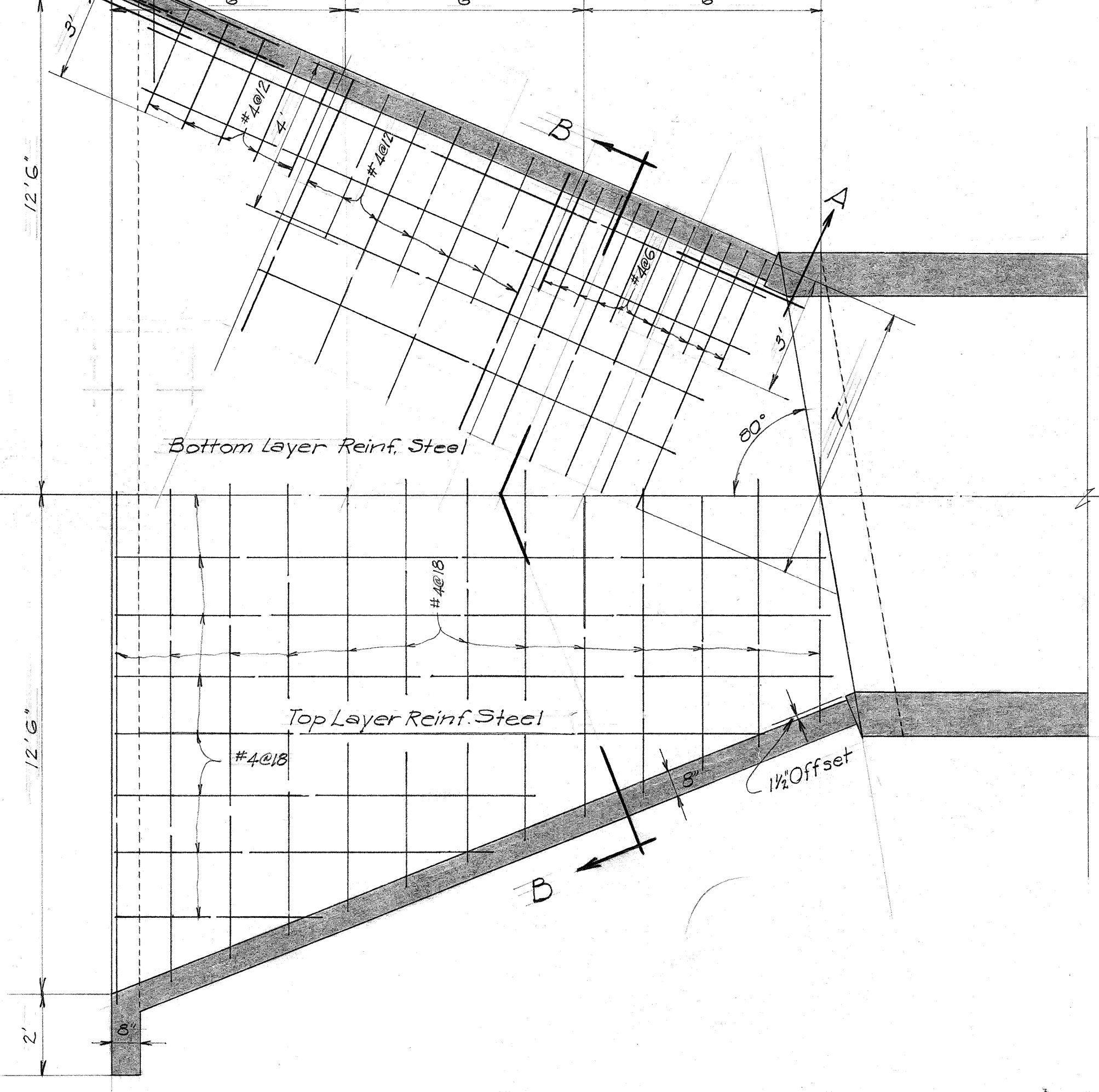
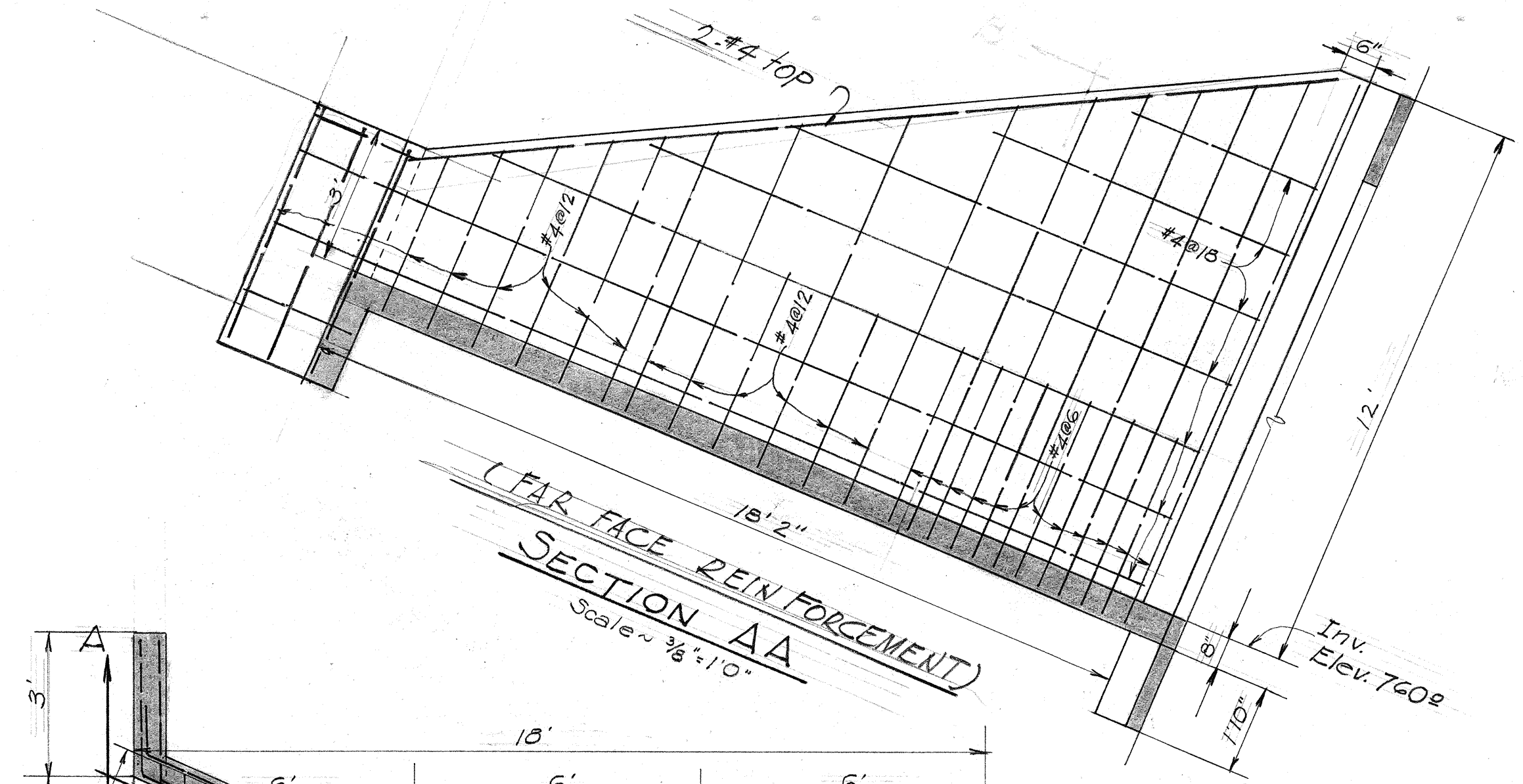


DESIGNED BY	DATE
DRAWN BY	1/1/55
CHECKED BY	1/1/55
QUANTITIES CHECKED BY	1/1/55
NOTE BOOK NO.	1/1/55

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

10'0"×10'0" BOX CULVERT
STA. 240+66

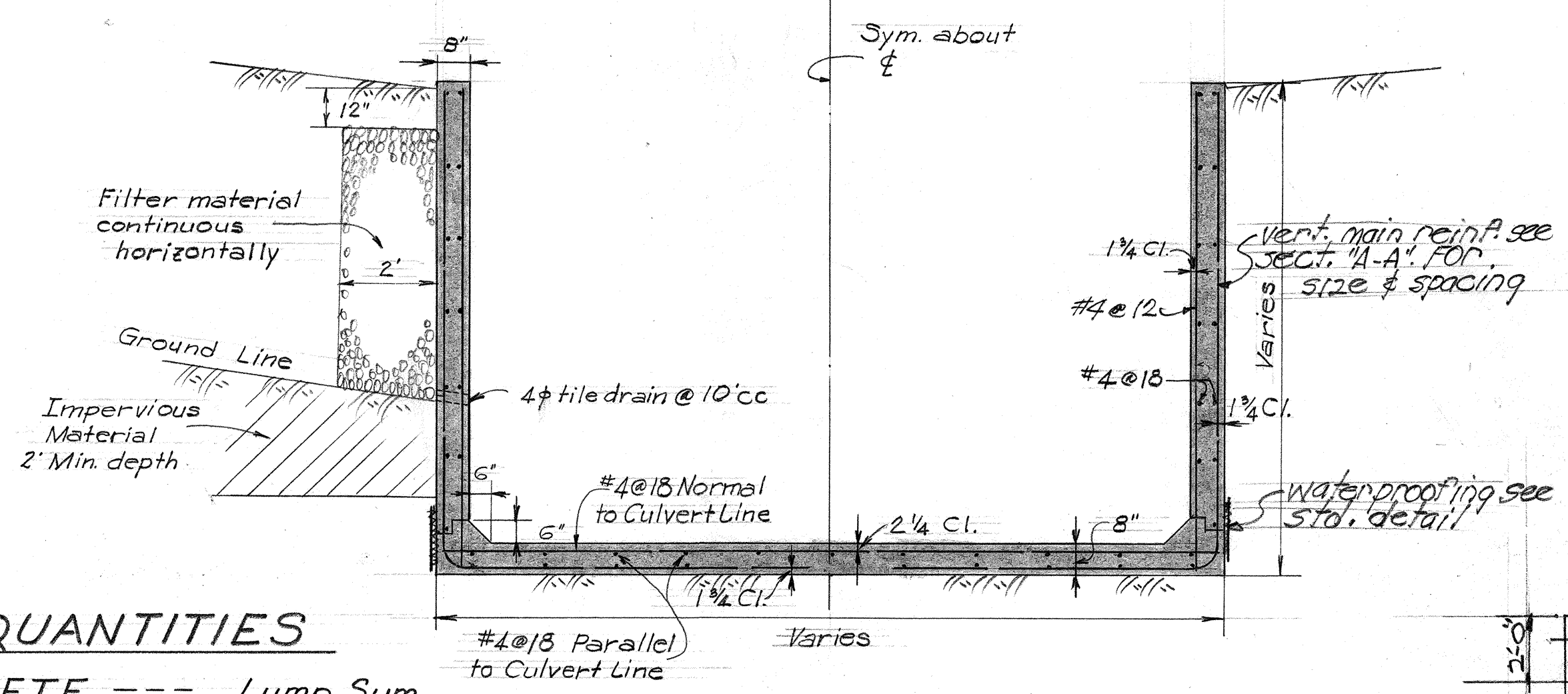
HAWAII BELT ROAD PROJ. DF-012-2(5)
JULY 1957



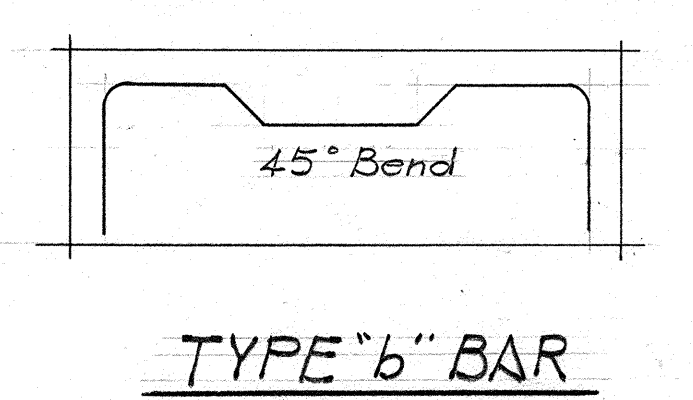
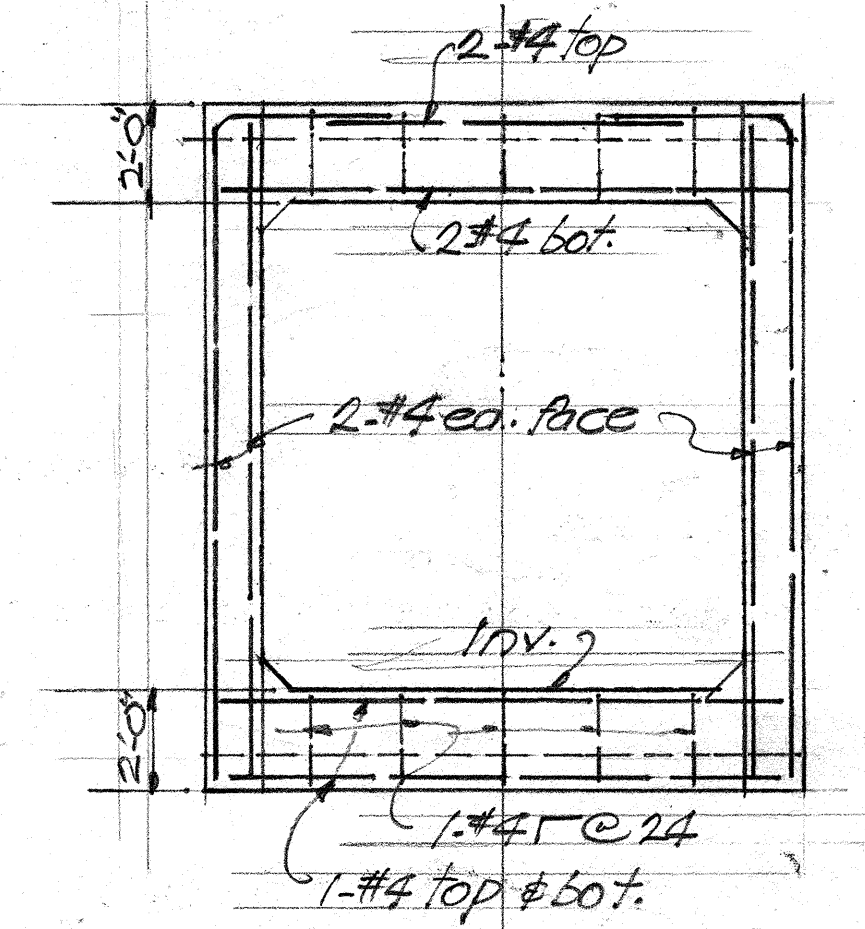
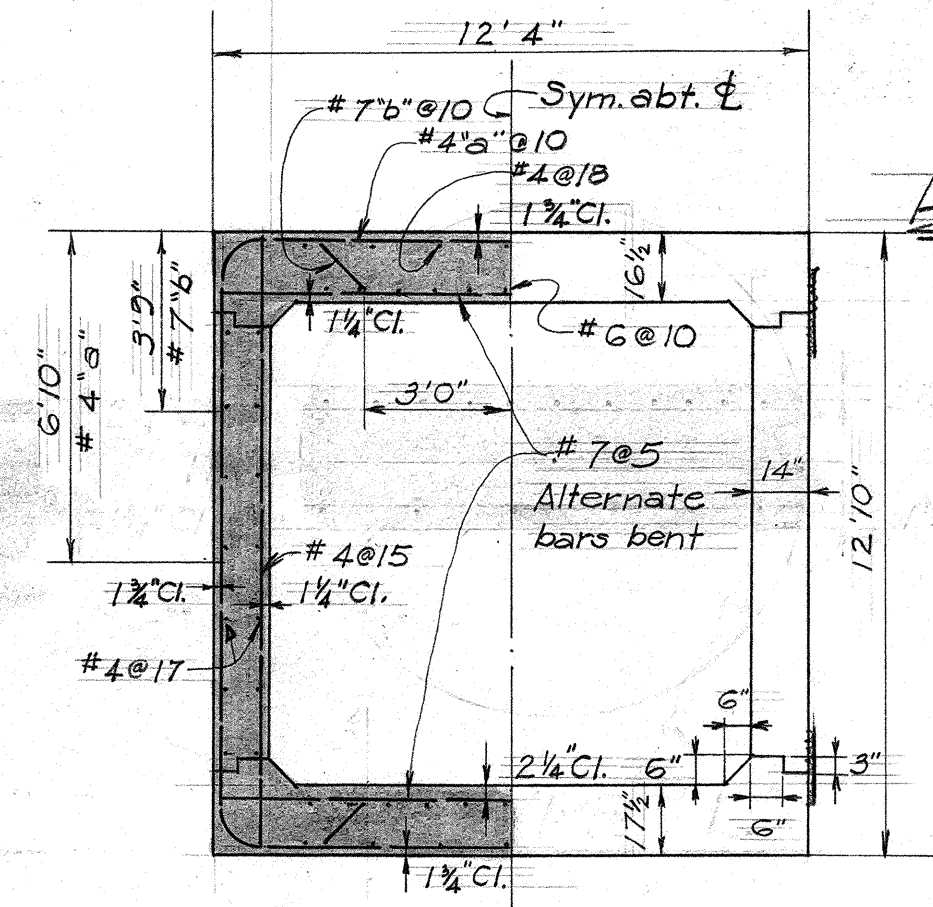
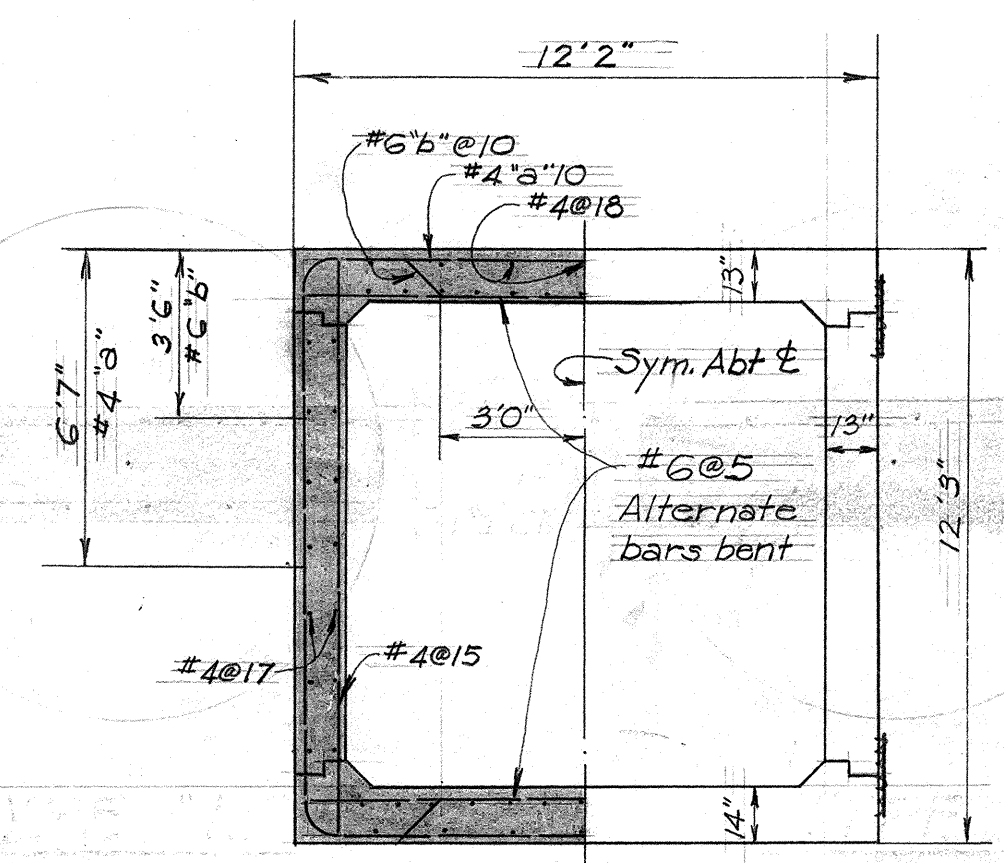
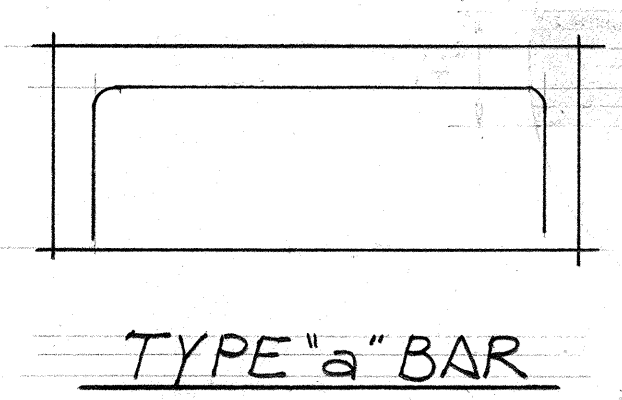
DETAILS, DISCHARGE OPEN DITCH

ESTIMATED QUANTITIES

CLASS A-1 CONCRETE	---	Lump Sum
REINFORCING STEEL	---	Lump Sum
STRUCT. EXCAVATION	---	550 c.y.
CHANNEL EXCAVATION	---	130 c.y.
C.R.M. WALL	---	61 c.y.
FILTER MATERIAL	---	11 c.y.



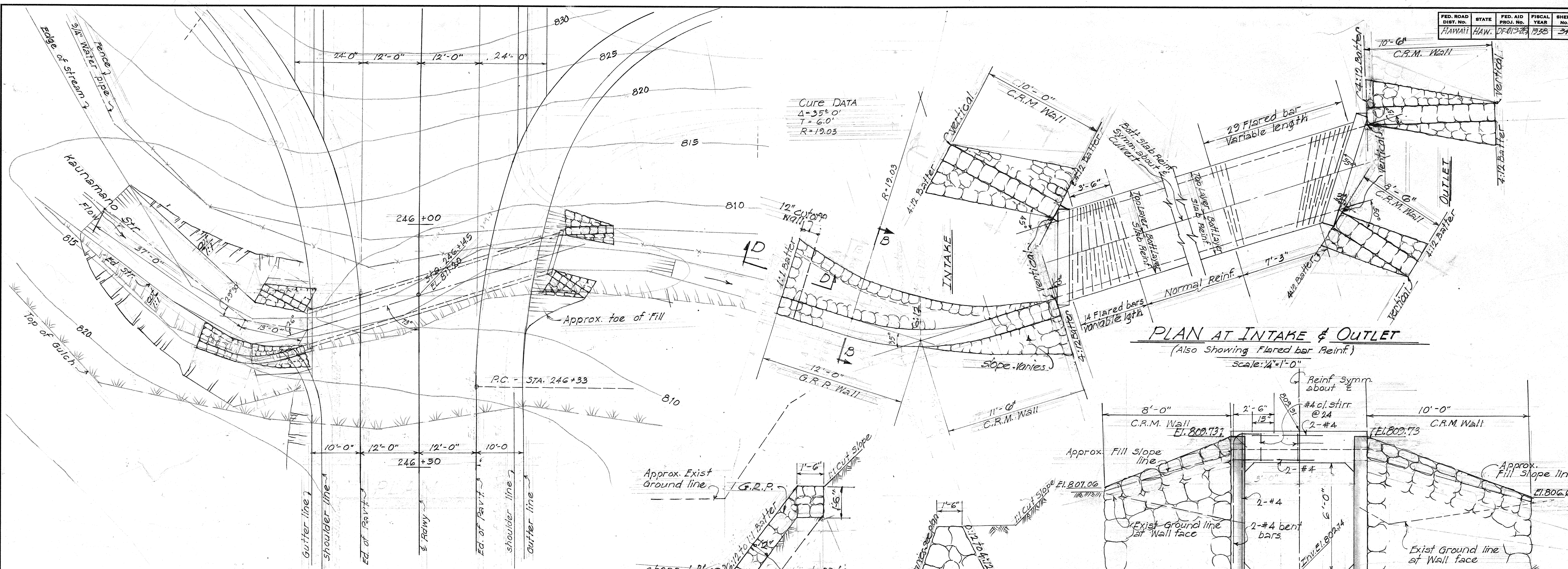
STANDARD 10'0" x 10'0" BOX CULVERT SECTIONS



TYPICAL CULVERT SECTIONS

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
10'0" x 10'0" BOX CULVERT
STA 240 + 66
HAWAII BELT RD. PROJ DF019-2(5)
JULY 1957

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	DF-019-23	1935	34	35



CURVE DATA
 $\Delta = 35^\circ 0'$
 $T = 6.0'$
 $R = 19.03$

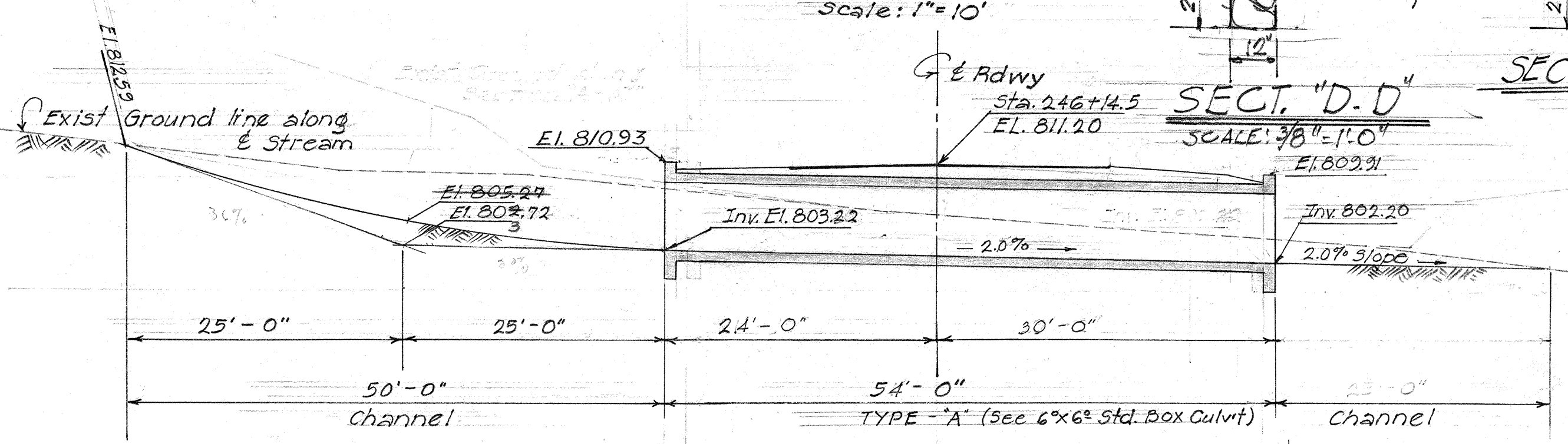
PLAN AT INTAKE & OUTLET
 (Also Showing Flared bar Reinf.)
 Scale: $\frac{1}{4}'' = 1'-0''$

PLAN
 Scale: $1'' = 10'$

SECTION B-B
 Scale: $\frac{3}{8}'' = 1'-0''$

TYP. C.R.M. WALL SECT.
 Scale: $\frac{3}{8}'' = 1'-0''$

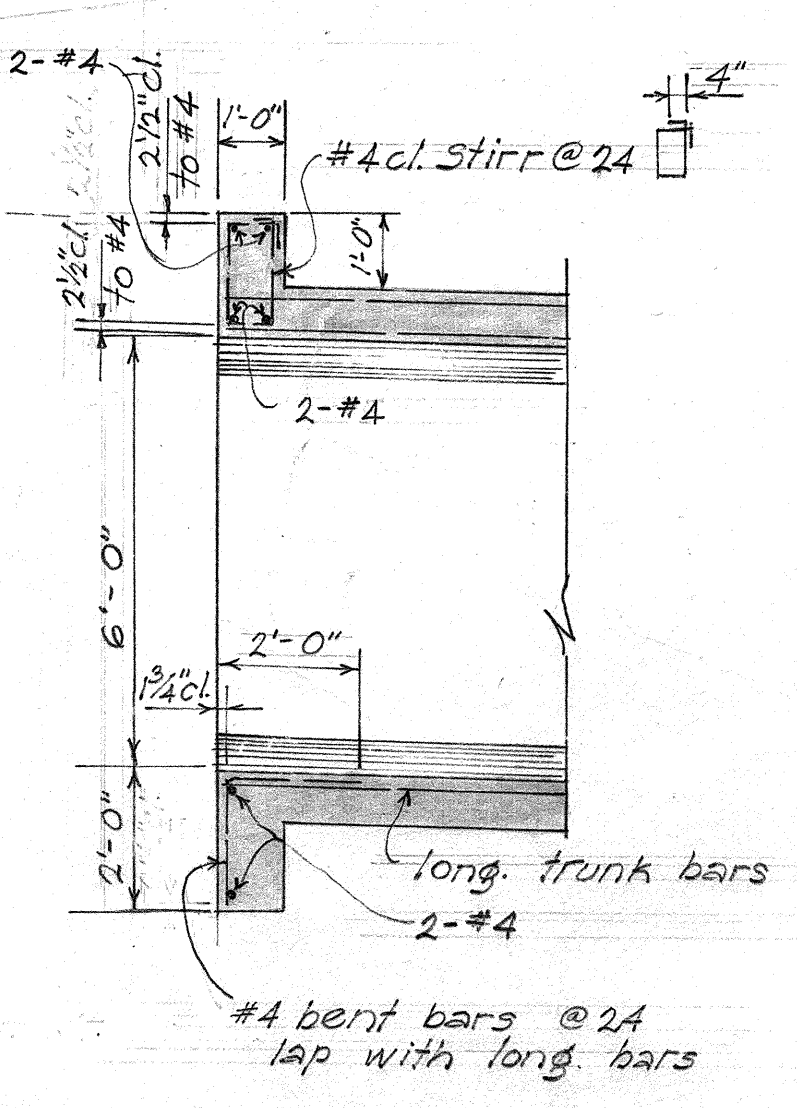
OUTLET ELEV.
 Scale: $\frac{3}{8}'' = 1'-0''$



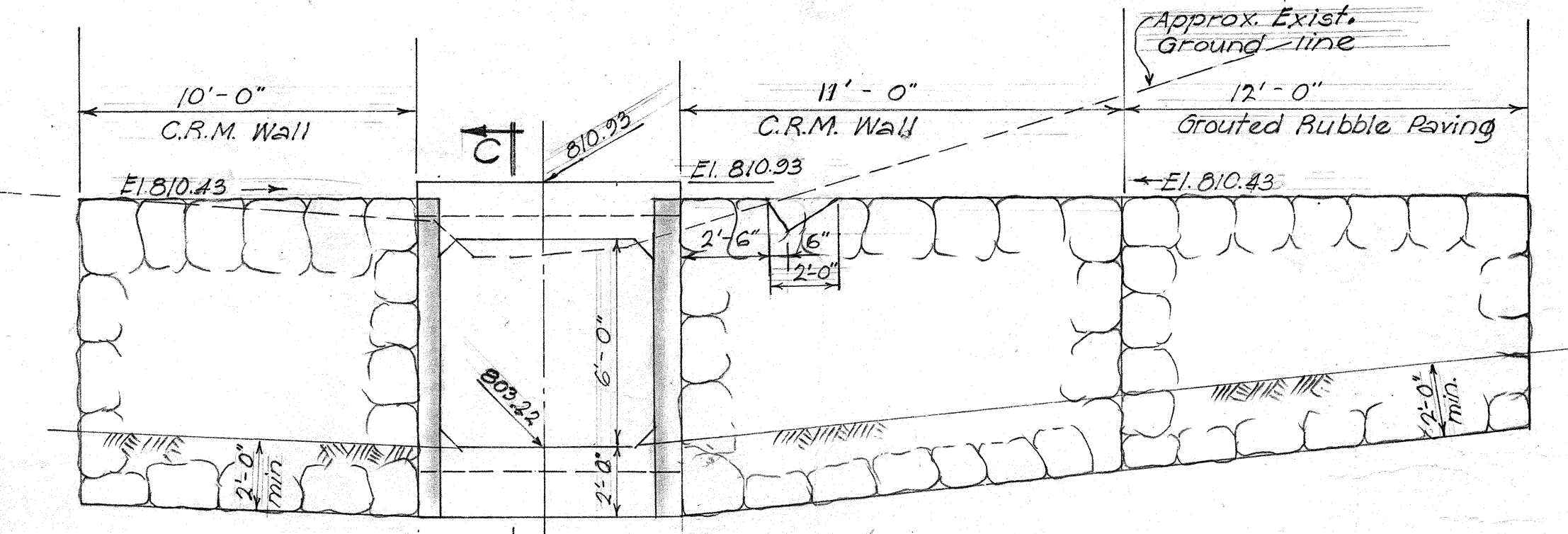
SECTION ALONG & BOX CULVERT
 Scale: $1'' = 10'$

ESTIMATED QUANTITIES

Class A-1 Conc	Lump Sum
Reinf. Steel	Lump Sum
Structural Exc.	200 c.y. 226
Channel Exc.	176 c.y.
C.R.M.	40 c.y.
G.R.P.	2.5 c.y. 2.0



SECTION C-C
 Scale: $\frac{3}{8}'' = 1'-0''$

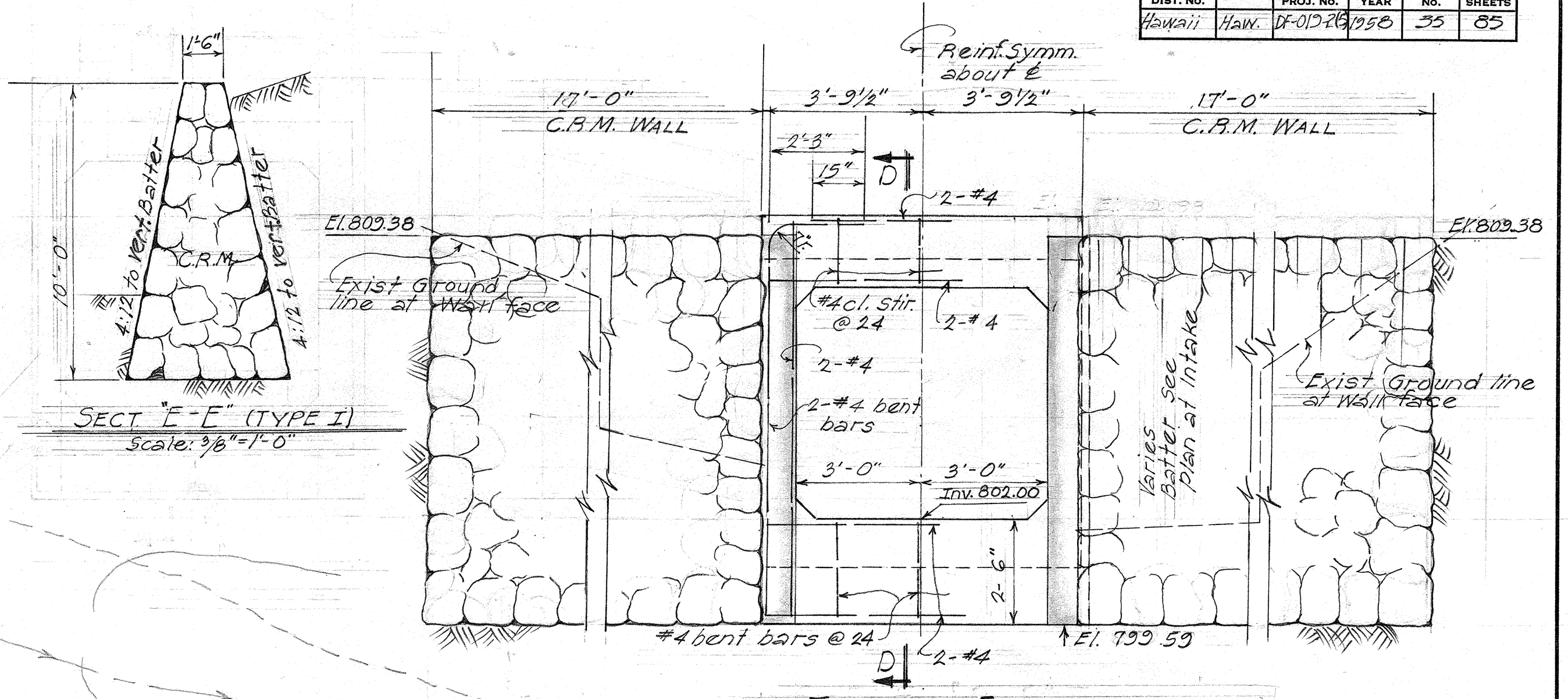
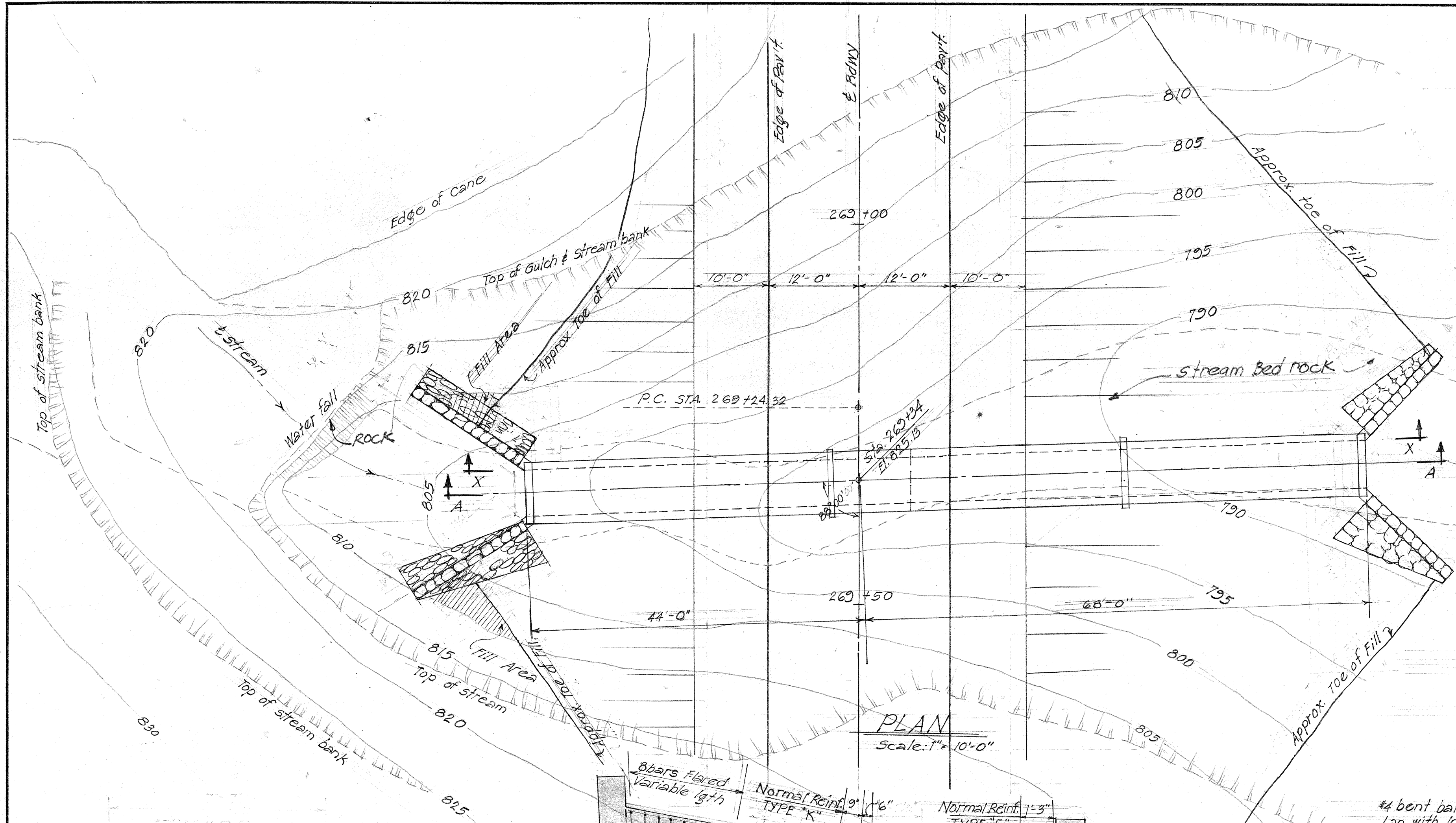


INTAKE ELEV.
 Scale: $\frac{1}{4}'' = 1'-0''$

TERRITORIAL HIGHWAY DEPARTMENT
 TERRITORY OF HAWAII
6" x 6" BOX CULVERT
 STA. 246+14.5
 HAWAII BELT RD. Proj. DF-019-2(5)
 JUNE 1957

DATE: 5-27-57
 DESIGNED BY: M. S. S. S.
 TRACED BY: A. L. S. S.
 QUANTITIES CHECKED BY: G. F. S. S.
 CHECKED BY: G. F. S. S.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw.	DF-019-2(5)	1958	33	85



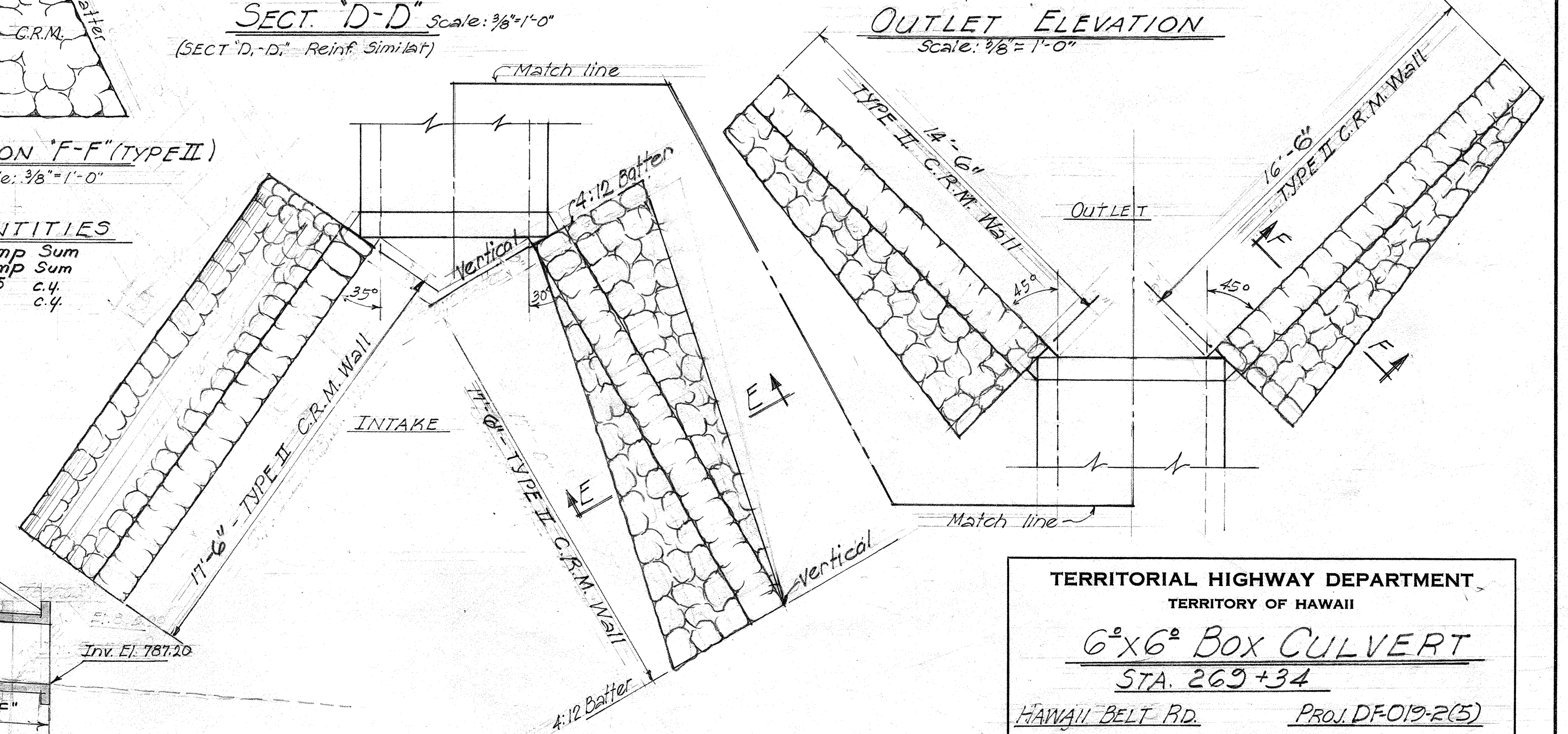
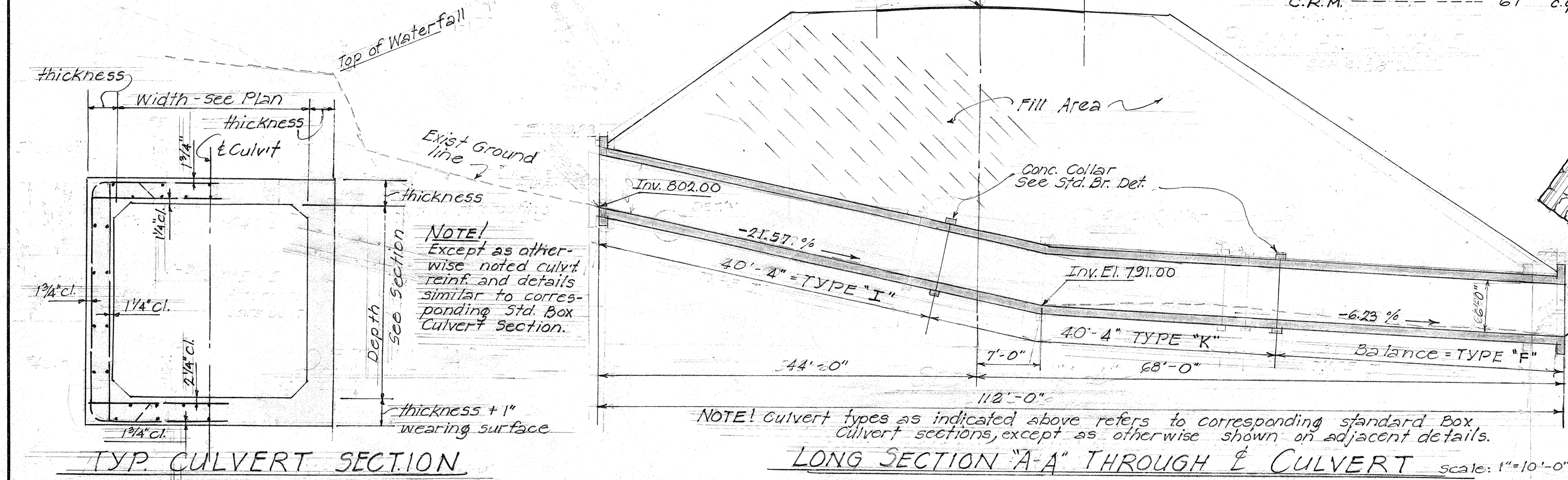
GENERAL NOTES
See corresponding standard detail of culvert.



ESTIMATED QUANTITIES

Class A-1 Conc.	Lump Sum
Reinf. Steel	Lump Sum
Structural Exc.	135 c.y.
C.R.M.	61 c.y.

SECTION D-D Scale: 3/8"=1'-0"
(SECT. D-D - Reinf. Similar)

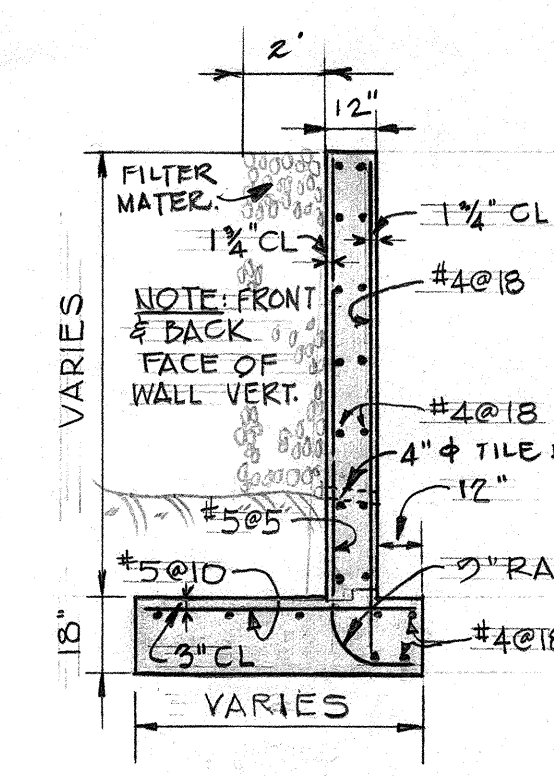
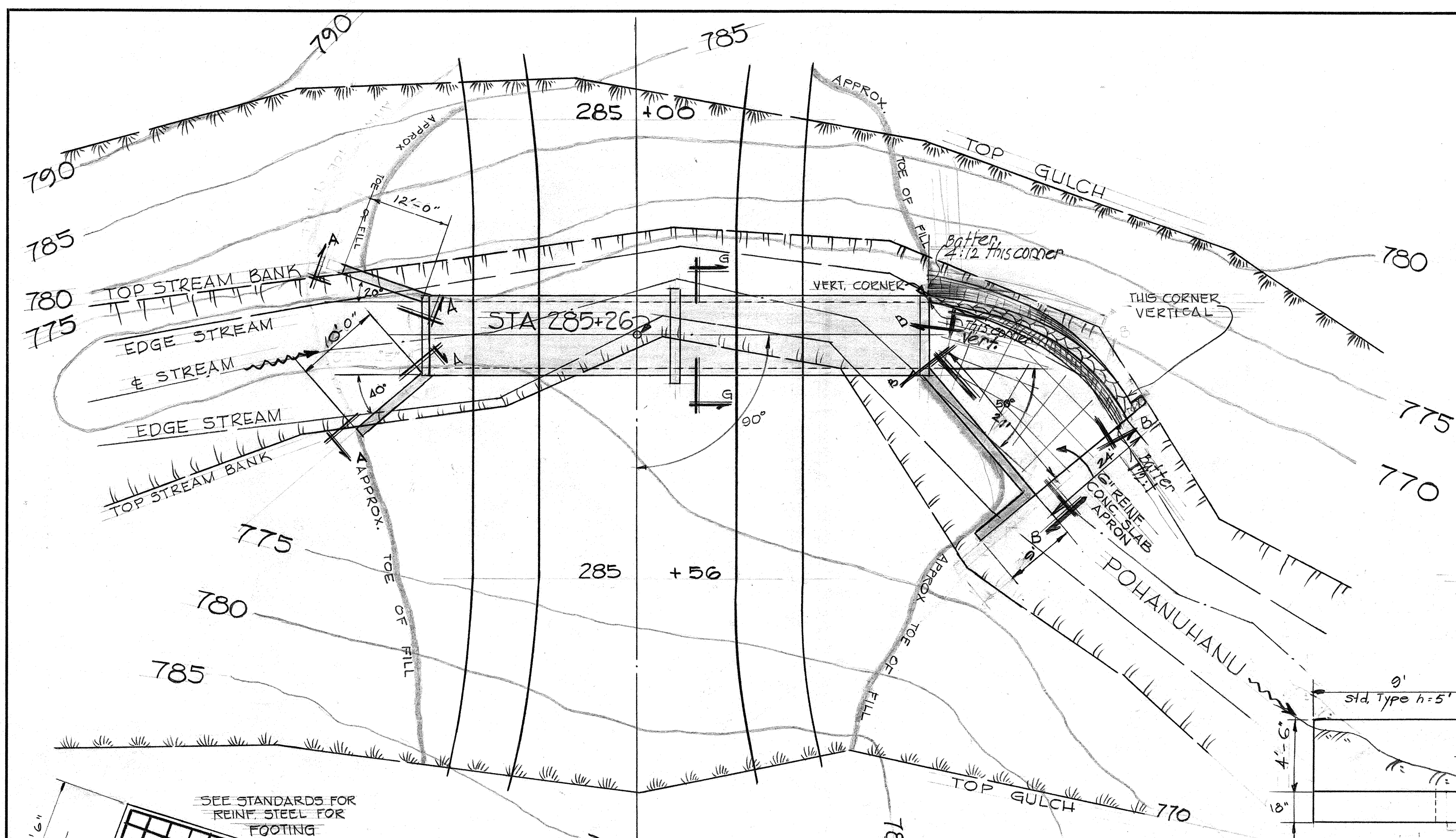


TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

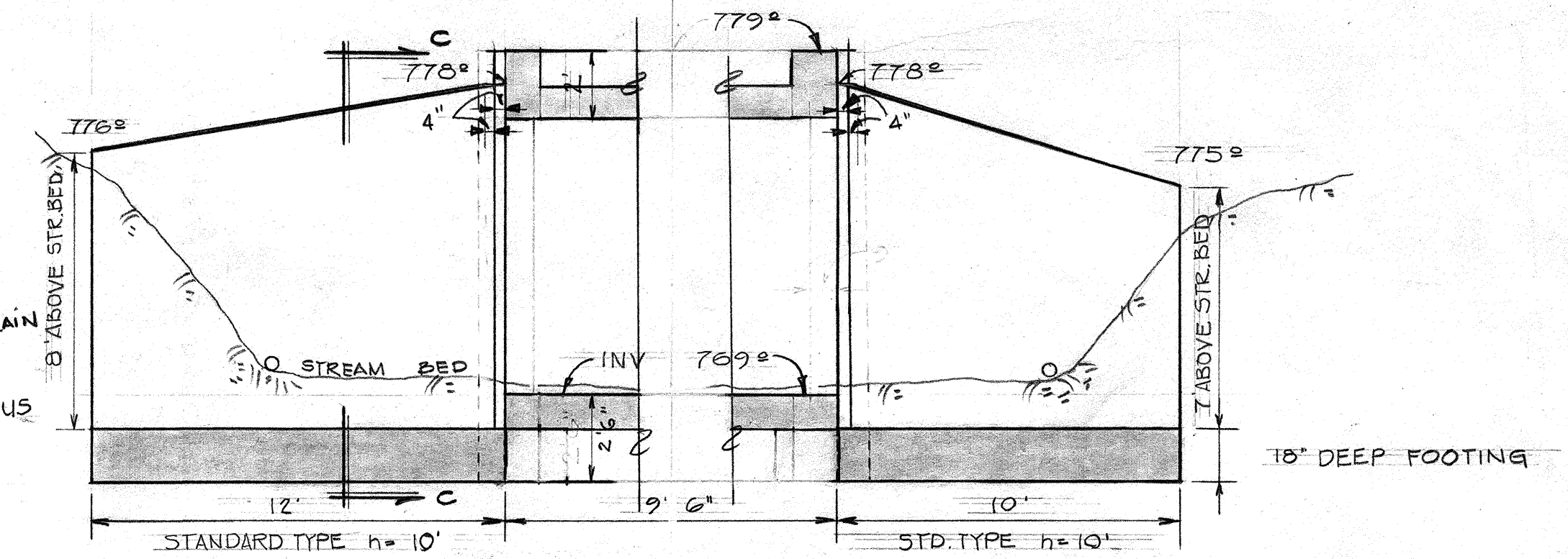
6"x6" Box CULVERT
STA. 269+34

HAWAII BELT RD. PROJ. DF-019-2(5)
MAY 1957

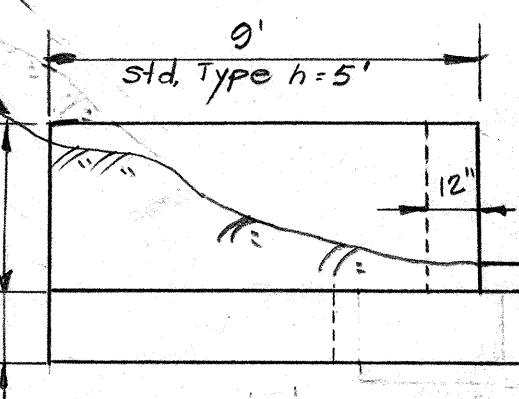
SURVEY PLOTTED BY	DATE
DRAWN BY	8-57
TRACED BY	8-57
QUANTITIES CHECKED BY	8-57
CHECKED BY	
NOTE BOOK NO.	



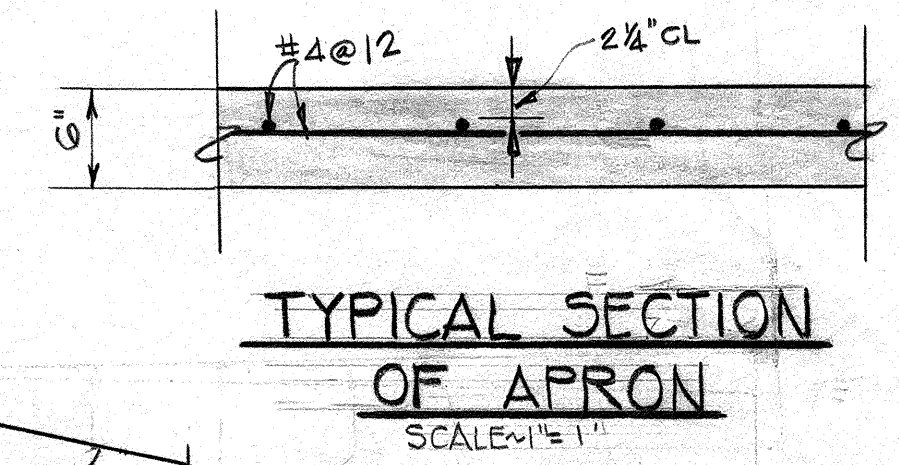
SECTION CC
SCALE ~ 1/4" = 1'



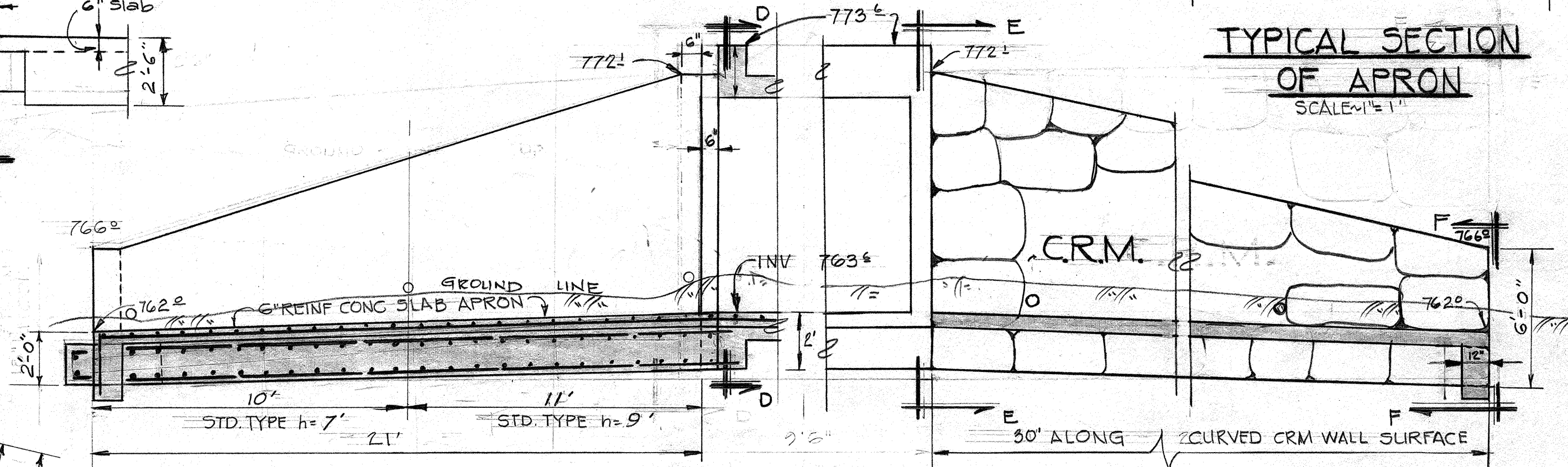
SECTION AA
SCALE ~ 1/4" = 1'



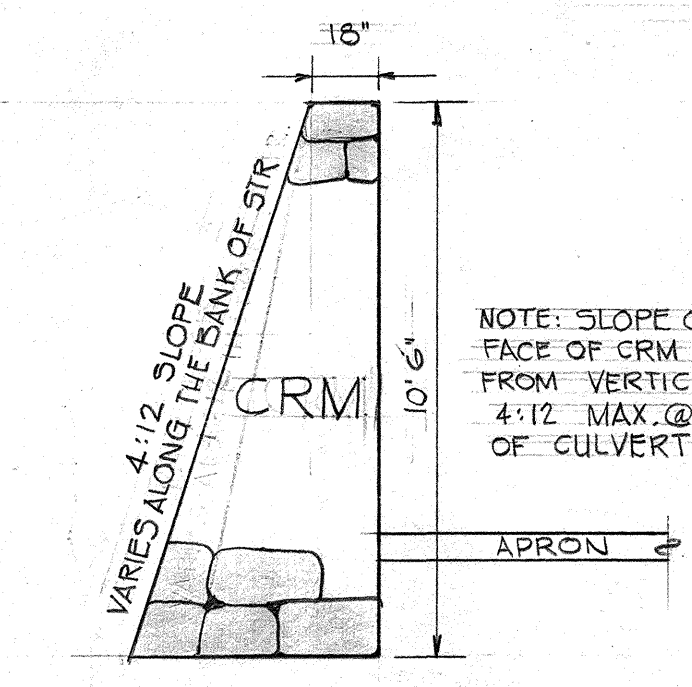
SECTION HH
SCALE ~ 1/4" = 1'



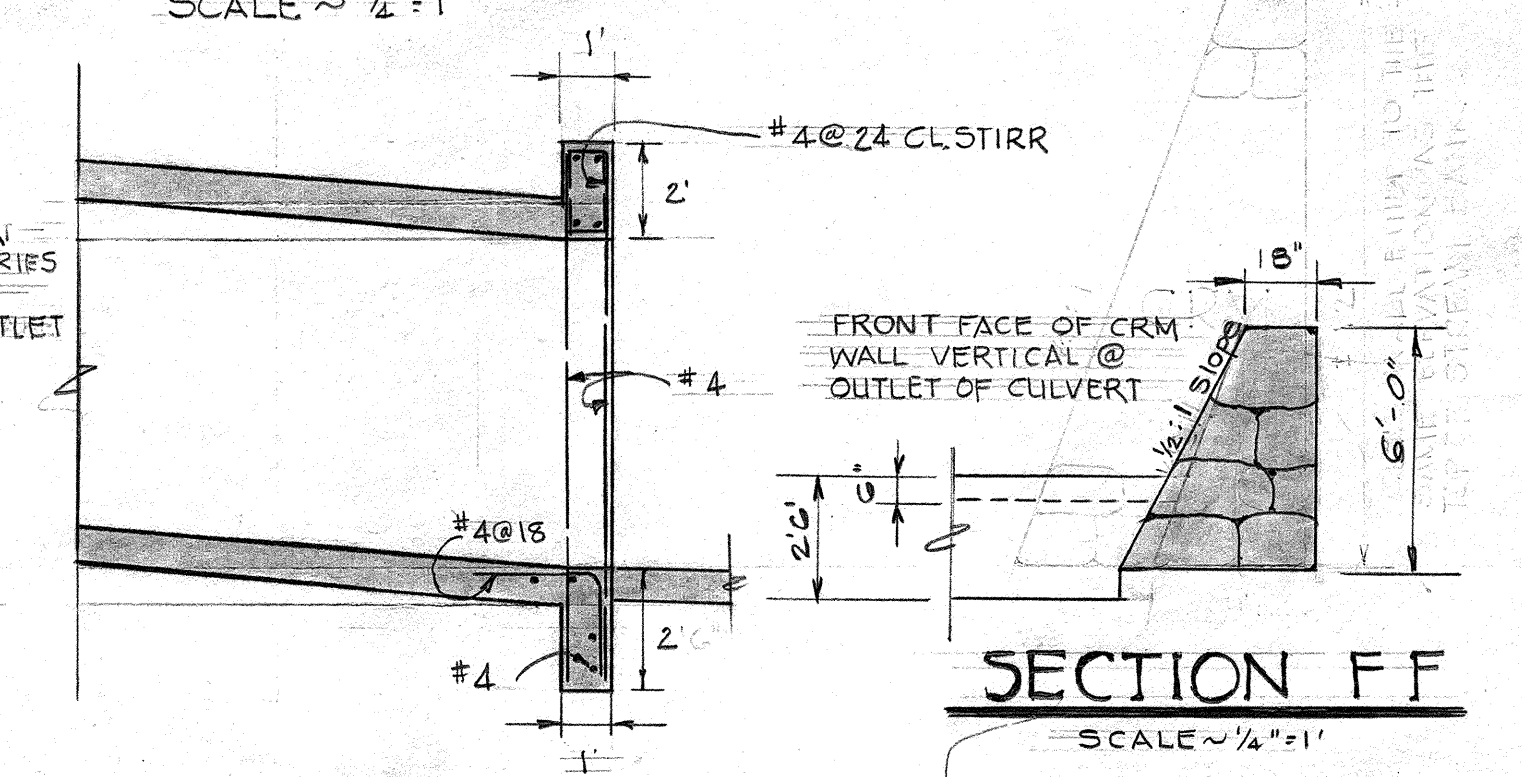
TYPICAL SECTION OF APRON
SCALE ~ 1" = 1'



SECTION BB
SCALE ~ 1/4" = 1'



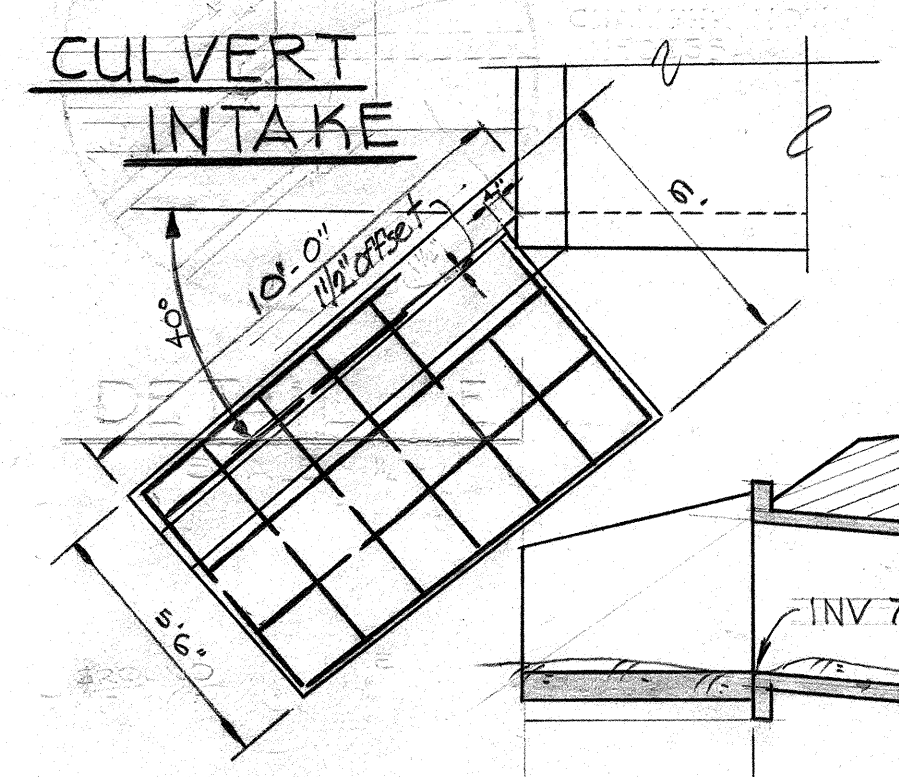
SECTION EE
SCALE ~ 1/4" = 1'



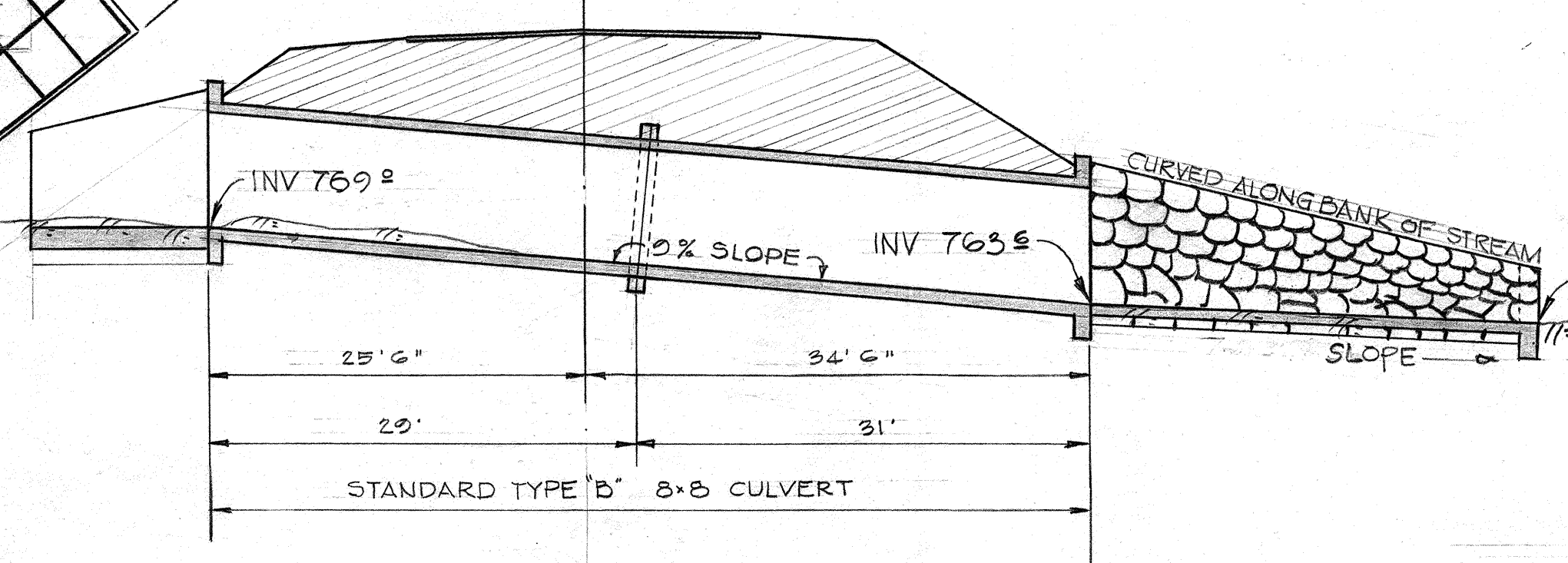
SECTION FF
SCALE ~ 1/4" = 1'

LOCATION PLAN OF CULVERT
SCALE: 1" = 10'

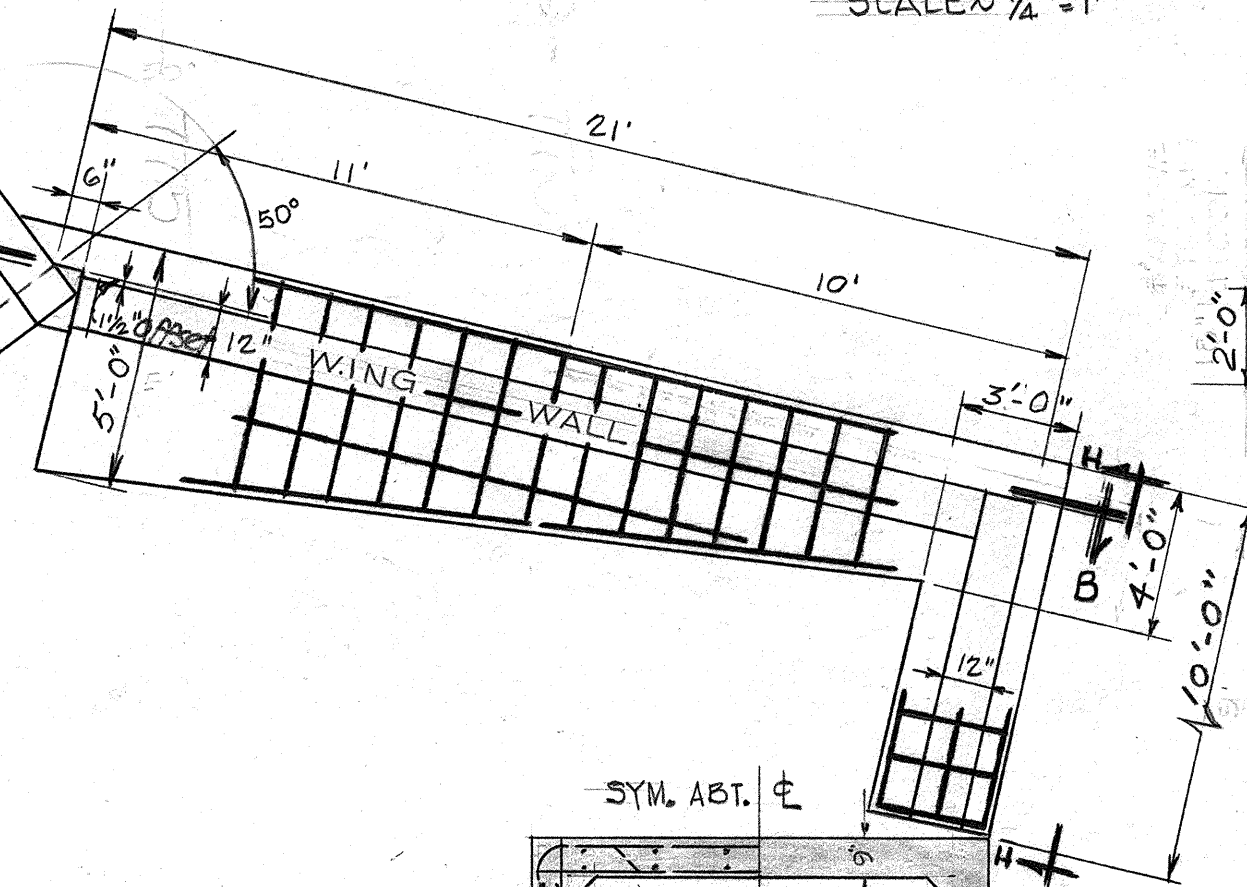
WING WALL TO CULVERT CONNECTION DETAIL
SCALE ~ 1/4" = 1'



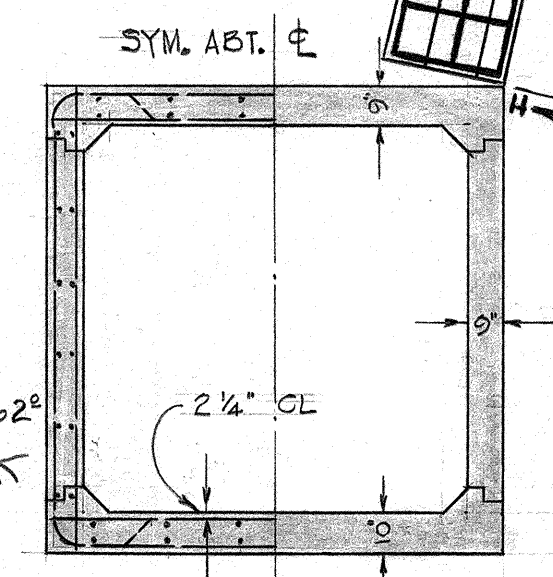
CULVERT INTAKE



SECTION ALONG & OF CULVERT
SCALE: HOR. 1" = 10'
VERT. 1" = 10'



SECTION GG
SCALE ~ 1/4" = 1'



SECTION GG
SCALE ~ 1/4" = 1'

ESTIMATED QUANTITIES

CLASS A-1 CONCRETE	LUMP SUM
REINFORCING STEEL	LUMP SUM
STRUCTURAL EXCAVATION	155 cu. yds.
C.R.M.	28 cu. yds.
FILTER MATERIAL	12 cu. yds.

SECTION DD
SCALE ~ 1/4" = 1'

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

8'0"X8'0" BOX CULVERT
STA 285 + 26

HAWAII BELT ROAD PROJ. No. DF-019-2(5)
JUNE 1957

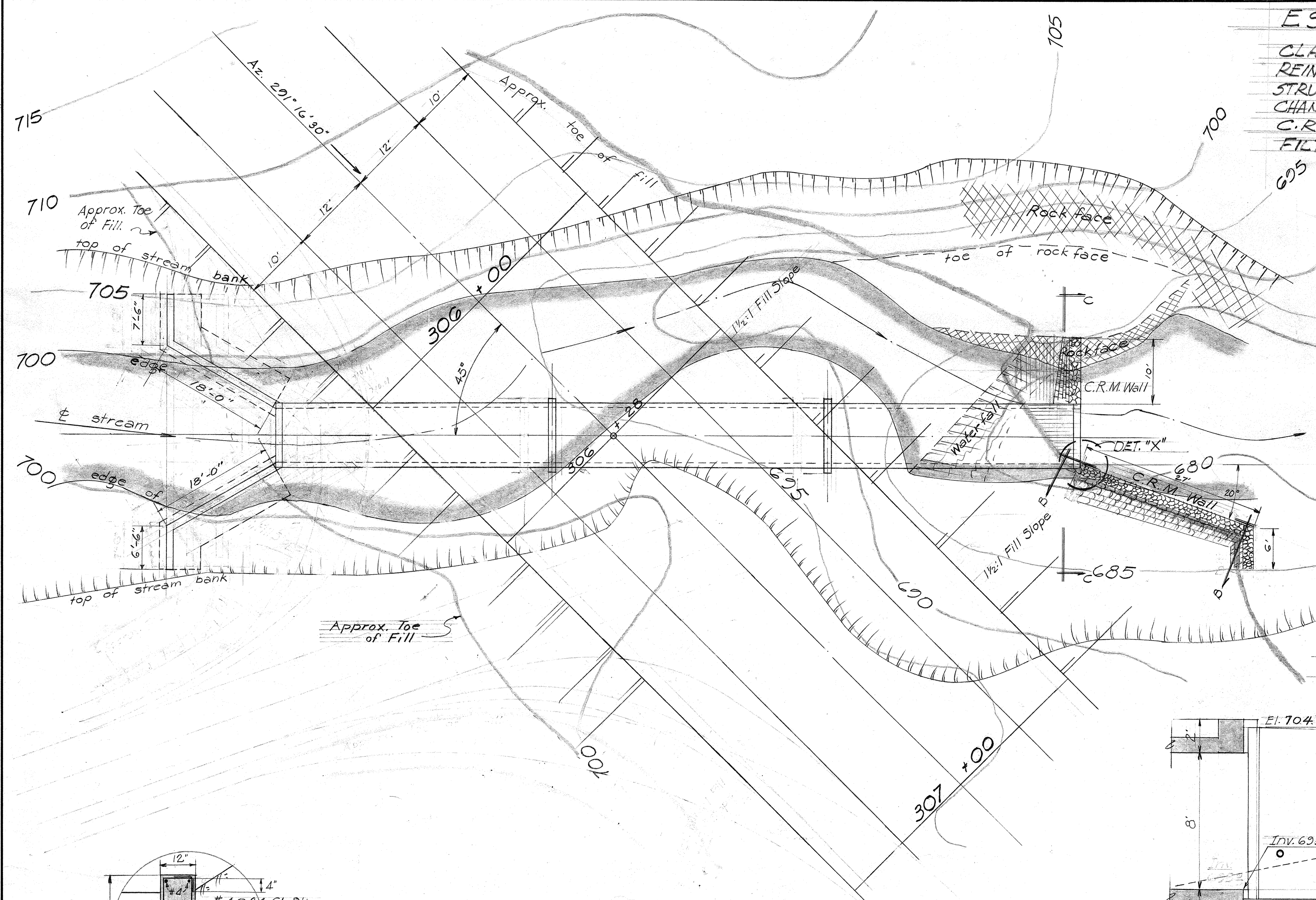
DESIGNED BY: HANADA
DRAWN BY: HANADA
CHECKED BY: HANADA
DATE: 8-27-57

ORIGINAL PLAN
NOTE BOOK No.

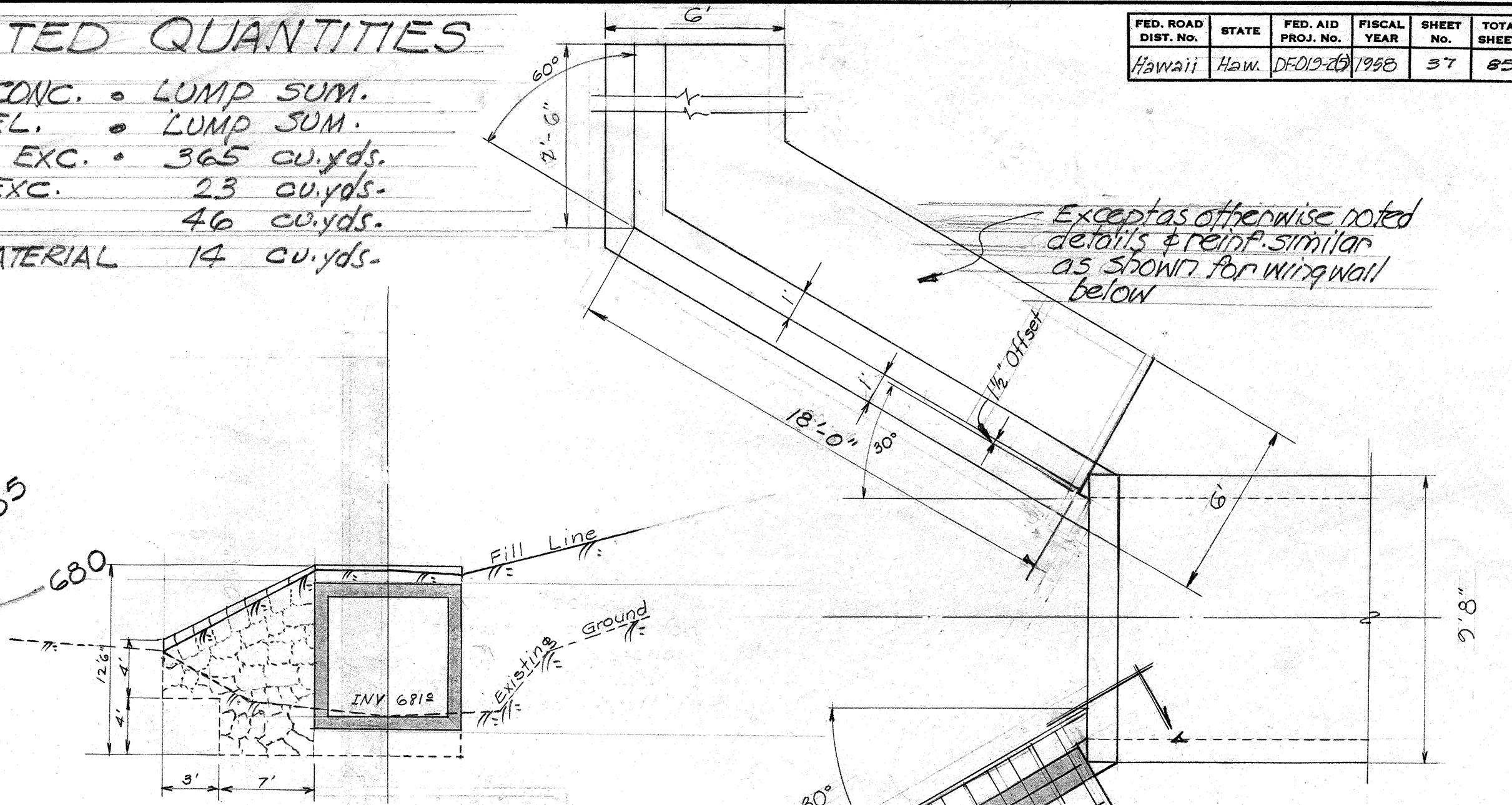
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw.	DF019-2(5)	1957	37	83

ESTIMATED QUANTITIES

CLASS A-1 CONC. • LUMP SUM.
 REINF. STEEL. • LUMP SUM.
 STRUCTURAL EXC. • 365 cu.yds.
 CHANNEL EXC. 23 cu.yds.
 C.R.M. 46 cu.yds.
 FILTER MATERIAL 14 cu.yds.

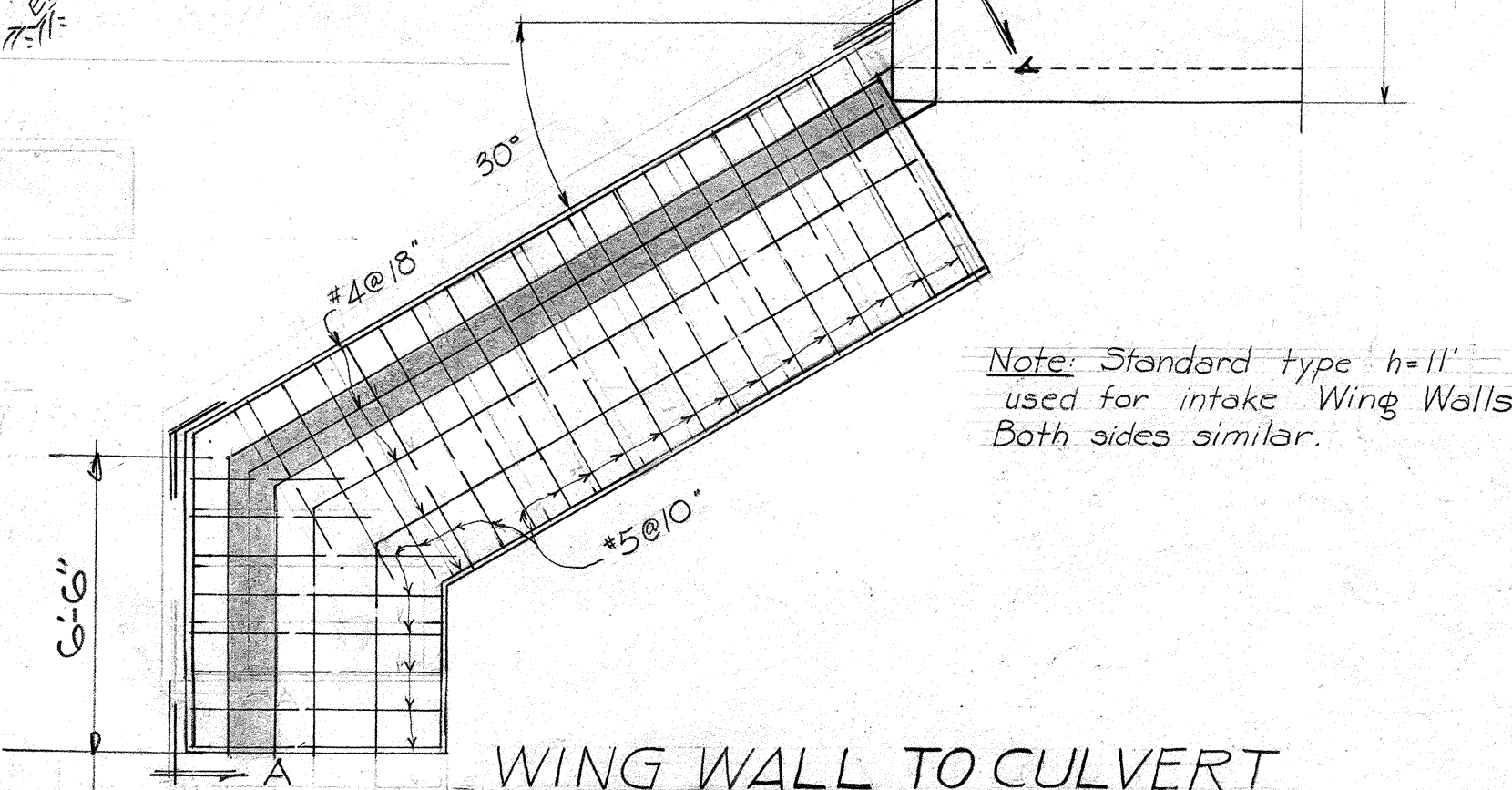


LOCATION PLAN OF CULVERT
 Scale ~ 1" = 10'

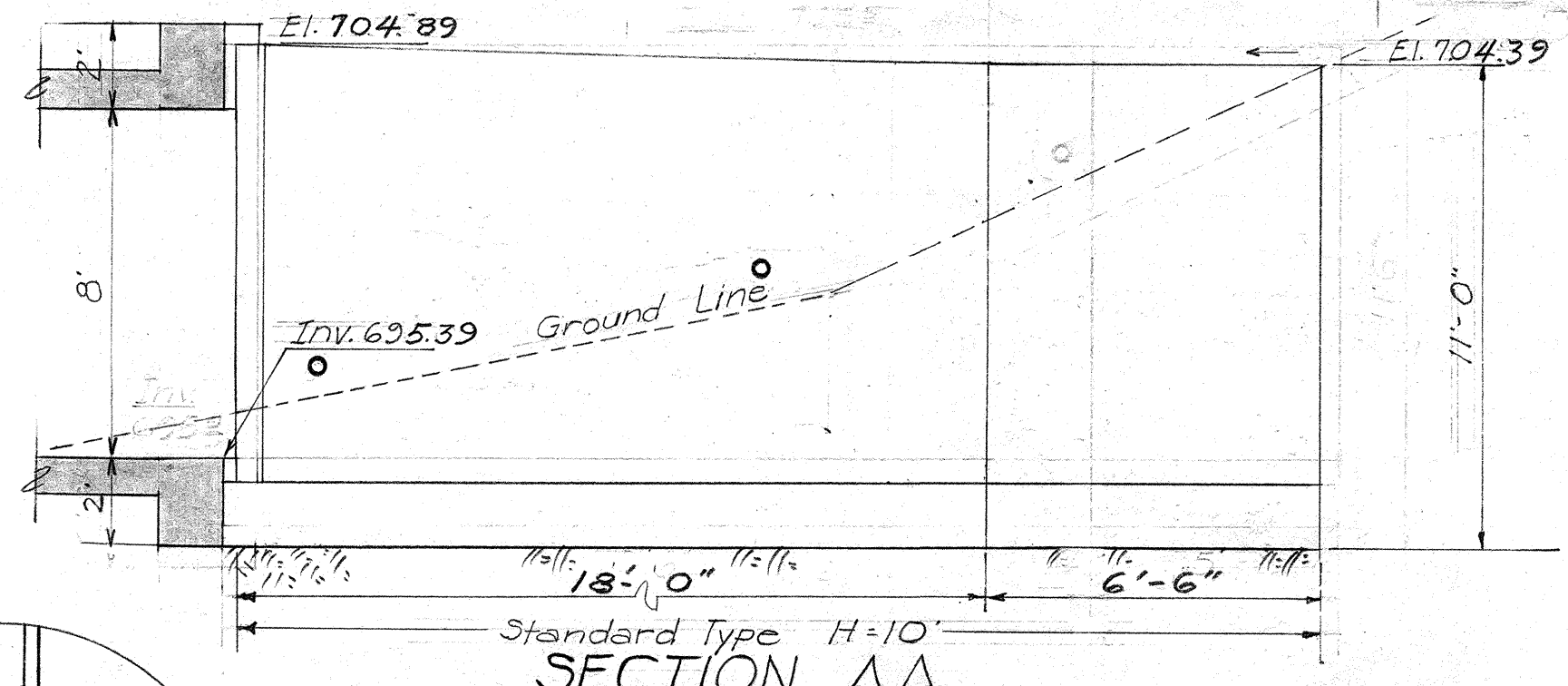


SECTION CC
 Scale ~ 1/8" = 1'0"

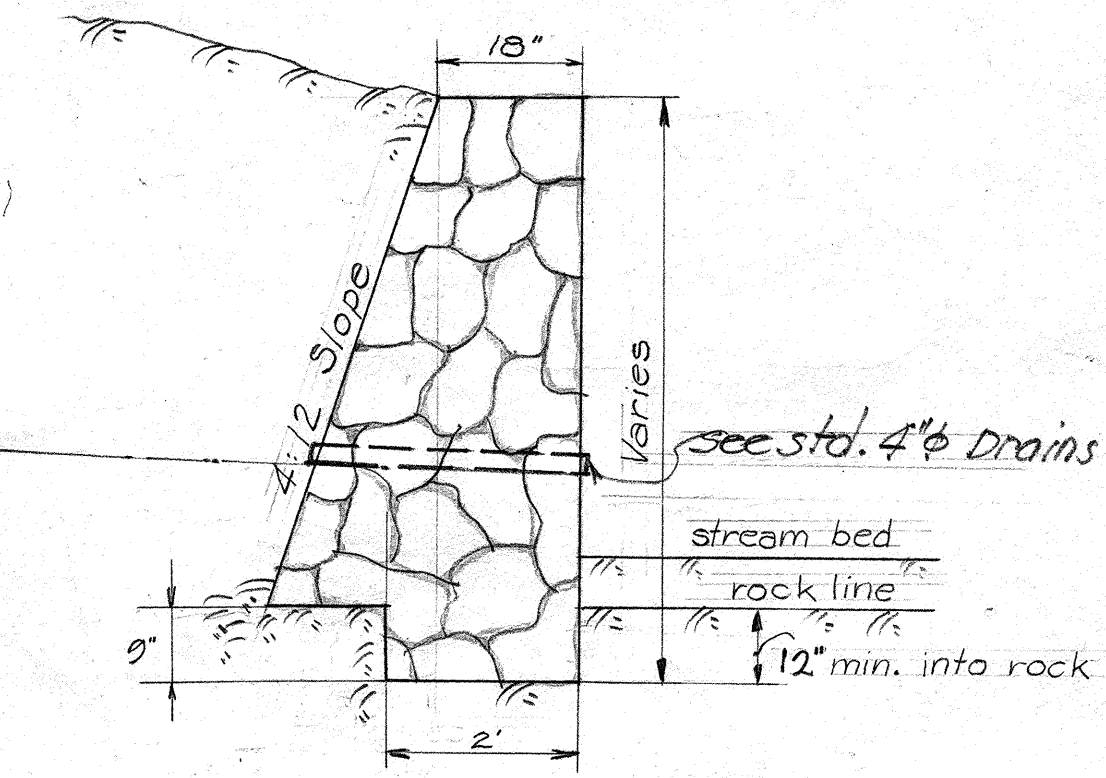
DETAIL "X"
 Scale 1/4" = 1'0"



WING WALL TO CULVERT
 CONNECTION DETAIL
 Scale ~ 1/4" = 1'0"

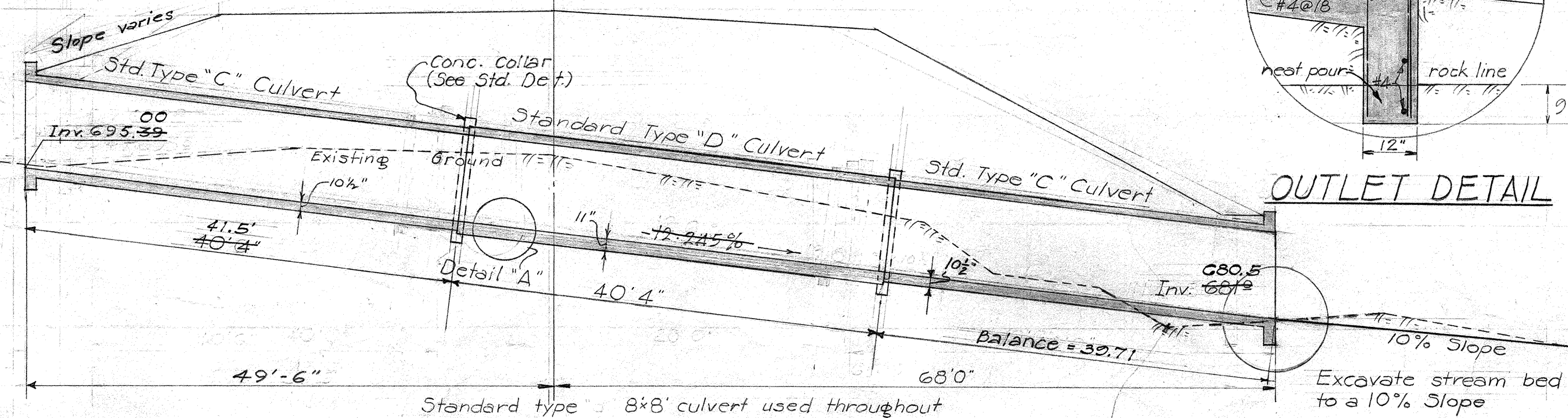


SECTION AA
 Scale ~ 1/4" = 1'0"



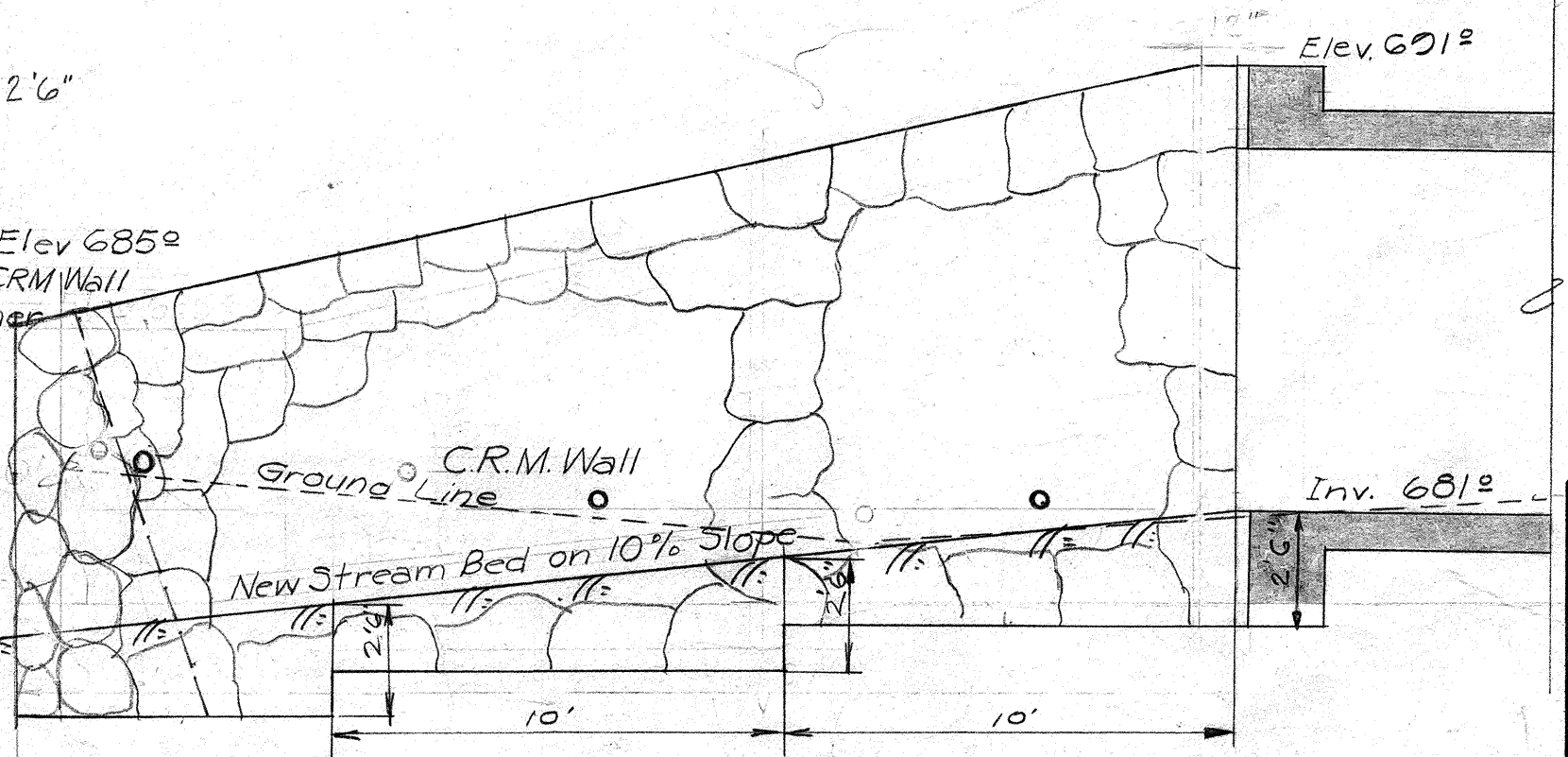
TYPICAL C.R.M.
 WALL SECTION
 Scale ~ 1/2" = 1'0"

TYPICAL HEADWALL
 Scale ~ 1/2" = 1'0"

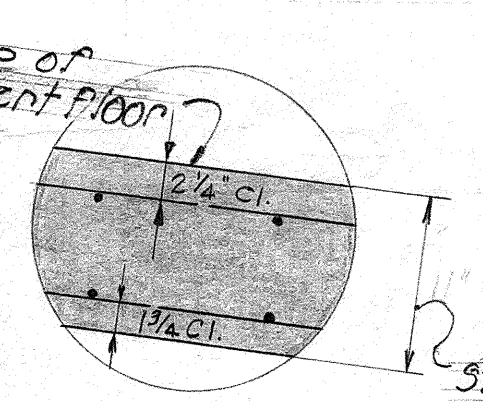


SECTION ALONG & OF CULVERT
 Scale ~ Hor. 1" = 10' Vert 1" = 10'

OUTLET DETAIL



SECTION BB
 Scale ~ 1/4" = 1'0"



DETAIL "A"

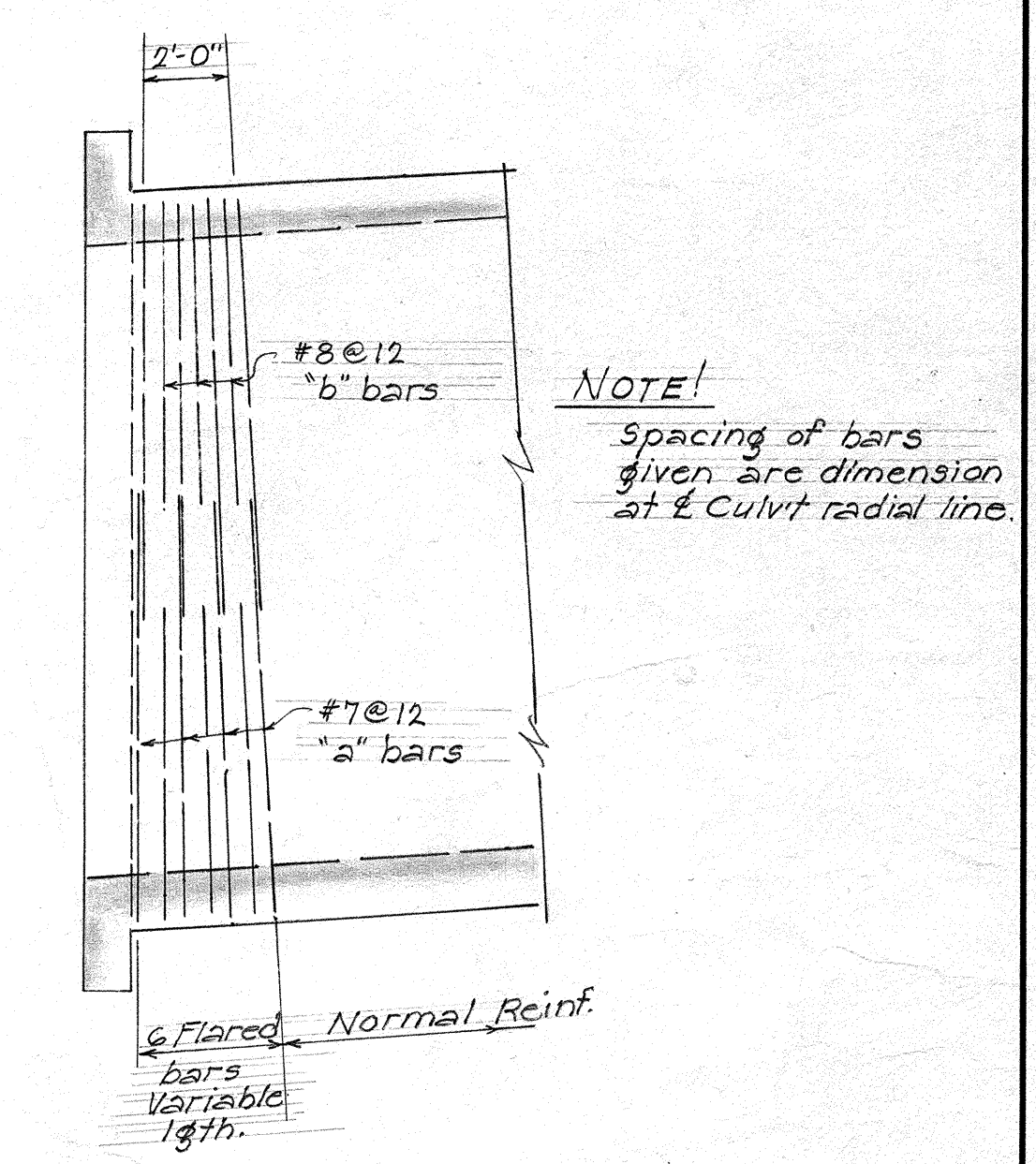
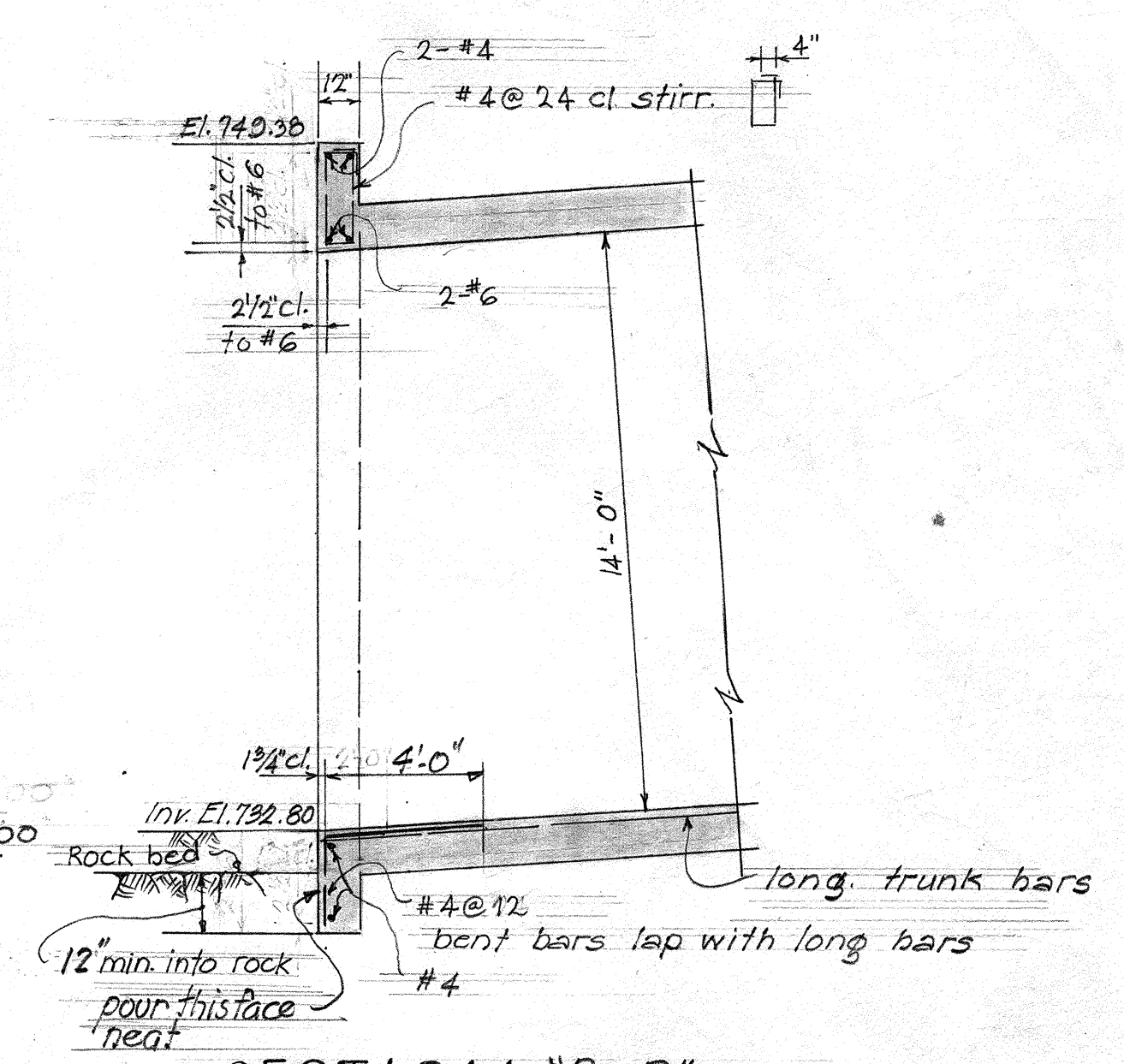
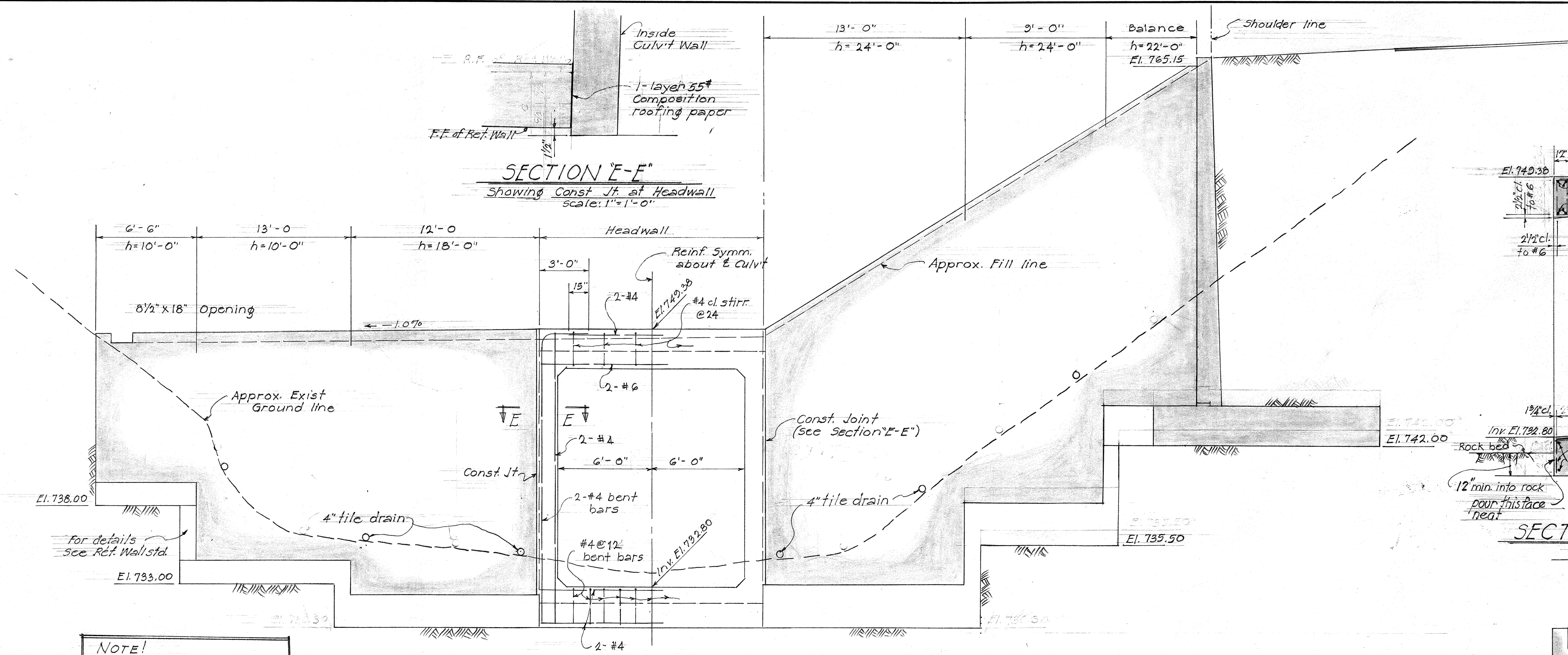
Note! Culvert types as indicated above refers to corresponding standard Box Culvert sections, except as otherwise shown on adjacent detail "A".

open area between existing ground & underside of culvert slab shall be filled with select material as designated by Engineer & compacted by pneumatic tamper. This item is incidental to class A-1 concrete.

TERRITORIAL HIGHWAY DEPARTMENT
 TERRITORY OF HAWAII
8'0" x 8'0" BOX CULVERT
 STA 306+28
 Hawaii Belt Road Proj DF-019-2(5)
 July 1957

DATE	4-27
DESIGNED BY	H.S. Harada
DRAWN BY	H.S. Harada
CHECKED BY	H.S. Harada
QUANTITIES CHECKED BY	H.S. Harada
NO.	37

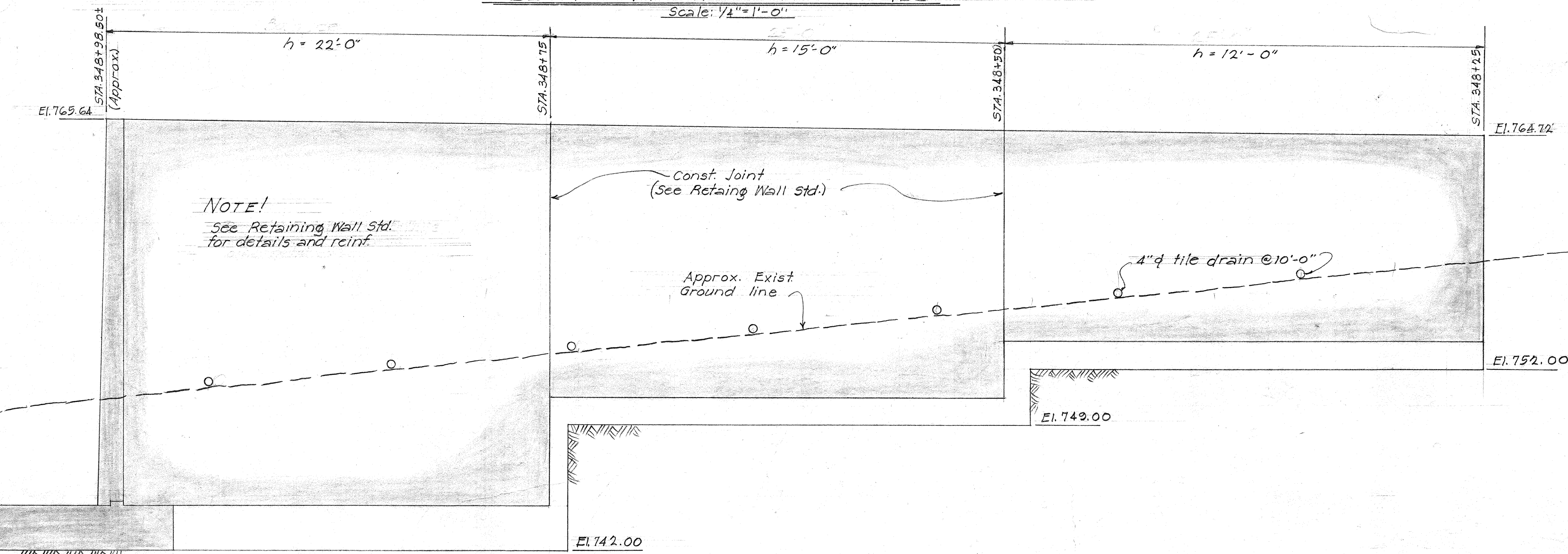
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	DF-019-2(5)	1953	53	85



NOTE!
For Retaining Wall details
See Retaining Wall Standard.

ELEVATION AT HEADWALL

Scale: 1/4"=1'-0"



NOTE!
See Retaining Wall Std.
for details and reinf.

SECTION A-A

Scale: 1/4"=1'-0"

El. 742.00

El. 733.00

El. 733.00

El. 733.00

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El. 733.00

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

12" x 14" BOX CULVERT
STA 349+16 ±

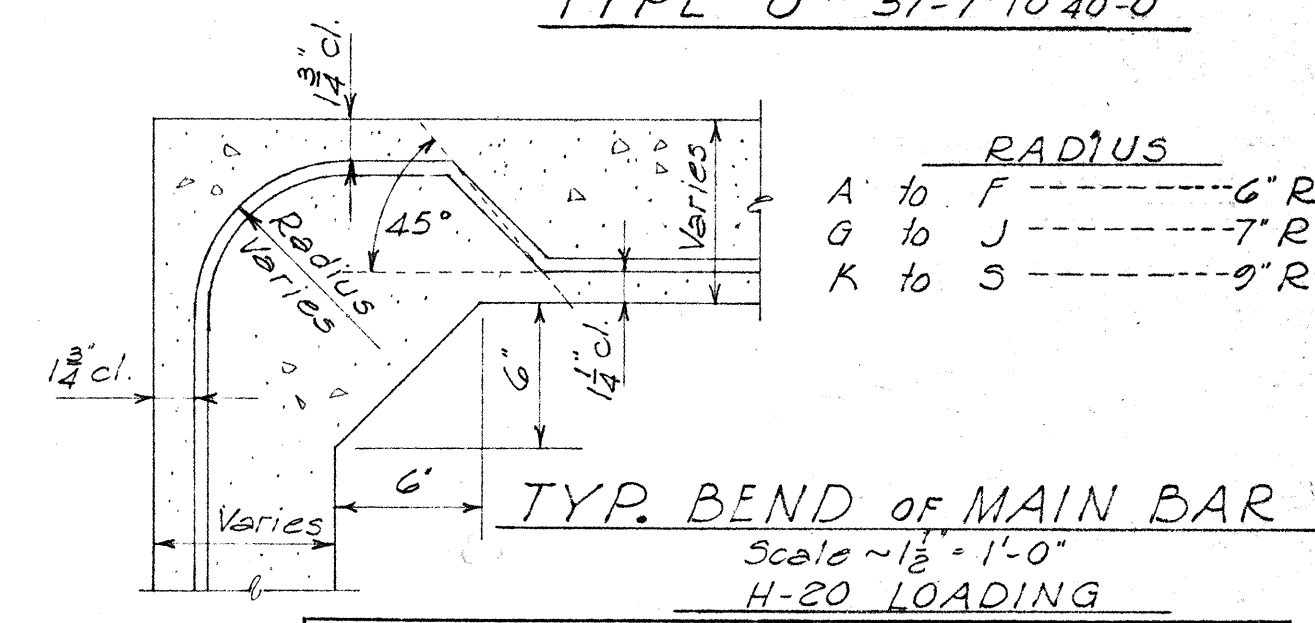
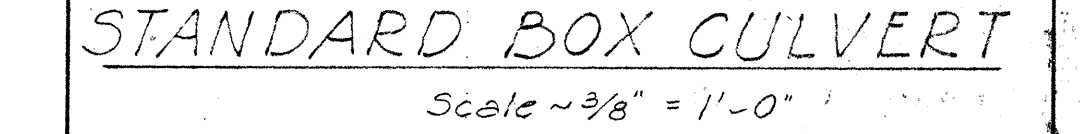
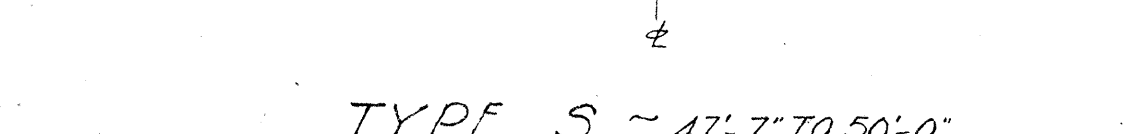
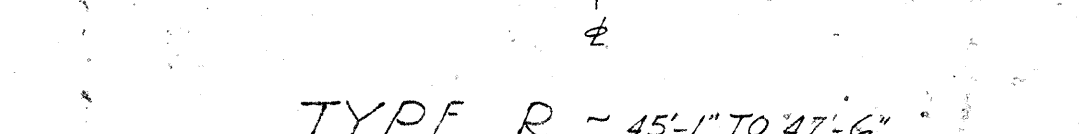
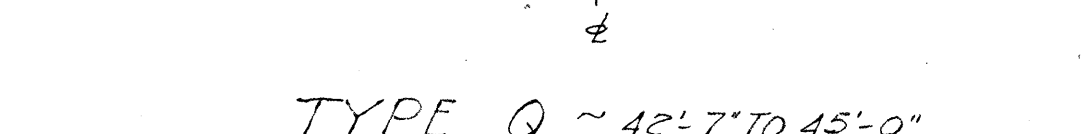
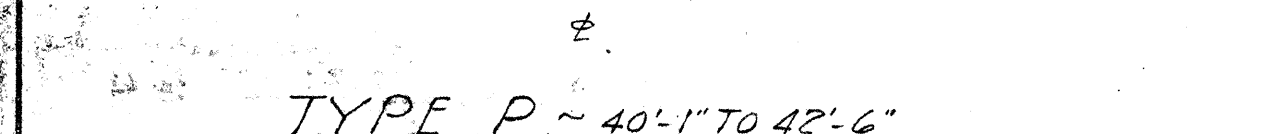
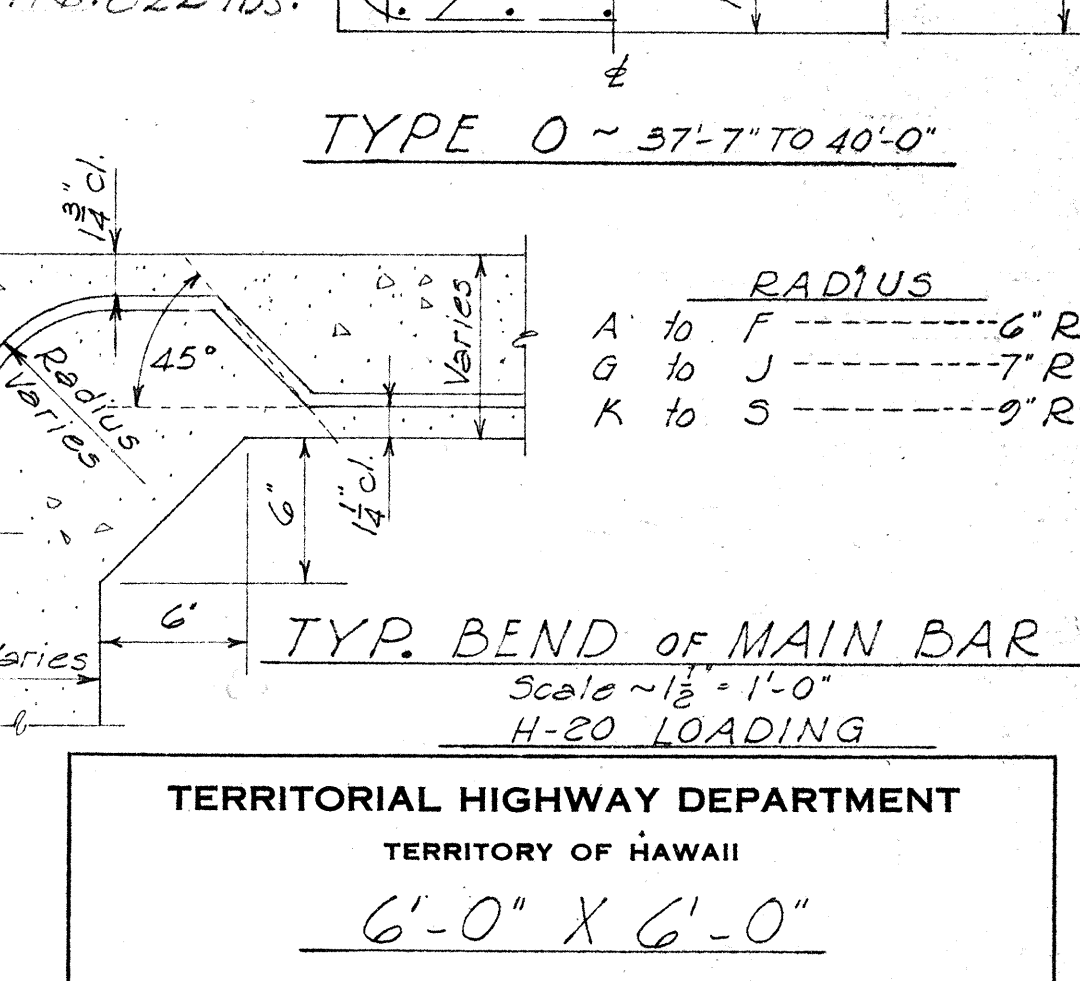
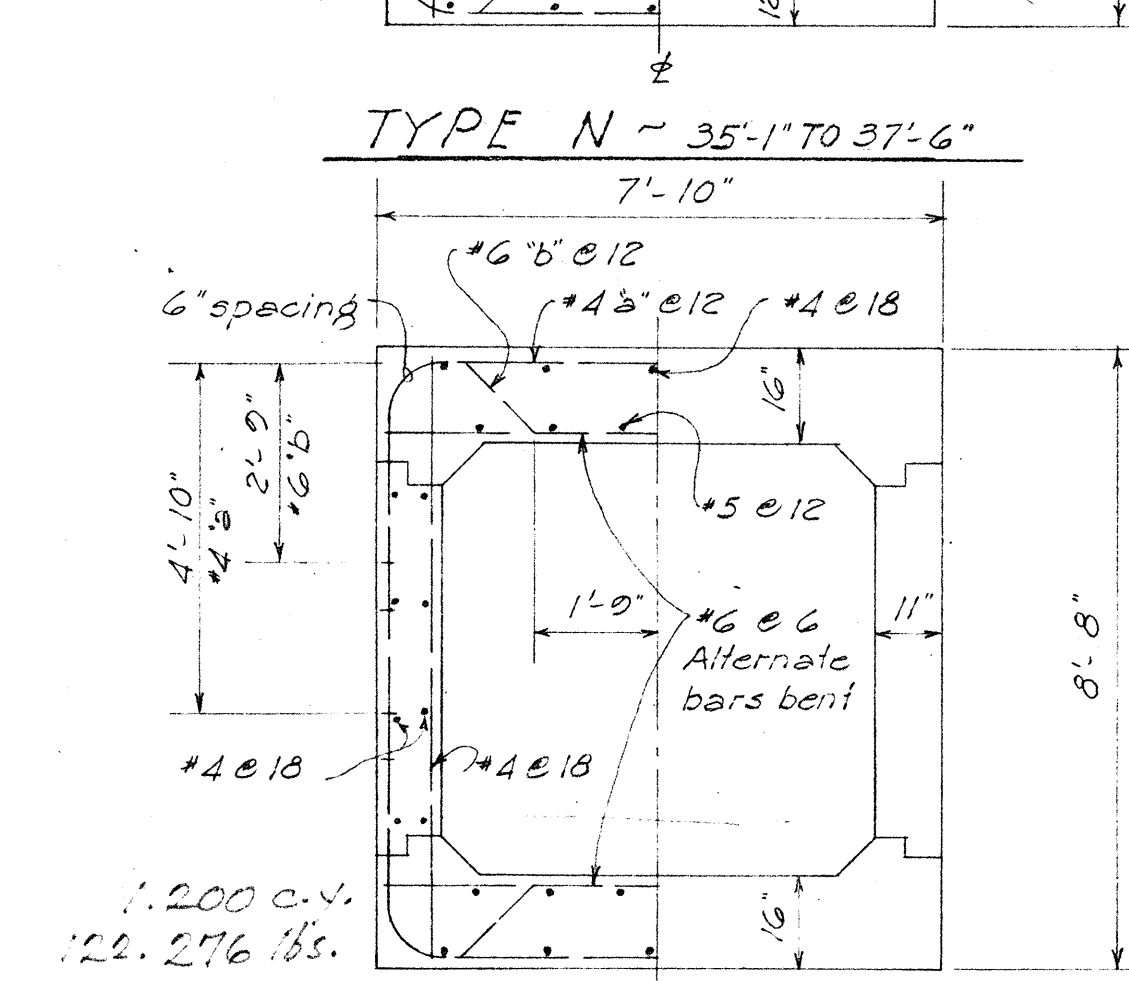
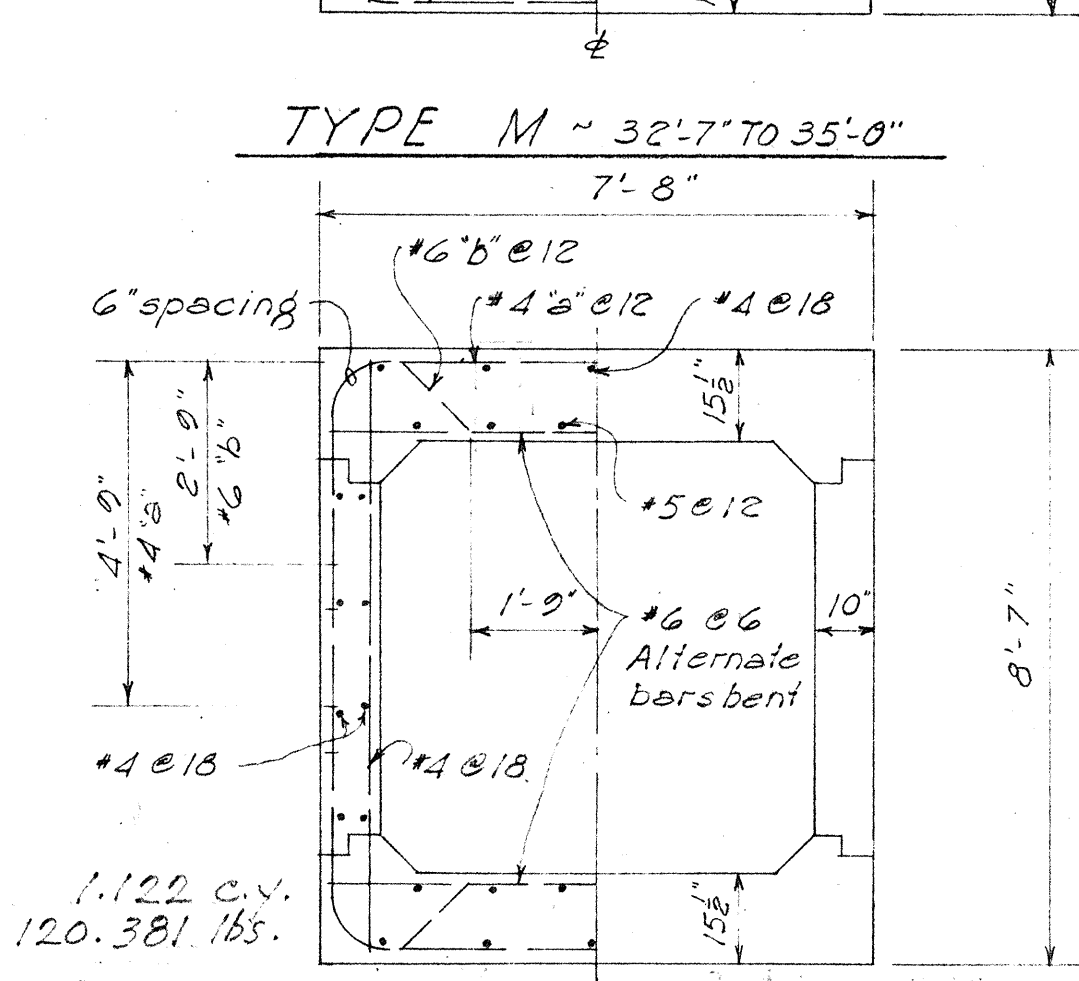
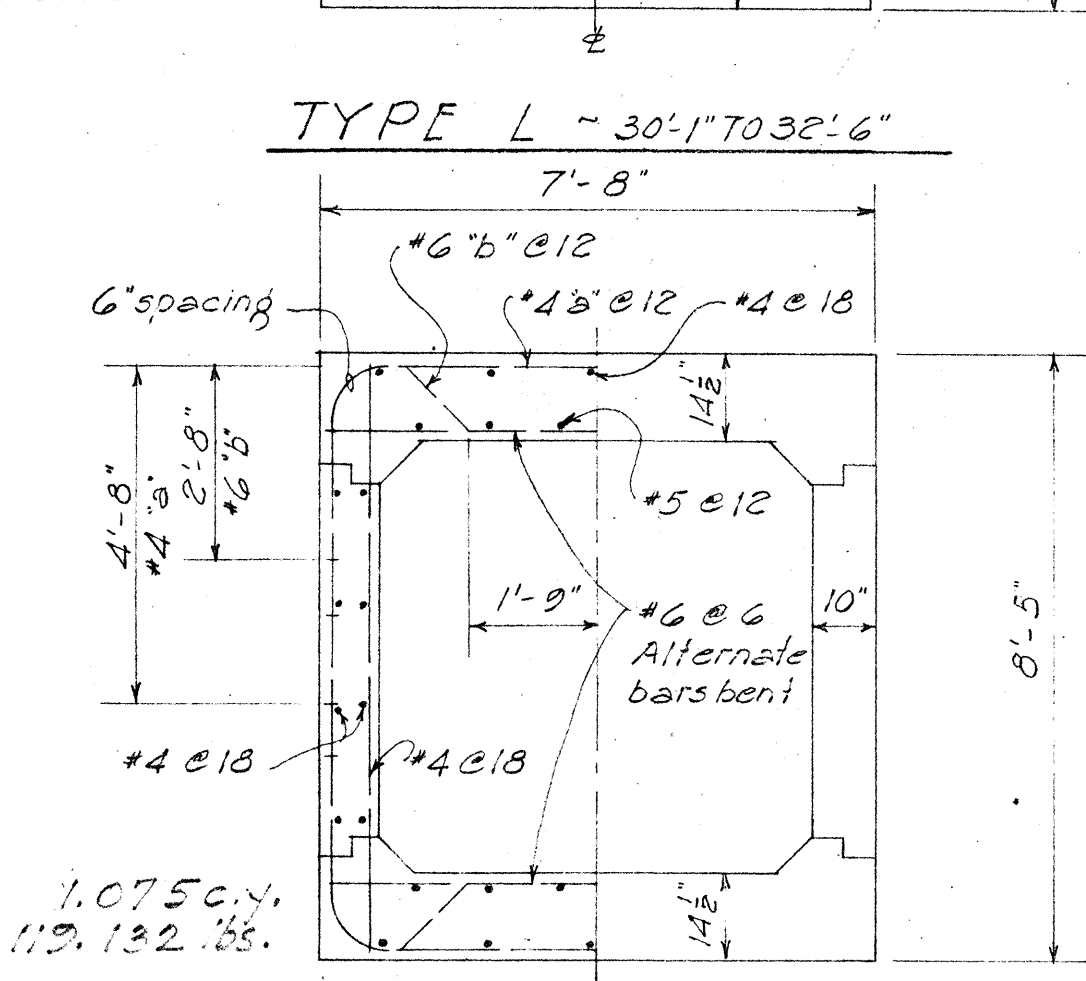
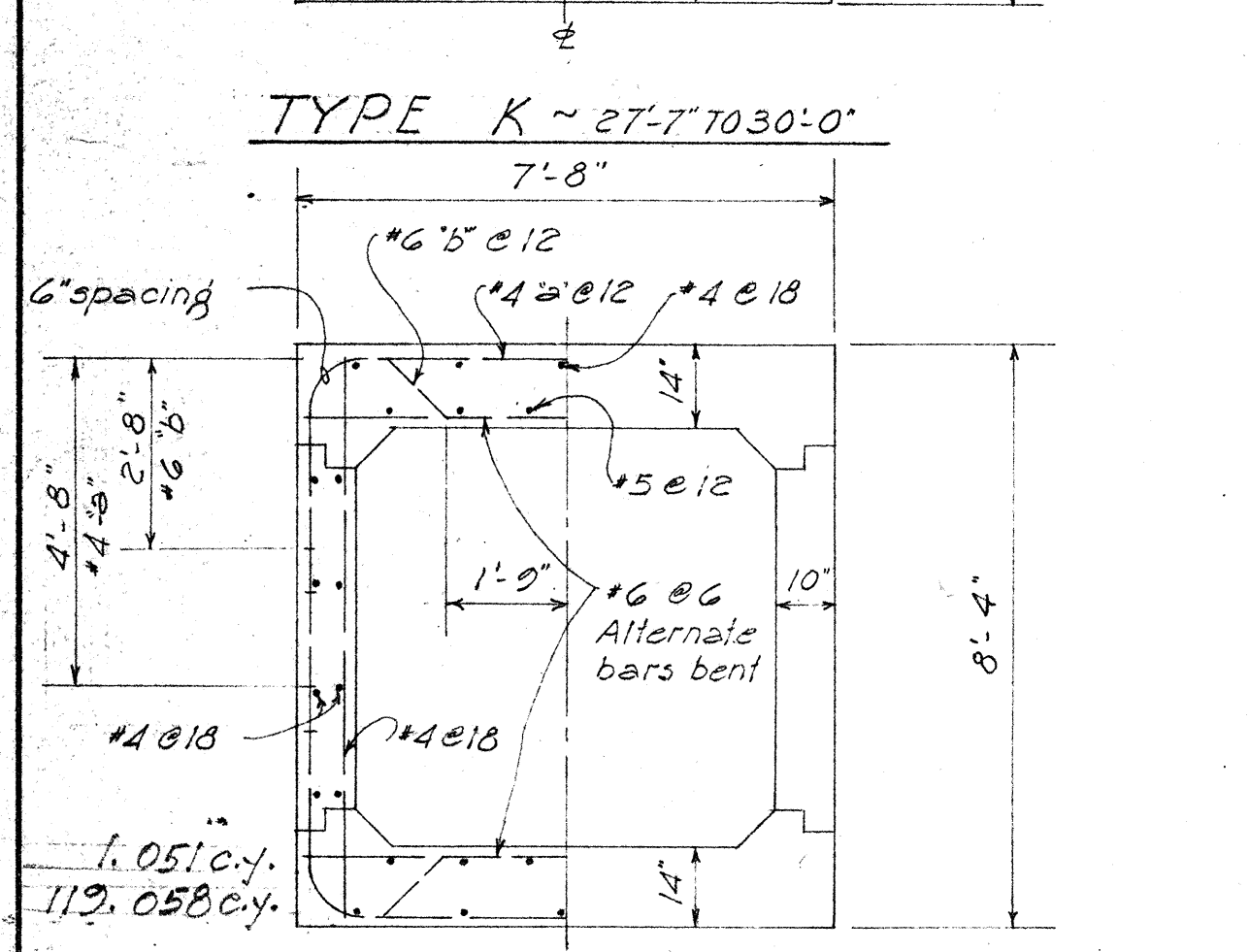
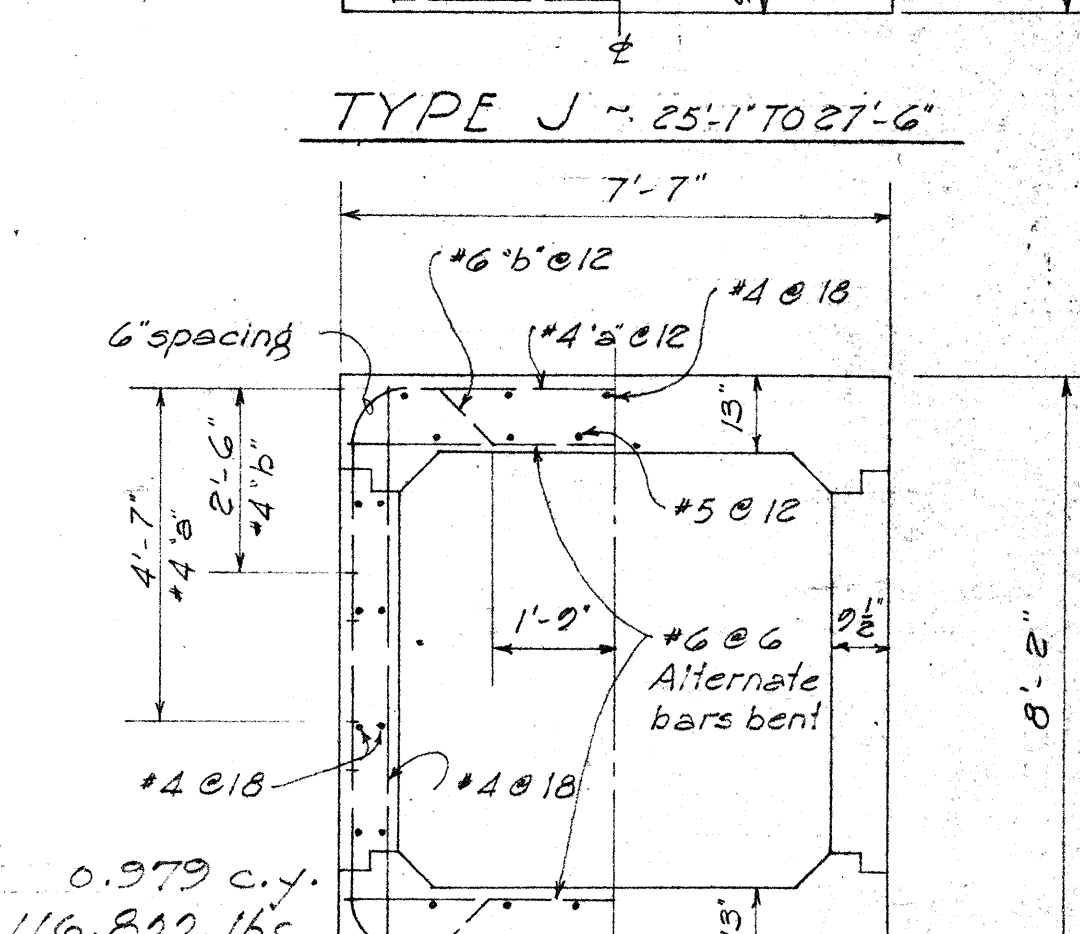
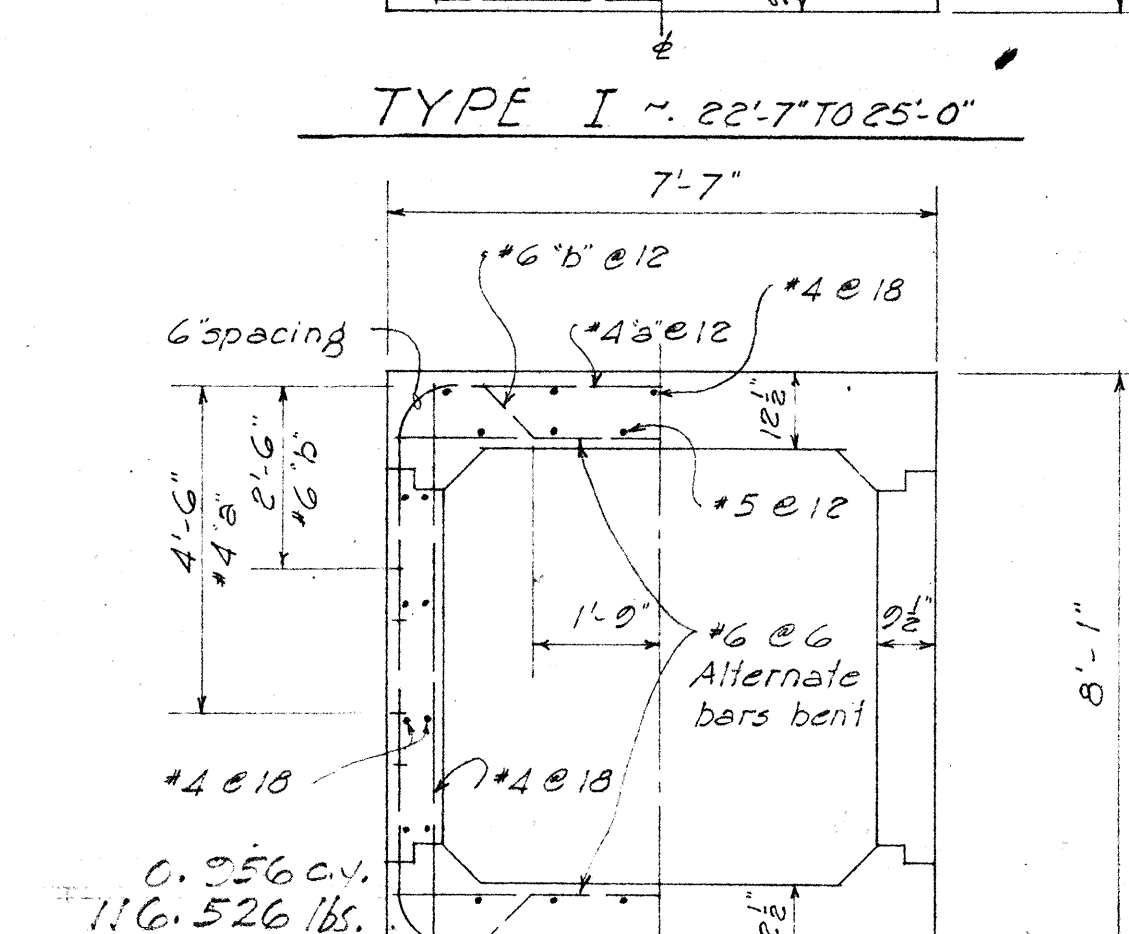
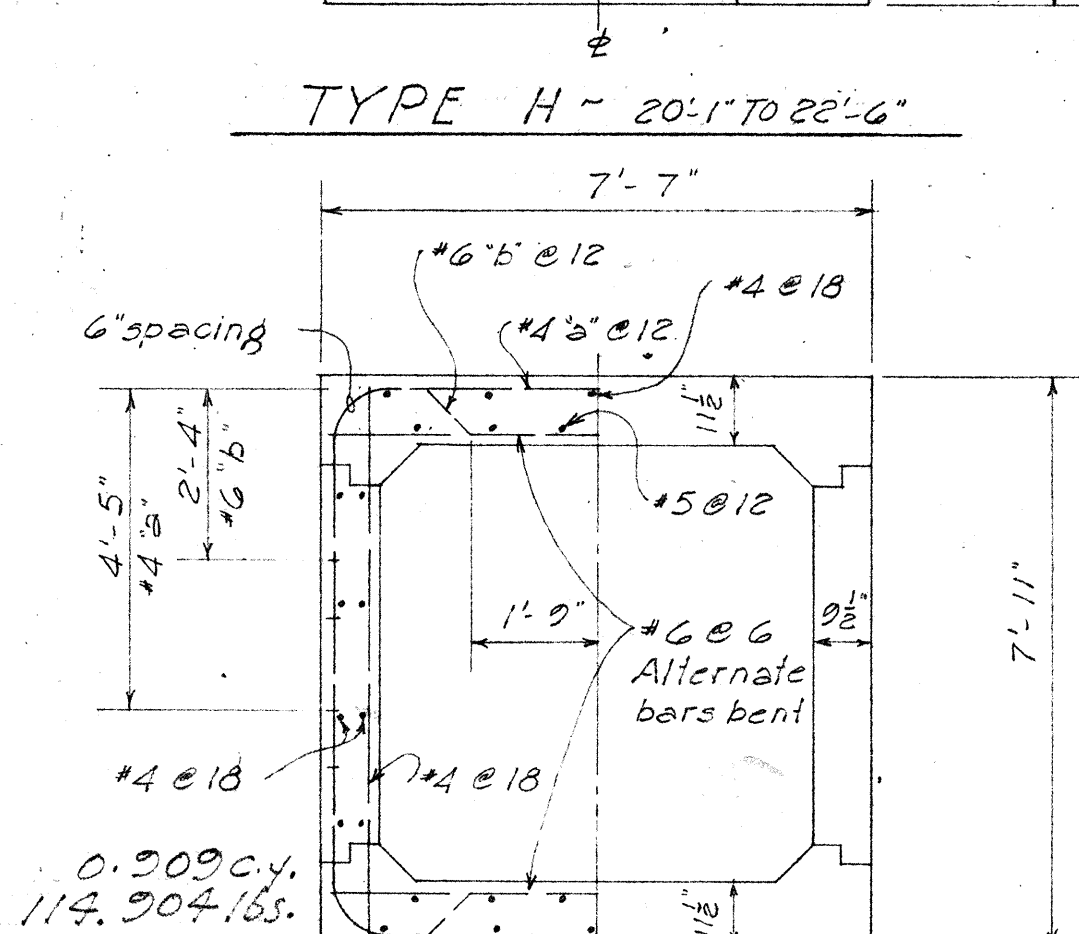
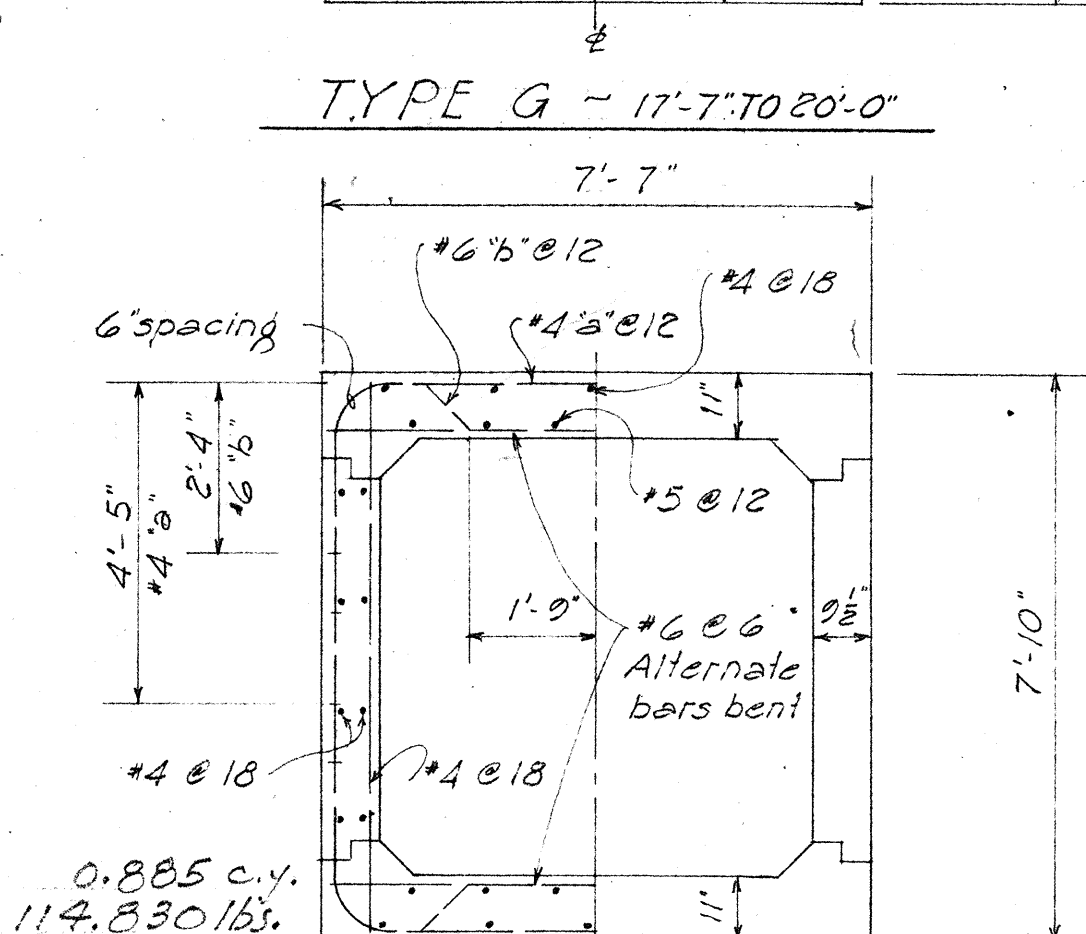
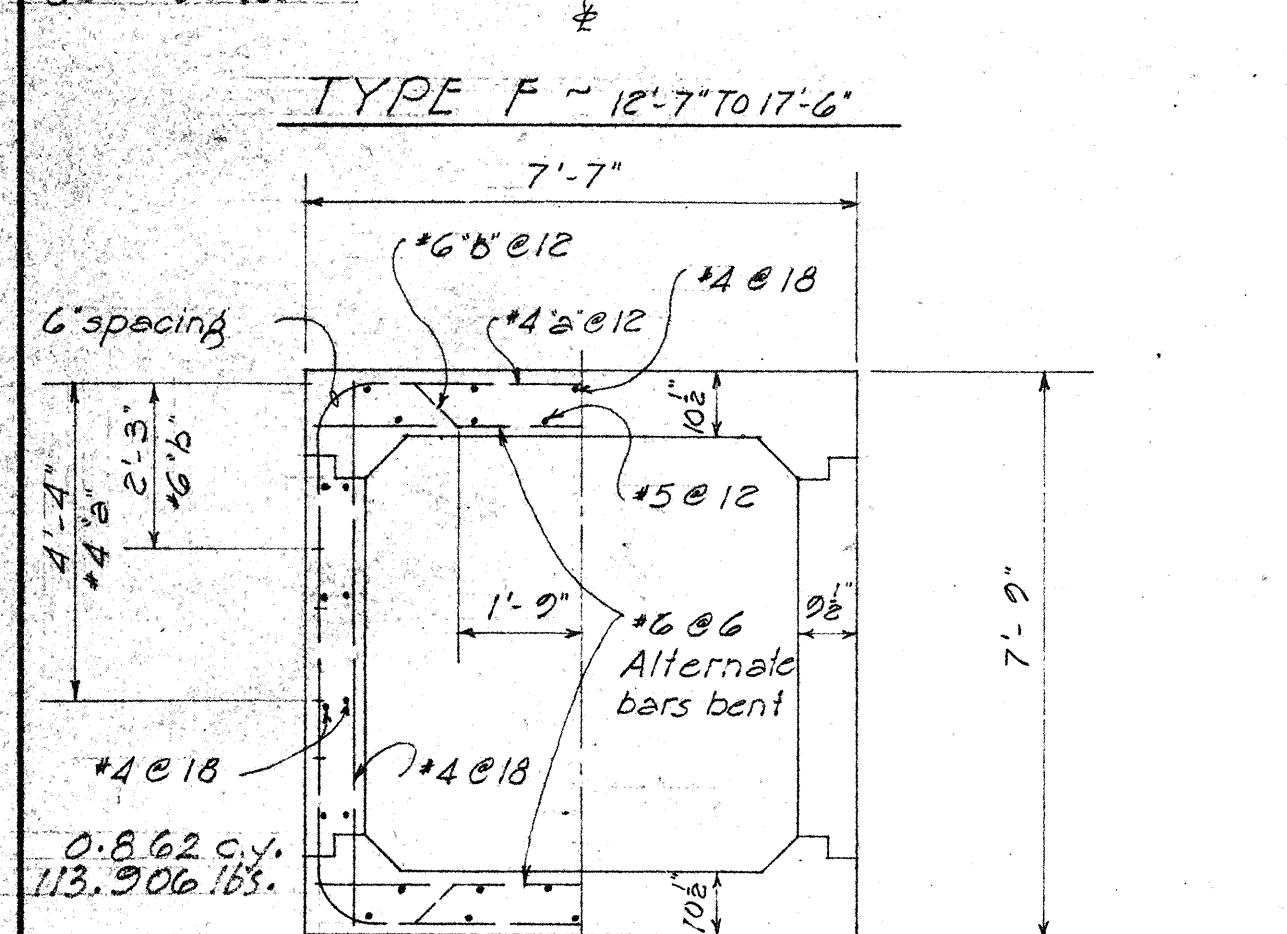
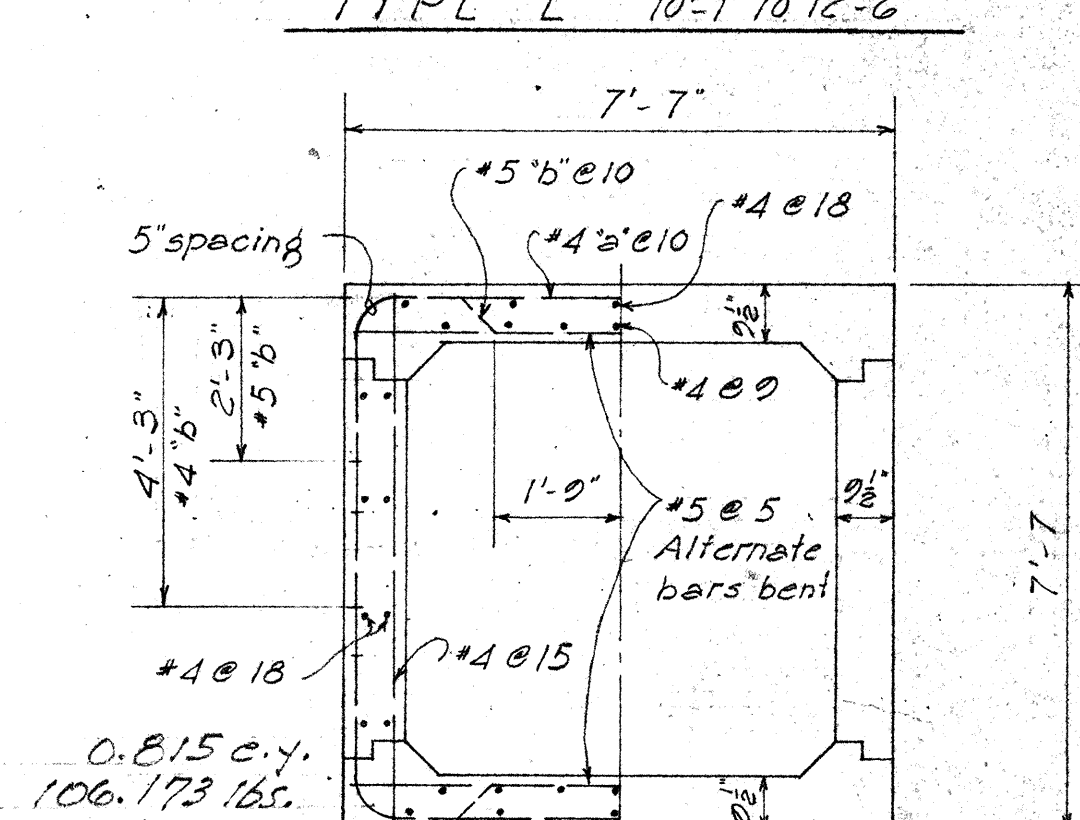
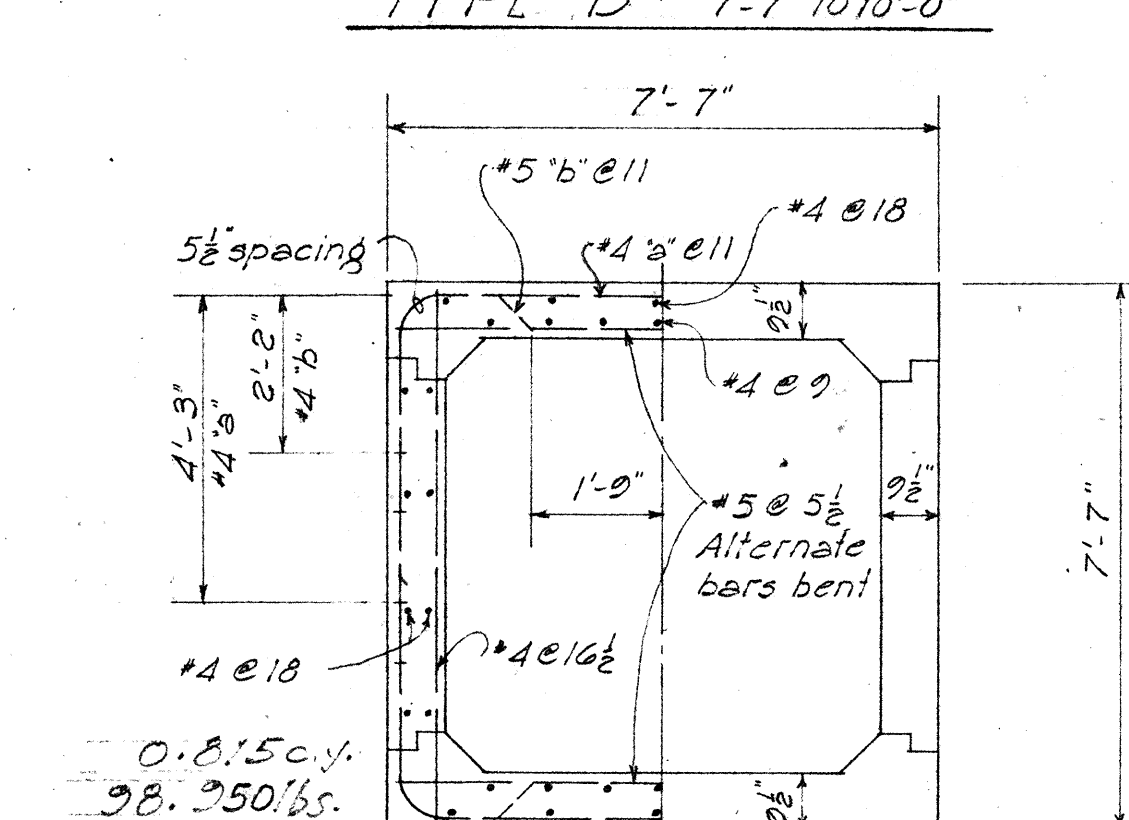
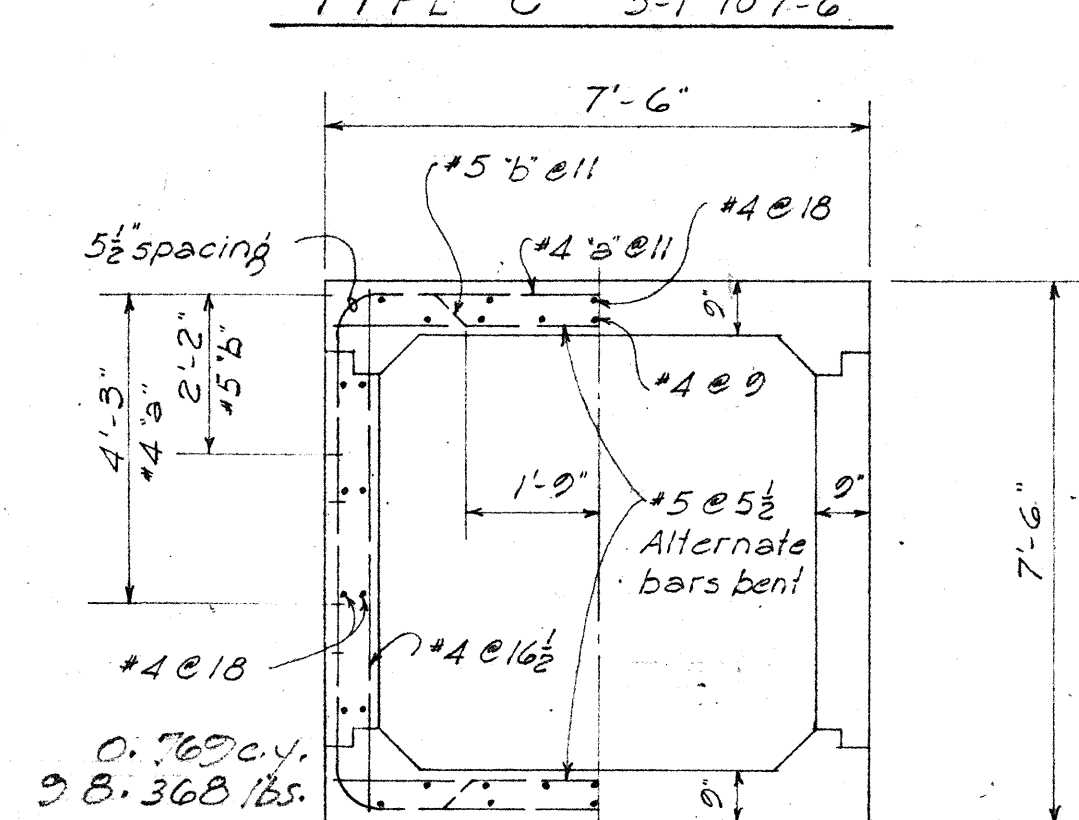
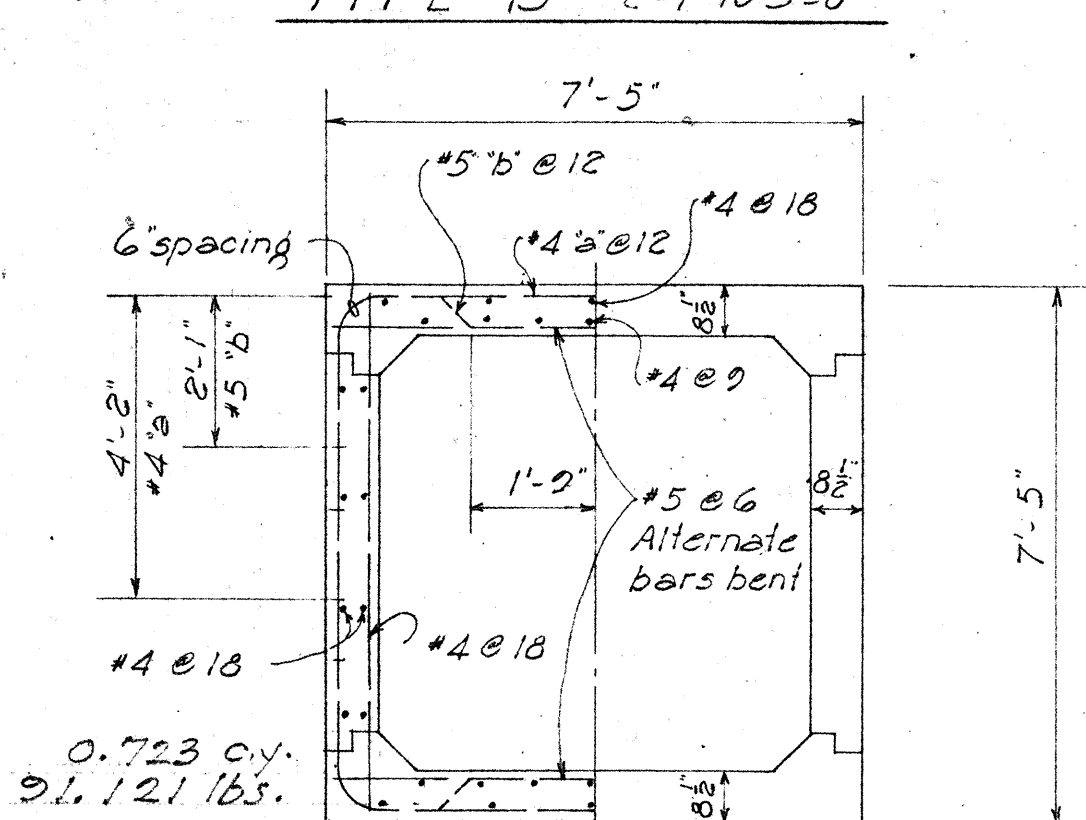
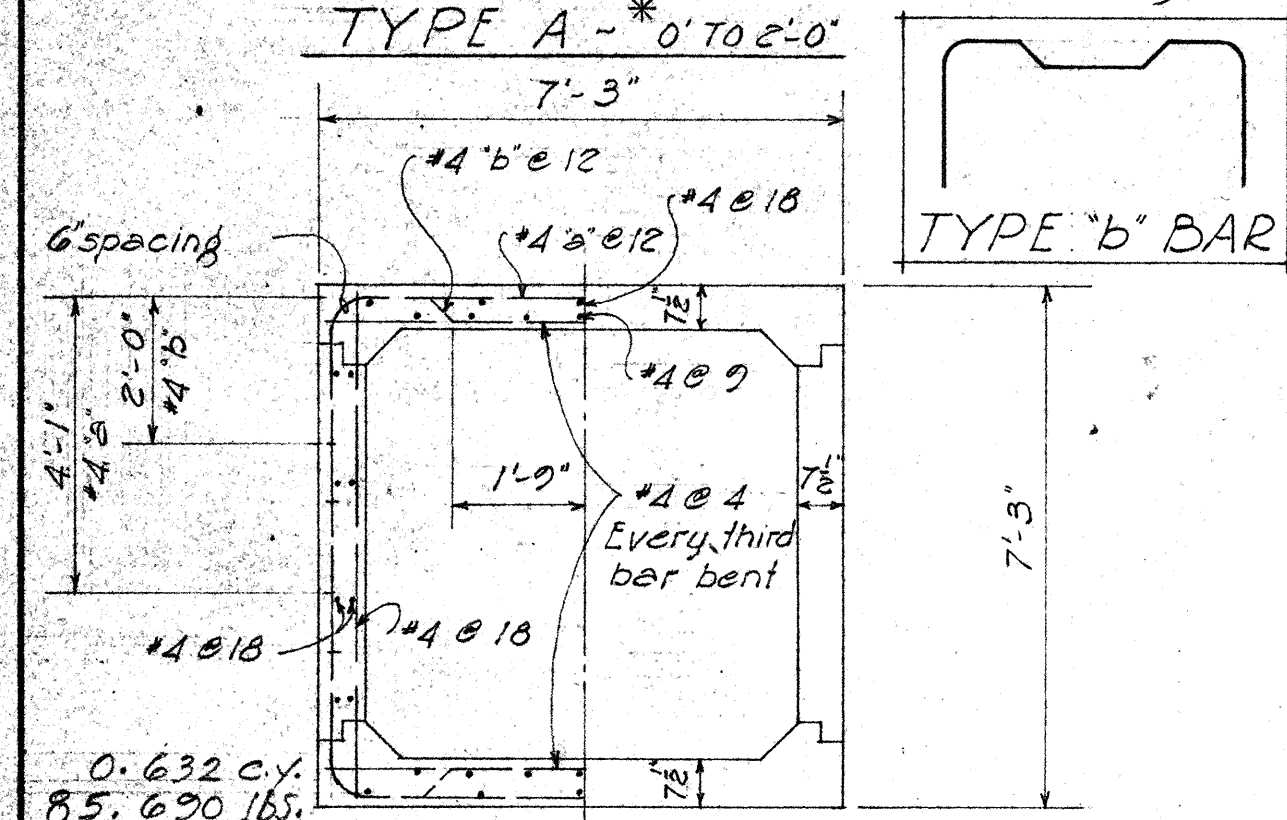
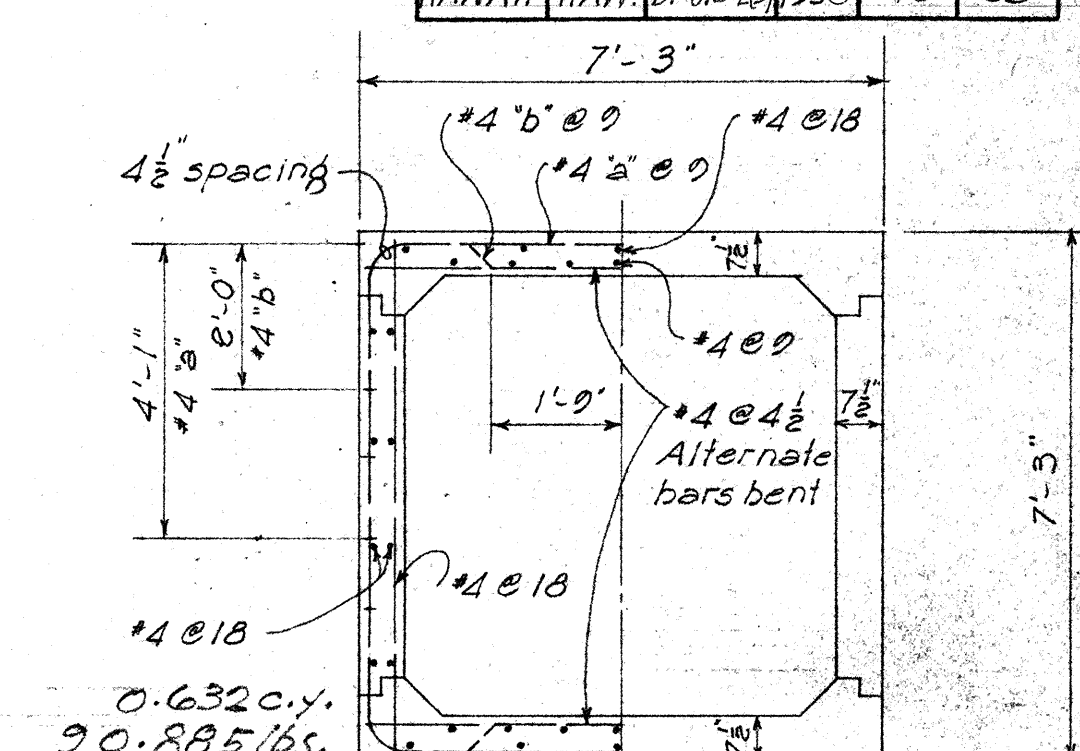
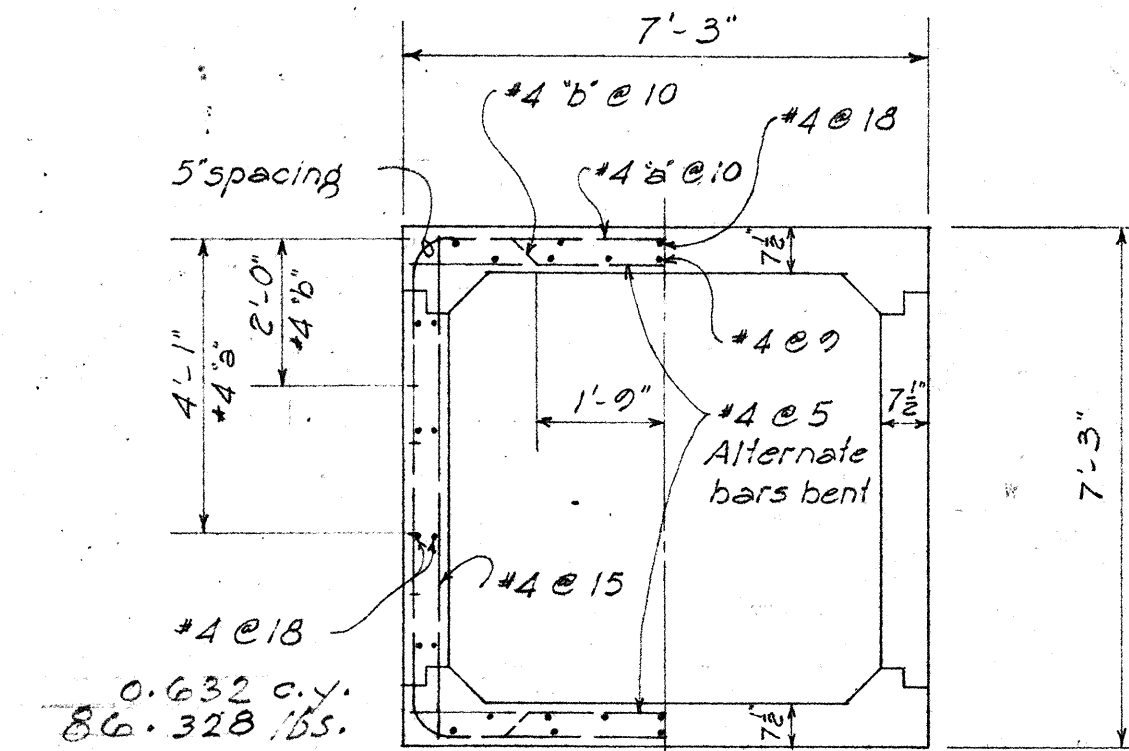
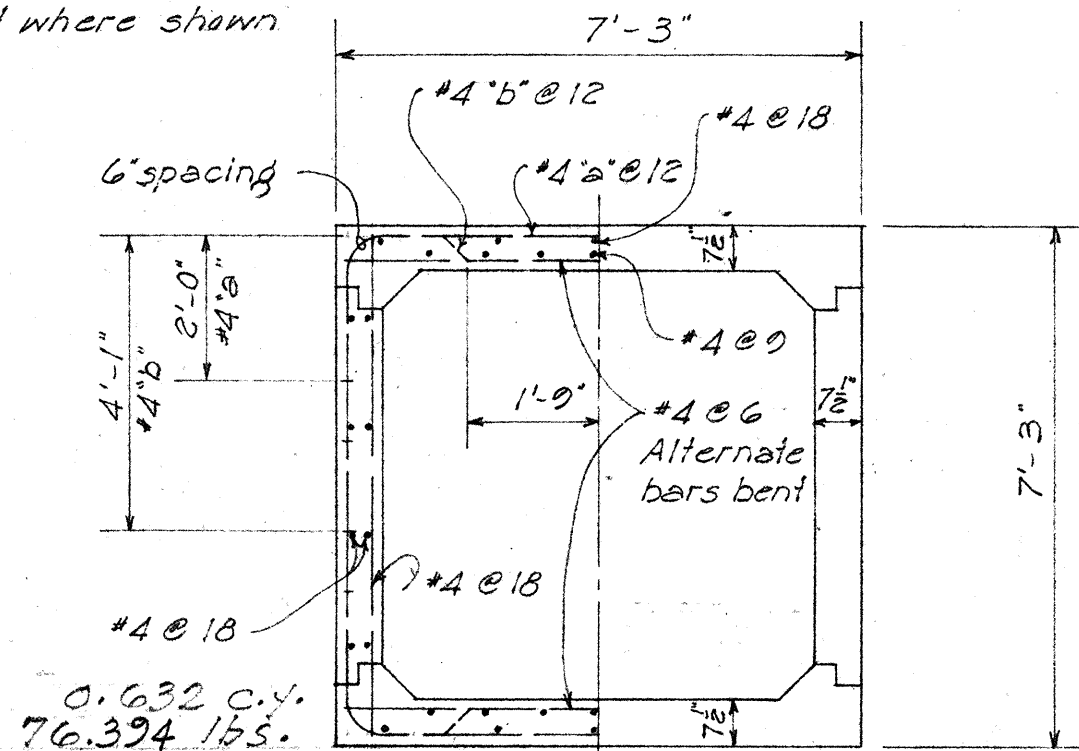
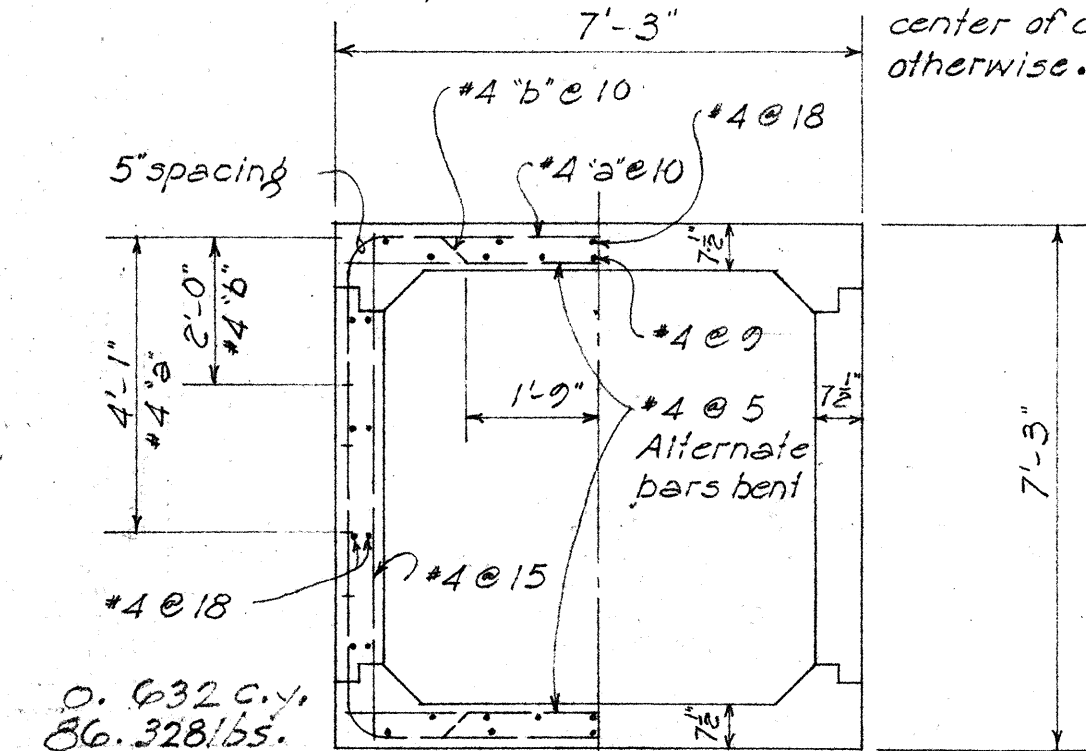
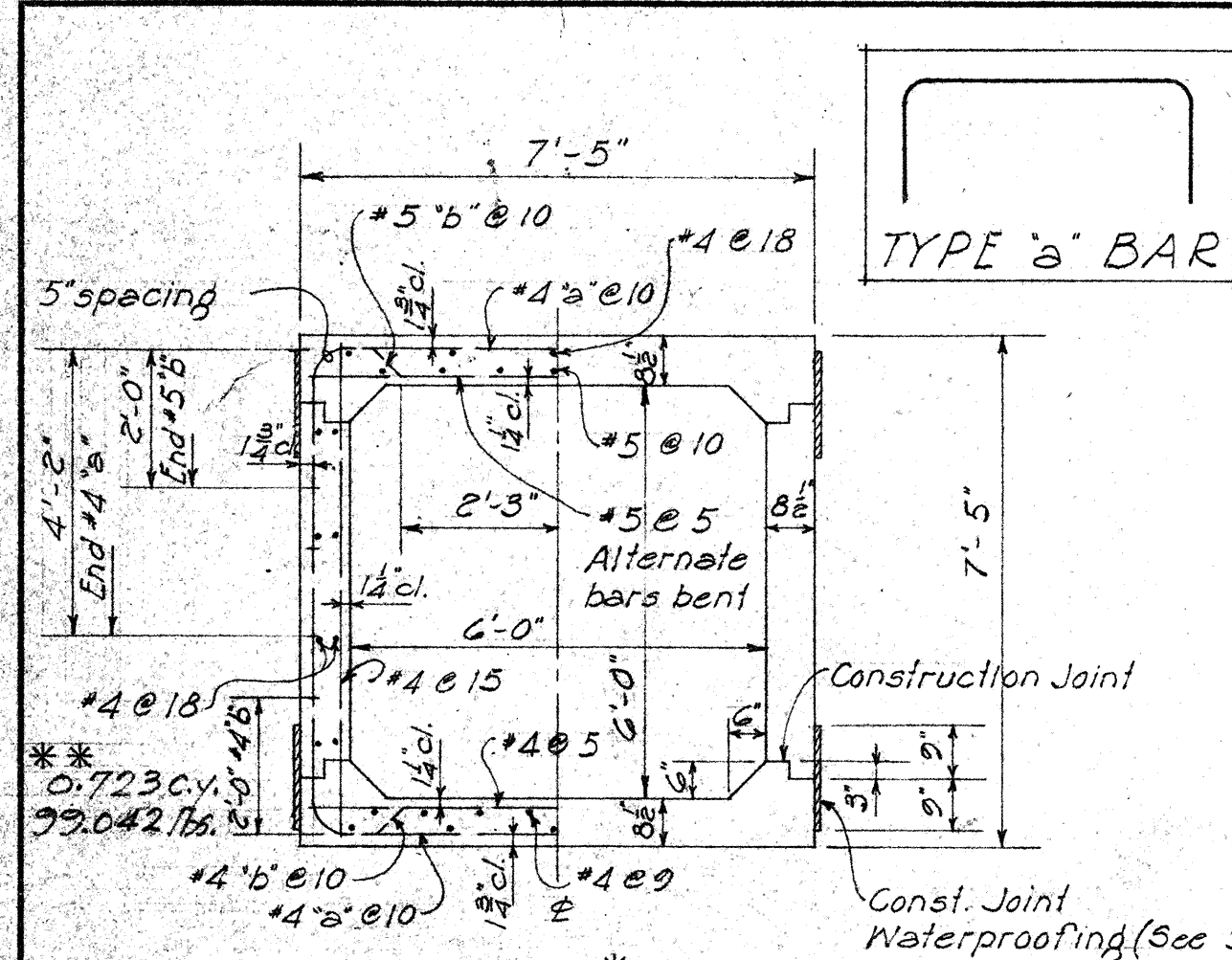
HAWAII BELT RD Proj. DF-019-2(5)
June, 1957

ORIGINAL PLAN	DATE
DESIGNED BY	6-27
DRAWN BY	6-27
QUANTITIES BY	6-27
CHECKED BY	6-27
NOTE BOOK NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	DF-10-10	1958	40	85

* Fill Height above top of slab.
* Cu. Yds. Concrete per Lin. Ft.
Lbs. Reinf. Steel per Lin. Ft.

NOTE:~
Culvert details are symmetrical about the vertical and horizontal axis at center of culvert except where shown otherwise.



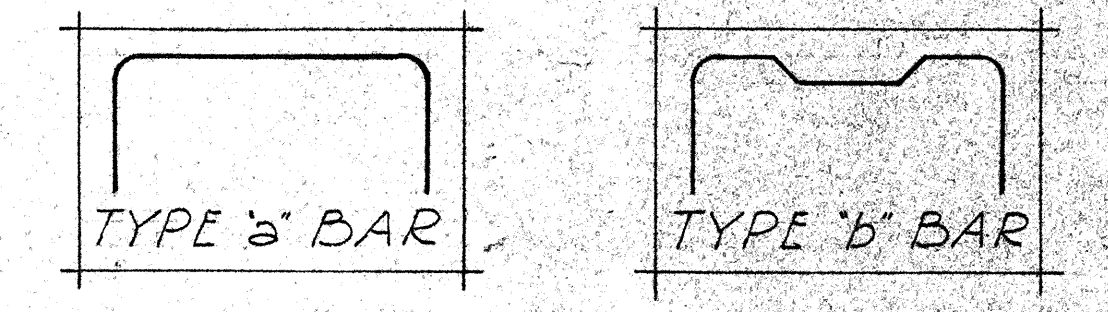
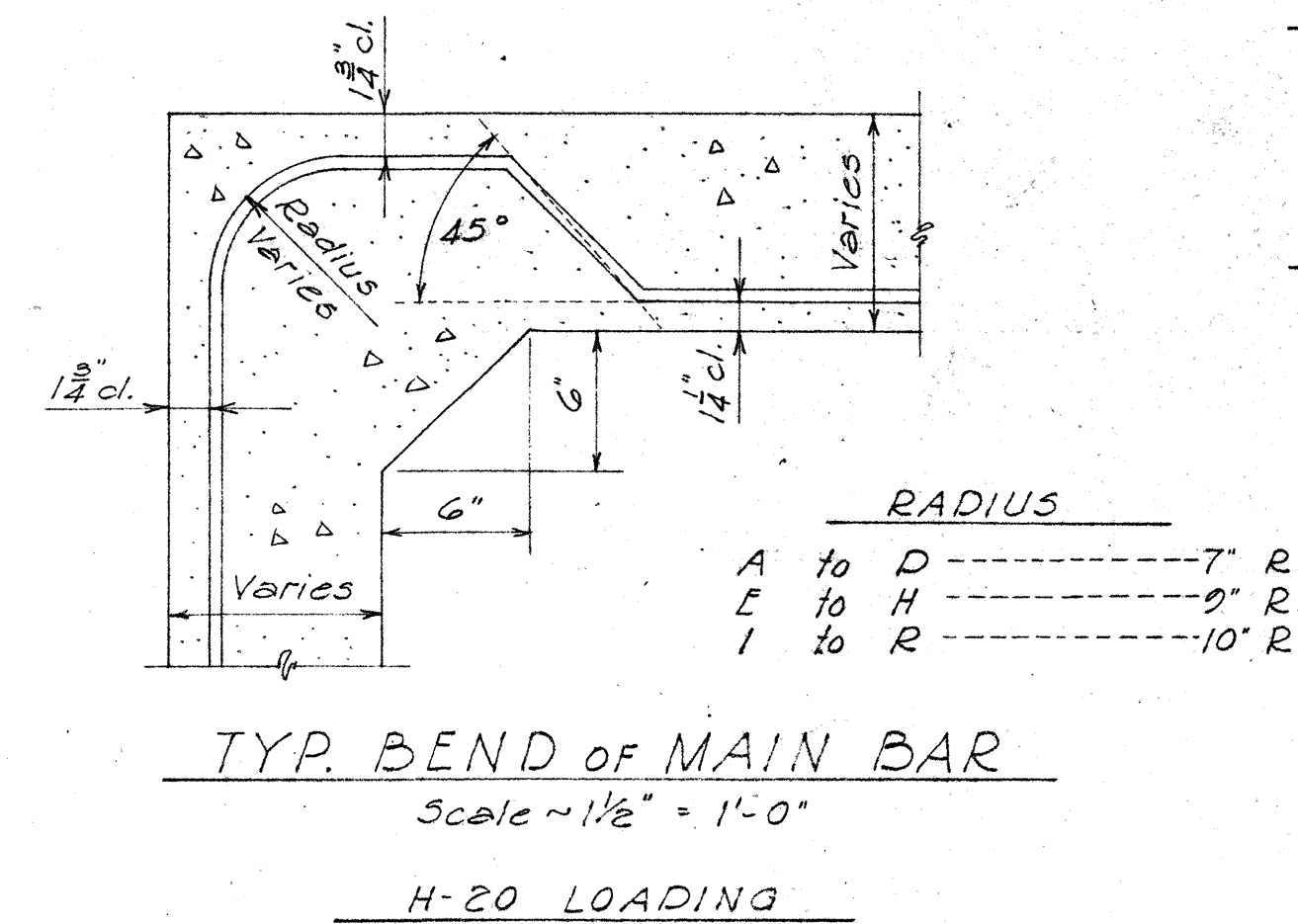
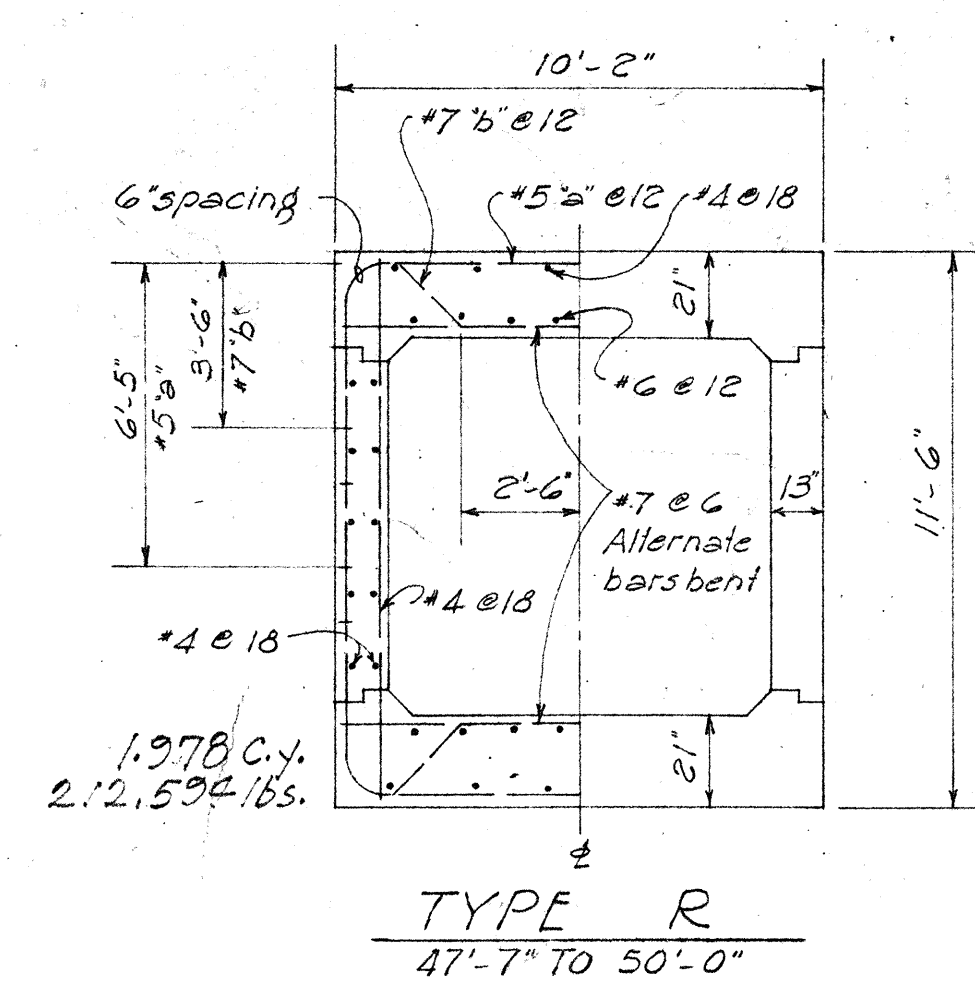
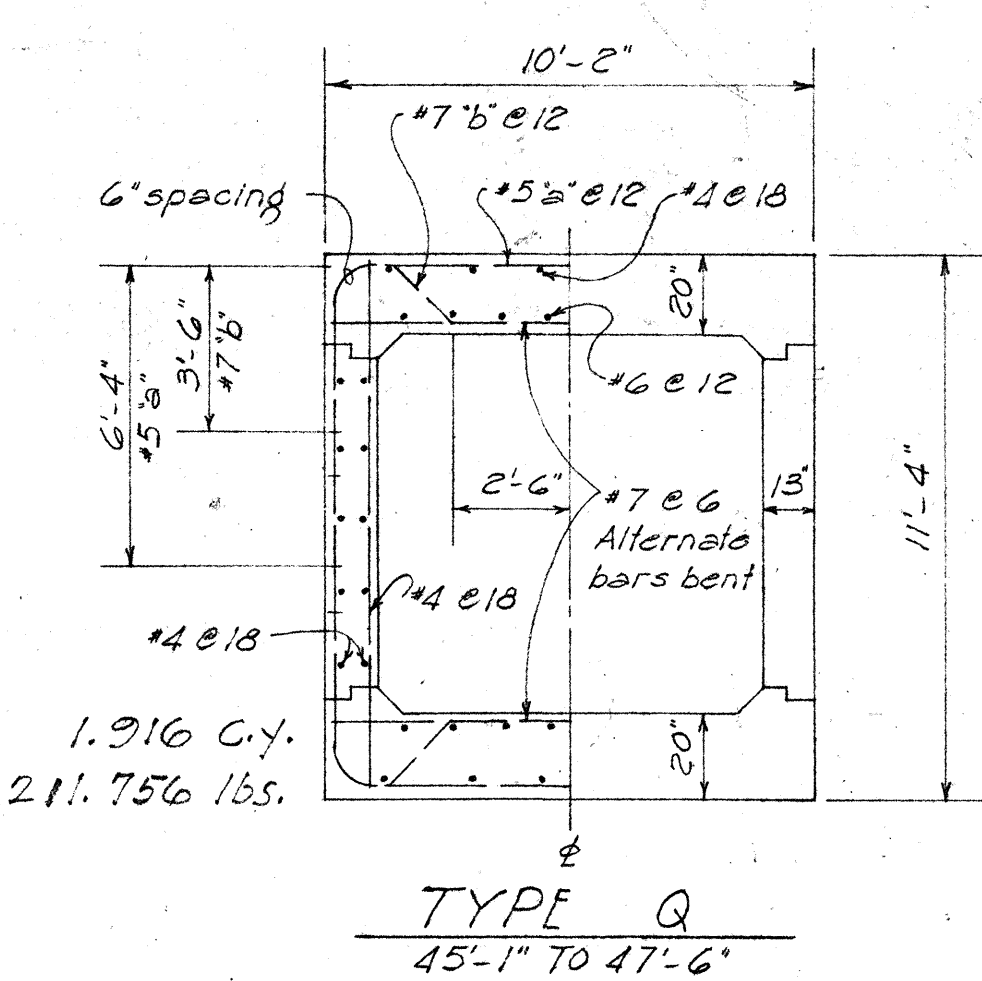
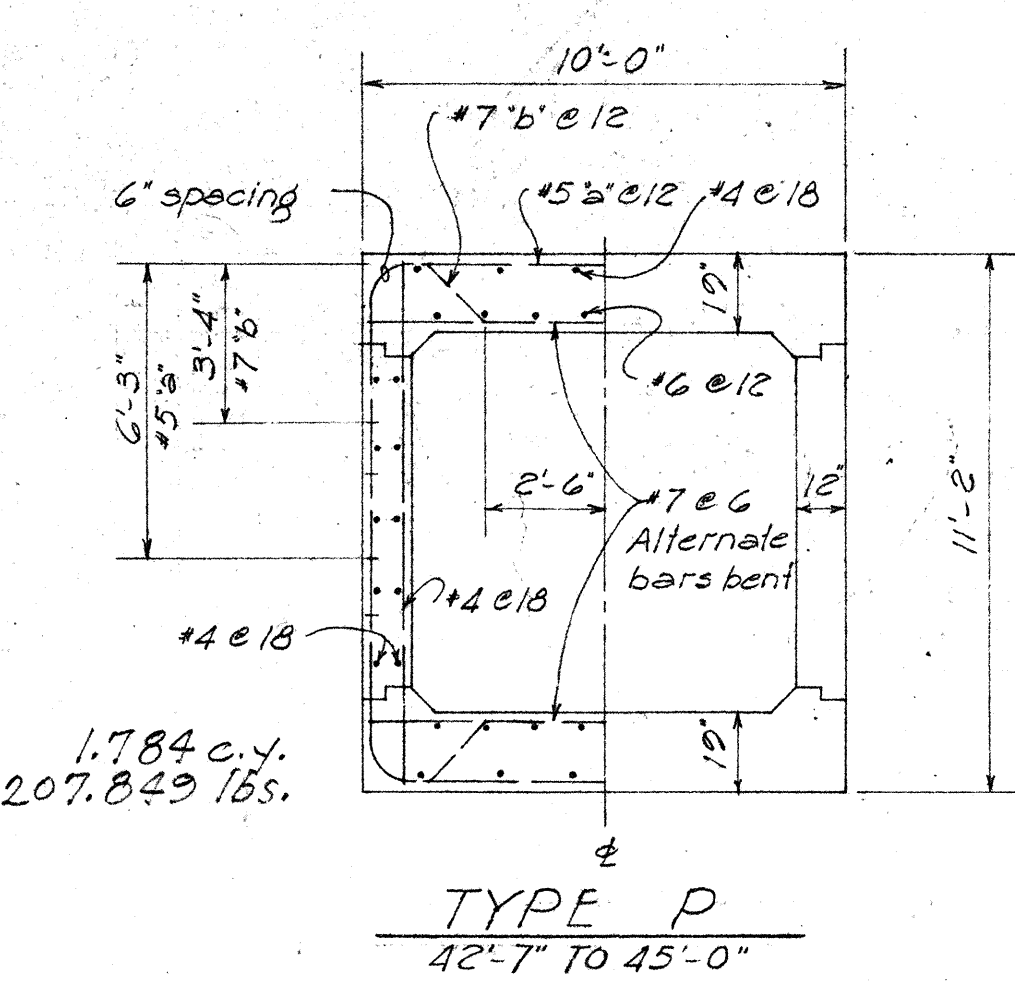
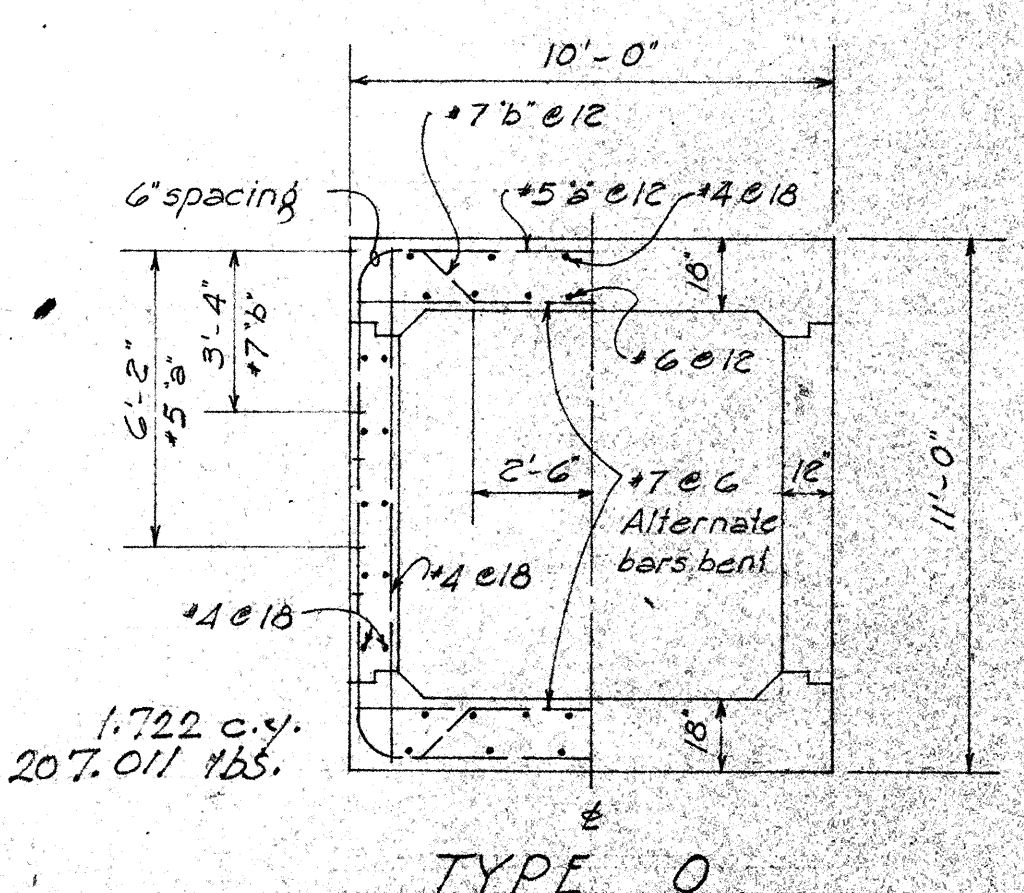
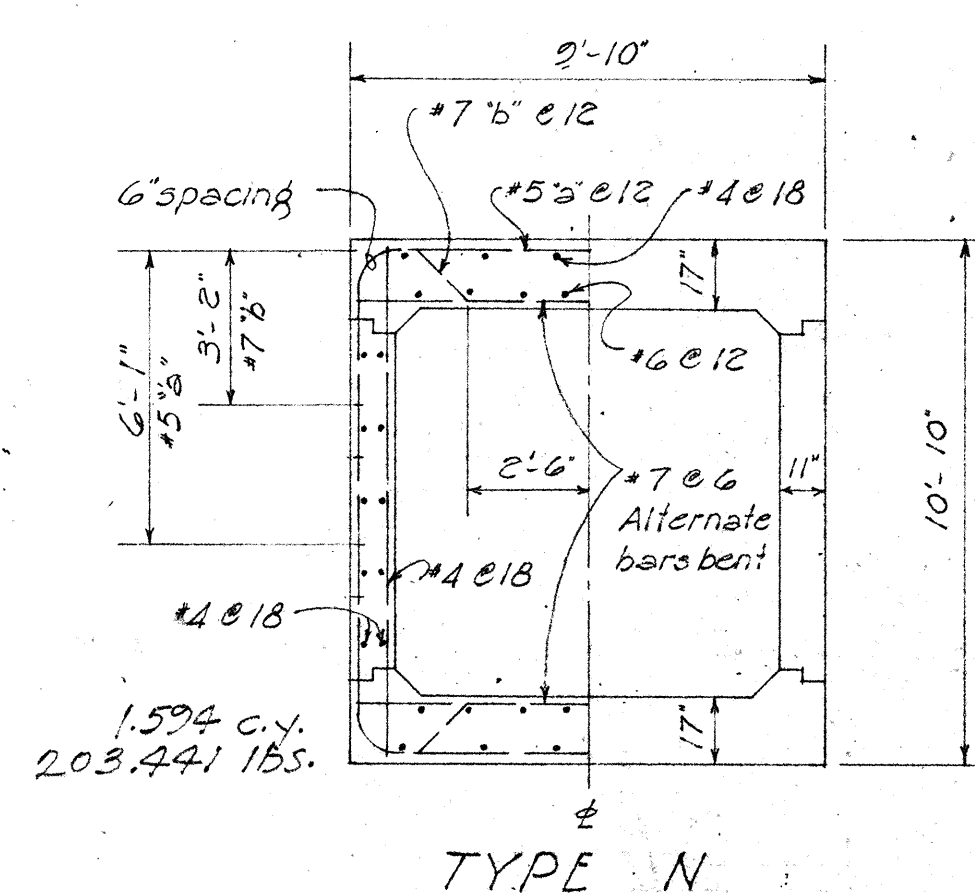
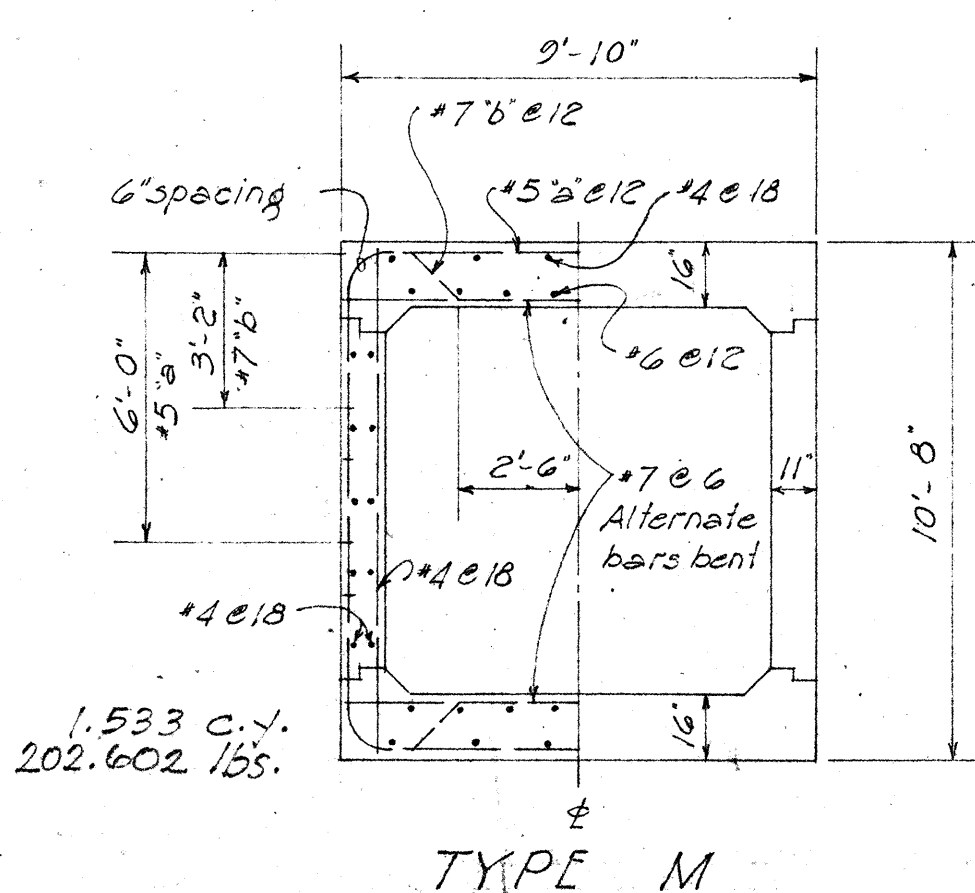
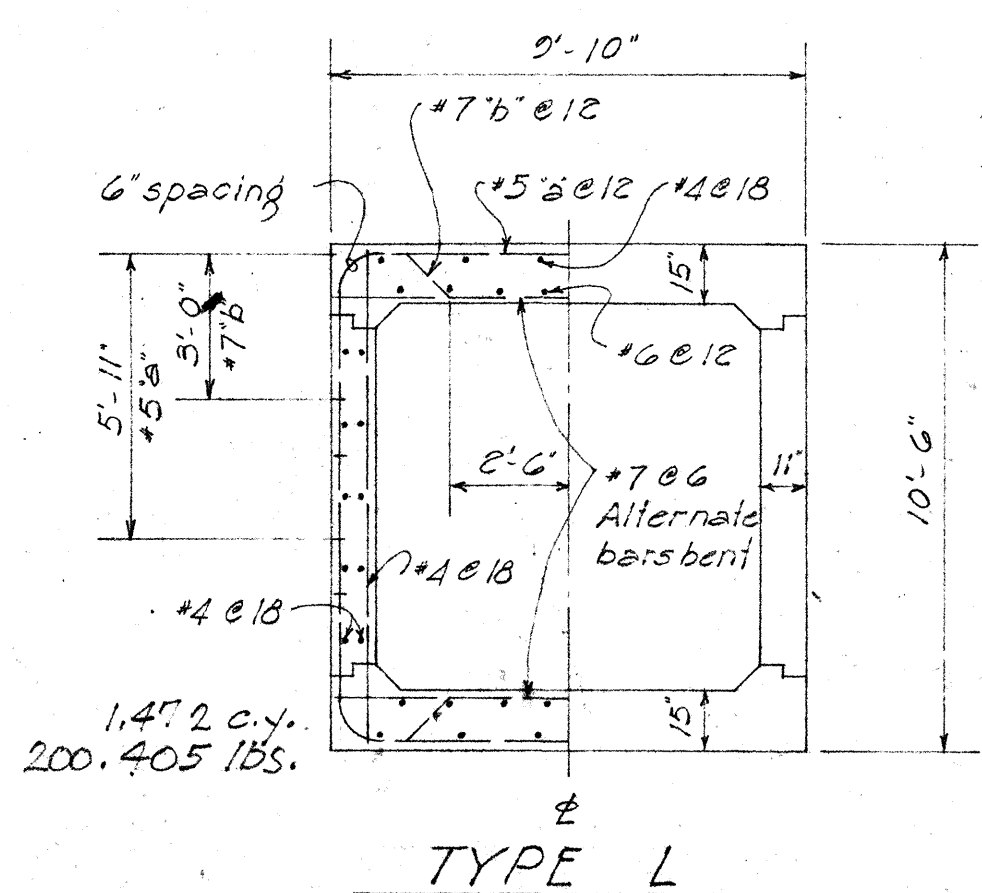
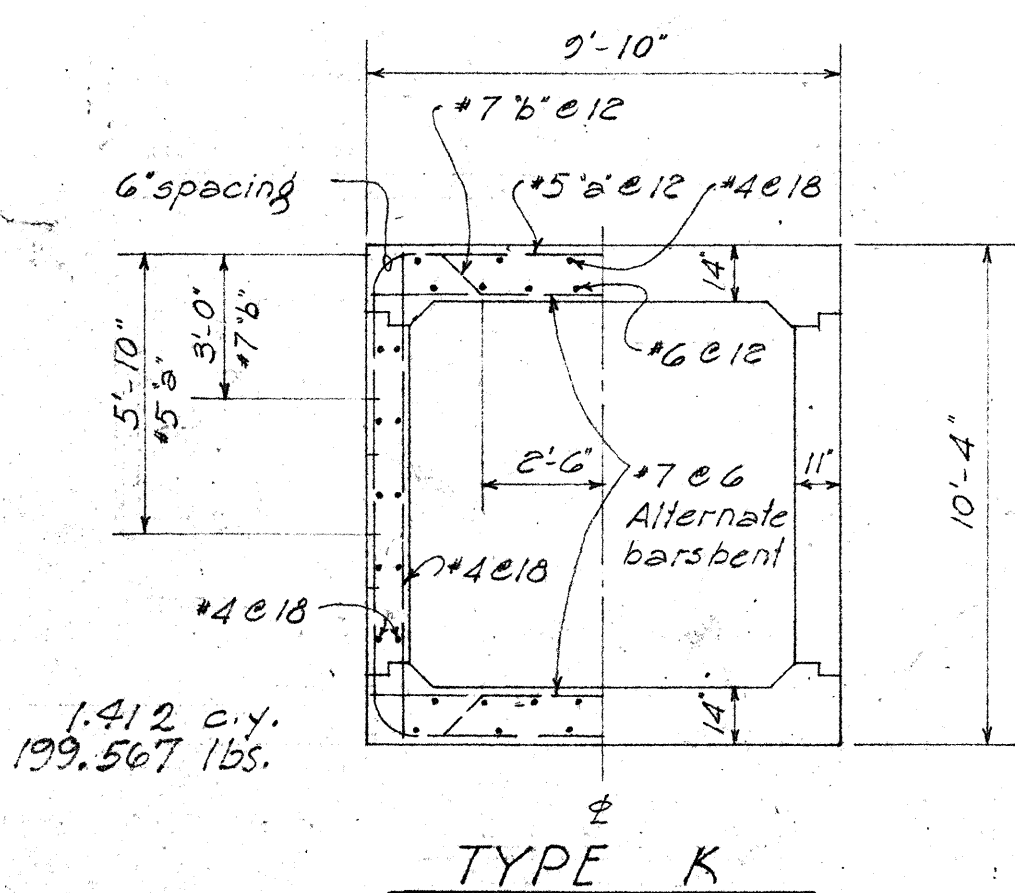
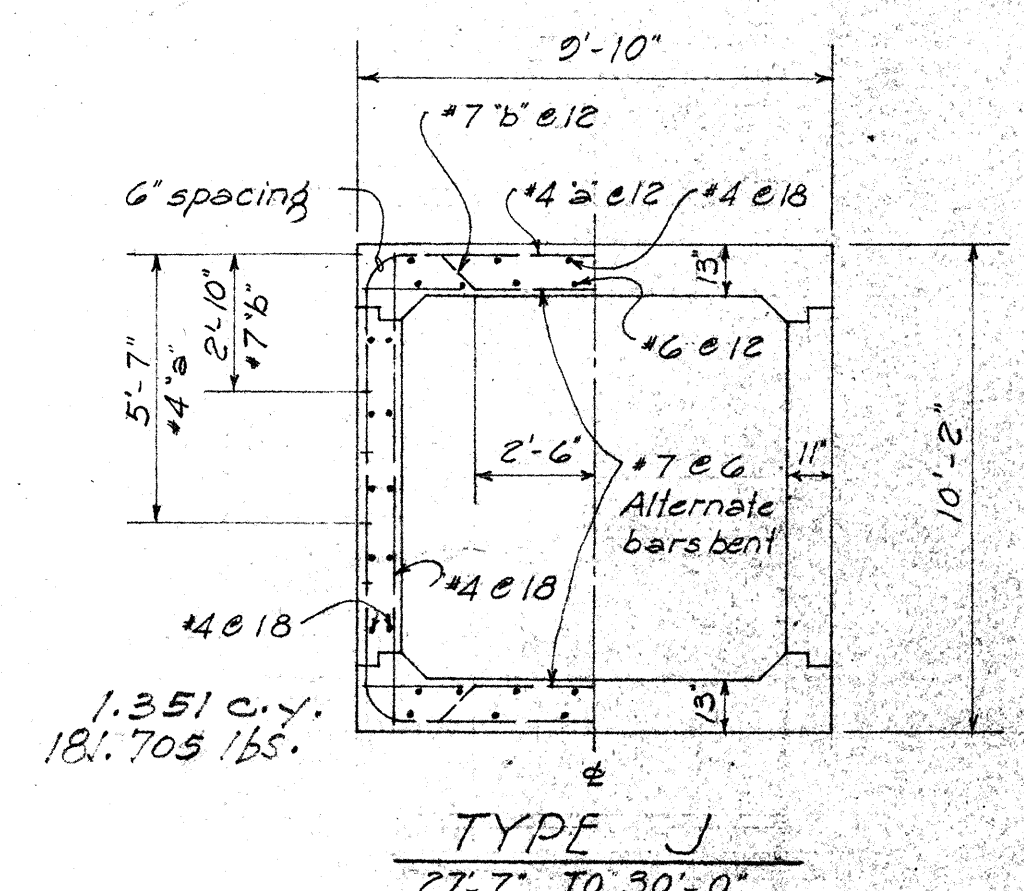
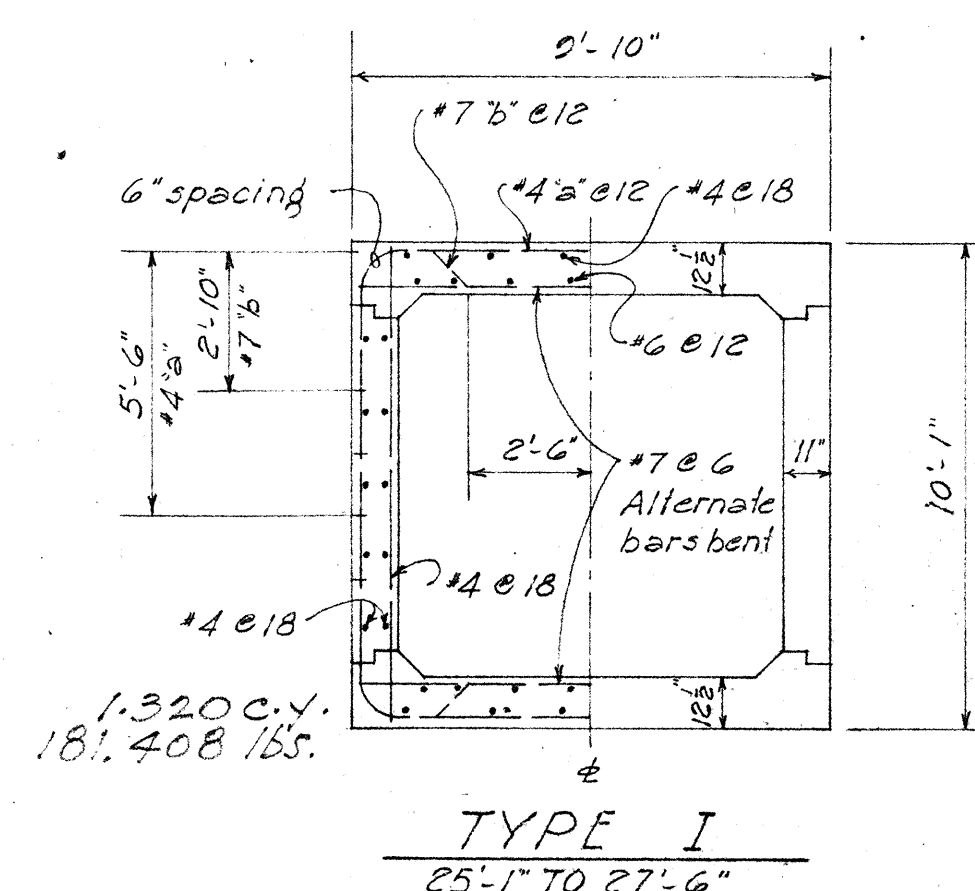
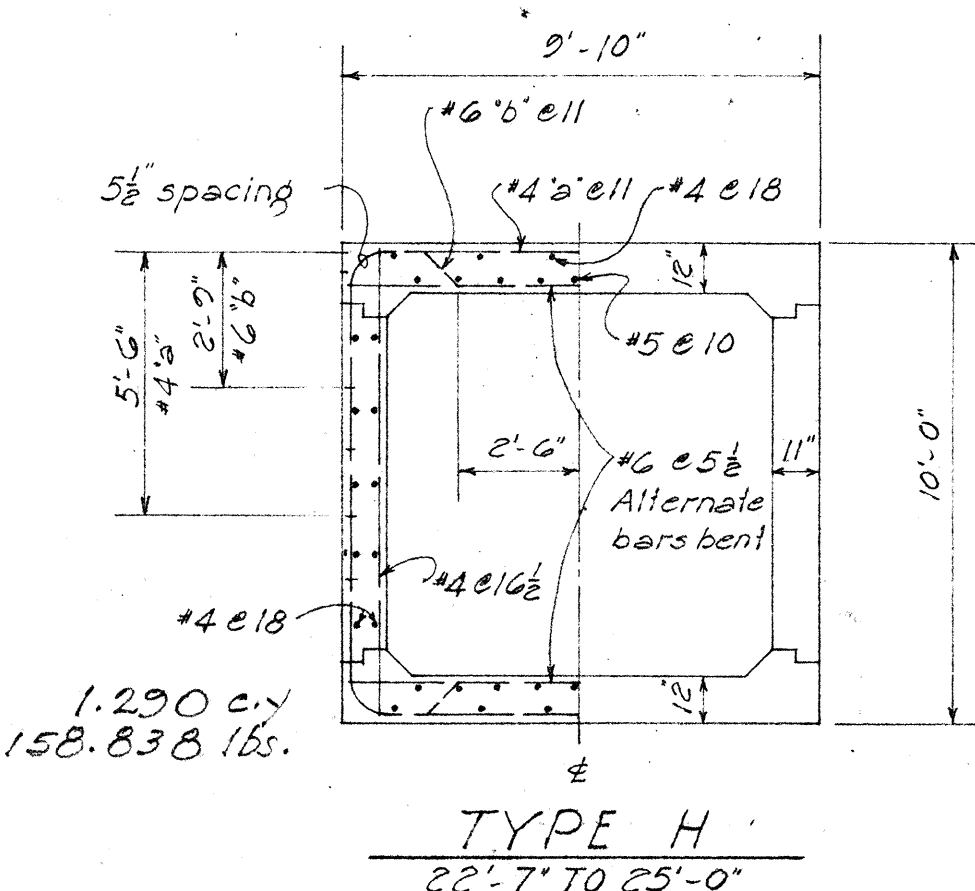
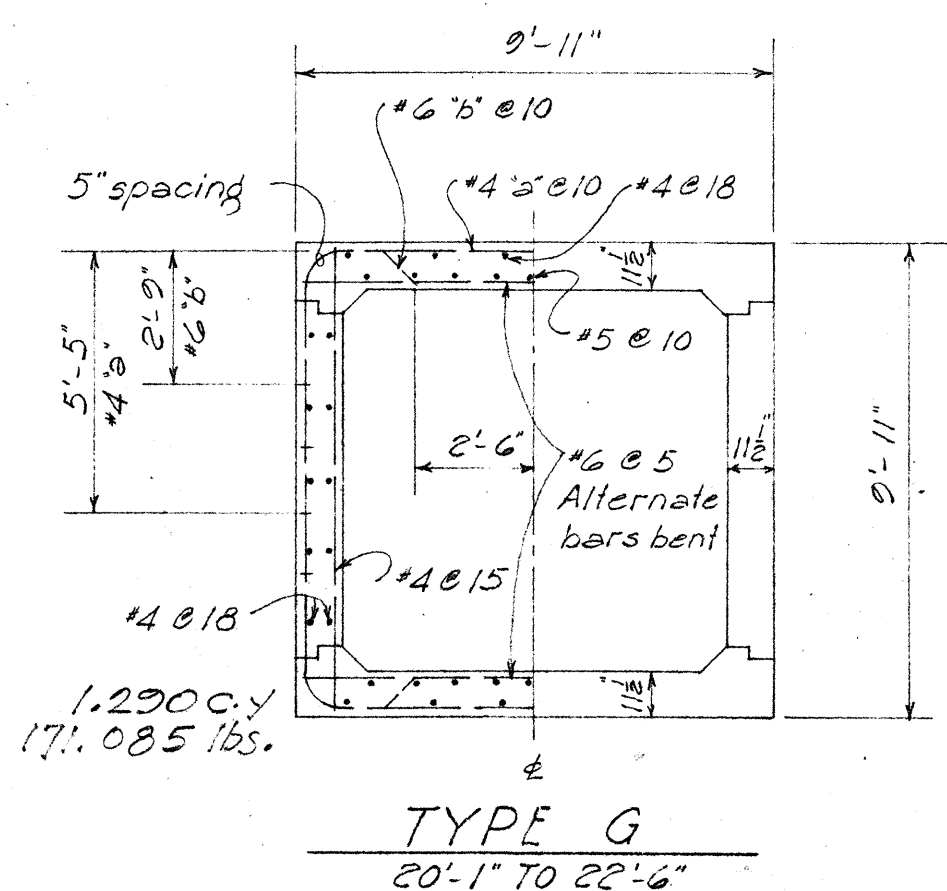
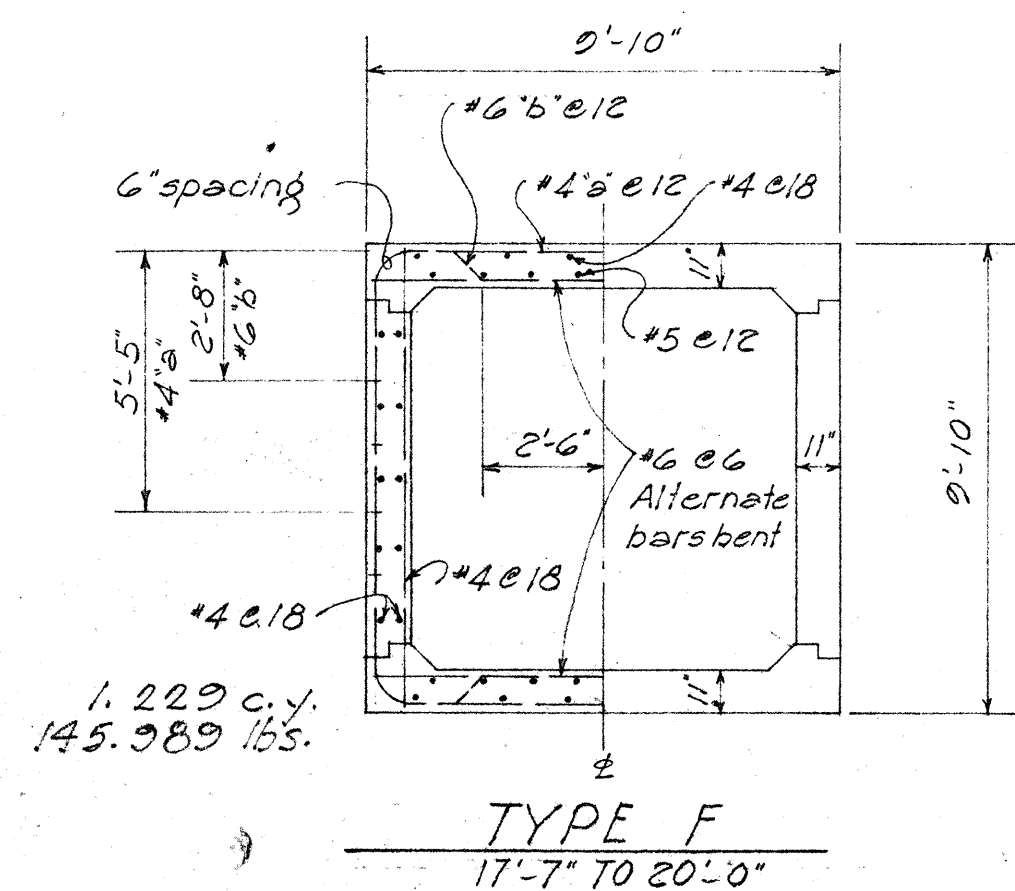
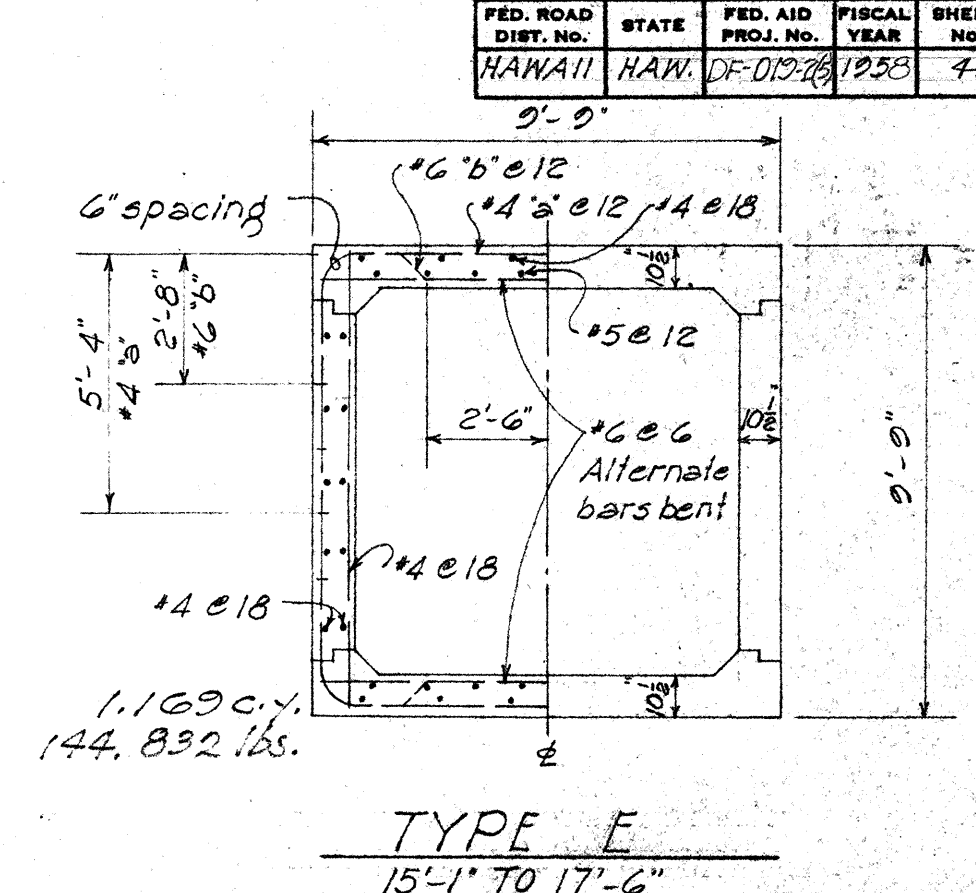
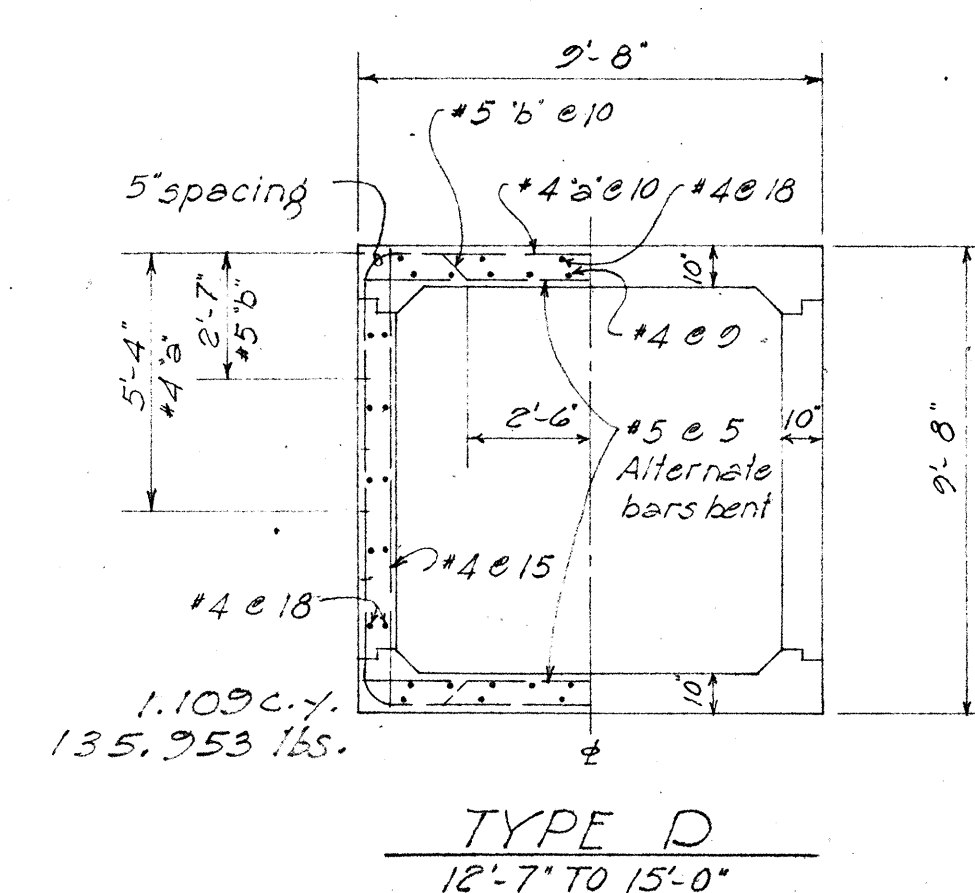
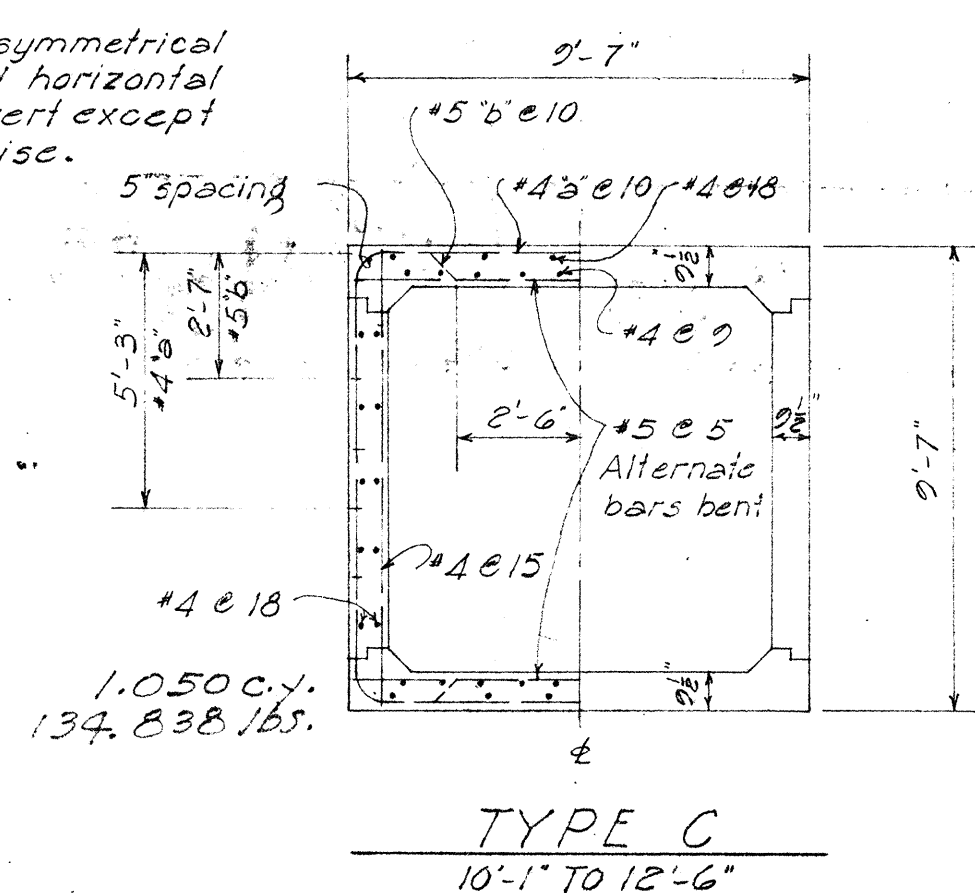
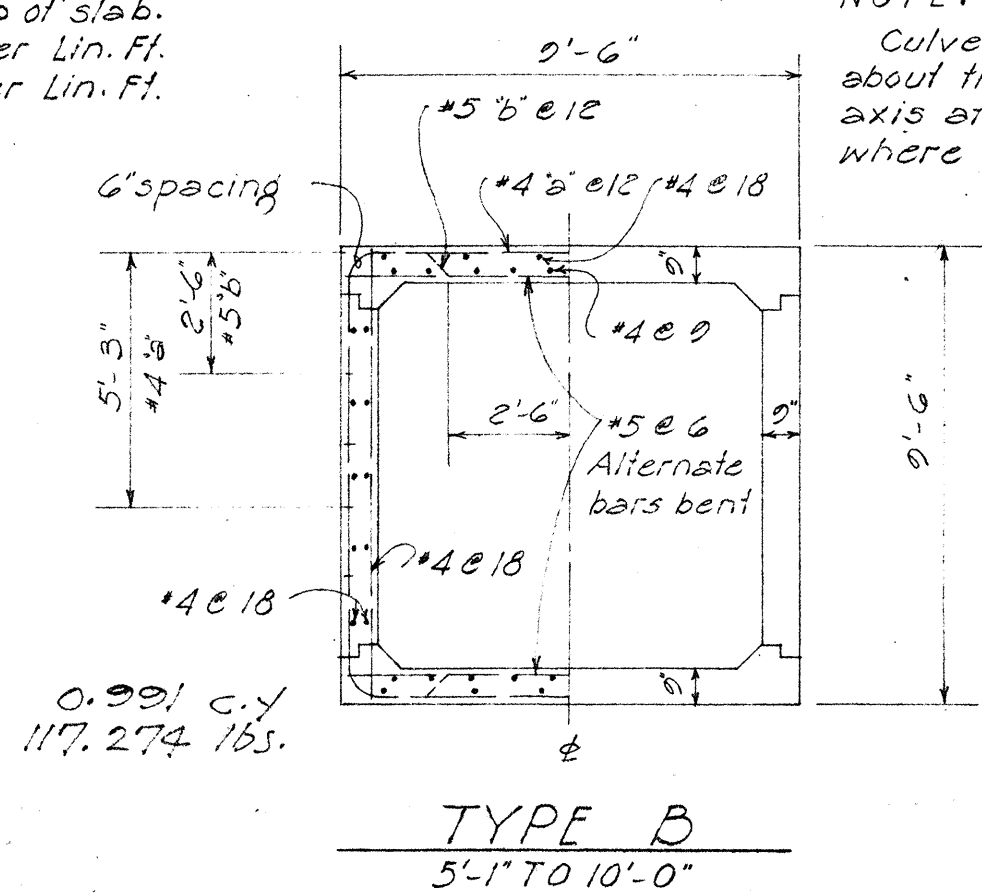
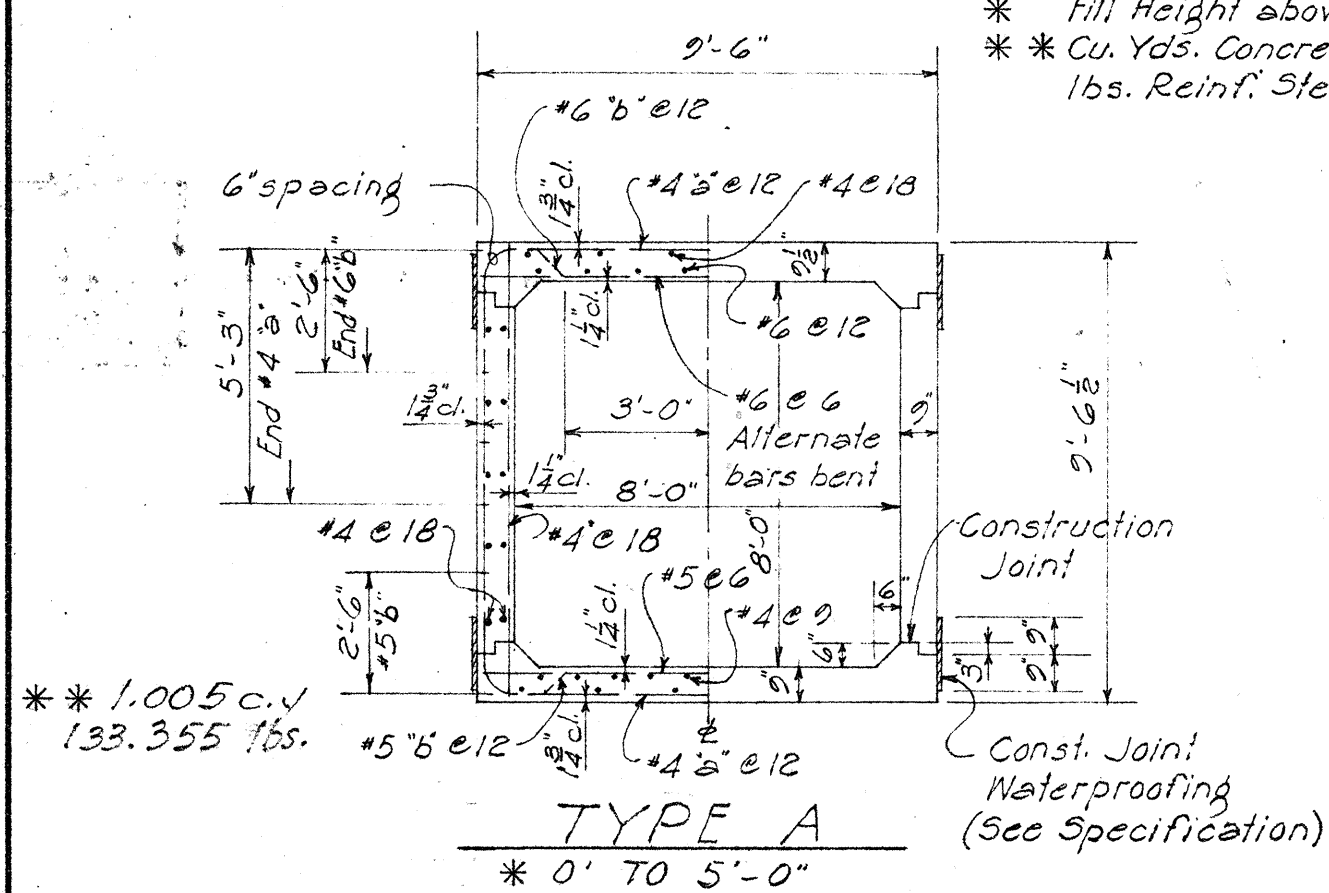
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
6'-0" X 6'-0"
STANDARD BOX CULVERT
Scale 1/8" = 1'-0"

DATE: 5-11-58
DESIGNED BY: H.C. DODD
CHECKED BY: H.C. DODD
QUANTITIES BY: H.C. DODD
NOTE BOOK: H.C. DODD

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	17-0022	1955	41	85

* Fill Height above top of slab.
* Cu. Yds. Concrete per Lin. Ft.
lbs. Reinf. Steel per Lin. Ft.

NOTE:-
Culvert details are symmetrical about the vertical and horizontal axis at center of culvert except where shown otherwise.



TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
8'-0" X 8'-0"
STANDARD BOX CULVERT
Scale - 1/4" = 1'-0"

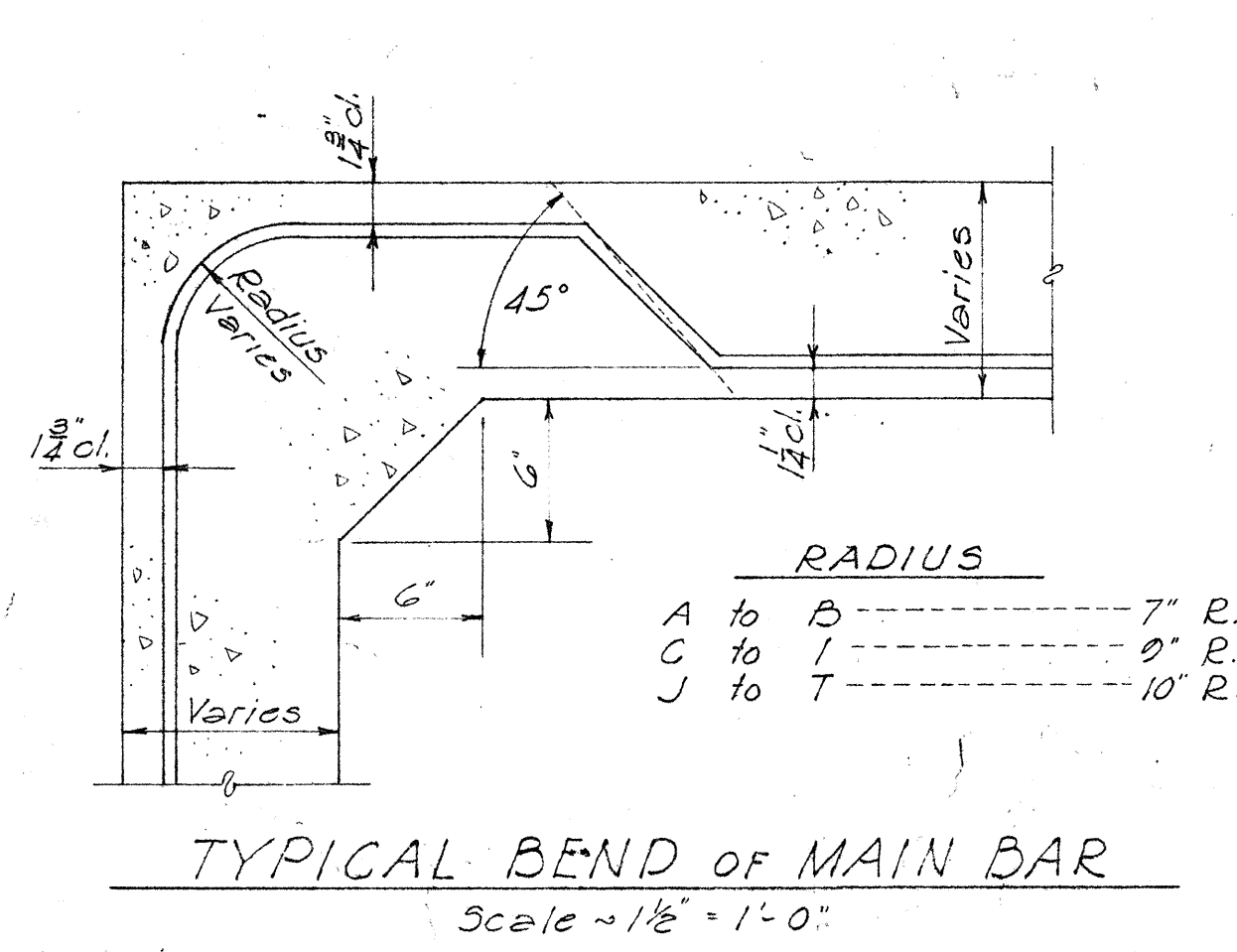
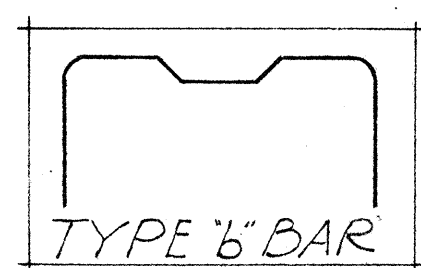
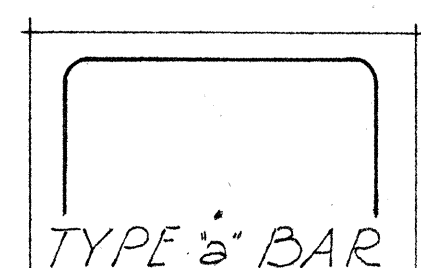
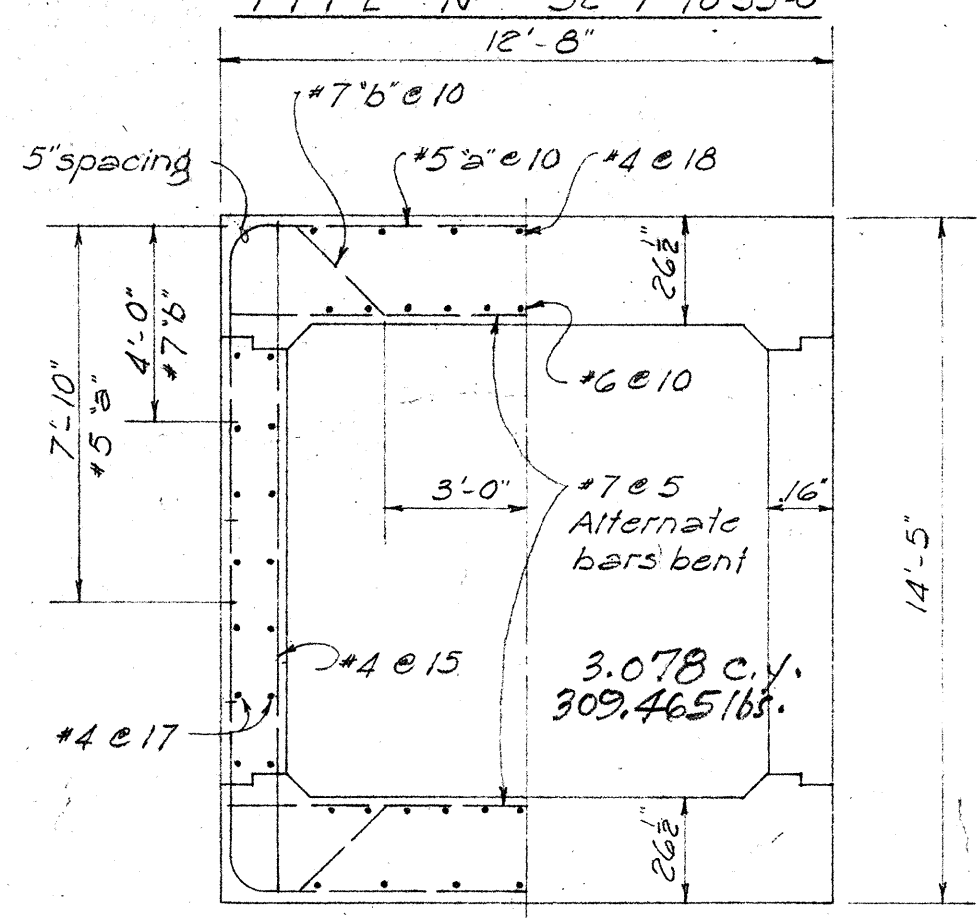
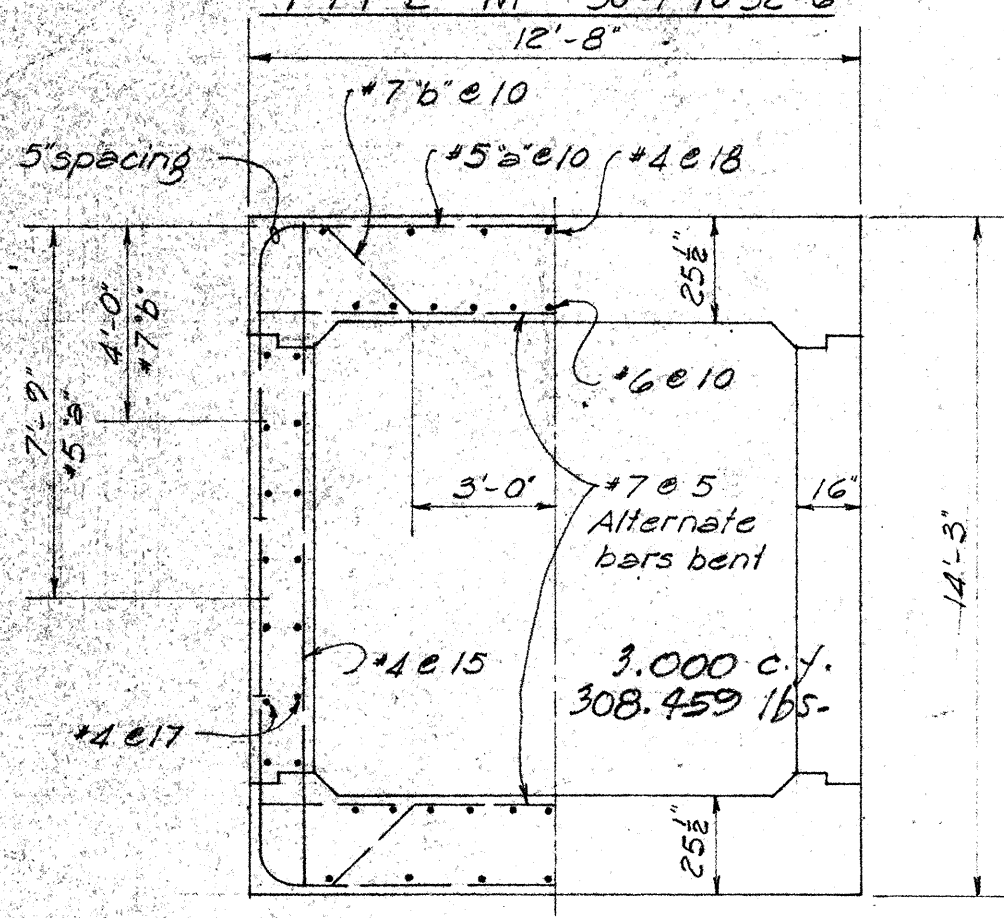
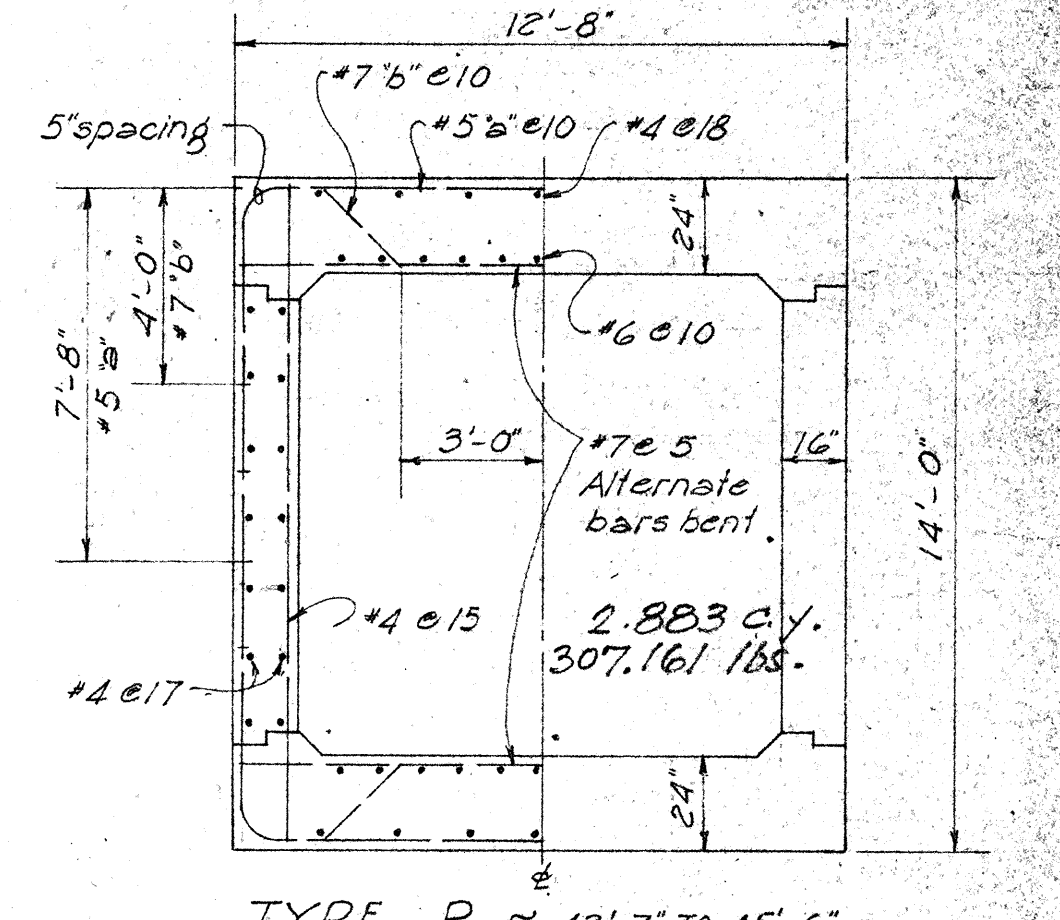
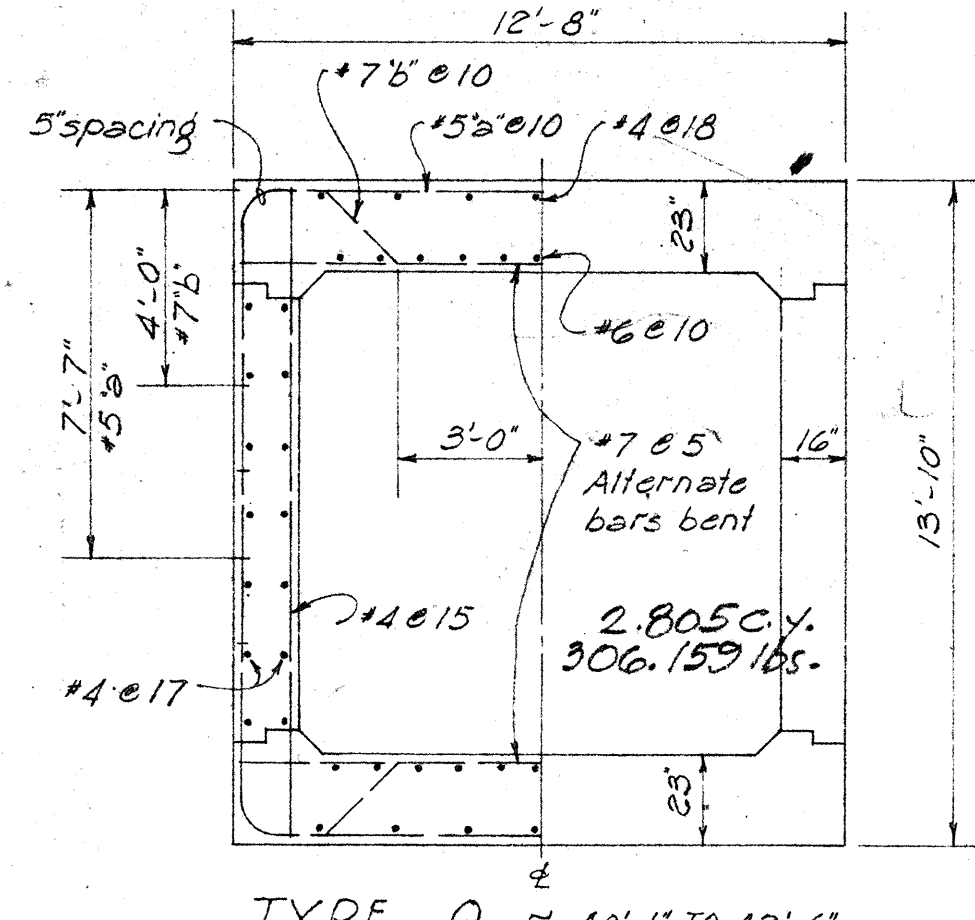
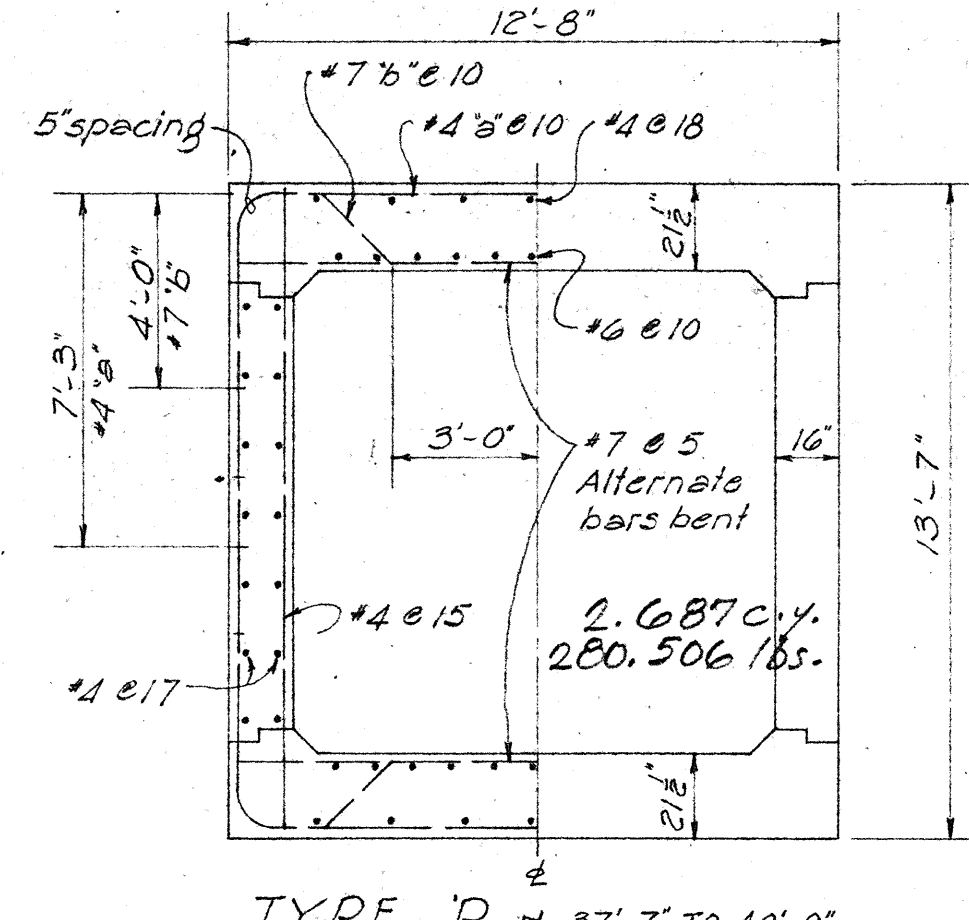
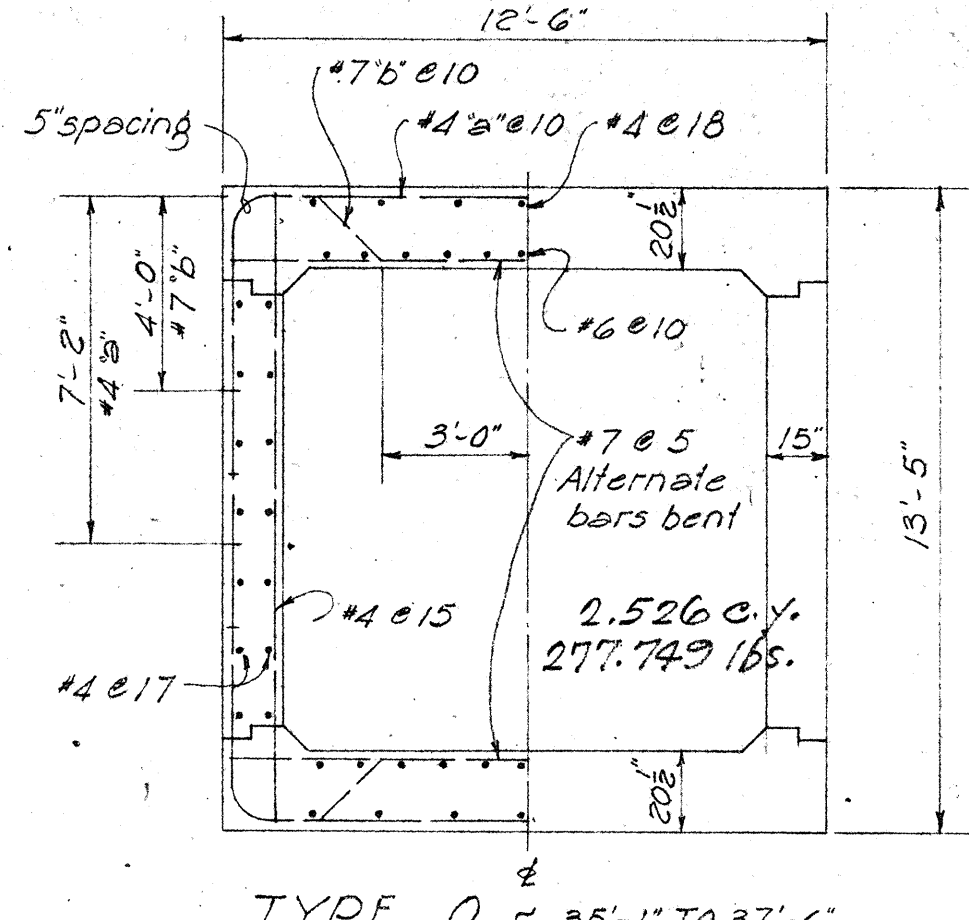
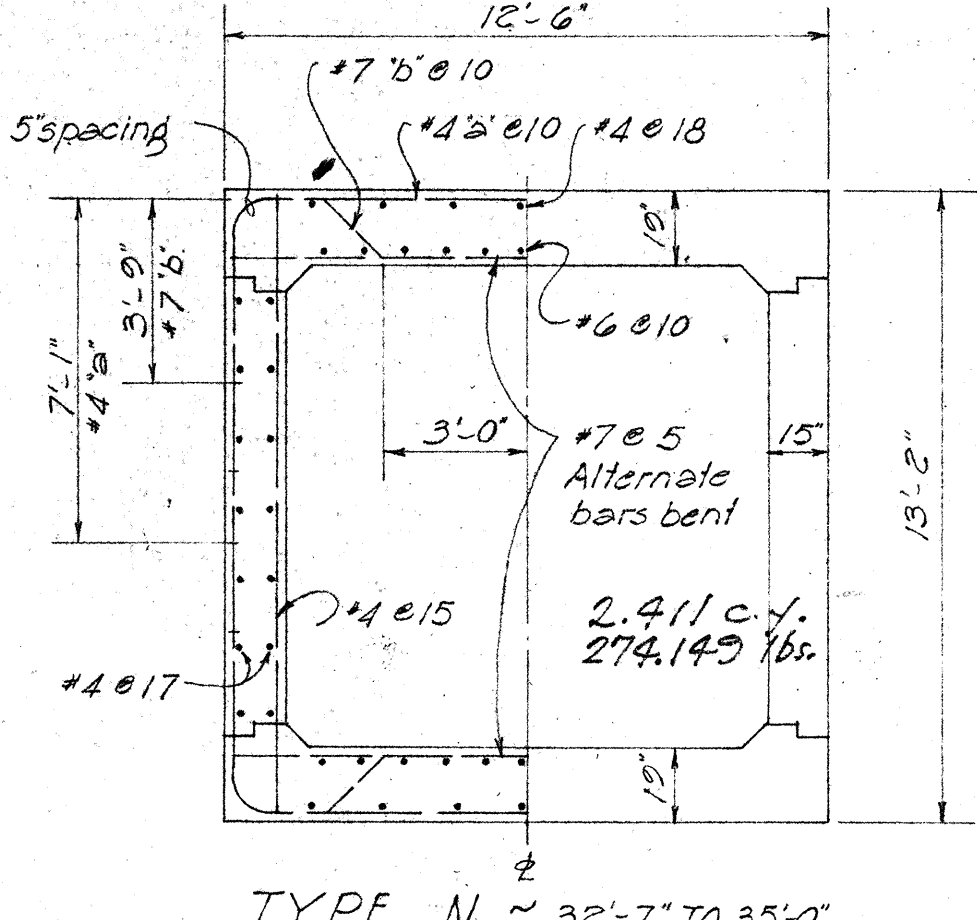
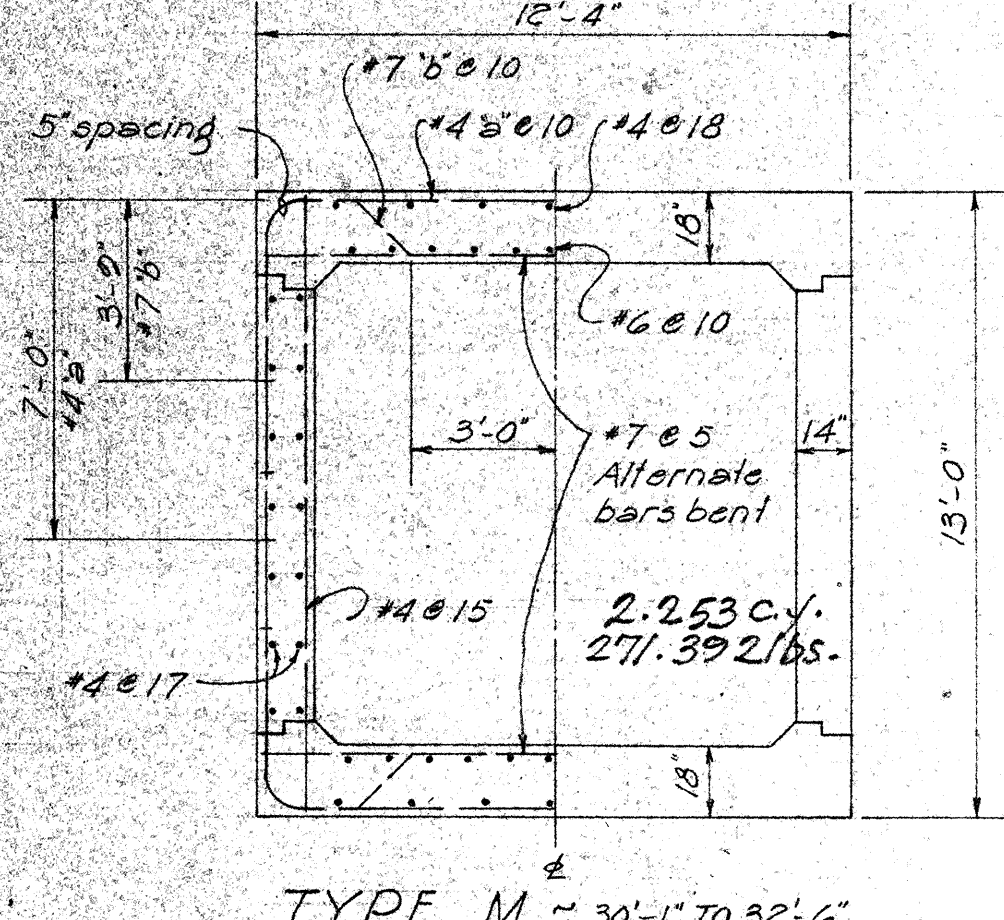
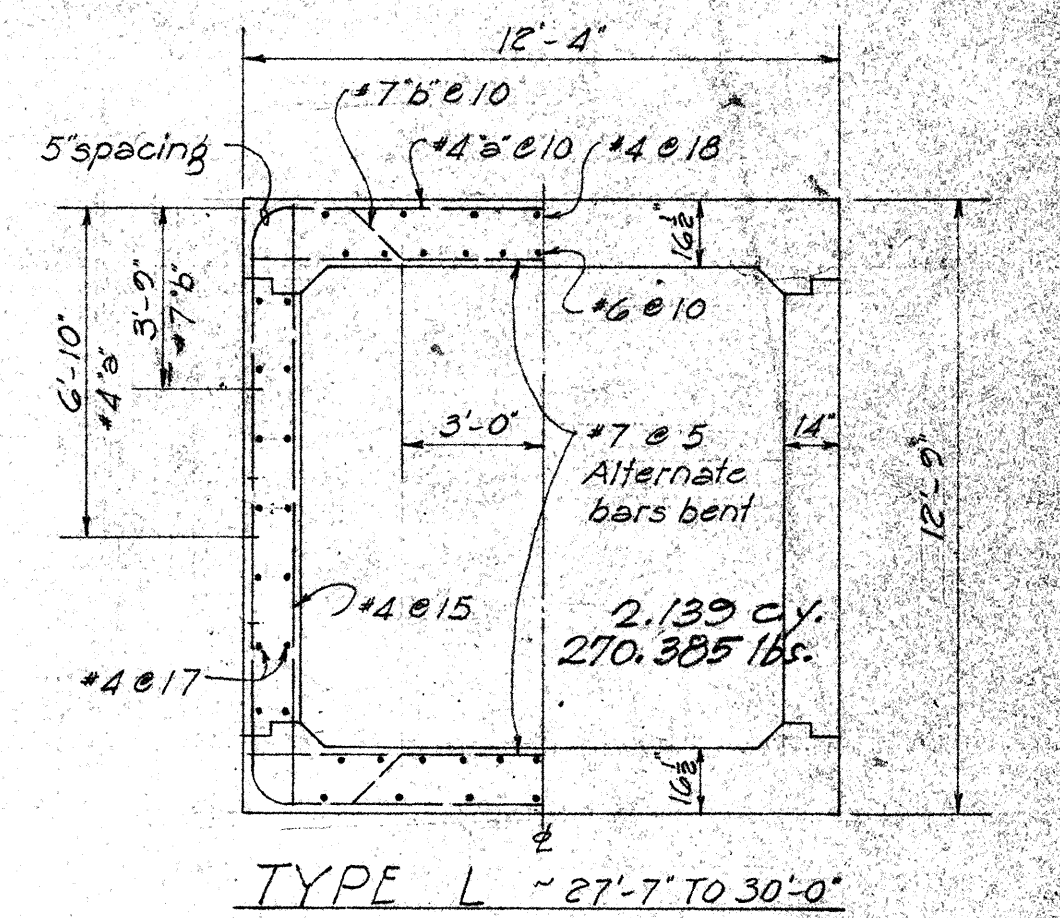
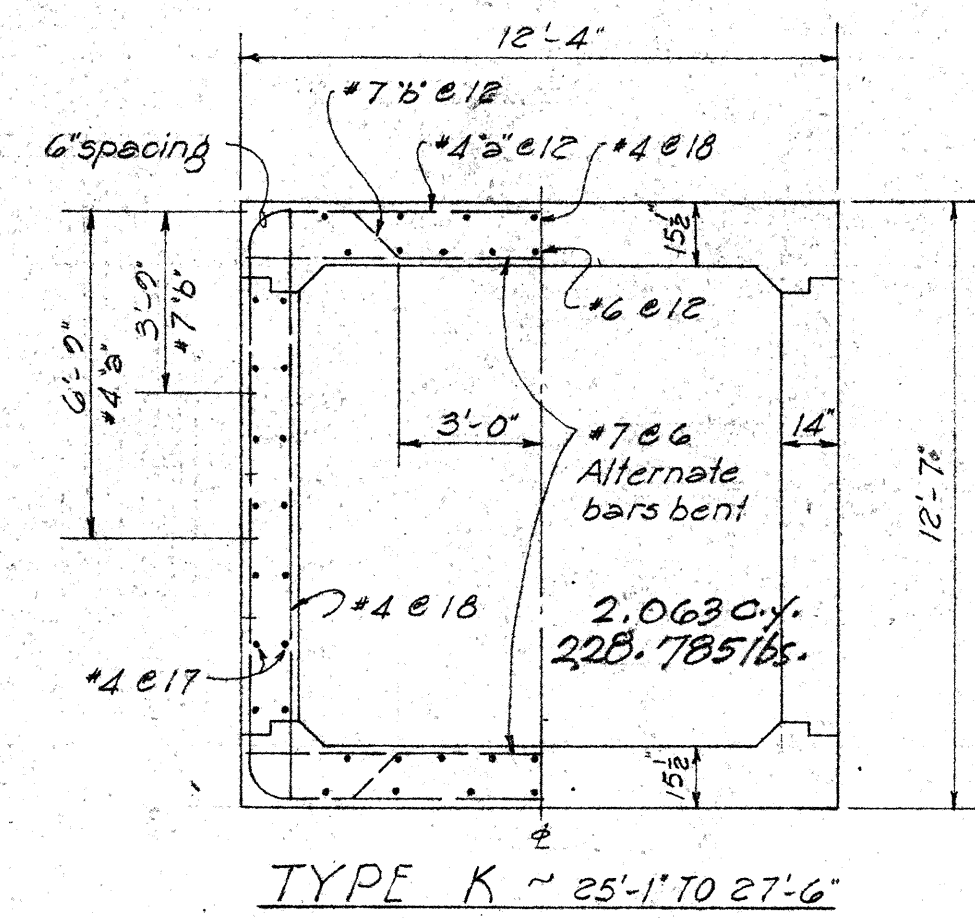
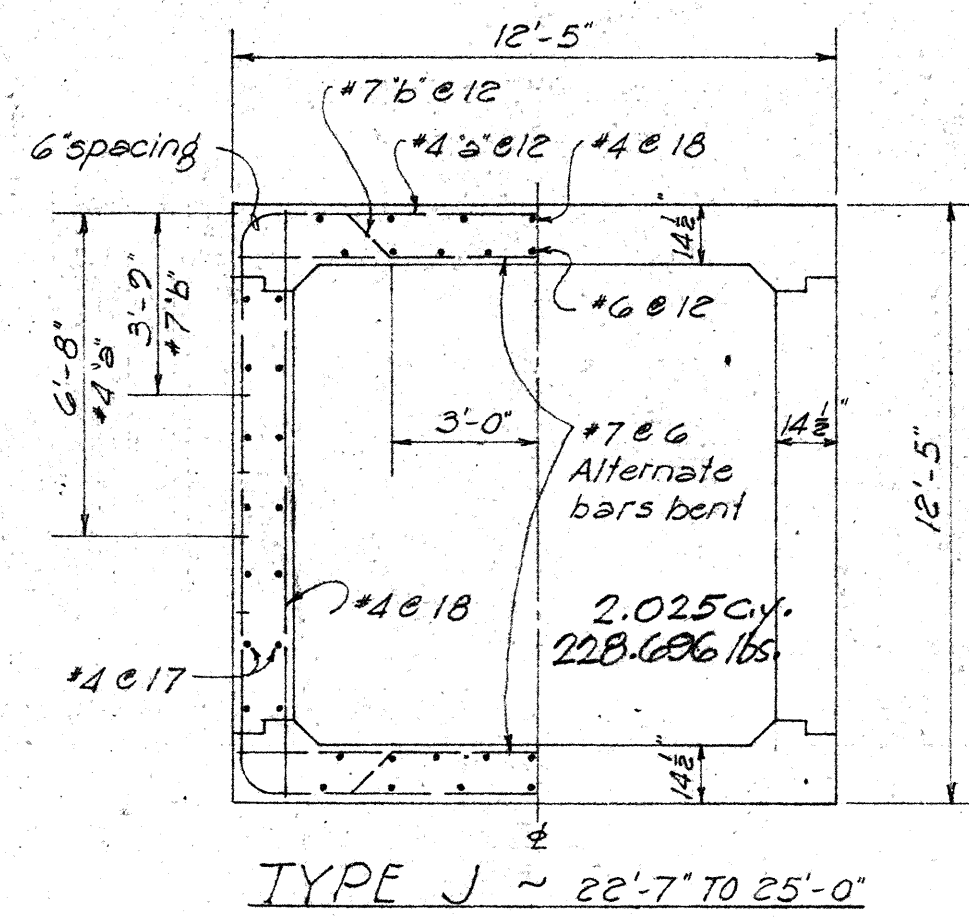
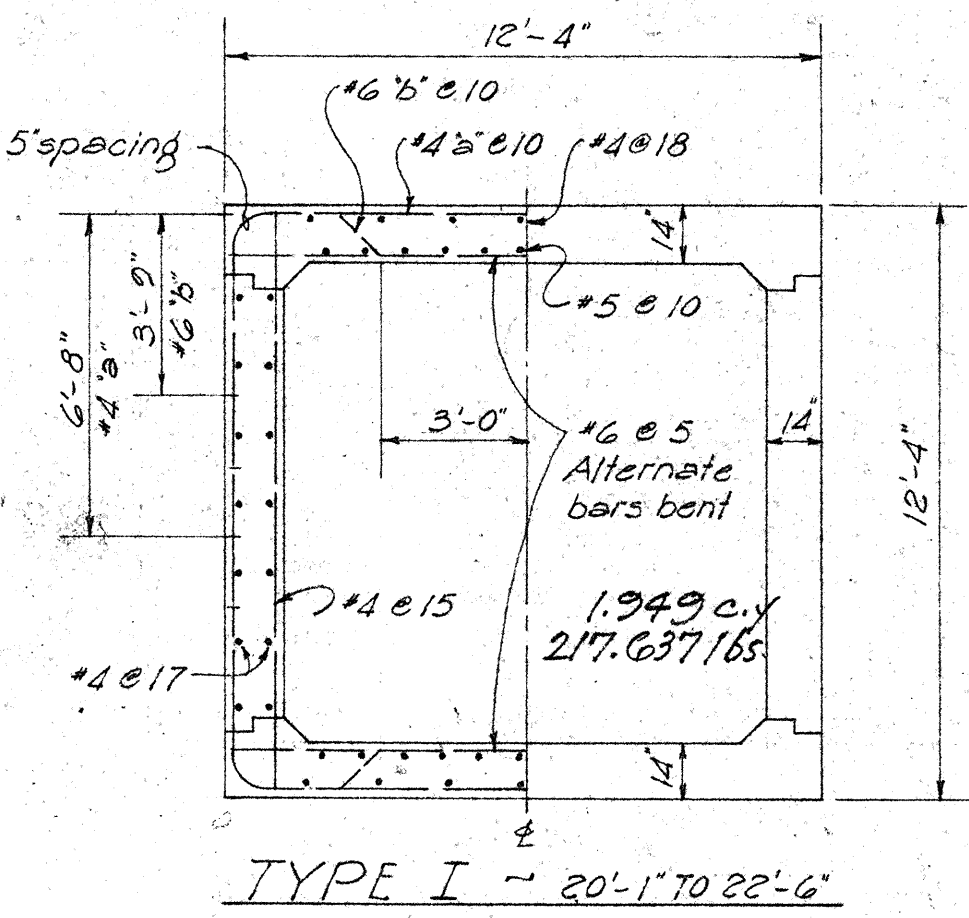
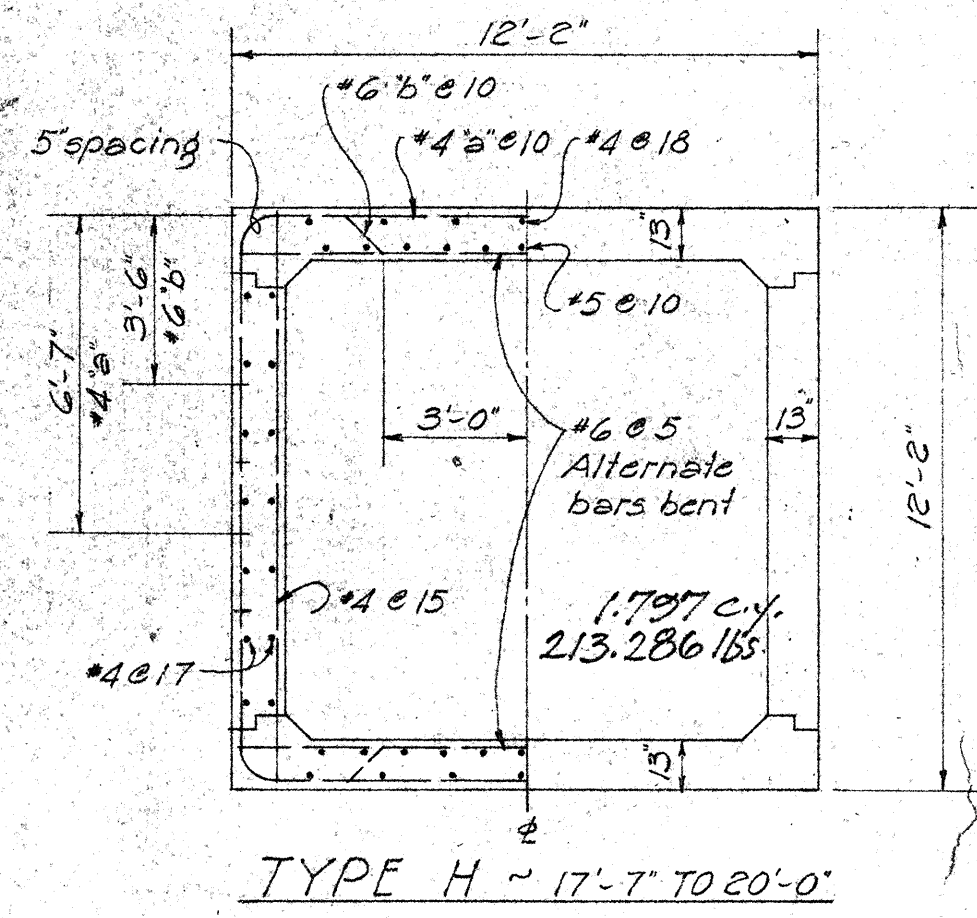
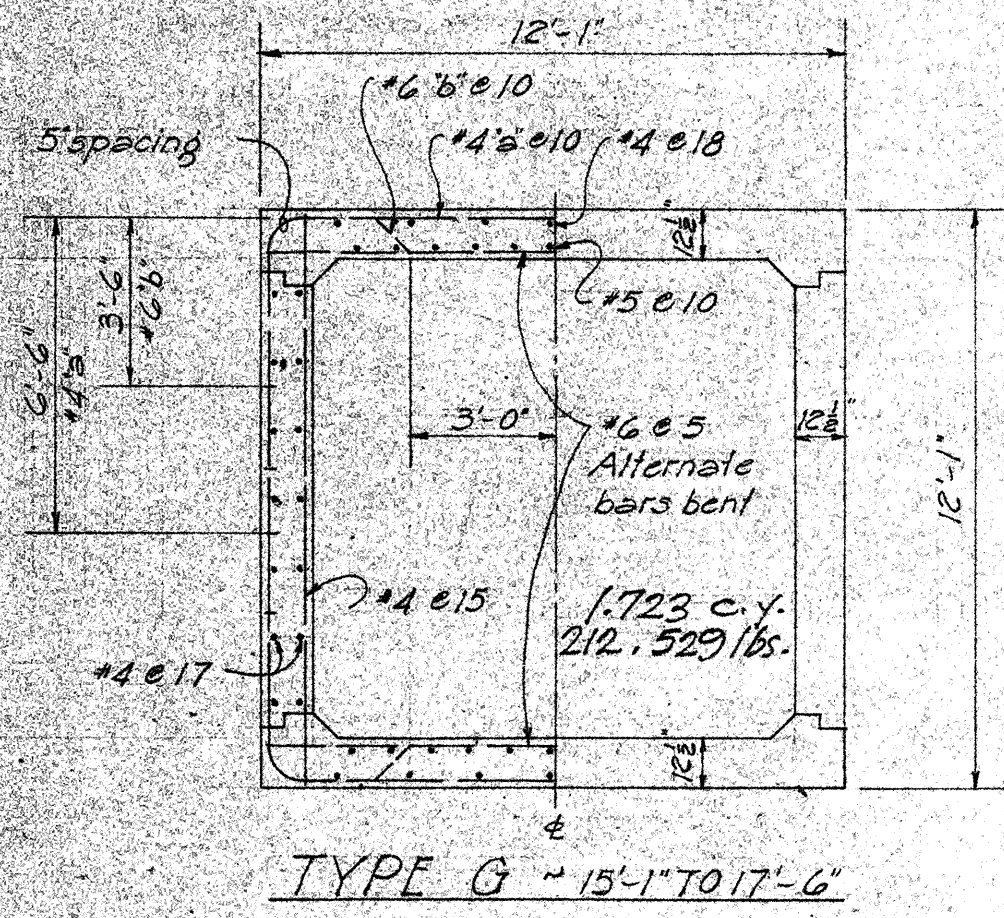
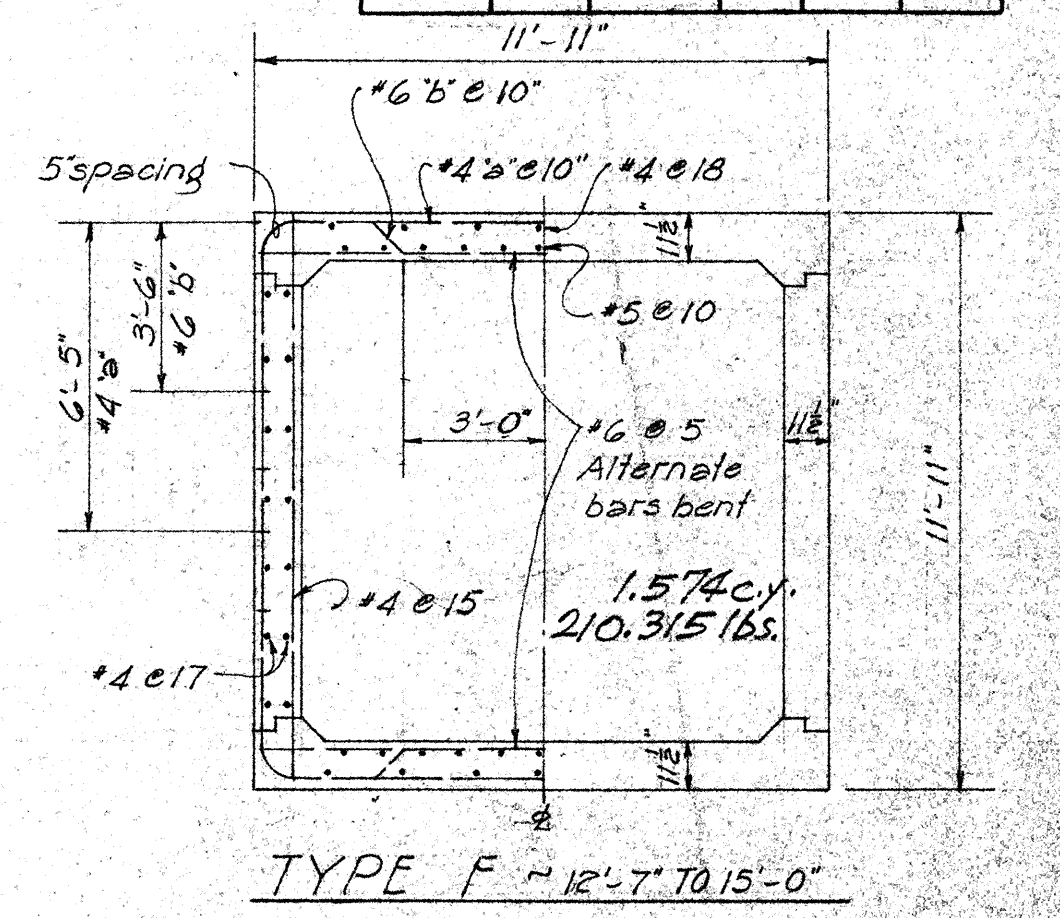
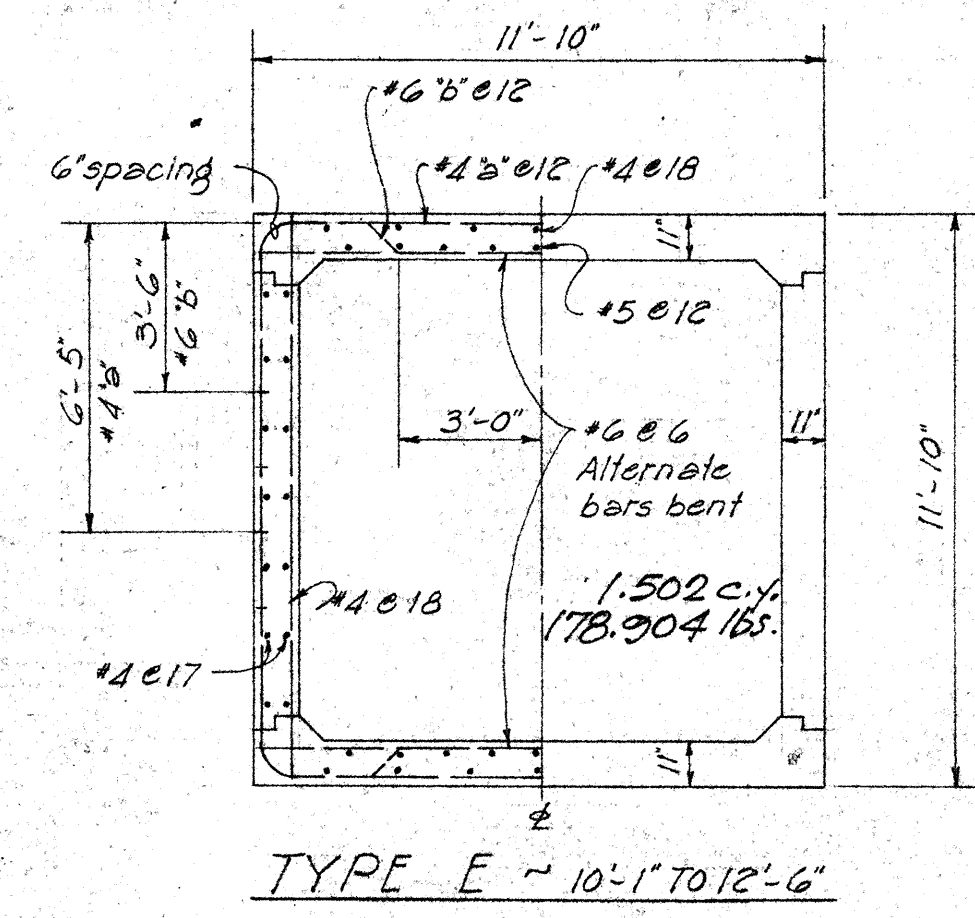
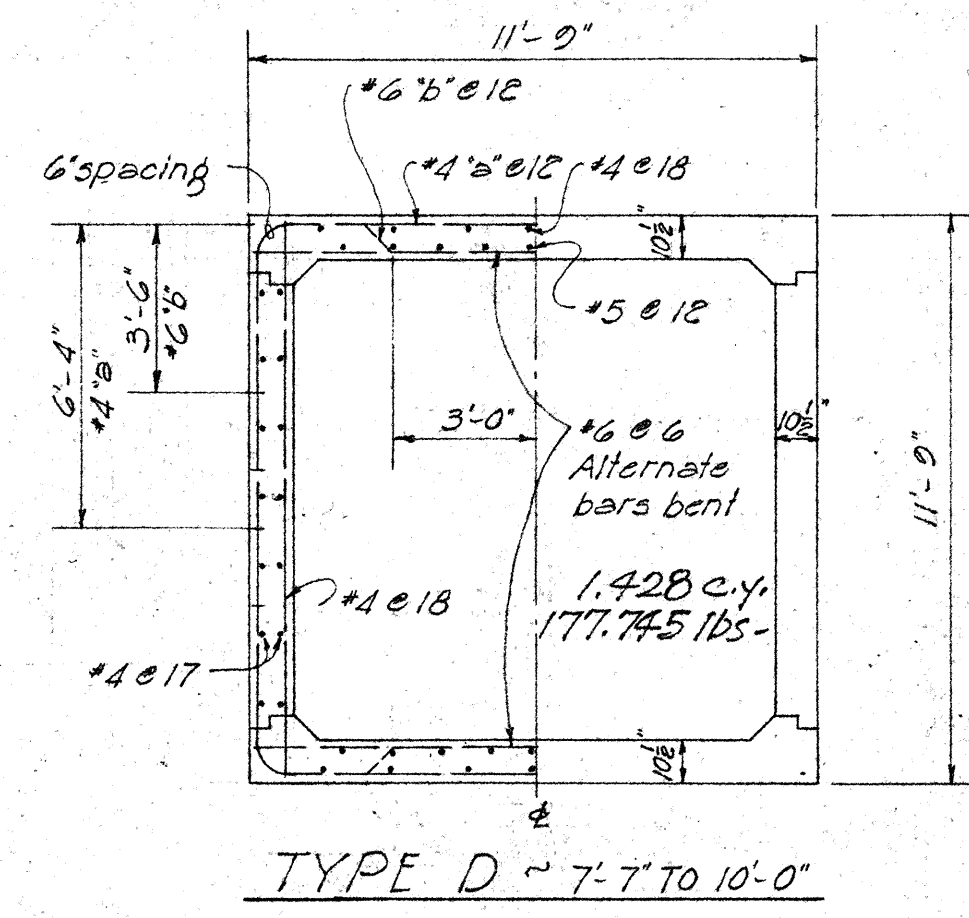
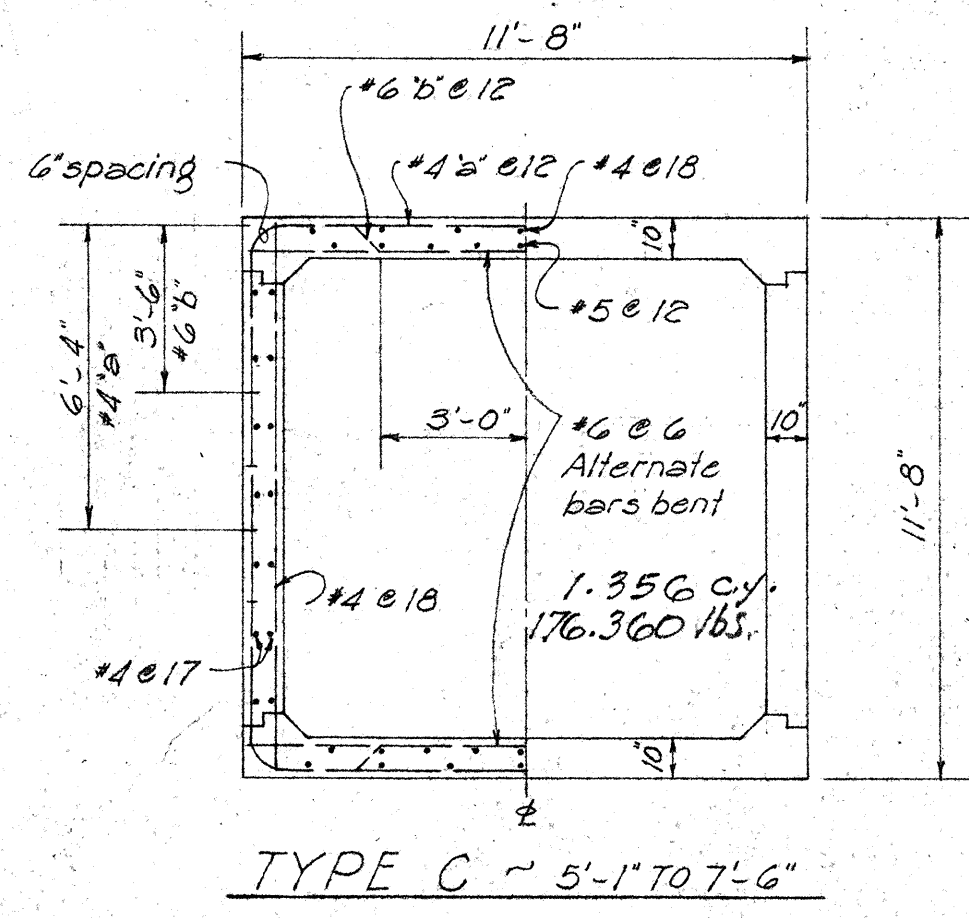
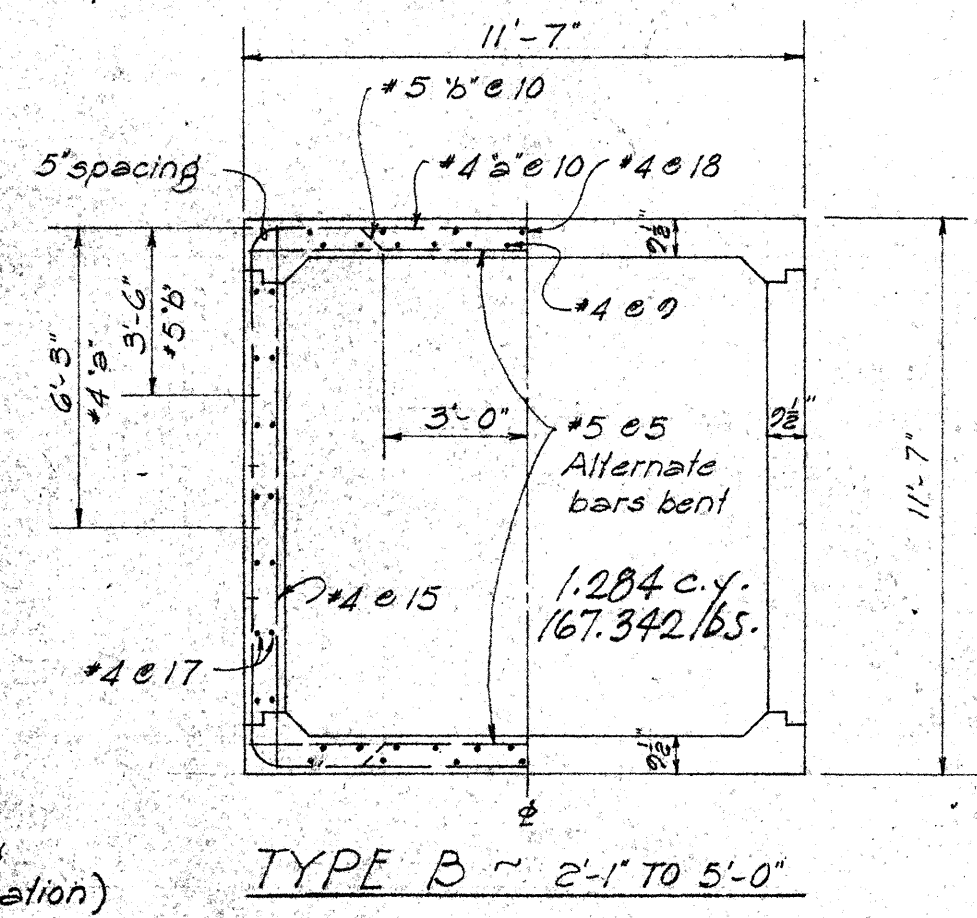
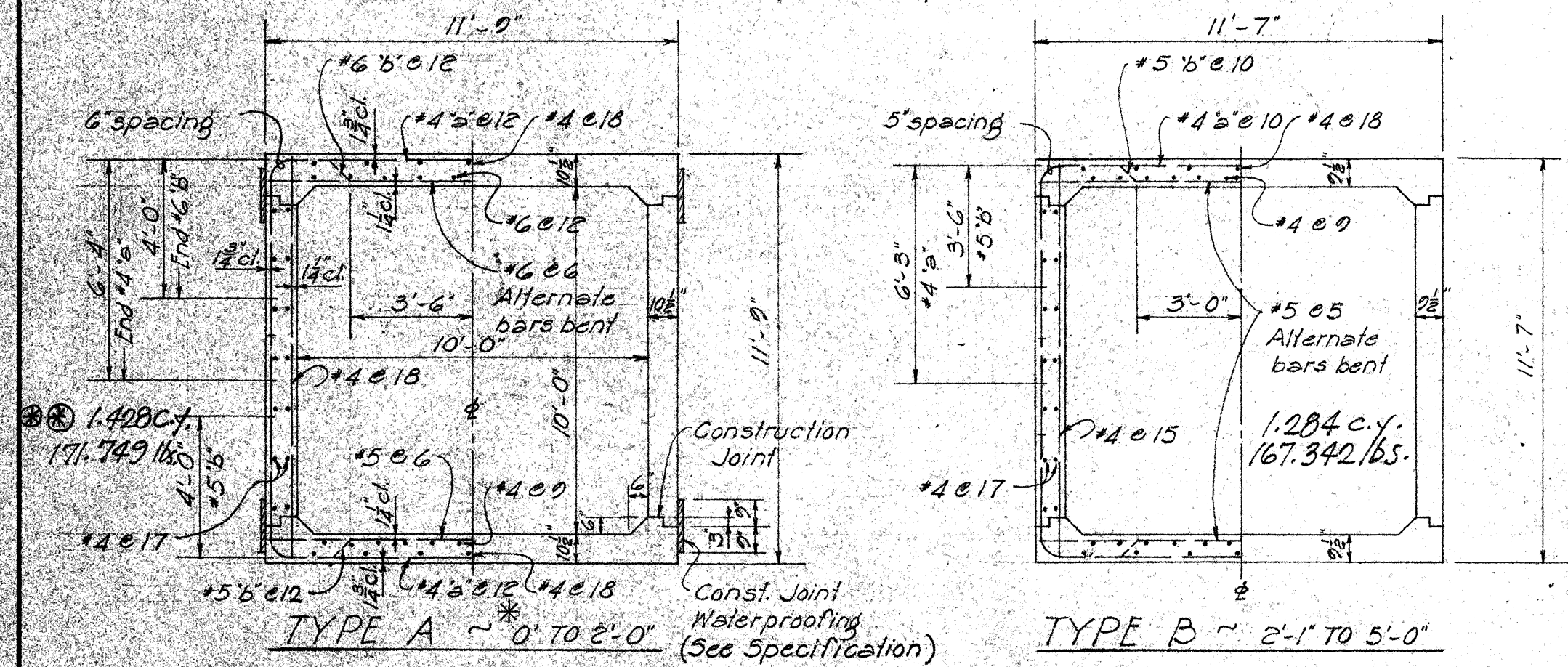
SHEET NO. OF SHEETS

5954.41

DESIGNED BY: J. L. B. 1/5/55
DRAWN BY: J. L. B. 1/5/55
CHECKED BY: J. L. B. 1/5/55
NOTE BOOK NO. 1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	DF-013-28	1953	42	65

* Fill Height above top of slab.
 ** Cu. Yds. Concrete per Lin. Ft.
 Lbs. Reinf. Steel per Lin. Ft.



NOTE:—
 Culvert details are symmetrical about the vertical and horizontal axis at center of culvert except where shown otherwise.

H-20 LOADING

TERRITORIAL HIGHWAY DEPARTMENT
 TERRITORY OF HAWAII
 10'-0" X 10'-0"
 STANDARD BOX CULVERT
 Scale ~ 1/4" = 1'-0"

SHEET NO. OF SHEETS

5954.42

DESIGNED BY: J. L. D. 12/13
 TRACED BY: J. L. D. 12/13
 QUANTITIES BY: J. L. D. 12/13
 CHECKED BY: J. L. D. 12/13
 DATE: 12/13