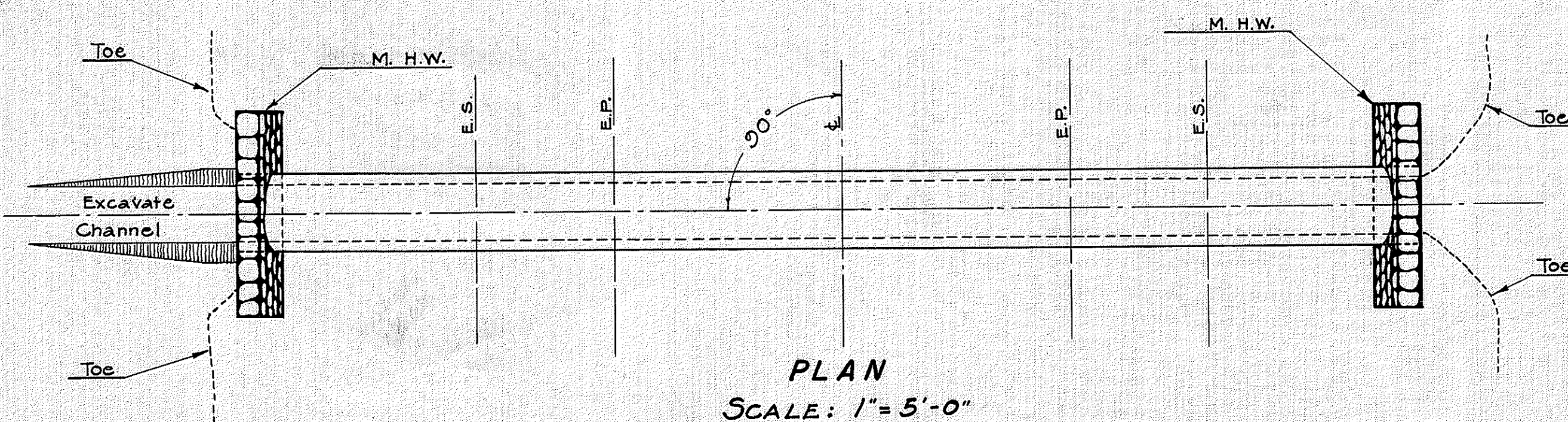
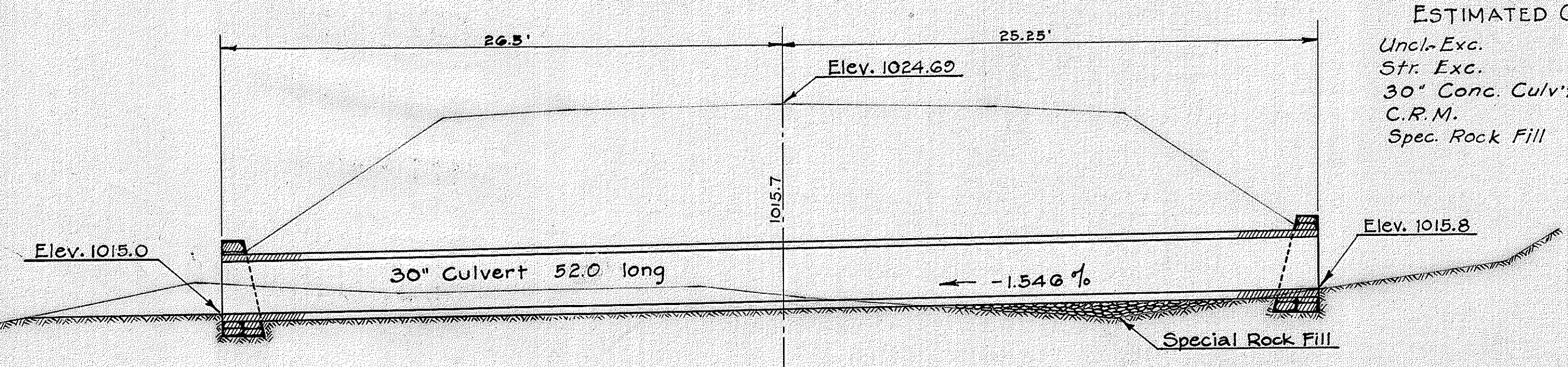


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	188	1936	15	39



PLAN
SCALE: 1" = 5'-0"

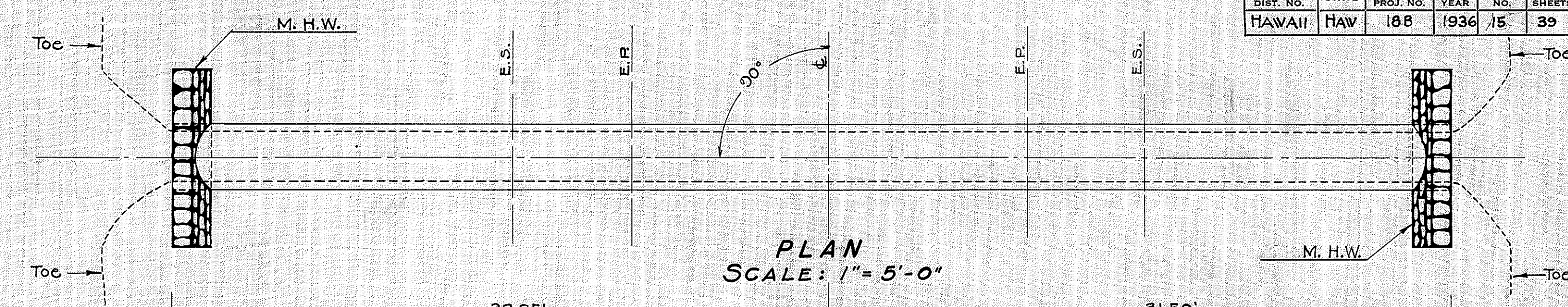


STA. 226+74 ST'D. 30" CAST-IN-PLACE CIR. CONG. CULV'T. 52.0' LONG 2 M. HEADWALLS

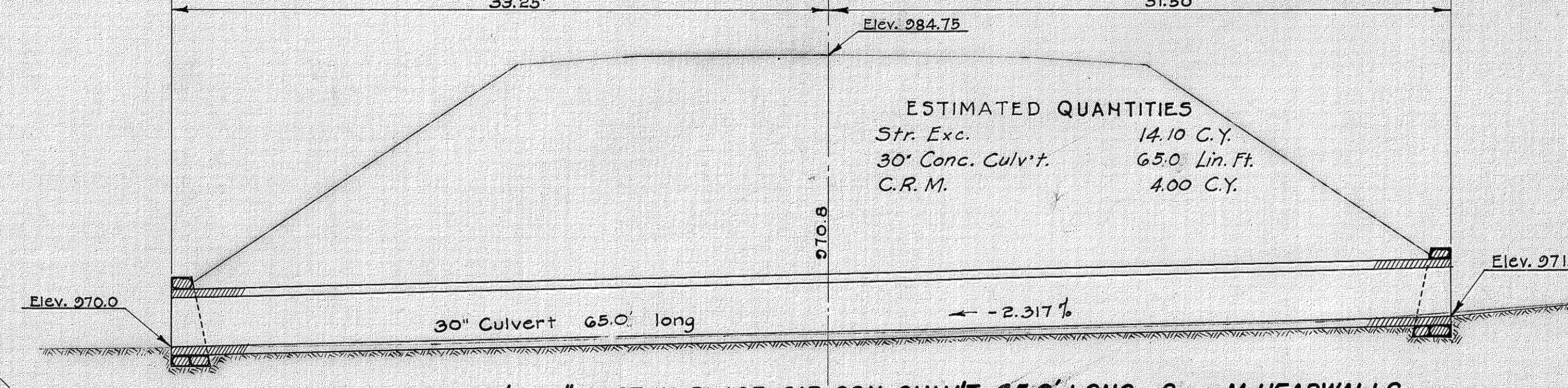
SECTION THRU ϕ
SCALE: 1" = 5'-0"

ESTIMATED QUANTITIES

Uncl. Exc.	0.49 C.Y.
Str. Exc.	12.02 C.Y.
30" Conc. Culv't.	52.0 Lin. Ft.
C.R.M.	4.00 C.Y.
Spec. Rock Fill	1.9 C.Y.



PLAN
SCALE: 1" = 5'-0"

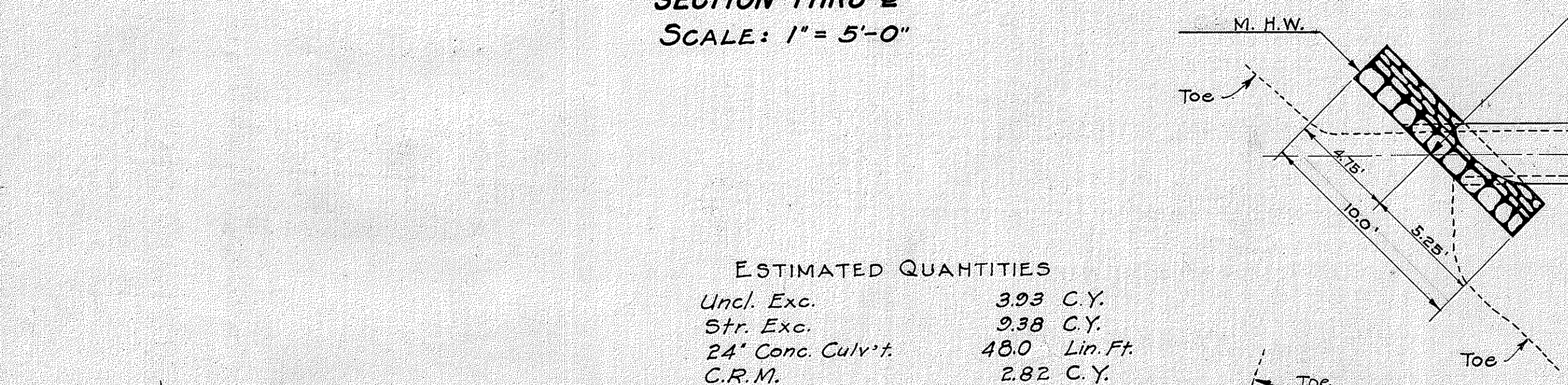


STA. 233+08 ST'D. 30" CAST-IN-PLACE CIR. CON. CULV'T. 65.0' LONG 2 M. HEADWALLS

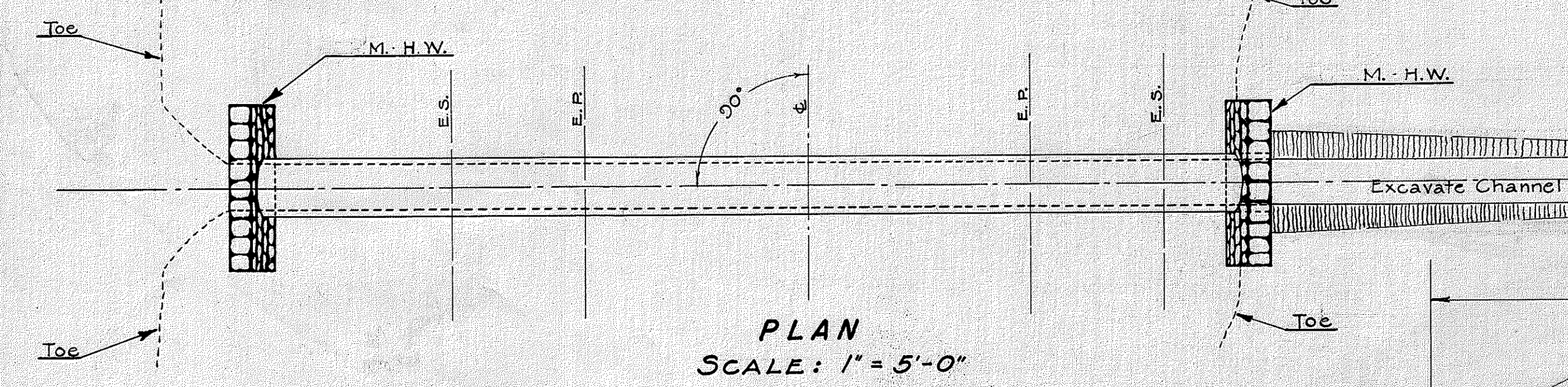
SECTION THRU ϕ
SCALE: 1" = 5'-0"

ESTIMATED QUANTITIES

Str. Exc.	14.10 C.Y.
30" Conc. Culv't.	65.0 Lin. Ft.
C.R.M.	4.00 C.Y.



PLAN
SCALE: 1" = 5'-0"



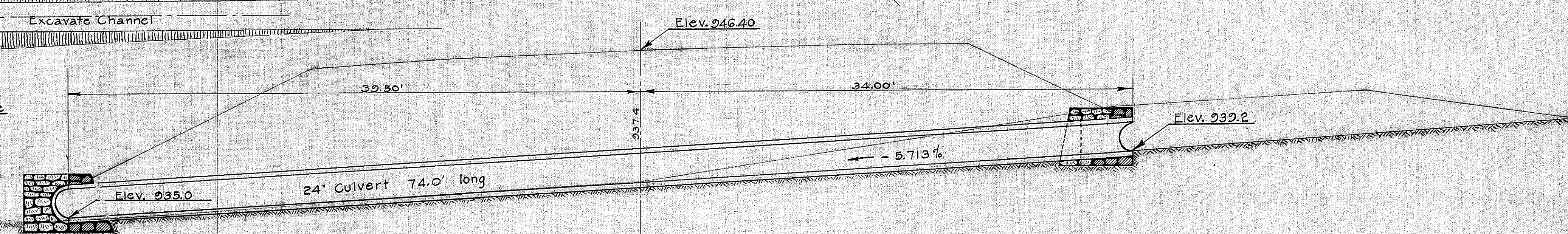
STA. 202+00 ST'D. CAST-IN-PLACE CIR. CON. CULV'T. 48.0' LONG 2 M. HEADWALLS

SECTION THRU ϕ
SCALE: 1" = 5'-0"

ESTIMATED QUANTITIES

Uncl. Exc.	3.93 C.Y.
Str. Exc.	9.38 C.Y.
24" Conc. Culv't.	48.0 Lin. Ft.
C.R.M.	2.82 C.Y.

PLAN
SCALE: 1" = 5'-0"



STA. 239+50 ST'D. 24" CAST-IN-PLACE CIR. CON. CULV'T. 74.0' LONG 2 SPECIAL M. HEADWALLS

SECTION THRU ϕ
SCALE: 1" = 5'-0"

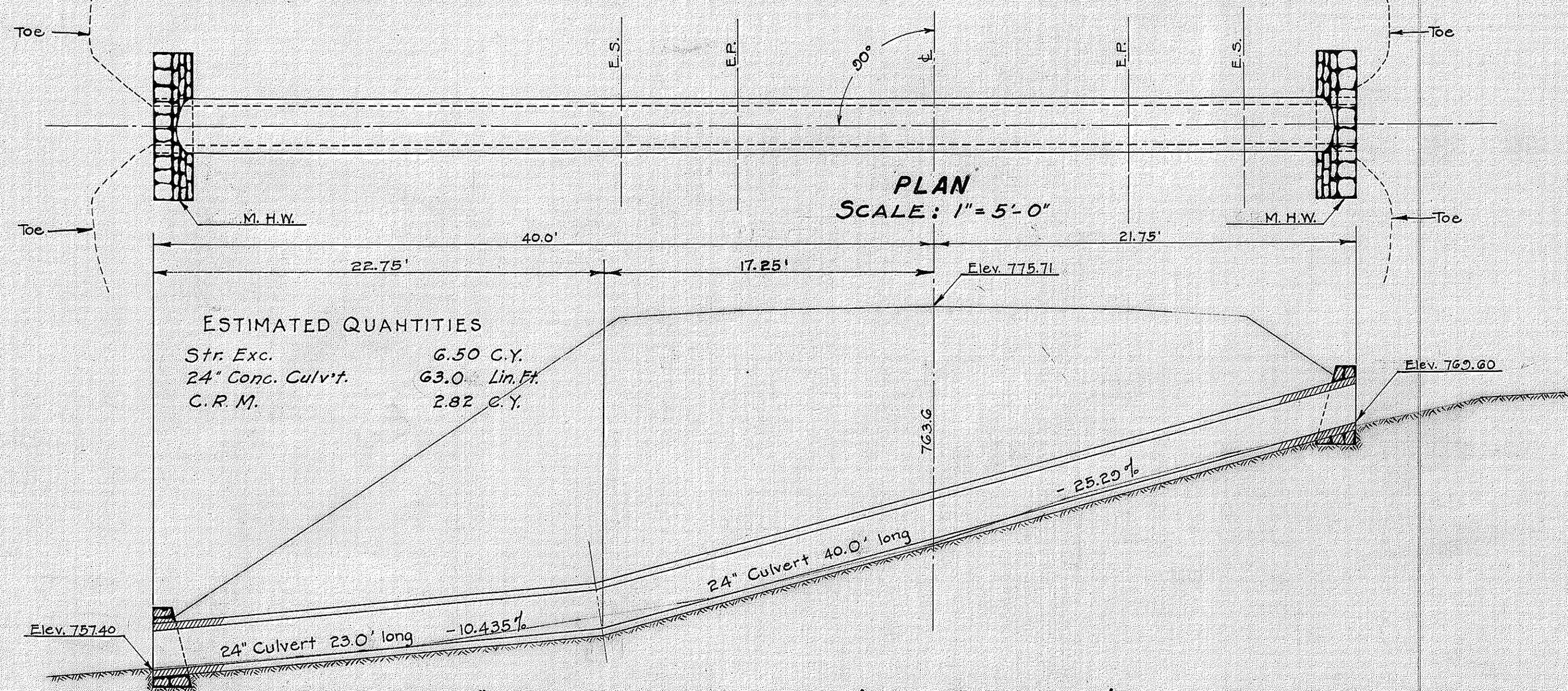
ESTIMATED QUANTITIES

Uncl. Exc.	10.33 C.Y.
Str. Exc.	18.04 C.Y.
24" Conc. Culv't.	74.0 Lin. Ft.
C.R.M.	4.00 C.Y.

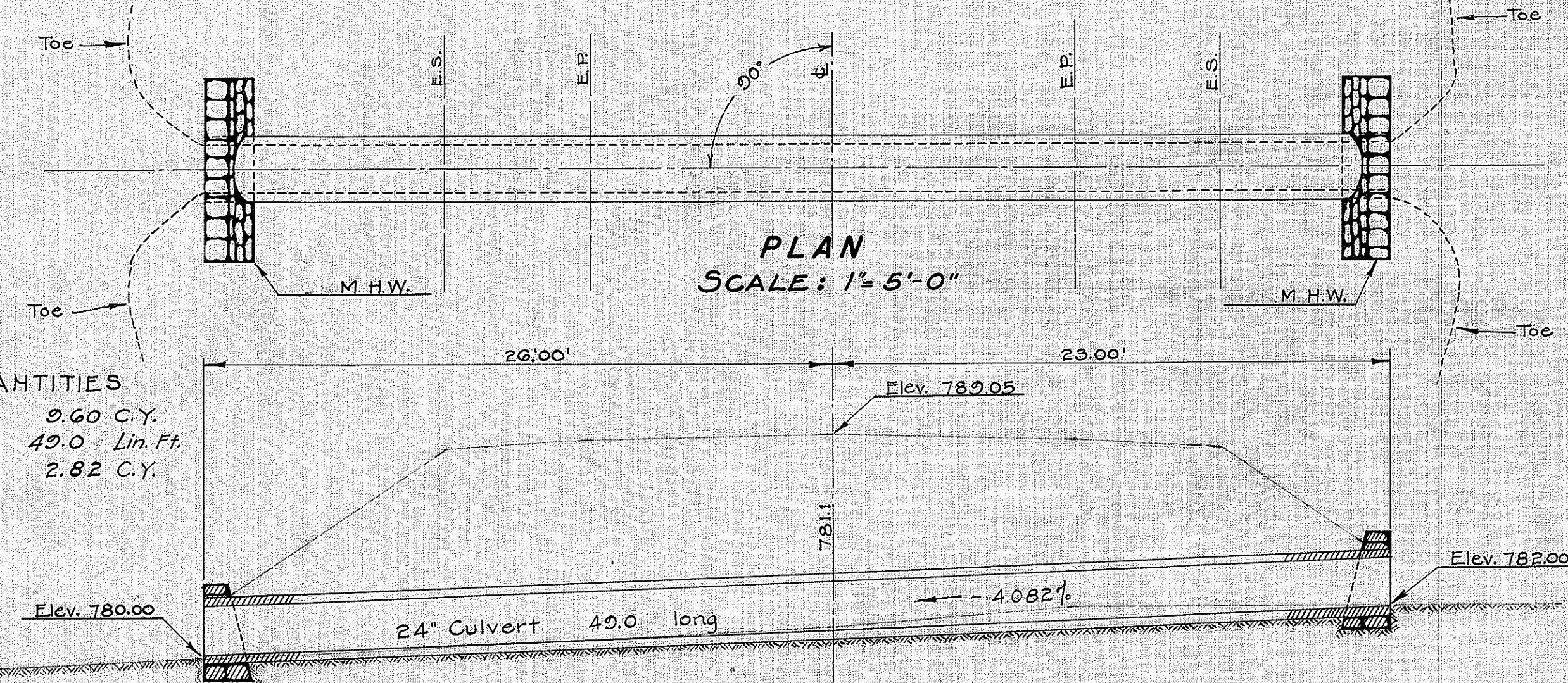
Note: For dimensions of channels, see Std. Outlet Ditch.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
CAST-IN-PLACE CIR. CON. CULV'T.
LOCATIONS AS NOTED
KAU SECTION, HAWAII BELT ROAD F.A.P.-18-B

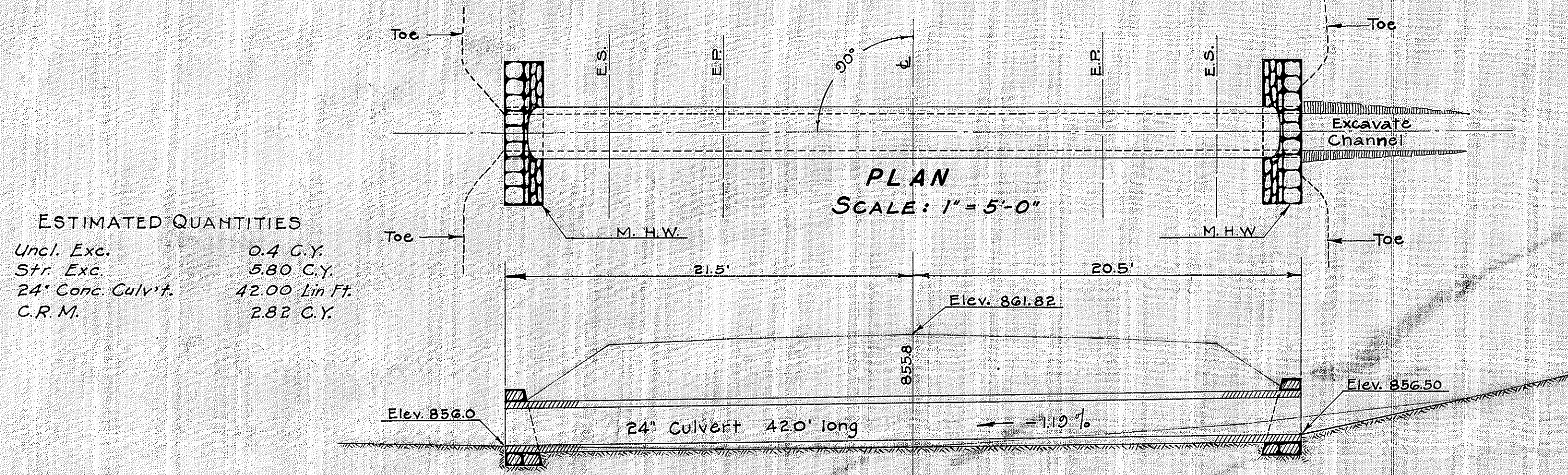
ORIGINAL DESIGNED BY: William Kameh
PLAN DRAWN BY: H. F. Criss
NOTE BOOK: 1158
QUANTITIES BY: Gilbert Kobaake
CHECKED BY: William Kameh



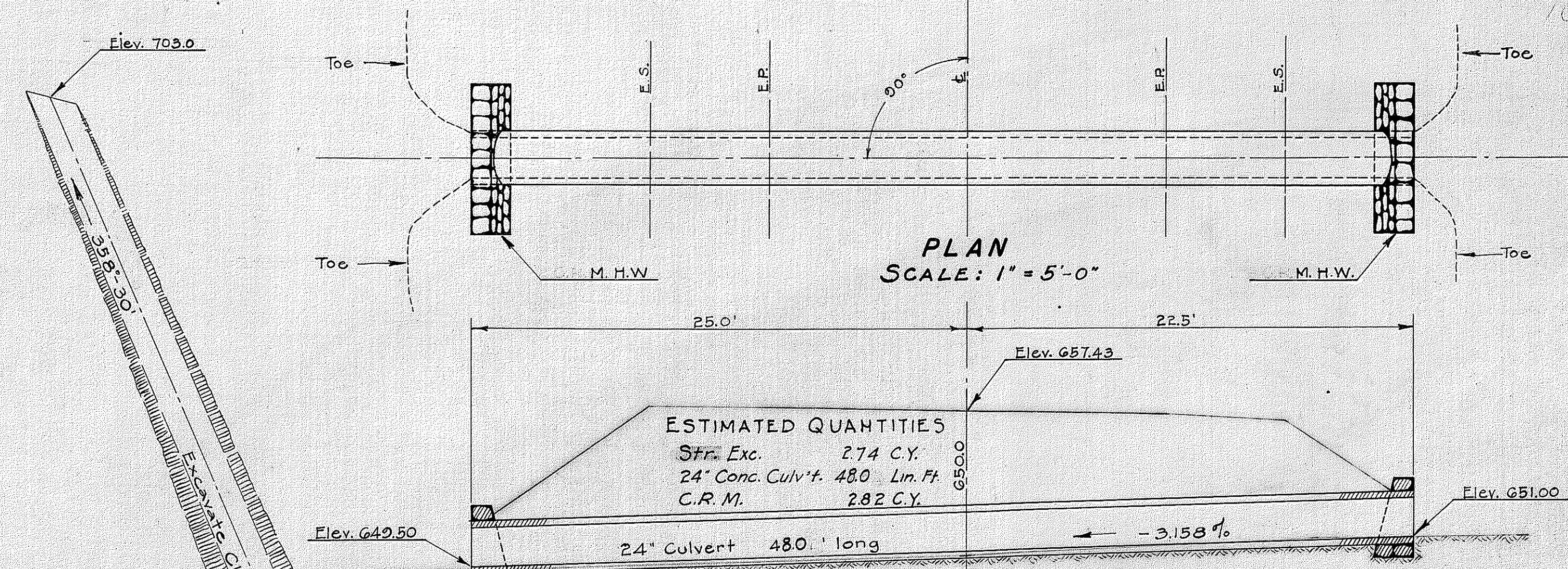
STA. 280+75 STD. 24" CAST-IN-PLACE CIR. CON. CULV'T. 63.0' LONG 2 STD. M. HEADWALLS
SECTION THRU &
SCALE: 1" = 5'-0"



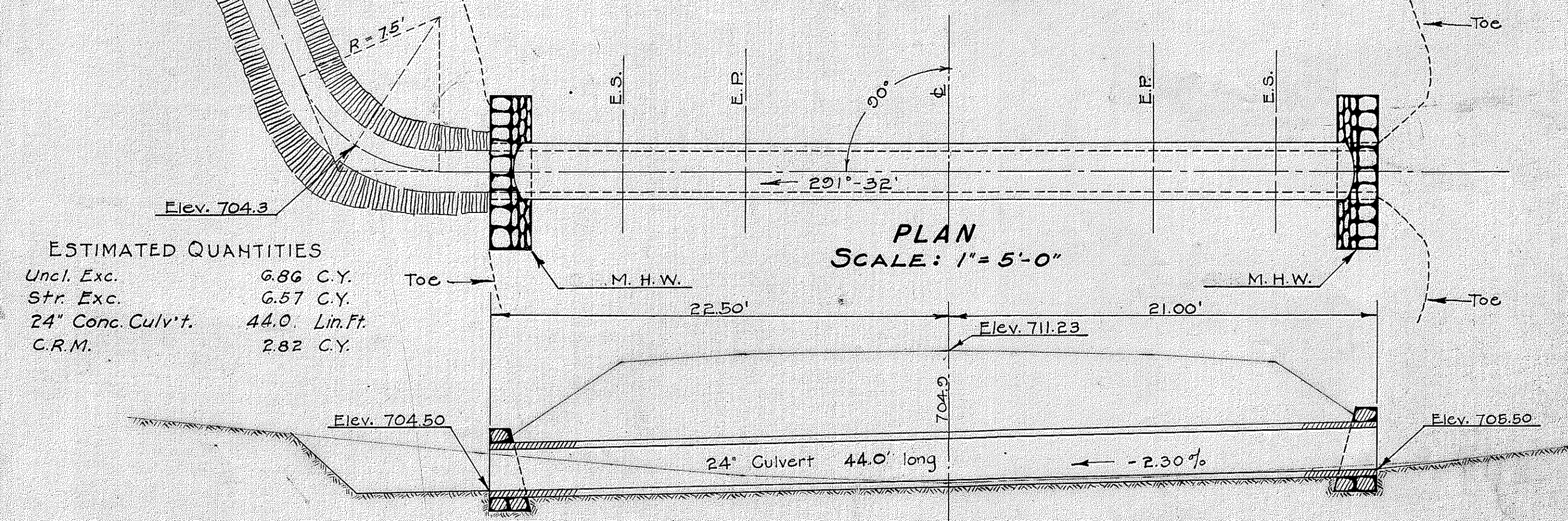
STA. 275+00 STD. 24" CAST-IN-PLACE CIR. CON. CULV'T. 49.0' LONG 2 STD. M. HEADWALLS
SECTION THRU &
SCALE: 1" = 5'-0"



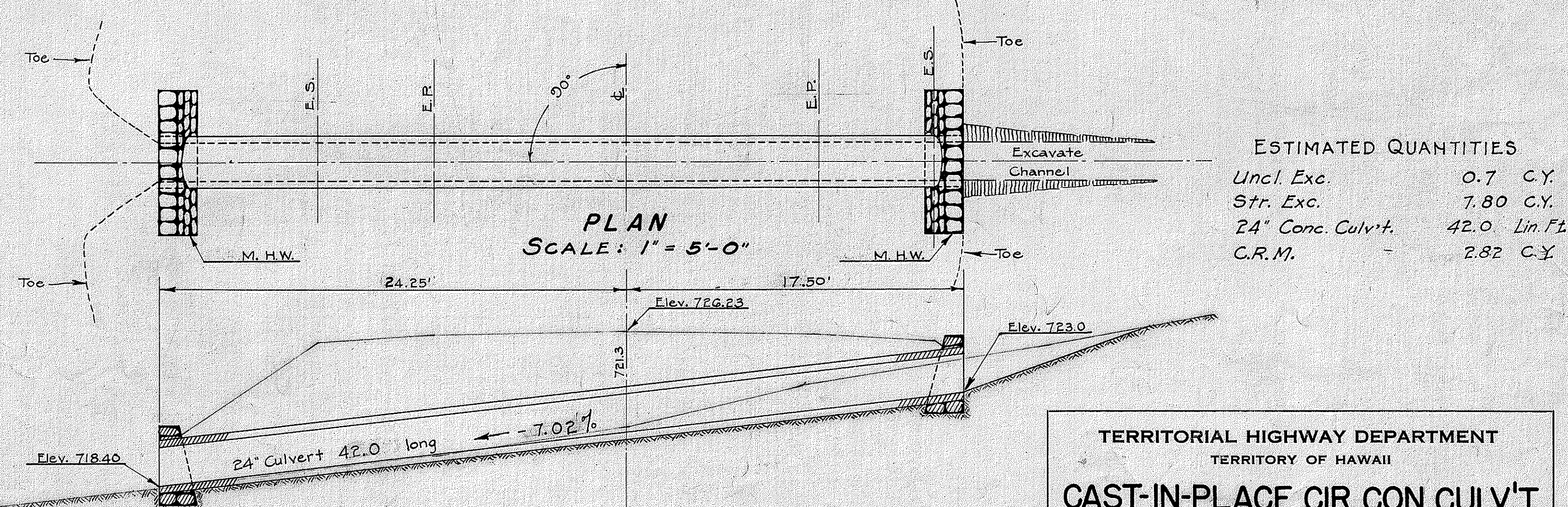
STA. 261+00 STD. 24" CAST-IN-PLACE CIR. CON. CULV'T. 42.00' LONG 2 STD. M. HEADWALLS
SECTION THRU &
SCALE: 1" = 5'-0"



STA. 302+50 STD. 24" CAST-IN-PLACE CIR. CON. CULV'T. 48.0' LONG 2 STD. M. HEADWALLS
SECTION THRU &
SCALE: 1" = 5'-0"



STA. 293+00 STD. 24" CAST-IN-PLACE CIR. CON. CULV'T. 44.0' LONG 2 STD. M. HEADWALLS
SECTION THRU &
SCALE: 1" = 5'-0"

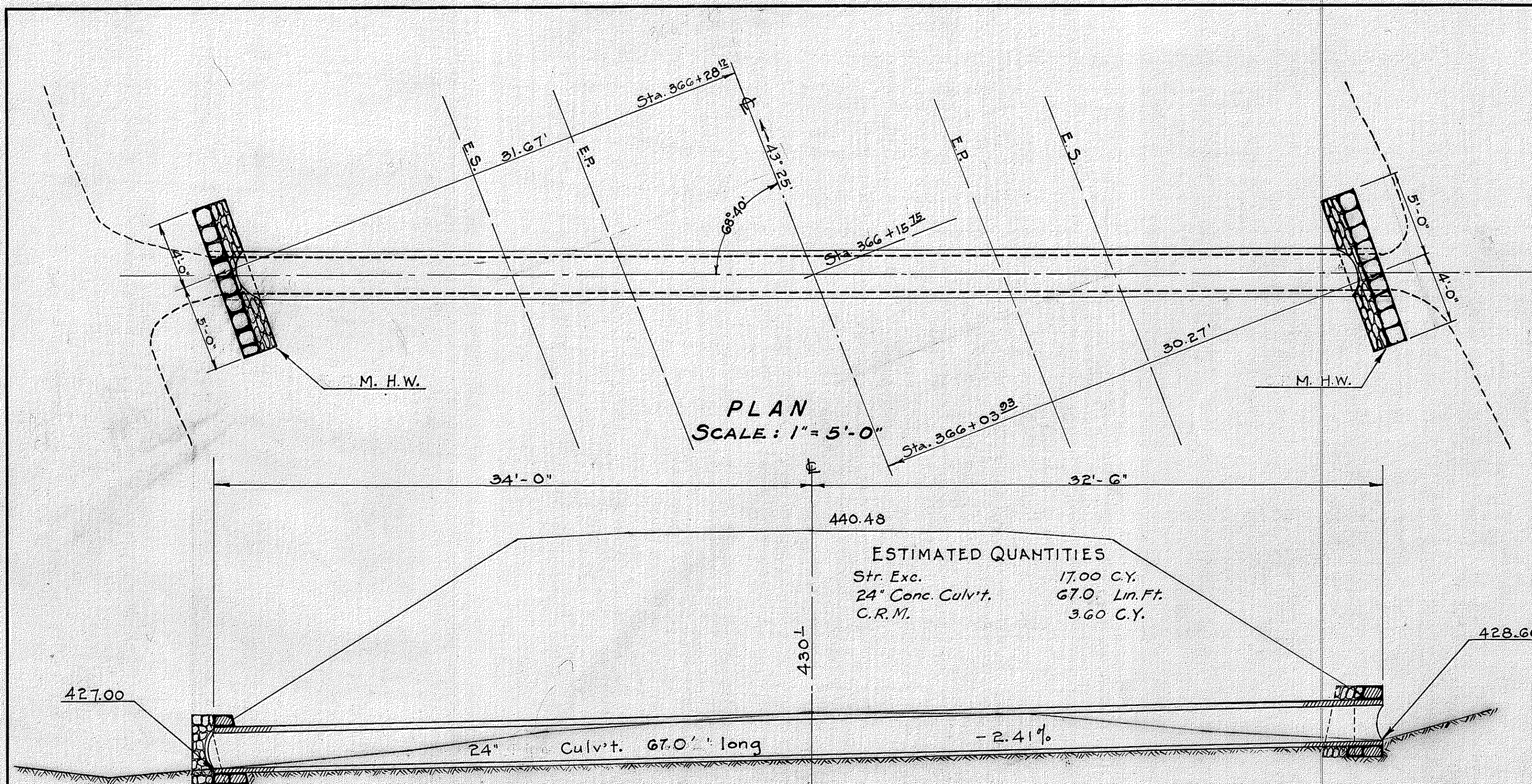


STA. 290+50 STD. CAST-IN-PLACE CIR. CON. CULV'T. 42.0' LONG 2 STD. M. HEADWALLS
SECTION THRU &
SCALE: 1" = 5'-0"

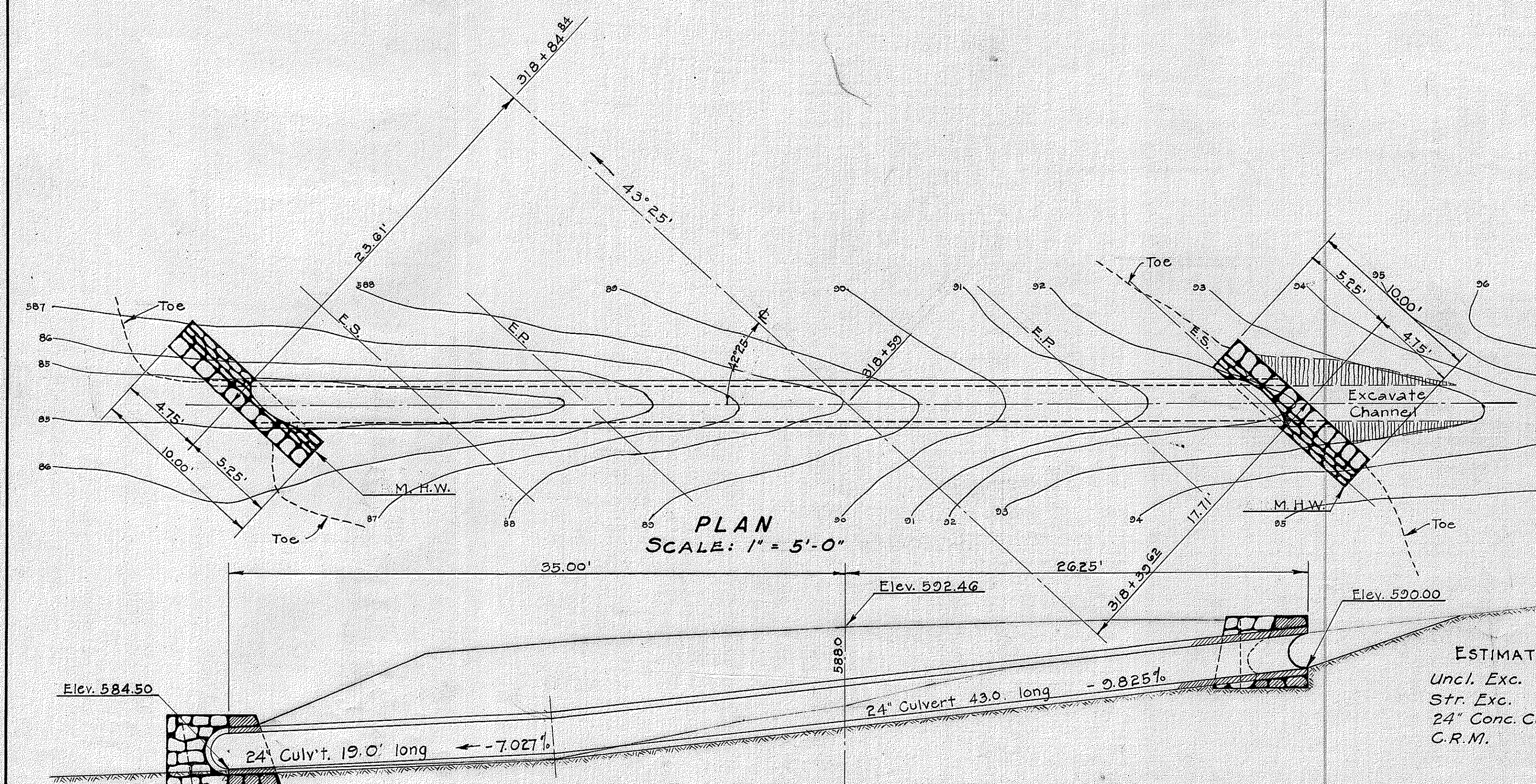
NOTE! For dimensions of channel, see Std. Outlet Ditch.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
CAST-IN-PLACE CIR. CON. CULV'T.
LOCATIONS AS NOTED
KAU SECTION, HAWAII BELT ROAD FAP-18-B

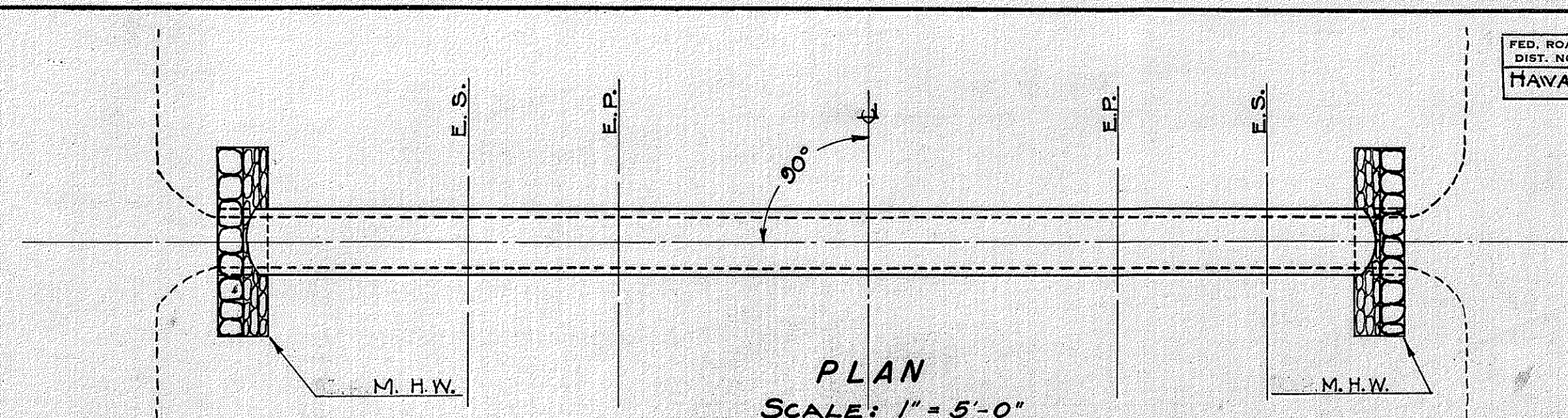
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	18B	1936	17	39



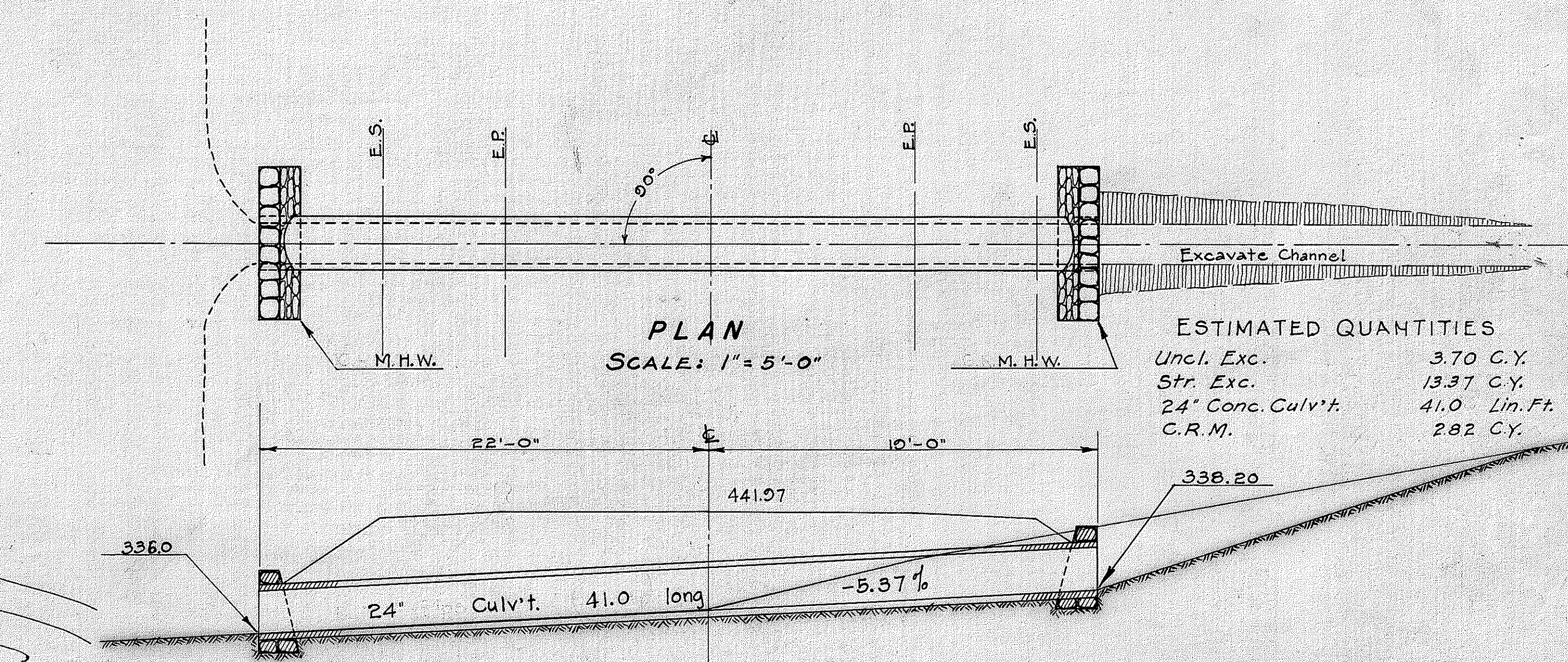
STA. 366+15.75 STD. 24" CAST-IN-PLACE CIR. CON. CULV'T. 67.0' LONG 2 SPECIAL M. HEADWALLS
SECTION THRU
SCALE: 1" = 5'-0"



STA. 318+59 STD. 24" CAST-IN-PLACE CIR. CON. CULV'T. 62.0' LONG 2 SPECIAL M. HEADWALLS
SECTION THRU
SCALE: 1" = 5'-0"



STA. 378+00 STD. 24" CAST-IN-PLACE CIR. CON. CULV'T. 48.0' LONG 2 STD. M. HEADWALLS
SECTION THRU
SCALE: 1" = 5'-0"



STA. 371+50 STD. 24" CAST-IN-PLACE CIR. CON. CULV'T. 41.0' LONG 2 STD. M. HEADWALLS
SECTION THRU
SCALE: 1" = 5'-0"

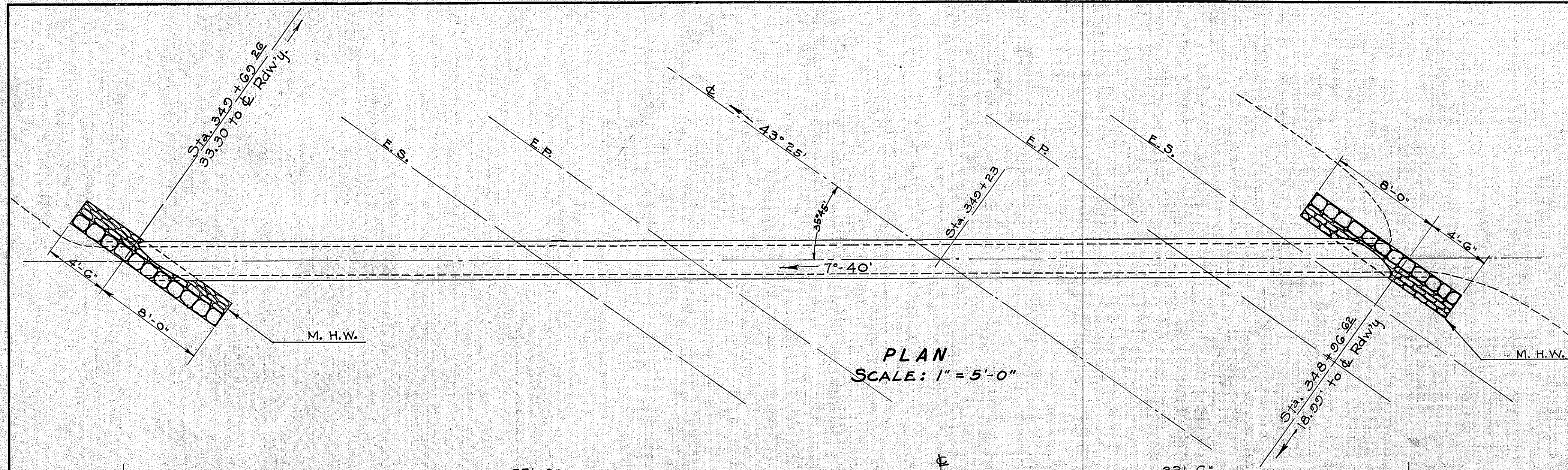
NOTE! For dimensions of channel, see Std. Outlet Ditch.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
CAST-IN-PLACE CIR. CON. CULV'T
LOCATIONS AS NOTED
KAU SECTION HAWAII BELT ROAD F.A.P.-18-B

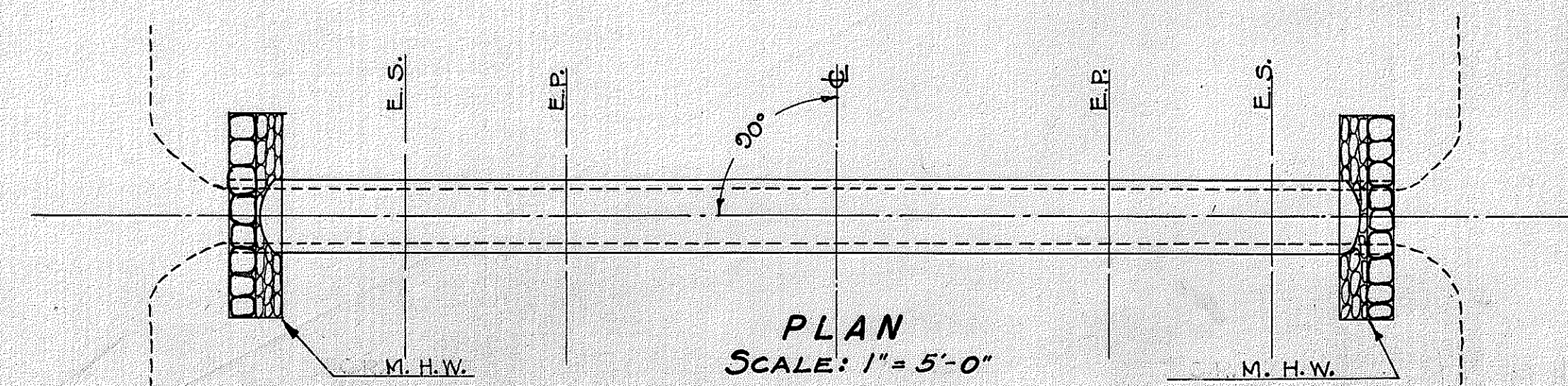
SURVEY PLOTTED BY William Kamau DATE Sept. 30, 1936
DESIGNED BY H. F. Criss
DRAWN BY Gilbert Katschke
CHECKED BY William Kamau

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	108	1936	18	39

ESTIMATED QUANTITIES
 Str. Exc. 5.00 C.Y.
 24" Conc. Culv't. 43.0' Lin. Ft.
 C.R.M. 2.82 C.Y.

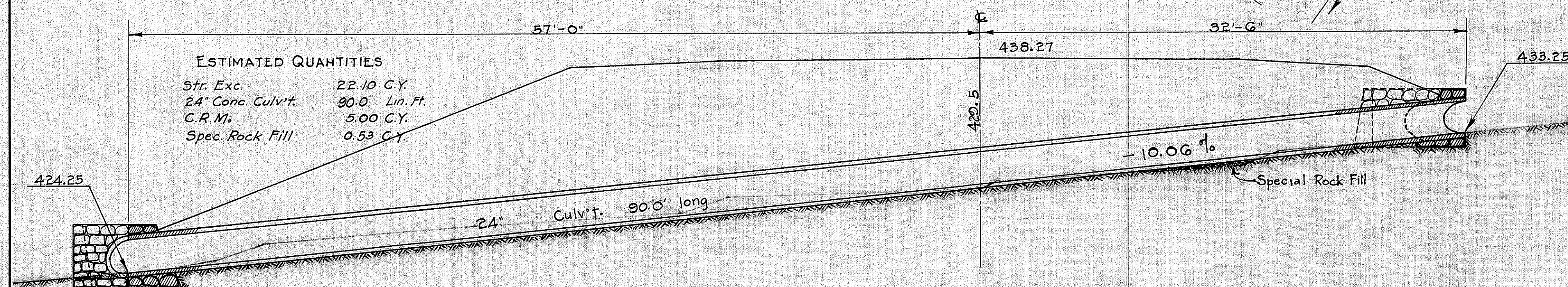


PLAN
 SCALE: 1" = 5'-0"



PLAN
 SCALE: 1" = 5'-0"

ESTIMATED QUANTITIES
 Str. Exc. 22.10 C.Y.
 24" Conc. Culv't. 90.0' Lin. Ft.
 C.R.M. 5.00 C.Y.
 Spec. Rock Fill 0.53 C.Y.

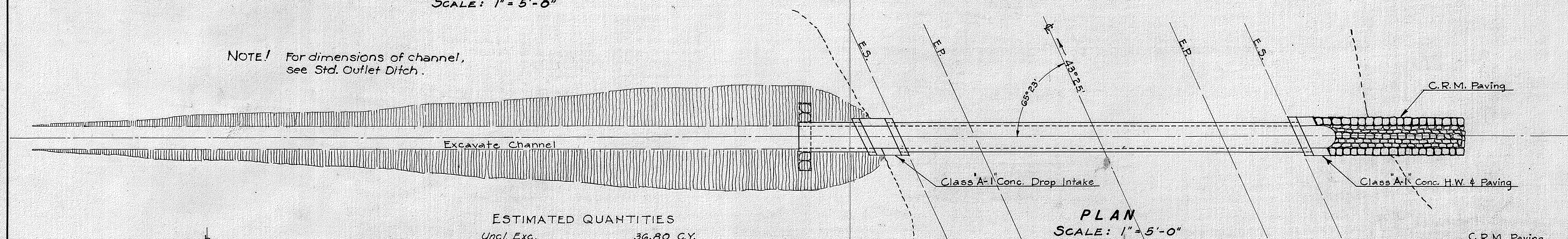


STA. 349+23 STD. 24" CAST-IN-PLACE CIR. CON. CULV'T 90.0' LONG 2 SPECIAL M. HEADWALLS
 SECTION THRU &
 SCALE: 1" = 5'-0"

STA. 375+50 STD. 24" CAST-IN-PLACE CIR. CON. CULV'T 43.0' LONG 2 STD. M. HEADWALLS

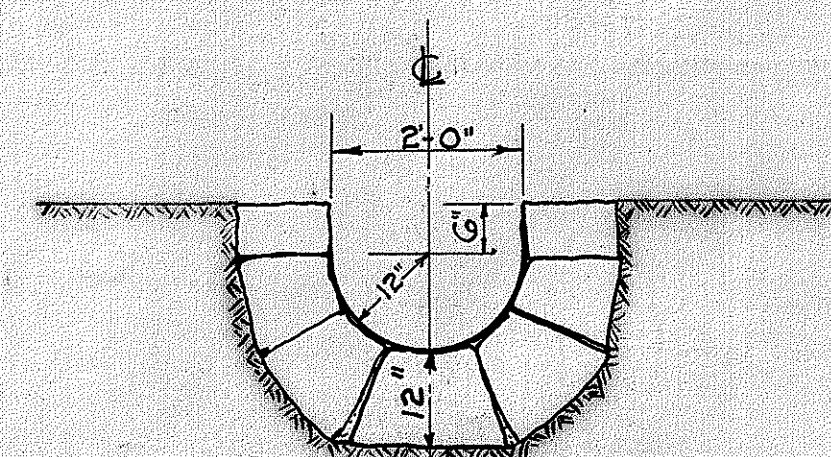
SECTION THRU &
 SCALE: 1" = 5'-0"

NOTE! For dimensions of channel, see Std. Outlet Ditch.

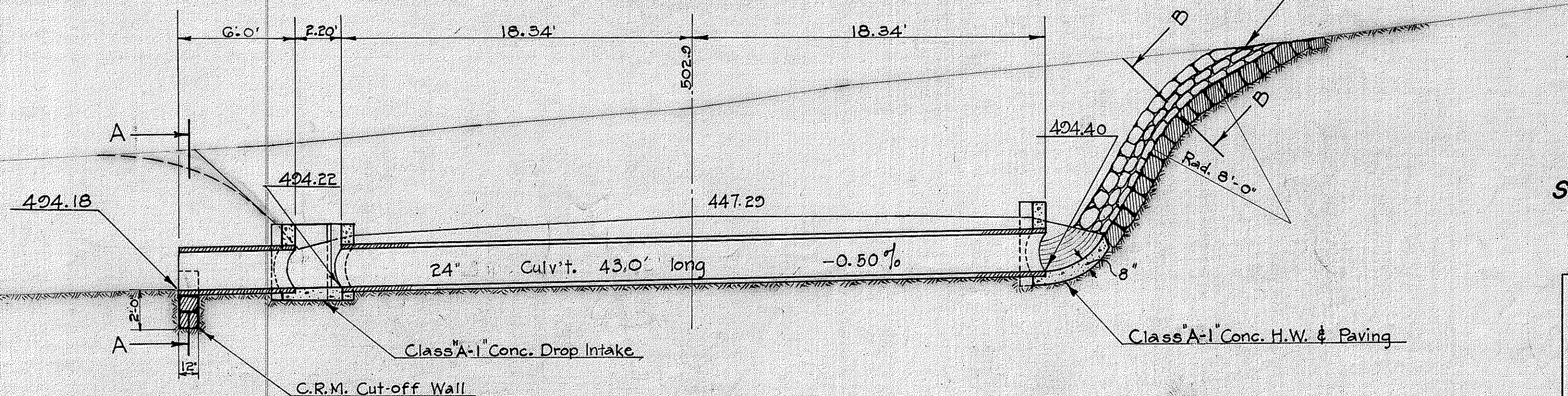


PLAN
 SCALE: 1" = 5'-0"

ESTIMATED QUANTITIES
 Uncl. Exc. 36.80 C.Y.
 Str. Exc. 30.23 C.Y.
 24" Conc. Culv't. 43.0' Lin. Ft.
 C.R.M. 5.98 C.Y.
 Class 'A' Conc. 2.33 C.Y.

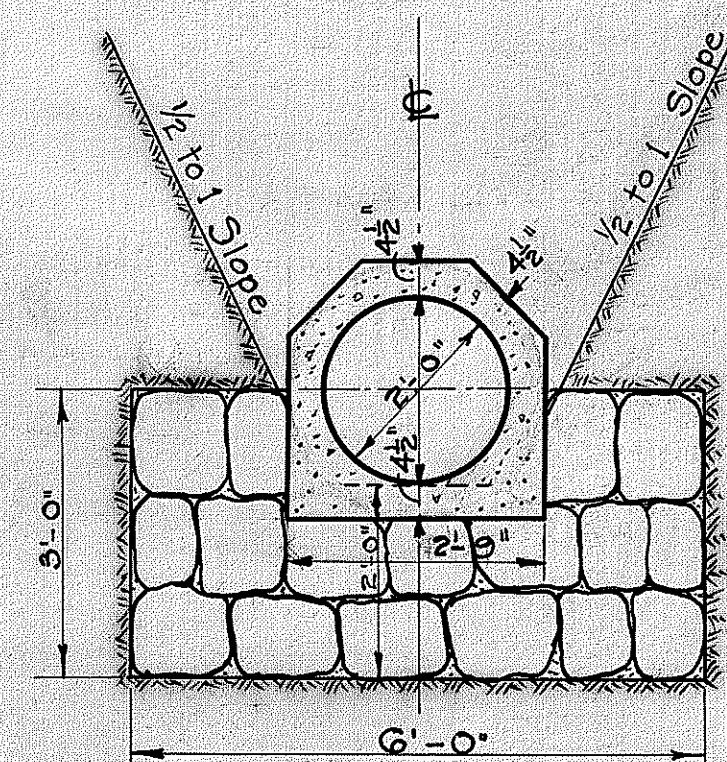


SECTION "B-B" OF C.R.M. PAVING
 SCALE: 1" = 2'-0"



STA. 336+75 STD. 24" CAST-IN-PLACE CIR. CON. CULV'T. 43.0' LONG 2 SPECIAL C.R.M. HEADWALLS

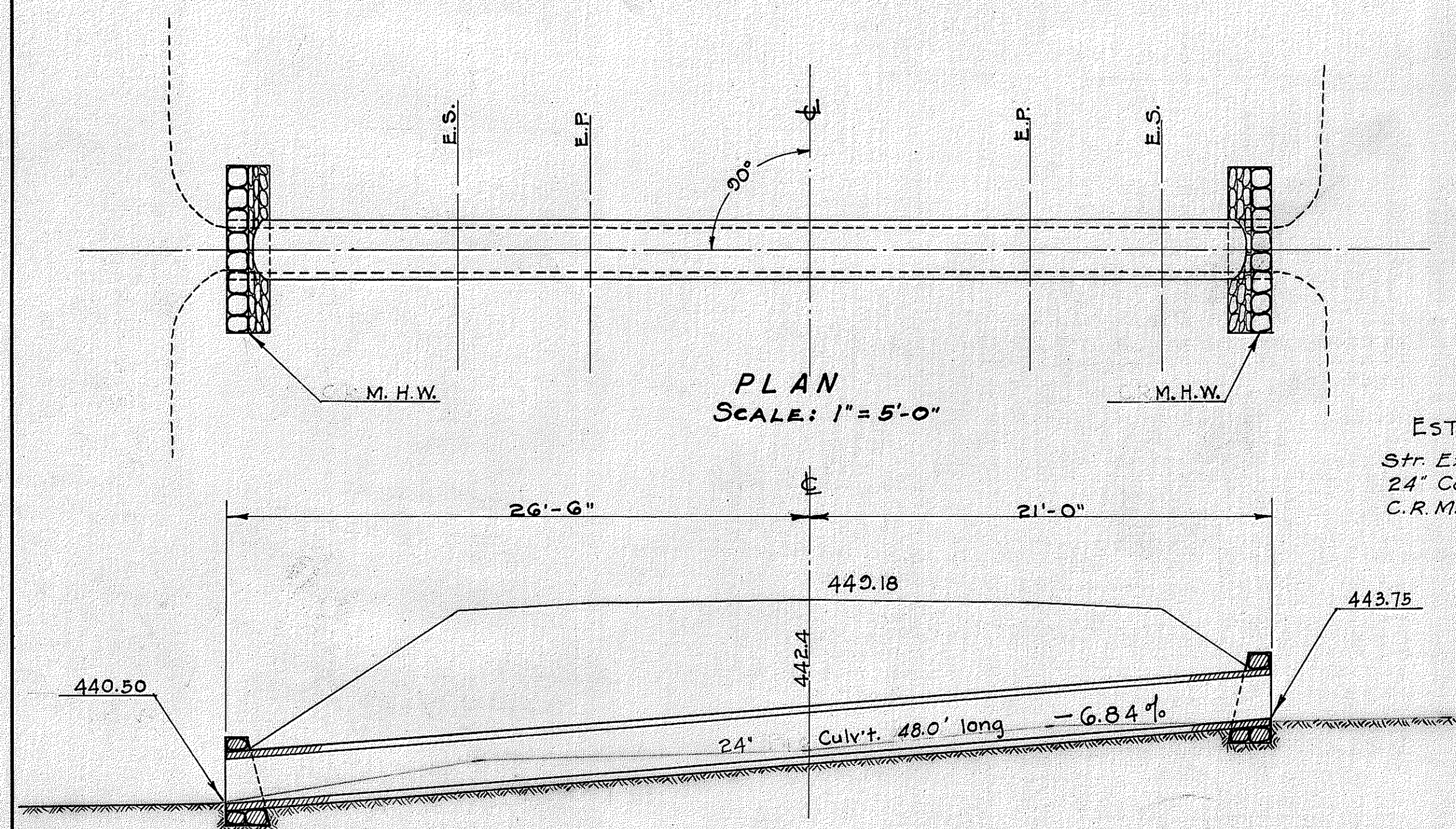
SECTION THRU &
 SCALE: 1" = 5'-0"



SECTION "A-A" OF CUT OFF WALL
 SCALE: 1" = 2'-0"

TERRITORIAL HIGHWAY DEPARTMENT
 TERRITORY OF HAWAII
 CAST-IN-PLACE CIR. CON. CULV'T
 LOCATIONS AS NOTED
 KAU SECTION HAWAII BELT ROAD F.A.P-18-B

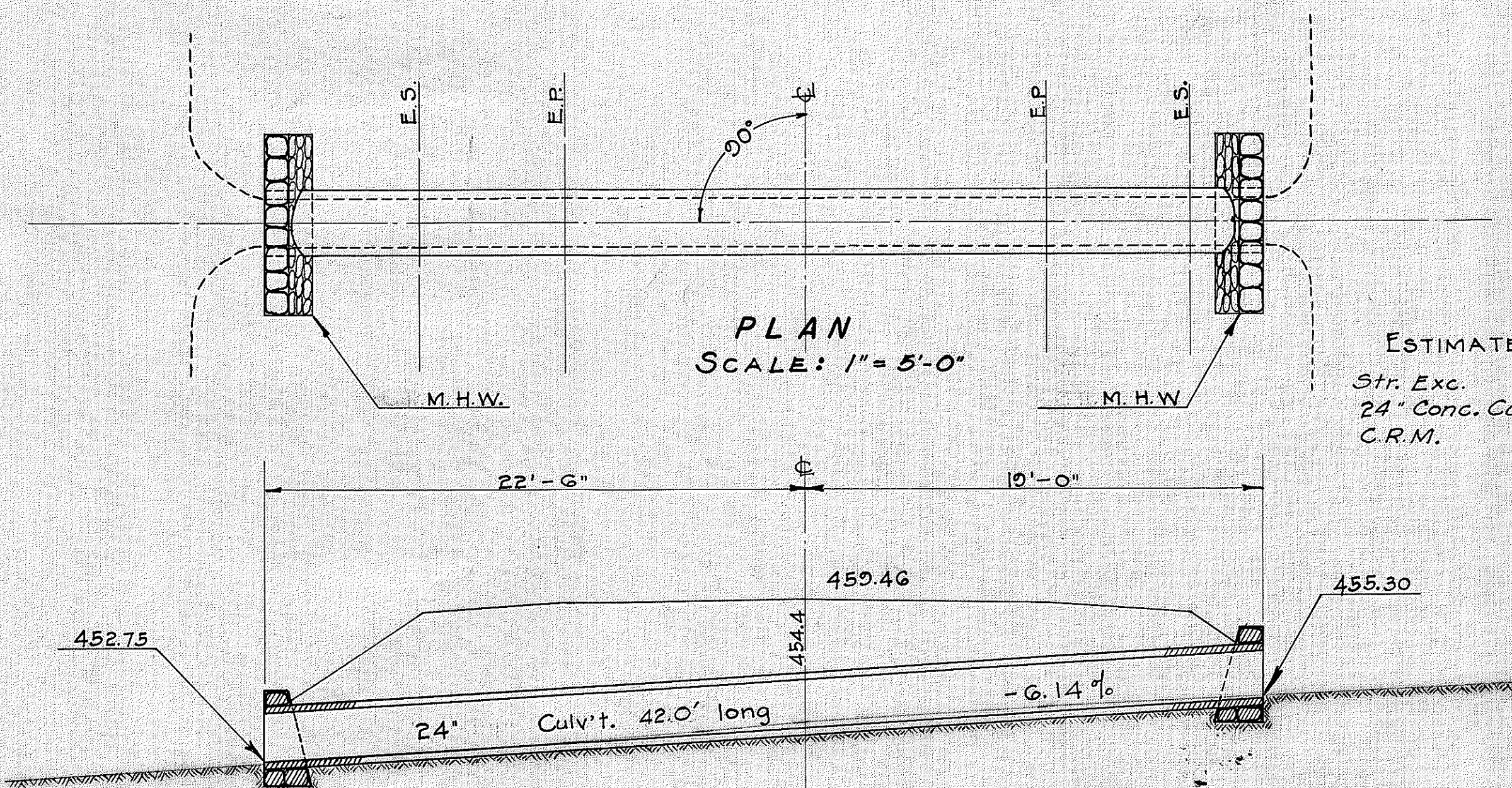
SURVEY PLOTTED BY William Kamau DATE Sept. 36
 DESIGNED BY H. F. Criss
 TRACED BY Gilbert Kobayake
 QUANTITIES BY William Kamau
 CHECKED BY
 ORIGINAL PLAN
 NOTE BOOK
 No.



ESTIMATED QUANTITIES
 Str. Exc. 10.85 C.Y.
 24" Conc. Culv't. 48.0 Lin. Ft.
 C.R.M. 2.82 C.Y.

STA. 399+00 STD. 24" CAST-IN-PLACE CIR. CON. CULV'T. 48.0' LONG 2 STD. M. HEADWALLS

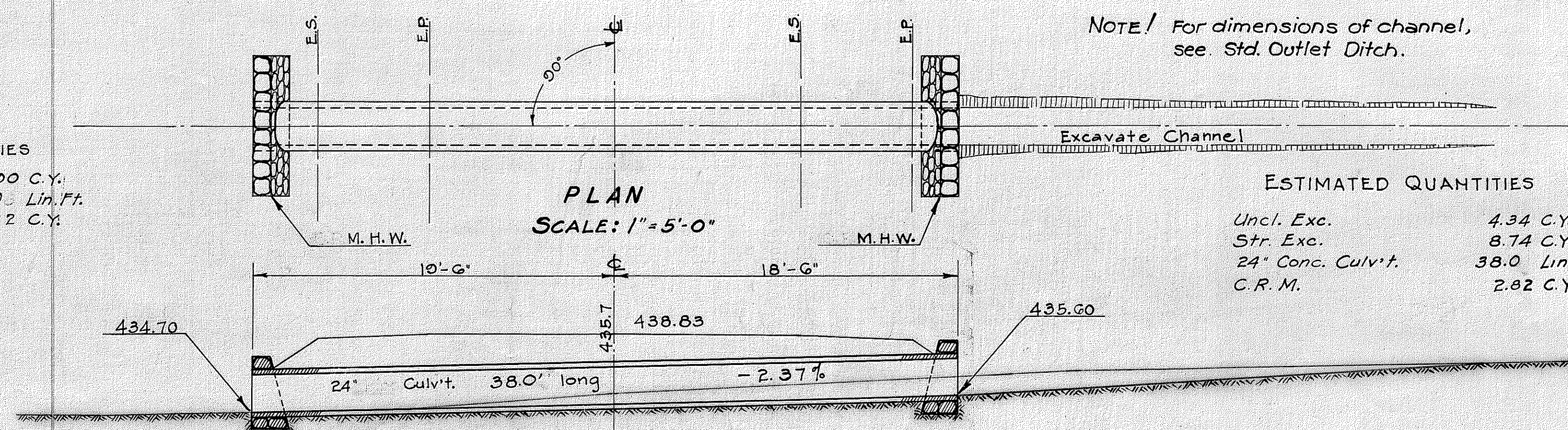
SECTION THRU ϕ
 SCALE: 1" = 5'-0"



ESTIMATED QUANTITIES
 Str. Exc. 5.90 C.Y.
 24" Conc. Culv't. 42.0 Lin. Ft.
 C.R.M. 2.82 C.Y.

STA. 383+00 STD. 24" CAST-IN-PLACE CIR. CON. CULV'T. 42.0' LONG 2 STD. M. HEADWALLS

SECTION THRU ϕ
 SCALE: 1" = 5'-0"



NOTE: For dimensions of channel, see Std. Outlet Ditch.

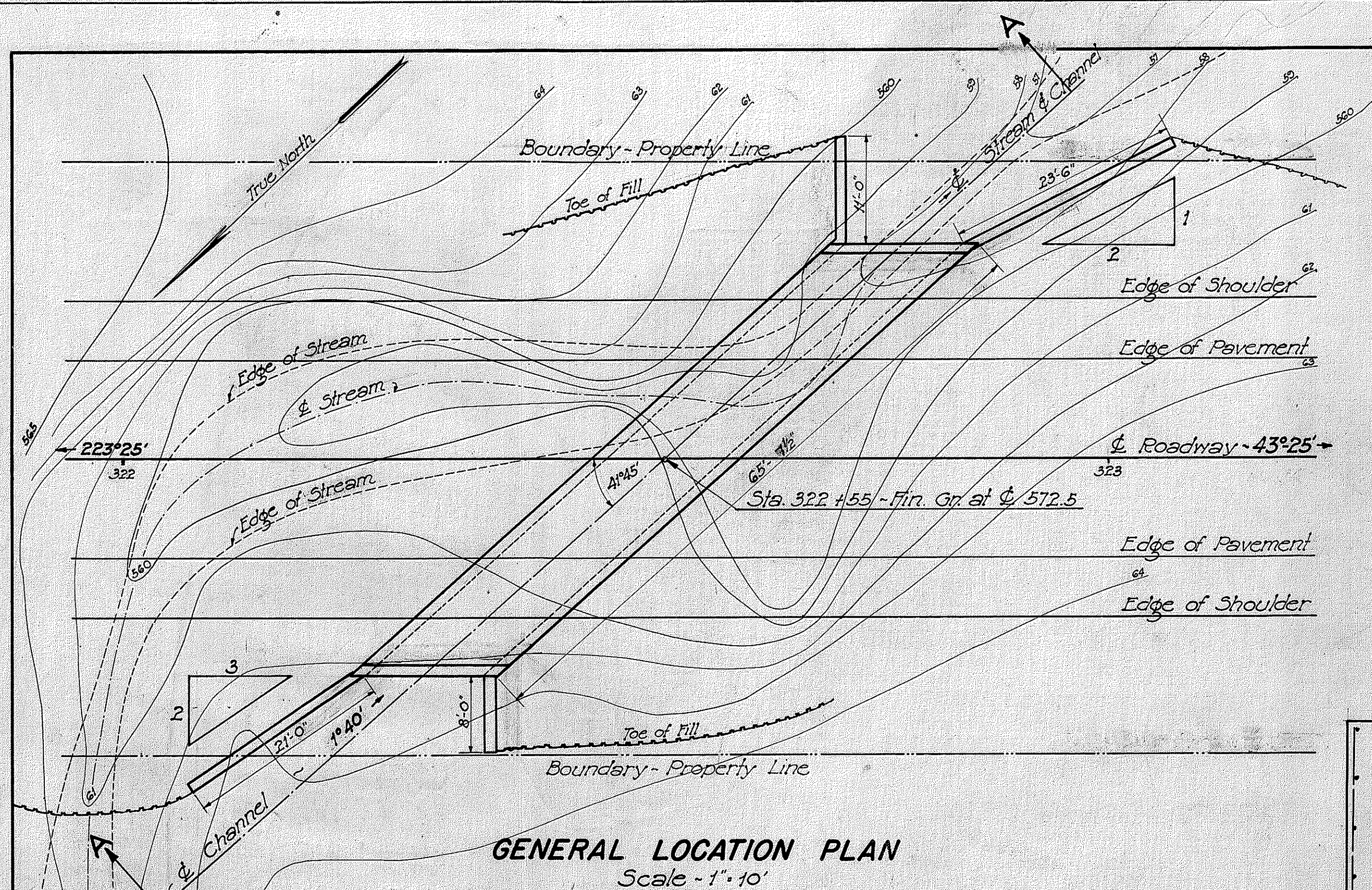
ESTIMATED QUANTITIES
 Uncl. Exc. 4.34 C.Y.
 Str. Exc. 8.74 C.Y.
 24" Conc. Culv't. 38.0 Lin. Ft.
 C.R.M. 2.82 C.Y.

STA. 421+50 STD. 24" CAST-IN-PLACE CIR. CON. CULV'T. 38.0' LONG 2 STD. M. HEADWALLS

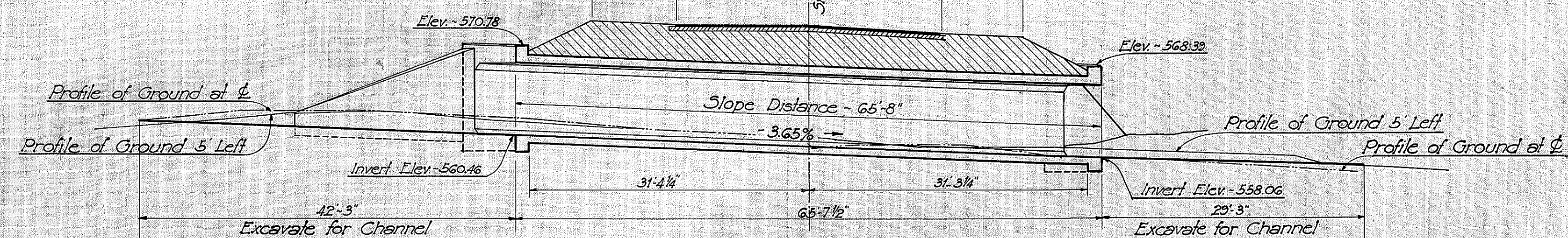
SECTION THRU ϕ
 SCALE: 1" = 5'-0"

TERRITORIAL HIGHWAY DEPARTMENT
 TERRITORY OF HAWAII
CAST-IN-PLACE CIR. CON. CULV'T.
 LOCATIONS AS NOTED
 KAU SECTION, HAWAII BELT ROAD F.A.P-18-B

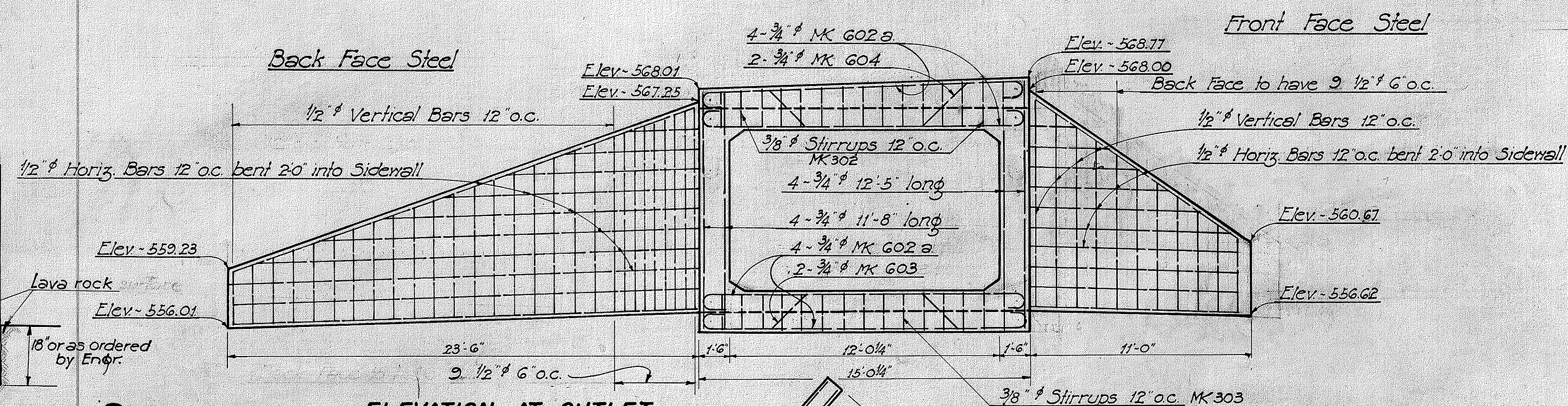
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	188	1936	20	39



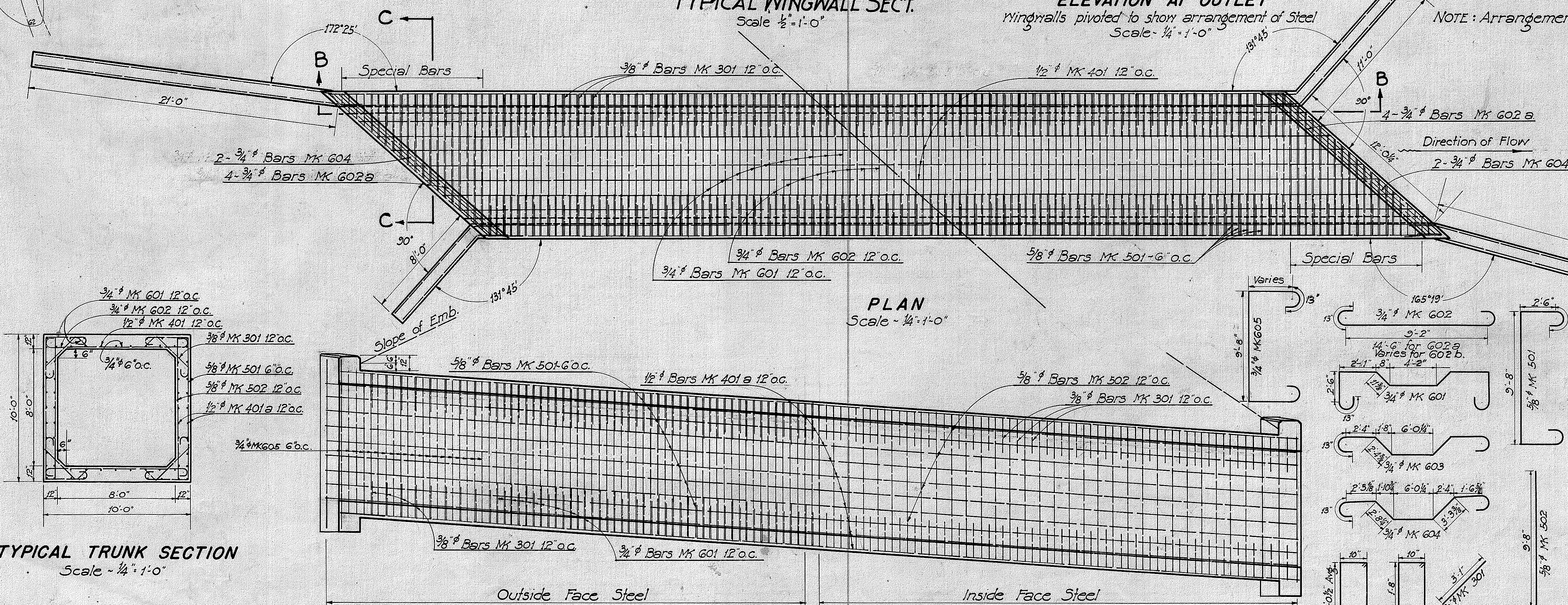
GENERAL LOCATION PLAN
Scale - 1" = 10'



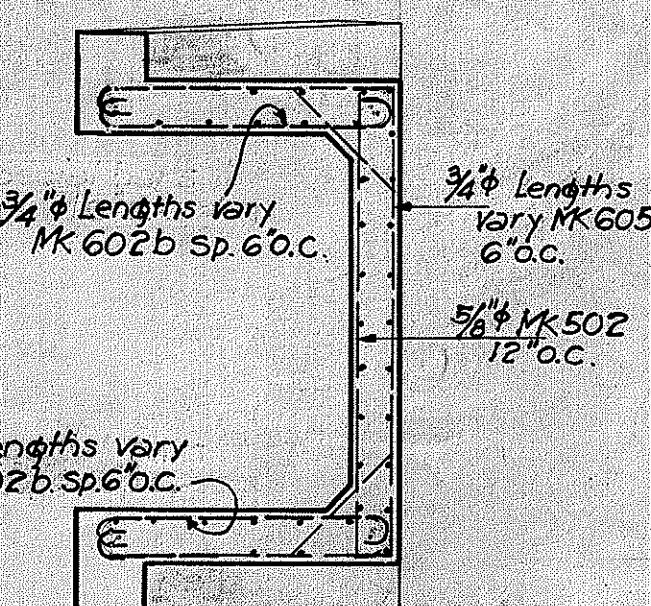
SECTION A-A
Scale: 1" = 10'



ELEVATION AT OUTLET



TYPICAL TRUNK SECTION
Scale ~ 1/4" = 1'-0"



SECTION C-C
Scale $\frac{1}{4}'' = 1'-0''$

QUANTITIES

Class A Conc.	110.5	Cu. Yds.
Structure Exc.	60.0	Cu. Yds.
Channel Exc.	30.0	Cu. Yds.
Reinf. Steel	16,100	Lbs.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
8' X 8' BOX CULVERT
AT STA. 322 + 55
HAWAII BELT ROAD - F.A.P. 18.B.

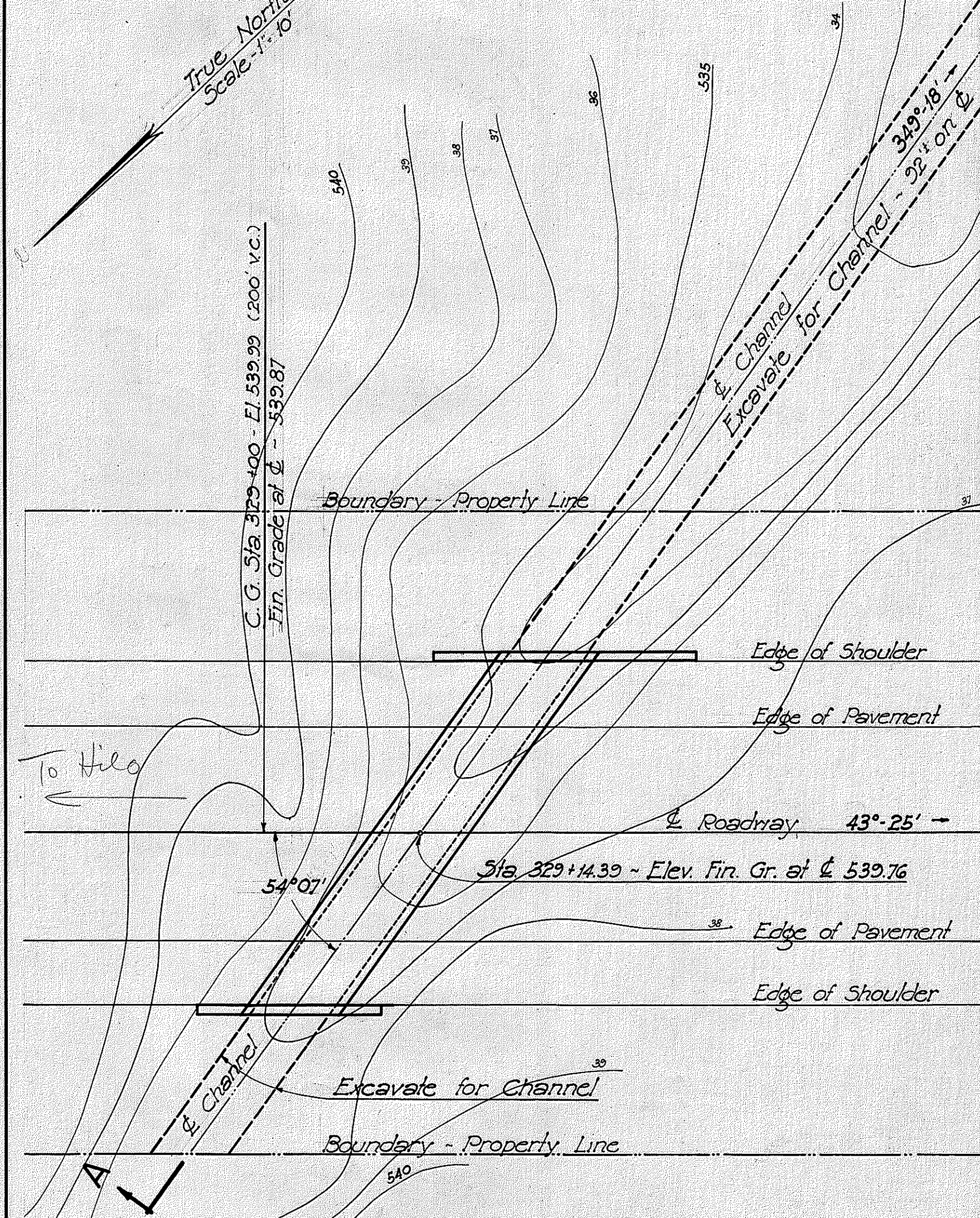
SHEET No OF SHEETS

SHEET N° OF SHEETS
4386.20

ORIGINAL PLAN	SURVEY PLOTTED BY DESIGNED BY DRAWN BY	H. F. Criss	DATE " " " " " "	Sept. 36
NOTE BOOK	TRACED BY QUANTITIES BY CHECKED BY	Gilbert Kobatake William Kamau	" " " " " "	" " " " " "
No.				

GENERAL LOCATION PLAN

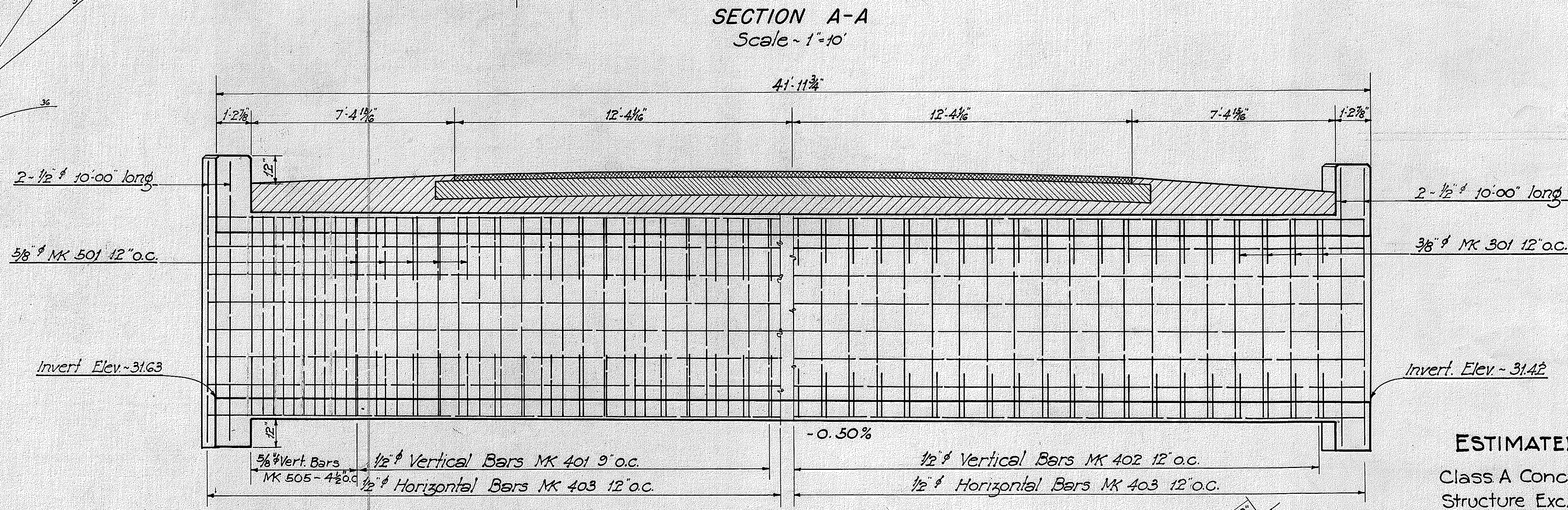
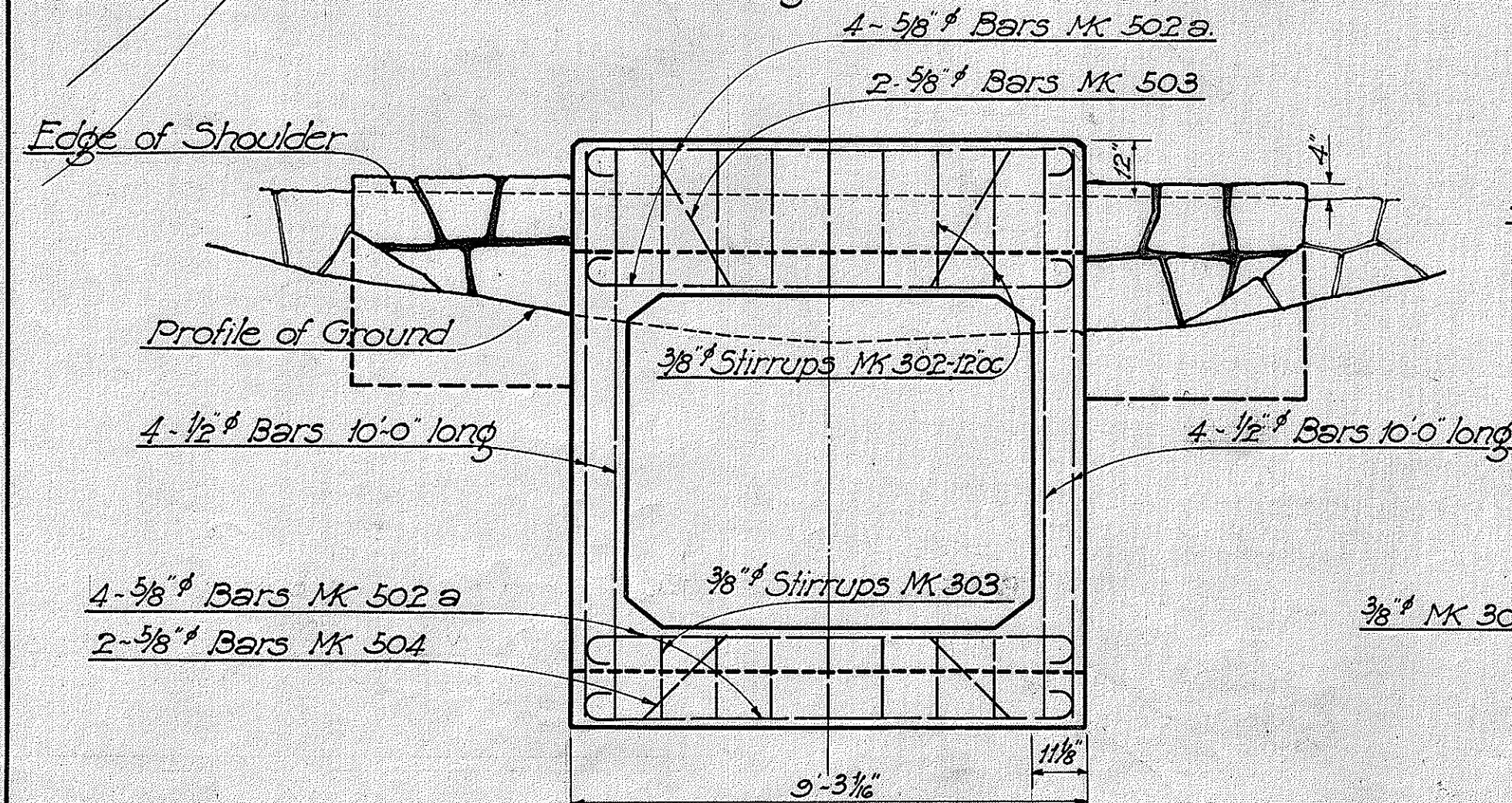
Scale - 1" = 10'



ELEVATION AT INTAKE

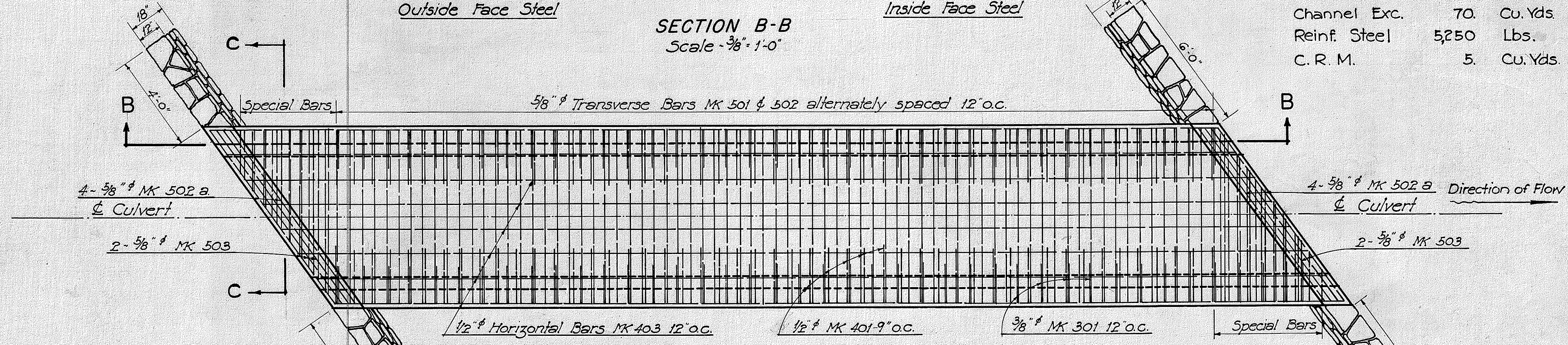
Scale - 3/8" = 1'-0"

Note: Steel arrangement at Outlet Similar



SECTION A-A

Scale - 1" = 10'



SECTION B-B

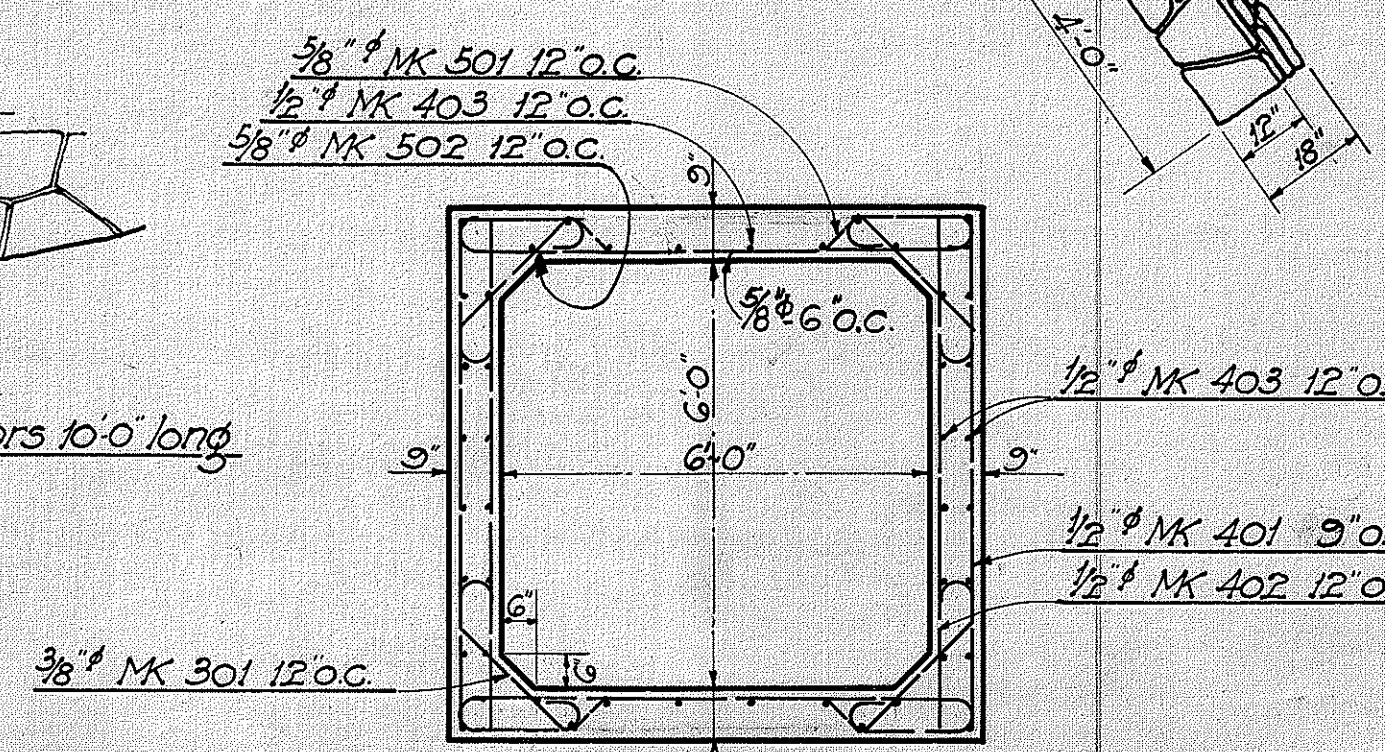
Scale - 3/8" = 1'-0"

ESTIMATED QUANTITIES

Class A Conc.	35.	Cu. Yds.
Structure Exc.	68.	Cu. Yds.
Channel Exc.	70.	Cu. Yds.
Reinf. Steel	5250	Lbs.
C. R. M.	5.	Cu. Yds.

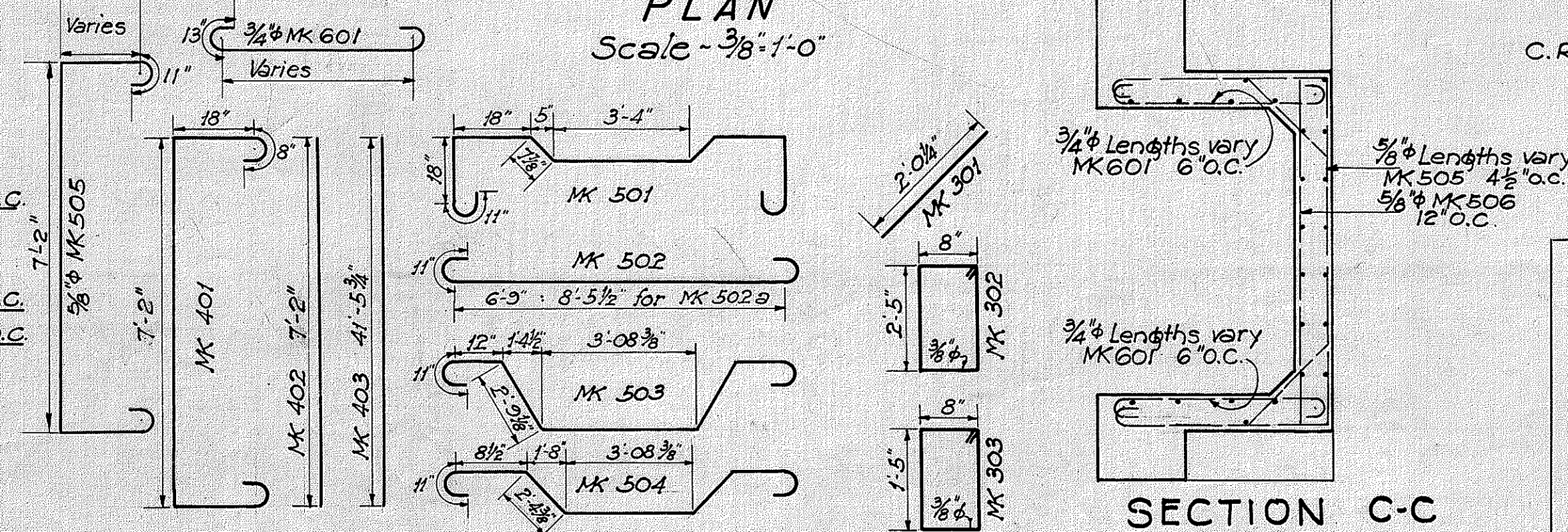
TYPICAL TRUNK SECTION

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

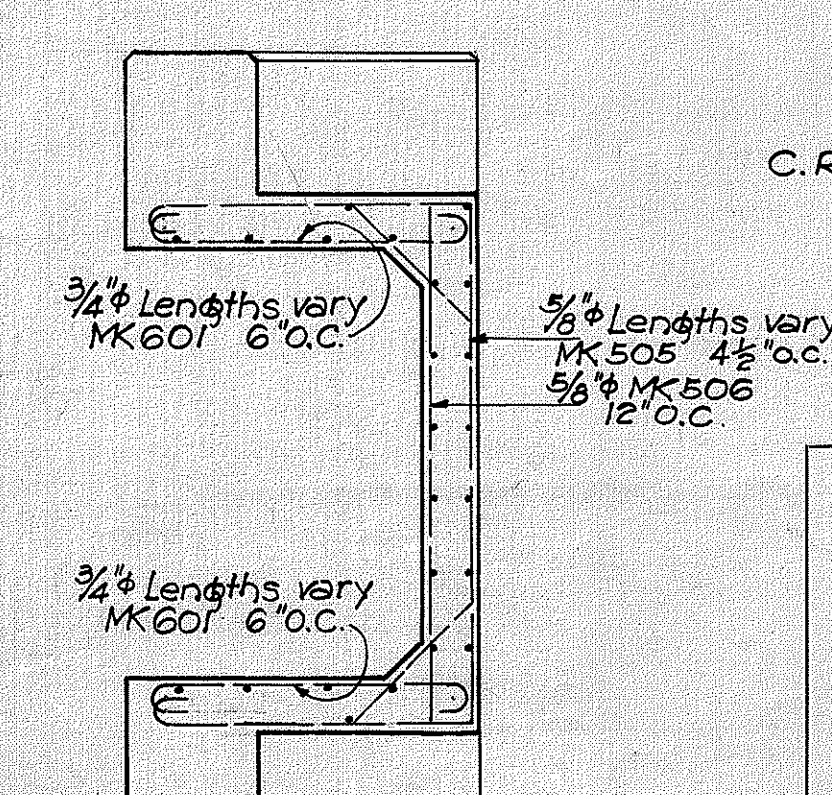


PLAN

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



SECTION C-C SHOWING SPECIAL BARS

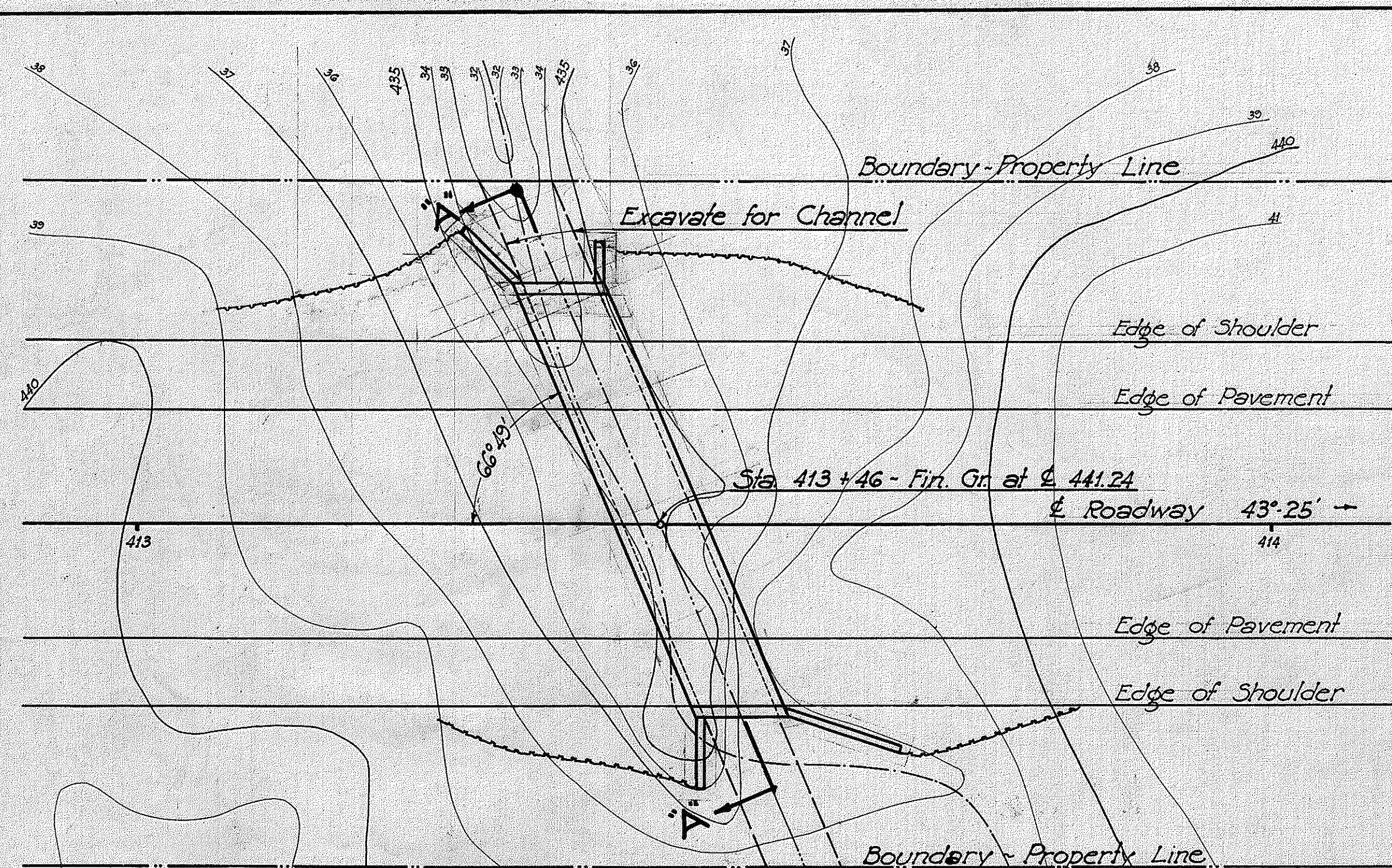


TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

6' X 6' BOX CULVERT
AT STA. 329+14.39
HAWAII BELT ROAD P.A.P. 18B

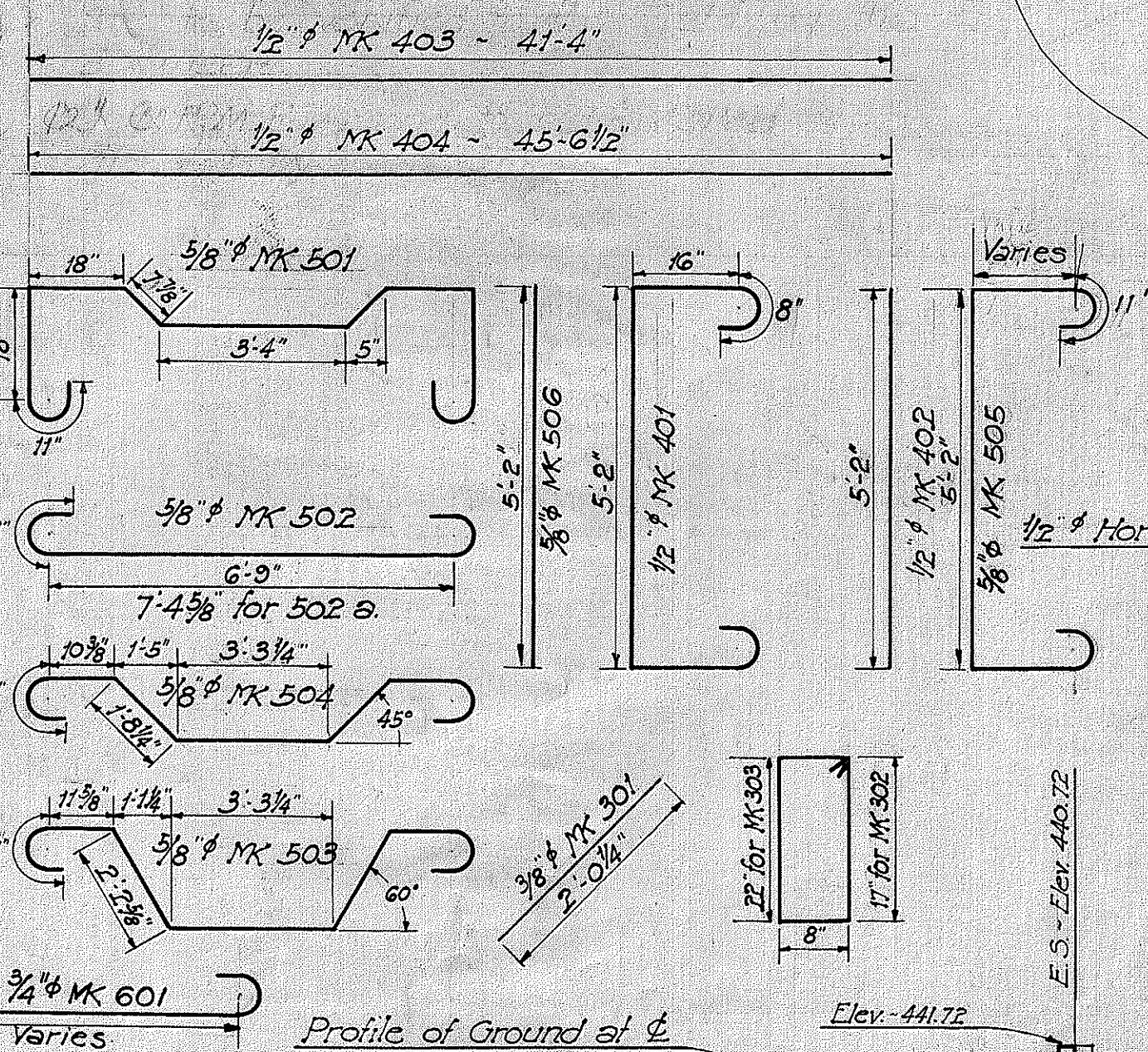
SHEET NO. 21 OF 39 SHEETS

4386.21

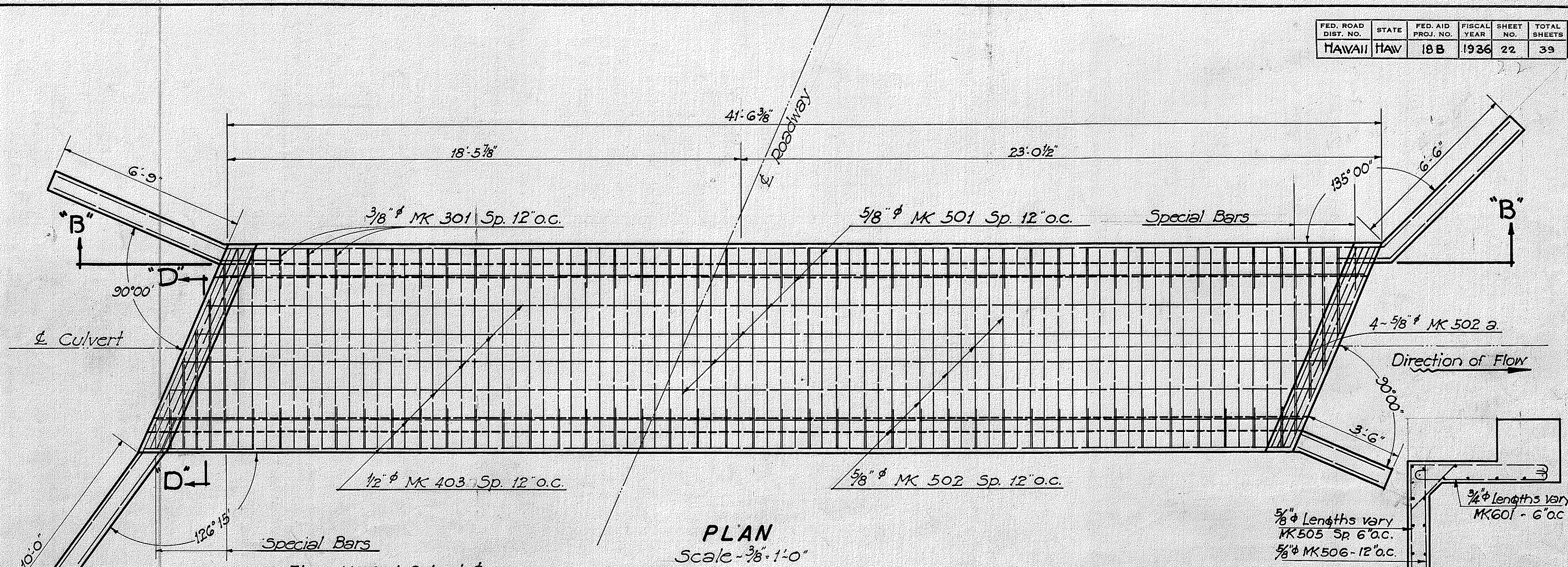


GENERAL LOCATION PLAN
Scale - 1" = 10'-0"

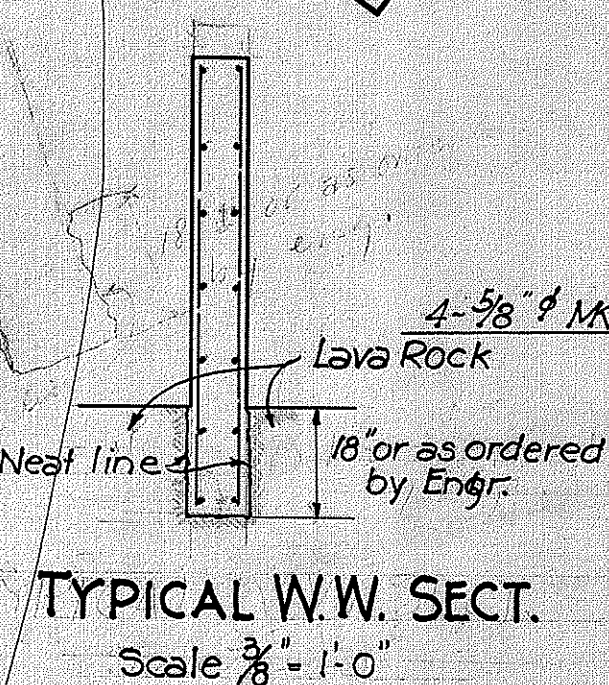
Wingwalls are to be poured integral with Culvert Sidewalls.
Bend Horizontal Bars in Wingwalls 2'-0" into Culvert Sidewalls, and Horizontal Sidewall bars 2'-0" into Wingwall.
Elevations and lengths of Wingwalls are to be verified by the Engineer in charge.
12" C.R.M.P. Aprons are to be installed as directed by the Engineer where necessary.



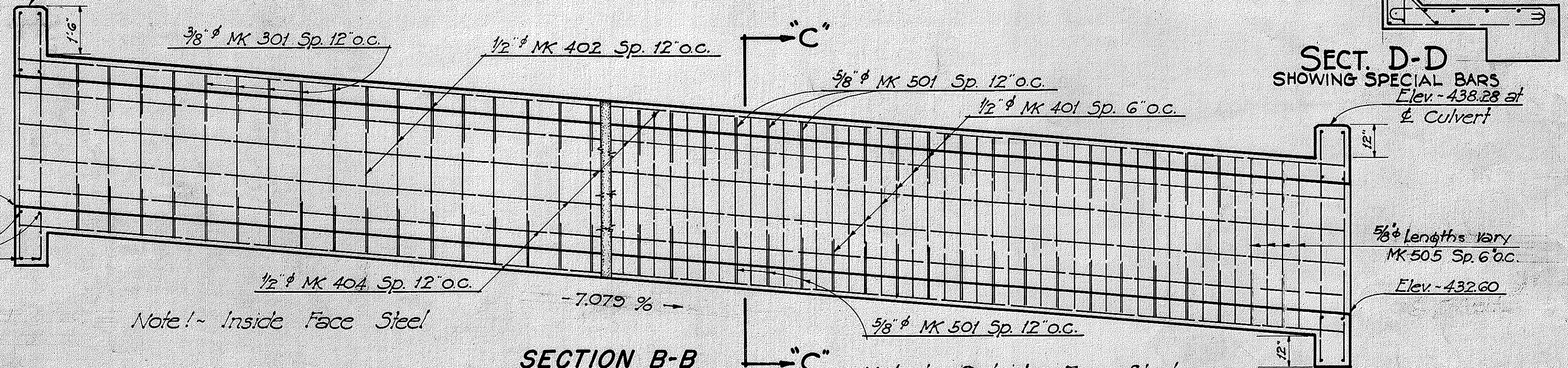
SECTION A-A
Scale - 1" = 10'-0"



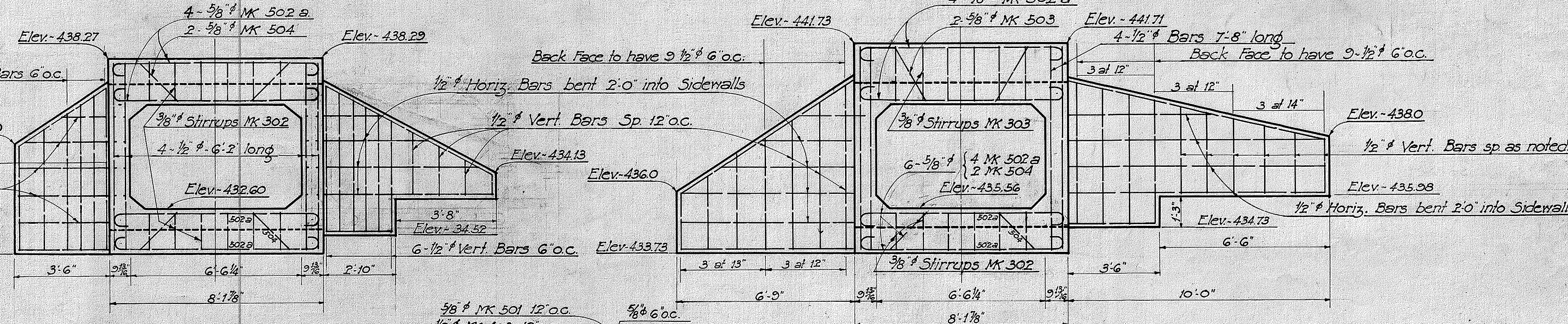
PLAN
Scale - 3/8" = 1'-0"



TYPICAL W.W. SECT.
Scale 3/8" = 1'-0"



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



ELEVATION AT OUTLET
Showing typical arrangement of Back Face W.W. Steel
Scale - 3/8" = 1'-0"

ELEVATION AT INTAKE
Showing typical arrangement of W.W. Front Face Steel
Scale - 3/8" = 1'-0"

QUANTITIES

Class A Concrete --- 323 Cu. Yd.
Structure Exc. --- 20 Cu. Yd.
Channel Exc. --- 60 Cu. Yd.
Reinf. Steel --- 5400 Lbs.

TYPICAL TRUNK SECTION C-C
Scale - 3/8" = 1'-0"

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
4' X 6' BOX CULVERT
AT STA. 413 + 46
HAWAII BELT ROAD F.A.P. 18B
Scales As Noted