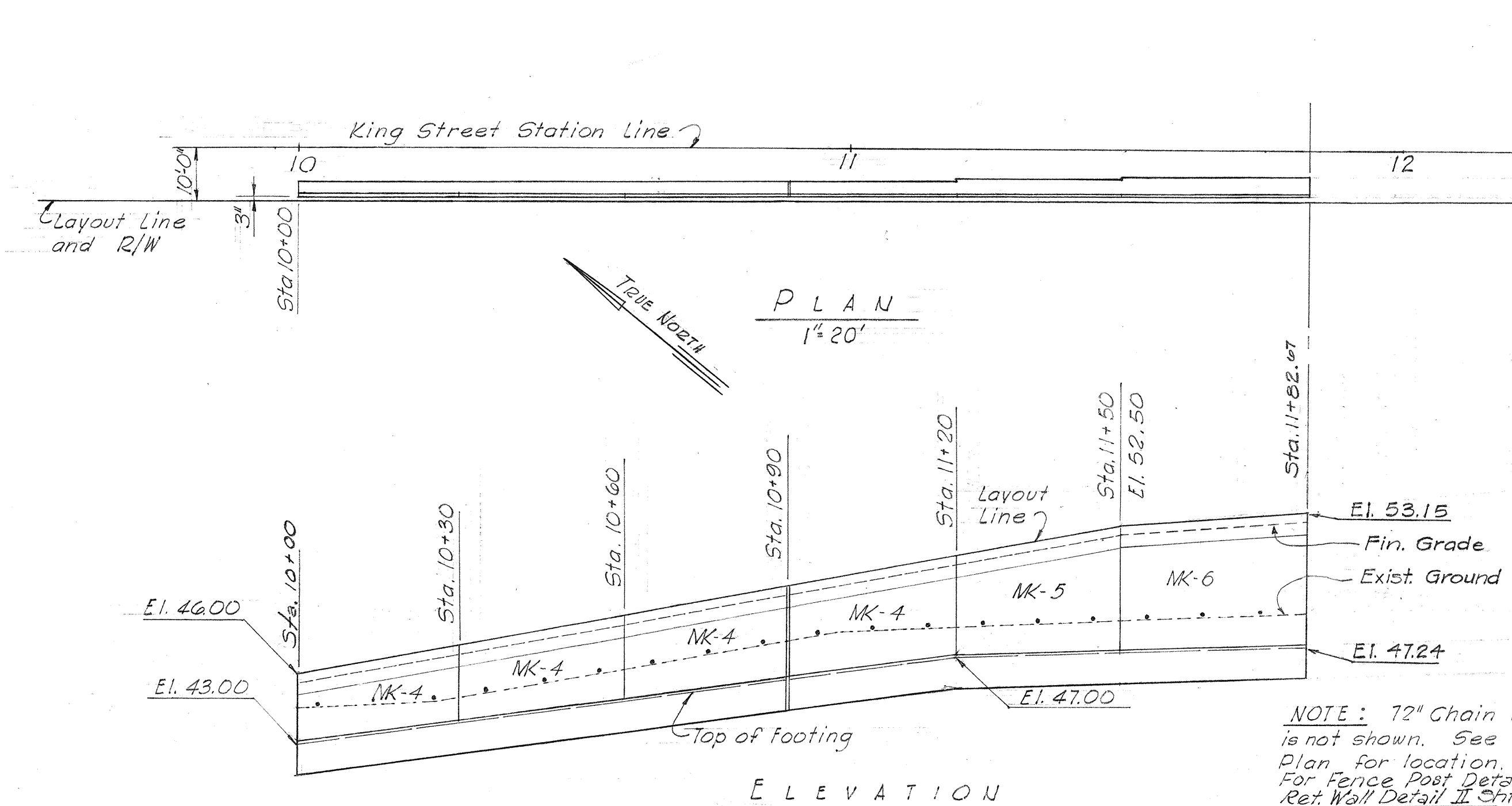


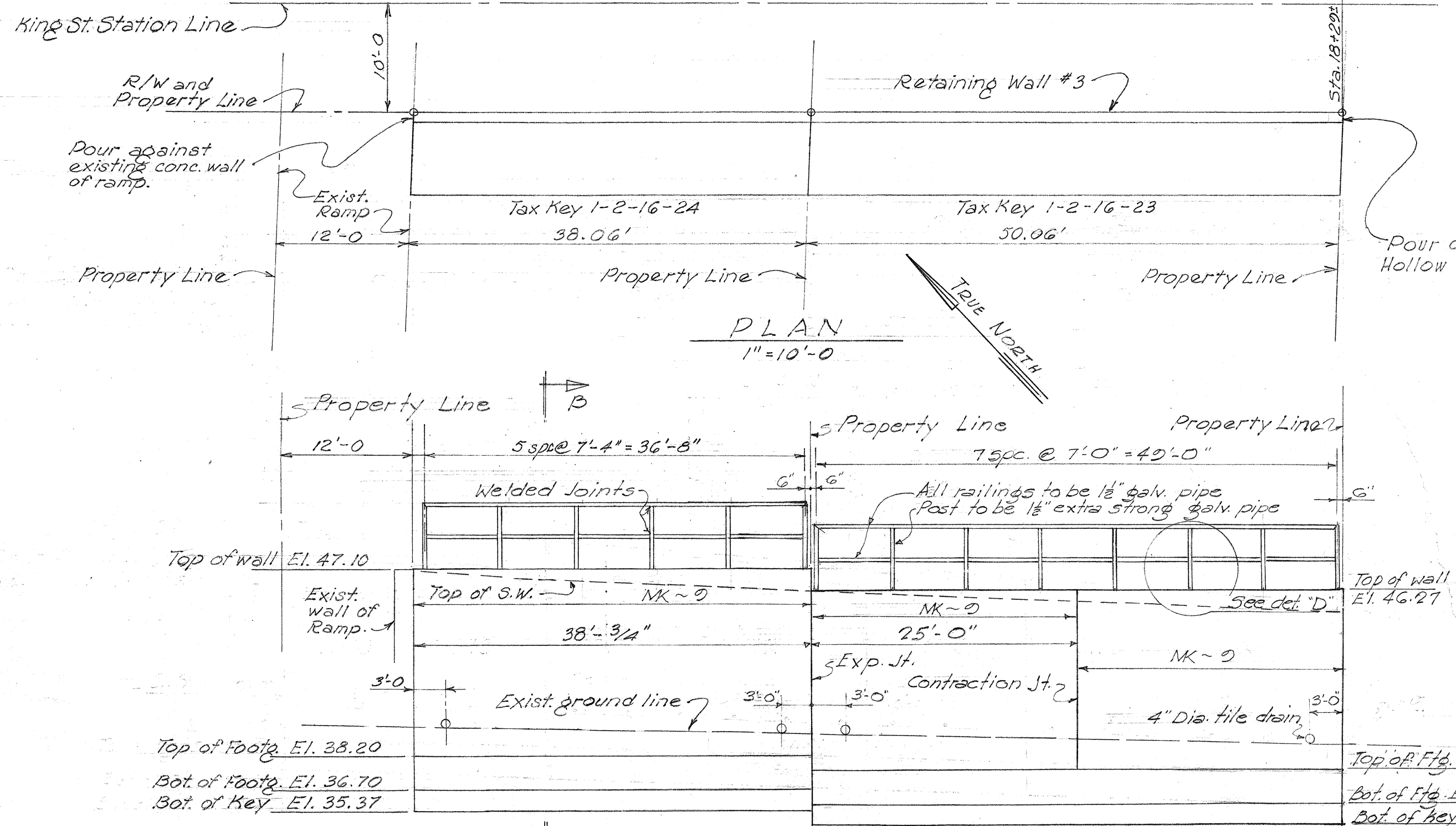
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	US-50720	1960	30	77
		BU-072-1(1)	1960	40	113
		BU-065-1(1)	1960	47	113



NOTE: 12" Chain Link Fence is not shown. See Detail Roadway Plan for location. For Fence Post Detail, see Ret. Wall Detail II, Sht. 30.

RETAINING WALL 1 (TYPE "L-2")
Horizontal 1"=20'-0" Vertical 1"=5'-0"

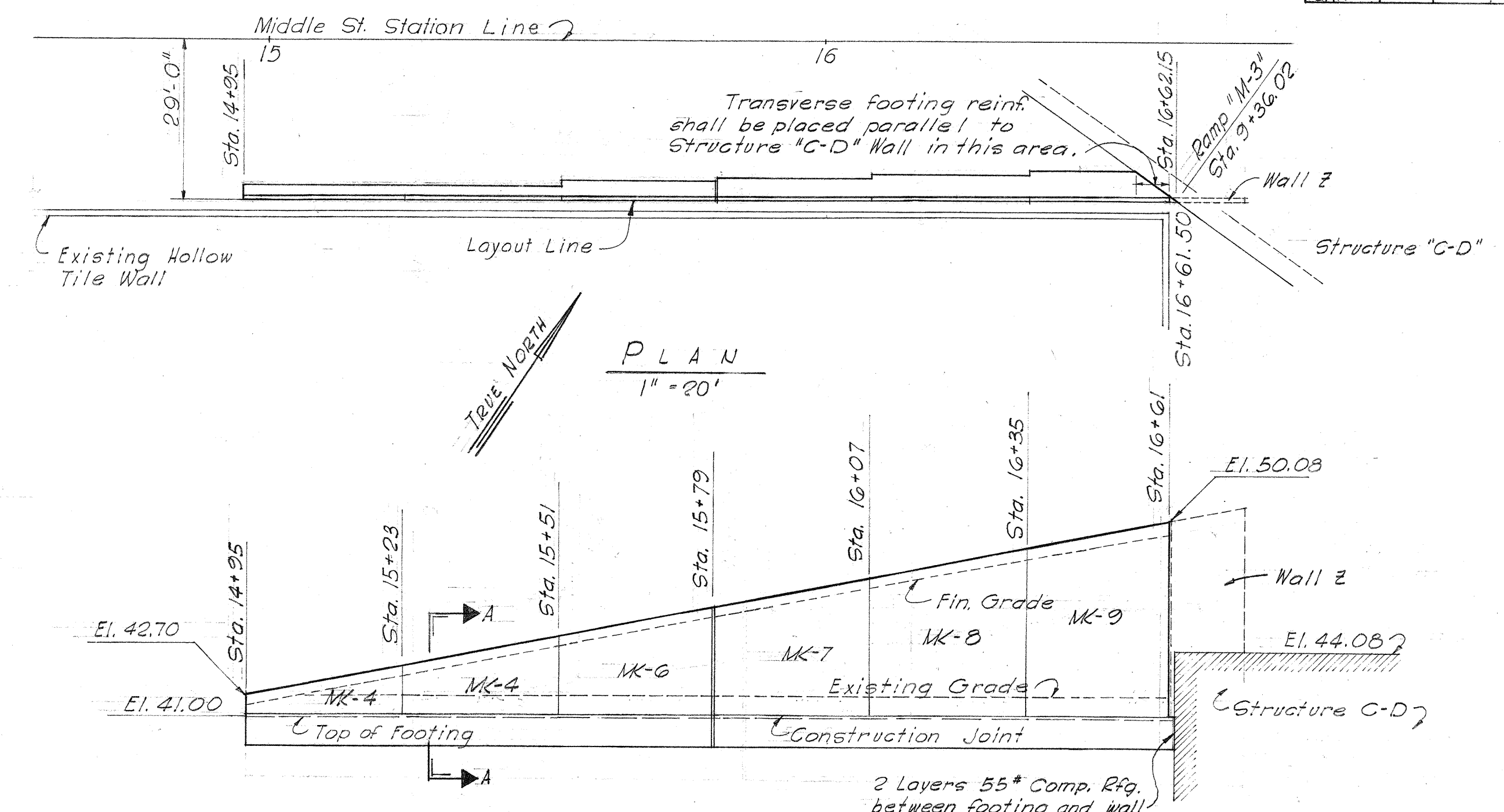
ITEM	QUANTITY
Class A-1 Concrete	6.5 Cubic Yds.
Reinf. Steel	2,343 Lbs.
Structural Exc.	91.29 Cubic Yds.
Filter Material	14.4 Cubic Yds.



ITEM	QUANTITY
Class A-1 Concrete	7.4 Cubic Yds.
Reinf. Steel	3,676 Lbs.
Structural Exc.	122.6 Cubic Yds.
Filter Material	10 Cubic Yds.
Galv. Pipe Rolling	85 Lin. Ft.

RETAINING WALL 3 (TYPE "L-1" OMIT DRIP CAP)
Horizontal 1"=10'-0" Vertical 1"=5'-0"

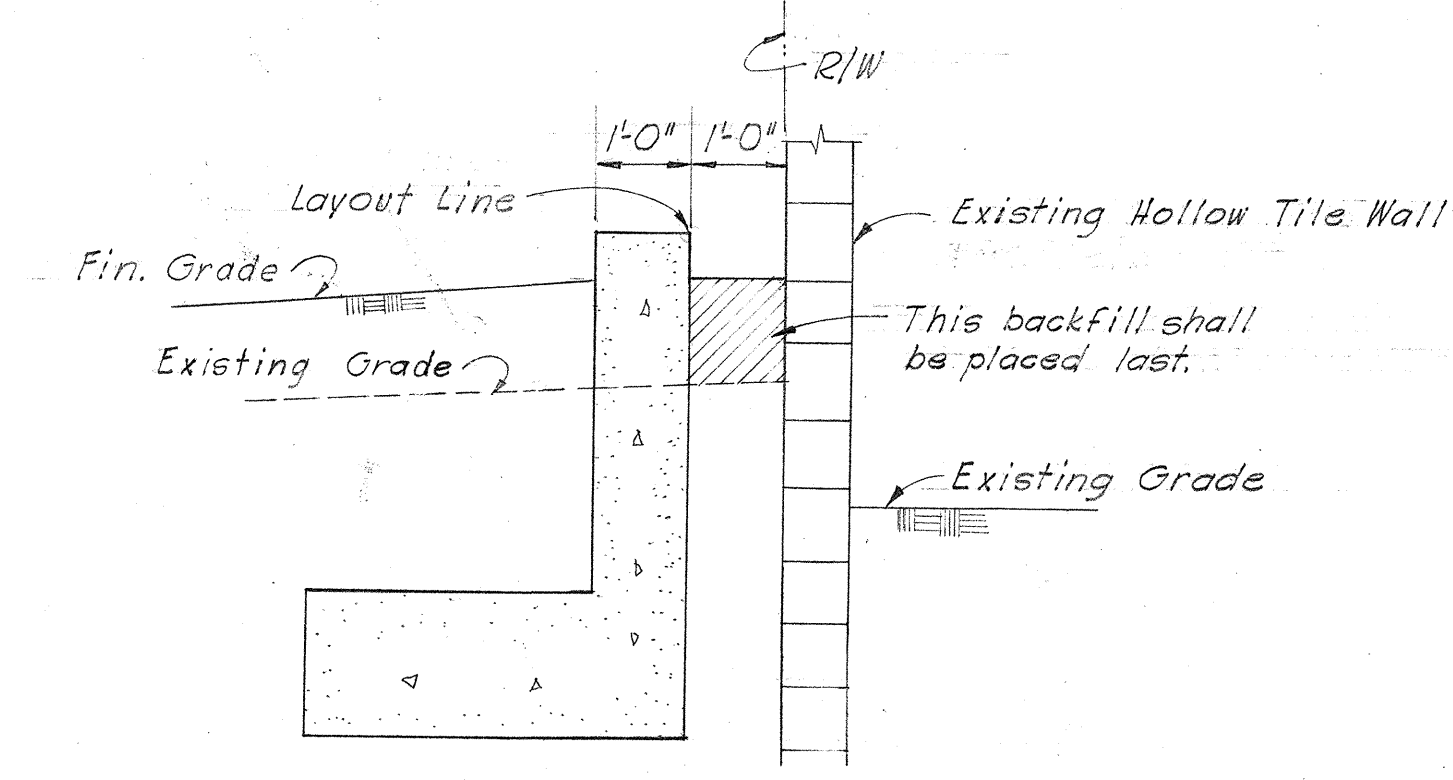
Note: Weep holes in Retaining Wall 3 to be closed after sidewalk construction.



Transverse footing reinf. shall be placed parallel to Structure "C-D" Wall in this area.

RETAINING WALL 2 (TYPE "L-2" OMIT DRIP CAP)
Horizontal 1"=20'-0" Vertical 1"=5'-0"

ITEM	QUANTITY
Class A-1 Concrete	7.3 Cubic Yds.
Reinf. Steel	3,574 Lbs.
Structural Exc.	153.5 Cubic Yds.
Filter Material	0.7 Cubic Yds.



NOTE: Attention is directed to the requirements for Protection of Property. See General Structural Notes.

LEGEND
Indicates Contraction Joint
Indicates Expansion Joint

REFERENCE DRAWINGS.

- RETAINING WALL DETAILS.
- STANDARD DETAILS.
- TYPICAL DETAILS AND GENERAL STRUCTURAL NOTES.
- DETAIL ROADWAY PLANS.



MOFFATT, NICHOL & TAYLOR
Associated with
BELT, COLLINS & ASSOC., LTD.
Civil and Structural Engineers

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

RETAINING WALLS 1, 2 & 3

MOANALUA ROAD

LUNALILO FREEWAY

MIDDLE STREET

US-6-0720(3) UNIT 3

BU-072-1(2) UNIT 4

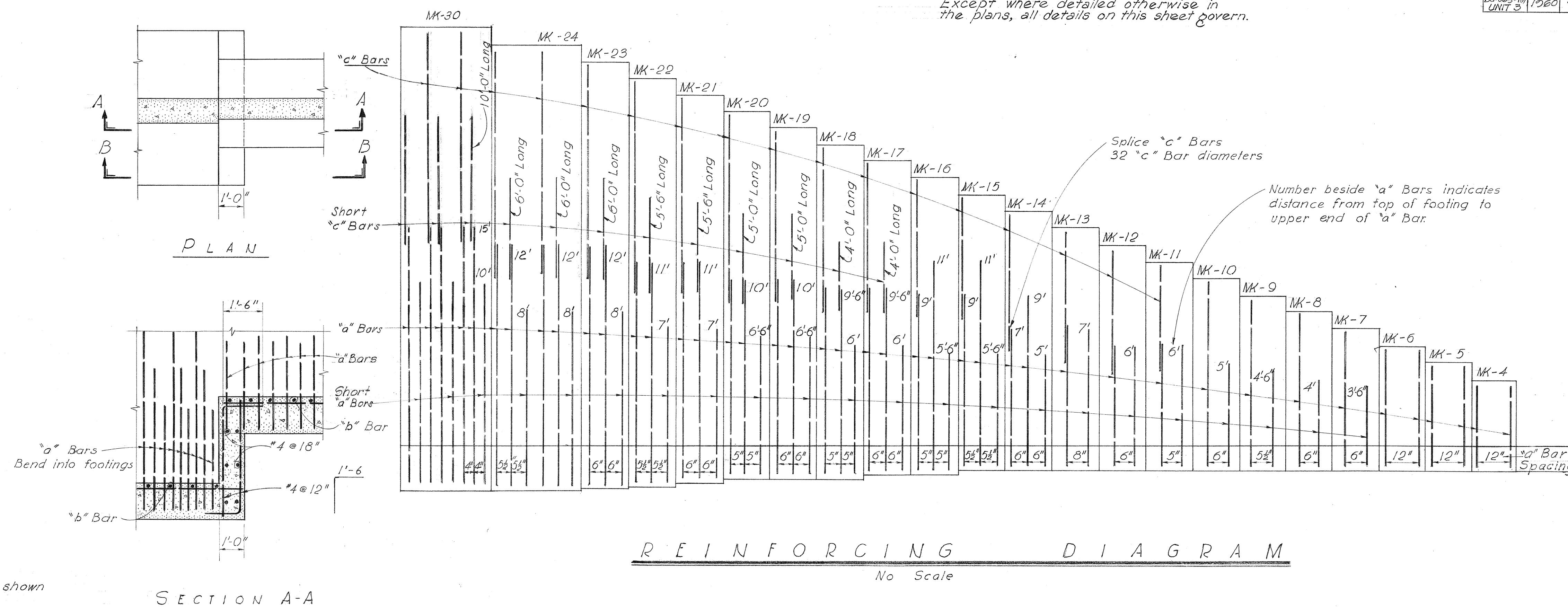
BU-065-1(1) UNIT 3

\$526.30 \$174.49 \$161.47

SURVEY PLOTTED BY: COLLEGE	DATE: 11/1/57
DESIGNED BY: SUZUKI	
TRACED BY: SUZUKI	
QUANTITIES CHECKED BY: WHITE	
NOTE BOOK NO. 1	

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEET
HAWAII	HAW	BL-072-1(2) UNIT 3	1960	31	79
		BL-072-1(2) UNIT 4	1960	50	118
		BL-065-1(1) UNIT 3	1960	48	115

Except where detailed otherwise in the plans, all details on this sheet govern.



T Y P E " T " W A L L
T Y P I C A L S E C T I O N

NOTE:

Contraction Joint detail is similar except that one layer 55" Composition Roofing shall be used in place of Premolded Joint Filler, and the Joint shall extend through the stem only.

REFERENCE DRAWINGS

RETAINING WALL DETAILS II
TYPICAL DETAILS AND GENERAL
STRUCTURAL NOTES

GUY H. TAYLOR
 REGISTERED
 PROFESSIONAL
 ENGINEER
 No. 882
 HAWAII, U.S.A.

MOFFATT, NICHOL & TAYLOR
 Associated with
BELT, COLLINS & ASSOC., LTD
 Civil and Structural Engineers

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

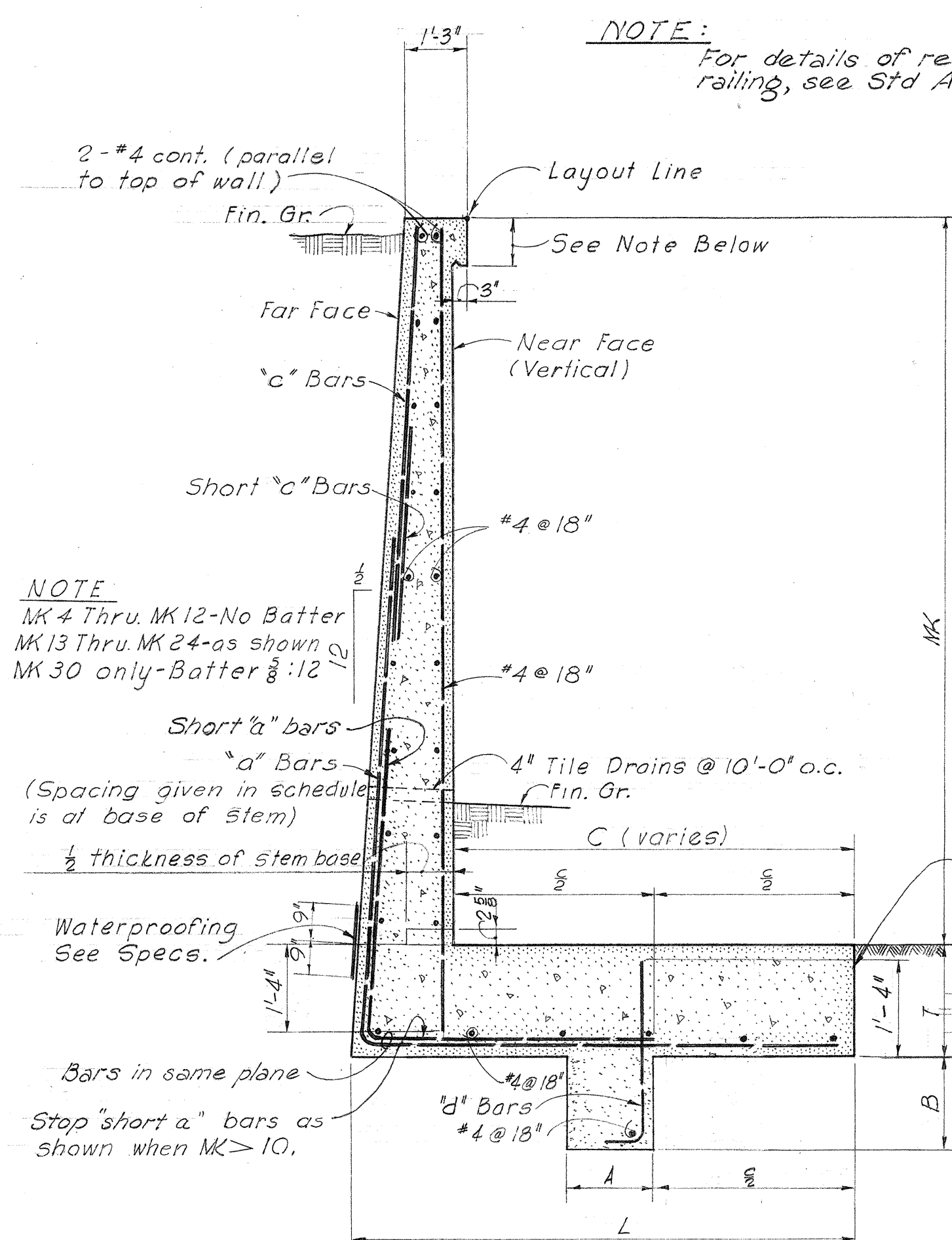
RETAINING WALL DETAILS I

LUNALILO FREEWAY	BU-072-1(2)	UNIT 4
MOANALUA ROAD	US-S-0720(3)	UNIT 3
MIDDLE STREET	BU-065-1(1)	UNIT 3

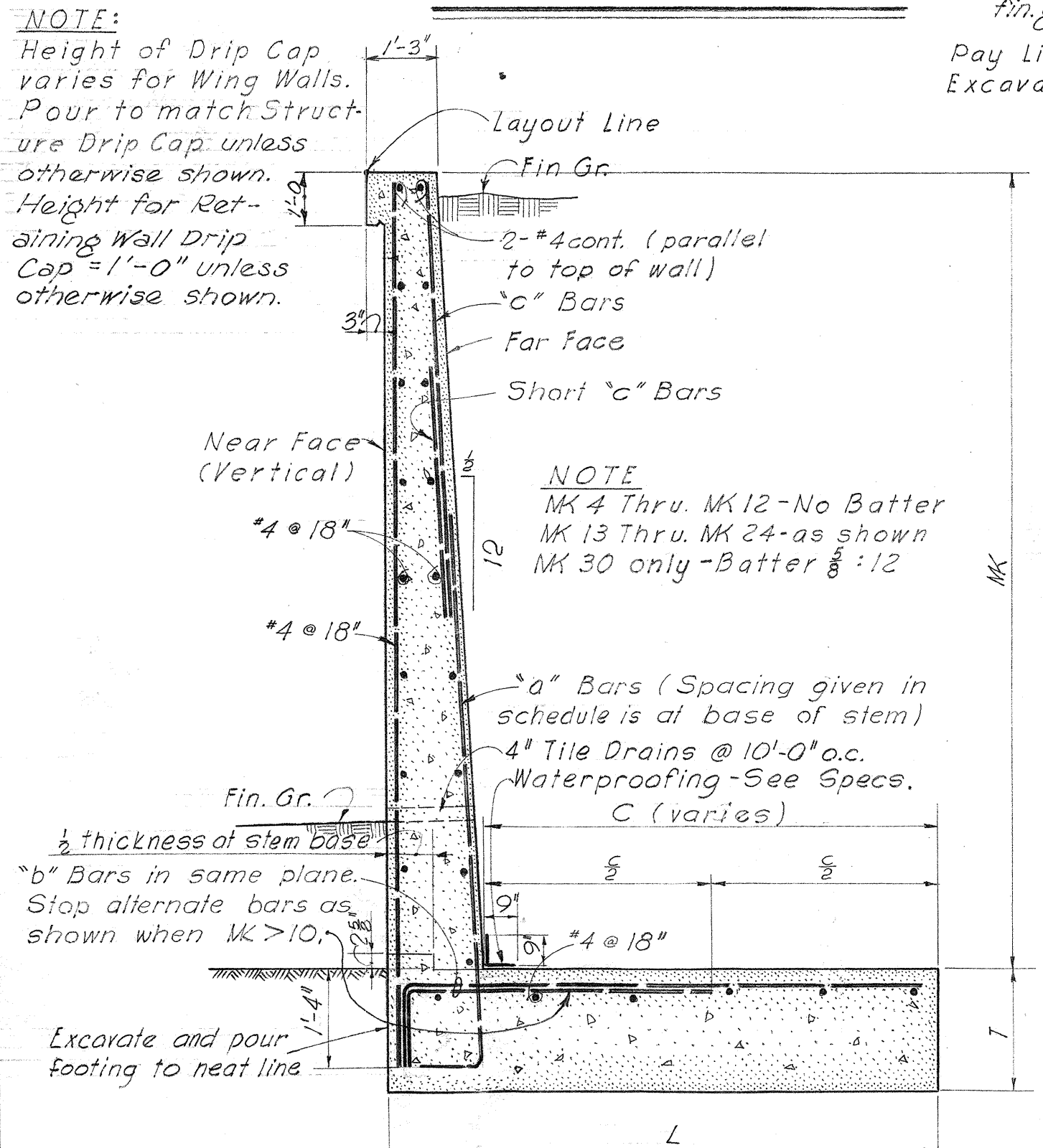
SHEET No. 1 OF 2 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1060-10	1960	32	77
		BU-072-1(2) UNIT 4	1960	51	118
		BU-072-1(1) UNIT 3	1960	45	115

June 1960



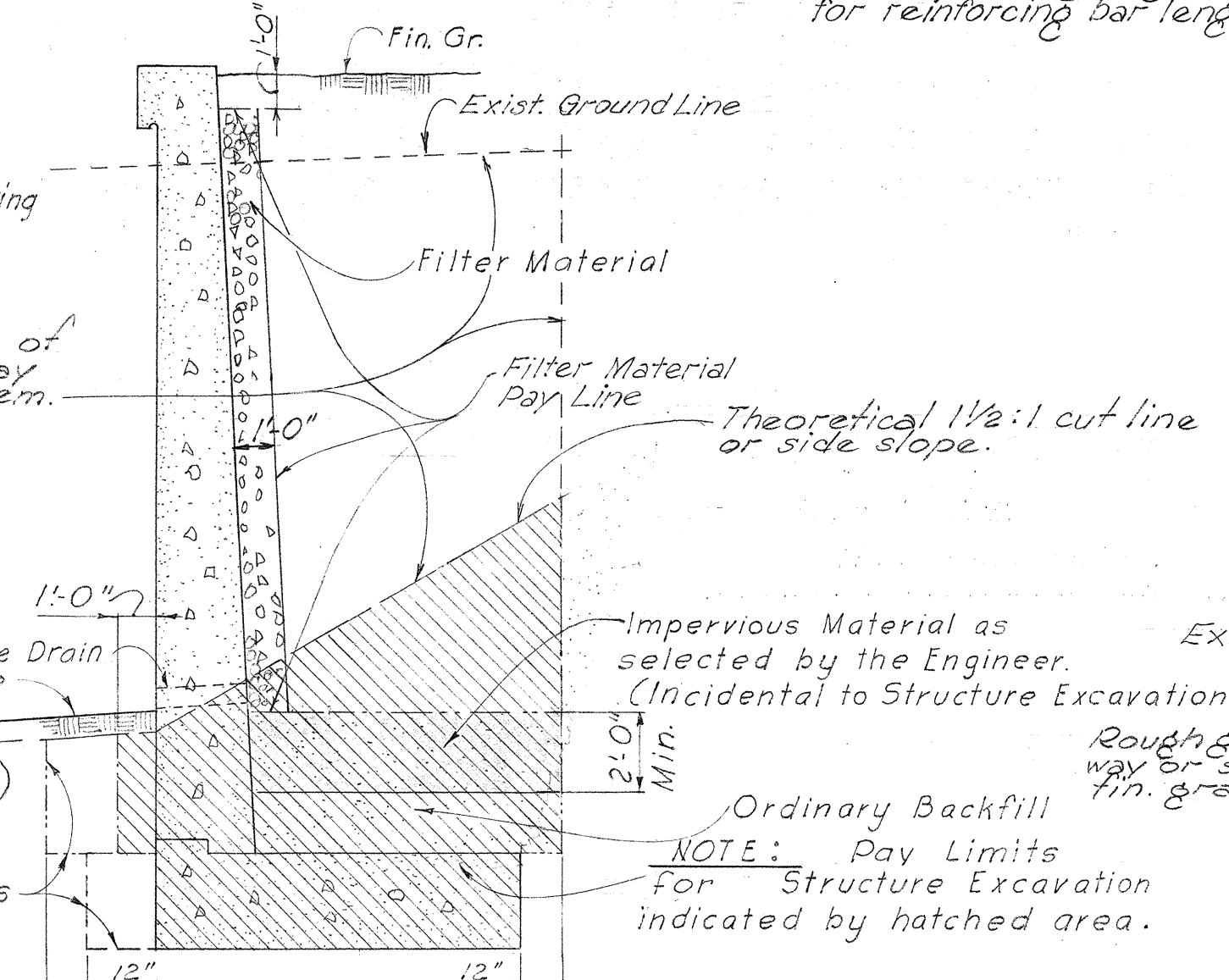
TYPICAL SECTION TYPE "L-1" WALL



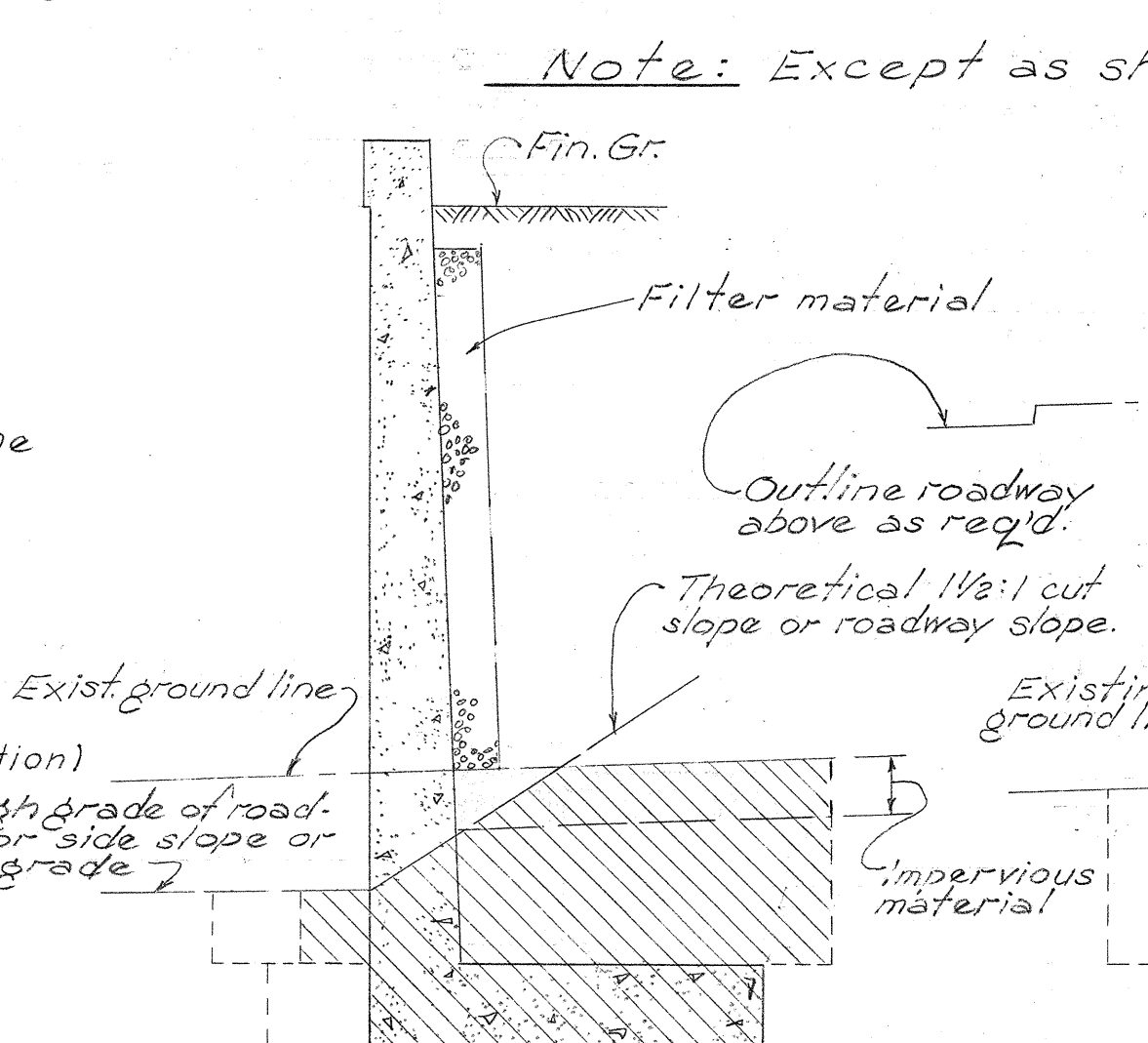
TYPICAL SECTION TYPE "L-2" WALL

TYPE "L-1" WALL SCHEDULE																				
MK	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		
L	3.5'	4.5'	5.5'	6.5'	7.5'	8.0'	8.5'	9.5'	10.0'	10.5'	11.0'	12.0'	12.5'	13.5'	14.0'	15.0'	16.0'	17.5'		
T	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	20"	22"	24"	24"	26"	28"	30"		
A	12"	14"	14"	14"	14"	16"	16"	18"	20"	20"	20"	24"	24"	24"	24"	24"	24"	24"		
B	12"	14"	14"	14"	14"	16"	16"	18"	20"	20"	20"	24"	24"	26"	26"	28"	30"			
"c" Bars								#4	#4	#4	#4	#4	#4	#4	#4	#5	#5	#6		
"a" Bars	#3	#3	#4	#3	#4	#4	#5	#5	#6	#6	#6	#6	#6	#7	#7	#8	#8	#9		
Short "a" Bars				#4	#4	#4	#5	#5	#6	#7	#7	#7	#7	#8	#8	#9	#8	#9		
"d" Bars	#3 @ 12"	#3 @ 12"	#3 @ 12"	#3 @ 12"	#3 @ 12"	#3 @ 10"	#4 @ 12"	#4 @ 10"	#4 @ 12"	#4 @ 12"	#4 @ 12"	#4 @ 11"	#4 @ 10"	#5 @ 12"	#5 @ 10"	#6 @ 10"	#6 @ 10"	#7 @ 12"		
Spacing of type "a" bars at base of stem (c to c.)	12"	12"	12"	6"	6"	5 1/2"	6"	5"	6"	8"	6"	5 1/2"	5"	6"	5"	6"	5"	6"		

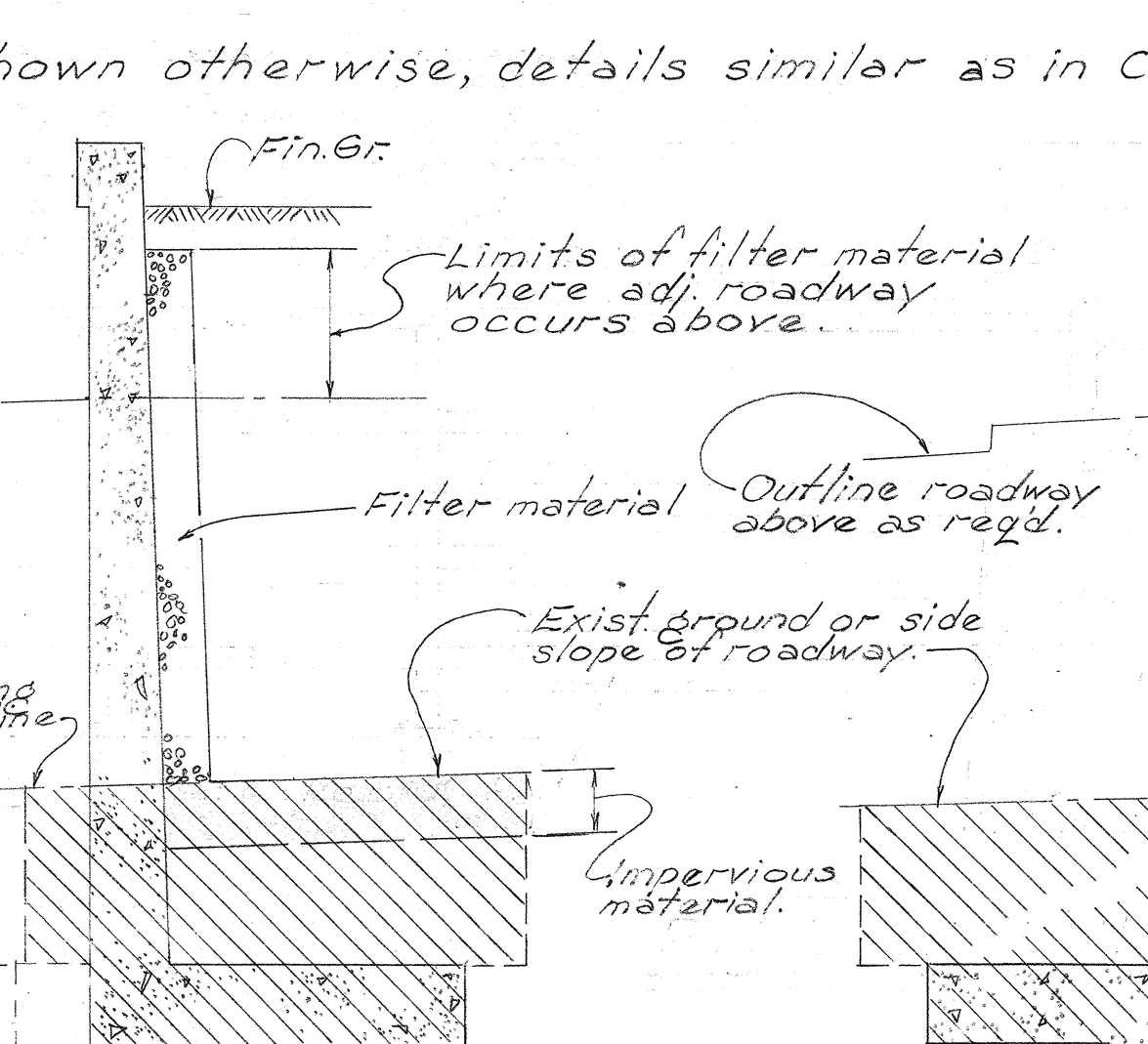
*** See Reinforcing Diagram on Retaining Wall Details I for reinforcing bar length and arrangement.



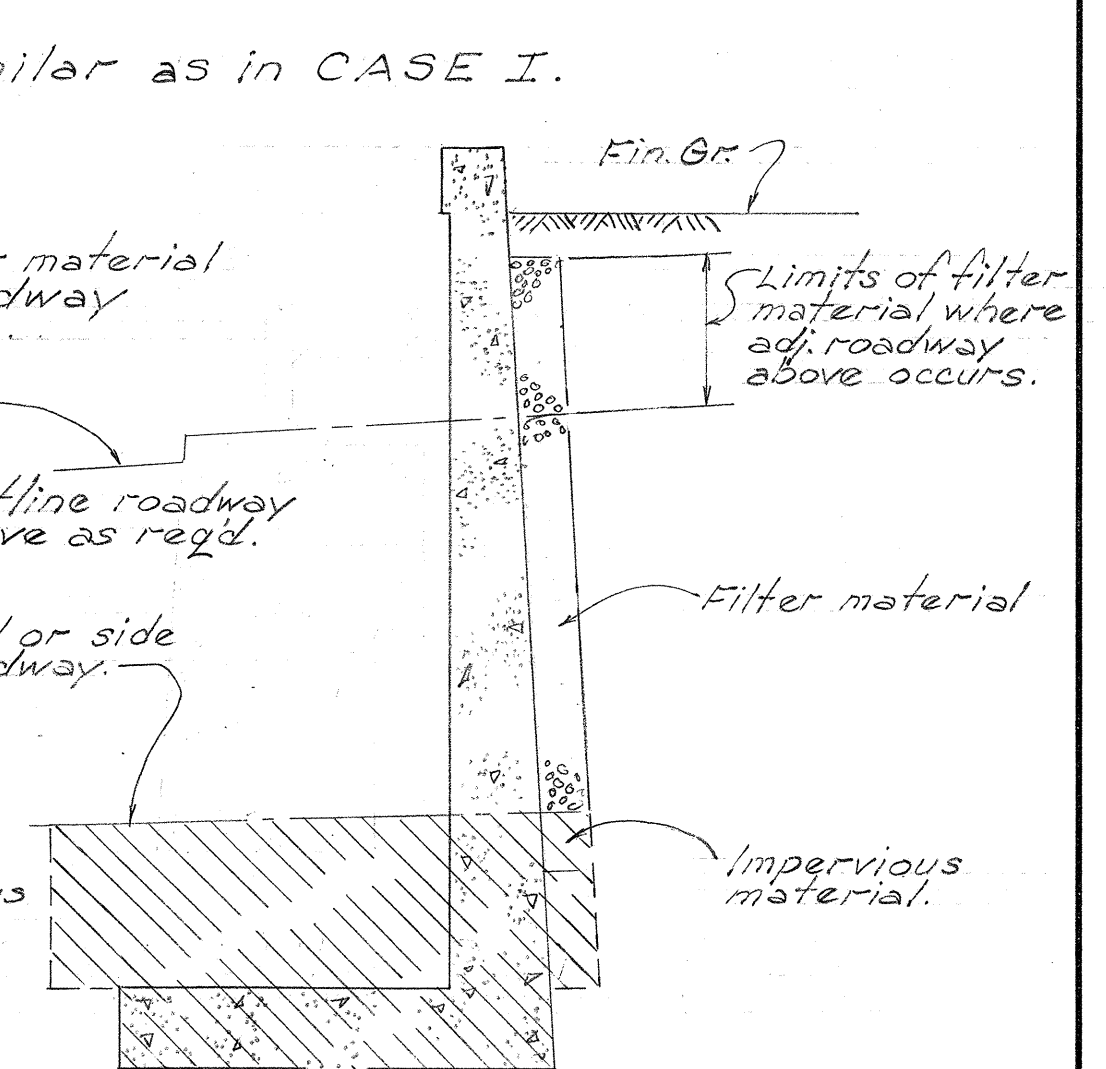
CASE I



CASE II



CASE III



TYPE "L-1" WALL

TYPICAL DETAILS OF LIMITS OF STRUCTURAL EXCAVATION

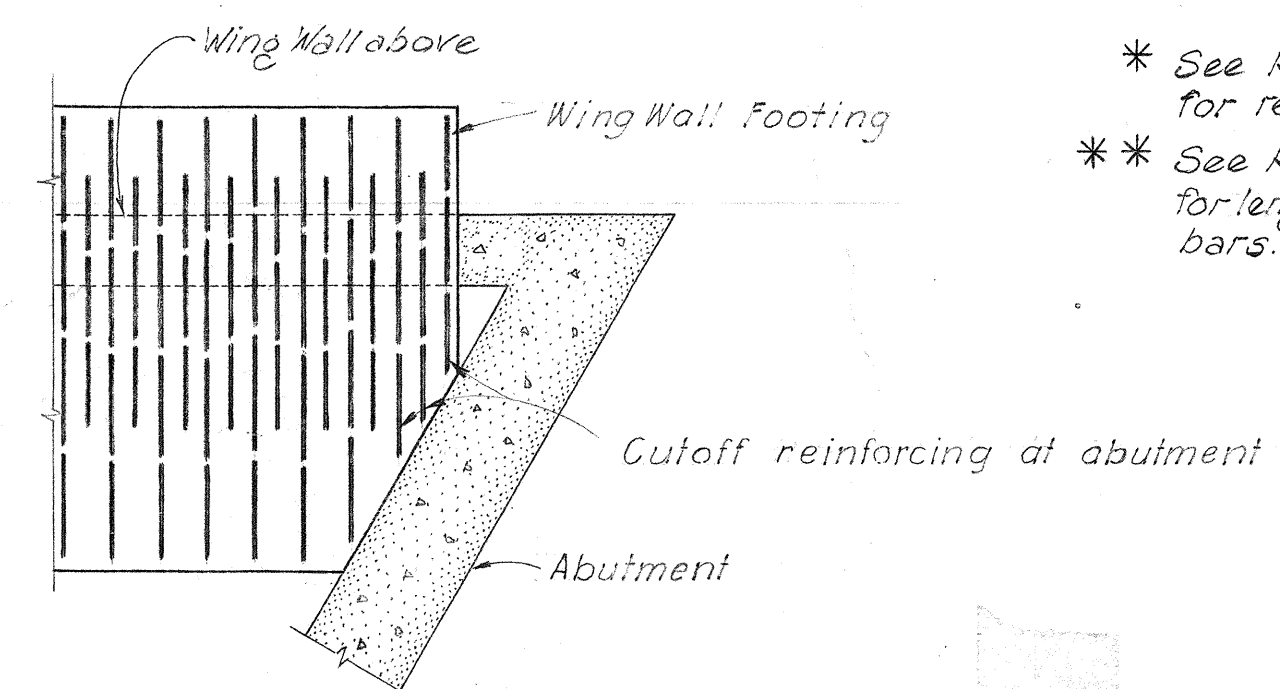
TYPE "L-2" WALL SCHEDULE																				
MK	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
L	3.5'	4.0'	4.5'	4.5'	5.0'	5.5'	6.0'	6.5'	7.5'	8.0'	9.0'	10.0'	11.0'	12.25'	13.5'	14.75'	16.0'			
T	18"	18"	18"	18"	18"	18"	18"	18"	20"	20"	22"	22"	22"	22"	24"	24"	24"			
"c" Bars *								#4	#4	#4	#4	#4	#4	#4	#4	#5	#5			
"a" Bars **	#3 @ 12"	#3 @ 12"	#4 @ 12"	#3 @ 6"	#4 @ 6"	#4 @ 5 1/2"	#5 @ 6"	#5 @ 5"	#6 @ 6"	#6 @ 8"	#6 @ 6"	#6 @ 5 1/2"	#6 @ 5"	#7 @ 6"	#7 @ 5"	#8 @ 6"	#8 @ 5"			
"b" Bars	#3 @ 12"	#3 @ 12"	#4 @ 12"	#3 @ 6"	#4 @ 6"	#4 @ 5 1/2"	#5 @ 6"	#5 @ 5"	#6 @ 6"	#8 @ 8"	#8 @ 6"	#8 @ 5 1/2"	#8 @ 5"	#9 @ 6"	#8 @ 5"	#9 @ 6"	#8 @ 5"			

GENERAL NOTE

Except where detailed otherwise in the plans, all details on this sheet governs.

REFERENCE DRAWINGS

RETAINING WALL DETAILS I
TYPICAL DETAILS AND GENERAL
STRUCTURAL NOTES



WING WALL FOOTING CUTOFF DETAIL
No Scale



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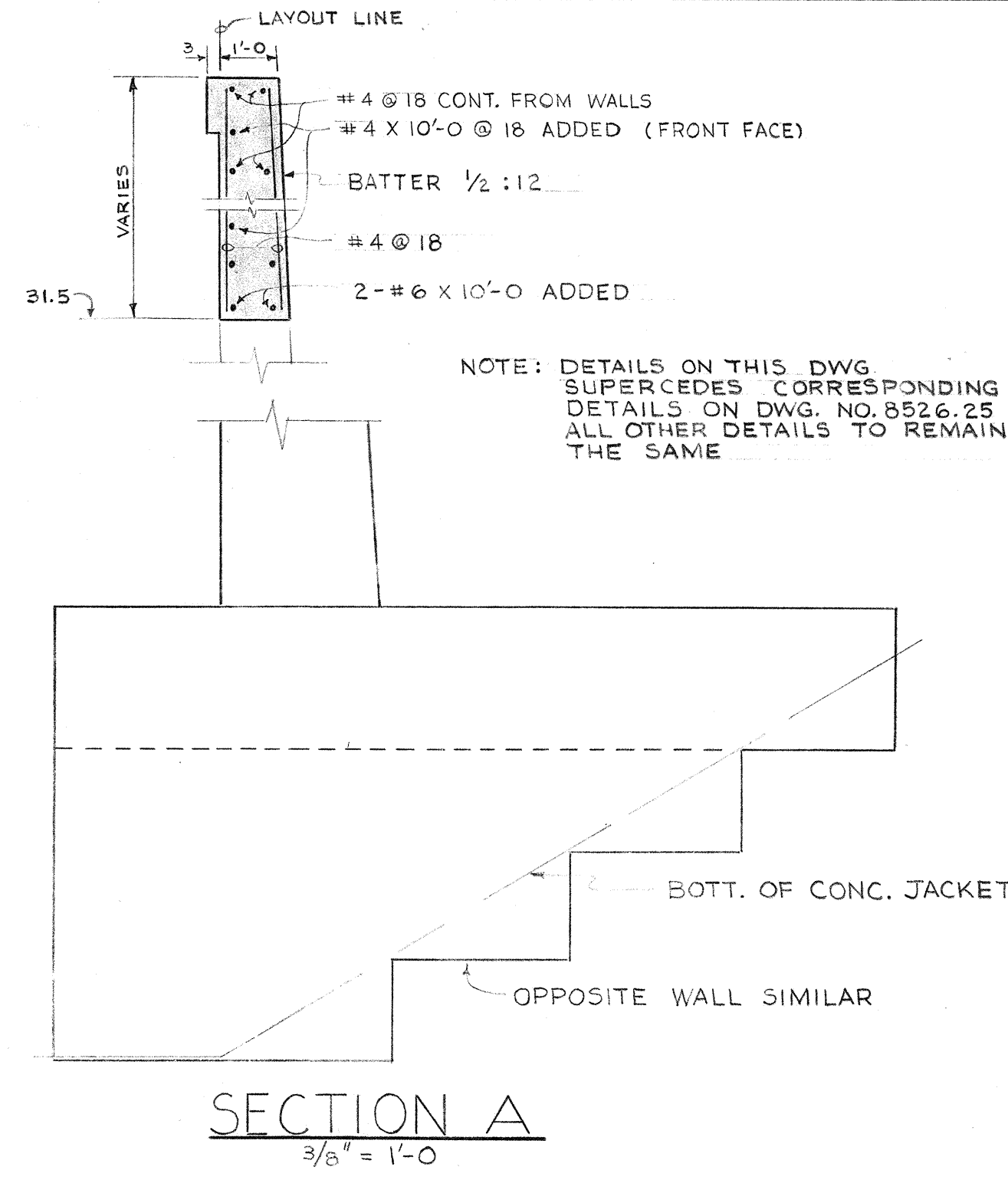
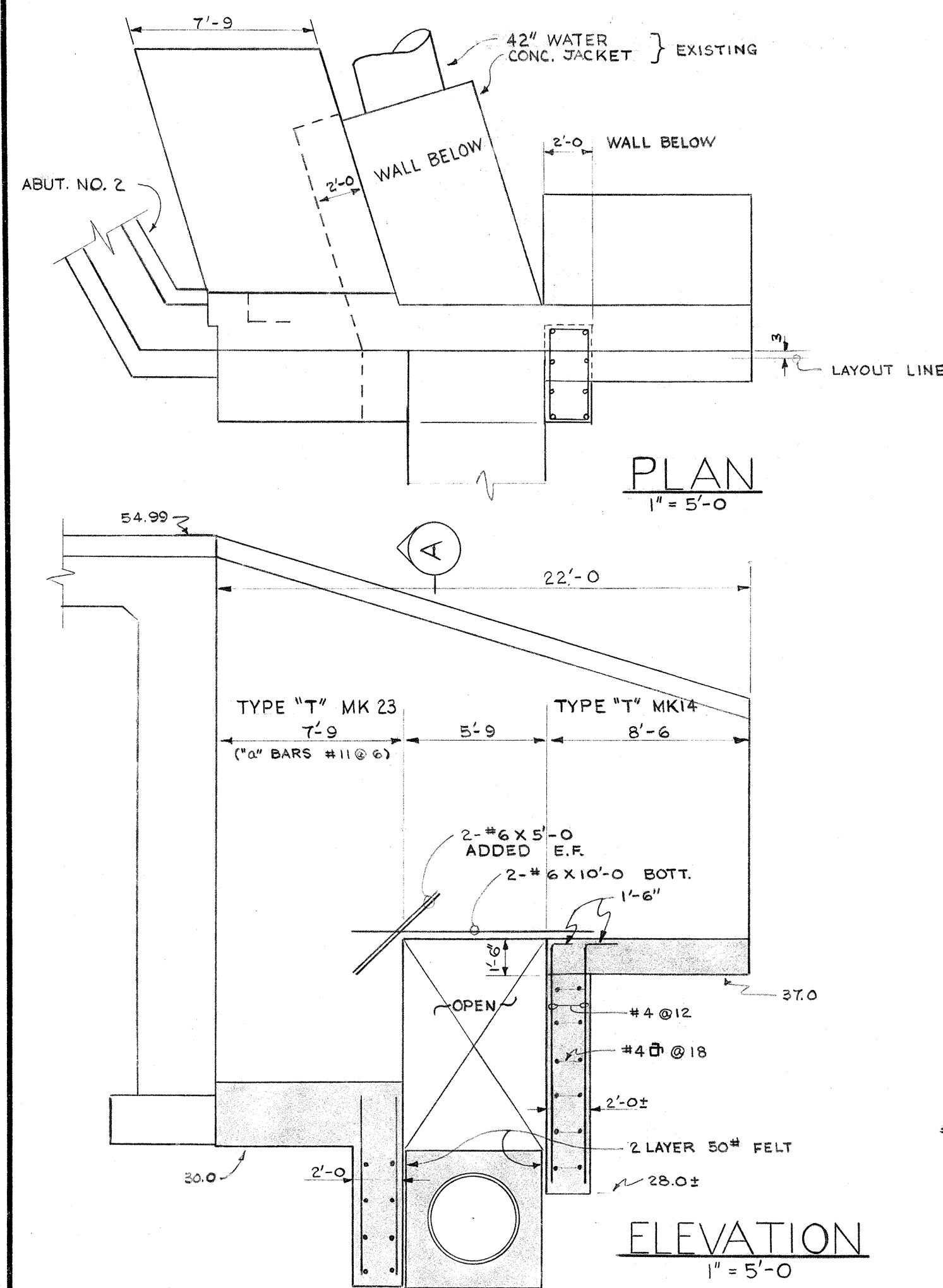
HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

RETAINING WALL DETAILS II

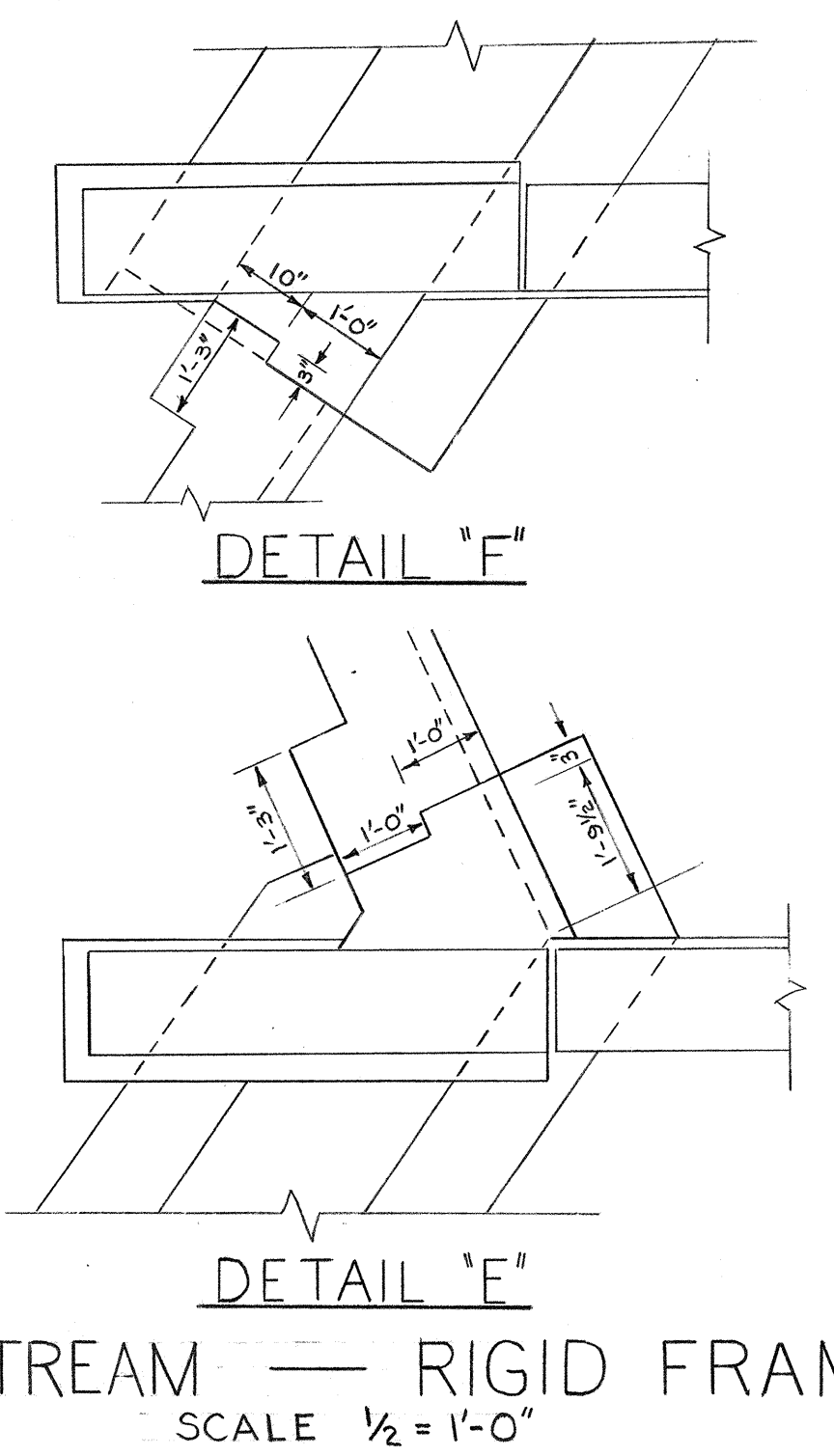
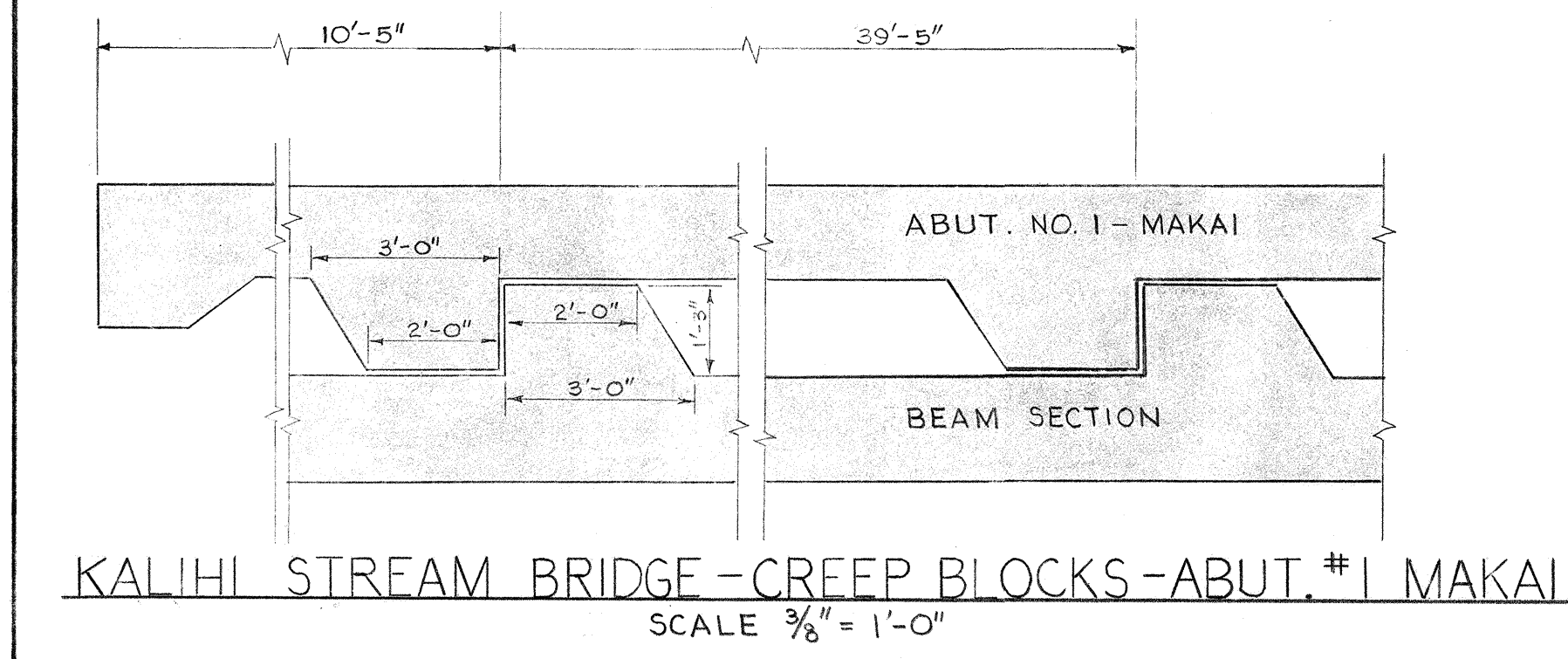
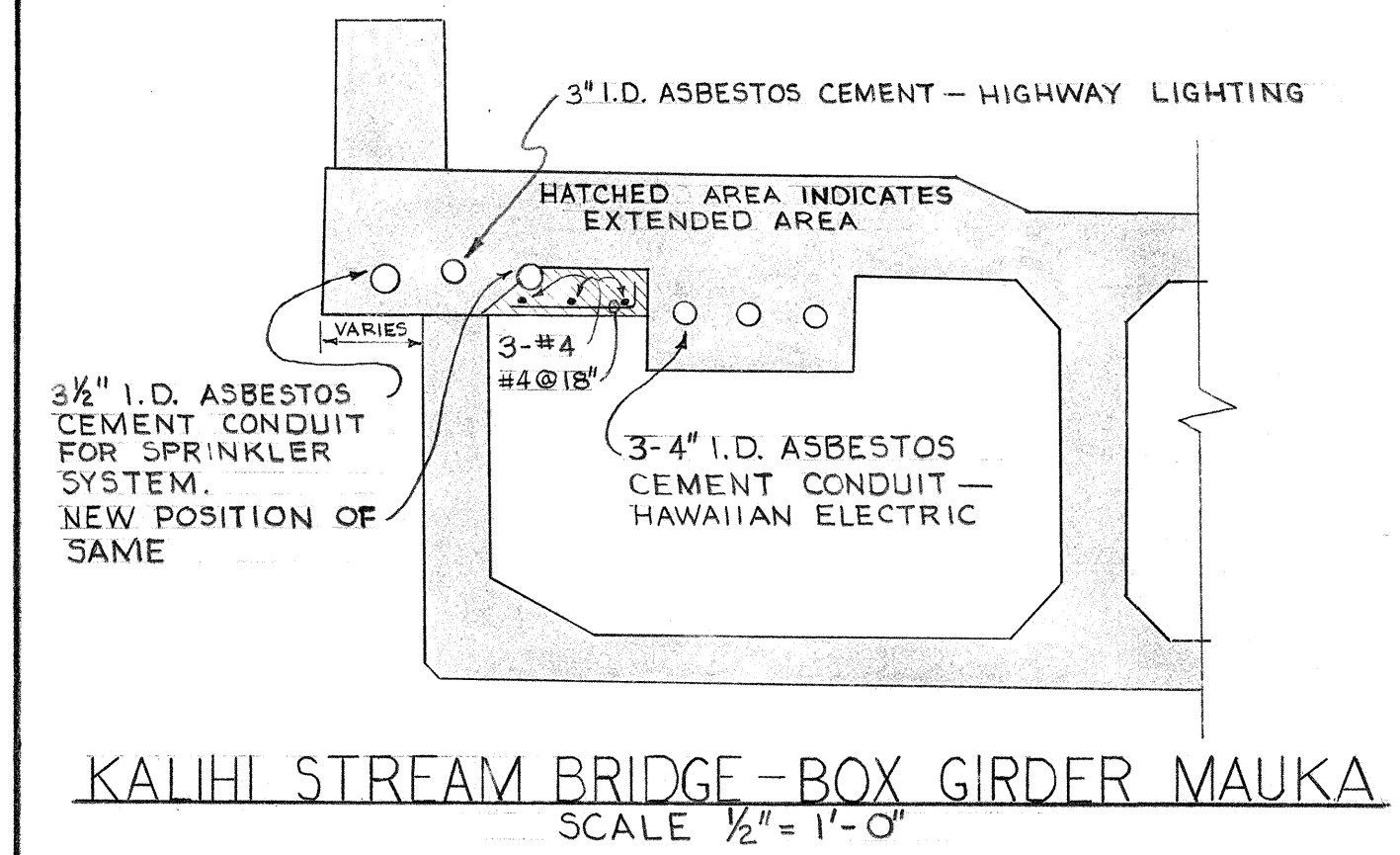
LUNALILO FREEWAY BU-072-1(2) UNIT 4
MOANALUA ROAD US-S-0720(3) UNIT 3
MIDDLE STREET BU-065-1(1) UNIT 3

DESIGNED BY	DATE
TRACED BY	2/2/1961
QUANTITIES BY	
CHECKED BY	
NO.	

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

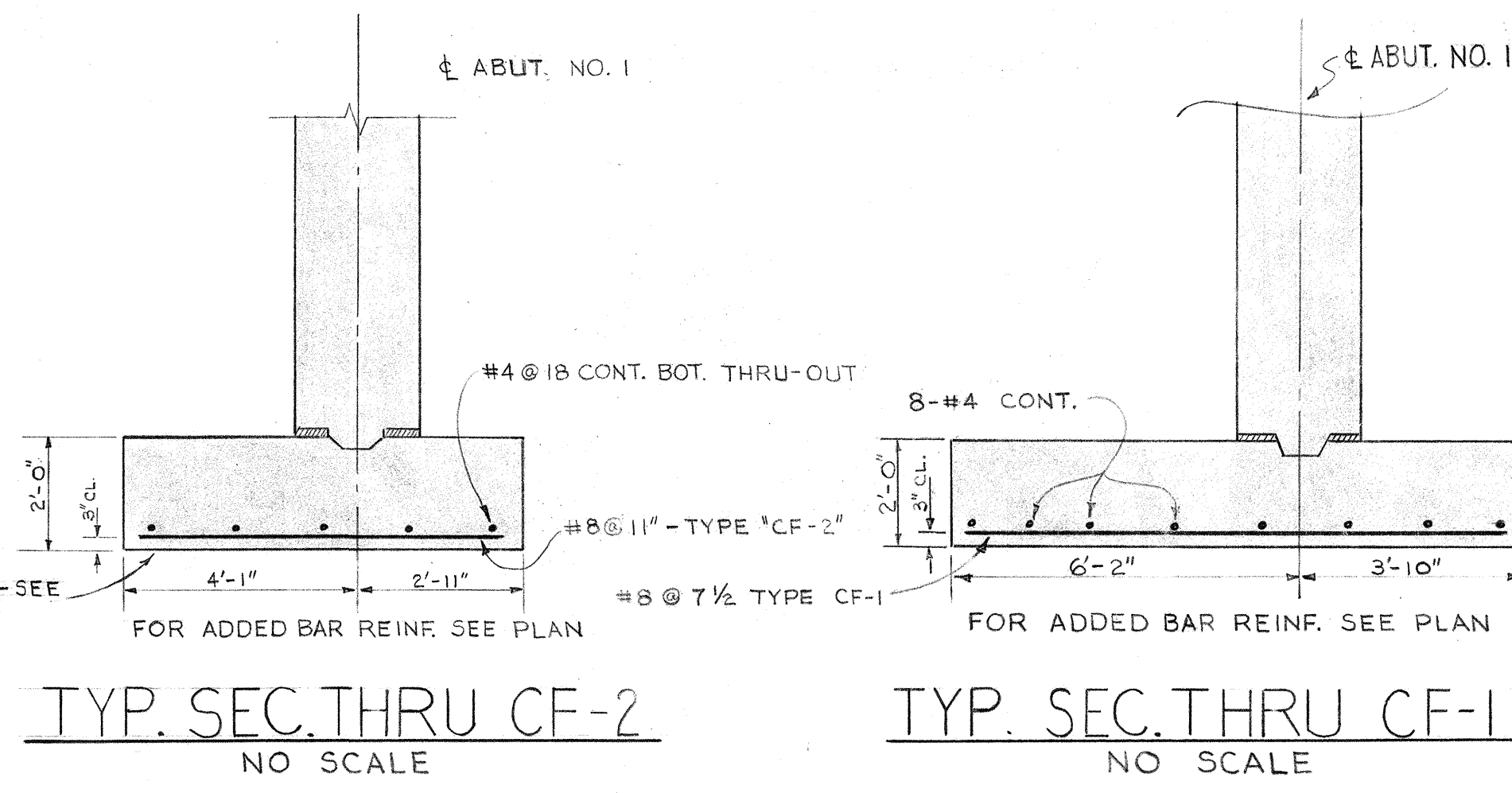
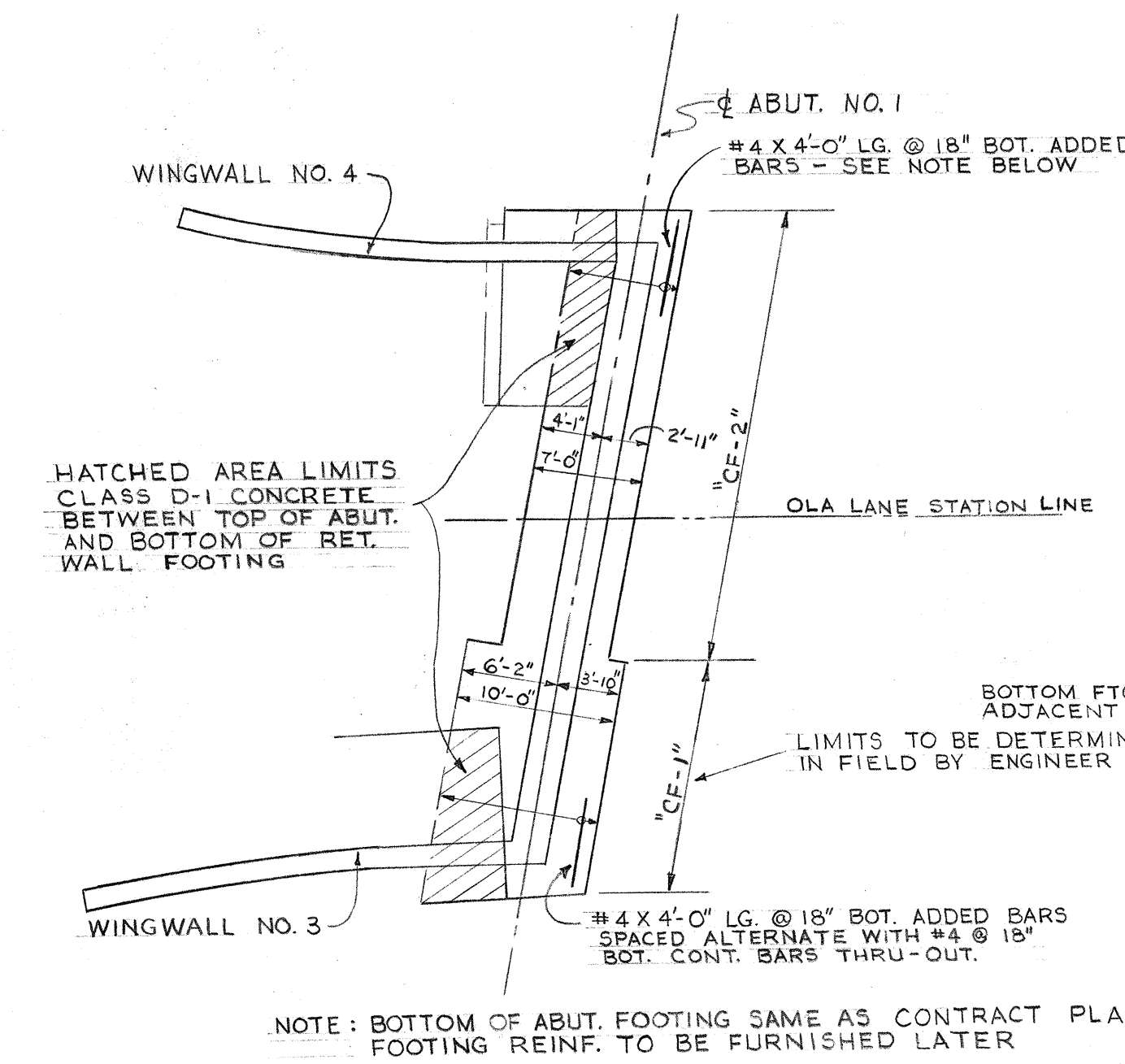


REVISIONS FOR
STRUCT. "E" WINGWALL NO. 2
MAY 10, 1962

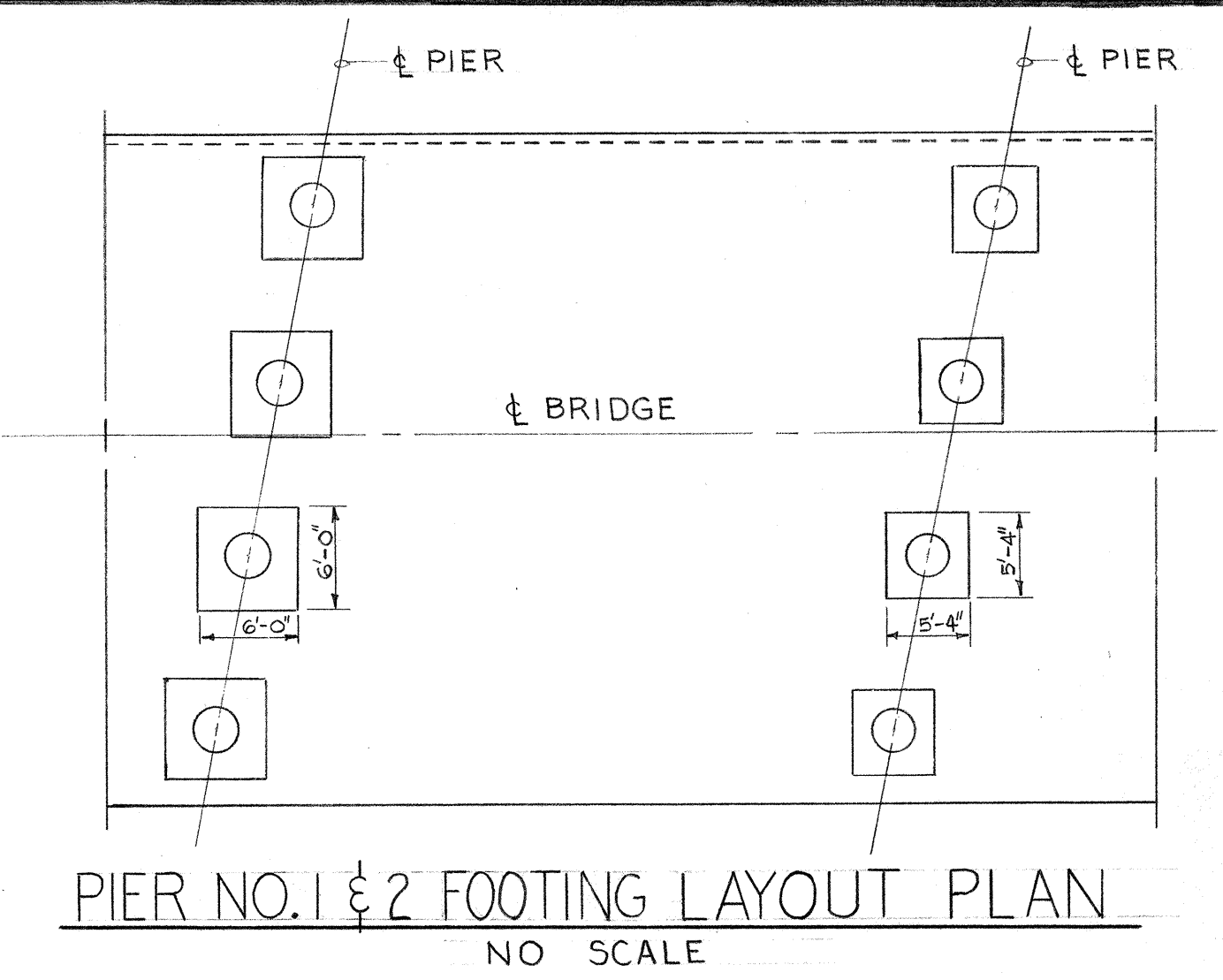
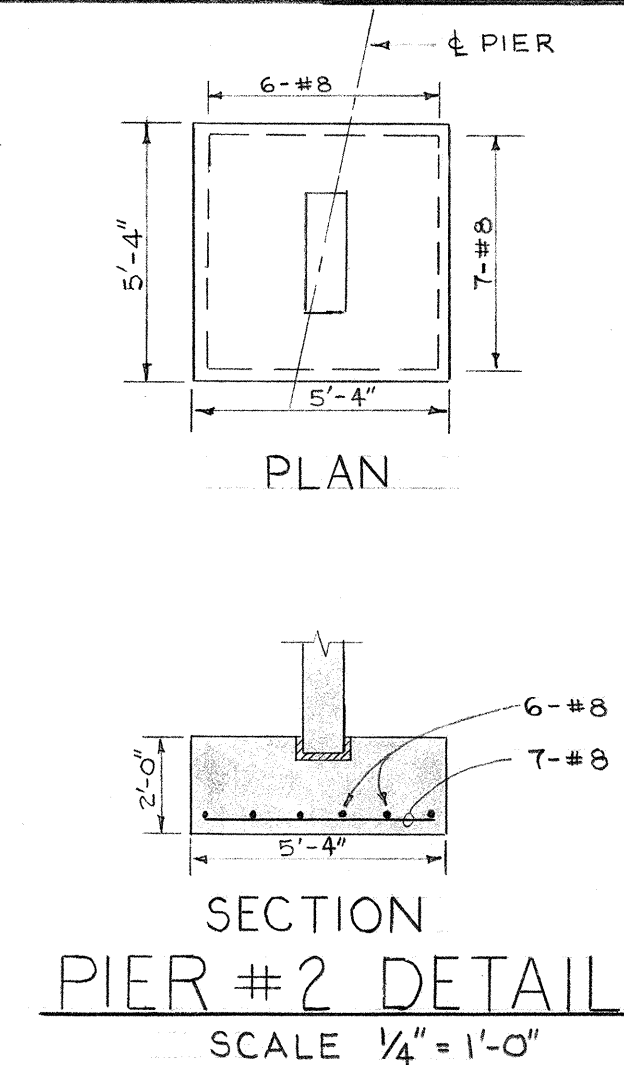
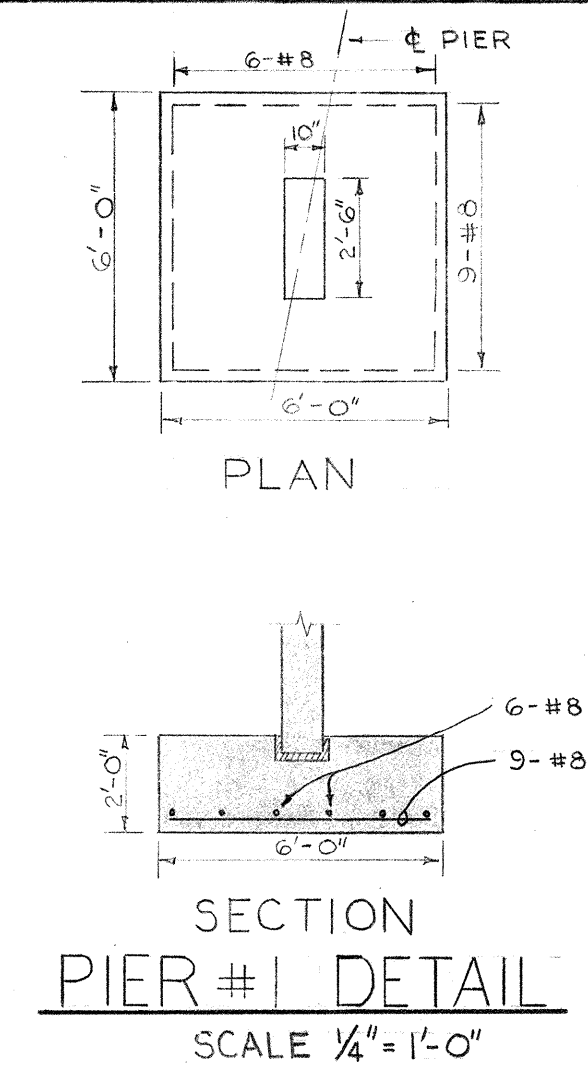


REVISED DETAILS FOR KALIHI STREAM BRIDGE
DECEMBER 18, 1961

For Additional "As-Built" Details
see Sht. No. 8174.32A, [58A]



REVISED FOOTING DETAILS
OLA LANE OVERPASS
SEPT. 8, 1961



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

REVISIONS FOR STRUCTURES

LUNALILO FREEWAY BU - OT2-1 (2) UNIT 4
MOANALUA ROAD US - S - OT20 (3) UNIT 3

SHEET No. OF SHEETS

8526.32A 8174.51A 8161.49A

81A

SURVEY PLOTTED BY	DATE
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
QUANTITIES BY	
DESIGNED BY	
CHECKED BY	