

ESTIMATED QUANTITIES					
ITEMS	Superstr.	Piers	Abutment	Railings End Post	Total
Class A Conc.	530.05 CY	52.73 CY	23.36 CY	52.86 C.Y.	659.00 CY
Reinf. Steel	103,833 lbs.	46,831 lbs.	30,111 lbs.	55,116 lbs.	118,891 lbs.
14x14x35 Conc. Piles		27	6		33 Pcs.
14x14x40 Conc. Piles		18			18 Pcs.
14x14x45 Conc. Piles			6		6 Pcs.
C.R. Masonry			82.0		82.0 C.Y.
Rock Fill			1075.0		1075.0 CY
7" A.C. Pavement					422.2 Tons
Structural Exc.			1050.0		1050.0 CY
Channel Exc.					2000.0 CY

Note: All concrete except in Piles Class A.
Concrete in Piles Class E.
Piles to have integral waterproofing.
Trigonal or equal. See special provisions.
Sidewalk, Curb & Railing to be poured after
release of falsework.

Design stresses:
H-20 Loading
 $f_c = 1000 \text{ lbs./sq. in.}$
 $f_s = 18,000 \text{ lbs./sq. in.}$

Phosphor Bronze Inserts sp. 13'-4" o.c. (See note on sheet 2)

LAYOUT PLAN

Scale 1" = 10'-0"

UPSTREAM ELEVATION

Scale 1" = 10'-0"

BORING DATA

Scale: Vertical 1" = 20'-0" Horizontal 1" = 30'-0"

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

HALAWA BRIDGE
Sta. 257+90 to Sta. 260+30

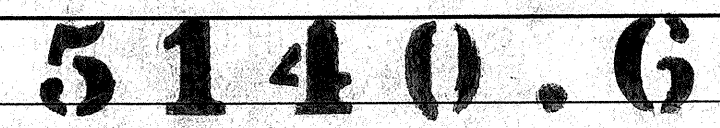
KAM HIGHWAY DANR 13(3)
June 1944

SHEET NO. 1 OF 5 SHEETS

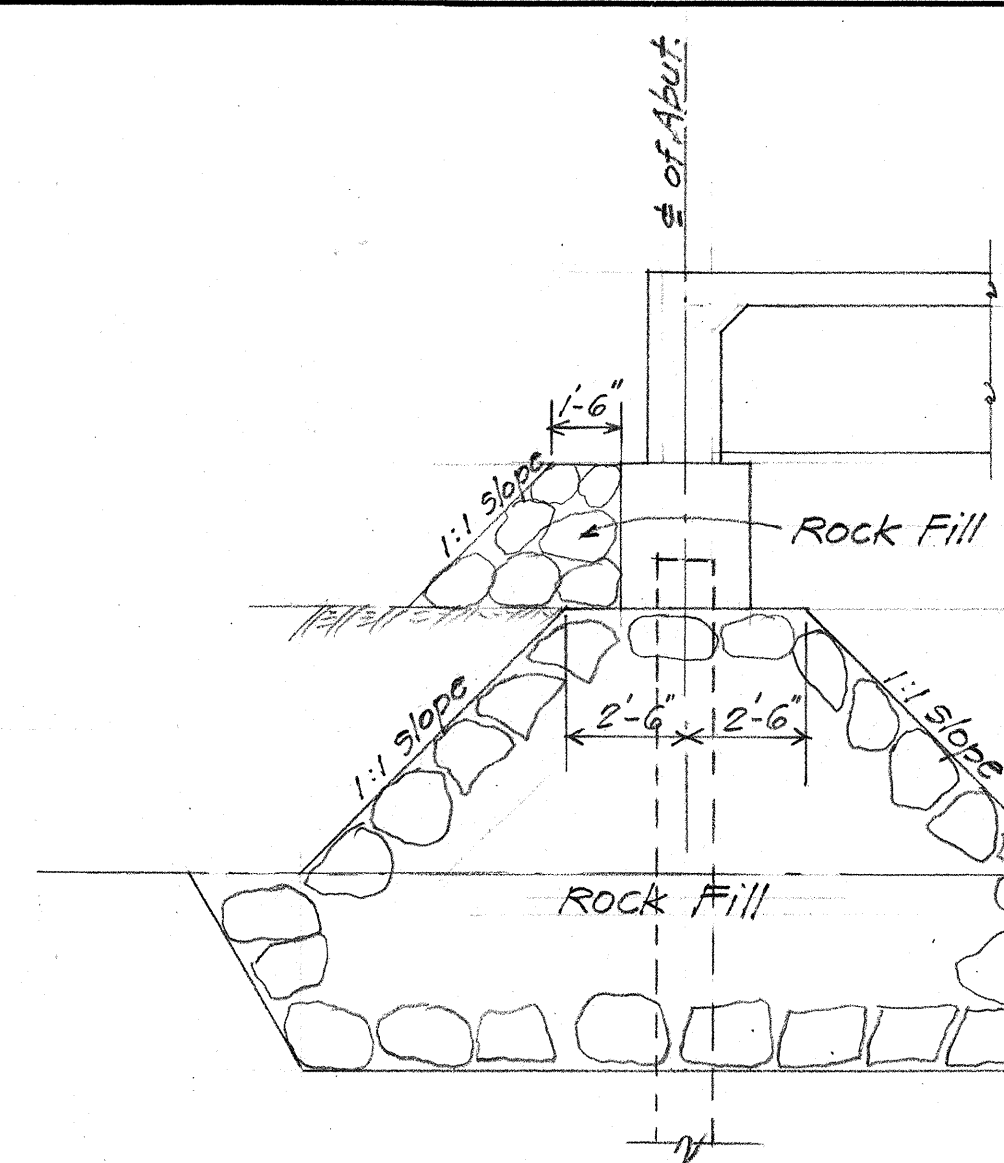
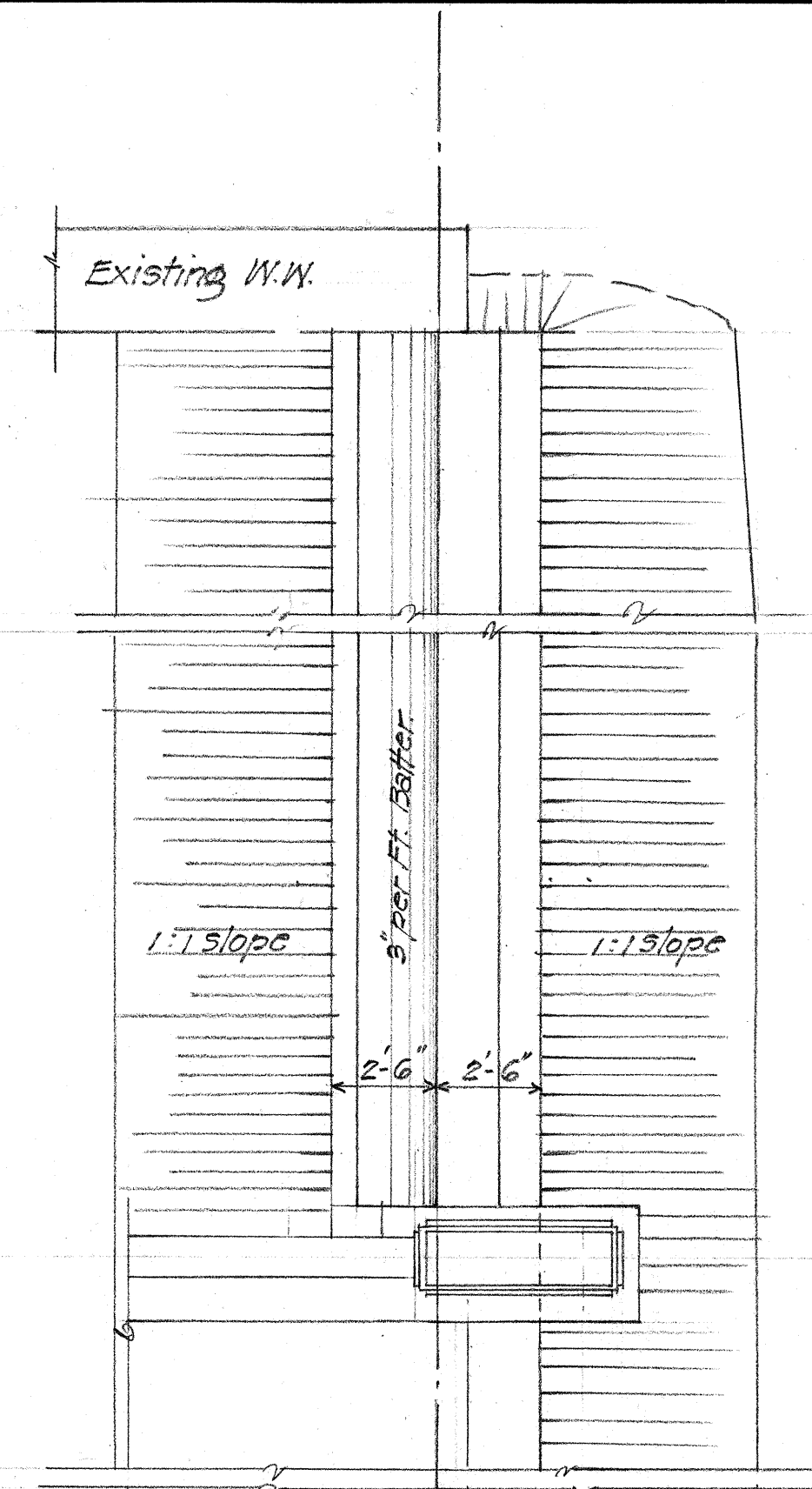
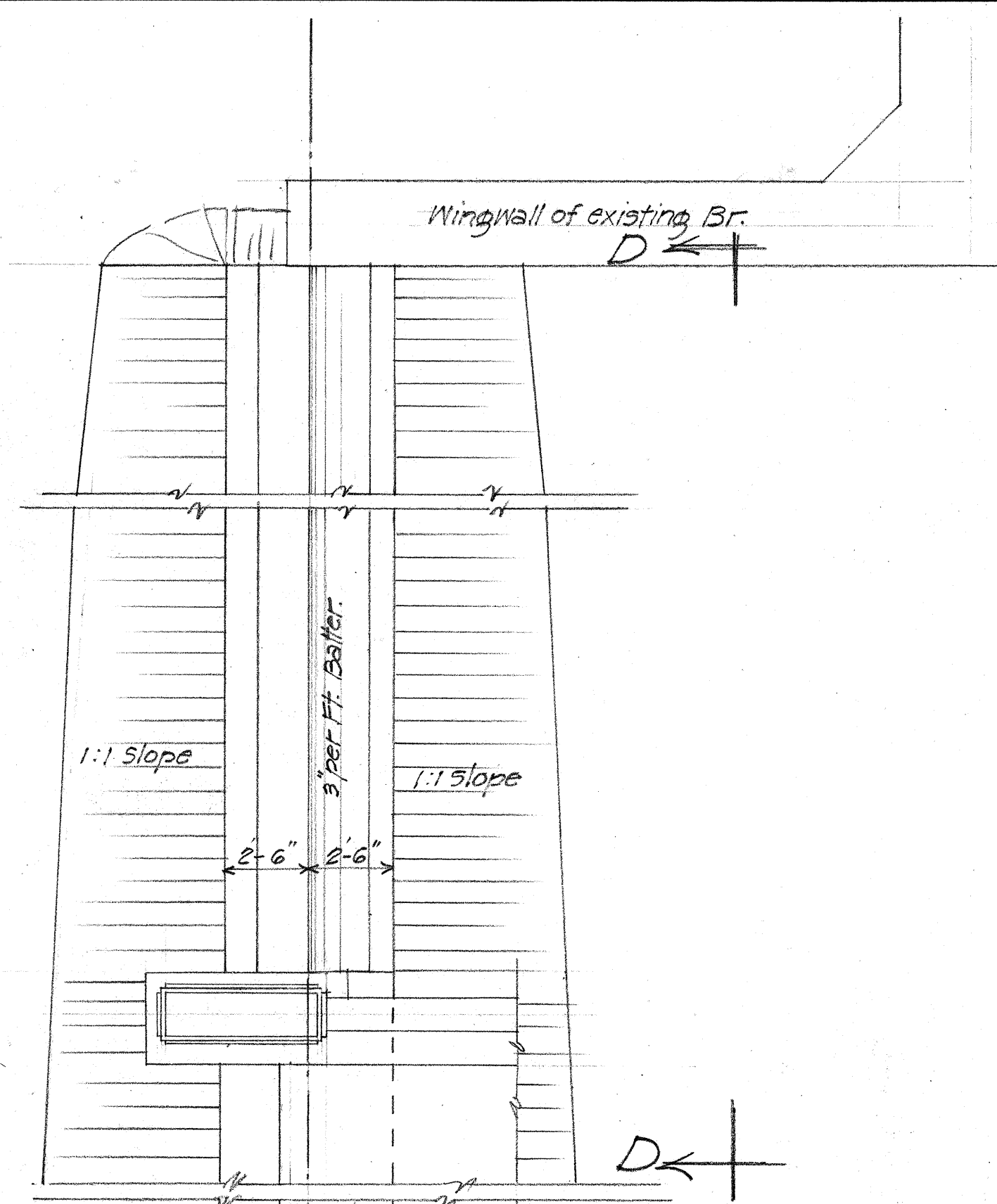
5140.4

Revision: Additional steel added
in superstructure.

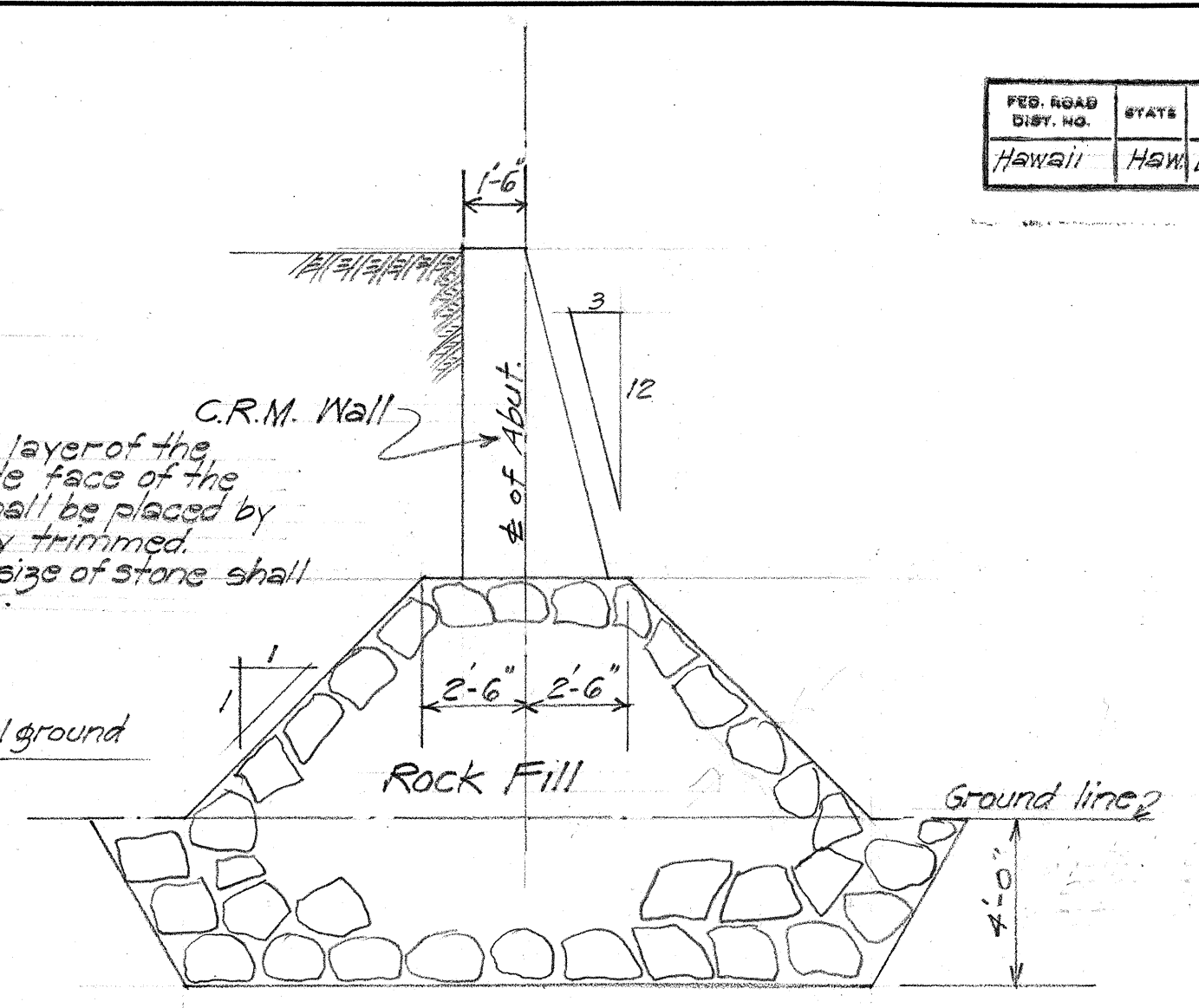
DESIGNED BY: W. K. Barlow
CHECKED BY: D. K. Langstaff
QUANTITIES BY: D. K. Langstaff
CHECKED BY: Paul Yemashita



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HSW	DANR 13(3)	1944	4	5

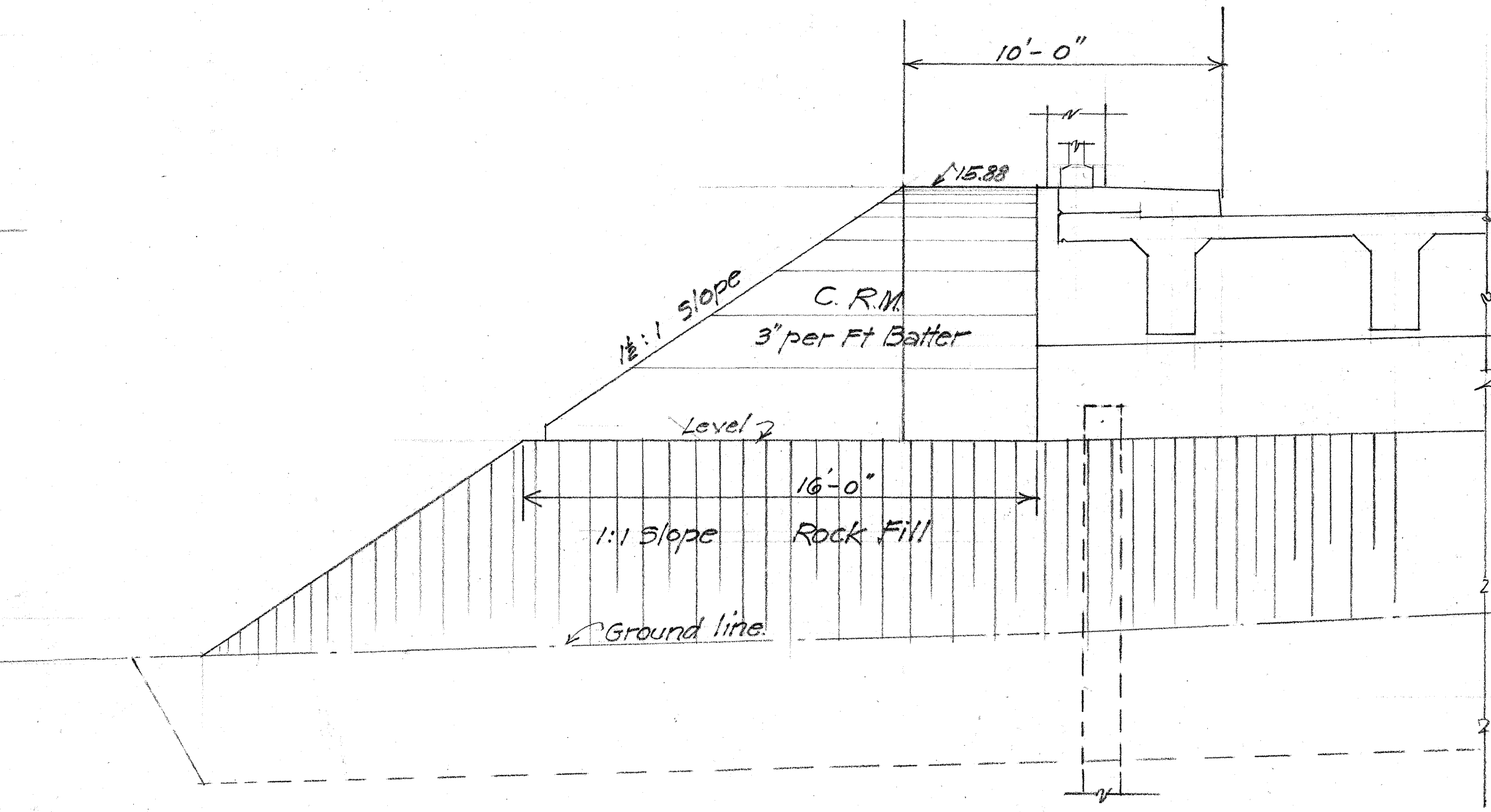
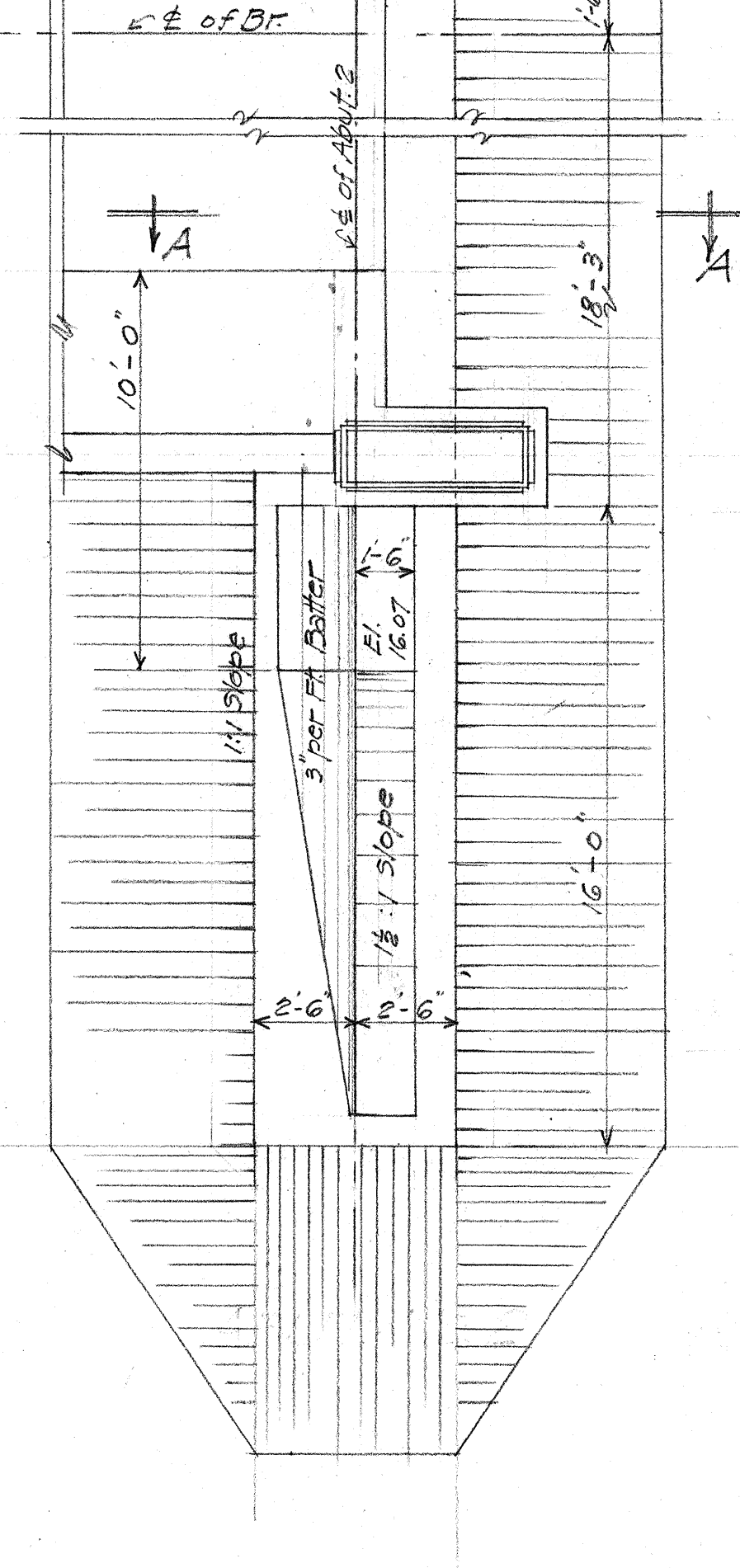
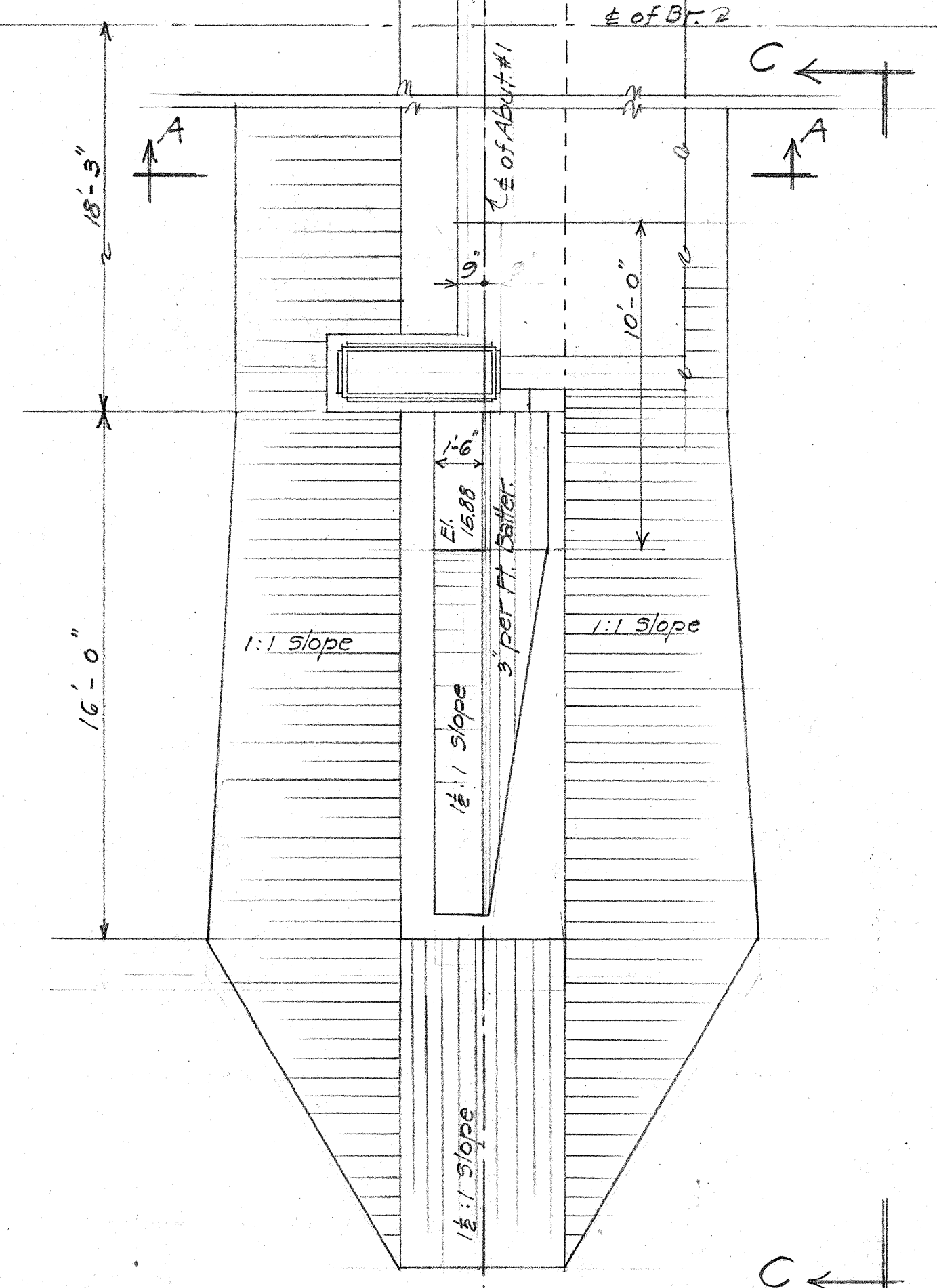


NOTE: Outside layer of the stream side face of the Rock Fill shall be placed by hand neatly trimmed. Minimum size of stone shall be one Man.

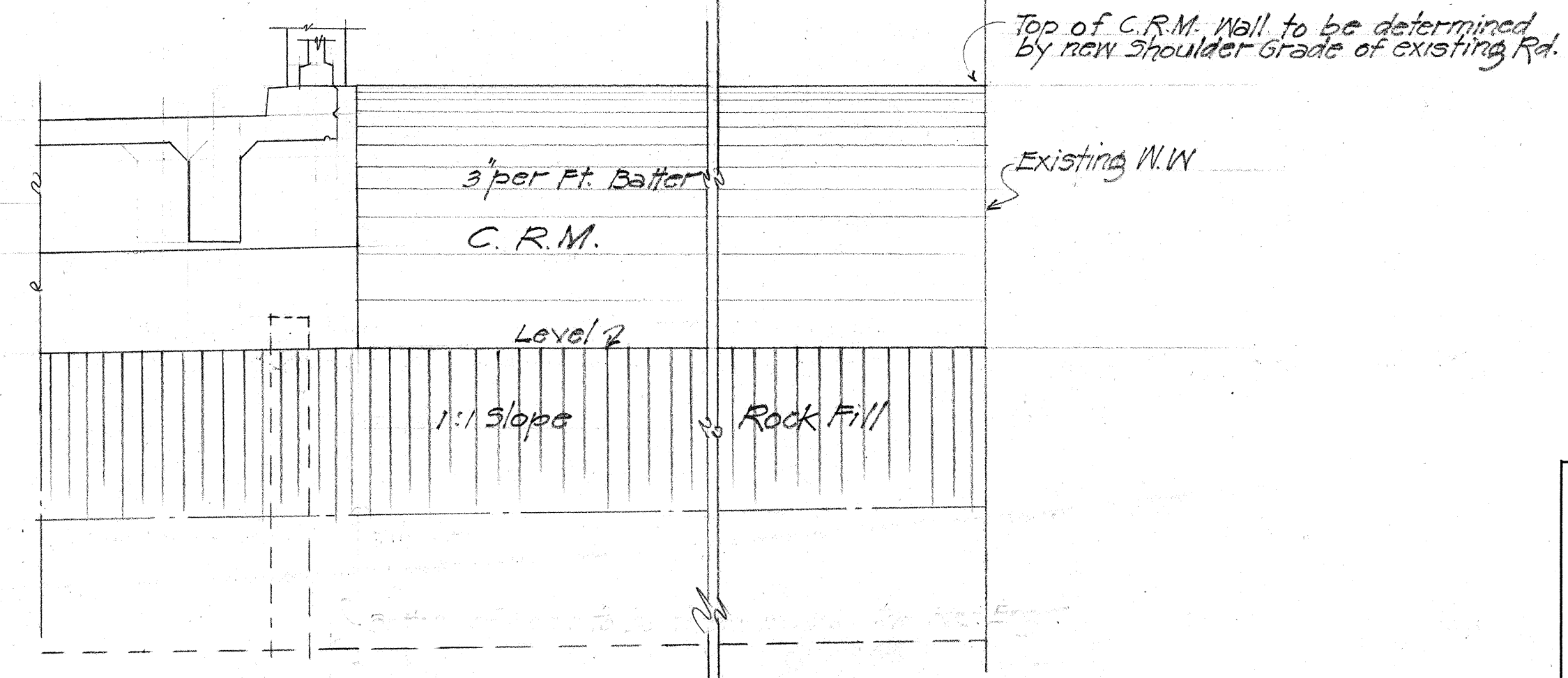


ABUT. SECTION A-A
Scale 1/4" = 1'-0"

WINGWALL SECTION B-B
1/4" = 1'-0"



WINGWALL ELEV. C-C.
1/4" = 1'-0"



WINGWALL ELEV. D-D
1/4" = 1'-0"

ABUT. #1

ABUT. PLAN SHOWING ROCK FILL & C.R.M. WALL
Scale 1/4" = 1'-0"

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
HALAWA BRIDGE
 STA. 257+20 TO STA. 260+30

KAM. HIGHWAY DANR 13(3)
 June, 1944

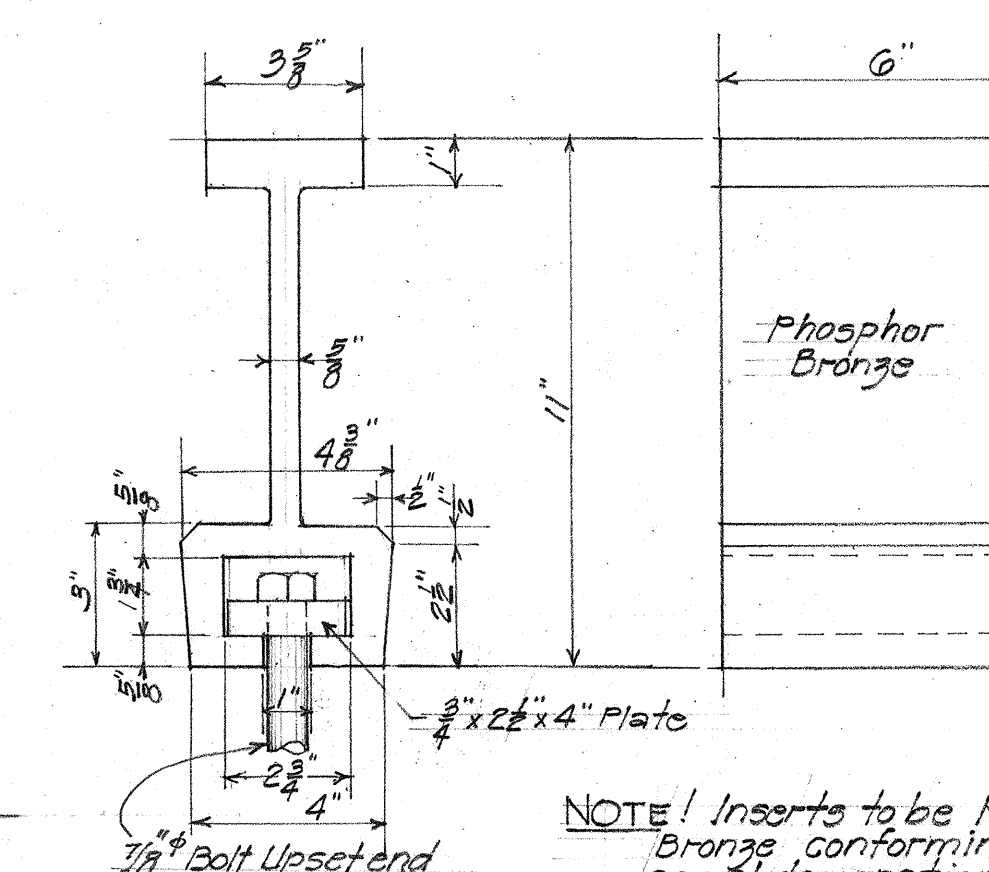
SHEET NO 4 OF 5 SHEETS

5140.5

ORIGINAL PLAN
 DESIGNED BY
 DRAWN BY
 CHECKED BY
 DATE
 1/1/44

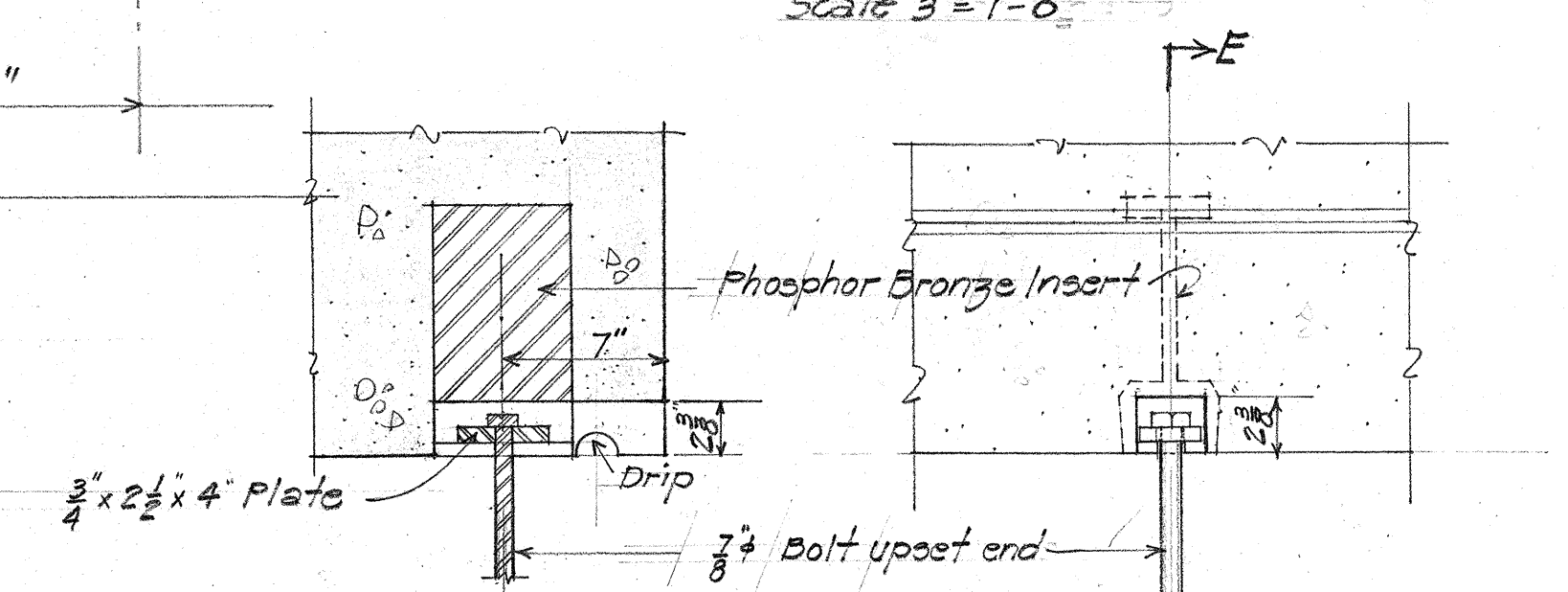
REV. NO.	BY	DATE	REV. NO.	BY	DATE
1	HAWAII	1944	5		

Note!
Phosphor Bronze Inserts and $\frac{3}{4} \times 8$ " phosphor-bronze bolts for 24" Water Main to be furnished by the Board of Water Supply and installed by the contractor.



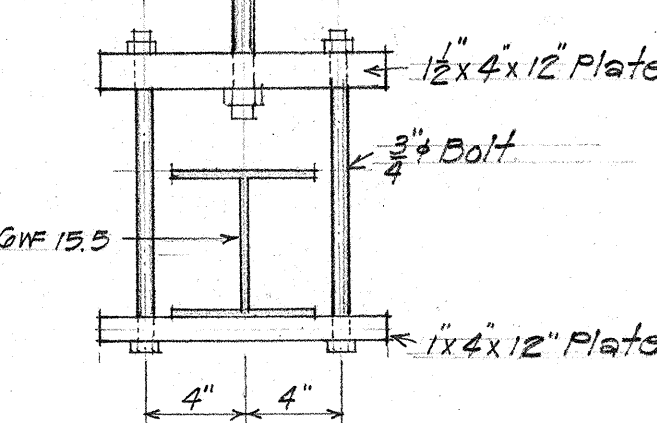
NOTE! Inserts to be Phosphor Bronze conforming to A.S.T.M. serial designation B 22-387 or the latest revision thereof and shall be Class D grade. Required: 24 Inserts.

DETAIL OF INSERT FOR 24" WATER MAIN
Scale 3" = 1'-0"

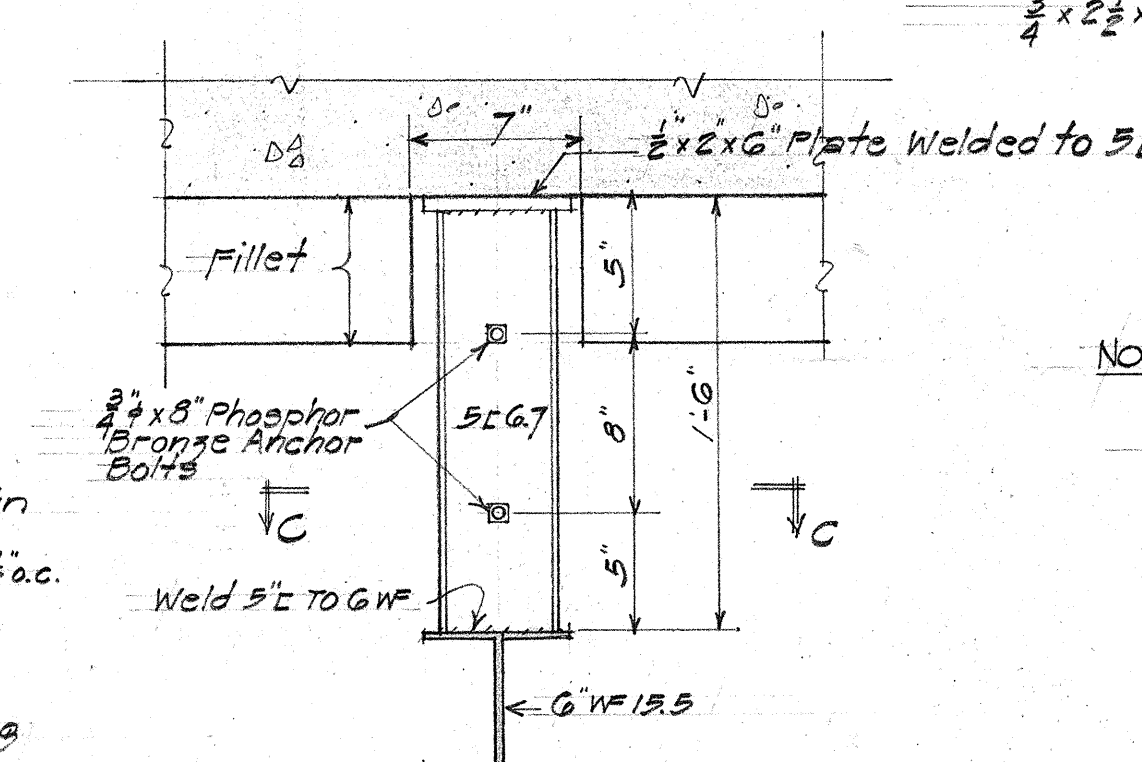


SECTION E-E
Scale 1 1/2" = 1'-0"

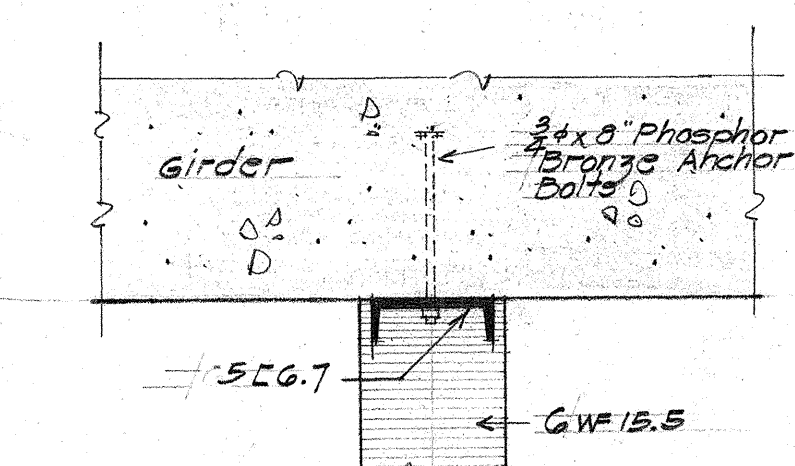
NOTE! All steel to be furnished and installed by others.
Required: 48 - $\frac{3}{4} \times 8$ " Phosphor Bronze Anchor Bolts. G.W. 15.5



ELEVATION D-D
Scale 1 1/2" = 1'-0"

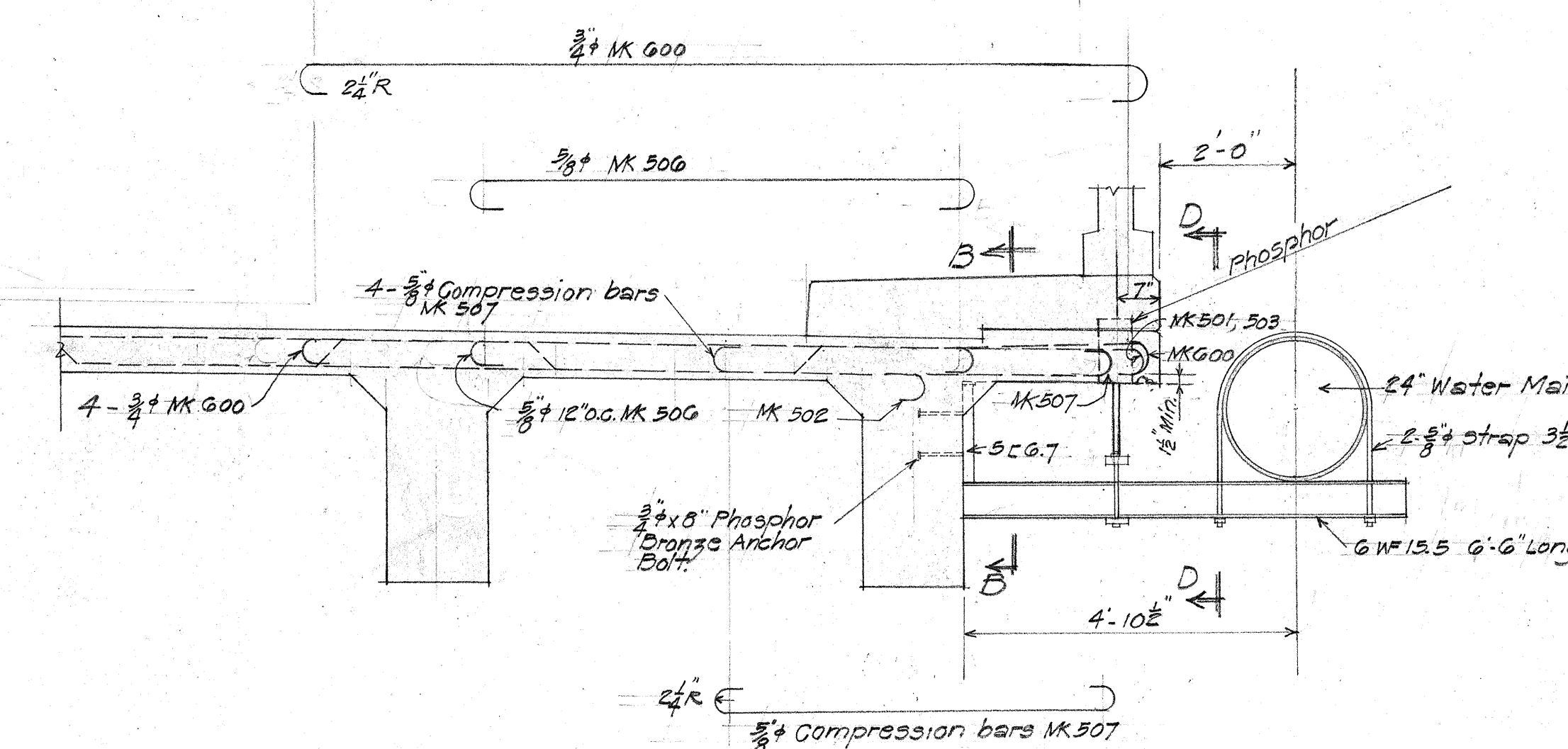


SECTION B-B
Scale 1 1/2" = 1'-0"

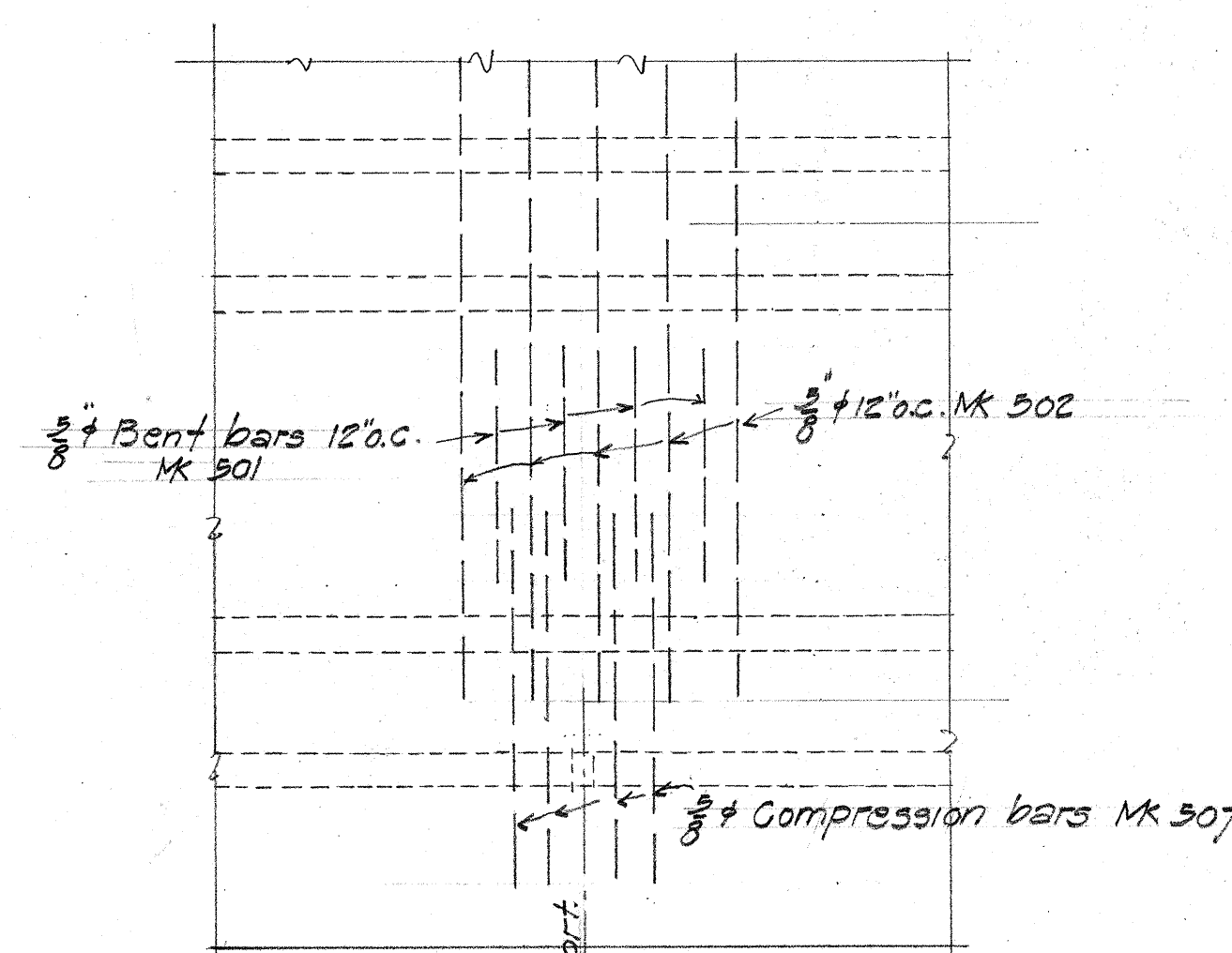


SECTION C-C
Scale 1 1/2" = 1'-0"

DECK TOP REINF. AT WATER MAIN SUPPORTS
Scale 3/8" = 1'-0"



SECTION A-A
Scale 1 1/2" = 1'-0"



BOTTOM REINF. AT WATER MAIN SUPPORTS
Scale 3/8" = 1'-0"

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
HALAWA BRIDGE
Sta 257+90 TO Sta 260+30
KAM. HIGHWAY DA-NR 13(B)
June 1944
SHEET NO 5 OF 5 SHEETS

5140.S