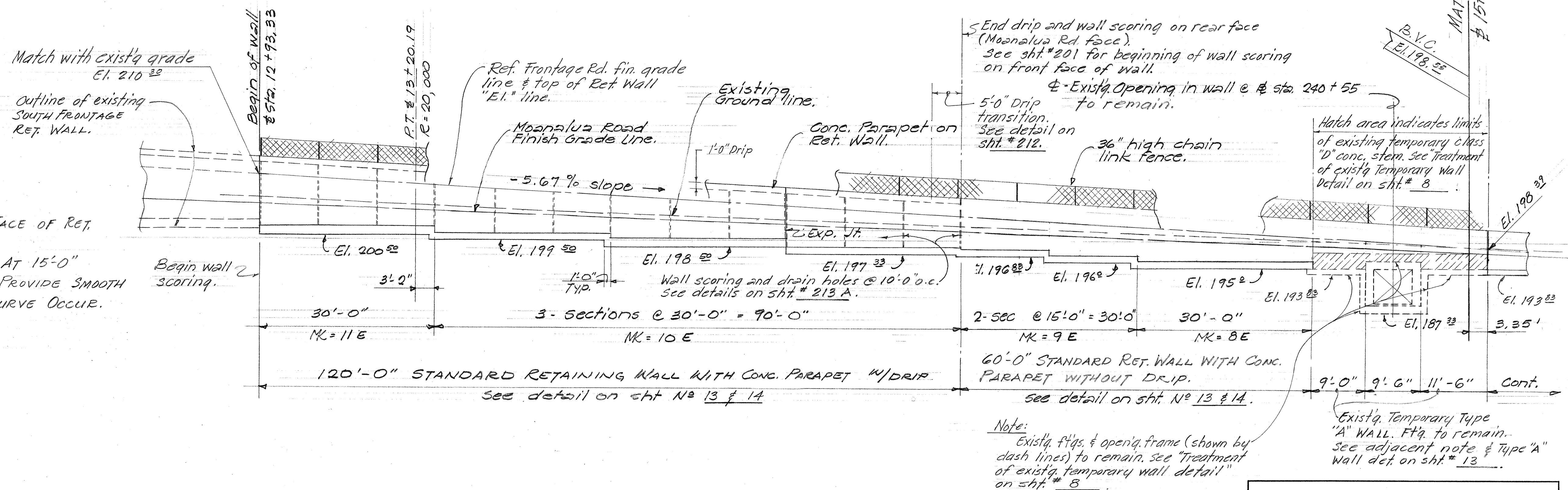


PLAN
Scale: 1" = 10'-0"

943' - 7 1/2" TOTAL LENGTH OF WALL.

- ① DIMENSIONS MEASURED ALONG FRONT FACE OF RET. WALL EXCEPT OTHERWISE NOTED.
- ② TOP OF RET. WALL ELEVATIONS GIVEN AT 15'-0" INTERVALS EXCEPT OTHERWISE NOTED. PROVIDE SMOOTH CURVE ACCORDINGLY WHERE VERTICAL CURVE OCCUR.



ELEVATION
Scale: 1" = 10' - 0"

ESTIMATED QUANTITIES		
CONCRETE	(710 c.y.)	LUMP SUM
REINFORCING STEEL	(70,200 lbs.)	LUMP SUM
STRUCTURAL EXCAVATION	1,600	C.Y.
FILTER MATERIAL	153	C.Y.

THIS SHEET SUPERSEDES
SHEET NO. 200.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SOUTH FRONTAGE RET. WALL
EXTENSION

\$ Sta. 12+93.33 to \$ Sta. 22+33.89

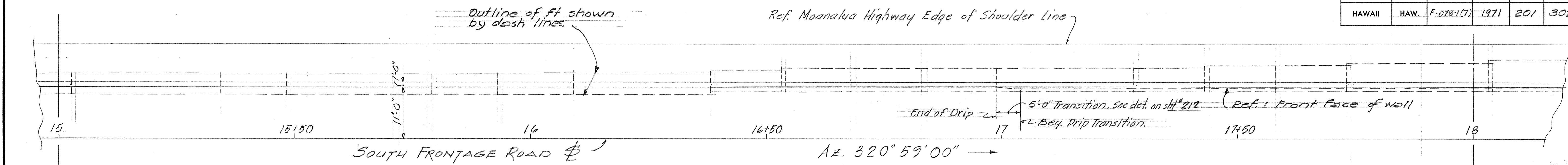
MOANALUA ROAD

F.A.P. Proj. No. F-078-1 (7)

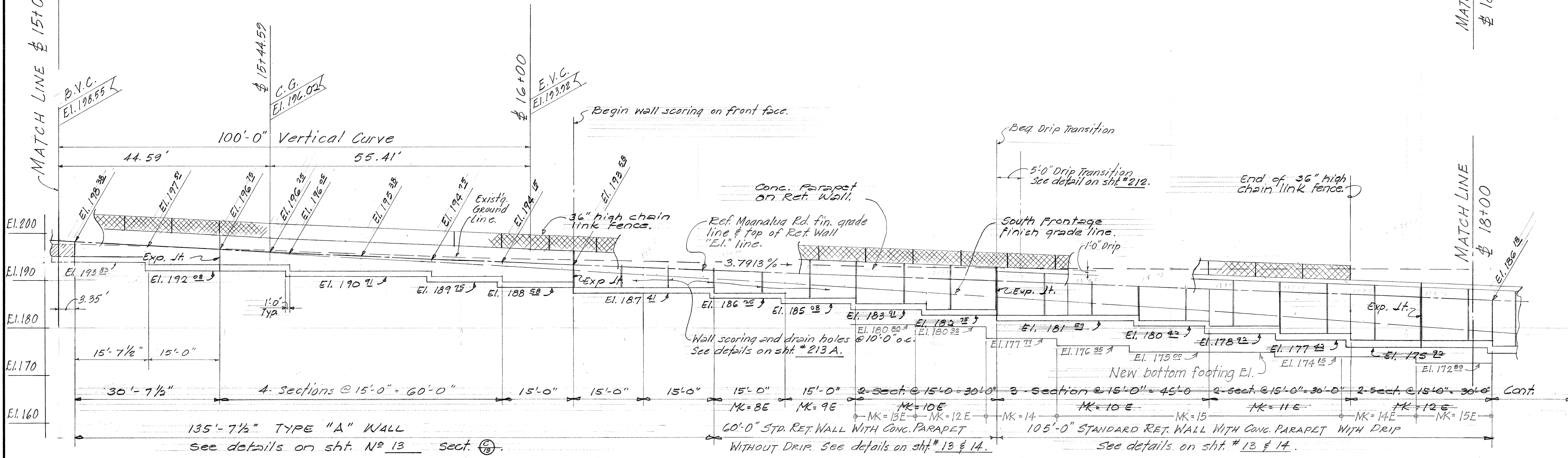
Scale: 1" = 10'-0" April 1970

SHEET NO. 1 OF 15 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(7)	1971	201	302



PLAN
Scale: 1" = 10'



ELEVATION
Scale: 1" = 10'

DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
NOTED BY	_____
NO.	_____

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**SOUTH FRONTAGE RET WALL
EXTENSION**

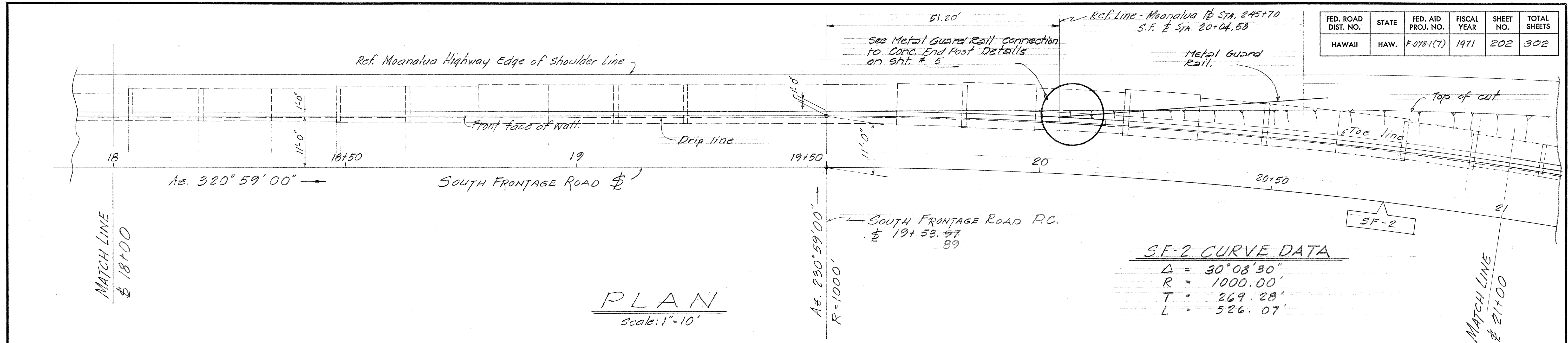
Sta. 12+93.33 to Sta. 22+33.89
MOANALUA ROAD

F.A.P. Proj. No. F-078-1(7)

Scale: 1" = 10'-0" April 1970

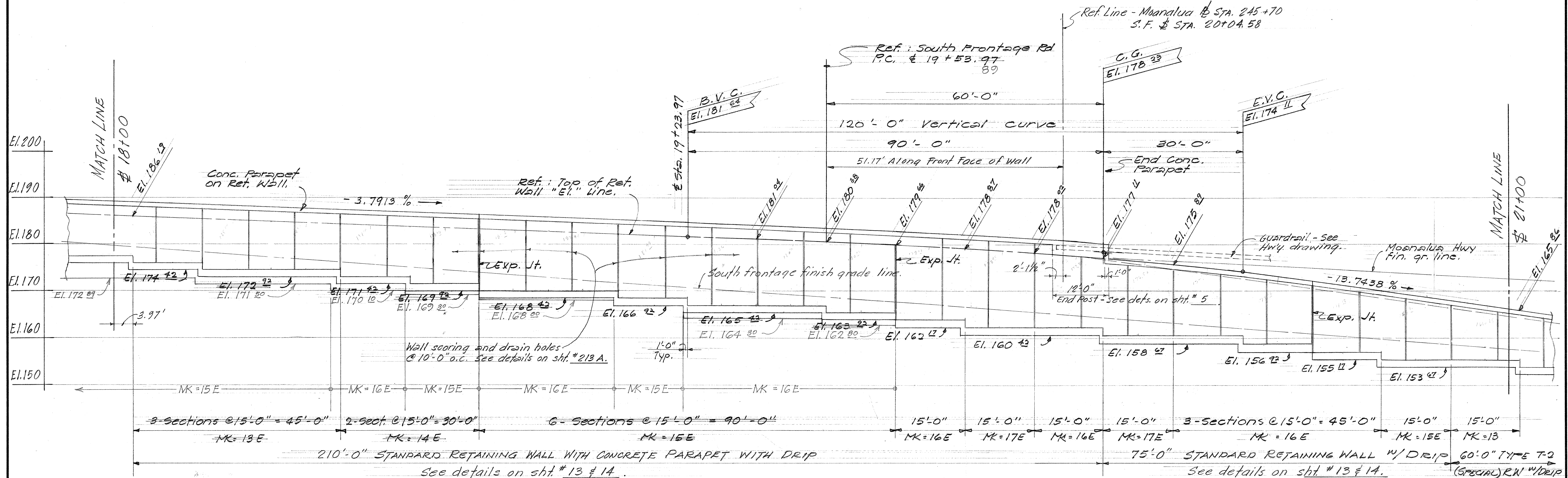
SHEET No. 2 OF 15 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(7)	1971	202	302



SF-2 CURVE DATA

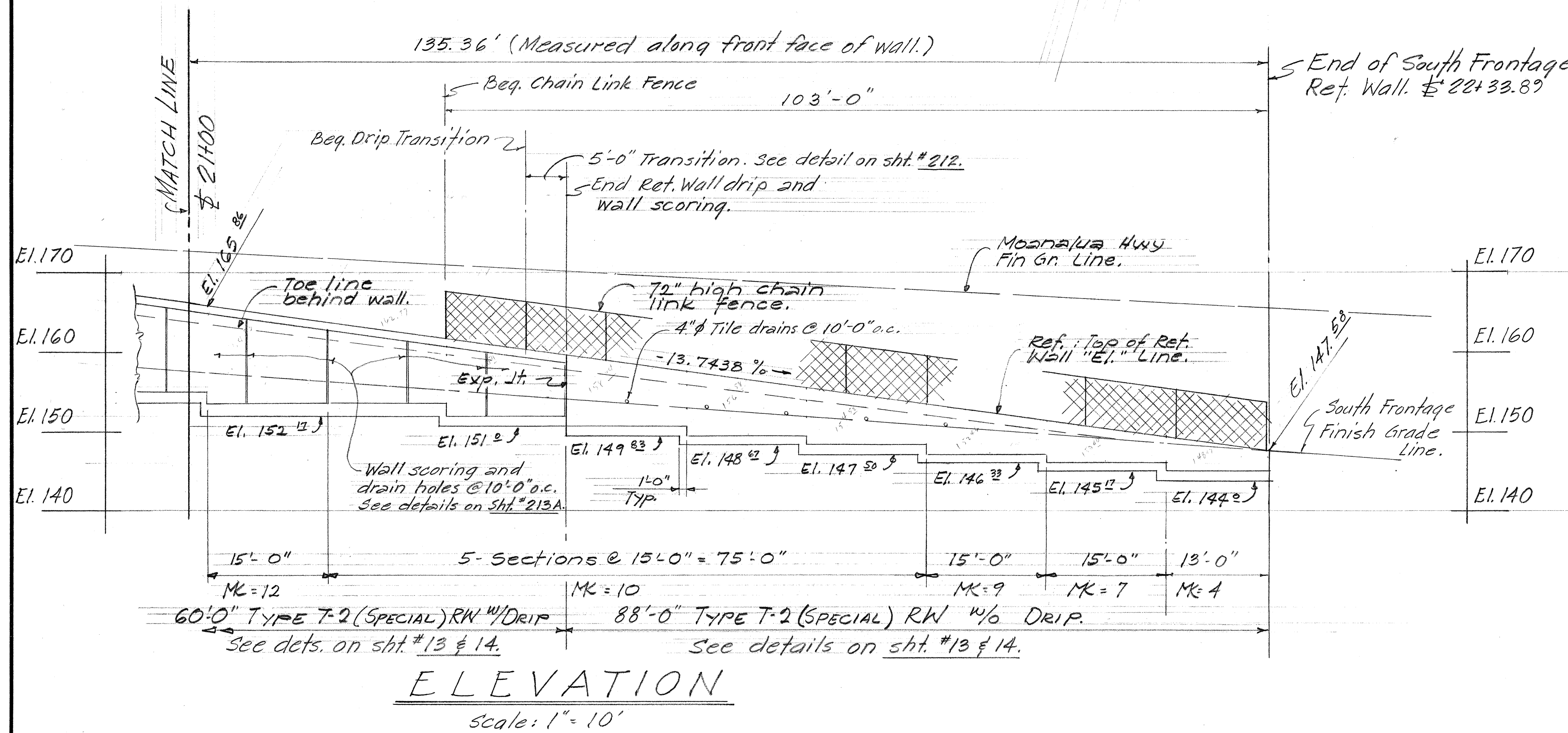
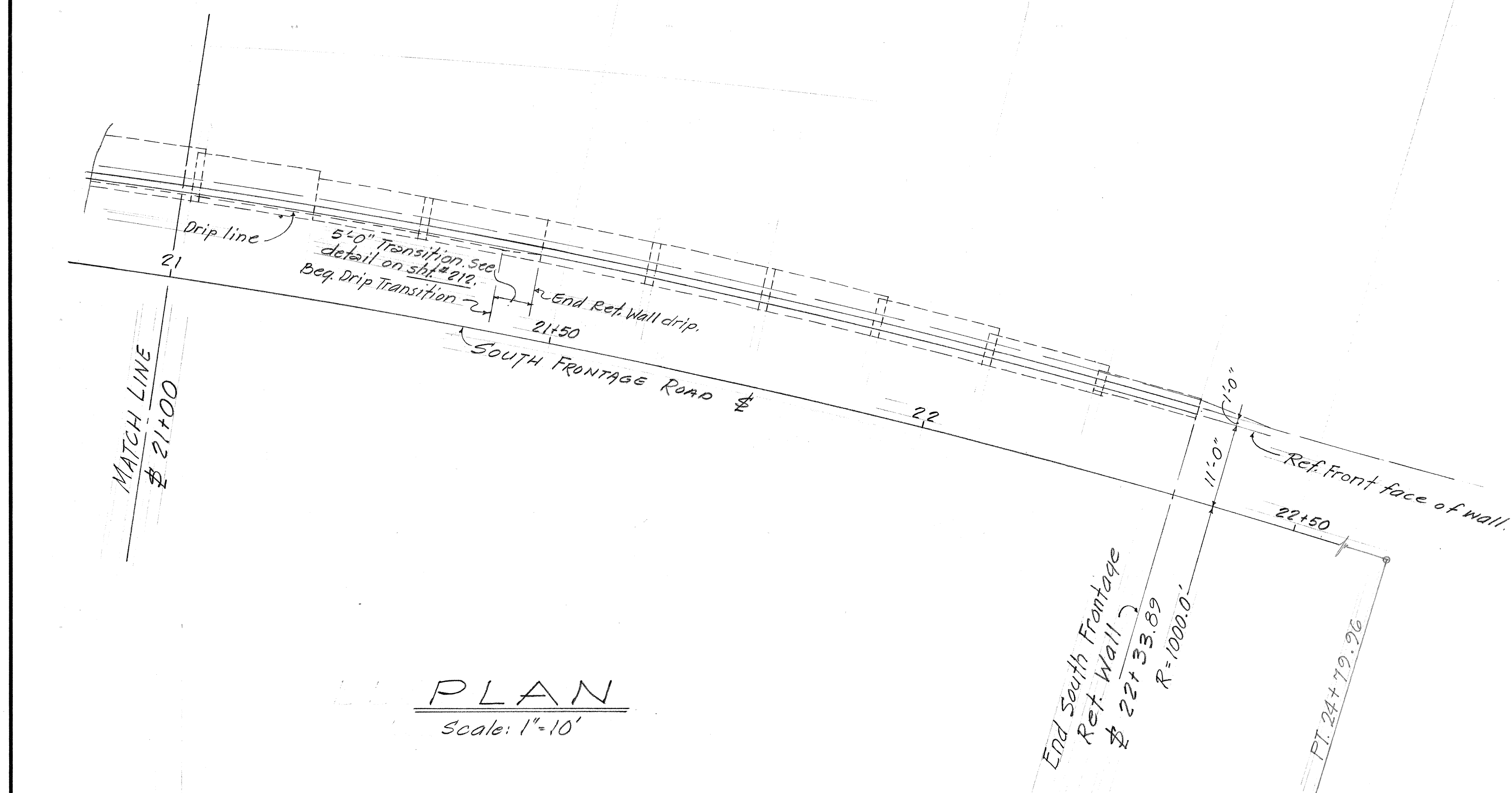
$\Delta = 30^{\circ}08'30''$
 $R = 1000.00'$
 $T = 269.28'$
 $L = 526.07'$



STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
SOUTH FRONTAGE RET. WALL
EXTENSION
 Sta. 12+93.33 to Sta. 22+33.89
 MOANALUA ROAD
 F.A.P. Proj. No. F-078-1(7)
 Scale: 1"=10'-0" April, 1970
 SHEET No. 3 OF 15 SHEETS

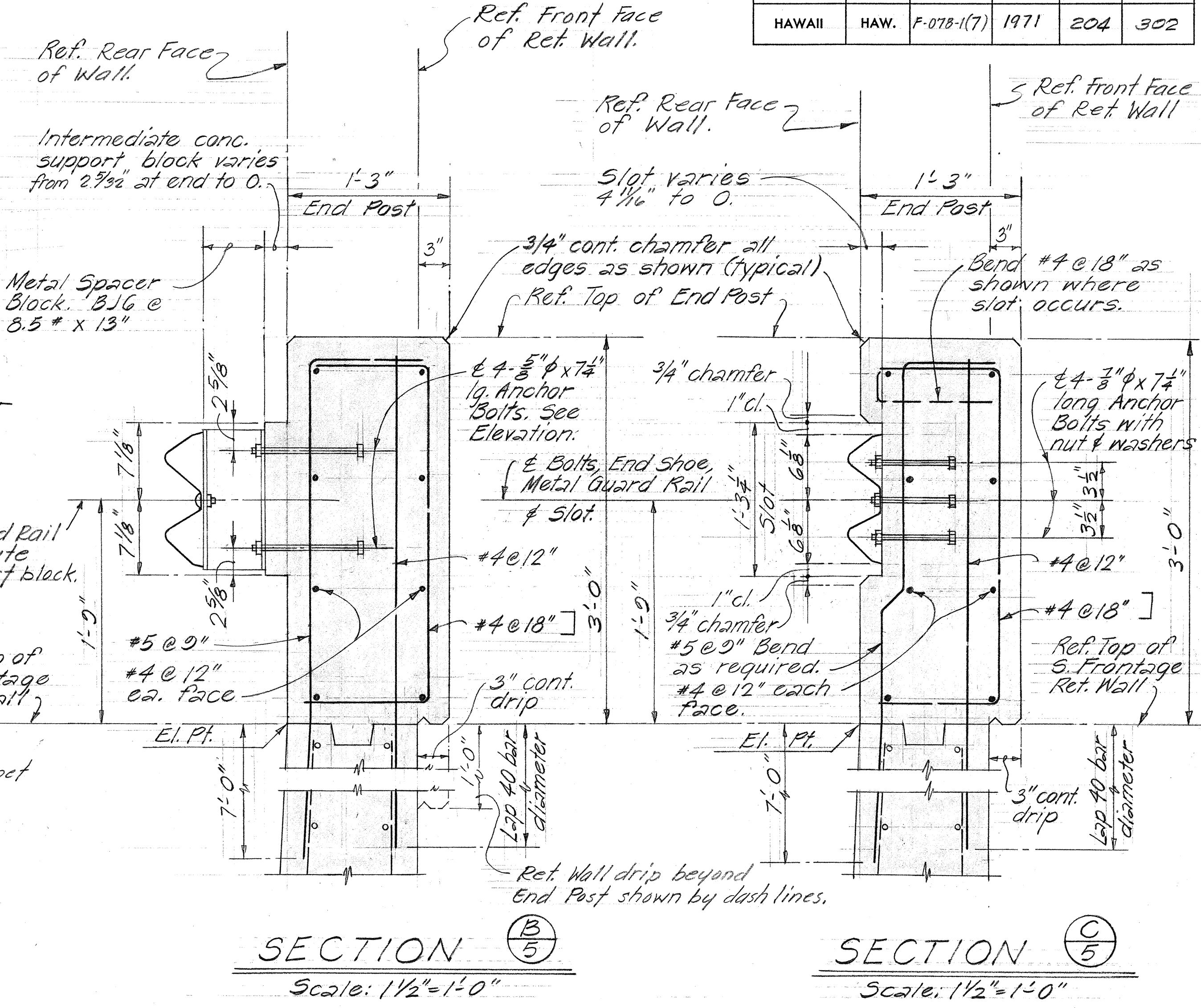
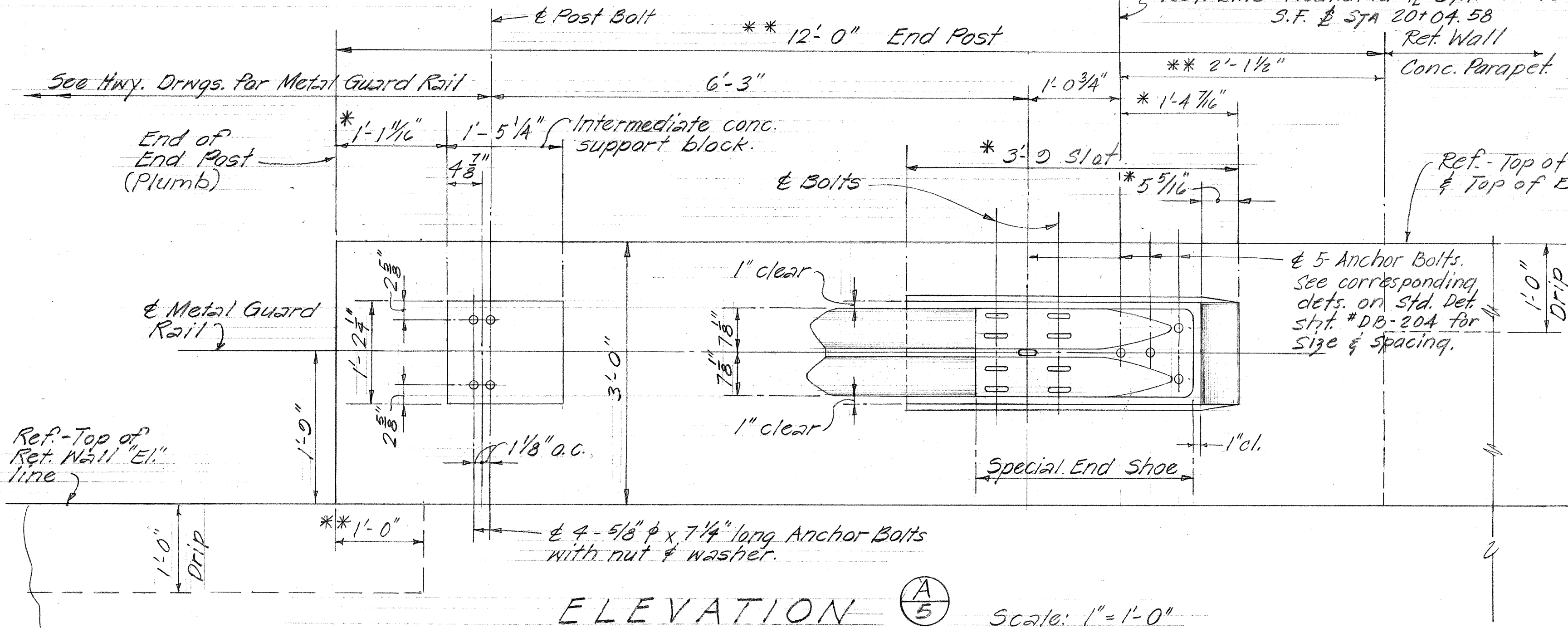
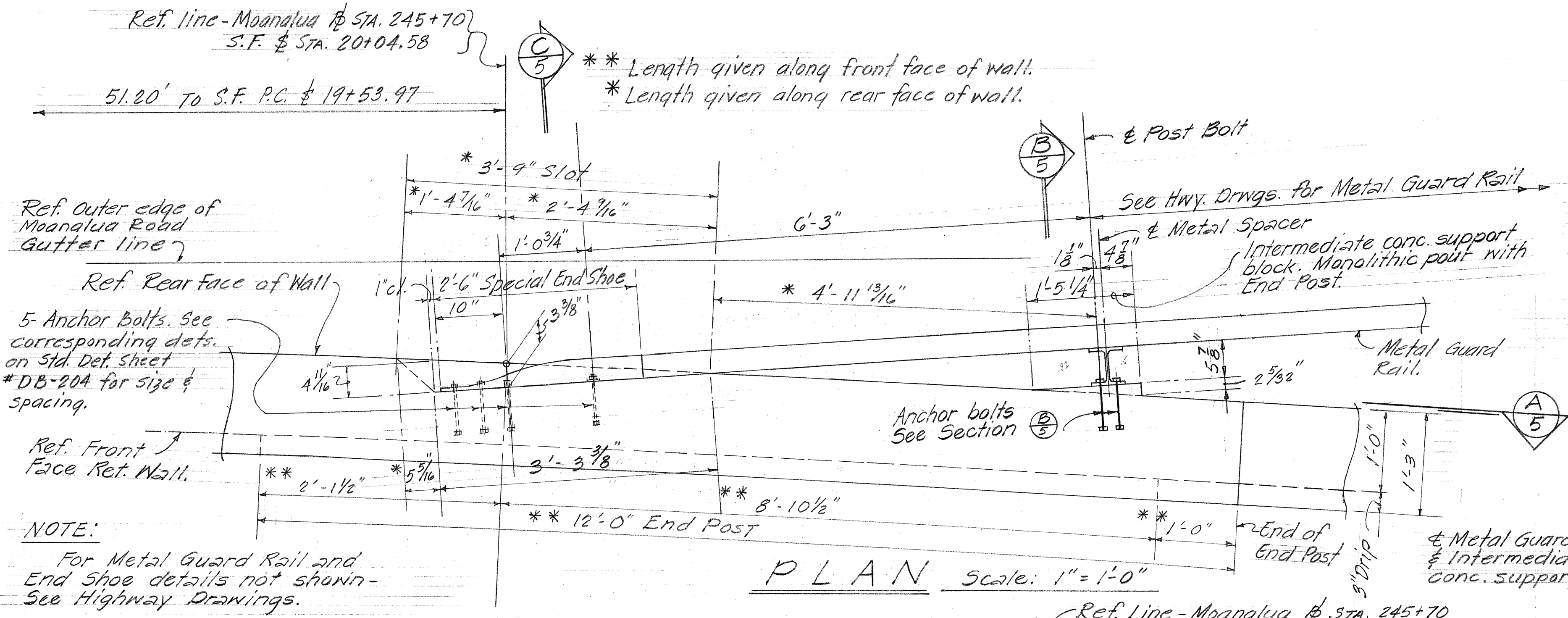
SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(7)	1971	203	302



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SOUTH FRONTAGE RET. WALL
EXTENSION**
Sta. 12+93.33 to Sta. 22+33.89
MOANALUA ROAD
F.A.P. Proj. No. F-078-1(7)
Scale: 1"=10'-0" April 1970
SHEET No. 4 OF 15 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(7)	1971	204	302



DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
TRACED BY	_____
NOTED BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
No.	_____

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

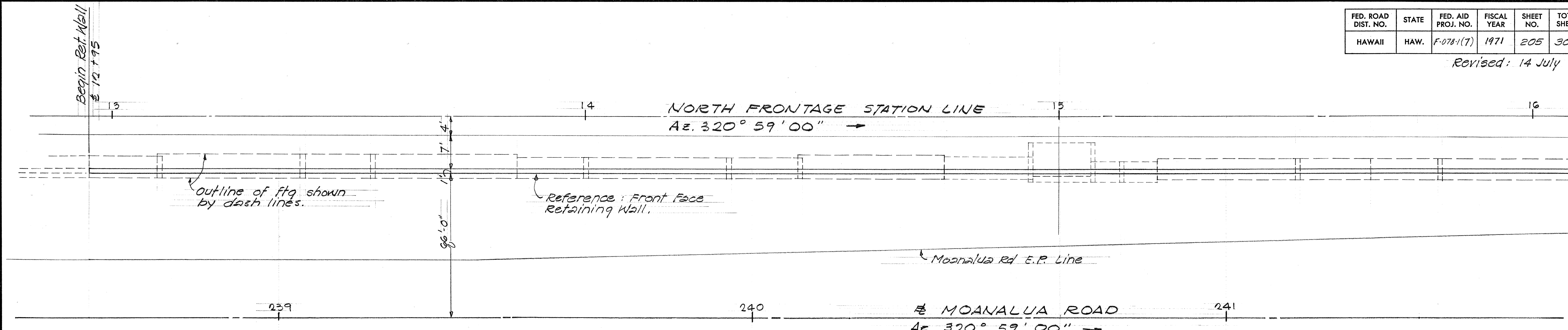
**SOUTH FRONTAGE RET. WALL
EXTENSION
METAL GUARD RAIL
CONNECTION DETAILS**

MOANALUA RD. F.A.P. PROJ. F-078-1(7)
Scale: As Shown DATE: Aug. 1970

SHEET No. 5 OF 15 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(7)	1971	205	302

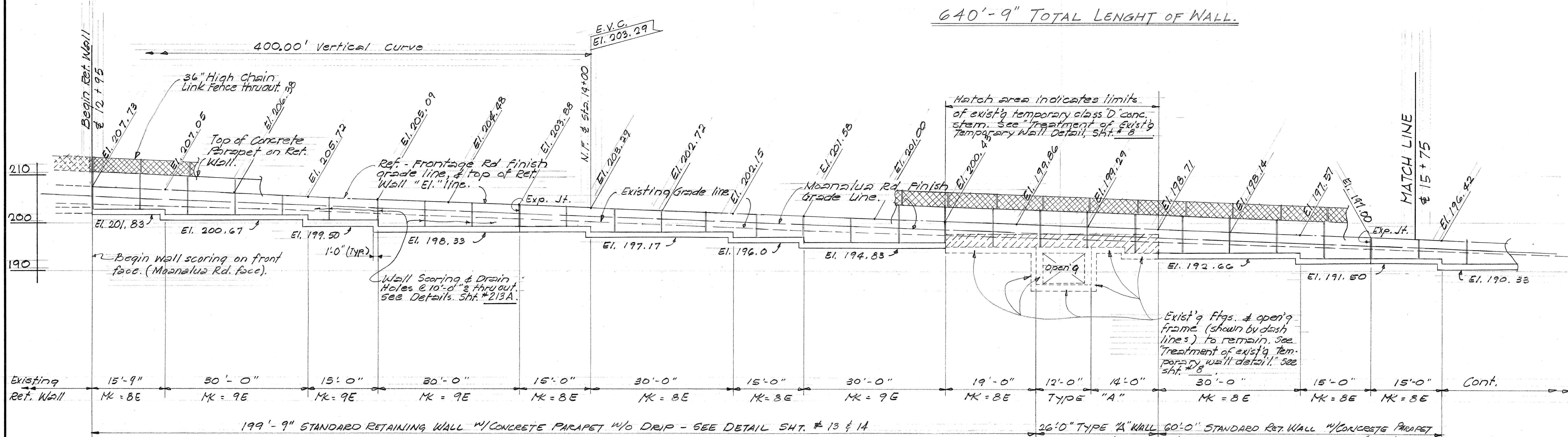
Revised: 14 July 71



PLAN

SCALE: 1" = 10'-0"

640'-9" TOTAL LENGTH OF WALL.



NOTES:

- All dimensions measured along front face of wall except as otherwise noted.
- Top of Ret. Wall Elevations given at 15'-0" intervals except as otherwise noted. Provide smooth curve accordingly where vertical curves occur.

ELEVATION

SCALE: 1" = 10'-0"

ESTIMATED QUANTITIES

CONCRETE	(300 C.Y.)	LUMP SUM
REINFORCING STEEL	(25,000 lbs.)	LUMP SUM
STRUCTURAL EXCAVATION	380	C.Y.
FILTER MATERIAL	0	C.Y.

THIS SHEET SUPERSEDES
SHEET NO. 205.

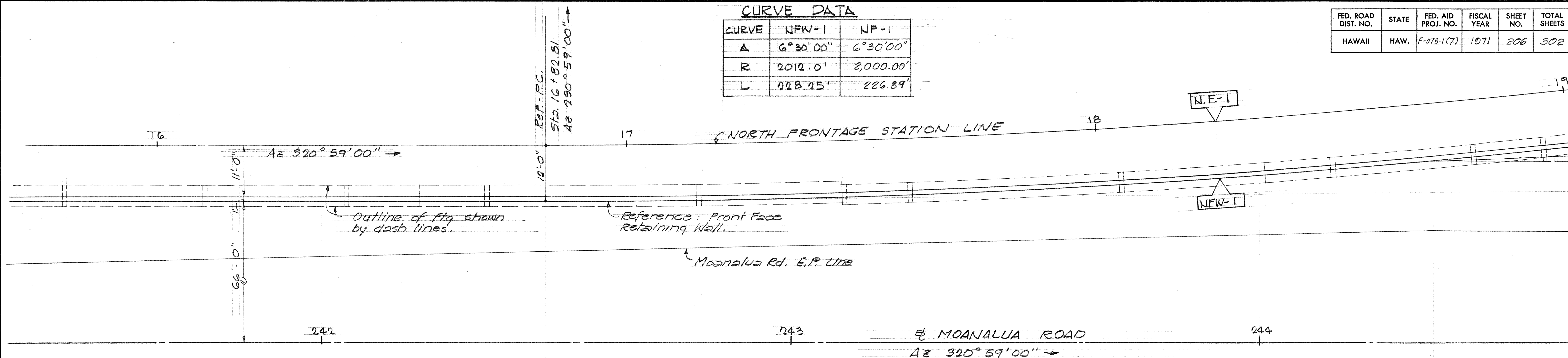
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
NORTH FRONTAGE RET. WALL
EXTENSION
Sta. 12+95.00 to Sta. 19+33.83
MOANALUA ROAD
F.A.P. Proj. No. F-078-1(7)
Scale: 1" = 10'-0" DATE: AUG., 1970
SHEET No. 6 OF 15 SHEETS

A 11 11 11 205

CURVE DATA

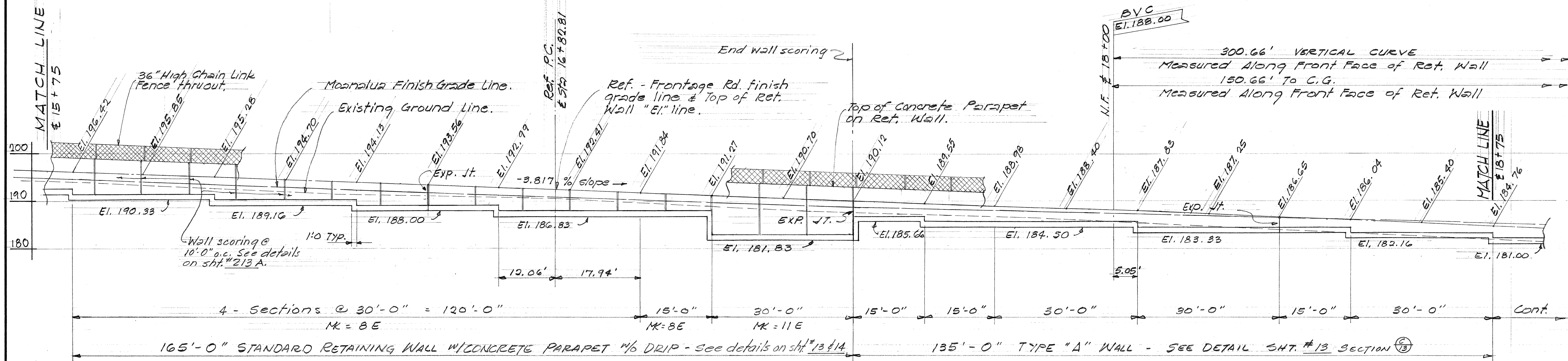
CURVE	NFW-1	NF-1
Δ	6°30'00"	6°30'00"
R	2012.0'	2000.00'
L	228.25'	226.89'

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(7)	1971	206	302



PLAN

SCALE: 1" = 10'-0"



ELEVATION

SCALE: 1" = 10'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**NORTH FRONTAGE RET. WALL
EXTENSION**

Sta. 12+95.00 to Sta. 24+99.69

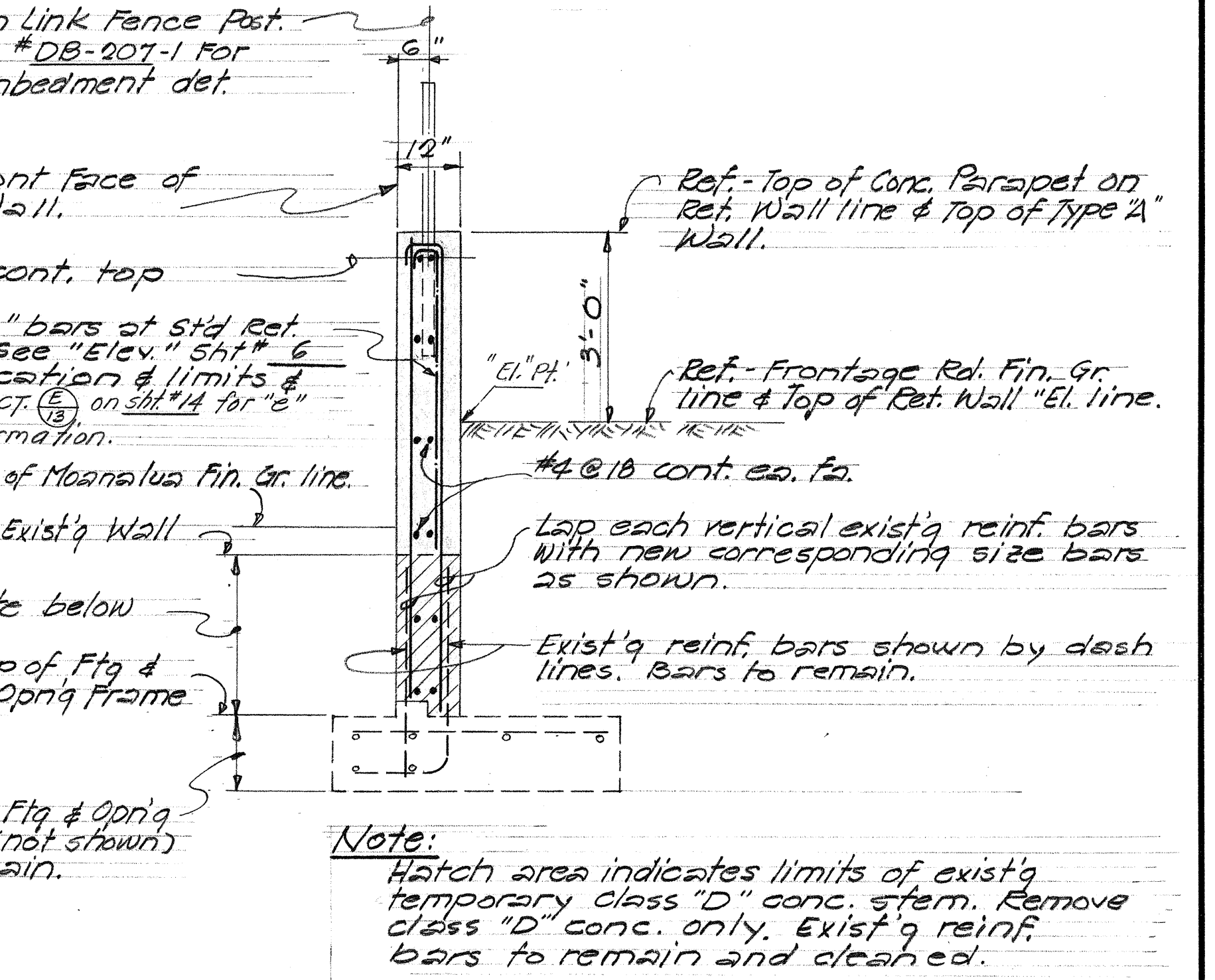
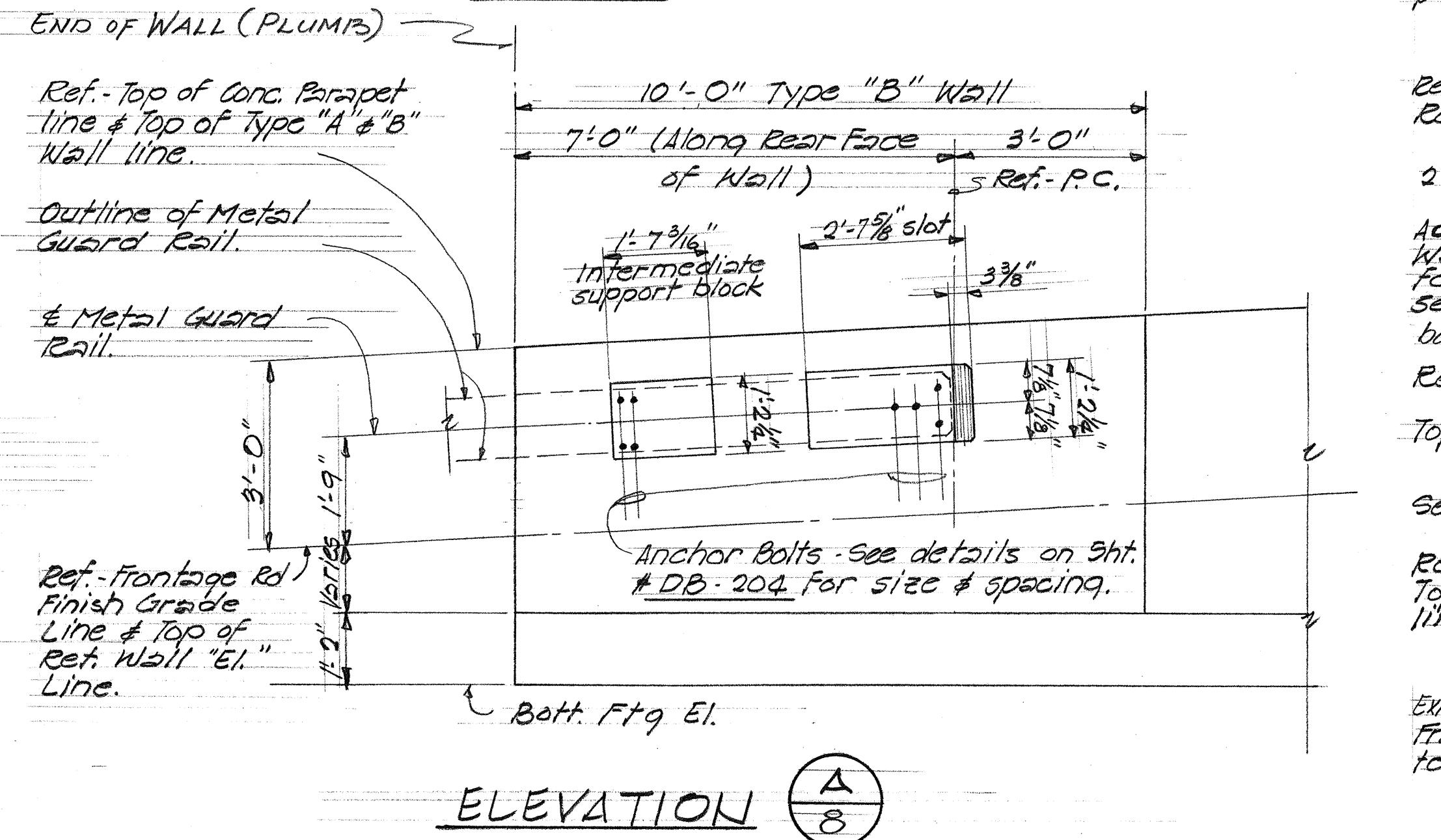
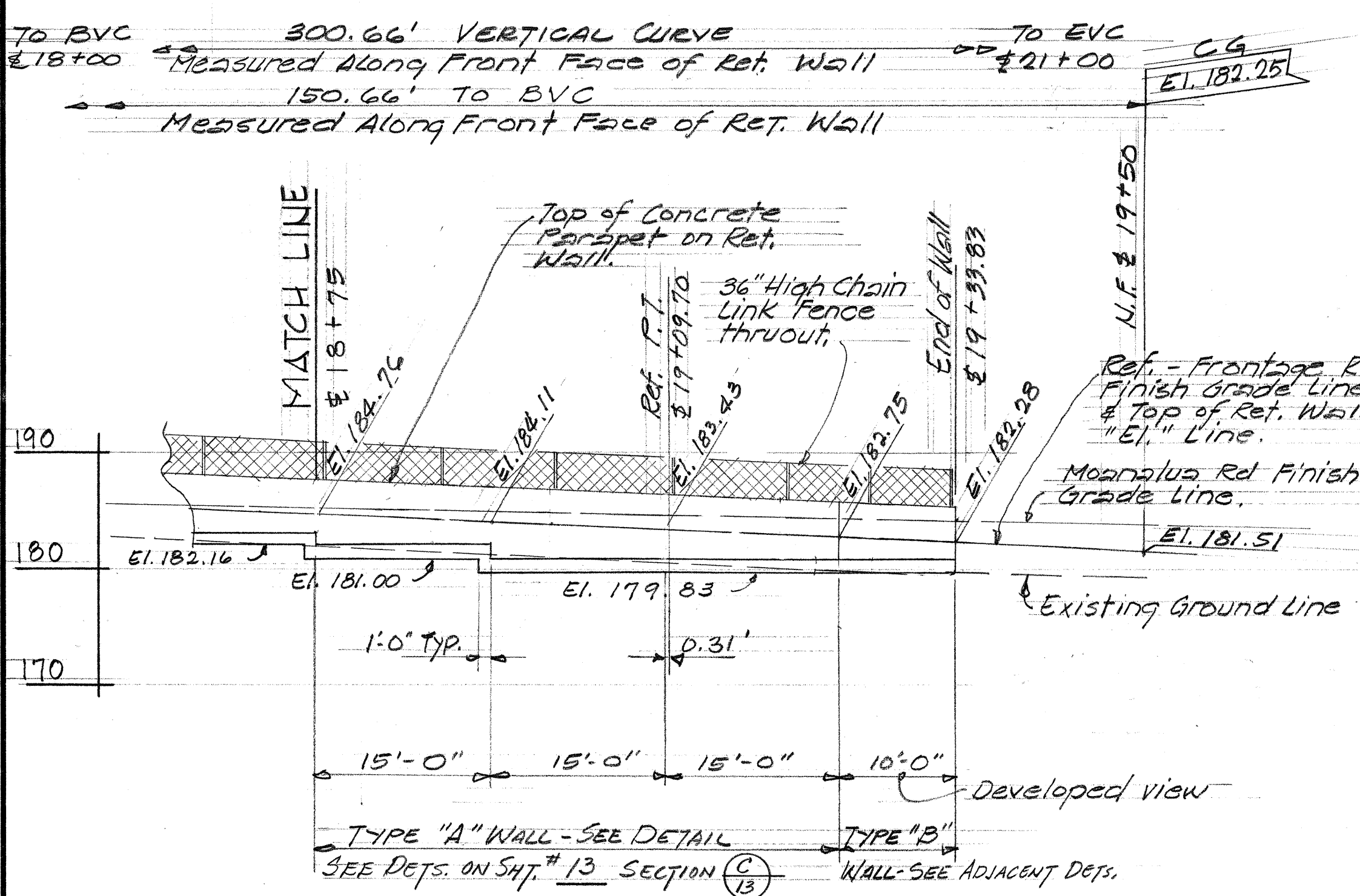
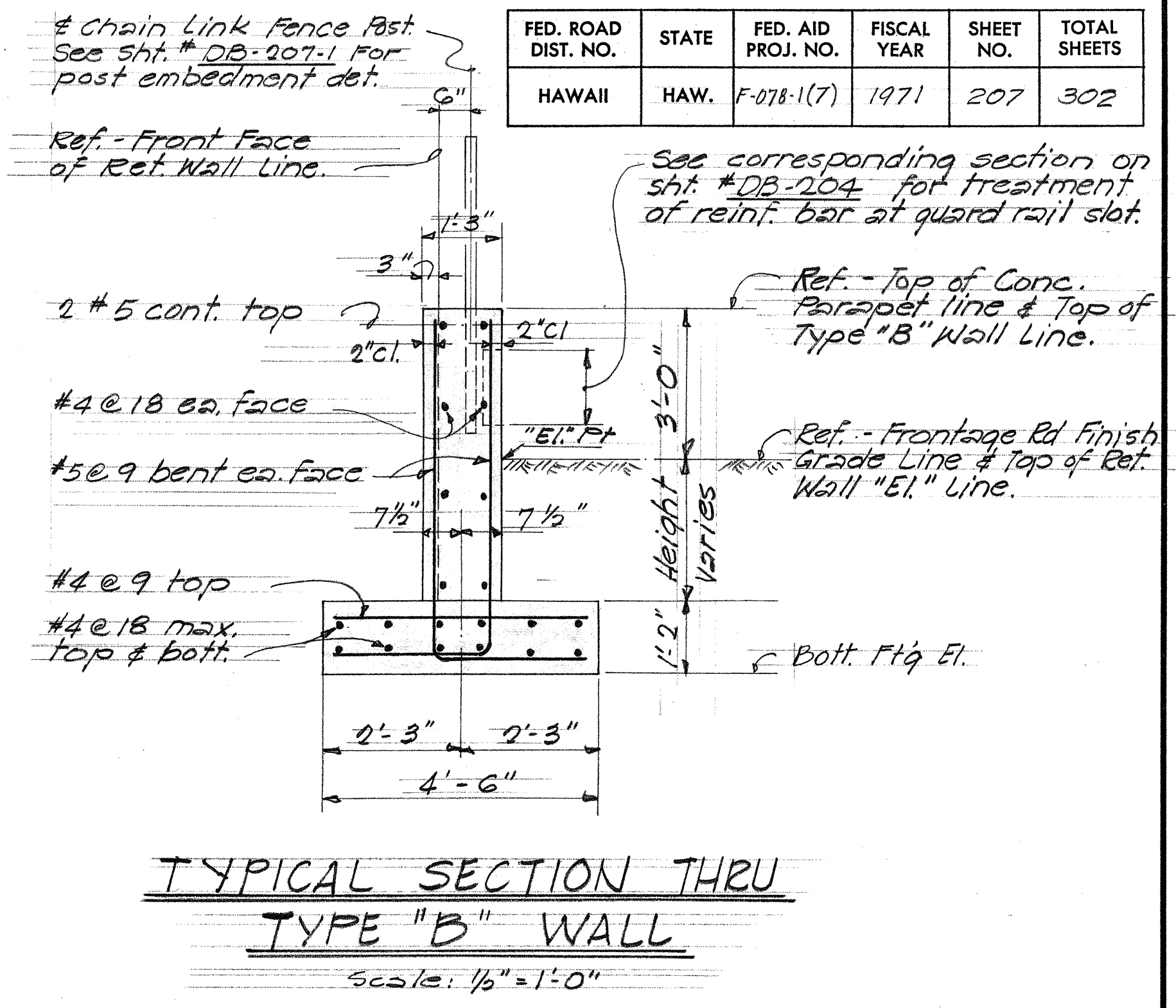
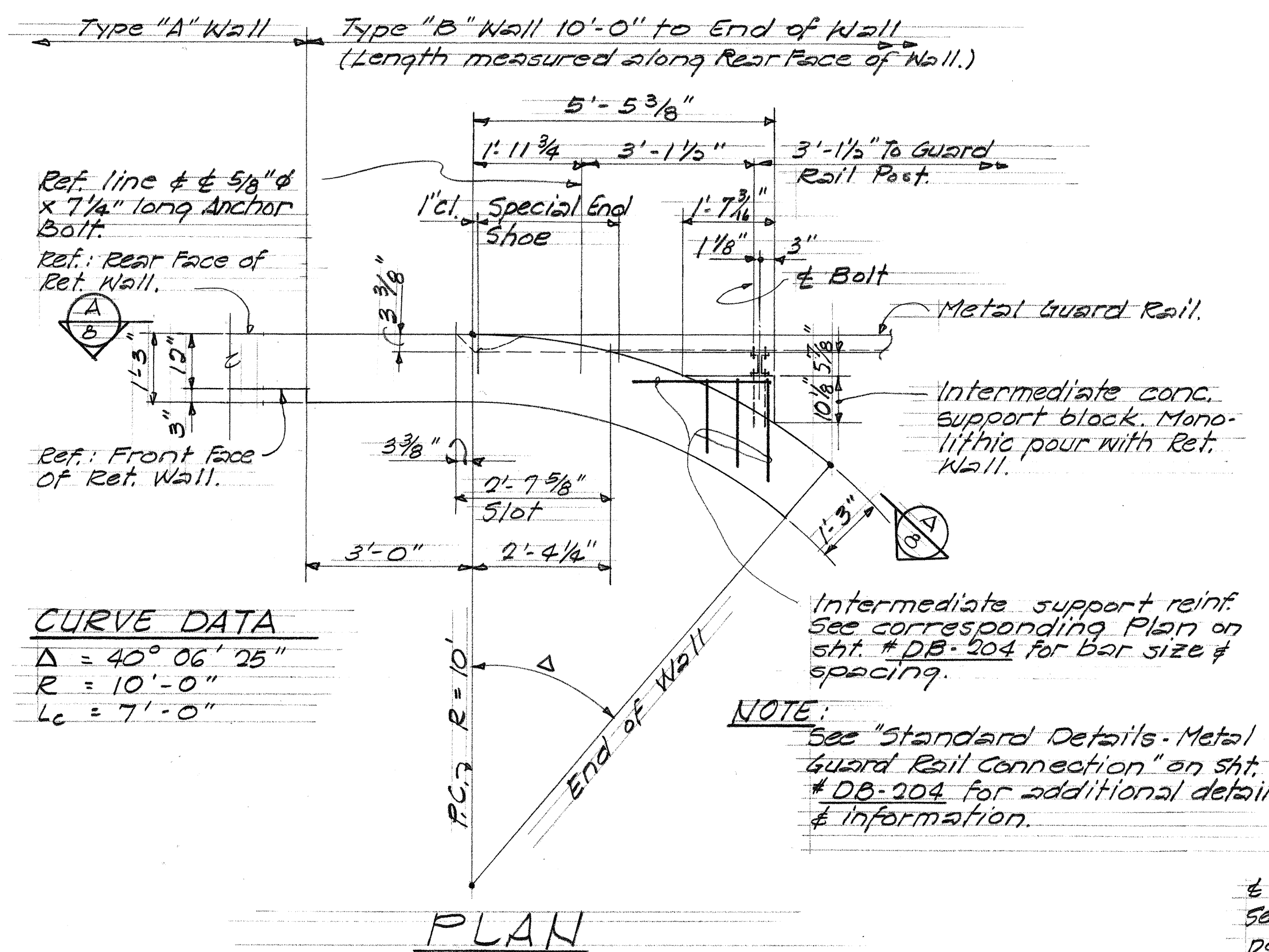
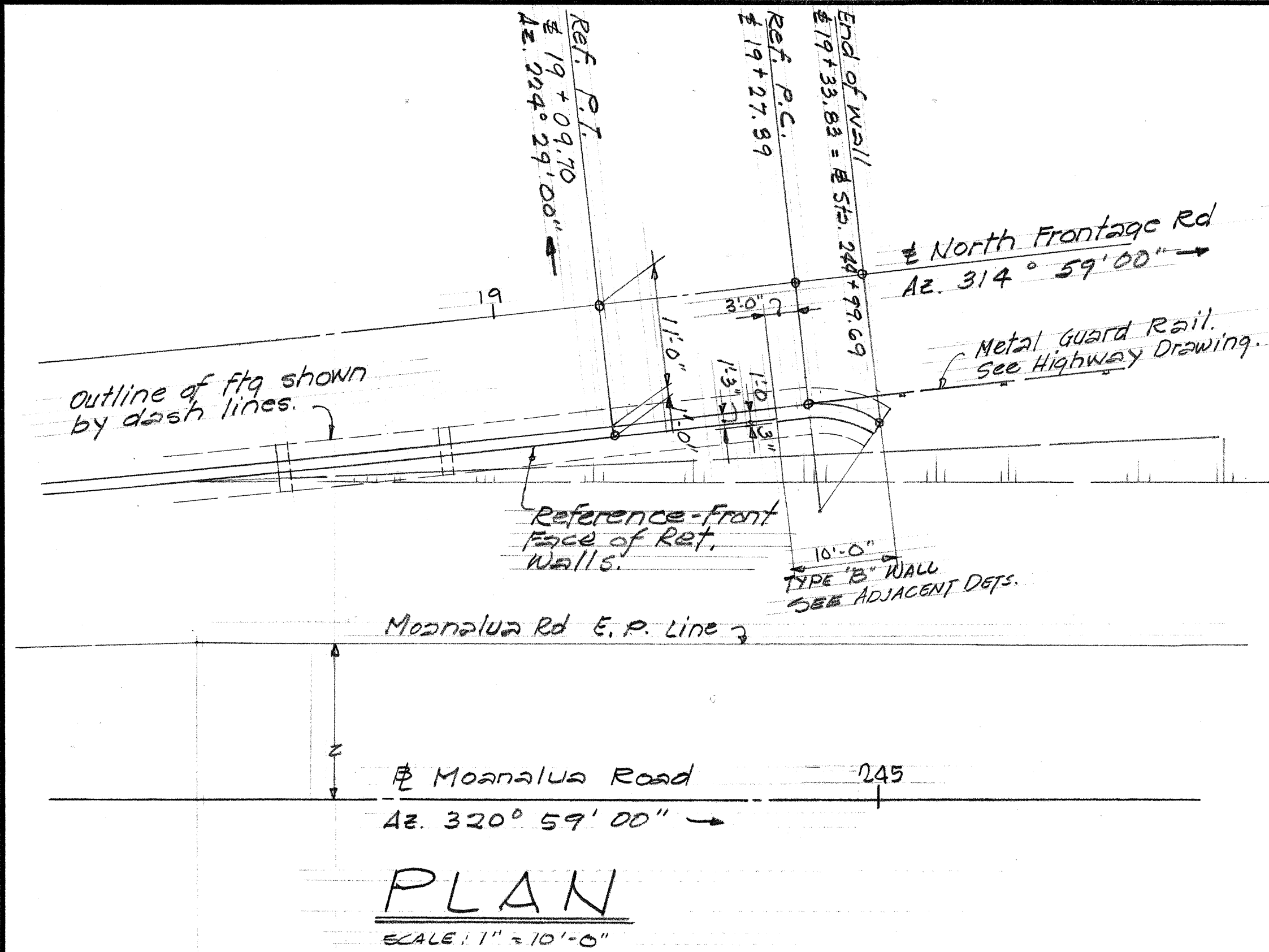
MOANALUA ROAD

F.A.P. Proj. No. F-078-1(7)

Scale: 1" = 10'-0" Aug., 1970

SHEET No. 7 OF 15 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(7)	1971	207	302

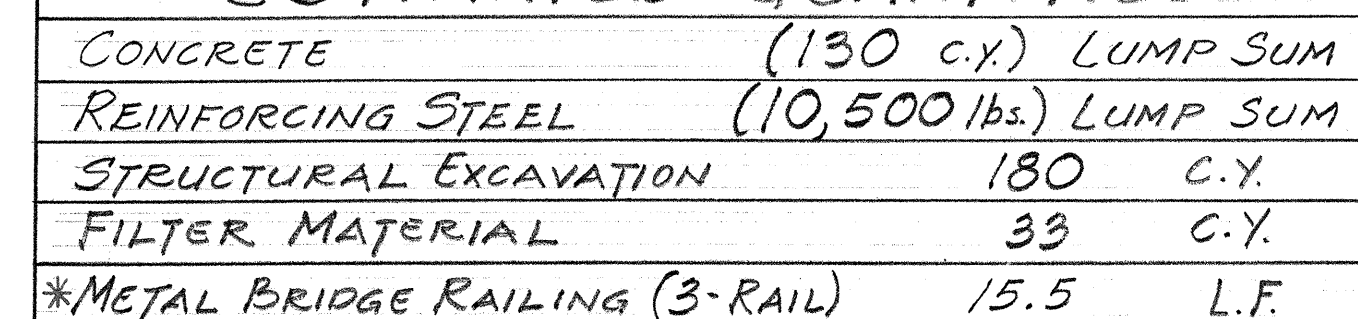
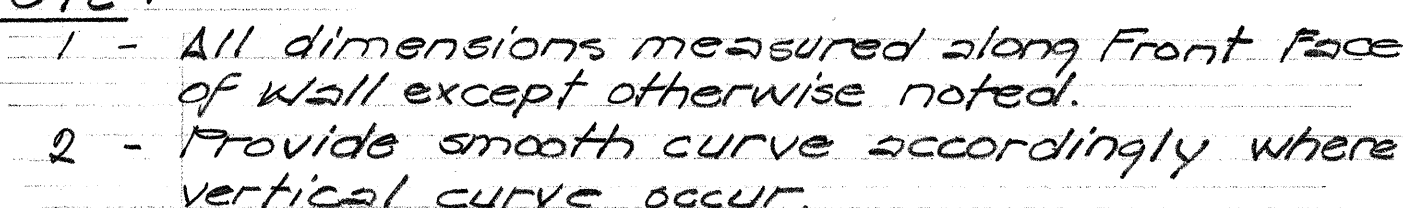


DATE: _____
 SURVEY PLOTTED BY: _____
 DRAWN BY: _____
 CHECKED BY: _____
 ORIGINAL PLAN: _____
 NOTE BOOK: _____
 No. _____

PRINTED ON NO. 1000H CLEARPRINT

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
NORTH FRONTAGE RET. WALL
EXTENSION
 Sta. 12+95.00 to Sta. 24+99.69
 MOANALUA ROAD
 F.A.P. Proj. No. F-078-1(7)
 Scale: As Noted Aug., 1970
 SHEET No. 8 OF 15 SHEETS

Revised: 14 July 71



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NORTH FRONTAGE RET. WALL

N#1

\$520.28 + 35.19 to \$520.28 + 68.98

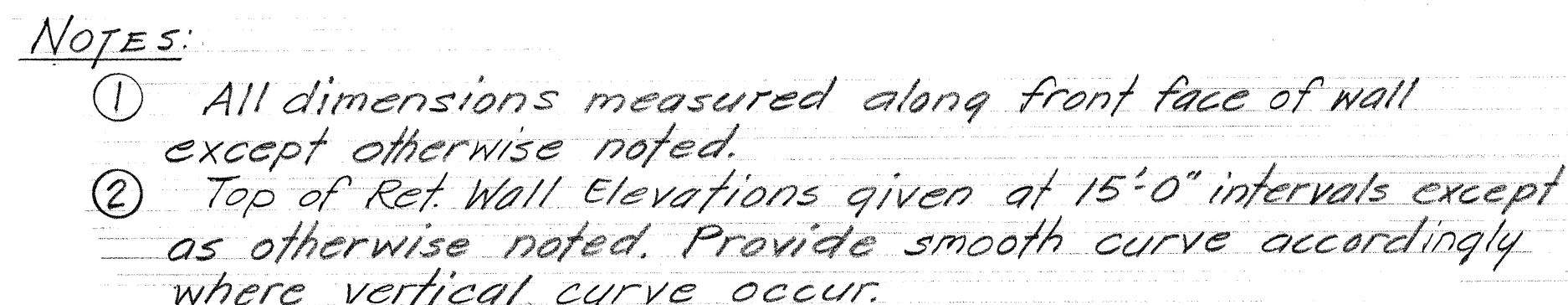
MOANALUA ROAD

F.A.P. Proj. No. F-078-1(7)

SCALE: 1"=10'-0" AUG., 1970

SHEET No. 9 OF 15 SHEETS

Revised: 14 July 71



Scale: 1" = 10'-0"

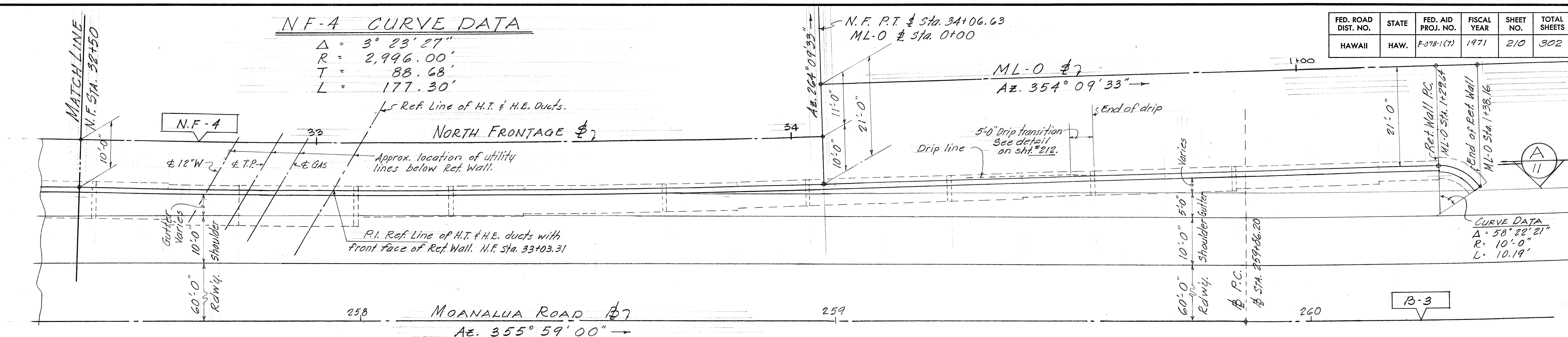
* Item 507.25

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
NORTH FRONTAGE RET. WALL
Nº 2
N.F. $\frac{1}{2}$ Sta. 30+04.76 to M.L.-0 Sta. 1+38.16
MOANALUA ROAD
F.A.P. Proj. Nº F-078-1(7)
Scale: 1"=10'-0" Date: Aug. 1970
SHEET No. 10 OF 15 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(7)	1971	210	302

NF-4 CURVE DATA

$\Delta = 3^\circ 23' 27''$
 $R = 2,996.00'$
 $T = 88.68'$
 $L = 177.30'$

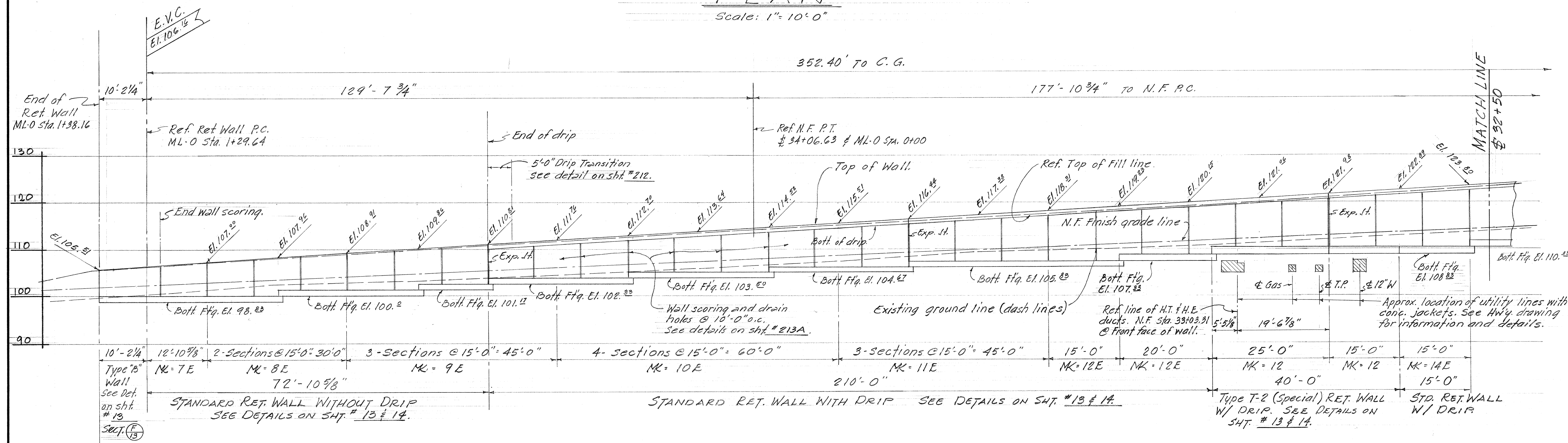


PLAN

Scale: 1" = 10'-0"

B-3 CURVE DATA

SEE HIGHWAY DRAWING.



ELEVATION

Scale: 1" = 10'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NORTH FRONTAGE RET. WALL
N^o 2
N.F. Sta. 30+04.76 to ML-0 Sta. 1+38.16
MOANALUA ROAD
E.A.P. Proj. N^o F-078-1(7)
Scale: 1" = 10'-0" Date: Aug. 1970

SHEET No. 11 of 15 SHEETS

Type "C" Wall
 15'-6³/₄" @ North Frontage Ret. Wall N^o1
 19'-4¹/₂" @ " " " " " " N^o2

Note: Match top of Type "C" Wall with top of Bridge curb.

Location of 6" drain opening @ N.F. Ret. Wall N^o1.

Location of 6" drain opening @ N.F. Ret. Wall N^o2.

4'-10" End Block.

Ref. P.T. Line. (Ret. Wall N^o1 @ STA. 28+14.79 " " N^o2 " " 30+28.98)

4-#5 @ 4' vert. End block reinf.

1'-0" 3" drip

Front face Ret. wall

4-#18 x 5'-6" long 1" bent horiz. End Block reinf.

4'-0"

North Frontage Grade Separation shown by dash lines.

Lakeside Separation Structure N^o1 shown by dash lines.

Limits of Ptg. step-up

3'-0" End of drip

4" Key

8"

5"

1'-0"

8"

16'-6¹/₄" @ Ret. Wall N^o1

7'-5³/₁₆" @ Ret. Wall N^o2

5 P.C.

See curve data below.

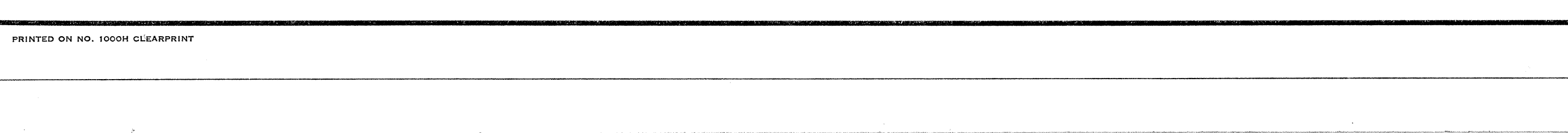
CURVE DATA

RET. WALL N ^o 1	R
Δ = 38° 32' 25"	
R = 10.0'	
L = 6.73'	

PLAN - DETAIL "X"
Scale: 3/8" = 1'-0"

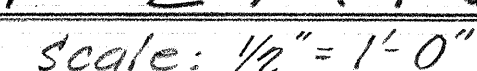
DEVELOPED ELEVATION A
12

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

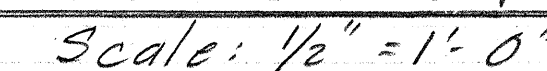
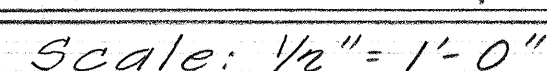


- Ref. Front Face of Ret. Wall

(Chain Link Fence not shown. See Note ②)



TYPE "B" RET. WALL



SHEET No. 13 OF 15 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(7)	1971	2/3	302

SCHEDULE OF DIMENSIONS & REINFORCING STEEL
TYPE T-2 (SPECIAL) RET. WALL

Maximum "MK"	4	5	7	8	9	10	12	13
a	6"	6"	12"	12"	12"	12"	12"	12"
b	14"	14"	14"	14"	14"	14"	18"	18"
L	3.75'	4.25'	6.0'	6.25'	7.25'	8.0'	8.5'	8.75'
"a" bars	See Note ② #3 @ 10"	#3 @ 10"	#4 @ 9"	#4 @ 5 1/2"	#5 @ 7"	#6 @ 6 1/2"	#7 @ 6"	#6 @ 6 1/2"
"b" bars	See Note ② #3 @ 10"	#3 @ 10"	#5 @ 9"	#4 @ 5 1/2"	#6 @ 7"	#6 @ 6 1/2"	#7 @ 6"	#7 @ 6 1/2"
"c" bars	See Note ②	—	—	—	—	—	#4	#4

NOTE ①

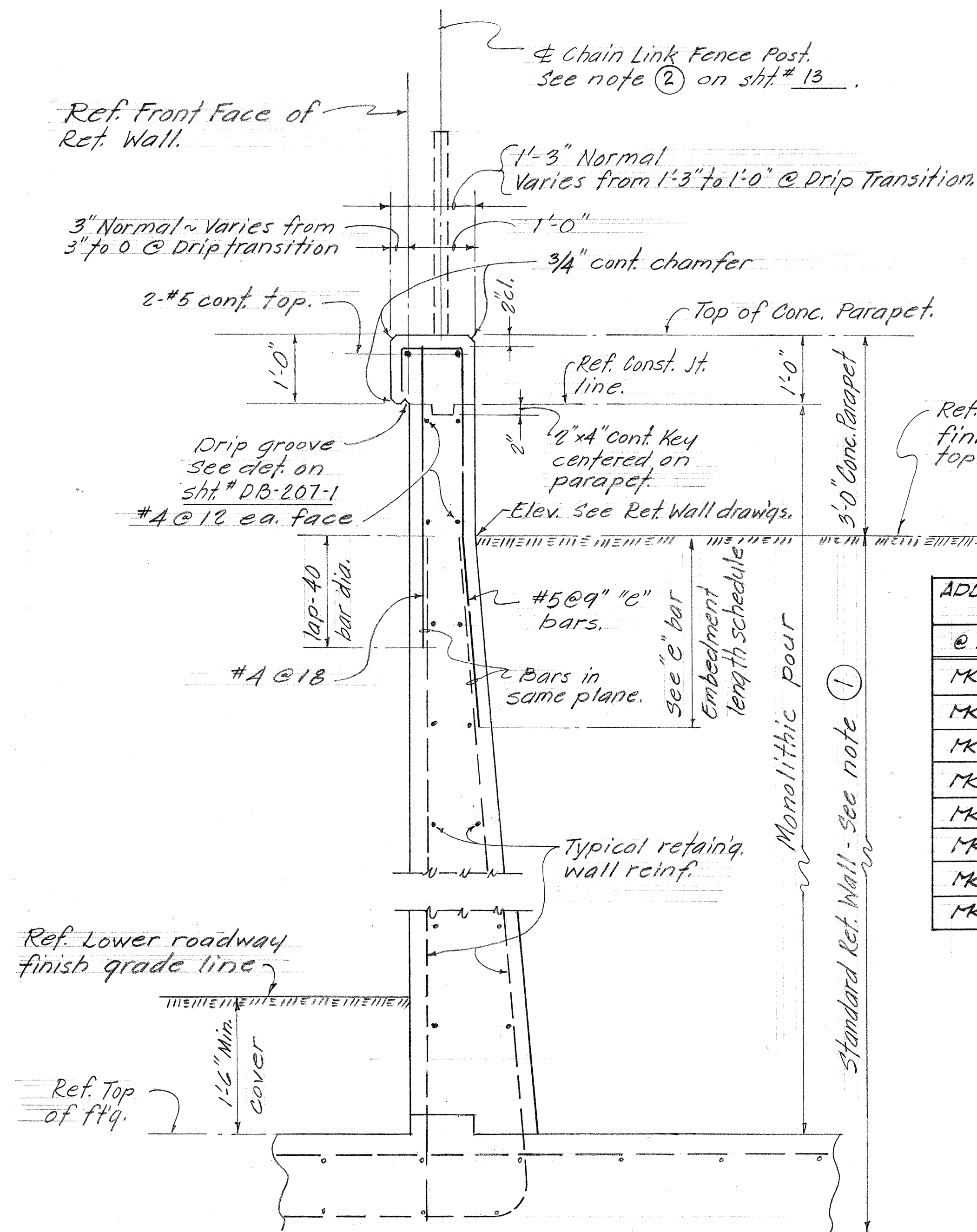
See Retaining Wall drawings for location and MK Type of "Standard Ret. Wall Type T-1 and Type T-2 (Special) Ret. Walls.

For "Standard Ret. Wall Type T-1 conc. reinf. steel, struct. exc. and miscellaneous details and information, see sht. # DB-207-1.

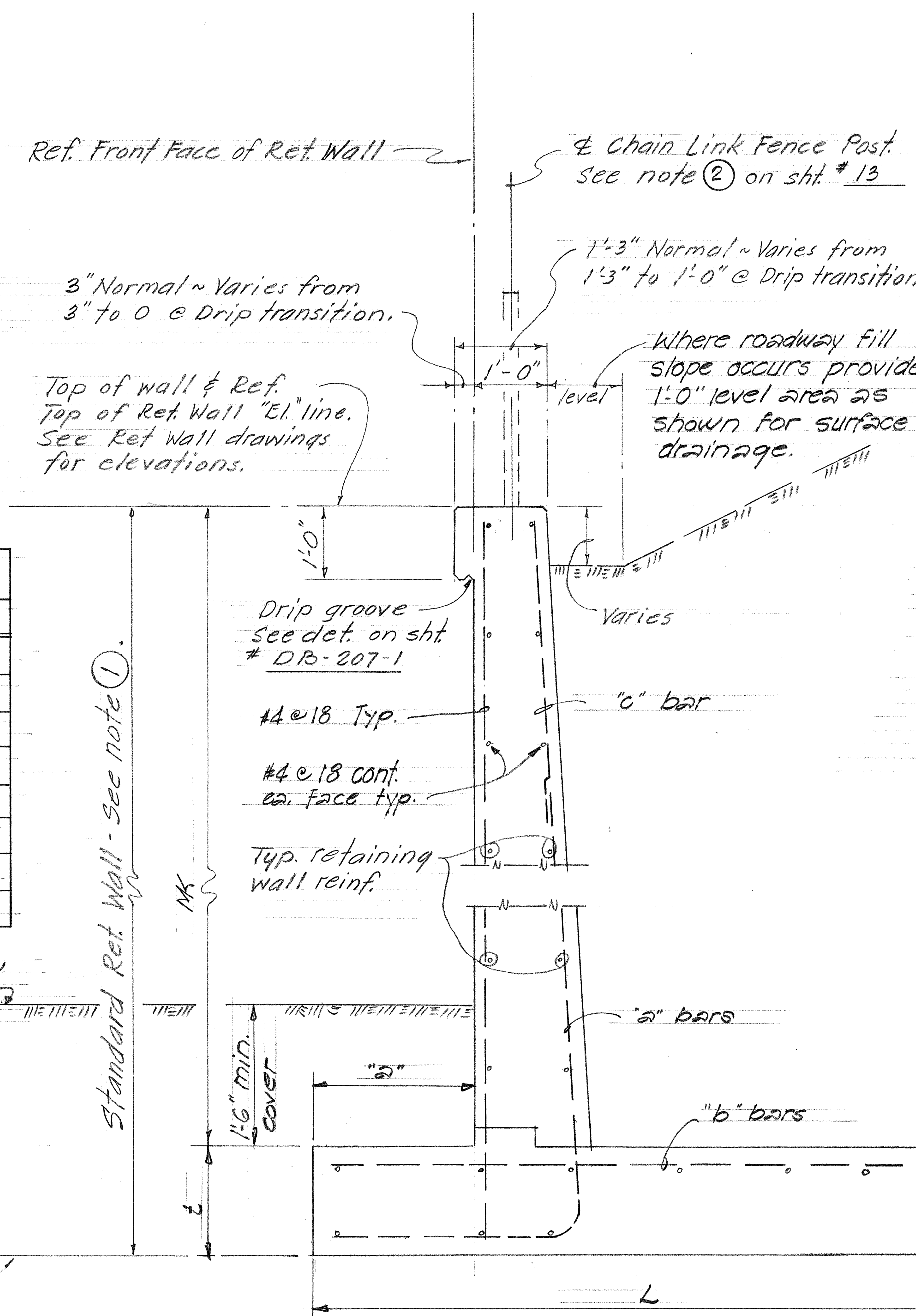
For Type T-2 (Special) Ret. Wall conc. and reinf. steel information, see adjacent schedule. Struct. exc. and other miscellaneous details similar to "Standard Ret. Wall Type T-1".

NOTE ②

Arrangement and various treatment of reinf. steel same as "Standard Ret. Wall Type T-1". See sht. # DB-207-1 for information.



ADDED "c" BAR EMBEDMENT LENGTH SCHEDULE	
@ STD RET. WALL MK	LENGTH
MK-8 & 9	3'-6"
MK-10 & 11	5'-0"
MK-12	6'-0"
MK-13, 14, 15 & 16	7'-0"
MK-17, 18 & 19	8'-0"
MK-20 & 21	9'-0"
MK-22 & 23	10'-0"
MK-24, 26, 28 & 30	11'-0"



SECTION A
13
SECTION B
13 SIMILAR EXCEPT WITHOUT DRIP
TYPICAL SECTION THRU STANDARD
RET. WALL WITH CONC. PARAPET
WITH & WITHOUT DRIP

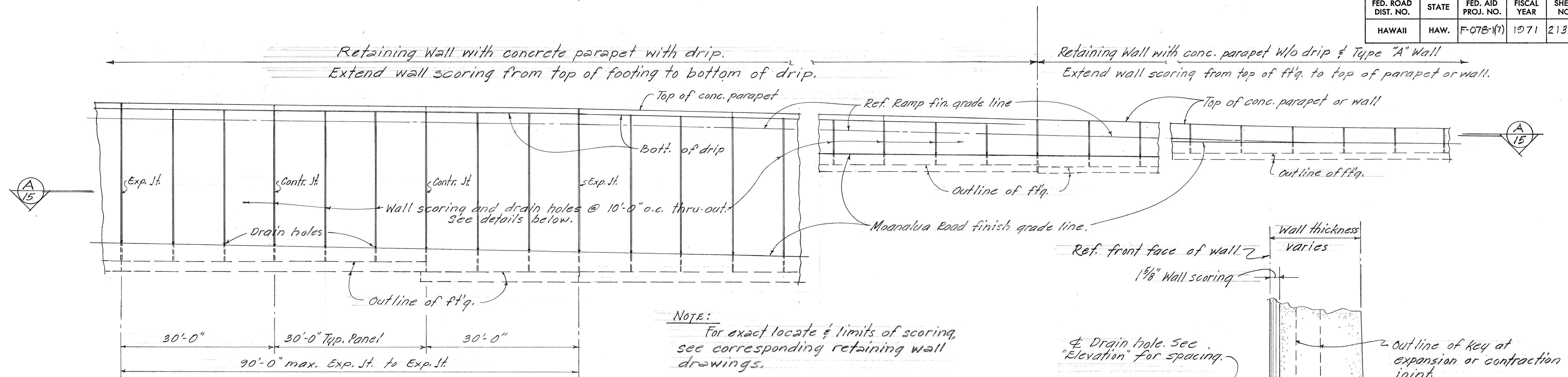
Scale: 3/4" = 1'-0"

SECTION D
13
SECTION E
13 SIMILAR EXCEPT WITHOUT DRIP
TYPICAL SECTION THRU STANDARD
RET. WALL TYPE T-1 & TYPE T-2 (SPECIAL) RW
WITH & WITHOUT DRIP

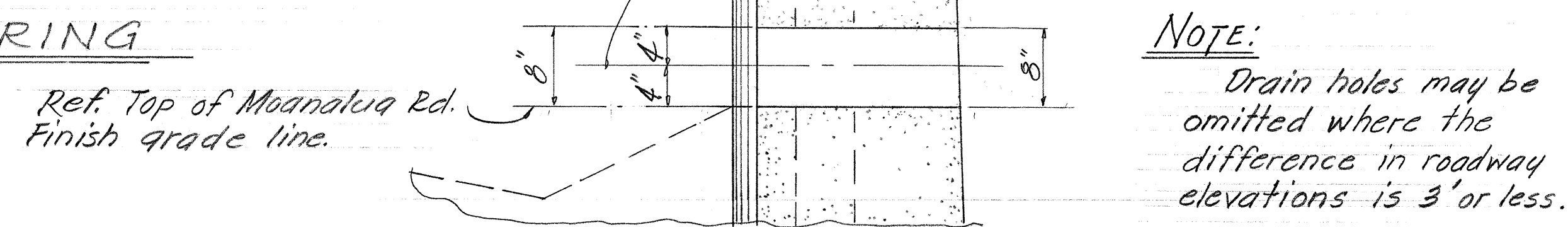
Scale: 3/4" = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TYPICAL SECTIONS
THRU RET. WALLS
MOANALUA ROAD
F.A.P. Proj. No. F-078-1(7)
SCALE: AS SHOWN DATE: AUG., 1970
SHEET No. 14 OF 15 SHEETS

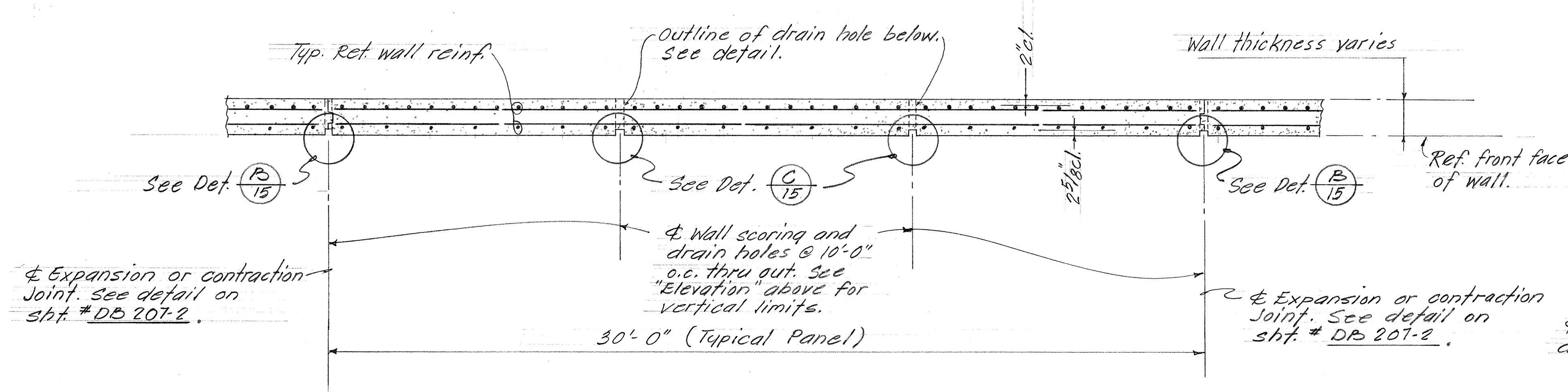
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(7)	1971	213 A	302



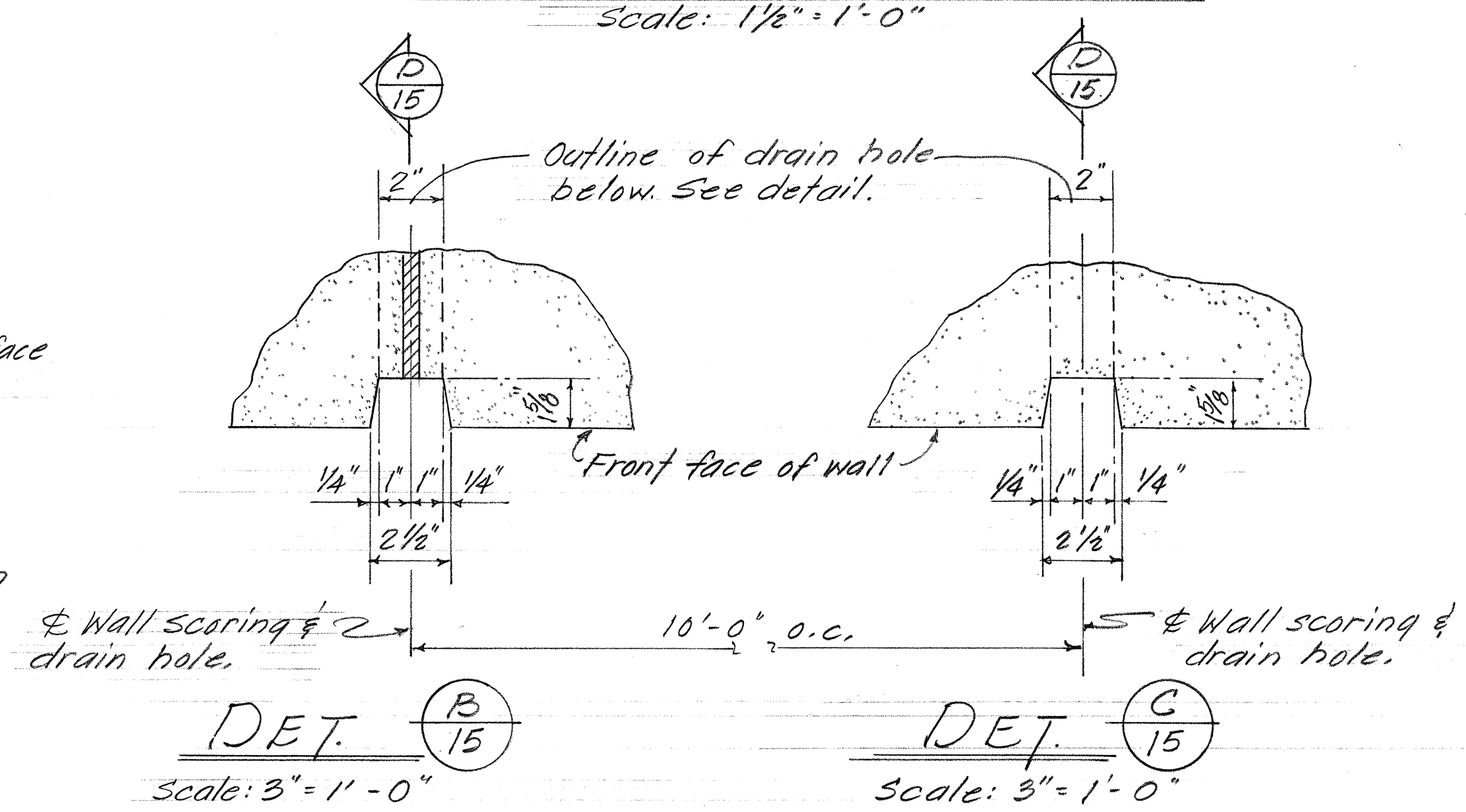
ELEVATION SHOWING LIMITS OF VERTICAL SCORING
Scale: 1" = 10'



SECTION D-15 TYP. DRAIN DETAIL
Scale: 1 1/2" = 1'-0"



TYP. SECTION A-15 THRU RET. WALLS
Scale: 1/2" = 1'-0"



DET. B-15
Scale: 3" = 1'-0"

DET. C-15
Scale: 3" = 1'-0"

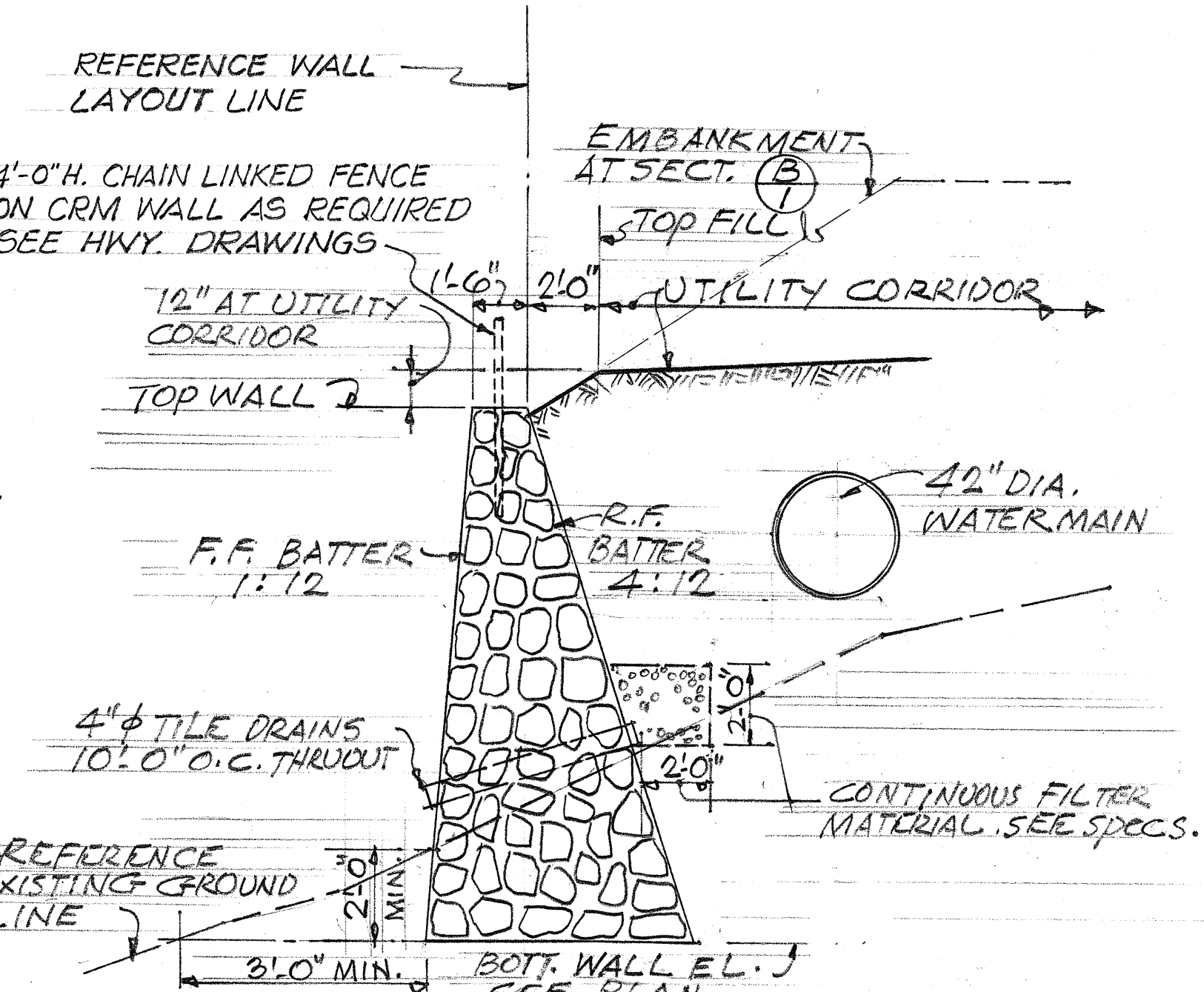
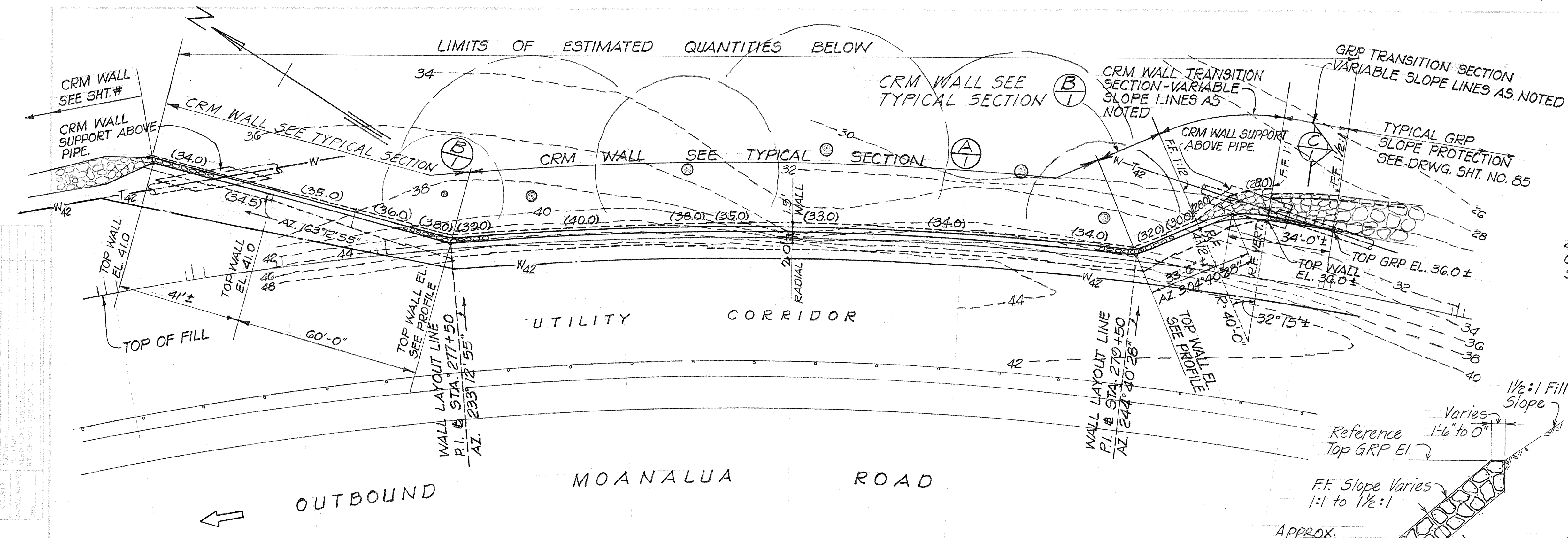
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WALL SCORING & DRAINAGE HOLE DET.
MOANALUA ROAD
F.A.P. PROJ. F-078-1(7)
SCALE AS SHOWN AUG. 1970
SHEET No. 15 OF 15 SHEETS

ABBREVIATIONS AND SYMBOLS

F.F. - FRONT FACE
R.F. - REAR FACE
(40.0) - BOTT. FOOTING ELEVATION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(7)	1971	ADD. 213A-51	302

Revised: July 28, 1971



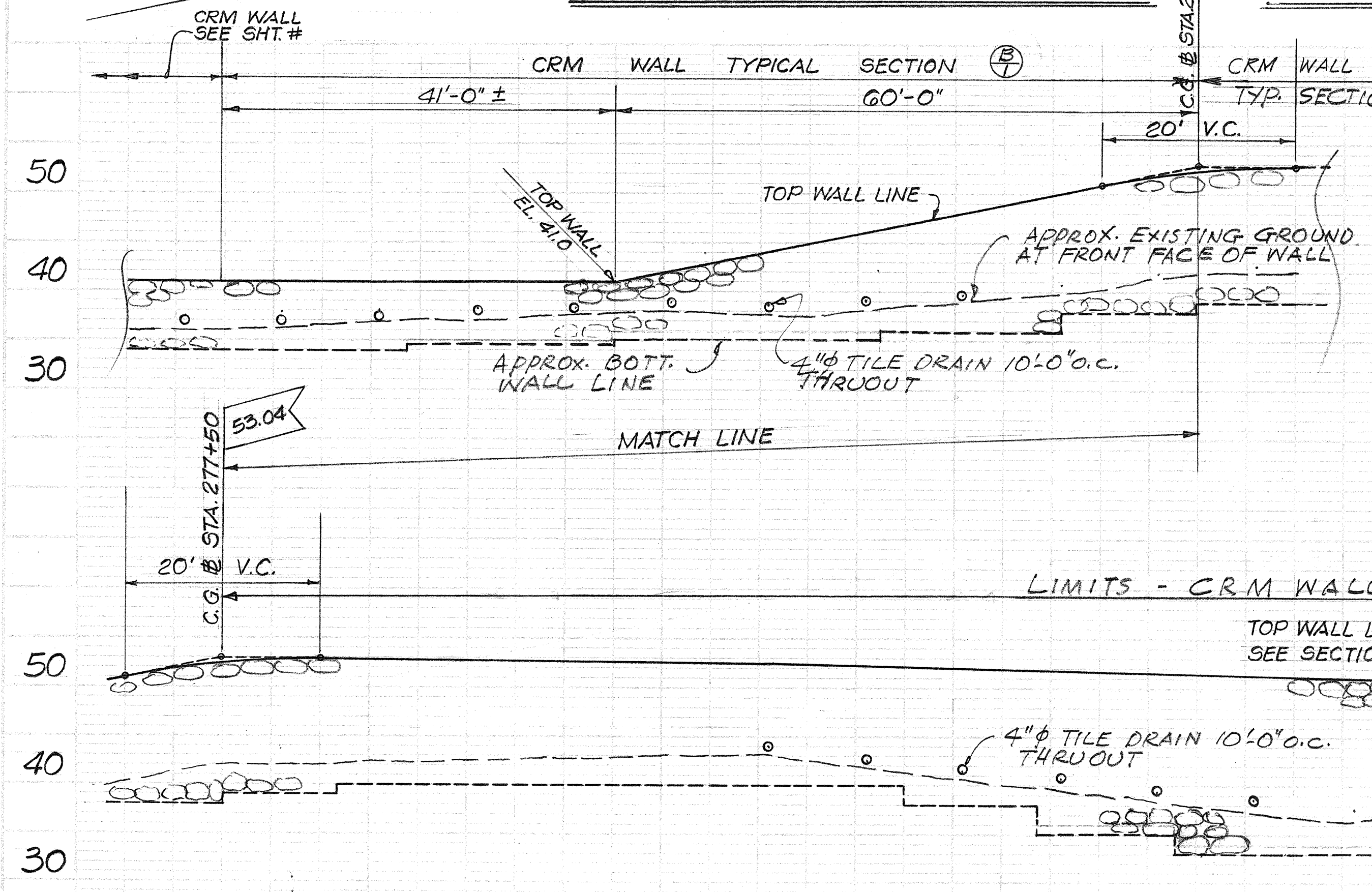
LAYOUT PLAN

SCALE: 1" = 20'-0"

TYP. SECTION

ESTIMATED QUANTITIES	
GRouted RUBBLE PAVING (SLOPE PROTECTION)	29 C.Y.
CEMENT RUBBLE MASONRY	841 C.Y.
STRUCTURAL EXCAVATION FOR RETAINING WALL	660 C.Y.
FILTER MATERIAL FOR RETAINING WALL	64 C.Y.
CLASS A CONCRETE	45 C.Y.
REINFORCING STEEL	3,000 lbs.

LIMITS - CRM WALL TYPICAL SECTION



PROFILE CRM WALL ALONG LAYOUT LINE : SCALE 1" = 10'-0"

THIS SHEET IS A SUPPLEMENT TO THE CONTRACT PLANS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

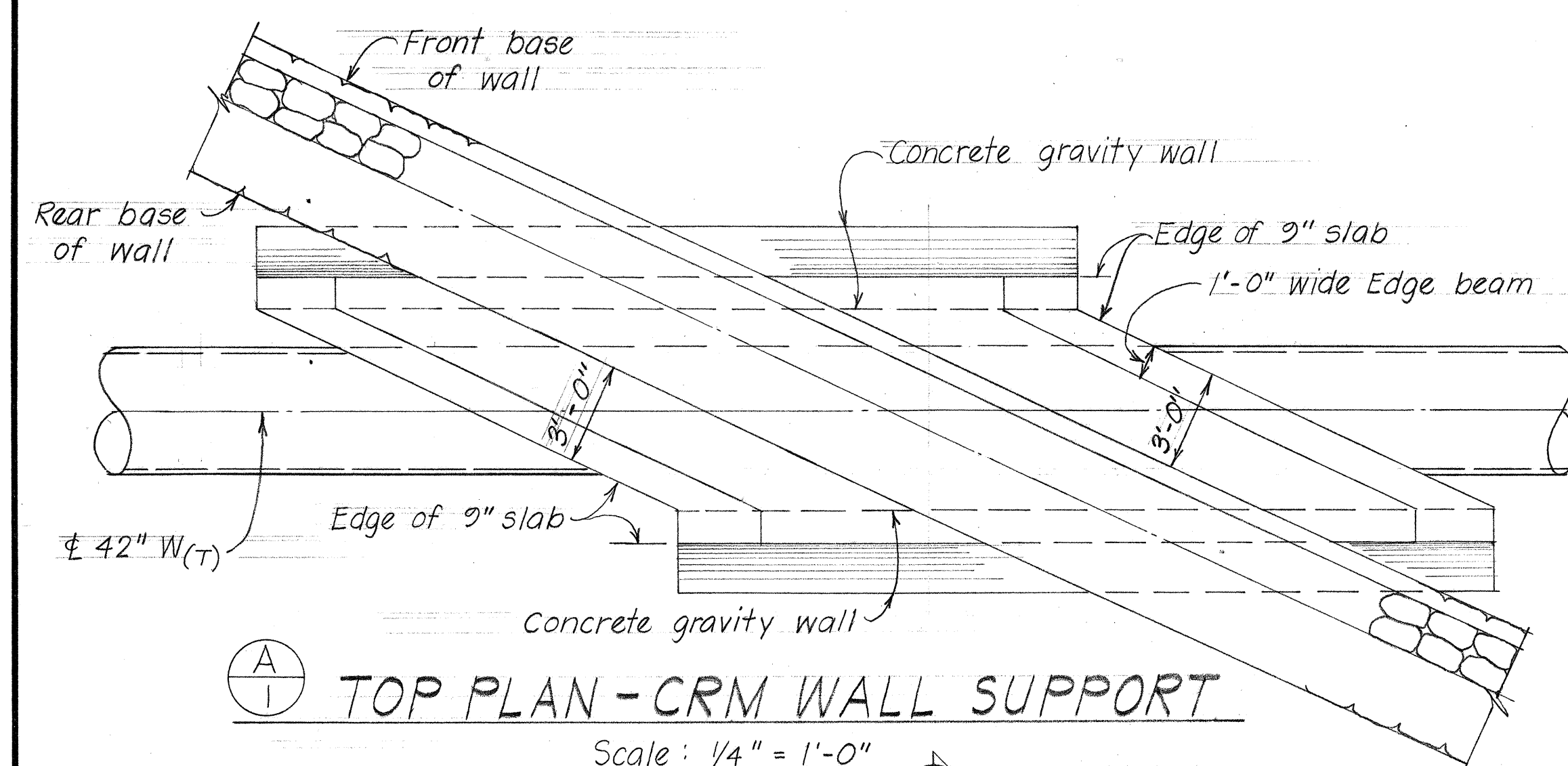
CRM WALL AND GRP SLOPE PROTECTION - UTILITY CORRIDOR
B STA. 276+67± TO STA. 280+07±

MOANALUA ROAD
FAP PROJ. NO. F-078-1(7) JULY, 1971

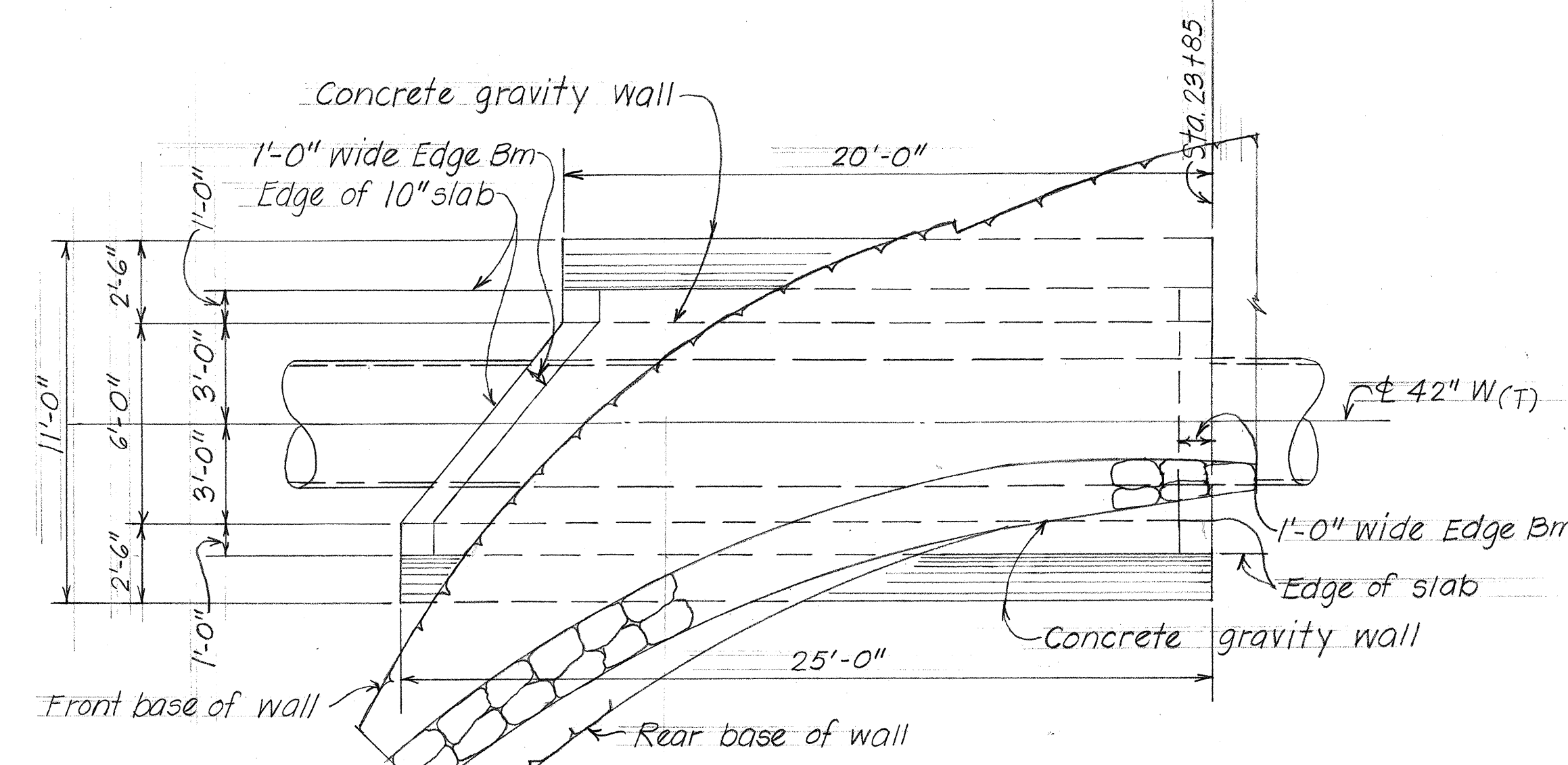
SHEET No. 15A OF 15 SHEETS

ADD. 213A S-1

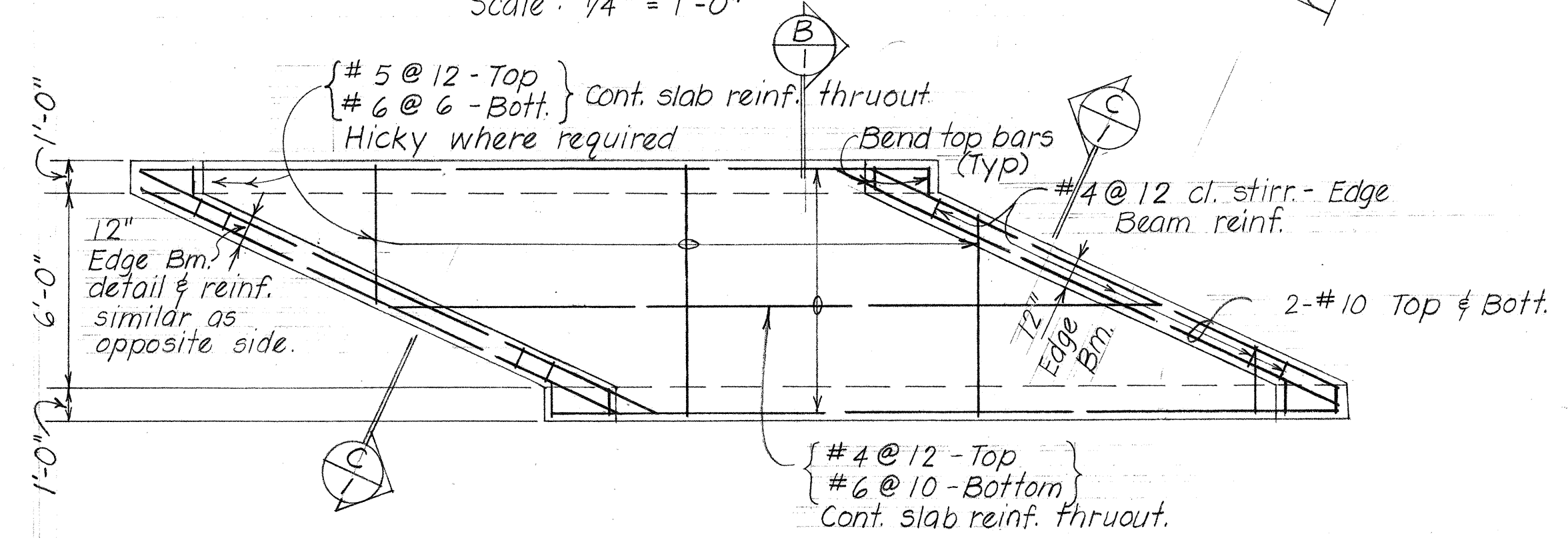
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(7)	1971	213A S-1	302



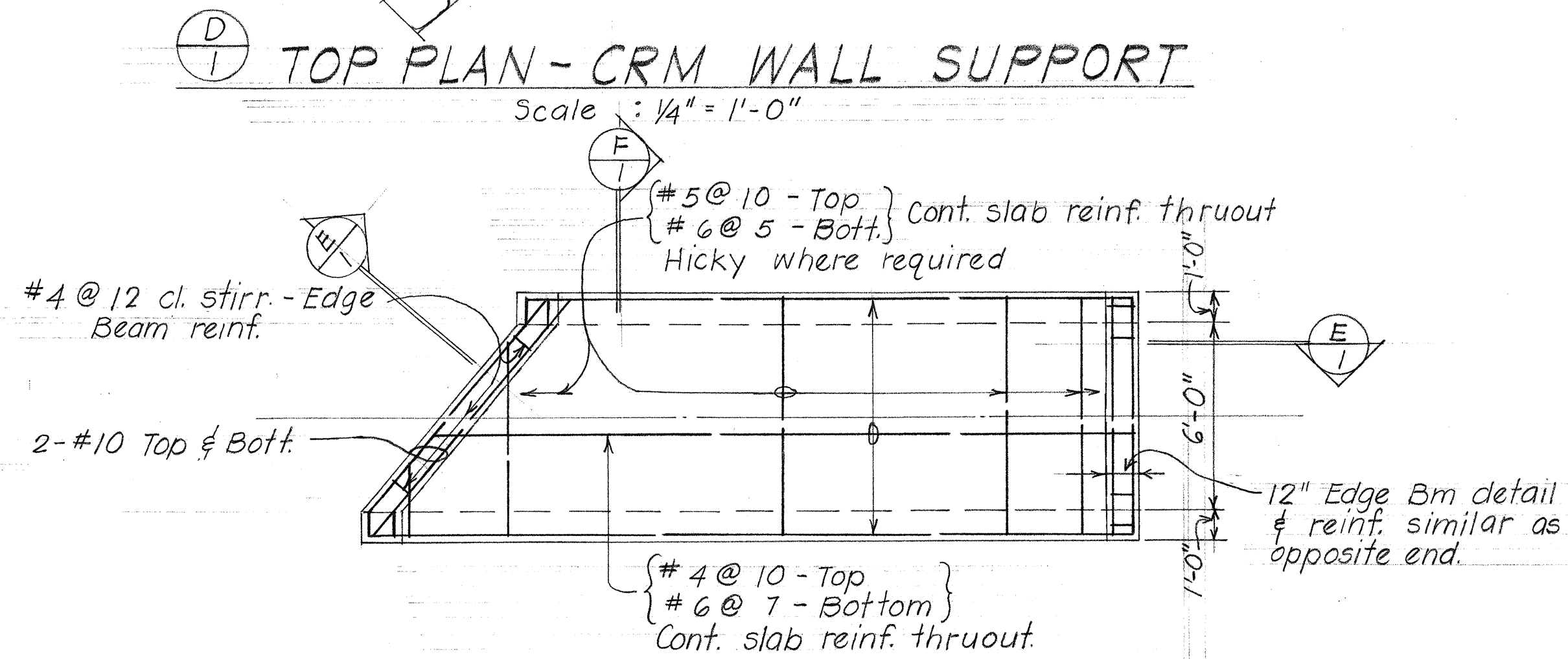
TOP PLAN - CRM WALL SUPPORT
Scale: 1/4" = 1'-0"



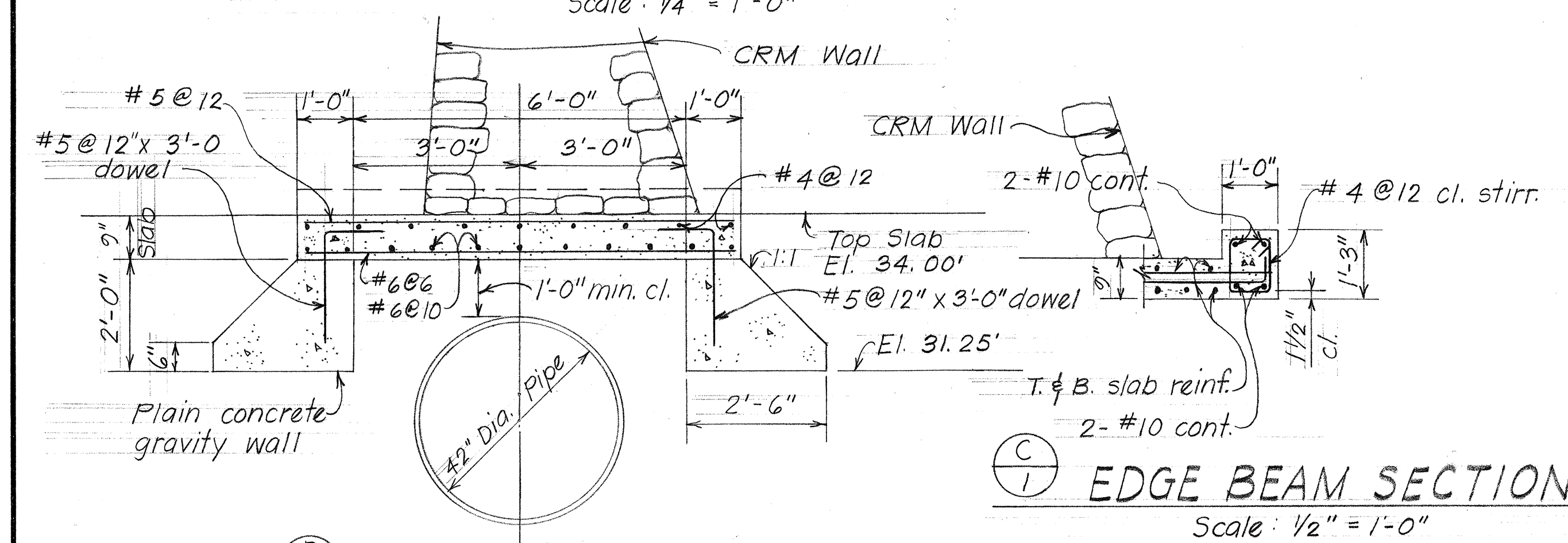
TOP PLAN - CRM WALL SUPPORT
Scale: 1/4" = 1'-0"



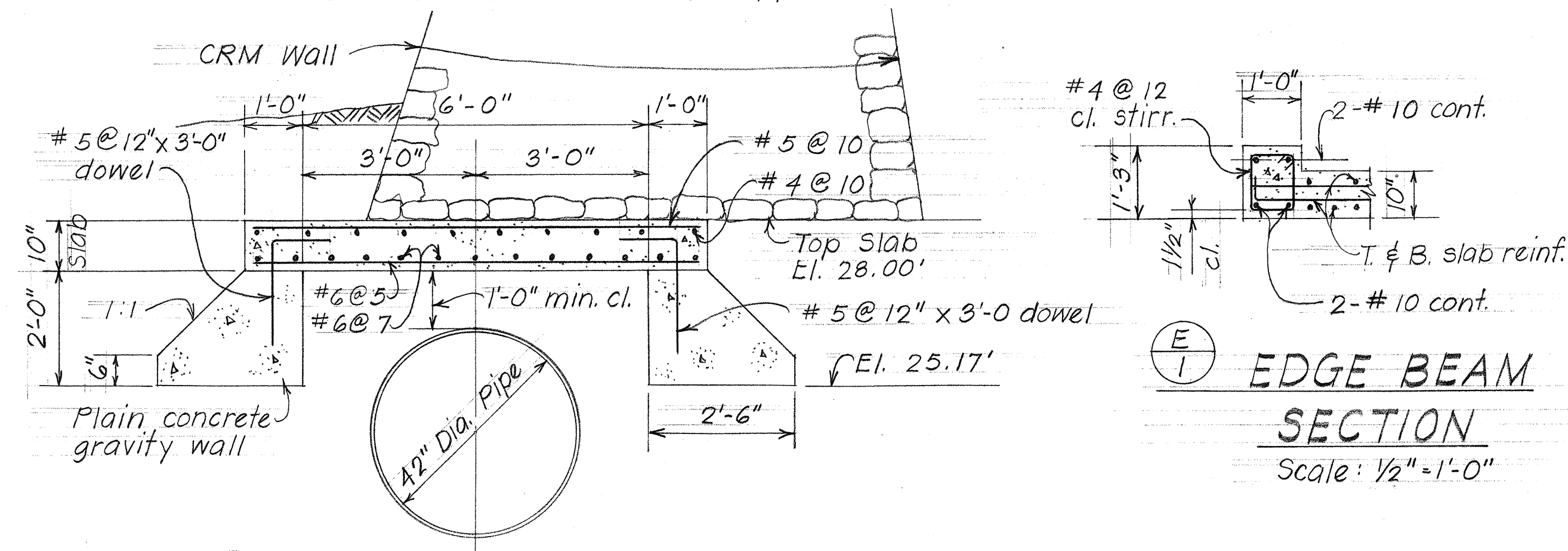
PLAN - WALL SUPPORT SLAB REINFORCEMENT
Scale: 1/4" = 1'-0"



PLAN - WALL SUPPORT SLAB REINFORCEMENT
Scale: 1/4" = 1'-0"



EDGE BEAM SECTION
Scale: 1/2" = 1'-0"



EDGE BEAM SECTION
Scale: 1/2" = 1'-0"

TYPICAL SECTION
Scale: 1/2" = 1'-0"

**CRM WALL SUPPORT
OVER 42" WATER MAIN**
Corridor STA. 20+50 ±

TYPICAL SECTION
Scale: 1/2" = 1'-0"

**CRM WALL SUPPORT
OVER 42" WATER MAIN**
Corridor STA. 23+85

THIS SHEET IS A SUPPLEMENT
TO THE CONTRACT PLANS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CRM WALL AND GRP SLOPE
PROTECTION-UTILITY CORRIDOR
DETAILS & SECTIONS

MOANALUA ROAD
FAP Proj. No. F-078-1(7) July 1971
SHEET No. 158 OF 15 SHEETS