PROJECT: MOANALUA ROAD, Red Hill Towards Ala Aolani Street (MILITARY REHABILITION)

FAP PROJECT NO.: F-078-1(11)

Revised: Oct. 16, 1970

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1970	112	258

ITEM NO.	202. 15	203. 01	206. 01	206. 02	206. 80	207. 01	304. 02	401. 05	408. 01	501. 20	501. 21	503. 002	503. 101	503. 111	503. 121	503. 201	503. 202	507. 40	508. 01	602. 101	602. 103	603. 0010	603. 0020	603. 1004	603. 1010	603. 1014	603. 1016	603. 5040	603. 7200	603. 7240	603. 7360	603. 7460	604. 010	604. 017	604. 025	604. 043
ITEM	Removal of a Portion of Bldg. 206	Roadway Excavation	Struc. Exc. other than at Bridges	Struc. Exc. for Drainage System	Filter Material	Ditch and Channel Excavation	Aggregate Base	A.C. Pavt., Mix No. II	MC-30 Liquid Asphalt for Prime Coat	Furn. and Inst. Meter Box Cover Plate	Rem., Cleaning, Painting, and Reinst. Meter Box Cover Plate	Conc. for Drainage System	Class A Conc. other than in Bridges	Class A Conc. for Sewer Manhole	Class A Conc. for Type K Electric M.H.	Class B Conc. other than in Bridges	Class B Conc. for Drainage System	Galv. Iron Pipe Railing	Cement Rubble Masonry	Reinf. Steel other than in Bridges	Reinf. Steel for Drainage System	Bed Course Material for Culvert	Class B Conc. or Shotcrete for Drainage Ditch	15" RCP, Cl. III	24" RCP, Cl. III	36" RCP, Cl. III	42" RCP, Cl. III	24" ACP, Cl. III or 24" RCP, Cl. III	24" CMP No. 14 Ga. or 24" RCP, Cl. III or 24" ACP, Cl. III	24" CMP No. 14 Ga. or 24" RCP, Cl. III or 24" ACP, Cl. III	36" CMP No. 10 Ga. or 30" RCP, Cl. III or 30" ACP, Cl. III	36" CMP No. 10 Ga. or 36" RCP, Cl. III or 36" ACP, Cl. III	Brick Wall for Storm Drain M.H.	Brick Wall for Type B Water M.H.	Brick Wall for Sewer M.H.	Furn. and Inst. Valve Box Frame and Cover
UNIT USED	L.S.	Cu.Yd.	Cu.Yd.	Cu.Yd.	Cu.Yd.	Cu.Yd.	Cu.Yd.	Ton	Gal.	Each	Each	Cu.Yd.	Cu.Yd.	Cu.Yd.	Cu.Yd.	Cu.Yd.	Cu.Yd.	Lin.Ft.	Cu.Yd.	Lb.	Lb.	Cu.Yd.	Cu.Yd.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Each
ROADWAY																																				
MILITARY ACCESS ROAD "A"		9,430					830	610	1,740																											
MILITARY ACCESS ROAD "B"	0	31,770					1,650	1,080	3,100																											
DRAINAGE				2,191		223						58					16				1,965	295	28	60	296	90	242	102	134	108	602	114	5			
MILITARY REHABILITATION																																				
COAST GUARD																																				
U. S. NAVY (NHA-RED HILL)		180					240	130	500																											
U. S. ARMY (ALIAMANU PARKING LOT)		30	60		10		830	590	1,720				30					280	190	360															
TOTAL ROADWAY	0	41,410	60	2,191	10	223	3,550	2,410	7,060			58	30				16	280	190	360	1,965	295	28	60	296	90	242	102	134	108	602	114	5			
MILITARY UTILITIES																																				
COAST GUARD			582										1	7		61				2900													4	8	
U. S. NAVY			103							2	3				26	2																			1
JOINT TRUNKING CABLE																																				
U. S. ARMY			21												4																				
MILITARY REHAB. TOTAL	0	41,410	766	2,191	10	223	3,550	2,410	7,060	2	3	58	31	7	30	63	16	280	190	3,260	1,965	295	28	60	296	90	242	102	134	108	602	114	5	4	8	1
ITEM NO.	202. 15	203. 01	206. 01	206. 02	206. 80	207. 01	304. 02	401. 05	408. 01	501. 20	501. 21	503. 002	503. 101	503. 111	503. 121	503. 201	503. 202	507. 40	508. 01	602. 101	602. 103	603. 0010	603. 0020	603. 1004	603. 1010	603. 1014	603. 1016	603. 5040	603. 7200	603. 7240	603. 7360	603. 7460	604. 010	604. 017	604. 025	604. 043

Date: May 25, 1970

PROJECT: MOANALUA ROAD, Red Hill Towards Ala Aolani Street (MILITARY REHABILITION)

FAP PROJECT NO.: F-078-1(11)

Revised: Oct. 16, 1970

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1970	120	258

ITEM NO.	604. 201	604. 202	604. 210	604. 231	604. 238	604. 305	604. 318	604. 320	604. 500	606. 310	607. 0151	609. 246	612. 01	619. 300	619. 910	619. 911	621. 50	621. 51	624. 1002	624. 1181	624. 1271	624. 1640	624. 1690	624. 4670	624. 5700	624. 5701	625. 020	632. 71	632. 72	650. 021	650. 022	650. 023	650. 024
ITEM	Type A Cast Iron Frame and Cover	Type B Cast Iron Frame and Cover	Type SA Cast Iron Frame and Cover	Type A-2 Steel Frame and Grate	Type G12/4 Steel Frame and Grate	Rem., Cleaning, Painting, and Reinst. Water M.H. Frame and Cover	Rem., Cleaning, Painting, and Reinst. Sewer M.H. Frame and Cover	Rem., Cleaning, Painting and Reinst. Valve Box Frame and Cover	Reinst. Electric M.H. Frame and Cover	Guard Rail, Type 3 - Single	6' Chain Link Fence with Top Rail, Conc. Footings and A-Frame Extension	Curb and Gutter, Type 2DG	Grouted Rubble Paving	Trans. Trees, Cocos Nucifera (Coconut)	Trans. Shrubs, Codiaeum Variegatum (Croton)	Trans. Shrubs, Hibiscus Rosa-Sinensis (Hibiscus)	Regulatory and Warning Sign	Regulatory and Warning Sign with Post	Furn. and Inst. 6" Cast Iron Pipe	Furn. and Inst. 6" Gate Valve (Cl 200)	Furn. and Inst. 3/4" Air Relief Valve (150 PSI Min Working Pressure) and All Appurtenances	Furn. and Inst. Cast Iron Fittings	Furn. and Inst. 2" Galv. Iron Pipe	Rem., Cleaning, Painting, and Reinst. Fire Hydrant	Rem., Cleaning, Painting, and Reinst. 1¼" and 2" Water Meter	Rem., Cleaning, Painting, and Reinst. Valves	Bed Course Material for Sewer Pipe	Relocate Regulatory and Warning Sign and Post	Relocate Military Information Sign & Post	Cut and Plug Exist. Coast Guard Sewer Force Main	Furn. and Inst. 6" Cast Iron Pipe (Cl 150)	Furn. and Inst. Cast Iron Fittings (Cl 250)	Furn. and Inst. 8" Vitrified Clay Pipe
UNIT USED	Each	Each	Each	Each	Each	Each	Each	Each	Each	Lin.Ft.	Lin.Ft.	Lin.Ft.	Cu.Yd.	Each	Each	Each	Each	Each	Lin.Ft.	Each	Each	Lb.	Lin.Ft.	Each	Each	Each	Cu.Yd.	Each	Each	F.A.	Lin.Ft.	Lb.	Lin.Ft.
ROADWAY																																	
MILITARY ACCESS ROAD "A"										600	230	3,560						2											1				
MILITARY ACCESS ROAD "B"										775		380						2										4	5				
DRAINAGE	1	7		1	6																												
MILITARY REHABILITATION																																	
COAST GUARD																																	
U. S. NAVY (NHA-RED HILL)										175		130		14	44	30	3	2															
U. S. ARMY (ALIAMANU PARKING LOT)																																	
TOTAL ROADWAY	1	7		1	6					1,550	230	4,130		14	44	30	3	6										4	6				
MILITARY UTILITIES																																	
COAST GUARD			1			1	1						24						650		1	1,500				1	35			0	900	250	30
U. S. NAVY								1	3				6						20	1		200	10	1	2	5							
JOINT TRUNKING CABLE																																	
U. S. ARMY									1																								
MILITARY REHAB. TOTAL	1	7	1	1	6	1	1	1	4	1,550	230	4,130	30	14	44	30	3	6	670	1	1	1,700	10	1	2	6	35	4	6	0	900	250	30
ITEM NO.	604. 201	604. 202	604. 210	604. 231	604. 238	604. 305	604. 318	604. 320	604. 500	606. 310	607. 0151	609. 246	612. 01	619. 300	619. 910	619. 911	621. 50	621. 51	624. 1002	624. 1181	624. 1271	624. 1640	624. 1690	624. 4670	624. 5700	624. 5701	625. 020	632. 71	632. 72	650. 021	650. 022	650. 023	650. 024

Date: May 25, 1970

PROJECT: MOANALUA ROAD, Red Hill Towards Ala Aolani Street (MILITARY REHABILITION)

FAP PROJECT NO.: F-078-1(11)

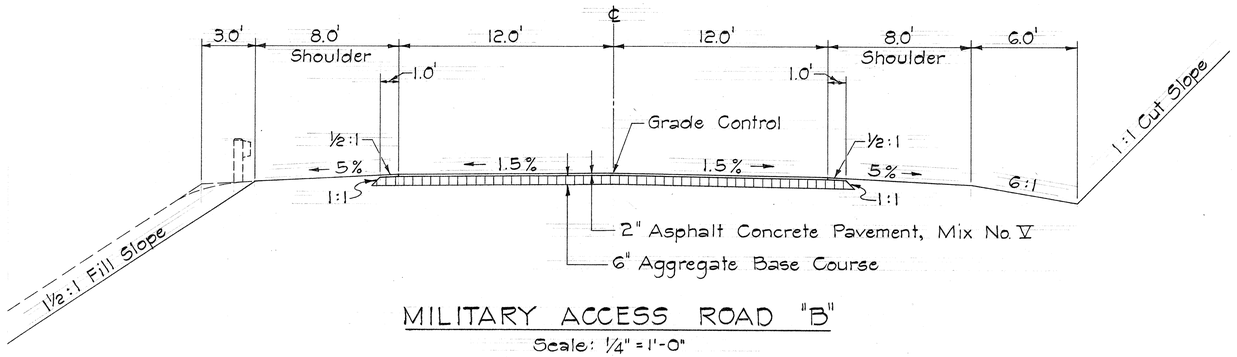
Revised: Oct. 16, 1970

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1970	121	258

ITEM NO.	650. 030	650. 031	650. 040	650. 041	650. 042	650. 050	651. 210	651. 310	651. 311	651. 410	651. 420	652. 020	652. 030	653. 200	653. 310	653. 320	206. 14	203. 02	608. 01	617. 01	618. 01	609. 306	630. 1242	630. 1244
ITEM	Furn. and Inst. 3 Primary Cables (Direct Burial)	Precast Conc. Handholes	Furn. and Inst. One 12" Galv. Steel Casing in Plain Conc. Jacket	Furn. and Inst. One 18" Galv. Steel Casing in Plain Conc. Jacket	Furn. and Inst. Four 4" Plastic Ducts in Plain Conc. Jacket	Relocation of Playground Equipment	Rem. and Reinst. Navy Water Meter Box	Furn. and Inst. Two 4" Ducts in Plain Conc. Jacket	Furn. and Inst. Cable for Navy Elect. Duct System	Reinf. Conc. Jacket for Exist. Sewer Line	Adjusting Sewer Cleanout	Relocation of Carport	Relocation of Mailboxes and Name Signs	Relocation of Army Overhead Elect. System	Furn. and Inst. One 4" Duct in Plain Conc. Jacket	Furn. and Inst. Cable for Army Elect. Duct System	Structure Excavation for Joint Trunking System	Mile Yard Overhaul for Pearl City Peninsula Disposal Site	Plain Conc. Sidewalk	Imported Topsoil	Sodded Surfaces	Curb, Type 3D	Installing Two 4-inch Plastic Ducts in Plain Concrete Jacket	Installing Four 4-inch Plastic Ducts in Plain Concrete Jacket
UNIT USED	Lin.Ft.	Each	Lin.Ft.	Lin.Ft.	Lin.Ft.	L.S.	Each	Lin.Ft.	Lin.Ft.	Lin.Ft.	Each	L.S.	Each	L.S.	Lin.Ft.	Lin.Ft.	Cu.Yd.	Mi.Yd.	Sq.Yd.	Cu.Yd.	Sq.Yd.	Lin.Ft.	Lin.Ft.	Lin.Ft.
ROADWAY																								
MILITARY ACCESS ROAD "A"																		30,250						
MILITARY ACCESS ROAD "B"																		88,550						
DRAINAGE																								
MILITARY REHABILITATION																								
COAST GUARD						0														35	300			
U. S. NAVY (NHA-RED HILL)												0	5						6	20	160			
U. S. ARMY (ALIAMANU PARKING LOT)																						360		
TOTAL ROADWAY						0						0	5					118,800	6	55	460	360		
MILITARY UTILITIES																								
COAST GUARD	920	6	275	265	275																			
U. S. NAVY							2	380	400	120	1													
JOINT TRUNKING CABLE																	60						40	70
U.S. ARMY														0	70	80								
MILITARY REHAB. TOTAL	920	6	275	265	275	0	2	380	400	120	1	0	5	0	70	80	60	118,800	6	55	460	360	40	70
ITEM NO.	650. 030	650. 031	650. 040	650. 041	650. 042	650. 050	651. 210	651. 310	651. 311	651. 410	651. 420	652. 020	652. 030	653. 200	653. 310	653. 320	206. 14	203. 02	608. 01	617. 01	618. 01	609. 306	630. 1242	630. 1244

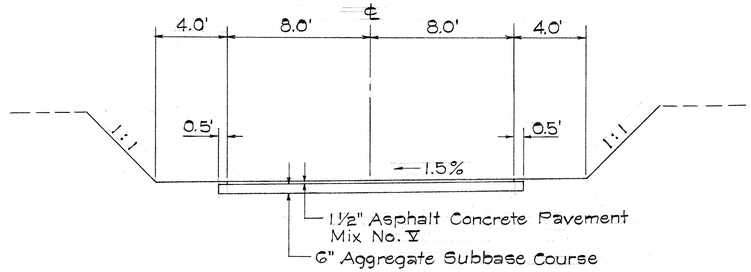
Date: May 25, 1970

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F078-1(11)	1969	122	258



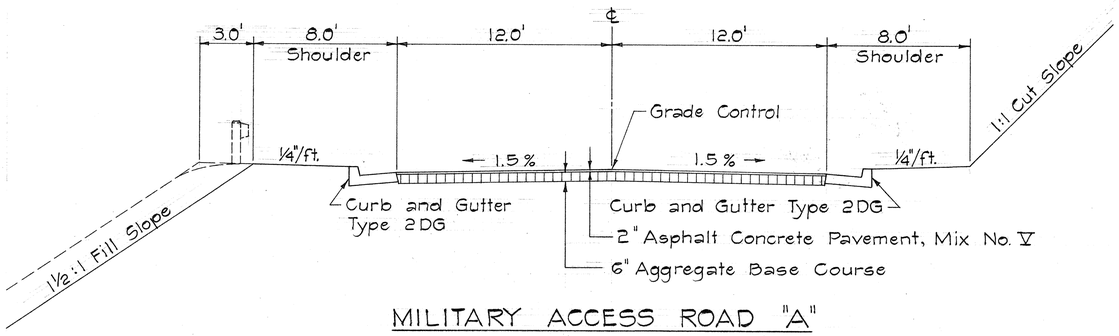
MILITARY ACCESS ROAD "B"

Scale: ¼" = 1'-0"



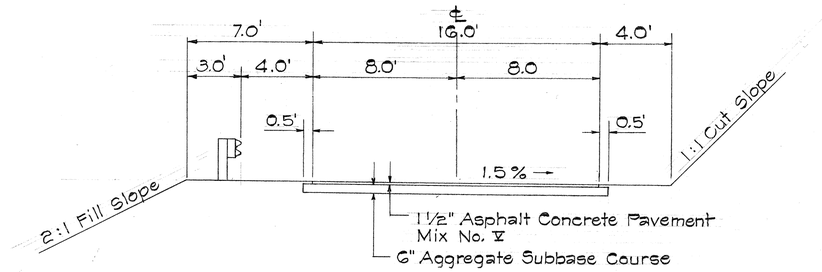
NAVAL HOUSING AREA CONNECTION "A" & "B"

Scale: ¼" = 1'-0"



MILITARY ACCESS ROAD "A"

Scale: ¼" = 1'-0"



NAVAL HOUSING AREA CONNECTION "C"

Scale: ¼" = 1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL ROADWAY SECTION
MILITARY ACCESS ROADS

MOANALUA ROAD
F.A.P. Proj. No. F-078-1(11)

Scale: As Noted Date: May 25, 1970

SHEET No. 4 OF 35 SHEETS

122

K&E CRYSTALENE® LA 2920 TRACING PAPER

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F078-1(11)	1969	123	258

Revised: July 18, 1970

DIRECTIONAL, REGULATORY & WARNING SIGNS						
TYPE	DESCRIPTION	SIGN & POST		SIGN ONLY	
		NEW	REL	NEW	REL
R1-1	STOP	2			
R6-1 (R)	ONE WAY	1		1	
R6-1 (L)	ONE WAY			2	
W1-7	⟷	1			
	NAVY HOUSING AREA - RED HILL RESTRICTED TO RESIDENTS AND GUESTS		1		

TRUE NORTH
Scale: 1" = 50'

2000N 500E

2000N 500W

1500N 500E

1000N 500E

1000N 500W

1500N 500W

OUTBOUND LANES

INBOUND LANES

RAMP RH-1

MOANALUA ROAD

RELOCATE
NAVY HOUSING AREA
RED HILL
RESTRICTED TO RESIDENTS AND GUESTS

BEGIN NHA CONN. "C"
S.L. Sta. 0+00

Scarify and Remove existing Pavement.

P.C. Sta. 1+24.35

Relocate Mast Arm Brackets and Luminaire on opposite side of pole.

Guard Rail with Posts

Remove Pole, Relocate Mast Arm Brackets and Luminaire to New Pole.

Adjust Chain Link Fence.

Scarify and Remove existing Pavement

Install New 40-foot Pole w/Anchor w/relocated Mast Arm Brackets and Luminaire.

NH-4 NH-5

R=100' P.C. Sta. 0+00 P.T. Sta. 0+90.35

R=40' P.T. Sta. 2+14.67

Provide Smooth Connection

INSTALL STOP R1-1

INSTALL W1-7

INSTALL ONE WAY R6-1 (R)

INSTALL ONE WAY R6-1 (L)

INSTALL ONE WAY R6-1 (L)

INSTALL STOP R1-1

U.S. Navy U.S. Coast Guard

U.S. Navy U.S. Army

Existing Chain Link Fence

Property Line

Relocated Carport. See Det. Sht. No. 130

R=30'

Sta. 13+73.75

P.T. Sta. 13+19.56

END NHA CONN. "B" STA. 1+90

P.C. Sta. 17+24.76

END MILITARY ACCESS ROAD "A" STA. 20+12.76

MA-3 R=30'

MA-2

NH-3

NH-2

NH-1

170°23'09"

Reconstruct existing sidewalk to conform to new edge of pavement.

Provide Smooth Connection.

END NHA CONN "A" STA. 1+70

Scarify and Remove existing Pavement. Place 4" topsoil and sod.

Adjust Chain Link Fence.

Reconstruct existing sidewalk to conform to new edge of pavement.

M.A.R. "A" STA. 14+50 TO 18+50 LEFT
Install Guard Rail, Type 3
400 Lin. Ft.

℄ M.A.R. "A"

M.A.R. "A" STA. 14+50 TO 20+00 RIGHT
Construct Type 2DG Curb & Gutter
600 Lin. Ft.

Type "B" Flare

M.A.R. "A" STA. 14+50 TO 20+00 LEFT
Construct Type 2DG Curb & Gutter
575 Lin. Ft.

BEGIN NHA CONN. "B"
STA. 0+00 =
M.A.R. STA. 17+26 ±

Adjust Chain Link Fence

Guard Rail with Posts

BEGIN NHA CONN. "A"
STA. 0+00 =
M.A.R. STA. 15+77 ±

Property Line

MATCH LINE M.A.R. "A" STA. 14+50

NHA CONN. "A" STA. 0+70 LEFT
Construct 12' wide A.C. paved connection to existing pavement

RELOCATED
NAVY HOUSING AREA
RED HILL
RESTRICTED TO RESIDENTS AND GUESTS

NHA CONN. "C" STA. 0+15 TO 1+90
Install Guard Rail, Type 3
175 Lin. Ft.

NOTE:
1. See sheet no. 122 for typical roadway sections for military access roads and connections.

CURVE DATA

	MA-2	MA-3	NH-1	NH-2	NH-3	NH-4	NH-5
Δ	27°54'09"	84°34'19"	90°00'00"	87°30'00"	92°30'00"	51°46'00"	111°45'00"
R	400.00'	30.00'	30.00'	30.00'	30.00'	100.00'	46.00'
T	99.37'	27.28'	30.00'	28.72'	31.34'	48.52'	67.88'
Lc	194.80'	44.28'	47.12'	45.81'	48.43'	90.35'	89.72'

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MILITARY ACCESS ROAD
DETAIL PLAN

MOANALUA ROAD
F.A.P. Proj. No. F-078-1(11)

Scale: 1" = 50' Date: May 25, 1970

SHEET No. 5 OF 35 SHEETS

KEUFFEL & ESSER CO. CRYSTALENE® LA 2920 TRACING PAPER

Revised: July 13, 1970

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	124	258

1500N 1000E

RAMP RH-I

R/W Line

500E

1500N

1000N

MATCH LINE

M.A.R. "A" STA. 14+50

1000N

1000N

SOUTH FRONTAGE ROAD

500N

26' 26'

P.O.T. Military Access Road "A"
Sta. 2+00

"A" ROAD

R=40'

Military Access Road "A" Sta. 3+00
Begin Military Access Road "B" Sta. 0+00

P.O.T. Military Access Road "A"
Sta. 3+52

R=40'

M.A.R. "A" STA. 1+75 TO STA. 14+50 RT.
Construct Type 2DG Curb & Gutter
1,275 Lin. Ft.

50°59'00" MILITARY ACCESS ROAD

M.A.R. "A" STA. 1+75 TO STA. 14+50 LT.
Construct Type 2DG Curb & Gutter
1,300 Lin. Ft.

CURVE DATA

	MA-1	
Δ	91°30'00"	
R	300.00'	
T	307.26'	
Lc	479.09'	

TRUE NORTH
Scale: 1" = 50'

1500E

P.C. Sta. 6+27.04
R=300.00

P.T. Sta. 11+06.13

MA-1

Existing Road

Exist. Fence to be Abandoned

142° 29' 00"

MILITARY ACCESS ROAD "A"

10

Type "E" Flare

Begin Chain Link Fence
Sta. 8+10

Exist. Chain Link Fence

End Chain Link Fence
Sta. 10+15

M.A.R. "A" Sta. 12+50 TO 14+50 LT.
Install Guard Rail, Type 3
200 Lin. Ft.

M.A.R. "A" STA. 8+10 TO 10+15 LT.
Construct 6' High Chain Link
Fence with A-Frame Extension.
230 Lin. Ft.

500N 500E

1000E

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MILITARY ACCESS ROAD
DETAIL PLAN

MOANALUA ROAD
F.A.P. Proj. No. F-078-1(11)

Scale: 1" = 50' Date: May 25, 1970

SHEET No. 6 OF 35 SHEETS

K&E CRYSTALENE® LA 2920 TRACING PAPER

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F078-1(11)	1969	125	258

DIRECTIONAL, REGULATORY & WARNING SIGNS			
TYPE	DESCRIPTION	SIGN & POST NEW	SIGN & POST REL
R1-1	STOP	2	2
	U.S. GOVERNMENT PROPERTY - NO TRESPASSING		1
	CDC PARKING		1
	U.S. ARMY HAWAII ALIAMANU MILITARY RESERVATION		1
	NO SMOKING BEYOND THIS POINT		1
	THIS AREA IS EXTREMELY DRY EXTREME CAUTION WILL BE TAKEN TO PREVENT FIRE		1

1500 E

1000 N

2000 E

500 N

TRUE NORTH
Scale: 1" = 50'

EXIST'G. - TO BE RELOCATED
U.S. GOVERNMENT PROPERTY
NO TRESPASSING

Begin Taper
Aliamanu Crater Access
S.F. Rd. Sta. 11+20

End of Project
℄ Sta. 239+00

RELOCATED
STOP
R1-1

NORTH FRONTAGE ROAD

OUTBOUND LANES

INBOUND LANES

SOUTH FRONTAGE ROAD

RED HILL GRADE SEPARATION STRUCTURE

Moanalua Road ℄ Sta. 225+65
Begin Military Access Road "A", Sta. 0+00

324° 08' 04" → 200.10

R/W Line

P.O.T. Sta. 5+36.76

320° 59' 00" →

MILITARY ACCESS ROAD "B"

INSTALL
STOP
R1-1

P.R.C. Sta. 2+89.88
R = 244.88

EXISTING - TO BE RELOCATED
STOP

MB-2

MB-3

MB-4

MB-1

R=48'

R=30'

R=40'

P.C. Sta. 1+00

50° 59' 00"

320° 59' 00"

52'

24'

R=40'

MILITARY ACCESS ROAD "A"

Military Access Road "A"
Sta. 3+00
Beg. Military Access Rd. "B"
Sta. 0+00

R = 244.88
P.T. Sta. 4+79.76

50° 59' 00"

For Aliamanu Tunnel Parking Lot and Tunnel Access. See detail sheet no. 131

CDC
PARKING
EXISTING - TO BE RELOCATED

Existing Road

R = 300.24

P.T. Sta. 13+78.38
R = 70'

Aliamanu Crater Access, See Detail Sht. No. 129

317° 01' 30"

℄ M.A.R. "B"

MATCH LINE M.A.R. "B" STA. 16+00

P.C. Sta. 9+90.84

P.R.C. Sta. 11+85.32
R = 338.82

INSTALL
STOP
R1-1

RELOCATED
NO SMOKING BEYOND THIS POINT

RELOCATED
U.S. ARMY HAWAII ALIAMANU MILITARY RESERVATION

RELOCATED
THIS AREA IS EXTREMELY DRY EXTREME CAUTION WILL BE TAKEN TO PREVENT FIRE

	MB-1	MB-2	MB-3	MB-4
Δ	44° 25' 36"	44° 25' 36"	32° 58' 13"	36° 50' 34"
R	244.88	244.88	338.82	300.24
T	100.00	100.00	100.00	100.00
Lc	189.88	189.88	194.48	193.06

ORIGINAL PLAN
NOTE BOOK
No.

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MILITARY ACCESS ROAD
DETAIL PLAN

MOANALUA ROAD
F.A.P. Proj. No. F-078-1(11)

Scale: 1" = 50' Date: May 25, 1970

SHEET No. 7 OF 35 SHEETS

K+E CRYSTALENE® LA 2920 TRACING PAPER

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	126	258

DIRECTIONAL, REGULATORY & WARNING SIGNS			
TYPE	DESCRIPTION	SIGN & POST NEW	SIGN & POST REL.
RE-1(20)	SPEED LIMIT 20		2

CURVE DATA

	MB-5	MB-6
Δ	30°51'11"	118°42'10"
R	500.00'	120.00'
T	137.97'	202.52'
Lc	269.24'	248.61'

2500E 00 3000E 5005 1000S

RELOCATE
U.S. ARMY HAWAII
ALIAMANU
MILITARY RESERVATION

RELOCATE
STOP

NORTH FRONTAGE ROAD

OUTBOUND LANES

INBOUND LANES

SOUTH FRONTAGE ROAD

MOANALUA - LAKESIDE ACCESS ROAD

TRUE NORTH
Scale: 1"=50'

245 250 20 25 255

RELOCATE
NO SMOKING
BEYOND THIS POINT

R/W Line

Type "E" Flare

STA. 16+00 "B" M.A.R.

MILITARY ACCESS ROAD "B"

317°01'39"

MB-5

Guard Rail with Posts

347°52'50" ℄ M.A.R. "B"

30' Limit of Work for Removal of Building 206

Building 206

SPEED LIMIT 20
EXISTING TO BE RELOCATED

RELOCATE
THIS AREA IS EXTREMELY DRY
EXTREME CAUTION
WILL BE TAKEN
TO PREVENT FIRE

MATCH LINE M.A.R. "B"

2000E 500S

P.C. Sta. 12+37.82
P.T. Sta. 22+67.06
R=500.00'

M.A.R. "B" Sta. 20+00 to Sta. 27+75 Lt.
Install Guard Rail, Type 3
775 Lin. Ft.

EXISTING
SPEED LIMIT
20
TO BE RELOCATED

P.C. Sta. 26+43.46
R=120.00'

MB-6

Type "B" Flare

P.T. Sta. 28+92.07
End of Military Access Road "B"

P.O.C. Sta. 28+70

Provide Smooth and Easy Riding Connection to Existing Roadway

1000S 2500E 1500S 3000E

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MILITARY ACCESS ROAD
DETAIL PLAN

MOANALUA ROAD
F.A.P. Proj. No. F-078-1(11)

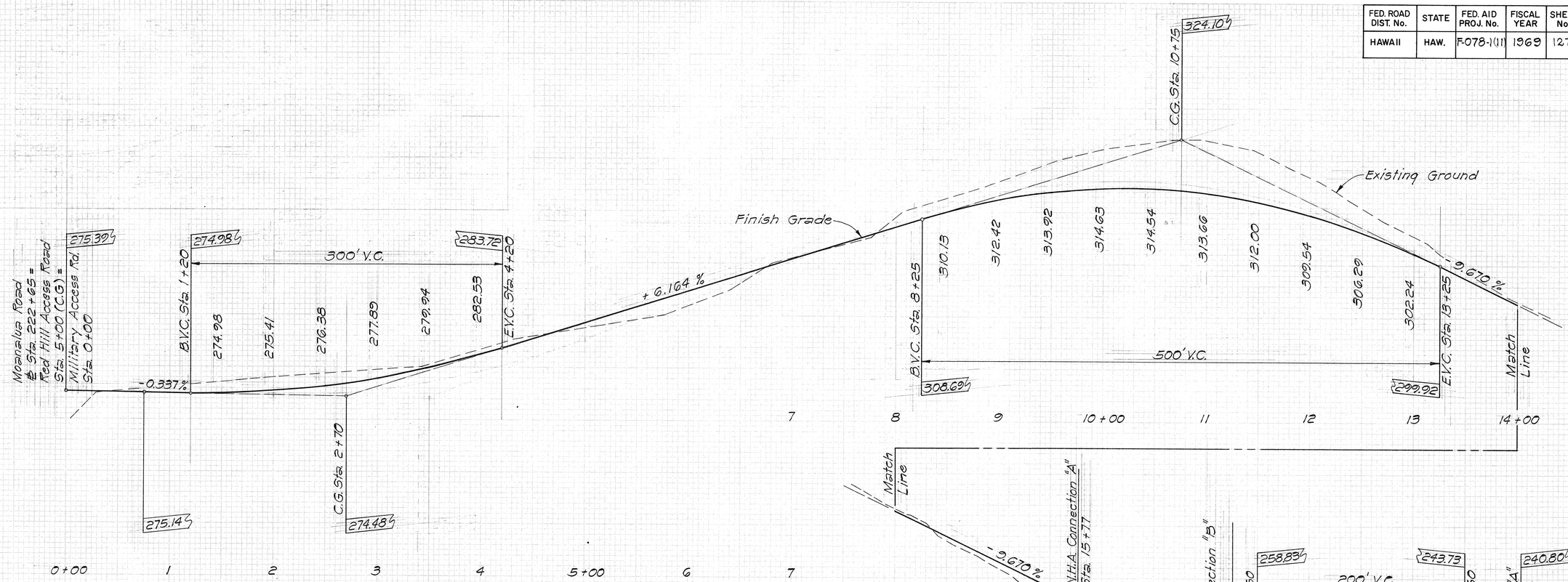
Scale: 1" = 50' Date: May 25, 1970

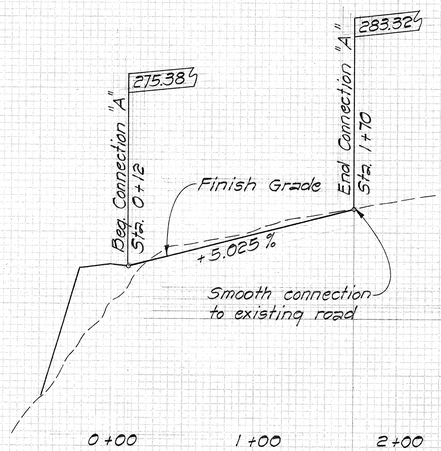
SHEET No. 8 OF 35 SHEETS

126

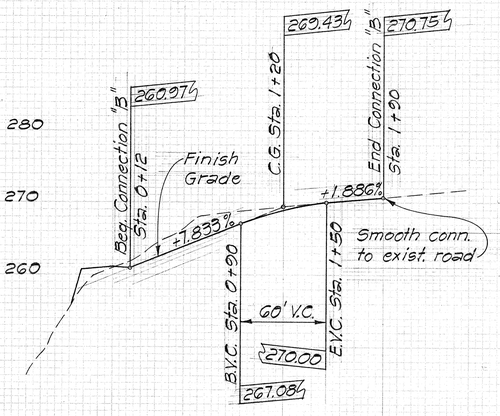
K+E CRYSTALENE® LA 2920 TRACING PAPER

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	127	258

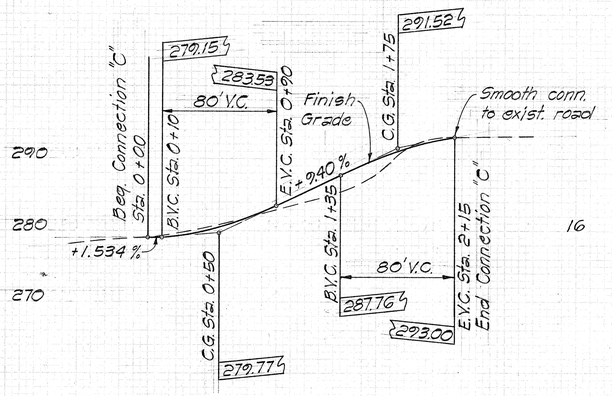




N.H.A. CONNECTION "A"
AT STA. 15 + 77 ±



N.H.A. CONNECTION "B"
AT STA. 17 + 26 ±



N.H.A. CONNECTION "C"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PROFILE
MILITARY ACCESS ROADS

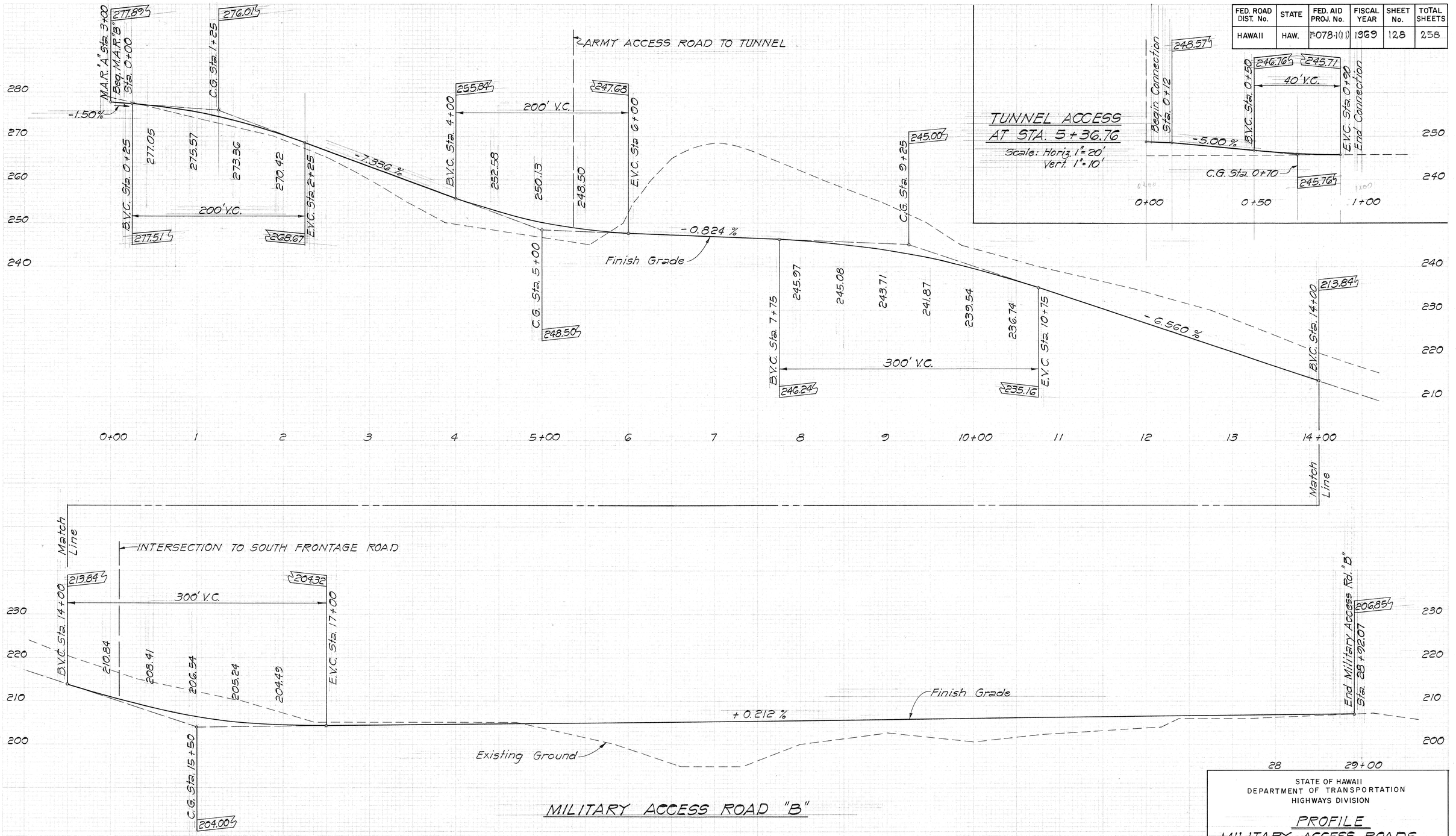
MOANALUA ROAD
F.A.P. Proj. No. F-078-1(11)

Scale: Horiz. 1" = 50'
Vert. 1" = 10'
Date: May 25, 1970

SHEET No. 9 OF 35 SHEETS

127

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	128	258



MILITARY ACCESS ROAD "B"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PROFILE
MILITARY ACCESS ROADS

MOANALUA ROAD
F.A.P. Proj. No. F-078-1(11)

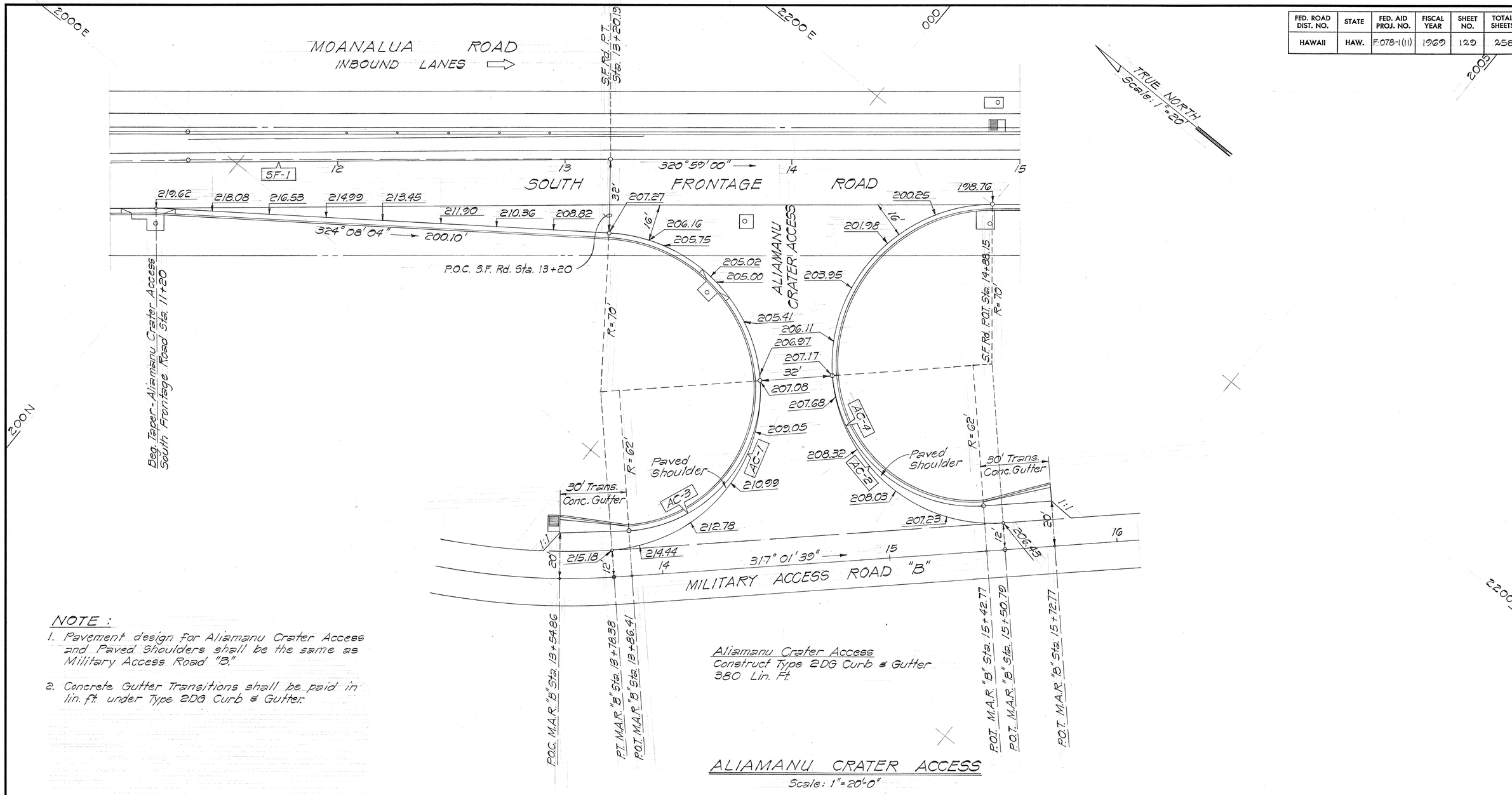
Scale: Horiz. 1"= 50'
Vert. 1"= 10'
Date: May 25, 1970

SHEET No. 10 OF 35 SHEETS

128

PLATE 3 - CROSS SECTION, F.A.S.
BLUEPRINT PAPER CO., S.F. CAL.
NO. 1000H-3

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	129	258



Aliamanu Crater Access
Construct Type 2DG Curb & Gutter
380 Lin. Ft.

ALIAMANU CRATER ACCESS

Scale: 1"=20'-0"

NOTE :

1. Pavement design for Aliamanu Crater Access and Paved Shoulders shall be the same as Military Access Road "B."
2. Concrete Gutter Transitions shall be paid in lin. ft. under Type 2DG Curb & Gutter.

CURVE DATA

	AC-1	AC-2	AC-3	AC-4	SF-1
Δ	172°53'35"	183°57'21"	89°58'38"	90°00'00"	1°03'36"
R	70.00	70.00	62.00	62.00	20,000.00
T	——	——	61.98	62.00	185.00
Lc	211.23	224.75	97.36	97.39	370.00

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

K+E CRYSTALENE® LA 2920 TRACING PAPER

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

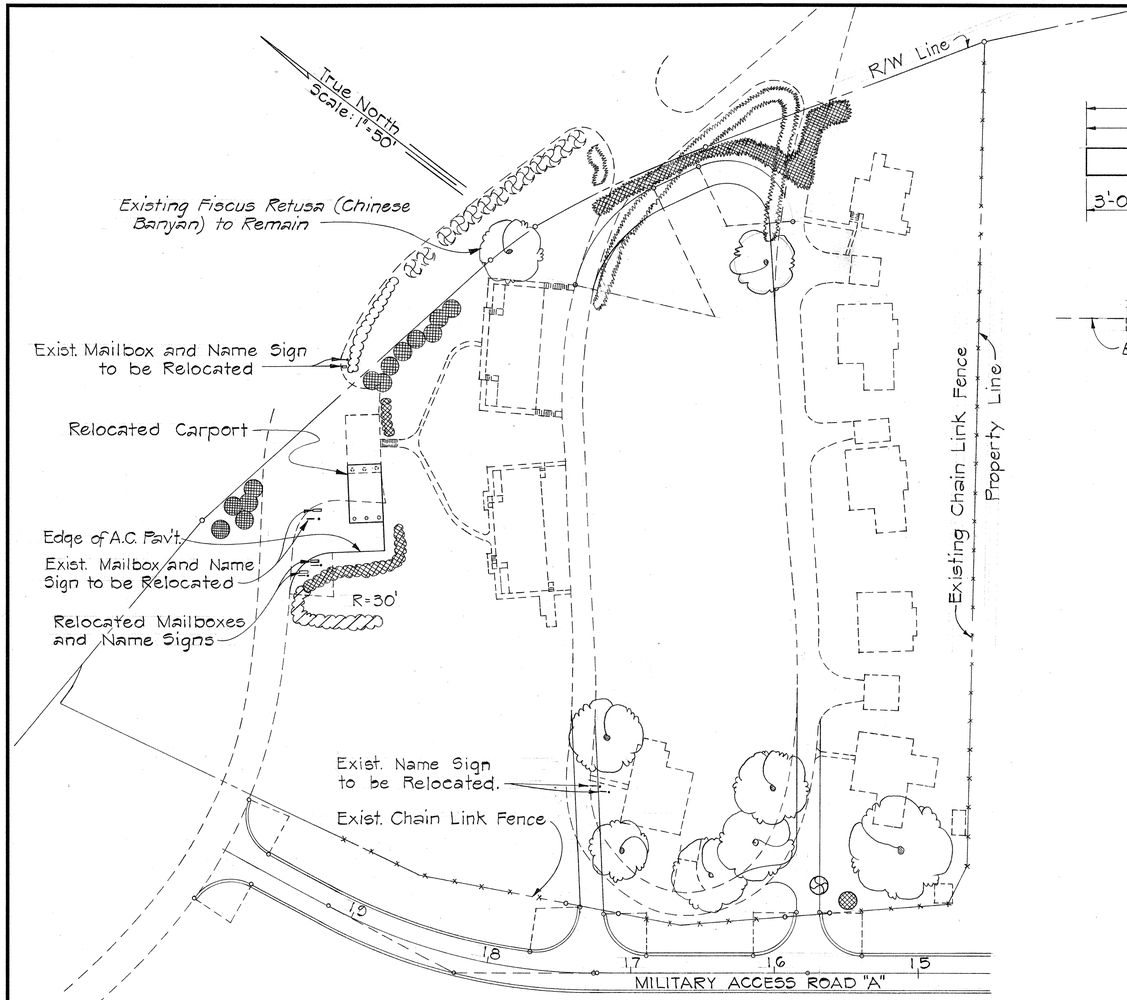
ALIAMANU CRATER ACCESS
DETAIL PLAN

MOANALUA ROAD
F.A.P. Proj. No. F-078-1(11)

Scale: 1" = 20' Date: May 25, 1970

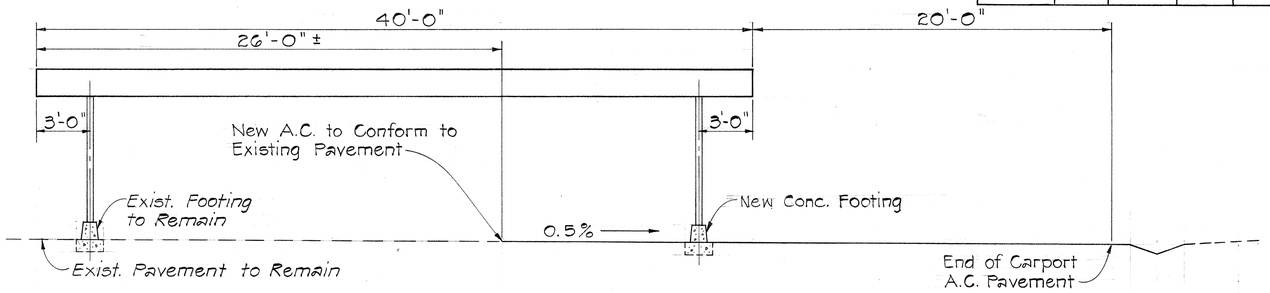
SHEET No. 11 OF 35 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F078-1(11)	1969	130	258

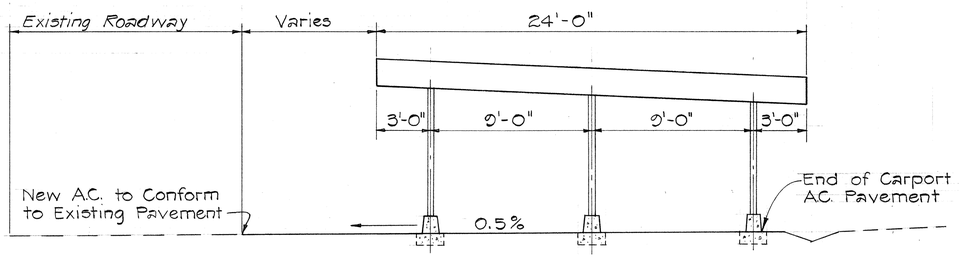


LAYOUT PLAN

Scale: 1" = 50'



FRONT ELEVATION



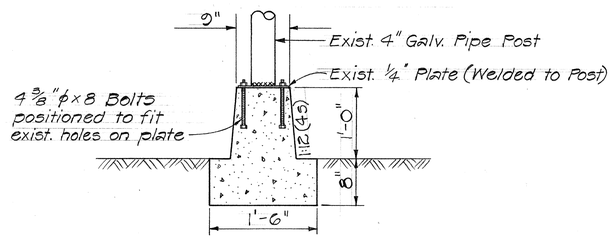
SIDE ELEVATION

RELOCATED CARPORT

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

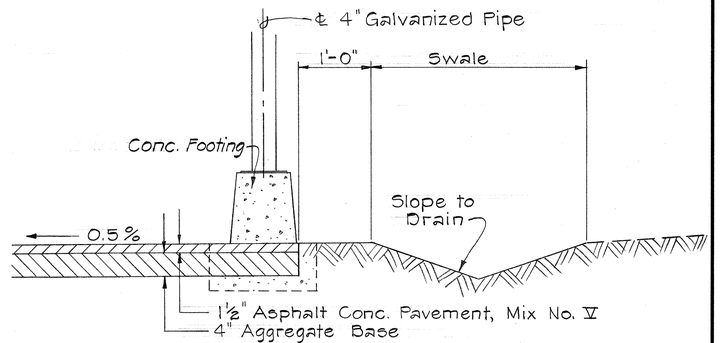
LEGEND

Botanical Name	Common Name	Existing to be Relocated	Existing to Remain	Relocated	Minimun Spacing
Codiaeum Variegatum	Croton				1'-6" o.c.
Hibiscus Rosa-Sinensis	Hibiscus				6'-0" o.c.
Cocos Nucifera	Coconut				15'-0" o.c.



TYPICAL SECTION OF NEW CONC. FOOTING W/BOLTS TO FIT

Scale: 1" = 1'-0"



TYPICAL SECTION OF DRAINAGE SWALE

Scale: 1" = 1'-0"

APPROVED:

COMMANDER, PACIFIC DIVISION NAVY FACILITIES, ENGINEERING COMMAND — DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPING AND CARPORT RELOCATION OF U.S. NAVY FACILITIES MOANALUA ROAD F.A.P. Proj. No. F-078-1(11)

Scale: As Shown Date: May 25, 1970

SHEET No. 12 OF 35 SHEETS

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

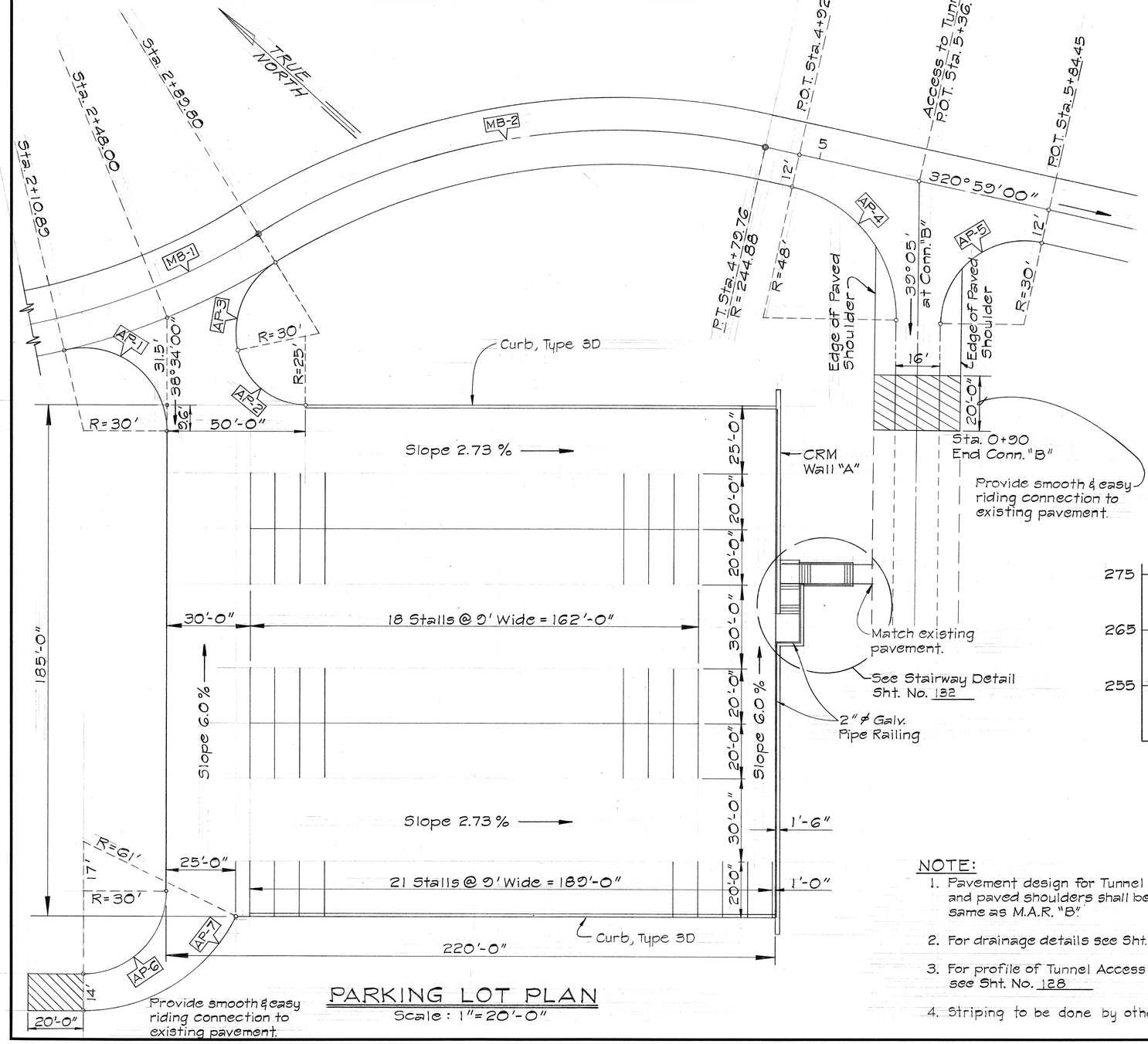
K&E CRYSTALENE® LA 2920 TRACING PAPER

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	131	258

Revised: July 13, 1970

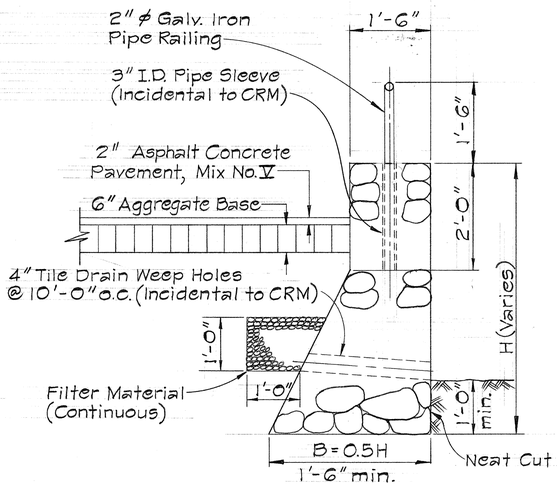
CURVE DATA

	MB-1	MB-2	AP-1	AP-2	AP-3	AP-4	AP-5	AP-6	AP-7
Δ	44°25'36"	44°25'36"	103°31'42"	78°15'23"	69°34'01"	78°06'00"	101°54'00"	90°00'-00"	64°00'00"
R	244.88'	244.88'	30.00'	25.00'	30.00'	48.00'	30.00'	30.00'	61.00'
T	100.00'	100.00'	37.01'	20.34'	20.84'	59.17'	24.34'	30.00'	38.12'
LC	189.88'	189.88'	54.20'	34.14'	36.43'	65.42'	53.35'	47.12'	68.13'



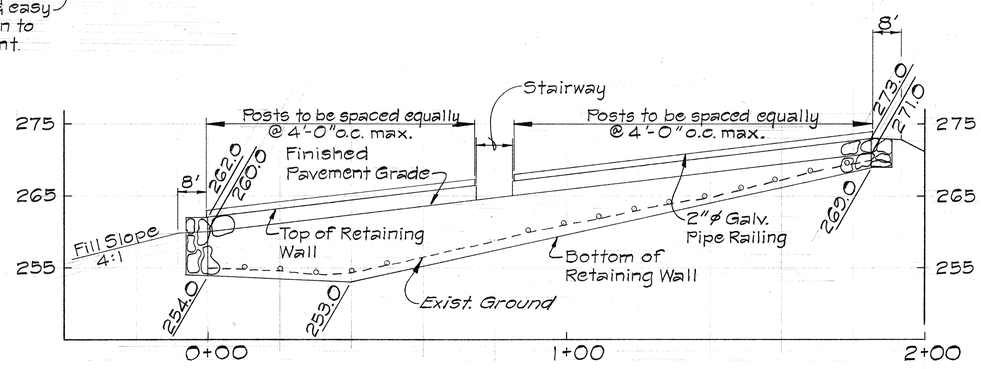
PARKING LOT PLAN

Scale: 1"=20'-0"



CRM WALL "A" DETAIL

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



ELEVATION

CRM WALL "A"

Scale: Horiz. 1"=20'
Verf. 1"=10'

NOTE:

1. Pavement design for Tunnel Access and paved shoulders shall be the same as M.A.R. "B".
2. For drainage details see Sht. No. 138
3. For profile of Tunnel Access see Sht. No. 128
4. Striping to be done by others.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ALIAMANU TUNNEL PARKING LOT AND TUNNEL ACCESS DETAIL PLAN

Moanalua Road
F.A.P. Proj. No. F-078-1(11)

Scale: As Shown Date: May 25, 1970

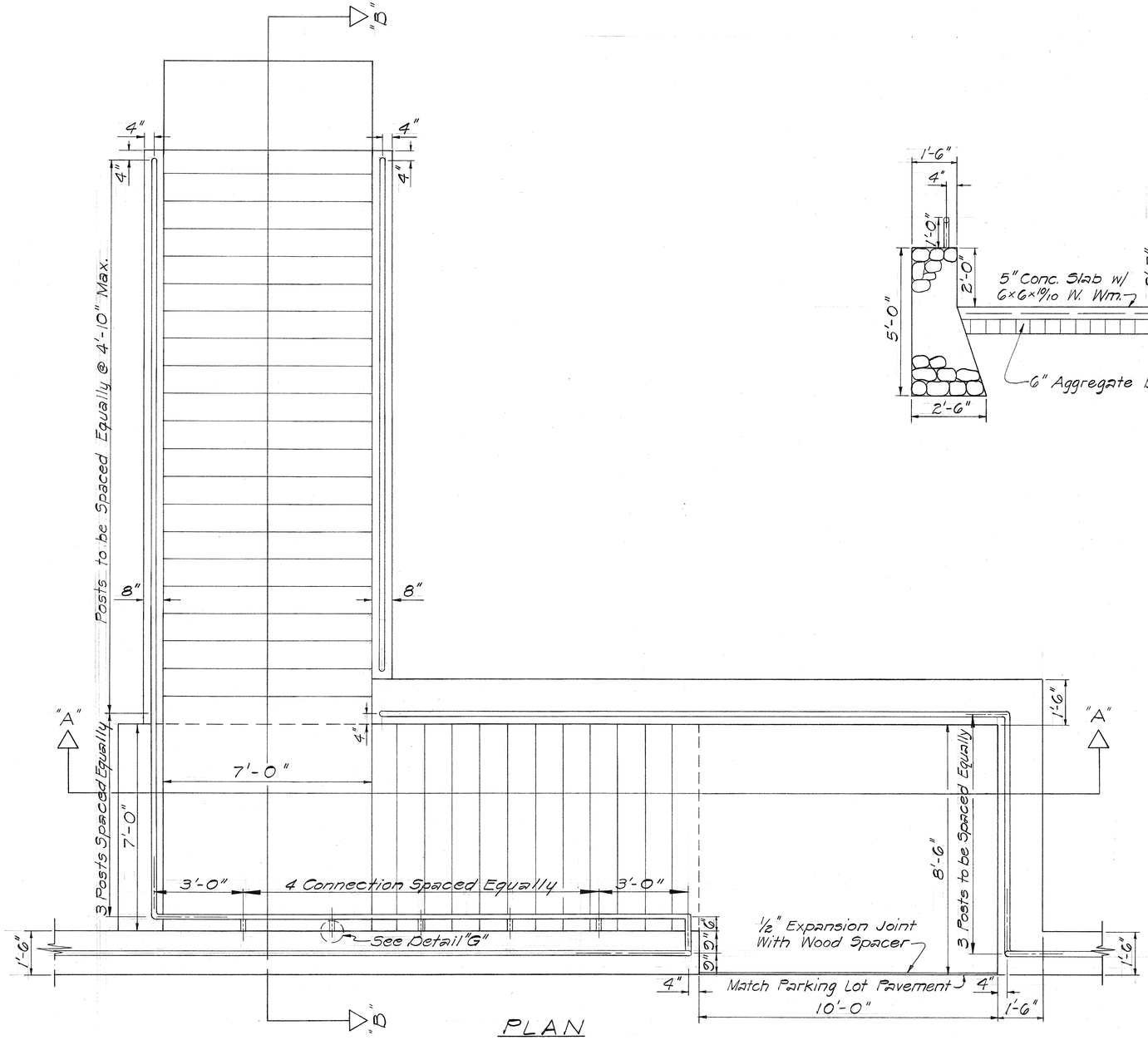
SHEET No. 13 OF 35 SHEETS

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

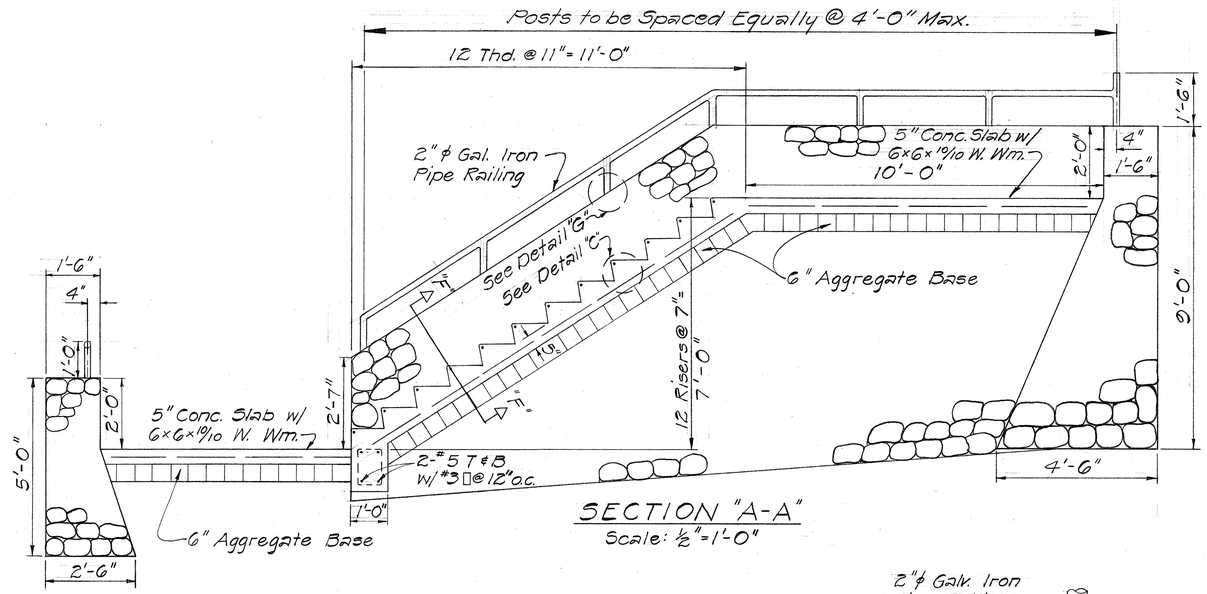
K+E CRYSTALENE® LA 2920 TRACING PAPER

131

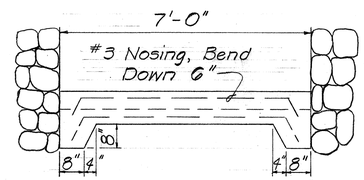
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F078-1(11)	1969	132	258



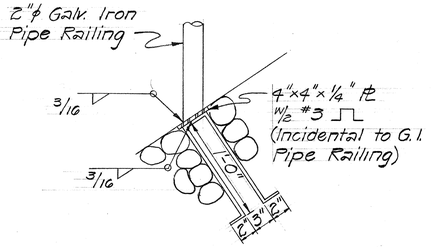
PLAN
Scale: ½"=1'-0"



SECTION "A-A"
Scale: ½"=1'-0"



DETAIL "F-F"
Scale: ½"=1'-0"



DETAIL "G"
TYPICAL CONNECTION C.R.M.
Scale: 1½"=1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

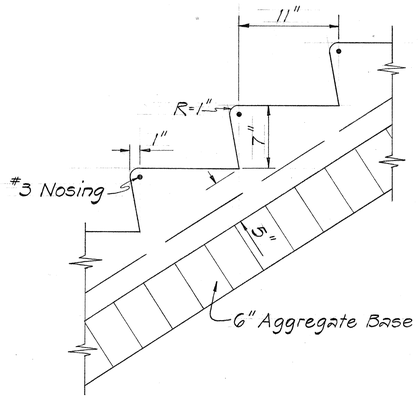
STAIRWAY DETAILS
ALIAMANU TUNNEL PARKING LOT
Moanalua Road
F.A.P. Proj. No. F-078-1(11)

Scale: As Shown Date: May 25, 1970

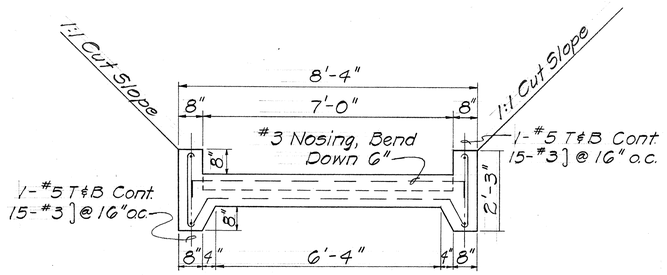
SHEET No. 14 OF 35 SHEETS

K+E CRYSTALENE® LA 2920 TRACING PAPER

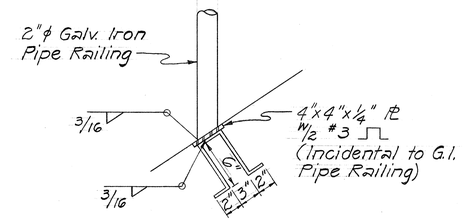
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	133	258



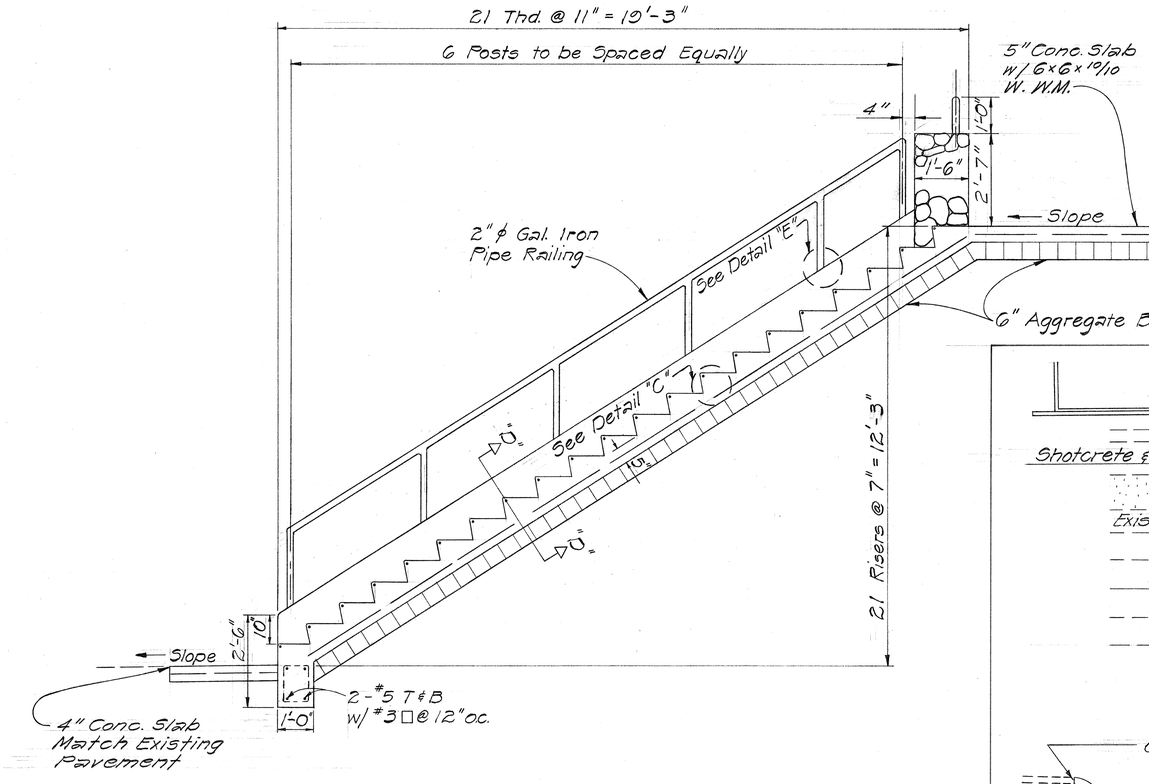
DETAIL "C"
Scale: 1½"=1'-0"



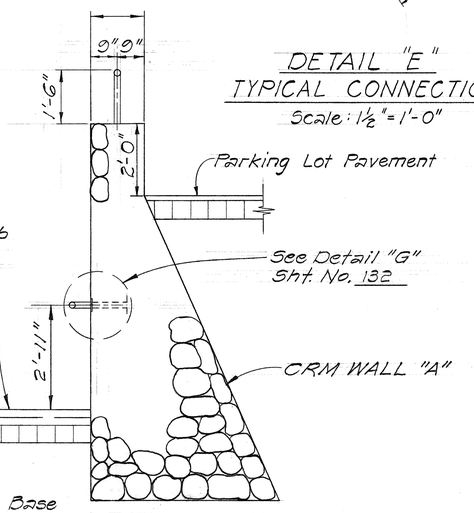
SECTION "DD"
Scale: ½"=1'-0"

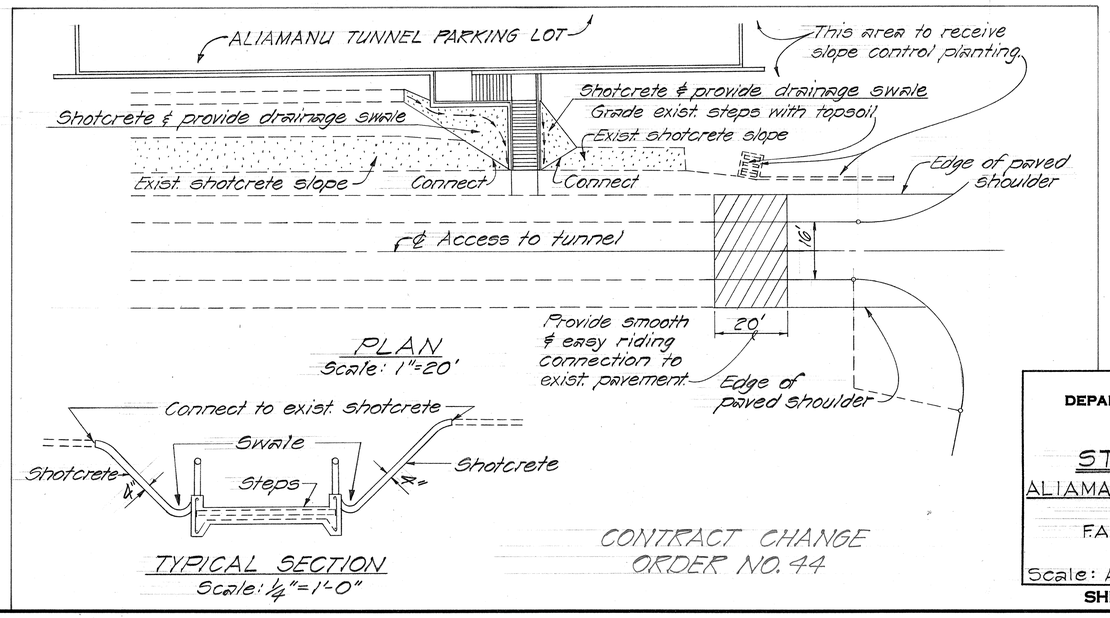


DETAIL "E"
TYPICAL CONNECTION CONC.
Scale: 1½"=1'-0"



SECTION "B-B"
Scale: ½"=1'-0"





PLAN
Scale: 1"=20'

TYPICAL SECTION
Scale: ¼"=1'-0"

CONTRACT CHANGE ORDER NO. 44

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STAIRWAY DETAILS
ALIAMANU TUNNEL PARKING LOT
Moanalua Road
F.A.P. Proj. No. F-078-1(11)

Scale: As Shown Date: May 25, 1970

SHEET No. 15 OF 35 SHEETS

K&E CRYSTALENE® LA 2920 TRACING PAPER

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	134	258

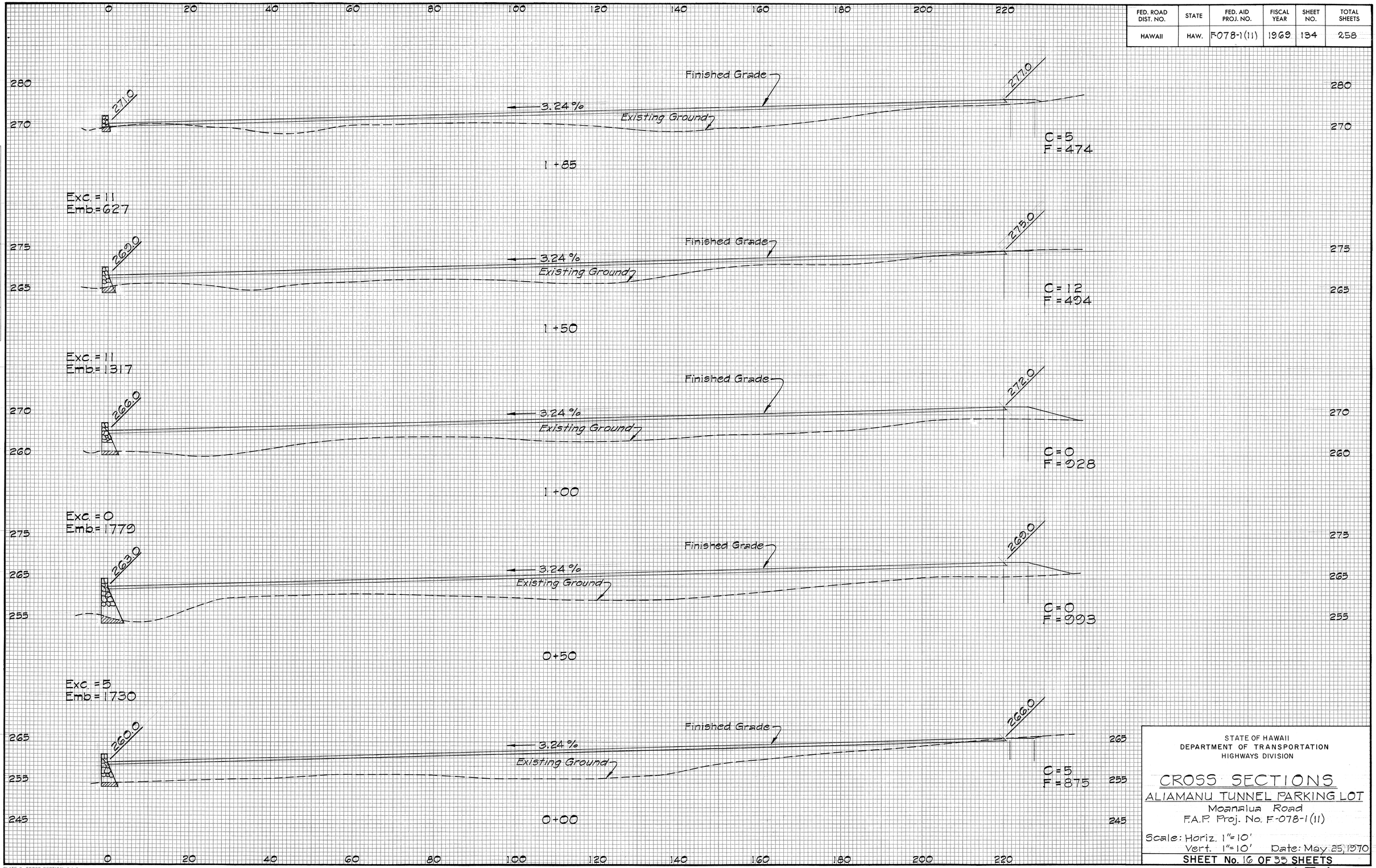


PLATE 3 - CROSS SECTION, F. A. S.
CLEARPRINT PAPER CO., S. F. CAL. NO. 1000H-3

FINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK — NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CROSS SECTIONS

ALIAMANU TUNNEL PARKING LOT
Moanalua Road
F.A.P. Proj. No. F-078-1(11)

Scale: Horiz. 1"=10'
Vert. 1"=10' Date: May 25, 1970

SHEET No. 16 OF 35 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F078-1(11)	1969	135	258

REVISED: Sept. 8, 1970

COAST GUARD HOUSING AREA

S.L. A Sta. 3+20 to 3+50
Construct two (2) Plain Sewer Manholes over existing Sewer Line. Demolish and remove Existing Manhole and Sewer Line. (Incidental to excavation)
Salvage and Reuse existing Sewer Manhole Frame and Cover.
See detail, sheet no. 170

℄ Sta. 216+00 Lt.
Relocate existing playground equipment

S.L. A Sta. 8+79 ±
Connect to existing Primary Circuit for Sewage Pump Station

S.L. A Sta. 8+85 ±
Connect existing Sewer Force Main.
Cut and Plug existing Sewer Line.
1-6-inch, 1/4 Bend (Class 250)
1-Concrete Reaction Block

℄ Sta. 221+00 Lt.
Relocate existing playground equipment

-S.L. A Sta. 0+07 ±
Connect to existing Sewer Force Main.
Cut and Plug existing Sewer Line.
1-6-inch, 1/16 Bend (Class 250)
1-Concrete Reaction Block.

TRUE NORTH
Scale: 1"=50'

Exist. Sewer Line
Sewer Force Main "A"
Exist. Sewer Force Main
Exist. M.H.
Existing Cables for Sewage Pump Station
Sta. Line A
R/W Line
HH #1
HH #2
HH #3
HH #4
HH #5
HH #6
JUNGLE JIM
CHIN BAR
SEE SAW
SWING
272° 14' 00"
292° 06' 20"
99.16'
202° 05' 56"
R = 954.00'
202° 38' 16"
R = 1047.35'
222° 16' 12"
4.50'
156.65'
S.L. A Sta. 2+74.43
S.L. A Sta. 6+05.19
S.L. A Sta. 7+07.35
S.L. A Sta. 220+30.37
℄ Sta. 210+30
℄ Sta. 215+00
℄ Sta. 220+00
8" dia. waterline through sleeve exist. 18"ø sleeve
272° 14' 00"
105° 40' 52"
W
210
215
220
10
5
6
8
12
WATER LINE "I"
SEWER LINE "E"

-S.L. A Sta. 0+12
Connect to existing Primary Circuit for Sewage Pump Station

8" dia. C.I. Soil Pipe through sleeve
Exist. 18"ø Sleeve for Sewer line

NOTE: For data of as-built by others, refer to U.S. Coast Guard drwg. no. 14KH028, "As Built Record Drawing" Dated 6/5/74.

(1) Conn. to exist. 8" water main
W.L. "I" Sta. 21+78 ±
Remove 8" Plug (by others)

(2) W.L. "I" Sta. 21+70 ±
1-8" 1/8 bend (horiz.)
1-8" 1/16 bend (horiz.)
1-8" Sleeve, 15" long
2-Conc. Blocks (by others)

(3) W.L. "I" Sta. 21+30
1-Air Relief Assembly (by others)

(4) S.M.H. "E4
S.L. "E" Sta. 20+40
Top: 194.4 ±
Inv.: 190.13 (by others)

(5) End exist. 18"ø Sleeve
Inv. El. = 190.00 (Sleeve) (by others)

(6) W.L. "I" Sta. 21+25 ±
End exist. 18"ø Sleeve (by others)

(7) Beg. exist. 18"ø Sleeve
Inv.: 191.35 (Sleeve) (by others)

(8) W.L. "I" Sta. 18+62 ±
Beg. exist. 18"ø Sleeve (by others)

Deep Drop
S.M.H. "E3
(9) S.L. "E" Sta. 17+36
Top: 210.0 ±
Inv.: 191.55 (by others)

W.L. "I" Sta. 18+57 ±
1-8" 1/8 bend (horiz. & vert.)
(10) 1-8" 1/16 bend (horiz. & vert.)
1-8" Sleeve, 15" long
2-Conc. Blocks (by others)

(11) W.L. "I" Sta. 18+25
1-8" 1/16 bend (vert.)
1-Reinf. Conc. Block (by others)

(12) W.L. "I" Sta. 16+85
1-8" 1/8 bend (horiz.)
1-Conc. Block (by others)

S.M.H. "E2
(13) S.L. "E" Sta. 15+18
Top: 218.4 ±
Inv.: 213.2 (by others)

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ADJUSTMENTS OF COAST GUARD FACILITIES

MOANALUA ROAD
F.A.P. Proj. No. F-078-1(11)

Scale: 1"=50' Date: May 25, 1970

SHEET No. 17 OF 35 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F078(10)	1969	136	258

DRAINAGE SUMMARY

STRUCTURES					ESTIMATED QUANTITIES																							REMARKS
NUMBER	TYPE	STATION	ITEM	NO.	206.02	207.01	503.502	503.202	602.103	603.00110	603.00120	603.1004	603.1010	603.1014	603.1016	603.5040	603.7200	603.7240	603.7360	603.7460	604.231	604.238	604.202		604.010	604.201			
					Structure Excavation for Drainage System	Ditch and Channel Excavation	Concrete for Drainage System	Class B Concrete for Drainage System	Reinforcing Steel for Drainage System	Bed Course Material for Culvert	Class B Concrete or Shotcrete for Drainage Ditch	15-inch Reinforced Concrete Pipe, Cl. III	24-inch Reinforced Concrete Pipe, Cl. III	36-inch Reinforced Concrete Pipe, Cl. III	42-inch Reinforced Concrete Pipe, Cl. III	24-inch ACP, Cl. III or 24-inch RCP, Cl. III	24" CMP, No. 14 Ga. or 24" RCP, Cl. III or 24" ACP, Cl. III	24" CMP, No. 10 Ga. or 24" RCP, Cl. III or 24" ACP, Cl. III	30" CMP, No. 10 Ga. or 30" RCP, Cl. III or 30" ACP, Cl. III	36" CMP, No. 10 Ga. or 36" RCP, Cl. III or 36" ACP, Cl. III	Type A-9 Steel Frame and Grate	Type G-24 Steel Frame and Grates	Type B Cast Iron Frame and Cover		Brickwall for Storm Drain Manholes	Type "A" Cast Iron Frame and Cover				
			UNIT	USED	C.Y.	C.Y.	C.Y.	C.Y.	LB.	C.Y.	C.Y.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	Ea.	Ea.	Ea.		L.F.	Ea.			
MILITARY ACCESS ROAD			"A"																									
1	"D" SDMH	2+10 30' ± % Lt.			139		1.0		35	20									118				1		5	1		
2	"C" C.B.	3+60 Lt.			164		3.5		108	25									146				1					
3	"B" C.B.	3+60 Rt.			47		3.5		108	5								30					1					
4	Std. H.W. "C" C.B.	15+35 Rt.			69		6.0	2.0	150	7							46						1					
5	Std. H.W. "B" C.B.	17+00 Lt.			32		3.5	1.5	150	3							16						1					
6	Std. H.W. "C" C.B.	19+67 Rt.			93		6.0	1.5	150	11							72						1					
MILITARY ACCESS ROAD "B" AND PARKING LOT																												
1	"B" CD1	2+30 40' ± % Rt.			39			1.5		6			40															
2	Std. H.W.	2+75 40' ± % Rt.			5			1.5	42																			
3	"P" CD1	45' % From Parkg. Lot Wall			175		2.5			28			188															
4	Trapezoidal Ditch	1' % From Shld'r. (See Plan)				100			980		28.0																	
5	"A-9" CD1	5+00 43' ± % Rt.			79		7.0			11			68								1							
6	"B" CD1	5+00 23' ± % Rt.			223			4.0	11	15				90														
7	61214 CD1	5+78 Lt.			337		2.5		95	45					220							1						
8	61214 CD1	8+00 Lt.			46		2.5		35	5					22							1						
9	Connection from Existing Grates to Existing SDMH				27					8		60																
10	61214 CD1	13+50 Lt.			56		2.0		21	7								46				1						
11	61214 CD1	13+50 Rt.			338		2.5		21	37									338			1						
12	"D" C.B.	14+20 ± 125' ± % Lt.			52		4.5		77	5								32										
13	61214 CD1	16+90 Rt.			76		2.5		21	9										48		1						
14	61214 CD1	16+90 Lt.			96	63	2.5		21	13										66		1						
15	"B" CD1	21+49 Rt.			98	60		4.0		15						102							1					

Note:

1. For Standard Details, see roadway drainage Standard Detail Sheet Nos. DH 1, DH 3, DH 9, DH 10 & DH 19.
2. For Type "A-9" CD1 and Type "P" CD1, see roadway drainage detail sheet nos. 19 of 34 and 21 of 34.

ORIGINAL PLANS — SURVEY PLOTTED BY / DRAWN BY / TRACED BY / DESIGN BY / QUANTITIES BY / CHECKED BY — DATE

NOTE BOOK — No. — DATE

Date: May 25, 1970

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	137	258

Revised: 2 July 28, 1970
3 Aug. 31, 1970

TRUE NORTH
Scale: 1"=50'

NEDL Sta. 0+00 (Face of M.H.)
Construct Type "X" M.H.

Demolish exist. M.H. (Incidental to roadway excavation). Manhole frame and cover to be salvage and reused.

Exist. U.S.N. 11.5 Kv. power line Circuit H-1

Furnish and install 2-4" ducts encased in plain conc. jacket (For Profile, see sht. no. 141)

272° 14' 00"

Demolish exist. manhole (incidental to roadway excavation). M.H. frame and cover to be salvaged and reused

NEDL Sta. 2+86± Construct Type "X" Manhole

NEDL Sta. 3+73± Construct Type "X" Manhole

℄ M.A.R. "A" 15+35 Rt.
Construct: Type "C" C.B.
Std. Conc. Headwall
Install: 24" CMP, 14 Ga. or
24" RCP, Cl. III or
24" ACP, Cl. III

℄ M.A.R. "A" 17+00 Lt.
Construct: Type "B" C.B.
Std. Conc. Headwall
Install: 24" CMP, 14 Ga. or
24" RCP, Cl. III or
24" ACP, Cl. III

℄ M.A.R. "A" 19+67 Rt.
Construct: Type "C" C.B.
Std. Conc. Headwall
Install: 24" CMP, 14 Ga. or
24" RCP, Cl. III or
24" ACP, Cl. III

℄ MAR "A" Sta. 20+40
Std. C.H.W.
Inv. = 237.0

℄ MAR "A" Sta. 19+67 Rt.
Type "C" C.B.
Inv. = 237.5

24" Culvert

℄ MAR "A" Sta. 17+70
Construct 40 L.F. of Reinforced Concrete Jacket for Existing Sewer Line Under Roadway

U.S. Navy U.S. Coast Guard Exist. Sewer Cleanout

Exist. 6" Sewer Line

Adjust Exist. Sewer Cleanout

M.A.R. "A" Sta. 17+~~10~~ 35±
Construct reinf. concrete jacket for existing sewer line under roadway - 90 L.F.

℄ M.A.R. "A" Sta. 17+00 ⅝ 34' Lt.
Std. C.H.W.
Inv. = 255.0

24" Culvert

Beg. Reinf. Conc. Jacket

℄ M.A.R. "A" Sta. 17+00 Lt.
Type "B" C.B.
Inv. = 259.0

Remove 2" G.I. Pipe

℄ M.A.R. "A" Sta. 15+35 ⅝ 31' Lt.
Std. C.H.W.
Inv. = 274.0

Exist. Cesspool

℄ MAR "A" Sta. 15+35 Rt.
Type "C" C.B.
Inv. = 274.5

24" Culvert

RAMP RH-0

OUTBOUND LANES

MOANALUA ROAD

INBOUND LANES

RAMP RH-I

℄ Sta. 211+85.28 (℄ Navy Electric Easement - 25' Wide)

B-1

225° 45' 15"

NE Cor.

Exist fire hydrant to be relocated. Cut and plug existing line

Exist. W.M. and meter boxes to be relocated

Fence Line Detail See Sht. No. 25

301° 41' 45"

NHA CONN. "C"

New 6" valve and valve box.

Relocated F.H.

W.L. Sta. 6+44
Conn. to exist. water line
1-6 inch, ⅛ bend
1-Conc. Reaction Block

W.L. Sta. 0+05
Connect to exist. water line
1-6 inch, ⅛ bend
1-6 inch, ⅛ bend
1-6 inch sleeve, 15" long
1-Reinf. Conc. Reaction Blk.
See detail sheet no. 146

Exist. 6" water line to be abandoned

W.L. Sta. 0+60
1-6 inch, ⅛ bend
1-6 inch, ⅛ bend
1-6 inch sleeve, 15" long

℄ Sta. 218+76.40 (℄ Water Easement - 10' Wide)

New 6" C.G. Water Line (For Profile, see sht. no. 141)

W.L. Sta. 3+00
1-6 inch, ⅛ bend

W.L. Sta. 3+56
1-6 inch, ⅛ bend

Exist. valve and manhole cover to be relocated

W.L. Sta. 4+26
1-6 inch, ⅛ bend
1-Reinf. Conc. Reaction Block
See detail sheet no. 146

W.L. Sta. 4+61
1-6 inch, ⅛ bend
1-6 inch, ⅛ bend
1-6 inch sleeve 15" long
1-Conc. Reaction Block

(1) NHA CONN. "A" Sta. 1+~~65~~ 24 ½ ~~14~~ 15 Rt. Lt. (Navy)
Reconstruct 2" F.V.-2.5 high
2-2 inch Valve (relocated)
1-Valve Box Frame and Cover (relocated)
10 L.F. 2-inch G.I. Pipe

NHA CONN. "B"

NHA CONN. "A" Sta. 1+70, End Reinf. Conc. Jacket

~~Relocated Fire Valve~~

~~Adjust Exist. Sewer Cleanout~~

Exist. 6" Sewer Line

Install 2" G.I. Pipe

NHA CONN. "A"

Adjust sewer cleanout

Existing F.V. to be relocated

(Relocated) Fire Valve (1)

NHA CONN. "A" Sta. 0+52± Construct reinf. concrete jacket for existing sewer line under roadway - 30 L.F.

Exist. 2" G.I. Pipe

Existing ~~sewer pump house~~ Tool Shed (Abandoned Sewer Pump House)

MILITARY ACCESS ROAD "A"

(2) W.L. Sta. 4+75
Construct Type "B" M.H.
1-6" Valve (relocated)
1-6 inch, ⅛ bend
1-M.H. Frame & Cover (relocated)
1-Air Relief Valve

(3) W.L. Sta. 6+24 (Navy)
Relocated Fire Hydrant
1-6" Gate Valve
1-Valve Box Frame & Cover
1-6"x6" Tee
20 L.F. 6 inch Cast Iron Pipe
1-Conc. Reaction Block

(4) W.L. Sta. 6+30 (Navy)
Relocated 4'-0" x 3'-8" Meter Box
* 1-1¼" Meter (relocated)
2-1¼" Valve (relocated)
2-3'-0" x 1'-8" x ¼" Cover Plates

(5) W.L. Sta. 6+35 (Navy)
Relocated 4'-0" x 4'-4" Meter Box
* 1-2" Meter (relocated)
1-2" Valve (relocated)
3-Cover Plates (relocated)

(1) W.L. Sta. 0+52 to 3+57
6 inch cast iron pipe in reinforced concrete jacket. See detail sheet no. 146

* Corp. Stops shall be furnished and installed by the Contractor for the relocated meters. (Incidental to 6-inch pipe)

U.S. Navy U.S. Army

2000N 500E 2000N 500E 1500N 1000N 500N 000 500N 000 1000N 500E

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE & MILITARY UTILITIES DETAIL PLAN

MOANALUA ROAD
F.A.P. Proj. No. F-078-1(11)

Scale: 1" = 50' Date: May 25, 1970

SHEET No. 12 OF 35 SHEETS

K&E CRYSTALENE® LA 2920 TRACING PAPER

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	138	258

Revised: July 13, 1970
Oct. 8, 1970

1500 E

TRUE NORTH
Scale: 1"=50'

1000 N

℄ M.A.R."B" 2+30 % 40' Rt.±
Construct: Type"B" CDI
Install: 24" RCP, Cl. III

℄ M.A.R. "B" 2+75 % 40' Rt. ±
Construct: 5't'd. CHW

% 45' ± From Edge of Wall
Construct: Type "P" CDI
(For details, See Sht No. 87)
Install: 24" RCP, Cl. III

% 1'± From Rear Edge of Parking Lot Shoulder
Construct: Lined Trapezoidal Ditch
(For details, See Sht. no. 87

℄ M.A.R."B" 5+00 % 23' Rt.±
Construct: Type"B" CDI
Install: 36" RCP, Cl. III

℄ M.A.R."B" 5+00 % 43' Rt.±
Construct: Type "A-9" CDI
(For details, See Sht. No. 85)
Install: 24" RCP, Cl. III

℄ M.A.R."B" 5+40 % 90' Rt.±
Connect & Install: 15" RCP, Cl. III
to existing CDI & MH

2000 E

℄ M.A.R."B" 5+78 Lt.
Construct: 61214 CDI
Install: 42" RCP, Cl. III

℄ M.A.R."B" 8+00 Lt.
Construct: 61214 CDI
Install: 42" RCP, Cl. III

500 N

℄ M.A.R."B" 14+29± % 123'± Lt.
(℄ S.F. Rd. 13+64± % 58'± Rt.)
Construct: Type"D" CB
Install: 24" CMP, 10 Ga. or
24" RCP, Cl. III or
24" ACP, Cl. III

End of Project
℄ Sta. 239+00

NORTH FRONTAGE ROAD

RED HILL GRADE SEPARATION STRUCTURE

Splice Pit #B-JTC
℄ S.F. Rd. 3+71± % 48' Rt.
See Detail, Sht. No. 196

Splice Pit #A-JTC
℄ S.F. Rd. 4+03±, % 48' Rt.
See Detail, Sht. No. 196

Furnish & Install 40' Primary Metering Pole

OUTBOUND LANES

Moanalua Road ℄ Sta. 225+65
Begin Military Access Road "A", Sta. 0+00

Demolish

New Primary Meter (to be installed and connected by others)

INBOUND LANES

Joint Trunking Cable-Direct Burial (Cable to be installed by others) See Det., Sht. No. 196

SOUTH FRONTAGE ROAD

36" RCP, Cl. III

42" RCP, Cl. III

Existing Transformer Poles to be removed

Existing to Remain

MILITARY ACCESS ROAD "B"

Demolish existing E.M.H., (Incidental to Roadway Exc.)

℄ M.A.R."B" 5+78 Lt.
61214 CDI
Exist. Inv. = 240.0±
Connect to existing SDMH

℄ M.A.R."B" 8+00 Lt.
61214 CDI
Inv. = 238.0

℄ M.A.R."B" 14+29± % 123'± Lt.
(℄ S.F. Rd. 13+64± % 58'± Rt.)
Type "D" CB
Inv. = 200.0

℄ M.A.R."B" 13+50 Lt.
61214 CDI
Inv. = 210.0

52'

30" Culvert

℄ M.A.R."A" 2+10 % 30' Lt.
Type "D" SDMH
Inv. = 270.0

℄ M.A.R."B" 5+00 % 23' Rt.±
Type "B" CDI
Inv. 243.0

24" RCP, Cl. III

℄ M.A.R."B" 2+75 % 40' Rt.±
5't'd. CHW
Inv. = ~~266.5~~ 260.0

15" RCP, Cl. III

Existing light pole to remain.

℄ M.A.R."B" 5+00 % 43' Rt.±
Type A-9 CDI
Inv. = 256.0, Inv. = 249.0

Tunnel Access Sta. 0+35 % 20' Rt.
Construct Type "X" M.H. over existing duct lines. See detail sheet no. 147

24" RCP, Cl. III

℄ M.A.R."B" 2+34.00

Military Access Rd. "A" Sta. 3+00
Beg. Military Access Rd. "B" Sta. 0+00

Demolish & plug end of culvert w/brick & mortar

24" Culv't.

Grade to Drain

℄ M.A.R."B" 2+30 % 40' Rt.±
Type "B" CDI
Inv. = ~~263.0~~ 260.5

24" RCP, Cl. III

Exist. Joint Trunking Cables to be Abandoned

Demolish exist. E.M.H. (Incidental to roadway excavation). Salvage and reuse M.H. frame & cover.

Remove Pole and Anchor

Type"P" CDI with 10' Trans. Ditch
Inv. = 266.5

Tunnel Access

Cont. Inv. = 256.0

℄ M.A.R."A" 3+60 Lt.
Type"C" C.B.
Inv. = 275.0

Joint Trunking Cable-Direct Burial (Cables to be installed by others) See Detail, Sht. No. 196

45'±

40' Pole, 6' Deep
1-1" Anchor w/
15' Lead

Lined Trap. Ditch

Splice Pit #C-JTC
See Detail, Sht. No. 196

Splice Pit #D-JTC
See Detail, Sht. No. 196

Exist. Joint Trunking Cables to Remain

For Detail See Sht No. 142

℄ M.A.R."A" 3+60 Rt.
Type"B" CB
Inv. = 275.5

MILITARY ACCESS ROAD "A"

E.P. (Rem.)

(Rem.) E.P.

24" Culvert

30" Culvert

140'

145'

40' E.P.
6' Deep

New
~~Existing~~ Pole ~~to remain~~
New 1" Anchor
15' Lead

℄ M.A.R."B" 13+50 Rt.
61214 CDI
Inv. = 209.0

℄ M.A.R."B" 13+50 Lt.
Construct: 61214 CDI
Install: 24" CMP, 10 Ga. or
24" RCP, Cl. III or
24" ACP, Cl. III

℄ M.A.R."B" 13+50 Rt.
Construct: 61214 CDI
Install: 30" CMP, 10 Ga. or
30" RCP, Cl. III or
30" ACP, Cl. III

MATCH LINE M.A.R. "B" STA. 16+00

2000 E

LEGEND

	Exist. to remain	Exist. to be abandoned	New
Primary Cable (Underground)			
Secondary Cable (Underground)			
Overhead Lines			
Joint Trunking Cable	jtc	jtc	JTC

E.P. ⊠ Existing Pole to be removed.
E.P. ● New or relocated Pole.
Existing Pole with existing Anchor.
Existing Pole with new Anchor.
New or relocated Pole with new Anchor.
E.P. ⊠ Existing Pole to be relocated.
E.P. ○ Existing Pole to remain.

GENERAL NOTES (JTC)

1. The Contractor shall notify H.T. Co. 72 hrs. before any trench or ducts will be ready for the installation of cables by the company.
2. Minimum cover of concrete encased ducts from finish grade to top of concrete jacket shall be 1'-6".

℄ M.A.R."A" 2+10 % 30' Lt.
Construct: Type"D" SDMH
Install: 30" CMP, 10 Ga. or
30" RCP, Cl. III or
30" ACP, Cl. III

℄ M.A.R."A" 3+60 Rt.
Construct: Type"B" CB
Install: 24" CMP, 10 Ga. or
24" RCP, Cl. III or
24" ACP, Cl. III

℄ M.A.R."A" 3+60 Lt.
Construct: Type"C" CB
Install: 30" CMP, 10 Ga. or
30" RCP, Cl. III or
30" ACP, Cl. III

500 N

1000 E

00

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

APPROVED:
T. T. Judd 9-14-70
HAWAIIAN TELEPHONE CO. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE & MILITARY UTILITIES DETAIL PLAN

MOANALUA ROAD
F.A.P. Proj. No. F-078-1(11)

Scale: 1"=50' Date: May 25, 1970

SHEET No. 20 OF 35 SHEETS

K&E CRYSTALENE® LA 2920 TRACING PAPER

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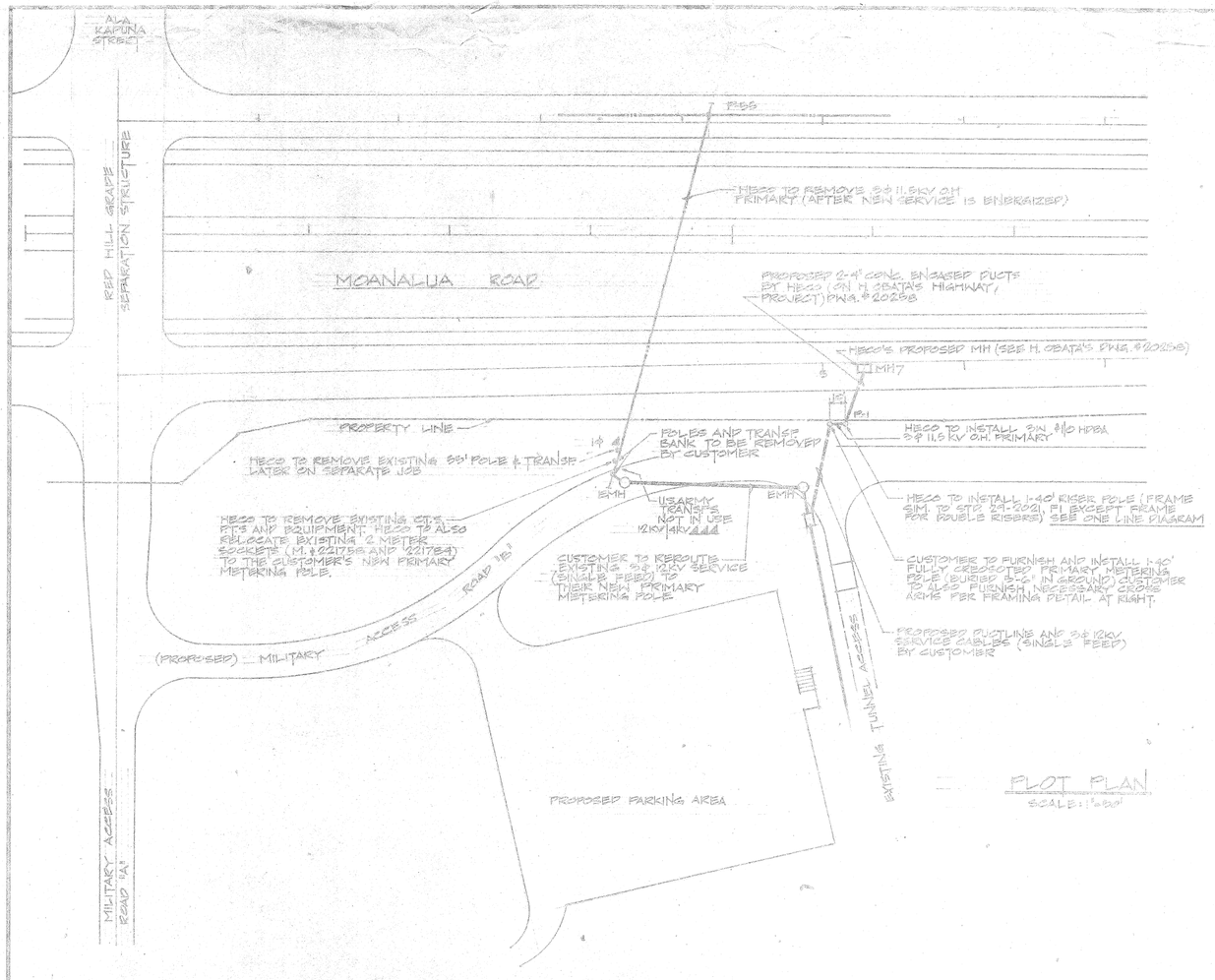
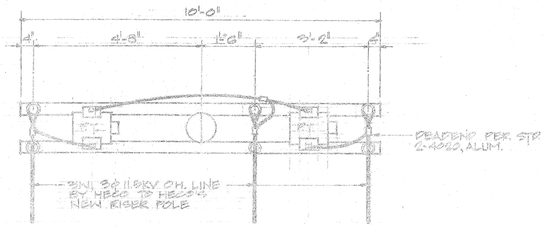
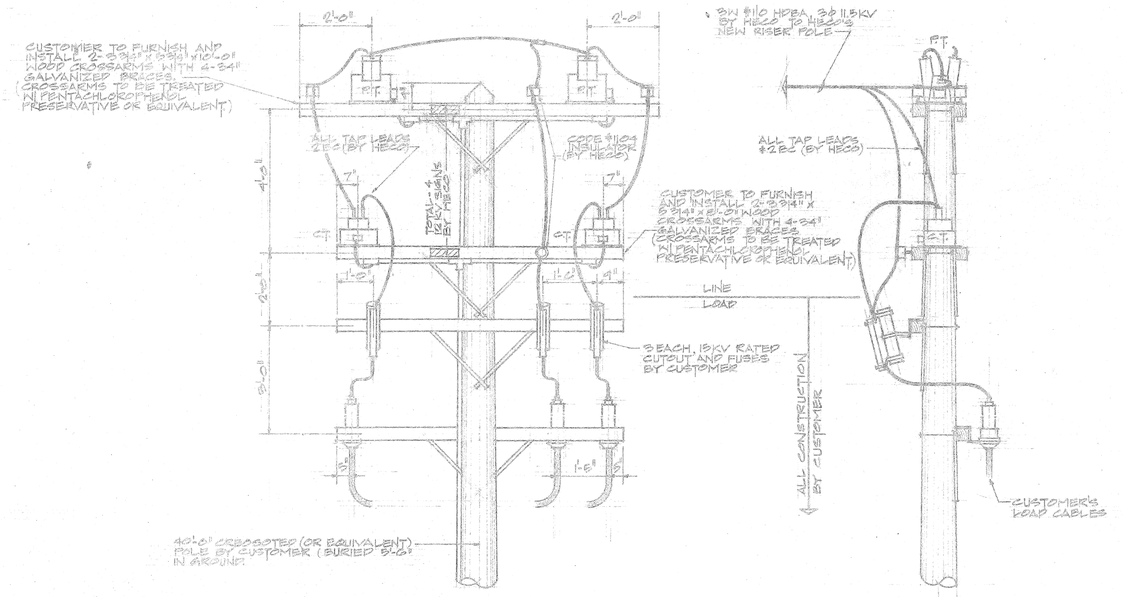


PLOT PLAN
SCALE: 1"=50'



PLAN VIEW

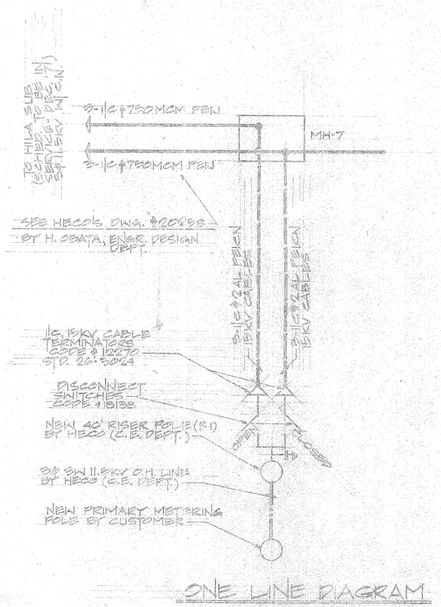
NOTE:
ALL CURRENT AND POTENTIAL TRANFS. BY HECO



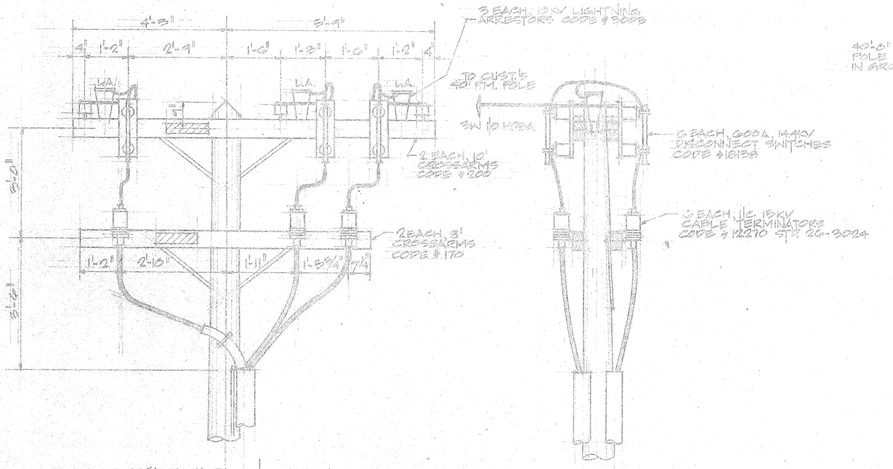
ELEVATION VIEW

SIDE VIEW

CUSTOMER'S 40' PRIMARY METERING POLE FRAMING DETAIL
NTS



ONE LINE DIAGRAM
NTS



ELEVATION VIEW

SIDE VIEW

F1
HECO'S RISER POLE FRAMING DETAIL
NTS

RECEIVED: Dec. 1, 1971

REF. # 015788

REFERENCE DWGS.

STATE DEPT. OF TRANSP. MOANALUA UPGRADING, UNIT I BETWEEN KEEP HILL AND PUULOA INTERCHANGE PROJECT # F-078-1 (11) HECO DWG. # 20258

NO.	DATE	REVISIONS	BY	CHK'D	APP'D

U.S. ARMY
3491 MOANALUA ROAD (AIO ALIAMANU TUNNEL)
RELOCATION OF OH PRIMARY METERED 3Ø 11.5KV SERVICE IN CONJUNCTION WITH MOANALUA ROAD F.A.P. PROJECT NO. F-078-1 (11) UNIT I

DESIGNED AL MACHIDA	DRAWN WM	DATE 11/24/71	SCALE AS NOTED
CHECKED	ELEC.	MECH.	STRUC.
APPROVAL			

ENGINEERING DESIGN DEPARTMENT
HAWAIIAN ELECTRIC CO., INC.
HONOLULU, HAWAII

DRAWING NUMBER
35364

Revised: July 13, 1970

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	139	258

2500 E

TRUE NORTH
Scale: 1" = 50'

3000 E

500 S

1000 S

Location of future 8" Army Water Line

W 8

(FUTURE) ⇦ NORTH FRONTAGE ROAD

Future Army Utility Corridor

8

(FUTURE) ⇦ OUTBOUND LANES

245

250

N

E.M. (Rem.)
3-transf(relocated)

E.P. (Rem.)

(FUTURE) INBOUND LANES ⇨

MOANALUA - LAKESIDE ACCESS ROAD

E.P. (Rem.)

20

Grade to Drain

E.P. (Rem.)

M.A.R. "B" Sta. 16+90 Lt.
Inv. = 193.5

SOUTH FRONTAGE ROAD ⇨

E.P. (Rel.)

Grade to Drain
M.A.R. "B" Sta. 21+42 Lt.
Inv. = 187.0

36" Culvert

M.A.R. "B" Sta. 16+90 Lt.
G1214 CD1
Inv. = 197.5

N

8

24" Culvert

102'

E.P. (Rel.)

Location of future 8" Water Line

W

E.P. (Rel.)

25 (FUTURE)

255

M.A.R. "B" STA. 16+00

20

36" Culvert

MILITARY ACCESS ROAD "B"

155'

180'

36" Culvert

140'

40' E.P. 6' Deep

40' E.P. 6' Deep,
3-Transformers
(relocated)

M.A.R "B" Sta 16+90 Rt.
G1214 CD1
Inv. = 198.5

Building 305

Mil. Access Rd. "B" Sta. 16+90 Lt.
Construct: G1214 CD1
Install: 36" CMP 10 Ga. or
36" RCP, CL III or
36" ACP, CL III

40' E.P. 6' Deep

M.A.R "B" Sta. 21+49 Rt.
Type "B" CD1
Inv. = 192.0

185'

25

W

E.P. (Rel.)

8

Mil. Access Rd. "B" Sta. 21+49 Rt.
Construct: Type "B" CD1
Install: 24" RCP, CL III or
24" ACP, CL III

Mil. Access Rd. "B" Sta. 16+90 Rt.
Construct: G1214 CD1
Install: 36" CMP 10 Ga. or
36" RCP, CL III or
36" ACP, CL III

MATCH LINE M.A.R. "B" STA. 16+00

E.P. (Rel.)
Light Standard
to be Relocated

40' E.P
6' Deep 2-1" Anchor
15' Lead
Relocated Light Standard

Existing Pole to Remain

2000 E

3000 E

1500 S

500 S

2000 E

1000 S

2500 E

1500 S

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE & MILITARY UTILITIES DETAIL PLAN

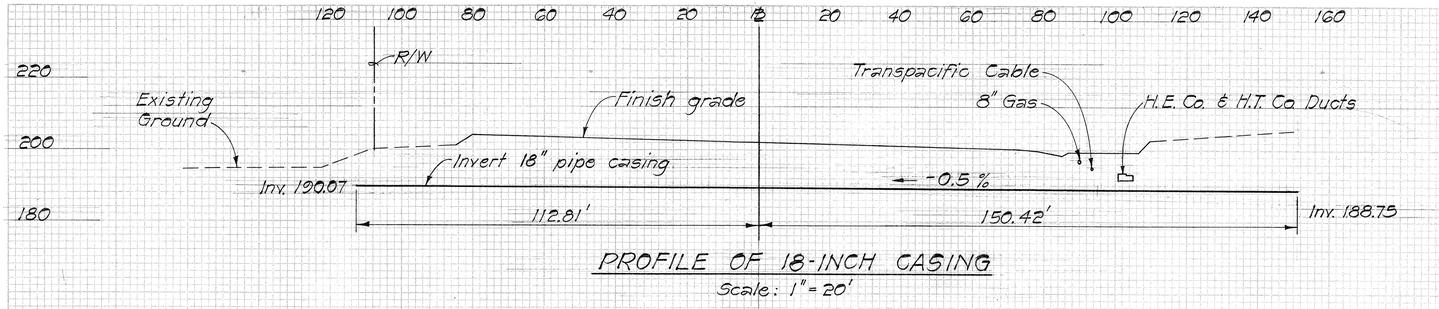
MOANALUA ROAD
F.A.P. Proj. No. F-078-1(11)

Scale: 1" = 50' Date: May 25, 1970

SHEET No. 21 OF 35 SHEETS

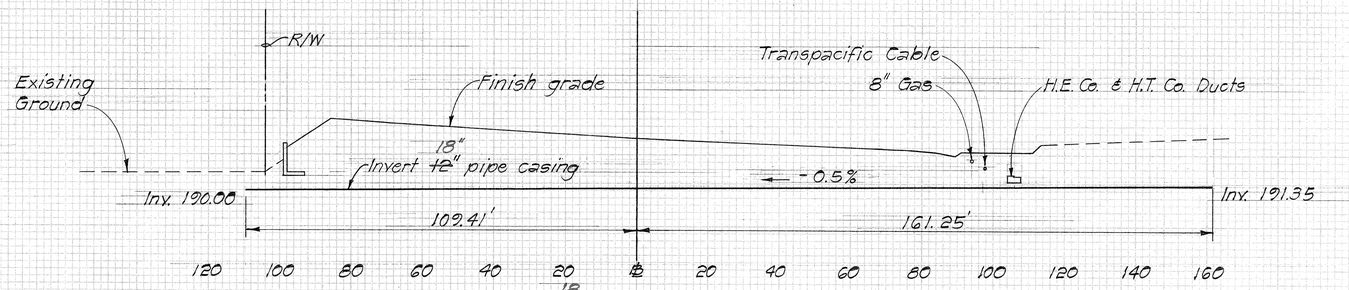
K&E CRYSTALENE® LA 2920 TRACING PAPER

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	140	258



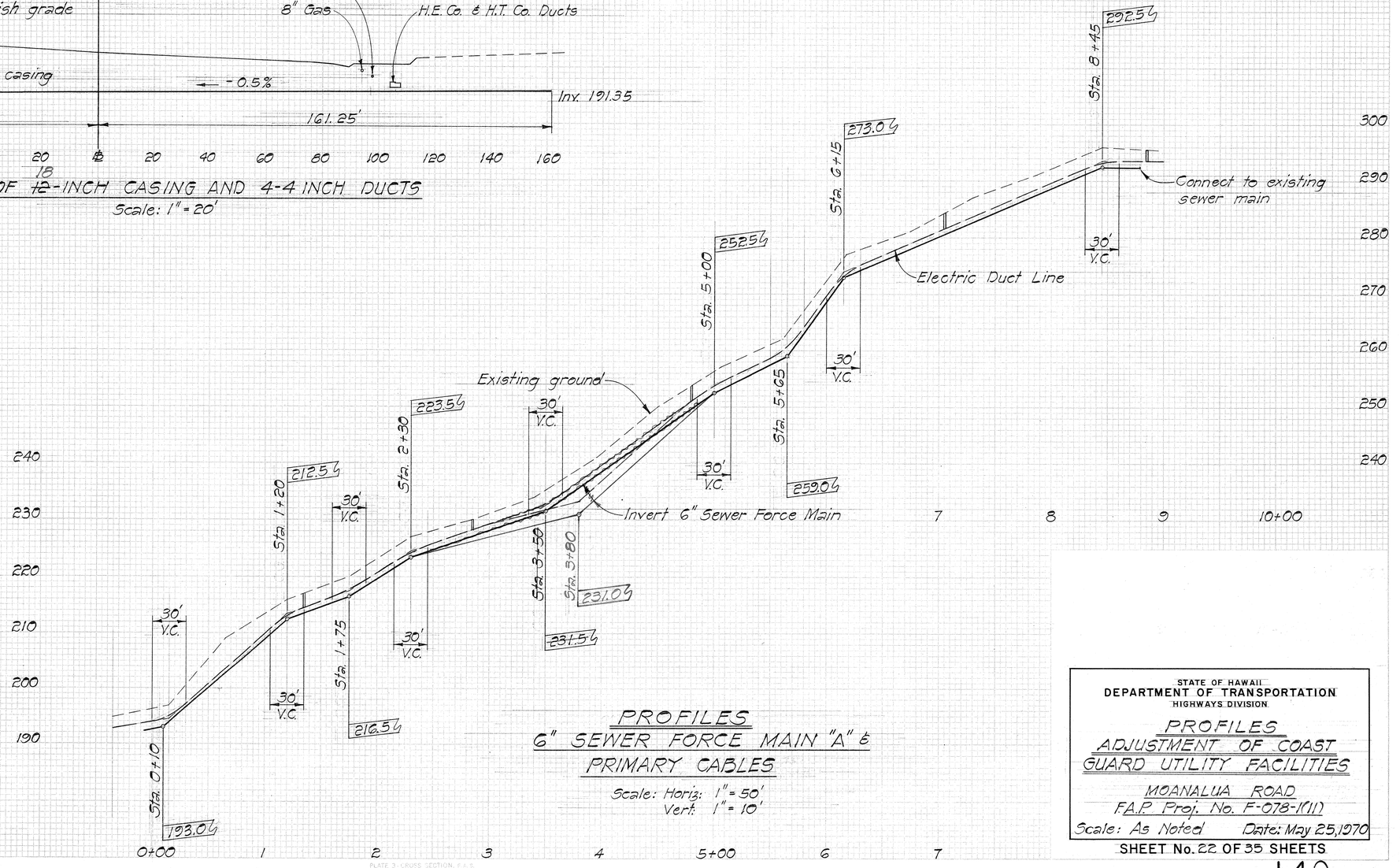
PROFILE OF 18-INCH CASING

Scale: 1" = 20'



PROFILE OF ~~12~~ 18-INCH CASING AND 4-4 INCH DUCTS

Scale: 1" = 20'



PROFILES

6" SEWER FORCE MAIN "A" &

PRIMARY CABLES

Scale: Horiz: 1" = 50'
Vert: 1" = 10'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PROFILES

ADJUSTMENT OF COAST GUARD UTILITY FACILITIES

MOANALUA ROAD

F.A.P. Proj. No. F-078-1(11)

Scale: As Noted Date: May 25, 1970

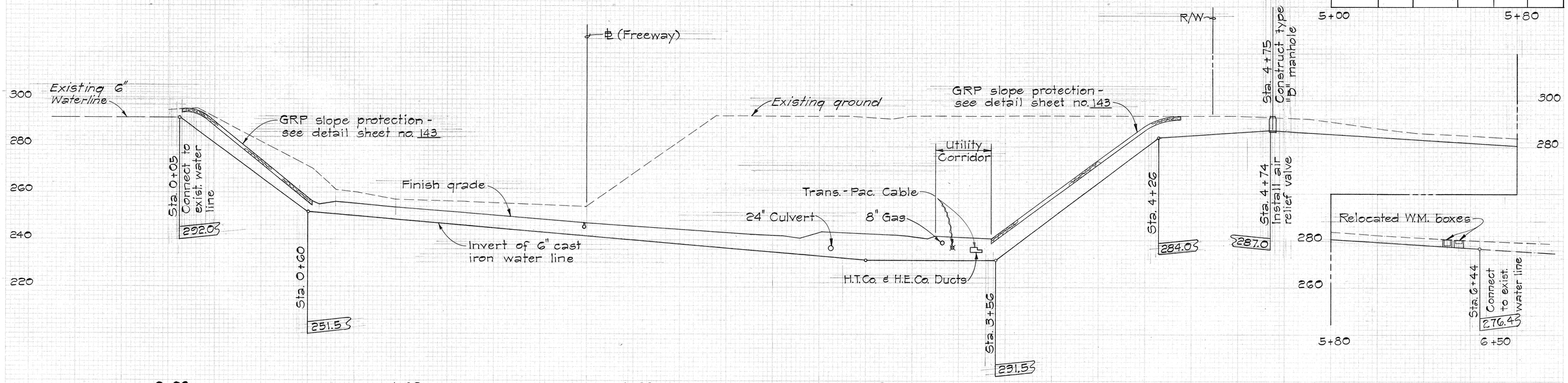
SHEET No. 22 OF 35 SHEETS

140

PLATE 3 - CROSS SECTION, F.A.S.
CLEARPRINT PAPER CO., S.F. CAL.
NO. 1900-3

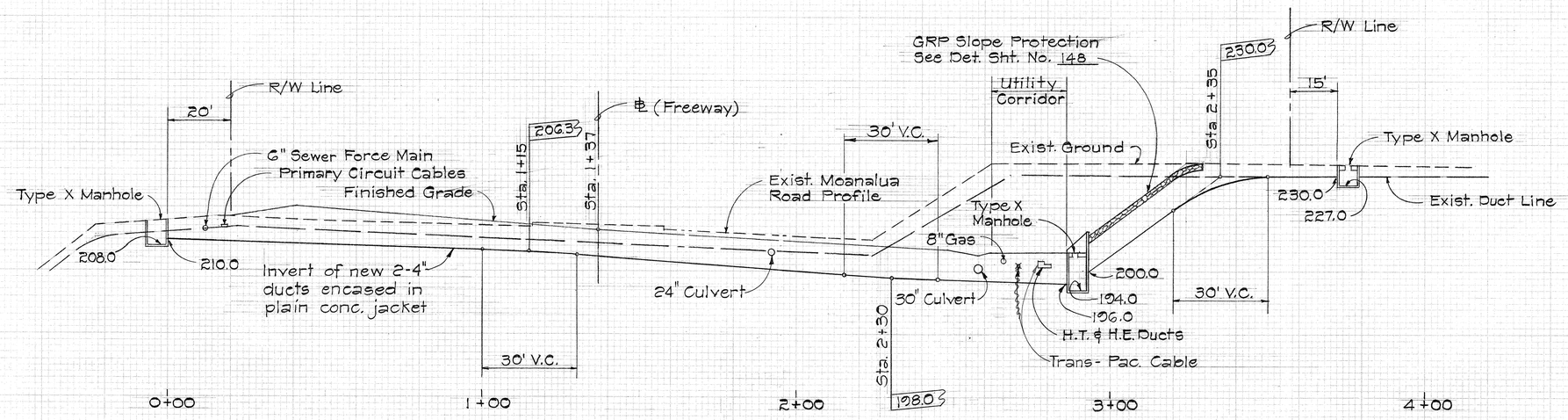
Revised: July 28, 1970

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	141	258



PROFILE OF COAST GUARD 6-INCH WATER LINE @ ℄ STA. 218+78±

Scale: Horiz. = 1" = 20'
Vert. = 1" = 20'



PROFILE OF NAVY ELECTRIC DUCT LINE @ ℄ STA. 211+88±

Scale: Horiz. = 1" = 20'
Vert. = 1" = 20'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PROFILES ADJUSTMENTS OF MILITARY FACILITIES

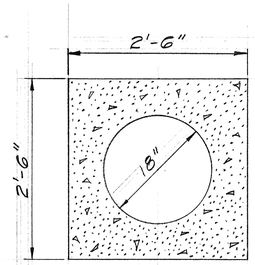
MOANALUA ROAD
F.A. Proj. No. F-078-1(7)

Scale: As Noted Date: May 25, 1970

SHEET No. 23 OF 35 SHEETS

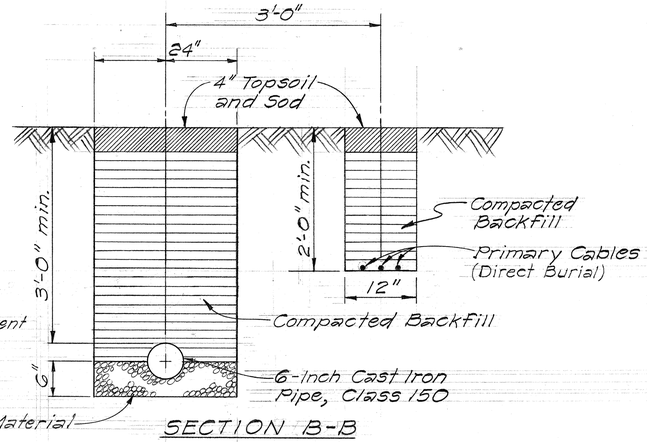
141

PLATE 3-CROSS SECTION, F.A.S.
CLEARPRINT PAPER CO., S.F. CAL. NO. 1000H-3



WS

18" Transite Pipe.
1-18"ϕ ~~Steel~~ Casing in Conc. Jacket for Future Water Line

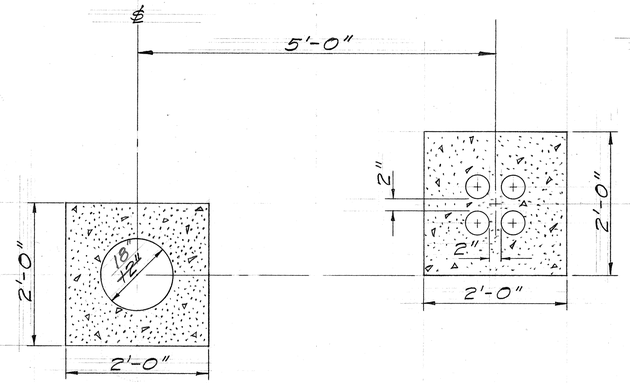


NOTE:
Measurement for payment of bed course material shall not exceed the dimensions shown.

SECTION B-B

TRENCH DETAIL

Scale: 1"=1'-0"



SS

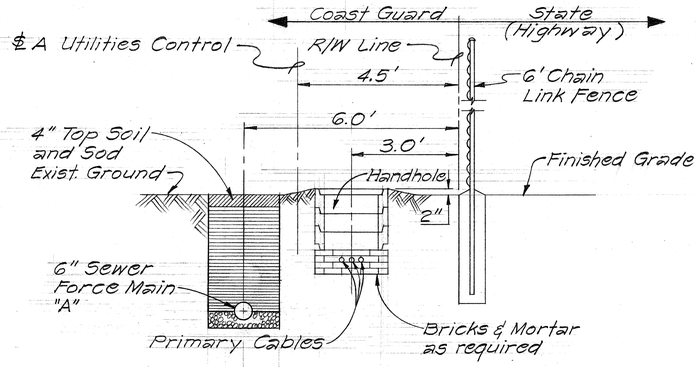
18" Transite Pipe
1-12ϕ Steel Casing in Conc. Jacket for Future Sewer Line

ES

4-4" Plastic Ducts in Concrete Jacket for Future Electric and Communication Cables.
(Extend ducts a minimum of 3" beyond end of jacket.)

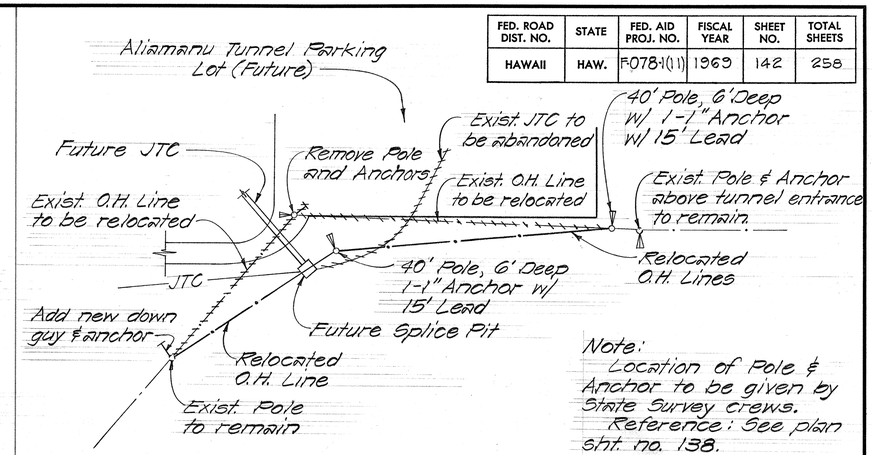
DETAIL OF DUCTS AND CASINGS FOR FUTURE UTILITIES

Scale: 1"=1'-0"



NOTE: Handholes shall be similar to H.T. Co. Pullbox No. 435-TB with appropriate markings: "C.G. Electric."

SECTION A-A



Note:
Location of Pole & Anchor to be given by State Survey crews.
Reference: See plan sht. no. 138.

RELOCATION OF EXISTING POLE AND ANCHORS
ALIAMANU TUNNEL PARKING LOT

Scale: 1"=50'

CONTRACT CHANGE ORDER NO. 11

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F078-1(11)	1969	142	258

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISCELLANEOUS DETAILS FOR ADJUSTMENTS OF COAST GUARD FACILITIES
MOANALUA ROAD
F.A.P. Proj. No. F-078-1(11)

Scale: As Noted Date: May 25, 1970

SHEET No. 24 OF 35 SHEETS

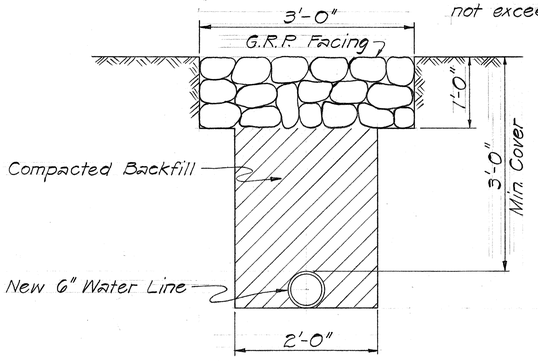
142

K&E CRYSTALENE® LA 2920 TRACING PAPER

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	143	258

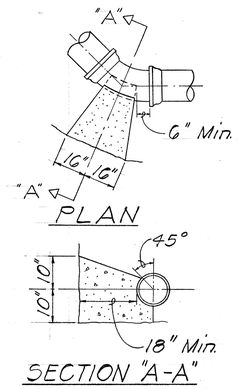
Revised : July 28, 1970

Measurement for Payment of Grouted Rubble Paving shall not exceed dimensions shown.



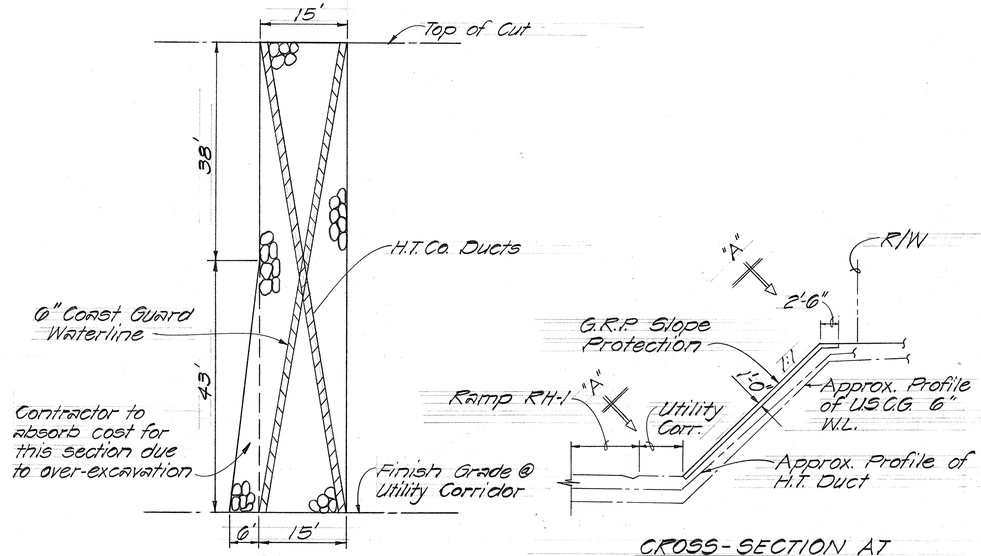
GROUTED RUBBLE PAVING SLOPE PROTECTION

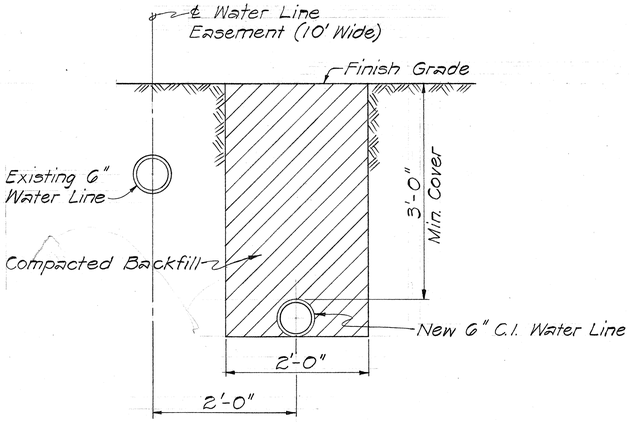
Scale: 1" = 1'-0"



CONCRETE REACTION BLOCK DETAIL FOR BENDS AND TEES

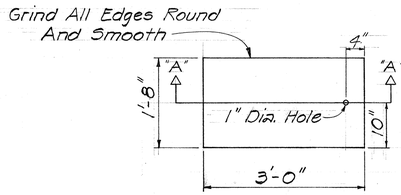
Not to Scale



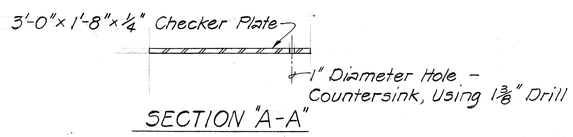


TYPICAL WATER LINE SECTION

Scale: 1" = 1'-0"



Note:
Hot dip galvanize checker plate after drilling, countersinking, and grinding edge.



COVER PLATE FOR NAVY 4'-0" x 3'-8" WATER METER BOX

Not to Scale

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAILS FOR ADJUSTMENT OF 6-INCH WATER LINE

MOANALUA ROAD
F.A.P. Proj. No. F-078-1(11)

Scale: As Noted Date: May 25, 1970

SHEET No. 25 OF 35 SHEETS

143

ORIGINAL PLAT
NOTE BOOK No.
SURVEY PLOTTED BY DATE
DRAWN BY "
TRACED BY "
DESIGNED BY "
QUANTITIES BY "
CHECKED BY "

K+E CRYSTALENE® LA 2920 TRACING PAPER

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	144	258

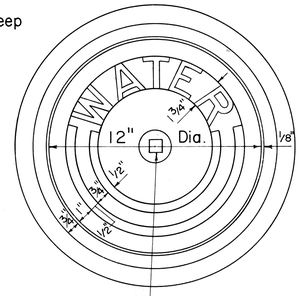
Revised : July 28, 1970

Offset word "WATER" 1 3/4" high, 1/8" deep

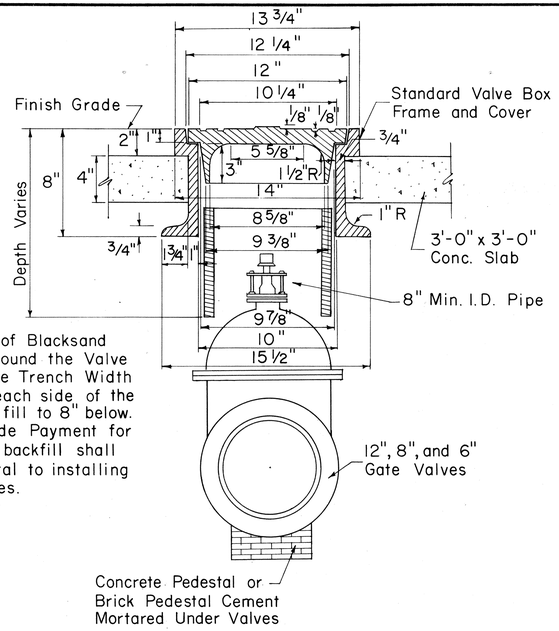
NOTE:

All castings shall be made accurately to the dimensions shown. Seat and Cover shall be ground where necessary to secure flat and true surfaces. The Cover shall not rattle in any position.

Minor changes in dimensions may be made to suit foundry conditions provided such changes are approved by the Board of Water Supply.

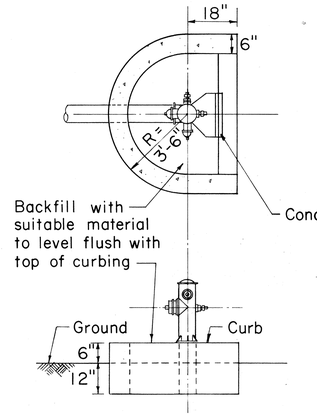


CAST IRON FRAME AND COVER

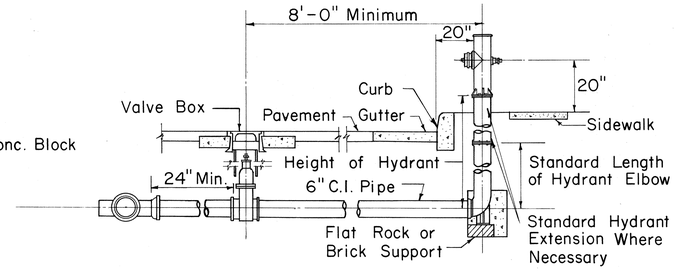


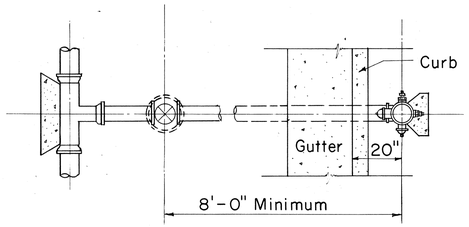
The limit of Blacksand Backfill around the Valve shall be the Trench Width x 4 ft. on each side of the Valve and fill to 8" below. Finish Grade Payment for Blacksand backfill shall be incidental to installing valve boxes.

INSTALLATION OF VALVE BOX FOR GATE VALVES



DETAIL OF CURBING AT HYDRANT WHERE REQUIRED

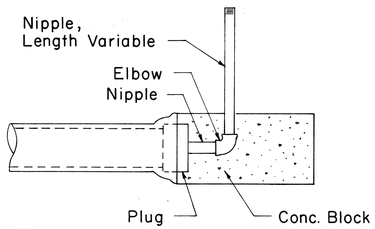




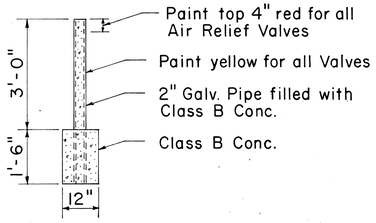
LAYOUT NO. 1

NOTE:

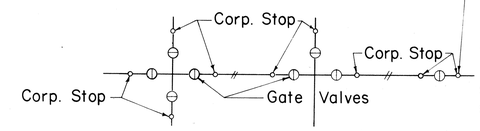
The sizes of cleanouts unless otherwise shown on the plans or directed by the Engineer shall be:
8 inch and smaller mains - 2 1/2 inch cleanout.
12 inch to 20 inch mains - 4 inch cleanout.
24 inch and larger mains - 6 inch cleanout.



DETAIL OF TEMPORARY CLEANOUT



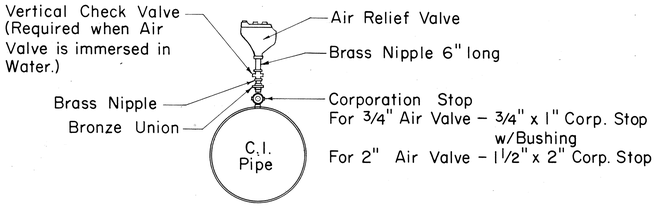
DETAIL OF VALVE MARKER



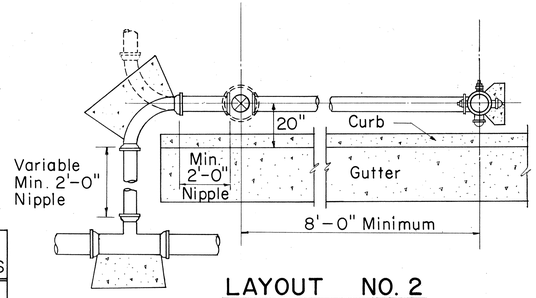
Size of Corporation Stops shall be:
4" to 20" Main 1" x 1 1/4"
24" to 36" Main 1 1/2" x 2"

Whenever the Corp. Stop at the Valve is used for flushing the Main, the maximum size permitted for the Main shall be used.

CORP. STOP LAYOUT



DETAIL OF CONNECTION FOR AIR RELIEF VALVE



LAYOUT NO. 2

STANDARD LENGTHS FOR HYDRANT ELBOWS
30"
36"
42"
48"

Standard Hydrant Extensions are available in the following Lengths:

6 to 30 inches long in increments of 6 inches

NOTE:

Gaskets for flanged joints shall be "full face" 1/16 inch duck - inserted rubber packing.

Bolts shall be 5/8" diameter x 2 3/4" long steel machine bolts with cut threads, American Standard heavy hexagon heads, galvanized.

Nuts shall be American Standard heavy cold punched hexagon nuts, galvanized.

STANDARD FIRE HYDRANT LAYOUT

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BOARD OF WATER SUPPLY
CITY & COUNTY OF HONOLULU

DETAILS FOR ADJUSTMENT OF 6-INCH WATER LINE

MOANALUA ROAD
F. A. P. Proj. No. F-078-1(11)

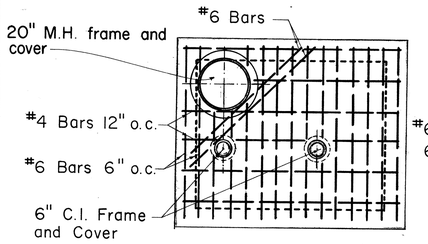
Not to Scale

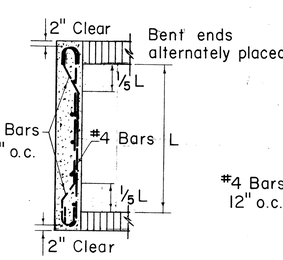
Date: May 25, 1970

SHEET No. 26 OF 35 SHEETS

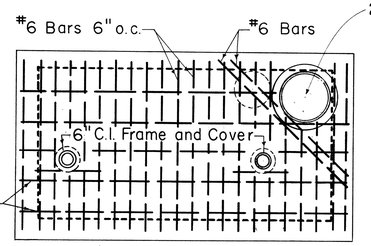
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	F-078-1(11)	1969	145	258

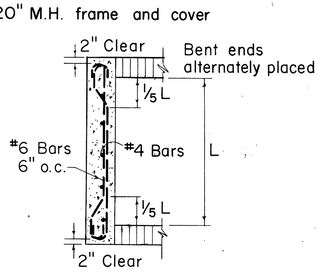
Revised : July 28, 1970



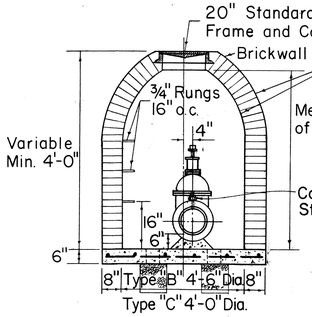


PLAN OF TOP SLAB

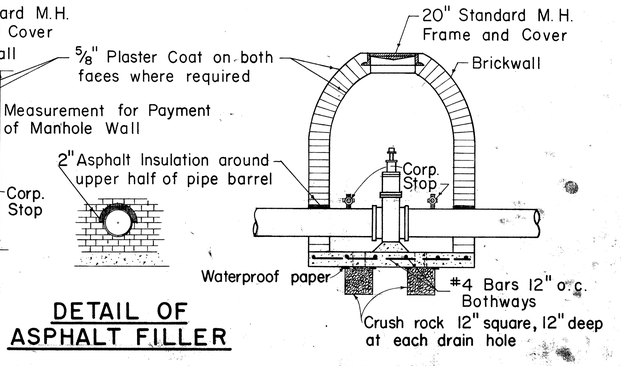




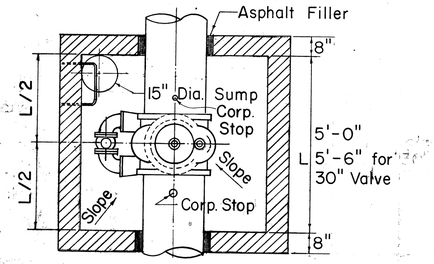
PLAN OF TOP SLAB

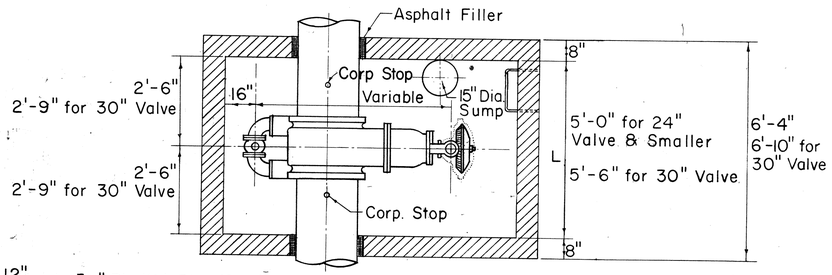


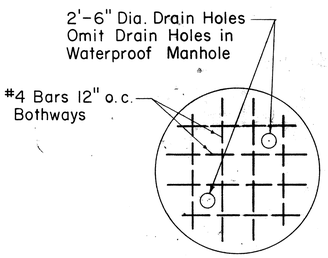
SECTION A-A



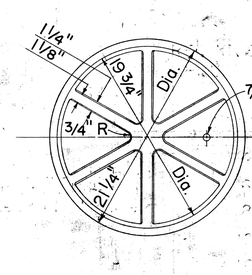
DETAIL OF ASPHALT FILLER



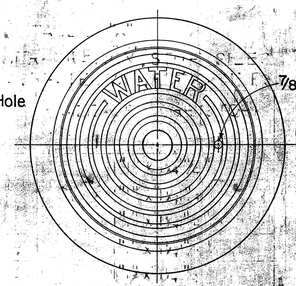




STEEL DETAIL IN BOTTOM SLAB

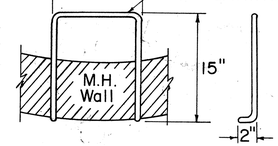


BOTTOM VIEW OF COVER

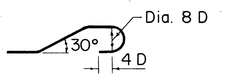


PLAN OF FRAME AND COVER

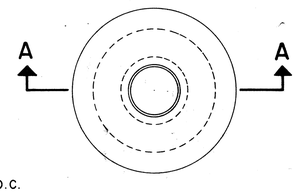
NOTE:
All castings shall be made accurately to the dimensions shown. Seat and cover shall be machined or ground where necessary to secure flat and and true surfaces. The cover shall not rattle in any position.



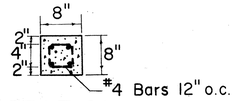
DETAIL OF RUNG



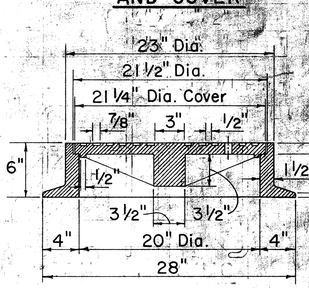
BAR BENDING DETAIL



PLAN

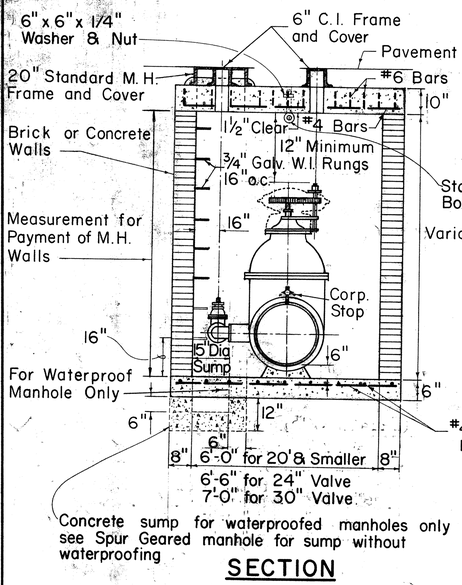


SECTION THRU LINTEL



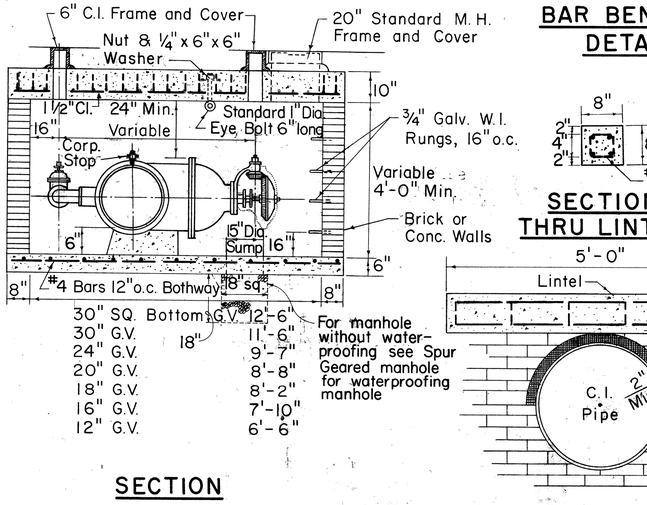
SECTION OF FRAME AND COVER

MANHOLE FRAME & COVER
CAST IRON, 20" SIZE



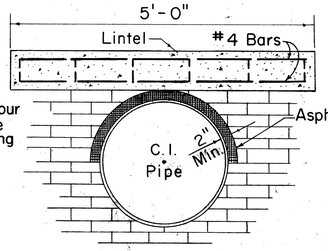
SECTION

TYPE "A" MANHOLE
FOR SPUR GEARED GATE VALVES



SECTION

TYPE "A" MANHOLE
FOR BEVEL GEARED GATE VALVES



DETAIL OF LINTEL AND ASPHALT FILLER

TYPE "B" M.H. 4'-6" DIA. (FOR 12" G.V.)
TYPE "C" M.H. 4'-0" DIA. (FOR 6" & 8" G.V.)

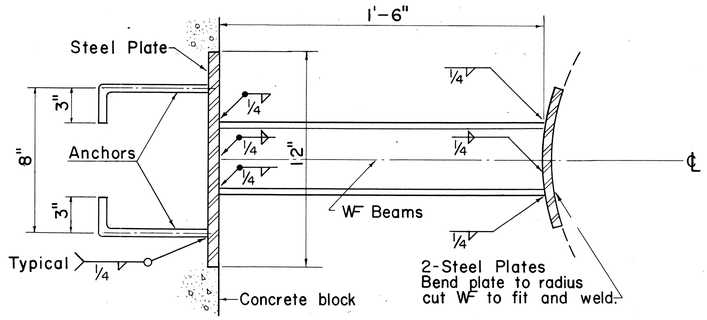
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
BOARD OF WATER SUPPLY
CITY & COUNTY OF HONOLULU
DETAILS FOR ADJUSTMENT OF 6-INCH WATER LINE
MOANALUA ROAD
F.A.P. Proj. No. F-078-1(11)
Not to Scale
Date: May 25, 1970

SHEET NO. 27 OF 35 SHEETS

LIETZ 1103 ARKWRIGHT TRACING CLOTH 10-60 200P

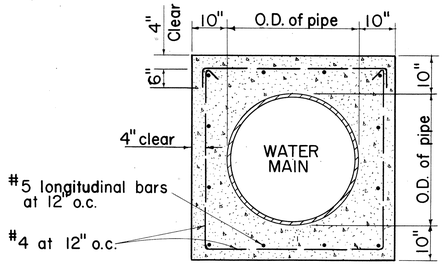
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F078-1(11)	1969	14C	258

Revised : July 28, 1970

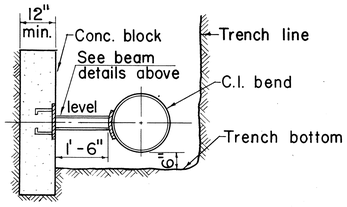


BEAM DETAIL

Scale: 3" = 1'-0"

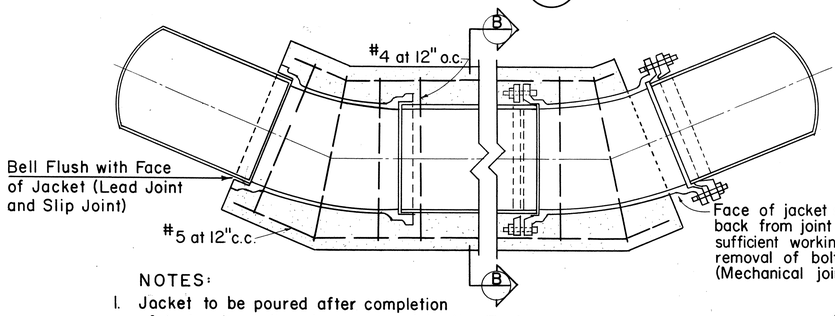


SECTION B



SECTION C

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

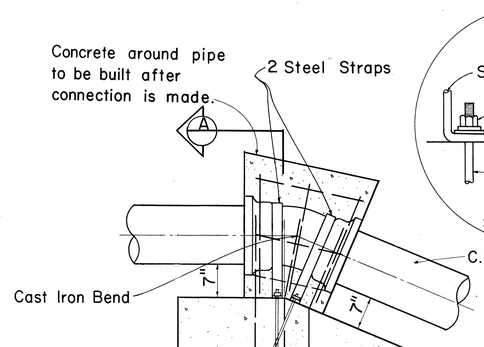


NOTES:

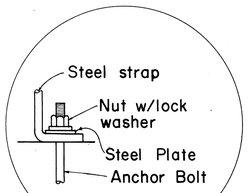
1. Jacket to be poured after completion of test unless otherwise approved by the Engineer.
2. 2 1/2" depth of lead for lead joint pipe required at all embedded joints.
3. Wherever construction joints are required, 6" rubber or neoprene waterstops shall be installed. Waterstops shall be of the type specified and manufactured by the Servicized Products Corporation, Gate Rubber Company or approved equal.

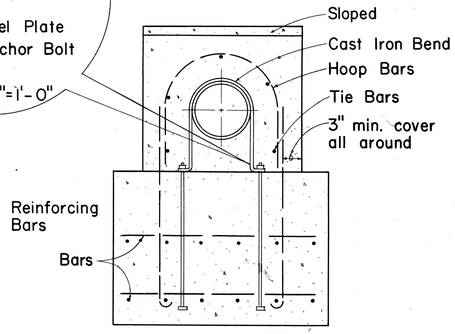
REINFORCED CONCRETE JACKET

Scale: Not to Scale



ELEVATION





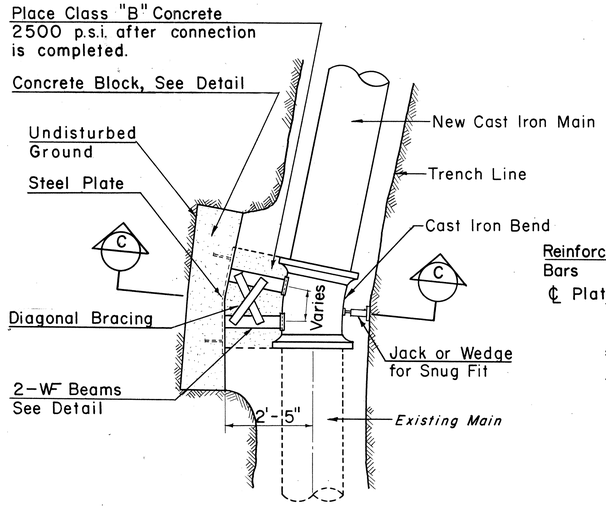
SECTION A

TYPICAL DETAIL OF CONCRETE REACTION BLOCK WITH STRAPS

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

GENERAL NOTES:

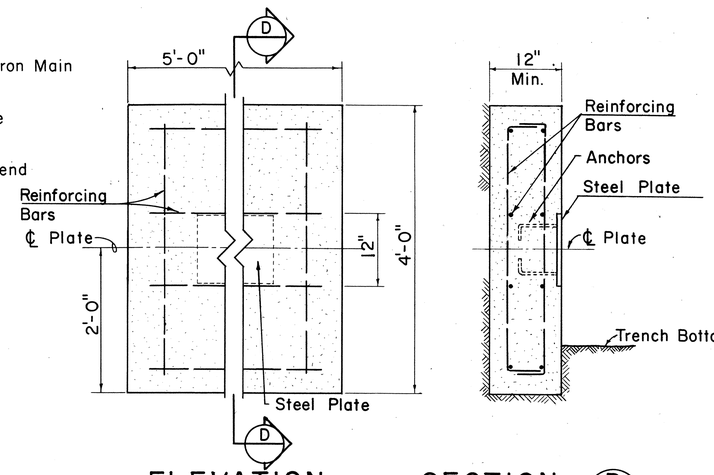
1. Detail drawings of actual blocks to be used, shall be furnished during construction by B.W.S. and or State.
2. Steel straps, anchor bolts, nuts, washers, etc., furnished and installed by the Contractor will not be paid for directly, but shall be considered incidental to the various contract items for the water system.
3. Minimum cover over all reinforcing steel shall be 3 inches.



PLAN

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

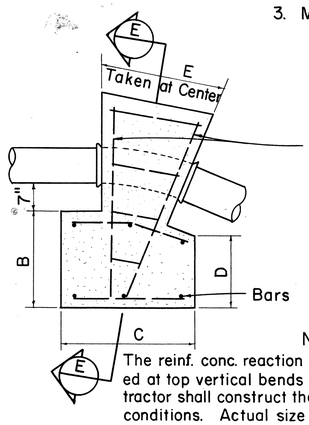
NOTE:
Concrete Block with structural strut shall be used for bends at connections or for tee connections.

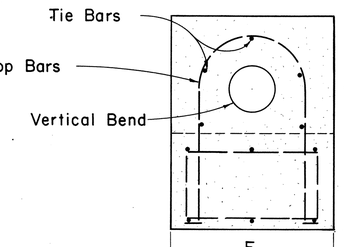


ELEVATION SECTION D

DETAILS OF CONCRETE BLOCK

Scale: 1" = 1'-0"





NOTE:
The reinf. conc. reaction block as shown in this typical detail shall be constructed at top vertical bends only. After trench is dug at block location, the Contractor shall construct the block as directed by the Engineer to meet ground conditions. Actual size of Reaction Block shall also be determined by the Engineer.

ELEVATION SECTION E

TYPICAL DETAIL OF REINFORCED CONCRETE REACTION BLOCK FOR TOP VERTICAL BENDS

Scale: Not to Scale

TYPICAL DETAIL OF CONCRETE BLOCK WITH STRUCTURAL STRUT

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BOARD OF WATER SUPPLY
CITY & COUNTY OF HONOLULU

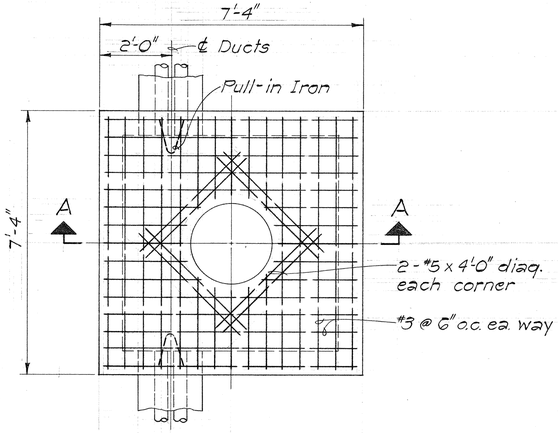
DETAILS FOR ADJUSTMENT OF 6-INCH WATER LINE

MOANALUA ROAD
F.A.P. Proj. No. F-078-1(11)

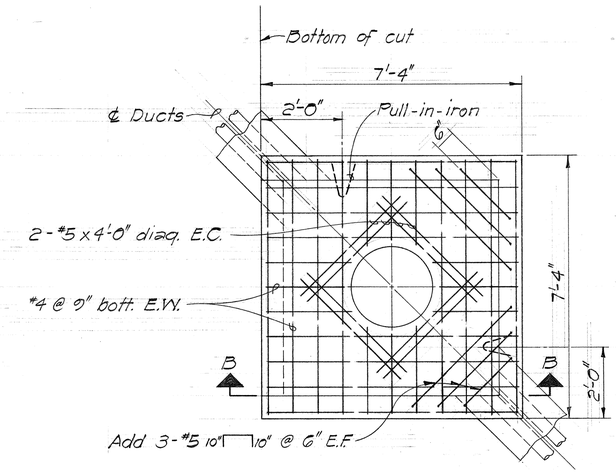
Scale: As Shown Date: May 25, 1970

SHEET No. 28 OF 35 SHEETS

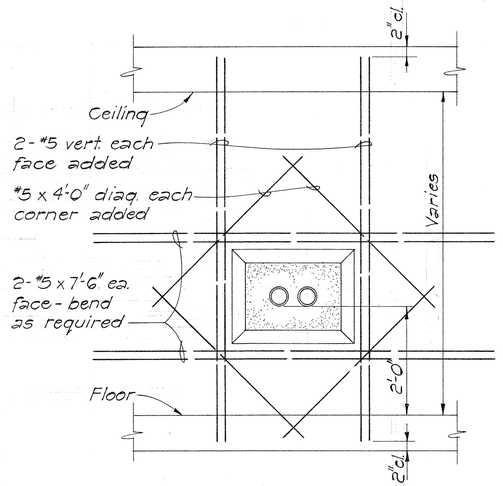
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	147	258



PLAN

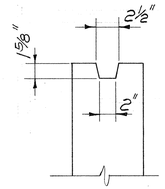


PLAN



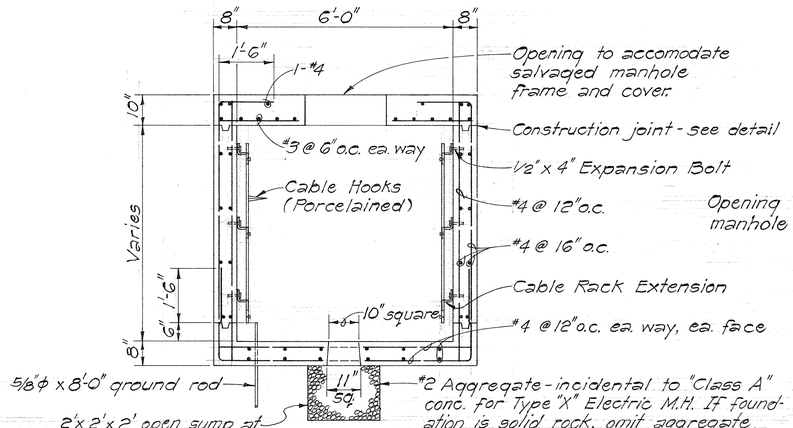
REINFORCING DETAIL FOR DUCT ENTRANCE

Not to Scale



CONSTRUCTION JOINT DETAIL

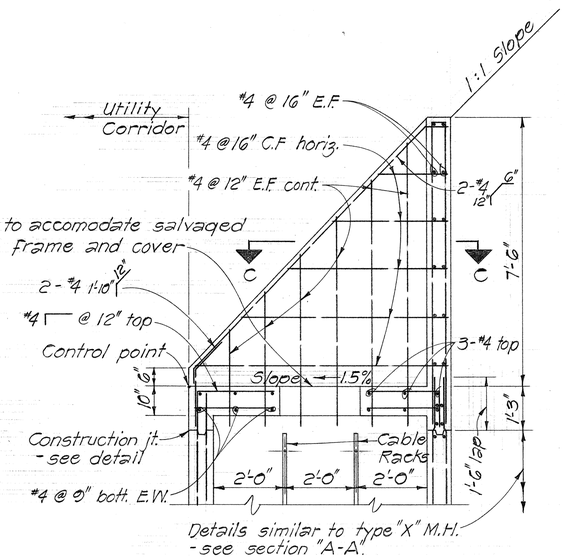
Scale: 1½" = 1'-0"



SECTION "A-A"

TYPE "X" MANHOLE

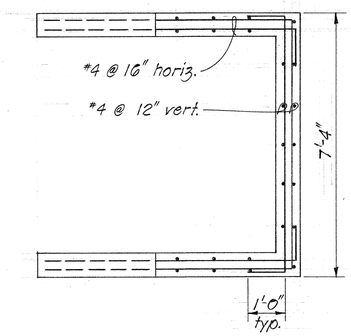
Scale: ½" = 1'-0"



SECTION "B-B"

TYPE "X" MANHOLE @ N.E DUCTLINE STA. 2+86 ±

Scale: ½" = 1'-0"



SECTION "C-C"

Scale: ½" = 1'-0"

GENERAL NOTES

1. Inverts for ducts and manholes are approximate only. Exact inverts to be determined by the Engineer.
2. Cable Racks to be installed on four walls of manhole.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAIL FOR TYPE "X" ELECTRIC M.H.

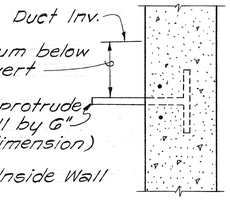
MOANALUA ROAD
F.A.P. Proj. No. F-078-1(11)

Scale: As Shown Date: May 25, 1970

SHEET No. 29 OF 35 SHEETS

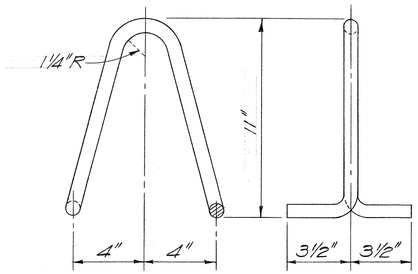
K&E CRYSTALENE® LA 2920 TRACING PAPER

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	148	258



ELEVATION DETAIL OF PULL-IN IRON

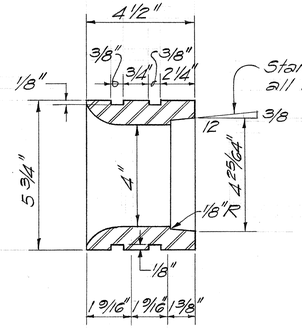
Scale : 1½"= 1'-0"



Construct from ¾"dia. iron bars (Galv.)

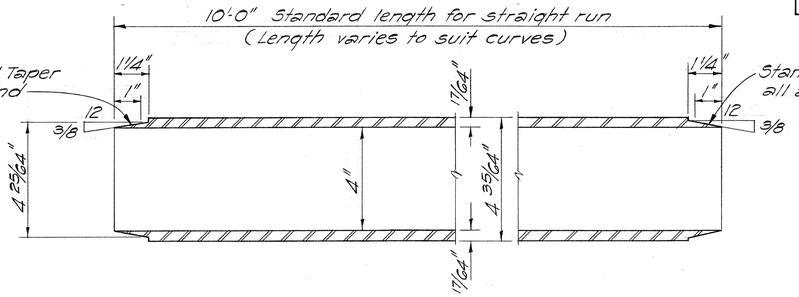
PULL-IN IRON

Not to Scale



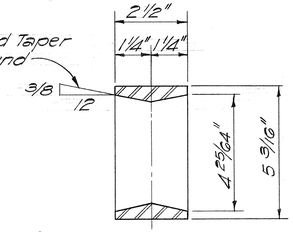
JUNIOR END BELLS

Not to Scale



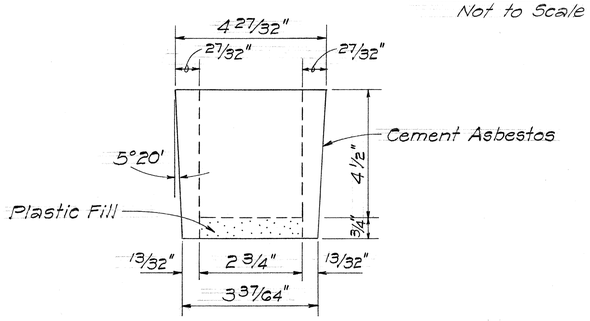
CEMENT ASBESTOS DUCT

Not to Scale



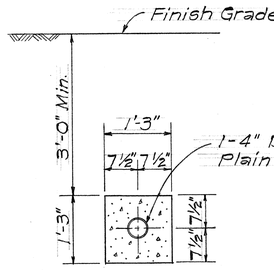
TAPERED COUPLINGS

Not to Scale



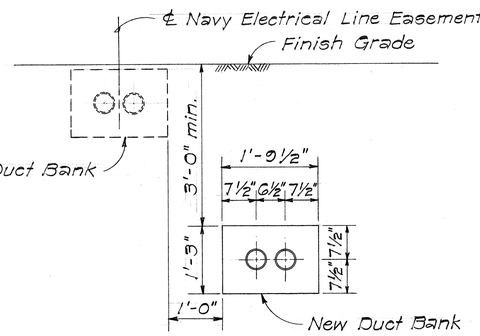
PLUGS FOR CEMENT ASBESTOS DUCT

Not to Scale



AE

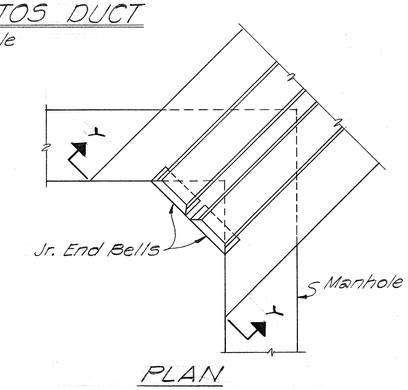
Scale: ¾" = 1'-0"



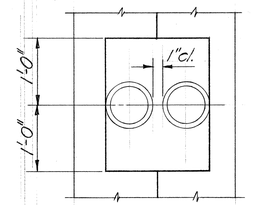
NE

TYPICAL DUCT SECTION

Scale: ¾ = 1'-0"



PLAN

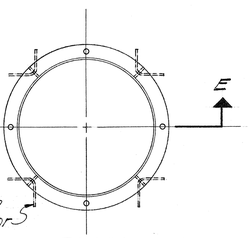


ELEVATION Y-Y

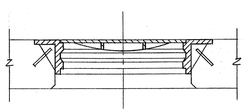
CORNER ENTRANCE TWO WAY DUCT

TYPICAL CORNER DUCT LINE ENTRANCE DETAIL

Not to Scale



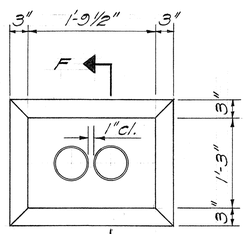
PLAN



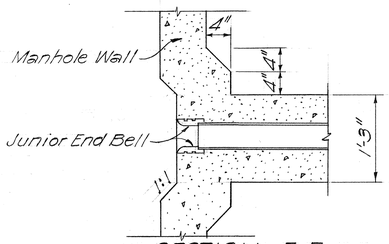
SECTION E-E

DETAIL OF MANHOLE FRAME INSTALLATION

Not to Scale



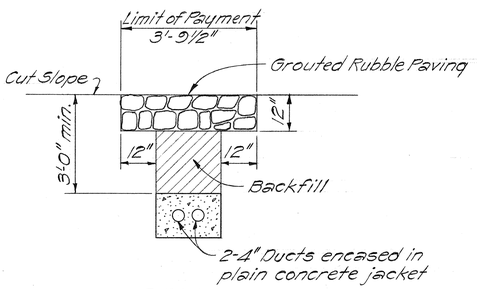
TYPICAL MANHOLE DUCT WINDOW



SECTION F-F

TYPICAL WINDOW DETAIL & JUNIOR END BELL

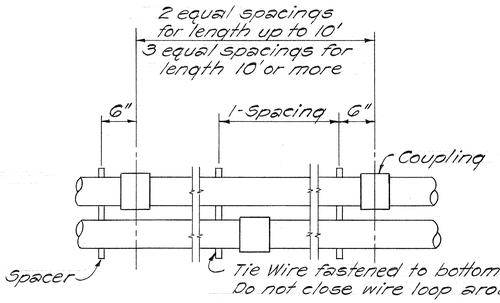
Scale : 1"= 1'-0"



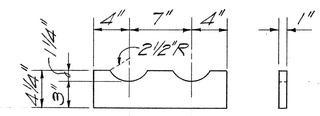
SECTION

G.R.P. SLOPE PROTECTION

Not to Scale

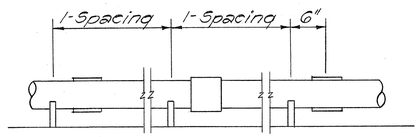


PLAN



SADDLE SPACER

Scale : 1½"= 1'-0"



SIDE VIEW

LAYOUT OF COUPLINGS & SADDLE SPACERS

Scale : 1"= 1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAILS FOR ADJUSTMENT OF NAVY & ARMY UNDERGROUND DUCT LINE

MOANALUA ROAD

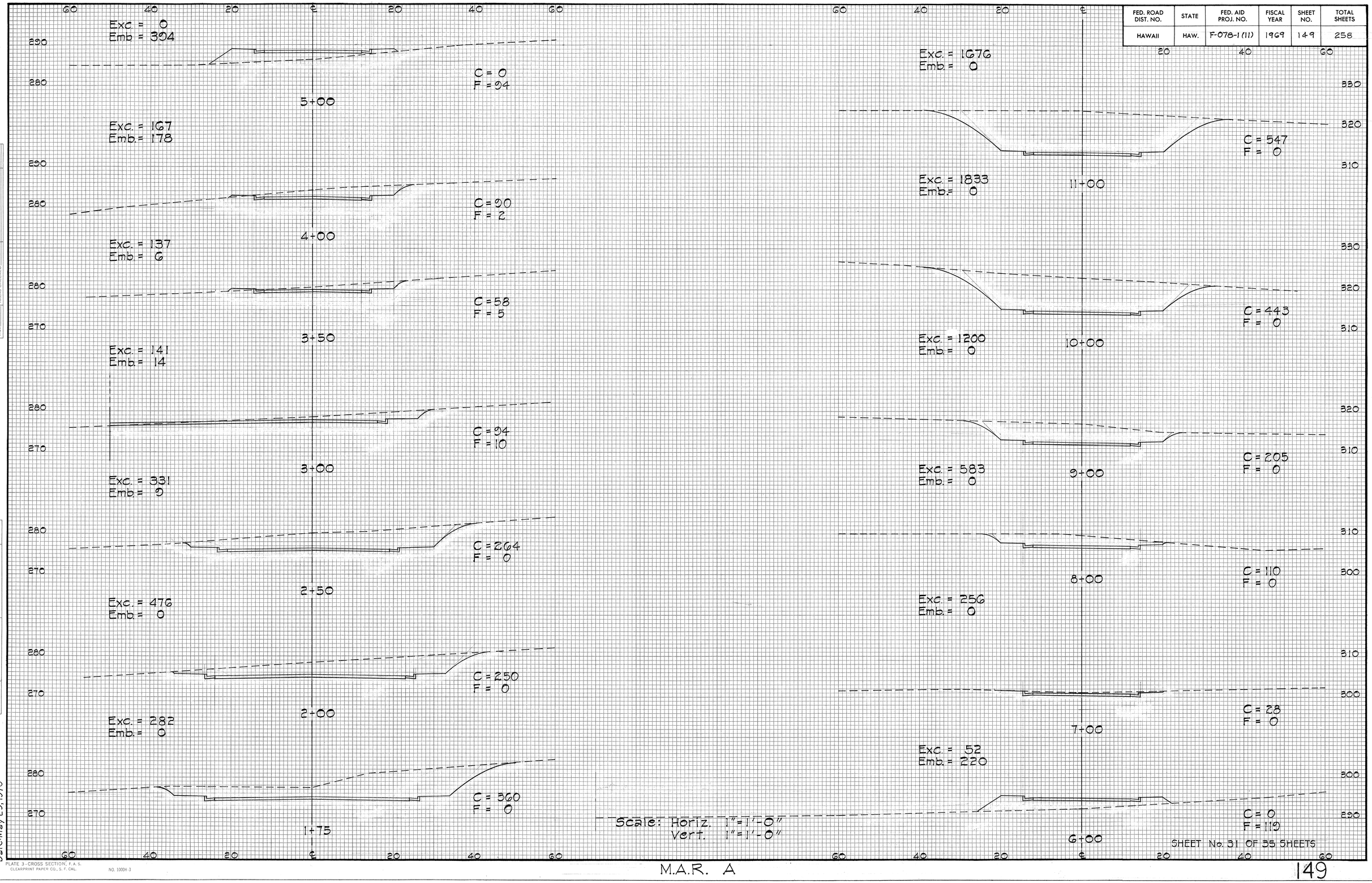
F.A.P. Proj. No. F-078-1(11)

Scale : As Shown Date: May 25, 1970

SHEET No. 30 OF 35 SHEETS

K&E CRYSTALENS® LA 2920 TRACING PAPER

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	149	258



FINAL SURVEY — SURVEYED, PLOTTED, TRACED, NOTE BOOK, NO., DATE, BY, AREAS CHECKED

ORIGINAL SURVEY — SURVEYED, PLOTTED, TRACED, NOTE BOOK, NO., DATE, BY, AREAS CHECKED

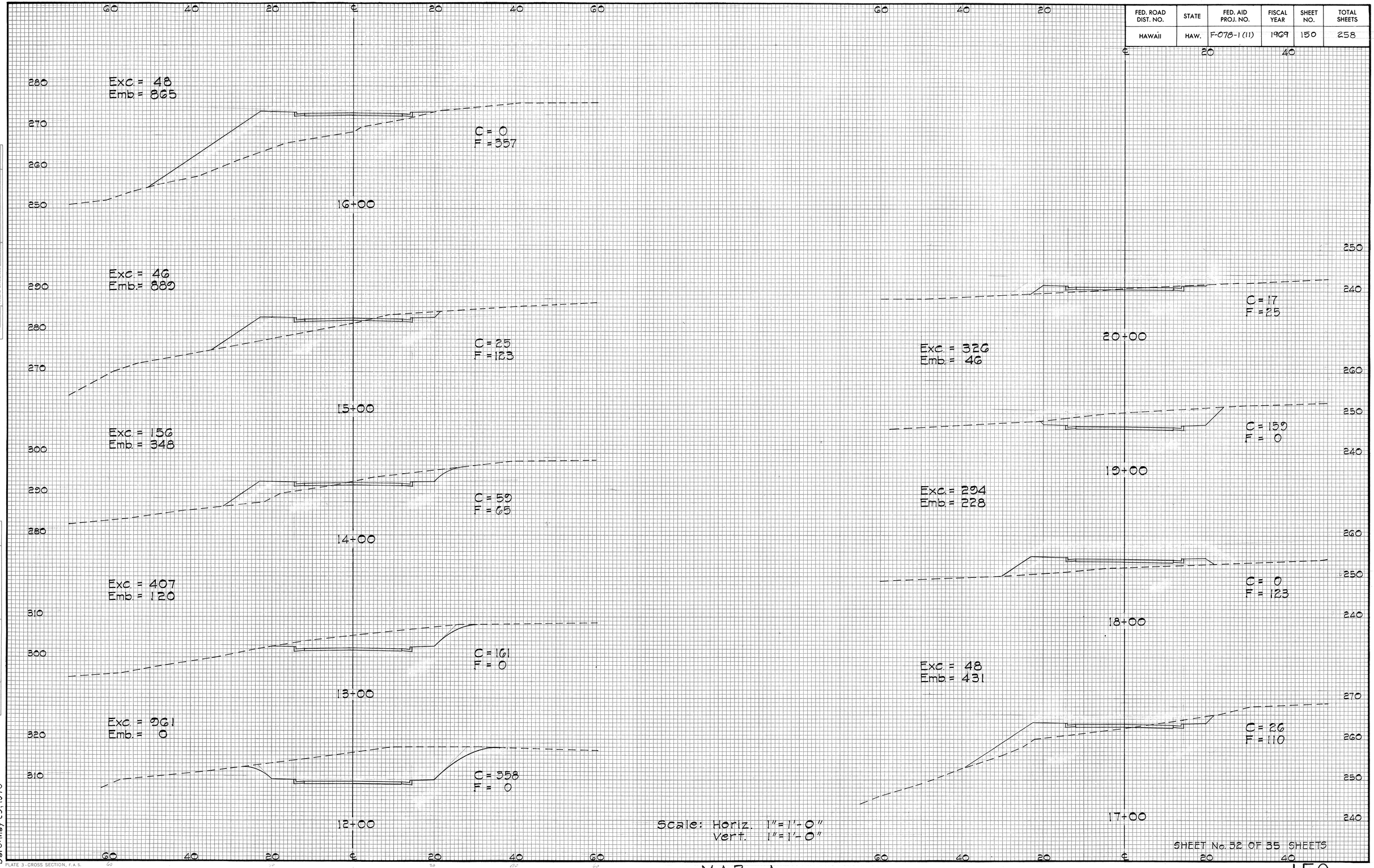
Date: May 25, 1970

PLATE 3 - CROSS SECTION, F.A.S.
CLEARPRINT PAPER CO., S. F. CAL. NO. 1000H-3

M.A.R. A

SHEET No. 31 OF 35 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	150	258



Scale: Horiz. 1"=1'-0"
Vert. 1"=1'-0"

SHEET No. 32 OF 35 SHEETS

FINAL SURVEY	NOTE BOOK	NO.	SURVEYED	PLOTTED	TEMPLATE	AREAS	AREAS CHECKED	BY	DATE

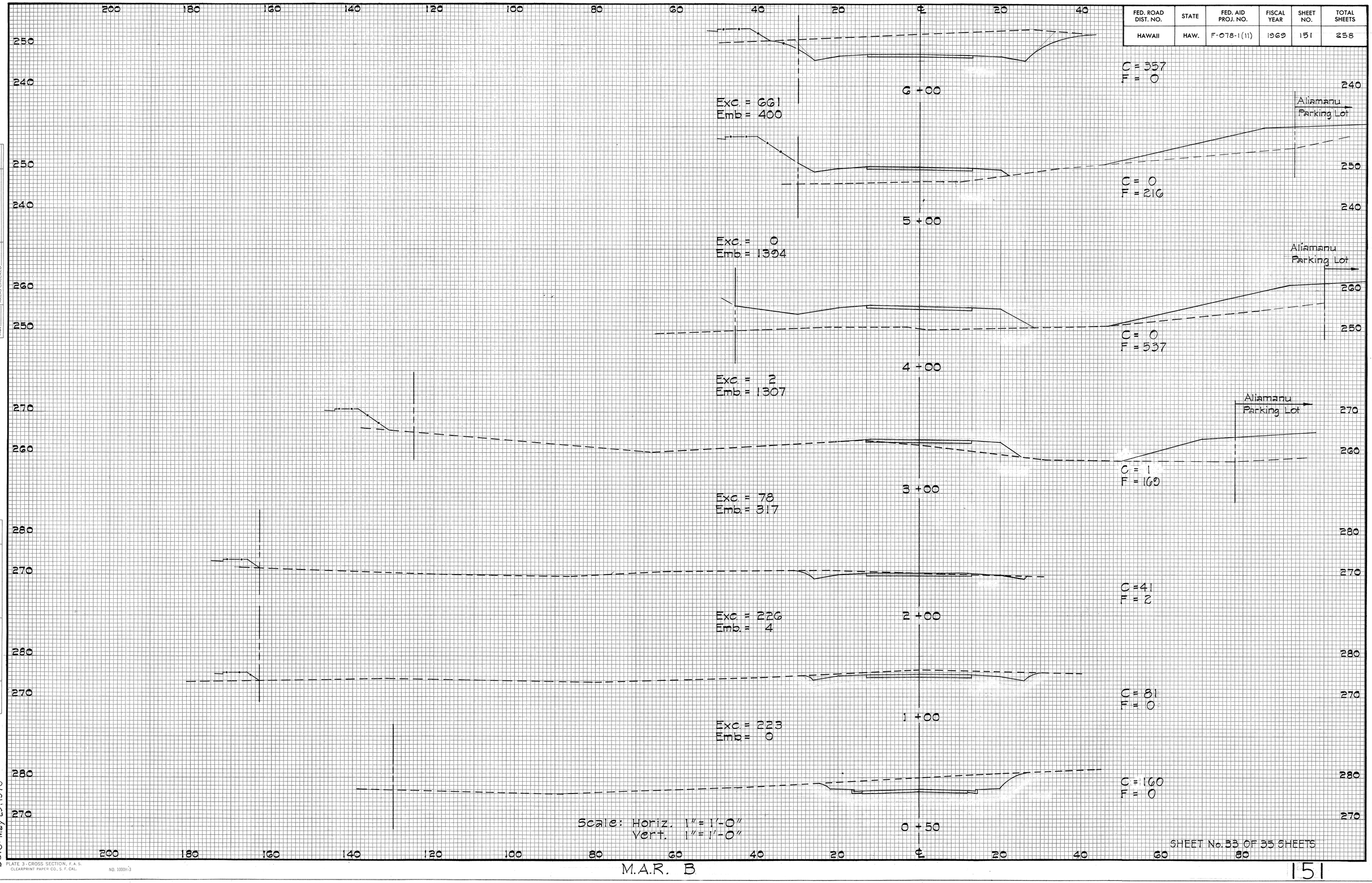
ORIGINAL SURVEY	NOTE BOOK	NO.	SURVEYED	PLOTTED	TEMPLATE	AREAS	AREAS CHECKED	BY	DATE

Date: May 25, 1970

PLATE 3 - CROSS SECTION, F.A.S.
CLEARPRINT PAPER CO., S. F., CAL. NO. 1000H-3

M.A.R. A

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	151	258



Scale: Horiz. 1" = 1'-0"
Vert. 1" = 1'-0"

SHEET No. 33 OF 35 SHEETS

M.A.R. B

151

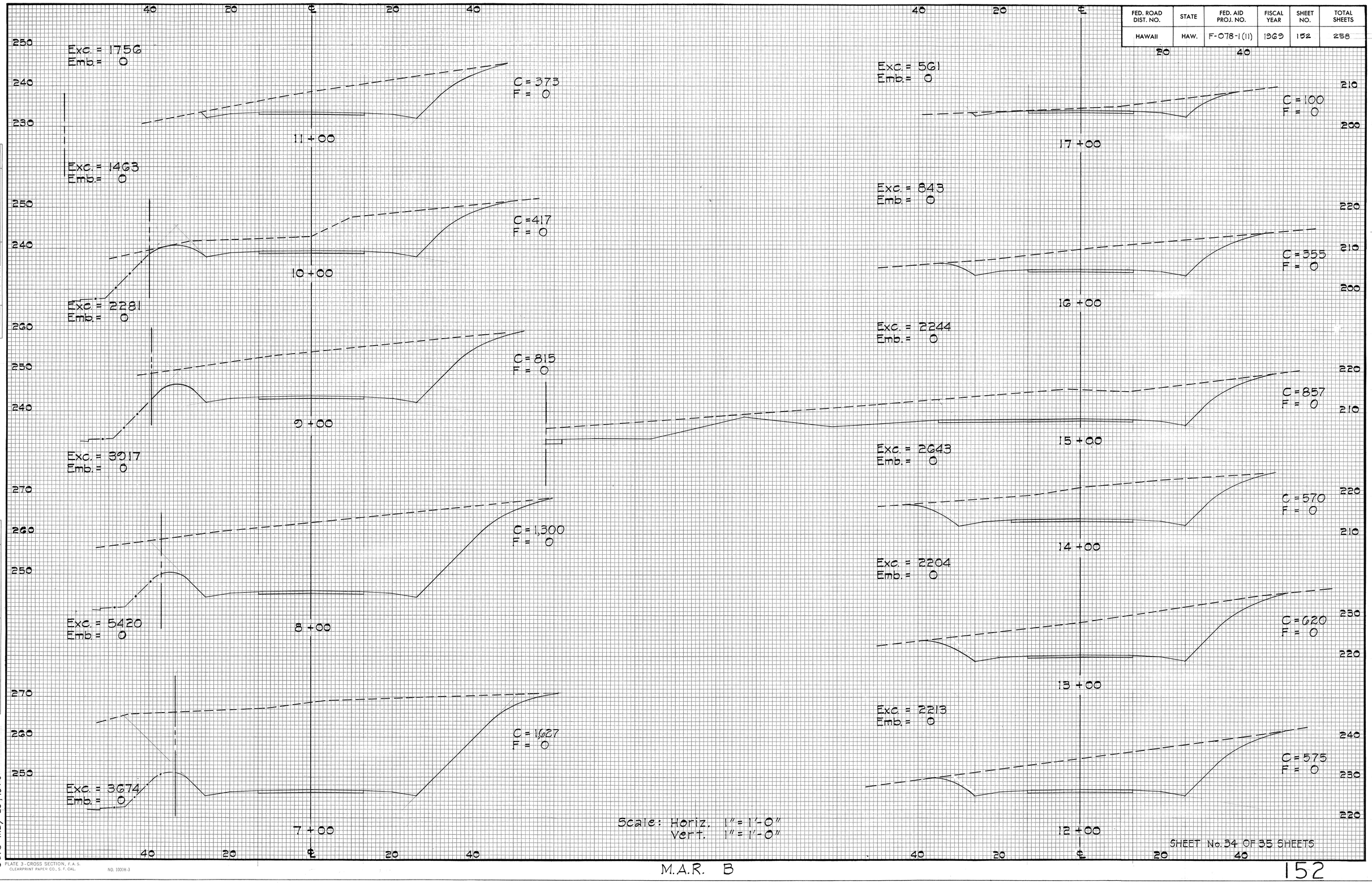
FINAL SURVEY — NOTE BOOK NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

Date: May 25, 1970

PLATE 3 - CROSS SECTION, F.A.S.
CLEARPRINT PAPER CO., S. F. CAL. NO. 1000H-3

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	152	258



FINAL SURVEY — SURVEYED, PLOTTED, NOTE BOOK, NO., TEMPLATE, AREAS, AREAS CHECKED, BY, DATE

ORIGINAL SURVEY — SURVEYED, PLOTTED, NOTE BOOK, NO., TEMPLATE, AREAS, AREAS CHECKED, BY, DATE

Date: May 25, 1970

Scale: Horiz. 1" = 1'-0"
Vert. 1" = 1'-0"

SHEET No. 34 OF 35 SHEETS

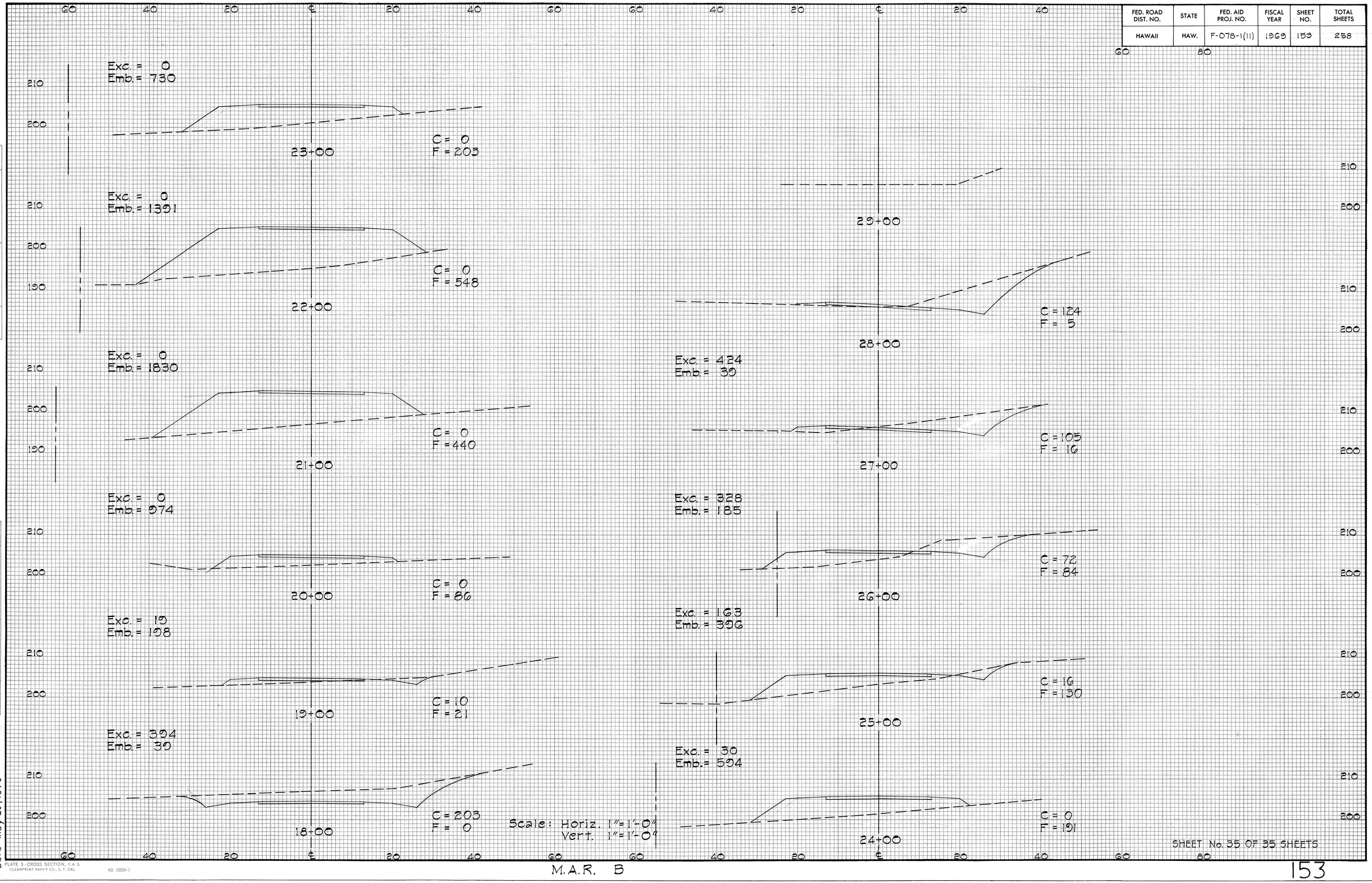
PLATE 3-CROSS SECTION, F.A.S.
CLEARPRINT PAPER CO., S. F. CAL. NO. 1000H-3

M.A.R. B

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(11)	1969	153	258

FINAL SURVEY — NOTE BOOK NO. — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, BY, DATE

ORIGINAL SURVEY — NOTE BOOK NO. — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, BY, DATE



Date: May 25, 1970

PLATE 3 - CROSS SECTION, F.A.S.
CLEARPRINT PAPER CO., S. F. CAL. NO. 1000H-3

SHEET No. 35 OF 35 SHEETS

M.A.R. B