FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	S-0380(6)	1969	7	89

Beg. of Proj. Sta. 0+83.73
Kahului Airport - Maalaea Highway
Proj. No. S-0380(6)
23,127.55 S
3,670.09 W

Sta. 1+35
Relocate Cane Haul Road
For Details See Sht. No. 17.

℄ CURVE DATA #1
Δ = 38°00'00"
Dc = 2°30'
Rc = 2,291.83
Ls = 200.00
Ts = 869.39
Xc = 199.96
Yc = 2.91
Lc = 1,320.00
L.T. = 133.35
S.T. = 66.68
θs = 2°30'
S/E = 0.034'/ft.

Sta. 15+00 Lt.
Grade Approach
Pav't Area = 362 s.y.
B.C. Area = 377 s.y.
Exc. = 28 c.y.
Emb. = 142 c.y.

Sta. 2+25 to 73+50 Lt
Construct Plantation Service Road. Payment to be on a Force Account Basis. See Special Provisions.

Sta. 25+00
Install 2-36" CMP, No. 10 Ga. or 2-36" RCP, Class III; or 2-36" ACP, Class III
Const. 2-CRM H.W.
Estimated Quantities

Struc. Exc.	153 c.y.
Ditch & Channel Exc.	3 c.y.
C.R.M.	10 c.y.
36" Pipe Culvert	168 l.f.

21,470.79 S
1,373.53 W
P.I. #2

Sta. 9+00
Install 2-43"×27" CMP-Arch, No. 10 Ga.
Const. 2-CRM H.W.
Estimated Quantities

Struc. Exc.	116 c.y.
Ditch & Channel Exc.	4 c.y.
CRM	9 c.y.
43"×27" Pipe Culvert	172 l.f.

Sta. 11+00
Install 2-58"×36" CMP-Arch, No. 12 Ga.
Const. 2 CRM H.W.
Estimated Quantities

Struc. Exc.	191 c.y.
CRM	13 c.y.
58"×36" Pipe Culvert	172 l.f.

Sta. 14+00
Install 42" CMP No. 12 Ga. or 42" RCP Class III.
Const. 2-CRM H.W.
Estimated Quantities

Struc. Exc.	115 c.y.
Ditch & Channel Exc.	1 c.y.
CRM	11 c.y.
42" Pipe Culvert	86 l.f.

Sta. 20+00
Install 50"×31" CMP-Arch, No. 10 Ga.
Const. 2-CRM H.W.
Estimated Quantities

Struc. Exc.	91 c.y.
Ditch & Channel Exc.	7 c.y.
CRM	7 c.y.
50"×31" Pipe Culvert	84 l.f.

Sta. 1+00
Install Highway Lighting System. For Details See Sht. No. 45 & 46.

BM # 1
"X" on NE corner of Pohakea Bridge Rail
Elev. = 180.28

BM # 2
¾" pipe 50' right of Sta. 14+50
~~Elev. 170.77~~

Sta. 11+25 to 15+50 Rt.
Existing Concrete Ditch to be Reconstructed by Owner

℄ CURVE DATA #2
Δ = 6°41'30"
Dc = 0°30'
R = 11,459.16
T = 669.93
L = 1,338.33
S/E = 0.015'/ft.

RESERVOIR

GENERAL NOTES
1. Roadway azimuths referred to "Luke".
2. All elevations referred to Mean Sea Level
3. Electrical and telephone utilities will be relocated by Maui Electric Co. and Hawaiian Telephone Co. respectively.
4. Scarify and remove all existing Pavement within the R/W. Payment for the work shall be incidental to Roadway Excavation.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	S-0380(6)	1969	8	89

Sta. 36+00 Lt.
Grade Approach
Pov't. Area = 362 s.y.
B.C. Area = 377 s.y.
Exc. = 50 c.y.
Emb. = 347 c.y.

TRUE NORTH
SCALE: 1" = 100'

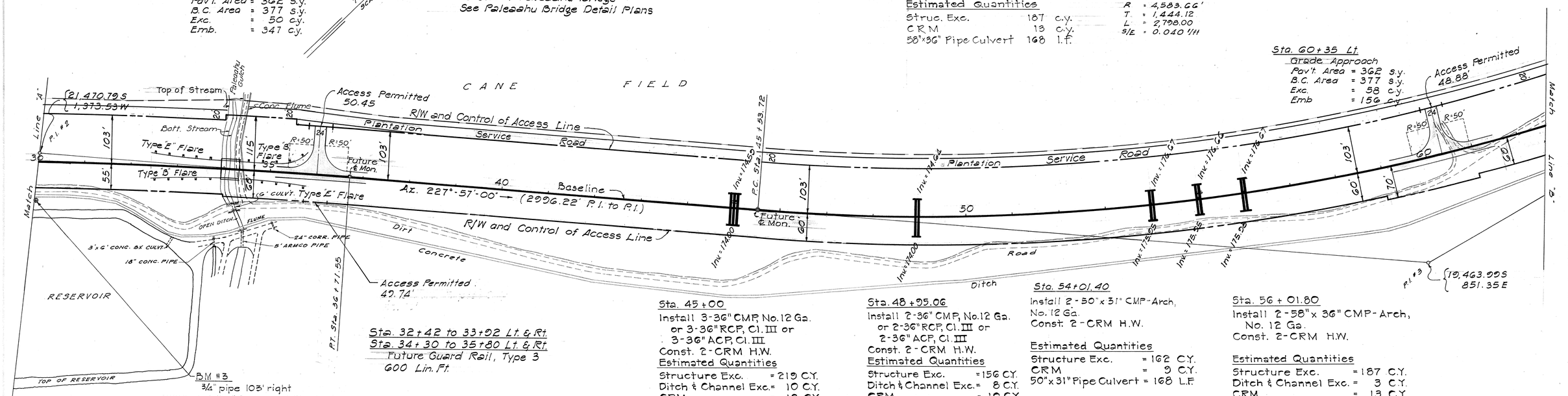
Sta. 33+02.08 to 34+29.02
Construct Paleaahu Bridge
See Paleaahu Bridge Detail Plans

Sta. 55+01.60
Install 2-58"x36" CMP-Arch, No. 12 Ga.
Const. 2-CRM H.W.

Estimated Quantities
Struc. Exc. 187 c.y.
C.R.M. 13 c.y.
58"x36" Pipe Culvert 168 l.f.

CURVE DATA #3
Δ = 34°-58'-30"
D = 1°-15'
R = 4,583.66'
T = 1,444.12
L = 2,798.00
S/E = 0.040 ft/ft

Sta. 60+35 Lt.
Grade Approach
Pov't. Area = 362 s.y.
B.C. Area = 377 s.y.
Exc. = 58 c.y.
Emb = 156 c.y.



Sta. 32+42 to 33+02 Lt. & Rt.
Sta. 34+30 to 35+80 Lt. & Rt.
Future Guard Rail, Type 3
600 Lin. Ft.

Sta. 45+00
Install 3-36" CMP, No. 12 Ga. or 3-36" RCP, Cl. III or 3-36" ACP, Cl. III
Const. 2-CRM H.W.

Estimated Quantities
Structure Exc. = 219 C.Y.
Ditch & Channel Exc. = 10 C.Y.
CRM = 12 C.Y.
36" Pipe Culvert = 252 L.F.

Sta. 48+95.06
Install 2-36" CMP, No. 12 Ga. or 2-36" RCP, Cl. III or 2-36" ACP, Cl. III
Const. 2-CRM H.W.

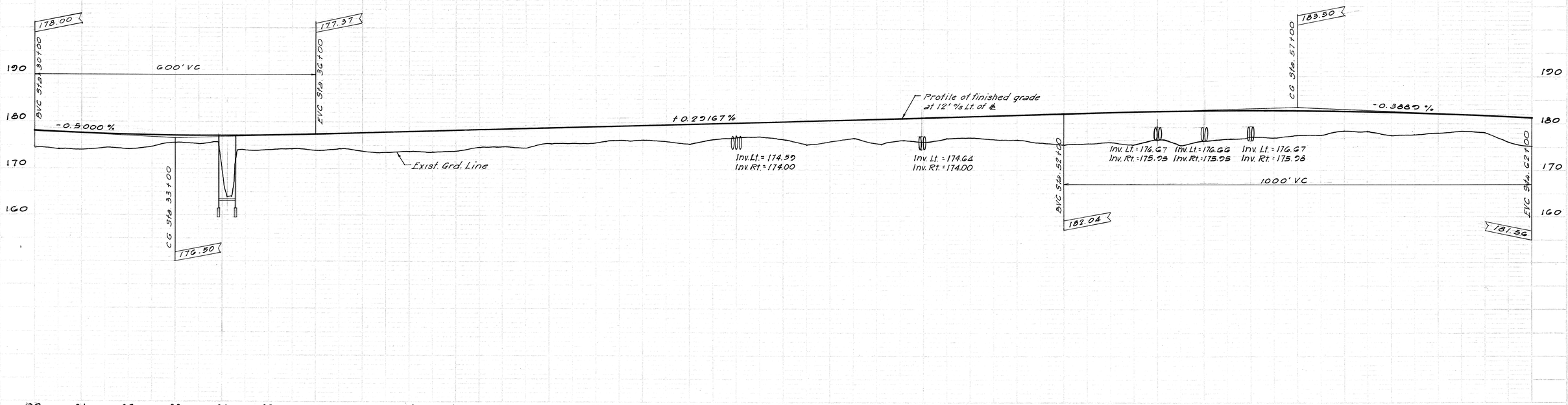
Estimated Quantities
Structure Exc. = 156 C.Y.
Ditch & Channel Exc. = 8 C.Y.
CRM = 10 C.Y.
36" Pipe Culvert = 172 L.F.

Sta. 54+01.40
Install 2-50"x 31" CMP-Arch, No. 12 Ga.
Const. 2-CRM H.W.

Estimated Quantities
Structure Exc. = 162 C.Y.
CRM = 9 C.Y.
50"x 31" Pipe Culvert = 168 L.F.

Sta. 56+01.80
Install 2-58"x 36" CMP-Arch, No. 12 Ga.
Const. 2-CRM H.W.

Estimated Quantities
Structure Exc. = 187 C.Y.
Ditch & Channel Exc. = 3 C.Y.
CRM = 13 C.Y.
58"x 36" Pipe Culvert = 168 L.F.



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	S-0380(6)	1969	17	89

TRUE NORTH
SCALE: 1"=100'

Sta. 74+00 to 91+00 Lt.
Const. Barbed Wire Fence
1700 Lin. Ft.

Sta. 73+50 Lt.
Grade Approach
Pav't. Area = 460 s.y.
B.C. Area = 484 s.y.
Exc. = 380 c.y.
Emb. = 0 c.y.

Sta. 70+25
Grade Approach
Pav't Area = 543 s.y.
B.C. Area = 302 s.y.
Excavation = 191 c.y.

Equation Minus 14.79'
51.72
P.I. Sta. 73+66.51

Access Permitted 49.14

KEAWE TREES

Plantation

Service Road

R/W & Control of Access Line

Type "A" Drainage Ditch & GRP Spillway

Type "B" Drainage Ditch & GRP Spillway

Match Line "B"

Inv. =174.33

Inv. =174.66

Inv. =173.00

Inv. =173.08

6" Conc.

20

12'

R=50'

103'

125

140'

60'

55

70

Road

Baseline

75

80 Type "E" Flare

Az. 102°-58'-30"

(3936.35 P.I. to P.I.)

Type "C" Flare

Inv. 150.25

Future ℄ Mon.

Concrete Ditch

Top of Gulch

Stream

Bottom of Gulch

Inv. 160.75

Type "B" Flare 85

Type "F" Flare

90

140'

155'

80'

Match Line Sta. 91+12.90

R/W and Control of Access Line

BM #5
¾" pipe, 20' right
of Sta. 69+00
Elev. = 174.40

Access Permitted
50.36'

FLUME ON 4 CONC.
I-I-I-I PILLARS
6' APART

BM #6
¾" pipe 78' right
of Sta. 84+00
Elev. 175.88

Sta. 63+95.30
Install 2-50"×31" CMP-Arch
12 Ga.
Const. 2 CRM H.W.

Estimated Quantities

Struc. Exc.	162 c.y.
Ditch & Channel Exc.	24 c.y.
CRM	9 c.y.
50"×31" Pipe Culvert	168 l.f.

Sta. 64+93.00
Install 2-50"×31" CMP-Arch
12 Ga.
Const. 2 CRM H.W.

Estimated Quantities

Struc. Exc.	162 c.y.
Ditch & Channel Exc.	27 c.y.
CRM	9 c.y.
50"×31" Pipe Culvert	168 l.f.

Sta. 73+76.79 to 82+40 Lt.
Construct Conc. Lined Drainage Ditch and GRP Spillway.
For Details See Sheet No. 35

Estimated Quantities

Ditch & Channel Exc.	504 c.y.
Class B Concrete or Shotcrete	124 c.y.
Reinf. Steel	1,609 lbs.
G R P	6 c.y.

Sta. 81+00 to 84+00 Lt. & Rt.
Future Guard Rail, Type 3
600 Lin. Ft.

Sta. 82+42
Install 12'-4" × 7'-9" Structural Plate Pipe Arch, No. 12 Ga. (18" Corner Radius)
Construct 2-CRM H.W. and W.W's and 2 GRP Aprons
For Details See Sheet No. 28

Estimated Quantities

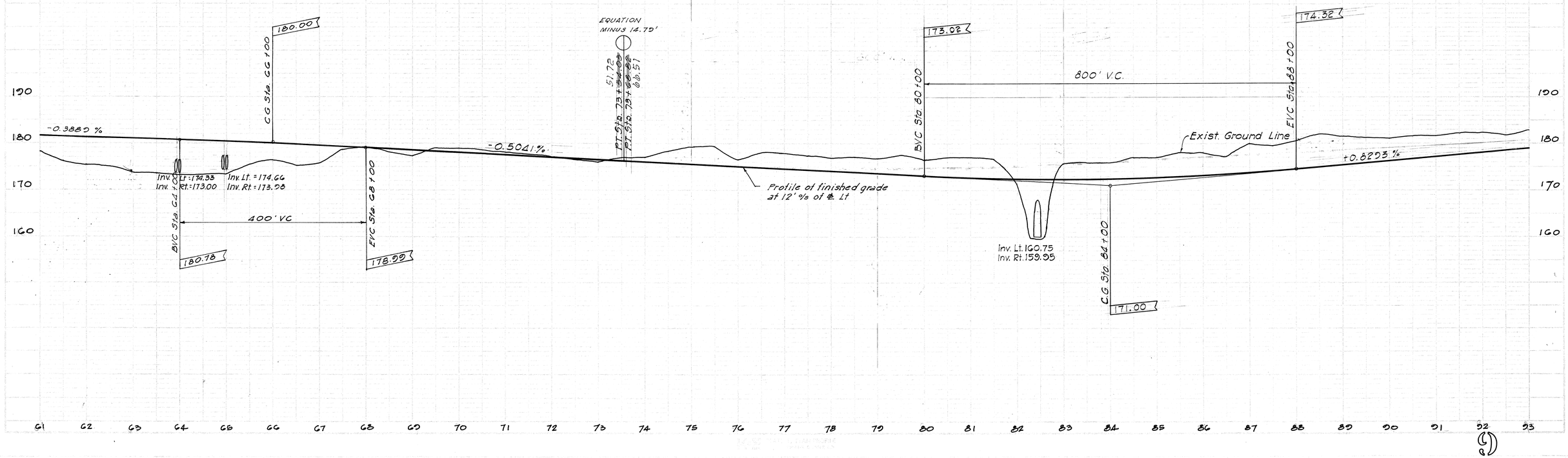
Struc. Exc.	491 c.y.
CRM	65 c.y.
GRP	25 c.y.
12'-4" × 7'-9" Structural Plate Pipe Arch	80 l.f.

Sta. 86+65 Lt. to 95+25 Lt.
Construct Conc. Lined Drainage Ditch and GRP Spillway.
For Details See Sheet No. 35

Estimated Quantities

Ditch & Channel Exc.	2,116 c.y.
Class B Concrete or Shotcrete	344 c.y.
Reinf. Steel	4,452 lbs.
G R P	16 c.y.

Sta. 84+70 to 91+00 Rt.
Const. Barbed Wire Fence
630 Lin. Ft.



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	S-0380(6)	1969	10	89

May 19, 1970

C0 10

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	S-0380(6)	1969	11	89

TRUE NORTH
SCALE: 1" = 100'

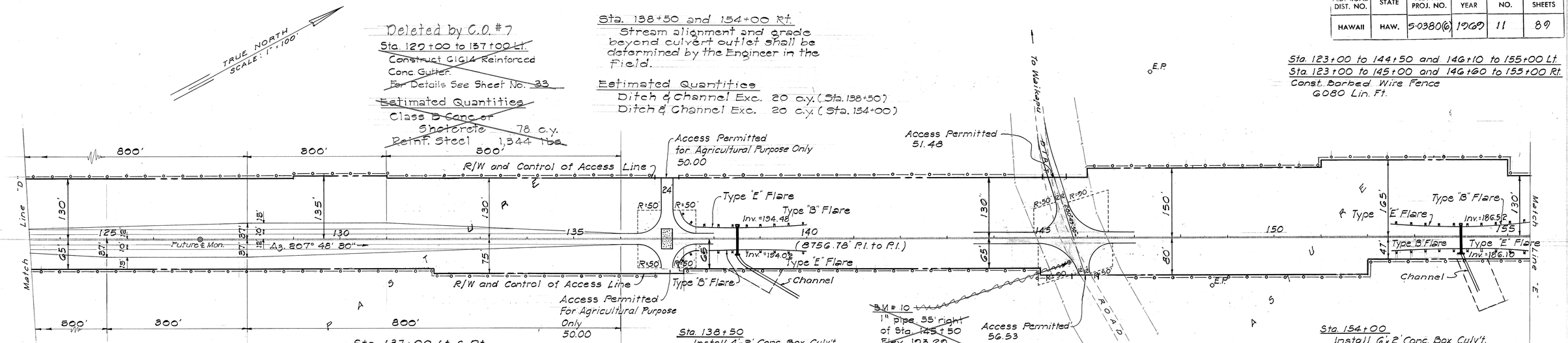
~~Deleted by C.O. #7~~
~~Sta. 129+00 to 137+00 Lt.~~
~~Construct G1G14 Reinforced Conc Gutter.~~
~~For Details See Sheet No. 33~~

~~Estimated Quantities~~
~~Class B Conc or Shotcrete 78 c.y.~~
~~Reinf. Steel 1,344 lbs.~~

Sta. 138+50 and 154+00 Rt.
Stream alignment and grade beyond culvert outlet shall be determined by the Engineer in the Field.

Estimated Quantities
Ditch & Channel Exc. 20 c.y. (Sta. 138+50)
Ditch & Channel Exc. 20 c.y. (Sta. 154+00)

Sta. 123+00 to 144+50 and 146+10 to 155+00 Lt.
Sta. 123+00 to 145+00 and 146+60 to 155+00 Rt.
Const. Barbed Wire Fence
6080 Lin. Ft.



Sta. 137+00 Lt. & Rt.
Grade: Approaches with Tournahauler Crossing
Pav't Area = 696 s.y.
B.C. Area = 723 s.y.
Exc. = 435 c.y.
Emb. = 0 c.y.

Detail of Tournahauler Crossing See Sht. No. 5.

Sta. 138+50
Install 4'x2' Conc. Box Culv't.
Const. 1-C.D.I., 1-C.H.W.
See 4'x2' Box Culv't.
For Details See Sht. No. 30

Sta. 137+00 Lt. & Rt.
Const. 12' Cattle Gate 2 Ea.
For Detail See Sht. No. 22.

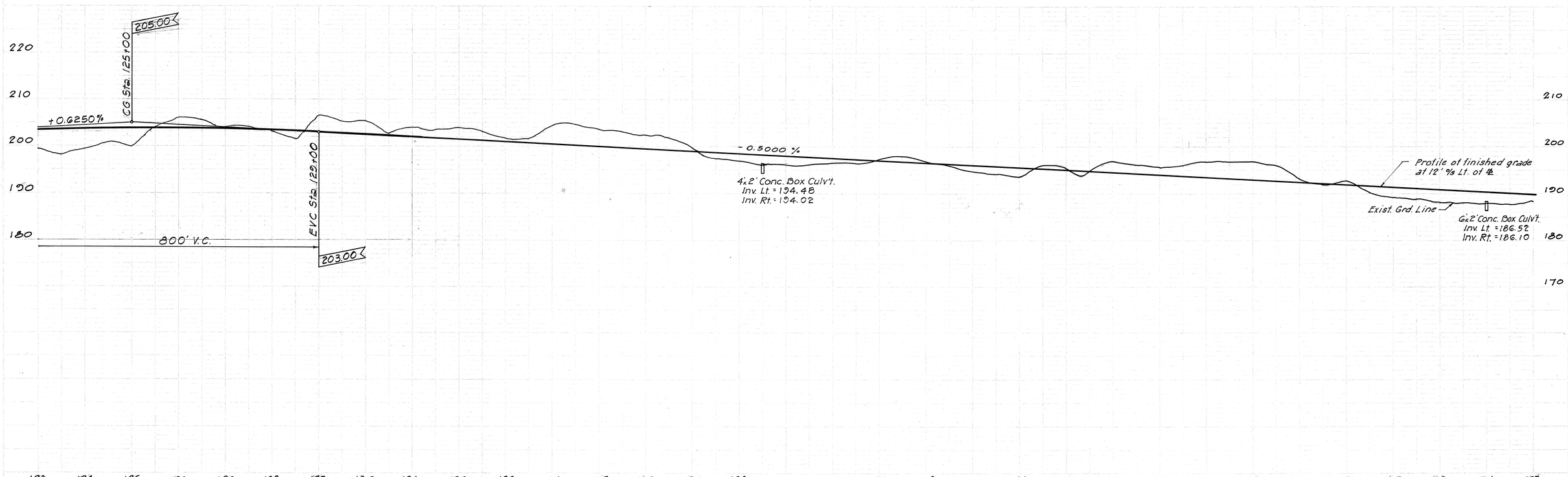
~~B.M. # 10~~
~~1" pipe 55' right of Sta. 145+50~~
~~Elev. 193.29~~

Sta. 137+00 to 140+00 Lt. & Rt.
Future Guard Rail, Type 3
600 Lin. Ft.

Sta. 145+60 Lt. & Rt.
Grade: Approaches
Pav't Area = 936 s.y.
B.C. Area = 1002 s.y.
Exc. = 623 c.y.
Emb. = 0 c.y.
Lay 6-inches of Aggregate Subbase for Temporary Crossing

Sta. 154+00
Install 6'x2' Conc. Box Culv't.
Const. 1-C.D.I., 1-C.H.W.
See 6'x2' Box Culv't.
For Details See Sht. No. 31

Sta. 152+50 to 155+50 Lt. & Rt.
Install Guard Rail, Type 3
600 Lin. Ft.



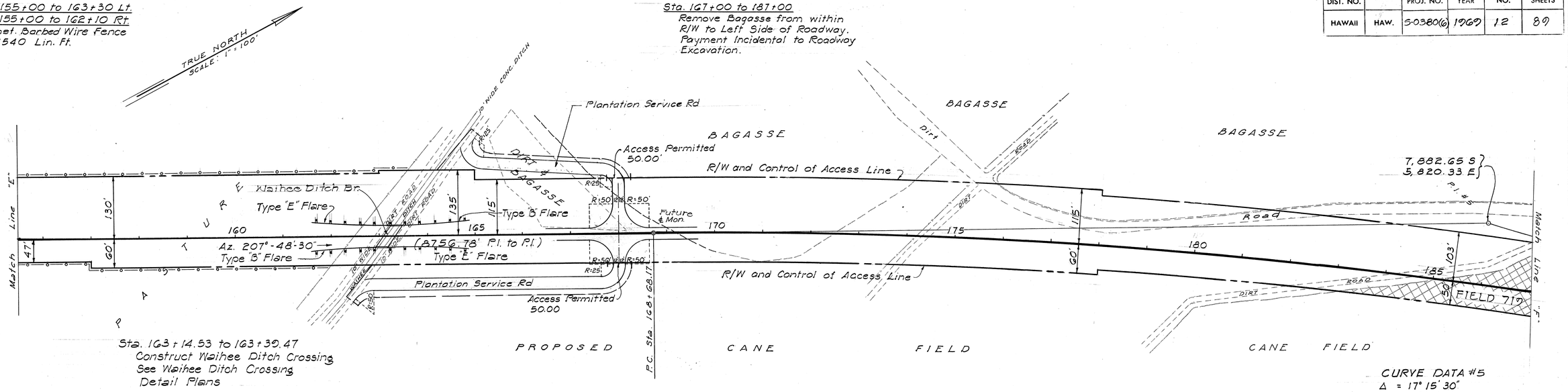
May 19, 1970

CO 11

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	S-0380(6)	1969	12	89

Sta. 155+00 to 163+30 Lt.
Sta 155+00 to 162+10 Rt.
Const. Barbed Wire Fence
1540 Lin. Ft.

Sta. 167+00 to 187+00
Remove Bagasse from within R/W to Left Side of Roadway. Payment Incidental to Roadway Excavation.

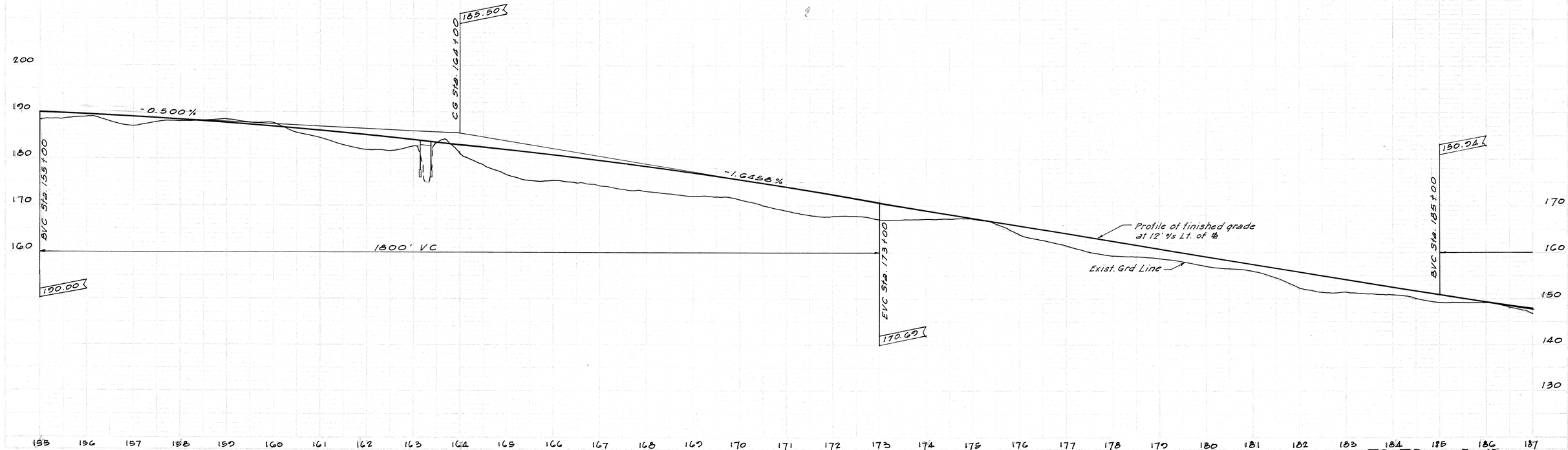


Sta. 163+14.53 to 163+30.47
Construct Waihee Ditch Crossing
See Waihee Ditch Crossing Detail Plans

Sta. 161+53 to 164+90 Lt. & Rt.
Future Guard Rail, Type 3
600 Lin. Ft.

Sta 168+00 Lt. & Rt.
Grade Approaches
Pav't. Area = 641 s.y.
B.C. Area = 665 s.y.
Exc. = 164 c.y.
Emb. = 142 c.y.
For Detail of Graded & Drained Road, See Sht. No. 4.
Lay 6-inches of Aggregate Base for Temporary Crossing.

CURVE DATA #5
Δ = 17° 15' 30"
D = 0° 30'
R = 11,459.16
T = 1,739.00
L = 3,451.67
S/E = 0.015 ft.



ADD 12

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	S-0380(6)	1969	13	89

210+48

Sta. 191+00 to ~~209+00~~ Lt.
Construct Reinforced C1G13.5 Conc. Gutter
For Detail See Sht. No. 33

Estimated Quantities
Class B Conc. or Shotcrete 105 c.y.
Reinf. Steel 2,835 lbs.

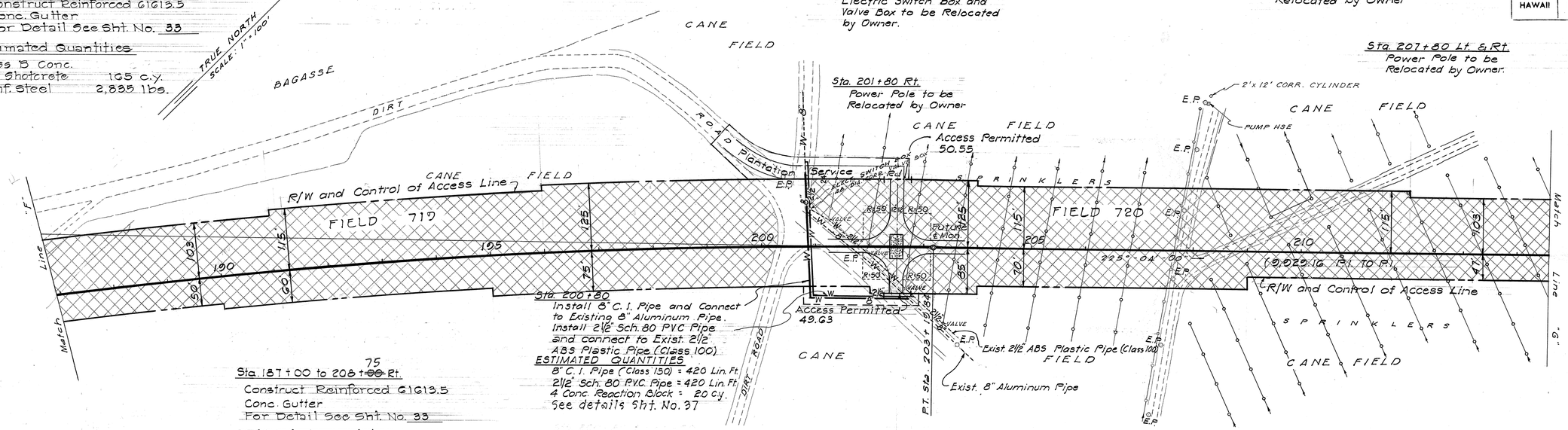
TRUE NORTH
SCALE: 1"=100'

Sta. 200+90 Lt.
Electric Switch Box and Valve Box to be Relocated by Owner.

Sta. 201+80 Rt.
Power Pole to be Relocated by Owner

Sta. 201+00 to 215+00 Lt. & Rt.
Water Sprinklers to be Relocated by Owner

Sta. 207+80 Lt. & Rt.
Power Pole to be Relocated by Owner.



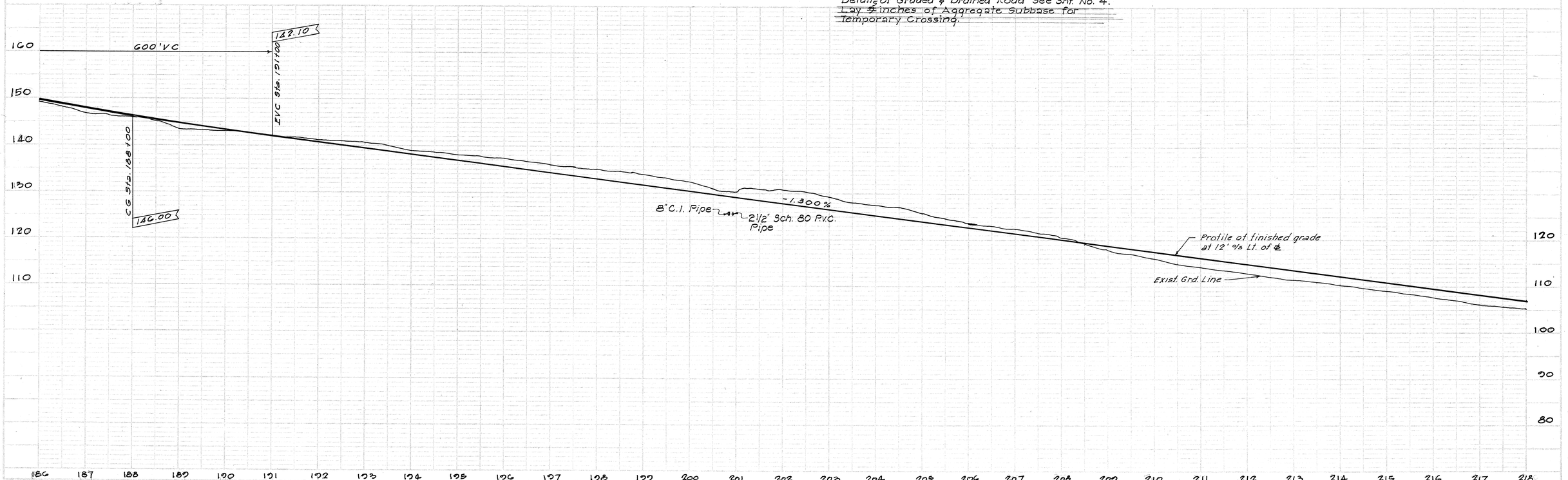
75

Sta. 187+00 to 208+~~00~~ Rt.
Construct Reinforced C1G13.5 Conc. Gutter
For Detail See Sht. No. 33

Estimated Quantities
Class B Conc. or Shotcrete 103 c.y.
Reinf. Steel 3,308 lbs.

R1-1

Sta. 202+50 Lt. & Rt.
Grade Approaches with Tournahauler Crossing
Pav't. Area = 853 s.y. 12½" Portland Cement Conc. Pavement = 40.74 c.y.
B.C. Area = 802 s.y.
Exc. = 753 c.y.
Emb. = 0 c.y.
Detail of Tournahauler Crossing See Sht. No. 5.
Detail of Graded & Drained Road See Sht. No. 4.
Lay 9 inches of Aggregate Subbase for Temporary Crossing.

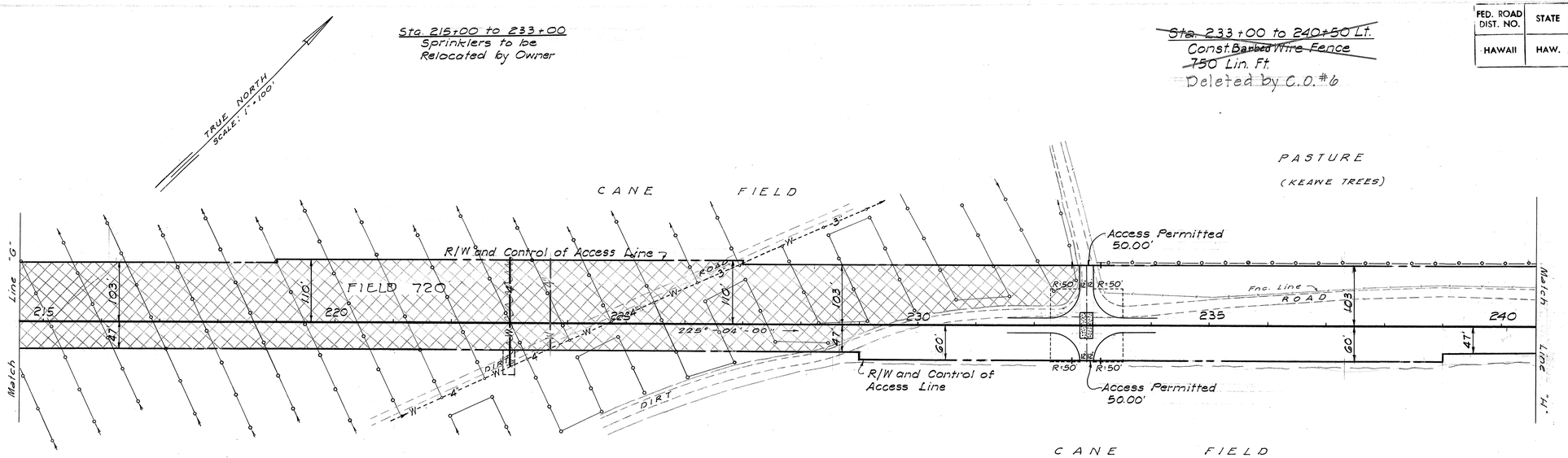


ADD 13

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	S-0380(6)	1969	14	89

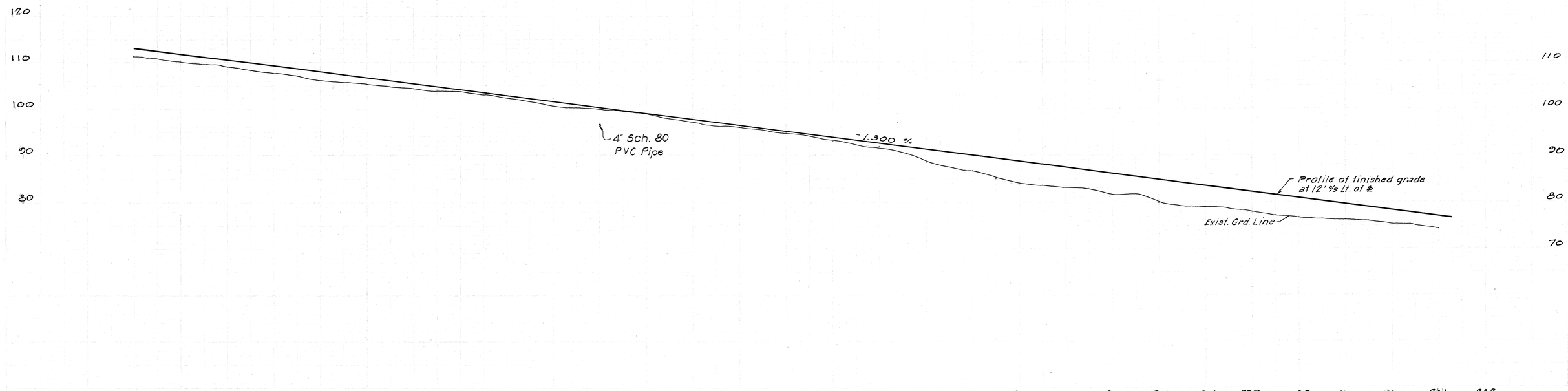
Sta. 215+00 to 233+00
Sprinklers to be
Relocated by Owner

~~Sta. 233+00 to 240+50 Lt.~~
~~Const. Barbed Wire Fence~~
~~750 Lin. Ft.~~
Deleted by C.O. #6



Sta. 223 +~~00~~ 67.41
Inst. 4" Sch. 80 P.V.C. Pipe
Connect to Existing
4" ABS Plastic Pipe
For Detail See Sht. No. 37
ESTIMATED QUANTITIES
4" Sch. 80 P.V.C. Pipe = 190 Lin. Ft.
2 Reaction Blocks = 1 c.y.

Sta. 232+90 Lt & Rt
Grade Approaches with Tournahauler Crossing
Pav't. Area = 609 s.y. 12½" Portland Cement
B.C. Area = 630 s.y. Conc. Pavement = 40.74 c.y.
Exc. = 76 c.y.
Emb. = 239 c.y.
For Detail of Tournahauler Crossing See Sht. No. 5.
Lay 8 inches of Aggregate Subbase for Temporary Crossing.

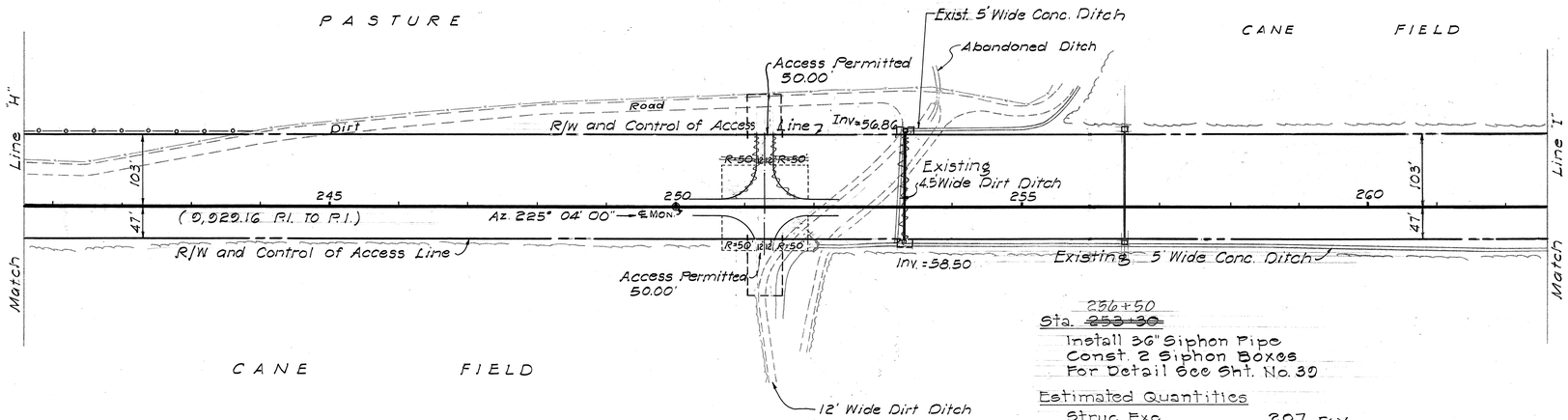


ADD 14

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	S-0380(6)	1969	15	89

~~Sta. 240+50 to 243+60 Lt.~~
~~Const. Barbed Wire Fence~~
~~310 Lin. Ft.~~
Deleted by C.O. #6

True North
Scale 1" = 100'

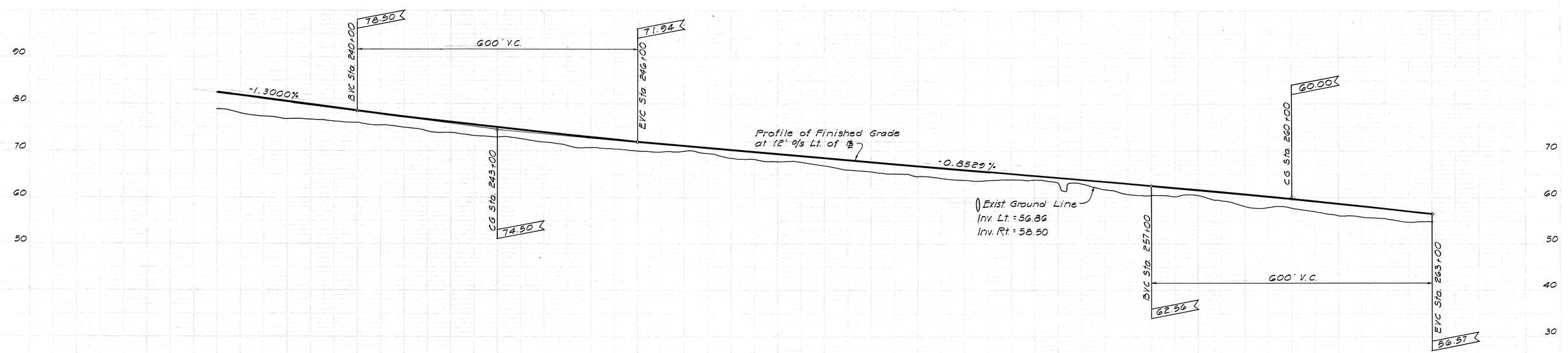


256+50
Sta. ~~253+30~~
Install 36" Siphon Pipe
Const. 2 Siphon Boxes
For Detail See Sht. No. 30

Estimated Quantities

Struc. Exc.	207	c.y.
Ditch & Channel Exc.	19	c.y.
Class B Conc.	9	c.y.
Class B Conc. or Shotcrete	5	c.y.
Reinf. Steel	558	lbs.
36" Siphon Pipe	153	l.f.
Wooden Gate	2	ea.

50
Sta. 251+~~28~~ ~~Lt.~~ Rt.
Grade Approaches
Pav't. Area = 571 s.y.
B.C. Area = 590 s.y.
Exc. = 97 c.y.
Emb. = 18 c.y.
Lay 9 inches of Aggregate Subbase for Temporary Crossing.



15

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	S-0380(6)	1969	16	89

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	S-0380(6)	1969	17	89

NOTE

1. Existing Stop Sign and Chain and Pipe Gate for Cane Haul Road to be Relocated to New Location as shown or Ordered by the Engineer. The work must conform to the requirements of Section 652, except payment incidental to the various items.
2. The Contractor shall provide for a continuous flow when work is being done on the Siphons. The work shall be coordinated with Wailuku Sugar Co.

CANE HAUL ROAD
CURVE No1
Δ = 2°-04'-41"
D = 0°-10'-00"
L = 1246.88'
T = 623.48'

CURVE No. 2
Δ = 45°00'
Δ/2 = 22°30'
R = 96.33
T = 39.90
L = 75.66

CURVE No.3
Δ = 134°50'
Δ/2 = 67°25'
R = 50.00'
T = 120.22
L = 117.66

True North
Scale 1" = 100'

Sta. -2+50 Beg Cane Haul Road

Provide smooth connection to exist. cane haul road

Exist. Stop Sign to be Relocated

274°-53'-26" (Sta. 59+28.45 FAP 13-G)

PT Sta. 0+00 Cane haul road

184°-53'-26"

182°-48'-45"

P.I. #1

HONOAPIILANI HIGHWAY

Ditch, Culv't, TP, EP, Conc. Ditch, G.P., M.P. 24, M.P. 20, M.P. 12

Exist. Chain & Pipe Gate - Relocate to Sta. 14+57

Beg. of Proj. Sta. 0+83.73
Kahului Airport - Maalaea Highway

To Maalaea

T.S. Sta. 2+24.63

S.C. Sta. 4+24.63

CANE HAUL ROAD

Siphon Pipe

24" Culv't

Sta. -2+50 to 13+00 Lt.
Construct earth dike
See x-section for detail
Payment incidental to roadway exc.

All hatched area to be scarified and exist. surface treatment and base to be removed. Payment incidental to the various items.

Sta. 14+40.20
Install 24" siphon pipe
Construct 2 siphon boxes
For Details See Sht. No. 43.

Estimated Quantities

Struc. Exc.	65	c.y.
Ditch & Channel Exc.	4	c.y.
Class B Conc.	10	c.y.
Class B Conc. or Shotcrete	2	c.y.
Reinf. Steel	595	lbs.
24" Siphon Pipe	32	l.f.
Type "A" Trash Rack	2	ea.

* R1-1 STOP 30" X 30"

Sta. 13+22.24, 137°-48'-45", 272°-36'-45", Sta. 13+64.24, P.T. Sta. 14+40.20 @ EQ = PLUS 75.96

Relocated Stop Sign

Relocated Chain & Pipe Gate

New conc. ditch to be installed by owner

Sta. 14+02
Const. Cane Haul Crossing
See Detail Below
Class 'A' Conc. 27.78c.y.

Sta. 14+50 to 18+68 Lt. & Rt.
Construct earth dike
See X-sections for detail
Payment incidental to roadway Exc.

Exist. Conc. Ditch

R=50'

18" Siphon Pipe

End Cane Haul Rd. Sta. 18+68.38

Note:
All irrigation ditches to be removed and reploced by the owner.

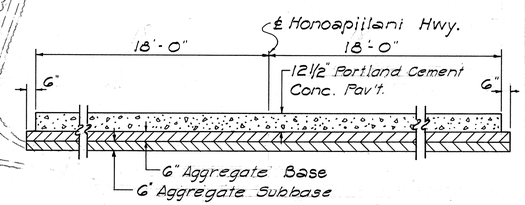
Sta. 16+50
Install 18" siphon pipe
Construct 2 siphon boxes
for Details see sht. no. 43.

Estimated Quantities

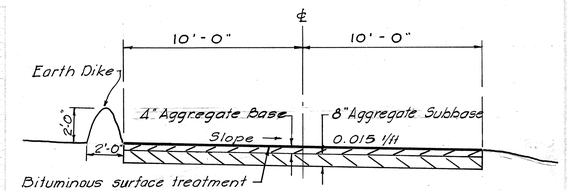
Struc. Exc.	51	c.y.
Ditch & Channel Exc.	7	c.y.
Class B Conc.	8	c.y.
Class B Conc. or Shotcrete	3	c.y.
Reinf. Steel	592	lbs.
18" Siphon Pipe	26	l.f.
Type "A" Trash Rack	2	ea.

CANE HAUL ROAD
ESTIMATED QUANTITIES

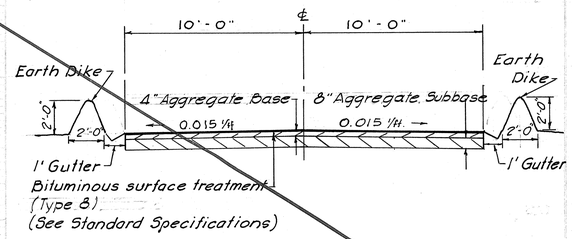
Excavation	= 3251	c.y.
Embankment	= 458	c.y.
Aggregate Base	= 538	c.y.
Aggregate Subbase	= 1073	c.y.
RS-1	= 1668	gals.
Course Rock #7	= 91	tons



TYPICAL CANE HAUL CROSSING
Scale : 1/4" = 1'-0"



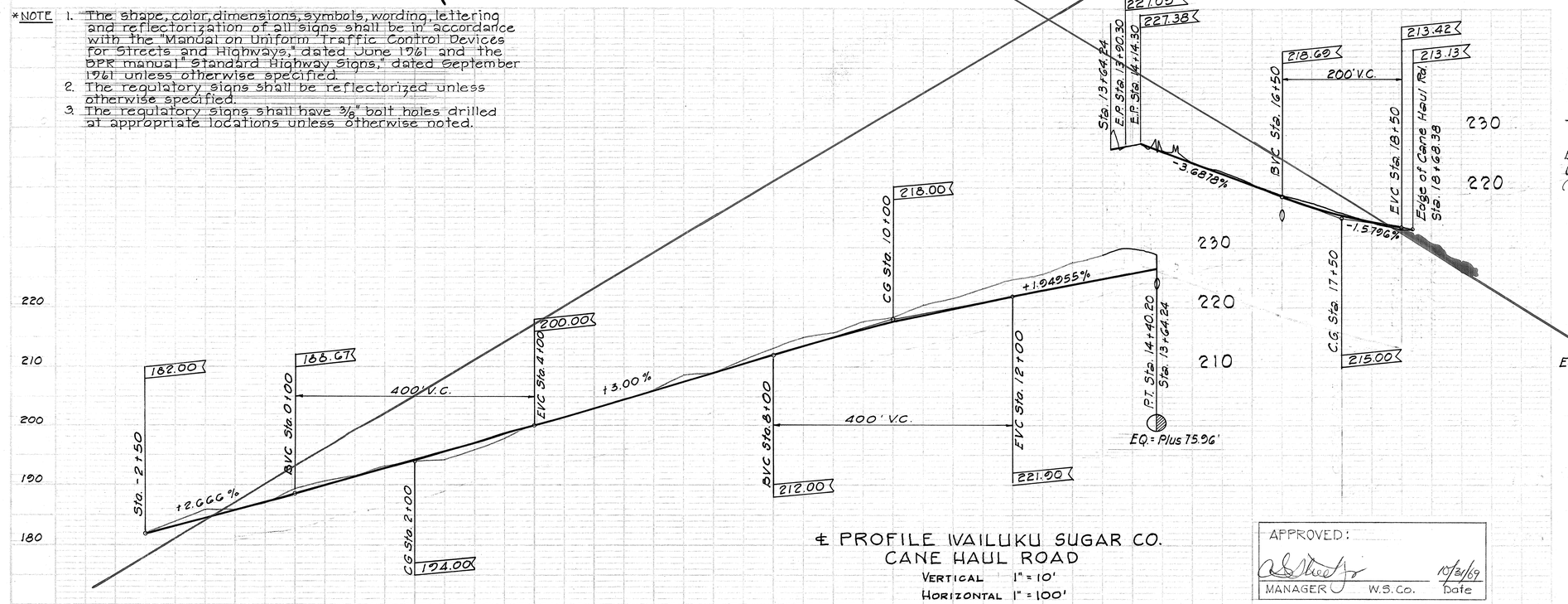
TYPICAL SECTION
STA. -2+50 to STA. 13+50
Scale: 1/4" = 1'-0"



TYPICAL SECTION
STA. 14+60 to STA. 18+68
Scale: 1/4" = 1'-0"

*NOTE

1. The shape, color, dimensions, symbols, wording, lettering and reflectorization of all signs shall be in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highways," dated June 1961 and the DPR manual "Standard Highway Signs," dated September 1961 unless otherwise specified.
2. The regulatory signs shall be reflectorized unless otherwise specified.
3. The regulatory signs shall have 3/8" bolt holes drilled at appropriate locations unless otherwise noted.



℄ PROFILE WAILUKU SUGAR CO.
CANE HAUL ROAD
VERTICAL 1" = 10'
HORIZONTAL 1" = 100'

APPROVED:
MANAGER W.S.Co. 10/21/69 Date

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