

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U-072-1(7)	1958	13	80

NOTE

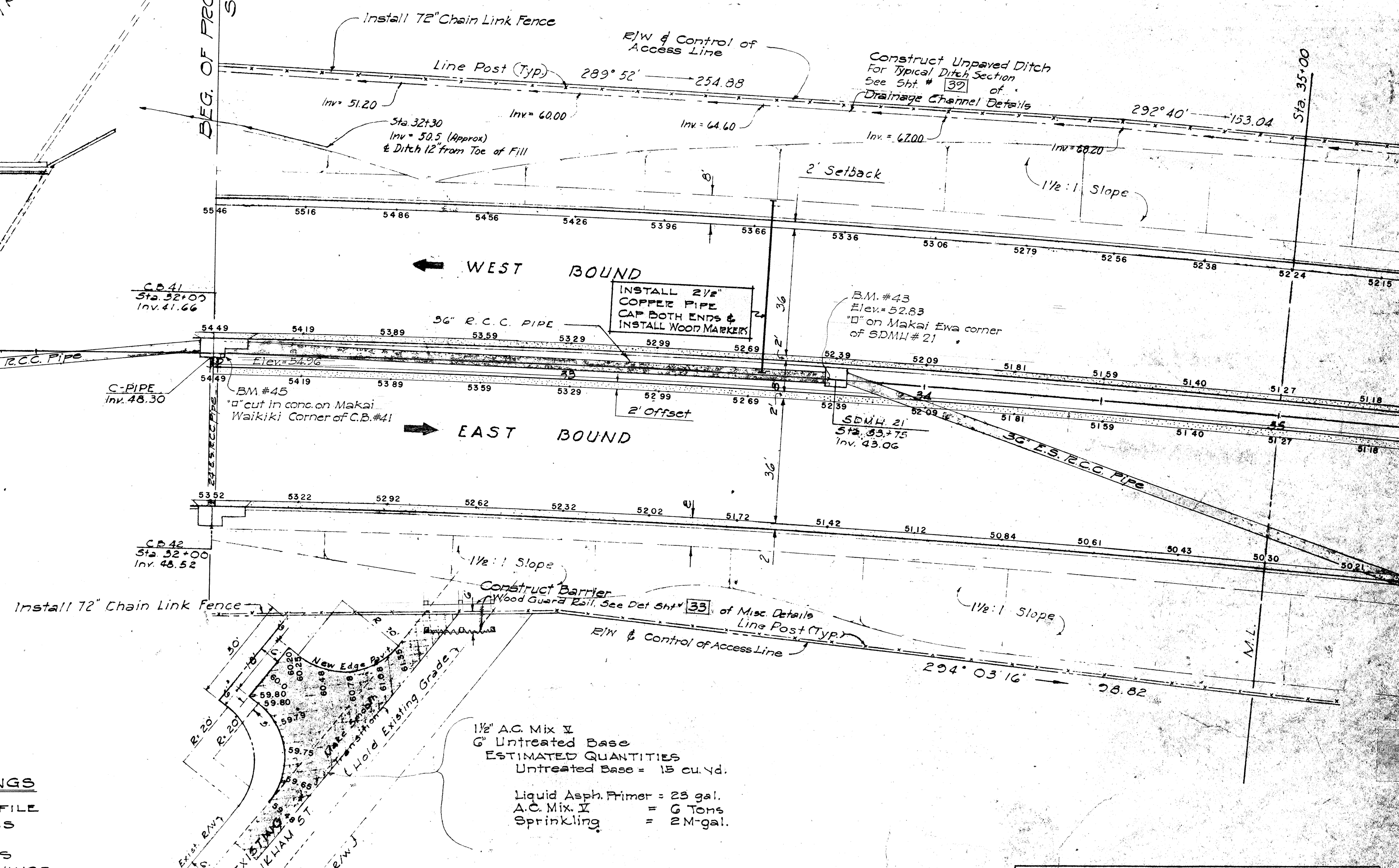
- All manholes requiring resetting shall be reset to new grades as directed by the Engineers.
- All existing lava rock curbs and precast concrete curbs which are to be removed shall be salvaged or reconstructed as shown on the plans.
- Where reconstructed curbs are to be connected to existing or new curbs, the curbs shall be installed to produce neatly matched joints.
- Where new concrete curbs of various types are to be connected to reconstructed curbs or to existing curbs, the new curbs shall have transitions of not less than 20'-00" to match the curb faces and height.
- Where new concrete curbs change from one type to another type, the heights and faces of concrete curbs shall have transitions of not less than 20'-00" unless otherwise shown.
- Top slab of drainage structures shall be at the grade of adjacent curbs and shall be sloped to the finished grade of sidewalk, shoulder or median strip as the case may be.
- Wherever Type 'A' Conc. Curb is shown, this curb shall be as shown on the Standard Details, except that recesses shall be omitted.
- All ends of abandoned drainage culverts shall be sealed with Class A-1 Concrete thickness to be at least $\frac{2}{3}$ the inside diameter of culverts.
- Coordinates referred to Mokuauia A.

NOTE: ALL GRADES SHOWN ARE FINISHED PAVEMENT GRADES.

BEG. OF PROJ. No. U-072-1(7) UNIT 3
STA. 32+00

KALIHI STREAM

PROPOSED KALIHI STREAM BRIDGE

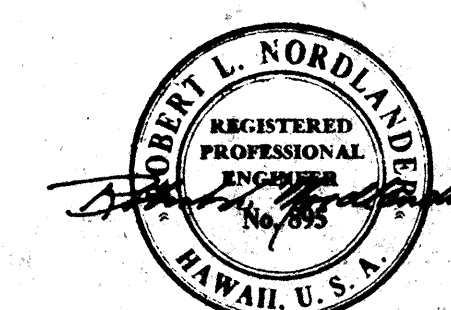


LEGEND

- ⊕ MON. OR C&C ST. SURVEY MON.
- BASE LINE (⊕)
- STATION LINE (⊕)
- R/W LINE OR PROPERTY LINE (⊕)
- CHAIN LINK FENCE
- EXISTING FENCE
- RAIL PIPE RAILING
- GUARD RAIL
- NEW RETAINING WALL
- NEW CRM WALL
- EXISTING WALL
- EXISTING OR FUTURE ROAD
- SLOPE LINES

REFERENCE DRAWINGS

- ROAD PLAN & PROFILE
- TYPICAL SECTIONS
- ROADWAY DETAILS
- DRAINAGE DETAILS
- STRUCTURAL DRAWINGS
- DORING PLAN & LOGS
- CONSTRUCTION PHASE
- CROSS SECTIONS



BELT, COLLINS & ASSOC., LTD.
Civil and Structural Engineers

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

DETAIL PLAN OF ROADWAY
FREWAY 32+00 - 35+00

LUNALILO FREEWAY U-072-1(7) UNIT 3

SHEET No. 1 OF 10 SHEETS

5983.13

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	0072-1(7)	1958	14	17
		US0630(2)		17	17

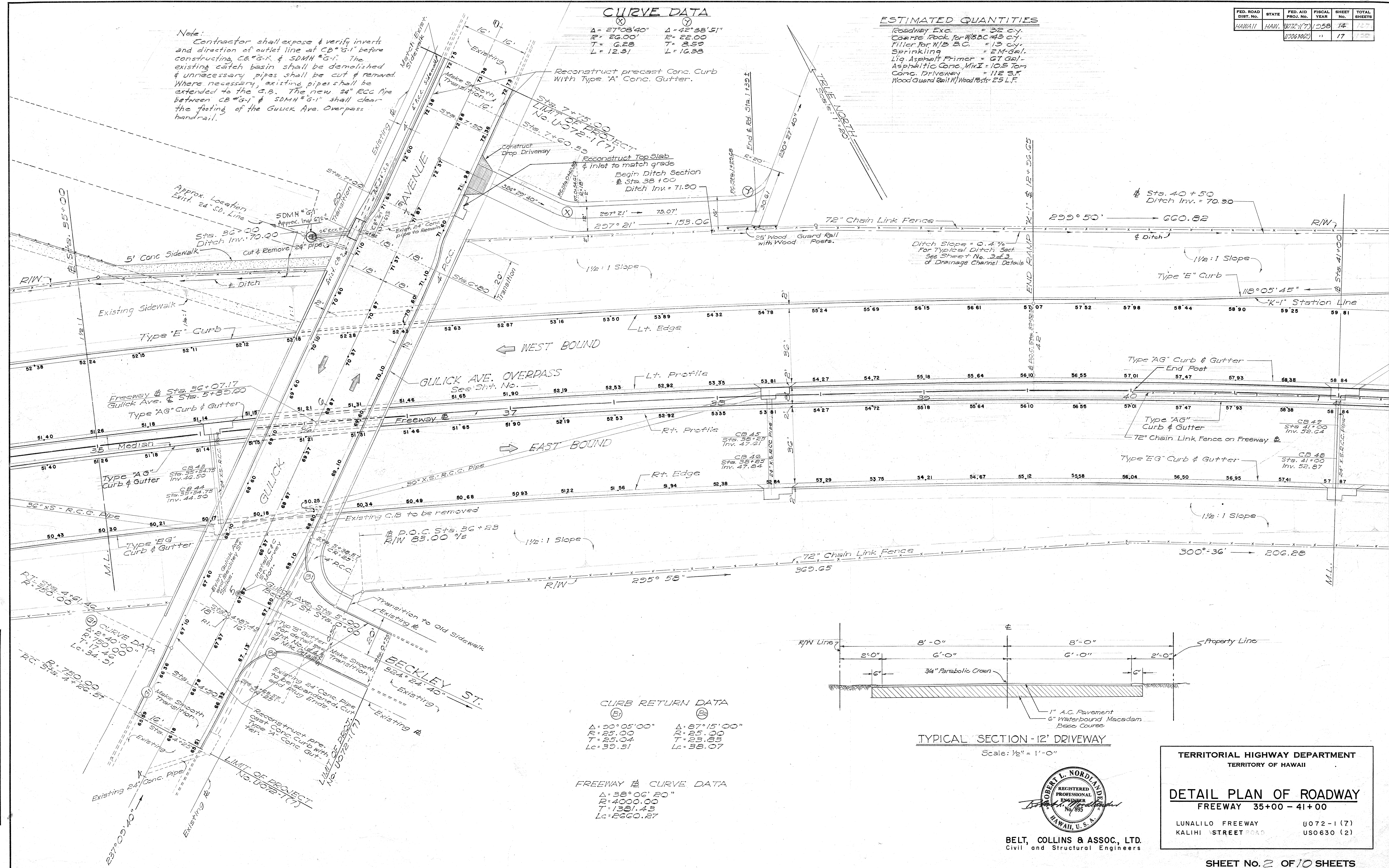
CURVE DATA

$\Delta = 27^{\circ}08'40''$	$\Delta = 42^{\circ}38'51''$
$R = 26.00'$	$R = 22.00'$
$T = 6.28'$	$T = 8.59'$
$L = 12.31'$	$L = 16.38'$

ESTIMATED QUANTITIES

Roadway Exc. = 32 CY.
 Coarse Rock for W.B.C. = 43 CY.
 Filler for W.B.C. = 13 CY.
 Sprinkling = 2 M-Gal.
 Lig. Asphalt Primer = 67 GAL.
 Asphaltic Conc. Mix I = 10.5 Ton
 Conc. Driveway = 112 S.F.
 Wood Guard Rail W/ Wood Posts = 25 L.F.

Note: Contractor shall expose & verify inverts and direction of outlet line at CB#G-1 before constructing CB#G-1 & SDMH#G-1. The existing catch basin shall be demolished & unnecessary pipes shall be cut & removed. Where necessary, existing pipes shall be extended to the C.B. The new 34" R.C.C. Pipe between CB#G-1 & SDMH#G-1 shall clear the footing of the Gulick Ave. Overpass handrail.

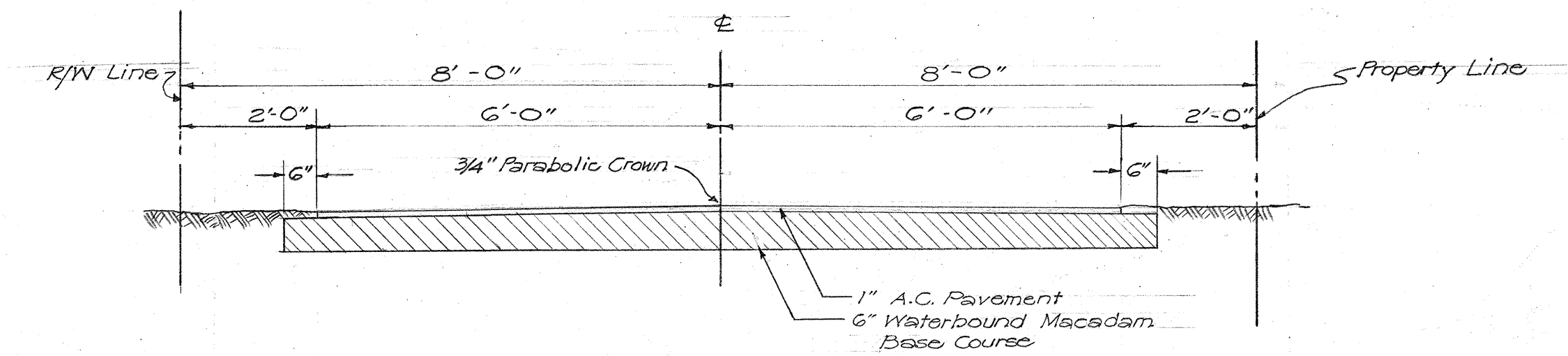


CURB RETURN DATA

$\Delta = 30^{\circ}05'00''$	$\Delta = 87^{\circ}15'00''$
$R = 25.00'$	$R = 25.00'$
$T = 25.04'$	$T = 25.83'$
$L = 39.51'$	$L = 38.07'$

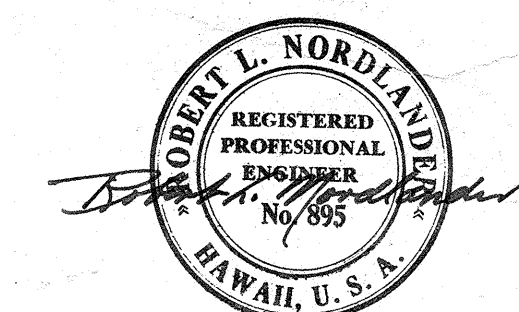
FREEWAY CURVE DATA

$\Delta = 38^{\circ}06'20''$
$R = 4000.00'$
$T = 1381.45'$
$L = 2660.27'$



TYPICAL SECTION - 12' DRIVEWAY

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



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 TERRITORY OF HAWAII

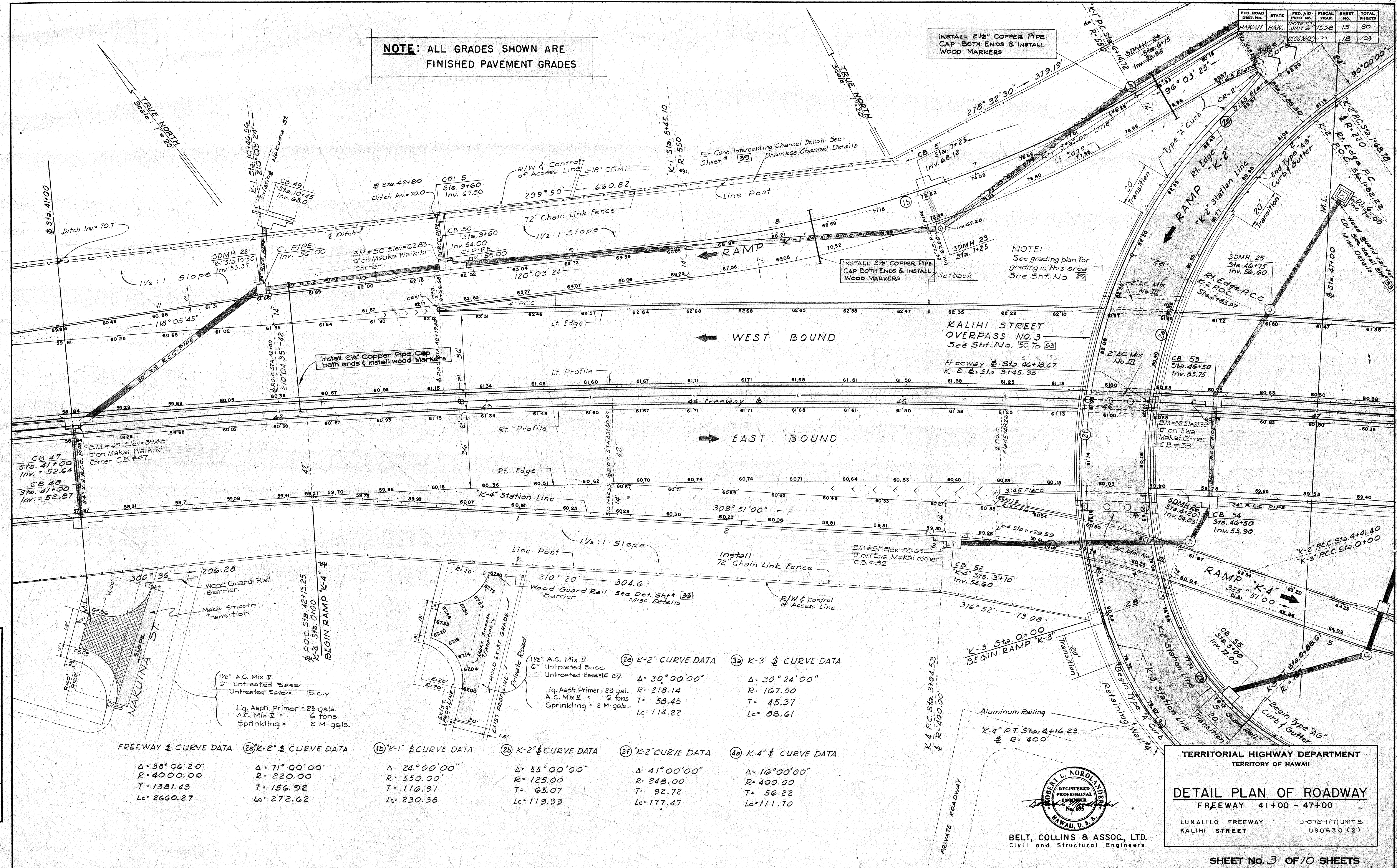
DETAIL PLAN OF ROADWAY

FREEWAY 35+00 - 41+00

LUNALILO FREEWAY 0072-1(7)
 KALIHI STREET ROAD US0630(2)

SHEET No. 2 OF 10 SHEETS

SURVEY PLOTTED BY	DATE
ORIGINAL PLAN	NO.
TRACED BY	DATE
QUANTITIES CHECKED BY	DATE
CHECKED BY	DATE



ROBERT L. NORDLAND
REGISTERED PROFESSIONAL ENGINEER
HAWAII, U.S.A.

BELT, COLLINS & ASSOC., LTD.
Civil and Structural Engineers

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

DETAIL PLAN OF ROADWAY
FREeway 41+00 - 47+00

LUNALILO FREEWAY
KALIHII STREET

U-072-1(7) UNIT 3
USO 630 (2)

SHEET NO. 3 OF 10 SHEETS

5983.15 5984.18

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
0072(17)	HAWAII	1053	1963	16	80
US 630 (2)				19	103

CURVE DATA

Δ · 15° 17' 00"	Δ · 97° 13' 00"
R · 600.00	R · 140.00
T · 80.50	T · 158.85
Lc · 160.05	Lc · 237.54

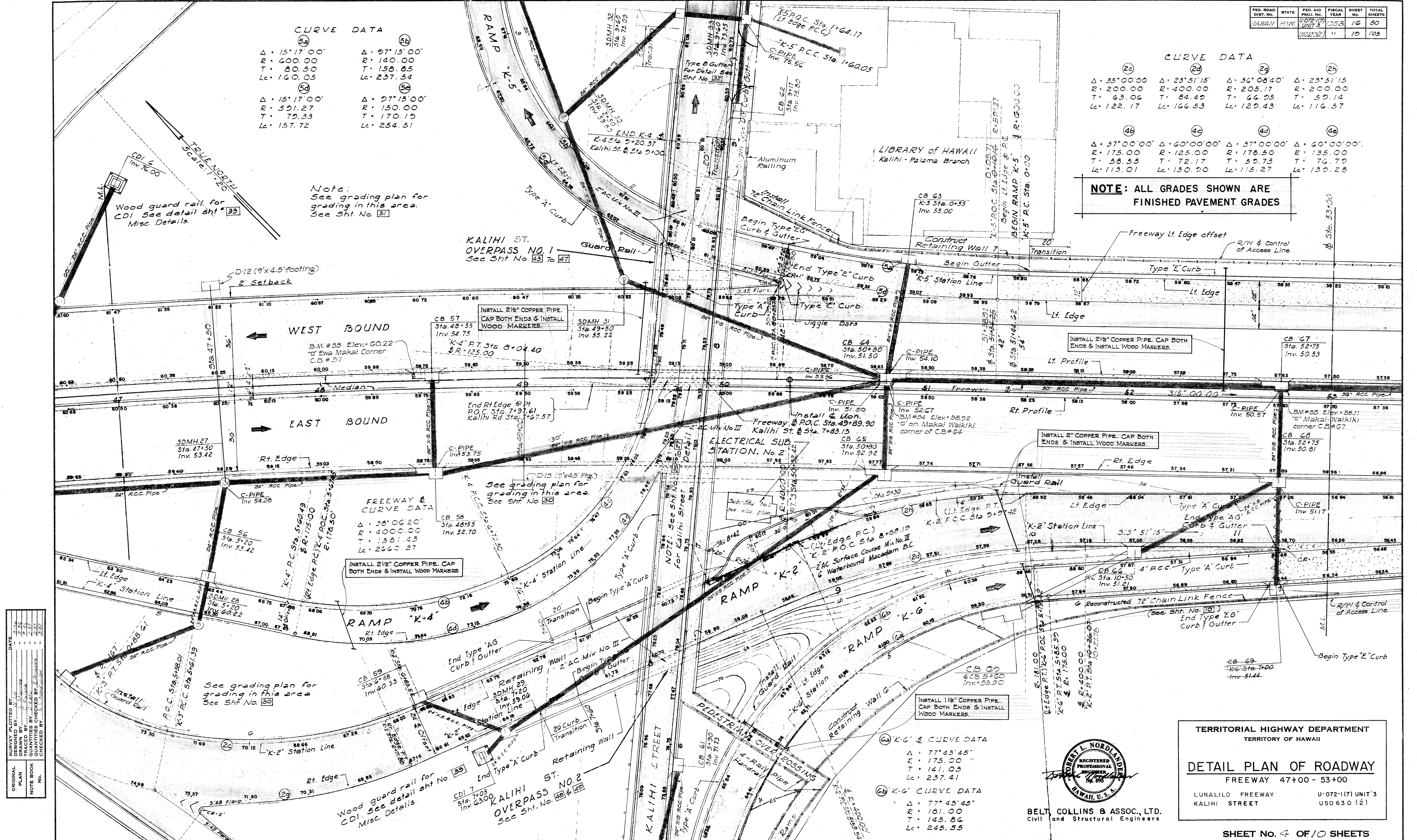
Δ · 15° 17' 00"	Δ · 97° 13' 00"
R · 591.27	R · 150.00
T · 79.33	T · 170.19
Lc · 157.72	Lc · 254.51

CURVE DATA

Δ · 35° 00' 00"	Δ · 23° 51' 15"	Δ · 36° 08' 40"	Δ · 23° 51' 15"
R · 200.00	R · 400.00	R · 205.17	R · 200.00
T · 63.06	T · 84.49	T · 66.95	T · 59.14
Lc · 122.17	Lc · 166.53	Lc · 129.43	Lc · 116.57

Δ · 37° 00' 00"	Δ · 60° 00' 00"	Δ · 37° 00' 00"	Δ · 60° 00' 00"
R · 175.00	R · 125.00	R · 175.50	R · 135.00
T · 58.55	T · 72.17	T · 59.73	T · 76.79
Lc · 113.01	Lc · 130.90	Lc · 115.27	Lc · 139.28

NOTE: ALL GRADES SHOWN ARE FINISHED PAVEMENT GRADES



DATE	3-14
DESIGNED BY	W. J. Collins
DRAWN BY	C. J. Collins
CHECKED BY	W. J. Collins
NOTED BY	W. J. Collins
NO.	1

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

DETAIL PLAN OF ROADWAY
FREEWAY 47+00 - 53+00

LUNALILO FREEWAY U-072-1(7) UNIT 3
KALIHĪ STREET US 630 (2)

ROBERT L. NORDLINDER
REGISTERED PROFESSIONAL ENGINEER
HAWAII, U.S.A.

BELT, COLLINS & ASSOC., LTD.
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Revised: Sept. 21, 1959
Added mauka Lined Ditch,
C.B., Manhole, 24" Culvert,
Sta. 56 + 04.

Fin. Gr.

6" 12" 1'-3"

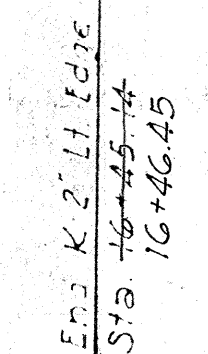
1'-0"

C-1 Conc.

Revision Date
Sept. 21, 1959

TYPICAL SECTION
TYPE "L-1" WALL

Sta. 58+00
Begin of Connection



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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U-072-1(7) UNIT 3	1958	18	80

TEMPORARY CONNECTION CURVE DATA

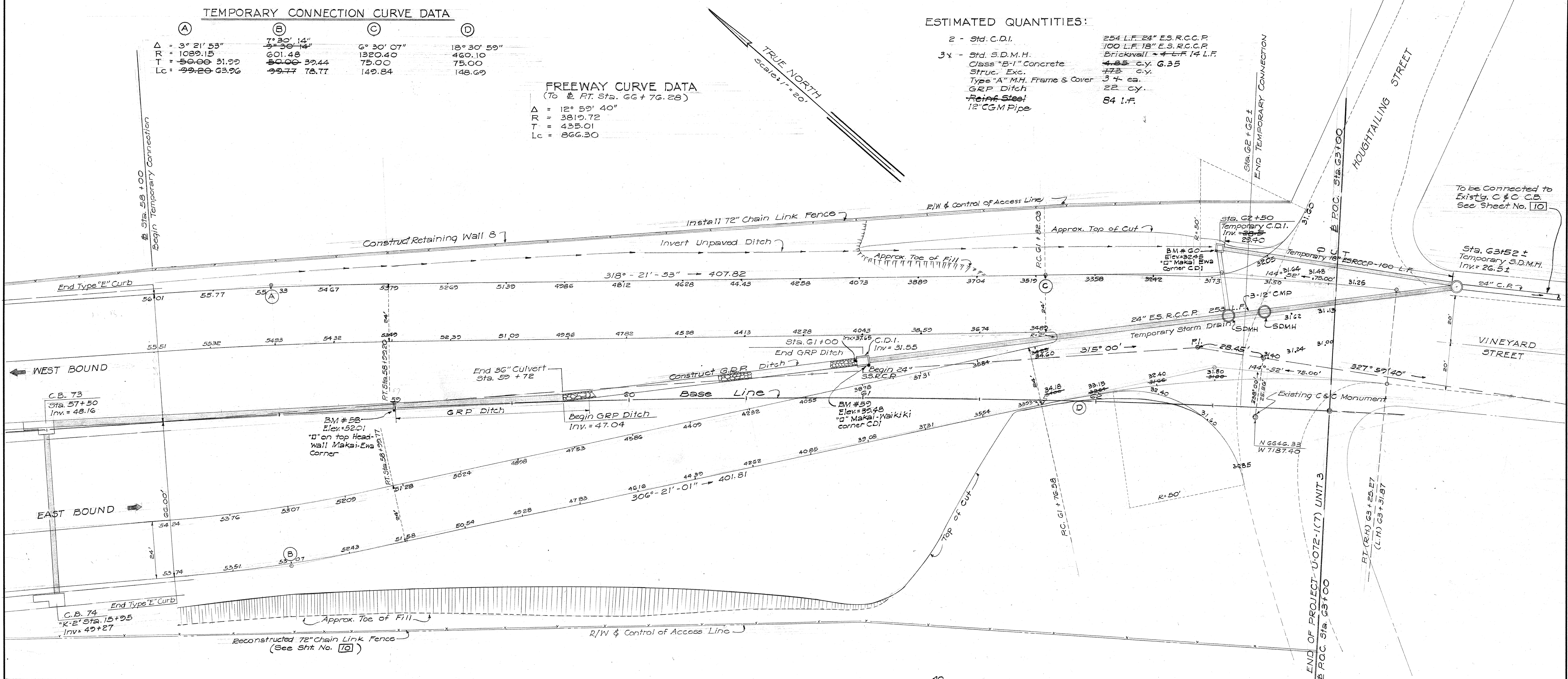
(A)	(B)	(C)	(D)
$\Delta = 3^\circ 21' 53''$	$7^\circ 30' 14''$	$6^\circ 30' 07''$	$18^\circ 30' 59''$
$R = 1089.15$	601.48	1320.40	460.10
$T = 50.00$	50.00	75.00	75.00
$Lc = 99.20$	99.77	140.84	148.60

FREEWAY CURVE DATA
(To & From Sta. 66+76.28)

$\Delta = 12^\circ 50' 40''$
$R = 3810.72$
$T = 435.01$
$Lc = 866.30$

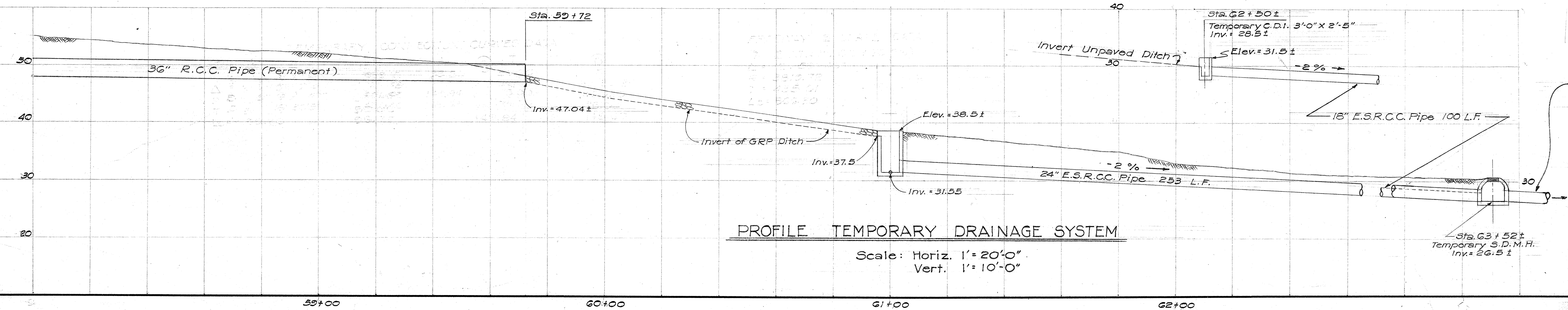
ESTIMATED QUANTITIES:

2 - Std. C.D.I.	254 L.F. 24" E.S.R.C.C.P.
34 - Std. S.D.M.H.	100 L.F. 18" E.S.R.C.C.P.
Class "B-1" Concrete	Brickwall - 4 L.F. 14 L.F.
Struc. Exc.	4-85 C.Y. G.35
Type "A" M.H. Frame & Cover	175 C.Y.
GRP Ditch	34 ea.
Rein. Steel	22 cy.
12" CGM Pipe	84 L.F.



PROFILE TEMPORARY DRAINAGE SYSTEM

Scale: Horiz. 1" = 20'-0"
Vert. 1" = 10'-0"



TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
TEMPORARY CONNECTION
STA. 58+00 TO HOUGHTAILING ST.
LUNALILO FREEWAY U-072-1(7) UNIT 3
Scale: 1" = 20'-0" or as noted - March 1958

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HI	105B	1960	80	103

NOTE: ALL GRADES SHOWN ARE FINISHED PAVEMENT GRADES

- ⑬ K-1 CURVE DATA

$\Delta = 47^{\circ}12'24"$
 $R = 500.00$
 $T = 218.48$
 $Lc = 411.98$
- ⑭ K-2 CURVE DATA

$\Delta = 30^{\circ}00'00"$
 $R = 218.14$
 $T = 58.45$
 $Lc = 114.22$
- ⑮ K-4 CURVE DATA

$\Delta = 37^{\circ}00'00"$
 $R = 178.50$
 $T = 59.73$
 $Lc = 115.27$
- ⑯ K-1 CURVE DATA

$\Delta = 42^{\circ}09'00"$
 $R = 536.00$
 $T = 206.56$
 $Lc = 394.31$
- ⑰ K-2 CURVE DATA

$\Delta = 41^{\circ}00'00"$
 $R = 248.00$
 $T = 92.72$
 $Lc = 177.47$
- ⑱ K-4 CURVE DATA

$\Delta = 60^{\circ}00'00"$
 $R = 133.00$
 $T = 76.79$
 $Lc = 139.28$
- ⑲ K-2 CURVE DATA

$\Delta = 71^{\circ}00'00"$
 $R = 220.00$
 $T = 156.92$
 $Lc = 272.62$
- ⑳ K-4 CURVE DATA

$\Delta = 37^{\circ}00'00"$
 $R = 175.00$
 $T = 58.55$
 $Lc = 113.05$
- ㉑ K-5 CURVE DATA

$\Delta = 97^{\circ}13'00"$
 $R = 140.00$
 $T = 158.85$
 $Lc = 237.54$
- ㉒ K-4 CURVE DATA

$\Delta = 60^{\circ}00'00"$
 $R = 125.00$
 $T = 72.17$
 $Lc = 130.90$
- ㉓ K-5 CURVE DATA

$\Delta = 97^{\circ}13'00"$
 $R = 150.00$
 $T = 170.19$
 $Lc = 254.51$

NOTE: SEE GRADING PLAN for grading in this area. Sht. No. 31

SURVEY PLOTTED BY	DATE
DESIGNED BY	10-56
TRACED BY	10-56
QUANTITIES BY	10-56
CHECKED BY	10-56
NOTED BY	10-56

