

PLAN	DATE
DESIGNED	
CHECKED	
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BY	

PROFILE	DATE
DESIGNED	
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BY	

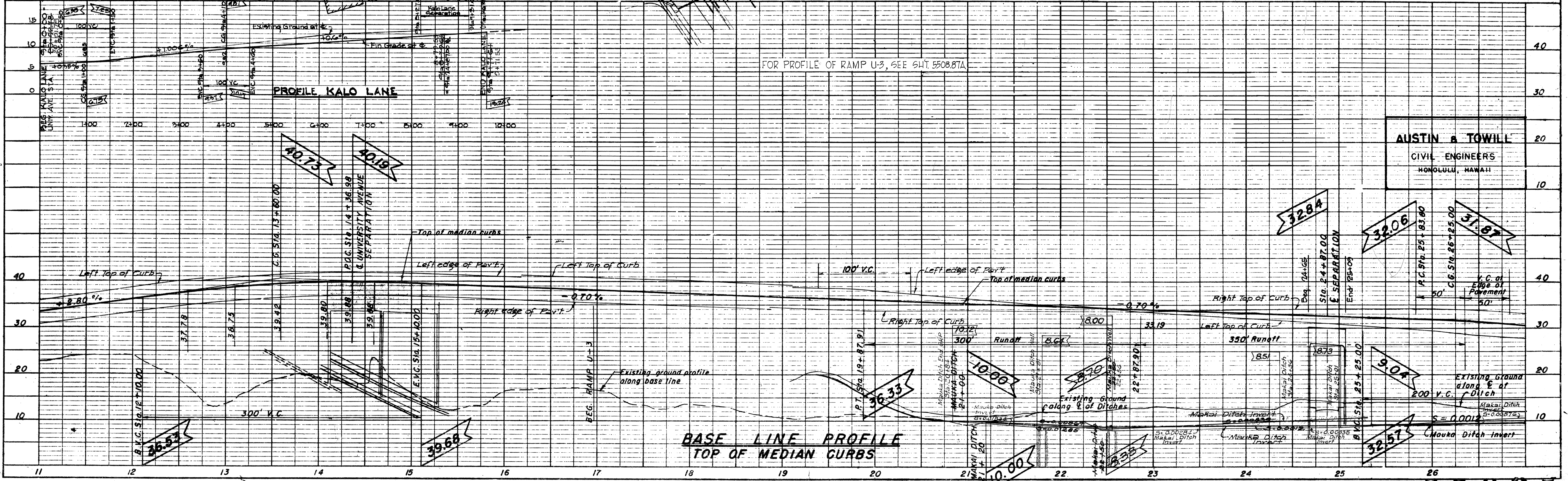
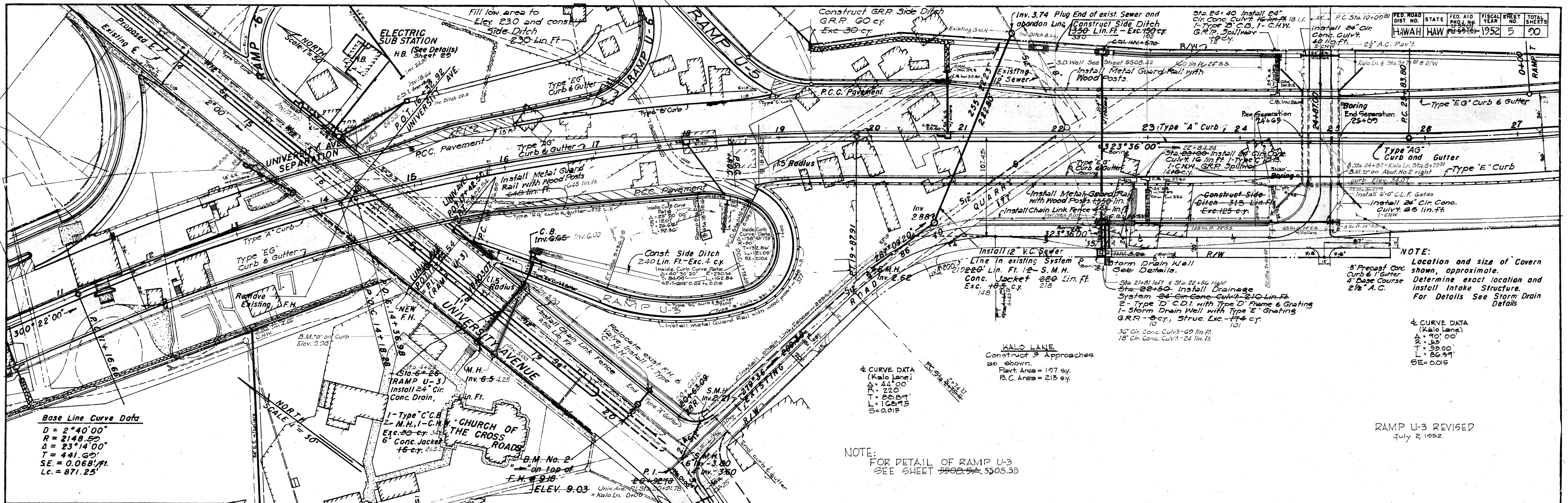


PLATE 1-PLAN-PROFILE O.P.R.A.E. STANDARD
 KALUPEL & ESSER CO., NEW YORK

K & E Co. No. 348-HC
 1101 BRUNNEN, ALBANY, N.Y.

DD-5-13

5508.5

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	LIAN	FU508.5B	1952	25	90

RAMP U-3 REVISED
8/27/52

SCALE: 1" = 20'

POC Sta. 14+18.28
Extg. Univ. Ave. & Sta. 16+32.92

HONOLULU

KAIMUKI

MANOA

UNIVERSITY AVE.

RAMP U-3

KALO LANE

Ramp U-3 Sta. 4+23 ~ Install 24" E.S. Reinf. conc. culvt. pipe and 24" E.S. Reinf. conc. culvt. pipe; 1- Type "C" C.B. with type "B" C.I. Fr. & Cov.; 2- Type "D" Manholes with type "A" C.I. Fr. & Cov.; 1- CONC. Jacket around pipe under roadway.
Estimated Quantities: ~
24" E.S. Conc. Pipe — 96 LF 92
24" E.S. Conc. Pipe — 16 LF 10
Class "A-1" Conc. — 6 cy. 3.8
Class "B-1" Conc. — 28 cy. 21.5
Reinf. Steel — 362 lbs. 766
Struc. Exc. — 50 cy. 34

Ramp U-3 ~ Estimated Quant.
P.C. Pavt. Area — 388 sq. 362
Pavt. Area — 605 sq. 742
Embankment — 556 sq. 11,222
Select Borrow — 1,946 sq. 1,773

INSIDE CURB CURVE DATA
Δ = 125° 00' 00"
R = 120'
T = 26.60'
L = 52.36'
SE = 0.104 to 0.015 / ft.

INSIDE CURB CURVE DATA
Δ = 138° 48' 17"
R = 50'
T = 132.86'
L = 121.00'
SE = 0.104 / ft.

OUTSIDE CURB CURVE DATA
Δ = 41° 25' 00"
R = 240.23'
T = 90.22'
L = 173.66'

Sta. 18+00 & Ramp U-3 Sta. 0+30 ~ Install 24" E.S. Reinf. Conc. culvt. pipe with conc. collars; 2- Type "C" C.B. with type "B" C.I. Fr. & Cov.; 1- C.H.W. ; G.R.P. Spillway.
Estimated Quantities: ~
24" E.S. Conc. Pipe — 88 LF 83
Class "A-1" Conc. — 12 cy. 10.6
Class "B-1" Conc. — 12 cy. 13
Reinf. Steel — 232 lbs.
Struc. Exc. — 13 cy. 16
G.R.P. — 10 cy. 7

NOTE:
See Sheet 5508.5A For Profile and X-Sections of Ramp U-3.

NOTE:
This Sheet Supersedes Sheet 5508.5A 8/27/52

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

PLAN
RAMP U-3
PROJECT FU508.5B U50(3)

Scale: 1" = 20'

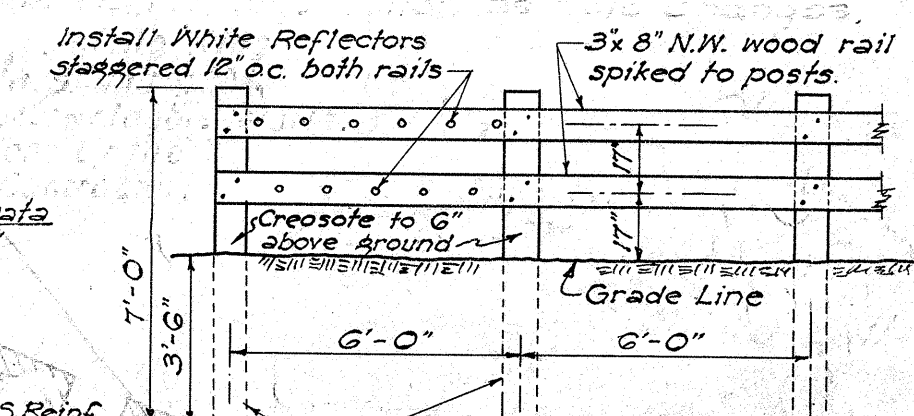
Aug. 1952

SHEET NO. OF SHEETS

5508.5B

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

NOTE:
All electric poles within R/W to be relocated by H.E. Co., Ltd.
Existing 24" and 8" C.I. Water Mains along Old Waialae Road and 8" C.I. along King St. shall be lowered by the Contractor. The connection of the new work to the existing system shall be done by the B.W.S. and paid for by the Contractor.



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

Drainage System - S. King St.
Install 18" S.S. Reinf. Conc. Culvert with Type "D" Catch Basin with 18" Conc. Frame & Cover, 1" Type "D" Manhole with Type "A" C.I. Frame & Cover. 18" Conc. Pipe = 144 Lin. Ft. 135 Class "A" Conc. = 34 cy. 33 Reinf. Steel = 34 lb. Struc. Exc. = 445 cy. 151

RAMP T
Inside Curb Curve Data
D = 5° 36' 00"
R = 1023.14
Δ = 24° 21' 50"
T = 220.88
Lc = 435.07
SE = 0.0263

Sta. 31+00 (BASE LINE)
Sta. 3+54 (RAMP T)
Install 24" Circ. Conc. Drain 40 Lin. Ft. 1- Type "B" C.B. 1- Type "A" C.B. 1- C.H.W. 2 c.y. G.R.P.

3+25
Sta. 3+30-50 RAMP T-1
Install 24" Circ. Conc. Drain 240 Lin. Ft. 1- Type "B" C.B. 1- C.H.W. 1-C.D.I. 7 c.y. G.R.P.

Construct Side Ditch 1050 Lin. Ft. 245+65 c.y.
Toe of Fill

Inv. Elev. 10.30 (Type "EG" Curb and Gutter)
295° 00' 00"

Edge of Existing Pavement
Prop. Line
Existing 8" Water Line
Make easy riding connection to existing pavement

Install Chain Link Fence 200 Lin. Ft. 57+20 c.y.

Install Metal Guard Rail with Wood Posts 350 Lin. Ft. 426
Future Drain (by Others)

RAMP T-2
Inside Curb Curve Data
Δ = 11° 42'
R = 475.00
T = 32.02
Lc = 61.54
SE = 0.104

RAMP T-2
Inside Curb Curve Data
Δ = 20° 00'
R = 55.50
T = 55.50
Lc = 87.18

RAMP T-1
Inside Curb Curve Data
Δ = 38° 23'
R = 100'
T = 34.81
Lc = 66.95

RAMP T-1
Outside Curb Curve Data
Δ = 38° 23'
R = 124'
T = 43.16
Lc = 83.07

RAMP T-1
Inside Curb Curve Data
Δ = 38° 23'
R = 100'
T = 34.81
Lc = 66.95

RAMP T-1
Outside Curb Curve Data
Δ = 38° 23'
R = 124'
T = 43.16
Lc = 83.07

RAMP T-1
Inside Curb Curve Data
Δ = 38° 23'
R = 100'
T = 34.81
Lc = 66.95

RAMP T-1
Outside Curb Curve Data
Δ = 38° 23'
R = 124'
T = 43.16
Lc = 83.07

RAMP T-1
Inside Curb Curve Data
Δ = 38° 23'
R = 100'
T = 34.81
Lc = 66.95

RAMP T-1
Outside Curb Curve Data
Δ = 38° 23'
R = 124'
T = 43.16
Lc = 83.07

BASE LINE CURVE DATA
D = 3° 00' 00"
R = 1909.86
Δ = 22° 29' 00"
T = 379.60
S = 0.071
Lc = 749.44

RAMP T-1
Inside Curb Curve Data
D = 12° 03' 44"
R = 475.00
Δ = 18° 39' 10"
T = 78.00
S = 0.104
Lc = 154.64

Fill Area to Elev. 20.0 to effect Drainage Shoulder Elev.

Reconstruct existing Chain Link Fence 200 Lin. Ft. 426

Install Chain Link Fence 200 Lin. Ft. 426

Install Metal Guard Rail with Wood Posts 350 Lin. Ft. 426

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NOTE:
The Contractor if he so elects, may pour footings in neatly excavated holes to eliminate formwork.

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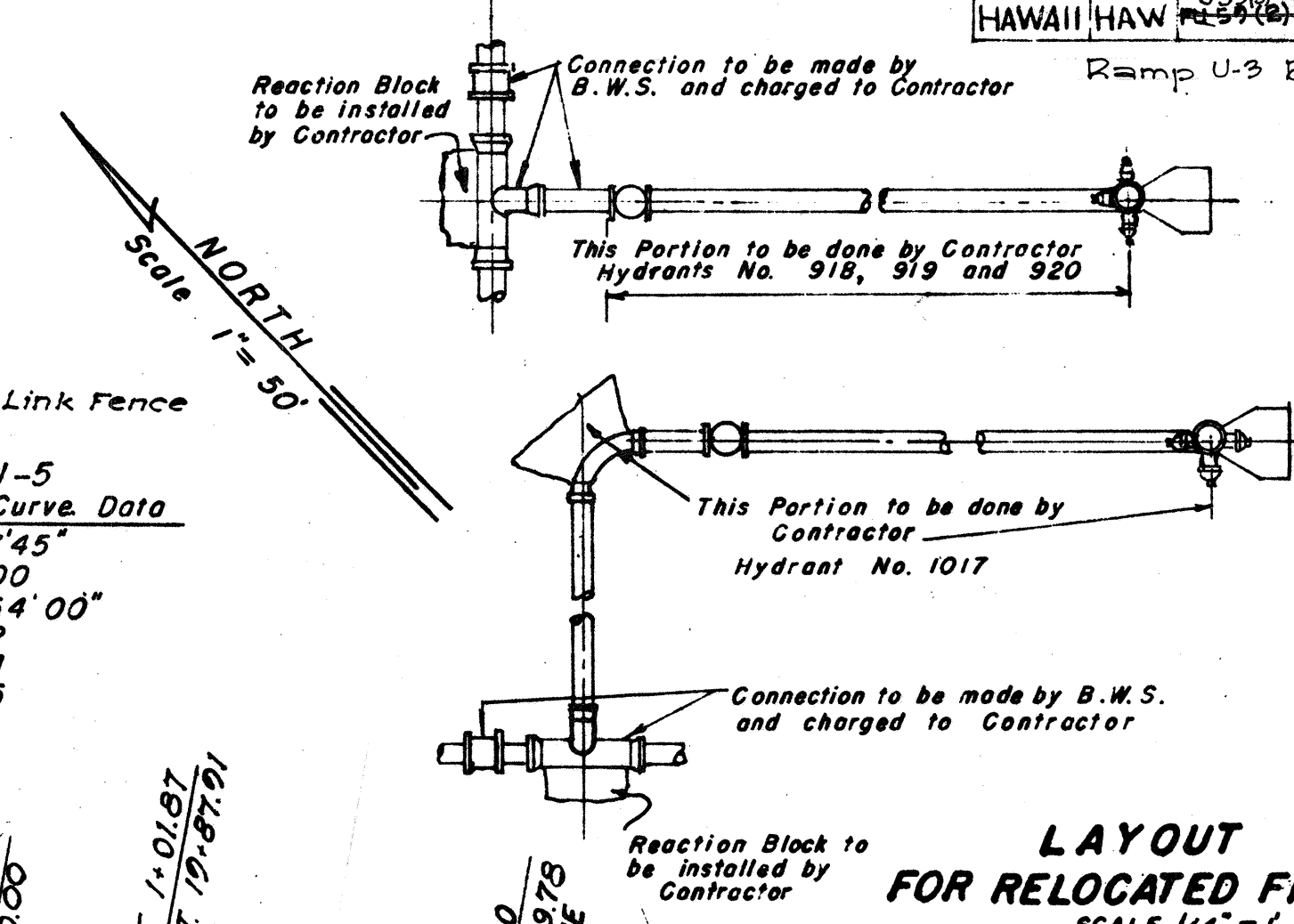
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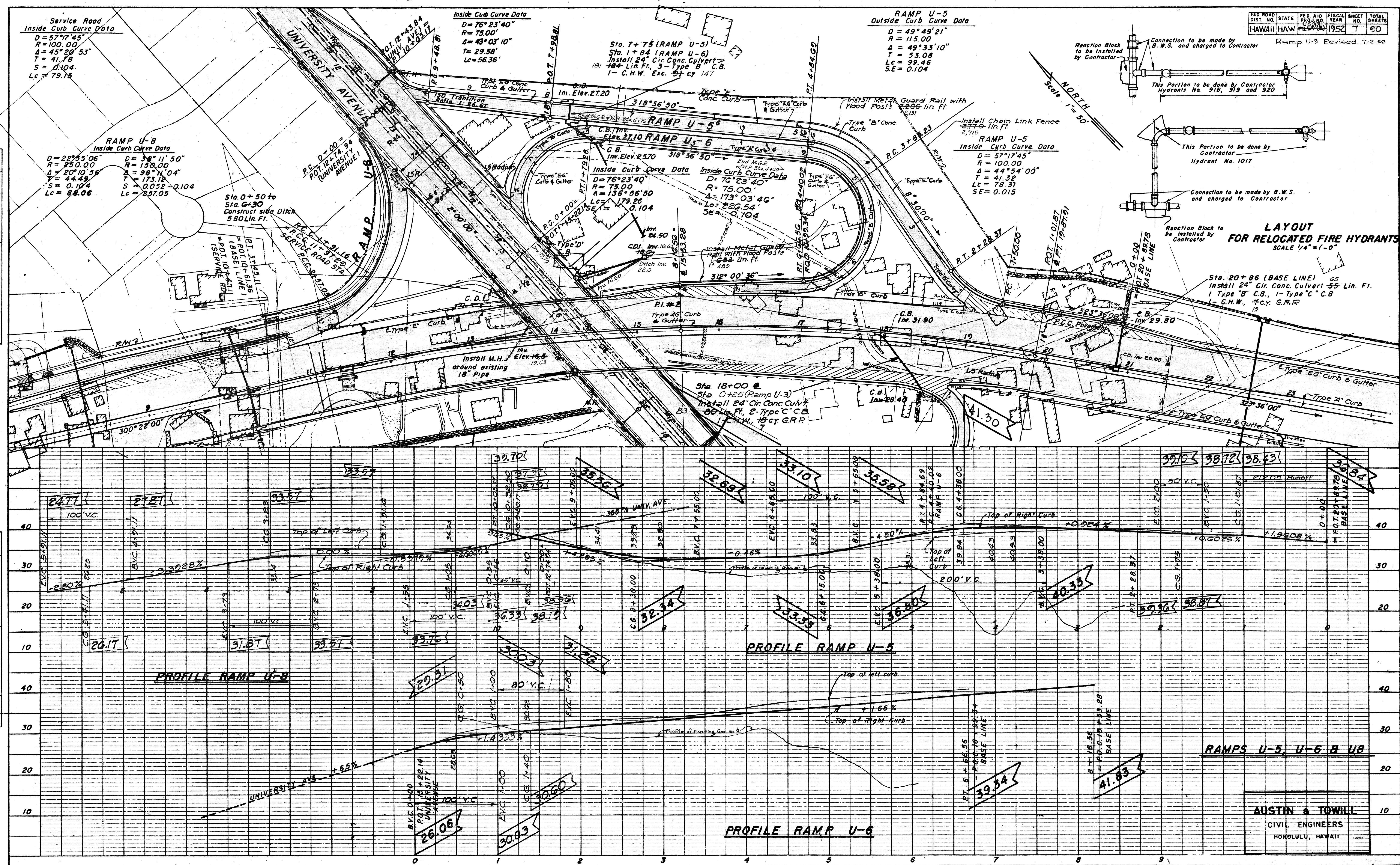
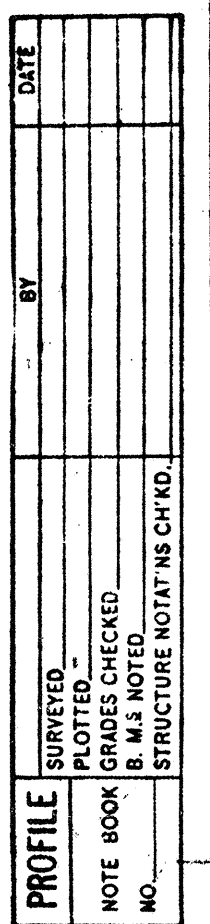
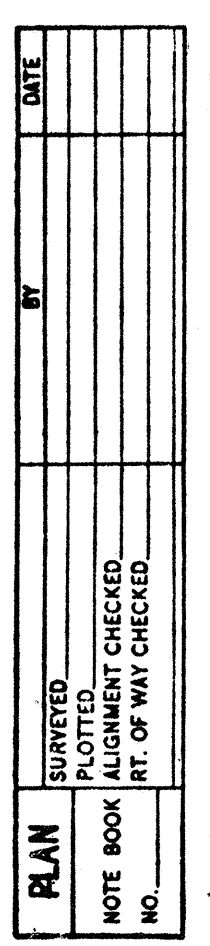
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	U-53(2) PL-54(2)	1952	T	90

Ramp U-3 Revised 7-2-52



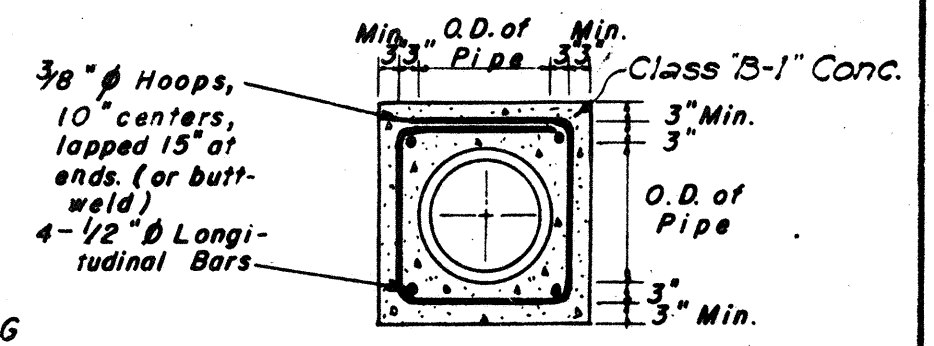
LAYOUT
FOR RELOCATED FIRE HYDRANTS
SCALE 1/4" = 1'-0"

Sta. 20+86 (BASE LINE) G5
Install 24" Cir. Conc. Culvert ~~55~~ Lin. Ft.
1 Type "B" C.B., 1-Type "C" C.B.
1- C.H.W., 7cy. G.R.R.



RAMP U-3 REVISED
July 2, 1952

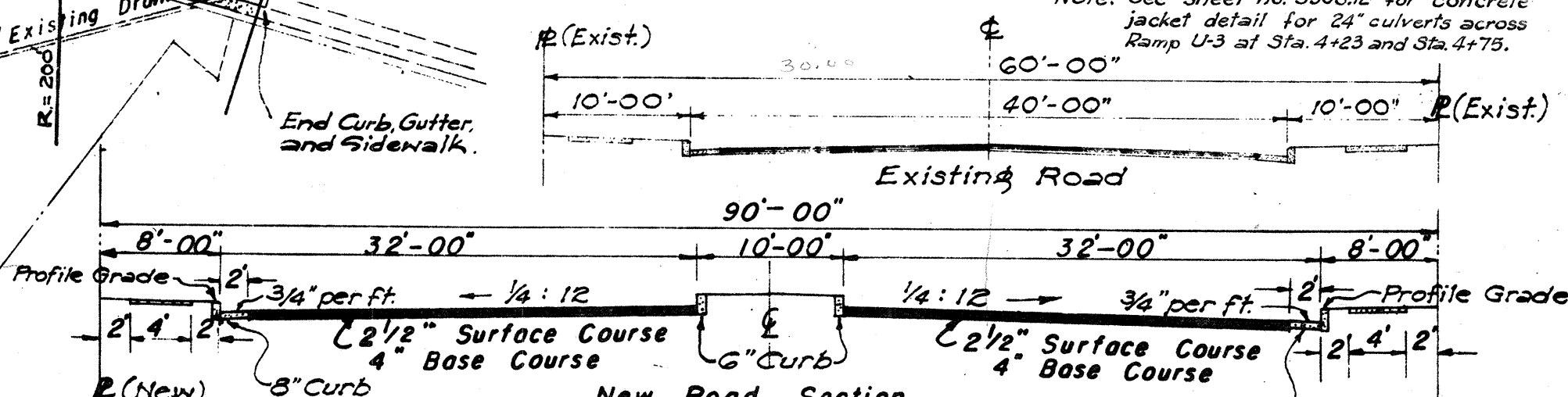
NORTH
Scale 1" = 50'



NOTE: RECONSTRUCT EXISTING PAVEMENT OF UNIVERSITY AVENUE TO NEW LINE AND GRADE.

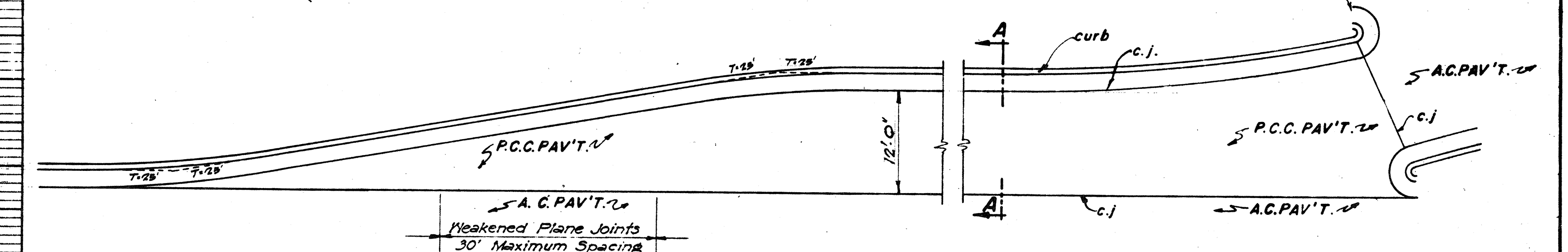
DETAIL OF CONG. JACKET
SCALE 3/8" = 1'-0"
(For Storm Drain Crossings
UNIVERSITY AVENUE)

Note: See sheet no. 5508.12 for concrete jacket detail for 24 inch culverts across Ramp U-3 at Sta. 4+23 and Sta. 4+79.



TYPICAL ROAD SECTION
UNIVERSITY AVENUE
SCALE 1" = 10'-00"

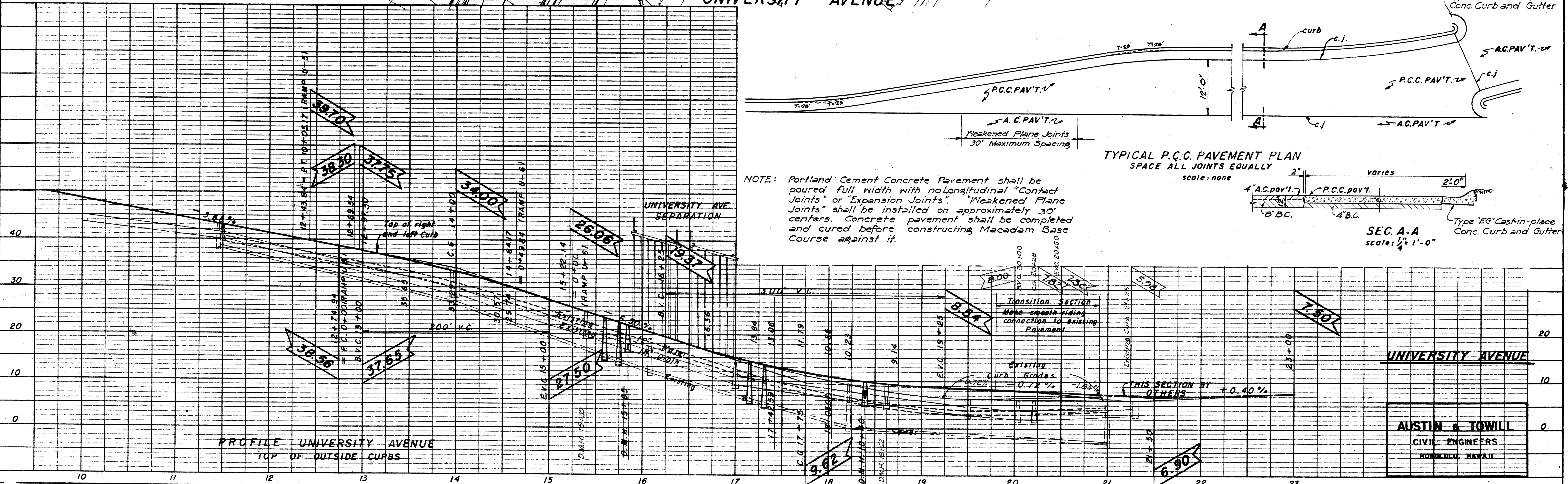
UNIVERSITY AVENUE



TYPICAL P.C.C. PAVEMENT PLAN
SPACE ALL JOINTS EQUALLY
scale: none

NOTE: Portland Cement Concrete Pavement shall be poured full width with no longitudinal "Contact Joints" or "Expansion Joints". "Weakened Plane Joints" shall be installed on approximately 30' centers. Concrete pavement shall be completed and cured before constructing Macadam Base Course against it.

SEC. A-A
scale: 1/2" = 1'-0"



PROFILE UNIVERSITY AVENUE
TOP OF OUTSIDE CURBS

AUSTIN & TOWILL
CIVIL ENGINEERS
HONOLULU, HAWAII