FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-061-1(7) UNIT 5	1960	139	176

6/14/60

GENERAL NOTES

CONSTRUCTION METHODS

Curb and sidewalk on bridge shall not be poured until after release of falsework.

Placing of backfill at bridge shall not be started until after the concrete in the superstructure has reached a strength of 3,000 lbs per sq. inch. The fill must be brought up evenly and simultaneously at both ends of the structure so as to avoid one sided earth pressure.

Footings shall be poured to neat lines. In case of overexcavation, space between footing and ground shall be filled with concrete at the contractors expense. This fill concrete shall have a minimum quality of class D-1.

MATERIALS

All concrete class A-1 unless otherwise noted on the plans.

All steel reinforcement shall be intermediate grade.

ADMIXTURE

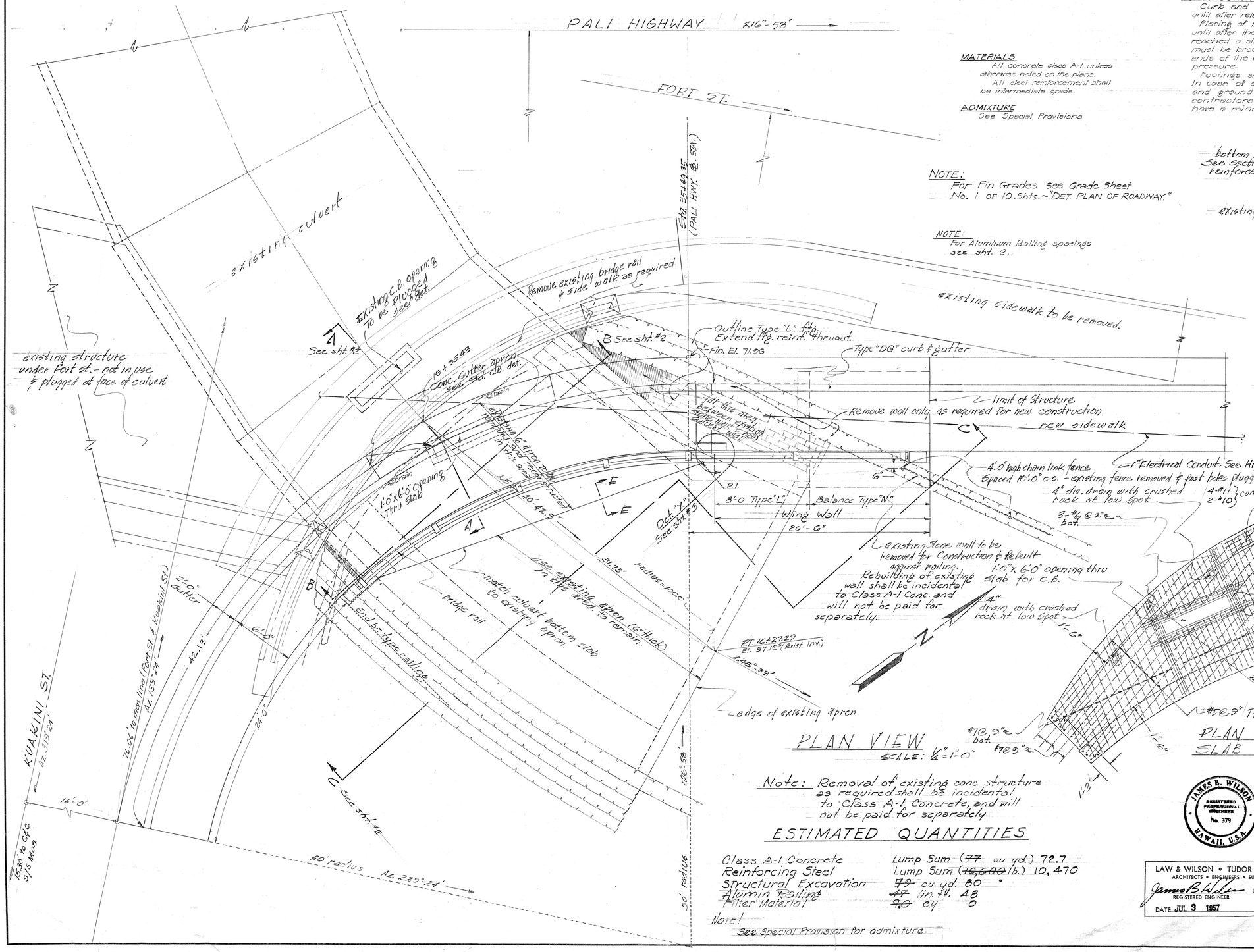
See Special Provisions

NOTE:

For Fin. Grades see Grade Sheet No. 1 of 10 Shts. - "DET. PLAN OF ROADWAY."

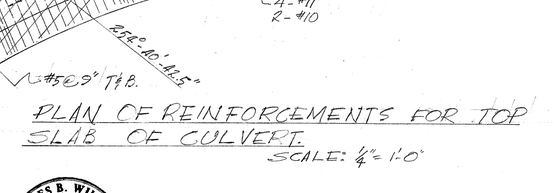
NOTE:

For Aluminum Railing spacings see sht. 2.



PLAN VIEW
SCALE: 1/4" = 1'-0"

PLAN OF REINFORCEMENTS FOR TOP SLAB OF CULVERT
SCALE: 1/4" = 1'-0"



SECTION E-E
SCALE: 1/2" = 1'-0"

Note: Removal of existing conc. structure as required shall be incidental to Class A-1 Concrete, and will not be paid for separately.

ESTIMATED QUANTITIES

Class A-1 Concrete	Lump Sum (~~77~~ cu. yd.)	72.7
Reinforcing Steel	Lump Sum (~~10,000~~ lb.)	10,470
Structural Excavation	~~79~~ cu. yd.	80
Alumin Railing	~~47~~ lin. ft.	48
Filler Material	~~90~~ c.y.	0

Note!
See Special Provision for admixture.

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DATE JUL 3 1957

STRUCTURE # 7

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII
PALI HIGHWAY
PROJECT NO BU-061-1 (7) UNIT 5
CULVERT EXTENSION AT PAUOA STREAM
STRUCTURAL DETAILS
SEPT. 1957

SHEET No. 1 OF 3 SHEETS

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

B.S147.139

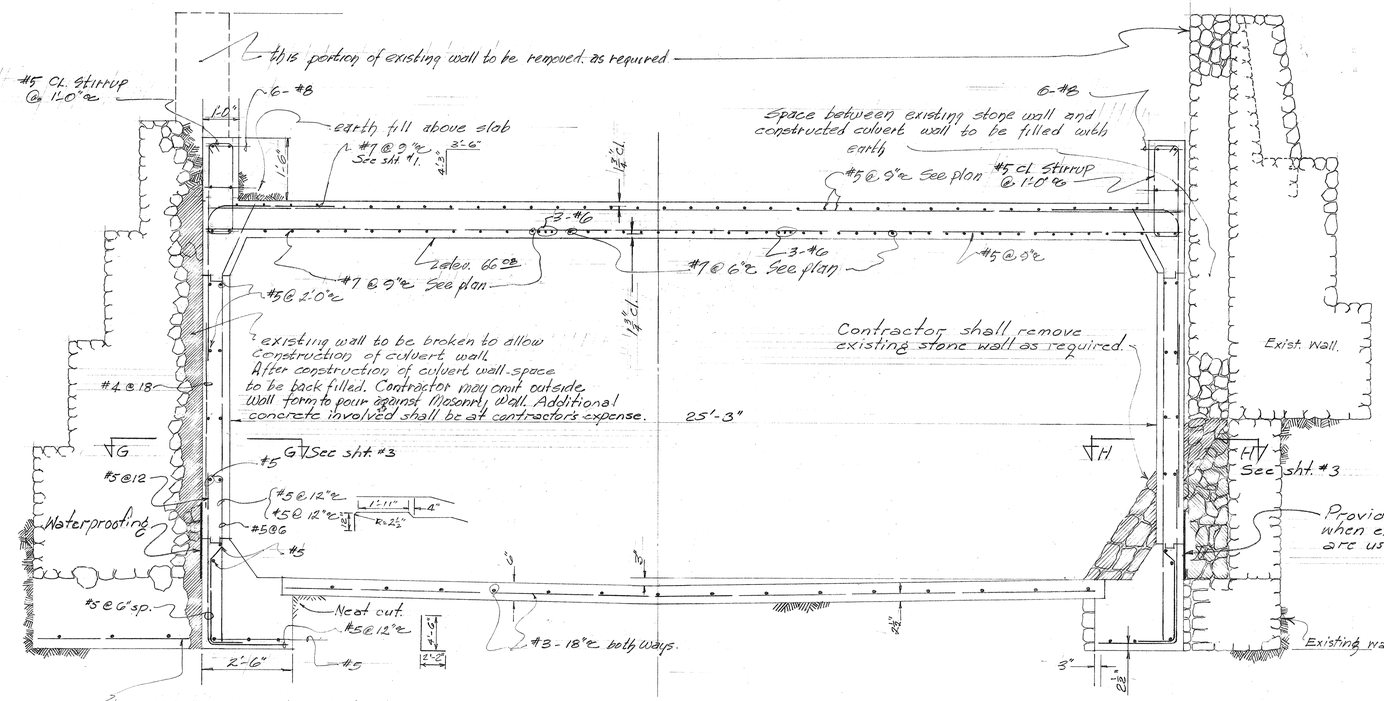
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20

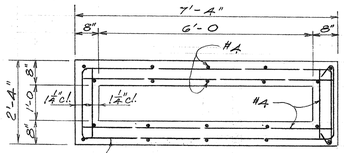
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FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAWI	BU-061-1(7) UNIT 5	1960	140	176

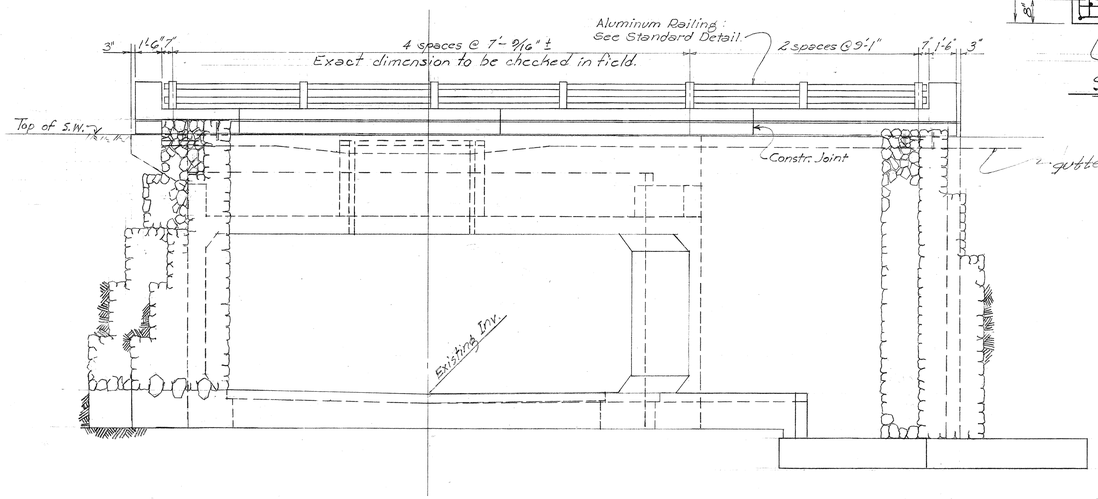
6/14/60



SECTION B-B (For location see sht #1.)
SCALE: ½" = 1'-0"

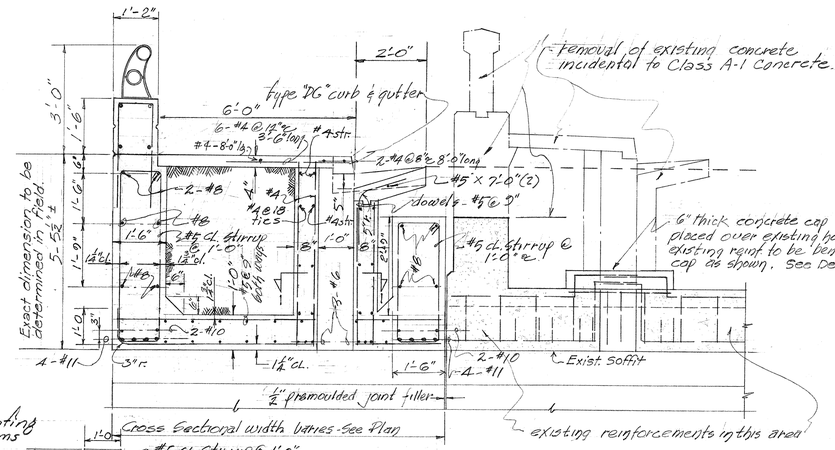


SECTION "1-1"
½" = 1'-0"

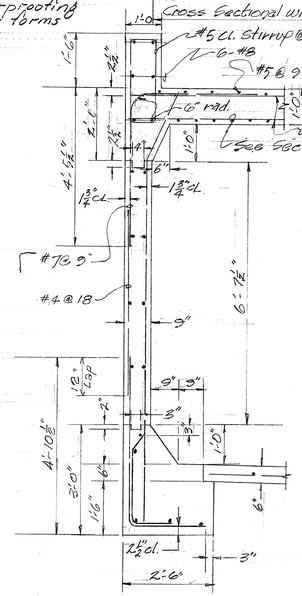


ELEVATION C-C (For location see sht #1)
SCALE: ¼" = 1'-0"

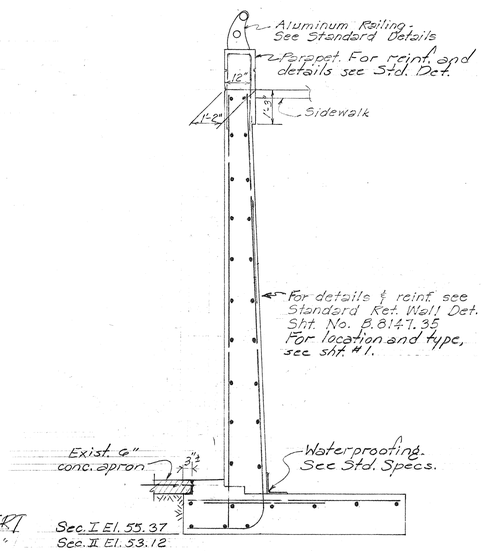
NOTE:
For Aluminum Railing details see Standard Details.



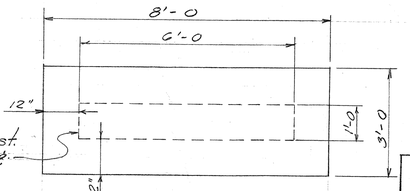
SECTION A-A (For location see sht #1.)
SCALE: ½" = 1'-0"



TYPICAL WALL SECTION OF CULVERT
SCALE: ½" = 1'-0"



TYPICAL WING WALL SECTION
Scale: ⅜" = 1'-0"



CAP DETAIL
Scale: ½" = 1'-0"

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James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1957

STRUCTURE #7

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY

PROJECT NO. BU-061-1(7) UNIT 5

CULVERT EXTENSION AT PAUOA STREAM

STRUCTURAL DETAILS

SEPT. 1957

SHEET NO. 2 OF 3 SHEETS

B.8147.140

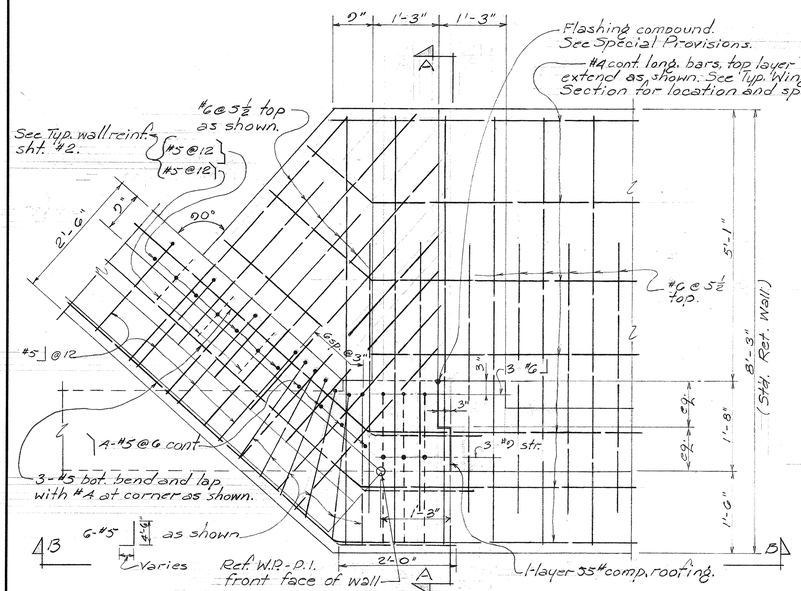
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	DESIGNED BY	
	DRAWN BY	
	TRACED BY	
NOTE BOOK	QUANTITIES BY	
No.	QUANTITIES CHECKED BY	CY
	CHECKED BY	

21

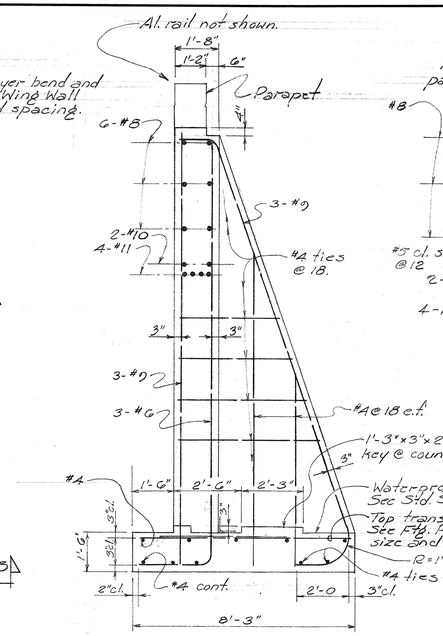
PRINTED ON DIEPO 1000H CLEARPRINT

140

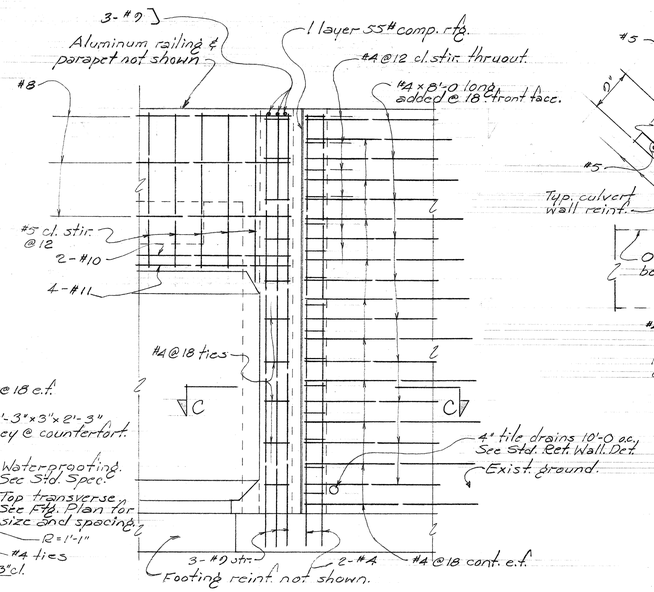
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	H.W.	BU-OGI-1(7) UNIT 5	1960	141	176



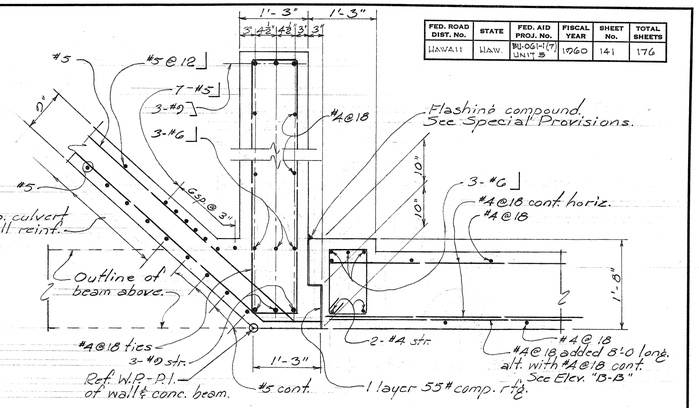
DETAIL "X" - FOOTING REINF.
Scale: 3/4" = 1'-0



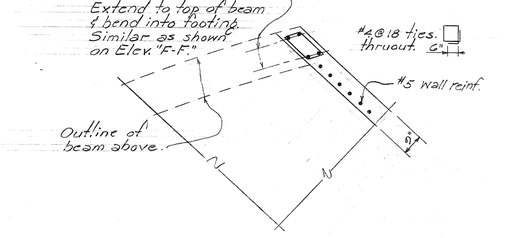
SECTION "A-A"
Scale: 3/8" = 1'-0



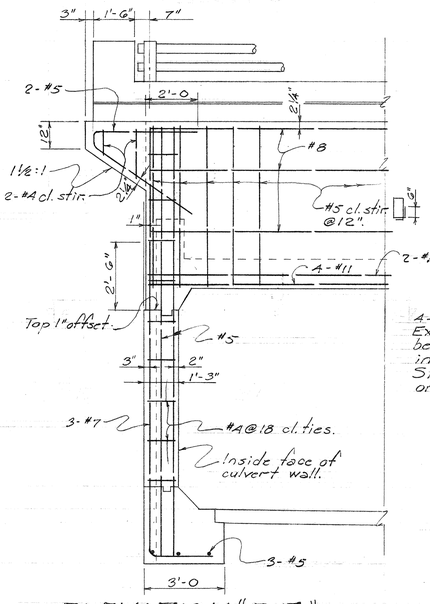
ELEVATION "B-B"
Scale: 3/8" = 1'-0



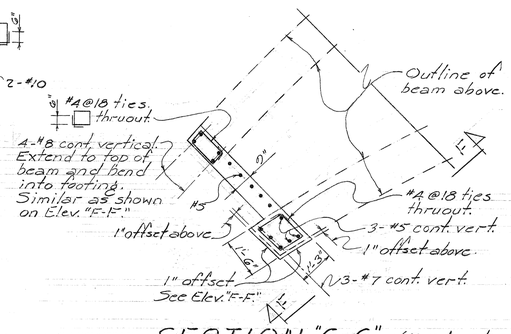
SECTION "C-C"
Scale: 3/4" = 1'-0



SECTION "H-H" (For location see sht. #2.)
Scale: 3/8" = 1'-0



ELEVATION "F-F"
Scale: 3/8" = 1'-0



SECTION "G-G" (For location see sht. #2.)
Scale: 3/8" = 1'-0

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

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY
PROJECT NO. BU-OGI-1(7) UNIT 5
CULVERT EXTENSION AT PAUOA STR.
STRUCTURAL DETAILS
FEB. 1960

SHEET No. 3 OF 3 SHEETS

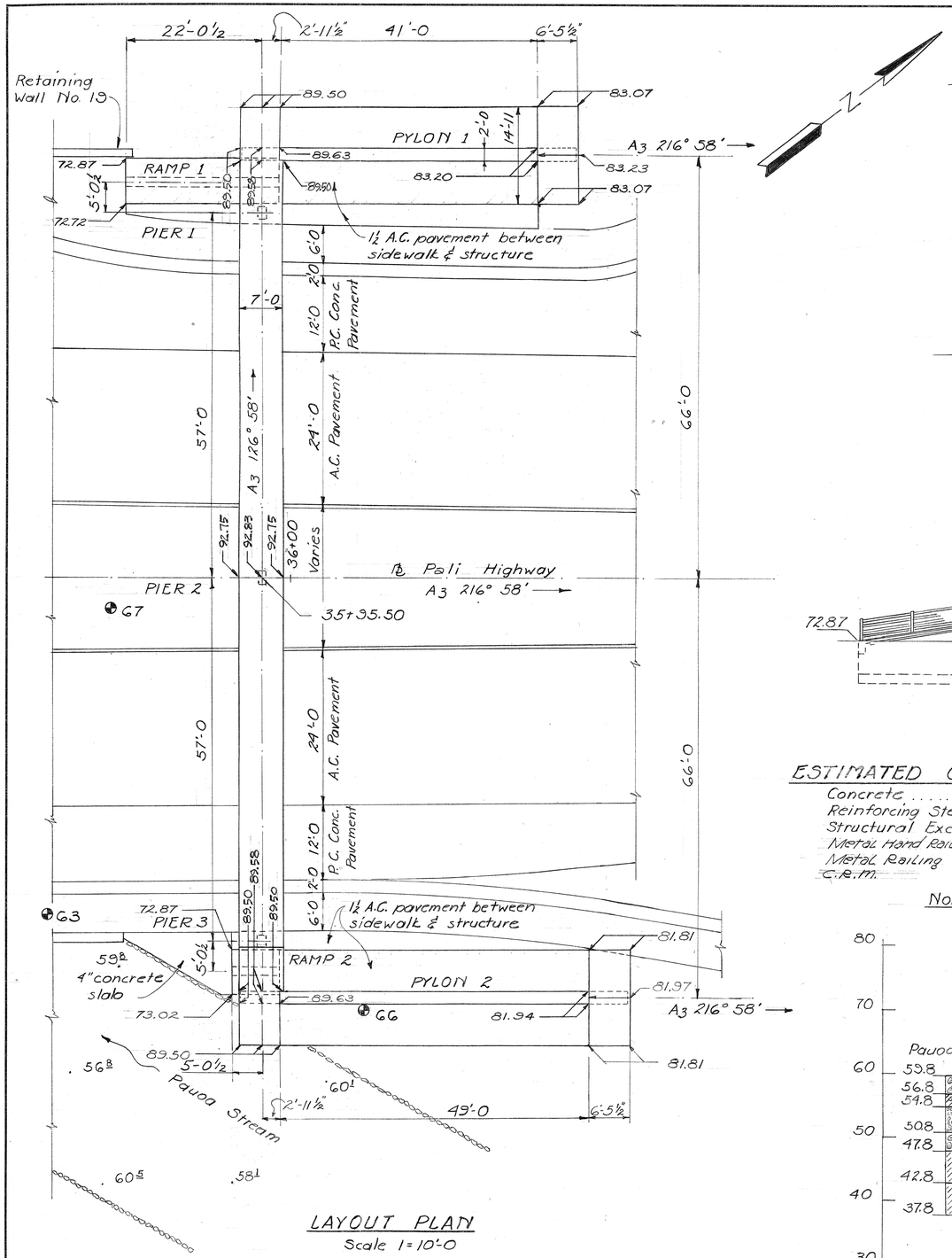
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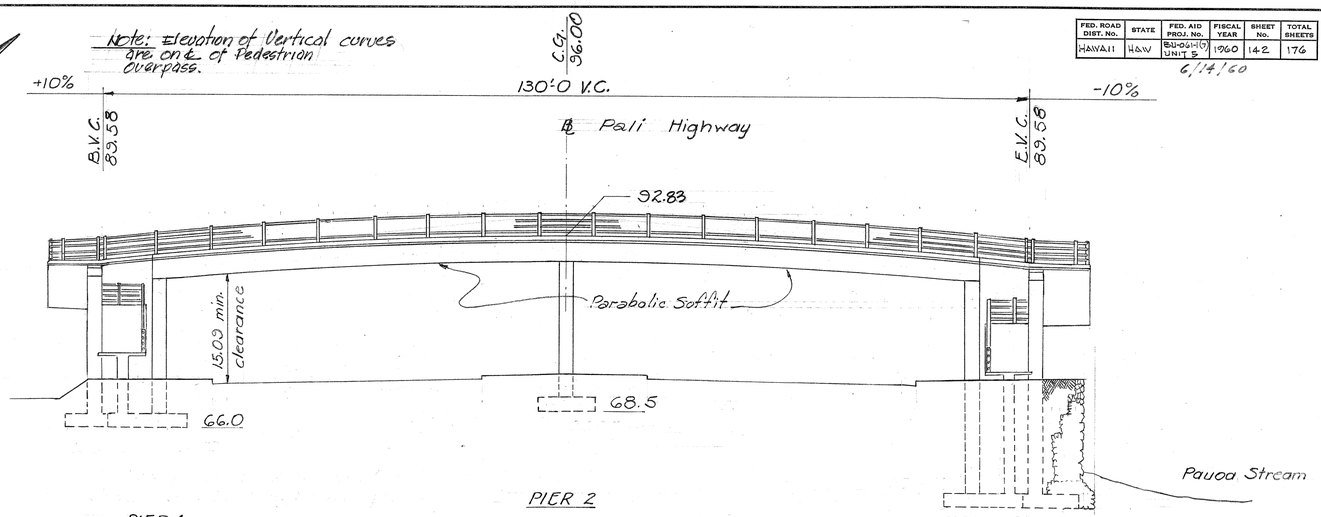
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-061-1(7) UNIT 5	1960	142	176

6/14/60

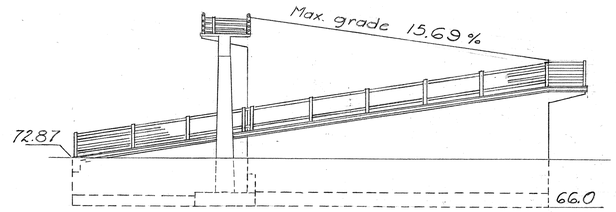


LAYOUT PLAN
Scale 1=10'-0

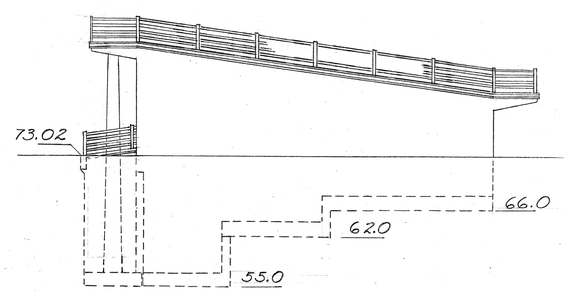
Note: Elevation of Vertical curves are on ℄ of Pedestrian Overpass.



ELEVATION
Scale 1=10'-0



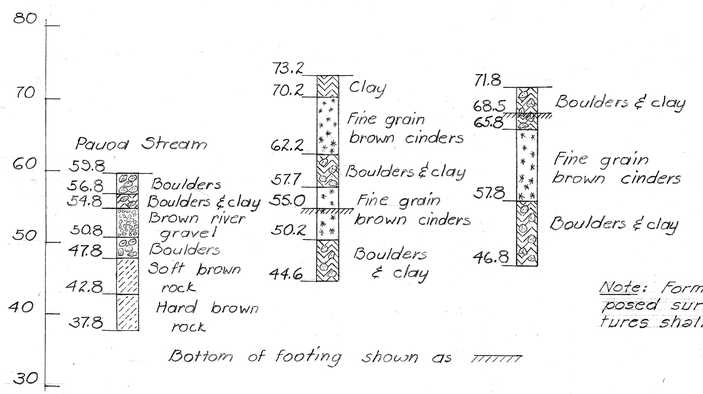
ELEVATION- PYLON 1
Scale 1=10'-0



ELEVATION- PYLON 2
Scale 1=10'-0

ESTIMATED QUANTITIES

Concrete	Lump Sum (~~348~~ cu.yd)	343.4
Reinforcing Steel	Lump Sum (34,500 lbs)	34,544
Structural Excavation	~~476~~ cu. yd.	428
Metal Hand Railing	92.0 Lin. Ft.	
Metal Railing	~~593.0~~ Lin. Ft.	588
C.R.M.	~~94~~ cu. yds.	15



LOG OF BORINGS
Scale 1=10'-0

GENERAL NOTES

Materials - All concrete shall be class A-1 - All steel reinforcement shall be intermediate grade.

Construction Methods - All walkway surfaces shall have a rough wearing surface produced by sprinkling ¼ lbs per sq. ft. of #8, #16 abrasive aggregate on fresh concrete and finishing it with a wood trowel. See Special Provisions.

All vertical surfaces and columns above the finish ground and to at least one foot below finished ground and top surface of pylons shall be given a class 2 finish. See Standard Specification for finish of other surfaces.

All footings shall be excavated & poured to neat lines. In case of over excavation space between footing and ground shall be filled with concrete at the Contractor's expense. This fill concrete shall have a minimun quality of Class D-1.

Metal Railing: See Special Provisions

Painting: See Special Provisions

Repairs to Galvanizing on Pipe Railings: See Sec. 44.3 (I) of Standard Specs.

Admixture - See Special Provisions.

Note: Forms for all exposed surfaces of structures shall be plywood.

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James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1961

STRUCTURE NO. 12

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY

PROJECT No. BU-061-1(7) UNIT 5
PEDESTRIAN OVERPASS AT
KUAKINI STREET
LAYOUT PLAN & BORINGS

SHEET No. 1 OF 6 SHEETS

ORIGINAL PLAN	
NOTE BOOK No.	
SURVEY PLOTTED BY	
DESIGNED BY	PPP
DRAWN BY	
TRACED BY	
QUANTITIES BY	
CHECKED BY	
CHECKED BY	
DATE	6-25-61

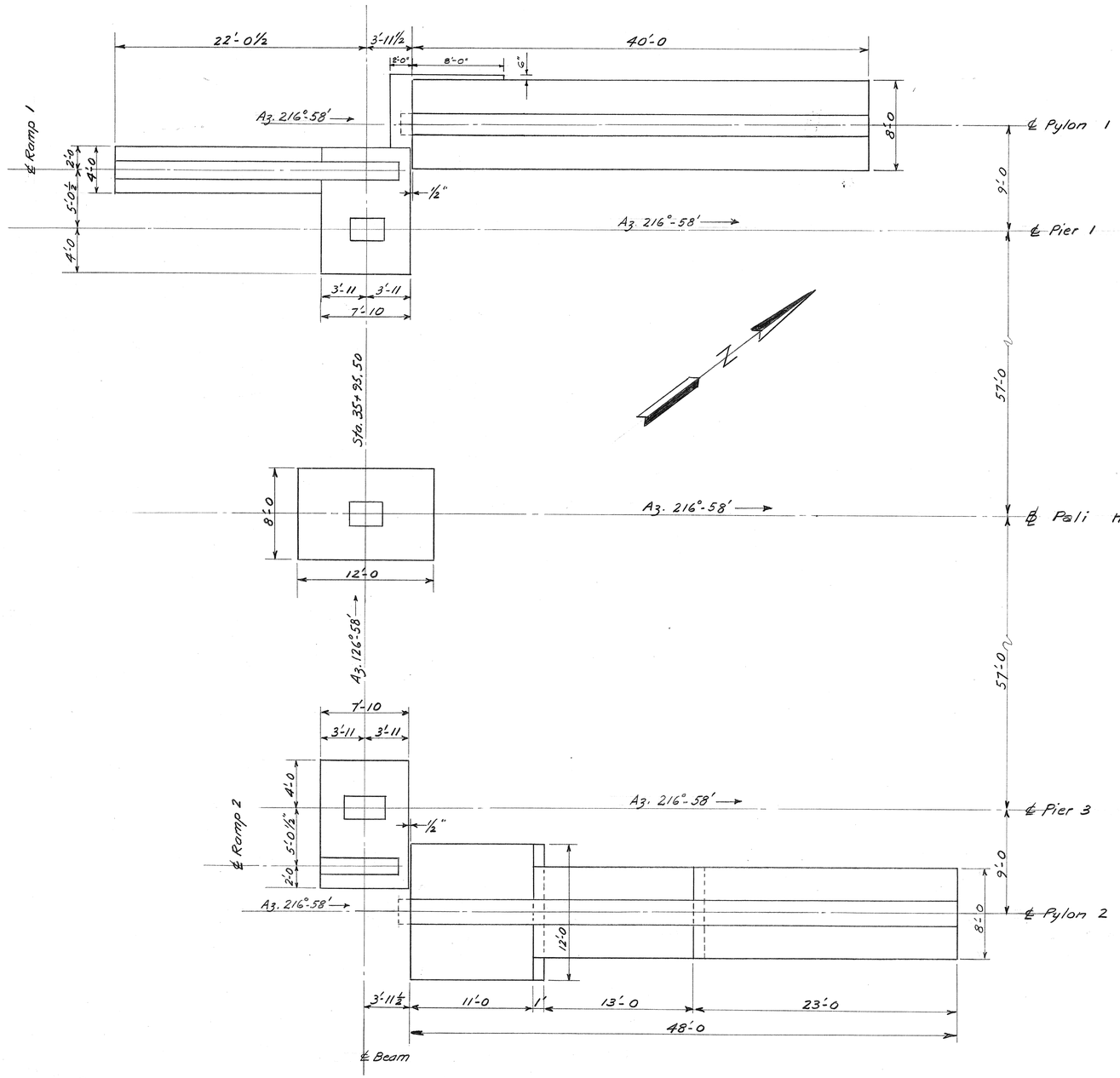
22

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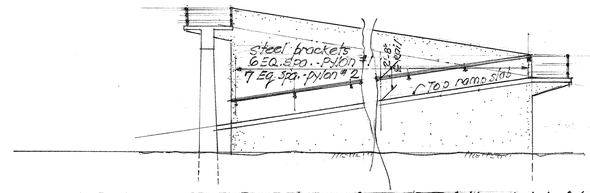
142

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-061(7) UNIT 5	1960	143	176

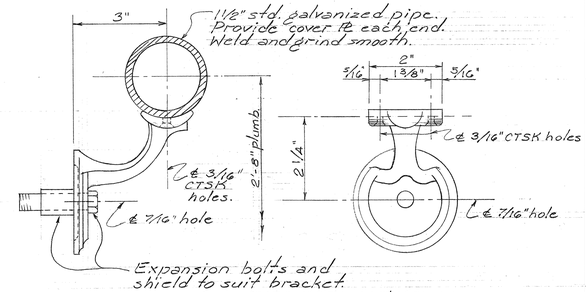


FOUNDATION PLAN

Scale: 3/16" = 1'-0



ELEVATION, TYPICAL METAL HAND RAIL ALONG FACE OF PYLON #1 & #2



TYPICAL PIPE HANDRAIL WALL BRACKET

Not to Scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY: P.E.P.	
	DRAWN BY: P.E.P.	
NOTE BOOK No.	TRACED BY	
	QUANTITIES BY	
	QUANTITIES CHECKED BY	6-25-57
	CHECKED BY: J.B.W.	

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James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 9 1957

STRUCTURE No. 12

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY

PROJECT No. BU-061-1(7) UNIT 5

PEDESTRIAN OVERPASS AT KUAKINI STREET

FOUNDATION PLAN

SHEET No. 2 OF 6 SHEETS

B.S147.143

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FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BU-061-1(7) UNIT 5	1960	144	176

6/14/60

Pali Highway

℄ Pier & footing below

Symmetrical about ℄ except for piers & footings

A-#8 MK8-1 x 28'-0"

8'-0 | 57'-0 | 57-0 | 8'-0

1'6 typ | #5 stirrups @12 | 2-MK11-1 | 1-#4 E.F. | 2-#4 cont in slab lapped with #8 | 2-MK11-2 x 28'-0 | 4-MK11-3 x 20'-0 | 1'-0 | 8-#11 in same plane. Bars centered over support.

8-#11 2nd layer | 1 MK11-7 | 2 MK11-6 | 1-MK11-5 | 3 MK11 same plane bot. layer | 2-MK11-4 Elev. 89.25 | 8"x6"x2" Key | construction joint

6" | 3'0 | 14'-0 | 2-MK11-6 x 38'0 | 1-MK11-7 x 20'-0

Elev. 86.88 | Hinge-see Sht. No. 5

PYLON 1

E | E | B | B | D | D

RAMP 1

Reinforcement similar to Section A-A

Dowels, ties and concrete dimensions same as Pier 2

#4 dowels @12 E.F. | #4@18 E.W. | Waterproofing | 1'-8 | 2'0 | Elev. 66.0 | 10-#5 | 7-#7

2'0 | 5'-0½ | 4'0 | 11'-0½

PIER 1

4 MK11-10 | Varies | 2'-0 | Note: Cut MK11-10 bars 10'-0 above top of footing | 10-#11 Full length #5 Ties @18

SECTION E-E
Scale: ½"=1'-0

Varies | 2'-0 | 10-#11 Full length #5 Ties @18

SECTION F-F
Scale ½"=1'-0

2'0 | #11 dowels | Construction Joint | #4 @ 18 E.F. | #5 ties @18

3 cl. | 3'-6 | 2'-0 | 2 cl. | 3 | Typ. clearances for all footings | El. 68.5 | Rad.=12" 12-#6 | 2'0 | 8-#10

8'-0

PIER 2

LONGITUDINAL SECTION
Scale ¼"=1'-0

8'-0" | 2'-0" | 2'-0" | 2'-0" | 2'-0" | 2'-0" | Varies | 12'-0" | 8"x11"x2" deep const. jt. key | MK11-8 | #11 Full length MK11-9 | Bend all Reinforcement Steel on a 12" Radius

SECTION D-D
Scale: ½"=1'-0"

Beam steel not shown

Elev. 88.88 | Elev. 86.88 | Hinge-see Sht. No. 5

PYLON 2

RAMP 2

#5@12 E.F. | Reinforcement similar to Section A-A except as noted | Waterproofing | #5 dowels @12 E.F. | #4@18 E.W. | 1'-8 | 2'0 | Elev. 55.0 | 8-#6 | 10-#5

4'-0 | 5'-0½ | 2'0 | 11'-0½

Dowels, ties and concrete dimensions same as Pier 2

PIER 3

For detail of hand rail and post base see Sht. No. 2 & 5.

7'-0 | 1" | MK11-1 | MK11-2 | MK11-3 | 4-#8 MK8-1 28'-0" long over pier 6#2 | 4-#4 | ¾" vee drip | #4@12 | 6 | 2'-9 | #5 stirrups @12 | 1-#4 E.F. | MK11-7 | MK11-6 | 2nd layer | MK11-5 | MK11-4 | 1'-6 | 3'-6 from Pier 1 to Pier 3

2½" min. clearance for beam reinforcement. Except as otherwise noted.

BEAM SECTION
Scale ½"=1'-0

#4@12 | 2'-0 | 2 cl. | #4 ties @ 12 | 4-#4 | 1'-0

DETAIL C
Scale ½"=1'-0

4 MK11-8 | #5 ties @18 | Varies | 6 | 12-#11 full length | 4 MK11-9 | 2'0

SECTION B-B
Scale ½"=1'-0

Note: Cut MK11-8 bars 6'-0 above top of footing. Cut MK11-9 bars 12'-0 above top of footing.

2'-11½ | ℄ column | Elev. 74.26 | See Detail C | Elev. 73.02 | 6-#4 | finish grade | 1'-6 | Crimp these bars to clear girder bars. | 2" Cl. | ⅜" per 1'-0 batter each face | 2-#4 | #4@18 E.F. | #5@12 E.F. | PYLON 2 | Elev. 55.0 | 6"x 2'-6" x 2" deep const jt key | 3'-11 | 3'-11 | 7'-10

TYPICAL PIER ELEVATION
Scale: ¼"=1'0

ELEVATION - RAMP 2
Scale ¼"=1'-0

7'-0 | 1'0 | #4@12 | 14 cl. | 6-#4 | ¾ vee drip | 1'-6 | #4@12 E.F. | #4@18 | 2 cl. | #4 dowels @12 E.F. | Construction joint | Waterproofing | 1'-8 | 2-#4 | 1'-6 | 6 | 4'-0

SECTION A-A
Scale ½"=1'-0

For details of hand rail and post base see Sht. No. 2 & 5.

2'-11½ | ℄ column | Elev. 76.77 | See Detail C | A | #4@18 E.F. | 6-#4 | finish grade | PYLON 1 | Elev. 72.87 | #4@12 E.F. | #4@12 E.F. | 1'-6 | Elev. 66.0 | 2'-6" | 2-#4 | 3'-11 | 3'-11 | 7'-10 | ½ | 2'0 | 18'-1 1½ | 6 x 2'-6 x 2 deep const. jt. keys 5-0 o.c.

ELEVATION - RAMP 1
Scale ¼"=1'-0

NOTES

For details of pylons and joint details between pylons, ramps & beams see Sht. Nos. 4 & 5

Provide continuous waterproofing around base of piers at top of footing. See Std. Spec.

STRUCTURE # 12

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James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1967

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY

PROJECT No. BU-061-1 (7) UNIT 5
PEDESTRIAN OVERPASS AT
KUAKINI STREET
BEAM & RAMP DETAILS

JAMES B. WILSON REGISTERED PROFESSIONAL ENGINEER No. 379 HAWAII, U.S.A.

SHEET No. 3 OF 6 SHEETS

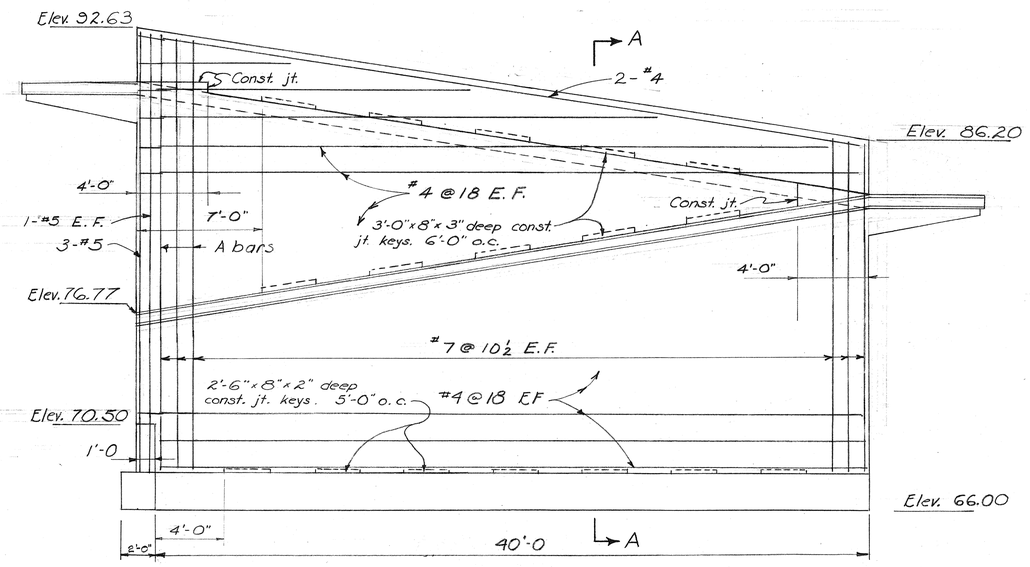
ORIGINAL PLAN	NOTE BOOK No.	SURVEY PLOTTED BY	DESIGNED BY FEP	DRAWN BY	TRACED BY	QUANTITIES BY	QUANTITIES CHECKED BY	CHECKED BY FEP	DATE 6-25-57

PRINTED ON DIEPO 1000H CLEARPRINT

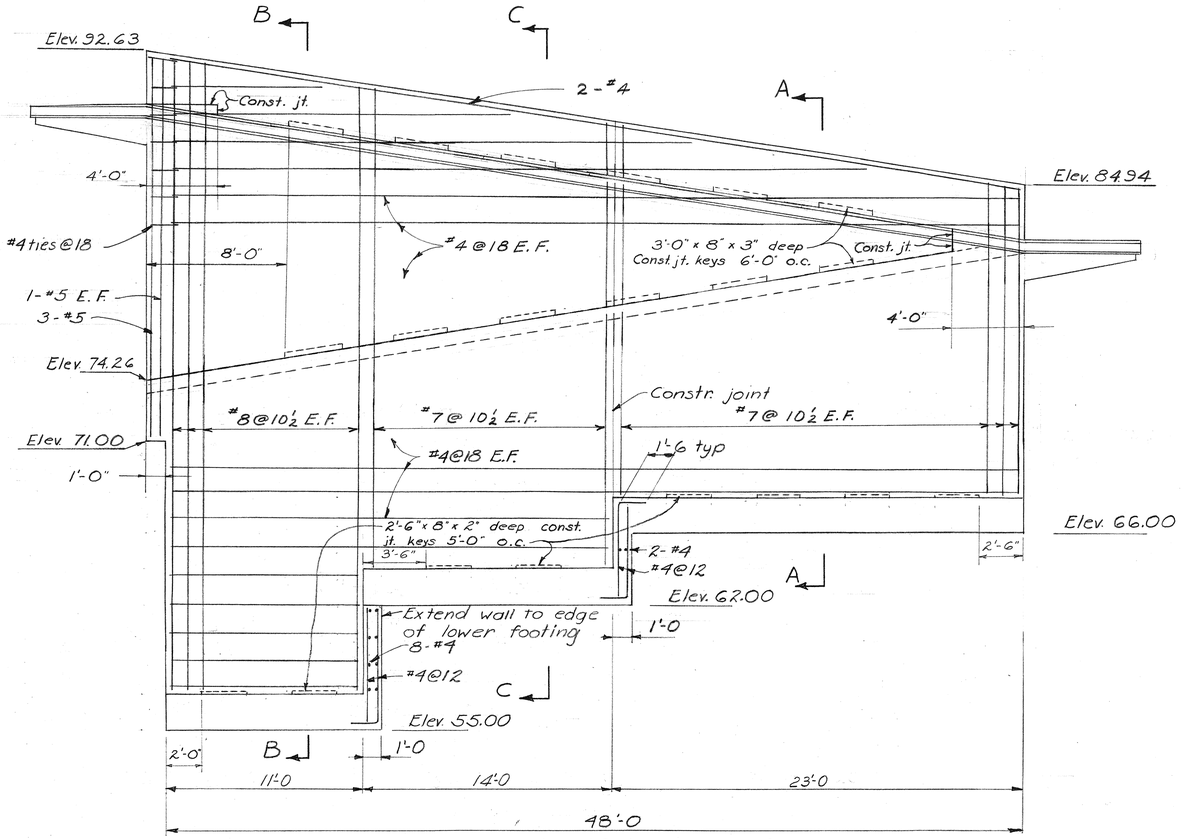
B.S147.144

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BU-061-1(7) UNIT 5	1960	145	174

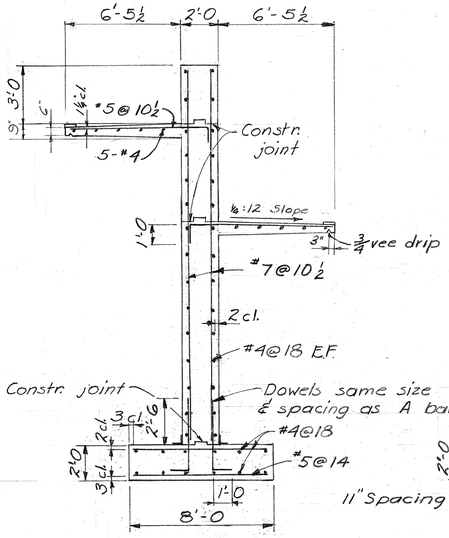
Notes
For detail of handrail and post base see Sht. No. 2 & 5.
For detail of joint between pylons and beams or ramps see Sht. No. 5
For elevations of cantilever slab see Sht. No. 1



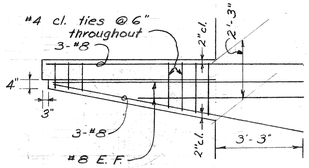
ELEVATION - PYLON 1
Scale ¼ = 1'-0



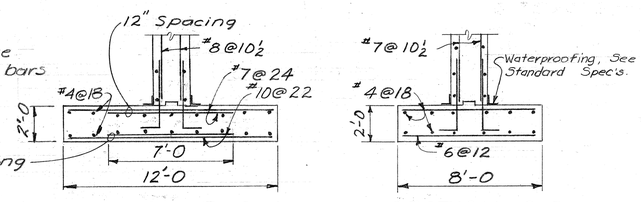
ELEVATION - PYLON 2
Scale ¼ = 1'-0



SECTION A-A



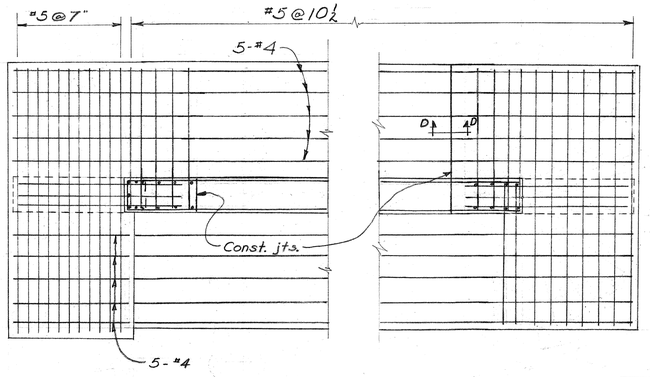
BRACKET DETAIL
Scale: 3/8 = 1'-0



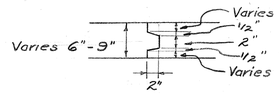
SECTION B-B

SECTION C-C

PYLON SECTIONS
Scale: ¼ = 1'-0



PLAN
Scale ¼ = 1'-0



SECTION D-D
Scale: 1"=1'-0"

JAMES B. WILSON
REGISTERED PROFESSIONAL ENGINEER
No. 379
HAWAII, U.S.A.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY PEP	
	DRAWN BY	
NOTE BOOK	TRACED BY	
No.	QUANTITIES BY	
	QUANTITIES CHECKED BY	4-25-57
	CHECKED BY PEP	

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James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1957

STRUCTURE #12

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII
PALI HIGHWAY
PROJECT No. BU-061-1(7) UNIT 5
PEDESTRIAN OVERPASS AT KUAKINI STREET
PYLON DETAILS

SHEET No. 4 OF 6 SHEETS

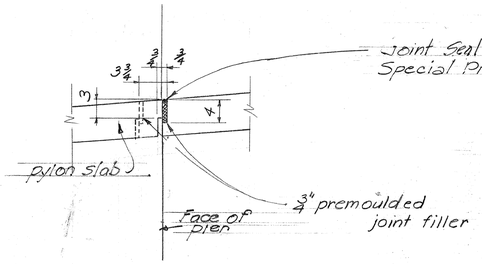
B.S147.145

25

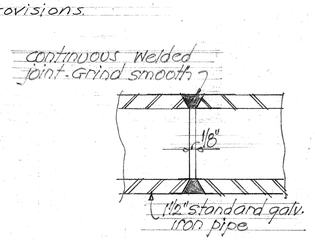
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249

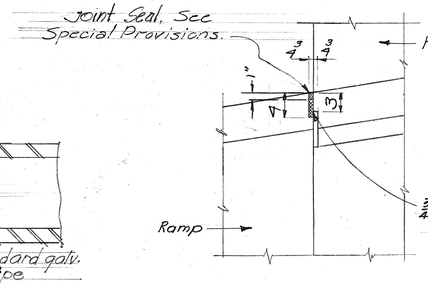
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BU-061-1(7) UNIT 5	1960	146	176



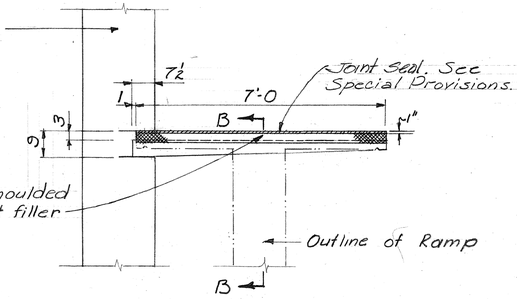
SECTION A-A
Scale 1"=1'-0"



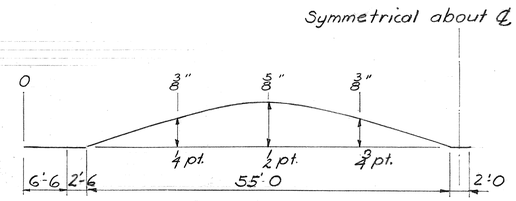
RAIL SPLICE DETAIL
Half Size



SECTION B-B
Scale 1"=1'-0"



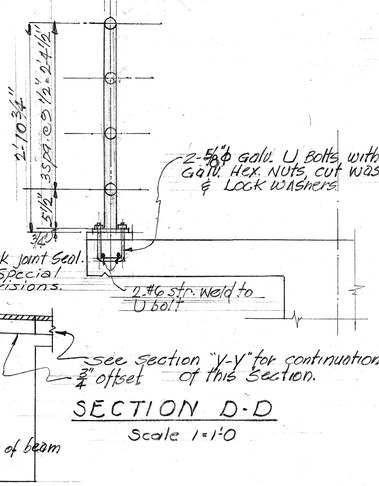
PYLON TO RAMP
Scale ½"=1'-0"



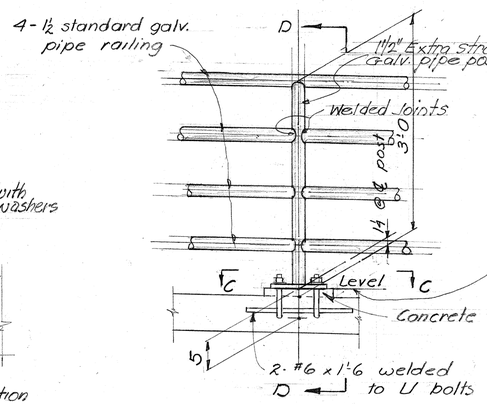
DEAD LOAD CAMBER
No scale

Note
This curve shows the dead load camber only and should be increased by the amount of the anticipated takeup in the falsework

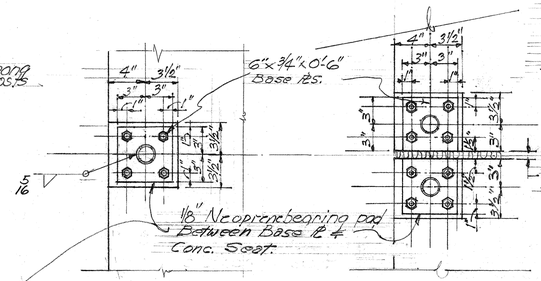
Cut web as shown ℄ bend flange over



SECTION D-D
Scale 1"=1'-0"



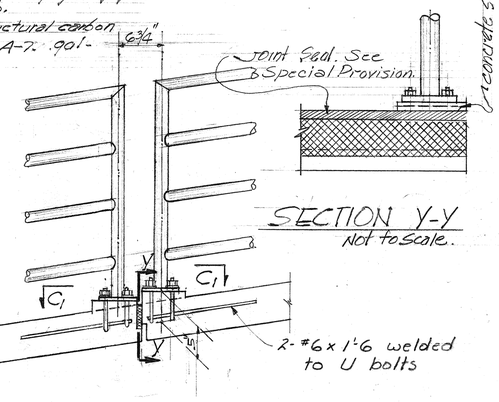
METAL RAILING DETAIL
Scale 1"=1'-0"



SECTION C-C
SCALE: 1½"=1'-0"

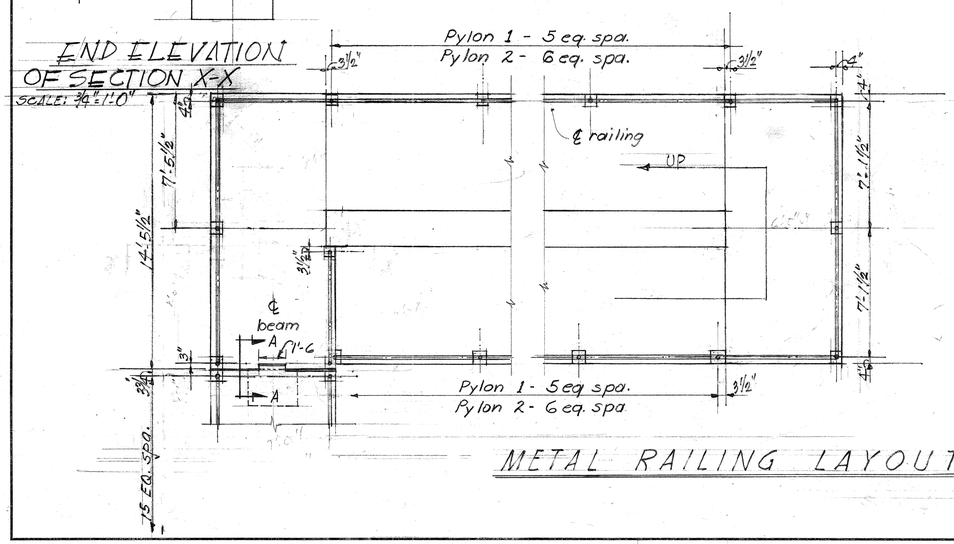
SECTION C1-C1
SCALE: 1½"=1'-0"

NOTE:
All rails to be 1½" std. galv. pipe.
Posts to be 1½" Extra strong galv. pipe.
All railing posts plumb.
Base plate shall be structural carbon steel ASTM designation A-7. galvanized.

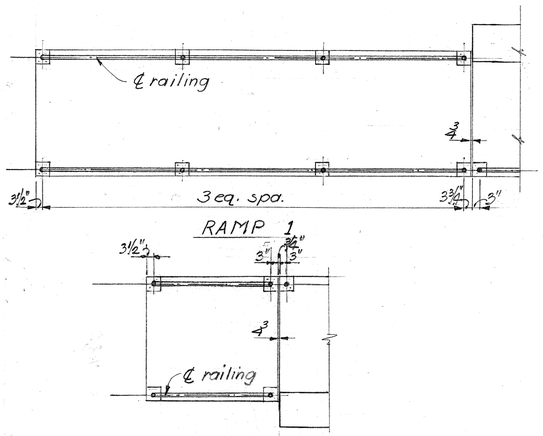


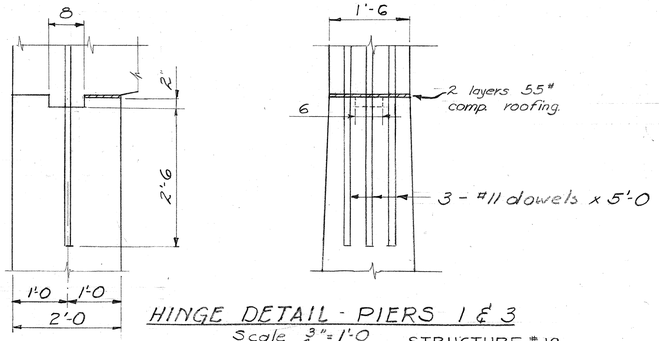
SECTION Y-Y
Not to Scale.

DETAIL AT EXPANSION JOINTS
Scale 1"=1'-0"



METAL RAILING LAYOUT
SCALE: 1/4"=1'-0"





HINGE DETAIL - PIERS 1 & 3
Scale ¾"=1'-0"
STRUCTURE # 12

ORIGINAL PLAN	NOTE BOOK No.	SURVEY PLOTTED BY	DESIGNED BY	TRACED BY	QUANTITIES BY	QUANTITIES CHECKED BY	CHECKED BY	DATE
			EFP	EFP				6-25-57

JAMES B. WILSON REGISTERED PROFESSIONAL ENGINEER No. 379 HAWAII, U.S.A.

LAW & WILSON • TUDOR • TOWILL
ARCHITECTS • ENGINEERS • SURVEYORS
James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1957

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII
PALI HIGHWAY
PROJECT No. BU-061-1(7) UNIT 5
PEDESTRIAN OVERPASS AT
KUAKINI STREET
HANDRAIL & EXPANSION JOINT DETAIL

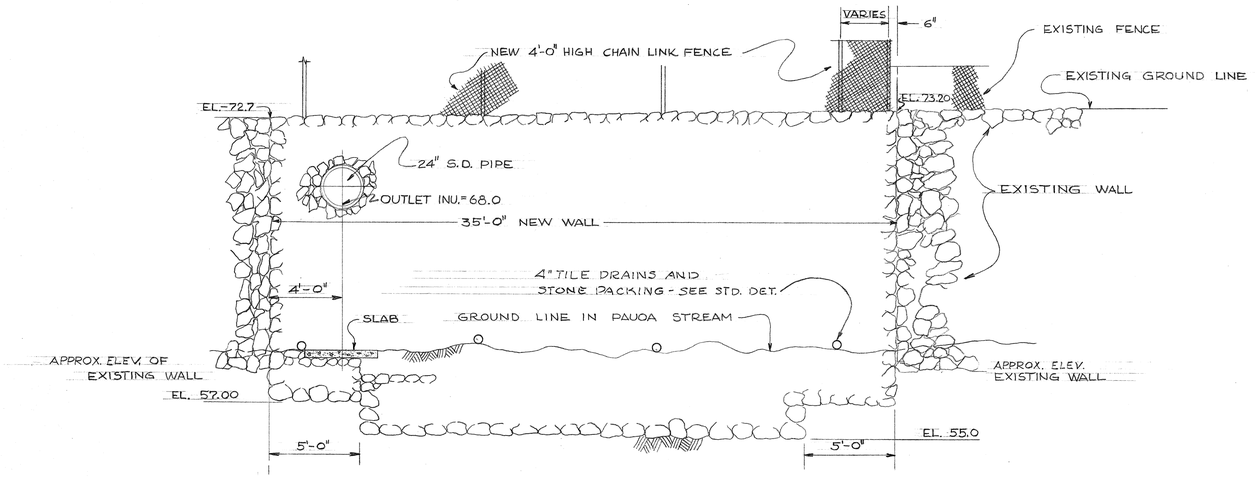
SHEET No. 5 OF 6 SHEETS

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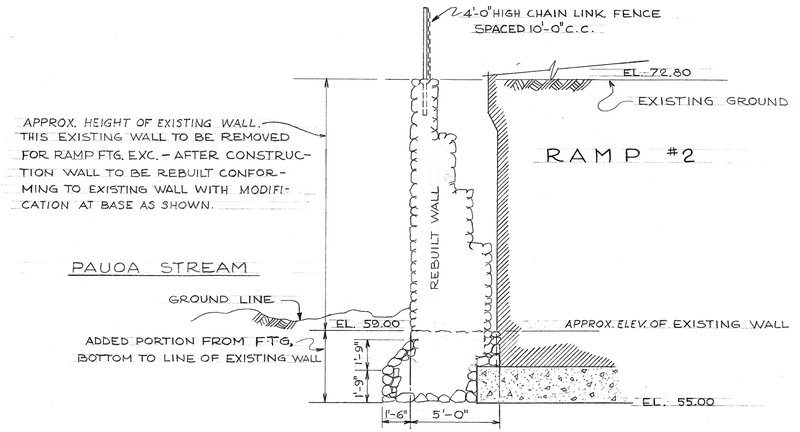
B.S147.146

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BU-061(7) UNIT 5	1960	147	176

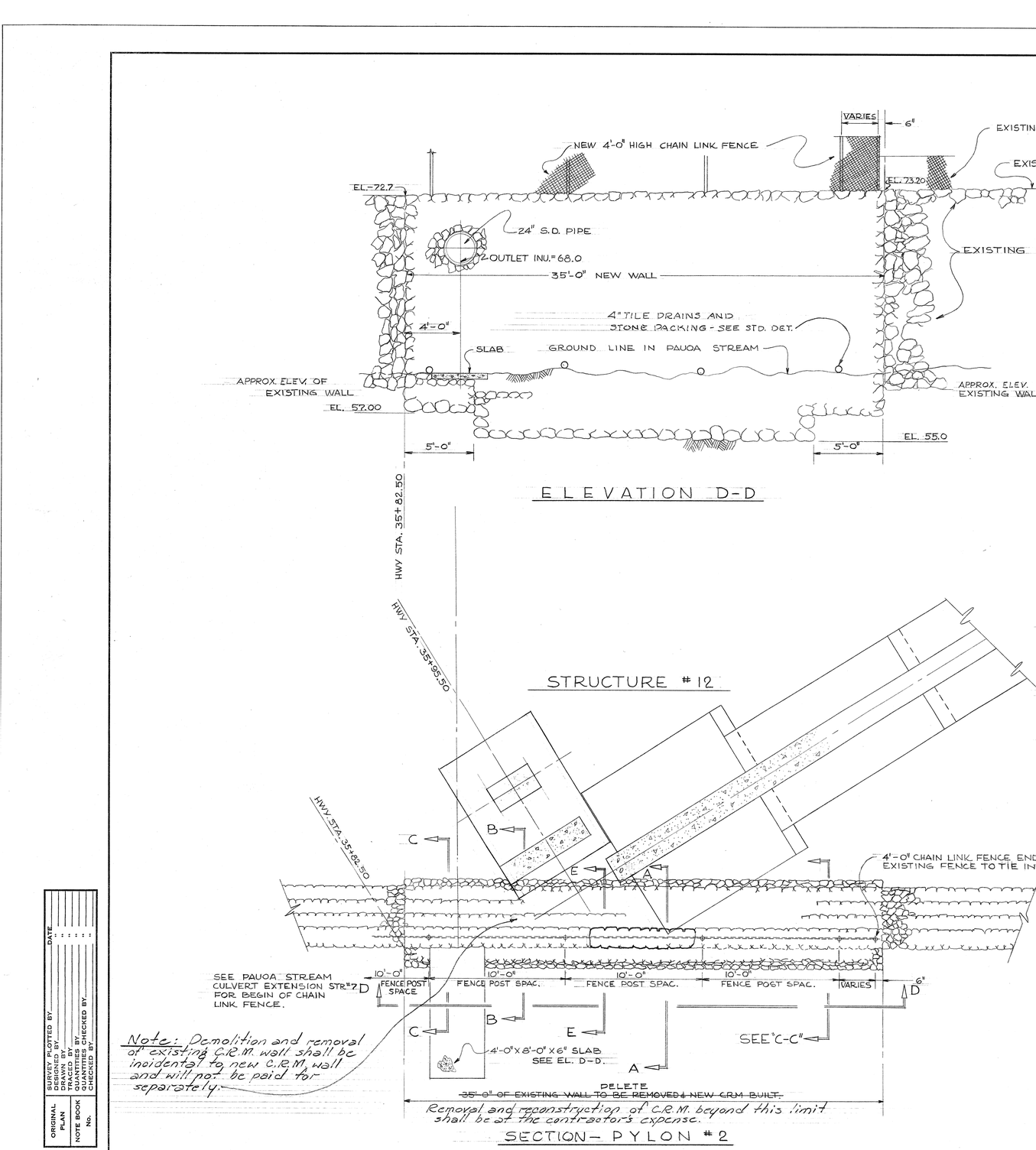
6/14/00



ELEVATION D-D

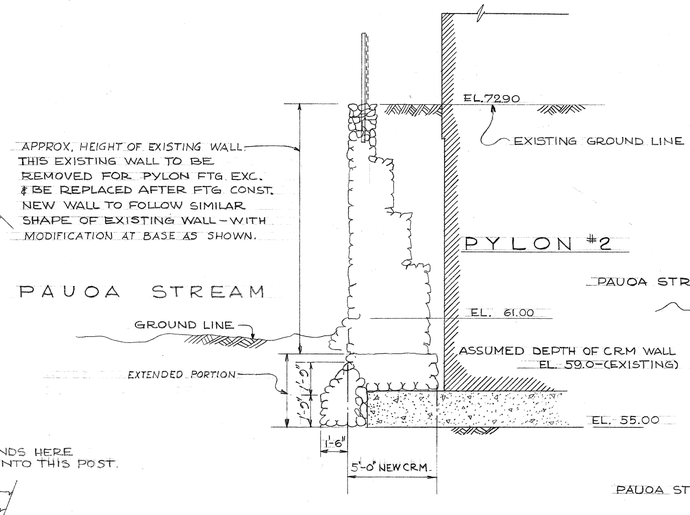


SECTION B-B

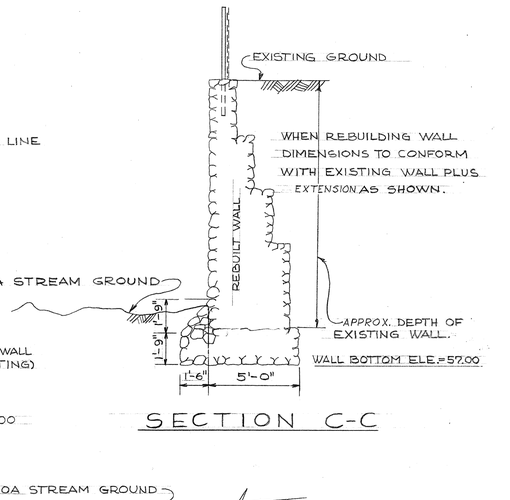


Note: Demolition and removal of existing C.R.M. wall shall be incidental to new C.R.M. wall and will not be paid for separately.

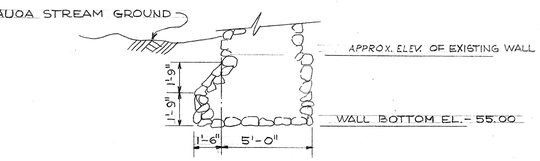
SECTION - PYLON #2



SECTION A-A



SECTION C-C



SECTION E-E

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

JAMES B. WILSON REGISTERED PROFESSIONAL ENGINEER No. 379 HAWAII, U.S.A.

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James B. Wilson No.
REGISTERED ENGINEER
DATE JAN 3 1957

STRUCTURE #12

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII
PALI HIGHWAY
PROJECT No. BU-061-1(7) UNIT 5
PEDESTRIAN OVERPASS AT
KUAKINI STREET
CRM WALL DETAILS
SCALE: 1/4"=1'-0"

SHEET No. 6 OF 6 SHEETS

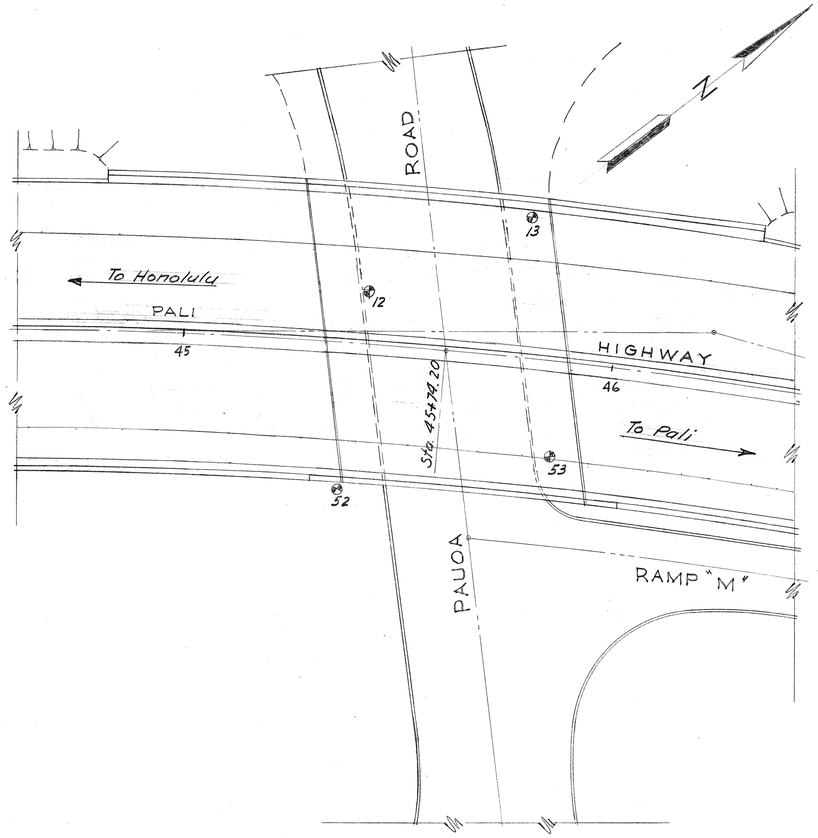
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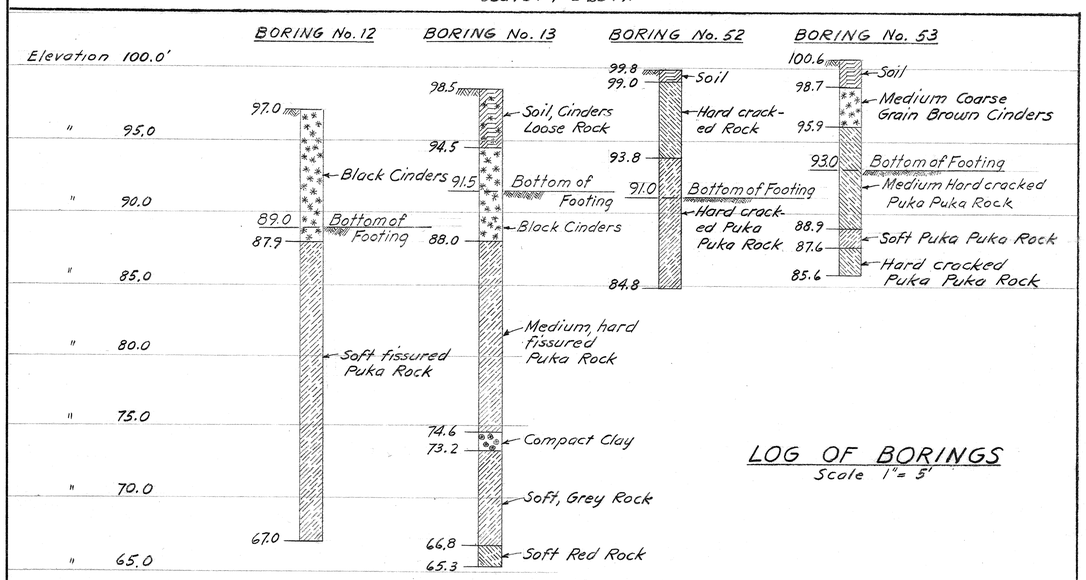
L51

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-061-1(7) UNIT 5	1960	148	176

5/26/60
6/16/60



LOCATION PLAN
Scale: 1" = 20 Ft.



LOG OF BORINGS
Scale 1" = 5'

GENERAL NOTES

Prestressed Beam
f'_c = 4,200 psi @ transfer
7/16 dia. 7-wire strands
* Tensioning Load = 18,900 lbs
Design Load = 15,120 lbs.
*Overstressing to not exceed 21,600 lbs. for short periods of time may be permitted provided the stress after seating of anchorage does not exceed 18,900 lbs.

SPECIFICATION: AASHO

Standard Specification for Highway Bridges (7th Edition) with subsequent additions & modifications.

MATERIALS

Concrete - All concrete shall be Class A-1 except concrete for prestressed beams. For prestressed beam concrete, see Special Provisions.
Steel Reinforcement - See Standard Specifications & Special Provisions.
Admixture - See Special Provisions.

CONSTRUCTION METHODS

General Notes - See Standard Specifications.
Welding - All welding shall conform to the latest specifications for Welding Highway & Railway Bridges, Design, Construction & Repair, of the American Welding Society.
Forms - Forms for all exposed surface of structure including retaining walls (except prestressed beams) shall be plywood.
Finish - See Standard Specifications for Road & Bridge for class of finish except as noted on Normal Section on Sheet # 4 All exposed edges shall be chamfered 3/4" unless otherwise noted.
Backfill - Backfill behind abutment & retaining walls before placing prestressed girders.
Footings shall be excavated & poured to neat lines. In case of over excavation, space between footing & ground shall be filled with concrete at the Contractors expense. The fill shall have a minimum quality of Class D-1 concrete.
Prestressed Beams - Grout used to bond post tensioned strands to the concrete, shall be allowed to set for at least 24 hours before the girders may be lifted. Method of jacking prestressing reinforcement shall be subject to the approval of the Engineer.

Forms must be removed and the girder inspected before the strands are released.

ESTIMATED QUANTITIES

Concrete	Lump sum ~~(1300~~ cu. yds) 1,316.1
Reinforcing steel	Lump sum (~~147,800~~ lbs) 148,842
Structural Excavation	~~1365~~ cu. y 1420
Aspholtic Concrete Paving	~~31~~ Tons 32
Bituminous Tack Coat	92 Gals.
Filter Material	~~160~~ cu. yds. 165
Aluminum Railing	~~244~~ lineal ft. 245
Prestressed Conc. Beam	713 lin. ft.

ORIGINAL PLAN
SURVEY PLOTTED BY — DATE
DRAWN BY A.E. DATE
DESIGNED BY GLERUM & WAR "
CHECKED BY " "
TRACED BY " "
NOTE BOOK QUANTITIES COMPUTED BY
No. QUANTITIES CHECKED BY J.R.F. 3-22-57

JAMES B. WILSON
REGISTERED PROFESSIONAL ENGINEER
No. 379
HAWAII, U.S.A.

LAW & WILSON • TUDOR • TOWILL
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James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1957

STRUCTURE NO. 3

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY
PROJECT No. BU-061-1(7) UNIT 5
GRADE SEPARATION AT
PAUOA ROAD
LOCATION PLAN & BORINGS

SHEET No. 1 OF 10 SHEETS

B.S147.148

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BU-061-1(7) UNIT 5	1960	149	176

Super Runoff

6% Super

For Loc. of anchor bolts See Sign Structure Sht

NOTE!
For Alum. Railing spacings, see Sht. 3 of 10 & Sht. 5 of 10.

45+25

45+00

Az 300°-13' ℄ of Bearing

95.84' on tangent to PC 44+46.35

3.11'

For Electrical Conduit Installation - See Typical Lighting Sht

158.27' on tangent to PC 44+46.35

8.54'

℄ of Bearing Az 300°-13'

Tangent 2

Az 216°-58'

Az 232°-20'

46+00

Sta. 45+74.20

℄ PALI HIGHWAY

Sta. 45+42.62 Front face of Abutment No. 1

PAUOA ROAD Az. 300°-13'

Highway Lighting See Sht

Sta. 46+05.92 Front Face of Abutment No. 2

℄ CURVE DATA
Δ = 15°-22'-00"
R = 1500.00'
T = 202.36'
L = 402.30
PC = 44+46.35
PT = 48+48.65

1'-3

14'-0

2'-0

24'-0

3'-0

1'-0

2'-0

8'-0

1'-3

Retaining Wall No. 21

Retaining Wall No. 22

1'-0"

For Location of anchor bolts - See Sign Structure Sht

10'-0

20'-0

20'-0

10'-0

℄ Ramp "M"

LAYOUT PLAN
Scale: 1/8"=1'-0"

VERTICAL CURVE

Station	Grade	Elevation
	+6%	
BVC 44+50		114.00
CG 46+50		126.00
EVC 48+50		130.00
	+2%	

Elevations are on Profile Grade

Sta. 45+42.62 Profile Grade Elev. 119.13'

Sta. 46+05.92 Profile Grade Elev. 122.14'

14.9' min. clearance

Existing grade

Structural excavation pay limits indicated by hatched area.

Excavate and pour to neat lines.

Structural excavation pay limits indicated by hatched area.

LONGITUDINAL SECTION
Scale: 1/8"=1'-0"

Profile Grade

TRANSVERSE SECTION
Scale: 1/8"=1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	REVISED BY	
	DRAWN BY FEP	
	TRACED BY	
	QUANTITIES BY	
NOTE BOOK No.	QUANTITIES CHECKED BY	
	CHECKED BY FEJ	3-27-57

JAMES B. WILSON
REGISTERED PROFESSIONAL ENGINEER
No. 379
HAWAII, U.S.A.

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James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1957

STRUCTURE # 3

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY
PROJECT NO. BU-061-1(7) UNIT 5
GRADE SEPARATION AT
PAUOA ROAD
LAYOUT PLAN & SECTIONS

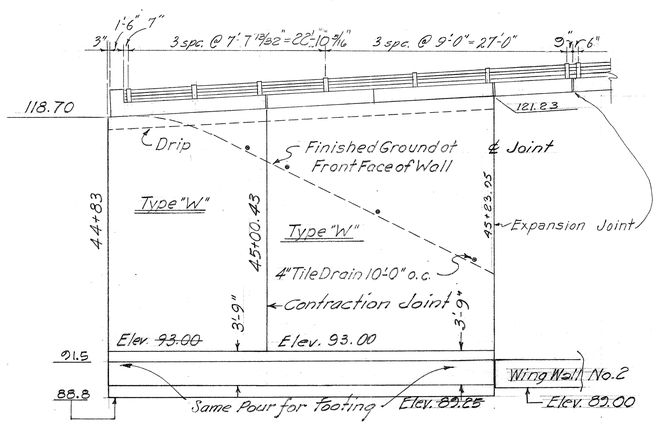
SHEET No. 2 OF 10 SHEETS

B. S147. 149

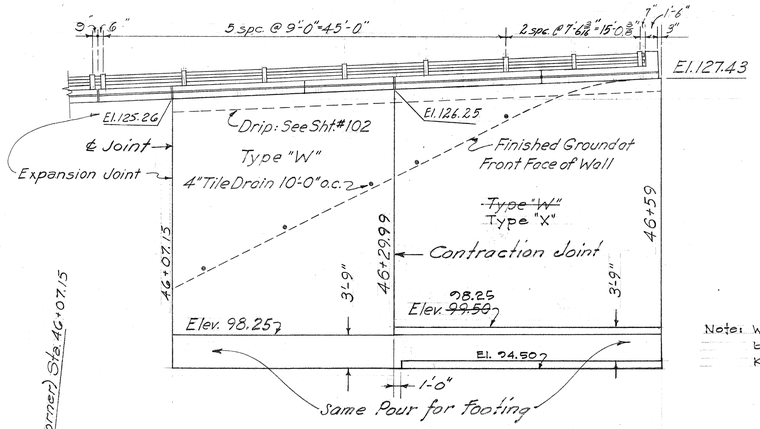
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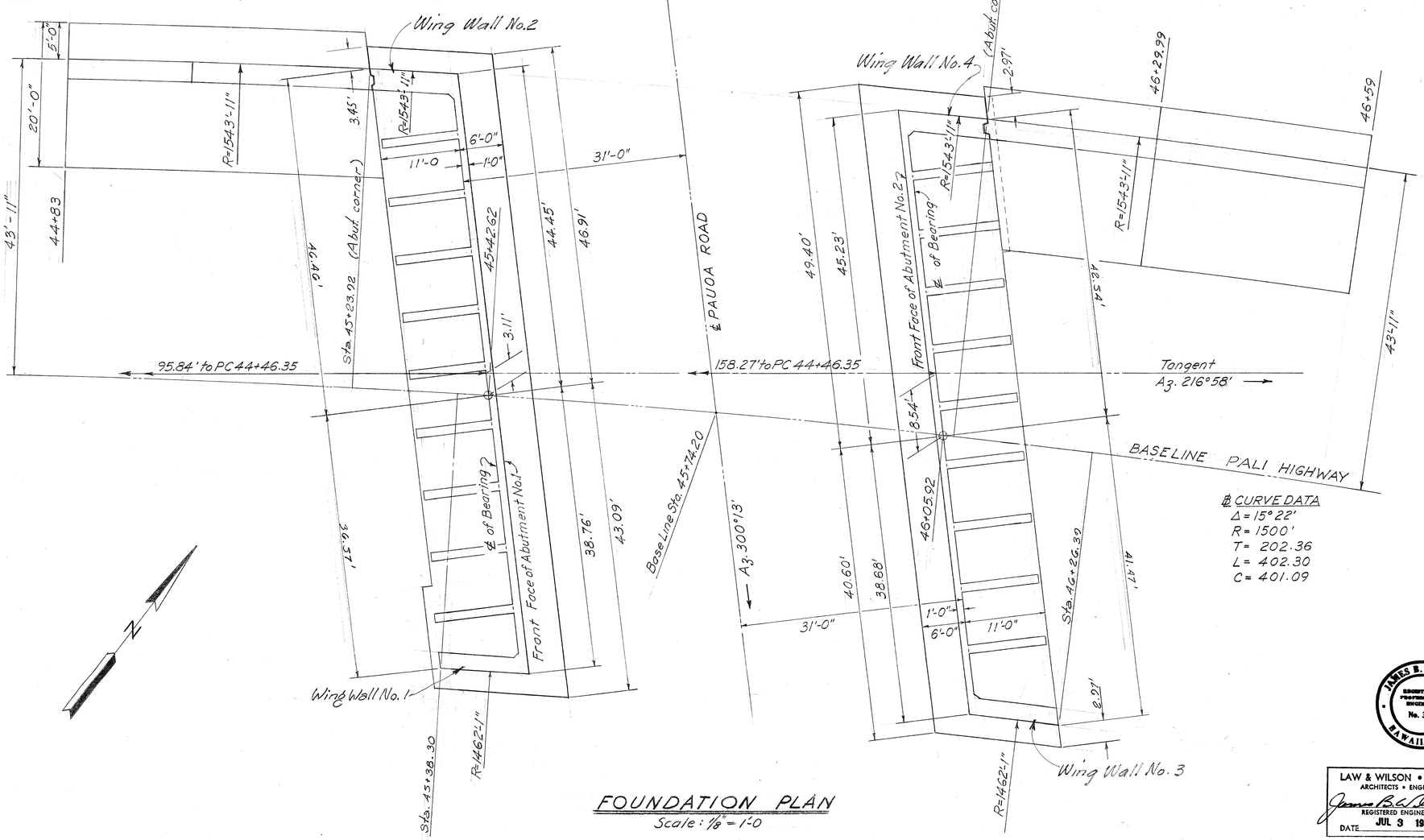
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	RU-OG-1(7) UNIT 5	1960	150	176



Note: For Aluminum Railing Det. see Std. Aluminum Rail. Det. For Ret. Wall Det. see Std. Ret. Wall. Det.



Note: Widen footing by one foot. Keep same thickness



℄ CURVE DATA
Δ = 15°22'
R = 1500'
T = 202.36
L = 402.30
C = 401.09

FOUNDATION PLAN
Scale: 1/8" = 1'-0

SURVEY PLOTTED BY FEP DATE
DESIGNED BY " "
DRAWN BY " "
TRACED BY " "
QUANTITIES BY " "
CHECKED BY FEP 5-22-57
ORIGINAL PLAN
NOTE BOOK No.

JAMES B. WILSON REGISTERED PROFESSIONAL ENGINEER No. 379 HAWAII, U.S.A.

LAW & WILSON • TUDOR • TOWILL
ARCHITECTS • ENGINEERS • SURVEYORS
James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1957

STRUCTURE # 3

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII
PALI HIGHWAY
PROJECT NO. BU-061-1(7) UNIT 5
GRADE SEPARATION AT
PAUOA ROAD
FOUNDATION PLAN

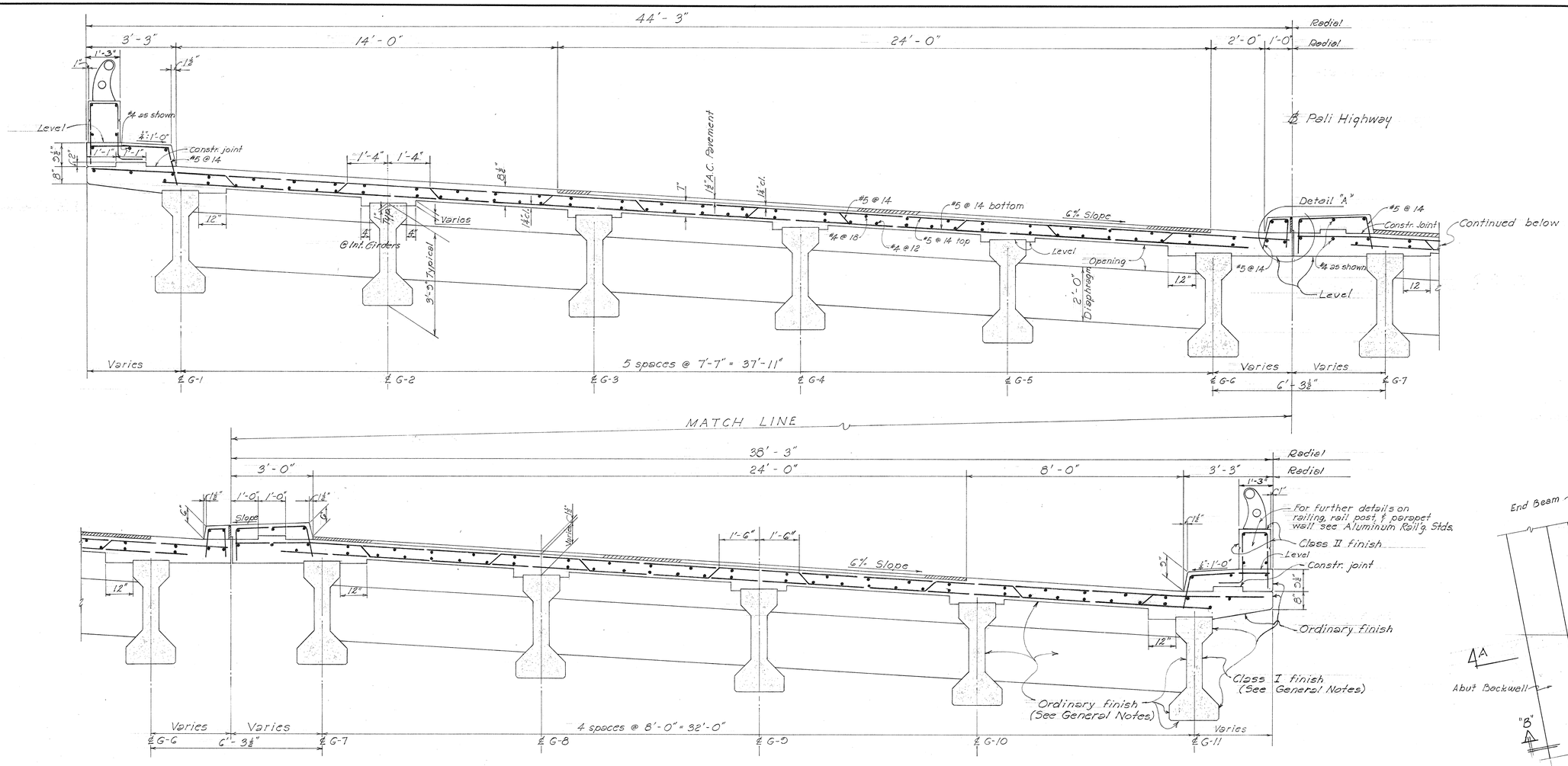
SHEET No. 3 OF 10 SHEETS

PRINTED ON DIEPO 1000H CLEARPRINT

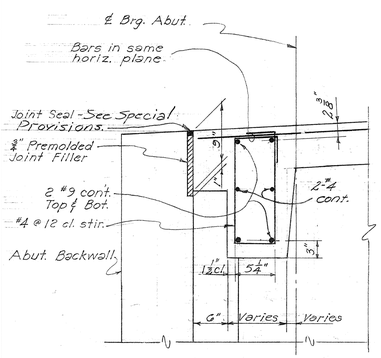
B. S147.150

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAWN.	BU-061-1(7) UNIT 5	1960	151	176

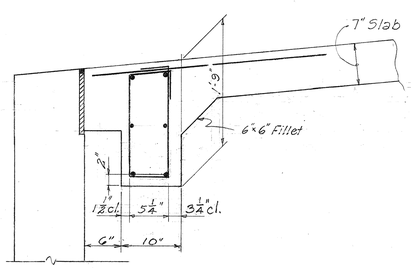
6-23-60



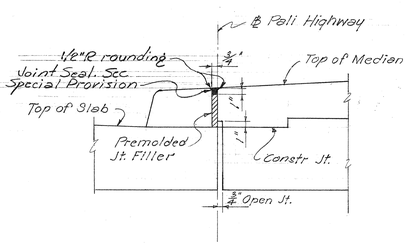
TYPICAL SECTION
Scale: ½" = 1'-0"



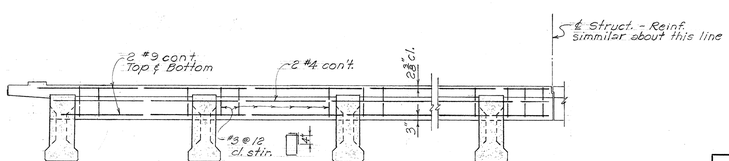
SECTION "A"-"A"
Scale: 1"=1'-0"



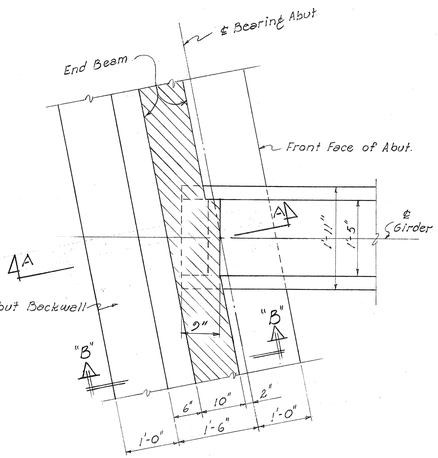
SECTION "B"-"B"
Scale: 1"=1'-0"



DETAIL "A"
Scale: 1"=1'-0"



ELEVATION - END BEAM "A"
Scale: ¼" = 1'-0"



PART PLAN - TYP. DETAIL END BEAM @ GIRDER
Scale: ¾" = 1'-0"

STRUCTURE NO. 3

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY
PROJECT No. BU-061-1(7) UNIT 5
GRADE SEPERATION AT
PAUOA ROAD
SECTIONS & DETAILS

SHEET No. 4 OF 10 SHEETS

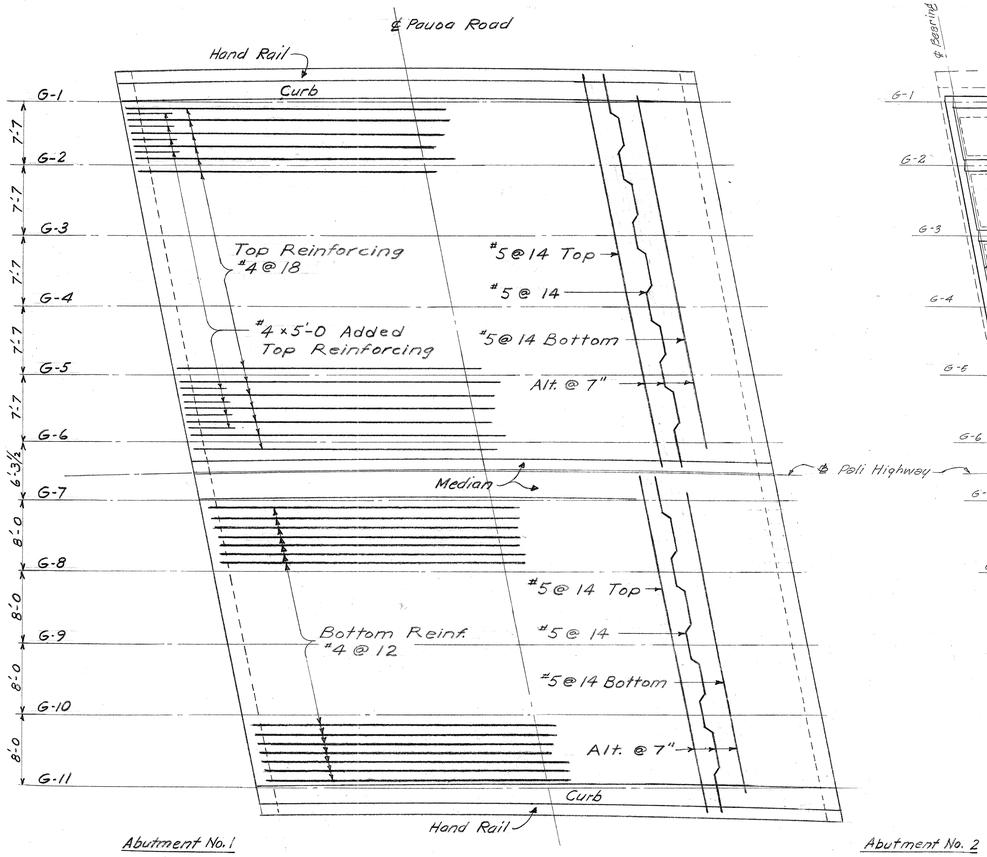
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY	
	DRAWN BY	
	TRACED BY	
NOTE BOOK No.	QUANTITIES CHECKED BY	
	CHECKED BY	

PRINTED ON DIEPO 1000N CLEARPRINT

B.S147.151

151

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BU-061-1(7) UNIT 5	1960	152	176



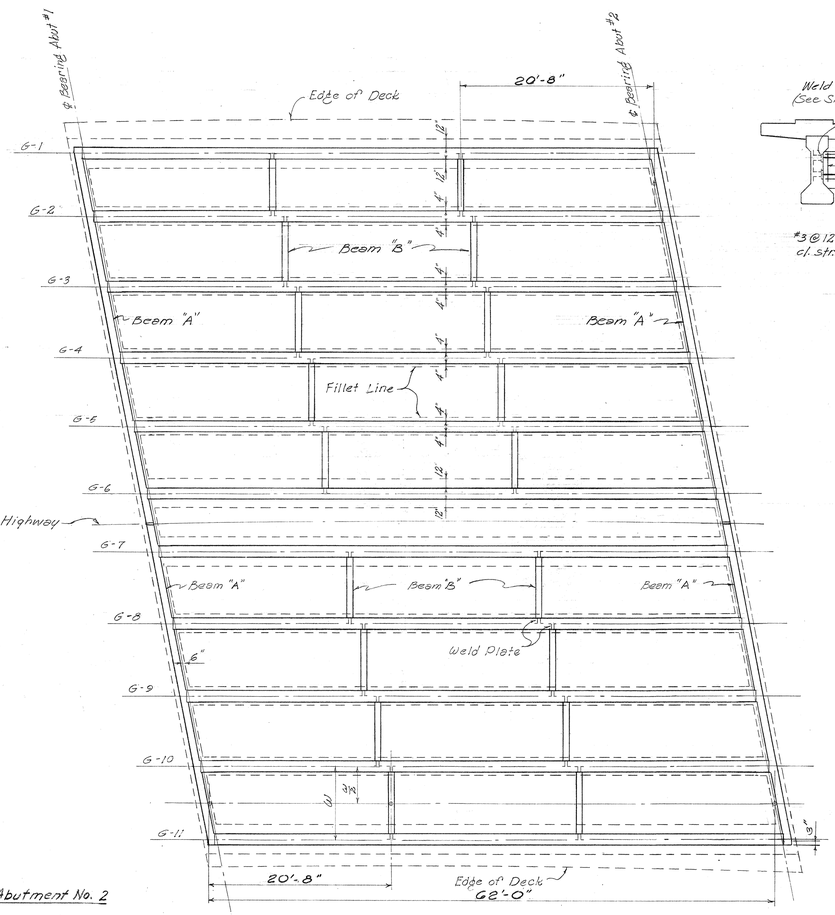
Abutment No. 1

Abutment No. 2

PLAN

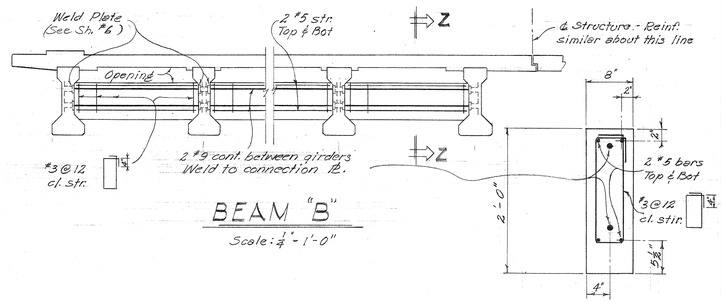
Scale: 1/8" = 1'-0

NOTE:
1. For Reinforcing in Curbs & Median, see Sheet No. 4



FRAMING PLAN

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

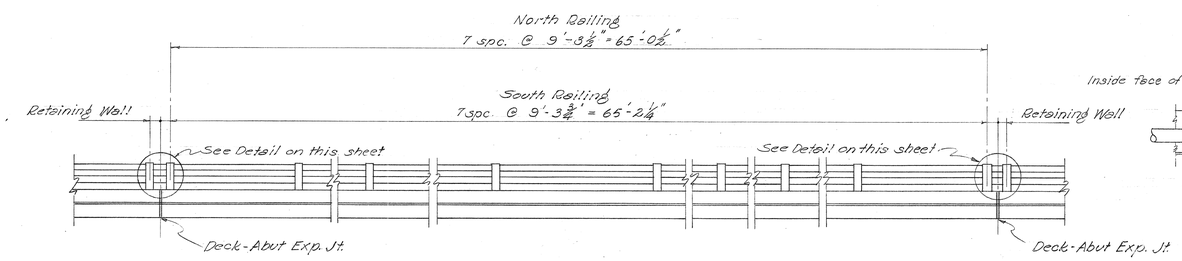


BEAM "B"

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

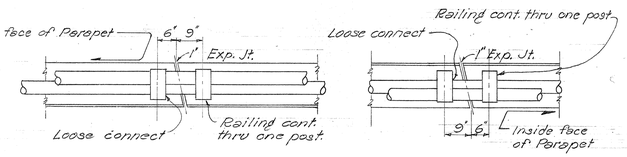
SECTION Z-Z

Scale: 1" = 1'-0"



ELEVATION OF HANDRAIL

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



SOUTH RAILING

NORTH RAILING

DOUBLE POST DETAIL

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

JAMES B. WILSON REGISTERED PROFESSIONAL ENGINEER No. 379 HAWAII, U.S.A.

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James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1967

STRUCTURE #3

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY
PROJECT NO. BU-061-1(7) UNIT 5
GRADE SEPARATION AT
PAUOA ROAD

DECK REINFORCEMENT PLAN

SHEET No. 5 OF 10 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	FIELD CHECKED BY J.R.T.	"
	DRAWN BY G.S.G.	"
NOTE BOOK No.	TRACED BY M.R.	"
	DESIGN BASED ON STRESSES IN	"
	QUANTITIES CHECKED BY	5-22-67
	CHECKED BY J.R.T.	

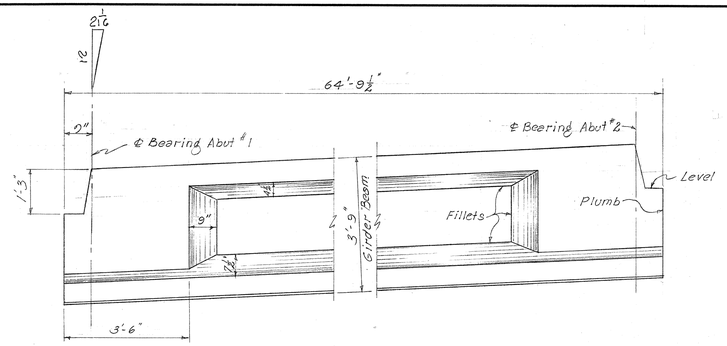
PRINTED ON DIEPO 1000H CLEARPRINT

B.S147.152

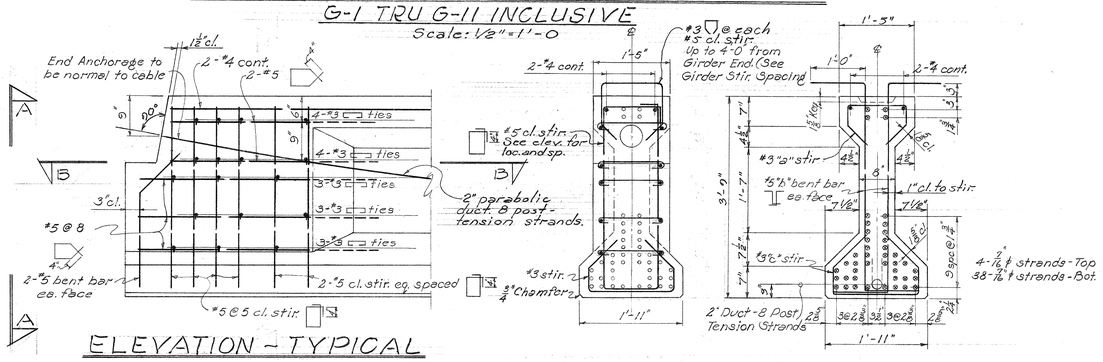
152

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BU-061-1(7) UNIT 5	1960	153	176

6-23-60

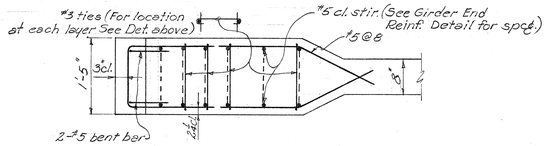


ELEVATION-TYPICAL PRESTRESSED GIRDER
G-1 THRU G-11 INCLUSIVE
Scale: 1/2" = 1'-0

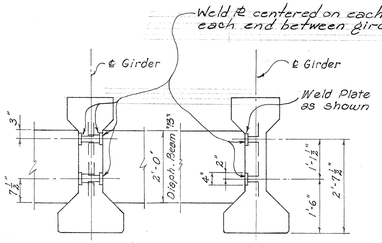


ELEVATION - TYPICAL GIRDER END REINFORCING
Scale: 3/4" = 1'-0"

AT ELEV. "A-A" AT ℄ SPAN
TYP. SEC. THRU PRESTRESSED GIRDER
Scale: 3/4" = 1'-0

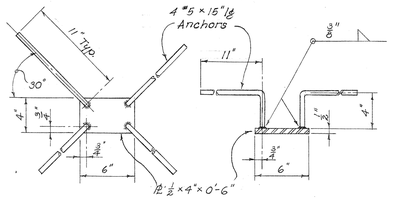


SECTION "B-B"
Scale: 3/4" = 1'-0"



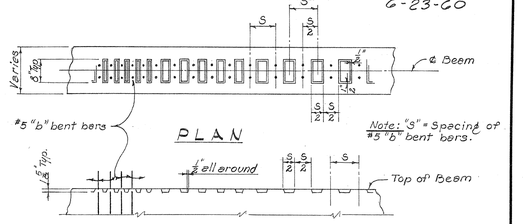
Note: For location of weld plate in span, see Framing Plan. Weld plate incidental to Prestressed Beams. (See Special Provisions)

TYPICAL BEAM "B" CONNECTION DETAIL
Scale: 1/2" = 1'-0

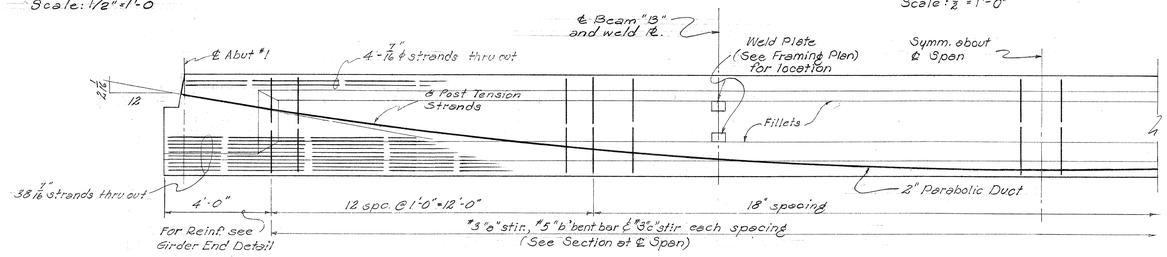


PLAN SECTION

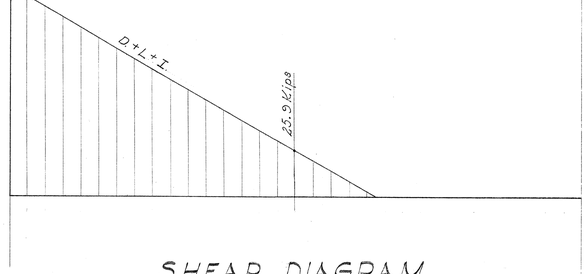
WELD PLATE DETAIL
Scale: 1½" = 1'-0"



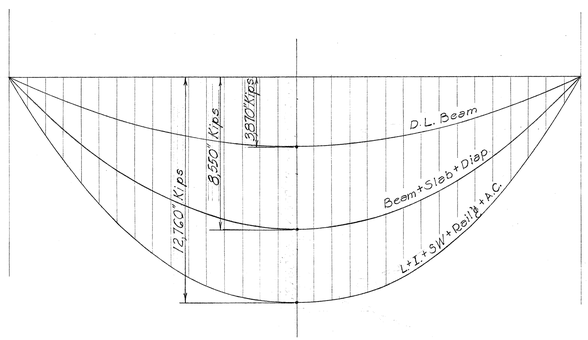
SECTION SHEAR KEY DETAIL
Scale: 1" = 1'-0"



GIRDER STIRRUP SPACING
Scale: 3/8" = 1'-0"



SHEAR DIAGRAM
Scale: Horiz. 8" = 1'-0"
Vert. 1" = 40^K.



MOMENT DIAGRAM
Scale: Horiz. 8" = 1'-0"
Vert. 1" = 4,000^K.

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

STRUCTURE NO. 3

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY
PROJECT No. BU-061-1(7) UNIT 5
GRADE SEPERATION AT
PAUOA ROAD
PRESTRESSED GIRDER DET.

SHEET No. 6 OF 10 SHEETS

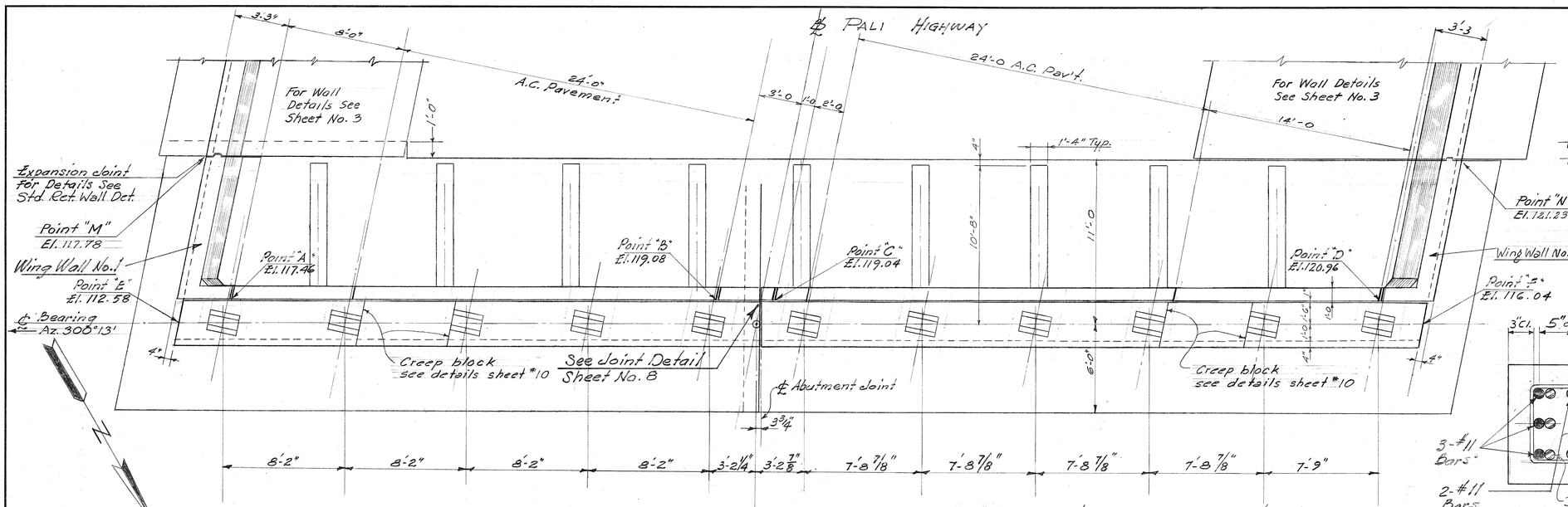
B.S147.153

153

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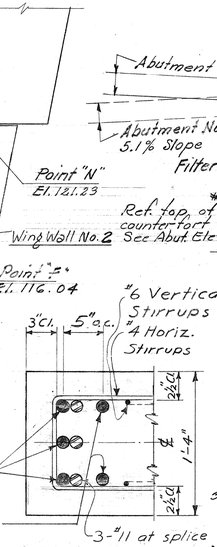
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	H.A.W.	BU-061-1(7) UNIT 5	1960	154	176

6/12/60



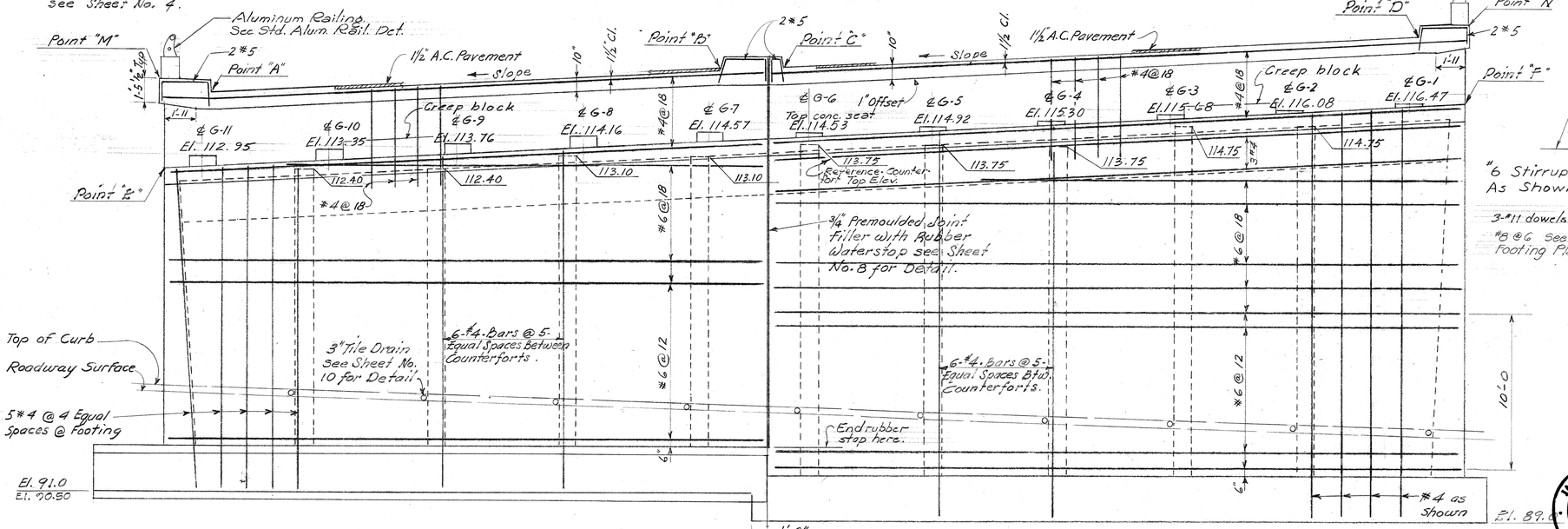
PLAN ~ ABUTMENT NO. 1 (Railing Not Shown.)
Scale: 1/4" = 1'-0"

Note: For Bearing Seat and Creep Block Details see sht. No. 10



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

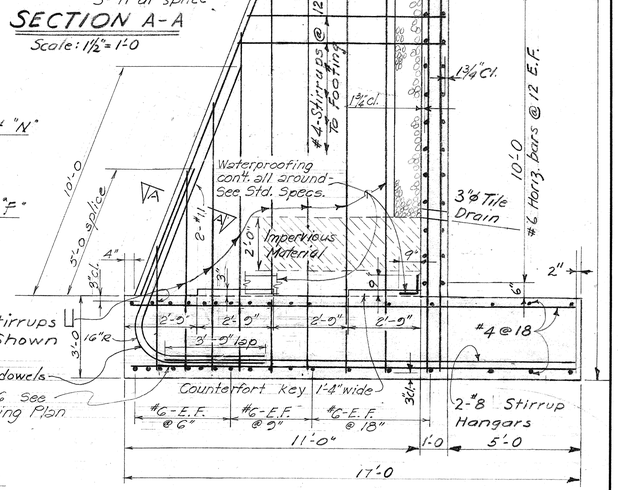
NOTE!
Curb & Median dimensions are identical to corresponding superstructure dimensions see Sheet No. 4.



Reinforcement, Typical for Front Face
Reinforcement, Typical for Back Face.
See Sheet No. 9 for footing Reinforcement

ELEVATION ~ ABUTMENT NO. 1
Scale: 1/4" = 1'-0"

Note!
Footing to be excavated and poured to neat lines.



TYPICAL SECTION
Scale: 3/8" = 1'-0

ORIGINAL PLAN	NOTE BOOK No.	SURVEY PLOTTED BY	DATE
		DESIGNED BY O.E. Gibson	" "
		DRAWN BY M.K.F.	" "
		TRACED BY	" "
		QUANTITIES BY	" "
		QUANTITIES CHECKED BY J.R.T.	5-27-57
		CHECKED BY	" "

JAMES B. WILSON REGISTERED PROFESSIONAL ENGINEER No. 379 HAWAII, U.S.A.

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ARCHITECTS • ENGINEERS • SURVEYORS
James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1957

STRUCTURE # 3

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY

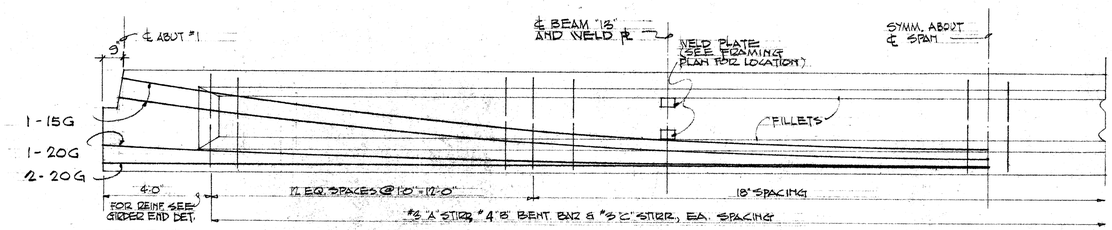
PROJECT NO. BU-061-1(7) UNIT 5
GRADE SEPARATION AT
PAUOA ROAD

ABUTMENT NO. 1

SHEET No. 7 OF 10 SHEETS

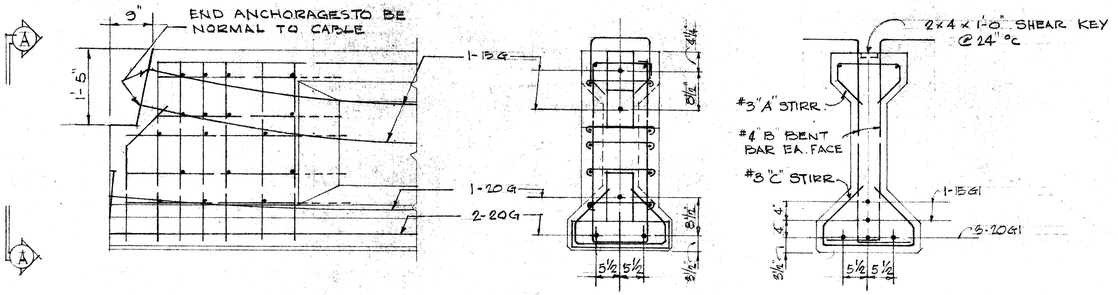
B. S147.154

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GIRDER ELEVATION

SCALE: 3/8" = 1'-0"



ELEVATION - AT END ELEVATION "A-A" AT ℄ SPAN

TYPICAL DETAIL OF POST TENSIONED GIRDER

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

NOTE:

ALL DIMENSIONS, REINFORCEMENTS, AND MISCELLANEOUS DETAILS SHALL BE THE SAME AS THAT SHOWN FOR THE BASIC GIRDER UNLESS OTHERWISE INDICATED. ALTERNATE DESIGN CONSISTS ESSENTIALLY OF SUBSTITUTING 2-15G & 3-20G PRESCON TENDONS FOR THE 42-7/16" STRANDS & 8 POST-TENSION STRANDS SHOWN IN THE BASIC.

DONALD T. LO
REGISTERED PROFESSIONAL ENGINEER
No. 427
HAWAII U. S. A.

ADDENDUM No. 3

STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

...LI HIGHWAY

... No. BU-061-1(7) UNIT 5

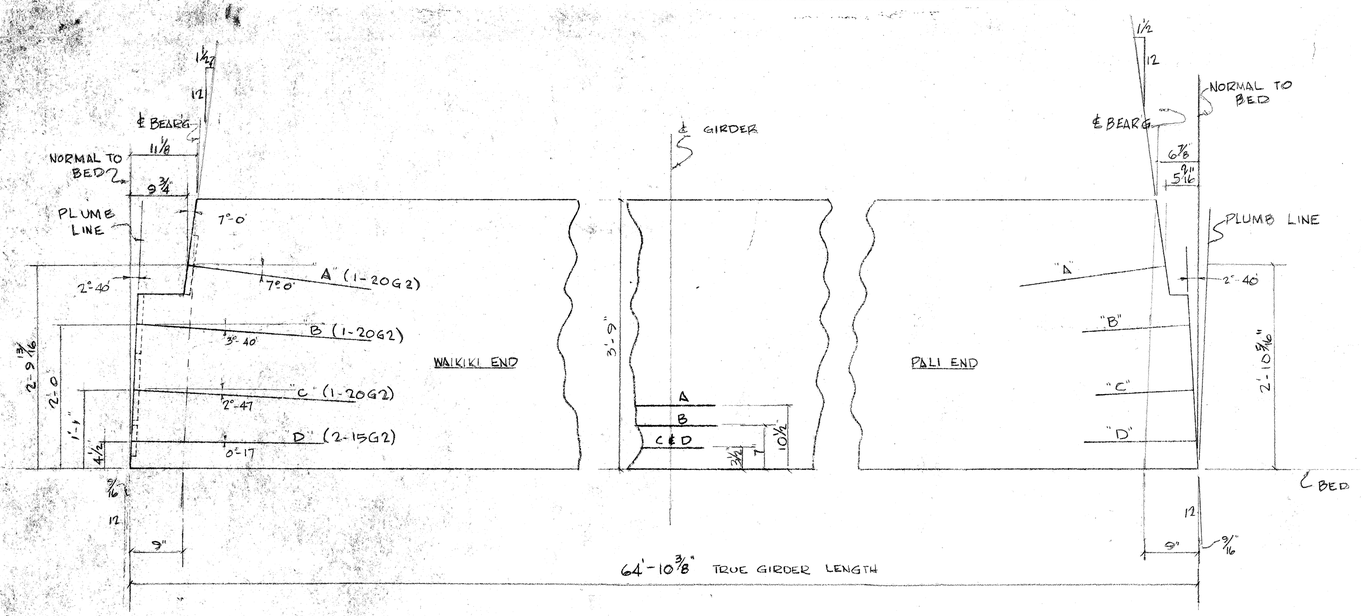
...RADE SEPARATION AT

...AUOA ROAD

ALTE... DESIGN - POST TENSIONED GIRDER

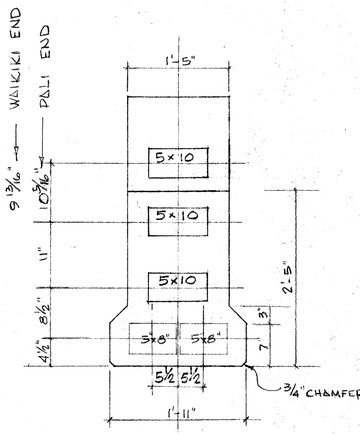
SHEET NO. A1 OF 1 SHEETS

B-8147/54A



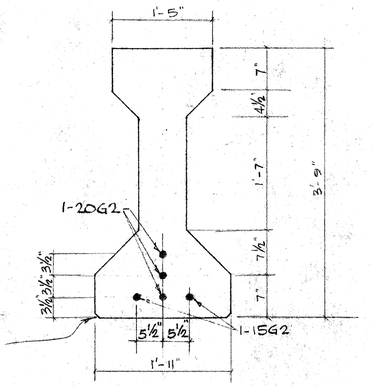
TYPICAL PROFILE OF POST-TENSIONED DUCT FOR GIRDERS

SCALE: 1"=1'-0"



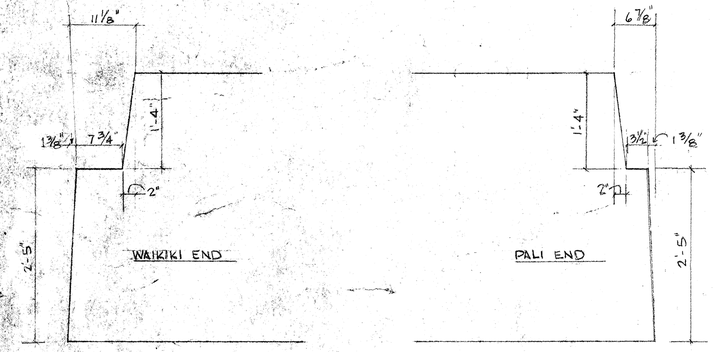
AT END GIRDER

SCALE: 1"=1'-0"



AT ℄ GIRDER

SCALE: 1"=1'-0"



END DETAILS

SCALE: 1"=1'-0"

TENDON STRESSING TABLE

MARK	NO. OF TENDONS	TYPE OF TENDONS	LENGTH OF TENDON - OUT TO OUT ENG. PLATE	LENGTH OF SHIMS EACH END	INITIAL PRESTRESS FORCE LBS	INITIAL PRESTRESS GAGE PSI	DO NOT EXCEED FORCE LBS	DO NOT EXCEED GAGE PSI	STRESSING SEQUENCE
A	1	20G	63'-9"	2 5/16"	164,980	7780	188,540	8,893	3
B	1	20G	64'-9 1/8"	2 11/32"	164,980	7780	188,540	8,893	1
C	1	20G	64'-9 11/16"	2 11/32"	164,980	7780	188,540	8,893	2
D	1	15G	64'-10 1/16"	2 1/32"	123,735	5840	141,408	6,670	4
E	1	15G	64'-10 1/16"	2 1/32"	123,735	5840	141,408	6,670	5

GENERAL NOTES:

1. TENDONS TO BE TIED AT SIXTEENTH (1/16) POINTS IN ORDER TO PREVENT EITHER HORIZONTAL OR VERTICAL MOVEMENT DURING THE PLACING OF CONCRETE
2. INSURE THAT BUTTON HEADS ARE FIRMLY AGAINST GROVED WASHER, PRIOR TO PLACING CONCRETE.
3. NEVER EXCEED THE "DO NOT EXCEED" PRESSURES AS SHOWN IN THE STRESSING TABLE.

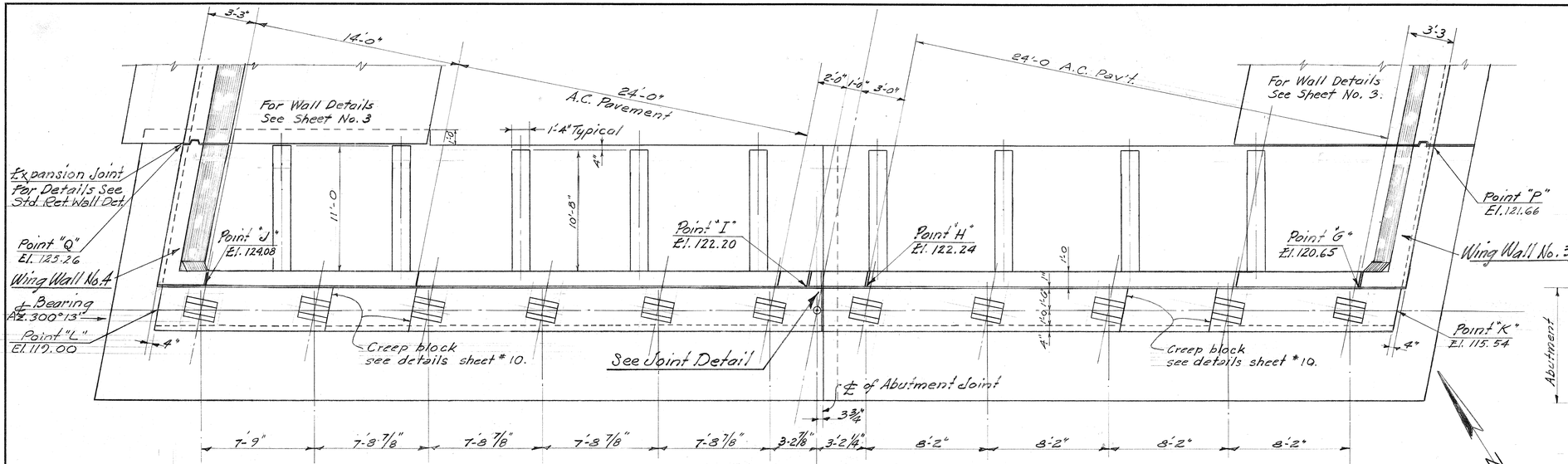
PALI HWY GIRDERS

DRAWN	SCALE	REVISIONS	DATE
CHECKED			
APPROVED			
DATE			

TITLE: SHEET NO. A2 OF 2 SHTS. NO. 2

B-8147.154E

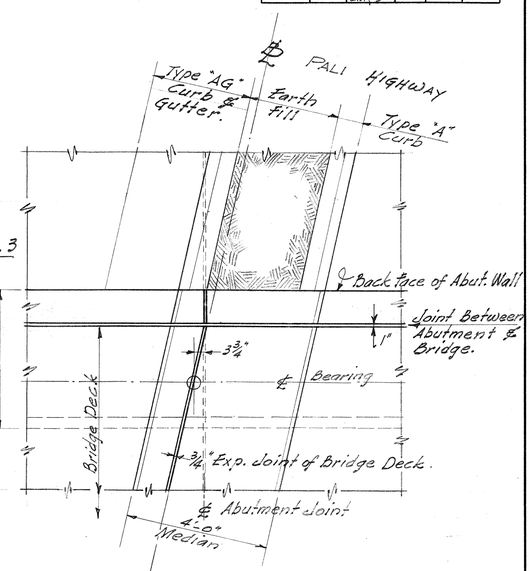
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-061-1(7) UNIT 5	1960	155	176



Note: For Bearing Seat and Creep Block Details see Sht. No. 10.

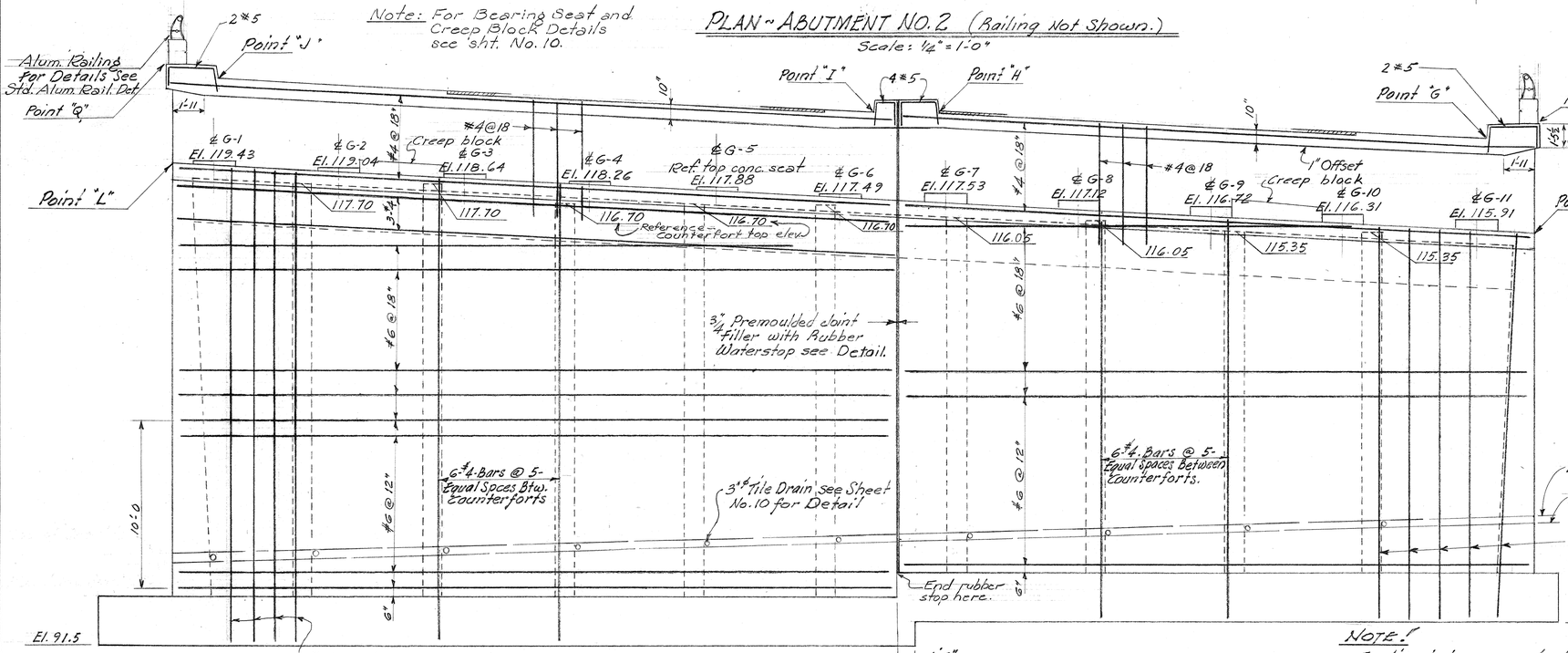
PLAN ~ ABUTMENT NO. 2 (Railing Not Shown.)

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



JOINT DETAIL

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



Reinforcement, Typical for Back face. Reinforcement, Typical for Front face.

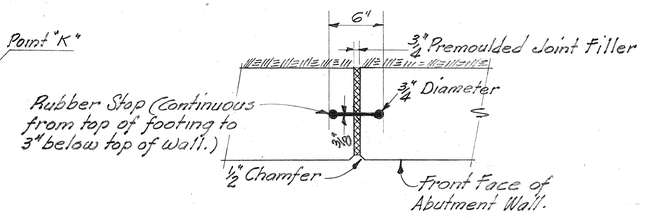
See Sheet No. 9 for footing Reinforcement.

ELEVATION ~ ABUTMENT NO. 2

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

NOTE! Footing to be excavated and poured to neat lines.

NOTE! For Typical Section of Abutment Wall, see Sheet No. 7.



RUBBER WATERSTOP DETAIL

No Scale

ORIGINAL PLAN	NOTE BOOK
SURVEY PLOTTED BY	DATE
DRAWN BY K.T.	" "
TRACED BY M.R.L. 4/25/60	" "
QUANTITIES BY	" "
QUANTITIES CHECKED BY	5-27-52
CHECKED BY J.R.T.	No.

JAMES B. WILSON — REGISTERED PROFESSIONAL ENGINEER — No. 379 — HAWAII, U.S.A.

LAW & WILSON • TUDOR • TOWILL
ARCHITECTS • ENGINEERS • SURVEYORS
James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 9 1957

STRUCTURE # 3

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

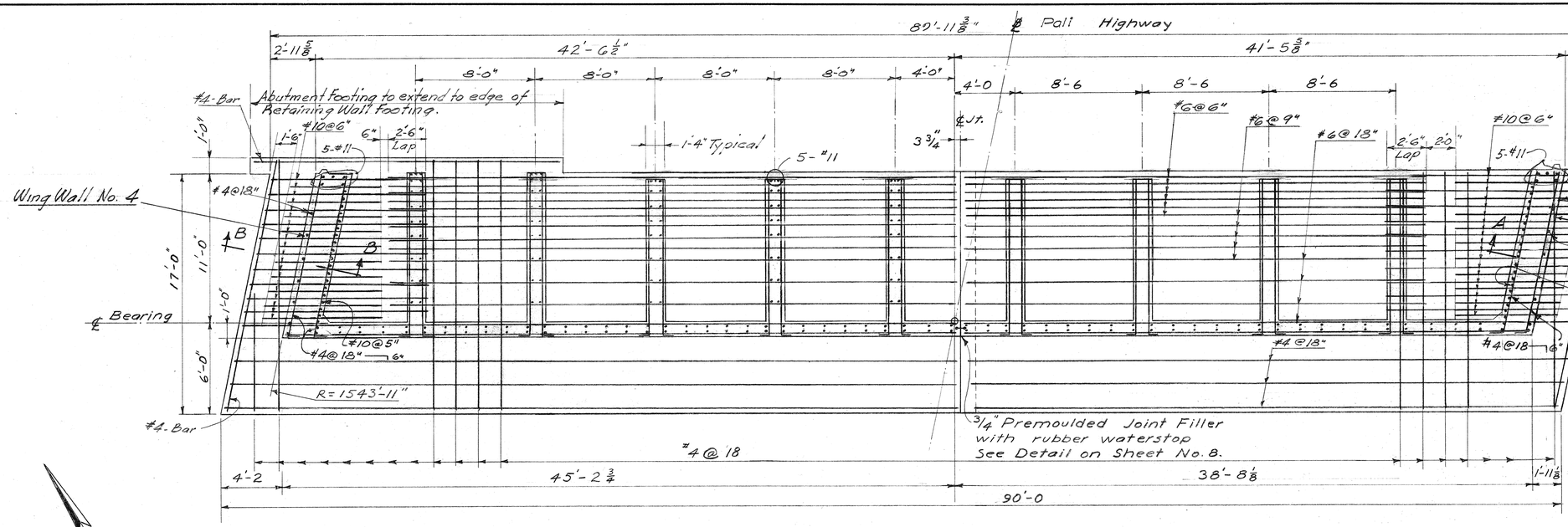
PALI HIGHWAY
PROJECT NO. BU-061-1(7) UNIT 5
GRADE SEPARATION AT
PAUOA ROAD
ABUTMENT NO. 2

SHEET No. 8 OF 10 SHEETS

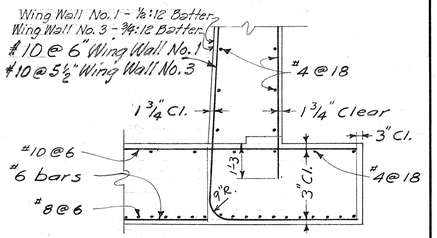
B.S147.155

PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No:	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BU-060-1(7) UNIT 5	1960	156	176

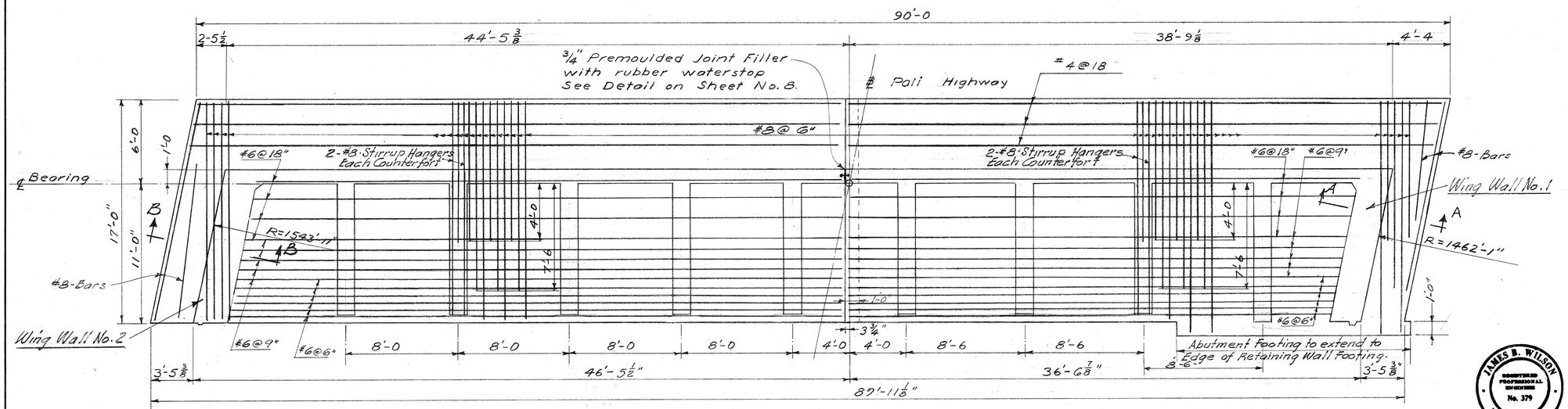


FOOTING PLAN - ABUTMENT No. 2
TOP STEEL SHOWN
Scale: 1/4" = 1'-0"

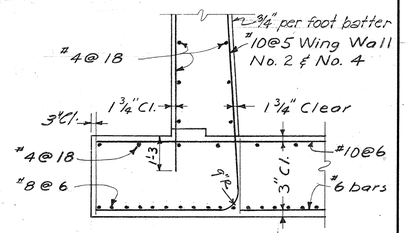


SECTION A-A
Scale 3/8" = 1'-0

NOTES:
1- All footing reinforcing steel shown in either plan is typical for both Abut. No. 1 & No. 2
2- Counterfort & Abutment Wall details shown on Sheets No. 7 & No. 8.
3- Additional Wing Wall Details shown on Sheet No. 10.



FOOTING PLAN - ABUTMENT No. 1
BOTTOM STEEL SHOWN
Scale: 1/4" = 1'-0"



SECTION B-B

LAW & WILSON • TUDOR • TOWILL
ARCHITECTS • ENGINEERS • SURVEYORS
James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1967

ORIGINAL PLAN	NOTE BOOK	SURVEY PLOTTED BY	DRAWN BY	TRACED BY	QUANTITIES COMPUTED BY	QUANTITIES CHECKED BY	DATE
	No.	J.R.T.	"	"	"	"	5-27-52

JAMES B. WILSON REGISTERED PROFESSIONAL ENGINEER No. 379 HAWAII, U.S.A.

STRUCTURE # 3

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY
PROJ. No. BU-060-1(7) UNIT 5
GRADE SEPARATION AT
PAUOA ROAD
ABUTMENT FOOTING PLANS

SHEET No. 9 OF 10 SHEETS

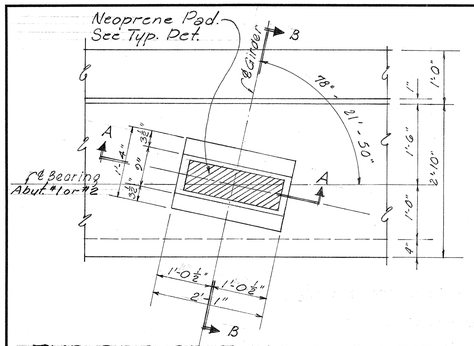
B.S147.156

11

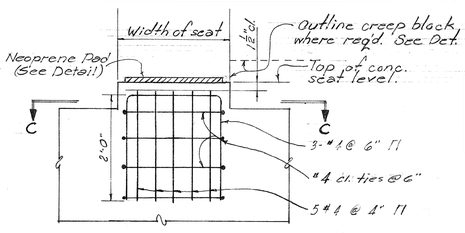
PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-061(7) UNIT 5	1960	157	176

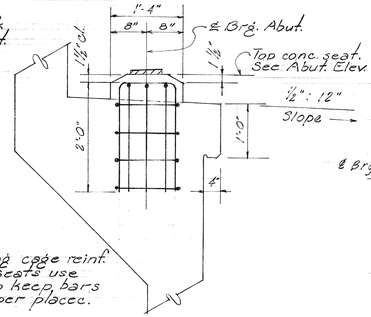
6/14/60



TYP. BRG. SEAT DET - G-1, G-4, G-5, G-6
G-7, G-8, G-11 - ABUT. No. 1 & No. 2
Scale: 3/4" = 1'-0

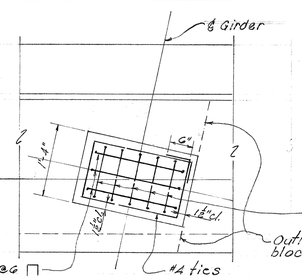


SECTION "AA"
Scale: 3/4" = 1'-0



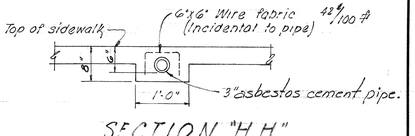
SECTION "BB"
Scale: 3/4" = 1'-0

Note: In fabricating cage reinf. of concrete seats use tack weld to keep bars in their proper places.

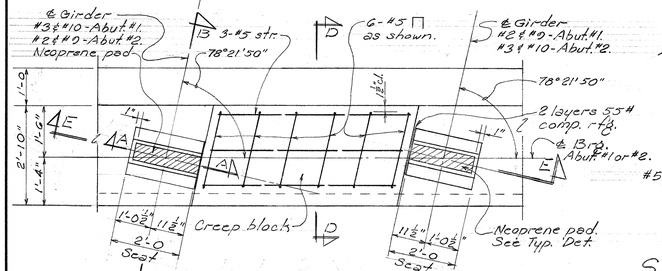


SECTION "CC"
Scale: 3/4" = 1'-0

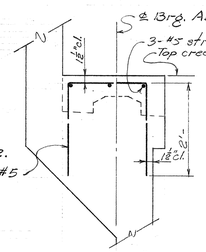
Note: For location of Creep Blocks, see Abut. Plans.



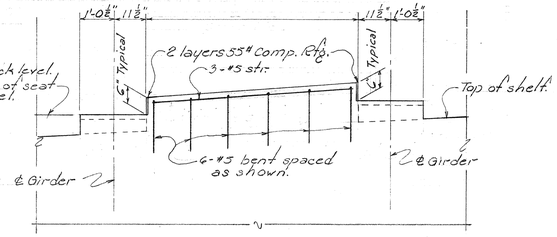
SECTION "HH"
Scale - 3/4" = 1'-0"



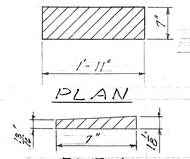
B TYP. BRG. SEAT DET.
G-2, G-3, G-9, G-10 - ABUT. No. 1 & No. 2



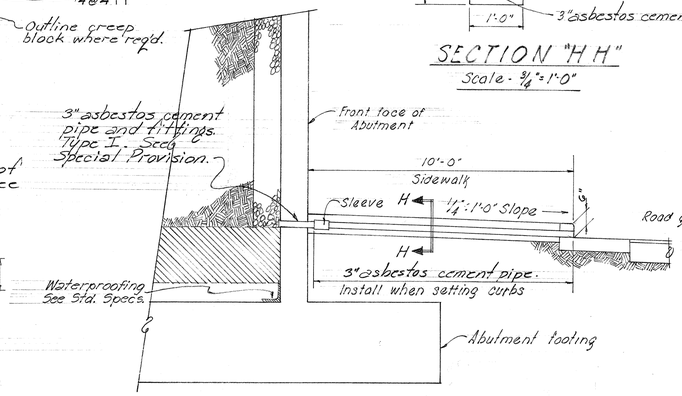
SECTION "D-D"
Scale: 1/2" = 1'-0



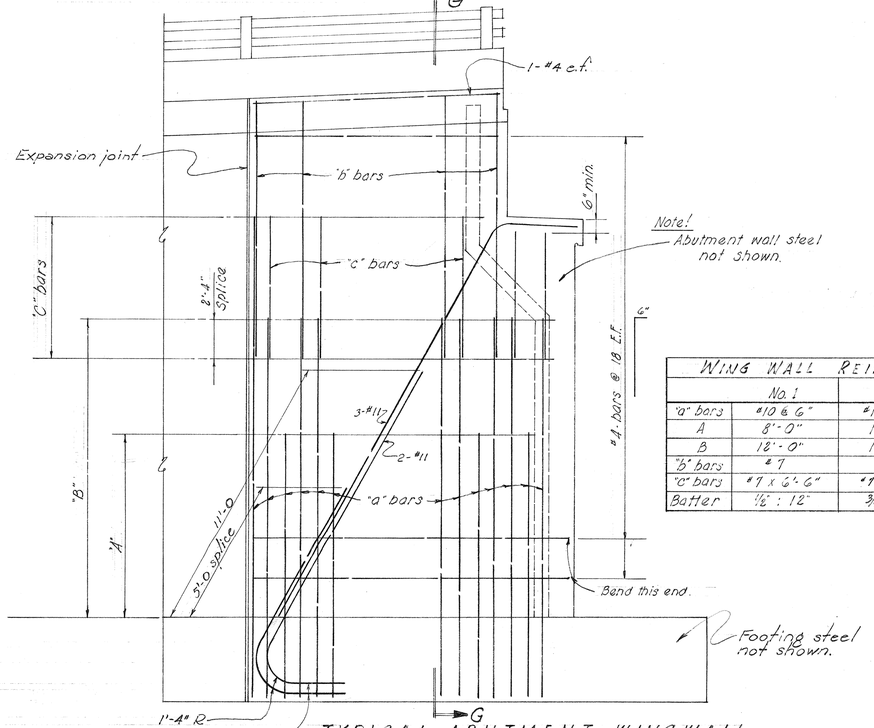
SECTION "E-E"
Scale: 1/2" = 1'-0



TYP. DET.
NEOPRENE PAD
No Scale

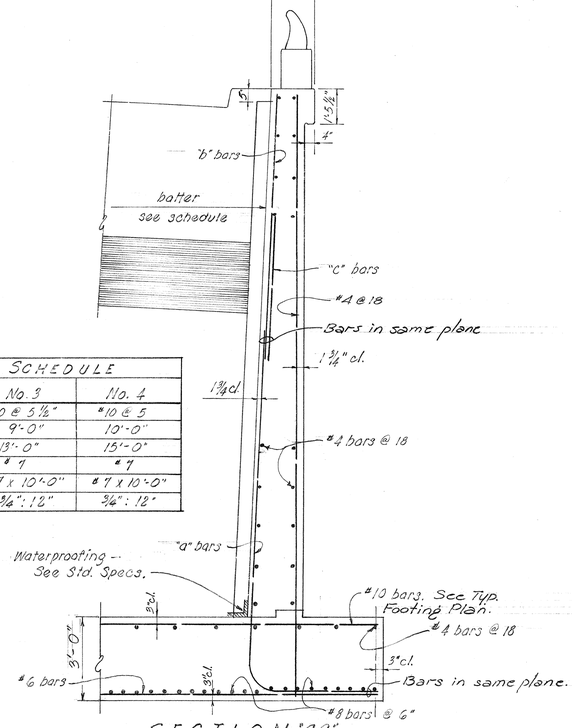


ABUTMENT & WINGWALL DRAINAGE DETAIL
Scale: 3/8" = 1'-0"



TYPICAL ABUTMENT WINGWALL
Rear face reinforcements shown. Scale: 3/8" = 1'-0

WING WALL REINFORCING SCHEDULE				
	No. 1	No. 2	No. 3	No. 4
"a" bars	#10 @ 6"	#10 @ 5	#10 @ 5 1/2"	#10 @ 5
A	8'-0"	10'-0"	9'-0"	10'-0"
B	12'-0"	15'-0"	13'-0"	15'-0"
"b" bars	#7	#7	#7	#7
"c" bars	#7 x 6'-6"	#7 @ 10'-0"	#7 x 10'-0"	#7 x 10'-0"
Batter	1/2" : 12"	3/4" : 12"	3/4" : 12"	3/4" : 12"



SECTION "GG"
Scale: 3/8" = 1'-0

Note!
Bridge seats shall be built to exact elevations shown and float finished. Neoprene Pads are incidental to Class A-1 Concrete & will not be paid as a separate item. Clean Conc. seat before placing Neoprene Pads.

STRUCTURE #3

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY
PROJECT NO. BU-061-1(7) UNIT 5
GRADE SEPERATION AT
PAUOA ROAD
ABUTMENT DETAILS

SHEET No. 10 OF 10 SHEETS

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

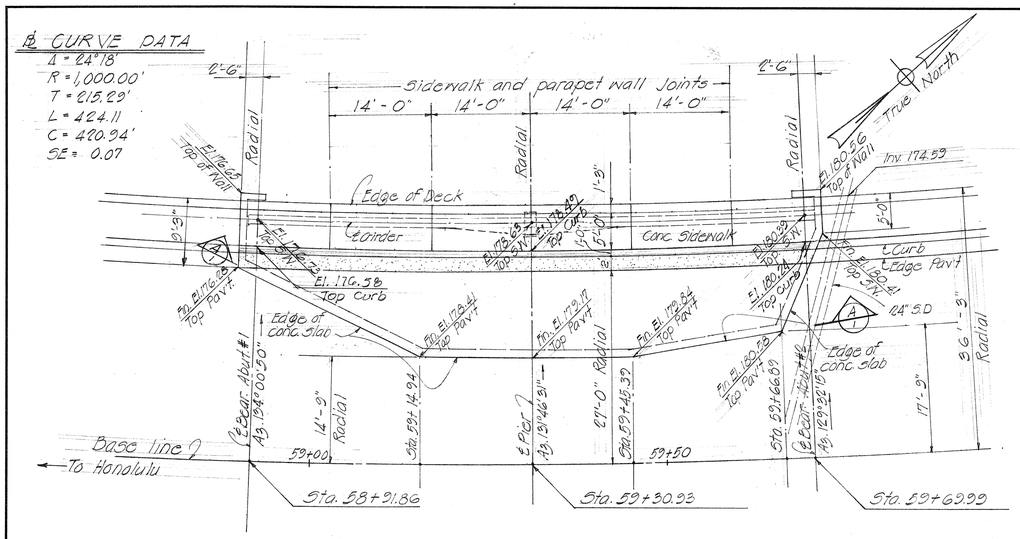
PRINTED ON DIEPO 1000H CLEARPRINT

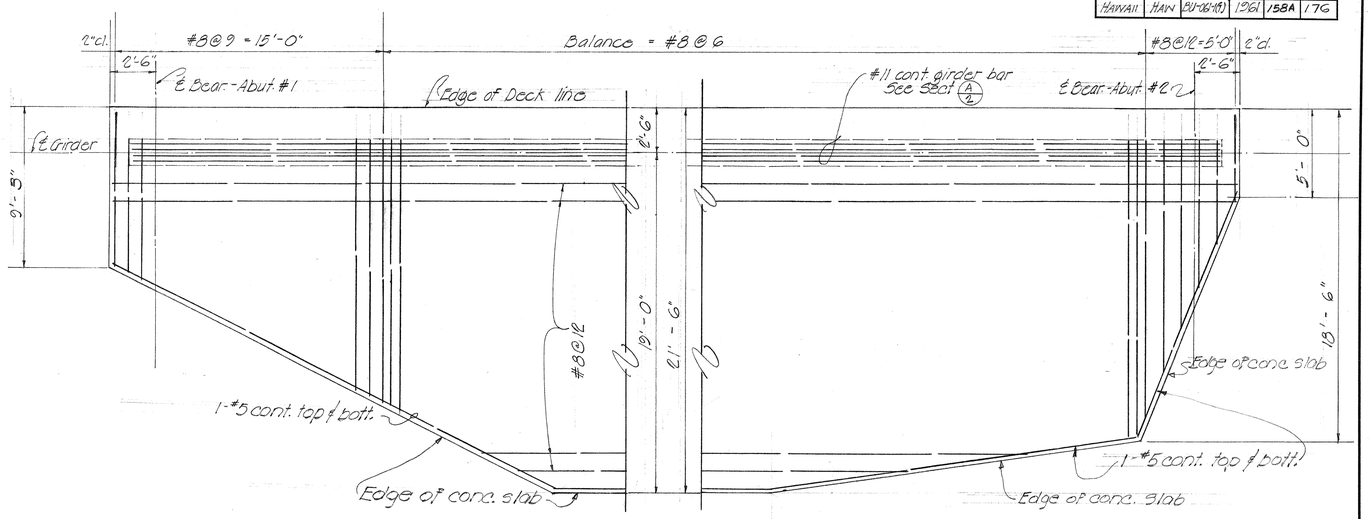
B.S147.157

9-9-61

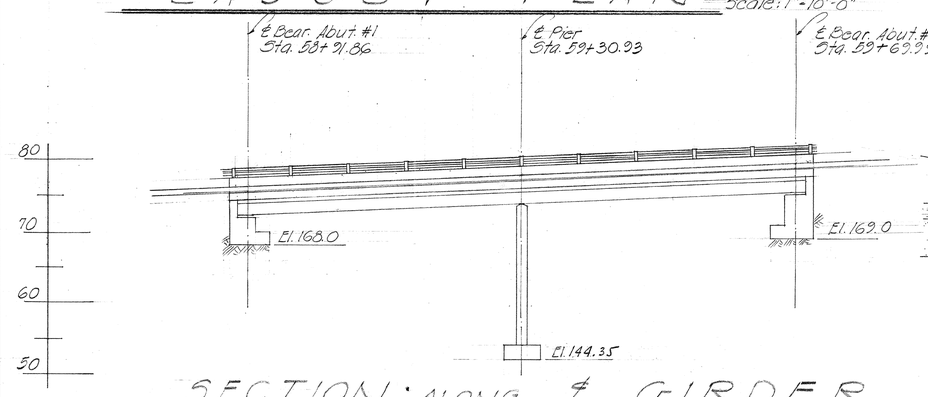
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-06(4)	1961	158A	176

℄ CURVE DATA
Δ = 24°18'
R = 1,000.00'
T = 215.29'
L = 424.11
C = 420.94'
SE = 0.07

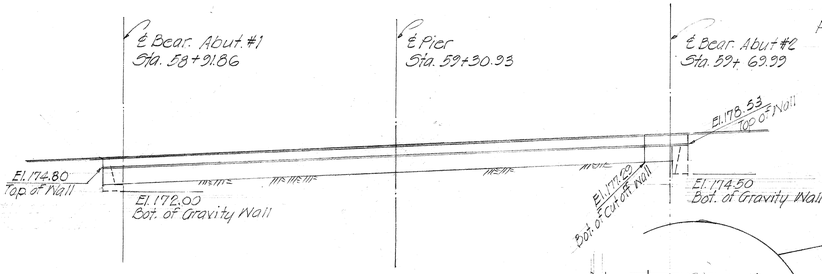




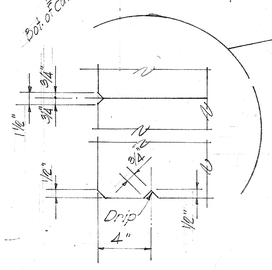
LAYOUT PLAN
Scale: 1"-10'-0"



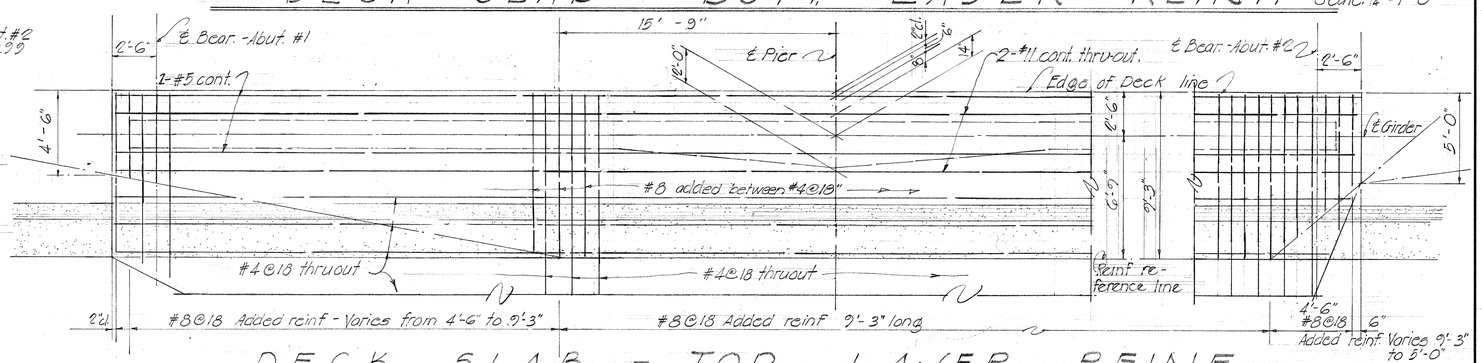
SECTION ALONG ℄ GIRDER
Scale: 1"=10'-0"



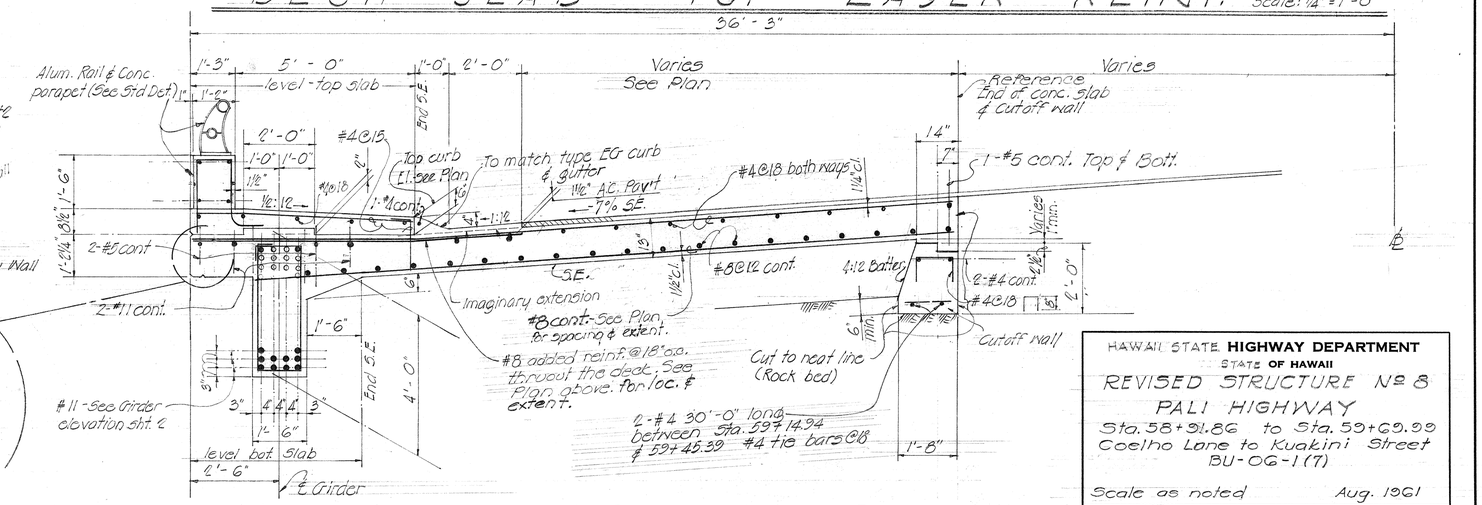
SECTION
Scale: 1"=10'-0"



DECK SLAB - BOTT. LAYER REINF.
Scale: ½"=1'-0"



DECK SLAB - TOP LAYER REINF.
Scale: ¼"=1'-0"



NORMAL SECTION IN SPAN
Scale: ½"=1'-0"

HAWAII STATE **HIGHWAY DEPARTMENT**
STATE OF HAWAII
REVISED STRUCTURE No. 8
PALI HIGHWAY
Sta. 58+91.86 to Sta. 59+69.99
Coelho Lane to Kuakini Street
BU-06-1(7)
Scale as noted Aug. 1961

SHEET No. 1 OF 3 SHEETS

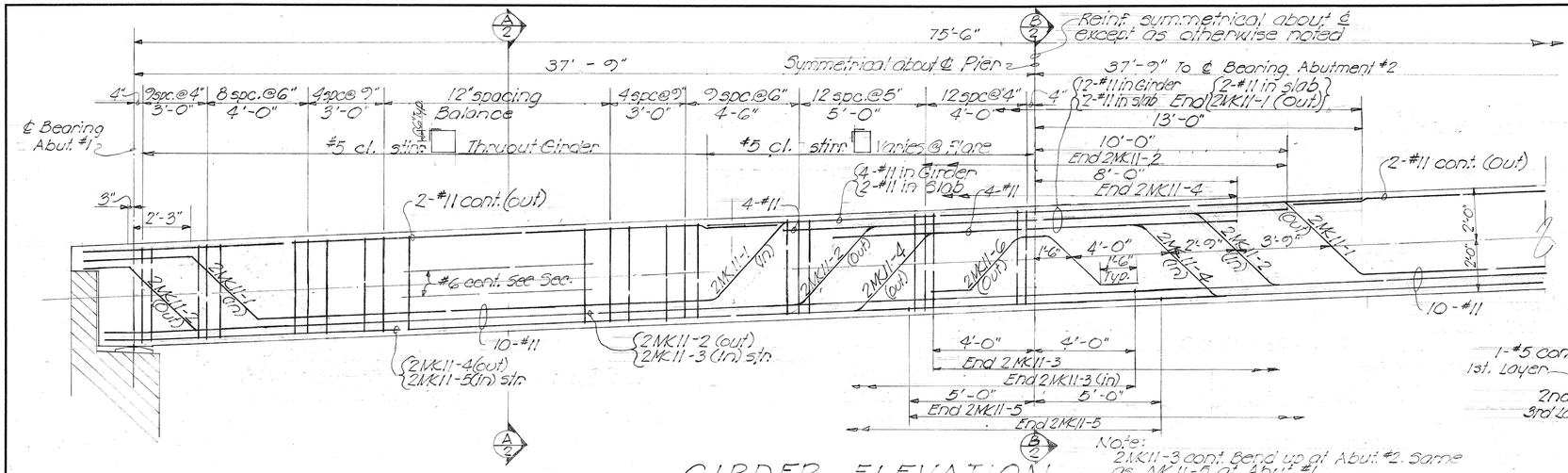
ORIGINAL PLAN	NOTE BOOK No.	SURVEY PLOTTED BY	DATE Aug '61
		DESIGN BY P.C.	
		DRAWN BY P.C.	
		TRACED BY A.F.	Aug '61
		QUANTITIES BY A.F.	Aug '61
		QUANTITIES CHECKED BY	
		CHECKED BY	

PRINTED ON DIEPO 1000H CLEARPRINT

B.S147.158A

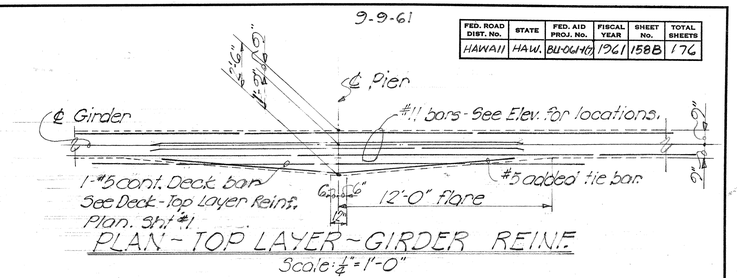
9-9-61

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BU-061-1(7)	1961	158B	176



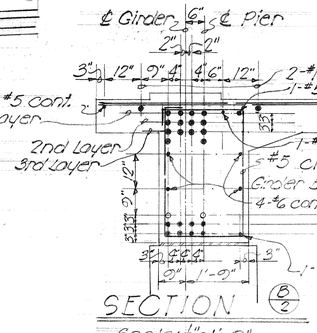
GIRDER ELEVATION

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



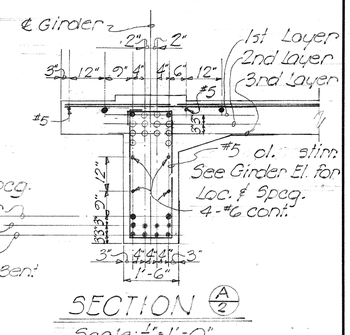
PLAN - TOP LAYER - GIRDER REINF.

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



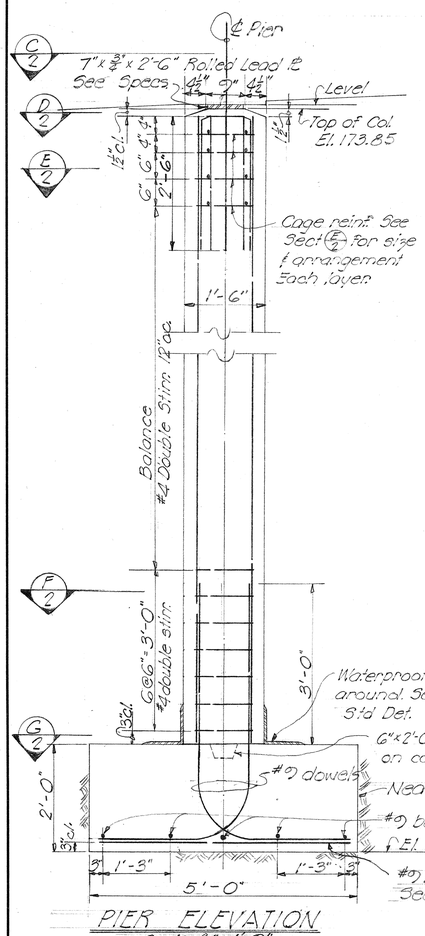
SECTION (B/2)

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



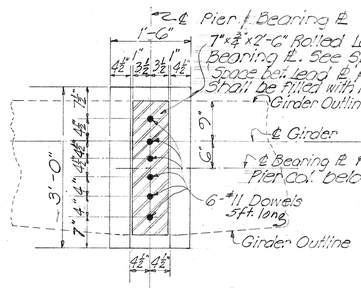
SECTION (A/2)

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



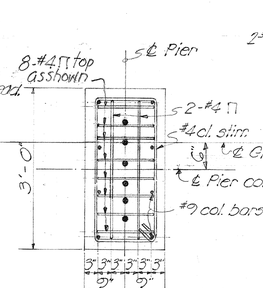
PIER ELEVATION

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



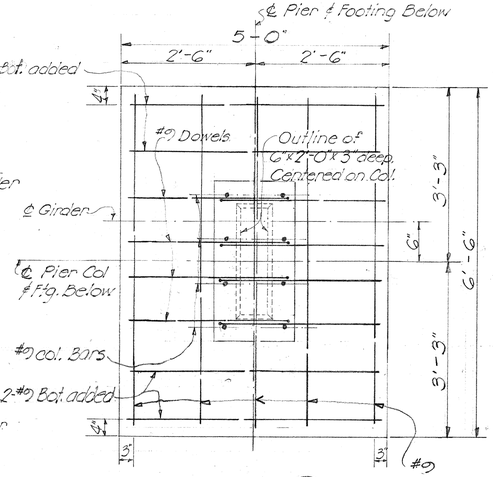
SECTION (C/2)

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



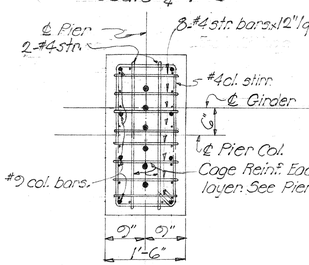
SECTION (D/2)

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



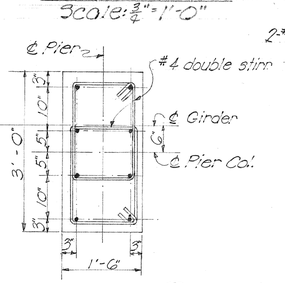
SECTION (G/2)

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



SECTION (E/2)

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



SECTION (F/2)

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

CONSTRUCTION METHODS

All backfill behind abutment shall be complete in place before pouring concrete for the superstructure.

Sidewalk and railing shall be poured after the release of falsework.

Footing shall be excavated and poured to neat lines in case of over excavation, space between footing and ground shall be filled with concrete at the contractor's expense. This fill concrete shall have a minimum quality of class D-1.

ESTIMATED QUANTITIES

Class A-1 concrete	126.5 c.y.
Reinforcing Steel	24,190 lb.
Structural Exc.	162 c.y.
C.R.M.	20.6 c.y.
Alum. railing	113. Lin. Ft.
Bituminous tack coat	12 Gal.
A.C. Paving	6 Tons
Additional Conc. in Bridge	13.8 c.y.

HAWAII STATE **HIGHWAY DEPARTMENT**
STATE OF HAWAII

REVISED STRUCTURE No 8

PALI HIGHWAY

Sta 58+91.86 to Sta 59+69.99

Coelho Lane to Kuakini St.

BU-061-1(7)

Scale as noted Aug. 1961

SHEET No. 2 OF 3 SHEETS

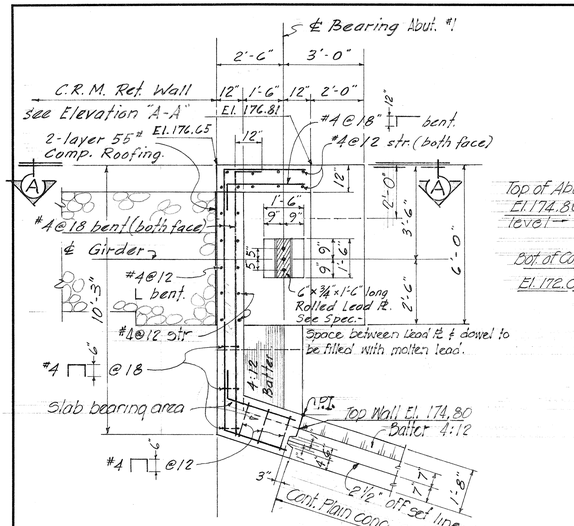
SURVEY PLOTTED BY	DATE
DRAWN BY	
ORIGINAL PLAN	
TRACED BY	
DESIGNED BY	
NOTE BOOK	QUANTITIES CHECKED BY
No.	CHECKED BY

PRINTED ON DIEPO 1000H CLEARPRINT

B.S147.15SB

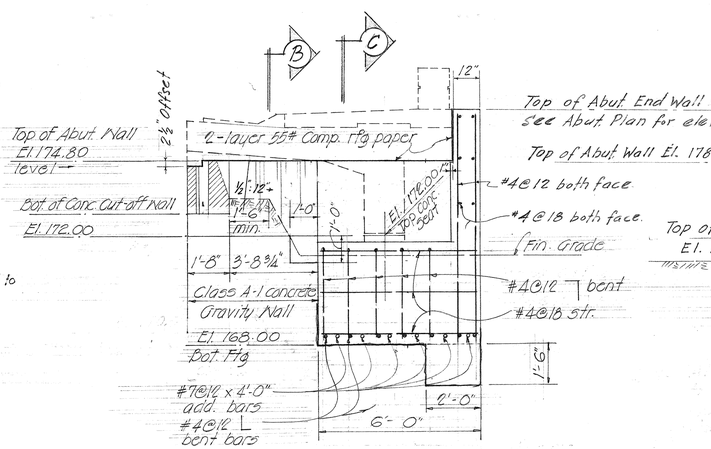
9-9-61

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-061-1(7)	1961	159A	176



ABUT. Nº 1 ~ PLAN

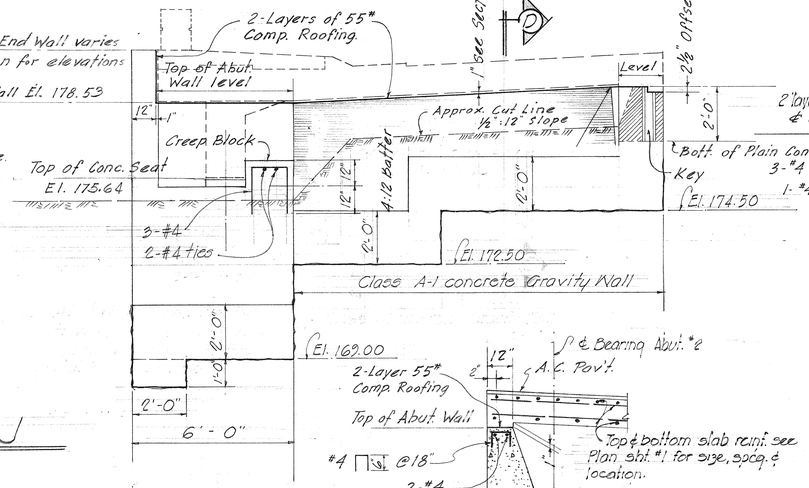
Scale: 3/8" = 1'-0"



ABUT Nº 1 ELEVATION

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

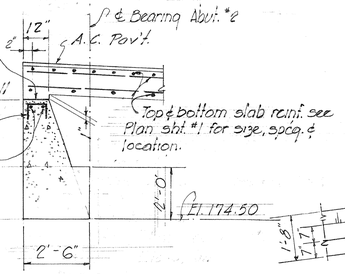
NOTE!
Abut #2 reinf. similar to Abut #1 except as otherwise noted on this detail and adj. Abut. plan.



ABUT. Nº 2 ELEVATION

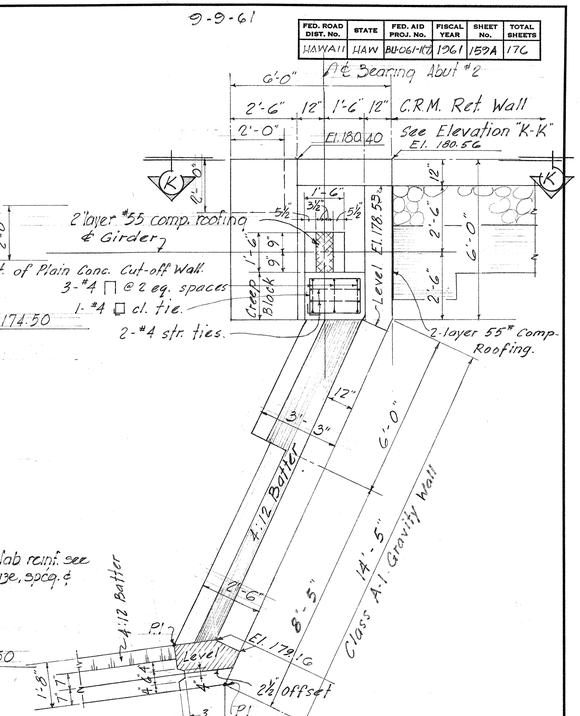
Excavate & pour to neat line.

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



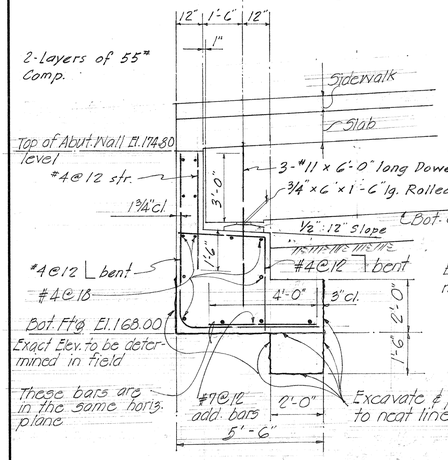
SECTION "D-D"

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



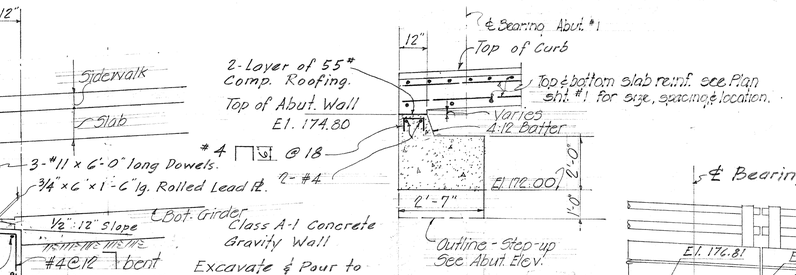
ABUT. Nº 2 ~ PLAN

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



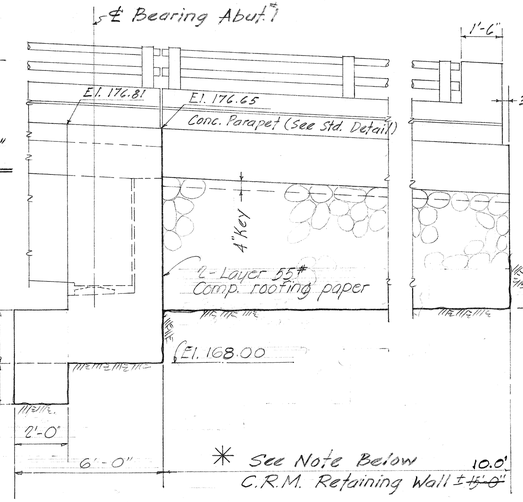
SECTION "C-C"

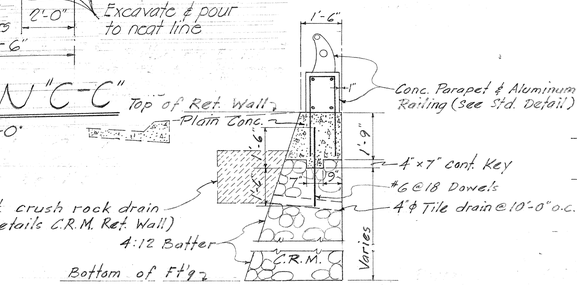
Scale: 3/8" = 1'-0"



SECTION "B-B"

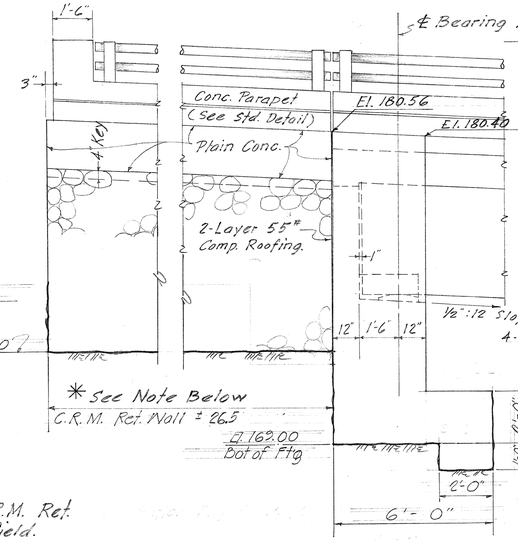
Scale: 3/8" = 1'-0"

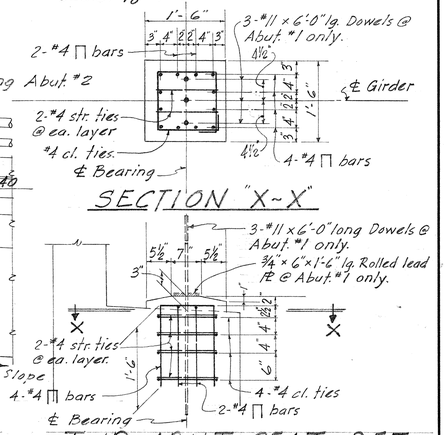




TYP. SECTION ~ C.R.M. RET. WALL

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





SECTION "X-X"

TYP. ABUT. SEAT DET.

Scale: ¾" = 1'-0"

C.R.M. RET. WALL ELEV. "A-A"

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

C.R.M. RET. WALL ELEV. "K-K"

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

* Note: Length and Elevations of C.R.M. Ret. Walls to be determined in field.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

REVISED STRUCTURE Nº 8

PALI HIGHWAY
Sta. 58+91.86 to Sta. 59+69.99
Coelho Lane to Kuakini St.
Proj. BU-061-1(7)
Scale as noted Aug. 1961

SHEET No. 3 OF 3 SHEETS

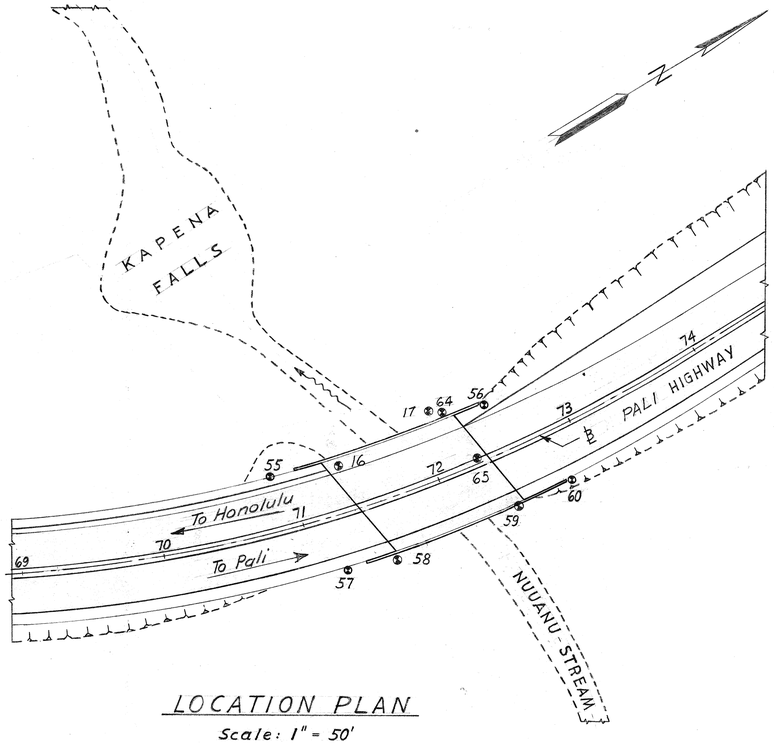
ORIGINAL PLAN	SURVEY PLOTTED BY:	DATE:
	DESIGNED BY:	
	DRAWN BY:	
	TRACED BY:	
NOTE BOOK	QUANTITIES BY:	
No.	CHECKED BY:	

B.S147.159A

PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BUOGI-1(7) UNIT 5	1960	160	176

6/16/60



LOCATION PLAN

Scale: 1" = 50'

ESTIMATED QUANTITIES

Concrete	Lump sum (~~1262~~ cu. yds.) 1292
Reinforcing Steel	Lump sum (~~198,000~~ lbs.) 173,800
Structural Excavation	~~1,230~~ cu. yds. 1240
Asphaltic Concrete Paving	~~43~~ Tons 44
Bituminous Tack Coat	126 Gal.
Filter Material	~~130~~ cu. yds. 121
Aluminum Railing	~~310~~ lineal ft. 309

GENERAL NOTES

MATERIALS

All concrete class A-1 unless otherwise noted on the plans.

All steel reinforcement shall be intermediate grade.

ADMIXTURE See Special Provisions

CONSTRUCTION METHODS

Curb and sidewalk on bridge shall not be poured until after release of falsework.

Placing of backfill at bridge shall not be started until after the concrete in the superstructure has reached a strength of 3,000 lbs. per sq. inch. The fill must be brought up evenly and simultaneously at both ends of the structure so as to avoid one sided earth pressure.

Footings shall be poured to neat lines. In case of overexcavation, space between footing and ground shall be filled with concrete at the contractor's expense. This fill concrete shall have a minimum quality of Class D-1.

BORING No. 16

200
190
182.3 Soil & loose rock.
176.3
174.3 Boulders & clay.
171.0 Hard fissured rock
168.8 Bottom of Footing Hard fissured blue rock
152.3

BORING No. 17

183.3 Soil
180.3 Boulders
178.3 Hard fissured rock
174.8 Rock
171.3
153.3 Rock

BORING No. 55

192.1 Boulders & clay.
186.1 Hard cracked rock.
179.0
177.1 Bottom of Footing

BORING No. 56

205.7
198.5 Bottom of Footing
190.7 Hard cracked rock

BORING No. 57

201.4
198.9 Boulders & clay
Hard cracked rock
191.5
188.9 Bottom of Footing

BORING No. 58

191.5 Hard cracked rock
180.0
176.5

BORING No. 59

188.9
186.9 Boulders & clay Hard cracked rock
182.9 Bottom of Fig.
177.0 Hard cracked rock
173.9

BORING No. 60

207.5 Boulders & clay
203.0 Medium hard cracked rock
198.5
195.5 Hard cracked rock
192.5
190
Bottom of Footing

BORING No. 65

191.1 Boulders & clay
184.1
181.0 Hard cracked rock
176.1
Bottom of Footing

BORING No. 64

189.3
186.8 Boulders & soil
181.0 Bottom of Footing Hard cracked rock
174.3

SURVEY PLOTTED BY
DESIGNED BY RK
DRAWN BY
TRACED BY
QUANTITIES BY
CHECKED BY JWL
DATE
ORIGINAL PLAN
NOTE BOOK No.
S-22-57

JAMES B. WILSON REGISTERED PROFESSIONAL ENGINEER No. 379 HAWAII, U.S.A.

LAW & WILSON • TUDOR • TOWILL
ARCHITECTS • ENGINEERS • SURVEYORS
James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1957

STRUCTURE NO. 4

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY
PROJECT NO. BU-061-1(7) UNIT 5
BRIDGE OVER
NUUANU STREAM
LOCATION PLAN & BORINGS

SHEET No. 1 OF 8 SHEETS

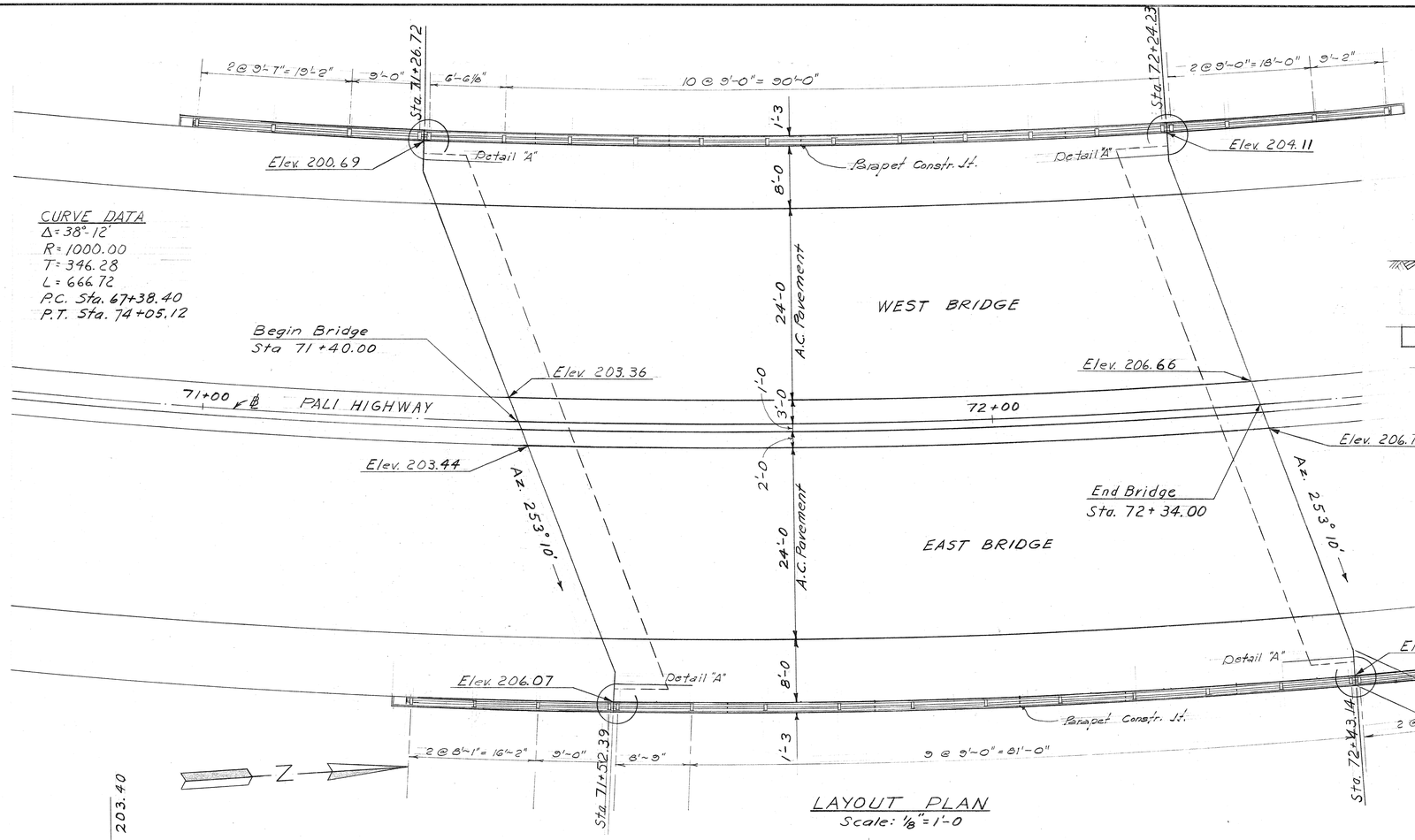
B.S147.160

160

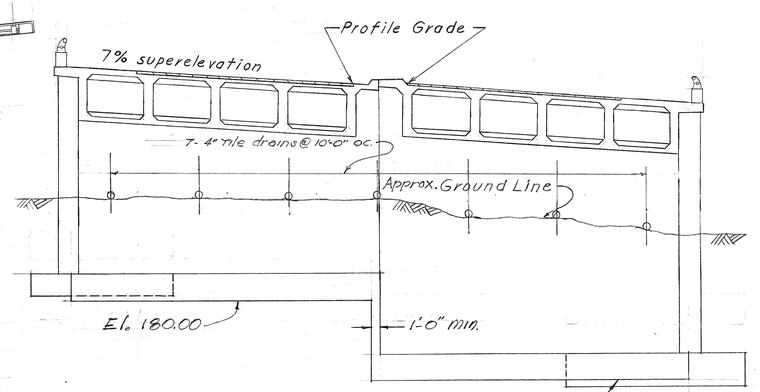
PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BU-061-1(7) UNIT 5	1960	161	176

6/14/60

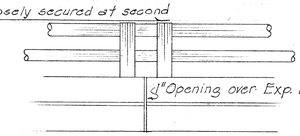


LAYOUT PLAN
Scale: 1/8"=1'-0



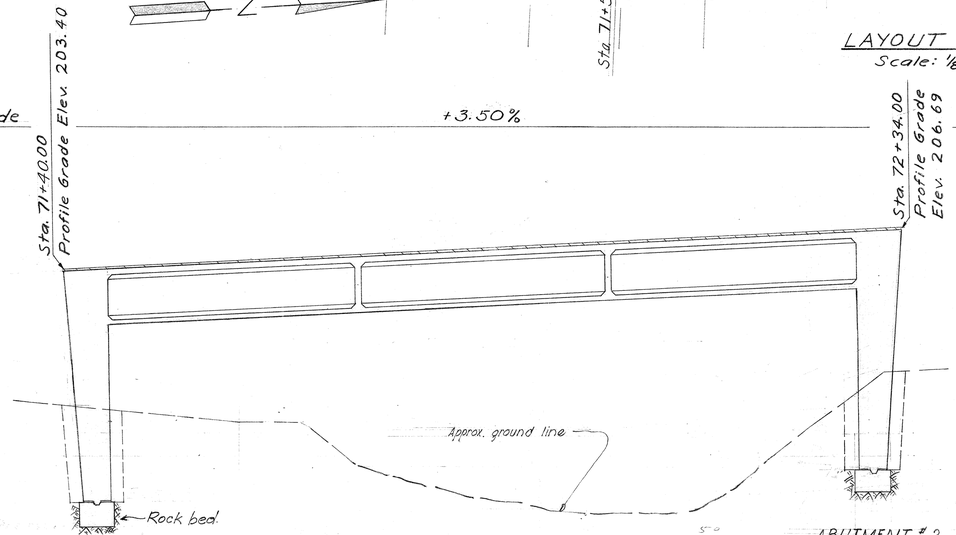
ELEVATION ABUTMENT 1
El. 171.00
Scale: 1/8"=1'-0"

Pipes continuous thru first post & loosely secured at second

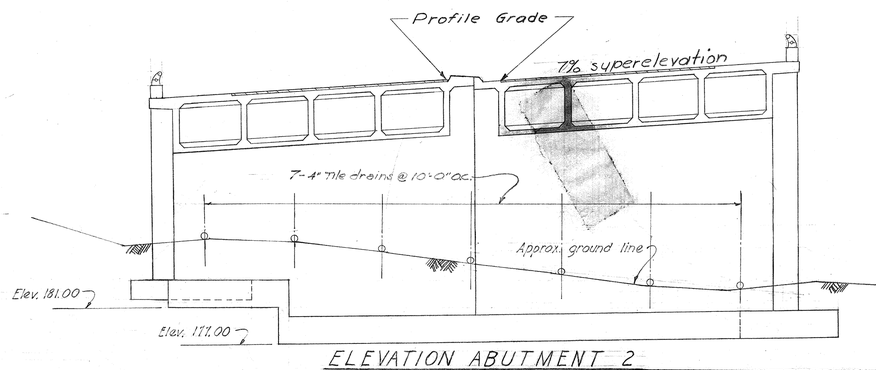


DETAIL "A"
Scale- 1/2"=1'-0"

NOTES:
1. Railings, retaining walls, abutment ends, webs, etc. are concentric with Baseline of Nuuanu Highway.
2. Super elevation of 7% is constant throughout bridge & retaining walls.
3. Bott. of Abut. Ftgs. to be 3'-0" min. below surface of bedrock.
   Bottom of Abut. footing elevations may be adjusted as directed by the engineer.
4. For more information on railing, see Standard Details for Aluminum Railing.



LONGITUDINAL SECTION
Scale: 1/8"=1'-0



ELEVATION ABUTMENT 2
Scale: 1/8"=1'-0

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James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1957

REGISTERED PROFESSIONAL ENGINEER No. 379 HAWAII, U.S.A.

STRUCTURE #4
HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII
PALI HIGHWAY
PROJECT NO. BU-061-1 (7) UNIT 5
BRIDGE OVER
NUUANU STREAM
LAYOUT PLAN & SECTIONS

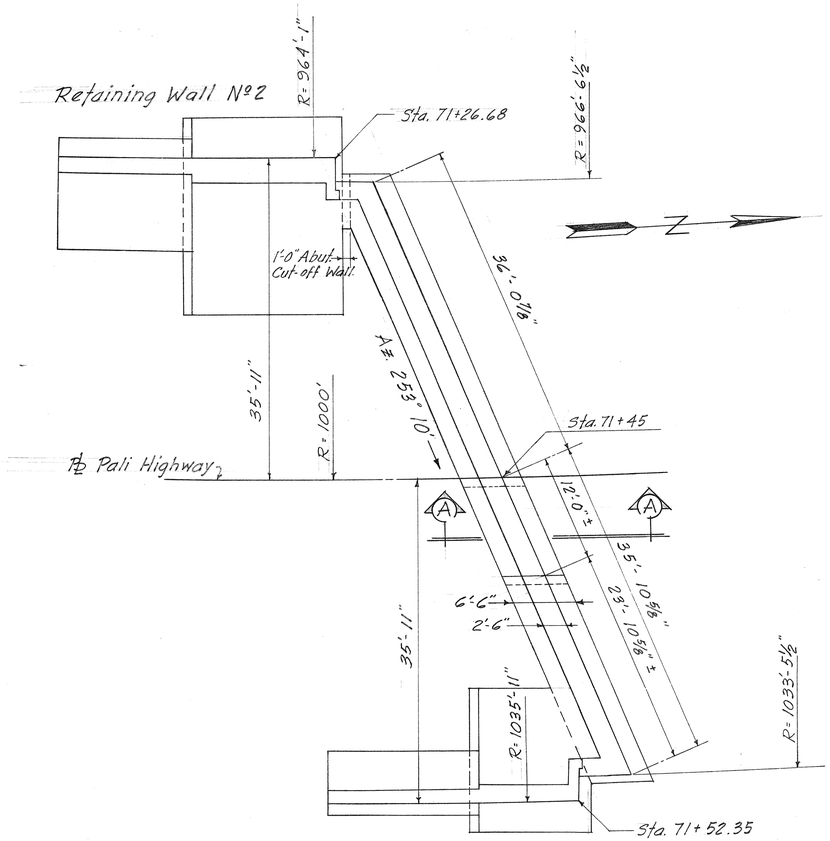
SHEET No. 2 OF 8 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY W.D.S.	
	DRAWN BY J.R.F.	
	TRACED BY	
NOTE BOOK No.	QUANTITIES BY	
	QUANTITIES CHECKED BY	
	CHECKED BY W.D.S.	5-27-57

PRINTED ON DIEPO 1000H CLEARPRINT

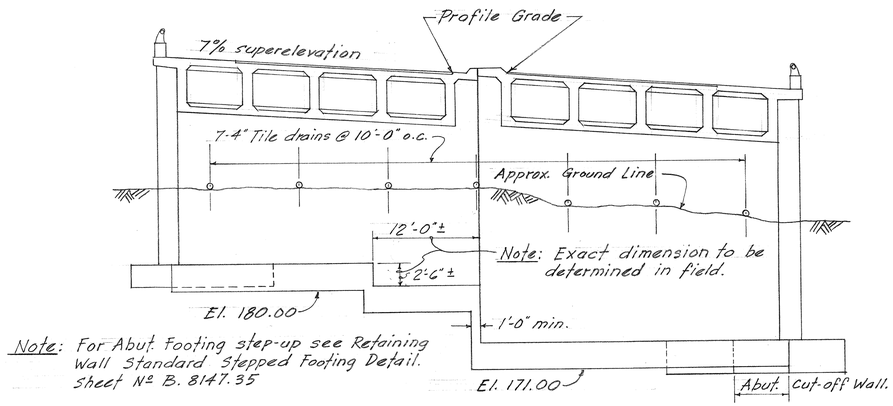
B.S147.161

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS



ABUT. Nº1 FOUNDATION PLAN

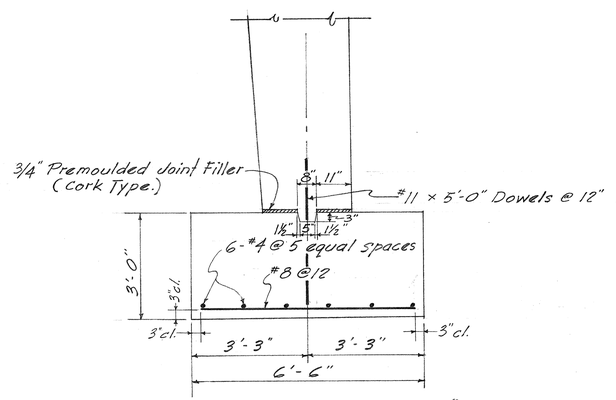
Scale: ⅛" = 1'-0"



Note: For Abut Footing step-up see Retaining Wall Standard Stepped Footing Detail. Sheet Nº B. 8147.35

ELEVATION - ABUTMENT Nº1

Scale: ⅛" = 1'-0"



TYPICAL SECTION "A-A"

Scale: ½" = 1'-0"

Note: For additional information see Contract Drawing.

ORIGINAL PLAN

NOTE BOOK No.

SURVEY PLOTTED BY
DESIGNED BY E. Salcedo
DRAWN BY E. Salcedo
TRACED BY
QUANTITIES BY
QUANTITIES CHECKED BY
CHECKED BY
DATE 4/61

Revision Nº 3 June 27, 1961
STRUCTURE #4

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
PALI HIGHWAY
PROJECT No. BU-061-1(7) UNIT 5
BRIDGE OVER
NUUANU STREAM
REVISED ABUTMENT #1 FT'G.

SHEET No. OF SHEETS

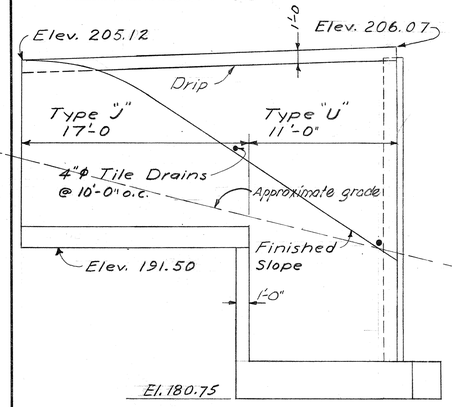
B.S147.161A

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FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BUOG-1(07) UNIT 5	1960	162	176

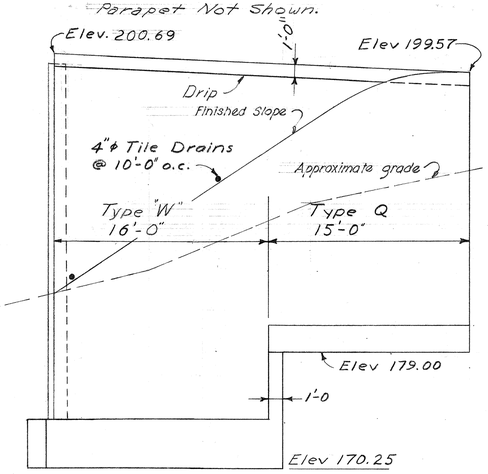
6/14/60

Note!
Aluminum Railing & Parapet Not Shown.



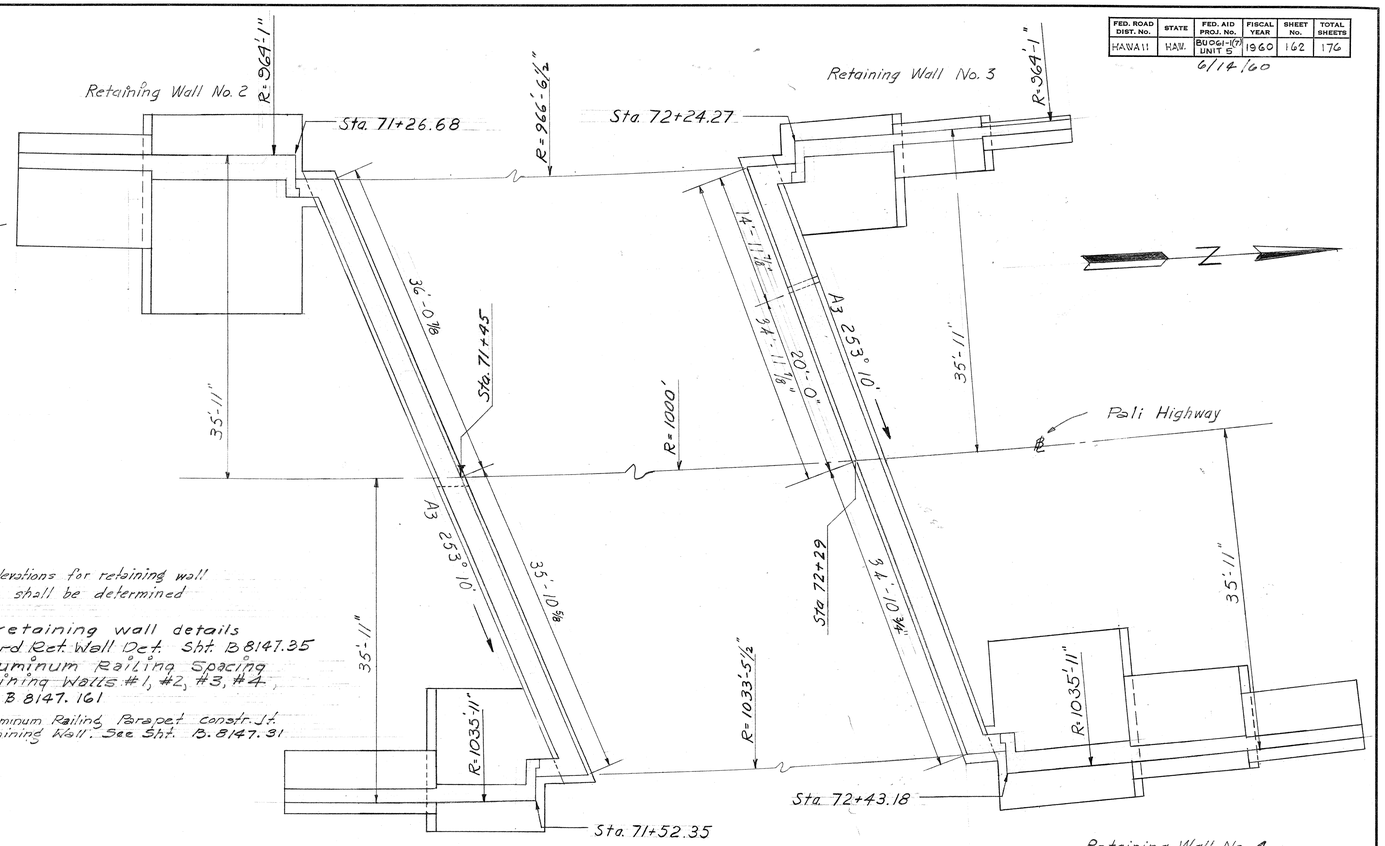
RETAINING WALL No. 1
Scale: 3/16" = 1'-0

Note!
Aluminum Railing & Parapet Not Shown.



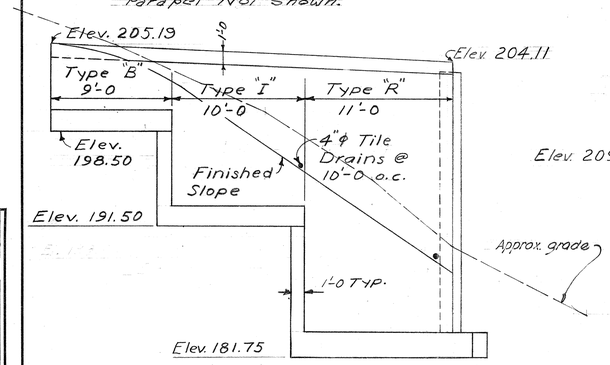
RETAINING WALL No 2
Scale 3/16" = 1'-0

NOTES:
1- Exact elevations for retaining wall footings shall be determined in field.
2- For retaining wall details Standard Ret. Wall Det. Sht. B 8147.35
3- For Aluminum Railing Spacing At Retaining Walls #1, #2, #3, #4, See Sht. B 8147.161
4- For Aluminum Railing Parapet constr. Jt. At Retaining Wall. See Sht. B. 8147.31



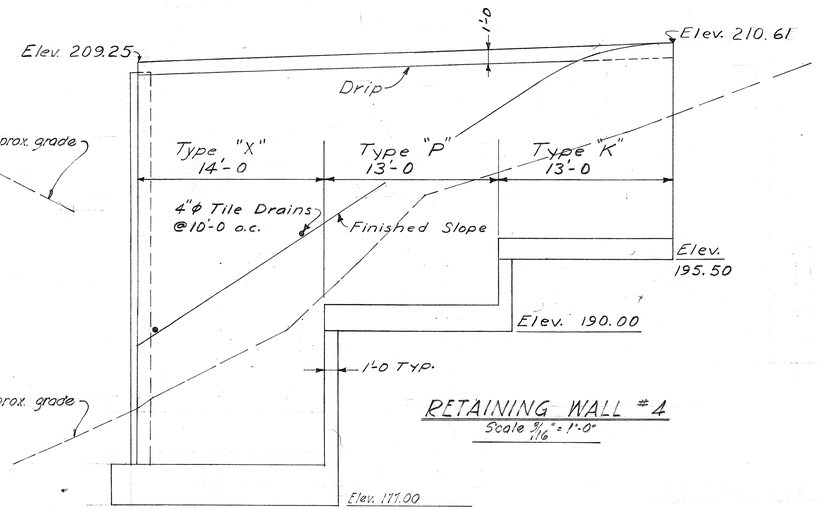
FOUNDATION PLAN
Scale: 1/8" = 1'-0

Note!
Aluminum Railing & Parapet Not Shown.



RETAINING WALL No. 3
Scale: 3/16" = 1'-0

Note!
Aluminum Railing & Parapet Not Shown.



RETAINING WALL #4
Scale 3/16" = 1'-0"

JAMES B. WILSON
REGISTERED PROFESSIONAL ENGINEER
No. 379
HAWAII, U.S.A.

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James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1957

STRUCTURE #4

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY

PROJECT NO. BU-061-1 (7) UNIT 5
BRIDGE OVER
NUUANU STREAM

RETAINING WALLS & FOUNDATION PLAN

SHEET No. 3 OF 8 SHEETS

ORIGINAL PLAN	NOTE BOOK No.	DATE
SURVEY PLOTTED BY		
DESIGNED BY WOZ	QUANTITIES BY	
TRACED BY WOZ	QUANTITIES CHECKED BY	
CHECKED BY WOZ	CHECKED BY	5-27-57

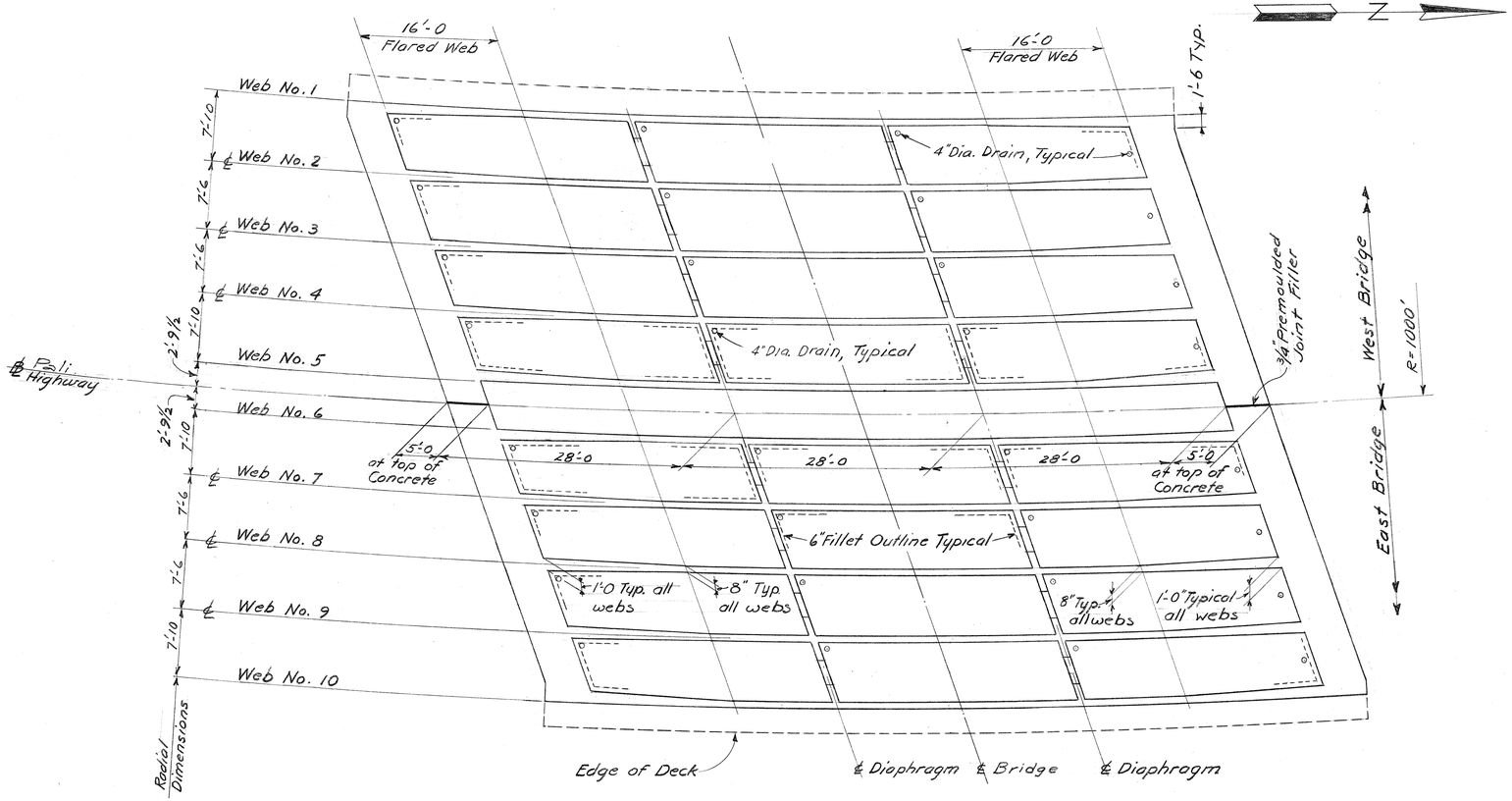
(116)

B.S147.162

162

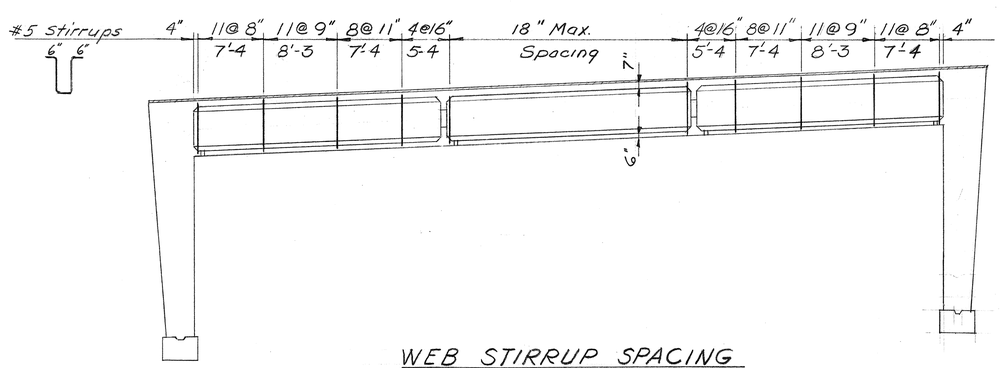
PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BUGGH-(7) UNIT 5	1960	163	176



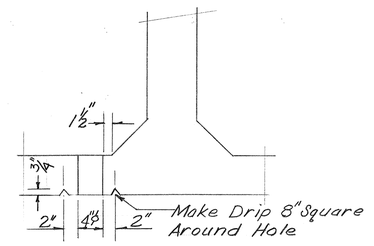
PLAN

Scale : 1/8" = 1'-0



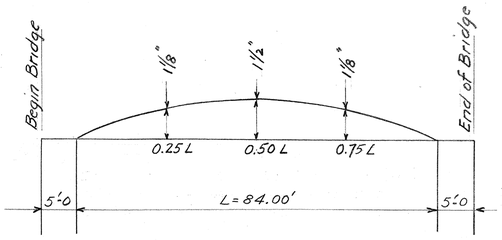
WEB STIRRUP SPACING

Scale : 1/8" = 1'-0



TYPICAL SECTION AT DRAIN

Scale : 1" = 1'-0"



DEAD LOAD CAMBER CURVE

No Scale

NOTE: This curve shows the dead load camber only and should be increased by the amount of the anticipated take up in the false work

NOTE:

Centerline of Webs No. 2,3,4,7,8,9 & outer edge of Webs No. 1,5,6 & 10 are concentric to ℄ of Nuuanu Highway

JAMES B. WILSON REGISTERED PROFESSIONAL ENGINEER No. 379 HAWAII, U.S.A.

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James B. Wilson No.
REGISTERED ENGINEER
DATE APR. 3 1957

STRUCTURE # 4

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY

PROJECT NO. BU-061-1 (7) UNIT 5
BRIDGE OVER
NUUANU STREAM

DECK FRAMING PLAN

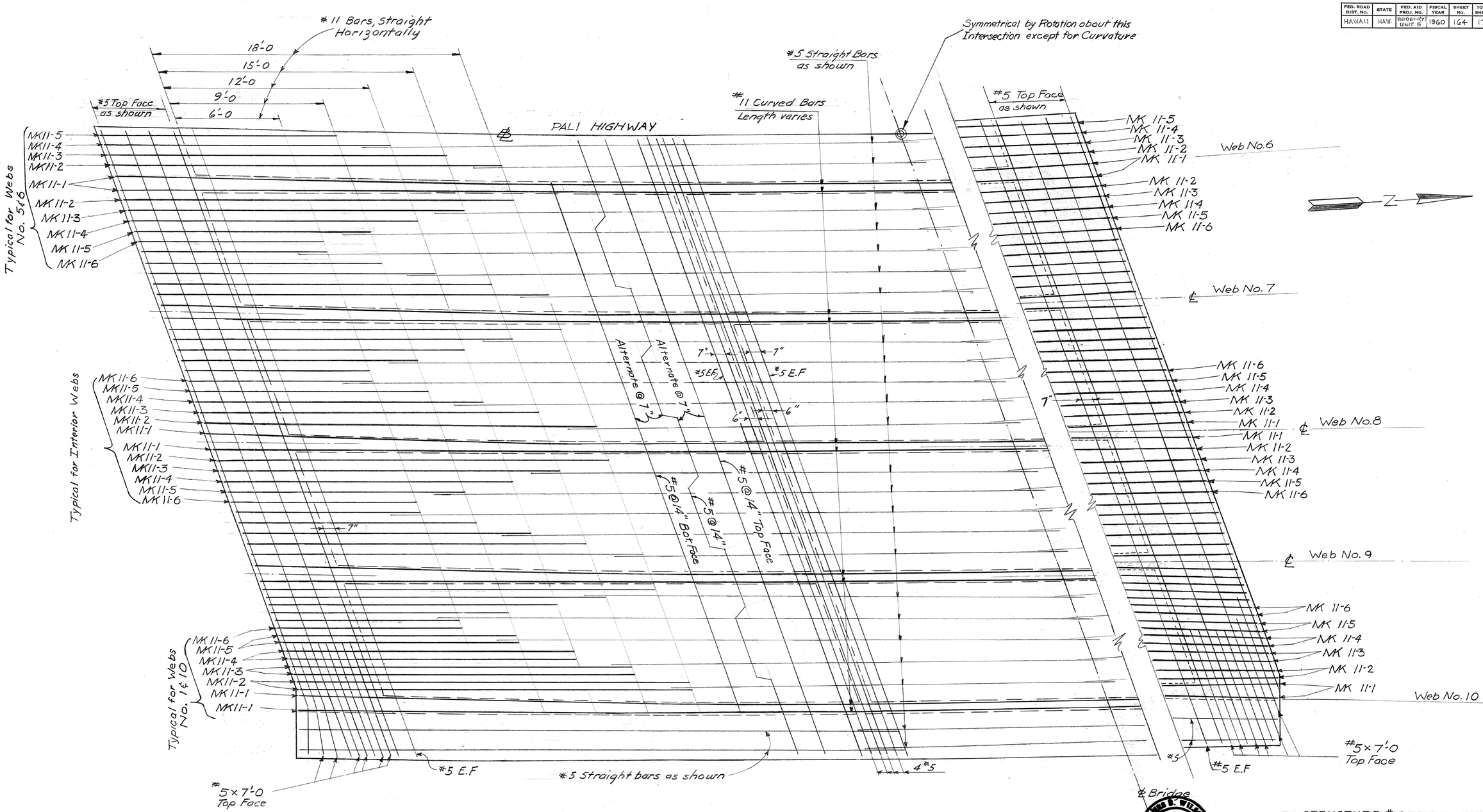
SHEET No. 4 OF 8 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY A.C.T.	
	DRAWN BY M.R.	
NOTE BOOK	TRACED BY	
No.	QUANTITIES BY	
	QUANTITIES CHECKED BY	
	CHECKED BY A.C.T.	3-27-57

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B.S147.163

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BUGH-HY UNIT 5	1960	164	176



NOTES:

1. East Bridge shown.
2. Top face reinforcement shown except as noted. For bottom face Longitudinal Steel see Section on Sheet No. 7
3. Dashed lines indicate outline of Concrete

PLAN - TOP SLAB REINFORCEMENT

Scale : 3/8" = 1'-0

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY JRL	
	DRAWN BY JRL	
	TRACED BY	
NOTE BOOK No.	QUANTITIES BY	
	CHECKED BY JRL	5-27-57

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James B. Wilson No. 379
REGISTERED ENGINEER
DATE JUL 3 1957

STRUCTURE #4

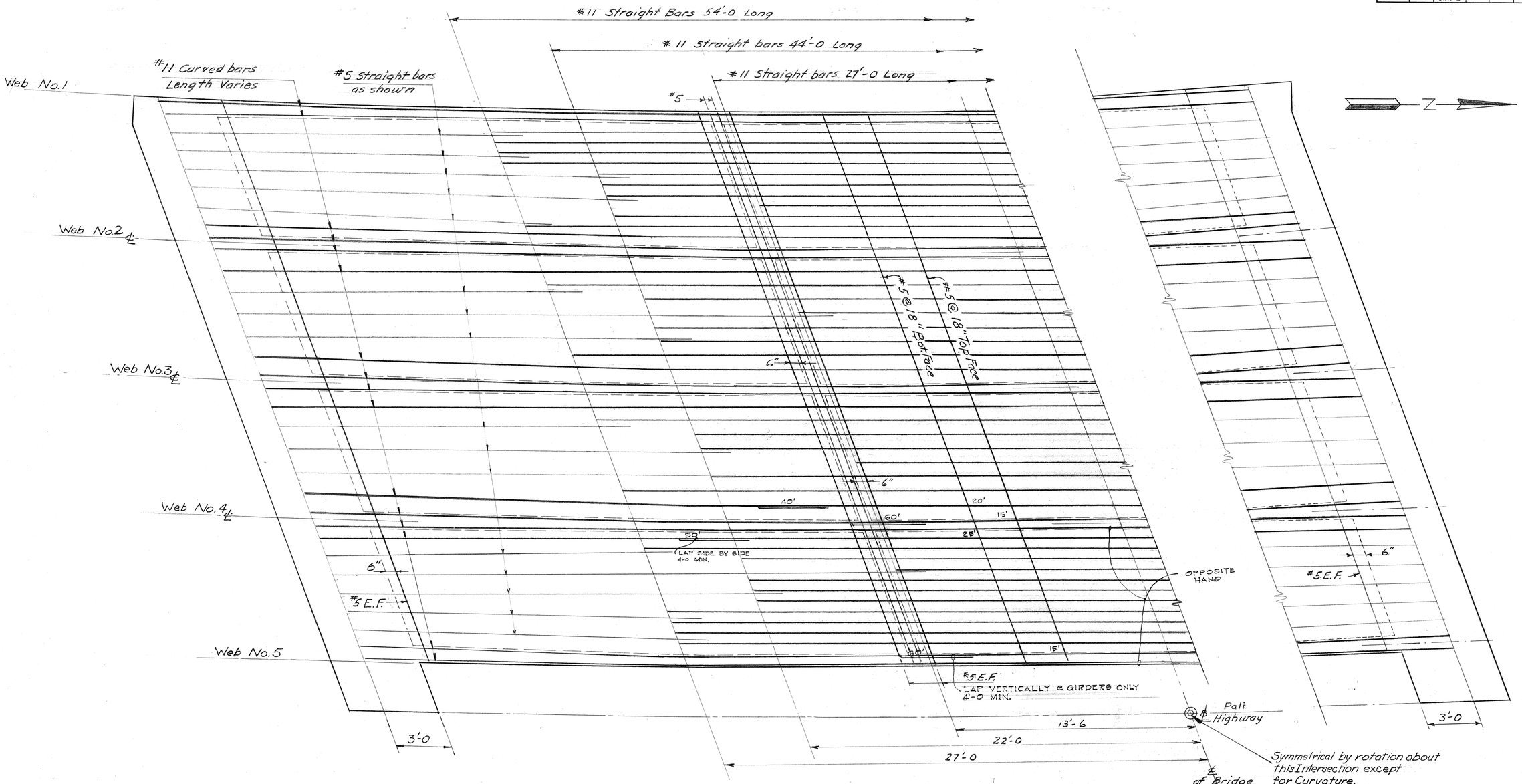
HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII
PALI HIGHWAY
PROJECT NO. BU-061-1 (7) UNIT 5
BRIDGE OVER
NUUANU STREAM
TOP SLAB REINFORCEMENT

SHEET No. 5 OF 8 SHEETS

PRINTED ON DIEPO 1000H CLEARPRINT

B.S147.164

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BUOSI-I(7) UNIT 5	1960	165	176



NOTES:

1. West Bridge shown
2. Bottom Face Reinforcement shown except as noted. For Top Face Longitudinal Steel see Section on Sheet No. 7

PLAN - BOTTOM SLAB REINFORCEMENT

Scale: 3/8" = 1'-0

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY J.K.T.	
	DRAWN BY M.K. P.E.R.	
	TRACED BY	
NOTE BOOK No.	QUANTITIES BY	
	QUANTITIES CHECKED BY	
	CHECKED BY J.K.T.	5-29-57

JAMES B. WILSON REGISTERED PROFESSIONAL ENGINEER No. 379 HAWAII U.S.A.

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James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1957

STRUCTURE #4

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY

PROJECT NO. BU-061-1 (7) UNIT 5

BRIDGE OVER

NUUANU STREAM

BOTTOM SLAB REINFORCEMENT

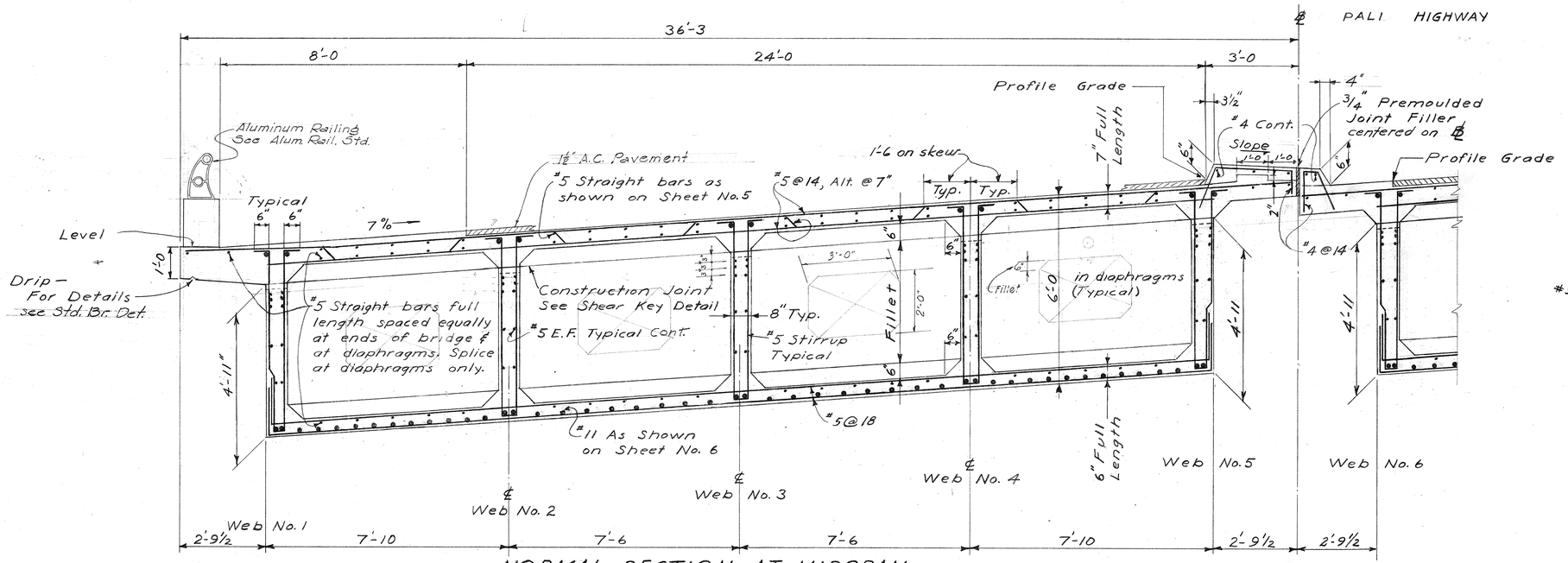
SHEET No. 6 OF 8 SHEETS

(119)

B.S147.165

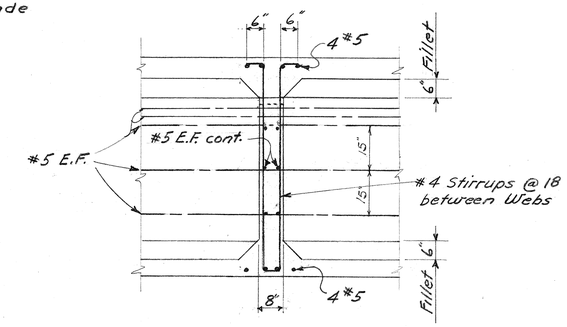
PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BRDG-H(7) UNIT 5	1960	166	176



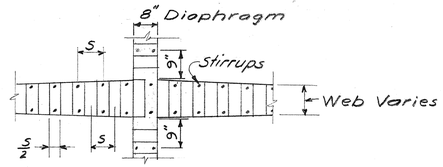
NORMAL SECTION AT MIDSPAN

Scale: ½"=1'-0



DIAPHRAGM SECTION

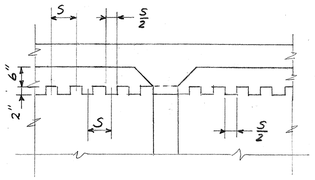
Scale: ½"=1'-0



PLAN

NOTE

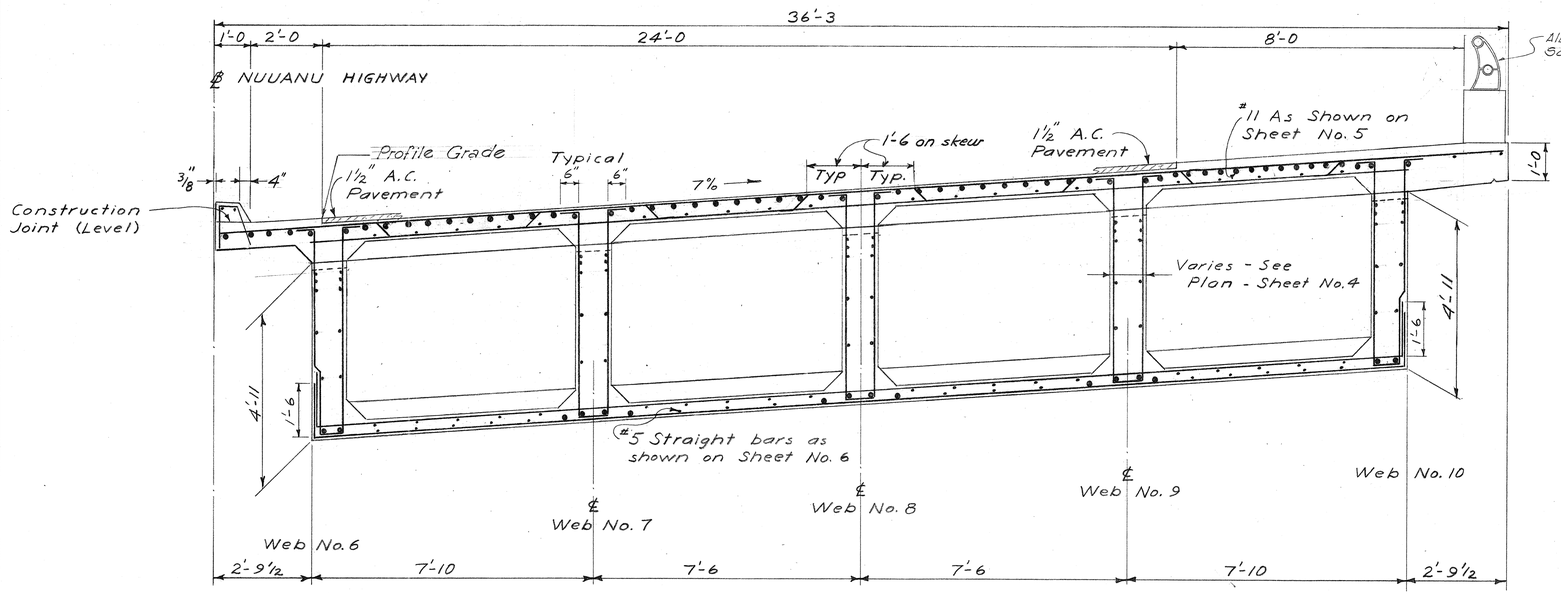
S= Stirrup spacing



SECTION

SHEAR KEY

Scale: ½"=1'-0



NORMAL SECTION NEAR ABUTMENTS

Scale: ½"=1'-0

NOTES:

1. Reinforcing steel descriptions & structural dimensions are similar for each section unless otherwise noted.
2. All reinforcing to be 1¼" clear minimum to face of concrete
3. See Std. Box Girder Detail Sht. B.8147.179 for further details.

JAMES B. WILSON REGISTERED PROFESSIONAL ENGINEER No. 379 HAWAII, U.S.A.

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James B. Wilson No.
REGISTERED ENGINEER
DATE DEC 9 - 1959

STRUCTURE #4

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII
PALI HIGHWAY
PROJECT NO. BU-061-1 (7) UNIT 5
BRIDGE OVER
NUUANU STREAM
DECK SECTIONS

SHEET No. 7 OF 8 SHEETS

ORIGINAL PLAN	NOTE BOOK No.	SURVEY PLOTTED BY	DESIGNED BY	DRAWN BY	TRACED BY	QUANTITIES BY	QUANTITIES CHECKED BY	CHECKED BY	DATE
									3-22-57

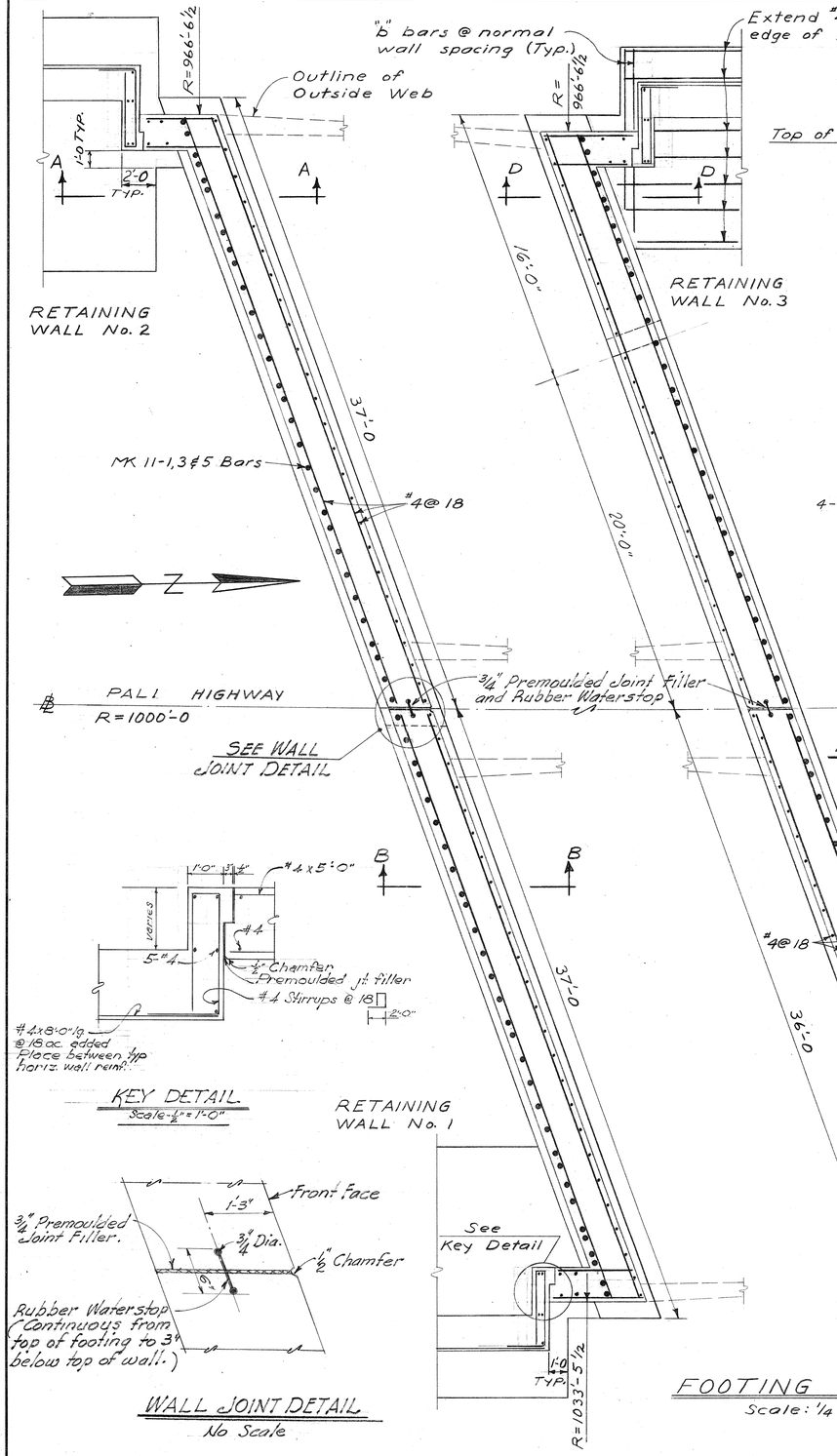
PRINTED ON DIEPO 1000H CLEARPRINT

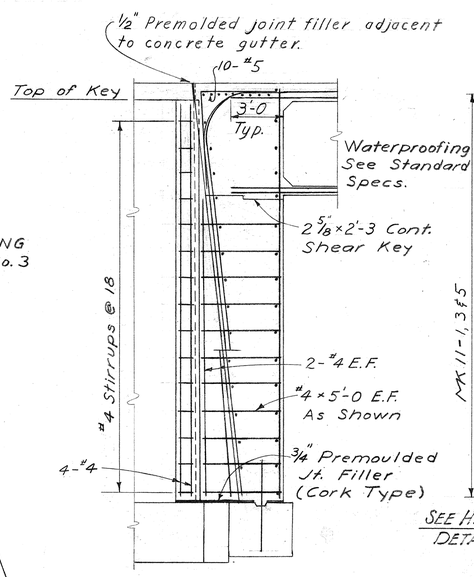
B.8147.166

166

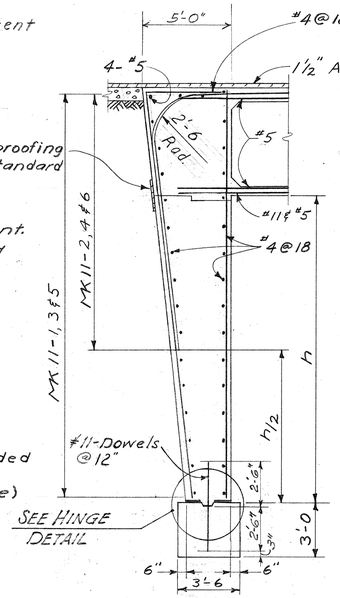
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BUOGI-(7) UNIT 5	1960	167	176

6/14/60

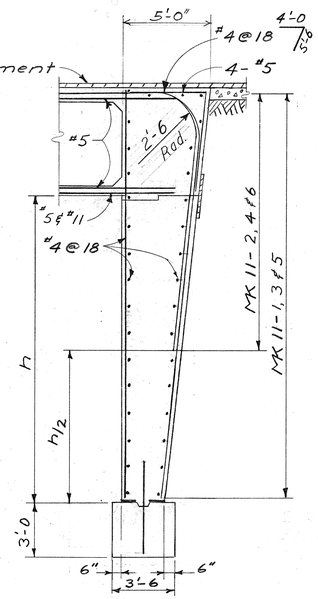




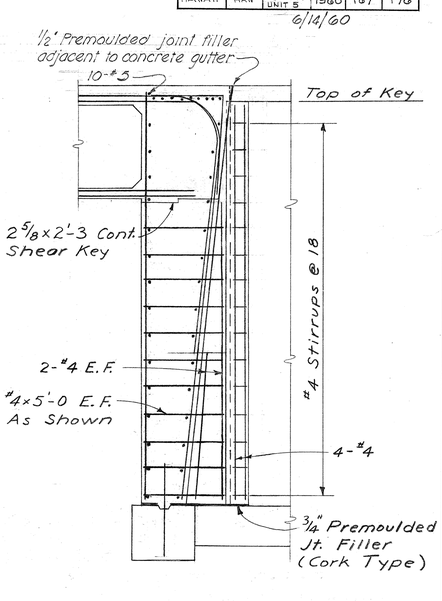
SECTION A-A
Scale: ¼"=1'-0



SECTION B-B
Scale: ¼"=1'-0



SECTION C-C
Scale: ¼"=1'-0



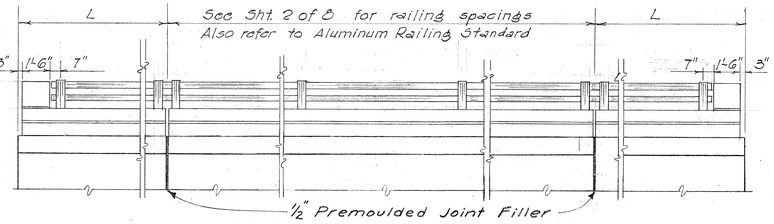
SECTION D-D
Scale: ¼"=1'-0

KEY DETAIL
Scale-½"=1'-0"

WALL JOINT DETAIL
No Scale

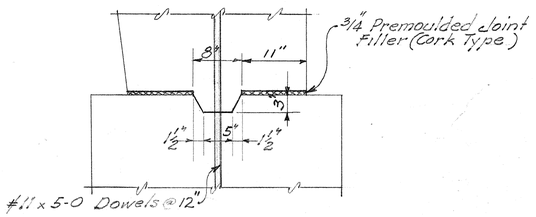
NOTES:
1- For further description of Mk. 11-1 through Mk. 11-6 see Sheet No. 5
2- All wall reinforcement 2" clear (min.) to face of concrete.

FOOTING PLAN
Scale: ¼"=1'-0

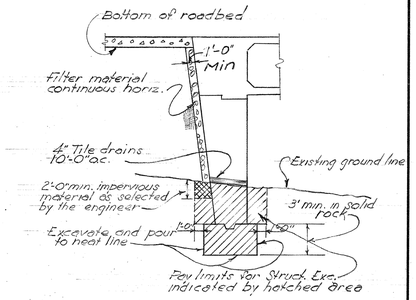


Retaining Wall No.	1	2	3	4
L	28'-0	31'-0	30'-0	40'-0

RAILING LAYOUT
Scale: ¼"=1'-0



HINGE DETAIL
Scale: 1"=1'-0"



DRAINAGE DETAIL
No Scale

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REGISTERED PROFESSIONAL ENGINEER
No. 379
HAWAII, U.S.A.

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REGISTERED ENGINEER
DATE JUL 3 1957

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK No.	DESIGNED BY JEQ	
	DRAWN BY JEQ	
	TRACED BY	
	QUANTITIES BY	
	QUANTITIES CHECKED BY	
	CHECKED BY JEQ	5-27-57

STRUCTURE #4

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY

PROJECT NO. BU-061-1 (7) UNIT 5
BRIDGE OVER
NUUANU STREAM

FOOTING PLAN & ABUTMENT WALLS

SHEET No. 8 OF 8 SHEETS

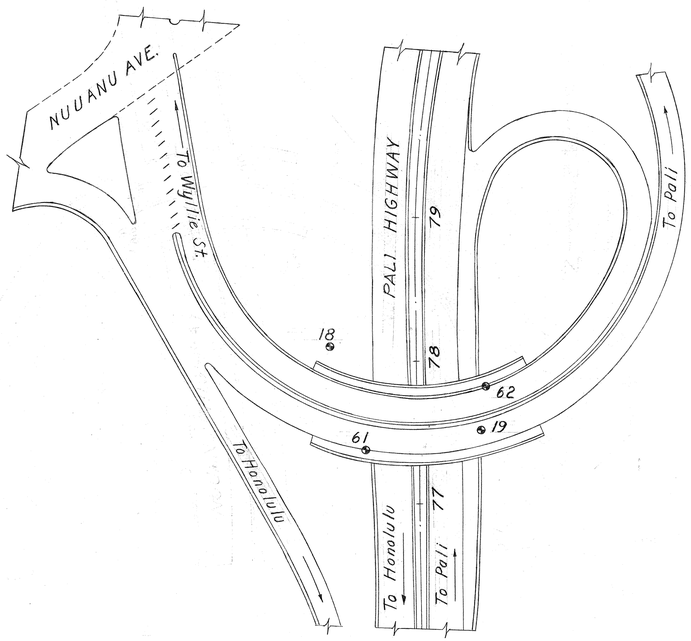
(121)

B.S147.167

PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-061(7) UNIT 5	1960	168	176

6/14/60



LOCATION PLAN
Scale 1" = 50'-0

ESTIMATED QUANTITIES

Concrete	Lump sum (1163 cu. yds.)
Reinforcing Steel	Lump sum (153,225 Lbs.)
Structural Excavation	902 cu. yds.
Asphaltic Concrete Paving	31 Tons
Bituminous Tack Coat	92 Gals.
Filter Material	125 cu. yds.
Aluminum Railing	340 linear ft.

GENERAL NOTES

MATERIALS

All concrete class A-1 unless otherwise noted on plans.

All steel reinforcement shall be intermediate grade.

Admixture: See Special Provisions.

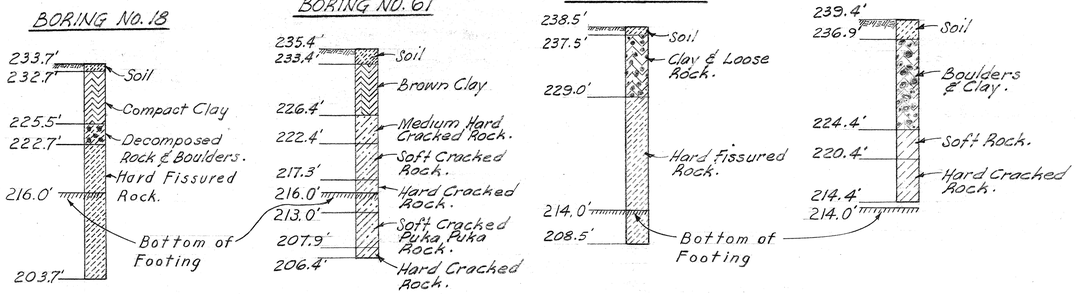
CONSTRUCTION METHODS

Curb and sidewalk on bridge shall not be poured until after release of falsework.

Placing of backfill at bridge shall not be started until after the concrete in the superstructure has reached a strength of 3,000 lbs. per sq. inch. The fill must be brought up evenly and simultaneously at both ends of the structure so as to avoid one sided earth pressure.

Footings shall be poured to neat lines. In case of over excavation space between footing and ground shall be filled with concrete at the Contractor's expense. This fill concrete shall have a minimum quality of Class D-1.

Forms for all exposed surfaces of structures including retaining walls shall be plywood.



LOG OF BORINGS
Scale 1" = 10'-0

ORIGINAL PLAN	SURVEY PLOTTED BY DATE
NOTE BOOK No.	DESIGNED BY
	DRAWN BY
	TRACED BY
	QUANTITIES BY
	CHECKED BY 5-31-60
	QUANTITIES CHECKED BY

JAMES B. WILSON
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No. 379
HAWAII, U.S.A.

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James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1960

STRUCTURE NO. 5

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY

PROJECT NO. BU-061-1(7) UNIT 5
GRADE SEPARATION NEAR
WYLLIE STREET
LOCATION PLAN AND BORINGS

SHEET No. 1 OF 7 SHEETS

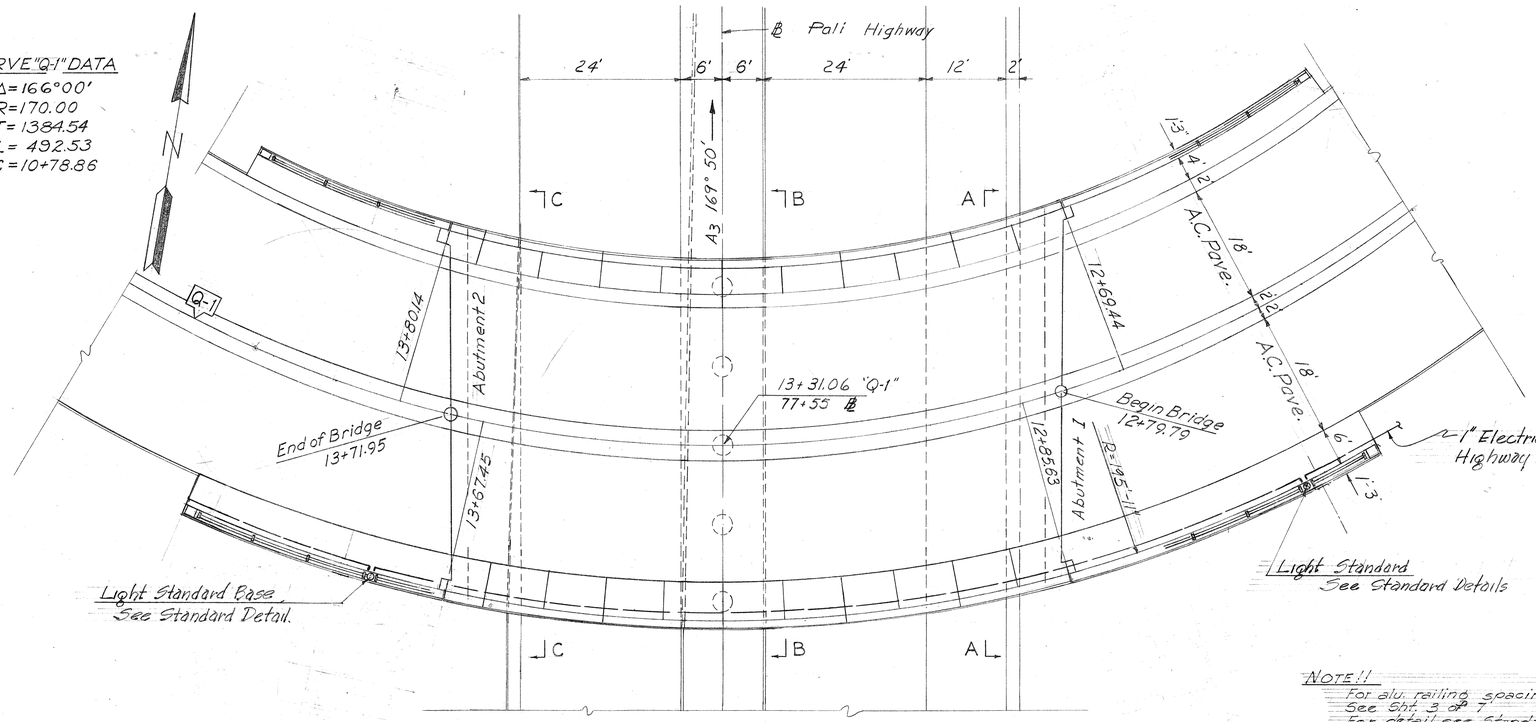
B.S147.16S

168

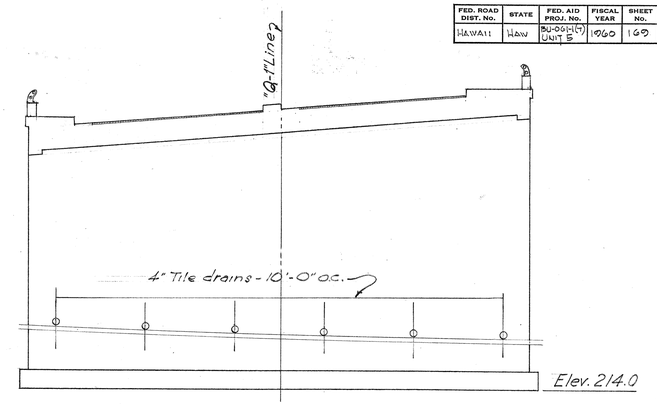
PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	BU-061-1(7) UNIT 5	1960	169	176

CURVE "Q-1" DATA
Δ = 166°00'
R = 170.00
T = 1384.54
L = 492.53
PC = 10+78.86

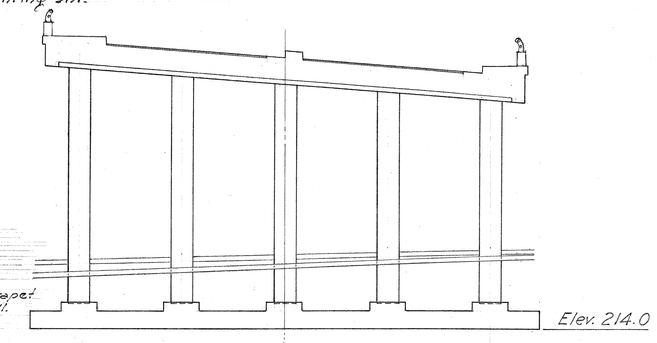


LAYOUT PLAN
Scale: 3/32" = 1'-0

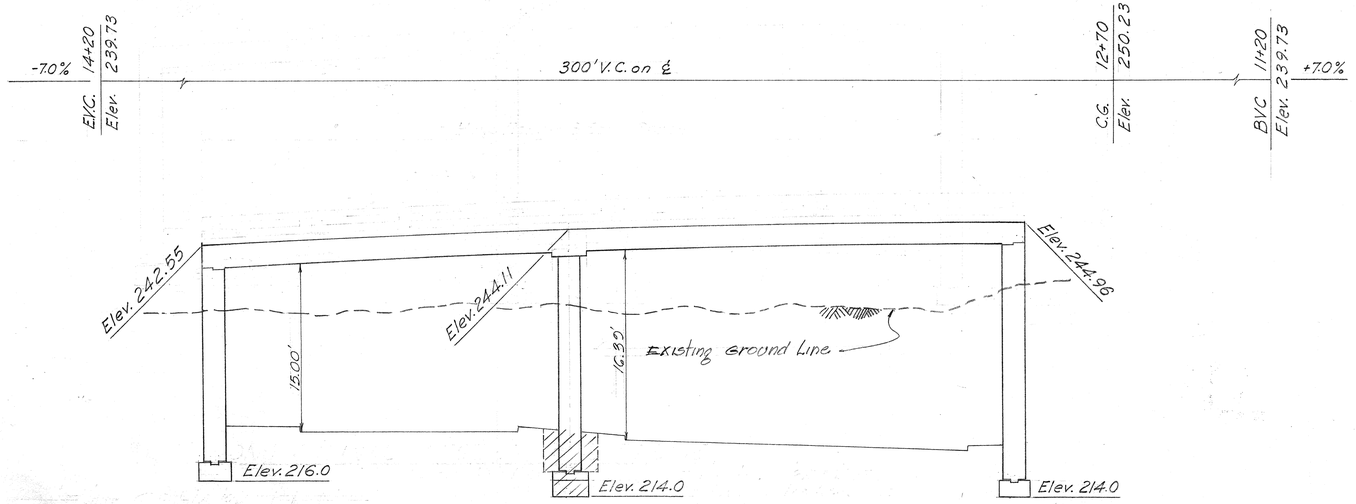


SECTION A-A

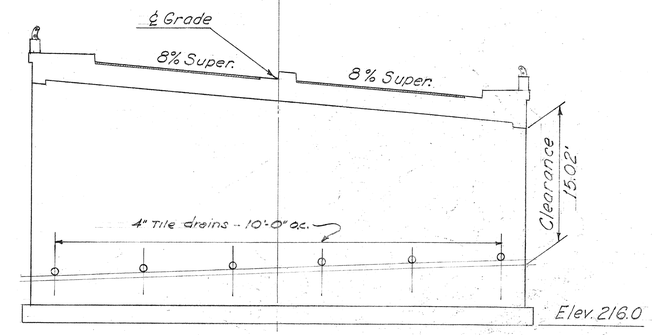
NOTE!!
For alu. railing spacing See Sht. 3 of 7
For detail see Standard Detail for Alu. Railing.
For location of alu. railing parapet constr. jt. for retaining wall. See sht. B. 8147. 31



SECTION B-B



LONGITUDINAL SECTION AT ℄ OF BRIDGE
Scale: 1/8" = 1'-0"



SECTION C-C
Scale: 1/8" = 1'-0"

JAMES B. WILSON
REGISTERED PROFESSIONAL ENGINEER
No. 379
HAWAII, U.S.A.

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REGISTERED ENGINEER No.
DATE JUL 3 1957

STRUCTURE # 5

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY

PROJECT No. BU-061-1(7) UNIT 5
GRADE SEPARATION NEAR
WYLLIE STREET
LAYOUT PLAN & SECTIONS

SHEET No. 2 OF 7 SHEETS

B. 8147. 169

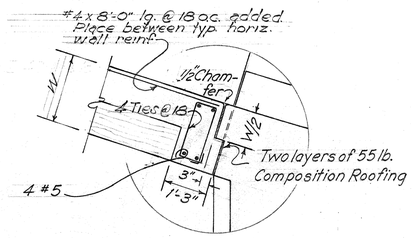
ORIGINAL PLAN	NOTE BOOK No.	SURVEY PLOTTED BY	DESIGNED BY V.G.	DRAWN BY	TRACED BY	QUANTITIES BY	QUANTITIES CHECKED BY	CHECKED BY Mc Cabe	DATE 5-21-57

14

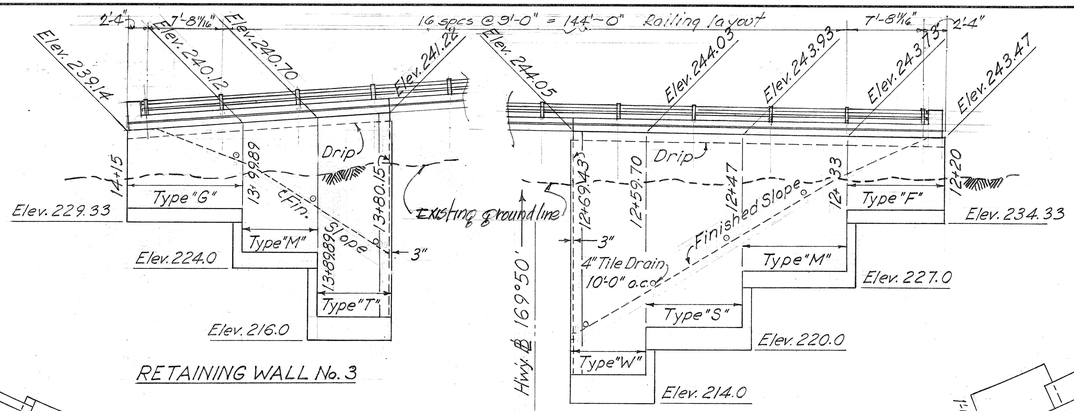
PRINTED ON DIEPO 1000H CLEARPRINT

REV. 1 Nov. 23, 1960
Change size and reinforcing in pier footing
REVISION #2 DEC. 1960
Abutment #2 & Ret. Wall #4 footing size & reinf. change

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-061-1(7) UNIT 5	1960	170	176

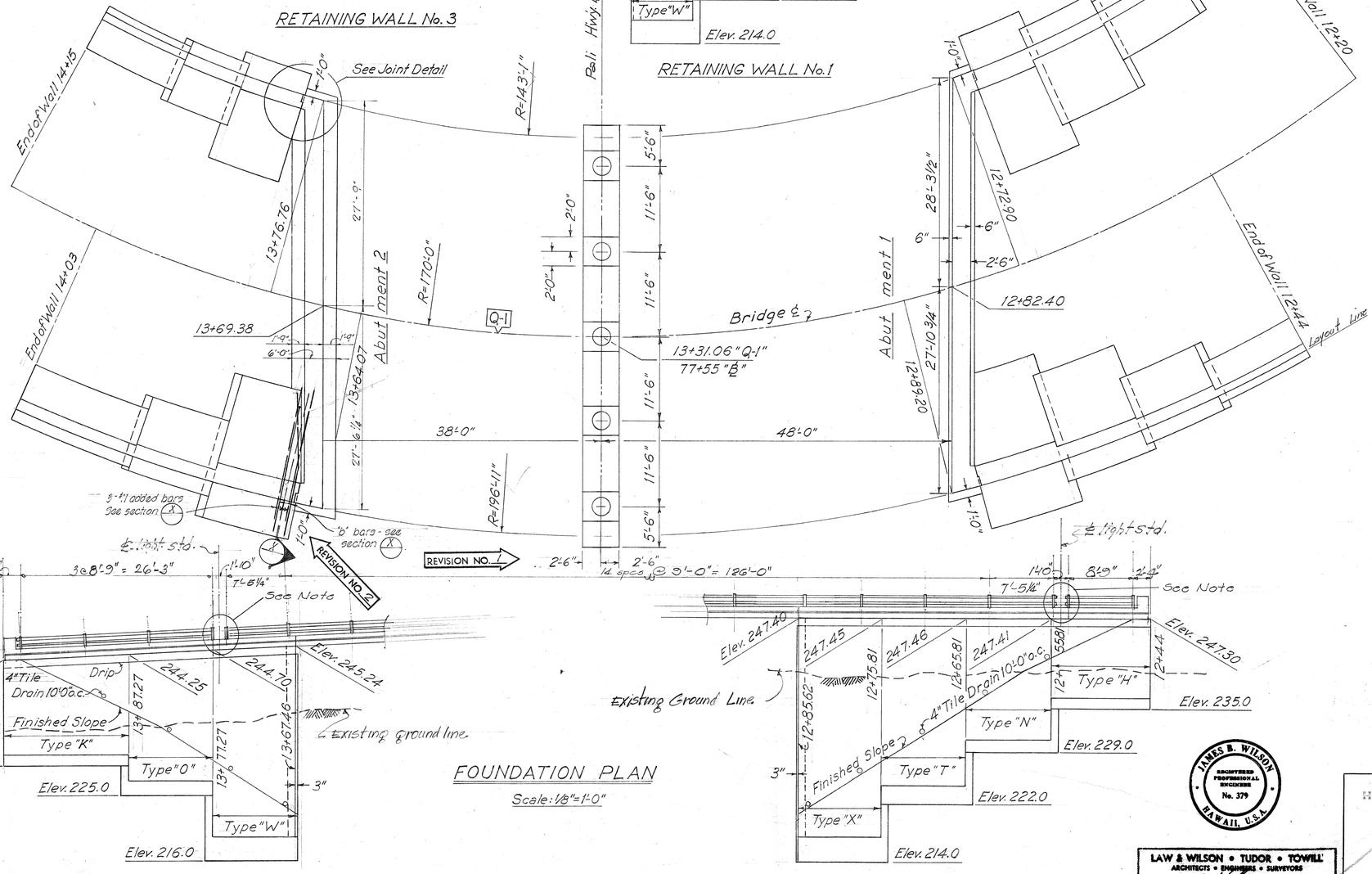


TYPICAL JOINT DETAIL
Horiz. Section at Drip
W = Stem thickness at top of footing



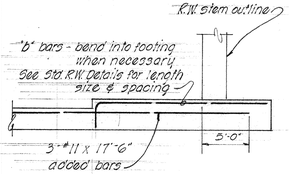
RETAINING WALL No. 3

RETAINING WALL No. 1

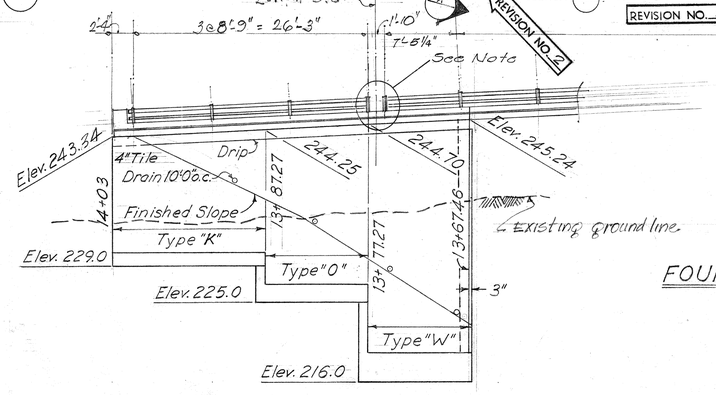




NOTE
- Alum. railing length measured along "Layout Line."
- Refer to Std. Alum. Det. for special reinforcement under "Light Std."
- Retaining wall details & reinf. — see Std. Ret. Wall Det.



SECTION ⓧ
SCALE: 1/8" = 1'-0"



RETAINING WALL No. 4

FOUNDATION PLAN
Scale: 1/8" = 1'-0"

RETAINING WALL No. 2

JAMES B. WILSON
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No. 379
HAWAII, U.S.A.

LAW & WILSON • TUDOR • TOWILL
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James B Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1957

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY V.G.	
	DRAWN BY V.G.	
	TRACED BY	
NOTE BOOK No.	QUANTITIES BY	
	QUANTITIES CHECKED BY	
	CHECKED BY 6/24/57	537-57

STRUCTURE # 5

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY

PROJECT No. BU-061-1(7) UNIT 5
GRADE SEPARATION NEAR
WYLLIE STREET
RETAINING WALLS & FOUNDATION PLAN

SHEET No. 3 OF 7 SHEETS

B. S147.170

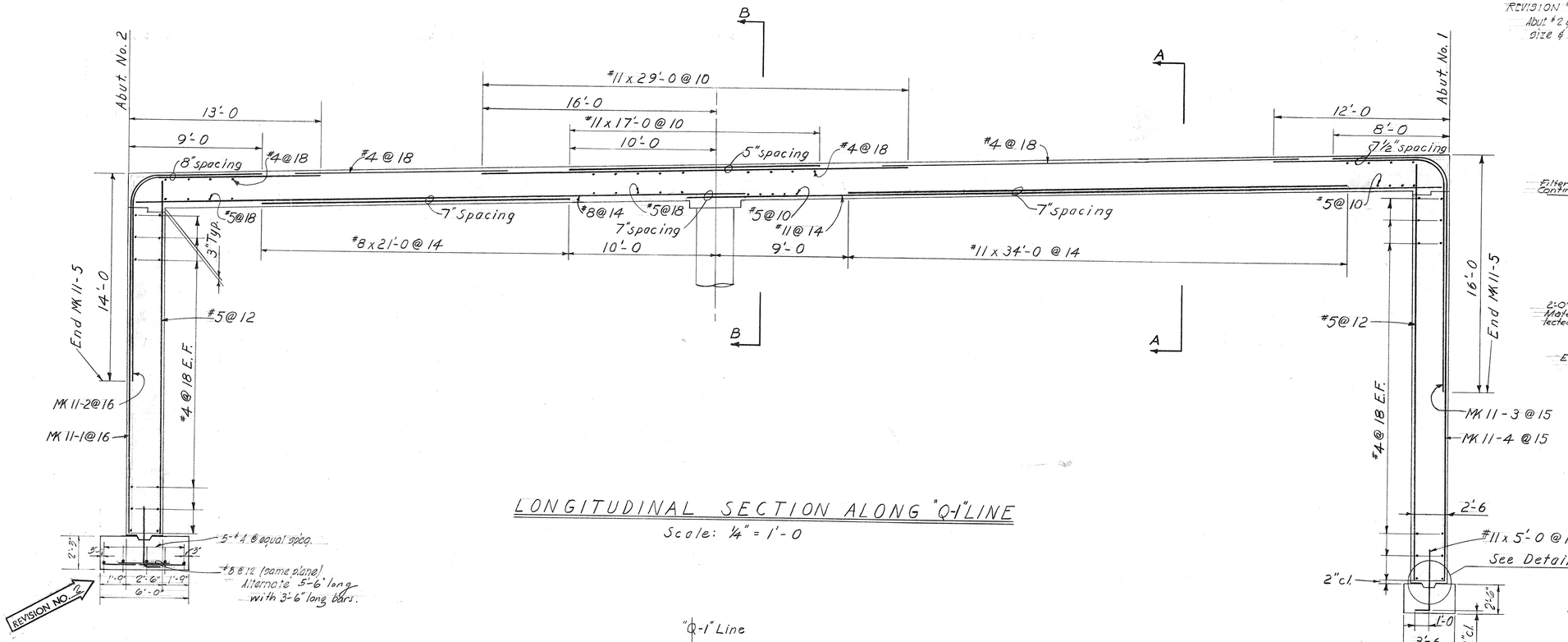
15

PRINTED ON DIEPO 1000H CLEARPRINT

REVISION #2 DEC 1960
Abut #2 & Ret. Wall #4 footing size & reinf. change.

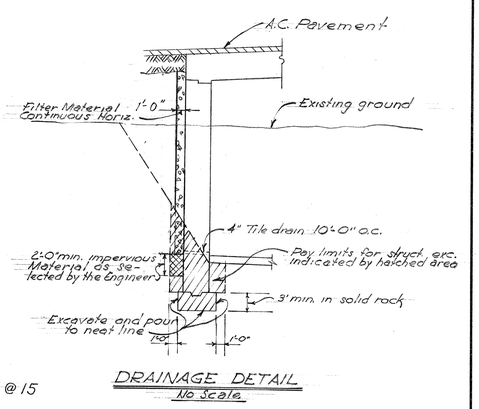
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-061-1(7) UNIT 5	1960	171	176

6/14/60



LONGITUDINAL SECTION ALONG "Q-1" LINE

Scale: ¼" = 1'-0



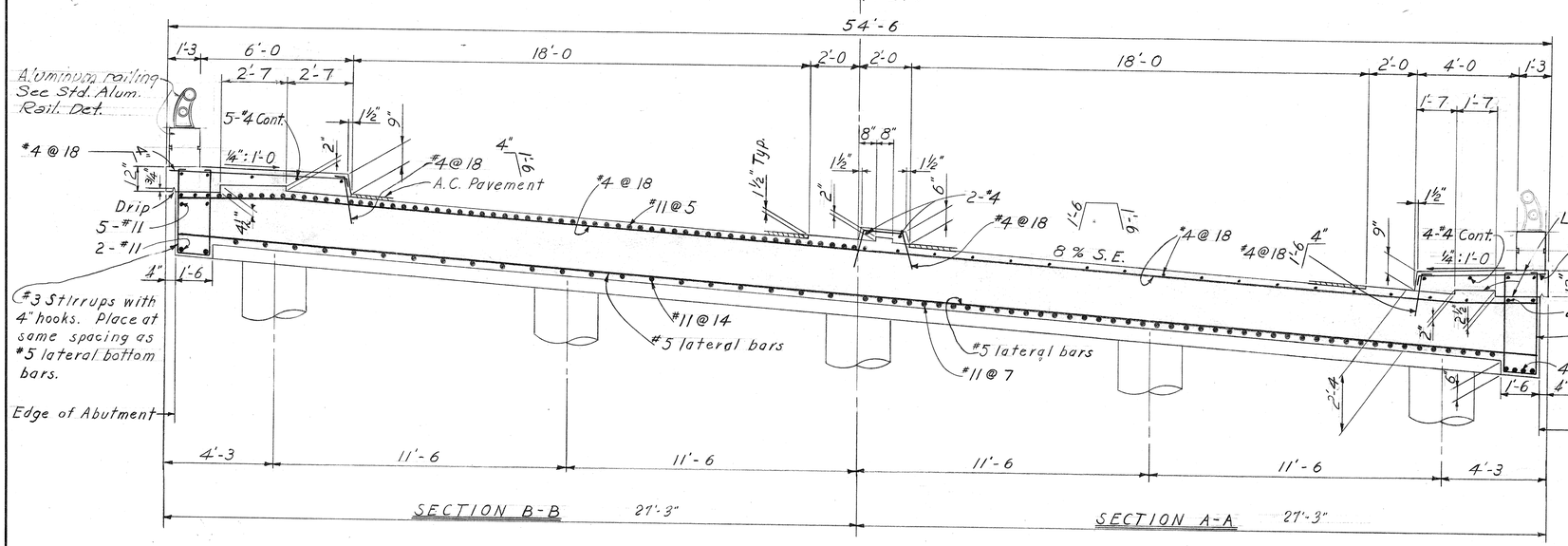
DRAINAGE DETAIL

No Scale

Notes!

Except otherwise noted, all slab reinforcing 1½" min. cl. to face of concrete.

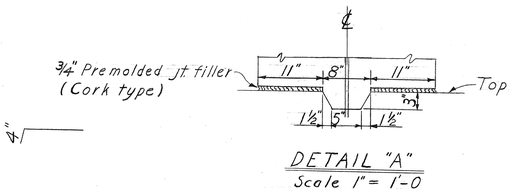
All wall reinforcing 2" min. cl. to face of concrete.



SECTION B-B

SECTION A-A

Scale: ⅜" = 1'-0



DETAIL "A"

Scale 1" = 1'-0

JAMES B. WILSON
REGISTERED PROFESSIONAL ENGINEER
No. 379
HAWAII, U.S.A.

LAW & WILSON • TUDOR • TOWILL
ARCHITECTS • ENGINEERS • SURVEYORS
James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1957

ORIGINAL PLAN	SURVEY PLOTTED BY
	DESIGNED BY F.R.T.
	DRAWN BY A.O.
	TRACED BY
NOTE BOOK No.	QUANTITIES BY
	QUANTITIES CHECKED BY
	CHECKED BY J.B.W. DATE 5-27-57

STRUCTURE # 5.

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY

PROJECT NO. BU-061-1(7) UNIT 5
GRADE SEPARATION NEAR
WYLLIE STREET
DECK SECTIONS

SHEET No. 4 OF 7 SHEETS

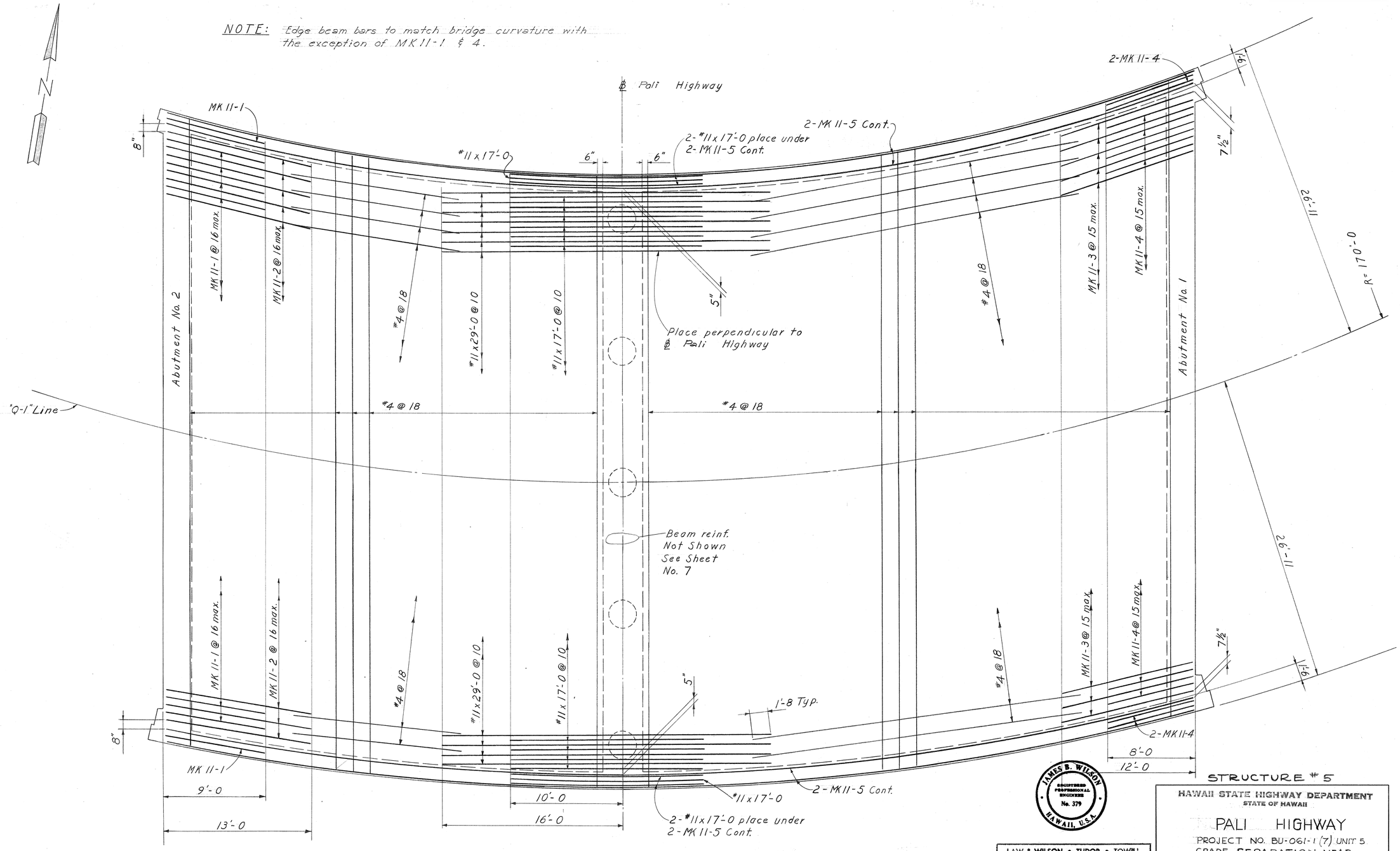
16

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B.S147.171

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BU-061-1(7) UNIT 5	1960	172	176

NOTE: Edge beam bars to match bridge curvature with the exception of MK 11-1 & 4.



TOP REINFORCEMENT
Scale: ¼" = 1'-0

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY A.K.	
	DRAWN BY A.O.	
	TRACED BY	
NOTE BOOK No.	QUANTITIES BY	5-21-57
	QUANTITIES CHECKED BY	
	CHECKED BY A.K.	

JAMES B. WILSON REGISTERED PROFESSIONAL ENGINEER No. 379 HAWAII, U.S.A.

LAW & WILSON • TUDOR • TOWILL
ARCHITECTS • ENGINEERS • SURVEYORS
James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1957

STRUCTURE # 5

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY

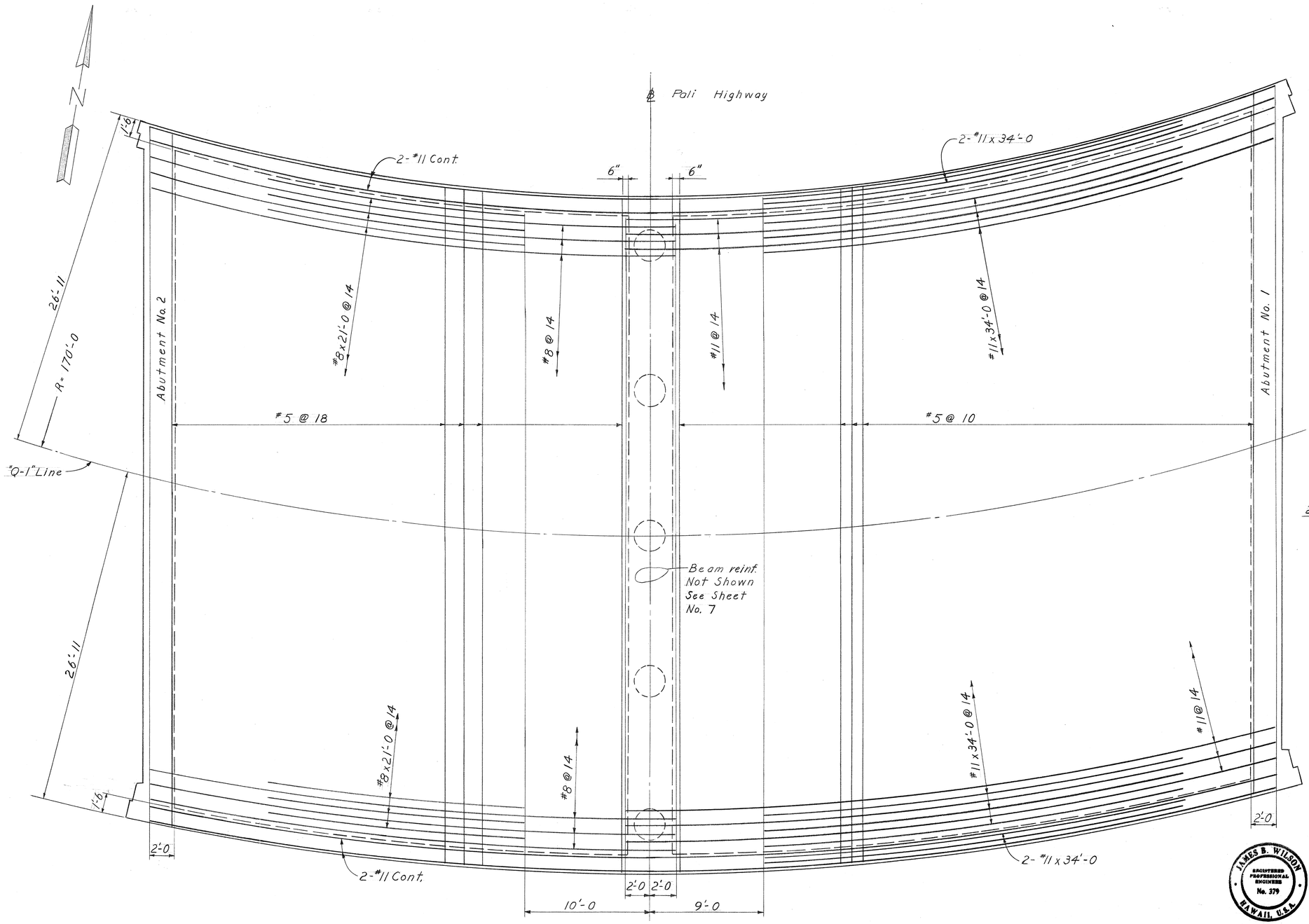
PROJECT NO. BU-061-1 (7) UNIT 5
GRADE SEPARATION NEAR
WYLLIE STREET
DECK PLAN-TOP REINFORCEMENT

SHEET No. 5 OF 7 SHEETS

B.S147.172

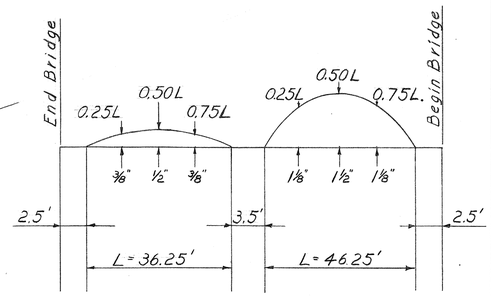
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FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-061-1(7) UNIT 5	1960	173	176



BOTTOM REINFORCEMENT

Scale: 1/4" = 1'-0



DEAD LOAD CAMBER CURVE

No Scale

Note: This curve shows the dead load camber only and should be increased by the amount of the anticipated take up in the falsework.

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DESIGNED BY A.T.	
	DRAWN BY A.O	
	TRACED BY	
NOTE BOOK No.	QUANTITIES BY	5-21-59
	QUANTITIES CHECKED BY	
	CHECKED BY A.T.	

JAMES B. WILSON
REGISTERED PROFESSIONAL ENGINEER
No. 379
HAWAII, U.S.A.

LAW & WILSON • TUDOR • TOWILL
ARCHITECTS • ENGINEERS & SURVEYORS
James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1959

STRUCTURE # 5

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY

PROJECT No. BU-061-1(7) UNIT-5

GRADE SEPARATION NEAR

WYLLIE STREET

DECK PLAN-BOTTOM REINFORCEMENT

SHEET No. 6 OF 7 SHEETS

18

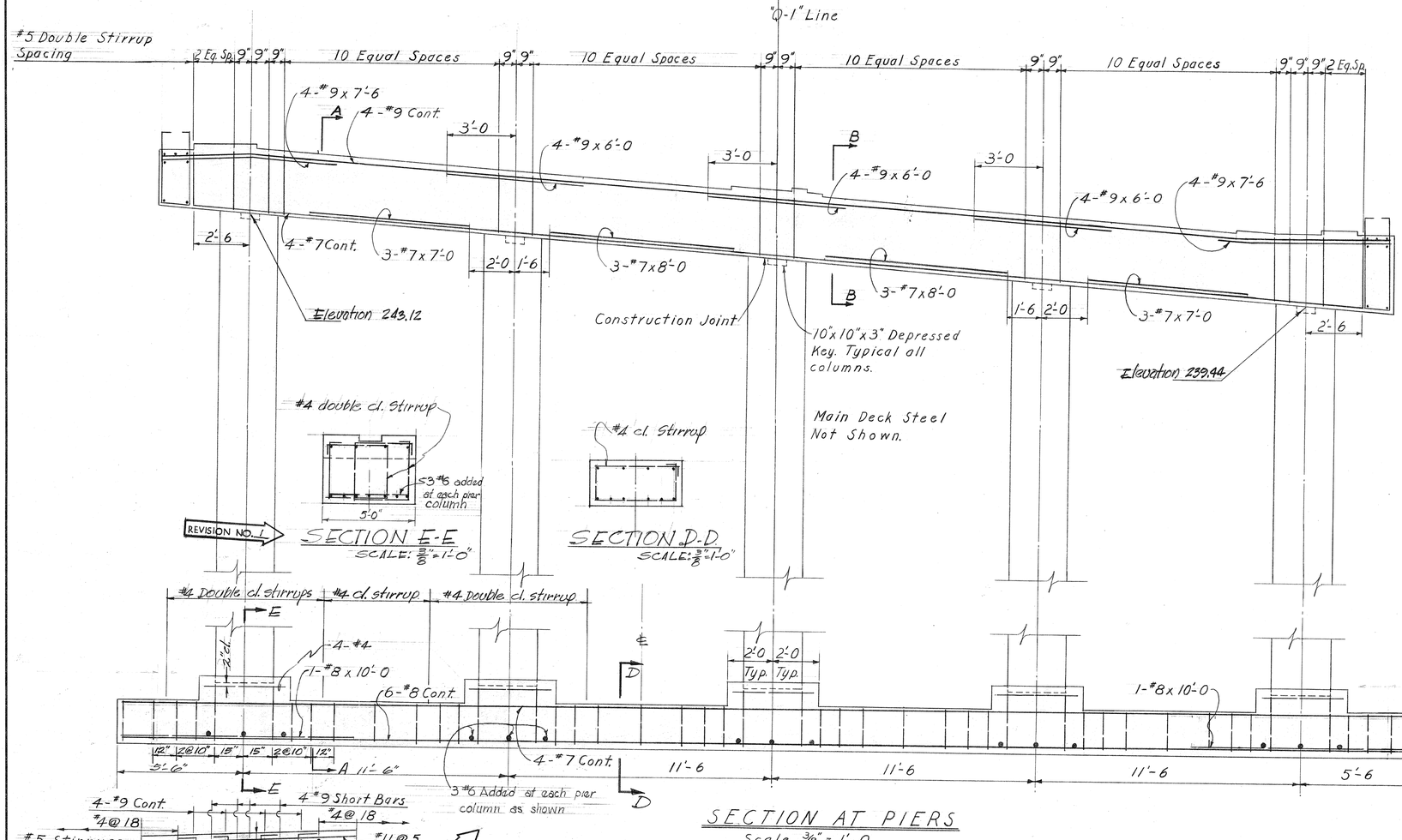
PRINTED ON DIEPO 1000N CLEARPRINT

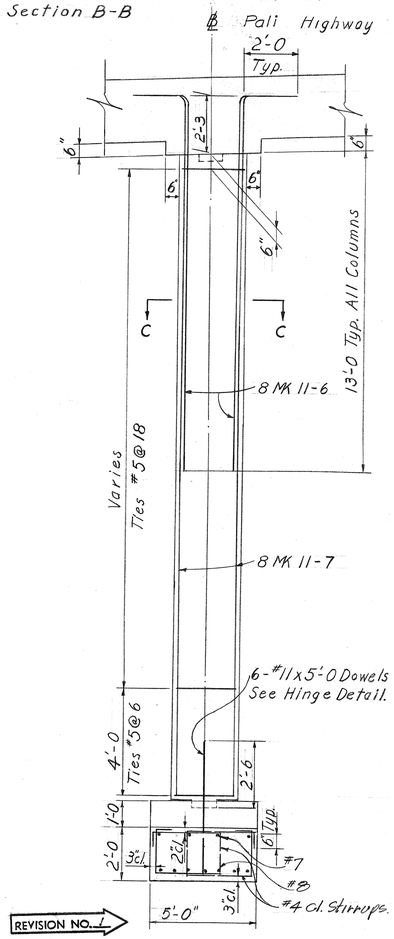
B.S147.173

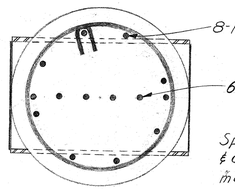
REV. 1 Nov. 23, 1960
Change size and reinforcing in pier footing.

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-061-1(7) UNIT 5	1960	174	176

Cross Beam & Slab reinf. not shown
See Section B-B







Space between lead plate & dowels to be filled with molten lead.

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James B. Wilson No.
REGISTERED ENGINEER
DATE JUL 3 1957

STRUCTURE # 5

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

PALI HIGHWAY

PROJECT NO. BU-061-1(7) UNIT 5
GRADE SEPARATION NEAR
WYLLIE STREET
PIER DETAILS

SHEET No. 7 OF 7 SHEETS

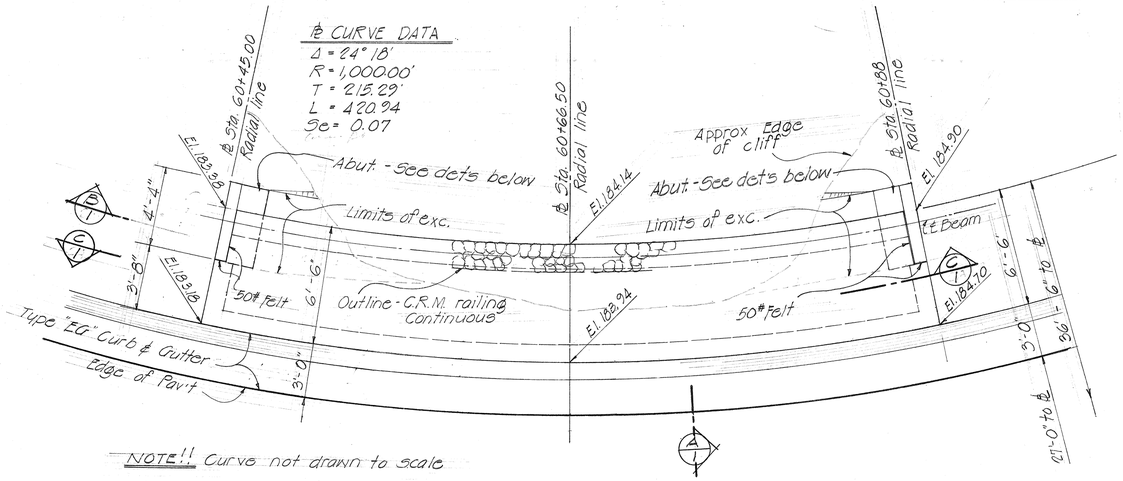
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY A.O.	
	DRAWN BY	
	TRACED BY	
NOTE BOOK	QUANTITIES BY	
No.	QUANTITIES CHECKED BY	
	CHECKED BY J.B.W.	32457

B.S147.174

19

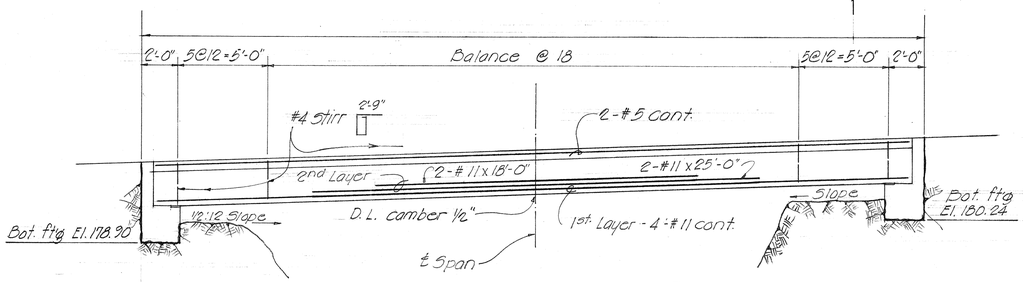
PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS



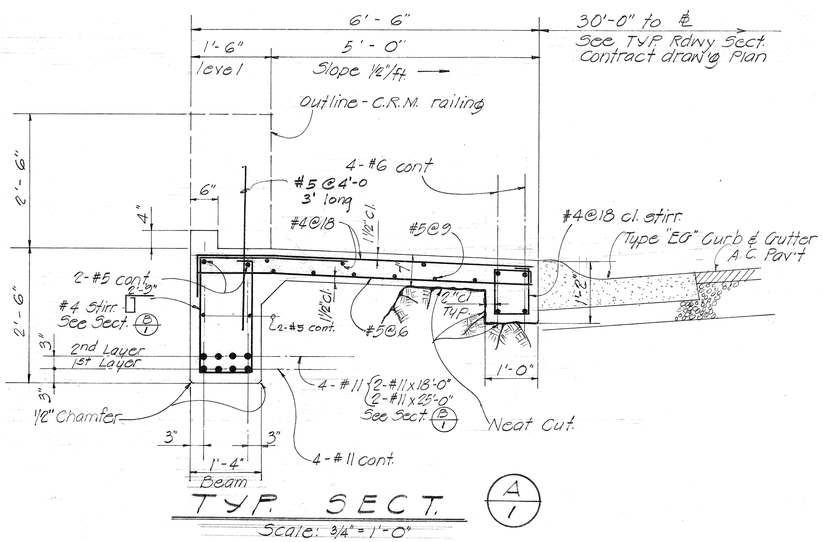
LAYOUT PLAN

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



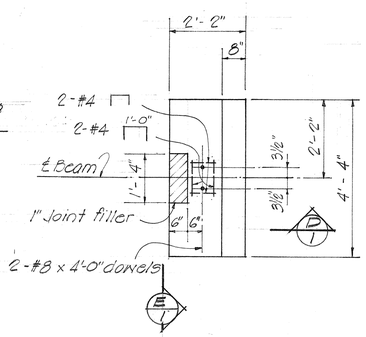
SECTION B/1 BEAM DETAIL

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



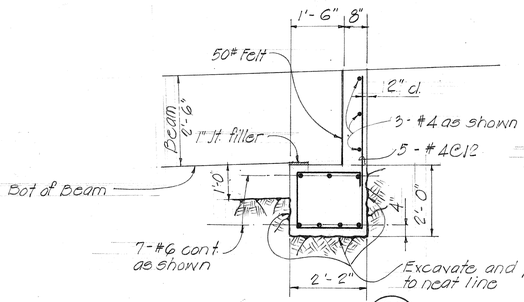
TYP. SECT. A/1

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

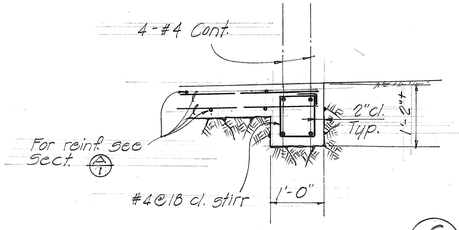


PLAN E/1

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

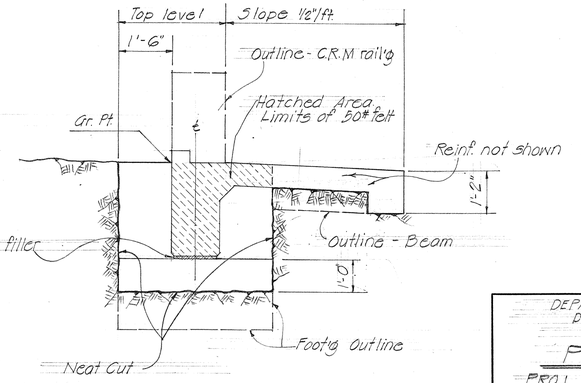


SECTION P/1



SECTION C/1

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



ELEVATION E/1

TYP. ABUTMENT DETAILS

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

DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STATE OF HAWAII

PALI HIGHWAY

PROJ. No. BUOG1-1(7) Unit 5

PARTIAL BRIDGE

STA. 60+45 to STA. 60+88

SCALE: AS SHOWN DEC. 1961

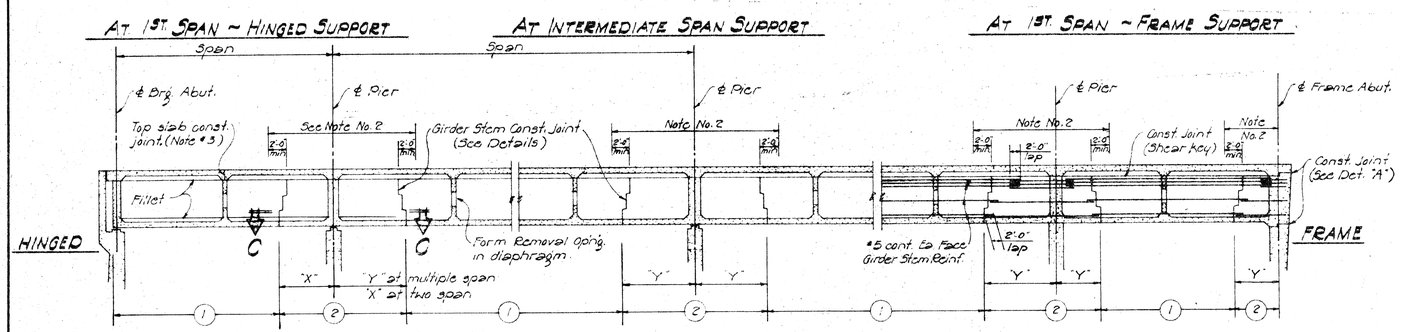
SHEET No. 1 OF 1 SHEETS

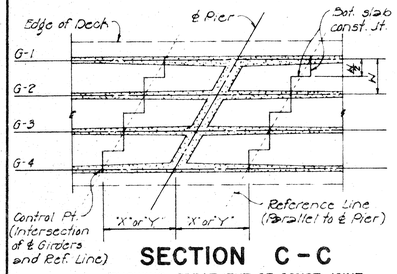
B S147.174A

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FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BRIDGE (17) UNIT 5	1960	175	176

May '59

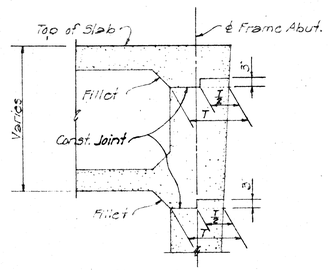




SECTION C-C
SHOWING TREATMENT OF CONST. JOINT FOR BRIDGES ON SKEW

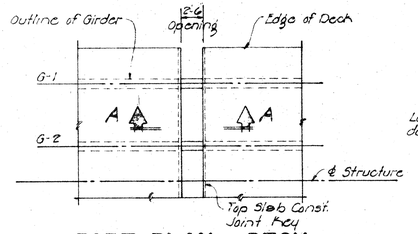
NOTE:
No. 1 - Numbers ① and ② indicate sequence of placing bottom slab and girder stems.
No. 2 - No top slab construction joint or form removal opening shall be located in the region over the piers as noted.
No. 3 - When top slab forms are not removed, const. joint in top slab shall be located over an intermediate diaphragm.
No. 4 - Dimension "X" = 1/4 span "Y" = 1/5 span
No. 5 - No lapping of main girder bars shall be permitted at construction joints.

PLACING DIAGRAM FOR SUPERSTRUCTURE CONCRETE

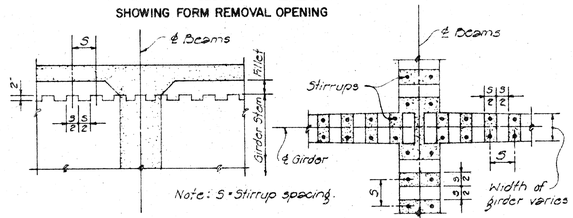


DETAIL - A

Note: Final location of opening shall be determined by the Engineer.

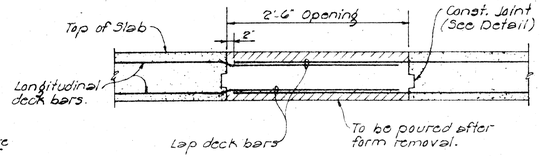


PART PLAN - DECK
SHOWING FORM REMOVAL OPENING

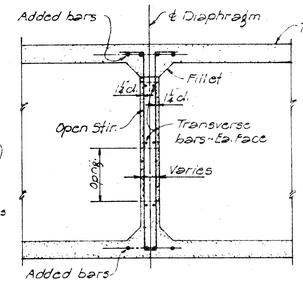


SHEAR KEY DETAIL

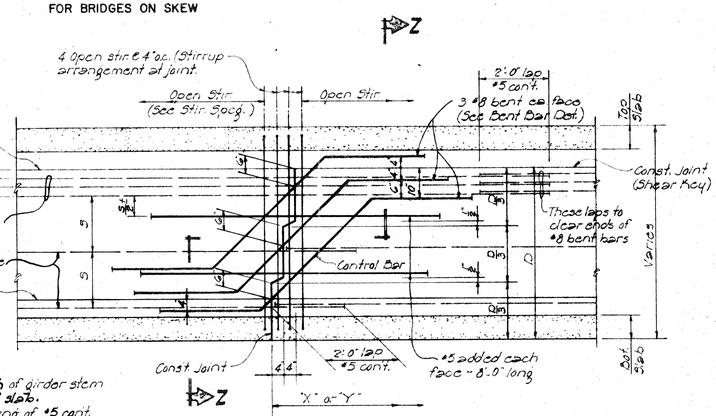
Note: No lapping of main girder bars shall be permitted where opening is required.



SECTION A-A

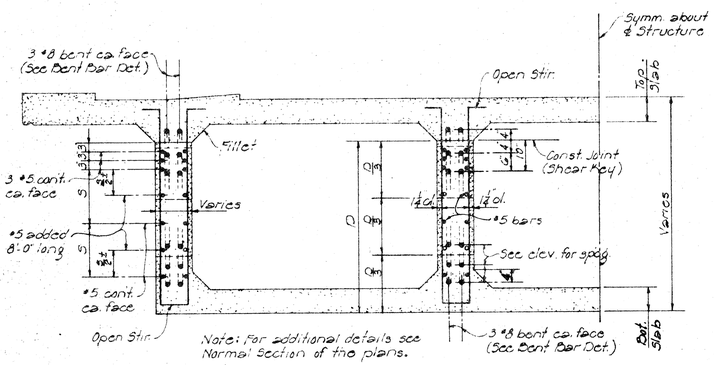


SECTION B-B

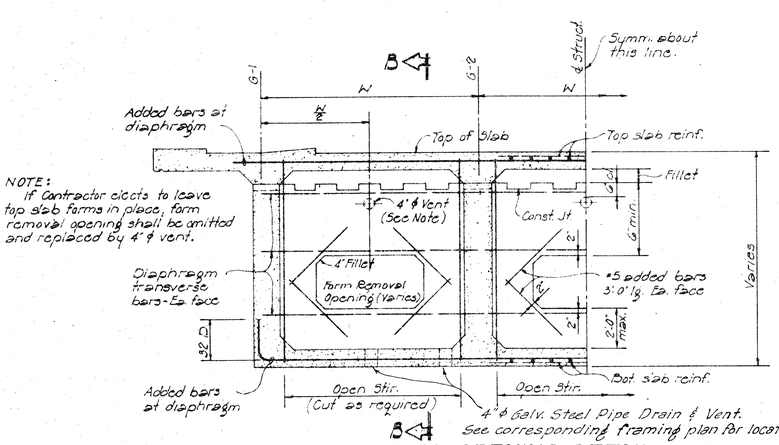


NOTE:
D = Depth of girder stem to bottom of slab.
S = Spacing of #5 cont. girder stem long. bars.

GIRDER STEM CONST. JOINT

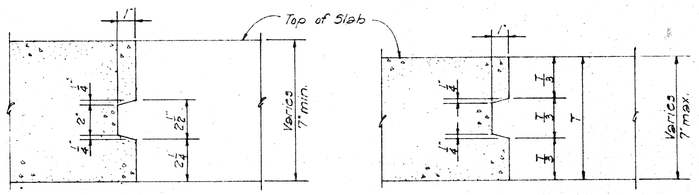


SECTION Z-Z

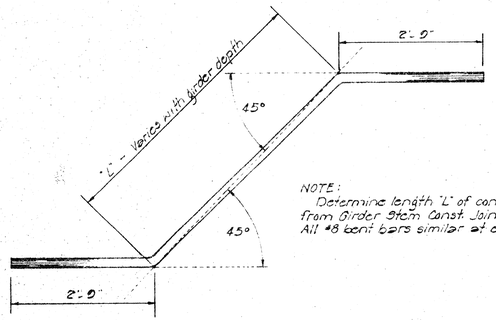


NOTE:
If Contractor elects to leave top slab forms in place, form removal opening shall be omitted and replaced by 4" ϕ vent.

FORM REMOVAL OPENING DETAIL IN DIAPHRAGM



TOP SLAB CONST. JOINT



NOTE:
Determine length "L" of control bar from Girder Stem Const. Joint detail. All #8 bent bars similar at each joint.

DETAIL - NO. 8 BENT BAR

GENERAL NOTE

Except where detailed otherwise in the plans, all details on this sheet govern.

APPROVED: DATE: Aug. 26, 1959
STATE HIGHWAY ENGINEER

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

STANDARD DETAILS

BOX GIRDER

PALI HIGHWAY — PROJ. No. BF-061(7) UNIT 5

SCALES AS NOTED

SHEET No. 1 OF 2 SHEETS

B.S147.175

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

PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	BU-061-1(7) UNIT 5	1960	174	176

Feb. '58
May '58
Aug. '58
Jan. '57
Aug. '57
Jan. '58
May '59
Sept. '59
June '60

GENERAL NOTES

PREMOLDED JOINT FILLER: Premolded joint filler for bridges, including pedestrian overpassing, shall conform to AASHO Designation M153.

CONCRETE: Class of concrete to be used in different parts of the structure are as noted on the plans.

REINFORCING STEEL: All reinforcing steel shall be Billet Steel Bars A.S.T.M. A 15 intermediate grade.

Steel shall be made by the open-hearth process. Deformations shall conform to A.S.T.M.-A 305.

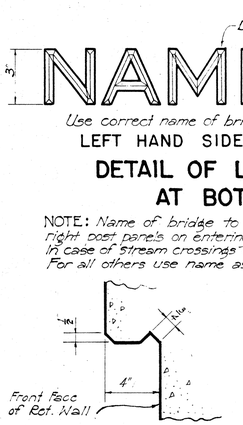
Splicing of reinforcing other than in main deck slab, girder and frame bars shall be done as shown in above sketch except where shown otherwise. Splices are to be staggered. Splices in main girder and frame bars are permitted only in bars exceeding 60'-0" in length at points to be indicated by the Engineer. These splices to be electrically are welded according to detail and specifications. No allowance will be made in the quantities for extra weight of steel required for splices not shown on the plans.

Minimum spacing between parallel bars shall be 2½ times the diameter of bars, but in no case shall the clear distance between the bars be less than 1½ times the maximum size of the coarse aggregate.

Minimum covering, measured from the surface of the concrete to the face of any reinforcing bar, shall be not less than 2 inches except in slabs where the minimum covering shall be 1½ inch. In the footings of abutments and retaining walls and in piers the minimum covering shall be 3 inches. In work exposed to the action of sea water the minimum covering shall be 4 inches except in precast concrete piles where a minimum of 3" may be used.

All dimensions relating to reinforcing are to centers of bars unless otherwise noted.

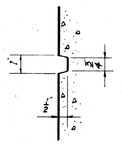
CONSTRUCTION JOINTS: All construction joints to have surface roughened and 1:2 cement grout applied immediately before the second pour. Construction Joints to be located at places indicated in the plans. See Sec. 46.3.F(3) of the "Standard Specifications."



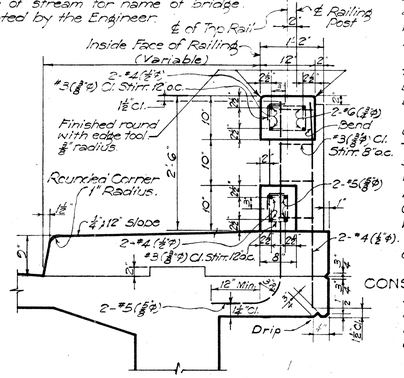
DETAIL OF LETTERS AND FIGURES AT BOTH APPROACHES

NOTE: Name of bridge to be placed in left end post panels and date in right post panels on entering bridge using modified block letters 2" in height. In case of stream crossings use name of stream for name of bridge. For all others use name as designated by the Engineer.

DRIP DET. FOR RET. WALL
Scale - 3" = 1'-0"



END POST GROOVE DET.
Scale - 3" = 1'-0"



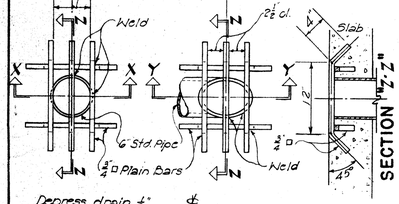
SECTION "B-B" RAILING DETAIL
Scale: ¾" = 1'-0"

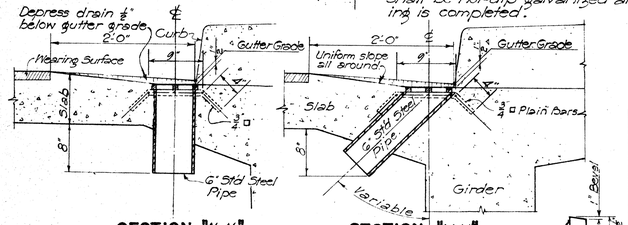
NOTE! Sidewalk, curb and railing to be poured after release of falsework. Forms for railing and endpost to be made of plywood.

SURFACE FINISH: The surface of the concrete railings shall be given a Class 2 Rubbed Finish as specified under Subarticle 46.3 (C) (3) of Section 46 Concrete of the Standard Specifications.

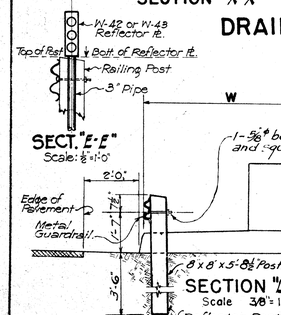
NOTE! Metal drains shall be considered incidental to Class A-1 Concrete in both concrete and steel bridges and will not be paid for separately.

Assemblage of drillage and pipe shall be hot-dip galvanized after all welding is completed.

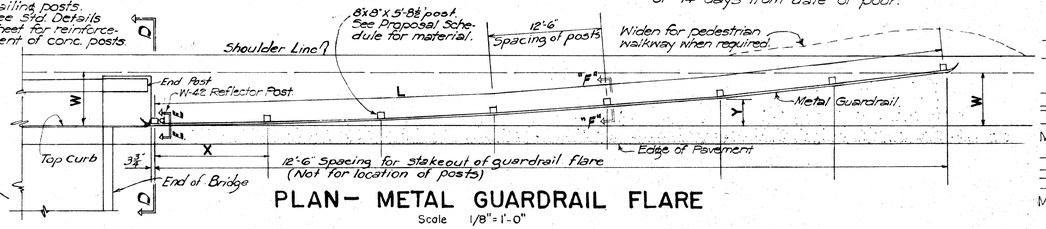




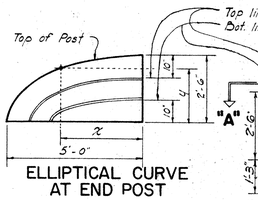
DRAINAGE DETAIL
Scale: 1" = 1'-0"



NOTE!! See Regulatory & Warning Signs Sheet for details of W-42, W-43, and railing posts. See Std. Details Sheet for reinforcement of conc. posts.



PLAN — METAL GUARDRAIL FLARE
Scale 1/8" = 1'-0"



ELLIPTICAL CURVE AT END POST

ELLIPSE COORDINATES

Top of Post

x	0	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-3"	4'-6"	4'-9"	4'-10½"	5'-0"
y	2'-6"	2'-5⅝"	2'-4⅝"	2'-3½"	2'-2"	2'-0"	1'-9⅞"	1'-6"	1'-3⅝"	1'-1⅞"	9⅜"	6¹¹/₁₆"	0

Top Line of Upper Groove

x	0	6"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-3"	3'-6"	3'-9"	4'-0"	4'-1"	4'-2"
y	1'-8"	1'-7⅞"	1'-7⅞"	1'-6¹⁵/₁₆"	1'-5⅝"	1'-4"	1'-1⅞"	1'-0⅞"	10⅞"	8¹¹/₁₆"	5⅝"	4"	0

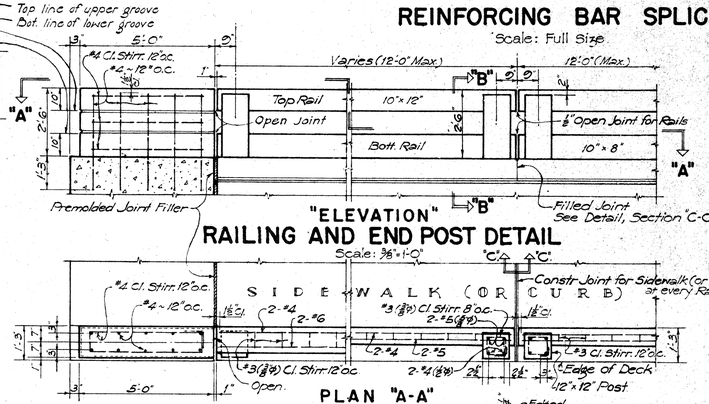
Bot. Line of Lower Groove

x	0	6"	1'-0"	1'-6"	2'-0"	2'-6"	2'-9"	3'-0"	3'-2"	3'-3"	3'-4"		
y	10"	9⅞"	9⅛"	8¹⁵/₁₆"	8"	6⅝"	5⅝"	4⅜"	3⅛"	2⅛"	0		

GUARDRAIL OFFSET

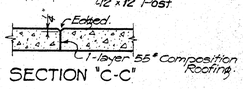
X	Y W=3'	W=4'	W=5'	W=6'	W=7'	W=8'
12.5	0.19	0.16	0.14	0.12	0.09	0.08
25.0	0.75	0.64	0.55	0.49	0.36	0.32
37.5	1.69	1.44	1.25	1.10	0.78	0.72
50.0	3.00	2.56	2.22	1.96	1.38	1.28
62.5		4.00	3.47	3.06	2.16	2.00
75.0			5.00	4.41	3.11	2.88
87.5				6.00	4.23	3.92
100.0					5.53	5.12
112.5					7.00	6.48
125.0						8.00

W = Guardrail flare
X = Distance from post at bridge to offset points.
Y = Guardrail flare offset

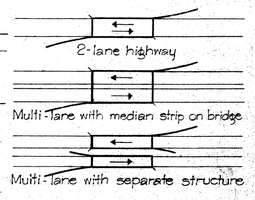


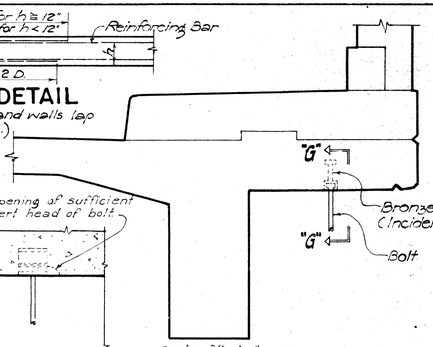
PLAN "A-A"

TOP RAIL ~ Bottom forms for top rails shall be kept in place a minimum of 14 days from date of pour.



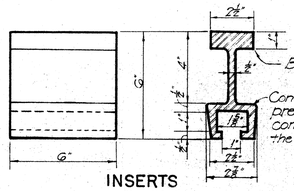
SECTION "C-C"





SECTION "G-G"
Scale: ¾" = 1'-0"

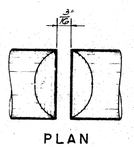
JOINT FILLER: Joint filler, when called for in plans, shall be incidental to concrete and will not be paid for separately.



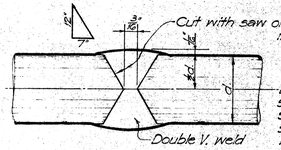
INSERTS
Scale: ¾" = 1'-0"

DETAIL OF PIPE HANGERS AND INSERTS

NOTE! Inserts, bolts, plates, nuts & washers to be Bronze conforming to A.S.T.M. Designation B 22 and shall be Class "D" grade.

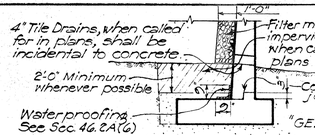


PLAN

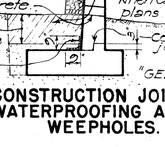


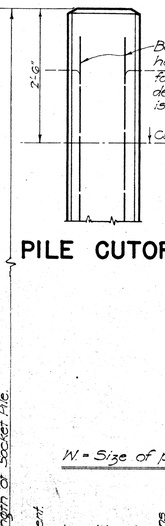
REINFORCING BAR SPLICE
Scale: Full Size

Bottom end of pile extension must be of sufficient size to fill the splice sleeve completely. No filling-in will be permitted.

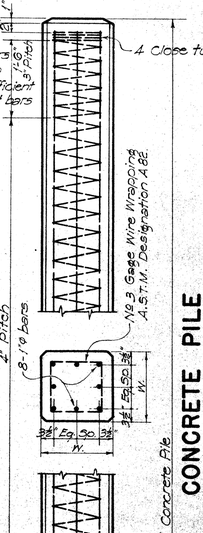


CONSTRUCTION JOINT, WATERPROOFING AND WEEPHOLES.



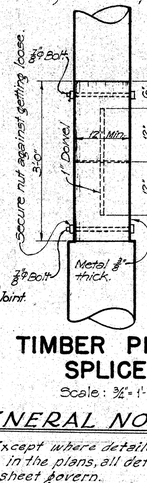


PILE CUTOFF

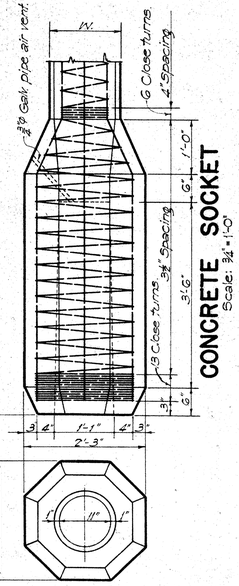


CONCRETE PILE
DETAIL OF CONCRETE PILE
Scale: ¾" = 1'-0"

W. = Size of pile.



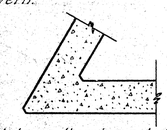
TIMBER PILE SPLICE
Scale: ¾" = 1'-0"



CONCRETE SOCKET
Scale: ¾" = 1'-0"

GENERAL NOTE

Except where detailed otherwise in the plans, all details on this sheet govern.



Unless otherwise noted all sharp corners and re-entrant angles in concrete work shall be chamfered. See Section 46.3(C) of the Standard Specifications. Chamfer to be ¾"

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII
PALI HIGHWAY
STANDARD BRIDGE DETAILS
Scales as Noted
APPROVED BY: _____
STATE HIGHWAY ENGINEER
PROJ. No BU-061-1(7)
UNIT - 5
DATE: Aug. 26, 1959

SHEET No 2 OF 2 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY R. Barnes	"
	DRAWN BY R. Kanahele	" Mar. 1960
NOTE BOOK	TRACED BY	"
	QUANTITIES COMPUTED BY	"
No.	QUANTITIES CHECKED BY	"
	CHECKED BY	"

B.S147.176

(18)