

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 4 S-1	455

WATER NOTES-GENERAL

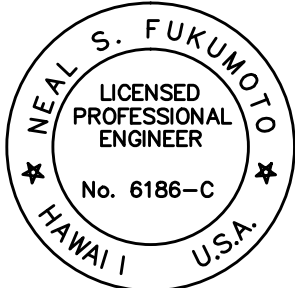
1. Unless otherwise specified, all materials and construction of water system facilities and appurtenances shall be in accordance with the City and County of Honolulu Board of Water Supply's "Water System Standards", dated 2002, the "Water System External Corrosion Control Standards", volume 3, dated 1991, and all subsequent amendments and additions.
2. The Contractor shall notify BWS Capital Projects Division, Construction Section in writing and submit six (6) sets of approved construction plans one week prior to commencing work on the water system.
3. Any adjustments to the existing water system required during construction, to meet the requirements of the BWS Standards, whether shown on the plans or not, shall be done by the contractor at no cost to the board or the state.
4. The Contractor shall be responsible for the protection of all water lines during construction. The Contractor shall be especially careful when excavating behind waterlines, tees and bends whenever there is possibility of water line movement due to the removal of the supporting earth beyond the existing reaction blocks. The Contractor shall take whatever measures necessary to protect the water lines, such as constructing special reaction blocks (with BWS approval) and /or modifying his construction method.
5. The existence and location of underground utilities and structures as shown on the plans are from the latest available data but is not guaranteed as to the accuracy or the encountering of other obstacles during the course of the work. The Contractor shall be responsible and shall pay for all damages to existing utilities. The Contractor shall not assume that where no utilities are shown, that none exist.
6. Re-approval shall be required if this project is not under construction within a period of two years.
7. Waterline outages will not be allowed by BWS. Waterlines shall remain active at all times.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	" "
NA	TRACED BY	" "
	DESIGNED BY	" "
	CHECKED BY	" "

APPROVED:

MANAGER AND CHIEF ENGINEER, BWS
(FOR WORK AFFECTING BWS FACILITIES IN STATE R/W)

DATE



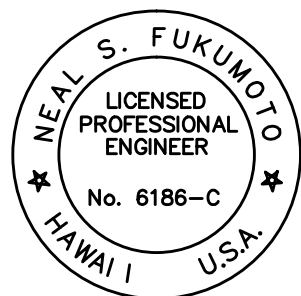
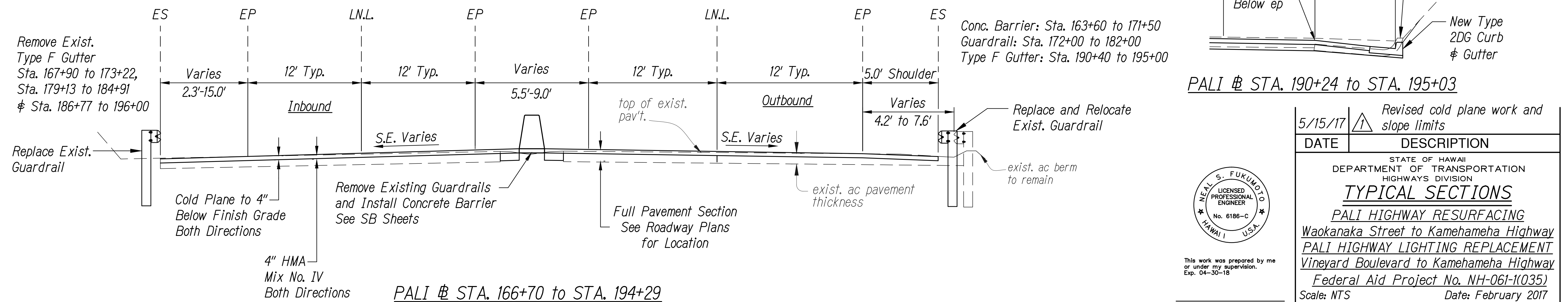
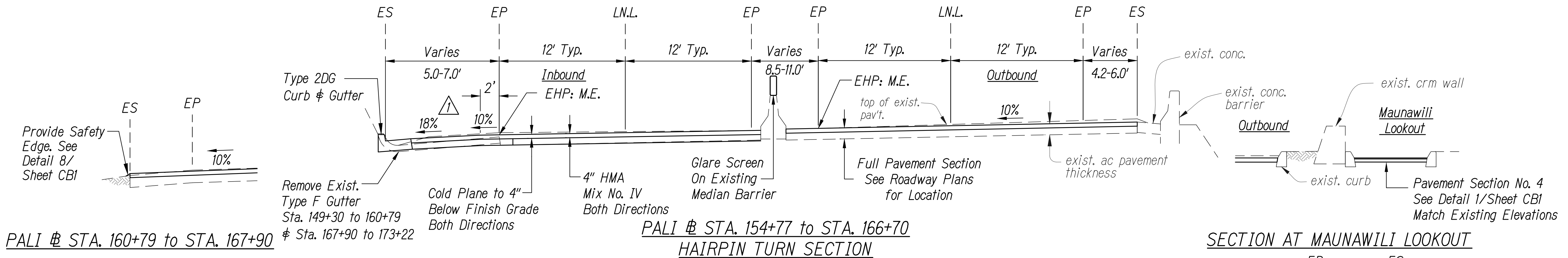
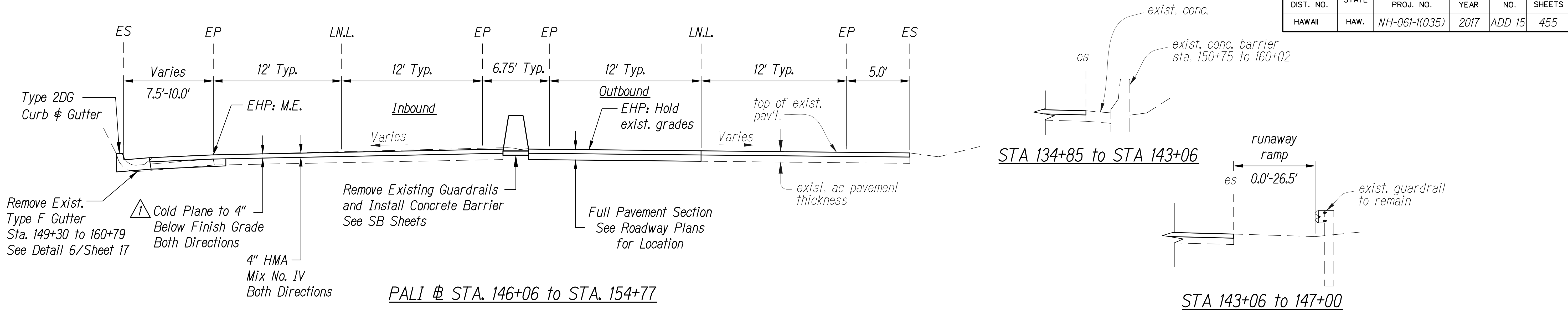
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Exp. 04-30-18

Wesley R. Segawa & Associates, Inc.

5/15/17	New Sheet
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION GENERAL WATER NOTES <u>PALI HIGHWAY RESURFACING</u> <u>Waokanaka Street to Kamehameha Highway</u> <u>PALI HIGHWAY LIGHTING REPLACEMENT</u> <u>Vineyard Boulevard to Kamehameha Highway</u> <u>Federal Aid Project No. NH-061-1(035)</u> Scale: NTS Date: February 2017	
SHEET No. 01 OF 01 SHEETS	

ADD. 4 S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD 15	455

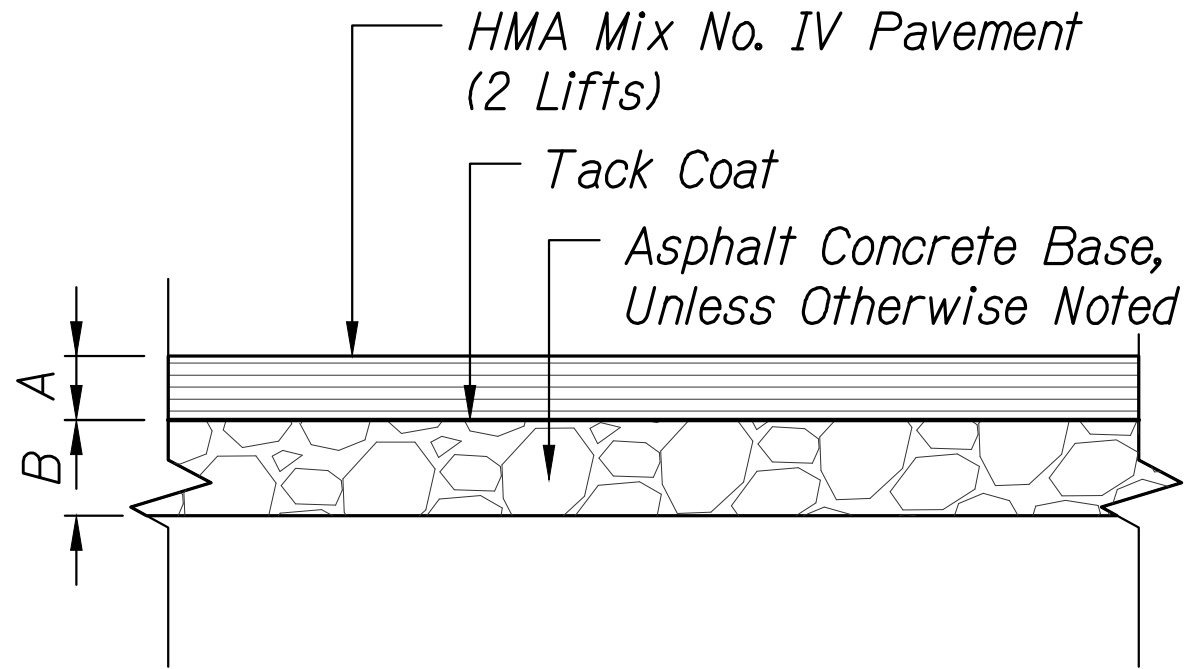


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Wesley R. Segawa & Associates, Inc.

DATE	DESCRIPTION
5/15/17	Revised cold plane work and slope limits
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION TYPICAL SECTIONS PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-1(035) Scale: NTS Date: February 2017	
SHEET No. CA8 OF 09 SHEETS	

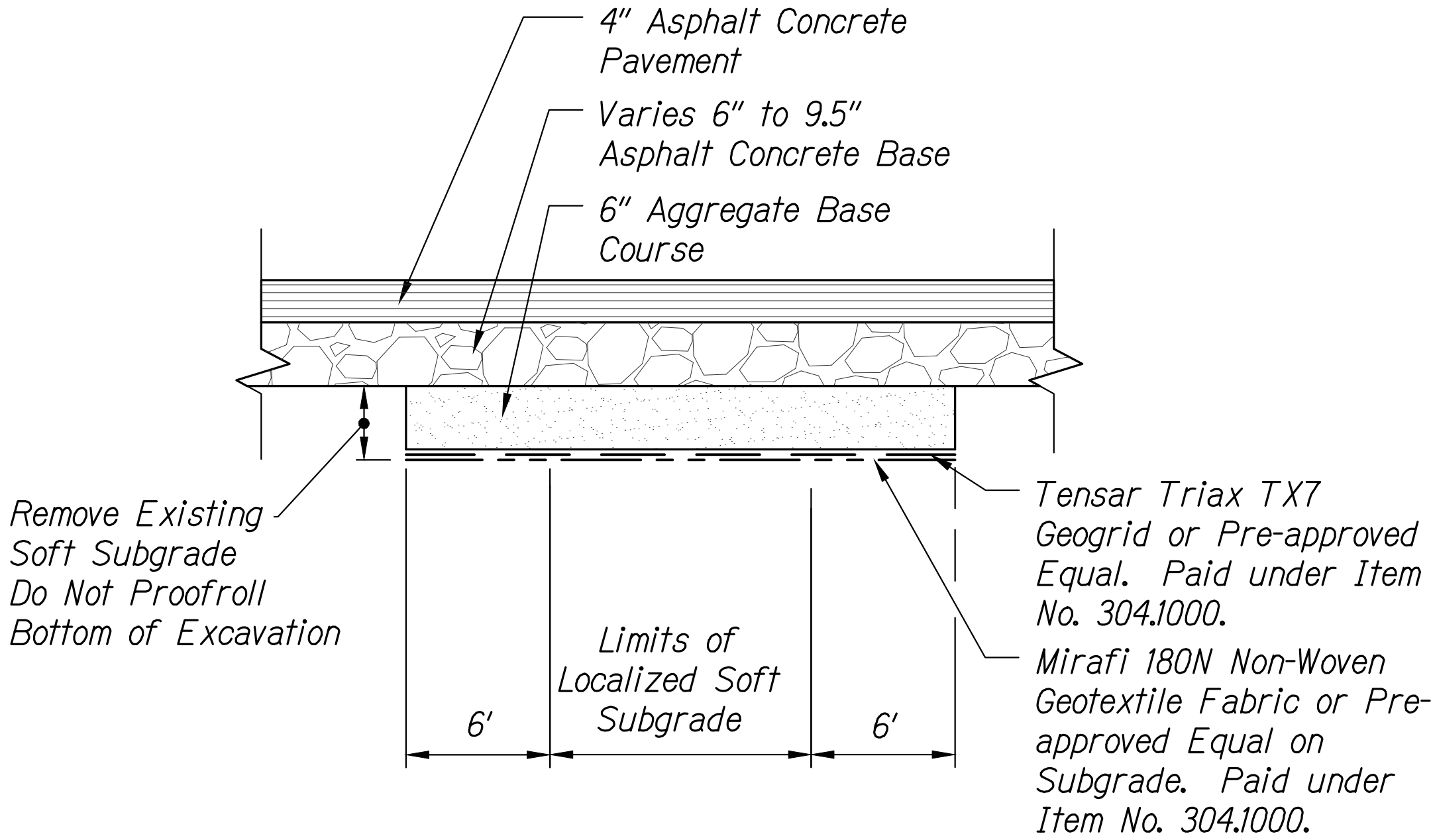
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 17	455



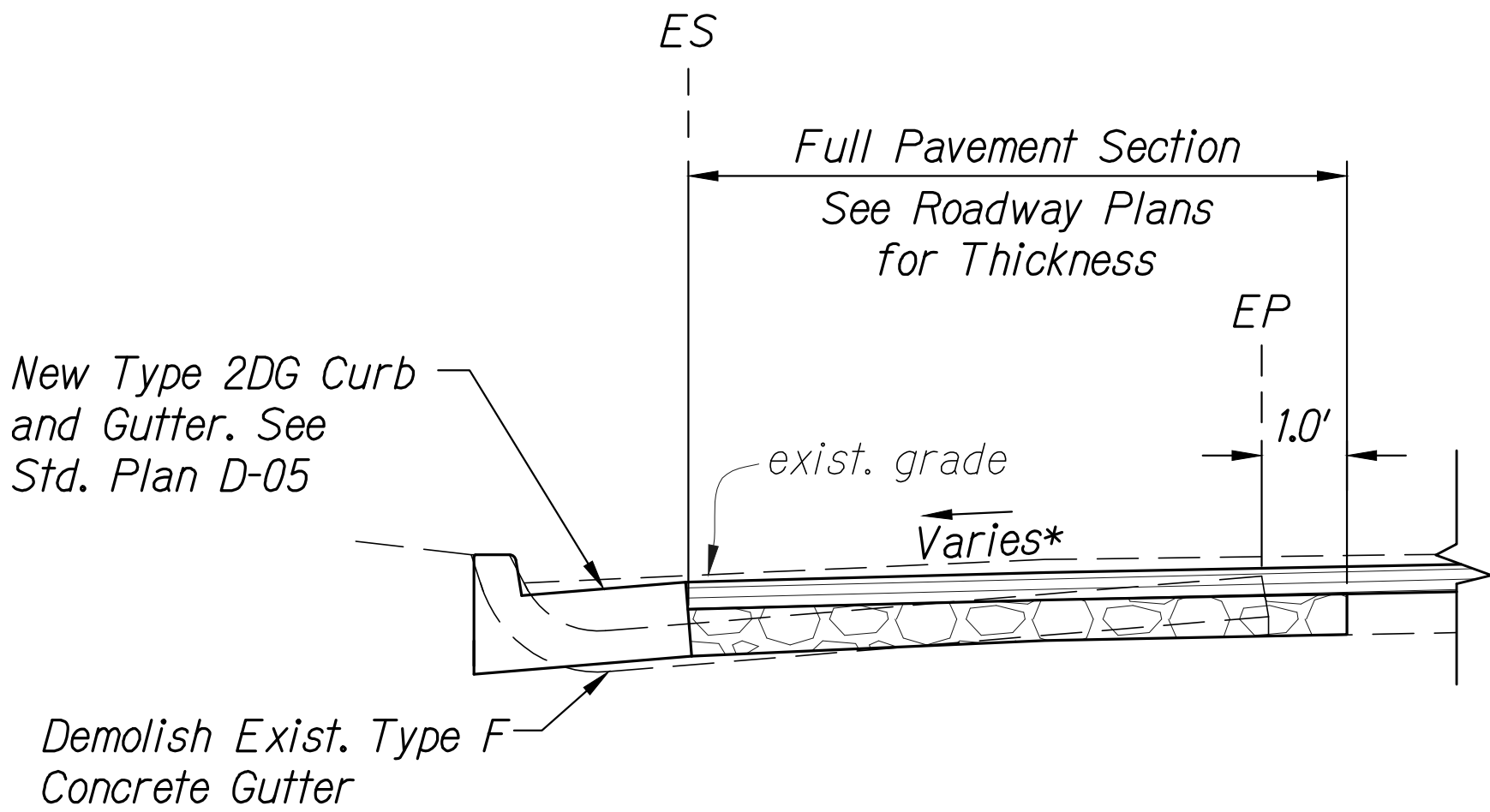
1 **PAVEMENT SECTIONS**
Scale: Not To Scale

Pavement Section Table		
Pavement Section No.	A (inches)	B (inches)
1	4	6
2	4	7
3	4	9.5
4	2 (1 Lift Only)	6 (Aggregate Base)

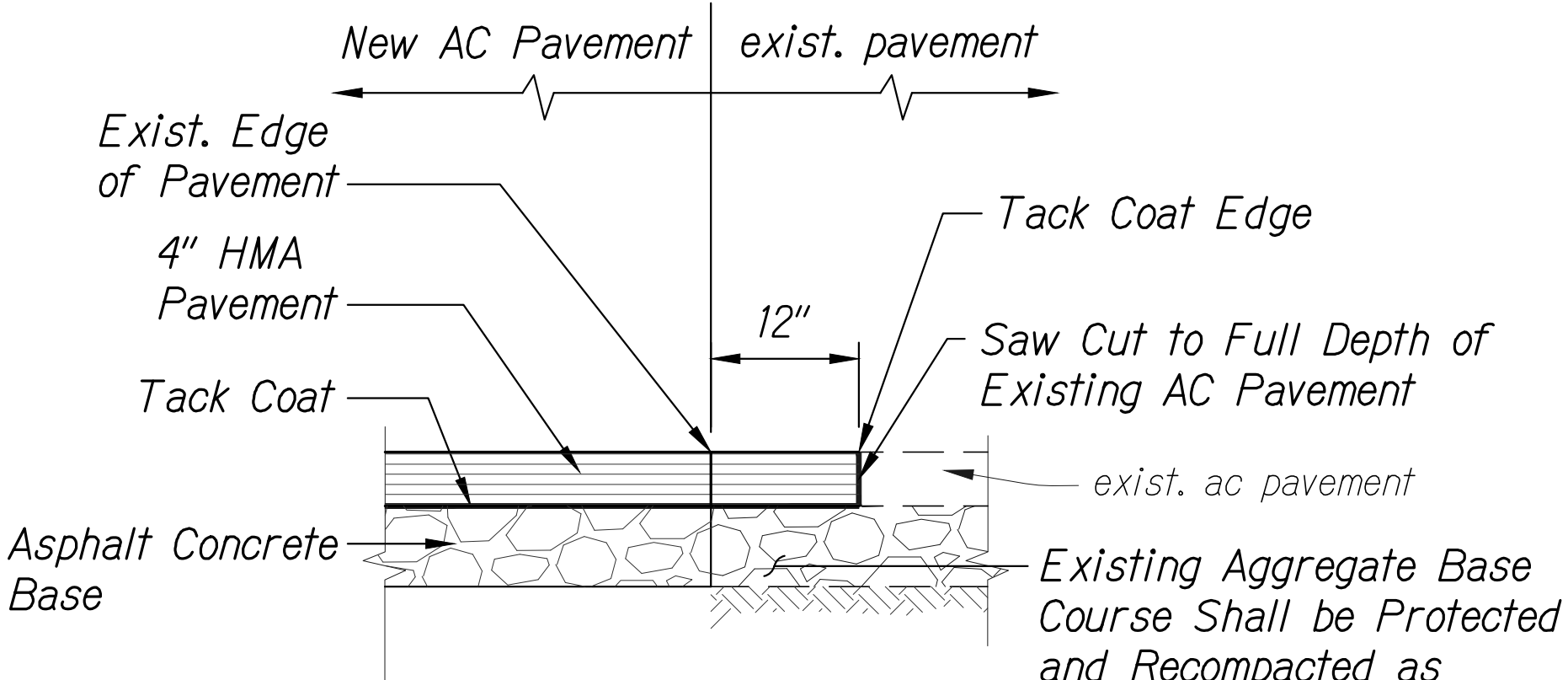
NOTE:
At the end of each work day, AC shall be brought up to 2" below FG. The final 2" lift of HMA Mix No. IV shall occur once a large enough area is available to pave for an entire work day. This is to limit the number of AC joints on the finished surface.



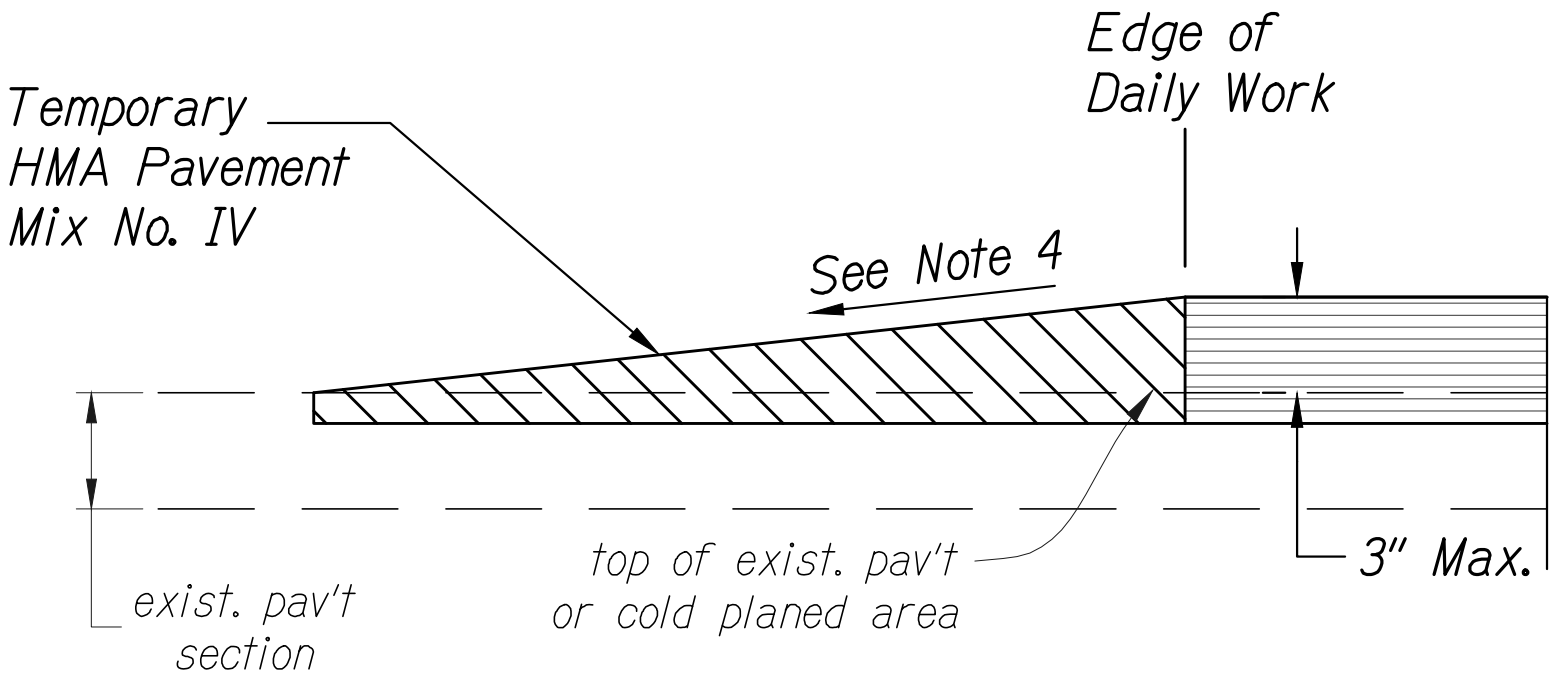
3 **PAVEMENT SECTION WITH SOFT CONDITION**
Scale: Not To Scale



6 **RECONSTRUCTION AT TYPE F GUTTER**
Scale: Not To Scale

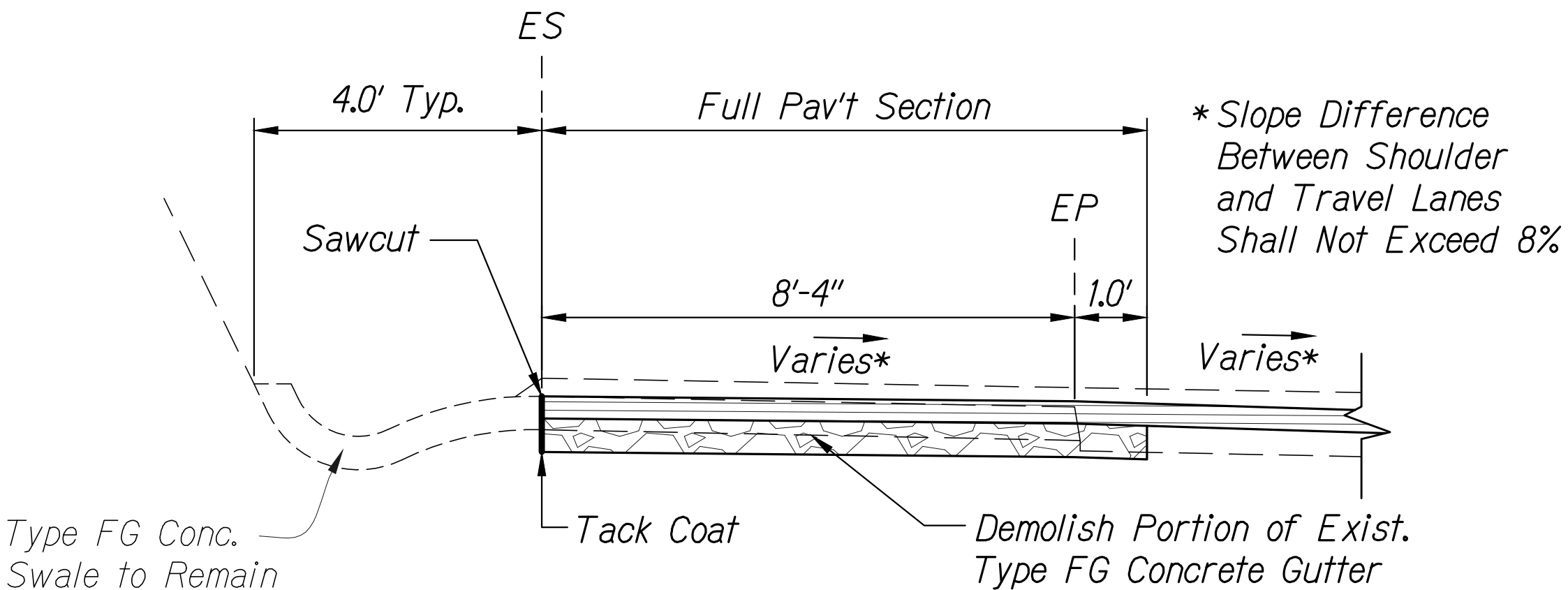


2 **A.C./A.C. PAVEMENT CONNECTION**
Scale: Not To Scale

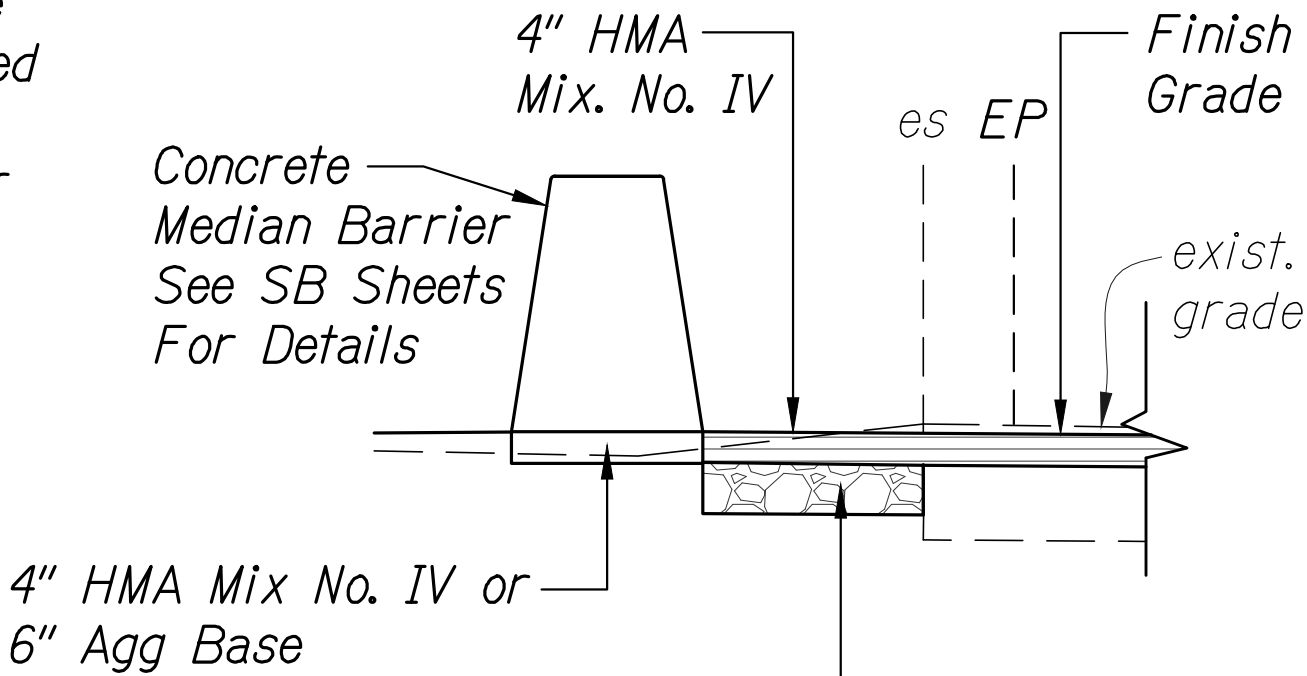


NOTES:
1. Temporary HMA Pavement shall be removed prior to placement of new pavement.
2. Placement of Temporary HMA Pavement shall be incidental to 401.0400 HMA Pavement, Mix No. IV.
3. Removal of Temporary HMA Pavement shall be incidental to 415.0100 Cold Planing.
4. Slope of temporary HMA pavement shall be 48:1 or flatter for longitudinal transitions and 6:1 or flatter for transverse transitions.

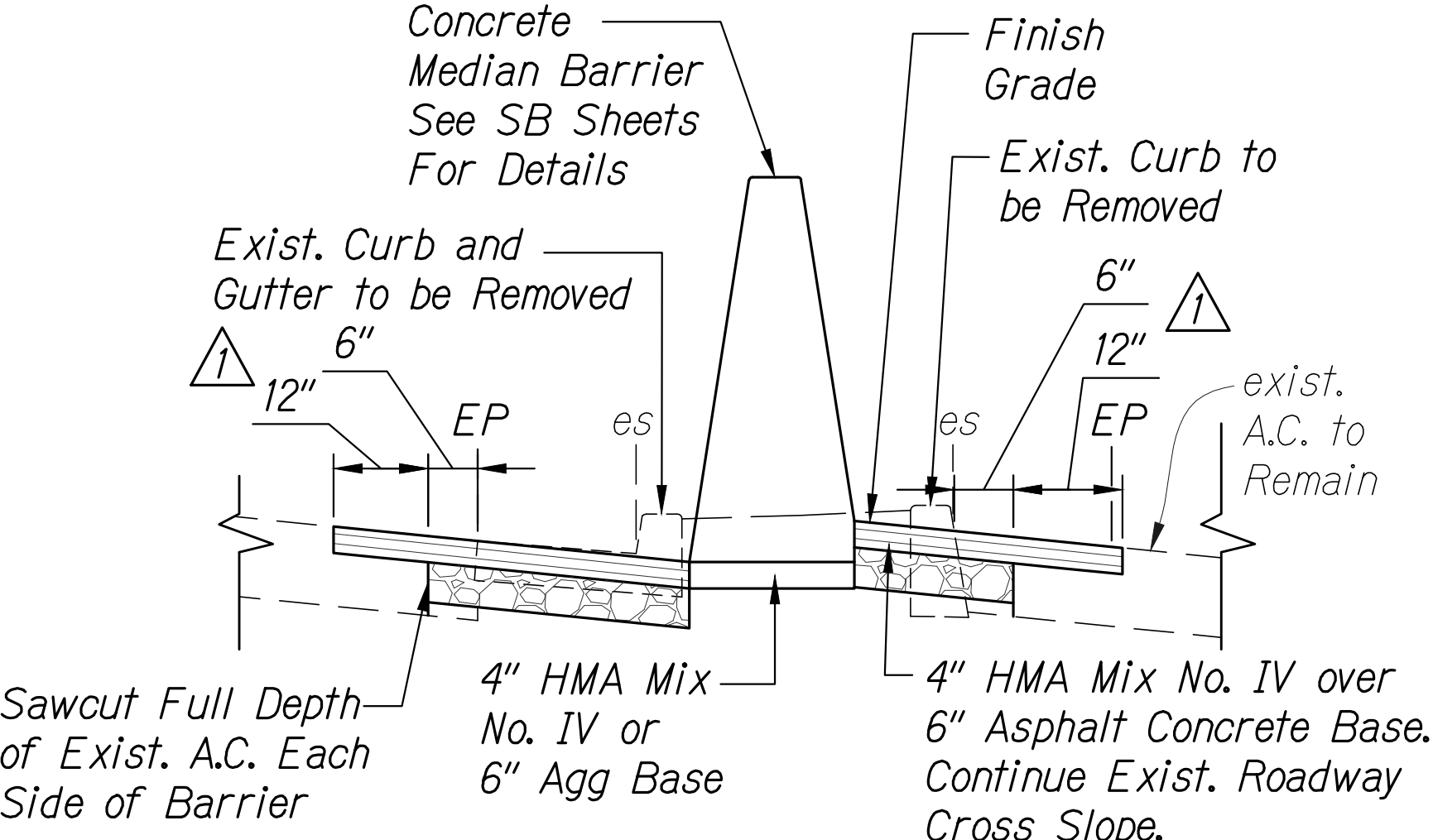
4 **TEMPORARY TREATMENT OF GRADE DIFFERENCES DURING NON-WORK HOURS**
Scale: Not To Scale



7 **MODIFIED TYPE FG GUTTER**
Scale: Not To Scale

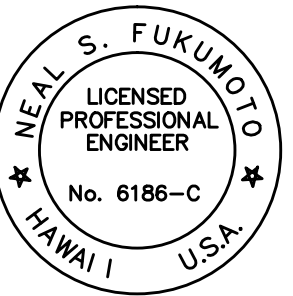


5 **FULL PAVEMENT SECTION AT MEDIAN BARRIER**
Scale: Not To Scale



8 **MEDIAN BARRIER PAVEMENT RESTORATION - LOWER PALI**
Scale: Not To Scale

5/15/17	Note revised and dimensions added
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
PAVEMENT DETAILS	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Scale: NTS	Date: February 2017



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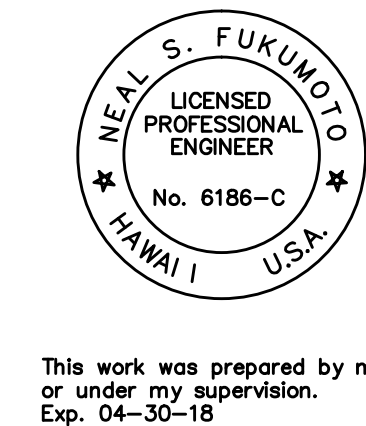
Wesley R. Segawa & Associates, Inc.

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

Notes:

1. Guardrail sections shown here do not include those removed for concrete median barrier sections. For concrete median barrier quantities, see sheet SB0.
2. Guardrail location stations do not include length of end treatments.

GUARDRAIL SCHEDULE												FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
												HAWAII	HAW.	NH-061-1(035)	2017	ADD 19	455
GUARDRAIL NO.	REFERENCE #	LOCATION		EXISTING LENGTH	OFFSET FROM  YELLOW STRIPE (FT)		INSTALL NEW (L.F.)	END TREATMENT LENGTH (L.F.)		END TREATMENT TYPE		REMARKS	⚠				
		FROM	TO		LEFT	RIGHT		LEAD	TRAIL	LEAD	TRAIL						
1	Pali Hwy. #	84+11	86+67	325		x	325	0.0	6.75	exist. guardrail	Quadguard II	double sided guardrail					
2	Waokanaka #	0+10	5+25	500	x		0					existing to remain					
3	Waokanaka #	5+17	14+15	900		x	0					existing to remain					
4	I.B. #	16+88	51+92	3,500		x	3,500	25.0	25.0	Thrie Beam Trans	Thrie Beam Trans						
5	O.B. #	17+00	29+40	1,250		x	1,250	37.5	13.0	FLEAT-350	Type G						
6	O.B. #	37+07	37+68	37.5		x	62.5	25.0	25.0	Modified A-1	Modified A-1						
7	I.B. #	38+92	39+61	75	x		75	50.0	13.0	Modified A-1	Type G						
8	O.B. #	48+56	48+94	12.5		x	37.5	25.0	25.0	Modified A-1	Thrie Beam						
9	I.B. #	50+26	52+53	237.5	x		237.5	50.0	50.0	Modified A-1	Modified A-1						
10	O.B. #	51+10	55+87	475		x	475	37.5	13.0	FLEAT-350	Type G						
11	I.B. #	56+15	57+03	87.5	x		87.5	50.0	50.0	Modified A-1	Modified A-1						
12	O.B. #	62+84	75+80	1,300		x	1,300	37.5	13.0	FLEAT-350	Type G						
13	I.B. #	66+39	76+16	987.5	x		987.5	50.0	13.0	Modified A-1	Type G						
14	I.B. #	81+56	89+44	787.5		x	787.5	6.75	25.0	Quadguard II	Thrie-Beam						
15	O.B. #	81+07	89+07	800	x		800	25.0	6.75	Thrie-Beam	Quadguard II						
16	O.B. #	82+39	86+48	425		x	425	37.5	13.0	FLEAT-350	Type G						
17	I.B. #	90+95	97+49	662.5		x	662.5	25.0	6.75	Thrie Beam Trans	Quadguard II						
18	Pali Hwy. #	90+70	97+32	662.5		x	662.5	6.75	25.0	Quadguard II	Thrie Beam Trans						
19	Pali Hwy. #	42+86	64+33	2150		x	2,150	37.5	13.0	exist. SRT-350	Type G	86 - 8' Post					
20	Pali Hwy. #	45+61	64+66	1,900	x		1,900	50.0	0.0	Modified A-1	connect to ex.	20 - 8' Post					
21	Pali Hwy. #	67+90	IB # 81+85	1,400	x		1,400	37.5	50.0	FLEAT-350	Modified A-1						
22	Pali Hwy. #	68+43	OB 82+27	1,387.5		x	1,387.5	37.5	13.0	FLEAT-350	Type G						
23	I.B. #	81+88	88+84	700		x	700	6.75	25.0	Quadguard II	Thrie Beam Trans						
24	O.B. #	81+83	88+77	700	x		700	25.0	6.75	Thrie Beam Trans	Quadguard II						
25	I.B. #	137+03±	137+93	112.5		x	100±	25.0	0.0	Thrie Beam Trans	bridge conn.	Use existing bridge rail connection	⚠				
26	O.B. #	135+65	136+86	125	x		125	13.0	25.0	Type G	Thrie Beam Trans	Terminate Type "G" behind exist. wall Grade area as needed	⚠				



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Exp. 04-30-18

Wesley R. Segawa & Associates, Inc.

5/15/17	⚠ Guardrails data revised
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
GUARDRAIL SCHEDULE	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Scale: NTS	Date: February 2017

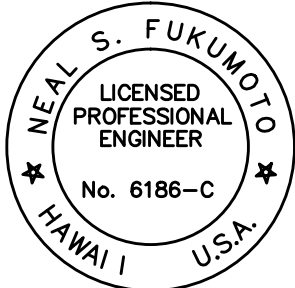
ORIGINAL PLAN	NOTE BOOK	No.	SURVEY PLOTTED BY	DATE
			DRAWN BY	
			TRACED BY	
			DESIGNED BY	
			CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD 20	455

GUARDRAIL SCHEDULE												HAWAII	HAW.	NH-061-1(035)	2017	ADD
GUARDRAIL NO.	REFERENCE ㊟	LOCATION		EXISTING LENGTH	OFFSET FROM ㊟ YELLOW STRIPE (FT)		INSTALL NEW (L.F.)	END TREATMENT LENGTH (L.F.)		END TREATMENT TYPE		REMARKS				
		FROM	TO		LEFT	RIGHT		LEAD	TRAIL	LEAD	TRAIL					
27	Pali Hwy ㊟	146+06	148+64	237.5	x		275	0	6.0	exist. guardrail	exist. crm wall					
28	Pali Hwy ㊟	169+65	170+67	112.5	x		112.5	25.0	13.0	Modified A-1	Type G					
29	Pali Hwy ㊟	173+01	178+18	537.5	x		525 ㊟	50.0	13.0	Modified A-1	Type G					
30	Pali Hwy ㊟	172+25	183+05	1,087.5		x	1087.5	0.0	0.0	exist. guardrail	exist. guardrail					
31	Pali Hwy ㊟	184+88	187+28	250	x		250	50.0	13.0	Modified A-1	Type G					
32	Pali Hwy ㊟	196+41	201+20	487.5	x		487.5	0.0	0.0	exist. guardrail	exist. guardrail					
33	Pali Hwy ㊟	196+46	200+30	375		x	375	50.0	13.0	Modified A-1	Type G					

GUARDRAIL TOTAL		
Item No.	Pay Item	Estimated Qty.
202.1000	Removal of Guardrail and End Treatments (Excluding Median Barrier Locations)	22,925 L.F. $\triangle$
606.3112	Type 3 - W-Beam w/ Strong Post	22,925 L.F. $\triangle$
606.3114	Type 3 - Thrie-beam	275 L.F. $\triangle$
606.7010	Terminal Section Type FLEAT-350 Guardrail	7 EA.
606.7020	Terminal Section Type "G" Guardrail	13 EA. $\triangle$
606.7030	Terminal Section Modified Type "A" Flare Guardrail	15 EA.
693.1000	Terminal Impact Attenuator - Wide	1 EA.
693.2000	Terminal Impact Attenuator - Narrow	2 EA.
695.4010	Concrete Median Barrier Transition to Thrie Beam - Single Sided	2 EA
695.4020	Concrete Median Barrier Transition to Thrie Beam - Double Sided	5 EA

- Note:
- Guardrail sections shown here do not include those removed for concrete median barrier sections. For concrete median barrier quantities, see sheet SB0.
 - Guardrail location stations do not include length of end treatments.



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Exp. 04-30-18

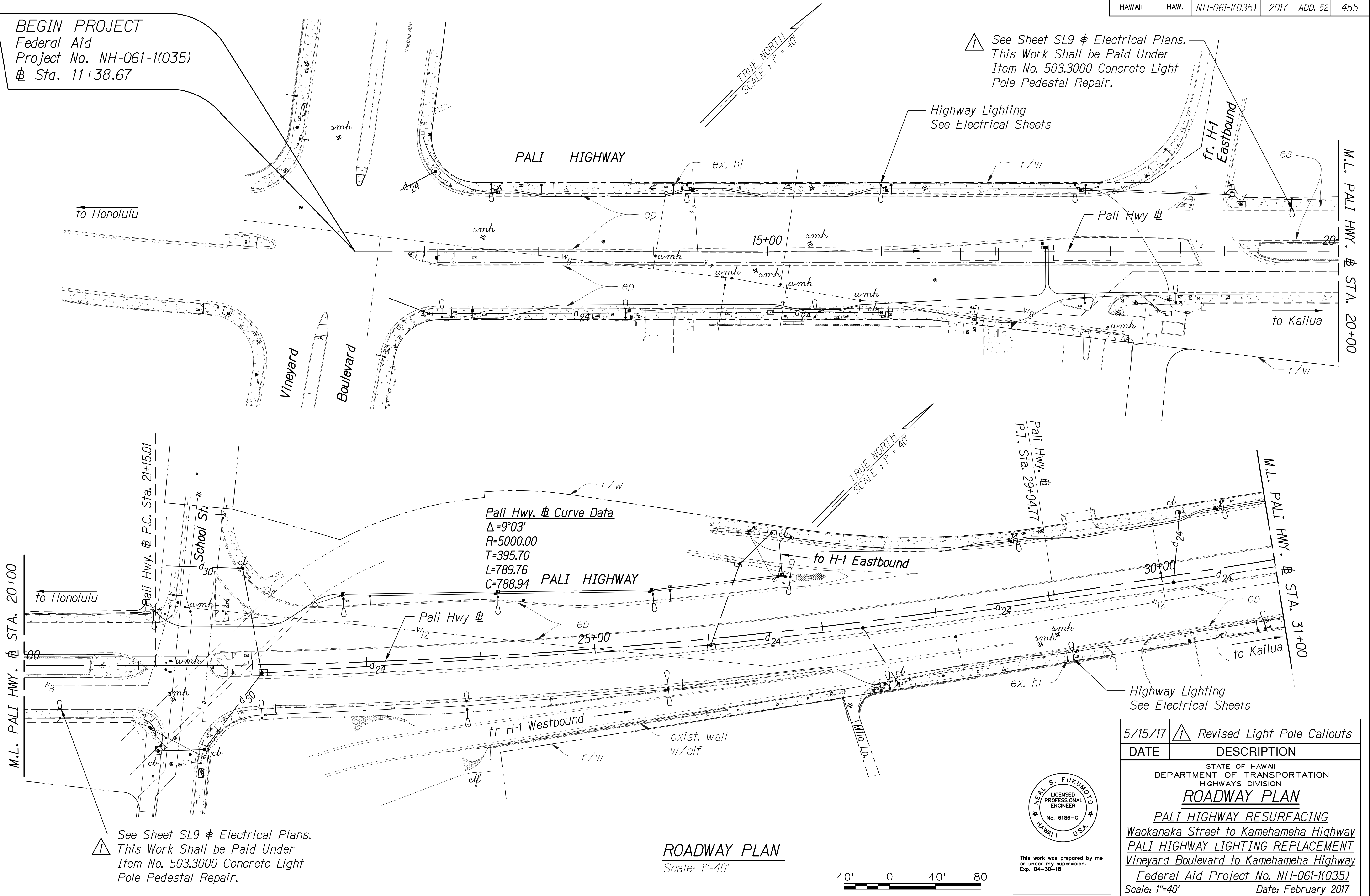
Wesley R. Segawa & Associates, Inc.

5/15/17	$\triangle$ Guardrail data revised
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
GUARDRAIL SCHEDULE	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Scale: NTS	Date: February 2017

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 52	455

BEGIN PROJECT
Federal Aid
Project No. NH-061-1(035)
Sta. 11+38.67

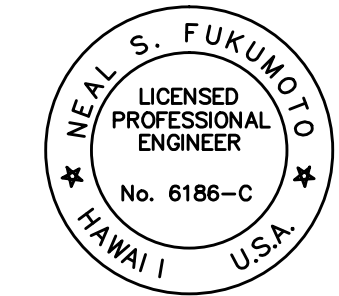
See Sheet SL9 & Electrical Plans.
This Work Shall be Paid Under
Item No. 503.3000 Concrete Light
Pole Pedestal Repair.



ORIGINAL PLAN	DATE
NOTED BY	DATE
DESIGNED BY	DATE
CHECKED BY	DATE

See Sheet SL9 & Electrical Plans.
This Work Shall be Paid Under
Item No. 503.3000 Concrete Light
Pole Pedestal Repair.

ROADWAY PLAN
Scale: 1"=40'



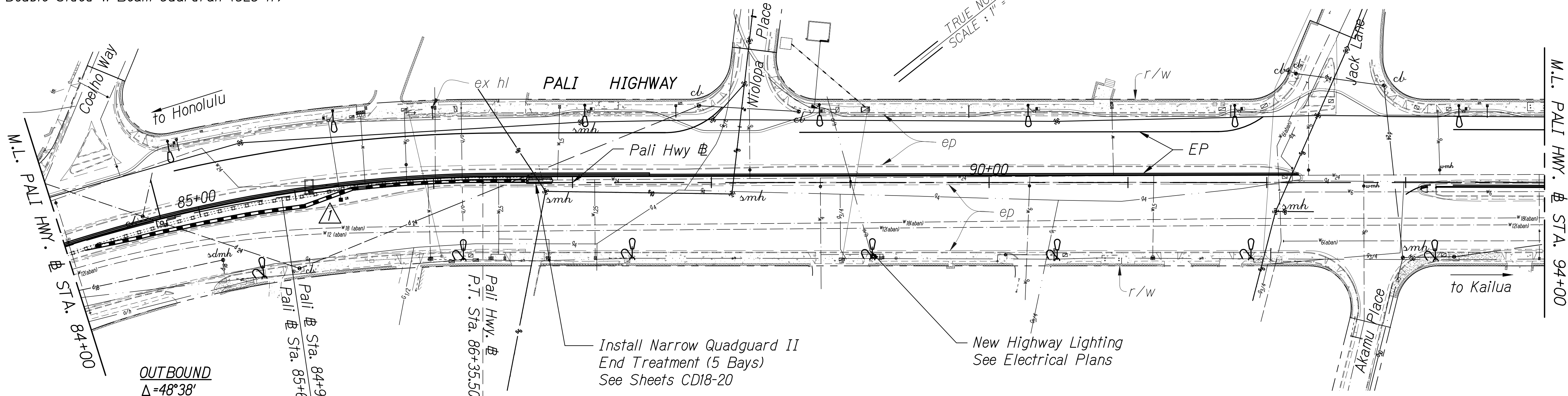
This work was prepared by me
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Exp. 04-30-18

Wesley R. Segawa & Associates, Inc.

DATE	DESCRIPTION
5/15/17	Revised Light Pole Callouts
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ROADWAY PLAN	
PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-1(035) Scale: 1"=40' Date: February 2017	
SHEET No. 061 OF 31 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 56	455

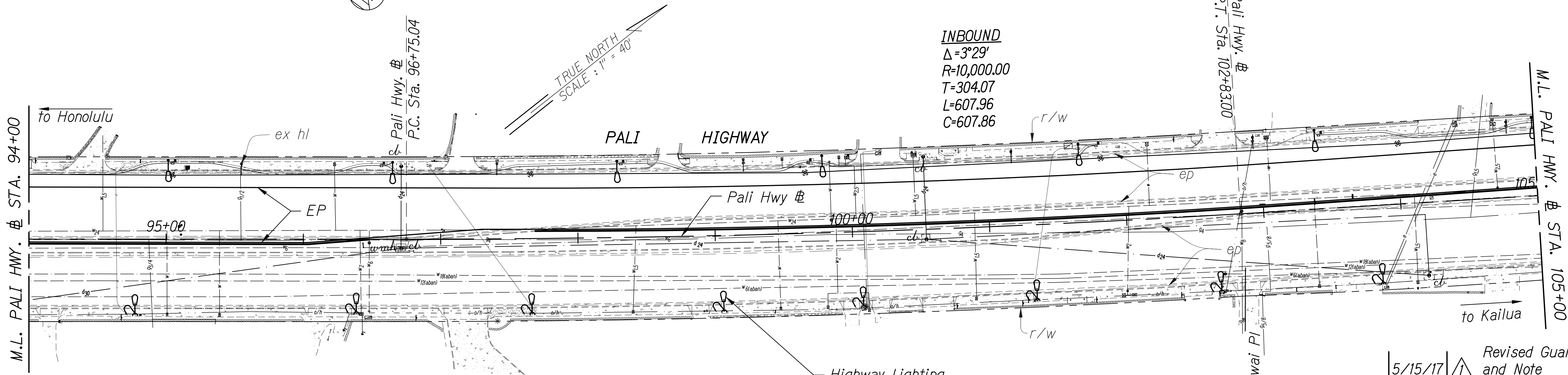
0# Sta. 84+11 to Sta. 86+67, Rt. 
Remove Existing Guardrail and
Install Double Sided W-Beam Guardrail (325 lf)



ROADWAY PLAN

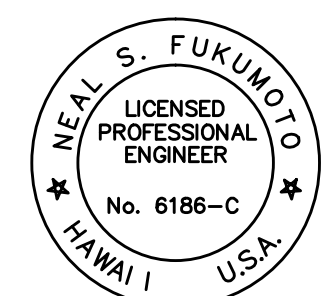
Scale: 1"=40'

 For Median Work Between Nuuanu and Dowsett Avenues, See Sheets CR3 to CR11.



ROADWAY PLAN

Scale: 1"=40'



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Wesley R. Segawa & Associates, Inc.

5/15/17	 Revised Guardrail Layout and Note
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ROADWAY PLAN	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Scale: 1"=40'	Date: February 2017

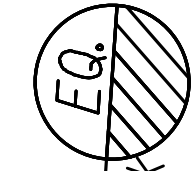
SHEET No. CG5 OF 31 SHEETS

ADD. 56

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	

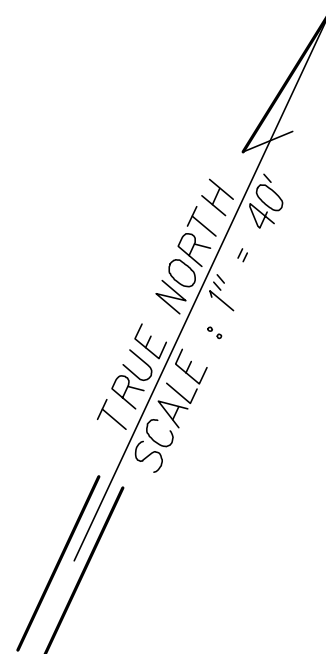
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD 72	455

PAV'T AREA NO.	BEG. STA.	END STA.	AREA (LxW)
50	IB 79+00	IB 81+63	263x12
51	IB 83+00	IB 87+00	400x12
52	IB 83+00	IB 96+00	1300x12
53	IB 89+00	IB 96+00	700x12
54	OB 90+92	OB 91+02	10x12



Concrete Median Barrier No. 4
Pali Hwy. # Sta. 97+71 to IB # Sta. 81+44
O/S Varies 4.75' To 9.09' Rt.
Remove Existing Guardrail and Install
Concrete Median Barrier (5,125 lf)
See SB Sheets for Schedule and Details

I.B. # Curve Data
 $\Delta=10^{\circ}27'$
 $R=8594.37$
 $T=785.93$
 $L=1567.50$
 $C=1565.33$



Pali Hwy. # Sta. 67+90 to IB # Sta. 81+85, Lt.
Remove Exist. Guardrail and
Install W-beam Guardrail (1400 lf)

Existing Median Opening
to be Closed Off.

IB # Sta. 81+88 to Sta. 88+84, Rt.
Remove Exist. Guardrail and
Install W-beam Guardrail (700 lf)

IB # Sta. 86+51 to 96+04
O/S Varies 13.24' To 13.91' Lt.
Demolish Type F Gutter &
Construct Type 2DG Curb and
Gutter. See Detail 6/Sheet CBI

Remove exist. Quadguard.
Install W-Beam Transition
to Median Barrier
See Sheets CD15-17

Concrete
Median Barrier

Install
FLEAT-350

PALI HIGHWAY

EP

IB #

to Honolulu

Boring C-15

Boring C-14

Boring B-6

Highway Lighting
See Electrical Sheets

Install Type "G"
End Terminal

Pali Hwy # Sta. 80+00
Reconstruct Type C
Catch Basin
See Sheet SD16.2

OB # Sta. 68+43 to Sta. 82+27, Rt.
Remove Exist. Guardrail and
Install W-beam Guardrail (1387.5 lf)

OB # Sta. 81+83 to Sta. 88+77, Lt.
Remove Exist. Guardrail and
Install W-beam Guardrail (700 lf)

Install Quadguard II
Narrow End Terminal
See Sheets CD18-20

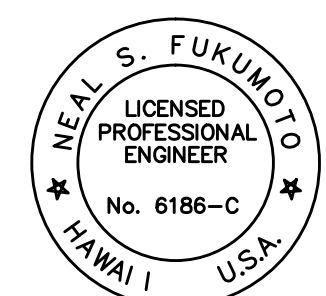
OB # Sta. 87+00 to 90+19
O/S Varies 24.58' To 24.94' Rt.
Demolish Type F Gutter &
Construct Type 2DG Curb and
Gutter. See Detail 6/Sheet CBI

O.B. # Curve Data
 $\Delta=10^{\circ}27'$
 $R=8594.37$
 $T=785.93$
 $L=1567.50$
 $C=1565.33$

Legend:

4" HMA Mix IV Over 7" A.C.B.
See Detail 1/Sheet CBI

ROADWAY PLAN
Scale: 1"=40'

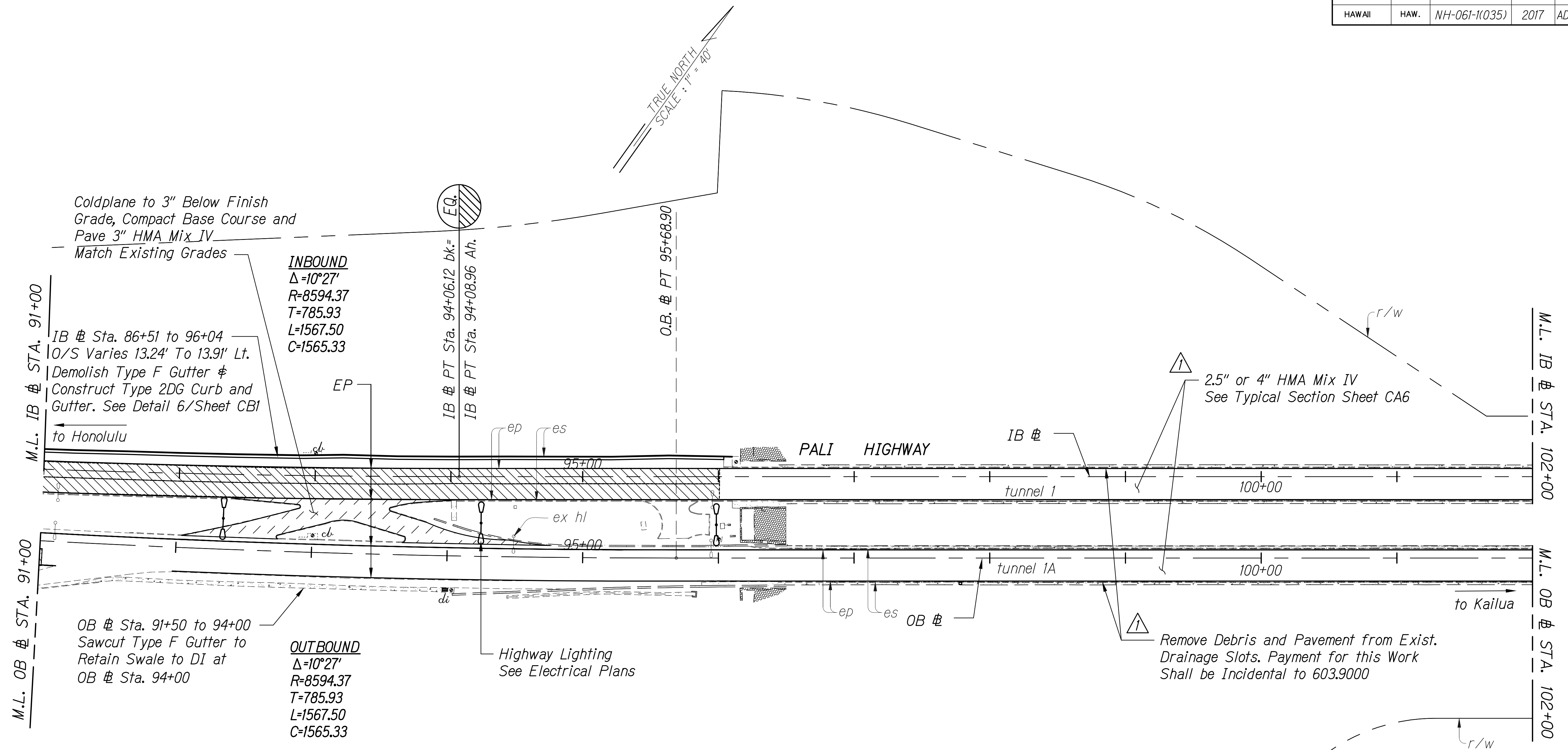


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Exp. 04-30-18

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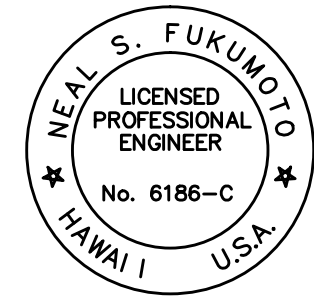
5/15/17	Added CB Callout
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ROADWAY PLAN	
PALI HIGHWAY RESURFACING Waikanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-1(035)	
Scale: 1"=40'	Date: February 2017
SHEET No. CG21 OF 31 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 73	455



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

ROADWAY PLAN
Scale: 1"=40'



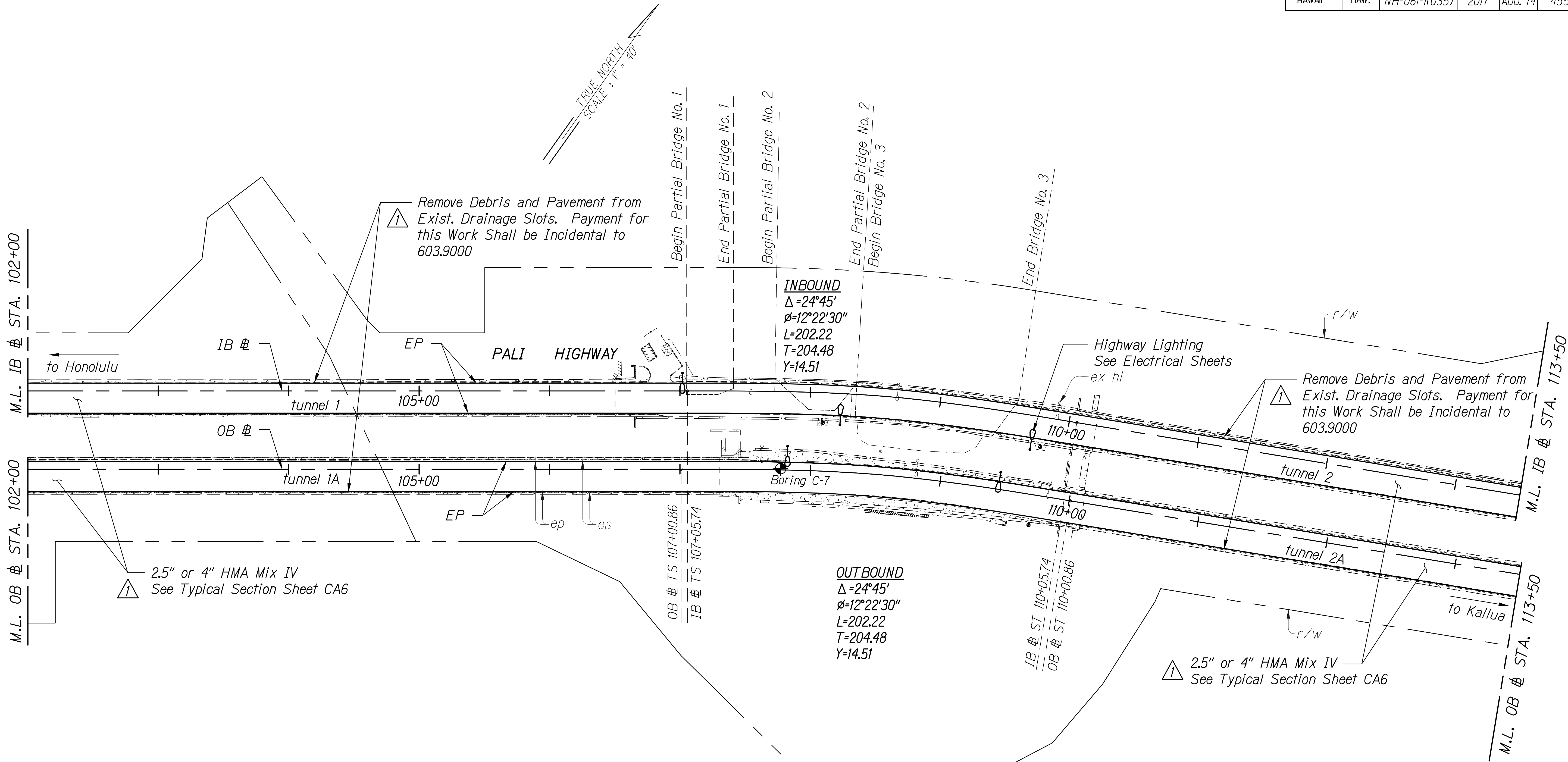
This work was prepared by me or under my supervision.
Exp. 04-30-18

Wesley R. Segawa & Associates, Inc.

5/15/17	Added and revised notes for work in tunnels
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ROADWAY PLAN	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Scale: As Shown	Date: February 2017
SHEET No. CG22 OF 31 SHEETS	

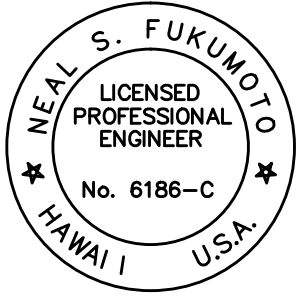
ADD. 73

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 74	455



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	

ROADWAY PLAN
Scale: 1"=40'



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Wesley R. Segawa & Associates, Inc.

5/15/17	Added and revised notes for work in tunnel
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION ROADWAY PLAN PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-1(035) Scale: 1"=40' Date: February 2017	
SHEET No. 0623 OF 31 SHEETS	

PAV'T AREA NO.	BEG. STA.	END STA.	AREA (1xw)
55	OB 116+98	OB 117+28	30x11.5
56	OB 118+31	OB 118+56	25x11.5
57	OB 118+71	OB 118+76	5x11.5
58	OB 120+50	OB 120+75	25x11.5
59	OB 123+13	OB 123+18	5x11.5
60	OB 123+18	OB 123+48	30x11.5
61	OB 123+87	OB 124+07	20x11.5

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 75	455

IB # Spiral Data
 $\Delta=24^{\circ}45'$
 $\phi=12^{\circ}22'30''$
 $L=202.22$
 $T=204.48$
 $Y=14.51$

IB # Curve Data

IB # Spiral Data IB # Curve Data
 $\Delta=36^{\circ}46'$ $\Delta=09^{\circ}18'08''$
 $\phi=13^{\circ}43'56''$ $R=417.24$
 $L=200.00$ $T=33.94$
 $T=239.80$ $L=67.74$
 $C=67.67$

OB # Spiral Data
 $\Delta=24^{\circ}45'$
 $\phi=12^{\circ}22'30''$
 $L=202.22$
 $T=204.48$
 $Y=14.51$

OB # Curve Data

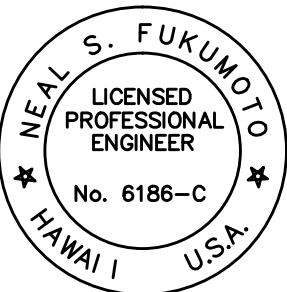
OB # Spiral Data OB # Circular Data
 $\Delta=36^{\circ}46'$ $\Delta=09^{\circ}18'08''$
 $\phi=13^{\circ}44'00''$ $R=417.20$
 $L=200.00$ $T=33.93$
 $T=239.78$ $L=67.72$
 $C=67.64$

Legend:

 4" HMA Mix IV Over 7" A.C.B.
See Detail 1/Sheet CBI

ROADWAY PLAN

Scale: 1"=40'



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Exp. 04-30-18

Wesley R. Segawa & Associates, Inc.

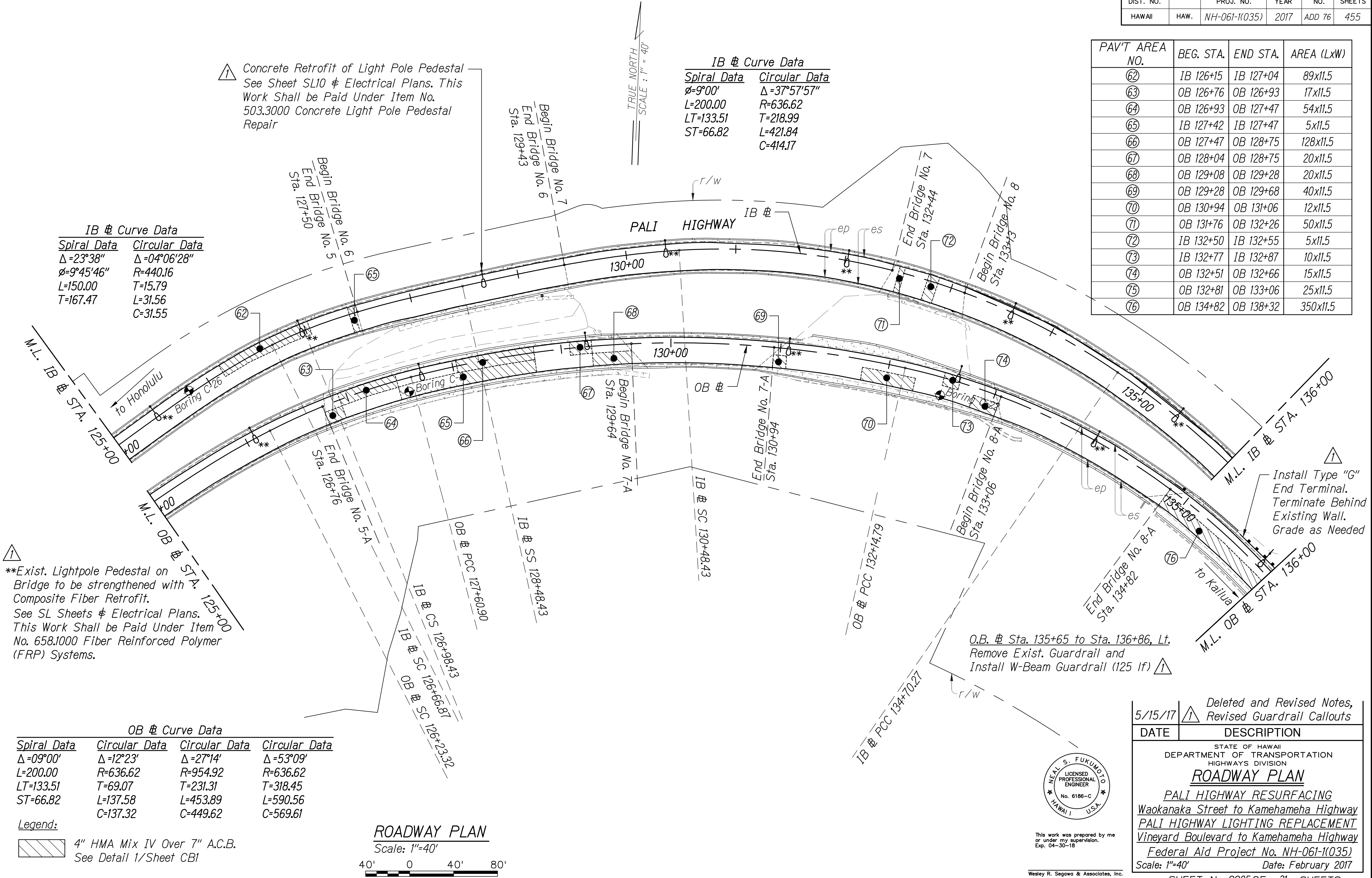
5/15/17	 Callouts Revised
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION ROADWAY PLAN PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-1(035) Scale: 1"=40' Date: February 2017	
SHEET No. 0624 OF 31 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-(035)	2017	ADD 76	455

PAV'T AREA NO.	BEG. STA.	END STA.	AREA (LxW)
62	IB 126+15	IB 127+04	89x11.5
63	OB 126+76	OB 126+93	17x11.5
64	OB 126+93	OB 127+47	54x11.5
65	IB 127+42	IB 127+47	5x11.5
66	OB 127+47	OB 128+75	128x11.5
67	OB 128+04	OB 128+75	20x11.5
68	OB 129+08	OB 129+28	20x11.5
69	OB 129+28	OB 129+68	40x11.5
70	OB 130+94	OB 131+06	12x11.5
71	OB 131+76	OB 132+26	50x11.5
72	IB 132+50	IB 132+55	5x11.5
73	IB 132+77	IB 132+87	10x11.5
74	OB 132+51	OB 132+66	15x11.5
75	OB 132+81	OB 133+06	25x11.5
76	OB 134+82	OB 138+32	350x11.5

IB # Curve Data	
Spiral Data	Circular Data
$\phi=9^{\circ}00'$	$\Delta=37^{\circ}57'57''$
L=200.00	R=636.62
LT=133.51	T=218.99
ST=66.82	L=421.84
	C=414.17

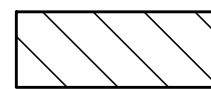
IB # Curve Data	
Spiral Data	Circular Data
$\Delta=23^{\circ}38''$	$\Delta=04^{\circ}06'28''$
$\phi=9^{\circ}45'46''$	R=440.16
L=150.00	T=15.79
T=167.47	L=31.56
	C=31.55



△ ****Exist. Lightpole Pedestal on Bridge to be strengthened with Composite Fiber Retrofit.**
See SL Sheets & Electrical Plans.
This Work Shall be Paid Under Item No. 658.1000 Fiber Reinforced Polymer (FRP) Systems.

OB # Curve Data			
Spiral Data	Circular Data	Circular Data	Circular Data
$\Delta=09^{\circ}00'$	$\Delta=12^{\circ}23'$	$\Delta=27^{\circ}14'$	$\Delta=53^{\circ}09'$
L=200.00	R=636.62	R=954.92	R=636.62
LT=133.51	T=69.07	T=231.31	T=318.45
ST=66.82	L=137.58	L=453.89	L=590.56
	C=137.32	C=449.62	C=569.61

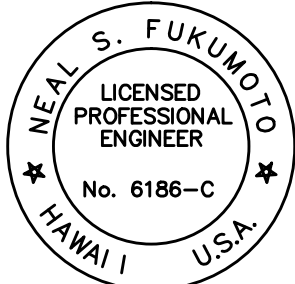
Legend:



4" HMA Mix IV Over 7" A.C.B.
See Detail 1/Sheet CB1

ROADWAY PLAN

Scale: 1"=40'



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Exp. 04-30-18

Wesley R. Segawa & Associates, Inc.

5/15/17	Deleted and Revised Notes, Revised Guardrail Callouts
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ROADWAY PLAN	
PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-(035)	
Scale: 1"=40'	Date: February 2017
SHEET No. CG25 OF 31 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 77	455

PAV'T AREA NO.	BEG. STA.	END STA.	AREA (LxW)
76	OB 134+82	OB 138+32	350x11.5
77	IB 137+02	IB 138+41	139x11.5
78	IB 139+98	IB 140+03	5x11.5
79	IB 140+48	IB 140+83	35x11.5
80	IB 142+87	IB 143+12	25x11.5
81	OB 142+31	OB 142+76	45x11.5
82	OB 142+98	OB 143+23	25x23
83	OB 143+94	OB 144+24	30x11.5
84	OB 144+24	OB 144+44	20x11.5
85	146+64	146+84	20x11.5

Concrete Median Barrier No. 6
 IB # Sta. 145+92 to
 Pali Hwy. # Sta. 154+77
 O/S Varies 3.75' To 18.75' Rt.
 Remove Existing Guardrail and Install
 Concrete Median Barrier (885 lf)
 See SB Sheets for Schedule and Details

Pali Hwy. # Sta. 146+06 to Sta. 148+64
 Remove Existing Guardrail and
 Install W-beam Guardrail (275 lf)

IB # OB # Spiral Data

$\Delta=12^{\circ}30'$
 $\phi=6^{\circ}15'$
 $L=200.00$
 $T=200.56$

Install Narrow Quadguard II
 End Treatment (5 Bays)
 See Sheets CD18-20

Connect New
 Guardrail to
 exist. rock wall
 connection

M.L. PALI HWY. # STA. 147+00

EQ. # ST=146+00.58 BK. # ST=146+00.56 AL. # ST=144+87.10 BK. # ST=144+87.10 AL. # ST=144+87.10

5/15/17  Revised Guardrail
 Notes And Callout

DATE DESCRIPTION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

ROADWAY PLAN

PALI HIGHWAY RESURFACING

Waokanaka Street to Kamehameha Highway
 PALI HIGHWAY LIGHTING REPLACEMENT
 Vineyard Boulevard to Kamehameha Highway

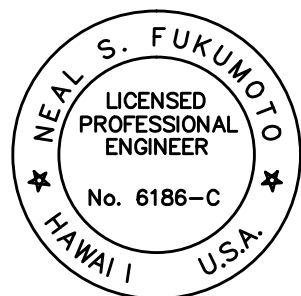
Federal Aid Project No. NH-061-1(035)

Scale: 1"=40'

Date: February 2017

SHEET No. CG26 OF 31 SHEETS

ADD. 77



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Wesley R. Segawa & Associates, Inc.



ROADWAY PLAN

Scale: 1"=40'

Concrete Median Barrier No. 5
 IB # Sta. 138+34 to Pali Hwy. # Sta. 144+85
 O/S Varies 18.75' To 25.09' Rt.
 Remove Existing Guardrail and Install
 Concrete Median Barrier (651 lf)
 See SB Sheets for Schedule and Details

2" HMA Mix IV
 Over 6" A.C.B.

Highway Lighting
 See Electrical Sheets

Install W-Beam Transition
 to Median Barrier.
 See Sheets CD15-17

IB # Sta. 137+03± to Sta. 137+93, Rt.
 Remove Existing Guardrail and
 Install W-Beam Guardrail (100± lf)

IB Sta. 138+15 to 141+75, Rt.
 Remove Exist. Type 2D Curb (360 lf)

Connect W-Beam
 to exist. bridge
 rail connection

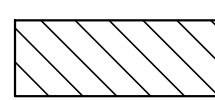
End Bridge No. 8
 Sta. 136+93

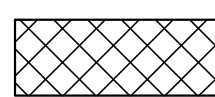
M.L. IB # STA. 136+00

OB # Sta. 135+65 to Sta. 136+86, Lt.
 Remove Exist. Guardrail and
 Install W-Beam Guardrail (125 lf) 

OB Sta. 138+15 to 145+00, Lt.
 Remove Exist. Type 2D Curb (685 lf)

Legend:

 4" HMA Mix IV Over 7" A.C.B.
 See Detail 1/Sheet CBI

 4" HMA Mix IV Over 9.5" A.C.B.
 See Detail 1/Sheet CBI

 2" HMA Mix IV Over 6" AB
 See Detail 1/Sheet CBI

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NOTE BOOK	
NA	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 79	455

PAV'T AREA NO.	BEG. STA.	END STA.	AREA (LxW)
91	155+00	160+00	500x12
93	160+00	162+50	250x24
94	161+34	161+44	10x12
95	163+50	165+50	200x24
96	166+19	166+39	20x12
97	167+00	169+00	200x12
98	169+07	169+32	25x12
99	169+79	171+24	145x12
100	170+60	173+00	240x11.5
101	171+00	173+00	200x11.5

Pali Hwy. # Sta. 169+52 to Sta. 170+67, Lt.
Remove Existing Guardrail and
Install W-beam Guardrail (112.5 lf)

Install Wide Quadguard II
End Treatment (5 Bays)
Concrete Backup System
See Sheets CD18-20

Install Modified
Type A-1 Flare

Install Type "G"
End Treatment

Concrete Median Barrier No. 8
Pali Hwy. # Sta. 166+69 to Sta. 171+14
O/S Varies 5.52' To 6.00' Lt.
Remove Exist. Guardrail and
Install Concrete Median Barrier (445 lf)
See SB Sheets for Schedule and Details

Pali Hwy. # Sta. 168+08
Concrete Barrier Over
Existing CB. See Sheet SB5

Pali Hwy. # Sta. 166+69
Connect New Concrete Median Barrier
to Exist. Concrete Median Barrier
See Sheet SB2 and SB8 for Details

Pali Hwy. # Sta. 154+00 to Sta. 167+00
Install High Friction Surface Treatment by
Kwik Bond Polymers, LLC or Pre-Approved Equal
within the Travel Way.

Pali Hwy. # Sta. 167+90 to 173+22
O/S Varies 38.57' To 44.71' Lt.
Demolish Type F Gutter and
Install Type 2DG Curb and Gutter.
See Detail 6/Sheet CBI

Pali Hwy. # Sta. 154+77 to 166+69
Install Glare Screen on Top of
Exist. Concrete Barrier
See Sheet SB8 for Details

Pali Hwy. # Sta. 149+30 to 160+79
O/S Varies 28.65' To 30.00' Lt.
Demolish Type F Gutter and
Install Type 2DG Curb and Gutter.
See Detail 6/Sheet CBI

Pali # Curve Data	
<u>Spiral Data</u>	<u>Circular Data</u>
$\phi=13^{\circ}43'56''$	$\Delta=148^{\circ}21'41''$
L=300.00	R=400.00
LT=201.49	T=1411.76
ST=101.36	L=1035.76
	C=769.70

Highway Lighting
See Electrical Sheets

M.L. PALI HWY. # STA. 159+00

exist. rock wall

exist. guardrail to remain

93

exist. rock wall

94

ex hl

EP

PALI HIGHWAY

165+00

2" HMA Mix IV Over
6" Agg. Base

95

96

New Concrete
Median Barrier

97

98

99

100

101

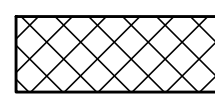
to Kailua

M.L. PALI HWY. # STA. 171+50

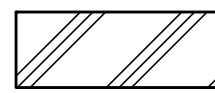
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Pali Hwy. # Sta. 167+00 to Sta. 171+15, Rt.
Remove Exist. Type 2D Curb (415 lf)

Legend:



4" HMA Mix IV Over 9.5" A.C.B.
See Detail 1/Sheet CBI

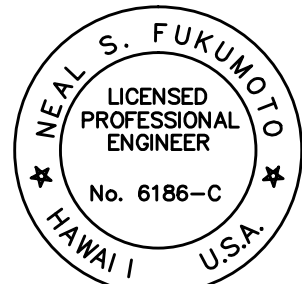


2" HMA Mix IV Over 6" AB
See Detail 1/Sheet CBI

ROADWAY PLAN

Scale: 1"=40'

40' 0 40' 80'



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Exp. 04-30-18

Wesley R. Segowa & Associates, Inc.

5/15/17	Revised Guardrail and Deleted Note
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ROADWAY PLAN	
PALI HIGHWAY RESURFACING Waikanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Scale: 1"=40'	Date: February 2017
SHEET No. CG28 OF 31 SHEETS	

ADD. 79

Notes:

1. The Contractor shall verify all site conditions to confirm existing dimensions. Conditions for roadway locations, gutters, curbs, etc. may differ from those shown. The Contractor shall report any discrepancies in writing to the Engineer before commencing work or ordering materials.
2. Transverse joint spacing length to width ratio shall be no greater than 1.25.
3. Skew the typical transverse joint with a 2 foot offset counter clockwise from a perpendicular to the edge of pavement for every 12 feet along that perpendicular.
4. Space transverse joints at successive intervals of 10', 13', 11', and 12' in the direction of travel. Repeat for remaining joints except where otherwise indicated on plans.
5. For travelway lanes, reinforce odd shaped slabs and slabs with mismatched joints. Odd shaped slabs are slabs with length to width ratios greater than 1.25 and other nonsquare shaped slabs. See standard plans sheet D-20 for details.
6. Locate transverse construction joints a minimum of 10 feet and a maximum of 15 feet from the nearest planned construction joint.
7. Portland cement concrete pavement shall attain a minimum flexural strength, $f_r = 450$ psi before opening to traffic and

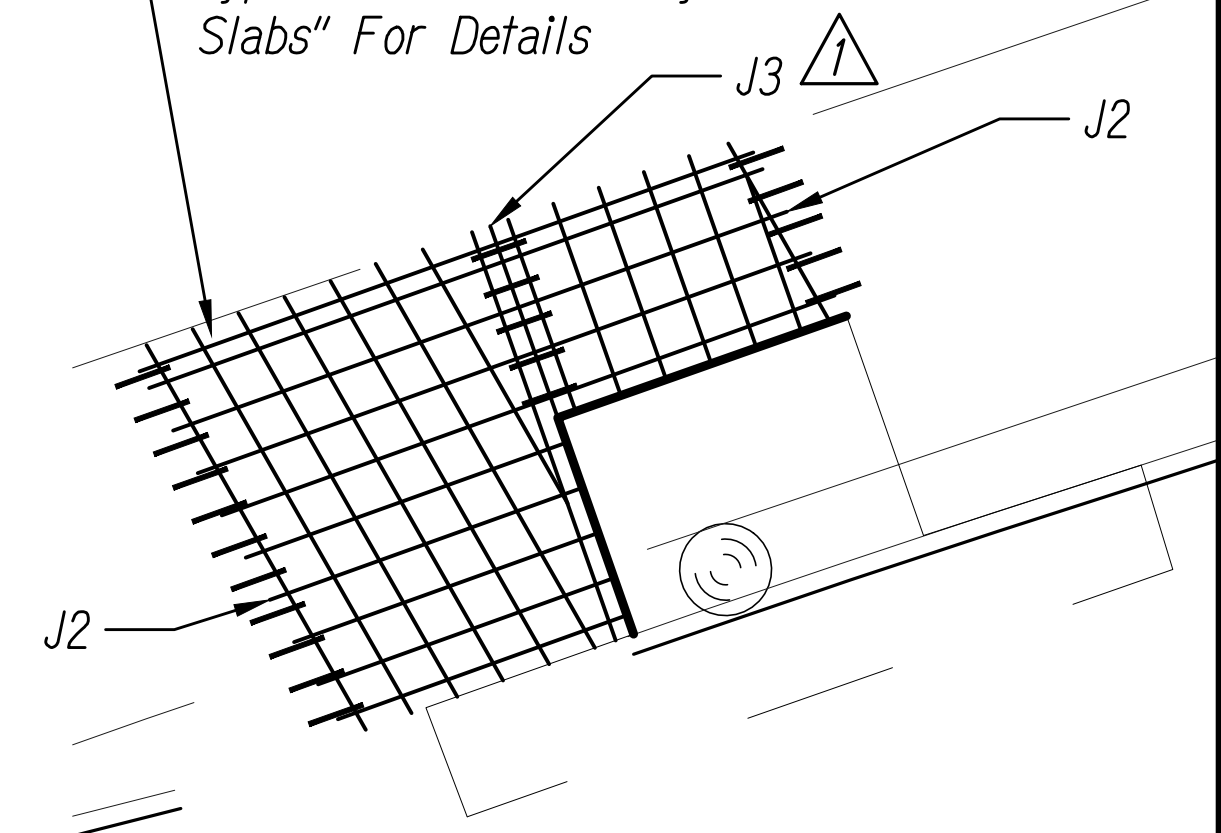
a minimum 14-day flexural strength, $f_r = 650$ psi. Steel plates cannot be used. Contractor shall obtain services of an accredited testing laboratory (approved by the Engineer) to test and confirm strength, temperature, air content, slump, unit weight & strength of P.C.C. pavement.

8. Dowel bars shall be uncoated, corrosion resistant dowels conforming to AASHTO MP 18/ ASTM A1035, Type CS, Grade 100 or epoxy coated rebar conforming to AASHTO M 284/ ASTM A 775. For pavements with depth greater than 10", use 1-1/2" dia. X 1'-6" long dowels.
9. Dowels shall be positioned parallel to the pavement surface and paving lane direction to avoid future cracks in the P.C.C. pavement. The ends of the dowels shall not deviate more the 0.01' from the parallel in 9" length.
10. Damaged epoxy coated dowels shall be replaced at no cost to the State. Damage includes voids in the epoxy coating.
11. Transverse construction joints shall be located a minimum distance of 10 feet from the nearest transverse contraction joint. Joints shall be perpendicular to paving lane.
12. Adjust location of reinforcing bars to avoid interfering with movement of the dowels.

13. Pour new P.C.C. pavement against existing curb. Remove dust and loose material from surfaces using 3000 psi hydro blasting immediately before pouring concrete.
14. See Standard Plans B-01 for additional notes.
15. Contractor shall follow "General Notes", Standard Specs 314, 411 & 709 and Special Provisions 314, 411, 413 & 709.
16. Transverse Joint Types:
 - J1 - Transverse Weakened Plane Joint. See Standard Plan D-19, Detail 5.
 - J2 - Transverse Construction Joint @ existing PCC pavement. See Standard Plan D-19 Detail 4. J2 may be substituted for J1 with approval from the Engineer.
 - J3 - Transverse Contraction Joint For Perpendicular Joint. See Standard Plan D-19 Detail 1.
17. Match existing elevations. See Cross Sections for elevations at existing asphalt/concrete interface.
18. Contractor shall be allowed to close concrete lane from Friday night at 8:30PM to Monday morning at 5:00AM. One lane must be open at all times, unless closing one direction of traffic as stated in General Note 24 on Sheet 3. When not working, two lanes must remain open.

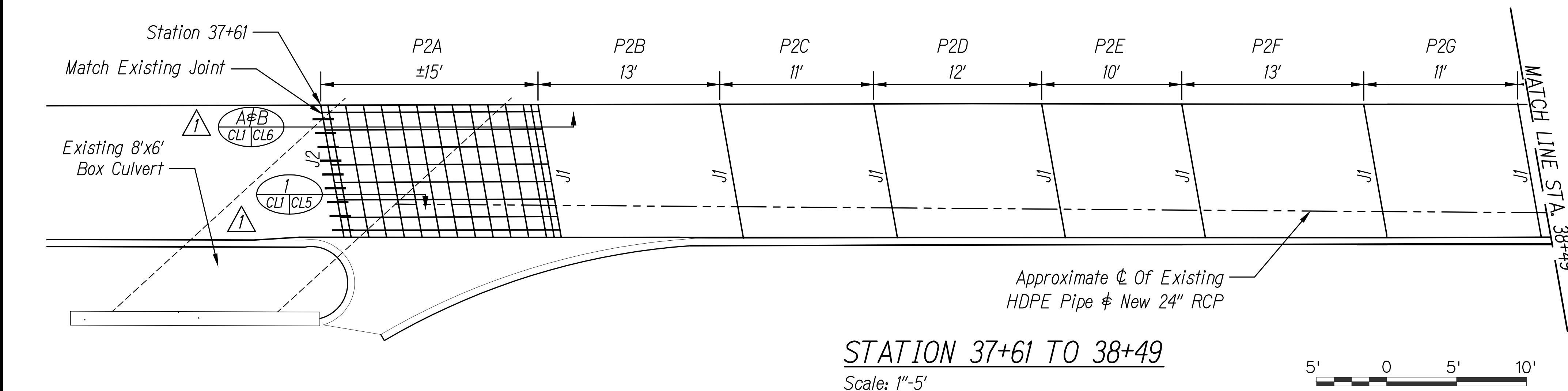
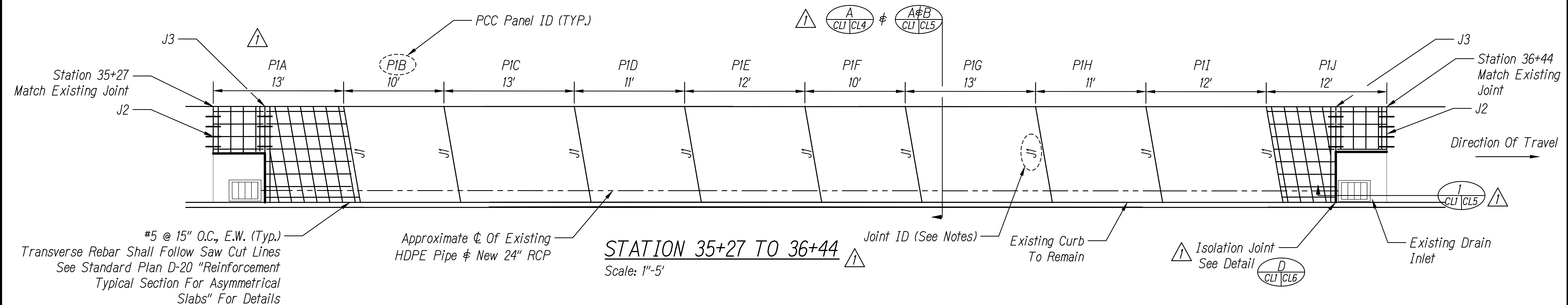
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 108	455

#5 @ 15" O.C., E.W. (Typ.)
Transverse Rebar Shall Follow Saw Cut Lines
See Standard Plan D-20 "Reinforcement Typical Section For Asymmetrical Slabs" For Details

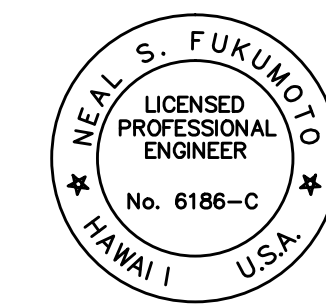


STATION 14+85 TO 15+03

Scale: 1"-5'



Direction Of Travel



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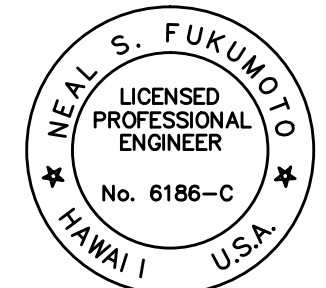
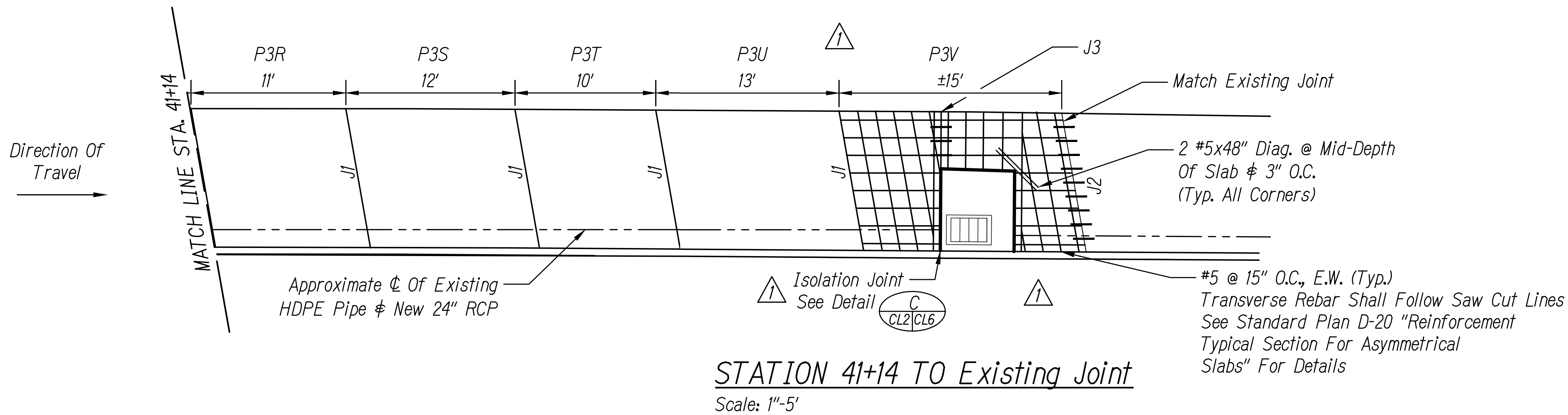
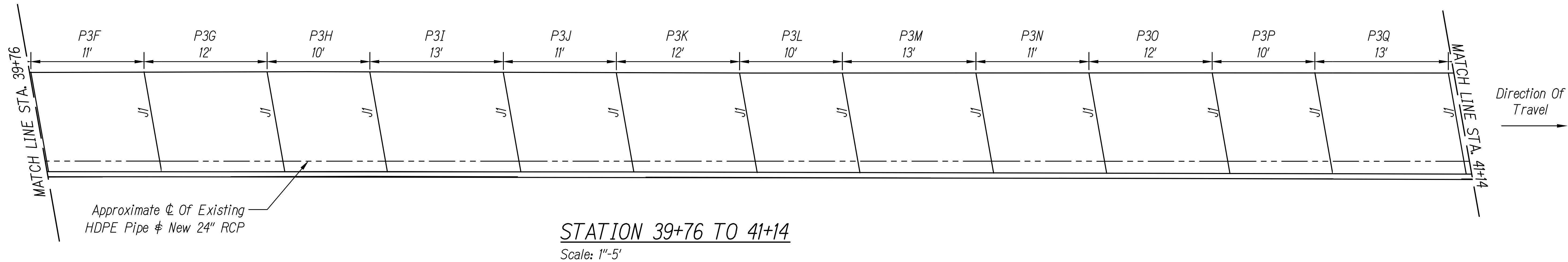
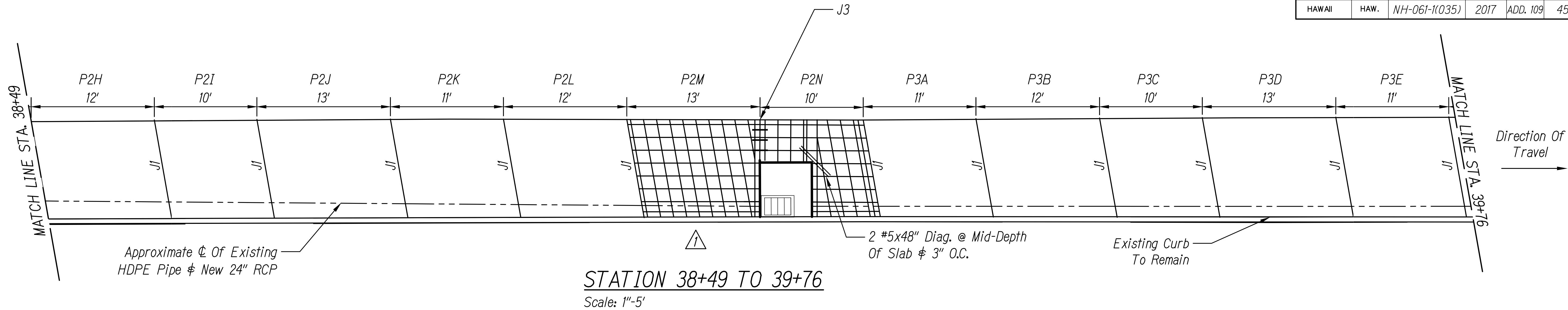
Wesley R. Segowa & Associates, Inc.

DATE	DESCRIPTION
5/15/17	Joints & Detail Bubbles Revised
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
PCC & PIPE REPLACEMENT	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Date: February 2017	

SHEET No. CL1 OF 06 SHEETS

ADD. 108

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 109	455



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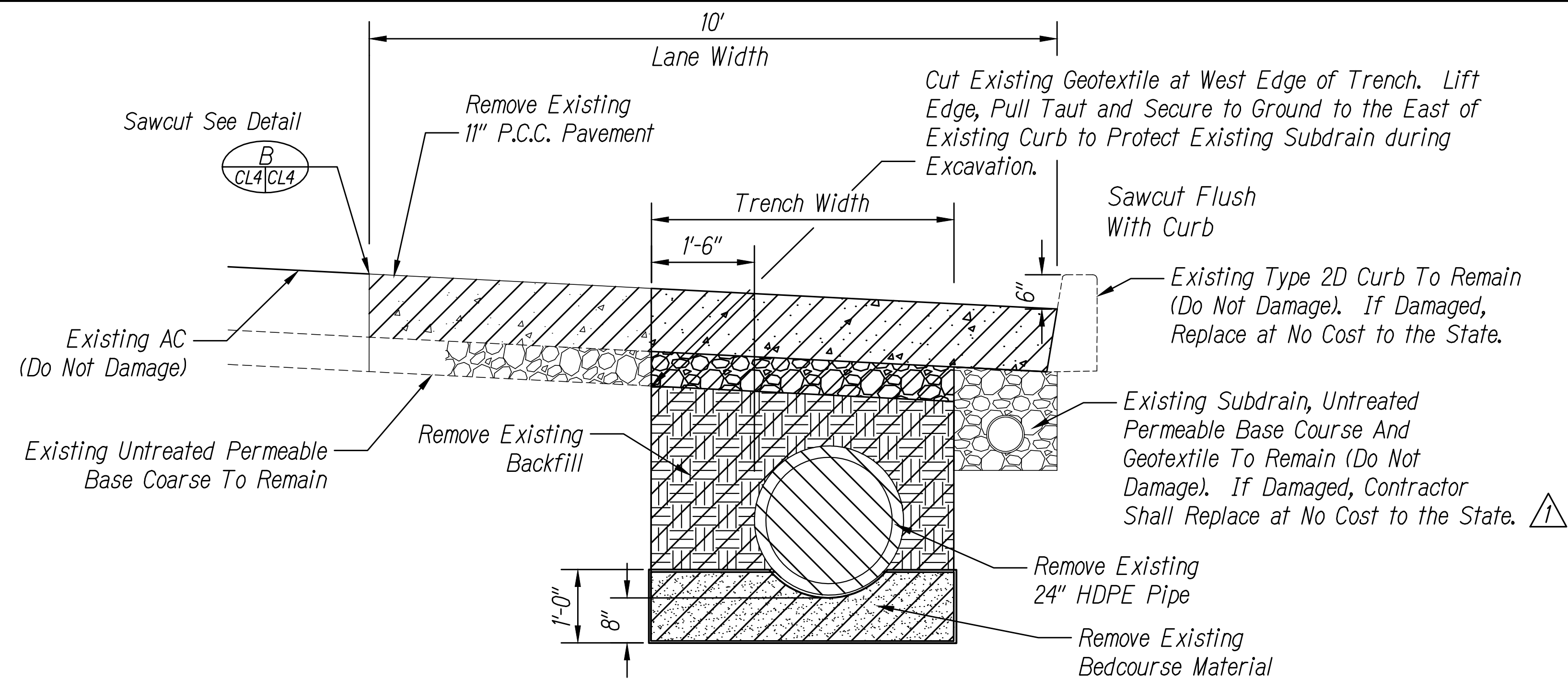
DATE	DESCRIPTION
5/15/17	Revised Panel ID's, Joints, & Section Cuts
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
PCC & PIPE REPLACEMENT	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Date: February 2017	

SHEET No. CL2 OF 06 SHEETS

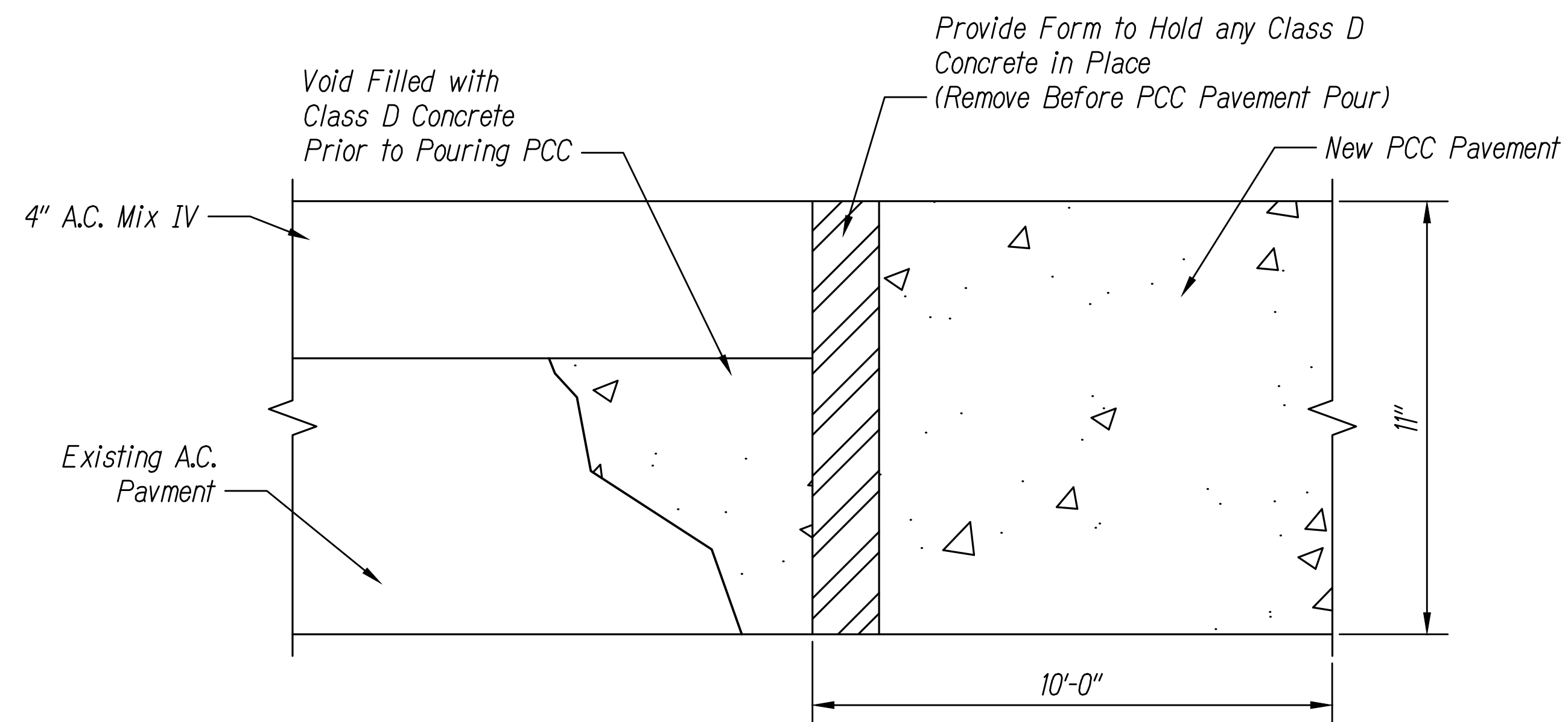
ADD. 109

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 111	455



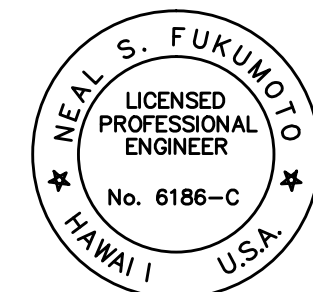
SECTION - TYPICAL DEMOLITION AWAY FROM GDI A
CL4/CL4 ⚠
Scale: No Scale



DETAIL COLLAPSED SAWCUT EDGE B
CL4/CL4
Scale: No Scale

Legend

	Backfill		Existing PCC
	Base Course		Demolition/Removal
	Bedcourse		



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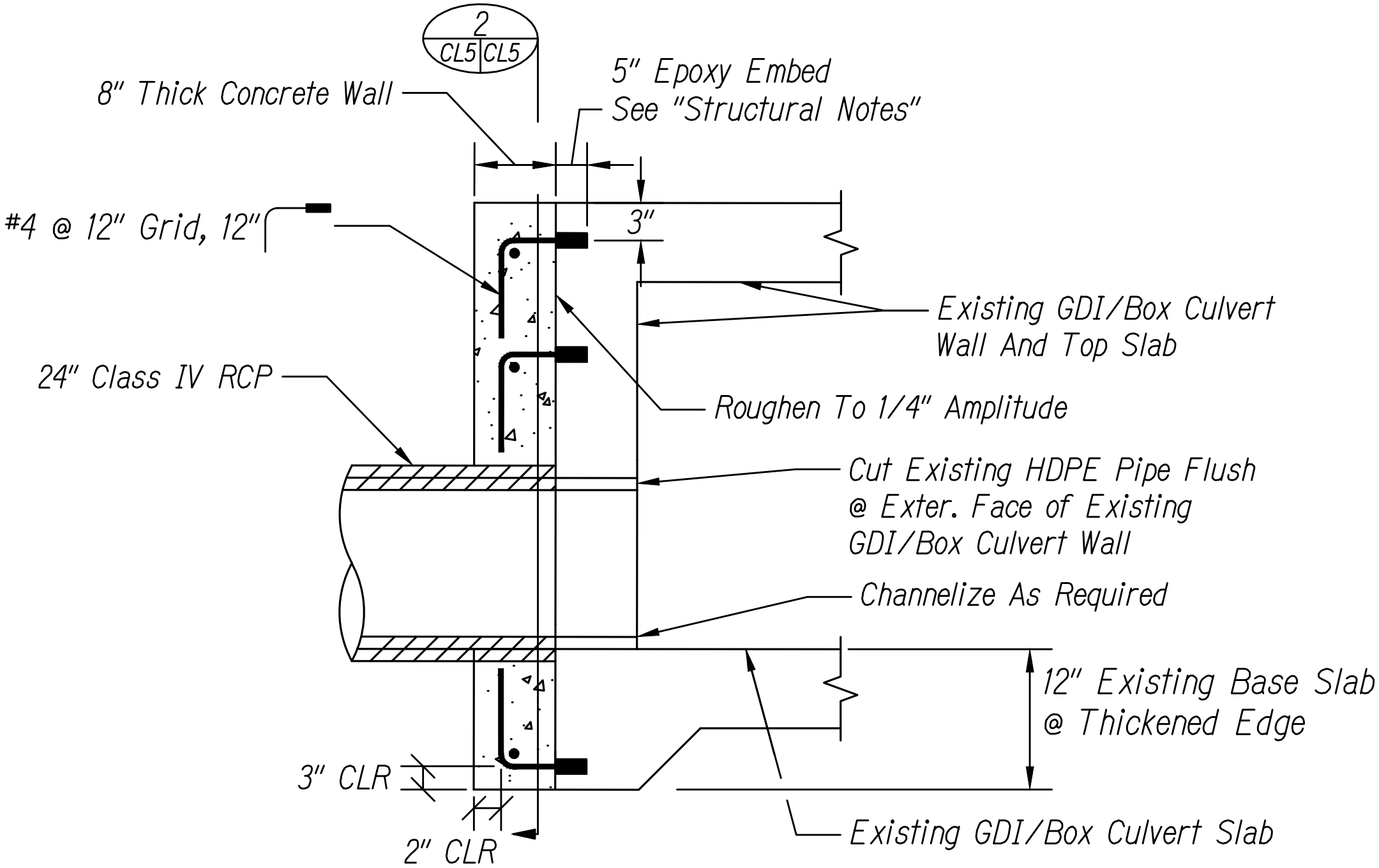
Wesley R. Segawa & Associates, Inc.

DATE	DESCRIPTION
5/15/17	⚠ Callout & Detail Bubble Revised
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
PCC & PIPE REPLACEMENT	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Date: February 2017	

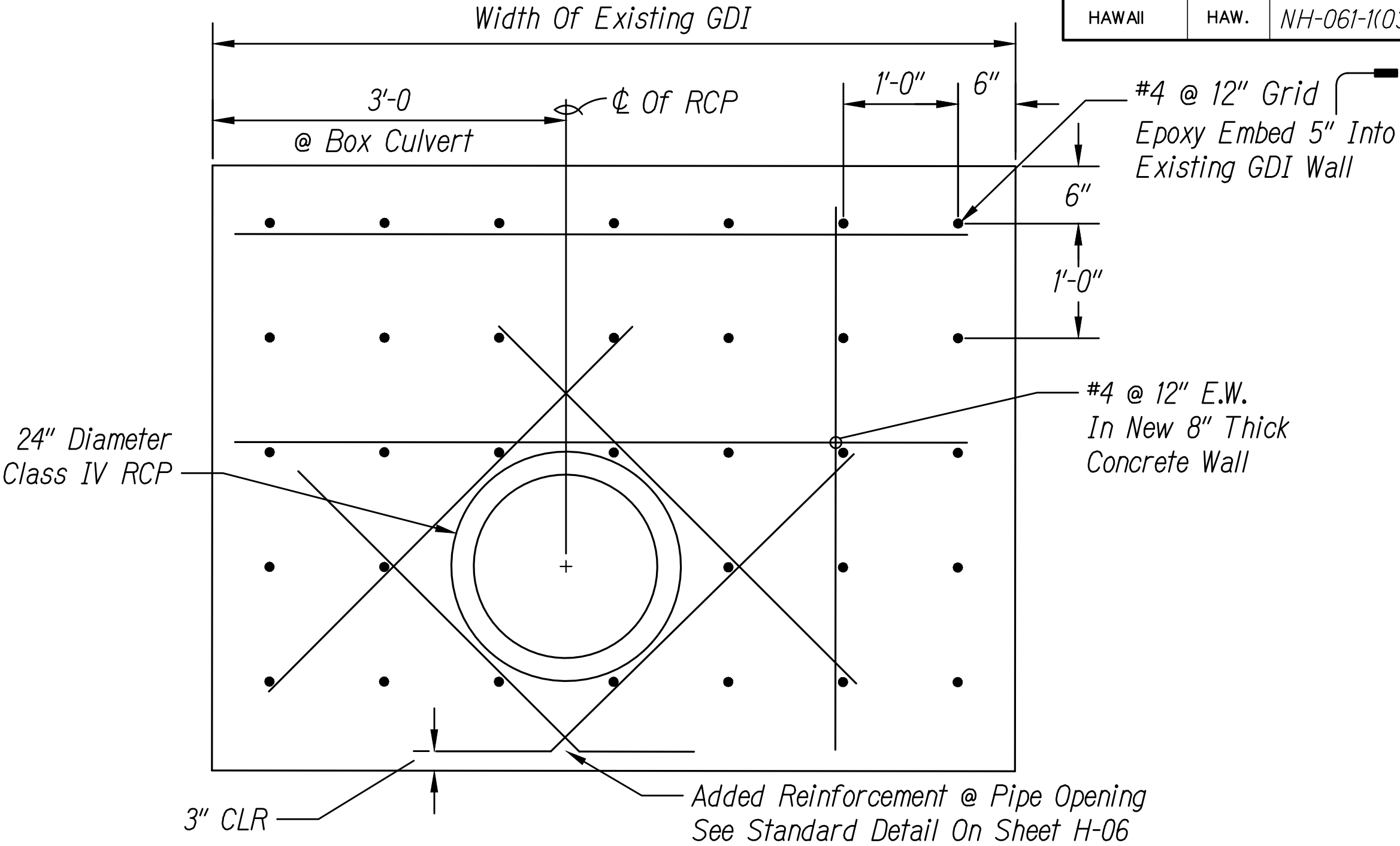
SHEET No. CL4 OF 06 SHEETS

ADD. 111

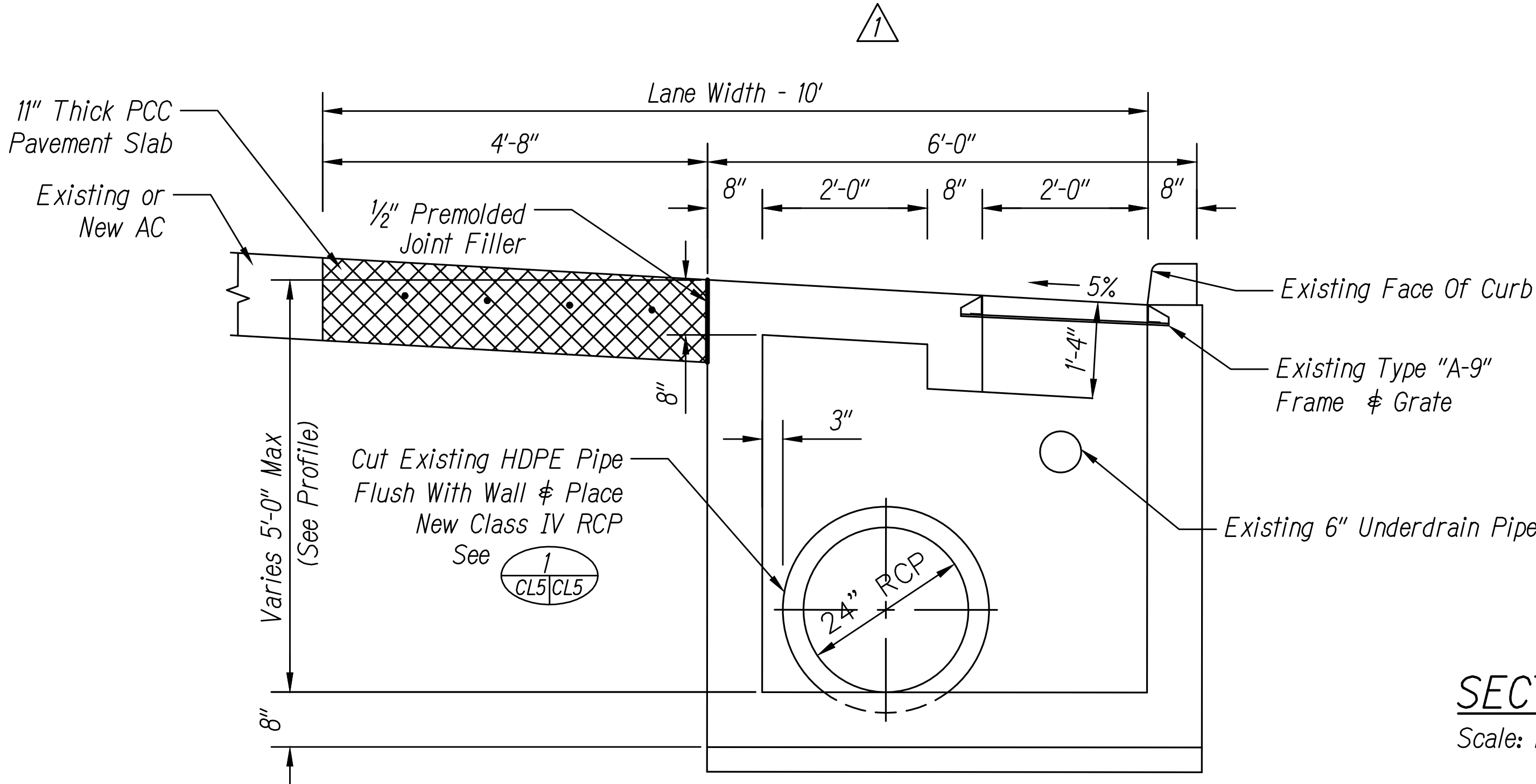
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 112	455



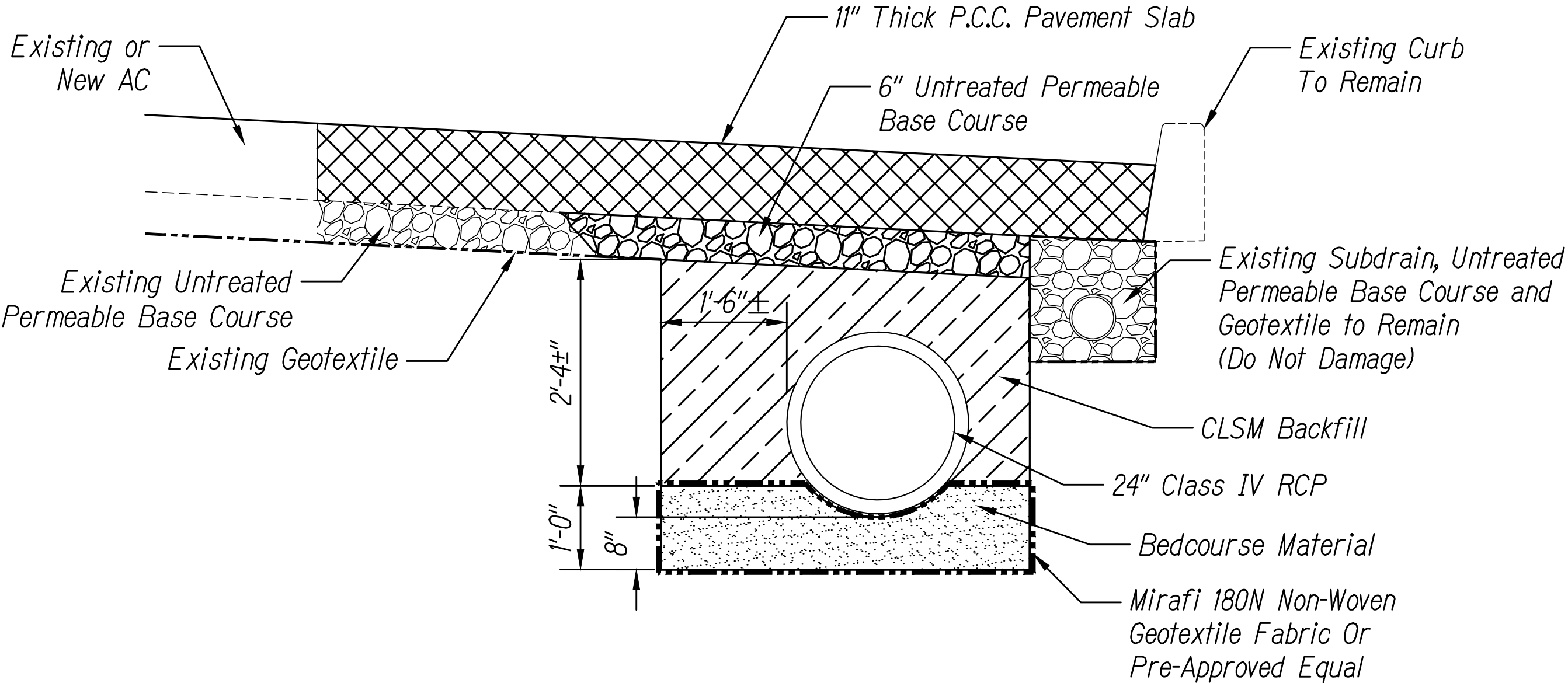
SECTION - TYPICAL RCP CONNECTION AT GDI & BOX CULVERT 1 CL5 1
 Scale: No Scale



ELEVATION - RCP CONNECTION AT GDI & BOX CULVERT 2 CL5 1
 Scale: No Scale



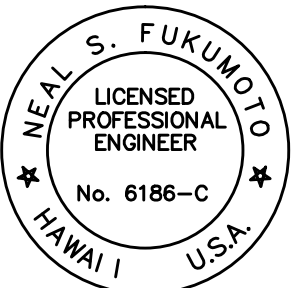
SECTION - TYPICAL PCC PLACEMENT DETAIL NEAR GDI A CL5 1
 Scale: No Scale



SECTION - TYPICAL 24" RCP & PCC PLACEMENT DETAIL AWAY FROM GDI B CL5 1
 Scale: No Scale

ORIGINAL PLAN	DATE
DESIGNED BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
TRACED BY	
DRAWN BY	
SURVEY PLOTTED BY	

	Base Course		Concrete
	Bedcourse		Demolition/Removal
	CLSM Backfill		New PCC



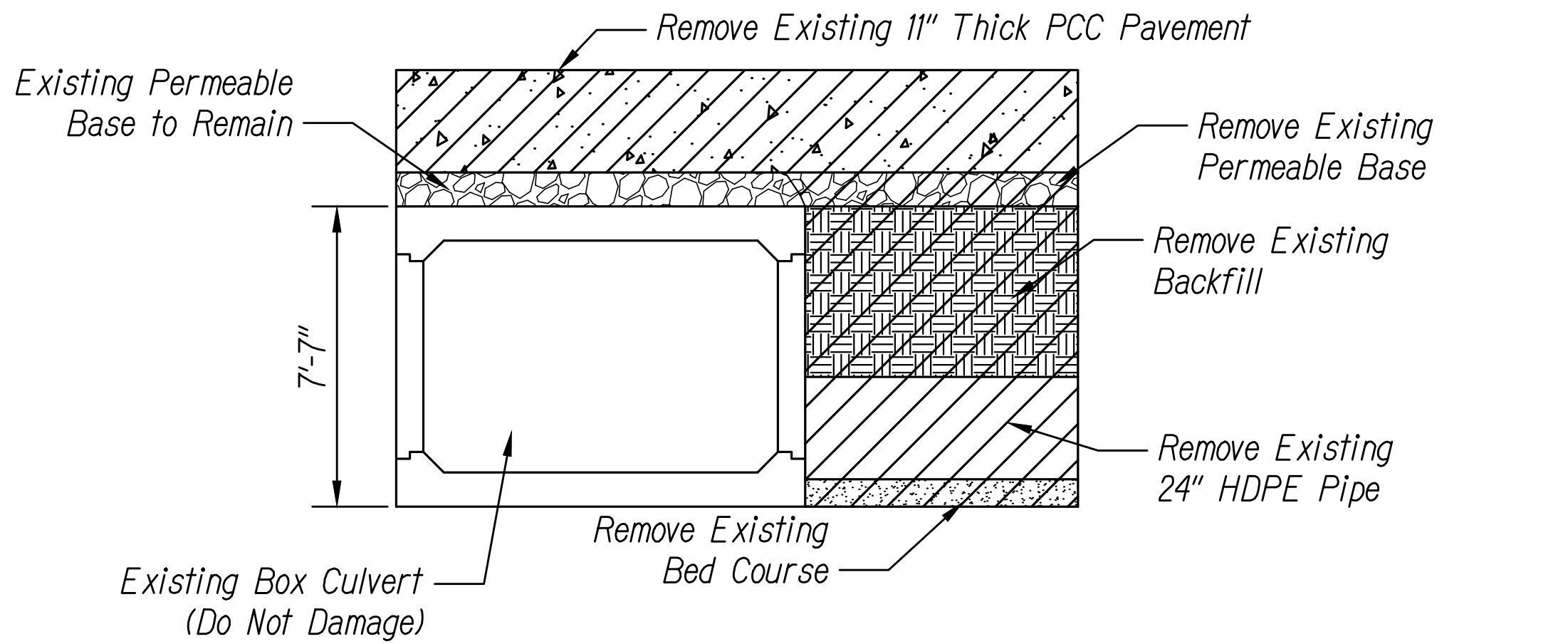
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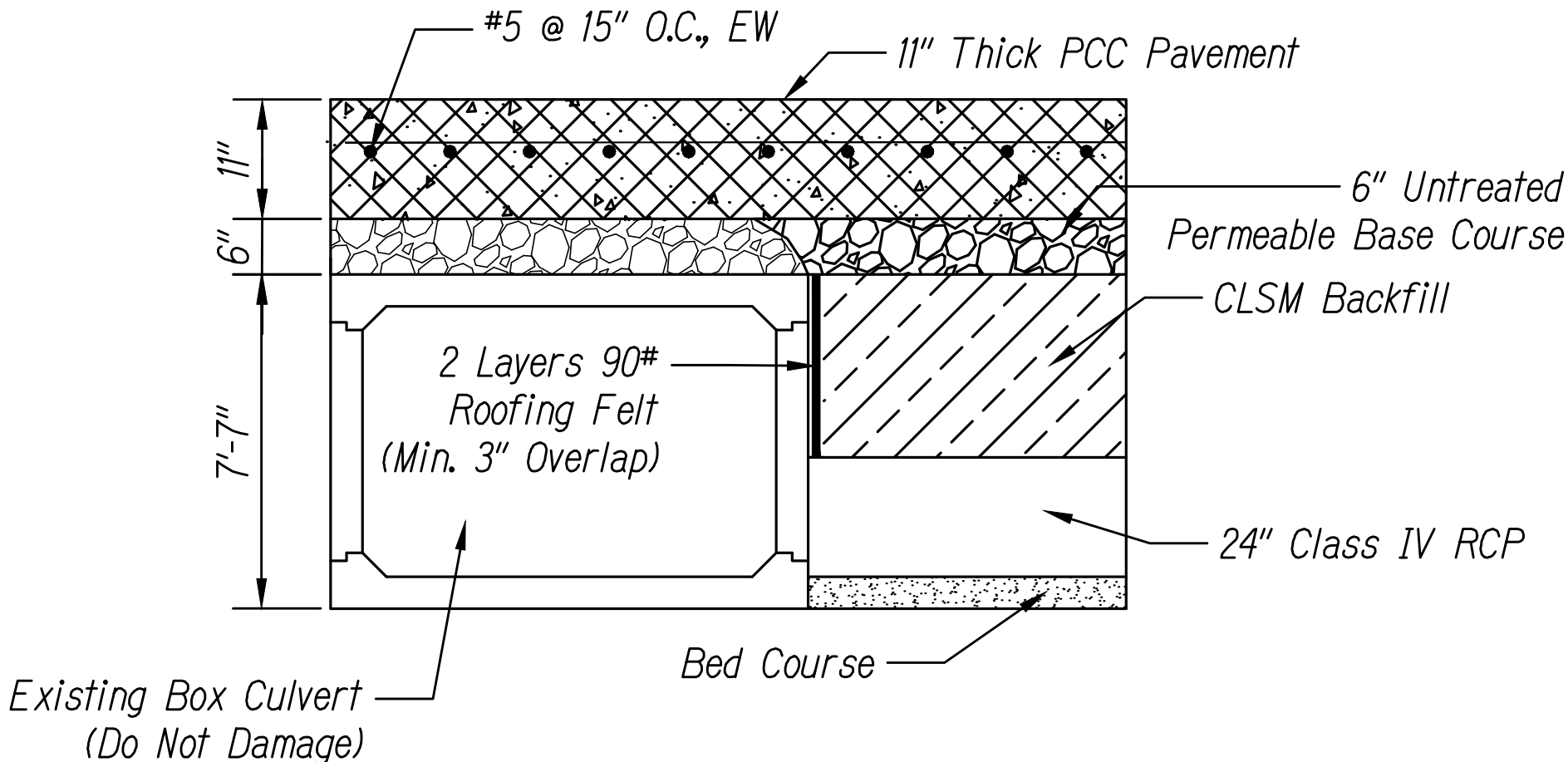
5/15/17	1 Detail Bubbles Revised
DATE	DESCRIPTION
	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
	PCC & PIPE REPLACEMENT
	PALI HIGHWAY RESURFACING
	Waokanaka Street to Kamehameha Highway
	PALI HIGHWAY LIGHTING REPLACEMENT
	Vineyard Boulevard to Kamehameha Highway
	Federal Aid Project No. NH-061-1(035)
	Date: February 2017

SHEET No. CL5 OF 06 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 113	455

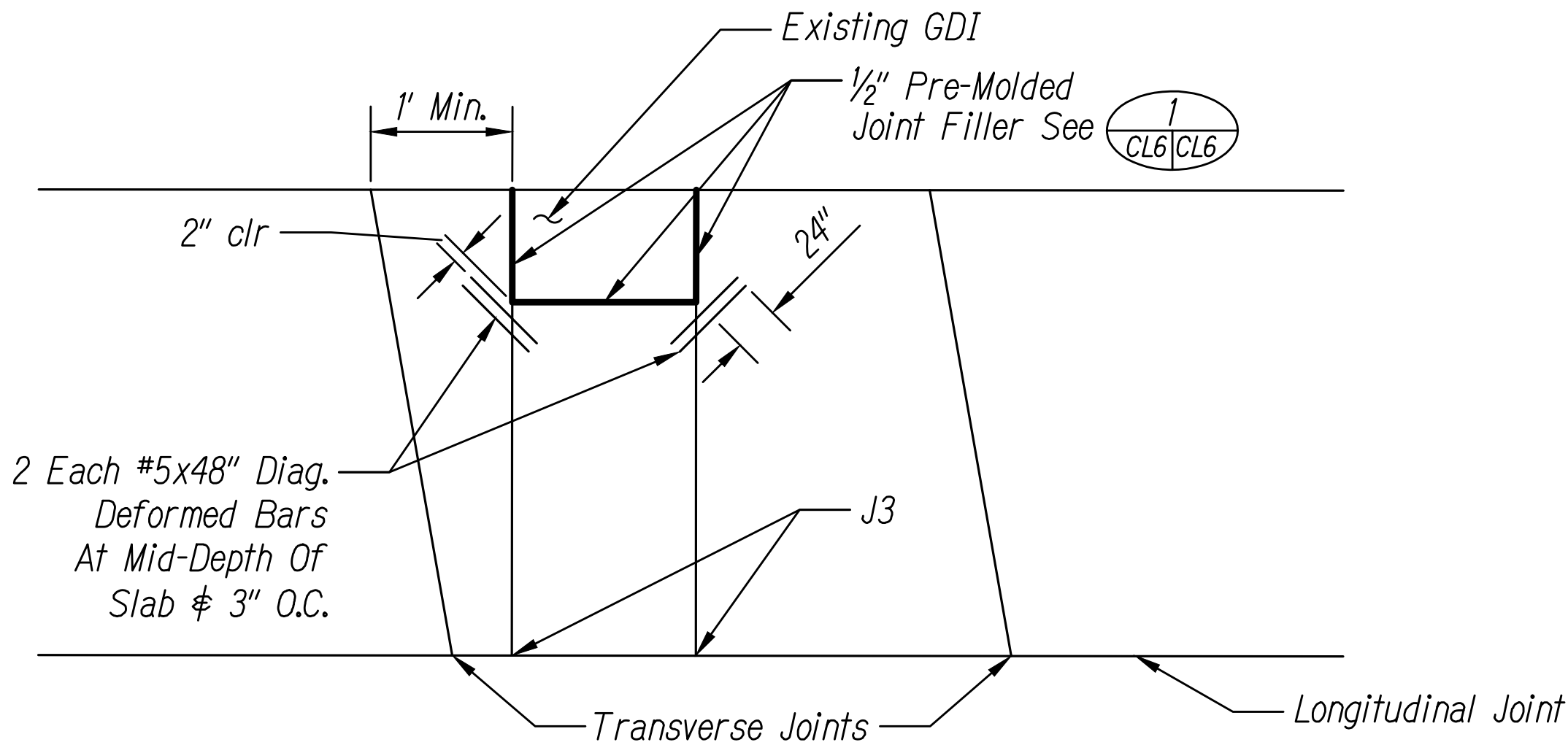


SECTION - TYPICAL DEMOLITION @ BOX CULVERT A CL6 1
 Scale: No Scale

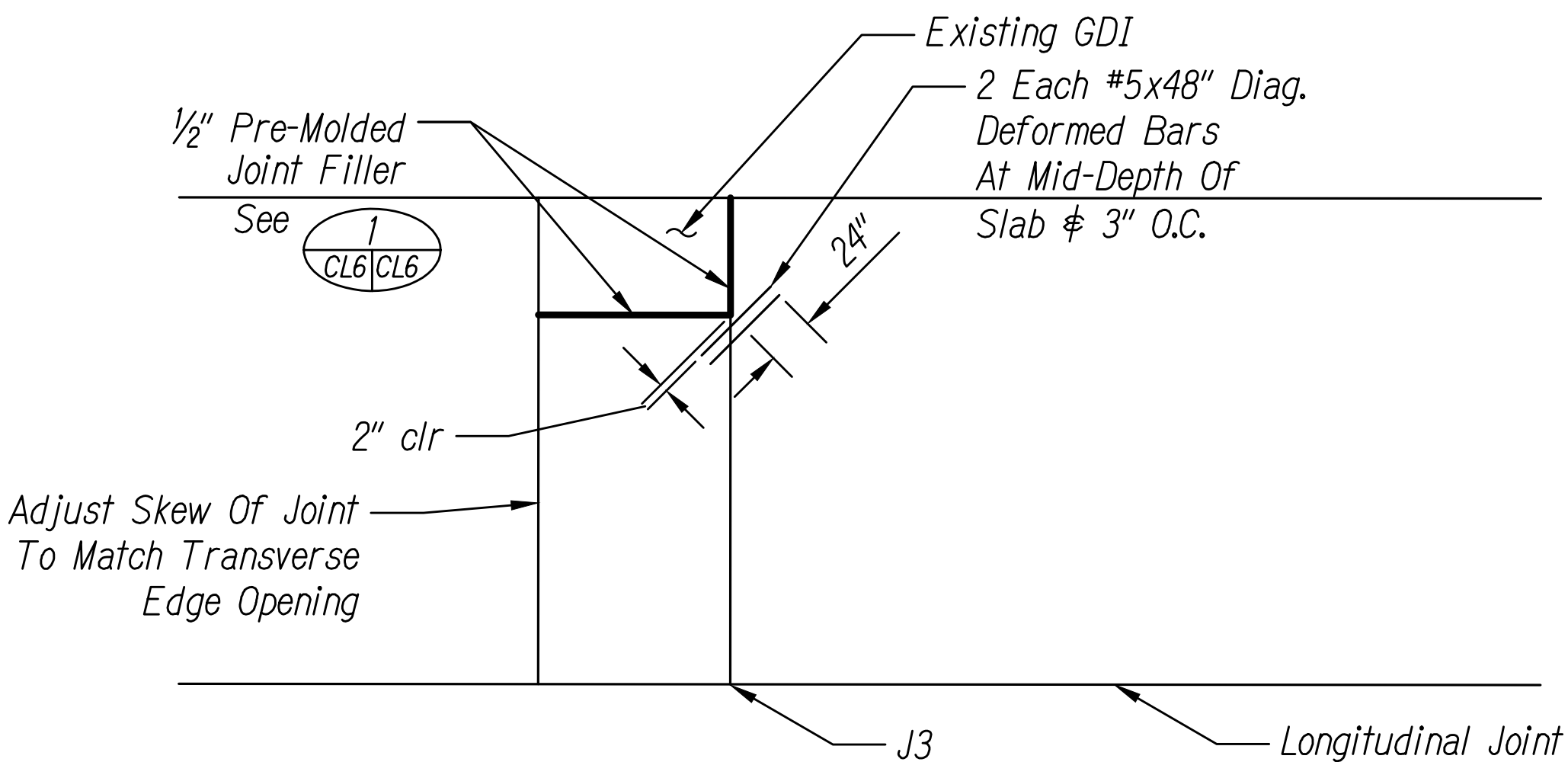


SECTION - TYPICAL PCC PLACEMENT @ BOX CULVERT B CL6 1
 Scale: No Scale

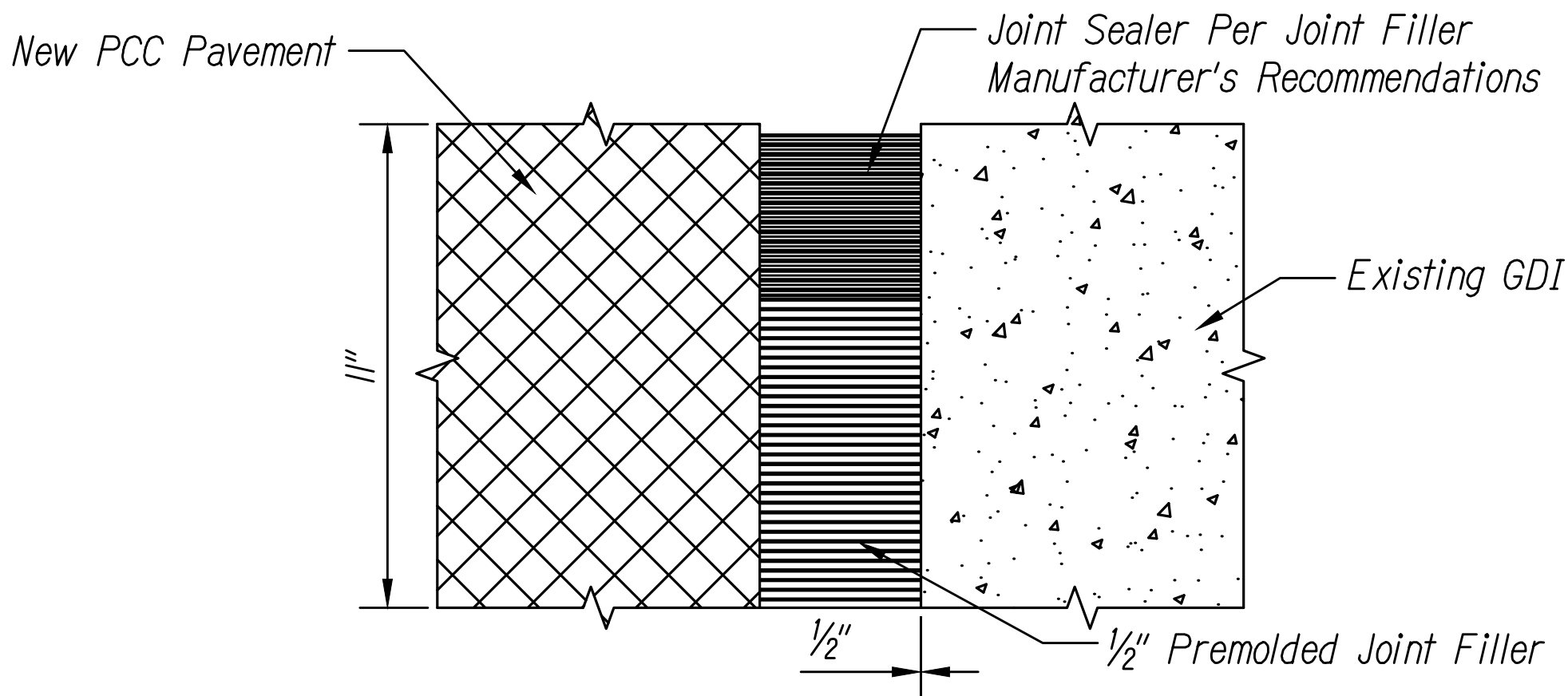
- Notes:
1. Install isolation joints to allow the slab to move independently of objects that will not move evenly with the slab to minimize stress in the slab.
 2. Minimize the number of openings within the slab to minimize the areas where cracking can occur. Listed below are considerations that can minimize cracking from openings in the slab.
 - 2.1. Install reinforcing bars at the corners. See Details C & D on this sheet.
 - 2.2. Install the openings along a joint.
 3. Locate openings along joints and configure to minimize the number of corners within the slab.



TYPICAL ISOLATION JOINT AWAY FROM TRANSVERSE JOINTS DETAIL C CL2 CL6 1
 Scale: No Scale



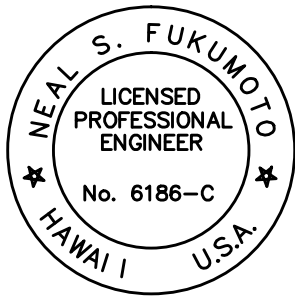
TYPICAL ISOLATION JOINT NEAR TRANSVERSE JOINTS DETAIL D CL6 1
 Scale: No Scale



TYPICAL ISOLATION JOINT DETAIL 1 CL6 CL6
 Scale: No Scale

Legend

	Backfill		CLSM Backfill		Joint Filler
	Base Course		Concrete		Joint Sealer
	Bedcourse		Demolition/Removal		New PCC



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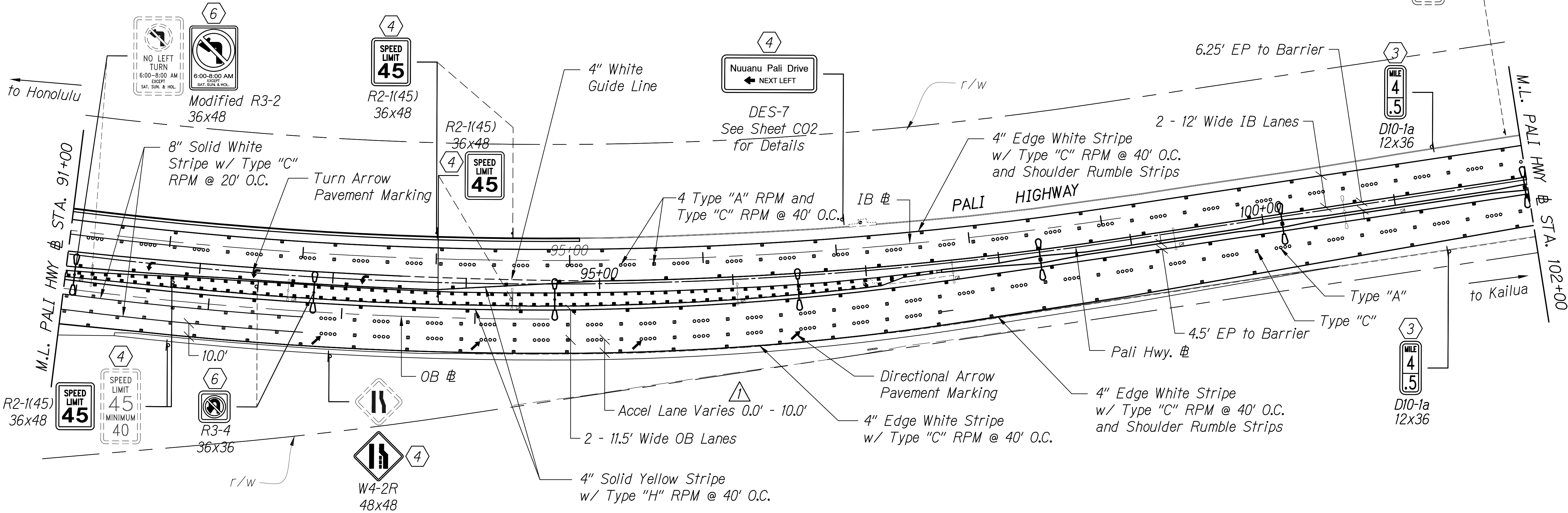
5/15/17	1 Detail Bubbles Revised
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
PCC & PIPE REPLACEMENT	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Date: February 2017	

SHEET No. CL6 OF 06 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 123	455

IB # Sta. 11+13 to Sta. 43+03, Lt.
Equation Station 109+50 bk=41+98.64 Ah.
Bicycle Friendly Shoulder Rumble Strip (9,941 LF)
See Sheets CP1 and CP2 for Details

IB # Sta. 96+00 to Sta. 107+00, Rt.
Continuous Shoulder Rumble Strip (1,100 LF)
See Sheets CP1 and CP2 for Details



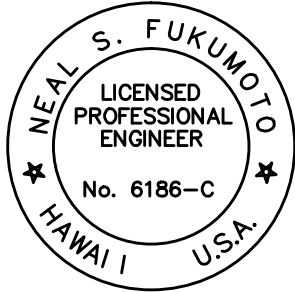
SIGN KEY

- 1 Existing Sign and Post(s) to Remain
- 2 Remove Existing Sign and Post
- 3 Install New Sign(s) w/Steel Post(s) and RM-3(s)
- 4 Remove Existing Sign and Post(s) and Install New Sign(s) w/Post(s) and RM-3(s)
- 5 Install New Sign(s) on Light Post
- 6 Remove Existing Sign and Post(s) and Install New Sign(s) on Light Post
- 7 Remove Existing Sign and Post(s) and Install New Sign(s) on Concrete Median Barrier
- 8 Remove Existing Sign and Light Pole and Install New Sign(s) on w/Post(s) and RM-3(s)
- 9 Remove Existing Sign and Post(s) and Install New Sign(s) on Type I Traffic Signal Pole

OB # Sta. 91+50 to Sta. 42+00, Rt.
Equation Sta. 109+50 bk=41+98.64 Ah.
Bicycle Friendly Shoulder Rumble Strip (1,801 LF)
See Sheets CP1 and CP2 for Details

OB # Sta. 91+50 to Sta. 89+02, Lt.
Equation Sta. 109+50 bk=41+98.64 Ah.
Continuous Shoulder Rumble Stripe (6,503 LF)
See Sheets CP1 and CP2 for Details

SIGNING AND STRIPING PLAN
Scale: 1"=40'



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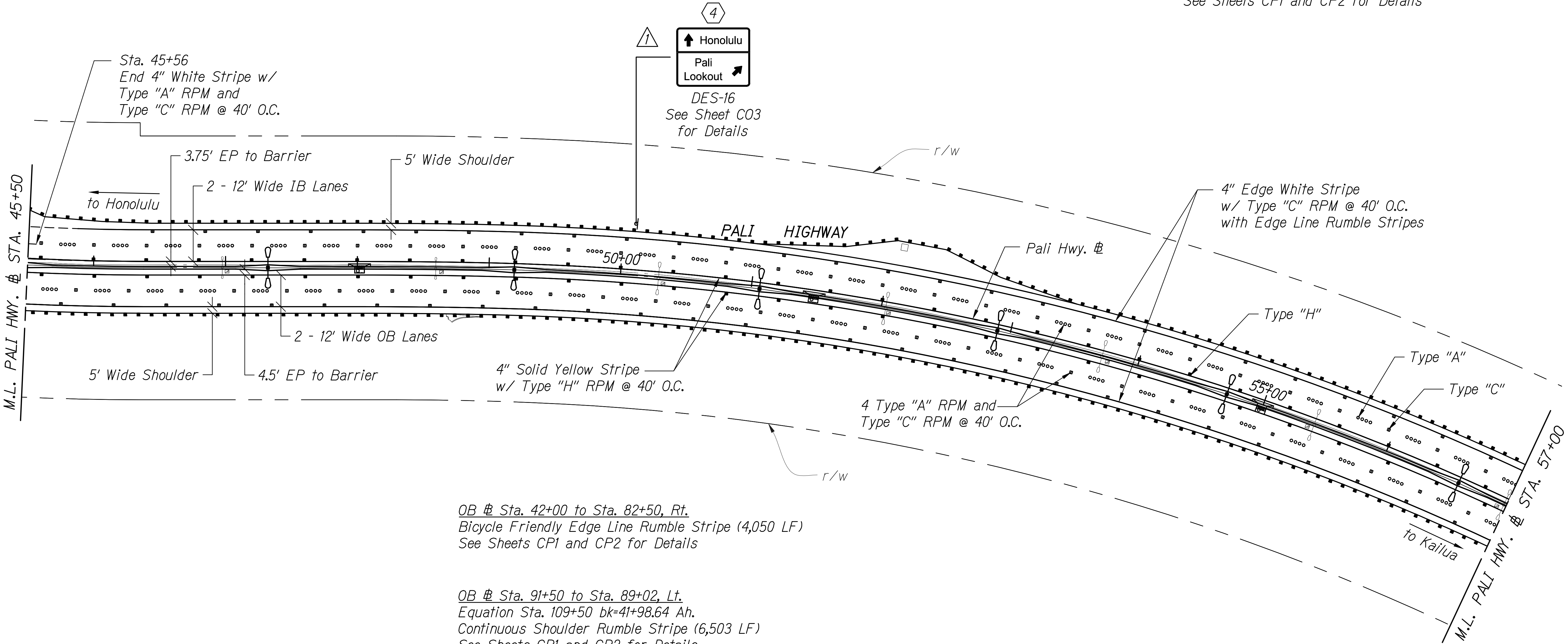
Wesley R. Segawa & Associates, Inc.

DATE	DESCRIPTION
5/15/17	Revised lane widths
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
SIGNING AND STRIPING PLAN	
PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-1(035) Scale: 1"=40' Date: February 2017	
SHEET No. CN9 OF 24 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 125	455

IB @ Sta. 45+87 to Sta. 86+51, Lt.
Bicycle Friendly Edge Line Rumble Stripe (4,064 LF)
See Sheets CP1 and CP2 for Details

IB @ Sta. 107+00 to Sta. 87+06, Rt.
Equation Sta. 109+50 bk=41+98.64 Ah.
Continuous Edge Line Rumble Stripe (4,757 LF)
See Sheets CP1 and CP2 for Details



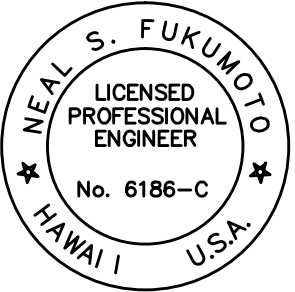
OB @ Sta. 42+00 to Sta. 82+50, Rt.
Bicycle Friendly Edge Line Rumble Stripe (4,050 LF)
See Sheets CP1 and CP2 for Details

OB @ Sta. 91+50 to Sta. 89+02, Lt.
Equation Sta. 109+50 bk=41+98.64 Ah.
Continuous Shoulder Rumble Stripe (6,503 LF)
See Sheets CP1 and CP2 for Details

SIGN KEY

- 1 Existing Sign and Post(s) to Remain
- 2 Remove Existing Sign and Post
- 3 Install New Sign(s) w/Steel Post(s) and RM-3(s)
- 4 Remove Existing Sign and Post(s) and Install New Sign(s) w/Post(s) and RM-3(s)
- 5 Install New Sign(s) on Light Post
- 6 Remove Existing Sign and Post(s) and Install New Sign(s) on Light Post
- 7 Remove Existing Sign and Post(s) and Install New Sign(s) on Concrete Median Barrier
- 8 Remove Existing Sign and Light Pole and Install New Sign(s) on w/Post(s) and RM-3(s)
- 9 Remove Existing Sign and Post(s) and Install New Sign(s) on Type I Traffic Signal Pole

SIGNING AND STRIPING PLAN
Scale: 1"=40'

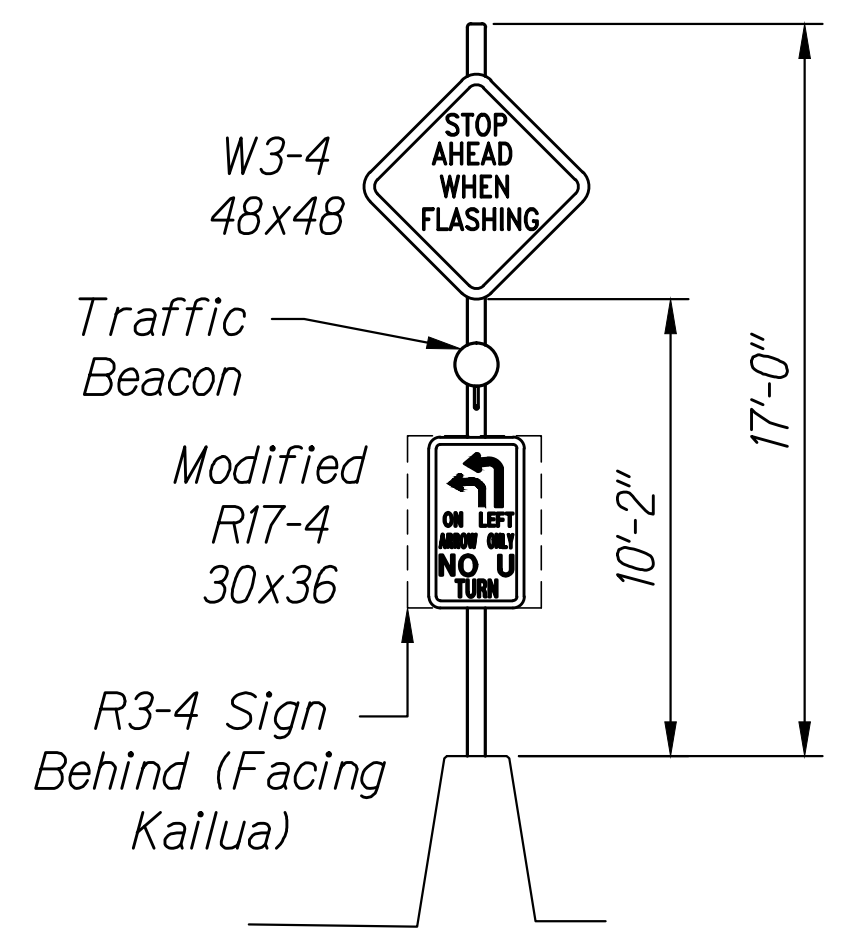


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Exp. 04-30-18

Wesley R. Segawa & Associates, Inc.

5/15/17	Destination Sign Added
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
SIGNING AND STRIPING PLAN	
<u>PALI HIGHWAY RESURFACING</u> <u>Waokanaka Street to Kamehameha Highway</u> <u>PALI HIGHWAY LIGHTING REPLACEMENT</u> <u>Vineyard Boulevard to Kamehameha Highway</u> <u>Federal Aid Project No. NH-061-1(035)</u> Scale: 1"=40' Date: February 2017	
SHEET No. CN11 OF 24 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 138	455



Type 1 Traffic Signal Pole
At Station 197+07.5
See Electrical Sheets

IB # Sta. 173+25 to Pali Hwy. # Sta. 195+30, Lt.
Bicycle Friendly Shoulder Rumble Strip (2,205 LF)
See Sheets CP1 and CP2 for Details

- SIGN KEY**
- 1 Existing Sign and Post(s) to Remain
 - 2 Remove Existing Sign and Post
 - 3 Install New Sign(s) w/Steel Post(s) and RM-3(s)
 - 4 Remove Existing Sign and Post(s) and Install New Sign(s) w/Post(s) and RM-3(s)
 - 5 Install New Sign(s) on Light Post
 - 6 Remove Existing Sign and Post(s) and Install New Sign(s) on Light Post
 - 7 Remove Existing Sign and Post(s) and Install New Sign(s) on Concrete Median Barrier
 - 8 Remove Existing Sign and Light Pole and Install New Sign(s) on w/Post(s) and RM-3(s)
 - 9 Remove Existing Sign and Post(s) and Install New Sign(s) on Type I Traffic Signal Pole

Pali Hwy. # Sta. 190+25 to Sta. 199+00, Rt.
Bicycle Friendly Shoulder Rumble Strip (875 LF)
See Sheets CP1 and CP2 for Details

SIGNING AND STRIPING PLAN
Scale: 1"=40'



Professional Engineer Seal for Neal S. Fukumoto, License No. 6186-C, State of Hawaii.

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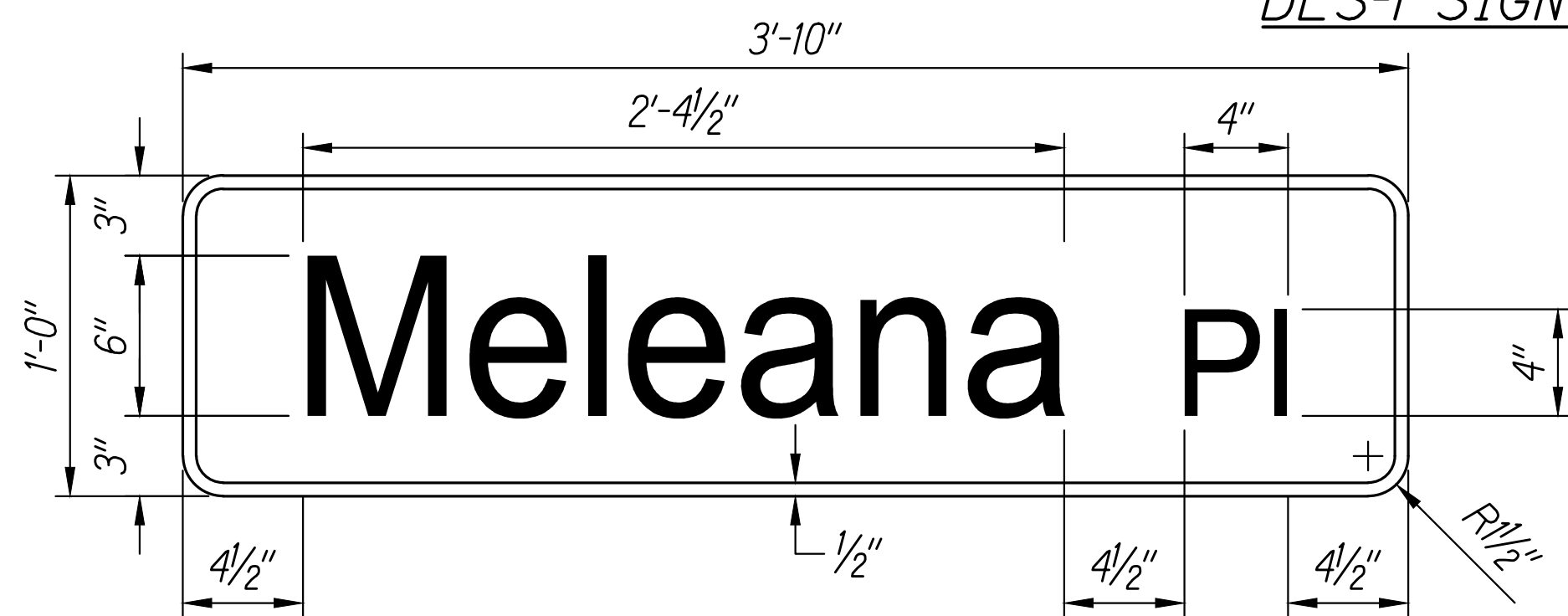
Wesley R. Segawa & Associates, Inc.

DATE	DESCRIPTION
5/15/17	Sign Callouts Added
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
SIGNING AND STRIPING PLAN	
PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-1(035) Scale: 1"=40' Date: February 2017	
SHEET No. CN24 OF 24 SHEETS	

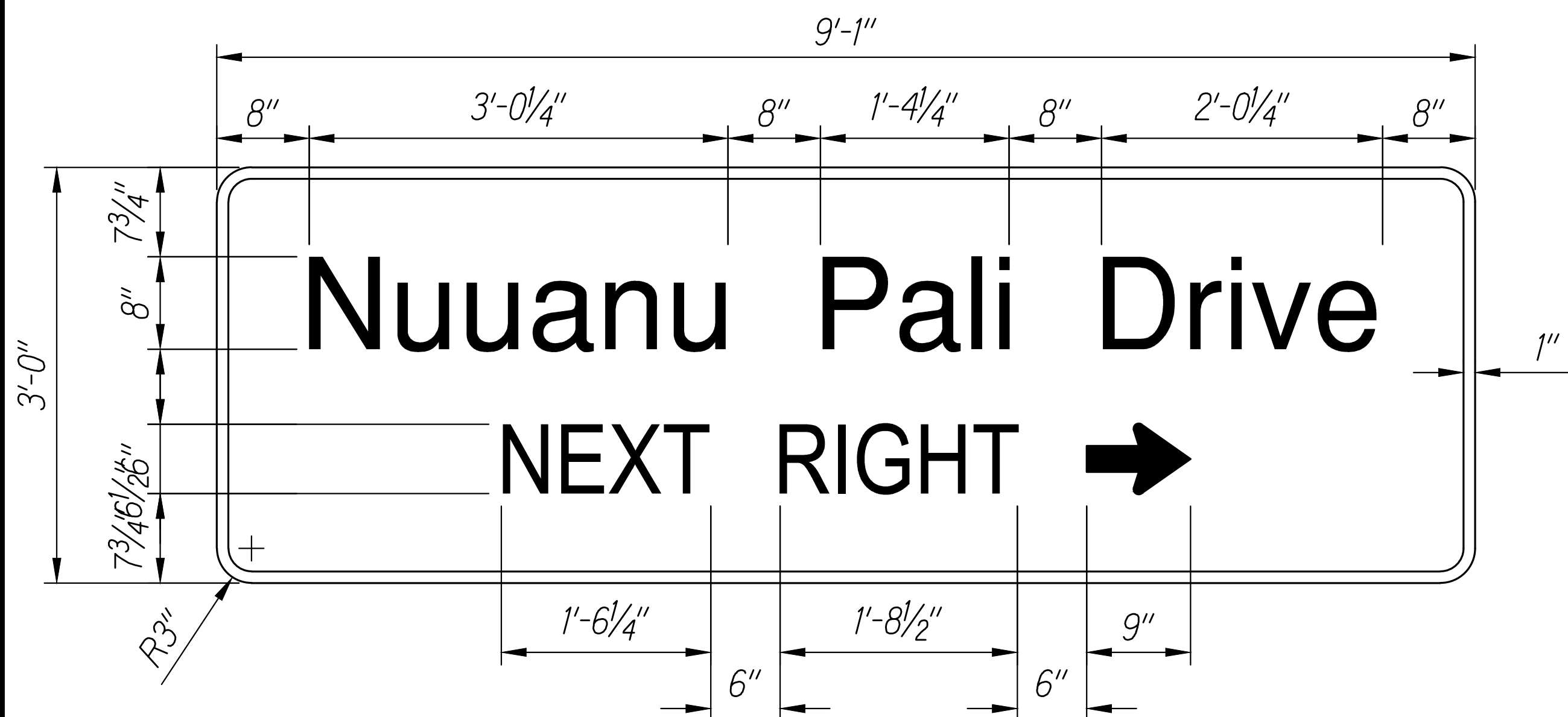
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 139	455



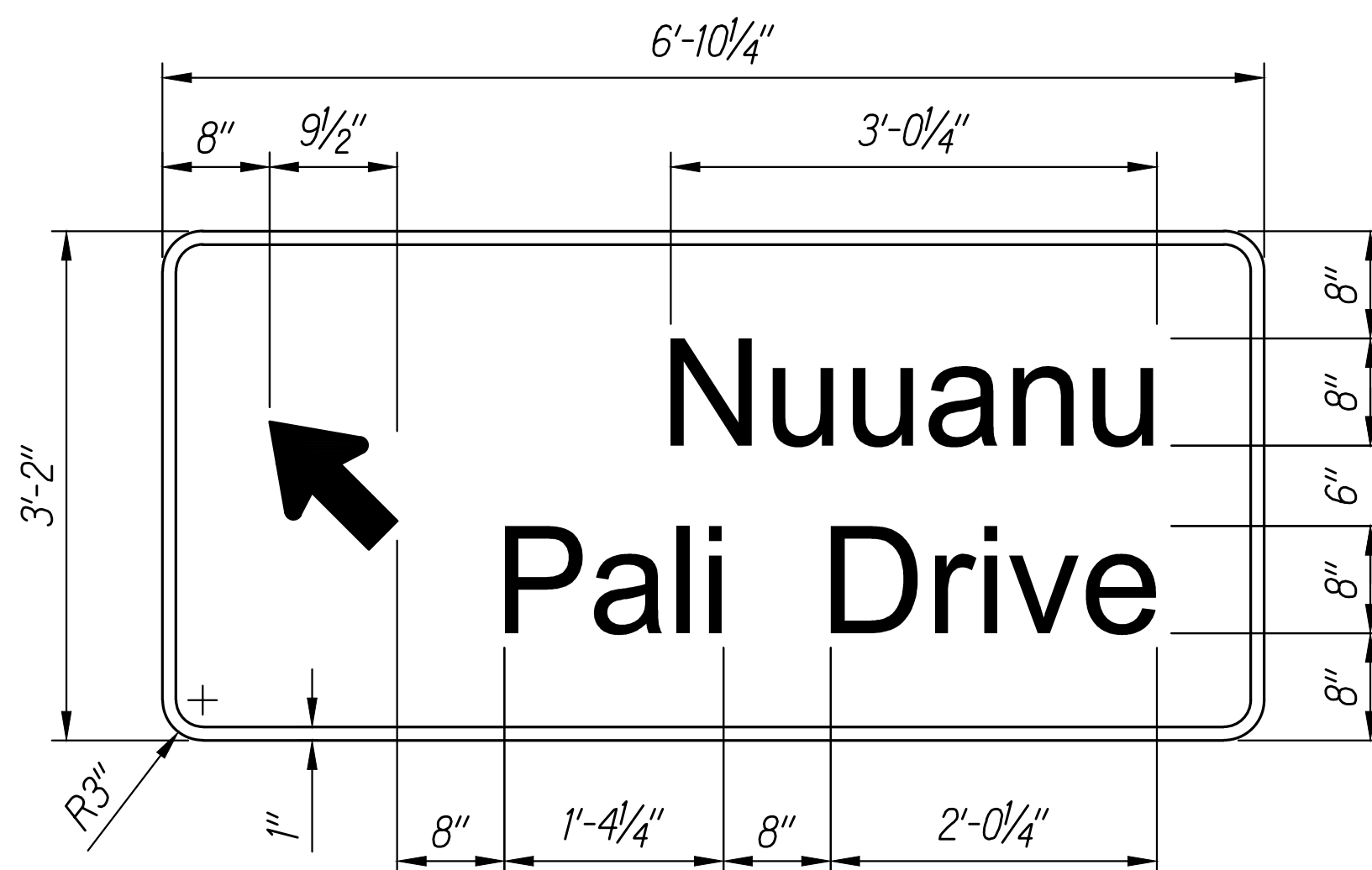
DES-1 SIGN DETAIL



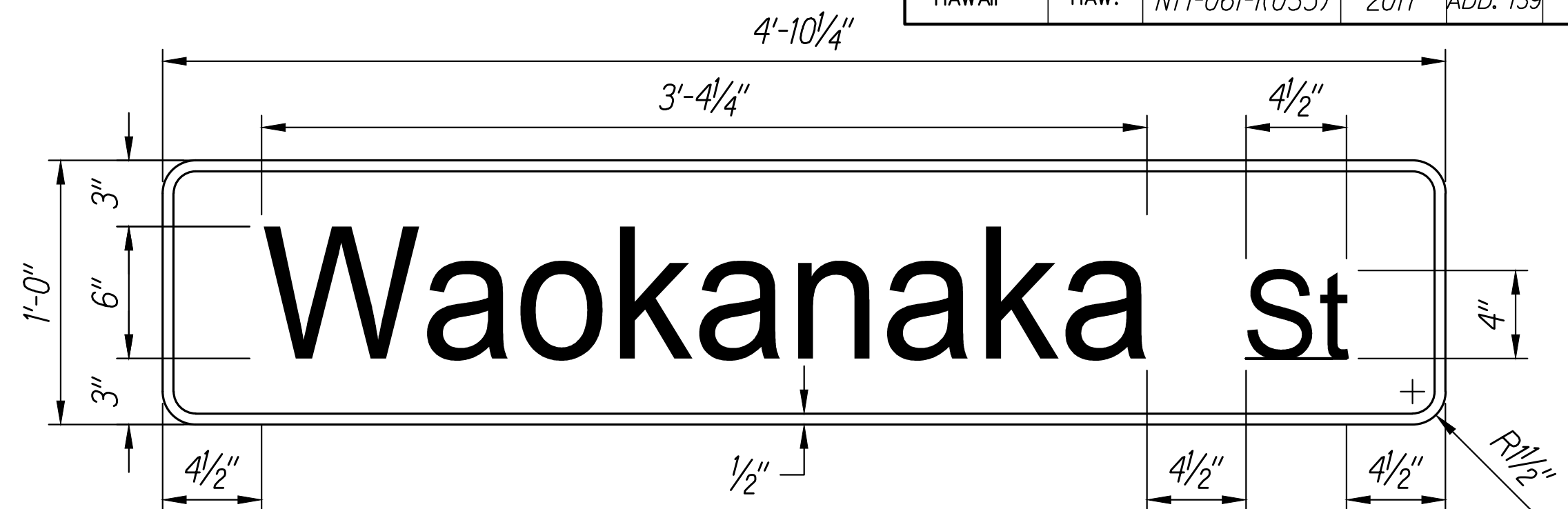
DES-4 SIGN DETAIL



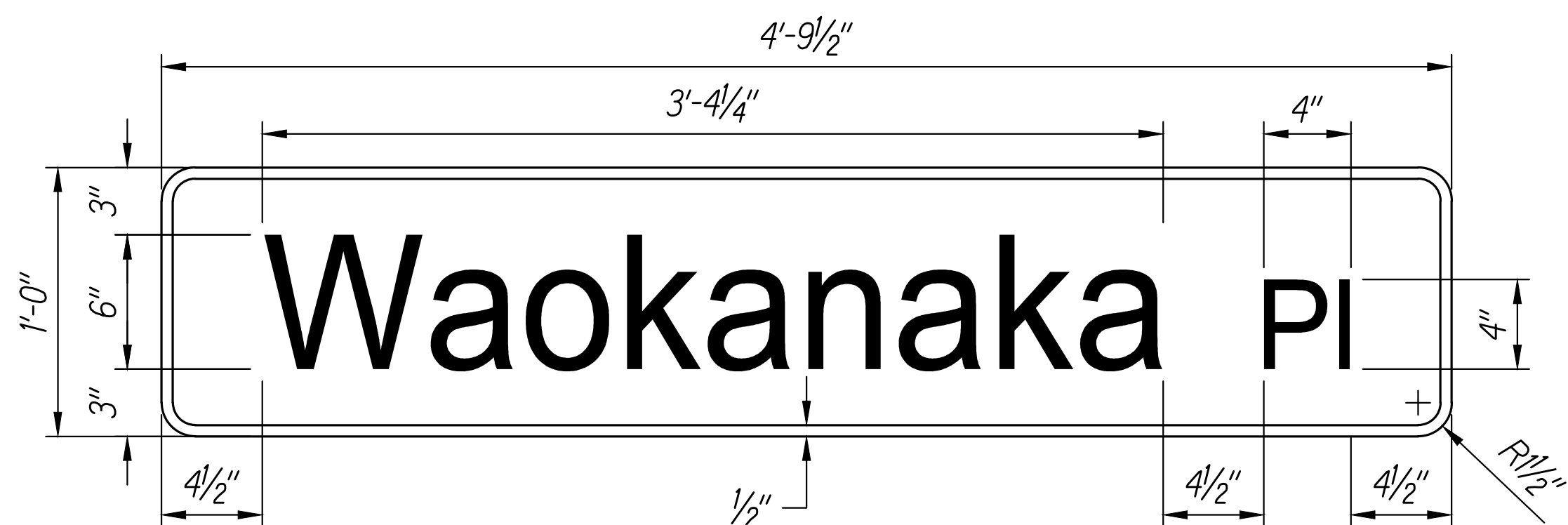
DES-5 SIGN DETAIL



DES-6 SIGN DETAIL



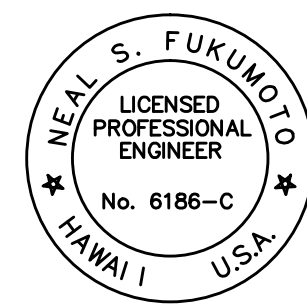
DES-2 SIGN DETAIL



DES-3 SIGN DETAIL

Sign Notes:

- Letters and alphabets shall conform to the MUTCD Standard Alphabets For Traffic Control Devices. Use Series "D 2000" letters and numbers unless otherwise specified.
- Destination sign posts shall be flanged channel posts, 12 gage square tube posts or mounted on breakaway or ground mounted posts. See Standard Plans for sign square footage requirements.
- Radius and border of signs are as shown on plans.
- Guide signs shall be retroreflective with green background and white legend.
- Street name signs on mast arm shall have the same legend on both sides of sign.



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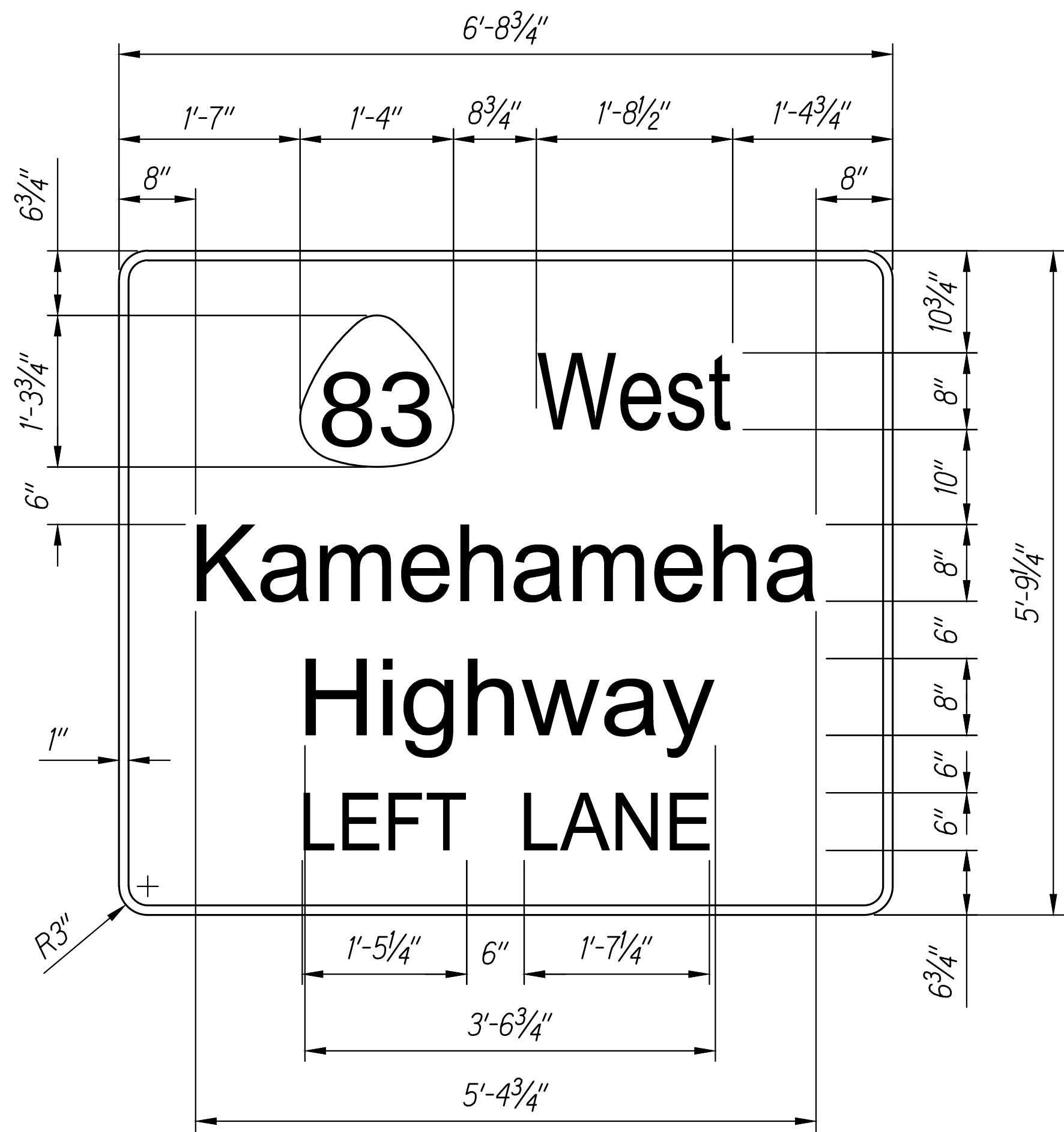
Wesley R. Segawa & Associates, Inc.

5/15/17	Sign notes revised
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
SIGN DETAILS	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Scale: Not to Scale	Date: February 2017

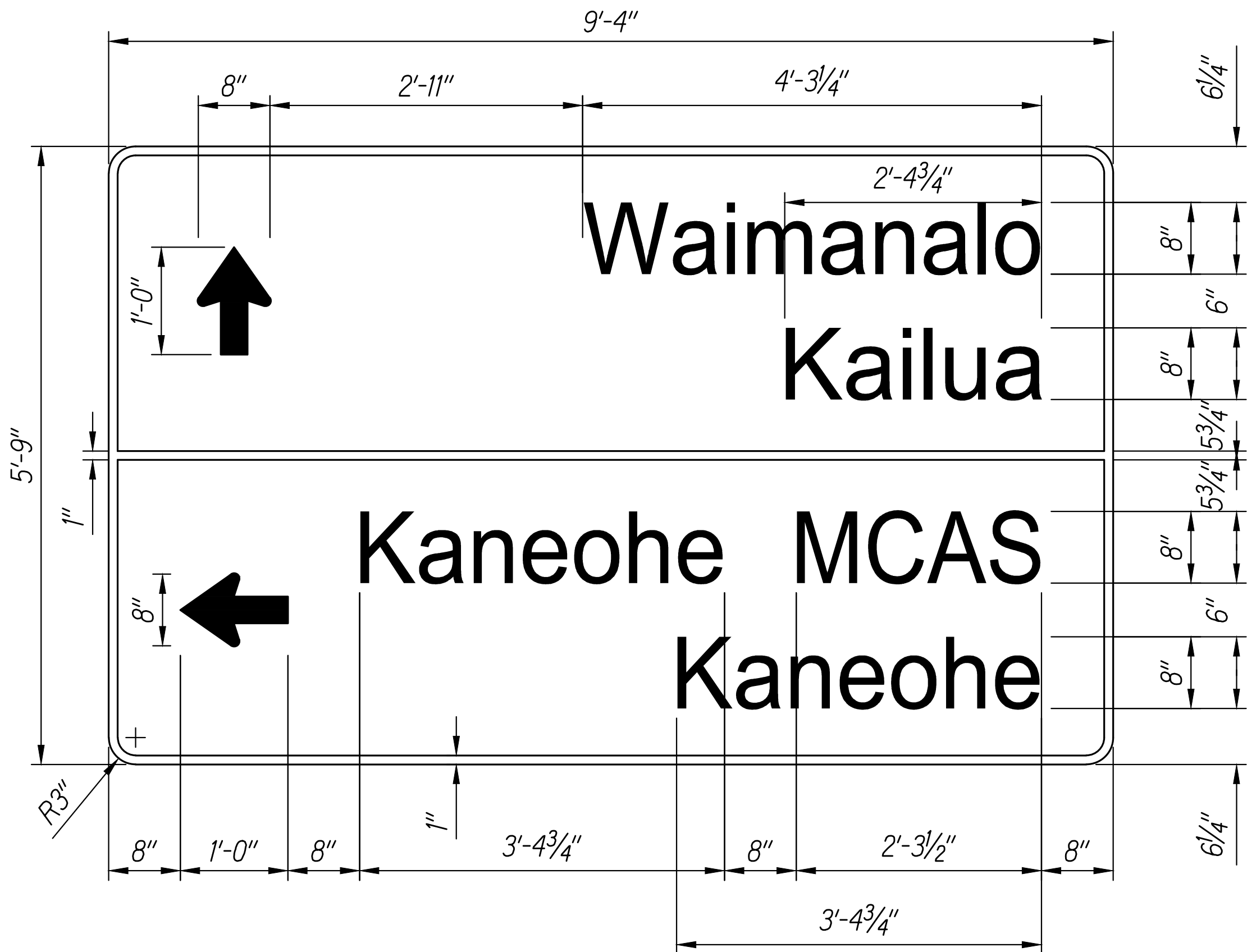
SHEET No. 001 OF 6 SHEETS

ADD. 139

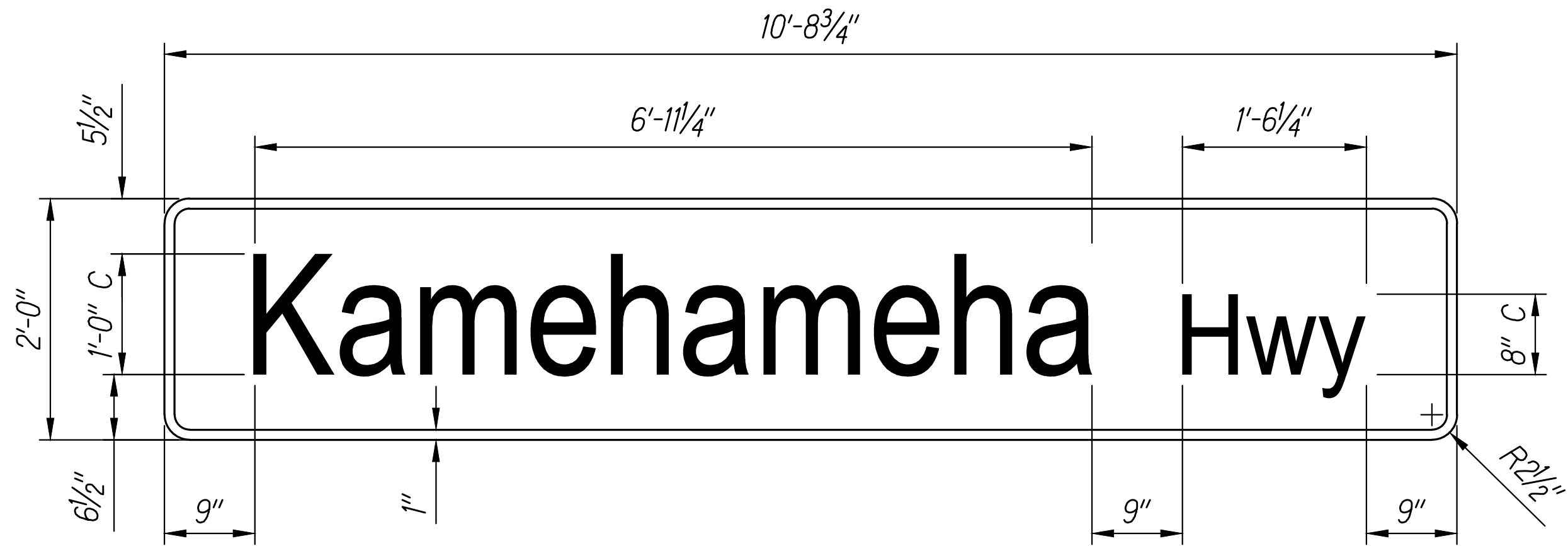
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 141	455



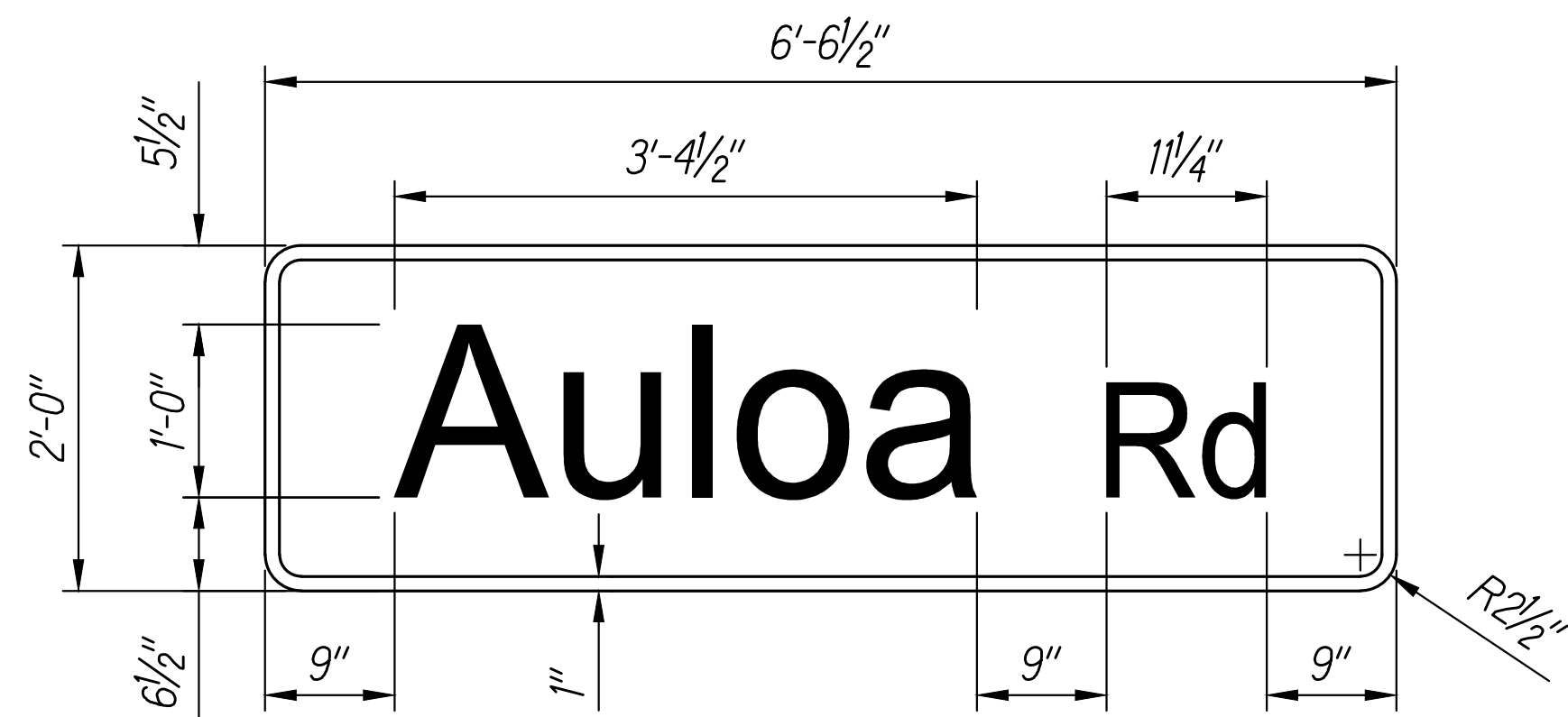
DES-12 SIGN DETAIL



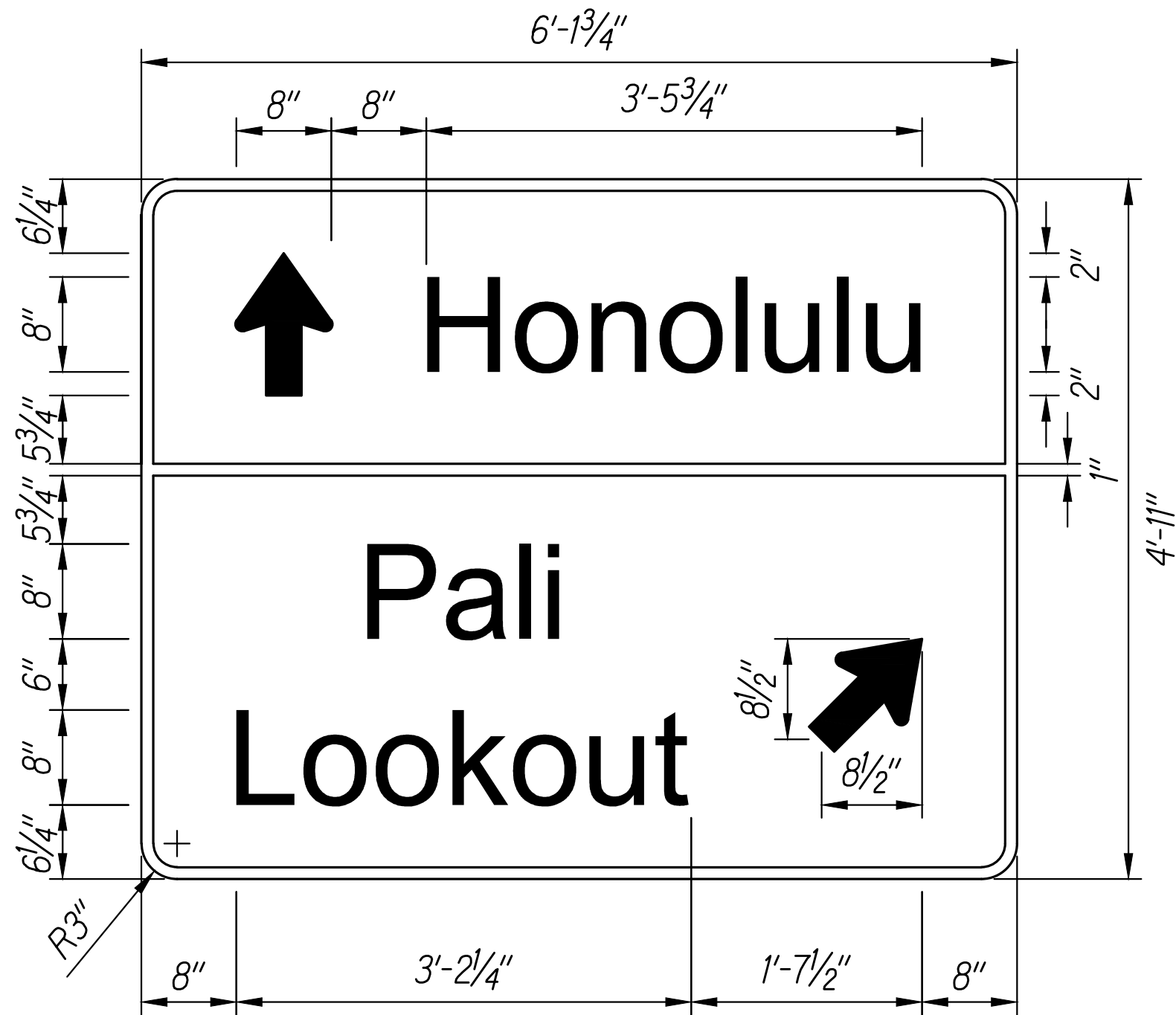
DES-13 SIGN DETAIL



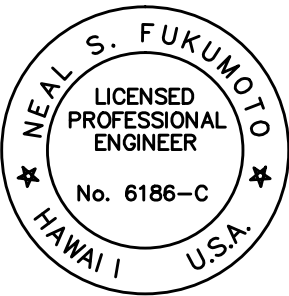
DES-14 SIGN DETAIL



DES-15 SIGN DETAIL



DES-16 SIGN DETAIL



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Exp. 04-30-18

Wesley R. Segowa & Associates, Inc.

5/15/17	Added Sign Detail
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
SIGN DETAILS	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Scale: Not to Scale	Date: February 2017

SHEET No. C03 OF 6 SHEETS

ADD. 141

ORIGINAL PLAN

DATE

SURVEY PLOTTED BY

DRAWN BY

TRACED BY

NOTE BOOK

DESIGNED BY

QUANTITIES BY

CHECKED BY

No.

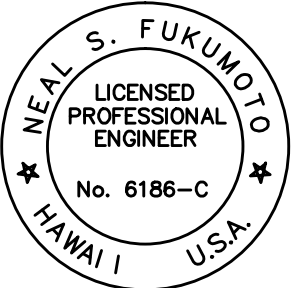
EXISTING STATION	LEFT	RIGHT	PROPOSED TYPE	SYMBOL	PROPOSED STATION	LEFT	RIGHT	REMARKS
⌘ 26+30	●		R17-1	⬡9	same	●		Only replace sign, not pole
⌘ 26+82		●	R1-2	⬡4	same		●	
⌘ 27+48		●	R1-2	⬡4	same		●	
Wao. 0+68		●	W1-1(R)	⬡4	same		●	
		●	W13-1P(20)	⬡4	same		●	
⌘ 27+75		●	R17-1	⬡4	same		●	
Wao. 3+99	●		W1-1(L)	⬡4	same	●		
	●		W13-1P(20)	⬡4	same	●		
IB ⌘ 6+16	●		Custom Sign	⬡1	exist.			Residential Area Ahead Reduce Speed
Wao. 4+63		●	R2-1(25)	⬡4	same		●	
NEW			W8-3b	⬡3	OB ⌘ 7+91		●	
IB ⌘ 8+22		●	R2-1(35)	⬡4	same		●	w/ Solar Panel & Speed Display
IB ⌘ 8+58	●		Des Sign	⬡2	-			"Nuuanu Pali Dr."
OB ⌘ 8+58	●		R2-1(45)	⬡2	-			
OB ⌘ 8+57		●	R2-1(45)	⬡4	same		●	
NEW			W8-3c	⬡3	IB ⌘ 8+93	●		
OB ⌘ 8+94		●	Modified R4-5	⬡4	same		●	See Sheet C04
OB ⌘ 9+27		●	M3-1 & M1-6(61)	⬡4	same		●	
Wao ⌘ 7+45	●		R2-1(25)	⬡4	same	●		
IB ⌘ 10+08		●	W3-3	⬡2	-			
IB ⌘ 10+18	●		D3-2	⬡2	-			
	●		W3-3	⬡4	same	●		
NEW			DES-1	⬡3	IB ⌘ 11+28	●		See Sheet C01, Use Breakway Mounts
Wao ⌘ 9+32		●	R2-1(25)	⬡4	same		●	
Wao ⌘ 10+65	●		R2-1(25)	⬡4	same	●		
IB ⌘ 16+24	●		W3-5(35)	⬡4	same	●		
Wao ⌘ 19+97	●		DES-2 & 3	⬡4	same			See Sheet C01
	●		W14-1	⬡4	same	●		
	●		R1-1	⬡4	same			
Wao ⌘ 20+86	●		R7-1A	⬡4	same	●		
	●		R7-201P		same	●		
Wao ⌘ 24+66	●		R7-1A	⬡4	same	●		
	●		R7-201P		same	●		
OB ⌘ 25+29		●	D10-1a	⬡4	same		●	Mile 3.0
NEW			D10-1a	⬡3	IB ⌘ 25+48	●		Mile 3.0
Wao ⌘ 26+91	●		R7-1A	⬡4	same	●		
	●		R7-201P		same	●		



EXISTING STATION	LEFT	RIGHT	TYPE	SYMBOL	PROPOSED STATION	LEFT	RIGHT	REMARKS
Wao ⌘ 28+00	●		DES-2 & 4 R1-1	⬡4 ⬡4	same same	●		See Sheet C01
Wao ⌘ 28+26	●		W14-1	⬡4	same	●		
OB ⌘ 30+12		●	Modified R4-5	⬡4	same		●	See Sheet C04
Wao ⌘ 35+53	●		R7-1A	⬡4	same	●		
	●		R7-201P		same	●		
OB ⌘ 48+45		●	D10-1a	⬡4	same		●	Mile 3.5
OB ⌘ 48+45	●		D10-1a	⬡2	-			Mile 3.5
NEW			D10-1a	⬡3	IB ⌘ 48+75	●		Mile 3.5
OB ⌘ 49+18		●	OM3-R	⬡4	same		●	
OB ⌘ 53+70	●		R2-1(45)	⬡4	same	●		
OB ⌘ 54+16		●	R2-1(45)	⬡4	same		●	
IB ⌘ 56+96		●	R2-1(45)	⬡8	IB ⌘ 52+31		●	
IB ⌘ 57+24	●		R2-1(45)	⬡4	IB ⌘ 52+31	●		
IB ⌘ 61+25	●		Gov't Property	⬡1	exist.			
OB ⌘ 77+10		●	D10-1a	⬡4	same		●	Mile 4.0
IB ⌘ 77+60	●		D10-1a	⬡4	same	●		Mile 4.0
IB ⌘ 77+69		●	adopt a highway	⬡1	IB ⌘ 77+25	●		Relocate exist. sign and sponsor sign
OB ⌘ 77+19		●	adopt a highway	⬡1	OB ⌘ 78+26	●		Relocate exist. sign and sponsor sign
NEW			DES-5	⬡3	OB ⌘ 82+56		●	See Sheet C01
OB ⌘ 84+71	●		W2-2	⬡4	same	●		
OB ⌘ 84+71		●	W2-2	⬡4	same		●	
OB ⌘ 87+98		●	W9-2	⬡4	same		●	
OB ⌘ 88+87	●		R3-4	⬡6	OB ⌘ 89+46	●		
IB ⌘ 89+25		●	Modified R3-2	⬡6	IB ⌘ 89+47		●	See Sheet C04
OB ⌘ 89+49		●	DES-6	⬡4	same		●	See Sheet C01

SIGN KEY

- ⬡1 Existing Sign and Post(s) to Remain
- ⬡2 Remove Existing Sign and Post
- ⬡3 Install New Sign(s) w/Steel Post(s) and RM-3(s)
- ⬡4 Remove Existing Sign and Post(s) and Install New Sign(s) w/Post(s) and RM-3(s)
- ⬡5 Install New Sign(s) on Light Post
- ⬡6 Remove Existing Sign and Post(s) and Install New Sign(s) on Light Post
- ⬡7 Remove Existing Sign and Post(s) and Install New Sign(s) on Concrete Median Barrier
- ⬡8 Remove Existing Sign and Light Pole and Install New Sign(s) on w/Post(s) and RM-3(s)
- ⬡9 Remove Existing Sign and Post(s) and Install New Sign(s) on Type I Traffic Signal Pole



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Exp. 04-30-18

Wesley R. Segowa & Associates, Inc.

5/15/17

⬡1 DES-1 Sign remark revised

DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION SIGN SCHEDULE PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-1(035) Scale: As Shown Date: February 2017	
SHEET No. CQ1 OF 5 SHEETS	

ORIGINAL PLAN

DATE

SURVEY PLOTTED BY

DATE

NOTE BOOK

DESIGNED BY

QUANTITIES BY

CHECKED BY

No.

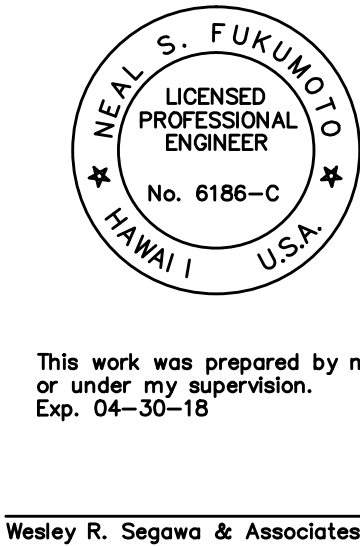
EXISTING STATION	LEFT	RIGHT	TYPE	SYMBOL	PROPOSED STATION	LEFT	RIGHT	REMARKS
OB # 90+10		●	R1-1	⬡4	same		●	
IB # 91+45		●	Modified R3-2	⬡6	IB # 91+32		●	See Sheet C04
OB # 91+72		●	R2-1(45)	⬡4	same		●	
OB # 91+72	●		R2-1(45)	⬡4	same	●		
IB # 92+68		●	R3-4	⬡6	OB # 93+10		●	
OB # 92+92		●	W4-2R	⬡4	same		●	
IB # 94+34	●		R2-1(45)	⬡4	IB # 93+77	●		
IB # 94+34		●	R2-1(45)	⬡4	IB # 93+77		●	
IB # 97+07	●		DES-7	⬡4	same	●		See Sheet C02
NEW			D10-1a	⬡3	# 101+34	●		Mile 4.5
NEW			D10-1a	⬡3	# 101+34		●	Mile 4.5
# IB 101+89	●		M1-6(61) # M3-3	⬡1	exist	●		
# 43+89	●		R1-1	⬡4	same	●		
# 44+63	●		R1-7A	⬡4	# 44+63	●		96' Offset
	●		R7-201P	⬡4	# 44+63	●		
# 44+63	●		DES-8	⬡4	same	●		See Sheet C02, Use Breakway Mounts
# 45+23		●	R2-1(45)	⬡2	-			
# 45+23		●	R2-1(45)	⬡4	same		●	
# 50+09	●		DES-16	⬡4	same	●		See Sheet C03
# 64+30		●	D10-1a	⬡4	same		●	Mile 5.0
# 64+32	●		D10-1a	⬡4	same	●		Mile 5.0
# 70+33	●		R2-1(45)	⬡4	same	●		
# 70+33		●	R2-1(45)	⬡4	same		●	
# 70+37		●	R2-1(45)	⬡2	-			On median barrier; one sign in each direction
		●	R2-1(45)	⬡2	-			
# 74+15		●	DES-9	⬡4	same		●	
# 77+07		●	Modified W7-1	⬡4	same		●	See Sheet C05
IB # 80+34	●		Z-BUCKLE UP	⬡4	same	●		
	●		Z-CLICK IT	⬡4	same	●		
OB # 81+02		●	W7-1	⬡4	same		●	
		●	W7-2P	⬡4	same		●	
IB # 81+86	●		W7-1	⬡4	same	●		
	●		W7-2P	⬡4	same	●		
OB # 84+70		●	DES-8	⬡4	same		●	See Sheet C02; Use Breakaway Mounts
		●	DES-10	⬡4	same		●	
OB # 85+53		●	W4-1	⬡4	same		●	
IB # 85+63	●		Modified W7-1	⬡4	same	●		See Sheet C05
NEW			D10-1a	⬡3	IB # 86+60	●		Mile 5.5

1

EXISTING STATION	LEFT	RIGHT	TYPE	SYMBOL	PROPOSED STATION	LEFT	RIGHT	REMARKS
NEW			D10-1a	⬡3	OB # 86+57		●	Mile 5.5
OB # 86+87	●		W3-5(35)	⬡4	same	●		
OB # 86+87		●	W3-5(35)	⬡4	same		●	
OB # 89+33		●	Modified W5-2	⬡4	same		●	See Sheet C05
OB # 89+84		●	W1-11(R)	⬡4	OB # 90+03		●	Located on Pali Lookout Ramp
		●	W13-1P(15)	⬡4	OB # 90+03		●	
OB # 90+14		●	R5-1	⬡4	same		●	Located on Pali Lookout Ramp
OB # 90+87		●	R1-2	⬡4	same		●	
IB # 91+08	●		adopt a highway	⬡1	exist			ex. sign and sponsor sign
OB # 91+52		●	R2-1(35)	⬡4	same		●	
OB # 91+64	●		R2-1(35)	⬡4	same	●		
IB # 92+32		●	ZLIGHTS	⬡4	same		●	See Sheet C05
IB # 92+57	●		ZLIGHTS	⬡4	same	●		See Sheet C05
OB # 93+07	●		R11-1	⬡4	same	●		
	●		R3-3	⬡4	same	●		
OB # 94+91	●		Modified R14-3	⬡4	same	●		See Sheet C04
OB # 95+14		●	ZUSE-HEADLIGHTS	⬡4	same		●	See Sheet C04
OB # 95+92		●	D10-1a	⬡2	-			Mile 5
IB # 107+10	●		ZNO-STOPPING	⬡4	same	●		use headlights - stop
IB # 108+27		●	R2-1(45)	⬡4	same		●	
IB # 108+67	●		R2-1(45)	⬡4	same	●		
OB # 108+57		●	Modified R8-5	⬡4	same		●	See Sheet C04
OB # 108+81	●		Modified R8-5	⬡4	same	●		See Sheet C04
OB # 109+57		●	R7-4	⬡4	same		●	
		●	R7-201	⬡4	same		●	
NEW			W1-2(R)	⬡3	OB # 109+75	●		

SIGN KEY

- 1 Existing Sign and Post(s) to Remain
- 2 Remove Existing Sign and Post
- 3 Install New Sign(s) w/Steel Post(s) and RM-3(s)
- 4 Remove Existing Sign and Post(s) and Install New Sign(s) w/Post(s) and RM-3(s)
- 5 Install New Sign(s) on Light Post
- 6 Remove Existing Sign and Post(s) and Install New Sign(s) on Light Post
- 7 Remove Existing Sign and Post(s) and Install New Sign(s) on Concrete Median Barrier
- 8 Remove Existing Sign and Light Pole and Install New Sign(s) on w/Post(s) and RM-3(s)
- 9 Remove Existing Sign and Post(s) and Install New Sign(s) on Type I Traffic Signal Pole



5/15/17

1 New Sign Added

DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION SIGN SCHEDULE PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-1(035) Date: February 2017	

SHEET No. CQ2 OF 5 SHEETS

ORIGINAL PLAN

DATE

SURVEY PLOTTED BY

DRAWN BY

TRACED BY

DESIGNED BY

QUANTITIES BY

CHECKED BY

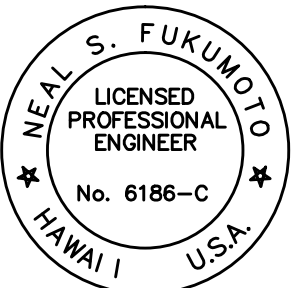
Nc

EXISTING STATION	LEFT	RIGHT	TYPE	SYMBOL	PROPOSED STATION	LEFT	RIGHT	REMARKS
NEW			D10-1a		# 193+23	●		Mile 7.5
NEW			D10-1a		# 193+23		●	Mile 7.5
# 193+93		●	W3-4		same		●	Existing Post and Beacon to Remain
# 194+11	●		M3-3 # M1-6(61)		exist.			
# 194+67		●	M3-4, M1-6(83)		exist.			
		●	# M5-1(L)					
# 194+67		●	M3-1, M1-6(61)		exist.			
			# M6-3					
# 195+14	●		R3-4		# 195+32	●		
# 196+03	●		R1-1		same	●		
NEW			W8-3b		# 196+83	●		
# 197+00	●		R4-3		# 195+69	●		
# 197+20	●		R4-3		-			
	●		R3-4		# 197+22	●		
# 197+20	●		W3-4		# 197+07.5	●		
	●		Modified R17-4		# 197+07.5	●		
# 198+47	●		R2-1(45)		same	●		
# 198+95	●		R1-2		same	●		Keep exist. steel posts
# 199+11	●		M3-4, M1-6(83)		# 199+08	●		Relocate exist. signs onto new light pole
			# M5-1(L)					
# 199+28		●	DES-13		same		●	See Sheet C03
# 199+82	●		R2-1(45)		same	●		
NEW			W8-3c		# 199+87		●	
# 200+02	●		R10-11a		same	●		
# 200+41		●	R3-7R		same		●	
		●	ZCITY-BUS		same		●	"Except City Buses"
# 201+07	●		Modified R17-4		same	●		
# 201+21		●	Modified R17-4		same		●	
# 201+23	●		Modified R17-4		same	●		
# 201+44	●		DES-14		same	●		See Sheet C03; Street Name Sign on Mast Arm
# 201+50	●		Modified R9-3b		same	●		See Sheet C05
	●		W1-6(R)		same	●		
# 201+69		●	M3-1 # M1-6(61)		exist.		●	
# 202+57		●	DES-15		exist.		●	See Sheet C03; Street Name Sign on Mast Arm



- SIGN KEY
- Existing Sign and Post(s) to Remain
 - Remove Existing Sign and Post
 - Install New Sign(s) w/Steel Post(s) and RM-3(s)
 - Remove Existing Sign and Post(s) and Install New Sign(s) w/Post(s) and RM-3(s)
 - Install New Sign(s) on Light Post
 - Remove Existing Sign and Post(s) and Install New Sign(s) on Light Post
 - Remove Existing Sign and Post(s) and Install New Sign(s) on Concrete Median Barrier

- Remove Existing Sign and Light Pole and Install New Sign(s) on w/Post(s) and RM-3(s)
- Remove Existing Sign and Post(s) and Install New Sign(s) on Type I Traffic Signal Pole



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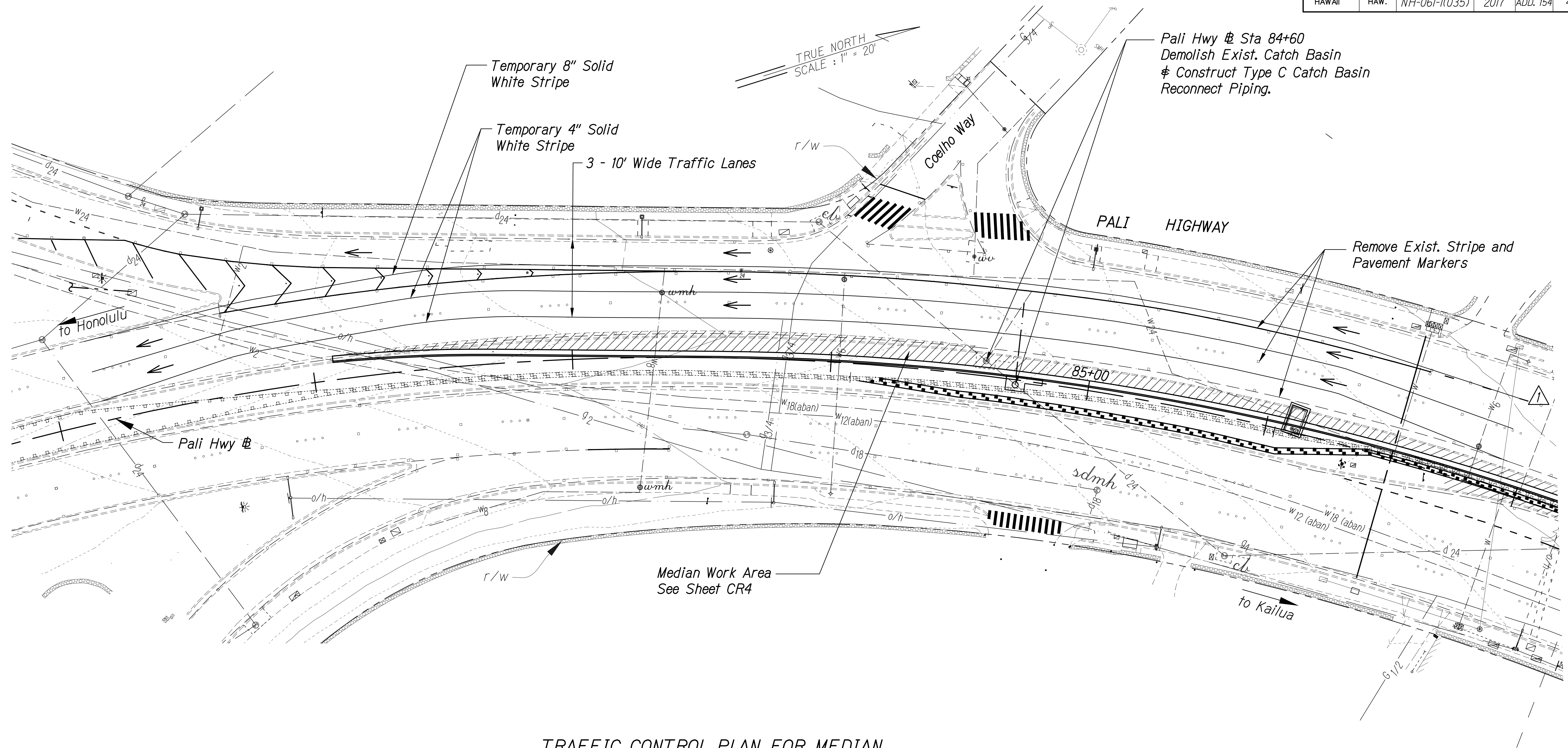
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 151	455

5/15/17	New destination signs added
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION SIGN SCHEDULE PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-1(035) Scale: As Shown Date: February 2017	

SHEET No. CQ5 OF 5 SHEETS

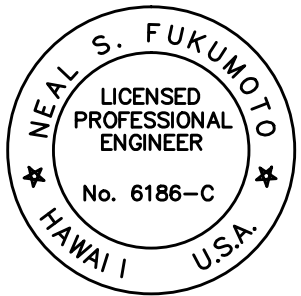
ADD. 151

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 154	455



**TRAFFIC CONTROL PLAN FOR MEDIAN
WORK NEAR NUUANU AVE.**
Scale: 1"=20'

Legend:
 4" HMA Mix IV Over 6" ACB
See Detail 1/Sheet CB1
 Direction of Temporary Traffic Lane

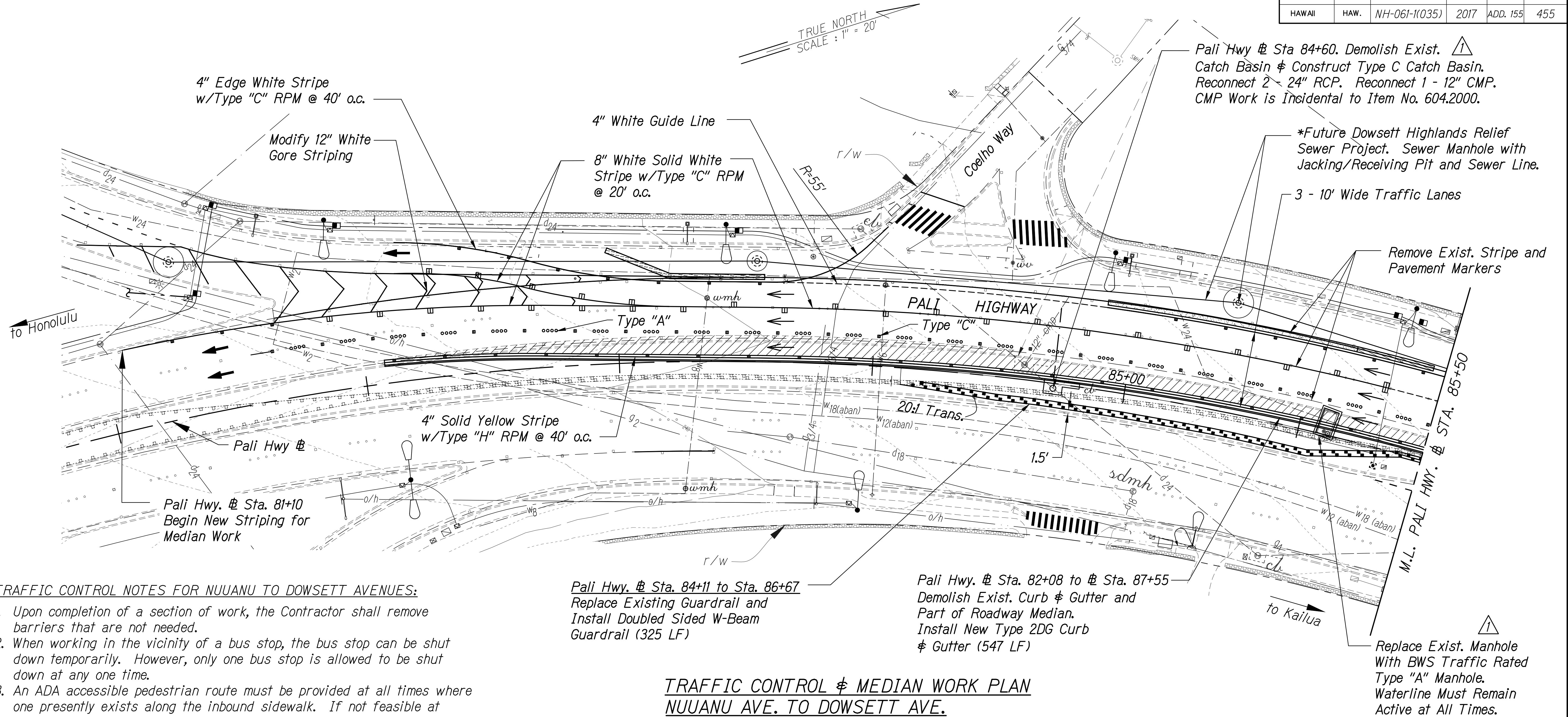


This work was prepared by me
or under my supervision.
Exp. 04-30-18

Wesley R. Segawa & Associates, Inc.

5/15/17	Revised Lanes
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
TRAFFIC CONTROL PLAN	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Scale: As Shown	Date: February 2017
SHEET No. CR3 OF 11 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 155	455



TRAFFIC CONTROL NOTES FOR NUUANU TO DOWSETT AVENUES:

- Upon completion of a section of work, the Contractor shall remove barriers that are not needed.
- When working in the vicinity of a bus stop, the bus stop can be shut down temporarily. However, only one bus stop is allowed to be shut down at any one time.
- An ADA accessible pedestrian route must be provided at all times where one presently exists along the inbound sidewalk. If not feasible at certain locations, proper signage must direct pedestrians to the outbound sidewalk.
- Access to all driveways and side streets must be provided at all times.
- All turning movements must be maintained, except the left turn onto Ahi Place during construction of the Type A water manhole.
- The Contractor shall provide police officers or flagmen as necessary.
- All signs being relocated into the median should follow guidelines on Standard Plan TE-01.
- Relocate existing irrigation lines, sprinkler heads and irrigation boxes into the median as necessary.

Legend:

- 4" HMA Mix IV Over 6" ACB See Detail 1/Sheet CBI
- Portable Concrete Barrier
- Portable Water-Filled Barrier
- ABSORB-350 End Treatment (31 LF)
- Direction of Temporary Traffic Lane

APPROVED:

MANAGER AND CHIEF ENGINEER, BWS
(FOR WORK AFFECTING BWS FACILITIES IN STATE R/W)

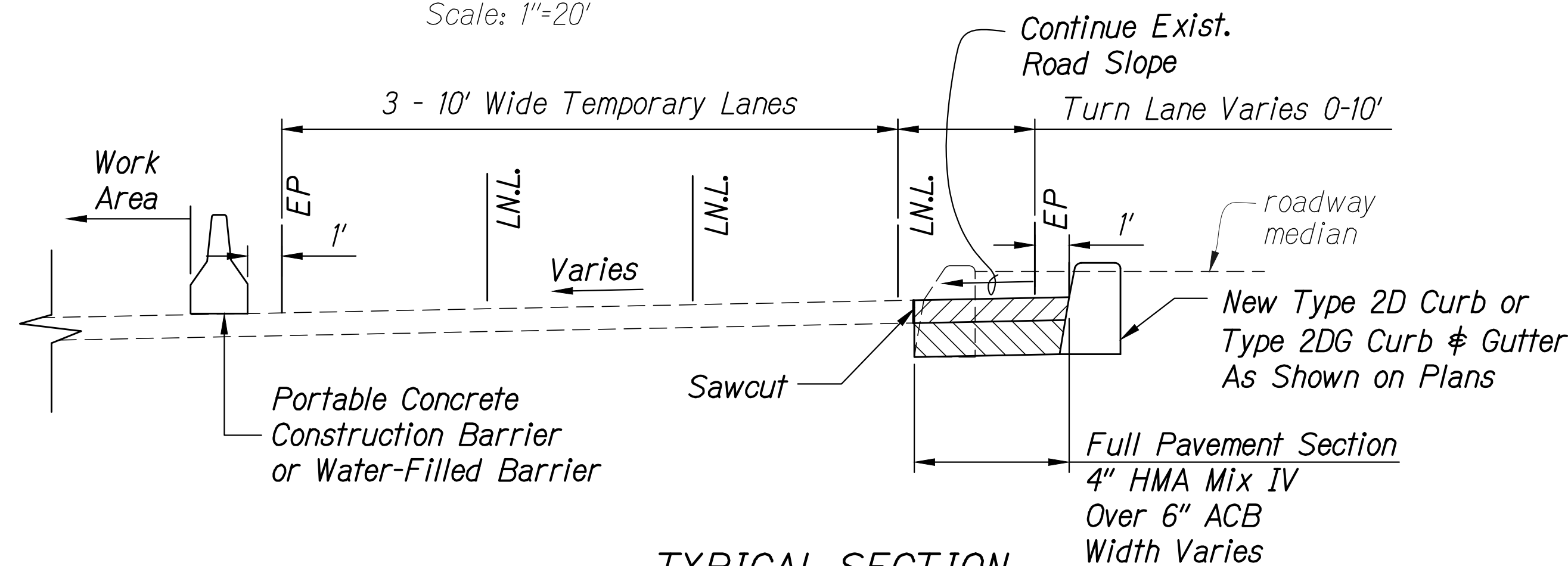
Pali Hwy. Sta. 84+11 to Sta. 86+67
Replace Existing Guardrail and
Install Doubled Sided W-Beam
Guardrail (325 LF)

Pali Hwy. Sta. 82+08 to Sta. 87+55
Demolish Exist. Curb & Gutter and
Part of Roadway Median.
Install New Type 2DG Curb
& Gutter (547 LF)

Replace Exist. Manhole
With BWS Traffic Rated
Type "A" Manhole.
Waterline Must Remain
Active at All Times.

TRAFFIC CONTROL & MEDIAN WORK PLAN
NUUANU AVE. TO DOWSETT AVE.

Scale: 1"=20'

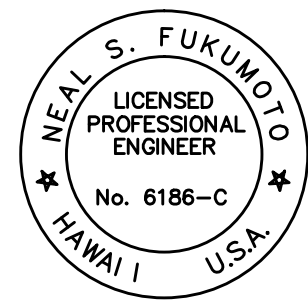


TYPICAL SECTION

Scale: nts

* Do Not Install Utilities Within
Future Sewer Jacking/Receiving
Pit Locations.

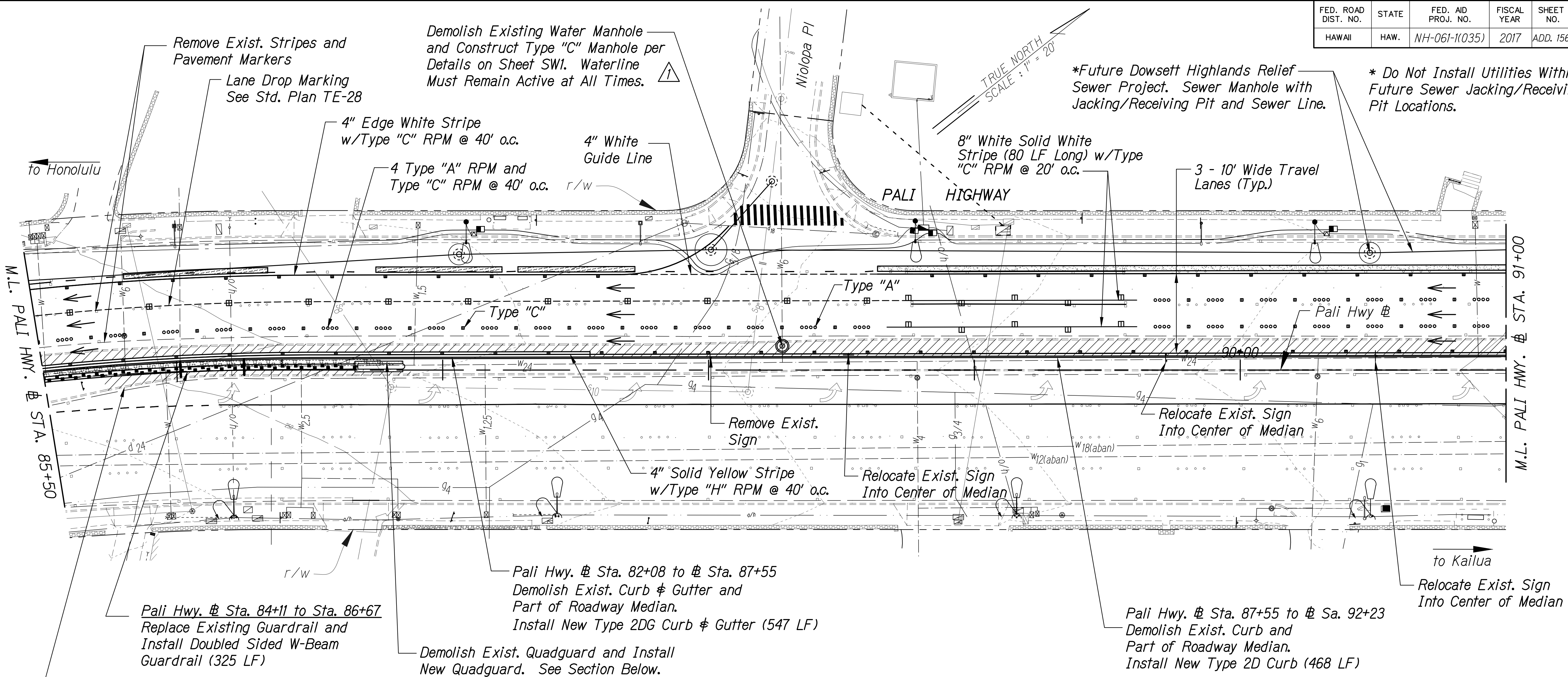
DATE	DESCRIPTION
5/15/17	Revised notes, callouts and added BWS signature block
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
TRAFFIC CONTROL PLAN	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Scale: As Shown	Date: February 2017
SHEET No. CR4 OF 11 SHEETS	



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Exp. 04-30-18

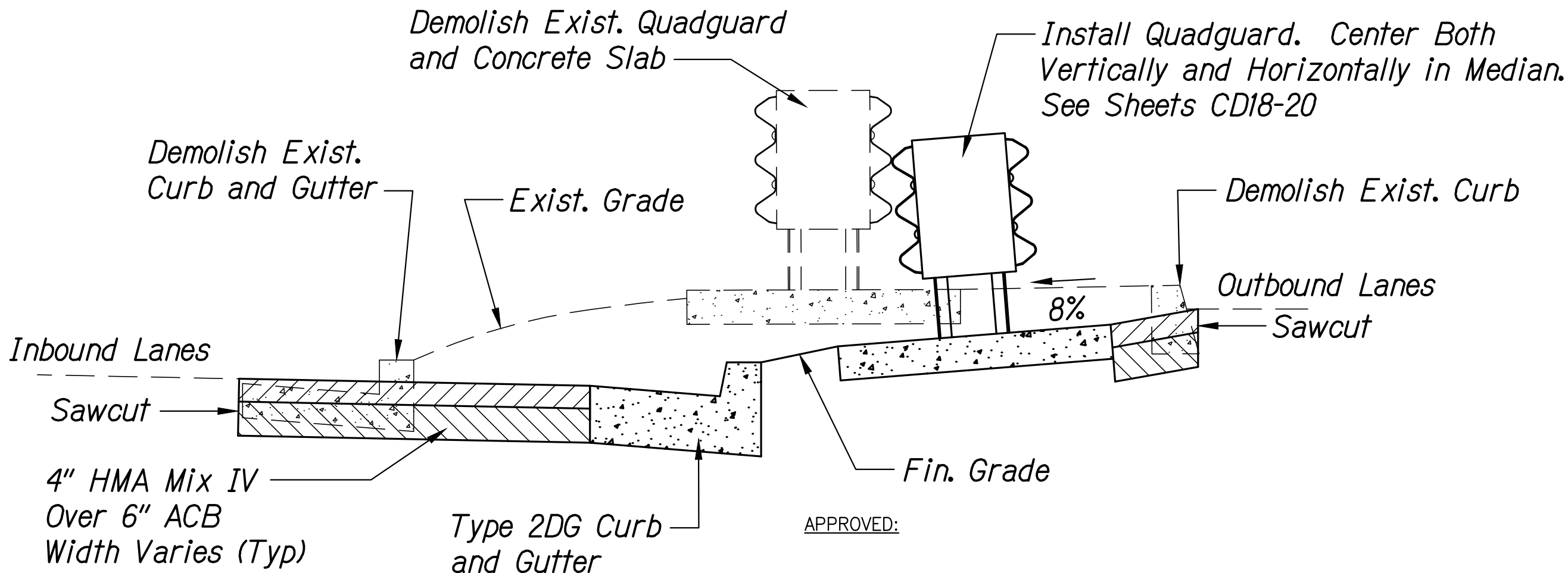
Wesley R. Segawa & Associates, Inc.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 156	455



TRAFFIC CONTROL & MEDIAN WORK PLAN NUUANU AVE. TO DOWSETT AVE.

Scale: 1"=20'



Legend:

- 4" HMA Mix IV Over 6" ACB See Detail 1/Sheet CB1
- Portable Concrete Barrier
- Portable Water-Filled Barrier
- ABSORB-350 End Treatment (31 LF)
- Direction of Temporary Traffic Lane

20' 0 20' 40'

SECTION AT QUADGUARD

Not to Scale

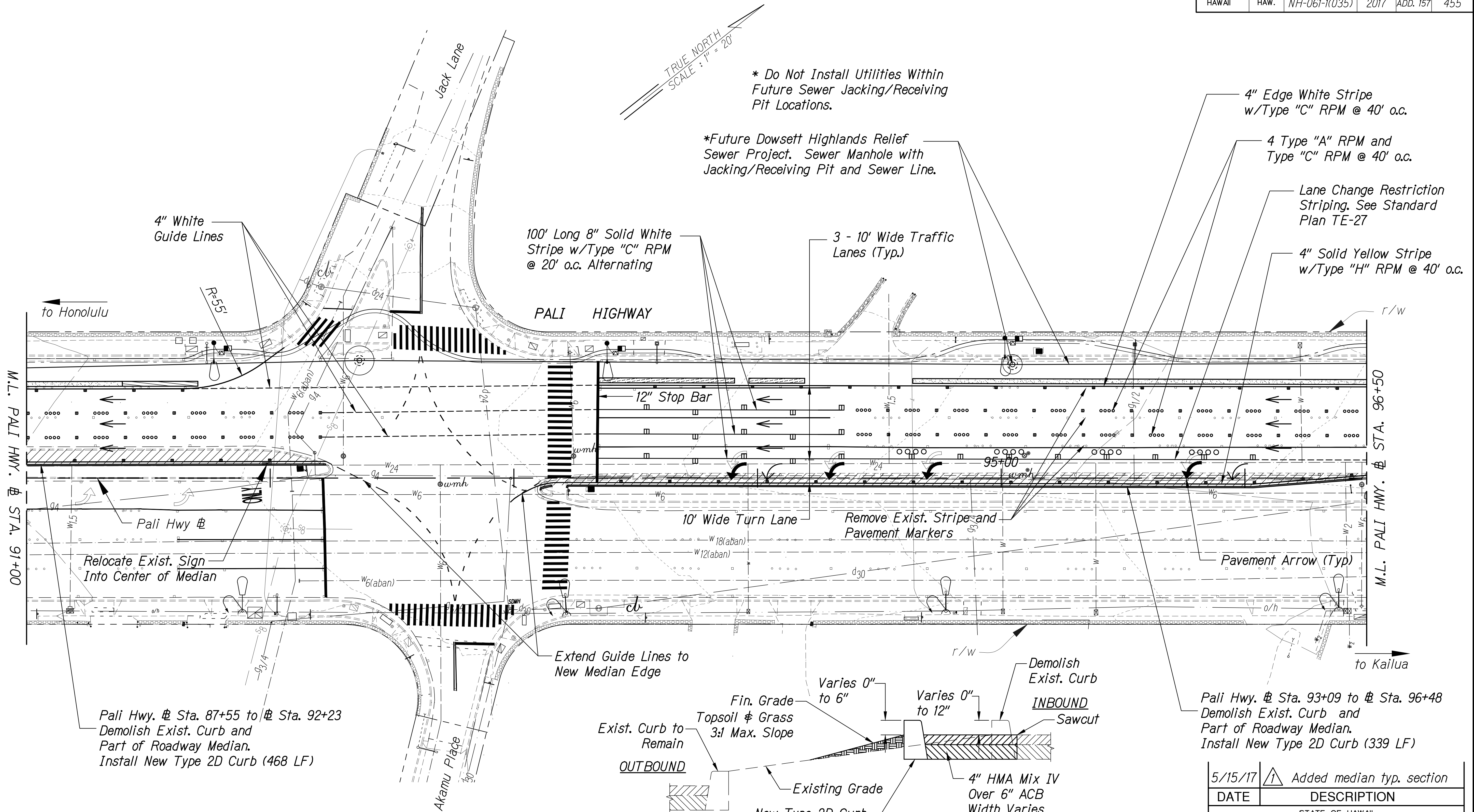
MANAGER AND CHIEF ENGINEER, BWS
(FOR WORK AFFECTING BWS FACILITIES IN STATE R/W)

DATE

Wesley R. Segawa & Associates, Inc.

5/15/17	Revised callout and added BWS signature block
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
TRAFFIC CONTROL PLAN	
PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-1(035) Scale: 1"=20' Date: February 2017	
SHEET No. CR5 OF 11 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 157	455



Legend:

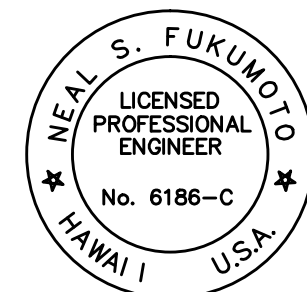
- 4" HMA Mix IV Over 6" ACB
See Detail 1/Sheet CBI
- Portable Concrete Barrier
- Portable Water-Filled Barrier
- ABSORB-350 End Treatment (31 LF)
- Direction of Temporary Traffic Lane

TRAFFIC CONTROL & MEDIAN WORK PLAN
NUUANU AVE. TO DOWSETT AVE.

Scale: 1"=20'

MEDIAN TYPICAL SECTION IN AREAS
WITH GRADE DIFFERENCE
STA. 93+09 TO STA. 96+60

Not to Scale



This work was prepared by me
or under my supervision.
Exp. 04-30-18

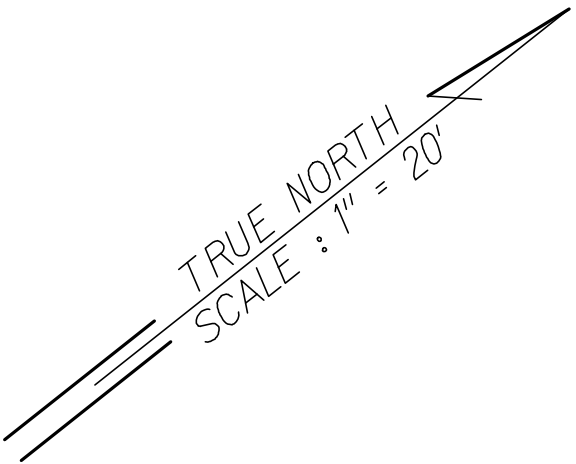
Wesley R. Segawa & Associates, Inc.

DATE	DESCRIPTION
5/15/17	Added median typ. section
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
TRAFFIC CONTROL PLAN	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Scale: 1"=20'	Date: February 2017
SHEET No. CR6 OF 11 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 158	455

* Do Not Install Utilities Within Future Sewer Jacking/Receiving Pit Locations.

*Future Dowsett Highlands Relief Sewer Project. Sewer Manhole with Jacking/Receiving Pit and Sewer Line.



Remove Exist. Stripe and Pavement Markers

4" Edge White Stripe w/Type "C" RPM @ 40' o.c.

4 Type "A" RPM and Type "C" RPM @ 40' o.c.

4" Solid Yellow Stripe w/Type "H" RPM @ 40' o.c.

3 - 10' Wide Travel Lanes (Typ.)

PALI HIGHWAY

to Honolulu

M.L. PALI HWY. @ STA. 96+50

M.L. PALI HWY. @ STA. 102+00

to Kailua

Type "C"
Type "A"

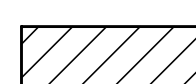
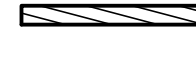
4" White Guide Line

Pali Hwy @

Pali Hwy. @ Sta. 97+69 to 106+70
Demolish Exist. Curb and Part of Roadway Median.
Install New Type 2D Curb (901 LF)

Demolish Existing Water Manhole  and Construct Type "C" Manhole per Details on Sheet SW1.
Waterline Must Remain Active at All Times.

Legend:

-  4" HMA Mix IV Over 6" ACB
See Detail 1/Sheet CBI
-  Portable Concrete Barrier
-  Portable Water-Filled Barrier
-  ABSORB-350 End Treatment (31 LF)
-  Direction of Temporary Traffic Lane

TRAFFIC CONTROL & MEDIAN WORK PLAN
NUUANU AVE. TO DOWSETT AVE.
Scale: 1"=20'

APPROVED:



MANAGER AND CHIEF ENGINEER, BWS
(FOR WORK AFFECTING BWS FACILITIES IN STATE R/W)

DATE

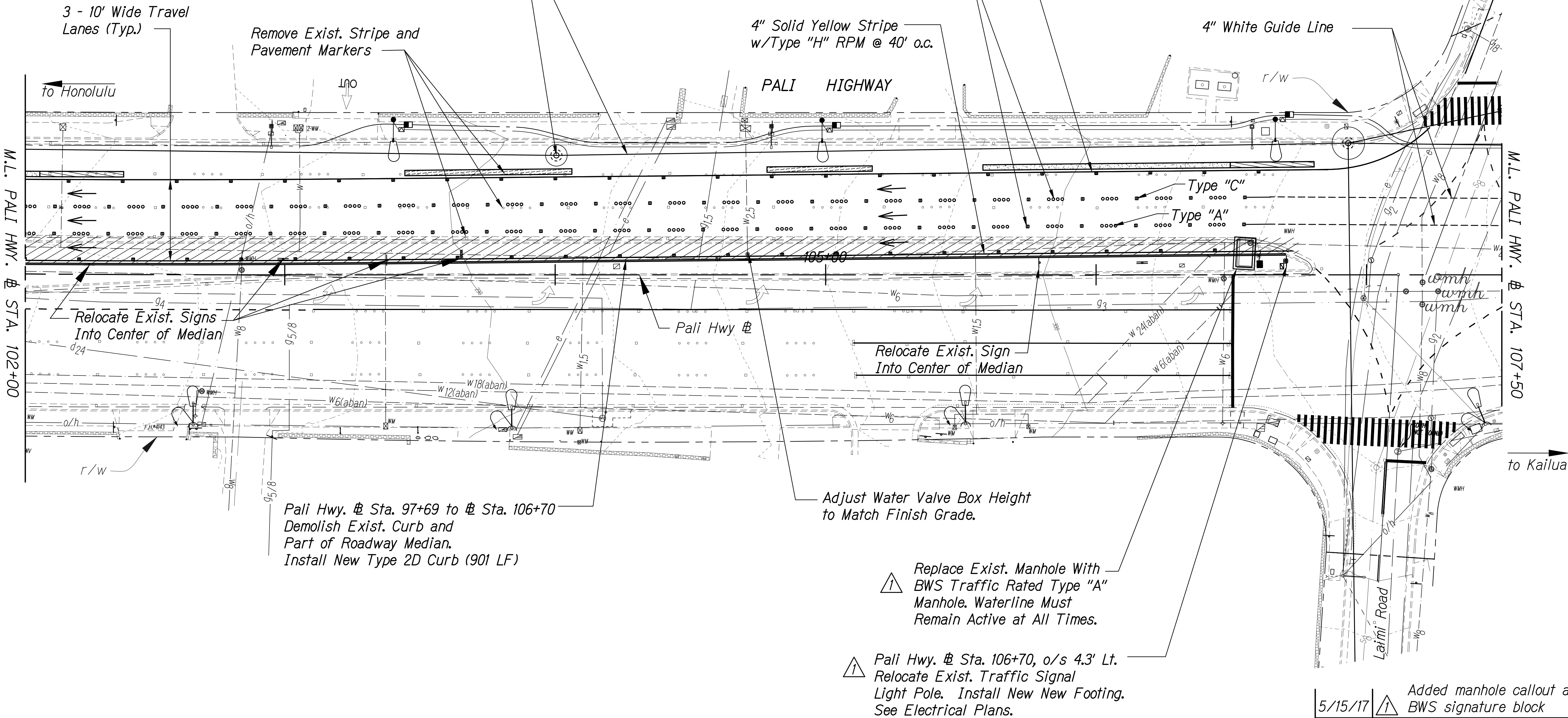
This work was prepared by me or under my supervision.
Exp. 04-30-18

Wesley R. Segawa & Associates, Inc.

5/15/17	 Revised callout and added BWS signature block
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
TRAFFIC CONTROL PLAN	
PALI HIGHWAY RESURFACING	
Waikanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Scale: 1"=20'	Date: February 2017
SHEET No. CR7 OF 11 SHEETS	

* Do Not Install Utilities Within
Future Sewer Jacking/Receiving
Pit Locations.

*Future Dowsett Highlands Relief
Sewer Project. Sewer Manhole with
Jacking/Receiving Pit and Sewer Line.



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 159	455

Legend:

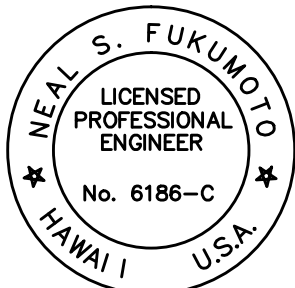
- 4" HMA Mix IV Over 6" ACB
See Detail 1/Sheet CBI
- Portable Concrete Barrier
- Portable Water-Filled Barrier
- ABSORB-350 End Treatment (31 LF)
- Direction of Temporary Traffic Lane

TRAFFIC CONTROL & MEDIAN WORK PLAN
NUUANU AVE. TO DOWSETT AVE.
Scale: 1"=20'

APPROVED:

MANAGER AND CHIEF ENGINEER, BWS
(FOR WORK AFFECTING BWS FACILITIES IN STATE R/W)

DATE



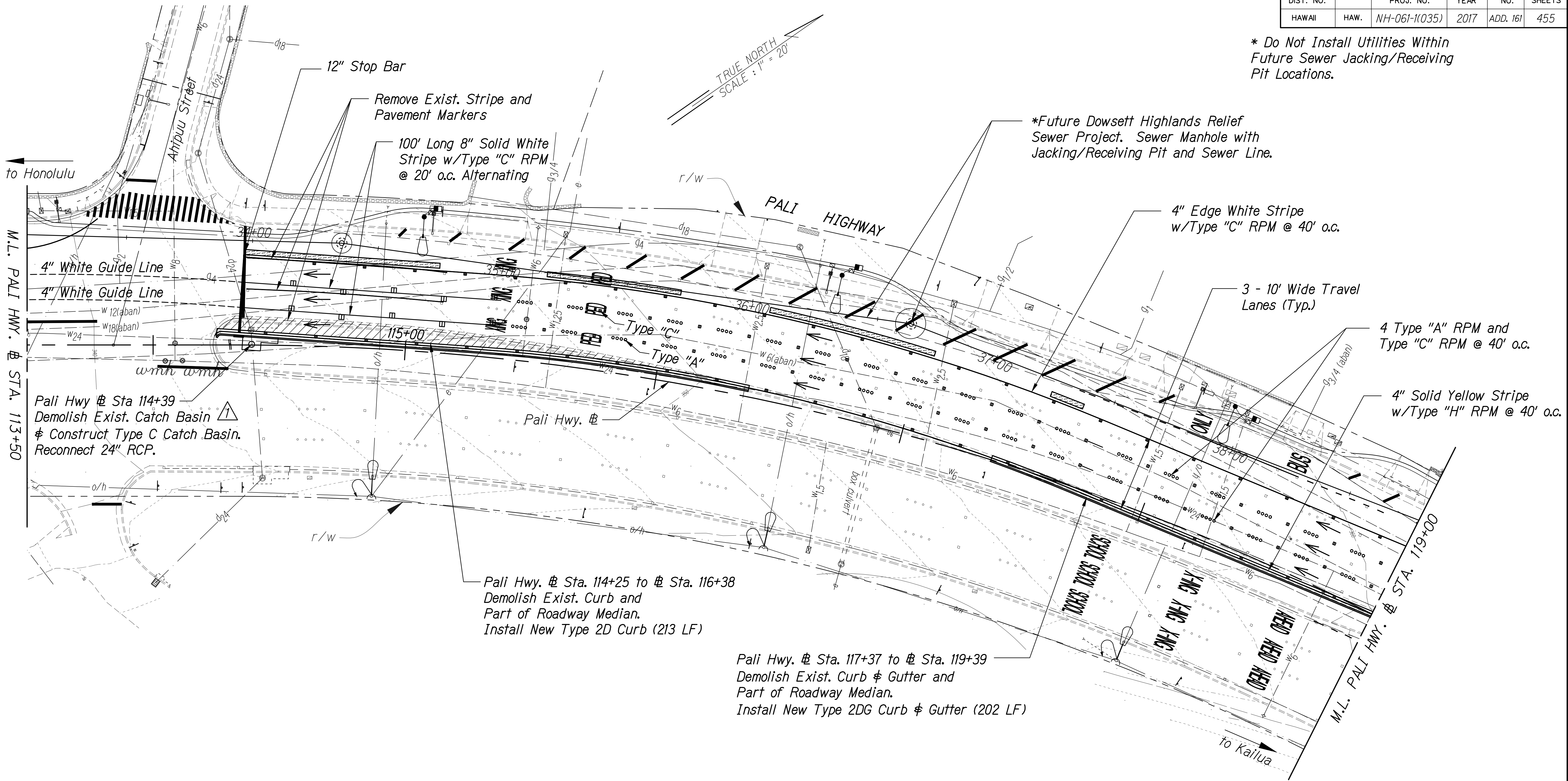
This work was prepared by me
or under my supervision.
Exp. 04-30-18

Wesley R. Segowa & Associates, Inc.

DATE	DESCRIPTION
5/15/17	Added manhole callout and BWS signature block
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION TRAFFIC CONTROL PLAN PALI HIGHWAY RESURFACING <i>Waakanaka Street to Kamehameha Highway</i> PALI HIGHWAY LIGHTING REPLACEMENT <i>Vineyard Boulevard to Kamehameha Highway</i> <i>Federal Aid Project No. NH-061-1(035)</i> Scale: 1"=20' Date: February 2017	
SHEET No. CR8 OF 11 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 161	455

* Do Not Install Utilities Within Future Sewer Jacking/Receiving Pit Locations.

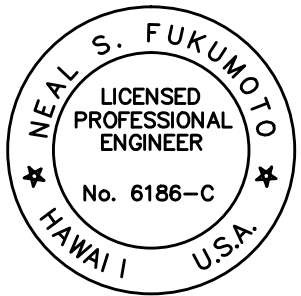


Legend:

- 4" HMA Mix IV Over 6" ACB
See Detail 1/Sheet CBI
- Portable Concrete Barrier
- Portable Water-Filled Barrier
- ABSORB-350 End Treatment (31 LF)
- Direction of Temporary Traffic Lane

TRAFFIC CONTROL & MEDIAN WORK PLAN
NUUANU AVE. TO DOWSETT AVE.

Scale: 1"=20'



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Exp. 04-30-18

Wesley R. Segawa & Associates, Inc.

5/15/17	Revised Callout
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
TRAFFIC CONTROL PLAN	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Scale: 1"=20'	Date: February 2017
SHEET No. CR10 OF 11 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 212	455

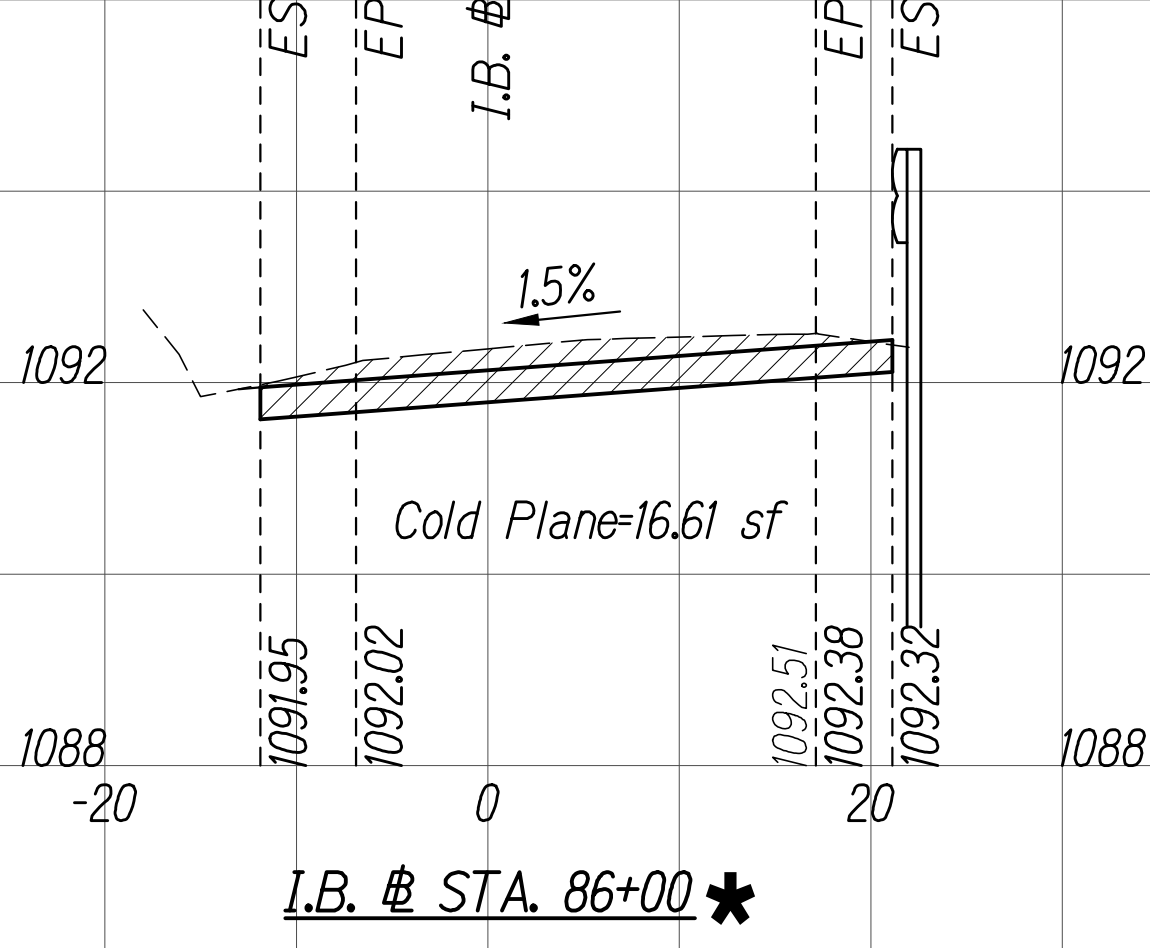
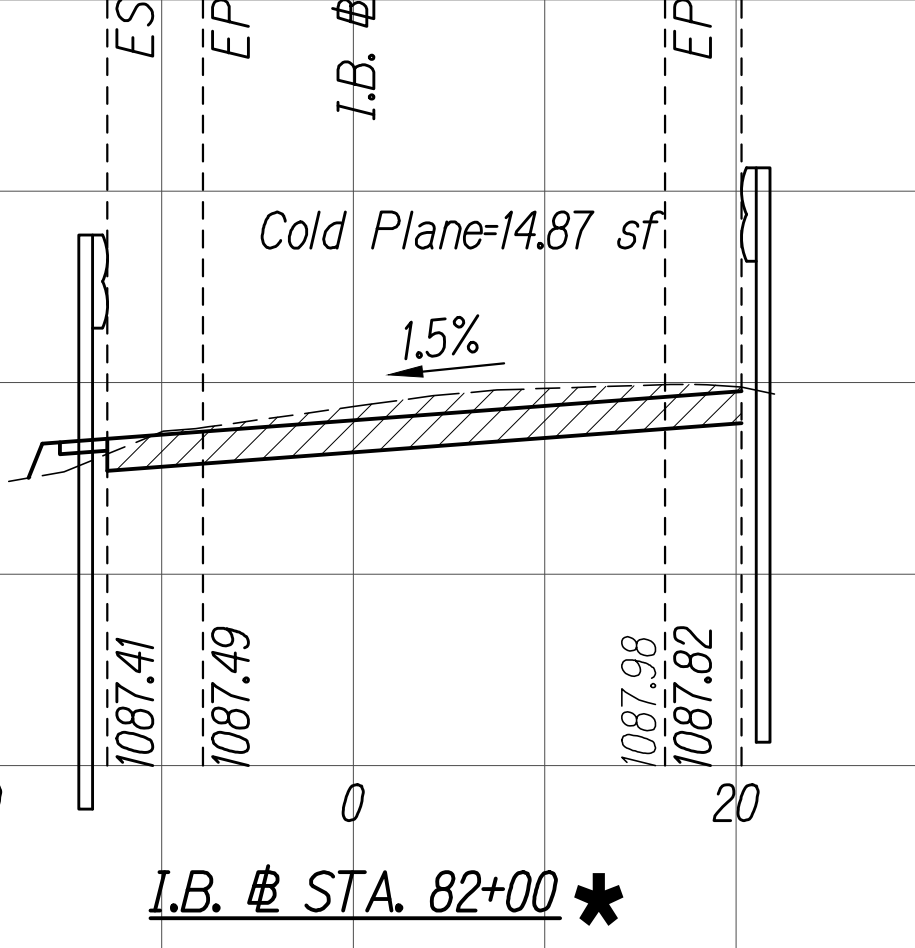
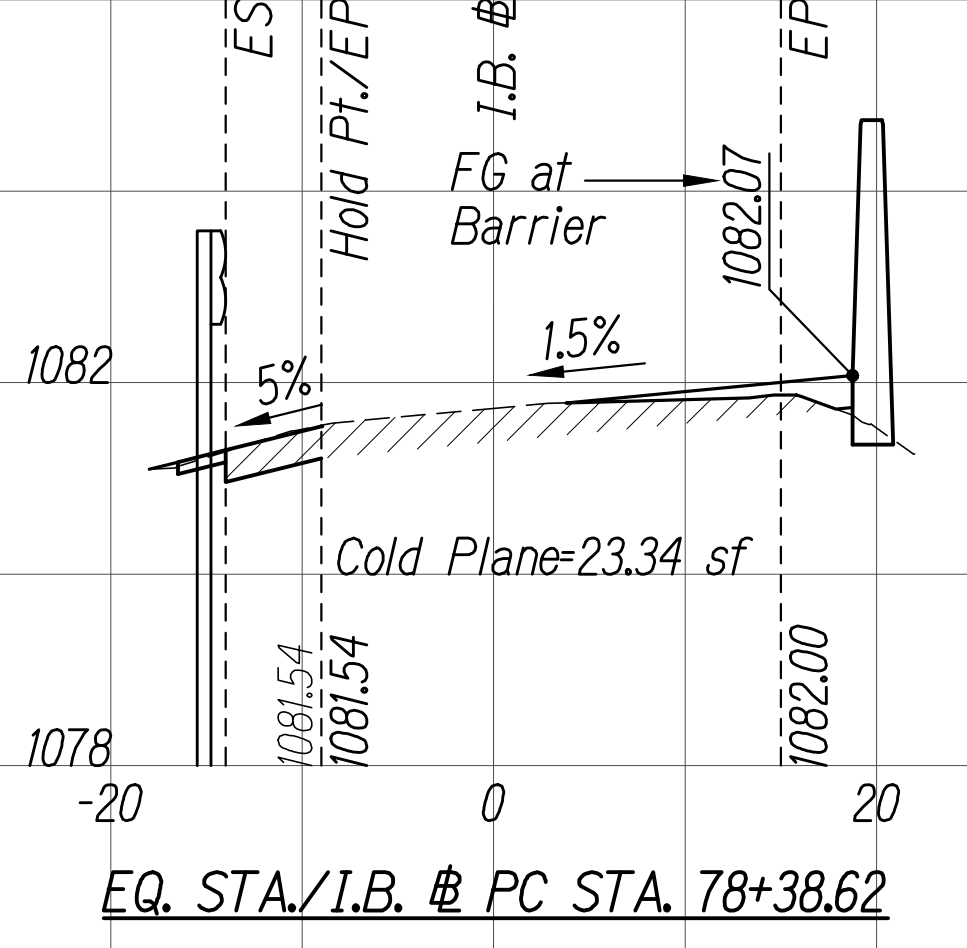
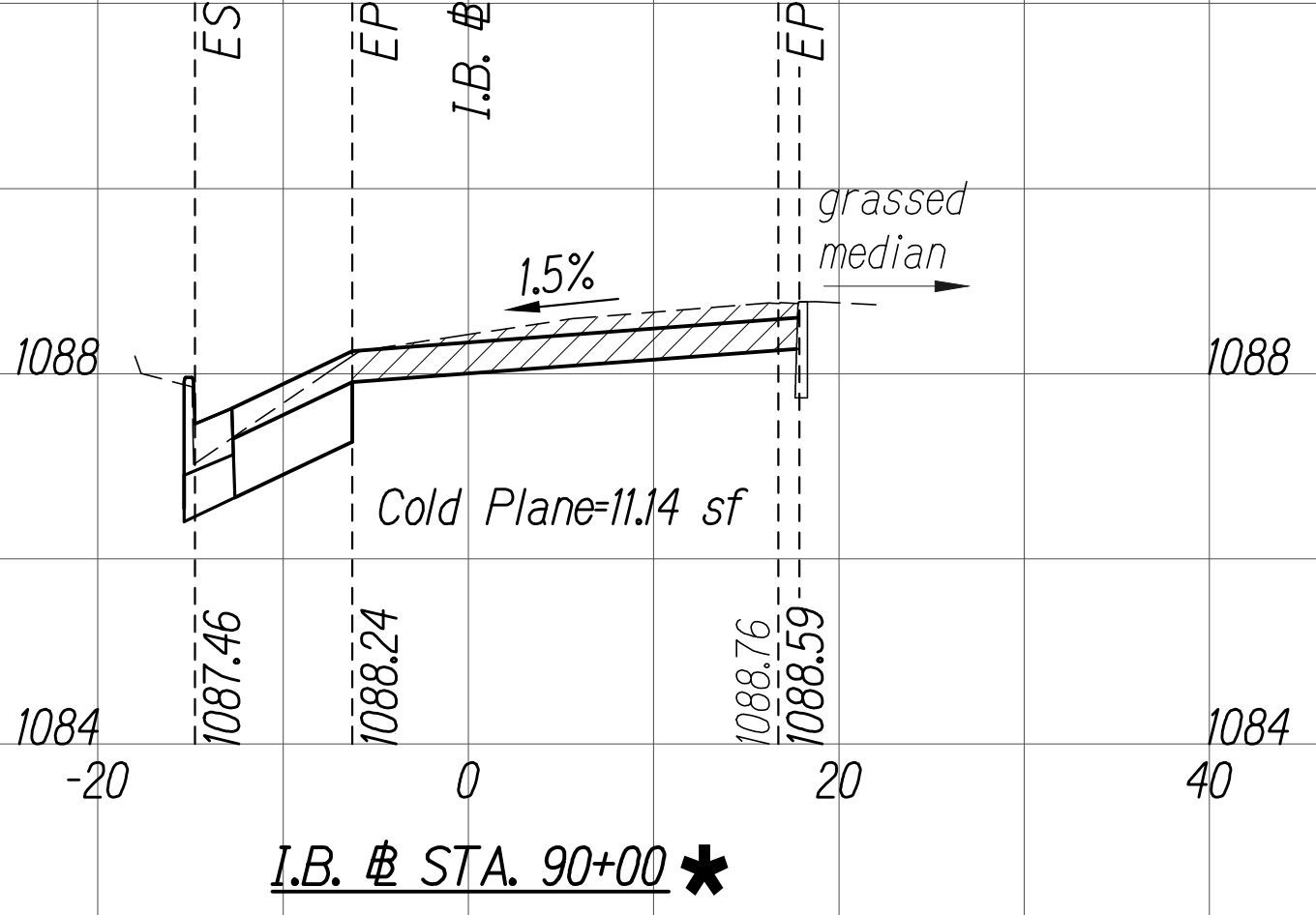
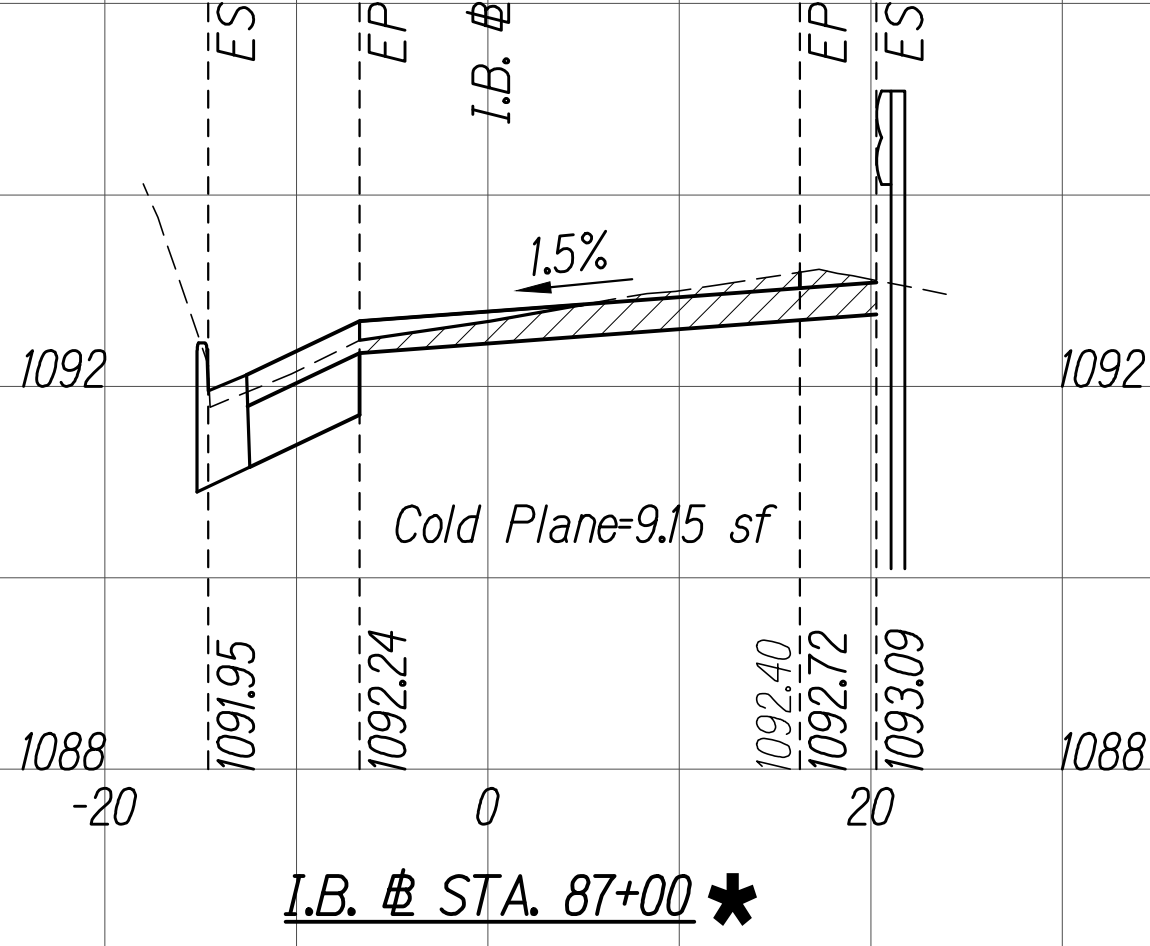
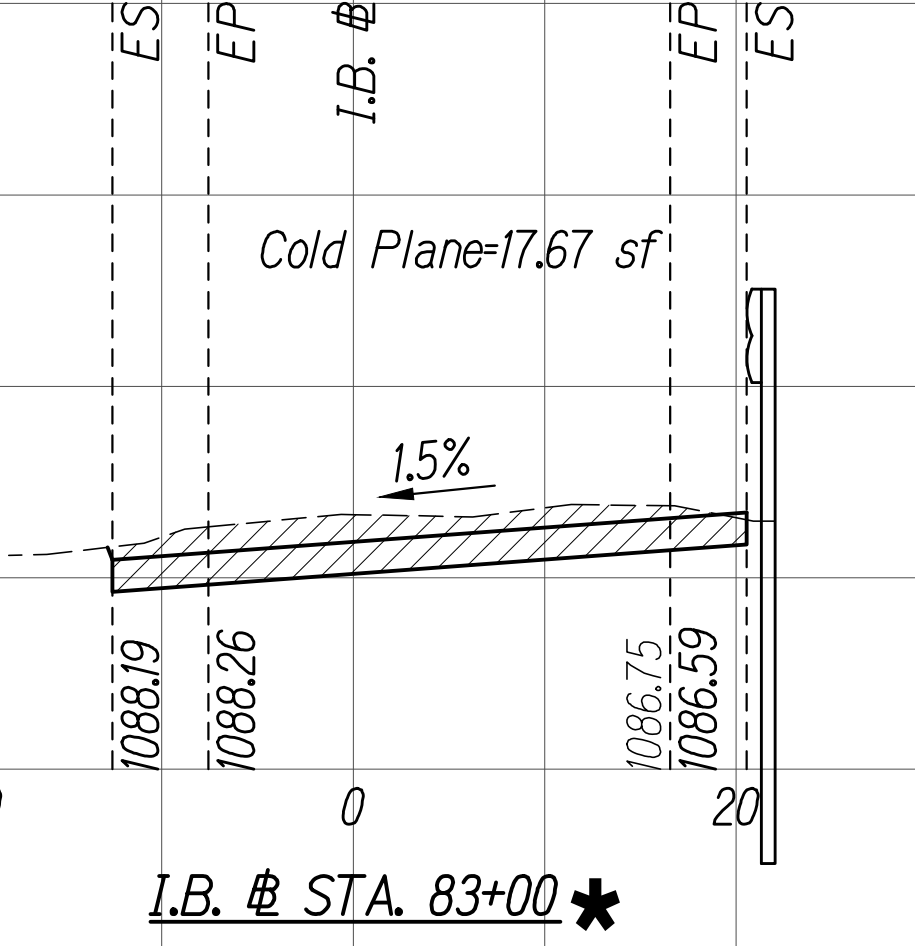
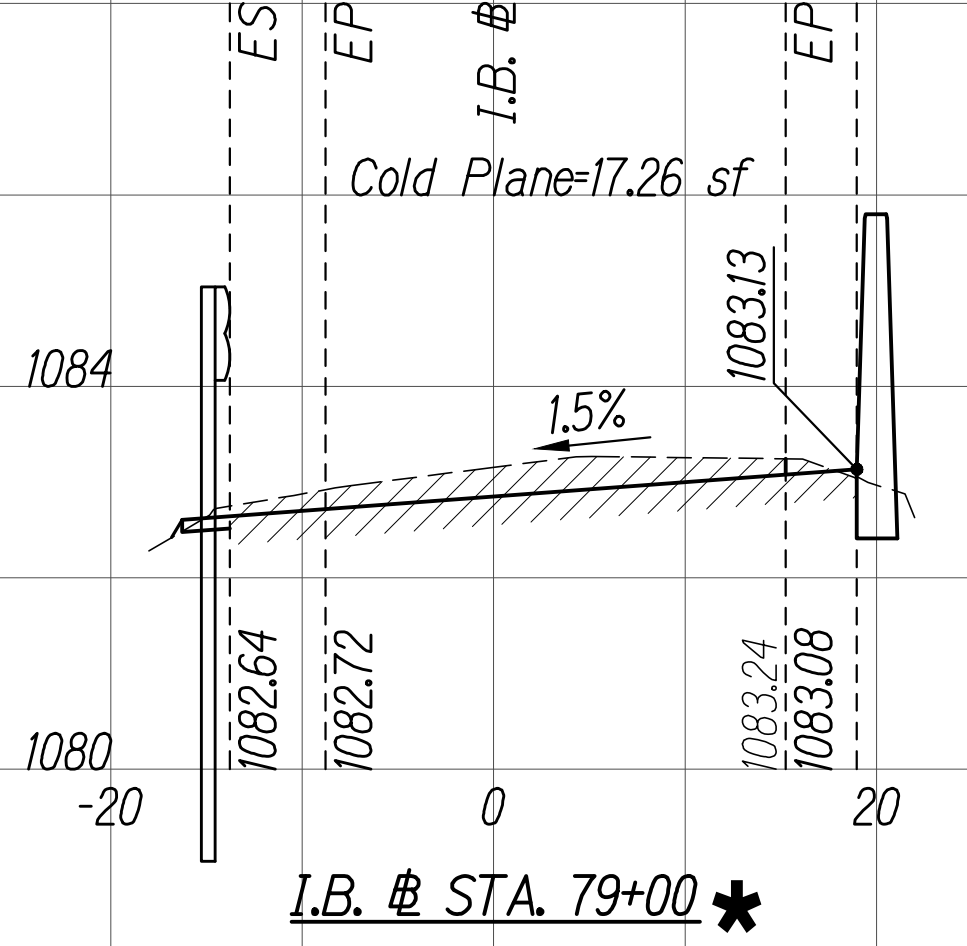
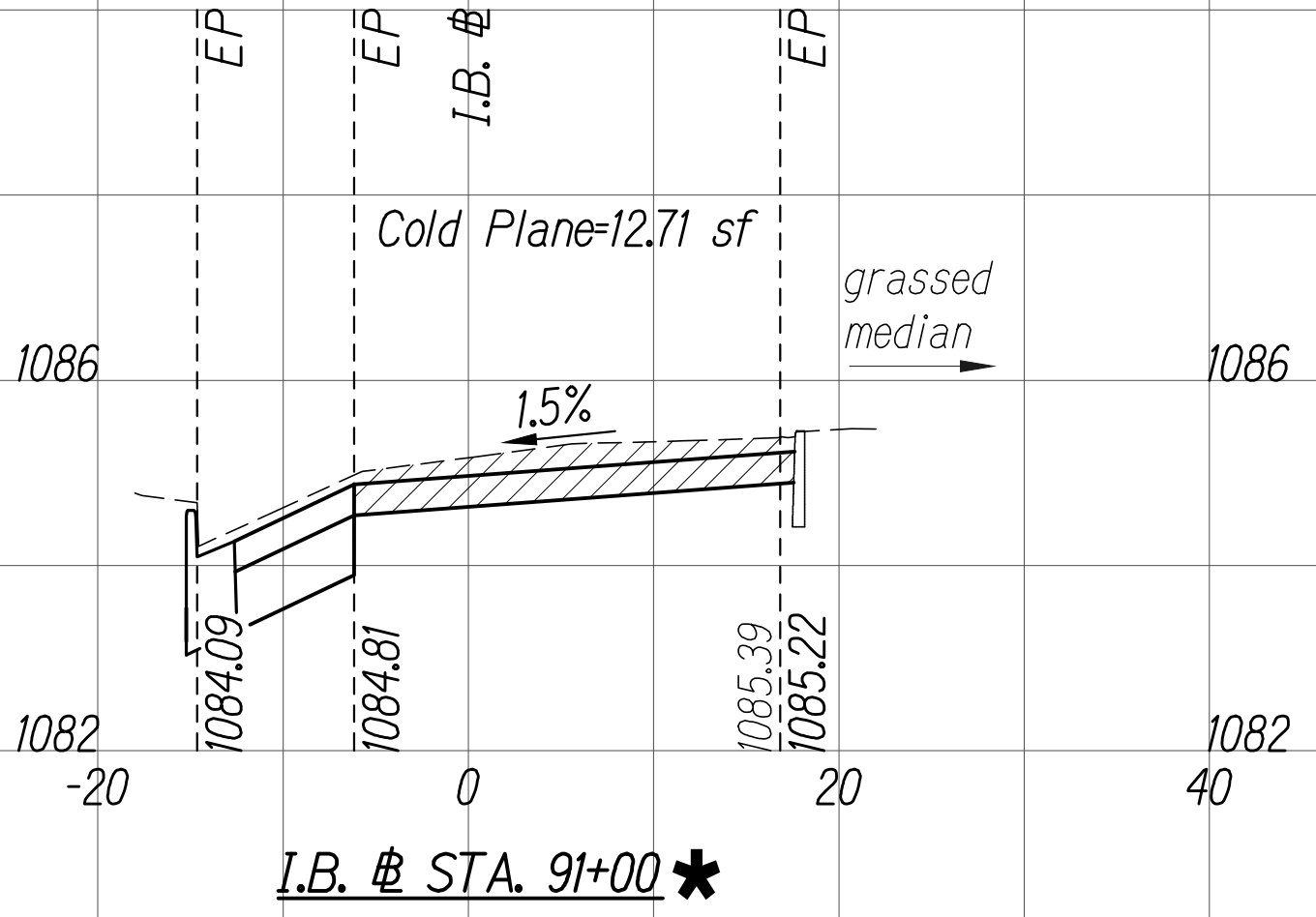
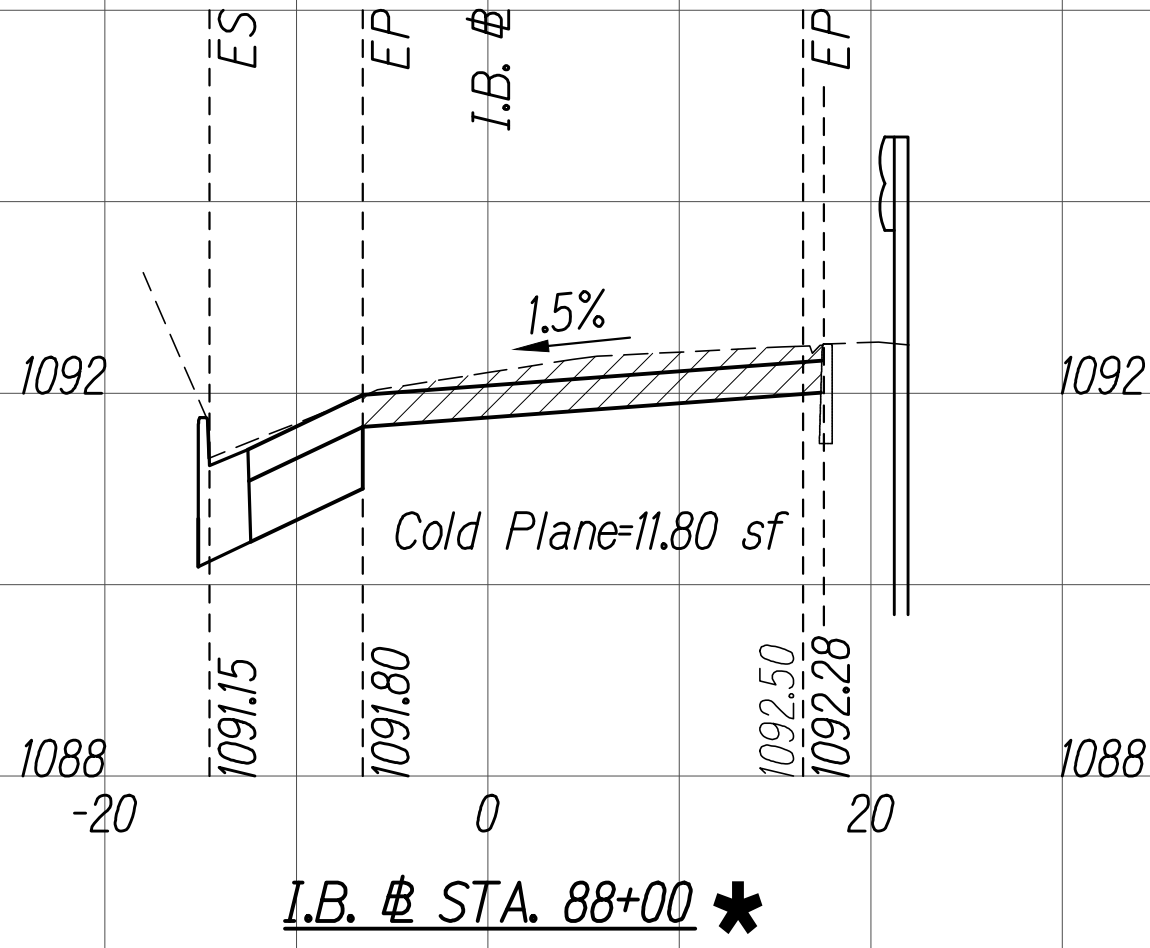
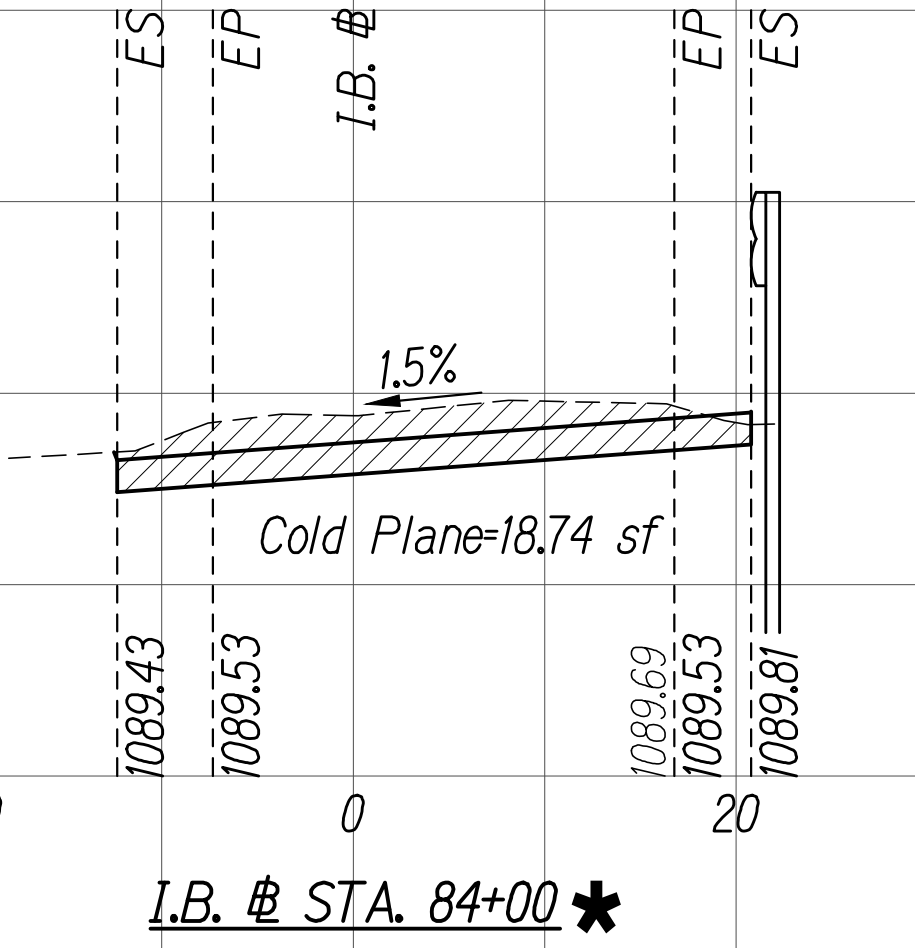
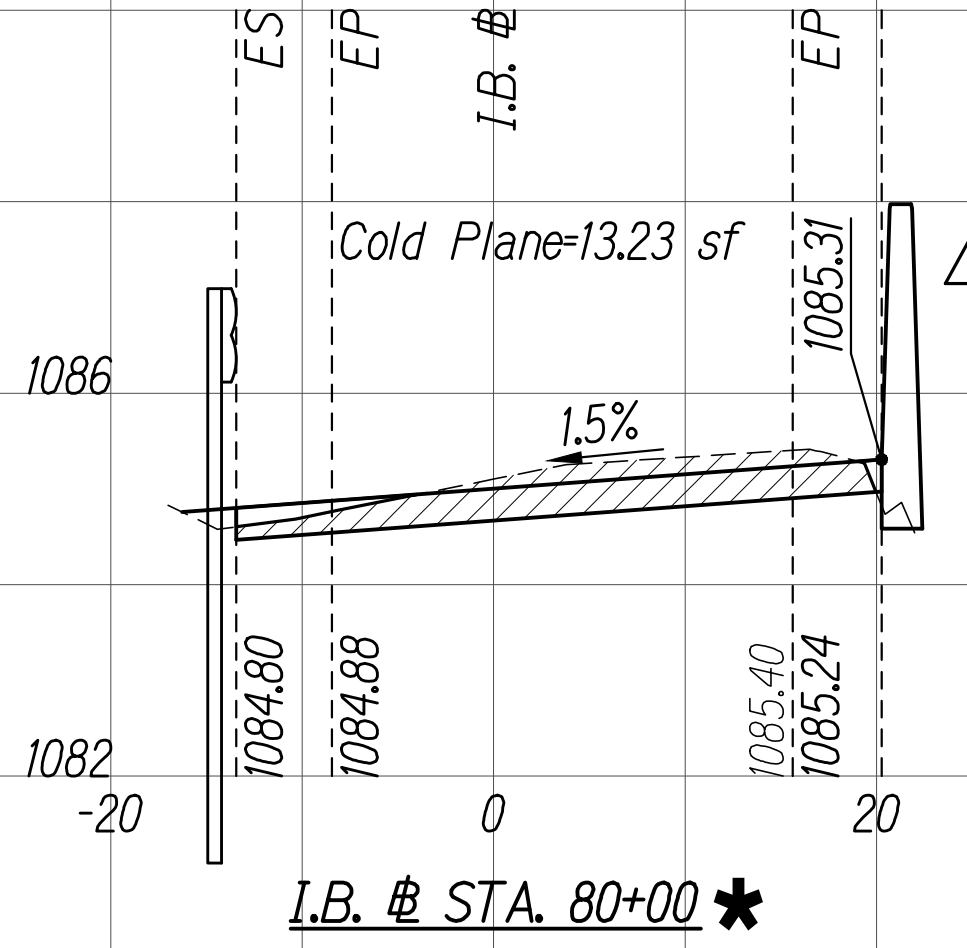
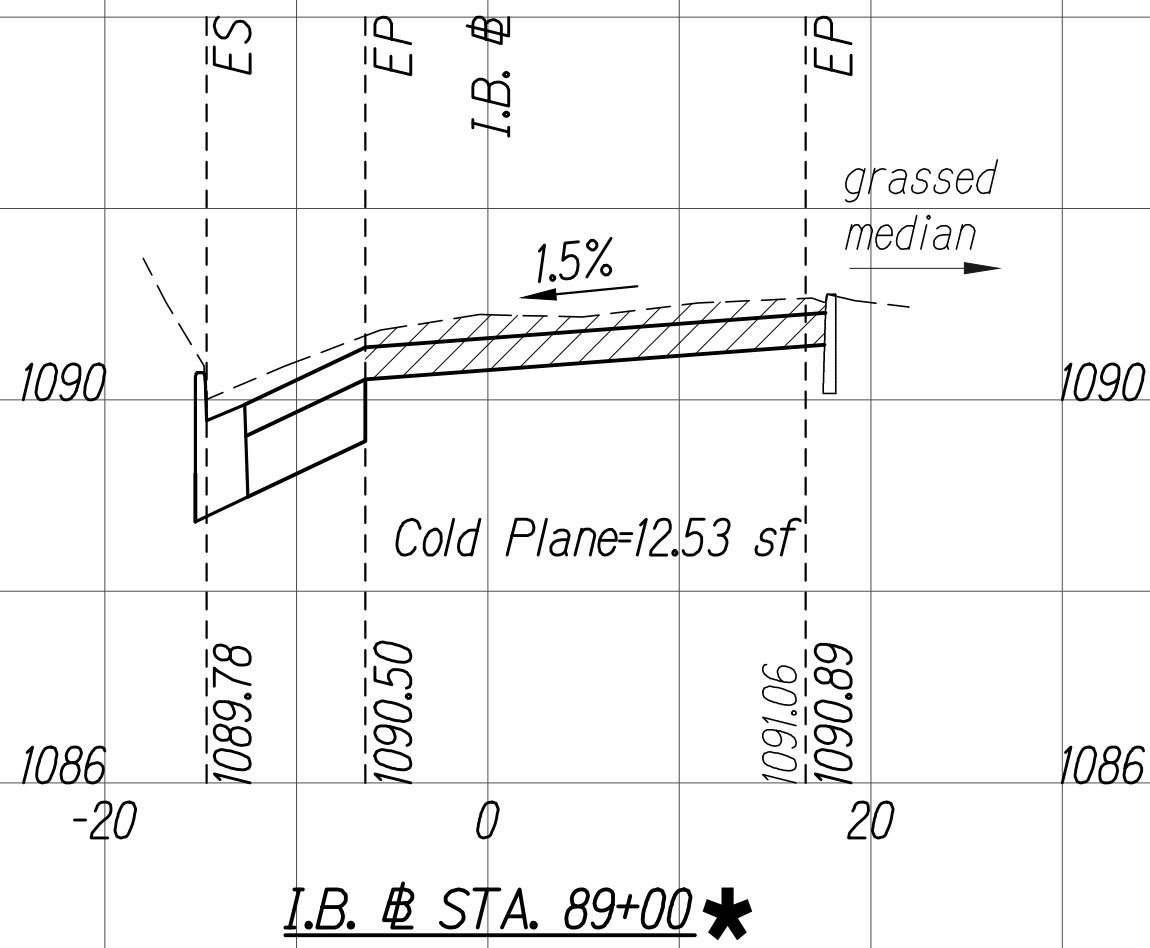
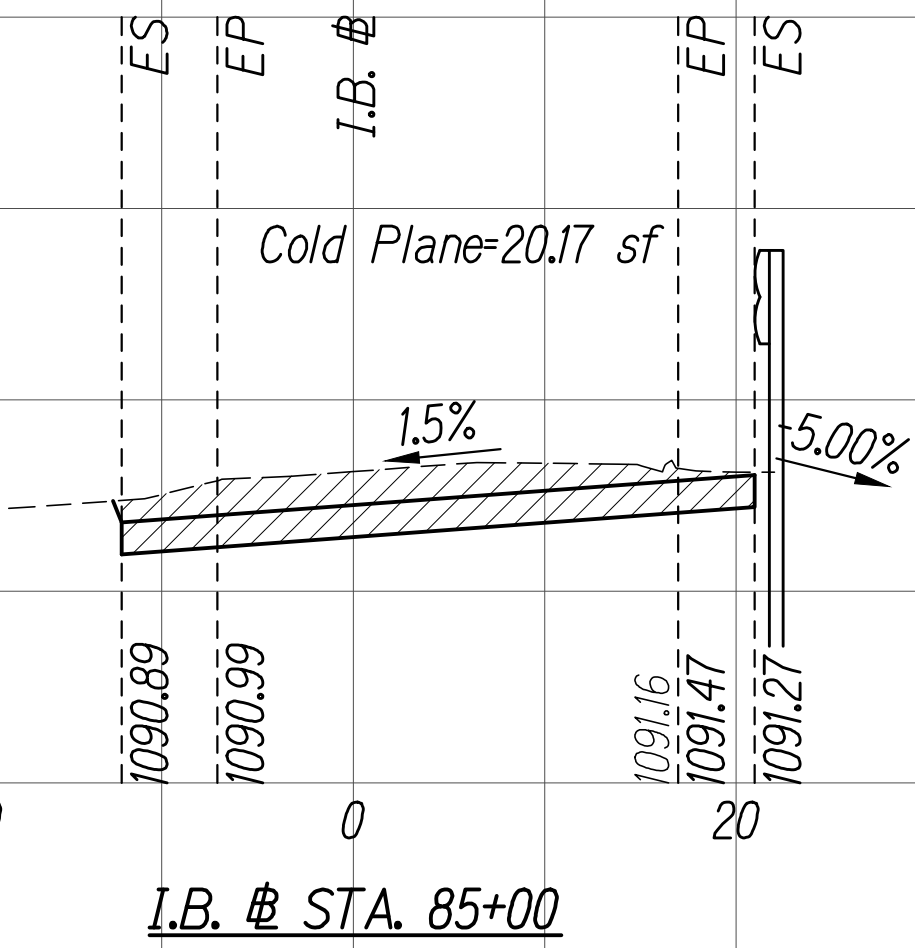
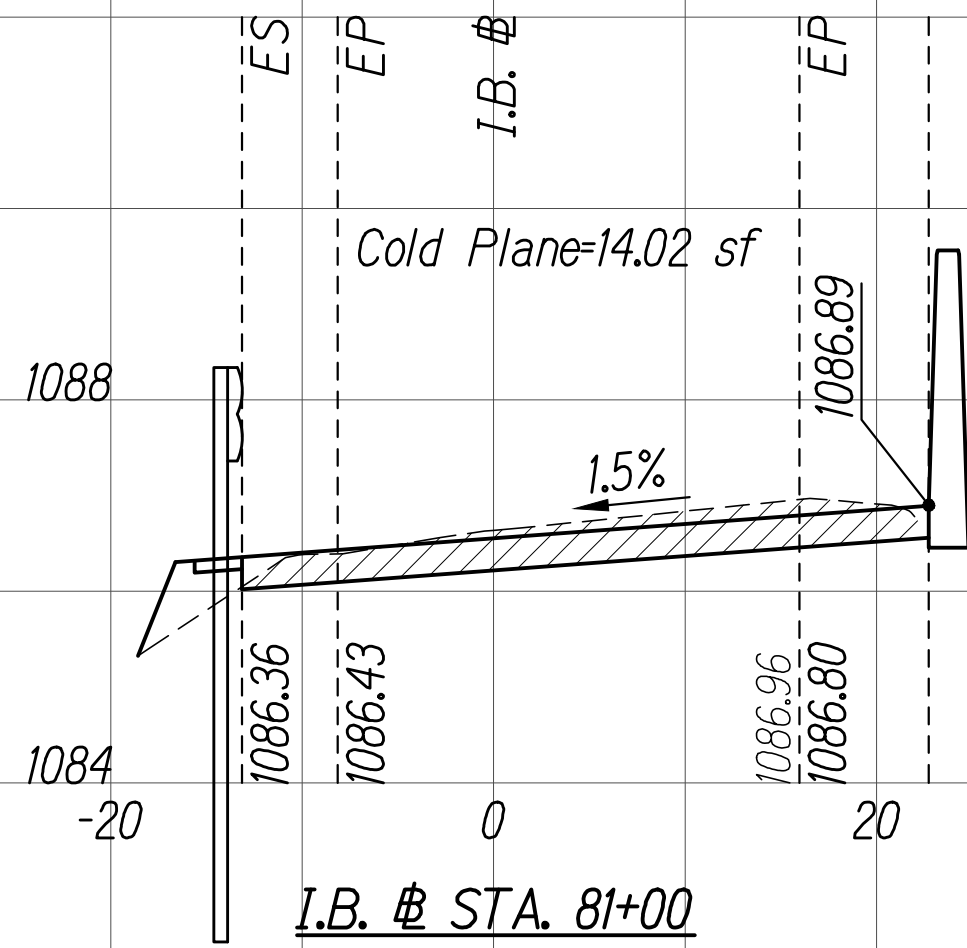
NOTES:

1. Full Pavement Reconstruction areas not shown in sections. See Roadway Plans for locations and quantities.

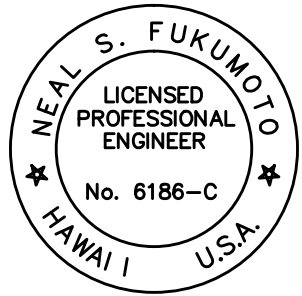
Legend:

- Cold Plane (CP)
- 4" HMA Mix IV Pavement
- ACB Pavement

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

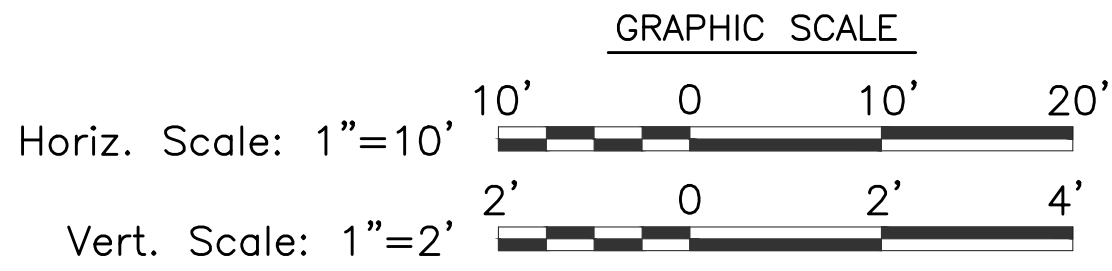


DATE	DESCRIPTION
5/15/17	Revised Elevation



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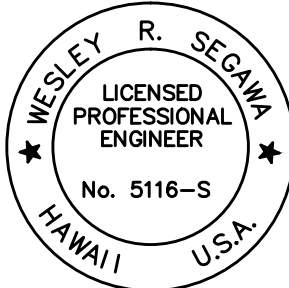
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				DRAWN BY	_____
				TRACED BY	_____
				DESIGNED BY	_____
				CHECKED BY	_____



STRUCTURAL INDEX TO DRAWINGS	
SHEET	DESCRIPTION
S0.1	STRUCTURAL INDEX TO DRAWINGS
S0.2	STRUCTURAL NOTES
S0.3	STRUCTURAL NOTES
S0.4	STRUCTURAL SUMMARY TABLES
SB0	CONCRETE BARRIER SCHEDULE
SB1	CONCRETE BARRIER TYPE 60S
SB2	CONCRETE BARRIER DETAILS
SB3	CONCRETE BARRIER TYPE 60G
SB4	CONCRETE BARRIER DETAILS
SB5	CONCRETE BARRIER OVER CATCH BASIN
SB6	CONCRETE BARRIER TYPE 60SF
SB7	CONCRETE BARRIER TYPE 60GE
SB8	GLARE SCREEN ON EXISTING BARRIER
SB9	CONCRETE BARRIER ON EXISTING BRIDGE
SB10	CONCRETE BARRIER TO QUADGUARD AT ST. STEPHENS DRIVEWAY INTX.
SD1, SD1.1	CATCH BASIN RECONSTRUCTION - LOWER PALI BL STA. 43+50
SD2, SD2.1	CATCH BASIN RECONSTRUCTION - LOWER PALI BL STA. 46+17
SD3, SD3.1	CATCH BASIN RECONSTRUCTION - LOWER PALI BL STA. 56+48
SD4, SD4.1	CATCH BASIN RECONSTRUCTION - LOWER PALI BL STA. 61+02.5
SD5, SD5.1	CATCH BASIN RECONSTRUCTION - LOWER PALI BL STA. 65+23
SD6, SD6.1	CATCH BASIN RECONSTRUCTION - LOWER PALI BL STA. 72+57
SD7, SD7.1	CATCH BASIN RECONSTRUCTION - O.B. BL STA. 65+40
SD8, SD8.1	CATCH BASIN RECONSTRUCTION - O.B. BL STA. 69+35
SD9, SD9.1	CATCH BASIN RECONSTRUCTION - O.B. BL STA. 73+32
SD10, SD10.1	CATCH BASIN RECONSTRUCTION - PALI BL STA. 103+06
SD11, SD11.1	CATCH BASIN RECONSTRUCTION - PALI BL STA. 106+48
SD12, SD12.1	CATCH BASIN RECONSTRUCTION - PALI BL STA. 43+48
SD13, SD13.1	CATCH BASIN RECONSTRUCTION - PALI BL STA. 48+02
SD14, SD14.1	CATCH BASIN RECONSTRUCTION - PALI BL STA. 51+48
SD15, SD15.1	CATCH BASIN RECONSTRUCTION - PALI BL STA. 54+99
SD16, SD16.1	CATCH BASIN RECONSTRUCTION - PALI BL STA. 59+00
SD16.2, SD16.3	CATCH BASIN RECONSTRUCTION - PALI BL STA. 80+00
SD17, SD17.1	CATCH BASIN RECONSTRUCTION - O.B. BL STA. 140+38
SD18, SD18.1	CATCH BASIN REPLACEMENT - O.B. BL STA. 143+75



STRUCTURAL INDEX TO DRAWINGS	
SHEET	DESCRIPTION
SD19	CATCH BASIN RECONSTRUCTION - PALI BL STA. 199+90.5
SD20	CATCH BASIN RECONSTRUCTION DETAILS
SD21	CATCH BASIN RECONSTRUCTION DETAILS
SD22	CATCH BASIN RECONSTRUCTION DETAILS
SD23	CATCH BASIN RECONSTRUCTION DETAILS
SD24	CATCH BASIN RECONSTRUCTION DETAILS
SL1	LIGHT POLE BASE AT BARRIER DETAIL
SL2	LIGHT POLE PEDESTAL COMPOSITE FIBER STRENGTHENING
SL3	LIGHT POLE PEDESTAL COMPOSITE FIBER STRENGTHENING
SL4	LIGHT POLE PEDESTAL COMPOSITE FIBER STRENGTHENING
SL5	LIGHT POLE PEDESTAL COMPOSITE FIBER STRENGTHENING
SL6	LIGHT POLE PEDESTAL COMPOSITE FIBER STRENGTHENING
SL7	LIGHT POLE PEDESTAL COMPOSITE FIBER STRENGTHENING
SL8	MISCELLANEOUS LIGHT POLE PEDESTAL DETAILS
SL9	NEW LIGHT STANDARDS @ HI OVERPASS
SL10	NEW LIGHT STANDARD @ IB STA 128+68.4 (EX. BRIDGE #6)
SW1	Type "C" Manhole



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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 240	455

5/15/17	Index Revised
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
STRUCTURAL INDEX TO DRAWINGS	
PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-1(035) Date: February 2017	

GENERAL STRUCTURAL NOTES

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 241	455

1. General Specifications: Hawaii Department of Transportation, Standard Specifications for Road, Bridge and Public Works Construction, 2005, together with Special Provisions prepared for this contract.

2. Design Specifications and Standard Plans:

- (A) AASHTO 2012 LRFD Bridge Design Specifications (Fifth Edition) and its subsequent interim specifications with interim supplements and modifications by the HDOT Highways Division.
- (B) HDOT Document dated August 8, 2014 with subject title "Design Criteria for Bridges and Structures".
- (C) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals (6th Edition) and its subsequent interim specifications with 2015 interm revisions & interim supplements and modifications by the HDOT Highways Division.
- (D) State of Hawaii, Department of Transportation (HDOT), Highways Division, Design Branch Standard Plans 2008, refer to all structures in general, except for modifications as may be required for special conditions. For such modifications refer to corresponding detailed drawings.
- (E) Hawaii Department of Transportation (HDOT), Hawaii Standard Specifications for Road and Bridge Construction, 2005, together with Special Provisions prepared for this contract.

3. Loads:

- (A) Live Load: AASHTO HL-93 Truck Loading.
- (B) Utility Load: An allowance of 12 plf on the existing bridges on the Kailua side of the tunnels for Utility Loads has been provided for in the design.
- (C) Railing Test Level: TL-3.
- (D) Wind:
- (1) Basic Wind Speed ----- 105 mph
- (2) Recurrence Intervals:
- (a) Traffic signal structures ----- 50 years
- (b) Luminaire support structures < 50' in height - 25 years
- (3) Fatigue Category ----- I
- (4) Maximum Posted Speed ----- 45 mph.
- (5) Natural wind gusts are considered for all sign & traffic signal structures.
- (6) Sign & traffic signal structures are designed for a truck induced gust based on a truck speed of 20 mph over the maximum posted speed.



4. Concrete Strengths Shall Be As Shown Below Unless Otherwise Noted:

Item No.	Structure	Maximum Aggregate Size	Compressive Strength, f'c (28 Days)	Cementitious Material Content (lbs/cy)
(1)	Catch Basins & Barrier Seats --see Notes (i), (ii), (iii)	1/2"	4000 psi	625 max
(2)	Median Barriers, Glare Screen --see Notes (i), (ii)	1/2"	4000 psi	675 min
(3)	Drilled Shaft --see Notes (i), (ii)	1/2"	4500 psi	670 max
(4)	PCC Pavements	3/4"	450 psi flex @ Open to traffic 650 psi flex @ 14 days	610 min
(5)	CLSM	-	50-300psi	-
(6)	Others --see Notes (i), (ii)	1/2"	4000 psi	550 min

Notes:

- All concrete noted above shall have a maximum W/C Ratio of 0.45.
- (i) A shrinkage reducing admixture shall be added to the concrete mix for Items (1), (2), (3), (6). The minimum dosage shall be 128 ounces per cubic yard of concrete.
- (ii) A migrating corrosion inhibitor amine arboxylate water-based admixture shall be added to the concrete mix for Items (1), (2), (3), (6). The minimum dosage shall be 1.5 pints per cubic yard of concrete.
- (iii) A structural, alkalai-resistant glass fiber or approved equal shall be added to the concrete mix for Item (1) at a dosage of 7 lbs per cubic yard.
- The use of calcium chloride is prohibited.

5. Concrete Finish:

- (A) Top surface of catch basin top slabs shall follow HDOT Standard Specifications Section 411.03(M)(7).
- (B) All concrete surfaces other than the top of catch basin top slabs shall follow HDOT Standard Specifications Section 503.03(M).

6. Reinforcement:

- (A) All reinforcing steel shall be ASTM A615 Grade 60 unless otherwise noted.
- (B) Reinforcing steel shall be ASTM A706 where welding is required.
- (C) Concrete cover measured from the surface of the concrete to the face of any reinforcing bar shall be as follows, except as otherwise shown:
- (i) Concrete cast against and permanently exposed to earth = 3".
- (ii) All others unless otherwise noted = 2".
- (D) Reinforcing bars shall be detailed in accordance with the latest edition of the A.C.I. Detailing Manual unless otherwise noted.
- (E) Minimum clear spacing between parallel bars shall be 1 1/2 times the diameter of bars (for non-bundled bars). In no case shall the clear distance between the bars be less than 1 1/2 times the maximum size of the coarse aggregate or 1 1/2", which ever is larger.

6. Reinforcement (Cont.):

- (F) All dimensions relating to reinforcing bars are to centers of bars unless otherwise noted.
- (G) Reinforcing bars shall be securely tied at all intersections and lap splices except where the spacing of intersections is less than one foot in each direction, in which case alternate intersections shall be tied.
- (H) All new reinforcing for catch basins shall be uncoated corrosion resistant bars conforming to ASTM A1035/AASHTO MP18, Type CS, Grade 100 MMFX Steel Corp or approved equal.
- (I) Longitudinal dowels in barriers shall be smooth uncoated corrosion resistant (CRR) bars, ASTM A1035/AASHTO MP 18, Type CS, Grade 100 when specified for high corrosive environments or smooth stainless steel bars, ASTM A276, Type 316, Condition S as indicated in the contract documents.
- (J) Lap splices shall not be within 2 feet of catch basin walls.

7. Structural Steel

- (A) Post-Installed anchor rods which connect steel to concrete shall be high-strength all thread rods conforming to ASTM F1554, Grade 105 as noted in contract documents.
- (B) F1554 rods, drilled and epoxied, shall be located a minimum distance of 7" from any joint. Adjust location as approved by the Engineer.
- (C) Headed bolts which connect steel to steel and designated as high strength shall conform to ASTM F3125 Grade A325 Type 1. Bolts shall be snug tightened unless otherwise shown on plans. Non-high strength headed bolts shall conform to ASTM A307.
- (D) All nuts shall be ASTM A563 DH and all hardened washers shall be ASTM F436-1.
- (E) All hardware, including bolts, anchor bolts, nuts, and washers shall be ASTM F2329 hot-dip zinc coated.
- (F) Steel plates, splice plates, cover plates, and base plates shall conform to ASTM A709, f_y = 36 ksi.
- (G) Angles, wide flange sections and other sections shall meet the longitudinal Charpy v-notch requirements for a non-fracture critical member in Zone 1.
- (H) All new steel members shall be ASTM F2329 hot-dip zinc coated after fabrication.
- (I) All welding shall conform to the latest ANSI/AASHTO/AWS D 1.5 Bridge Welding Code. Unless noted otherwise, all welding shall be shielded arc welding done with E70 electrodes.
- (J) All welding shall be done to minimize distortion.
- (K) All aluminum shapes, extrusions, sheets, and plates shall be alloy 6061-T651 or 6061-T6.

SURVEY PLAN	PLOTTED BY	DATE
DRAWN BY		
DESIGNED BY		
CHECKED BY		
NOTE BOOK		
SA		

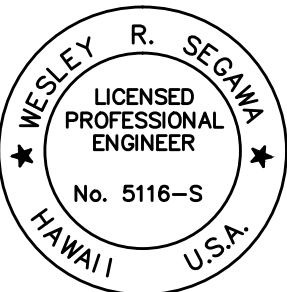
Abbreviations:

&	And
@	At
Ⓢ	Centerline
B	Bottom
CB/cb	Catch Basin
Clr.	Clear
Conc.	Concrete
Cont.	Continuous
Dia.	Diameter
Elev.	Elevation
EW	Each Way
EF	Each Face
Exist.	Existing
FG	Footing
FRP	Fiber Reinforced Polymer
H	Horizontal
LPB	Light Pole Base
LP.	Light Pole

Abbreviations (Continued):

max	Maximum
MH	Manhole
Min	Minimum
O.C.	On Center
Pl	Plate
R	Radius
RCP	Reinforced Concrete Pipe
Reinf.	Reinforcing
T	Top
Trans.	Transformer
T&B	Top and Bottom
Typ.	Typical
V/Vert	Vertical
w/	With

Detail Number
Source Page
Detail Page



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Exp. 04-30-18

Wesley R. Segawa & Associates, Inc.

5/15/17	Revised Notes and Abbreviations Added
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION STRUCTURAL NOTES PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-1(035) Date: February 2017	

SHEET No. S02 OF 4 SHEETS

ADD. 241

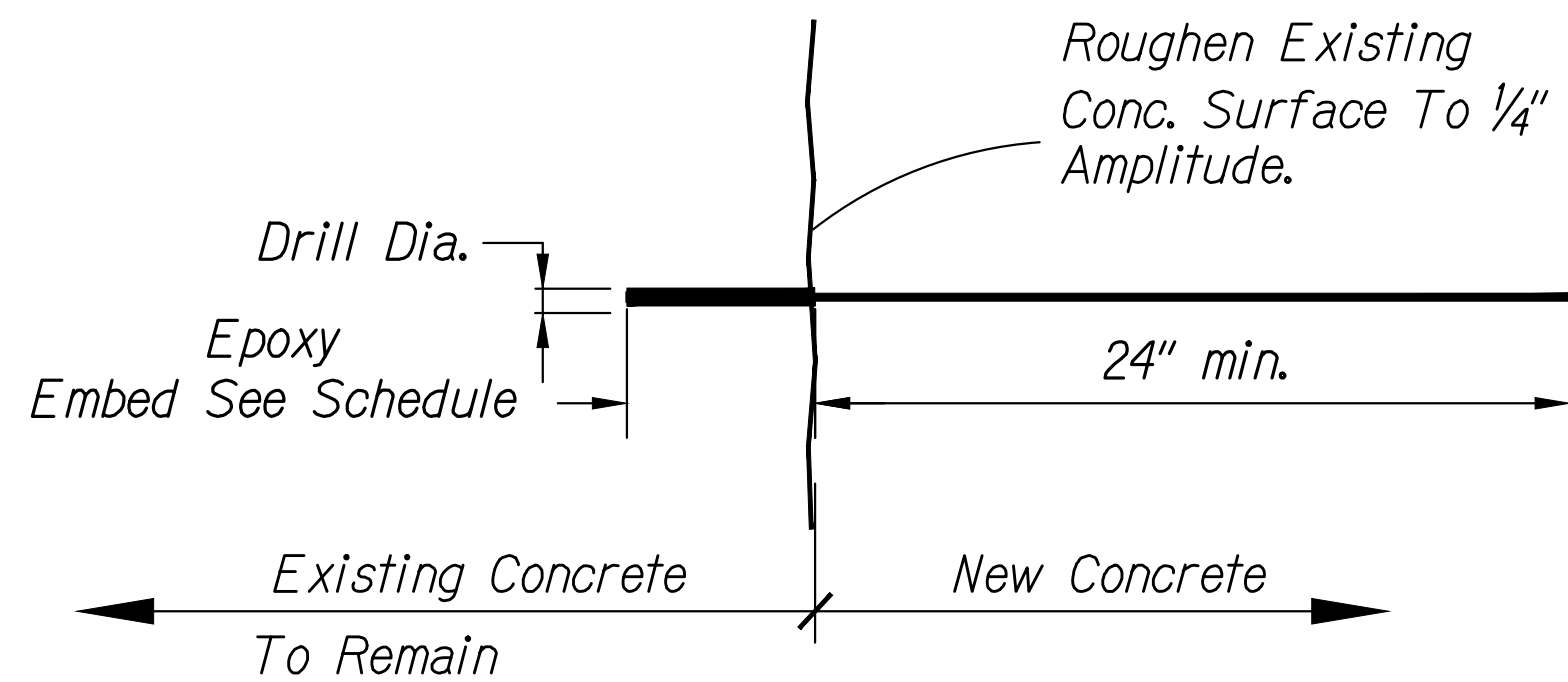
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 242	455

8. Adhesive Anchors:

-  (A) Holes shall be clean & sound, in accordance with epoxy manufacture's requirements, and free of standing water. Blow/brush/blow with oil free compressed air (3 times min.).
- (B) Epoxy shall be 2 component, amine based, moisture insensitive, ASTM C-881 and gel Or non-sagging paste such as, HILTI-RE-500-SD, Simpson Set-XP or approved equal. Manufacturer's recommendations shall be followed.
- Comp. Strength 10,000 Psi min.
Tensile Strength 4,700 Psi min.
Bond Strength 3,000 Concrete To Concrete min.
- (C) Fill drilled holes w/epoxy approx. 1/2 full before inserting dowels with a twisting motion.
- (D) The contractor shall refer to Special Provisions 656 "Drilling Holes & Installing Dowel Reinforcing Bars" & 674 "Concrete Retrofit".
- (E) Angled bars shall be pre-bent before epoxying into existing concrete.
- (F) Epoxy shall reach full tensile strength of bar being anchored before pouring concrete

DRILLED HOLE SCHEDULE

SIZE OR DIA.	DRILL DIA.	EMBEDMENT DEPTH
#4 OR 1/2"	5/8"	5"
#5 OR 5/8"	3/4"	6"
#6 OR 3/4"	7/8"	7"



9. Glass Fiber Reinforced Polymer Bar:

- (A) Glass Fiber Reinforced Polymer (GFRP) rebar shall have a minimum tensile strength of 110 ksi for 1/2" bar and smaller. All others shall have a minimum tensile strength of 95 ksi. The allowable stress is equal to 1/4 of the tensile strength.
- (B) The modulus of elasticity of the GFRP bar shall be a minimum of 5,900,00 psi.
- (C) Minimum concrete cover for the GFRP bars shall be 3/4" unless otherwise noted.
- (D) Minimum lap splice lengths for the GFRP bars shall be 42 bar diameters unless otherwise noted.
- (E) All GFRP bars shall be securely tied in place.
- (F) The GFRP bars may be cut in the field with a masonry or diamond blade.
- (G) All work including materials and bends shall follow Manufacturer's recommendations.

10. Construction Notes:

- (A) The Contractor shall verify all site conditions to confirm existing dimensions, elevations and azimuths. Conditions for roadway locations, gutters, curbs, sidewalks, etc., may differ from those shown. The contractor shall report any discrepancies in writing to the Engineer before commencing work or ordering materials.
- (B) Contractor shall verify the location of all utility lines and notify the respective owners before commencing with any excavation, temporary piling, drilling or sheeting. The Contractor shall be solely responsible for the protection of adjacent properties, utilities and existing and new structures from damage due to construction. Repairing any damage shall be at the Contractor's own expense, to the satisfaction of the Engineer.
- (C) Original construction documents for Pali Highway structures are available from the State of Hawaii Department of Transportation and shall be used to confirm existing details or original construction.
- (D) Except as otherwise noted, all vertical dimensions are measured plumb.
- (E) In general, top of new concrete catch basin shall be constructed to follow the existing roadway vertical & horizontal curves and superelevations.
- (F) For the installation of anchor bolts for lighting standards, the Contractor shall provide rigid templates to maintain the proper locations and shall protect such anchor bolts at all times during construction.
- (G) For concrete finish see Standard Specifications and Special Provisions.
- (H) Construction joints may be relocated or additional ones added subject to the approval of the Engineer.
- (I) Unless otherwise noted, all exposed concrete edges shall be chamfered 3/4" x 3/4".
- (J) The Contractor shall verify the location and size of all existing reinforcing bars prior to drilling. Cutting or damaging existing reinforcing is not allowed, unless shown on the plans.
- (K) Epoxy shall be able to develop the full strength of the dowels prior to pouring concrete.
- (L) Location of drilled holes shown in plans are approximate. Prior to placing holes in concrete, the Contractor shall locate all reinforcing steel and adjust the location of the holes to clear all reinforcing bars. Final hole locations are subject to the approval of the Engineer.
- (M) Bonding Agent & Anticorrosion coating shall be applied to interfaces between new and existing concrete and to existing reinforcing steel. Use Euclid, DuralPrep AC, Sika Armatec 110 EpoChem or approved equal. Follow all manufacturer's recommendations.
- (N) All holes in concrete created by the removal of conduit supports shall be filled with Euclid, DuralTop, SikaTop 122 Plus or approved equal. Follow all manufacturer's recommendations.
- (O) Holes in concrete for dowels or anchor rods shall be hammer-drilled and shall not shatter existing concrete.
- (P) Holes shall be cleaned in conformance with epoxy manufacturer's requirements. At a minimum, blow/brush/blow holes 3 times with oil-free compressed air.
- (Q) Drilled holes in existing concrete for anchor bolts shall not be left unfilled for more than 8 hours. Epoxy shall develop the full strength of the dowel. Follow all manufacturer's recommendations for the dowel and epoxy.
- (R) Aluminum members and dissimilar metals in contact with structural steel shall be isolated with neoprene material as approved by the Engineer.

10. Construction Notes (Cont.):

- (S) The existing sign and luminaire support members and components may be reused after inspection for soundness, corrosion or other damage and after approval from the Engineer.
- (T) Existing drainage systems will be functional at all times during construction. The Contractor is to furnish materials, equipment, labor, tools and incidentals necessary to accomplish maintenance of flow. The cost shall be incidental to the various Contract

11. Foundations:

- (A) For geotechnical information, see geotechnical engineering report by Geolabs, Inc. dated February 2, 2015. See Geotechnical Sheets.
- (B) A 6-inch min. layer of Structure Backfill Material A shall be placed and compacted to 90%. This shall be paid for under Item No. 206.2000.

12. Reference Drawings:

- (A) For electrical conduit and light standard location details, see Electrical drawings.
- (B) For drain line locations, see Civil drawings.
- (C) For existing utility lines not shown on Structural drawings, see Civil and Electrical drawings.

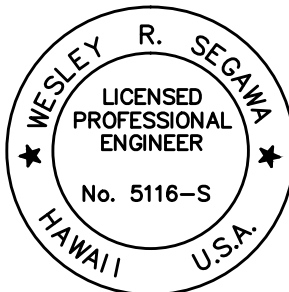
13. Drilled Shaft:

- (A) Drilled shaft concrete shall be 4500 psi strength at 28 days.
- (B) Spacer blocks shall be used to maintain proper position & Clearance of the reinforcement cage within the shaft.
- (C) The Contractor shall refer to Special Provision 511 - "Drilled Shafts".
- (D) All excavation and drilling operation for foundations shall be monitored by the Engineer.
- (E) Bottom of Drilled Shaft tip elevations shall be verified by the Engineer prior to installing reinforcing bar cage.
- (F) Concrete shall not be placed without approval of the Engineer.
- (G) Lap splice length for #5 continuous bars shall be 3'-6". No lap splices are allowed in the upper half of the drilled shaft.
-  (H) Stagger splice points such that not more than 50% of total bars are spliced at any section normal to the axis of the member.
-  (I) Lap splices shall have a minimum offset of 2'-0" vertically between ends of splice points.
- (J) Lap splice length for #4 spiral shall be 1 full turn minimum.
- (K) Each end of the spiral shall have 1-1/2 extra turns with 135° hook around vertical reinforcement.

14. Composite Fiber Strengthening:

-  (A) Fiber Reinforced Polymer (FRP) shall be used to reinforce light pole base pedestals on bridges as indicated in the plans.
- (B) The Contractor shall refer to Special Provision Section 658 "Fiber Reinforced Polymer (FRP) Systems".
- (C) Provide sufficient fiber material to accommodate holes drilled through the fabric.

SURVEY PLOTTED BY	DATE
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DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NA	



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Wesley R. Segawa & Associates, Inc.

5/15/17	 Revised Notes
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION STRUCTURAL NOTES PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-1(035) Date: February 2017	
SHEET No. S0.3 OF 4 SHEETS	

CATCH BASIN RECONSTRUCTION SUMMARY OF WORK TABLE

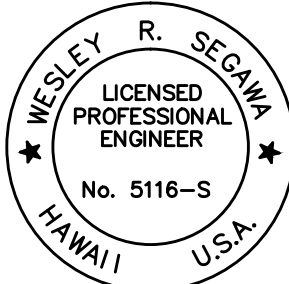
STATION	DESCRIPTION OF WORK	REFERENCE SHEET #
Lower Pali BL 43+50	Replace/ relocate manhole frame & cover, replace gutter, add concrete barrier *	SD1
Lower Pali BL 46+17	Enlarge, replace/relocate manhole frame & cover, replace gutter, add concrete barrier *	SD2
Lower Pali BL 56+48	Enlarge, replace/relocate manhole frame & cover, replace gutter, add concrete barrier *	SD3
Lower Pali BL 61+02.5	Enlarge, replace/relocate manhole frame & cover, replace gutter, add concrete barrier *	SD4
Lower Pali BL 65+23	Enlarge, replace/relocate manhole frame & cover, replace gutter, add concrete barrier *	SD5
Lower Pali BL 72+57	Enlarge, replace/relocate manhole frame & cover, replace gutter, add concrete barrier *	SD6
OB BL 65+40	Enlarge, remove grate, add manhole frame & cover, replace gutter, add concrete barrier *	SD7
OB BL 69+35	Enlarge, replace/ relocate manhole frame & cover, add gutter, replace wing, add concrete barrier *	SD8
OB BL 73+32	Enlarge, replace/ relocate manhole frame & cover, add gutter, replace wing, add concrete barrier *	SD9
BL 103+06	Remove manhole frame & cover, add concrete barrier *	SD10
BL 106+48	Replace/ relocate manhole frame & cover, replace gutter, add concrete barrier *	SD11
BL 43+48	Enlarge, remove grate, add manhole frame & cover, add gutter, add concrete barrier *	SD12
BL 48+02	Enlarge, remove grate, add manhole frame & cover, add gutter, add concrete barrier *	SD13
BL 51+48	Remove grate, add manhole frame & cover, add gutter, add concrete barrier *	SD14
BL 54+99	Remove grate, add manhole frame & cover, add gutter, add concrete barrier *	SD15
BL 59+00	Remove grate, add manhole frame & cover, add gutter, add concrete barrier *	SD16
BL 80+00	Enlarge, replace/ relocate manhole frame & cover, add gutter, add concrete barrier *	SD16.2
OB BL 140+38	Add walls, replace/ relocate manhole frame & cover, add gutter, add concrete barrier *	SD17
OB BL 143+75	Remove existing catch basin and replace with new Type D1 Catch Basin, add concrete barrier	SD18
BL 199+90.5	Extend catch basin top, add concrete barrier	SD19

* Note: All catch basin tops shall be replaced except for OB BL 143+75 & BL 199+90.5

LIGHT POLE PEDESTAL RETROFIT SUMMARY

REINFORCED CONCRETE RETROFIT	COMPOSITE FIBER RETROFIT
Lower Pali 19+58.9	IB 120+52.9
Lower Pali 20+31.5	IB 122+12.2
IB 128+68.4	IB 125+43.4
	IB 126+96.3
	IB 130+36.8
	IB 132+2.1
	IB 133+59.4
	IB 135+37.2
	OB 126+8.3
	OB 131+7.7
	OB 134+0.0

ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
	DRAWN BY _____	"
	TRACED BY _____	"
	DESIGNED BY _____	"
NOTE BOOK	CHECKED BY _____	"
	NA _____	"

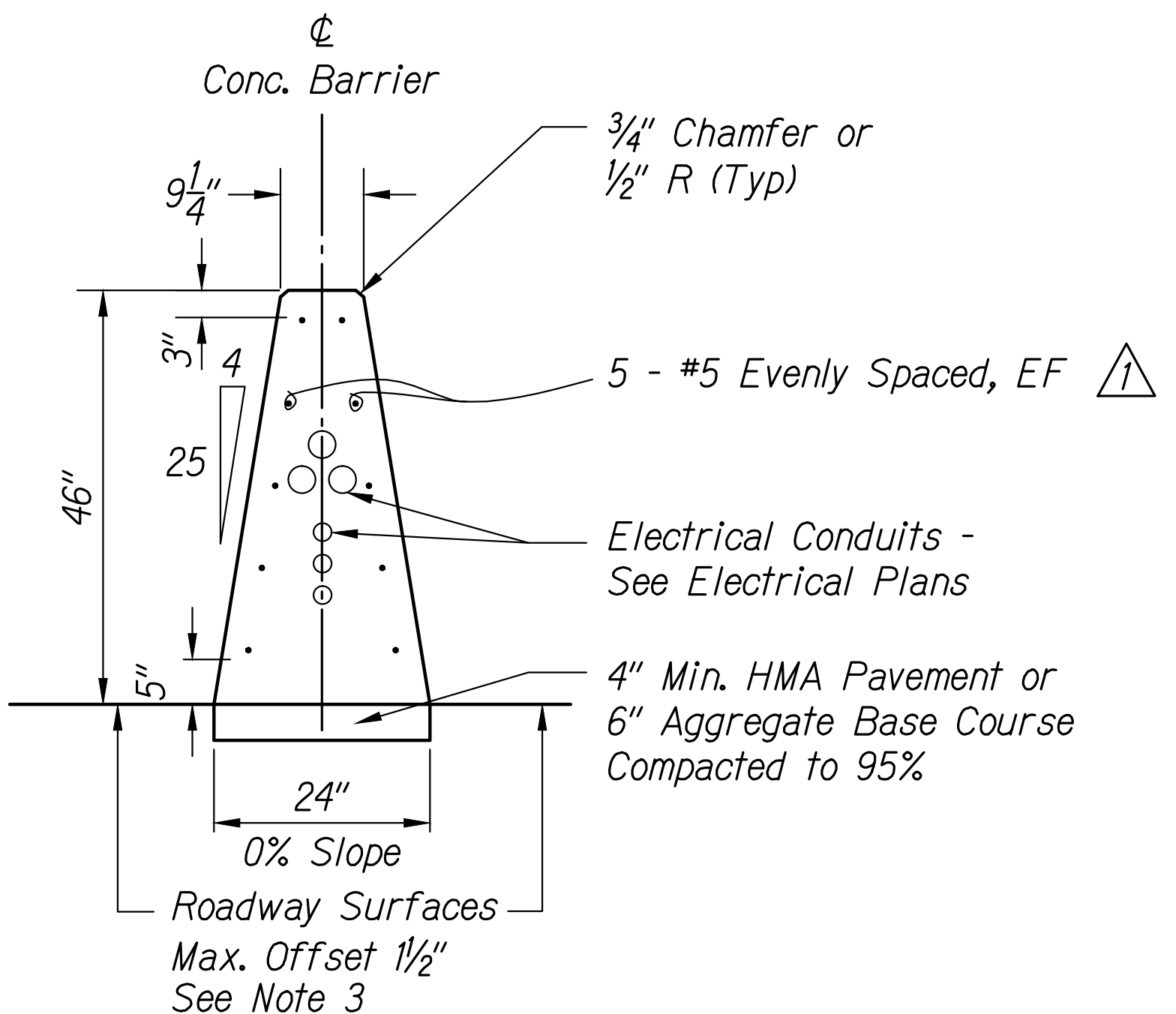
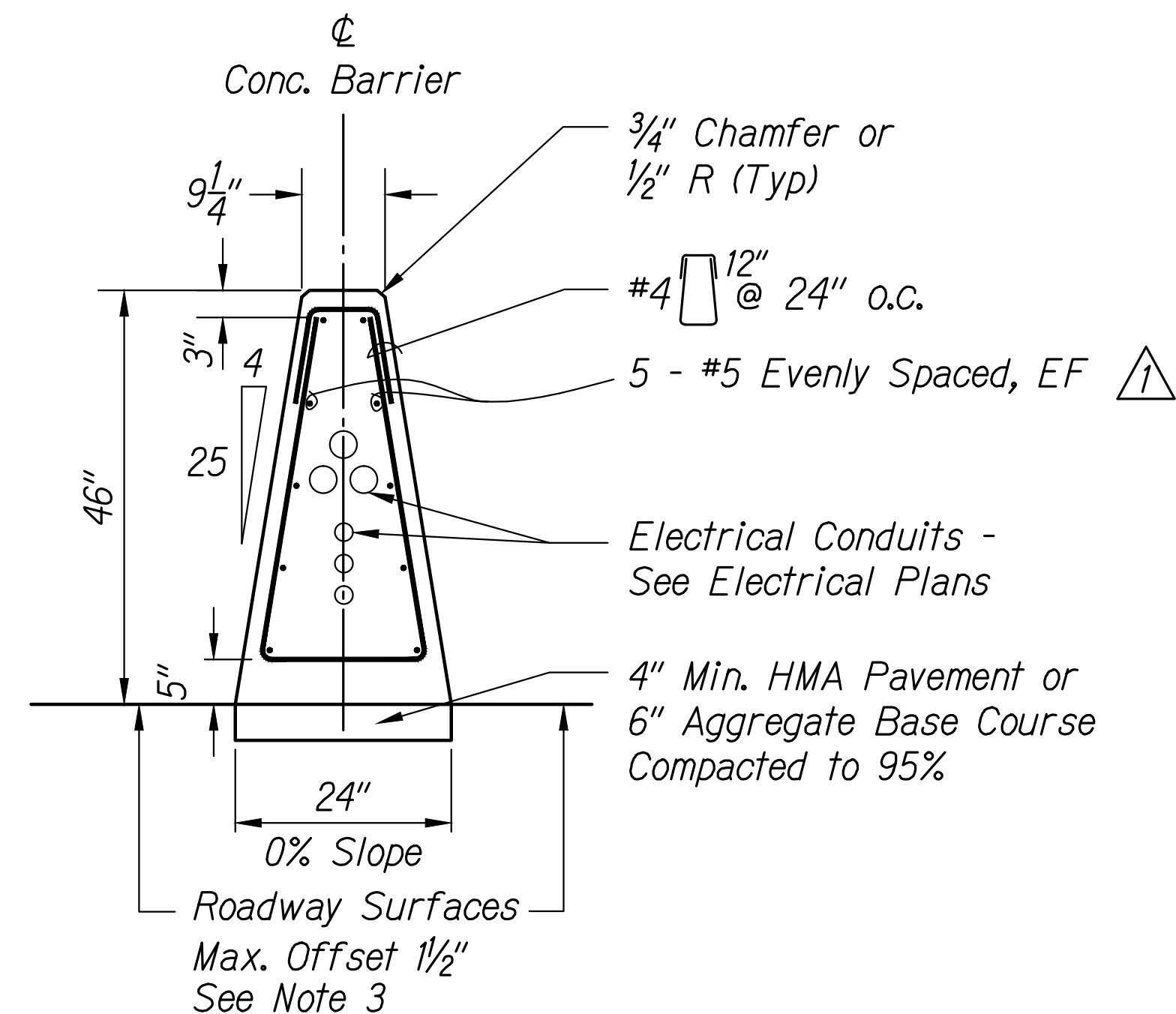


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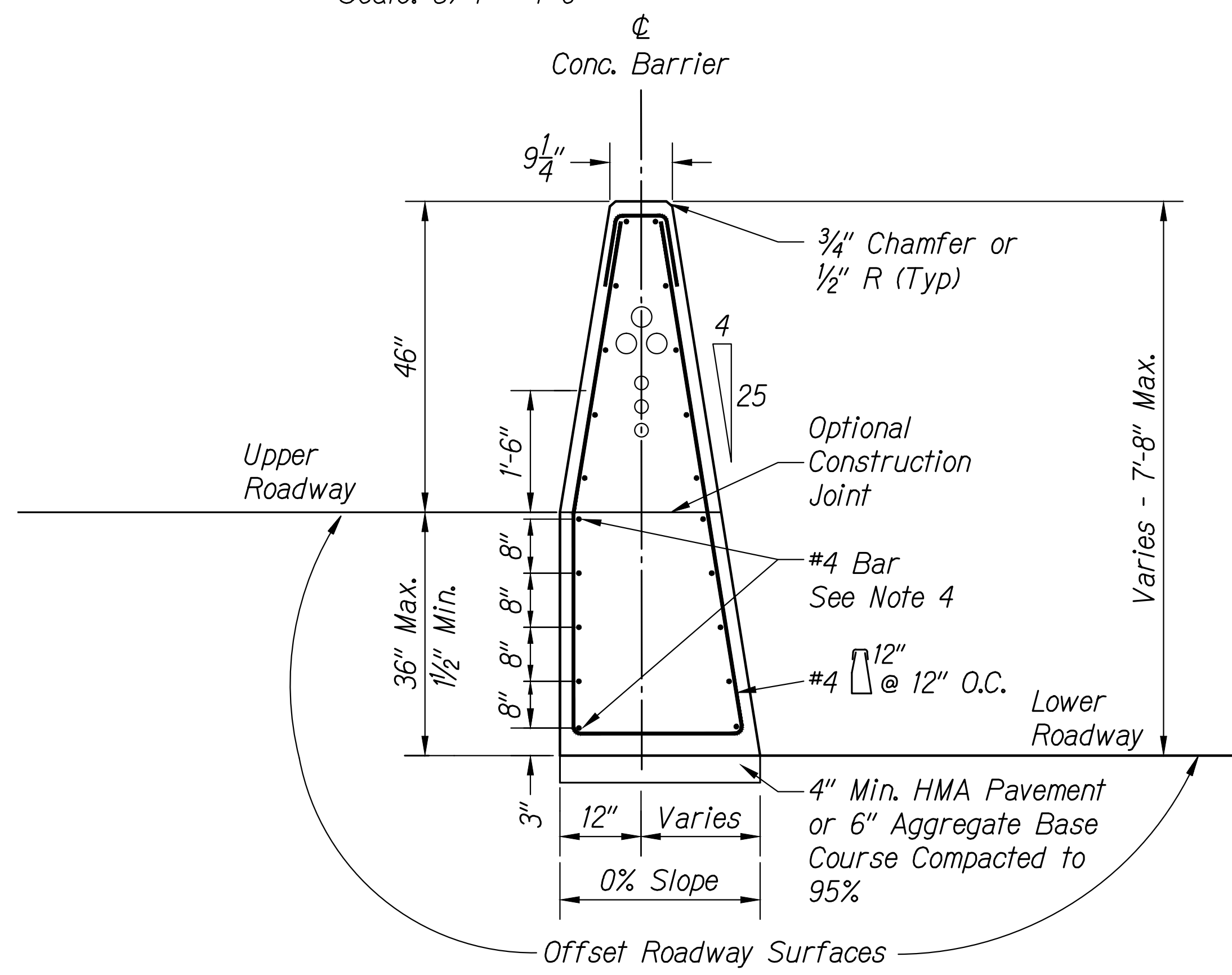
5/15/17	Catch Basin Added
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
STRUCTURAL SUMMARY TABLES	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Date: February 2017	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 247	455



CONCRETE BARRIER TYPE 60G
FOR CAST-IN-PLACE METHOD
(Monolithic concrete glare screen/barrier)
Scale: 3/4" = 1'-0"

CONCRETE BARRIER TYPE 60G
FOR SLIP-FORM OR EXTRUSION METHOD
(Monolithic concrete glare screen/barrier)
Scale: 3/4" = 1'-0"

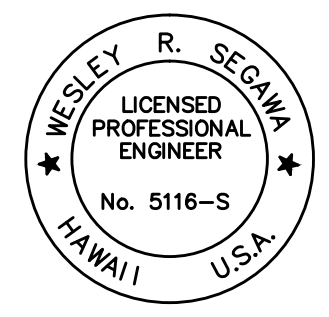


Details similar to Type 60G except as noted.
36" roadway surfaces offset shown.
CONCRETE BARRIER TYPE 60GC
Scale: 3/4" = 1'-0"
(Type 60G Where Change in Grade Occurs)

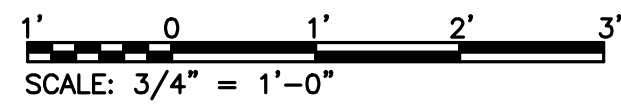
NOTES:

- See Sheet SB4 for details of Concrete Barrier Type 60G end anchors, and transitions to Concrete Barrier Type 60S.
- See Sheet SB7 for Concrete Barrier Type 60G transitions at light poles.
- Where roadway offset is greater than 1 1/2" see Concrete Barrier Type 60GC.
- Roadway Surfaces (RS) offset:
 - 1 1/2" < RS ≤ 3" - no rebars required.
 - 3" < RS ≤ 8" - use two #4 rebars at 3" above the lower roadway surface.
 - 8" < RS ≤ 12" - use two #4 rebars at 3" above the lower roadway surface and two #4 rebars at 8" above the lower roadway surface.
 - 12" < RS ≤ 36" - use two #4 rebars at 3" above the lower roadway surface and two #4 rebars at every 8" increments vertical spacing above the first two #4 rebars.
- Stagger lap splices of longitudinal steel, minimum overlap of steel shall be 48 bar diameters. Bars at laps shall be firmly tied or connected.
- When switching between slip form and cast-in-place operations, extend longitudinal steel 36" beyond slip-forming cut-off point. Exposed steel into the next pour's reinforcement shall be firmly tied together.
- Maintain 2" minimum reinforcement cover unless otherwise shown.
- Cold joints may be used between anchor installations. When a cold joint is needed, 36" lap longitudinal steel. Laps shall be firmly tied.
- For all barrier types shown, anchor is required at concrete barrier ends and at interruptions in concrete barrier, such as at expansion joints.
- Expansion joints in the concrete barrier shall be located where the barrier abuts any concrete structure. All expansion joints shall be 3/4".
- Contractor Shall Refer To Special Provision 695 Concrete Median Barriers.

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NOTE BOOK	
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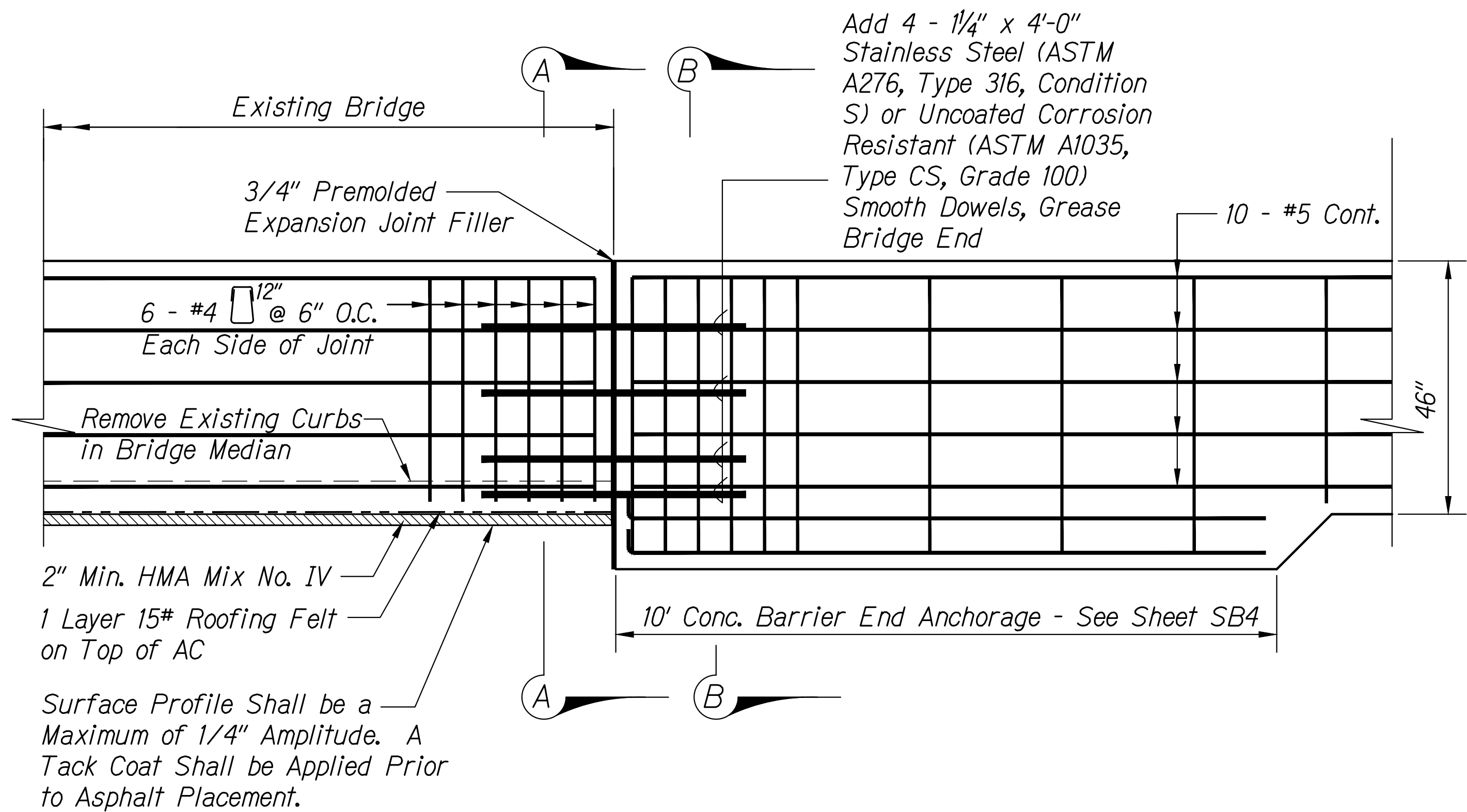
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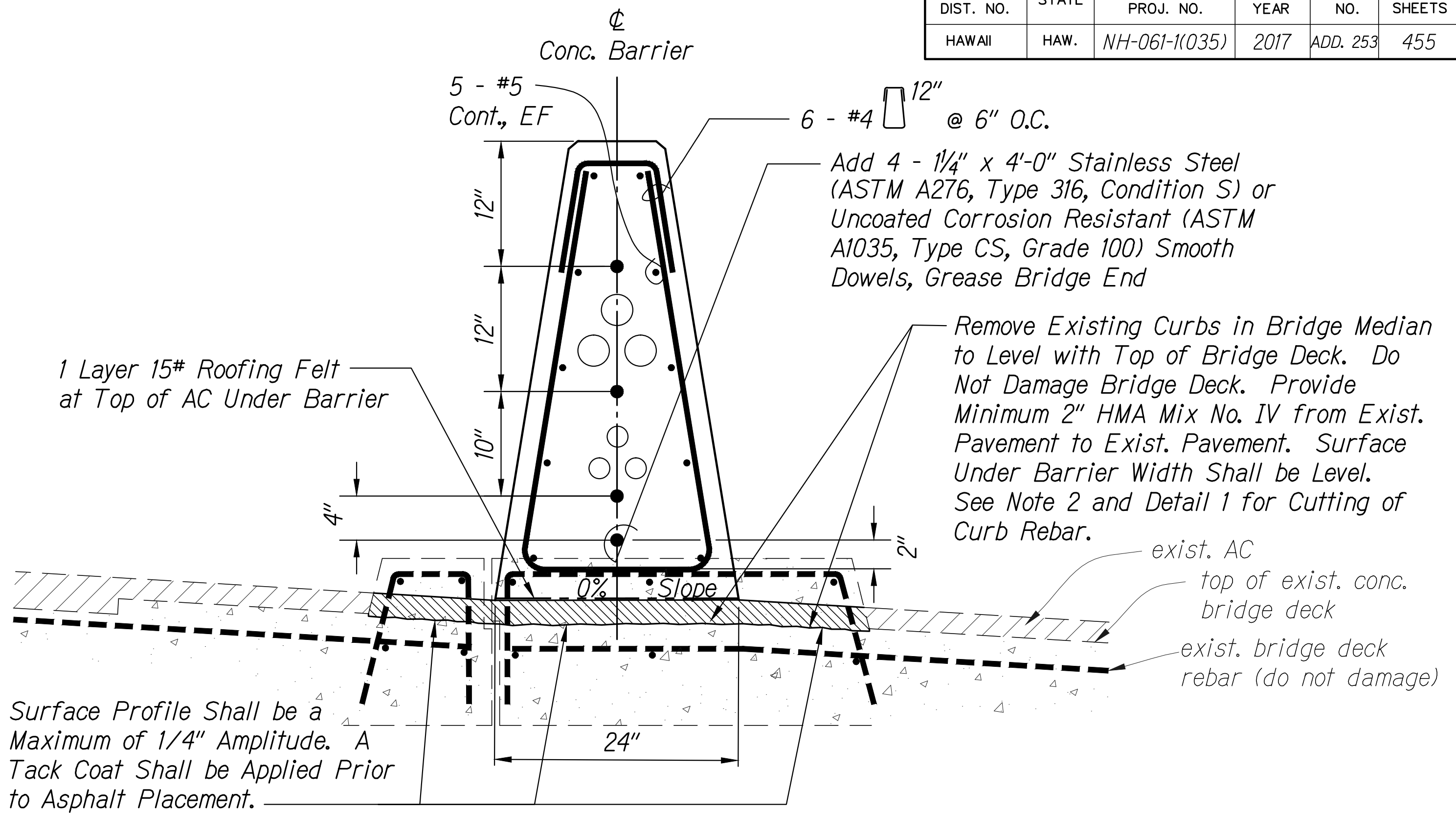
5/15/17	Revised Callouts
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
CONCRETE BARRIER TYPE 60G	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Date: February 2017	
SHEET No. SB3 OF 10 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD. 253	455



CONCRETE BARRIER ON EXISTING BRIDGE AND
END ANCHORAGE ON EITHER SIDE OF BRIDGE

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

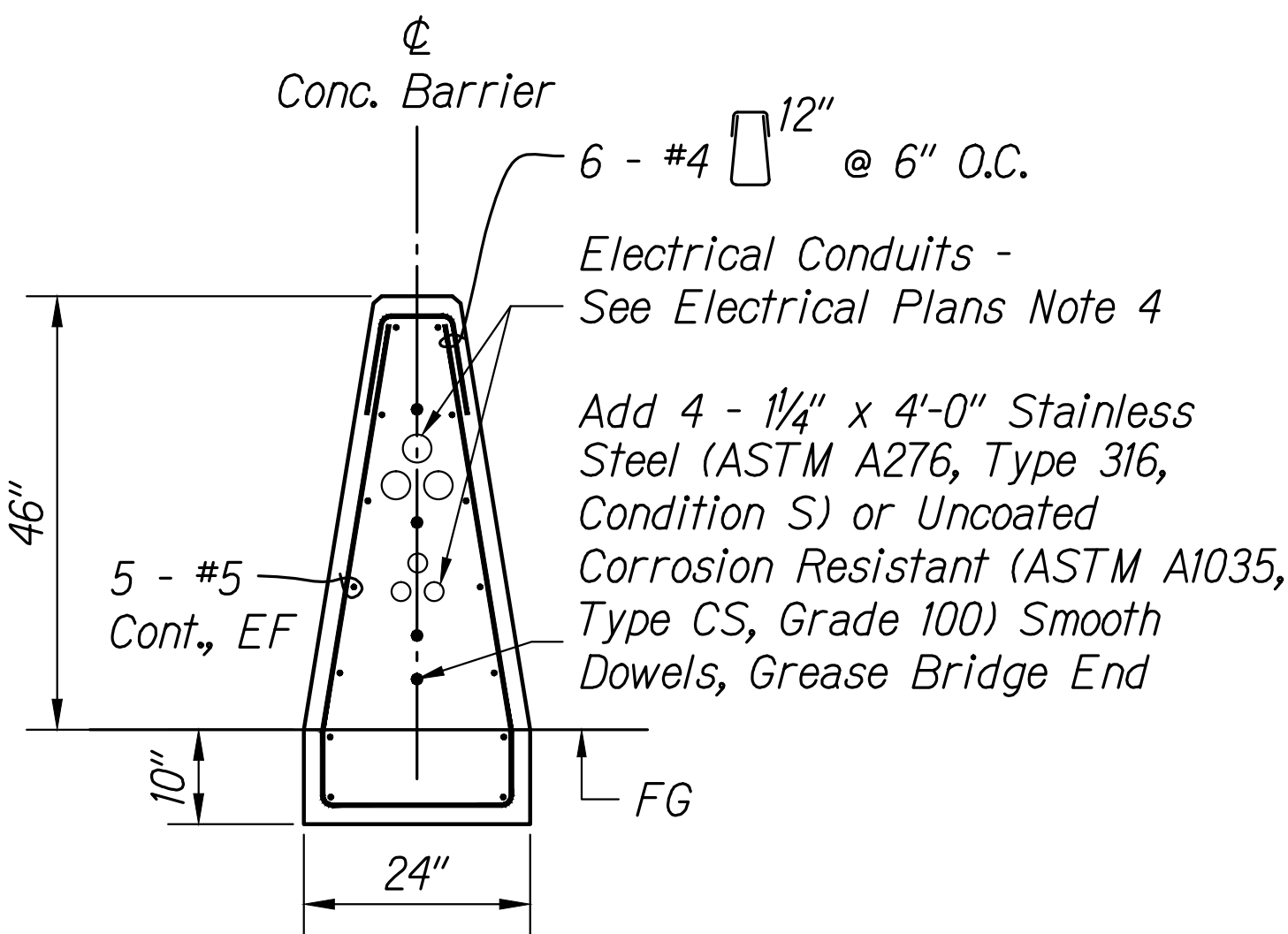


Section A-A Through Barrier on Existing Bridge

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

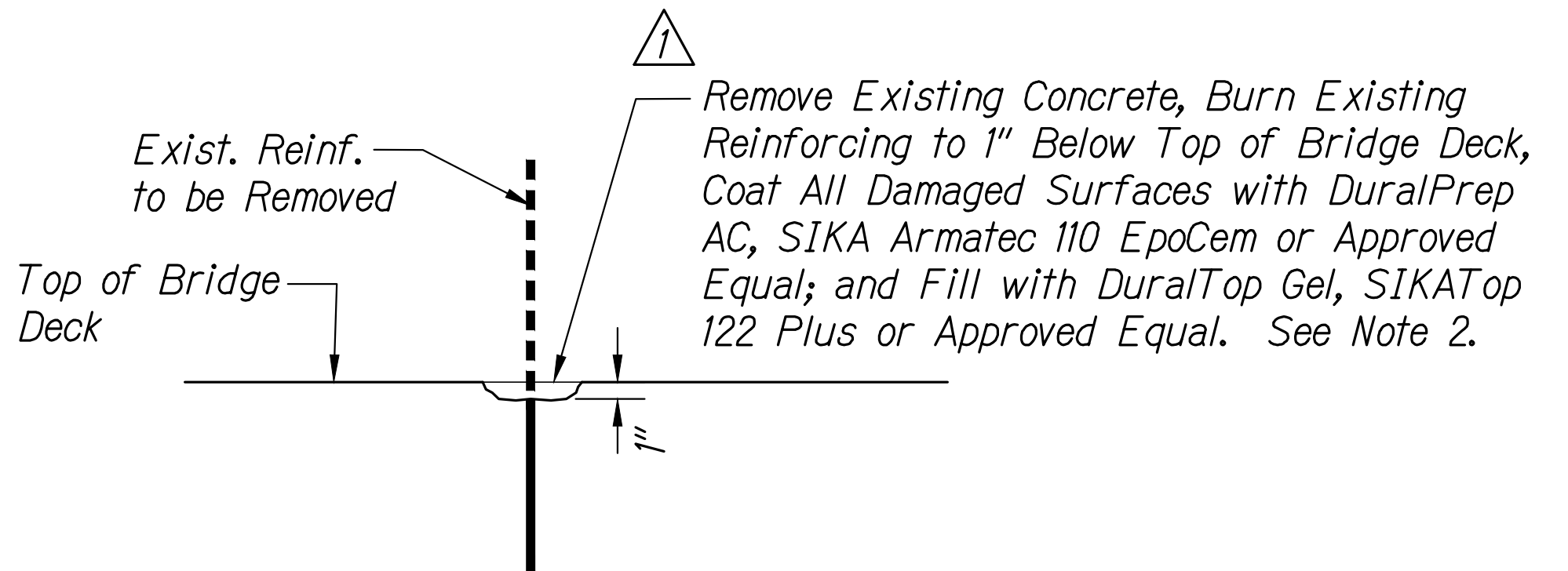
NOTES:

- See Sheet SB3 for Concrete Barrier Type 60G.
- When removing curb, only cut rebar necessary to obtain surface level with existing bridge deck. Cut rebar 1" below top of bridge deck. Concrete surface and cut rebar shall be coated with an anti-corrosion/bonding agent such as Euclid DuralPrep AC, SIKA Armatex 110 Epocem or approved equal, and patched with DuralTop Gel, SIKATop 122 Plus or approved equal. Follow manufacturer's recommendations.
- Expansion joint and end anchorage shall be installed at both ends of the bridge.
- Expansion couplings shall be installed for all conduits at expansion joints.
- The Contractor shall refer to Specifications 709 Reinforcing Steel & Special Provision 695 Concrete Median Barriers & 709 Reinforcing Steel.



Section B-B Through End Anchorage

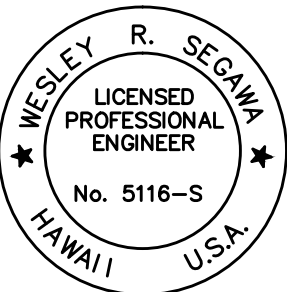
Scale: 3/4" = 1'-0"



Reinforcing Removal Detail 1

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

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NOTE BOOK	
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5/15/17	Revised Callout
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
CONCRETE BARRIER ON EXIST. BRIDGE	
<u>PALI HIGHWAY RESURFACING</u> Waokanaka Street to Kamehameha Highway <u>PALI HIGHWAY LIGHTING REPLACEMENT</u> Vineyard Boulevard to Kamehameha Highway <u>Federal Aid Project No. NH-061-1(035)</u> Date: February 2017	

SHEET No. SB9 OF 10 SHEETS

Legend:

New

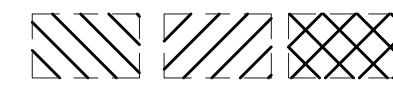
New Catch Basin Beyond

Existing To Remain

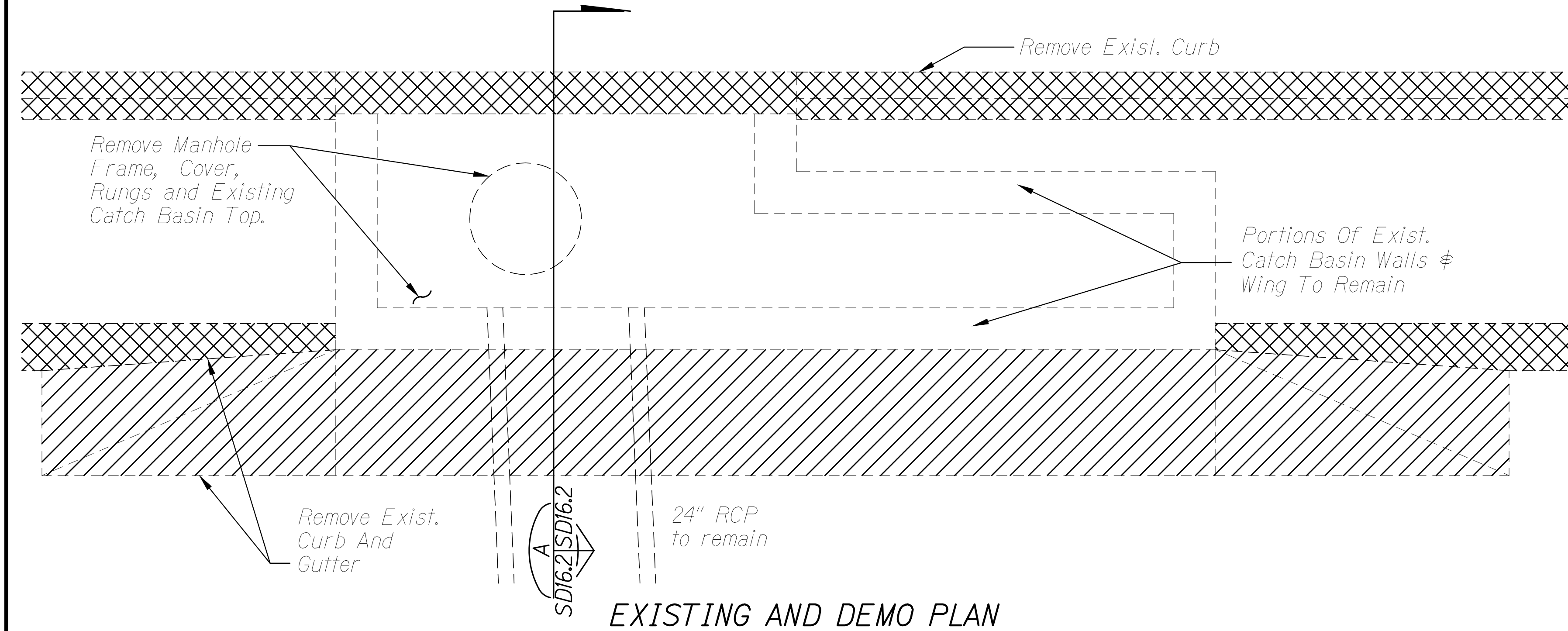
Existing To Be Removed

Typical Details

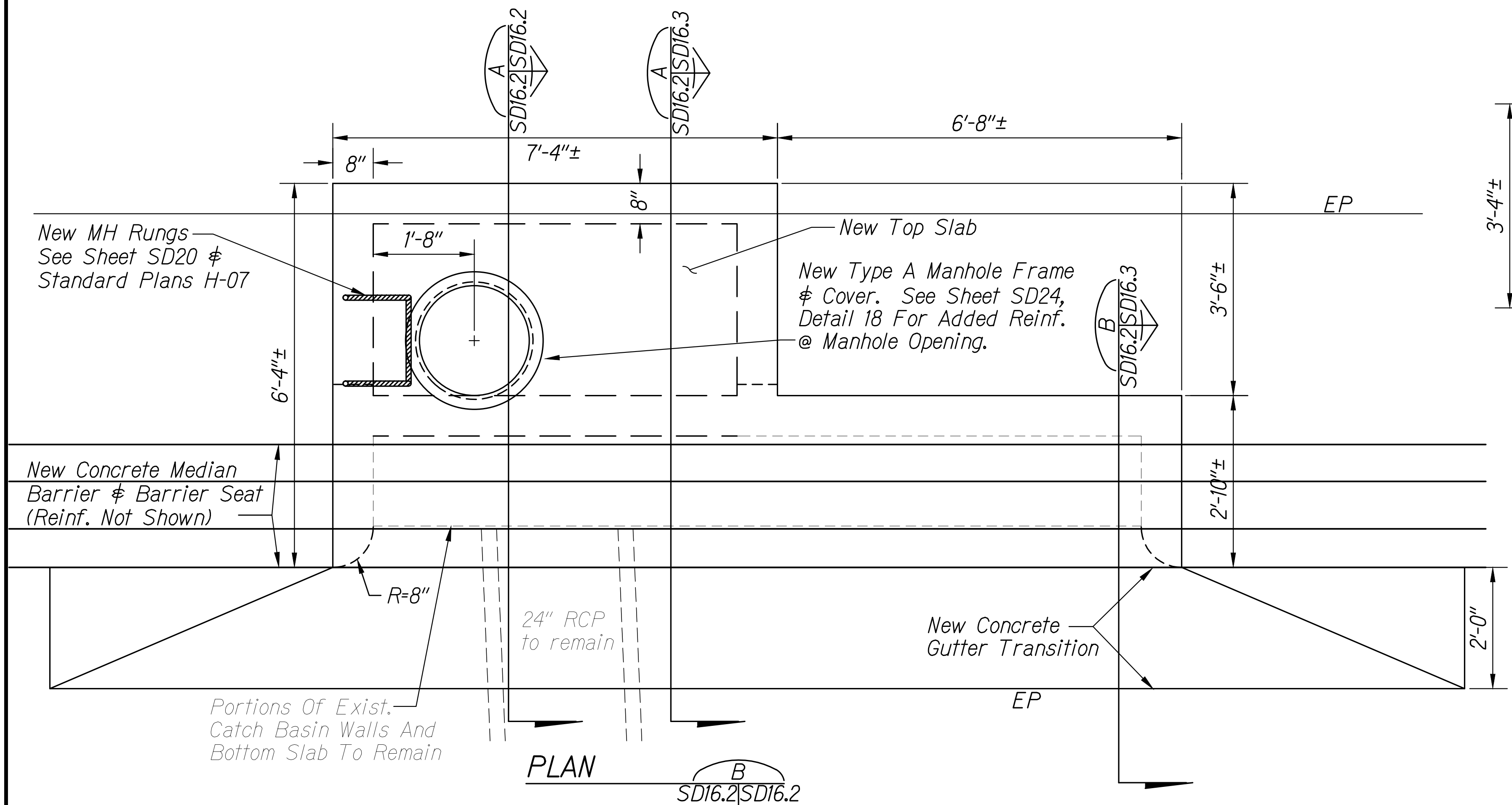
(Sheets SD21, SD22, SD23, SD24)



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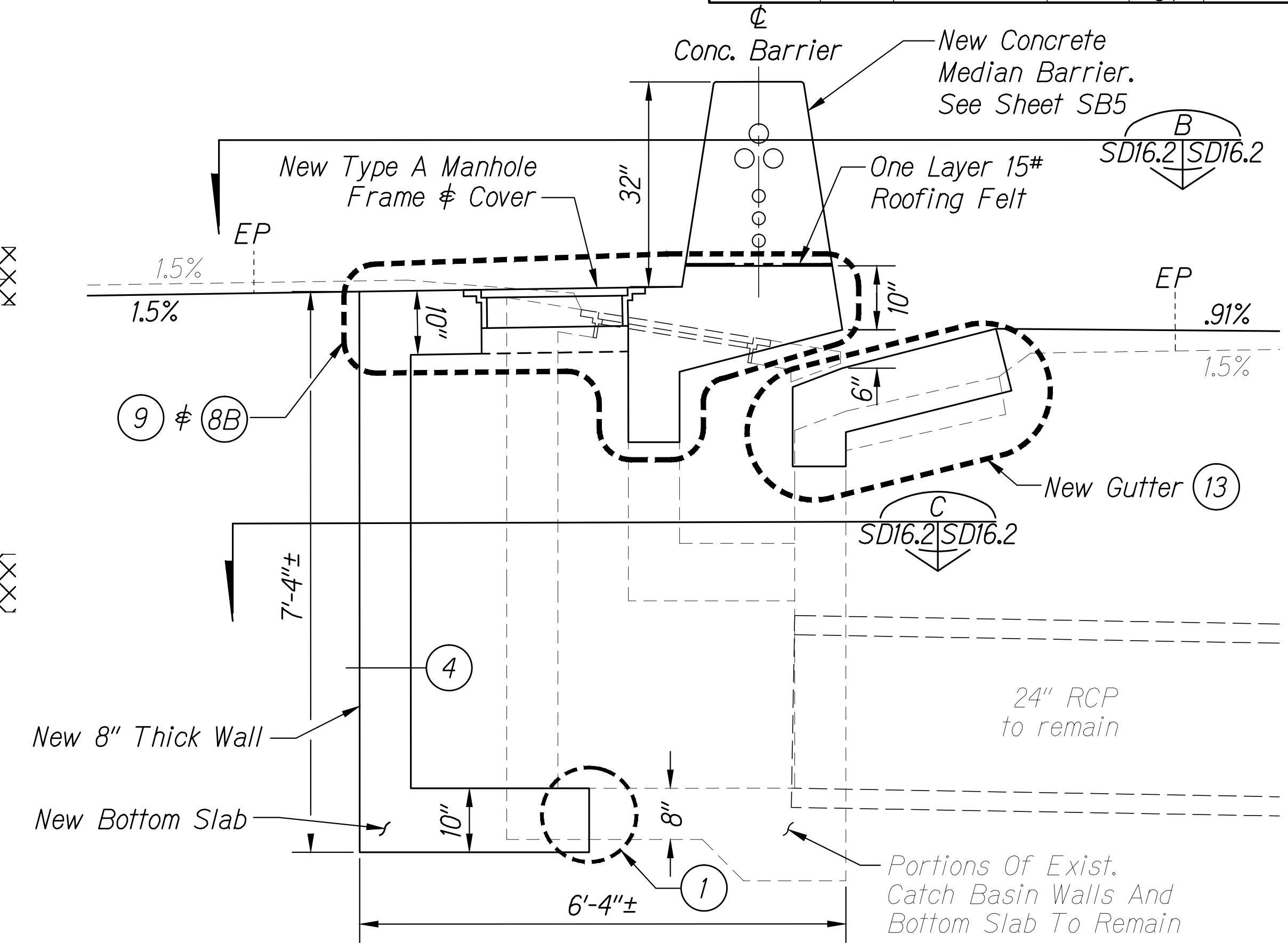


EXISTING AND DEMO PLAN



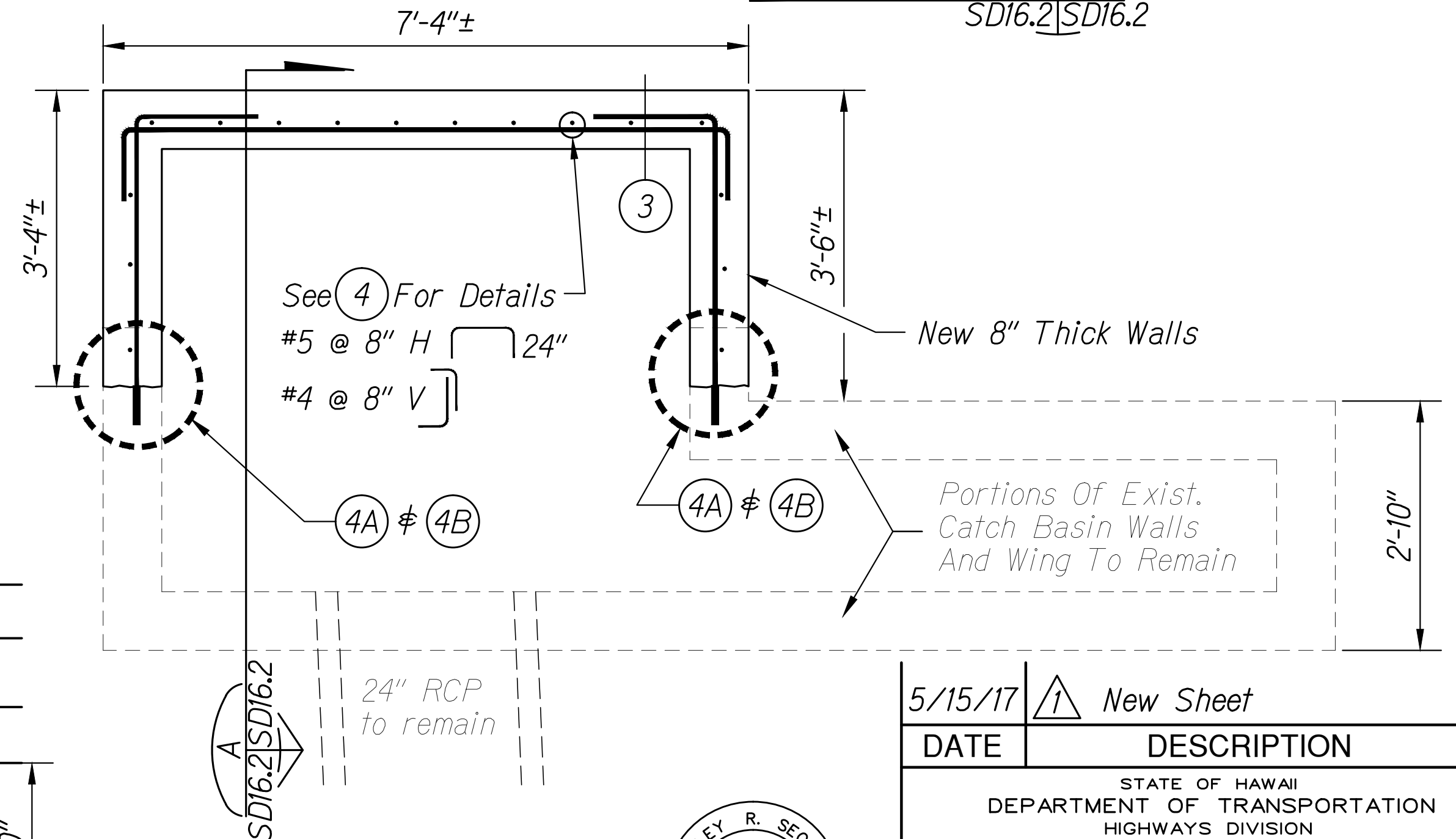
PLAN

SD16.2SD16.2



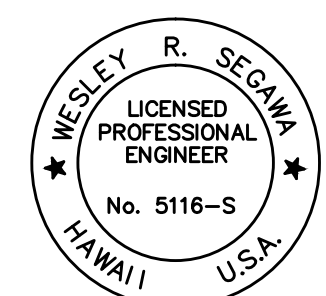
SECTION

SD16.2SD16.2



SECTION

SD16.2SD16.2



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5/15/17	New Sheet
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
PALI # STA. 80+00 TYPE C C.B.	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Date: February 2017	

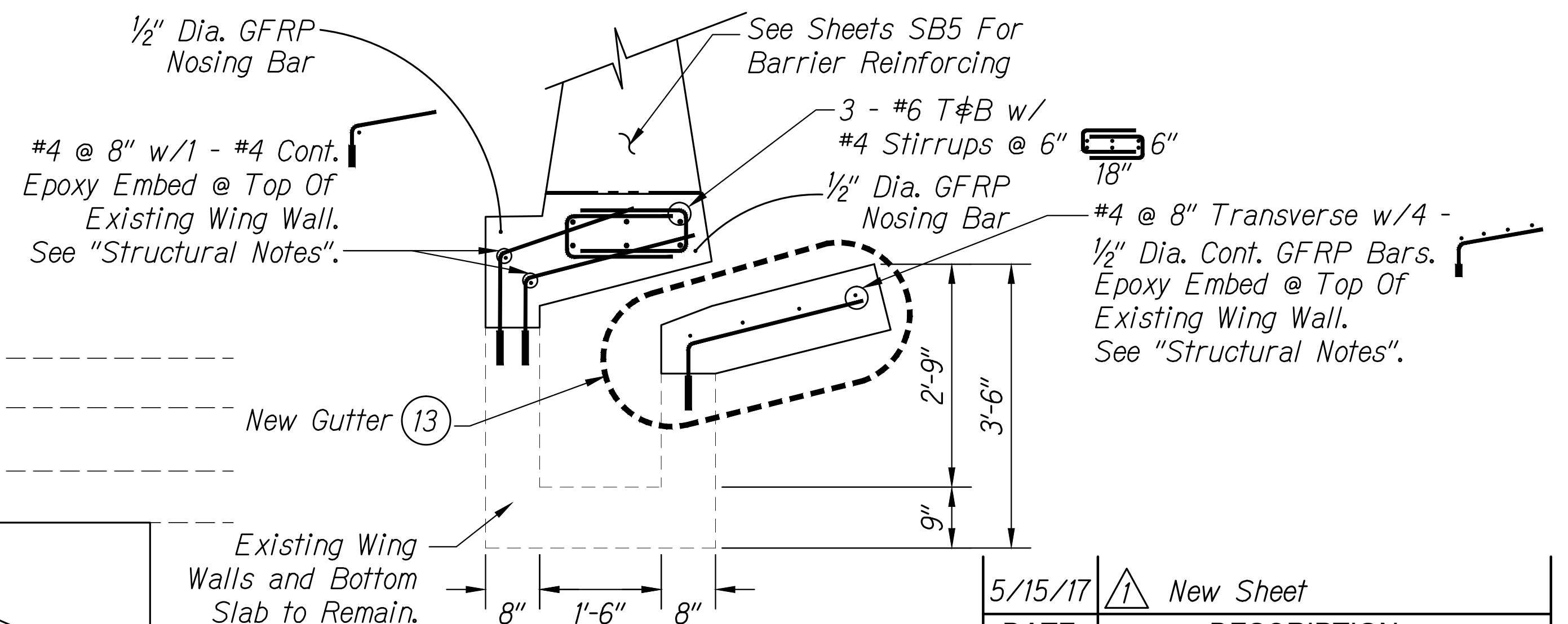
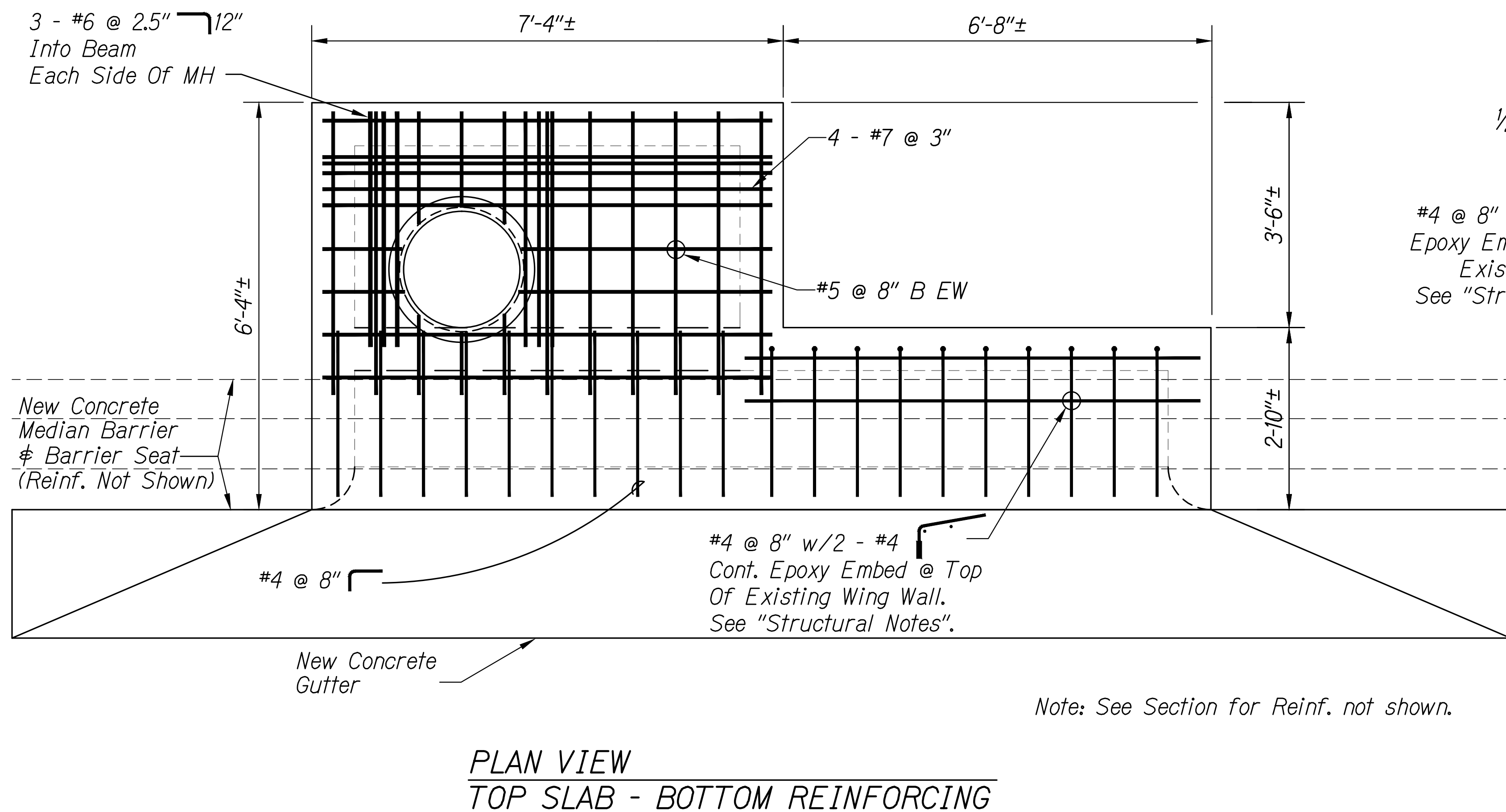
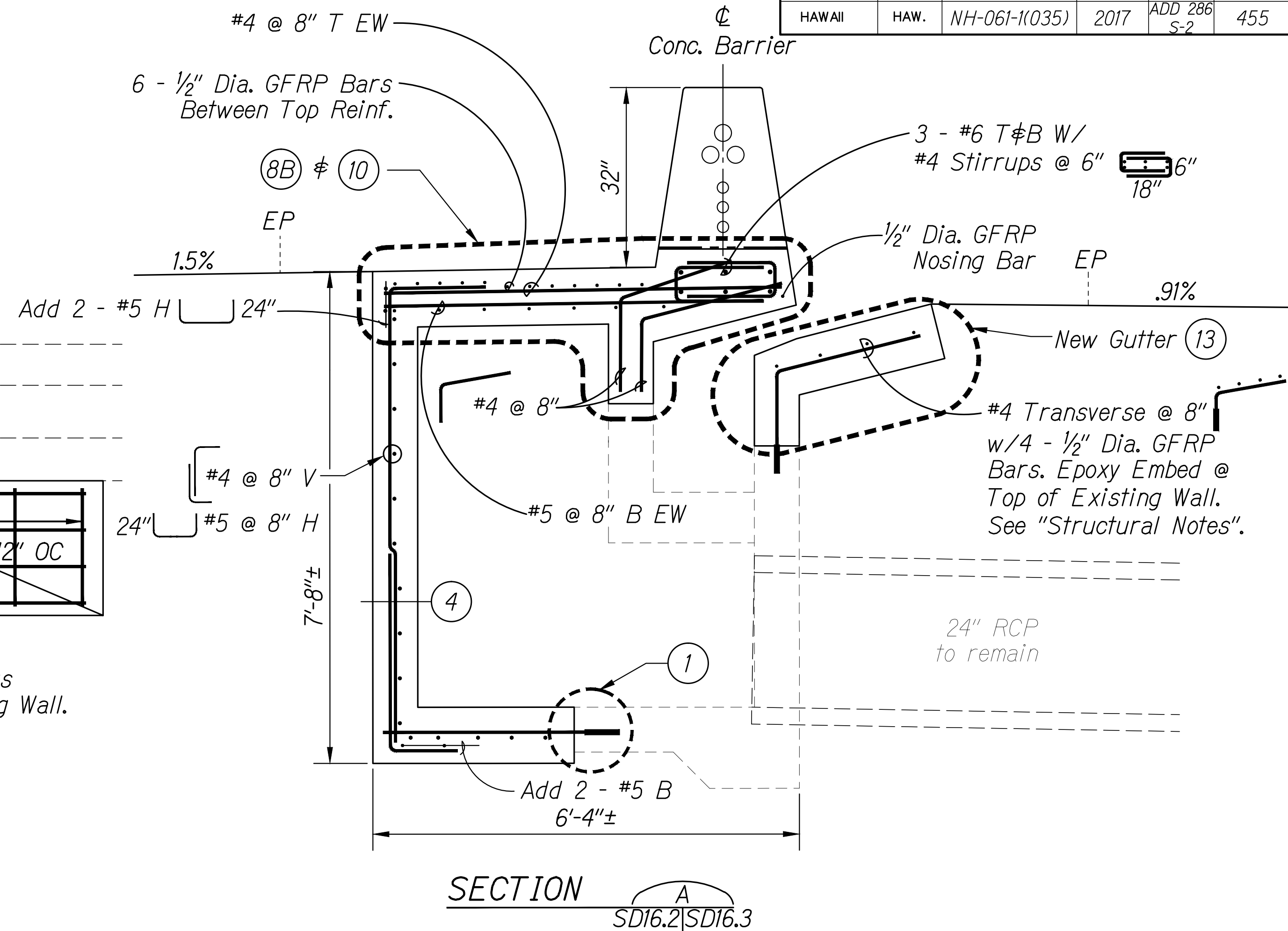
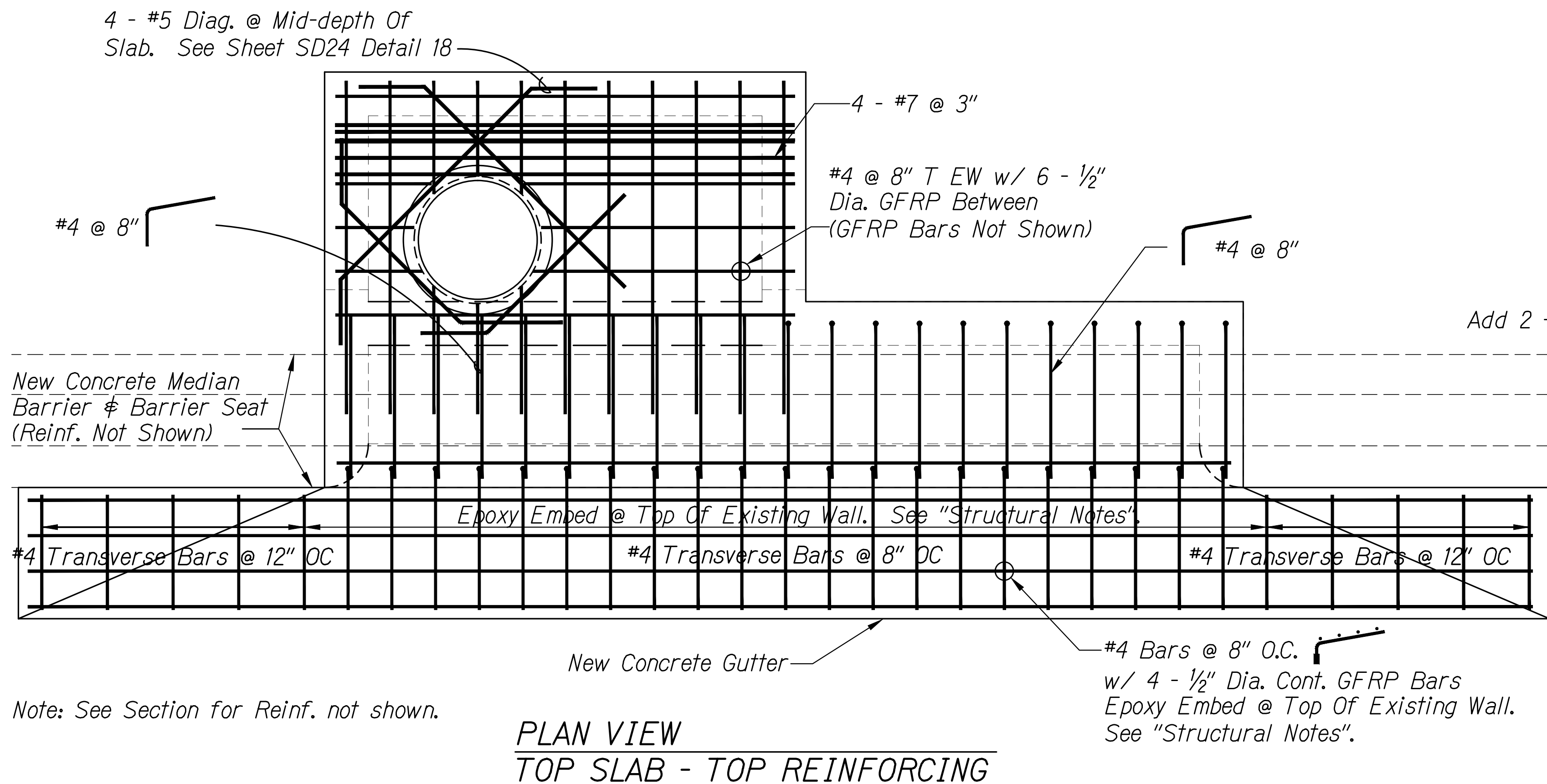
SHEET No. SD16.2 OF 42 SHEETS

ADD. 286 S-1

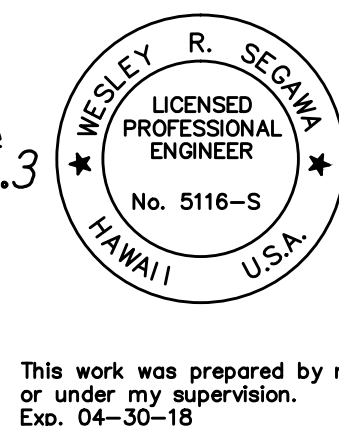
SURVEY PLOTTED BY: _____	DATE: _____
DRAWN BY: _____	DESIGNED BY: _____
TRACED BY: _____	CHECKED BY: _____
NOTE BOOK: _____	NA: _____

SCALE 3/4" 1' 0 1' 2' 3'

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD 286 S-2	455



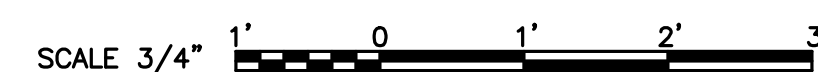
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NOTE BOOK	
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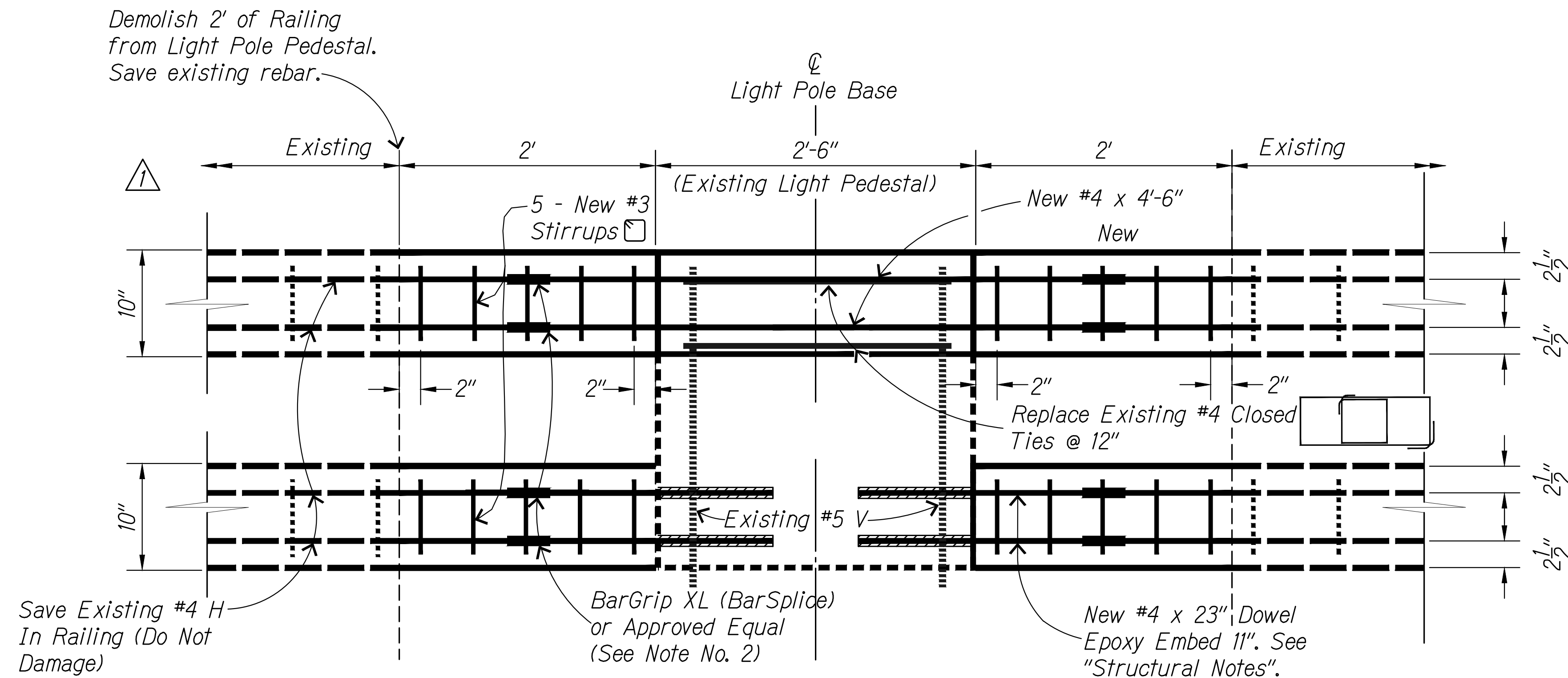
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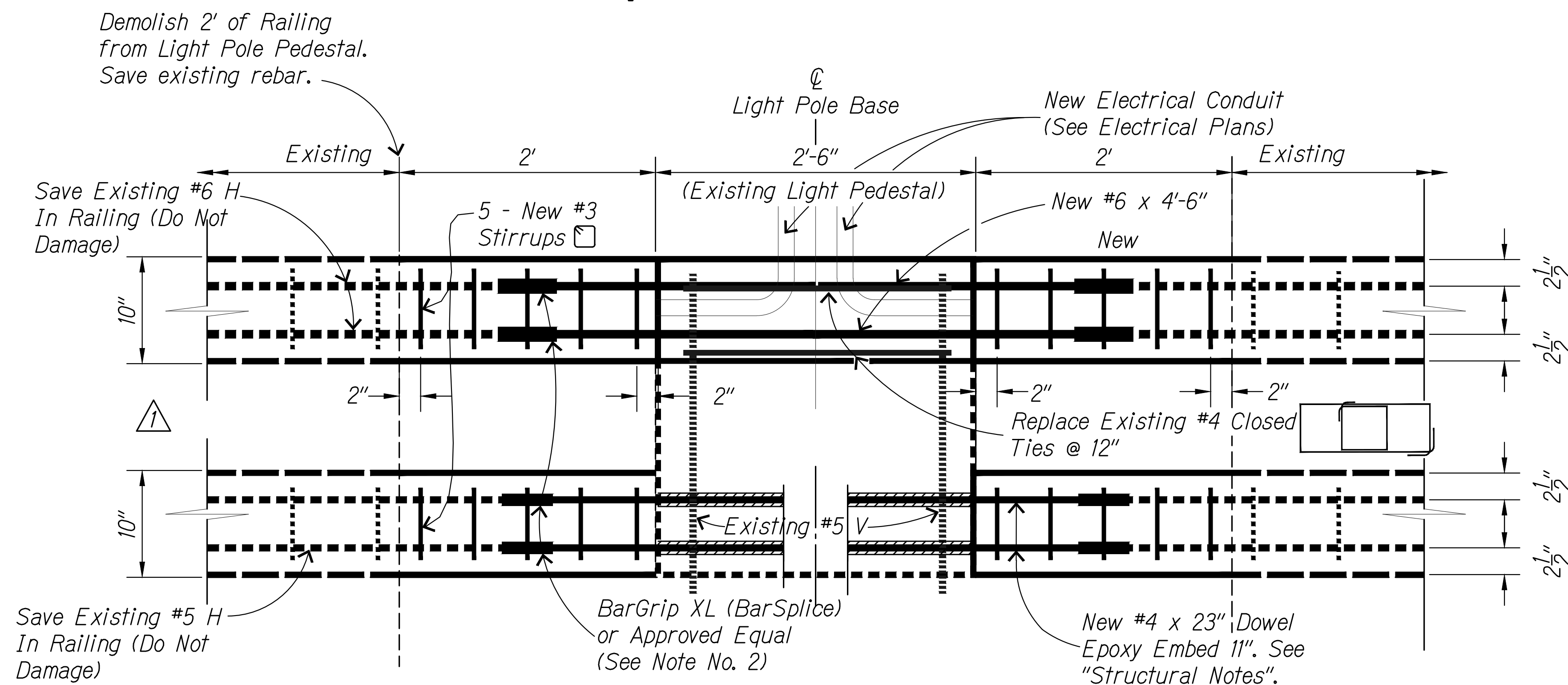
5/15/17	New Sheet
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION PALI @ STA. 80+00 TYPE C C.B. PALI HIGHWAY RESURFACING Waikanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-1(035) Date: February 2017	
SHEET No. SD16.3 OF 42 SHEETS	



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-K(035)	2017	ADD. 302	455



ELEVATION VIEW (Highway Side)
SCALE: 1 1/2" = 1'-0"



ELEVATION VIEW (Backside of Bridge Rail)
SCALE: 1 1/2" = 1'-0"

BRIDGE RAIL RECONSTRUCTION AT LIGHT PEDESTAL (AFTER FRP INSTALLATION)

-  **Notes:**

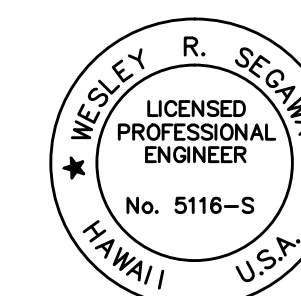
 1. All Surfaces Which Will Be Covered by New Concrete Shall be Coated with DuralPrep AC or Approved Equal Before Placing Concrete (i.e., rebar, existing concrete, FRP, etc.)
 2. All Manufacturer's Recommendations Shall be Followed.

Legend:

New

Existing To Remain

Existing Reinforcement

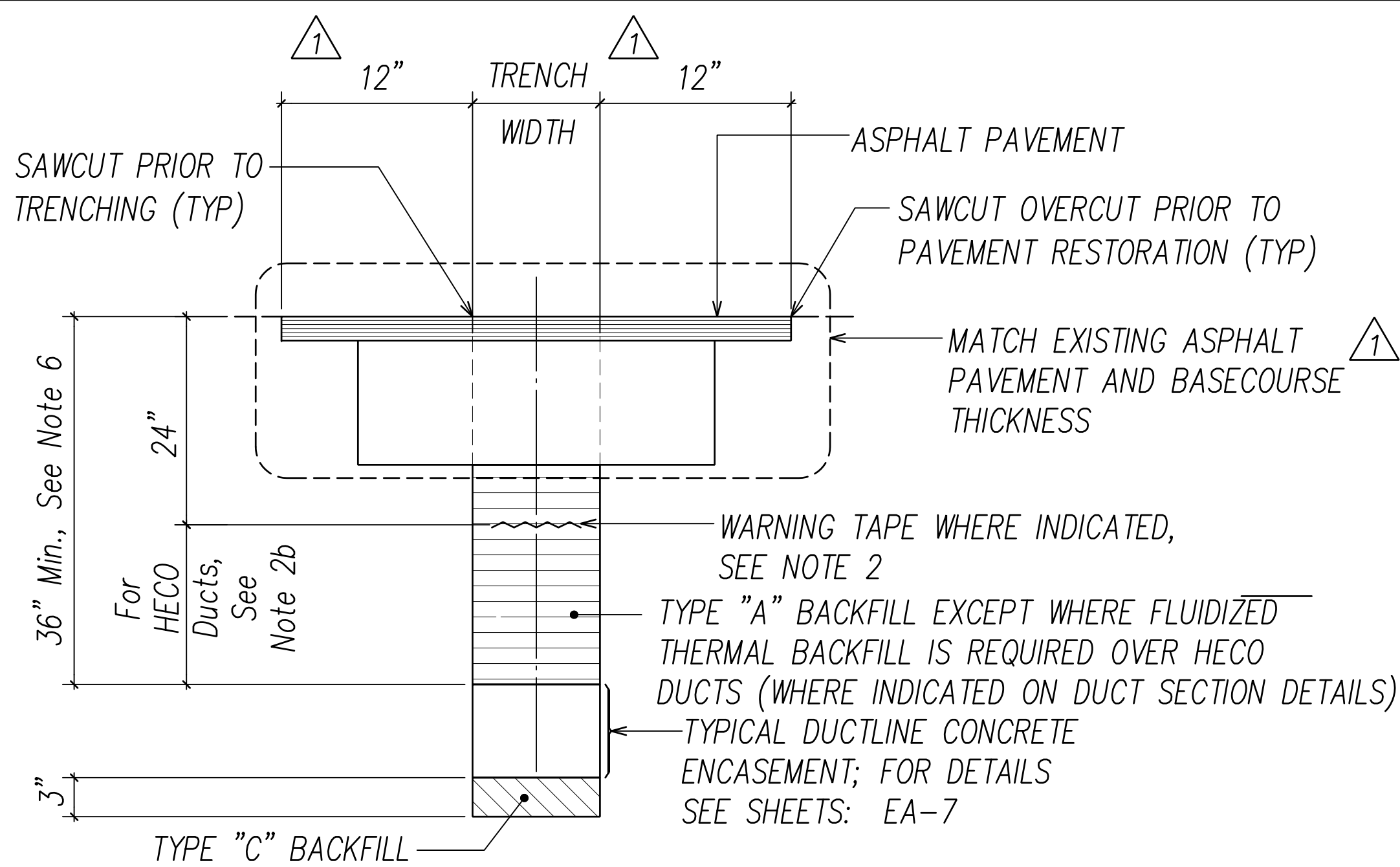


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Wesley R. Segawa & Associates, Inc.

5/15/17	 Revised Rebar
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <u>L.P. PEDESTAL COMPOSITE FIBER STRENGTHENING</u> <u>PALI HIGHWAY RESURFACING</u> <u>Waokanaka Street to Kamehameha Highway</u> <u>PALI HIGHWAY LIGHTING REPLACEMENT</u> <u>Vineyard Boulevard to Kamehameha Highway</u> <u>Federal Aid Project No. NH-061-I(035)</u> Scale: As Shown Date: February 2017	
SHEET No. SL6 OF 10 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-(K035)	2017	ADD312	455



ASPHALT PAVEMENT RESTORATION
OVER TRENCH EXCAVATION
WITHIN STATE R-O-W
NOT TO SCALE

STATE RIGHT-OF-WAY
BACKFILL NOTES

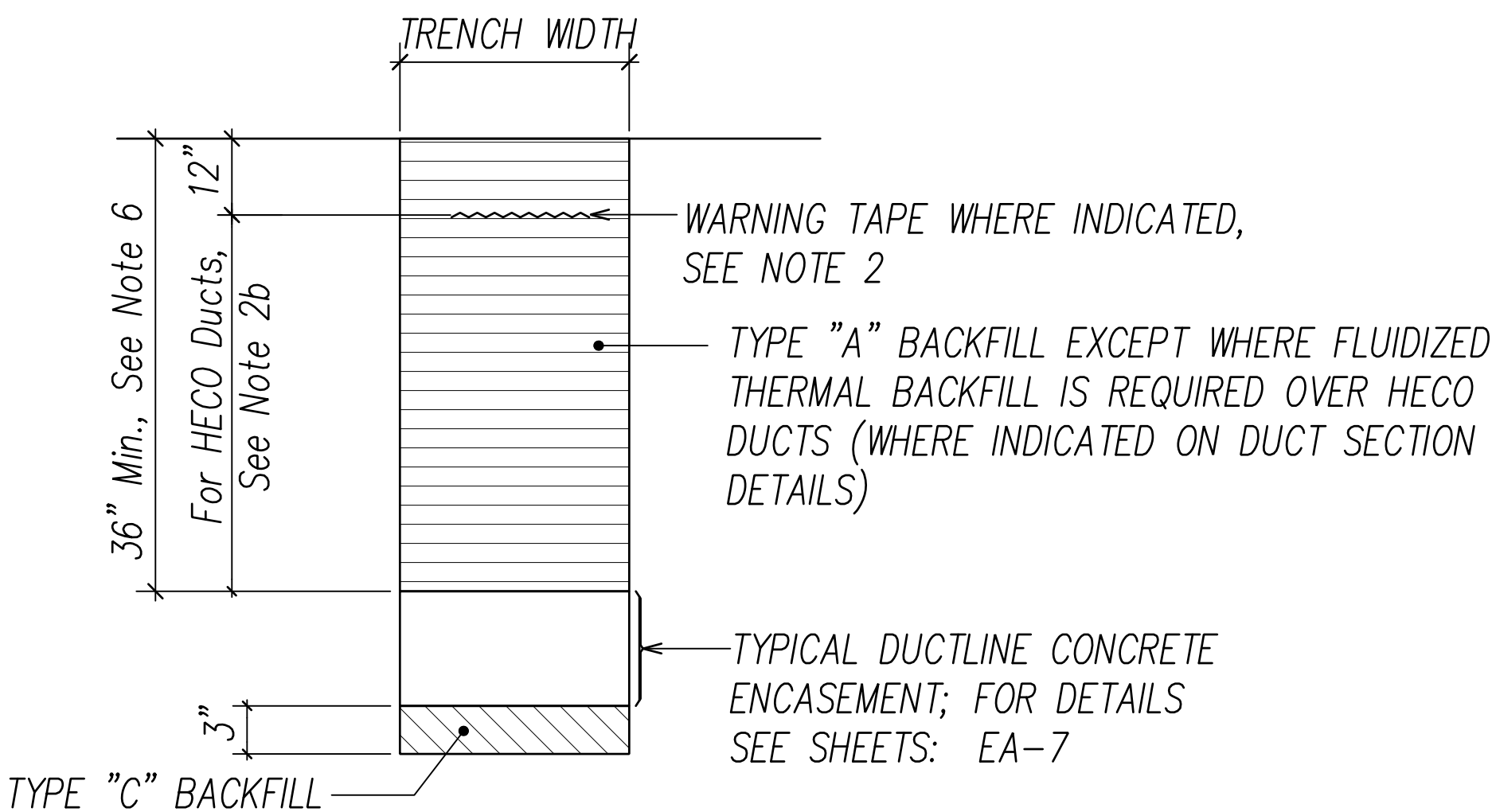
- TRENCH BACKFILL MATERIAL "A"
When Tested According to AASHTO T176, The Sand Equivalent Value Shall be 20 or Greater.
- TRENCH BACKFILL MATERIAL "B"
When Tested According to AASHTO T176, The Sand Equivalent Value of the Backfill Material Shall be Equal to or Greater Than the Surrounding Soil.
- TRENCH BACKFILL MATERIAL "C"
Excavate Material and Provide 3" Backfill Material "A", See Above.
- CONCRETE - 3" ENCASEMENT,
3000 PSI COMPRESSIVE STRENGTH @ 28 DAYS.

NOTE:

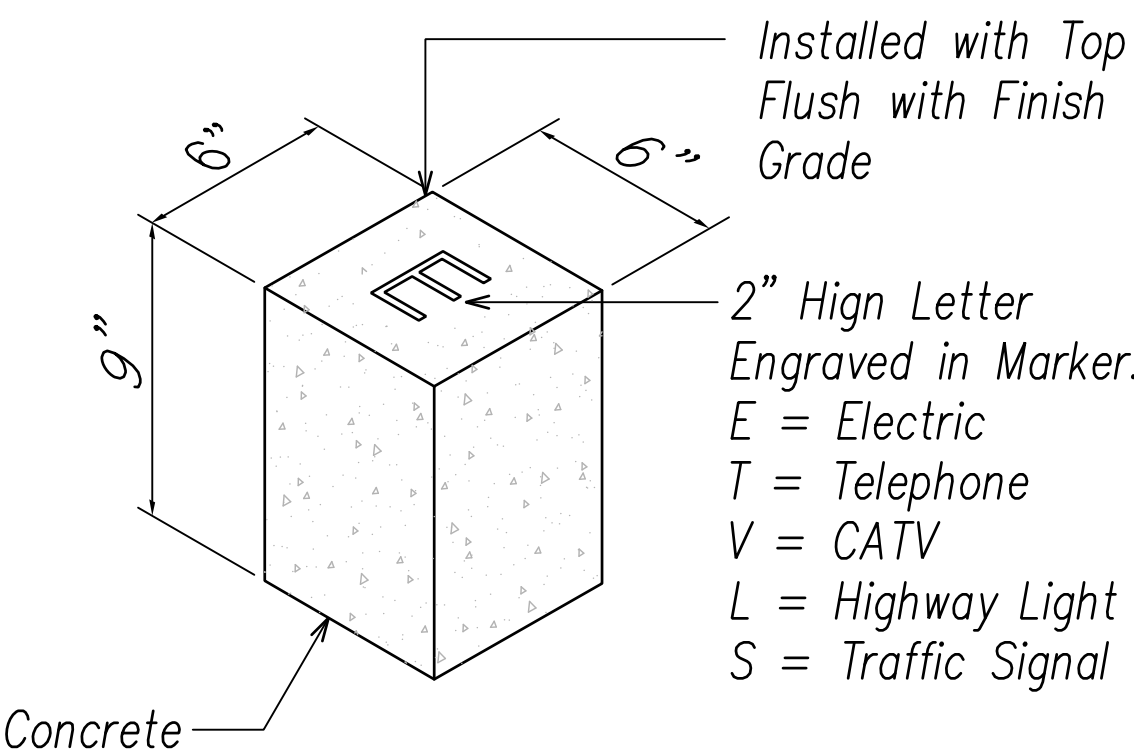
See Specification Section 703.21 for
Additional Trench Backfill Material
Requirements.

GENERAL DUCTLINE DUCT SECTION NOTES:

- If trench is located on unpaved area, the Contractor shall replace 10" A.C. Base Course and 4" A.C. Pavement with Type "A" backfill material.
- The Metal Detectable Red Plastic Warning Tape shall be a minimum 5 mils thick and 4" wide with a continuous metallic backing and corrosion resistant 1' min thick foil core. For the State DOT traffic signal and highway lighting ducts, the message on the tape shall read, "CAUTION - STATE TRAFFIC SIGNAL AND/OR HWY LIGHTING BURIED BELOW," utilizing 1 1/2 inches series "C" block lettering. The message will be repeated with a 4 1/4" spacing between top line of message and start of next repeat.
 - For the respective utility company ducts, provide metal detectable warning tape over respective utility company ducts per respective utility company requirements and approval.
 - For HECO, provide warning tape per HECO Specification M0302-0; place warning tape 12 inches above the HECO ductbank unless backfilling with fluidized thermal backfill (FTB). When FTB is used, place warning tape at the boundary between the FTB and pavement section.
- The Contractor may begin backfilling the conduit trench when the concrete reaches 3000 psi compressive strength after 3 days.
- Maximum four (4) Conduits per row for multiple conduit duct section.
- Clearances: Refer to HECO Note No. 14 for clearance requirements between all ductlines and all adjacent structures (charted and uncharted) near the trench.
- See General Construction Note J. on sheet EA-2 for ductline depth requirements where ductline crosses guard rail locations.



BACKFILL SECTION WITHIN STATE R-O-W
BEYOND PAVED ROADWAY
NOT TO SCALE



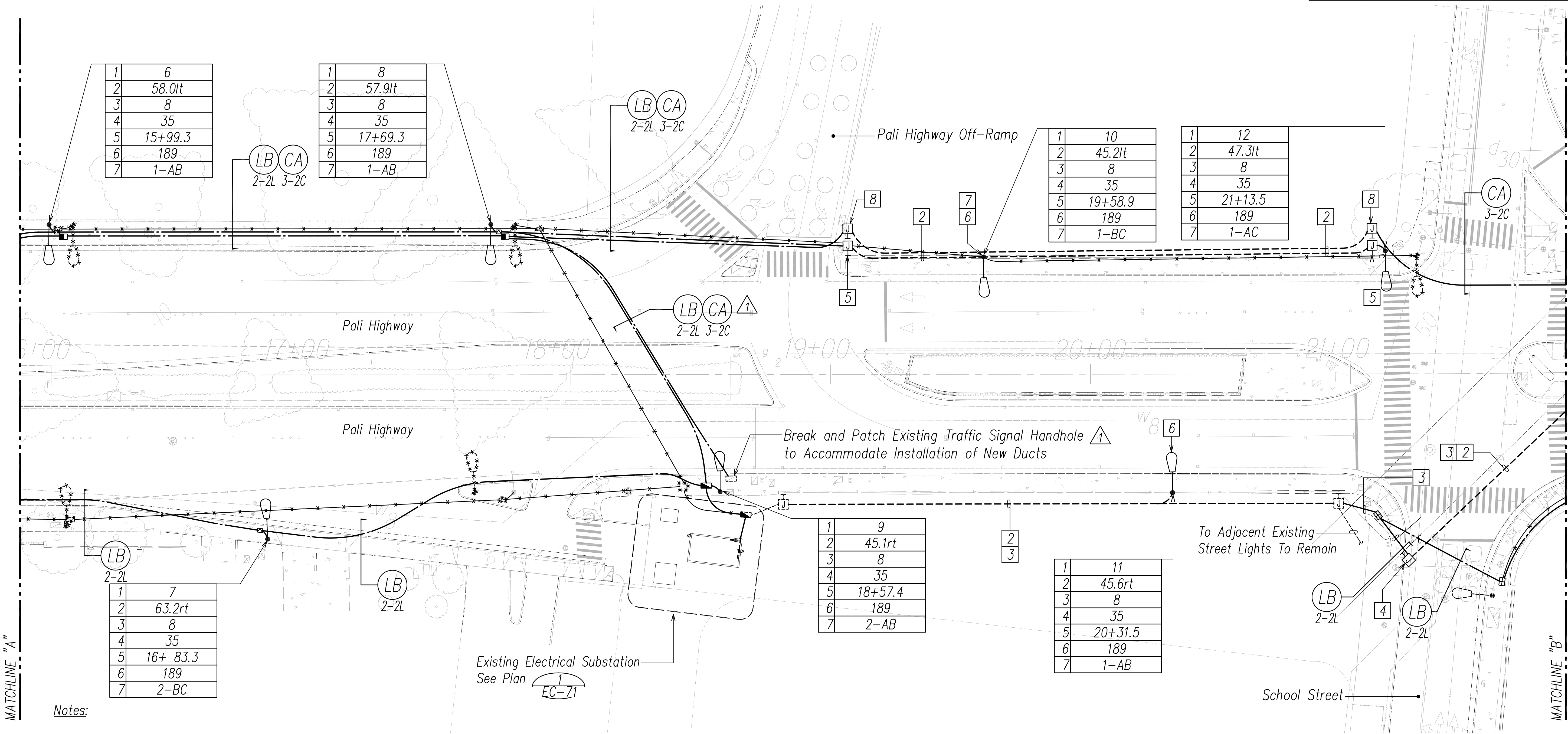
CONCRETE CONDUIT STUB-OUT MARKER
NOT TO SCALE

5/15/17	Revised Duct Section Note
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION DUCT SECTION DETAILS 1 PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-(K035) Scale: AS NOTED Date: February 2017	
SHEET No. EA-6 OF 7 SHEETS	



Signature 2017.05.12

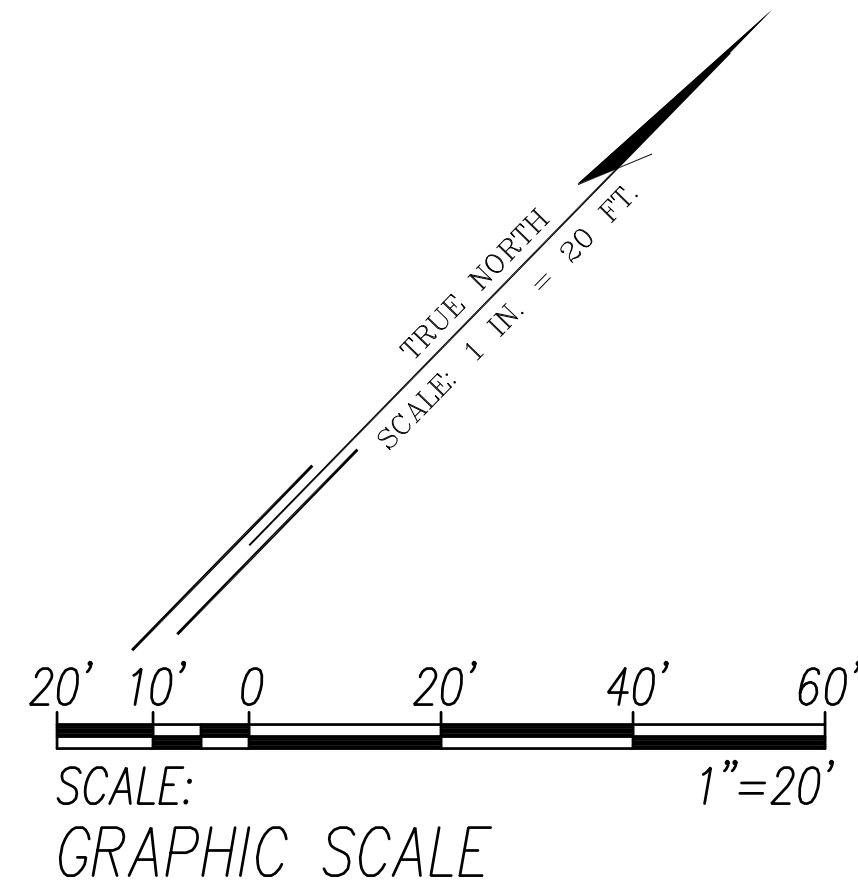
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-(K035)	2017	ADD320	455



Notes:

1. See Sheet ED-2 For Traffic Signal Plan.
2. Conduit Shall Be Surface Mounted On Face Of Overpass. Provide Conduit Supports Every 5' At Minimum. See Details On Sheet EF-19.
3. Existing Highway Lighting Conduit And Wiring To Be Removed. Provide New Conduit And Wiring.
4. Existing Highway Lighting Junction Box To Be Removed. Provide New 16"W x 12"H x 6"D Junction Box, NEMA 4X SS.
5. Existing Highway Lighting Junction Box To Be Removed. Provide New 12"SQ x 6"D Junction Box, NEMA 4X SS.
6. Existing Highway Light Standard To Be Replaced In Same Location. Existing Light Base With 12" Bolt Circle to Be Reused. See Structural Drawings For Details.
7. Existing Traffic Camera Shall Be Removed And Reinstalled To Accommodate Installation Of New Highway Light Standard.
8. 12"W x 10"H x 6"D Communications Junction Box, NEMA 4X SS.

LIGHTING PLAN 2
Scale: 1"=20'

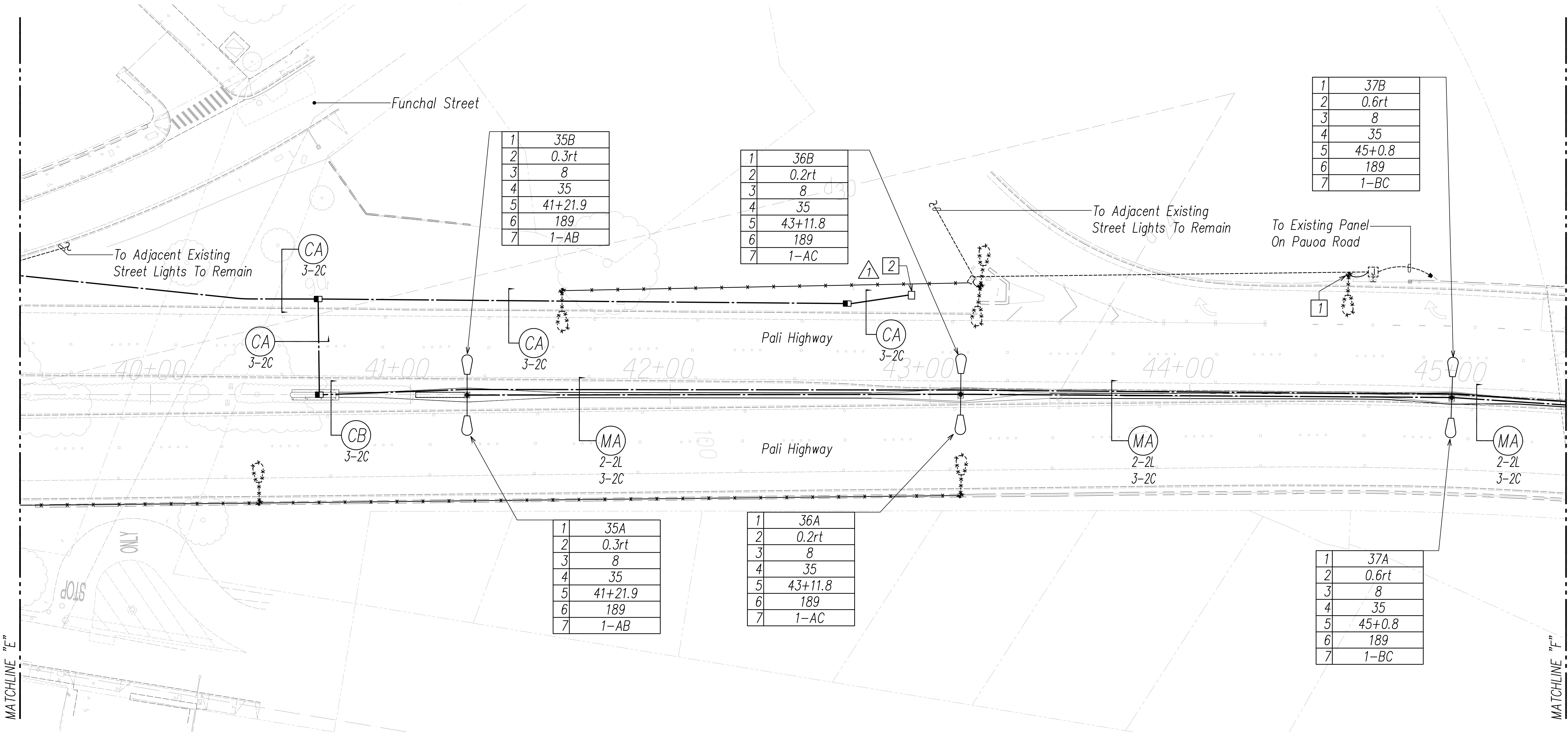


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5/15/17	Added Comm Conduits
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION LIGHTING PLAN 2 PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-(K035) Scale: AS NOTED Date: February 2017	
SHEET No. EC-2 OF 71 SHEETS	

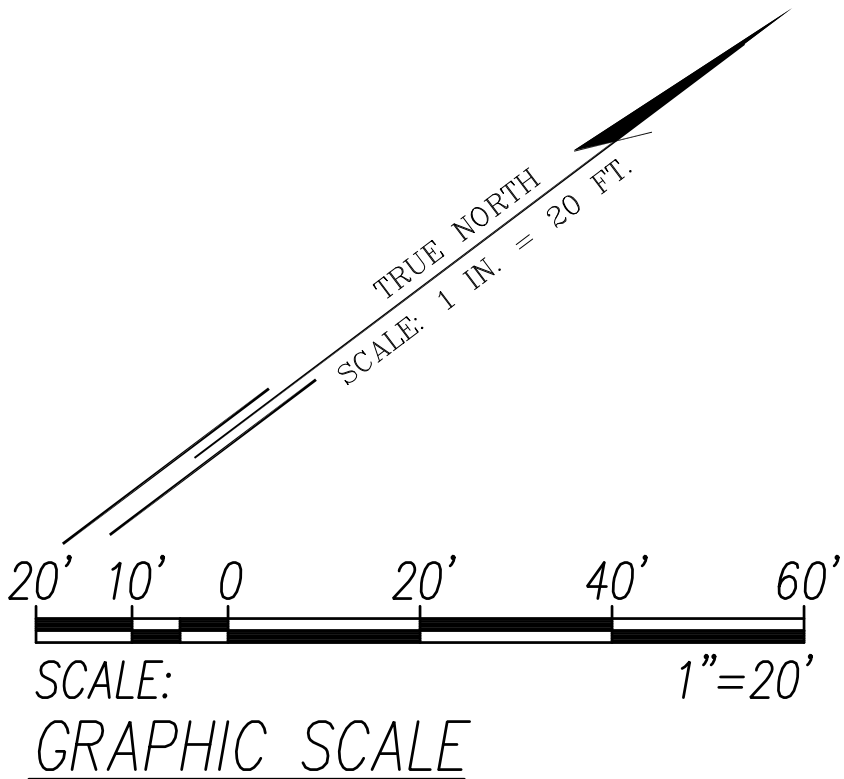
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-(K035)	2017	ADD324	455



Notes:

- 1 Existing Flashing Yellow Light Mounted To Existing Highway Light Standard To Be Removed.
- 2 Type "D" Concrete Pad For Future Traffic Signal Cabinet. See Detail On EF-31.

LIGHTING PLAN 6
Scale: 1"=20'



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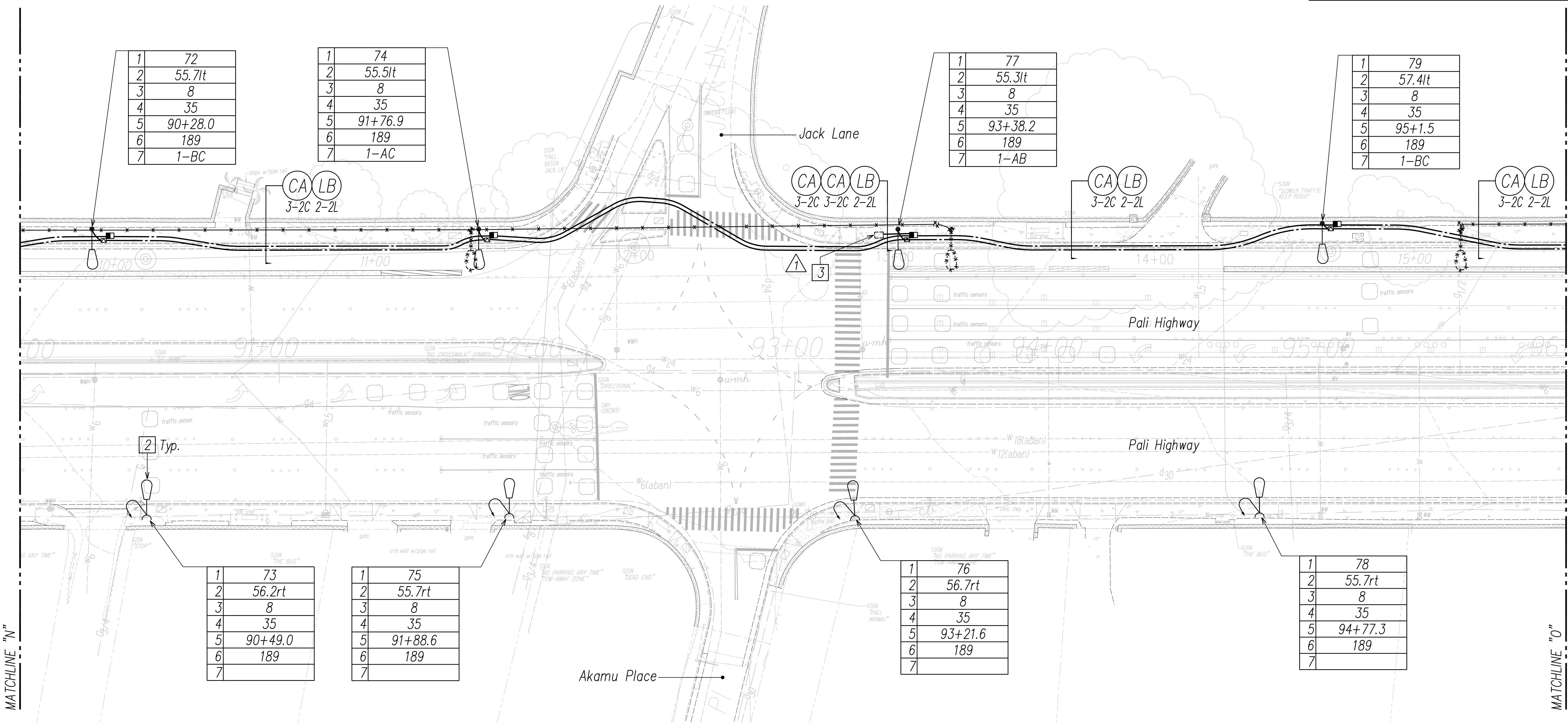
Signature 2017.05.12

DATE	DESCRIPTION
5/15/17	Added Comm Ducts and Type D Concrete Pad

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
LIGHTING PLAN 6
PALI HIGHWAY RESURFACING
Waikanaka Street to Kamehameha Highway
PALI HIGHWAY LIGHTING REPLACEMENT
Vineyard Boulevard to Kamehameha Highway
Federal Aid Project No. NH-061-(K035)
Scale: AS NOTED Date: February 2017

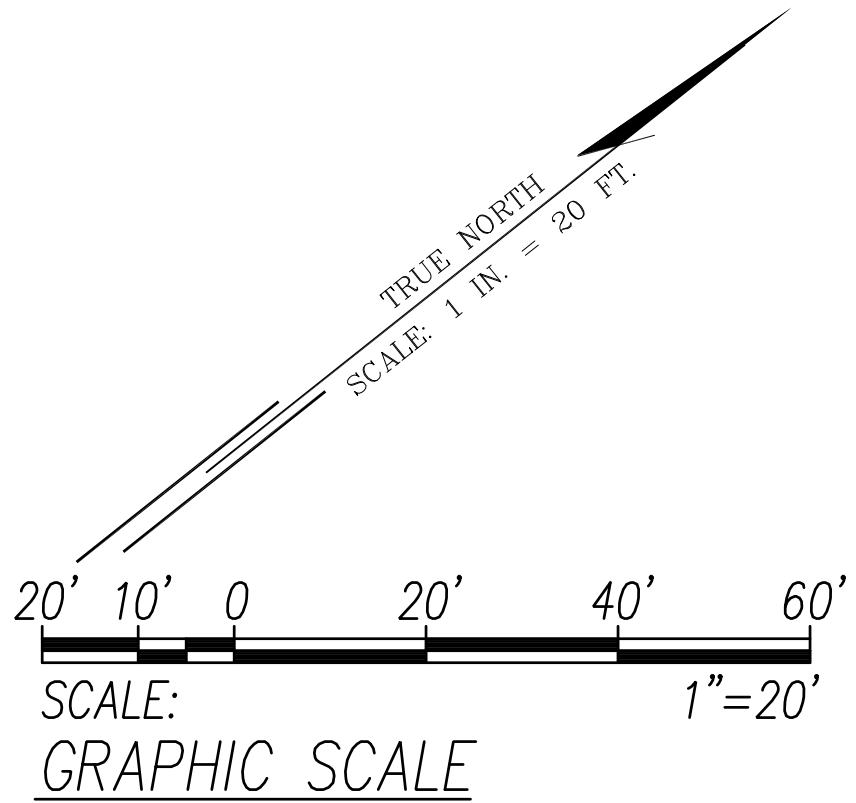
SHEET No. EC-6 OF 71 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-(K035)	2017	ADD333	455



- Notes:
- See Sheets ED-4 & ED-5 For Traffic Signal Plans.
 - Existing Highway Light Standard On Existing Utility Wood Pole To Be Replaced. See Details On Sheet EF-17.
 - Break And Patch Existing Traffic Signal Handhole To Accommodate Installation Of New Ducts.

LIGHTING PLAN 15
Scale: 1"=20'

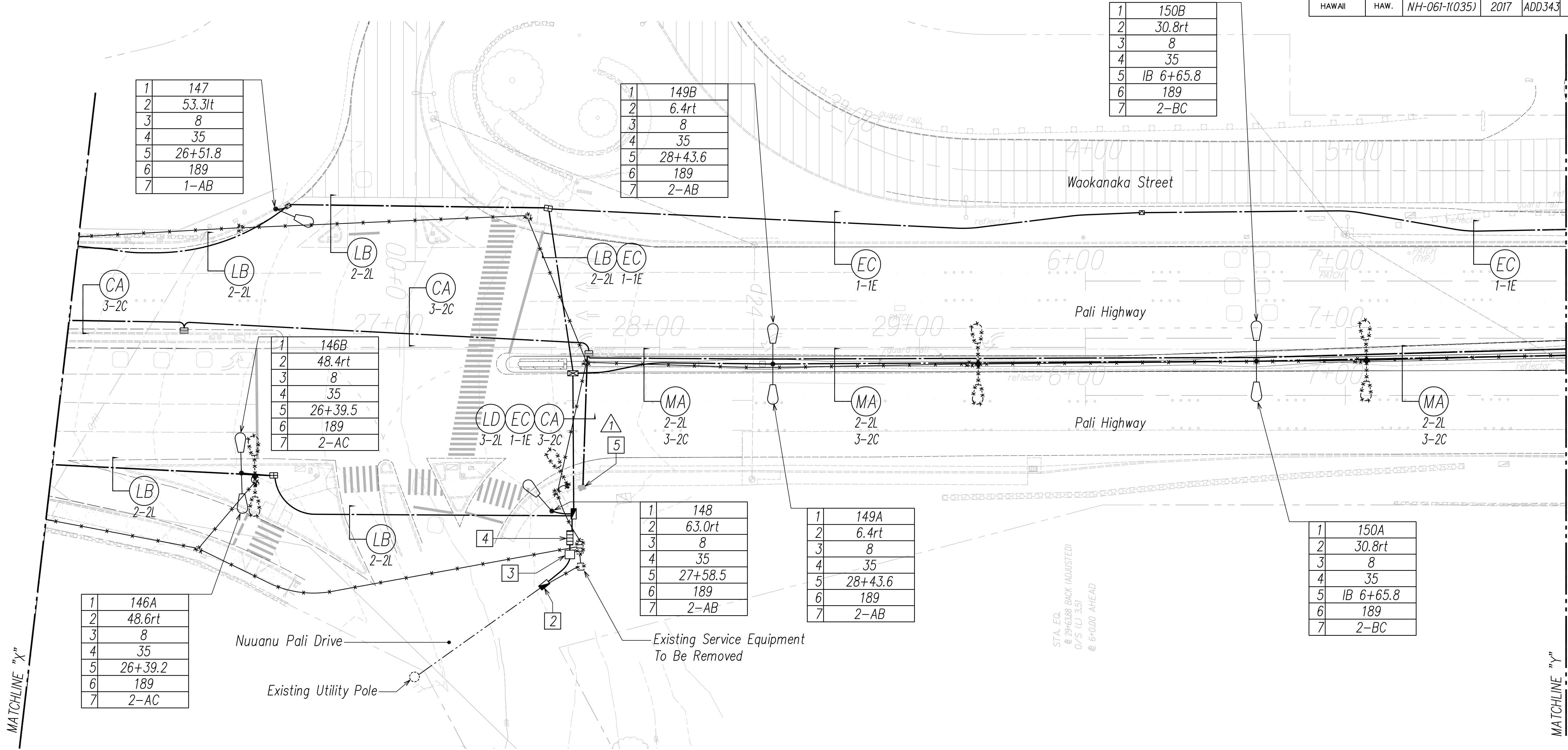


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5/15/17	Added Comm Conduits
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION LIGHTING PLAN 15 PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-(K035) Scale: AS NOTED Date: February 2017	
SHEET No. EC-15 OF 71 SHEETS	

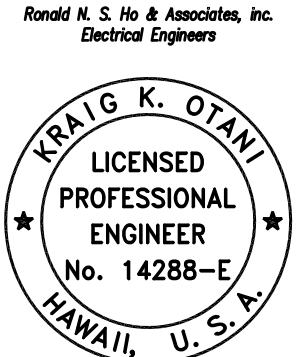
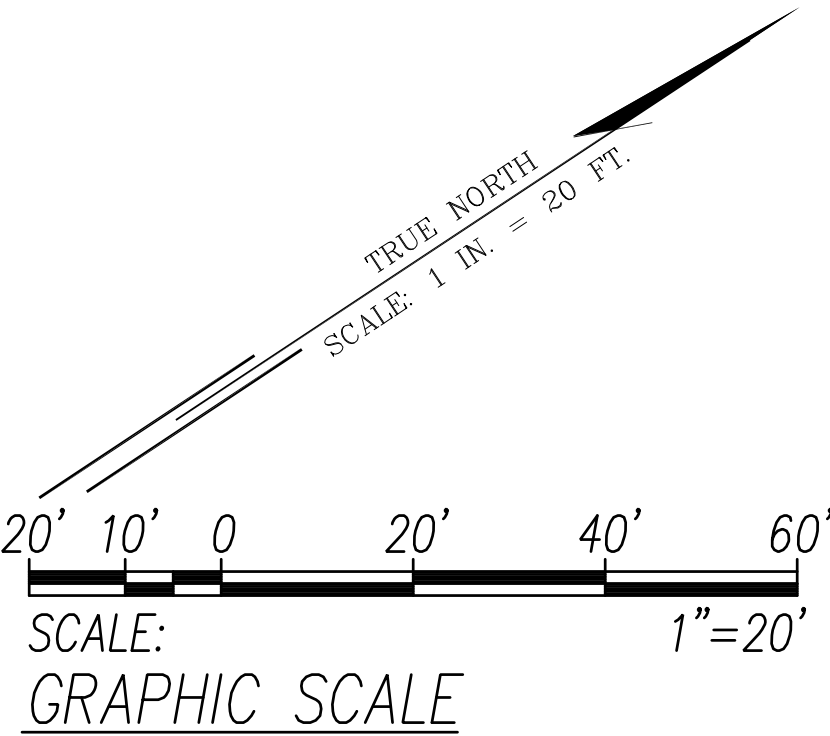
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-(K035)	2017	ADD343	455



Notes:

- See Sheet ED-9 For Traffic Signal Plan.
- Provide New Type C Pullbox To Intercept Existing HECO Ductline And Extend To New Service Equipment.
- New HECO Padmounted Transformer.
- New Highway Lighting Service Equipment. See Detail On Sheet EF-1.
- Break And Patch Existing Traffic Signal Handhole To Accommodate Installation Of New Ducts.

LIGHTING PLAN 25
Scale: 1"=20'

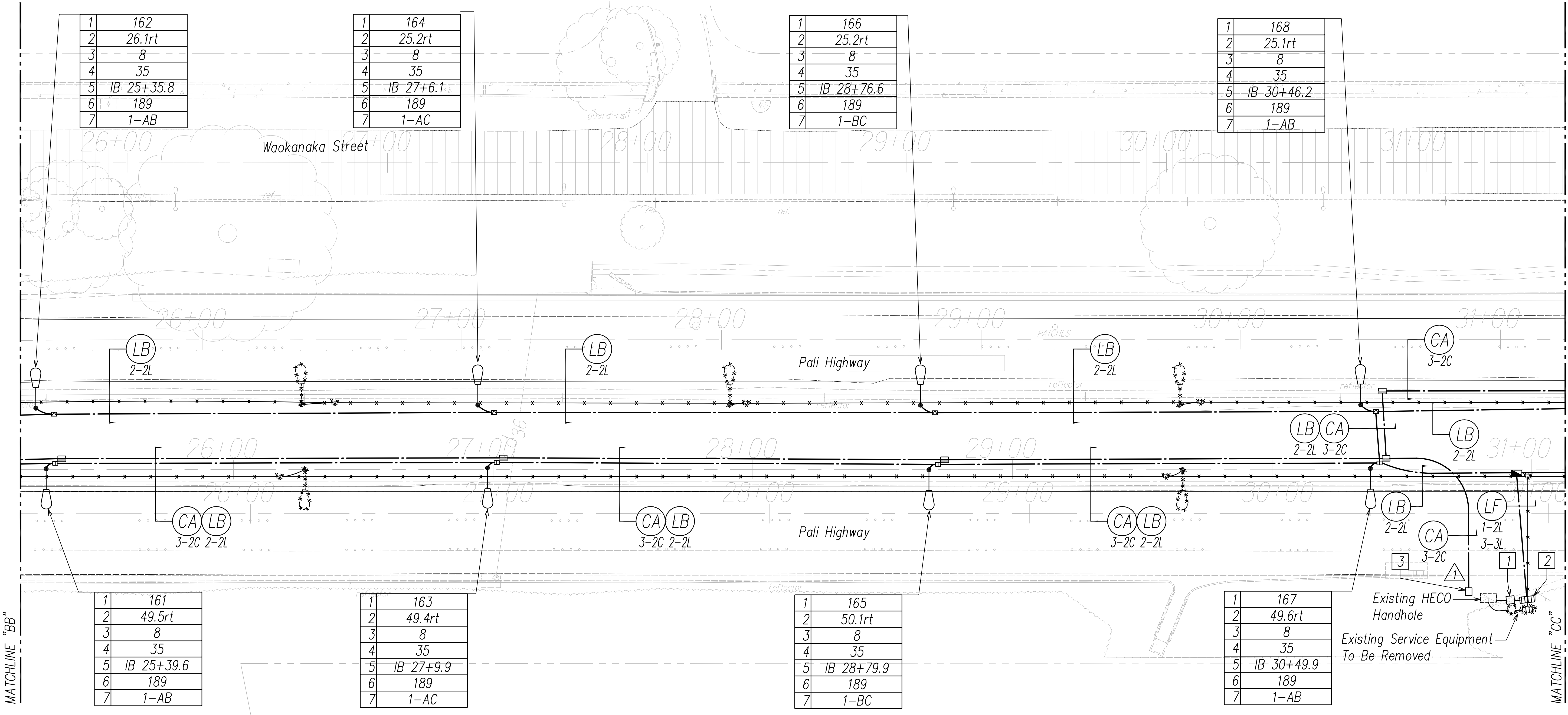


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Exp. 04-30-18

Signature 2017.05.12

5/15/17	Added Comm Conduits
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION LIGHTING PLAN 25 PALI HIGHWAY RESURFACING Waikanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-(K035) Scale: AS NOTED Date: February 2017	
SHEET No. EC-250F 71 SHEETS	

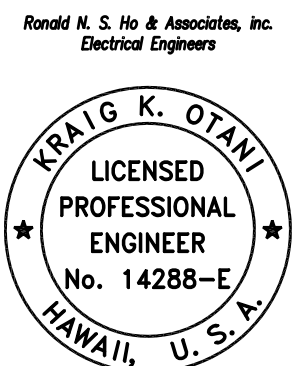
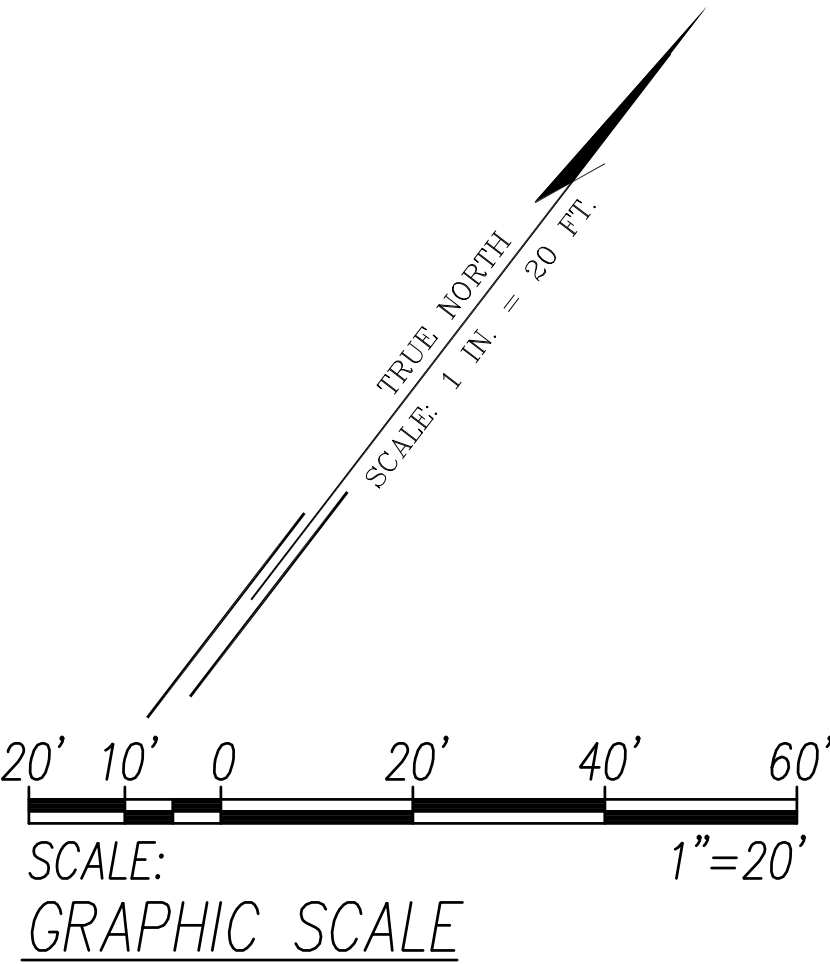
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-(K035)	2017	ADD347	455



Notes:

- 1 New HECO Padmounted Transformer.
- 2 New Highway Lighting Service Equipment. See Detail On Sheet EF-1.
- 3 Type "D" Concrete Pad For Future Traffic Signal Cabinet. See Detail On EF-31.

LIGHTING PLAN 29
Scale: 1"=20'



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5/15/17	Added Comm Ducts and Type D Concrete Pad
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION LIGHTING PLAN 29 PALI HIGHWAY RESURFACING Waikanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-(K035) Scale: AS NOTED Date: February 2017	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-(035)	2017	ADD357	455

1	212B
2	29.6rt
3	8
4	35
5	IB 89+50.8
6	189
7	1-AC

1	211B
2	28.1rt
3	8
4	35
5	IB 87+71.8
6	189
7	1-BC

1	210B
2	27.5rt
3	8
4	35
5	IB 85+97.1
6	189
7	1-AB

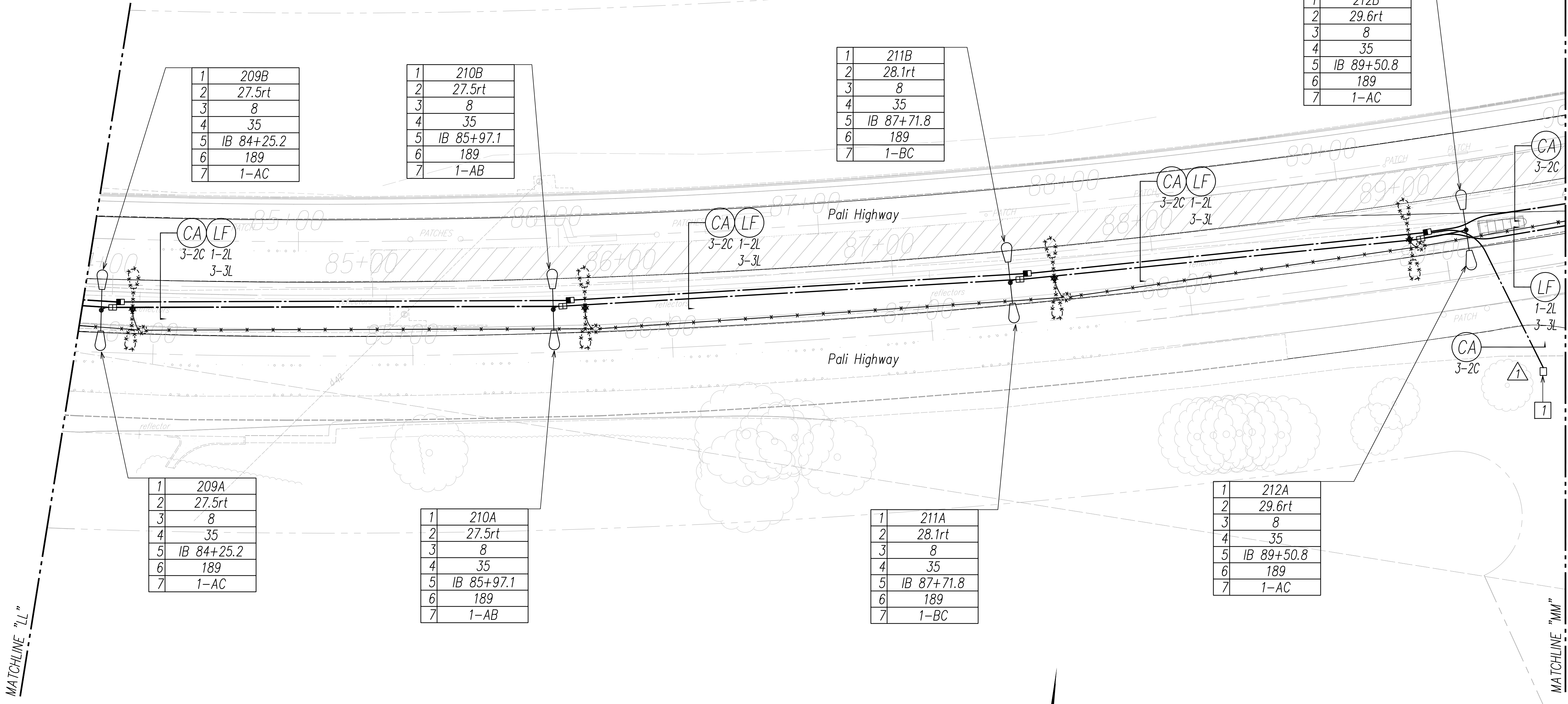
1	209B
2	27.5rt
3	8
4	35
5	IB 84+25.2
6	189
7	1-AC

1	212A
2	29.6rt
3	8
4	35
5	IB 89+50.8
6	189
7	1-AC

1	211A
2	28.1rt
3	8
4	35
5	IB 87+71.8
6	189
7	1-BC

1	210A
2	27.5rt
3	8
4	35
5	IB 85+97.1
6	189
7	1-AB

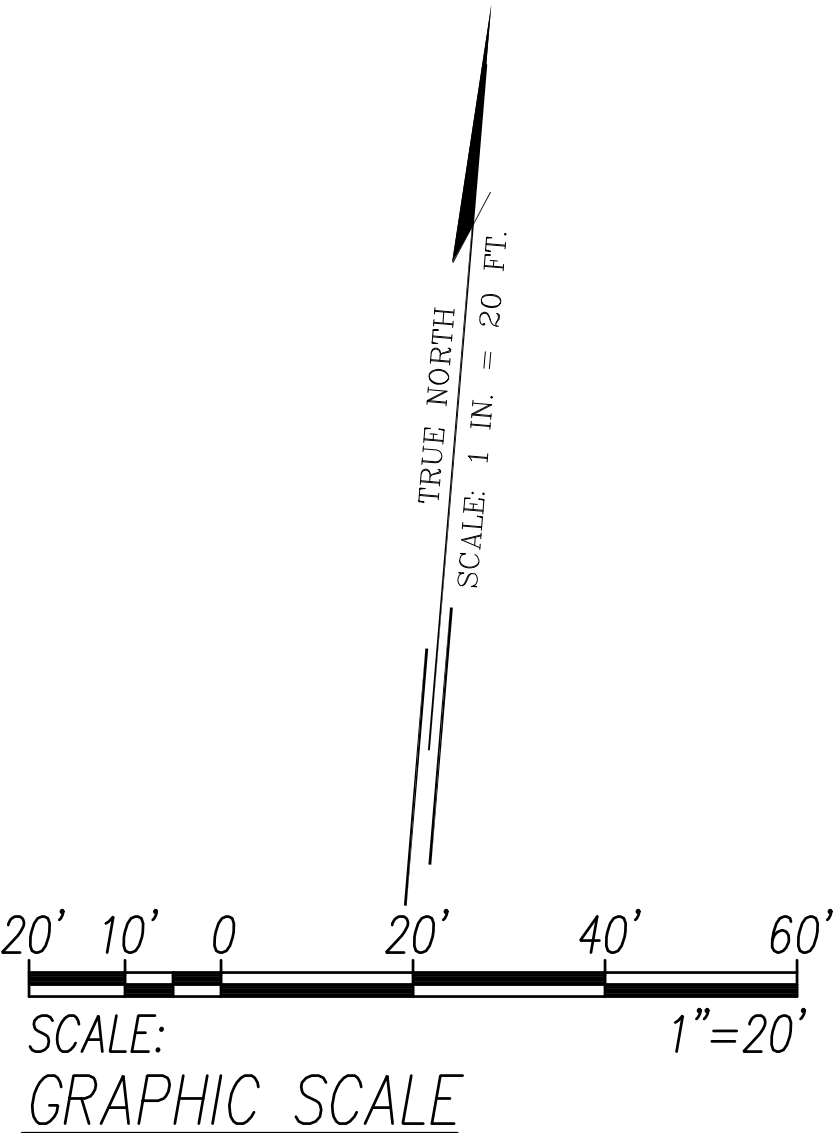
1	209A
2	27.5rt
3	8
4	35
5	IB 84+25.2
6	189
7	1-AC



Notes:

1 Type "D" Concrete Pad For Future Traffic Signal Cabinet. See Detail On EF-31.

LIGHTING PLAN 39
Scale: 1"=20'

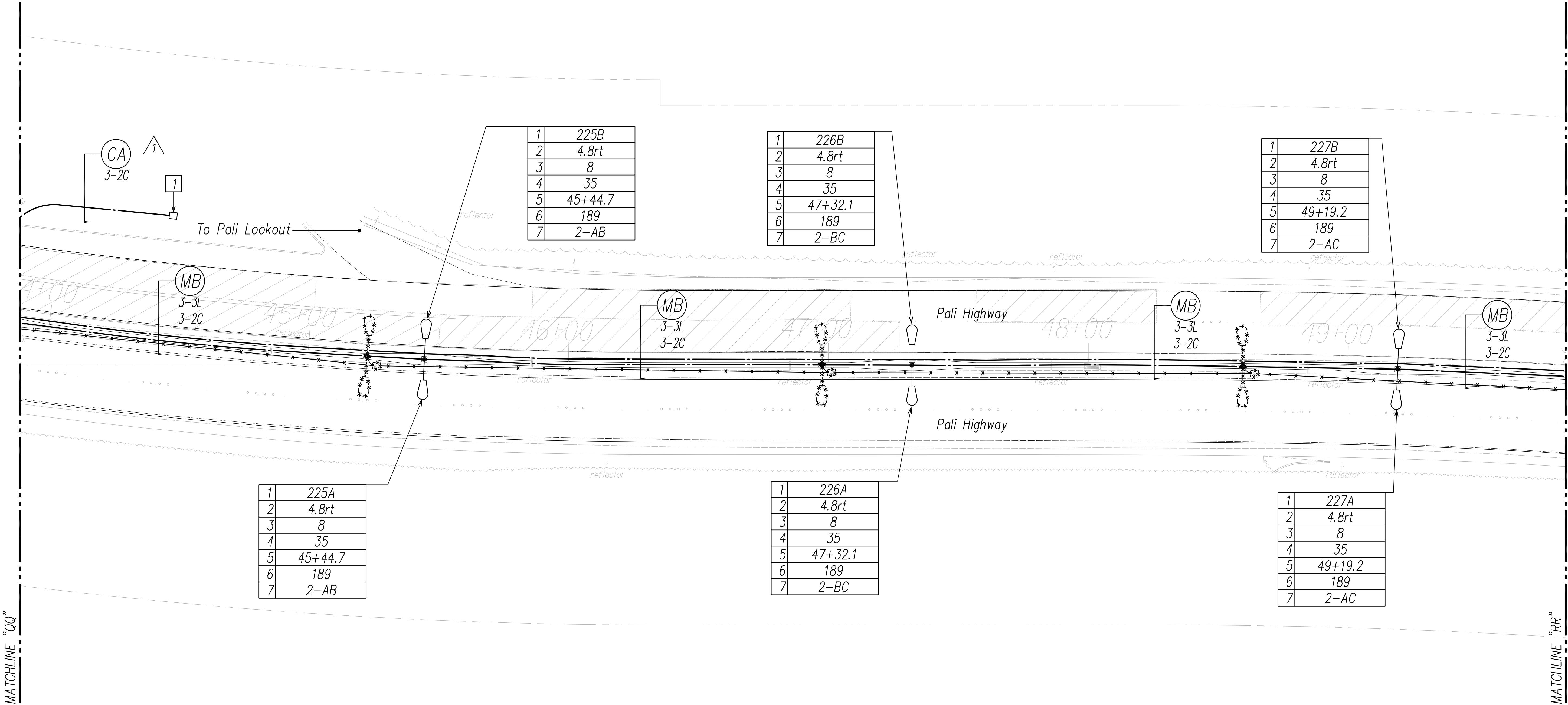


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Signature 2017.05.12

5/15/17	1 Added Comm Ducts and Type D Concrete Pad
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION LIGHTING PLAN 39 PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-(035) Scale: AS NOTED Date: February 2017	
SHEET No. EC-390F 71 SHEETS	

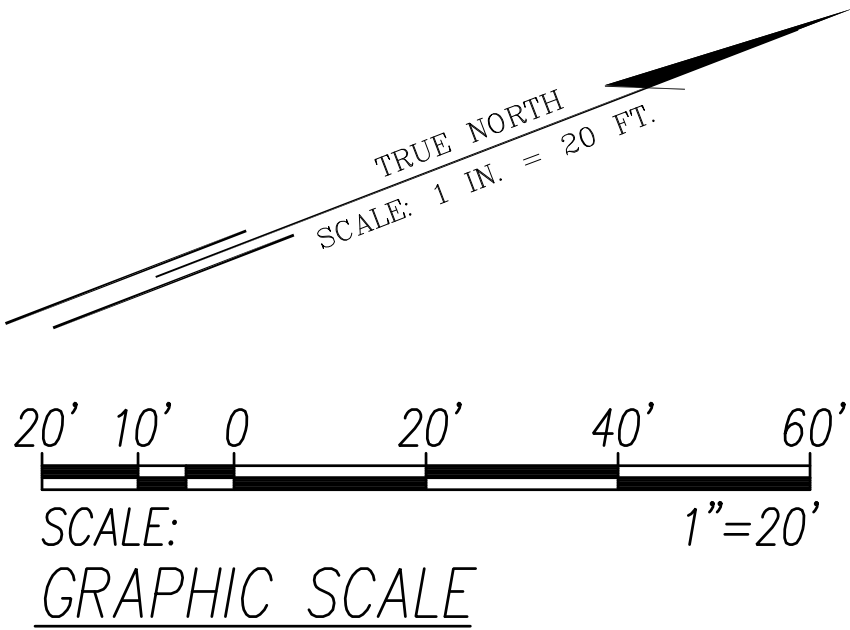
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-(K035)	2017	ADD362	455



Notes:

1 Type "D" Concrete Pad For Future Traffic Signal Cabinet. See Detail On EF-31.

LIGHTING PLAN 44
Scale: 1"=20'

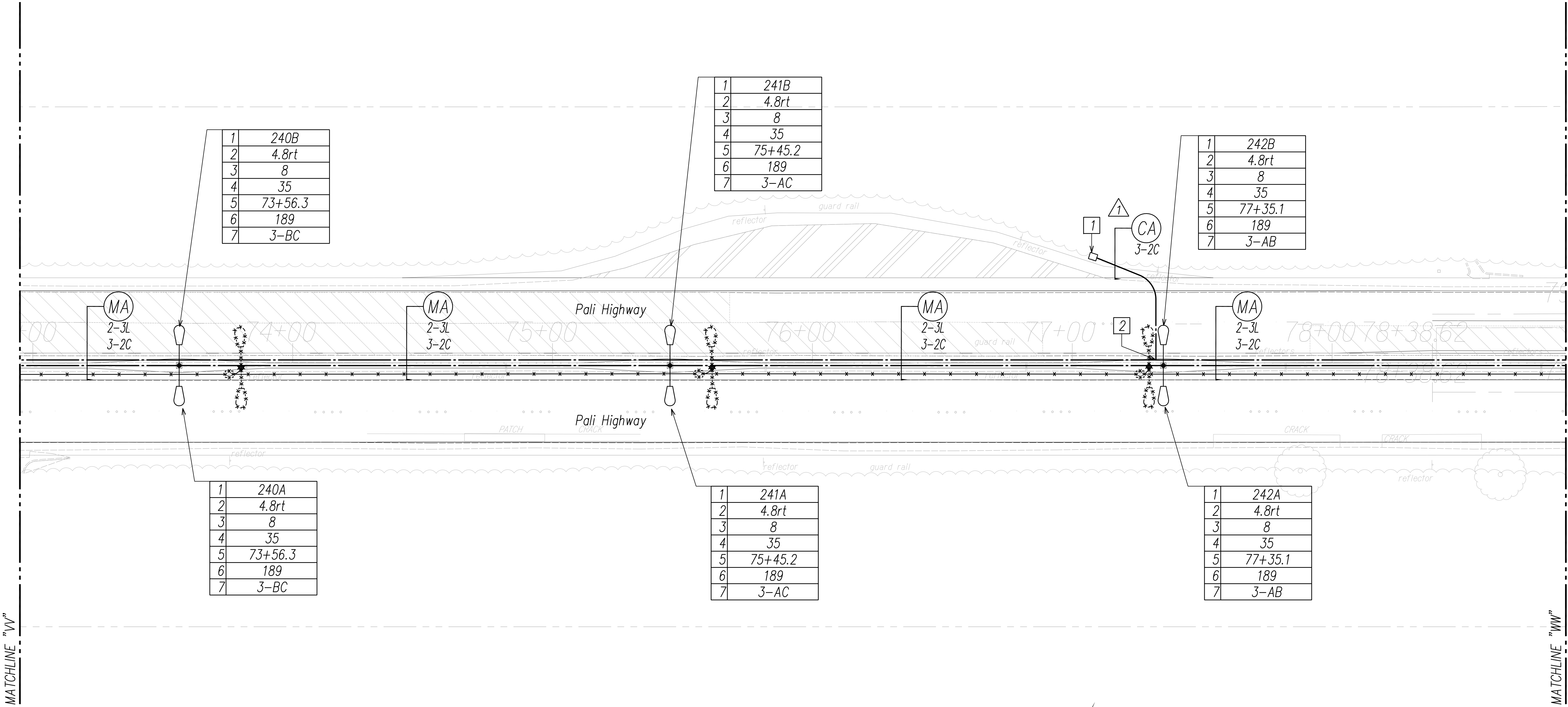


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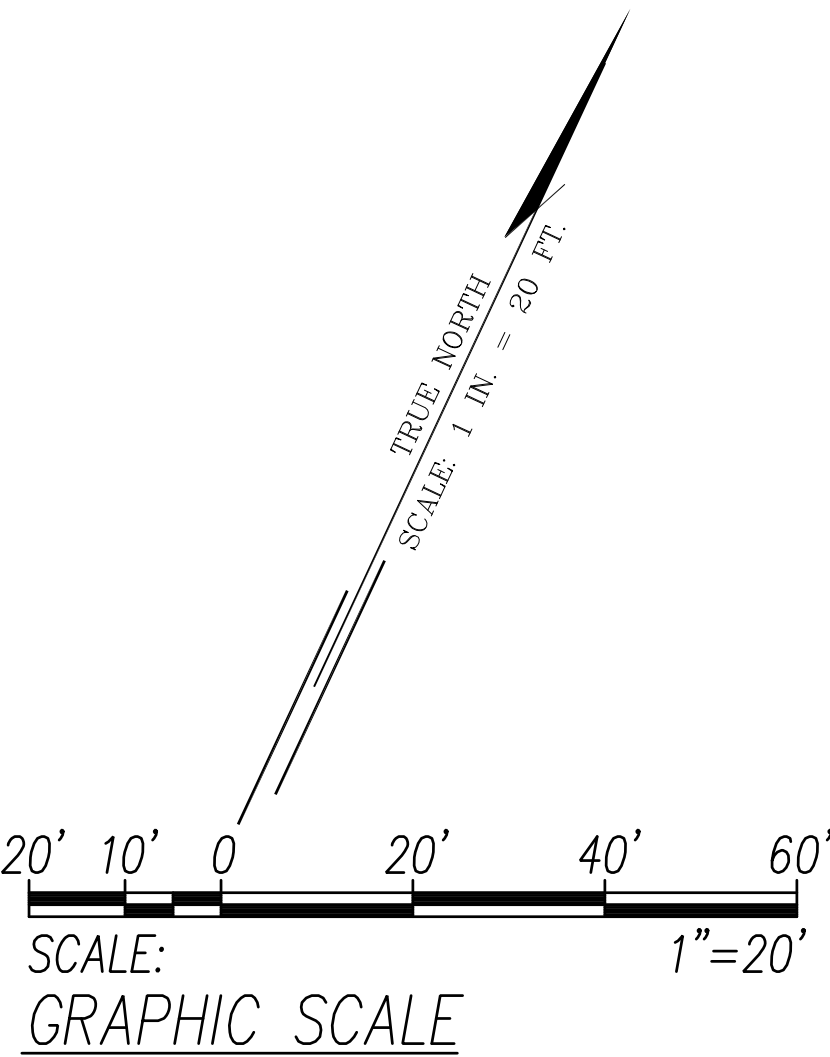
5/15/17	1 Added Comm Ducts and Type D Concrete Pad
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION LIGHTING PLAN 44 PALI HIGHWAY RESURFACING <i>Waokanaka Street to Kamehameha Highway</i> <i>PALI HIGHWAY LIGHTING REPLACEMENT</i> <i>Vineyard Boulevard to Kamehameha Highway</i> <i>Federal Aid Project No. NH-061-(K035)</i> Scale: AS NOTED Date: February 2017	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD367	455



- Notes:**
- 1 Type "D" Concrete Pad For Future Traffic Signal Cabinet. See Detail On EF-31.
 - 2 Provide 3-2" Communications Conduits to Nearest Communications Junction Box in Concrete Median Barrier.

LIGHTING PLAN 49
Scale: 1"=20'

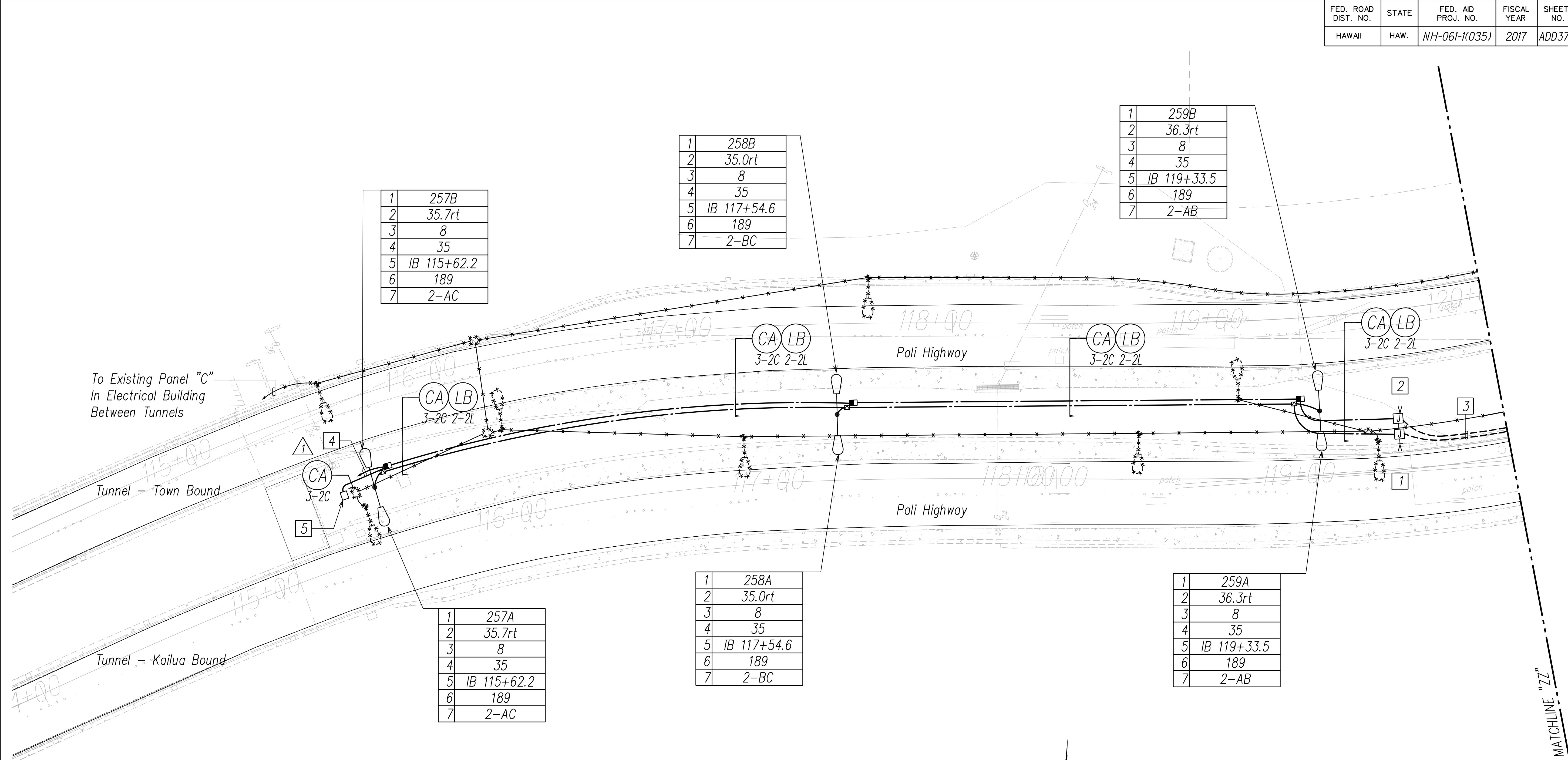


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Exp. 04-30-18

Signature 2017.05.12

5/15/17	Added Comm Ducts and Type D Concrete Pad
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION LIGHTING PLAN 49 PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-1(035) Scale: AS NOTED Date: February 2017	
SHEET No. EC-49 OF 71 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-(K035)	2017	ADD372	455



1	257B
2	35.7rt
3	8
4	35
5	IB 115+62.2
6	189
7	2-AC

1	258B
2	35.0rt
3	8
4	35
5	IB 117+54.6
6	189
7	2-BC

1	259B
2	36.3rt
3	8
4	35
5	IB 119+33.5
6	189
7	2-AB

1	257A
2	35.7rt
3	8
4	35
5	IB 115+62.2
6	189
7	2-AC

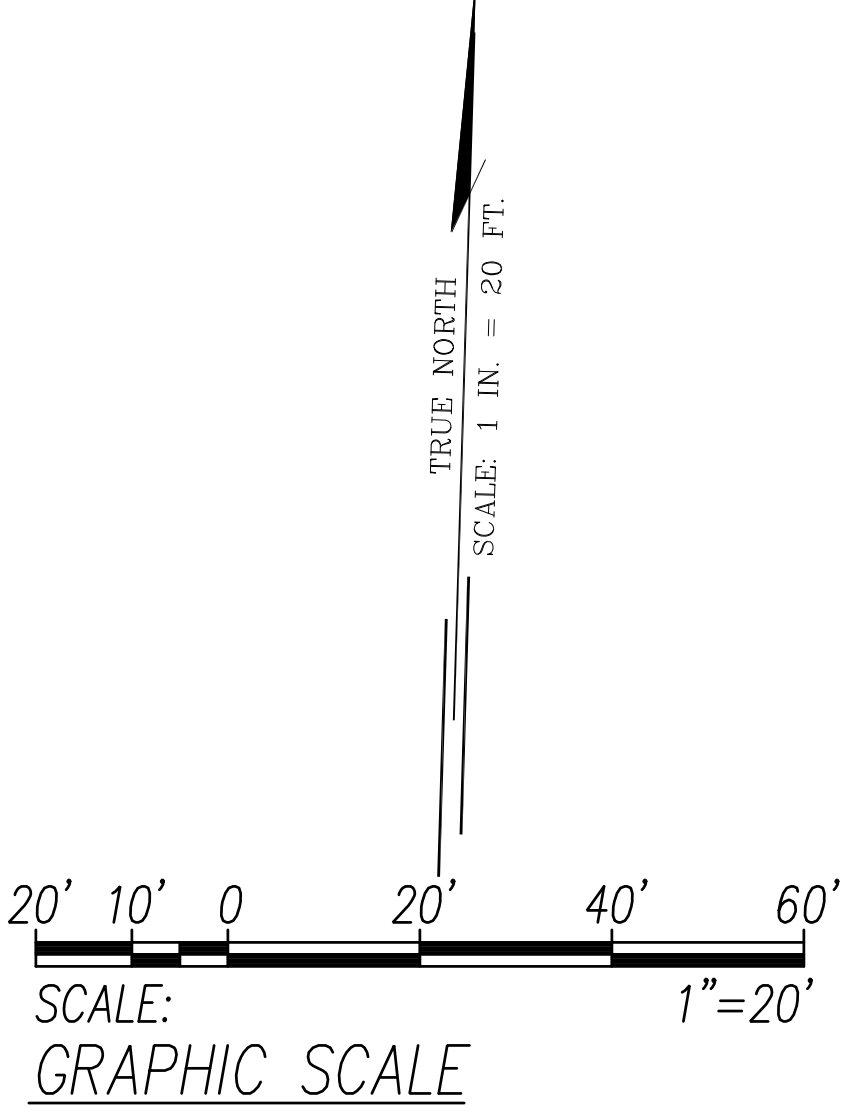
1	258A
2	35.0rt
3	8
4	35
5	IB 117+54.6
6	189
7	2-BC

1	259A
2	36.3rt
3	8
4	35
5	IB 119+33.5
6	189
7	2-AB

Notes:

- 1 24"W x 20"H x 8"D Lighting Junction Box, NEMA 4X SS.
- 2 30"W x 24"H x 8"D Communications Junction Box, NEMA 4X SS.
- 3 Conduit Shall Be Surface Mounted To Face Of Bridge. Provide Conduit Supports Every 5' At Minimum. See Details On EF-20 & EF-21.
- 4 Provide 3-2" Communications Conduits To Existing Johnson Controls Communications Junction Box In Tunnel. Coordinate Location Of Junction Box With DOT-Highways.
- 1 5 Type "D" Concrete Pad For Future Traffic Signal Cabinet. See Detail On EF-31.

LIGHTING PLAN 54
Scale: 1"=20'



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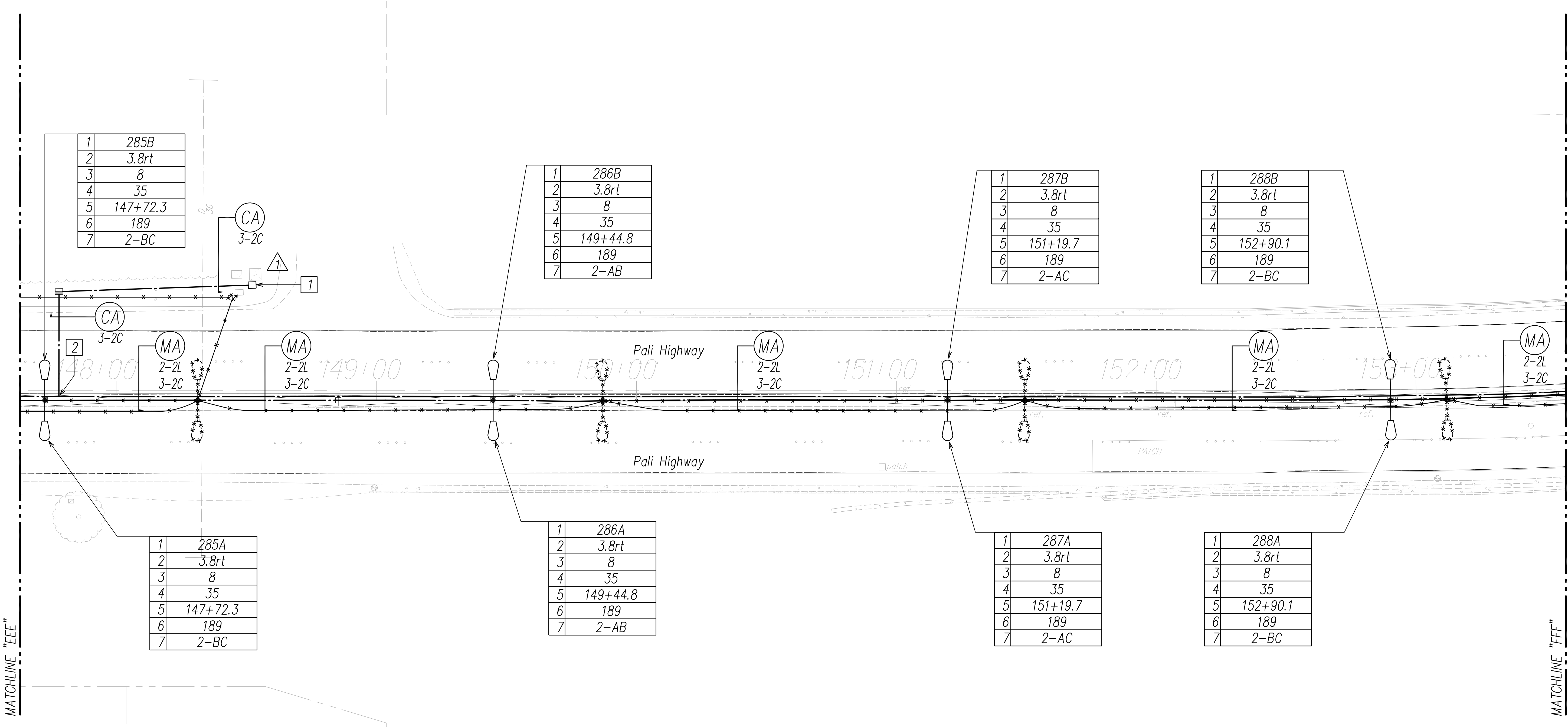
Signature 2017.05.12

5/15/17 1 Added Comm Ducts and Type D Concrete Pad

DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION LIGHTING PLAN 54 PALI HIGHWAY RESURFACING Waikanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-(K035) Scale: AS NOTED Date: February 2017	

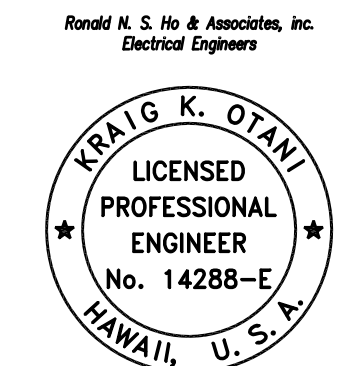
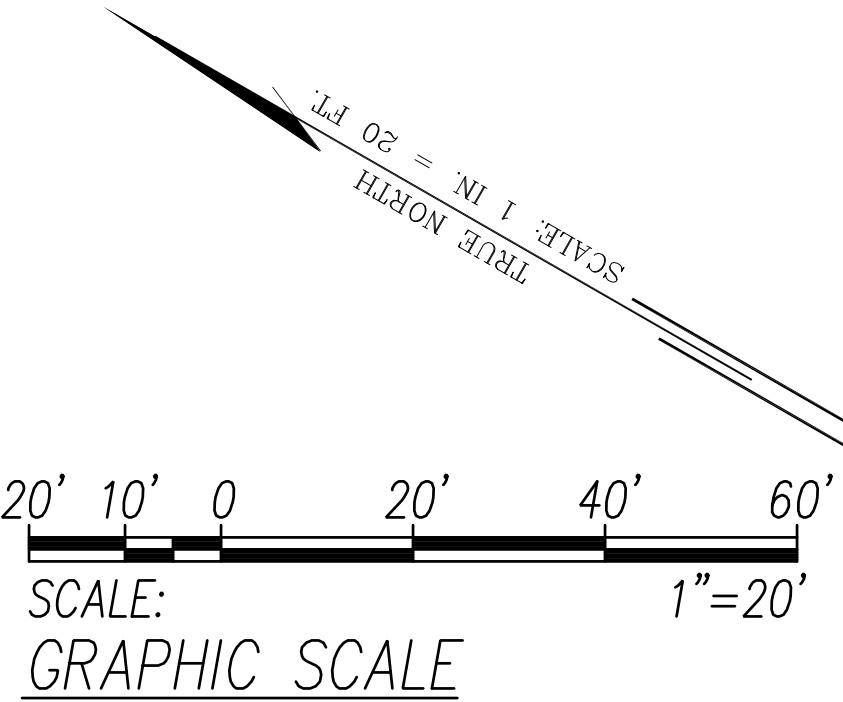
SHEET No. EC-54 OF 71 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-(K035)	2017	ADD378	455



- Notes:**
- 1 Type "D" Concrete Pad For Future Traffic Signal Cabinet. See Detail On EF-31.
 - 2 Provide 3-2" Communications Conduits to Nearest Communications Junction Box in Concrete Median Barrier.

LIGHTING PLAN 60
Scale: 1"=20'

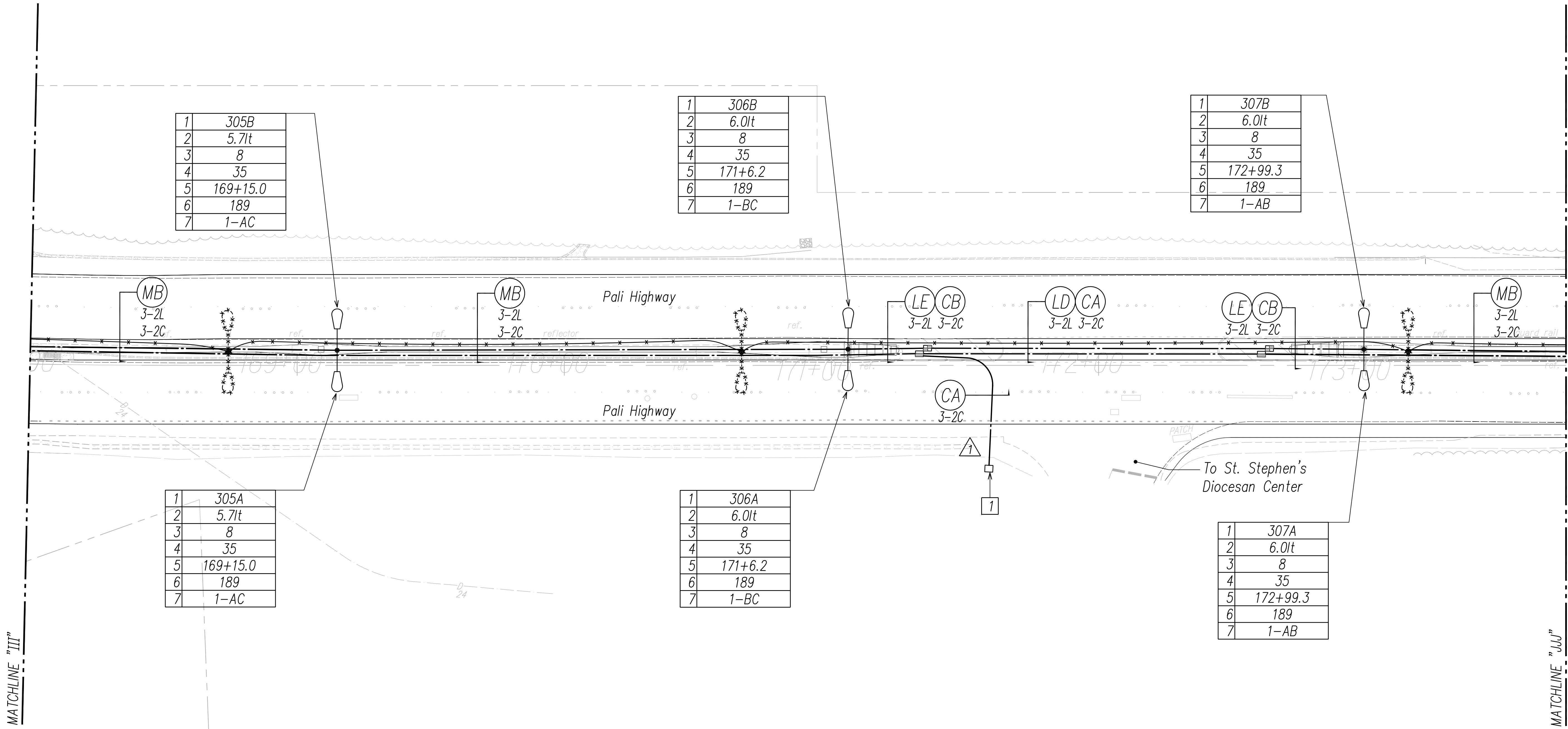


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Exp. 04-30-18

Signature 2017.05.12

5/15/17	Added Comm Ducts and Type D Concrete Pad
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION LIGHTING PLAN 60 PALI HIGHWAY RESURFACING Waikanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-(K035) Scale: AS NOTED Date: February 2017	

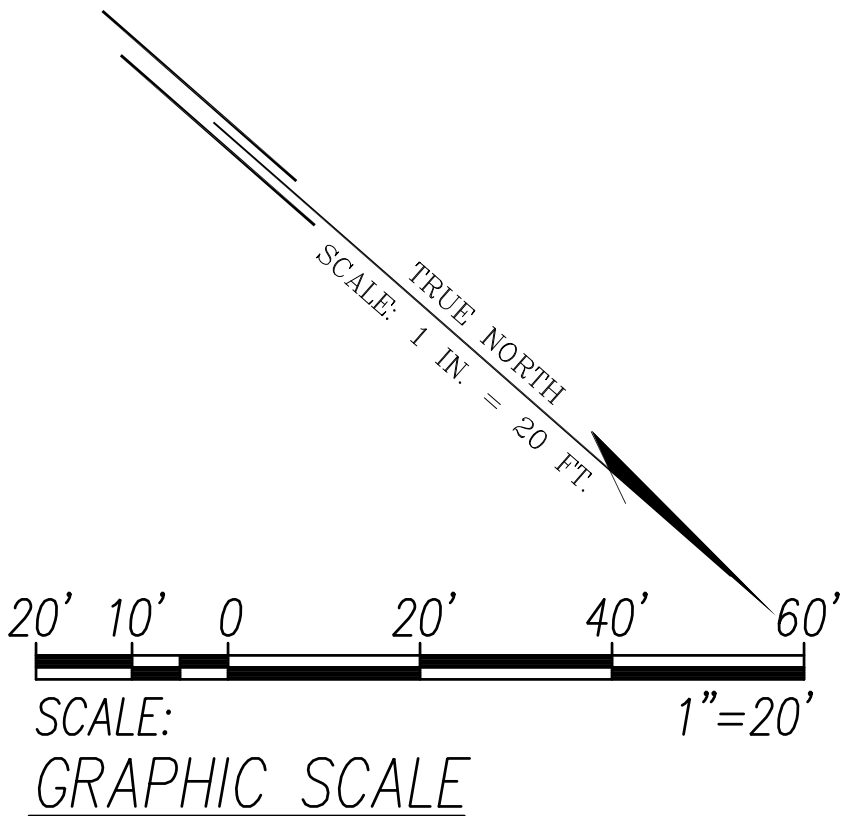
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-(035)	2017	ADD382	455



Notes:

1 1 Type "D" Concrete Pad For Future Traffic Signal Cabinet. See Detail On EF-31.

LIGHTING PLAN 64
Scale: 1"=20'



Ronald M. S. Ho & Associates, Inc.
Electrical Engineers

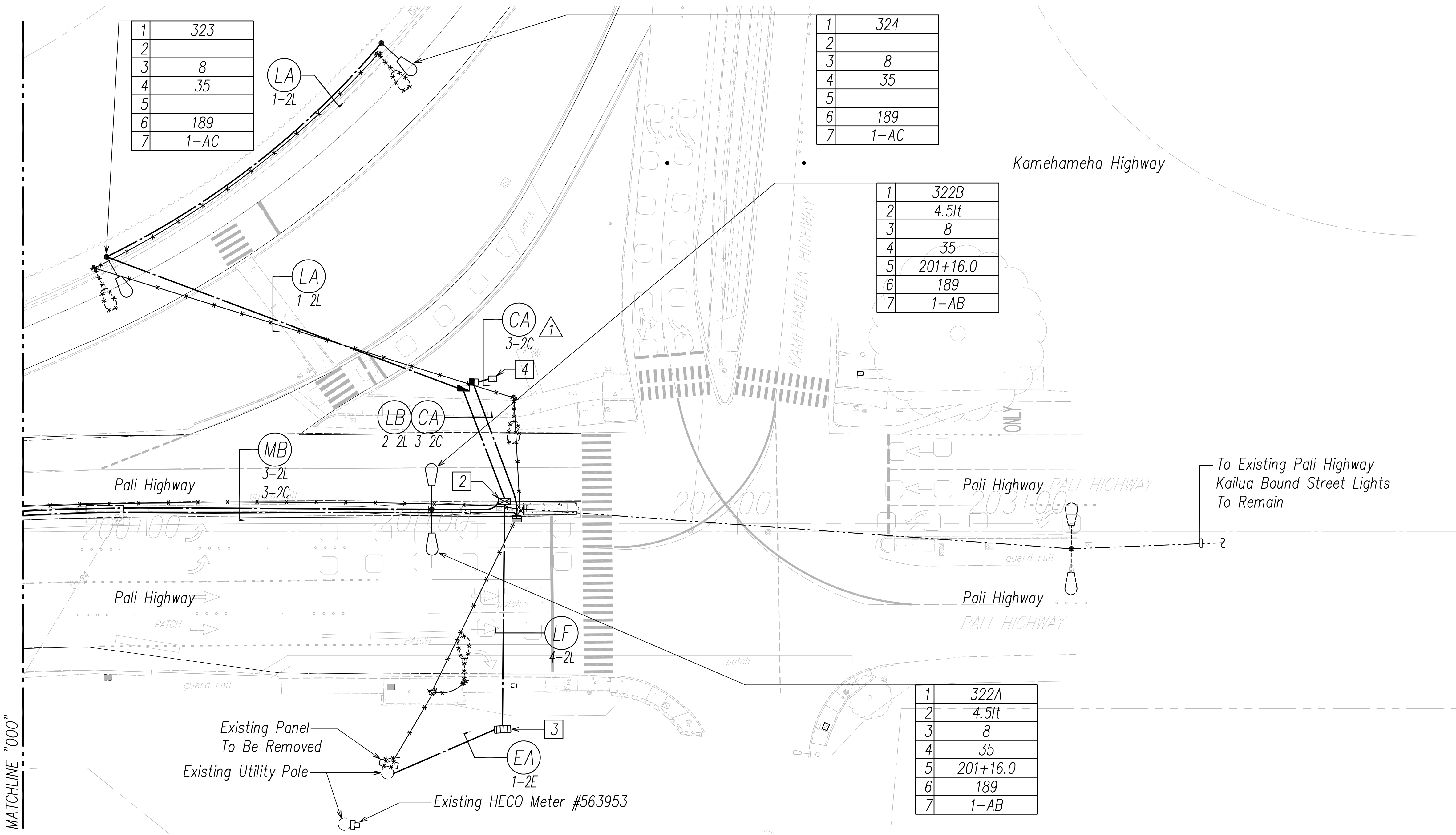
KRAIG K. OTANI
LICENSED PROFESSIONAL ENGINEER
No. 14288-E
HAWAII, U.S.A.

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Exp. 04-30-18

Signature _____ 2017.05.12

5/15/17	Added Comm Ducts and Type D Concrete Pad
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
LIGHTING PLAN 64	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-(035)	
Scale: AS NOTED	Date: February 2017
SHEET No. EC-64 OF 71 SHEETS	

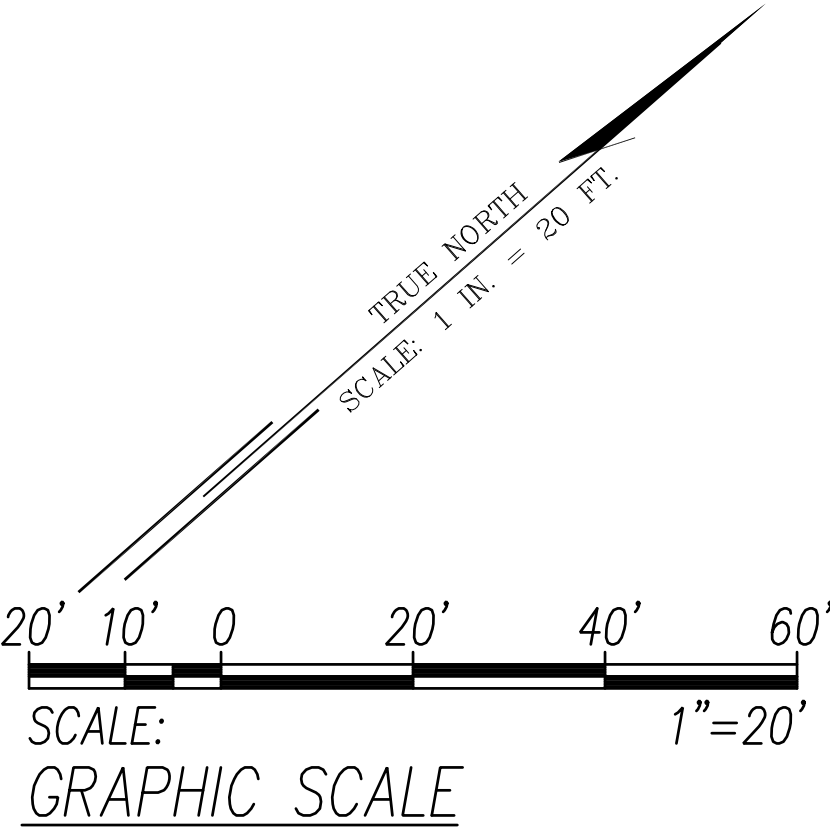
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-(035)	2017	ADD388	455



Notes:

- 1. See Sheet ED-12 For Traffic Signal Plan.
- 2. Provide New Handhole To Intercept Existing Highway Lighting Ductline. Splice New And Existing Conductors In Handhole To Maintain Existing Pali Highway - Kailua Bound Street Lights.
- 3. New Highway Lighting Service Equipment. See Detail On Sheet EF-1.
- 4. Break And Patch Existing Traffic Signal Handhole To Accommodate Installation Of New Ducts.

LIGHTING PLAN 70
Scale: 1"=20'



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Ronald M. S. Ho & Associates, Inc.
Electrical Engineers

KRAIG K. OTANI
LICENSED PROFESSIONAL ENGINEER
No. 14288-E
HAWAII, U.S.A.

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Exp. 04-30-18

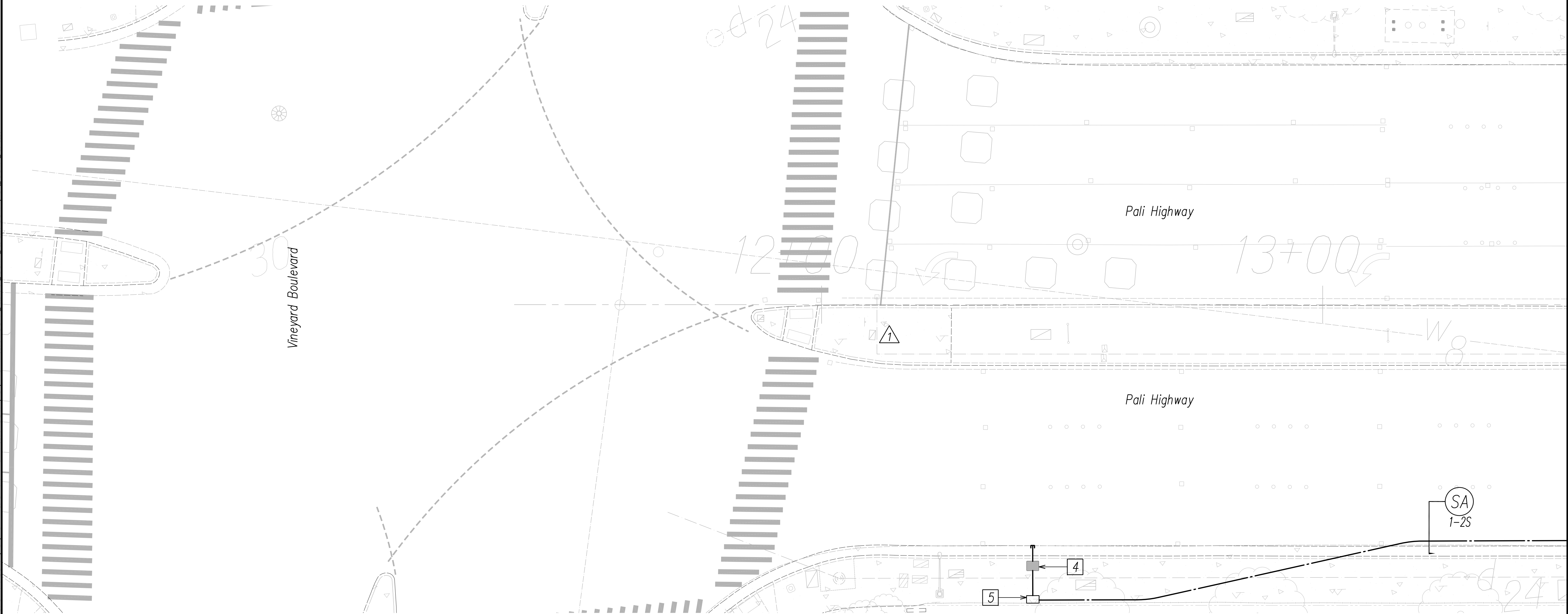
5/15/17	Added Comm Conduits
DATE	DESCRIPTION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PLAN 70
PALI HIGHWAY RESURFACING
Waokanaka Street to Kamehameha Highway
PALI HIGHWAY LIGHTING REPLACEMENT
Vineyard Boulevard to Kamehameha Highway
Federal Aid Project No. NH-061-(035)
Scale: AS NOTED Date: February 2017

SHEET No. EC-700F 71 SHEETS

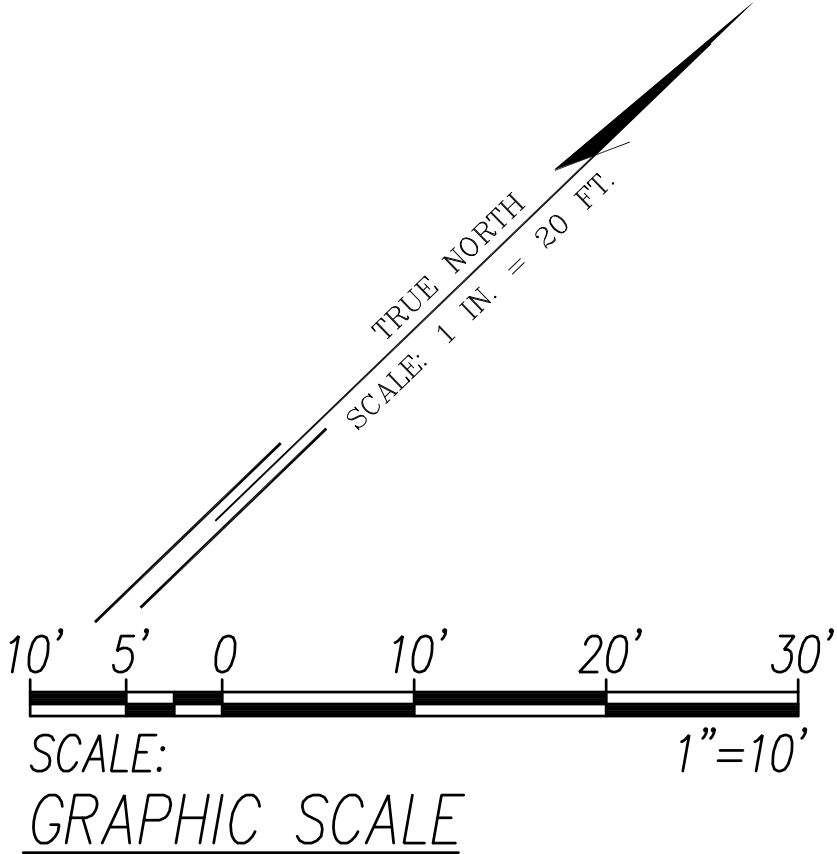
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-(K035)	2017	ADD390	455



TRAFFIC SIGNAL PLAN 1 – PALI HIGHWAY AT VINEYARD BOULEVARD
SCALE: 1"=10'

Notes:

- See Traffic Signal Details On Sheet Series EF.
- Traffic Signal Work In Pavement Shall Be Completed By DOT-Highways In Future.
- Not Used.
- Type A Pullbox. Provide 2" Conduit From Pullbox To Edge Of Pavement.
- Type M Cabinet. See Sheet EF-28 For Details. Installation To Include 1" Conduit For Future Tel Line.

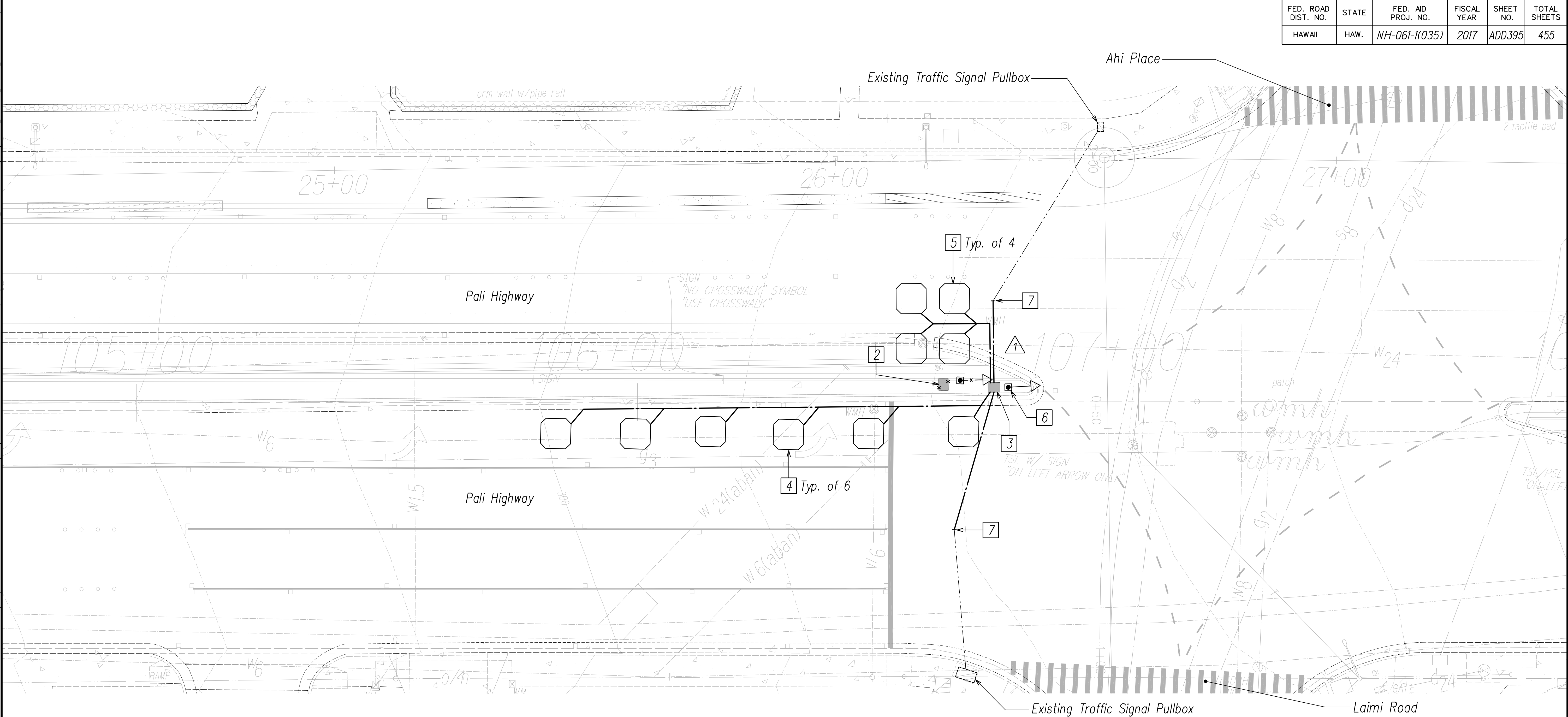


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5/15/17	Removed New TS Pullbox
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION TRAFFIC SIGNAL PLAN 1 PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-(K035) Scale: AS NOTED Date: February 2017	
SHEET No. ED-10F 13 SHEETS	

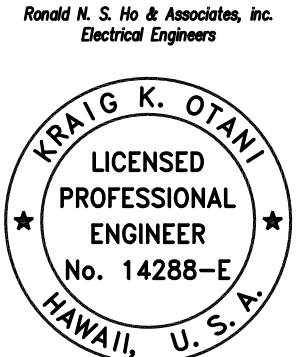
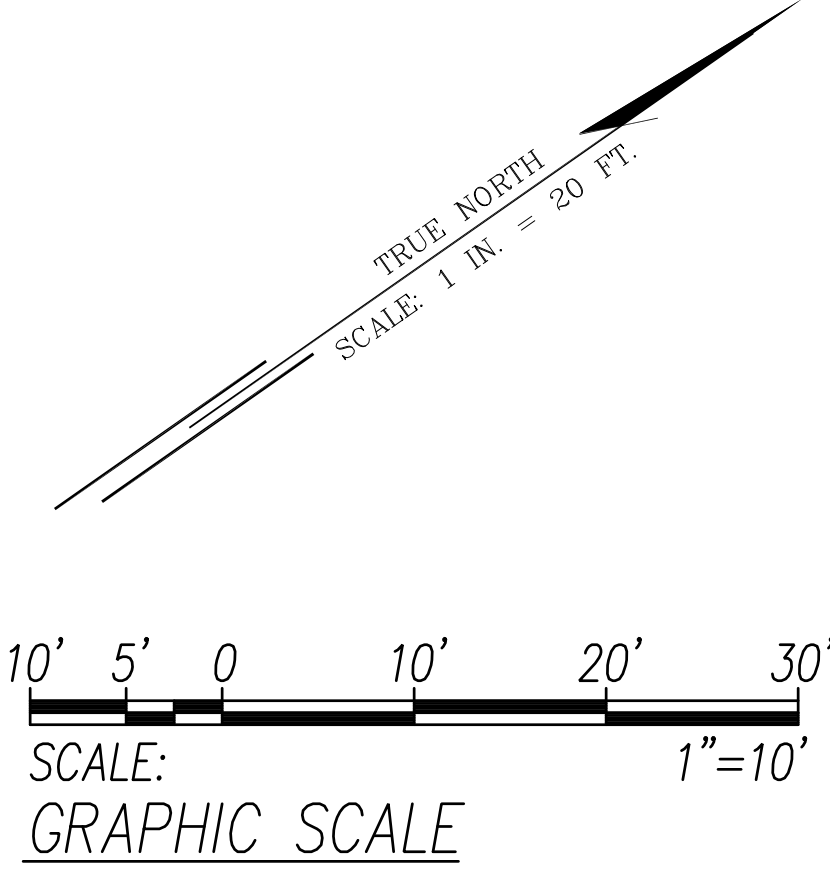
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-(K035)	2017	ADD395	455



Notes: 1

- See Traffic Signal Details On Sheet Series EF.
- Existing Type A Traffic Signal Pullbox To Be Removed.
- New Type A Traffic Signal Pullbox.
- Existing Loop Detector To Be Replaced In Same Location.
- Existing Loop Detectors To Be Removed. Provide New Loop Detectors To Accommodate The New Lane Configurations.
- Existing Traffic Signal Pole To Be Relocated. Extend Existing Traffic Signal Wiring to New Traffic Signal Standard. Provide New Concrete Footing Per Standard Detail TE-32.
- Cut Existing Conduit(s) And Provide New Conduit(s) To Extend To New Traffic Signal Pullbox. Contractor Shall Verify Exact Location And Quantity Of Conduits.

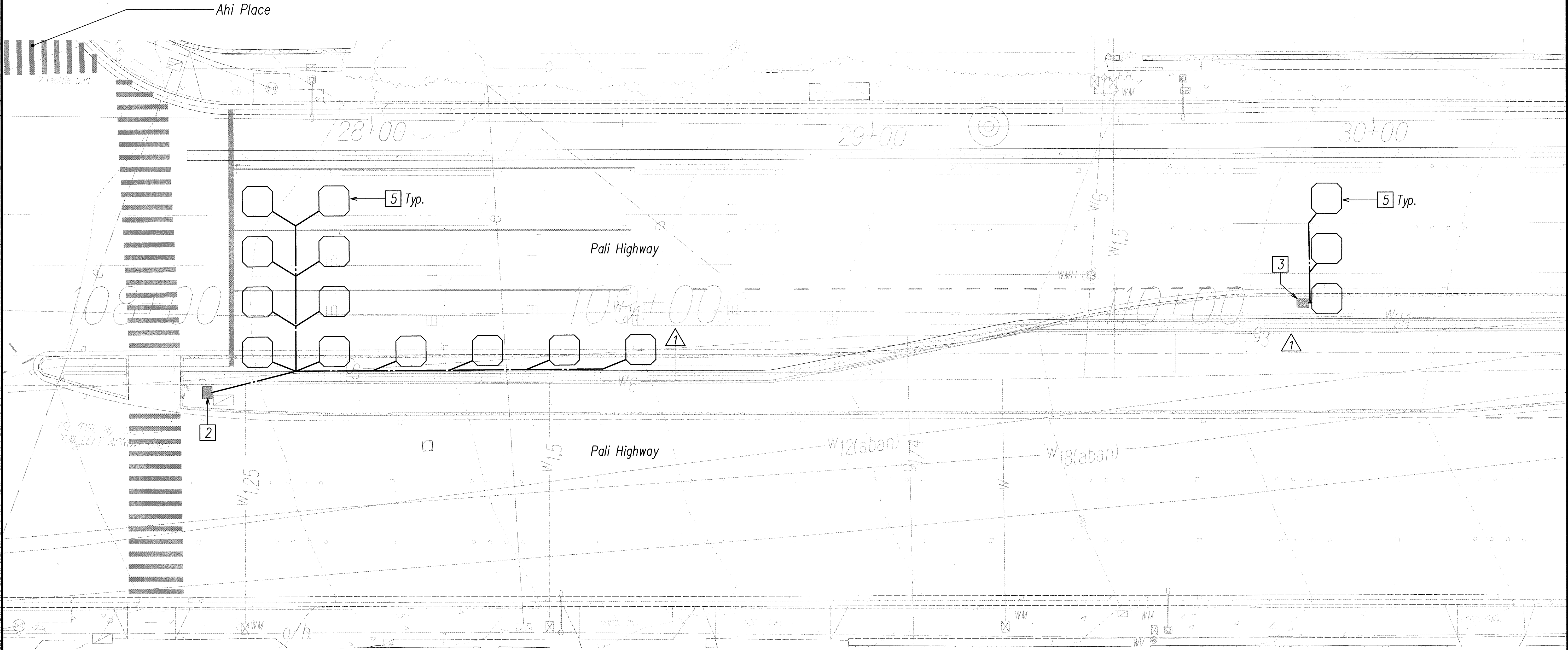
TRAFFIC SIGNAL PLAN 6 – PALI HIGHWAY AT AHI PLACE
SCALE: 1"=10'



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5/15/17	Revised TS Design and Notes
DATE	DESCRIPTION
	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION TRAFFIC SIGNAL PLAN 6 PALI HIGHWAY RESURFACING Waikanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-(K035) Scale: AS NOTED Date: February 2017

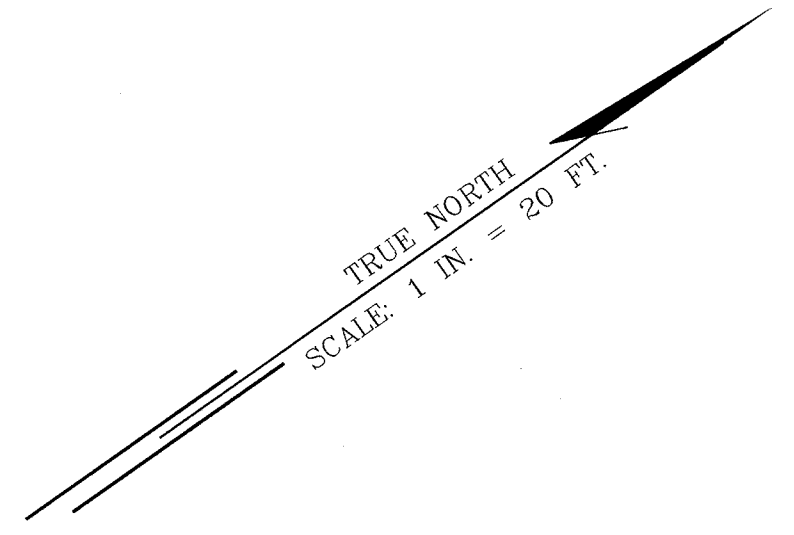
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-K035	2017	ADD396	455



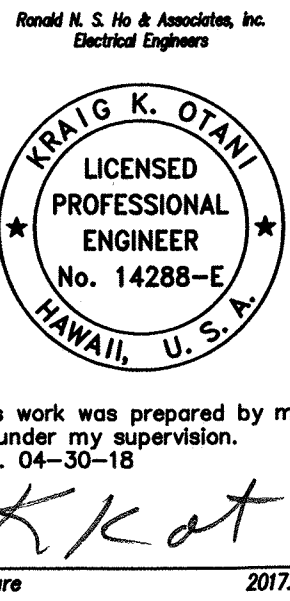
TRAFFIC SIGNAL PLAN 7 – PALI HIGHWAY AT AHI PLACE
SCALE: 1"=10'

Notes:

- 1. See Traffic Signal Details On Sheet Series EF.
- 2. Existing Type A Traffic Signal Pullbox To Be Replaced In Same Location.
- 3. Existing Type A Traffic Signal Pullbox To Be Removed. Provide New Type A Traffic Rated Traffic Signal Pullbox. 1
- 4. Not Used. 1
- 5. Existing Loop Detectors To Be Removed. Provide New Loop Detectors To Accommodate The New Lane Configurations.

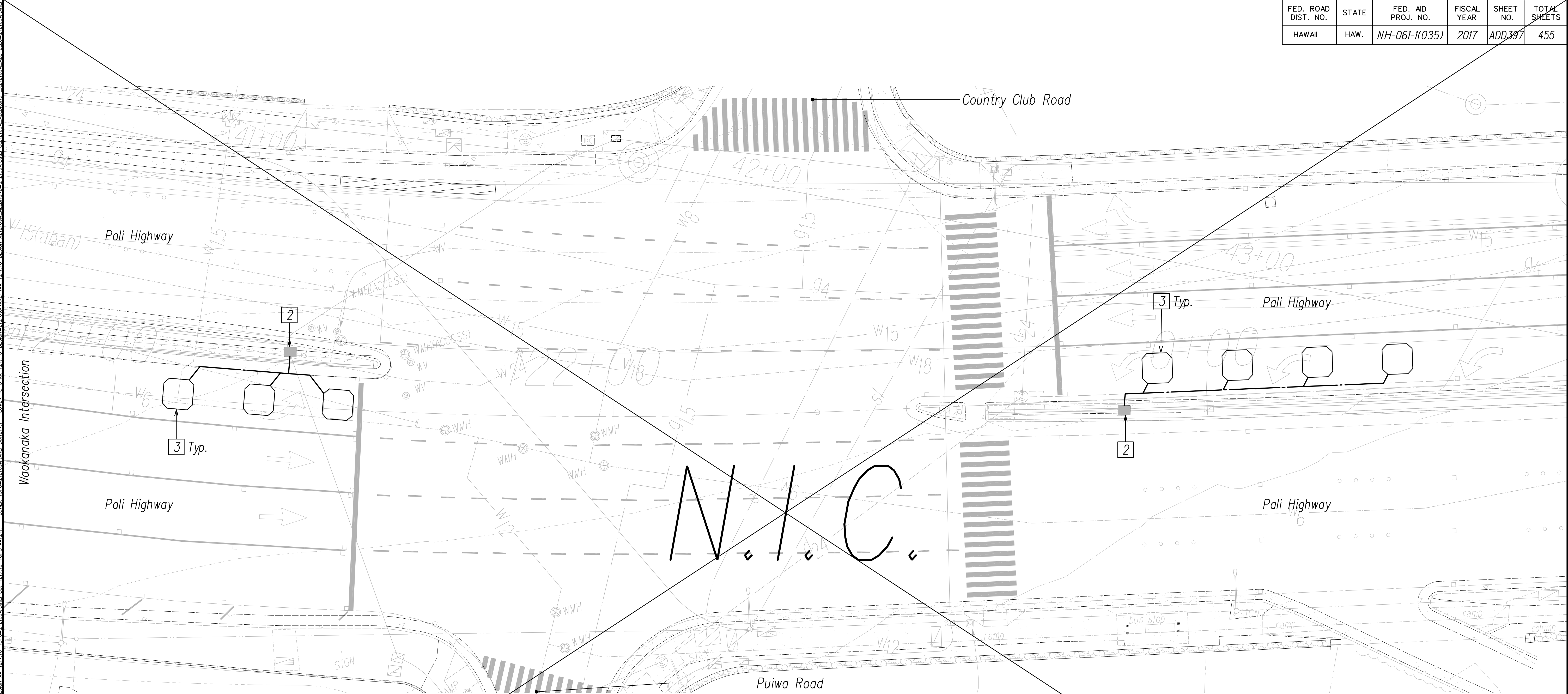


SCALE: 1"=10'
GRAPHIC SCALE



5/15/17	1 Revised TS Design
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
TRAFFIC SIGNAL PLAN 7	
PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-K035 Scale: AS NOTED Date: February 2017	
SHEET No. ED-70F 13 SHEETS	

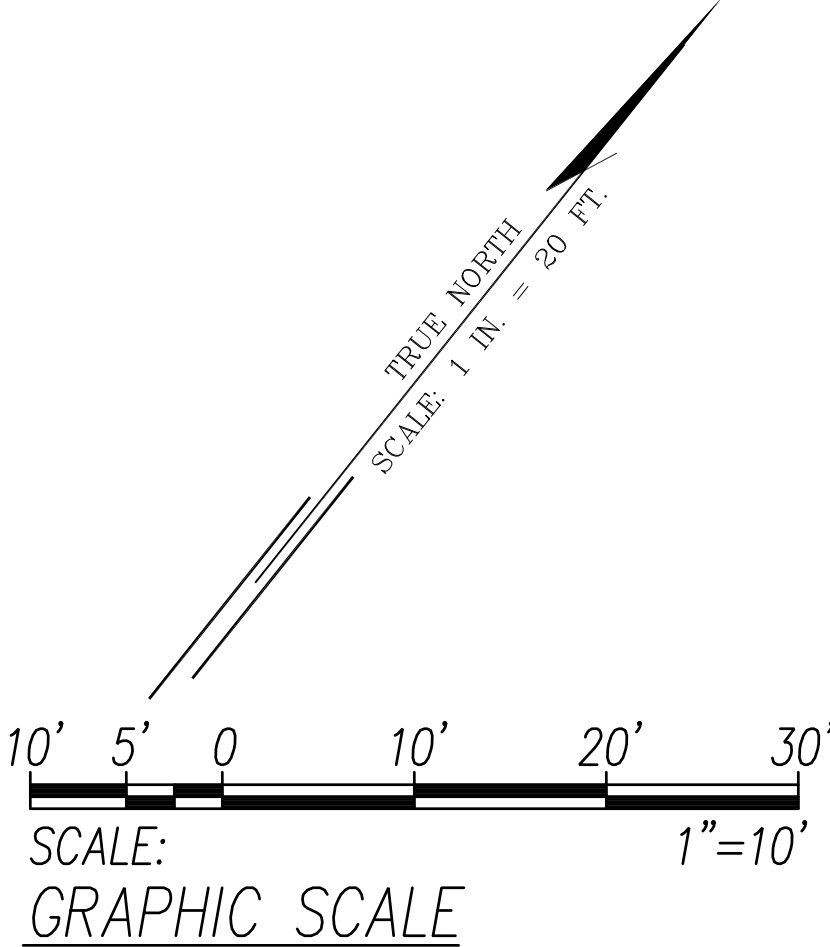
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-(035)	2017	ADD.397	455



TRAFFIC SIGNAL PLAN 8 – PALI HIGHWAY AT COUNTRY CLUB ROAD
SCALE: 1"=10'

Notes:

- See Traffic Signal Details On Sheet Series EF.
- Existing Type A Traffic Signal Pullbox To Be Replaced In Same Location.
- Existing Loop Detector To Be Replaced In Same Location.



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Signature 2017.05.12

5/15/17	Sheet Deleted
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION TRAFFIC SIGNAL PLAN 8 PALI HIGHWAY RESURFACING Waokanaka Street to Kamehameha Highway PALI HIGHWAY LIGHTING REPLACEMENT Vineyard Boulevard to Kamehameha Highway Federal Aid Project No. NH-061-(035) Scale: AS NOTED Date: February 2017	

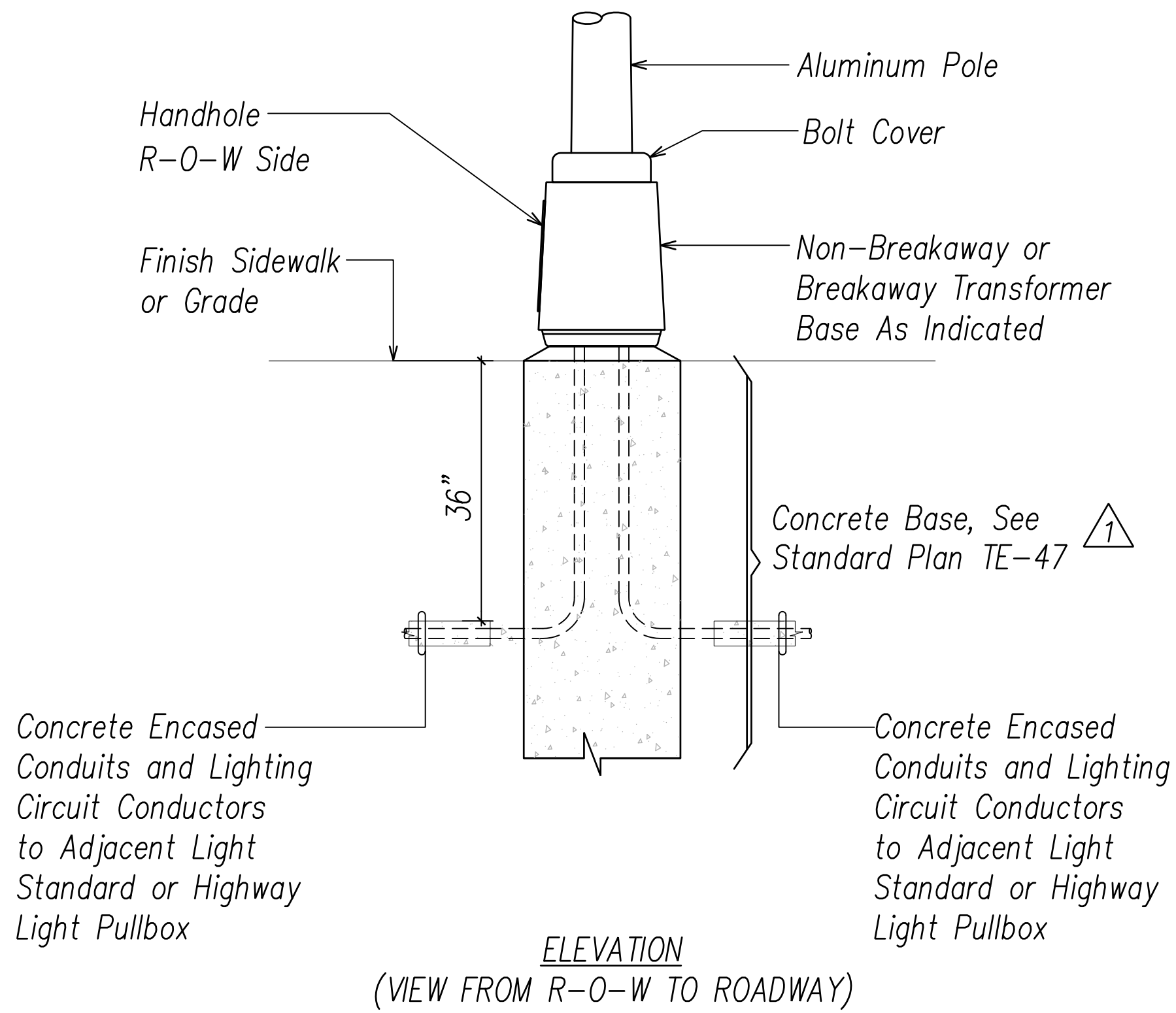


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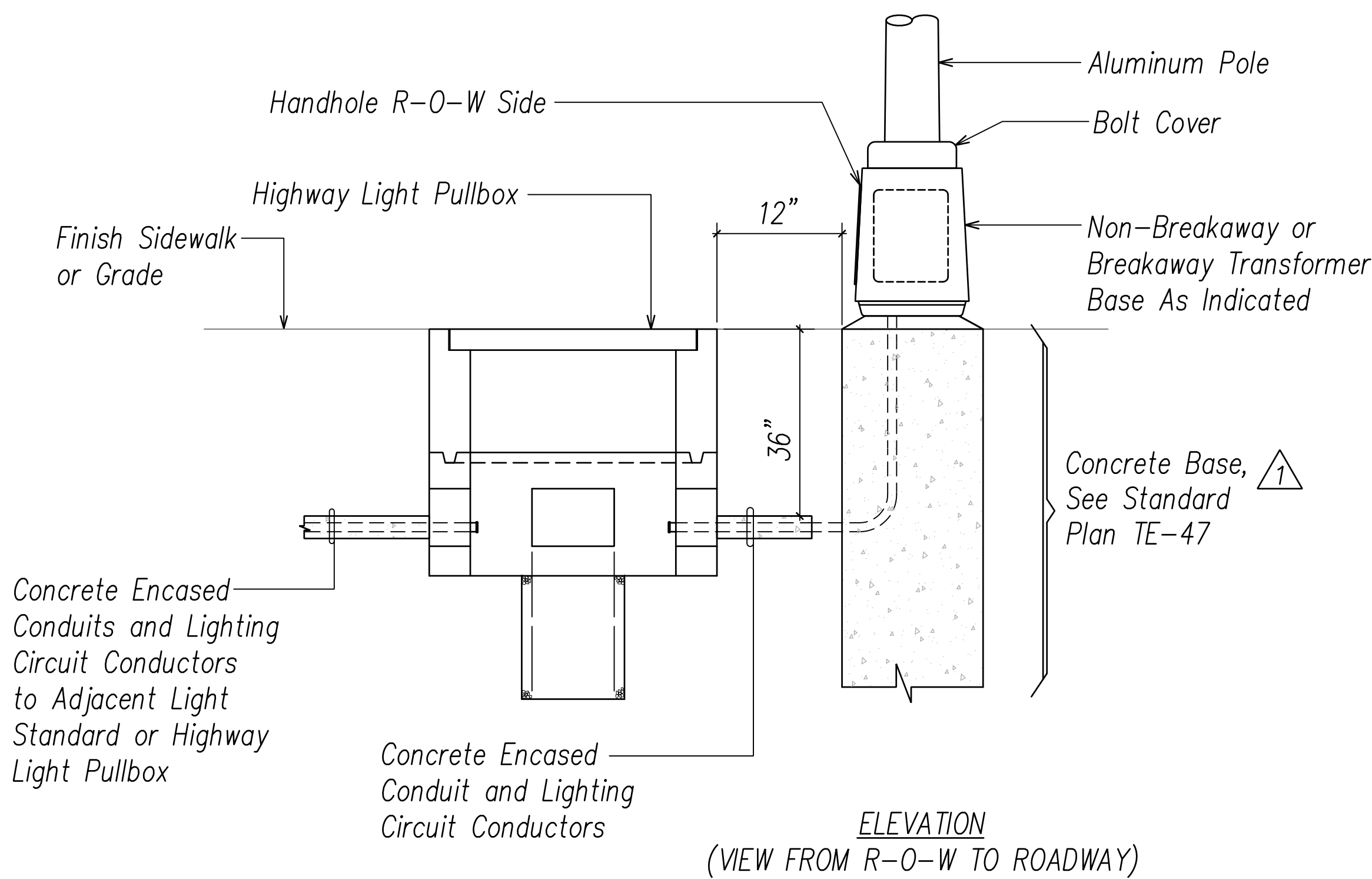


5/15/17	 Removed New TS Pullbox
DATE	DESCRIPTION

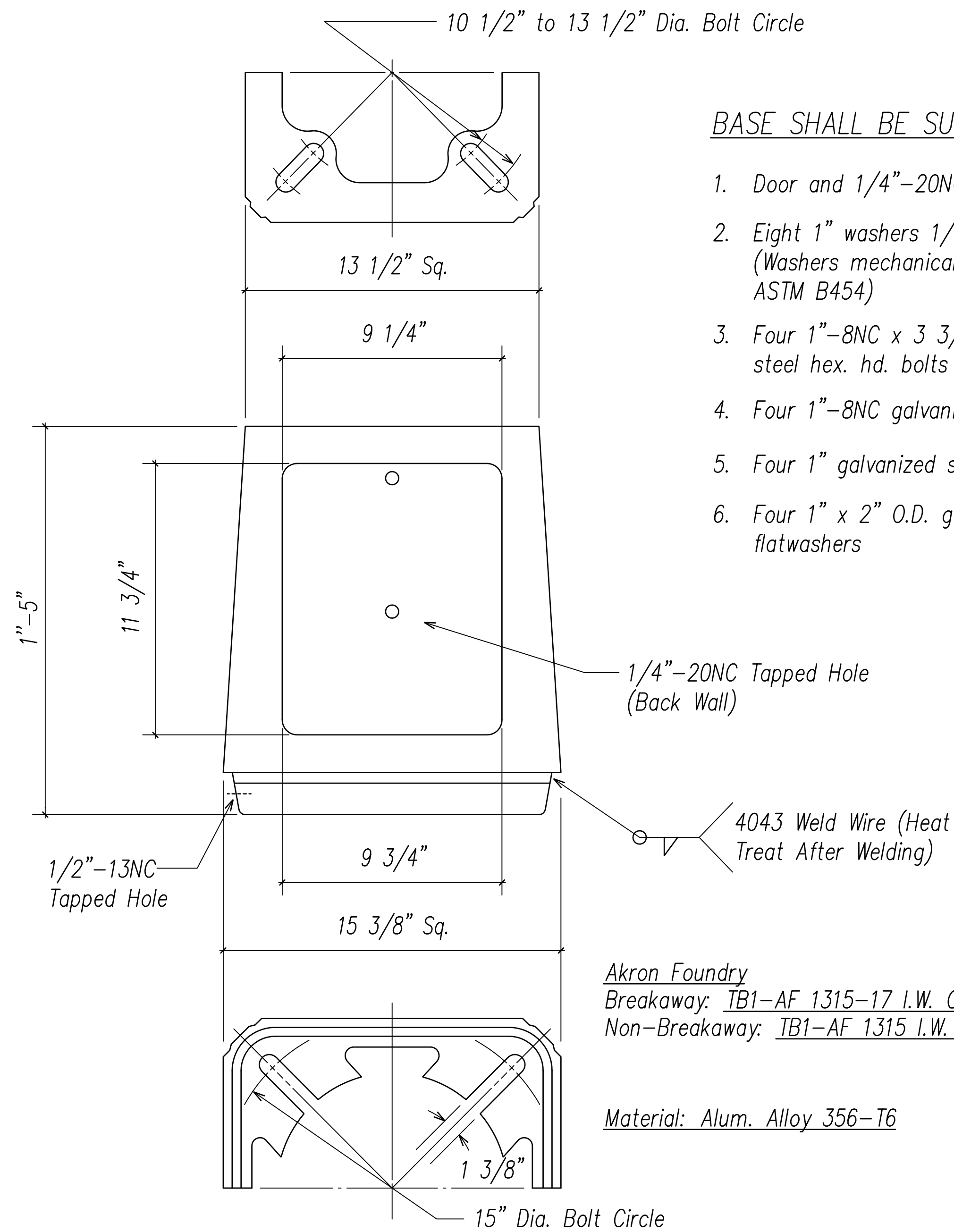
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-(035)	2017	ADD434	455



HIGHWAY LIGHT STANDARD WITHOUT PULLBOX DETAIL
NOT TO SCALE



HIGHWAY LIGHT STANDARD WITH PULLBOX LOCATION DETAIL
NOT TO SCALE



BASE SHALL BE SUPPLIED WITH:

1. Door and 1/4"-20NC S.S. screw
2. Eight 1" washers 1/2" thick x 2 3/4" O.D. (Washers mechanical galvanized per ASTM A153 or ASTM B454)
3. Four 1"-8NC x 3 3/4" long galvanized steel hex. hd. bolts
4. Four 1"-8NC galvanized steel hex. nuts
5. Four 1" galvanized stl. lock washers
6. Four 1" x 2" O.D. galvanized stl. flatwashers

Akron Foundry
Breakaway: TB1-AF 1315-17 I.W. OR Equal (Plus Hardware)
Non-Breakaway: TB1-AF 1315 I.W. OR Equal (Plus Hardware)

Material: Alum. Alloy 356-T6

Note: Non-Breakaway Transformer Base Shall Be Used On Concrete Median Barriers And Bridges.
Breakaway Transformer Base Shall Be Used In All Other Protected Areas, Such As Behind A Guardrail Or Curb.

BREAKAWAY AND NON-BREAKAWAY TRANSFORMER BASE DETAIL
NOT TO SCALE

5/15/17 **Revised St. Lt. Detail Notes**

DATE DESCRIPTION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HWY LIGHT XFMR BASE DETAILS

PALI HIGHWAY RESURFACING

Waokanaka Street to Kamehameha Highway

PALI HIGHWAY LIGHTING REPLACEMENT

Vineyard Boulevard to Kamehameha Highway

Federal Aid Project No. NH-061-(035)

Scale: AS NOTED Date: February 2017

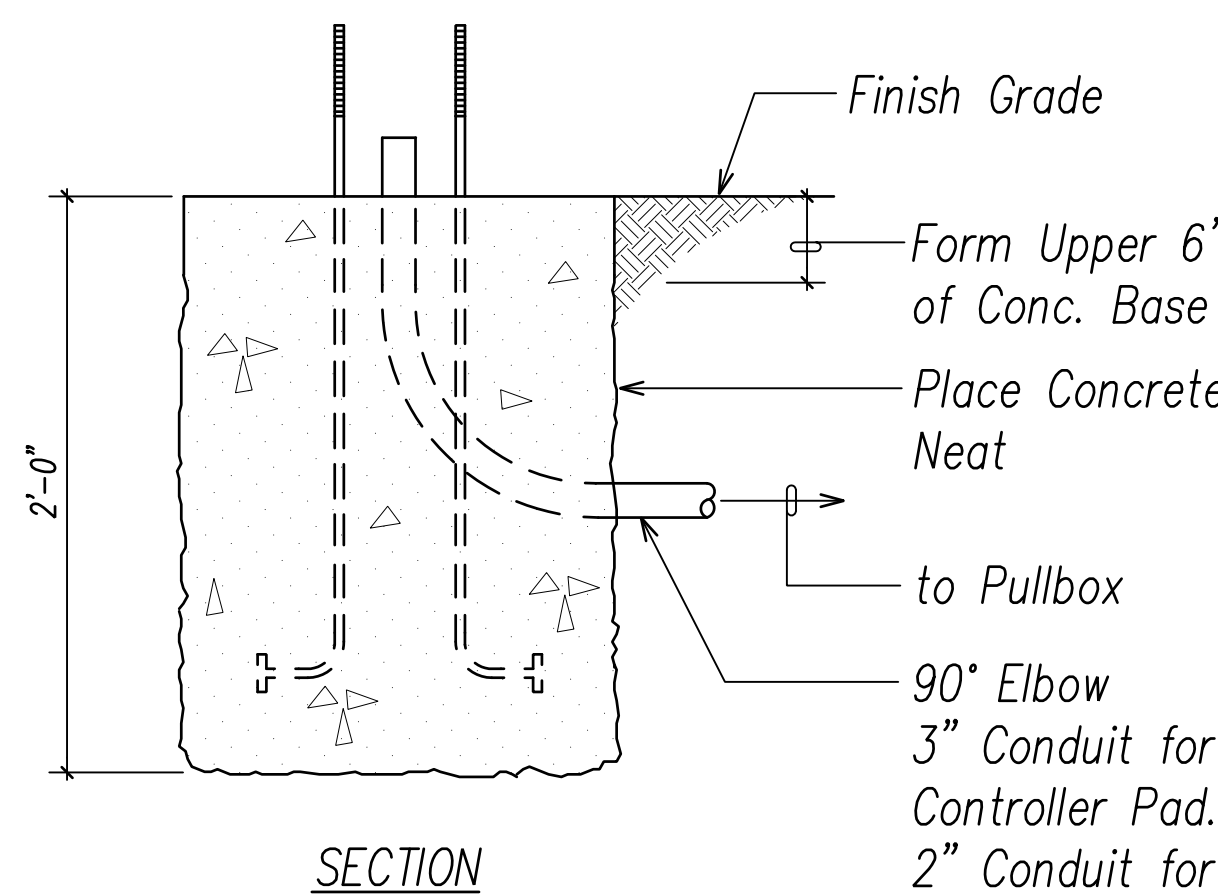
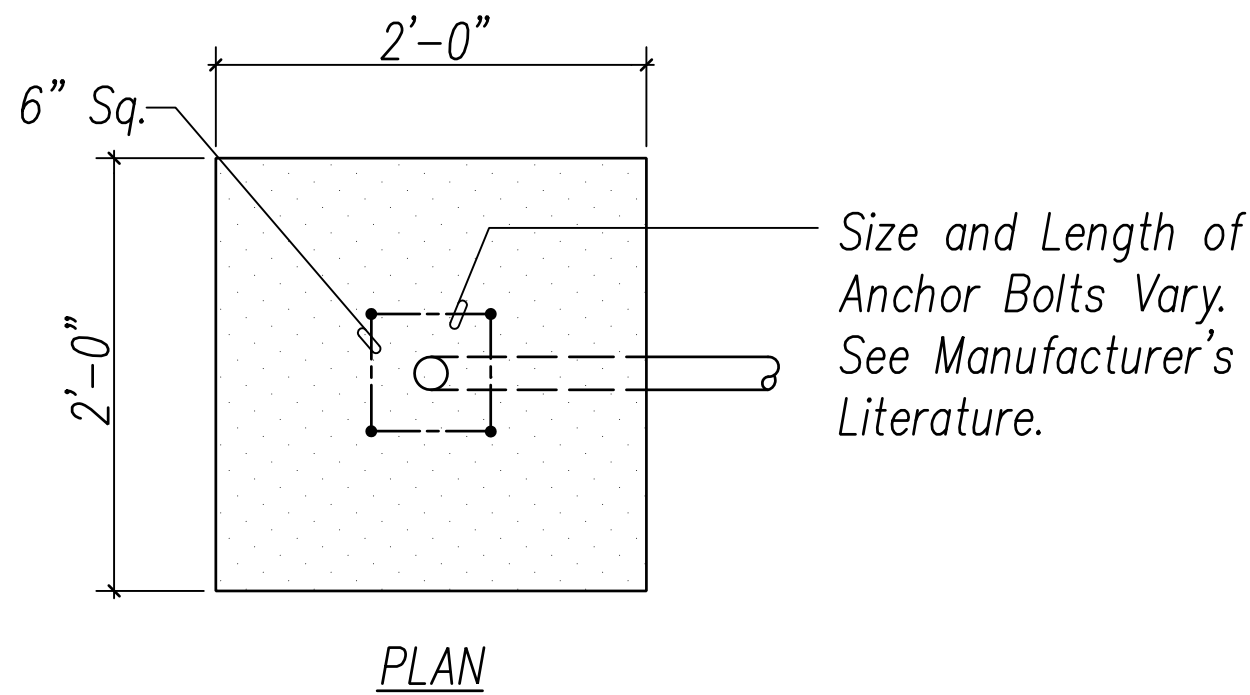
SHEET No.EF-160F 34 SHEETS



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Exp. 04-30-18

Signature 2017.05.12

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-061-1(035)	2017	ADD449	455

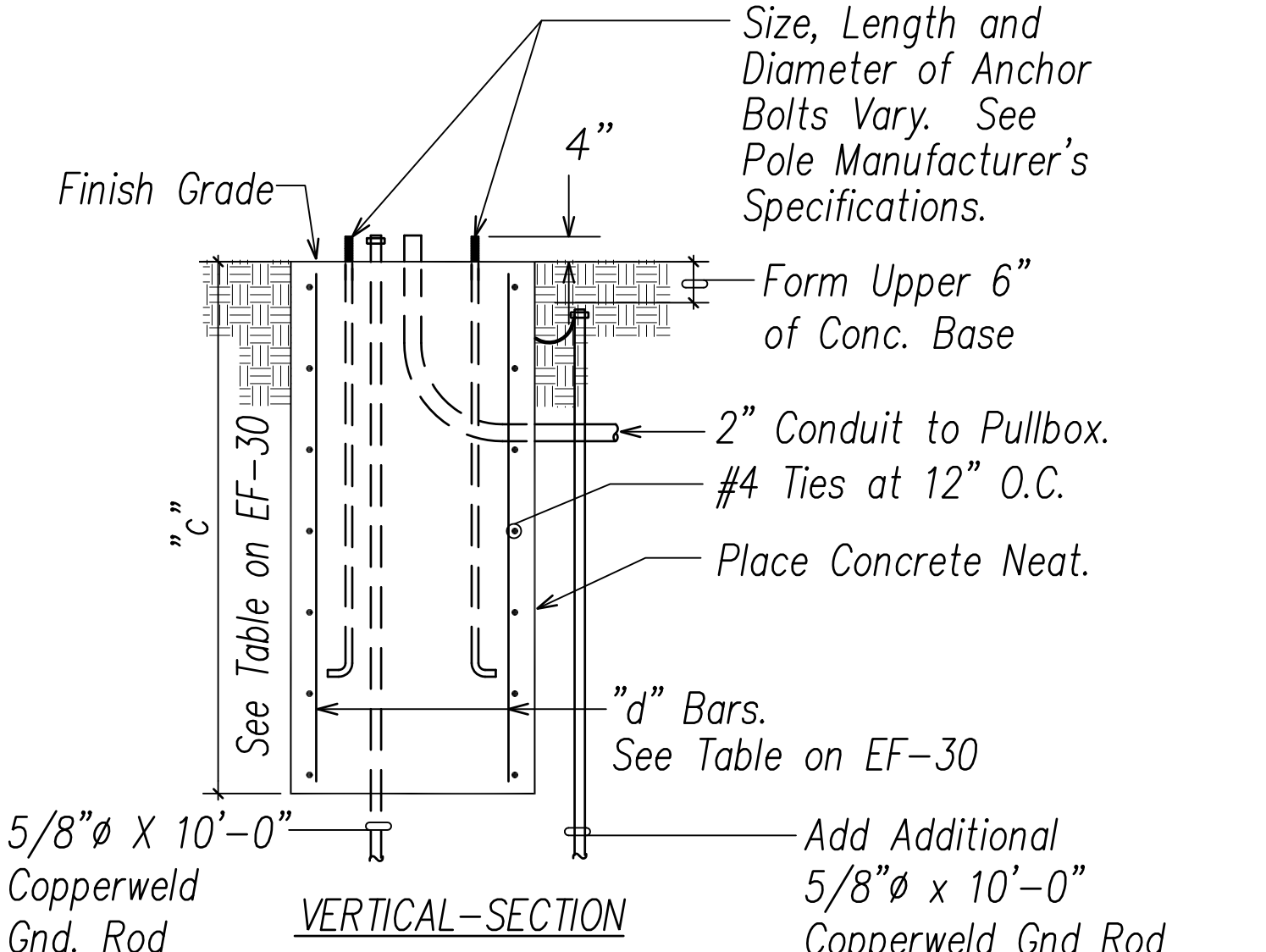
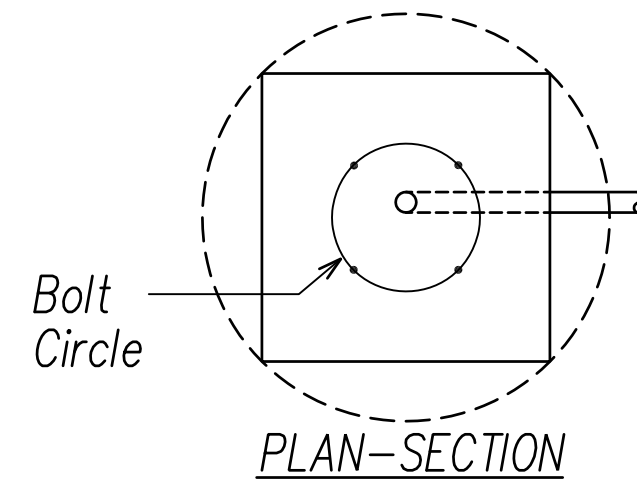


NOTES:

- Concrete shall be Class "A".
- Type "A" concrete base shall be used for type I-9, I-12 and I-17 standards.
- Conduit bend is incidental to concrete base construction.

TYPE "A" CONCRETE BASE

Not To Scale



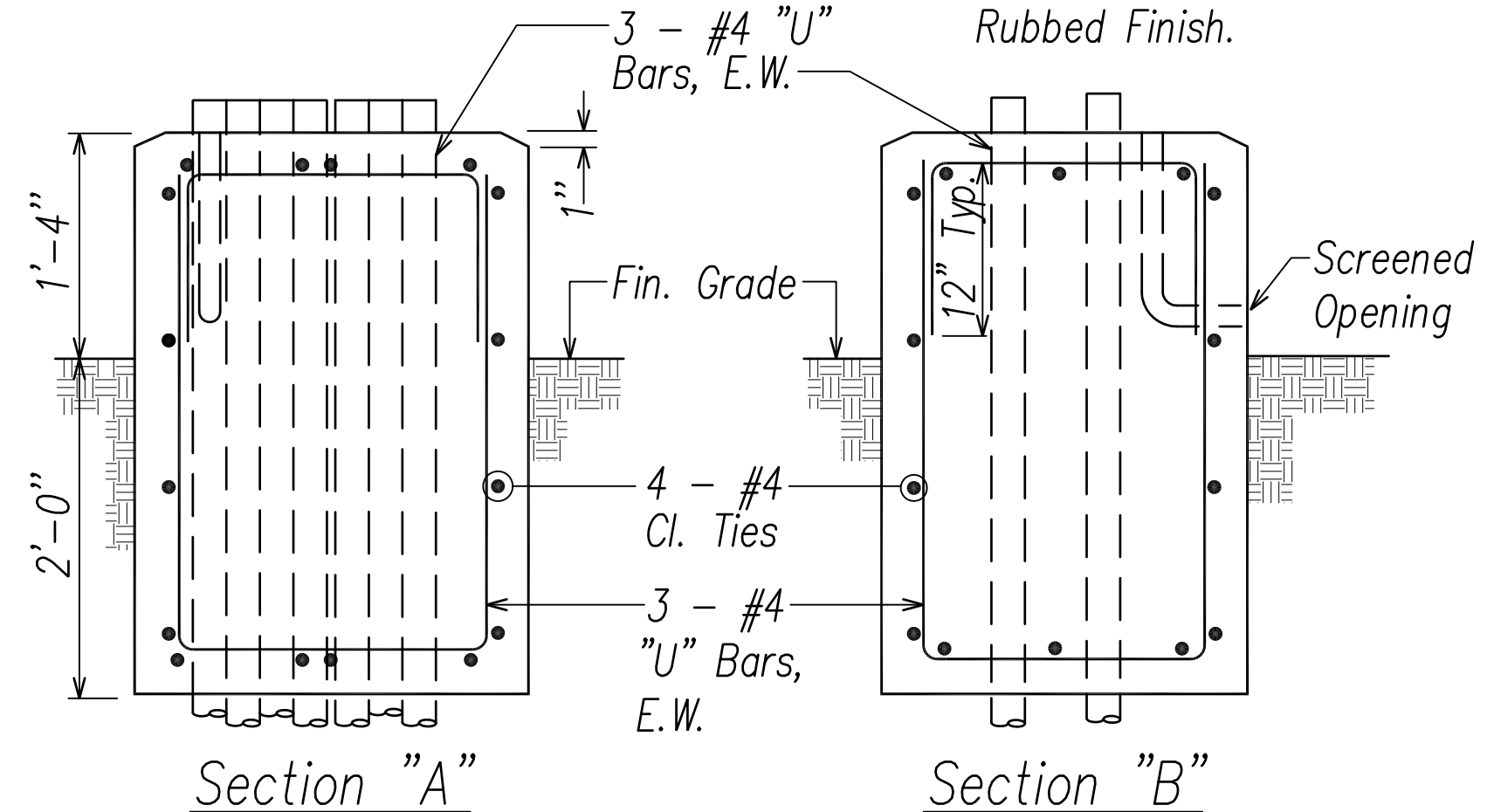
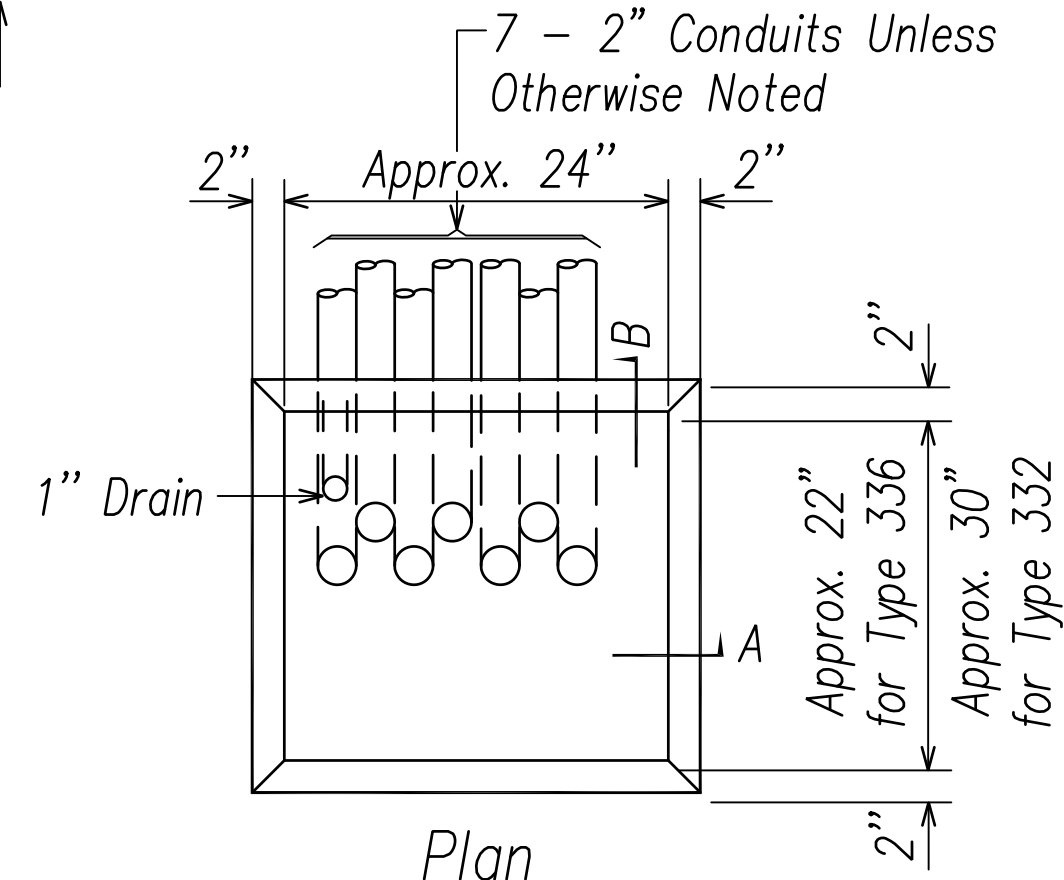
TYPE "C" CONCRETE BASE

Not To Scale

TYPE II AND III TRAFFIC SIGNAL STANDARD NOTES:

- Type "C" concrete base shall be used for Types II and III traffic signal standards.
- Conduit bend is incidental to concrete base.
- Typical Standard Designation: II - 25

Type II - 25
Mast Arm Length

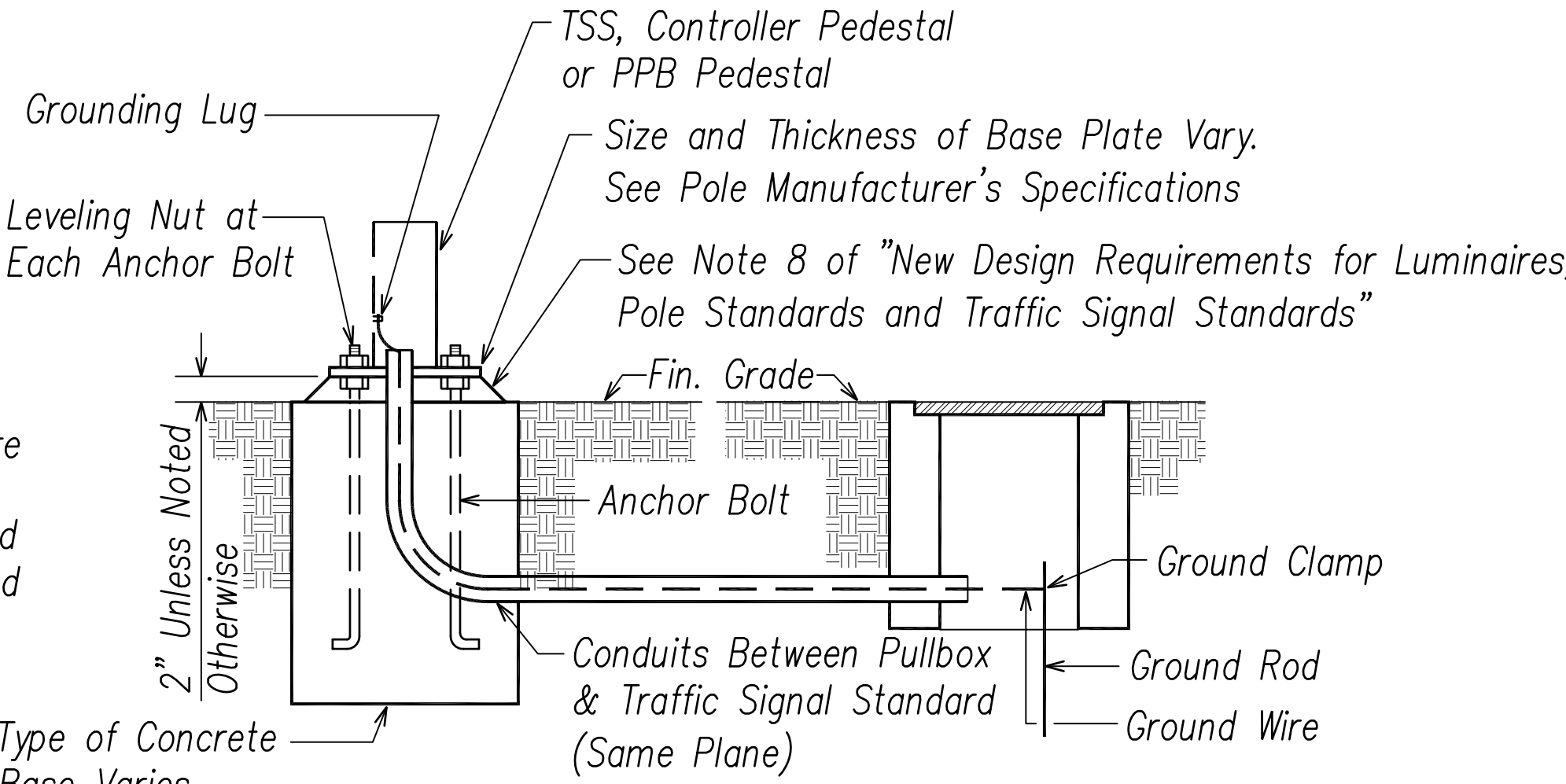
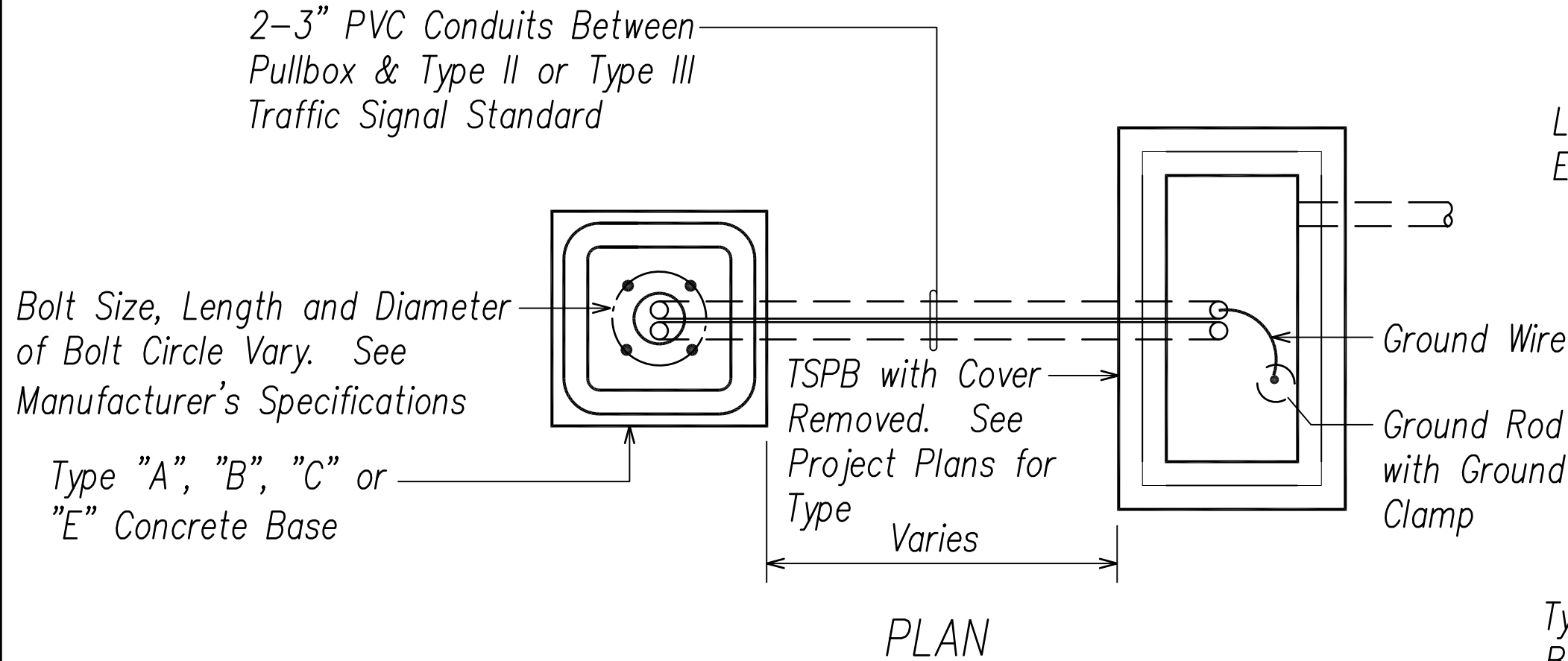


TYPE "D" CONCRETE BASE DETAIL

Not To Scale

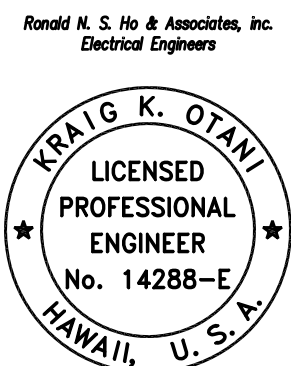
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DATE	DESIGNED BY	CHECKED BY
ORIGINAL PLAN	NOTE BOOK	No.



TYPICAL STANDARD & PEDESTAL DETAIL

Not To Scale



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Signature 2017.05.12

5/15/17	Added Type "D" Detail
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
1 CONCRETE BASE DETAILS	
PALI HIGHWAY RESURFACING	
Waokanaka Street to Kamehameha Highway	
PALI HIGHWAY LIGHTING REPLACEMENT	
Vineyard Boulevard to Kamehameha Highway	
Federal Aid Project No. NH-061-1(035)	
Scale: AS NOTED	Date: February 2017
SHEET No.EF-31OF 34 SHEETS	