

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	61	90

HAWAIIAN ELECTRIC COMPANY NOTES (Continued)

12. DAMAGE TO HECO FACILITIES

The Contractor Shall Be Responsible For The Protection Of All HECO Surface And Subsurface Utilities And Shall Be Responsible For Any Damages To HECO's Facilities As A Result Of His Operations. The Contractor Shall Immediately Report Such Damages To HECO's Trouble Dispatcher At 548-7961. Repair Work Shall Be Done By HECO Or By The Contractor Under HECO's Supervision. Cost For Damages To HECO's Facilities Shall Be Borne By The Contractor.

In Case Of Damage Or Suspected Damage To HECO's Fuel Pipeline, The Contractor Shall Immediately Notify HECO's Honolulu Power Plant Shift Supervisor At 533-2102 (a 24-hour Number) So HECO Personnel Can Secure The Damaged Section And Report Any Oil Spills To The Proper Authorities. All Costs Associated With The Damage, Repair, And Oil Spill Cleanup Shall Be Borne By The Contractor.

13. HECO STAND-BY PERSONNEL

The Contractor May Request HECO To Provide An Inspector To Stand-by During Construction Near HECO's Facilities. The Cost Of Such Inspection Will Be Charged To The Contractor.

The Contractor Shall Call The HECO Construction And Maintenance Dept., Customer & System Superintended At 543-4223 A Minimum Of 5 Working Days In Advance To Arrange For HECO Stand-by Personnel.

14. CLEARANCES

The Following Clearances Shall Be Maintained Between HECO's Ductline And All Adjacent Structures (charted And Uncharted) In The Trench:

Structure Type	Minimum Clearance (inches)
Water Lines, Parallel	36(A)
Water Lines, Crossing	12(B)
Sewer Lines, Parallel	36(C)
Sewer Lines, Crossing	24(D)
Drain Lines, Parallel	12
Drain Lines, Crossing	6(E)
Electrical and Gas Lines, Parallel	12
Electrical and Gas Lines, Crossing	12
Telephone Lines, Parallel	6(E)
Telephone Lines, Crossing	6(E)
Chevron Oil Lines, Parallel	36
Chevron Oil Lines, Crossing	48 BELOW OIL LINE (F)

- A. The Minimum Horizontal Clerances To Water Lines Parallel To Electrical Ductlines Should Be Increased To 60 Inches If The Water Line Is Greater Than Or Equal To 16 Inches In Diameter.
- B. The Mimimum Vertical Clerances To Water Lines Crossing Electrical Ductlines Can Be Reduced To 6 Inches If The Electrical Ductline Structure Is Concrete Encased And Is Below The Water Line And The Water Line Is Less Than 16 Inches In Diameter.

- C. A Minimum Horizontal Clearance Of 36 Inches Is Required Between New Handholes And Existing Sewer Laterals.
- D. The Minimum Vertical Clearances To Sewer Pipes Crossing Electrical Ductlines Can Be Reduced To 12 Inches If The Sewer Pipe Is Jacketed In Concrete.
- E. The Minimum Clearances Shall Be Increased To 12 Inches If The Electrical Ductline Is Direct Buried.
- F. The Minimum Vertical Clearances To Oil Lines Crossing Electrical Ductlines Can Be Reduced To 24 Inches Below Oil Lines If The Crossings Are Encased In 6 Inches Of Concrete.
- G. The Contractor Shall Notify The Construction Manager & HECO Of Any Heat Sources (Power Cable Duct Bank, Steamline, Etc.) Encountered That Are Not Properly Identified On The Drawing.

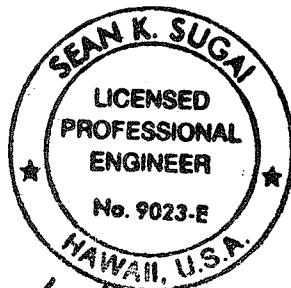
The Following Clearance Shall Be Maintained Between HECO's Fuel Oil Pipelines And All Adjacent Structures: 24-inches, Parallel Or Crossing. The Minimum Clearance Can Be Reduced To 12 Inches (parallel And Below Only) If The Structure Is Jacketed In Concrete.

15. INDEMNITY

The Contractor Shall Indemnify, Defend And Hold Harmless HECO From And Against All Losses, Damages, Claims, And Actions, Including But Not Limited To Reasonable Attorney's Fees And Costs Based Upon Or Arising Out Of Damage To Property Or Injuries To Persons, Or Other Tortious Acts Caused By Contributed To By Contractor Or Anyone Acting Under Its Direction Or Control Or On Its Behalf; Provided Contractor's Indemnity Shall Not Be Applicable To Any Liability Based Upon The Sole Negligence Of HECO.

SURVEY PLOTTED BY	DATE
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DESIGNED BY	
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ORIGINAL PLAN	
NOTE BOOK	
No.	

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APRIL 30, 2008
EXPIRATION DATE OF LICENSE
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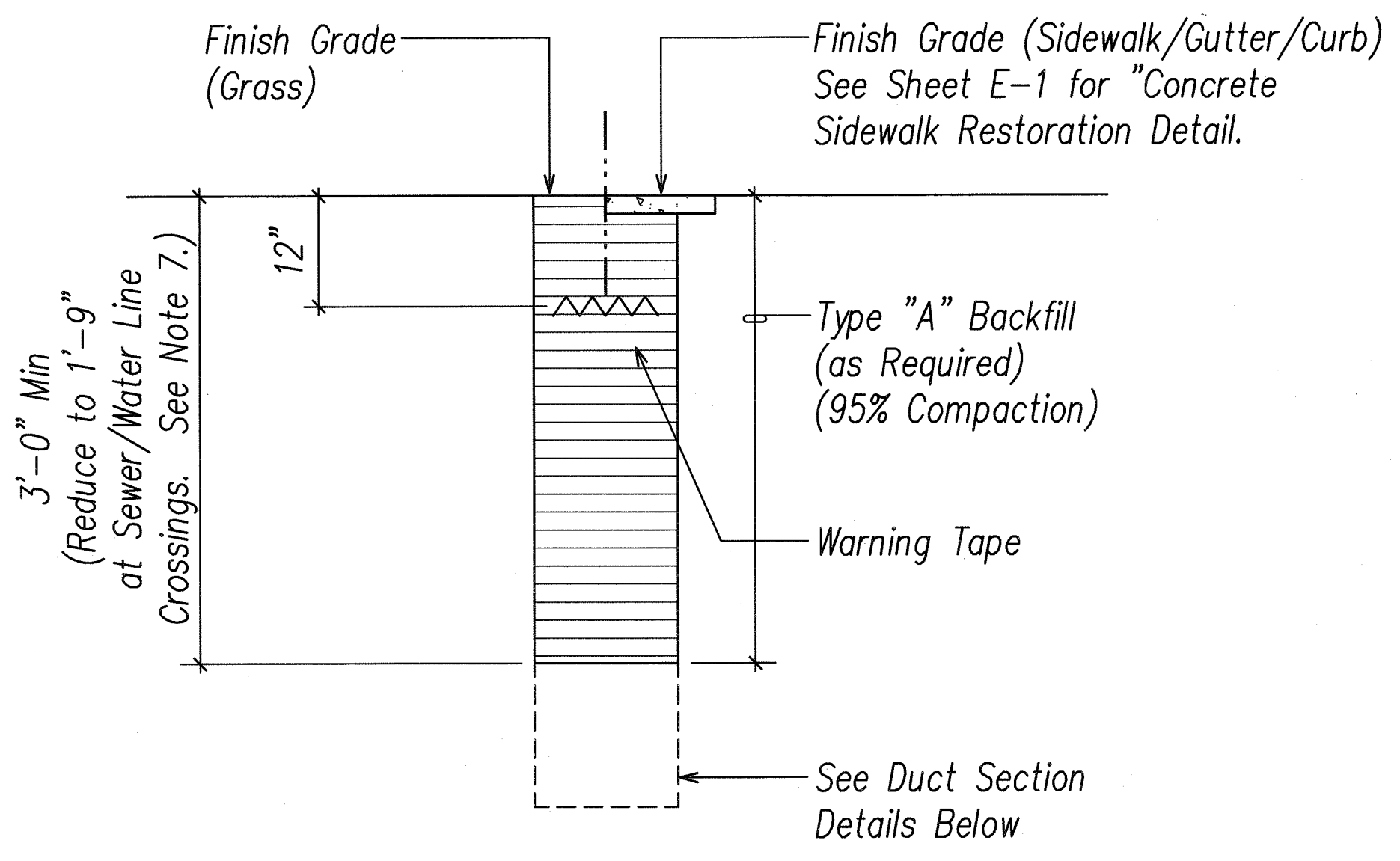
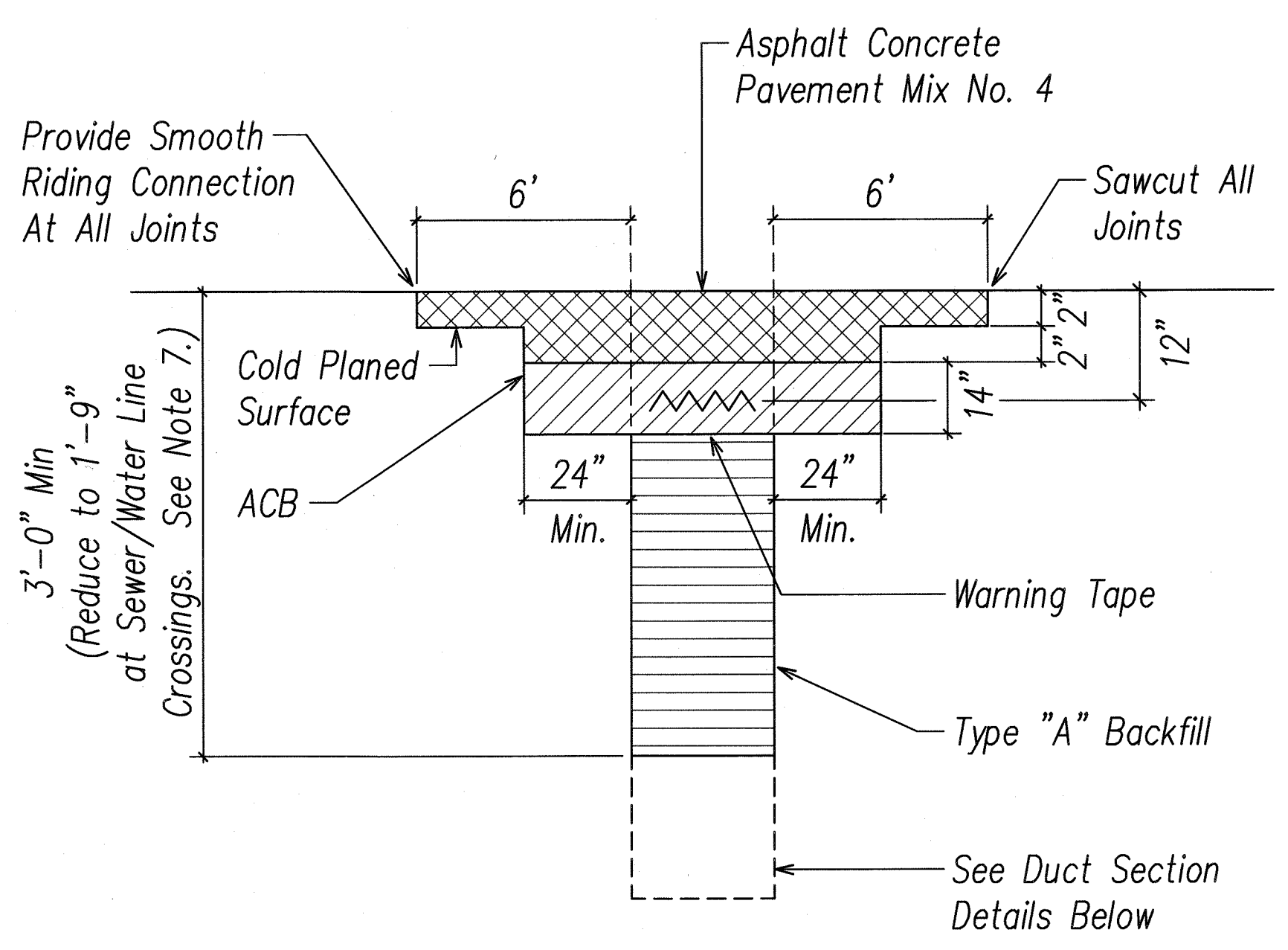
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HECO NOTES II

KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)

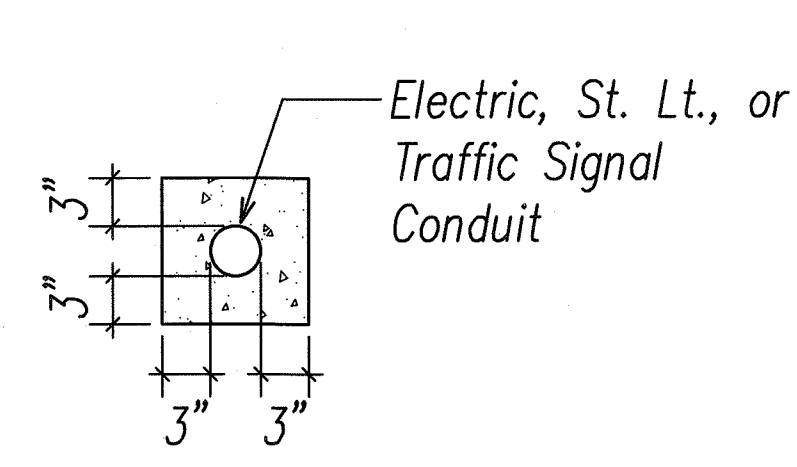
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SHEET No. E-3 OF 32 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	62	90

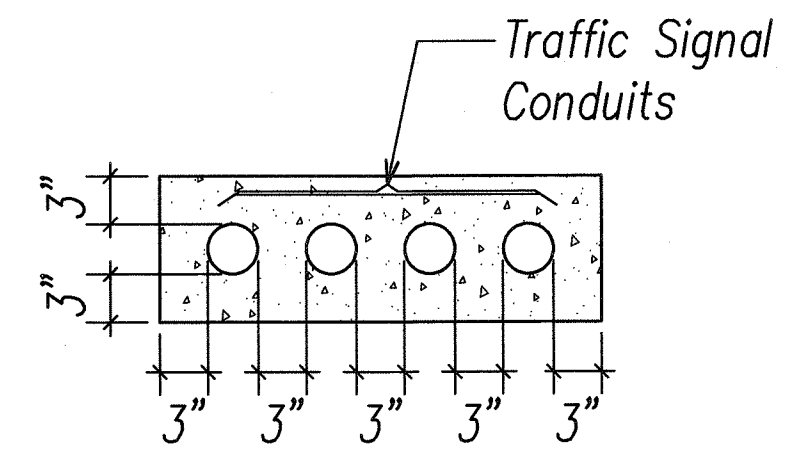


- BACKFILL NOTES:**
- Trench Backfill Material "A"
 - 1. Sand Equivalent
 - 2. 8" Max. Lift Loose
 - 3. 95% Compaction \geq 20
 - Concrete - 3" Encasement, 3000 PSI Compressive Strength @ 24 Days.

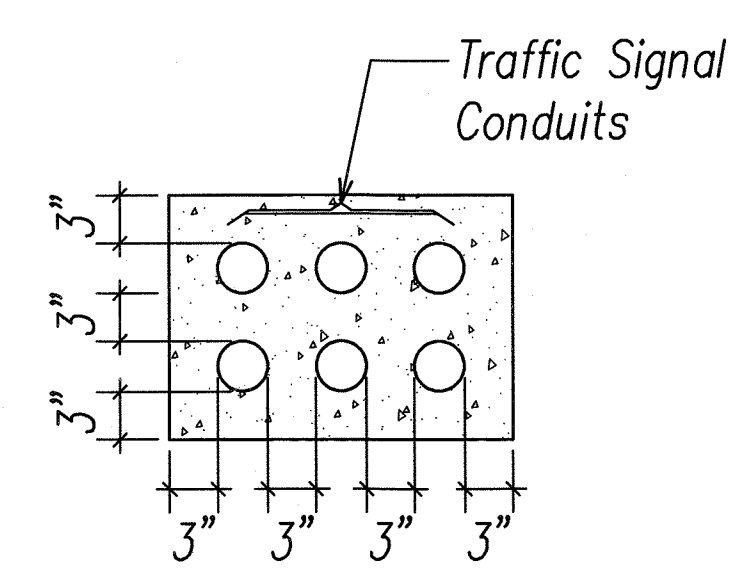
- NOTES:**
- Tack Coat Existing Asphalt Bound Material Faces Prior To Filling Excavation With Asphalt Bound Material.
 - When Ground Water Is Encountered In Trenches, Backfill With Gravel Conforming To ASTM C-33, Size 67 Material Until One Foot Above Waterlevel. Encapsulate The Size 67 And Sides Of The Trench And Overlap At The Top Of The Material For The Width Of The Trench. Complete Backfilling The Trench Per Detail.
 - Smoothness of Paved Surfaces: The Distance From The Paved Surface To The Testing Edge Of A Ten-Foot Straight Edge Between Two Points Of Contact Shall Not Exceed 3/16".
 - Base Course & Sub-Base Course Per 2005 State Standard Specifications For Highway Construction.
 - Sawcutting & Repairing Of Existing A.C. Pavement Shall Not Be Paid For Separately, But considered Incidental to the Various Contract Items.
 - The Metal Detectable Reel Warning Tape Shall Be A Minimum Of 8 Mils Thick And 3" Wide With A Continuous Metallic Backing And Corrosion Resistant 1 \pm Mil Thick Foil Core. The Message On The Tape Shall Read, "Caution-~~State Highway~~ *Lighting Cables* Electric Line Buried Below", Utility 2" Series "C" Black Lettering. The Message Shall Be Repeated With A 36" Spacing. Warning Tape For Signal Corps Conduits Shall Be Per Signal Corps Standards.
 - At Sewer/Water Line Crossings Where 3' Vertical Clearance Between Sewer/Water Pipe and Electrical Conduit Cannot be Maintained, Route Electrical Conduits Over Sewer/Water Pipe and Provide 6" Concrete Encasement for Sewer/Water Pipe. Concrete Encasement Shall Extend a Minimum of 3' Beyond the Electrical Duct Bank on Each Side. See Civil Drawings for Encasement Details.



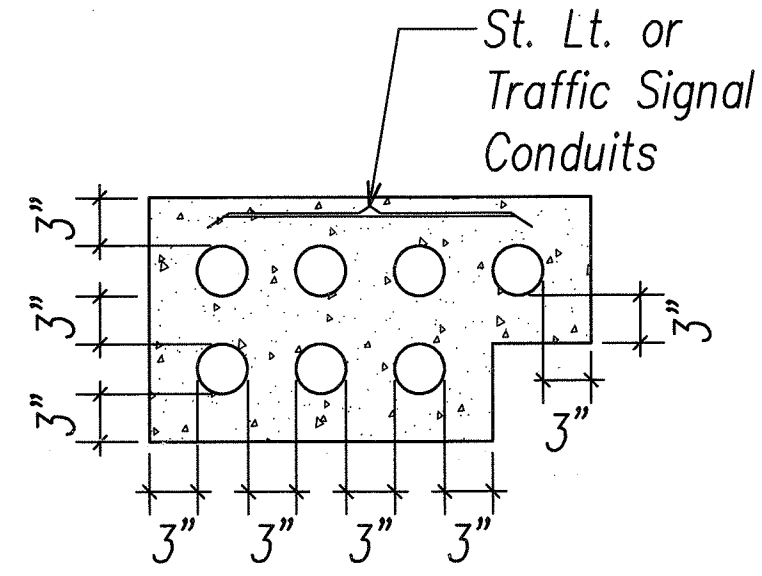
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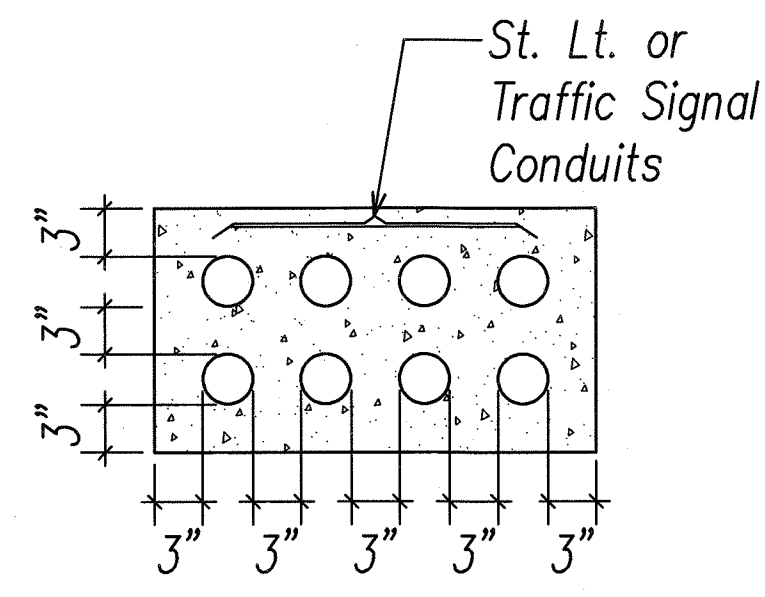
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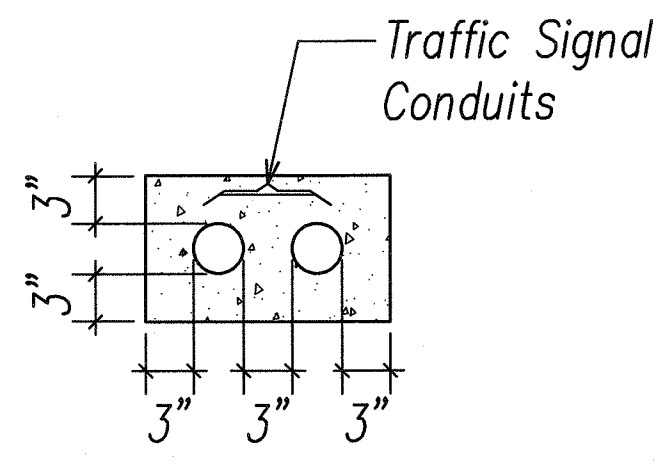
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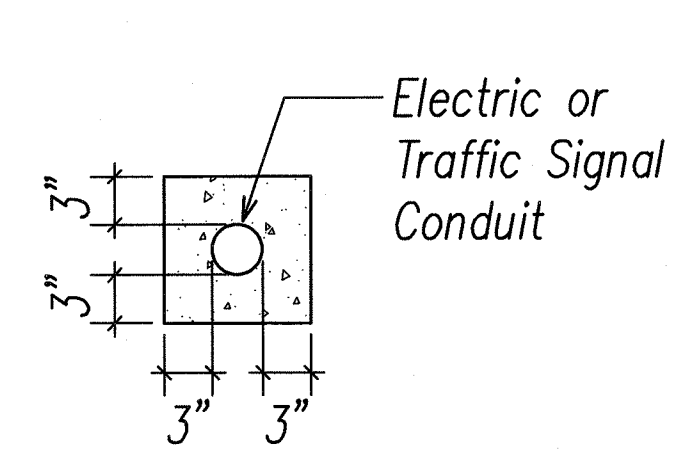
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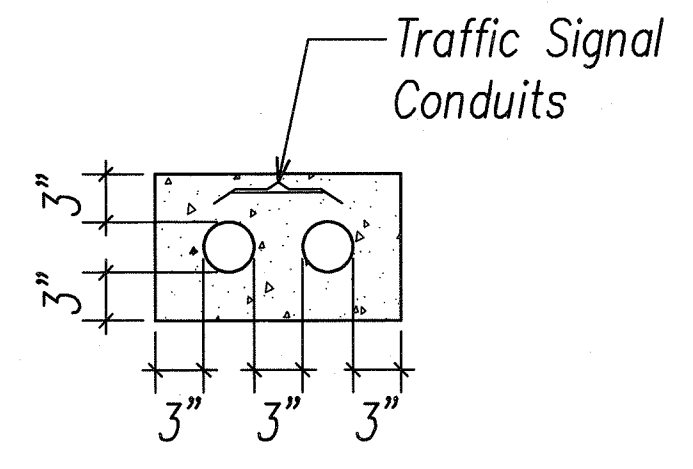
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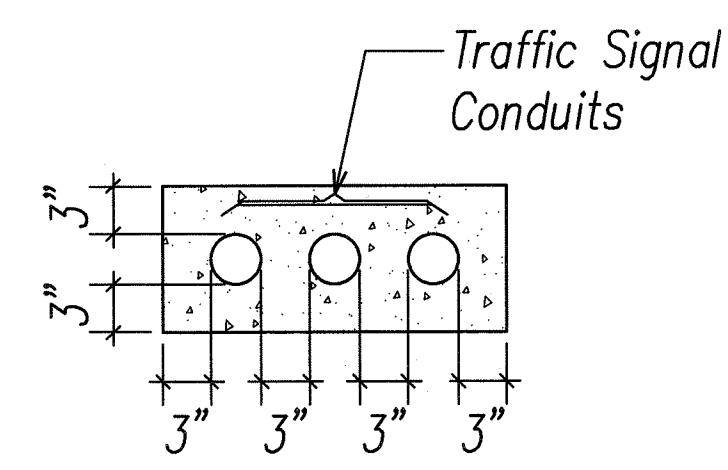
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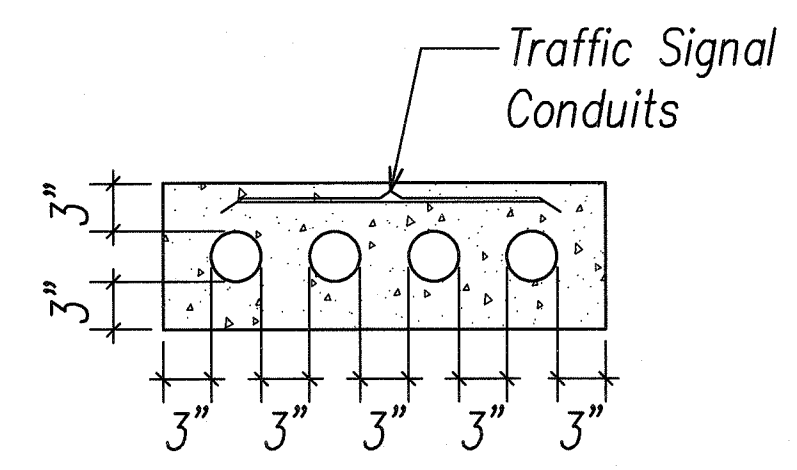
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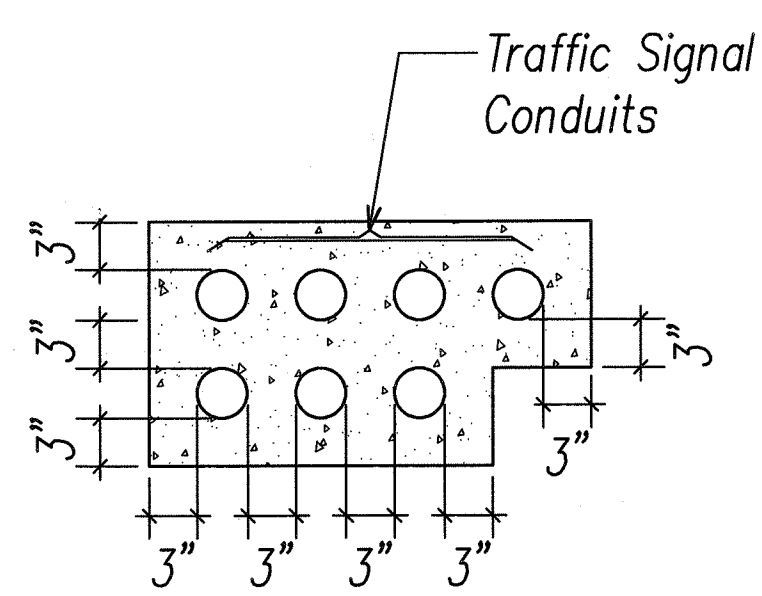
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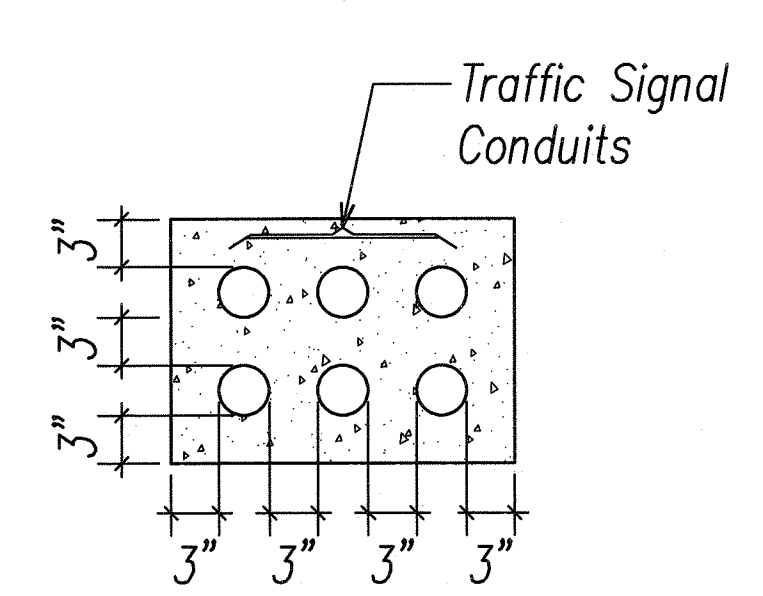
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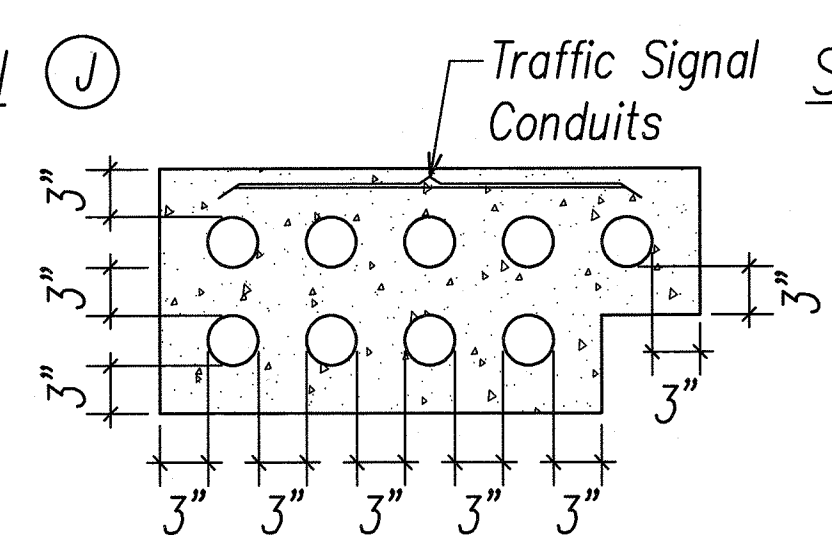
SECTION (I)



SECTION (J)



SECTION (L)



SECTION (M)

TRENCH RESTORATION & DUCT SECTION DETAILS NOT TO SCALE

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SEAN K. SUGR
LICENSED PROFESSIONAL ENGINEER
No. 9023-E
HAWAII, U.S.A.

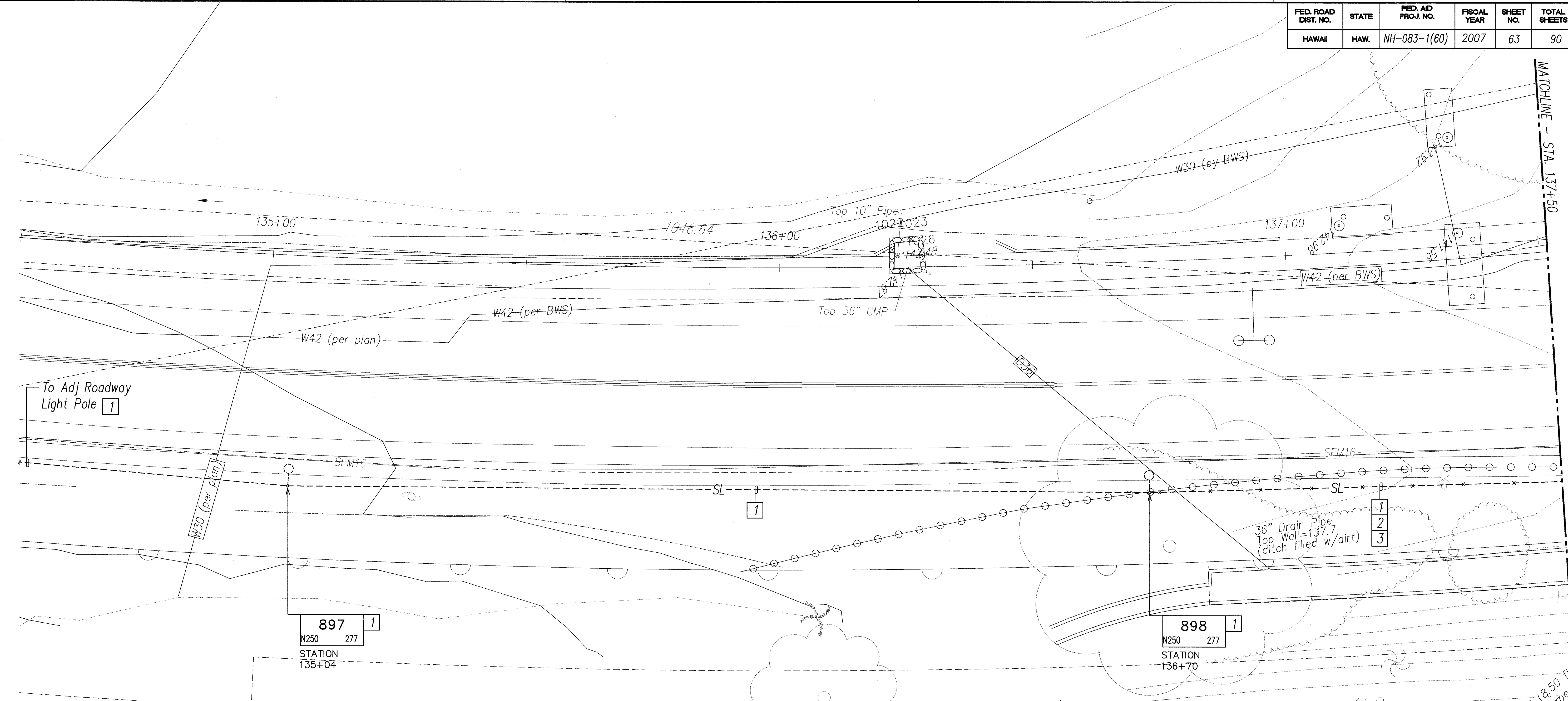
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APRIL 30, 2012
EXPIRATION DATE OF LICENSE

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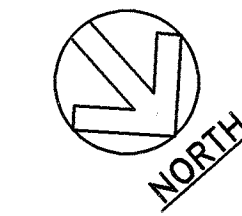
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3/9/09	Added duct section K
DATE	REVISION
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SCALE: As Noted	DATE: April 2007
SHEET No. E-4 OF 32 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	63	90

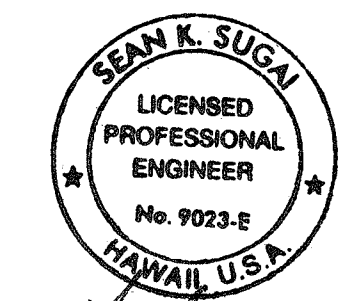
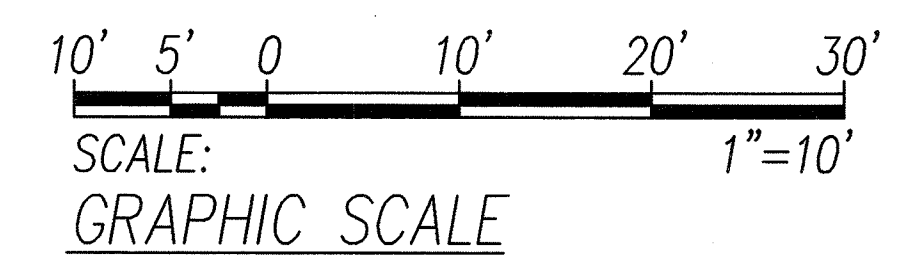


NOTES:

- "X" thru Item denotes "Existing Item to be Removed".
- 1 Item to be installed as part of future work to be completed prior to this Contract.
- 2 Roadway lights are to remain operational during construction. Provide temporary overhead conductors prior to removal of the underground ductline to maintain service.
- 3 All demolition work shown shall be done under this contract.



ELECTRICAL DEMOLITION PLAN I
SCALE: 1"=10'



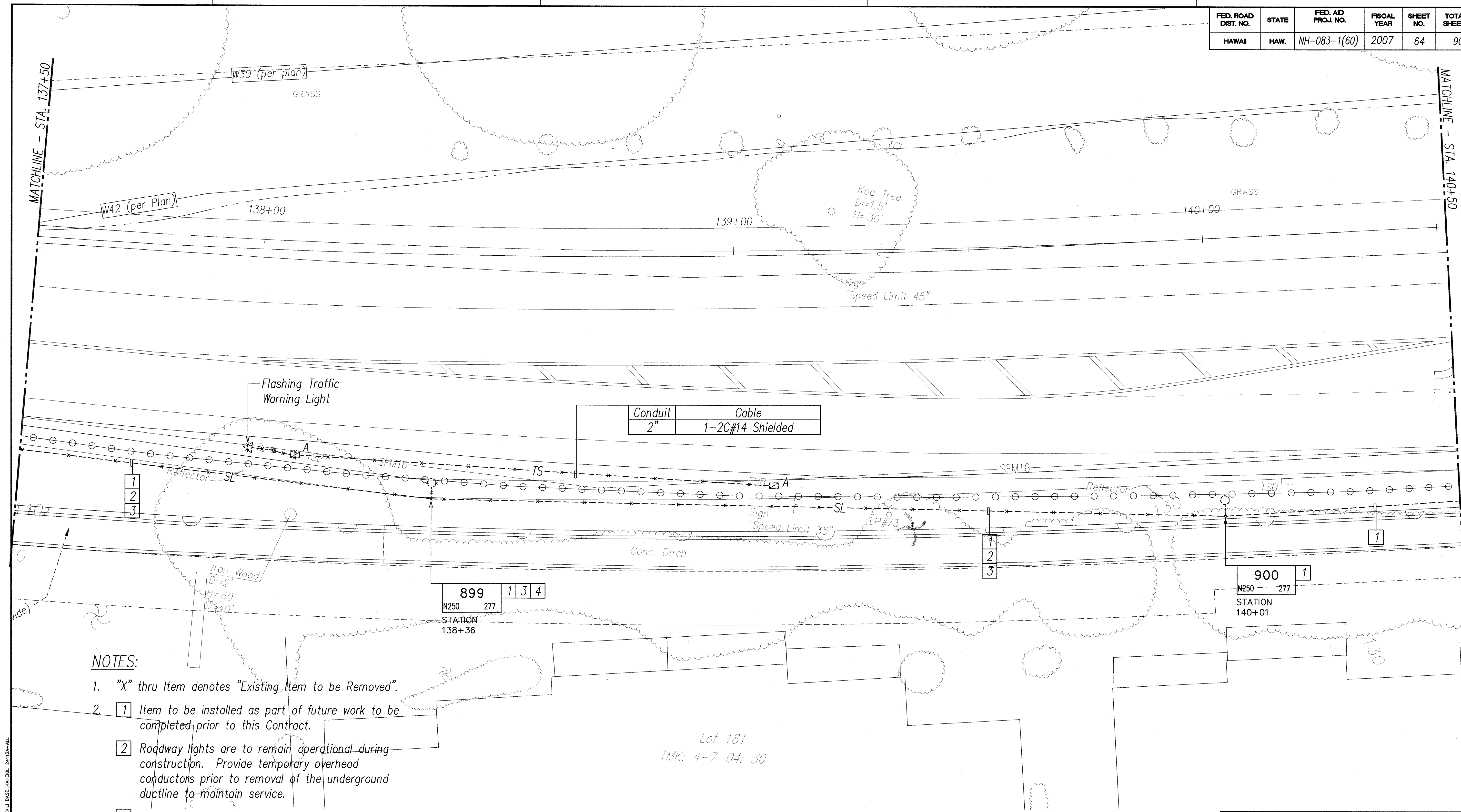
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APRIL 30, 2008
EXPIRATION DATE OF LICENSE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL DEMOLITION PLAN I

KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)

SCALE: As Noted
DATE: April 2007
SHEET No. E-5 OF 32 SHEETS

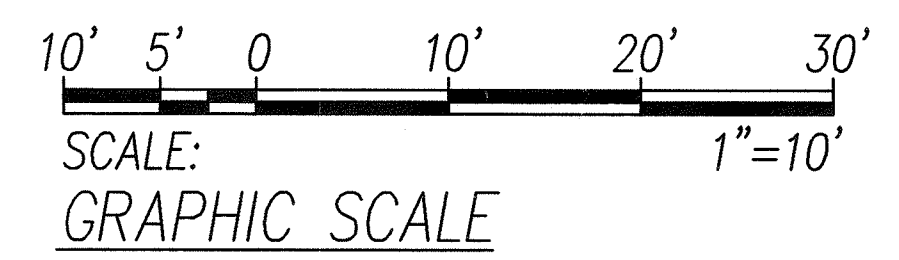
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HAWAII	HAW.	NH-083-1(60)	2007	64	90



NOTES:

- "X" thru Item denotes "Existing Item to be Removed".
- 1 Item to be installed as part of future work to be completed prior to this Contract.
- Roadway lights are to remain operational during construction. Provide temporary overhead conductors prior to removal of the underground ductline to maintain service.
- All demolition work shown shall be done under this contract.
- Light pole to be removed and relocated to accommodate new guard rail. See sheet E-13 for new location.

ELECTRICAL DEMOLITION PLAN II
SCALE: 1"=10'



SEAN K. SUGA
LICENSED PROFESSIONAL ENGINEER
No. 9023-E
HAWAII, U.S.A.
SIGNATURE: [Signature]
APRIL 30, 2008
EXPIRATION DATE OF LICENSE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL DEMOLITION PLAN II

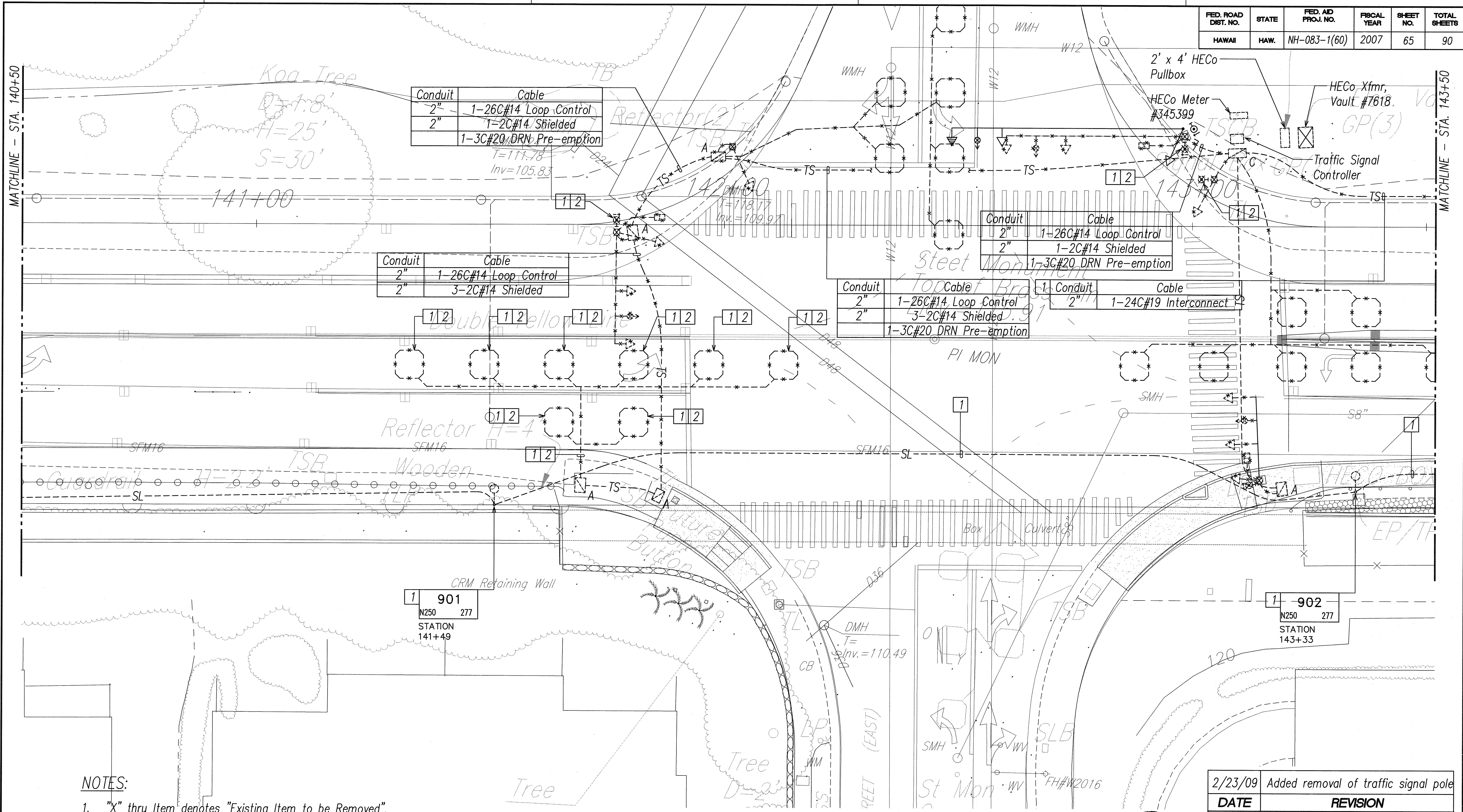
KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)

SCALE: As Noted DATE: April 2007
SHEET No. E-6 OF 32 SHEETS

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DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	

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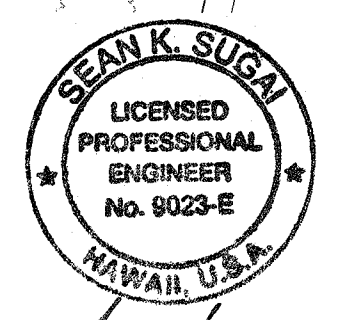
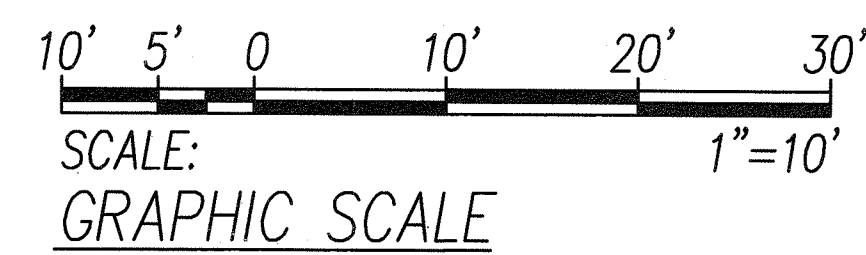
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HAWAII	HAW.	NH-083-1(60)	2007	65	90



NOTES:

1. "X" thru Item denotes "Existing Item to be Removed".
2. [1] Item to be installed as part of future work to be completed prior to this Contract.
- 2 All demolition work shown shall be done under this contract.

ELECTRICAL DEMOLITION PLAN III
SCALE: 1"=10'



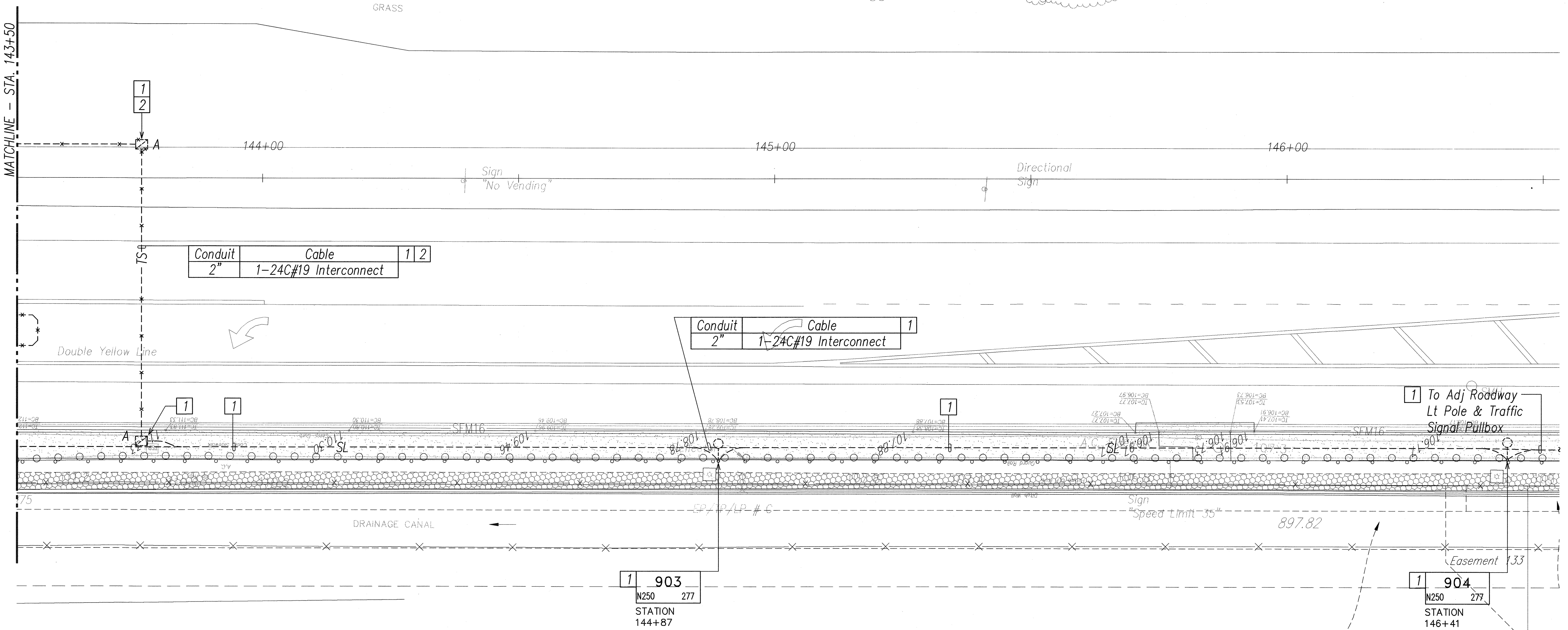
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APRIL 30, 2012
EXPIRATION DATE OF LICENSE
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2/23/09	Added removal of traffic signal pole
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ELECTRICAL DEMOLITION PLAN III	
KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS VICINITY OF HUI IWA STREET FEDERAL-AID PROJECT NO. NH-083-1(60)	
SCALE: As Noted	DATE: April 2007
SHEET No. E-7 OF 32 SHEETS	

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	66	90

MATCHLINE - STA. 143+50

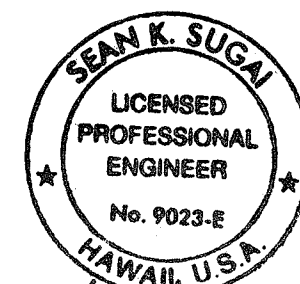
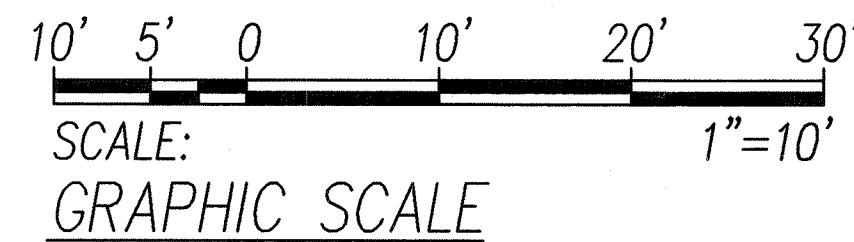


NOTES:

- "X" thru Item denotes "Existing Item to be Removed".
- 1 Item to be installed as part of future work to be completed prior to this Contract.
- 2 All demolition work shown shall be done under this contract.



ELECTRICAL DEMOLITION PLAN IV
SCALE: 1"=10'



SIGNATURE: *[Signature]* 5/9/07
APRIL 30, 2008
EXPIRATION DATE OF LICENSE
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL DEMOLITION PLAN IV

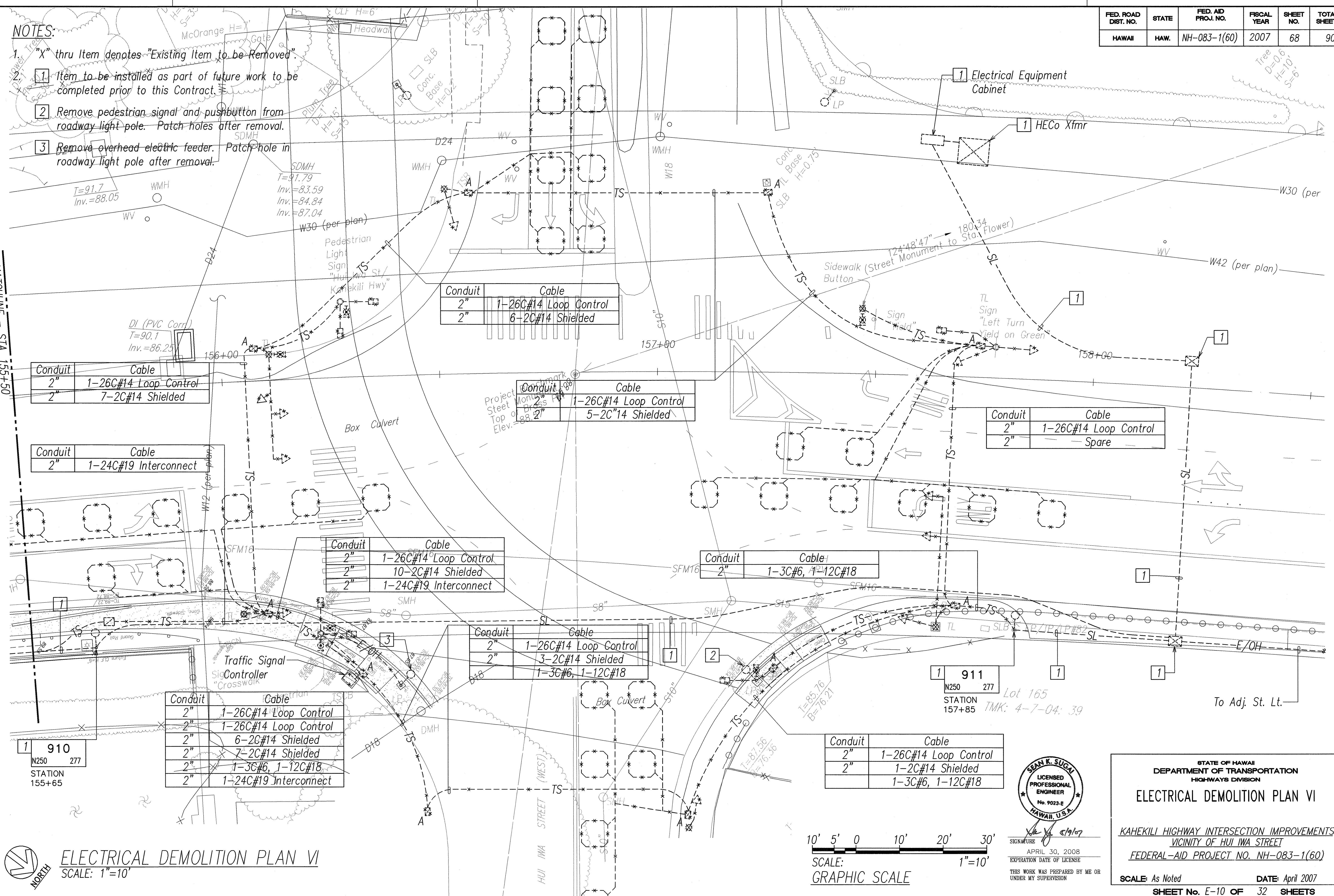
KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)

SCALE: As Noted DATE: April 2007
SHEET No. E-8 OF 32 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	68	90

- NOTES:
- "X" thru Item denotes "Existing Item to be Removed".
 - Item to be installed as part of future work to be completed prior to this Contract.
 - Remove pedestrian signal and pushbutton from roadway light pole. Patch holes after removal.
 - Remove overhead electric feeder. Patch hole in roadway light pole after removal.

MATCHLINE - STA. 155+50



Conduit	Cable
2"	1-26C#14 Loop Control
2"	7-2C#14 Shielded

Conduit	Cable
2"	1-24C#19 Interconnect

Conduit	Cable
2"	1-26C#14 Loop Control
2"	10-2C#14 Shielded
2"	1-24C#19 Interconnect

Conduit	Cable
2"	1-26C#14 Loop Control
2"	3-2C#14 Shielded
2"	1-3C#6, 1-12C#18

Conduit	Cable
2"	1-26C#14 Loop Control
2"	1-26C#14 Loop Control
2"	6-2C#14 Shielded
2"	7-2C#14 Shielded
2"	1-3C#6, 1-12C#18
2"	1-24C#19 Interconnect

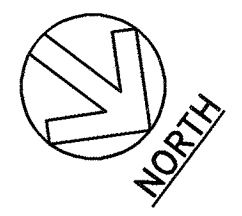
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2"	6-2C#14 Shielded

Conduit	Cable
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2"	5-2C#14 Shielded

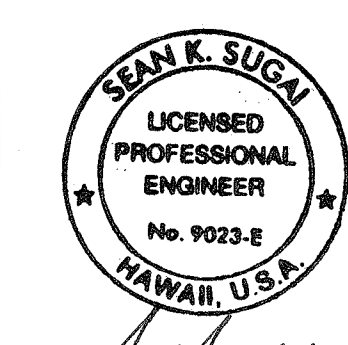
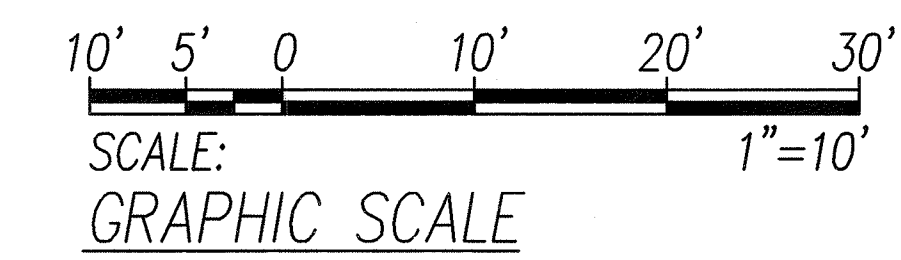
Conduit	Cable
2"	1-3C#6, 1-12C#18

Conduit	Cable
2"	1-26C#14 Loop Control
2"	Spare

Conduit	Cable
2"	1-26C#14 Loop Control
2"	1-2C#14 Shielded
2"	1-3C#6, 1-12C#18



ELECTRICAL DEMOLITION PLAN VI
SCALE: 1"=10'



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APRIL 30, 2008
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL DEMOLITION PLAN VI

KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)

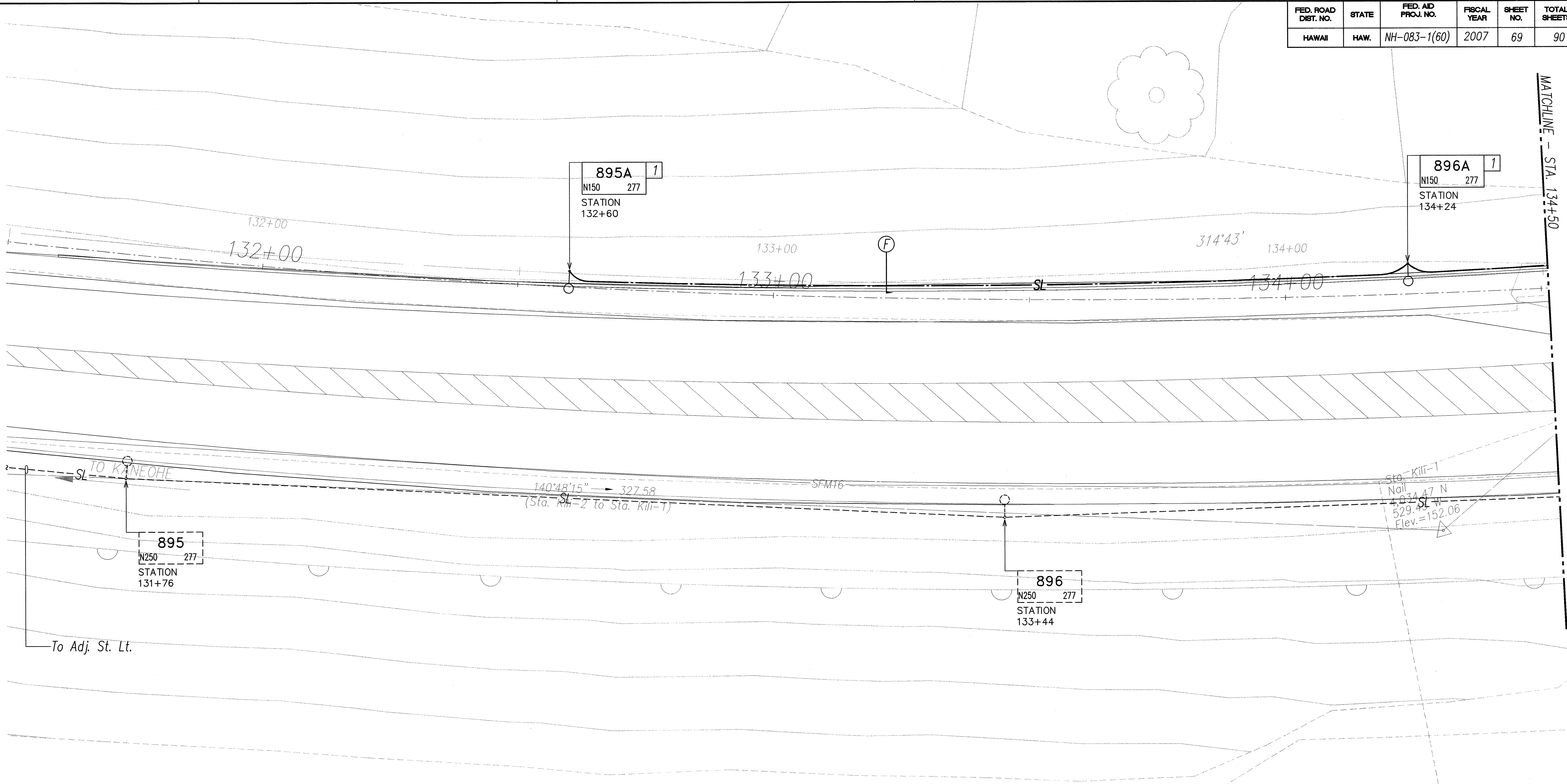
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DATE: April 2007
SHEET No. E-10 OF 32 SHEETS

68

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DESIGNED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

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DRAWN BY: J. KANEHUKU
CHECKED BY: J. KANEHUKU
DATE: 04/13/08

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	69	90

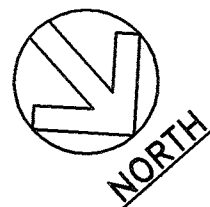


NOTES:

1. 1 Setback Condition No. 1. See sheet E-29 for detail.

ORIGINAL PLAN	DATE
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TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

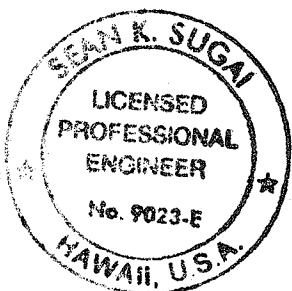
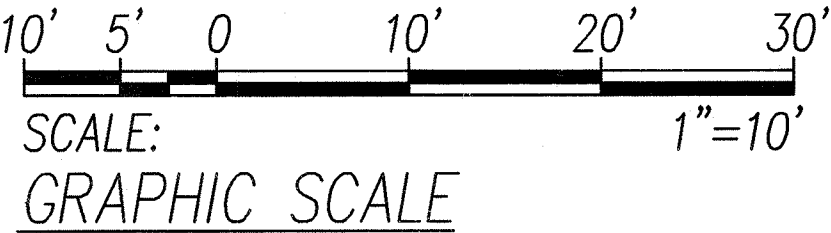
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ELECTRICAL PLAN I
 SCALE: 1"=10'

APPROVED BY:
Donna M. Nishimura
 CHIEF, WASTEWATER BRANCH, DPP

6/7/07
 DATE



SIGNATURE
Sean K. Suga
 APRIL 30, 2008
 EXPIRATION DATE OF LICENSE
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

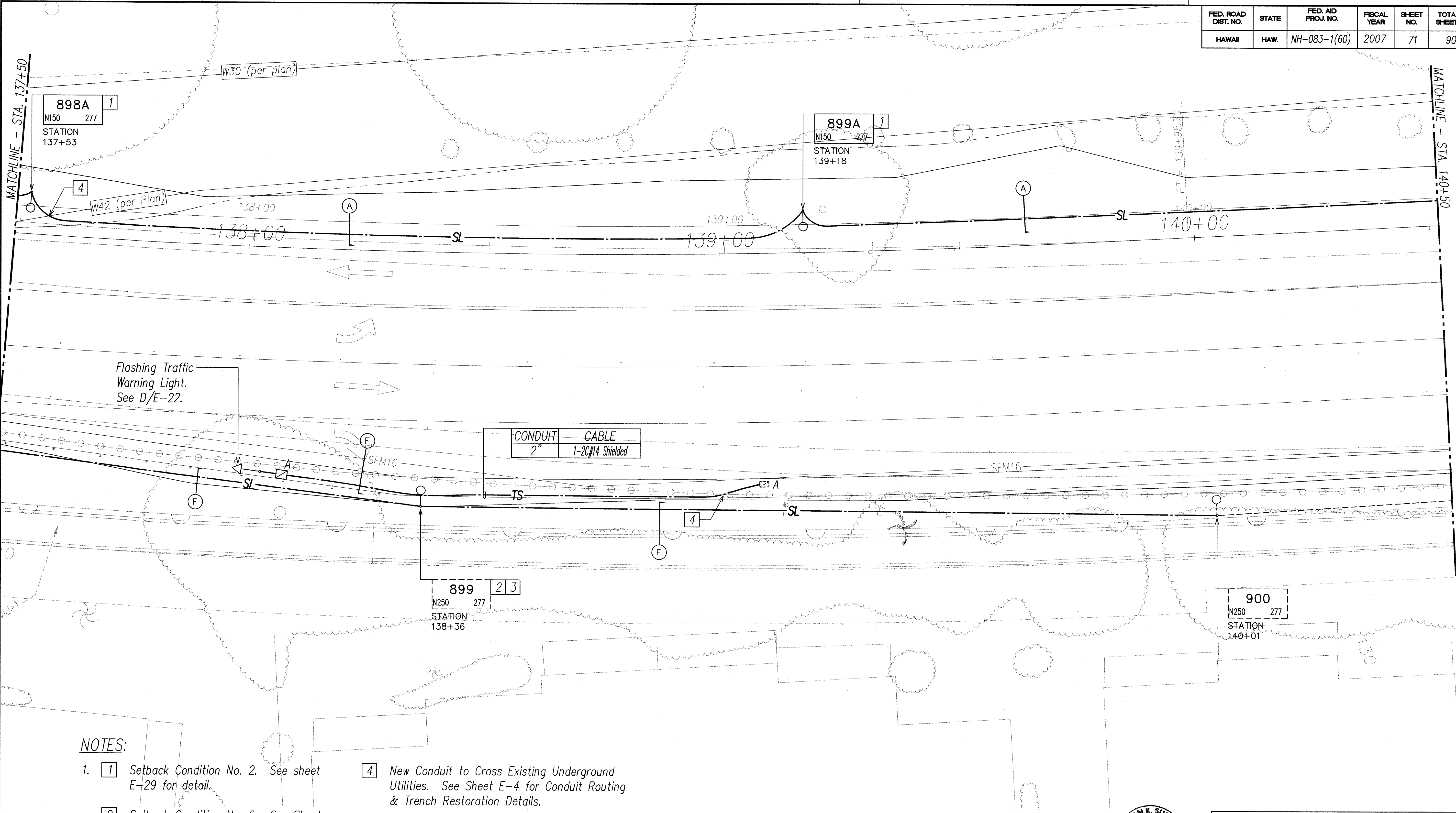
ELECTRICAL PLAN I

KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IHA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)

SCALE: As Noted
DATE: April 2007

SHEET No. E-11 OF 32 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	71	90



NOTES:

1. 1

Setback Condition No. 2. See sheet E-29 for detail.
2. 2

Setback Condition No. 6. See Sheet E-29 for detail.
3. 3

Existing light pole to be reinstalled. Provide new anchor bolts and concrete foundation.
4. 4

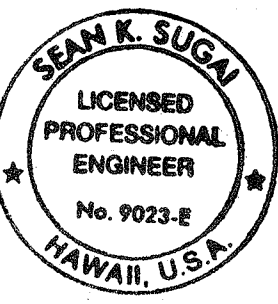
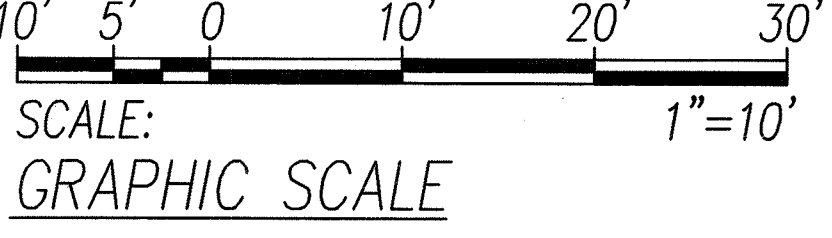
New Conduit to Cross Existing Underground Utilities. See Sheet E-4 for Conduit Routing & Trench Restoration Details.



ELECTRICAL PLAN III
SCALE: 1"=10'

APPROVED BY:
Dennis M. Mikiyama
CHIEF, WASTEWATER BRANCH, DPP

6/7/07
DATE



SIGNATURE: *Sean K. Sugi*
APRIL 30, 2008
EXPIRATION DATE OF LICENSE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL PLAN III

KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)

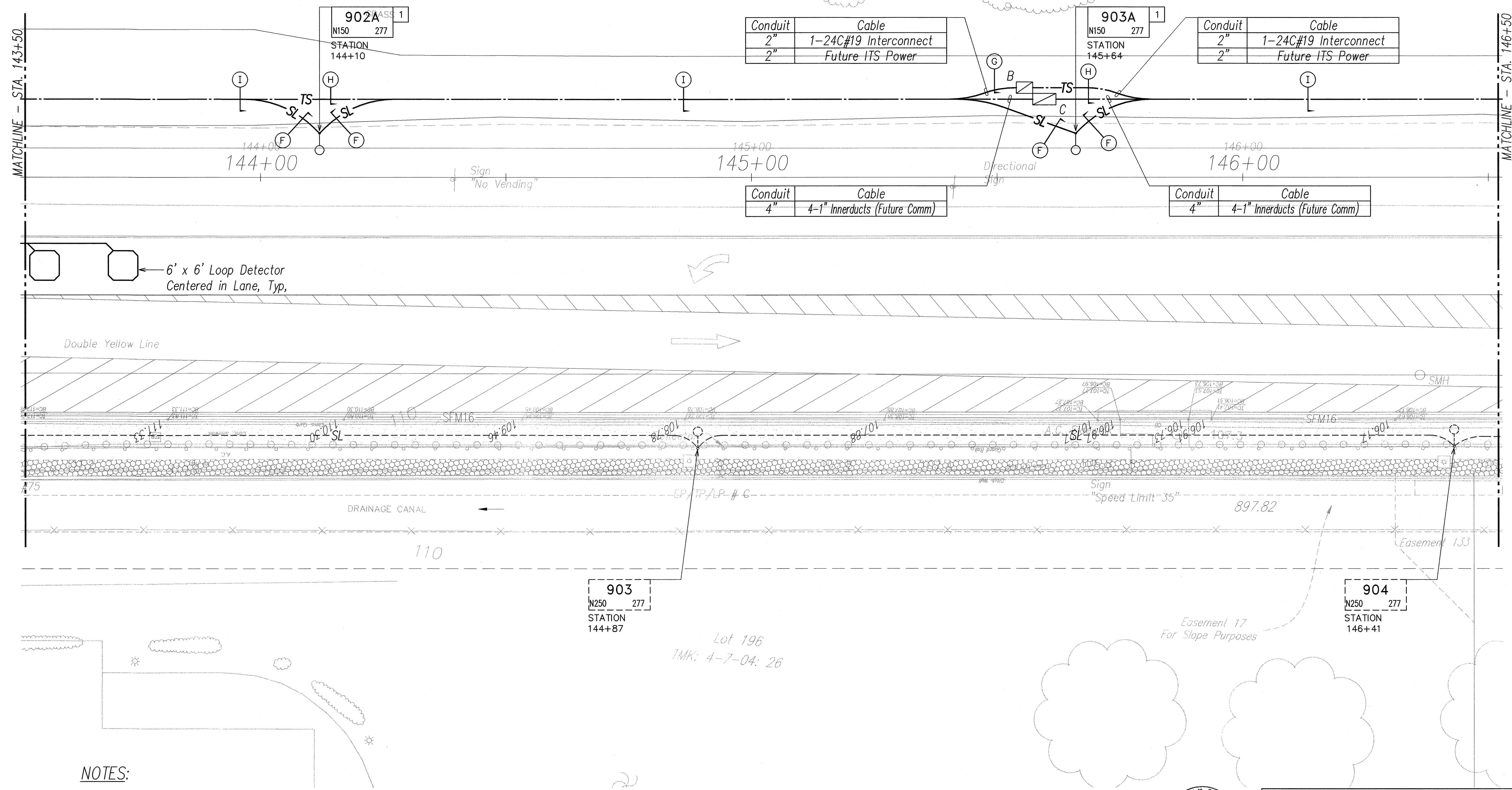
SCALE: As Noted DATE: April 2007

SHEET No. E-13 OF 32 SHEETS

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

LAST SAVE: 05/09/07 @ 08:45:43 BY: TAM PLOT SC: 1=10
C:\WORK\PROJECTS\2007\200706\20070607\20070607.DWG

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	73	90



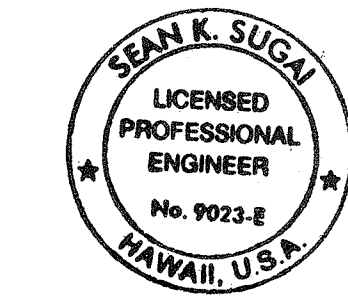
NOTES:
1. [1] Setback Condition No. 2. See sheet E-29 for detail.



ELECTRICAL PLAN V
SCALE: 1"=10'

APPROVED BY:
Dennis M. Nashim
CHIEF, WASTEWATER BRANCH, DPP

6/7/07
DATE
10' 5' 0 10' 20' 30'
SCALE:
GRAPHIC SCALE
1"=10'



SIGNATURE
Sean K. Sugar
APRIL 30, 2008
EXPIRATION DATE OF LICENSE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL PLAN V

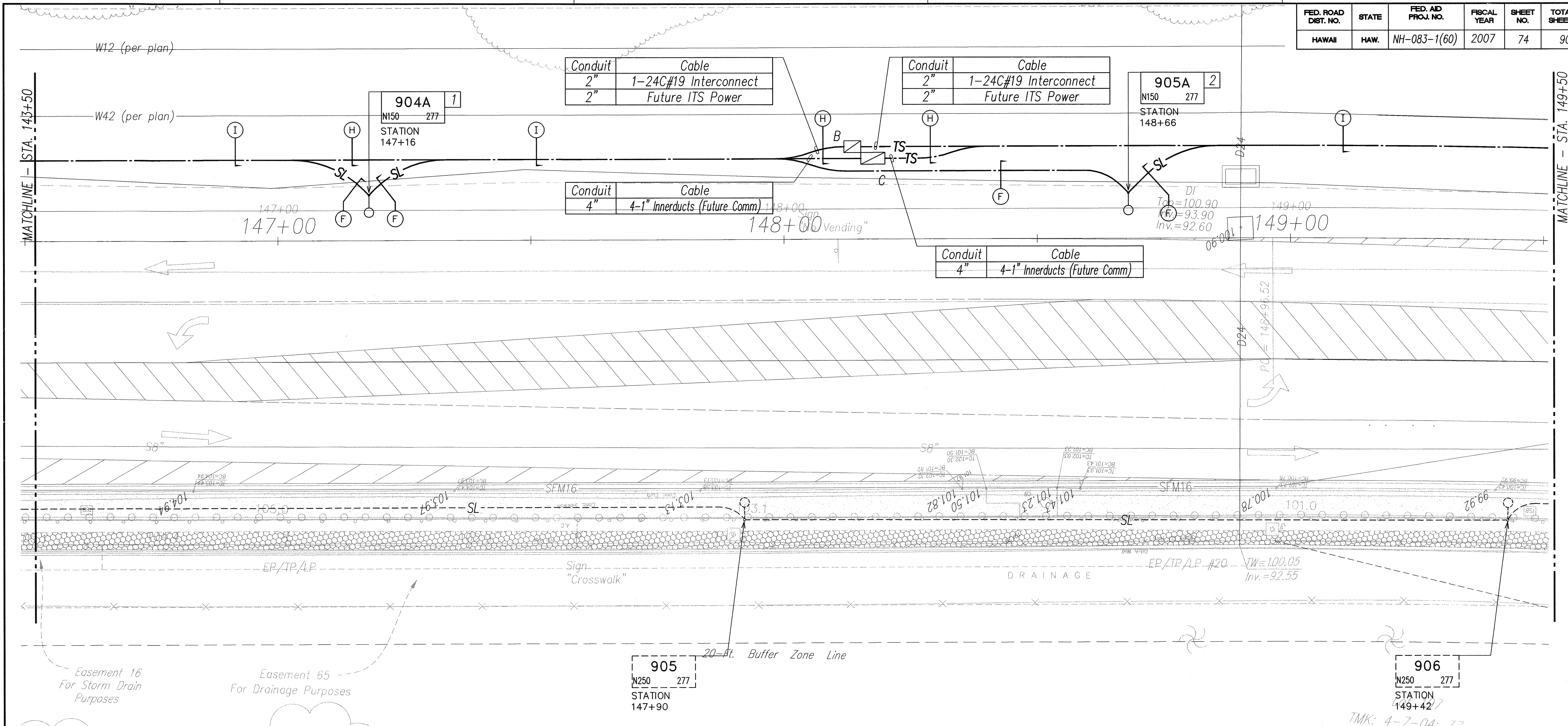
KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)

SCALE: As Noted
DATE: April 2007
SHEET No. E-15 OF 32 SHEETS

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

LAST SAVE: 06/09/07 @ 09:44:46 BY: T.M. PLOT 50 T=10
PROJECT: KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS VICINITY OF HUI IWA STREET
SHEET: E-15 OF 32 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	74	90



NOTES:

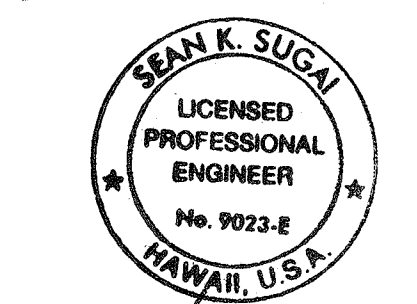
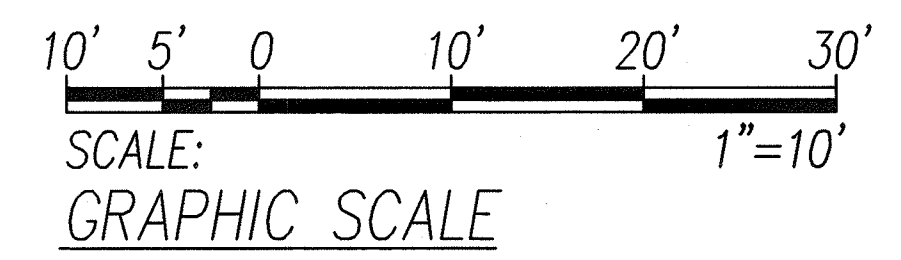
1. [1] Setback Condition No. 2. See sheet E-29 for detail.
2. [2] Setback Condition No. 3. See sheet E-29 for detail.



ELECTRICAL PLAN VI
SCALE: 1"=10'

APPROVED BY:
Deon M. Nishimura
CHIEF, WASTEWATER BRANCH, DPP

6/7/07
DATE



SIGNATURE
Sean K. Sugai
APRIL 30, 2008
EXPIRATION DATE OF LICENSE
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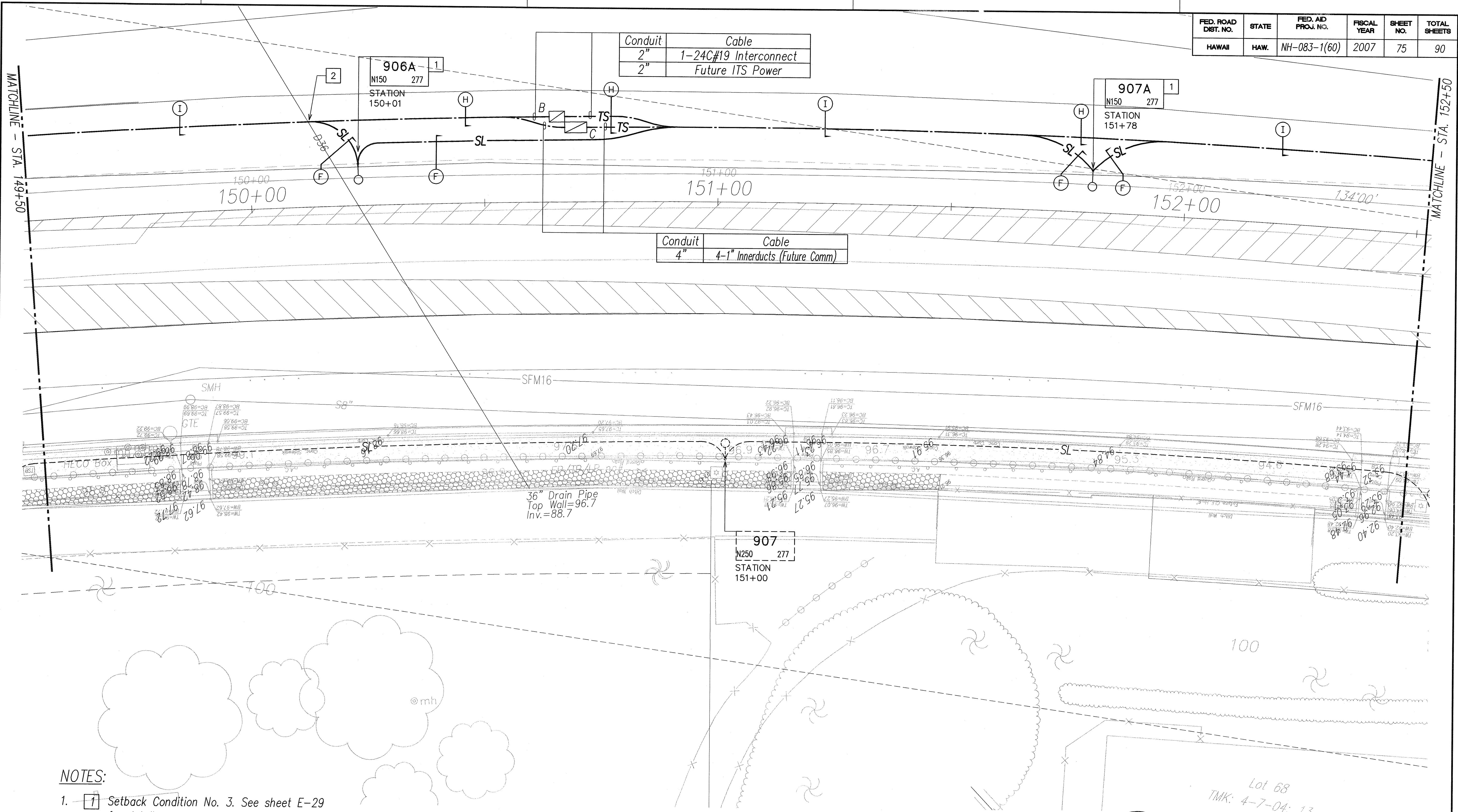
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL PLAN VI

KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)

SCALE: As Noted
DATE: April 2007
SHEET No. E-16 OF 32 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	75	90



NOTES:

1. ☐ Setback Condition No. 3. See sheet E-29 for detail.
2. New Conduit to Cross Existing Underground Utilities. See Sheet E-4 for Conduit Routing & Trench Restoration Details.



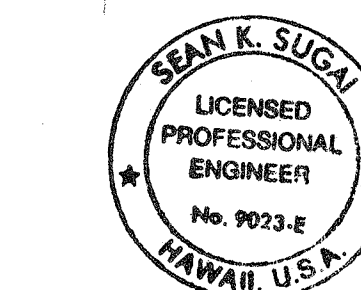
ELECTRICAL PLAN VII SCALE: 1"=10'

APPROVED BY:

Deon M. Nishimura
CHIEF, WASTEWATER BRANCH, DPP

6/7/07
DATE

10' 5' 0' 10' 20' 30'
SCALE:
GRAPHIC SCALE
1"=10'



SIGNATURE
APRIL 30, 2008
EXPIRATION DATE OF LICENSE
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL PLAN VII
KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)
SCALE: As Noted
DATE: April 2007
SHEET No. E-17 OF 32 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	76	90

Conduit	Cable
2"	1-24C#19 Interconnect
2"	Future ITS Power

908A 2
N150 277
STATION 153+34

909A 1
N150 277
STATION 154+89

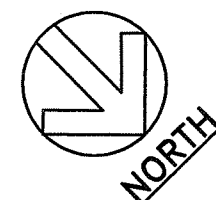
Conduit	Cable
4"	4-1" Innerducts (Future Comm)

908
N250 277
STATION 152+56

909
N250 277
STATION 154+13

NOTES:

1. [1] Setback Condition No. 4. See sheet E-29 for detail.
2. [2] Setback Condition No. 5. See sheet E-29 for detail.

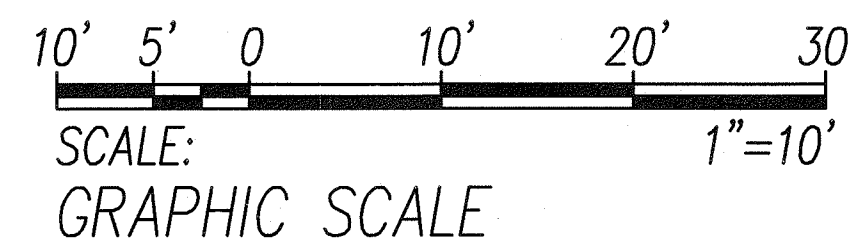


ELECTRICAL PLAN VIII SCALE: 1"=10'

APPROVED BY:

CHIEF, WASTEWATER BRANCH, DPP DATE

DIRECTOR, CITY DEPARTMENT OF ENVIRONMENTAL SERVICES DATE



SCALE: GRAPHIC SCALE



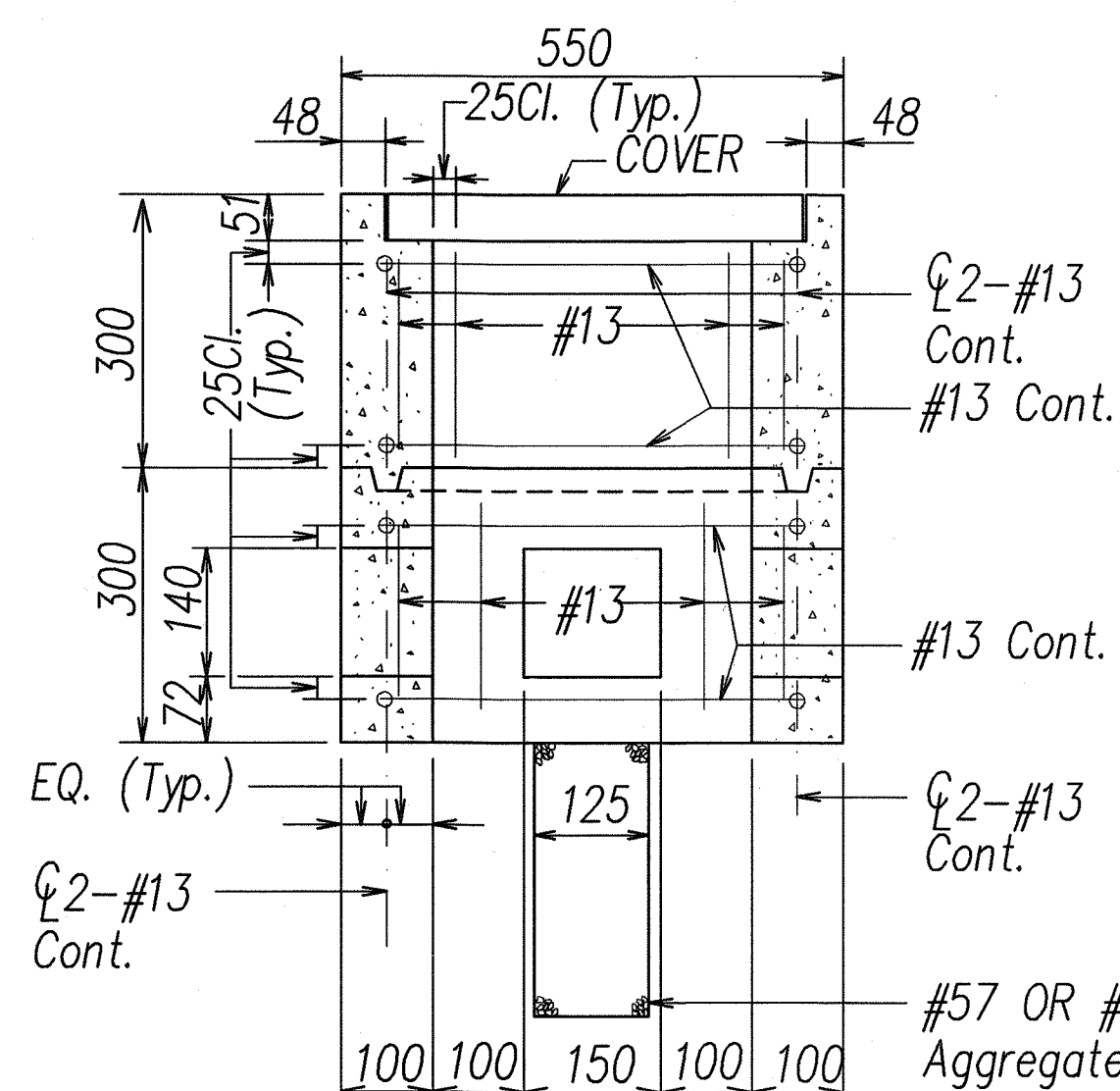
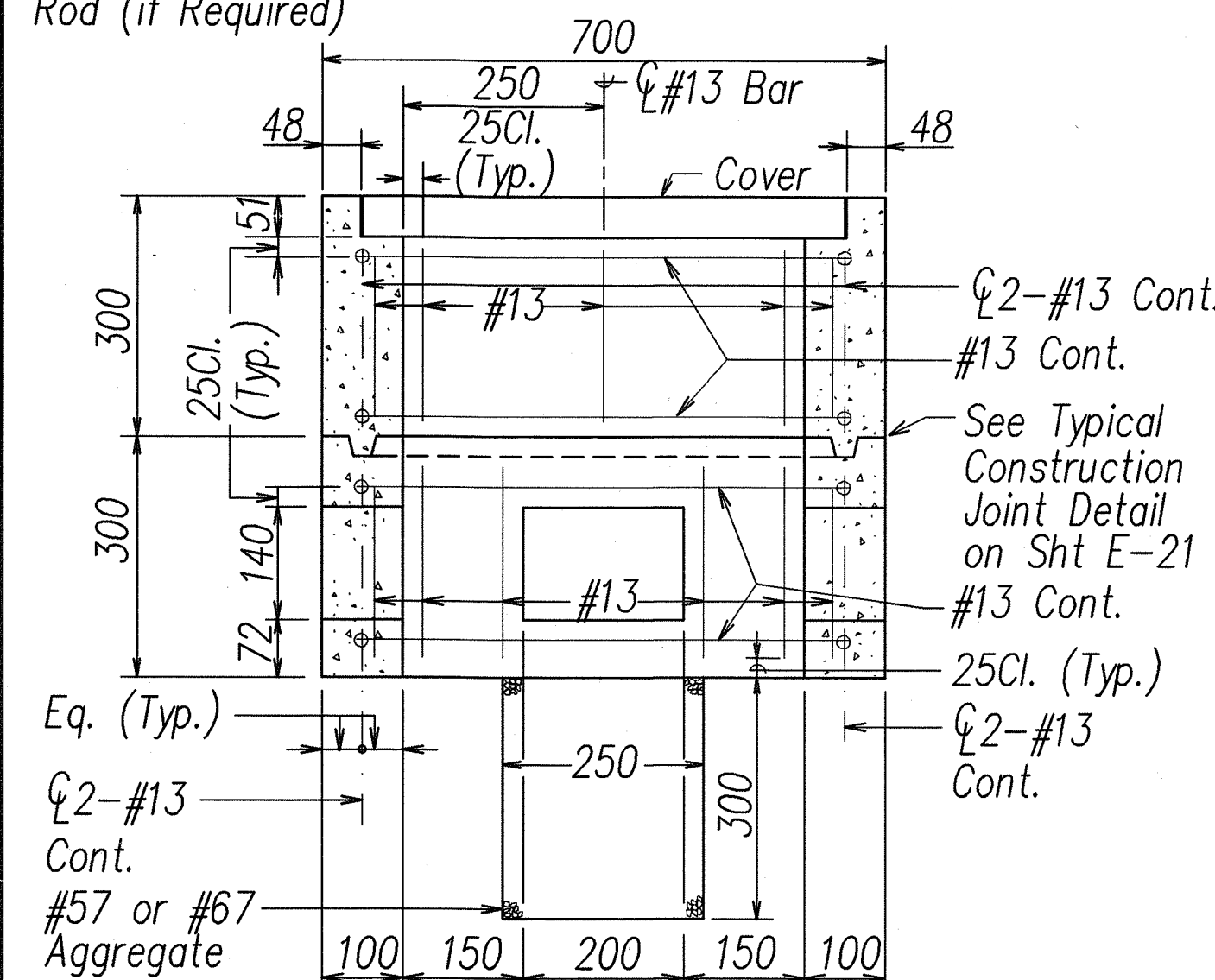
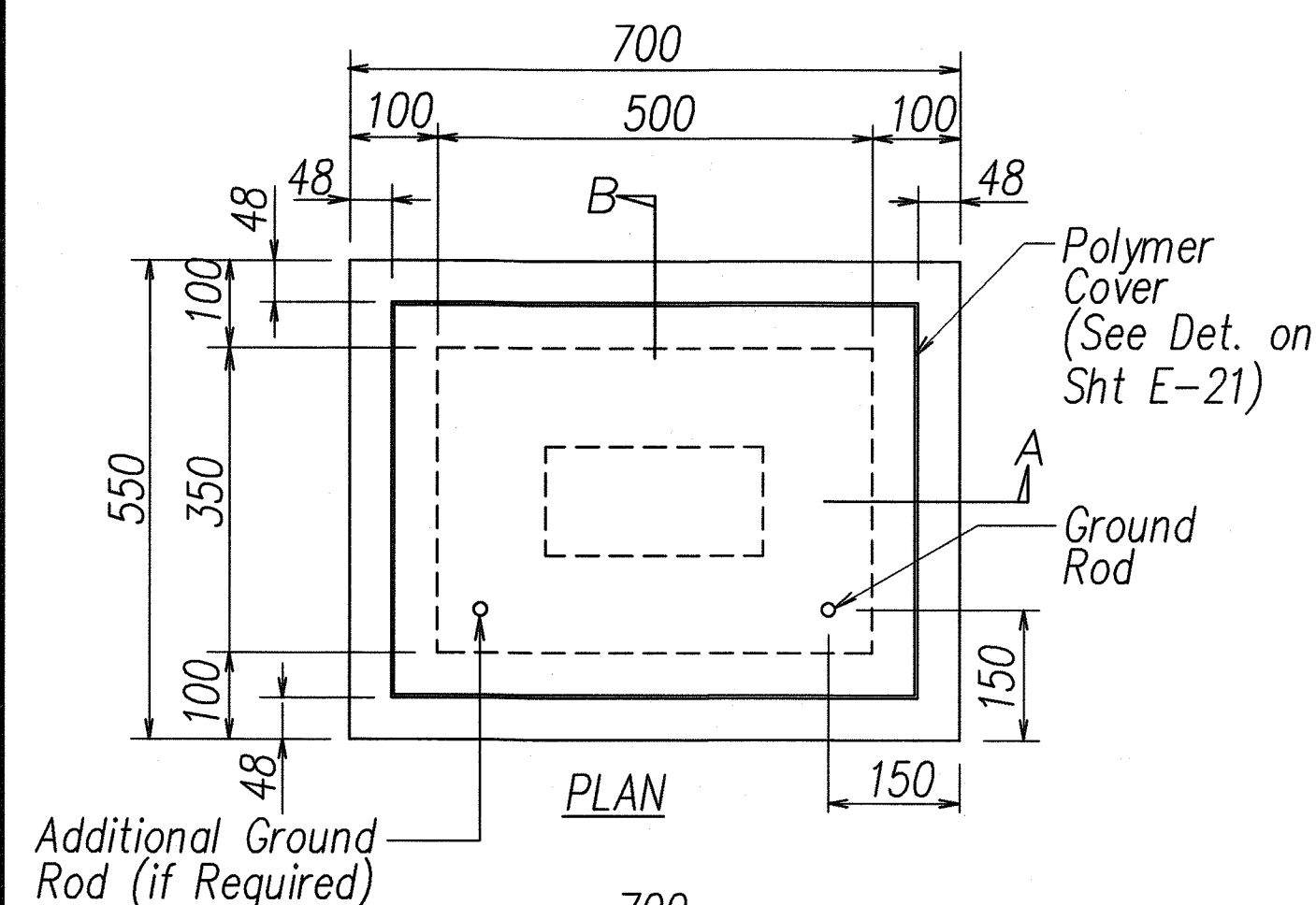
SIGNATURE: [Signature]
APRIL 30, 2012
EXPIRATION DATE OF LICENSE
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9/11/09	Added loop detector
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION ELECTRICAL PLAN VIII KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS VICINITY OF HUI IWA STREET FEDERAL-AID PROJECT NO. NH-083-1(60) SCALE: As Noted DATE: April 2007 SHEET No. E-18 OF 32 SHEETS	

"AS-BUILT"

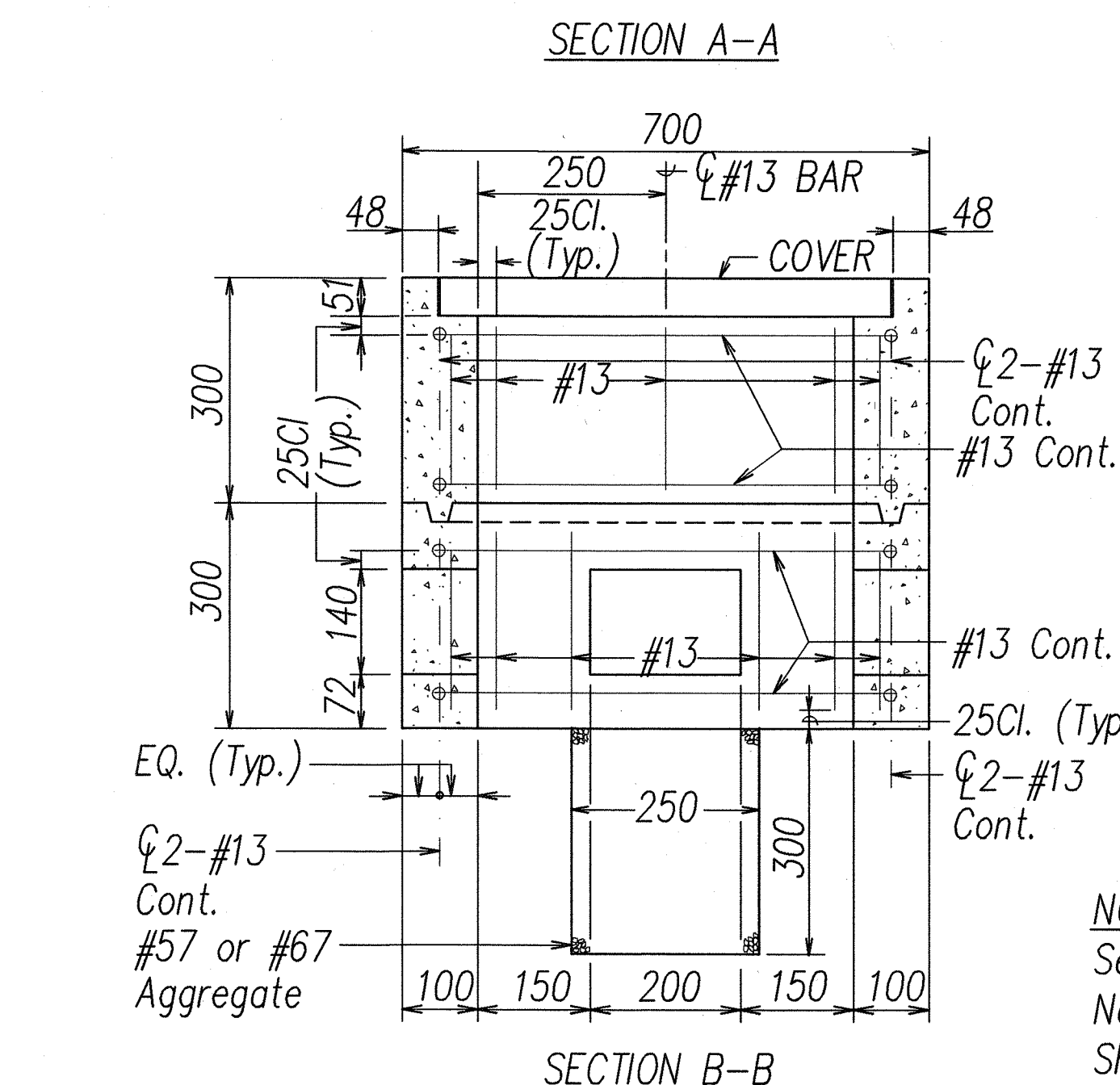
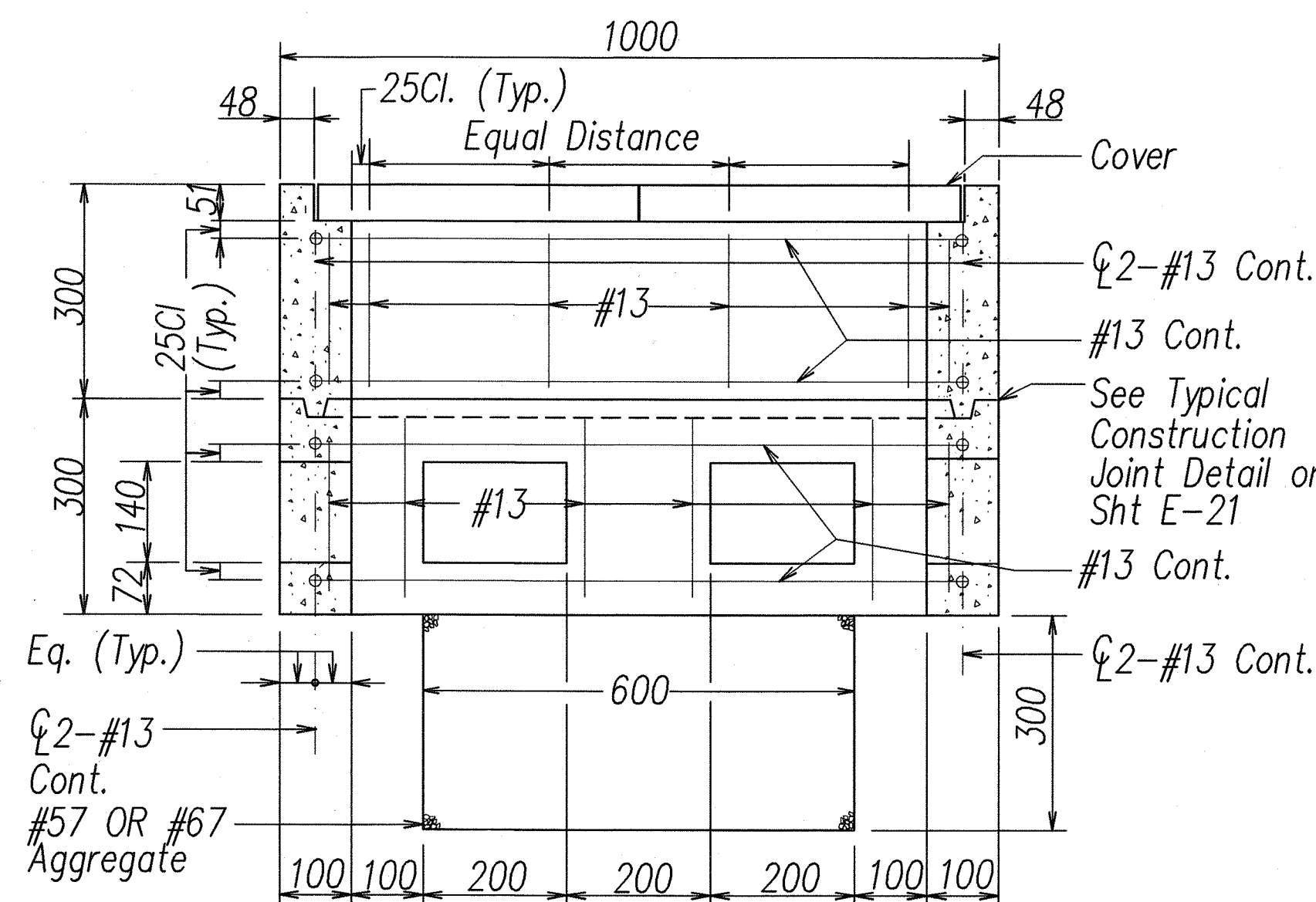
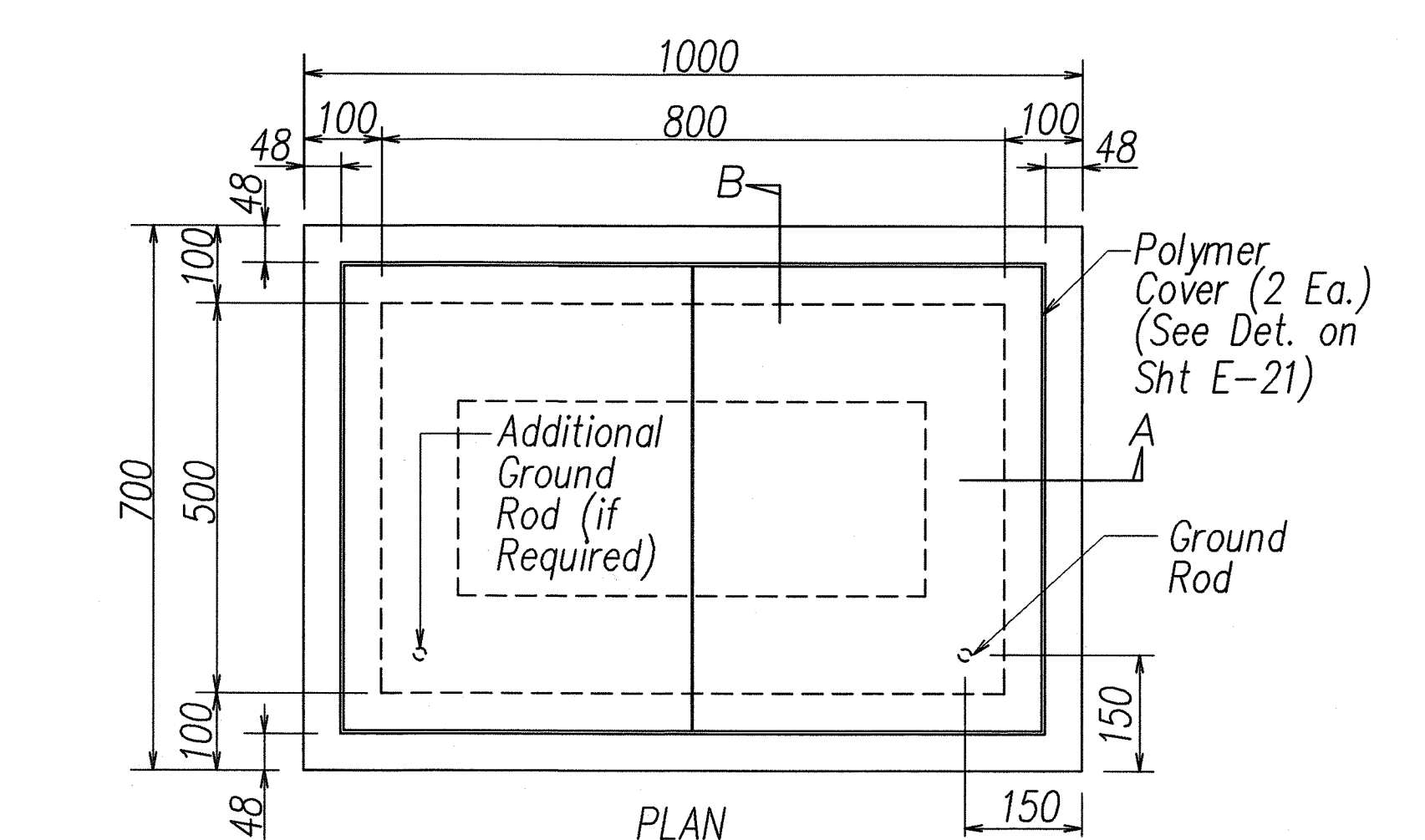
CO. 76

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	78	90



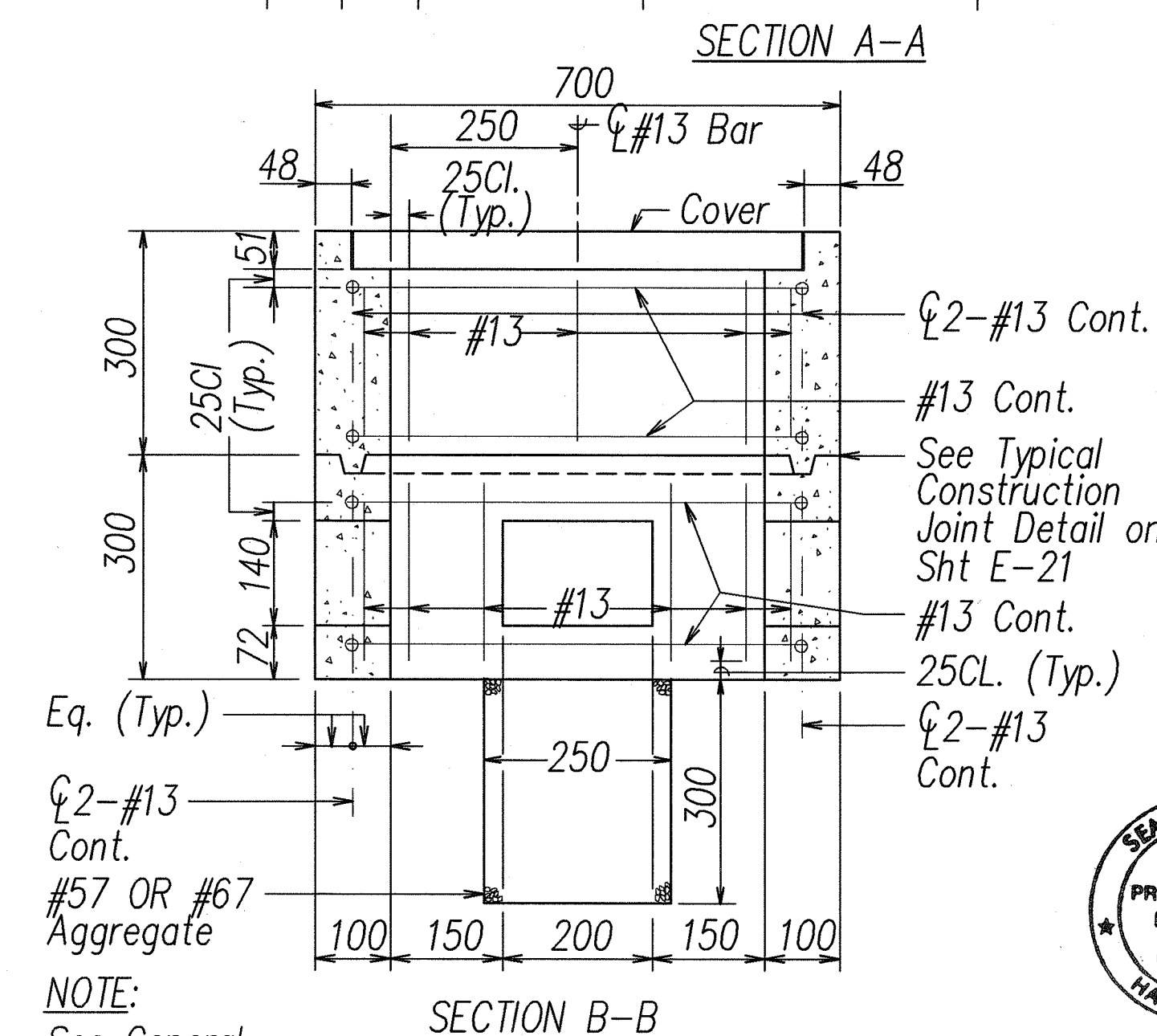
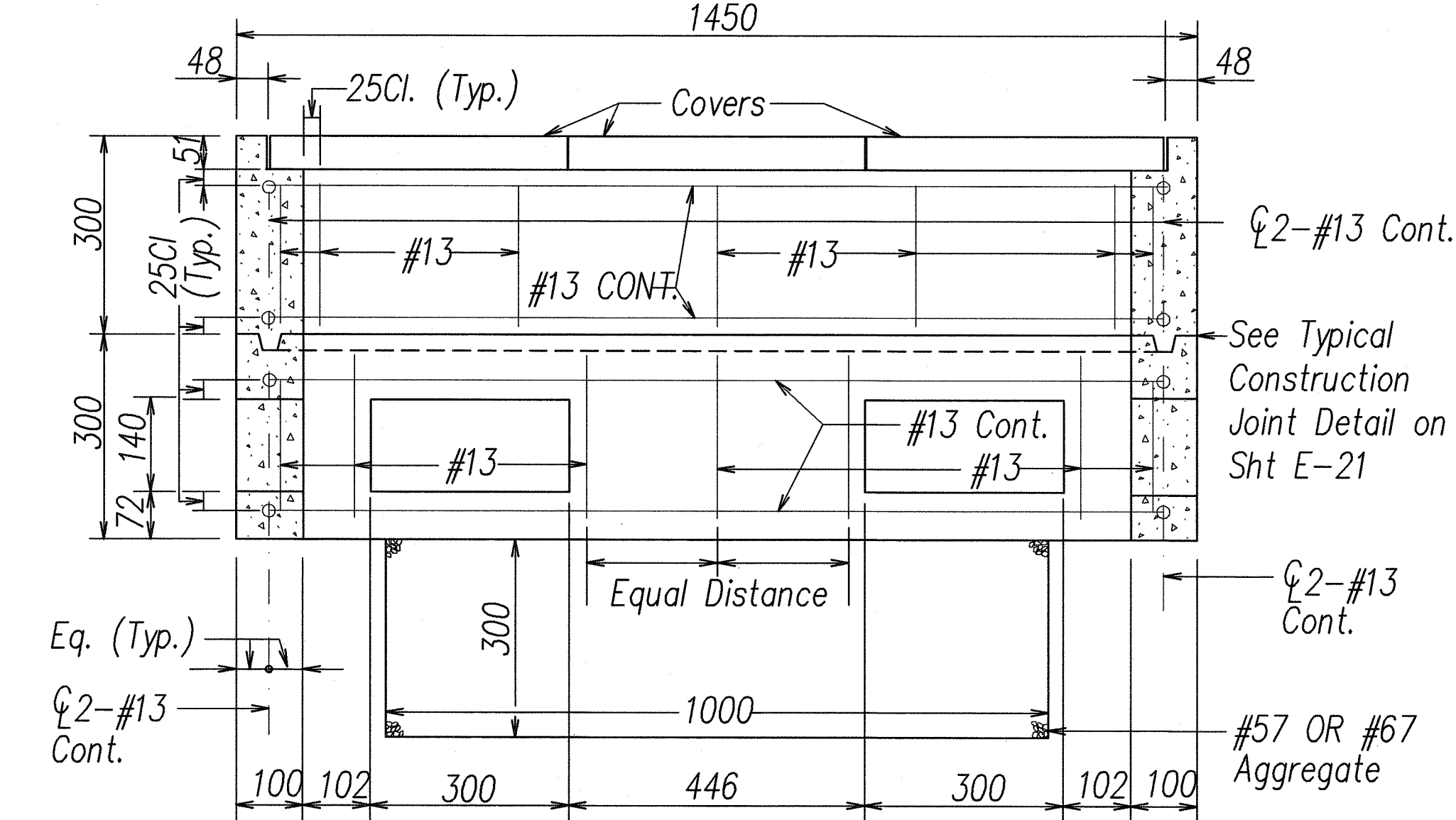
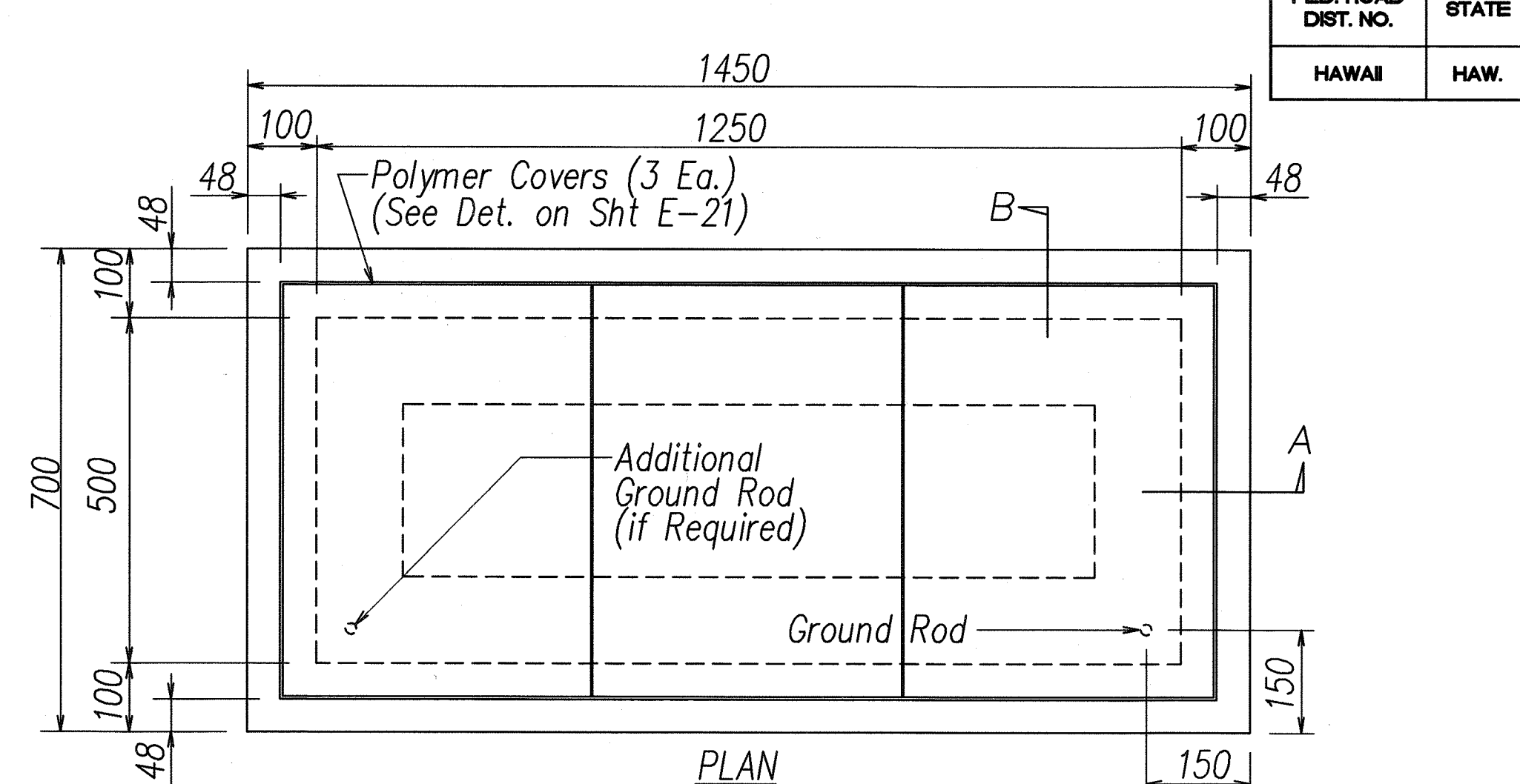
NOTE:
See General
Notes on
Sht E-21

A TYPE "A" PULLBOX OLD TYPE "B"
E-20 NOT TO SCALE



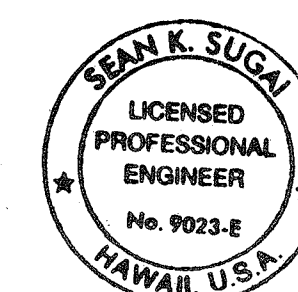
NOTE:
See General
Notes on
Sht E-21

B TYPE "B" PULLBOX (OLD TYPE "C")
E-20 NOT TO SCALE



NOTE:
See General
Notes on
Sht E-21

C TYPE "C" PULLBOX (OLD TYPE "D")
E-20 NOT TO SCALE



SIGNATURE
APRIL 30, 2008
EXPIRATION DATE OF LICENSE
THIS WORK WAS PREPARED BY ME OR
UNDER MY SUPERVISION

All Dimensions on this
Sheet are in Millimeters

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL
PULLBOX DETAILS I

KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)

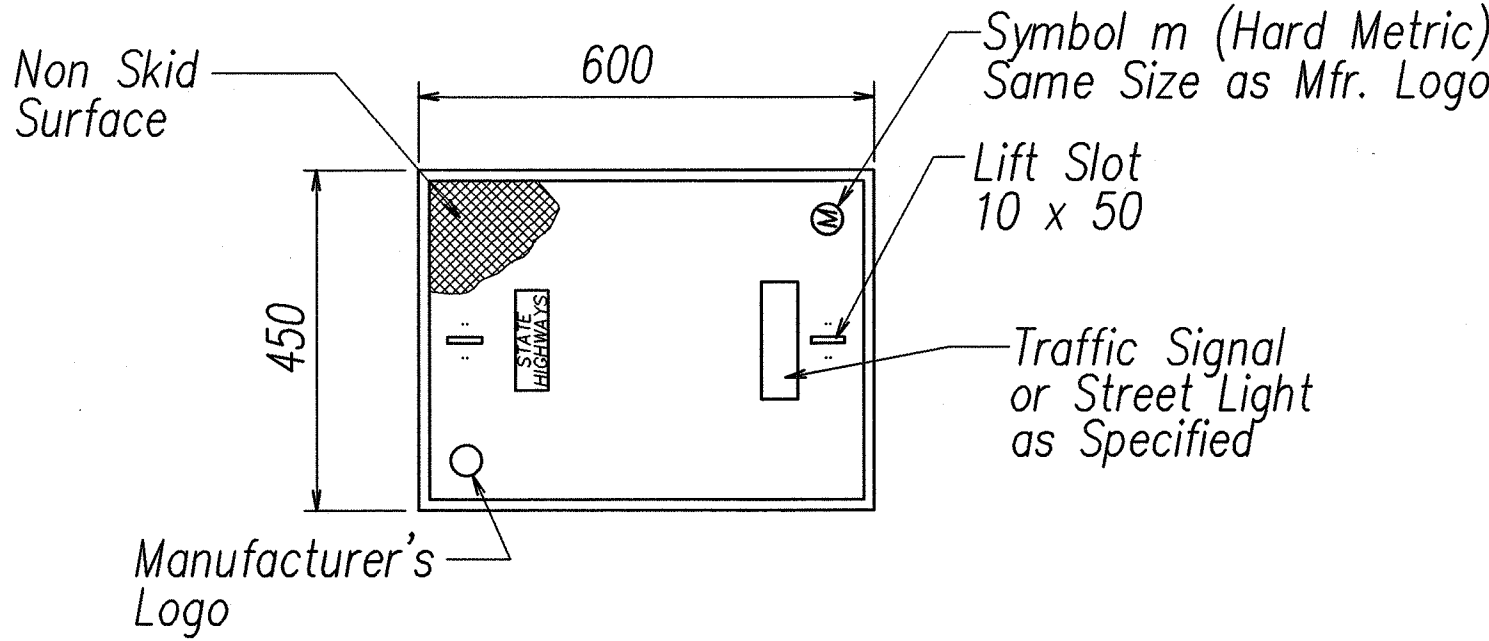
SCALE: As Noted
DATE: April 2007
SHEET No. E-20 OF 32 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	79	90

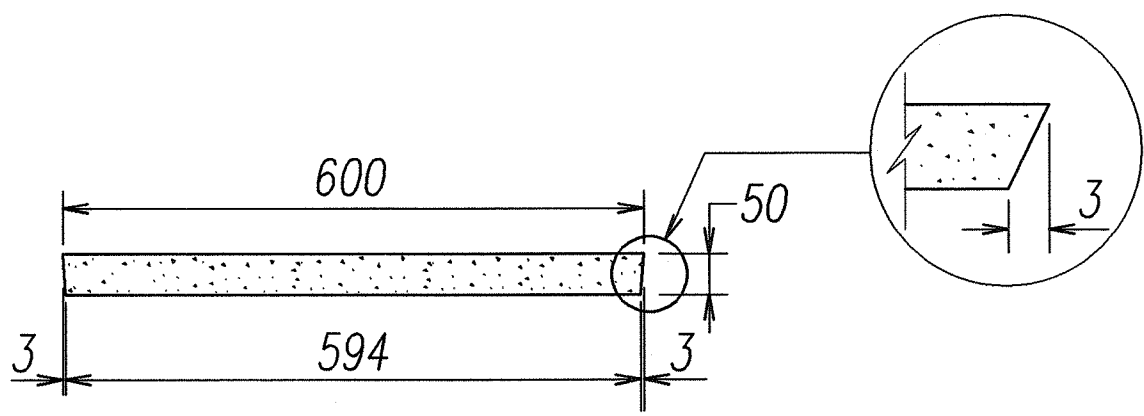
GENERAL NOTES FOR TRAFFIC SIGNAL PULLBOX

DETAILS ON SHEET E-20

1. Provide a minimum of one 16 x 2.5m copperweld ground rod in each pullbox. When directed by the traffic signal inspector/engineer, install additional ground rods. Cost of ground rods shall be incidental to the pullboxes.
2. All pre-cast concrete pullboxes shall be manufactured in two pieces.
3. The pullbox with cover shall be capable of supporting an ms 18 loading.
4. The maximum weight of the pullbox cover shall not exceed 27 kilograms.
5. The openings for the conduits on all pullboxes shall be pre-cast concrete knockouts.
6. After installing the conduits in the openings of the pullboxes, the Contractor shall fill the excess opening in the pre-cast knockouts with concrete mortar.
7. Prior to installing the pullboxes, the Contractor shall level the bottom of the trench and achieve a minimum of 95% relative compaction of the bottom of the trench.
8. All concrete shall be class A (25MPa, min.)
9. Rebars shall be grade 300 and all lapped splices shall be 360mm minimum.
10. The #57 or #67 size aggregate shall conform to latest version of AASHTO M43 (ASTM D 448).
11. Type "C" pullbox shall be installed in a location protected from vehicular traffic (i.e. raised sidewalk, behind a.c. curbs, traffic signal standard or pipe guards).
12. Pullboxes shall be installed such that covers are level with curb or sidewalk or 1 inch above existing ground. For raised boxes, backfill at edges to provide 2% slope from edge to existing grade.



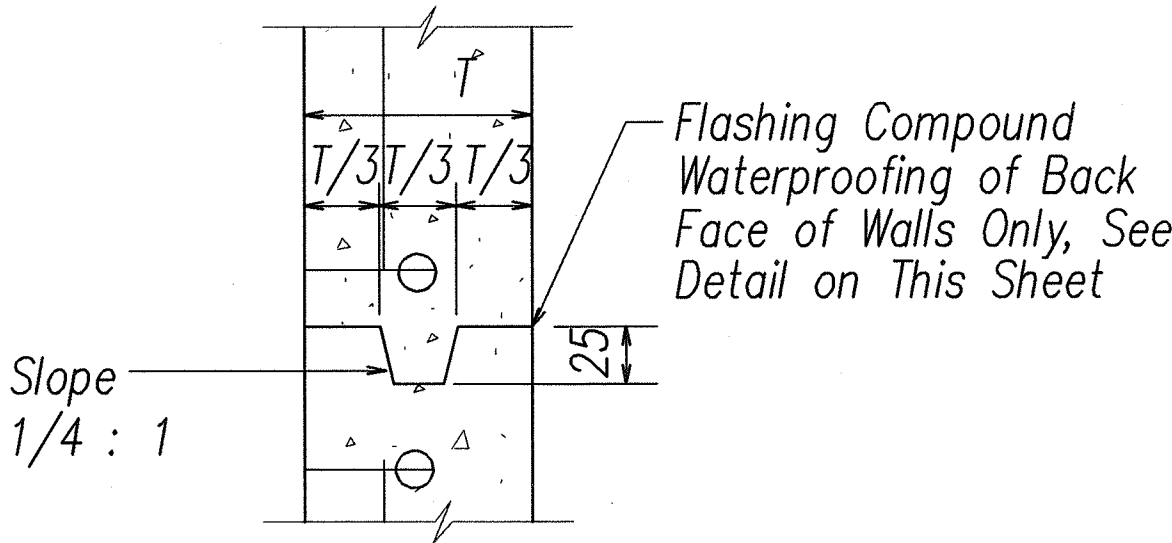
PLAN VIEW



ELEVATION

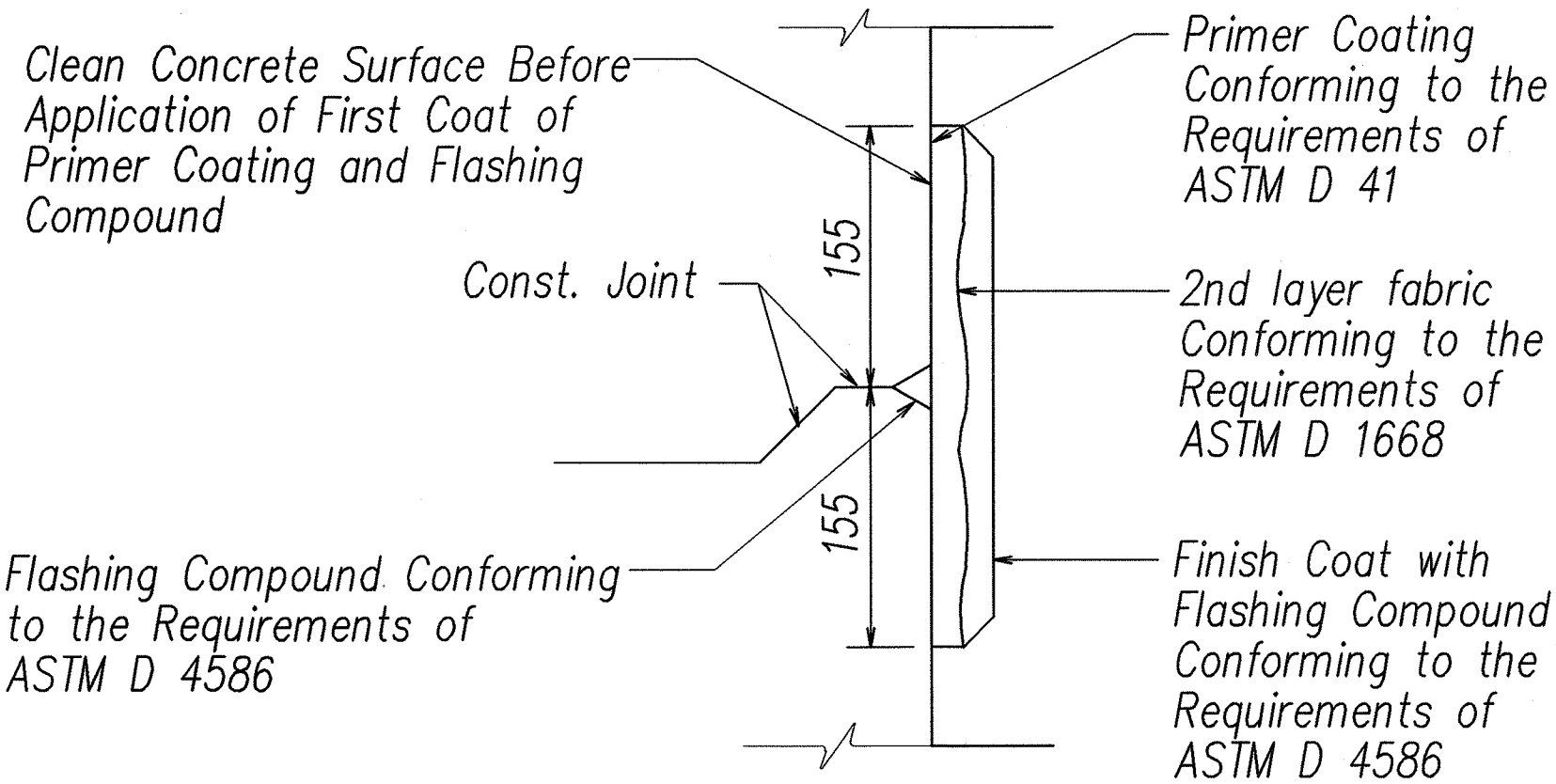
Note: See Highway Lighting and Traffic Signal Pullbox Details on Sht E-18

B E-21 POLYMER CONCRETE COVER NOT TO SCALE



Note: See Highway Lighting and Traffic Signal Pullbox Details on Sht E-20

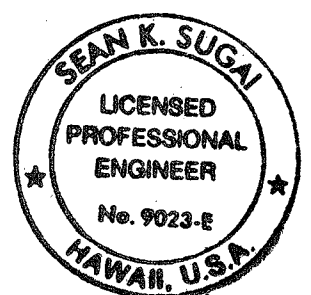
C E-21 TYPICAL CONSTRUCTION JOINT DETAIL NOT TO SCALE



A E-21 TYPICAL FLASHING COMPOUND WATERPROOFING DETAILS NOT TO SCALE

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NO.	

LAST SAVE: 04/09/07 09:20:05 BY: 80107 SC: 14-05-1
V:\asst\projects\241130\241130_241130_Pullbox02



SIGNATURE: *Sean K. Sugai* 5/9/07
APRIL 30, 2008
EXPIRATION DATE OF LICENSE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

All Dimensions on this Sheet are in Millimeters Unless Otherwise Shown

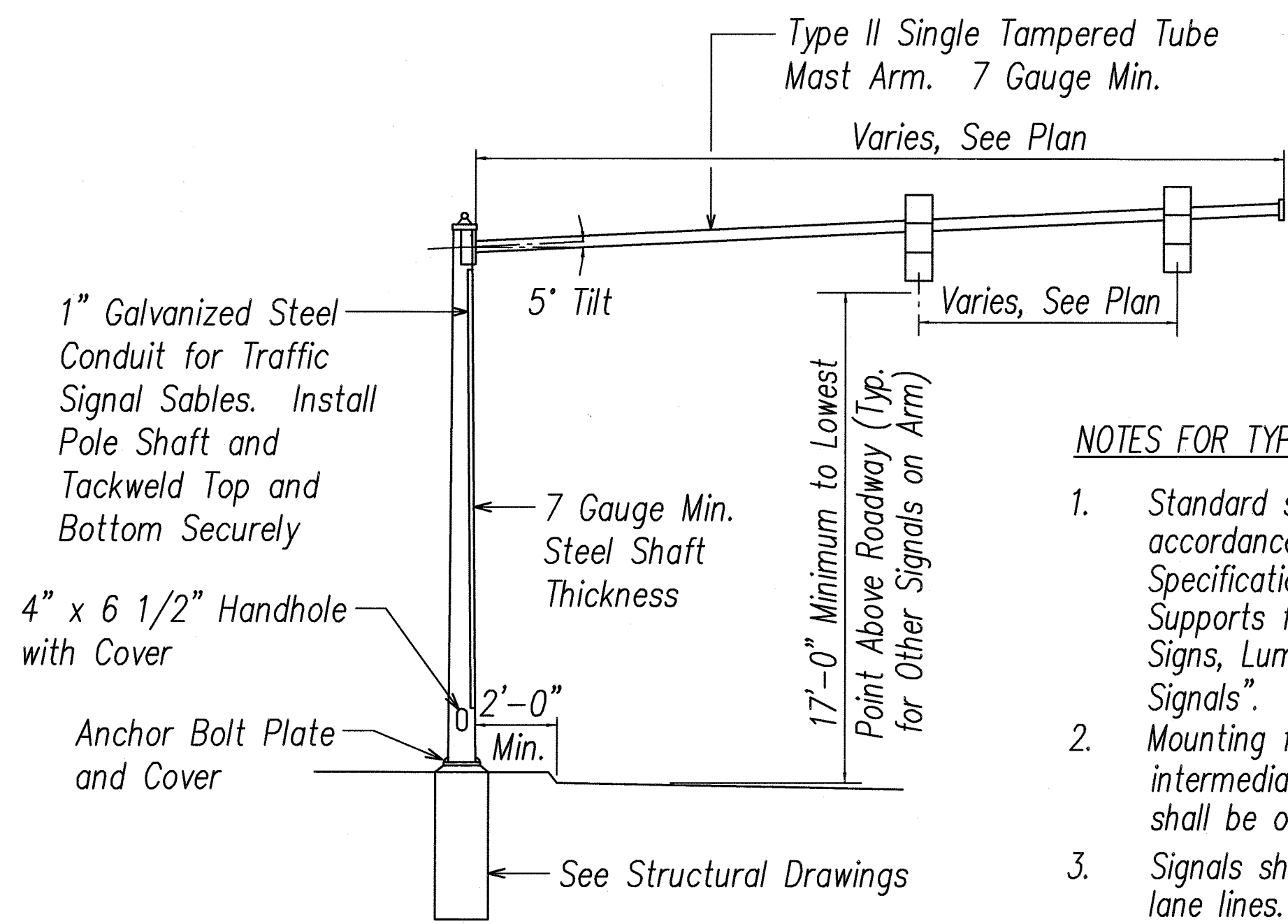
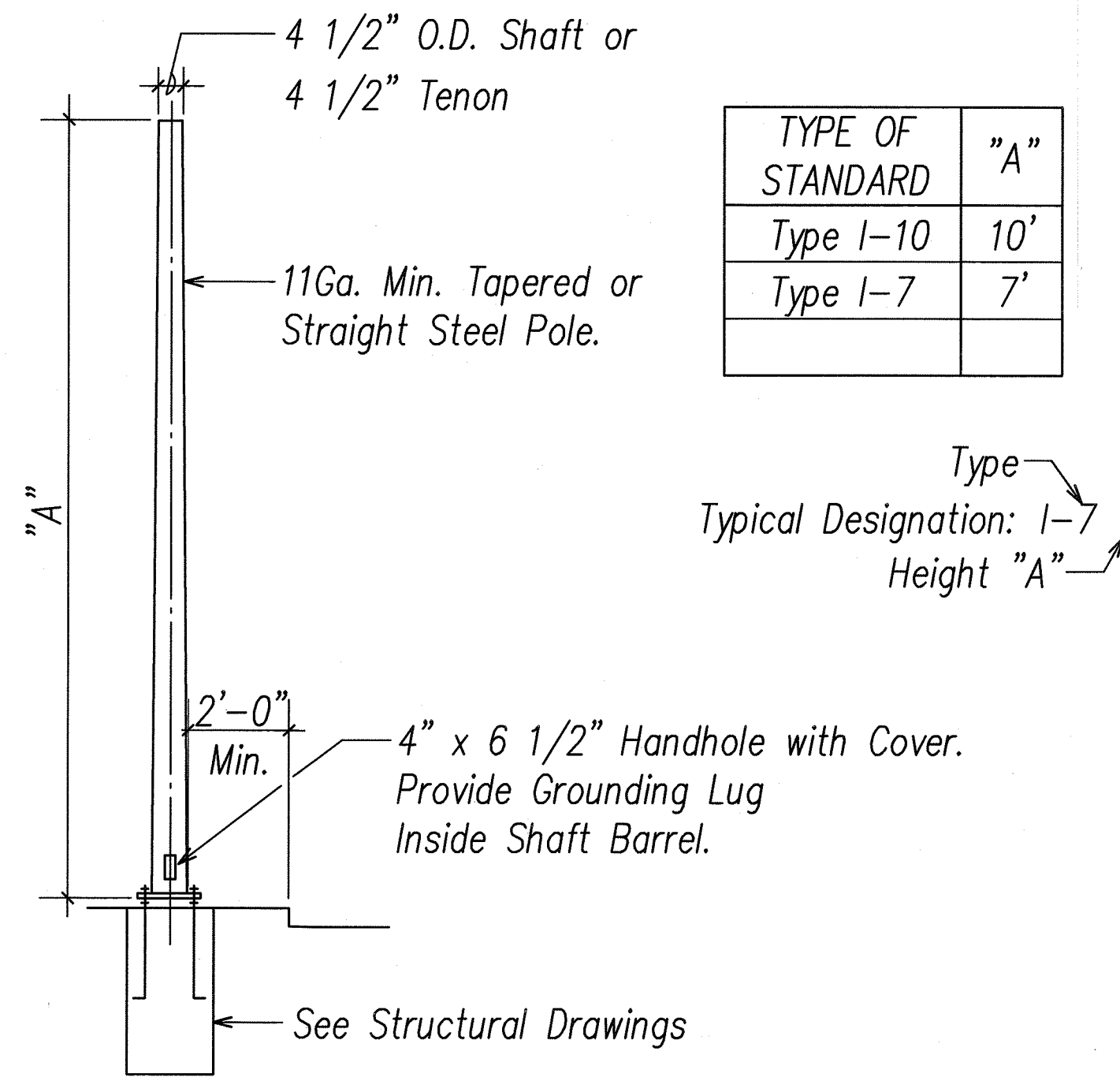
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL
PULLBOX DETAILS II

KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)

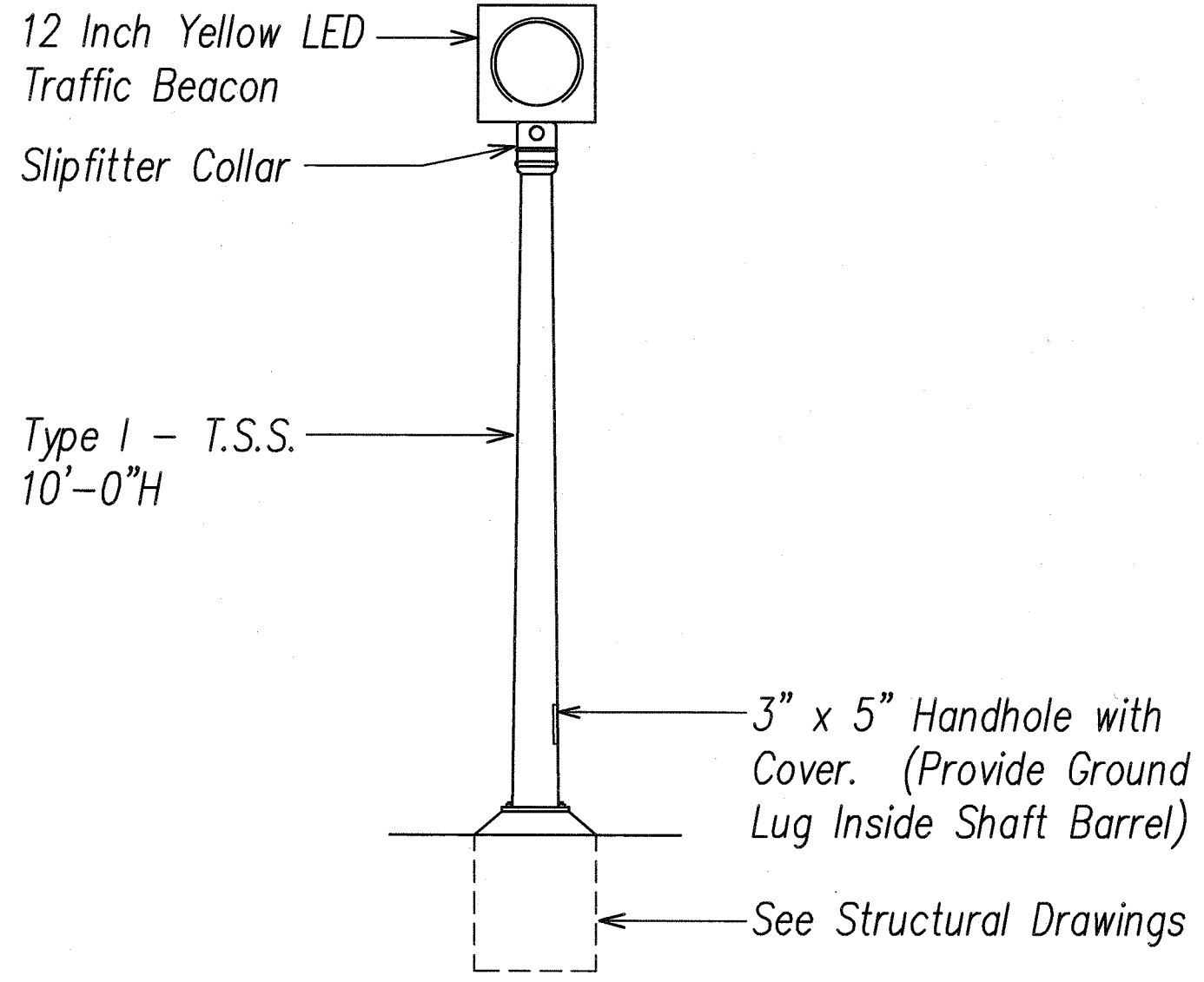
SCALE: As Noted DATE: April 2007
SHEET No. E-21 OF 32 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	80	90



NOTES FOR TYPE II STANDARD:

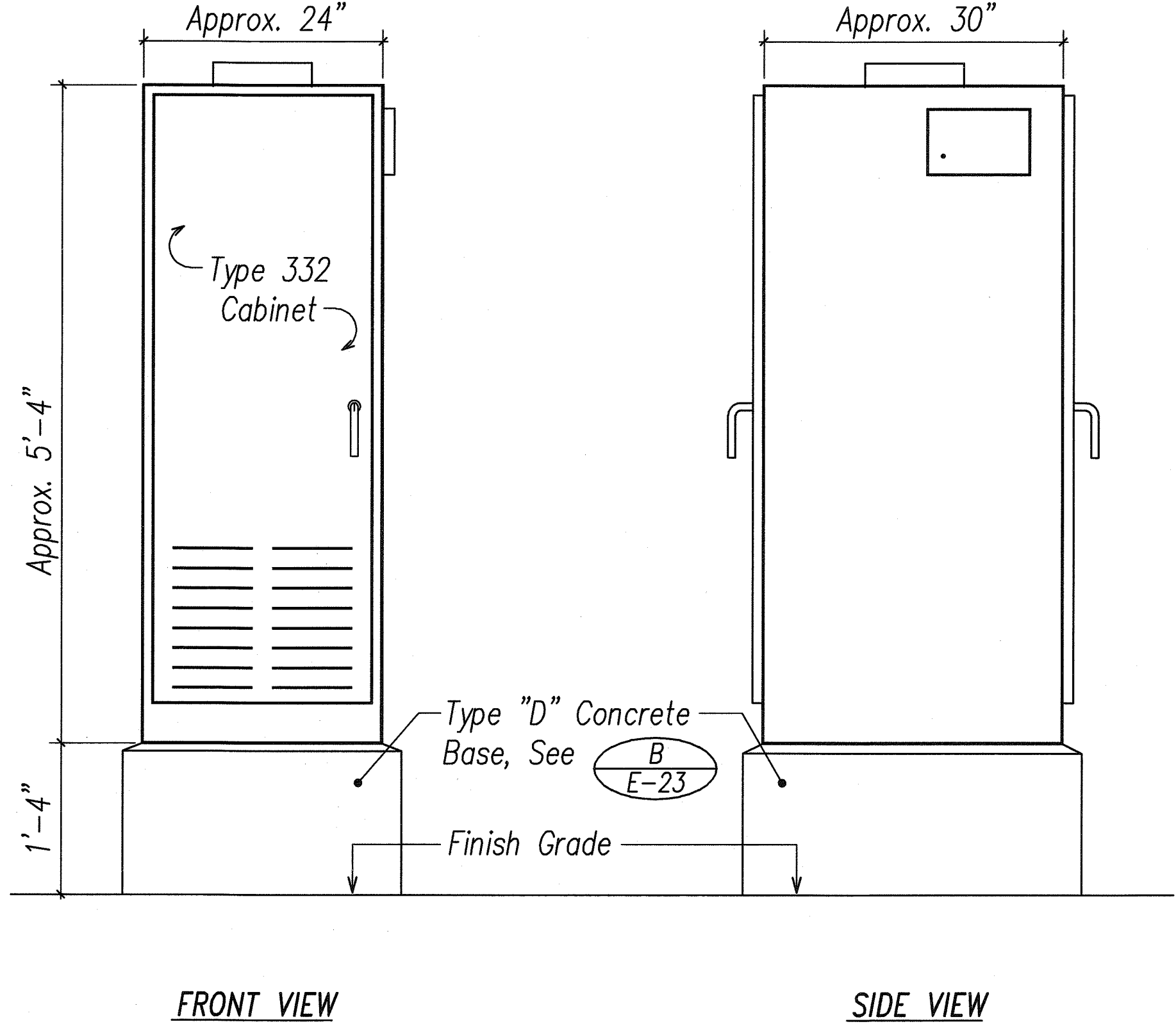
- Standard shall be designed in accordance with "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals".
- Mounting for signals at intermediate points of mast arm shall be of the adjustable type.
- Signals shall be centered over lane lines.
- Submit shop drawings for approval.



A TYPE I TRAFFIC SIGNAL STANDARD
E-22 NOT TO SCALE

B TYPE II TRAFFIC SIGNAL STANDARD
E-22 NOT TO SCALE

D TRAFFIC WARNING LIGHT
E-22 NOT TO SCALE



C TYPE 332A TRAFFIC SIGNAL
E-22 CONTROLLER CABINET DETAIL
NOT TO SCALE

ORIGINAL PLAN	DATE
NOTED BY	DESIGNED BY
NOTE BOOK	QUANTITIES BY
NO.	CHECKED BY

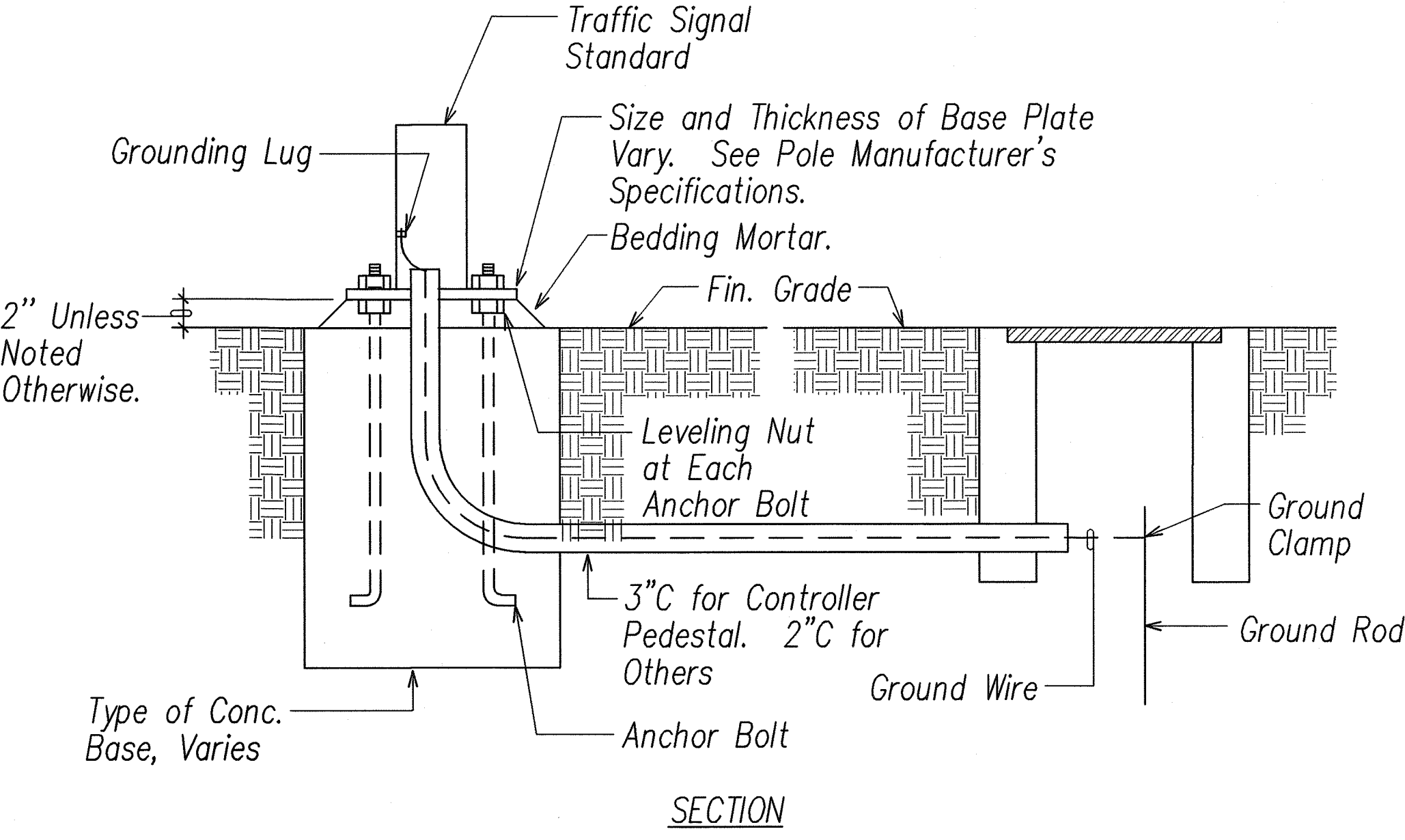
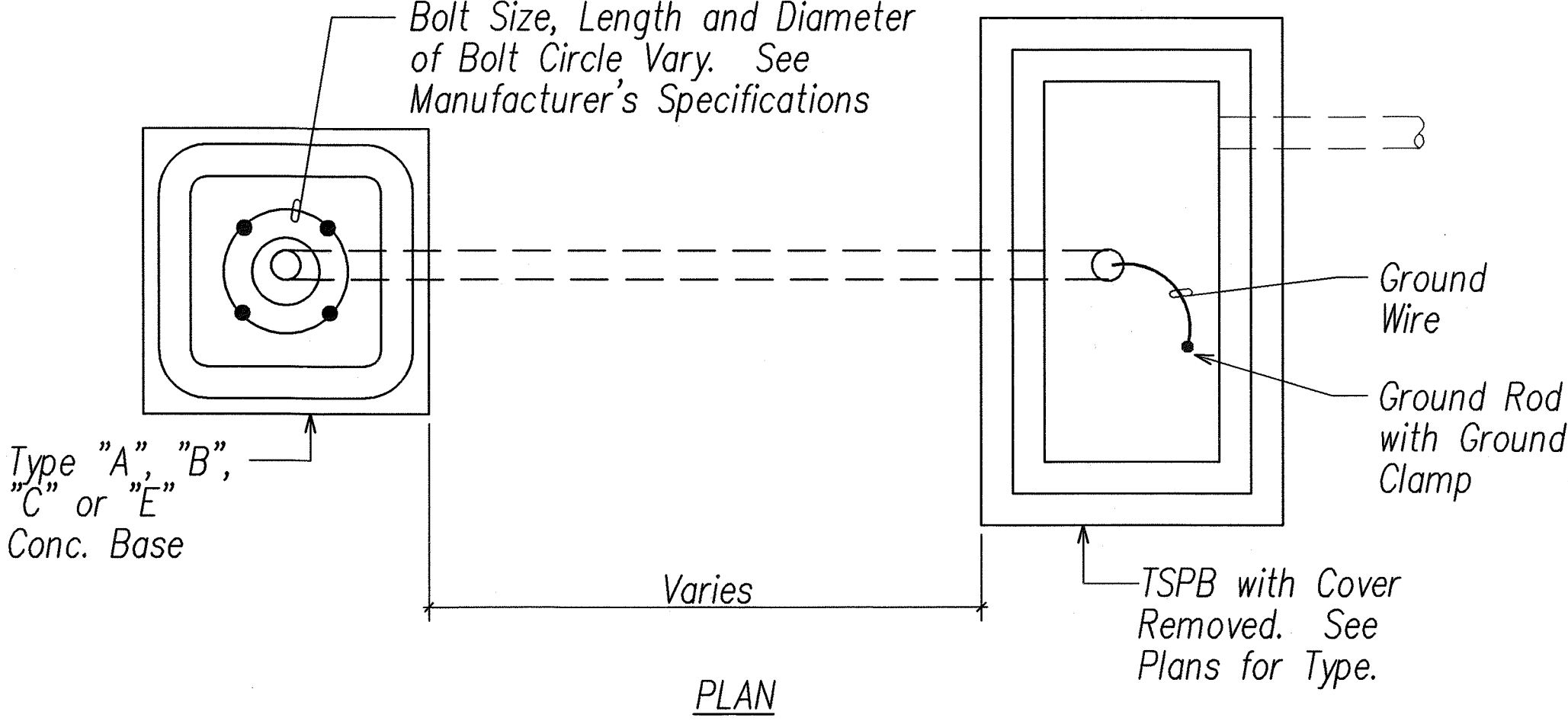
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SEAN K. SUGA
LICENSED PROFESSIONAL ENGINEER
No. 9023-E
HAWAII, U.S.A.
Signature: *Sean K. Suga* 6/17/11
APRIL 30, 2012
EXPIRATION DATE OF LICENSE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

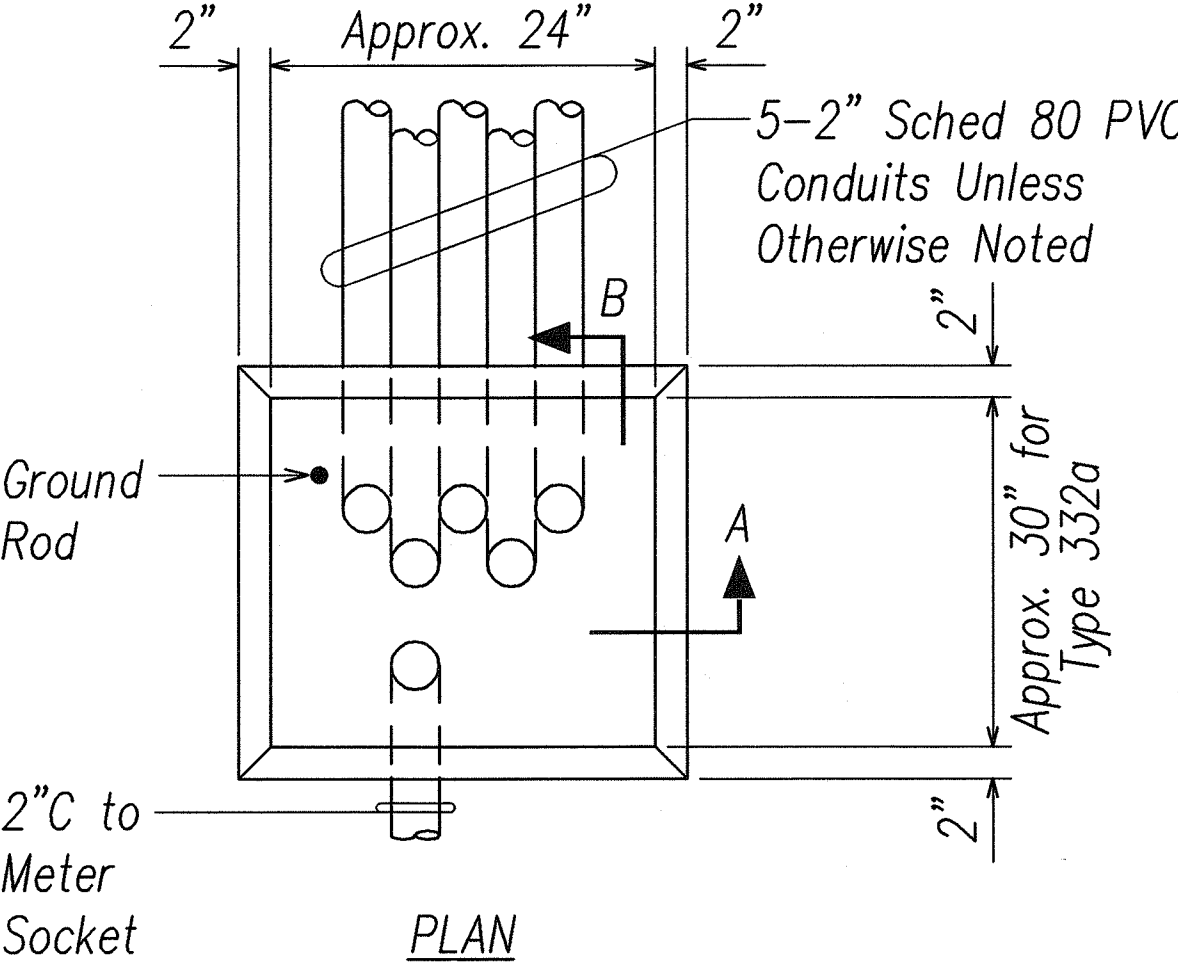
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TRAFFIC SIGNAL DETAILS I
KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)
SCALE: As Noted
DATE: April 2007
SHEET No. E-22 OF 32 SHEETS

"AS-BUILT"

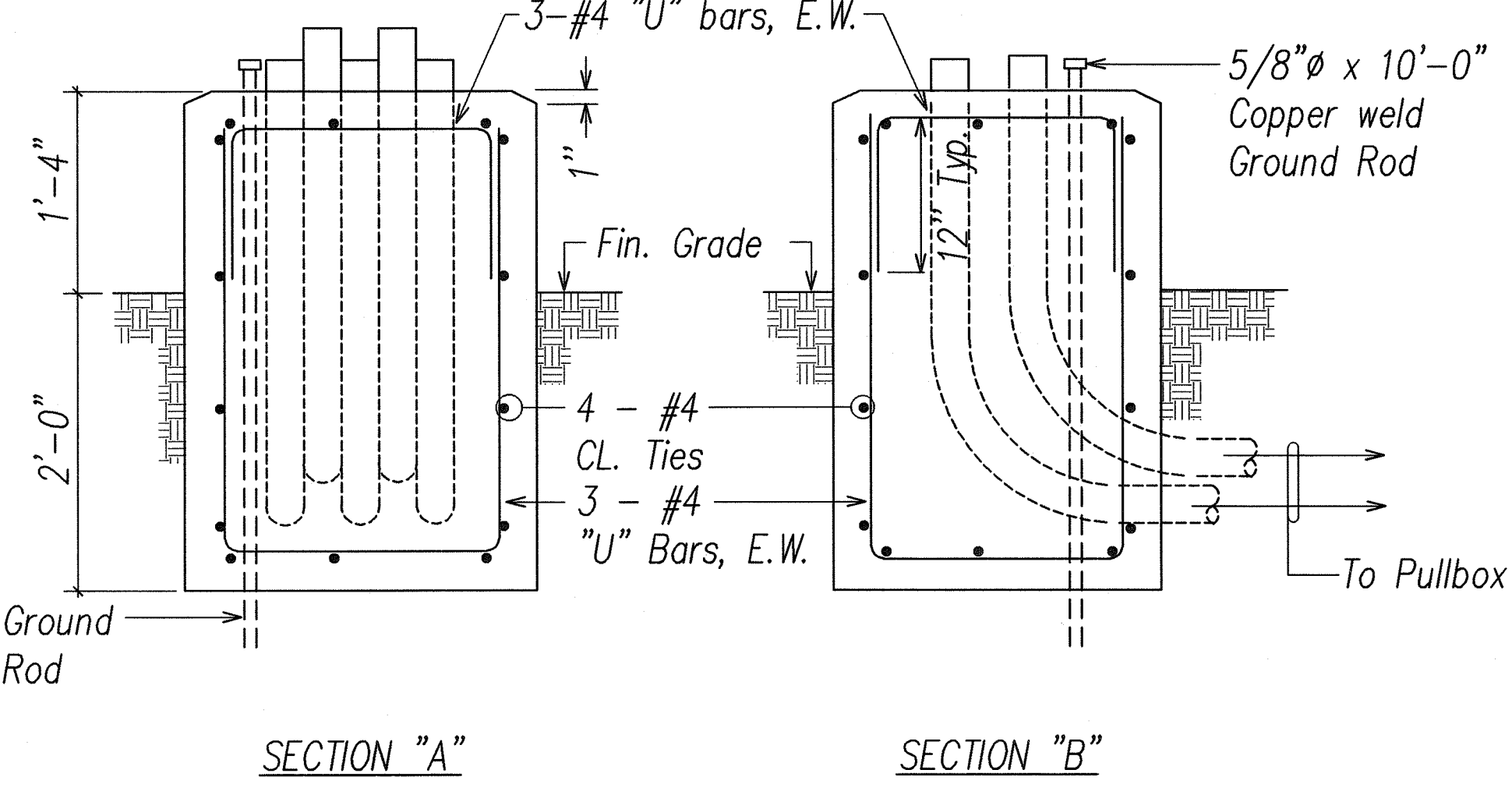
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	81	90



A TYPICAL STANDARD & PEDESTAL DETAIL
E-23 NOT TO SCALE



- NOTES:**
1. Concrete shall be class "B".
 2. Dimensions shall be altered to suit controller cabinet actually furnished.
 3. Conduit bends and drain are incidental to concrete base.
 4. Refer to cabinet manufacturer's specifications for details of anchor bolts and base setting.
 5. All exposed surfaces of concrete base shall be given a Class 2, rubbed finish.



B CONTROLLER CONCRETE BASE DETAIL
E-23 NOT TO SCALE

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

LAST DATE: 04/20/07 © 08/28/07 BY: SD/DOJ/SE 1'-0"=1'
V:\Road\Projects\24113A\232-24113A_TrafficSig.dwg



SIGNATURE: *[Signature]* 5/9/07
APRIL 30, 2008
EXPIRATION DATE OF LICENSE
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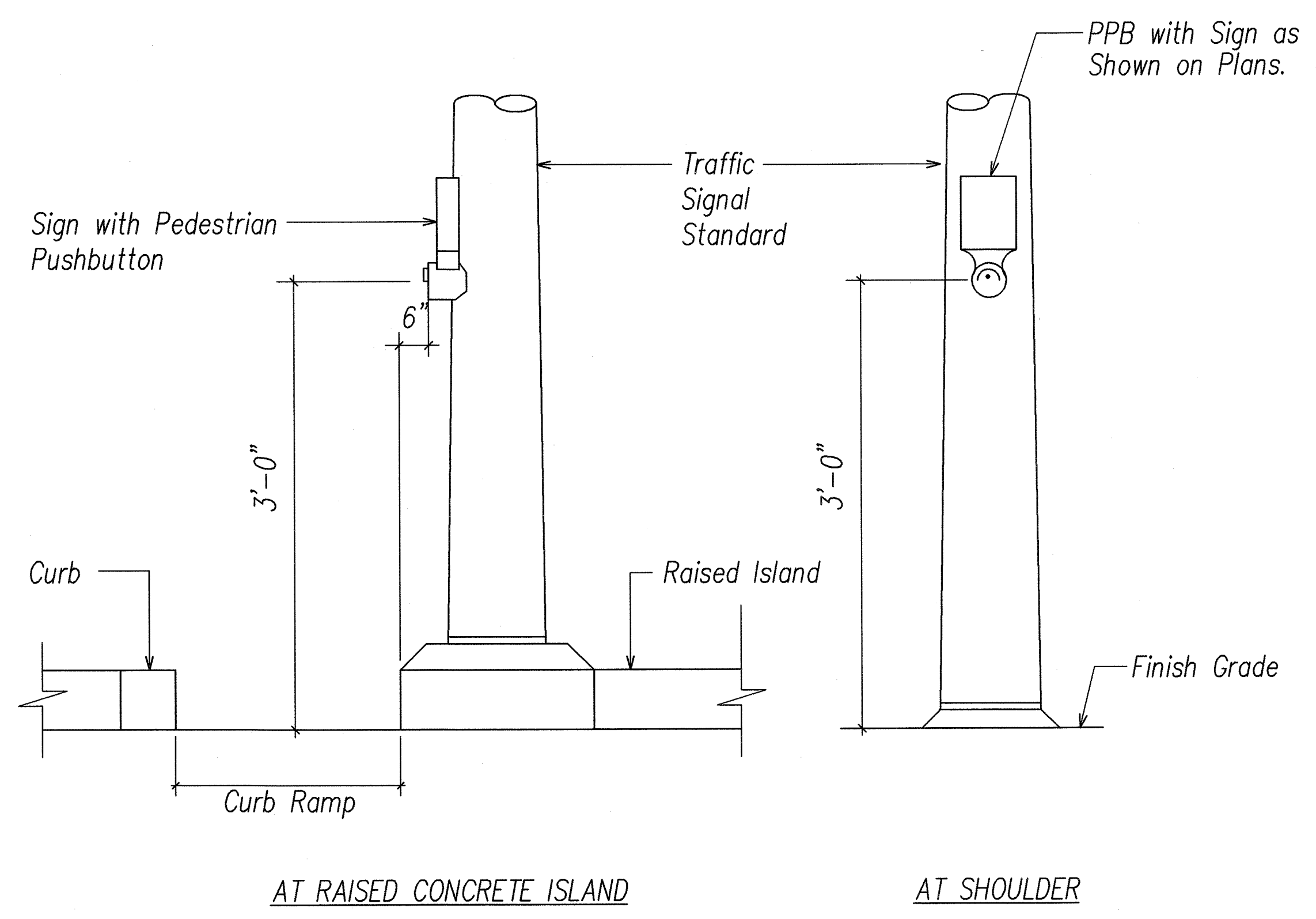
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL DETAILS II

KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)

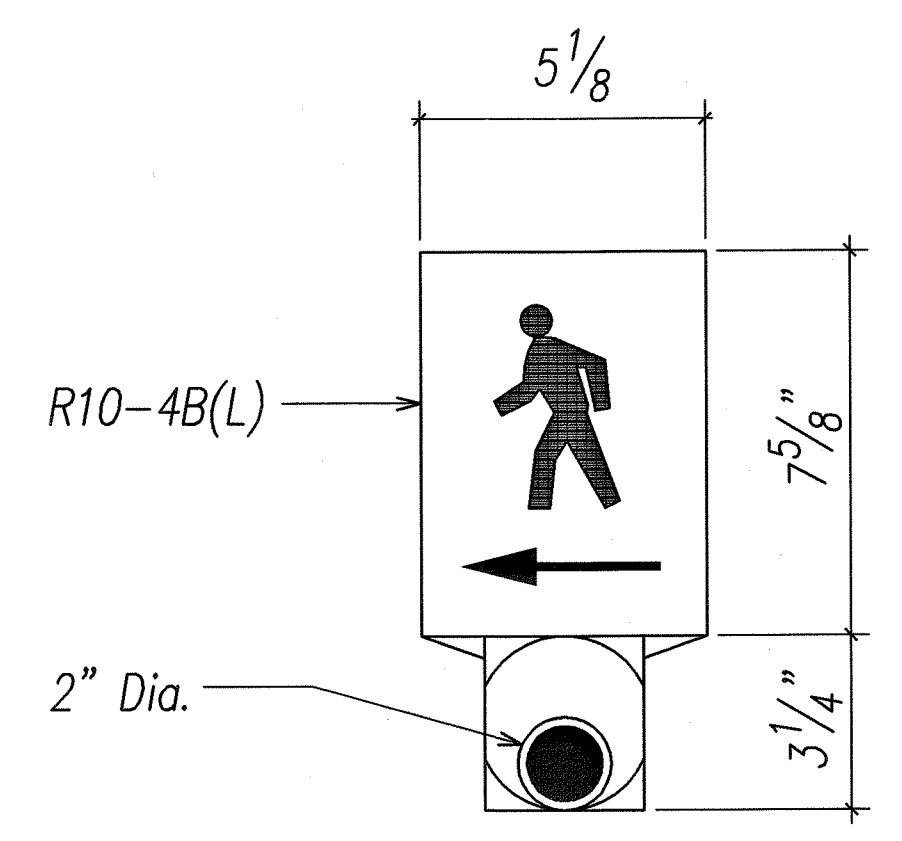
SCALE: As Noted DATE: April 2007
SHEET No. E-23 OF 32 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	82	90

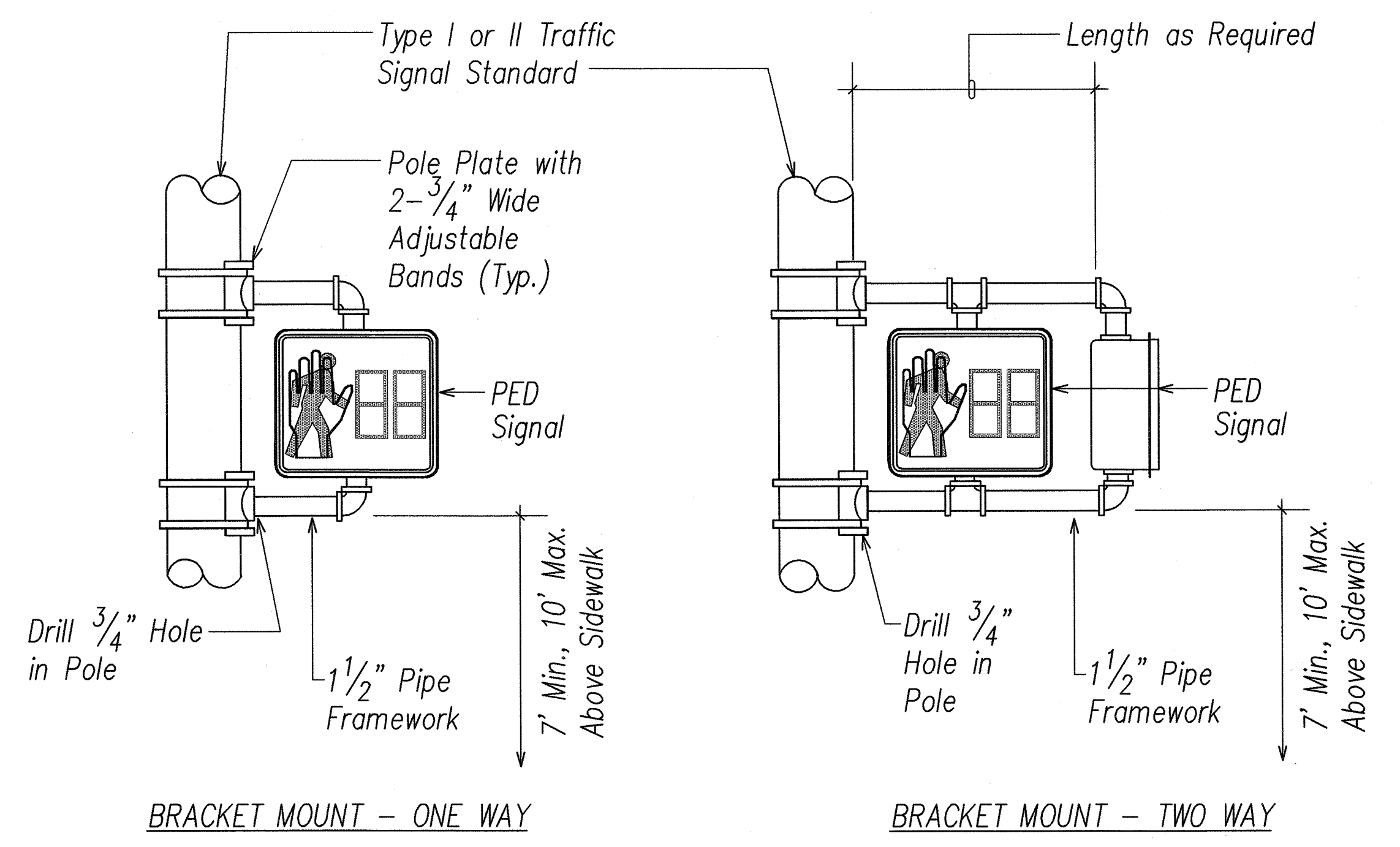
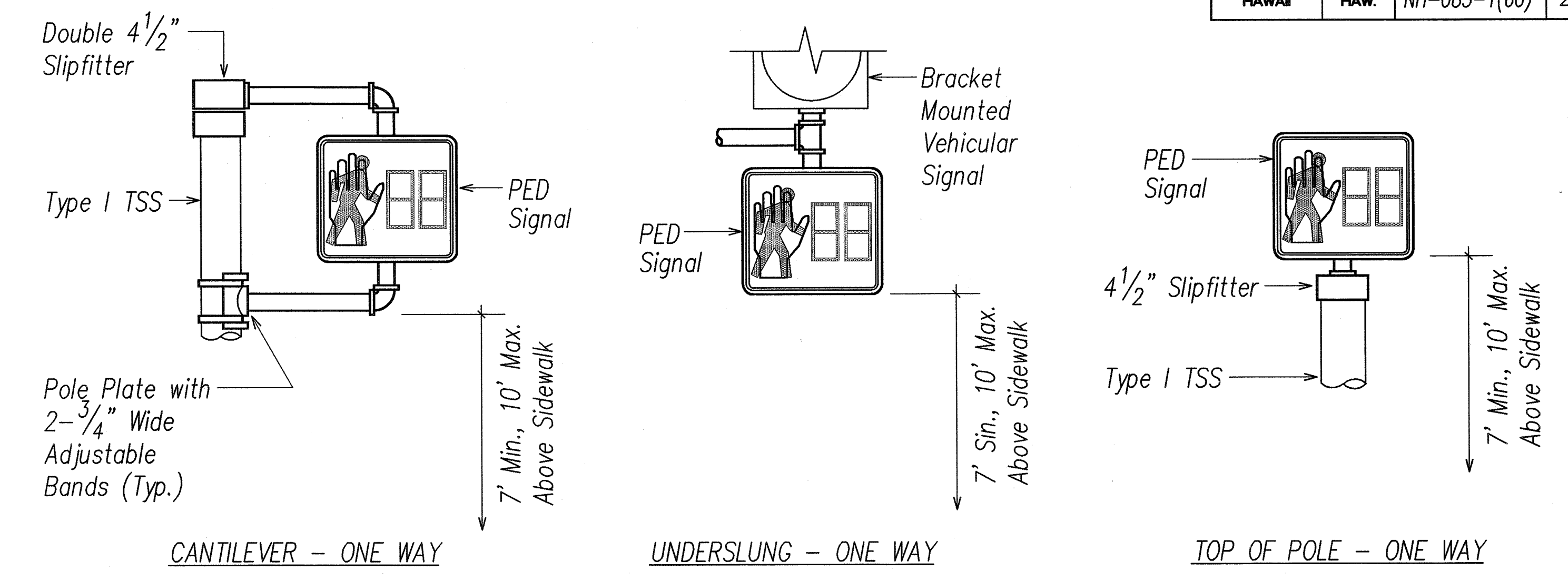


DETAIL NOTES:

1. The pedestrian pushbutton unit shall consist of a one piece assembly with a raise walking man, arrow indication and push button.
2. The pushbutton activator shall be of the mushroom plunger type, ADA acceptable, 2 inches in diameter that requires less than 5 lbs. of pressure to activate.
3. The raised man and arrows shall be directional and match the directional indication as shown on the plans.
4. The pushbutton shall be tamper proof, weatherproof and constructed so that electrical shocks are impossible.
5. The color scheme shall be:
White - Man, arrow and pushbutton
Black - Background



A PEDESTRIAN PUSHBUTTON DETAILS
E-24 NOT TO SCALE



NOTES:

1. Stainless steel bands shall be 3/4" wide x .050" thick, minimum. tensile strength shall be 100,000 psi minimum.
2. Upper arm, lower arm and vertical support tube shall be of 356 cast aluminum.
3. All wiring shall be concealed.
4. Vertical tube clamp shall be of malleable iron, grade 32510.
5. All aluminum parts shall have an alodine 1200 finish.
6. Signal as noted on plans.
7. Maintain 16" min. clearance at rear of all programmed faces.

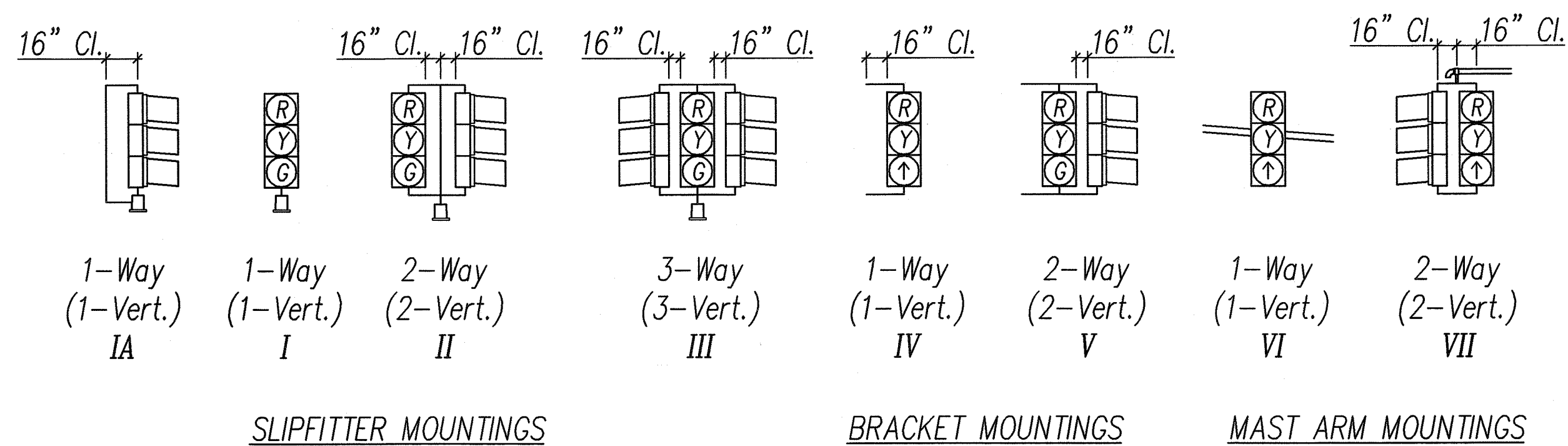
B PEDESTRIAN SIGNAL MOUNTING DETAILS
E-24 NOT TO SCALE

DATE	DESIGNED BY	CHECKED BY
ORIGINAL PLAN	NOTE BOOK	LAST SAVE: 06/20/07 @ 10:54:13 BY: TIA PLOT SC 1'-0"=1'
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QUANTITIES BY	NOTE BOOK	
CHECKED BY	NOTE BOOK	

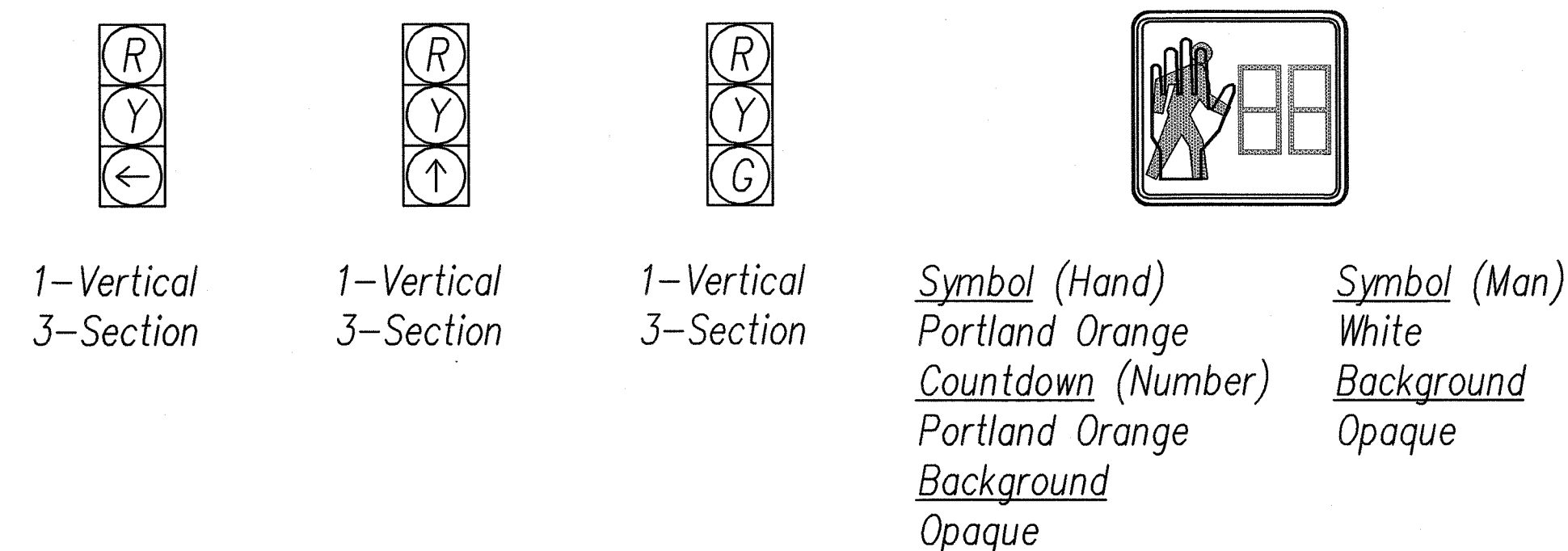
SEAN K. SIGA
LICENSED PROFESSIONAL ENGINEER
No. 9023-E
HAWAII, U.S.A.
SIGNATURE: [Signature]
APRIL 30, 2008
EXPIRATION DATE OF LICENSE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TRAFFIC SIGNAL DETAILS III
KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)
SCALE: As Noted
SHEET No. E-24 OF 32 SHEETS

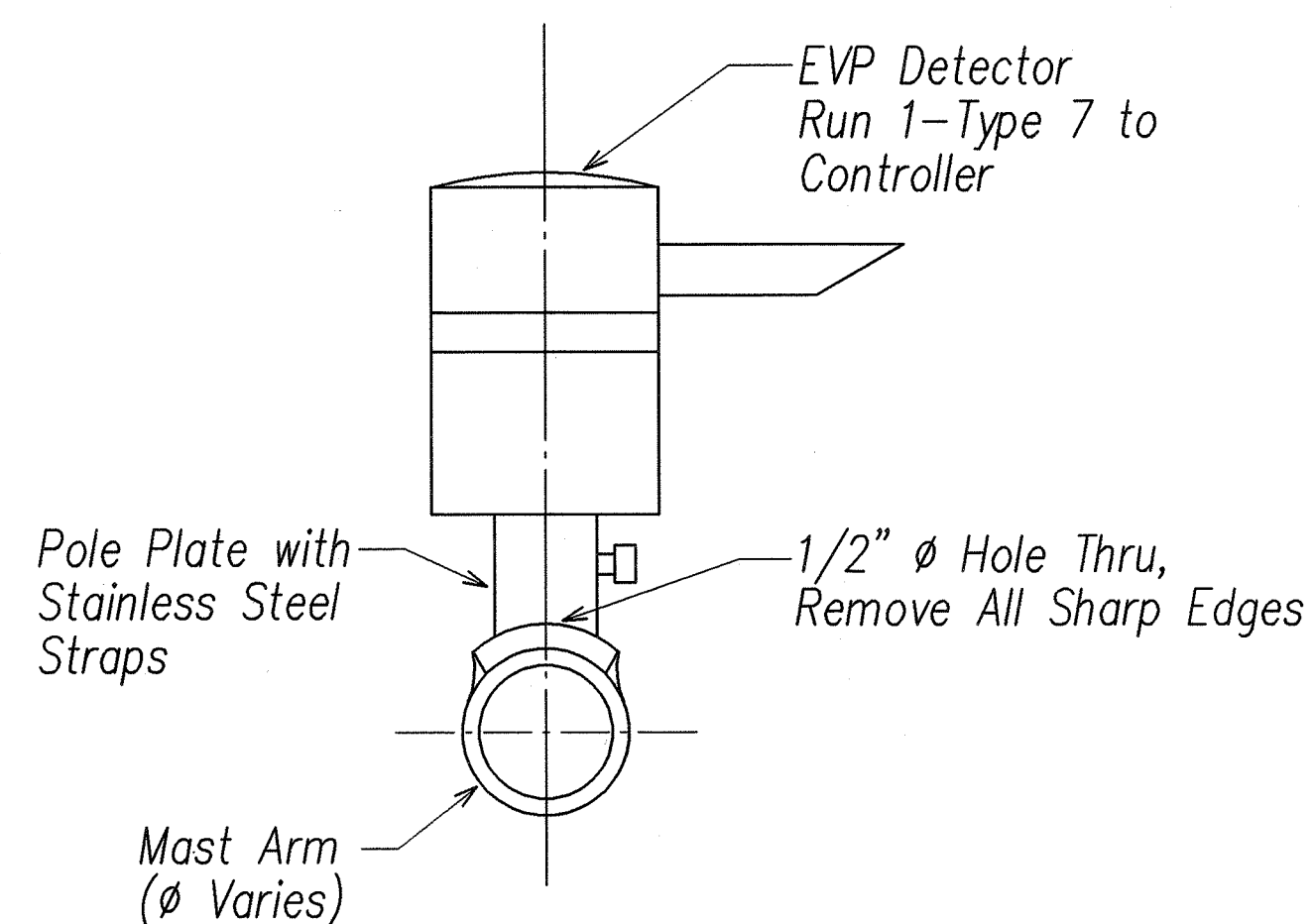
DATE: April 2007



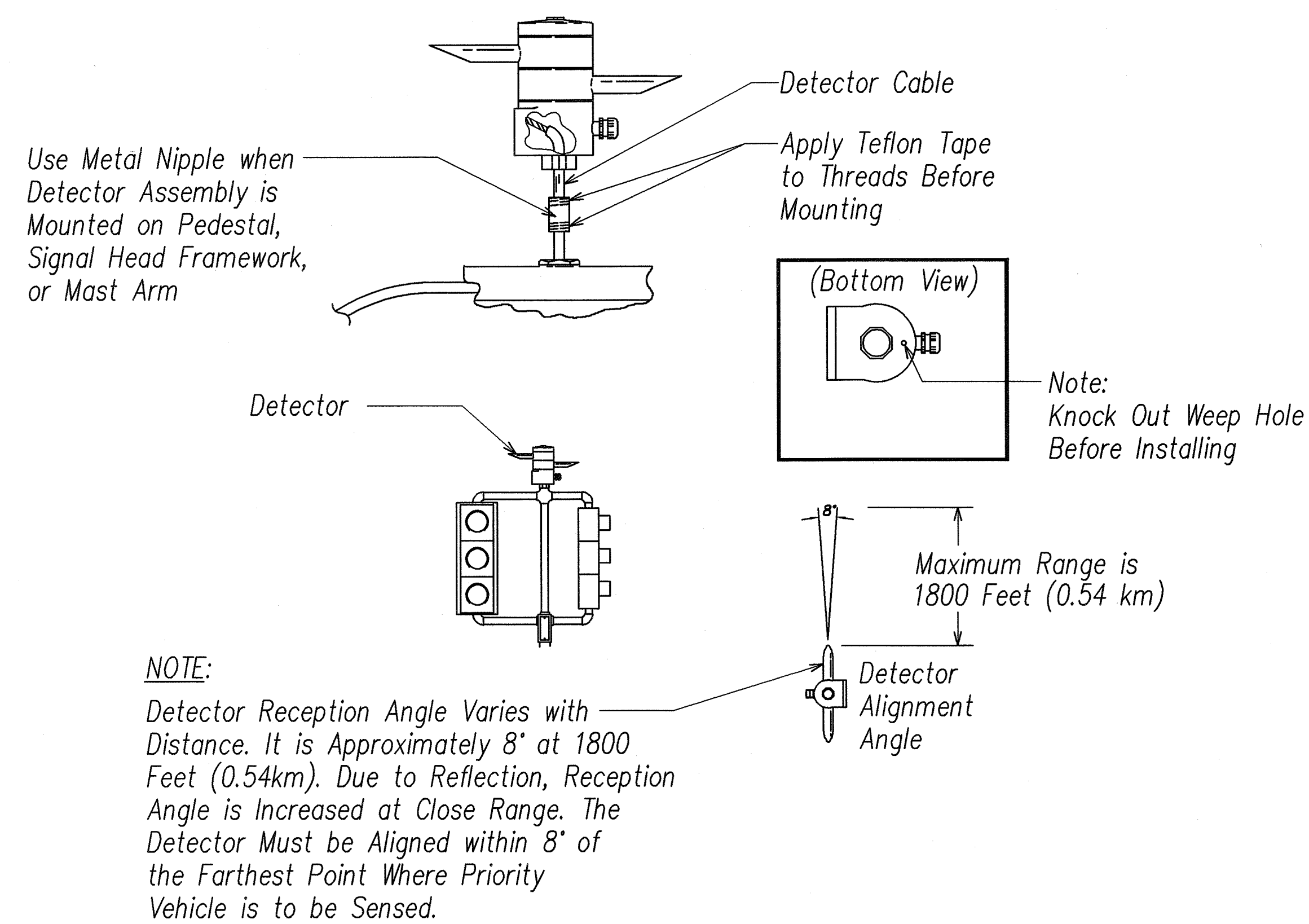
TYPICAL VEHICULAR AND PEDESTRIAN SIGNAL MOUNTINGS



A TYPICAL SIGNAL ARRANGEMENTS
E-26 NOT TO SCALE

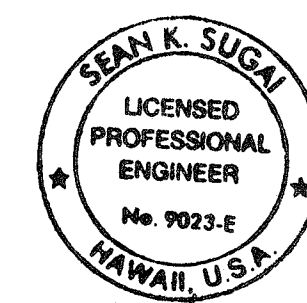


C EVP DETECTOR HORIZONTAL MOUNTING DETAIL
E-26 NOT TO SCALE



NOTE:
Detector Reception Angle Varies with Distance. It is Approximately 8° at 1800 Feet (0.54km). Due to Reflection, Reception Angle is Increased at Close Range. The Detector Must be Aligned within 8° of the Farthest Point Where Priority Vehicle is to be Sensed.

B TYPICAL PEDESTAL/MAST ARM INSTALLATION OF EVP DETECTOR
E-26 NOT TO SCALE



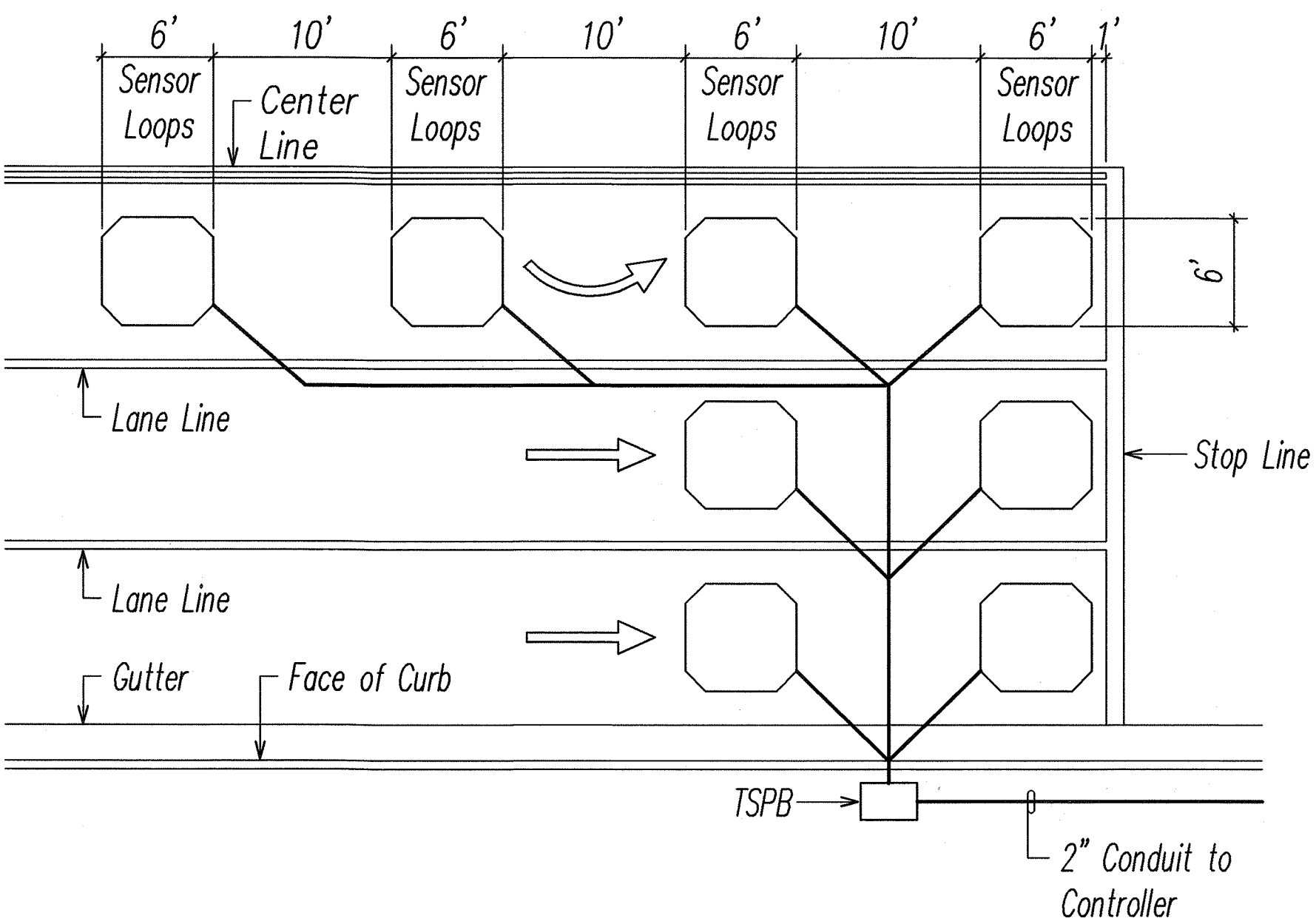
SIGNATURE: *Sean K. Sugai* 4/20/07
APRIL 30, 2008
EXPIRATION DATE OF LICENSE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TRAFFIC SIGNAL DETAILS V
KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)
SCALE: As Noted
DATE: April 2007
SHEET No. E-26 OF 32 SHEETS

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

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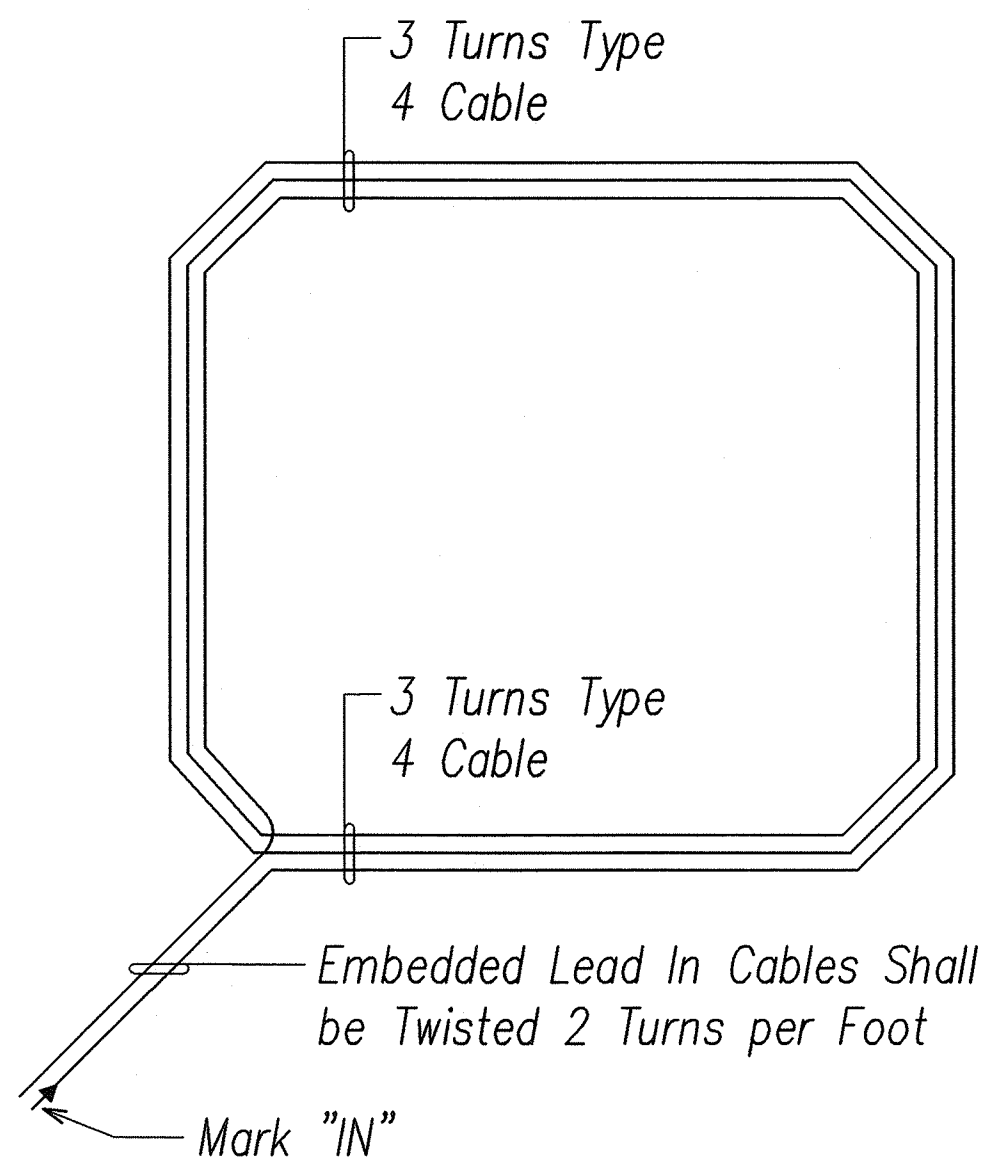
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	85	90



NOTES:

1. Center sensor loops in lanes.
2. Collector cables shall be twisted 2 turns per foot.
3. Number of loops and locations vary. See project plans.
4. Number and locations of collector sawcuts may be varied in the field to suit.

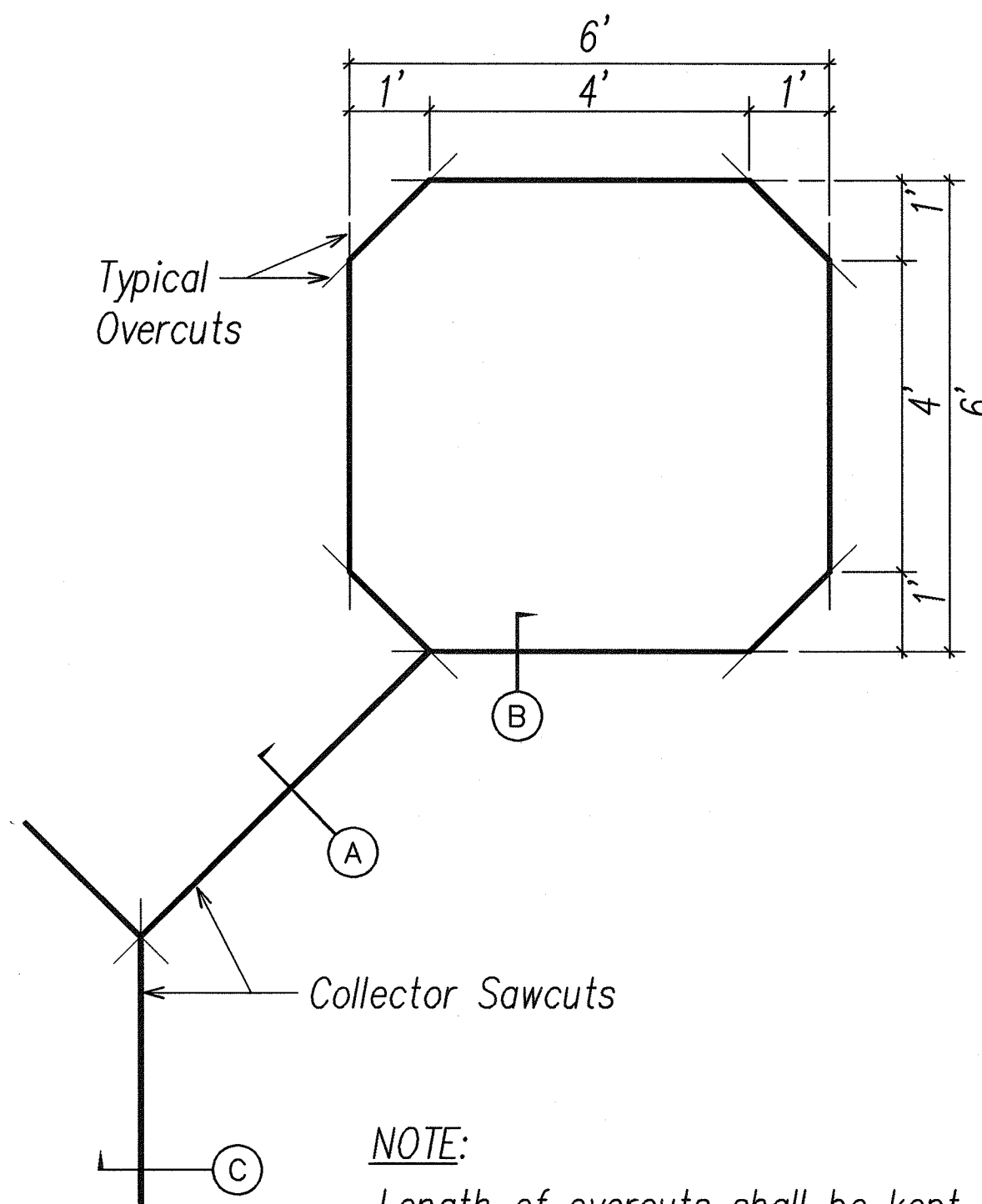
TYPICAL SENSOR LOOP LAYOUT
NOT TO SCALE



PLAN

NOTE: Type 4 Cable – Loop Sensor Cable: Solid No. 12, Single Conductor to IMSA Spec 51-5

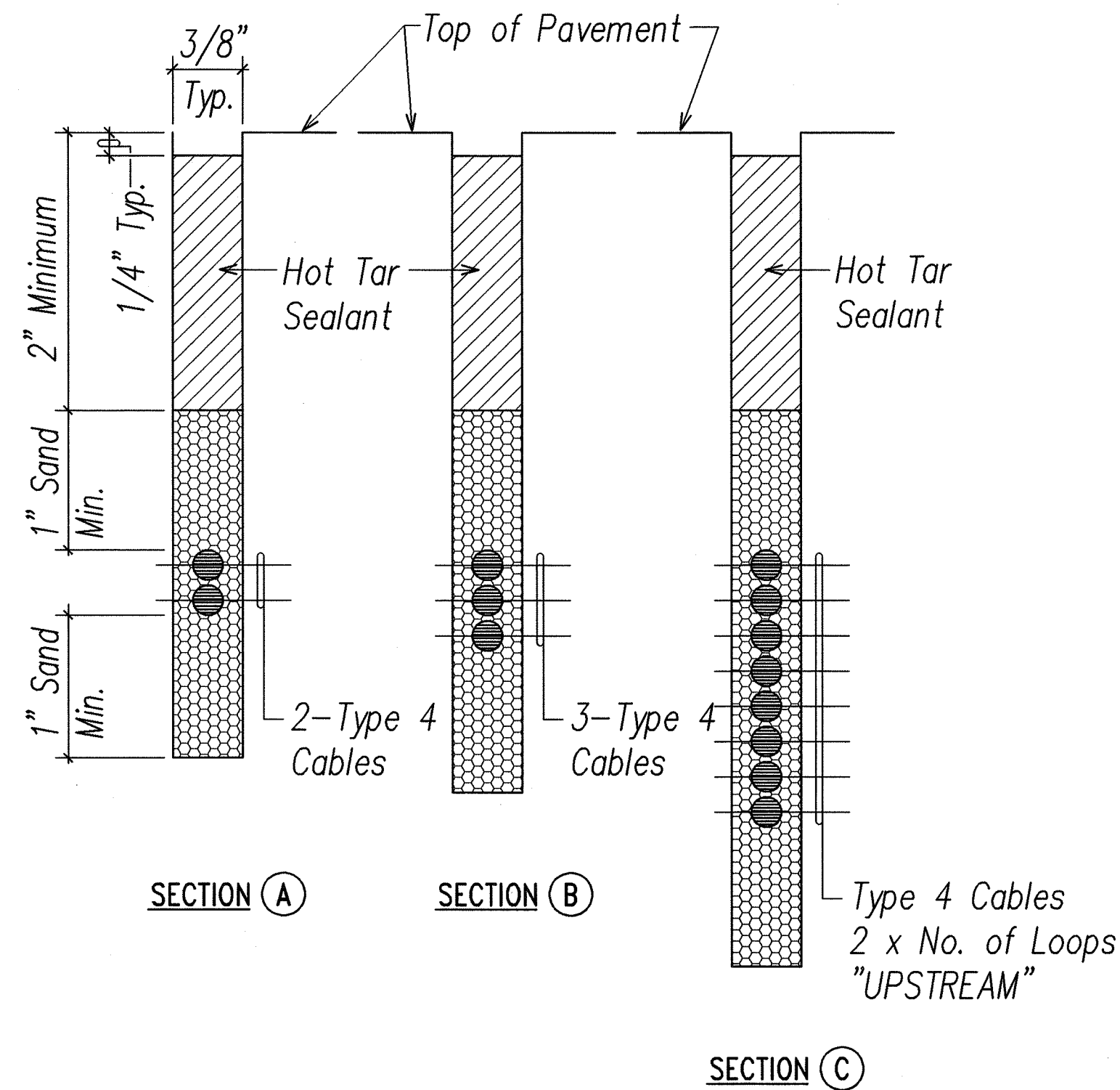
TYPICAL SENSOR LOOP WIRING DIAGRAM
NOT TO SCALE



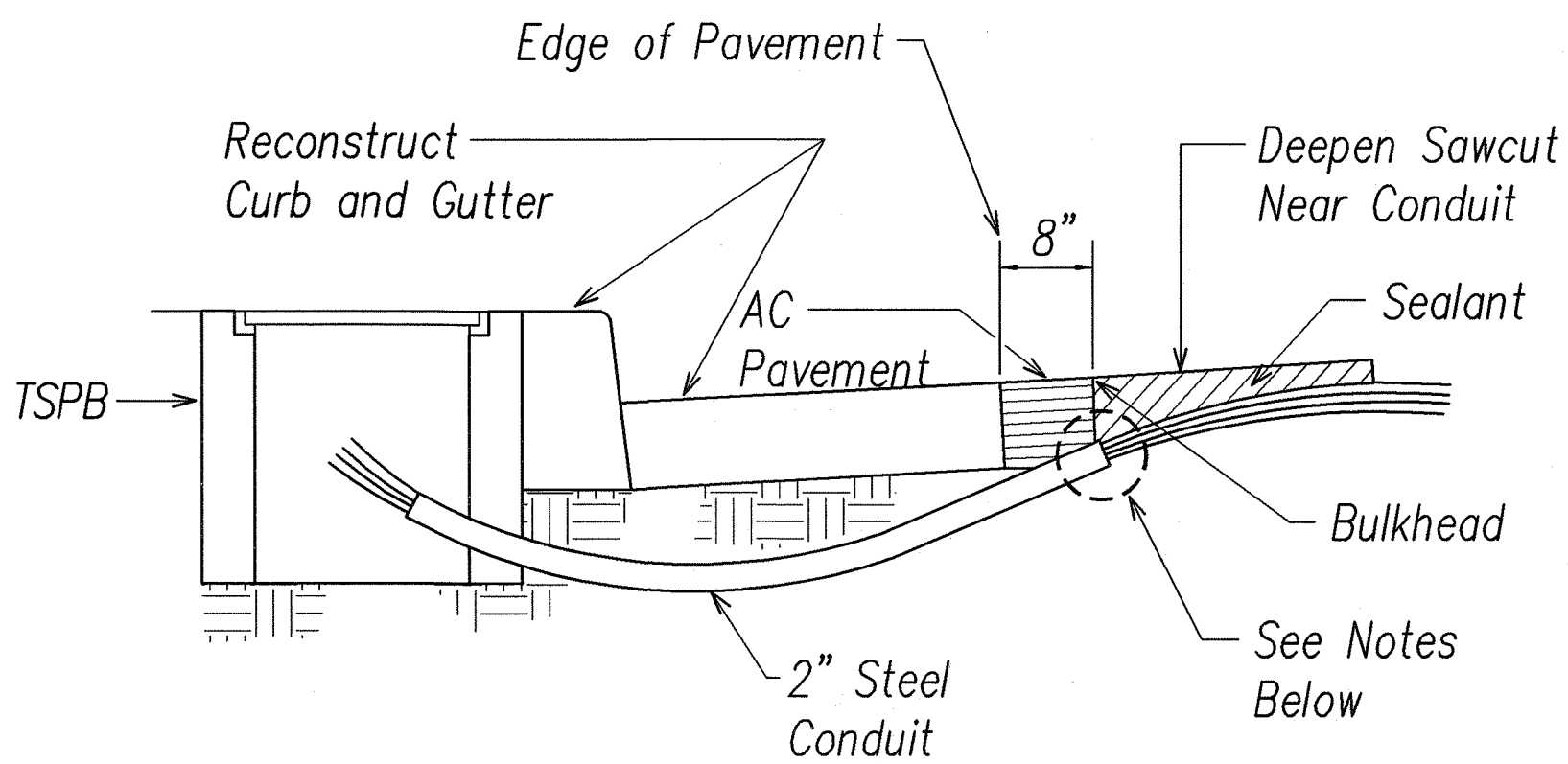
NOTE:

Length of overcuts shall be kept to a minimum. All overcuts shall be backfilled with hot tar sealant.

TYPICAL SENSOR LOOP SAWCUT DETAIL
NOT TO SCALE



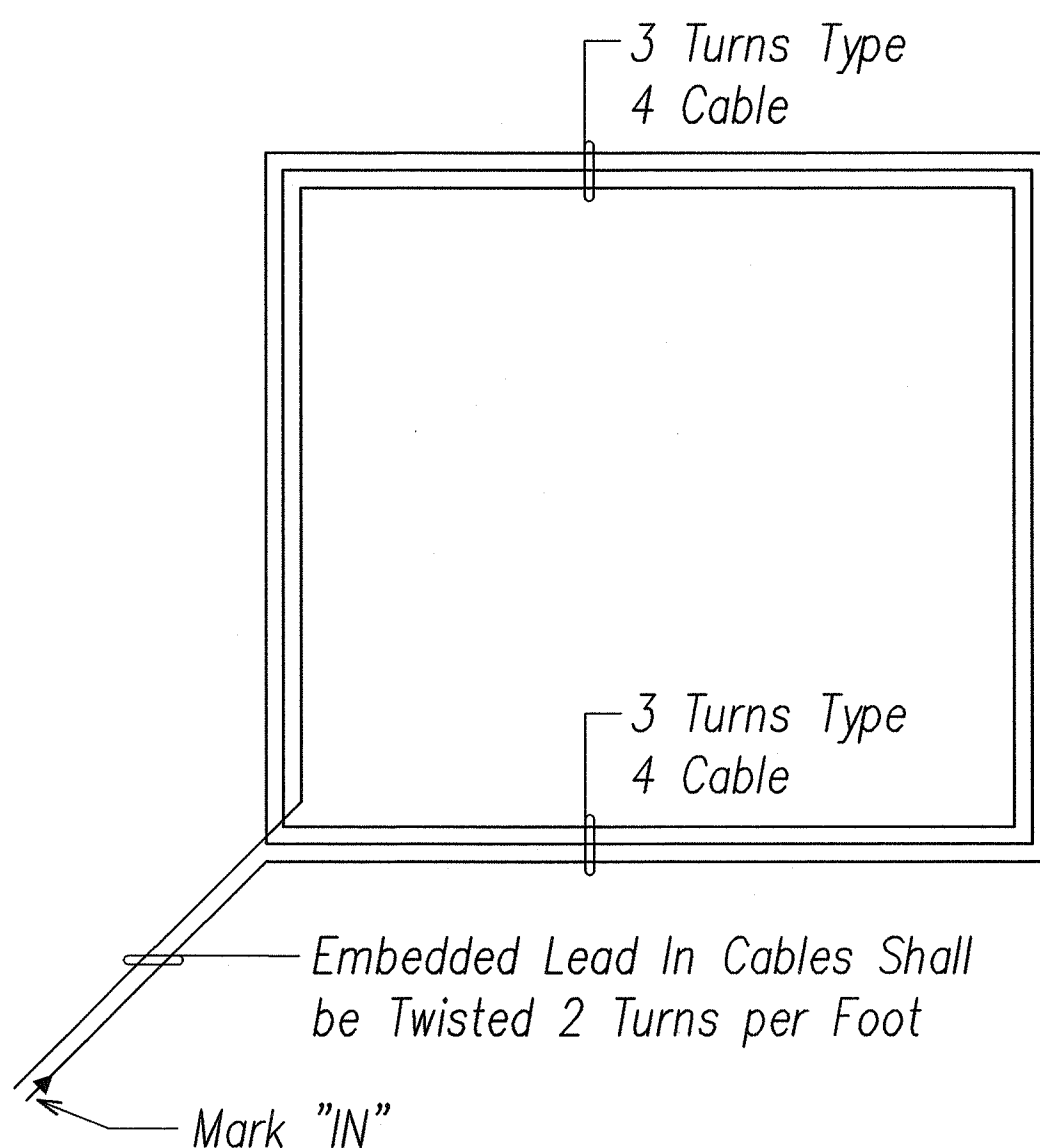
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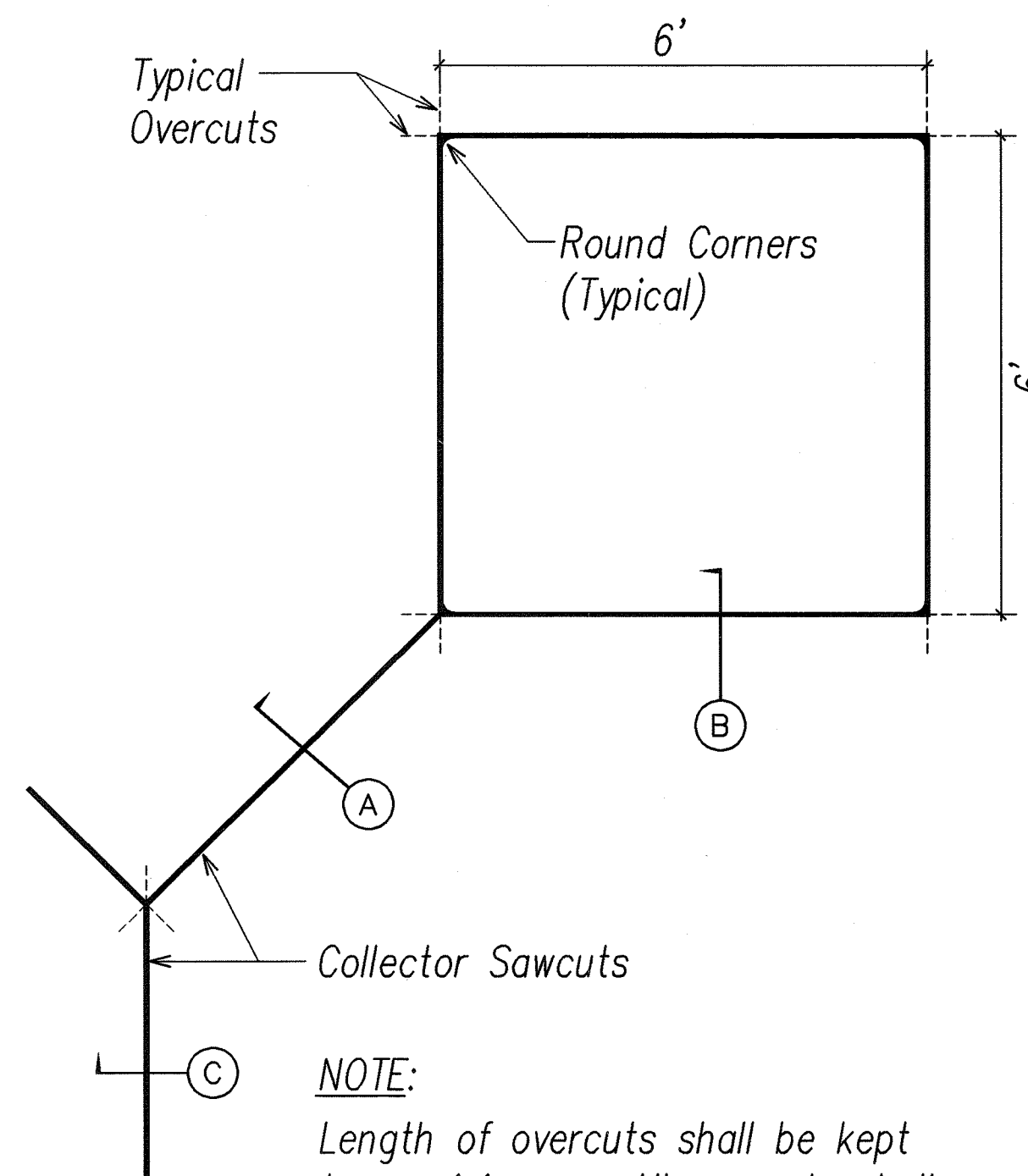
NOTES:

1. Seal roadway end of conduit after installation of conductors.
2. Install bulkhead across conduit trench.
3. Place hot tar in sawcut.
4. Backfill over conduit with new a.c.
5. Reconstruct curb and gutter as required.

DETAIL OF SENSOR LOOP INSTALLATION AT EDGE OF ROADWAY
NOT TO SCALE



TYPICAL ALTERNATE SENSOR LOOP WIRING DETAIL
NOT TO SCALE



NOTE:

Length of overcuts shall be kept to a minimum. All overcuts shall be backfilled with hot tar sealant.

TYPICAL ALTERNATE SENSOR LOOP SAWCUT DETAIL
NOT TO SCALE



SIGNATURE: *Sean K. Sugan*
APRIL 30, 2008
EXPIRATION DATE OF LICENSE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

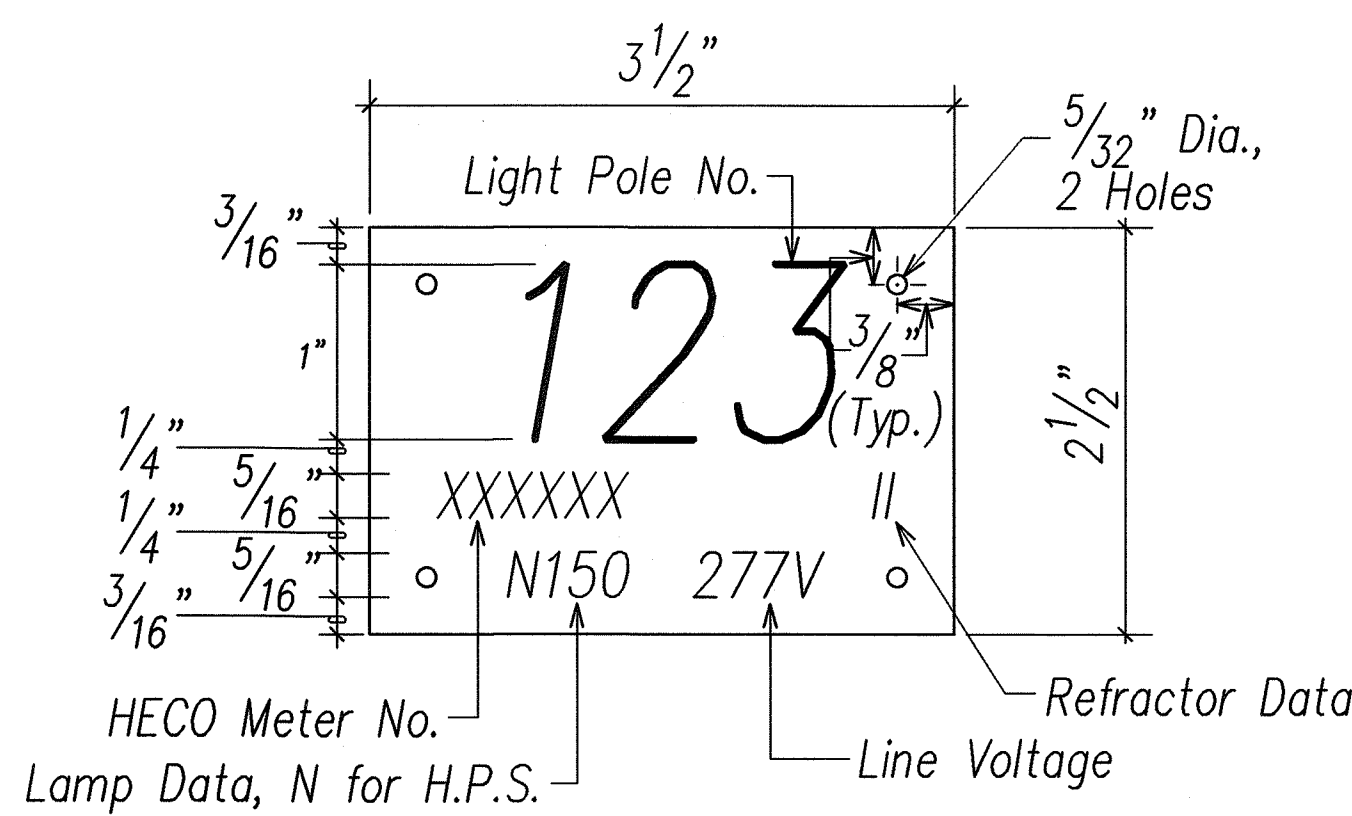
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**TRAFFIC SIGNAL LOOP
DETECTOR DETAILS**

KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)

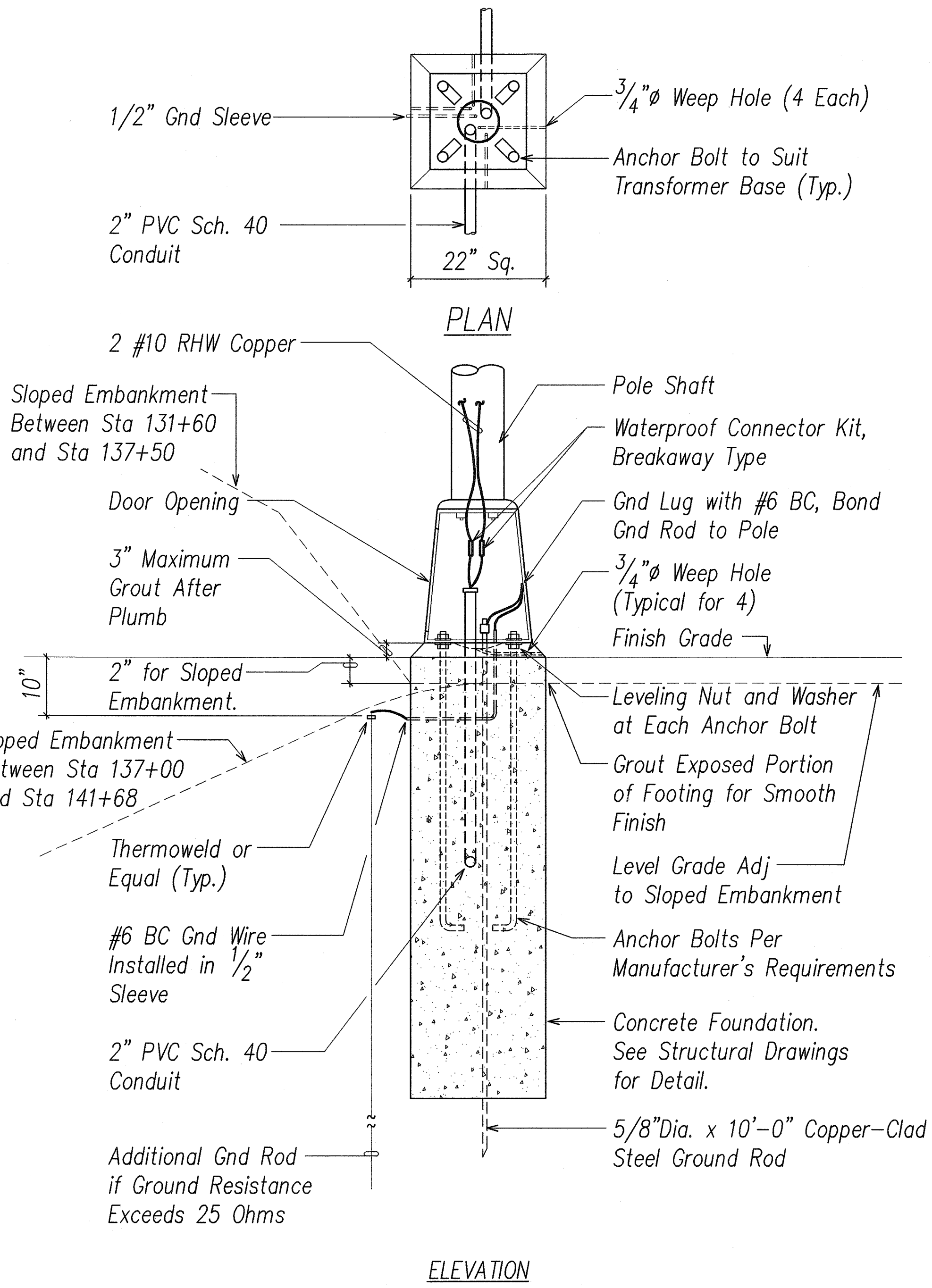
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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	86	90

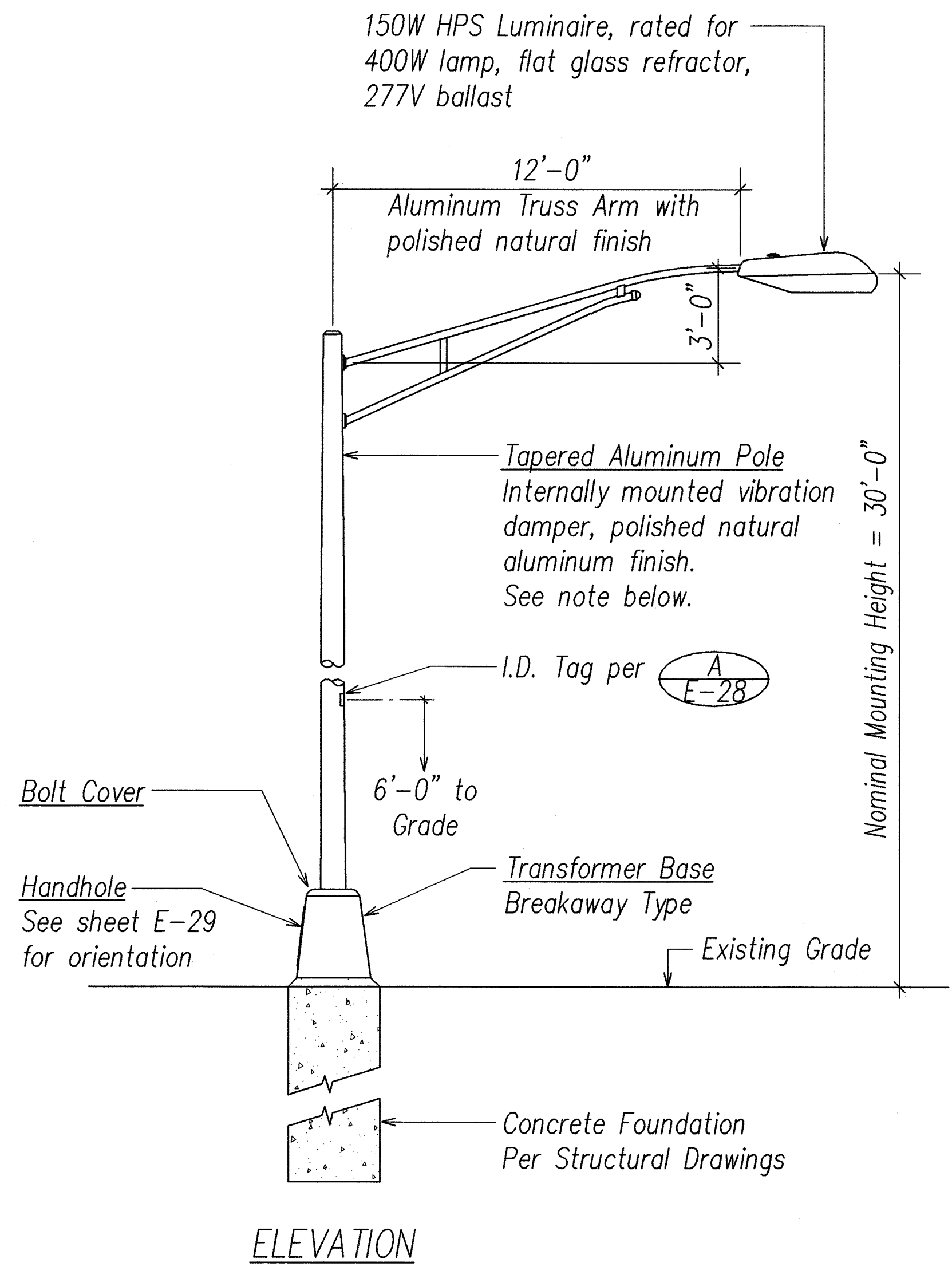


- NOTES:**
- Use 3 Ply Laminated Flexible Plastic Black-White-Black Thickness: Black Cap Sheet-0.010", White Base Sheet-0.052", Black Base Sheet-0.010".
 - Light Pole Number Size shall be 1" High and Engraved 1/8" Wide, White in Color. Pole Number as Indicated on Electrical Plans, Sht. E9 to E14.
 - Nomenclature Size shall be 5/16" High and Engraved 1/32" Wide, White in Color (Meter Number, Circuit Number, Line Voltage, Lamp Data and Refractor Data as Required).
 - Attach to Aluminum and Steel Poles with No. 8 Stainless Steel, 1/2" Long Drive Screw in 1/8" Drill Hole. Attach to Wood Poles with 4D Aluminum Nails.
 - Numbers are Inscribed by Cutting through "Black Cap Sheet" to Expose "White Letters".

A ROADWAY LIGHT I.D. TAG METERED SYSTEM
E-28 NOT TO SCALE



B TYPICAL CONCRETE FOUNDATION AND TRANSFORMER BASE DETAIL
E-28 NOT TO SCALE



POLE NOTE:

All Components of the Light Standard shall be Designed in Accordance with AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals", Dated 2001, 4th Edition, including interims.

C ROADWAY LIGHT STANDARD
E-28 NOT TO SCALE

SEAN K. SUGA
LICENSED PROFESSIONAL ENGINEER
No. 9023-E
HAWAII, U.S.A.
SIGNATURE
APRIL 30, 2008
EXPIRATION DATE OF LICENSE
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY LIGHT DETAILS

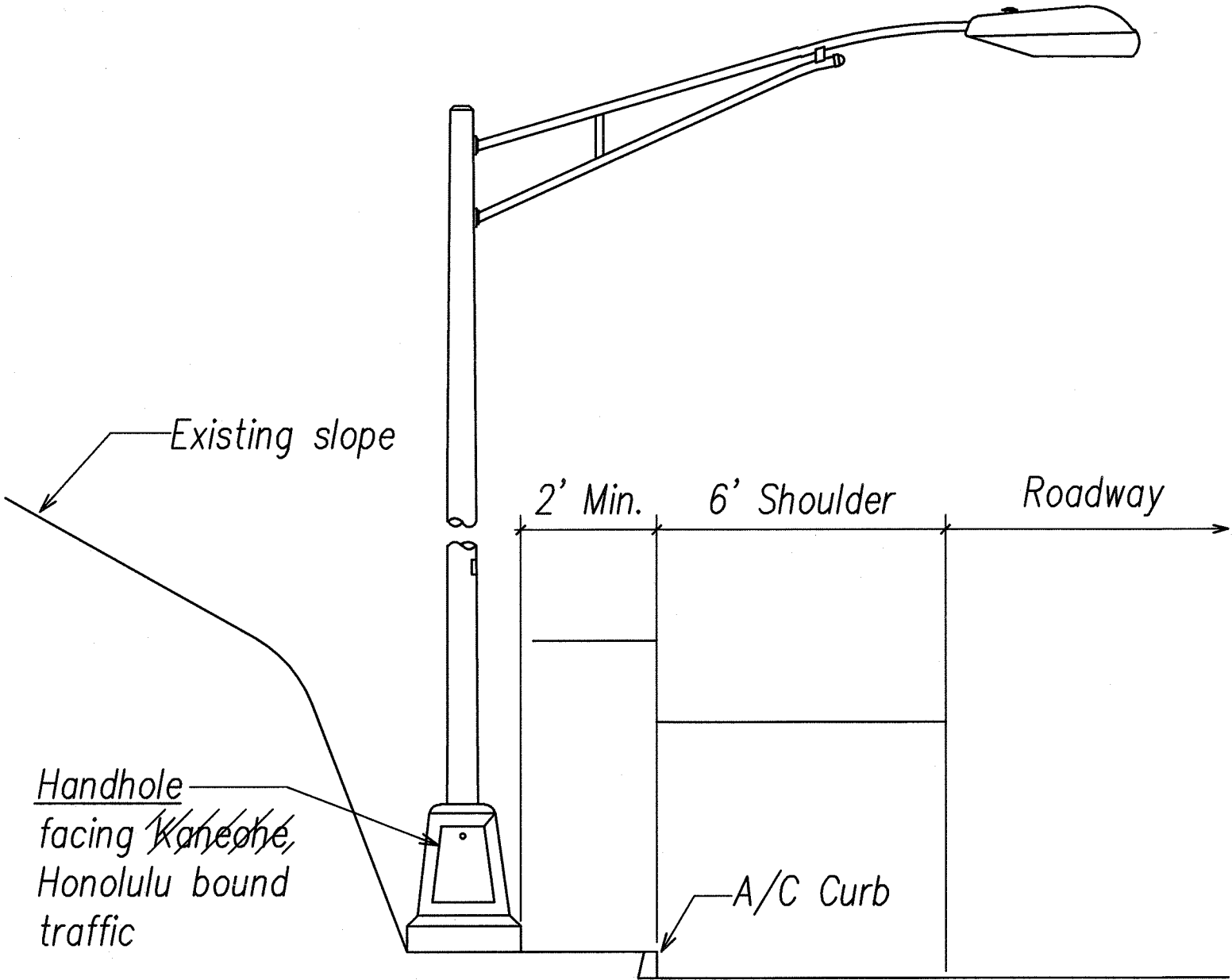
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VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)

SCALE: As Noted DATE: April 2007
SHEET No. E-28 OF 32 SHEETS

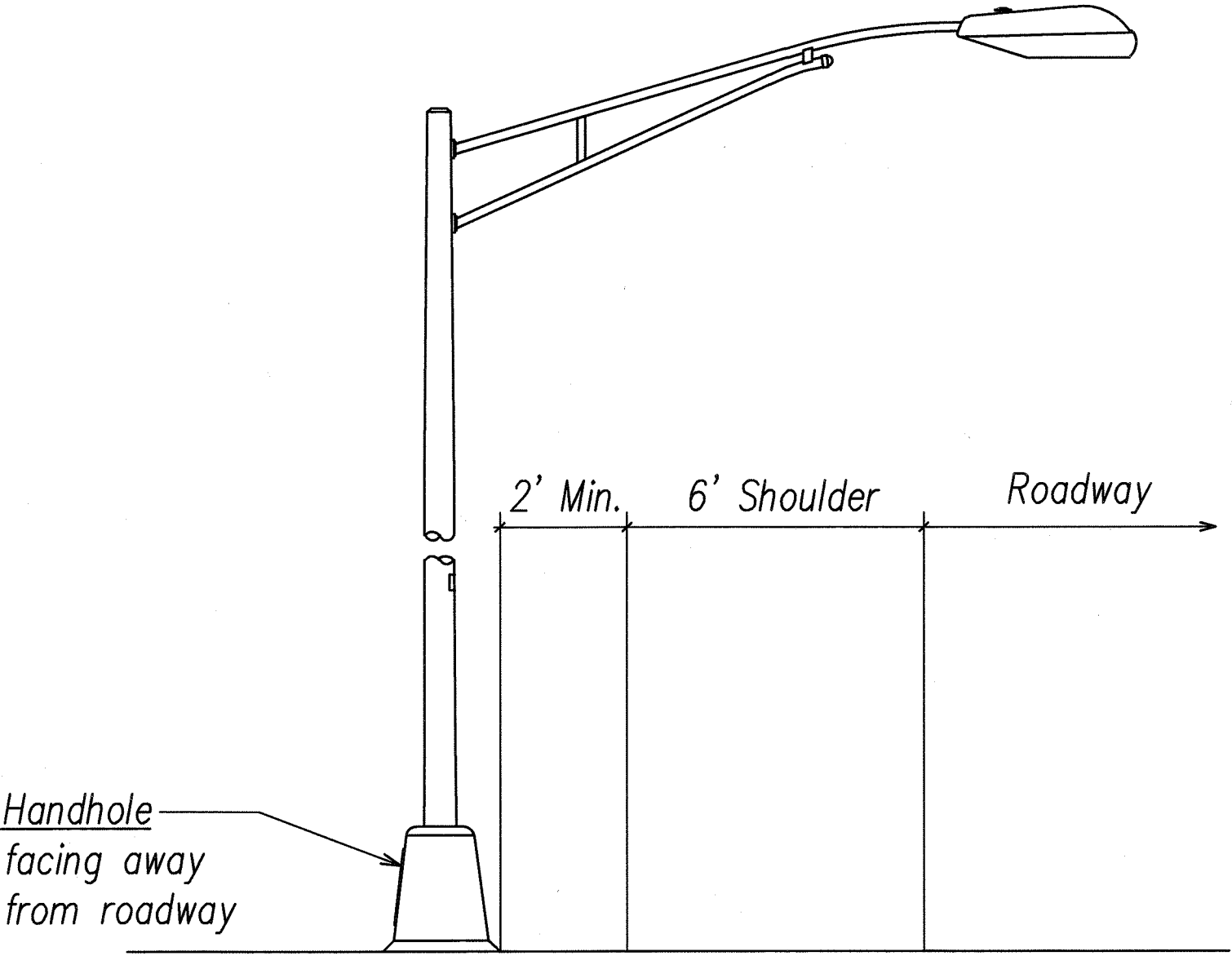
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DRAWN BY	_____
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DESIGNED BY	_____
QUANTITIES BY	_____
CHECKED BY	_____
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NOTE BOOK	_____
No.	_____

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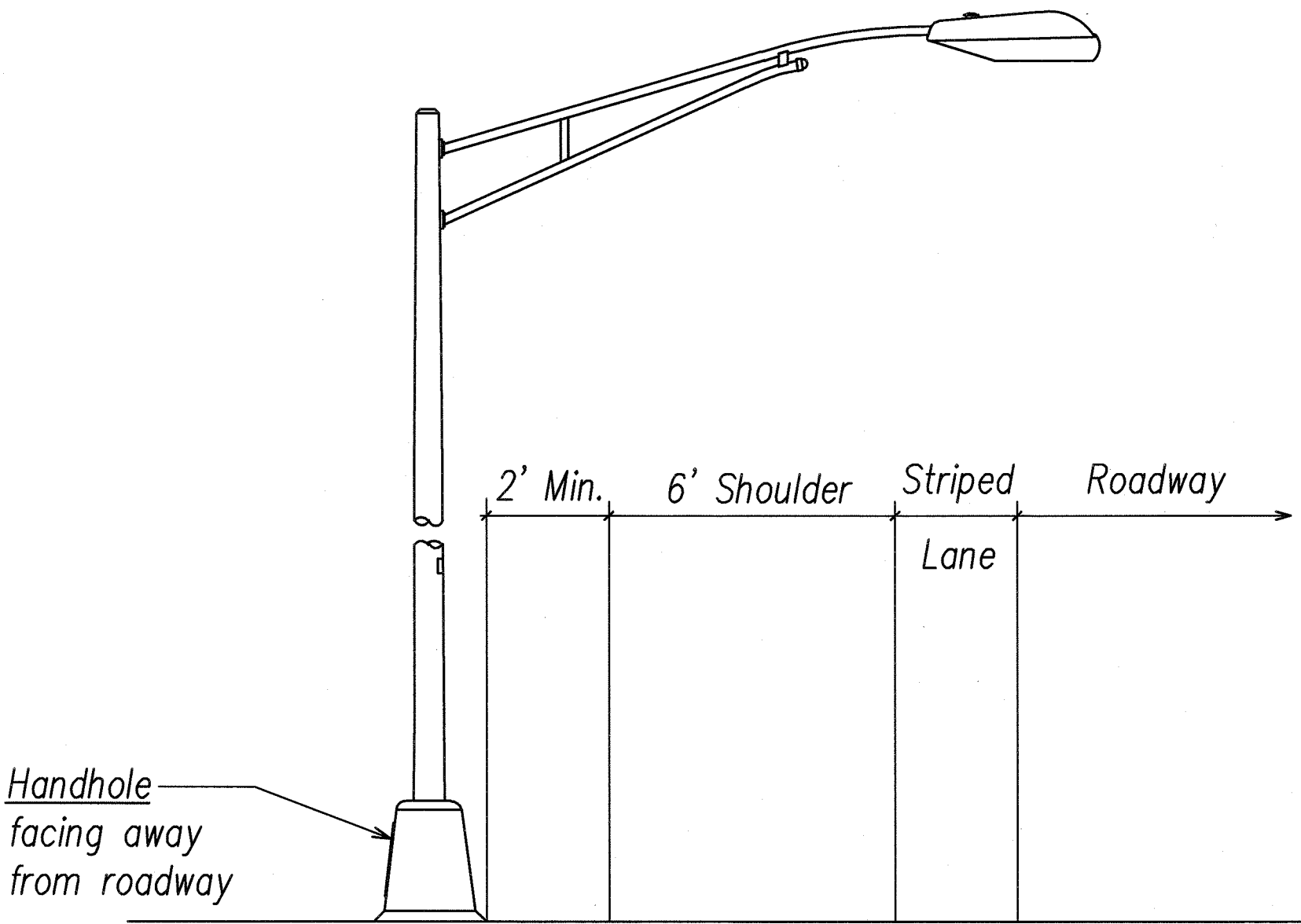
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HAWAII	HAW.	NH-083-1(60)	2007	87	90



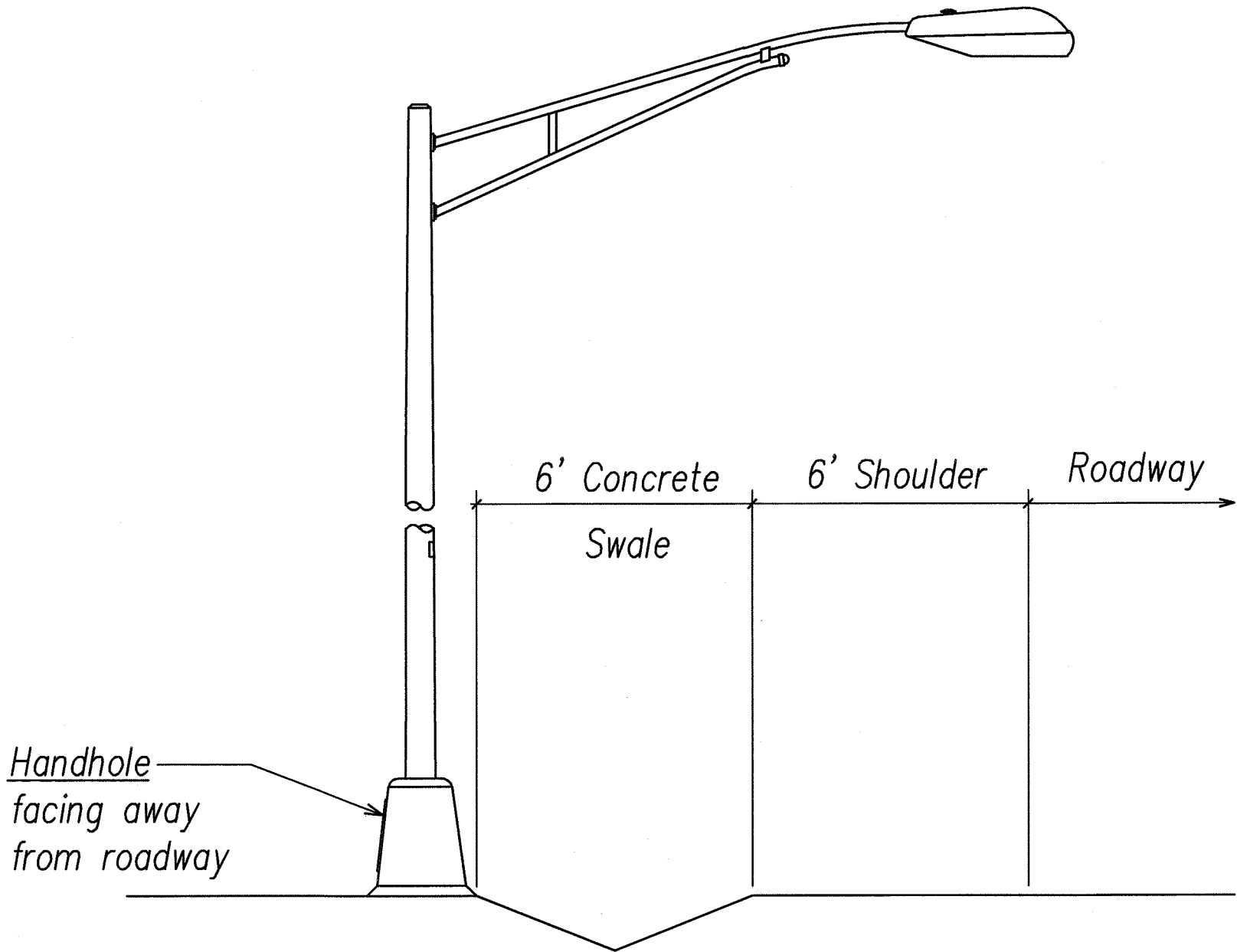
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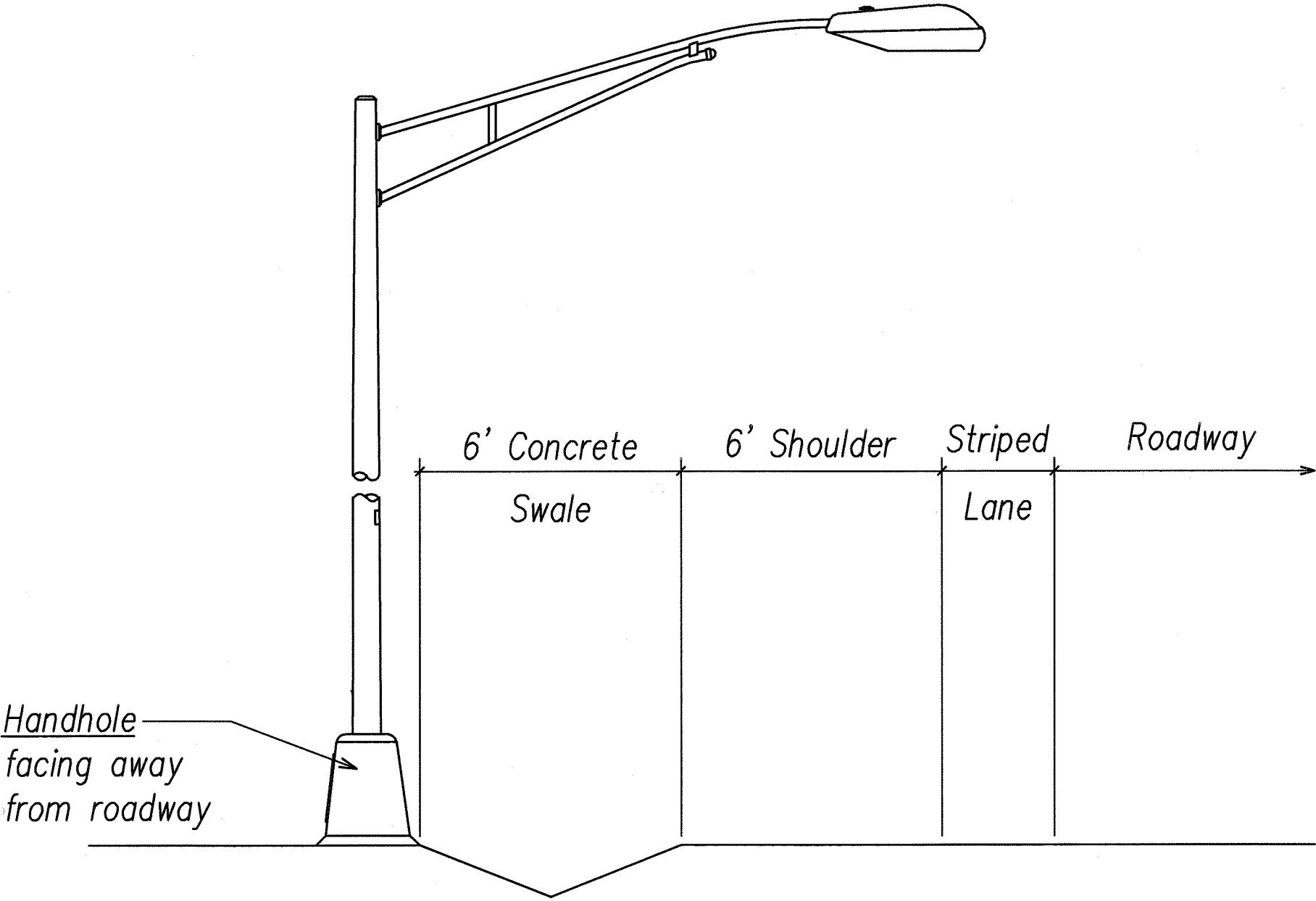
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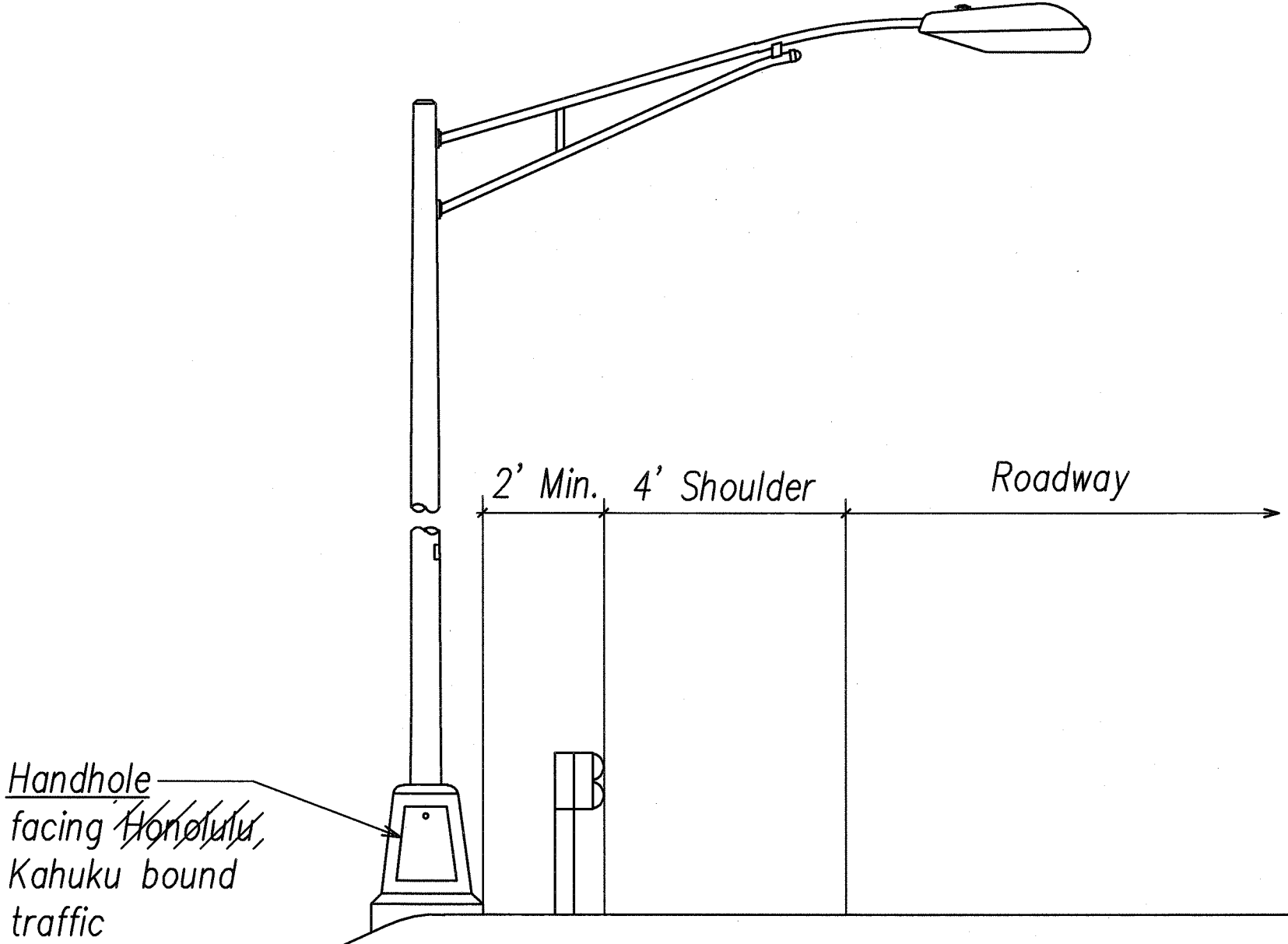
SETBACK CONDITION NO. 3
NOT TO SCALE



SETBACK CONDITION NO. 4
NOT TO SCALE



SETBACK CONDITION NO. 5
NOT TO SCALE



SETBACK CONDITION NO. 6
NOT TO SCALE

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DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	
NO.	

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SIGNATURE

APRIL 30, 2012

EXPIRATION DATE OF LICENSE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

ROADWAY LIGHT STANDARD

SETBACK CONDITIONS

KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS

VICINITY OF HUI IWA STREET

FEDERAL-AID PROJECT NO. NH-083-1(60)

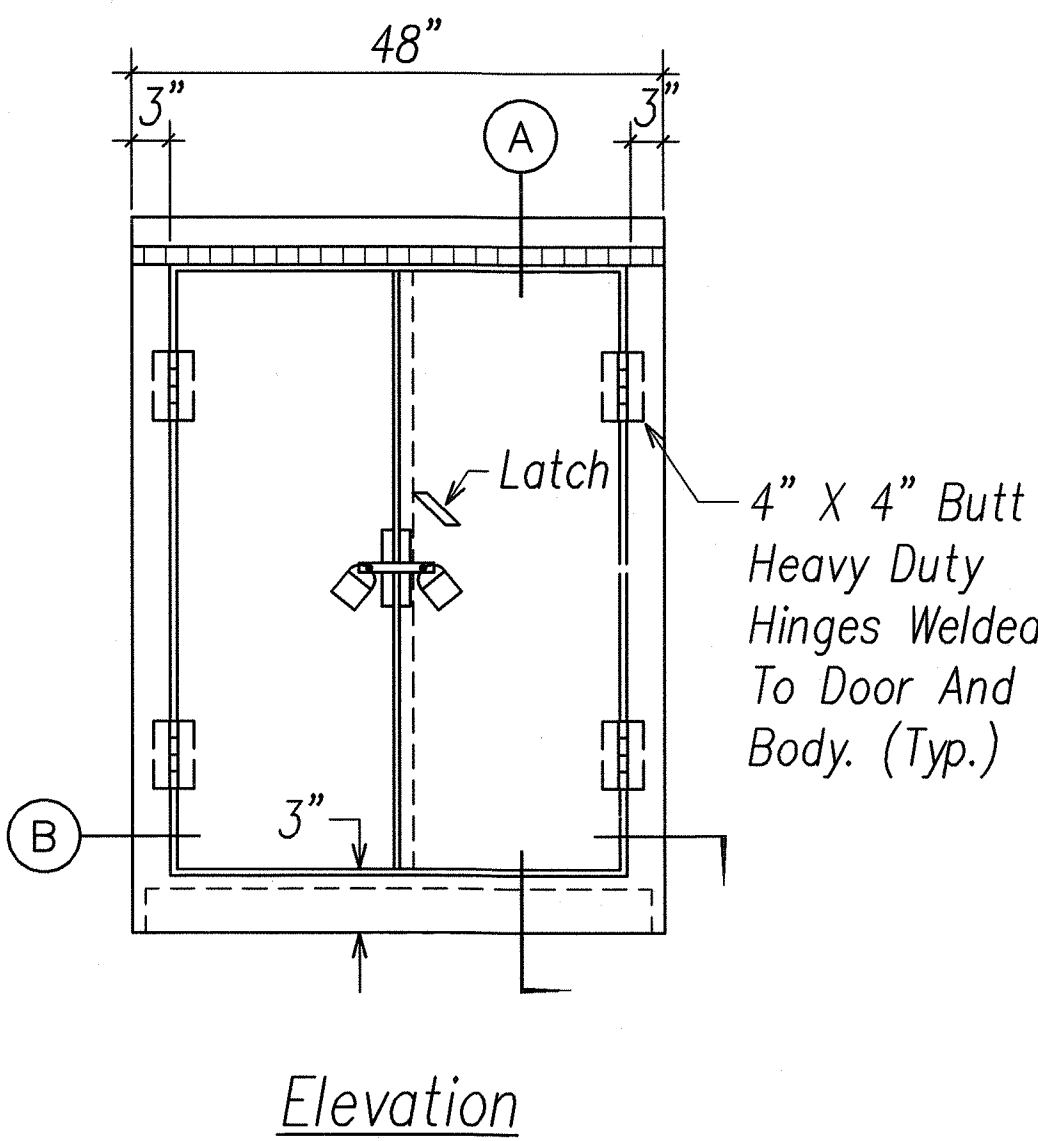
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DATE: April 2007

SHEET No. E-29 OF 32 SHEETS

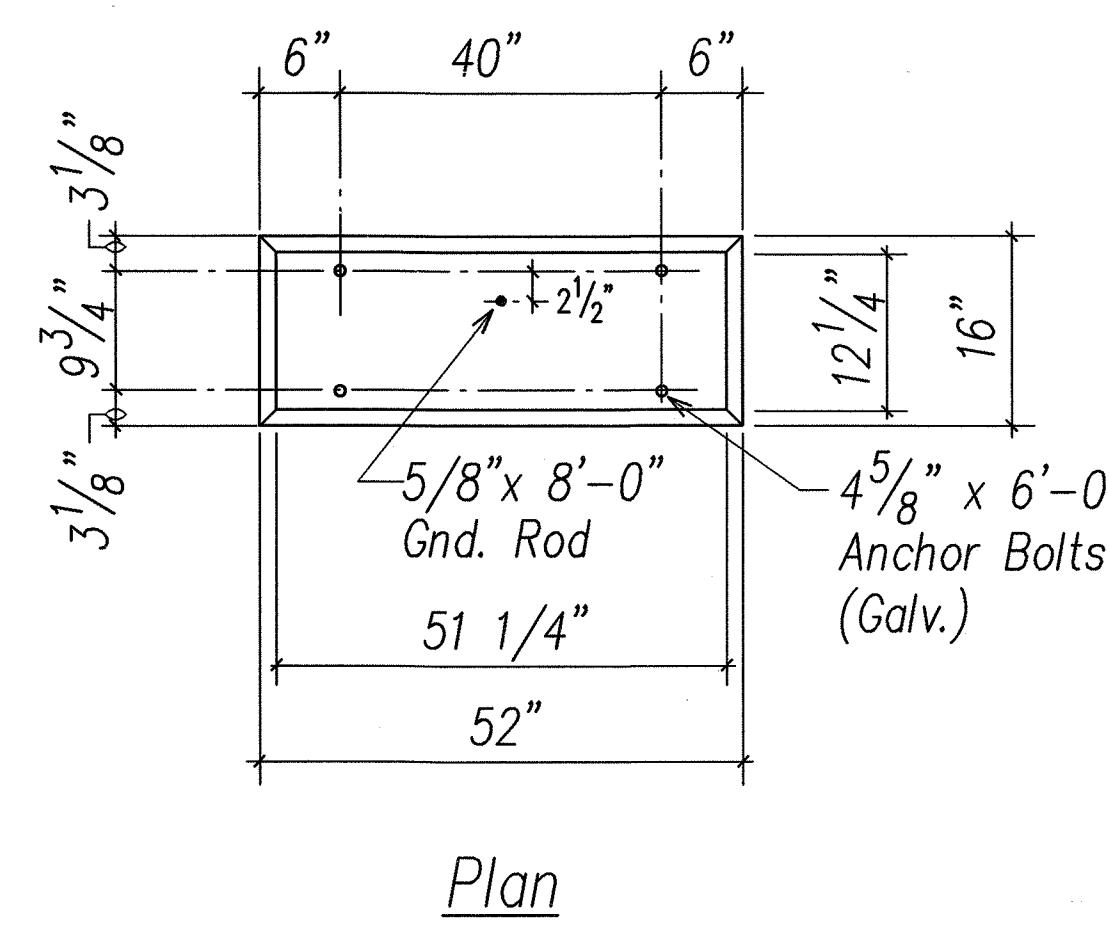
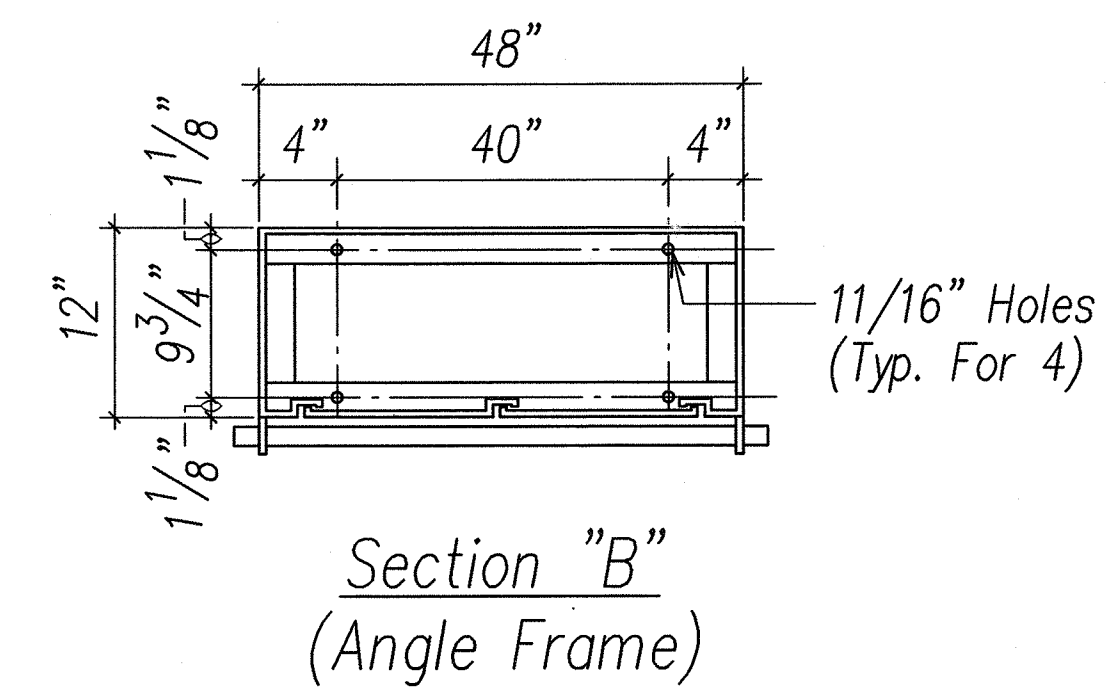
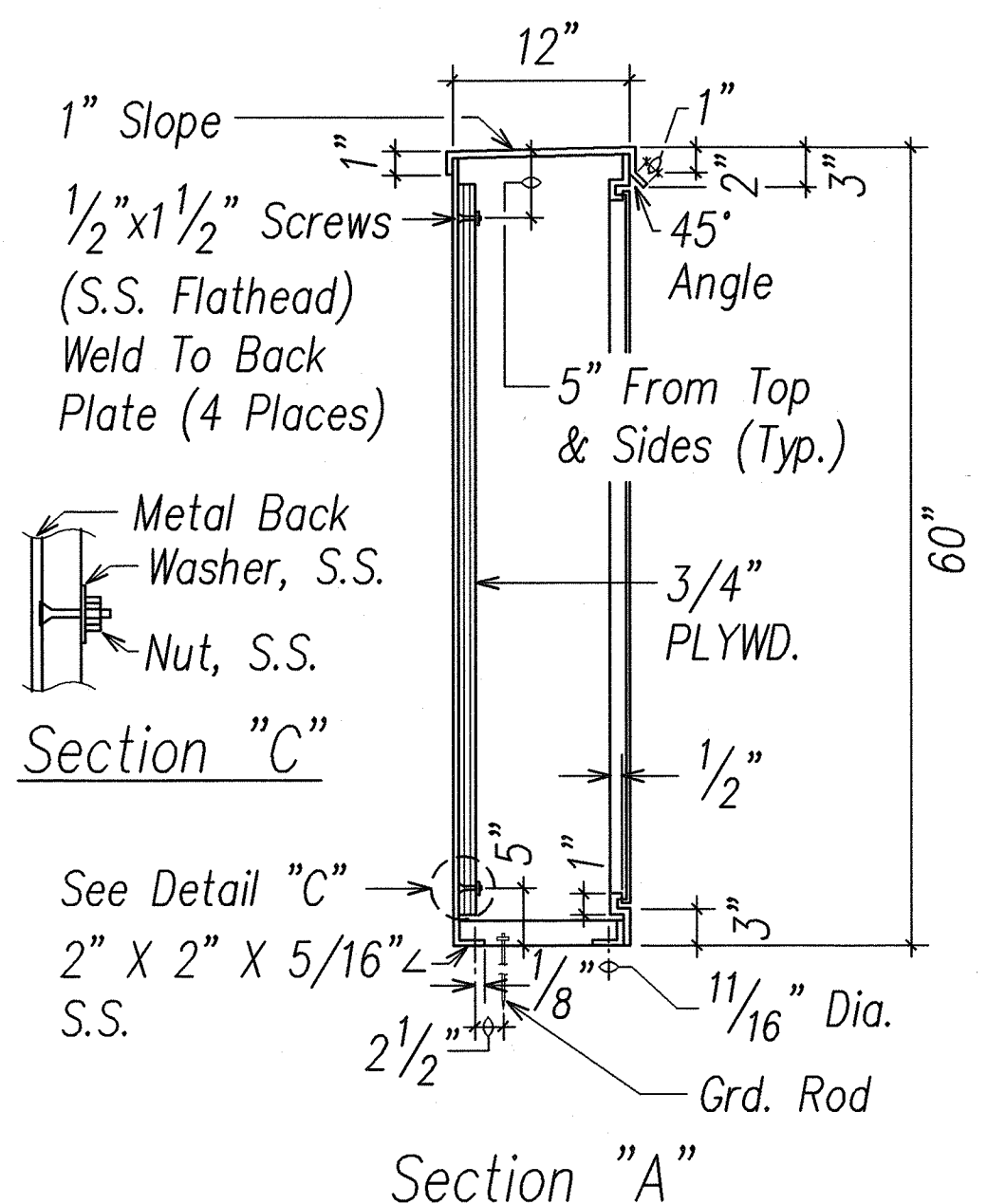
"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	88	90

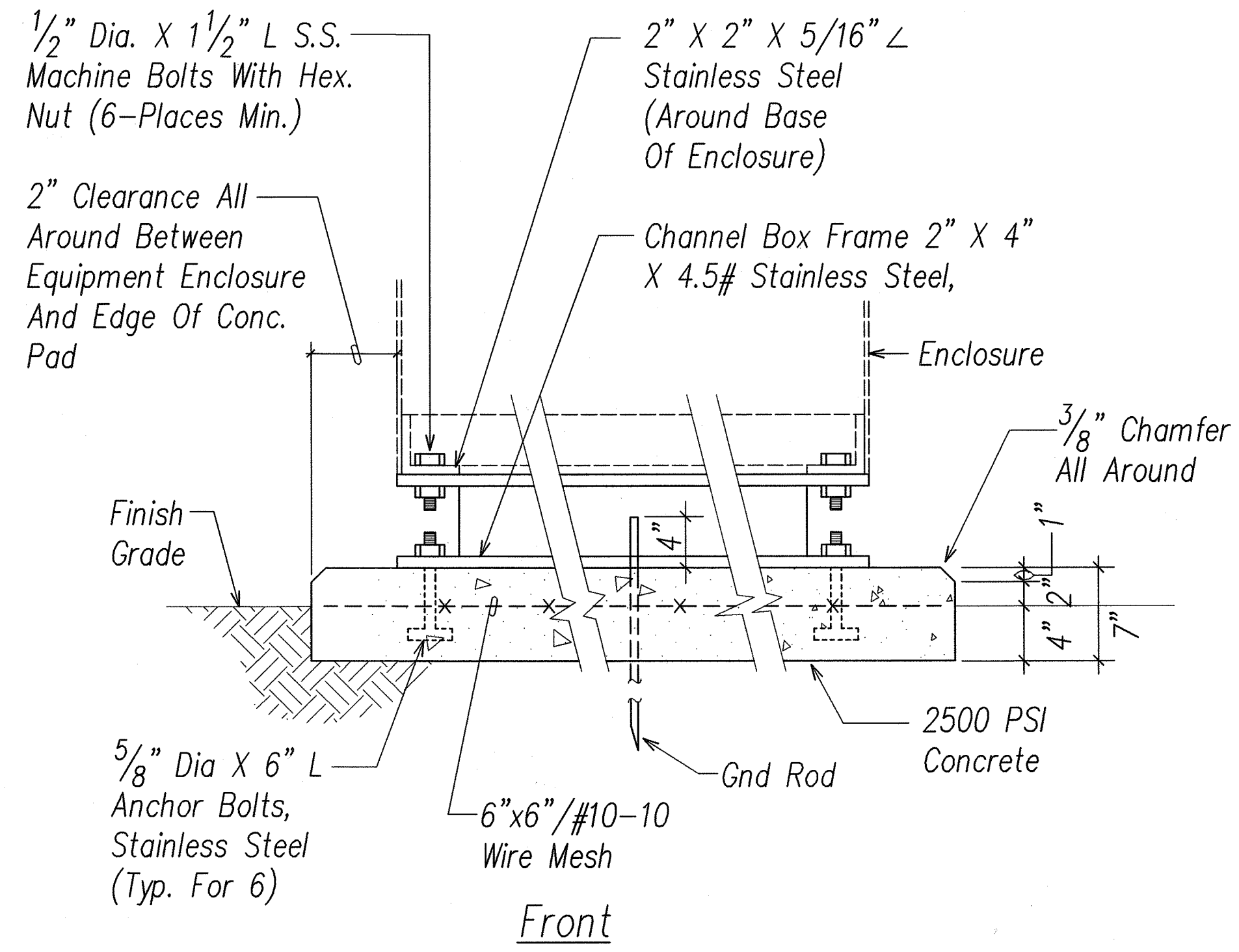


Elevation

- NOTES:
- Cabinet To Be Primed With One Coat Shop Primer.
 - Plywood To Be Treated (Wolmanized) Plywood, Exterior Grade, 3/4" Thick
 - Made From 10 GA. Type 316 SS.
 - Provide Two Coats Epoxy Enamel Finish, Color To Match Existing Adjacent Enclosure.
 - Enclosure Shall Be Nema 3R With Neoprene Gasketing.
 - Padlocks:
1 - Heco Furnished
1 - Contractor Furnished
 - Shop Fabrication Drawings Shall Be Submitted For Approval.
 - Contractor Shall Enlarge Enclosure As Required To Install All Required Equipment.

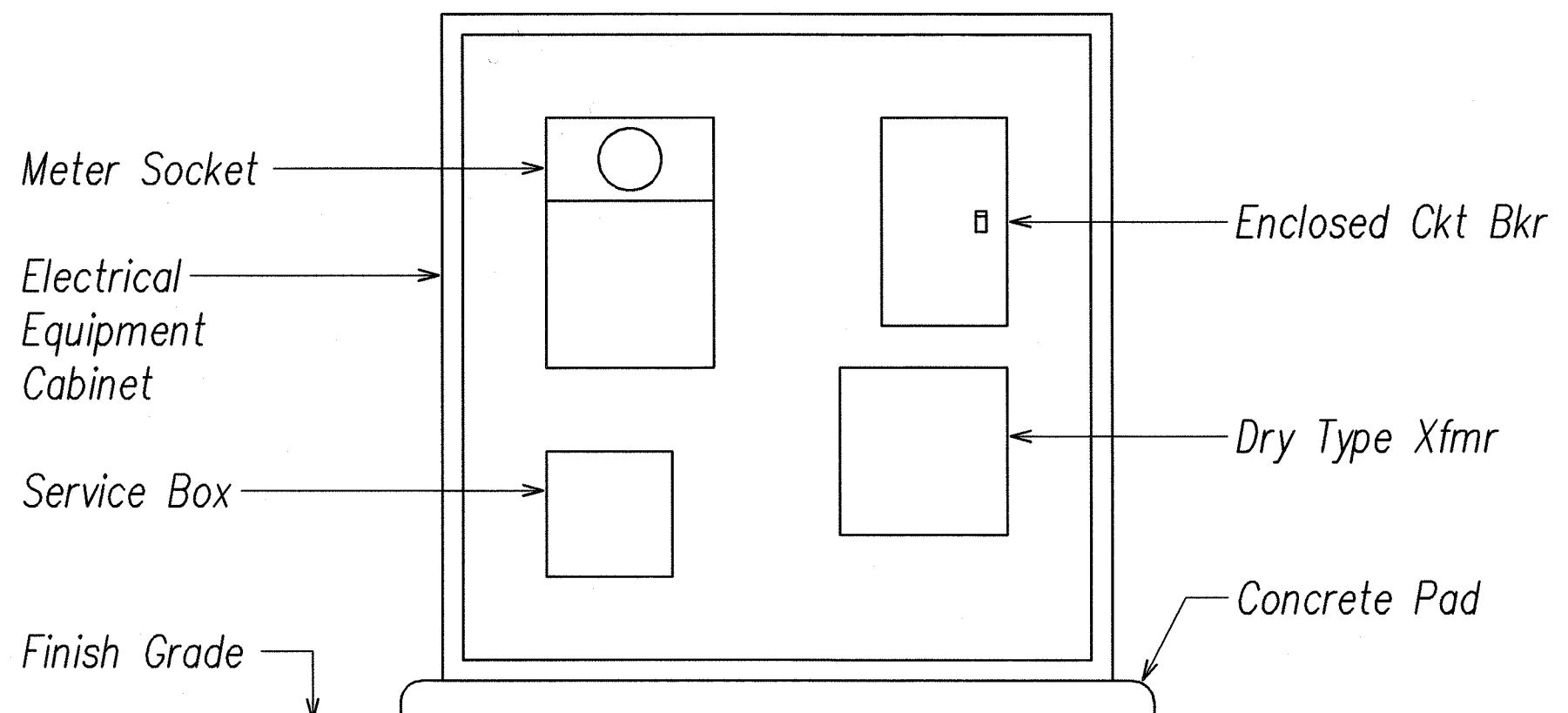


Plan

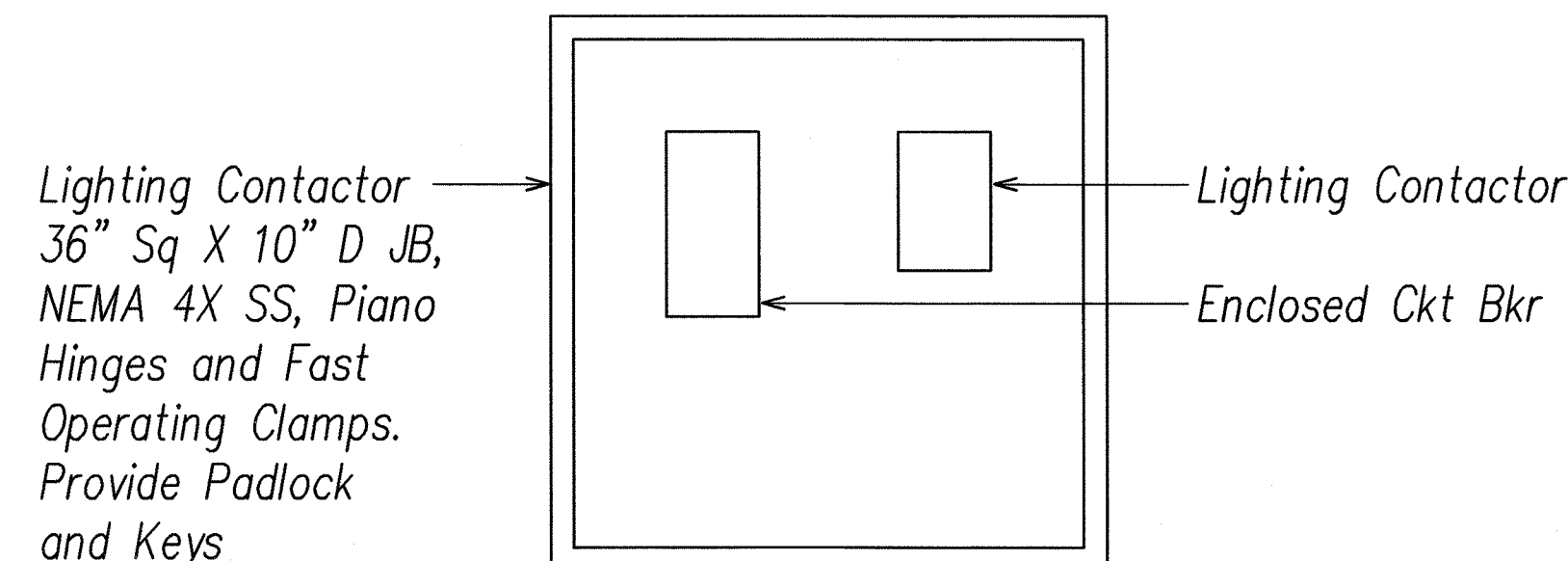


Front

ELECTRICAL EQUIPMENT ENCLOSURE DETAIL
A
E-30 NOT TO SCALE

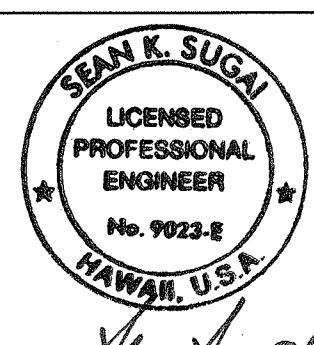


ELECTRICAL EQUIPMENT ELEVATION
B
E-30 NOT TO SCALE



NOTES: Contractor Shall Enlarge Enclosure as Required To Install All Required Equipment.

ROADWAY LIGHTING EQUIPMENT ELEVATION
C
E-30 NOT TO SCALE



SIGNATURE: *Sean K. Suga* 5/19/07
APRIL 30, 2008
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THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL EQUIPMENT ENCLOSURE DETAILS
KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)
SCALE: As Noted
DATE: April 2007
SHEET No. E-30 OF 32 SHEETS

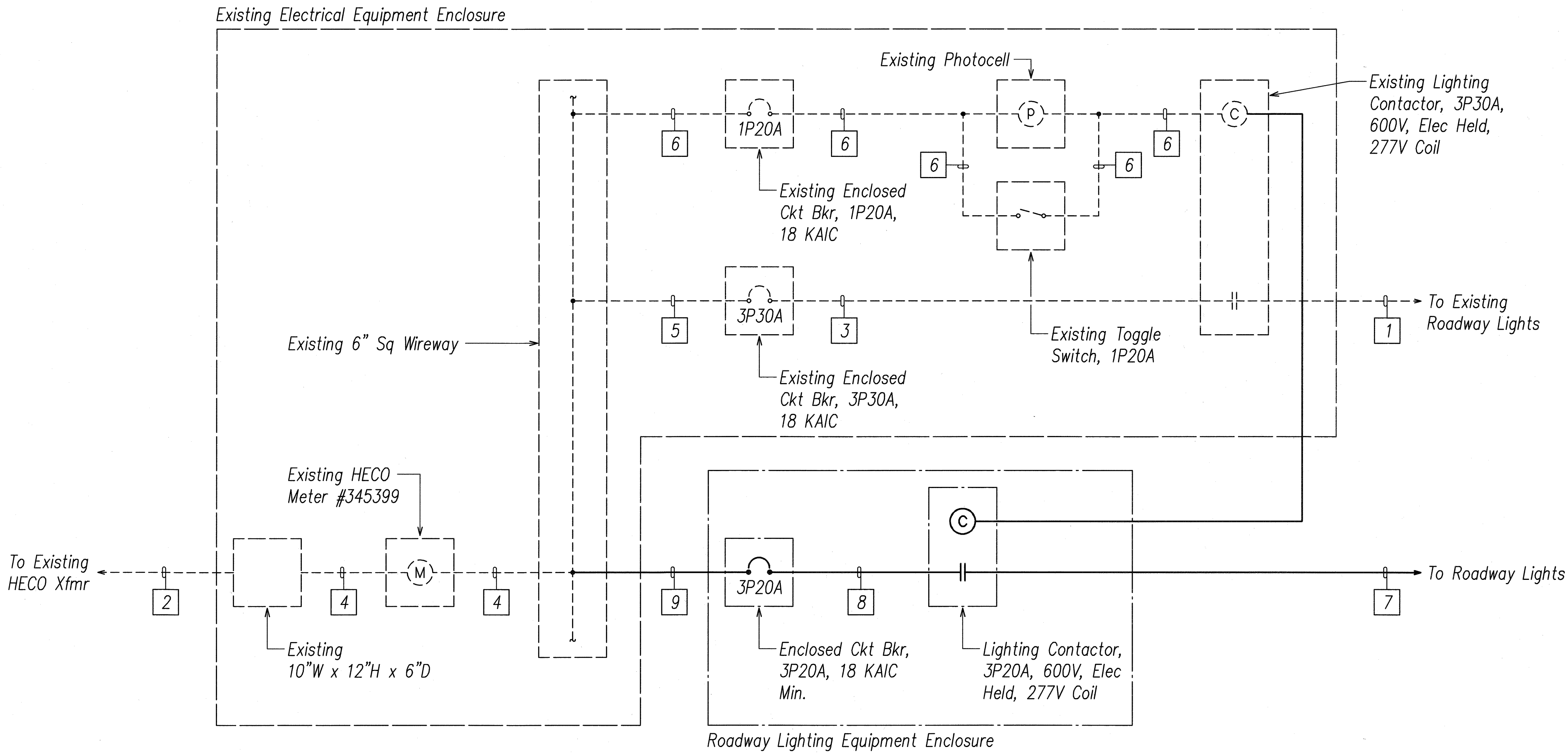
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NOTE BOOK	DRAWN BY	
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	QUANTITIES BY	
	CHECKED BY	

LAST SAE: 04/20/07 & 08/4/07 BY: BO PLOT SO: 1'-0"=1'

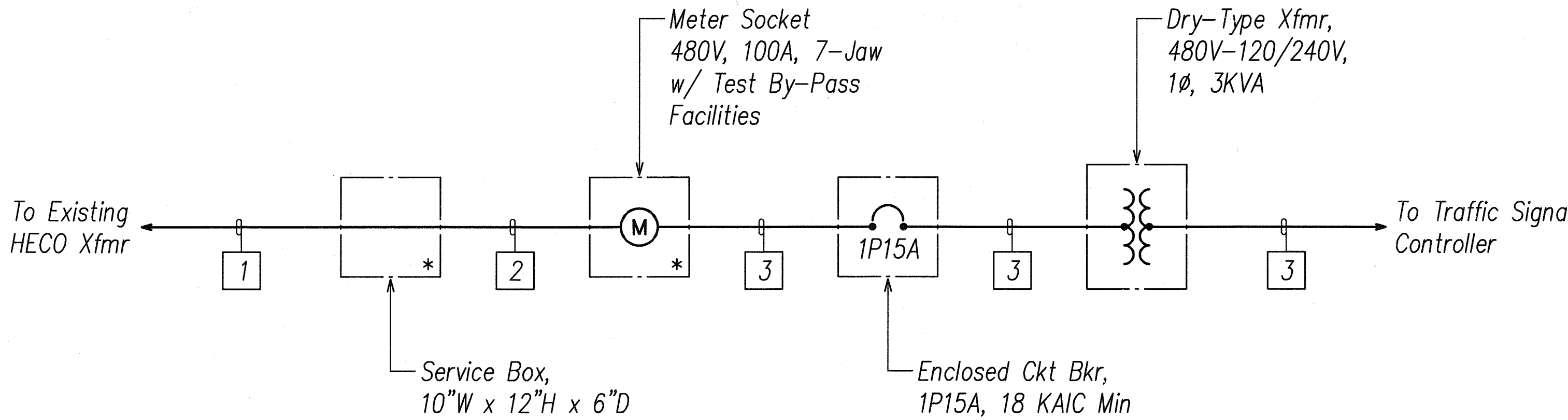
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	89	90

NOTES:

- Dashed Line Symbol Denotes "Existing Item".
Solid Line Symbol Denotes "New Item".
- 1 Existing 2"C, 4#2, 1#8 Gnd.
2 Existing 2"C, 4#6.
3 Existing 1 1/4"C, 4#2, 1#8 Gnd.
4 Existing 1 1/4"C, 4#6.
5 Existing 3/4"C, 4#10.
6 Existing 3/4"C, 2#12.
7 2"C, 4#4, 1#4 Gnd.
8 1 1/2"C, 4#4, 1#4 Gnd.
9 3/4"C, 4#12.



ROADWAY LIGHTING FEEDER ONE LINE DIAGRAM



* Provide Provisions for HECO Seal.

TRAFFIC SIGNAL FEEDER ONE LINE DIAGRAM

Notes:

- All Items Shown Are New.
- 1 2"C, 4#6.
2 1 1/4"C, 4#6.
3 3/4"C, 2#12.



SIGNATURE
APRIL 30, 2012
EXPIRATION DATE OF LICENSE
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ONE LINE DIAGRAMS

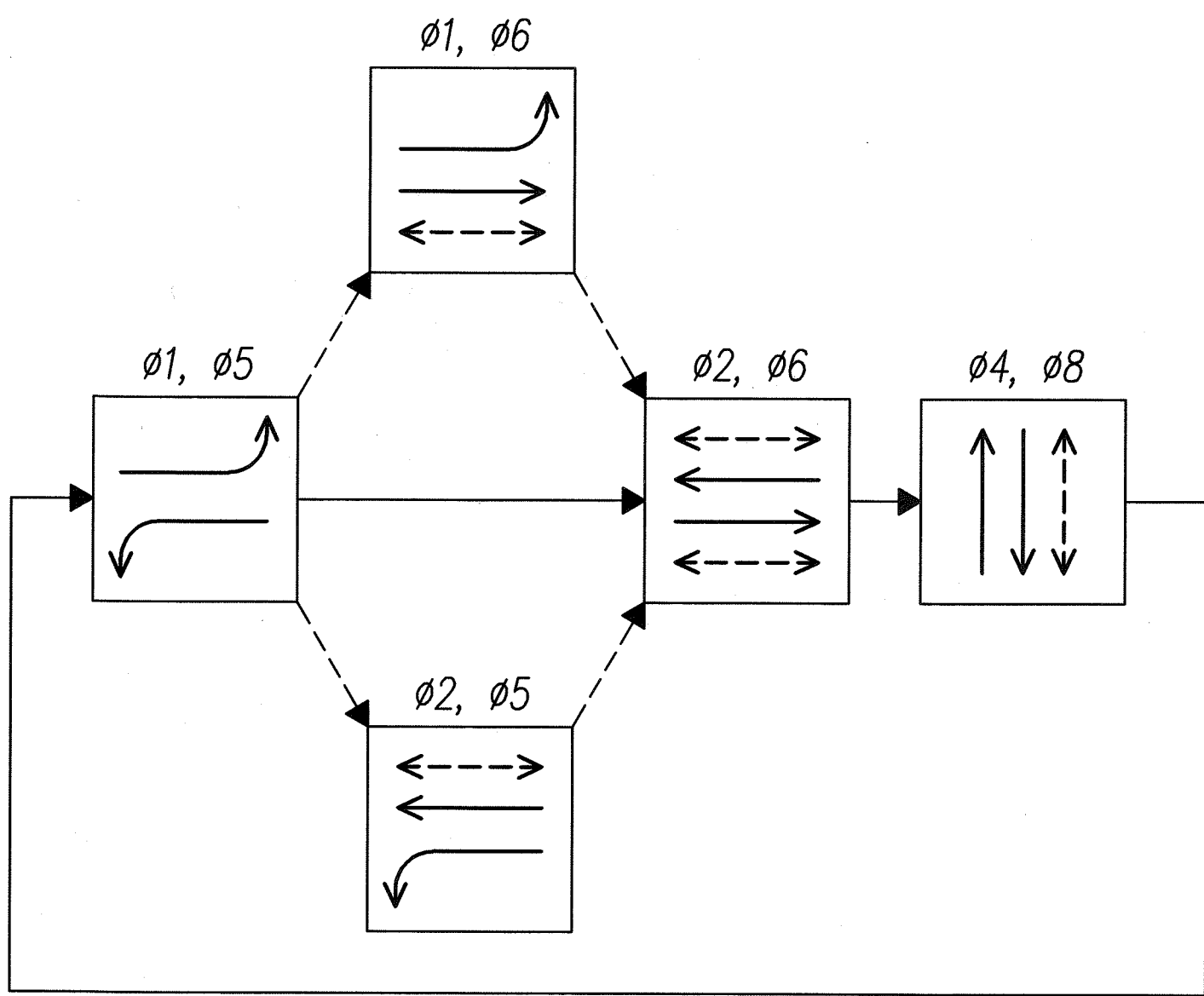
KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS
VICINITY OF HUI IWA STREET
FEDERAL-AID PROJECT NO. NH-083-1(60)

SCALE: As Noted DATE: April 2007
SHEET No. E-31 OF 32 SHEETS

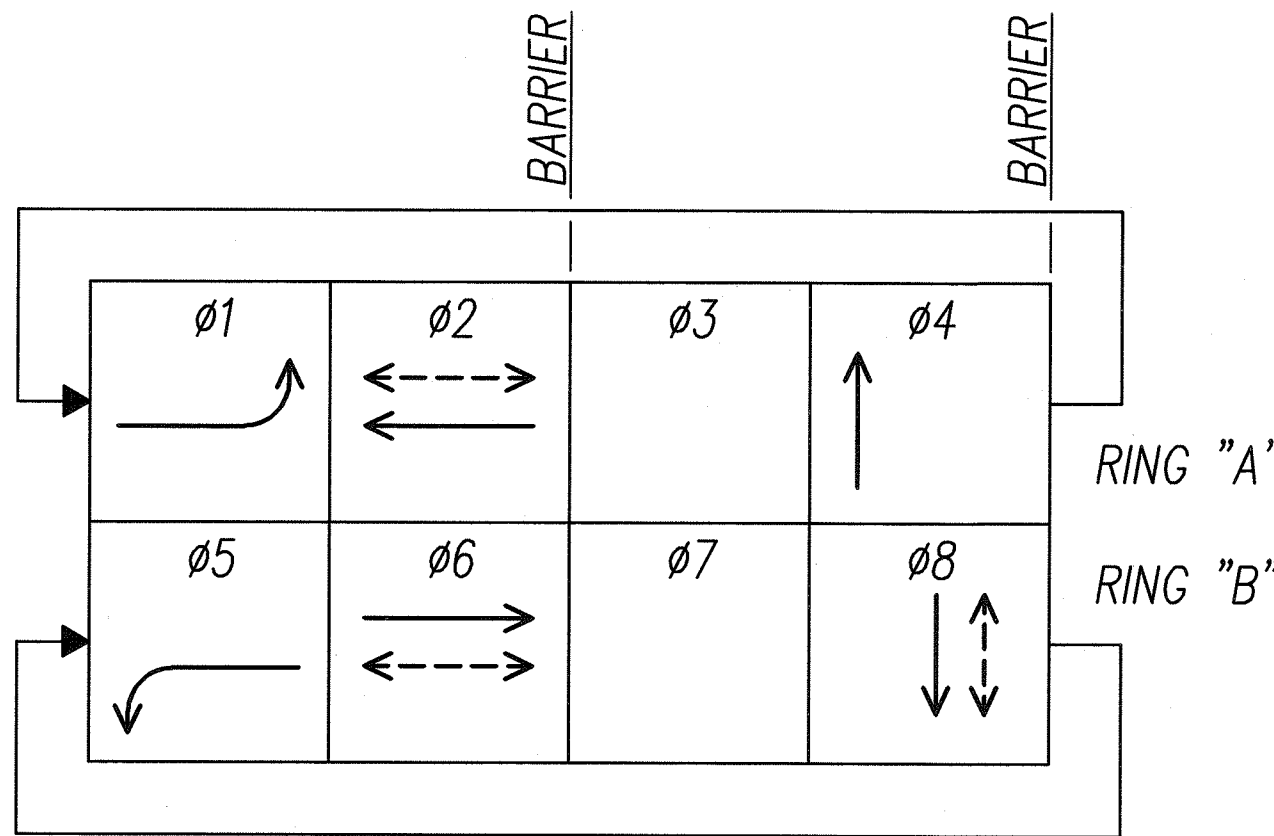
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NOTE BOOK	
No.	

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(60)	2007	90	90



PHASING DIAGRAM



PHASE ASSIGNMENT DIAGRAM

KAHEKILI HWY/EAST HUI IWA ST INTERSECTION
TRAFFIC SIGNAL PHASING DIAGRAMS

SIGNAL INDICATION	DESCRIPTION	SYMBOL
	12" RYG TRAFFIC SIGNAL HEAD (L.E.D. SIGNAL ASSEMBLY)	
	12" RYGA TRAFFIC SIGNAL HEAD (L.E.D. SIGNAL ASSEMBLY)	
	PEDESTRIAN SIGNAL HEAD (L.E.D. SIGNAL ASSEMBLY)	
A-2 A-3 B-1*	C-1* C-2 C-3 E-2 E-3	A-1 D-1* E-1*
		A-4 C-4 D-2 E-4

* - PROGRAMMED VISIBILITY

KAHEKILI HWY/EAST HUI IWA ST INTERSECTION
TRAFFIC SIGNAL HEAD LEGEND

SURVEY PLOTTED BY	DATE
DESIGNED BY	
TRACED BY	
NOTED BY	
CHECKED BY	

LAST SAVE: 05/17/11 @ 16:24:03 BY: BO PLOT SC: 1-0-1
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SEAN K. SUGAL
LICENSED PROFESSIONAL ENGINEER
No. 9023-E
HAWAII, U.S.A.
SIGNATURE
APRIL 30, 2012
EXPIRATION DATE OF LICENSE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

3/9/09	Revised phasing diagram
2/23/09	Added signal heads
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION TRAFFIC SIGNAL HEAD LEGEND, TRAFFIC SIGNAL PHASING DIAGRAM KAHEKILI HIGHWAY INTERSECTION IMPROVEMENTS VICINITY OF HUI IWA STREET FEDERAL-AID PROJECT NO. NH-083-1(60) SCALE: As Noted DATE: April 2007 SHEET No. E-32 OF 32 SHEETS	

"AS-BUILT"