

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-98	2002	50	75

ELECTRICAL SYMBOLS

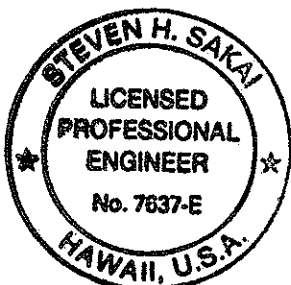
SYMBOL		DESCRIPTION	SYMBOL		DESCRIPTION
EXST	NEW		EXST	NEW	
		250W HPS Highway Lt Standard; Pole, Luminaire & Bracket Arm, Conc Base			Type I Traffic Signal Standard, 7' Unless Indicated Otherwise; See Typical Details TE-38
		RYGA ↑ Traffic Signal Head			Type II Traffic Signal Standard with Traffic Signal Heads Mounted on Mast Arm and Standard; Pole "B" and 30' Mast Arm Length Indicated, See Detail
		RYGA ← Programmed Visibility Traffic Signal Head			Type III Traffic Signal Standard with Traffic Signal Heads Mounted on Mast Arm and Standard, Highway Light Luminaire and Bracket Arm, Luminaire by HECO; Pole "C", 30' Mast Arm and 15' Bracket Arm Lengths Indicated, See Detail
		RYG Traffic Signal Head			Guy & Anchor to be Removed by Utility Co
		RYGA ← Traffic Signal Head			Utility Wood Pole to be Removed by Utility Co Unless Indicated Otherwise
		Pedestrian Traffic Signal Head, See Std. TE-38			Electric/Signal Overhead Service Drop by Respective Utility Co
		Opticom Detector			Traffic Signal Ductline and Wiring
		New Pedestrian Pushbutton Shall Meet Current American with Disabilities Act (ADA) Accessibility Guidelines, See Detail E/E-8			Highway Light Ductline and Wiring
		Traffic Signal Controller			Overhead Guy Wire
		Detector Loops, See Sheet E-8			Electric/Signal Overhead Lines By Respective Utility Co.
		Type "A" Metric Highway Light Pullbox (Approx. 22" X 28"), See Detail A/E-7			Joint Utility Wood Pole By HECO Unless Indicated Otherwise
					Guy and Anchor
		Pullbox or Handhole, See Plan for Size			
		CATV Pullbox			
		Verizon Hawaii Pullbox/Handhole			
		Verizon Hawaii Manhole			
		HECO Pullbox/Handhole			
		HECO Manhole			

Traffic Signal Notes:

- Locations of Existing Underground Structures and Utilities Such as Pipelines, Conduits, Cables, Etc., Shown on Plans are Approximate Only. It is Not the Intent of These Plans to Show The Exact Location of All Underground Utilities and Structures. It is The Responsibility of the Contractor to Verify the Locations of All Existing Utilities with the Respective Owners. Existing Utilities Damaged by the Contractor Shall Be Repaired By the Contractor at His Own Coast.
- The Locations of The Traffic Signal Standards, Traffic Signal Standards with Mast-Arm, Pedestrian Push Buttons, Traffic Controller Cabinet, Pullboxes, Conduits and Loop Detectors Shall Be Staked Out In the Field By the Contractor and Approval of the Locations Shall Be Obtained From the Engineer Prior to Construction and Installation.
- All Traffic Signal Work Shall Conform to the Requirements of the "Manual on Uniform Traffic Control Devices for Streets and Highways". Federal Highway Administration (1984)) and Amendments.
- Locations of Traffic Markings and Markers (Lane Lines, Stop Lines, Crosswalk, Etc.) Shown on the Plans Shall Be Verified with the Engineer Prior to the Installation of the Traffic Signal System.
- Maintenance of Traffic Through the Construction Area Shall Be in Accordance with Part VI of the "Manual on Uniform Traffic Control Devices for Streets and Highways", Federal Highway Administration (1984) and as Specified in the Special Provisions, The Contractor Shall Furnish and Maintain Adequate Barricades, Blinkers, Construction Signs, Etc., For the Safety of the Motoring Public.

ORIGINAL PLAN	DATE
NOTED BY	
DESIGNED BY	
CHECKED BY	

LAST SAVE: 10/16/02 @ 15:53:59 BY: RUI PLOT SO 1-0-11
7:40:00 PM 10/16/02 @ 15:53:59

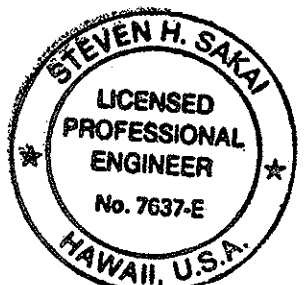
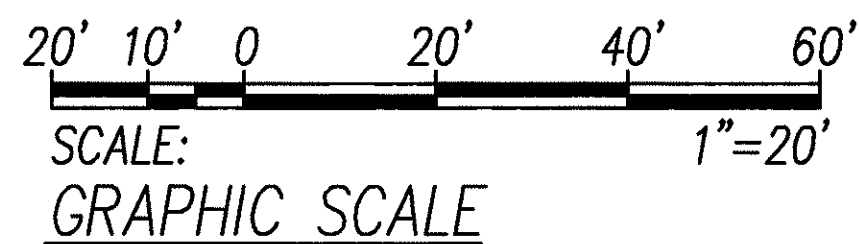
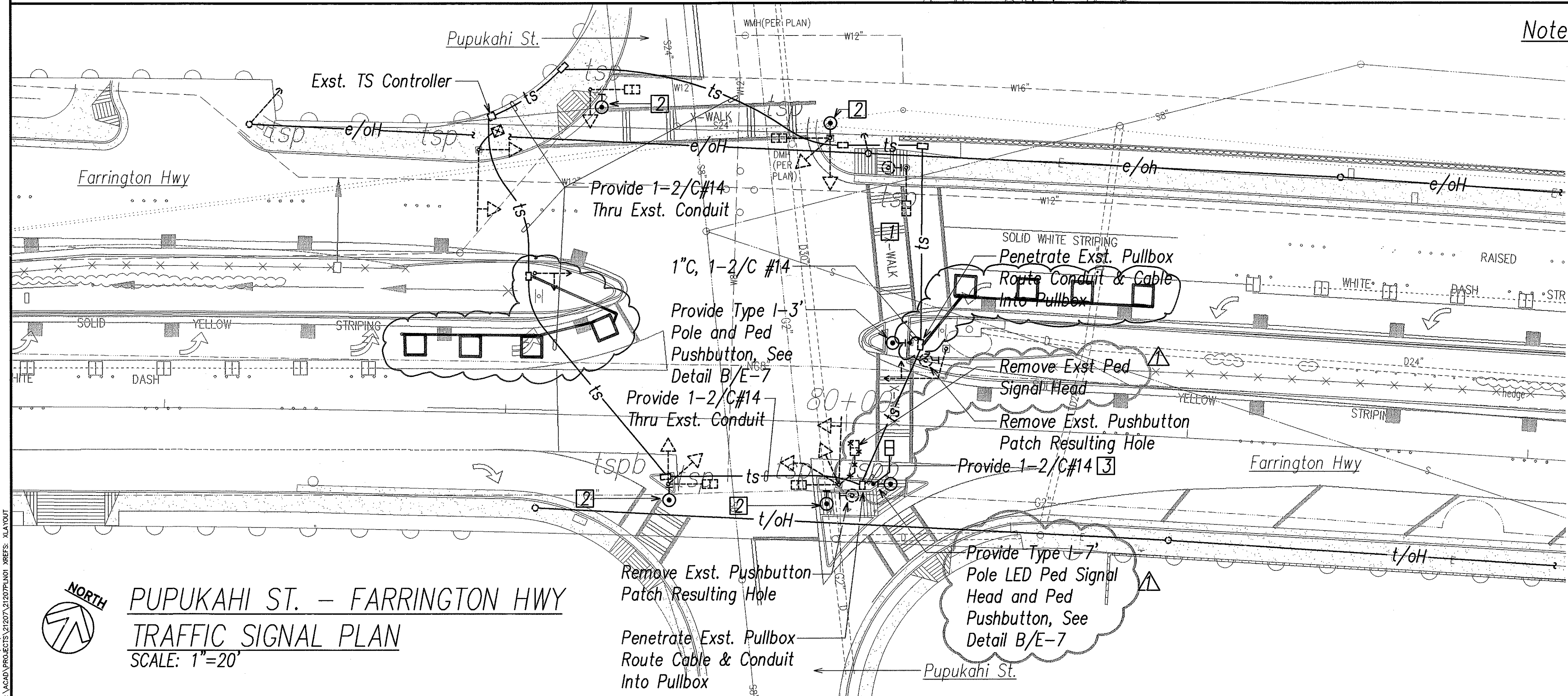
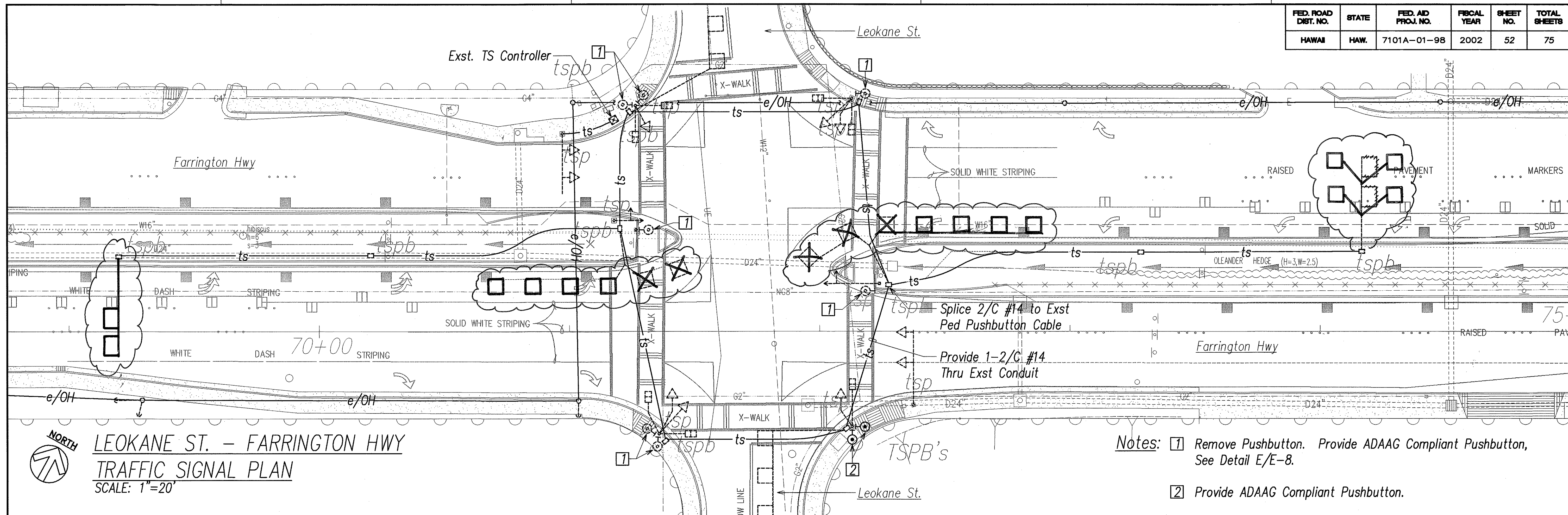


License Expires 4/30/04

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Steven H. Sakai

10/02	REVISED PED SIGNALS PER C & C DTS-TST COMMENTS
DATE	SYMBOL REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ELECTRICAL SYMBOLS	
FARRINGTON HIGHWAY LANDSCAPING Kamehameha Highway to Fort Weaver Road Project No. 7101A-01-98	
Scale: AS NOTED	Date: April 2002
SHEET No. E-1 OF 89 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-98	2002	52	75



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION
Steven H. Sakai

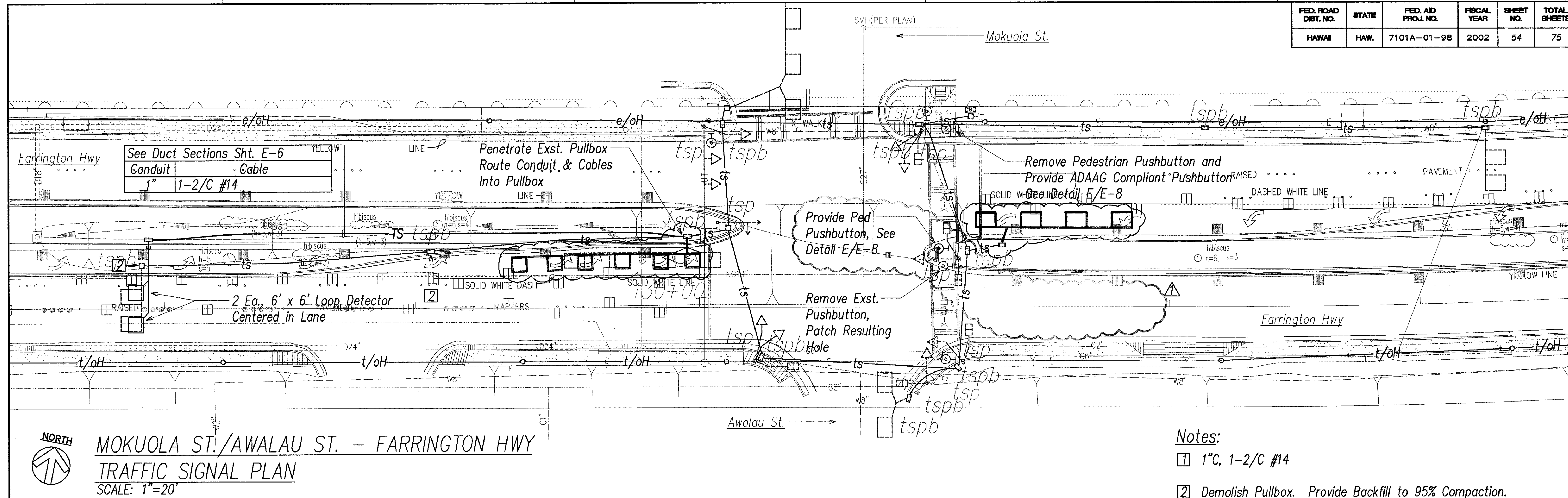
DATE	SYMBOL	REVISION
10/02		REVISED PED SIGNALS PER C & C DTS-TST COMMENTS
		REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

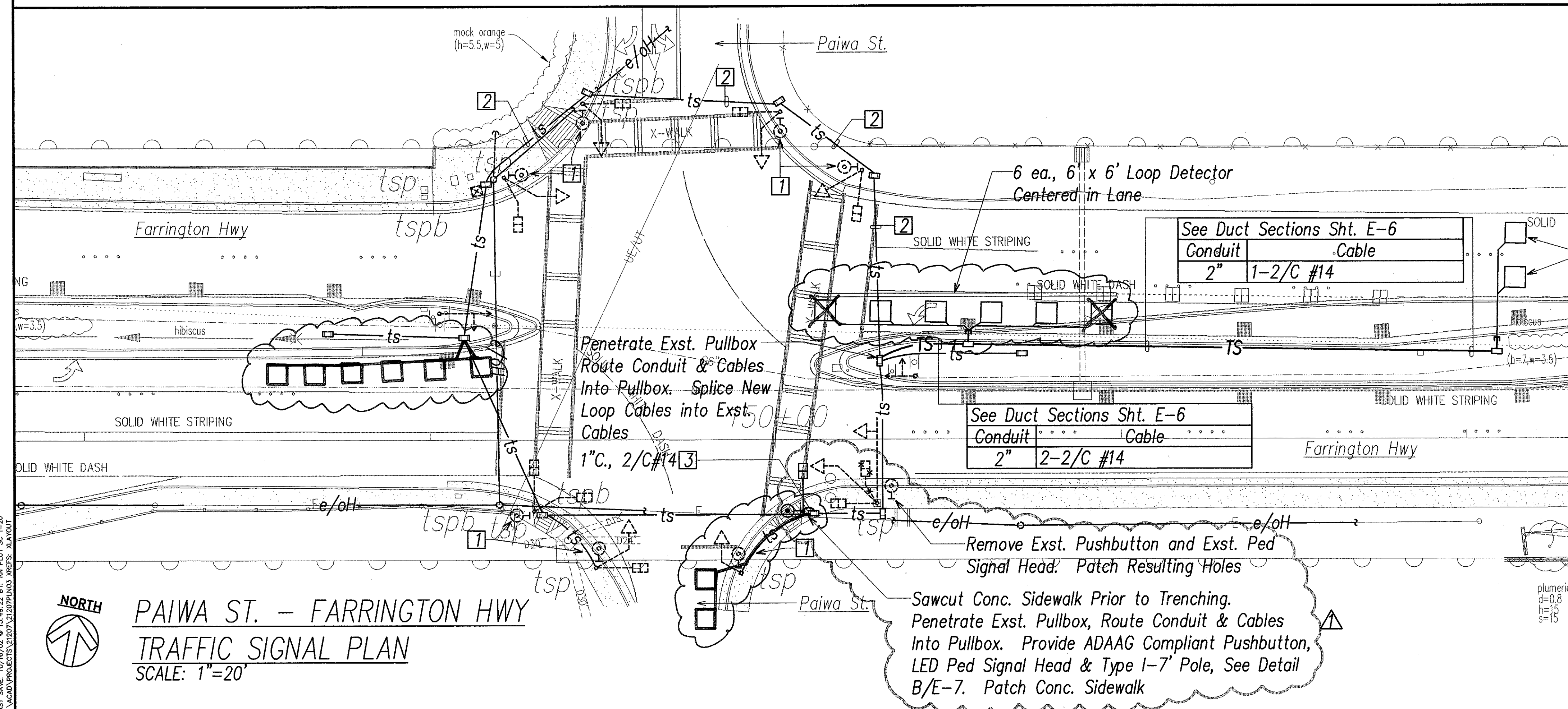
FARRINGTON HWY
TRAFFIC SIGNAL PLAN I
FARRINGTON HIGHWAY LANDSCAPING
Kamehameha Highway to Fort Weaver Road
Project No. 7101A-01-98

Scale: AS NOTED Date: April 2002
SHEET No. E-3 OF 89 SHEETS

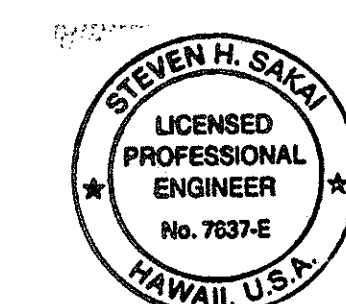
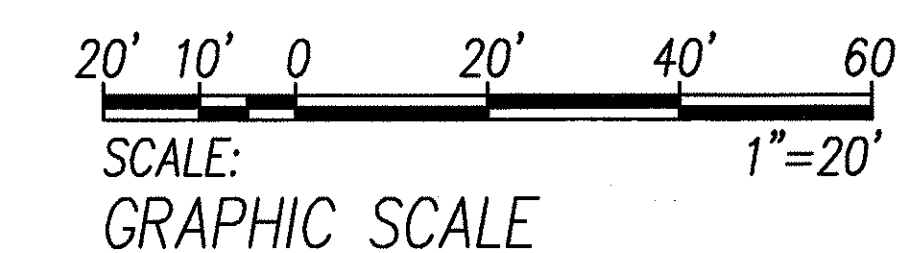
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-98	2002	54	75



- Notes:
- 1 1" C, 1-2/C #14
 - 2 Demolish Pullbox. Provide Backfill to 95% Compaction.



- Notes:
- 1 Remove Pedestrian Pushbutton and Provide ADAAG Compliant Pushbutton, See Detail B/E-7
 - 2 Provide 2-2/C #14 Thru Exst Conduits.
 - 3 See Duct Sections Sheet E-6



10/02	Δ	REVISED PED SIGNALS PER C & C DTS-TST COMMENTS
DATE	SYM	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION		
FARRINGTON HWY TRAFFIC SIGNAL PLAN III		
FARRINGTON HIGHWAY LANDSCAPING Kamehameha Highway to Fort Weaver Road Project No. 7101A-01-98		
Scale: AS NOTED		Date: April 2002
SHEET No. E-5 OF 89 SHEETS		

State Right-of-Way Backfill Notes

 Trench Backfill Material "A" Beach Sand, Earth, Or Earth And Gravel If Earth And Gravel Used, The Maximum Shall Contain Not More Than 50% By Volume Of Rock Particles. Maximum 8" Loose Fill Per Lift. Obtain 95% Compaction For Each Lift.

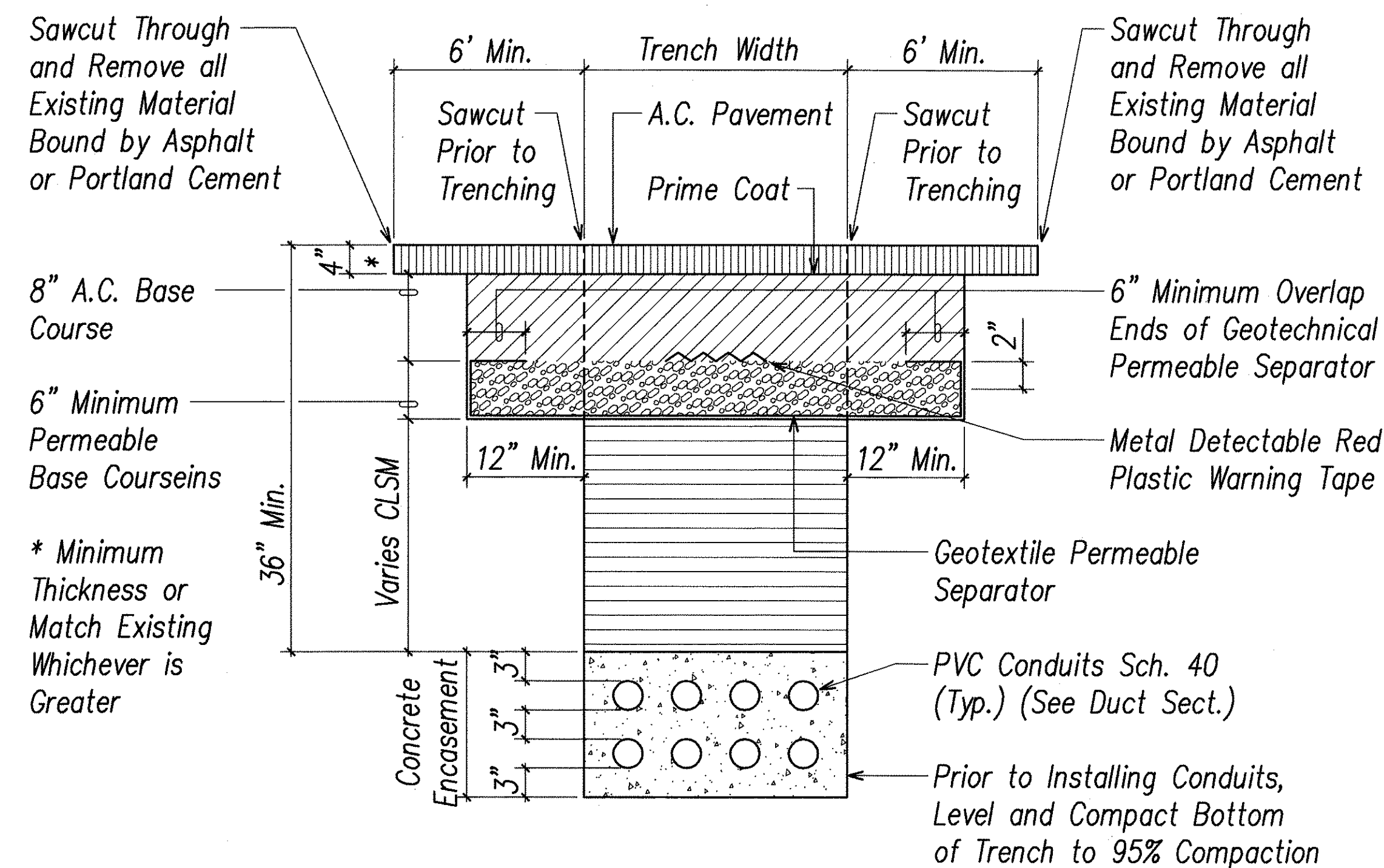
 Concrete
2500 PSI Compressive Strength @ 3 Days.

NOTE: Base Course & Sub-base Course Per 1994 State Standard Specifications For Highway Construction.

General Notes

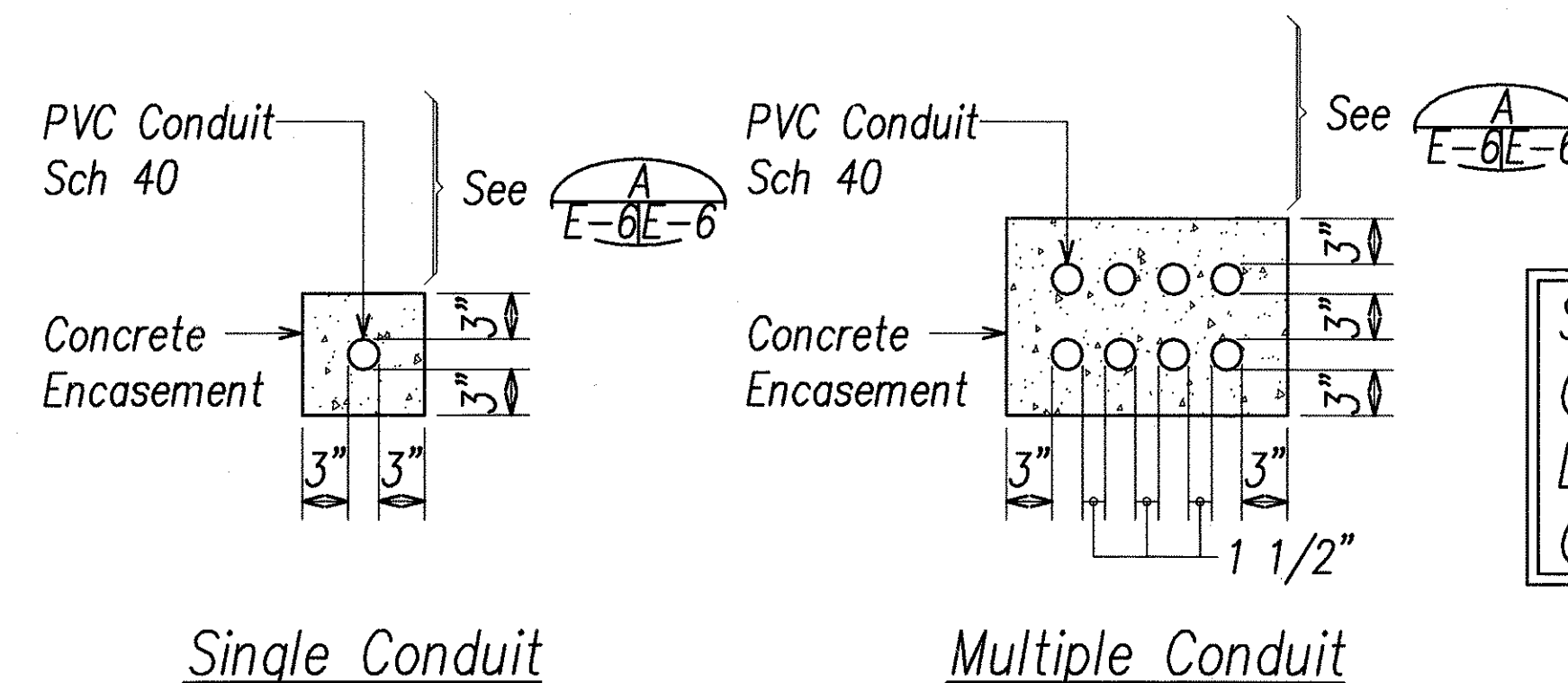
1. If Trench Is Located On Unpaved Area, The Contractor Shall Replace 10" A.C. Base Course And 4" A.C. Pavement With Type "A" Backfill Material.
2. The Metal Detectable Red Plastic Warning Tape Shall Be A Minimum 5 Mils Thick And 4" Wide With A Continuous Metallic Backing And Corrosion Resistant 1 Mil Thick Foil Core. The Tape Shall Read, "caution - State Traffic Signal And/or Hwy Lighting Buried Below," Utilizing 3 Inch Series "C" Lettering. The Message Will Be Repeated With A 12-inch Spacing Between The End And Beginning Of Repeated Message.
3. The Contractor May Begin Backfilling The Conduit Trench When The Concrete Reaches 3000 Psi Compressive Strength After 3 Days.
4. Maximum Four (4) Conduits Per Row For Multiple Conduit Duct Section.
5. For Direct Buried Duct Sections, The Concrete Jacket Required At The Conduit By-pass For Various Utilities, Shall Not Be Paid For Separately But Considered Incidental To The Direct Buried Conduits.
6. After Installing All The Traffic Signal Cables, The Contractor Shall Duct Seal All Conduits In The Pullboxes, Traffic Signal Standards And Traffic Signal Controller Cabinet Concrete Base. The Duct Seal Material Shall Be Approved By The Traffic Signal Inspector/Engineer And Shall Not Be Paid For Separately But Considered Incidental To The Direct Buried And/Or Concrete Encased Conduits.

	Clearance
Water	See BWS Note 3, Sht 6
Sewer	24" Min Or Provide 6" Thick Reinforced Conc Jacket
Drain	12" Min
HECO/HTCO/CATV	3" Min
AT&T	12" Min
Traffic Signal/Street Light	0"

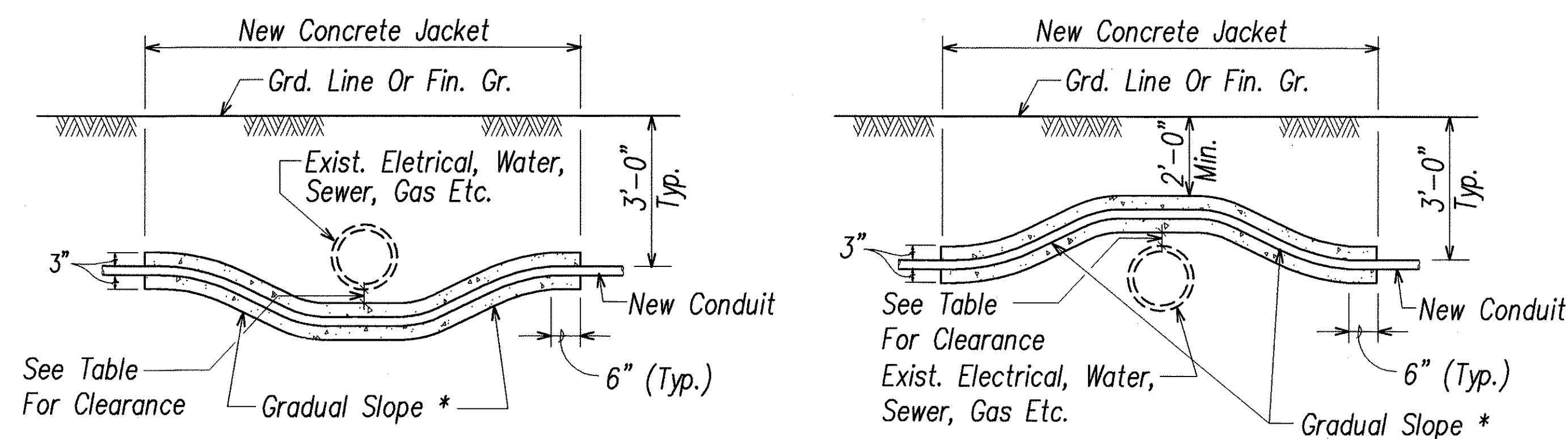


Note: Pavement Structure As Shown Or Match Existing Whichever Is Greater

A TYPICAL BACKFILL SECTION WITH CONCRETE ENCASED DUCTS
E-6 E-6 NOT TO SCALE

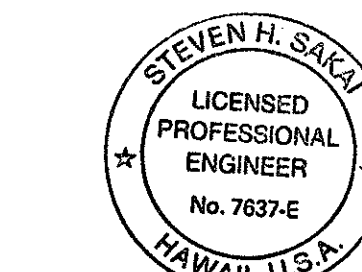


B TYPICAL DUCT SECTIONS - CONC. ENCASED
E-6 E-6 NOT TO SCALE



* To Be Determined By County Electrical Inspector/Engineer

C CONDUIT BY-PASS DETAIL AT VARIOUS UTILITIES
E-6 E-6 NOT TO SCALE



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION
Steven H. Sakai

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

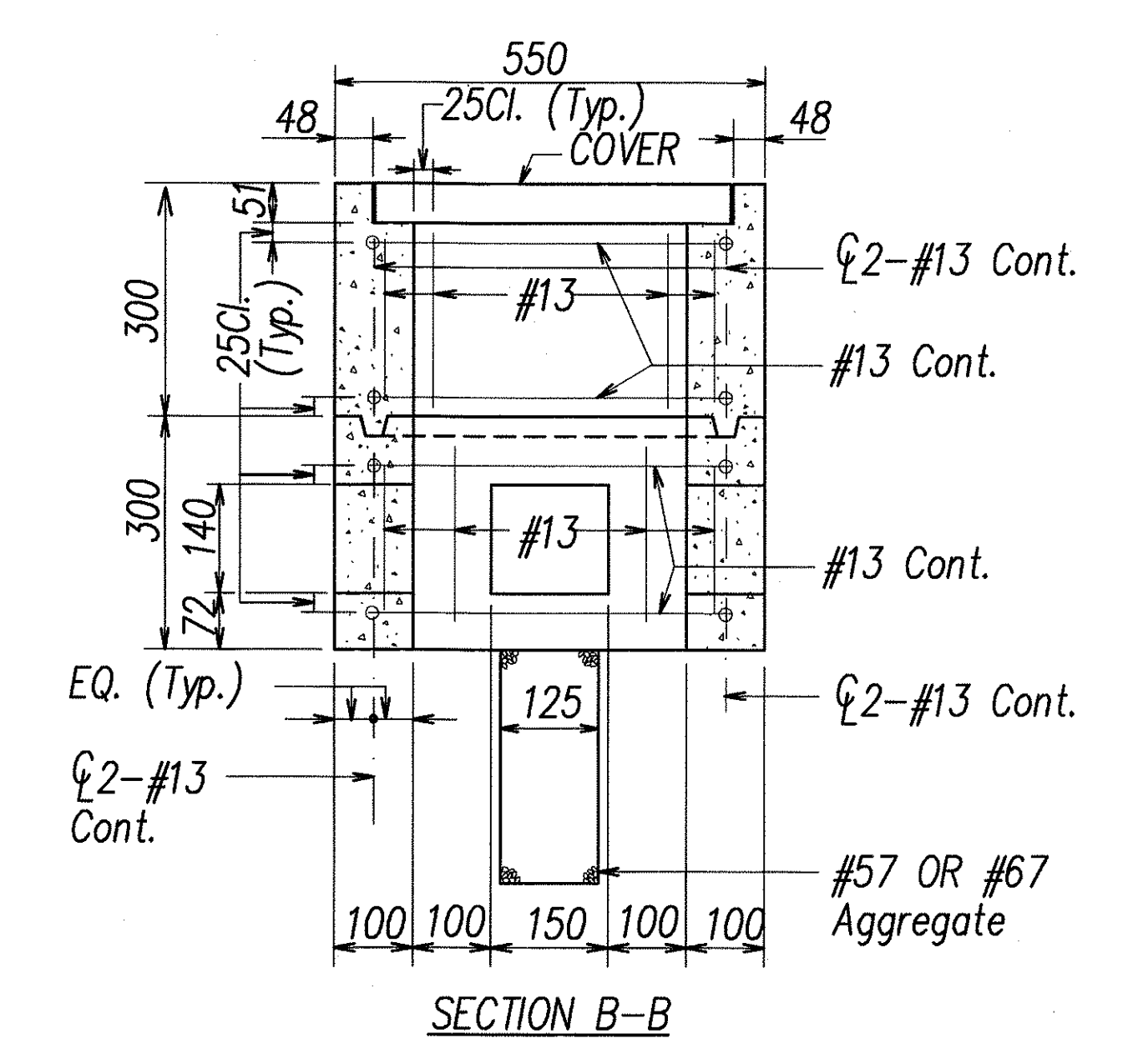
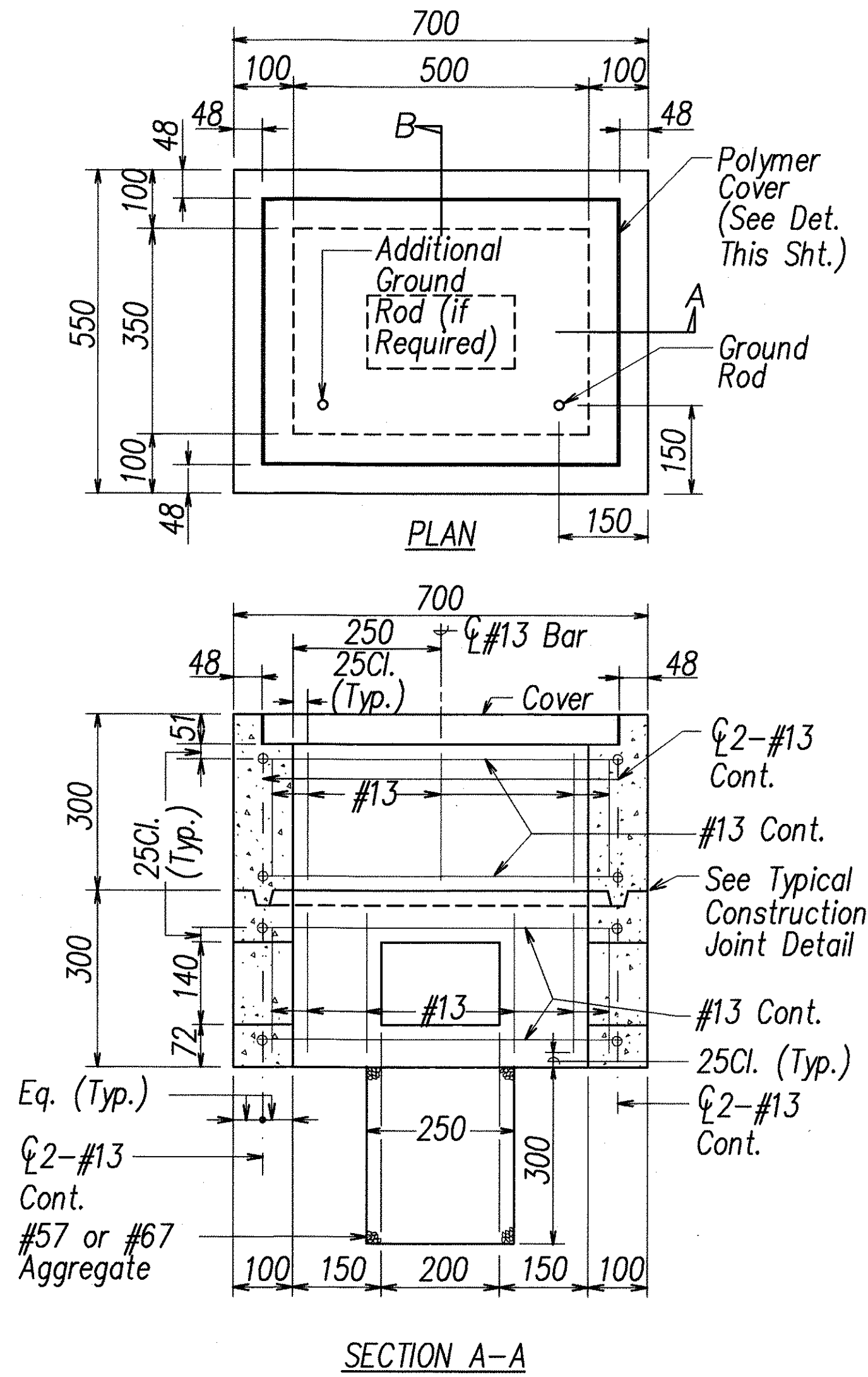
**TYPICAL BACKFILL
SECTION DETAILS**

FARRINGTON HIGHWAY LANDSCAPING
Kamehameha Highway to Fort Weaver Road
Project No. 7101A-01-98

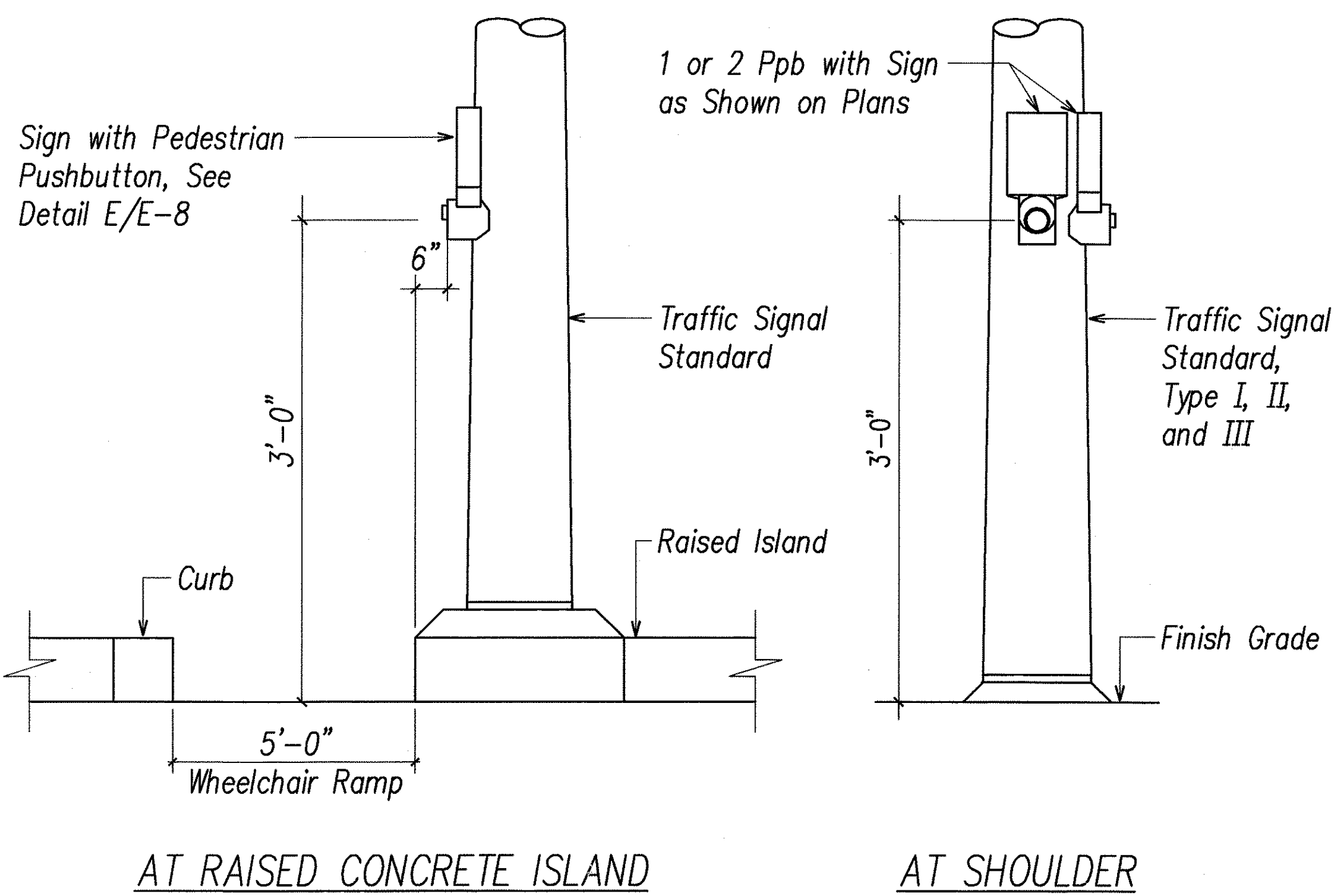
Scale: AS NOTED Date: April 2002

SHEET No. E-6 OF 80 SHEETS

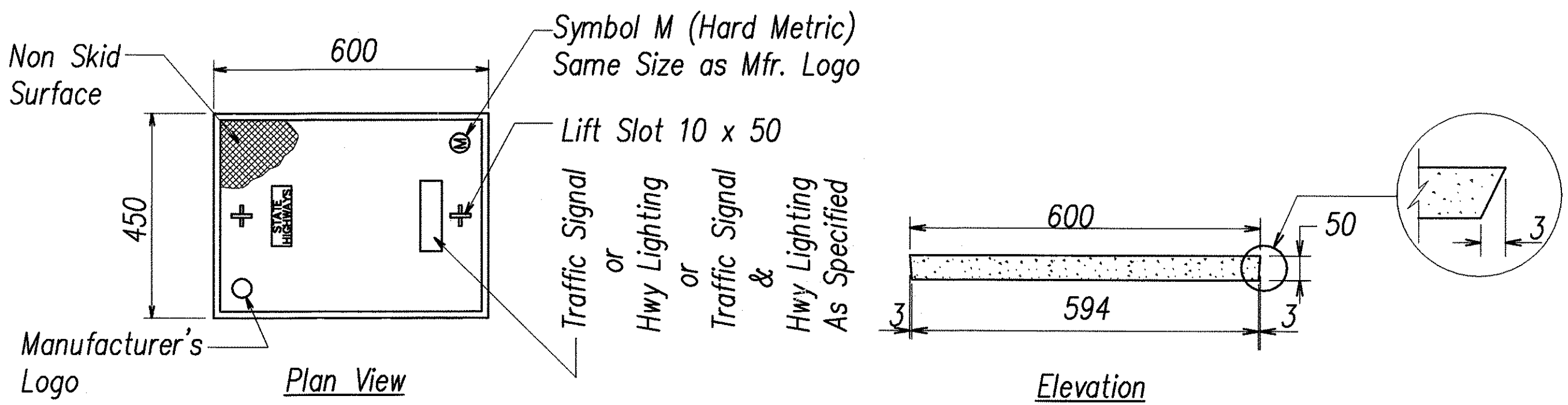
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-98	2002	56	80



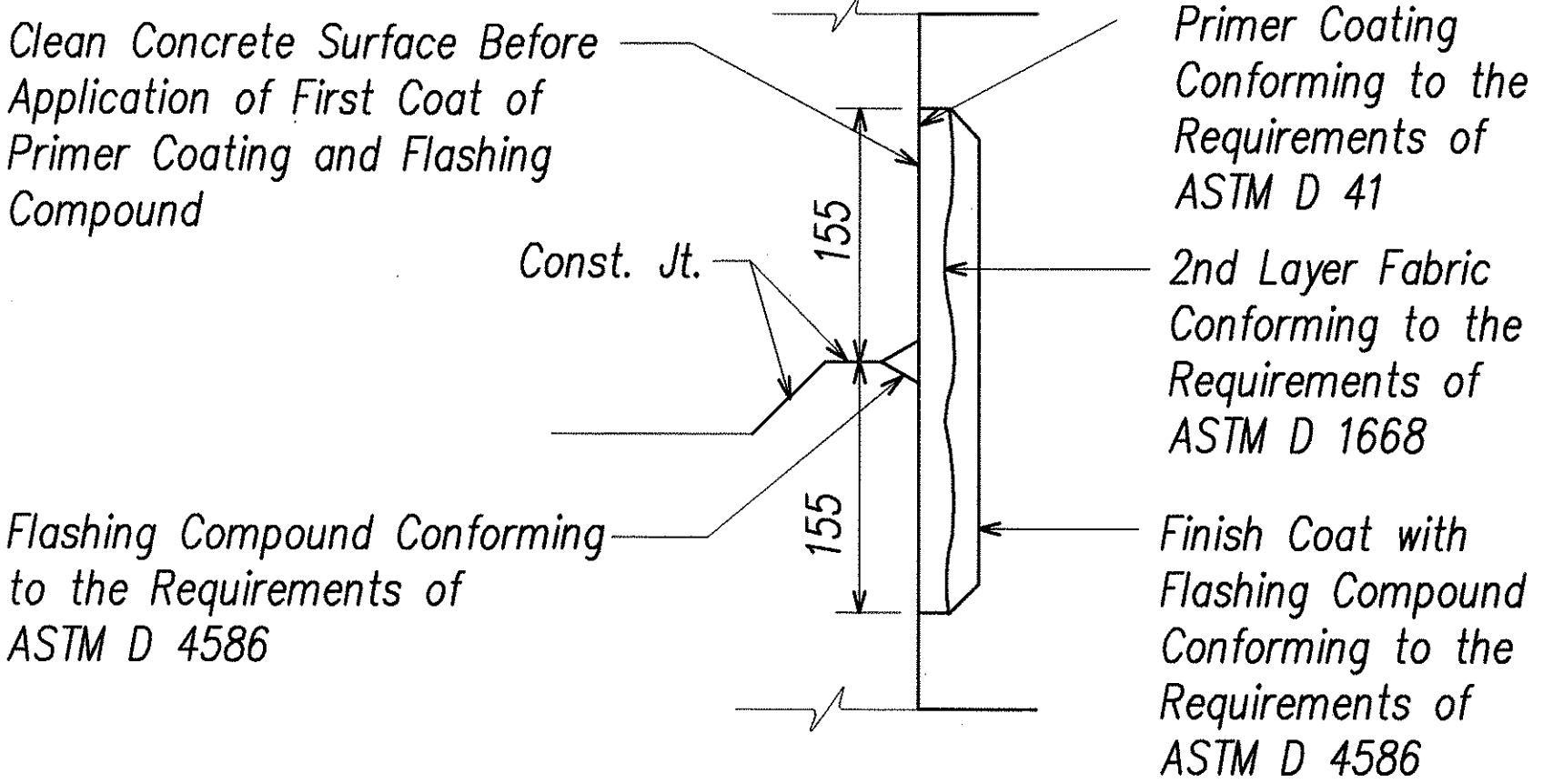
A TYPE "A" PULLBOX (OLD TYPE "B")
E-7 E-7 NOT TO SCALE



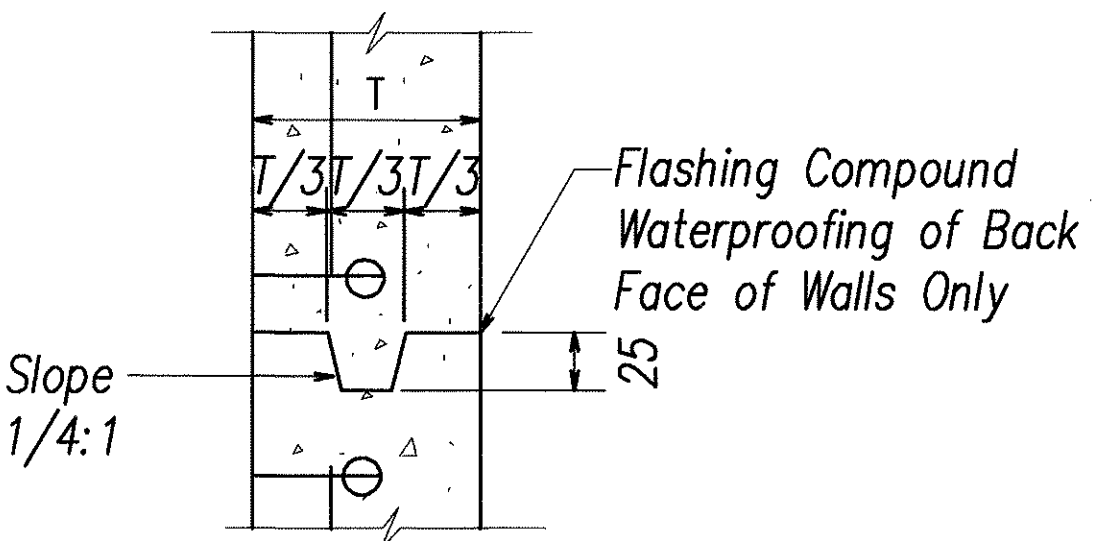
B PEDESTRIAN PUSHBUTTON DETAILS
E-7 E-7 NOT TO SCALE



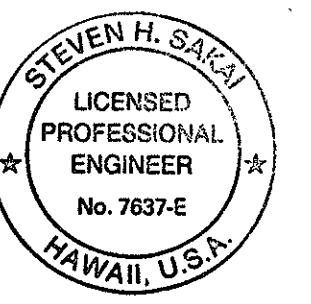
C POLYMER CONCRETE COVER
E-7 E-7 NOT TO SCALE



D TYPICAL FLASHING COMPOUND WATERPROOFING DETAILS
E-7 E-7 NOT TO SCALE



E TYPICAL CONSTRUCTION JOINT DETAIL
E-7 E-7 NOT TO SCALE



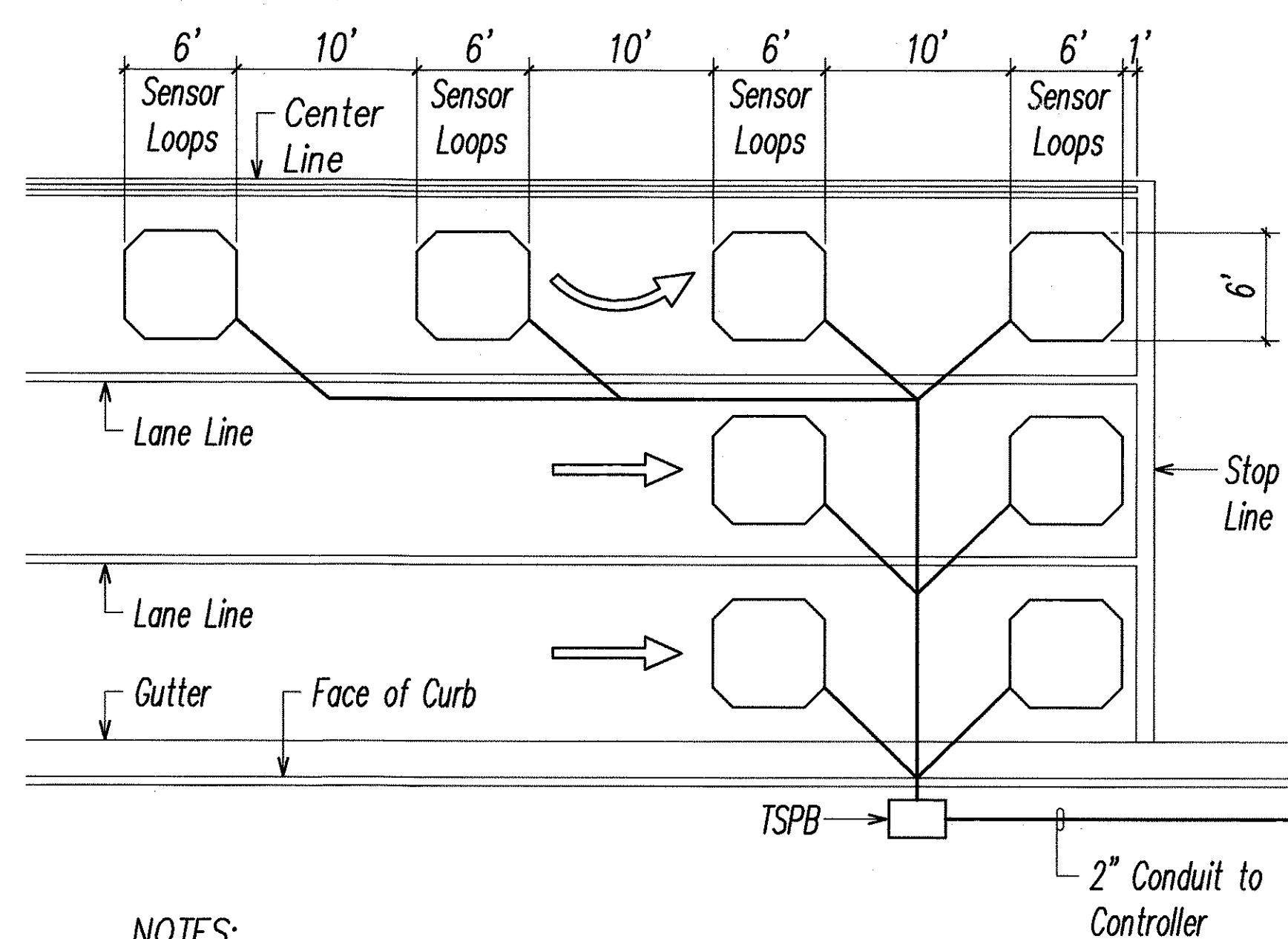
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PULLBOX AND COVER
DETAILS I
FARRINGTON HIGHWAY LANDSCAPING
Kamehameha Highway to Fort Weaver Road
Project No. 7101A-01-98
Scale: AS NOTED Date: April 2002
SHEET No. E-7 OF 80 SHEETS

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

LAST REV. 09/23/02 © 10/26/04 BY: E-7 E-7 NOT TO SCALE

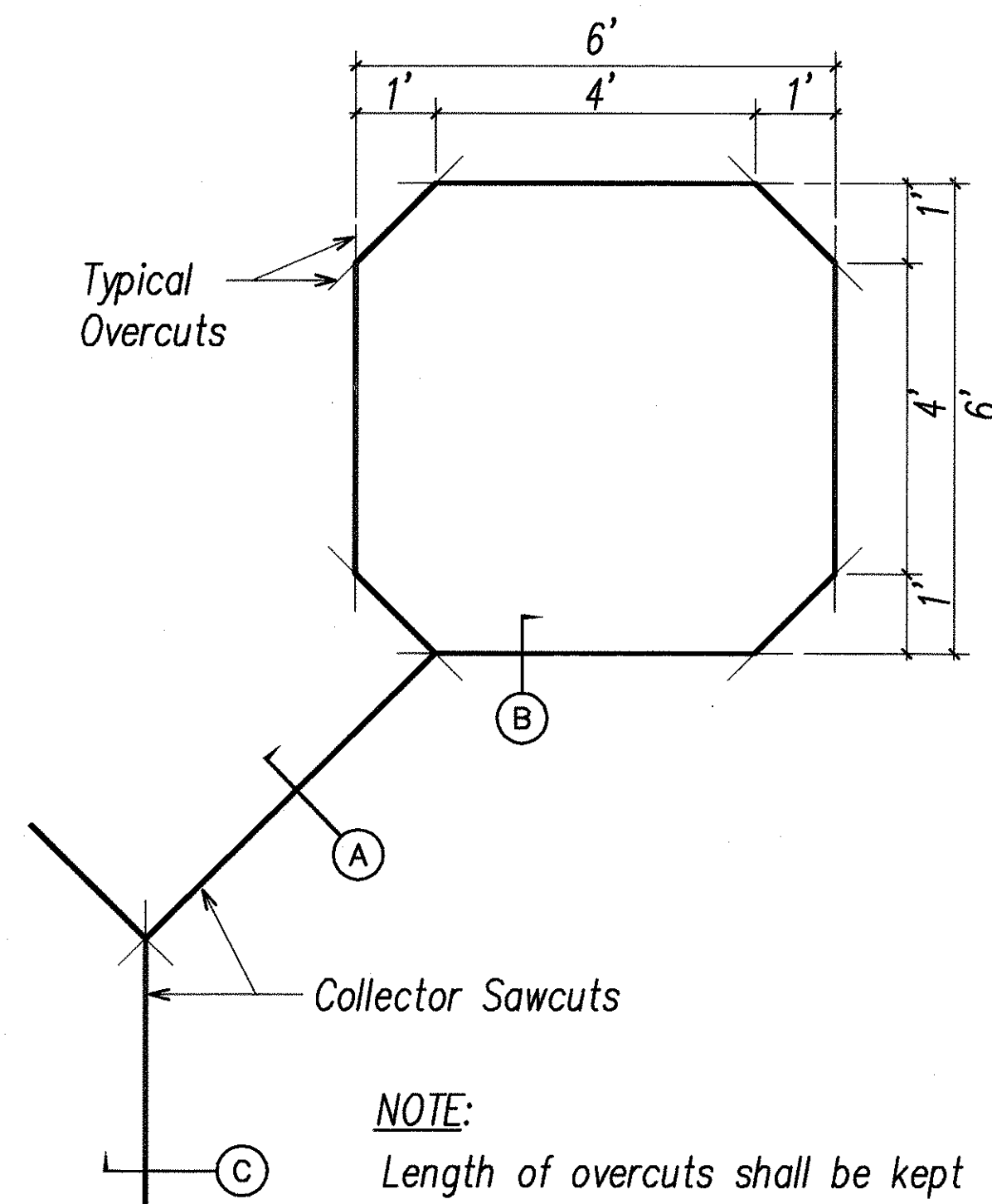
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-98	2002	57	80



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.

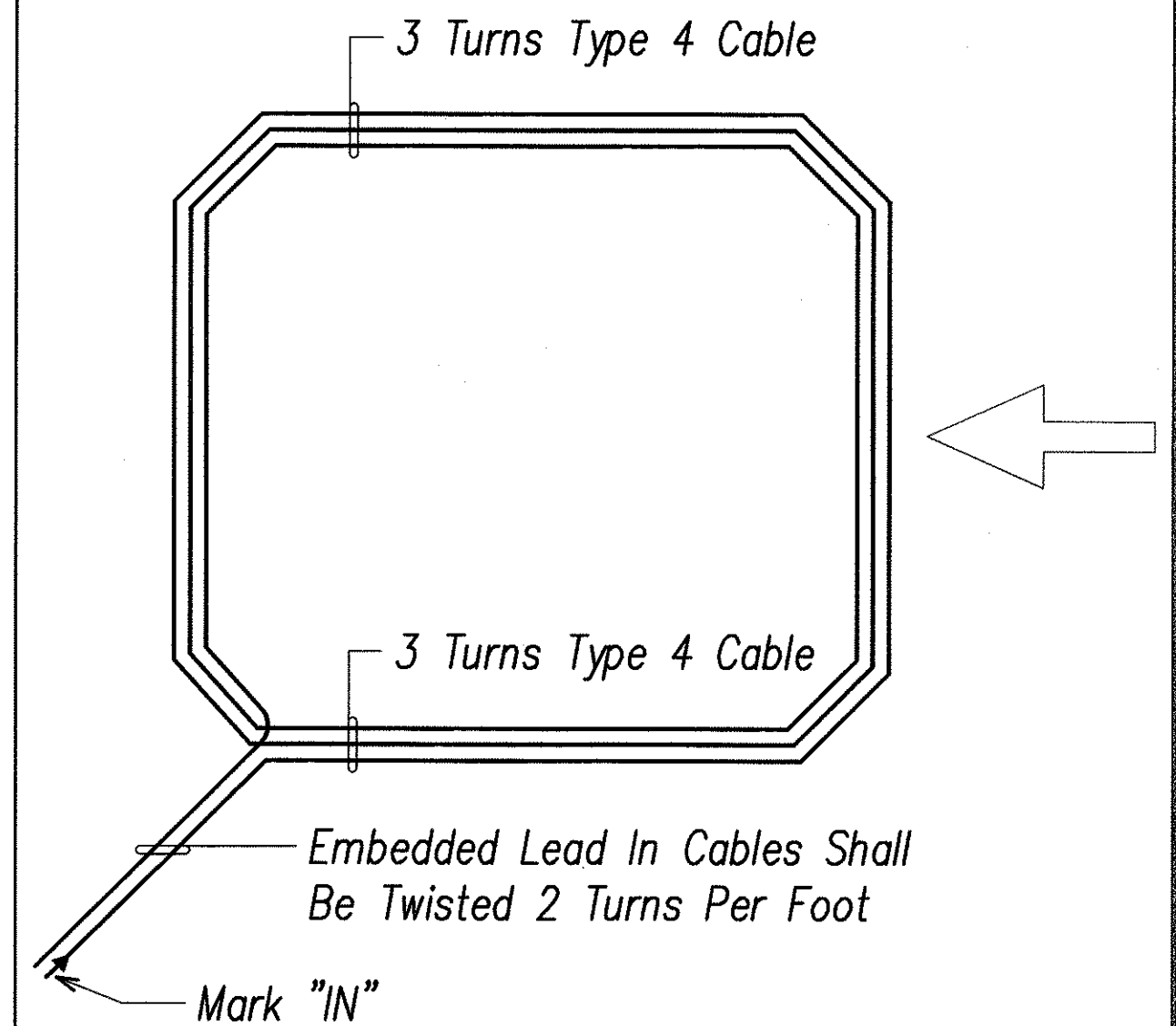
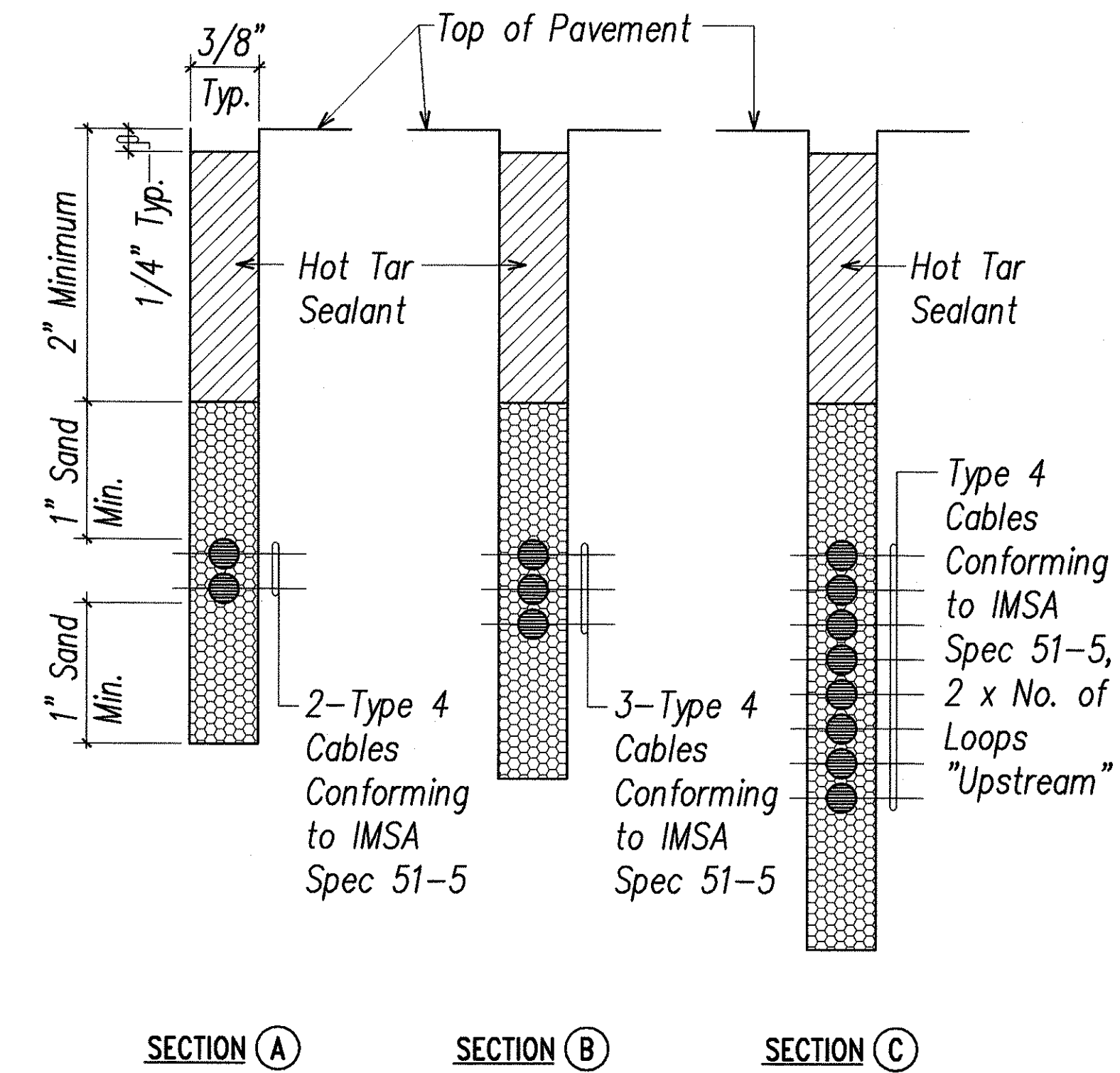
A TYPICAL SENSOR LOOP LAYOUT
E-8E-8 NOT TO SCALE



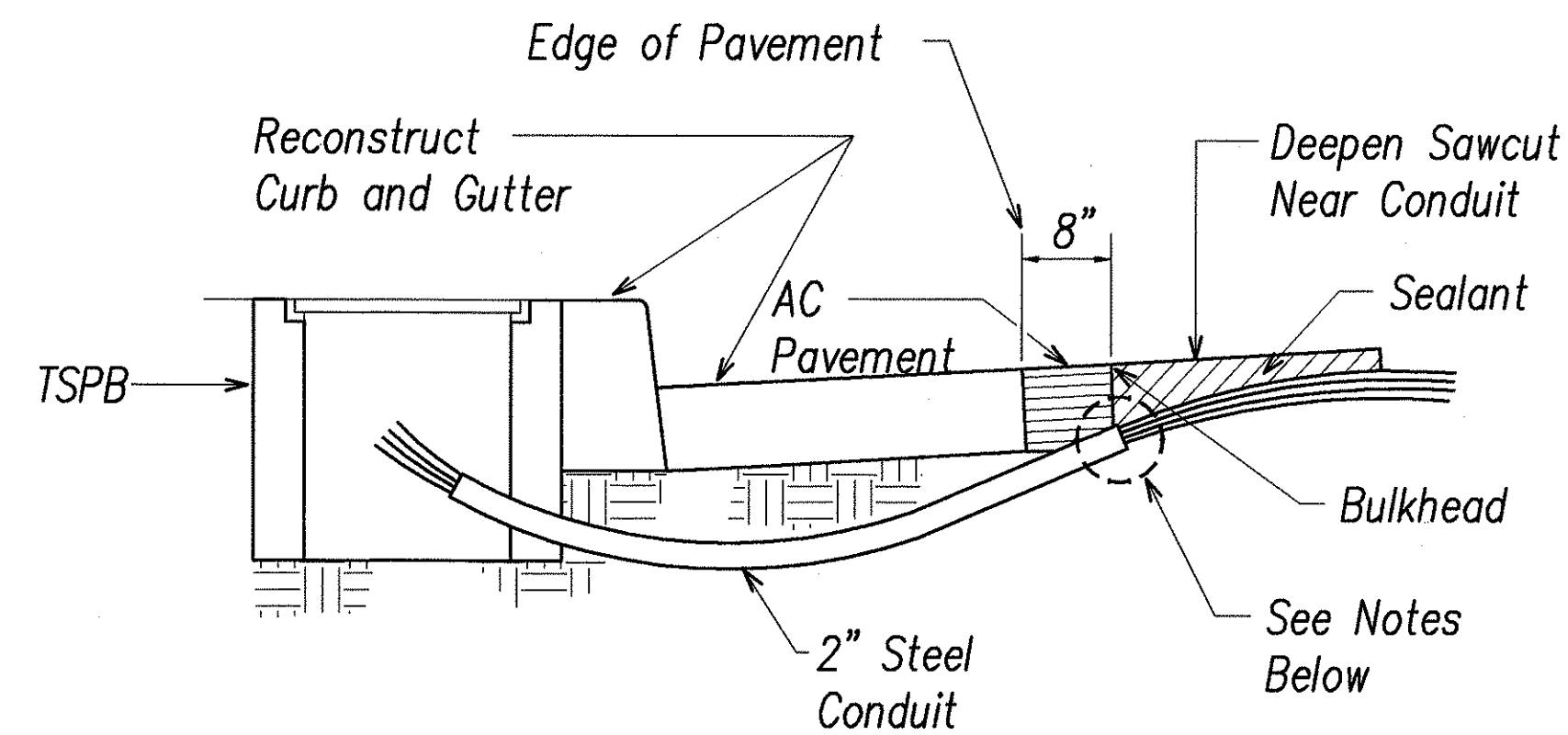
NOTE:

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

B TYPICAL SENSOR LOOP SAWCUT DETAIL
E-8E-8 NOT TO SCALE



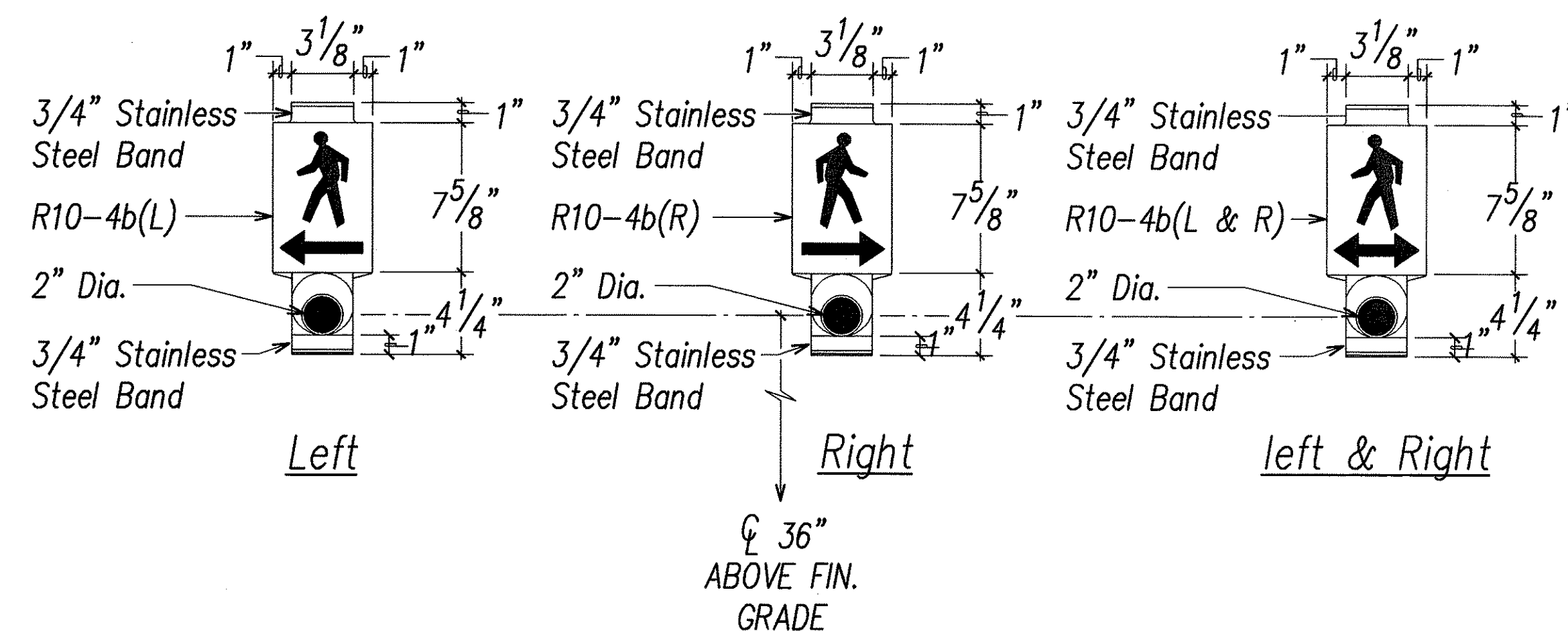
C TYPICAL SENSOR LOOP WIRING DIAGRAM
E-8E-8 NOT TO SCALE



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.

D DETAIL OF SENSOR LOOP INSTALLATION AT EDGE OF ROADWAY
E-8E-8 NOT TO SCALE



Notes:

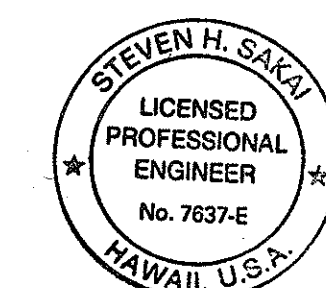
1. On Plan Sheet, Use Applicable Detail.
2. Pedestrian Pushbutton Shall Be ADAAG Compliant.

The Color Scheme Shall Be:
White-man, Arrow And Push Button
Black-background

E PEDESTRIAN PUSHBUTTON
E-1,3,4,5 E-8E-8 NOT TO SCALE

SURVEY LOCATED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

LAST SAVE: 06/23/02 @ 10:38:38 AM; TE PLOT SC 1'-0"=1'



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Steven H. Sakai

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PED PUSHBUTTON AND LOOP DETECTOR DETAILS

FARRINGTON HIGHWAY LANDSCAPING
Kamehameha Highway to Fort Weaver Road
Project No. 7101A-01-98

Scale: AS NOTED Date: April 2002

SHEET No. E-8 OF 80 SHEETS