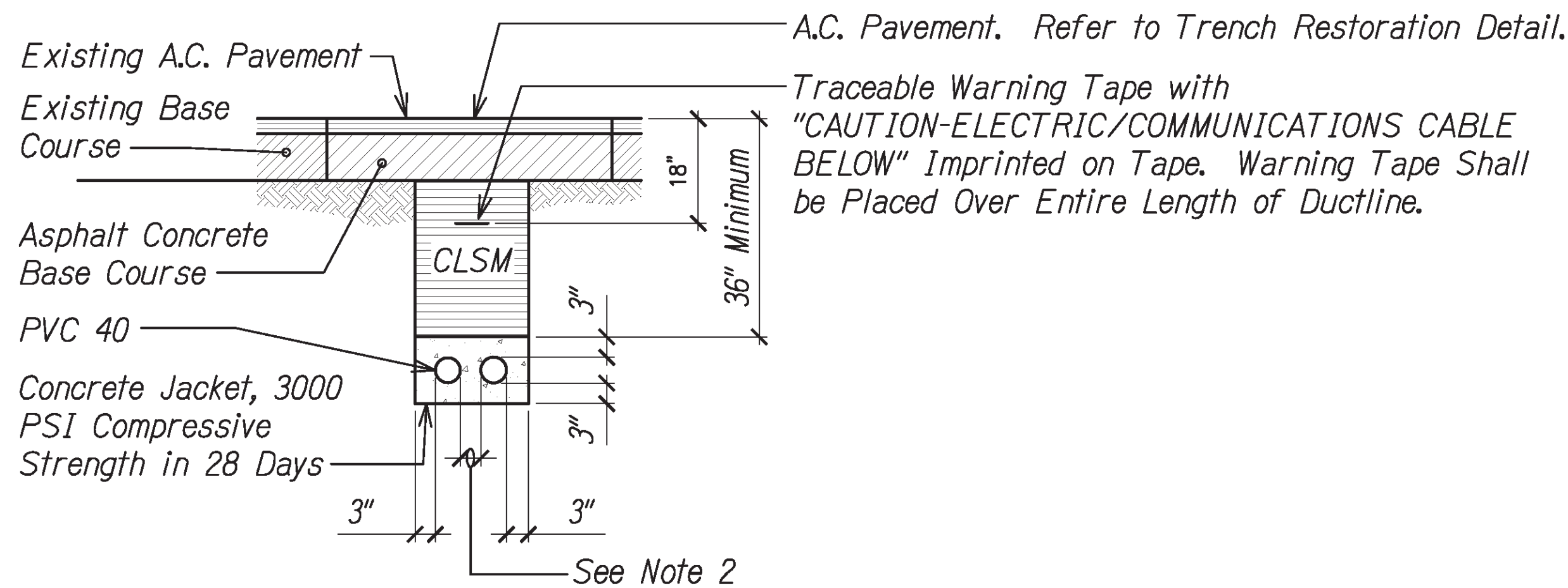


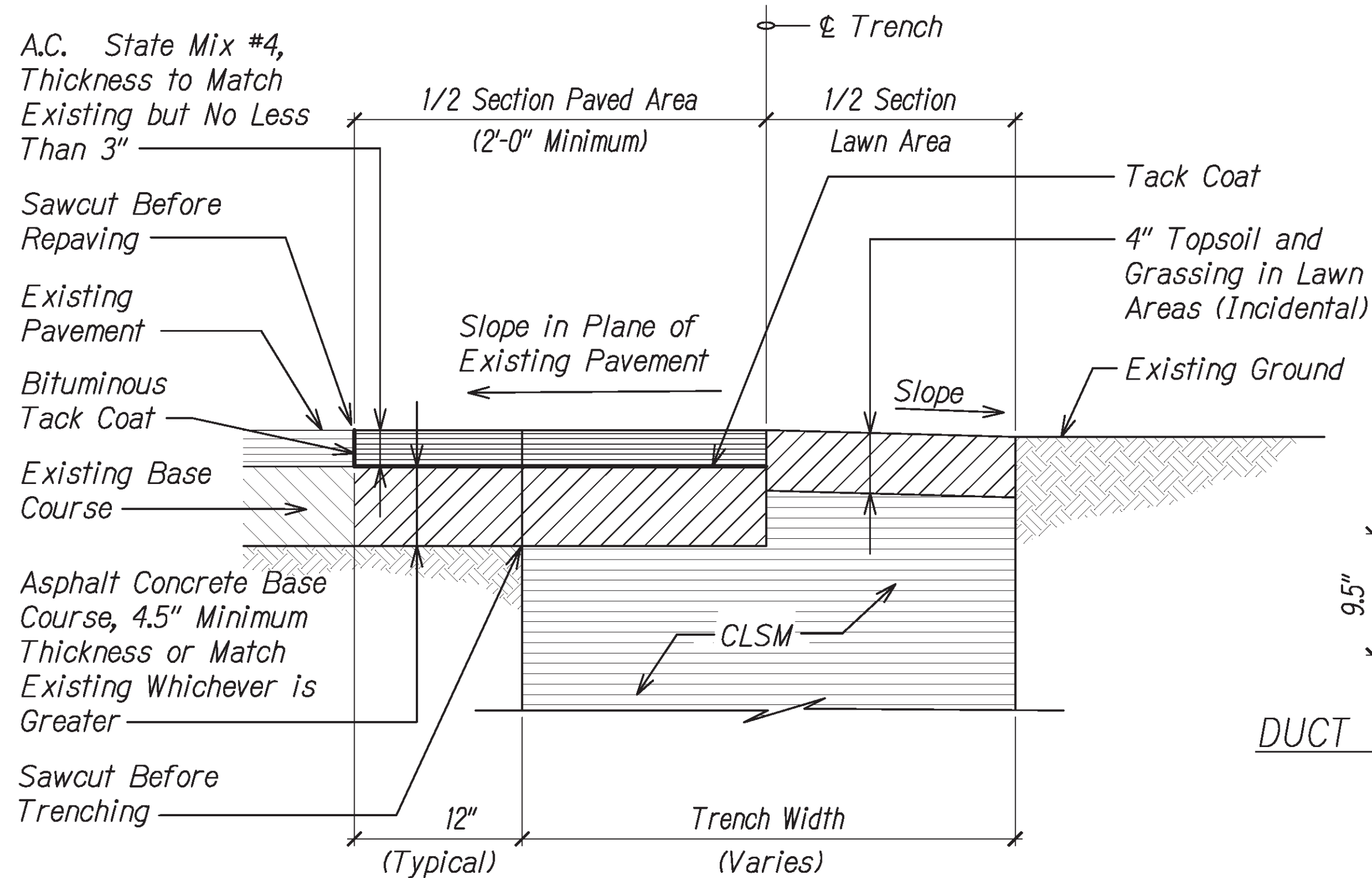
DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUAI	HAW.	50B-01-14	2020	39	44



1  
E-6  
TYPICAL ROADWAY DUCT SECTION (CONCRETE ENCASED)  
NTS

NOTES:

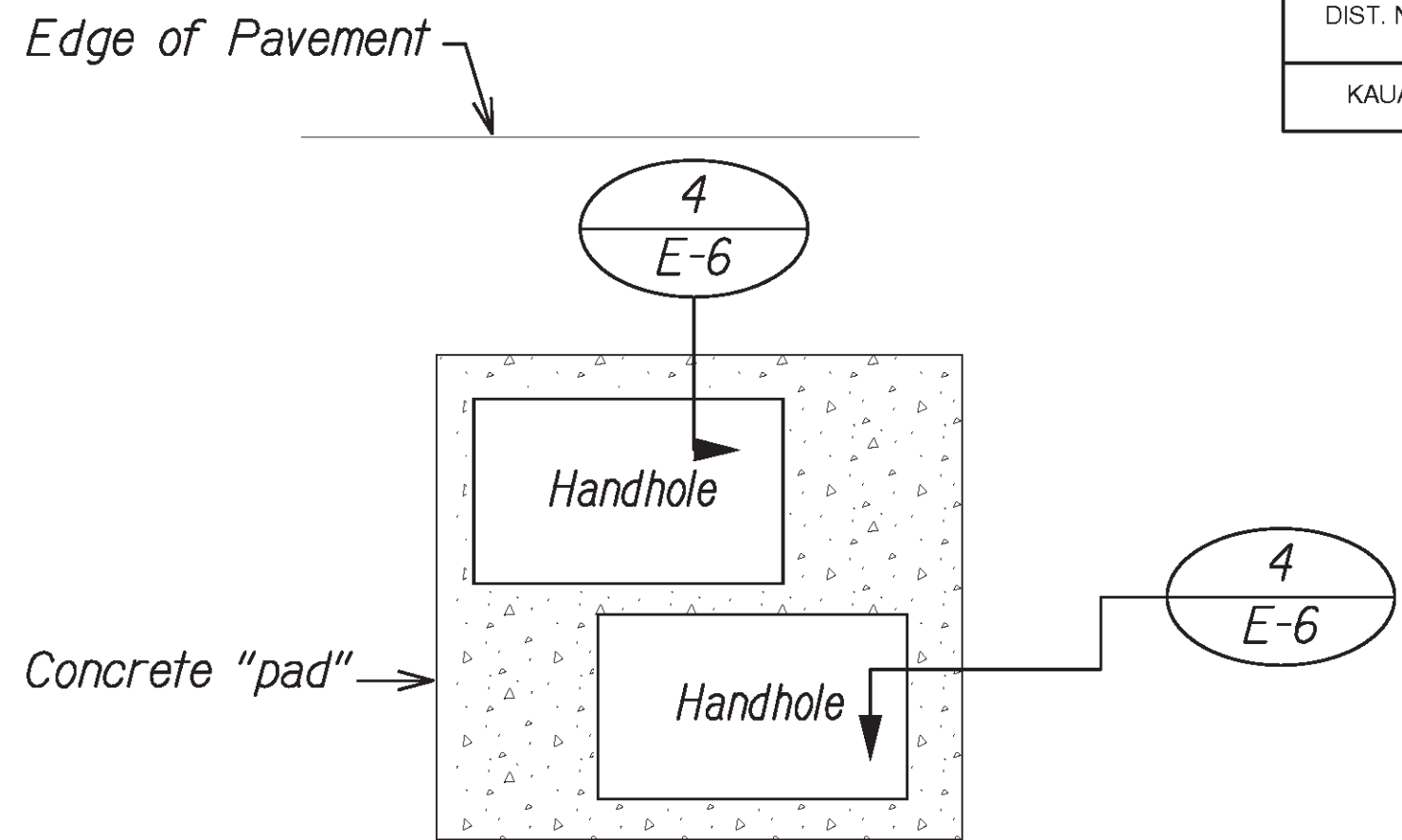
- Electrical and Telephone Ducts Similar.
- Provide 2" Separation Between Ducts of Same System and 3" Between Ducts of Different Systems.
- See Duct Section Details for Conduit Arrangement.
- Warning Tapes, Duct Spacers and Miscellaneous Items are Incidental Costs.



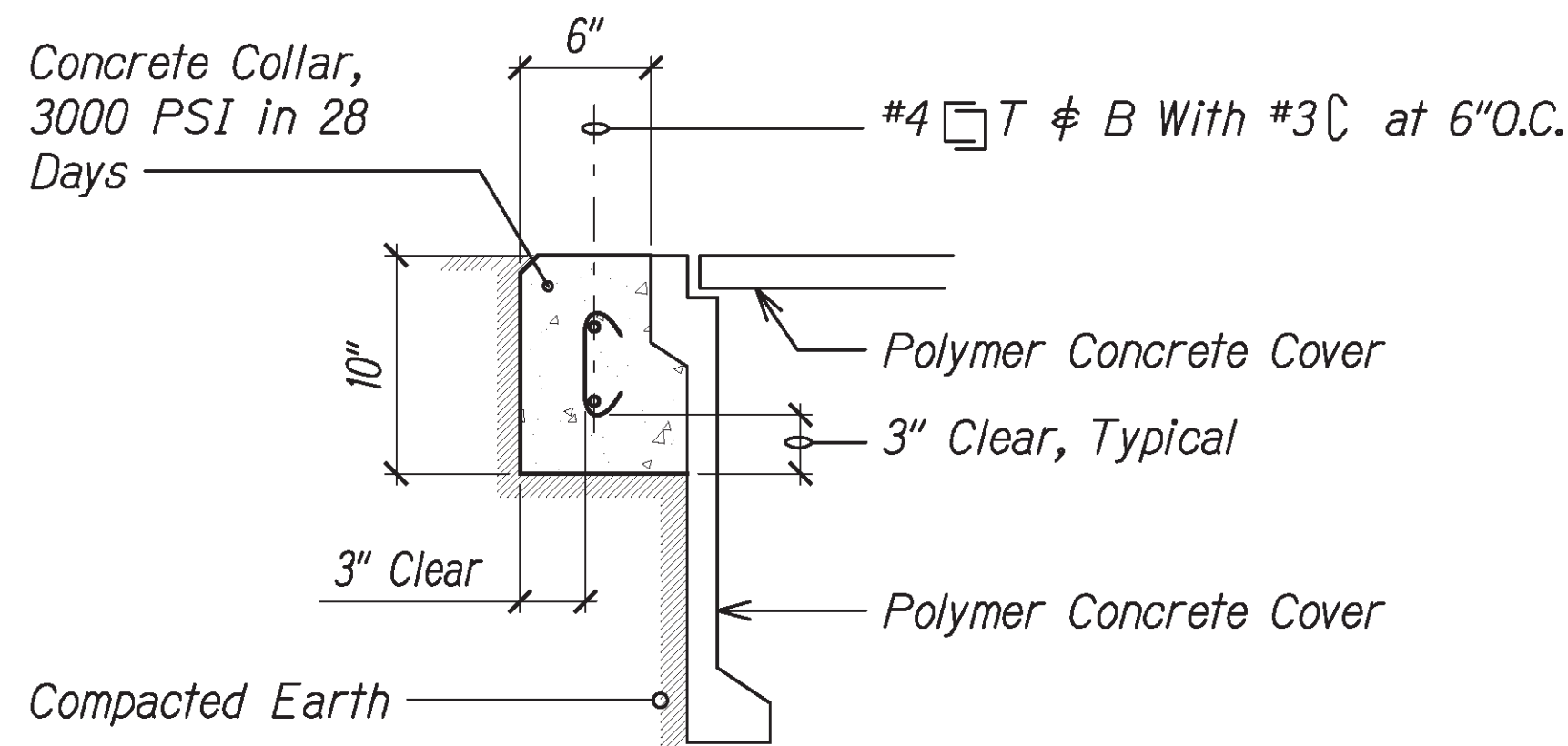
3  
E-6  
TRENCH RESTORATION DETAIL  
NTS

NOTES:

- Any Part of the Trench Excavated Below the Established Grade or Beyond the Maximum Permitted Width Shall be Refilled and Compacted with Select Material, or Paved with AC by the Contractor at His Expense.



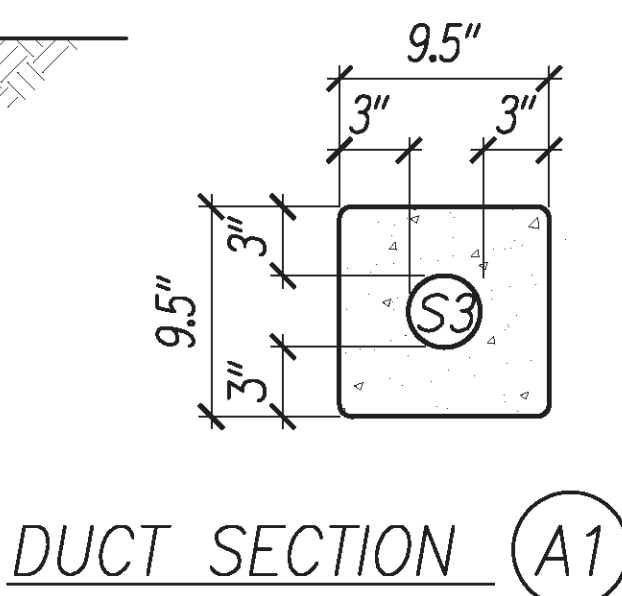
2  
E-6  
TYPICAL HANDHOLE GROUP PLAN  
NTS



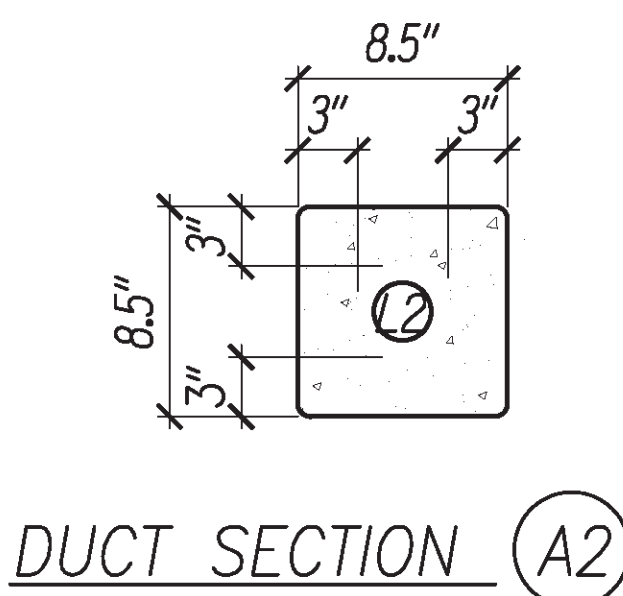
4  
E-6  
CONCRETE COLLAR RING  
NTS

NOTES:

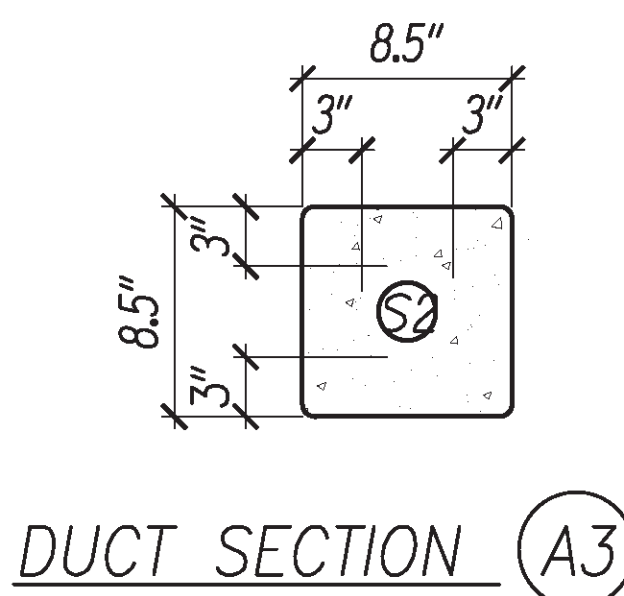
- Provide Concrete Collar Around All New Handholes.



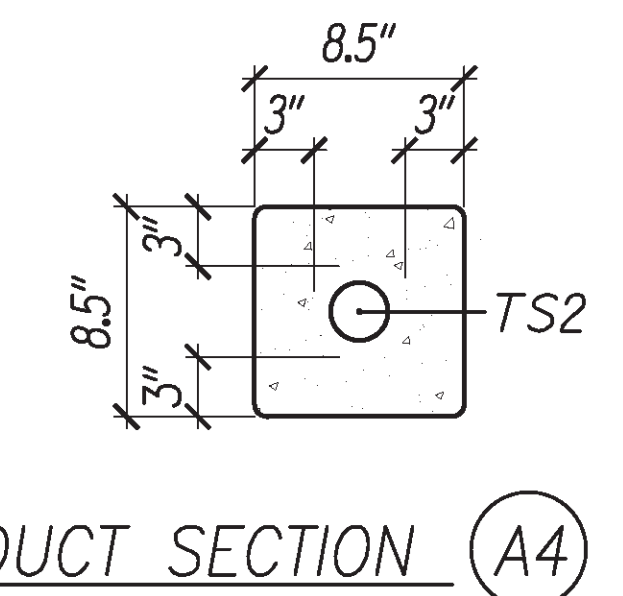
DUCT SECTION A1



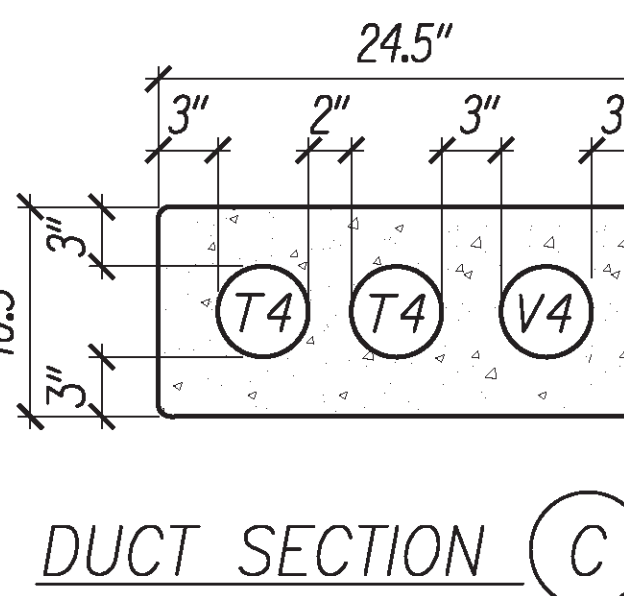
DUCT SECTION A2



DUCT SECTION A3

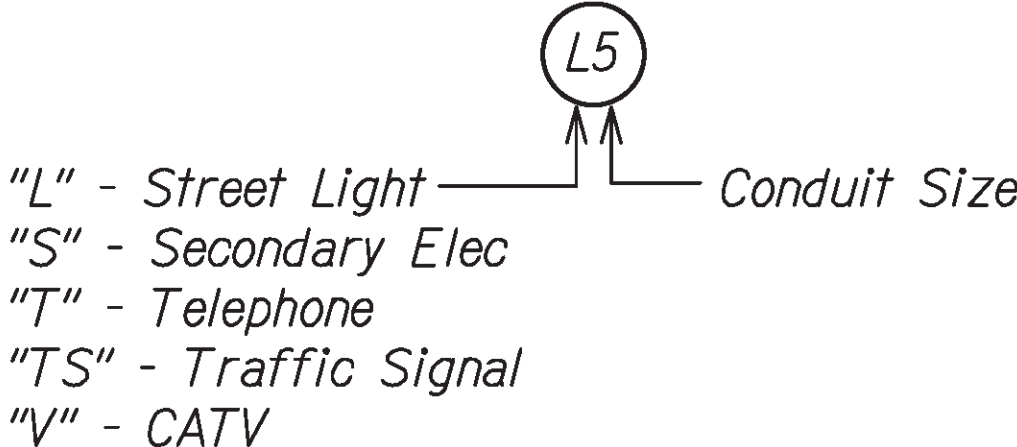


DUCT SECTION A4



DUCT SECTION C

DUCT SECTION LEGEND



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**ELECTRICAL DETAILS - 1**

*Kaunualii Highway Intersection Improvements at Waimea Canyon Drive and Menehune Road/Halepule Road*  
Project No. 50B-01-14

Scale: As Shown Date: May 2020

SHEET No. E-6 OF 11 SHEETS

DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUAI	HAW.	50B-01-14	2020	40	44

15041

NOTES:

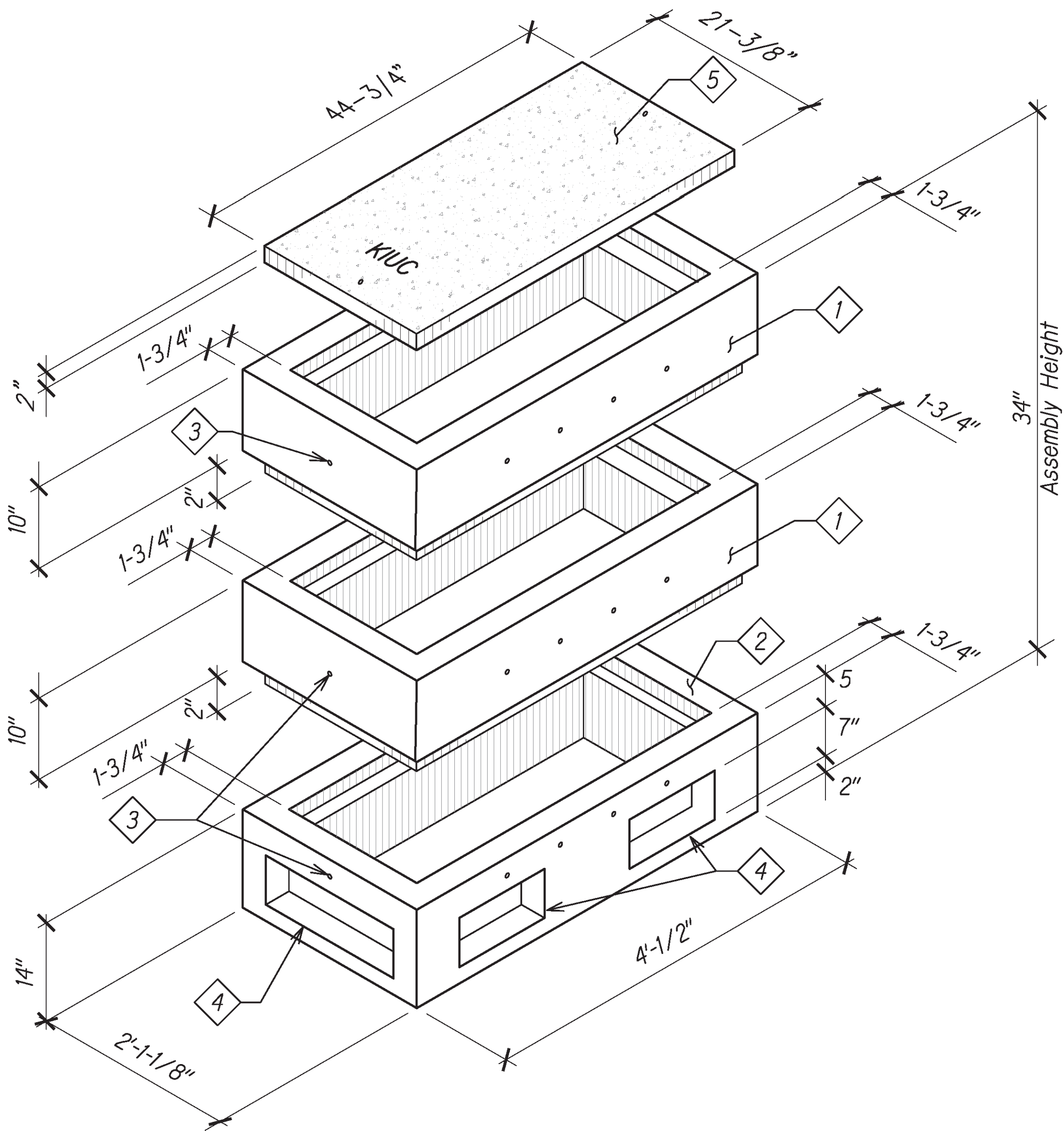
- Handhole Designed in Accordance with KIUC Standards Using 4,000 PSI Compressive Strength Concrete and 60,000 PSI Yield Strength ASTM A-615 Steel Reinforcement per Calcs.
- All Concrete and Reinforced Concrete Work Shall be Done in Accordance with Applicable Provisions of the American Concrete Institute's Building Code Requirements for Reinforced Concrete (ACI 318-87).
- Handhole to be Placed on a 6" Base on Firm/Compacted Backfill or on Undisturbed Soil.
- Product to be Stenciled:  
Walker Industries  
Date of Pour  
Product Mark No.
- Provide Endbells for All Conduit Entries.

ORDERING INFORMATION:

2' x 4' x 34" KIUC for Assembly as Shown.  
Approved for KIUC Specs.  
Total Weight of Assembly Shown is 1230#.

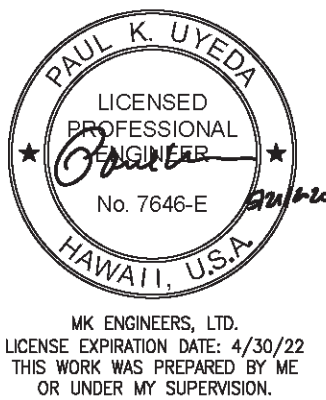
THE FOLLOWING MATERIALS TO BE SHIPPED WITH EACH HANDHOLE:

- 1 Top Section. Wt. 400#.
- 2 Bottom Section with Knockouts. Wt. 430#.
- 3 1/2" Dia. x 4" Lifting Hole (Contr. to Grout Solid After Placement of Section).
- 4 Conduit Opening Knockout.
- 5 Concrete Cover, Refer to HECO Dwg. No. 11312.



1 HANDHOLE TYPE 101  
E-7 NTS

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



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**ELECTRICAL DETAILS - 2**

*Kaunualii Highway Intersection  
Improvements at Waimea Canyon Drive  
and Menehune Road/Halepule Road  
Project No. 50B-01-14*

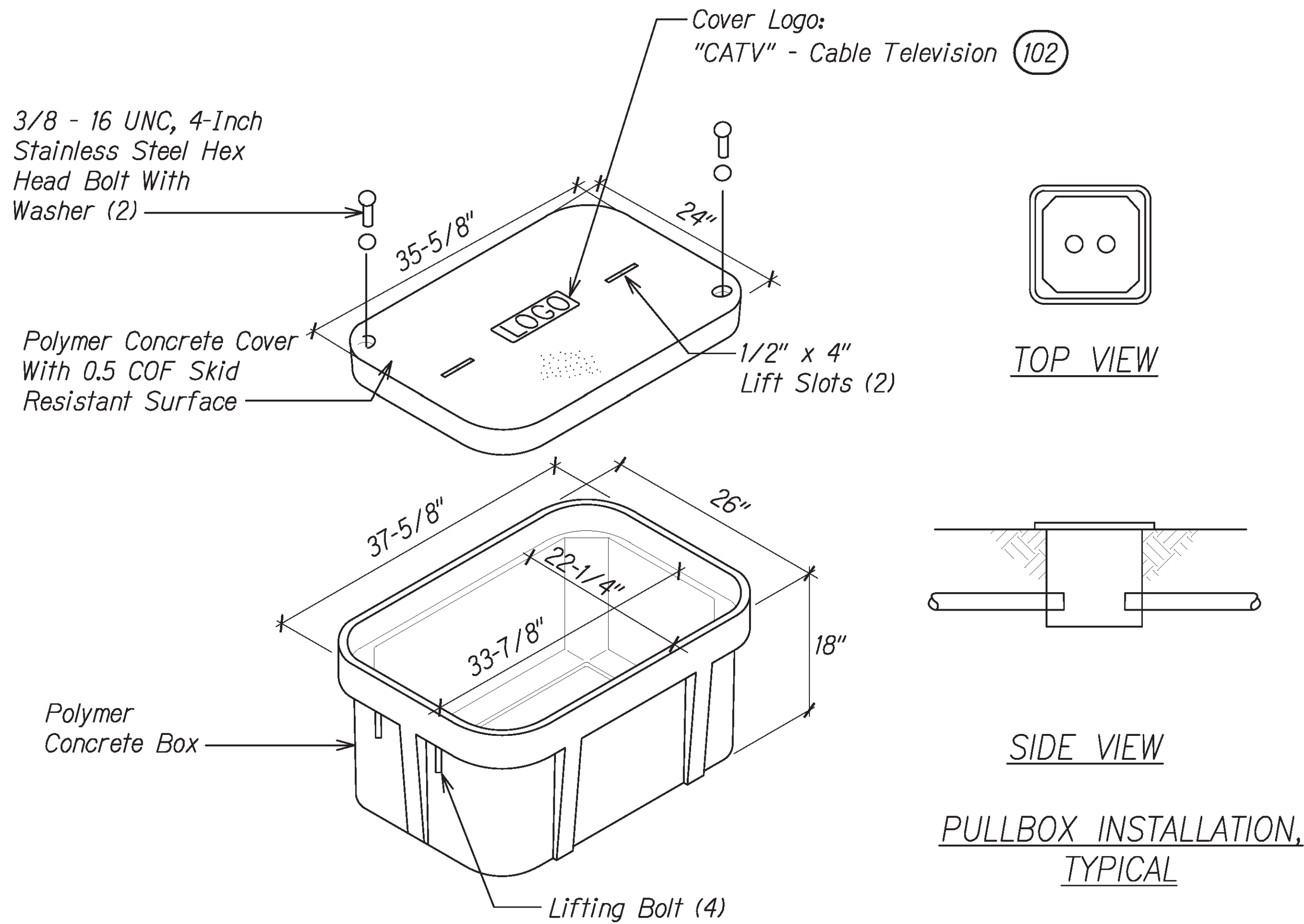
Scale: As Shown Date: May 2020

SHEET No. E-7 OF 11 SHEETS



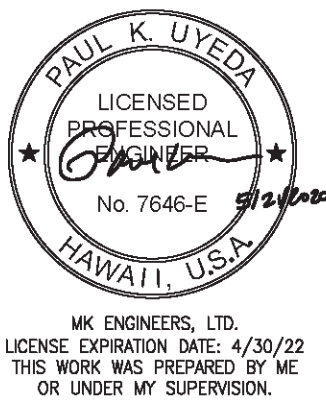
DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUAI	HAW.	50B-01-14	2020	41	44

15041



- NOTES:**
- All Conduits Shall Enter Horizontally at the Bottom of the Pullboxes, Provide Endbells.
  - All Dimensions and Lines are Approximate.
  - Field Adjust Pullbox Locations and Conduit Clearances as Required.
  - Pullbox Covers Shall be Labeled "CATV".
  - Install 5/8" x 8'-0" Copper Clad Ground Rods in Each Pullbox.
  - Pullboxes will be Quazite Type, Tier 22 Rating, Part #PG 2436BA18 or Equal.
  - Pullbox Covers will be Quazite Type, Tier 22 Rating, Part #PG2436BAHH0017P or Equal.
  - Pullbox Specifications:
    - Heavy Duty With Open Bottom, Polymer Concrete
    - Design: 22,500 Lbs.
    - Test Loading: 33,750 Lbs.
    - UL Listed, ANSI/SCTE 77, ANSI Tier 22
  - Pullbox Cover Specifications:
    - Heavy Duty With 2 Hex Head Bolts, Polymer Concrete
    - Design: 22,500 Lbs.
    - Test Loading: 33,750 Lbs.
    - UL Listed, ANSI/SCTE 77, ANSI Tier 22

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



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

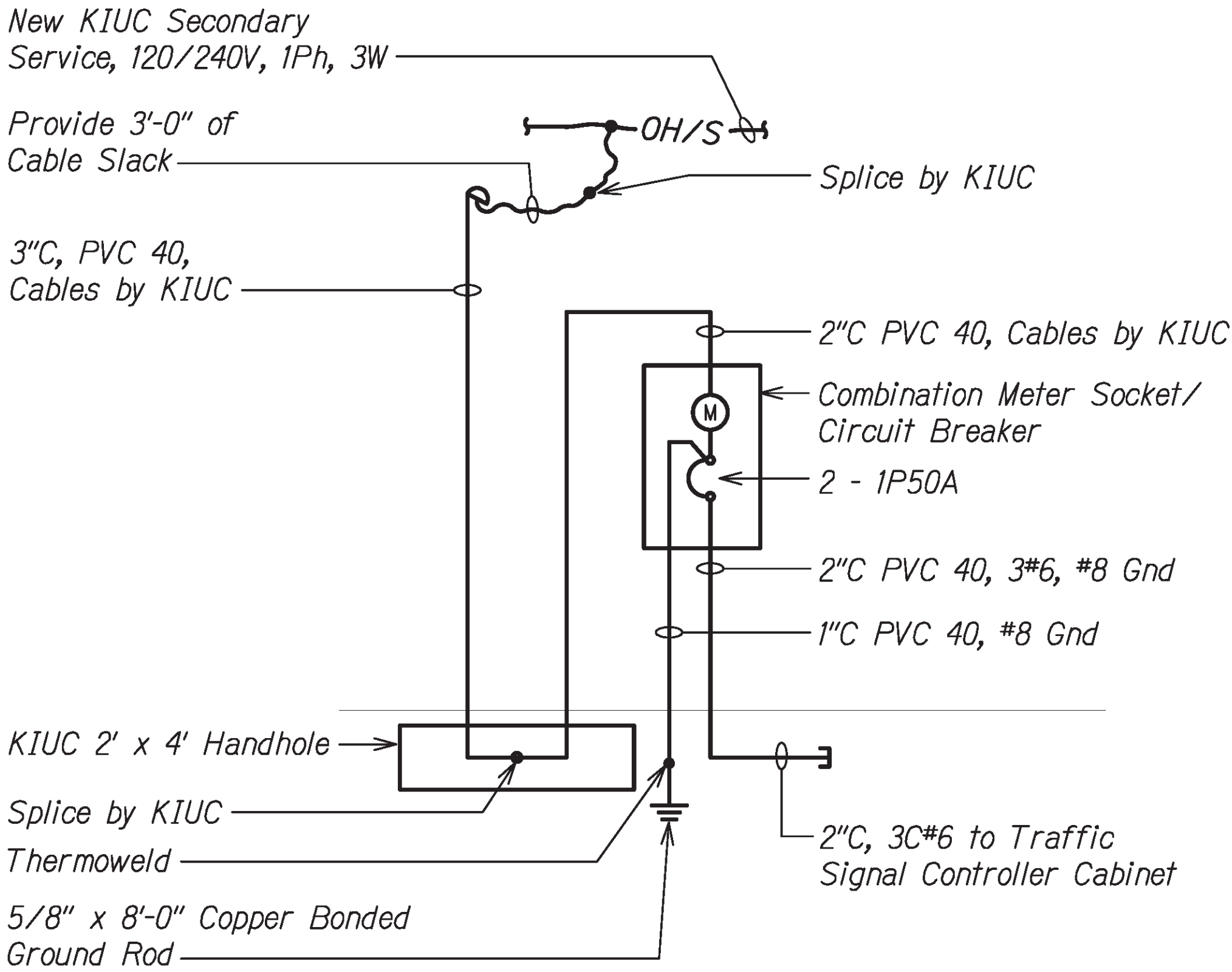
**ELECTRICAL DETAILS - 3**

*Kaunualii Highway Intersection  
Improvements at Waimea Canyon Drive  
and Menehune Road/Halepule Road  
Project No. 50B-01-14*

Scale: As Shown Date: May 2020

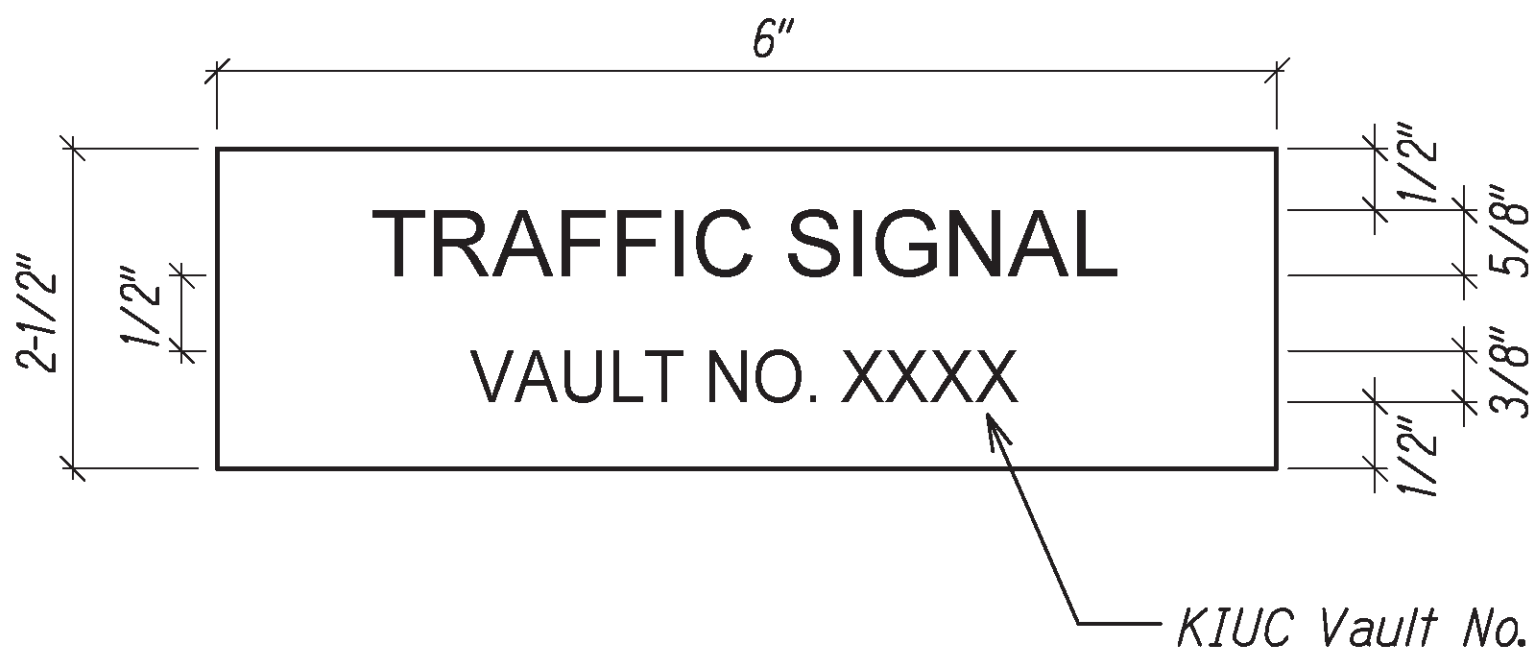
SHEET No. E-8 OF 11 SHEETS

DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUAI	HAW.	50B-01-14	2020	42	44



1 ONE-LINE DIAGRAM (TRAFFIC SIGNAL SYSTEM)

E-9 NTS

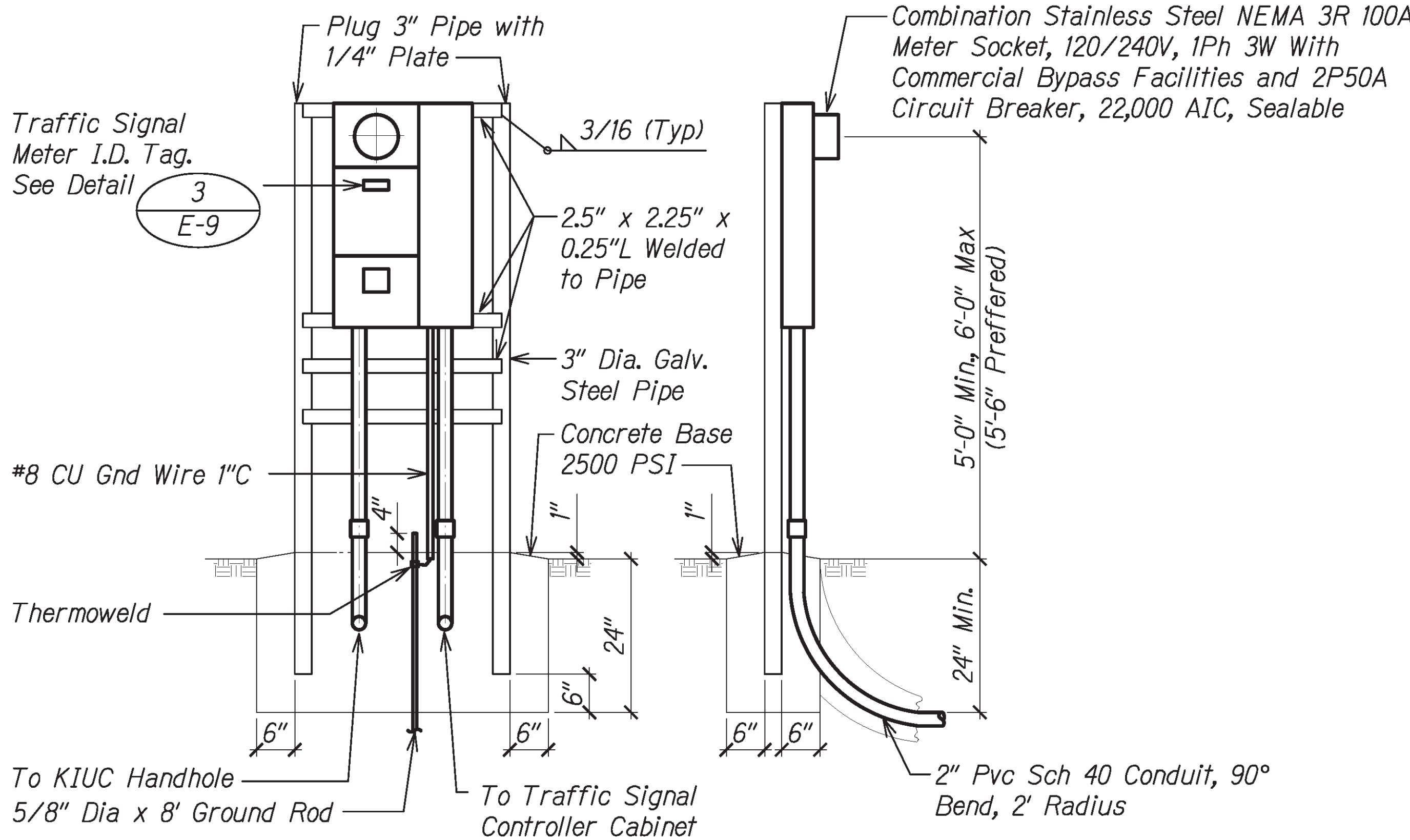


3 METER I.D. TAG DETAIL

E-9 NTS

NOTES:

- Use 3-Ply Laminated Flexible Plastic, Black-White-Black Tickness: Black Cap Sheet - 0.010", White Base Sheet - 0.052", Black Base Sheet - 0.010".
- Attach to Meter Box Using Scotch 3M Brand Very High Bond (VHB) Double Coated Acrylic Foam Tape or Equivalent.
- Letters/Numbers Shall be 1/16" Stroke, (White in Color).
- Leters/Numbers Shall be Inscribed by Cutting Through "Black Cap Sheet" to Expose White Letters/Numbers.



2 METER PEDESTAL FOR TRAFFIC SIGNAL METER

E-9 NTS

NOTES:

- Pedestal Shall be New Hot Dipped Galvanized After Fabrication.
- All Fastening Bolts, Nuts, and Washers Shall be New Stainless Steel. All Hardware Shall be Brass, Bronze, or Stainless Steel.
- Service Equipment Shall be Installed in Accordance with KIUC Requirements.
- Provide a Minimum of 4 Feet of Clear and Level Workspace Clearance in Front of Metering and Service Equipment.
- Provide Plastic Meter Socket Cover and Band for All Blank Meter Sockets. Label Plastic Cover with Contractor's Name and Number so Cover can be Returned After Meter Installation.
- Provide a Permanent Phenolic Nameplate (Black with White Letters) for all Meter Sockets to Identify the Address, Unit, Space, Area or Load Served (e.g. "Parking Lot").
- The Grounding Electrode Conductor Shall Not Pass Through KIUC's Sealable Sections or Compartments.
- KIUC Service Conductors Shall be Separated by Suitable Barriers from the Customer's Load Conductors. Also, the Customer's Load Conductors Shall Not Pass Through KIUC's Sealable Sections or Compartments.



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**ELECTRICAL DETAILS - 4**

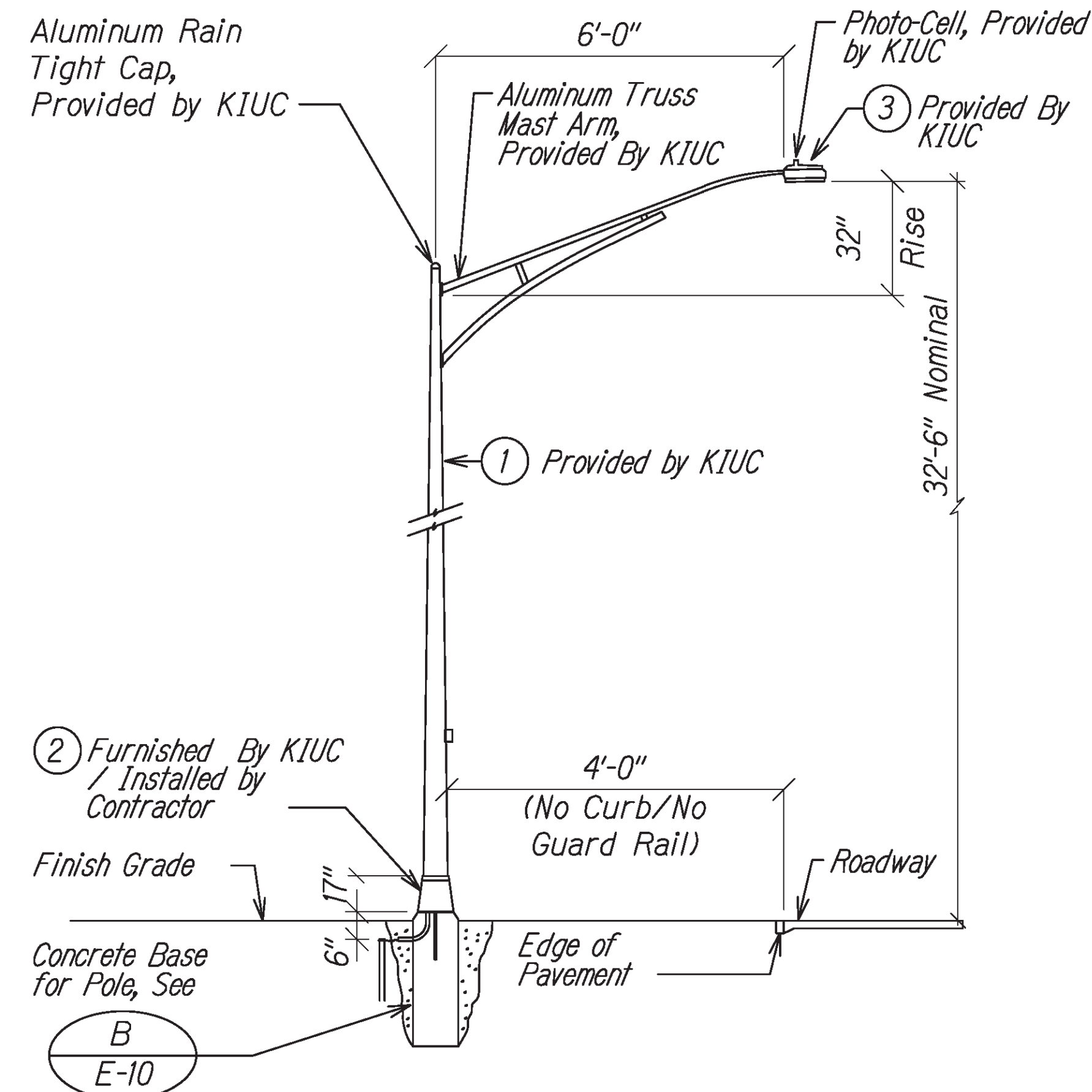
*Kaunualii Highway Intersection Improvements at Waimea Canyon Drive and Menehune Road/Halepule Road*  
Project No. 50B-01-14

Scale: As Shown Date: May 2020

SHEET No. E-9 OF 11 SHEETS

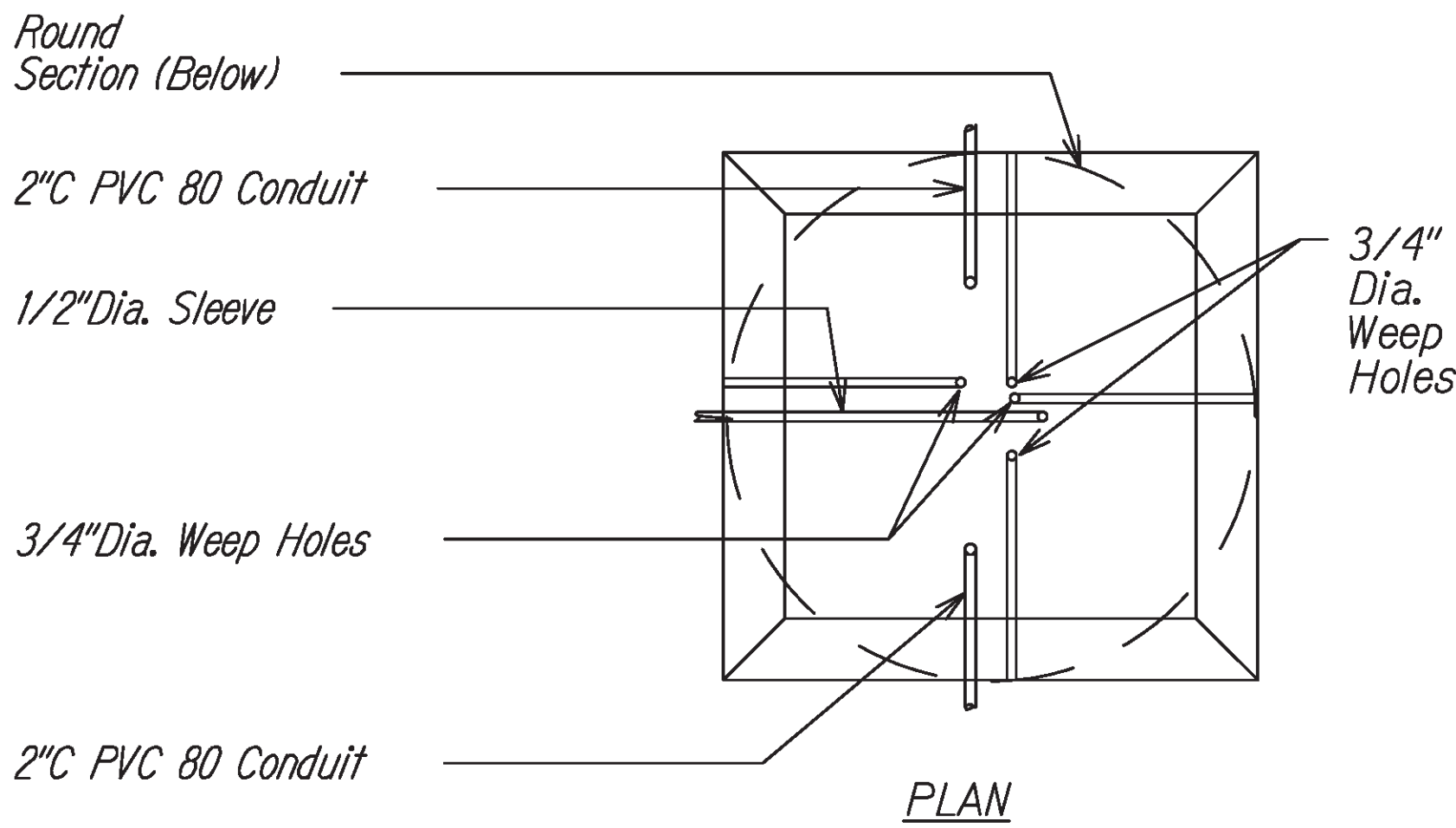
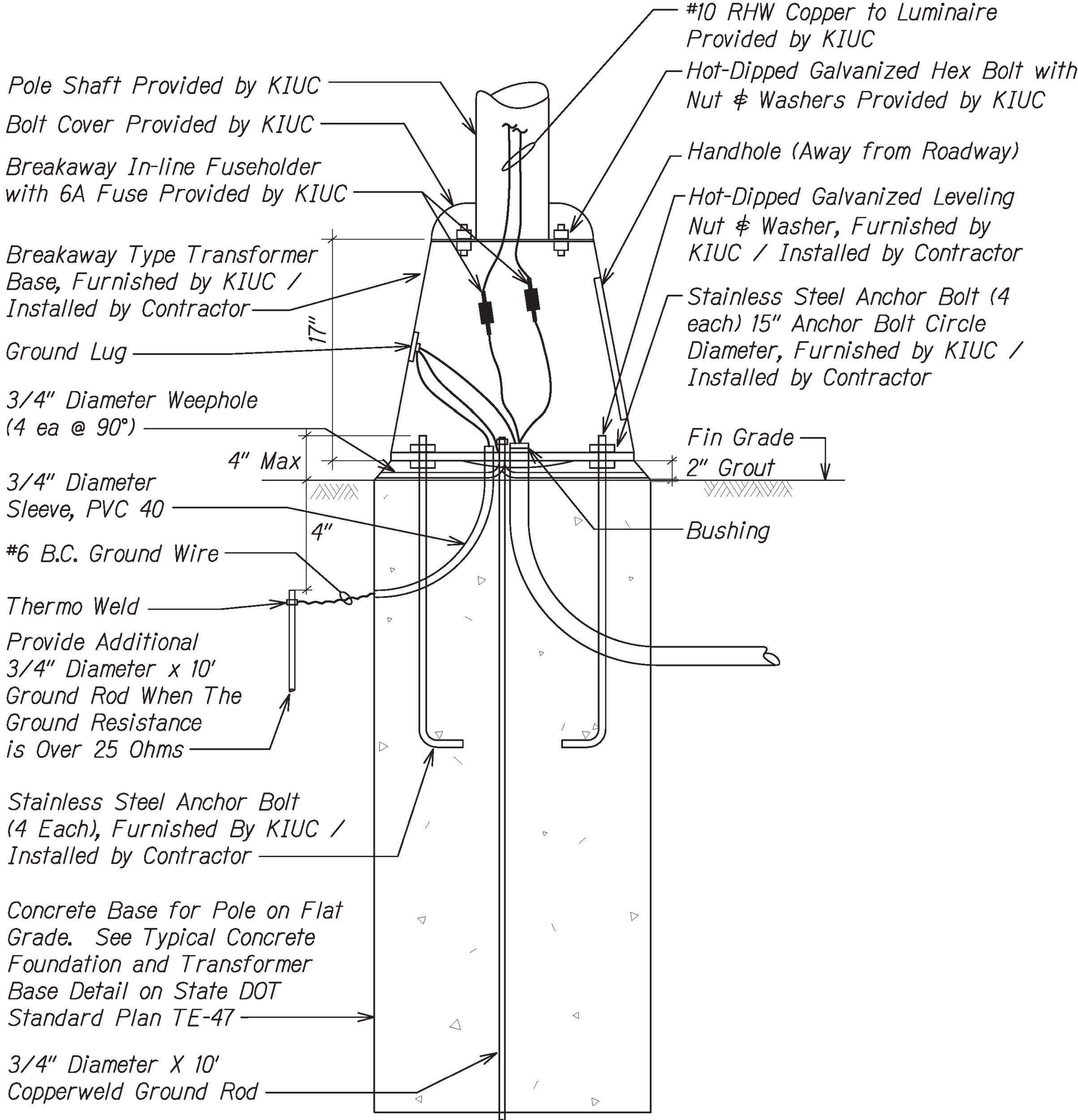


DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUAI	HAW.	50B-01-14	2020	43	44



**A**  
E-10  
**HIGHWAY LIGHT STANDARD DETAIL**  
NOT TO SCALE

MATERIAL LIST		
ITEM	DESCRIPTION	MANUF.
①	Satin Brushed Finish Aluminum Light Pole With Factory Installed Internally Mounted Vibration Damper. 0.25" Minimum Thick Wall, Length as Required. Must Withstand 105 MPH Wind Velocity With 1.14 Gust Factor Per AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 1st Edition with 2017 Interim Revisions & Be Free From White Rust. Design of Light Pole & Mast Arm Shall be in Accordance with "Changes to Design Criteria for Bridges and Structures" Dated January 08, 2018 (HWY-DB 2.5098).	
②	Transformer Base (Alum) (Breakaway Type), Furnished by KIUC / Installed by Contractor.	
③	Luminaire, LED Light Source (Wattage/Lumens/ Distribution As Noted), Die-cast Aluminum with Structured LED Array for Optimized Roadway, 3000K, 240V, Integral Die-cast Mounting Pipe Stop, Horizontal Slipfitter, Corrosion Resistant Polyester Powder Painted, Minimum 2.0 Mil Thickness, Class A Audible Sound Rating, Power Factor >90%, Bug Rating B2-U0-G2, 21.3" x 14.5" x 5.4", EPA 0.7 Sq. Ft., the Provided Light Fixtures Shall Meet or Exceed the Illumination Criteria Data Indicated on Sheet <b>E-11</b> .	



**B**  
E-10  
**TYPICAL TRANSFORMER BASE DETAIL**  
NOT TO SCALE



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**ELECTRICAL DETAILS - 5**

*Kaunualii Highway Intersection  
Improvements at Waimea Canyon Drive  
and Menehune Road/Halepule Road  
Project No. 50B-01-14*

Scale: As Shown Date: May 2020

SHEET No. E-10 OF 11 SHEETS