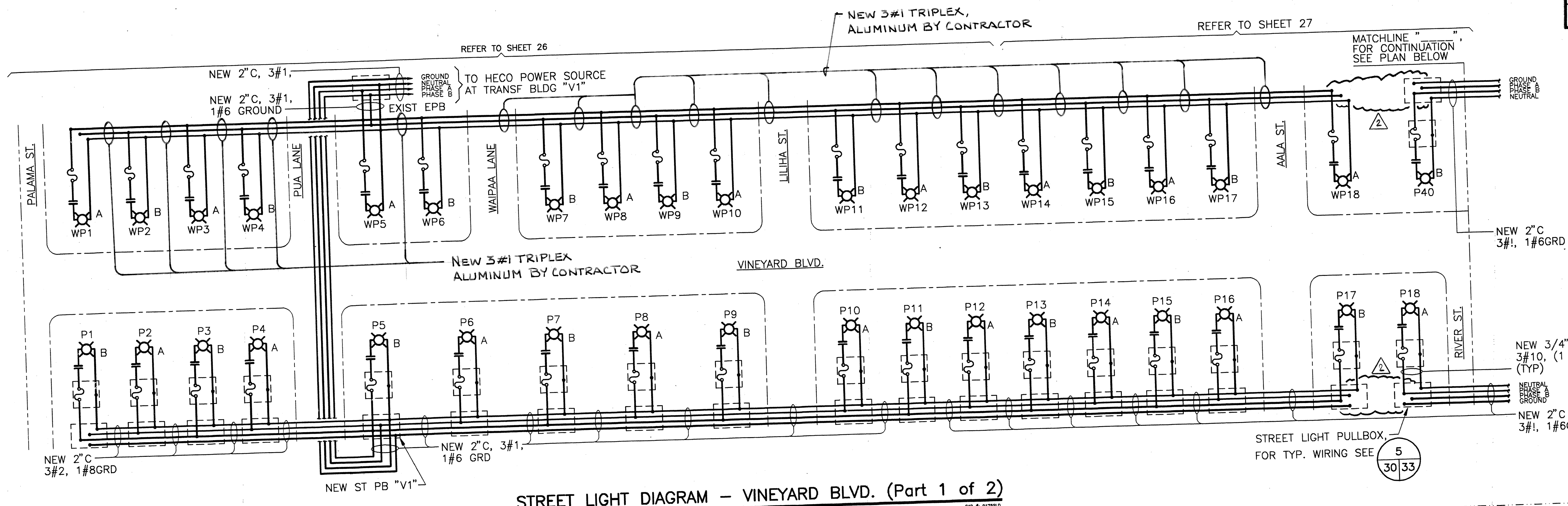
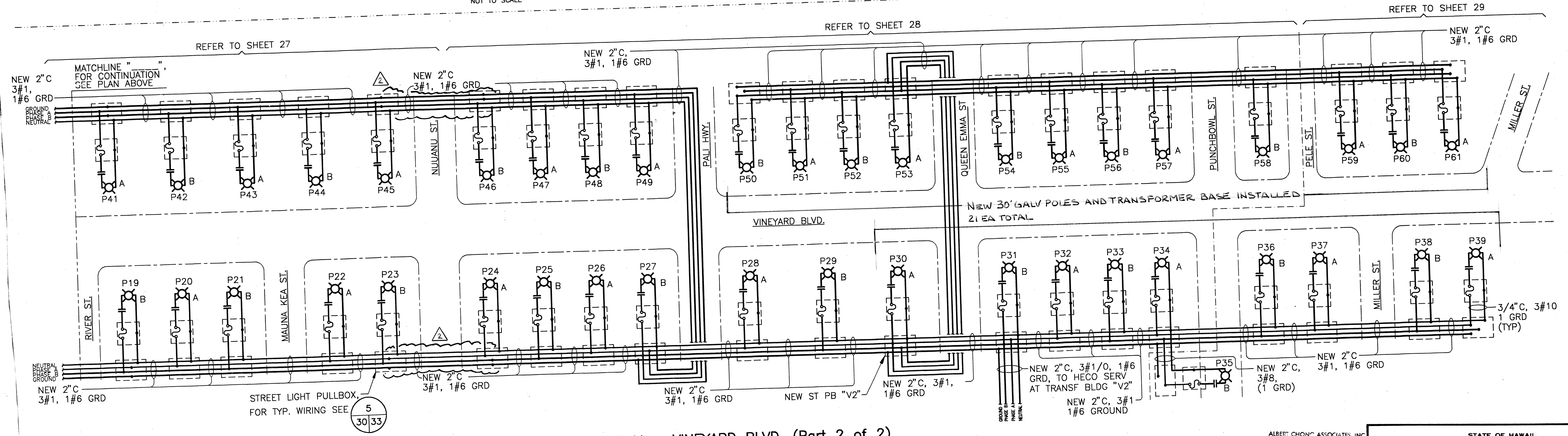


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-098-1(9)	1993	30	35



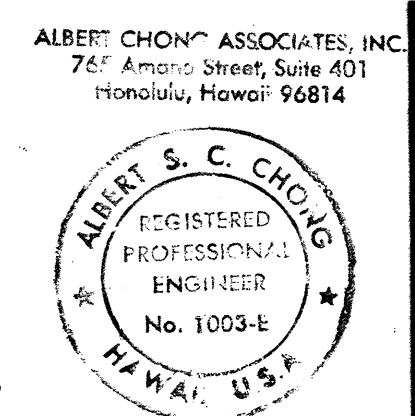
STREET LIGHT DIAGRAM - VINEYARD BLVD. (Part 1 of 2)



STREET LIGHT DIAGRAM - VINEYARD BLVD. (Part 2 of 2)

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
TRACED BY		
NOTED BY		
CHECKED BY		
NO.		

5-27-94	REVISED STREET LIGHT DIAGRAM - RIVER & NUUANU CROSSINGS	
6-16-93	ADDENDUM NO. 1	
DATE	NO.	REVISION
		ENG



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

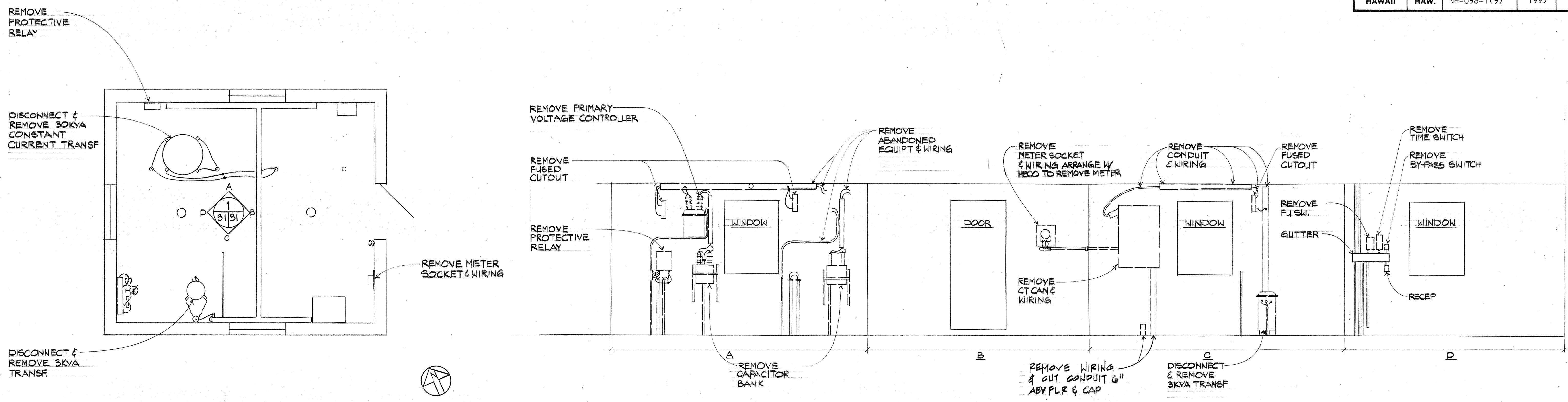
STREET LIGHT DIAGRAM

HIGHWAY LIGHTING IMPROVEMENTS AND REHABILITATION  
VINEYARD BOULEVARD  
PALAMA STREET TO PUNCHBOWL STREET

SHEET NO. 30 OF 35 SHEETS

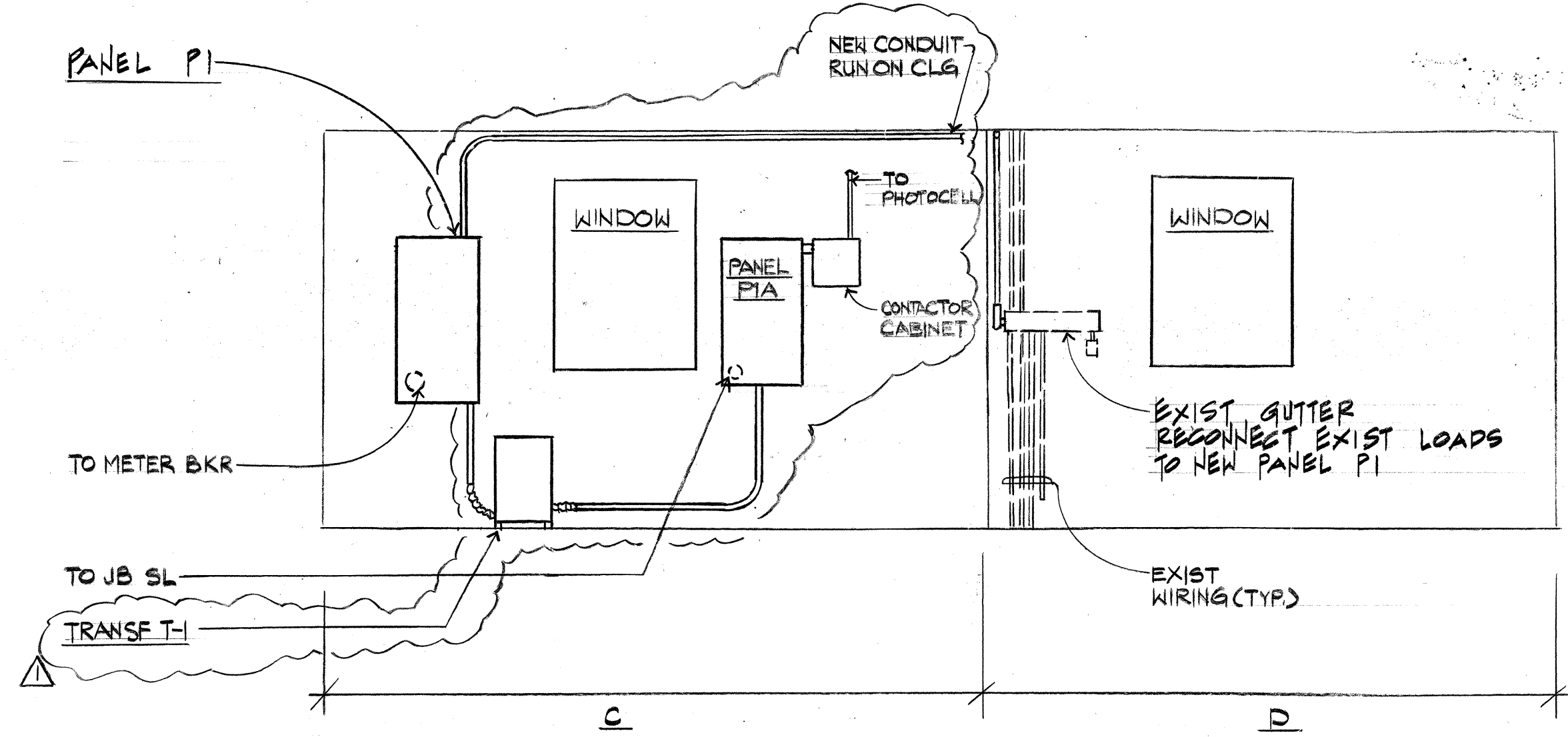


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-098-1(9)	1993	31	35



TRANSFORMER BLDG 'V1' ELECTRICAL DEMOLITION PLAN  
SCALE: 3/8" = 1'-0"

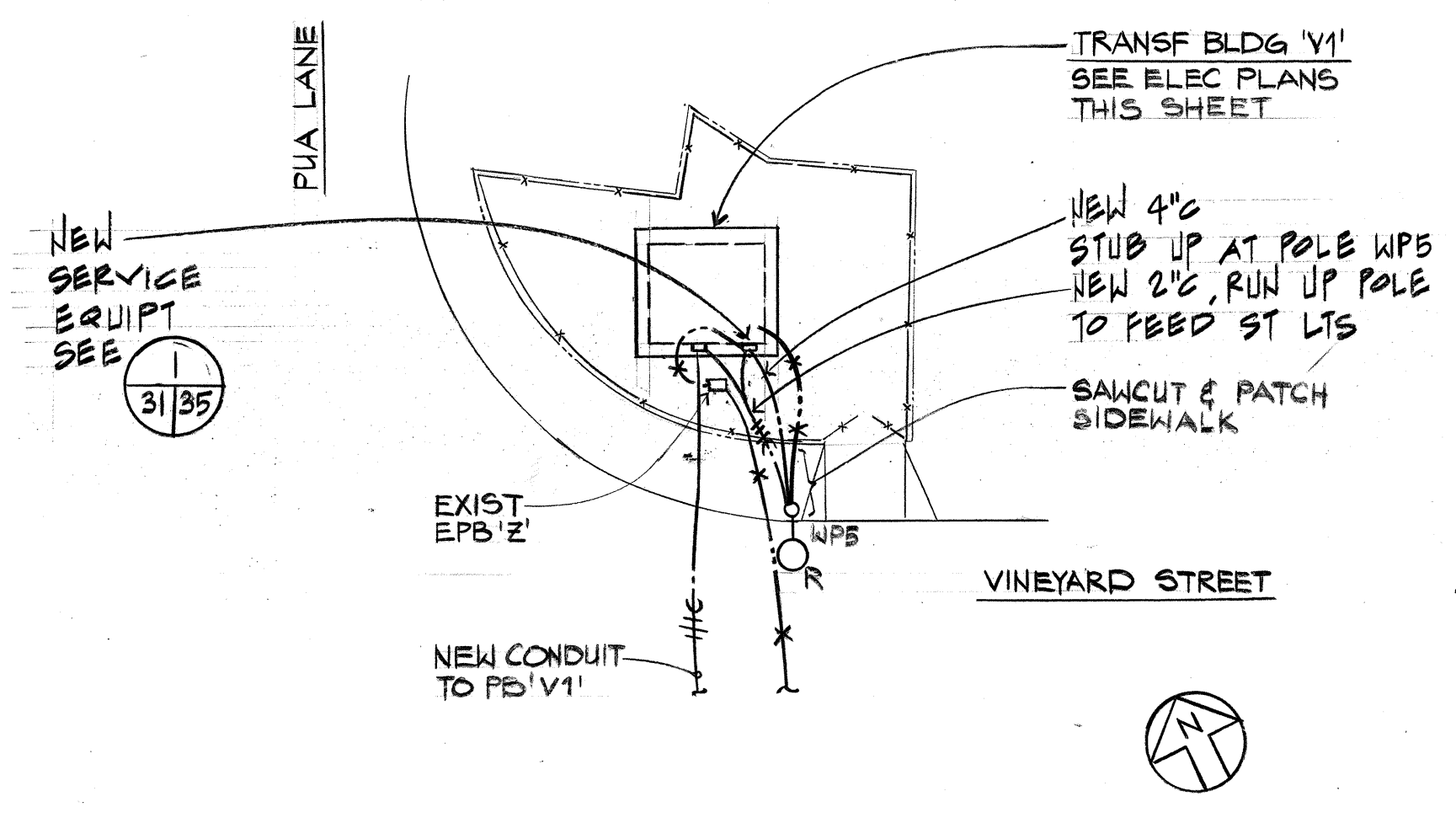
1 ELEVATION-EXISTING CONDITION  
SCALE: 3/8" = 1'-0"



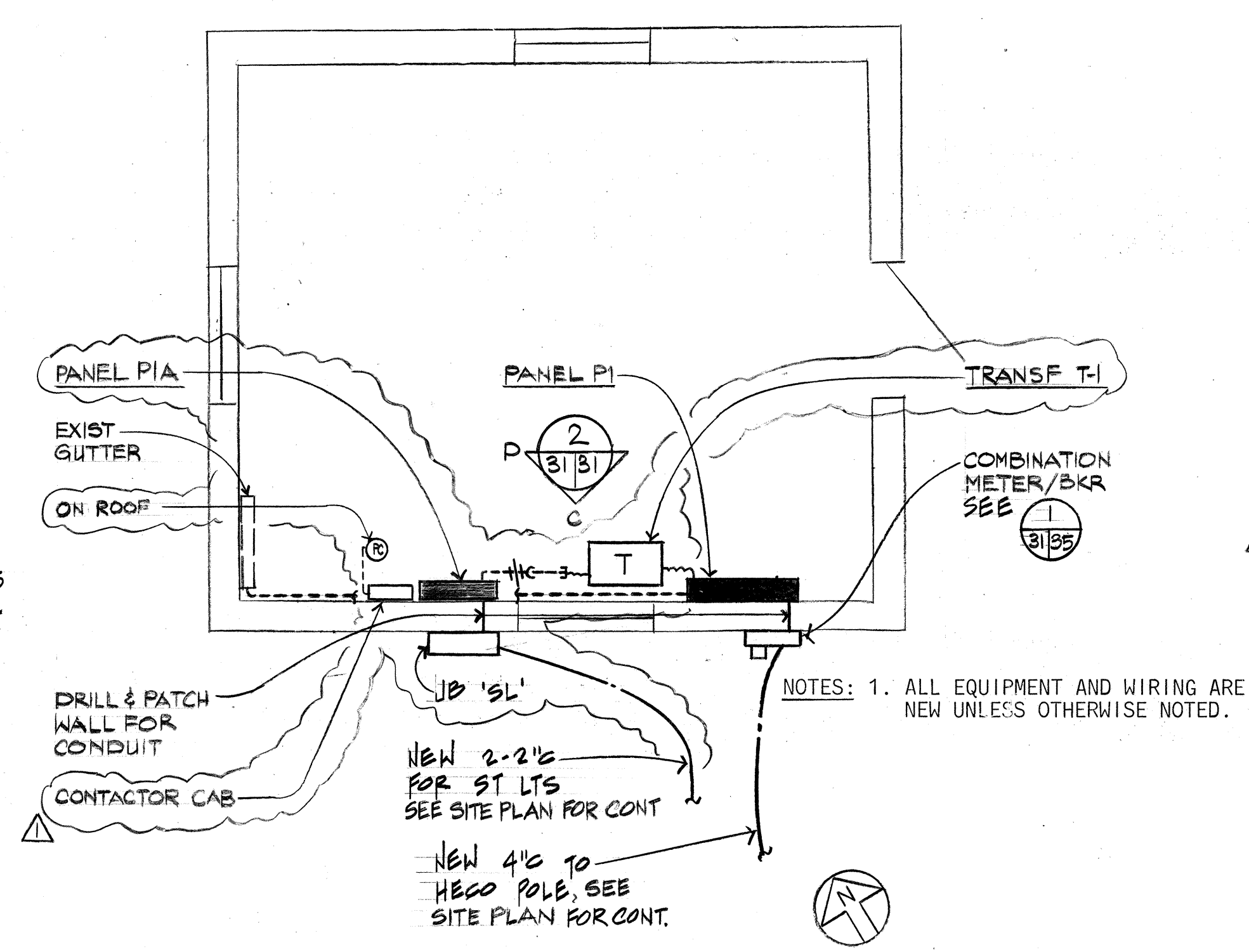
2 ELEVATION-NEW CONDITION  
SCALE: 3/8" = 1'-0"

NOTES: 1. ALL EQUIPMENT AND WIRING ARE NEW UNLESS OTHERWISE NOTED.

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

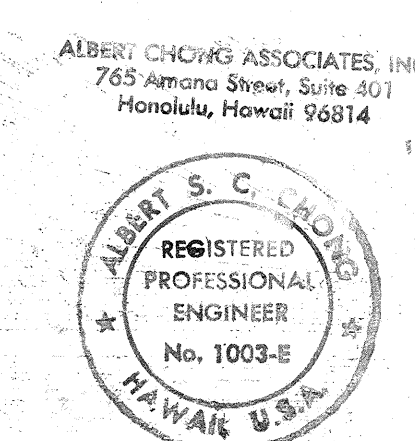


TRANSFORMER BLDG 'V1' ELECTRICAL SITE PLAN  
SCALE: 1" = 20'-0"



TRANSFORMER BLDG 'V1' NEW ELECTRICAL PLAN  
SCALE: 3/8" = 1'-0"

6-16-93	ADDENDUM NO. 1	
DATE	NO.	REVISION
		ENG

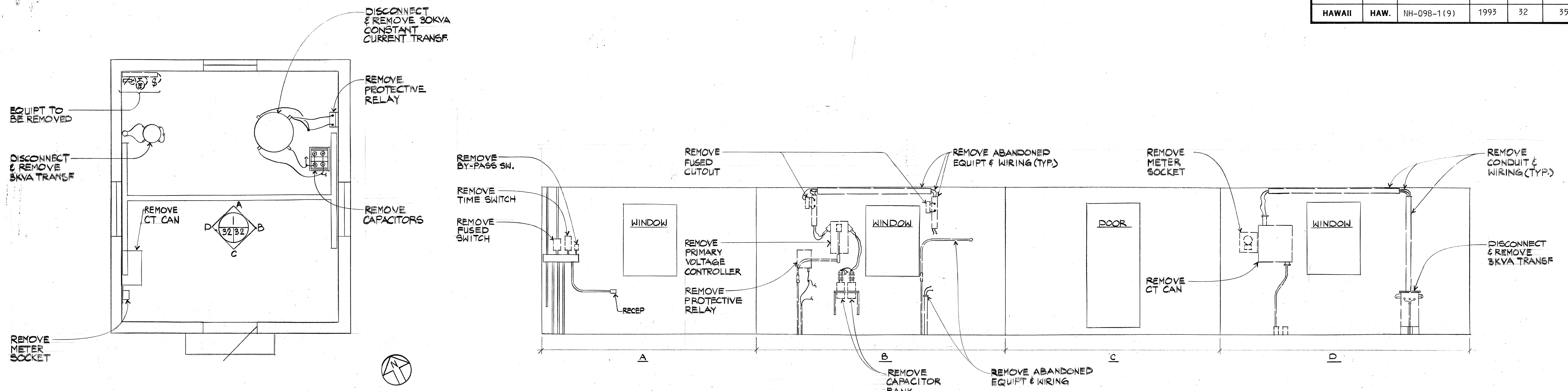


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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
  
TRANSFORMER BUILDING V1 - ELECTRICAL PLANS AND ELEVATIONS  
  
HIGHWAY LIGHTING IMPROVEMENTS AND REHABILITATION  
VINEYARD BOULEVARD  
PALAMA STREET TO PUNCHBOWL STREET

SHEET NO. 31 OF 35 SHEETS  
C.O.31

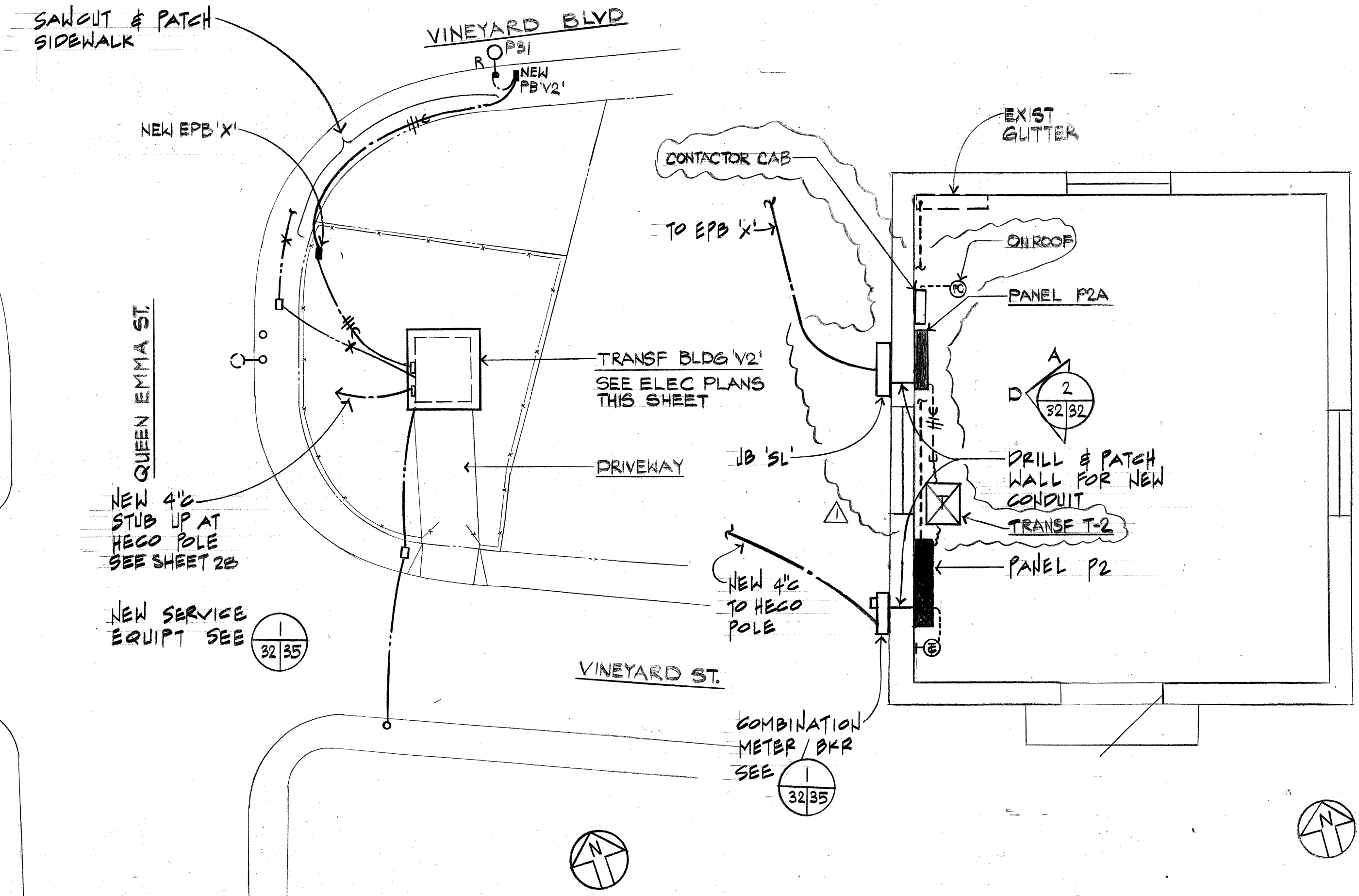
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-098-1(9)	1993	32	35



TRANSFORMER BLDG 'V2' ELECTRICAL DEMOLITION PLAN  
SCALE: 3/8" = 1'-0"

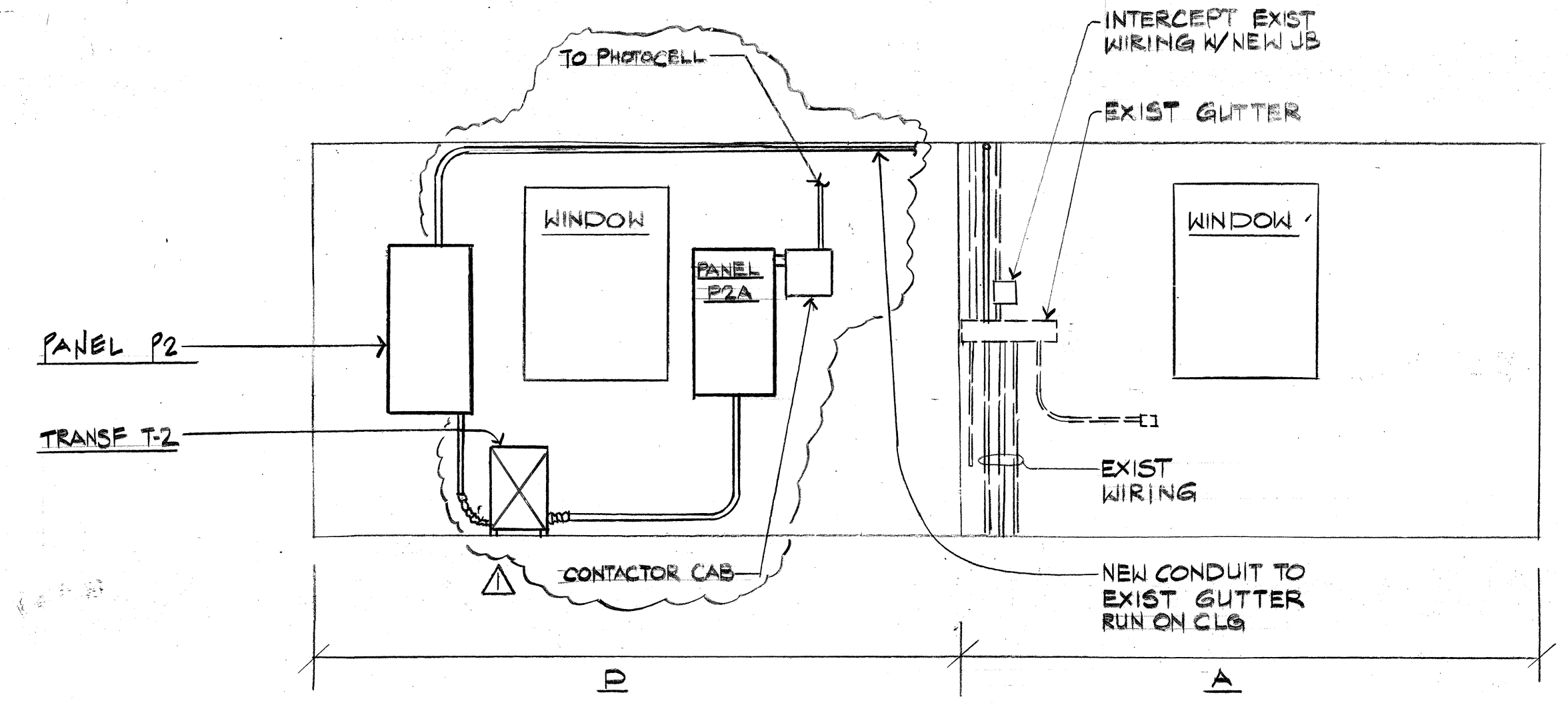
1 ELEVATION-EXISTING CONDITION  
SCALE: 3/8" = 1'-0"

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NO.	



TRANSFORMER BUILDING 'V2' ELECTRICAL SITE PLAN  
SCALE: 1" = 20'-0"

TRANSFORMER BLDG 'V2' NEW ELECTRICAL PLAN  
SCALE: 3/8" = 1'-0"

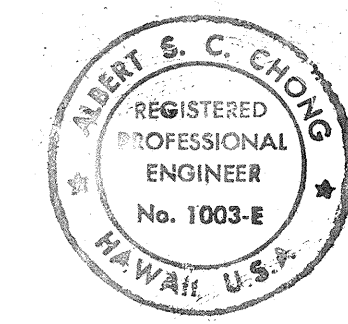


2 ELEVATION-NEW CONDITION  
SCALE: 3/8" = 1'-0"

NOTES: 1. ALL EQUIPMENT AND WIRING ARE NEW UNLESS OTHERWISE NOTED.

NOTES: 1. ALL EQUIPMENT AND WIRING ARE NEW UNLESS OTHERWISE NOTED.

ALBERT CHONG ASSOCIATES, INC.  
755 Aiea Street, Suite 401  
Honolulu, Hawaii 96814



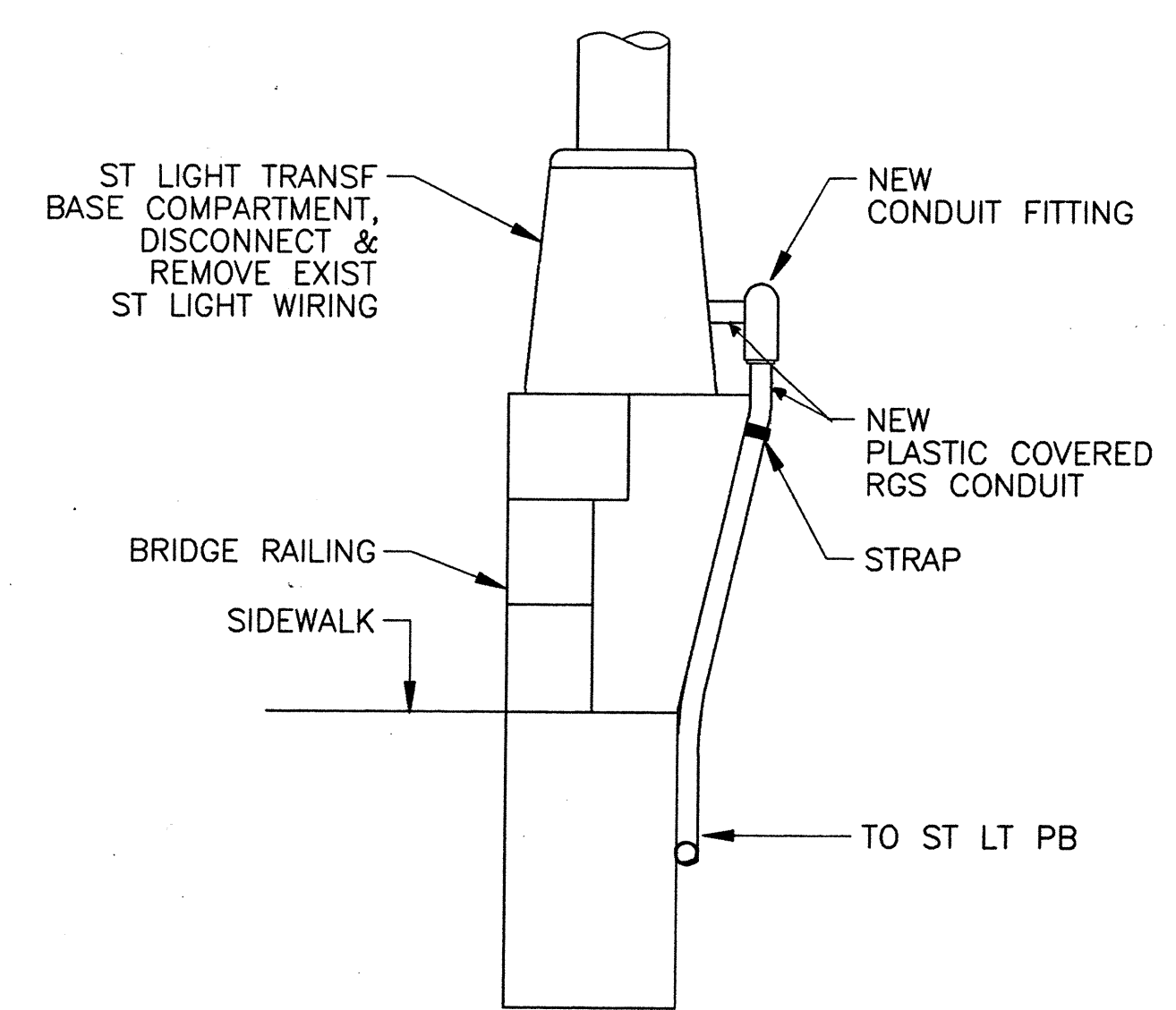
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
*Albert S. C. Chong*

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
TRANSFORMER BUILDING V2 - ELECTRICAL PLANS AND ELEVATIONS  
HIGHWAY LIGHTING IMPROVEMENTS AND REHABILITATION  
VINEYARD BOULEVARD  
PALAMA STREET TO PUNCHBOWL STREET

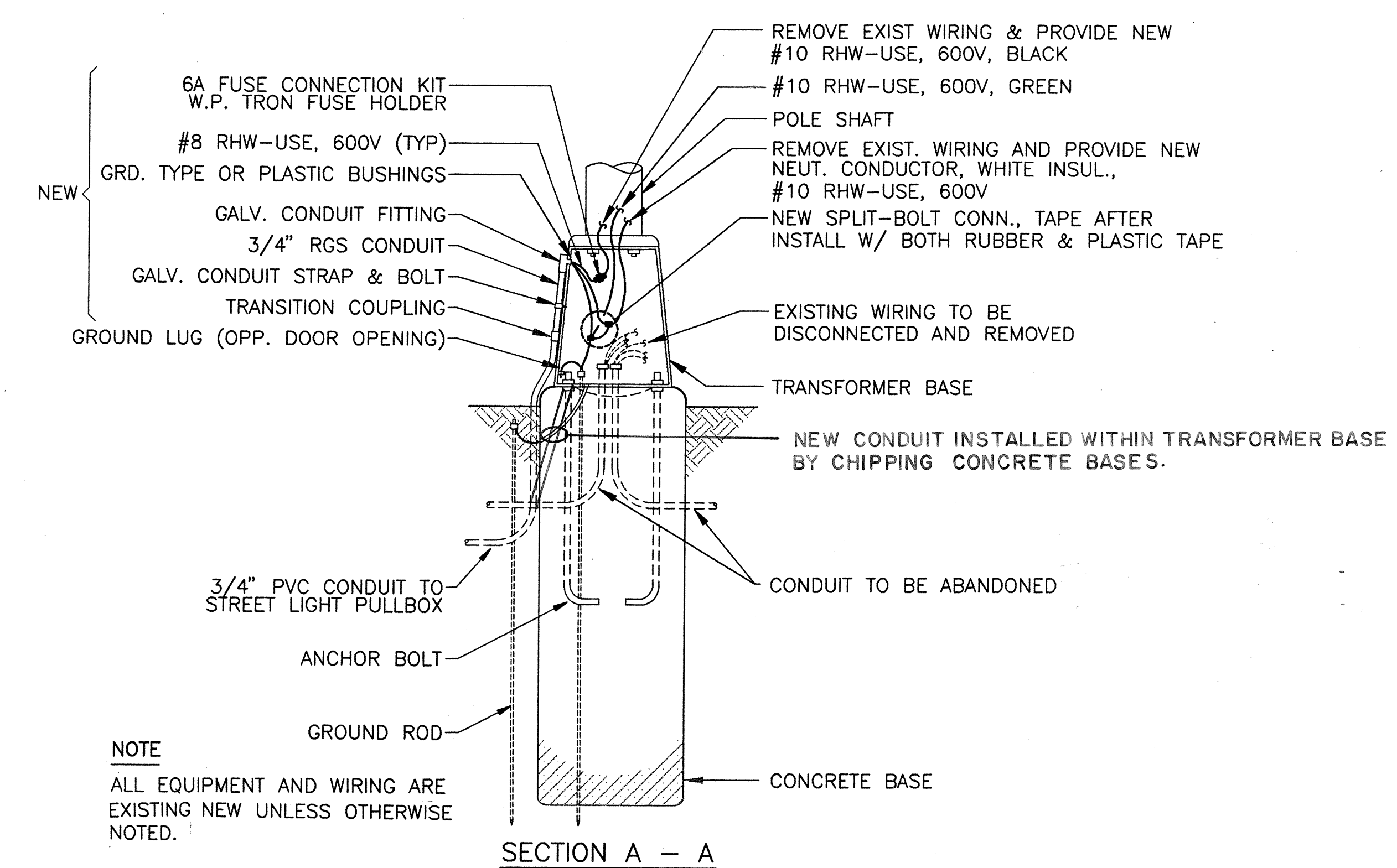
6-16-93	ADDENDUM NO. 1	
DATE	NO.	REVISION
		ENG



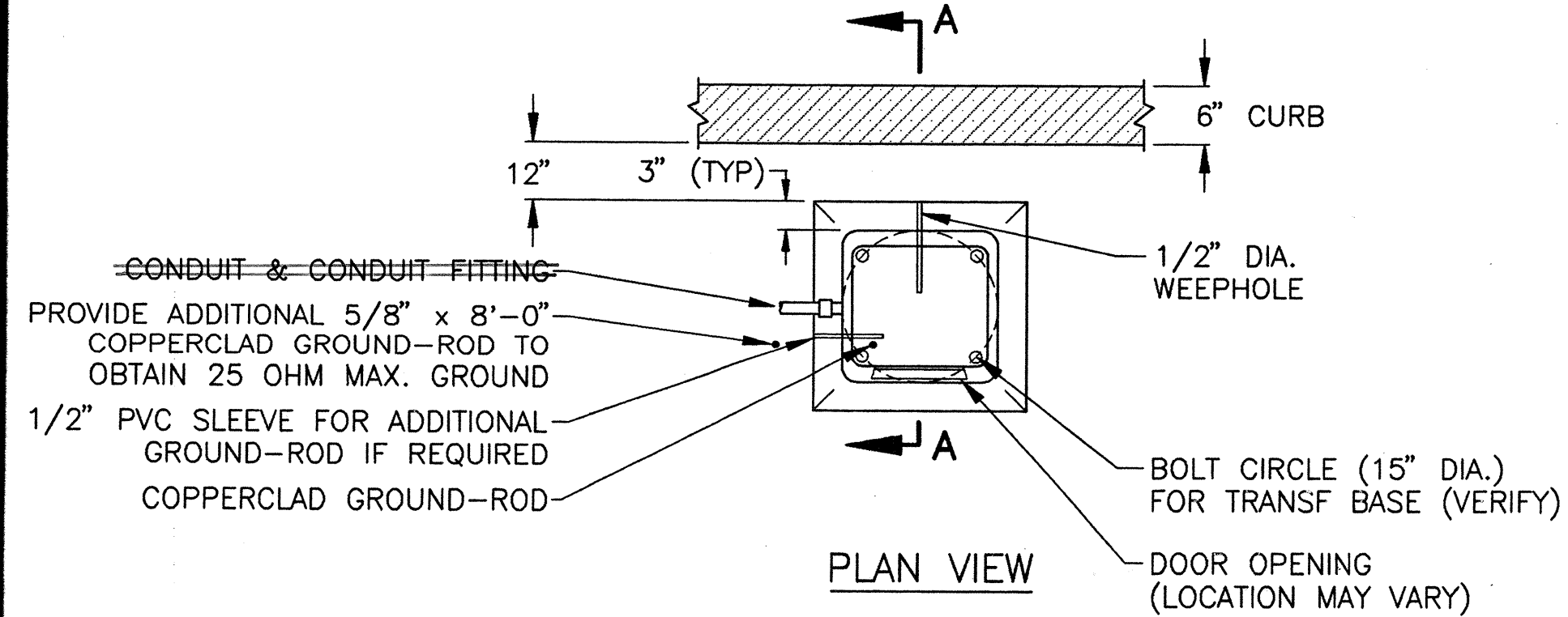
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-098-1(9)	1993	33	35



**1 DETAIL - RELOCATED POLE**  
25/33 NOT TO SCALE CAD: 9175-E33

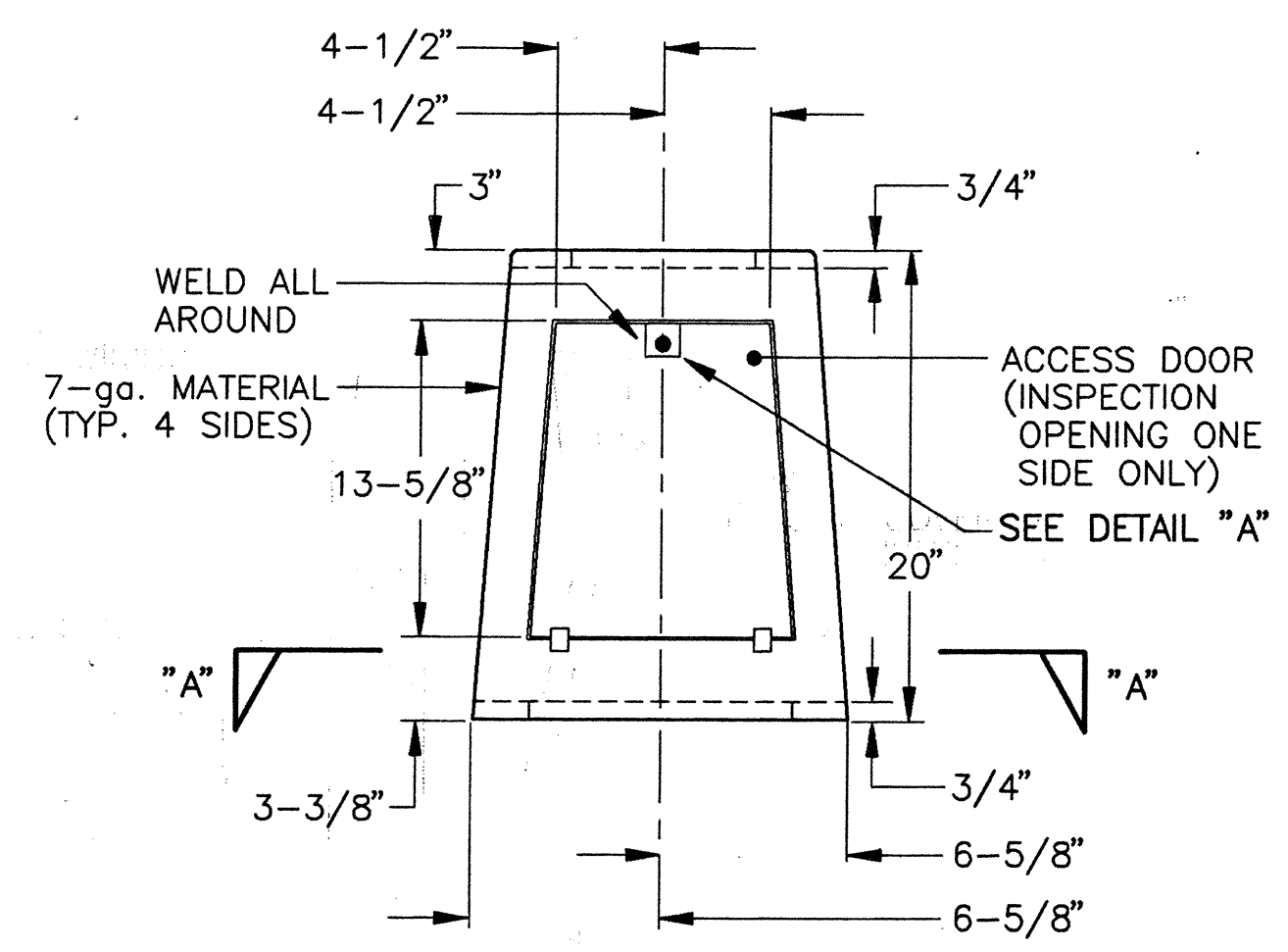


**SECTION A - A**

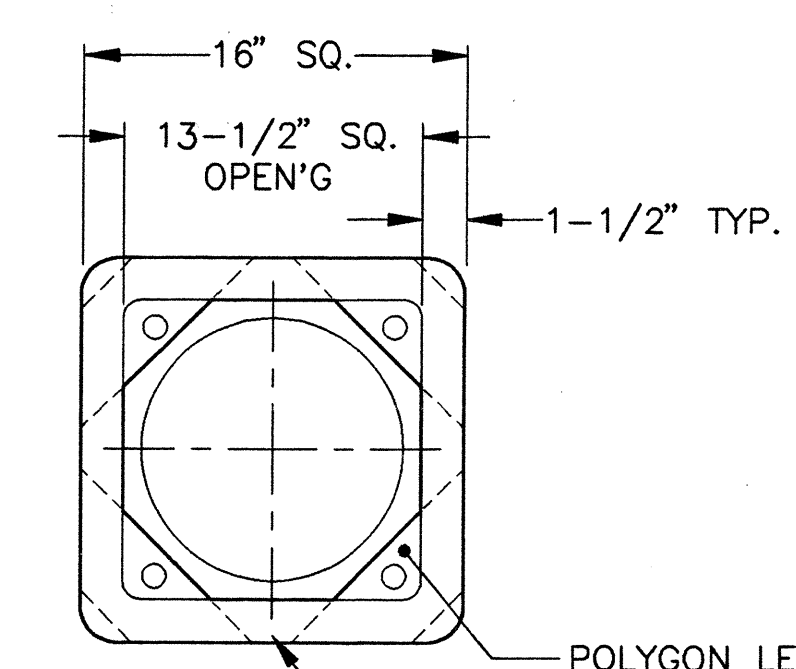


**PLAN VIEW**

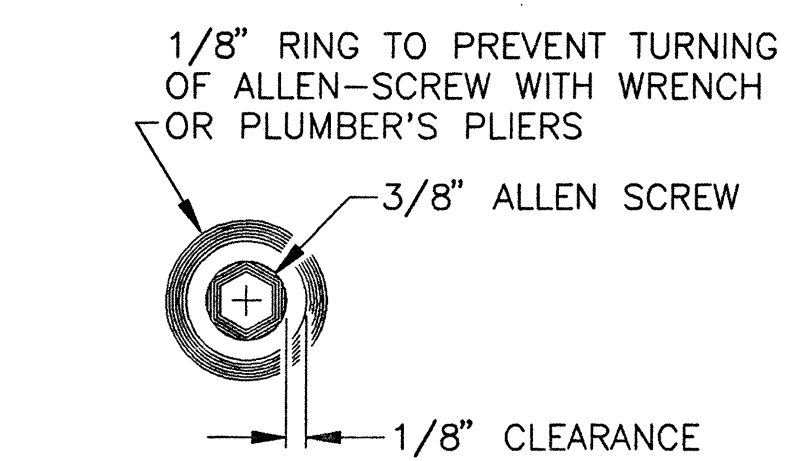
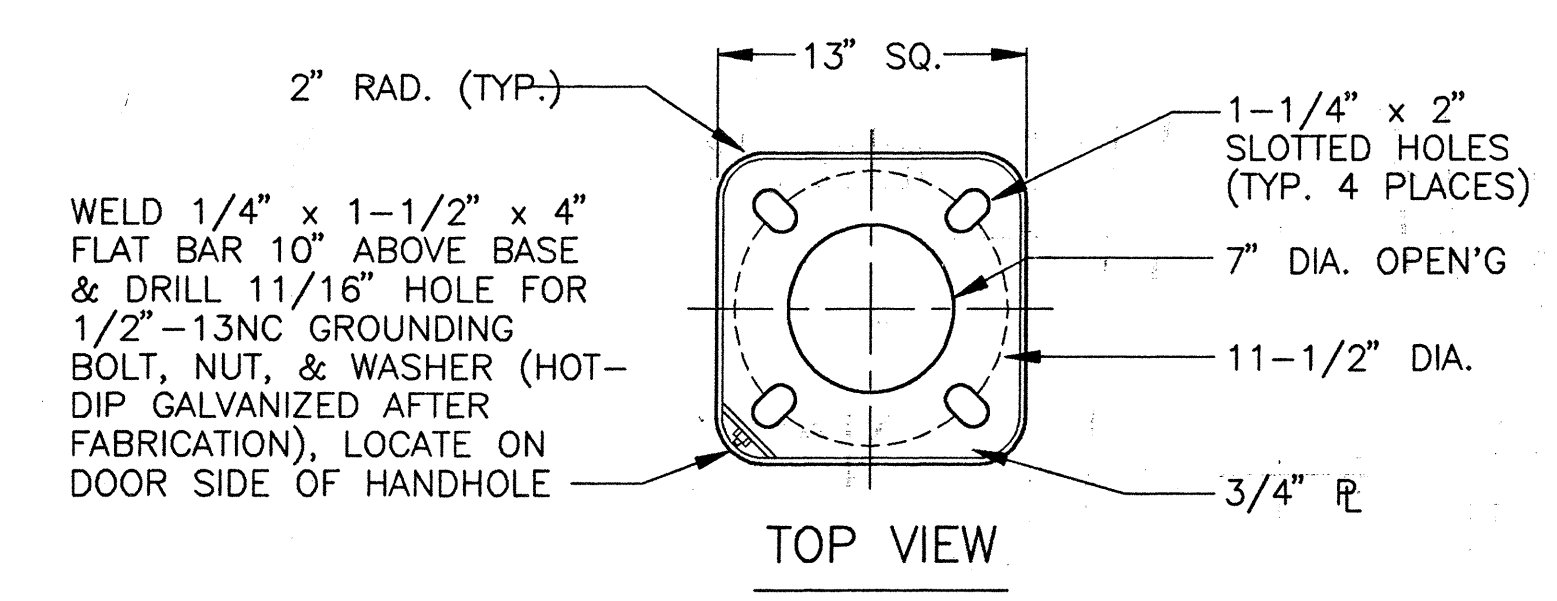
**3 EXISTING POLE BASE DETAIL**  
25/33 NOT TO SCALE CAD: 9175-E33



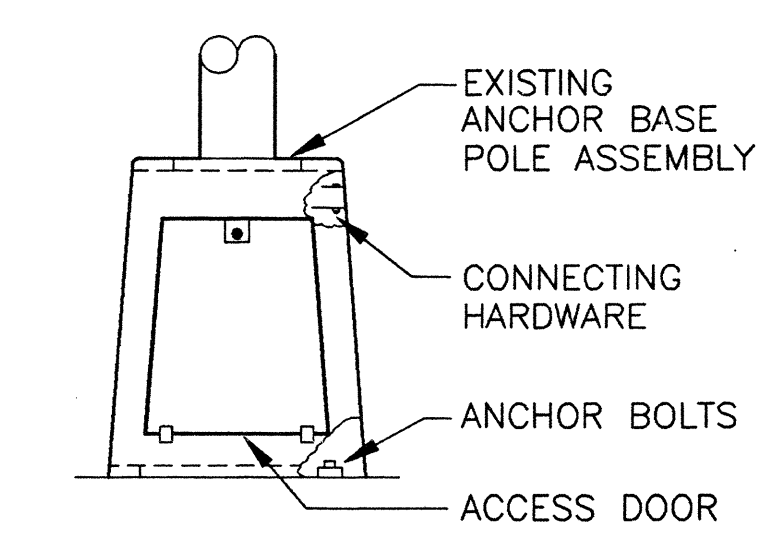
**SIDE VIEW**



**SECTION "A-A"**

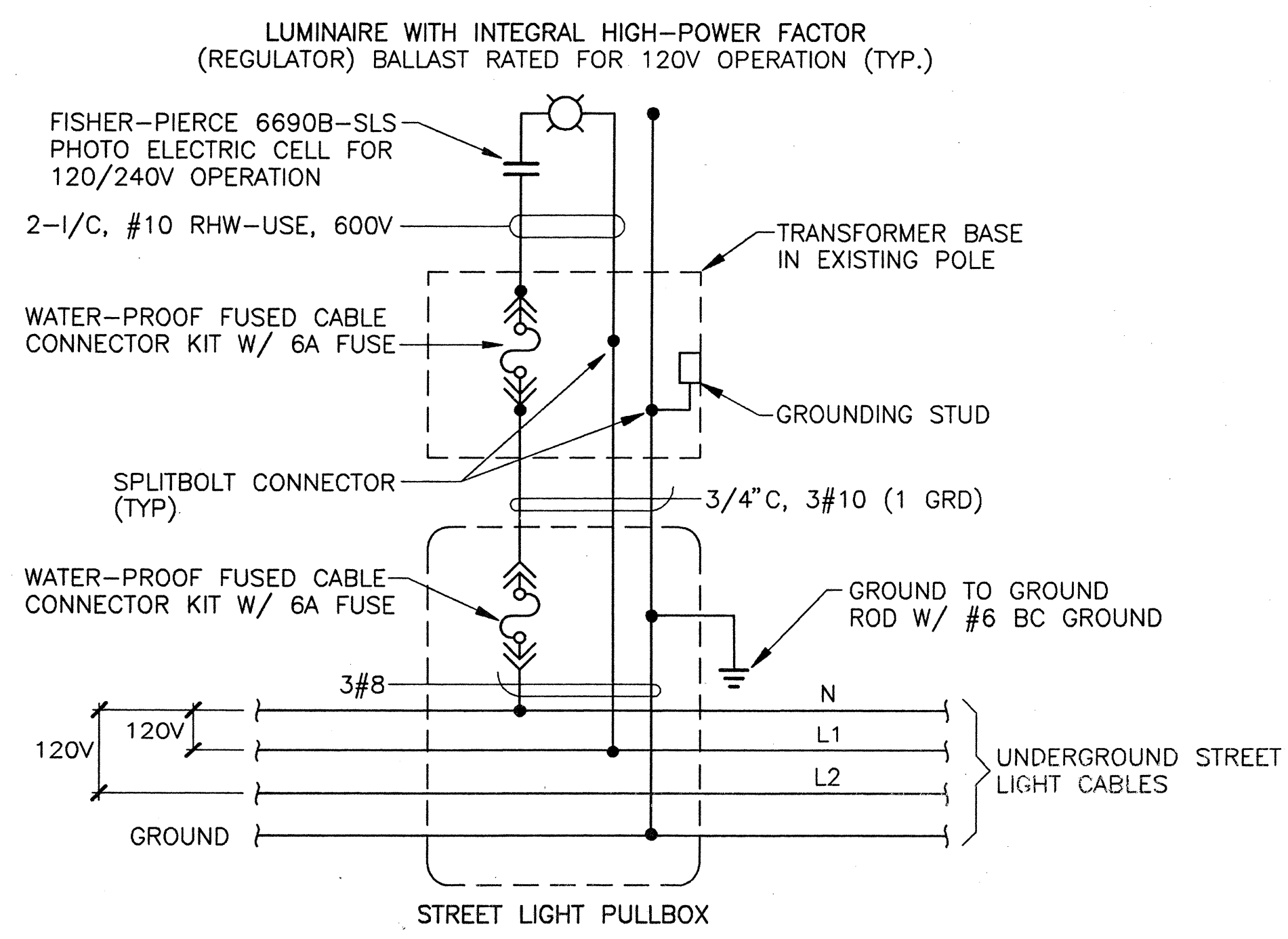


**DETAIL "A"**

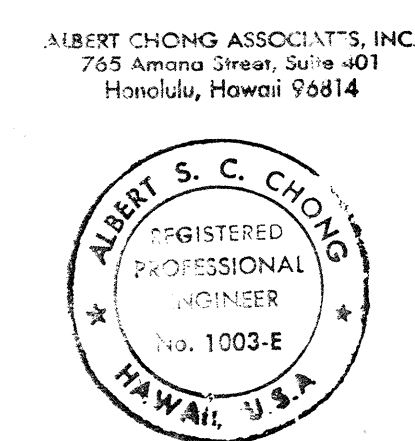


**ELEVATION**

**2 TRANSFORMER BASE DETAIL**  
25/33 NOT TO SCALE CAD: 9175-E33



**4 TYPICAL CONNECTION DIAGRAM FOR STREET LIGHTING**  
25/33 NOT TO SCALE CAD: 9175-E33



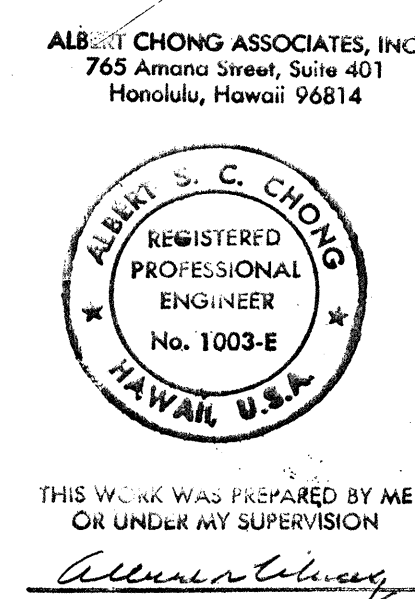
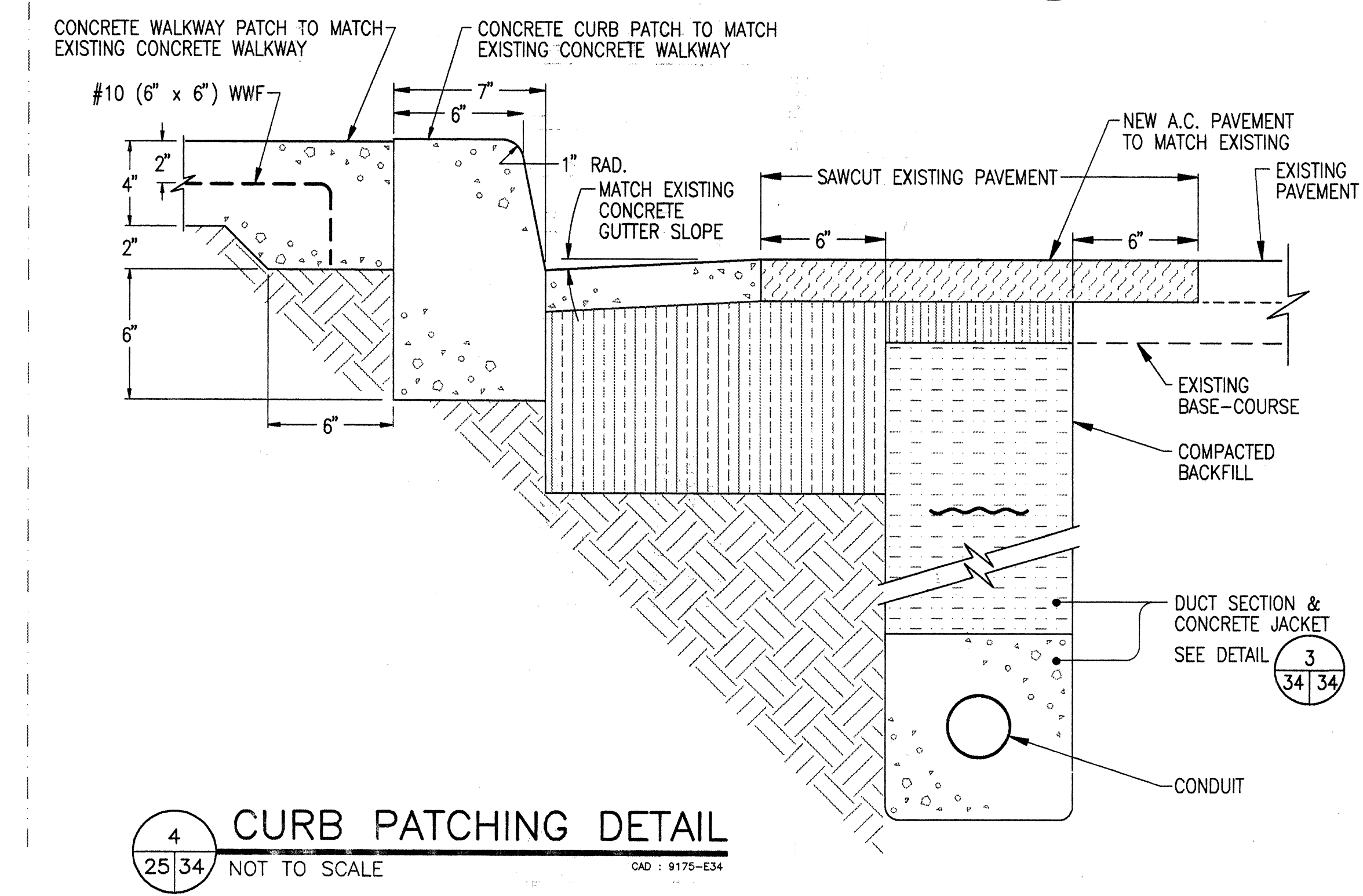
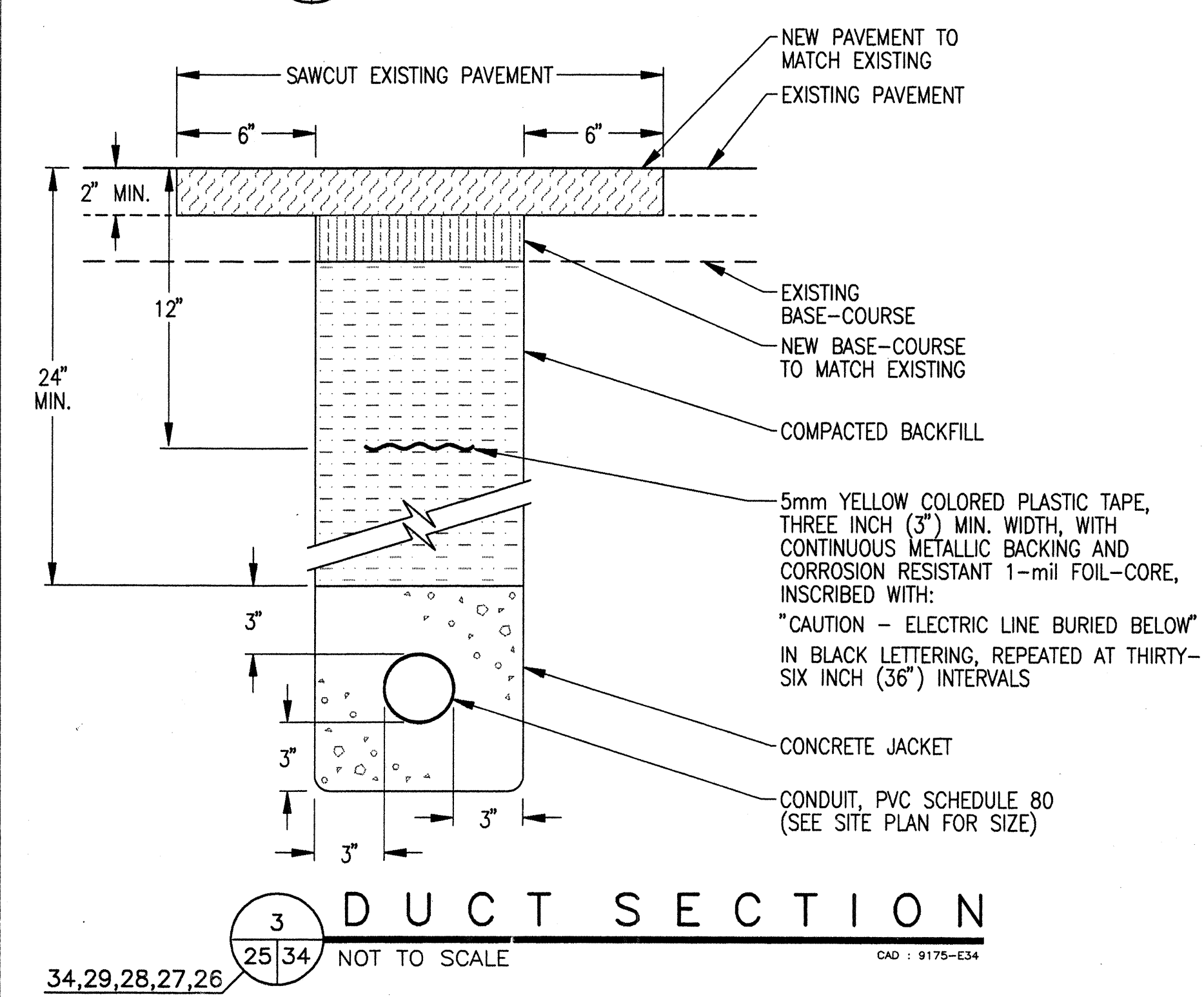
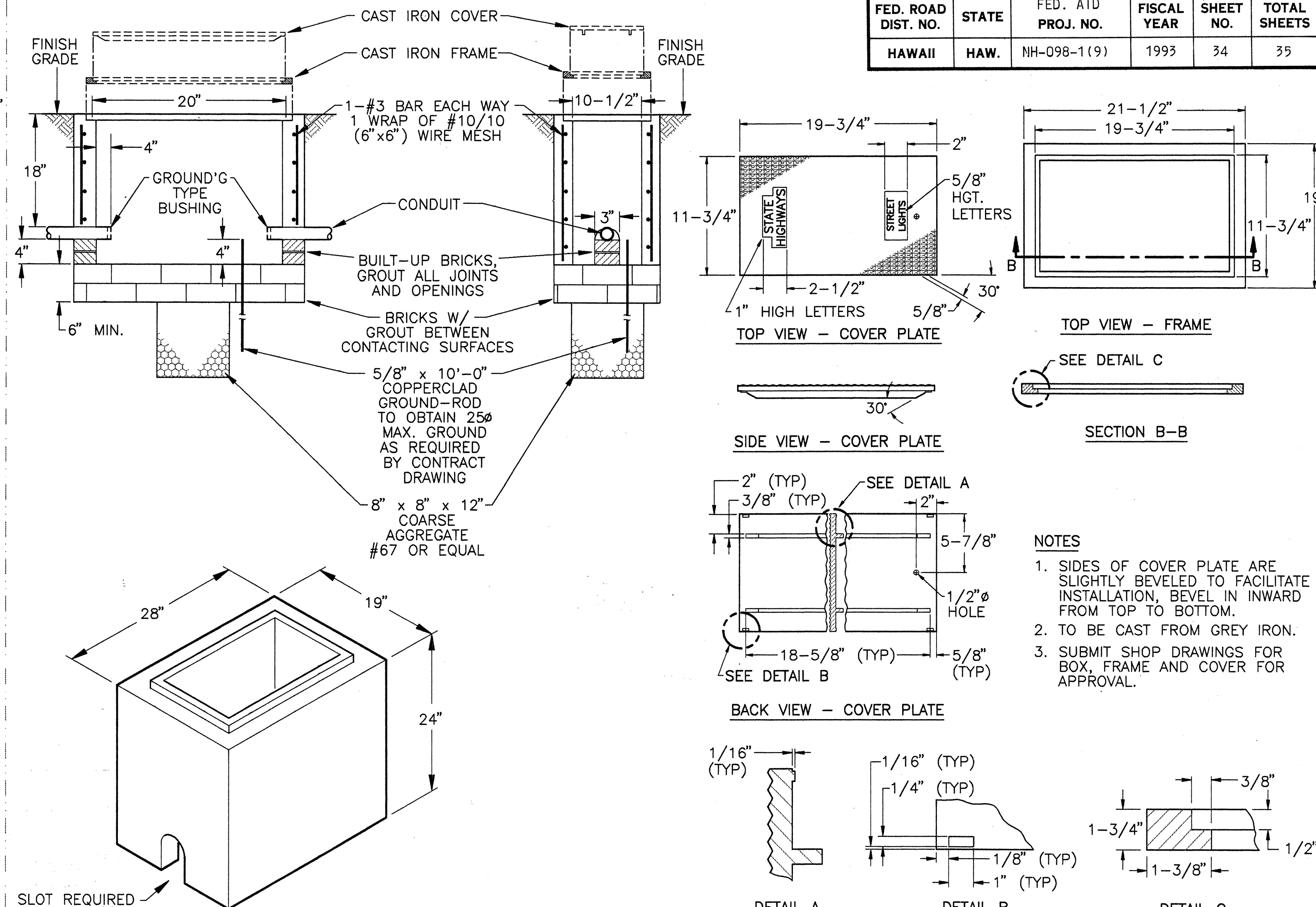
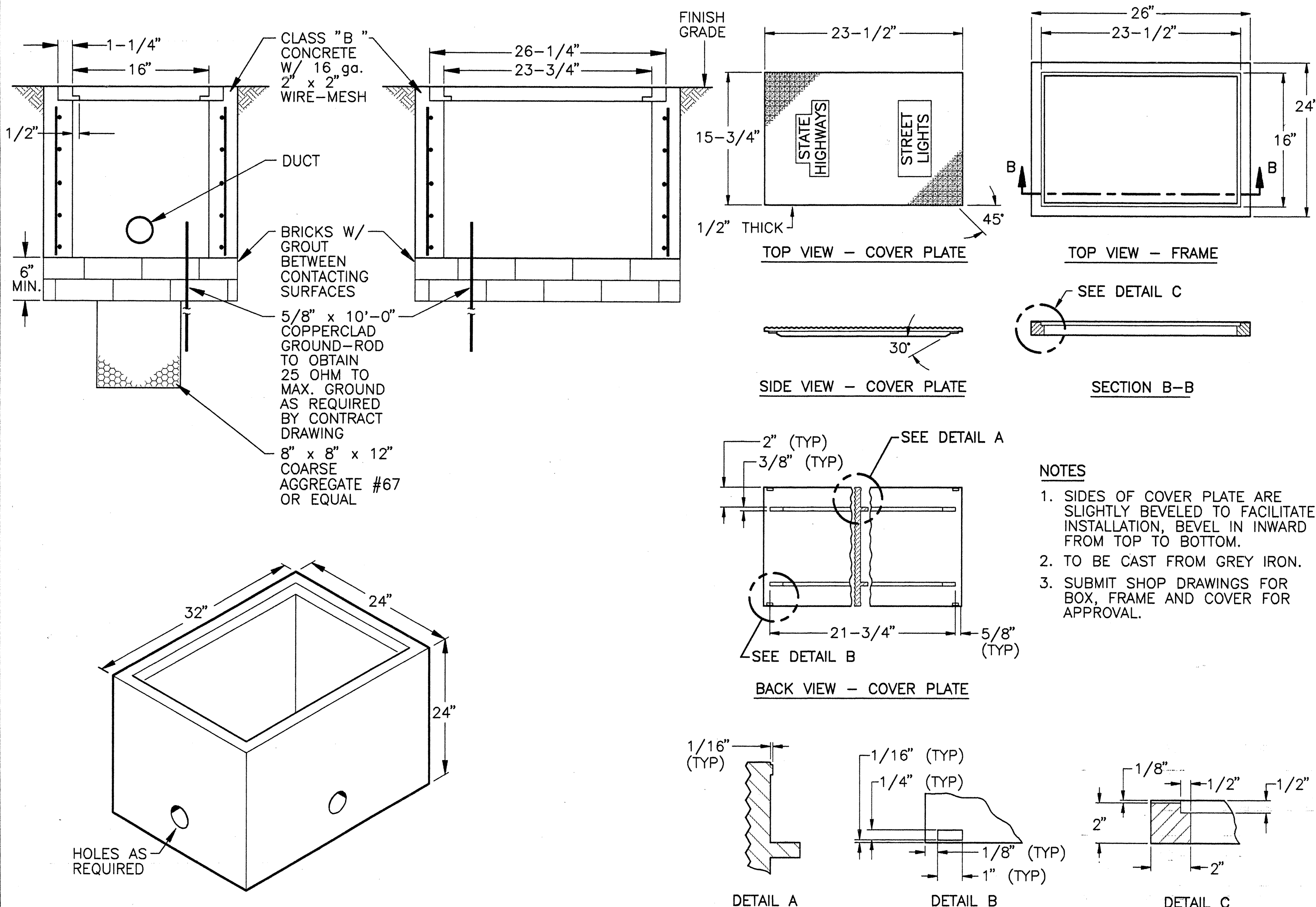
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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

MISCELLANEOUS DETAILS

HIGHWAY LIGHTING IMPROVEMENTS AND REHABILITATION  
VINEYARD BOULEVARD  
PALAMA STREET TO PUNCHBOWL STREET

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-098-1(9)	1993	34	35



STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

MISCELLANEOUS DETAILS

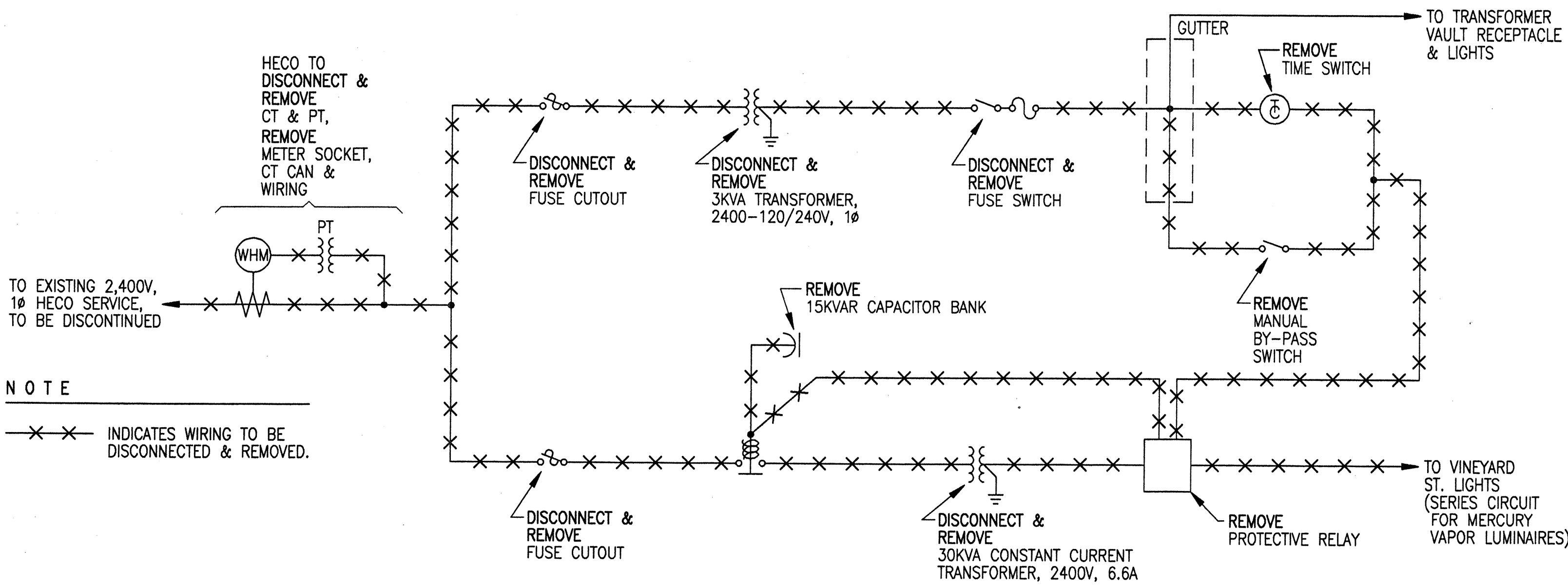
HIGHWAY LIGHTING IMPROVEMENTS AND REHABILITATION  
 VINEYARD BOULEVARD  
 PALAMA STREET TO PUNCHBOWL STREET

**SHEET NO. 34 OF 35 SHEETS**

DATE	_____
SURVEY PLOTTED BY	_____
ORIGINAL PLAN	_____
DRAWN BY	_____
DESIGNED BY	_____
CHECKED BY	_____
NO.	_____

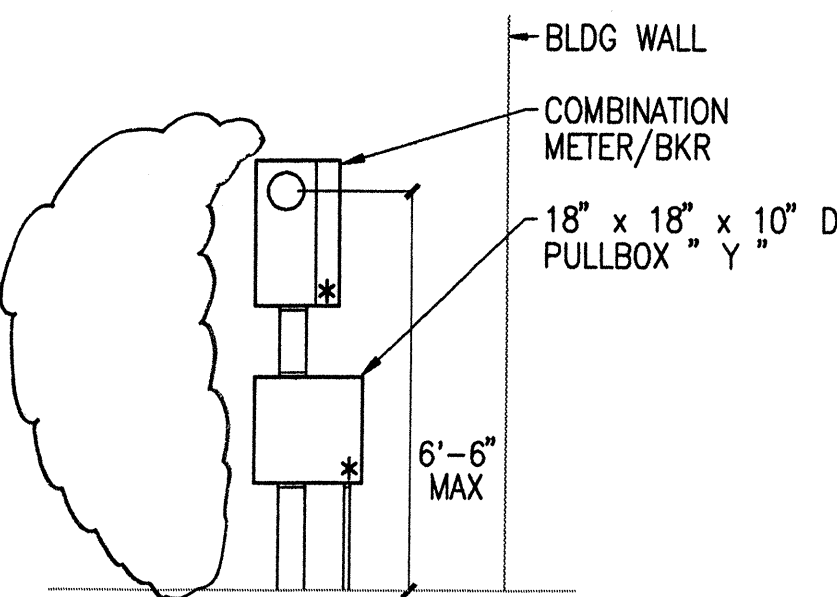


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-098-1(9)	1993	35	35



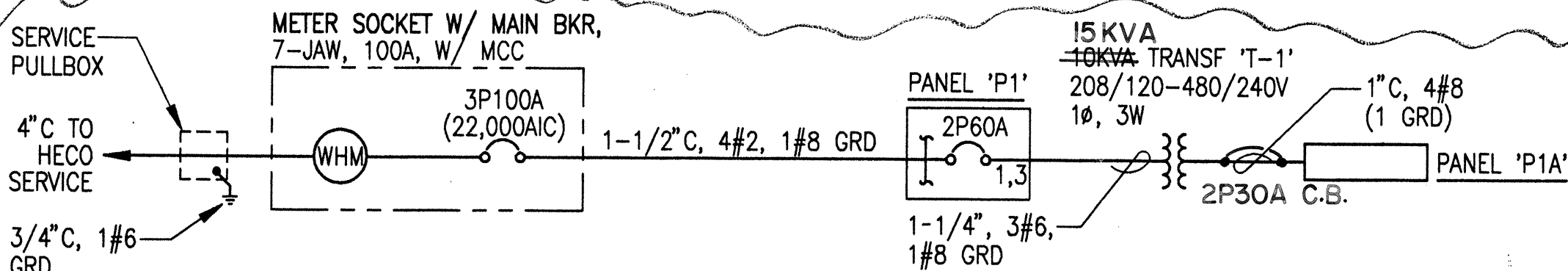
NOTE  
 -X-X- INDICATES WIRING TO BE DISCONNECTED & REMOVED.

EXISTING SINGLE LINE DIAGRAM - TRANSFORMER BUILDING " V1 " & " V2 "

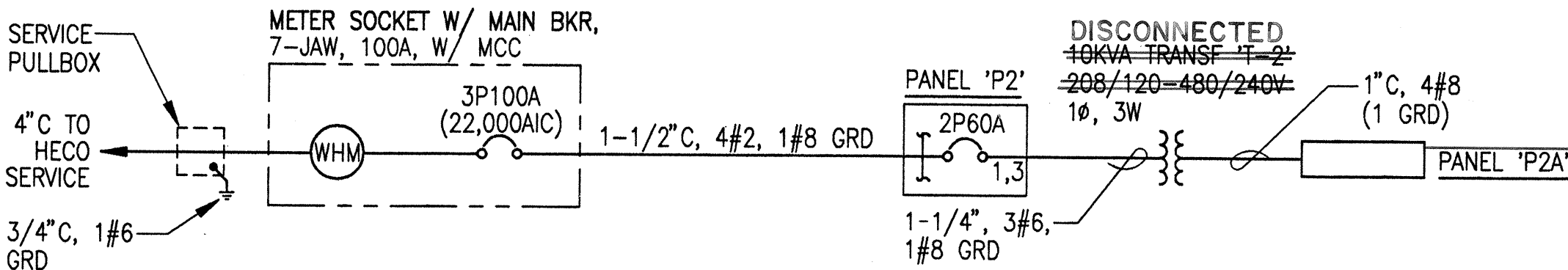


- NOTES:
- ALL EQUIPMENT AND WIRING ARE NEW.
  - ALL ENCLOSURES NEMA 3R.
  - " \* " DENOTES A SEALBLE ENCLOSURE.

1 ELEVATION  
 32 31 35 NOT TO SCALE



NEW SINGLE LINE DIAGRAM - TRANSFORMER BUILDING " V1 "



NEW SINGLE LINE DIAGRAM - TRANSFORMER BUILDING " V2 "

PANEL P1 208/120 VOLTS THREE PHASE 4 WIRE 100A LUGS ONLY BREAKER I.C. 10,000A 20" WIDE CABINET, INDUSTRIAL BOLTED SURFACE MOUNTED						
CKT. NO.	BKR.	LOAD	KVA			WIRE
			AØ	BØ	CØ	
1,3	2P60A	TRANSF 'T1'	5.0	5.0		6
2	1P20A	EXIST VAULT LIGHTS *	0.2			12
4	1P20A	EXIST RECEP *		0.2		12
5	1P20A	SPARE				
6	1P20A	LTG. CONTROL			0.1	12
7	1P	PFB				
8						
9						
10						
11						
12						
* EXISTING LOAD TO BE RECONNECTED.						
TOTALS			5.2	5.2	0.1	

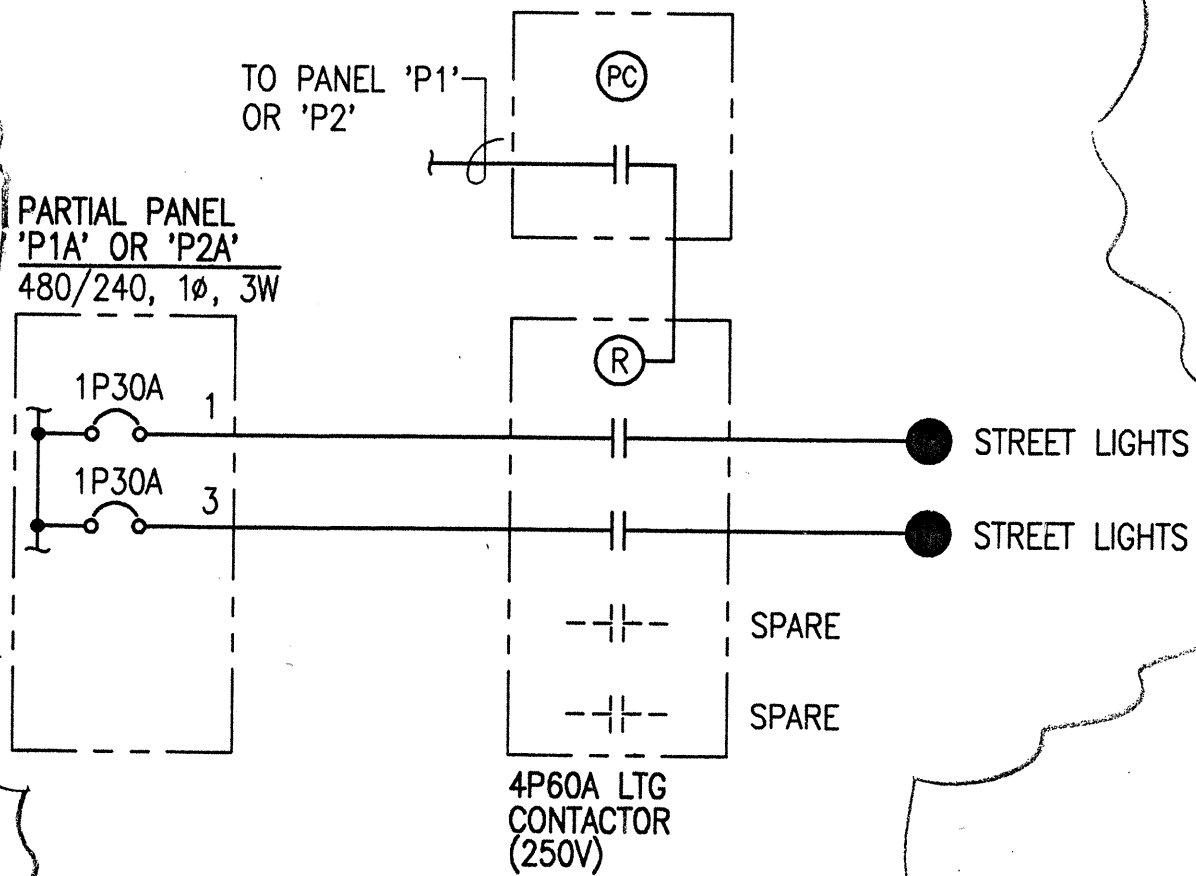
PANEL P2 208/120 VOLTS THREE PHASE 4 WIRE 100A LUGS ONLY BREAKER I.C. 10,000A 20" WIDE CABINET, INDUSTRIAL BOLTED SURFACE MOUNTED						
CKT. NO.	BKR.	LOAD	KVA			WIRE
			L1	L2		
1,3	2P60A	TRANSF 'T2'	5.0	5.0		6
2	1P20A	EXIST VAULT LIGHTS *	0.2			12
4	1P20A	EXIST RECEP *		0.2		12
5	1P20A	SPARE				
6	1P20A	LTG. CONTROL			0.1	12
7	1P	PFB				
8						
9						
10						
11						
12						
* EXISTING LOAD TO BE RECONNECTED.						
TOTALS			5.2	5.2	0.1	

PANEL P1A 480/240 VOLTS SINGLE PHASE 3 WIRE 100A LUGS ONLY BREAKER I.C. 14,000A 20" WIDE CABINET, INDUSTRIAL BOLTED SURFACE MOUNTED						
CKT. NO.	BKR.	LOAD	KVA			WIRE
			L1	L2		
1	1P30A	STREET LIGHTS	3.5			
2	1P30A	SPARE				
3	1P30A	STREET LIGHTS		3.5		
4	1P30A	SPARE				
5	1P20A					
6	1P20A					
7	1P	PFB				
8						
9						
10						
11						
12						
TOTALS						
			3.5	3.5		

PANEL P2A 480/240 VOLTS SINGLE PHASE 3 WIRE 100A LUGS ONLY BREAKER I.C. 14,000A 20" WIDE CABINET, INDUSTRIAL BOLTED SURFACE MOUNTED						
CKT. NO.	BKR.	LOAD	KVA			WIRE
			L1	L2		
1	1P30A	STREET LIGHTS	3.0			
2	1P30A	SPARE				
3	1P30A	STREET LIGHTS		3.0		
4	1P30A	SPARE				
5	1P20A					
6	1P20A	SPARE				
7	1P	PFB				
8						
9						
10						
11						
12						
TOTALS						
			3.0	3.0		

TRAFFIC CONTROL NOTES :

- THE CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS (AT INTERSECTIONS, DRIVEWAYS, BRIDGES, STRUCTURES, ETC.) TO FIT FIELD CONDITIONS.
- CONES OR DELINEATORS SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
- TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SUCH THAT THE SIGN OR DEVICE FARTEST FROM THE WORK AREA SHALL BE PLACED FIRST. THE OTHERS SHALL THEN BE PLACED PROGRESSIVELY TOWARD THE WORK AREA.
- REGULATORY AND WARNING SIGNS WITHIN THE CONSTRUCTION ZONE, THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLANS, SHALL BE REMOVED OR COVERED. ALL SIGNS SHALL BE RESTORED UPON COMPLETION OF THE WORK.
- FLAGGERS AND/OR POLICE OFFICERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES.
- ALL TRAFFIC LANES SHALL BE A MINIMUM OF TEN FEET (10') WIDE.
- ALL CONSTRUCTION WARNING SIGNS SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE MESSAGE IS NOT APPLICABLE OR NOT IN USE.
- THE BACKS OF ALL SIGNS USED FOR TRAFFIC CONTROL SHALL BE APPROPRIATELY COVERED TO PRECLUDE THE DISPLAY OF IN-APPLICABLE SIGN MESSAGES (i.e., WHEN SIGNS HAVE MESSAGES ON BOTH SIDES).
- AT THE END OF EACH DAY'S WORK OR AS SOON AS THE WORK IS COMPLETED, THE CONTRACTOR SHALL REMOVE ALL TRAFFIC CONTROL DEVICES NO LONGER NEEDED, TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC. REMOVAL SHALL BE IN THE REVERSE ORDER OF INSTALLATION.
- REPLACE PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS UPON COMPLETION OF EACH PHASE OF WORK.
- CONTRACTOR SHALL PROVIDE RAMPS FOR WHEEL-CHAIR TRAFFIC.



LIGHTING CONTROL DIAGRAM  
 NOT TO SCALE

ALBERT CHONG ASSOCIATES, INC.  
 765 Kalia Street, Suite 401  
 Honolulu, Hawaii 96814



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Albert Chong

6-16-93	ADDENDUM NO. 1	
DATE	NO.	REVISION
		ENG

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

TRANSFORMER BUILDINGS V1 AND V2: SINGLE LINE  
 DIAGRAMS AND GENERAL NOTES

HIGHWAY LIGHTING IMPROVEMENTS AND REHABILITATION  
 VINEYARD BOULEVARD  
 PALAMA STREET TO PUNCHBOWL STREET

SHEET NO. 35 OF 35 SHEETS



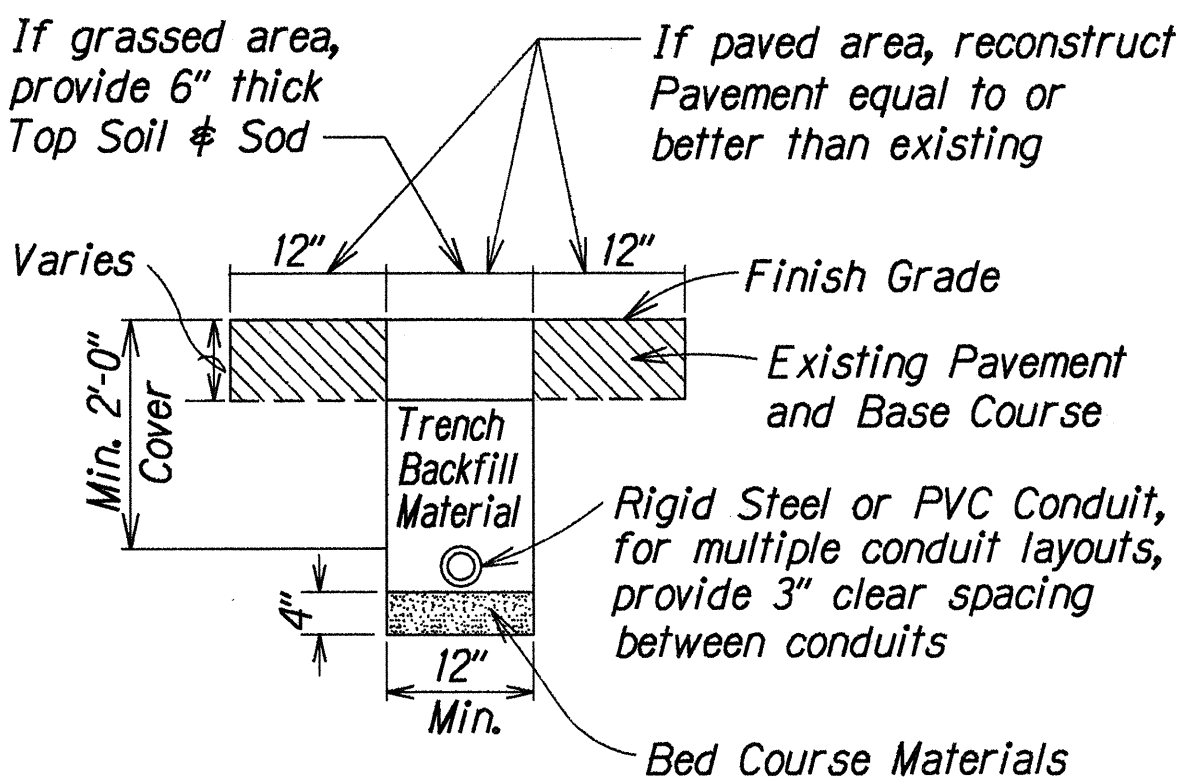
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-098-1(10)	1993	35 S-1	35

GENERAL NOTES

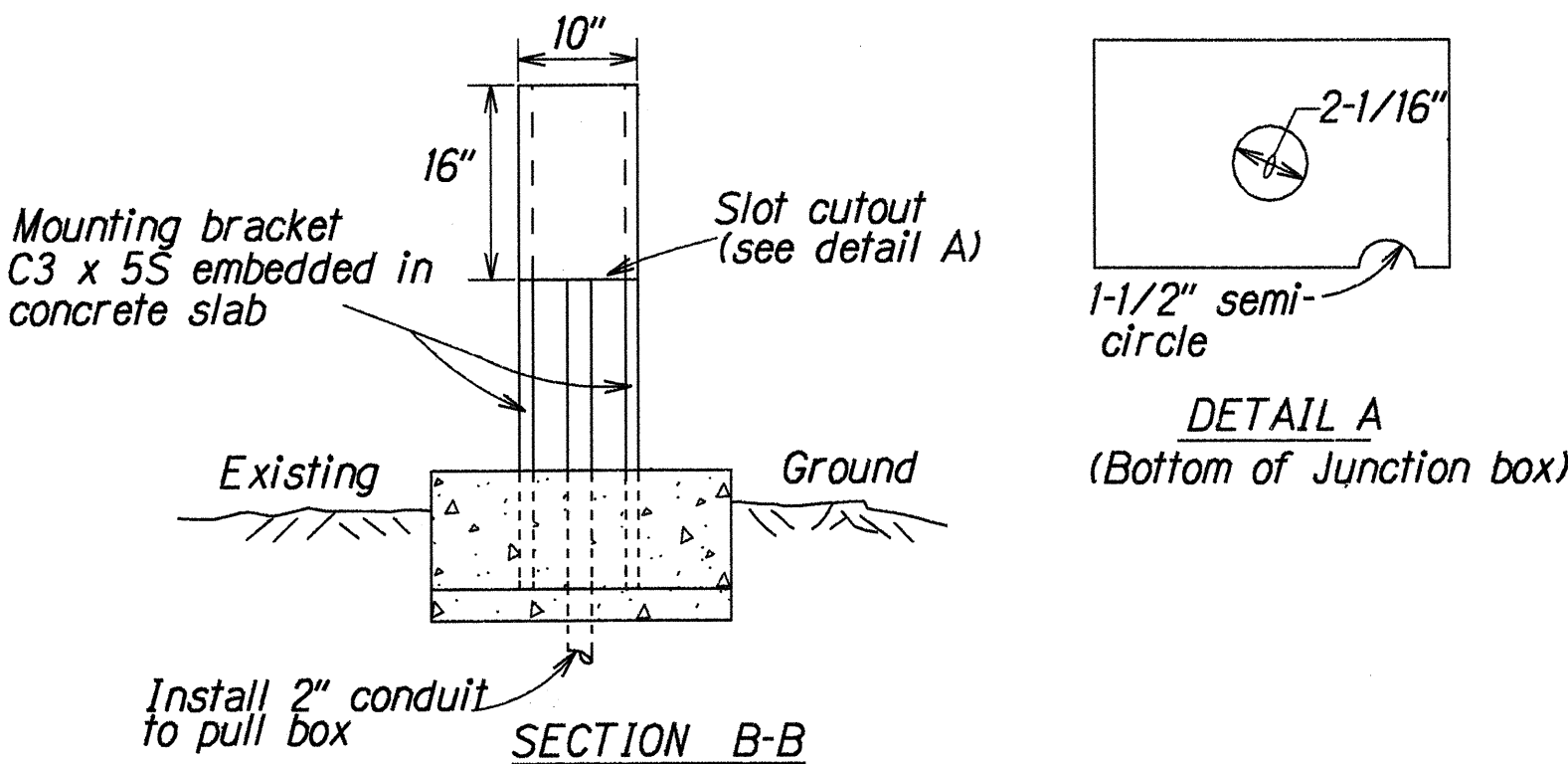
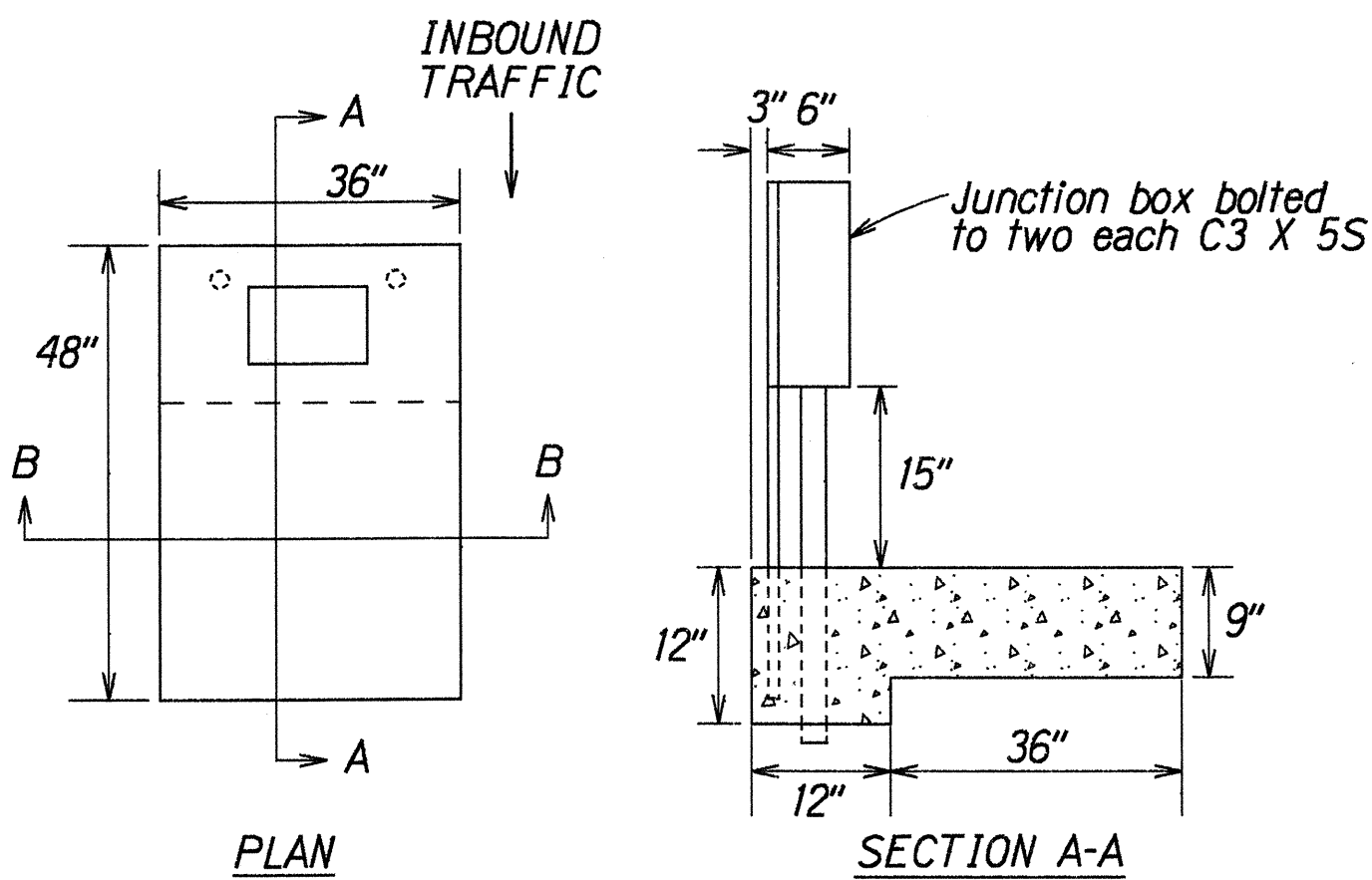
- The locations of new inductance loops, pullboxes and cabinets/junction boxes shall be staked out in the field by the Contractor and approved by the Engineer prior to installation.
- The contractor shall inform the Engineer at least one day prior to pouring of the concrete slab/pad, saw-cutting pavement and installing inductance loops.
- Continuity of inductance loops and lead-in wires shall be tested and warranted for one year from date of acceptance by the Contractor.
- The Contractor shall restore all affected areas to their original condition. This item of work shall not be paid for separately, but shall be considered incidental to work of other paid items.
- The Contractor shall verify the locations of the existing utilities and underground structures whether or not shown on plans.
- The Contractor shall assume that existing underground utilities not shown on the plans may exist, therefore, he shall contact the different utility companies for information and toning.
- The Contractor shall be held liable for any damages incurred to the existing utilities and underground structures as a result of his operations. All damaged portions shall be replaced in accordance with the standards and specifications of the affected utility company at no cost to the STATE.
- Changes to the contract plans and specifications shall not be permitted, unless otherwise authorized by the Engineer upon written justification and request for approval by the Contractor.

LOOP LAYOUT NOTES

- Detector loop shall consist of three turns of 1/C 14 AWG RHW-USE-XLP wire or equivalent embedded in a 3/8" minimum saw cut, except as noted.
- Loop and lead-in to the first pullbox shall be one continuous wire. Lead-in wires from the same loop shall be twisted in pairs, two turns per foot. DO NOT twist one loop-pairs with another loop-pairs.
- All lead-in wires shall be crimped with open end lugs that will fit into the terminal board slots snugly.
- Stagger traffic loops on roadway less than 12 foot lane width.
- The Contractor shall connect the inductance wires on each terminal slot.
- The left lane in the direction of traffic flow is designated as lane 1, and the lane next to to its right as lane 2 and so on as indicated on plans.
- Clean sawcut thoroughly before filling with epoxy sealant.
- All loop lead-in wires in all enclosures including pullboxes shall be identified and labeled by direction of traffic flow and lane numbers as shown on plans.
- All cables and wires teminated within an enclosure shall have a minimum 12" additional slack.



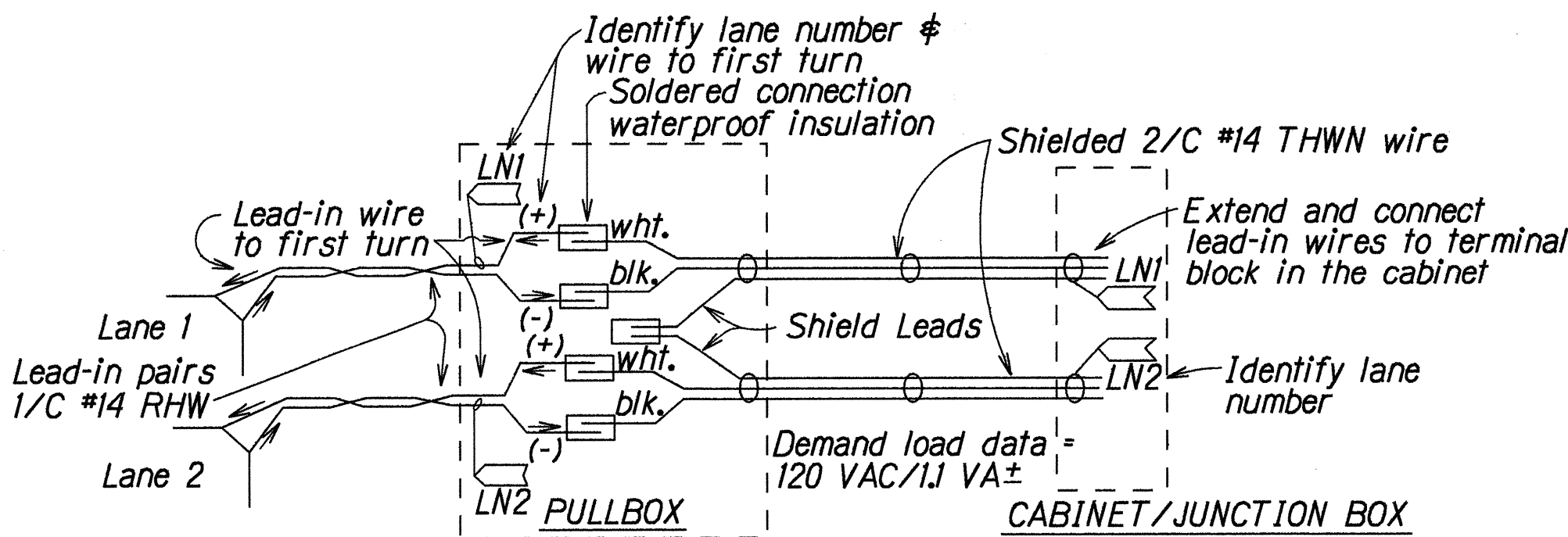
TYPICAL TRENCH SECTION FOR CONDUIT  
Not to Scale



CONCRETE PAD AND JUNCTION BOX  
Not to Scale

CONCRETE PAD AND JUNCTION BOX NOTES

- Mount a junction box on concrete slab (36"x48") as shown at each location.
- Concrete for new slab shall be poured in place.
- The Contractor shall furnish keys of the junction boxes to the STATE.
- Mount one 20-pin terminal board on wall inside the junction box.
- All conduits shall be steel or schedule 80 PVC.
- All fastenings shall be secured by screws. Holes for the screws shall be drilled and tapped.
- All conduits shall be laid a minimum depth of 12" below the surface's finished grade.
- All pullboxes are type B, meeting DOT requirements. Apply two coats asphaltic base paint to the frames and covers after installation.



DETECTOR LOOP LEAD-IN WIRING AND IDENTIFICATION IN PULLBOX AND CABINET  
Not to Scale

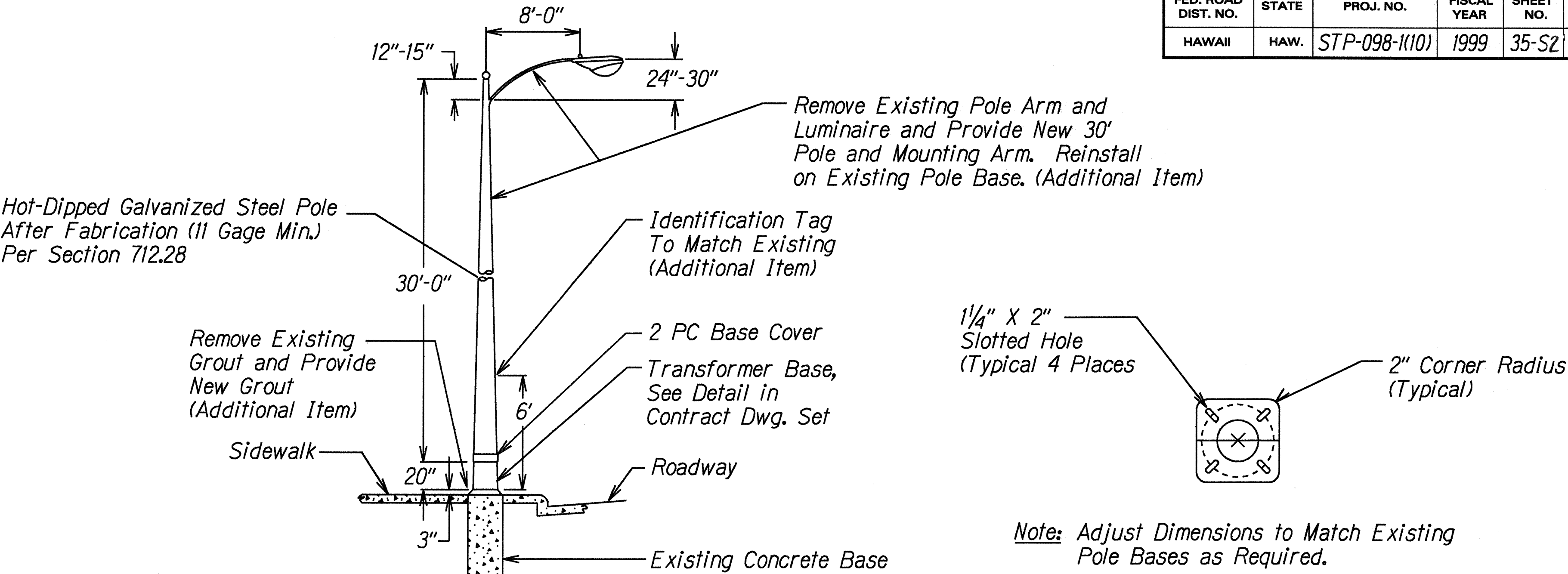
ORIGINAL PLAN	DATE	11/23/93
SURVEY PLOTTED BY		
DRAWN BY		
DESIGNED BY		
CHECKED BY		
NOTED BY		

11/23/93	Sheet added to Contract Plan Set for additional details required on Plan Sht. No. C.O. 10.
DATE	REVISION

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
<b>VEHICLE DETECTOR LOOPS</b>
<b>VINEYARD BOULEVARD RESURFACING</b>
<b>H-1 Off-Ramp to H-1 On-Ramp</b>
<b>Fed. Aid Proj. No. STP-098-1(10)</b>
Scale: As Shown      Date: Nov., 1993
SHEET No. 1 OF 1 SHEETS

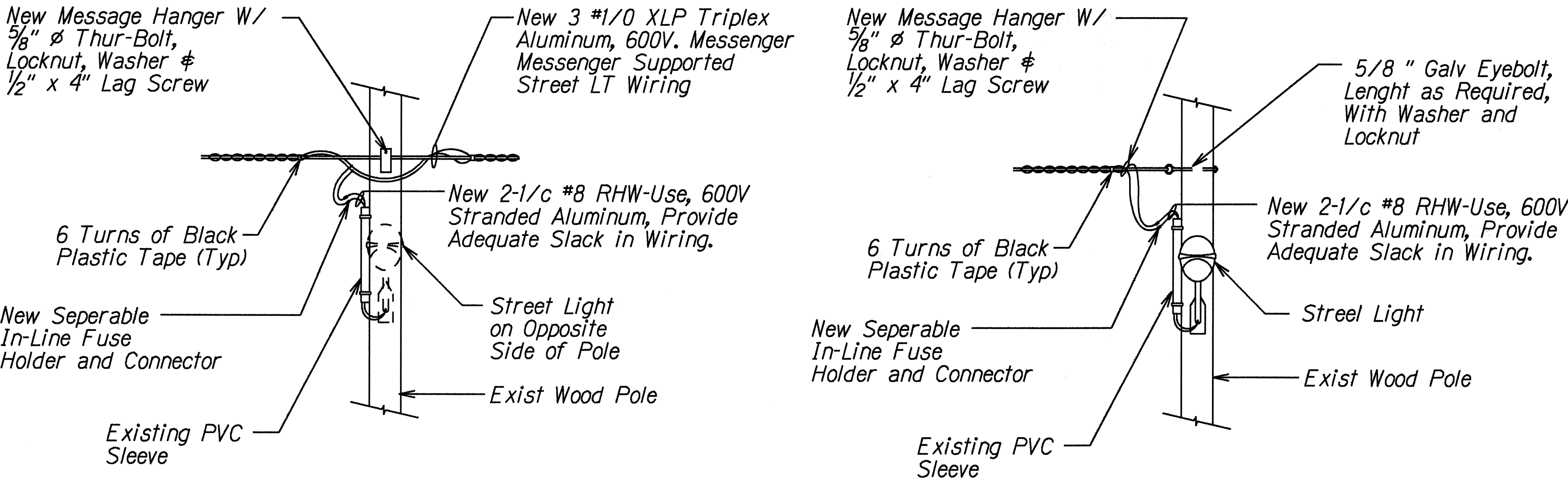
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-098-1(10)	1999	35-S2	35

SCHEDULE OF SIGNS TO BE RELOCATED		
POLE NO.	NO. SIGN	DESCRIPTION
P30	NONE	
P31	NONE	
P32	4	"RIGHT LANE MUST TURN RIGHT"
		"6AM - 9AM MON - FRI"
		"NO PARKING ANY TIME"
		"TOW AWAY ZONE"
P33	2	"RIGHT LANE MUST TURN RIGHT"
		"6AM - 9AM MON - FRI"
P34	2	"S. VINEYARD BLVD. 320>"
		"PUNCHBOWL ST. <1400"
P36	NONE	
P37	1	"SPEED LIMIT 30"
P38	NONE	
P39	NONE	
P50	1	"AFTER STOP RIGHT TURN PERMITTED ON RED"
P51	1	"PALI HWY."
P52	1	"SPEED LIMIT 30"
P53	NONE	
P54	NONE	
P55	2	"NO PARKING ANY TIME"
		"TOW AWAY ZONE"
P56	1	"SPEED LIMIT 30"
P57	NONE	
P58	3	"NO RIGHT TURN OF RED"
		"PUNCHBOWL ST. 1400>"
		"S. VINEYARD BLVD. <320"
P59	NONE	
P60	2	"SPEED LIMIT 30"
		"HAWAII 98"
P61	1	"ONE WAY"



Street Light Standard Detail  
Not To Scale

Base Plate  
Not To Scale



Detail - Through Pole  
Not To Scale

Detail - End of Line Pole  
Not To Scale

TRAFFIC SIGNAL SYSTEM NOTES:

- Poles P30, P50 and P54 have traffic signal system equipment and wiring. This equipment consists of a 1" conduit riser with weatherhead, and wiring to a traffic signal light mounted to the pole. Contractor shall coordinate the relocation of such equipment with the city and county department of transportation services.
- Pole P34 has a 1" conduit riser and weatherhead only, there is no wiring. Contractor shall coordinate with the city and county department of transportation services as required when replacing pole.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

STREET LIGHT DETAILS  
Highway Lighting, Improvement  
And Rehabilitation - Vineyard Blvd  
Palama Street To Punchbowl Street  
Scale: N.T.S. Date: MAY, 1999

SHEET No. 1 OF 1 SHEETS