

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

HECO NOTES

- LOCATION OF HECO'S OVERHEAD AND UNDERGROUND FACILITIES AS SHOWN ON THE PLANS ARE FROM EXISTING RECORDS OF VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THEREFORE, THE CONTRACTOR IS TO EXERCISE EXTREME CAUTION WHEN THE EXCAVATION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND ELECTRICAL FACILITIES AND MAINTAIN A MINIMUM 13'-0" CLEARANCE WHILE WORKING CLOSE TO AND/OR UNDER HECO'S OVERHEAD FACILITIES. **CAUTION: HECO'S OVERHEAD AND UNDERGROUND LINES ARE ENERGIZED.**
- THE CONTRACTOR SHALL COMPLY WITH THE STATE OF HAWAII'S OCCUPATIONAL SAFETY AND HEALTH LAWS (DOSH) INCLUDING ALL AMENDMENTS.
- WHEN TRENCH EXCAVATION IS ADJACENT TO OR BENEATH HECO'S EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR:
 - SHEETING AND BRACING THE EXCAVATION TO PREVENT SLIDES, CAVE-INS AND SETTLEMENTS.
 - PROTECTING EXISTING STRUCTURES OR FACILITIES WITH BEAMS, STRUTS OR UNDER-PINNING.
- FOR POLE BRACING INSTRUCTIONS, THE CONTRACTOR SHALL CALL THE HECO DISTRICT CONSTRUCTION SUPERINTENDENT AT WAI'AU, PHONE 543-4223, A MINIMUM OF 72 HOURS IN ADVANCE.
- ANY WORK REQUIRED TO RELOCATE HECO FACILITIES SHALL BE DONE BY HECO AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION AND FOR COST IF APPLICABLE.
- SHOULD IT BECOME NECESSARY TO TEMPORARILY RELOCATE ANY HECO FACILITIES TO ENABLE THE CONTRACTOR TO PERFORM HIS WORK IN A SAFE AND EXPEDITIOUS MANNER IN FULFILLING HIS CONTRACT OBLIGATIONS, THESE TEMPORARY RELOCATIONS WILL BE DONE BY HECO OR BY THE CONTRACTOR UNDER HECO'S SUPERVISION, WITH ALL COST BEING BORNE BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGES TO HECO'S FACILITIES. ANY DAMAGES TO HECO'S FACILITIES WILL BE REPORTED IMMEDIATELY TO HECO'S TROUBLE DISPATCHER AT 543-7874.
- EXISTING HECO OVERHEAD AND UNDERGROUND FACILITIES AS SHOWN ON THESE PLANS OR WHOSE APPROXIMATE LOCATIONS WITHIN THE PROJECT BOUNDARIES HAVE BEEN MADE KNOWN BY ANY REASONABLE MEANS AT ANY TIME TO THE CONTRACTOR SHALL BE PROTECTED AT ALL TIMES BY THE CONTRACTOR DURING CONSTRUCTION. COSTS FOR DAMAGES TO HECO FACILITIES SHALL BE BORNE BY THE CONTRACTOR. THIS REPAIR WORK SHALL BE DONE BY HECO.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS. THE CONTRACTOR SHALL CONTACT HECO'S MAPPING AND RECORDS DIVISION LOCATED AT 820 WARD AVENUE, 4TH FLOOR, TWO WEEKS PRIOR TO STARTING CONSTRUCTION FOR FIELD VERIFICATION OF HECO'S UNDERGROUND FACILITIES, AND OBTAIN AN EXCAVATION PERMIT.
- ALL EXISTING UTILITY FACILITIES SHALL REMAIN IN PLACE UNTIL THE PROPOSED TEMPORARY OR PERMANENT FACILITIES ARE COMPLETED.
- ALL EXISTING FACILITIES SHOWN ARE APPROXIMATELY ONLY. CONTRACTOR SHALL VERIFY THEIR LOCATIONS AND MAKE ADJUSTMENTS TO ANY NEW OR EXISTING FACILITIES AS DIRECTED BY THE ENGINEER.
- ALL PROPOSED MANHOLES, PULLBOXES, CONDUITS/DUCTLINES, INCLUDING RISER BENDS, MANHOLE FRAMES AND COVERS, AND GROUND RODS REQUIRED WITHIN THE ROAD RIGHT-OF-WAY SHALL BE INSTALLED BY THE CONTRACTOR.
- THE TERM "ENGINEER" FOR THE UTILITY COMPANIES SHALL ALSO MEAN HIS DELEGATED REPRESENTATIVE AND/OR UTILITIES INSPECTOR OF RECORD.
- THE TERM "PULLBOX" SHALL MEAN SPLICE CAN, SPLICE OR SERVICE BOX, PULLBOX OR HANDHOLE.
- THE TERM "MANHOLE" SHALL MEAN ANY SUBSURFACE ENCLOSURE IN WHICH MEN MUST ENTER TO WORK.
- THE CONTRACTOR SHALL STAKEOUT ALL FACILITIES FOR VERIFICATION BY THE UTILITY INVOLVED AND/OR AFFECTED BEFORE PROCEEDING.
- THE LOCATION AND DEPTH OF ALL MANHOLES AND PULLBOXES AND THE ROUTING OF ALL DUCTLINES SHALL BE VERIFIED BY THE UTILITIES BEFORE EXCAVATIONS STARTS.
- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS TO COMPLETE THE CONSTRUCTION OF THE UNDERGROUND DUCTLINE SYSTEM UNLESS OTHERWISE SPECIFIED.
- ALL MANHOLES, PULLBOXES, AND DUCTLINES TO BE INSTALLED IN CONCRETE SHALL BE INSPECTED AND APPROVED BY THE UTILITY COMPANY BEFORE PLACING CONCRETE. ALL HECO DUCTS SHALL BE ENCASED IN CONCRETE JACKET UNLESS OTHERWISE SPECIFIED. FOR HECO FACILITIES, NOTIFY HECO'S INSPECTOR, RODNEY JANICKI AT CELL. #352-0950, PGR. #290-1450, AT LEAST 48 HOURS BEFORE PLACING CONCRETE.

- MANHOLE DEPTHS SHOWN ON PLANS REFER TO INSIDE DEPTH OF MANHOLE.
- THE MINIMUM DEPTH OF DUCTLINES FROM FINISH GRADE TO TOP OF CONCRETE ENCASEMENT OR COVER IS AS FOLLOWS:
 - WITHIN ROADWAY: 3'-0"
- ALL COMPLETED DUCTLINES SHALL BE MANDREL TESTED BY THE CONTRACTOR IN THE PRESENCE OF THE UTILITY COMPANY'S INSPECTOR USING THE UTILITY COMPANY'S STANDARD PRACTICE.
- THE CONTRACTOR SHALL FURNISH AND INSTALL A 1/8" POLYOLEFIN PULL LINE IN ALL COMPLETED DUCTLINES AFTER MANDREL TESTING IS COMPLETE.
- THE CONTRACTOR SHALL FURNISH HIS CONSTRUCTION SCHEDULE TO HECO AT LEAST FIFTEEN (15) WORKING DAYS PRIOR TO STARTING ANY HECO WORK.
- THE CONTRACTOR SHALL GIVE HECO AT LEAST FIFTEEN (15) WORKING DAYS NOTICE TO PROCEED WITH ITS PORTION OF THE WORK.
- THE CONTRACTOR SHALL GIVE HECO AT LEAST TWENTY (20) WORKING DAYS FOR ANY RELOCATION WORK NOT SHOWN ON THE PLANS. HECO SHALL NOT BE RESPONSIBLE FOR DELAYS THAT ARE BEYOND THEIR CONTROL. ALL HECO TEMPORARY RELOCATIONS NOT SHOWN ON THE PLANS ARE AT THE CONTRACTOR'S COST.
- BARRICADING OF HECO'S FACILITIES, IF REQUIRED, SHALL BE DONE BY CONTRACTOR. BREAKING INTO EXISTING HECO FACILITIES SHALL BE DONE BY HECO.
- HECO SHALL REMOVE ALL EXISTING HECO FACILITIES EXCEPT AS NOTED ON PLANS.
- HTCO SHALL BE THE JOINT POLE REMOVAL COMPANY.
- SPECIAL NOTE:**
THE EXISTING ELECTRICAL CABLES IN THE AREA ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION. ONLY HECO PERSONNEL ARE TO HANDLE THESE CABLES AND ERECT TEMPORARY GUARDS TO PROTECT THESE CABLES FROM DAMAGE. THE CONTRACTOR SHALL EXERCISED DUE CARE AND PRECAUTIONS TO AVOID DISTURBANCE OF ENERGIZED CABLES AND TEMPORARY GUARDS AND SHALL WORK CAUTIOUSLY AT ALL TIMES TO AVOID ACCIDENTS. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH HECO'S UNDERGROUND DIVISION AND INSPECTION DIVISION. (PHONE: 543-7871.)
- THE FOLLOWING TERMS WILL BE USED INTERCHANGEABLY THROUGHOUT THIS PROJECT:
 - HTCO OR "T" FOR HAWAIIAN TELEPHONE CO.
 - HECO OR "E" FOR HAWAIIAN ELECTRIC CO.
 - OCEANIC OR "C" FOR OCEANIC CABLEVISION.
- POWERLINES RUNNING IN PARALLEL WITH HTCO DUCTLINE SHALL NOT BE INSTALLED ABOVE OR BELOW HTCO DUCTLINE.
- FOR ASSISTANCE IN PROVIDING PROPER SUPPORT AND PROTECTION OF UNDERGROUND DUCTLINES, THE CONTRACTOR SHALL CONTACT HECO'S UNDERGROUND DIVISION AT 543-7871, A MINIMUM OF 72 HOURS IN ADVANCE. THE COST FOR HECO'S ASSISTANCE WILL BE AT THE CONTRACTOR'S COST.
- THE CONTRACTOR SHALL INSTALL SCHEDULE 40 PVC CONDUIT FOR ALL HECO DUCTLINE. NO SPLIT DUCTS WILL ALLOWED. NO NOTCHING OF HECO BOXES WILL BE ALLOWED. SCHEDULE 80 PVC CONDUIT FOR ALL RISER CONDUIT SHALL BE INSTALLED.
- WHEN EXCAVATING NEAR UTILITY POLES, THE CONTRACTOR SHALL PROTECT, SUPPORT, SECURE AND TAKE ALL OTHER PRECAUTIONS TO PREVENT DAMAGE TO OR LEANING OF THESE POLES. CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED TO REPAIR OR STRAIGHTEN POLE.
- THE CONTRACTOR SHALL PROVIDE TO HECO TWO SETS OF AS-BUILT PLAN & PROFILE DRAWINGS OF THE HECO DUCTLINE(S) CONSTRUCTED. THE OFFSETS, STATIONING, VERTICAL ELEVATION OF THE HECO DUCTLINE(S) CONSTRUCTED, AND ALL FACILITIES THAT CROSSES THE DUCTLINE SHALL BE SHOWN.
- THE CONTRACTOR SHALL STAKE OUT ALL TEMPORARY AND PERMANENT NEW POLE & ANCHOR LOCATIONS SO AS NOT TO CONFLICT WITH ANY EXISTING OR PROPOSED UTILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COST INCURRED BY CONFLICTING UTILITIES. UTILITY COMPANY REPRESENTATIVE SHALL APPROVE THE LOCATION.
- FOR CONSTRUCTION OF UNDERGROUND FACILITIES REFER TO HECO SPECIFICATIONS CS7001, CS7003, CS9301. FOR DESIGN AND CONSTRUCTION OF PRECAST MANHOLES/HANDHOLES REFER TO HECO SPECIFICATION CS9401.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
OAHU	HAW.	STP-083-1(45)	2000	23	39

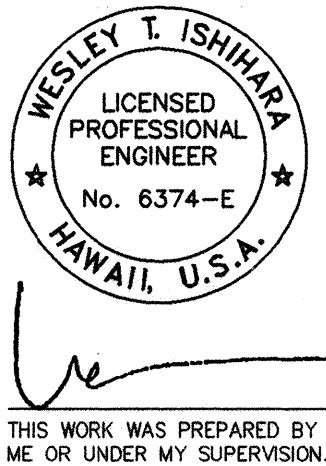
ELECTRICAL SYMBOL LEGEND			
SYMBOL			
REMOVE	EXISTING	NEW	DESCRIPTION
		— — — —	UNDERGROUND DUCT LINE
		— EP —	ELECTRICAL PRIMARY DUCT (12KV AND 46KV)
		— T/CV —	TELEPHONE AND CABLE TELEVISION DUCT
		⬡	ELECTRICAL MANHOLE - EMH
		⬢	ELECTRICAL HANDHOLE - EHH
		⬤	TELEPHONE MANHOLE - TMH
		■	CABLE TELEVISION MANHOLE - CMH
		●	STREET LIGHT STANDARD, SINGLE LUMINAIRE ARM
		⦶	STREET LIGHT STANDARD ON WOOD POLE
		⬜ L	STREET LIGHT PULLBOX, TYPE "A"
JP16 ✕	JP16 ○	(JP16) ●	JOINT UTILITY POLE, POLE #16 INDICATED
		▨	HIGHWAY LIGHTING SERVICE EQUIPMENT
		⊖	PHOTOCELL
		— L —	UNDERGROUND STREET LIGHT DUCTLINE AND WIRING
— e/OH — R —	— e/OH —	— E/OH —	OVERHEAD WIRING
	— Te/OH —	— TE/OH —	TEMPORARY OVERHEAD WIRING
		⊙ 2 E2	DETAIL INDICATOR: TOP HALF DENOTES DETAIL NUMBER, LEFT DENOTES SHEET ON WHICH DETAIL SHOWN.
		Ⓐ	DUCT INDICATOR
		⬠ 1	NOTE INDICATOR
		////	HATCH MARKS INDICATE REMOVAL
		GFCI	GROUND FAULT CIRCUIT INTERRUPTOR
		GND	GROUND
		HECO	HAWAIIAN ELECTRIC COMPANY
		HTCO	GTE HAWAIIAN TELEPHONE COMPANY
		NIC	DENOTES NOT IN CONTRACT
		WP	WEATHERPROOF
		—	JOINT UTILITY ANCHOR

DRAWING REVIEW	
Reviewed for HECO's Facilities Only	
Date 4/3/00	By JKH
Engineering Department	
Hawaiian Electric Company, Inc.	
HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials, and any other liability associated with this project.	

APPROVED:		
Wesley T. Ishihara	HAWAIIAN TELEPHONE COMPANY	4-3-00
DATE		
APPROVED:		
Wesley T. Ishihara	OCEANIC CABLEVISION	4-3-00
DATE		

STREET LIGHT STANDARD IDENTIFICATION LEGEND:

LEGEND	DESCRIPTION
1 121+93	STATION NUMBER
2 2, CKT #3, AB	STREET LIGHT POLE NUMBER, CIRCUIT NUMBER, PHASE (VERIFY POLE NO. WITH D.O.T.)
3 6'	LUMINAIRE ARM SPAN IN FEET
4 30'	LUMINAIRE MOUNTING HEIGHT ABOVE PAVEMENT



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ELECTRICAL COMPANY NOTES AND ELECTRICAL LEGEND	
KAMEHAMEHA HIGHWAY WAIMEA BAY	
EMERGENCY ROCKFALL REMEDIATION	
Scale: As Shown	Date: April 2000
SHEET No. E-1 OF SHEETS	

"AS-BUILT"

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

ELECTRICAL GENERAL NOTES:

1. WORK INCLUDES INSTALLATION OF ALL ELECTRICAL SYSTEMS COMPLETE AND OPERATIONAL TO THE SATISFACTION OF THE STATE AS LIMITED BY THE INTENT OF THE CONTRACT DOCUMENTS.
2. PERFORM ELECTRICAL WORK IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70), NATIONAL ELECTRICAL SAFETY CODE, AND ALL LOCAL RULES AND REGULATIONS.
3. OBTAIN ALL NECESSARY PERMITS.
4. VISIT THE JOB SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS AND THE EXTENT OF REMOVAL, RELOCATION, RECONNECTION AND/OR NEW WORK PRIOR TO BIDDING. BID SUBMISSION SHALL BE CONSIDERED AS EVIDENCE THAT THE CONTRACTOR HAS VISITED THE SITE AND HAS RESOLVED ALL DISCREPANCIES AND QUESTIONS AND NO EXTRA PAYMENT WILL BE AUTHORIZED FOR WORK MADE NECESSARY BY THE CONTRACTOR'S FAILURE TO DO SO.
5. SIZE ALL CONDUIT PER THE NATIONAL ELECTRICAL CODE UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
6. PROVIDE SOLID COPPER, 600 VOLT INSULATION TYPE RHW-USE POWER CONDUCTORS FOR FEEDERS AND BRANCH CIRCUITS #10 AND SMALLER.
7. PROVIDE AN INSULATED GREEN GROUNDING CONDUCTOR, SIZED PER TABLE 250-95 OF THE NATIONAL ELECTRICAL CODE, FOR ALL CIRCUITS. INSTALL THIS CONDUCTOR IN ALL RACEWAYS INCLUDING THOSE INSTALLED FOR SWITCH LEGS AND ATTACH TO THE DEVICE, LUMINAIRE, OR EQUIPMENT USING A SUITABLE GROUNDING LUG.
8. PROVIDE AND INSTALL ALL JUNCTION AND PULL BOXES REQUIRED FOR THE INSTALLATION OF ELECTRICAL DEVICES AND EQUIPMENT, WHETHER OR NOT SPECIFICALLY INDICATED ON THE PLANS. SIZE BOXES PER THE NATIONAL ELECTRICAL CODE.

DEMOLITION NOTES:

1. THE DEMOLITION PLAN IS INTENDED TO SHOW THE GENERAL SCOPE OF WORK AND DOES NOT NECESSARILY SHOW EVERY DEVICE, BOX, CONDUIT, ETC. TO BE REMOVED. FIELD VERIFY OTHER ELECTRICAL SERVICES THAT MAY BE ENCOUNTERED DURING DEMOLITION AND REMOVE OR RE-ROUTE THESE ITEMS AS REQUIRED.
2. COORDINATE WITH HAWAIIAN ELECTRIC COMPANY (HECO) AND HAWAIIAN TELEPHONE COMPANY (HTCO), OCEANIC CABLE FOR THE REMOVAL AND RELOCATION (IF NECESSARY) OF EXISTING SERVICES.
3. REMOVE ALL UNUSED WIRING FROM DEMOLITION AREA, INCLUDING WIRING DISCONNECTED UNDER THIS CONTRACT AND WIRING UNCOVERED BY DEMOLITION.

GTE/OCEANIC NOTES:

1. THE LOCATION OF OVERHEAD AND UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND FACILITIES AND SHALL MAINTAIN ADEQUATE CLEARANCE OPERATING EQUIPMENT WITHIN OR UNDER AND OVERHEAD LINES. ANY DAMAGES TO THE EXISTING UNDERGROUND FACILITIES SHALL BE PAID FOR BY THE CONTRACTOR.
2. ALL EXISTING FACILITIES SHOWN ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THEIR LOCATION AND SHALL MAKE ADJUSTMENTS TO ANY NEW OR EXISTING FACILITIES AS DIRECTED BY THE ENGINEER.
3. THE CONTRACTOR SHALL STAKE OUT ALL FACILITIES FOR VERIFICATION BY THE UTILITY INVOLVED AND /OR AFFECTED.
4. THE CONTRACTOR WILL IMMEDIATELY REPORT DAMAGES DISCOVERED OR CAUSED BY HIS WORK TO THE APPROPRIATE UTILITY COMPANY.
5. THE LOCATION OF THE GTE HAWAIIAN TELEPHONE COMPANY'S EXISTING FACILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION AND SHALL MAINTAIN PROPER CLEARANCES WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF GTE HAWAIIAN TELEPHONE COMPANY FACILITIES. THE CONTRACTOR SHALL VERIFY THEIR LOCATION AND SHALL BE LIABLE FOR ANY DAMAGES TO GTE HAWAIIAN TELEPHONE COMPANY FACILITIES. ANY DAMAGES SHALL BE REPORTED IMMEDIATELY TO GTE HAWAIIAN TELEPHONE COMPANY'S REPAIR SECTION AT #611 (24 HOURS) OR AT 840-1444 (NORMAL WORKING HOURS, MONDAY THROUGH FRIDAY, EXCEPT HOLIDAYS). OCEANIC CABLE 625-8666.
6. FOR UNDERGROUND CABLE LOCATING AND MARKING, FIVE WORKING DAYS ADVANCE NOTICE IS REQUIRED. THREE WORKING DAYS ADVANCE NOTICE IS REQUIRED FOR ANY INSPECTION BY A DESIGNATED REPRESENTATIVE.
7. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTION NOT TO DAMAGE ANY EXISTING CABLES OR CONDUITS. ANY WORK INVOLVING EXISTING GTE HAWAIIAN TELEPHONE COMPANY CABLES OR CONDUITS, SHALL BE DONE IN THE PRESENCE OF A GTE HAWAIIAN TELEPHONE COMPANY INSPECTOR OR DESIGNATED REPRESENTATIVE. APPLICABLE TO OCEANIC CABLE.
8. THE CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT AND TONING REQUEST FROM GTE HAWAIIAN TELEPHONE COMPANY'S EXCAVATION PERMIT SECTION LOCATED AT 3239 UALENA STREET, THIRD FLOOR, TWO WEEKS PRIOR TO THE START OF CONSTRUCTION. HOURS OF BUSINESS ARE 7:00A.M TO 10:30P.M. AND 11:30A.M TO 3:00P.M MONDAY THROUGH FRIDAY EXCEPT HOLIDAYS. OCEANIC CABLE LOCATED AT 200 AKAMAINUI STREET IN MILILANI. HOURS OF BUSINESS ARE 8:00 A.M. TO 11:00 A.M. AND 12:00 P.M. TO 2:00 P.M. MONDAY THRU FRIDAY EXCEPT HOLIDAYS.
9. THE CONTRACTOR SHALL NOTIFY GTE HAWAIIAN TELEPHONE COMPANY'S INSPECTOR OR DESIGNATED REPRESENTATIVE A MINIMUM OF 72 HOURS PRIOR TO EXCAVATION, BRACING OR BACKFILLING OF GTE HAWAIIAN TELEPHONE COMPANY'S STRUCTURES OR FACILITIES. OCEANIC CABLE INSPECTOR CAN BE CONTACTED AT 625-8378 OR 625-8372.
10. WHEN EXCAVATION IS ADJACENT TO OR BENEATH GTE HAWAIIAN TELEPHONE COMPANY'S EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR SHALL:
 - A. SHEET AND /OR BRACE THE EXCAVATION TO PREVENT SLIDES, CAVE-INS OR SETTLEMENTS TO ENSURE NO MOVEMENT TO GTE HAWAIIAN TELEPHONE COMPANY'S STRUCTURES OR FACILITIES.
 - B. PROTECT EXISTING STRUCTURES AND /OR FACILITIES WITH BEAMS, STRUTS OR UNDERPINNING WHILE EXCAVATING BENEATH THEM TO ENSURE NO MOVEMENT TO GTE HAWAIIAN TELEPHONE COMPANY'S STRUCTURES OR FACILITIES.
11. NEW DUCTLINES SHALL HAVE NEPTCO WP1800P MULETAPE OR APPROVED EQUAL INSTALLED.
12. THE CONTRACTOR SHALL PUMP ALL MANHOLES DURING FINAL INSPECTION.

13. ALL APPLICABLE CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE "GTE HAWAIIAN TELEPHONE COMPANY STANDARD SPECIFICATIONS FOR PLACING UNDERGROUND TELEPHONE SYSTEMS. DATED MARCH 1999."
14. THE CONTRACTOR SHALL NOTIFY GTE HAWAIIAN TELEPHONE COMPANY INSPECTOR 24 HOUR PRIOR TO THE POURING OF CONCRETE OR BACKFILL.

HIGHWAY LIGHTING NOTES :

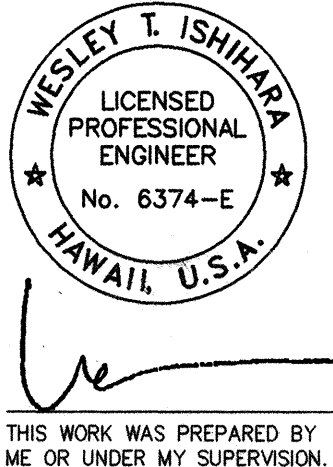
1. THE CONTRACTOR SHALL NOTIFY THE STATE HIGHWAYS, HIGHWAY LIGHTING AND TRAFFIC SUPERVISOR 72 HOURS IN ADVANCE BEFORE COMMENCING INSTALLATION OF HIGHWAY LIGHTING SYSTEM. PHONE: 837-8056.
2. ALL LUMINAIRES SHALL BE HIGH PRESSURE SODIUM TYPE WITH WATTAGE AND I.E.S. TYPE LIGHT DISTRIBUTION AS SHOWN ON THE APPROVED PLANS.
3. THE CONTRACTOR SHALL HAVE ONE SET OF APPROVED PLANS AT JOB SITE AT ALL DURING THE CONSTRUCTION WORK AND RECORD ALL CHANGES WHICH OCCUR DURING CONSTRUCTION OF THE HIGHWAY LIGHTING SYSTEM.
4. CONTRACTOR TO STENCIL DATE OF INSTALLATION AT THE BOTTOM OF EACH PHOTOCELL.
5. FINAL ACCEPTANCE AND INSPECTION WILL BE UNDERTAKEN ONLY AFTER ALL WORK HAS BEEN COMPLETED.
6. THE CONTRACTOR SHALL MEASURE AND RECORD GROUND RESISTANCE AT EACH STANDARD WITH FOUNDATIONS IN GRADE, AND SUBMIT RECORDED GROUND RESISTANCE TO TRAFFIC SECTION, AND OAHU DISTRICT MAINTENANCE SECTION, DEPARTMENT OF TRANSPORTATION, STATE HIGHWAYS. THE CONTRACTOR SHALL CERTIFY ALL ELECTRICAL TESTS, INCLUDING BUT NOT LIMITED TO: CONTINUITY TEST AND THE GROUND ROD RESISTANT TEST PRIOR TO SUBMISSION TO THE ENGINEER.
7. TRIM TREE BRANCHES TO CLEAR REMOVAL OR INSTALLATION OF HIGHWAY LIGHT STANDARDS, AT NO ADDITION COST THE STATE.
8. THE CONTRACTOR SHALL AT HIS EXPENSE, KEEP THE PROJECT AND SURROUNDING AREA FREE FROM DUST NUISANCE AND SHALL BE RESPONSIBLE FOR CLEANING AND REMOVAL OF ALL SILT AND DEBRIS GENERATED BY THE EXCAVATION WORK AND DEPOSITED AND ACCUMULATED WITHIN DOWNSTREAM WATERWAYS, DITCHES, DRAIN PIPES, AND ON PUBLIC ROADWAYS. ANY CITATIONS (FINES) RECEIVED BY HE STATE FOR THE CONTRACTOR'S NON COMPLIANCE OR ANY DEPARTMENT OF HEALTH REGULATIONS SHALL BE DEDUCTED FROM THE PROGRESS PAYMENT.
9. THE CONTRACTOR SHALL LOCATE EXISTING BURIED UTILITY LINES IN THE VICINITY OF THE EXCAVATION WORK PRIOR TO COMMENCING EXCAVATION. AS A MINIMUM, AN ELECTRONIC MAGNETIC DEVICE FOR DETECTION OR BURIED LINES SHALL BE UTILIZED PRIOR TO EXCAVATION. TRENCHES SHALL BE EXCAVATED WITH CARE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING UTILITES RESULTING FROM HIS NEGLIGENCE AND SHALL BEAR COST OF REPAIRS TO THE UTILITIES. METHOD OF REPAIR SHALL BE DETERMINED BY THE STATE.
10. AFTER THE EXACT LOCATION OF THE LIGHTING POLE BASE IS DETERMINED, PLACE 2"x2"x18" HUBS OR OTHER APPROVED MARKER AT THESE LOCATIONS TO INFORM THE CONTRACTING OFFICER OF FINAL LOCATION. OBTAIN APPROVAL PRIOR TO CONSTRUCTION OF LIGHT BASES. ACTUAL FIELD CONDITIONS MAY DIFFER FROM THAT SHOWN ON THES DRAWINGS. USE EXTREME CAUTION WHEN EXCAVATING FOR NEW DUCTLINES.
11. THE ELECTRICAL CONTRACTOR SHALL HAVE PERSONNEL ON THE PROJECT THAT COMPLY WITH THE FOLLOWING QUALIFICATIONS:
 - A. ONE (1) REGISTERED MASTER ELECTRICIAN IN THE COMPANY.
 - B. CERTIFIED JOURNEYMAN ELECTRICIAN AT EACH CONSTRUCTION LOCATION TO PERFORM SPLICING OF CABLES AND ALL REQUIRED WIRING WORK

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OAHU	HAW.	STP-083-1(45)	2000	24	39

12. PROVIDE CONDUIT EXPANSION FITTINGS TO ACCOMMODATE EXPANSIONS AND DEFLECTIONS WHERE CONDUITS CROSS SEISMIC CONTROL AND EXPANSION JOINTS. EXPANSION FITTINGS SHALL BE OF WEATHERTIGHT CONSTRUCTION WITH INSULATED BUSHING ON END OF MOVEABLE CONDUIT. FACTORY-FORMED COPPER BRAID RING ALLOWING CONDUIT EXPANSION AND CONTRACTION. FERALOY END FITTING, STEEL CONDUIT BODY, ZINC ELECTROPLATE AND ALUMINUM CELLULOSE LACQUER FINISH, 8" MAXIMUM CONDUIT MOVEMENT. CROUSE- HINDS "XJ" SERIES FOR EXPOSED CONDUIT AND "XD" SERIES FOR CONDUIT CONCEALED IN CONCRETE OR APPROVED EQUAL. REFER TO STRUCTURAL PLANS FOR EXACT LOCATION OF EXPANSION JOINTS.
13. ALL DUCTLINES TO BE INSTALLED IN CONCRETE SHALL BE INSPECTED AND APPROVED BY THE STATE INSPECTOR AND THE STATE ELECTRICAL MAINTENANCE SUPERVISOR 48 HOURS BEFORE PLACING CONCRETE.
14. DESIGN ILLUMINATION LEVEL= 0.6 FOOTCANDLE AVERAGE MAINTAINED. DESIGN UNIFORMITY RATIO (AVERAGE MINIMUM) =3:1 MAXIMUM. DESIGN MAINTENANCE FACTOR=0.65
15. NEW ROADWAY LIGHTS WILL BE INSTALLED AFTER HECO REMOVES THE TEMPORARY 12.47 KV OVERHEAD LINES FROM THE TEMPORARY POLES.

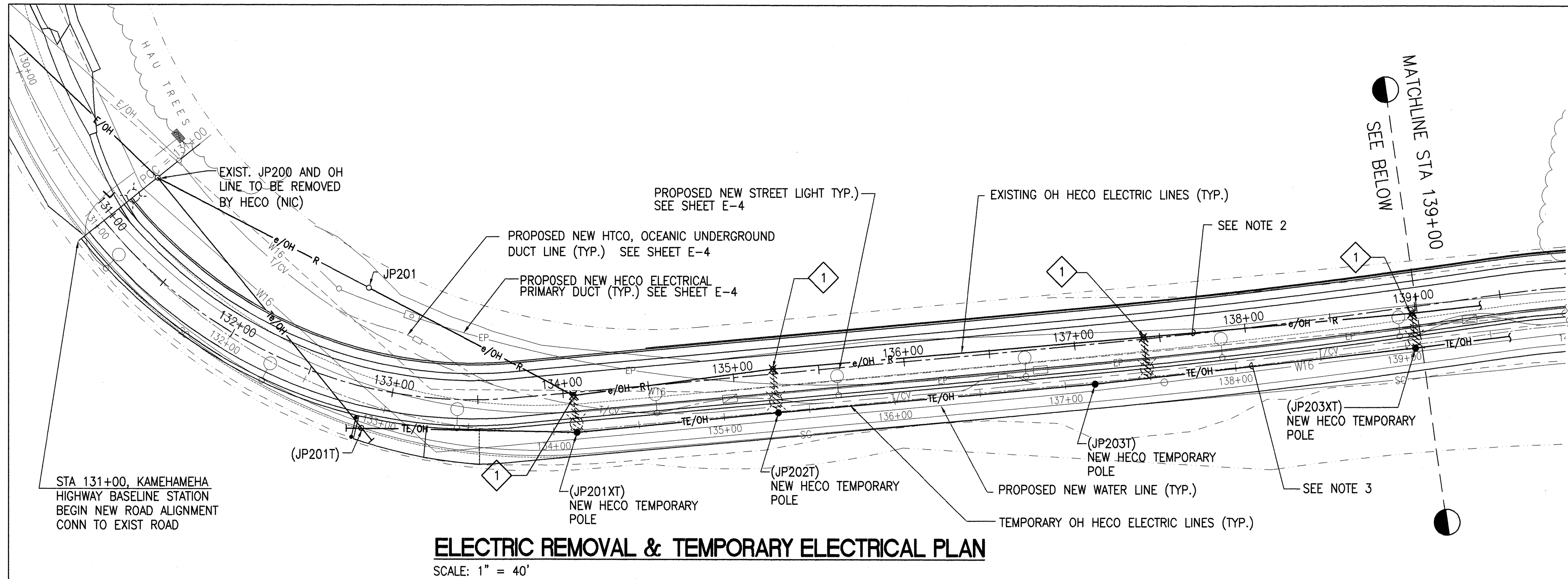
<u>DRAWING REVIEW</u>	
Reviewed for HECO's Facilities Only	
Date <u>4/3/00</u>	By <u>AKH</u>
Engineering Department	
Hawaiian Electric Company, Inc.	
HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials, and any other liability associated with this project.	

APPROVED:	<u>W. P. Cabral</u>	<u>4-3-00</u>
	HAWAIIAN TELEPHONE COMPANY	DATE
APPROVED:	<u>AKH</u>	<u>4-3-00</u>
	OCEANIC CABLEVISION	DATE



STATE OF HAWAII	
DEPARTMENT OF TRANSPORTATION	
HIGHWAYS DIVISION	
<u>GENERAL, DEMOLITION, UTILITY</u>	
<u>AND HIGHWAY LIGHTING NOTES</u>	
<u>KAMEHAMEHA HIGHWAY</u>	
<u>WAIMEA BAY</u>	
<u>EMERGENCY ROCKFALL REMEDIATION</u>	
Scale: As Shown	Date: April 2000
SHEET No. E-2 OF SHEETS	

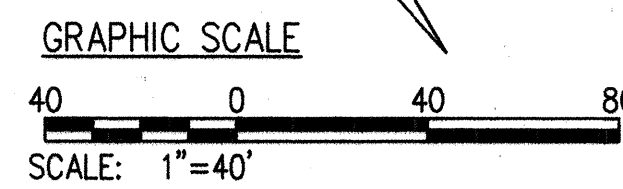
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
OAHU	HAW.	STP-083-1(45)	2000	25	39



- NOTE:
- STATION NUMBERS SHOWN ARE APPROXIMATE AND ARE FOR REFERENCE ONLY.
 - EXISTING ELECTRICAL OH WIRES TO BE RELOCATED BY UTILITY.
 - PROPOSED LOCATION OF TEMPORARY RELOCATED ELECTRIC WIRES TO REMAIN UNTIL PERMANENT ELECTRIC UNDERGROUND FACILITIES ARE INSTALLED.
 - EXISTING HECO OH POLE/LINE, PROPOSED TEMPORARY UTILITY OH POLE/LINE, PROPOSED UTILITY UNDERGROUND DUCT LINES, PROPOSED STREET LIGHT UNDERGROUND DUCT LINES/STREET LIGHTS, PROPOSED WATER LINE LOCATED IN THE SAME VICINITY. CONTRACTOR TO COORDINATE INSTALLATION OF FACILITIES.

- WORK NOTE:
- REMOVE WOOD POLE AND LIGHT FIXTURE STANDARD AFTER EXIST. UTILITIES WIRING ARE REMOVED.

CAUTION: ELECTRIC LINES ARE ENERGIZED.



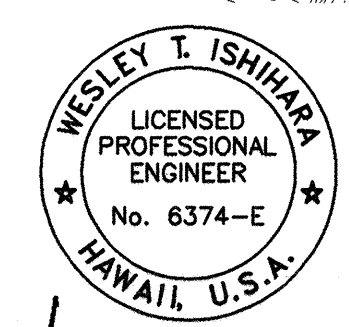
DRAWING REVIEW

Reviewed for HECO's Facilities Only
Date 4/3/00 By [Signature]
Engineering Department
Hawaiian Electric Company, Inc.

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APPROVED: [Signature] 4-3-00
HAWAIIAN TELEPHONE COMPANY DATE

APPROVED: [Signature] 4-3-00
OCEANIC CABLEVISION DATE



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRIC REMOVAL & TEMPORARY ELECTRICAL PLAN

**KAMEHAMEHA HIGHWAY
WAIMEA BAY
EMERGENCY ROCKFALL REMEDIATION**

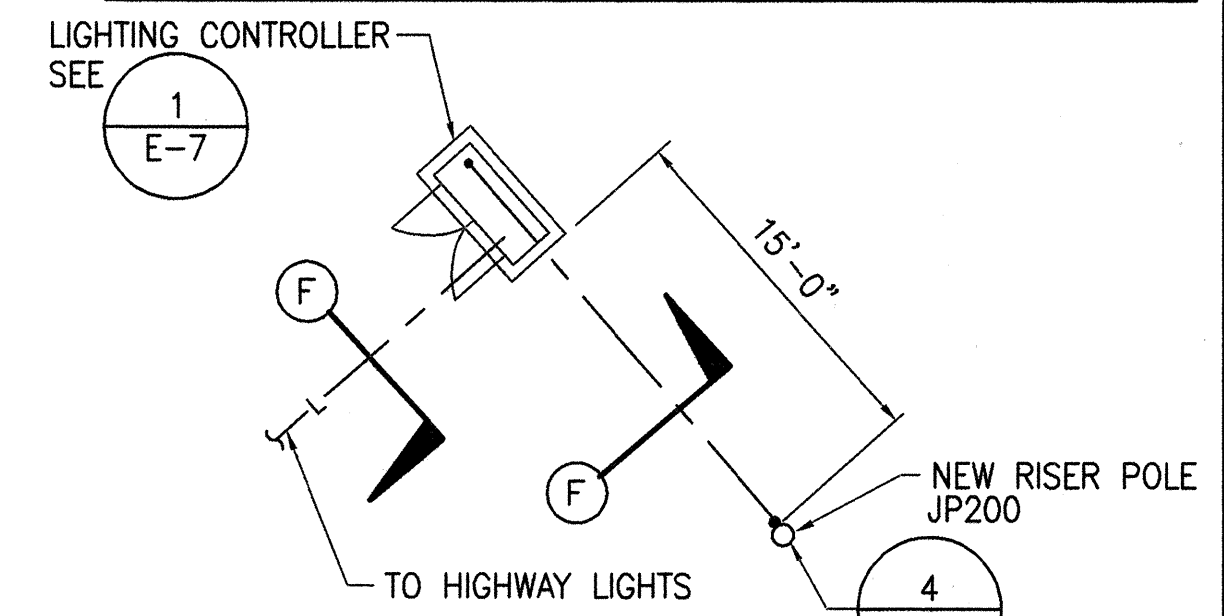
Scale: As Shown Date: April 2000
SHEET No. E-3 OF SHEETS

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QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

ELECTRIC REMOVAL & TEMPORARY ELECTRICAL PLAN
SCALE: 1" = 40'

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
OAHU	HAW.	STP-083-1(45)	2000	C.O. ADD 26	39

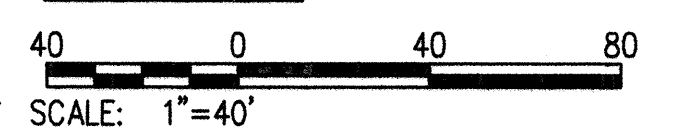


1 LIGHTING CONTROLLER PLAN
SCALE: 1/8" = 1'-0"

NOTE:

- COORDINATE DUCT AND MANHOLE INSTALLATION WITH HECO, GTE HAWAIIAN TELEPHONE AND OCEANIC CABLE.
- STATION NUMBERS SHOWN ARE APPROXIMATE AND ARE FOR REFERENCE ONLY.
- PROVIDE 6'x11' ELECTRIC MANHOLE. REFERENCE HECO DRAWING 18775 AND 16688. (SHT. 1 & 2)
- PROVIDE 5'x7' HANDHOLE. REFERENCE HECO DRAWING 18848 AND 16688. (SHT. 1 & 2)
- PROVIDE 5'x10' TELEPHONE MANHOLE. REFERENCE GTE HAWAIIAN TEL DRAWING 34108.
- PROVIDE 4'x6'-6" CABLE TELEVISION MANHOLE. REFERENCE GTE HAWAIIAN TEL DRAWING 466-GTE, ITEM CODE: 180014.
- EXISTING HECO OH POLE/LINE, PROPOSED TEMPORARY UTILITY OH POLE/LINE, PROPOSED UTILITY UNDERGROUND DUCT LINES, PROPOSED STREET LIGHT UNDERGROUND DUCT LINES/STREET LIGHTS, PROPOSED WATER LINE LOCATED IN THE SAME VICINITY. CONTRACTOR TO COORDINATE INSTALLATION OF FACILITIES.

GRAPHIC SCALE



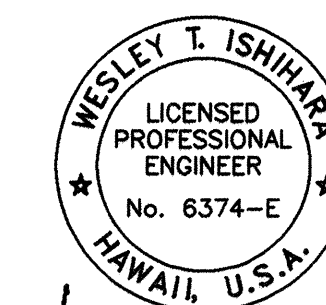
DRAWING REVIEW

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Date 4/3/00 By *[Signature]*
Engineering Department
Hawaiian Electric Company, Inc.
HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials, and any other liability associated with this project.

APPROVED:

[Signature] Wayne P. Cabral 4-3-00
HAWAIIAN TELEPHONE COMPANY DATE
[Signature] 4-3-00
OCEANIC CABLEVISION DATE

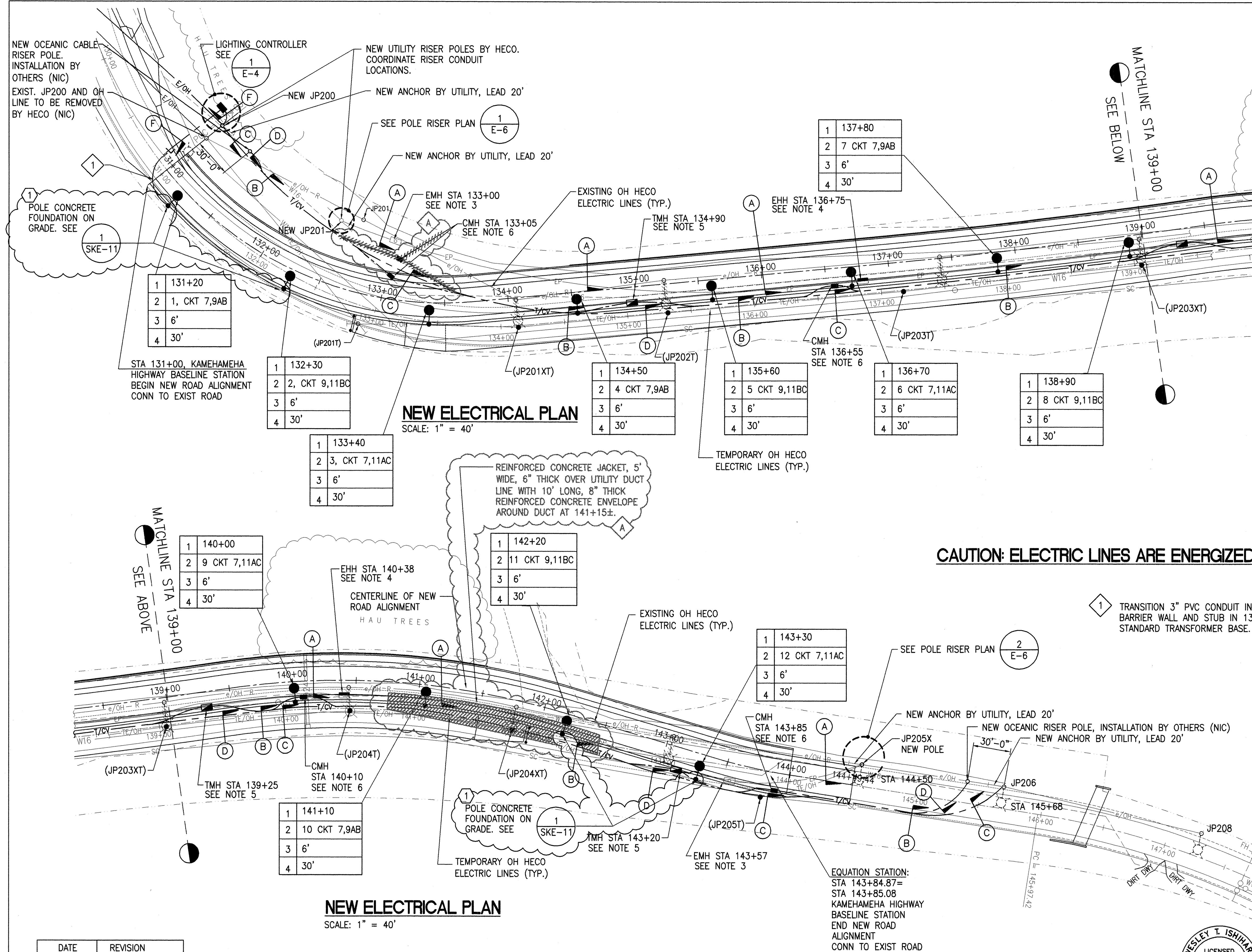
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
NEW ELECTRICAL PLAN
KAMEHAMEHA HIGHWAY
WAIMEA BAY
EMERGENCY ROCKFALL REMEDIATION
Scale: As Shown Date: April 2000
SHEET No. E-4 OF SHEETS



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

"AS-BUILT"

C.O. ADD. 26



NEW ELECTRICAL PLAN
SCALE: 1" = 40'

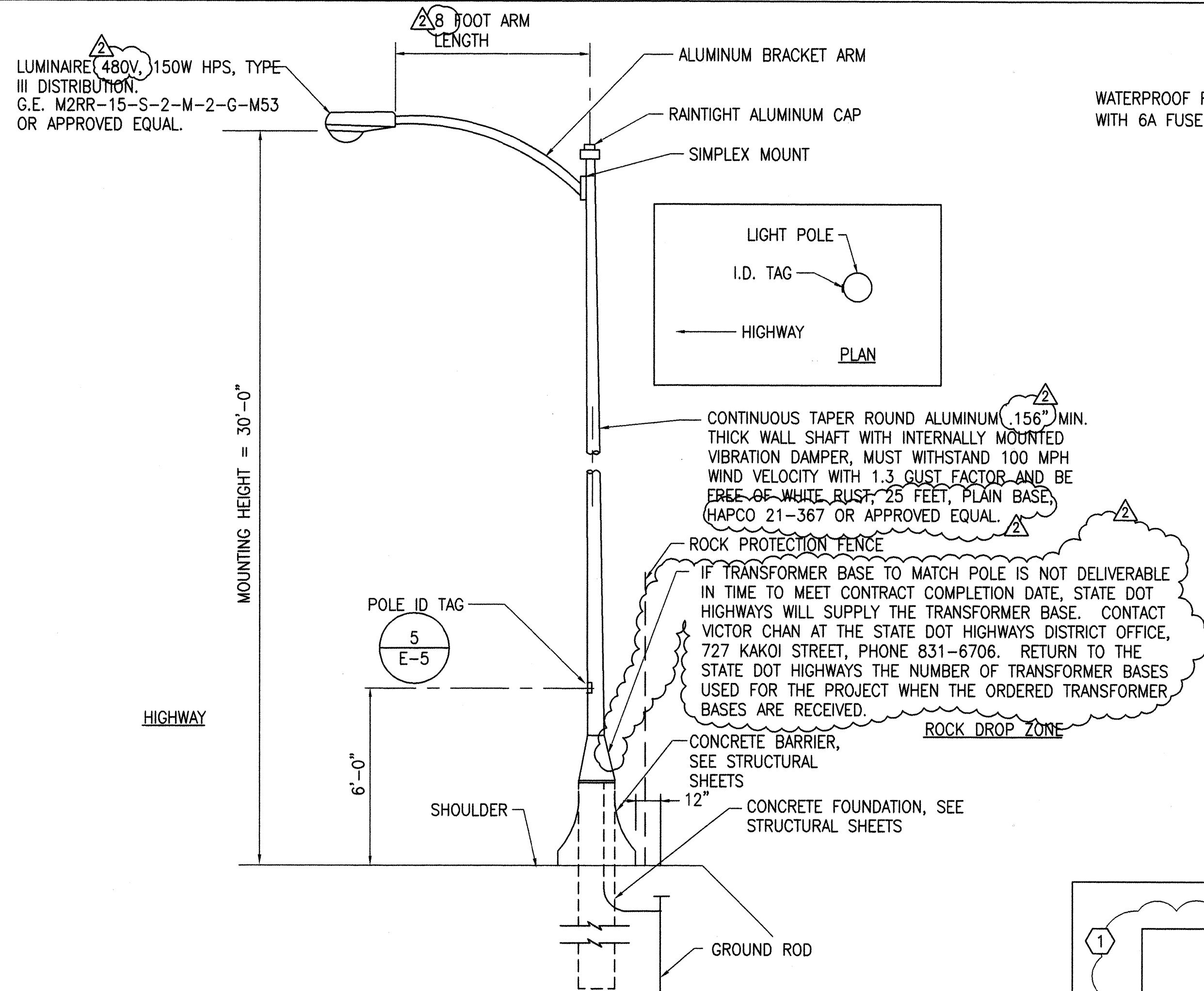
NEW ELECTRICAL PLAN
SCALE: 1" = 40'

LEGEND FOR AS-BUILT POSTINGS

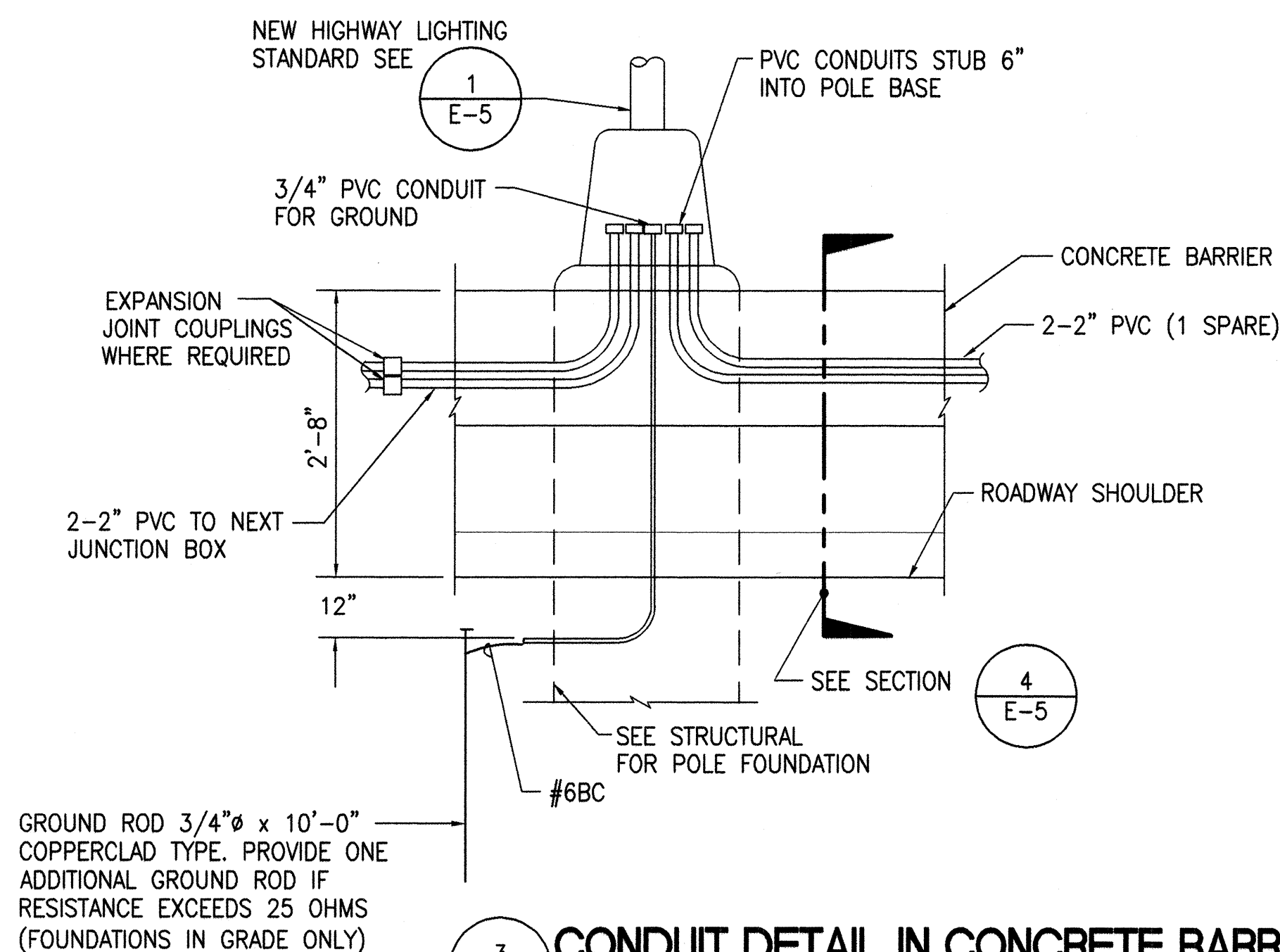
	CROSS-HATCH FOR AS-BUILT DELETION
	DOUBLE LINE FOR AS-BUILT DELETION
TEXT	TEXT FOR AS-BUILT POSTING

DATE	REVISION
1/31/02	"AS-BUILT" A
5-19-00	REVISION 1
4-7-00	ADDENDUM 2

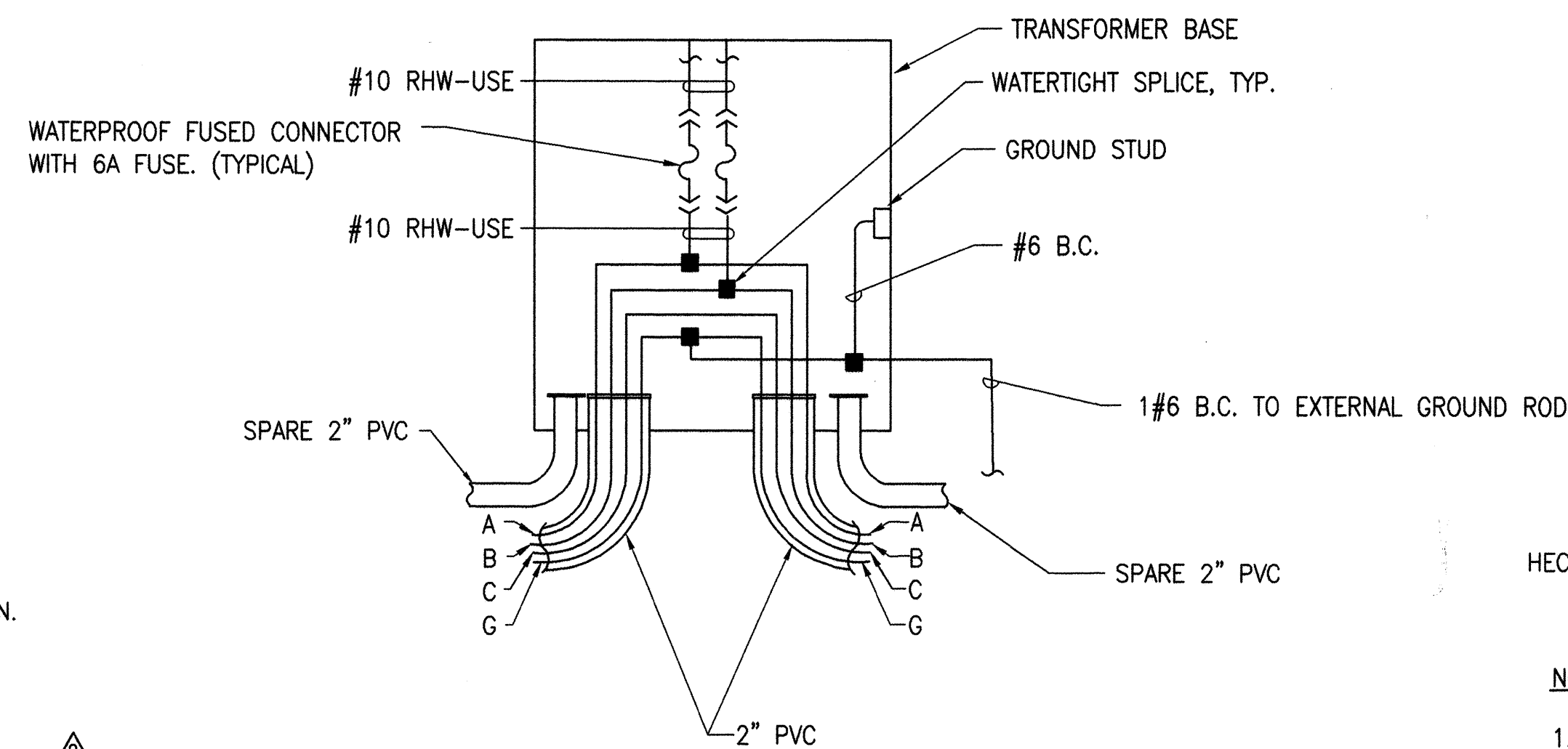
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DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	



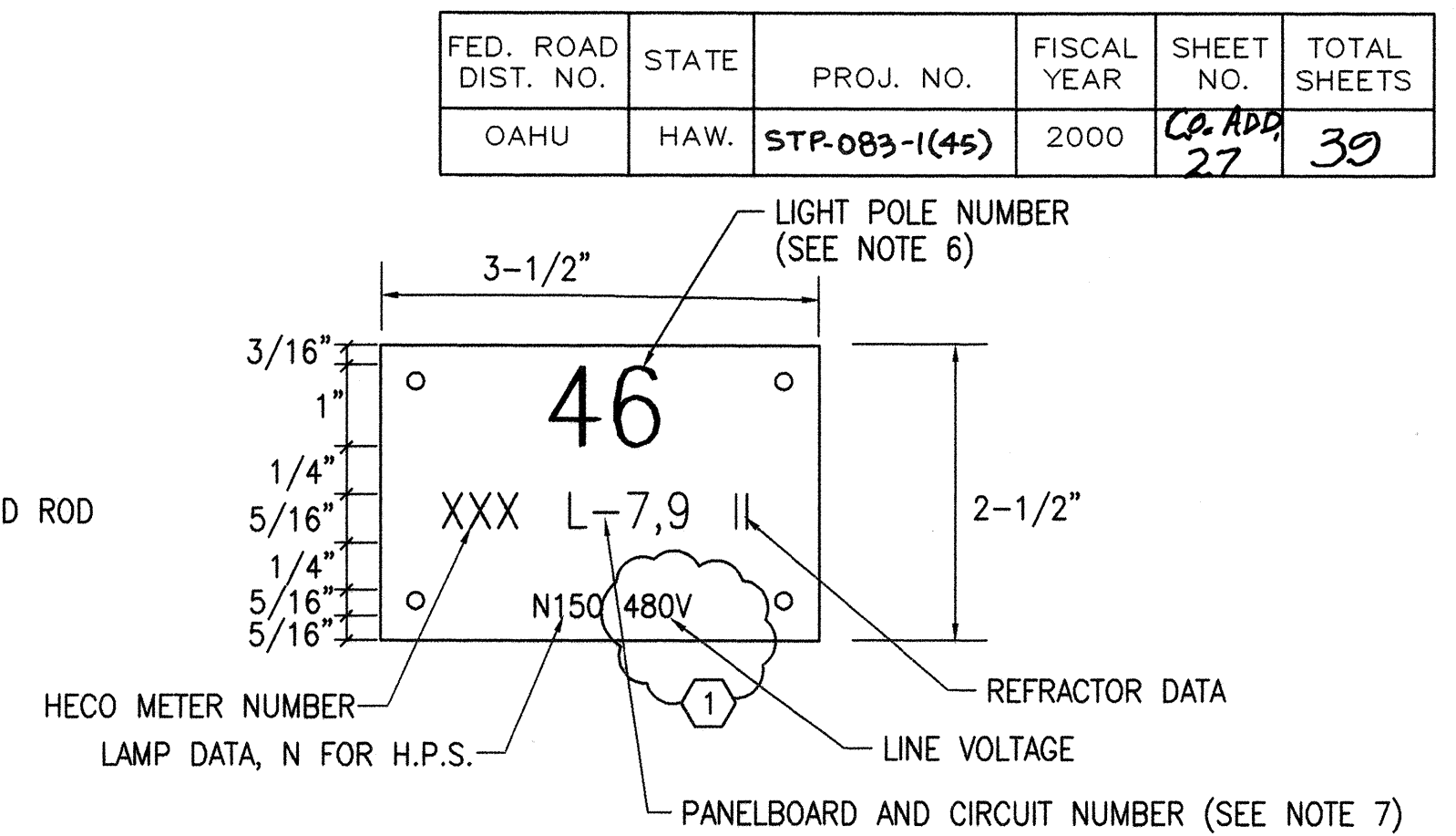
1
E-5
**TYPICAL LIGHT STANDARD INSTALLATION
IN CONCRETE BARRIER**
NOT TO SCALE



3
E-5
CONDUIT DETAIL IN CONCRETE BARRIER
NOT TO SCALE

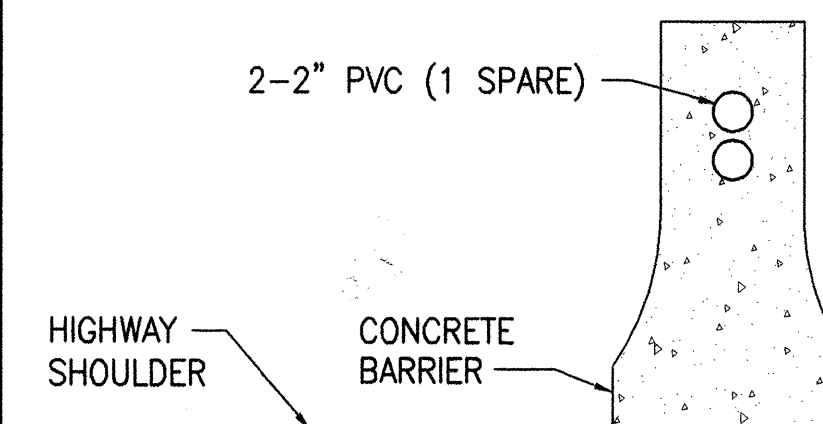


2
E-5
**WIRING CONNECTION DIAGRAM - HIGHWAY
LIGHTING STANDARD**
NOT TO SCALE

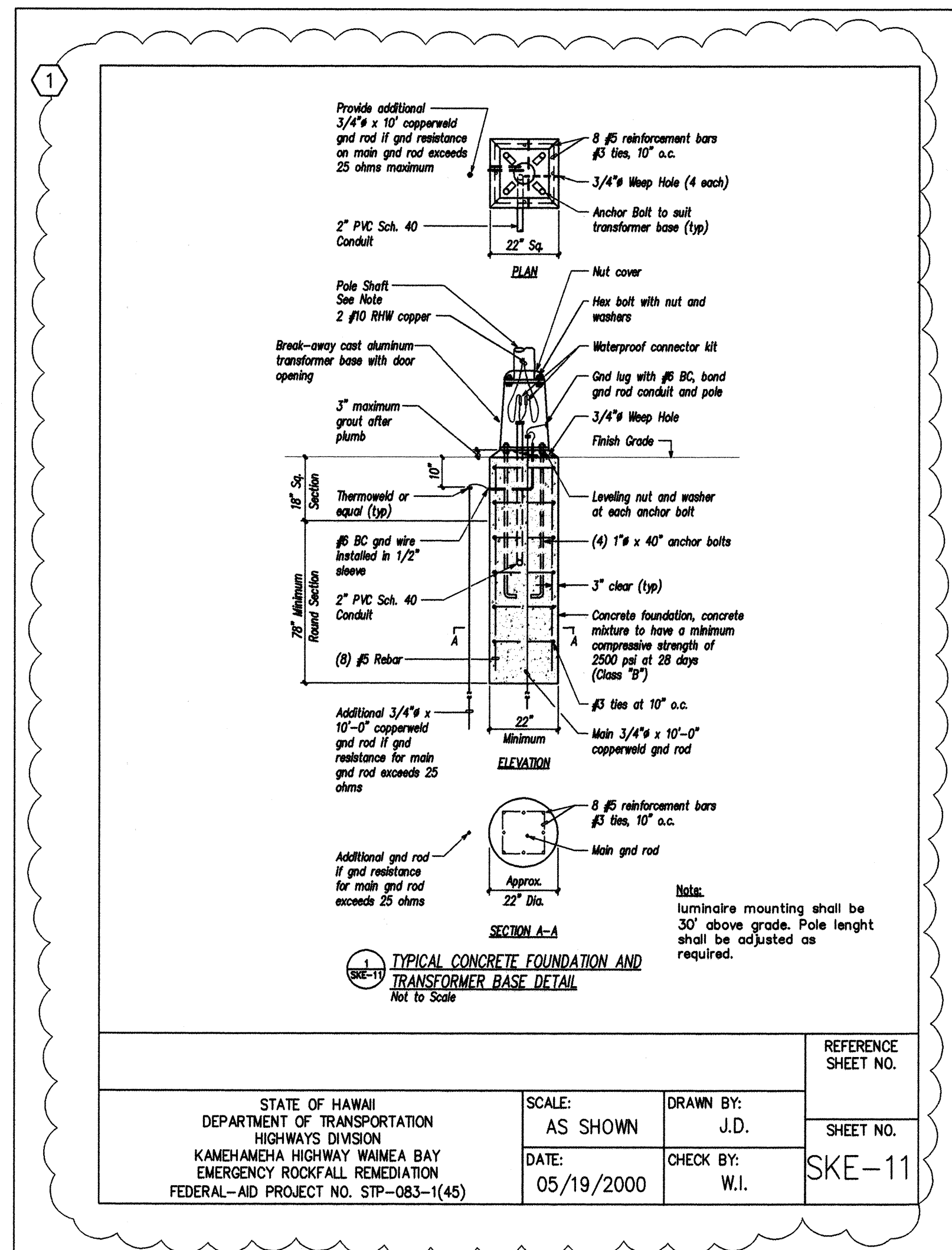


- NOTES:
- USE 3 PLY LAMINATED FLEXIBLE PLASTIC BLACK-WHITE-BLACK THICKNESS BLACK CAP SHEET-0.010", WHITE BASE SHEET-0.052", BLACK SHEET-0.010".
 - LIGHT POLE NUMBER SIZE SHALL BE 1" HIGH AND ENGRAVED 1/8" WIDE, WHITE IN COLOR (NUMBER AS REQUIRED).
 - NOMENCLATURE SIZE SHALL BE 5/16" HIGH AND ENGRAVED 1/32" WIDE, WHITE IN COLOR (HECO VAULT NUMBER PANEL BOARD AND CIRCUIT NUMBER, LINE VOLTAGE, LAMP DATA AND REFRACTOR DATA REQUIRED).
 - ATTACH TO ALUMINUM AND STEEL POST WITH NO. 8 STAINLESS STEEL, 1/2" LONG DRIVE SCREWS 1/8" DRILL HOLE.
 - NUMBERS ARE INSCRIBED BY CUTTING THROUGH "BLACK ACP SHEET" TO EXPOSE "WHITE LETTERS".
 - LIGHT NUMBERS SHALL BE OBTAINED FROM THE STATE.
 - NOMENCLATURE REQUIRED FOR SYSTEMS WITH TWO OR MORE CIRCUITS (LETTER INDICATES PANELBOARD, NUMBER INDICATES CIRCUIT).

5
E-5
**HIGHWAY LIGHT POLE TAG
DETAIL METERED SYSTEM**
NOT TO SCALE



4
E-5
SECTION AT CONCRETE BARRIER
NOT TO SCALE

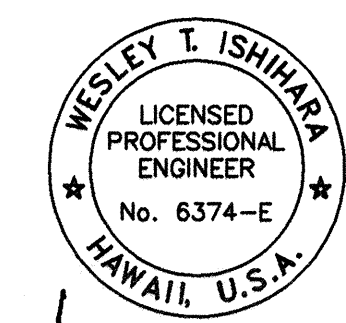


STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION KAMEHAMEHA HIGHWAY WAIMEA BAY EMERGENCY ROCKFALL REMEDIATION FEDERAL-AID PROJECT NO. STP-083-1(48)	SCALE: AS SHOWN DATE: 05/19/2000	DRAWN BY: J.D. CHECK BY: W.I.	REFERENCE SHEET NO. SKE-11
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DATE	REVISION
5-19-00	REVISION 1
4-7-00	ADDENDUM 2

DRAWING REVIEW
Reviewed for HECO's Facilities Only
Date 4/3/00 By *[Signature]*
Engineering Department
Hawaiian Electric Company, Inc.
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APPROVED: *[Signature]* 4-3-00
HAWAIIAN TELEPHONE COMPANY
DATE
APPROVED: *[Signature]* 4-3-00
OCEANIC CABLEVISION
DATE



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**TYPICAL WIRING DIAGRAMS AND
LIGHT POLE TAG DETAILS**
KAMEHAMEHA HIGHWAY
WAIMEA BAY
EMERGENCY ROCKFALL REMEDIATION

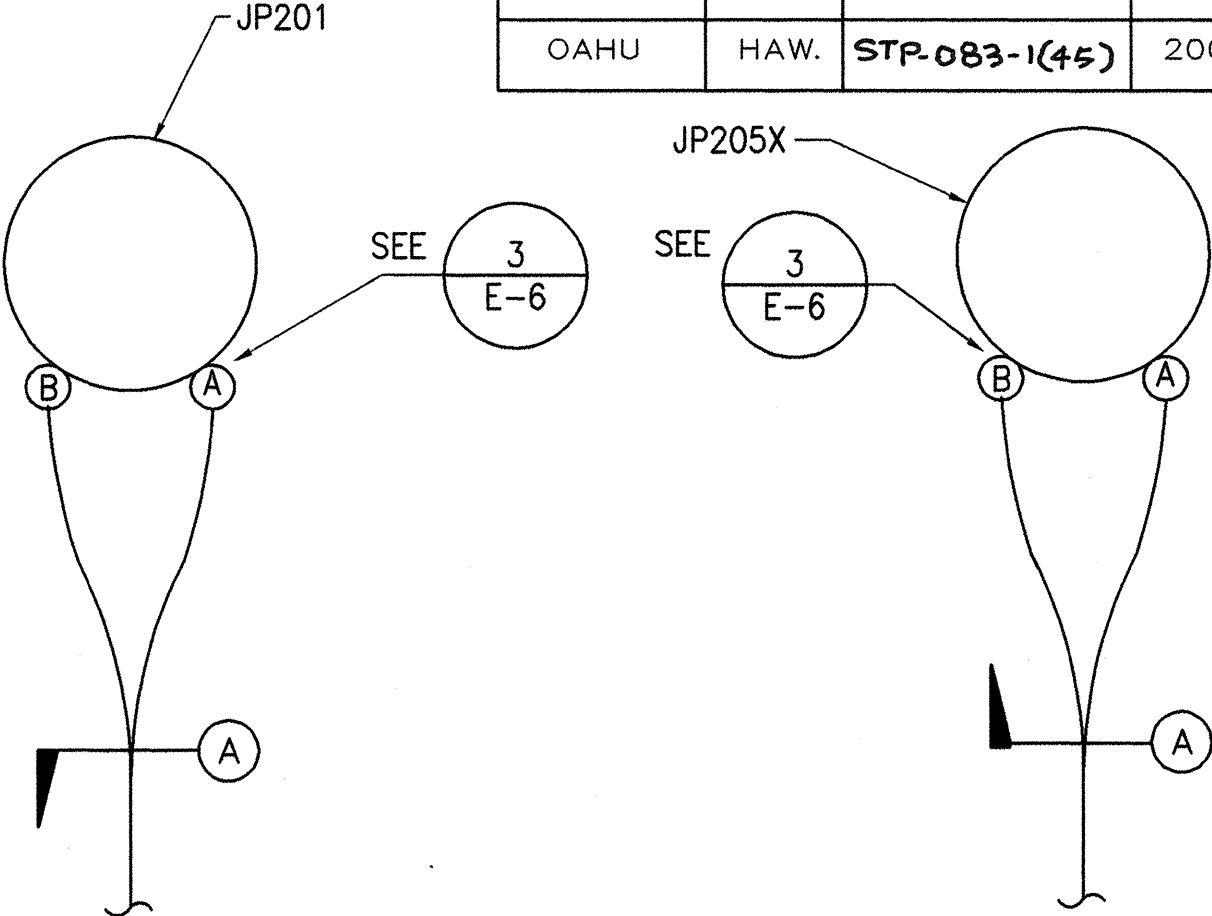
Scale: As Shown Date: April 2000
SHEET No. E-5 OF SHEETS

"AS-BUILT"

C.O. ADD. 27

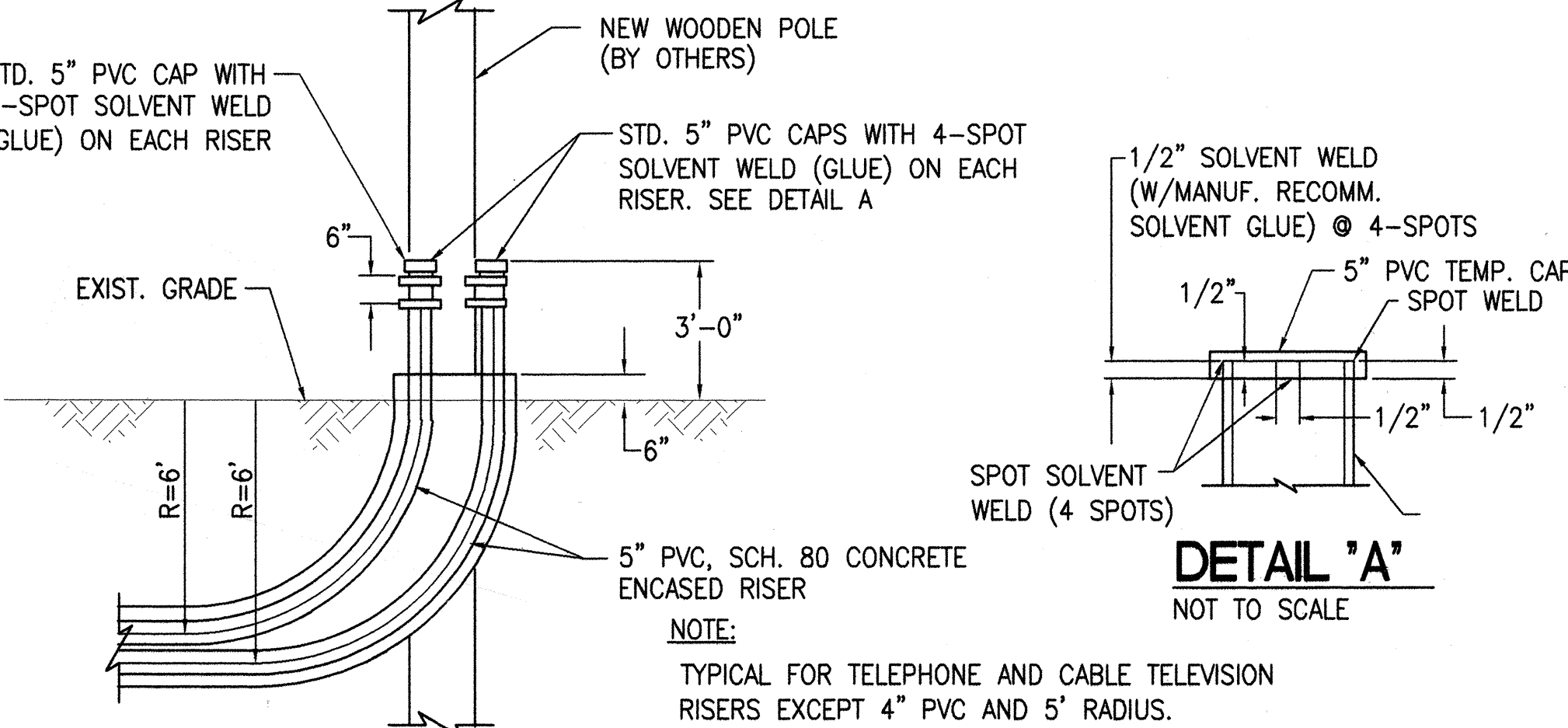
SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
OAHU	HAW.	STP-083-1(45)	2000	ADD. 28	30

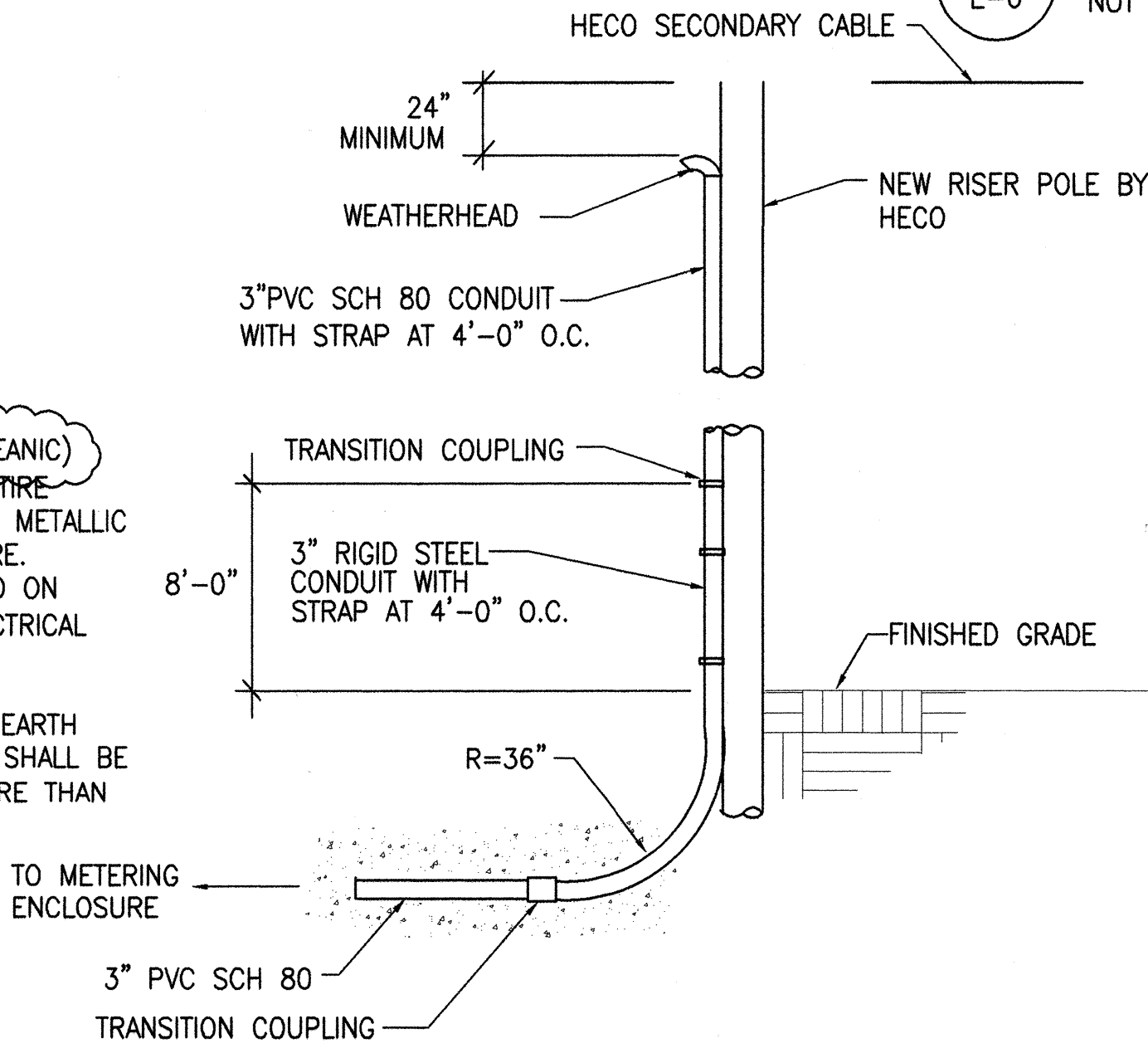


1 POLE RISER PLAN - JP201
E-6 NOT TO SCALE

2 POLE RISER PLAN - JP205X
E-6 NOT TO SCALE

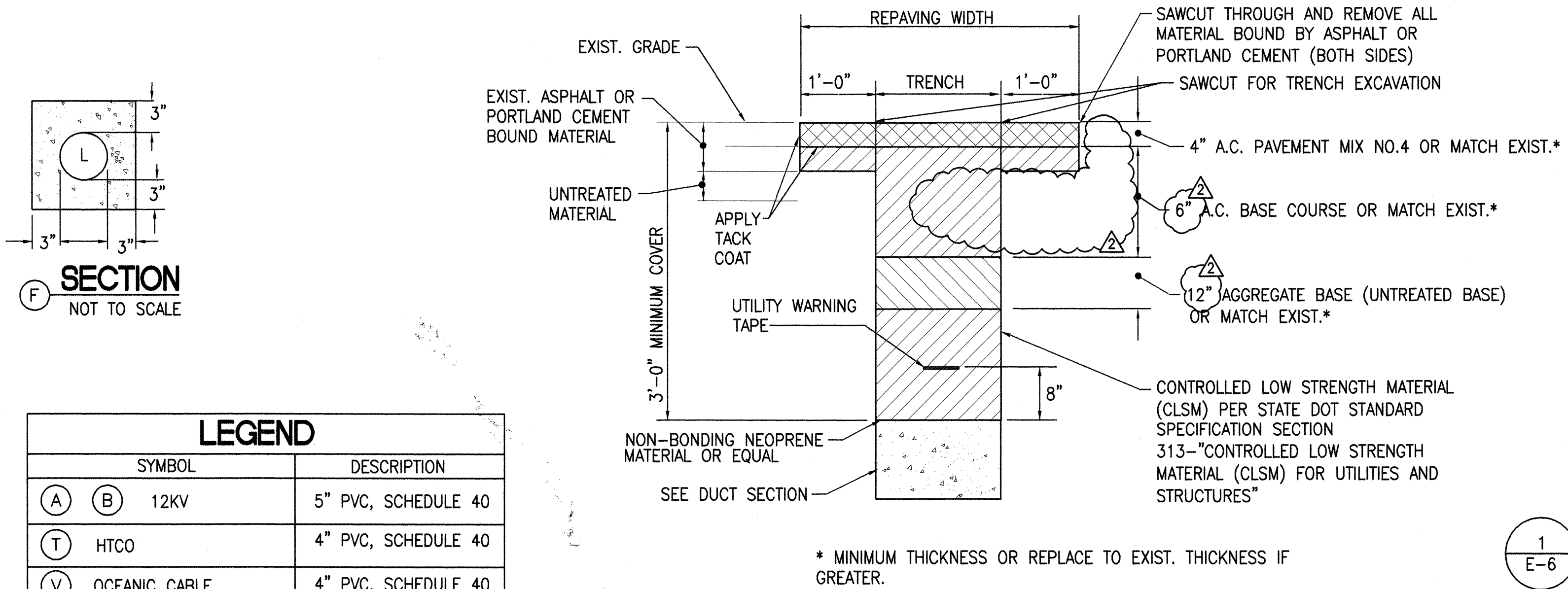


3 TYPICAL RISER DETAIL AT NEW WOODEN POLE
E-6 NOT TO SCALE

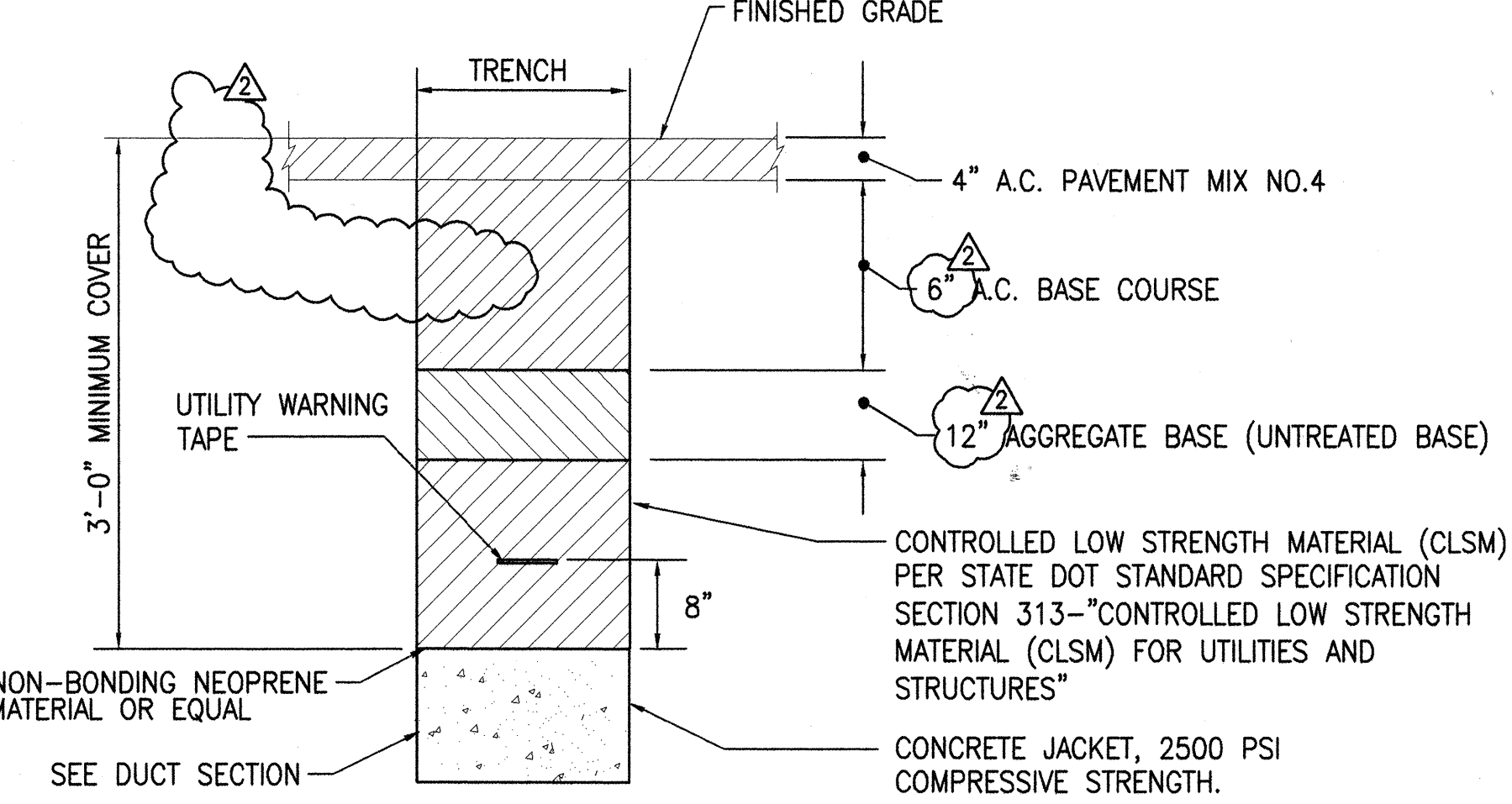


4 CONDUIT STUB-UP AT UTILITY POLE
E-6 NOT TO SCALE

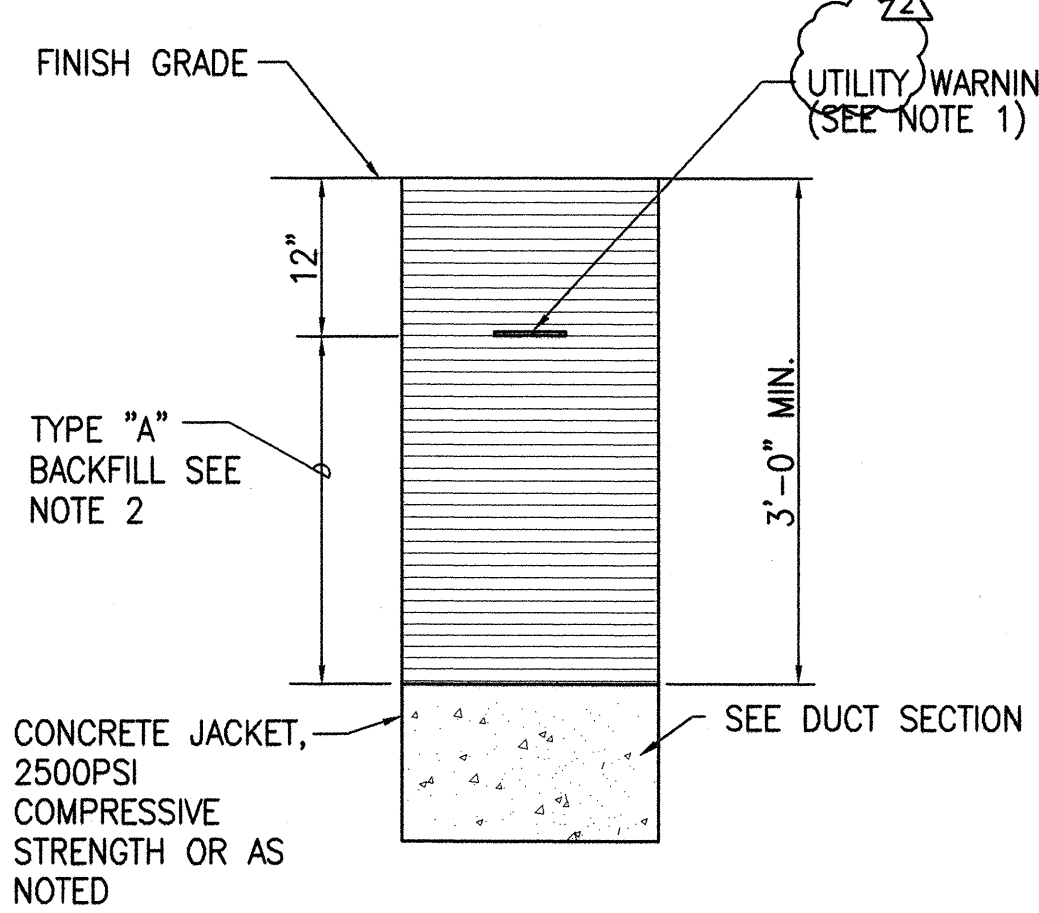
TYPICAL PAVEMENT RESTORATION IN STATE HIGHWAY
NOT TO SCALE



SYMBOL	DESCRIPTION
(A) (B) 12KV	5" PVC, SCHEDULE 40
(T) HTCO	4" PVC, SCHEDULE 40
(V) OCEANIC CABLE	4" PVC, SCHEDULE 40
(L) HIGHWAY LIGHT	3" PVC, SCHEDULE 40

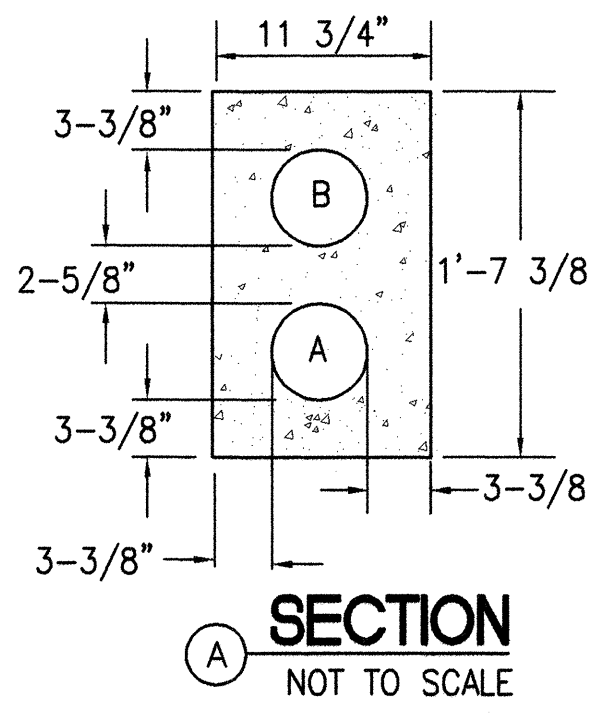


TYPICAL DUCT SECTION IN NEW STATE HIGHWAY
NOT TO SCALE

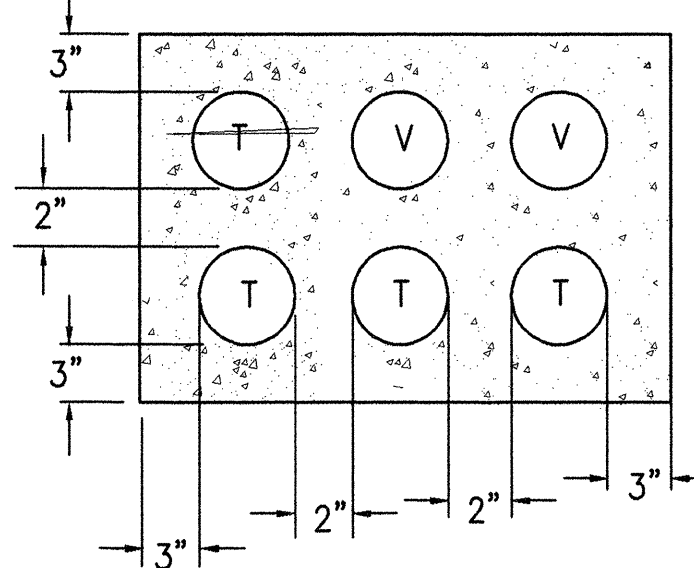


CONCRETE ENCASED (NON ROADWAY AREA)
NOT TO SCALE

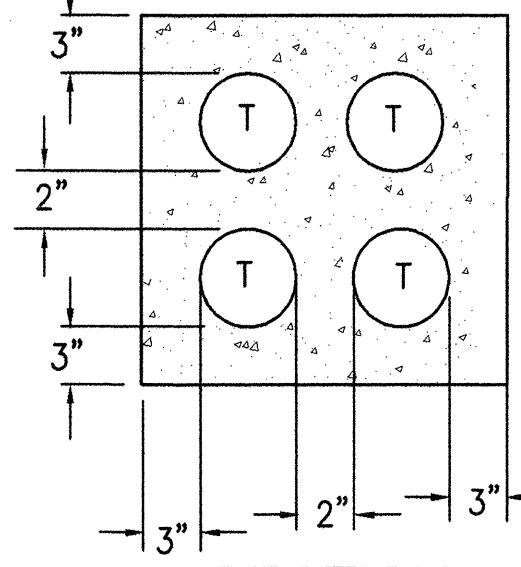
- NOTES:
- 5 MIL THICK RED (HECO), ORANGE (HTCO/OCEANIC) COLORED PLASTIC WARNING TAPE 3" WIDE, ENTIRE LENGTH OF DUCT. TAPE TO HAVE CONTINUOUS METALLIC BACKING AND CORROSION RESISTANT FOIL CORE. WARNING AND IDENTIFICATION TO BE IMPRINTED ON TAPE AND SHALL READ "CAUTION BURIED ELECTRICAL CABLE BELOW". MESSAGE SHALL BE REPEATED APPROXIMATELY EVERY TEN FEET.
 - TYPE "A" BACKFILL: BEACH SAND, EARTH, OR EARTH AND GRAVEL USED, THE MAXIMUM ROCK SIZE SHALL BE 1" AND THE MIXTURE SHALL CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES.



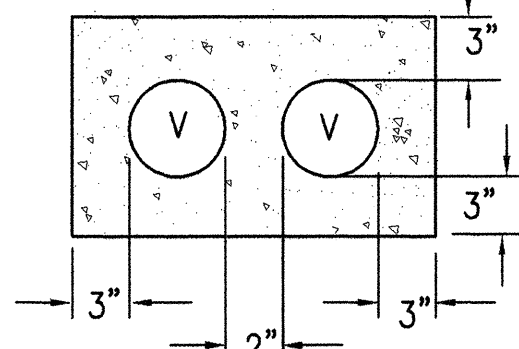
SECTION A
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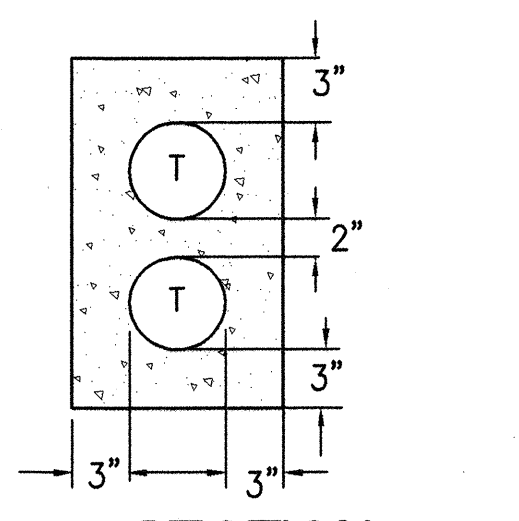
SECTION B
NOT TO SCALE



SECTION C
NOT TO SCALE

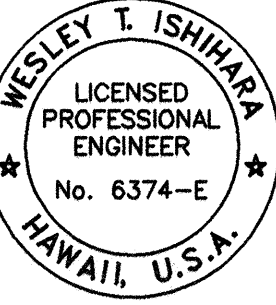


SECTION D
NOT TO SCALE



SECTION E
NOT TO SCALE

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DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	



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Engineering Department
Hawaiian Electric Company, Inc.

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DATE	REVISION
4-7-00	ADDENDUM 2

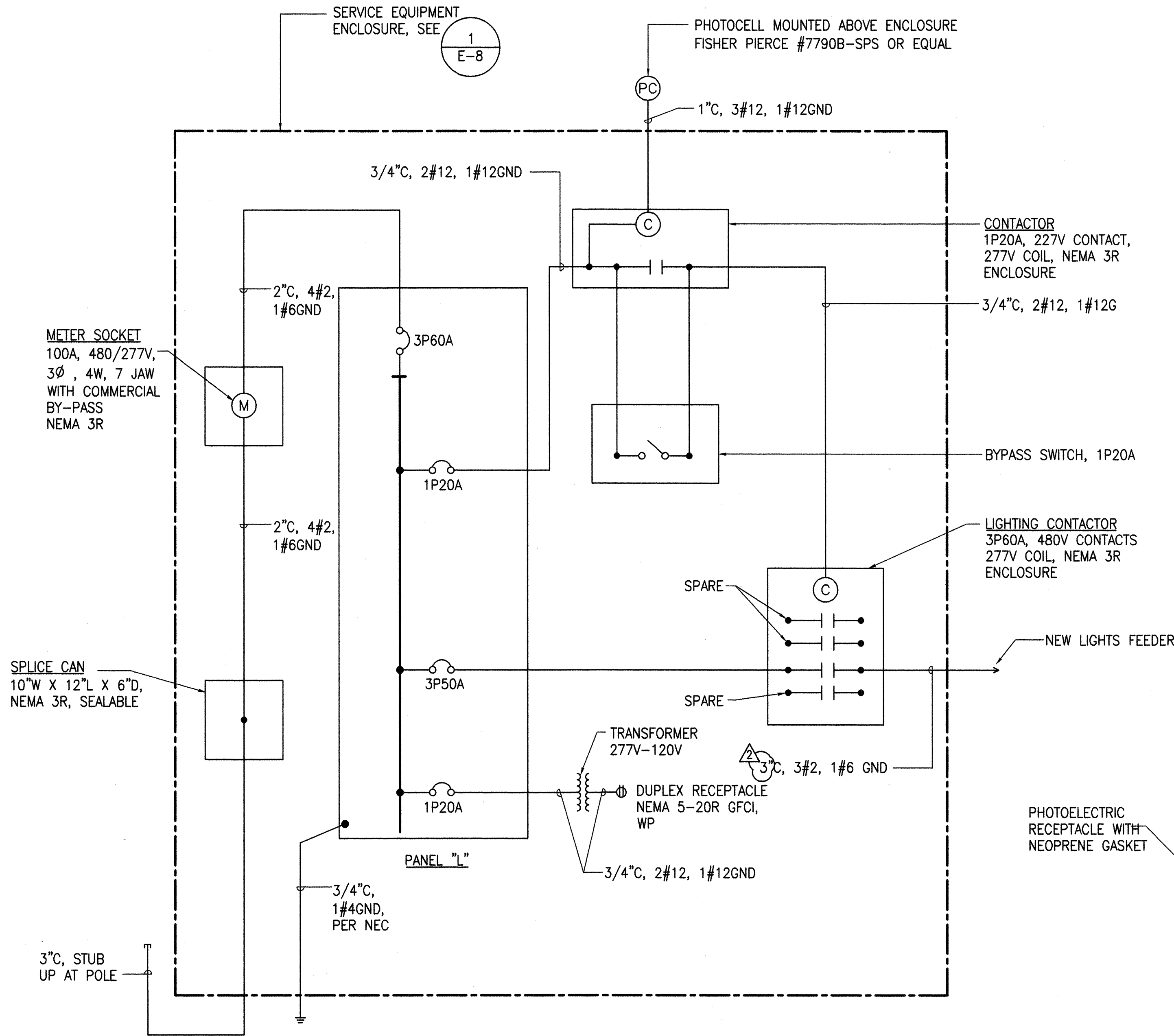
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**DUCT SECTIONS AND
RISER POLES**
KAMEHAMEHA HIGHWAY
WAIMEA BAY
EMERGENCY ROCKFALL REMEDIATION

Scale: As Shown Date: April 2000
SHEET No. E-6 OF SHEETS

"AS-BUILT"

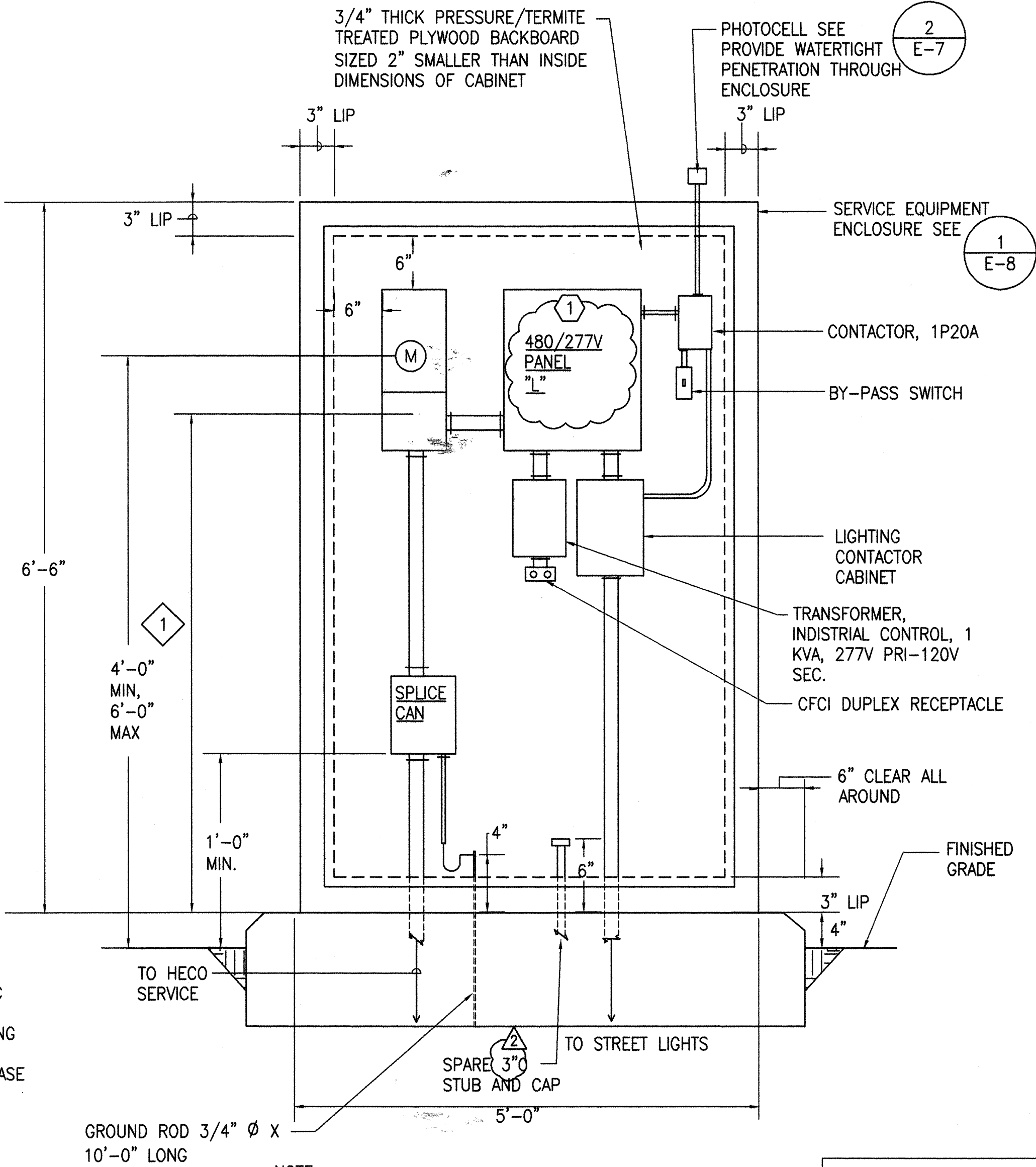
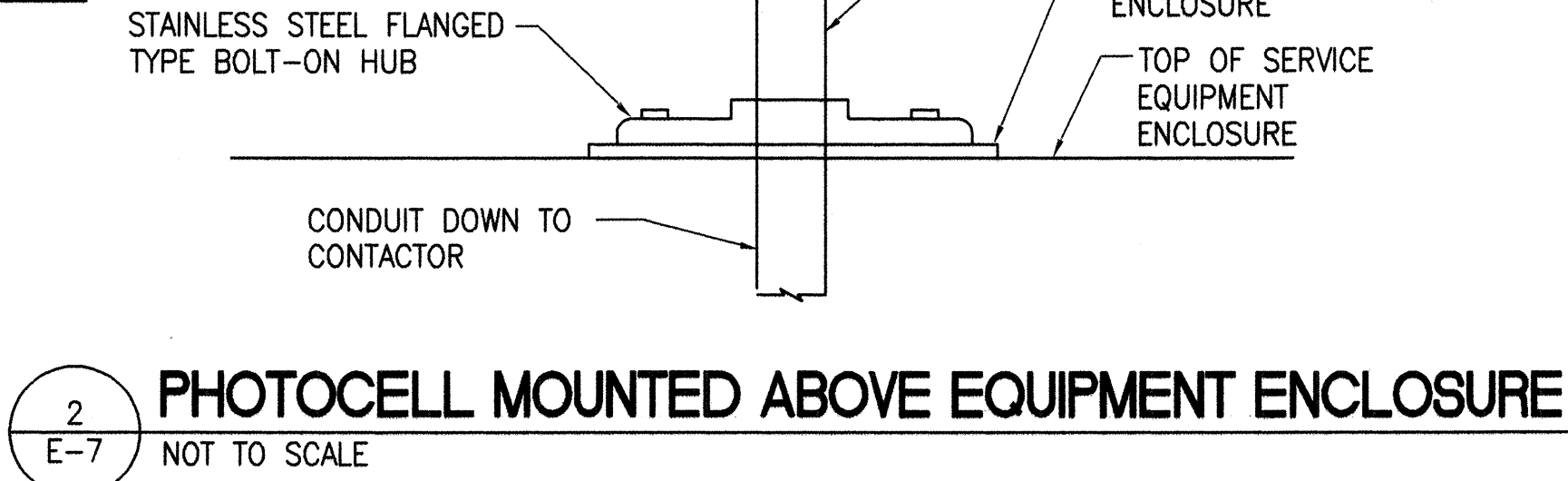
ADD. 28

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
OAHU	HAW.	STP-083-1(45)	2000	C.O. ADD 29	39



HIGHWAY LIGHTING CONTROLLER ONE LINE DIAGRAM
NOT TO SCALE

PANEL: L					VOLTAGE: 480/277V					3 PHASE					POLES: 18				
MAIN BUS: 100A					MAIN BKR: 3P60A					4 WIRE					MIN. A.I.C.: 10,000				
MOUNTING: SURFACE					BKR TYPE: BOLT-ON										CABINET WIDTH: 20"				
CKT NO.	DESCRIPTION	KVA			BKR	WIRE	CKT NO.	DESCRIPTION	KVA			BKR	WIRE						
		A	B	C					A	B	C								
1	LTG CONTACTOR	0.5			1P20A	#12	2	PFB											
3	RECEPTACLE		0.5		1P20A	#12	4	PFB											
5	PFB						6	PFB											
7	HIGHWAY LTS FEEDER	0.8			3P50A	#2	8	PFB											
9	HIGHWAY LTS FEEDER		0.8		3P50A	#2	10	PFB											
11	HIGHWAY LTS FEEDER			0.8	3P50A	#2	12	PFB											
13	PFB						14	PFB											
15	PFB						16	PFB											
17	PFB						18	PFB											
TOTAL CONNECTED LOAD: 3.4					KVA														
DEMAND FACTOR: 1.0																			
TOTAL DEMAND LOAD: 3.4					KVA														
TOTAL DEMAND AMPS: 4.1					AMPS														



NOTE:
1 3'-0" MINIMUM TO CENTER OF COMMERCIAL BY-PASS FACILITY.

CONTROLLER EQUIPMENT ELEVATION
NOT TO SCALE

- NOTE:
1. PROVIDE AND MAINTAIN 4 FEET WORKING SPACE CLEARANCE IN FRONT OF METERING EQUIPMENT.
 2. SHOULD THE CABINET BE EXPOSED TO VEHICULAR TRAFFIC, PROVIDE NON-REMOVABLE BARRIER POSTS TO PROTECT CABINET.

DRAWING REVIEW

Reviewed for HECO's Facilities Only
Date 4/3/00 By W. H. H. H.

Engineering Department
Hawaiian Electric Company, Inc.

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APPROVED: Wesley T. Ishihara 4-3-00
HAWAIIAN TELEPHONE COMPANY DATE

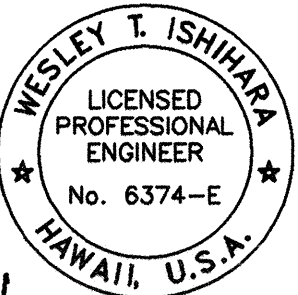
APPROVED: Wesley T. Ishihara 4-3-00
OCEANIC CABLEVISION DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING CONTROLLER

KAMEHAMEHA HIGHWAY
WAIMEA BAY
EMERGENCY ROCKFALL REMEDIATION

Scale: As Shown Date: April 2000
SHEET No. E-7 OF SHEETS

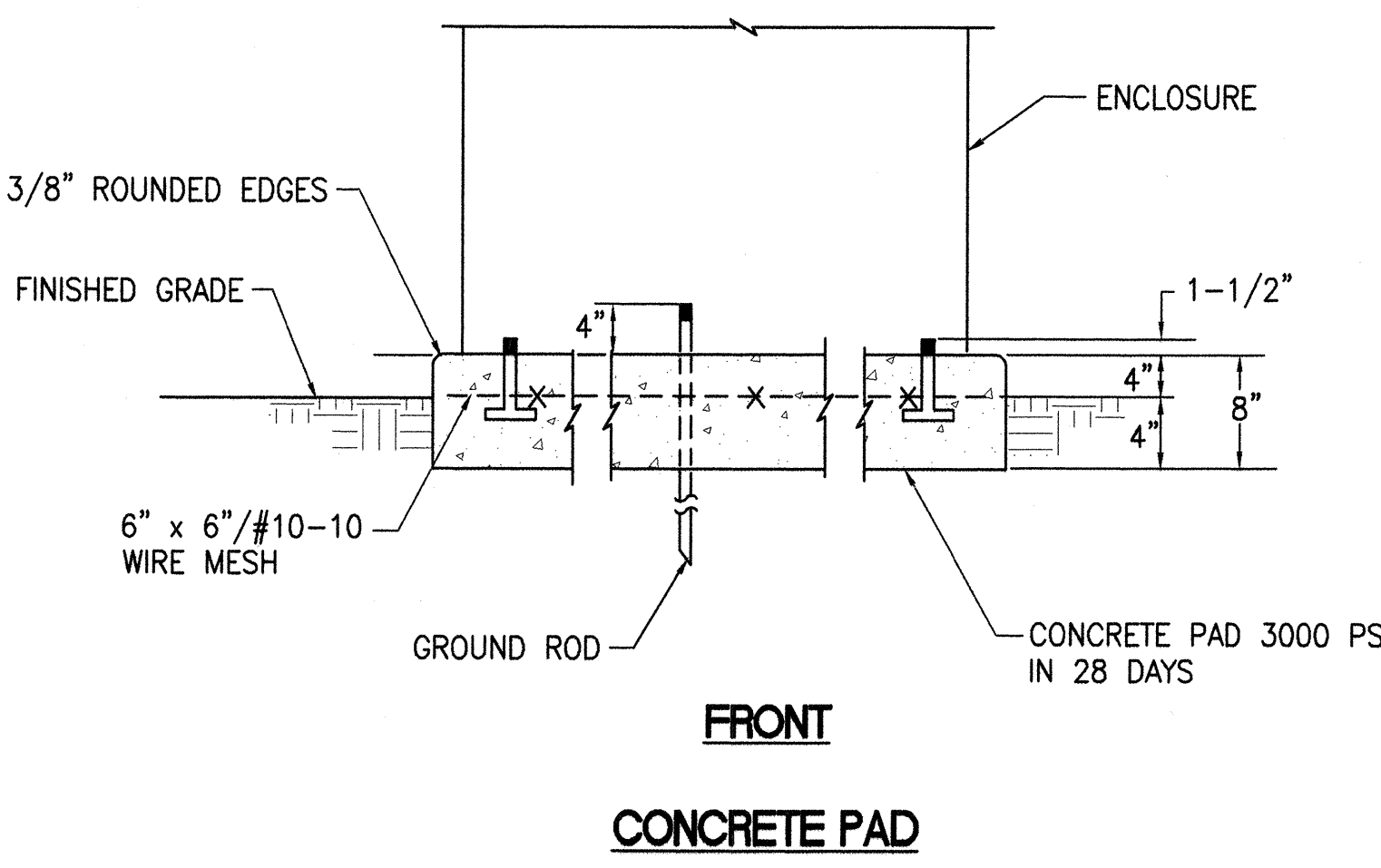
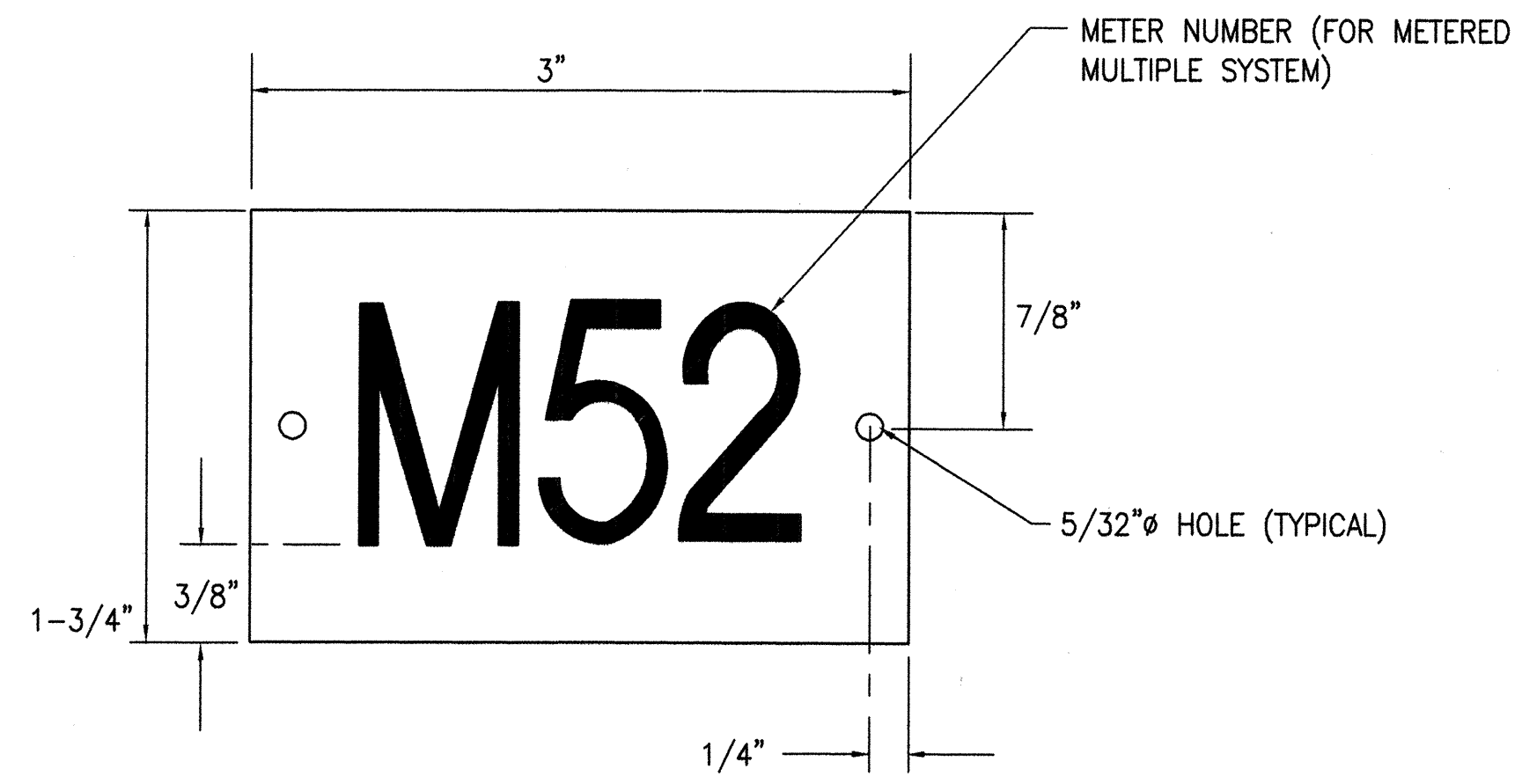
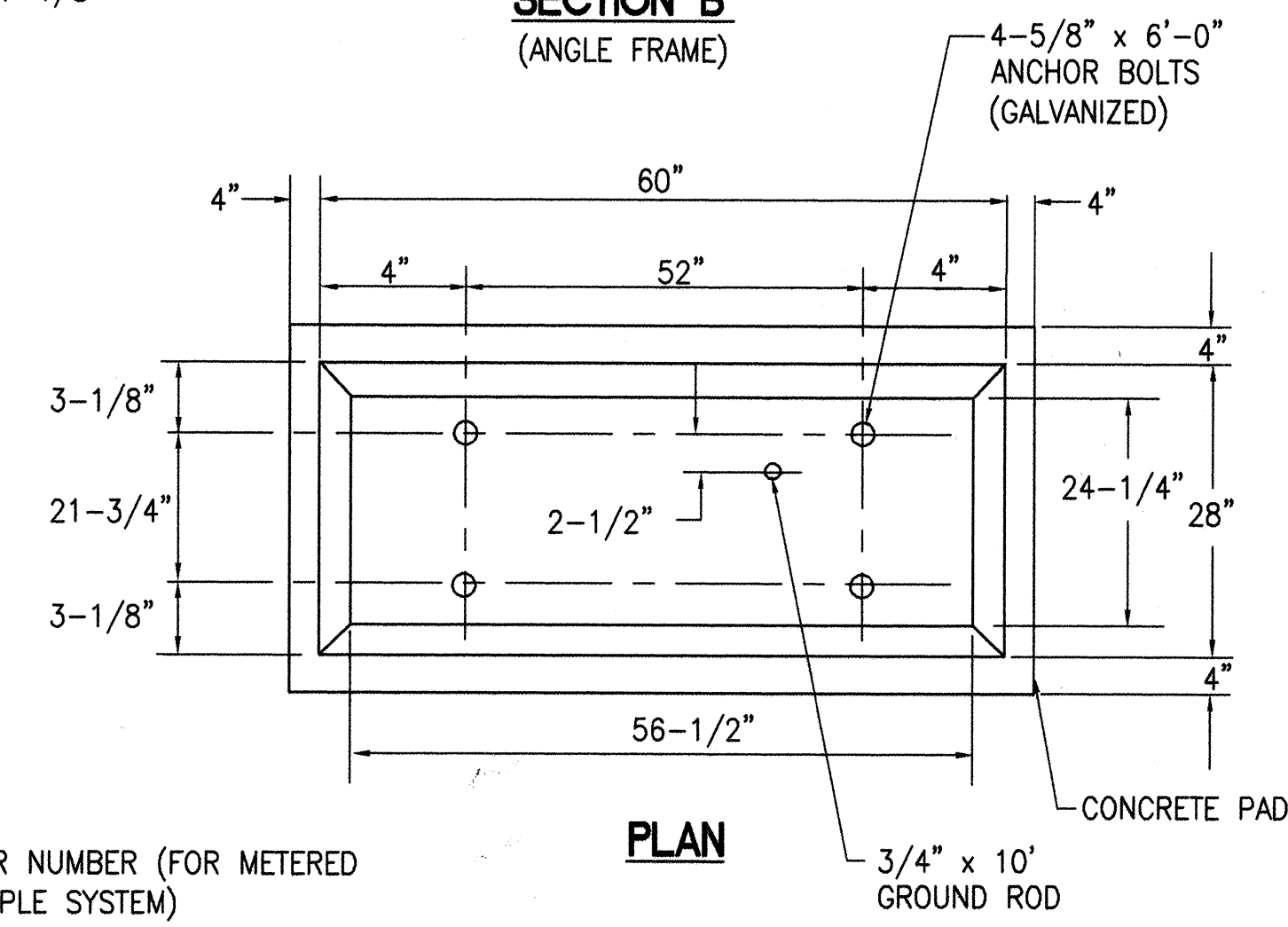
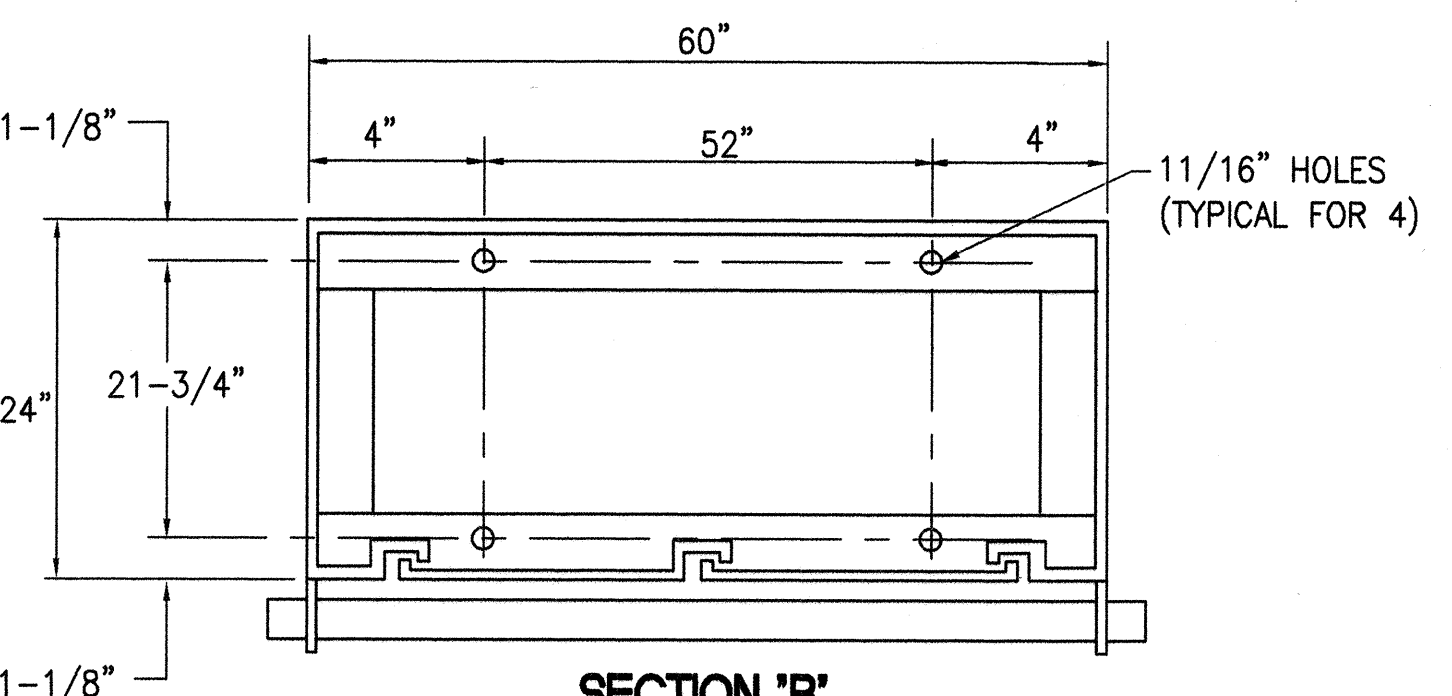
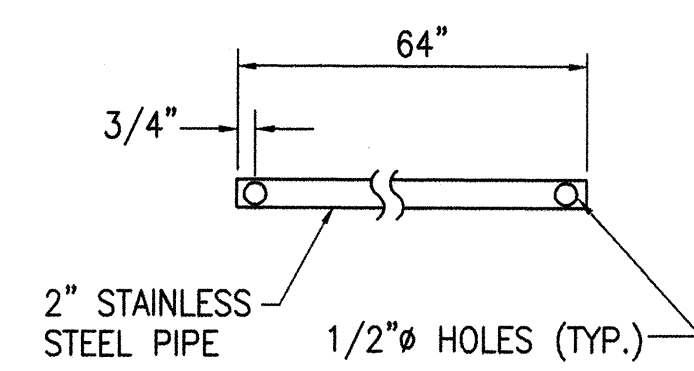
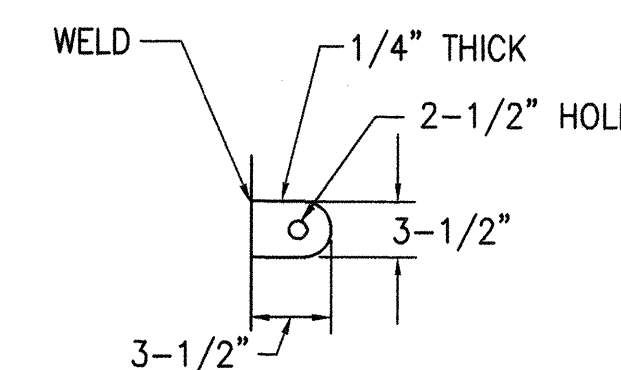
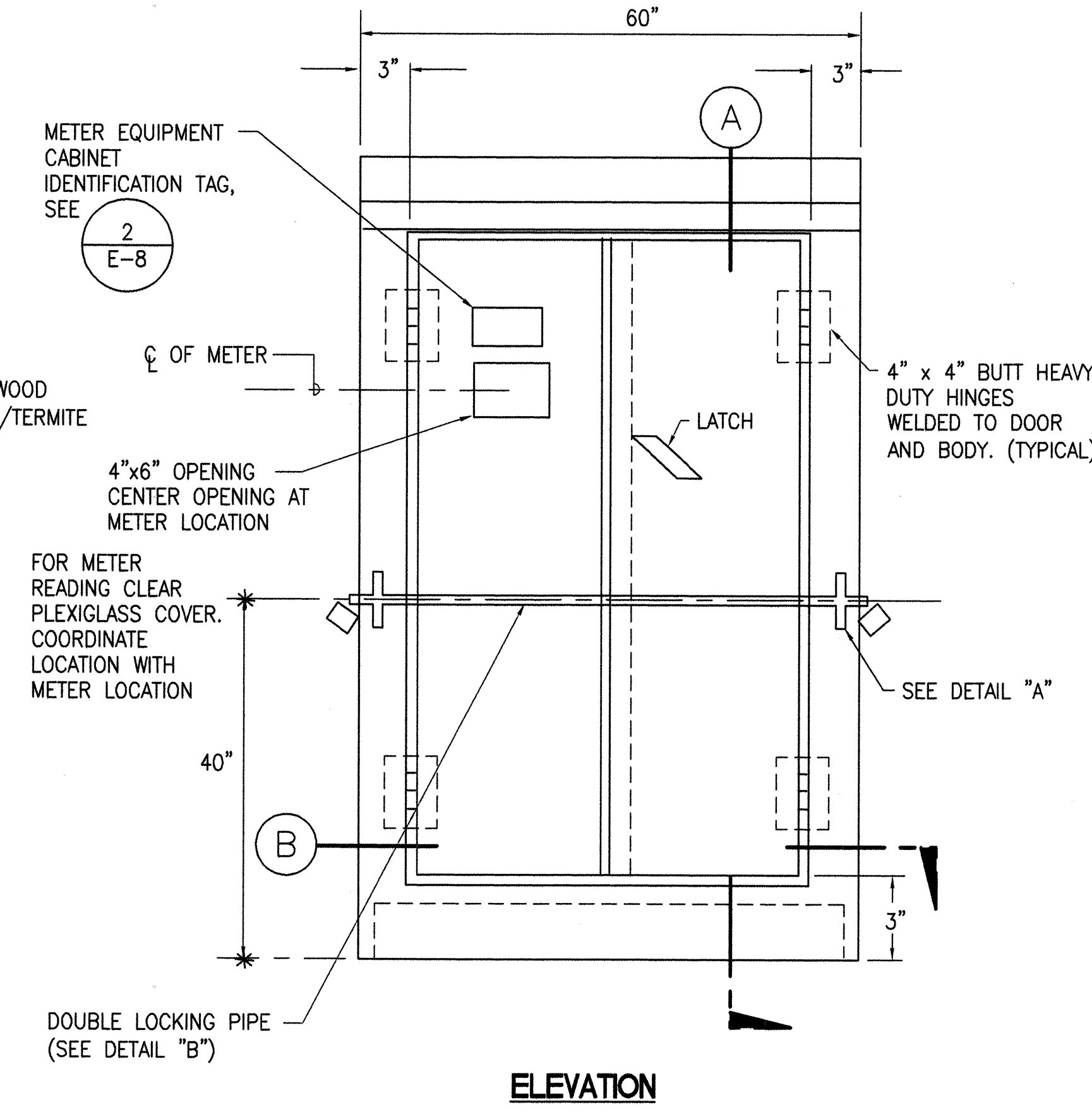
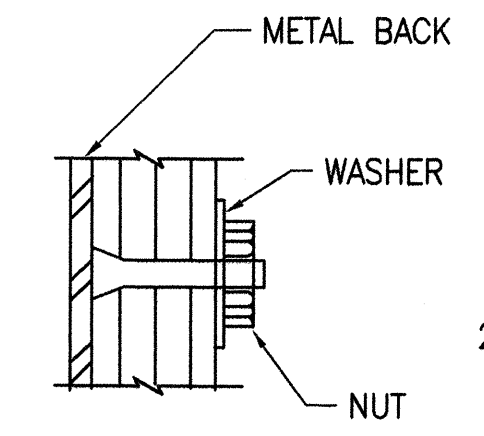
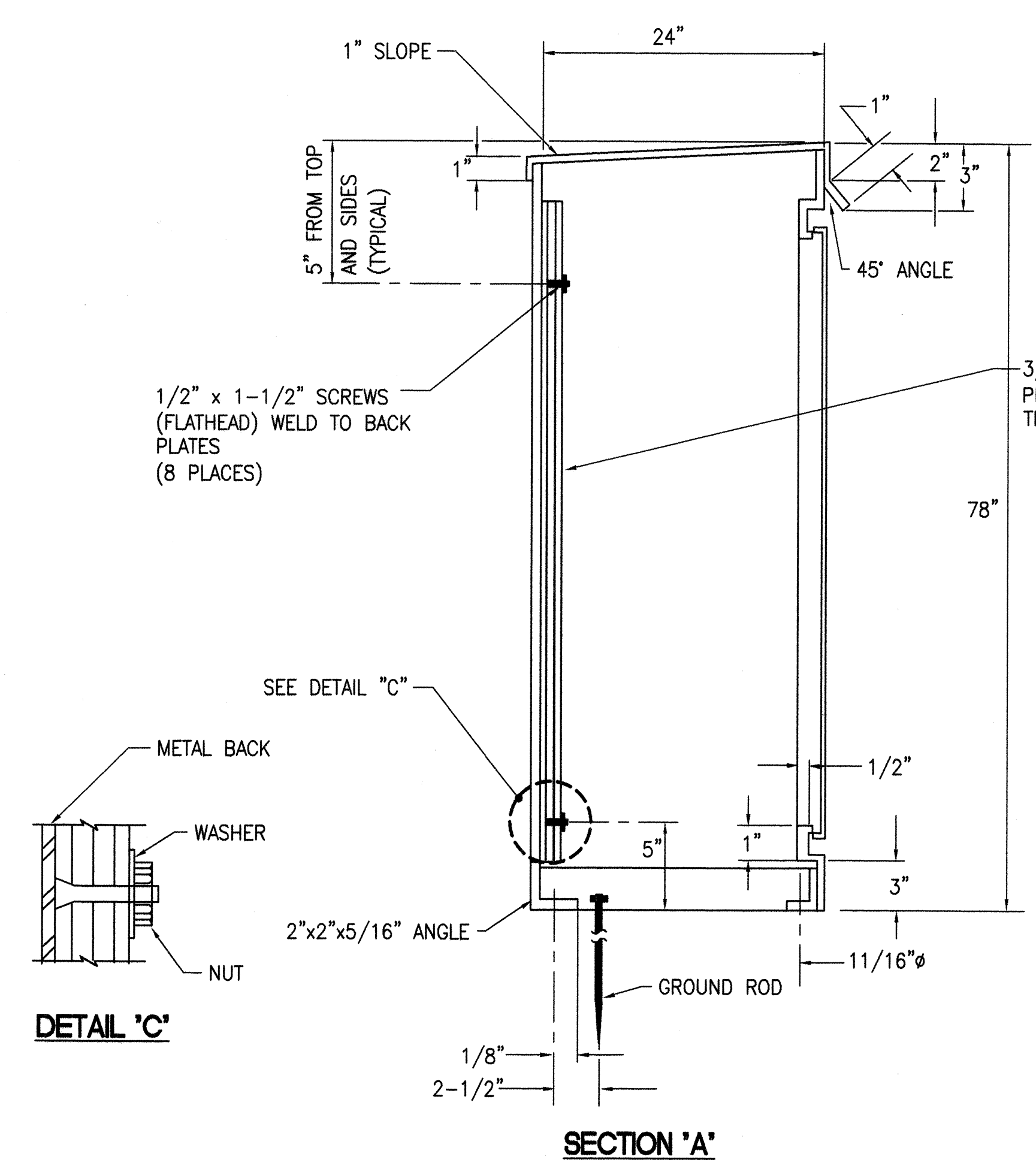


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

"AS-BUILT"

C.O. ADD. 29

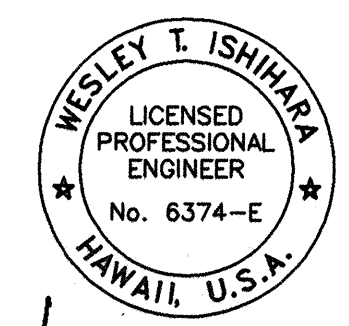
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
OAHU	HAW.	STP-083-1(45)	2000	30	39



- NOTES:
- CABINET SHALL BE OF STAINLESS STEEL CONSTRUCTION.
 - ENCLOSURE SHALL BE NEMA 4X WITH NEOPRENE GASKETING.
 - PADLOCKS:
 - HECO FURNISHED
 - CONTRACTOR SHALL OBTAIN MASTER ELECTRICAL LOCK FROM THE HIGHWAY MAINTENANCE SECTION.
 - SHOP FABRICATION DRAWINGS SHALL BE SUBMITTED FOR APPROVAL.
 - ADD ADDITIONAL GROUND ROD AS REQUIRED IF GROUND RESISTANCE EXCEEDS 25 OHMS (MAX ALLOWED)

- NOTES:
- USE 2 PLY PLASTIC - BLACK, WHITE. THICKNESS: BLACK CAP SHEET - 0.010"; WHITE BASE SHEET - 0.052".
 - NUMBER SIZE SHALL BE 1" HIGH AND ENGRAVED 1/8" WIDE, WHITE IN COLOR (NUMBER AS REQUIRED)
 - ATTACH TO METER ENCLOSURE WITH NO.8 STAINLESS STEEL SCREWS.
 - NUMBERS ARE INSCRIBED BY CUTTING THROUGH "BLACK CAP SHEET" TO EXPOSE "WHITE LETTERS".

2
E-8 METER EQUIPMENT CABINET I.D. TAG
NOT TO SCALE



DRAWING REVIEW
Reviewed for HECO's Facilities Only
Date 4/3/00 By [Signature]
Engineering Department
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APPROVED: [Signature] 4-3-00
HAWAIIAN TELEPHONE COMPANY
APPROVED: [Signature] 4-3-00
OCEANIC CABLEVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
METER AND EQUIPMENT ENCLOSURE DETAILS
KAMEHAMEHA HIGHWAY
WAIMEA BAY
EMERGENCY ROCKFALL REMEDIATION

Scale: As Shown Date: April 2000
SHEET No. E-8 OF SHEETS

"AS-BUILT"