

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	PMT-HIC-01-97			

EQUIPMENT SCHEDULE

THE HAWAIIAN ELECTRIC CO. INC., HAWAIIAN TELEPHONE CO., COMMUNITY ANTENNA TELEVISION & STREET LIGHTING PULLBOXES, HANDHOLES, MANHOLES, TRANSFORMER PADS, SWITCHING EQUIPMENT PADS, & PAD LOTS TO BE PROVIDED BY THE CONTRACTOR AS SHOWN IN THESE DRAWINGS & IN ACCORDANCE WITH THE FOLLOWING STANDARD DRAWINGS:

TYPE	DESCRIPTION
6' X 14' HECO MANHOLE	6' X 14' REINFORCED CONCRETE MANHOLE WITH CAST IRON FRAME AND COVER, PROVIDED IN ACCORDANCE WITH HECO STANDARD DRAWING NO. 71467. CONTRACTOR TO PROVIDE MANHOLE FRAME AND COVER.
4' X 6' HTCO MANHOLE	4' X 6' REINFORCED CONCRETE MANHOLE WITH CAST IRON FRAME AND COVER, PROVIDED IN ACCORDANCE WITH GTE STANDARD DRAWING NO. 98-0370.

2' X 4' CATV PULLBOX

2' X 4' PRECAST CONCRETE PULLBOX WITH TWO PIECE CHECKERED STEEL PLATE COVERS, SIMILAR TO HTCO 2' X 4' PULLBOX, HTCO DRAWING NO. 34056 WITH "CATV" INSCRIBED ON COVER.

2' X 4' ST. LT. PULLBOX (CITY & COUNTY)

2' X 4' PRECAST CONCRETE PULLBOX SIMILAR TO HTCO 435TB EXCEPT WITH 2-PIECE CHECKERED STEEL COVERS AND "C&C" ST. LT." WELDED ON BOTH COVERS.

24" X 32" ST. LT. PULLBOX (STATE)

24" X 32" TYPE "A" PRECAST CONCRETE PULLBOX WITH CAST IRON FRAME AND COVER, PROVIDED IN ACCORDANCE WITH STATE DEPARTMENT OF TRANSPORTATION STANDARD DRAWING TE-41.

ELECTRICAL SYMBOLS

SYMBOL	DESCRIPTION
●	STREET LIGHT, 100W HIGH PRESSURE SODIUM LUMINAIRE, GALV. STEEL POLE & BRACKET ARM, SEE DETAIL A/E-6 (STATE)
⊙	EXST 250W HPS STREET LIGHT (STATE)
⊙	STREET LIGHT, 100W HIGH PRESSURE SODIUM LUMINAIRE, GALV STEEL POLE & BRACKET ARM, SEE DETAIL A/E-9 (C&C)
⊙	EXST 70W HPS STREET LIGHT (C&C)
⊙	EXST 100W HPS STREET LIGHT (C&C)
⊙	EXST 55W LPS STREET LIGHT (C&C)
⊙	EXST UTILITY POLE TO BE REMOVED BY RESPECTIVE UTILITY CO. UNLESS INDICATED OTHERWISE
⊙	EXST UTILITY POLE
⊙	HECO 6' X 14' MANHOLE
⊙	EXST HECO 6' X 11' MANHOLE
⊙	HTCO 4' X 6' MANHOLE
⊙	EXST HTCO HANDHOLE/PULLBOX. SEE PLAN
⊙	CATV 2' X 4' PULLBOX
⊙	EXST CATV 2' X 4' PULLBOX
⊙	STREET LIGHT 2' X 4' PULLBOX (C&C)
⊙	EXST STREET LIGHT PULLBOX (C&C)
⊙	STREET LIGHT TYPE "A" PULLBOX (STATE)
⊙	EXST STREET LIGHT PULLBOX (STATE)
⊙	ELECTRIC/SIGNAL DUCTLINE WITH DESIGNATORS; INDICATES TYPE "A" DUCT SECTION WITH "2-4E" DUCTS. SEE SHEET E-7 FOR TYP DUCT SECTIONS AND SHEET E-7 FOR CONDUIT SCHEDULES
⊙	STUB, CAP, & MARK CONDUITS
⊙	EXST ELEC/SIGNAL DUCTLINE & WIRING
⊙	EXST WIRING TO BE REMOVED BY RESPECTIVE UTILITY CO.; CAP ENDS OF EXST. ELEC/SIGNAL DUCTS & ABANDONED IN PLACE
⊙	EXST STREET LIGHT DUCTLINE & WIRING
⊙	STREET LIGHT DUCTLINE & WIRING
⊙	EXST TRAFFIC SIGNAL DUCTLINE
⊙	EXST OVERHEAD ELEC/SIGNAL LINES
⊙	EXST OVERHEAD ELEC/SIGNAL LINES TO BE REMOVED BY RESPECTIVE UTILITY CO'S UNLESS OTHERWISE INDICATED.
⊙	CAST METAL J-BOX, SEE PLAN
⊙	CAST METAL 6" SQ X 4" J-BOX, SURFACE MTD, WEATHERPROOF
⊙	SURFACE MTD CONDUIT; 3/4"C W/2#12 & #12 GND UNLESS OTHERWISE INDICATED.

SYMBOL NOTES:

- HASH MARKS ON CONDUIT SYMBOL INDICATES WIRE QUANTITY. NO HASH MARKS INDICATE 2 WIRES PLUS GROUND; "H" INDICATES 3 WIRES PLUS GROUND.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

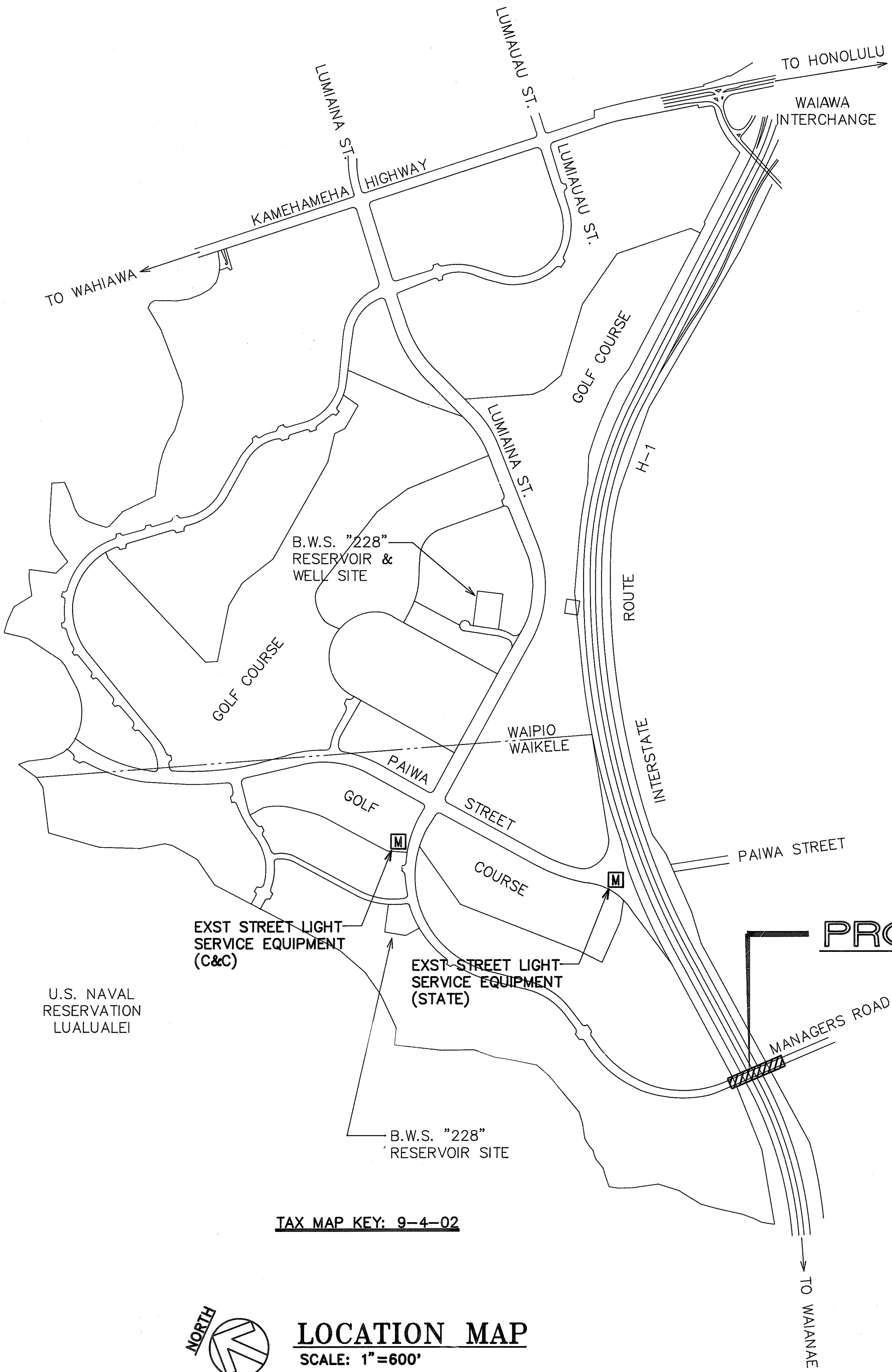
LOCATION MAP, EQUIPMENT SCHEDULE
ELECTRICAL SYMBOLS

MANAGER'S DRIVE BRIDGE WIDENING
INTERSTATE ROUTE H-1

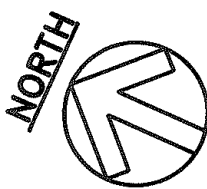
SCALE: AS NOTED

DATE:

E-1 SHEET No. 1 OF 13 SHEETS



TAX MAP KEY: 9-4-02



LOCATION MAP

SCALE: 1"=600'

600' 300' 0 600' 1200' 1800'
SCALE: 1"=600'

GRAPHIC SCALE

DRAWING REVIEW:

Reviewed for HECO's
Facilities Only

Date 4/27/97 By [Signature]

Distribution Engineering Department
Hawaiian Electric Company, Inc.

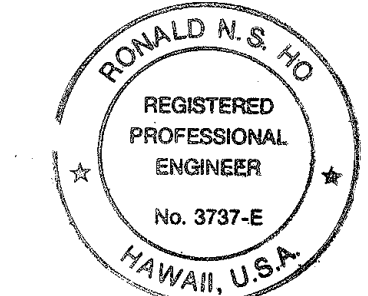
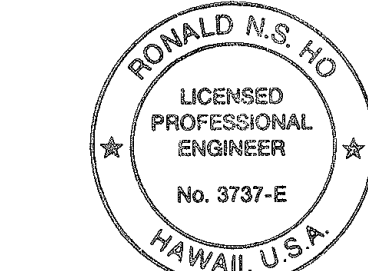
HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on Customer's behalf from the responsibility for engineering, design, materials and any liability associated with this project.

REAPPROVED BY:

HAWAIIAN ELECTRIC CO. DATE 5/21/97
HAWAIIAN TELEPHONE CO. DATE 2/21/97

APPROVED BY:

DATE 4/15/98
DATE 12/7/93
DATE 04-10-94



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.
[Signature]
11/19/93

REVIS'D PER HECO COMMENT

DATE

REVISION

UTILITY 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 LINES AND SHALL MAINTAIN ADEQUATE CLEARANCE WHEN OPERATING EQUIPMENT WITHIN OR UNDER ANY OVERHEAD LINES.
2. THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGE TO HAWAIIAN ELECTRIC CO. FACILITIES AND SHALL IMMEDIATELY REPORT SUCH DAMAGES TO HAWAIIAN ELECTRIC CO.'S TROUBLE DISPATCHER AT 548-7961.
3. THE CONTRACTOR IS TO COMPLY WITH THE DIRECTIONS OF THE STATE OF HAWAII OCCUPATIONAL SAFETY AND HEALTH LAW (DOSH).
4. FOR VERIFYING THE LOCATION OF UNDERGROUND DUCT LINES AND FOR ASSISTANCE IN PROVIDING PROPER SUPPORT AND PROTECTION OF THE UNDERGROUND DUCTLINES, THE CONTRACTOR IS TO CONTACT HAWAIIAN ELECTRIC CO. UNDERGROUND DIVISION AT 548-7395 A MINIMUM OF 72 HOURS IN ADVANCE.
5. ALL HAWAIIAN ELECTRIC CO. OVERHEAD AND UNDERGROUND FACILITIES 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 THE DAMAGES TO HAWAIIAN ELECTRIC CO. FACILITIES MAY BE BORNE BY THE CONTRACTOR. THIS REPAIR WORK SHALL BE DONE BY HAWAIIAN ELECTRIC CO. OR BY THE CONTRACTOR UNDER HAWAIIAN ELECTRIC CO.'S SUPERVISION.
6. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGEMENT DEPT. TWO WEEKS PRIOR TO WORK ON HAWAIIAN ELECTRIC CO. FACILITIES, AT 548-5668.
7. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN THE EXCAVATION AND CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND TELEPHONE AND SIGNAL CABLE FACILITIES AND SHALL MAINTAIN ADEQUATE CLEARANCE FOR HIS EQUIPMENT WHILE WORKING CLOSE TO AND/OR UNDER OVERHEAD FACILITIES. ANY DAMAGES TO THE EXISTING UNDERGROUND FACILITIES SHALL BE REPAIRED AND PAID FOR BY THE CONTRACTOR.
8. FOR FIELD LOCATION OF HAWAIIAN TELEPHONE CO. FACILITIES, CONTACT HAWAIIAN TELEPHONE OUTSIDE PLANT ENGINEERING SECTION, A MINIMUM OF 72 HOURS IN ADVANCE, PRIOR TO START OF EXCAVATION.
9. SHOULD FIELD CONDITIONS AND CONSTRUCTION PROCEDURES REQUIRE THAT UTILITY POLES BE BRACED, THE CONTRACTOR SHALL CONTACT THE FOLLOWING PERSON FOR POLE BRACING INSTRUCTIONS A MINIMUM OF 72 HOURS IN ADVANCE OF ACTUAL REQUIRED BRACING - HAWAIIAN TELEPHONE CO. - CALVIN CHOY - AREA CONSTRUCTION SUPERVISOR AT 546-3381.
10. WHEN TRENCH EXCAVATION IS ADJACENT TO EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS, AND SETTLEMENT, AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS, OR UNDERPINNING TO FULLY PROTECT IT FROM DAMAGE.
11. SHOULD IT BECOME NECESSARY, ANY WORK REQUIRED TO RELOCATE HAWAIIAN ELECTRIC CO. FACILITIES SHALL BE DONE BY HAWAIIAN ELECTRIC CO. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION.
12. A 4" WIDE WARNING TAPE ORANGE IN COLOR WITH A BLACK IMPRINTED MESSAGE "WARNING-STOP DIGGING CALL GTE, COMMUNICATIONS CABLE BURIED BELOW, FAILURE TO COMPLY COULD RESULT IN LEGAL ACTION" SHALL BE PLACED 12" BELOW THE SURFACE OVER HTCO DUCT OR CONCRETE JACKET FOR THE ENTIRE LENGTH OF DUCT INSTALLATIONS. SEE HTCO STANDARD DRAWING 34028.
13. INSTALL NEPTCO WP1800P MULETAPE IN ALL NEW DUCTS AND CAP ALL DUCTS AFTER TESTING. THE NEPTCO MULETAPE IS AVAILABLE IN 3,000 FT, 6,500 FT AND 10,000 FT REELS FROM WESTINGHOUSE ELECTRIC SUPPLY COMPANY (WESCO). USING THE NEPTCO MULETAPE, THE CONTRACTOR SHALL MEASURE AT LEAST ONE DUCT OF A COMMON DUCT RUN. THE DISTANCE SHALL BE MARKED ON THE RECORD PRINTS AND SUBMITTED TO THE HTCO INSPECTOR FOR RECORD KEEPING.
14. THE CONTRACTOR SHALL NOTIFY OCEANIC CABLEVISION INSPECTOR MOKI PLACE AT 625-8378, 48 HOURS PRIOR TO ANY WORK INVOLVING CATV FACILITIES. ALL WORK INVOLVING CATV FACILITIES SHALL BE DONE IN THE PRESENCE OF THE INSPECTOR, AS INSTRUCTED BY THE INSPECTOR.

NOTES FOR CONSTRUCTION WITHIN STATE RIGHT-OF-WAY

1. CONTRACTOR SHALL OBTAIN A CONSTRUCTION PERMIT FROM STATE'S HIGHWAY DISTRICT ENGINEER AT 727 KAKOI STREET PRIOR TO COMMENCEMENT OF WORK WITHIN THE STATE RIGHT-OF-WAY.
2. CONSTRUCTION & RESTORATION OF ALL EXISTING HIGHWAY FACILITIES WITHIN STATE RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE CURRENT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", & THE "SPECIFICATION FOR INSTALLATION OF MISCELLANEOUS IMPROVEMENTS WITHIN STATE HIGHWAYS", OF THE STATE HIGHWAYS DIVISION.
3. ALL LANES SHALL BE OPEN TO TRAFFIC DURING MORNING PEAK HOURS FROM 6:00 AM TO 8:30 AM & DURING AFTERNOON PEAK HOURS FROM 3:00 PM TO 6:00 PM, & DURING OFF-WORK HOURS. ONLY ONE LANE OF MANAGERS DRIVE SHALL BE CLOSED AT ANY OTHER TIME.
4. CONTRACTOR SHALL PROVIDE, INSTALL & MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES, & OTHER PROTECTIVE FACILITIES & SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION & FOR THE CONVENIENCE & SAFETY OF PUBLIC TRAFFIC. ALL SUCH PROTECTIVE FACILITIES & PRECAUTIONS TO BE TAKEN SHALL CONFORM WITH THE "ADMINISTRATIVE RULES OF HAWAII GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITES ON OR ADJACENT TO PUBLIC STREETS & HIGHWAYS" ADOPTED BY THE DIRECTOR OF TRANSPORTATION, & THE CURRENT U.S. FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS & HIGHWAYS, PART VI - TRAFFIC CONTROL FOR HIGHWAY CONSTRUCTION & MAINTENANCE OPERATIONS", DATED 1985. IF LANE CLOSURES ARE REQUIRED DURING CONSTRUCTION, A TRAFFIC CONTROL PLAN SHALL BE INCORPORATED INTO THE CONSTRUCTION PLANS AND MUST BE APPROVED BY THE DIVISION PRIOR TO THE ISSUANCE OF THE PERMIT.
5. THE MINIMUM PAVEMENT STRUCTURE SHALL CONSIST OF:

4" ASPHALT CONCRETE, 8" ASPHALT CONCRETE BASE COURSE & 12" AGGREGATE SUBBASE OR MATCH EXISTING PAVEMENT STRUCTURE, WHICHEVER IS GREATER.
6. NO MATERIAL AND/OR EQUIPMENT SHALL BE STOCKPILED OR OTHERWISE STORED WITHIN HIGHWAY RIGHT-OF-WAY EXCEPT AT LOCATIONS DESIGNATED IN WRITING & APPROVED BY THE DISTRICT ENGINEER.
7. CONTRACTOR SHALL BE REQUIRED TO PROVIDE ADEQUATE, SAFE, NON-SKID BRIDGING MATERIAL OVER TRENCHES, INCLUDING SHORING, WHEN TRENCHING IN PAVEMENT AREAS TO HANDLE ALL TYPES OF VEHICULAR TRAFFIC.
8. LONGITUDINAL DRAINAGE ALONG THE HIGHWAY SHALL BE MAINTAINED.
9. APPROVAL OF PERMIT CONSTRUCTION PLANS SHALL BE VALID FOR A PERIOD OF ONE YEAR THEREOF FROM THE DATE OF NOTIFICATION OF APPROVAL TO THE APPLICANT. IN THE EVENT CONSTRUCTION DOES NOT COMMENCE WITHIN THIS ONE-YEAR PERIOD, THE APPLICANT WILL BE REQUIRED TO RESUBMIT THIS CONSTRUCTION PLANS FOR DIVISION'S REVIEW AND APPROVAL.
10. ALL REGULATORY, GUIDE AND CONSTRUCTION SIGNS AND BARRICADES SHALL BE OF HIGH INTENSITY REFLECTIVE SHEETING.
11. COMPACTION TESTS SHALL BE TAKEN IN ACCORDANCE WITH THE SPECIFICATIONS FOR INSTALLATIONS OF MISCELLANEOUS IMPROVEMENTS WITHIN STATE HIGHWAYS AS FOLLOWS:

A. SUBBASE: ONE COMPACTION TEST
B. BASE COURSE: ONE COMPACTION TEST
C. ONE COMPACTION TEST FOR 300 LINEAL FEET OF TRENCH

SEE DWG 4A FOR "NOTES FOR CONSTRUCTION WITHIN STATE RIGHT-OF-WAY."

12. NO TRENCH SHALL BE OPENED MORE THAN 300 FEET IN ADVANCE OF THE INSTALLED AND TESTED PIPE AND/OR DUCTLINE.
13. PRIOR TO COMMENCING TRENCH EXCAVATION WORK, THE CONTRACTOR SHALL TAKE A PROFILE ALONG THE NEW CENTERLINE OF THE UTILITY TRENCH AND THAT SUCH INFORMATION SHALL BE USED IN THE VERIFICATION OF RESTORING THE ROADWAY TO ITS ORIGINAL CONDITION. A COPY OF THE PROFILE SHALL BE SUBMITTED TO THE DISTRICT ENGINEER.

ELECTRICAL & MAINTENANCE SERVICES DIVISION NOTES

1. THE CONTRACTOR SHALL NOTIFY THE JOINT POLE COMMITTEE TWO (2) WEEKS IN ADVANCE OF ANY RELOCATION OF UTILITY POLE(S) THAT MAY BE NECESSARY.
2. THE CONTRACTOR SHALL NOTIFY THE ELECTRICAL & MAINTENANCE SERVICES DIVISION, DEPARTMENT OF TRANSPORTATION SERVICES, THREE (3) WORKING DAYS PRIOR TO COMMENCING WORK ON THE STREET LIGHTING SYSTEM. (PHONE 527-5002).
3. THE CONTRACTOR SHALL NOTIFY THE ELECTRICAL & MAINTENANCE SERVICES DIVISION, DEPARTMENT OF TRANSPORTATION SERVICES, THREE (3) WORKING DAYS PRIOR TO COMMENCING WORK ON THE TRAFFIC SIGNAL SYSTEM. (PHONE 527-5007).
4. THE CONTRACTOR SHALL NOTIFY THE ELECTRICAL & MAINTENANCE SERVICES DIVISION, DEPARTMENT OF TRANSPORTATION SERVICES, THREE (3) WORKING DAYS PRIOR TO COMMENCING WORK ON THE FIBER OPTIC SYSTEM. (PHONE 527-5007).
5. THE STREET LIGHTING, TRAFFIC SIGNAL, AND FIBER OPTIC SYSTEM SHALL BE KEPT OPERATIONAL DURING CONSTRUCTION. ANY RELOCATION OR CHANGEOVER REQUIRED SHALL BE APPROVED BY THE ELECTRICAL & MAINTENANCE SERVICES DIVISION, DEPARTMENT OF TRANSPORTATION SERVICES, AND PERFORMED AND PAID FOR BY THE CONTRACTOR.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO EXISTING STREET LIGHTING, TRAFFIC SIGNAL, AND FIBER OPTIC FACILITIES, INCLUDING THE TRAFFIC SIGNAL INTERCONNECT SYSTEM, AND ANY AND ALL DAMAGES TO THESE FACILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS COST IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY AND COUNTY OF HONOLULU.

GENERAL ELECTRICAL NOTES

1. ELECTRICAL WORK SHALL BE NEW UNLESS INDICATED OTHERWISE.
2. EXISTING ELECTRICAL FACILITIES SHALL REMAIN UNLESS INDICATED OTHERWISE.
3. "REMOVE" SHALL MEAN "REMOVE AND DISPOSE".
4. EXISTING LIGHTING SYSTEM SHALL REMAIN OPERATIONAL DURING NON-DAYLIGHT HOURS.

REAPPROVED

HAWAIIAN ELECTRIC CO. DATE
Markus Jussel 5/10/97
HAWAIIAN TELEPHONE CO. DATE
W. S. Ziemke 2/12/97
for DIRECTOR, DEPT. OF TRANSPORTATION SERVICES
(FOR C&C RIGHT-OF-WAY ONLY) DATE

DRAWING REVIEW:

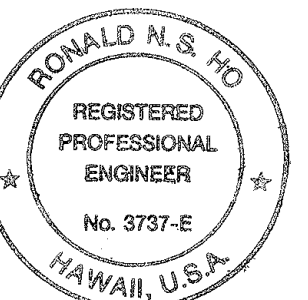
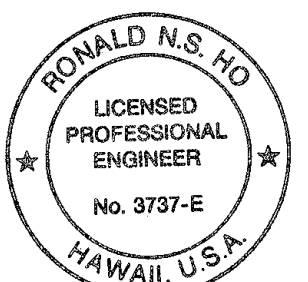
Reviewed for HECO's
Facilities Only
Date 4/17/97 By *[Signature]*
Distribution Engineering Department
Hawaiian Electric Company, Inc.
HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on Customer's behalf from the responsibility for engineering, design, materials and any liability associated with this project.

APPROVED BY:

W. S. Ziemke 4-17-97
HAWAIIAN TELEPHONE CO. DATE
W. S. Ziemke 4/17/97
DIRECTOR, DEPT. OF TRANSPORTATION SERVICES
(FOR C&C RIGHT-OF-WAY ONLY) DATE

DATE REVISION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	PMT-H16-01-97			



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Ronald N.S. Ho
4/17/97STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

NOTES

MANAGER'S DRIVE BRIDGE WIDENING
INTERSTATE ROUTE H-1

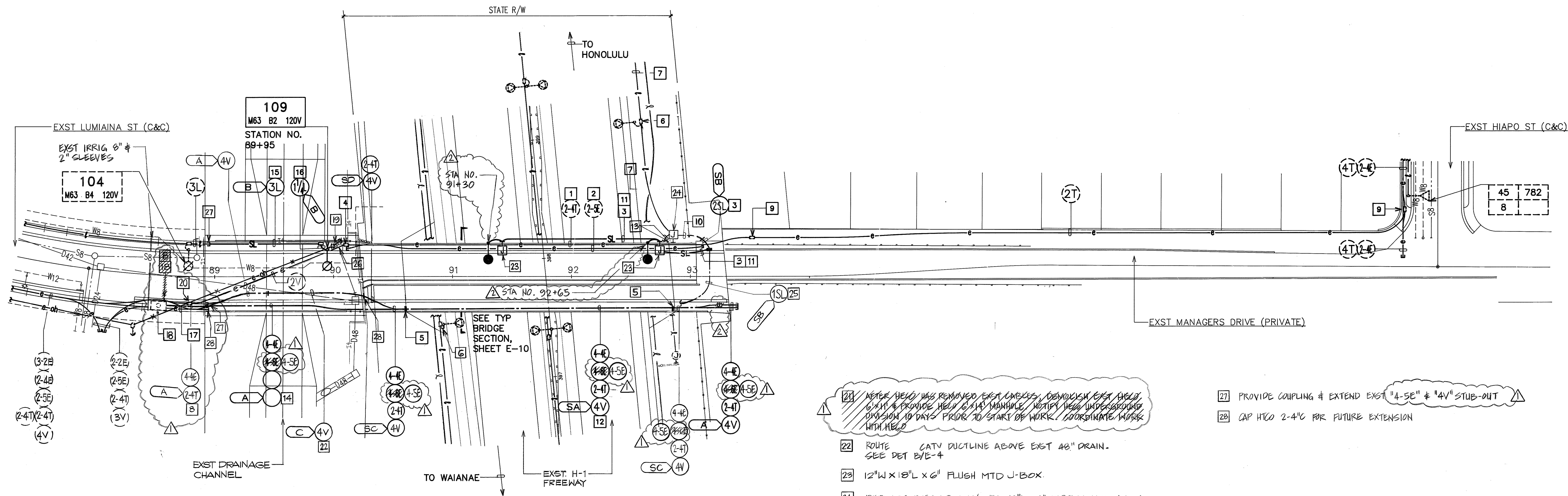
SCALE: AS NOTED

DATE:

E-2 SHEET No. 2 OF 13 SHEETS

SEE H-1 LIGHTING PLAN, SHEET E-4
FOR ADDITIONAL WORK

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	PMT-H10-01-97			



ELECTRICAL SITE PLAN

SCALE: 1"=40'-0"

NOTES:

- EXST HTCO 2-4" C CONCRETE ENCASED DUCTLINE W/ EXST HTCO CABLE & CATV FIBER OPTIC CABLE WITHIN EXST SIDEWALK
- EXST HECO 2-5" C CONCRETE ENCASED DUCTLINE WITHIN EXST BRIDGE STRUCTURE
- 2" C W/ 2#6 RHW-USE & #8 GND
- ADJUST EXST HTCO 2' X 4' PULLBOX TO MATCH SIDEWALK GRADE. COORDINATE WORK WITH HTCO
- PROVIDE EXPANSION COUPLINGS AT ABUTMENT WALL, SEE DET C/E-11
- EXST TYPE "A" ST LT PULLBOX
- EXST 2" C & 2#6 RHW-USE, #8 GND
- REMOVE EXST CONC SIDEWALK AT SCORELINE PRIOR TO INSTALLATION OF "4-4E" & "2-4T". REPAIR TO MATCH EXST. SEE DET A/E-11
- EXST HTCO 2' X 4' PULLBOX
- 2" GRSC W/ 2#6 RHW-USE & #8 GND
- CONDUIT ROUTED WITHIN CONCRETE RAILING
- CONDUITS ROUTED WITHIN CONC SIDEWALK
- 1" GRSC CONDUIT WITH 2#8 RHW-USE & #8 GND. SEE H-1 LIGHTING PLAN, SHEET E-4 FOR CONTINUATION
- DUCTLINE ROUTED AROUND EXST HEADWALL.
- 3" C W/ 2#1/0 RHW-USE & #2 GND
- 1 1/4" C W/ 2#8 RHW-USE & #8 GND
- REMOVE CONC ENCASED "2-4T" TO ALLOW INSTALLATION OF "4-4E". PROVIDE COUPLINGS & INSTALL REPLACEMENT "2-4T". COORDINATE WORK WITH HTCO & HECO.
- HECO UNDERGROUND DIVISION TO PENETRATE EXST 6" X 12" MANHOLE. PROVIDE END BELLS & TERMINATE "4-4E" AT EXST MANHOLE. CAP EXST "3-2E" & ABANDON-IN-PLACE. EXST MANHOLE CONTAINS ENERGIZED CABLES. CONTRACTOR SHALL EXERCISE CAUTION WHILE WORKING ON/IN EXST MANHOLE. REPAIR TO MATCH EXST. COORDINATE WORK WITH HECO. SEE DET A/E-10
- REMOVE WOOD POLE AFTER RESPECTIVE UTILITY CO HAS REMOVED OVERHEAD CABLE
- EXST CATV 2' X 6' PULLBOX

21 AFTER HECO HAS REMOVED EXST CABLES, DEMOLISH EXST HECO 6" X 12" & PROVIDE HECO 6" X 14" MANHOLE. NOTIFY HECO UNDERGROUND DIVISION 10 DAYS PRIOR TO START OF WORK. COORDINATE WORK WITH HECO.

22 ROUTE CATV DUCTLINE ABOVE EXST 48" DRAIN. SEE DET B/E-4

23 12" W X 18" L X 6" FLUSH MTD J-BOX

24 REPLACE EXST J-BOX W/ 12" W X 18" L X 6" SURFACE MTD J-BOX

25 1" C W/ 2#8 & #8 GND, SEE H-1 LIGHTING PLAN, SHEET E-4 FOR CONTINUATION.

26 REROUTE EXST CATV CONDUIT W/ FIBER OPTIC CABLE TO ALLOW INSTALLATION OF CATCH BASIN. USE EXTREME CAUTION WHILE BREAKING EXST CATV CONDUIT. ANY DAMAGE TO FIBER OPTIC SHALL BE REPAIRED BY OCEANIC CABLE & PAID FOR BY CONTRACTOR. PROVIDE SPLIT DUCT & 3" CONCRETE ENGASEMENT FOR FIBER OPTIC CABLE. COORDINATE WORK WITH CATV

27 PROVIDE COUPLING & EXTEND EXST "4-5E" & "4V" STUB-OUT

28 CAP HTCO 2-4" C FOR FUTURE EXTENSION

REAPPROVED BY:

Mark K. Janssen
HAWAIIAN TELEPHONE CO

5/21/97
DATE

HAWAIIAN ELECTRIC CO

DATE

for *John J. Schmale*
DIRECTOR, DEPT OF TRANSPORTATION SERVICES
(FOR C&C RIGHT-OF-WAY ONLY)

2/21/97
DATE

DRAWING REVIEW:
Reviewed for HECO's
Facility Only

Date 4/27/99 By *[Signature]*

Distribution 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 Customer's behalf from the responsibility for engineering, design, materials and any liability associated with this project.

APPROVED BY:

Mark K. Janssen
HAWAIIAN TELEPHONE CO

04-19-99
DATE

for *Kenneth Z. Young*
DIRECTOR, DEPT OF TRANSPORTATION SERVICES
(FOR C&C RIGHT-OF-WAY ONLY)

1/7/99
DATE

4/21/99
4/15/98

"AS-BUILT"
REVSD PER HECO COMMENT

DATE

REVISION

40' 20' 0 40' 80' 120'
SCALE: 1"=40'

GRAPHIC SCALE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL SITE PLAN

MANAGER'S DRIVE BRIDGE WIDENING
INTERSTATE ROUTE H-1

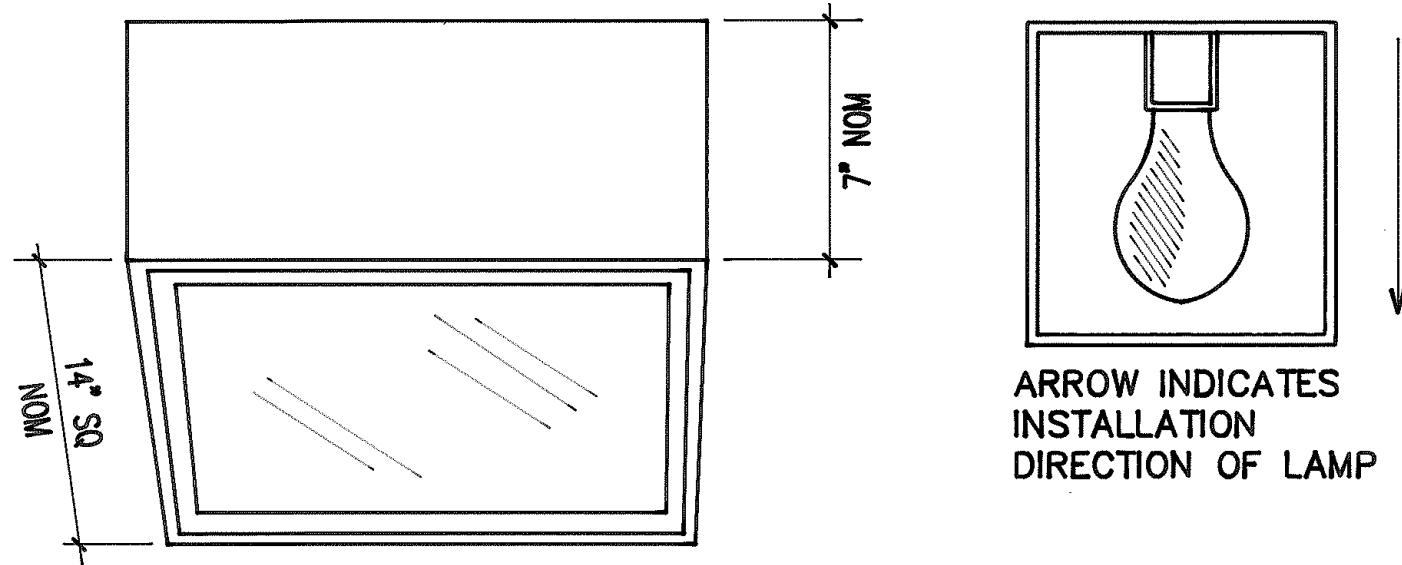
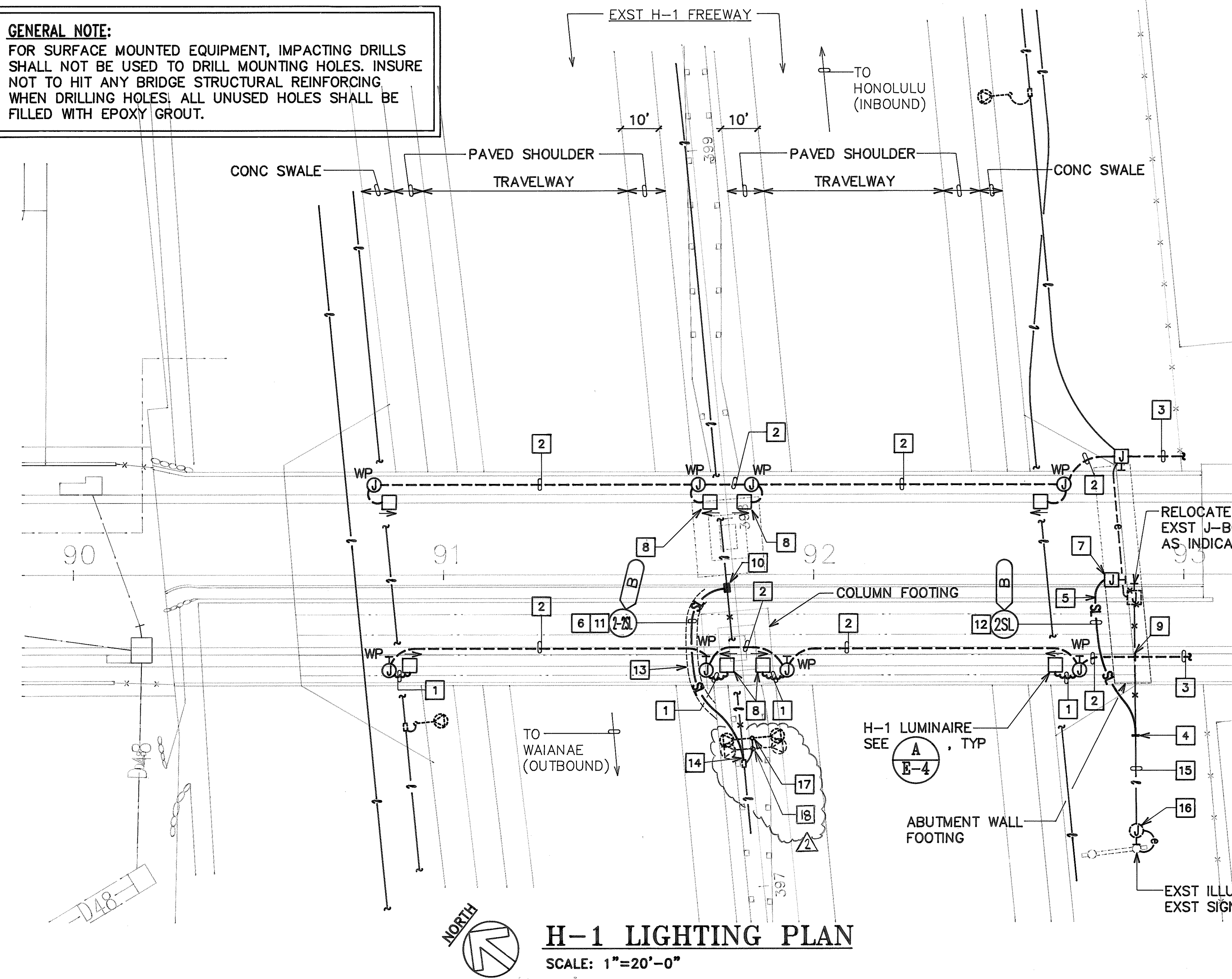
SCALE: AS NOTED

DATE:

E-3 SHEET No. 3 OF 13 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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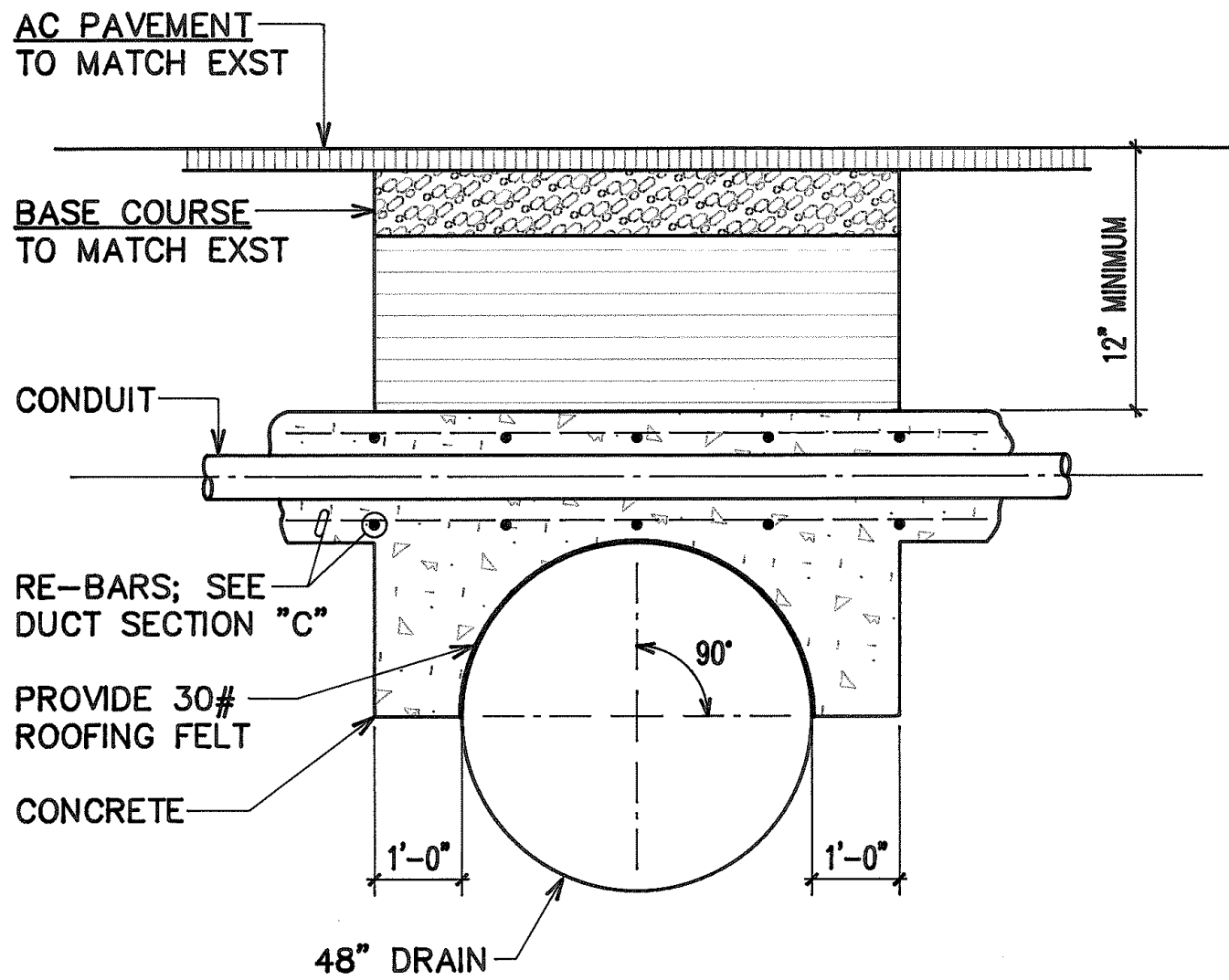
GENERAL NOTE:
FOR SURFACE MOUNTED EQUIPMENT, IMPACTING DRILLS SHALL NOT BE USED TO DRILL MOUNTING HOLES. INSURE NOT TO HIT ANY BRIDGE STRUCTURAL REINFORCING WHEN DRILLING HOLES. ALL UNUSED HOLES SHALL BE FILLED WITH EPOXY GROUT.



LAMP: 100W HPS, CLEAR
DESCRIPTION: EXTRUDED ALUM. CHASSIS WITH MITERED, WELDED CORNERS, DARK BRONZE ANODIZED FINISH, U.L. LISTED FOR WET LOCATIONS, CLEAR, TEMPERED GLASS DIFFUSER, HYDROFORMED SPECULAR ALUMINUM REFLECTOR WITH IES TYPE V OPTICS, HPF, CONSTANT WATTAGE AUTOTRANSFORMER BALLAST, 480V.
MOUNTING: STEM MTD. SEE DETAIL B/E-12
STREET LIGHTING SYSTEM SHALL PROVIDE A MINIMUM AVERAGE MAINTAINED ILLUMINATION ON PAVEMENT OF 0.9 FOOTCANDLES AND MAXIMUM OF 3 TO 1 AVERAGE TO MINIMUM RATIO. CONTRACTOR TO PROVIDE COMPUTERIZED FOOTCANDLE ARRAY FOR ROADWAY.

A H-1 LIGHT LUMINAIRE DETAIL

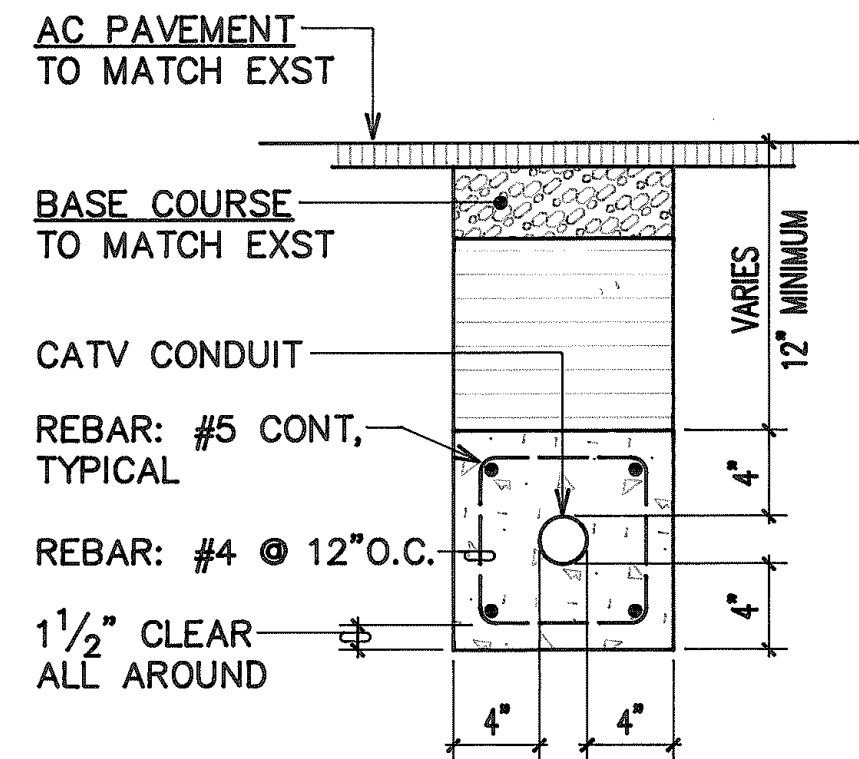
E-4 NOT TO SCALE



NOTE: CONTINUE STEEL REINFORCEMENT UNTIL 21" MINIMUM COVER IS ATTAINED OVER DUCTS.

C CATV DUCTLINE @ DRAINLINE

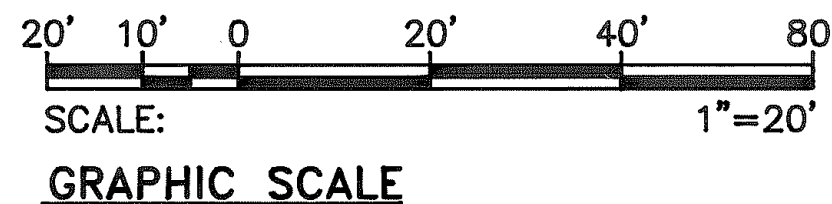
E-4 NOT TO SCALE



* SEE SHEET E-7 FOR BACKFILL NOTES & ADDITIONAL TYPICAL DUCT SECTIONS

ADDITIONAL TYPICAL DUCT SECTION

NOT TO SCALE



DATE

AS-BUILT

REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

H-1 LIGHTING PLAN, LIGHT FIXTURE & TYPICAL DUCT SECTION DETAILS

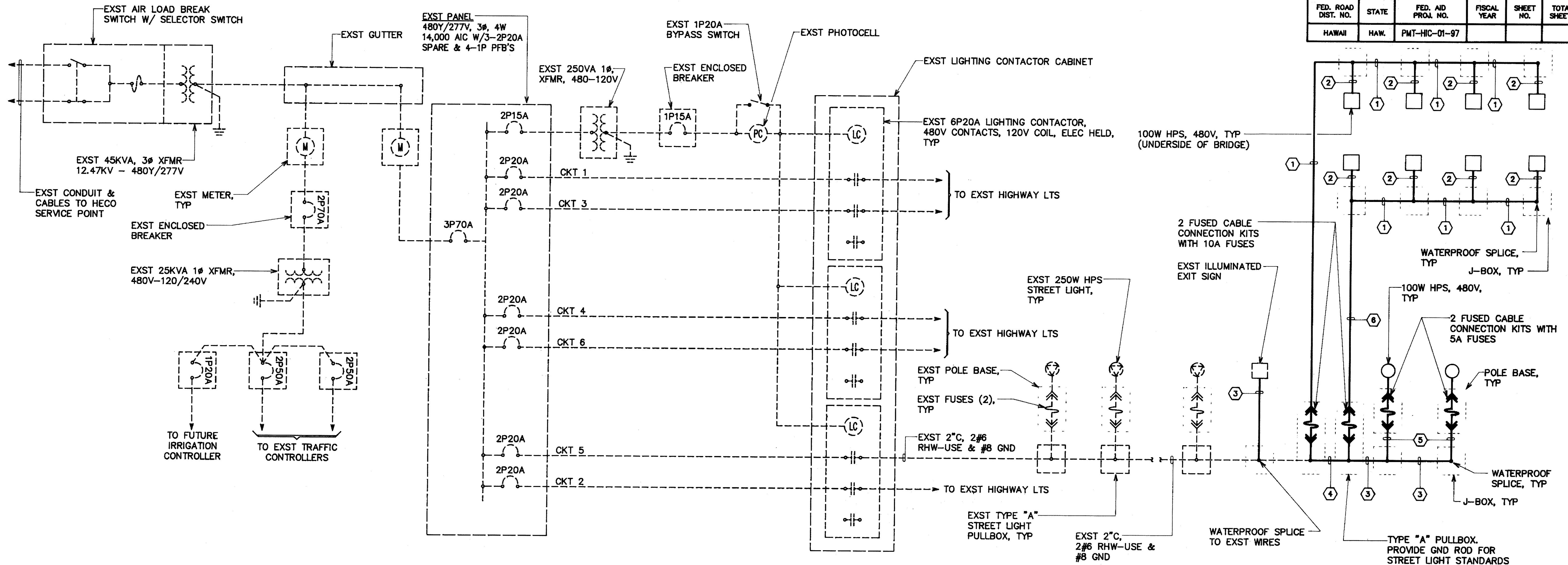
MANAGER'S DRIVE BRIDGE WIDENING
INTERSTATE ROUTE H-1

SCALE: AS NOTED

DATE

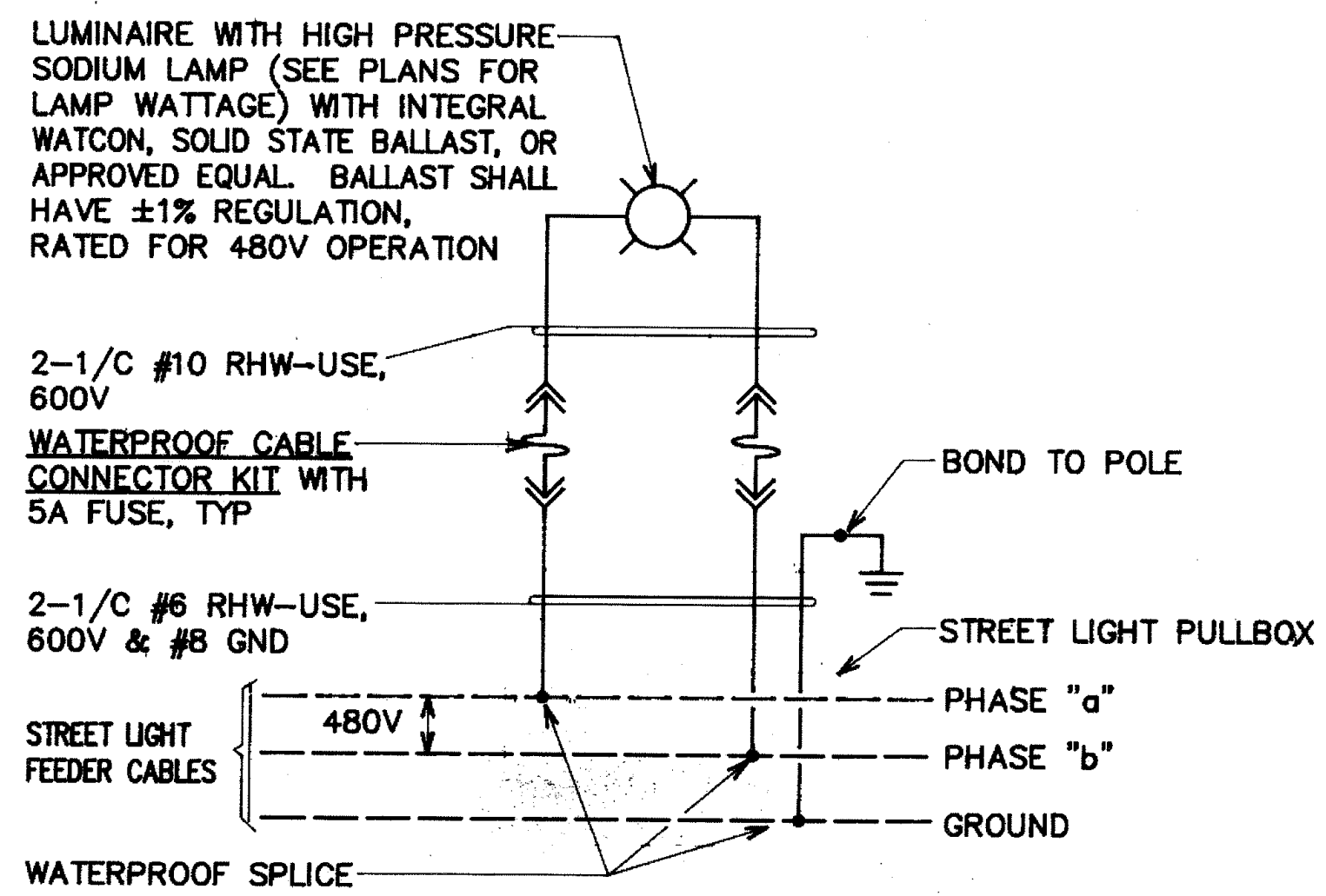
E-4 SHEET No. 4 OF 13 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	PMT-HIC-01-97			

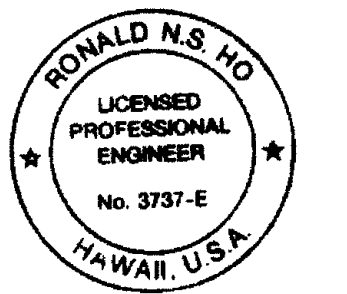


STREET LIGHT ONE-LINE DIAGRAM
(EXST SERVICE EQUIPMENT LOCATED @ PAIWA ST INTERCHANGE, SEE SHEET E-1)

CONDUIT & WIRING SCHEDULE	
ITEM	DESCRIPTION
①	1" GRSC, 2#8 RHW-USE & #8 GND
②	3/4" LIQUID TIGHT FLEX METAL CONDUIT, 2#8 RHW-USE & #8 GND
③	2"C, 2#6 RHW-USE & #8 GND
④	2" GRSC, 2#8 RHW-USE & #8 GND
⑤	1 1/2"C, 2#6 RHW-USE & #8 GND
⑥	1"C, 2#8 RHW-USE & #8 GND



SINGLE STREET LIGHT CONNECTION DIAGRAM
N.T.S. (STATE)



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
[Signature]
3/26/97

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ONE-LINE DIAGRAM (STATE)

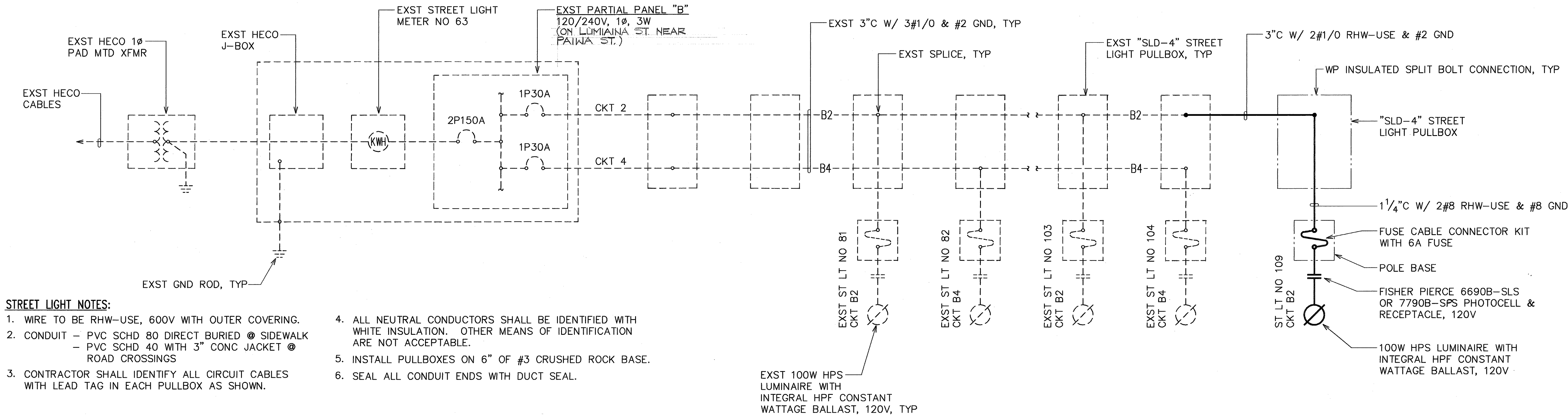
MANAGER'S DRIVE BRIDGE WIDENING
INTERSTATE ROUTE H-1

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

LAST SAVE: 09/26/97 10:00:00 AM BY: LA PLAT 001 001
S:\ASAP\PROJECTS\BIO\LA PLAT 001 001

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	PMT-H16-01-97			

LUMIAINA ST

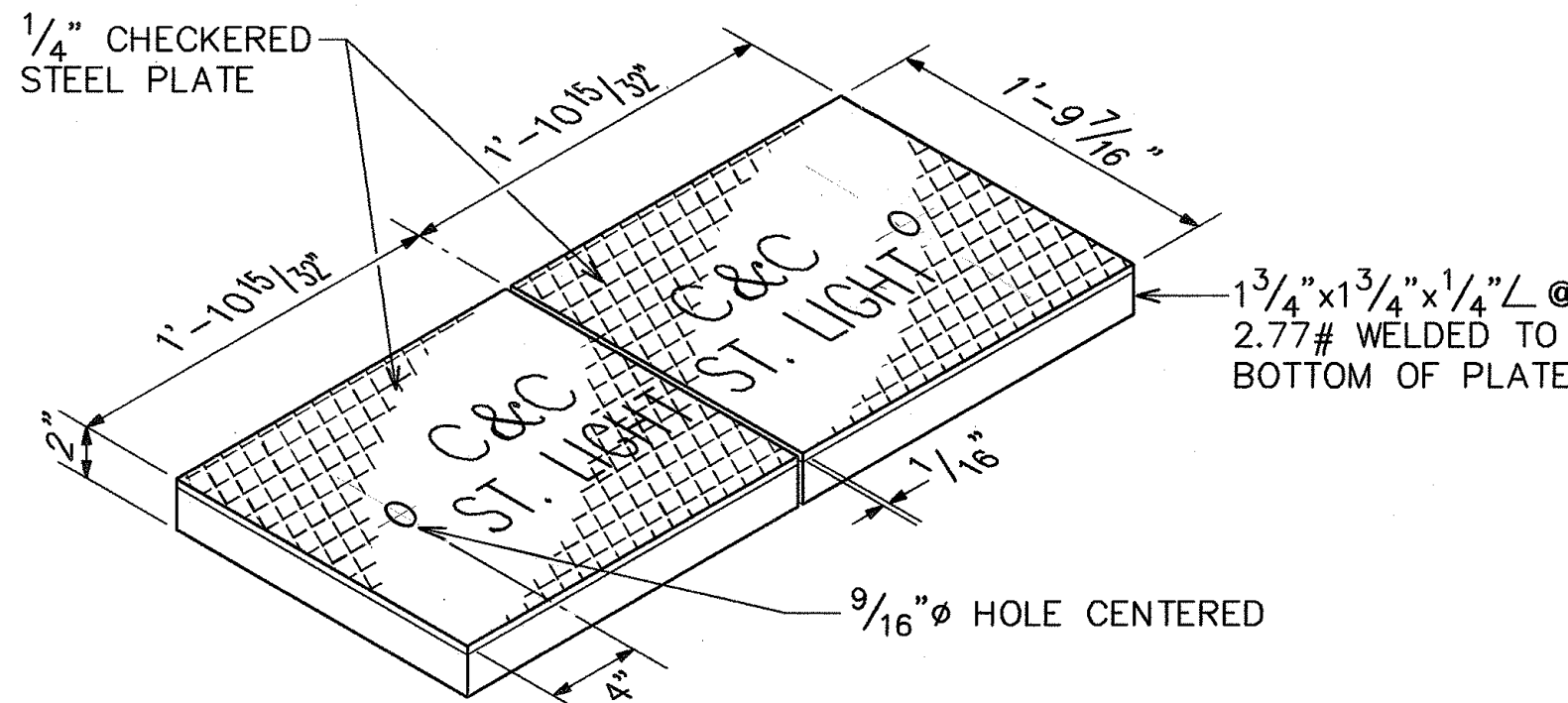


STREET LIGHT NOTES:

1. WIRE TO BE RHW-USE, 600V WITH OUTER COVERING.
2. CONDUIT - PVC SCHD 80 DIRECT BURIED @ SIDEWALK
- PVC SCHD 40 WITH 3\"/>
3. CONTRACTOR SHALL IDENTIFY ALL CIRCUIT CABLES WITH LEAD TAG IN EACH PULLBOX AS SHOWN.
4. ALL NEUTRAL CONDUCTORS SHALL BE IDENTIFIED WITH WHITE INSULATION. OTHER MEANS OF IDENTIFICATION ARE NOT ACCEPTABLE.
5. INSTALL PULLBOXES ON 6\"/>
6. SEAL ALL CONDUIT ENDS WITH DUCT SEAL.

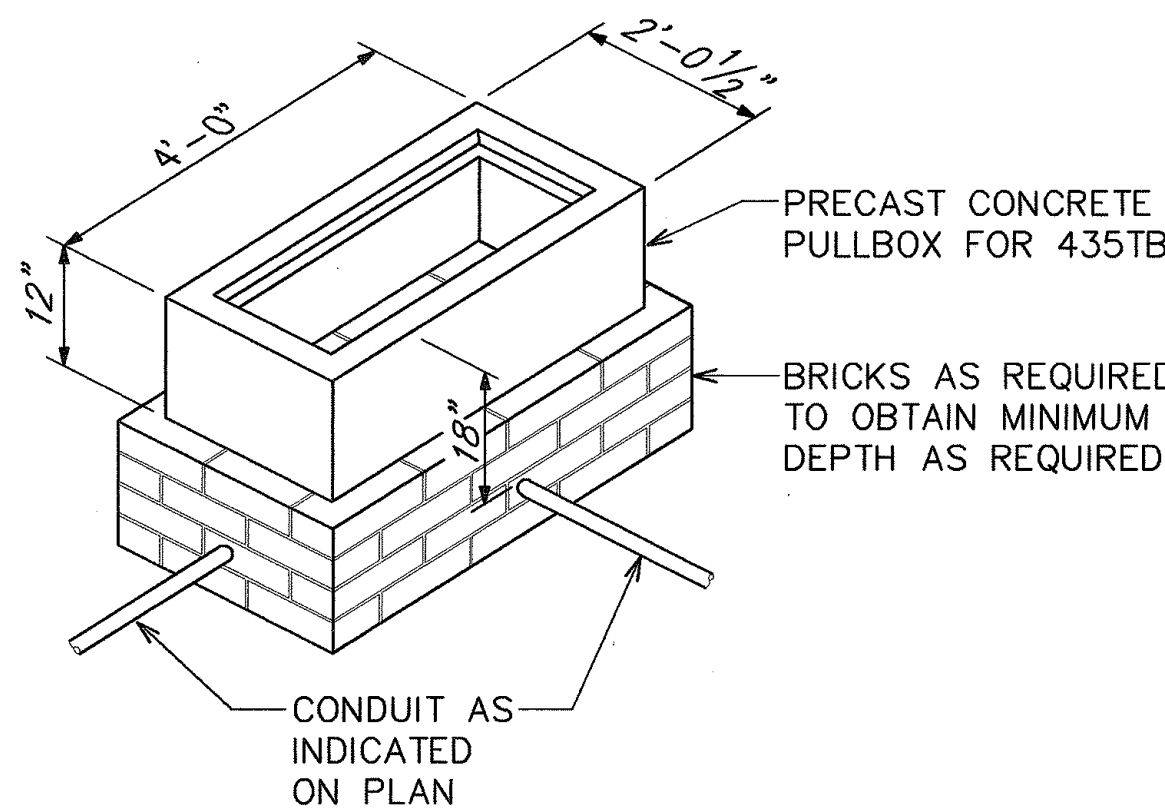
STREET LIGHT CONNECTION DIAGRAM

(CITY & COUNTY)



NOTES:

1. AFTER FABRICATION OF COVERS, DOUBLE DIP IN HOT GALVANIZE. SUBMIT SHOP DRAWING FOR APPROVAL BEFORE FABRICATION.
2. TYPICAL 435TB PULLBOX, REFER TO HTCO STANDARD DRAWING #34056.
3. INSTALL PULLBOX ON 6\"/>



A STREET LIGHT PULLBOX "SLD-4"
E-6 N.T.S.

REAPPROVED BY:

for *[Signature]* 2/21/97
DIRECTOR, DEPT OF TRANSPORTATION SERVICES
(FOR C&C RIGHT-OF-WAY ONLY) DATE

APPROVED BY:

for *[Signature]* 12/7/92
DIRECTOR, DEPT OF TRANSPORTATION SERVICES
(FOR C&C RIGHT-OF-WAY ONLY) DATE

DATE

REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONNECTION DIAGRAM, STREET
LIGHT DETAILS (C&C)

MANAGER'S DRIVE BRIDGE WIDENING
INTERSTATE ROUTE H-1

SCALE: AS NOTED

DATE:

E-6 SHEET No. 6 OF 13 SHEETS

CONDUIT SCHEDULE	
ITEM	DESCRIPTION
(3-2E)	HECO 3-2" CONDUITS, PVC SCHED 40
(4-4E)	HECO 4-4" CONDUITS, PVC SCHED 40
(4-5E)	HECO 4-5" CONDUITS, PVC SCHED 40
(4-6E)	HECO 4-6" CONDUITS, PVC SCHED 40
(3-2E)	EXST HECO 3-2" CONDUITS
(2-4E)	EXST HECO 2-4" CONDUITS
(4-5E)	EXST HECO 4-5" CONDUITS
(2-5E)	EXST HECO 2-5" CONDUITS
(2-4I)	HTCO 2-4" CONDUITS, GT-42 OR PVC SCHED 40
(2T)	EXST HTCO 2" CONDUIT
(4T)	EXST HTCO 4" CONDUIT
(2-4I)	EXST HTCO 2-4" CONDUIT
()	
()	
(4V)	CATV 4" CONDUIT, PVC SCHED 40
(4V)	EXST CATV 4" CONDUIT
(2V)	EXIST CATV 2" CONDUIT
()	
(1 1/4)	STREET LIGHT 1 1/4" CONDUIT, PVC SCHED 80
(2L)	STREET LIGHT 2" CONDUIT, PVC SCHED 80
(2L)	EXST STREET LIGHT 2" CONDUIT
()	
(1SL)	STATE STREET LIGHT 1" CONDUIT, PVC SCHED 40
(2SL)	STATE STREET LIGHT 2" CONDUIT, PVC SCHED 40

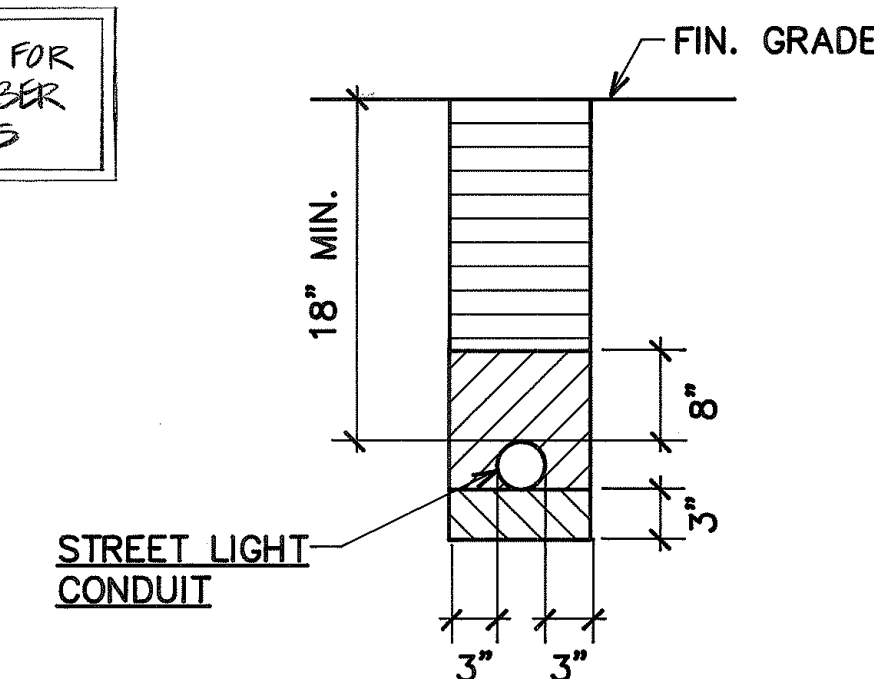
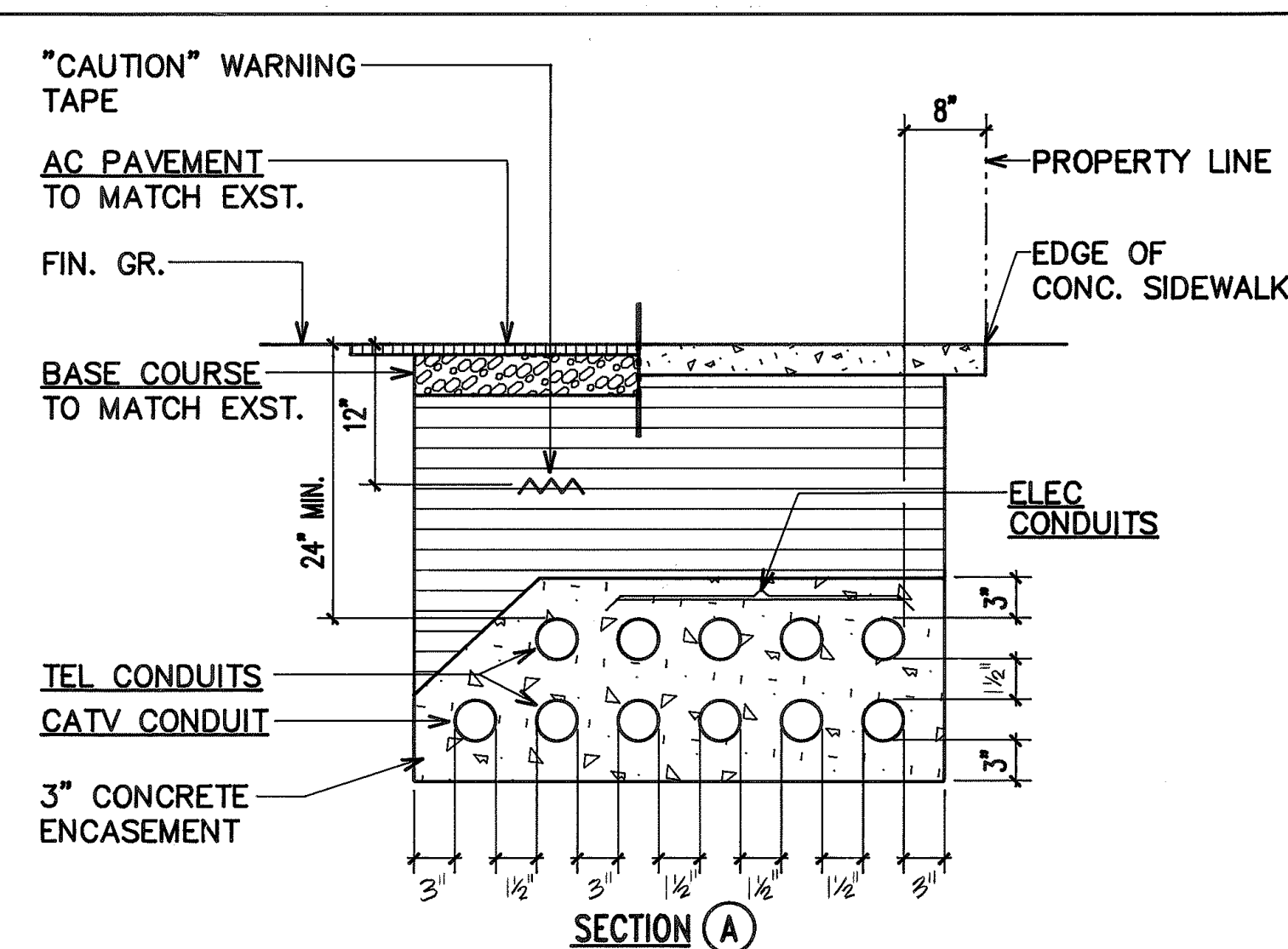
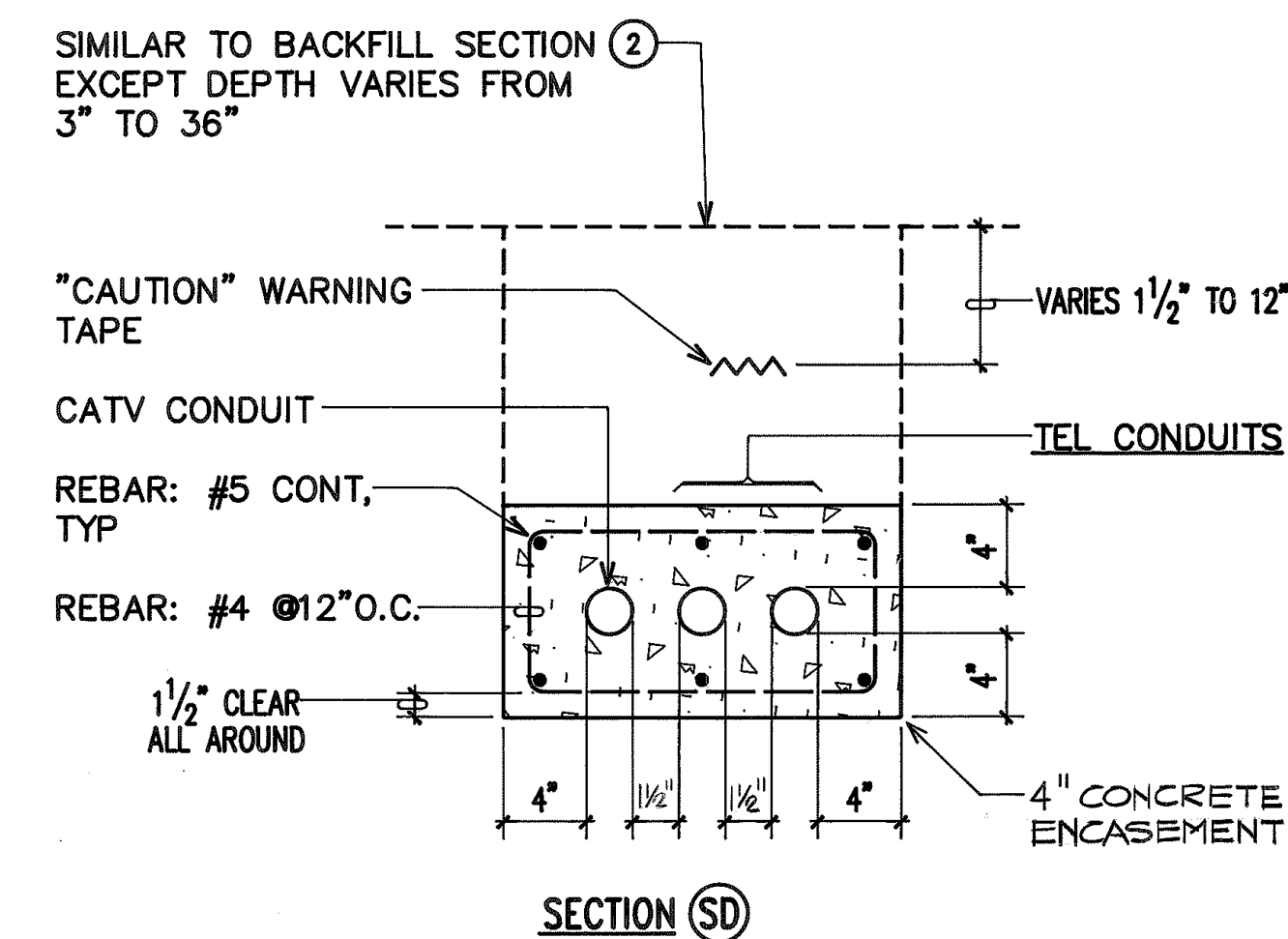
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DUCT SECTIONS

MANAGER'S DRIVE BRIDGE WIDENING
INTERSTATE ROUTE H-1

SCALE: AS NOTED DATE:

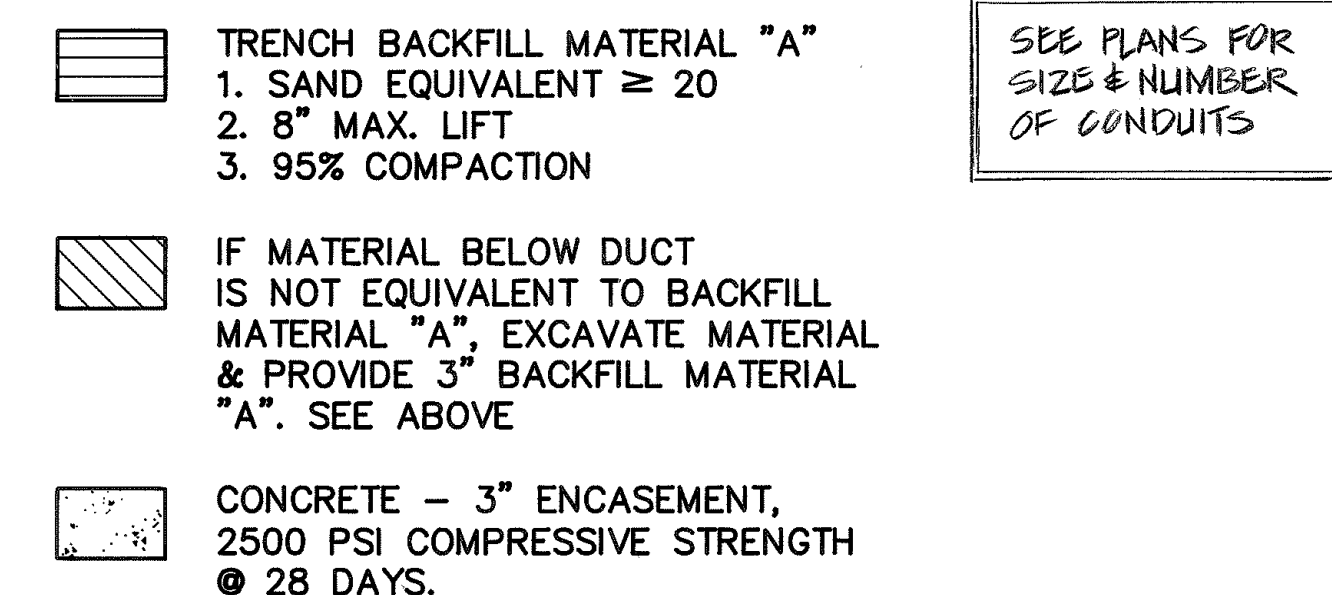
E-7 SHEET No. 7 OF 13 SHEETS



NOTE: SEE SHEET E-4 FOR ADDITIONAL TYPICAL DUCT SECTION

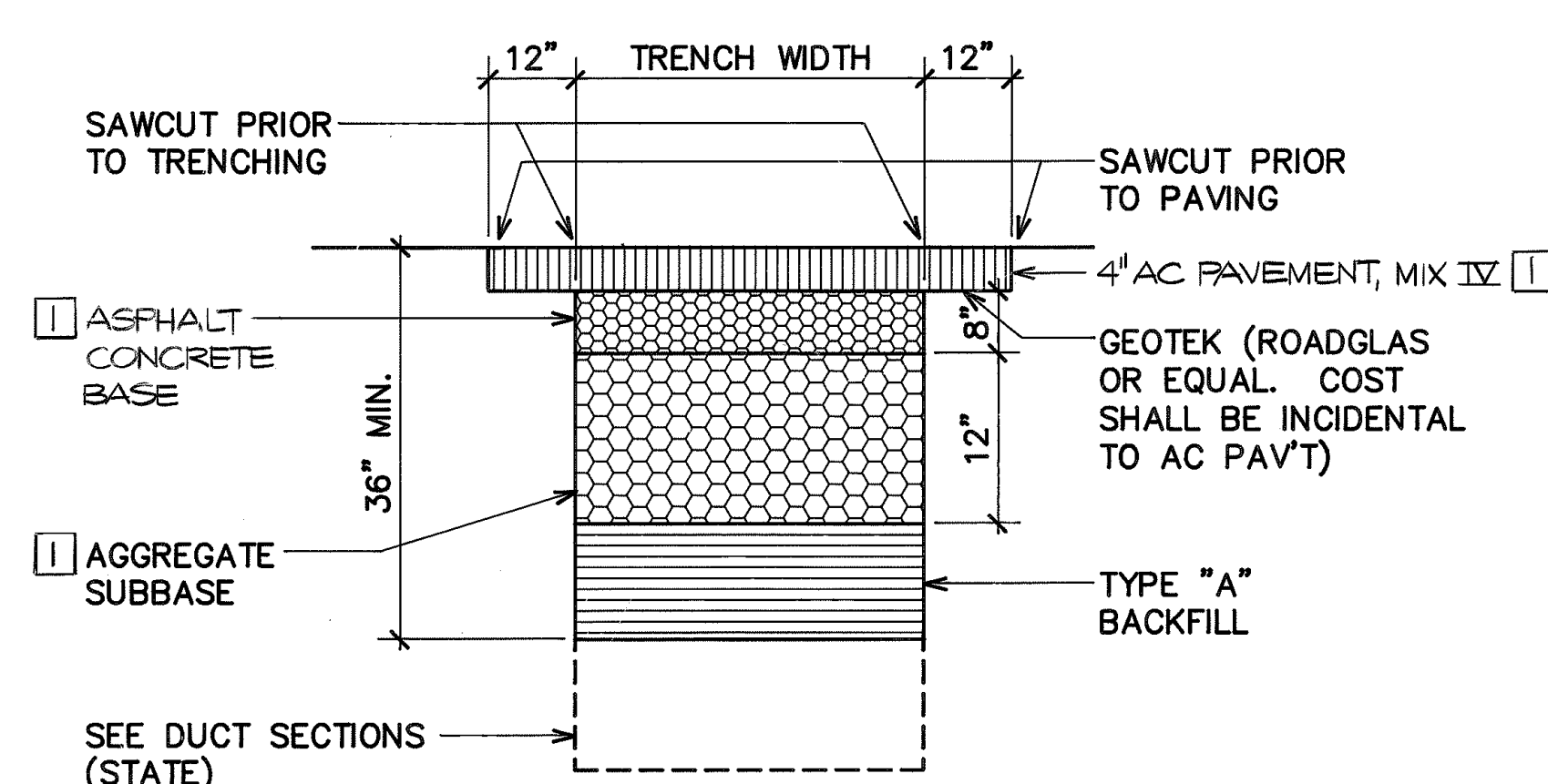
TYPICAL DUCT SECTIONS

N.I.S. (WITHIN CITY RIGHT-OF-WAY)

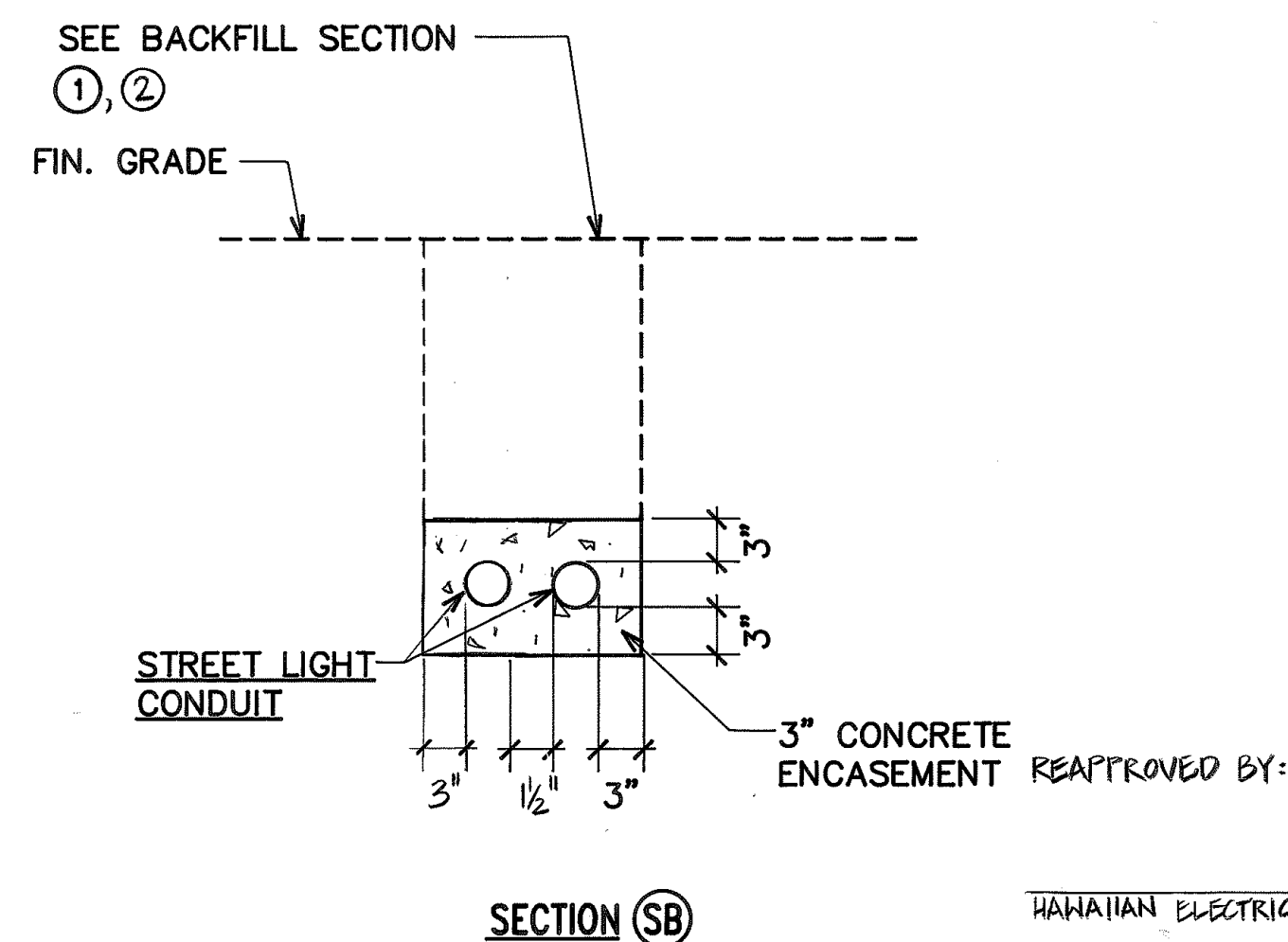


NOTE: BASE COURSE & SUB-BASE COURSE PER
1994 STATE STANDARD SPECIFICATIONS
FOR HIGHWAY CONSTRUCTION.

- 1 AC, AGGREGATE BASE & SUBBASE TO MATCH EXST THICKNESS OR THICKNESS SHOWN, WHICHEVER IS GREATER.
- 2 REBAR SHALL BE PROVIDED UNTIL 21" MIN DEPTH IS ATTAINED OVER CONDUITS



① BACKFILL SECTION
WITHIN STATE RIGHT-OF-WAY
UNDER ROADWAY



HAWAIIAN ELECTRIC CO DATE

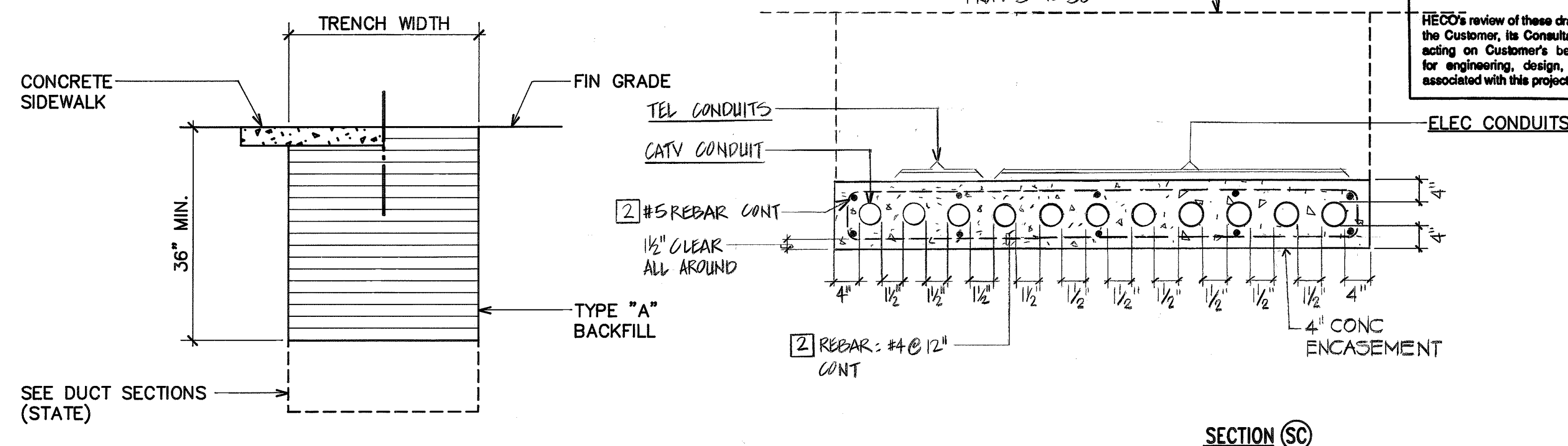
DRAWING REVIEW:
Reviewed for HECO's
Facilities Only

Date 12/18/97 By [Signature]

Distribution Engineering Department
Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, Contractor or anyone acting on Customer's behalf from the responsibility for engineering, design, materials and any liability associated with this project.

SEE BACKFILL SECTION
② EXCEPT DEPTH VARIES
FROM 3" TO 36"



TYPICAL DUCT SECTIONS


REAPPROVED BY: Mark Smith 5/21/97
HAWAIIAN TELEPHONE CO. DATE

Joe Hernandez 2/21/1
DIRECTOR, DEPT OF TRANSPORTATION SERVICES- DAT
(P.O. BOX 81410 - HAWAII, HI)


APPROVED BY:

vs Mark K. Jansels 4.19.94
HAWAIIAN TELEPHONE CO DATE

and Kenneth Z. Delaney 12/7/93
DIRECTOR, DEPT OF TRANSPORTATION SERVICES DATE
(FOR C&G RIGHT-OF-WAY ONLY)



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.
★ Ronald N. S.
6/19/93



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

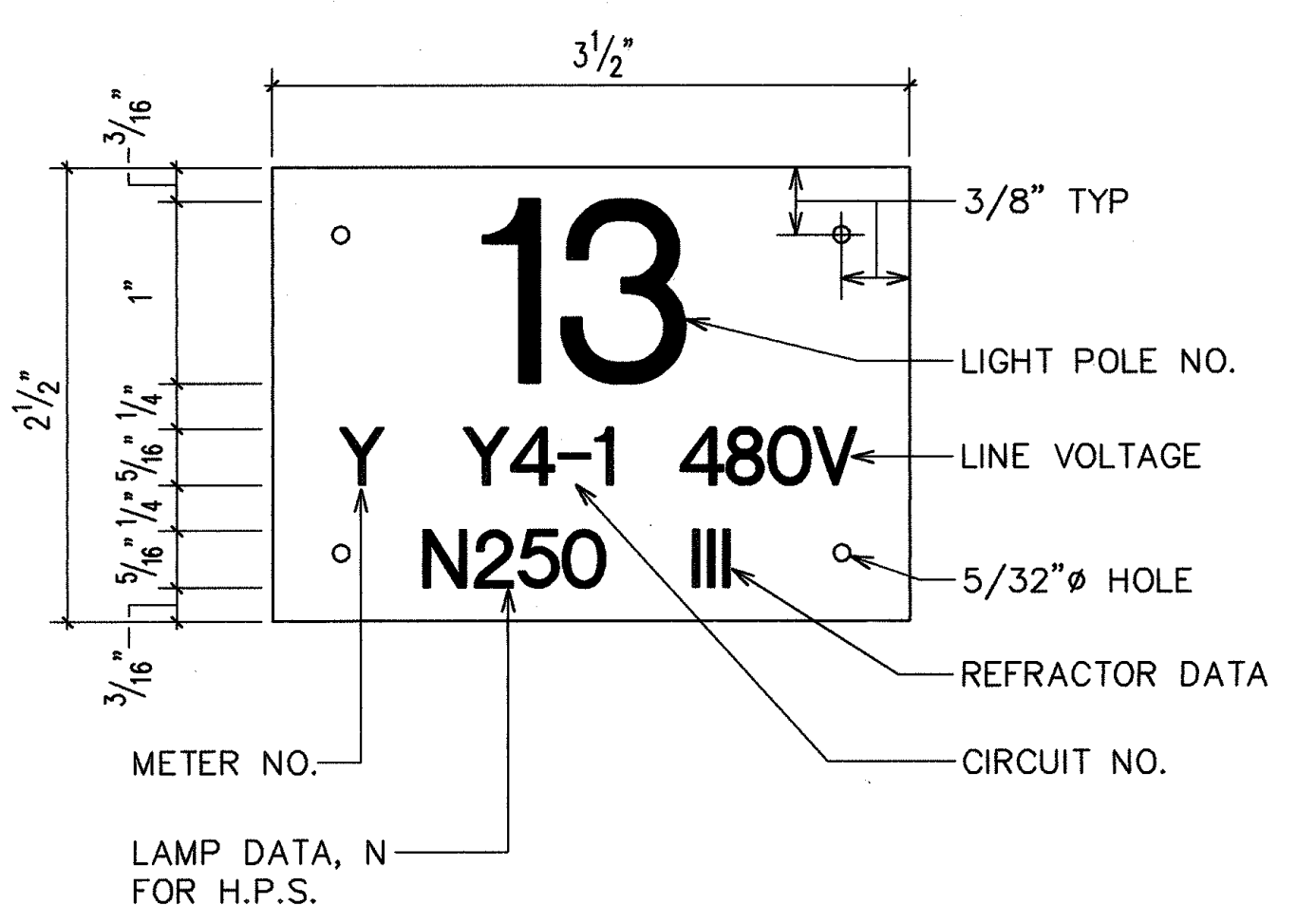
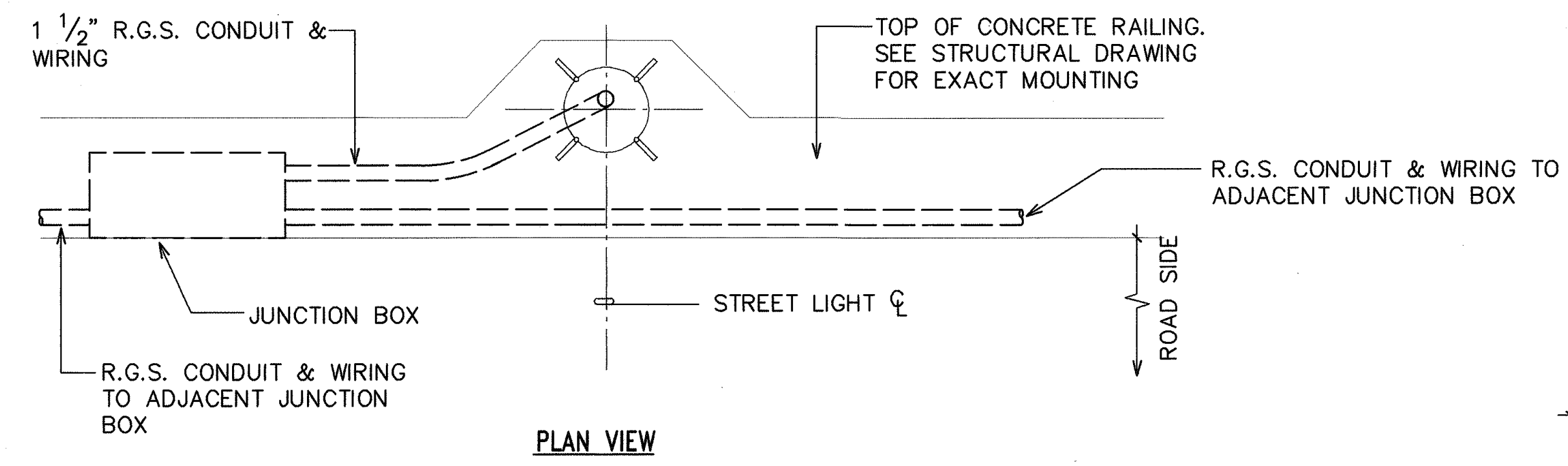
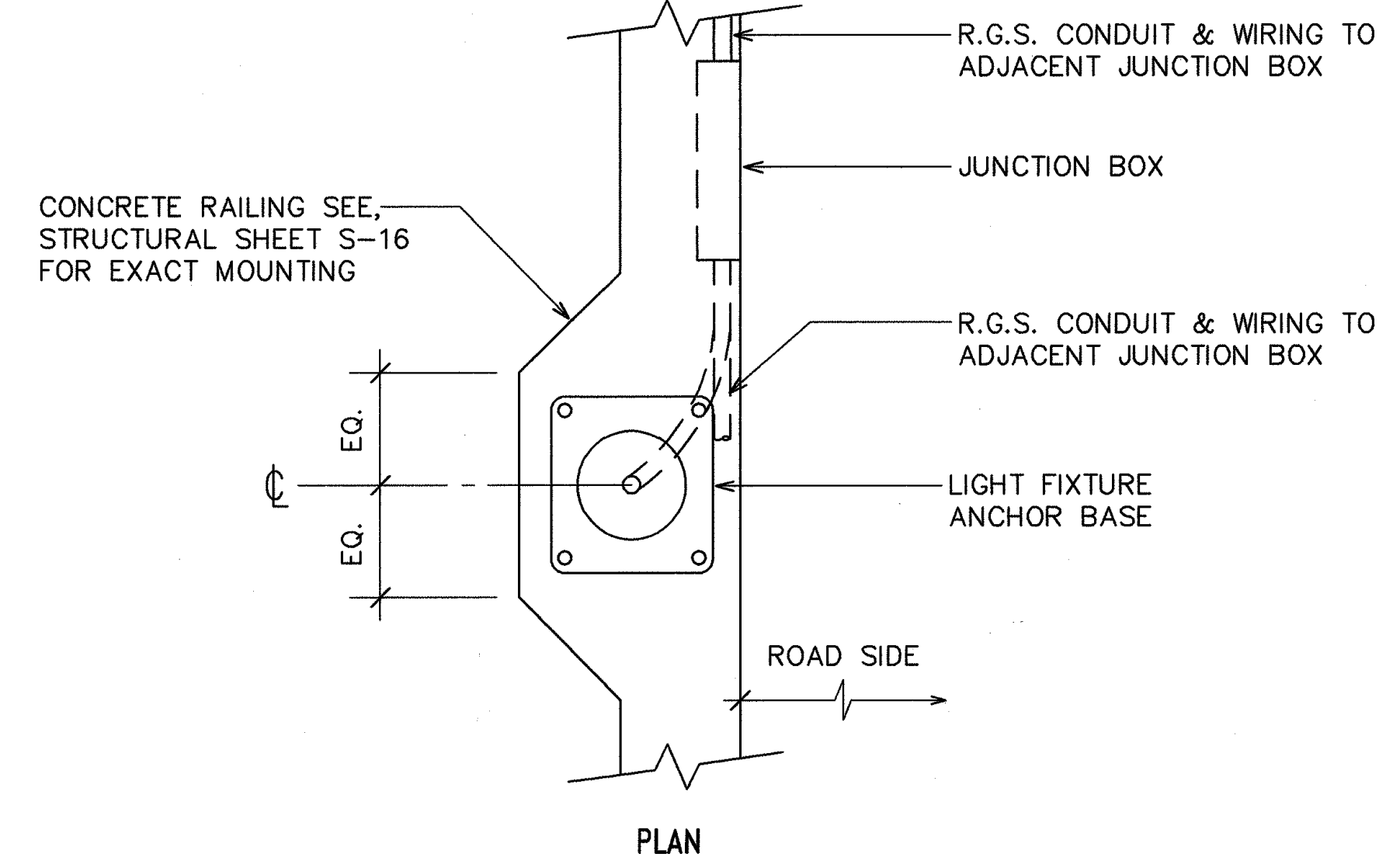
TYPICAL DUCT SECTIONS

MANAGERS DRIVE BRIDGE WIDENING
INTERSTATE ROUTE H-1

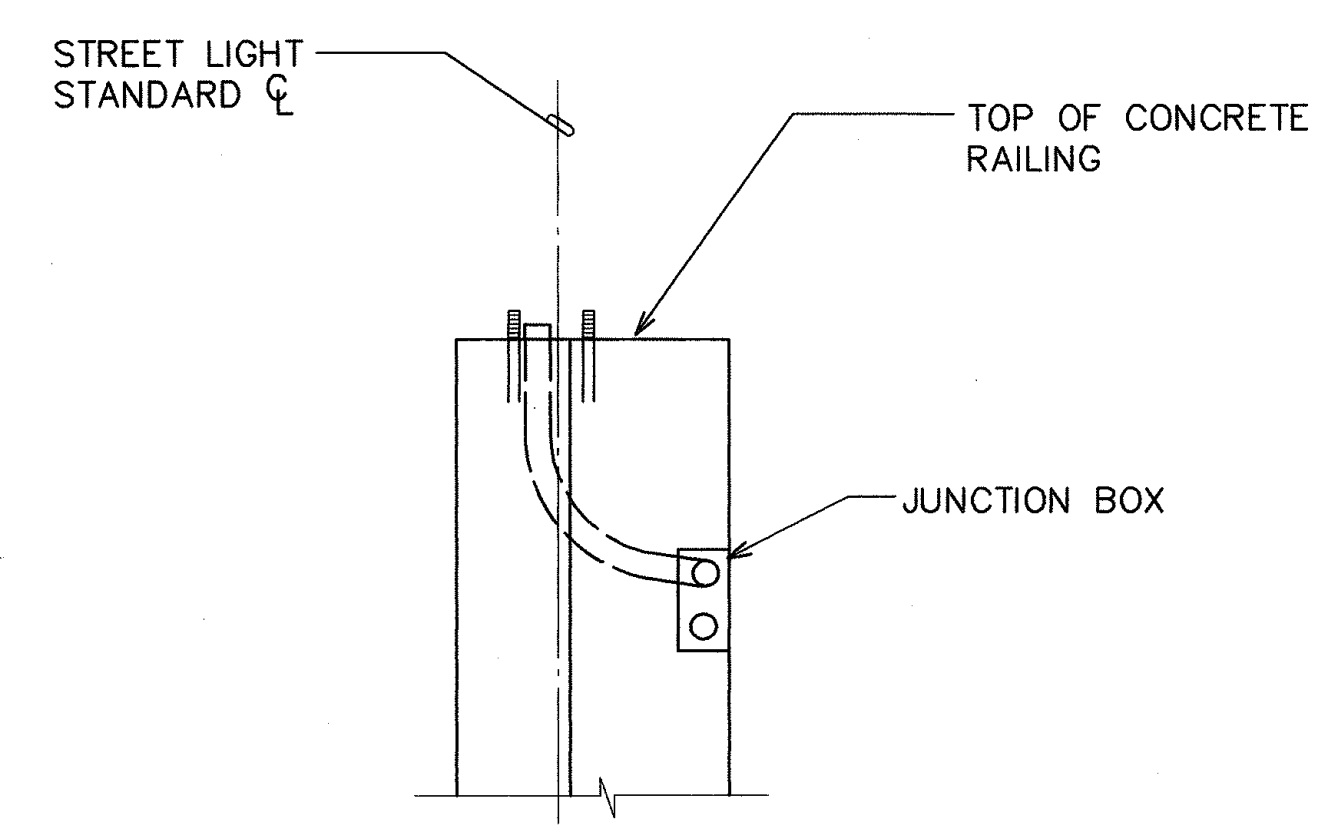
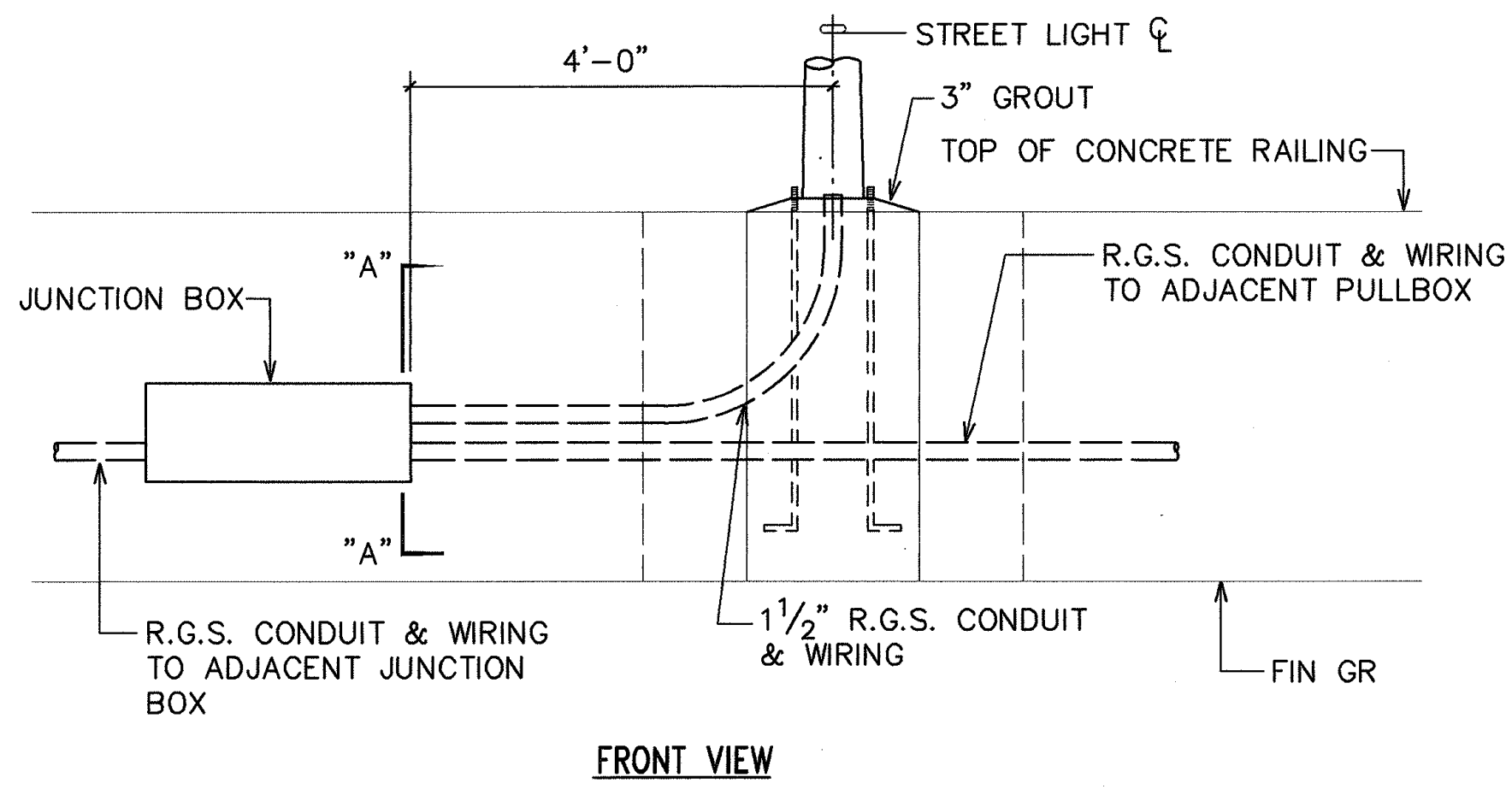
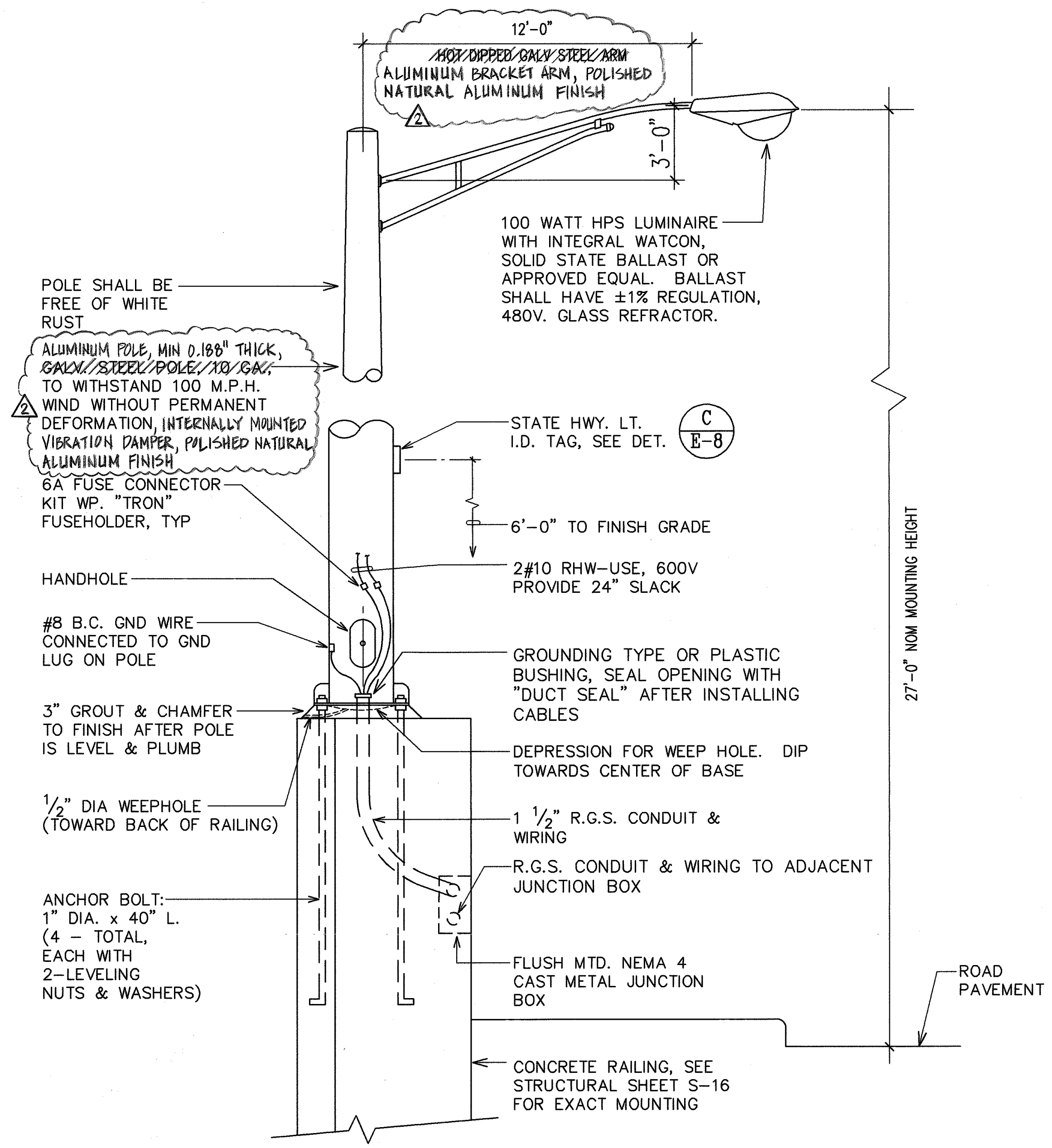
SCALE: AS NOTED	DATE:
E-7 SHEET No. 7 OF 13 SHEETS	

43

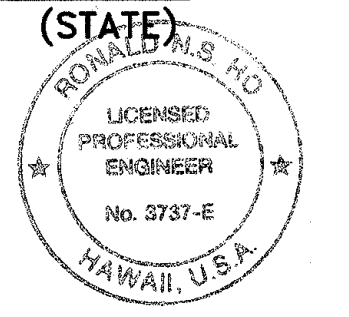
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	PMT-HIC-01-97			



- NOTES:
- USE 3 PLY LAMINATED FLEXIBLE PLASTIC BLACK-WHITE-BLACK THICKNESS BLACK CAP SHEET-0.010", WHITE BASE SHEET-0.52", 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 (METER NUMBER, CIRCUIT NUMBER, LINE VOLTAGE, LAMP DATA AND REFRACTOR DATA AS REQUIRED).
 - ATTACH TO STEEL POLES WITH NO.8 STAINLESS STEEL, 1/2" LONG DRIVE SCREWS IN 1/8" DRILL HOLE.
 - NUMBERS ARE INSCRIBED BY CUTTING THROUGH "BLACK CAP SHEET" TO EXPOSE "WHITE LETTERS".
 - ASSIGN CIRCUIT NUMBER FOR SYSTEMS WITH TWO OR MORE CIRCUITS (LETTER INDICATES PANEL BOARD, NUMBER INDICATES CIRCUIT).
 - HEIGHT FOR LIGHT POLE NUMBER AND NOMENCLATURE MAY BE ADJUSTED TO FIT REQUIRED DIGITS.



STREET LIGHT I.D. TAG DETAIL
(STATE)
N.T.S.



WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Ronald M. S.
8/26/97

**TYPICAL STREET LIGHTING DUCT IN CONCRETE RAILING
DETAIL WITH STREET LIGHTING STANDARD**
(STATE)
N.T.S.

STREET LIGHT STANDARD
(STATE)
N.T.S.

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

LAST SAVE: 08/24/97 @ 09:33:40 BY: LA PLUT EQ T-01
C:\ACAD\PROJECTS\01007A.DWG

4/21/99
DATE
REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

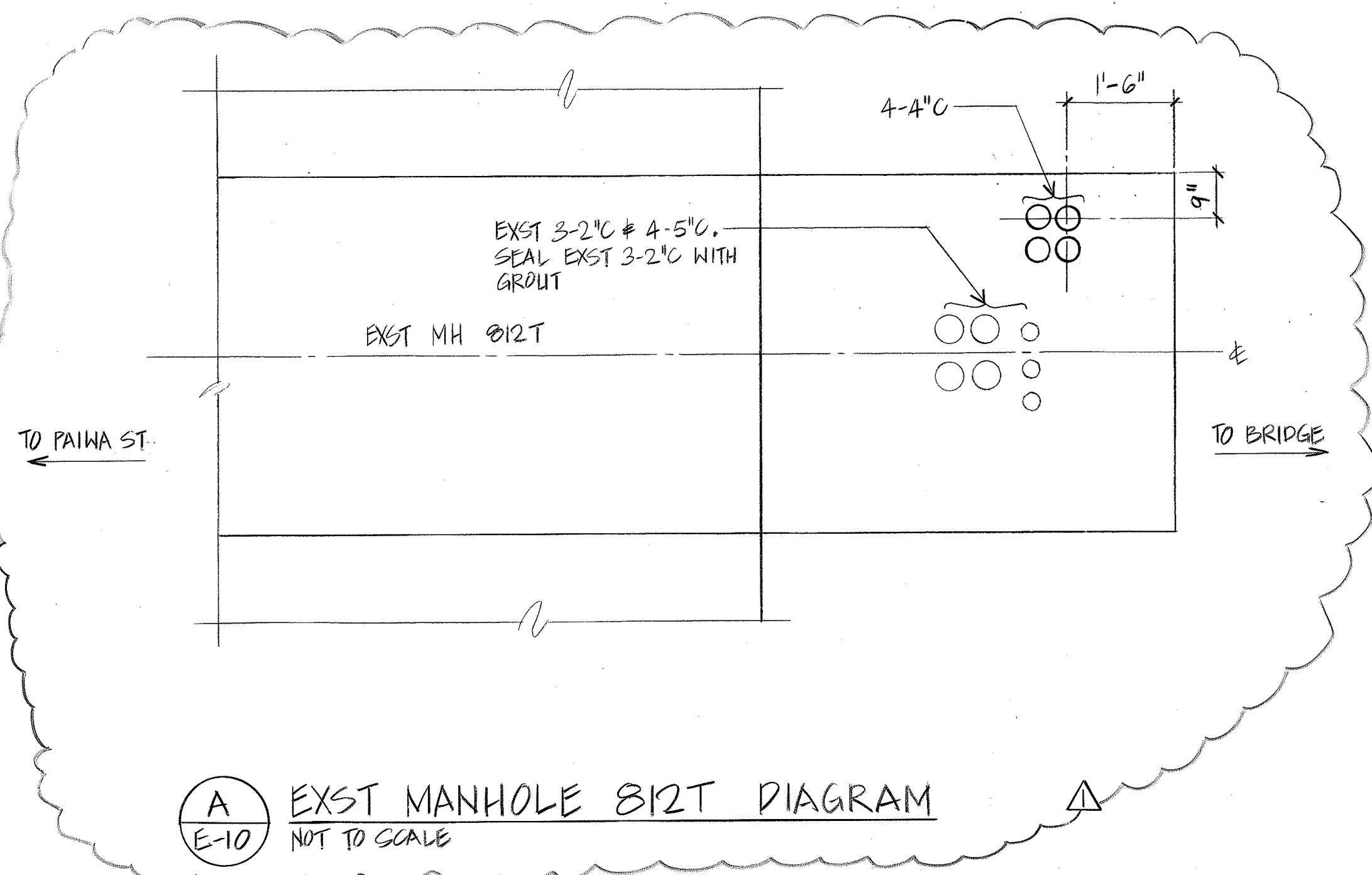
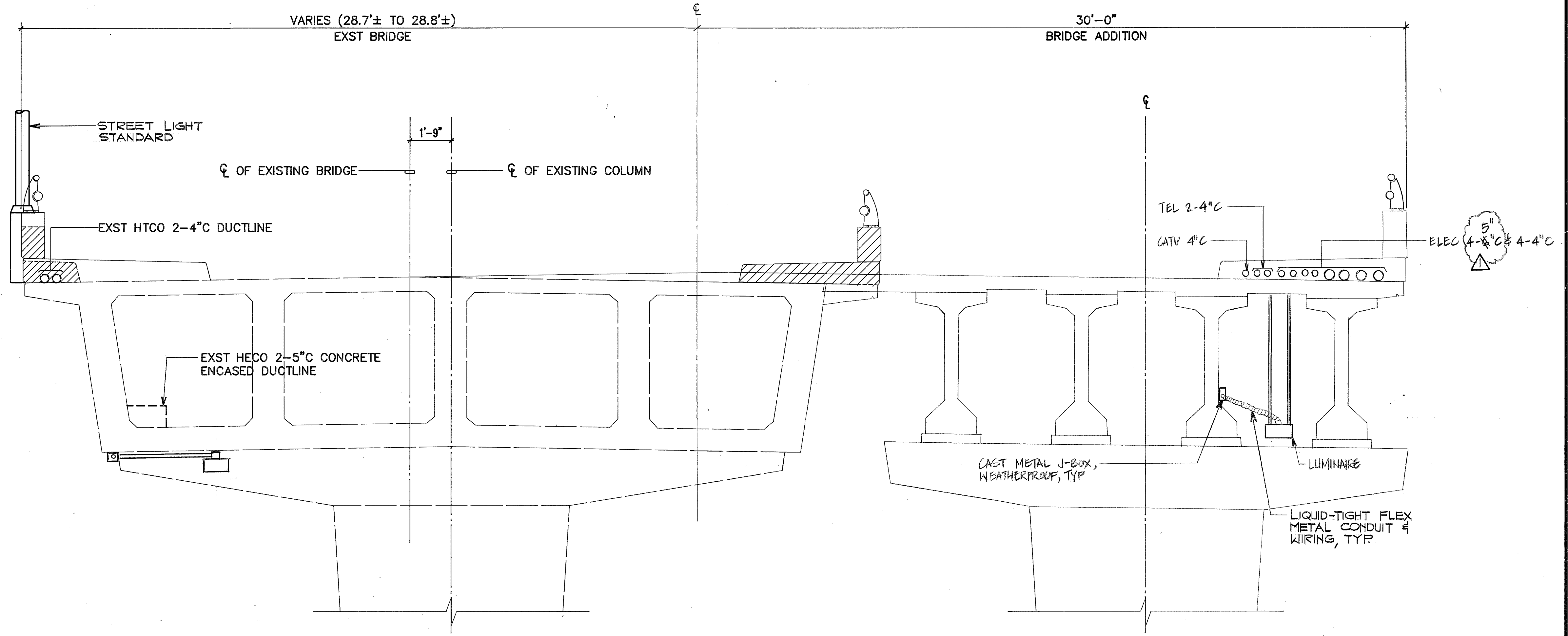
STREET LIGHT DETAILS I (STATE)

MANAGER'S DRIVE BRIDGE WIDENING
INTERSTATE ROUTE H-1

SCALE: AS NOTED
DATE:

E-8 SHEET No. 8 OF 13 SHEETS

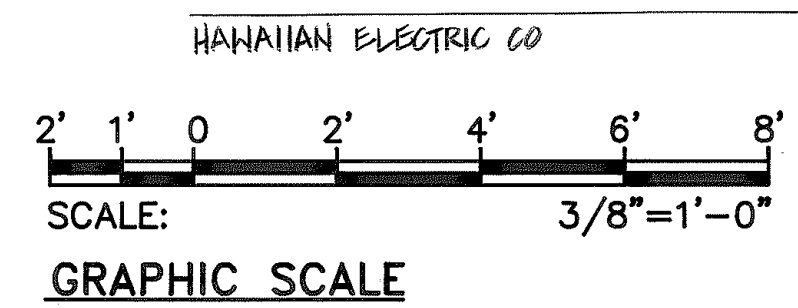
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	PMT-H16-01-97			



NOTE:
SEE STRUCTURAL SHEET S-7

TYPICAL BRIDGE SECTION
SCALE: 3/8"=1'-0"

REAPPROVED BY:



DRAWING REVIEW:
Reviewed for HECO's Facilities Only
Date: 12/18/97 By: [Signature]
4/6/98 By: [Signature]

Distribution 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 Customer's behalf from the responsibility for engineering, design, materials and any liability associated with this project.

APPROVED BY:
[Signature]
HAWAIIAN TELEPHONE CO
4-19-94
DATE

REAPPROVED BY:
[Signature]
HAWAIIAN TELEPHONE CO
[Signature]
DATE

4/15/98

DATE

REVISD & ADDED DETAIL

REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL BRIDGE SECTION, DETAILS

MANAGER'S DRIVE BRIDGE WIDENING
INTERSTATE ROUTE H-1

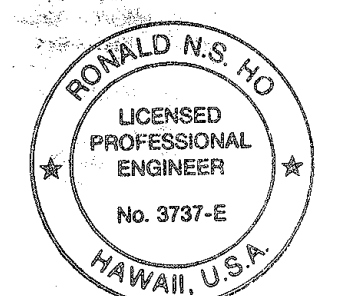
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E-10 SHEET No. 10 OF 13 SHEETS

DATE:
3/26/94

SURVEY PLOTTED BY: _____ DATE: _____
DRAWN BY: _____
TRACED BY: _____
DESIGNED BY: _____
CHECKED BY: _____
No. _____

ORIGINAL PLAN
NOTE BOOK

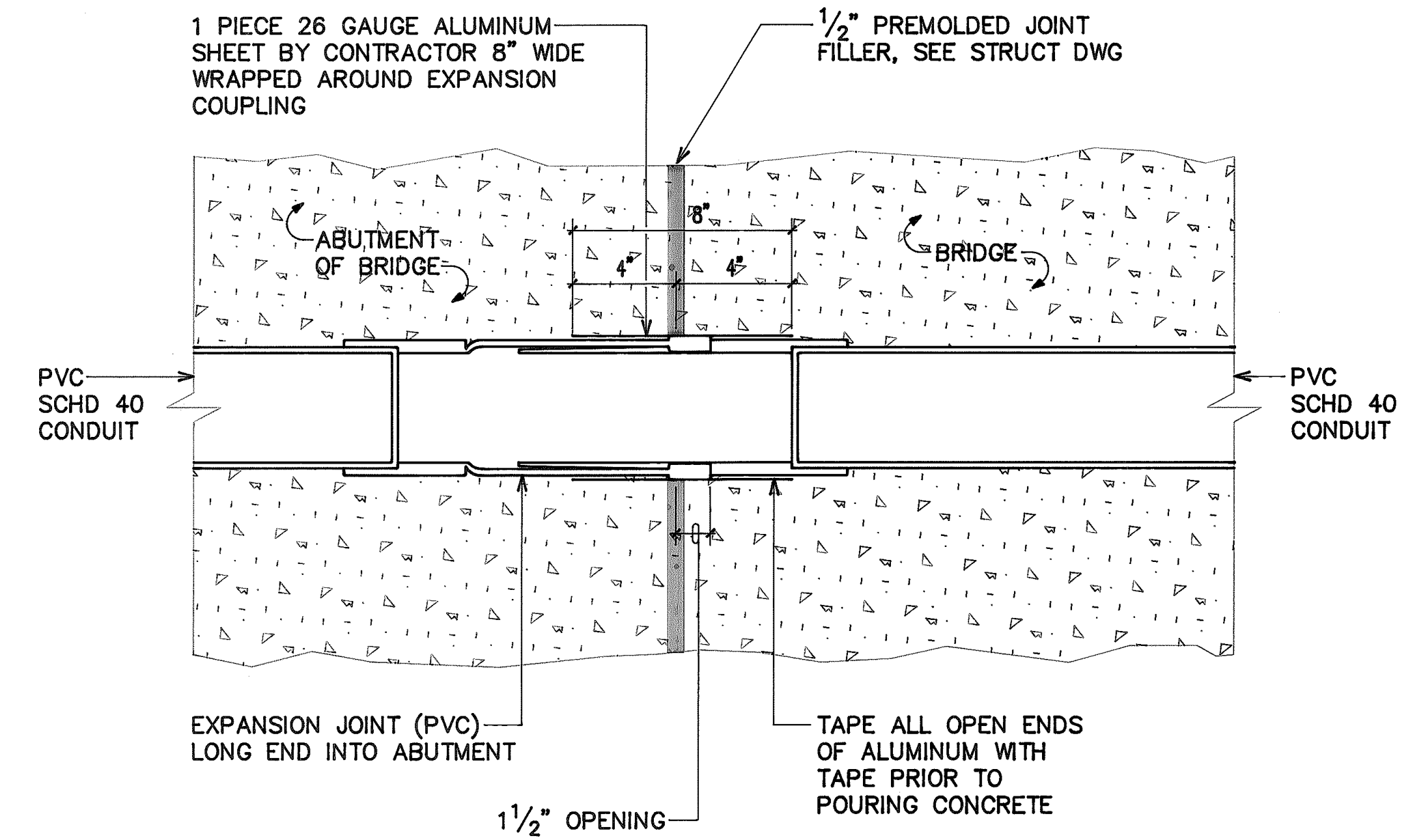
Left from 03/20/94
HAWAIIAN PROJECTS/0007A/BEST Xref: BRIDGE



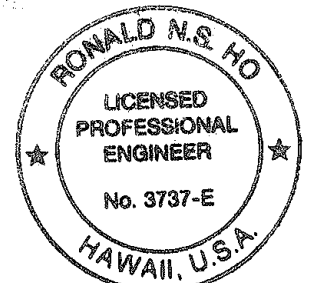
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
[Signature]
3/26/94

EXST HTCO/CATV DUCTLINE
 EXST HECO DUCTLINE
 CURE GRADE
 CATV DUCTLINE
 CATV 1 WIDE X 1 HIGH REINFORCED DUCTLINE
 HTCO/CATV 3 WIDE X 1 HIGH REINFORCED DUCTLINE
 HECO/HTCO/CATV 11 WIDE X 1 HIGH REINFORCED DUCTLINE IN BRIDGE SIDEWALK
 HECO 4 WIDE X 2 HIGH DUCTLINE TO 8 WIDE X 1 HIGH REINFORCED DUCTLINE
 HECO 6'x14' MH
 EXST CATV 2'x6' PB
 CAP HTCO 2'-4" C
 HTCO 4'x6'-6" MH
 EXST BOX DRAIN
 EXST 48" DRAIN AT HTCO/CATV DUCTLINE
 18" DRAIN AT HTCO/CATV DUCTLINE
 EXST 48" DRAIN AT HTCO DUCTLINE
 EXST 48" DRAIN AT HECO DUCTLINE
 ABUTMENT WALL #1
 88+00 89+00 90+00 91+00

SCALE: HORIZ 1"=40'-0"
VERT 1"=4'-0"



E-11 N.T.S.



4" CONCRETE SIDEWALK

2 1/2" AC PAVEMENT MIN OR MATCH EXST, WHICHEVER IS GREATER

12" MIN

SAWCUT @ SCORELINE

6" MIN

SAWCUT PRIOR TO TRENCHING

SAWCUT & TACKCOAT PRIOR TO PAVING

6" BASE COURSE MIN OR MATCH EXST, WHICHEVER IS GREATER

PRIMECOAT. FOR ROAD GRADES 0% TO 7.99% & PRIMECOAT IS NOT AVAILABLE, ONE REQUIRED. IF PRIMECOAT IS AVAILABLE, USE PRIMECOAT.

TYPE "A" BACKFILL

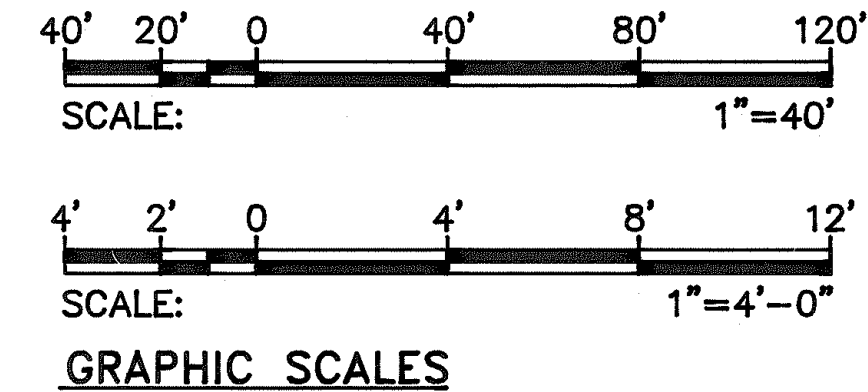
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DRAWING REVIEW:
Reviewed for HECO's
Facilities Only

Date 12/10/99 By SW [Signature]

Distribution 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 Customer's behalf from the responsibility for engineering, design, materials and any liability associated with this project.

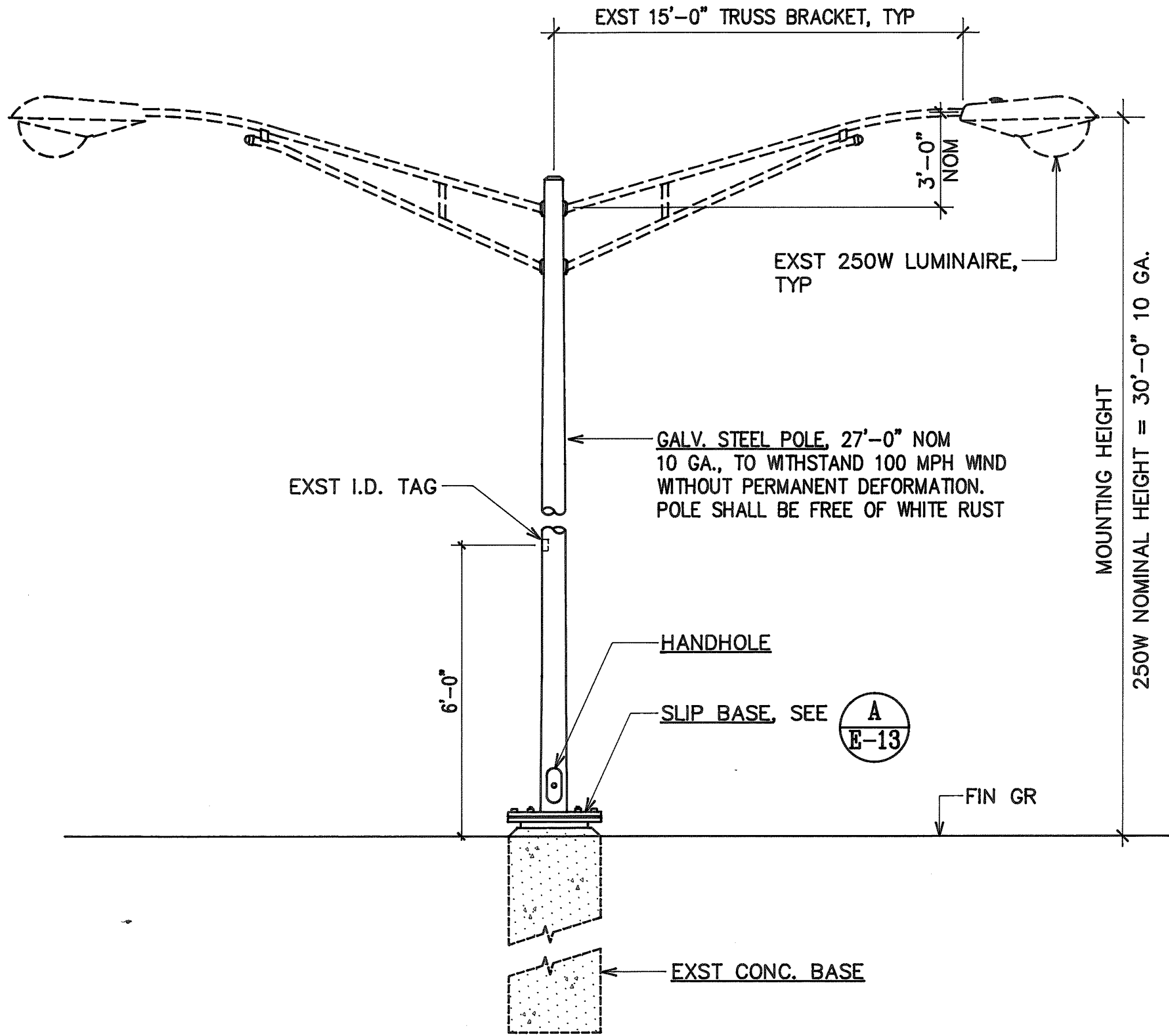


DUCTLINE PROFILES, MISCELLANEOUS DETAILS

MANAGER'S DRIVE BRIDGE WIDENING
INTERSTATE ROUTE H-1

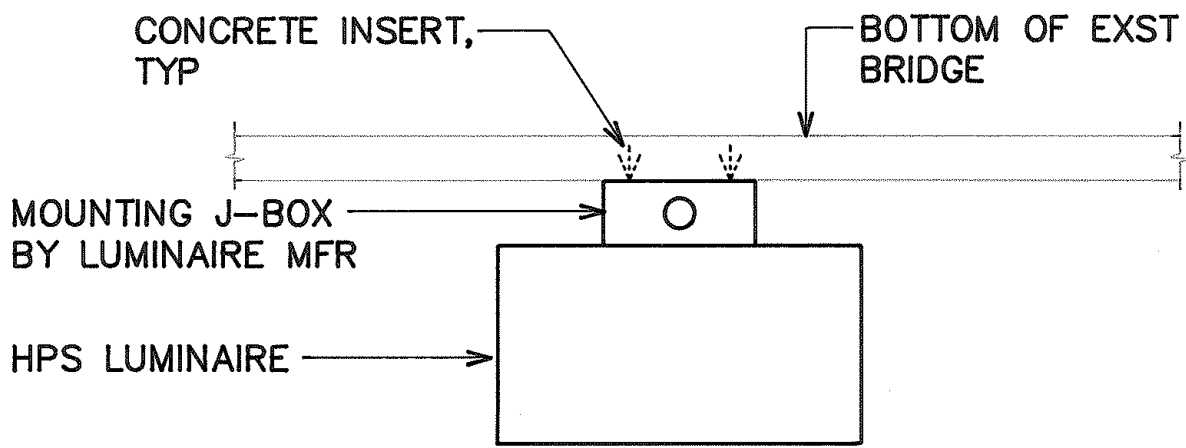
SCALE: AS NOTED	DATE:
E-11 SHEET No. 11 OF 13 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	PMT-HIC-01-97			

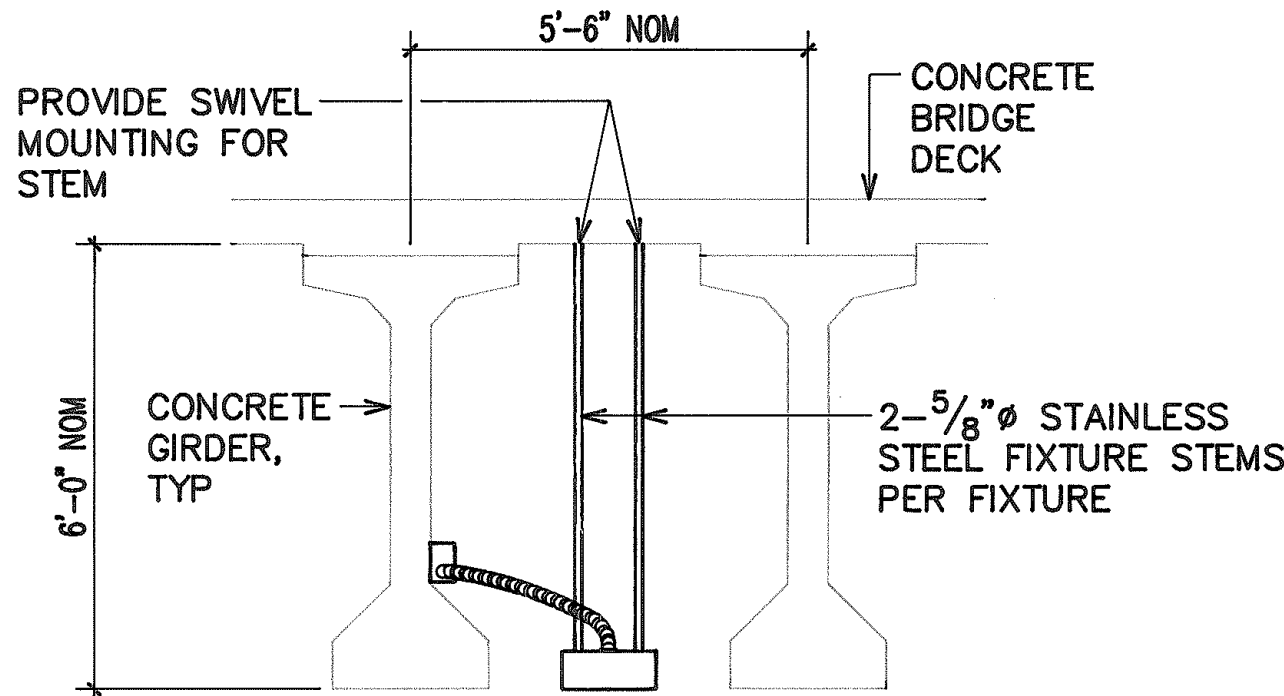


ELEVATION

A
E-12 STREET LIGHT STANDARD
NOT TO SCALE (STATE)



EXIST BRIDGE STRUCTURE

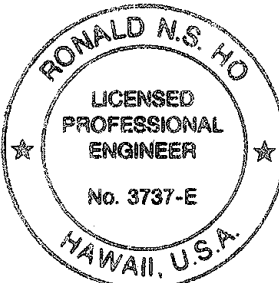


NEW BRIDGE STRUCTURE

NOTES:

1. ALL CEILING INSERTS FOR FIXTURE MOUNTING HARDWARE SHALL WITHSTAND A 100 LB PULL-OUT. SEE ALSO GENERAL NOTE IN UPPER LEFT CORNER.
2. CONTRACTOR SHALL EXERCISE CAUTION WHILE DRILLING MOUNTING HOLES TO AVOID HITTING ANY BRIDGE STRUCTURAL REINFORCING (IMPACTING DRILLS SHALL NOT BE USED TO DRILL HOLES). ALL UNUSED HOLES SHALL BE FILLED WITH EPOXY GROUT.

B
E-12 TYPICAL H-1 LUMINAIRE MOUNTING DETAIL
NOT TO SCALE



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.
Ronald N.S. Ho
8/26/97

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

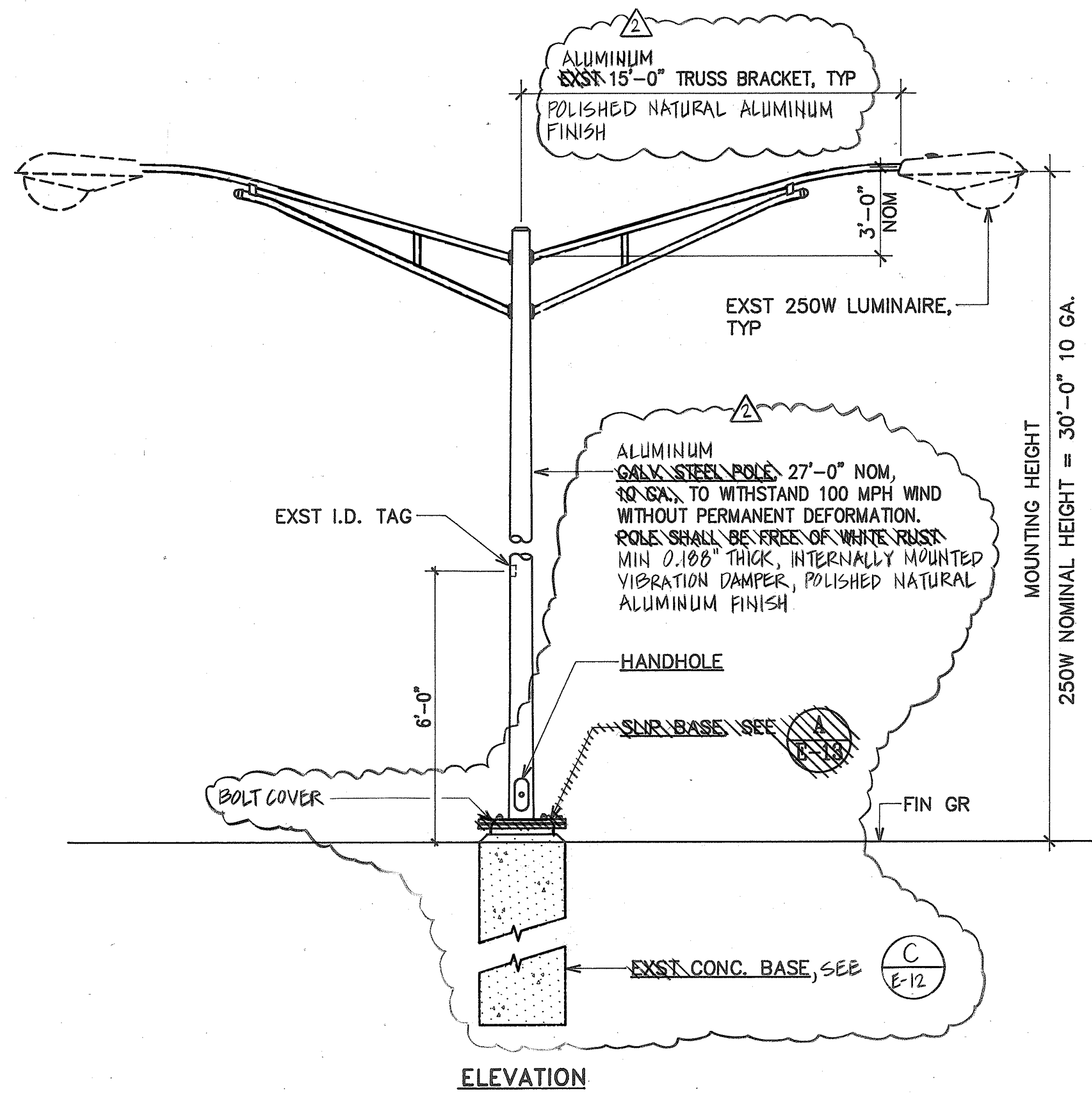
STREET LIGHT DETAILS II (STATE)

MANAGER'S DRIVE BRIDGE WIDENING
INTERSTATE ROUTE H-1

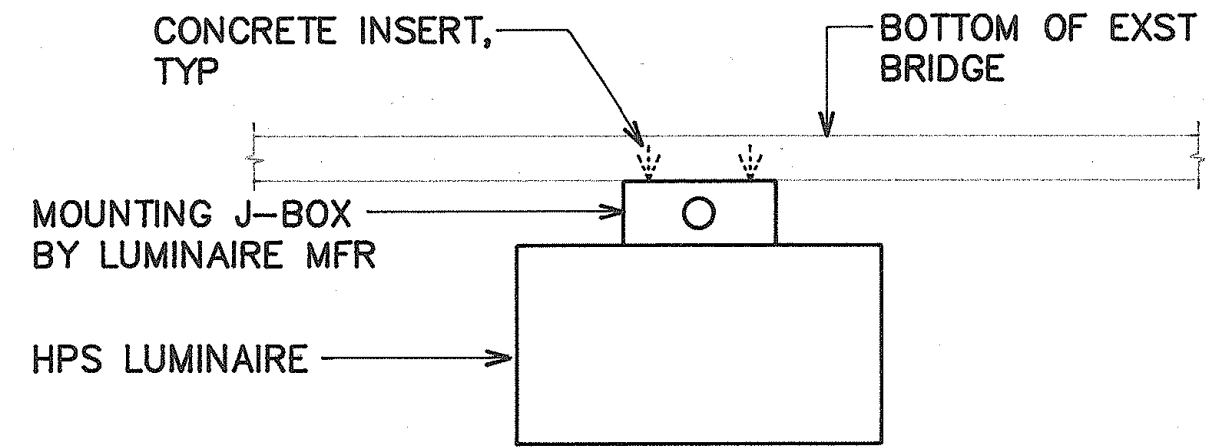
SCALE: AS NOTED DATE:
E-12 SHEET No. 12 OF 13 SHEETS

DATE REVISION

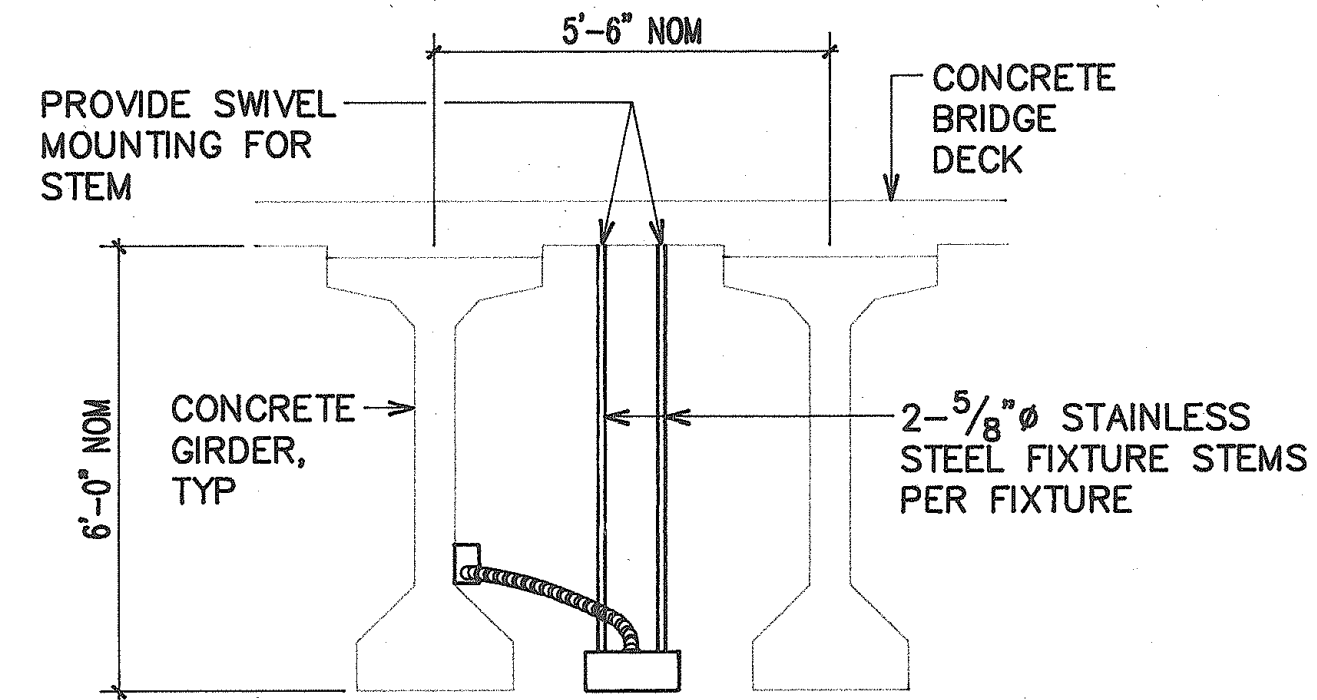
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	PMT-HIC-01-97			



ELEVATION



EXST BRIDGE STRUCTURE



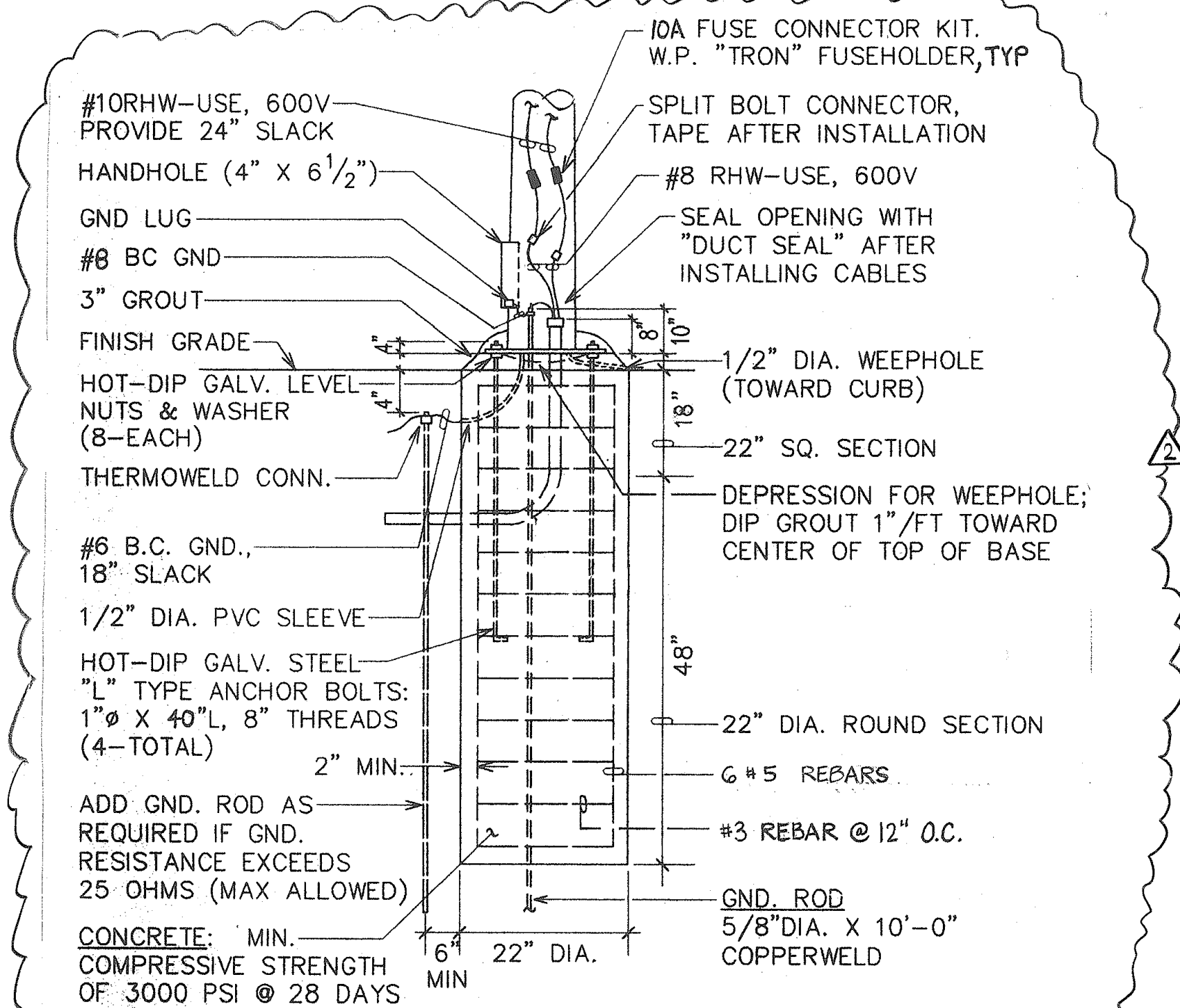
NEW BRIDGE STRUCTURE

NOTES:

1. ALL CEILING INSERTS FOR FIXTURE MOUNTING HARDWARE SHALL WITHSTAND A 100 LB PULL-OUT. SEE ALSO GENERAL NOTE IN UPPER LEFT CORNER.
2. CONTRACTOR SHALL EXERCISE CAUTION WHILE DRILLING MOUNTING HOLES TO AVOID HITTING ANY BRIDGE STRUCTURAL REINFORCING (IMPACTING DRILLS SHALL NOT BE USED TO DRILL HOLES). ALL UNUSED HOLES SHALL BE FILLED WITH EPOXY GROUT.

B TYPICAL H-1 LUMINAIRE MOUNTING DETAIL
NOT TO SCALE

A STREET LIGHT STANDARD
NOT TO SCALE (STATE)



C CONCRETE BASE ELEVATION
N.T.S.



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.
Ronald N.S. Ho
8/26/97

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STREET LIGHT DETAILS II (STATE)

MANAGER'S DRIVE BRIDGE WIDENING
INTERSTATE ROUTE H-1

SCALE: AS NOTED DATE:

E-12 SHEET No. 12 OF 13 SHEETS

4/21/97

"AS-BUILT"

DATE

REVISION

Technical drawing of a rectangular plate with the following dimensions and features:

- Overall width: 2"
- Overall height: 2 ³/₄"
- Hole diameter: 1 ⁵/₁₆" HOLE
- Hole position: 1 ¹/₈" from the left edge, 1 ³/₈" from the top edge.
- Material and finish: 2" X 1 ¹/₄" X 2 ³/₄" A.I.S.I. 1018 COLD DRAWN R WASHER

Technical drawing of a pole assembly. The drawing shows a cross-section of a pole with a central hole. The pole is labeled "5" DIA. DOLE". The pole is secured by a "7/8" DIA. H.S. BOLT". The drawing includes dimensions: "1/8\"", "2 1/4\"", "1\"", "1 1/4\"", "1 1/4\"", and "1\"". A vertical line indicates the "CL POLE".

[illegible]

9" DIA. HOLE

BOLT CIRCLE
DIA. = 14"

1" DIA. HOLE

1" (TYP.)

90°

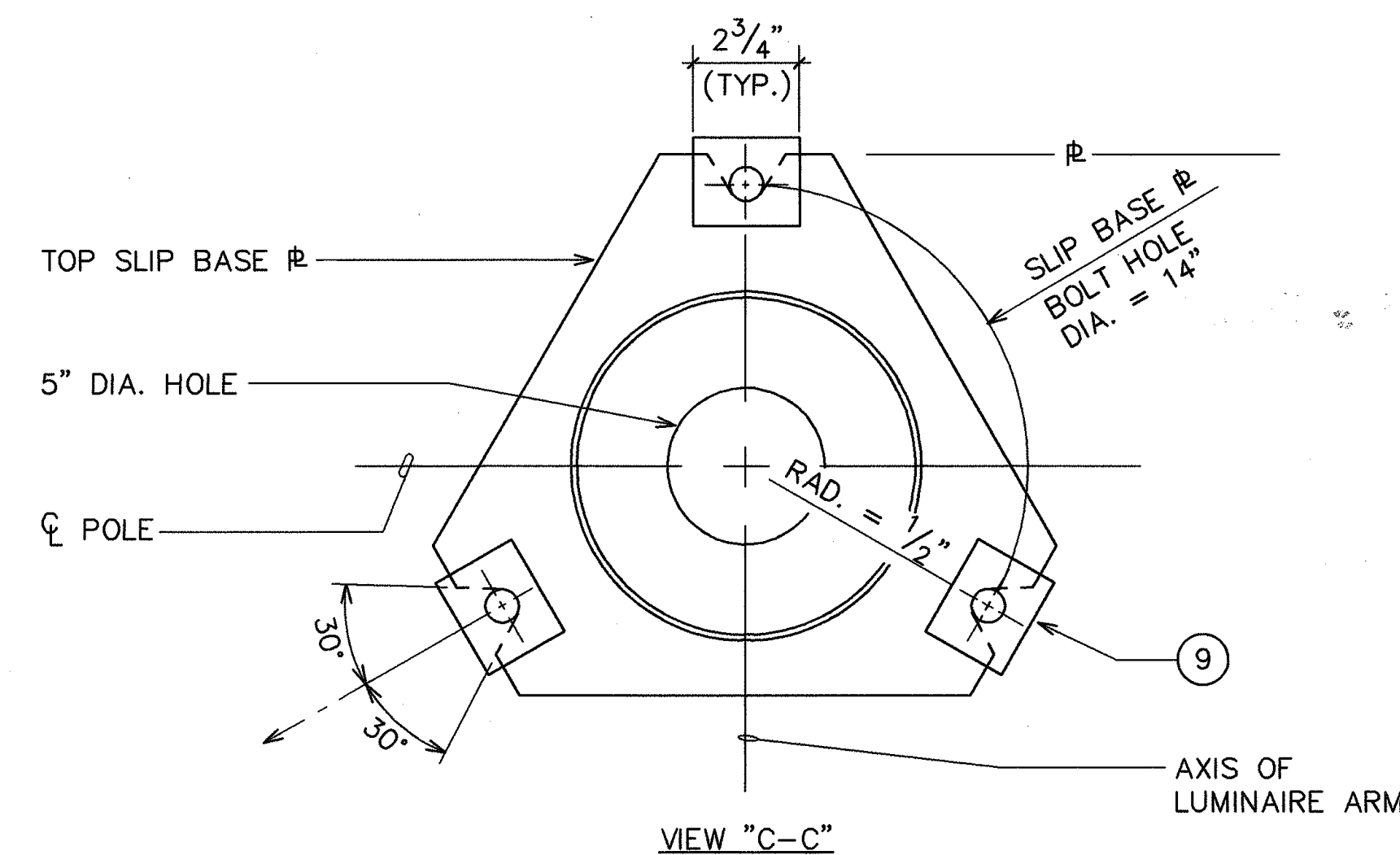
30°

6

8

Diagram illustrating the cross-section of the slip base assembly, labeled SECTION "G-G". The assembly consists of a TOP SLIP BASE and a BOTTOM SLIP BASE, which are joined by a 7/8" DIA. H.S. BOLT. The bolt passes through the center of both slip bases, secured by a nut and washer on the top side.

SLIP BASE DETAIL
NOT TO SCALE



1" DIA. HOLE

60°

30°

2 5/8"

30°

6"

ANCHOR PL

6" DIA. HOLE IN ANCHOR PL

5" DIA. HOLE IN BOTTOM SLIP BASE PL.

BOTTOM SLIP BASE PL

TRIM ANCHOR BAR WASHER AS SHOWN

AXIS OF LUMINAIRE ARM

30°

14"

H.S. BOLTS ANCHOR BARS BOLT CIRCLE = 14"

CL POLE

E

1" TOP SLIP BASE PLATE

1 1/4" BOTTOM SLIP BASE PLATE

1" ANCHOR PLATE

FIN. GR.

CONCRETE FOUNDATION

POLE

PLATE WASHER

3 7/8" DIA. H.S. SLIP BASE PLATE BOLTS HEX HD BOLT. NUT & 2 FLAT WASHERS

8

1 1/4"

2 1/4"

2" H

GROUT

PLATE WASHER

FLAT WASHER

7/8" DIA. X 40" H.S. ANCHOR BARS


1/4" X 1"
BACK UP
RING TACK
WELD

POLE WALL

TOP SLIP
BASE

1/8"

5/16"



49

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