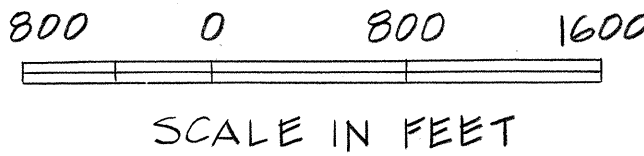
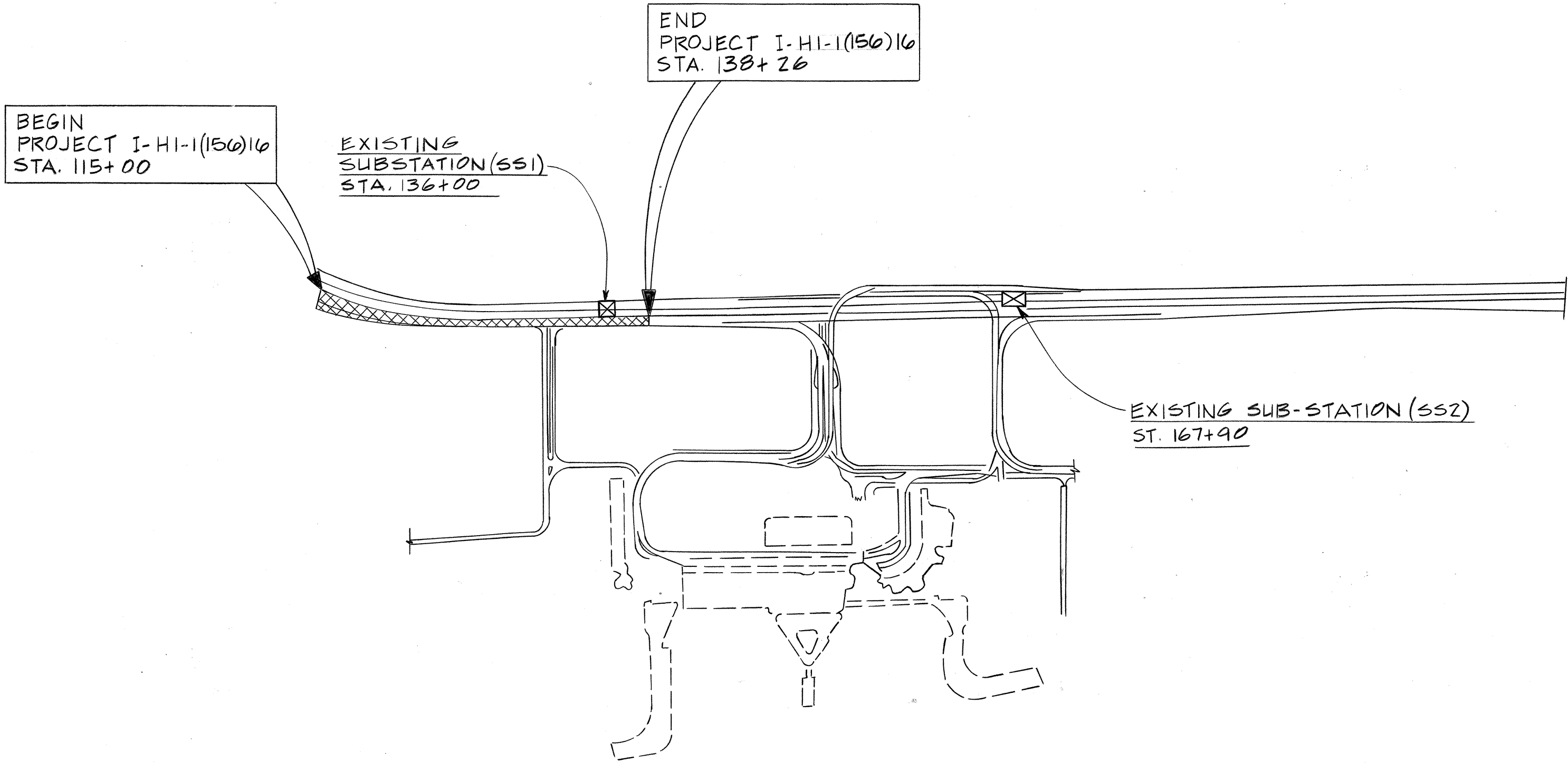


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(156)16	1979	76	236



GENERAL NOTES

1. ALL NON-CURRENT CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT AND RACEWAYS SHALL BE GROUNDED ALL NON-METALLIC CONDUIT RUNS SHALL BE PROVIDED WITH A #8 AWG. 600V. TW (GREEN) GROUNDING CONDUCTOR
2. ALL CONDUITS EMBEDDED IN CONCRETE STRUCTURES AND PASSING AN EXPANSION JOINT, SHALL BE INSTALLED WITH EXPANSION COUPLINGS. THE CROSSING OF EXPANSION JOINTS SHALL BE AT RIGHT ANGLE TO THE JOINT.
3. EXISTING GLARE SHIELDS ON MAKAI COLUMNS OF MAUKA VIADUCT SHALL BE MOVED FROM EWA SIDE TO WAIKIKI SIDE FOR STATIONS 115+00 ± TO 210+00 ±.
4. REMOVE ALL DETOUR LIGHTING POLES WITHIN CONTRACT LIMITS AS DIRECTED BY THE ENGINEER. USE DETOUR LUMINAIRES FOR PERMANENT VIADUCT LIGHTING AND STORE EXCESS LUMINAIRES AS DIRECTED BY THE ENGINEER.

ELECTRICAL KEY PLAN

ELECTRICAL SYMBOL LIST	
	RELOCATED LUMINAIRE ON NEW POLE, 50' MTG. HT. 400W HIGH PRESS. SODIUM LAMP 480V, TYPE "M", CONTRACTOR SHALL OBTAIN LUMINAIRE FROM STATE HIGHWAY DIVISION AND INSTALL ON NEW POLE.
	POLE MOUNTED LUMINAIRE, 12' MTG. HT. 175 W METAL HALIDE 480V, SEE DETAIL E3
	WALL MOUNTED LUMINAIRE, 15' MTG. HT. 250W HIGH PRESSURE SODIUM LAMP, 480V, TYPE "N"
	CONDUIT EMBEDDED IN CONCRETE VIADUCT STRUCTURE
	CONDUIT, BELOW GRADE, DIRECT BURIAL
	CONDUIT, BELOW GRADE, CONCRETE ENCASED
	CAPPED CONDUIT
	EMERGENCY COMMUNICATION PULL BOX
	INDICATES NUMBER OF CONDUCTORS IN CONDUIT
	NOT IN CONTRACT
	SUB-STATION
	DETAIL INDICATOR: TOP HALF - DETAIL NO. BOTTOM HALF - SHEET NO.
	SIGN
	INDICATES PARTICULAR LUMINAIRE CONNECTED TO A & B PHASE, B & C PHASE OR C & A PHASE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

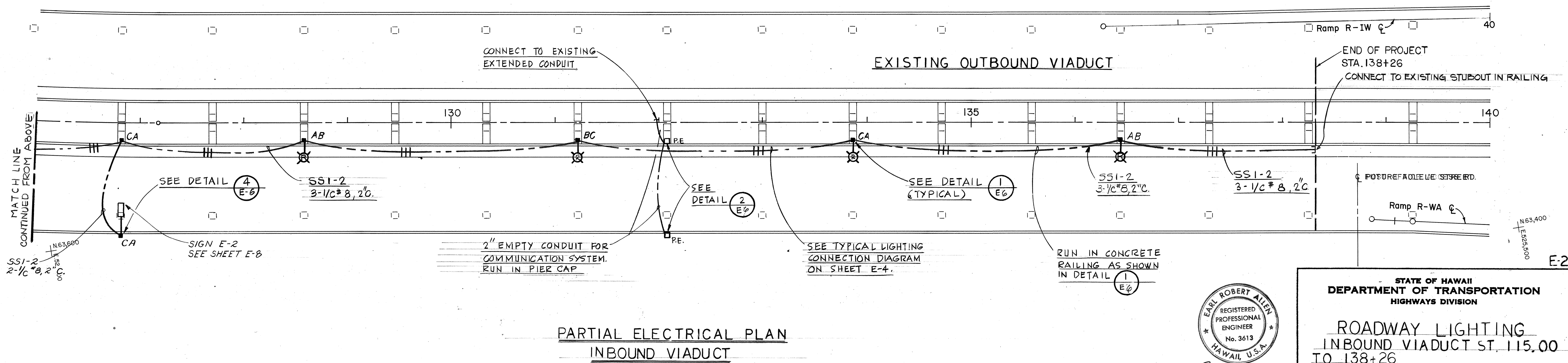
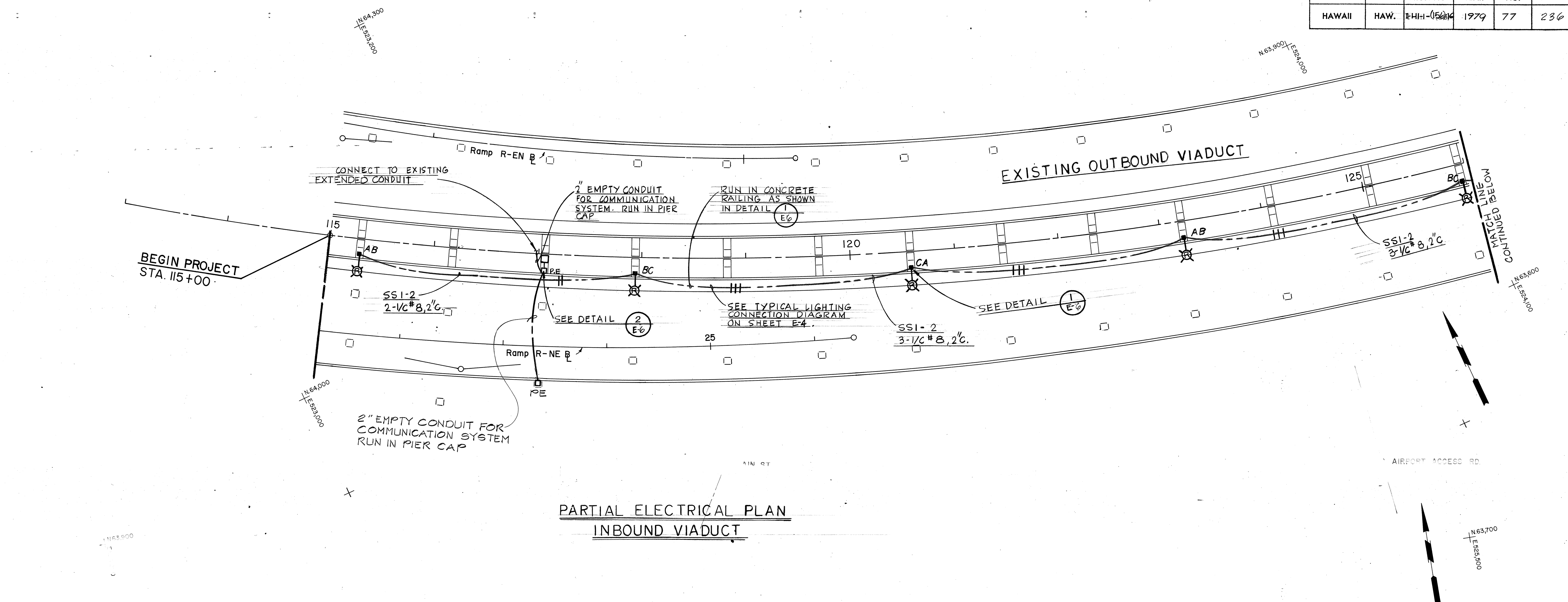
ROADWAY LIGHTING
ELECTRICAL KEY PLAN &
SYMBOL LIST

AIRPORT INTERCHANGE
F.A.I. PROJ. NO. I-HI-1(156)16

SCALE AS SHOWN DATE: NOV. 21, 1978

SHEET NO. 1 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H-1-1(156)16	1979	77	236



ORIGINAL PLAN	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	

EARL ROBERT ALLEN
REGISTERED PROFESSIONAL ENGINEER
No. 3613
HAWAII, U.S.A.

Earl R. Allen
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**ROADWAY LIGHTING
INBOUND VIADUCT ST. 115.00
TO 138+26**

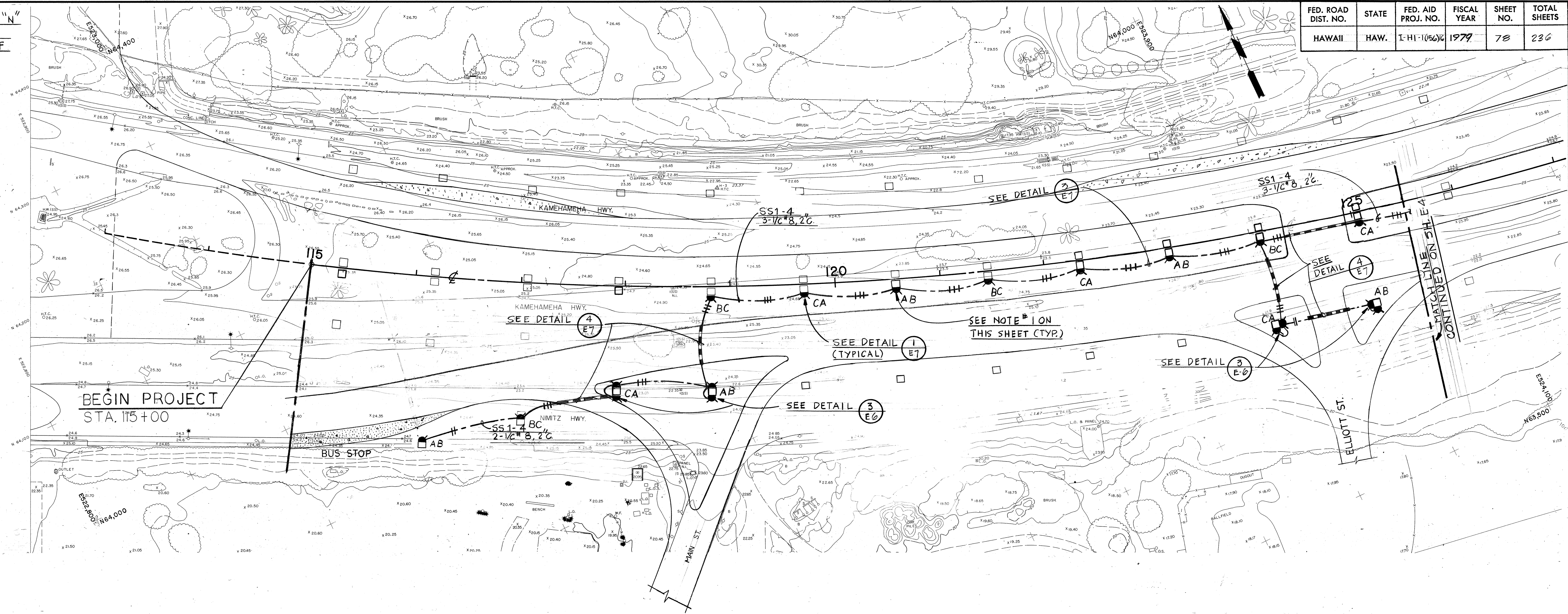
AIRPORT INTERCHANGE
FA PROJ. NO I-H-1(156)16

SCALE: 1"=50' DATE: NOV. 21, 1978

SHEET No. 2 OF 9 SHEETS

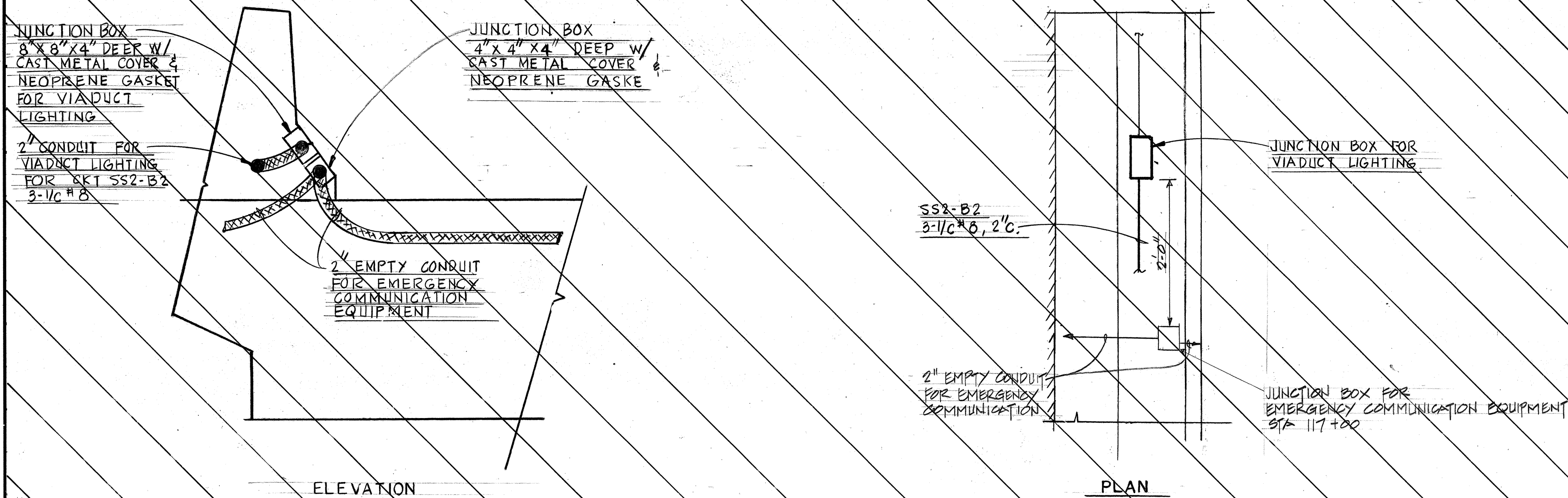
NOTE: 1. PROVIDE LUMINAIRES "N"
W/ GLARE
SHIELD IN DIRECTION OF
TRAFFIC.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(156)16	1979	78	236

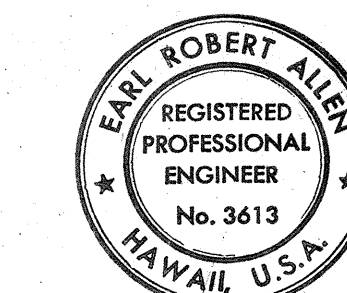
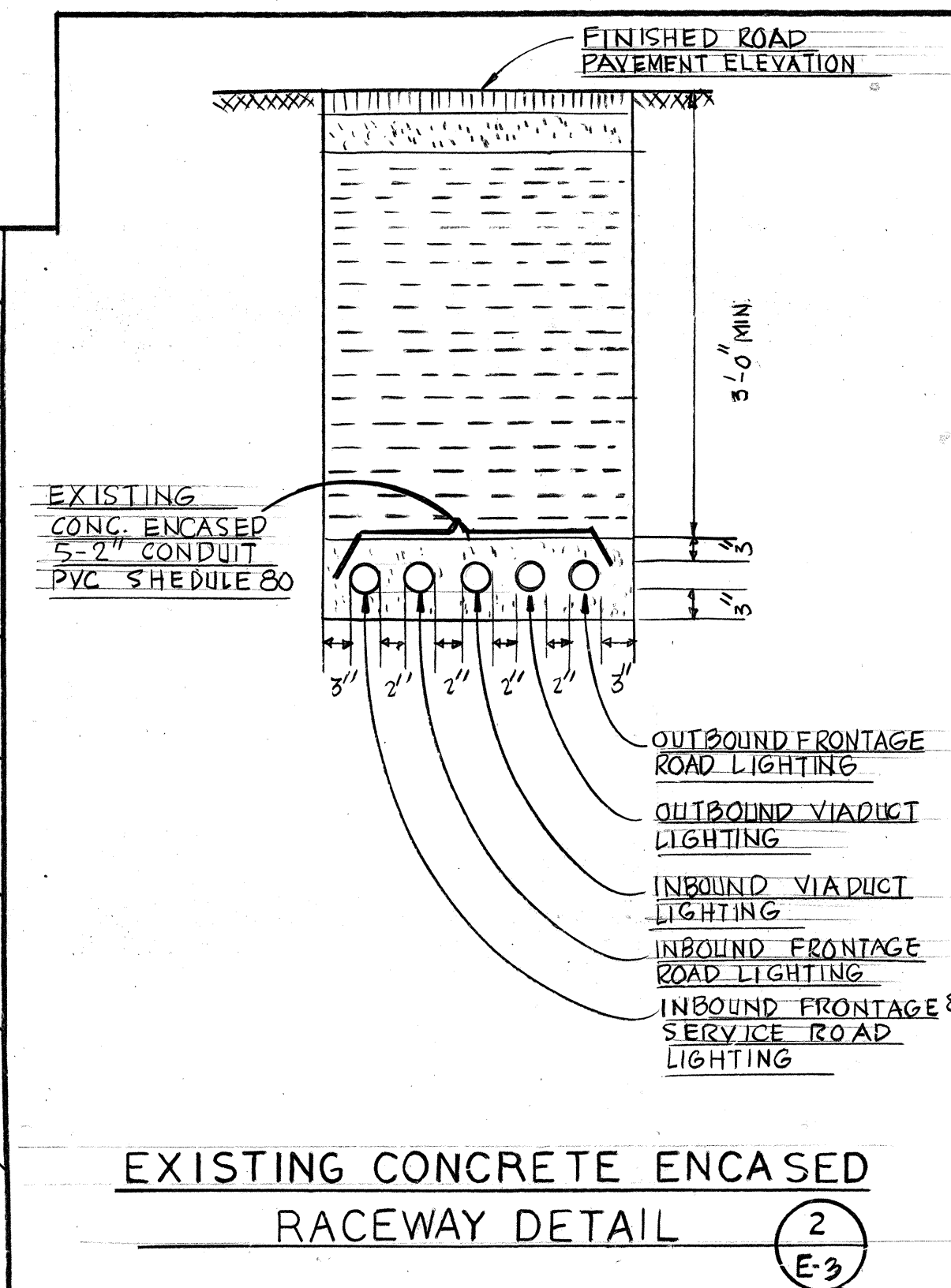


PARTIAL ELECTRICAL PLAN
INBOUND FRONTAGE ROAD

SCALE: 1" = 50'-0"



DETAIL
N.T.S. (1)
E-3



Earl Robert Allen
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

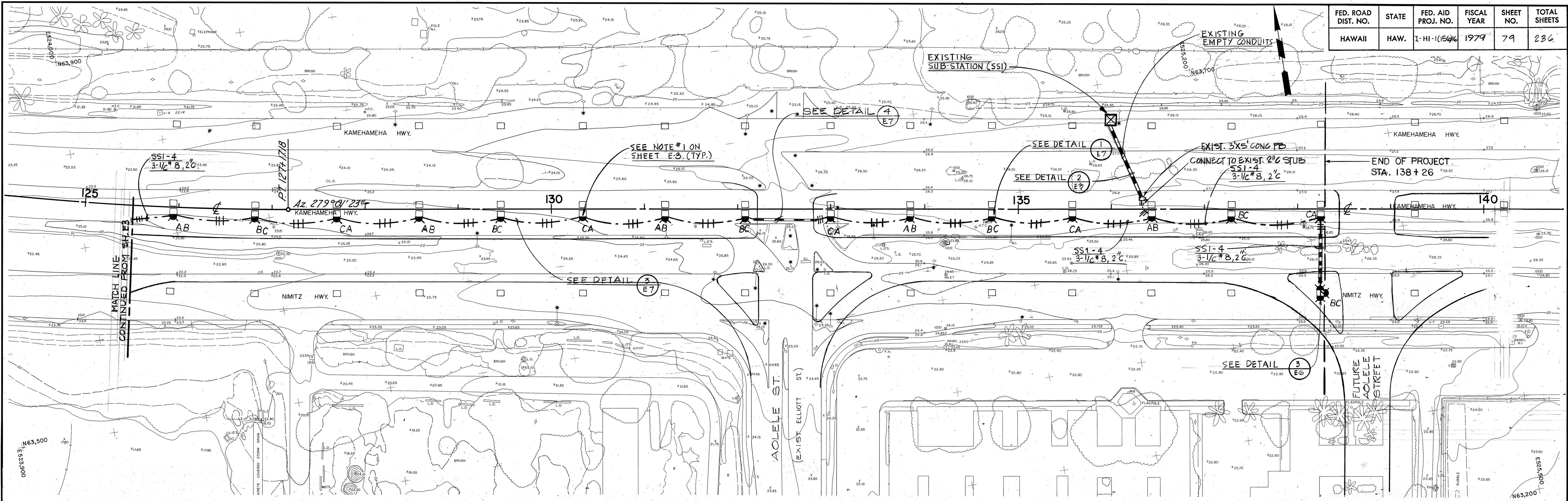
ROADWAY LIGHTING
INBOUND FRONTAGE ROAD
ST. 115+00 TO 125+50
AIRPORT INTERCHANGE
F.A.J. PROJ. NO. I-HI-1(156)16

SCALE: AS SHOWN DATE: NOV. 21, 1978
SHEET No. 3 OF 4 SHEETS

E3

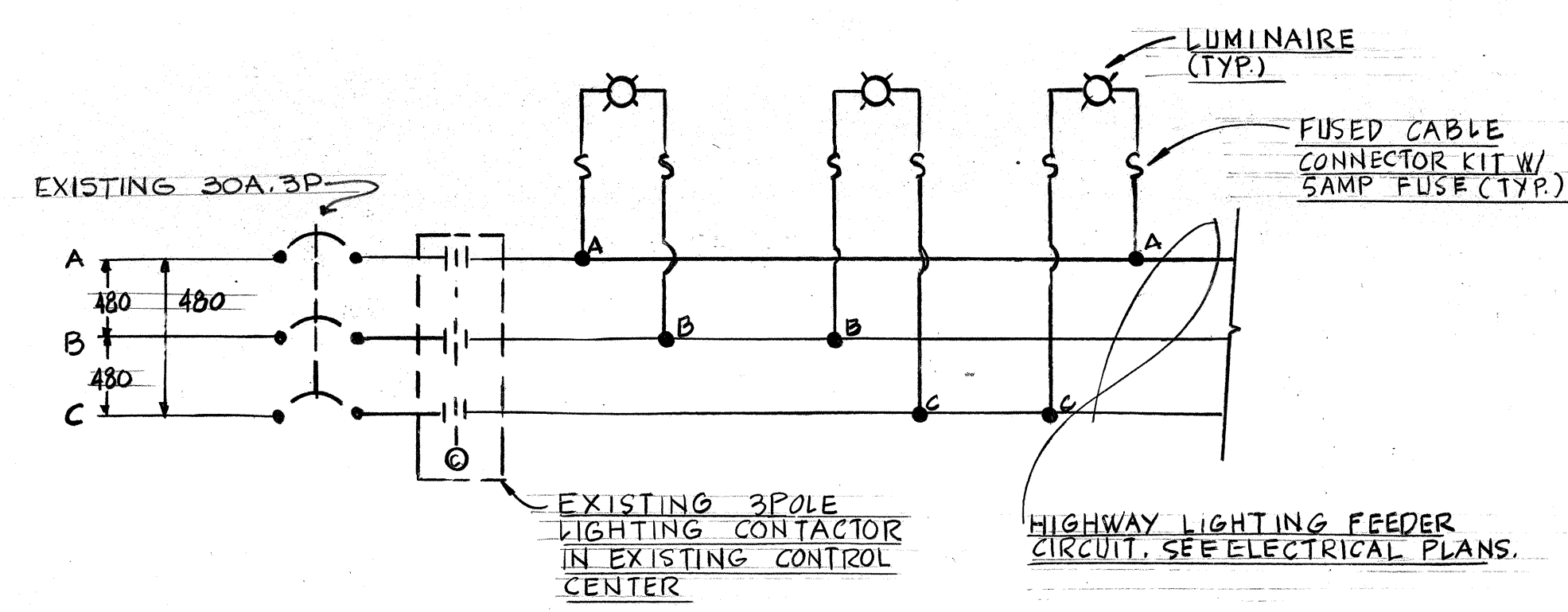
PLAN	DATE	BY	DATE	BY
SURVEYED				
NOTED				
ALIGNED				
CHECKED				
NO.				

PROFILE	DATE	BY	DATE	BY
SURVEYED				
NOTED				
ALIGNED				
CHECKED				
NO.				

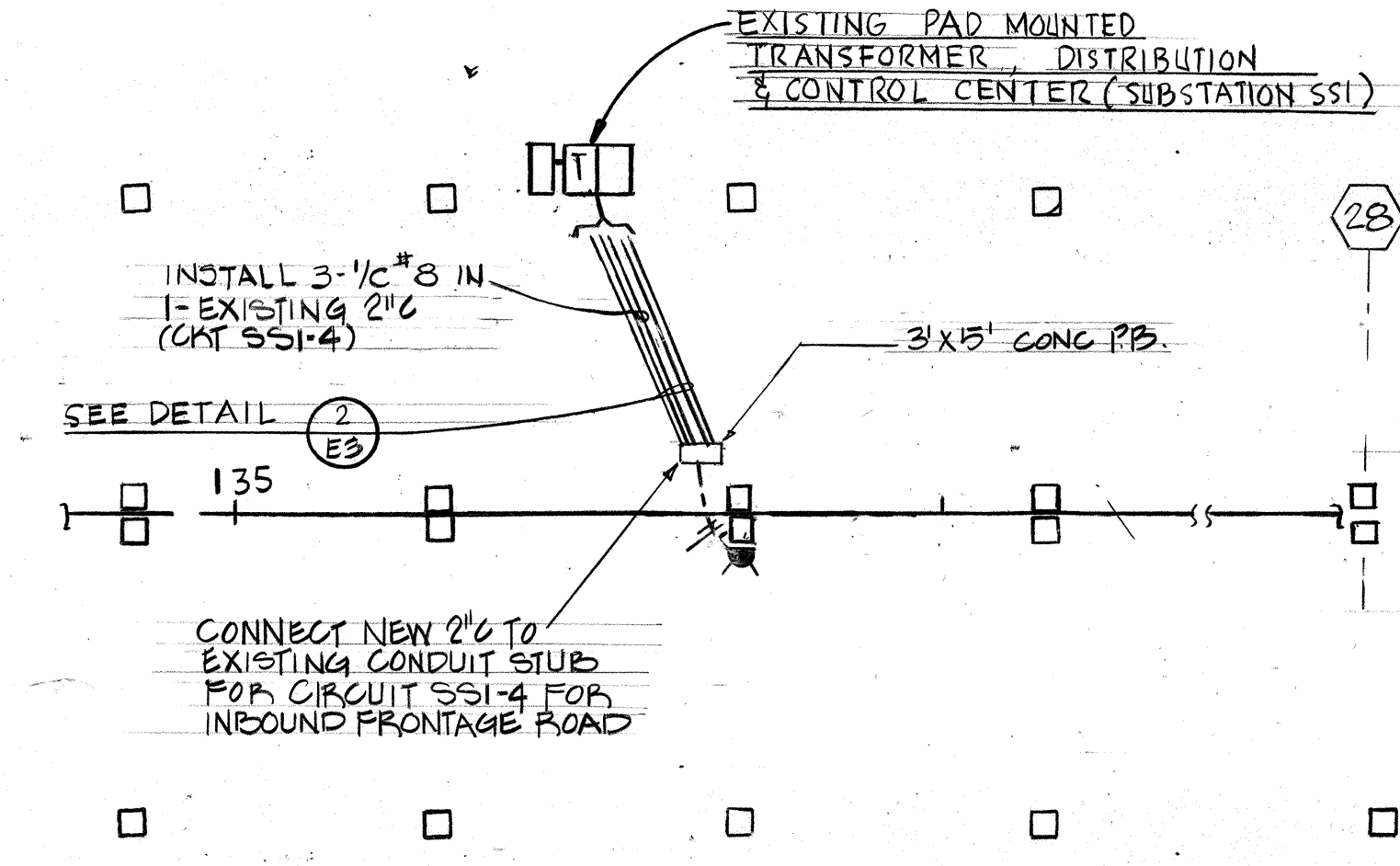


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(156)16	1979	79	236

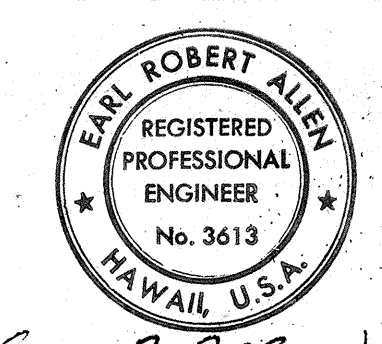
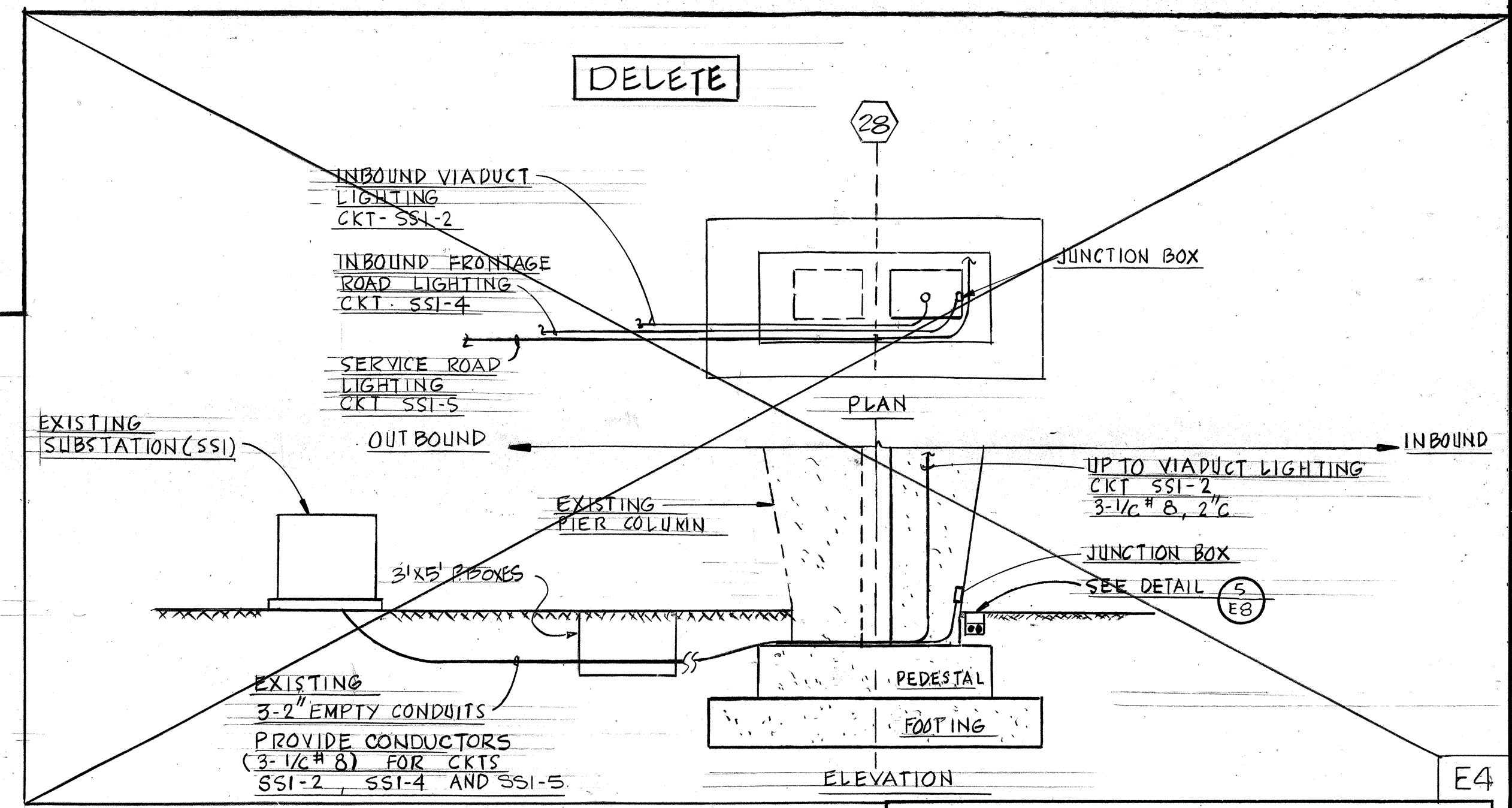
**PARTIAL ELECTRICAL PLAN
INBOUND FRONTAGE ROAD
SCALE: 1=50'-0"**



**TYPICAL LIGHTING CONNECTION DIAGRAM
VIADUCT AND FRONTAGE ROAD**



**PARTIAL PLAN
N.T.S.**



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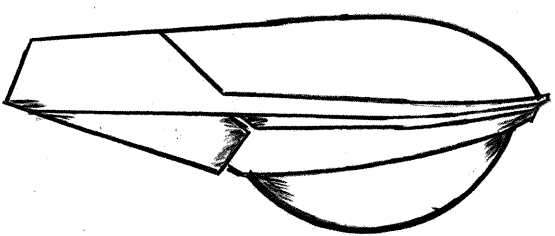
**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION**

**ROADWAY LIGHTING
INBOUND FRONTAGE ROAD
ST 125+50 TO 138+26
AIRPORT INTERCHANGE
F.A.I. PROJ. NO. I-HI-1(156)16**

SCALE: AS SHOWN DATE: NOV. 21, 1978

SHEET No. 4 OF 9 SHEETS

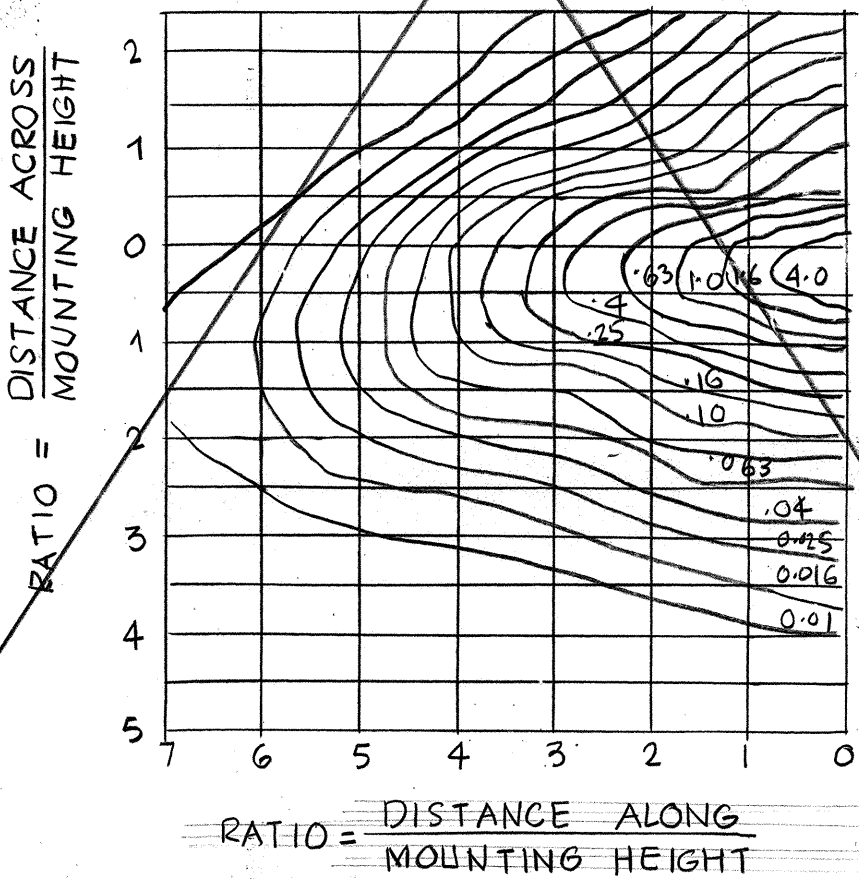
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(156)6	1979	80	236



TYPE R FIXTURE

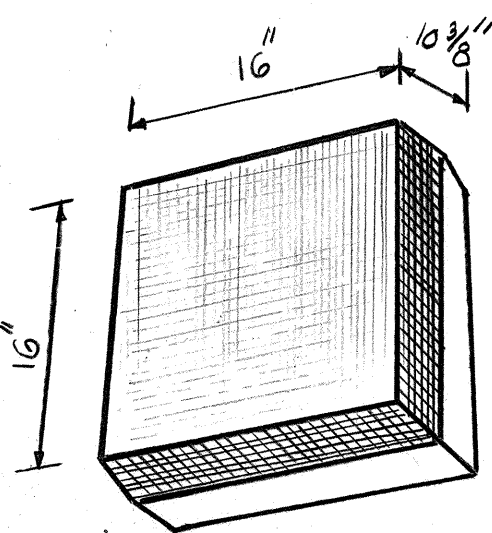
VIADUCT LUMINAIRE

MOUNTING HEIGHT : 30'
WATTAGE : 250W
LAMP : LU 250/BD (HI PRESS. SODIUM)
LUMENS @ INITIAL : 25,500 LUMENS



DELETE

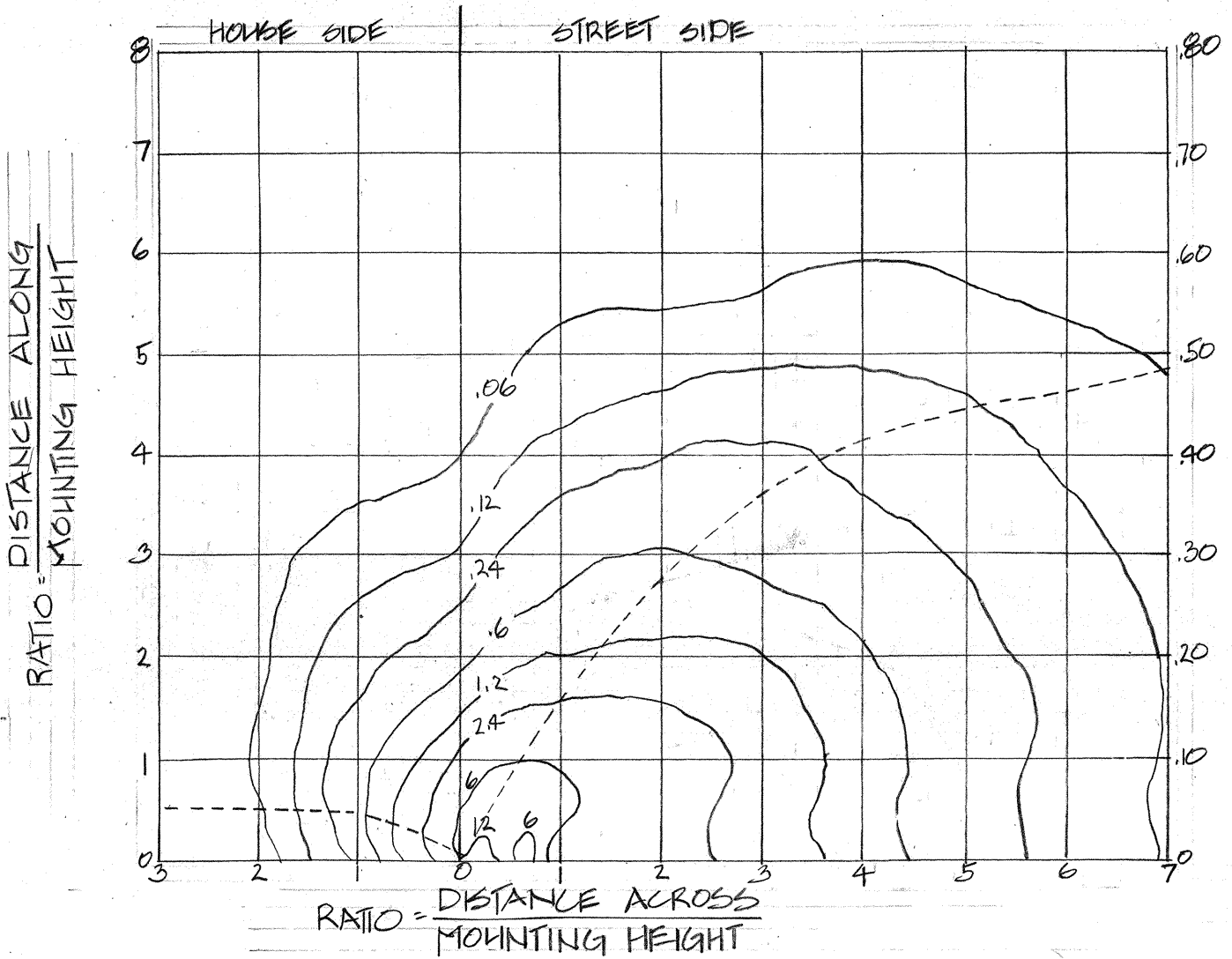
ISOFOOTCANDLE DIAGRAM



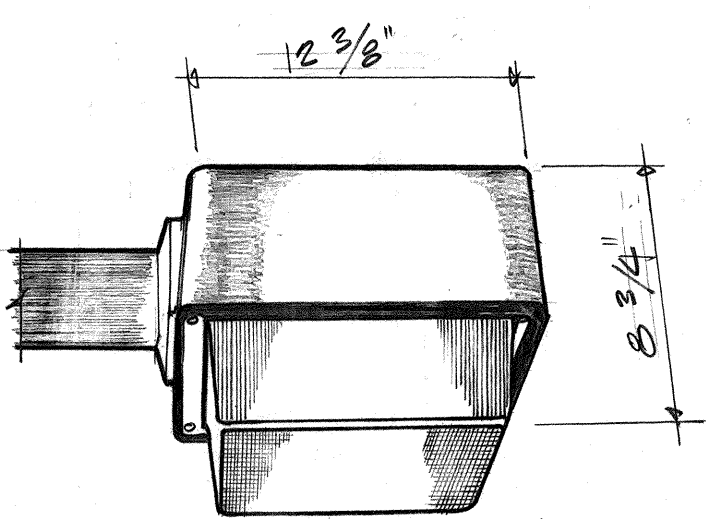
TYPE "N" FIXTURE

WALL MOUNTED LUMINAIRE

MOUNTING HEIGHT : 15'
WATTAGE : 250 W
LAMP : LU 250 HIGH PRESSURE SODIUM
LUMENS @ INITIAL : 30,000 LUMENS
SHIELDED ONE SIDE



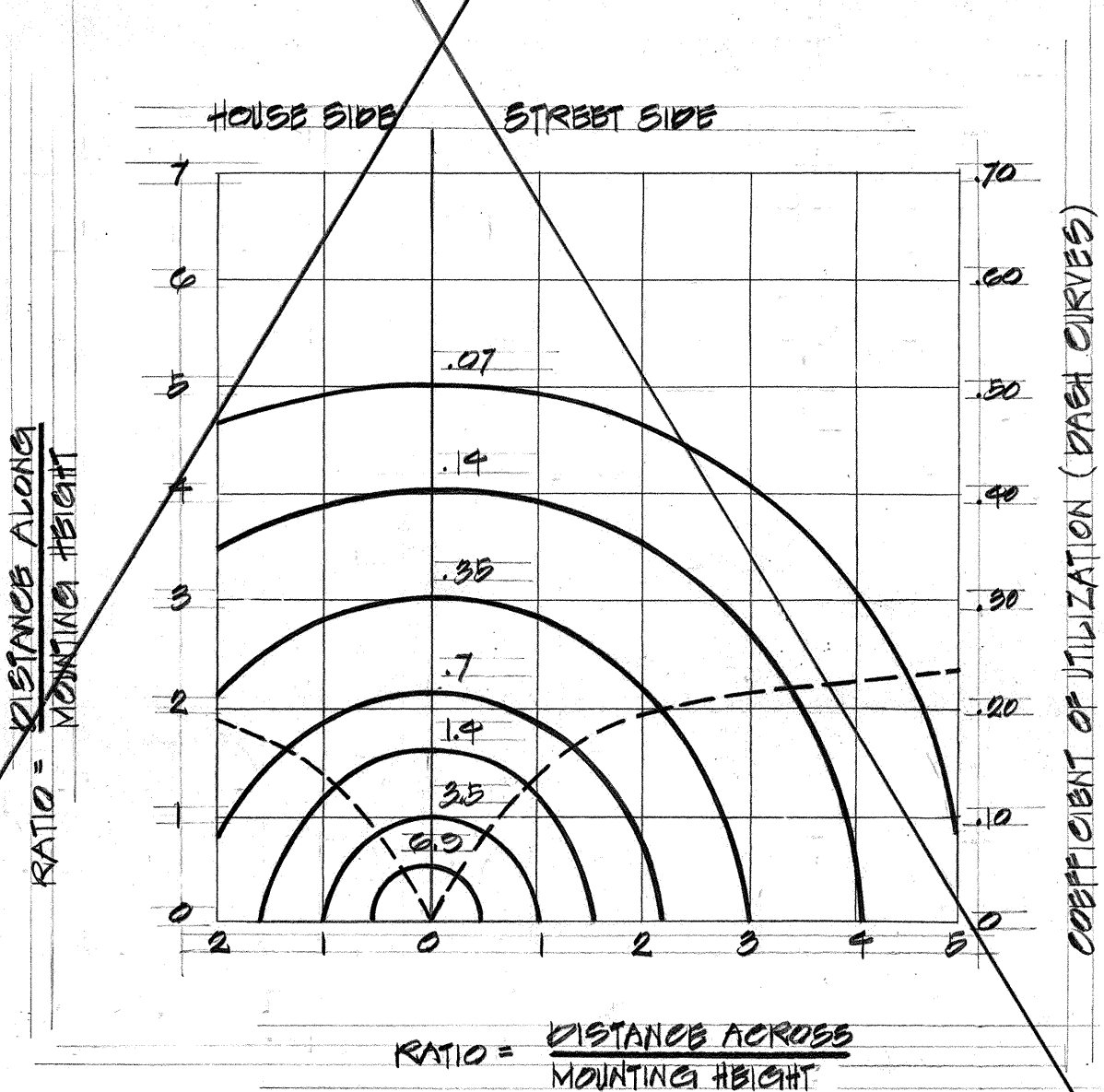
ISOFOOTCANDLE DIAGRAM



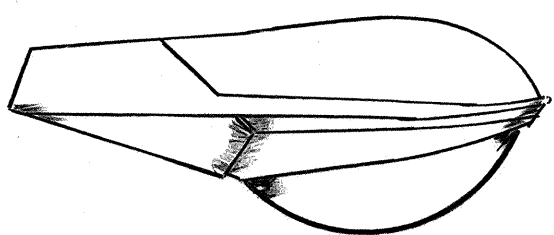
TYPE "T" FIXTURE

POLE MOUNTED LUMINAIRE

MOUNTING HEIGHT : 12'
WATTAGE : 175W
LAMP : 175W METAL HALIDE
LUMENS @ INITIAL : 14,000 LUMENS



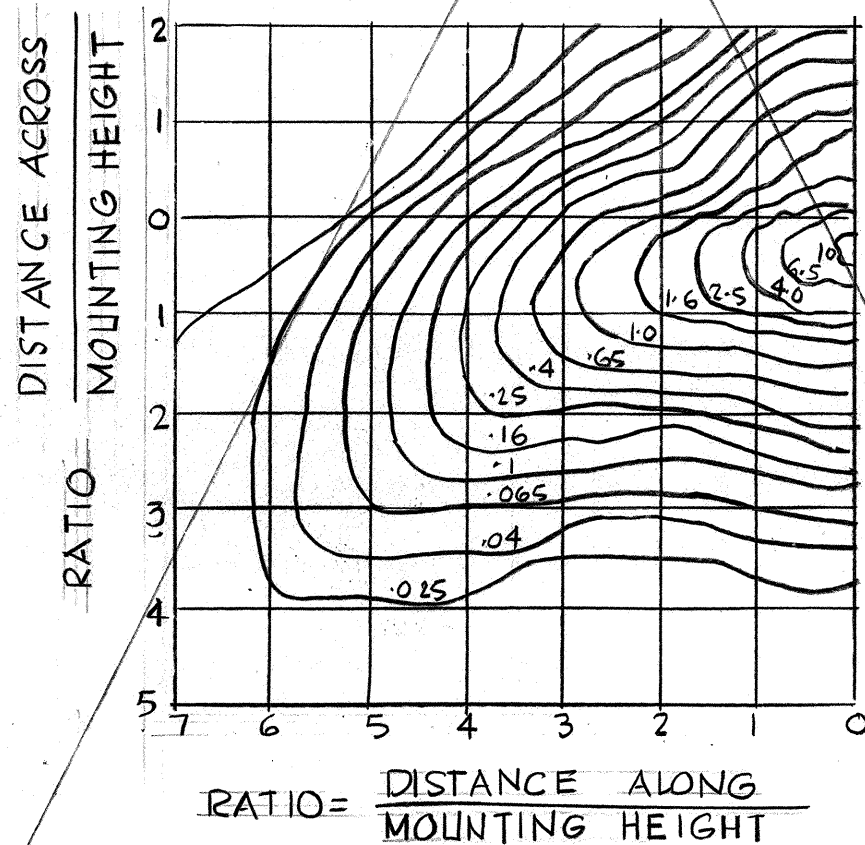
ISOFOOTCANDLE DIAGRAM



TYPE "M" FIXTURE

VIADUCT LUMINAIRE

MOUNTING HEIGHT : 50'
WATTAGE : 400W
LAMP : LU 400/BD (HI-PRESS. SODIUM)
LUMENS @ INITIAL : 50,000 LUMENS



DELETE

ISOFOOTCANDLE DIAGRAM

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



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

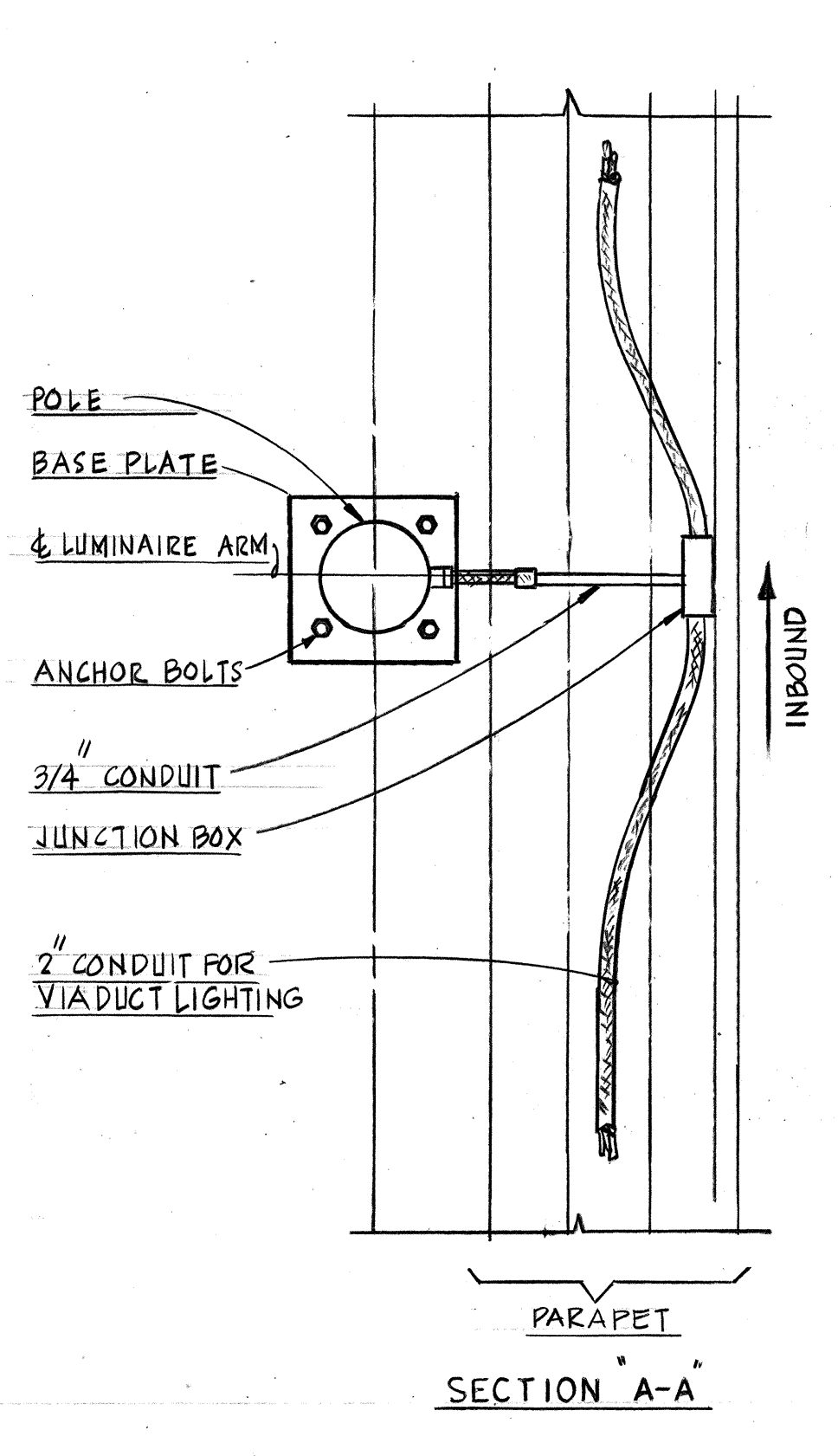
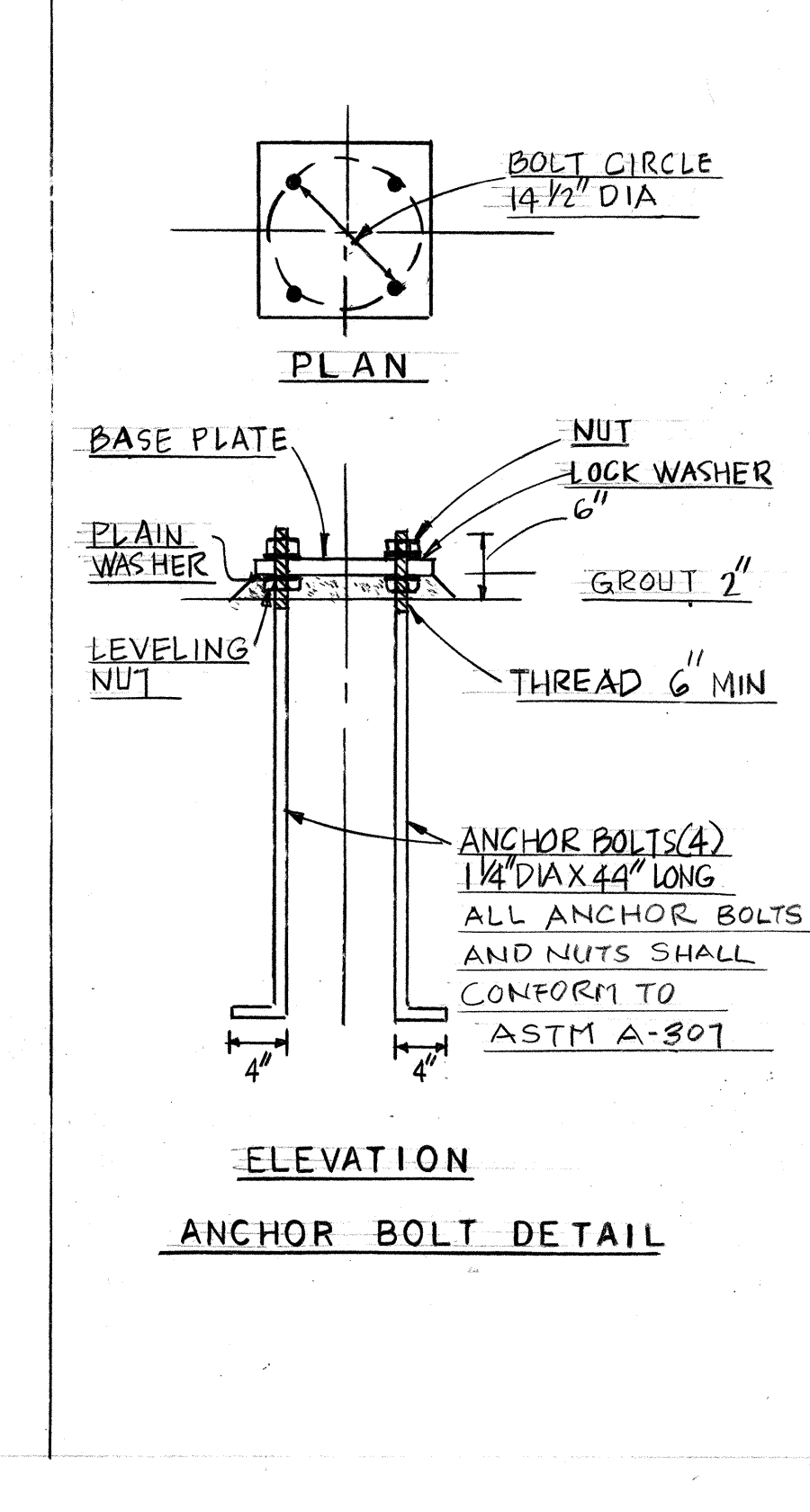
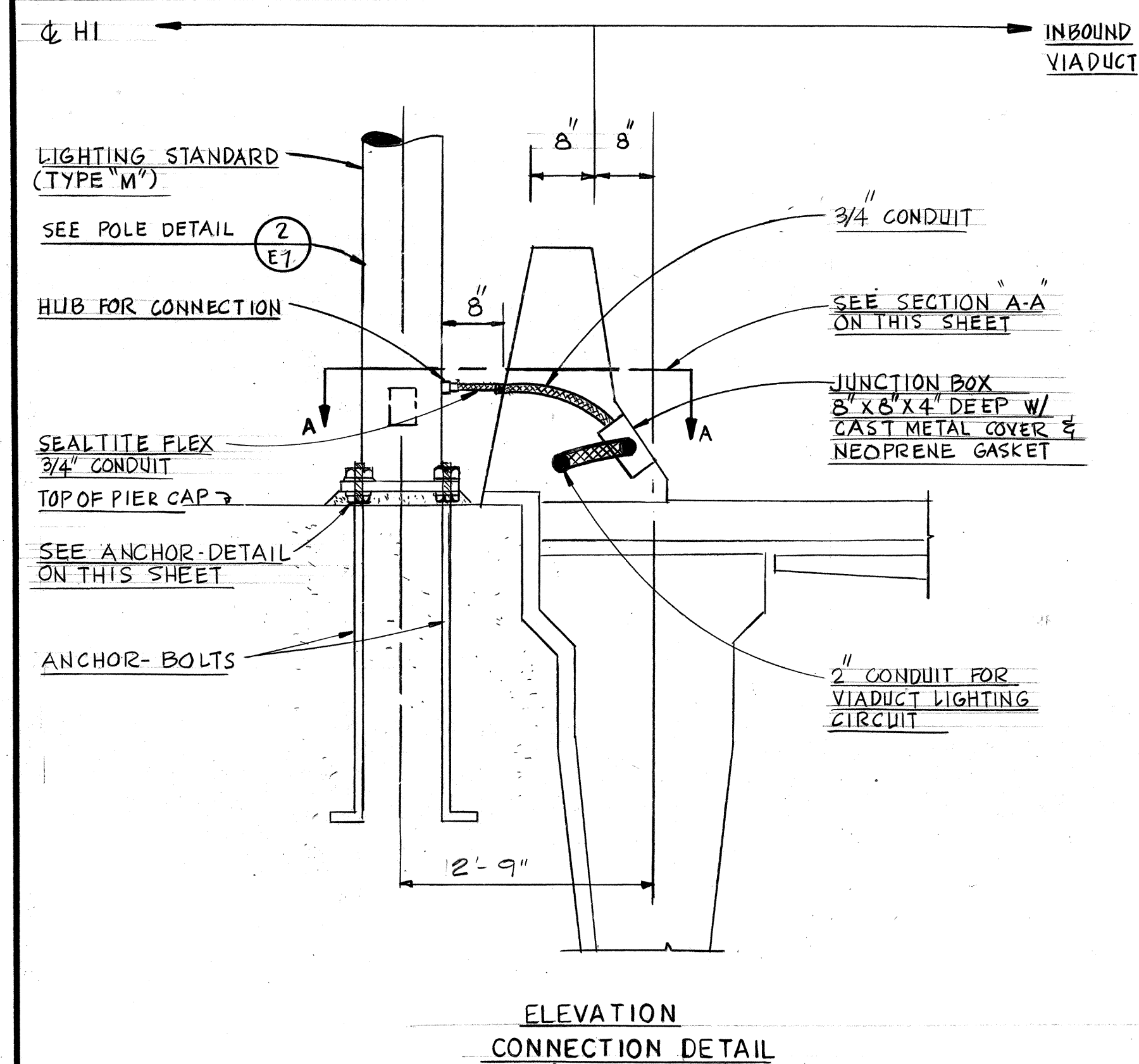
ROADWAY LIGHTING
ELECTRICAL DETAILS

AIRPORT INTERCHANGE
F.A.I. PROJ. NO. I-HI-1(156)16

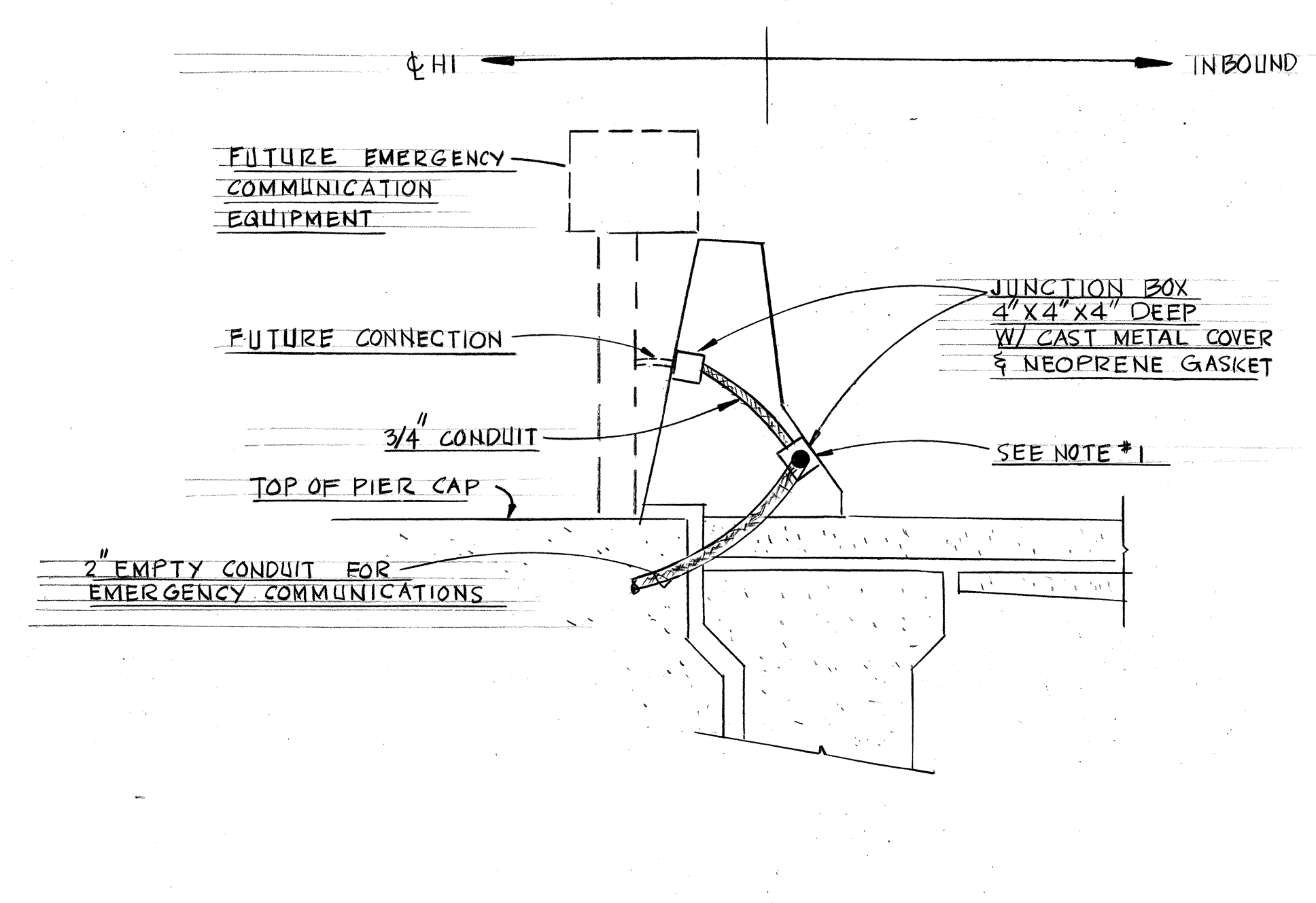
SCALE: NONE DATE: NOV. 21, 1978

SHEET No. 5 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-105016	1979	81	236

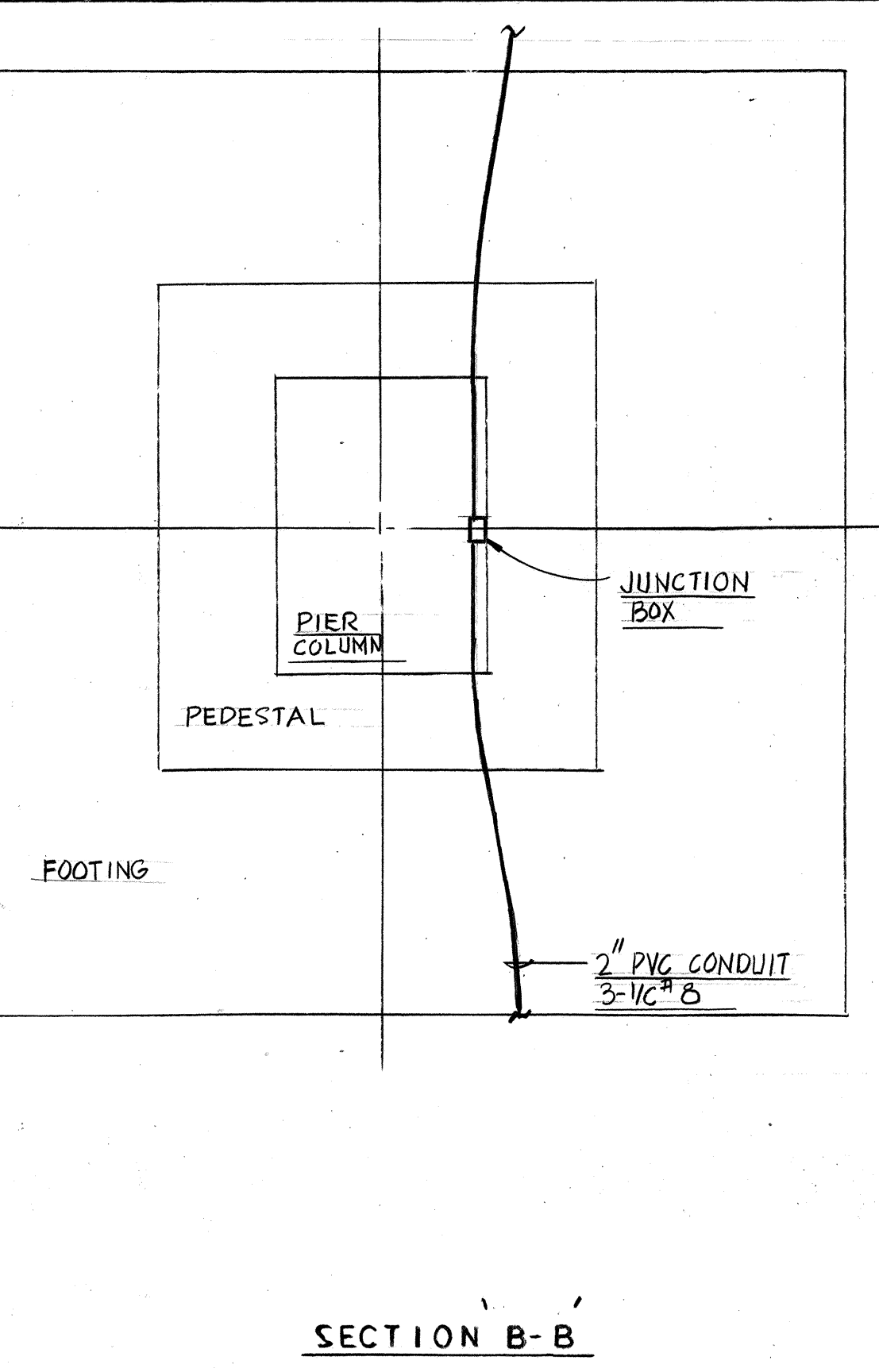
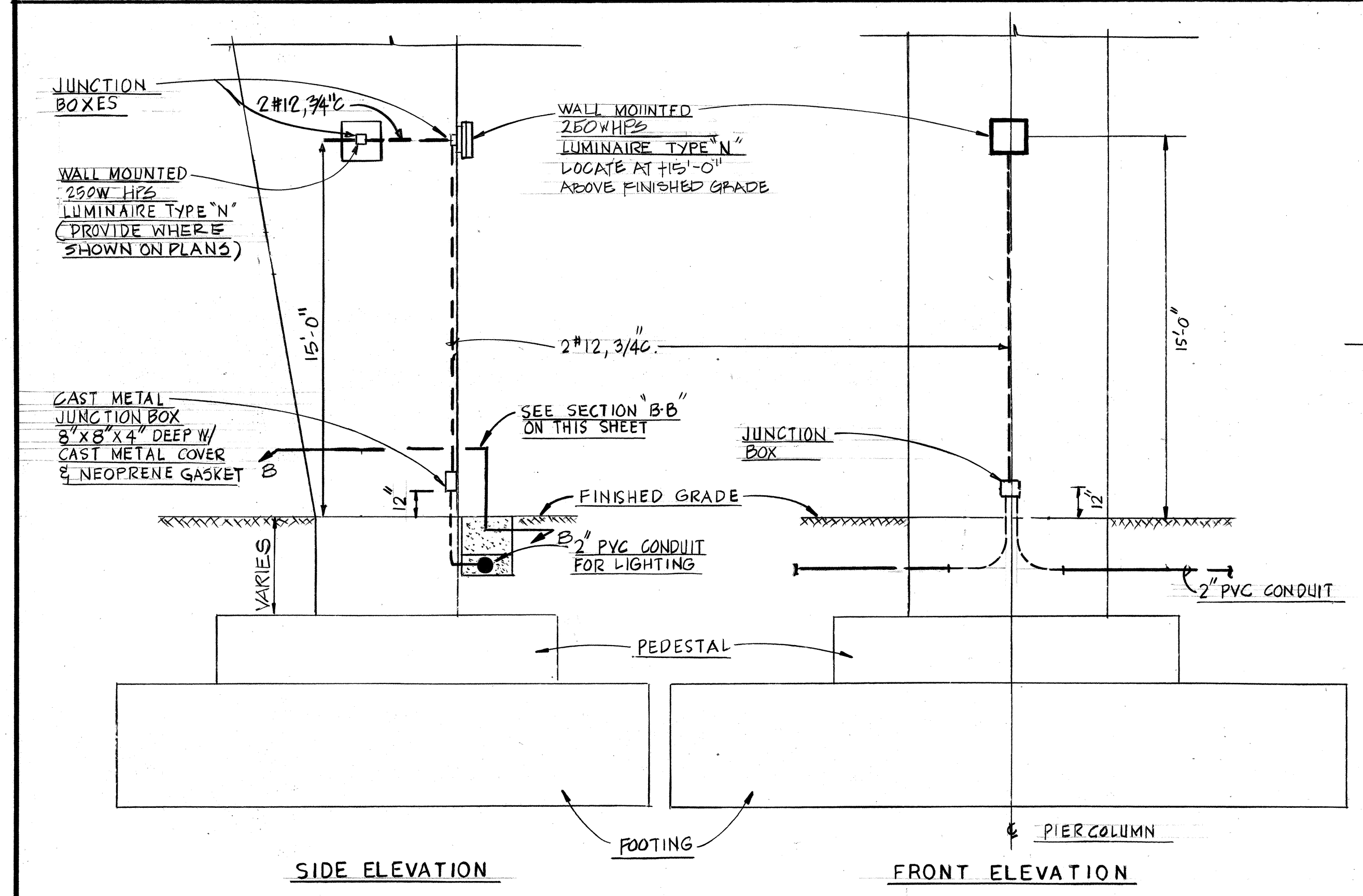


MOUNTING AND CONNECTION DETAIL
INBOUND VIADUCT LIGHT TYPE "M"
SCALE: 3/4"=1'-0"

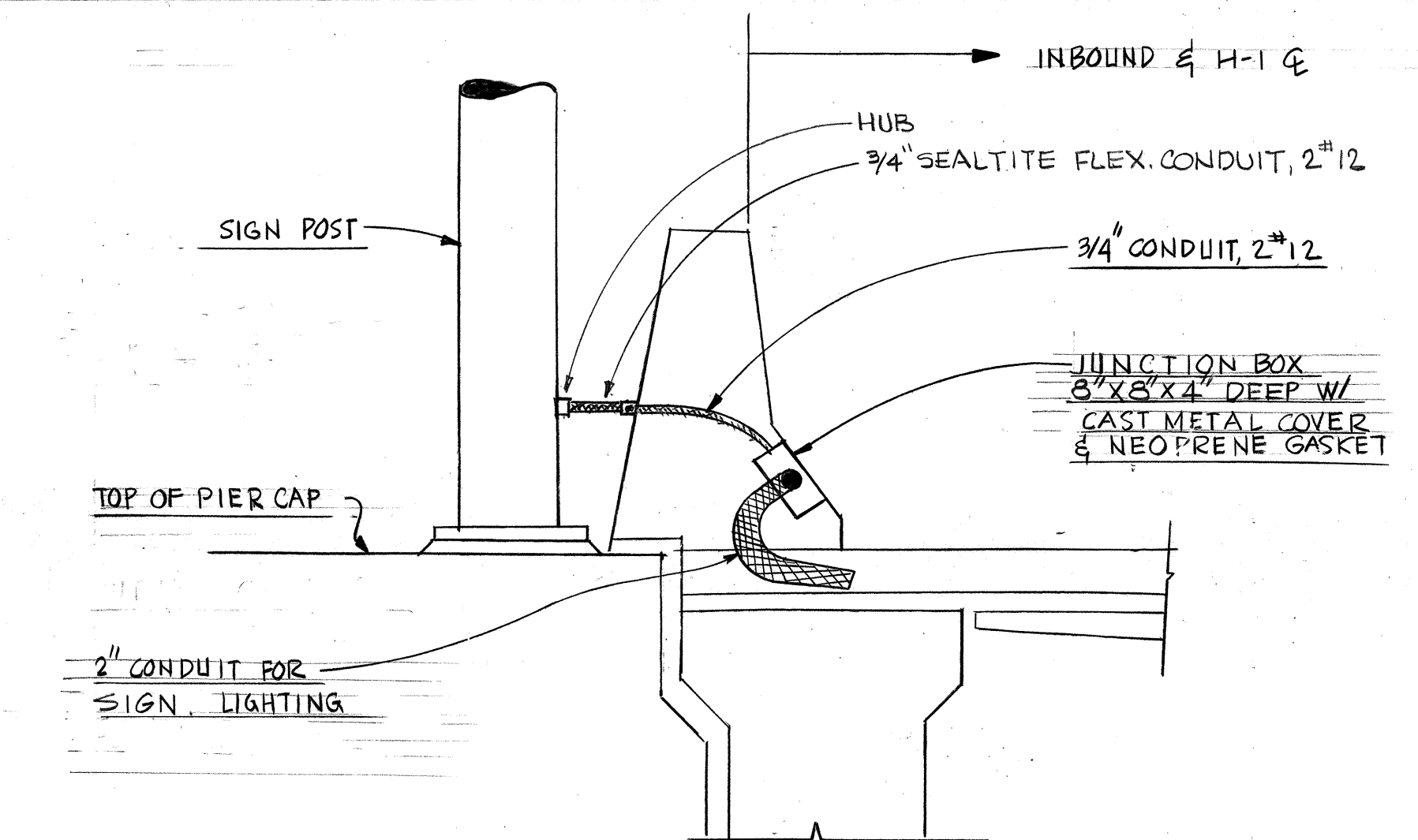


CONNECTION DETAIL
EMERGENCY COMMUNICATION EQUIPMENT
SCALE: 3/4"=1'-0"

NOTE: 1 LOCATE EMERGENCY PULL BOX ADJACENT TO & ABOVE LIGHTING JUNCTION BOX WHEN BOTH ARE LOCATED AT SAME PIER.



MOUNTING AND CONNECTING DETAIL
LUMINAIRE TYPE "N"
SCALE: 3/4"=1'-0"



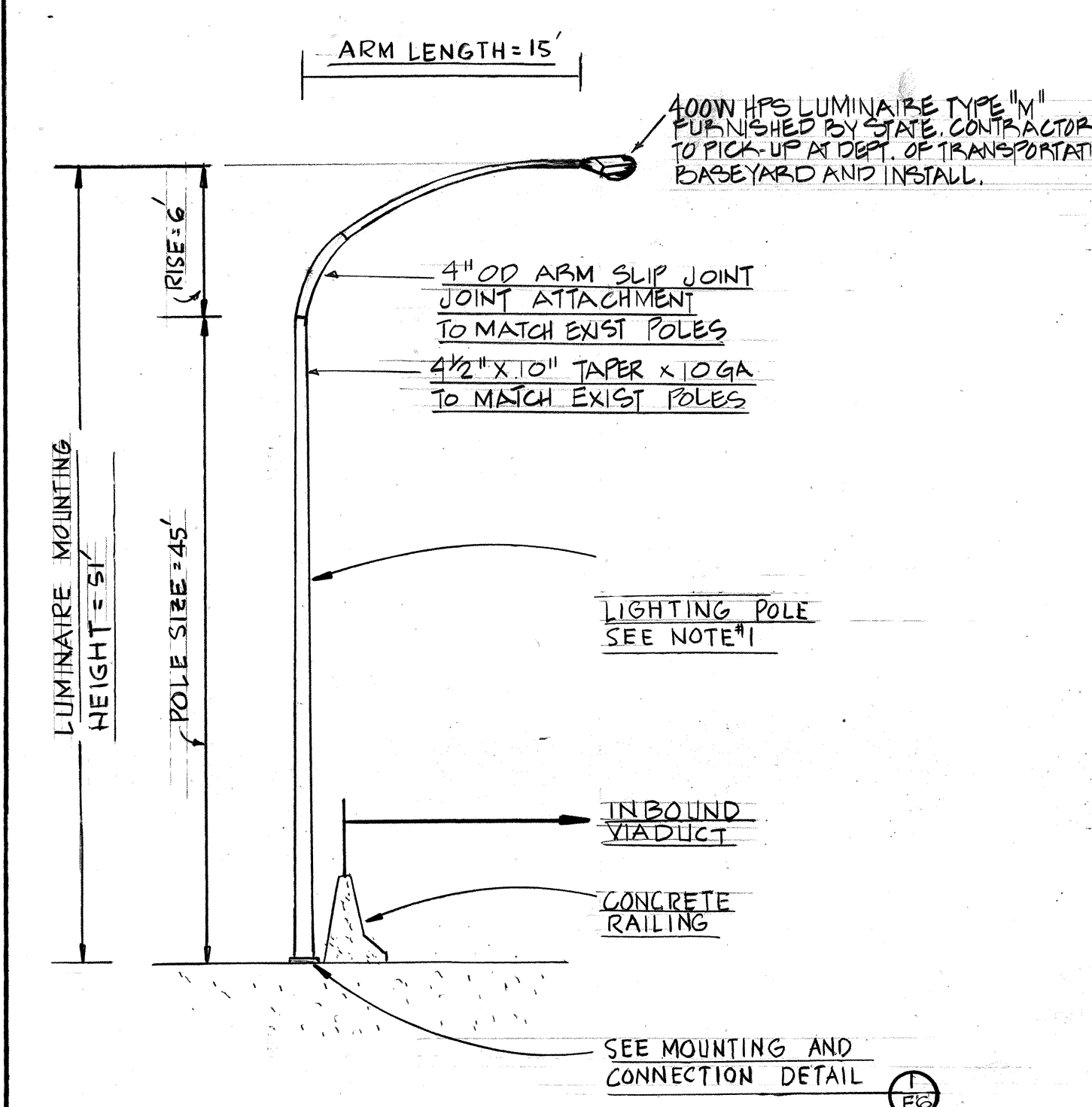
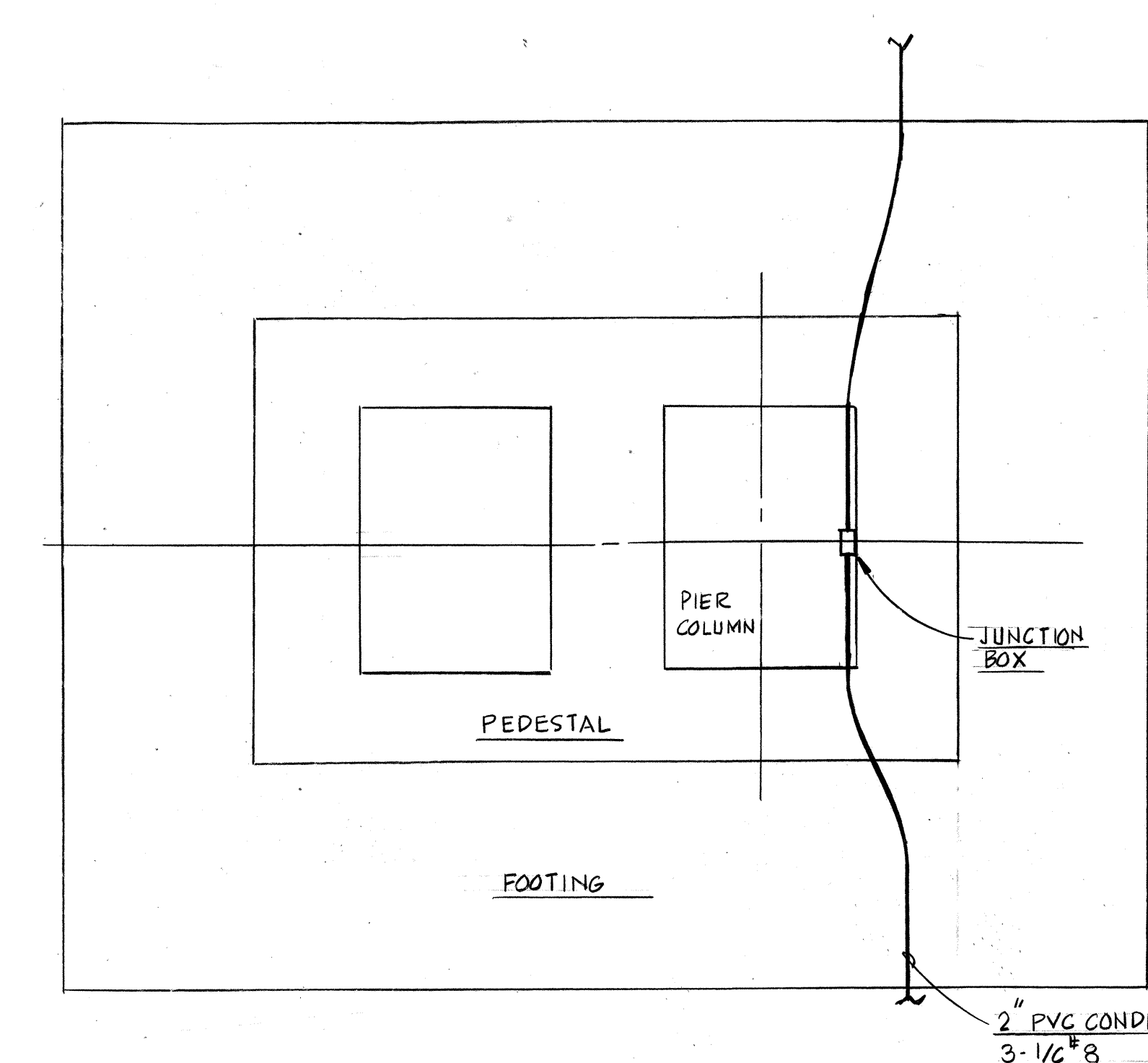
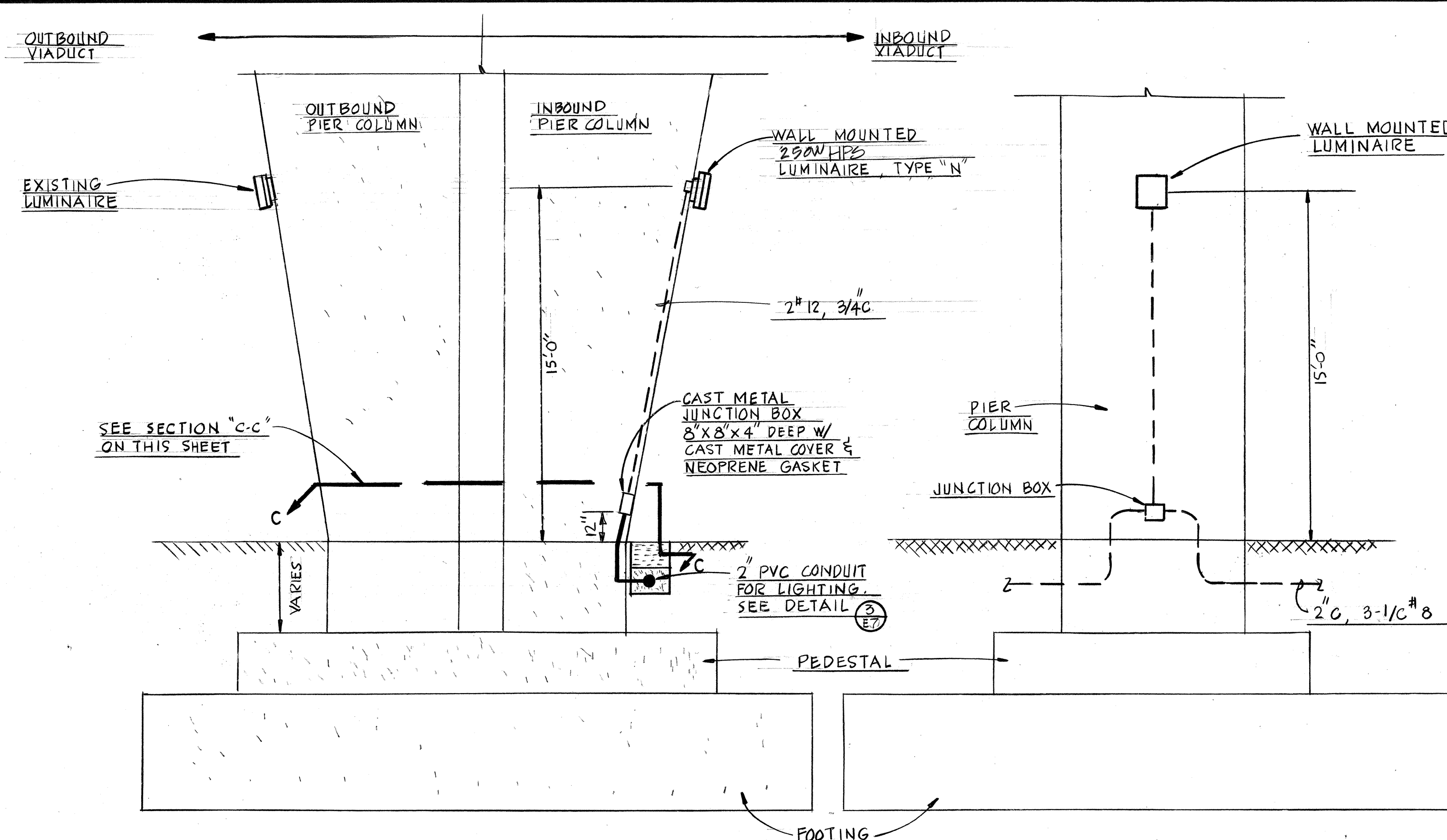
CONNECTION DETAIL
SIGN POST
SCALE: 3/4"=1'-0"

EARL ROBERT ALLEN
REGISTERED PROFESSIONAL ENGINEER
No. 3613
HAWAII, U.S.A.
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY LIGHTING ELECTRICAL DETAILS
AIRPORT INTERCHANGE
F.A.I. PROJ. NO. I-H-105016
SCALE: AS SHOWN DATE: NOV. 21, 1978
SHEET No. 6 OF 9 SHEETS

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(156)16	1979	82	236

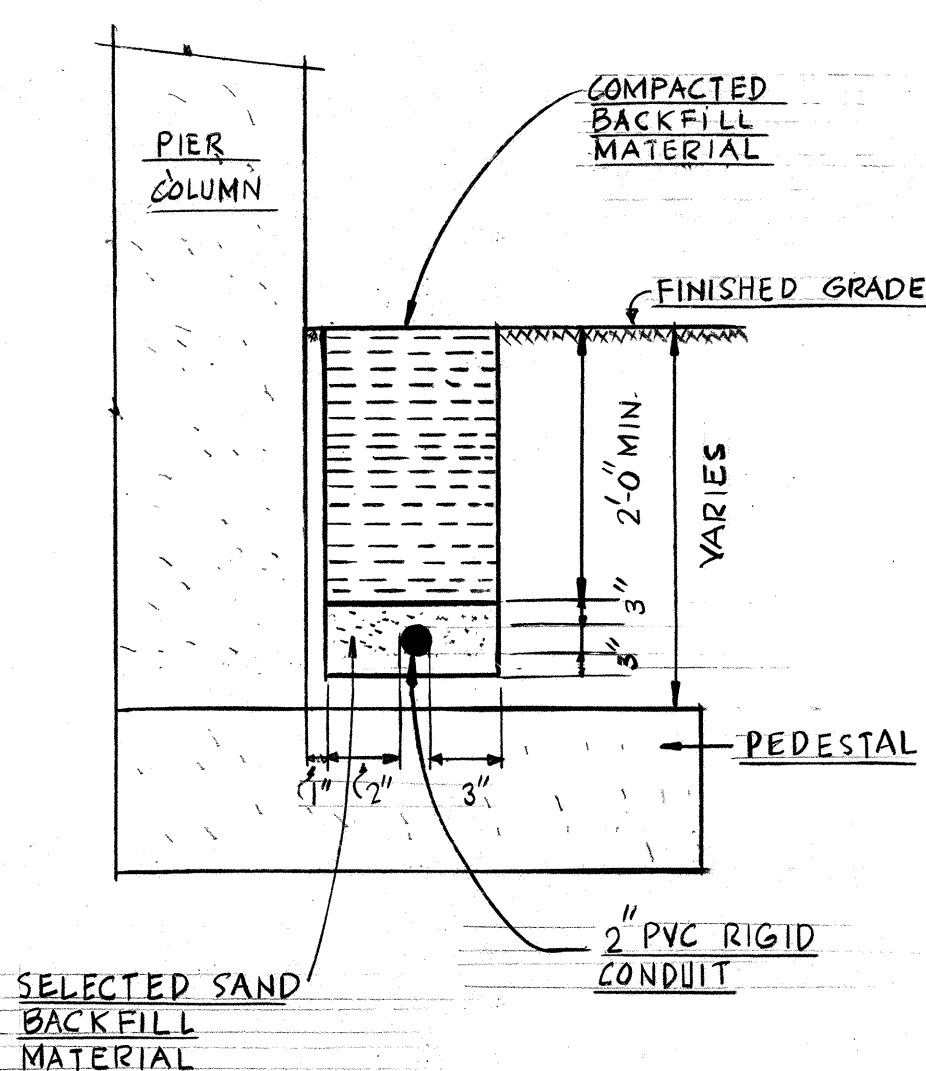


MOUNTING AND CONNECTION DETAIL
INBOUND FRONTAGE ROAD LIGHT TYPE "N"
 SCALE: 1/4" = 1'-0"

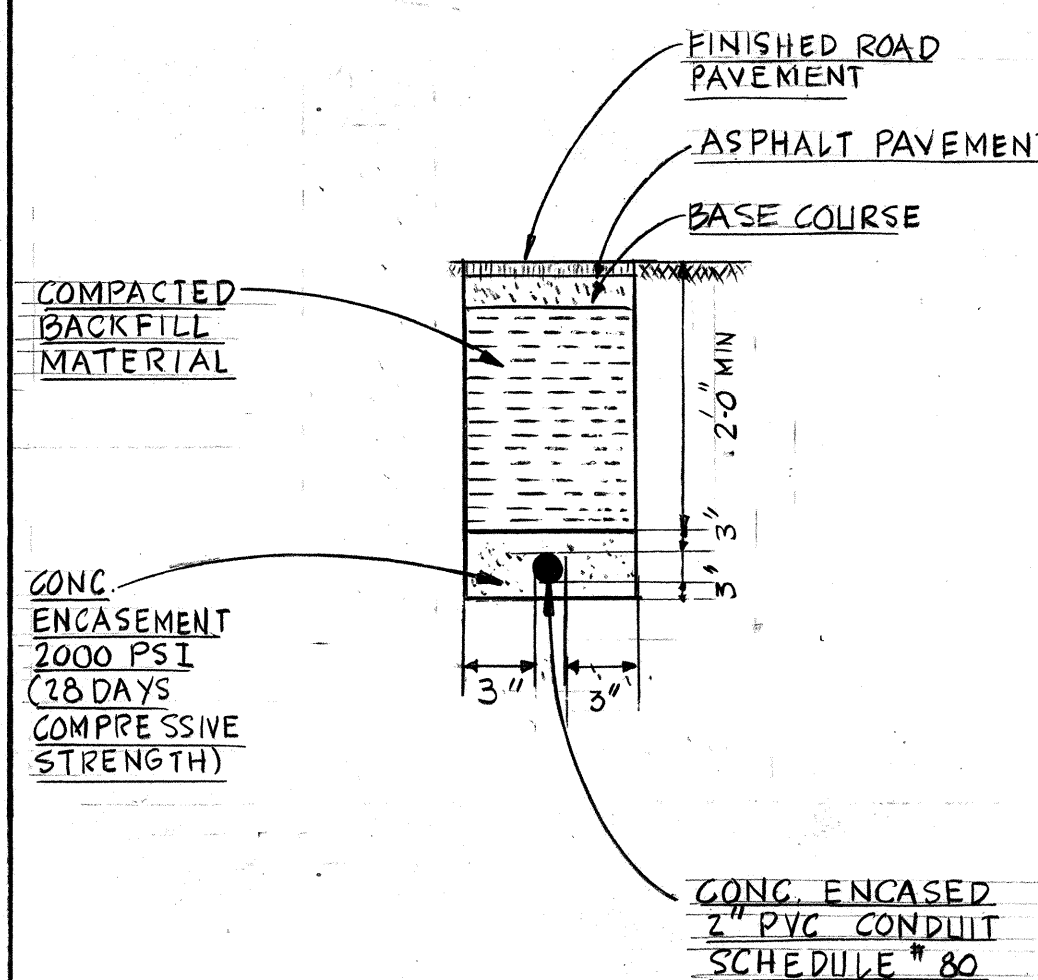
POLE DETAIL

N.T.S.

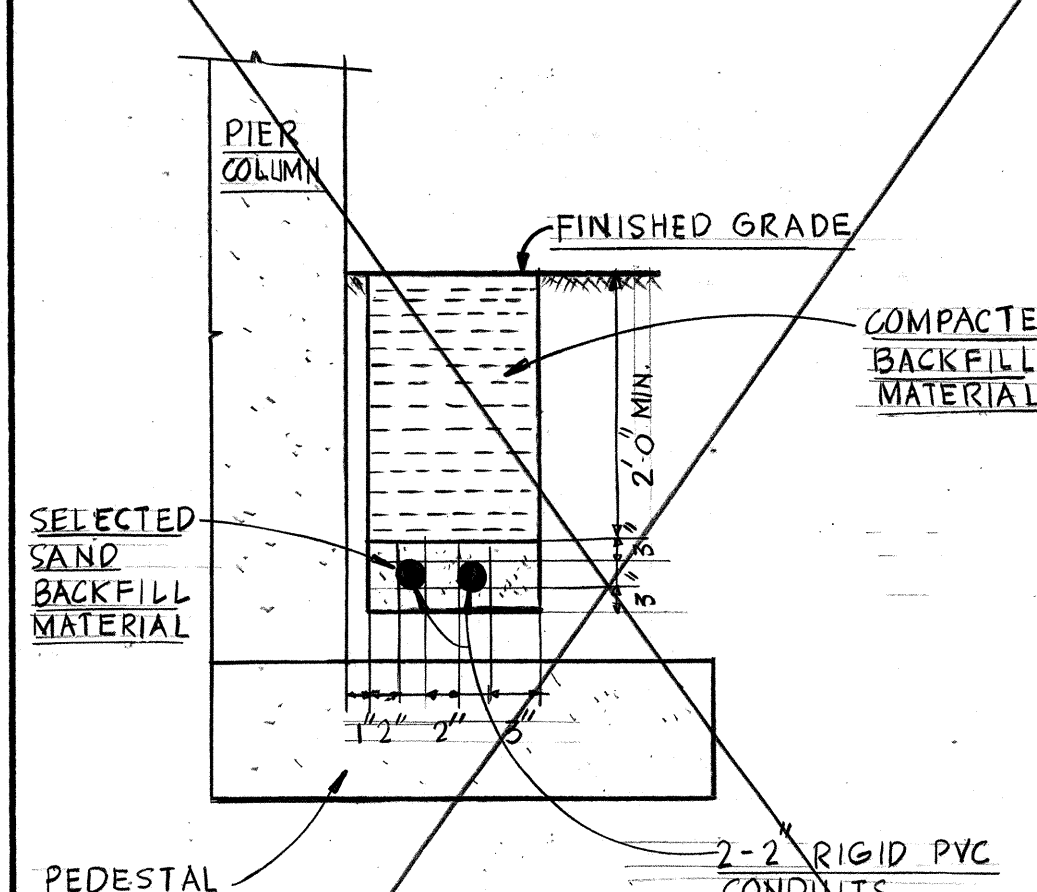
NOTE: POLE ASSEMBLY
 AS SHOWN ON AMERON
 PRODUCTS DRAWING # 1968C
 OR EQUIVALENT.



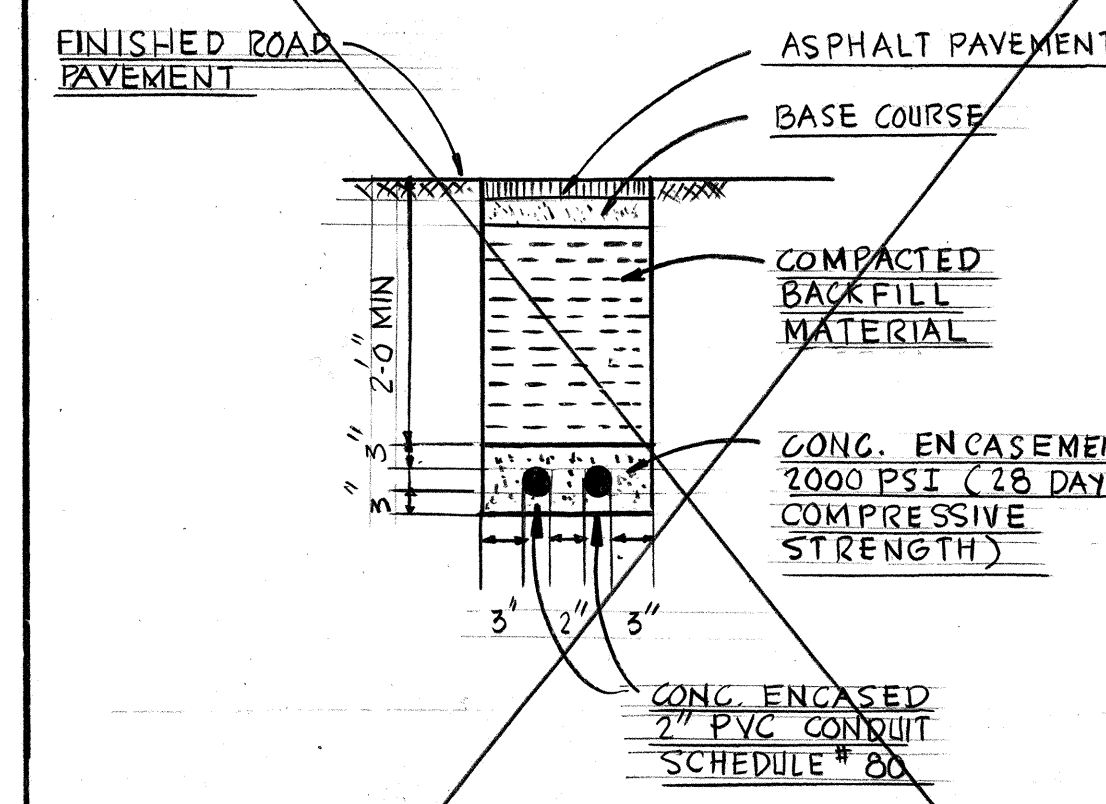
TYPICAL ELECTRICAL TRENCH BURIAL DETAIL
 N.T.S.



TYPICAL CONCRETE ENCASED RACEWAY DETAIL
 N.T.S.



TYPICAL ELECTRICAL TRENCH BURIAL DETAIL
 N.T.S.



TYPICAL CONCRETE ENCASED RACEWAY DETAIL
 N.T.S.



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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

ROADWAY LIGHTING ELECTRICAL DETAIL

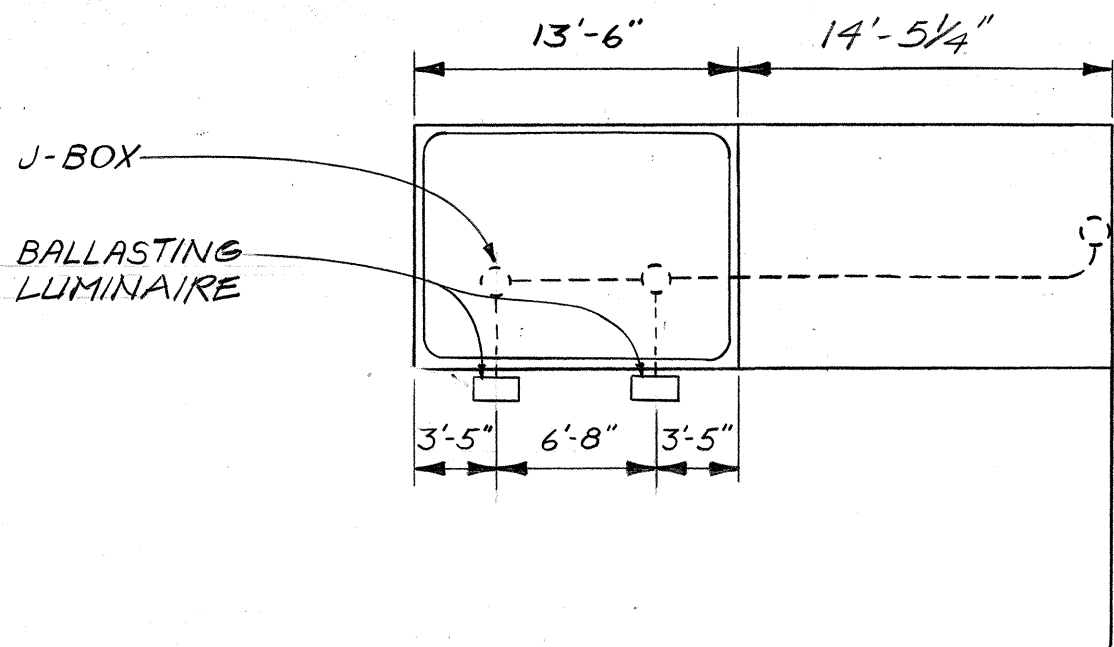
AIRPORT INTERCHANGE
 F.A.I. PROJ. NO. I-HI-1(156)16

SCALE: AS SHOWN DATE: NOV. 21, 1978

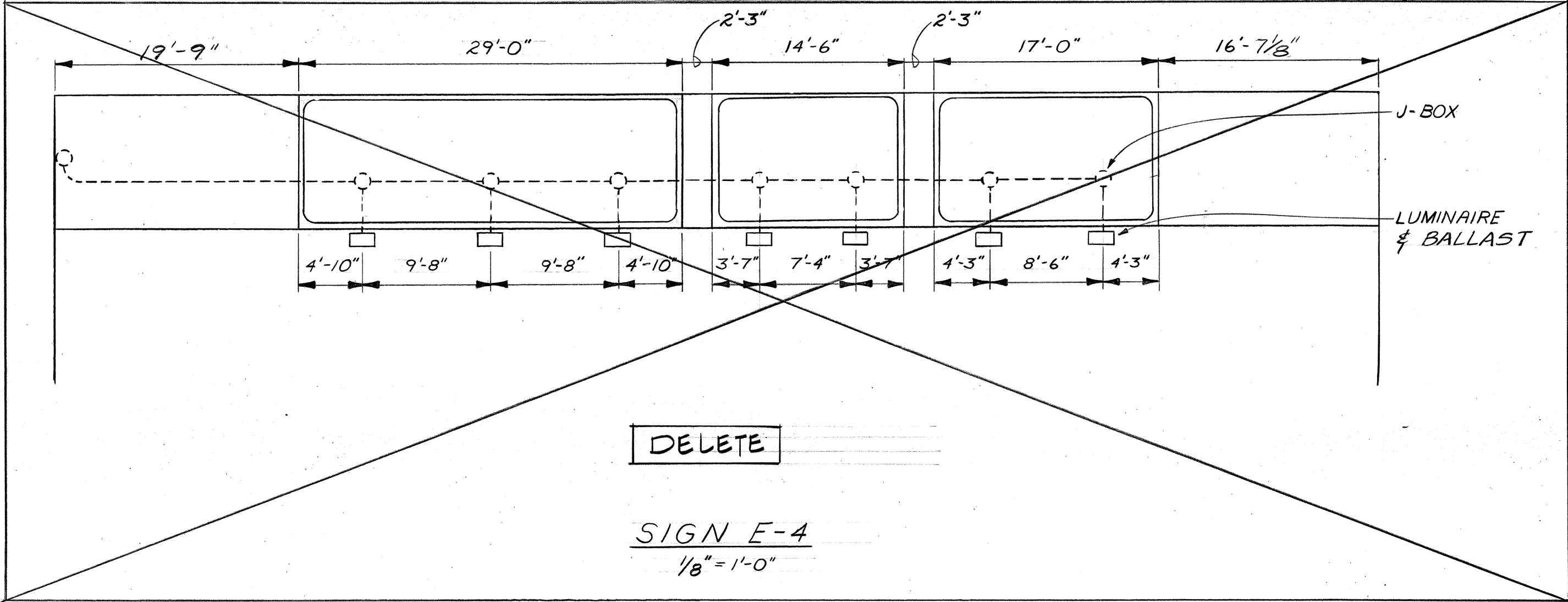
SHEET No. 7 OF 9 SHEETS

82 cont 7

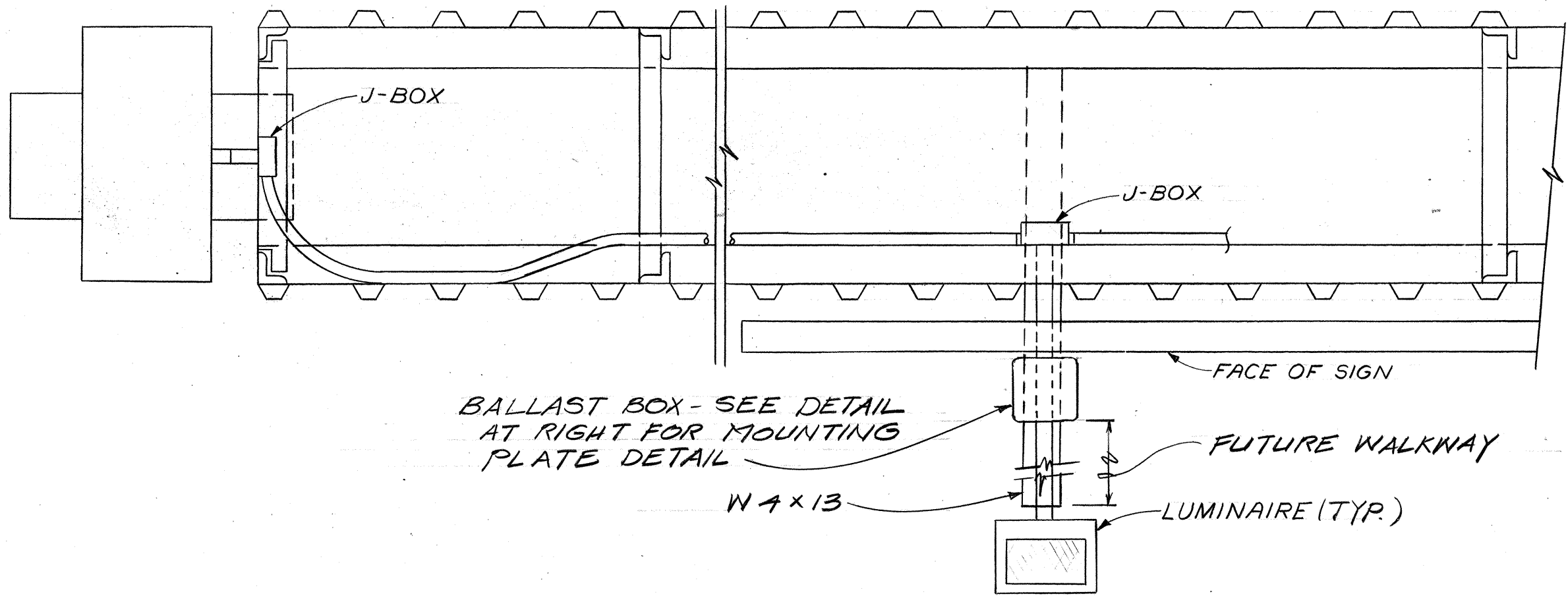
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(156) 16	1979	83	236



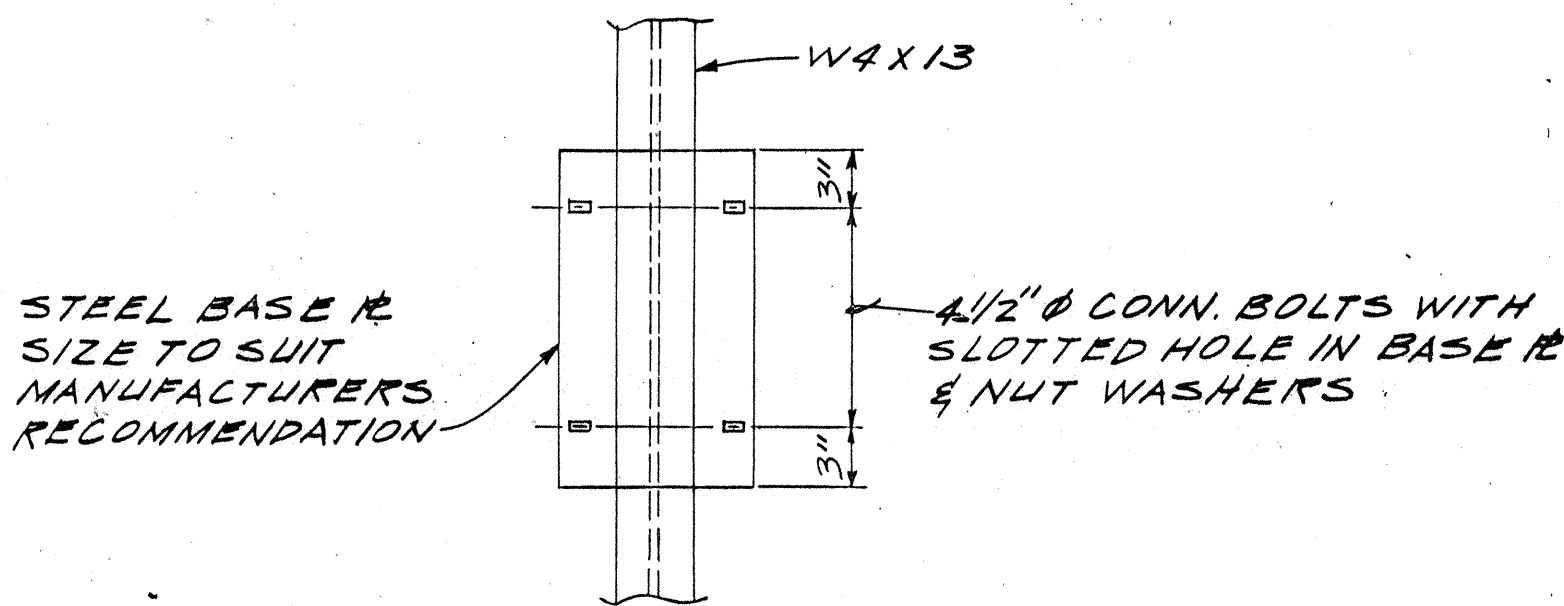
SIGN E-2
1/8" = 1'-0"



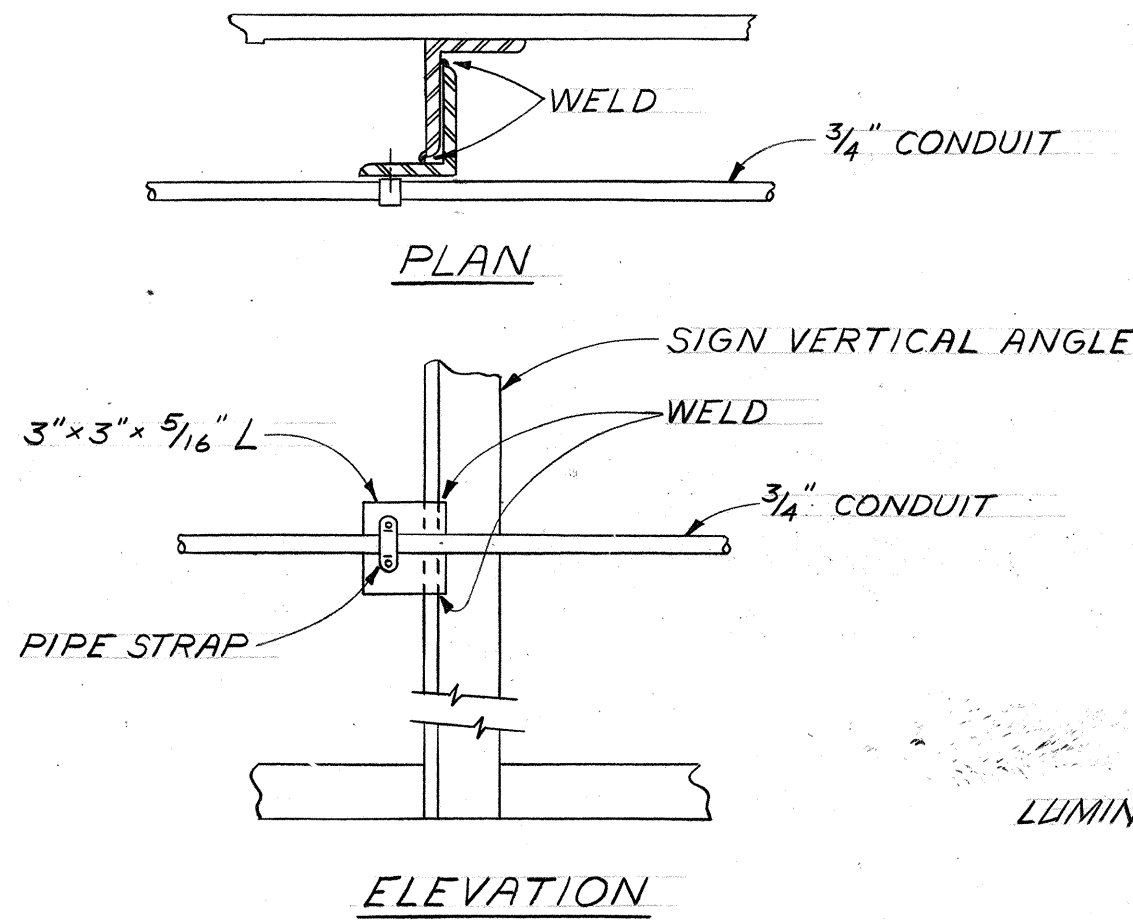
SIGN E-4
1/8" = 1'-0"



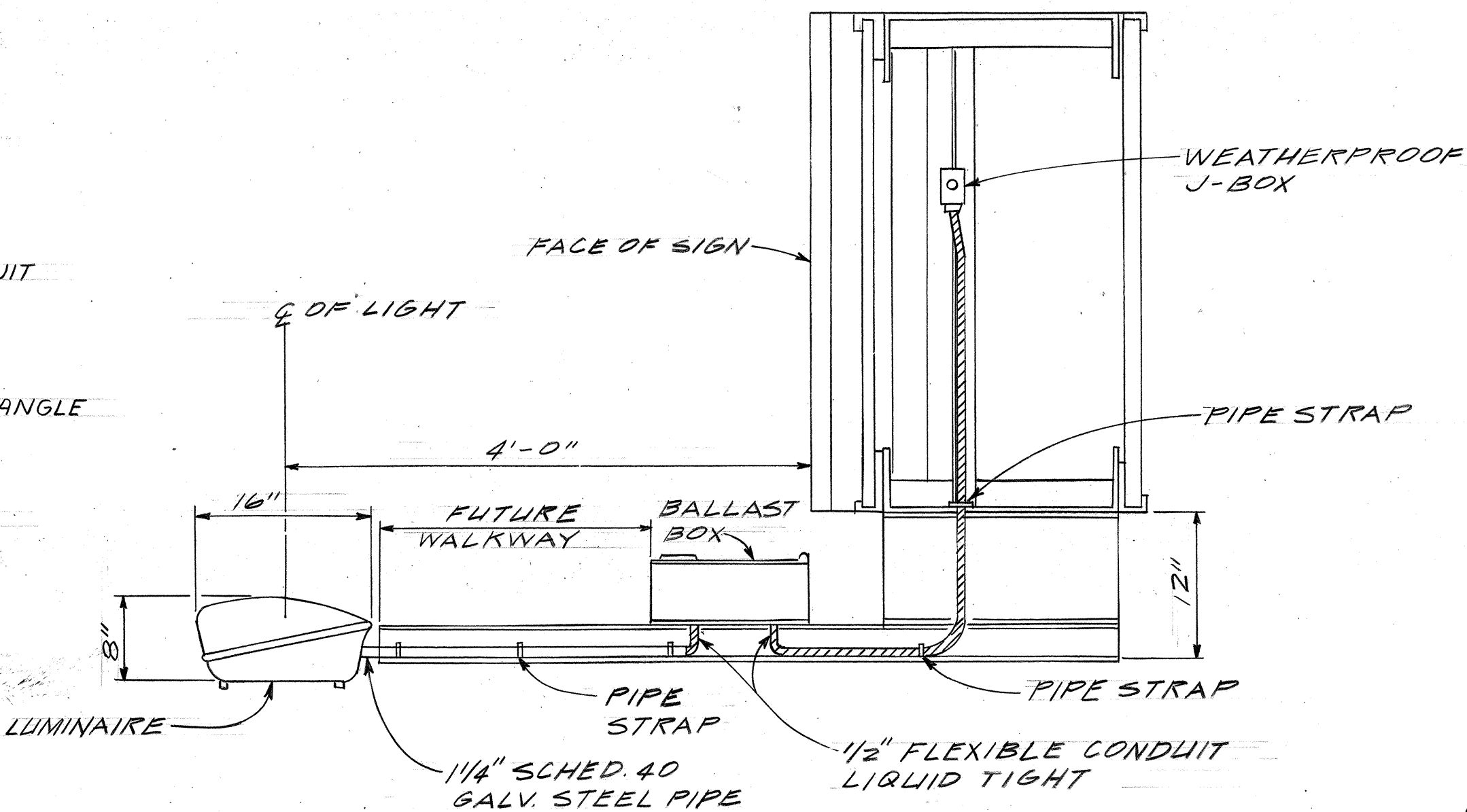
CONDUIT ROUTING - PLAN FOR SIGN E-2 SIMILAR BUT REVERSED
NOT TO SCALE



BALLAST BOX
MOUNTING PLATE DETAIL
N.T.S.



CONDUIT SUPPORT
NOT TO SCALE



LUMINAIRE MOUNTING
NOT TO SCALE

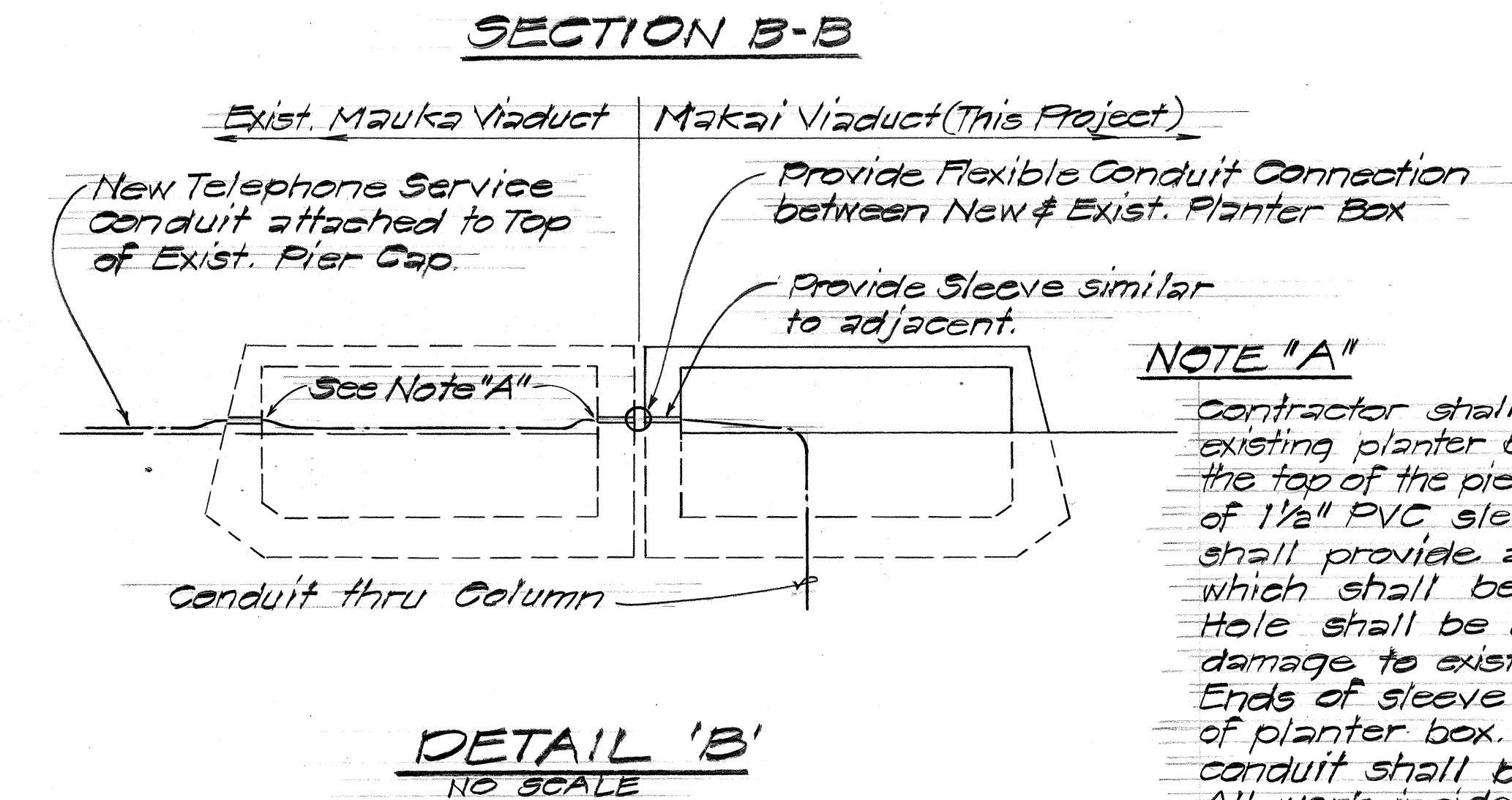
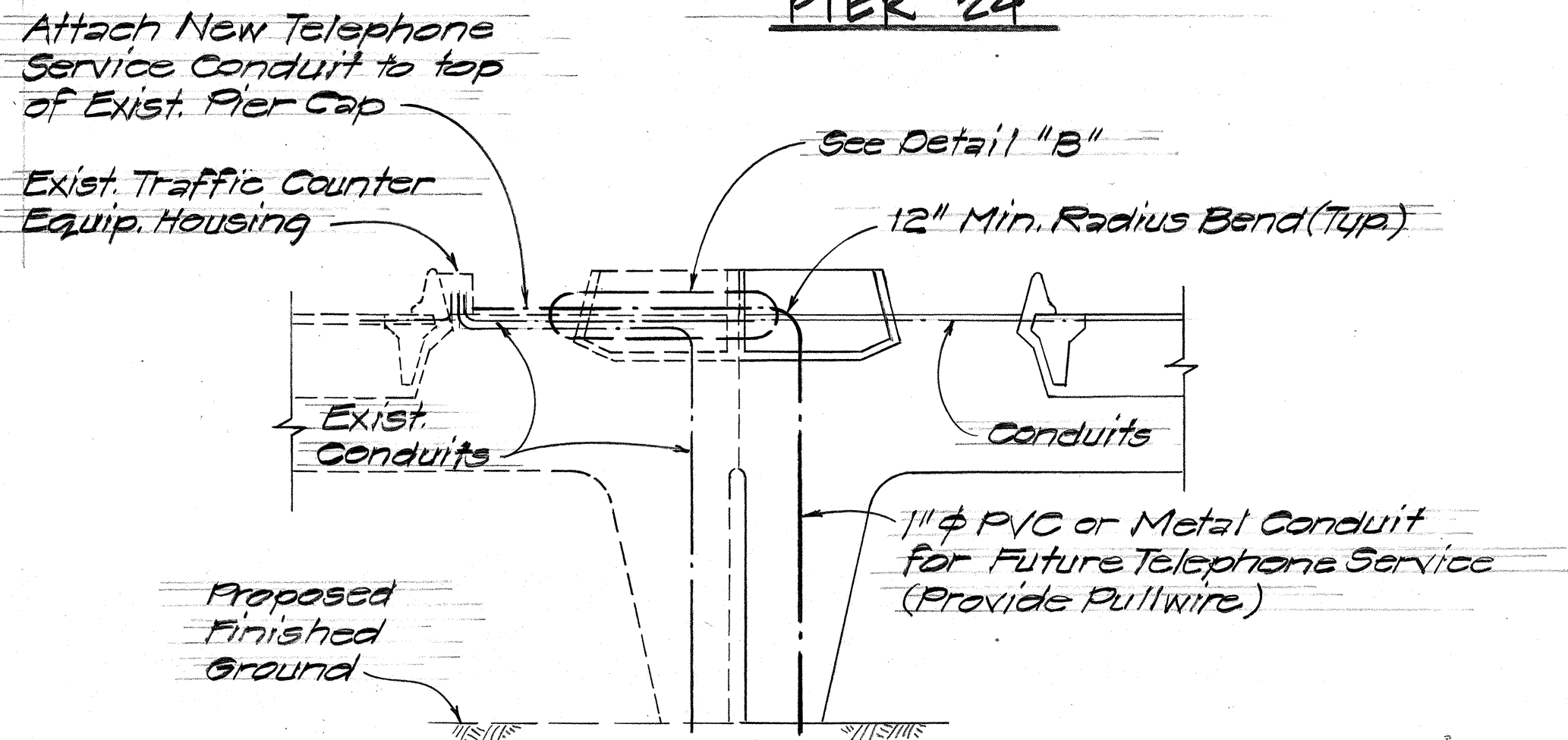
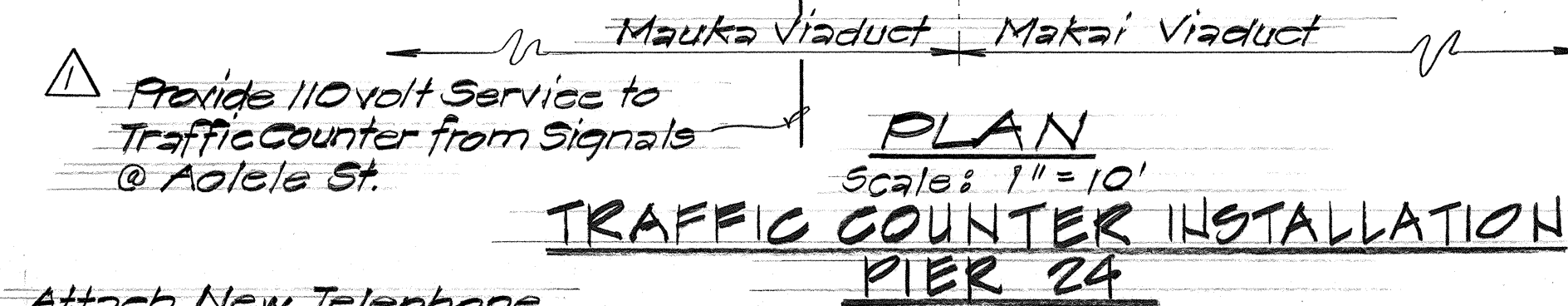
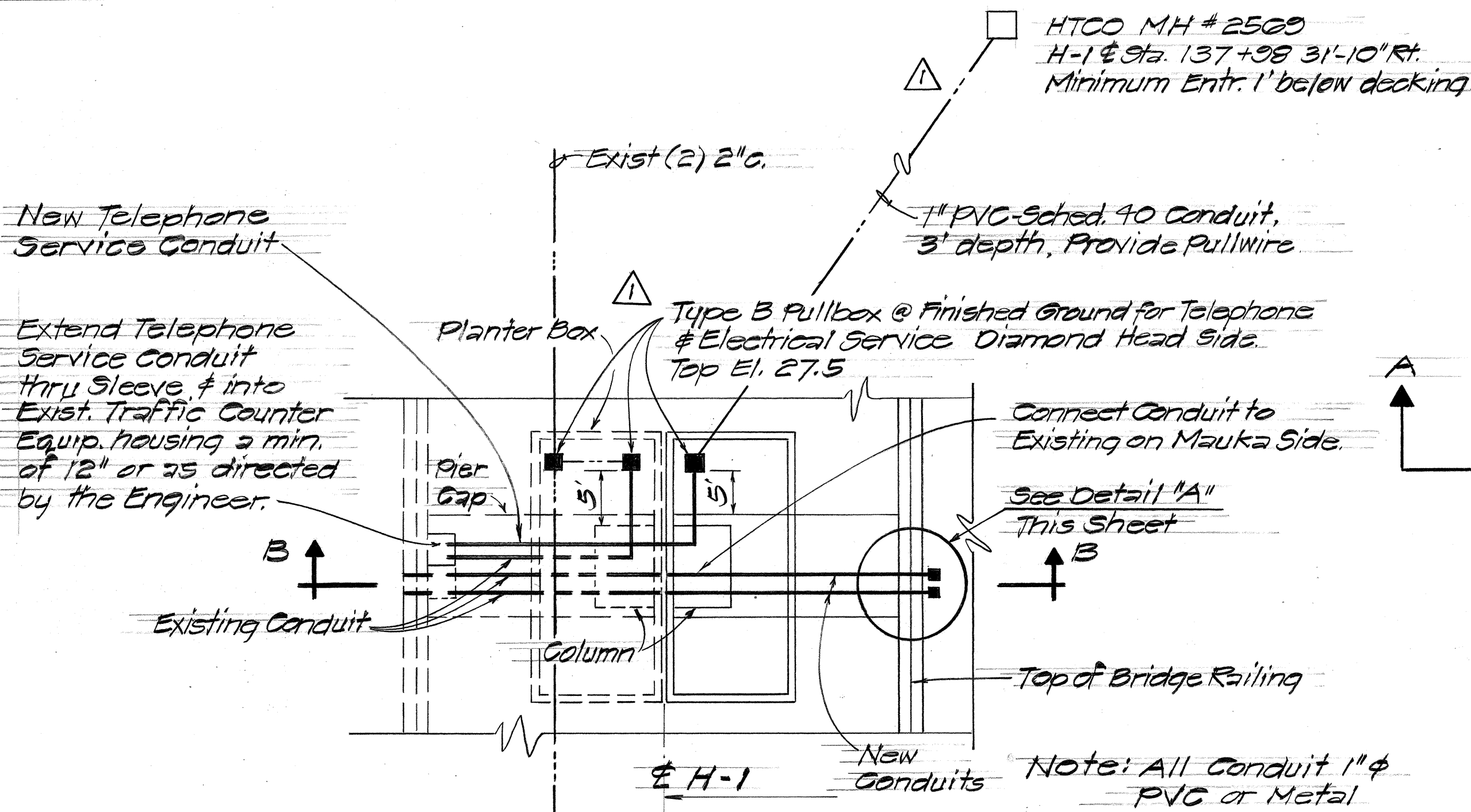


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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

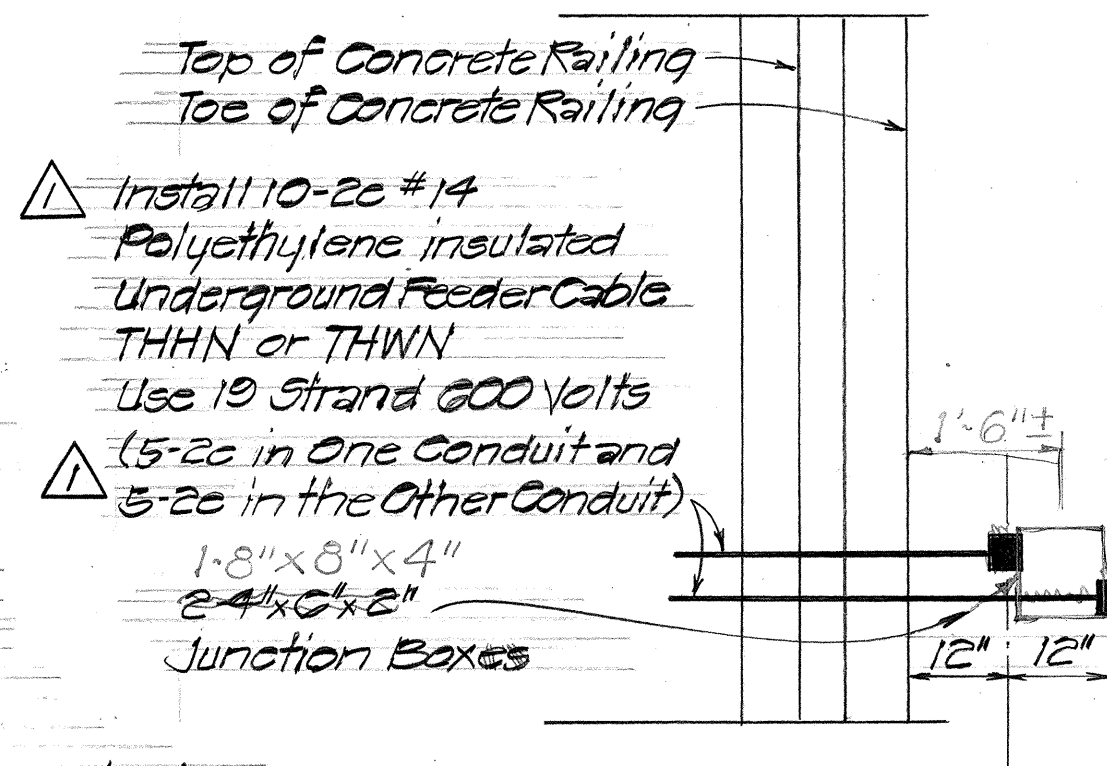
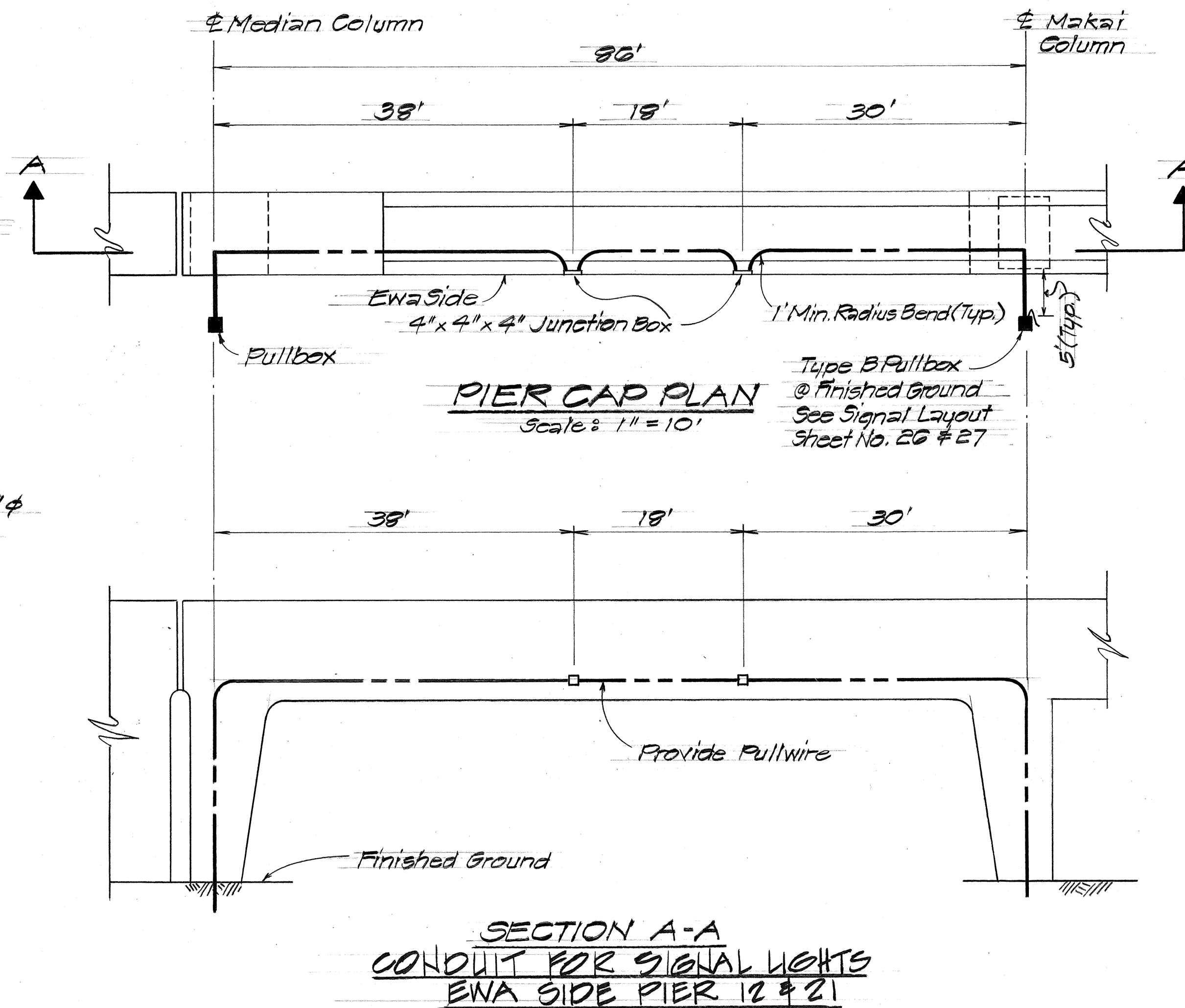
SIGN LIGHTING
LAYOUT AND DETAILS
AIRPORT INTERCHANGE
F.A.I. PROJ. NO. I-HI-1(156) 16
SCALE: AS SHOWN DATE: NOV. 21, 1978
SHEET No. 8 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-1(150)-10	1979	84	136



NOTE "A"

Contractor shall drill through walls of existing planter box a min. of 4" above the top of the pier cap for installation of 1 1/2" PVC sleeves. Size of hole shall provide a snug fit for sleeve which shall be epoxied in place. Hole shall be drilled to cause no damage to exist. planter box reinforcing steel. Ends of sleeve shall be cut flush with sides of planter box. Space between sleeve and conduit shall be sealed and made water tight. All work incidental to other structure items.



- Notes:**
- Cost of providing material and installation is incidental to other structure items.
 - Contractor shall notify L.T. - PH two days prior to deck pour @ Pier 24. L.T. - PH will install loop detectors for traffic counter.
 - At traffic counter installation, pair and code wires from junction boxes to counter housing on Mauka side of Planter Boxes.

NO.	DATE	REVISION
1	12-13-79	Added 2-Pullboxes, 1" Conduit to HTOO MH, Elec. Service from Aieale St. Changed Jet. Box loc.

APPROVED: *B. Updegraff* 1-25-80
HAWAIIAN TELEPHONE CO. DATE

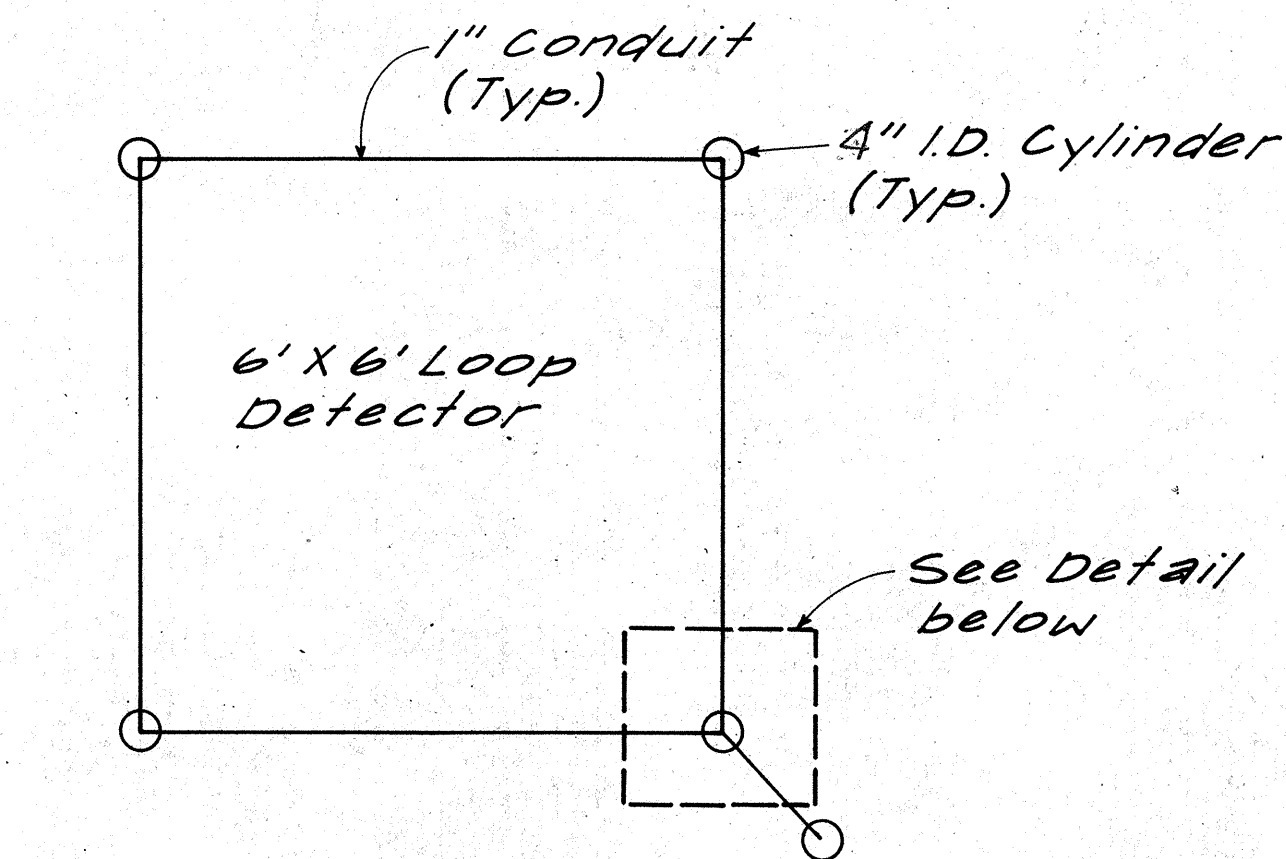


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

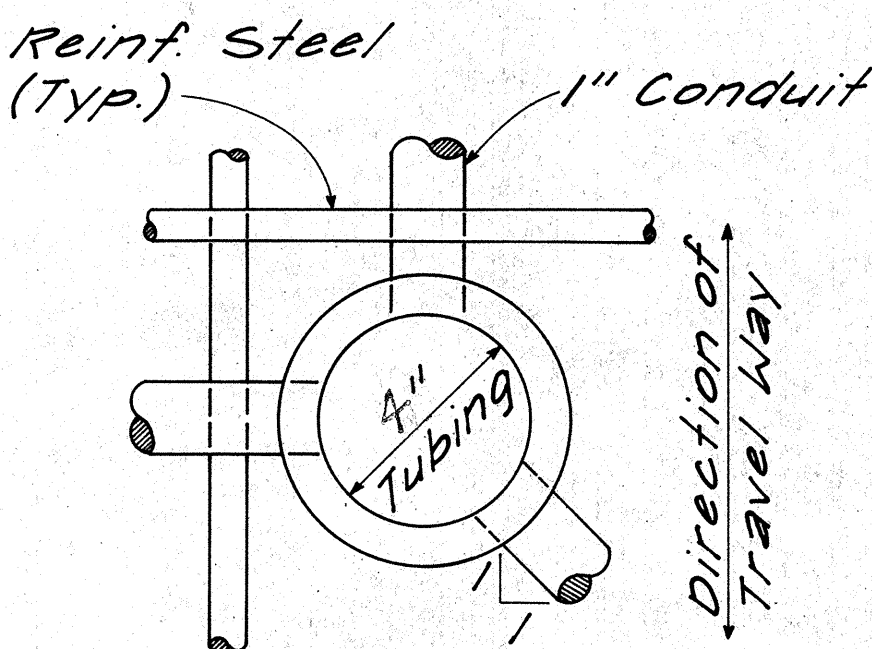
SIGNAL CONDUIT IN PIER CAP & TRAFFIC COUNTER INSTALLATION DETAILS

AIRPORT INTERCHANGE
P.A.C. PROJ. NO. I-HI-1(150)-10
SCALE: AS SHOWN DATE: AUG. 9, 1977
SHEET No. 9 OF 9 SHEETS

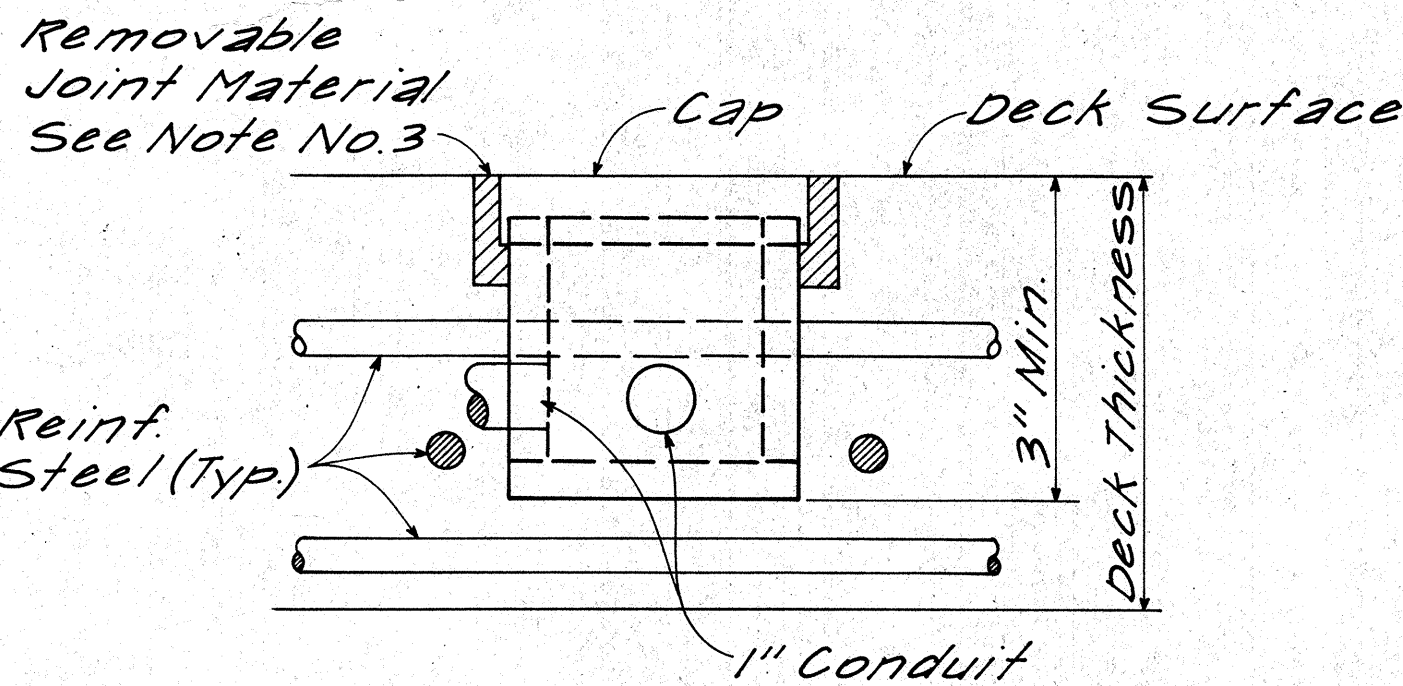
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FH-1(150)16	1979	84A	



DECK LOOP DETECTOR



PLAN

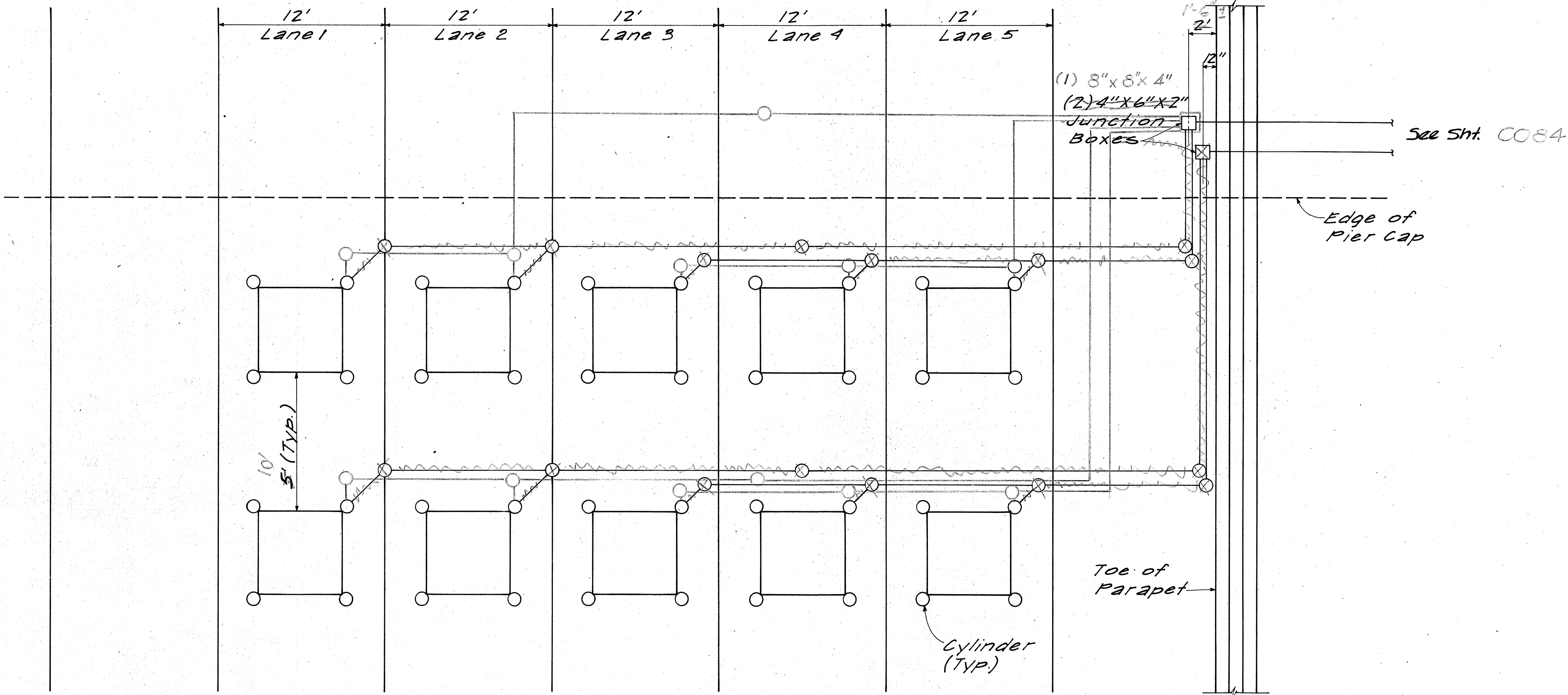


ELEVATION

DETAIL OF FOUR INCH CYLINDER.
NO SCALE

GENERAL NOTES:

1. Four inch (I.D.) cylinders and one inch (O.D.) tubings shall be made of PVC or Plexyglass plastics or combination.
2. All connection joints between cylinder and tubing shall be sealed with silicone compound.
3. Provisions should be made for removing cylinder cap after concrete pour on deck.
4. All cylinders shall be filled with sand and topped with a layer of epoxy.
5. Detector Loops shall consist of four turns of 1/6, 14 AWG, RHW-USE-XLP Wire in Lanes 1 and 2 and 3 turns of Wire in Lanes 3, 4 and 5.
6. Lead-in Wires run from the junction boxes should extend at least five feet beyond flexible conduits into the housing.
7. Lead-in Wires from same loop shall be twisted two turns per foot and labeled and identified by lane number and by first and last turn.



DETECTOR LOOP LAYOUT
NO SCALE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

TRAFFIC COUNTER LOOP
INSTALLATION

AIRPORT INTERCHANGE
FA 1 PROJ. NO I-HI-1(150)16

SCALE: NONE DATE: DEC. 1979

SHEET NO. OF SHEETS