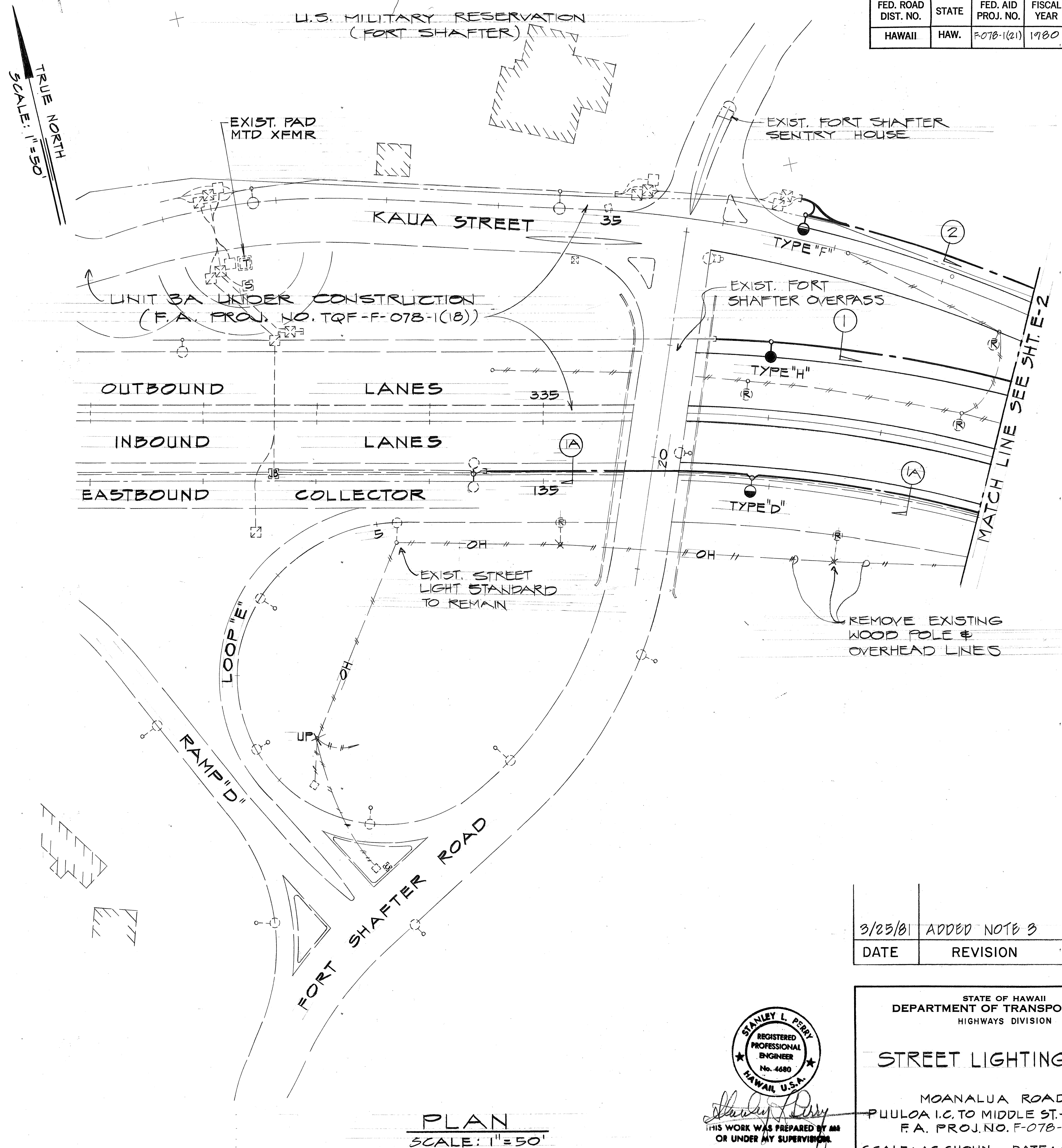


ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
—○—	EXTG. ST. LTG. STD.
—(R)—	EXTG. ST. LTG. STD. TO BE REMOVED UNLESS NOTED OTHERWISE
○UP	EXTG. UTILITY WOOD POLE
—●—	400 WATT HIGH PRESSURE SODIUM LUMINAIRE IES TYPE M-S-IV (50,000 LUMENS)
—●—	250 WATT HIGH PRESSURE SODIUM LUMINAIRE IES TYPE M-S-II (27,500 LUMENS)
—●—	150 WATT HIGH PRESSURE SODIUM LUMINAIRE IES TYPE M-S-II (16,000 LUMENS)
----	UNDERGROUND DUCT SYSTEM
----	EXTG. UNDERGROUND ST. LTG. SYSTEM UNLESS NOTED OTHERWISE
---#---	EXTG. ST. LTG. SYSTEM TO BE REMOVED OR ABANDONED AS REQ'D. SEE NOTE 1
—OH—	EXTG. OVERHEAD LINES, TYPE AS INDICATED
—E	STUB-OUT, CAP & MARK 5' FROM CURB OR PULLBOX UNLESS NOTE OTHERWISE
□	ST. LTG. PULLBOX - 19" x 28" PRECAST CONC. D.O.T. STD. TYPE "B"
□	EXTG. PULLBOX, TYPE AS INDICATED
□	SPRINKLER CONTROLLER
□	SPRINKLER SYSTEM PULLBOX - 19" x 28" PRECAST CONC. D.O.T. STD. TYPE "B"
□JB	JUNCTION BOX
(A) E3	DETAIL INDICATOR TOP HALF DET. ASSIGNMENT BOT. HALF SHT. ASSIGNMENT
(2)	DUCT SECTION INDICATOR, NUMBER IS DET. ASSIGNMENT

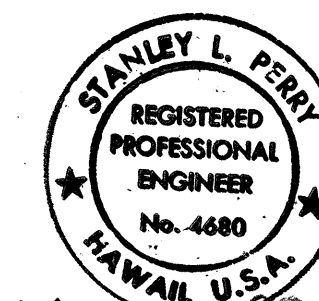
NOTE

1. REMOVE OR ABANDON EXTG. ST. LTG. DUCTS, CABLES AND OTHER EQUIPMENT AS REQ'D. STOCKPILE AS DIRECTED BY THE ENGINEER.
2. EXISTING SERIES LIGHTING TO BE MAINTAINED UNTIL NEW LIGHTING SYSTEM IS INSTALLED AND OPERATING.
3. THE EXISTING LIGHTS TO REMAIN SHALL BE ENERGIZED BY THE NEW LIGHTING SYSTEM AND PAID FOR AT THE CONTRACT L.S. FOR ITEM NO. 622.1701.



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(21)	1980	152	234

3/25/81	ADDED NOTE 3
DATE	REVISION

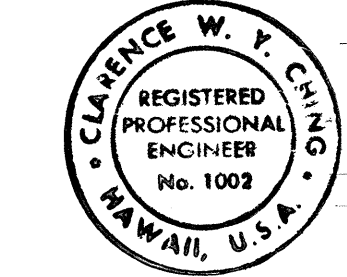
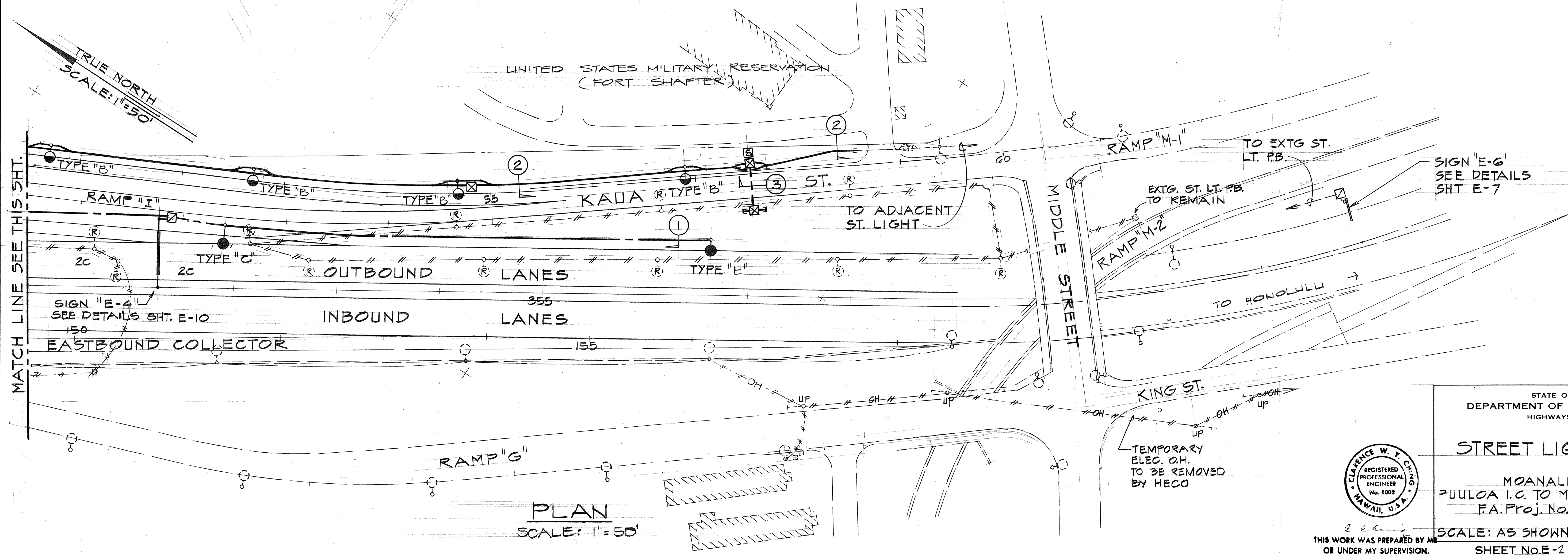
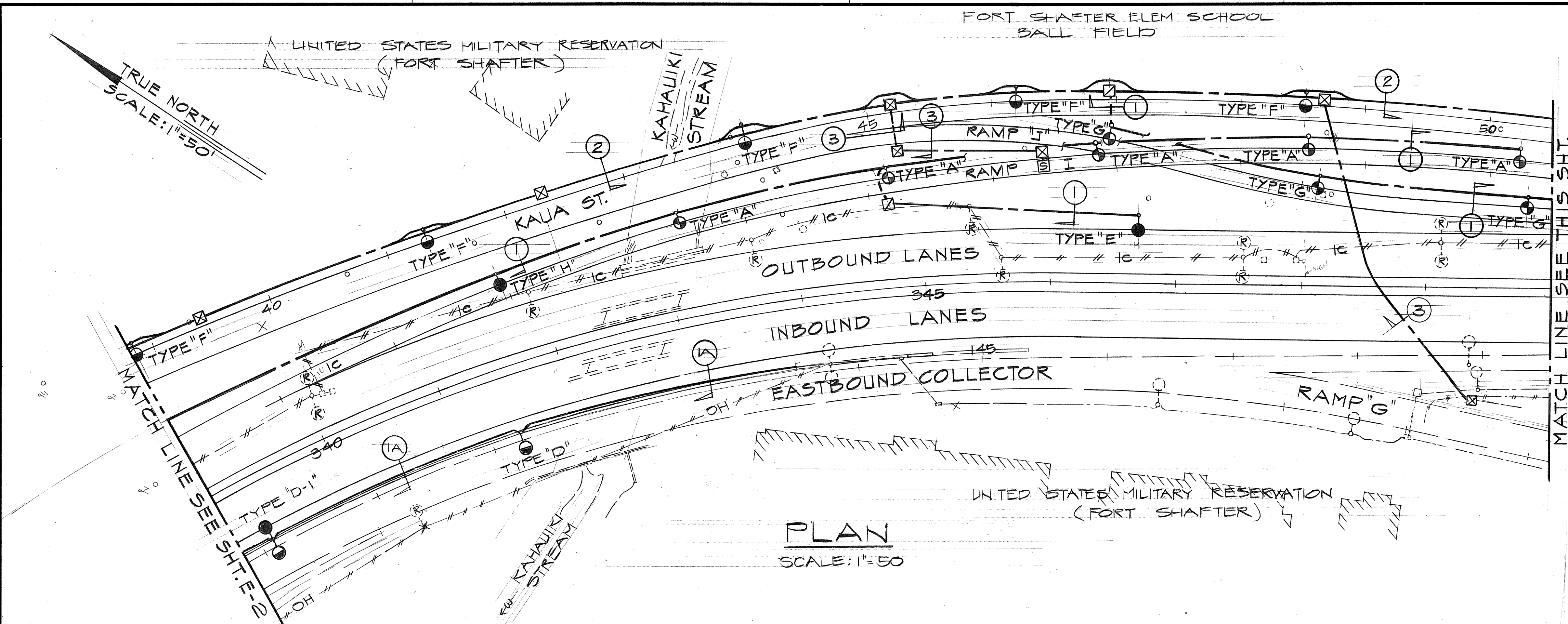


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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
STREET LIGHTING PLAN	
MOANALUA ROAD PUULO A I.C. TO MIDDLE ST. - UNIT 3B F.A. PROJ. NO. F-078-1(21)	
SCALE: AS SHOWN	DATE: AUG. 1, 1979
SHEET NO. E-1 OF 2 SHEETS	

PLAN
SCALE: 1" = 50'

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(21)	1980	153	234



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

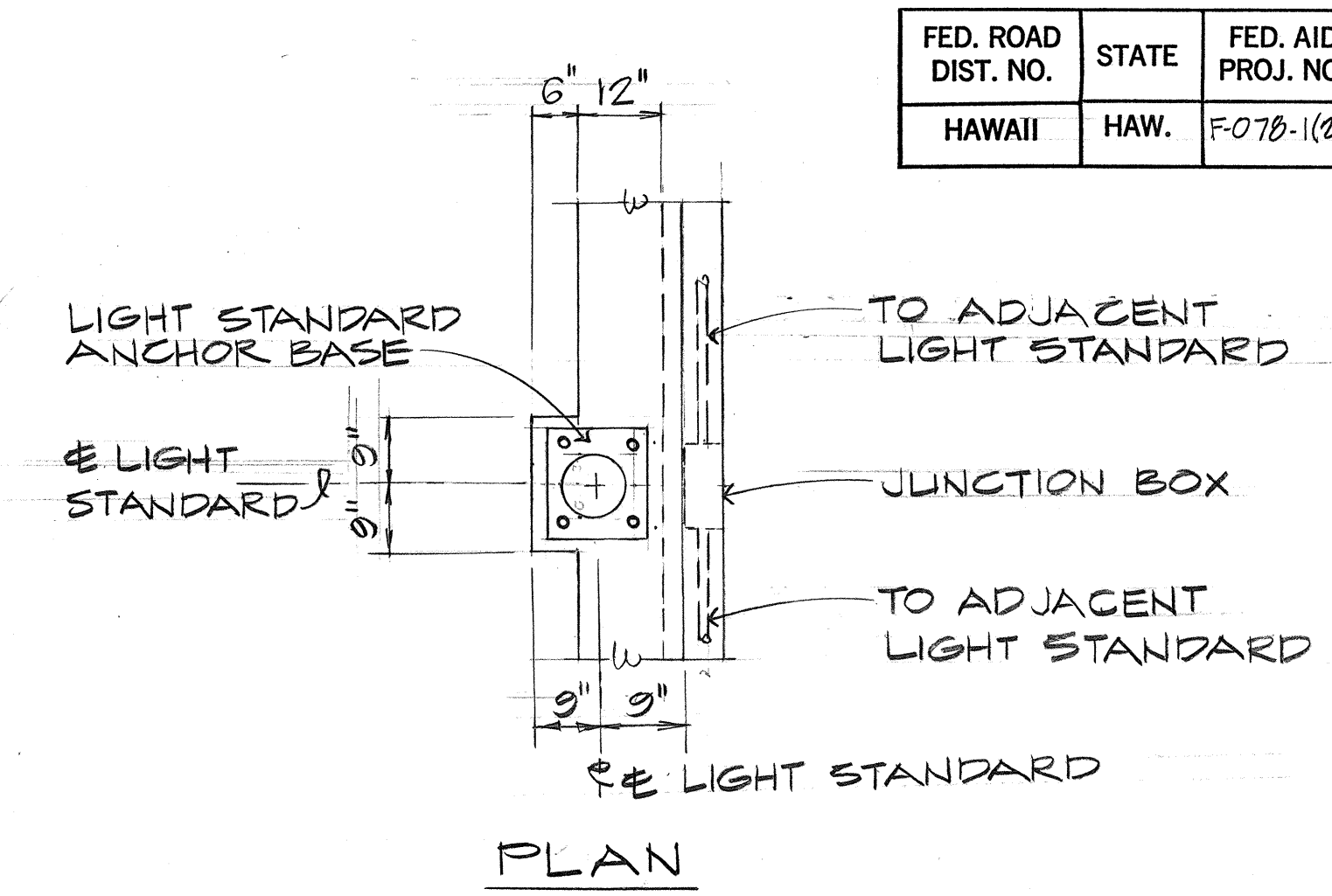
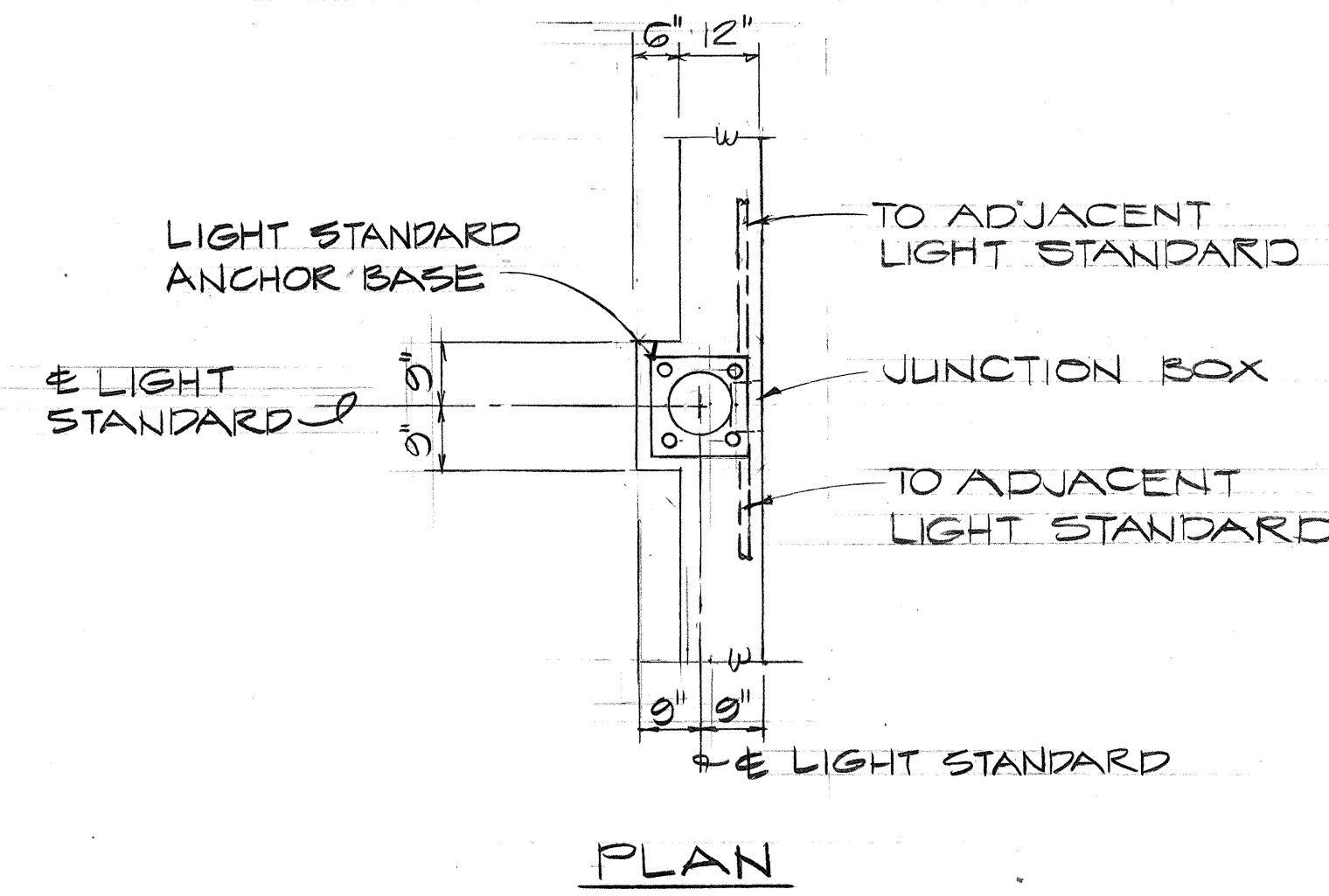
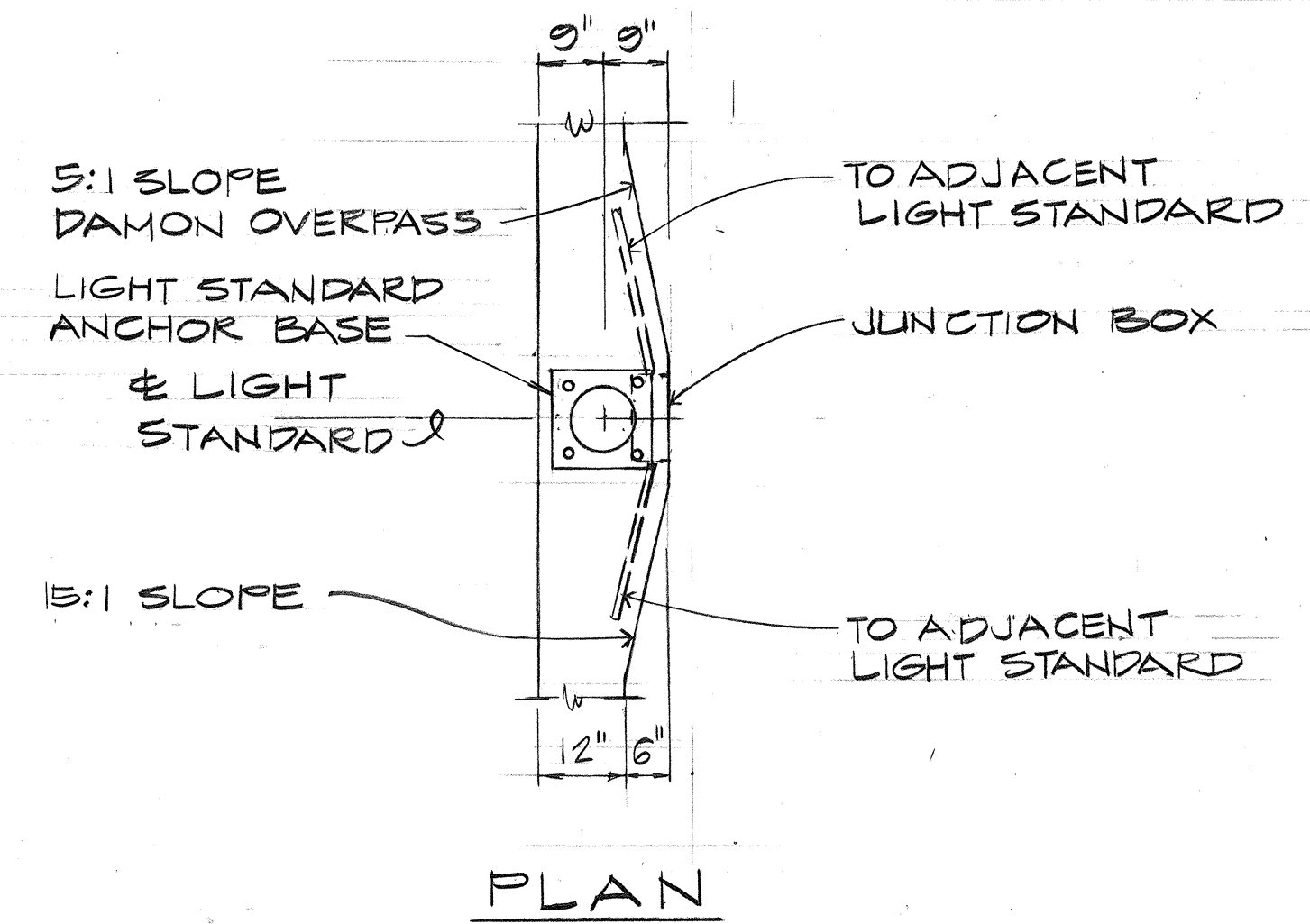
STREET LIGHTING PLAN

MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST.-UNIT 38
F.A.Proj. No. F-078-1(21)

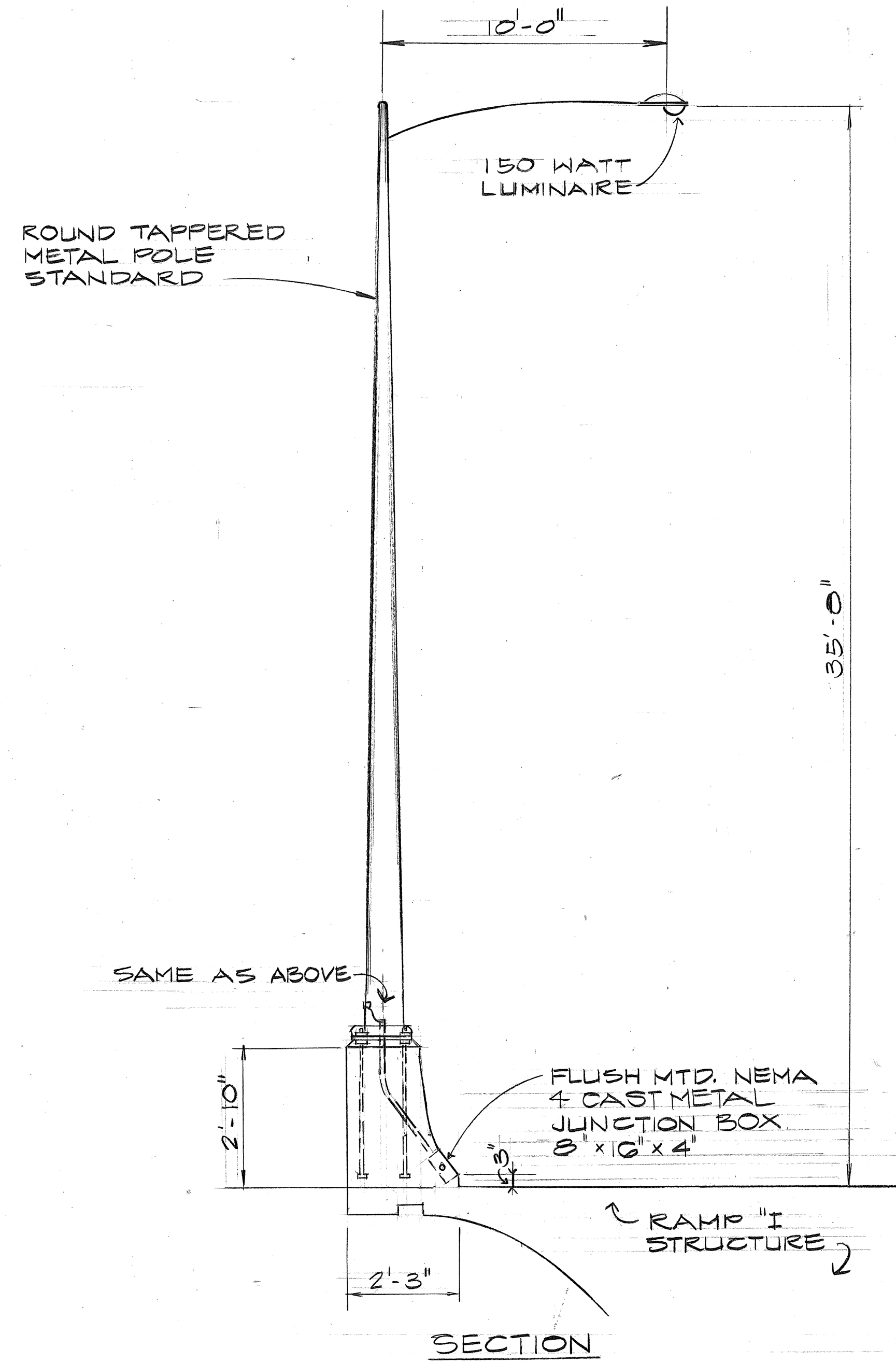
SCALE: AS SHOWN DATE: AUG. 1, 1970

SHEET NO. E-2 OF 8 SHEETS

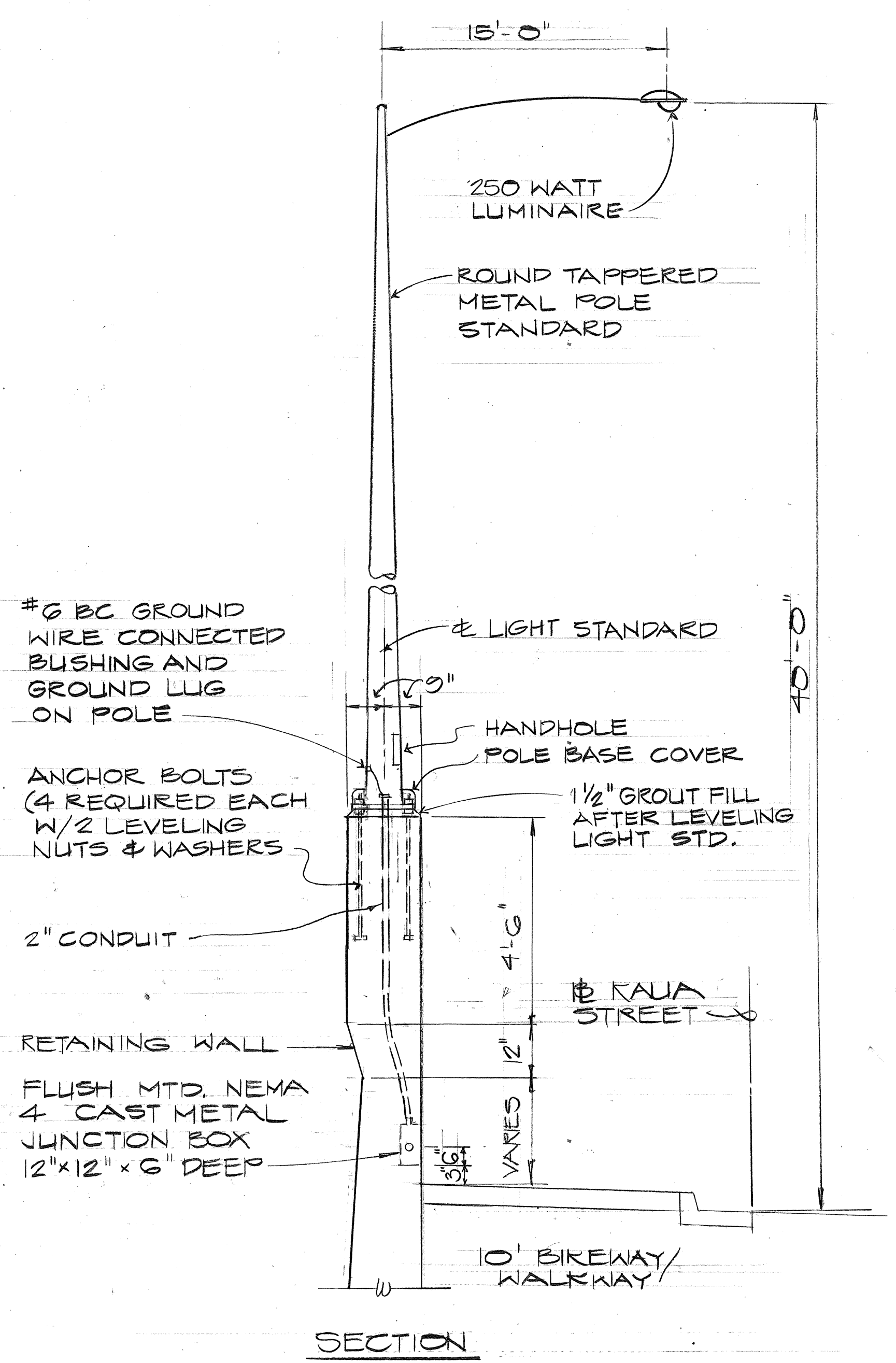
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(21)	1980	154	234



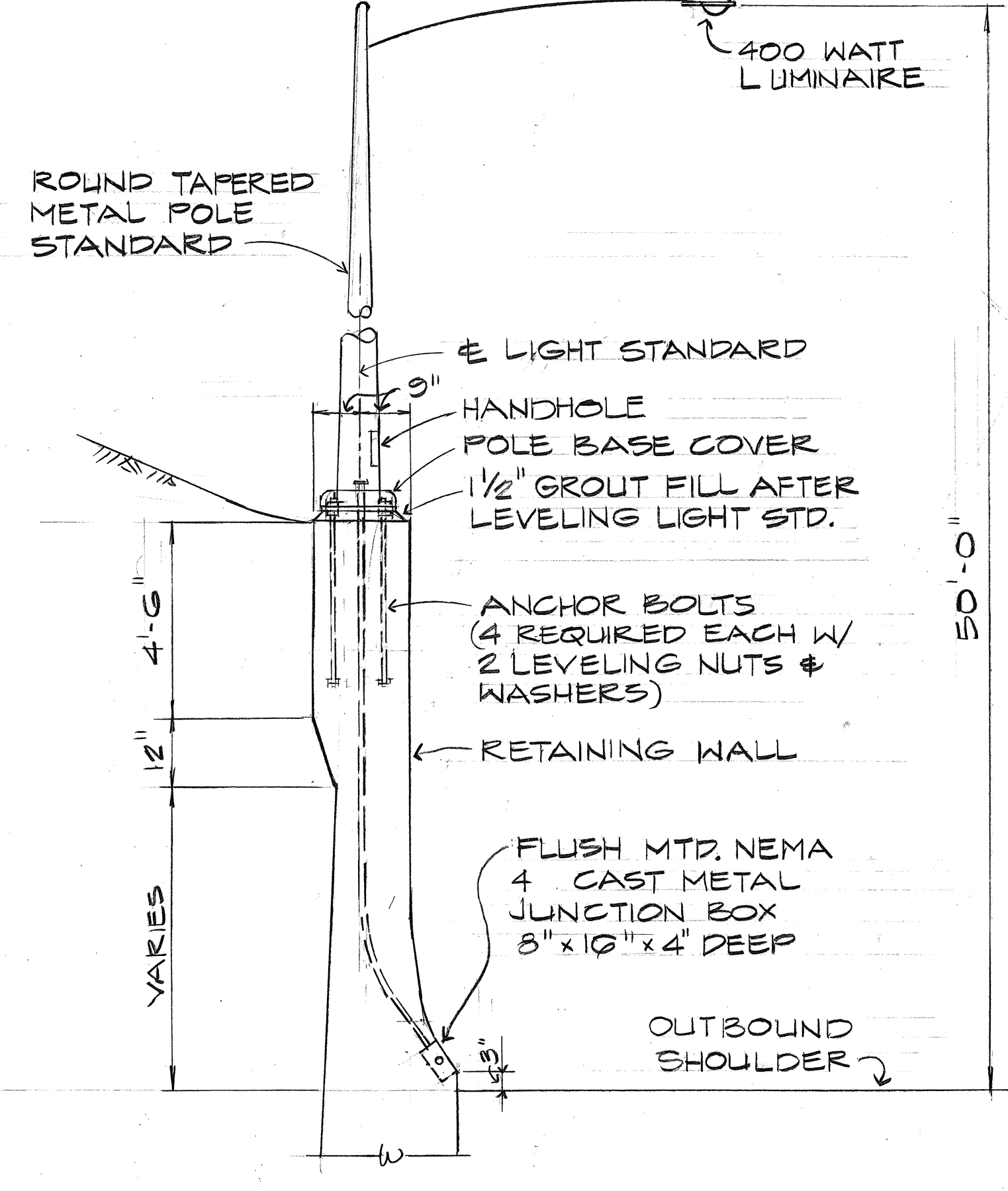
NOTE:
1. LIGHT STANDARD APPROX. FREEWAY & STA. 351+95 ON SIMILAR MOUNTING DETAIL, W/20:1 SLOPE SEE PLAN, TYPE 'A' LIGHT STD. THIS SHT.



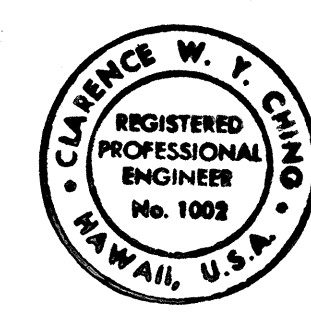
MOUNTING DET. FOR TYPE "A" STD. (A) E-3
NO SCALE



MOUNTING DET. FOR TYPE "B" STD. (B) E-3
NO SCALE



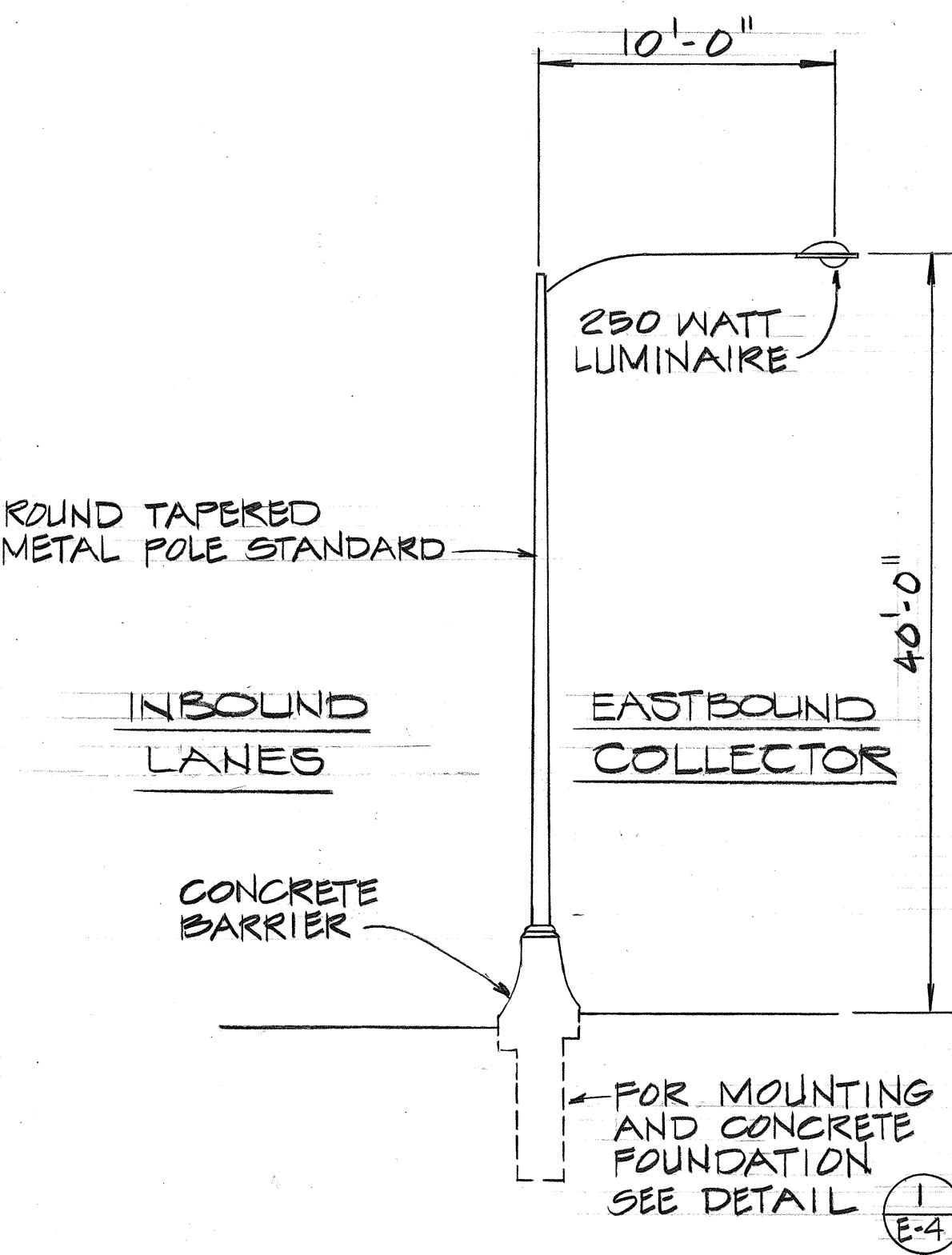
MOUNTING DET. FOR TYPE "C" STD. (C) E-3
NO SCALE



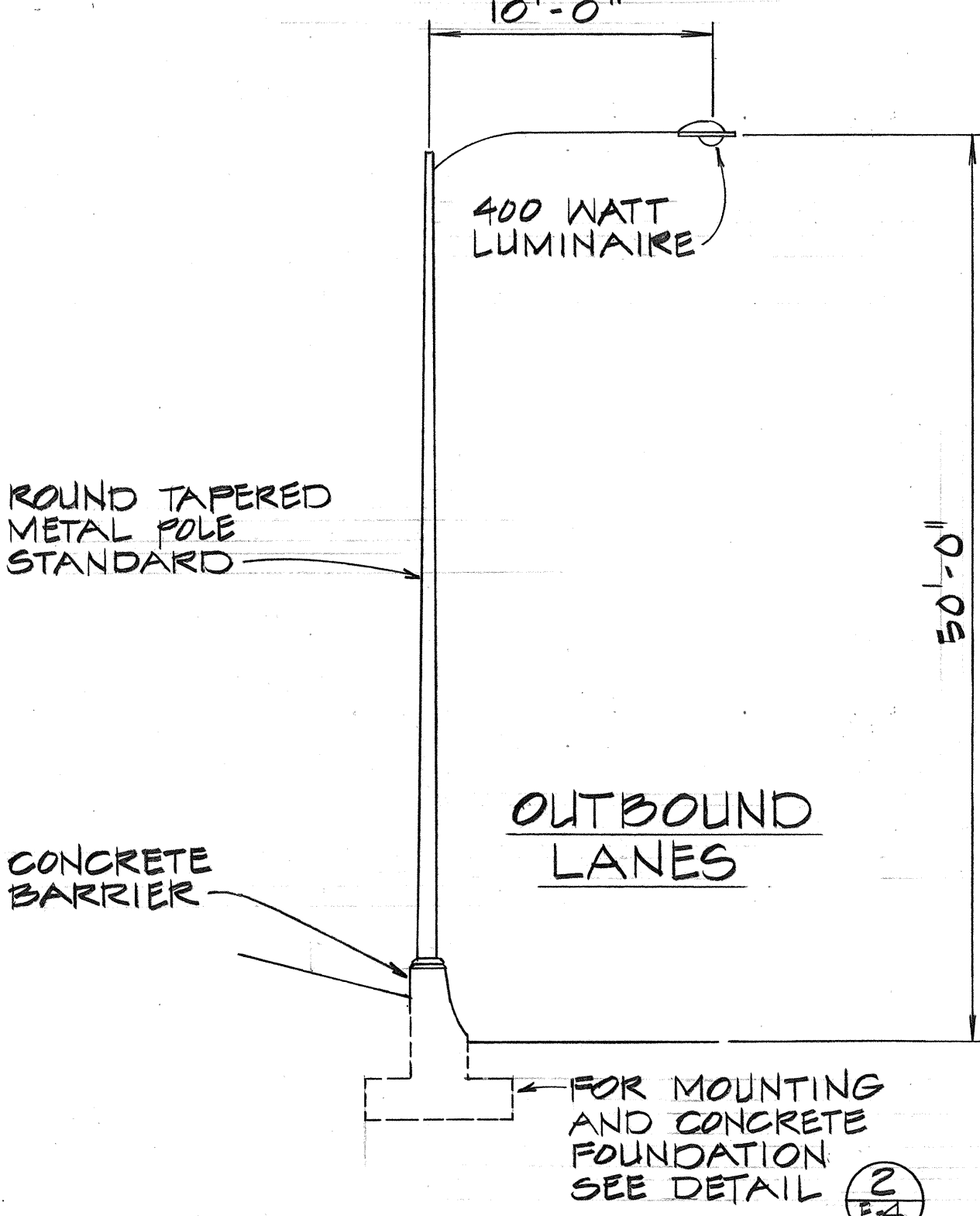
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**STREET LIGHTING
STANDARD DETAILS**
MOANALUA ROAD
PULLOA I.C. TO MIDDLE ST. - UNIT 3B
F.A. PROJ. NO. F-078-1(21)
SCALE: AS SHOWN DATE: AUG. 1, 1979
SHEET No. E-3 OF 8 SHEETS

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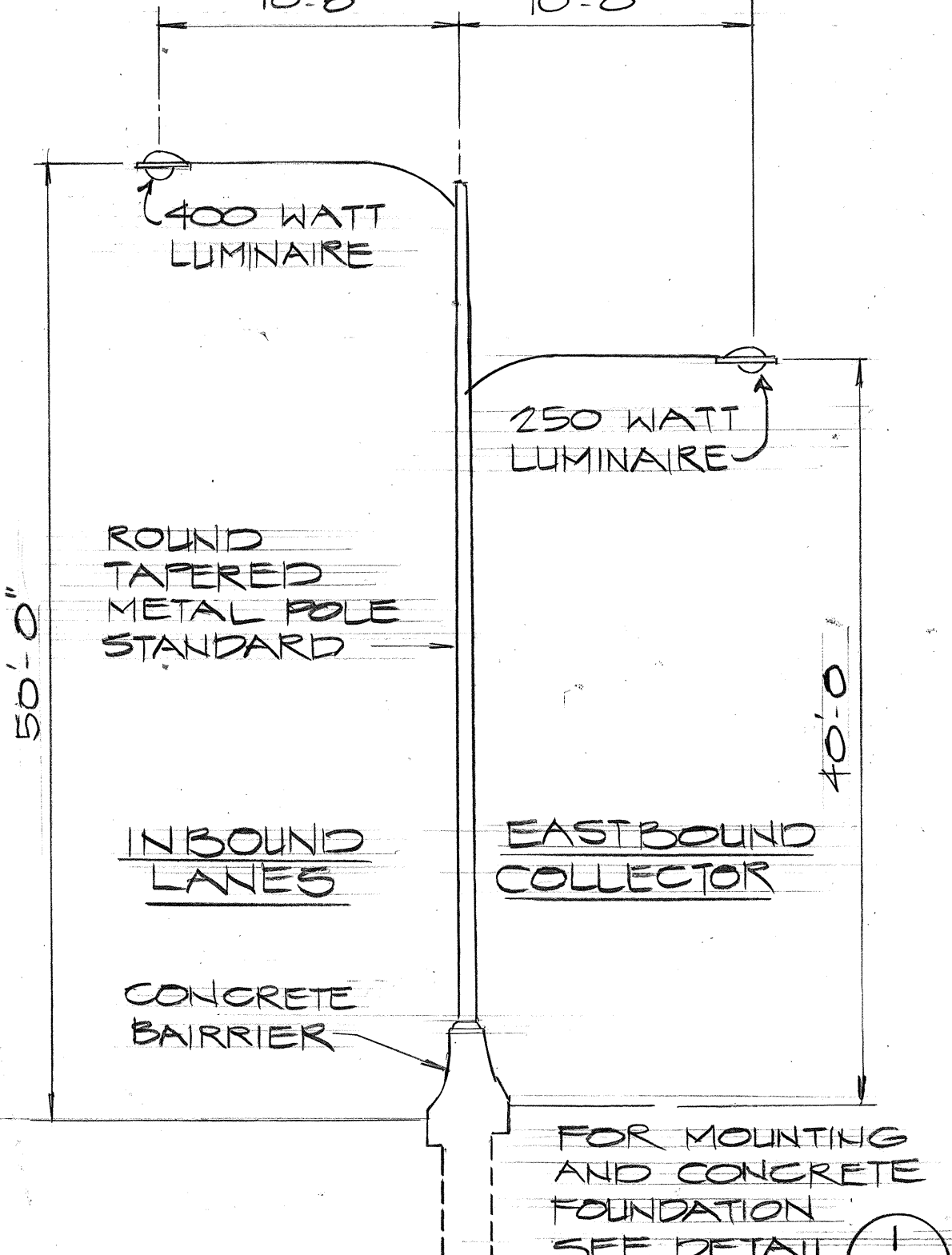
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(21)	1980	155	234



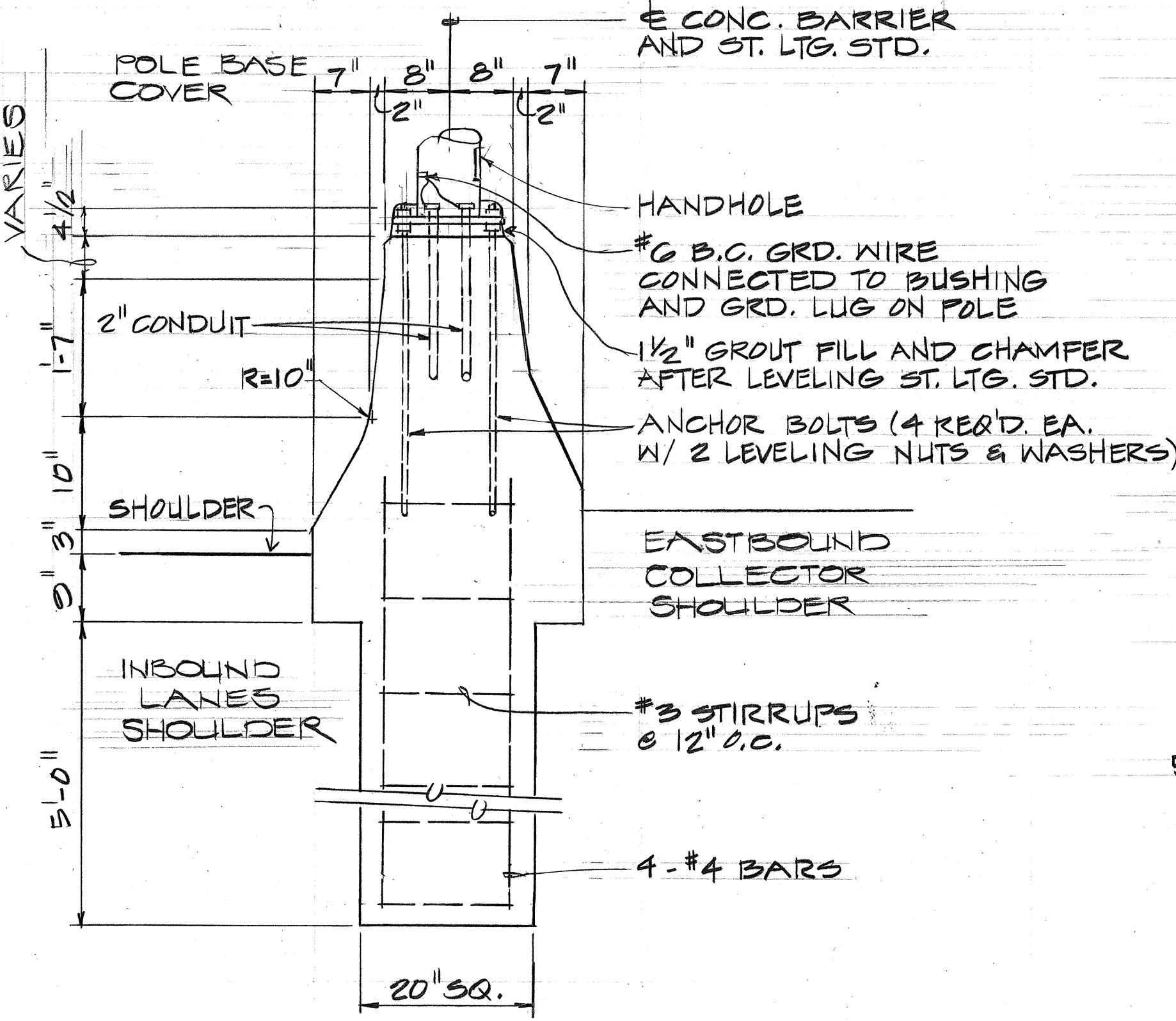
TYPE "D" ST. LTG. STD. DETAIL (A)
NO SCALE



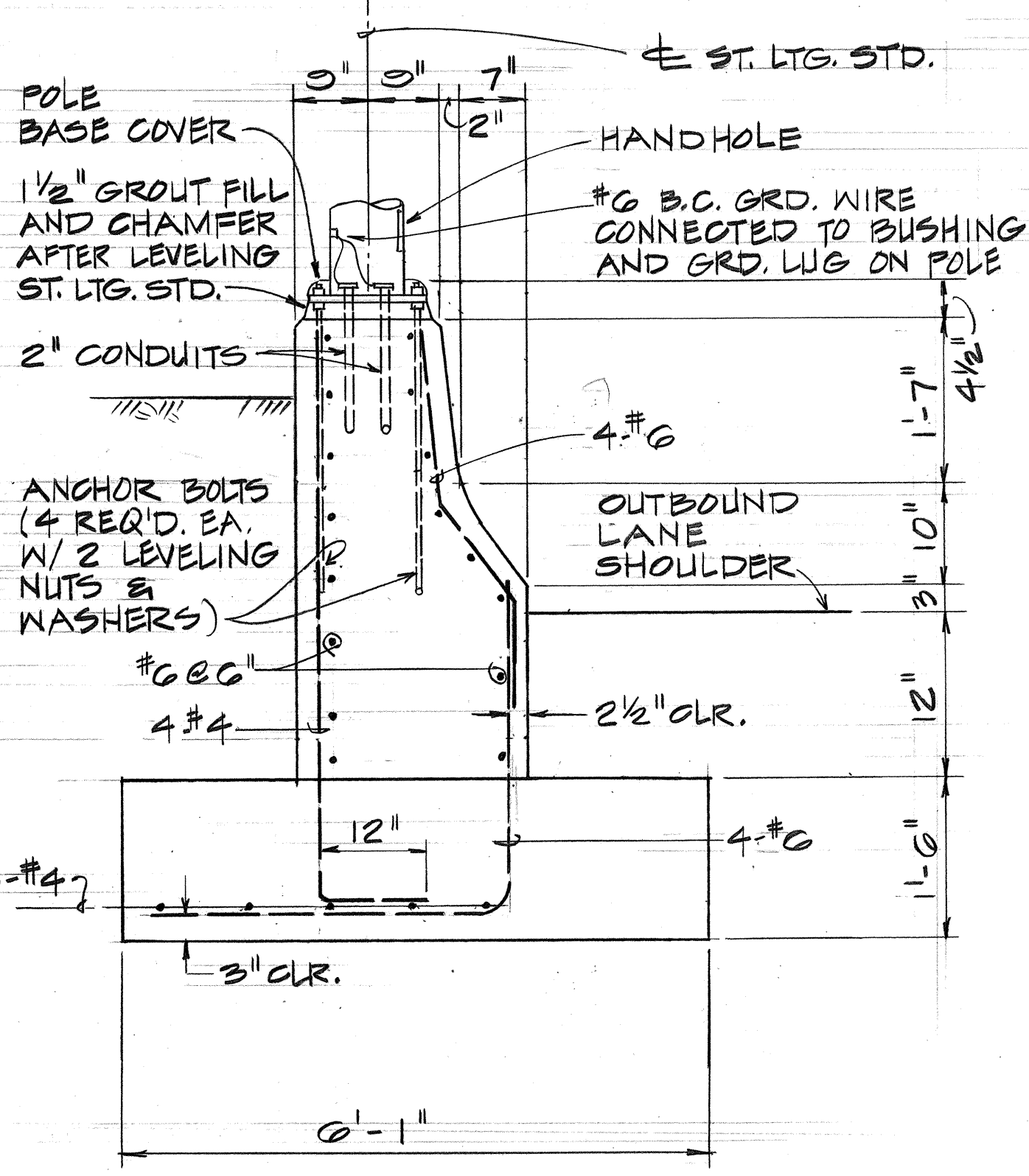
TYPE "E" ST. LTG. STD. DETAIL (B)
NO SCALE



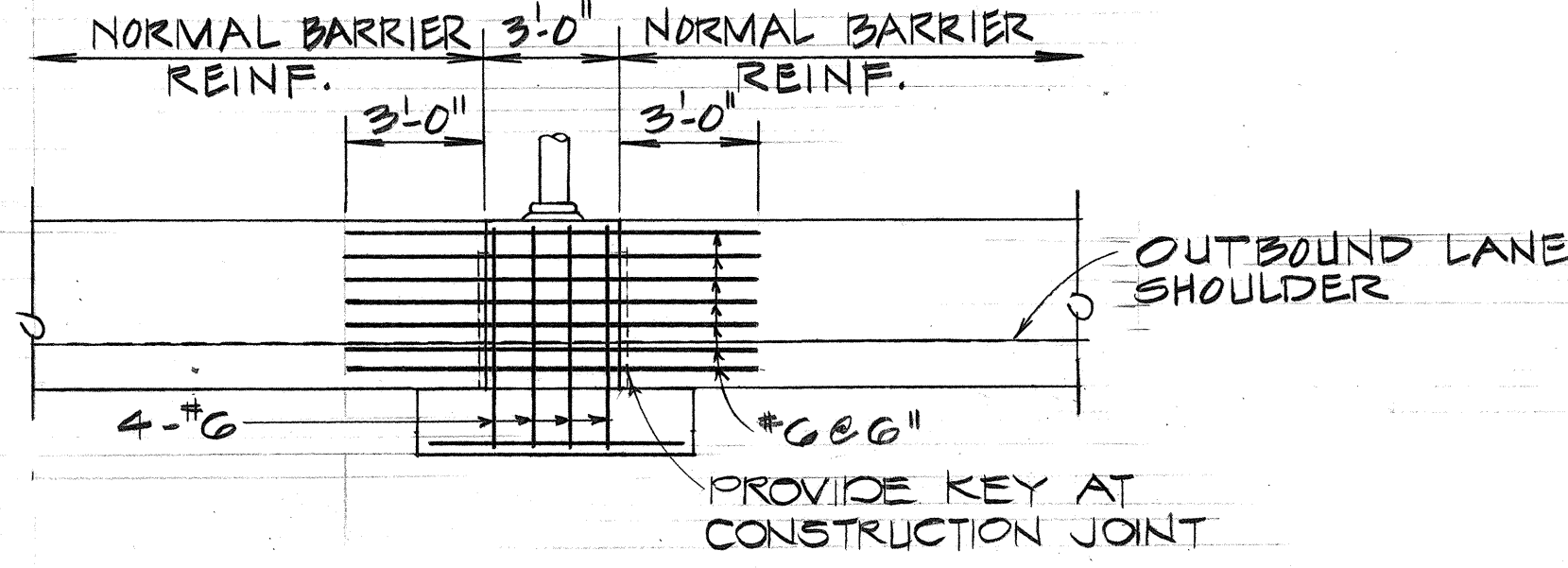
TYPE "D-1" ST. LTG. STD. DETAIL (C)
NO SCALE



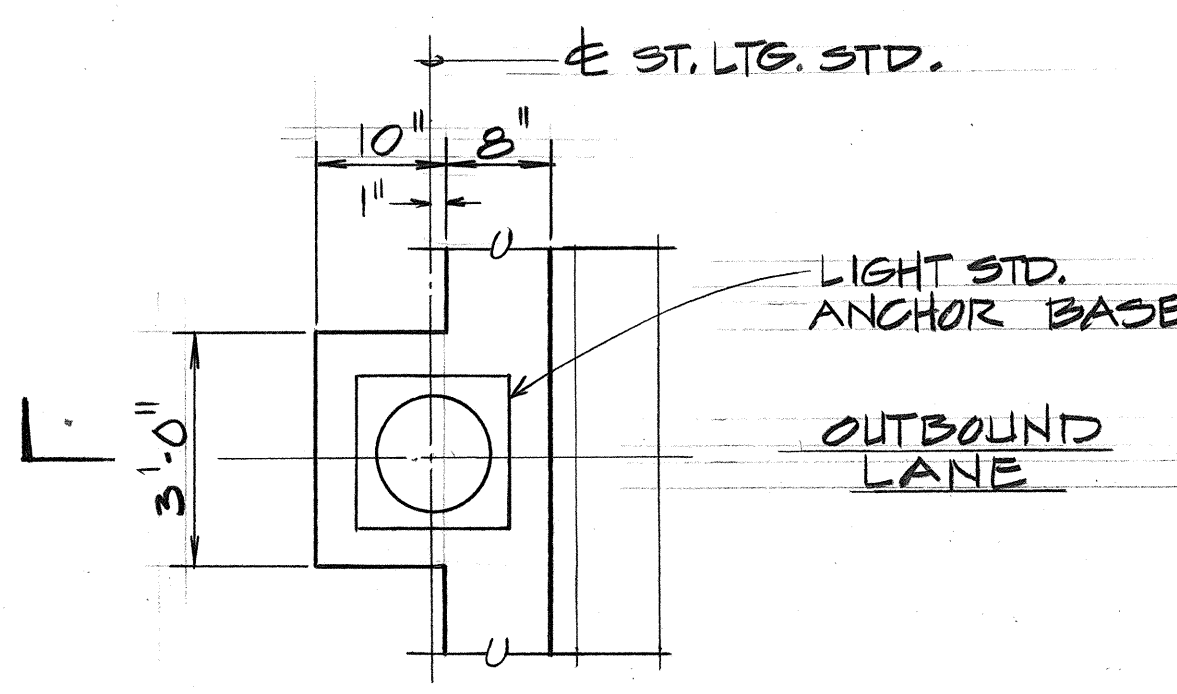
MOUNTING DETAIL
FOR TYPE "D" ST. LTG. STD. (1)
NO SCALE



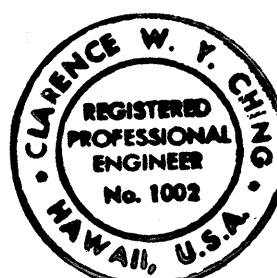
SECTION
MOUNTING DETAIL FOR TYPE "E" ST. LTG. STD. (2)
NO SCALE



ELEVATION



PLAN



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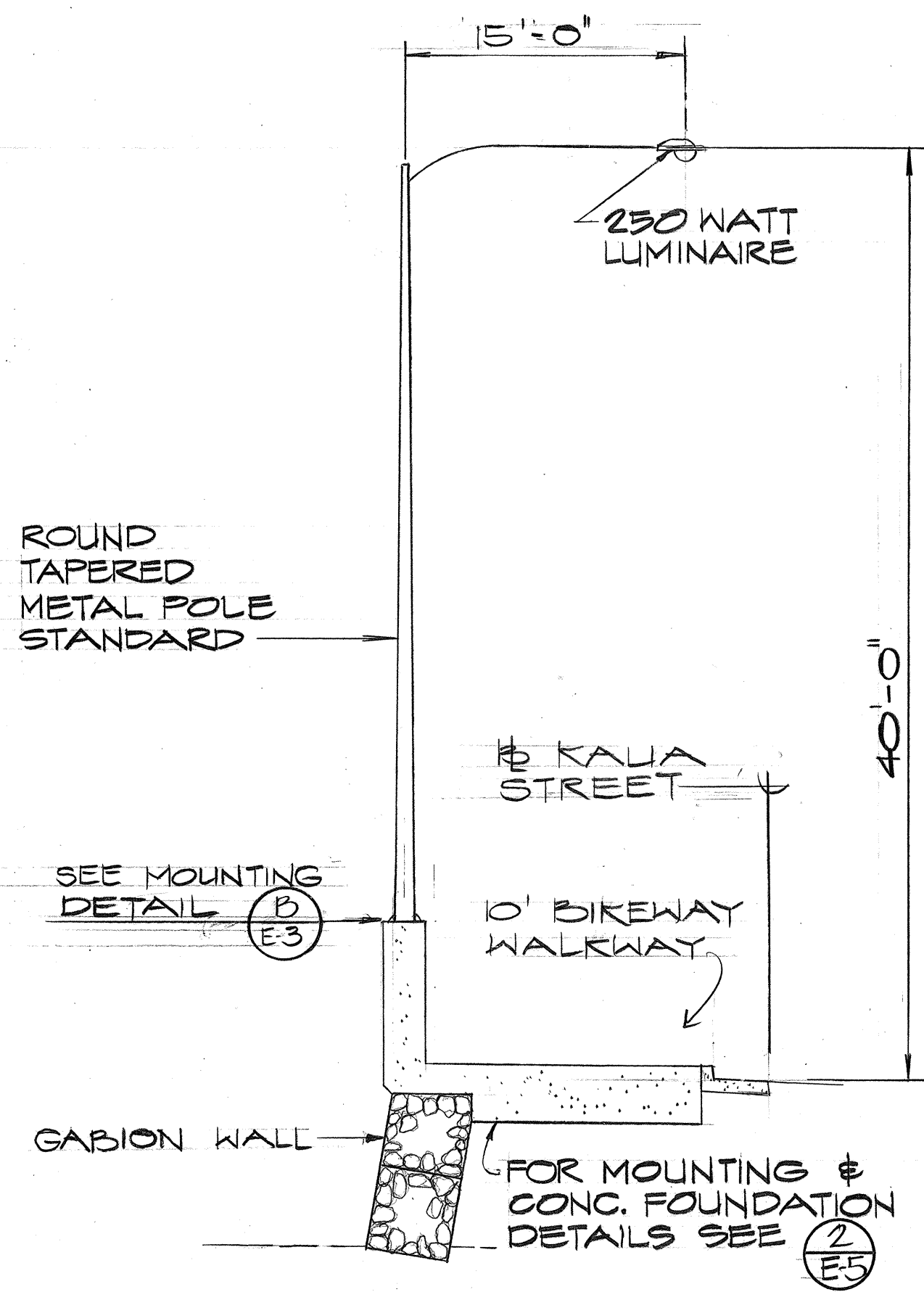
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STREET LIGHTING
STANDARD DETAILS

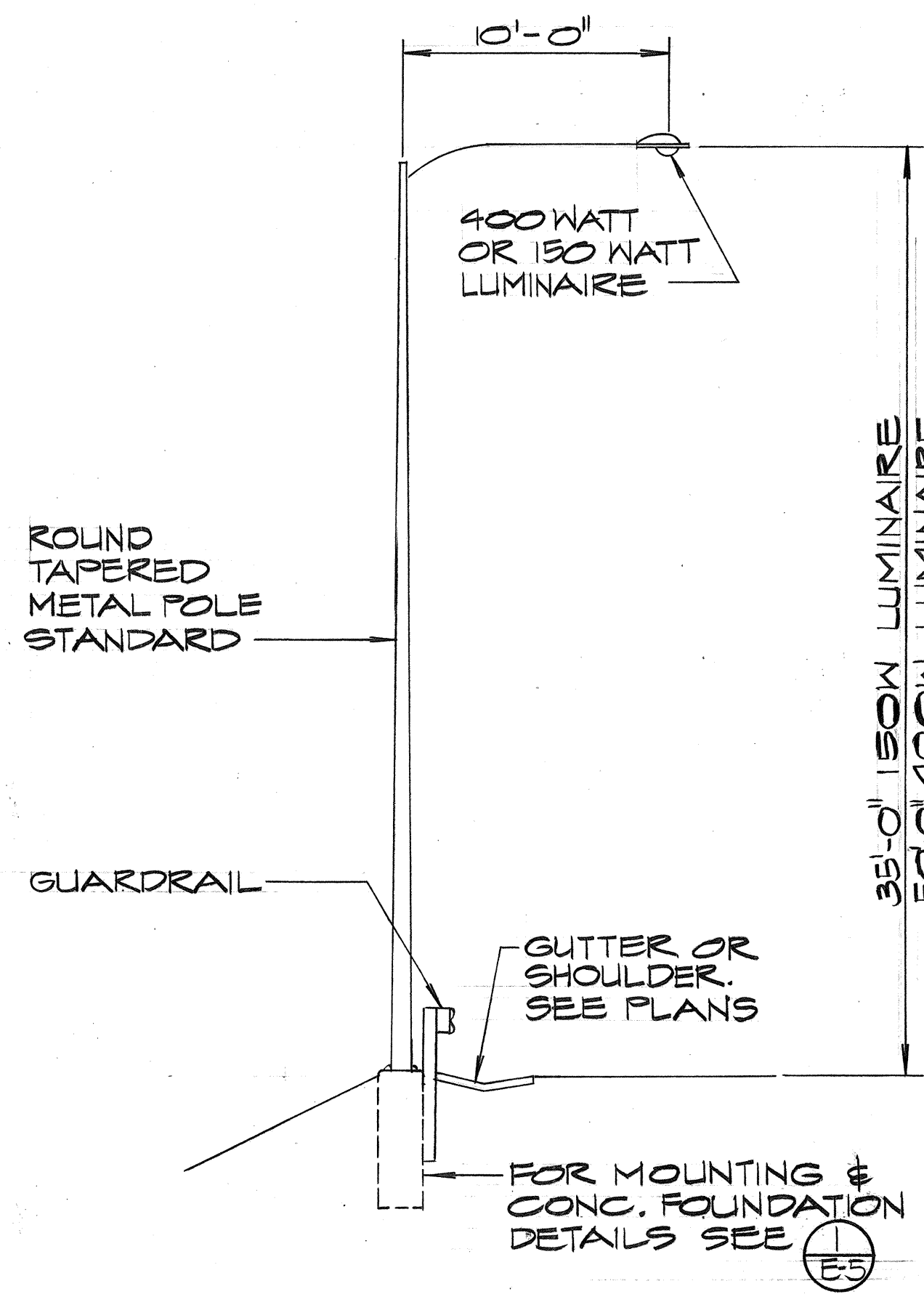
MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT 3B
F.A. PROJ. NO. F-078-1(21)

SCALE: AS SHOWN DATE: AUG. 1, 1979
SHEET No. E-4 OF 8 SHEETS

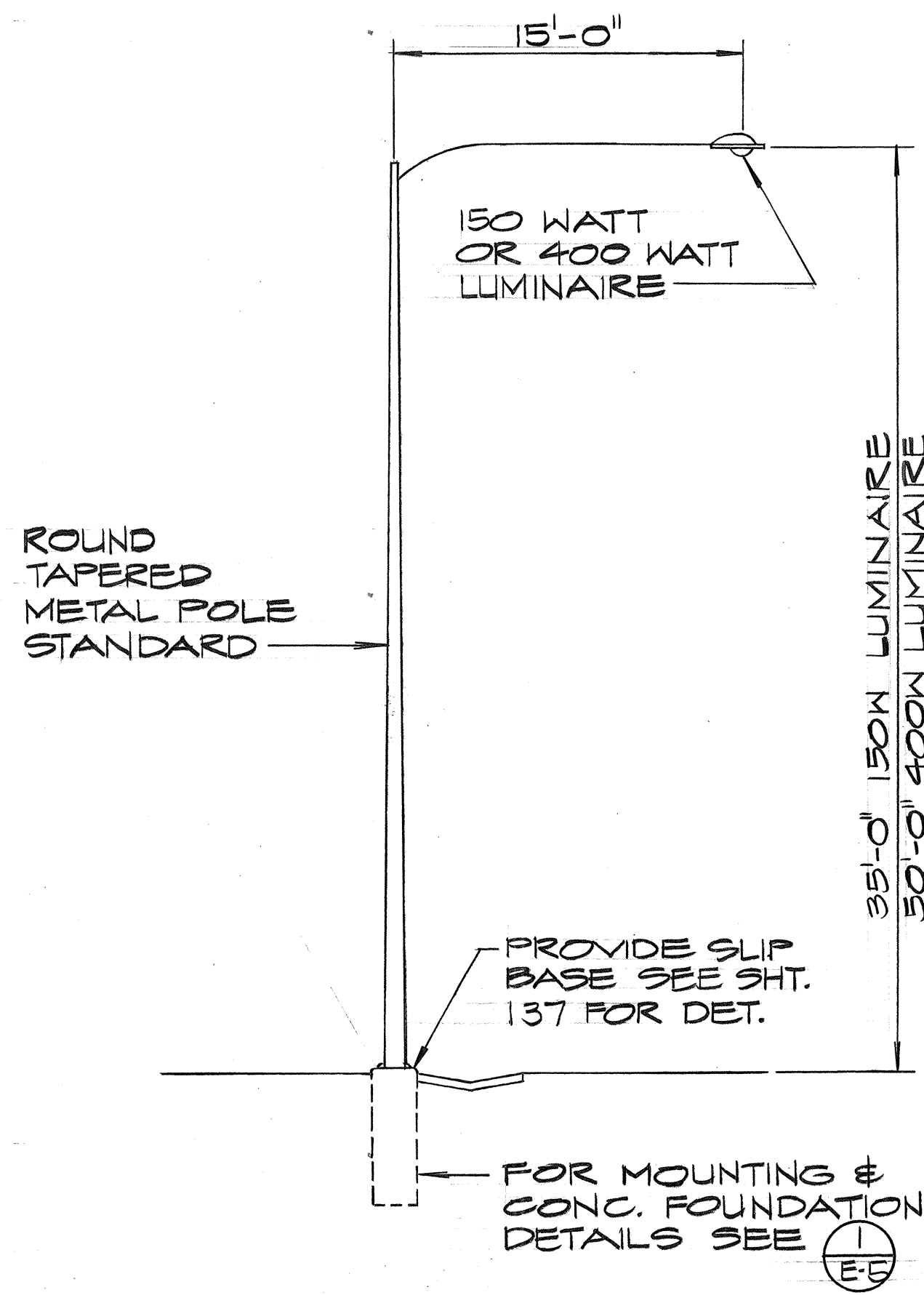
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(21)	1980	156	234



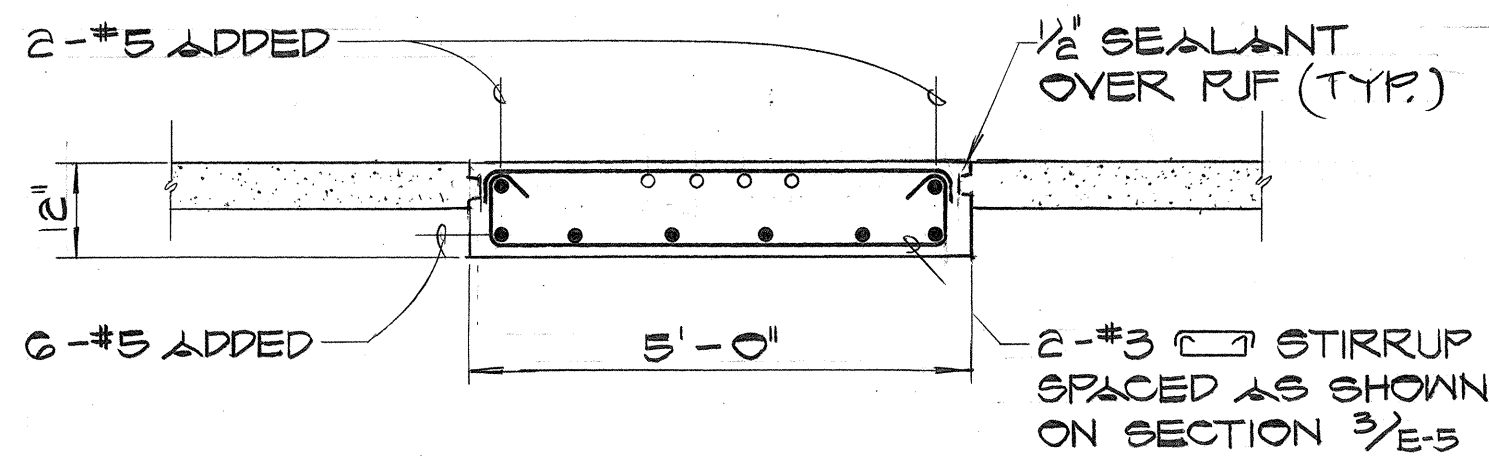
TYPE "F" ST. LTG. STANDARD DET. (A)
NO SCALE



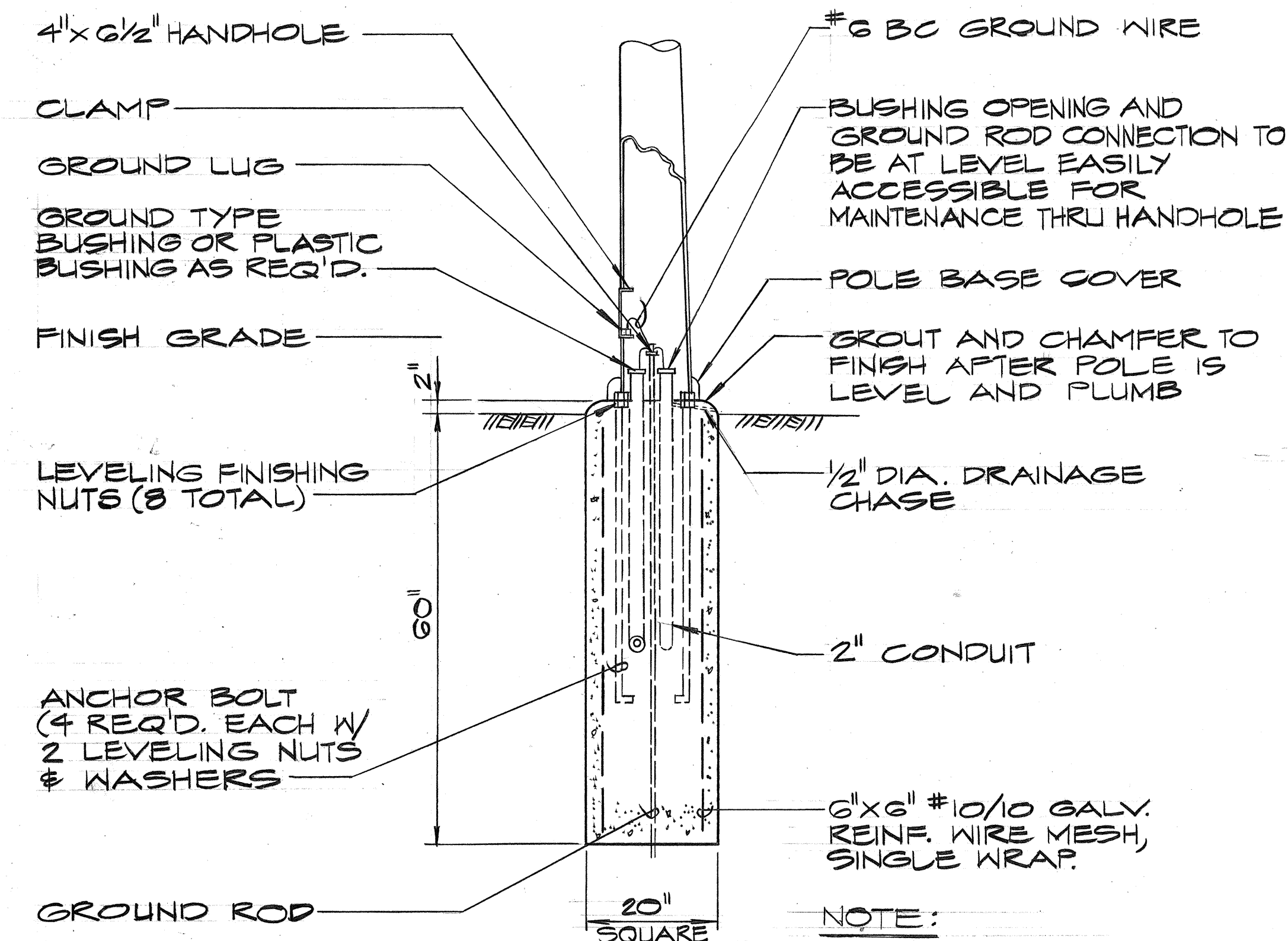
TYPE "G" ST. LTG. STANDARD DET. (B)
NO SCALE



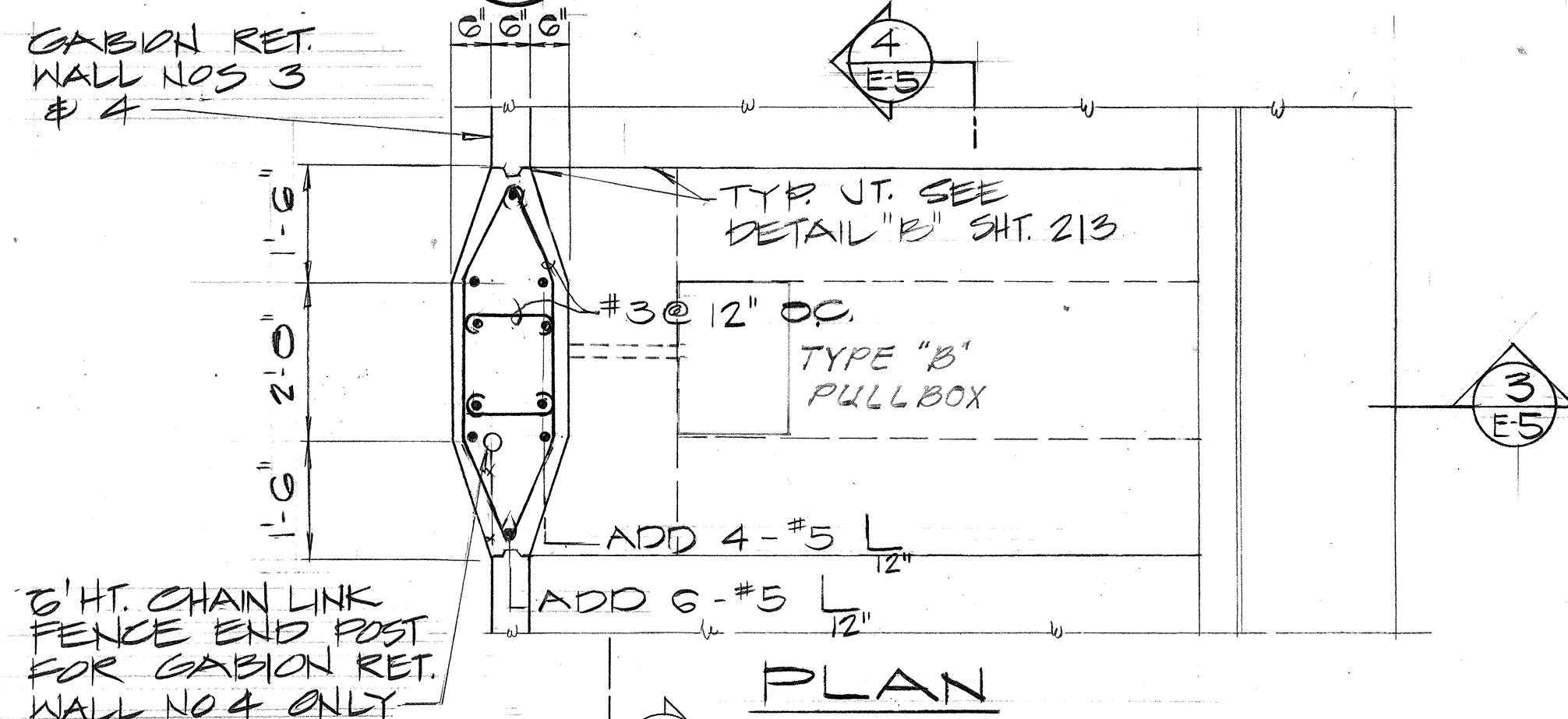
TYPE "H" ST. LTG. STANDARD DET. (C)
NO SCALE



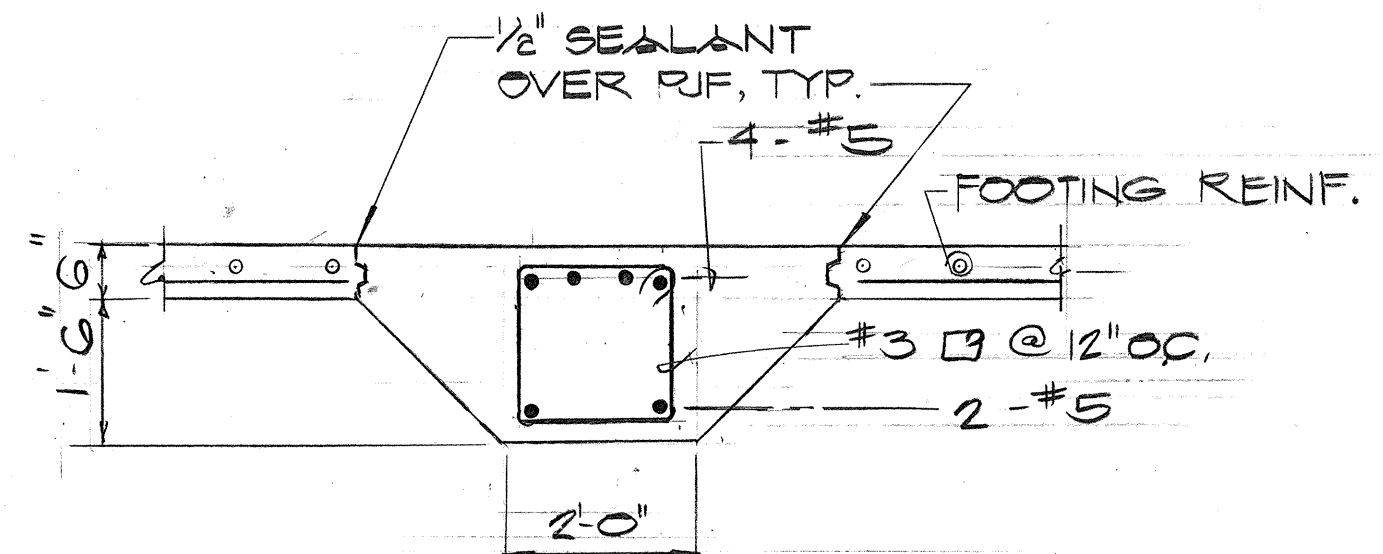
SECTION 5 (E-5)



MOUNTING DETAIL FOR TYPE G & H ST. LTG. STD. (1)
NO SCALE

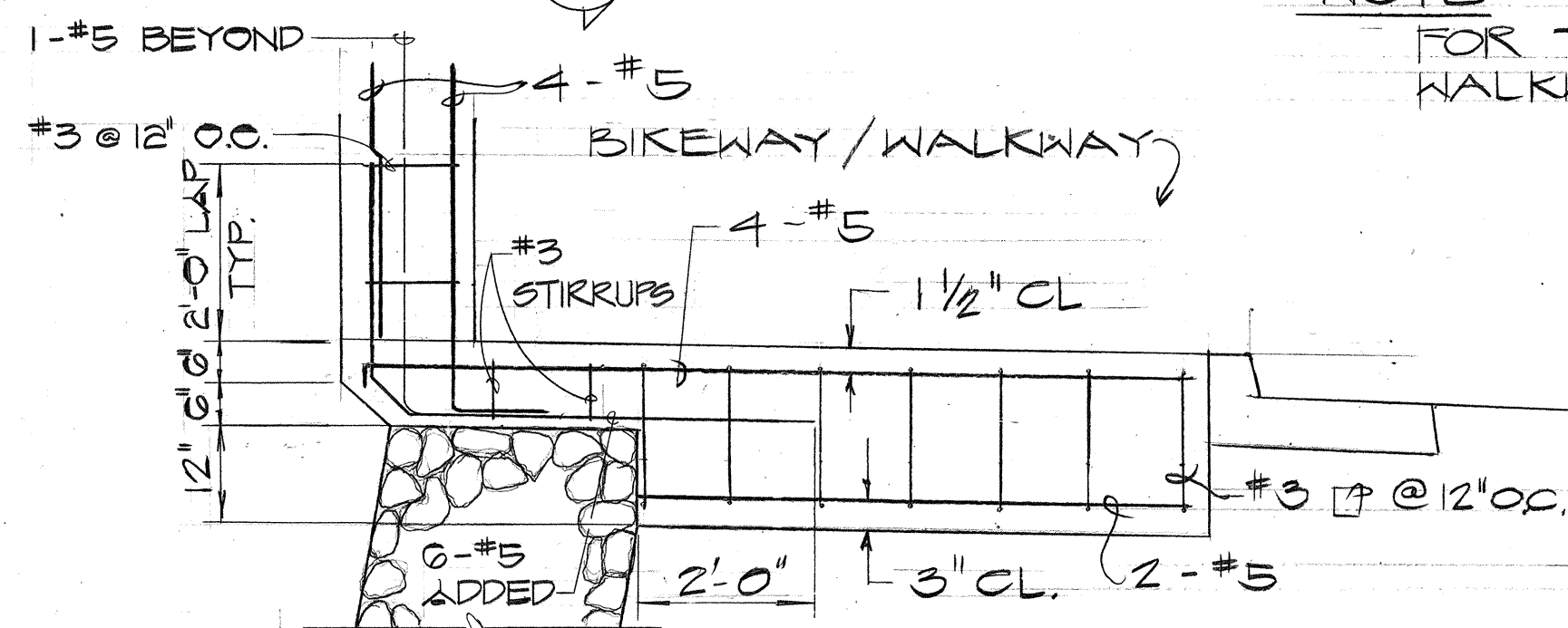


PLAN



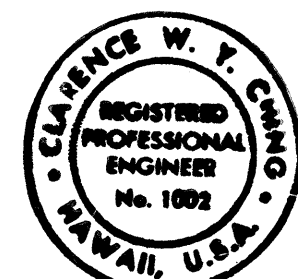
SECTION 4 (E-5)

NOTE:
FOR TYPICAL BIKEWAY/
WALKWAY SEE DETAILS SHT. 213



SECTION 3 (E-5)

MOUNTING DETAIL FOR TYPE "F" ST. LTG. STD. (2)
NO SCALE



1/4/83	REVISED TYPE "F" ST. LTG. CONC. FOUNDATION
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

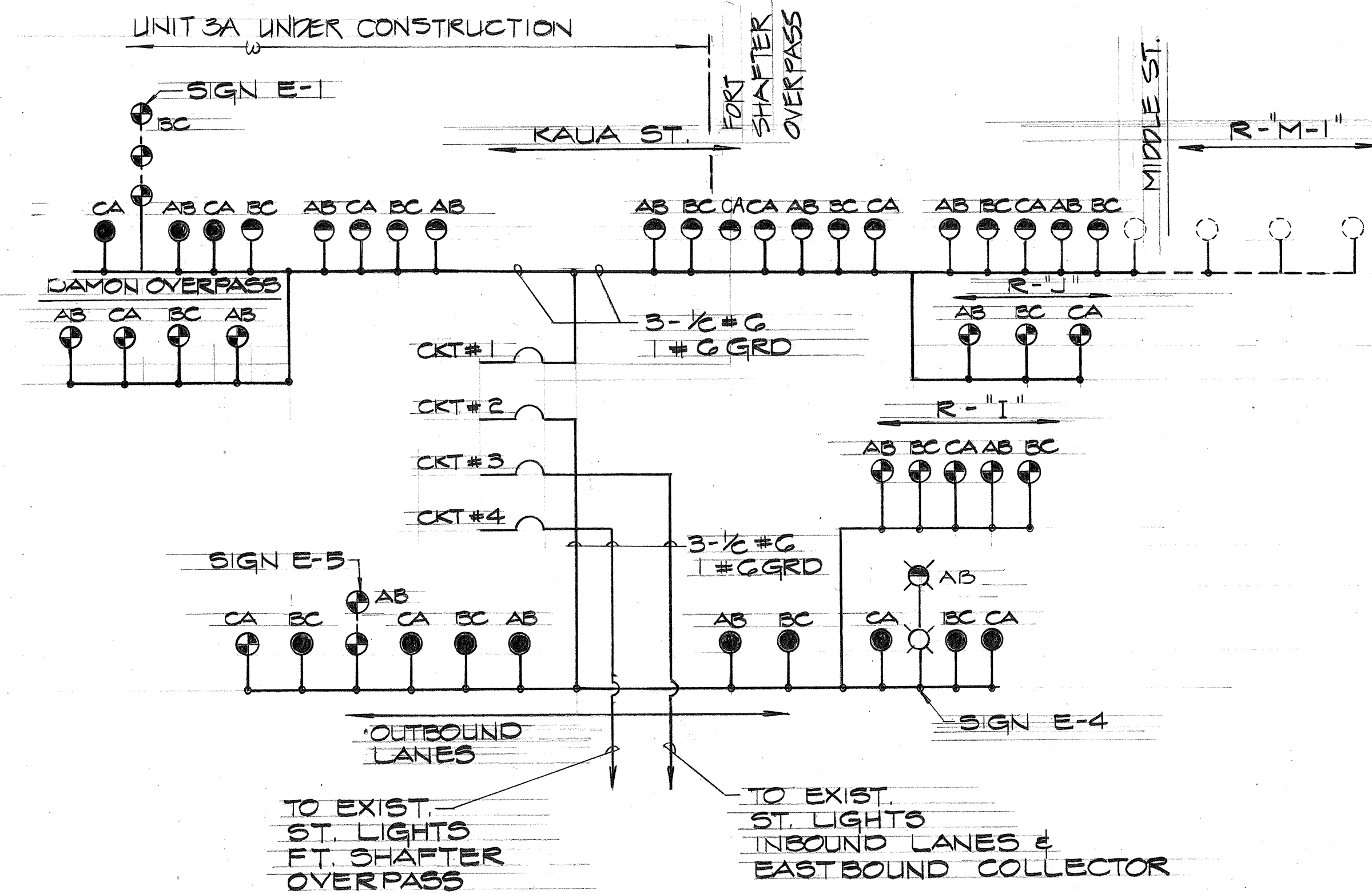
**STREET LIGHTING
STANDARD DETAILS**

MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT 3.B
F.A. PROJ. NO. F-078-1(21)

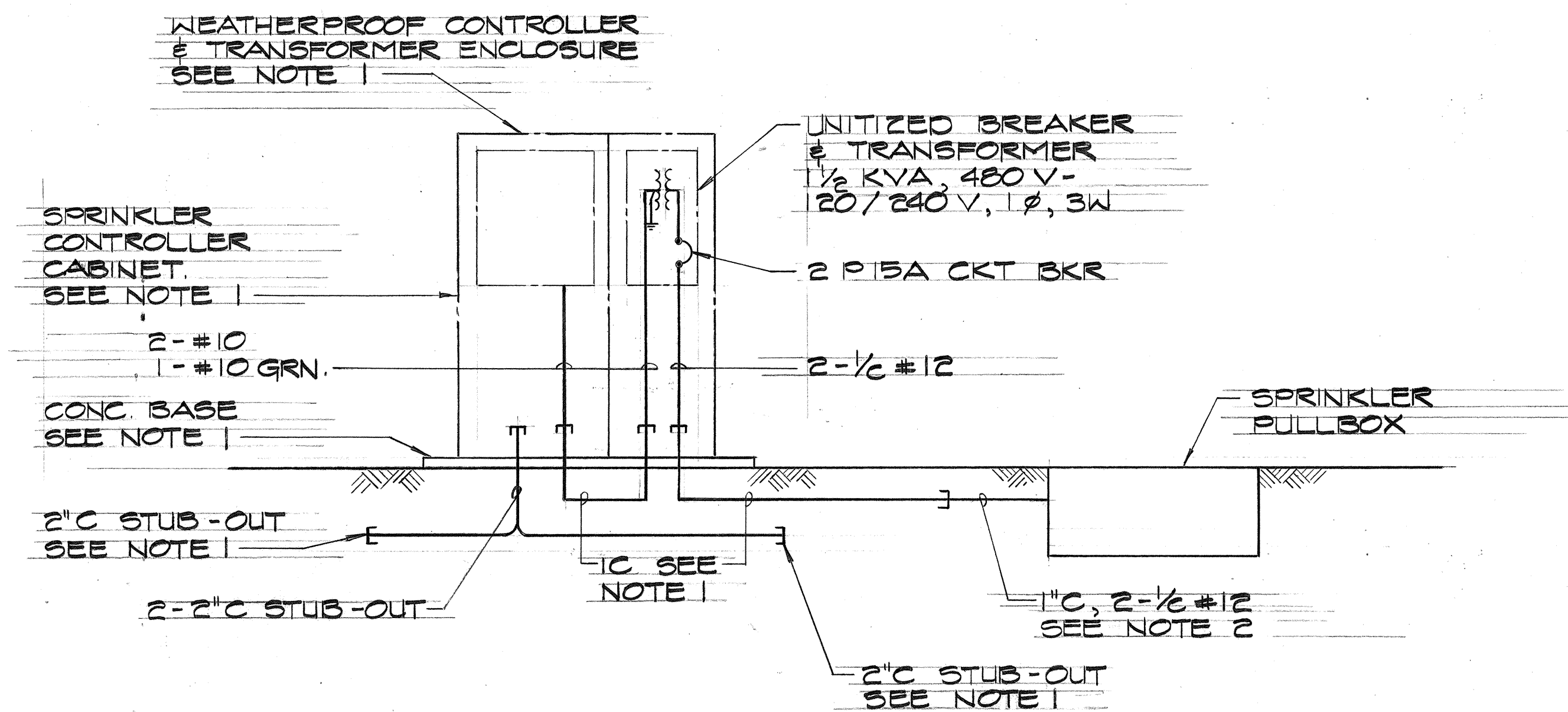
SCALE: AS SHOWN DATE: AUG. 1, 1979
SHEET NO. E-5 OF 8 SHEETS

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(21)	1980	157	234

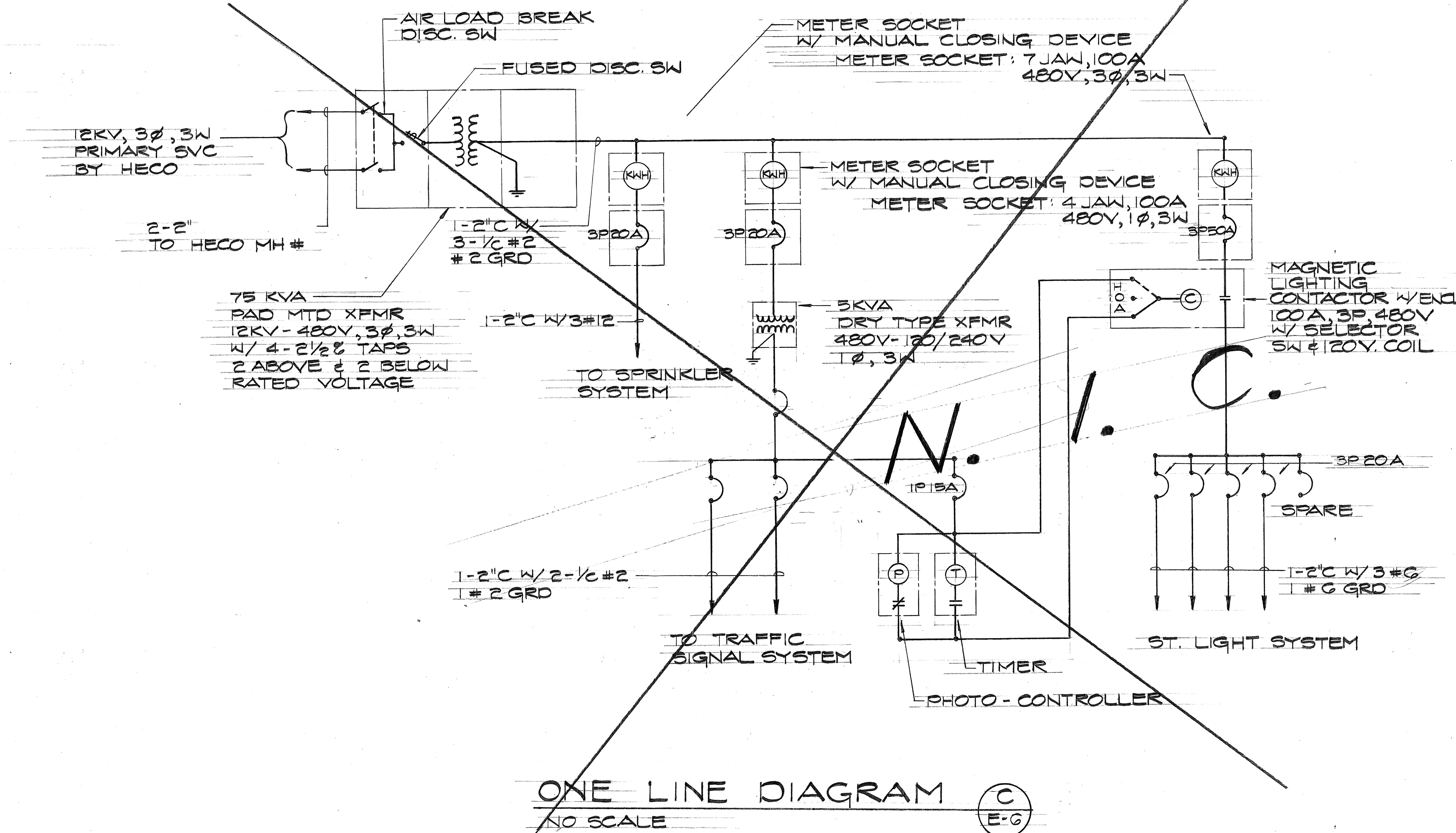


STREET LIGHTING ONE LINE DIAGRAM (A)
NO SCALE E-G



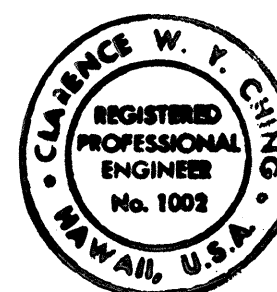
- NOTE:
1. WEATHERPROOF CONTROLLER & TRANSFORMER ENCLOSURE
SPRINKLER CONTROLLER CABINET, CONCRETE BASE &
CONDUIT STUB-OUTS BY SPRINKLER CONTRACTOR.
 2. EXTEND 1" C TO STUB-OUT.

TYPICAL ONE LINE DIAGRAM (B)
SPRINKLER CONTROLLER
NO SCALE E-G



ONE LINE DIAGRAM (C)
NO SCALE E-G

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
.....	TRACED BY	
.....	DESIGNED BY	
.....	CHECKED BY	
.....		

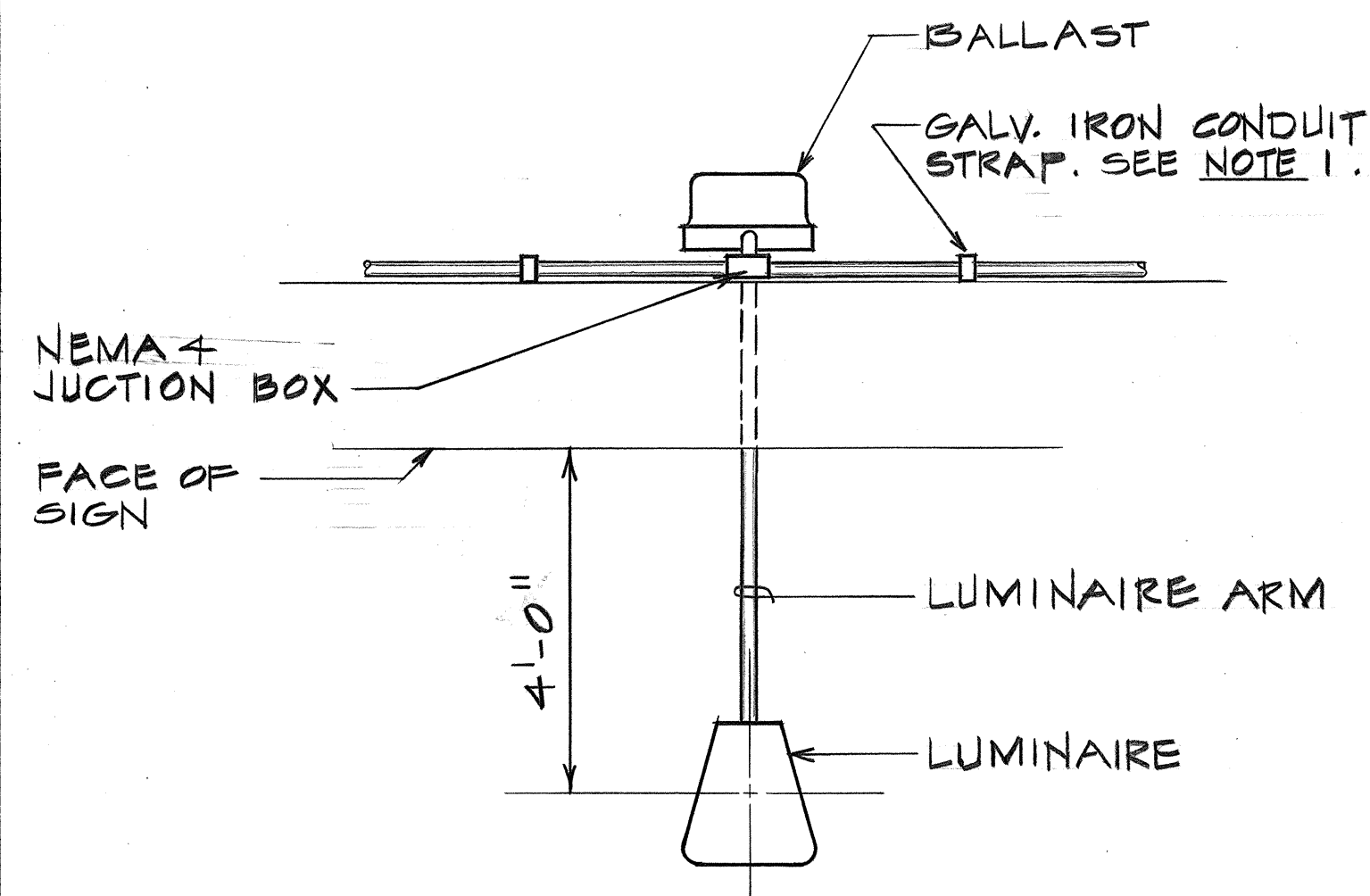


THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.

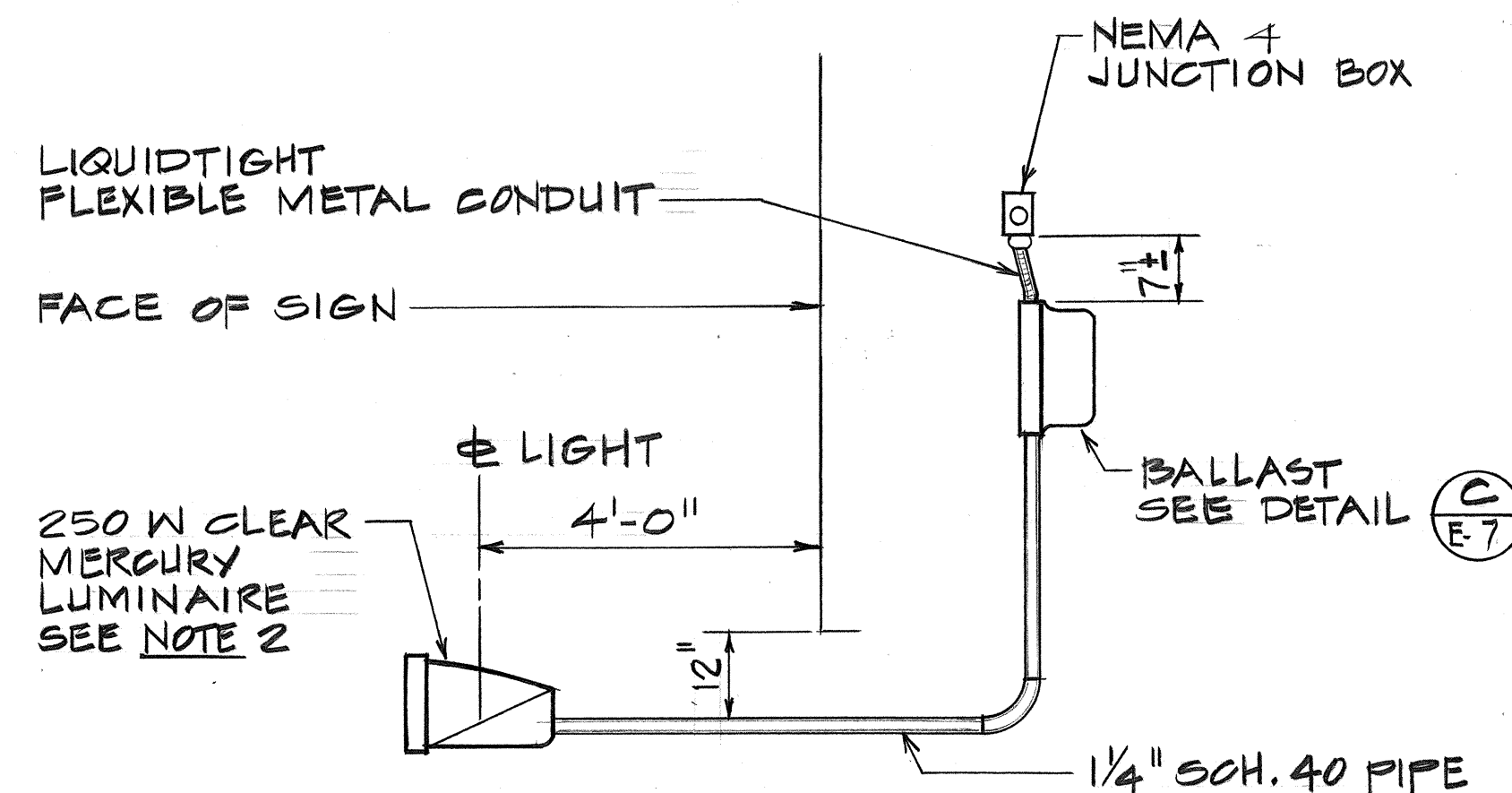
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ONE LINE DIAGRAM
MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT 3B
F.A. Proj. No. F-078-1(21)
SCALE: AS SHOWN DATE: AUG. 1, 1979

SHEET No. E-6 OF 8 SHEETS



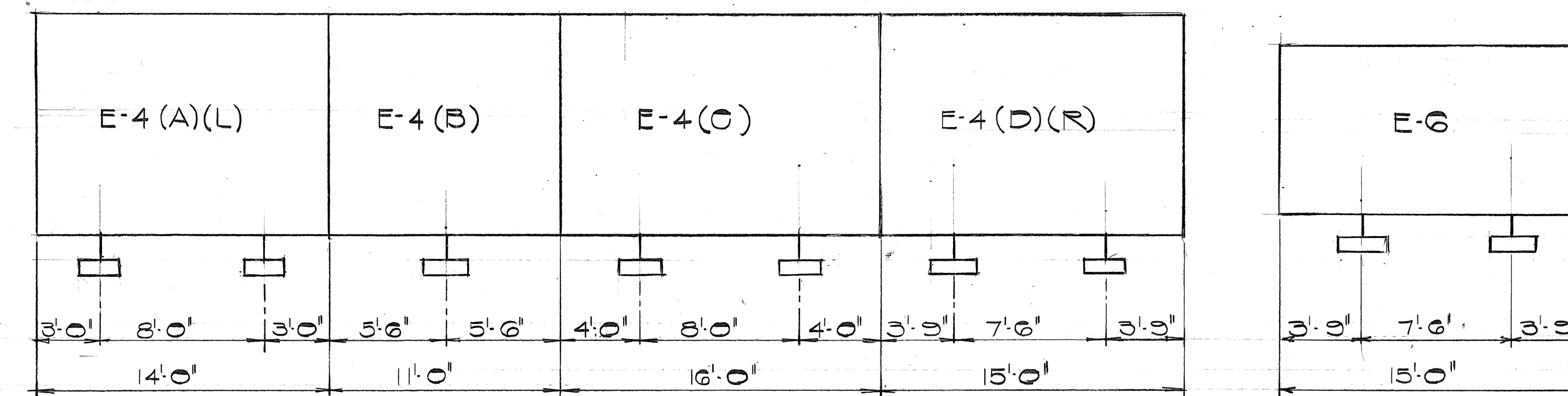
CONDUIT MOUNTING DETAIL (A)
NO SCALE (E-7)



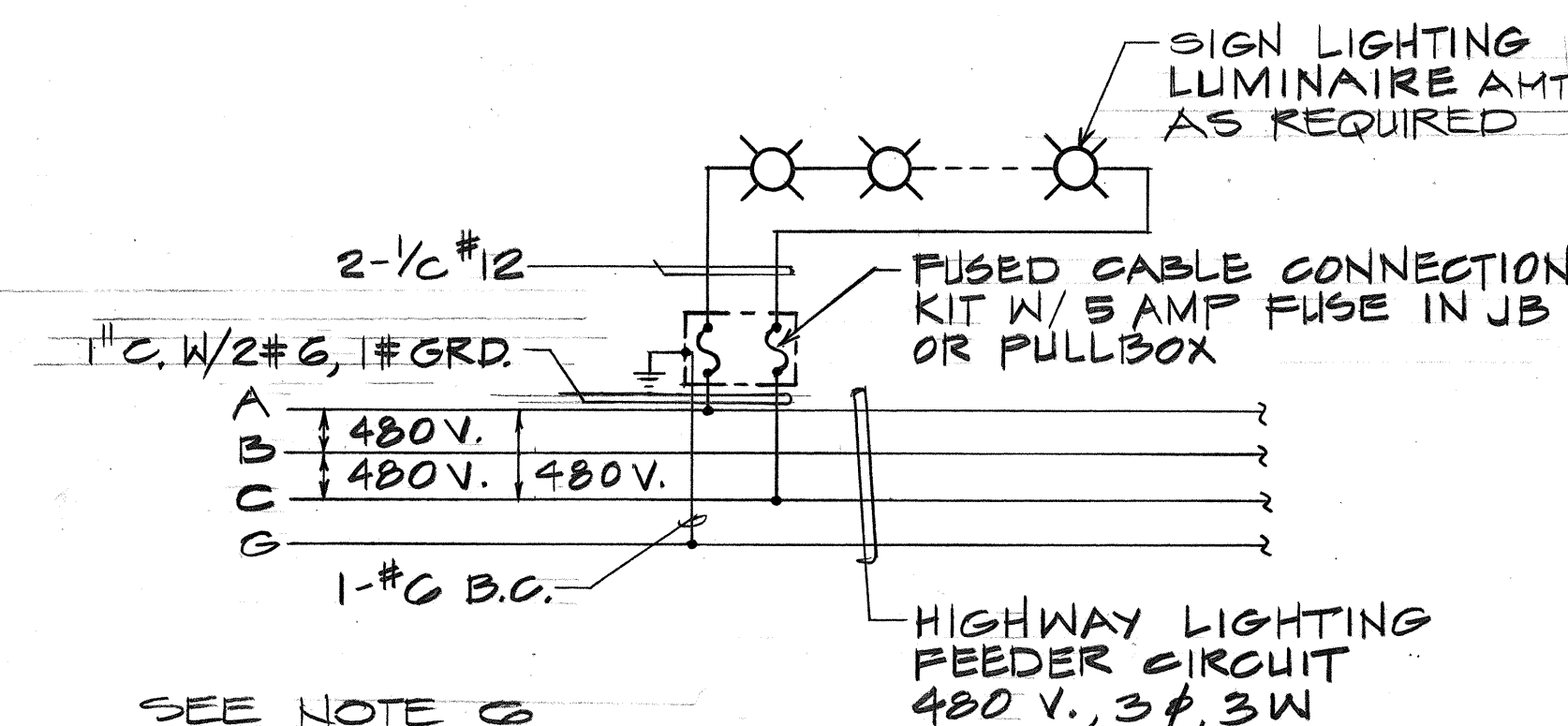
LUMINAIRE MOUNTING DETAIL (B)
NO SCALE (E-7)

NOTES CONT.
7. LUMINAIRE: ASSEMBLY.
PRISMATIC REFRACTOR THERMAL SHOCK
RESISTANT GLASS W/ RETRODISPERSING REFLECTOR
FOR UNIFORM SIGN LUMINANCE.
MAIN HOUSING CAST ALUMINUM SLIPFITTER TYPE
BALLAST BACKMOUNTED, 480V, REGULATOR TYPE
W/HFF ABOVE 90%, RIF SUPPRESSION TYPE

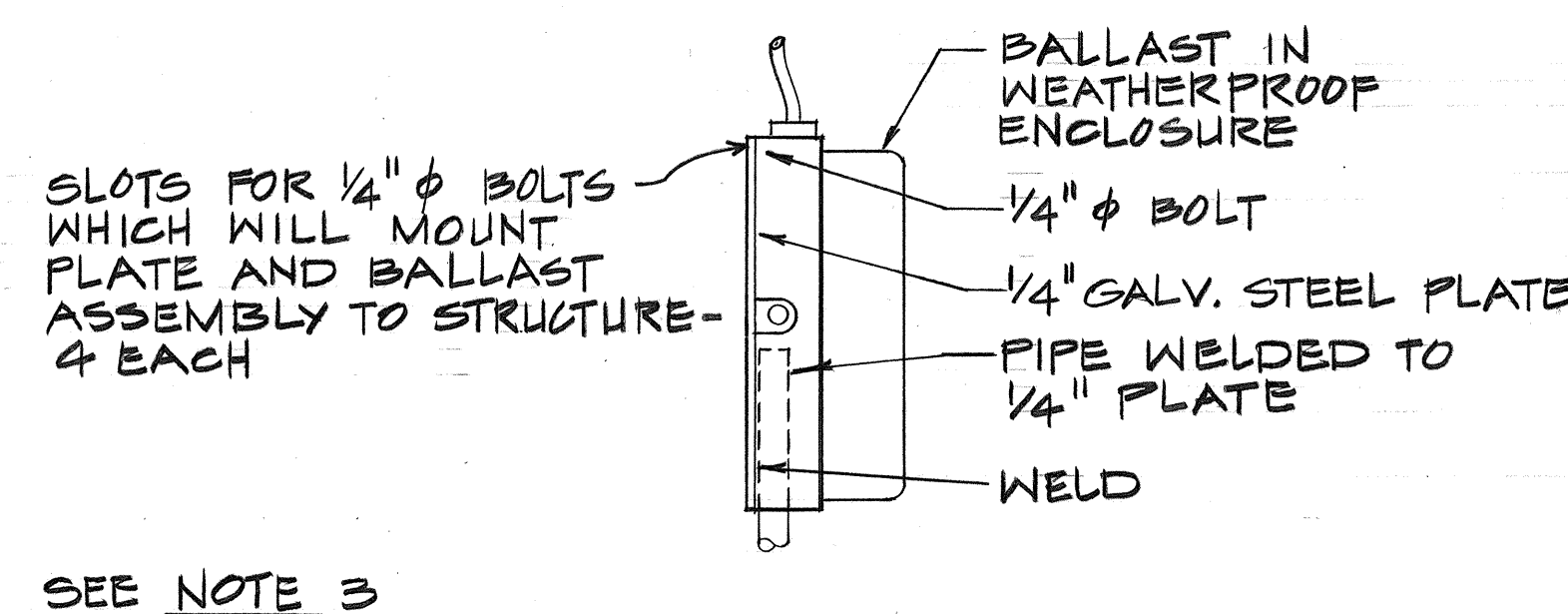
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F070-1(21)	1980	158	234



LUMINAIRE SPACING DETAIL (F)
NO SCALE (E-7)



SIGN LIGHTING WIRING DIAGRAM (D)
NO SCALE (E-7)



BALLAST-STEEL PLATE DETAIL (C)
NO SCALE (E-7)

NOTES: 1. SUPPORT CONDUITS AT 10' ± MAX. INTERVALS. SUPPORT CONDUITS 3'-0" MAX. FROM JUNCTION BOX.

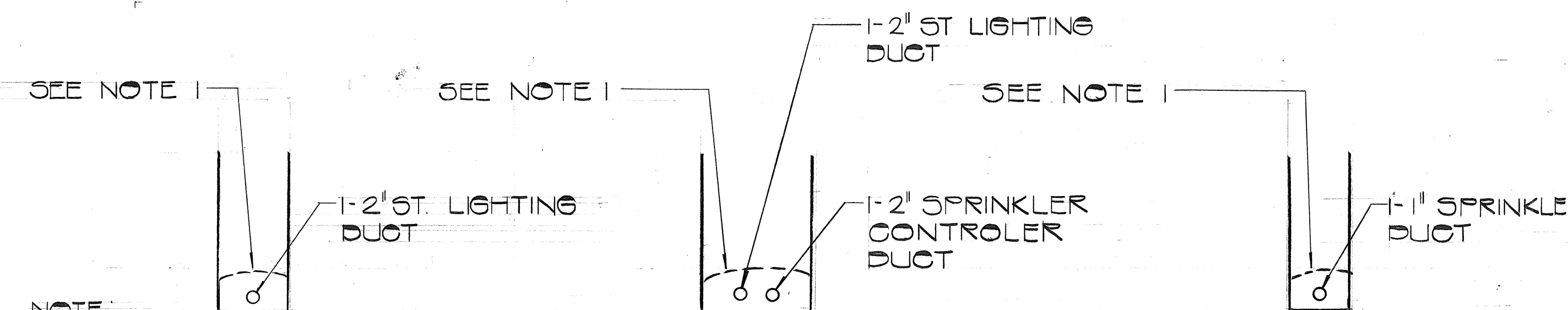
2. UNIFORMITY RATIO 3.1/1 WHEN SPACED 10'-0" O.C. WHEN RETROREFLECTING SIGN IS USED (1200' VIEWING DISTANCE). MIN. AVG F+1 17.
3. PIPE AND STEEL PLATE ASSEMBLY SHALL BE CAPABLE OF SUPPORTING LUMINAIRE AND BALLAST WITHOUT DAMAGE AGAINST 100 MPH WINDS. BOLTS ATTACHING BALLAST TO STEEL PLATE AND STEEL PLATE TO STRUCTURE SHALL BE PER MANUFACTURER'S RECOMMENDATIONS AND SHALL SUPPORT THE LUMINAIRE, BALLAST PIPE AND STEEL PLATE ASSEMBLY WITHOUT DAMAGE AGAINST 100 MPH WINDS.

4. CONDUITS SHALL BE 3/4" GALVANIZED RIGID STEEL.

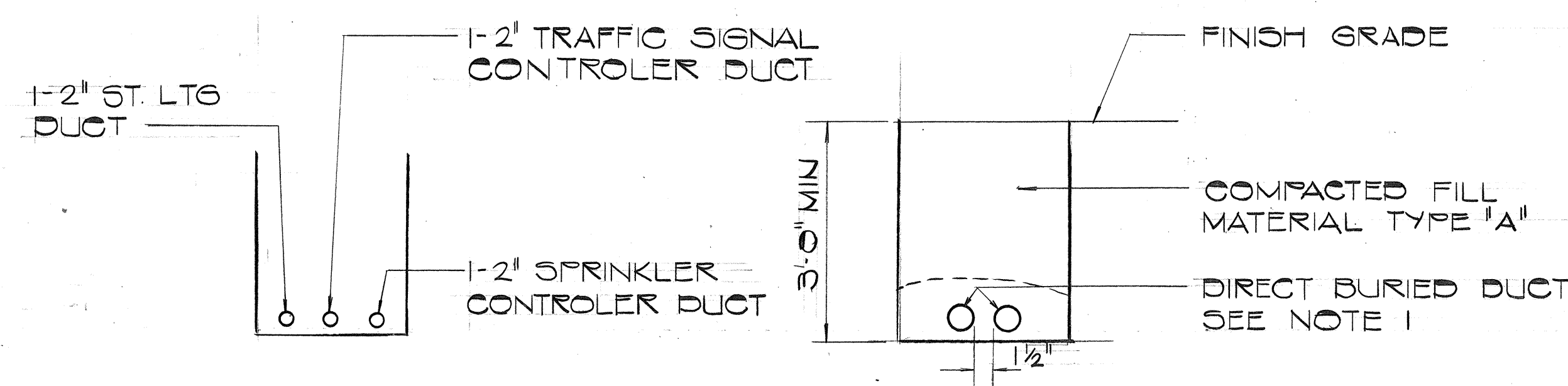
5. ALL EQUIPMENT SHALL BE NEMA 3R OUTDOOR TYPE.

6. FOR CONNECTION OF SIGN LIGHTING TO HIGHWAY LIGHTING FEEDER CIRCUIT SEE STREET LIGHTING ONE LINE DIAGRAM

SEE NOTE 7



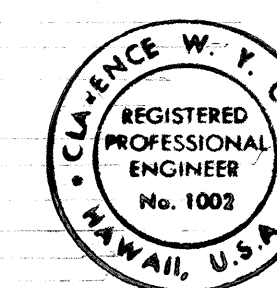
DUCT SECTION 1 (E-7) NO SCALE
DUCT SECTION 2 (E-7) NO SCALE
DUCT SECTION 3 (E-7) NO SCALE



DUCT SECTION 4 (E-7) NO SCALE
TYPICAL RACEWAY SECTION FOR STREET LIGHT POWER CKT (A) (E-7) NO SCALE

NOTES:

1. CONCRETE JACKET REQUIRED AT ALL ROAD CROSSING.
2. CONCRETE ENCASED DUCTS SHALL HAVE 3" AROUND ENCASEMENT, 1/2" BETWEEN DUCTS AND 3" MIN. SEPARATION BETWEEN ELECTRICAL AND COMMUNICATION DUCTS.



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

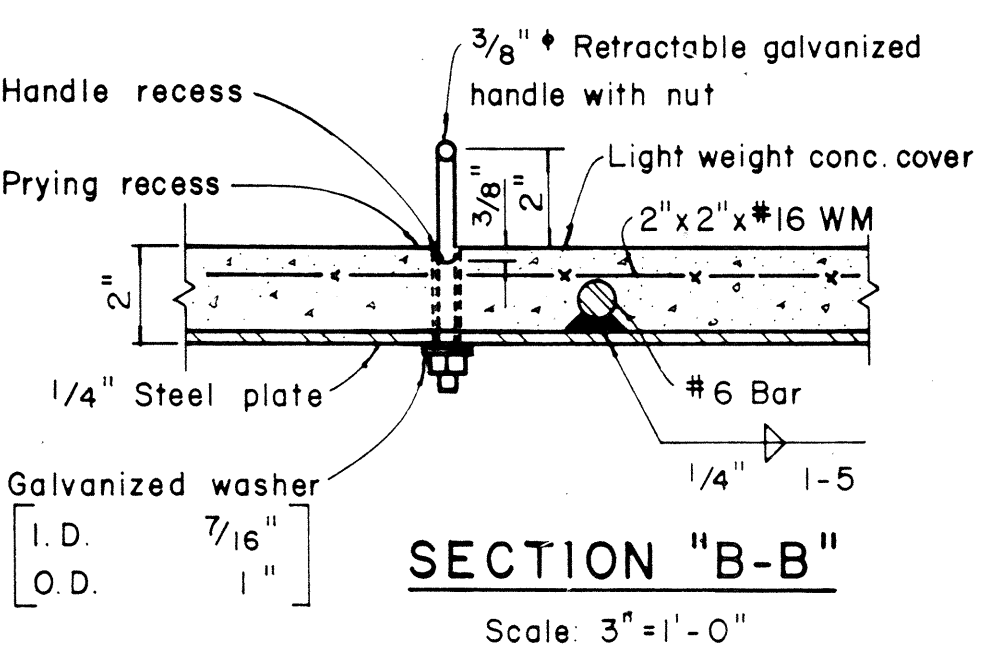
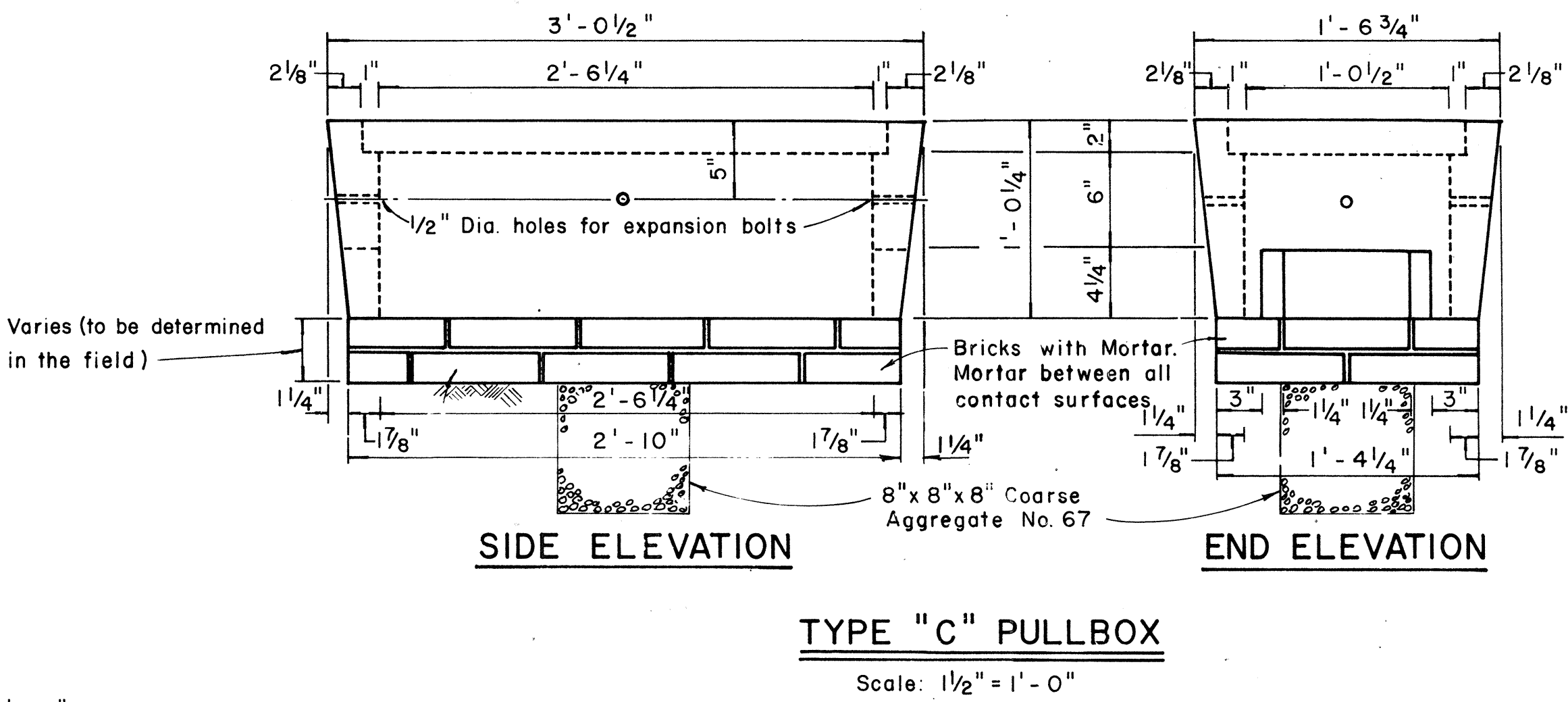
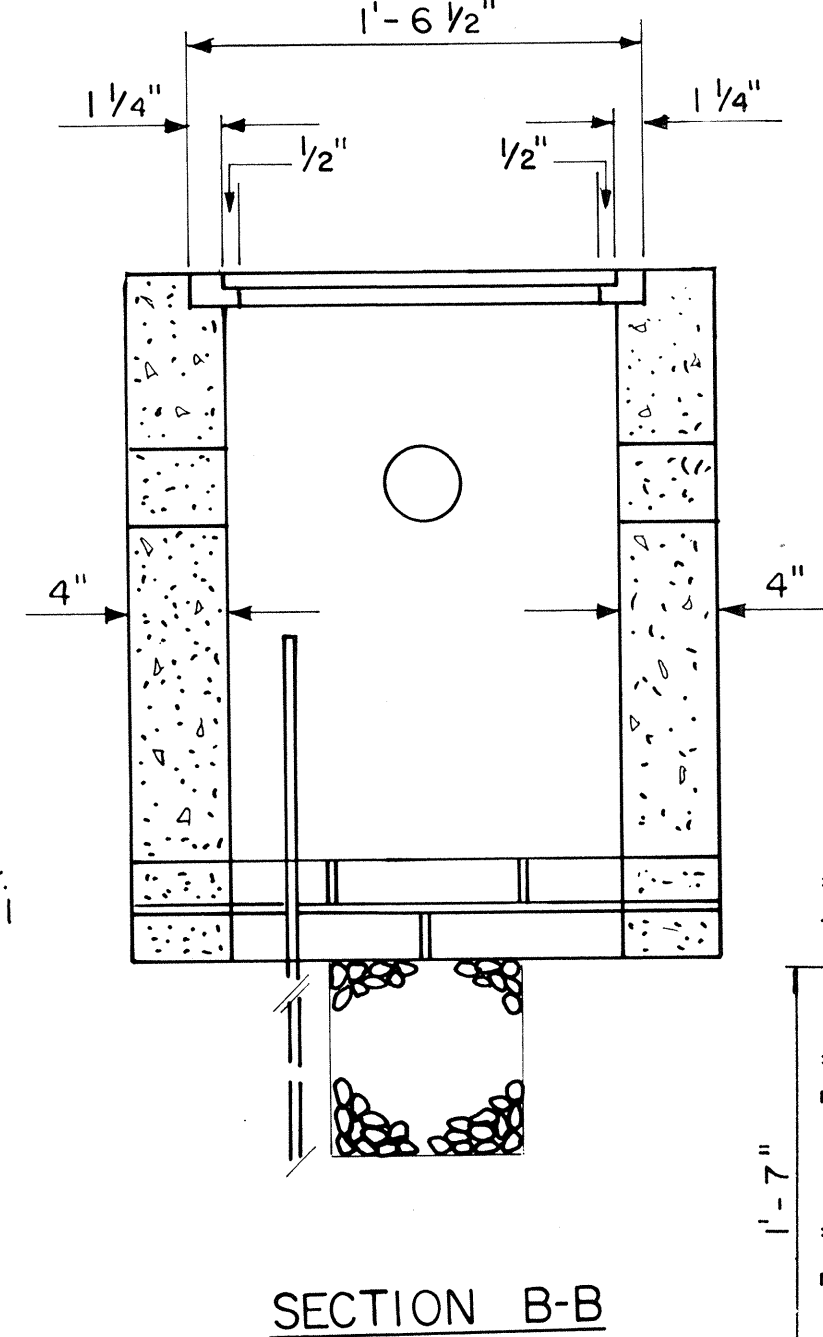
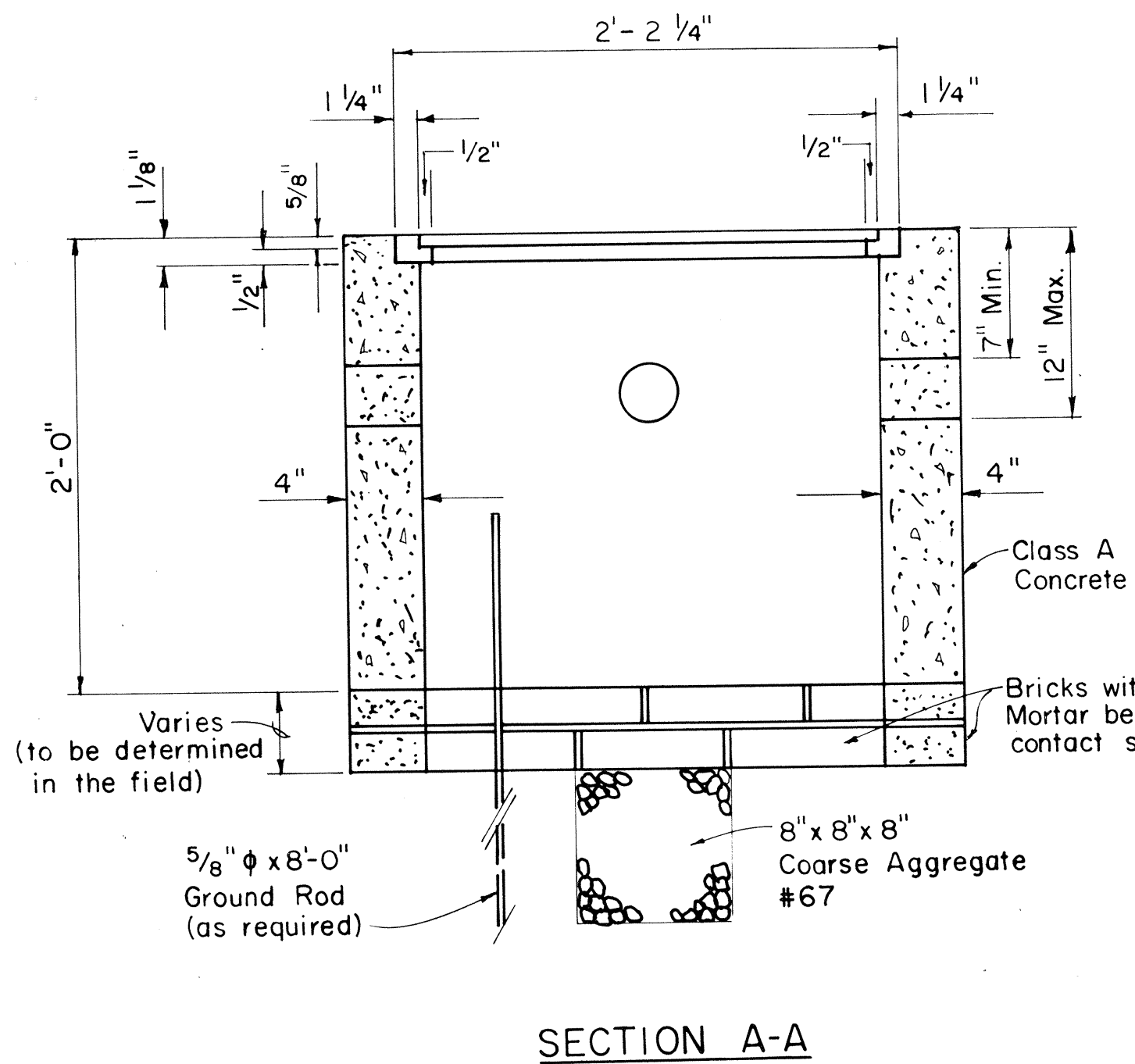
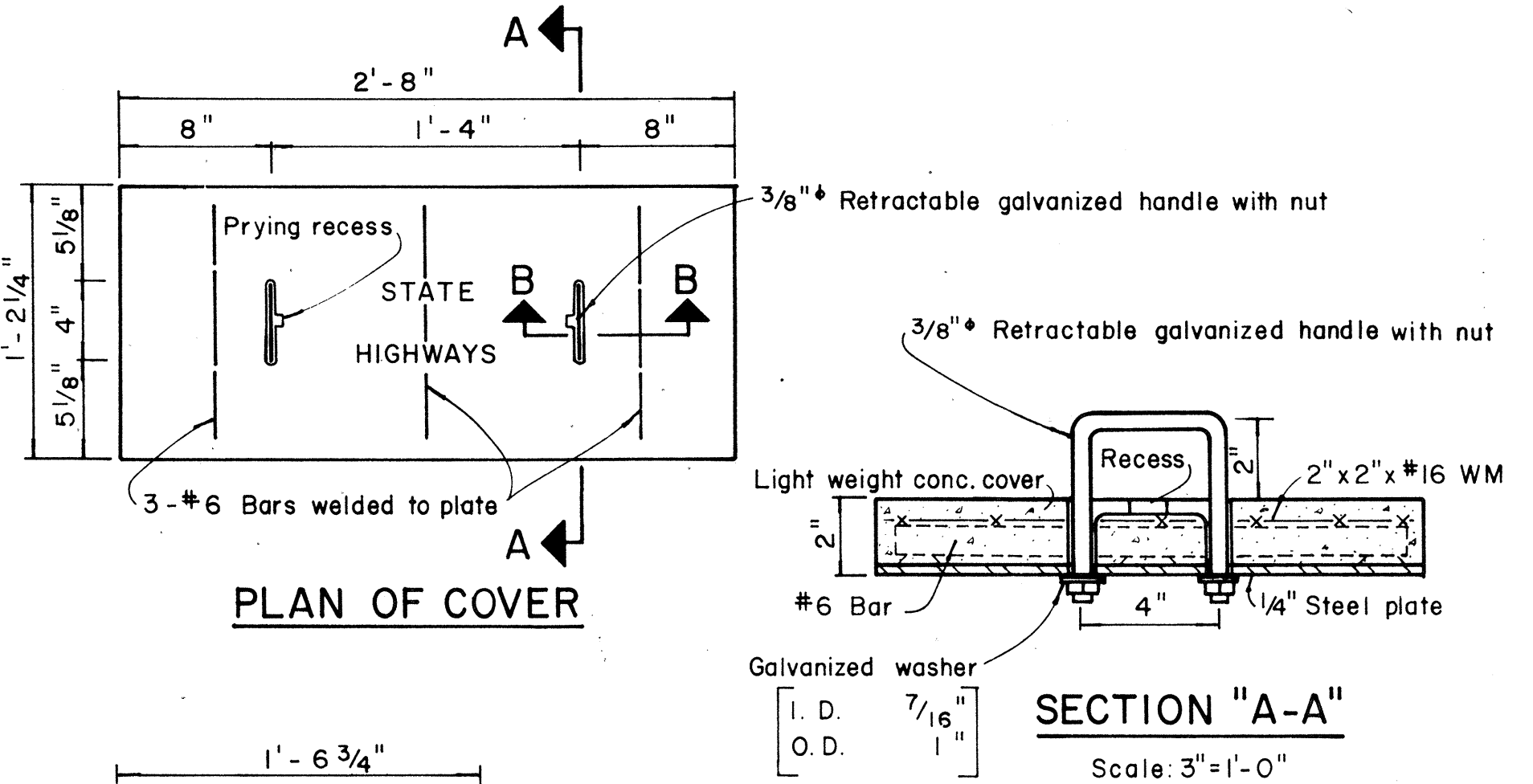
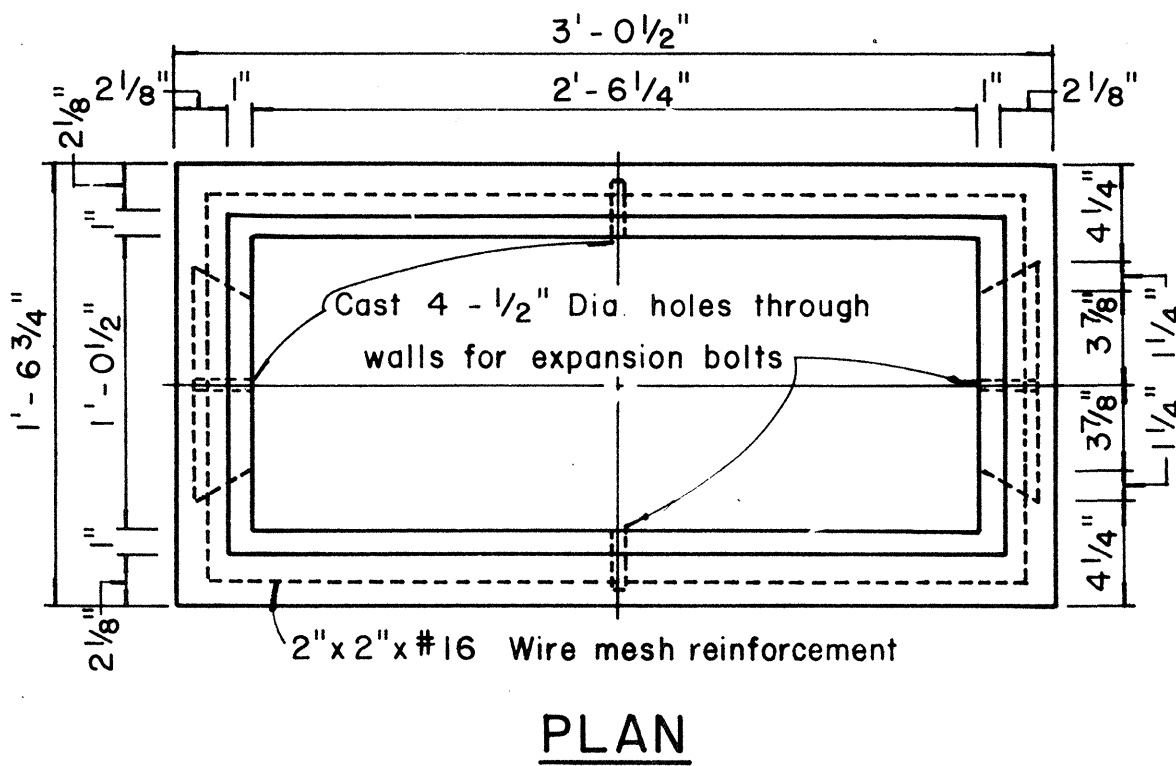
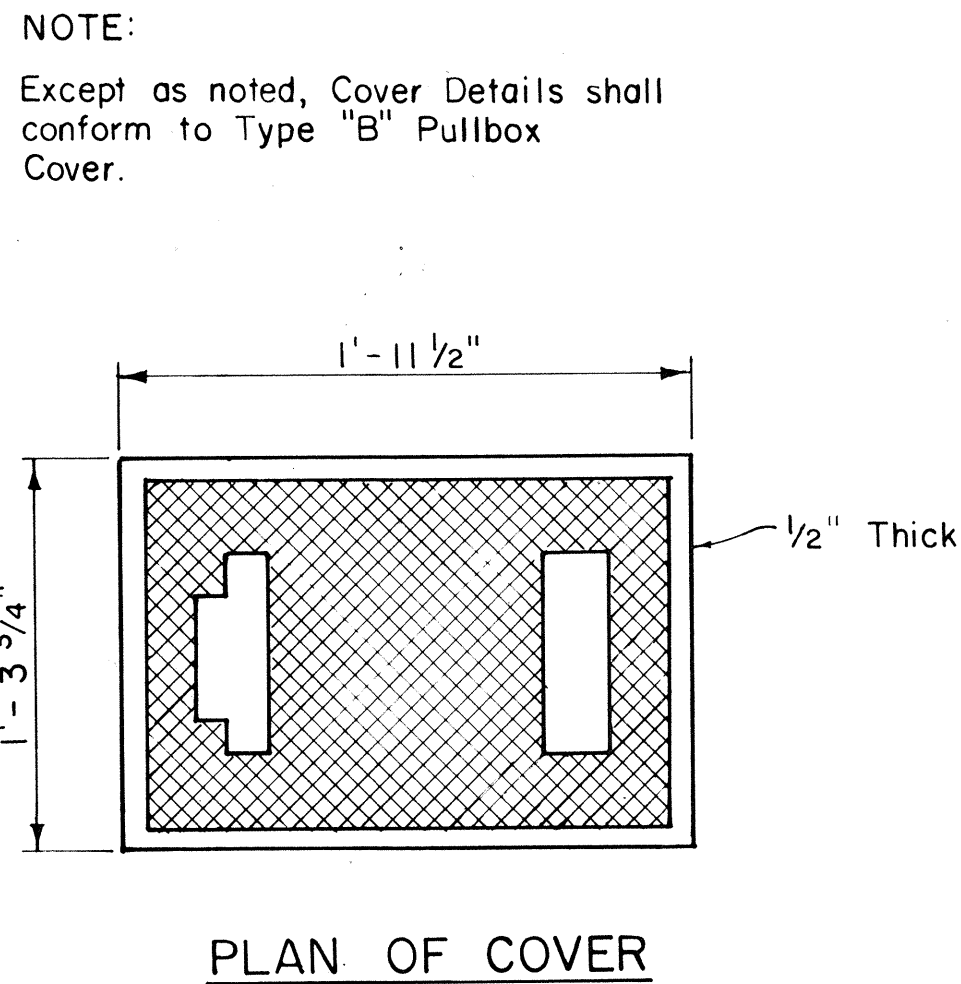
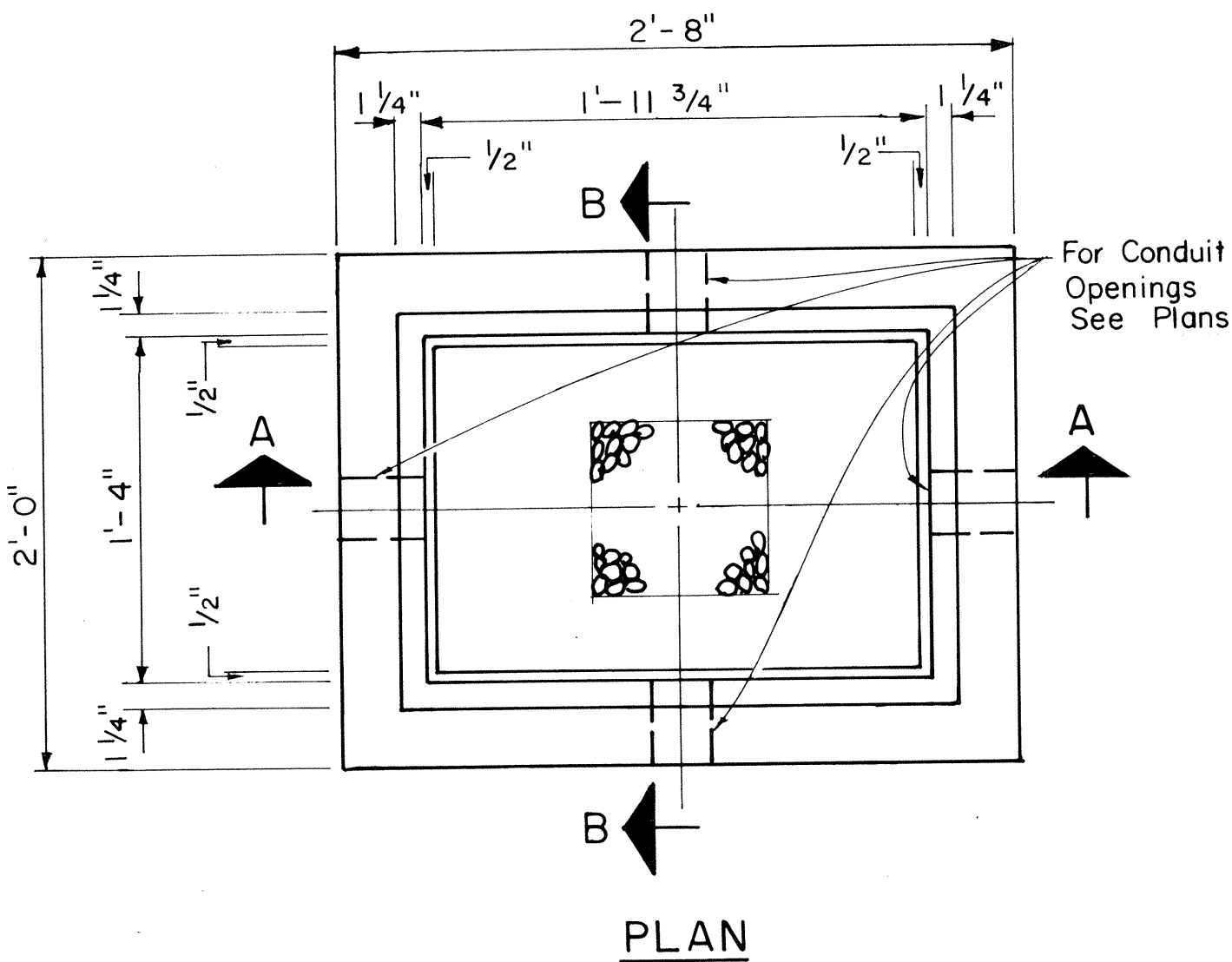
SIGN LIGHTING DETAILS

MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT 3B
F.A. PROJ. NO. F-070-1(21)

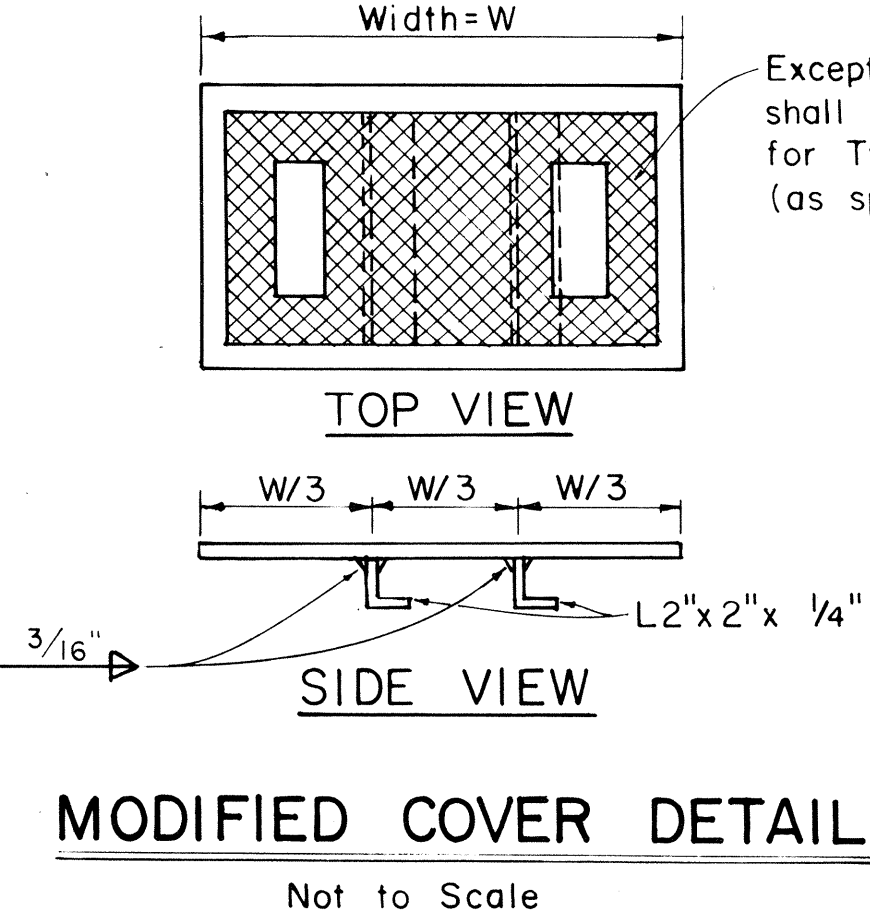
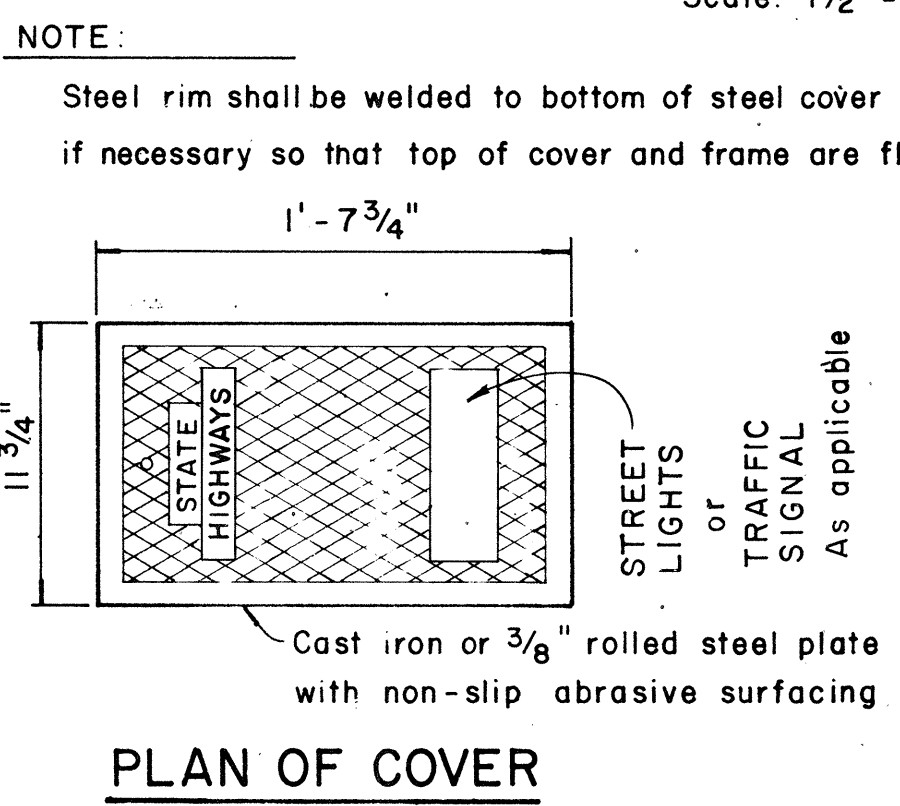
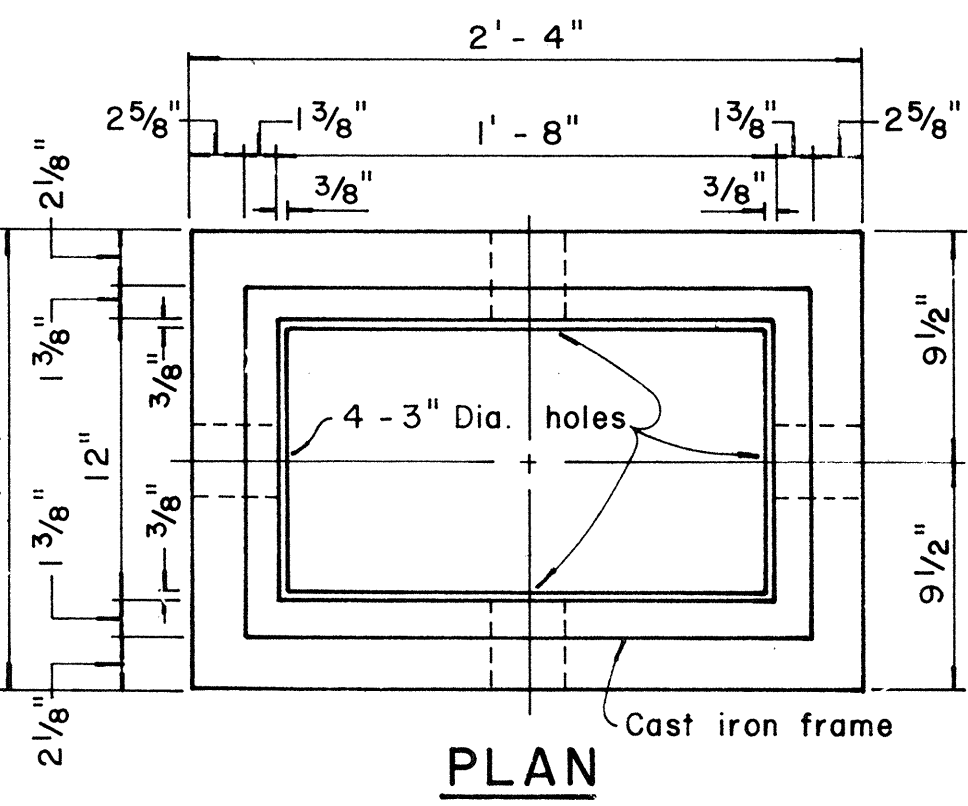
SCALE: AS SHOWN DATE: AUG. 1, 1979

SHEET NO. E-7 OF 8 SHEETS

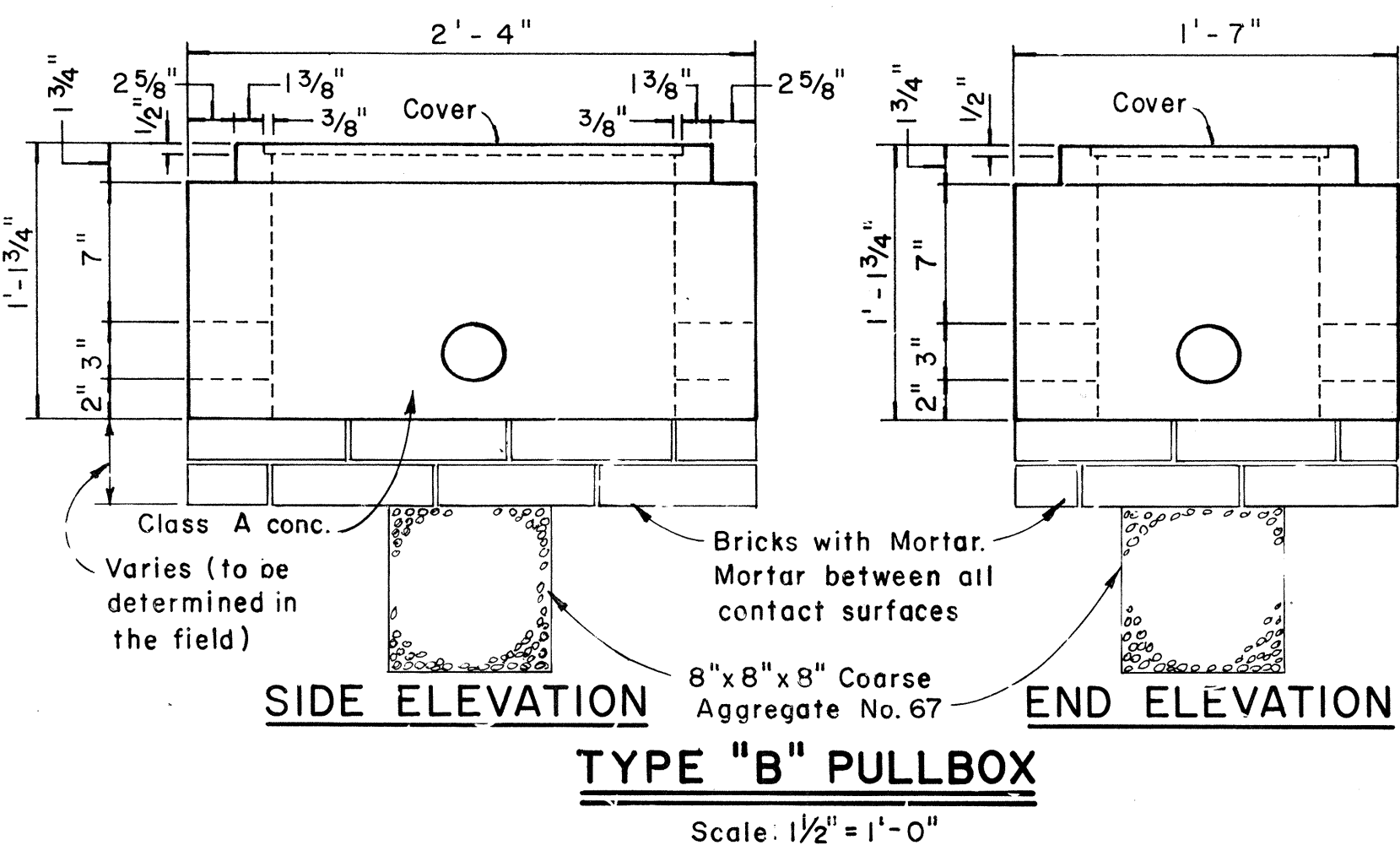
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-0781(21)	1980	159	234



TYPE "A" PULLBOX
Scale: 1 1/2"=1'-0"



NOTE:
Hot dip galvanize after fabrication. Modified cover shall be furnished when called for on plans.



NO.	REVISION	APPROVED BY	DATE
1	Revised Type B & C Pullbox details	H.T.	3-5-76
2	Revised Type "A" Pullbox & Added Modified Cover.	H.T.	1-31-80

APPROVAL RECOMMENDED
TRAFFIC ENGINEER
DATE: 12/29/69

APPROVED
ASSISTANT CHIEF, ENGINEERING
DATE: 12-29-69

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
PULLBOXES

Scale as noted Date

SHEET No. E-8 OF 8 SHEETS DT 401