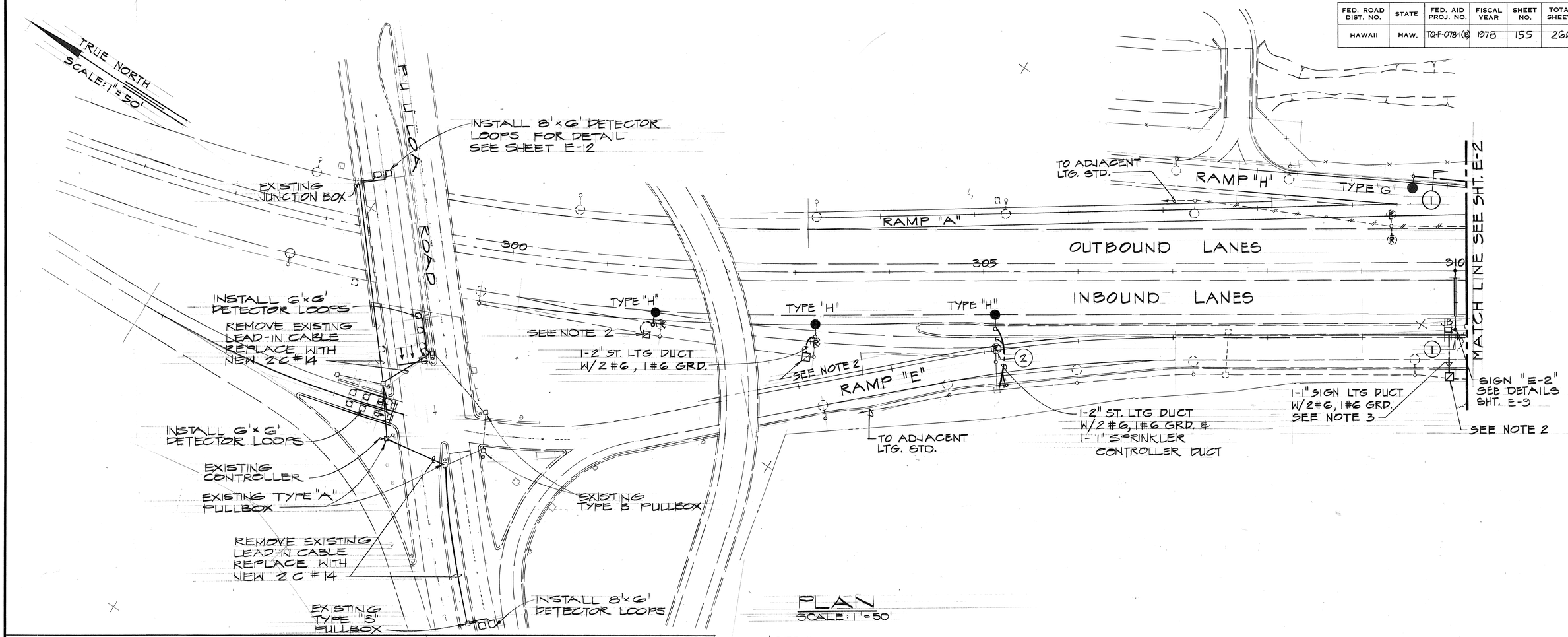
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	TQ-F-078-1(18)	1978	155	266



PLAN
SCALE: 1"=50'

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
○——○	EXTG. ST. LTG. STD.	——⊣	STUB-OUT, CAP & MARK 5' FROM CURB OR PULLBOX UNLESS NOTED OTHERWISE.
○——Ⓡ	EXTG. ST. LTG. STD. TO BE REMOVED UNLESS NOTED OTHERWISE.	T	PAD MOUNTED TRANSFORMER
UP○——○	EXTG. ST. LT. ON JOINT UTILITY POLE	C	TRAFFIC COUNTER
○UP	EXTG. UTILITY WOOD POLE	□	TRAFFIC SIGNAL PULLBOX - 15"x28" PRECAST CONCRETE, D.O.T. STD. TYPE "B".
○——●	400 WATT HIGH PRESSURE SODIUM LUMINAIRE IES TYPE M-S-IV	▮	ST. LT. CONTROL CABINET.
○——◑	250 WATT HIGH PRESSURE SODIUM LUMINAIRE IES TYPE M-S-II	▨	ST. LTG. PULLBOX - 15"x28" PRECAST CONCRETE, D.O.T. STD. TYPE "B".
○——◕	150 WATT HIGH PRESSURE SODIUM LUMINAIRE IES TYPE M-S-II	⬚	EXTG. PULLBOX, TYPE AS INDICATED.
		S	SPRINKLER CONTROLLER
————	UNDERGROUND DUCT SYSTEM	⊠	SPRINKLER SYSTEM PULLBOX - 15"x28" PRECAST CONCRETE, D.O.T. STD. TYPE "B"
— — —	EXTG. UNDERGROUND ST. LTG. SYSTEM UNLESS NOTED OTHERWISE.	□ JB	JUNCTION BOX
#——#	EXTG. ST. LTG. SYSTEM TO BE REMOVED OR ABANDONED AS REQ'D. SEE NOTE 1.	(A / E-3)	DETAIL INDICATOR TOP HALF DET. ASSIGNMENT BOT. HALF SHT. ASSIGNMENT
—OH—	EXTG. OVERHEAD LINES, TYPE AS INDICATED.	(2)——┐	DUCT SECTION INDICATOR. NUMBER IS DETAIL ASSIGNMENT.

NOTES:

1. REMOVE AND HAUL SALVABLE MATERIAL TO STATE'S PEARL CITY BASEYARD, AND OR ABANDON EXTG. ST. LTG. DUCTS, CABLES AND OTHER EQUIPMENT AS REQ'D.
2. PLACE ST. LTG PULLBOX OVER EXIST. ST. LTG DUCT LINE AND SPLICE INTO EXTG. SYSTEM AS REQ'D. DIRECTED BY THE ENGINEER.
3. SAW-CUT & REPAIR EXT'G PAVEMENT AS REQ'D TO INSTALL DUCT LINE. PROVIDE CONCRETE JACKETING AT ROAD CROSSING.
4. EXISTING TRAFFIC POST & PHASING TO REMAIN
5. EXISTING TRAFFIC SIGNAL LENS TO BE REPLACED BY OTHERS.
6. EXISTING SERIES LIGHTING TO BE MAINTAINED UNTIL NEW LIGHTING SYSTEM IS INSTALLED AND OPERATING.

DATE	REVISION
3/6/79	ADDED 3 TYPE "H" ST. LTG. STDS. & BASE.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STREET LIGHTING PLAN

MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT 3A
F.A. Proj. No. TQ-F-078-1 (18)

SCALE: AS SHOWN DATE: NOV. 15, 1978

SHEET NO. E-1 OF 12 SHEETS

CLARENCE W. F. CHING
REGISTERED PROFESSIONAL ENGINEER
No. 1003
HAWAII, U.S.A.

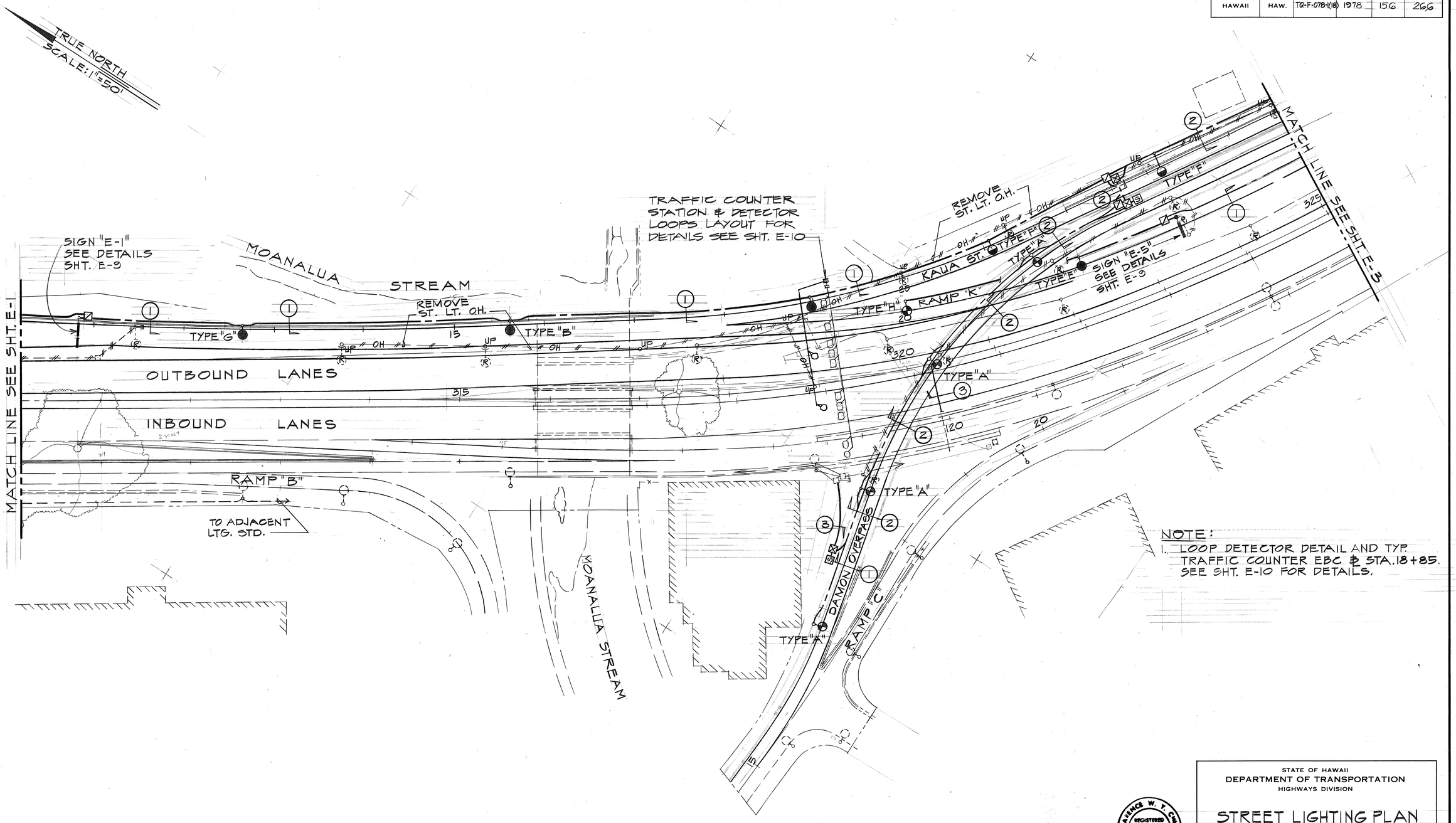
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

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

ADD 155

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	TQ-F-078-1(18)	1978	156	266

TRUE NORTH
SCALE: 1"=50'



PLAN
SCALE: 1"=50'

NOTE:
1. LOOP DETECTOR DETAIL AND TYP. TRAFFIC COUNTER EBC ℄ STA. 18+85. SEE SHT. E-10 FOR DETAILS.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STREET LIGHTING PLAN

MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT 3A
F.A. Proj. No. TQ-F-078-1(18)

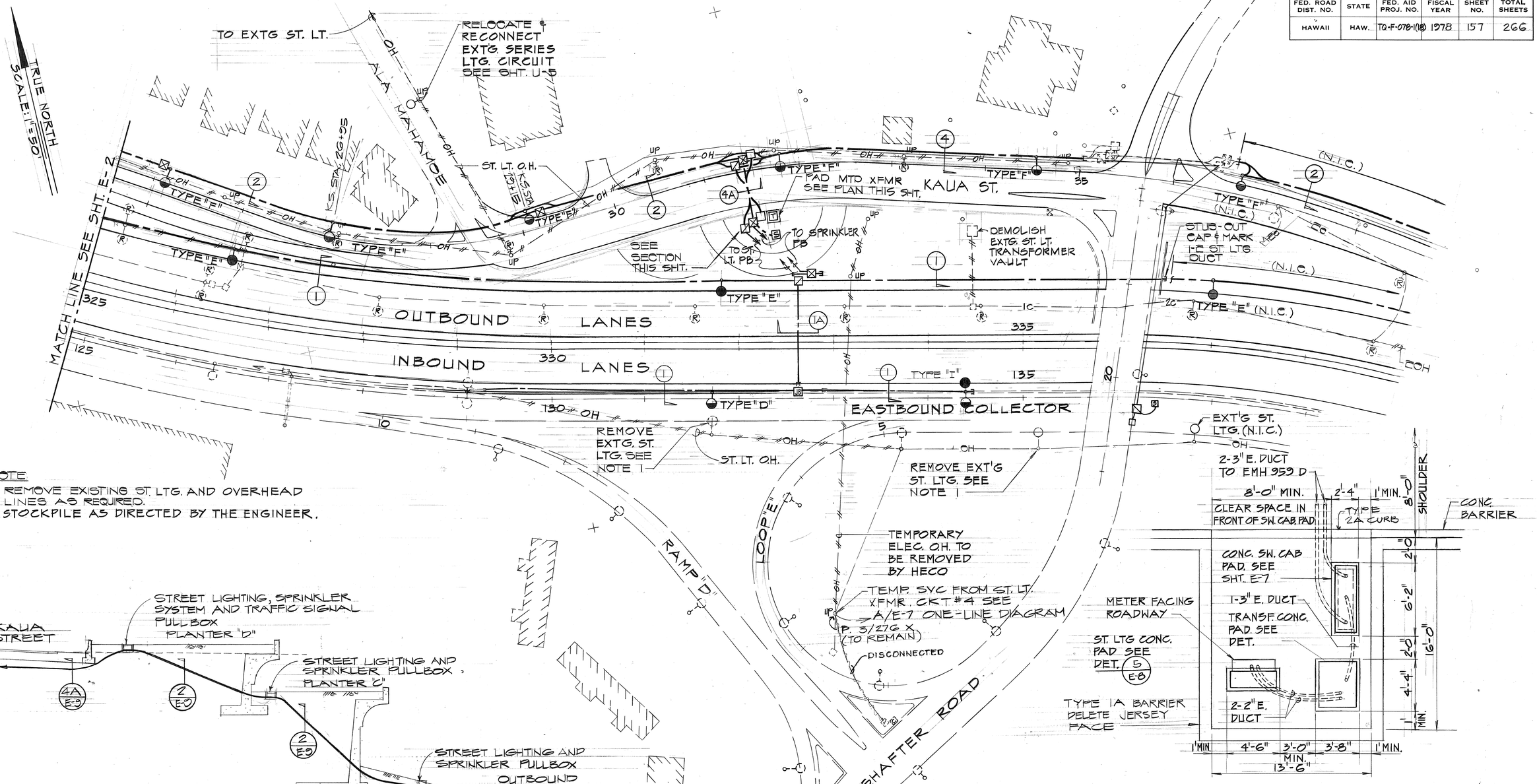
SCALE: AS SHOWN DATE: NOV. 15, 1978

SHEET No. E-2 OF 12 SHEETS

CLARENCE W. F. CHANG
REGISTERED PROFESSIONAL ENGINEER
No. 1002
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	TQ-F-078-1(18)	1978	157	266



PLAN

SCALE: 1"=50'

NOTE

1. REMOVE EXISTING ST. LTG. AND OVERHEAD LINES AS REQUIRED. STOCKPILE AS DIRECTED BY THE ENGINEER.

DUCT SECTION THRU PLANTER

ELECTRICAL EQUIP. PLAN

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STREET LIGHTING PLAN

MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT 3A
F.A. Proj. No. TQ-F-078-1(18)

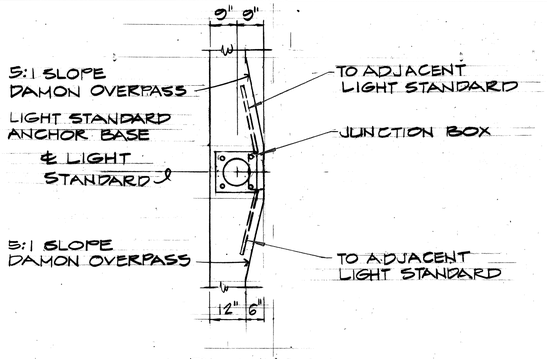
SCALE: AS SHOWN DATE: NOV. 15, 1978

SHEET NO. E-3 OF 12 SHEETS

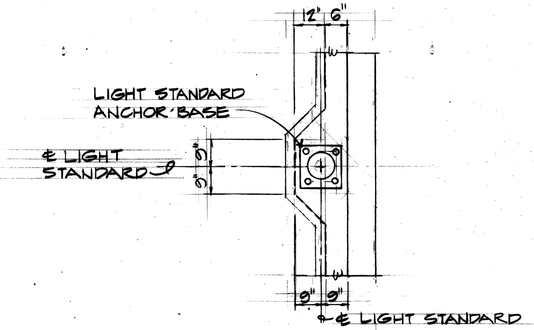
CLARENCE W. Y. CHING
REGISTERED PROFESSIONAL ENGINEER
No. 1002
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

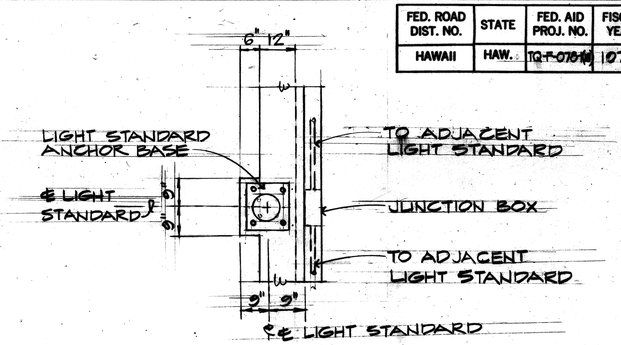
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	TQ-F-078(8)	1978	158	266



PLAN



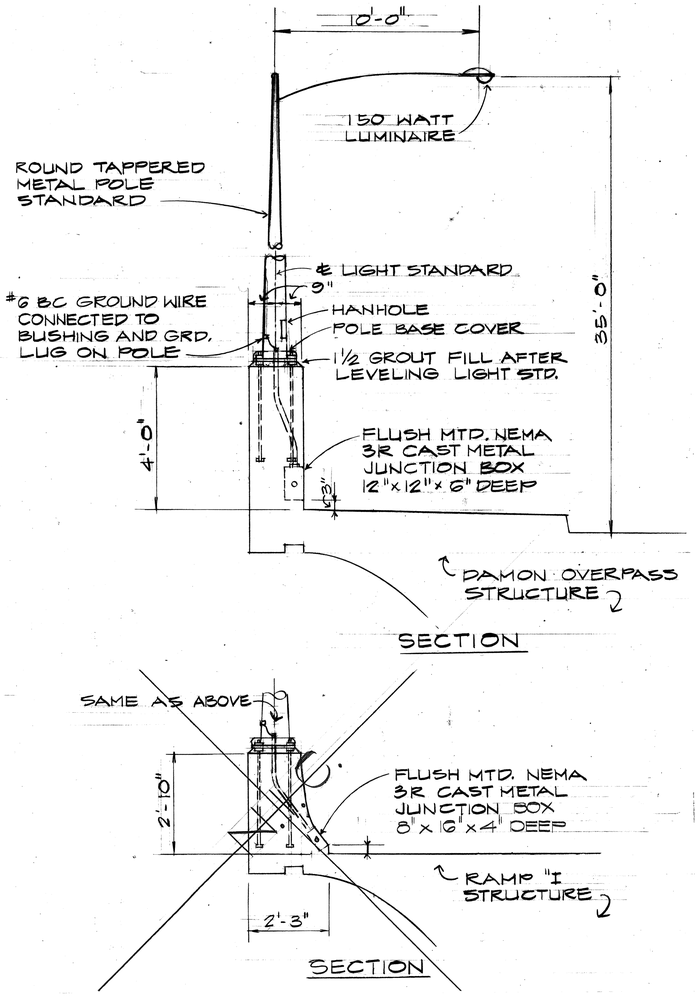
PLAN



PLAN

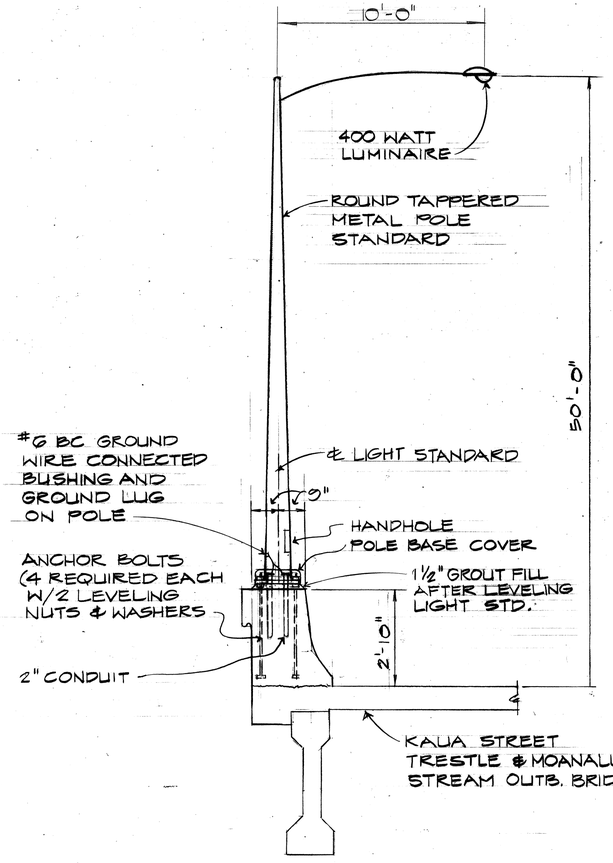
NOTE:

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



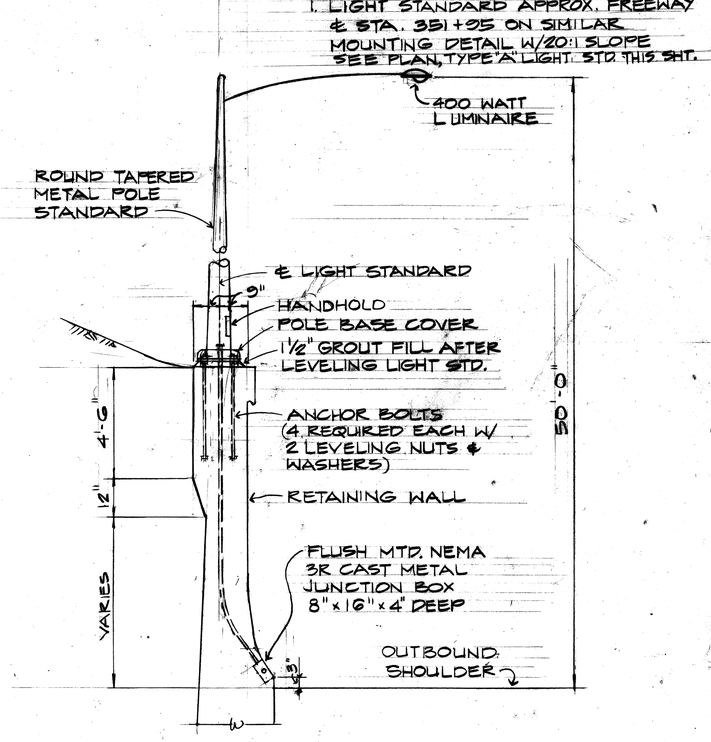
MOUNTING DET. FOR TYPE "A" STD. (A) E-4

NO SCALE



MOUNTING DET. FOR TYPE "B" STD. (B) E-7

NO SCALE



MOUNTING DET. FOR TYPE "C" STD. (C) E-38

NO SCALE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STREET LIGHTING STANDARD DETAILS

MOANALUA ROAD
PULLOA I.C. TO MIDDLE ST. - UNIT 3A
F.A. PROJ. NO. TQ-F-078-1(8)

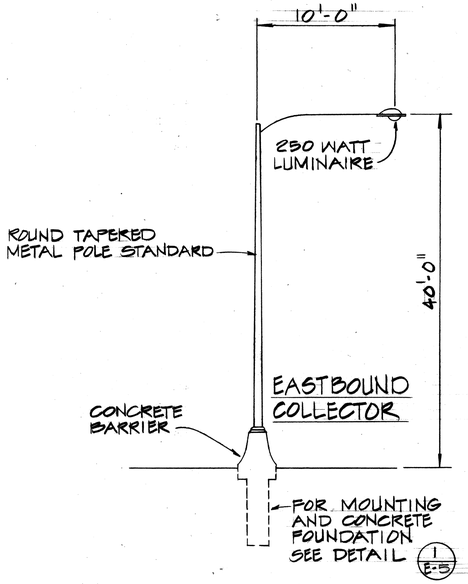
SCALE: AS SHOWN DATE: NOV. 15, 1978

SHEET NO. E-4 OF 12 SHEETS

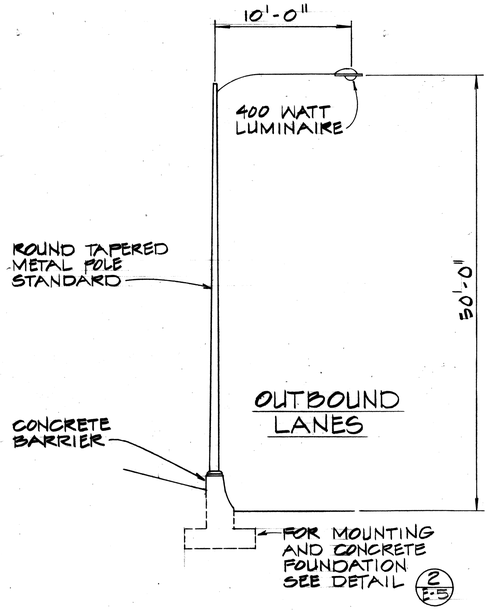
CLARENCE W. Y. CHING
REGISTERED PROFESSIONAL ENGINEER
No. 1002
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

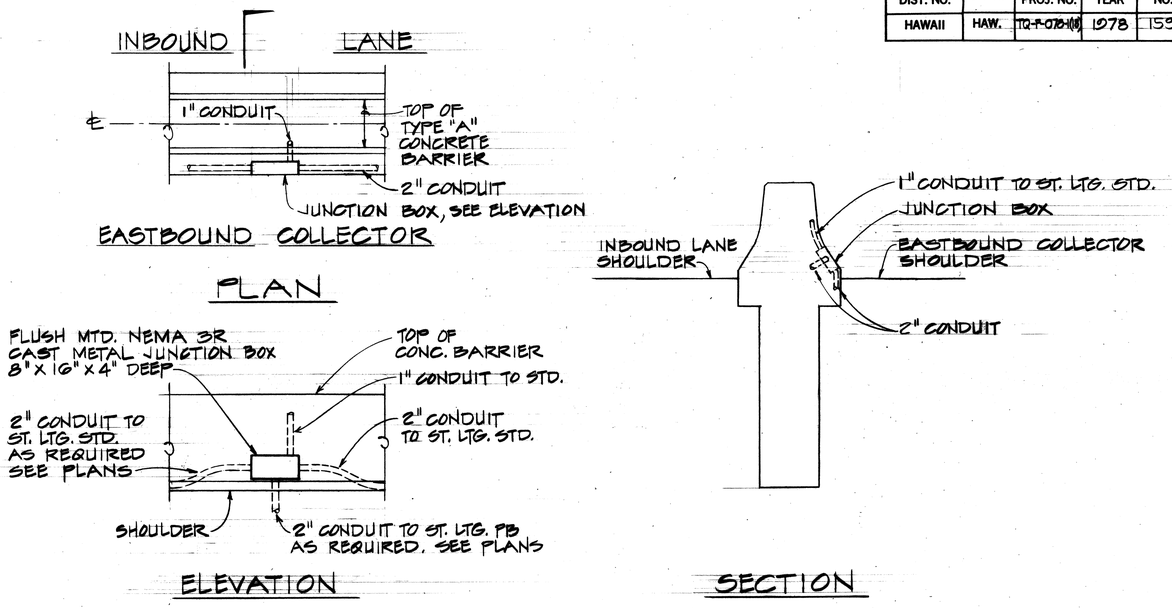
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	TQ-F-078-1(8)	1978	159	266



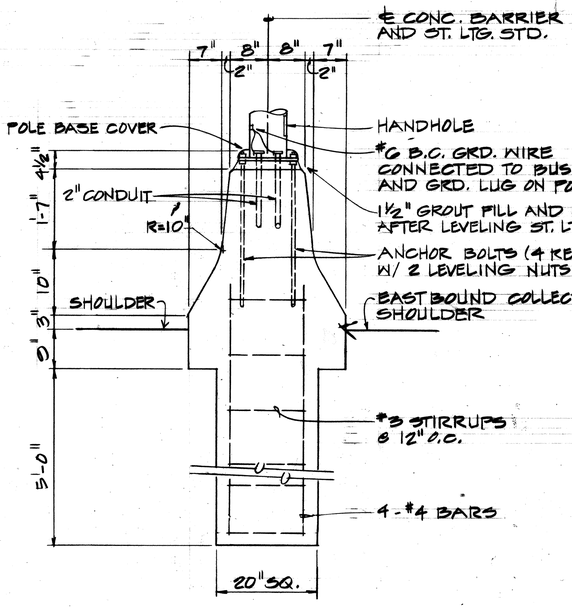
TYPE "D" ST. LTG. STD. DETAIL (A) E-5
NO SCALE



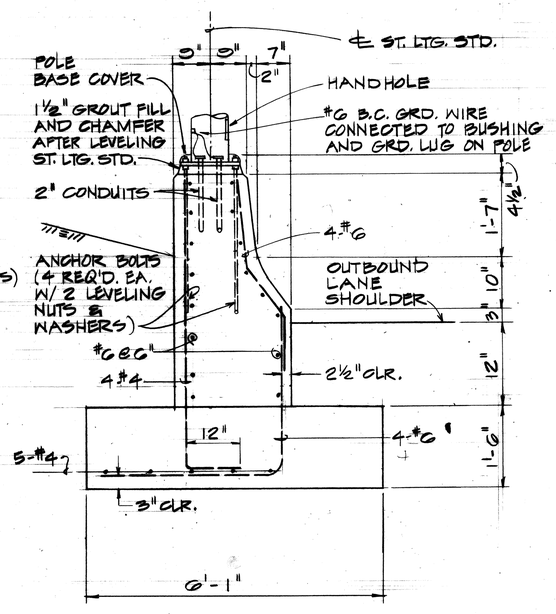
TYPE "E" ST. LTG. STD. DETAIL (B) E-5
NO SCALE



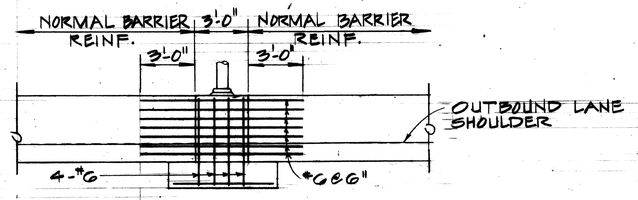
JUNCTION BOX MOUNTING DETAILS (3) E-5
NO SCALE



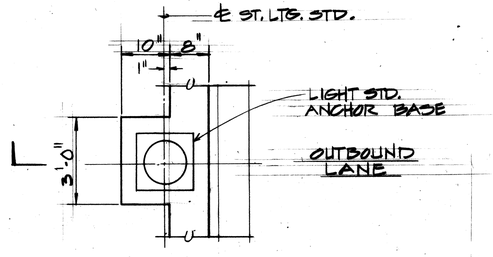
MOUNTING DETAIL FOR TYPE "D" ST. LTG. STD. (1) E-5
NO SCALE



SECTION



ELEVATION



PLAN

MOUNTING DETAIL FOR TYPE "D" ST. LTG. STD. (1) E-5
NO SCALE

MOUNTING DETAIL FOR TYPE "E" ST. LTG. STD. (2) E-5
NO SCALE

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

CLARENCE W. T. CHING REGISTERED PROFESSIONAL ENGINEER No. 1995 HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

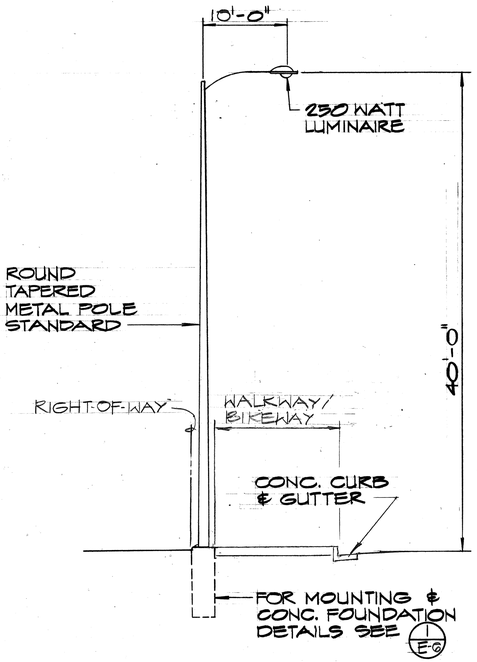
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STREET LIGHTING STANDARD DETAILS

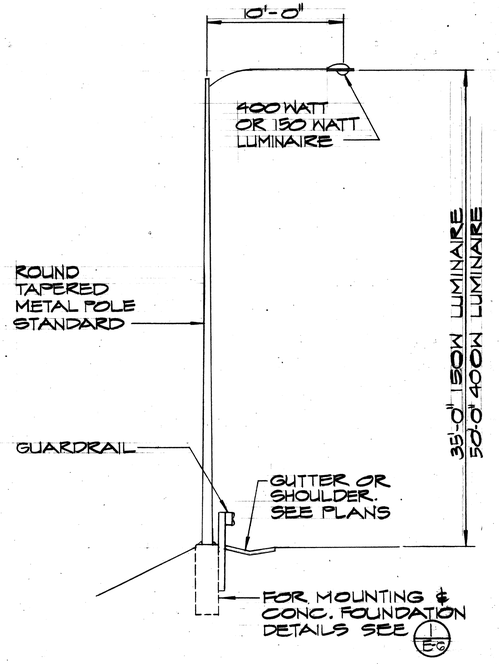
MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT 3A
F.A. PROJ. NO. TQ-F-078-1(8)

SCALE: AS SHOWN DATE: NOV. 15, 1978
SHEET No. E-5 OF 12 SHEETS

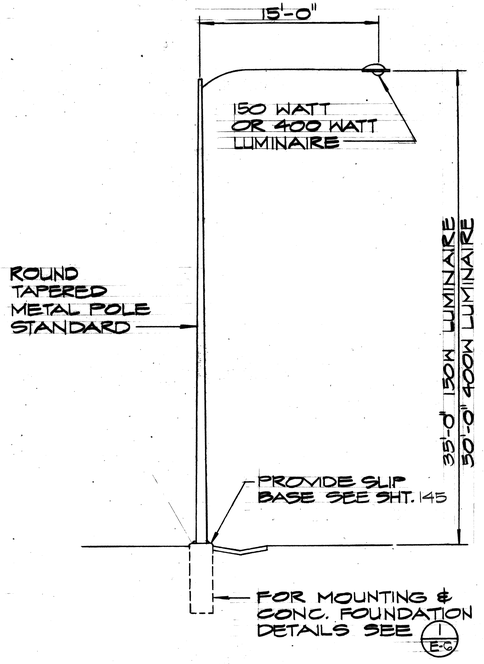
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	TQ-F-078-1(18)	1978	160	266



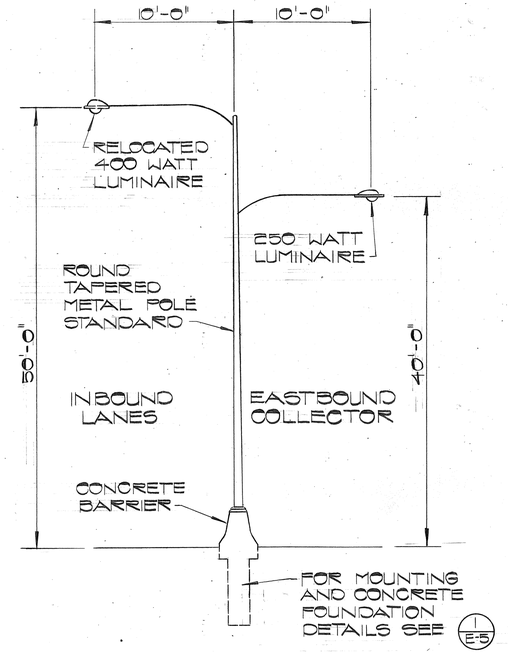
TYPE "F" ST. LTG. STANDARD DET. A E-6
NO SCALE



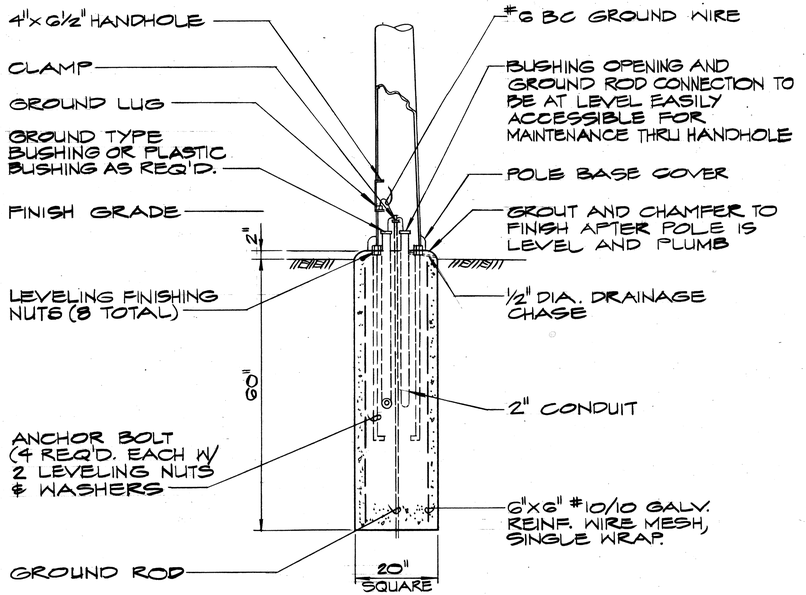
TYPE "G" ST. LTG. STANDARD DET. B E-6
NO SCALE



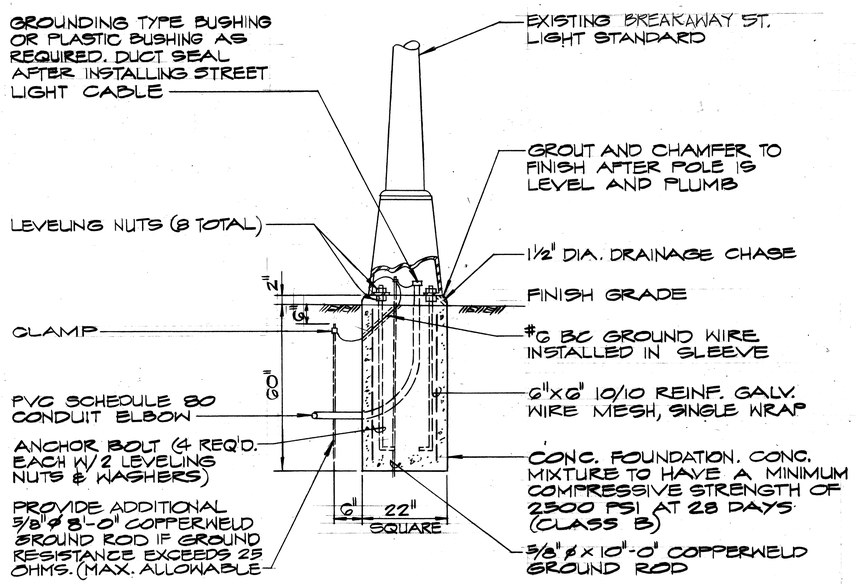
TYPE "H" ST. LTG. STANDARD DET. C E-6
NO SCALE



TYPE "I" ST. LTG. STD. DETAIL D E-6
NO SCALE



MOUNTING DETAIL FOR TYPE F,G & H ST. LTG. STD. 1 E-6
NO SCALE



TYP. MOUNTING DET. FOR RELOCATED STREET LTG. STD. 2 E-6
NO SCALE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STREET LIGHTING STANDARD DETAILS

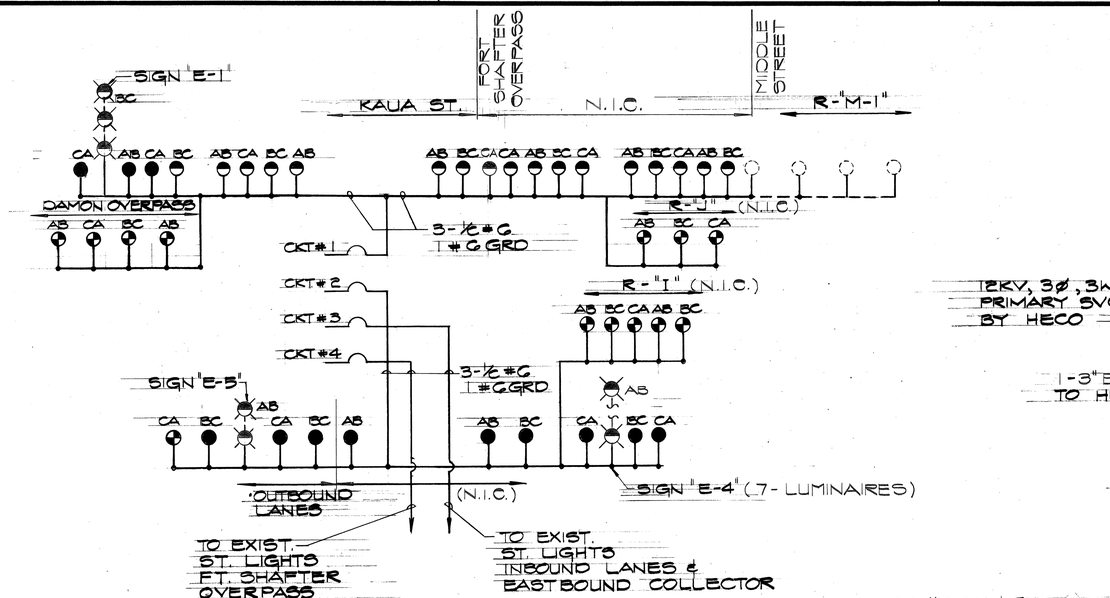
MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT 3A
F.A. PROJ. NO. TQ-F-078-1(18)

SCALE: AS SHOWN DATE: NOV. 15, 1978
SHEET No. E-6 OF 12 SHEETS

CLARENCE W. T. CHING REGISTERED PROFESSIONAL ENGINEER No. 1982 HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

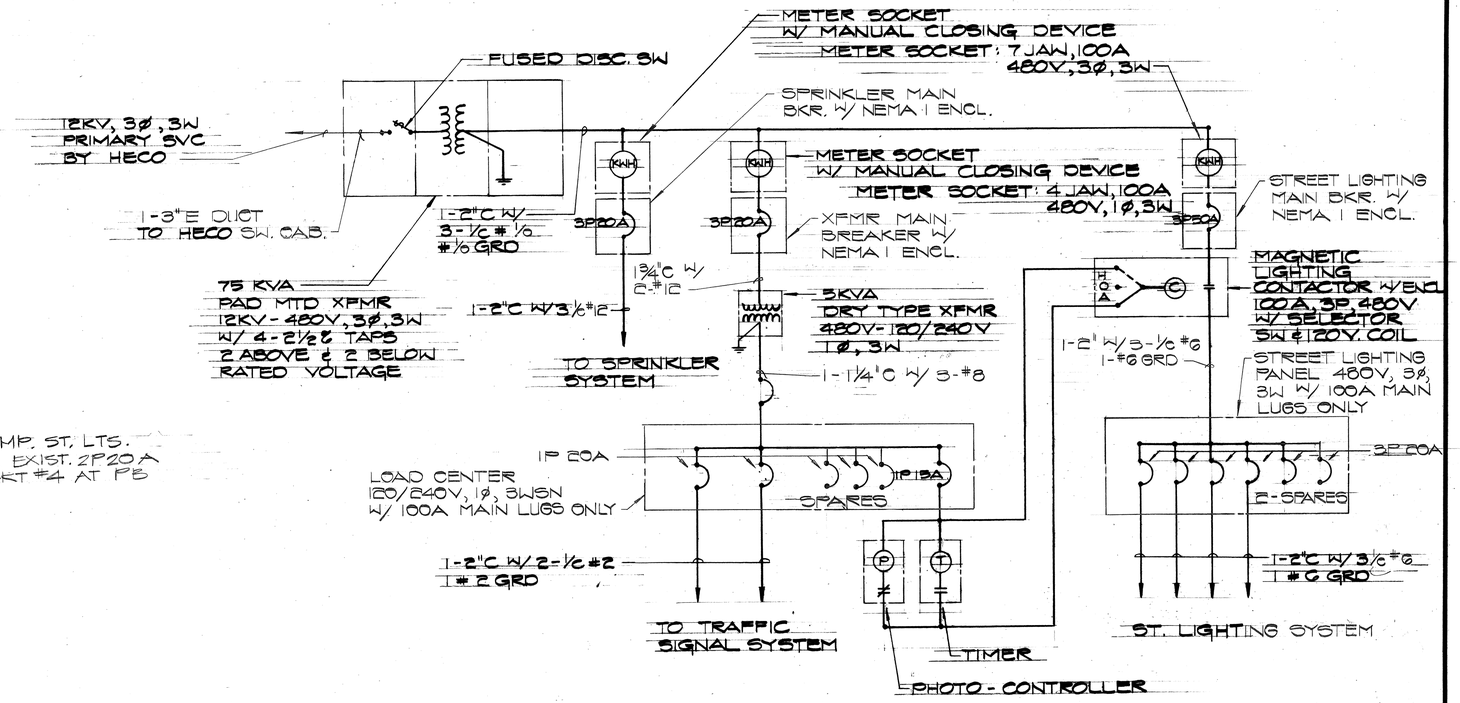
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	TQ-F-078(18)	1978	161	222

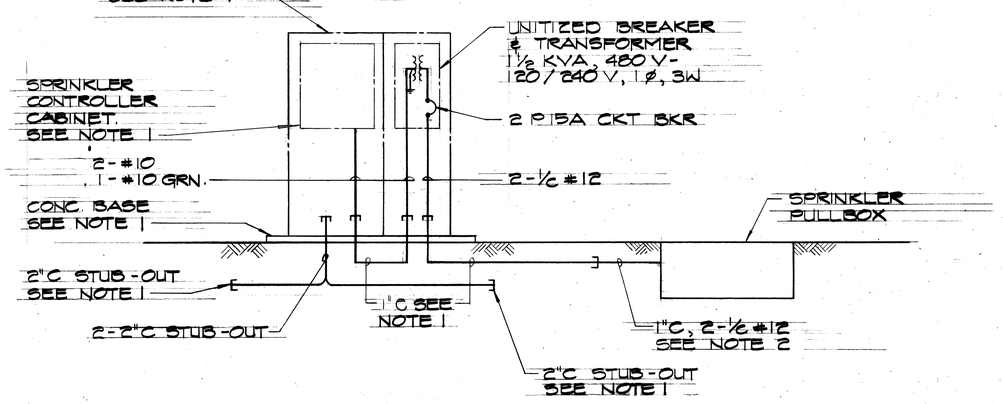


NOTE: PROVIDE TEMP. SVC TO EXIST. TEMP. ST. LTS. FORM CKT #4 VIA EXIST. P3/276X EXIST. 2P20A CKT. BKR., SPLICE 2-½"C #6 INTO CKT #4 AT PB

STREET LIGHTING ONE-LINE DIAGRAM (A E-7)

NO SCALE





NOTE:

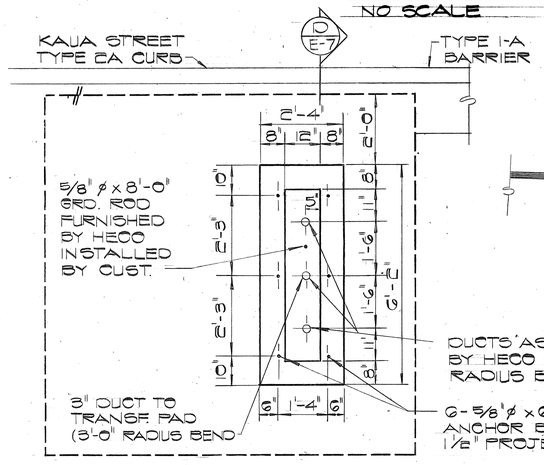
1. WEATHERPROOF CONTROLLER & TRANSFORMER ENCLOSURE, SPRINKLER CONTROLLER CABINET, CONCRETE BASE & CONDUIT STUB-OUTS BY SPRINKLER CONTRACTOR.
2. EXTEND 1"C TO STUB-OUT.

TYPICAL ONE LINE DIAGRAM SPRINKLER CONTROLLER (B E-7)

NO SCALE

ONE LINE DIAGRAM (C E-7)

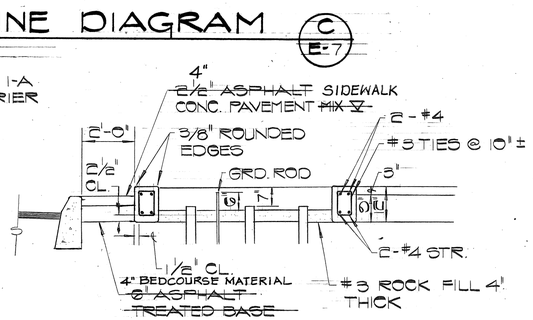
NO SCALE



PLAN

SWITCH CABINET PAD

SCALE: ½" = 1'-0"



SECTION (D E-7)

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

ONE LINE DIAGRAM

MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT 3A
F.A. Proj. No. TQ-F-078-1(18)
SCALE: AS SHOWN DATE: NOV. 15, 1978

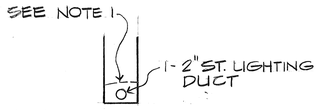
SHEET No. E-7 OF 12 SHEETS

CLARENCE W. T. CHING REGISTERED PROFESSIONAL ENGINEER No. 1008 HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

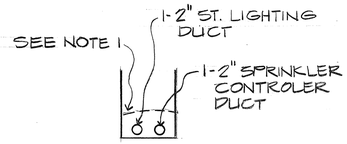
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	TQ-F-078-1(18)	1978	162	266

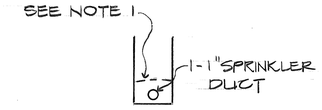


NOTE:
1A SIMILIAR ADD 1-2" ST. LTG. DUCT (SPARE)

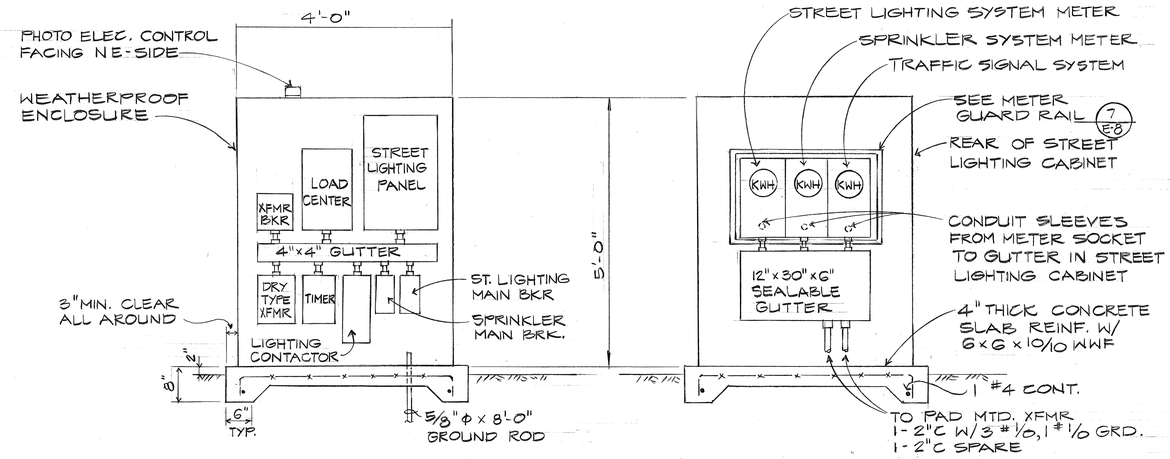
DUCT SECTION (1) E-8
NO SCALE



DUCT SECTION (2) E-8
NO SCALE

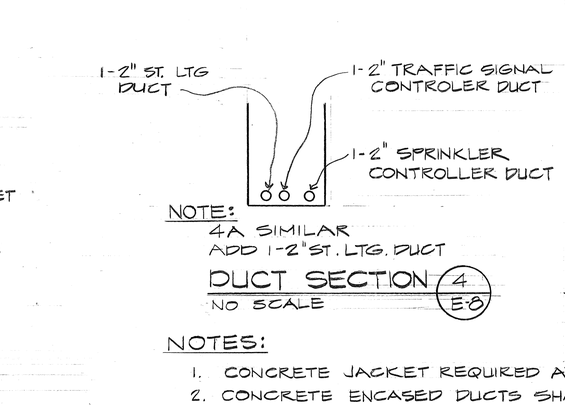


DUCT SECTION (3) E-8
NO SCALE



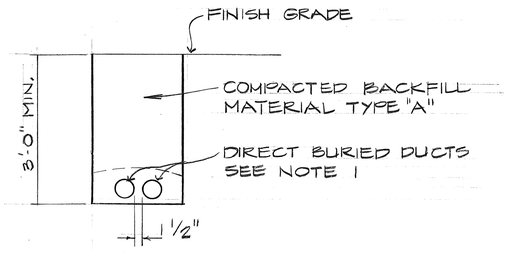
BACK ELEVATION FRONT ELEVATION

STREET LIGHTING CABINET AND PAD DETAIL (5) E-8
SCALE: 3/4"=1'-0"



NOTE:
4A SIMILAR
ADD 1-2" ST. LTG. DUCT

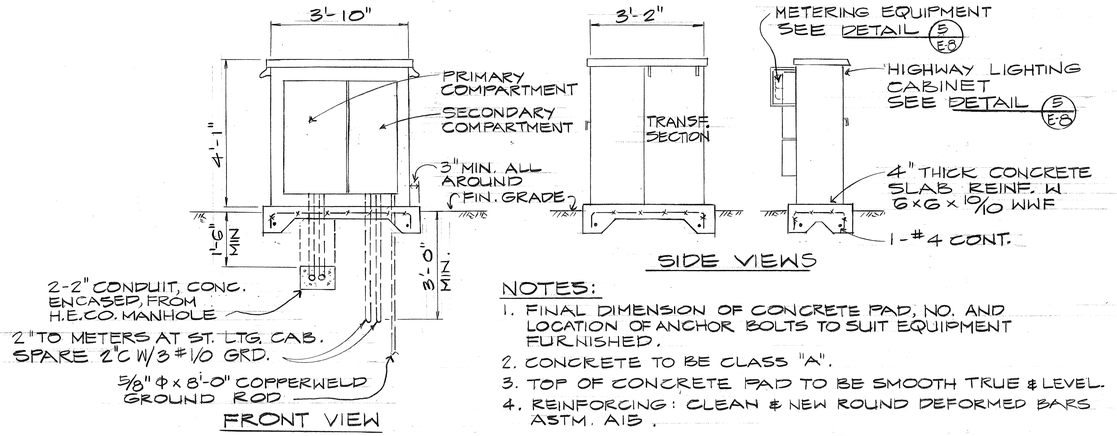
DUCT SECTION (4) E-8
NO SCALE



TYPICAL RACEWAY SECTION FOR STREET LIGHT POWER CKT. (A) E-8
NO SCALE

NOTES:

1. CONCRETE JACKET REQUIRED AT ALL ROAD CROSSING.
2. CONCRETE ENCASED DUCTS SHALL HAVE 3" AROUND ENCASEMENT, 1 1/2" BETWEEN DUCTS AND 3" MIN. SEPARATION BETWEEN ELECTRICAL AND COMMUNICATION DUCTS.
3. TRAFFIC SIGNAL DUCT SYSTEM SHALL BE INCIDENTAL TO THIS PROJECT.

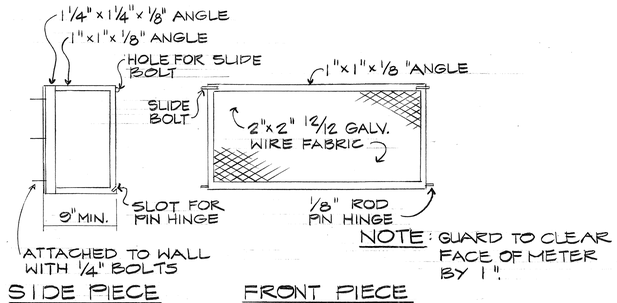


FRONT VIEW SIDE VIEWS

NOTES:

1. FINAL DIMENSION OF CONCRETE PAD, NO. AND LOCATION OF ANCHOR BOLTS TO SUIT EQUIPMENT FURNISHED.
2. CONCRETE TO BE CLASS "A".
3. TOP OF CONCRETE PAD TO BE SMOOTH TRUE & LEVEL.
4. REINFORCING: CLEAN & NEW ROUND DEFORMED BARS ASTM. A15.

PAD MOUNTED TRANSFORMER (6) E-8
SCALE: 1/2"=1'-0"



SIDE PIECE FRONT PIECE

NOTE: GUARD TO CLEAR FACE OF METER BY 1".

METER GUARD RAIL (7) E-8

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

CLARENCE W. Y. CHING
REGISTERED PROFESSIONAL ENGINEER
No. 1003
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

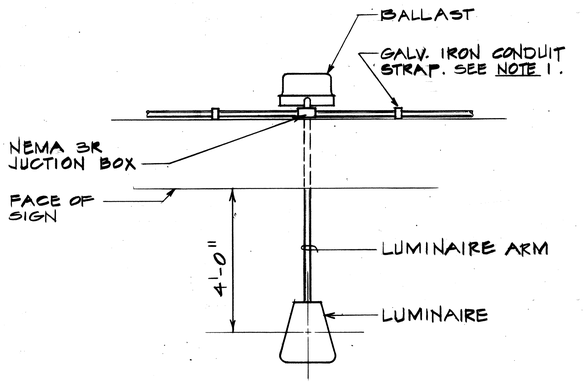
DUCT SECTIONS, STREET LIGHTING CABINET & PAD MOUNTED TRANSFORMER

MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT 3A
F.A. Proj. No. TQ-F-078-1(18)

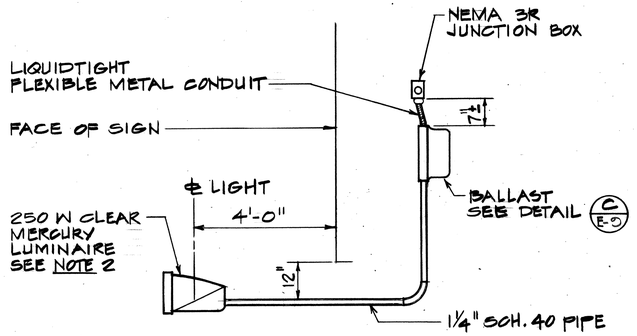
SCALE: AS SHOWN DATE: NOV. 15, 1978

SHEET No. E-8 OF 12 SHEETS

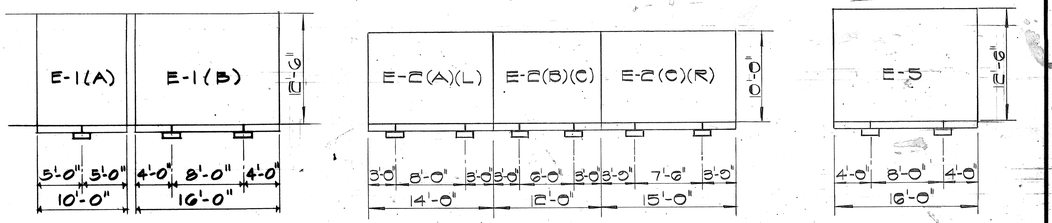
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	TQ-F-078-1(18)	1978	163	266



CONDUIT MOUNTING DETAIL (A, E-9)
NO SCALE



LUMINAIRE MOUNTING DETAIL (B, E-9)
NO SCALE

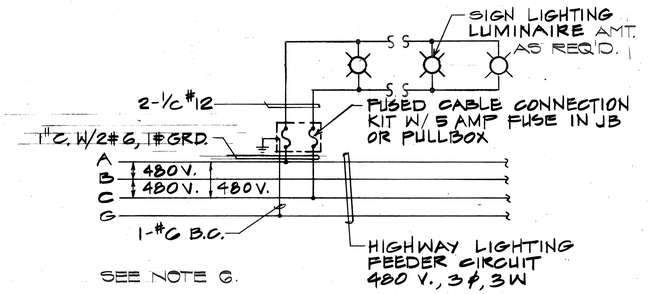


SIGN "E-1"
K.S. ℄ STA. 10+75

SIGN "E-2"
INBOUND ℄ STA. 310+00

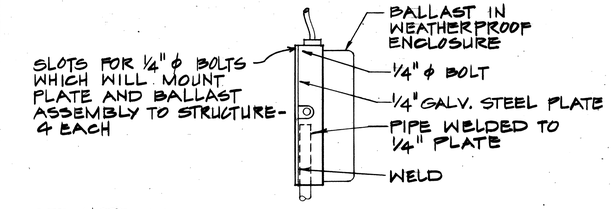
SIGN "E-5"
OUTBOUND ℄ STA. 323+50

LUMINAIRE SPACING DETAIL (E, E-9)
NO SCALE



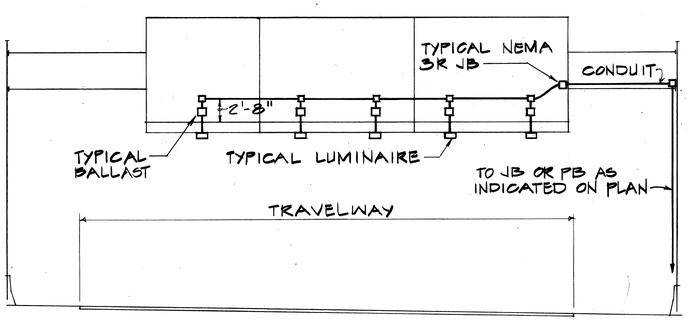
SEE NOTE 6.

SIGN LIGHTING WIRING DIAGRAM (D, E-9)
NO SCALE



SEE NOTE 3

BALLAST-STEEL PLATE DETAIL (C, E-9)
NO SCALE



SEE NOTES 4 & 5.

TYPICAL CONDUIT ROUTING DETAIL (E, E-9)
NO SCALE

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. Ft-l 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 MANUFACTURES 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.
7. LUMINAIRE : ASSEMBLY.
   PRISMATIC REFRACTOR THERMAL SHOCK RESISTANT GLASS W/ RETRODISPERSING REFLECTOR FOR UNIFORM SIGN LUMINANCE.
   MAIN HOUSING CAST ALUMINUM SLIPFITTER TYPE.
   BALLAST BACK MOUNTED, 480V, REGULATOR TYPE W/HPF ABOVE 90 %, RIF SUPPRESSION TYPE

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

CLARENCE W. Y. CHING
REGISTERED PROFESSIONAL ENGINEER
No. 1002
HAWAII, U.S.A.

C. Ching
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

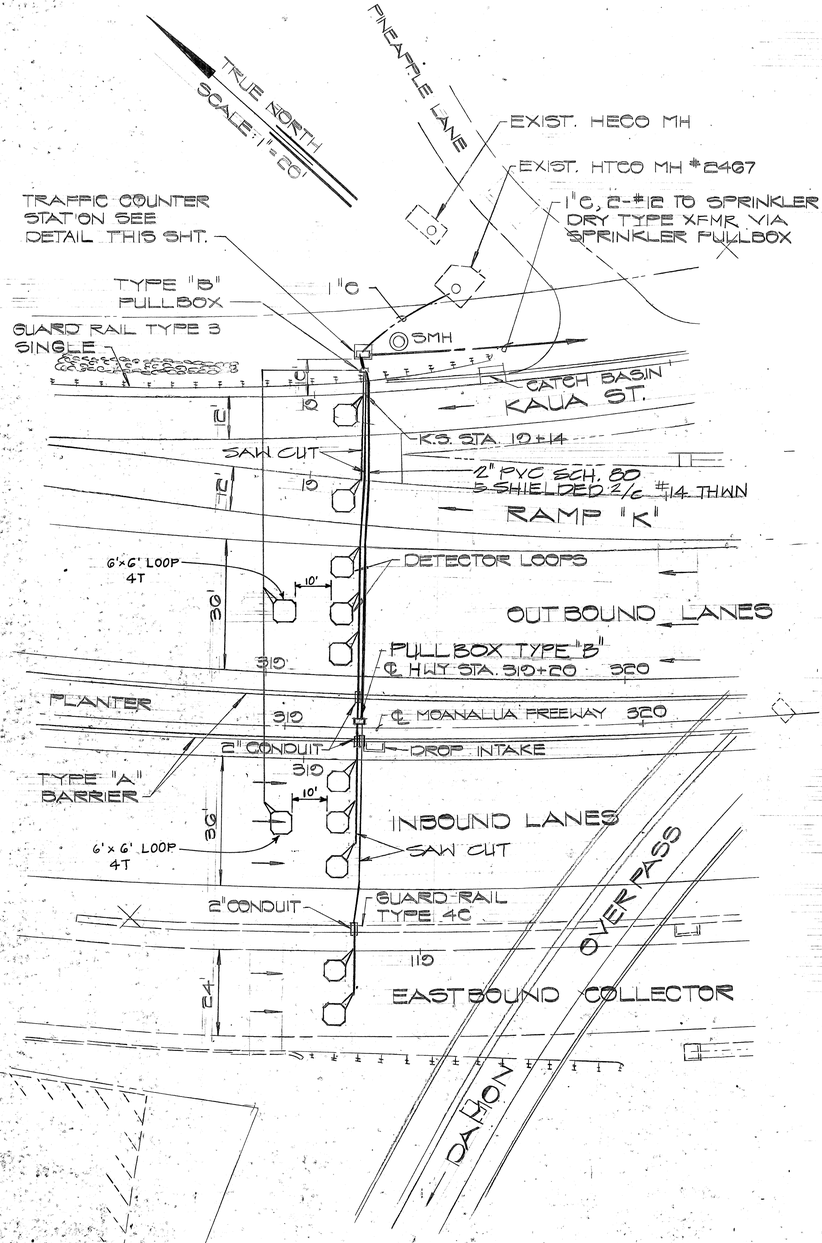
SIGN LIGHTING DETAILS

MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST.- UNIT 3A
F.A. PROJ. NO. TQ-F-078-1 (18)

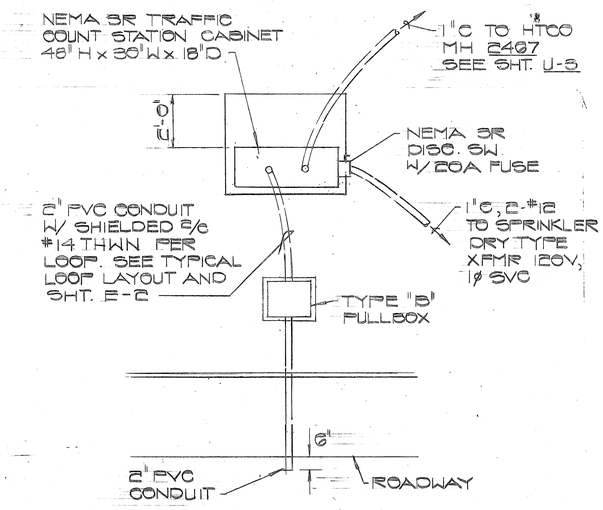
SCALE: AS SHOWN DATE: NOV. 15, 1978

SHEET No. E-9 OF 12 SHEETS

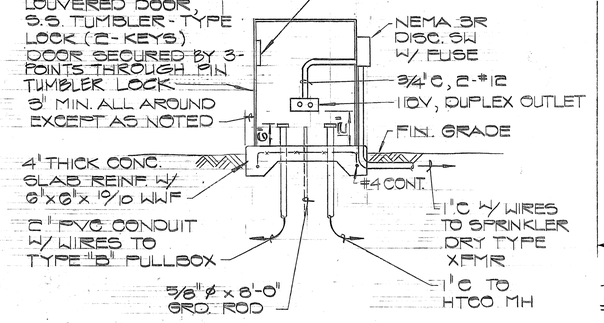
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	TQ-F-078-1(18)	1978	TG4	266



LAYOUT PLAN
SCALE: 1" = 20'



PLAN

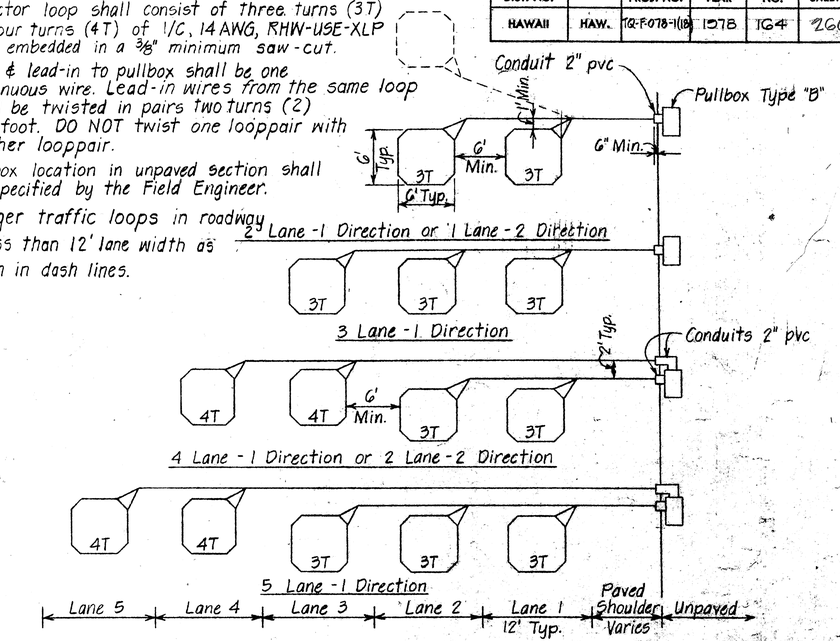


SECTION

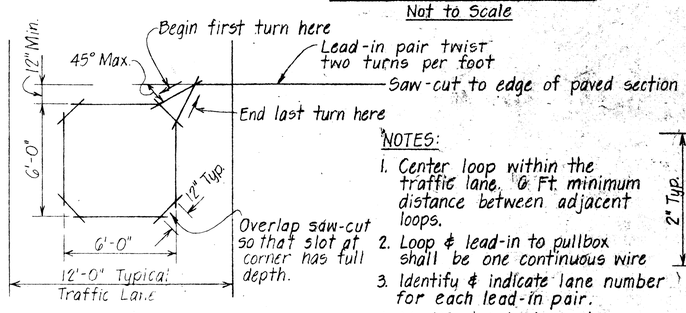
TRAFFIC COUNT STATION
NOT TO SCALE

LOOP LAYOUT NOTES:

1. Detector loop shall consist of three turns (3T) or four turns (4T) of 1/C, 14 AWG, RHW-USE-XLP wire embedded in a 3/8" minimum saw-cut.
2. Loop & lead-in to pullbox shall be one continuous wire. Lead-in wires from the same loop shall be twisted in pairs two turns (2) per foot. DO NOT twist one looppair with another looppair.
3. Pullbox location in unpaved section shall be specified by the Field Engineer.
4. Stagger traffic loops in roadway w/less than 12' lane width as shown in dash lines.



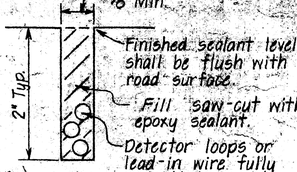
TYPICAL LOOP LAYOUT
Not to Scale



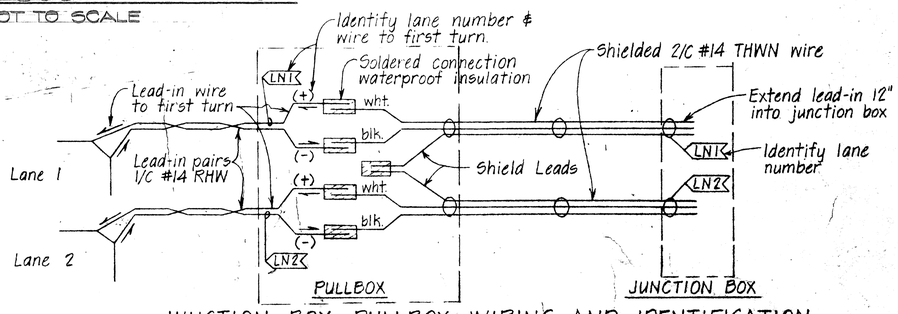
TYPICAL LOOP AND SLOT
Not to Scale

NOTES:

1. Center loop within the traffic lane. 6 Ft. minimum distance between adjacent loops.
2. Loop & lead-in to pullbox shall be one continuous wire
3. Identify & indicate lane number for each lead-in pair.
4. Identify & indicate lead-in wire to first turn.
5. Clean saw cut thoroughly before filling with epoxy sealant.
6. All PVC conduits used shall be type schedule 80.



TYPICAL SAW-CUT
Not to Scale



JUNCTION BOX, PULLBOX WIRING AND IDENTIFICATION

Revised 6-15-77
Revised 3-18-77

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

CLARENCE W. Y. CHING
REGISTERED PROFESSIONAL ENGINEER
No. 1002
HAWAII, U.S.A.

C. Ching

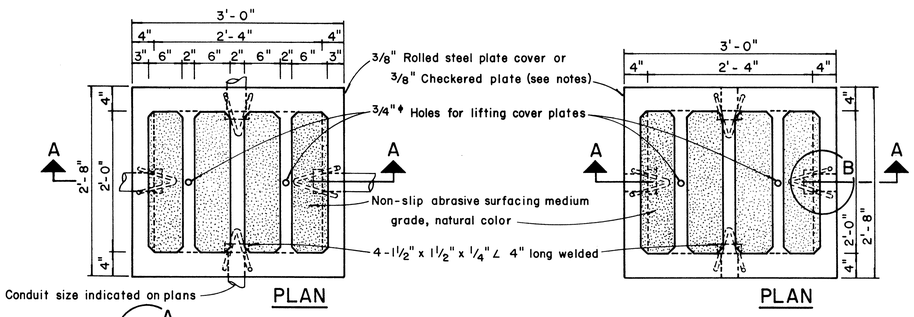
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS
TRAFFIC COUNT STATION
FOR
AC OR DC DETECTOR LOOP INSTALLATION

SHEET No. E10 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	T&F-078-1(18)	1978	165	266

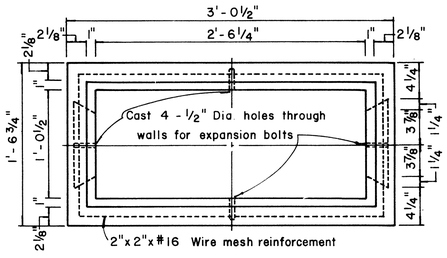


TYPE "A" PULLBOX CAST-IN-PLACE

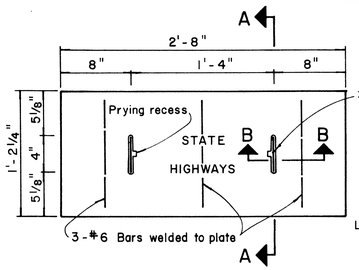
Scale: 1" = 1'-0"

TYPE "A" PULLBOX PRECAST

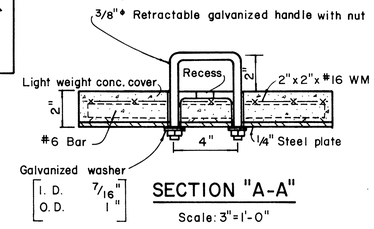
Scale: 1" = 1'-0"



PLAN

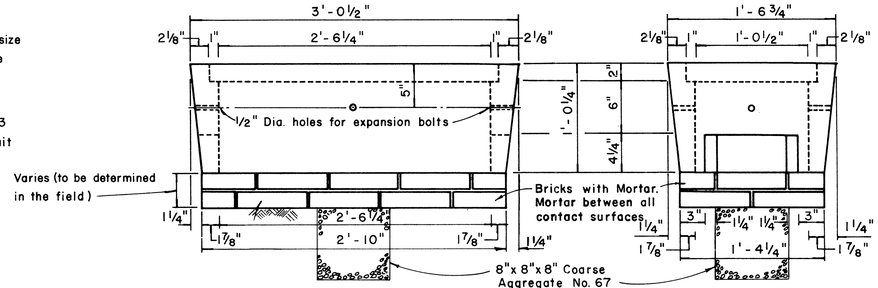


PLAN OF COVER



SECTION "A-A"

Scale: 3" = 1'-0"

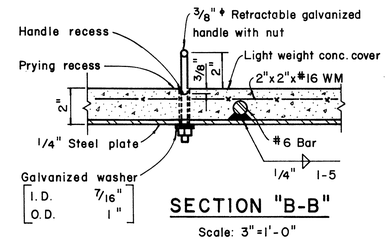


SIDE ELEVATION

END ELEVATION

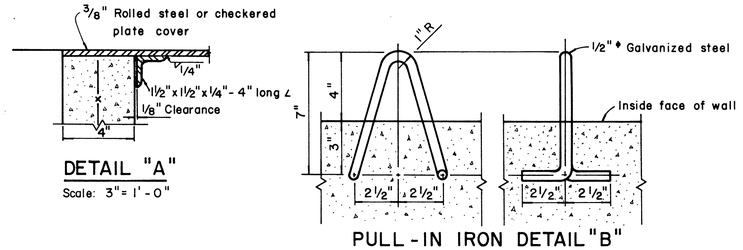
TYPE "C" PULLBOX

Scale: 1 1/2" = 1'-0"



SECTION "B-B"

Scale: 3" = 1'-0"



DETAIL "A"

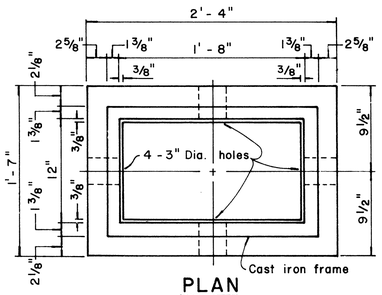
Scale: 3" = 1'-0"

PULL-IN IRON DETAIL "B"

Scale: 3" = 1'-0"

NOTES: (FOR TYPE "A" PULLBOX)

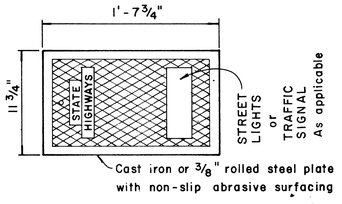
1. 3/8" Rolled steel plate cover with non-slip abrasive surfacing medium grade, natural color shall be used on all pullboxes located on sidewalk areas where pedestrians are walking.
2. 3/8" Checkered plate cover shall be used on all pullboxes located in median areas and other locations where there are no pedestrians walking.
3. Pull irons shall be placed opposite each conduit slot.
4. Covers on all pullboxes located in sidewalk areas shall be set flush with the concrete sidewalk.
5. Each pullbox shall have a pair of pull irons opposite each other for lifting purposes.



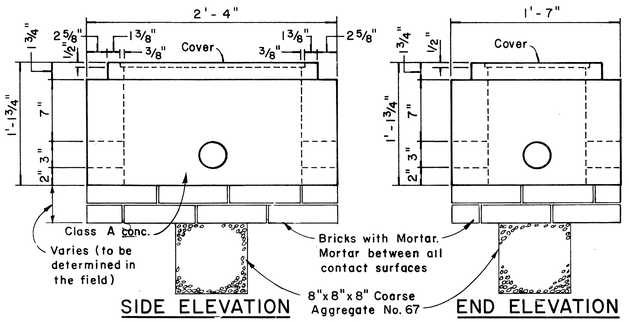
PLAN

NOTE:

Steel rim shall be welded to bottom of steel cover if necessary so that top of cover and frame are flush



PLAN OF COVER



SIDE ELEVATION

END ELEVATION

TYPE "B" PULLBOX

Scale: 1 1/2" = 1'-0"

NO.	REVISION	APPROVED BY	DATE
1	Revised Type B & C Pullbox details	H.T.	3-5-76

APPROVAL RECOMMENDED:

Eiichi Tanaka
TRAFFIC ENGINEER — DATE 12/69

APPROVED:

ASSISTANT CHIEF, ENGINEERING — DATE 12-30-69

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS
PULLBOXES

Scale as noted — Date: NOV. 15, 1978

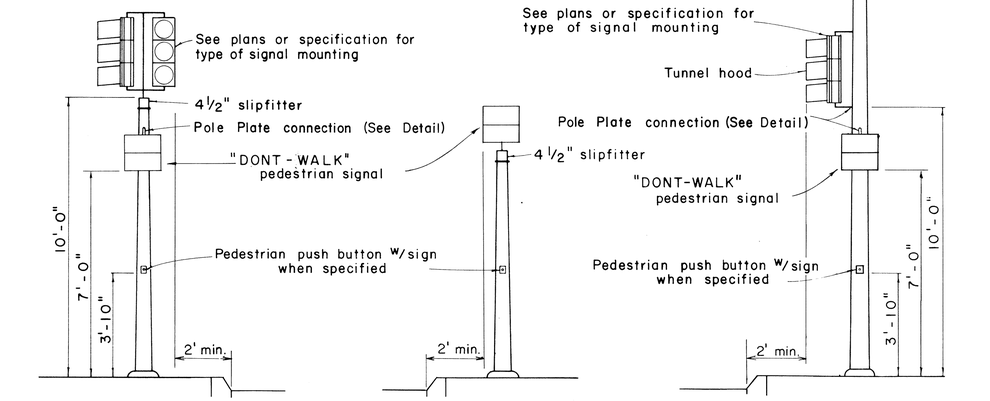
SHEET No. E-11 OF 12 SHEETS DT 401

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

PRINTED ON NO. 1000H CLEARPRINT

165

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	TQ-F-078-1(18)	1978	165 S-1	266

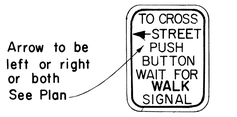


ON 10 - FOOT STANDARD

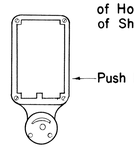
ON 8 - FOOT STANDARD WHEN SPECIFIED

ON MAST ARM OR SPAN WIRE STANDARD

TYPICAL EQUIPMENT MOUNTINGS

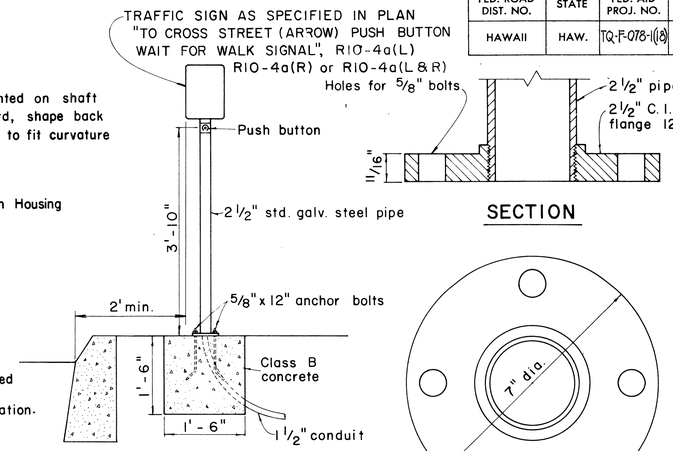


RIO - 4a(L)
5" x 7"

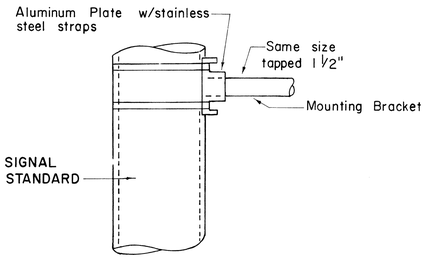


PEDESTRIAN PUSH BUTTON

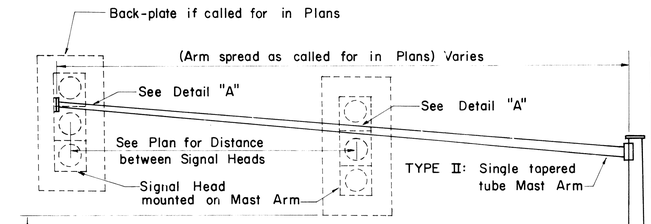
NOTE:
1. Conduits shall protrude 2" max. above finished surface of foundation.
2. Conduits shall slope away from pole foundation.



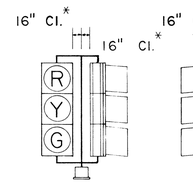
PEDESTRIAN PUSH BUTTON POST AND FOOTING



DETAIL OF POLE PLATE CONNECTIONS



DETAIL "A"

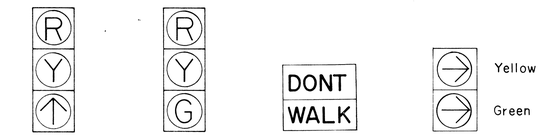


1 way (1 vert.) *IA
1 way (1 vert.) I
2 way (2 vert.) II
3 way (3 vert.) III
1 way (1 vert.) IV
2 way (2 vert.) V
1 way (1 vert.) VI
2 way (2 vert.) VII

SLIPFITTER MOUNTINGS | BRACKET MOUNTINGS | MASTARM MOUNTINGS

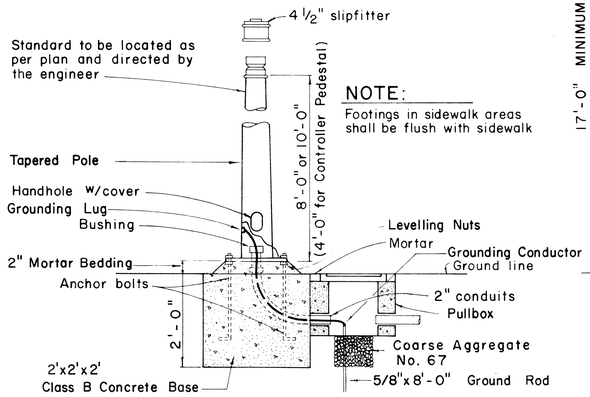
* Use with Programmed Visibility Signal

TYPICAL VEHICULAR AND PEDESTRIAN SIGNAL MOUNTINGS



1 - Vertical 3 - Section
1 - Vertical 3 - Section
1 - Dont Walk Walk
1 - Vertical 2 - Section

TYPICAL SIGNAL ARRANGEMENTS



NOTE:
Footings in sidewalk areas shall be flush with sidewalk

TYPE I SIGNAL STANDARD OR CONTROLLER PEDESTAL AND FOOTING

TYPE II MAST ARM AND STANDARD

NO	REVISION	APPROVED BY	DATE
1	Revise code nos. for Pedestrian Push Button signs.	H.T.	3/23/12
2	Revise Details of Traffic and Pedestrian Signals, Standards and Pedestrian Push Button and Signs.	H.T.	3/5/10
3	Revise signal indications.	H.T.	9/22/10
4	Remove Note No. 3 & Revise clearance and dimension.	H.T.	9/19/11

APPROVAL RECOMMENDED:

Eiichi Tanaka — TRAFFIC ENGINEER — 12/23/69 DATE

ASSISTANT CHIEF, ENGINEERING — 12/30/69 DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

TRAFFIC SIGNAL SYSTEM

MISCELLANEOUS DETAILS

Not to Scale

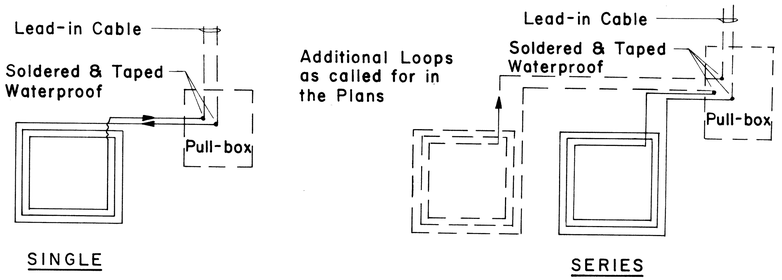
SHEET No. OF SHEETS DT 400

C.O. 165 S-1

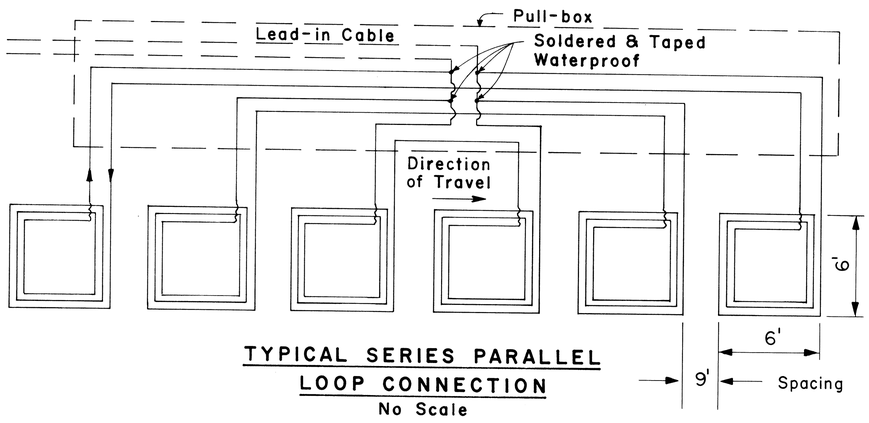
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE
NOTE BOOK
No.

PRINTED ON NO. 1000H CLEARPRINT

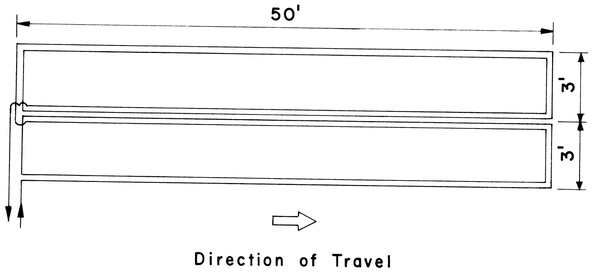
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	TQ-F-078-1(18)	1978	166	266



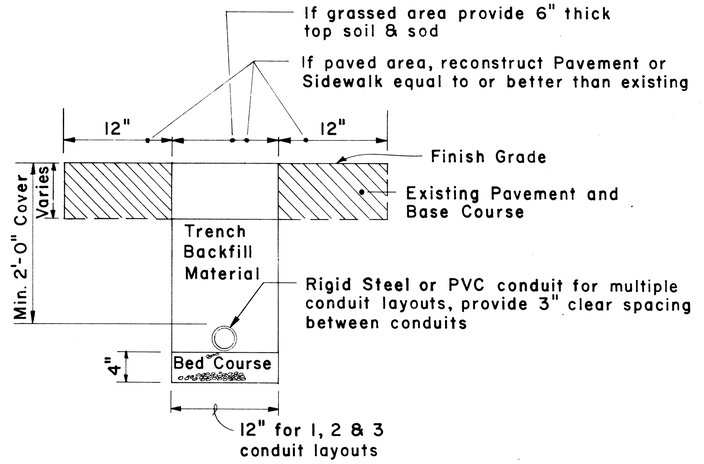
TYPICAL LOOP CONFIGURATIONS
No Scale



TYPICAL SERIES PARALLEL LOOP CONNECTION
No Scale



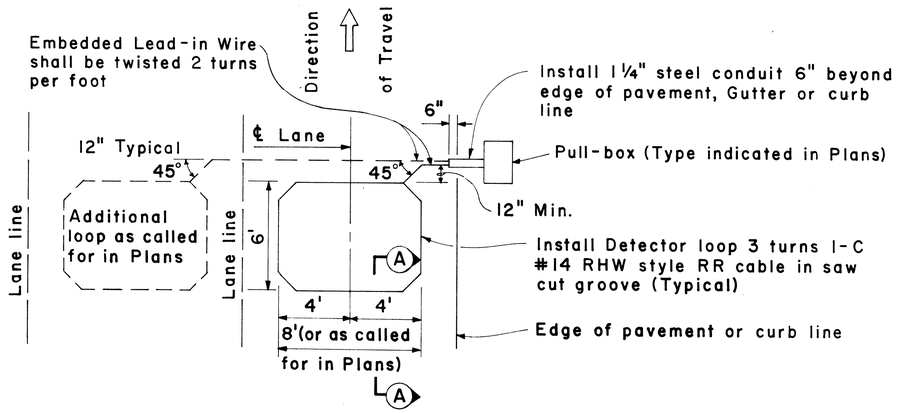
WIRING FOR 6' x 50' LOOP DETECTOR
No Scale



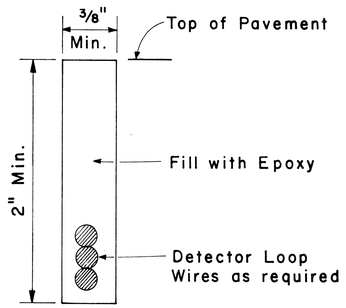
TYPICAL TRENCH SECTION FOR CONDUIT
Scale : 1 ½" = 1' - 0"

NOTE:

1. All conduits under roadways shall be steel or PVC schedule 80. All other conduits shall be steel or PVC schedule 40.



PLAN - MULTIPLE LOOP LAYOUT
Scale : ¼" = 1' - 0"



Detector Loop Saw-Cut

SECTION A-A (TYPICAL)
No Scale

DETECTION LOOP
Scale : As Shown

APPROVAL RECOMMENDED:
Eiichi Tanaka — TRAFFIC ENGINEER — 3/4/76 DATE

APPROVED:
Hubert S. Sakoshi — ASSISTANT CHIEF, ENGINEERING — 3-5-76 DATE

NO.	REVISION	APPROVED BY	DATE
1	Add dimensions to Loop Configurations	H.T.	9-22-76

STATE OF HAWAII — DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

TRAFFIC SIGNAL SYSTEM MISCELLANEOUS DETAILS

Scale : As Noted

SHEET No. E-12 OF 12 SHEETS DT 405

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

K-E ® TRACING PAPER