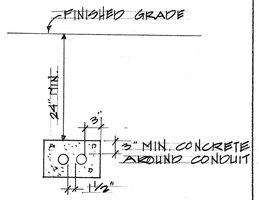
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(65):10 I-HI-1(40):11	1969	59	185

CONDUIT AND CABLE REQUIREMENTS

SECTION	CONDUIT	CABLE
A	1½"	2-#2 EXCEPT AS NOTED.
B	2-2"	SPARE
	1-2"	4-#2 CKT. 2, 5
	1-2"	4-#2 CKT. 3, 4, 3#12 CONTROL.
C	1-2"	SPARE (FUT. TRAFFIC SIGNAL)
	1-2"	4-#2
D	1-2"	SPARE
E	2-2"	SPARE
F	1-2"	4-#2 CKT.



CONDUIT INSTALLATION AT ROAD CROSSING

ELECTRICAL SYMBOLS

⊸⊗	LIGHT STANDARD, 400W, MERCURY LAMP
⊸○	LIGHT STANDARD, 250W, MERCURY LAMP.
⊸⬚	EXIST. LIGHT STANDARD
▭	LUMINAIRE FOR UNDERPASS LIGHTING
4⊸⊗	NUMERAL INDICATES CIRCUIT NO.
⊠	PULLBOX, TYPE "C"
———	STEEL CONDUIT ENCEBALED IN CONC. W/EXPANSION FITTING AT STRUCTURE EXPANSION JOINT
———	PVC CONDUIT BELOW GRADE, 18" MIN. EXCEPT AS NOTED
▪▪▪▪▪▪	GUARD RAIL (BY OTHERS)
2-6'-1800MA	2-6' SIGN LIGHT WITH 1800 MILLIAMPERE LAMPS.
14'-12' BKT III - 6' FTG	FIRST NUMERAL INDICATES OFFSET DISTANCE FROM EDGE OF SHOULDER TO NEAREST EDGE OF STANDARD CONC. BASE. SEE DETAILS FOR STANDARDS ON BRIDGE AND RETAINING WALL. (X INDICATES STD. ON CONC. STRUCTURE) SECOND NUMERAL INDICATES LENGTH OF BRACKET. ROMAN NUMERAL - IES TYPE LIGHT DISTRIBUTION ✳ FOURTH NUMERAL - CONCRETE FOOTING DEPTH. SEE DETAILS FOR FOOTING ON BRIDGE & RETAINING WALL

✳ III = MEDIUM SEMI-CUTOFF TYPE III DISTRIBUTION
II = MEDIUM SEMI-CUTOFF TYPE II DISTRIBUTION

NOTES:

1. PROVIDE EXPANSION COUPLING IN EACH PVC CONDUIT RUN BETWEEN LIGHT STANDARDS & BETWEEN LIGHT STANDARD & PULL BOX. OMIT EXPANSION COUPLING FOR RUN LESS THAN 5' BETWEEN PULL BOX & LIGHT STANDARD. EXPANSION COUPLING TO BE CENTERED IN THE CONDUIT RUN. CONDUIT JOINT SHALL BE MADE WATER TIGHT BY APPLICATION OF CHEMICAL SOLVENT PER CONDUIT MANUFACTURER'S RECOMMENDATION.
2. CONDUITS ACROSS ROADWAY SHALL BE STRAIGHT. PROVIDE MARKERS AT BOTH ENDS OF ROAD CROSSING. MARKERS SHALL BE INCIDENTAL TO THE CONDUITS. SEE DETAIL ON SHEET 6.
3. CONDUITS FOR FUTURE TRAFFIC SIGNAL SYSTEM TO BE PAID UNDER PROPOSAL ITEM 113.03.
4. ALL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 EXCEPT AS NOTED AND EXCEPT FOR TRAFFIC SIGNAL DUCTS WHICH SHALL BE P.V.C. OR GALV. STEEL.
5. PLUG ALL ENDS OF CONDUIT STUBS.

KEY PLAN

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING SYSTEM

INTERSTATE ROUTE H-1
PROJ. NO. I-HI-1(65):10

SCALE: AS SHOWN DATE

SHEET No. 1 OF 7 SHEETS

TAKETO KAWABATA
REGISTERED PROFESSIONAL ENGINEER
No. 750
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

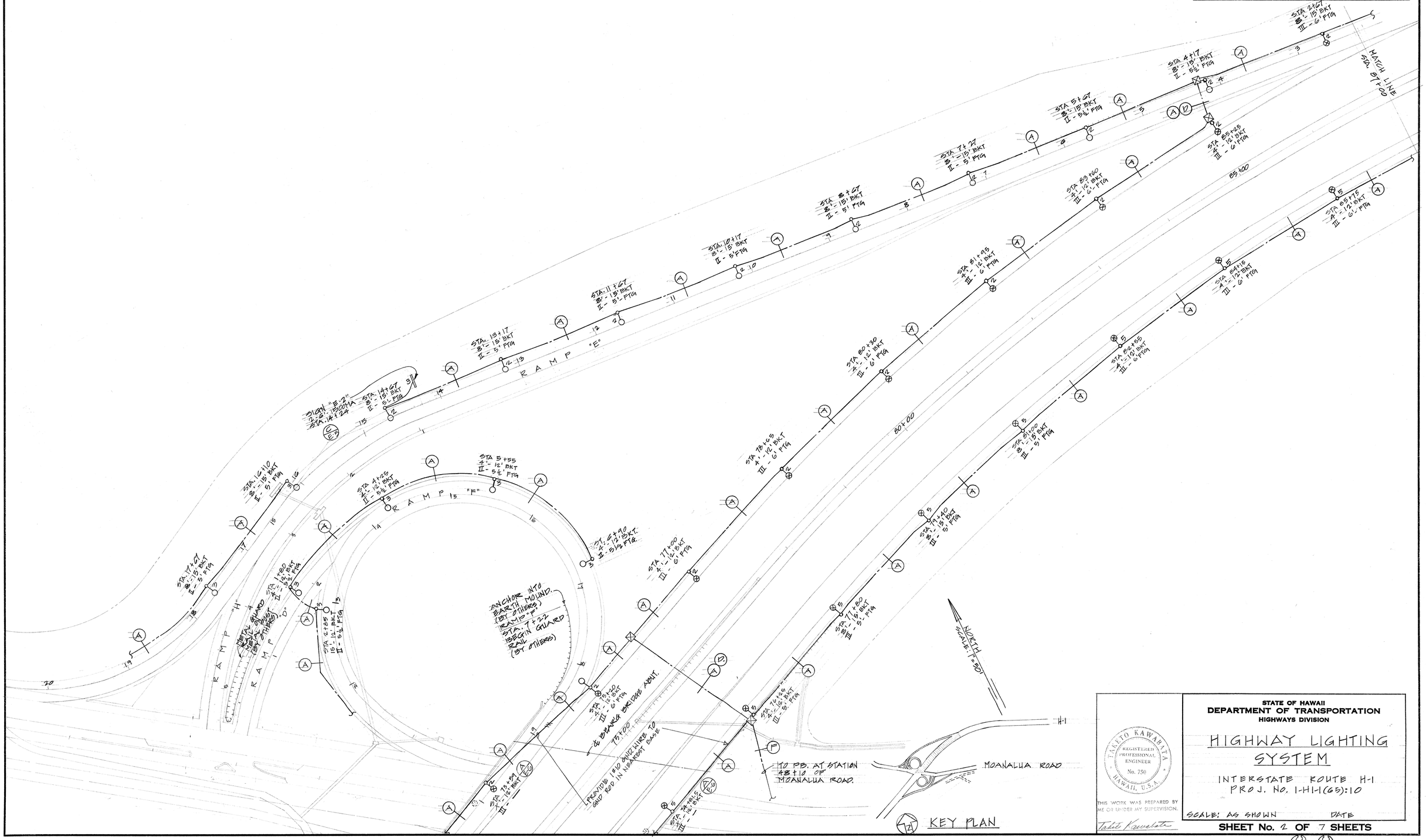
Taketo Kawabata

PRINTED ON NO. 1000H CLEARPRINT

59

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-(65):10 I-HI-(42):11	1969	60	185

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



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Taketo Kawabata

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING SYSTEM

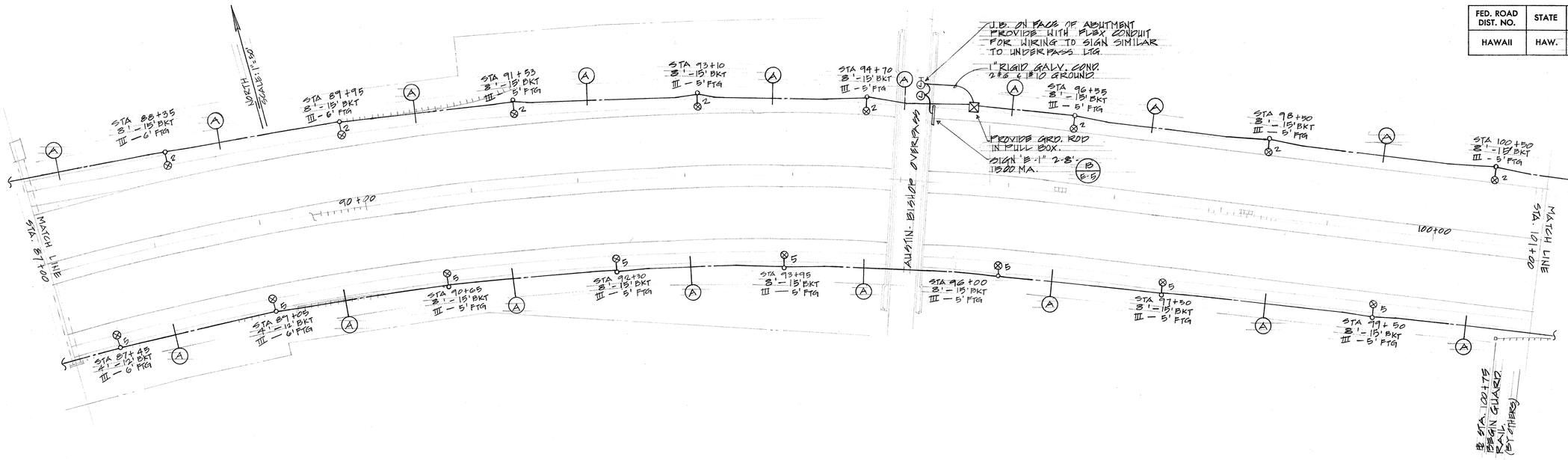
INTERSTATE ROUTE H-1
PROJ. NO. I-HI-1(65):10

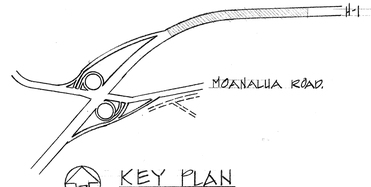
SCALE: AS SHOWN DATE

SHEET No. 2 OF 7 SHEETS

60

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-(68):10 I-HI-(40):11	1969	61	185





KEY PLAN

ORIGINAL PLAN	
NOTE BOOK	
No.	

	DATE
SURVEY PLOTTED BY	
DRAWN BY	"
TRACED BY	"
DESIGNED BY	"
QUANTITIES BY	"
CHECKED BY	"

TAKEO KAWABATA
REGISTERED PROFESSIONAL ENGINEER
No. 750
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING SYSTEM

INTERSTATE ROUTE H-1
PROJ. NO. I-HI-1(65):10

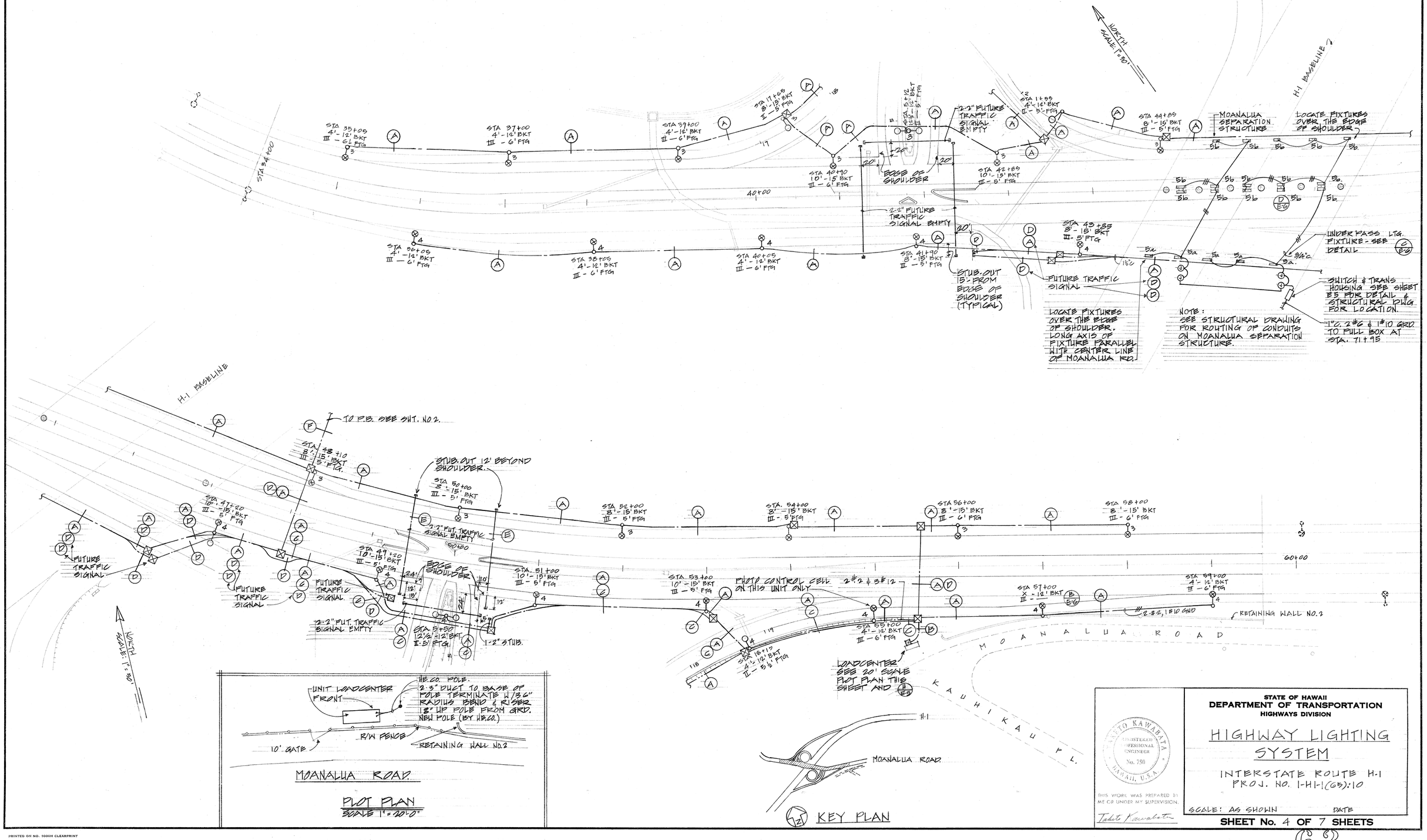
SCALE: AS SHOWN DATE

SHEET No. 3 OF 7 SHEETS

61

PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-(65):10 I-HI-(40):11	1969	62	185



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

PRINTED ON NO. 1000H CLEARPRINT

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING SYSTEM

INTERSTATE ROUTE H-1
PROJ. NO. I-HI-1(65):10

SCALE: AS SHOWN DATE

SHEET No. 4 OF 7 SHEETS

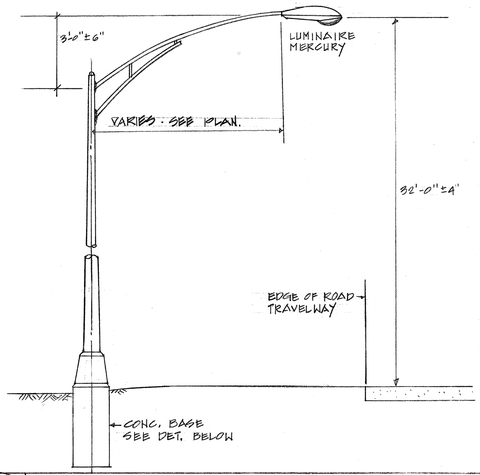
TAKETO KAWABATA
REGISTERED PROFESSIONAL ENGINEER
No. 750
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

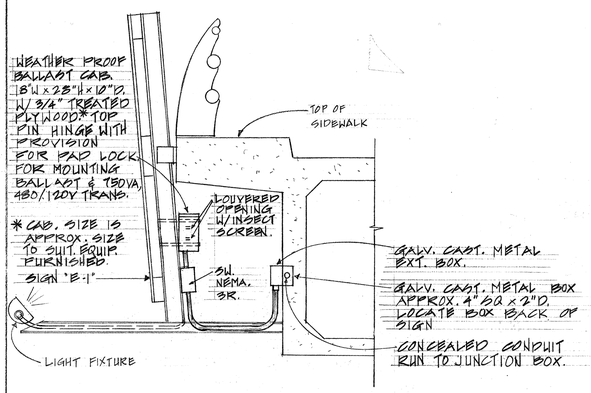
Taketo Kawabata

62

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-(65):10 I-HI-(40):11	1969	63	185



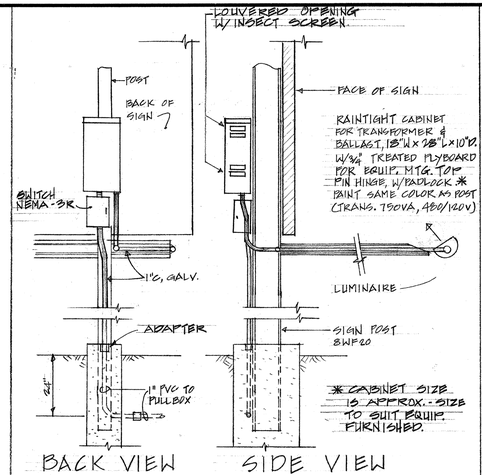
A E-5 TYPICAL SINGLE ARM METAL STREET LIGHT POLE N.T.S.



SIDE VIEW

B E-5 SIGN "E-1" BISHOP-AUSTIN SEPARATION

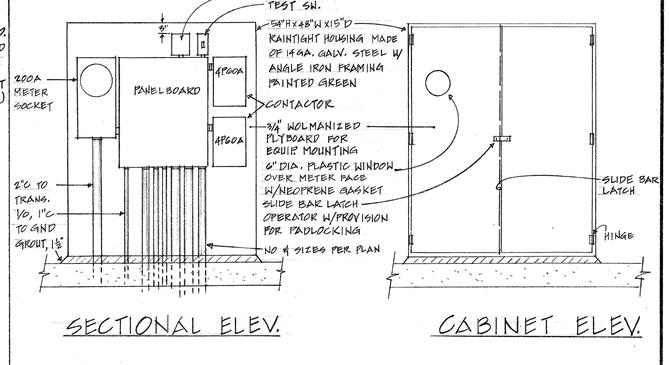
NOT TO SCALE



BACK VIEW SIDE VIEW

C E-5 SIGNS "E-2" & "E-3" DETAIL

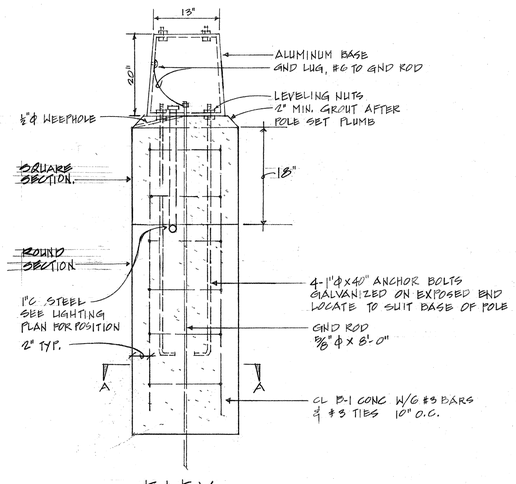
NOT TO SCALE



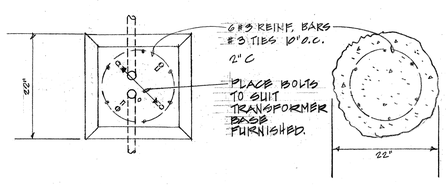
SECTIONAL ELEV. CABINET ELEV.

D E-5 CONTROL CENTER

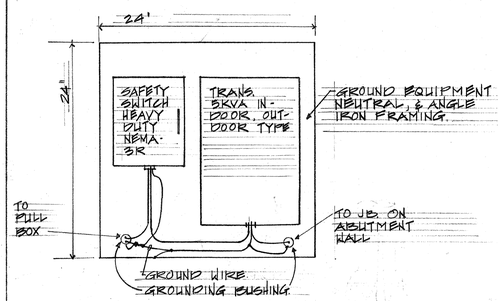
NOT TO SCALE



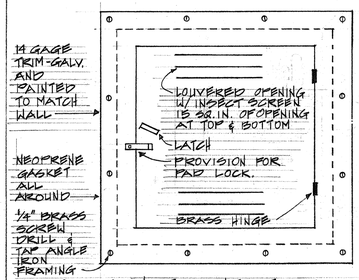
ELEV.



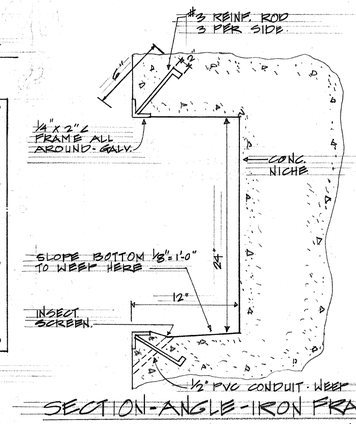
PLAN SEC. "A-A"



ELEVATION-EQUIPMENT MTG



ELEVATION-FRONT TRIM

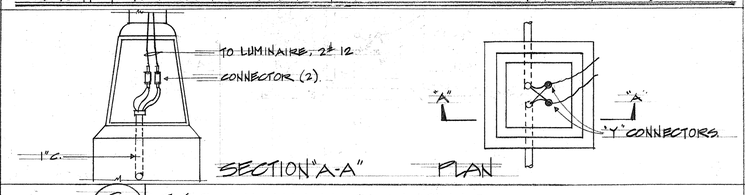


SECTION-ANGLE-IRON FRAMING

SWITCH & TRANSFORMER HOUSING FOR UNDERPASS LIGHTING

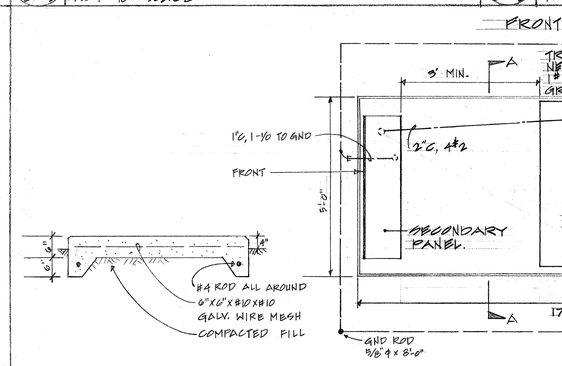
E E-5 CONCRETE BASE DETAIL

NOT TO SCALE



G E-5 TYP. LUMINAIRE WIRING

NOT TO SCALE

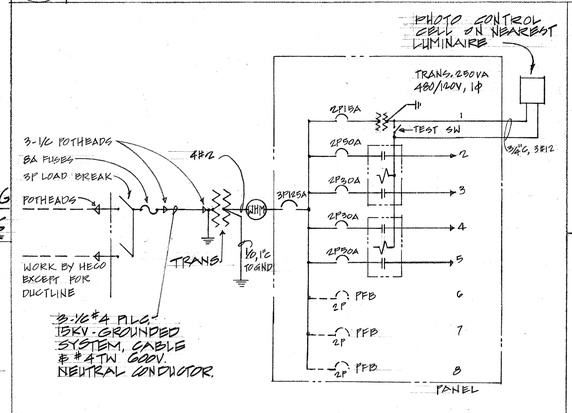


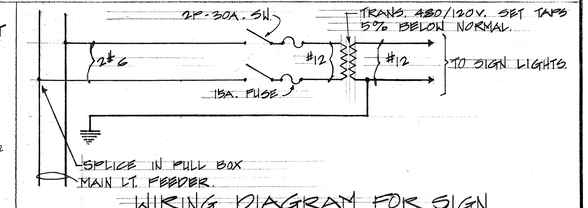
SECTION "A-A" PLAN

NOTES:
1. PROVIDE GALV. BOLTS FOR EQUIPMENT MOUNTING PER SHOP DWG.
2. PROVIDE MIN. OF 1½" CONC. GROUT BELOW EQUIP.

H E-5 UNIT LOAD CENTER FOR HIGHWAY LIGHTING SYSTEM

NOT TO SCALE





WIRING DIAGRAM FOR SIGN

N.T.S.

J E-5 ONE-LINE DIAGRAM

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Takeo Kawabata

TAKEO KAWABATA REGISTERED PROFESSIONAL ENGINEER No. 750 HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING SYSTEM

INTERSTATE ROUTE H-1
PROJ. NO. I-HI-1(65):10

SCALE: AS SHOWN DATE

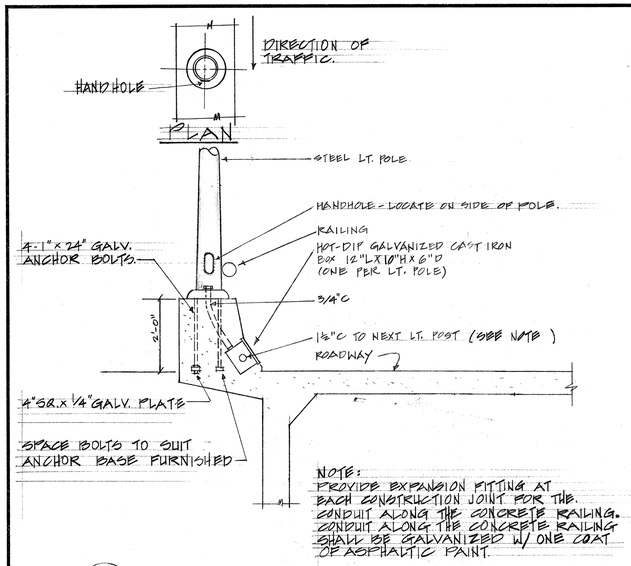
SHEET No. 5 OF 7 SHEETS

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

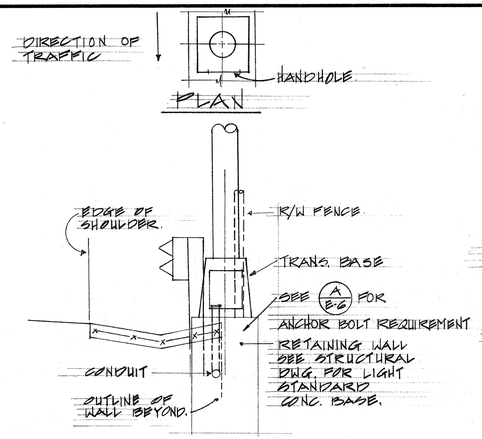
PRINTED ON NO. 1000H CLEARPRINT

(65) 33

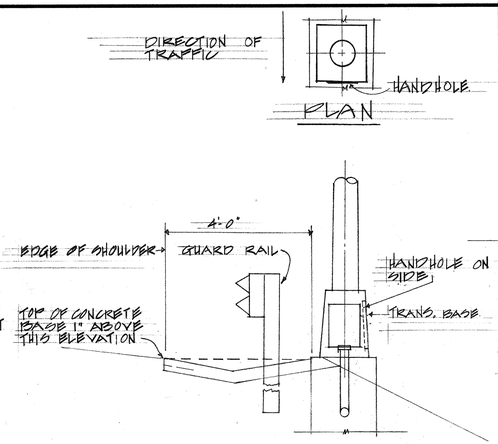
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(65):10 I-HI-1(40):11	1969	64	185



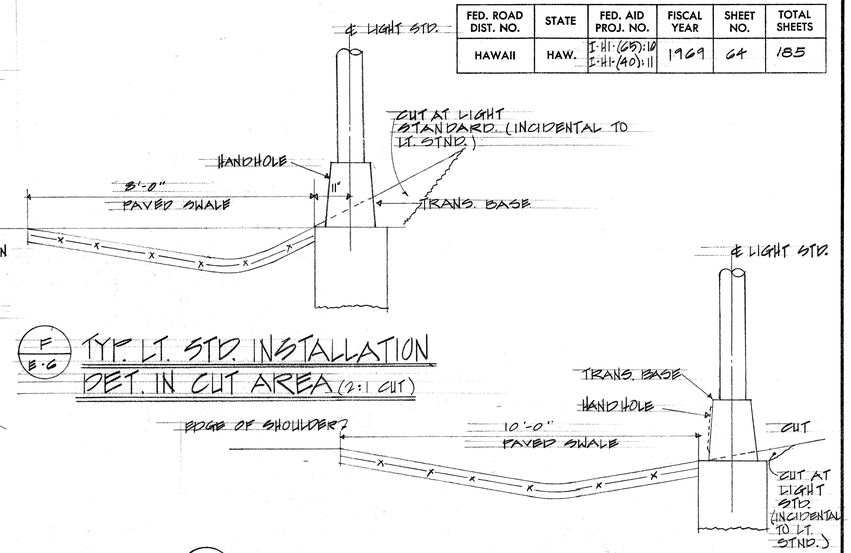
A E-6 LIGHT STANDARD AT BRIDGE
N.T.S.

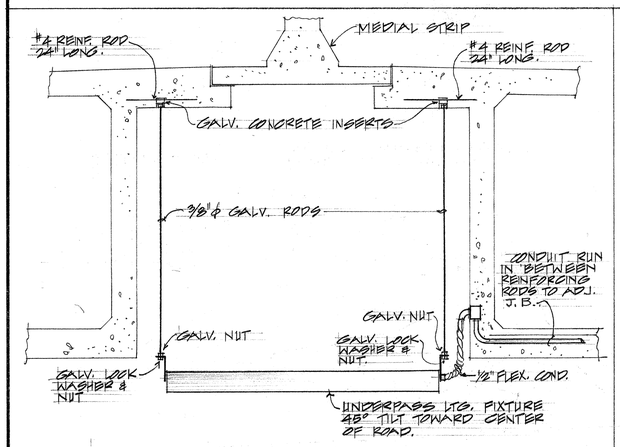


B E-6 LIGHT STANDARD AT STATION 57+00

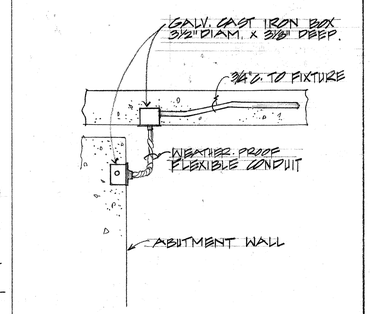


E E-6 TYPICAL LIGHT STANDARD INSTALLATION DETAIL IN FILL AREA.



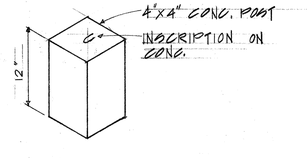


FIXTURE MOUNTING AT MEDIAL STRIP
N.T.S.

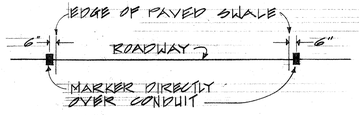


SECTION

TYPICAL WIRING FROM ABUTMENT WALL TO BRIDGE
N.T.S.

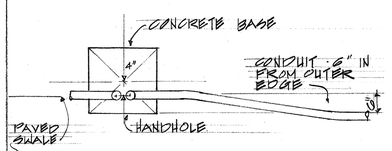


CONDUIT MARKER.



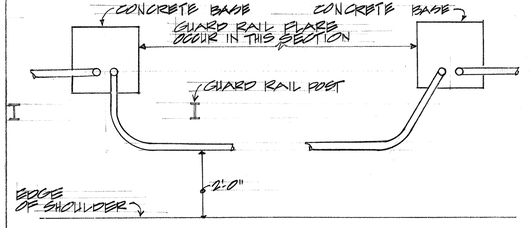
CONDUIT ROAD CROSSING MARKER
(FOR CONDUITS NOT TERMINATING IN PULL BOX.)

NOTES:
1. FOR CONDUIT RUNS TERMINATING IN PULL BOX INSCRIBE A "X" ON THE TOP OF PULL BOX TO INDICATE CENTER LINE OF THE CONDUIT RUN.
2. MARKERS SHALL BE INCIDENTAL TO CONDUITS.



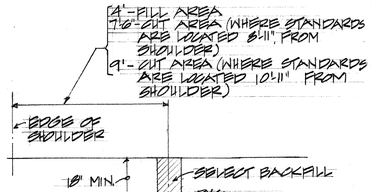
PLAN

H E-6 TYPICAL CONDUIT ROUTING
N.T.S.



PLAN

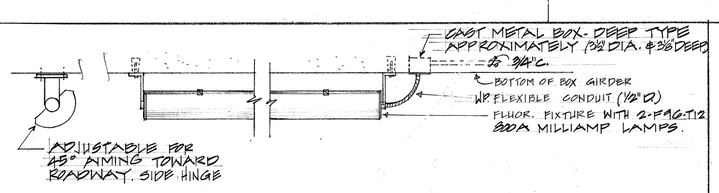
I E-6 CONDUIT ROUTING AT GUARD RAIL FLARE
N.T.S.



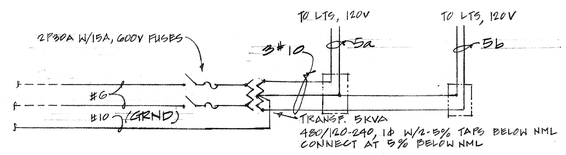
J E-6 TYPICAL SECTION CONDUIT INSTALLATION DETAILS
NOT TO SCALE

V E-6 TYPICAL INSTALLATION OF TYPE "C" PULLBOX N.T.S.

NOTE:
SELECT BACKFILL SHALL CONSIST OF BEACH SAND EARTH, OR EARTH & GRAVEL. IF EARTH & GRAVEL THE MAXIMUM ROCK SIZE SHALL BE 1" & THE MIXTURE SHALL CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES.



D E-6 FIXTURE MOUNTING & WIRING
N.T.S. FOR UNDERPASS LTG.



UNDERPASS LTG. DIAGRAM

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING SYSTEM

INTERSTATE ROUTE H-1
PROJ. NO. I-HI-1(65):10

SCALE: AS SHOWN DATE

SHEET No. 6 OF 7 SHEETS

TAKETO KAWABATA
REGISTERED PROFESSIONAL ENGINEER
No. 750
HAWAII, U.S.A.

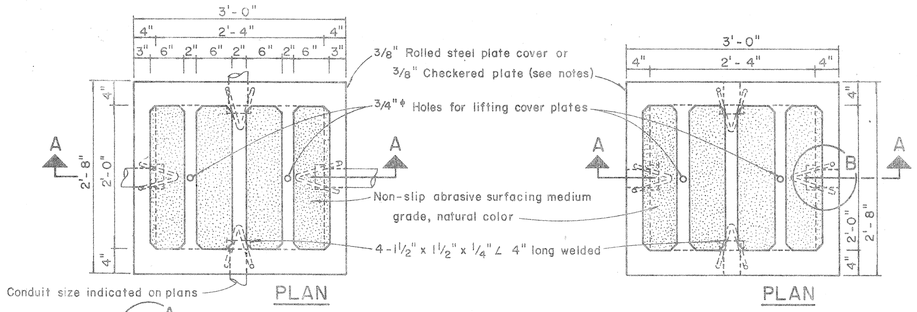
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Taketo Kawabata

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

PRINTED ON NO. 1000H CLEARPRINT

64

FED. ROAD DIST. NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-(42)11 I-HI-(43)11	1969	65	185

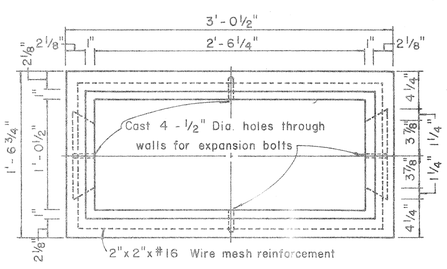


TYPE "A" PULLBOX CAST-IN-PLACE

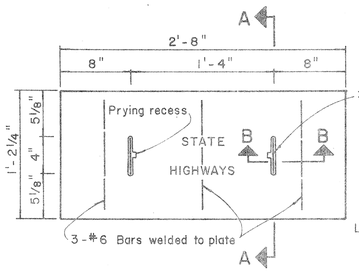
Scale: 1" = 1'-0"

TYPE "A" PULLBOX PRECAST

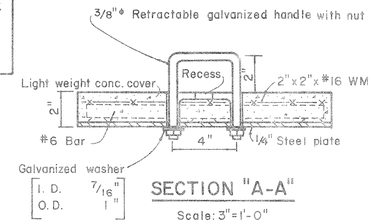
Scale: 1" = 1'-0"



PLAN

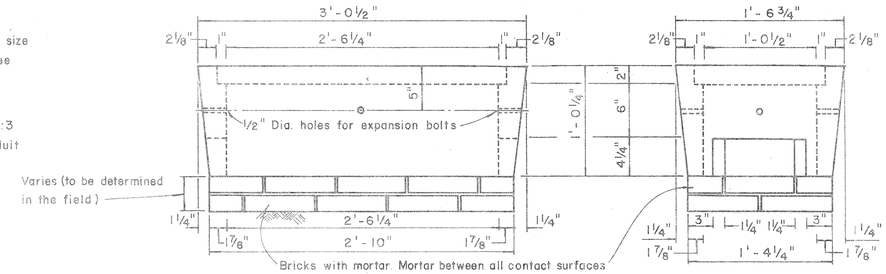


PLAN OF COVER



SECTION "A-A"

Scale: 3"=1'-0"

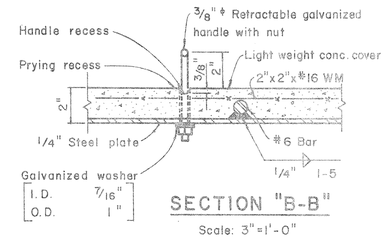


SIDE ELEVATION

END ELEVATION

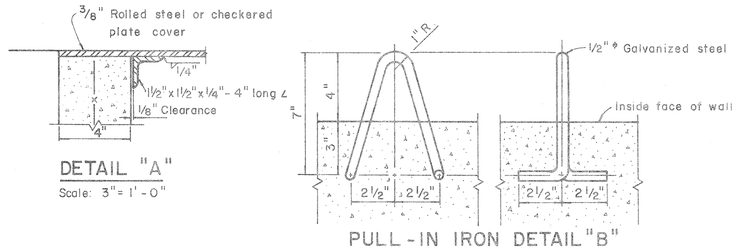
TYPE "C" PULLBOX

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



SECTION "B-B"

Scale: 3"=1'-0"



DETAIL "A"

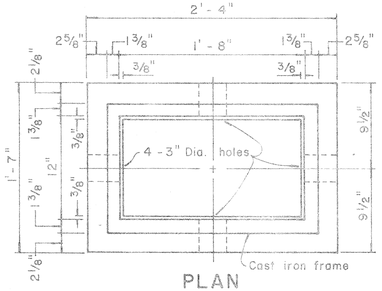
Scale: 3"=1'-0"

PULL-IN IRON DETAIL "B"

Scale: 3"=1'-0"

NOTES: (FOR TYPE "A" PULLBOX)

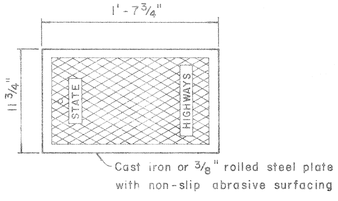
1. 3/8" Rolled steel plate cover with non-slip abrasive surfacing medium grade, natural color shall be used on all pullboxes located on sidewalk areas where pedestrians are walking.
2. 3/8" Checkered plate cover shall be used on all pullboxes located in median areas and other locations where there are 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.



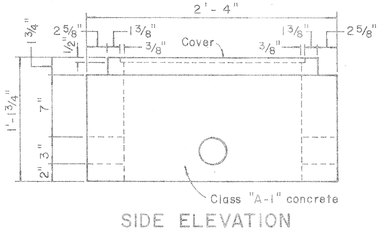
PLAN

NOTE:

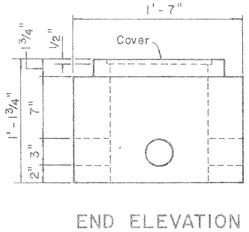
Steel rim shall be welded to bottom of steel cover if necessary so that top of cover and frame are flush



PLAN OF COVER



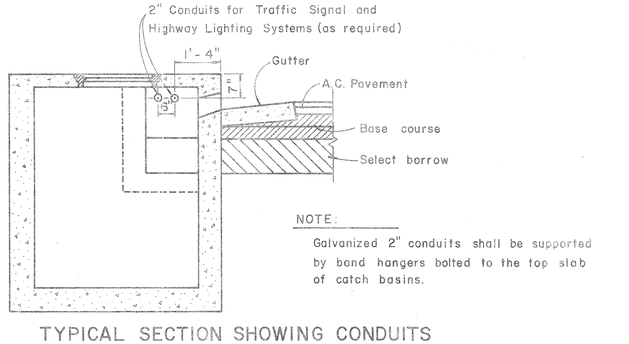
SIDE ELEVATION



END ELEVATION

TYPE "B" PULLBOX

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



NOTE:

Galvanized 2" conduits shall be supported by band hangers bolted to the top slab of catch basins.

TYPICAL SECTION SHOWING CONDUITS PASSING THROUGH CATCH BASINS

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

TAKETO KAWABATA
REGISTERED PROFESSIONAL ENGINEER
No. 750
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Taketo Kawabata

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
PULLBOXES

INTERSTATE ROUTE H-1
PROJ. NO. I-HI-1(65):10

Scale as noted Date

SHEET No. 7 OF 7 SHEETS PT 421

65

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

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