










FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75), UNIT I	1996	350	405

ABBREVIATIONS

COMM	Communications
CMB	Concrete Median Barrier
DA (XX)	Detector Amplifier
DIA	Diameter
GND	Electrical Ground
CS	Electrical Service Panel
ECG (XX)	Emergency Crossover Gate
ECGC (XX)	Emergency Crossover Gate Controller
ETIB (XX)	Emergency Telephone Inbound
ETOB (XX)	Emergency Telephone Outbound
FO HUB (XX)	Fiber Optic Hub
GRS	Galvanized Rigid Steel
(XX) MM	Multimode Fiberoptic Cable
NEMA	National Electrical Manufacturers Association
PR	Pair
PLC	Programmable Logic Controller
RECPT	Receptacle
SL	Street Lighting
TV (XX)	Television Controller
TC (XX)	Traffic Controller
KVA	1,000 Volt Amps
W/SHLD	With Shield

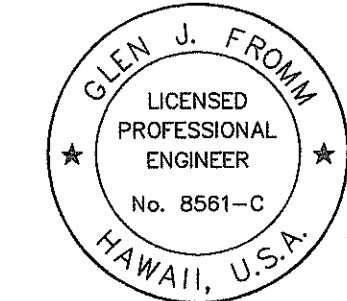
SYMBOLS

	Advance Warning Sign
	Conduit/Cable Note
	Construction Note
	Emergency Crossover Gate
	Emergency Crossover Gate Controller
	Existing Electrical Service
	Existing Fiberoptic Hub
	Existing Pullbox
	Existing Traffic Controller

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
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CAD by G.D. TRUONG, SS-92

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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
<b>SYSTEMS LEGEND AND ABBREVIATION</b>	
INTERSTATE ROUTE H-3 FAIP NO. I-H3-1(75), UNIT I	
SCALE: NONE	DATE: JANUARY 1996
SHEET NO. SY1 OF 9 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75), UNIT I	1996	351	405

CONDUIT / CABLE SCHEDULE					
RUN NO.	CONDUIT		CABLE / CONDUCTOR	USED FOR	REMARKS
	NEW	EXISTING			
1		2"	1-24mm (Existing)	Data/Comm.	Use 2 Fiber for ECGC 02 & 03
2		2"	1-12mm (Existing)	Data/Control	Use 2 Fiber for ECGC 03
			1-4mm	Data/Control	Use 2 Fiber for ECGC 02
3		3"	1-12mm (Existing)	Data/Control	Use 2 Fiber for ECGC 03
4		3"	3-#2 & GND	Power	480V Power to ECG 02 & 03
			3-#2 & GND (Existing)	Power	480V Power to TC 38, 39 & 40
5		2"	3-#2 & GND	Power	480V Power to ECG 02
6		3"	3-#2 & GND (Existing)	Power	480V Power to TC 39 & 40.
			3-#2 & GND	Power	480V Power to ECG 03
7		4"	1-4mm	Data/Control	Use 2 Fiber for ECGC 02
8		4"	1-4mm	Data/Control	Use 2 Fiber for ECGC 02
			3-#8 & GND	Signals	120V Power, ECG 02 Beacon
9		2"	3-#8 & GND	Signals	120V Power, ECG 02 Beacon
10		2"	2-#6 & GND	Power	480V Power to TC 38
19		3"	1-12mm (Existing)	Data/Comm.	Use 2 Fiber for ECGC 03
			1-4mm	Data/Control	Use 2 Fiber for ECGC 03
20		3"	3-#2 & GND (Existing)	Power	480V Power to TC 39 & 40.
25		3"	3-#2 & GND (Existing)	Power	480V Power to TC 38,39 & 40.
			3-#2 & GND	Power	480V Power to ECG 03

CONSTRUCTION NOTES

- 1 Install wiring from conduit run #4 into existing panel CS and connect to "Future TC" breaker as indicated on Panel Schedule shown on Sheet E-6.
- 2 Install, coil and store 5 feet of fiberoptic cable into existing fiberoptic hub FO 13. Seal end of cable from moisture and leakage of water blocking material. Fiber terminations to be done by others.
- 3 Install, coil and store 5 feet of 1-4mm fiberoptic cable from ECGC 02 into existing TV 8E cabinet. Seal end of cable from moisture and leakage of water blocking material. Fiber terminations to be done by others.
- 4 Provide splices in power feeder conductors for 480V power to ECG 02 & 03.
- 5 Install, coil and store 5 feet of 1-4mm fiberoptic cable from ECGC 03 into existing splice cabinet. Seal end of cable from moisture and leakage of water blocking material. Fiber terminations to be done by others.
- 6 Terminate 480V power feeder conductors in existing electrical pullbox adjacent to TC 39. Provide minimum 10 feet of slack in conductors and seal ends against moisture.



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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**SYSTEMS  
EMERGENCY CROSSOVER  
KANE OHE INTERCHANGE**  
INTERSTATE ROUTE H-3  
FAIP NO. I-H3-1(75), UNIT I  
SCALE: 1" = 200' DATE: JANUARY 1996  
SHEET NO. SY2 OF 9 SHEETS

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

CAO by J. MIMURA, 55-52



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75), UNIT I	1996	352	405

CONSTRUCTION NOTES

- 1

Install 1-4mm fiber cable from ECGC-03 into existing cabinet at TC 39. Connect 2 fiber of cable to spare fiberoptic modem in cabinet. Seal ends of unterminated cable to prevent leakage of waterblocking material.
- 2

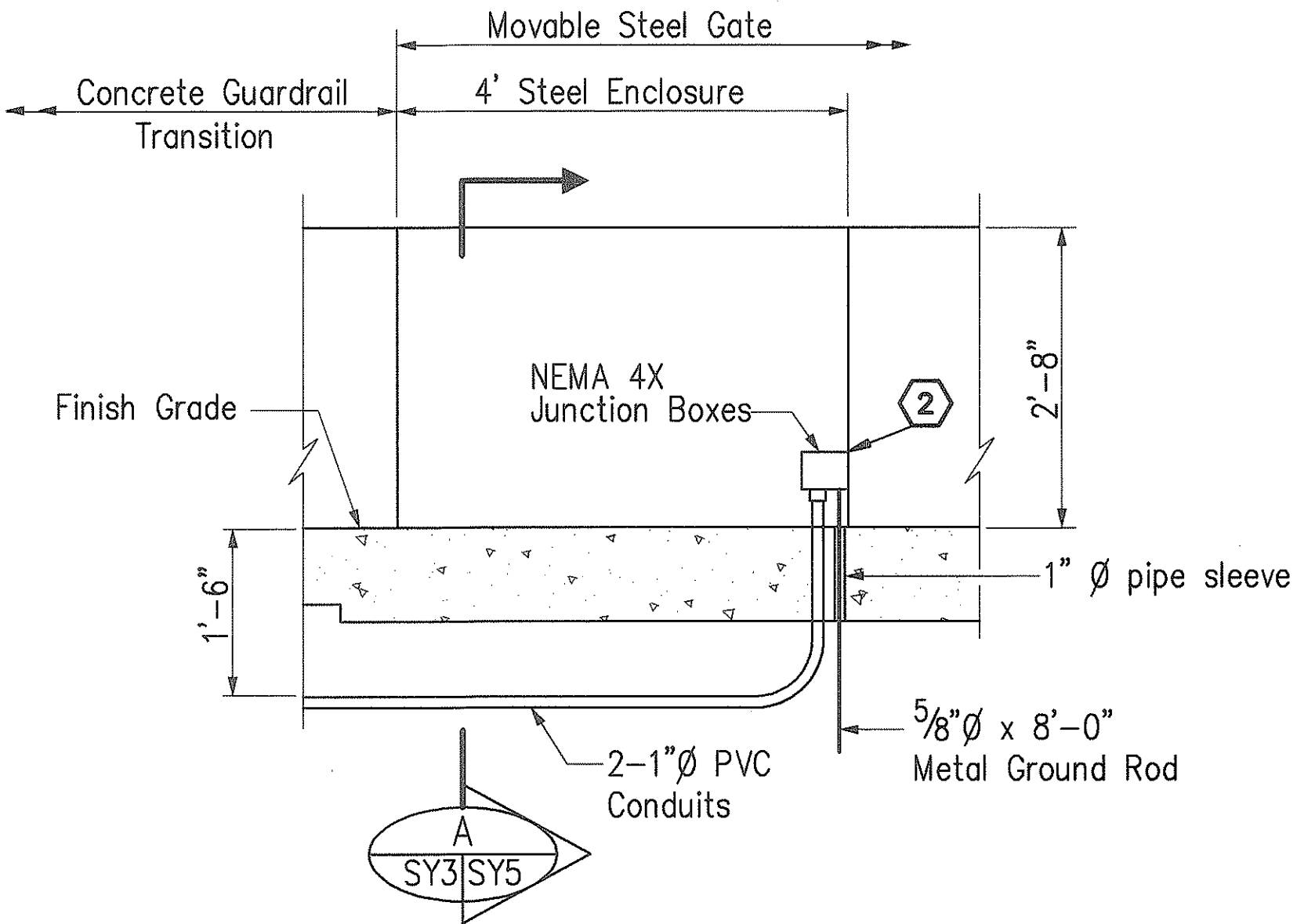
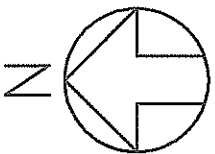
Contractor to install NEMA 4X junction boxes for conductor splicing. Coordinate box size with ECG manufacturer. Provide minimum 10 feet of slack in conductors and seal ends against moisture. Secure conductors out of traveled way.
- 3

Install ECGC foundation, cabinet and associated equipment as detailed on sheet SY6 and as specified in the contract specifications.
- 4

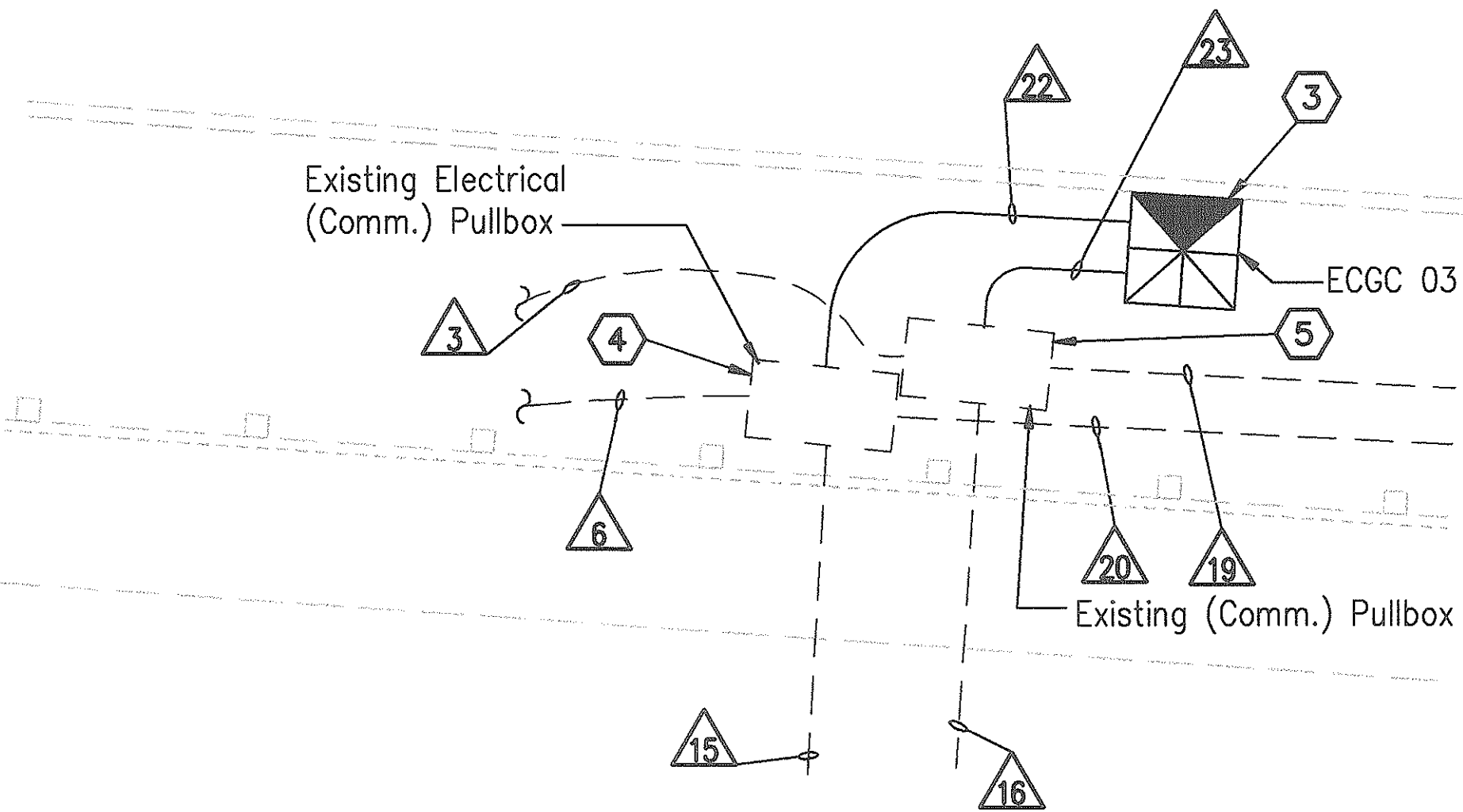
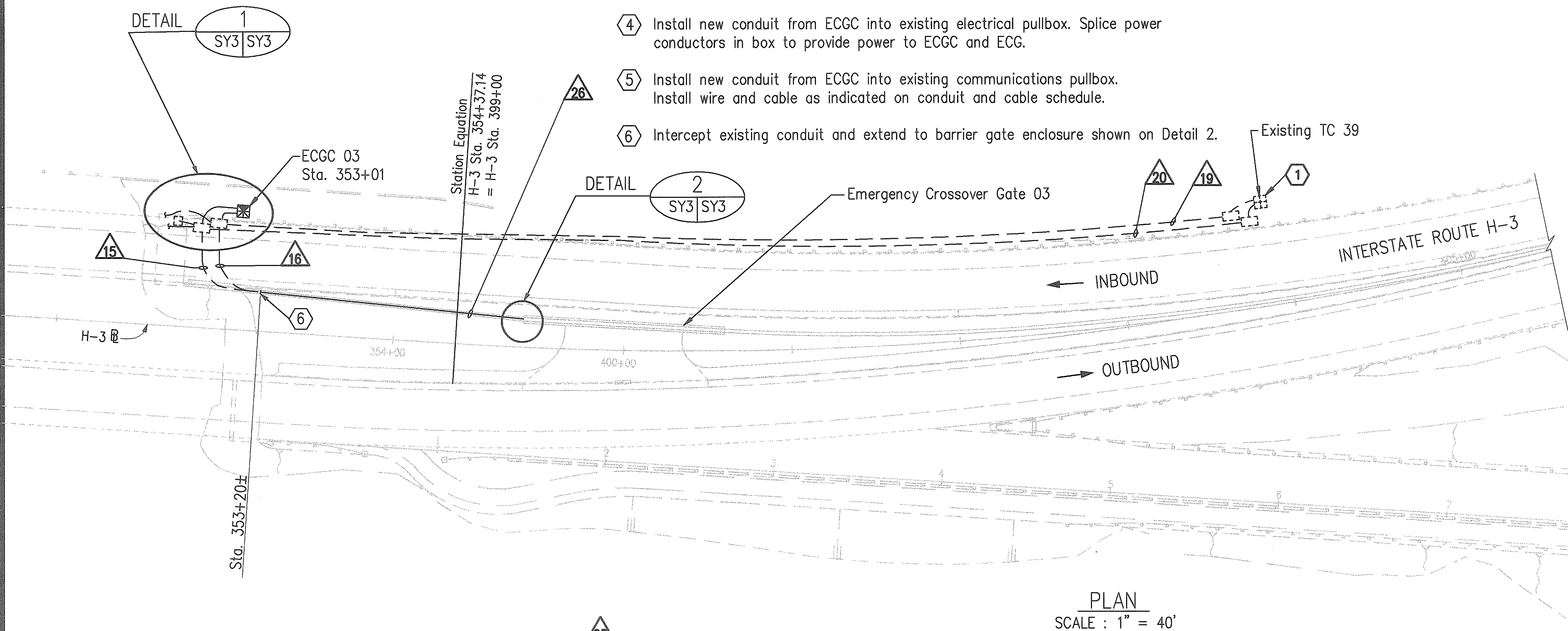
Install new conduit from ECGC into existing electrical pullbox. Splice power conductors in box to provide power to ECGC and ECG.
- 5

Install new conduit from ECGC into existing communications pullbox. Install wire and cable as indicated on conduit and cable schedule.
- 6

Intercept existing conduit and extend to barrier gate enclosure shown on Detail 2.



DETAIL 2  
N.T.S. SY3/SY3



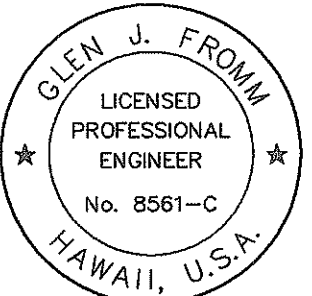
DETAIL 1  
N.T.S. SY3/SY3

ECGC 03  
STA. 353+01

RUN NO.	CONDUIT		CABLE / CONDUCTOR	USED FOR	REMARKS
	NEW	EXISTING			
3		3"	1-12mm (Existing)	Data/Control	Use 2 Fiber for ECGC 03
6		3"	3-#2 & GND	Power	480V Power to TC 39
			3-#2 & GND	Power	480V Power to ECGC 03
15		1"	3-#6 & GND	Power	480V Power to ECG 03
16		1"	1-6 pr #18 w/shld	Control	PLC Control to ECG 03
19		3"	1-12mm (Existing)	Data/Comm	Use 2 Fiber for ECGC 03
			1-4mm	Data/Control	Use 2 Fiber for ECGC 03
20		3"	3-#2 & GND (Existing)	Power	480V Power to TC 39 & 40
22	1-1/2"		3-#6 & GND	Power	480V Power to ECGC 03
23	1-1/2"		1-4mm	Data/Control	Use 2 Fiber for ECGC 03
			1-6 pr #18 w/shld	Control	PLC Control to ECG 03
26	2-1"		3-#6 & GND	Power	480V Power to ECG 03
			1-6 pr #18 w/shld	Control	PLC Control to ECG 03

CONSTRUCTION NOTES (CON'T)

7. INSTALL 3'x5' PRECAST HANDHOLE OVER THE PULLED SECTION OF THE EXISTING FIBER OPTIC CABLE LOCATED AT HALEKOU INTERCHANGE APPROX BASELINE STA. 420+50.
8. INSTALL PLAIN CONCRETE JACKET OVER EXISTING 2-4" CONDUITS AT HALEKOU INTERCHANGE STA. 420+50.



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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

SYSTEMS  
EMERGENCY CROSSOVER  
WINDWARD HIGHWAY

INTERSTATE ROUTE H-3  
FAIP NO. I-H3-1(75), UNIT I

SCALE: AS SHOWN      DATE: JANUARY 1996

SHEET NO. SY3 OF 9 SHEETS

"AS-BUILT"

ORIGINAL  
PLAN  
DATE: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
TRACED BY: \_\_\_\_\_  
DESIGNED BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
No. \_\_\_\_\_

CAD by C.D. TRUONG, 55-52

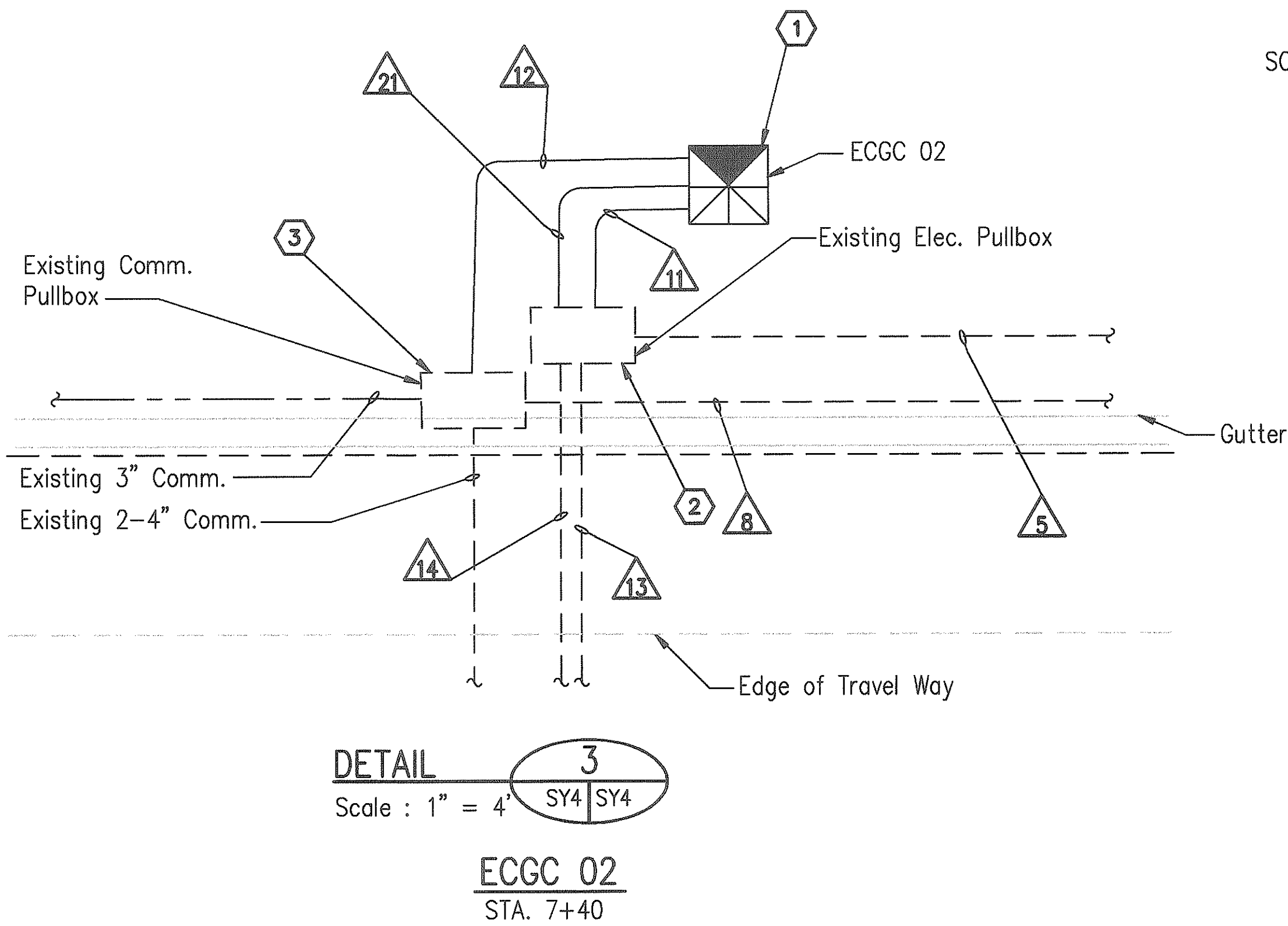
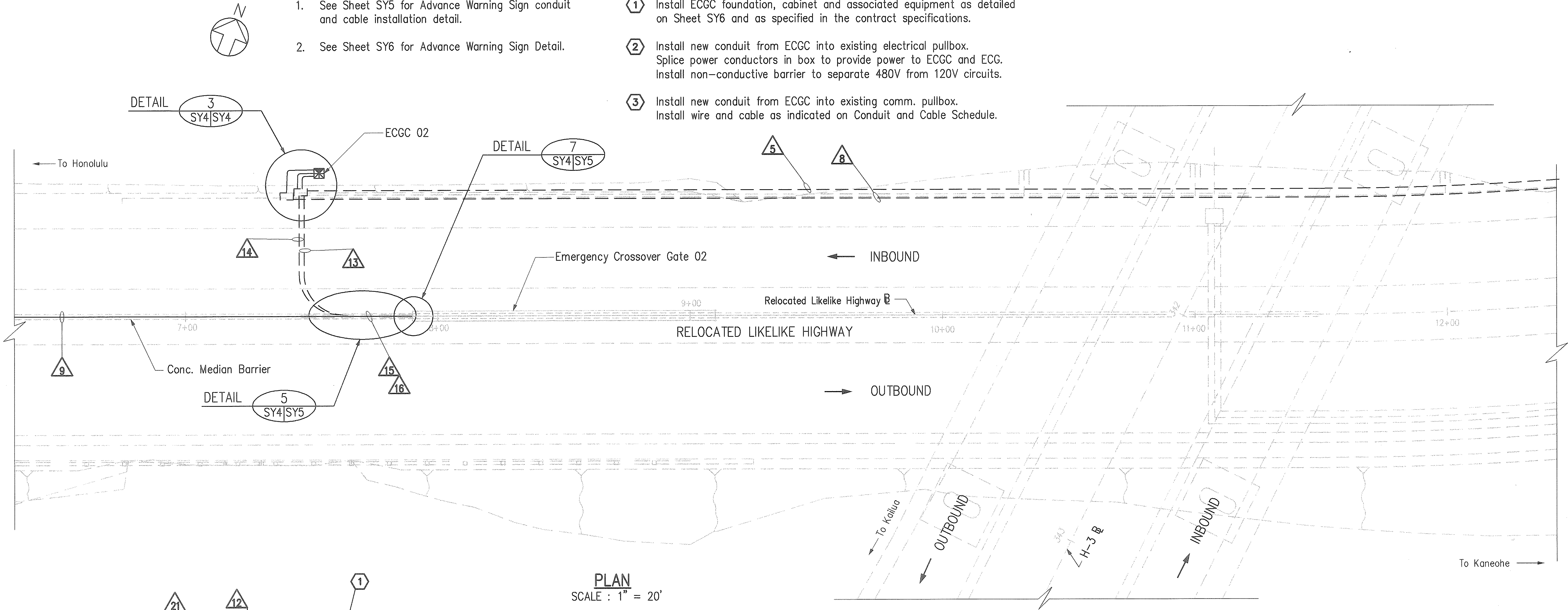
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75), UNIT I	1996	353	405

NOTES :

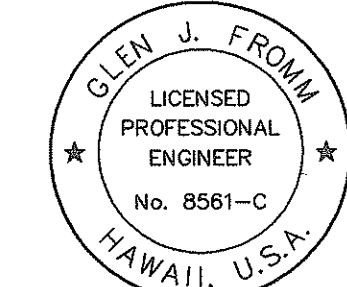
- See Sheet SY5 for Advance Warning Sign conduit and cable installation detail.
- See Sheet SY6 for Advance Warning Sign Detail.

CONSTRUCTION NOTES :

- Install ECGC foundation, cabinet and associated equipment as detailed on Sheet SY6 and as specified in the contract specifications.
- Install new conduit from ECGC into existing electrical pullbox. Splice power conductors in box to provide power to ECGC and ECG. Install non-conductive barrier to separate 480V from 120V circuits.
- Install new conduit from ECGC into existing comm. pullbox. Install wire and cable as indicated on Conduit and Cable Schedule.



CONDUIT / CABLE SCHEDULE					
RUN NO.	CONDUIT		CABLE / CONDUCTOR	USED FOR	REMARKS
	NEW	EXISTING			
5		2"	3-#2 & GND	Power	480V Power to ECG 02
8		4"	1-4mm	Data/Control	Use 2 Fiber for ECGC 02
			3-#8 & GND	Signals	120V Power, ECG 02 Beacon
9		2"	3-#8 & GND	Signals	120V Power, ECG 02 Beacon
11	1 1/2"		3-#6 & GND	Power	480V Power to ECG 02
12	1 1/2"		1-4mm	Data/Control	Use 2 Fiber for ECGC 02
			3-#8 & GND	Signals	120V Power, ECG 02 Beacon
13		2"	3-#6 & GND	Power	480V Power to Gate.
14		2"	1-6 pr #18 w/shld	Control	PLC Control to ECG 02
			3-#8 & GND	Signals	120V Power, ECG 02 Beacon
15		1"	3-#6 & GND	Power	480V Power to Gate.
16		1"	1-6 pr #18 w/shld	Control	PLC Control to ECG 02
21	1 1/2"		1-6 pr #18 w/shld	Control	PLC Control to ECG 02
			3-#8 & GND	Signals	120V Power, ECG 02 Beacon



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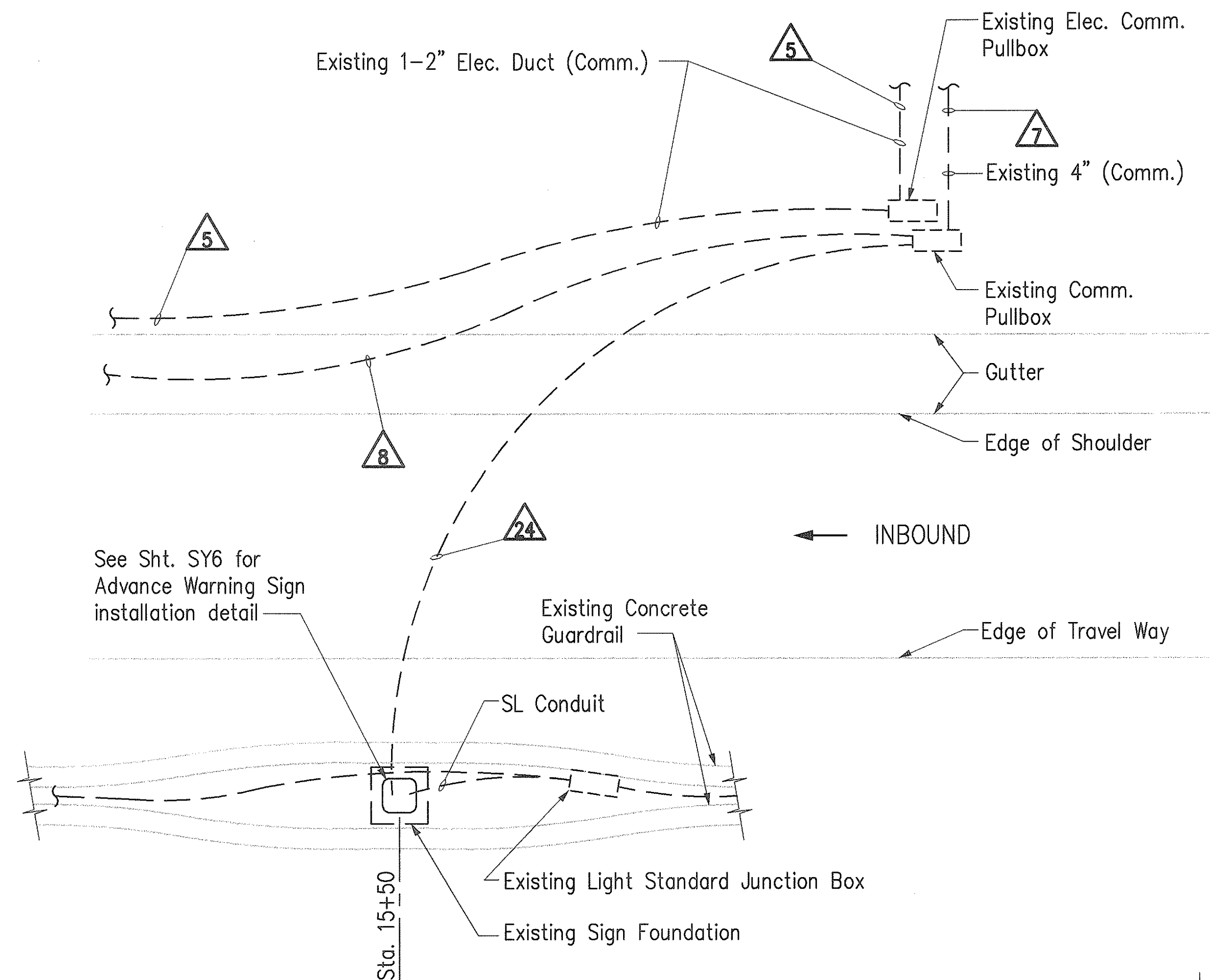
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DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**SYSTEMS**  
**EMERGENCY CROSSOVER**  
**RELOCATED LIKELIKE HIGHWAY**

INTERSTATE ROUTE H-3  
FAIP NO. I-H3-1(75), UNIT I  
SCALE: AS SHOWN      DATE: JANUARY 1996  
SHEET NO. SY4 OF 9 SHEETS

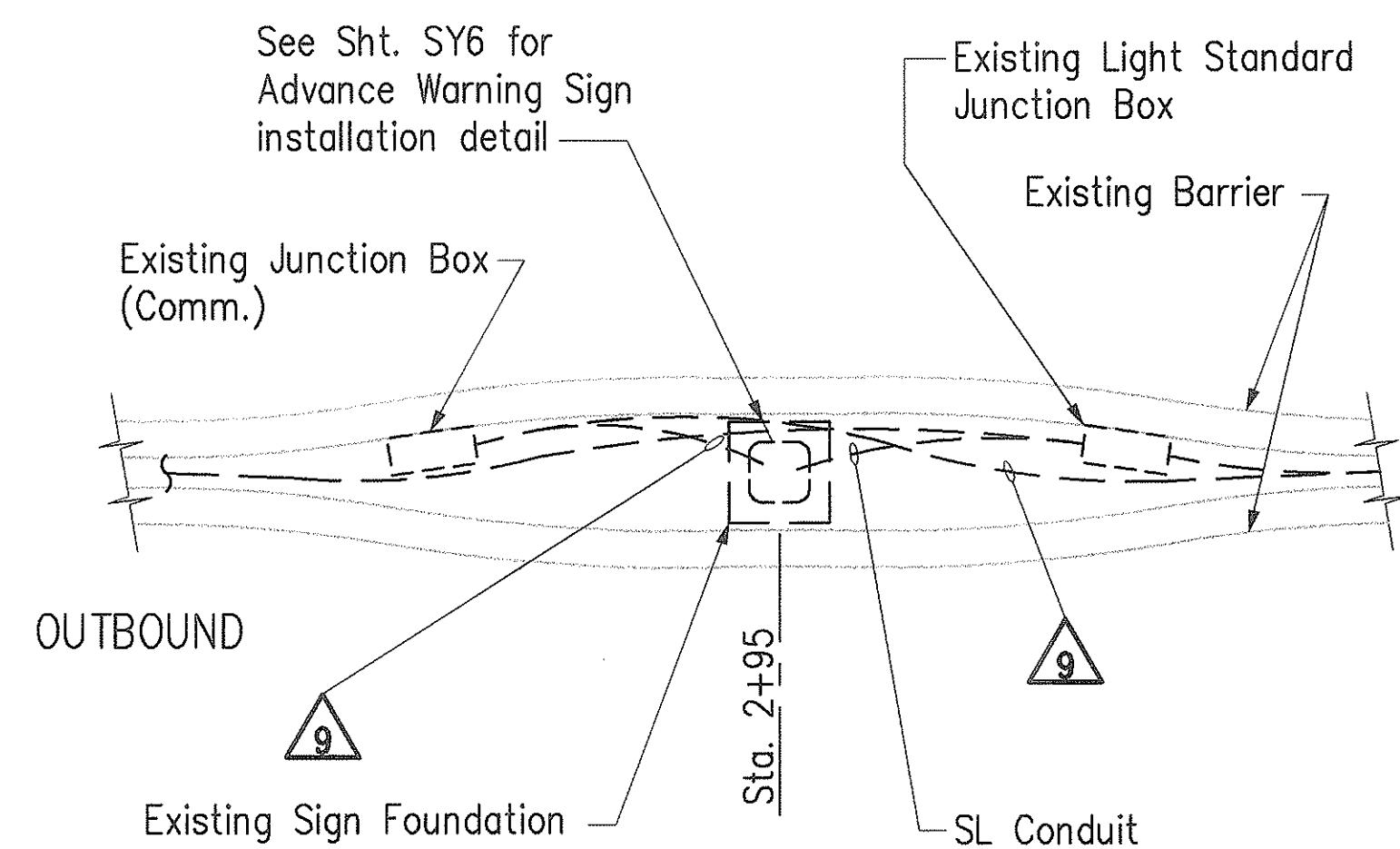
ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
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NOTE BOOK DESIGNED BY	
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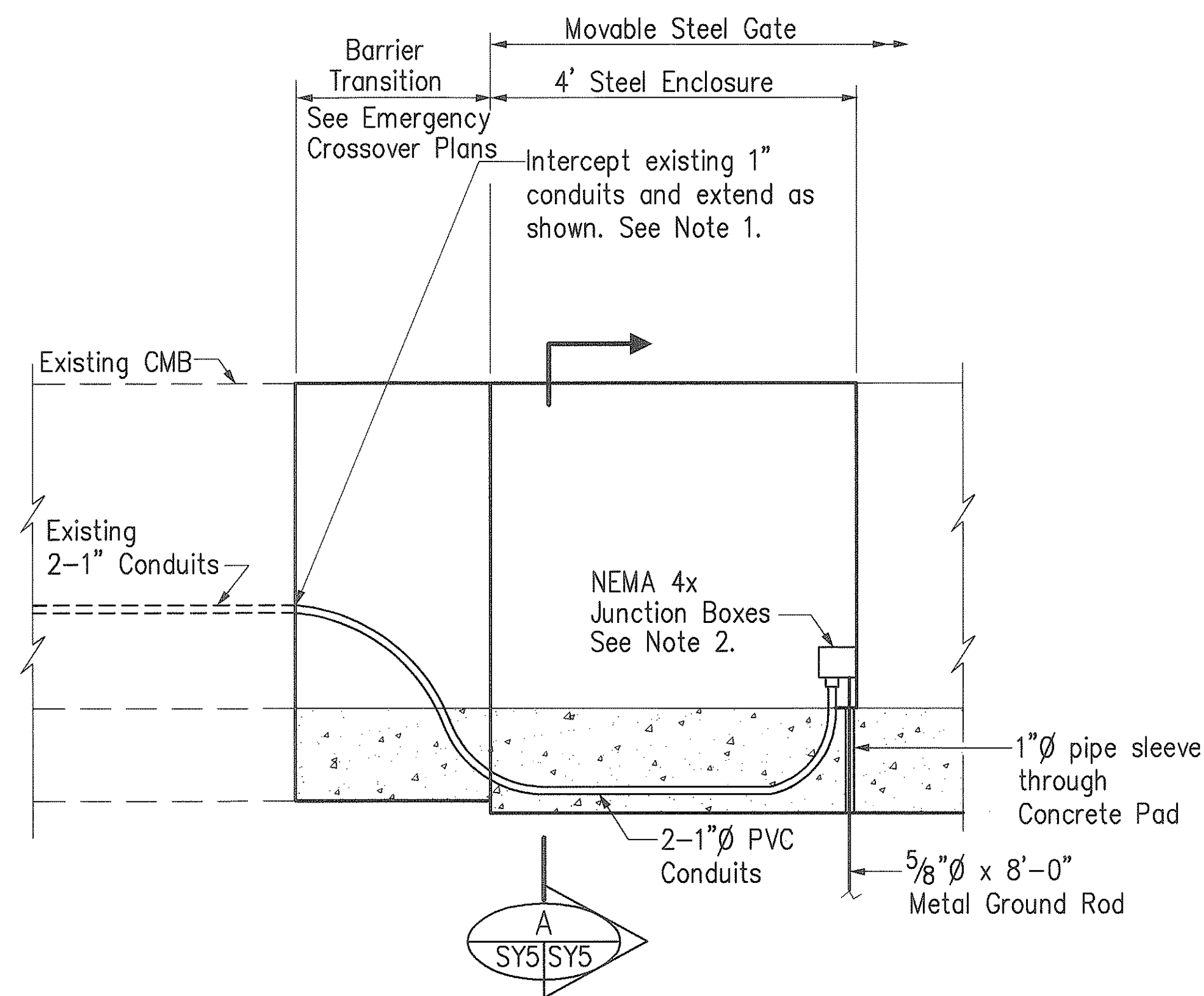
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75), UNIT I	1996	354	405



DETAIL 4  
N.T.S. SY2|SY5  
ADVANCE WARNING SIGN, STA. 15+50

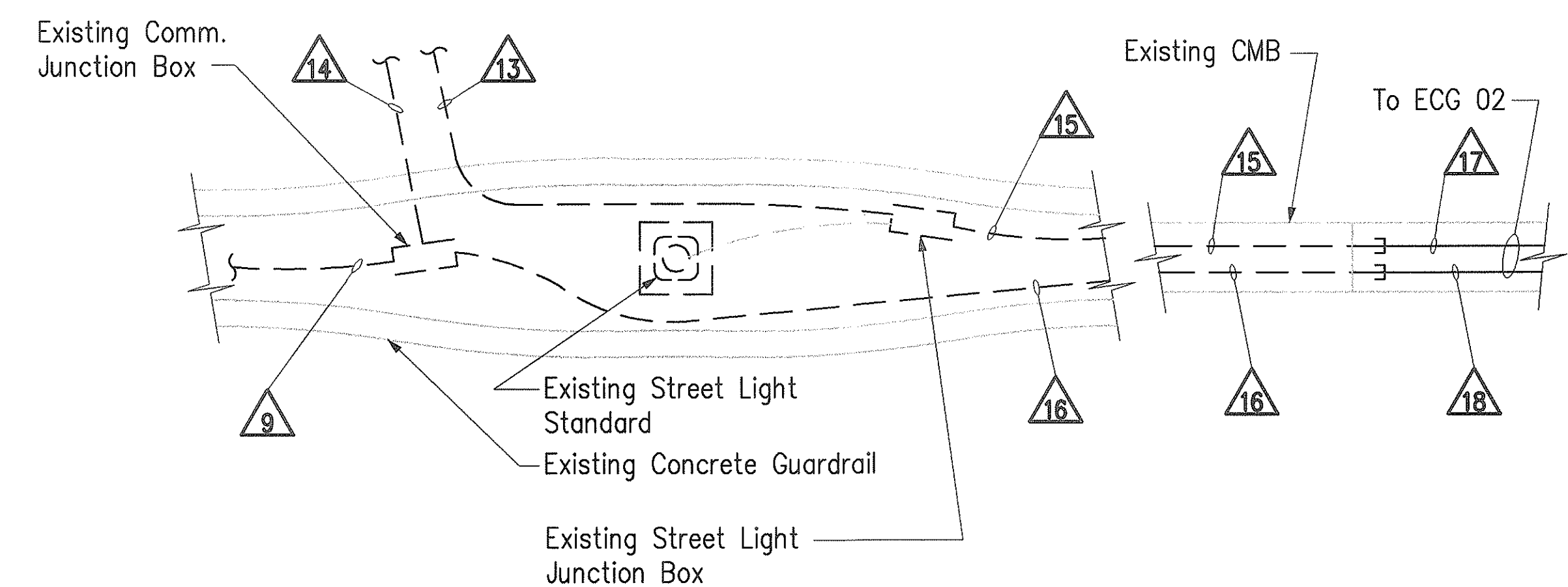


DETAIL 6  
N.T.S. SY2|SY5  
ADVANCE WARNING SIGN, STA. 2+95

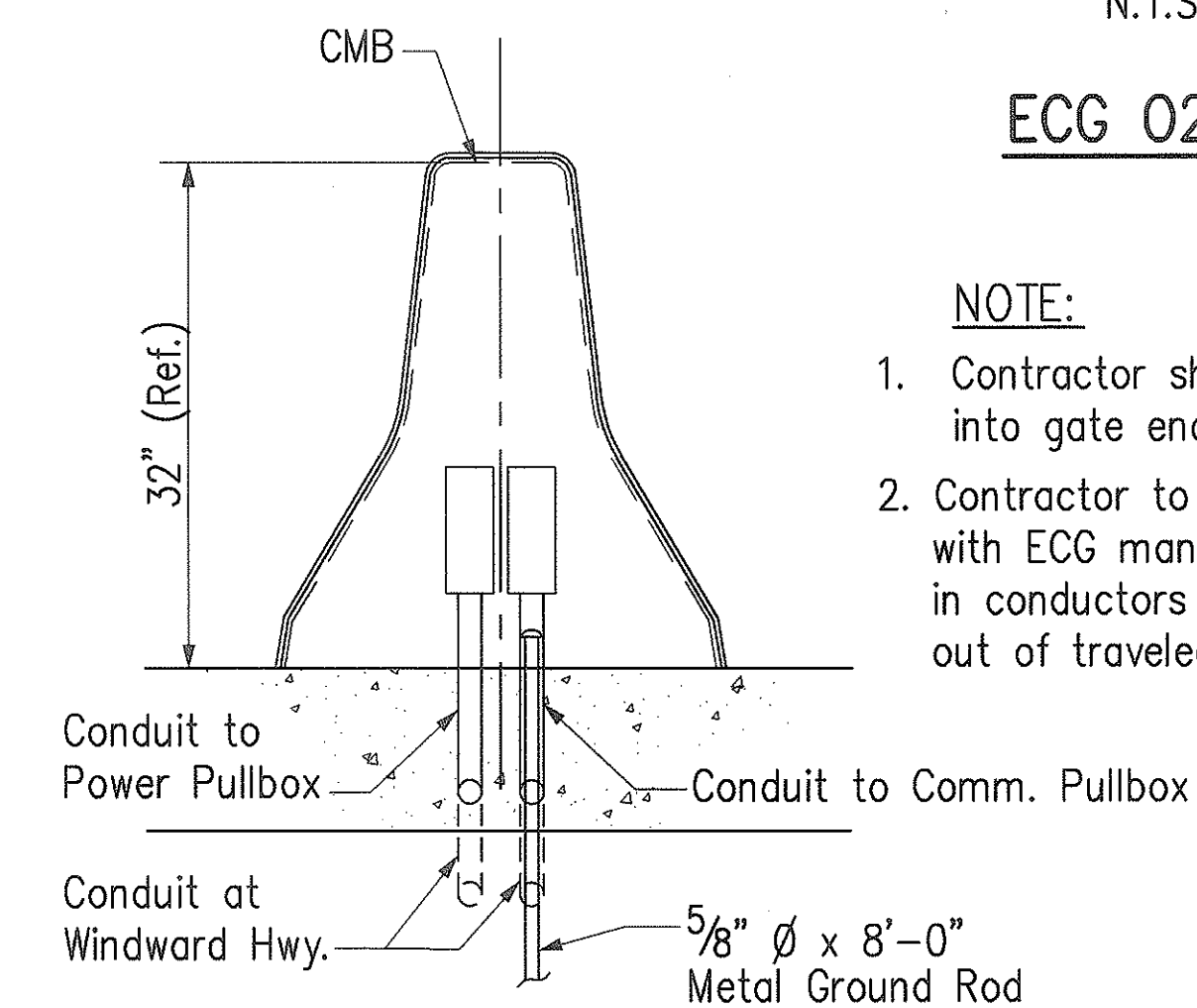


DETAIL 7  
N.T.S. SY4|SY5  
GATE END CONNECTION

CONDUIT / CABLE SCHEDULE					
RUN NO.	CONDUIT		CABLE / CONDUCTOR	USED FOR	REMARKS
	NEW	EXISTING			
5		2"	3-#2 & GND	Power	480V Power to ECGC 02
7		4"	1-4mm	Data/Control	Use 2 Fiber for ECGC 02
8		4"	1-4mm	Data/Control	Use 2 Fiber for ECGC 02
			3-#8 & GND	Signals	120V Power ECG 02 Beacon
9		2"	3-#8 & GND	Signals	120V Power ECG 02 Beacon
13		2"	3-#6 & GND	Power	480V Power to ECG 02
14		2"	1-6 pr #18 w/shld	Control	PCC Control to ECG 02
			3-#8 & GND	Signals	120V Power ECG 02 Beacon
15		1"	3-#6 & GND	Power	480V Power to ECGC 02
16		1"	1-6 pr #18 w/shld	Control	PCC Control to ECG 02
17	1"		3-#6 & GND	Power	480V Power to ECGC 02
18	1"		1-6 pr #18 w/shld	Control	PCC Control to ECG 02
24		2"	3-#8 & GND	Signals	120V Power to Beacon



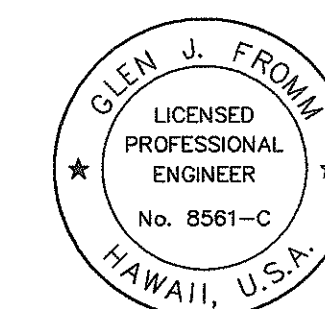
DETAIL 5  
N.T.S. SY4|SY5  
ECG 02 CONDUIT CROSSING



NOTE:

- Contractor shall verify exact location of conduit entrance into gate enclosure with gate supplier.
- Contractor to install NEMA 4X junction boxes for conductor splicing. Coordinate with ECG manufacturer to determine JB size. Provide minimum 10 feet of slack in conductors and seal ends against moisture. Secure conductors out of out of traveled way.

SECTION A  
N.T.S. SY3|SY5|SY5



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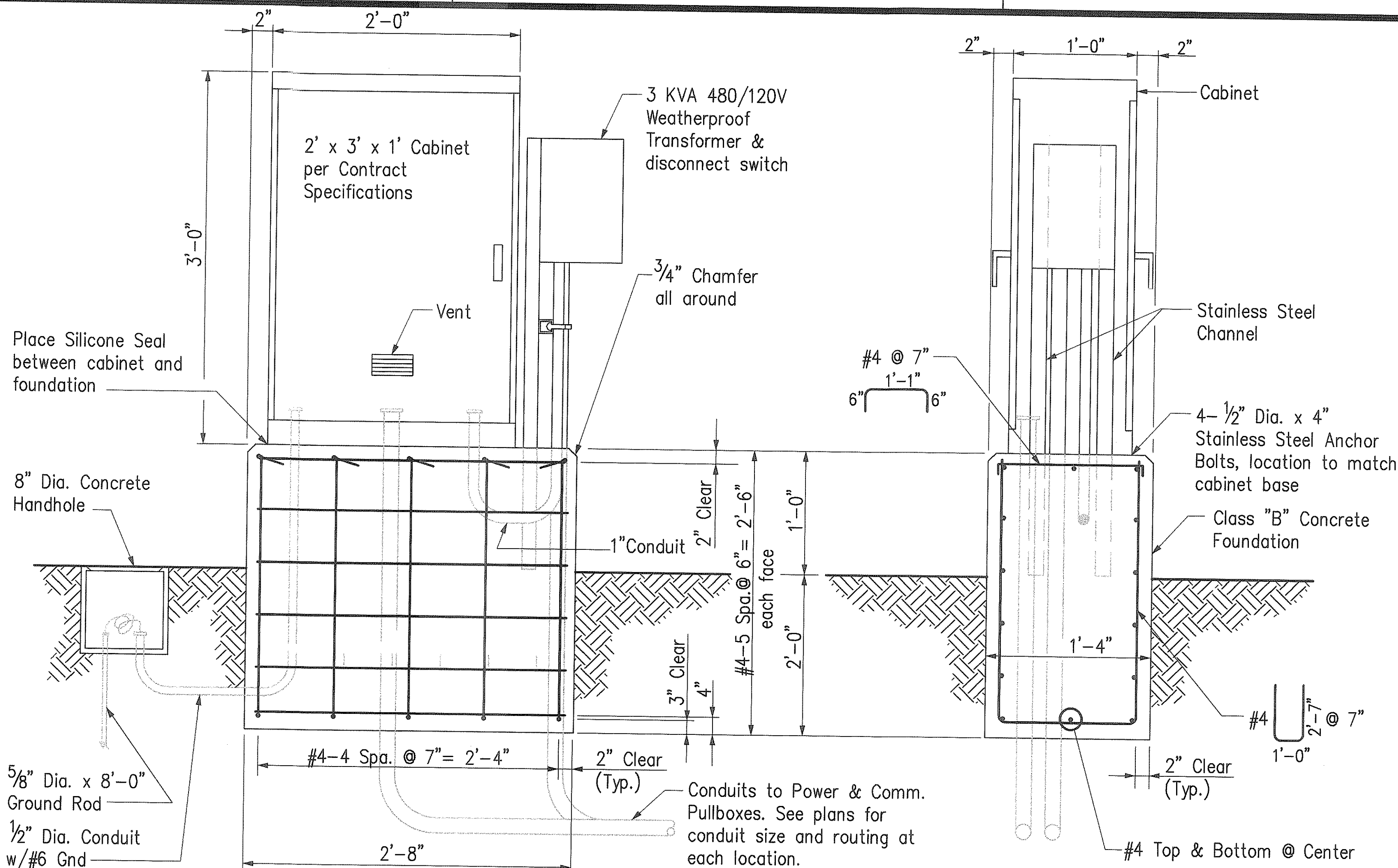
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**SYSTEMS**  
**EMERGENCY CROSSOVER**  
**RELOCATED LIKELIKE HIGHWAY**

INTERSTATE ROUTE H-3  
FAIP NO. I-H3-1(75), UNIT I  
SCALE: AS SHOWN  
SHEET NO. SY5 OF 9 SHEETS

SURVEY PLOTTED BY	DATE
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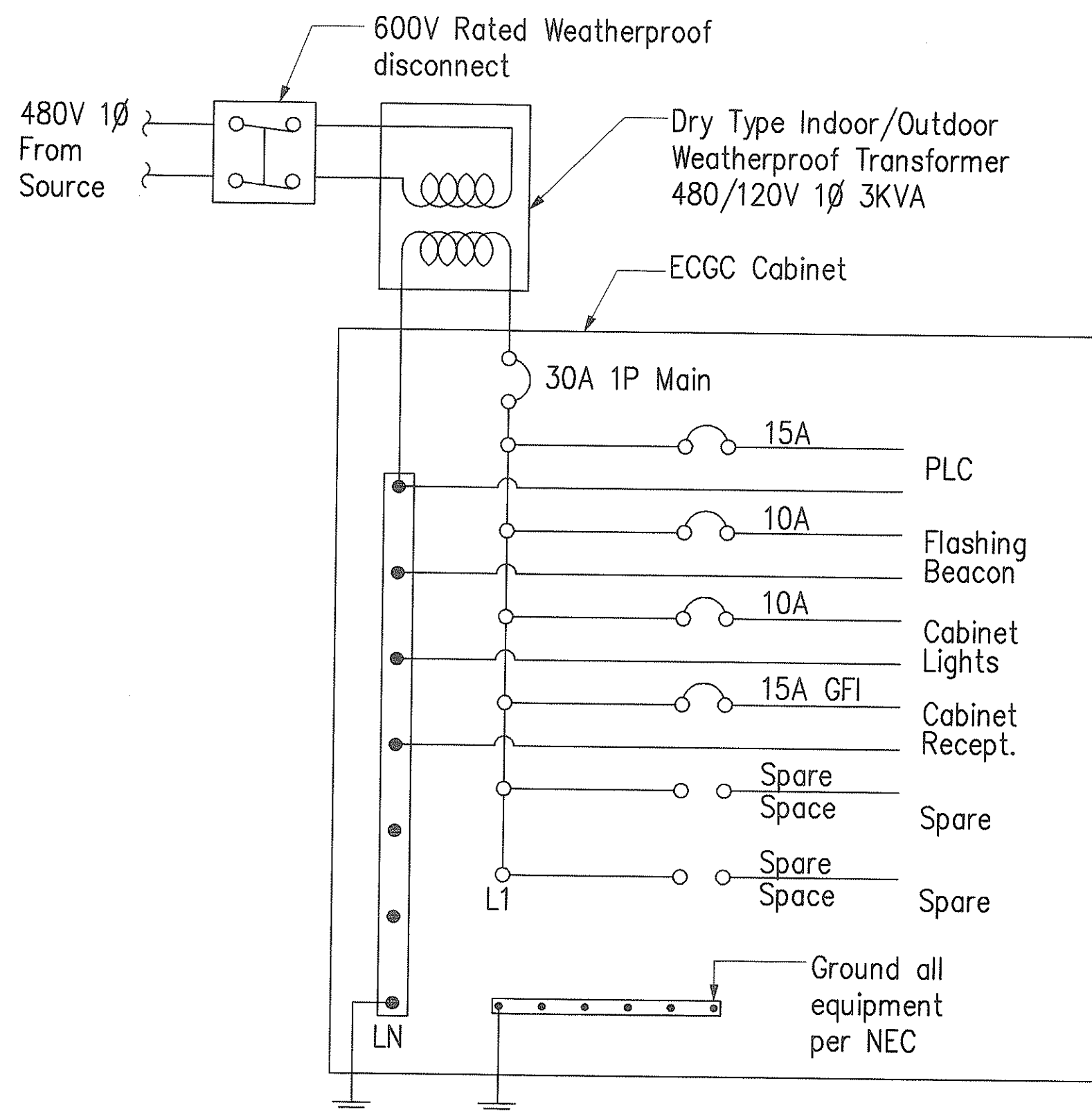
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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75), UNIT I	1996	355	405

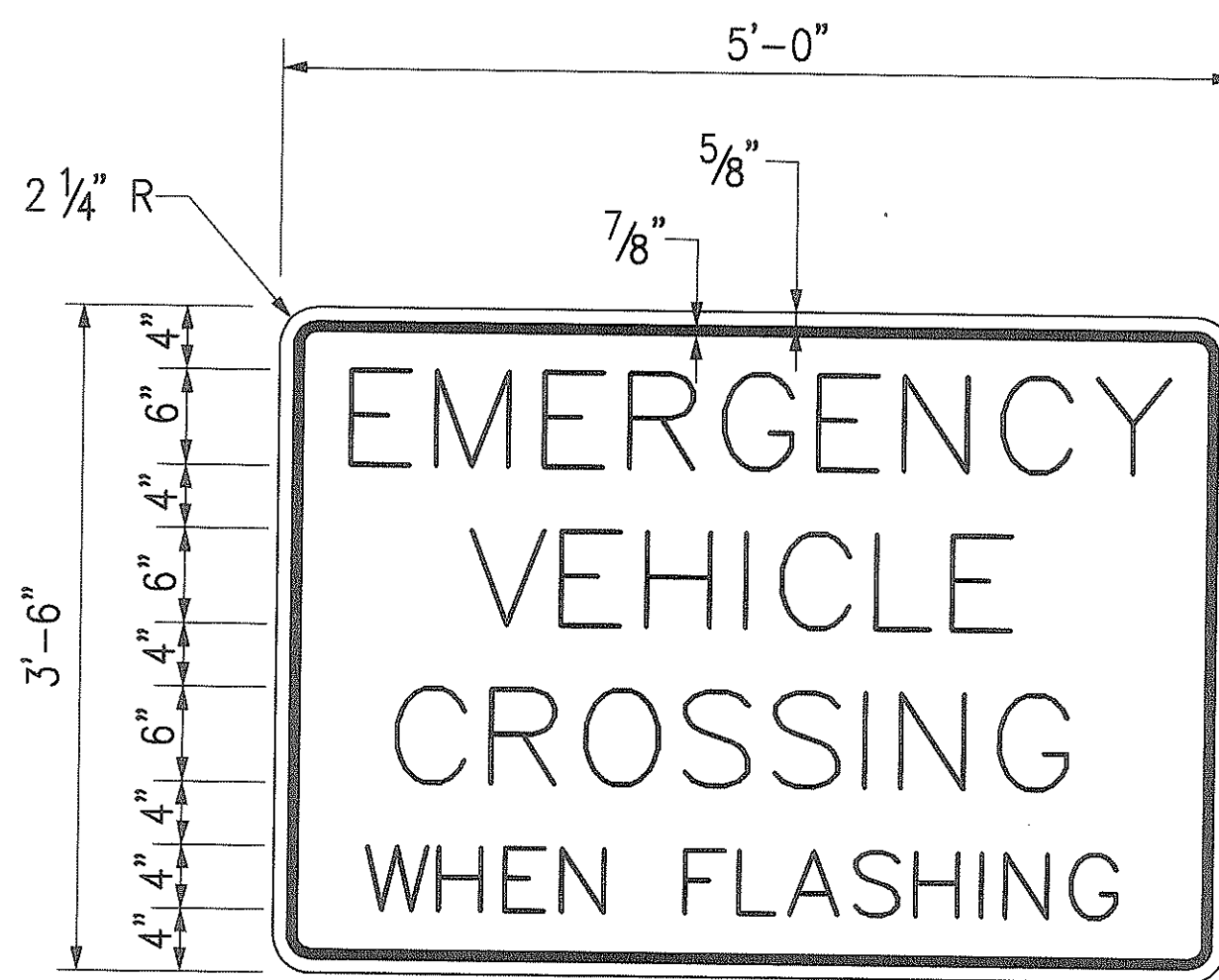


NOTE: All conduit to be schedule 40 GRS.  
Ground all equipment per NEC.

ECGC  
N.T.S.



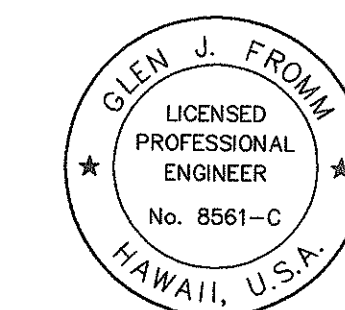
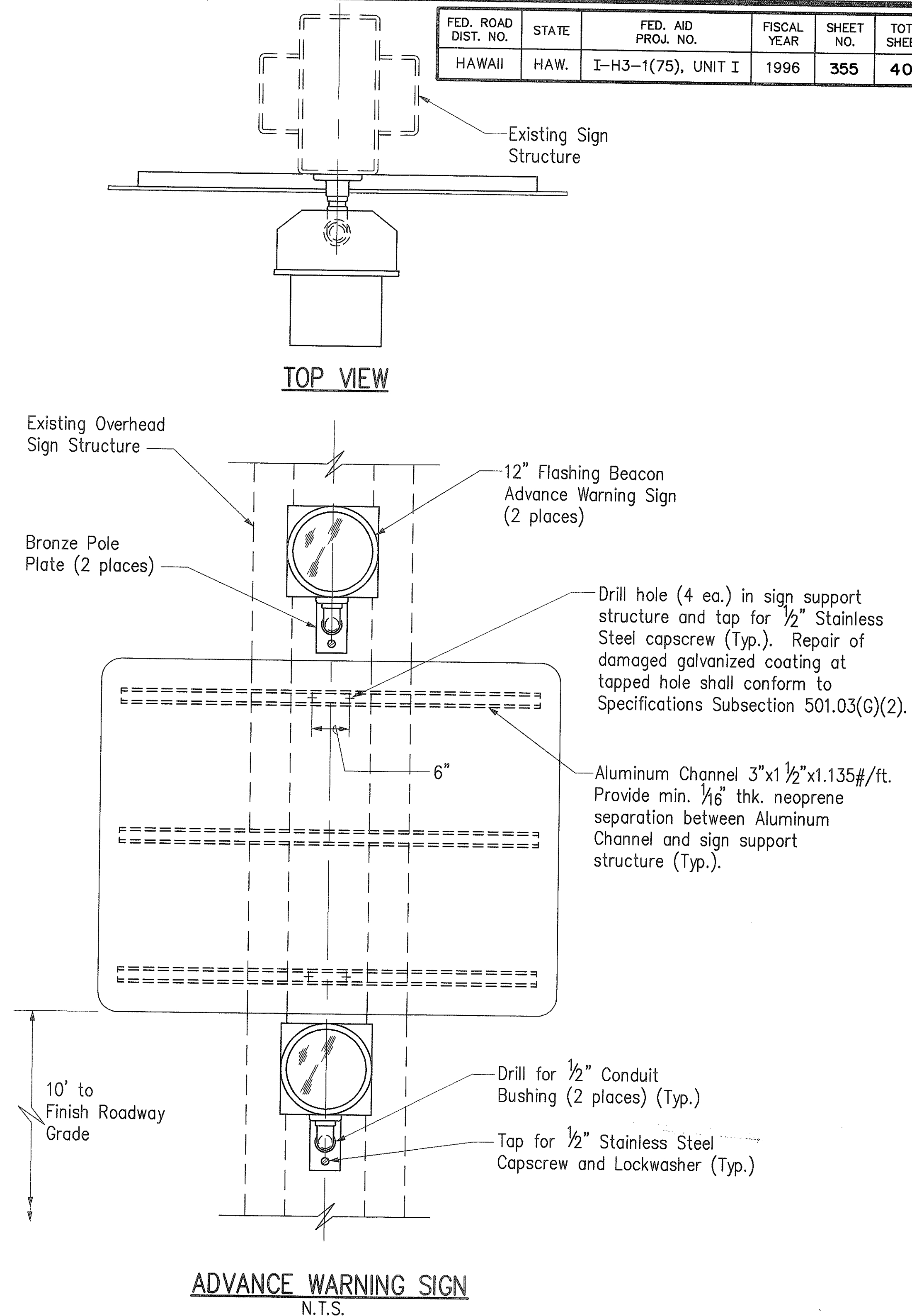
ECGC POWER WIRING DIAGRAM  
N.T.S.



#### NOTES

- All lettering to be Series D.
- Black border and legend on yellow background.

ADVANCE WARNING SIGN DETAIL  
FOR  
EMERGENCY CROSSOVERS  
N.T.S.



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DEPARTMENT OF TRANSPORTATION  
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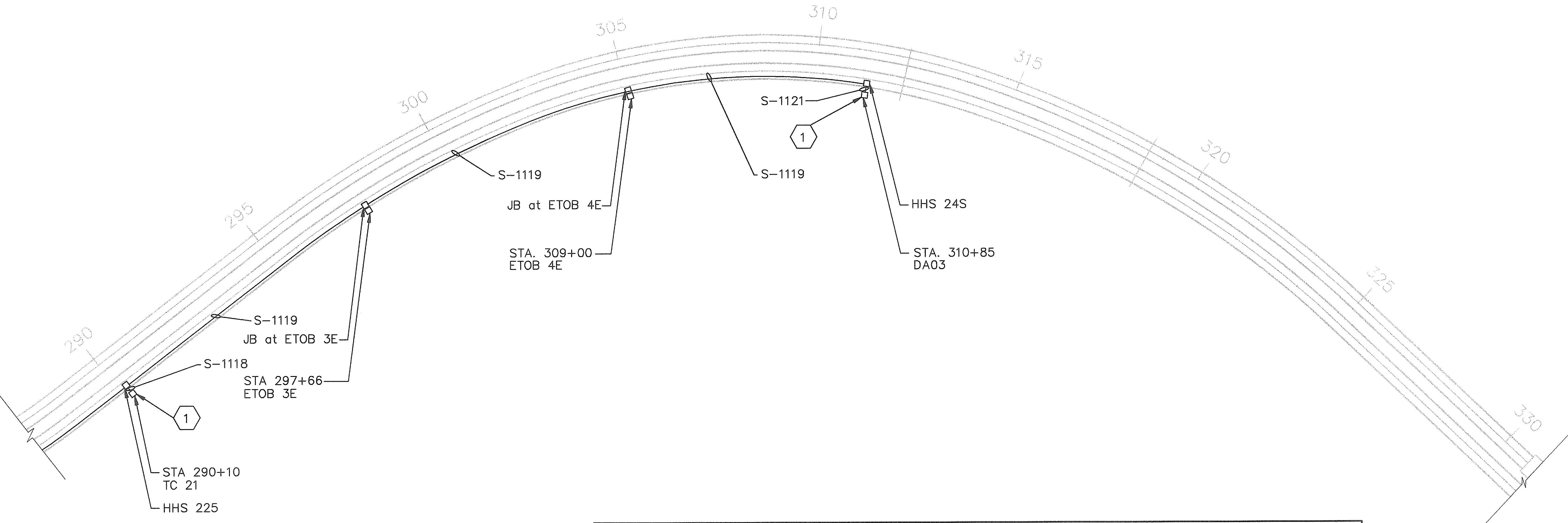
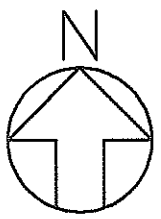
SYSTEMS  
EMERGENCY CROSSOVER  
DETAILS

INTERSTATE ROUTE H-3  
FAIP NO. I-H3-1(75), UNIT I  
SCALE: AS SHOWN  
DATE: JANUARY 1996

SHEET NO. SY6 OF 9 SHEETS



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75), UNIT I	1996	356	405



1 CONSTRUCTION NOTES:  
Coil 10' cable in cabinet  
for future use.

EXIST. RUN NO.	CIRCUIT ID	FROM	TO	SIZE INCH	CABLE QUANTITY	
S-1118	CO	TC 21	HHS 22S	2.00	1-4MM (TC21 to FO HUB 07)	1-4MM Fiber (DA03)
S-1119	CO	HHS 22S	ETOB 3E	2.00	1-2pr #22 (ETOB 3E)	1-4MM Fiber (DA03)
S-1119	CO	ETOB 3E	ETOB 4E	2.00	empty	1-4MM Fiber (DA03)
S-1119	CO	ETOB 4E	HHS 24S	2.00	1-2pr #22 (ETOB 4E)	1-4MM Fiber (DA03)
S-1121	CO	HHS 24S	DA03	2.00	empty	1-4MM Fiber (DA03)

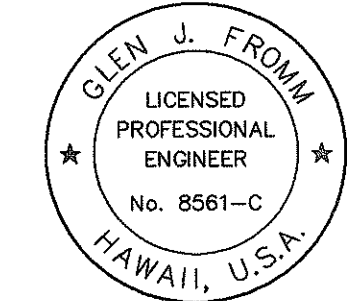
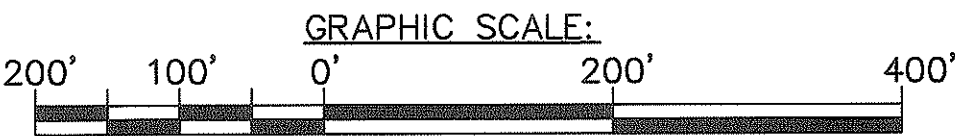
Existing per previous contracts      New per FAIP NO. I-H3-1(75), UNIT I

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# HAIKU APPROACH



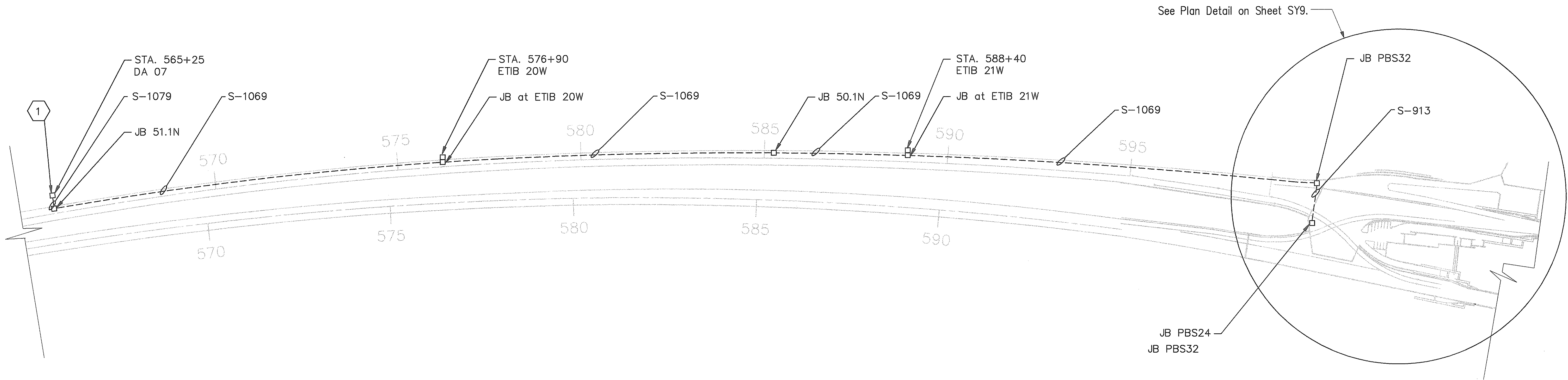
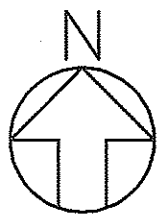
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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**SYSTEMS**  
**HAIKU APPROACH**

INTERSTATE ROUTE H-3  
FAIP NO. I-H3-1(75), UNIT I  
SCALE: NTS  
DATE: JANUARY 1996  
SHEET NO. SY7 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75), UNIT I	1996	357	405



EXIST. RUN NO.	CIRCUIT ID	FROM	TO	SIZE INCH	CABLE QUANTITY	
S-913	COMM	PBS 24	PBS 32	3.00	4-2pr #22 (ETIB 18W-21W)	1-4MM Fiber (DA07)
S-1069	COMM	PBS 32	ETIB 21W	3.00	4-2pr #22 (ETIB 18W-21W)	1-4MM Fiber (DA07)
S-1069	COMM	ETIB 21W	HHS 50.1N	3.00	3-2pr #22 (ETIB 18W-20W)	1-4MM Fiber (DA07)
S-1069	COMM	HHS 50.1N	ETIB 20W	3.00	3-2pr #22 (ETIB 18W-20W)	1-4MM Fiber (DA07)
S-1069	COMM	ETIB 20W	HHS 51.1N	3.00	2-2pr #22 (ETIB 18W-19W)	1-4MM Fiber (DA07)
S-1079	COMM	HHS 51.1N	DA07	2.00		1-4MM Fiber (DA07)

Existing per previous contracts      New per FAIP NO. I-H3-1(75), UNIT I

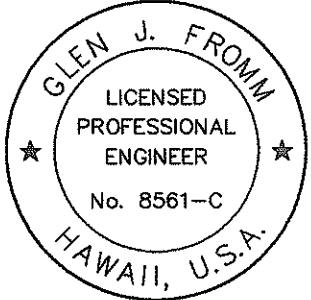
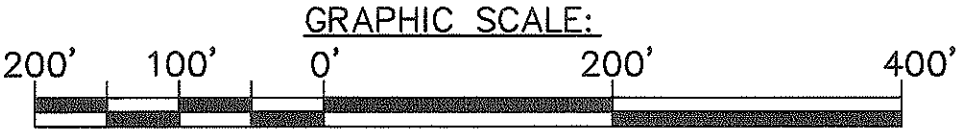
CONSTRUCTION NOTES:

- 1 Coil 10' of cable in DA07 cabinet for future use.

SURVEY PLOTTED BY	DATE
DRAWN BY	
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HALAWA APPROACH



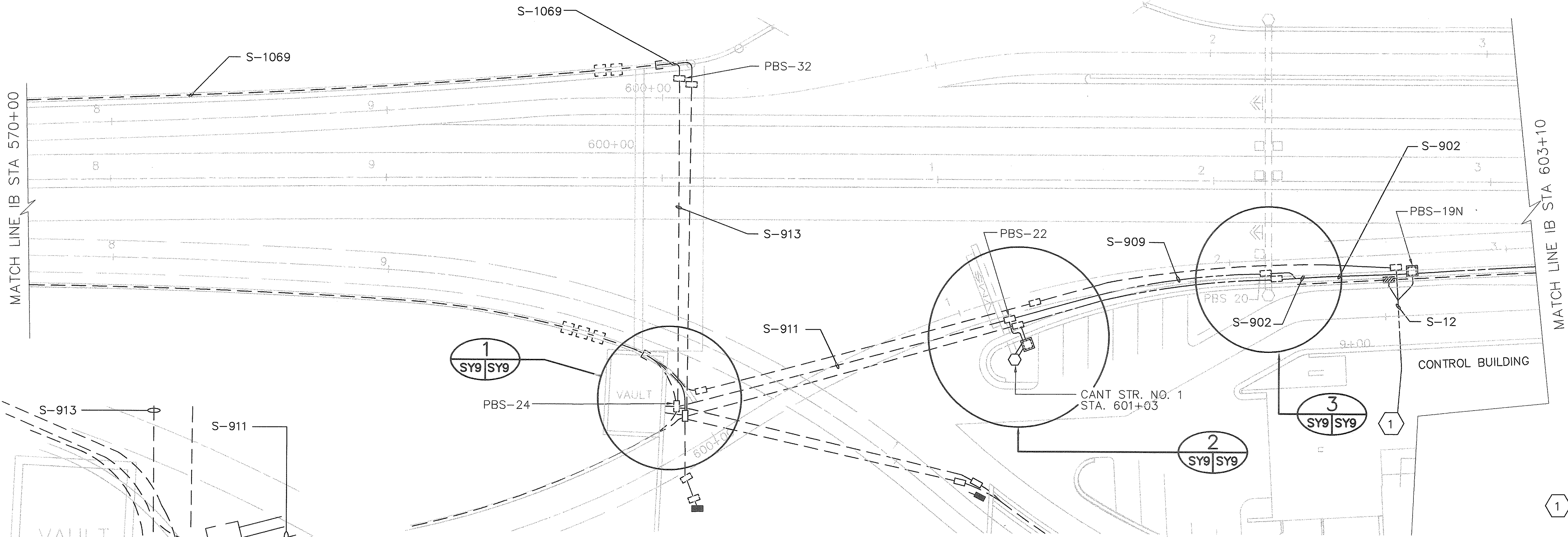
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*Glen J. Fromm*

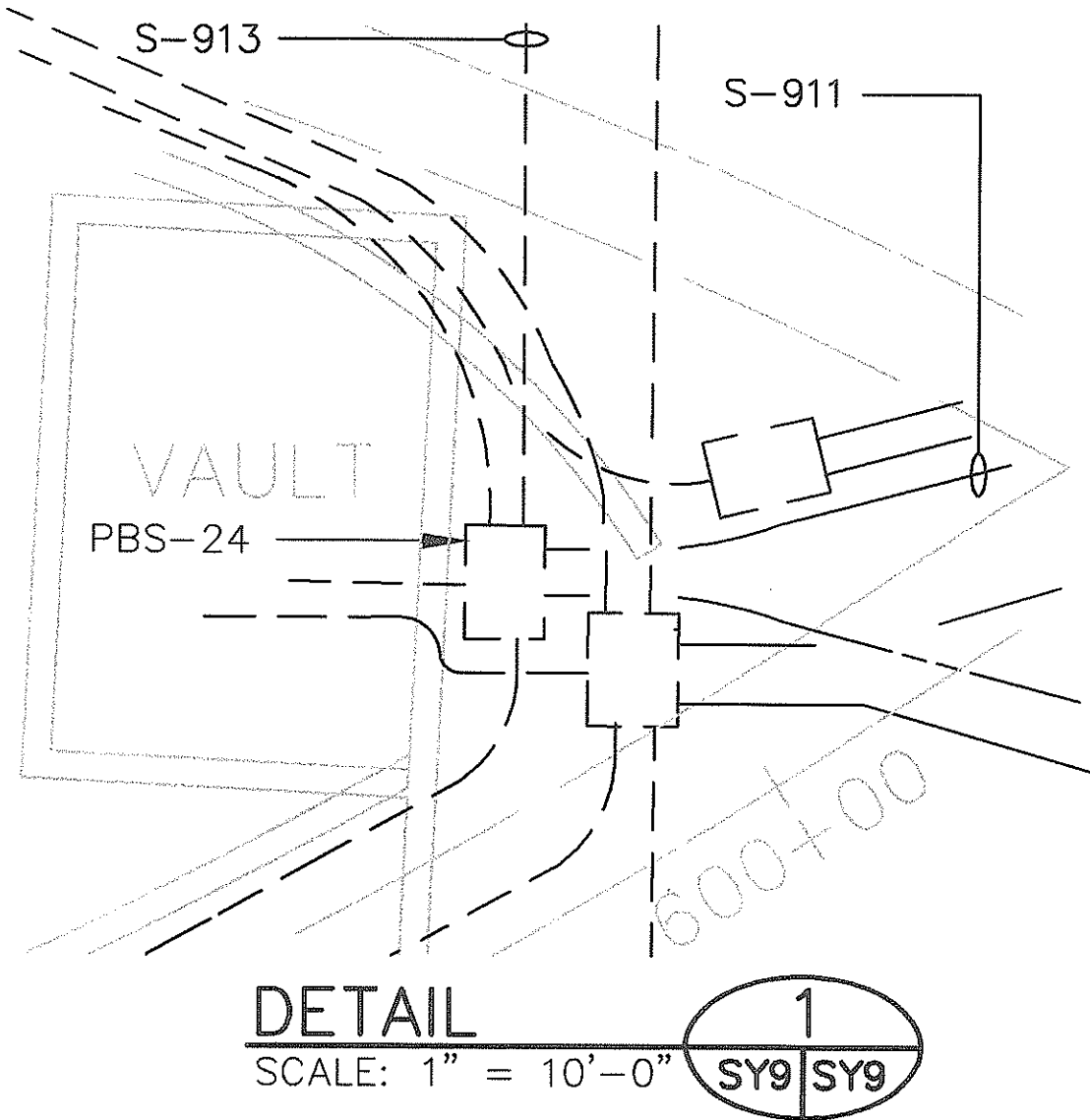
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**SYSTEMS**  
**HALAWA APPROACH**  
  
INTERSTATE ROUTE H-3  
FAIP NO. I-H3-1(75), UNIT I  
SCALE: NTS      DATE: JANUARY 1996  
SHEET NO. SY8 OF 9 SHEETS



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75), UNIT I	1996	358	405



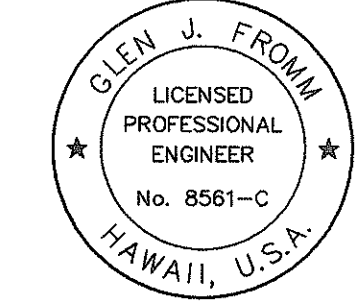
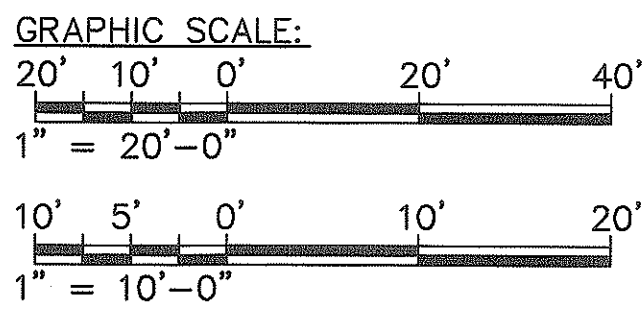
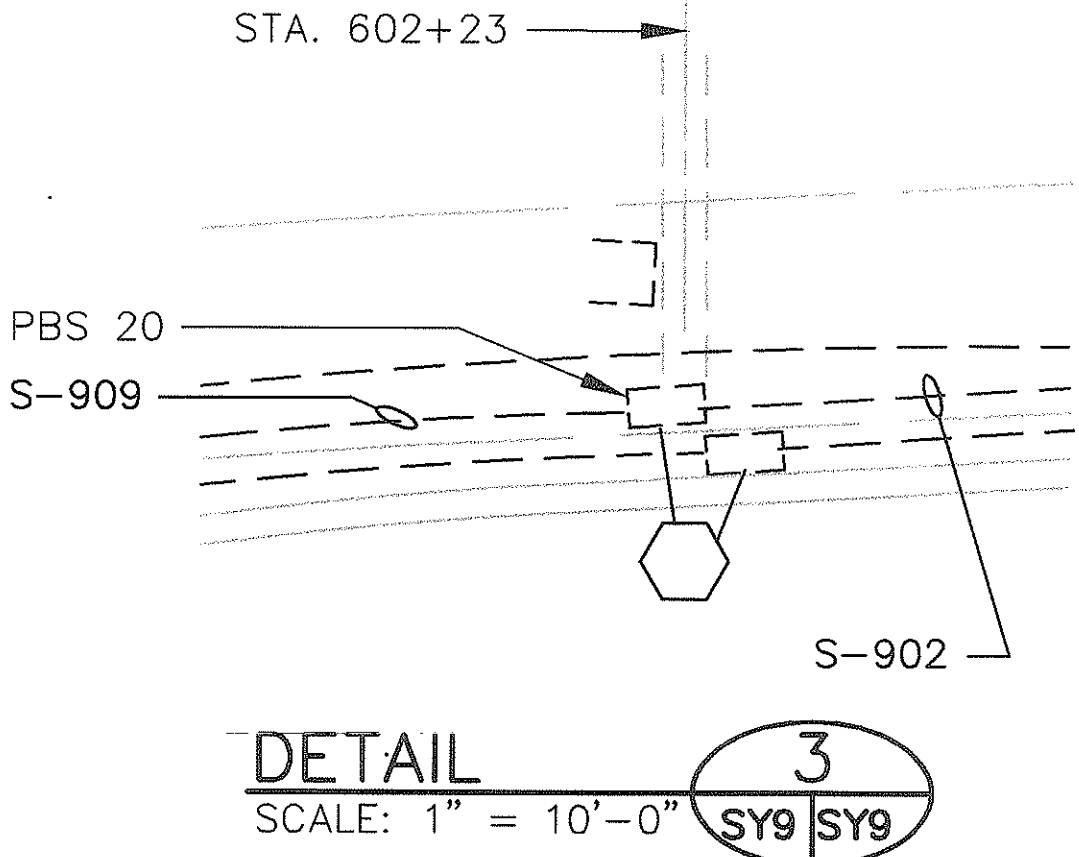
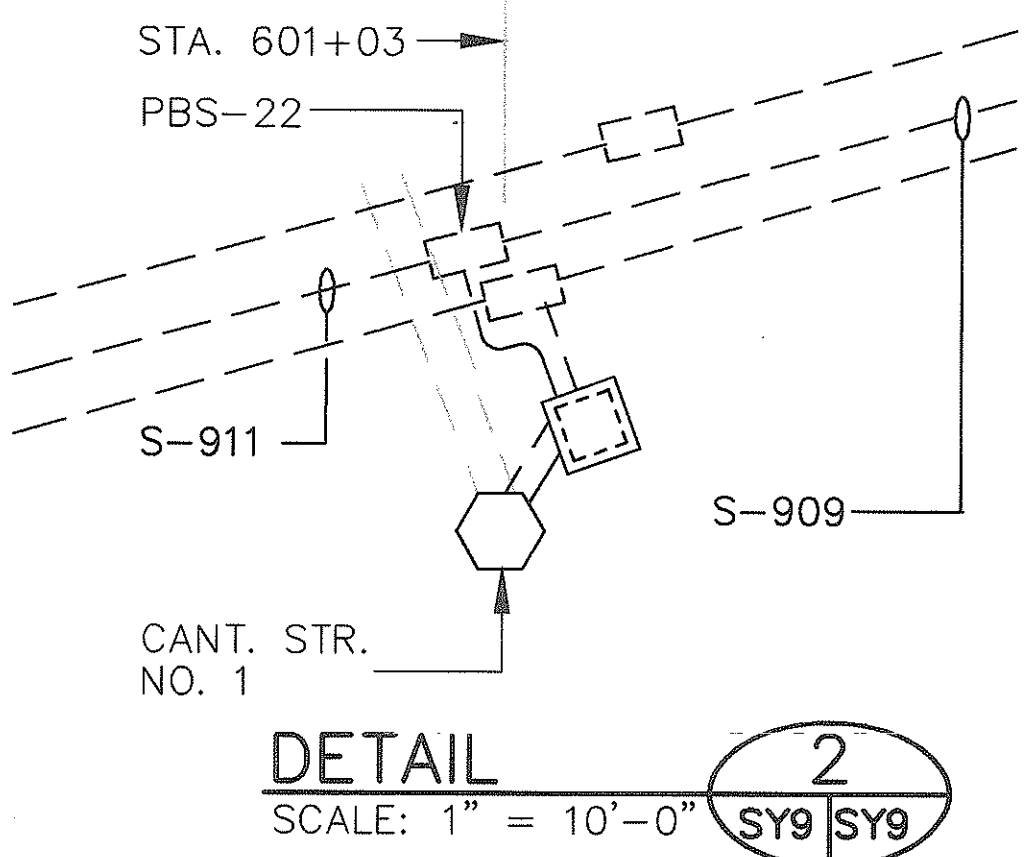
CONSTRUCTION NOTES:  
 1 Coil 150' cable in CC equipment room for future use.



PLAN DETAIL  
 SCALE: 1" = 20'

EXIST. RUN NO.	CIRCUIT ID	FROM	TO	SIZE INCH	CABLE QUANTITY	
S-12	COMM	CB	PBS 19N	3.00	4-2pr #22 (ETIB 18W-21W)	1-4MM Fiber (DA07)
					1-48SM Fiber (FO13 to FO14)	
					1-48SM Fiber (FO02 to FO14)	
					1-24MM Fiber (FO14 to FO09)	
					1-4MM Fiber (FO14 to SC11)	
S-902	COMM	PBS 19N	PBS 20	3.00	4-2pr #22 (ETIB 18W-21W)	1-4MM Fiber (DA07)
					1-48SM Fiber (FO02 to FO14)	
S-909	COMM	PBS 20	PBS 22	3.00	4-2pr #22 (ETIB 18W-21W)	1-4MM Fiber (DA07)
					1-48SM Fiber (FO02 to FO14)	
					1-4MM Fiber (FO14 to SC11)	
S-911	COMM	PBS 22	PBS 24	3.00	4-2pr #22 (ETIB 18W-21W)	1-4MM Fiber (DA07)
					1-48SM Fiber (FO02 to FO14)	
S-913	COMM	PBS 24	PBS 32	3.00	4-2pr #22 (ETIB 18W-21W)	1-4MM Fiber (DA07)
S-1069	COMM	PBS 32	ETIB 21W	3.00	4-2pr #22 (ETIB 18W-21W)	1-4MM Fiber (DA07)

Existing per previous contracts      New per FAIP NO. I-H3-1(75), UNIT I



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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**SYSTEMS**  
**HALAWA APPROACH**

INTERSTATE ROUTE H-3  
FAIP NO. I-H3-1(75), UNIT I  
SCALE: AS SHOWN      DATE: JANUARY 1996  
SHEET NO. SY9 OF 9 SHEETS

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

CAO by J. Minura 55-52