

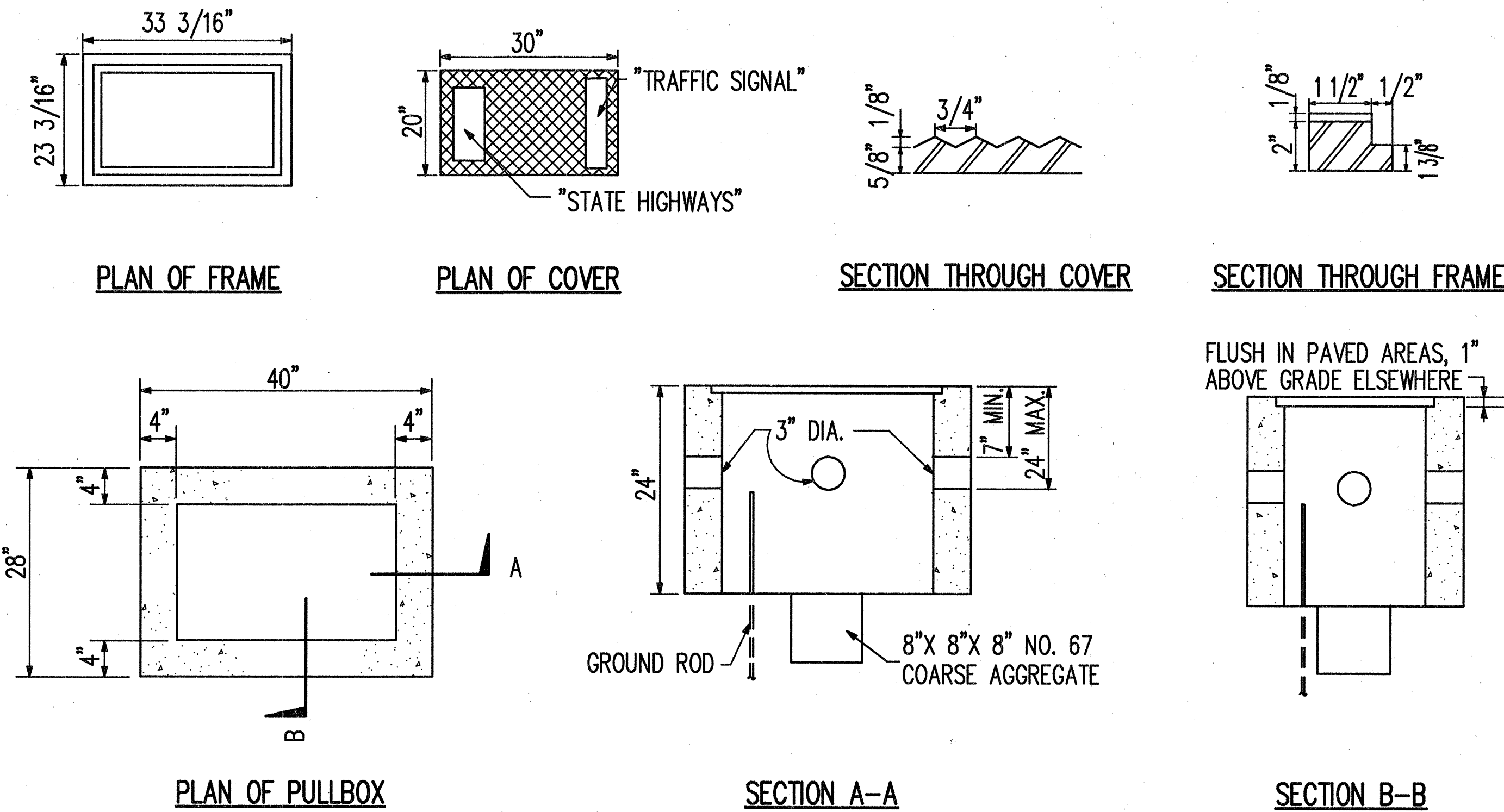
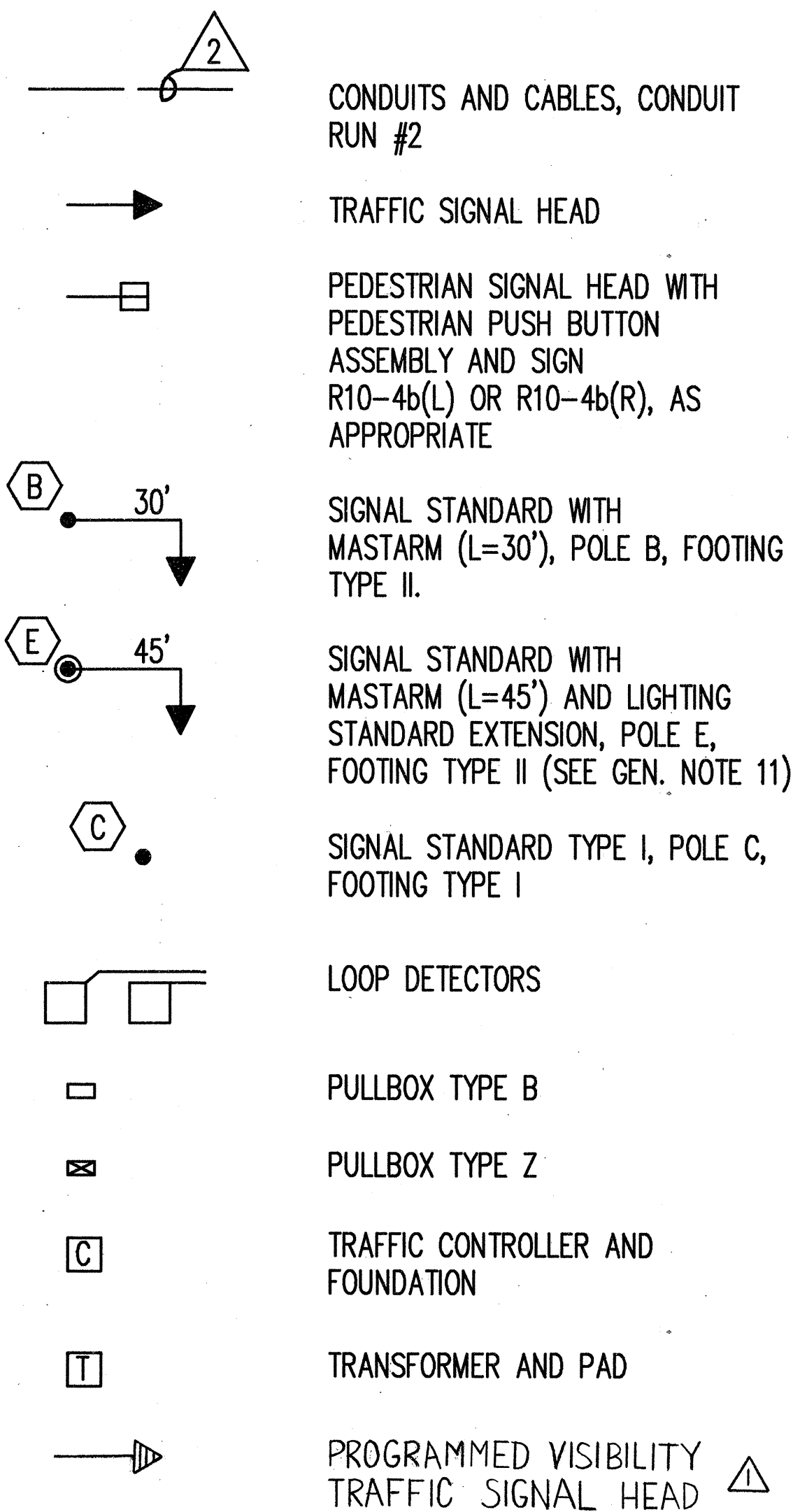
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FMTFH2-C-0294		C.O.39	84

GENERAL NOTES

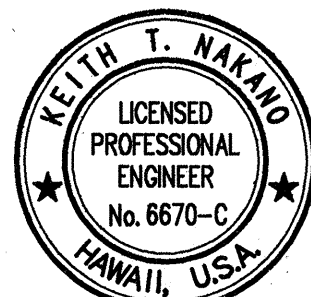
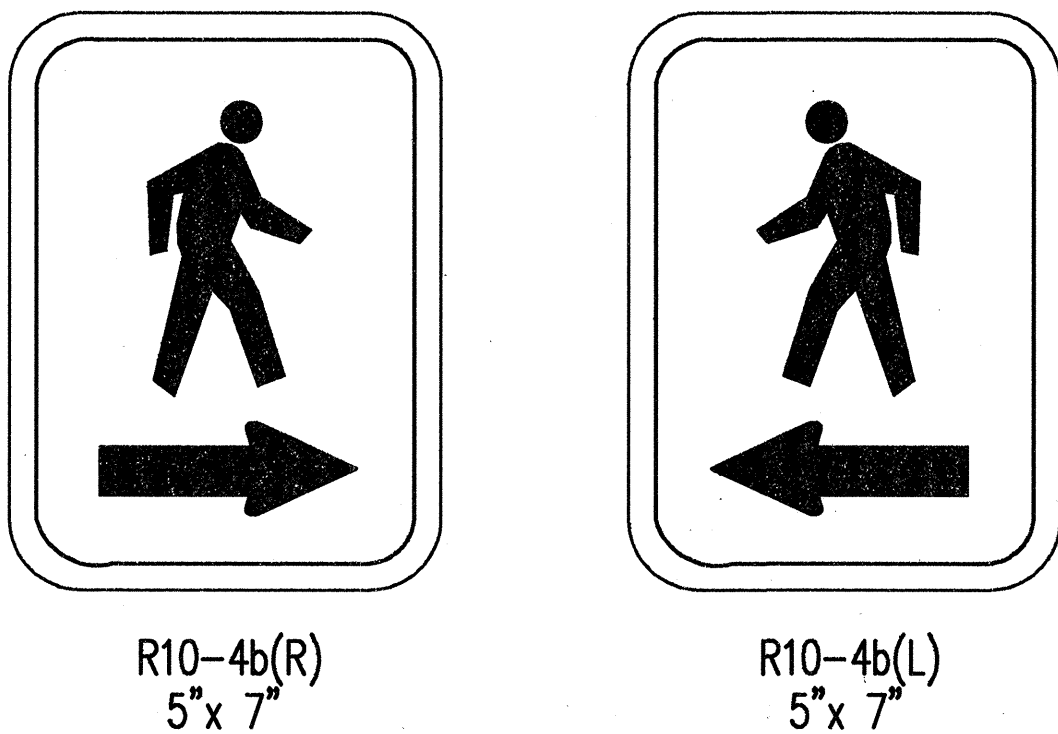
- SEE HIGHWAY LIGHTING PLANS FOR ELECTRICAL SERVICE CONNECTION TO TRAFFIC SIGNAL SYSTEM.
- EXISTING SIGNAL SYSTEM SHALL REMAIN OPERATIONAL UNTIL NEW SYSTEM IS IN SERVICE AND SHALL BE ADJUSTED AS NECESSARY TO FACILITATE CONSTRUCTION OF NEW SYSTEMS AND OTHER FACILITIES SUCH AS UTILITIES, DRAINAGE, ETC.
- ALL TRAFFIC SIGNAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", FEDERAL HIGHWAY ADMINISTRATION, LATEST EDITION, AND AMENDMENTS.
- THE LOCATIONS OF THE TRAFFIC SIGNAL STANDARDS, TRAFFIC SIGNAL STANDARDS WITH MAST-ARM, PEDESTRIAN PUSH BUTTONS, TRAFFIC CONTROLLER, TRANSFORMER, PULLBOXES, CONDUITS, BARRIERS & LOOP DETECTORS SHALL BE STAKED OUT IN THE FIELD BY CONTRACTOR & APPROVAL OF THE LOCATIONS OBTAINED FROM THE ENGINEER PRIOR TO CONSTRUCTION & INSTALLATION. LOCATIONS SHOWN ON THE PLANS SHALL BE ADJUSTED AS NECESSARY TO PREVENT CONFLICTS WITH EXISTING OR NEW FACILITIES.
- ALL NEW CONDUITS UNDER ROADWAY SHALL BE PVC SCHEDULE 80.
~~CONTRACTOR SHALL HAVE THE OPTION OF USING PVC SCHEDULE 40 FOR NEW CONDUITS NOT UNDER ROADWAY, UNLESS OTHERWISE NOTED.~~
- ~~IN ADDITION TO THE CONDUITS INDICATED IN THE "CONDUIT & CABLE SCHEDULE" INSTALL ONE 3-INCH CONDUIT IN THE CONTROLLER FOOTING. CONDUIT SHALL BE STUBBED OUT 12" FROM FOOTING AND SHALL BE CAPPED.~~
- LOOP DETECTORS SHALL BE IN ACCORDANCE WITH THE DETAILS ON SHEET F-2A, EXCEPT FOR THE FOLLOWING:
 - WIRE LOOP 11A, 11C AND 11B, 11D IN SERIES
 - PROVIDE SEPARATE LEAD-IN CABLE FOR EACH INDIVIDUALLY-NUMBERED LOOP (E.G. LOOP #24) AND FOR EACH GROUP OF LOOPS WITH SAME NUMBERS (E.G. LOOPS #23A AND #23B)
- LEAD-IN WIRES IN PULLBOX NEAR LOOPS SHALL BE TAGGED WITH LOOP NUMBER(S).
- EXISTING PAVEMENTS SHALL BE RESTORED IN ACCORDANCE WITH DETAIL "RESTORATION OF EXIST. PAVEMENT" SHOWN ON ROADWAY CONSTRUCTION PLANS.
- DEPARTMENT OF TRANSPORTATION SERVICES, CITY & COUNTY OF HONOLULU WILL ASSIST THE ENGINEER IN CONSTRUCTION INSPECTION FOR THE TRAFFIC SIGNAL SYSTEM.
 WORK BY THE DEPT. OF TRANSPORTATION SERVICES, C & C OF HONOLULU:
 - TEST CONTROLLER & AUXILIARY EQUIPMENT IN CABINET.
 - MAKE ALL ELECTRICAL EQUIPMENT CONNECTIONS IN THE FIELD FOR SIGNAL SYSTEM AFTER THE SYSTEM HAS BEEN INSTALLED IN PLACE BY THE CONTRACTOR.
 - FINAL ADJUSTMENT OF TRAFFIC SIGNAL CONTROL EQUIPMENT.
- FOOTING TYPE II FOR SIGNAL STANDARD WITH MASTARM AND LIGHTING STANDARD EXTENSION SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD PLAN TE-39 EXCEPT FOR SIGNAL STANDARD E, DIMENSION "c" SHALL BE 11'-0".

- STEEL PLATES FOR COVERING TRENCHES SHALL HAVE SKID RESISTANT SURFACE.
- EXISTING SIGNAL STANDARDS, SIGNAL HEADS, CONTROLLERS, AND APPURTENANCES SHALL BE SALVAGED, FULLY DISMANTLED AND STOCKPILED AS DIRECTED BY THE ENGINEER AT THE STATE'S BASE YARD, LEHUA AVE., PEARL CITY. EXISTING PULLBOXES, CONTROLLER FOOTINGS AND THE TOP 1'-6" OF SIGNAL STANDARD FOOTINGS SHALL BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR. THE EXISTING GROUND SHALL BE RESTORED WITH TOP SOIL.
- COORDINATE WITH DEPARTMENT OF TRANSPORTATION, CITY & COUNTY OF HONOLULU TO PERFORM TEMPORARY ELECTRICAL POWER CHANGE OVER.

TRAFFIC SIGNAL LEGEND



PULLBOX TYPE Z
NOT TO SCALE

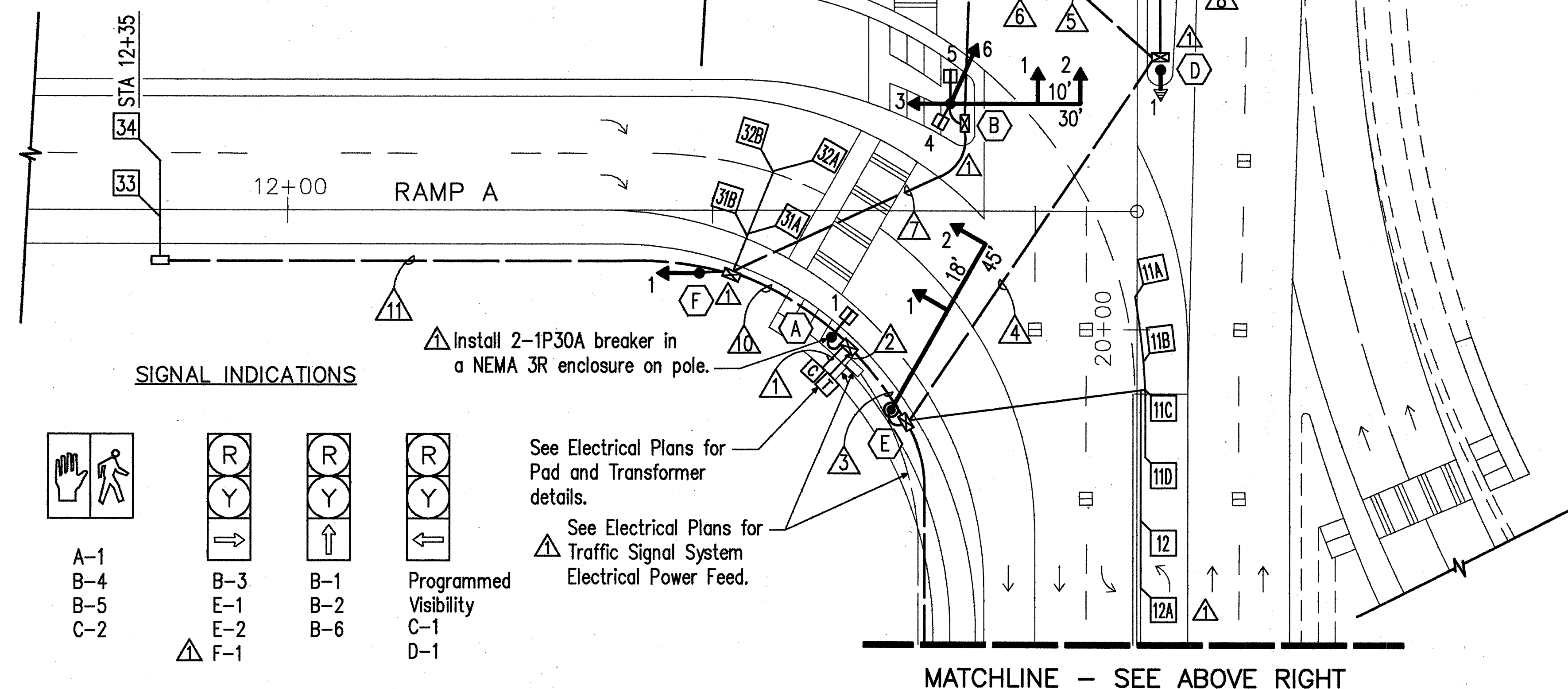


THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.
Keith T. Nanno

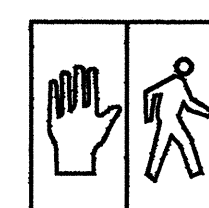
12/29/92	Revised Gen. Notes 5 and 7. Deleted Gen. Note 6. Added symbol for Programmed Visibility Traffic Signal. Added Gen. Note 14.
4/13/92	Revised Note 7 reference.
DATE	REVISION
CASTLE & COOKE RESIDENTIAL, Inc.	
TRAFFIC SIGNAL SYSTEM NOTES & LEGEND	
MILILANI INTERCHANGE NORTHBOUND ON- AND OFF-RAMPS	
SCALE:	DATE: March 1992
SHEET No.F-1 OF 2 SHEETS	

CONDUIT & CABLE SCHEDULE		
CONDUIT	CABLE	
1 6-2" SCH 80	1-26C#14, 1-#8 GND	
	1-26C#14	
	9-2C#14 SHLD	
	3-#8	
	FUTURE SIGNAL INTERCONNECT	
	FUTURE OPTICOM	
2 1-2" SCH 80	3-#8	
3 4-2" SCH 80	1-26C#14, 1-#8 GND	
	5-2C#14	
	FUTURE SIGNAL INTERCONNECT	
	SPARE	
4 3-2" SCH 80	1-26C#14, 1-#8 GND	
	3-2C#14 SHLD	
	SPARE	
5 3-2" SCH 80	1-26C#14, 1-#8 GND	
6 3-2" SCH 80	2 SPARES	
	1-26C#14, 1-#8 GND	
	1-2C#14 SHLD	
7 3-2" SCH 80	SPARE	
	1-26C#14, 1-#8 GND	
	1-2C#14 SHLD	
	FUTURE OPTICOM	
8 1-2" SCH 80	3-2C#14 SHLD	
9 1-2" SCH 80	1-2C#14 SHLD	
10 3-2" SCH 80	1-26C#14, 1-#8 GND	
	4-2C#14 SHLD	
	FUTURE OPTICOM	
11 1-2" SCH 80	1-2C#14 SHLD	
12 DELETED	DELETED	
13 1-2" SCH 80	FUTURE SIGNAL INTERCONNECT	
14 1-2" SCH 80	FUTURE SIGNAL INTERCONNECT	

NOTE: THE #8 SYSTEM GND INSTALLED IN TRAFFIC SIGNAL SYSTEM CONDUIT SHALL BE BARE SOLID COPPER.



SIGNAL INDICATIONS



A-1
B-4
B-5
C-2



B-3
E-1
E-2
F-1



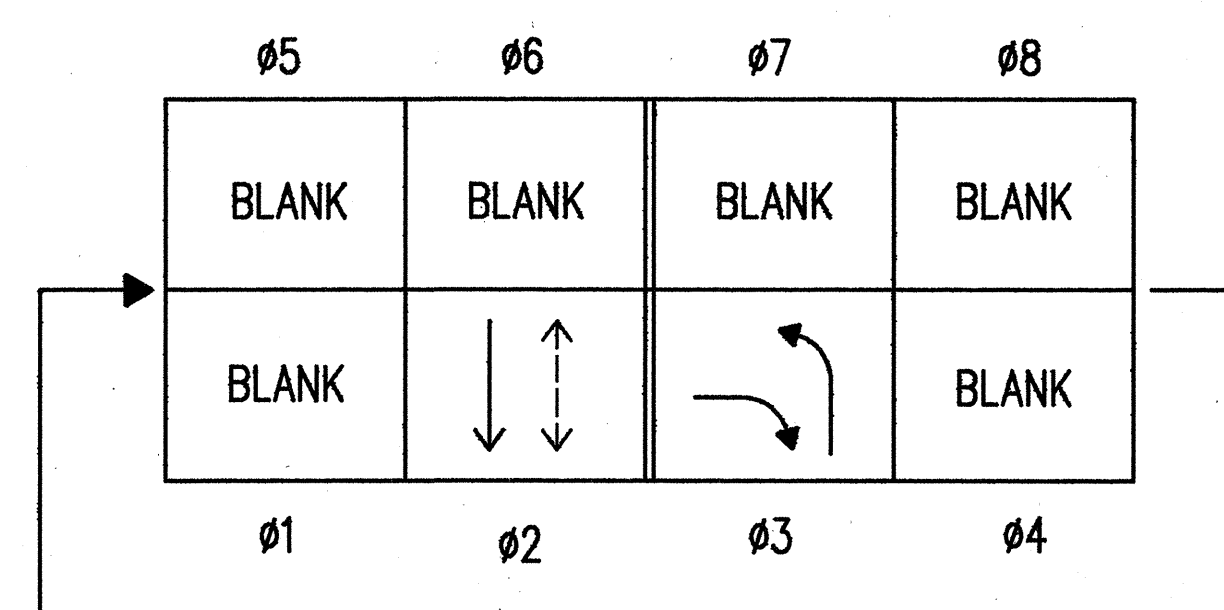
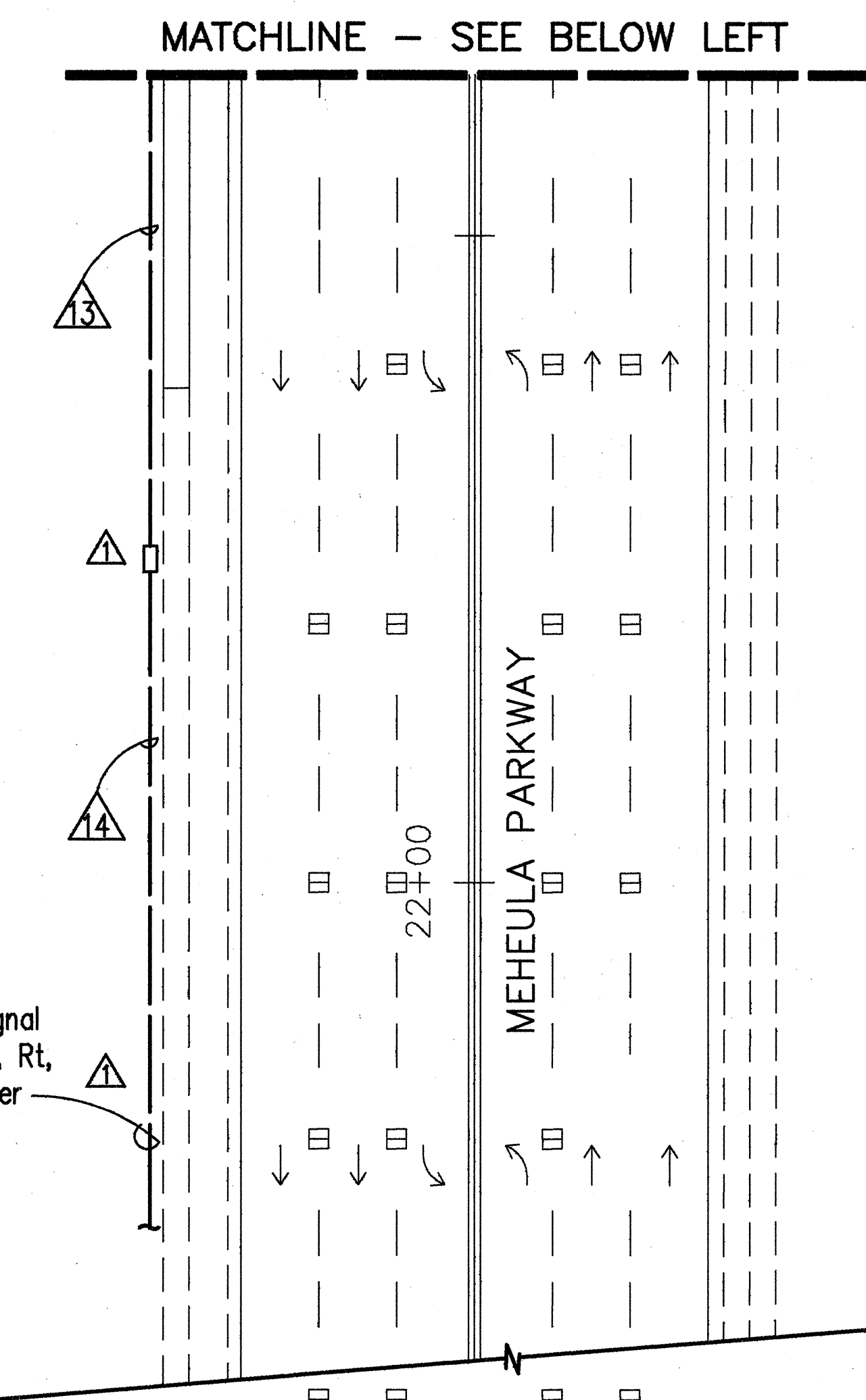
B-1
B-2
B-6



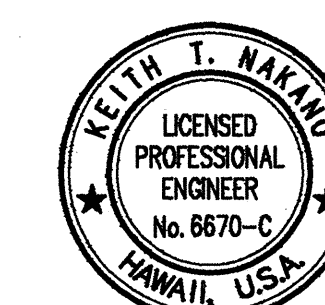
Programmed
Visibility
C-1
D-1

See Electrical Plans for
Pad and Transformer
details.

See Electrical Plans for
Traffic Signal System
Electrical Power Feed.



PHASE DIAGRAM
Model 170 Controller



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.
Keith T. Nakano

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FMT-H2-C-0294		C.O.40	84

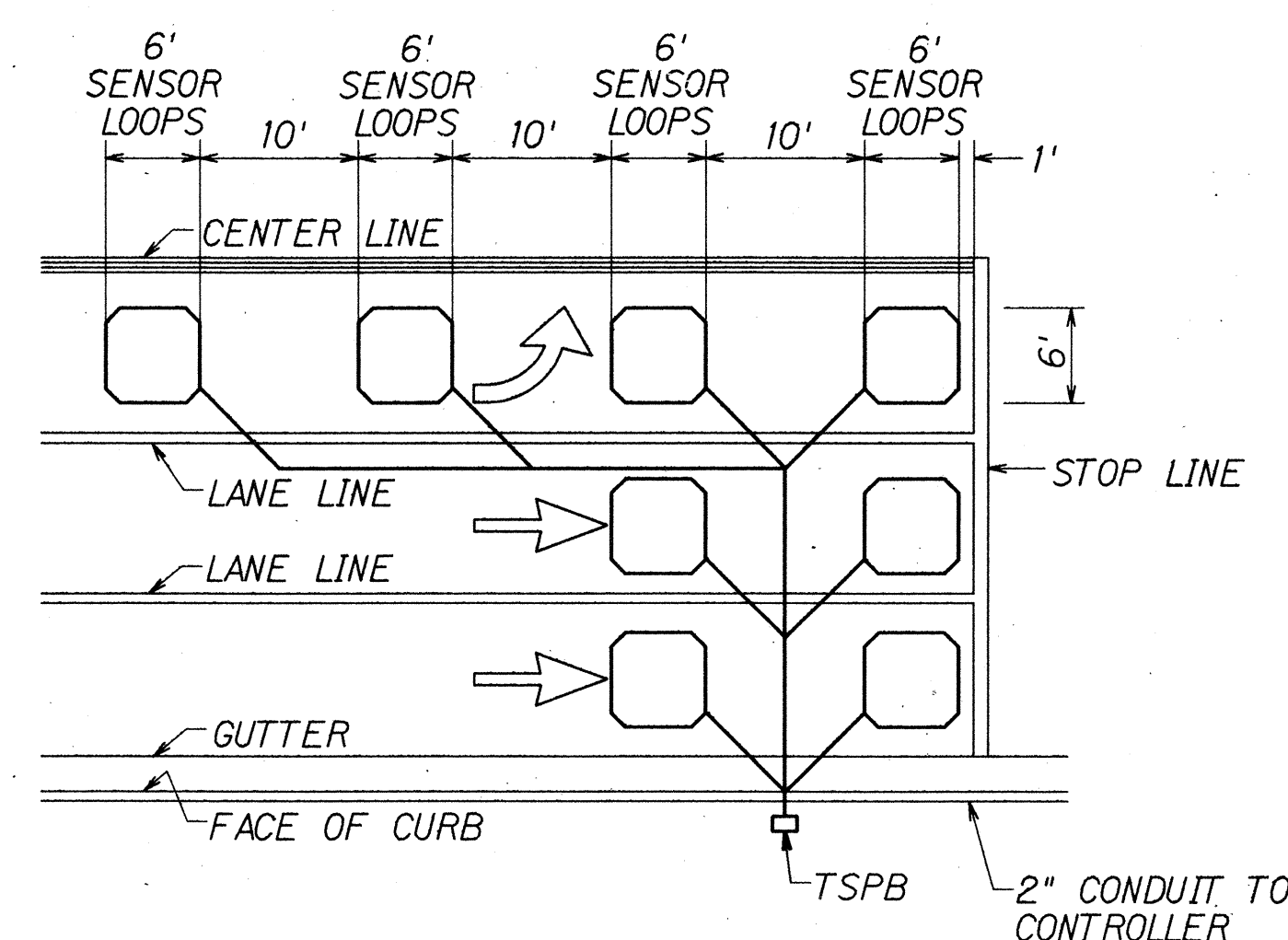
ABBREVIATIONS

R	RED
Y	AMBER
G	GREEN
Ø	PHASE OR DIAMETER
SHLD	SHIELDED

1/12/93	Changed pullboxes at Poles B, C, D and F to Type Z. Added signal standard and head F. Revised location of conduit 7. Deleted conduit 12. Deleted loop detectors 13, 14, 27 and 28. Added loop detector 12A. Revised Conduit & Cable Schedule and Signal Indications. Revised conduit 2 and cables. Added circuit breaker to pole E.
---------	---

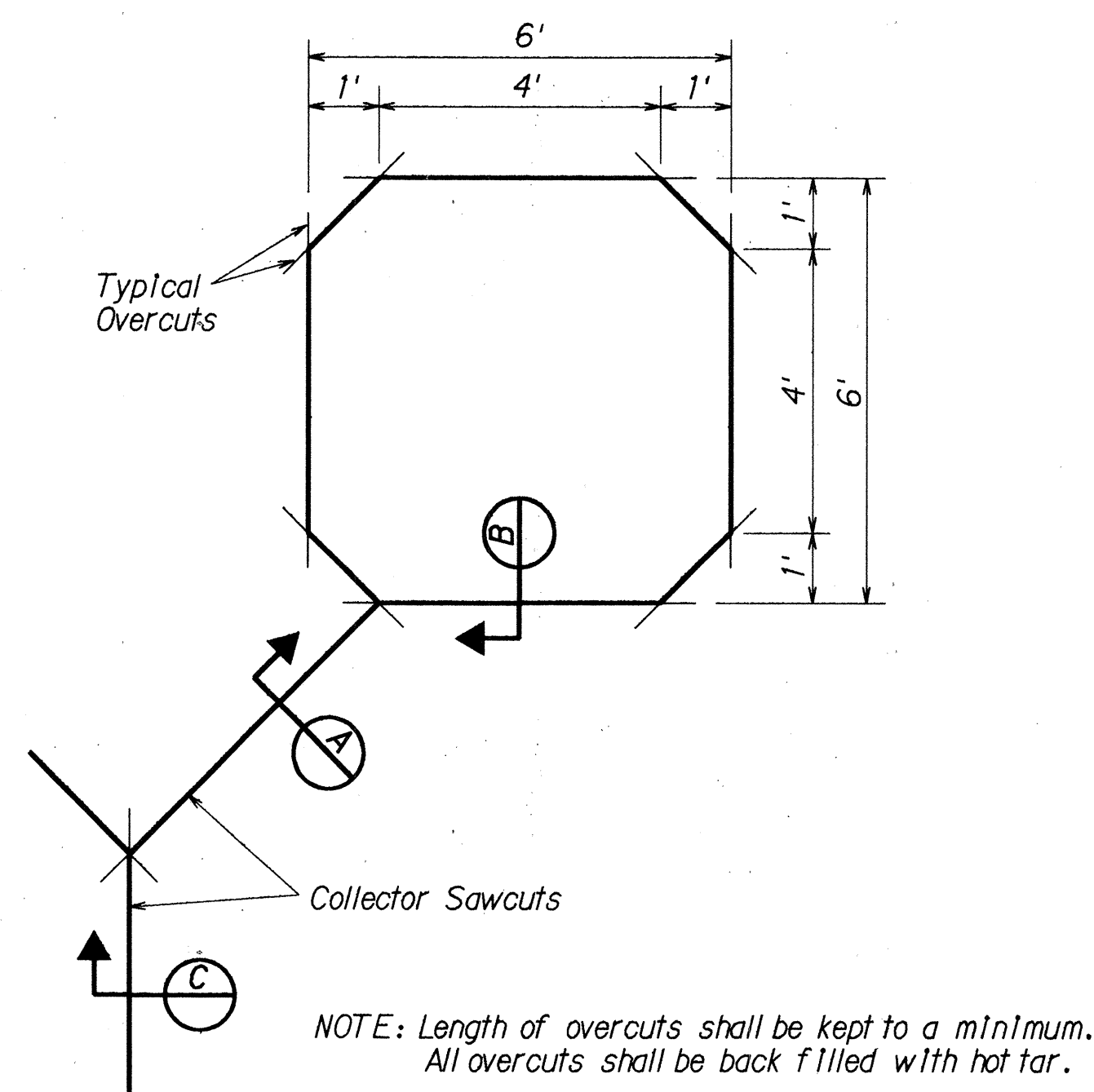
DATE	REVISION
CASTLE & COOKE RESIDENTIAL, Inc.	
TRAFFIC SIGNAL SYSTEM	
MILILANI INTERCHANGE NORTHBOUND ON- AND OFF-RAMPS	
SCALE: 1"=20'	DATE: March 1992
SHEET No.F-2 OF 2 SHEETS	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	PMTH2-C-02-94		40S-1	84

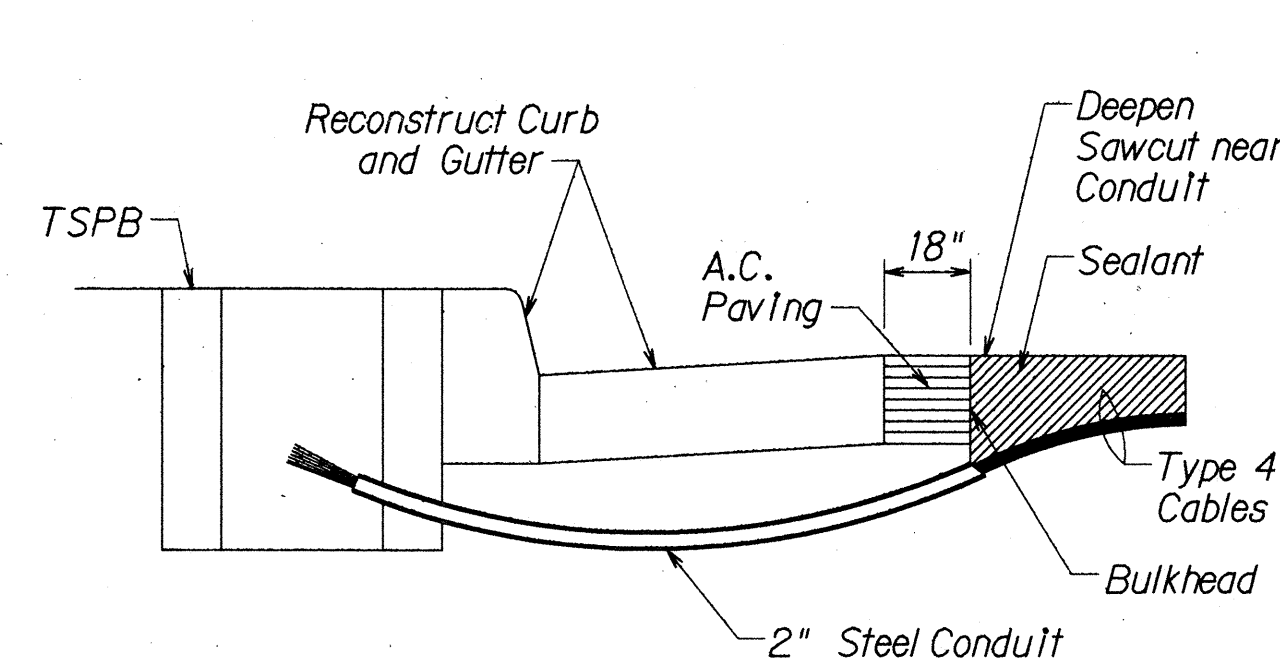
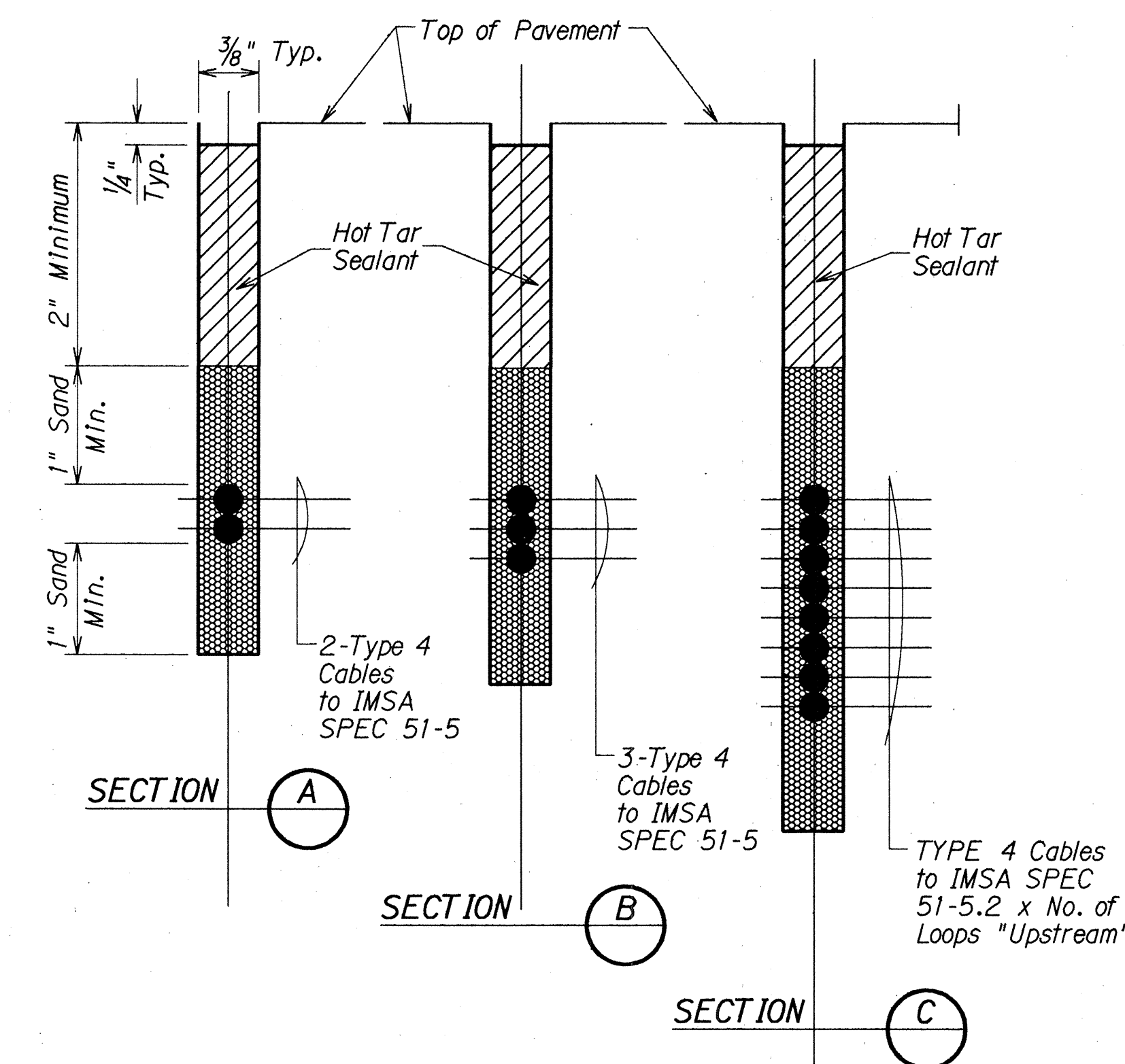


- NOTES:
1. Center sensor loops in lanes.
 2. Collector cables shall be twisted 2 turns per foot.
 3. Number of loops and locations vary. See project plans.
 4. Number and locations of collector sawcuts may be varied in the field to suit.

TYPICAL SENSOR LOOP LAYOUT

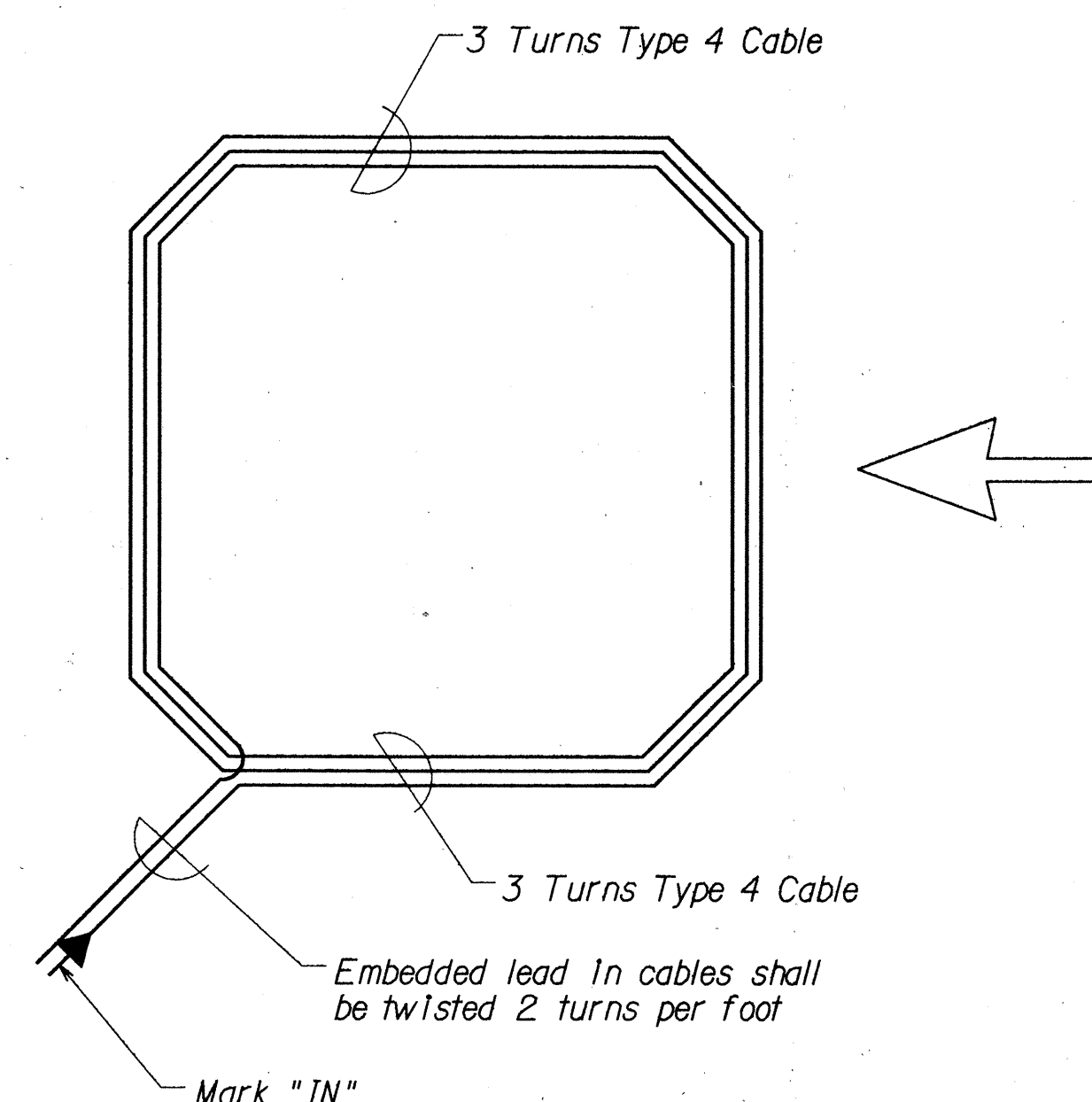


TYPICAL SENSOR LOOP SAWCUT DETAIL



- NOTES ON CONSTRUCTION AT END OF SAWCUT
1. Seal roadway end of conduit after installation of conductors.
 2. Install bulkhead across conduit trench.
 3. Place hot tar in sawcut.
 4. Backfill over conduit with new A.C.
 5. Reconstruct curb and gutter as required.

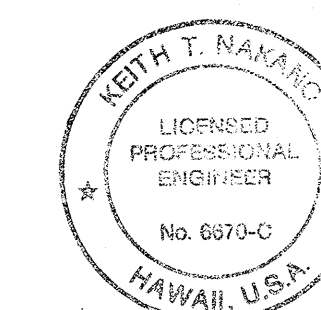
DETAIL OF SENSOR LOOP INSTALLATION AT EDGE OF ROADWAY



TYPICAL SENSOR LOOP WIRING DIAGRAM

TYPES OF CABLES

- TYPE 1 Signal Loop Cable: Stranded No. 14, 26 conductors
- TYPE 2 Detector Lead-In Cable and Pedestrian Push Button Circuit Cable: Stranded, No. 14, 2 Conductors
- TYPE 3 Interconnect Cable: Solid No. 20, 12 Pairs
- TYPE 4 Loop Sensor Cable: Solid No. 12, Single Conductor to IMSA SPEC 51-5
- TYPE 5 Cable from Signal Loop to Signal Head: Stranded, No. 14, Single Conductor
- TYPE 6 Service Cable: Solid, No. 6, 3 Conductors



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

CASTLE & COOKE RESIDENTIAL, Inc.

LOOP DETECTOR DETAILS

MILILANI INTERCHANGE
NORTHBOUND ON - AND OFF - RAMPS

Not to Scale

SHEET No. F-2A OF 2 SHEETS

40S-1

Original