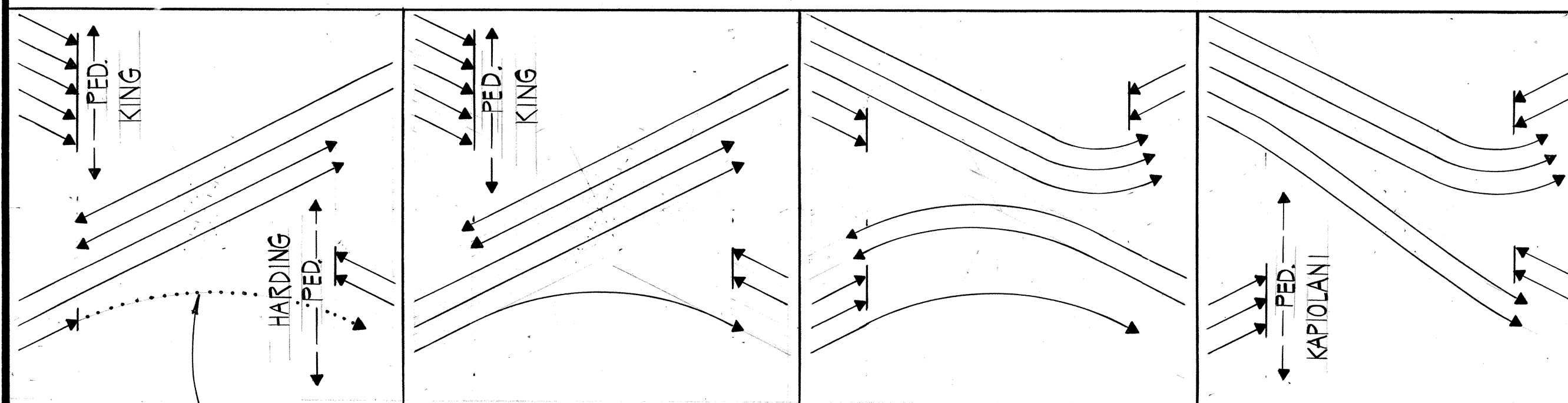


PHASE DIAGRAMS



CONTROLLER DATA

CONTROLLER UNIT: 2 TO 8 PHASES.
COORDINATION UNIT REQUIRED.
DETECTOR UNIT CHANNELS REQUIRED: 6

PHASES	
RING 1	RING 2
1	5
2	6
3	7
4	8

TIMING DATA

PHASES	1*	2**	3	4	5	6	7	8
MIN. GREEN		5	5	5	5		5	
EXTENSION (GAP)		2	2	2	2		2	
YELLOW CHANGE		4	7	7	5		7	
RED CLEARANCE			2	2	2		2	
WALK	7				7			
PED. CLEARANCE	14			18	16			
MAX. I		32	10	36	32		52	
MAX. II								

COORDINATOR TIMING DATA WILL BE FURNISHED BY THE STATE AFTER CONTRACT AWARD.

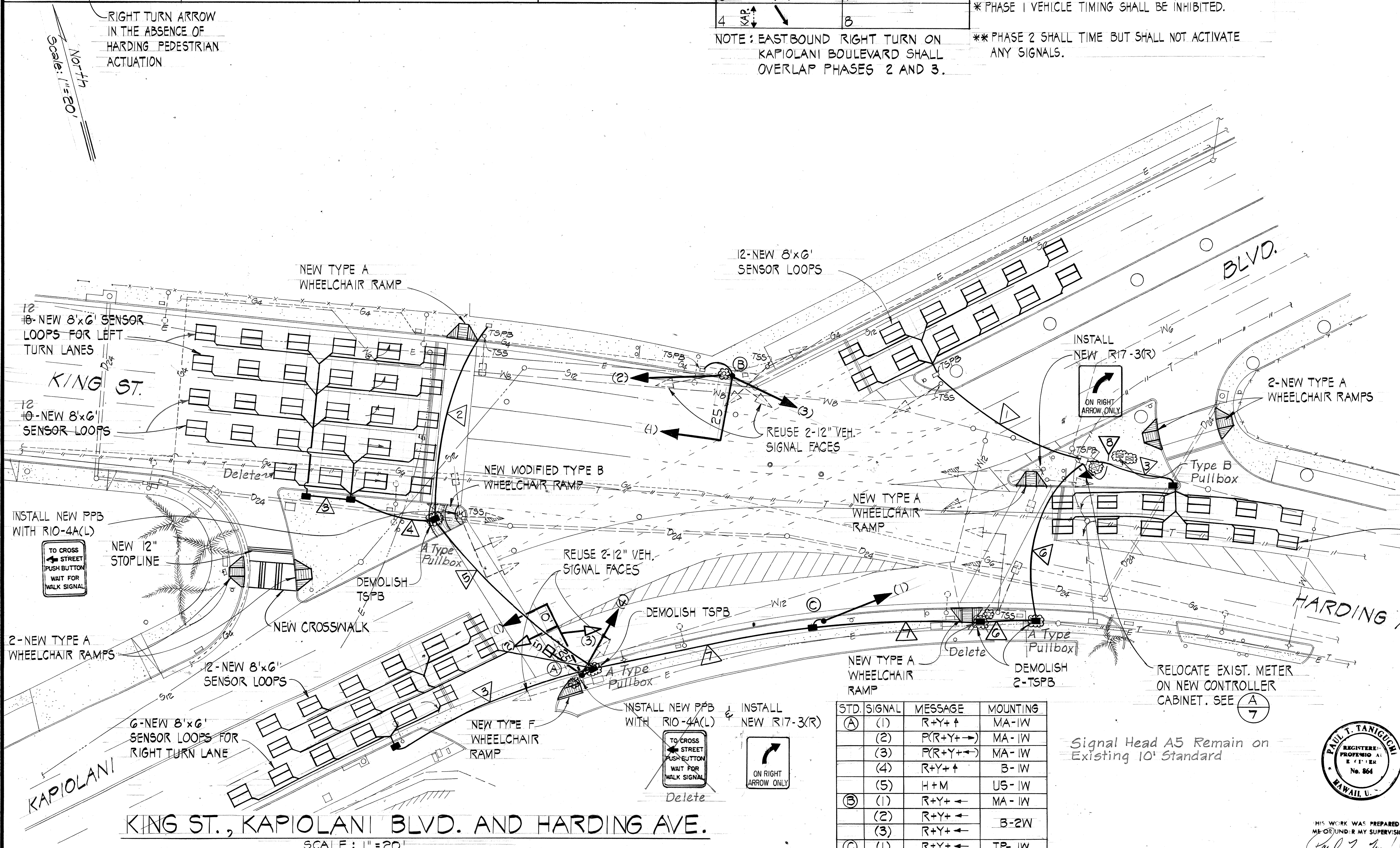
* PHASE 1 VEHICLE TIMING SHALL BE INHIBITED.

NOTE: EASTBOUND RIGHT TURN ON KAPIOLANI BOULEVARD SHALL OVERLAP PHASES 2 AND 3.

** PHASE 2 SHALL TIME BUT SHALL NOT ACTIVATE ANY SIGNALS.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-0300(21)	1983	4	25

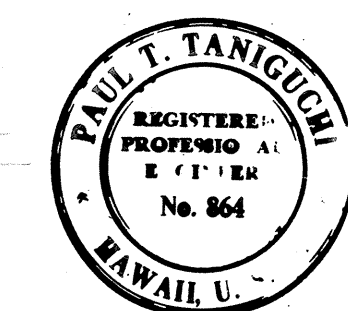
	CONDUITS	LF	CABLES	LF
1	EXIST.		1-TYPE 2	75
2	EXIST.		1-TYPE 7	85
3	1-2"	145	1-TYPE 2	160
4	1-2"	35	2-TYPE 2	80
5	1-2"	85	2-TYPE 2	180
			2-TYPE 7	180
6	2-2"	95	4-TYPE 2	420
			3-TYPE 7	315
7	2-2"	175	1-TYPE 1	185
			4-TYPE 2	740
			2-TYPE 7	370
8	6-2" (1-2" IS FOR HECO PRIMARY LINE)	5	1-TYPE 1	10
			6-TYPE 2	60
			1-TYPE 3	10
			1-TYPE 6	10
			3-TYPE 7	30
TSS TO TSPB	1-2"	25	TYPE 5 (NO. VARIES)	1,245



NOTES:
1. SEE SHEET 2 FOR GENERAL NOTES AND LEGEND.

STD. SIGNAL	MESSAGE	MOUNTING
(A) (1)	R+Y+↑	MA-1W
(2)	P(R+Y+→)	MA-1W
(3)	P(R+Y+←)	MA-1W
(4)	R+Y+↑	B-1W
(5)	H+M	US-1W
(B) (1)	R+Y+←	MA-1W
(2)	R+Y+←	B-2W
(3)	R+Y+←	B-2W
(C) (1)	R+Y+←	TP-1W

Signal Head A5 Remain on Existing 10' Standard



HIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Paul T. Taniguchi

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL SYSTEM AT
KING ST., KAPIOLANI BLVD. & HARDING AVE.

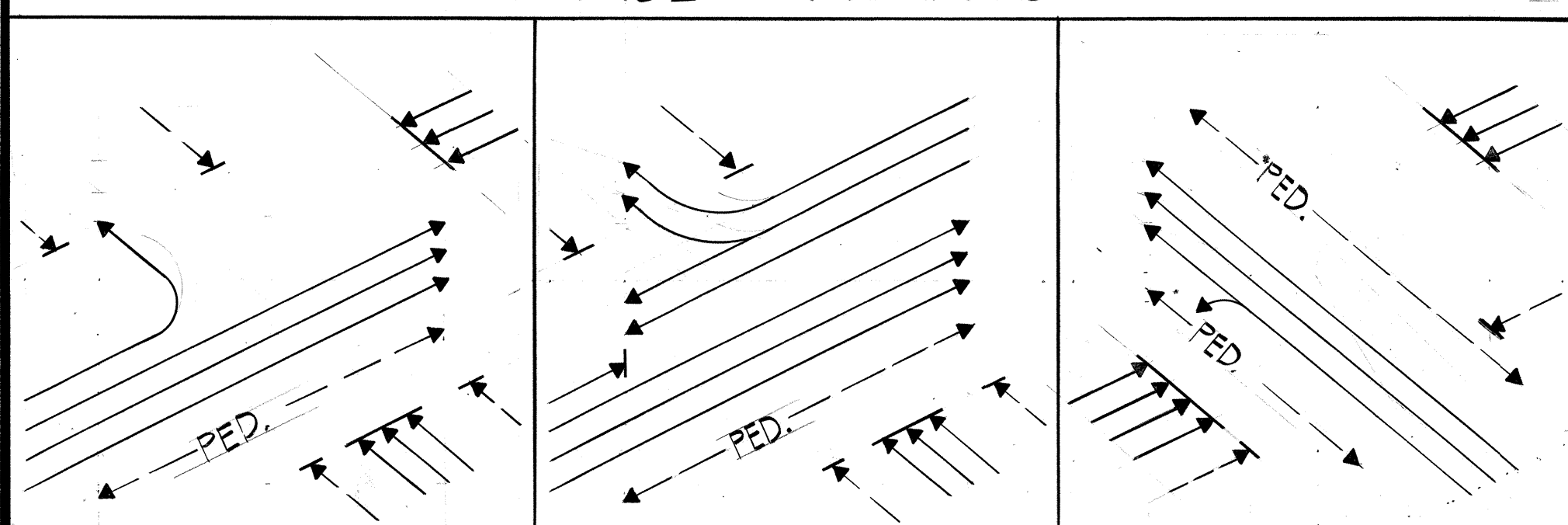
MODERNIZATION OF TRAFFIC SIGNAL SYSTEMS
KING-KAPIOLANI-HARDING-KAPAHULU-WAIALAE-OLD WAIALAE
PROJECT NO. HES-0300(21)

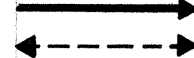
SCALE: AS SHOWN DATE: _____

SHEET NO. 1 OF 3 SHEETS

MASTER CONTROLLER DATA

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-0300(21)	1983	5	25



CONTROLLER UNIT : 2 TO 8 PHASES.	
COMPUTER UNIT REQUIRED.	
DETECTOR UNIT CHANNELS REQUIRED: 4	
PHASES	
RING 1	RING 2
	
	
	
	

PHASES	1	2	3	5
MIN. GREEN	5	5	5	5
EXTENSION (GAP)	2	2	2	2
YELLOW CHANGE	5	5	6	5
RED CLEARANCE	1	1	2	1
WALK			7	7
PED. CLEARANCE			28	14
MAX I	12	34	35	52
MAX II				

COORDINATOR TIMING DATA WILL
BE FURNISHED BY THE STATE
AFTER CONTRACT AWARD.

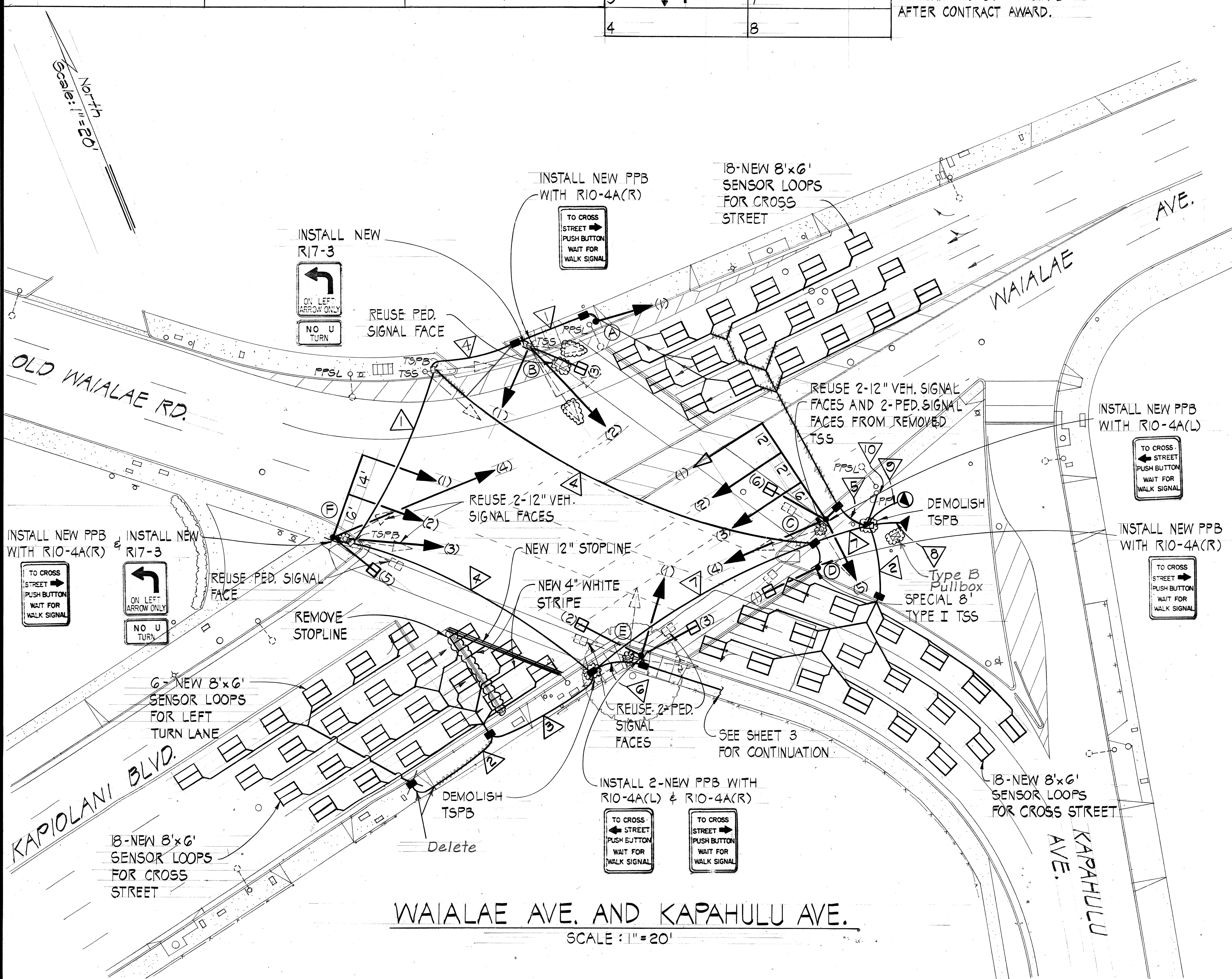
9-PROGRAM, MIN., MASTER CONTROLLER.
2-CHANNEL DETECTOR UNITS REQUIRED.
INITIAL PROGRAMMING WILL BE TOD/ DOW.

▶	CONDUITS	LF	CABLES	LF
1	1 - 2 "	100	1-TYPE 1	110
2	1 - 2 "	75	1-TYPE 2	85
3	1 - 2 "	40	2-TYPE 2	90
4	2 - 2 "	280	1-TYPE 1	295
			1-TYPE 7	295
5	2 - 2 "	15	1-TYPE 1	20
			1-TYPE 2	20
			1-TYPE 7	20
6	3 - 2 "	25	1-TYPE 1	30
			1-TYPE 3	30
			1-TYPE 7	60
7	3 - 2 "	110	1-TYPE 1	120
			2-TYPE 2	240
			1-TYPE 3	120
			2-TYPE 7	240
8	4 - 2 "	15	1-TYPE 1	20
			4-TYPE 2	80
			1-TYPE 3	20
			1-TYPE 6	20
			2-TYPE 7	40
9	3 - 2 "	15	2-TYPE 2	40
			1-TYPE 3	20
			1-TYPE 6	20
TSS TO TSPB	1 - 2 "	40	TYPE 5 NO. VARIES	2,020
10	1-2" STL. RISER	30	—	—

STD	SIGNAL	MESSAGE	MOUNTING
(A)	(1)	$R+Y+G$	TP-1W
(B)	(1)	$R+Y+\leftarrow$	B-2W
	(2)	$R+Y+\uparrow$	
	(3)	$H+M$	US-1W
(C)	(1)	$P(R+Y+\leftarrow)$	MA-1W
	(2)	$R+Y+\uparrow$	MA-1W
	(3)	$R+Y+\uparrow$	MA-1W
	(4)	$R+Y+\uparrow$	B-2W
	(5)	$R+Y+\uparrow$	
	(6)	$H+M$	US-1W
(D)	(1)	$H+M$	TP-1W
(E)	(1)	$R+Y+\uparrow$	TP-1W
	(2)	$H+M$	C-1W
	(3)	$H+M$	C-1W
(F)	(1)	$R+Y+\uparrow$	MA-1W
	(2)	$R+Y+G$	MA-1W
	(3)	$R+Y+G$	B-2W
	(4)	$R+Y+G$	
	(5)	$H+M$	US-1W

NOTES:
1. SEE SHEET 2 FOR GENERAL NOTES
AND LEGEND.

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



A circular professional seal for Paul T. Taniguchi. The outer ring contains the text "PAUL T. TANIGUCHI" at the top and "HAWAII, U. S. A." at the bottom. The inner circle contains the text "REGISTERED PROFESSIONAL ENGINEER" and "No. 864".

THIS WORK WAS PREPARED
ME OR UNDER MY SUPERVISION

Paul J. Tamm

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

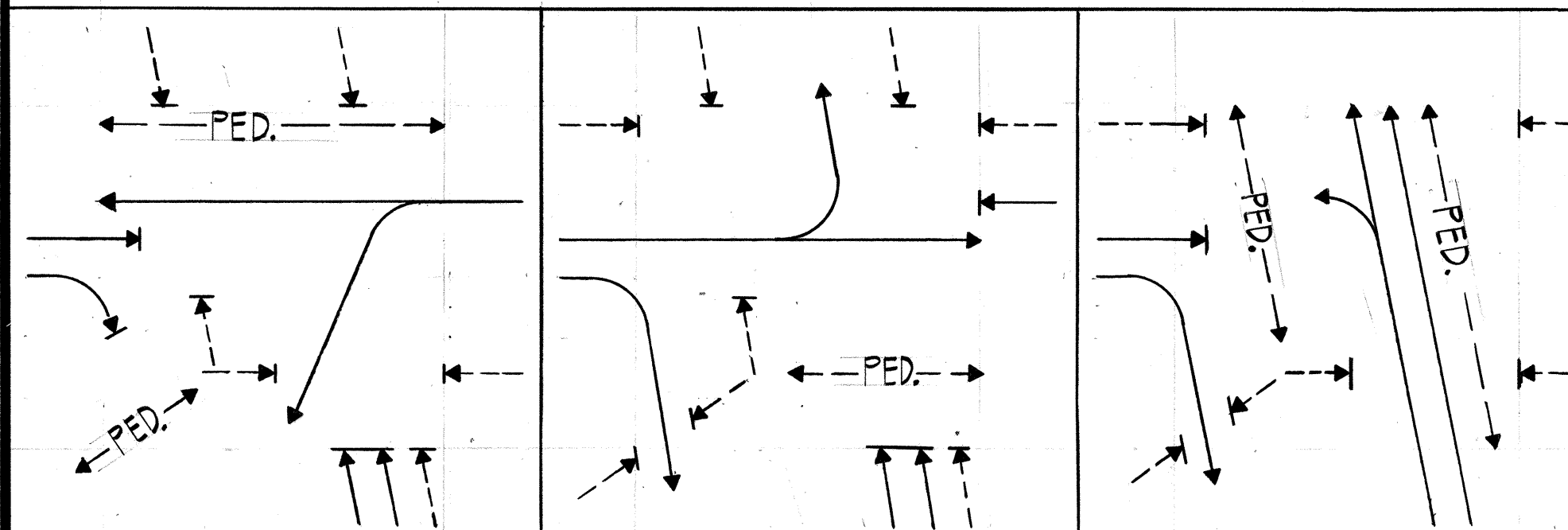
TRAFFIC SIGNAL SYSTEM AT
WAIALAE AVE. & KAPAHULU AVE.

MODERNIZATION OF TRAFFIC SIGNAL SYSTEMS
KING-KAPOLANI-HARDING-KAPAHULU-WAIALAE-OLD WAIALAE
PROJECT NO. HES-0300(21)

SCALE: AS SHOWN DATE:

SHEET No. 2 OF 3 SHEETS

PHASE DIAGRAMS



CONTROLLER DATA

CONTROLLER UNIT: 2 TO 8 PHASES.	
COORDINATION UNIT REQUIRED.	
DETECTOR UNIT CHANNELS REQUIRED: 4.	
PHASES	
RING 1	RING 2
1	5
2	6
3	7
4	8

TIMING DATA

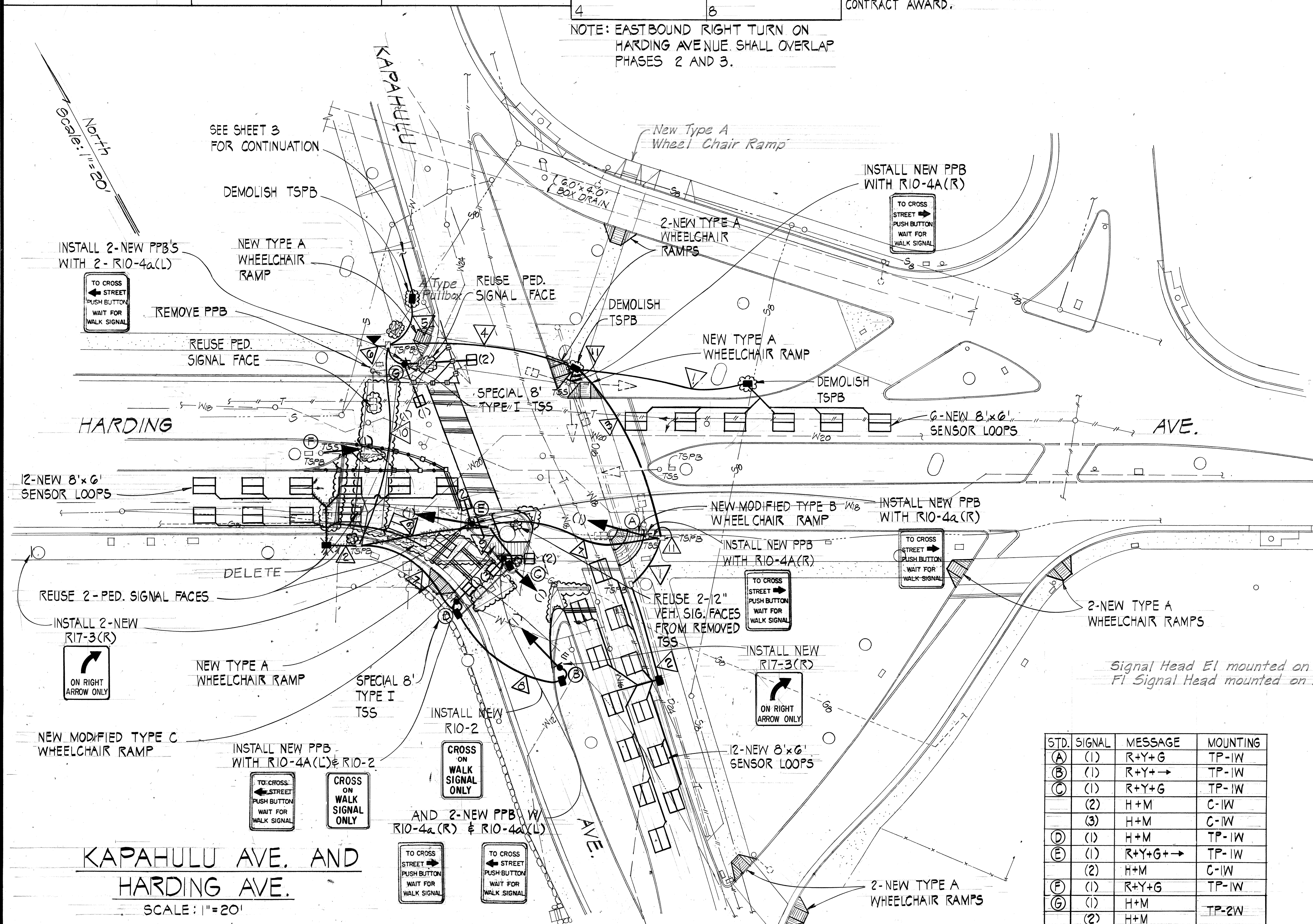
PHASES	1	2	3
MIN. GREEN	5	5	5
EXTENSION (GAP)	2	2	2
YELLOW CHANGE	4	4	4
RED CLEARANCE	1	1	1
WALK	7	7	7
PED. CLEARANCE	10	8	14
MAX. I	34	17	34
MAX. II			

COORDINATOR TIMING DATA WILL BE FURNISHED BY STATE AFTER CONTRACT AWARD.

NOTE: EASTBOUND RIGHT TURN ON HARDING AVENUE SHALL OVERLAP PHASES 2 AND 3.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-0300(21)	1983	6	25

	CONDUITS	LF	CABLES	LF
1	EXIST.		1-TYPE 2	25
2	1-2"	55	1-TYPE 2	65
3	1-2"	75	1-TYPE 2	80
			2-TYPE 7	160
4	1-2"	75	2-TYPE 2	160
			3-TYPE 7	240
5	1-2"	20	1-TYPE 3	25
6	5-2"	5	1-TYPE 1	10
			4-TYPE 2	40
			1-TYPE 3	10
			1-TYPE 6	10
			5-TYPE 7	50
7	2-2"	115	1-TYPE 1	125
			1-TYPE 7	125
8	1-2"	50	1-TYPE 1	55
9	2-2"	70	1-TYPE 1	80
			2-TYPE 7	160
10	2-2"	75	1-TYPE 1	80
			1-TYPE 2	80
			2-TYPE 7	160
11	EXIST.		TYPE 5 (NO. VARIES)	140
TSS TO TSPB	1-2"	35	TYPE 5 (NO. VARIES)	280



STD.	SIGNAL	MESSAGE	MOUNTING
(A)	(1)	R+Y+G	TP-1W
(B)	(1)	R+Y+→	TP-1W
(C)	(1)	R+Y+G	TP-1W
	(2)	H+M	C-1W
	(3)	H+M	C-1W
(D)	(1)	H+M	TP-1W
(E)	(1)	R+Y+G+→	TP-1W
	(2)	H+M	C-1W
(F)	(1)	R+Y+G	TP-1W
(G)	(1)	H+M	TP-2W
	(2)	H+M	

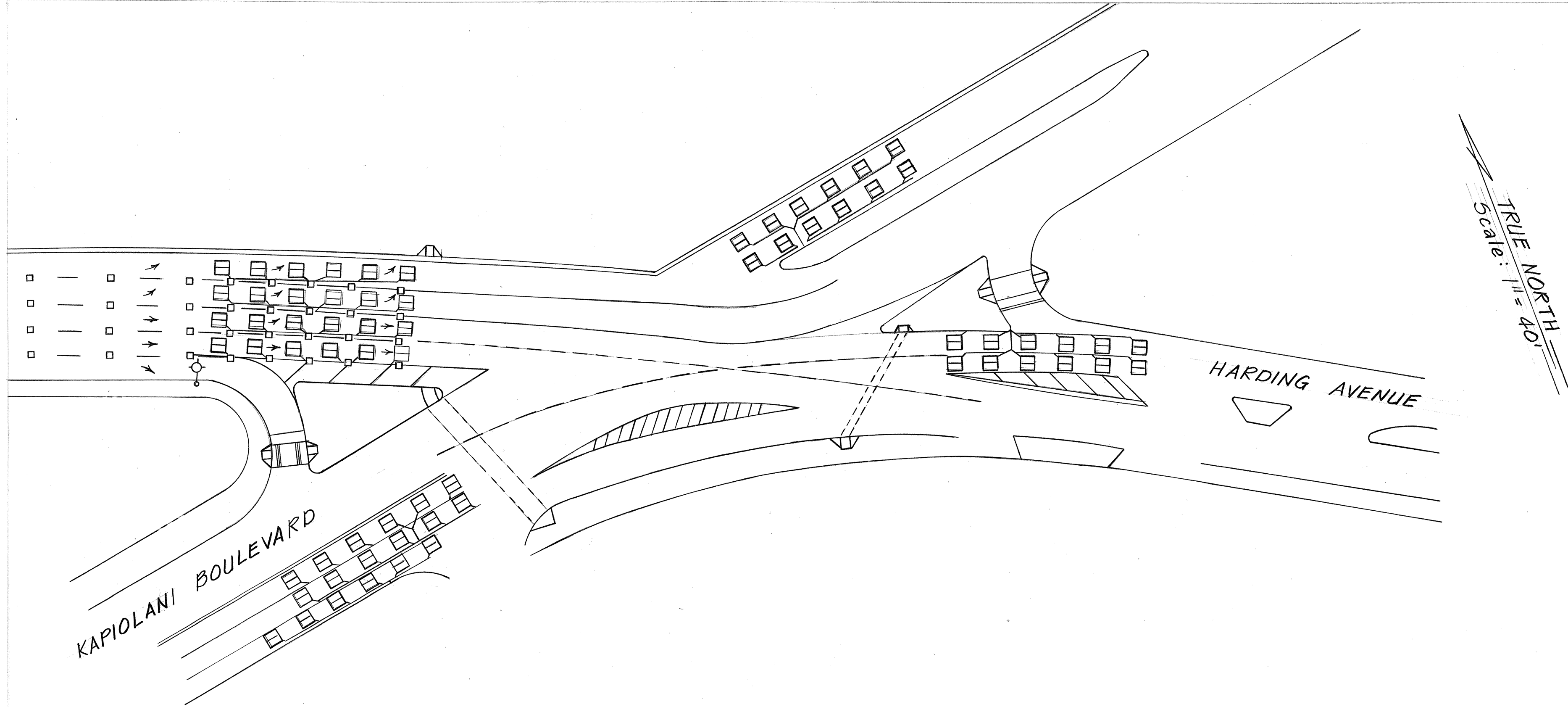
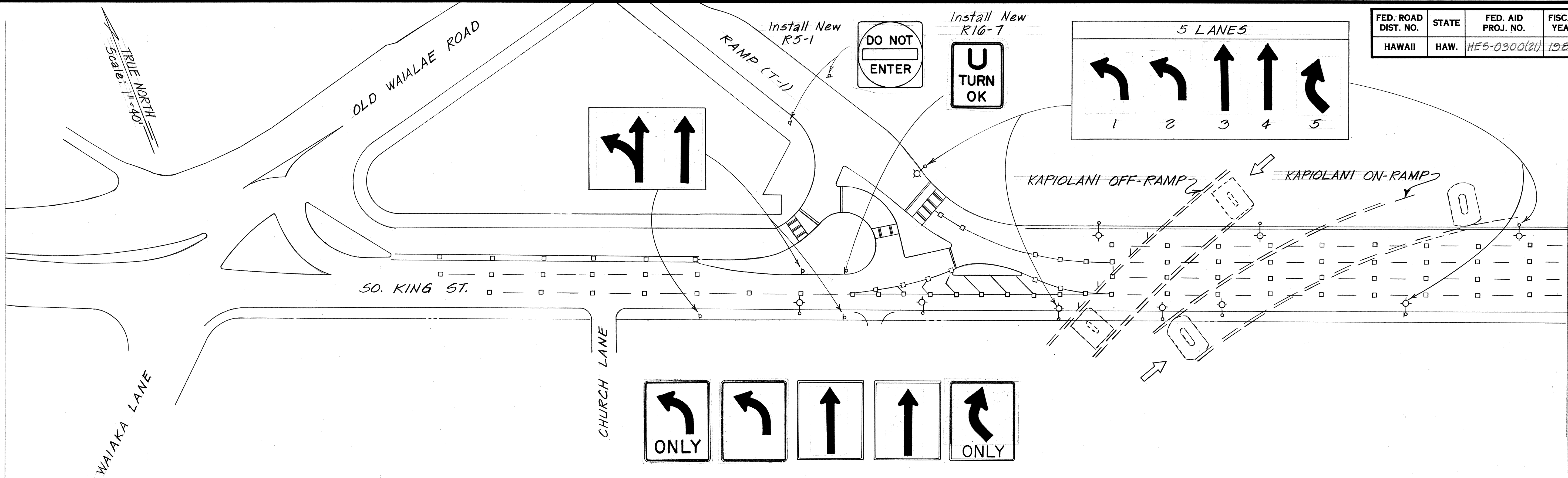
PAUL T. TANIGUCHI
REGISTERED PROFESSIONAL ENGINEER
No. 864
HAWAII, U.S.A.
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION
Paul T. Taniguchi

NOTES:
1. SEE SHEET 2 FOR GENERAL NOTES AND LEGEND.
2. SEE SHEET 7 FOR PAVEMENT MARKING AND STRIPING PLAN.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TRAFFIC SIGNAL SYSTEM AT
KAPAEHULU AVE. & HARDING AVE.
MODERNIZATION OF TRAFFIC SIGNAL SYSTEMS
KING-KAPOLANI-HARDING-KAPAEHULU-WAIALAE-OLD WAIALAE
PROJECT NO. HES-0300(21)
SCALE: AS SHOWN DATE:
SHEET NO. 3 OF 3 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-0300(21)	1983	65-1	26



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAYEMENT MARKING & STRIPING PLAN
FOR KAPAHULU AVE. & HARDING AVE.
MISCELLANEOUS TRAFFIC DETAILS
MODERNIZATION OF TRAFFIC SIGNAL SYSTEMS
KING-KAPIOLANI-HARDING-KAPAHULU-WAIALAE-OLD WAIALAE
PROJECT NO. HES-0300(21)

Scale: As Shown Date: