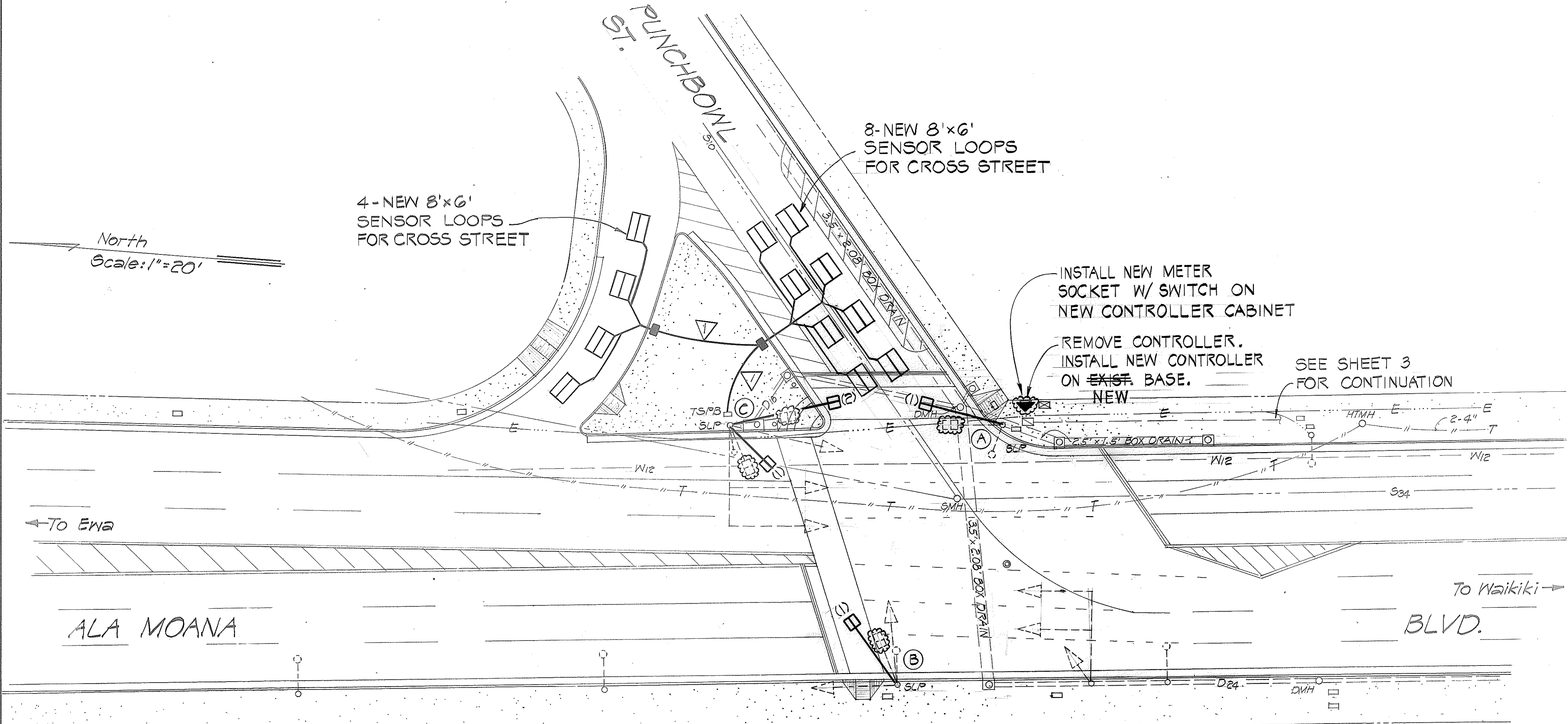


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-092-1 (20)	1985	5	33

PHASE DIAGRAMS		CONTROLLER DATA	TIMING DATA																												
		*CONTROLLER UNIT: 2 TO 8 PHASES. COORDINATION UNIT REQUIRED. DETECTOR UNIT CHANNELS REQUIRED : 3.	<table><tr><td>PHASES</td><td>2</td><td>4</td></tr><tr><td>MIN. GREEN</td><td>20</td><td>5</td></tr><tr><td>EXTENSION (GAP)</td><td>2</td><td>2</td></tr><tr><td>YELLOW CHANGE</td><td>4</td><td>5</td></tr><tr><td>RED CLEAR.</td><td>2</td><td>1</td></tr><tr><td>WALK</td><td>7</td><td>7</td></tr><tr><td>PED. CLEAR.</td><td>11</td><td>20</td></tr><tr><td>MAX. I</td><td>47</td><td>27</td></tr><tr><td>MAX II</td><td>60</td><td>27</td></tr></table>		PHASES	2	4	MIN. GREEN	20	5	EXTENSION (GAP)	2	2	YELLOW CHANGE	4	5	RED CLEAR.	2	1	WALK	7	7	PED. CLEAR.	11	20	MAX. I	47	27	MAX II	60	27
PHASES	2	4																													
MIN. GREEN	20	5																													
EXTENSION (GAP)	2	2																													
YELLOW CHANGE	4	5																													
RED CLEAR.	2	1																													
WALK	7	7																													
PED. CLEAR.	11	20																													
MAX. I	47	27																													
MAX II	60	27																													
		<table><tr><th colspan="2">PHASES</th></tr><tr><th>RING 1</th><th>RING 2</th></tr><tr><td>1</td><td>5</td></tr><tr><td>2</td><td>6</td></tr><tr><td>3</td><td>7</td></tr><tr><td>4</td><td>8</td></tr></table>	PHASES		RING 1	RING 2	1	5	2	6	3	7	4	8	<table><tr><td colspan="2">COORDINATOR TIMING DATA BE FURNISHED BY THE AFTER CONTRACT AWARD</td></tr></table>		COORDINATOR TIMING DATA BE FURNISHED BY THE AFTER CONTRACT AWARD														
PHASES																															
RING 1	RING 2																														
1	5																														
2	6																														
3	7																														
4	8																														
COORDINATOR TIMING DATA BE FURNISHED BY THE AFTER CONTRACT AWARD																															

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

*CABINET FOR CONTROLLER ASSEMBLY SHALL
BE SIZED TO FIT EXISTING CONCRETE BASE.



CONDUITS	LF	CABLES	LF
1-2"	65	1-TYPE 2	75

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

STD.	SIGNAL	MESSAGE	MOUNTING
(A)	(1)	H+M	B-IW
(B)	(1)	H+M	US-IW
(C)	(1)	H+M	US-IW
	(2)	H+M	B-IW

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

ALA MOANA BLVD. AND PUNCHBOWL ST.
SCALE: 1"=20'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL SYSTEM AT
ALA MOANA BLVD. & PUNCHBOWL ST.
MODERNIZATION OF TRAFFIC SIGNAL SYSTEMS
ALA MOANA BLVD., PUNCHBOWL ST. TO WARD AVE.
PROJECT NO. HES-092-1(EO)
SCALE: AS SHOWN
DATE: 11/2/84
SHEET No. 1 OF 7 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-092-1 (20)	1985	6	33

▶	CONDUITS	LF	CABLES	LF
▶	EXIST.		1- TYPE 1	40
▶	1-2"	75	1- TYPE 2	85
▶	2-2"	195	1- TYPE 1	205
			1- TYPE 7	205
▶	2-2"	35	1- TYPE 1	40
			1- TYPE 2	40
▶	2-2"	155	1- TYPE 1	170
			1- TYPE 2	170
			1- TYPE 7	170
▶	3-2"	50	1- TYPE 1	55
			2- TYPE 2	110
			1- TYPE 3	55
▶	3-2"	80	1- TYPE 1	85
			3- TYPE 2	255
			1- TYPE 3	85
			2- TYPE 7	170
▶	3-2"	20	1- TYPE 1	25
			4- TYPE 2	100
			1- TYPE 3	25
			2- TYPE 7	50
▶	5-2"	10	1- TYPE 1	15
			6- TYPE 2	90
			1- TYPE 3	15
			1- TYPE 6	15
			3- TYPE 7	45
▶	EXIST. COND.		TYPE 5 (NO. VARIES)	485
TSS TO TSPB	1-2"	45	TYPE 5 (NO. VARIES)	2250

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

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

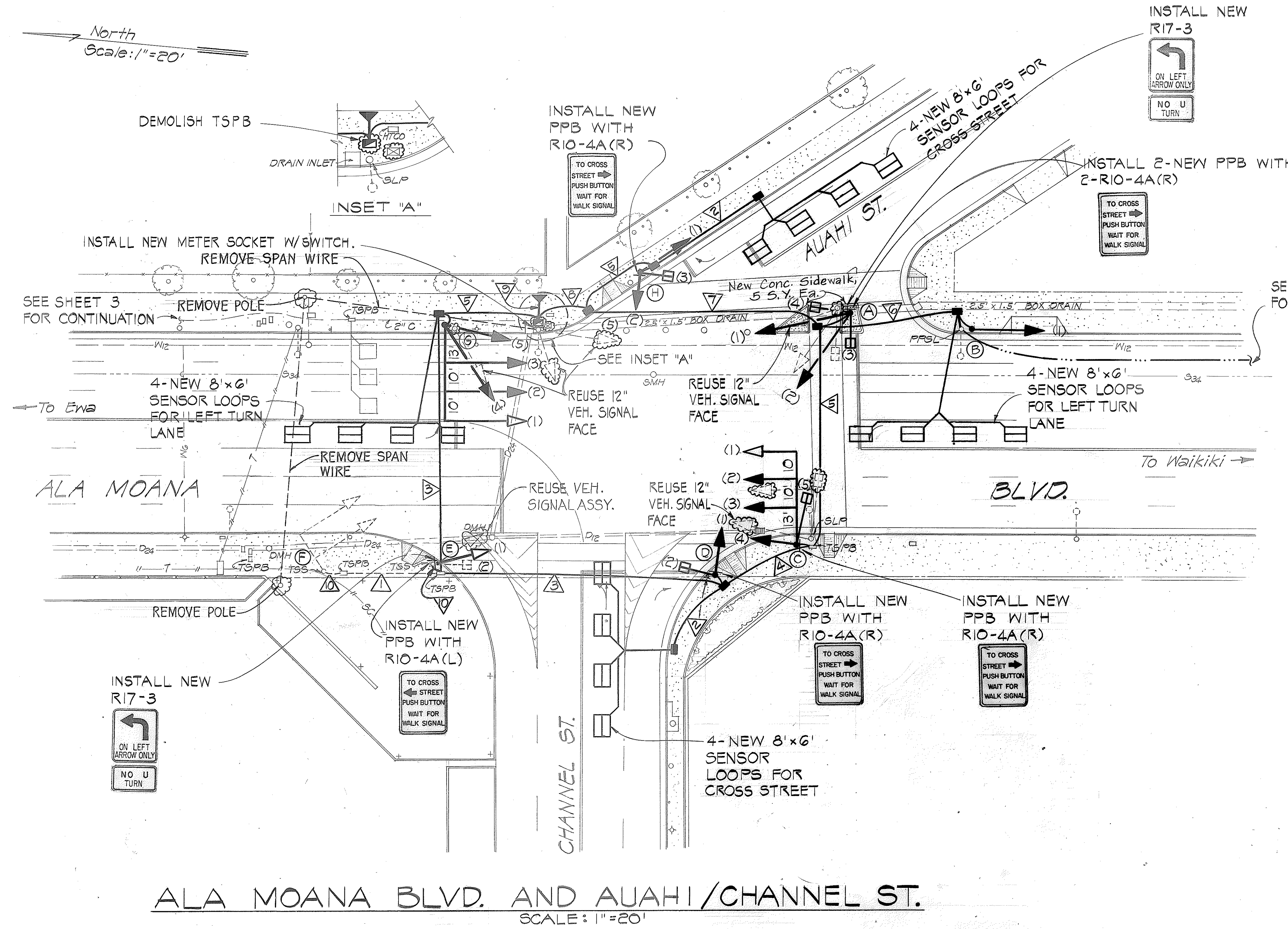
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL SYSTEM AT
ALA MOANA BLVD. & AUAHI/CHANNEL ST.

MODERNIZATION OF TRAFFIC SIGNAL SYSTEMS
ALA MOANA BLVD., PUNCHBOWL ST. TO WARD AVE.
PROJECT NO. HES-092-1(20)

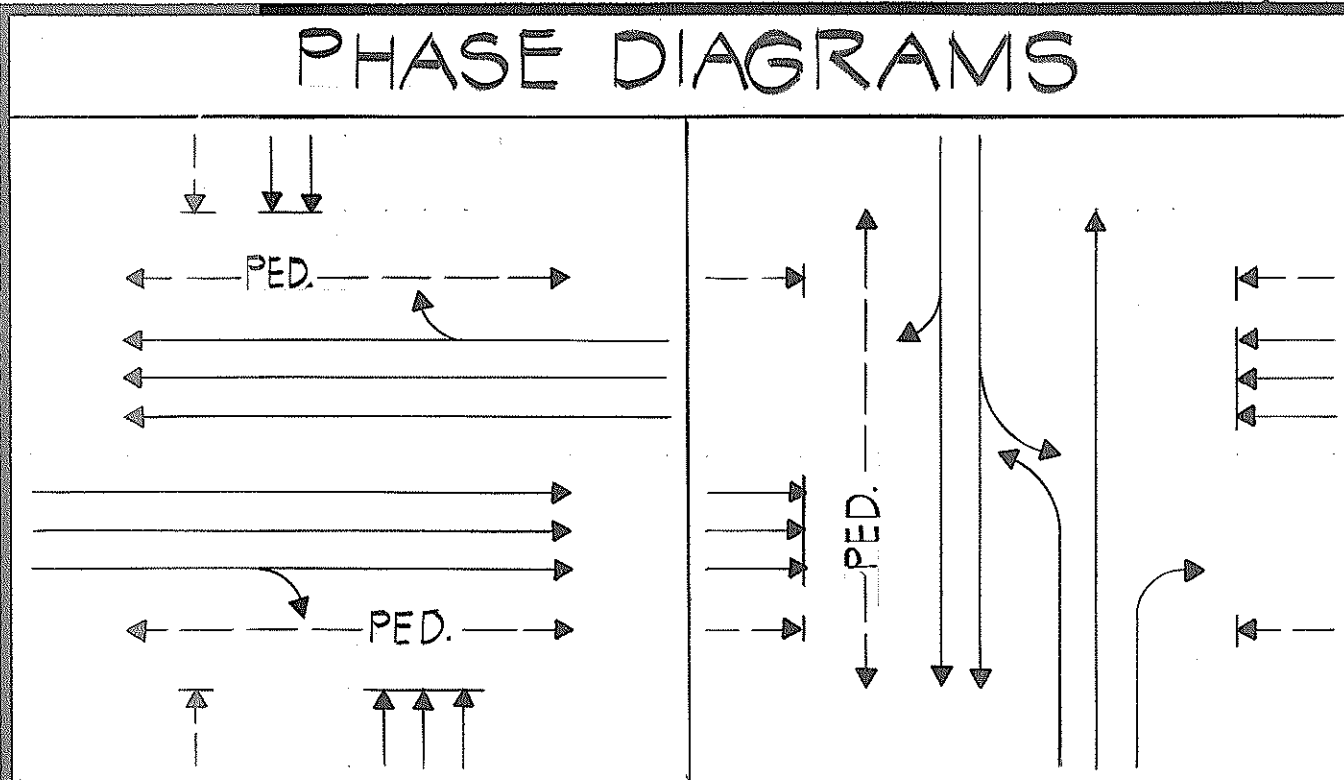
SCALE: AS SHOWN DATE: 11/2/84
SHEET NO. 2 OF 7 SHEETS

DATE: _____
SURVEY PLOTTED BY: _____
DRAWN BY: _____
DESIGNED BY: _____
CHECKED BY: _____
ORIGINAL PLAN: _____
NOTE BOOK: _____
NO. _____



ALA MOANA BLVD. AND AUAHI/CHANNEL ST.
SCALE: 1"=20'

PREPARED BY
SUPERVISOR
[Signature]



CONTROLLER DATA

CONTROLLER UNIT: EXIST. 2 TO 8 PHASES*
(ASD SERIES 118)
DETECTOR UNIT CHANNELS REQUIRED: 2

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

TIMING DATA

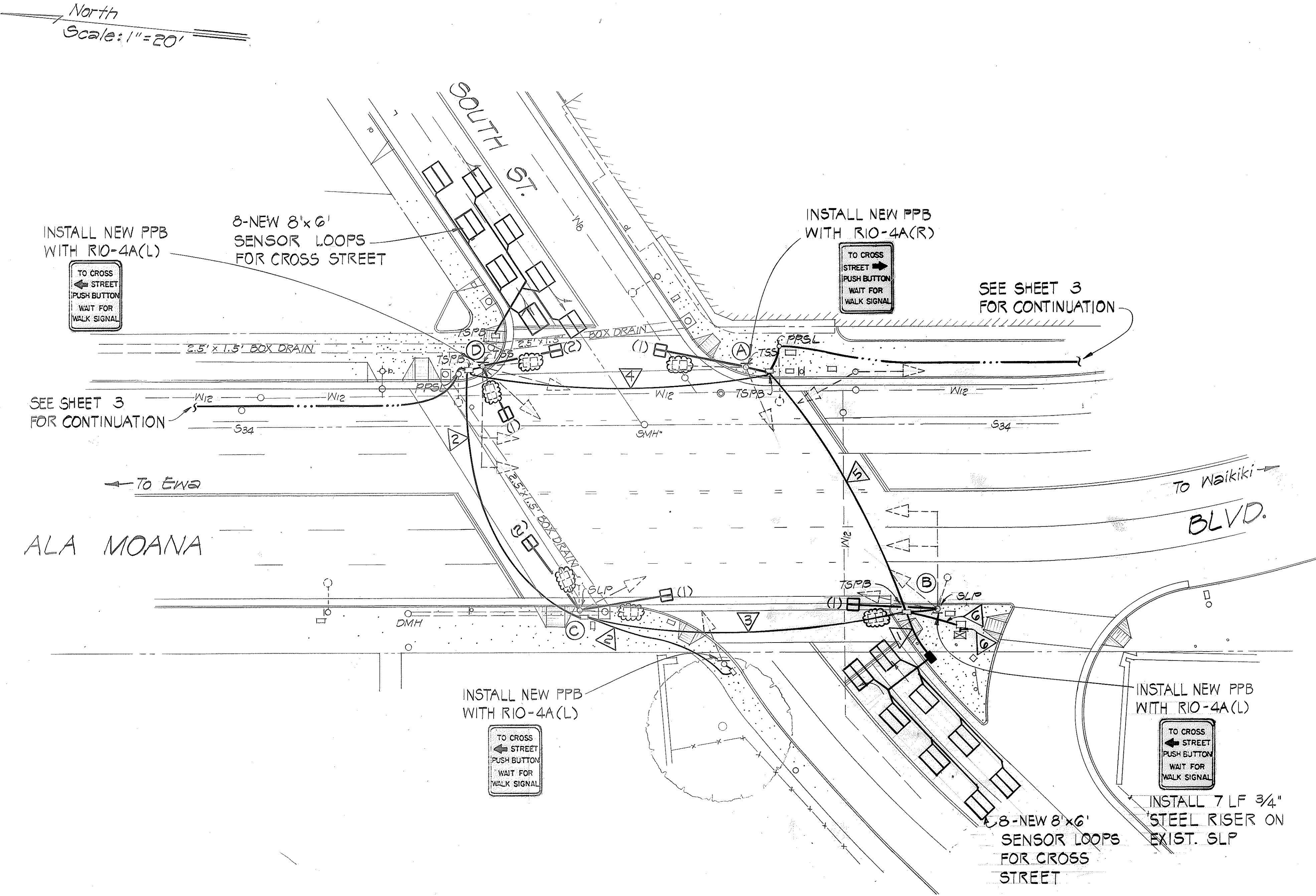
PHASES	2	4
MIN. GREEN	20	5
EXTENSION (GAP)	2	2
YELLOW CHANGE	3	5
RED CLEAR.	2	1
WALK	7	7
PED. CLEAR	16	20
MAX I	60	27
MAX II	80	27

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

*PROVIDE NEW COORDINATING UNIT
COMPATIBLE WITH ASD SERIES 118
CONTROLLER UNIT.
MODIFY EXISTING CONTROLLER ASSEMBLY.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-092-1 (20)	1985	7	33

	CONDUITS	LF	CABLES	LF
1	1-2"	15	1-TYPE 2	20
2	EXIST.		1-TYPE 7	190
3	EXIST.		2-TYPE 7	210
4	2-2"	95	1-TYPE 2 1-TYPE 3 1-TYPE 7	100 100 100
5	2-2"	85	2-TYPE 2 1-TYPE 3 1-TYPE 7	80 90 90
6	EXIST.		2-TYPE 2 1-TYPE 3 3-TYPE 7	60 30 90
TSS TO TSPB	EXIST.		TYPE 5 (NO. VARIES)	505



STD.	SIGNAL	MESSAGE	MOUNTING
A	(1)	H+M	C-IW
B	(1)	H+M	US-IW
C	(1)	H+M	US-IW
	(2)	H+M	B-IW
D	(1)	H+M	US-IW
	(2)	H+M	US-IW

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

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

ALA MOANA BLVD. AND SOUTH ST.
SCALE: 1"=20'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL SYSTEM AT
ALA MOANA BLVD. & SOUTH ST.

MODERNIZATION OF TRAFFIC SIGNAL SYSTEMS
ALA MOANA BLVD., PUNCHBOWL ST. TO WARD AVE.
PROJECT NO. HES-092-1(20)

SCALE: AS SHOWN DATE: 11/2/84
SHEET NO. 3 OF 7 SHEETS

PHASE DIAGRAMS

CONTROLLER DATA

TIMING DATA

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-092-1 (20)	1985	8	33

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

PHASES	1	2	3	4	5	6
MIN. GREEN	5	20	5	5	5	20
EXTENSION (GAP)	2	2	2	2	2	2
YELLOW CHANGE	3	3	5	5	3	3
RED CLEAR	2	2	2	2	2	2
WALK	—	7	—	7	—	7
PED. CLEAR	—	11	—	10	—	11
MAX I	10	09	10	26	10	09
MAX II	15	09	15	26	15	09

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

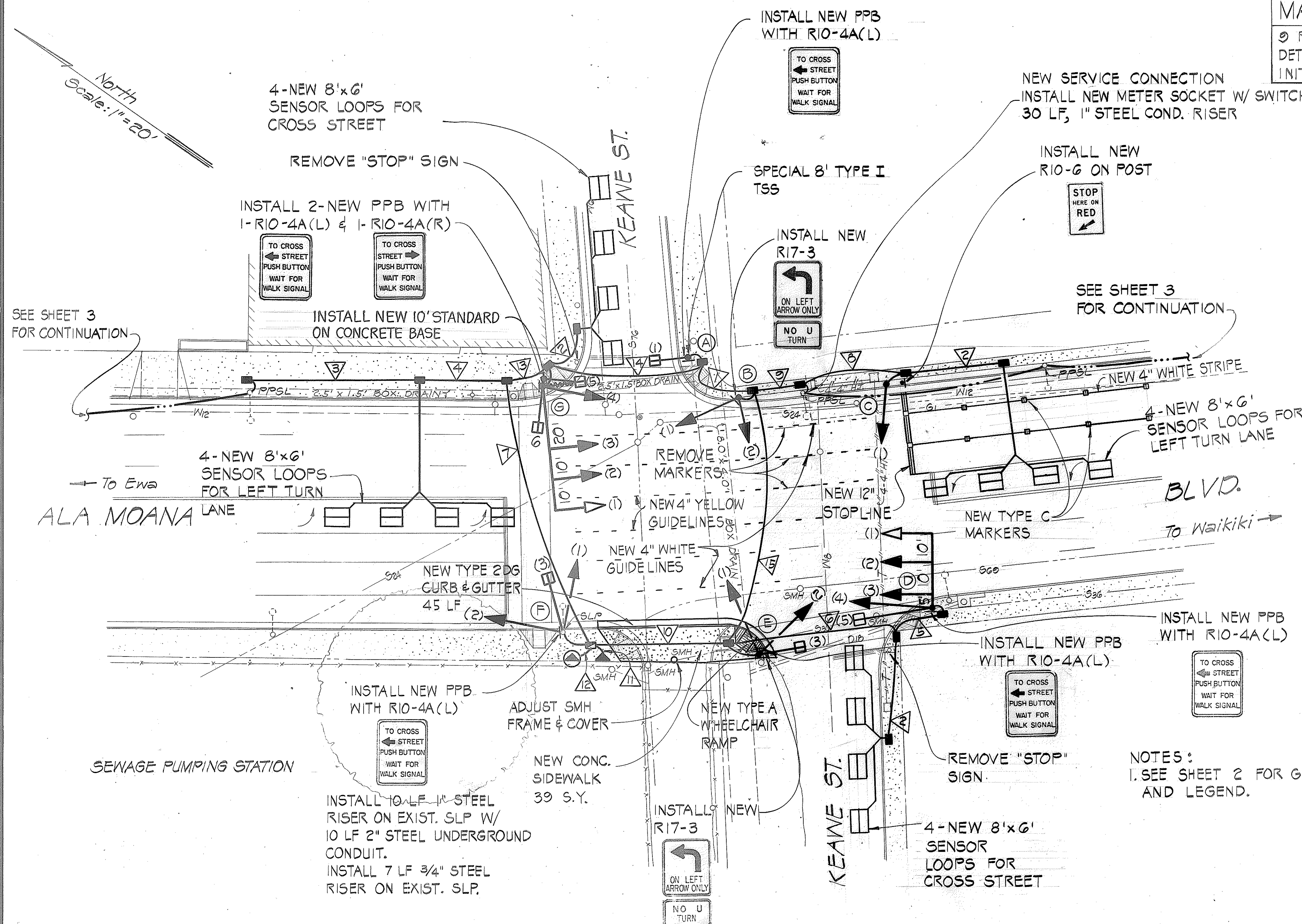
MASTER CONTROLLER DATA.

9 PROGRAM MASTER CONTROLLER (MINIMUM)
DETECTOR UNIT CHANNELS REQUIRED : 6
INITIAL PROGRAMMING WILL BE TOD/DOW

▷	CONDUITS	LF	CABLES	LF
▷	2-2"	25	1-TYPE 1	30
			1-TYPE 3	30
▷	1-2"	90	1-TYPE 2	105
▷	2-2"	55	1-TYPE 2	60
			1-TYPE 3	60
▷	2-2"	30	2-TYPE 2	70
			1-TYPE 3	35
▷	2-2"	17	1-TYPE 1	22
			1-TYPE 7	22
▷	2-2"	55	1-TYPE 1	60
			1-TYPE 2	60
			1-TYPE 7	60
▷	3-2"	90	1-TYPE 1	95
			3-TYPE 2	285
			1-TYPE 3	95
			2-TYPE 7	190
▷	2-2"	35	1-TYPE 1	40
			1-TYPE 2	40
▷	4-2"	17	1-TYPE 1	22
			2-TYPE 2	44
			1-TYPE 3	22
			1-TYPE 6	22
▷	3-2"	50	1-TYPE 1	55
			3-TYPE 2	165
			1-TYPE 6	55
			1-TYPE 7	55
▷	5-2"	5	1-TYPE 1	10
			6-TYPE 2	60
			1-TYPE 3	10
			1-TYPE 6	10
			3-TYPE 7	30
▷	3-2"	10	6-TYPE 2	90
			1-TYPE 3	15
			1-TYPE 6	15
▷	3-2"	17	1-TYPE 1	22
			1-TYPE 2	22
			1-TYPE 3	22
			2-TYPE 7	44
▷	3-2"	45	1-TYPE 1	50
			1-TYPE 3	50
			1-TYPE 7	50
▷	3-2"	85	1-TYPE 1	90
			2-TYPE 2	180
			1-TYPE 6	90
TSS TO TSPB	1-2"	50	TYPE 5 (NO. VARIES)	2390

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

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



ALA MOANA BLVD. AND KEAWE ST.

SCALE: 1"=20'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

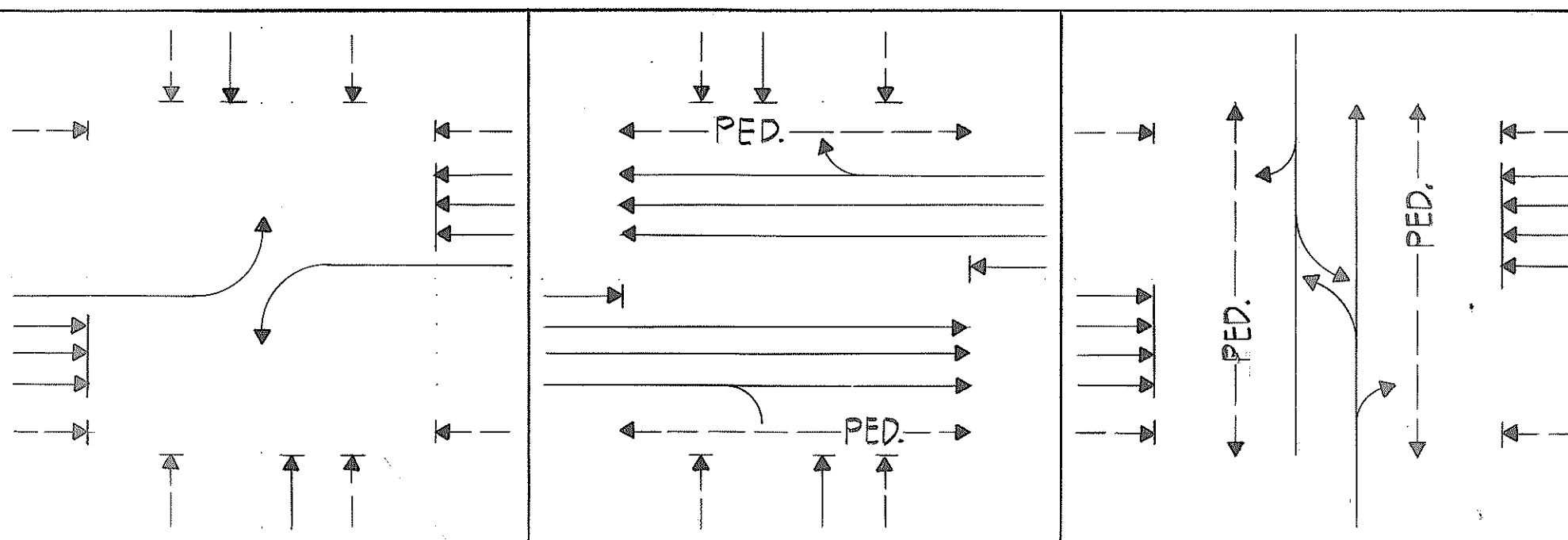
TRAFFIC SIGNAL SYSTEM AT
ALA MOANA BLVD. & KEAWE ST.

MODERNIZATION OF TRAFFIC SIGNAL SYSTEMS
ALA MOANA BLVD., PUNCHBOWL ST. TO WARD AVE.
PROJECT NO. HES-092-1(20)

SCALE: AS SHOWN DATE: 11/2/84

SHEET NO. 4 OF 7 SHEETS

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	4	5	6
MIN. GREEN	5	20	5	5	20
EXTENSION (GAP)	2	2	2	2	2
YELLOW CHANGE	3	3	4	3	3
RED CLEAR.	2	2	1	2	2
WALK	—	7	7	—	7
PED. CLEAR.	—	11	18	—	11
MAX I	10	69	25	10	69
MAX II	15	90	25	15	90

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-092-1(20)	1985	10	33

	CONDUITS	LF	CABLES	LF
1-2"	155		1-TYPE 2	175
3-2"	30		1-TYPE 1	35
			1-TYPE 2	35
			1-TYPE 3	35
3-2"	55		1-TYPE 1	60
			1-TYPE 3	60
			1-TYPE 7	60
2-2"	40		1-TYPE 2	50
			1-TYPE 3	50
2-2"	80		1-TYPE 1	85
			2-TYPE 2	170
			1-TYPE 7	85
2-2"	25		1-TYPE 1	30
			3-TYPE 2	90
			1-TYPE 7	30
2-2"	55		1-TYPE 1	60
			3-TYPE 2	180
			2-TYPE 7	120
2-2"	10		1-TYPE 1	15
			4-TYPE 2	60
			2-TYPE 7	30
4-2"	90		1-TYPE 1	95
			1-TYPE 2	95
			1-TYPE 3	95
			1-TYPE 6	95
			2-TYPE 7	190
5-2"	10		1-TYPE 1	15
			6-TYPE 2	90
			1-TYPE 3	15
			1-TYPE 6	15
			4-TYPE 7	60
EXIST. COND.			TYPE 5 (NO. VARIES)	290
TSS TO TSPB	1-2"	40	TYPE 5 (NO. VARIES)	2160

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

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

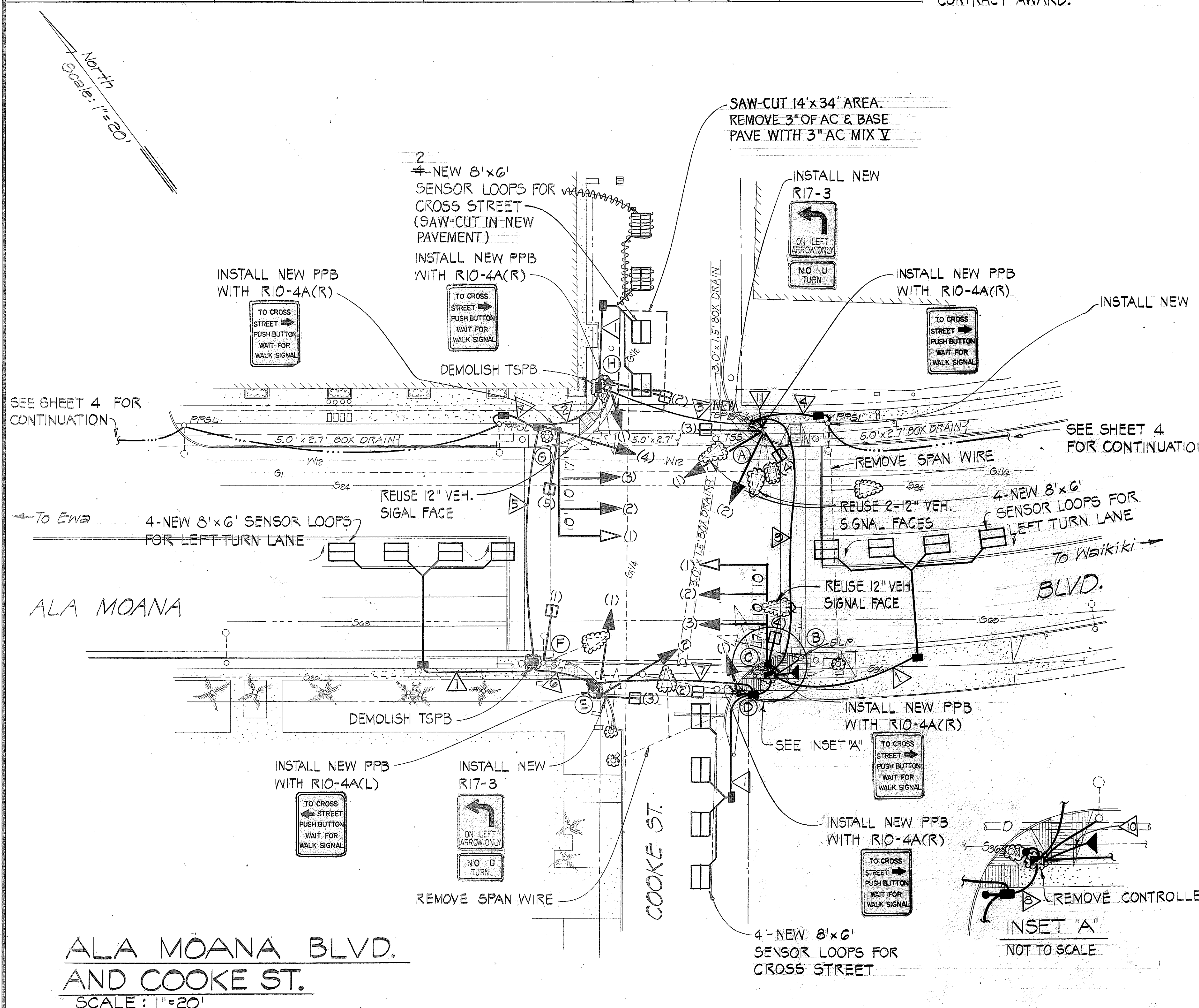
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL SYSTEM AT
ALA MOANA BLVD. & COOKE ST.

MODERNIZATION OF TRAFFIC SIGNAL SYSTEMS
ALA MOANA BLVD., PUNCHBOWL ST. TO WARD AVE.
PROJECT NO. HES-092-1(20)

SCALE: AS SHOWN DATE: 11/8/84

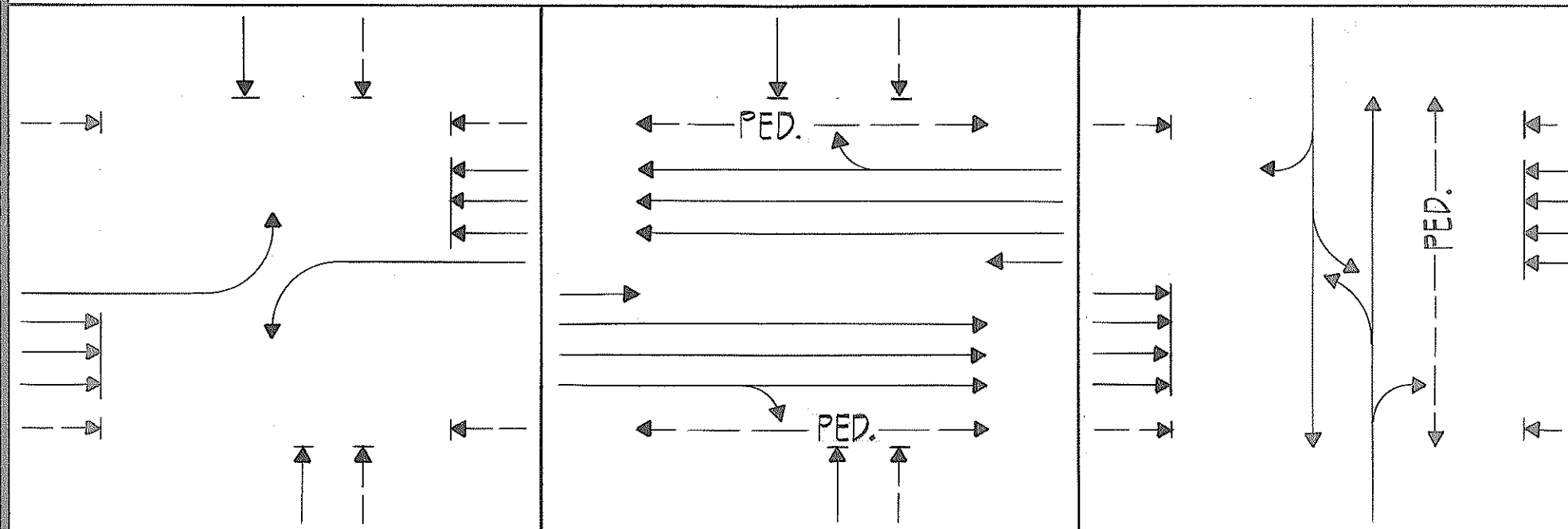
SHEET NO. 6 OF 7 SHEETS



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

ALA MOANA BLVD.
AND COOKE ST.
SCALE: 1"=20'

PHASE DIAGRAMS



CONTROLLER DATA

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

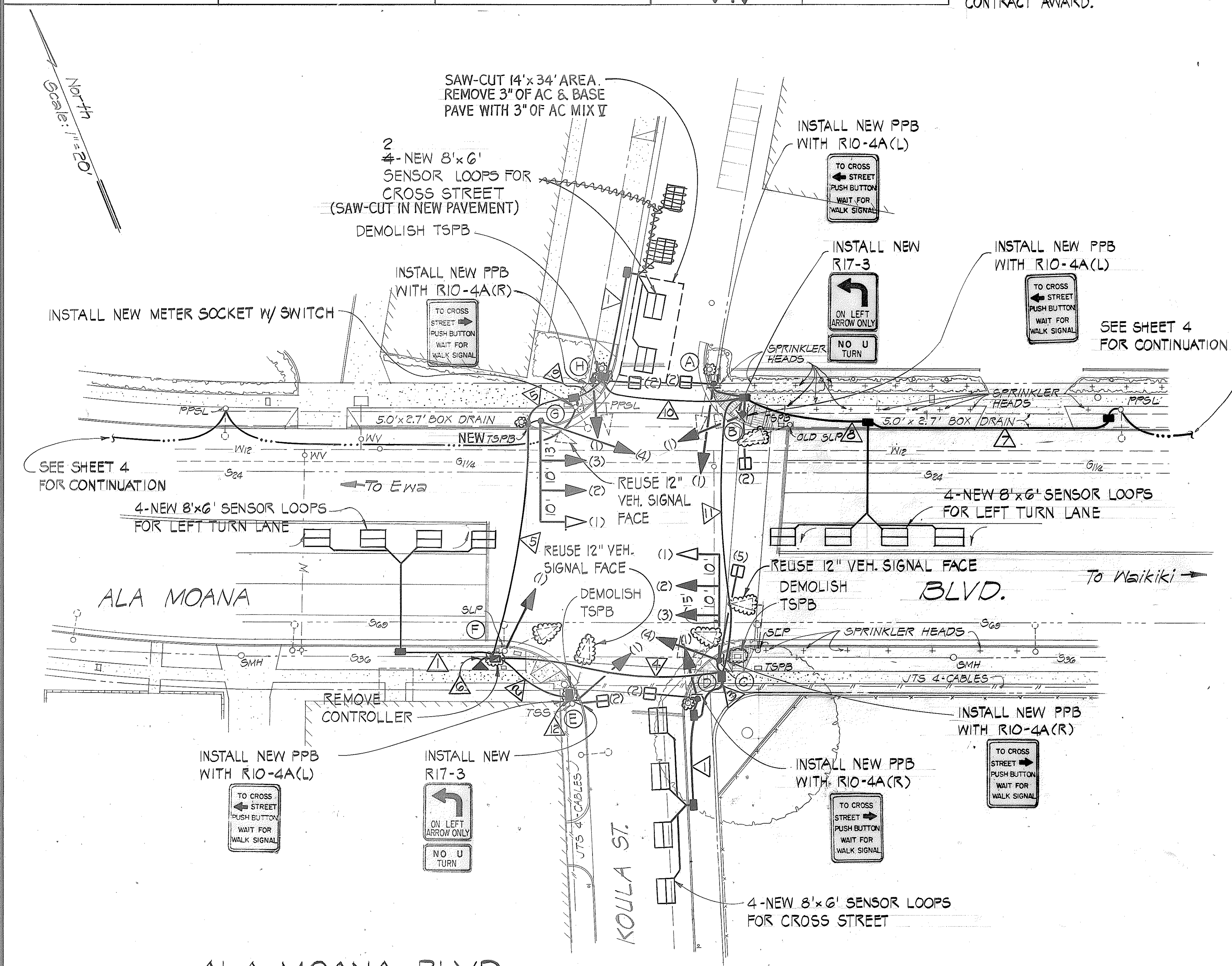
PHASES	
RING 1	RING 2
1	5
2	6
3	7
4	8

TIMING DATA

PHASES	1	2	4	5	6
MIN. GREEN	5	20	5	5	20
EXTENSION (GAP)	2	2	2	2	2
YELLOW CHANGE	3	3	4	3	3
RED CLEAR.	2	2	1	2	2
WALK	—	7	7	—	7
PED. CLEAR.	—	10	18	—	10
MAX I	10	68	25	10	68
MAX II	15	90	25	15	90

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-092-1 (20)	1985	11	33



STD.	SIGNAL	MESSAGE	MOUNTING
(A)	(1)	R+Y+G	TP-IW
	(2)	H+M	C-IW
(B)	(1)	R+Y+←	TP-IW
	(2)	H+M	C-IW
(C)	(1)	P(R+Y+←)	MA-IW
	(2)	R+Y+↑	MA-IW
	(3)	R+Y+G	MA-IW
	(4)	R+Y+G	B-IW
	(5)	H+M	US-IW
(D)	(1)	R+Y+G	TP-IW
	(2)	H+M	C-IW
(E)	(1)	R+Y+←	TP-IW
	(2)	H+M	C-IW
(F)	(1)	R+Y+G	B-IW
(G)	(1)	P(R+Y+←)	MA-IW
	(2)	R+Y+↑	MA-IW
	(3)	R+Y+G	MA-IW
	(4)	R+Y+G	B-IW
(H)	(1)	R+Y+G	TP-IW
	(2)	H+M	C-IW

	CONDUITS	LF	CABLES	LF
1-2"	105	1-TYPE 2	120	
2-2"	30	1-TYPE 1	35	
		1-TYPE 7	35	
2-2"	15	1-TYPE 1	20	
		1-TYPE 2	20	
		1-TYPE 7	20	
2-2"	85	1-TYPE 1	90	
		3-TYPE 2	270	
		2-TYPE 7	180	
3-2"	100	1-TYPE 1	110	
		2-TYPE 2	220	
		1-TYPE 3	110	
		1-TYPE 7	110	
5-2"	5	1-TYPE 1	10	
		6-TYPE 2	60	
		1-TYPE 3	10	
		1-TYPE 6	10	
		3-TYPE 7	30	
2-2"	85	1-TYPE 2	90	
		1-TYPE 3	90	
2-2"	50	2-TYPE 2	110	
		1-TYPE 3	55	
3-2"	15	1-TYPE 1	20	
		1-TYPE 2	20	
		1-TYPE 3	20	
		1-TYPE 7	20	
3-2"	45	1-TYPE 1	50	
		1-TYPE 3	50	
		1-TYPE 7	50	
2-2"	85	1-TYPE 1	90	
		2-TYPE 2	180	
		1-TYPE 7	90	
EXIST.		TYPE 5 (NO. VARIES)	170	
TSS TO TSPB	1-2"	35	TYPE 5 (NO. VARIES)	2115

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

ALA MOANA BLVD.
AND KOULA ST.
SCALE: 1"=20'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL SYSTEM AT
ALA MOANA BLVD. & KOULA ST.

MODERNIZATION OF TRAFFIC SIGNAL SYSTEMS
ALA MOANA BLVD., PUNCHBOWL ST. TO WARD AVE.
PROJECT NO. HES-092-1 (20)

SCALE: AS SHOWN DATE: 11/2/84
SHEET No. 7 OF 7 SHEETS

SURVEY PLOTTED BY	DATE

ORIGINAL PLAN	DESIGNED BY	NOTED BY	CHECKED BY