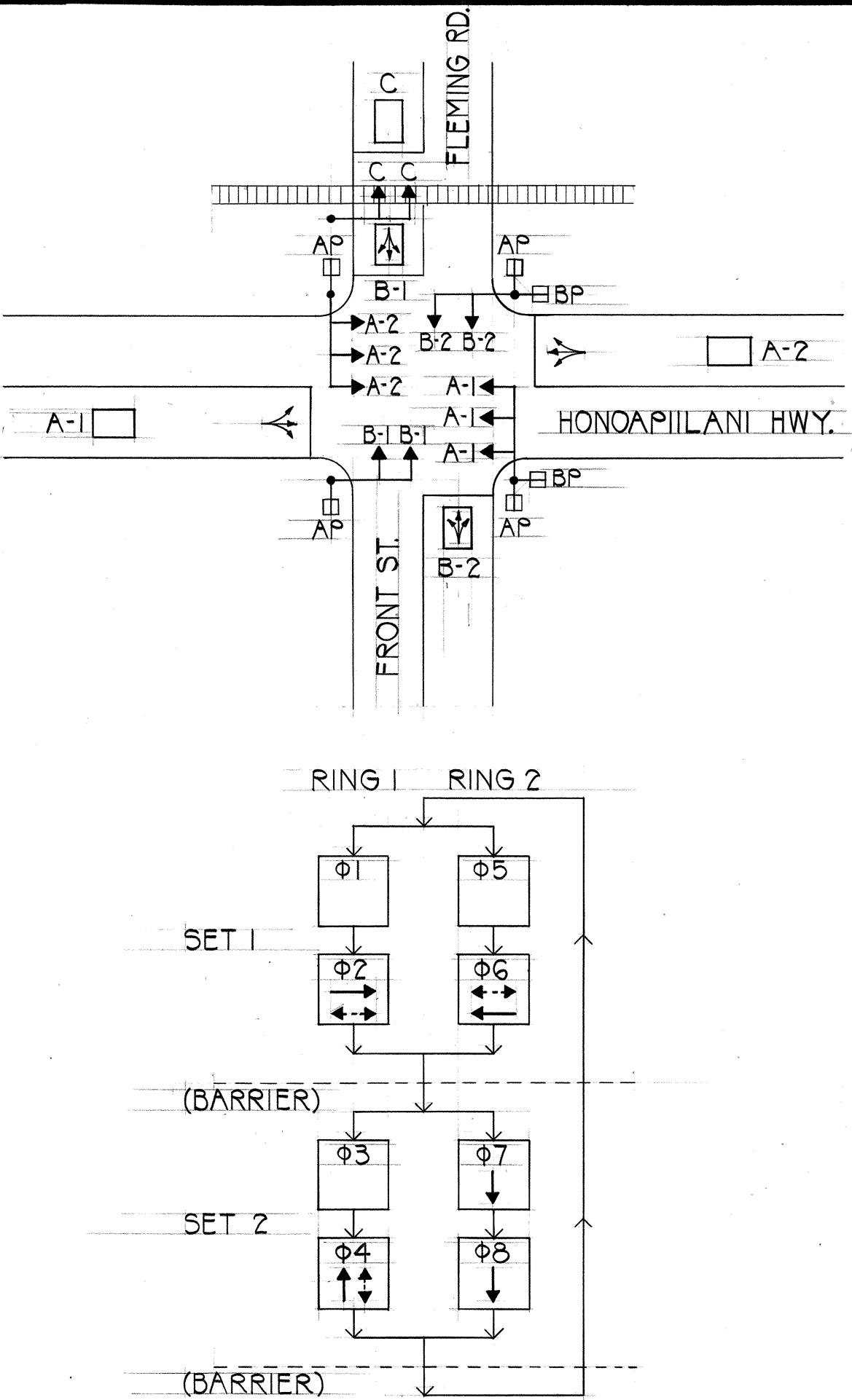


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-030-1(17)	1983	6	22

# TRAFFIC SIGNAL NOTES

- ALL TRAFFIC SIGNAL CONTROLLER EQUIPMENT SHALL BE COMPLETELY WIRED IN THE CABINET AND SHALL CONTROL THE TRAFFIC SIGNALS AS CALLED FOR IN THE PLANS.
- SIGNAL INDICATIONS DURING CLEARANCE INTERVAL:
  - IF A SIGNAL IS G OR ~~G~~ AND WILL REMAIN G OR ~~G~~ DURING THE NEXT PHASE, IT SHALL BE G OR ~~G~~ DURING THE CLEARANCE INTERVAL.
  - IF A SIGNAL IS G OR ~~G~~ AND WILL BECOME R OR EXTINGUISHED DURING THE NEXT PHASE, IT SHALL BE Y OR ~~Y~~ DURING THE CLEARANCE INTERVAL.
  - IF A SIGNAL IS R AND WILL REMAIN R OR BECOMES G DURING THE NEXT PHASE, IT SHALL REMAIN R DURING THE CLEARANCE INTERVAL.
- THE CONTROLLER FURNISHED SHALL BE A 2-8 PHASE CONTROLLER. A COORDINATION UNIT IS NOT REQUIRED FOR THIS PROJECT. HOWEVER, THE CABINET SHALL BE WIRED FOR INSTALLING IN THE FUTURE A COORDINATION UNIT OF THE SAME MANUFACTURER AS THE CONTROLLER UNIT. CONTROLLER SHALL BE MODULAR BY PHASE.
- THE LOOP AMPLIFIER UNITS FURNISHED FOR THIS PROJECT SHALL BE CAPABLE OF OPERATING THE LOOP DETECTOR CONFIGURATIONS SHOWN ON THE PLANS.
- MINIMUM CONTROLLER CABINET SIZE SHALL BE 40" HIGH, 24" WIDE AND 14" DEEP.
- CONTRACTOR SHALL FURNISH A 50-AMPERE CIRCUIT BREAKER.
- A SOLID #8 BARE COPPER WIRE SHALL BE PULLED WITH THE TRAFFIC CONTROL CABLE FOR EQUIPMENT GROUND. COST SHALL BE INCIDENTAL TO THE INSTALLATION OF THE CONTROL CABLE.
- THE TWO 8' x 6' LOOPS AND THE THREE 8' x 6' LOOPS ON FLEMING ROAD SHALL BE CONNECTED TO THE SAME LOOP AMPLIFIER WHOSE OUTPUT IS TIED TO  $\phi 7$ .
- $\phi 8$  SHALL BE OVERLAPPED TO  $\phi 7$ . ALL CALLS TO  $\phi 7$  WILL ALSO PLACE A CALL TO  $\phi 8$ .
- $\phi 8$  GREEN INDICATION IS TO REMAIN GREEN UP TO 6 SECONDS AFTER  $\phi 7$  HAS BEEN TERMINATED.
- PROVIDE SEPARATE LOOP AMPLIFIERS FOR LOOP DETECTORS ON RAILROAD TRACKS WITH AN EXTERNAL TIMER HAVING A MINIMUM RANGE FROM 30 SECONDS TO 5 MINUTES.
- MASK SIGNAL HEADS F-1 AND G-2 TO CUT OFF AT THE RAILROAD TRACKS.
- OUTPUT TO THE CABINET TERMINAL BOARD FROM THE PRE-EMPTOR SHALL BE PROVIDED FOR A SIGNAL INDICATION TO THE TRAIN ENGINEER INDICATING THAT PRE-EMPTION SEQUENCE IS FUNCTIONING.
- CONTRACTOR SHALL DEMONSTRATE PRIOR TO COMPLETION OF THE PROJECT THAT LOOP DETECTORS UNDER RAILROAD TRACKS ARE CAPABLE OF DETECTING THE APPROACHING TRAIN AND THEN RESETTING ITSELF AFTER THE LAST CAR LEAVES THE INFLUENCE AREA OF THE LOOP DETECTOR.



	$\phi 2(A-1)$				$\phi 4(B-2)$				$\phi 6(A-2)$				$\phi 7(C)$				$\phi 8(B-1)$				FLASH
	CLEAR TO				CLEAR TO				CLEAR TO				CLEAR TO				CLEAR TO				
R/W	$\phi 4$	$\phi 7$			$\phi 2$	$\phi 6$			$\phi 4$	$\phi 7$			$\phi 8$				$\phi 2$	$\phi 6$			
$\phi 2(A-1)$	G	Y	R	Y	R				R	R	R	R					R	R	R	R	FY
$\phi 4(B-2)$	R	R	R	R	R				G	Y	R	Y	R				G	Y	R	Y	FR
$\phi 6(A-2)$	G	Y	R	Y	R				R	R	R	R	R				R	R	R	R	FY
$\phi 7(C)$	R	R	R	R	R				G	Y	R	Y	R				G	Y	R	Y	FR
$\phi 8(B-1)$	R	R	R	R	R				G	Y	R	Y	R				G	Y	R	Y	FR
$\phi 7+\phi 8(C+B-1)$	R	R	R	R	R				G	Y	R	Y	R				G	Y	R	Y	FR
AP	*	D	D	D	D				D	D	D	D	D				D	D	D	D	
BP	D	D	D	D	D				*	D	D	D	D				*	D	D	D	D

\* WHEN CALLED, TIMES STEADY WALK, THEN FLASHING DON'T WALK, THEN GOES STEADY DON'T WALK.

NOTE:

ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.

$\phi$	PHASE A		PHASE B			PRE-EMPTION SEQUENCE					
	R/W	CLEAR	R/W	CLEAR <sub>1</sub>	CLEAR <sub>2</sub>	PHASE A CLEAR	PHASE B CLEAR	HOLD	CLEAR	RELEASE	
2	G	Y	R	R	R	Y	R	R	FY	Y	R
4	R	R	G	Y	R	R	Y	R	FR	R	G
6	G	Y	R	R	R	Y	R	R	FY	Y	R
7	R	R	G	Y	R	R	Y	R	R	R	G
8	R	R	G	G	Y	R	G	Y	FR	R	G

G = GREEN BALL  
Y = YELLOW BALL  
R = RED BALL  
FY = FLASHING YELLOW BALL  
FR = FLASHING RED BALL  
D = DON'T WALK

## CONTROLLER SEQUENCE DIAGRAM

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	



THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION  
*Theodore S. Kawahigashi*  
Engineer

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

### CONTROLLER SEQUENCE DIAGRAM

HONOAPIILANI HIGHWAY  
TRAFFIC SIGNALS AT  
FLEMING ROAD

FED. AID PROJECT NO. HES-030-1(17)

NOT TO SCALE

DATE: 12-23-82

SHEET NO. 1 OF 1 SHEETS