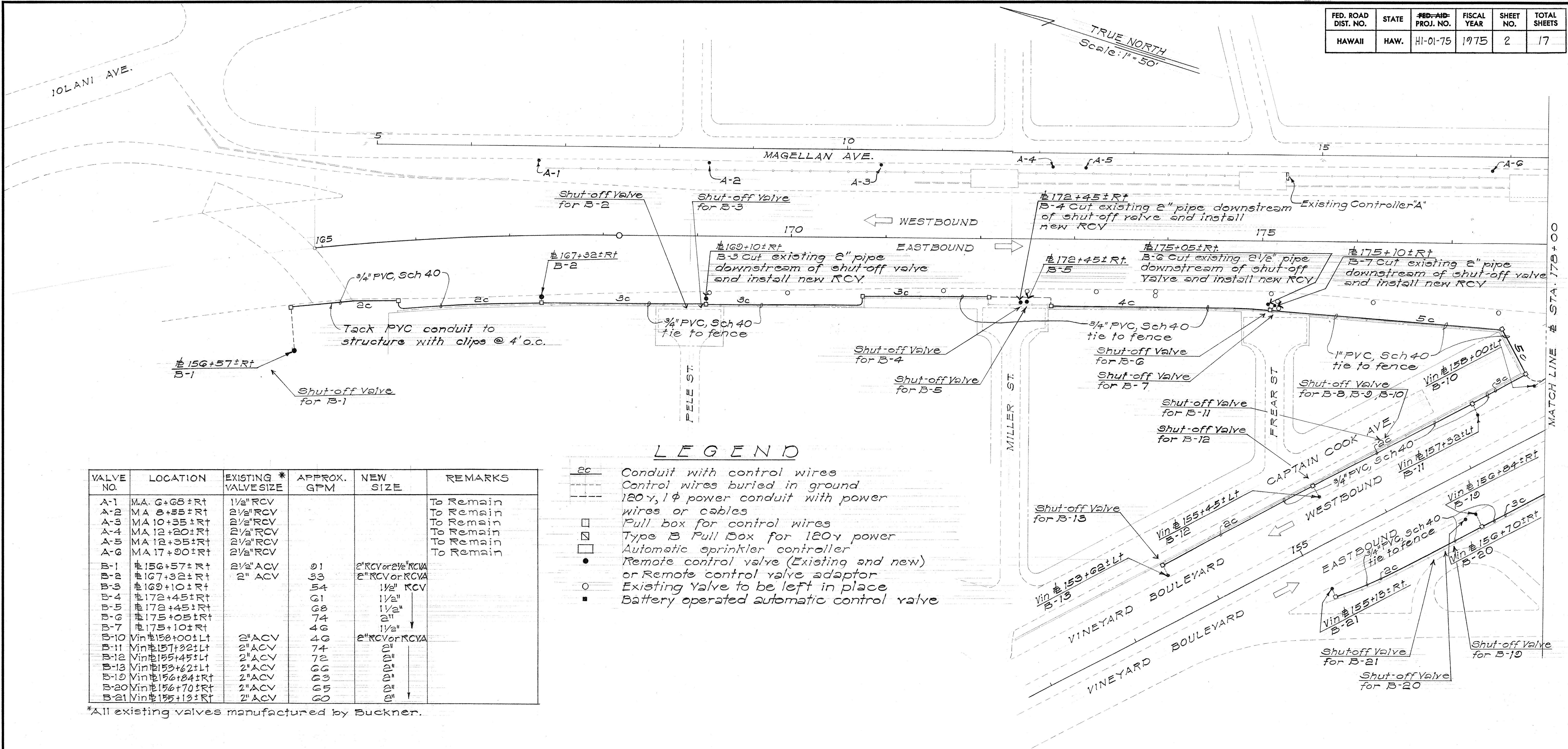


FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HI-01-75	1975	2	17



VALVE NO.	LOCATION	EXISTING * VALVE SIZE	APPROX. GPM	NEW SIZE	REMARKS
A-1	MA 6+68±Rt	1 1/2" RCV			To Remain
A-2	MA 8+55±Rt	2 1/2" RCV			To Remain
A-3	MA 10+35±Rt	2 1/2" RCV			To Remain
A-4	MA 12+20±Rt	2 1/2" RCV			To Remain
A-5	MA 12+35±Rt	2 1/2" RCV			To Remain
A-6	MA 17+90±Rt	2 1/2" RCV			To Remain
B-1	156+57±Rt	2 1/2" ACV	91	2" RCV or 2 1/2" RCVA	
B-2	167+32±Rt	2" ACV	33	2" RCV or RCVA	
B-3	169+10±Rt		54	1 1/2" RCV	
B-4	172+45±Rt		61	1 1/2"	
B-5	172+45±Rt		68	1 1/2"	
B-6	175+05±Rt		74	2"	
B-7	175+10±Rt		46	1 1/2"	
B-10	158+00±Lt	2" ACV	46	2" RCV or RCVA	
B-11	157+32±Lt	2" ACV	74	2"	
B-12	155+45±Lt	2" ACV	72	2"	
B-13	153+62±Lt	2" ACV	66	2"	
B-19	156+84±Rt	2" ACV	63	2"	
B-20	156+70±Rt	2" ACV	65	2"	
B-21	155+13±Rt	2" ACV	60	2"	

*All existing valves manufactured by Buckner.

LEGEND

- Conduit with control wires
- Control wires buried in ground
- 120v, 1φ power conduit with power wires or cables
- Pull box for control wires
- Type B Pull Box for 120v power
- Automatic sprinkler controller
- Remote control valve (Existing and new)
- or Remote control valve adaptor
- Existing Valve to be left in place
- Battery operated automatic control valve

GENERAL NOTES

The Contractor shall be responsible for damages done to existing utilities, structures, sprinkler lines and the landscaping and shall repair or restore them to the satisfaction of the engineer at his own expense.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

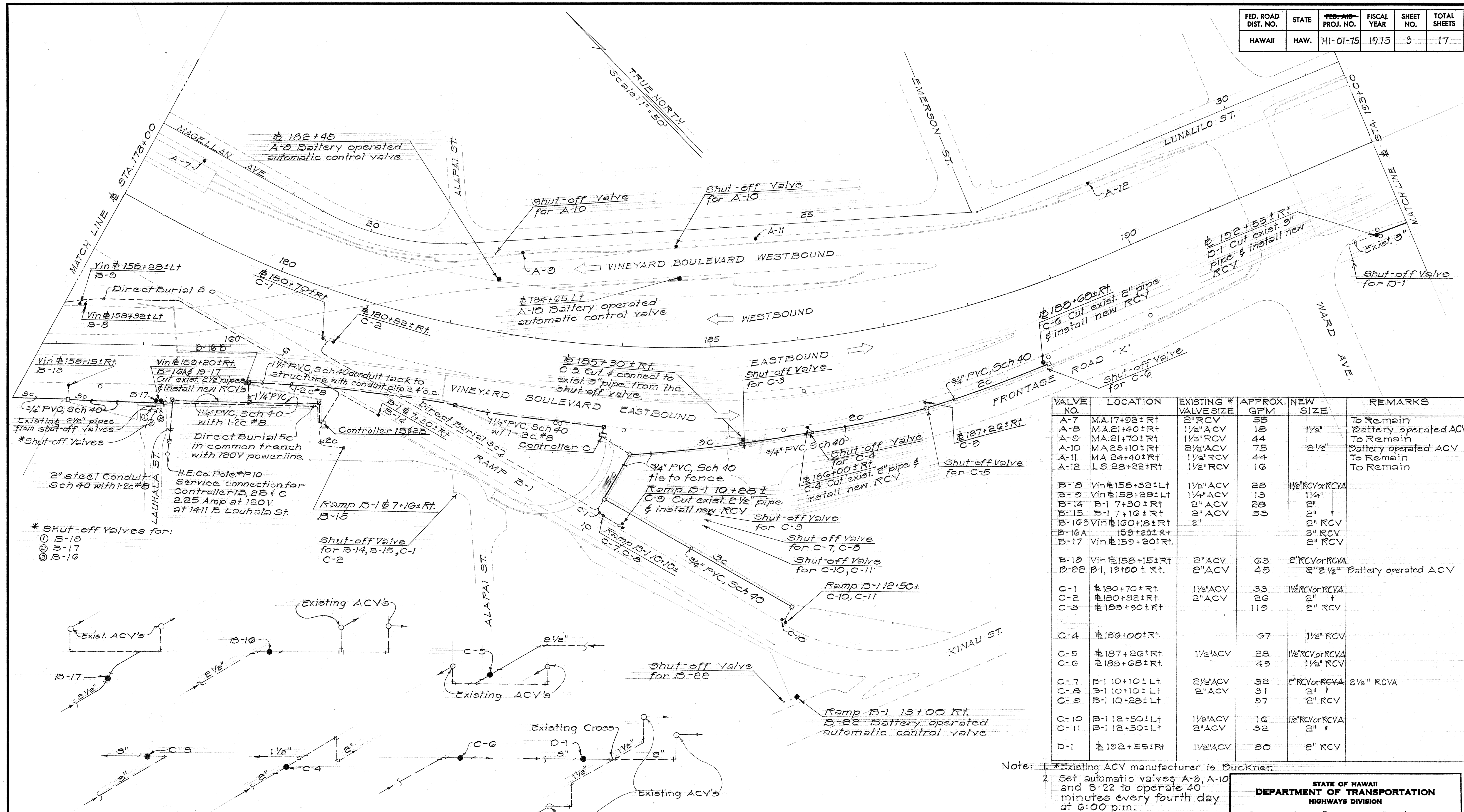
Conversion of Manual Sprinkler Systems to Automatic Control

Punchbowl St. to Keeaumoku St.
Proj. No. HI-01-75

Scale: 1"=50' Date: March 1975

SHEET No. 1 OF 4 SHEETS

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



PIPE SCHEMATIC B-16, B-17, C-3, C-4, C-6, C-9, & D-1

VALVE NO.	LOCATION	EXISTING * VALVE SIZE	APPROX. GPM	NEW SIZE	REMARKS
A-7	MA 17+92± Rt	2" RCV	55		To Remain
A-8	MA 21+40± Rt	1 1/2" ACV	18	1 1/2"	Battery operated ACV
A-9	MA 21+70± Rt	1 1/2" RCV	44		To Remain
A-10	MA 23+10± Rt	2 1/2" ACV	75	2 1/2"	Battery operated ACV
A-11	MA 24+40± Rt	1 1/2" RCV	44		To Remain
A-12	LS 28+22± Rt	1 1/2" RCV	16		To Remain
B-5	Vin 158+32± Lt	1 1/2" ACV	28	1 1/2" RCV or RCVA	
B-6	Vin 158+28± Lt	1 1/4" ACV	13	1 1/4"	
B-14	B-1 7+30± Rt	2" ACV	28	2"	
B-15	B-1 7+16± Rt	2" ACV	53	2"	
B-16A	Vin 160+18± Rt	2" RCV		2" RCV	
B-17	Vin 159+20± Rt	2" RCV		2" RCV	
B-18	Vin 158+15± Rt	2" ACV	63	2" RCV or RCVA	
B-22	B-1 12+00± Rt	2" ACV	45	2" 2 1/2"	Battery operated ACV
C-1	B-1 10+10± Lt	1 1/2" ACV	33	1 1/2" RCV or RCVA	
C-2	B-1 10+10± Lt	2" ACV	26	2"	
C-3	B-1 10+28± Lt	1 1/2" RCV	119	2" RCV	
C-4	B-1 12+50± Lt	1 1/2" RCV	67	1 1/2" RCV	
C-5	B-1 12+50± Lt	1 1/2" ACV	28	1 1/2" RCV or RCVA	
C-6	B-1 12+50± Lt	1 1/2" RCV	43	1 1/2" RCV	
C-7	B-1 10+10± Lt	2 1/2" ACV	32	2" RCV or RCVA	2 1/2" RCVA
C-8	B-1 10+10± Lt	2" ACV	31	2"	
C-9	B-1 10+28± Lt	2" RCV	57	2" RCV	
C-10	B-1 12+50± Lt	1 1/2" ACV	16	1 1/2" RCV or RCVA	
C-11	B-1 12+50± Lt	2" ACV	32	2"	
D-1	B-1 12+55± Rt	1 1/2" ACV	80	2" RCV	

Note: 1. * Existing ACV manufacturer is Buckner.
2. Set automatic valves A-8, A-10 and B-22 to operate 40 minutes every fourth day at 6:00 p.m.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Conversion of Manual Sprinkler Systems to Automatic Control

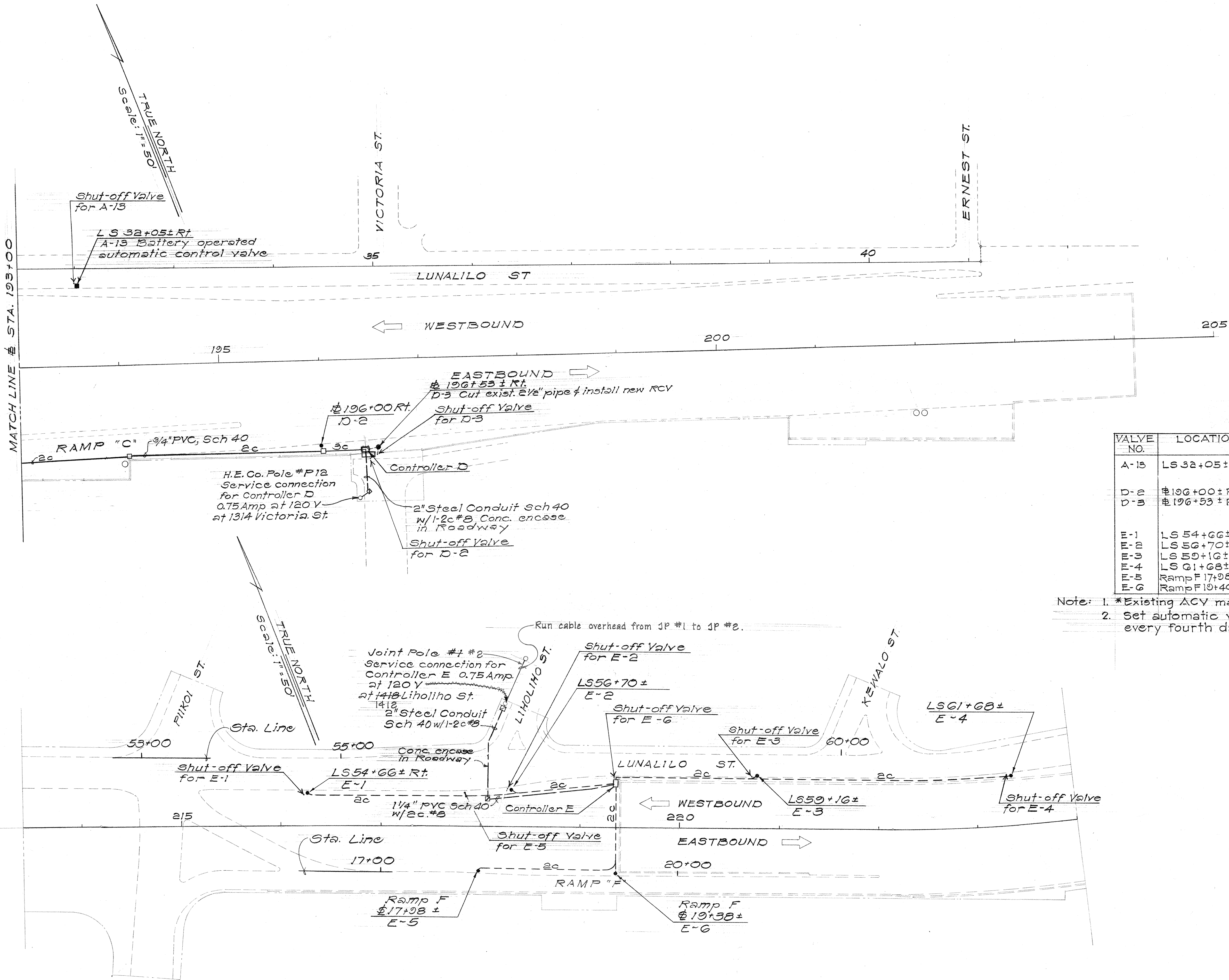
Punchbowl St. to Keeaumoku St.
Proj. No. HI-01-75

Scale: 1" = 50' Date: March 1975

SHEET No. 2 OF 4 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HI-01-75	1975	4	17



VALVE NO.	LOCATION	EXISTING * VALVE SIZE	APPROX. GPM	NEW SIZE	REMARKS
A-13	LS 32+05 ± Rt	2 1/2" ACV	84	2 1/2"	Battery operated ACV
D-2	LS 196+00 ± Rt	2" ACV	34	2" RCV or RCV A	
D-3	LS 196+53 ± Rt		93	2" RCV	
E-1	LS 54+66 ± Rt	1 1/2" ACV	20	1 1/2" RCV or RCV A	
E-2	LS 56+70 ± Rt	2" ACV	42	2"	
E-3	LS 59+16 ± Rt	1 1/2" ACV	24	1 1/2"	
E-4	LS 61+68 ± Rt	1 1/2" ACV	24	1 1/2"	
E-5	Ramp F 17+98 ± Lt	2 1/2" ACV	48	2"	
E-6	Ramp F 19+40 ± Lt	2 1/2" ACV	50	2"	

- Note: 1. *Existing ACV manufacturer is Buckner.
2. Set automatic valve A-13 to operate 40 minutes every fourth day at 6:00 p.m.

DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
TRACED BY	_____
DESIGNED BY	_____
CHECKED BY	_____
NOTE BOOK	_____
No.	_____

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

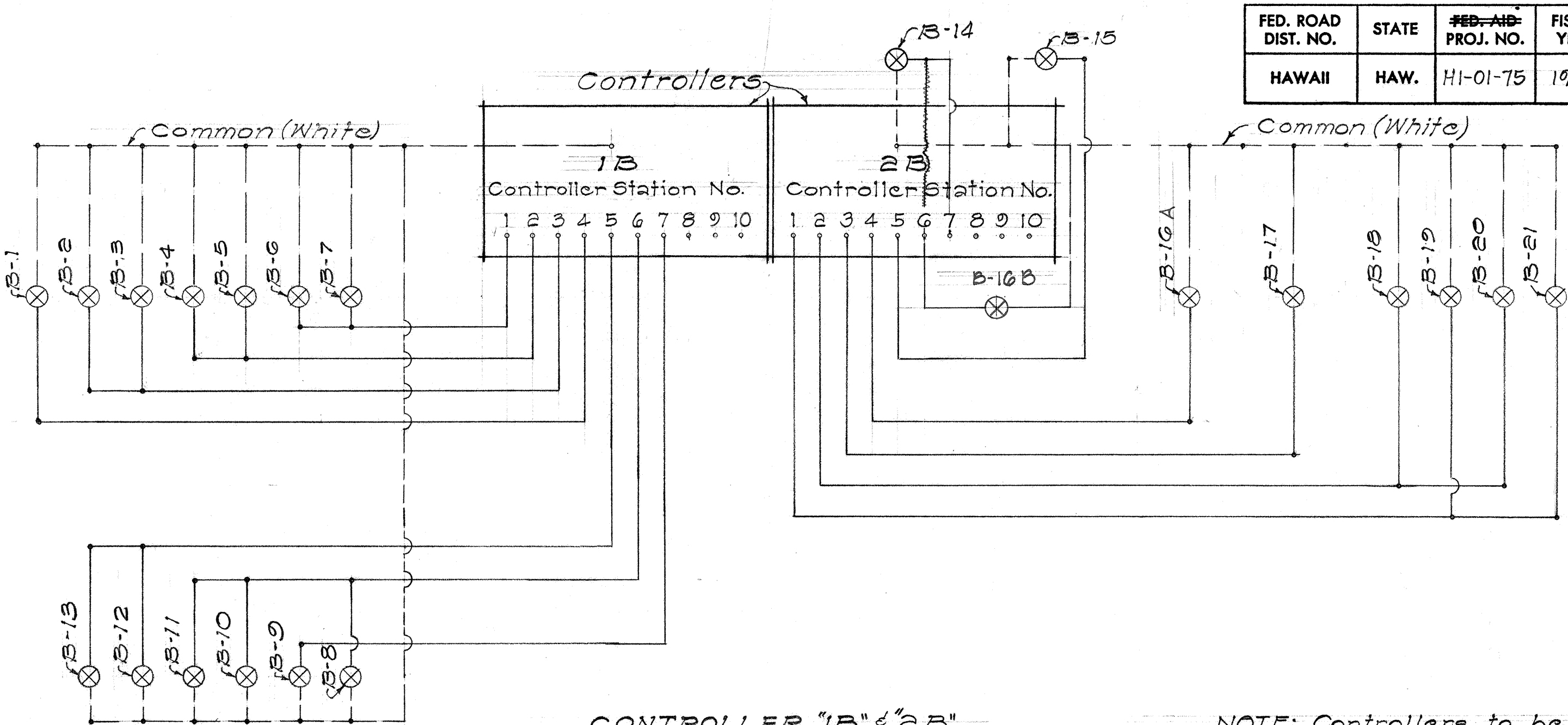
Conversion of Manual Sprinkler
Systems to Automatic Control

Punchbowl St. to Keeaumoku St.
Proj. No. HI-01-75

Scale: 1"=50'
Date: March 1975

SHEET No. 3 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1-01-75	1975	5	17



CONTROLLER "1B" & "2B"
(10 Station Minimum Each)
Pedestal Mounted

NOTE: Controllers to be set for the following start times:

CONTROLLER	START TIMES
1B	6:00 P.M. 8:30 P.M. 12:00 A.M. 2:30 A.M.
2B	6:00 P.M. 7:30 P.M. 9:00 P.M. 10:30 P.M. 12:00 A.M. 1:30 A.M. 3:00 A.M.
C	6:00 P.M. 7:30 P.M. 9:00 P.M. 10:30 P.M. 12:00 A.M. 1:30 A.M.
D & E	6:00 P.M. 7:00 P.M.

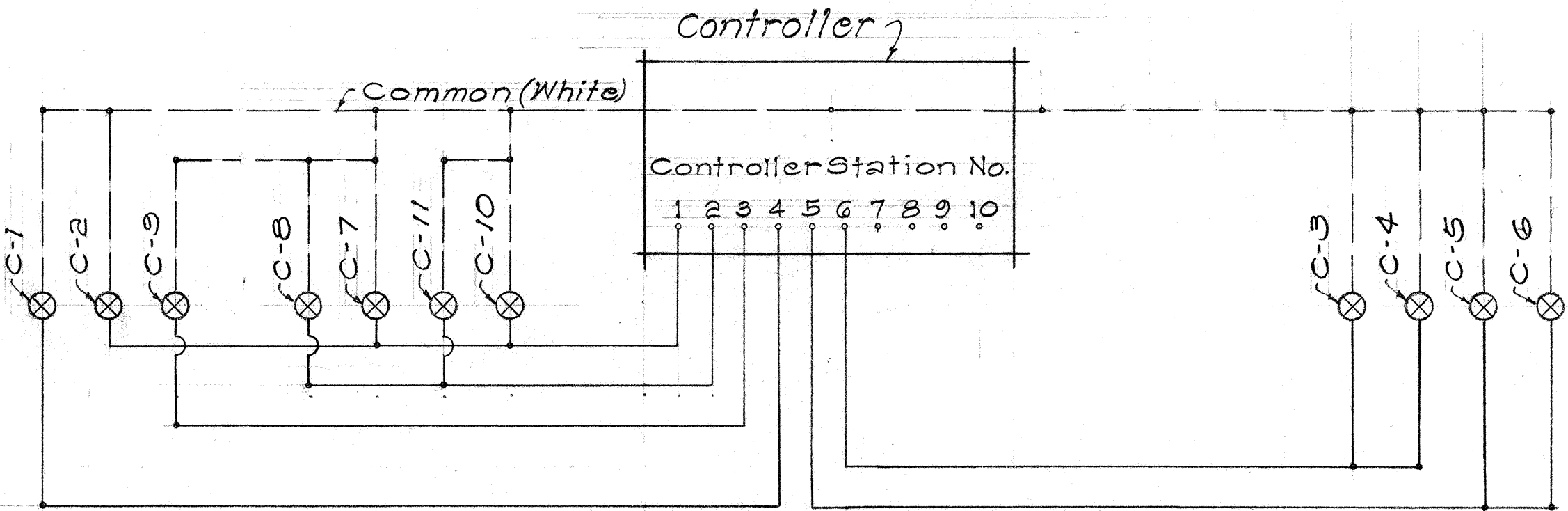
CONTROLLER	Day of Operation	A	1B	2B	C	D	E
			Mon. & Tues.	Mon. & Tues.	Mon. & Tues.	Mon. & Tues.	Mon. & Tues.
Station Number	1		10 min.	5 min.	50 min.	10 min.	10 min.
	2		10	5	5	10	10
	3		10	5	5	10	10
	4		10	5	5	10	10
	5		10	5	5	10	10
	6		10	5	5	10	10
	7		60	60	5	10	10
	8						
	9						
	10						
Total Time per Cycle			120 min	85 min	75 min	60 min	60 min

OPERATING TIME SCHEDULES FOR AUTOMATIC CONTROLLERS

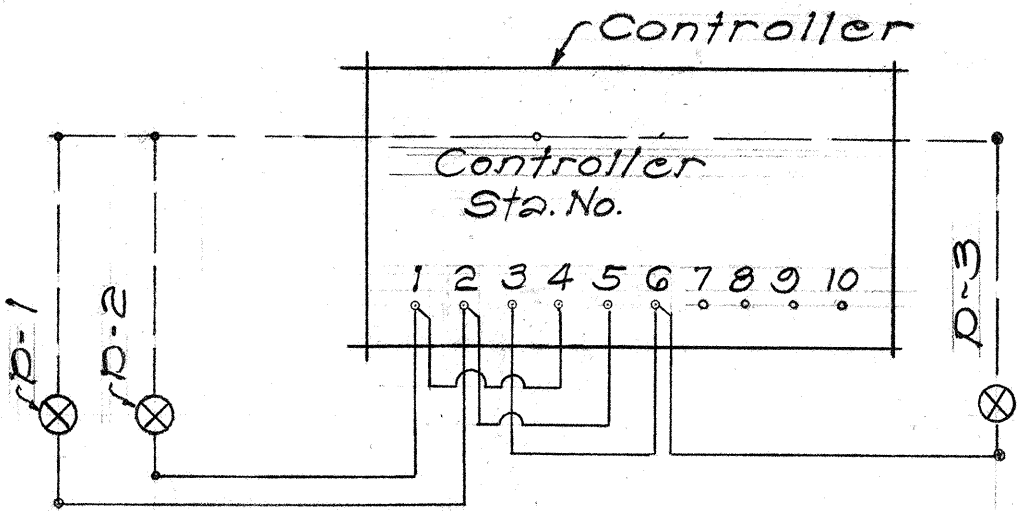
ELECTRICAL NOTES

- All control wiring are 14 Gage, unless indicated.
- Common wires shall be color coded white.

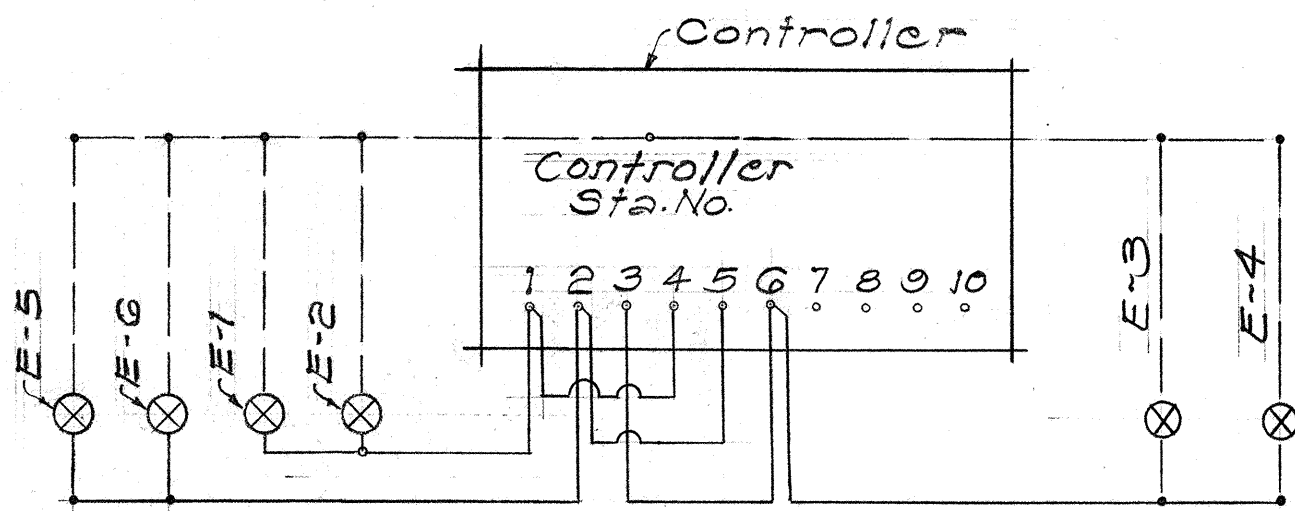
Watering schedules are for the months from February to November. Controllers may be turned off or set for minimum timing for December and January. If controller timing capability does not conform to watering start times, repeat the watering cycles as necessary to match the total watering time.



CONTROLLER "C"
(10 Station Minimum)
Pedestal Mounted



CONTROLLER "D"
(10 Station Minimum)
Pedestal Mounted



CONTROLLER "E"
(10 Station Minimum)
Wall Mounted

SCHEMATIC WIRE DIAGRAM FOR AUTOMATIC SPRINKLING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Conversion of Manual Sprinkler
Systems to Automatic Control

Punchbowl St. to Keeaumoku St.
Proj. No. H1-01-75

Date: March 1975

SHEET No. 4 OF 4 SHEETS

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