

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



BUREAU OF HIGHWAYS
BANGOR

PENOBSCOT COUNTY

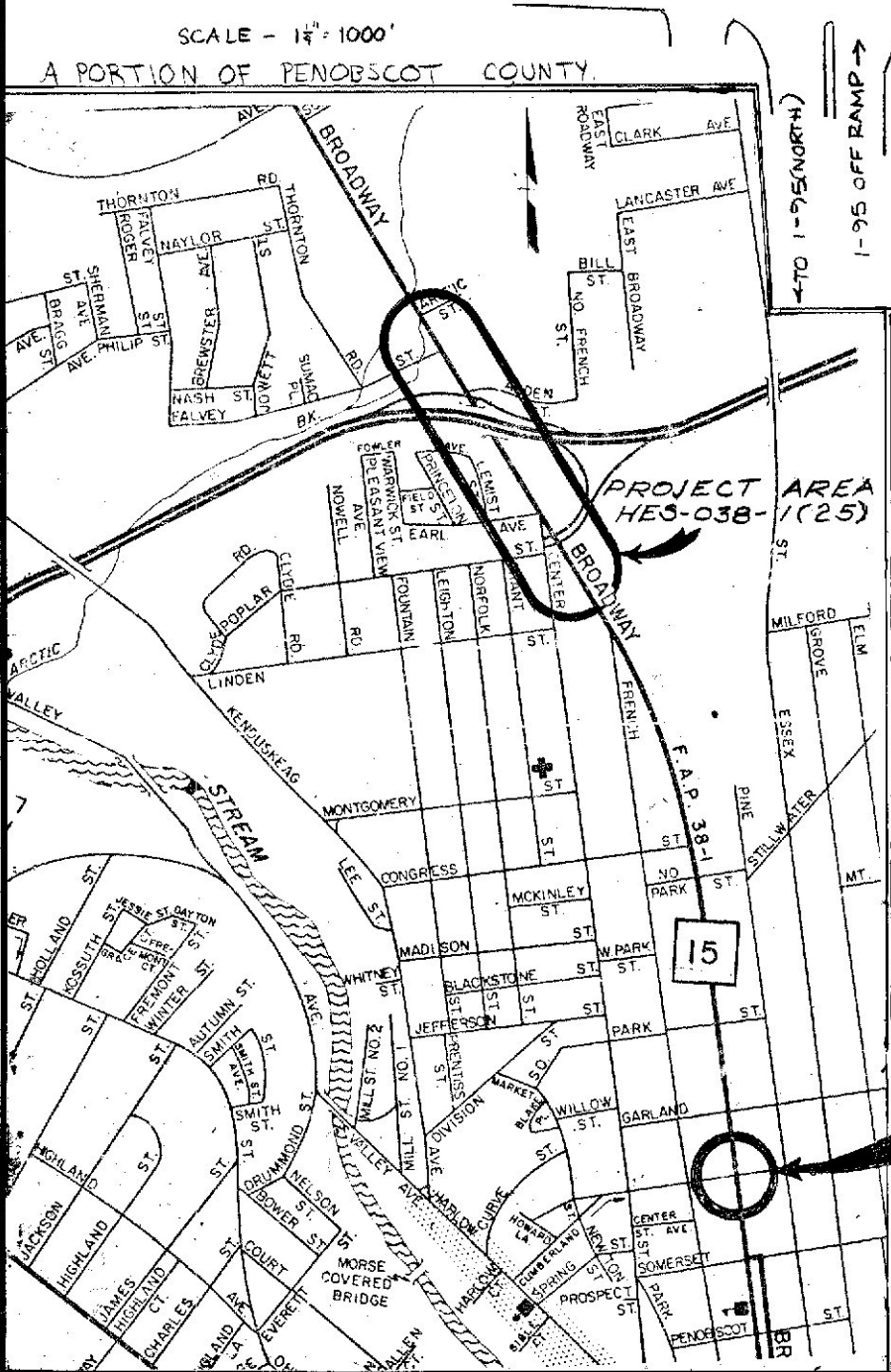
MAINE FEDERAL AID URBAN
PROJECT NO. HES-038-1(25)
AND NO. HES-038-1(24)
TRAFFIC SIGNALS

INDEX OF SHEETS

SHEET NO. 1	TITLE SHEET
SHEET NO. 2	INTERCONNECT WIRE SHEET
SHEET NO. 3-4	PLAN SHEETS
SHEET NO. 5	PLAN SHEET
SHEET NO. 6	STANDARD DETAILS
SHEET NO. 7-10	MAINTENANCE OF TRAFFIC

CONVENTIONAL SIGNS

COUNTY LINES	=====	TRAVELLED WAY - PROPOSED	=====
TOWN LINES	=====	UNDERGROUND UTILITIES - EXISTING	-----
PROPERTY LINES	=====	UNDERGROUND UTILITIES - PROPOSED	-----
R/W LINES - EXISTING	=====	RAILROAD - SINGLE TRACK	=====
R/W LINES - NEW - ACCESS CONTROL	=====	RAILROAD - DOUBLE TRACK	=====
R/W LINES - NEW - NO ACCESS CONTROL	=====	UTILITY POLE - EXISTING	o
CULVERT - EXISTING	=====	UTILITY POLE - JOINT OCCUPANCY	o
CULVERT - PROPOSED	=====	PROPOSED UTILITY POLE - TEMPORARY	x
CURBING - EXISTING	=====	PROPOSED UTILITY POLE - PERMANENT	+
CURBING - PROPOSED	=====	TREES	o
TRAVELLED WAY - EXISTING	=====	WOODS	=====



PROJECT NO. HES-038-1(25)

LAYOUT PLAN

SCALE 0 50 100 FEET

PROJECT NO. HES-038-1(24)

BROADWAY

TRAFFIC DATA

A.D.T.	19
A.D.T.	19
D.H.V.	
T. (%)	
D. (%)	
V.	
P.S.D. (%)	
18 KIPS	

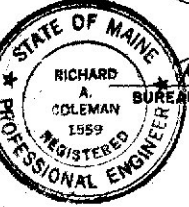
NOTE

All work contemplated under this contract to be governed by and in conformity with the STANDARD SPECIFICATIONS (revision of June 1981) and supplementals thereto, except as modified on the plans and in the special provisions.

APPROVED:

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

George N. G. [Signature]
COMMISSIONER



Richard A. Coleman
BUREAU DIRECTOR AND CHIEF ENGINEER

DATE

6-14-82

6-14-82

"AS BUILT" 1983 *W. Heath*

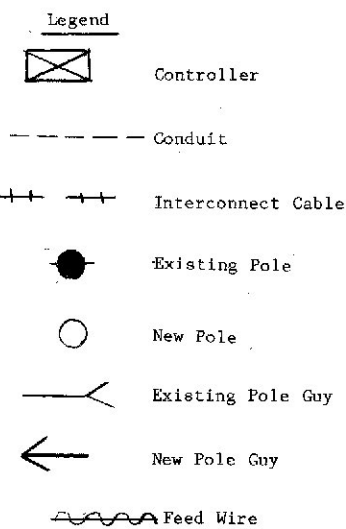
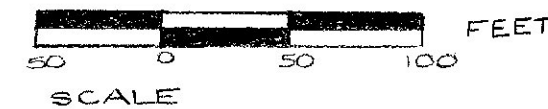
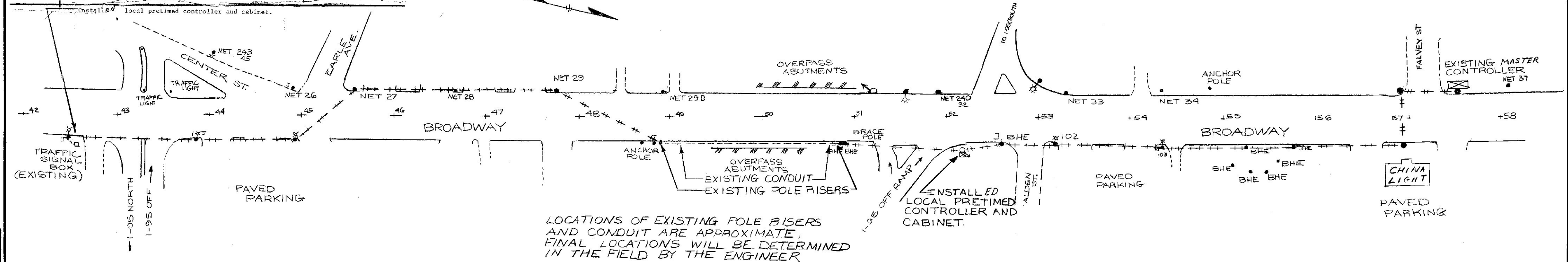
UNITED STATES
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION 1

APPROVED:

DIVISION ADMINISTRATOR DATE

FINAL QUANTITIES - HES-038-1(24) & HES-038-1(25)

ITEM NO	DESCRIPTION	QUANTITY	UNIT
627.61	4" SOLID WHITE PAVEMENT MARKING	600	L.F.
627.62	4" BROKEN WHITE PAVEMENT MARKING	200	L.F.
627.63	4" SOLID YELLOW PAVEMENT MARKING	1170	L.F.
627.65	WHITE OR YELLOW PAVEMENT CURB MARKING	613	S.F.
627.67	REMOVAL OF PAVEMENT MARKINGS	132	S.F.
643.801	TRAFFIC SIGNALS @ BROADWAY & SB RAMP	1	L.S.
643.802	TRAFFIC SIGNALS @ BROADWAY & CENTER	1	L.S.
643.803	TRAFFIC SIGNALS @ BROADWAY & CUMBERLAND	1	L.S.
643.90	INTERCONNECT WIRE BETWEEN CENTER & FALVEY	1	L.S.
652.31	TYPE I BARRICADES	2	EACH
652.33	DRUMS	0	EACH
652.34	CONES	40	EACH
652.35	CONSTRUCTION SIGNS	192	S.F.
652.36	MAINTENANCE OF TRAFFIC CONTROL DEVICES	24	C.D.
652.38	FLAGGERS	20	M.H.
659.10	MOBILIZATION	1	L.S.



CONTRACTOR INSTALLED 75 AND 90 SECOND GEARS IN MASTER CONTROLLER AT MACDONALD'S-BROADWAY (NOT SHOWN) AND IN LOCAL CONTROLLER AT FALVEY-BROADWAY. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK. PAYMENT WILL BE INCIDENTAL TO ITEM NO. 643.90

CONTRACTOR SHALL ADJUST TIMING IN CONTROLLER ON FALVEY ST. AND MACDONALD'S AS SHOWN.

INTERSECTION	TIME	DIAL	CYCLE LENGTH	OFFSET
MACDONALD'S SHOPPING CENTER	10:00AM-3:00PM	GEAR 1	75 SEC	0
	6:00-10:00AM 5:00-10:00PM	GEAR 2	90 SEC	0
FALVEY & BROADWAY	10:00AM-8:00PM	GEAR 1	75 SEC.	34.0 SEC 46.1%
	6:00-10:00AM 8:00-10:00PM	GEAR 2	90 SEC	46.4 SEC 51.6%
I-95 SB RAMP BROADWAY	10:00AM-8:00PM	1	75 SEC	40.6 SEC 54.1%
	6:00-10:00AM 8:00-10:00PM	2	90 SEC	61.6 SEC 68.4%
CENTER ST & BROADWAY	10:00AM-8:00PM	1	75 SEC	71.8 SEC 95.7%
	6:00-10:00AM 8:00-10:00PM	2	90 SEC	2.7 SEC 3%

*FLASHING OPERATIONS 10:00 PM - 6:00 AM

"AS BUILT" 1983 W. 26-74

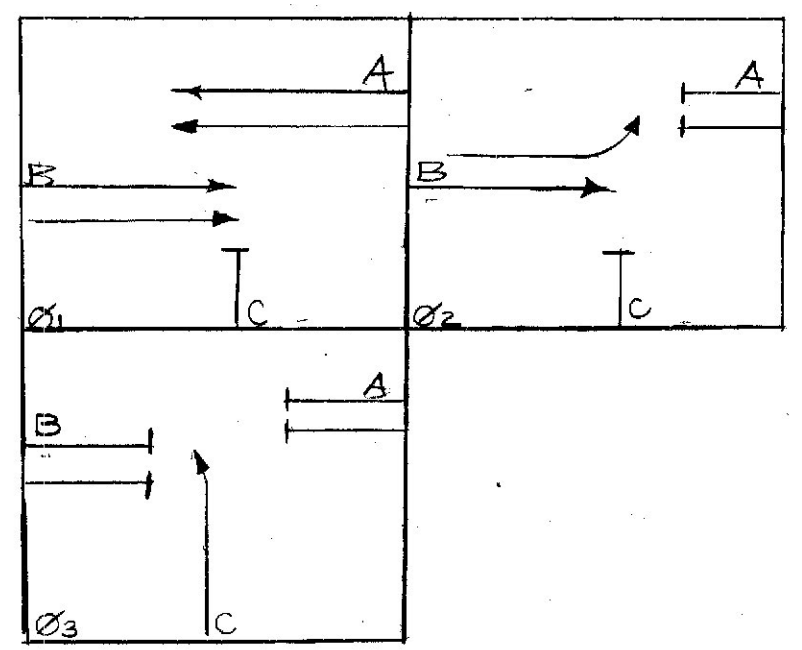
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

INTERCONNECT WIRE

BROADWAY

BANGOR
HES-038-1(25)

I-95 SB RAMP
PHASE DIAGRAM

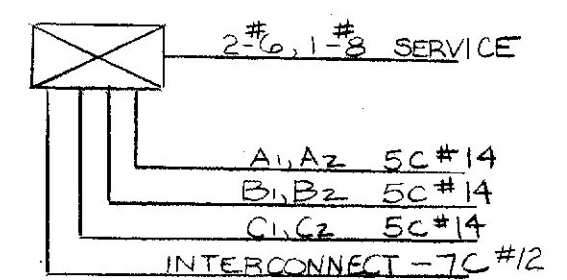


GENERAL NOTES

THE CONTROLLER SHALL BE A THREE DIAL, THREE PHASE PRETIMED CONTROLLER WITH THREE OFFSETS ON EACH DIAL.

PAVEMENT MARKINGS SHALL BE PLACED AS SHOWN.

FIELD WIRING DIAGRAM



FINAL QUANTITIES HES-038-1(25)

ITEM NO	DESCRIPTION	QUANTITY	UNIT
627.61	4" SOLID WHITE PAVEMENT MARKING	534	L.F.
627.62	4" BROKEN WHITE PAVEMENT MARKING	200	L.F.
627.63	4" SOLID YELLOW PAVEMENT MARKING	530	L.F.
627.65	WHITE OR YELLOW PAVEMENT CURB MARKING	74	S.F.
627.67	REMOVAL OF PAVEMENT MARKING	0	L.F.
643.801	TRAFFIC SIGNALS @ BROADWAY & SB RAMP	1	L.S.
643.802	TRAFFIC SIGNALS AT BROADWAY & CENTER STREET	1	L.S.
643.90	INTERCONNECT WIRE BETWEEN CENTER & FALVEY	1	L.S.
652.31	TYPE I BARRICADES	2	EACH
652.33	DRUMS	0	EACH
652.34	CONES	40	EACH
652.35	CONSTRUCTION SIGNS	28	S.F.
652.36	MAINTENANCE OF TRAFFIC CONTROL DEVICES	22	C.D.
652.38	FLAGGERS	20	M.H.
653.10	MOBILIZATION	50	L.S.

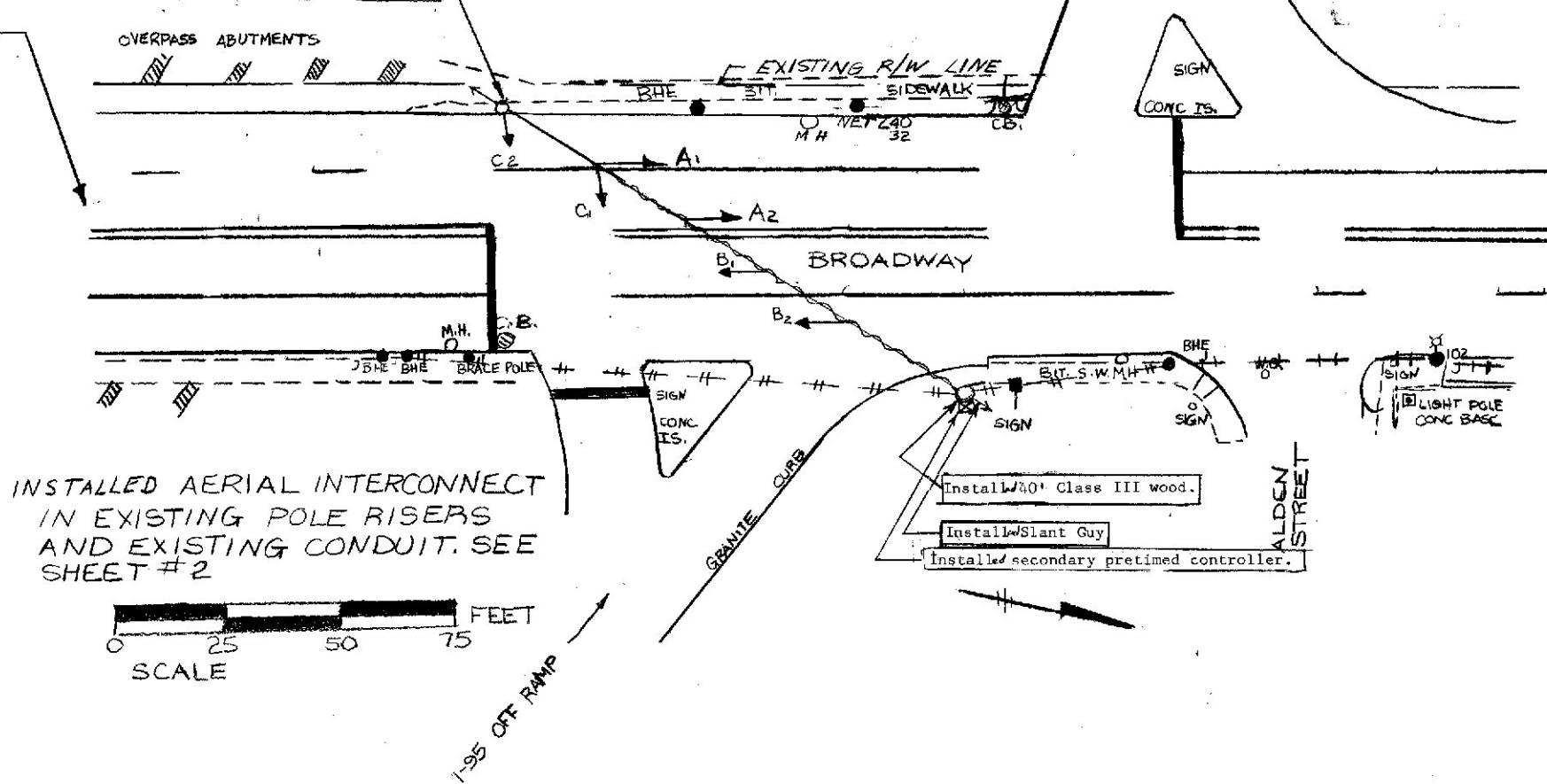
Key to Sequence and Indications

R-Red
Y-Yellow
G-Green

INDICATIONS

ALL 12"	
A 1,2	B 1
B 2	R
C 1,2	Y
(R)	Y
(Y)	G
(G)	←

LIMIT OF PAVEMENT MARKINGS



LIMIT OF PAVEMENT MARKINGS

GENERAL NOTES

1. THE CONTRACTOR MUST MEET ALL REQUIREMENTS OF UTILITY COMPANIES WHEN INSTALLING EQUIPMENT ON THEIR POLES. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING UTILITY COMPANIES TO DETERMINE SPECIFIC REQUIREMENTS.
2. LOCATIONS OF POLES, SIGNAL HEADS, GUYS AND CONTROLLER SHOWN ARE APPROXIMATE. FINAL LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
3. ALL EQUIPMENT SHALL BE CROUSE-HINDS.
4. POLYCARBONATE REFLECTORS MAY BE USED.

HEAD	1	2	3	4	5	6	7	8	9	FLASH
A1,2	G	Y	R	R	R	R	R	R	G	Y
B1	G	G	G	Y	R	R	R	R	G	Y
B2	G	G	G	Y	R	R	R	R	G	Y
C1,2	R	R	R	R	R	G	Y	R	R	R
TIMING 75 SEC DIAL	34	3	15	3	2	13	3	2		
TIMING 90 SEC DIAL	42	3	19	3	2	16	3	2		

KEY TO PAVEMENT MARKINGS

- 4" YELLOW CENTERLINE
- 4" WHITE LANELINE
- 6" WHITE CROSSWALK
- 12" WHITE STOPLINE

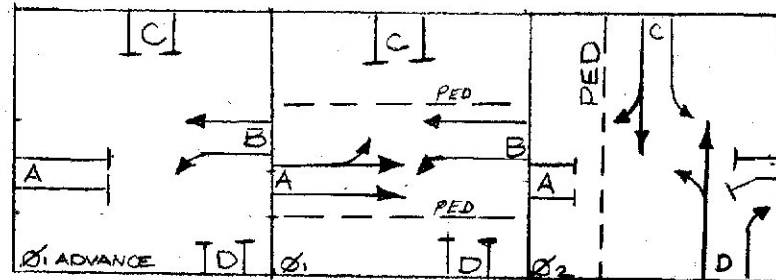
"AS BUILT" 1983

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
TRAFFIC SIGNALS
BROADWAY & SB RAMP
BANGOR
HES-038-1(25)
SHEET OF AUGUSTA, MAINE

PROJECT DESIGN ENGINEER	DATE
DESIGN - DETAILED	
CHECKED	
REVISIONS	
FIELD CHANGES	

- Legend
- Controller
 - Vehicular Signal Head
 - Existing Wood Pole
 - New Wood Pole
 - Slant Guy
 - New Slant Guy
 - Interconnect Cable
 - Feed Wire

CENTER ST. PHASE DIAGRAM



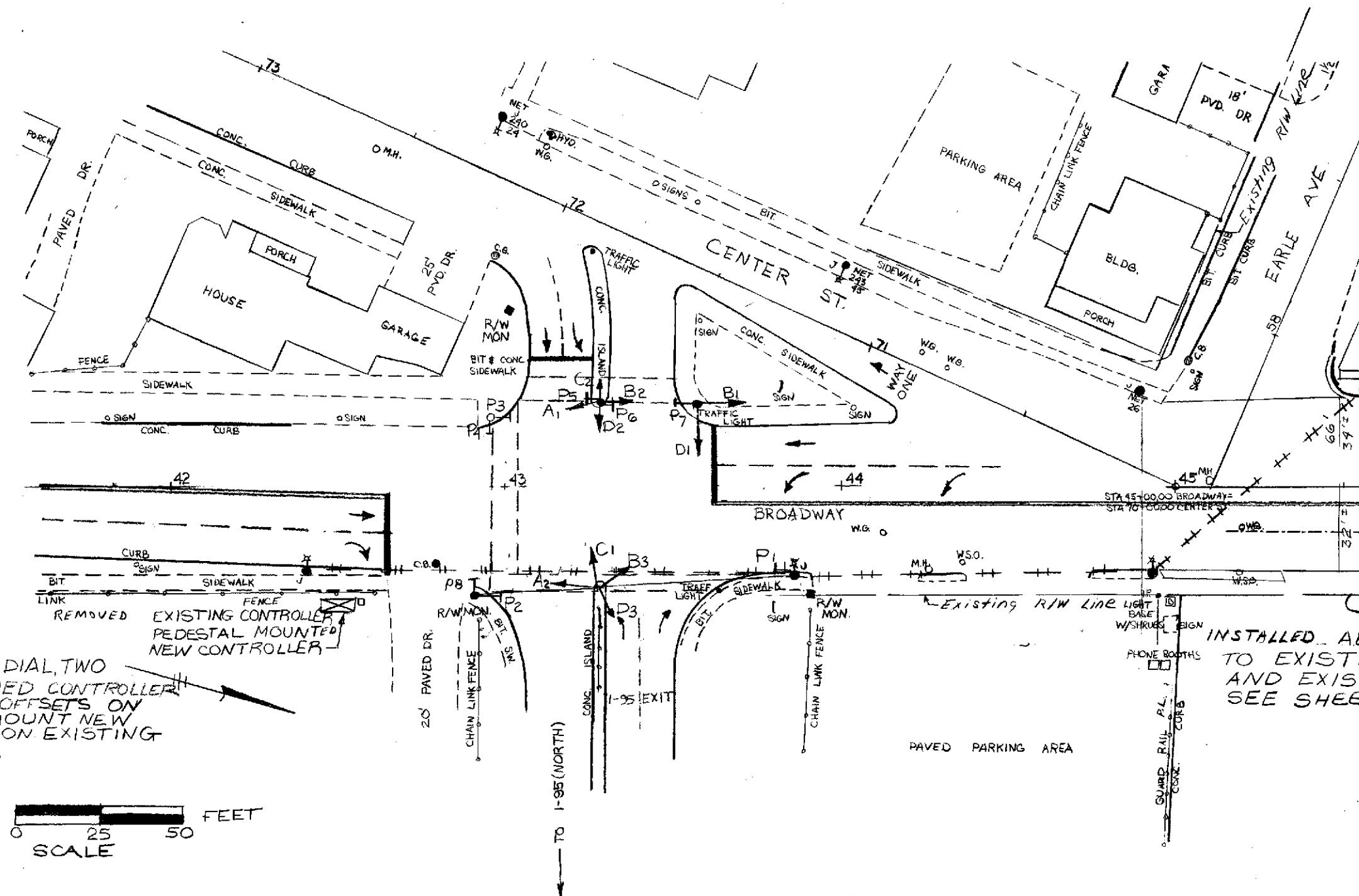
SEQUENCE DIAGRAM

HEAD	1	2	3	4	5	6	7	8	9	1	FLASH
A _{1,2}	R	G	G	Y	R	R	R	R	R	R	Y
B ₃	G	G	G	Y	R	R	R	R	R	G	Y
B _{1,2}	G	G	G	Y	R	R	R	R	R	G	Y
C _{1,2}	R	R	R	R	R	G	G	Y	R	R	R
D _{1,2,3}	R	R	R	R	R	G	G	Y	R	R	R
P _{1,2,3,5,6,7}	DW	FW	FDW	DW	DW	DW	DW	DW	DW	DW	OUT
P _{4,8}	DW	DW	DW	DW	DW	FW	FDW	FDW	DW	DW	OUT
75 SEC	18	23	10	3	2	7	7	3	2		
90 SEC	22	31	10	3	2	10	7	3	2		

INDICATIONS

A _{1,2}	
B _{1,2}	
C _{1,2}	
D _{1,2,3}	
(R)	(R)
(Y)	(Y)
(G)	(G)

PED
WALK
DON'T
WALK



GENERAL NOTES

1. ALL EQUIPMENT IS CROUSE-HINDS.
2. CONTRACTOR TURNED PEDESTRIAN HEAD P₇ TO FACE CENTER ST CROSSWALK PAYMENT IS INCIDENTAL TO ITEM NO. 643.802. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK. CONTRACTOR WILL REMOVE 6 PEDESTRIAN PUSH BUTTONS PAYMENT IS INCIDENTAL TO ITEM NO. 643.802. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK. REWIRED P₃, P₄, P₂, & P₈ TO SPLIT PHASE FOR CONCURRENT WALK.

PROJECT DESIGN ENGINEER	BY	DATE
DESIGN - DETAILED		
CHECKED		
REVISIONS		
FIELD CHANGES		

PLANS

INSTALLED THREE DIAL TWO PHASE PRETIMED CONTROLLER WITH THREE OFFSETS ON EACH DIAL. MOUNT NEW CONTROLLER ON EXISTING 4" PEDESTAL.

0 25 50 FEET
SCALE

INSTALLED AERIAL INTERCONNECT TO EXISTING POLE RISERS AND EXISTING CONDUIT. SEE SHEET # 2

"AS BUILT" 1993 W. H. & K.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNALS
BROADWAY & CENTER
BANGOR
HES-038-1(25)

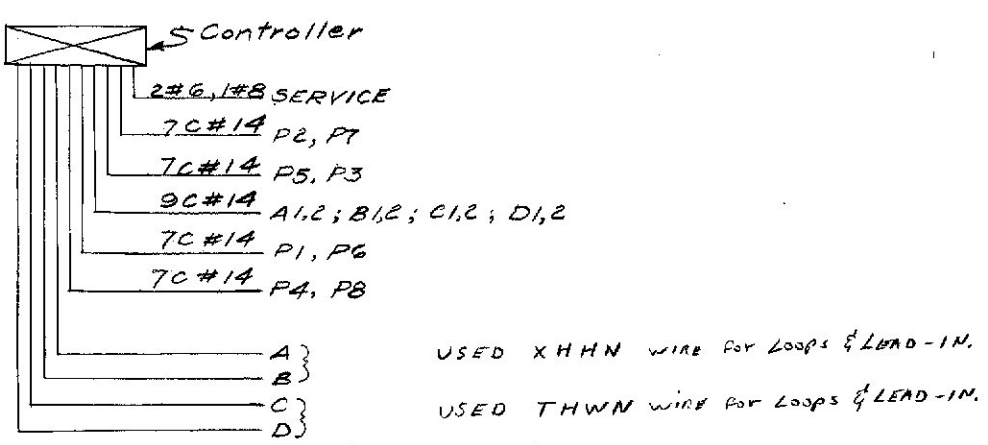
FINAL QUANTITIES - HES-038-1(24)			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
627.61	4" SOLID WHITE PAVEMENT MARKING LINE	165	LF
627.63	4" SOLID YELLOW PAVEMENT MARKING LINE	640	LF
627.65	WHITE OR YELLOW PAVEMENT AND CURB MARKING	539	SF
643.803	TRAFFIC SIGNALS AT BROADWAY AND CUMBERLAND	1	LS
652.31	TYPE 1 BARRICADES	0	EA.
652.33	DRUMS	0	EA.
652.34	CONES	40	EA.
652.35	CONSTRUCTION SIGNS	104	S.F.
652.36	MAINTENANCE OF TRAFFIC CONTROL DEVICES	2	G.D.
652.38	FLAGGERS	0	M.H.
659.10	MOBILIZATION	0.50	LS

GENERAL NOTES

THE CONTROLLER SHALL BE A TWO-PHASE FULLY ACTUATED CONTROLLER WITH CONCURRENT PEDESTRIAN PHASE AND TIME CLOCK TO CONTROL FLASH OPERATION. THE CONTROLLER SHALL BE MODULAR BY PHASE.

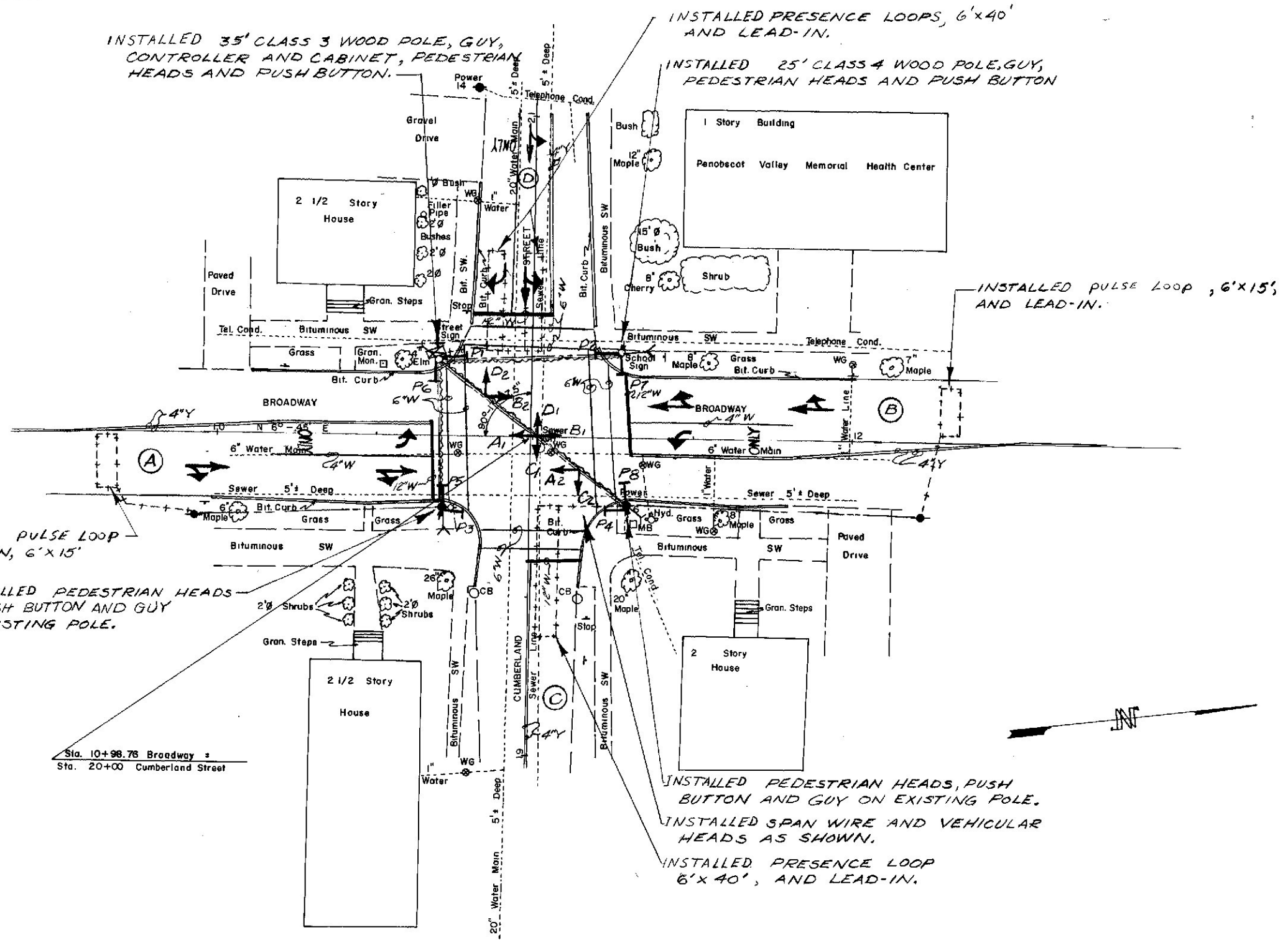
PAVEMENT MARKINGS ARE PLACED AS SHOWN. POLYCARBONATE REFLECTORS MAY BE USED.

LOCATIONS OF ALL POLES, GUYS, AND DETECTION LOOPS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.



KEY TO PAVEMENT MARKINGS

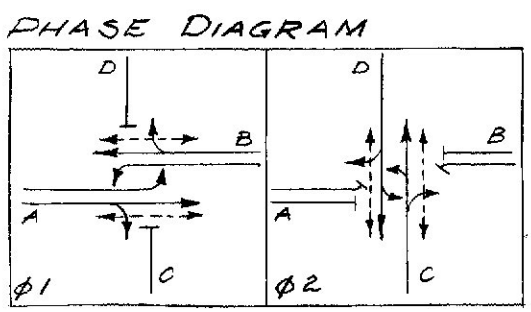
4"Y = 4" YELLOW - CENTERLINE
4"W = 4" WHITE - LANELINE
6"W = 6" WHITE - CROSSWALK
12"W = 12" WHITE - STOPLINE
← = LEFT ARROW
↕ = THRU & RIGHT ARROW



FIELD WIRING DIAGRAM

	Phase 1	Phase 2
	Seconds	Seconds
INITIAL	20	1
EXTENSION	3	4
MAXIMUM	30	25
RECALL	ON	OFF
CLEAR(YELLOW)	3	3
CLEAR(RED)	2	1
FDW	10	8
FW	10	8

FLASHING OPERATION 10:00 PM to 6:00 AM



Phase Head	1 to 2								Flash
	A1,2	G	G	Y	R	R	R	R	
A1,2	G	G	Y	R	R	R	R	G	Y
B1,2	G	G	Y	R	R	R	R	G	Y
C1,2	R	R	R	R	G	G	Y	R	R
D1,2	R	R	R	R	G	G	Y	R	R
P1-4	FW	FDW	DW	DW	DW	DW	DW	FW	OFF
P5-8	DW	DW	DW	DW	FW	FDW	DW	DW	OFF

INDICATIONS		PI-B	
A1, A2 B1, B2	12"	C1, C2 D1, D2	8"
(R)	12"	(R)	8"
(Y)	8"	(Y)	8"
(G)	8"	(G)	8"

KEY TO SEQUENCE AND INDICATIONS

R - RED
Y - YELLOW
G - GREEN
FW - FLASHING WALK
DW - DON'T WALK
FDW - FLASHING DON'T WALK

- LEGEND**
- CONTROLLER
 - VEHICULAR HEAD
 - PEDESTRIAN HEAD
 - PEDESTRIAN PUSH BUTTON
 - NEW WOOD POLE
 - EXISTING WOOD POLE
 - GUY
 - LOOP DETECTOR
 - AERIAL LOOP LEAD-IN
 - CONDUCTORS



"AS BUILT" 1983 W. 76.4th

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNALS
BROADWAY and CUMBERLAND ST.
BANGOR
HES-038-1(24)

PROJECT DESIGN ENGINEER
DESIGN - DETAILED
CHECKED
REVISIONS
FIELD CHANGES

PLANS