

EMERGENCY PRE-EMPTION PHASING MOVEMENT, SEQUENCE AND TIMING DIAGRAM

PHASE	INTERVAL	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	SELECTIVE YELLOW																				
2	SELECTIVE RED																				
3	SELECTIVE YELLOW																				
4	SELECTIVE RED																				
5	SELECTIVE YELLOW																				
6	SELECTIVE RED																				
7	SELECTIVE YELLOW																				
8	SELECTIVE RED																				
9	SELECTIVE YELLOW																				
10	SELECTIVE RED																				
a,b	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
c,d	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
FIXED TIME		4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2

FOR DURATION OF PRE-EMPTION EMERGENCY PRE-EMPTION NOTES

CONTROLLER TO BE EQUIPPED WITH EMERGENCY PRE-EMPTION FOR BOTH APPROACHES OF STREET ROAD AND BOTH APPROACHES OF WILMINGTON PIKE WITH A FAIL SAFE DEVICE FOR EACH DIRECTION OF TRAFFIC.

THE SIGNALS, WHEN ACTIVATED BY EMERGENCY VEHICLES ON STREET ROAD AND WILMINGTON PIKE SHALL PROVIDE A SELECTIVE YELLOW OF 4 SECONDS FOLLOWED BY A SELECTIVE RED INTERVAL OF 2 SECONDS FOLLOWED BY A GREEN INDICATION FOR THE PHASE GOVERNING THE APPROACH OF THE EMERGENCY VEHICLE TO THE INTERSECTION AND A RED INDICATION FOR ALL OTHER APPROACHES.

TO PRE-EMPTION PHASE A:
 ANY <G> OR G INDICATION EXCEPT THE <G> OR G INDICATIONS FOR SIGNALS 1, 2 & 3 SHALL BE FOLLOWED BY INTERVAL 21 & 22 BEFORE GOING INTO PRE-EMPTION INTERVAL 23. IF PRE-EMPTION OCCURS WHEN SIGNALS 1, 2 & 3 ARE <G> OR G, THEY SHALL REMAIN <G> OR G GOING TO PRE-EMPTION INTERVAL 23.
 ANY Y INDICATION SHALL TIME OUT FOLLOWED BY INTERVAL 22 & PRE-EMPTION INTERVAL 23.
 ANY R INDICATION SHALL TIME OUT FOLLOWED BY PRE-EMPTION INTERVAL 23.
 IF PRE-EMPTION OCCURS WHEN IN PRE-EMPTION A, B, C OR D, THAT PRE-EMPTION PHASE WILL TIME OUT BEFORE GOING TO INTERVAL 23.

TO PRE-EMPTION PHASE B:
 ANY <G> OR G INDICATION EXCEPT THE <G> OR G INDICATIONS FOR SIGNALS 4, 5, & 6 SHALL BE FOLLOWED BY INTERVAL 26 & 27 BEFORE GOING INTO PRE-EMPTION INTERVAL 28. IF PRE-EMPTION OCCURS WHEN SIGNALS 4, 5 & 6 ARE <G> OR G, THEY SHALL REMAIN <G> OR G GOING TO PRE-EMPTION INTERVAL 28.
 ANY Y INDICATION SHALL TIME OUT FOLLOWED BY INTERVAL 27 & PRE-EMPTION INTERVAL 28.
 ANY R INDICATION SHALL TIME OUT FOLLOWED BY PRE-EMPTION INTERVAL 28.
 IF PRE-EMPTION OCCURS WHEN IN PRE-EMPTION A, C OR D, THAT PRE-EMPTION PHASE WILL TIME OUT BEFORE GOING TO INTERVAL 28.

TO PRE-EMPTION PHASE C:
 ANY <G> OR G INDICATION EXCEPT THE <G> OR G INDICATIONS FOR SIGNALS 7 & 8 SHALL BE FOLLOWED BY INTERVAL 32 & 33 BEFORE GOING INTO PRE-EMPTION INTERVAL 34. IF PRE-EMPTION OCCURS WHEN SIGNALS 7 & 8 ARE <G> OR G, THEY SHALL REMAIN <G> OR G GOING TO PRE-EMPTION INTERVAL 34.
 ANY Y INDICATION SHALL TIME OUT FOLLOWED BY INTERVAL 33 & PRE-EMPTION INTERVAL 34.
 ANY R INDICATION SHALL TIME OUT FOLLOWED BY PRE-EMPTION INTERVAL 34.
 IF PRE-EMPTION OCCURS WHEN IN PRE-EMPTION A, B OR C, THAT PRE-EMPTION PHASE WILL TIME OUT BEFORE GOING TO INTERVAL 34.

TO PRE-EMPTION PHASE D:
 ANY <G> OR G INDICATION EXCEPT THE <G> OR G INDICATIONS FOR SIGNALS 9 & 10 SHALL BE FOLLOWED BY INTERVAL 36 & 37 BEFORE GOING INTO PRE-EMPTION INTERVAL 38. IF PRE-EMPTION OCCURS WHEN SIGNALS 9 & 10 ARE <G> OR G, THEY SHALL REMAIN <G> OR G GOING TO PRE-EMPTION INTERVAL 38.
 ANY Y INDICATION SHALL TIME OUT FOLLOWED BY INTERVAL 37 & PRE-EMPTION INTERVAL 38.
 ANY R INDICATION SHALL TIME OUT FOLLOWED BY PRE-EMPTION INTERVAL 38.
 IF PRE-EMPTION OCCURS WHEN IN PRE-EMPTION A, B OR C, THAT PRE-EMPTION PHASE WILL TIME OUT BEFORE GOING TO INTERVAL 38.

IF PRE-EMPTION OCCURS DURING FLASHING:
 ALL SIGNALS SHALL REMAIN FLASHING.

IN RETURNING TO NORMAL OPERATION FROM PRE-EMPTION PHASE A:
 FROM PRE-EMPTION INTERVAL 23 SHALL BE FOLLOWED BY INTERVALS 24 & 25. WITH SIGNALS 2 & 3 PROVIDING A G INDICATION DURING INTERVALS 24 & 25. UPON COMPLETION OF INTERVAL 25, PHASE 2+6 INTERVAL 10 SHALL FOLLOW.

IN RETURNING TO NORMAL OPERATION FROM PRE-EMPTION PHASE B:
 FROM PRE-EMPTION INTERVAL 28 SHALL BE FOLLOWED BY INTERVALS 29 & 30. WITH SIGNALS 5 & 6 PROVIDING A G INDICATION DURING INTERVALS 29 & 30. UPON COMPLETION OF INTERVAL 30, PHASE 2+6 INTERVAL 10 SHALL FOLLOW.

IN RETURNING TO NORMAL OPERATION FROM PRE-EMPTION PHASE C:
 FROM PRE-EMPTION INTERVAL 34 SHALL BE FOLLOWED BY INTERVALS 34 & 35. UPON COMPLETION OF INTERVAL 35, PHASE 2+6 INTERVAL 10 SHALL FOLLOW.

IN RETURNING TO NORMAL OPERATION FROM PRE-EMPTION PHASE D:
 FROM PRE-EMPTION INTERVAL 38 SHALL BE FOLLOWED BY INTERVALS 39 & 40. UPON COMPLETION OF INTERVAL 40, PHASE 2+6 INTERVAL 10 SHALL FOLLOW.

CONFIRMATION OF PRE-EMPTION:
 DURING PRE-EMPTION INTERVALS 21, 26, 31 & 36, A FLASHING WHITE FLOOD LIGHT MOUNTED OVERHEAD FACING THE EMERGENCY VEHICLE'S DIRECTION OF TRAVEL SHALL BE ILLUMINATED, CONFIRMING THAT PRE-EMPTION HAS BEEN ENABLED.

TO PRE-EMPTION PHASE C:
 ANY <G> OR G INDICATION EXCEPT THE <G> OR G INDICATIONS FOR SIGNALS 9 & 10 SHALL BE FOLLOWED BY INTERVAL 31 & 32 BEFORE GOING INTO PRE-EMPTION INTERVAL 33. IF PRE-EMPTION OCCURS WHEN SIGNALS 9 & 10 ARE <G> OR G, THEY SHALL REMAIN <G> OR G GOING TO PRE-EMPTION INTERVAL 33.
 ANY Y INDICATION SHALL TIME OUT FOLLOWED BY INTERVAL 32 & PRE-EMPTION INTERVAL 33.
 ANY R INDICATION SHALL TIME OUT FOLLOWED BY PRE-EMPTION INTERVAL 33.
 IF PRE-EMPTION OCCURS WHEN IN PRE-EMPTION A, B OR D, THAT PRE-EMPTION PHASE WILL TIME OUT BEFORE GOING TO INTERVAL 33.

TO PRE-EMPTION PHASE D:
 ANY <G> OR G INDICATION EXCEPT THE <G> OR G INDICATIONS FOR SIGNALS 7 & 8 SHALL BE FOLLOWED BY INTERVAL 36 & 37 BEFORE GOING INTO PRE-EMPTION INTERVAL 38. IF PRE-EMPTION OCCURS WHEN SIGNALS 7 & 8 ARE <G> OR G, THEY SHALL REMAIN <G> OR G GOING TO PRE-EMPTION INTERVAL 38.
 ANY Y INDICATION SHALL TIME OUT FOLLOWED BY INTERVAL 37 & PRE-EMPTION INTERVAL 38.
 ANY R INDICATION SHALL TIME OUT FOLLOWED BY PRE-EMPTION INTERVAL 38.
 IF PRE-EMPTION OCCURS WHEN IN PRE-EMPTION A, B OR C, THAT PRE-EMPTION PHASE WILL TIME OUT BEFORE GOING TO INTERVAL 38.

IF PRE-EMPTION OCCURS DURING FLASHING:
 ALL SIGNALS SHALL REMAIN FLASHING.

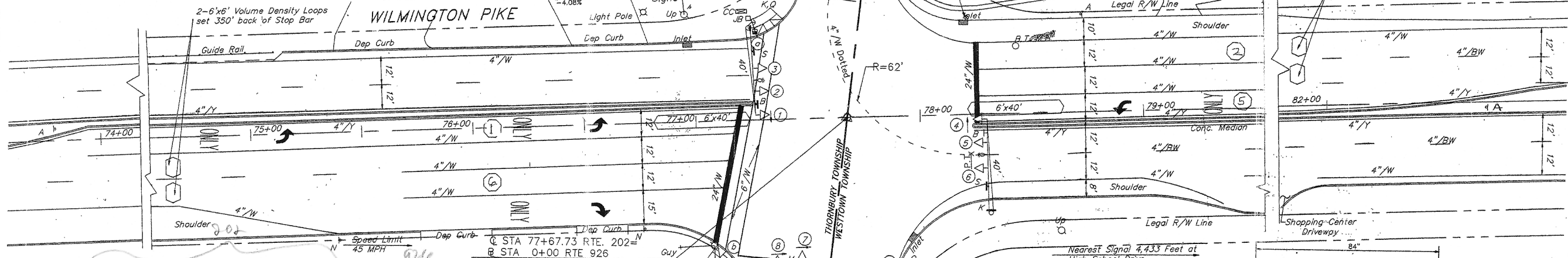
IN RETURNING TO NORMAL OPERATION FROM PRE-EMPTION PHASE A:
 FROM PRE-EMPTION INTERVAL 23 SHALL BE FOLLOWED BY INTERVALS 24 & 25. WITH SIGNALS 2 & 3 PROVIDING A G INDICATION DURING INTERVALS 24 & 25. UPON COMPLETION OF INTERVAL 25, PHASE 2+6 INTERVAL 10 SHALL FOLLOW.

IN RETURNING TO NORMAL OPERATION FROM PRE-EMPTION PHASE B:
 FROM PRE-EMPTION INTERVAL 28 SHALL BE FOLLOWED BY INTERVALS 29 & 30. WITH SIGNALS 5 & 6 PROVIDING A G INDICATION DURING INTERVALS 29 & 30. UPON COMPLETION OF INTERVAL 30, PHASE 2+6 INTERVAL 10 SHALL FOLLOW.

IN RETURNING TO NORMAL OPERATION FROM PRE-EMPTION PHASE C:
 FROM PRE-EMPTION INTERVAL 34 SHALL BE FOLLOWED BY INTERVALS 34 & 35. UPON COMPLETION OF INTERVAL 35, PHASE 2+6 INTERVAL 10 SHALL FOLLOW.

IN RETURNING TO NORMAL OPERATION FROM PRE-EMPTION PHASE D:
 FROM PRE-EMPTION INTERVAL 38 SHALL BE FOLLOWED BY INTERVALS 39 & 40. UPON COMPLETION OF INTERVAL 40, PHASE 2+6 INTERVAL 10 SHALL FOLLOW.

CONFIRMATION OF PRE-EMPTION:
 DURING PRE-EMPTION INTERVALS 21, 26, 31 & 36, A FLASHING WHITE FLOOD LIGHT MOUNTED OVERHEAD FACING THE EMERGENCY VEHICLE'S DIRECTION OF TRAVEL SHALL BE ILLUMINATED, CONFIRMING THAT PRE-EMPTION HAS BEEN ENABLED.



MOVEMENT, SEQUENCE AND TIMING DIAGRAM

PHASE	INTERVAL	1+5	2+6	3	4	EMERGENCY FLASHING
1	1	R	R	R	R	OFF
2,3	2	R	R	R	R	OFF
4	3	R	R	R	R	OFF
5,6	4	R	R	R	R	OFF
7	5	R	R	R	R	OFF
8	6	R	R	R	R	OFF
9	7	R	R	R	R	OFF
10	8	R	R	R	R	OFF
a,b	9	DW	DW	DW	DW	OFF
c,d	10	DW	DW	DW	DW	OFF
FIXED		4	2	4	2	
MINIMUM SEC/ACT		3	3	3	3	
MAX INIT PASSAGE		3	3	3	3	
T.T.R.		12	12	12	12	
MIN. GAP		12	12	12	12	
MAXIMUM MEMORY		12	12	12	12	

OPERATION NOTES

- IF FOLLOWED BY 1+6
- IF FOLLOWED BY 1+5
- G IF FOLLOWED BY 2+6
- G IF FOLLOWED BY 1+6
- IF FOLLOWED BY 2+5
- G IF FOLLOWED BY 2+5
- PEDESTRIAN TIMING TO BE COMPLETED IN PHASE 2+6

MAX II TO OPERATE MONDAY-SATURDAY 6 A.M. - 9 A.M., MAX I TO OPERATE AT ALL OTHER TIMES.

* UPON PEDESTRIAN ACTUATION, OTHERWISE DON'T WALK AT ALL TIMES

1123

GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.

ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 68.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF ACT 38, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, EFFECTIVE DATE: DECEMBER 12, 1991.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT FOR REVIEW PRIOR TO BIDDING.

PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-7800 SERIES.

LEGEND

- EXISTING MAIST ARM/IDENTIFYING LENGTH
- PROPOSED MAIST ARM/IDENTIFYING LENGTH
- EXISTING PEDESTAL
- PROPOSED PEDESTAL
- VEHICULAR SIGNAL HEAD/BACKPLATE/VISORS/DIRECTIONAL ARROW/IDENTIFYING NUMBER
- PEDESTRIAN SIGNAL HEAD/IDENTIFYING NUMBER
- PEDESTRIAN PUSHBUTTON/SIGN
- LOOP SENSOR/SIZE
- MICROWAVE DETECTOR
- EMERGENCY PREEMPTION CUT
- CURB CUT RAMP
- UTILITY POLE
- PHASE NUMBER
- SIGN/IDENTIFYING LETTER

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: CHESTER
MUNICIPALITY: WESTTOWN TWP./THORNBURY TWP.
INTERSECTION: WILMINGTON PIKE (S.R. 0202)
STREET ROAD (S.R. 0926)

REVIEWED: [Signature] DATE 8 January 1997
MUNICIPAL OFFICIAL [Signature] DATE
RECOMMENDED: [Signature] DATE 3-7-97
[Signature] DATE May 3/10/97
DISTRICT TRAFFIC ENGINEER [Signature] DATE

REVISION	REVISION	DES./REV.	DATE	REV.	DATE	RECOM.	DATE
1	MODERNIZATION	WJ	10-2-97	WJ	3/9/97	WJ	3/10/97
2	TIMING ADJ. MAX II	BRB	10-2-97	BRB	10/2/97	BRB	10/2/97
3	Timing Change	SHG	10/2/97	SHG	10/2/97	SHG	10/2/97
4	Timing Change	SHG	10/2/97	SHG	10/2/97	SHG	10/2/97

SHEET 2 OF 2 PERMIT # 62-1123 FILE # 1123

SIGNAL INDICATIONS

4.5" LETTERS 12" LENS 12" LENS 12" LENS

WALK

DON'T WALK

1,4

2,3,5,6

7,8,9

10

SIGNAL TO BE EQUIPPED WITH TUNNEL VISORS & LOUVERS, RED LENS ONLY 1,4

SIGN TABULATION

PLAN SYMBOL	SERIES NUMBER	SIZE (INCHES)	REMARKS
A	R3-7L	30X30	LEFT LANE MUST TURN LEFT
B	R10-10L	30X36	LEFT TURN SIGNAL
C	R10-11	30X36	NO TURN ON RED
D	R10-6L	24X30	STOP HERE ON RED
E	R3-6SLR	30X36	OPTIONAL LEFT, STRAIGHT AND RIGHT TURN SIGNAL
F	R3-6L	30X36	LEFT TURN SIGNAL
G	R3-6R	30X36	RIGHT TURN SIGNAL
J	R3-5S	30X36	STRAIGHT THROUGH SIGN
K	R9-3	18X18	NO PEDESTRIAN CROSSING
M	R10-21	24X30	WAIT FOR GREEN
N	R3-7R	30X30	RIGHT LANE MUST TURN RIGHT
P	R10-4	9X18	PUSH BUTTON FOR WALK SIGNAL
Q	R10-4	9X18	PUSH BUTTON FOR WALK SIGNAL
W	D3-4	16X96	WILMINGTON PK
S	D3-4	16X84	STREET RD

