

MOVEMENT, SEQUENCE, AND TIMING DIAGRAM

PHASE	1+6				2+6				4+8				FLASH
INTERVAL	1	2	3	4	5	6	7	8	9	10	11	12	
1	G	G	Y	R	G	G	Y	R	R	R	R	R	Y
2,3	G	G	Y	R	G	G	Y	R	R	R	R	R	Y
4,5,6	R	R	R	R	G	G	Y	R	R	R	R	R	Y
7,8,9	R	R	R	R	R	R	R	R	G	G	Y	R	R
10,11,12	R	R	R	R	R	R	R	R	R	G	Y	R	R
13,14	M	FH	H	H	M	FH	H	H	H	H	H	H	OFF
15,16	H	H	H	H	H	H	H	H	M	FH	H	H	OFF

FIXED		4	3		4	3		4	3
MINIMUM	5			10			5		
PASSAGE	3			3			3		
MAX 1	7			37			20		
MAX 2	7			24			20		
PEDESTRIAN*	③			7	22		7	11	
MEMORY	NL			MX			NL		

REFER TO SYSTEM PERMIT #1-0057 FOR PROGRAM TIMINGS AND WEEKLY PROGRAM CHART

OPERATION NOTES

- ① G IF FOLLOWED BY 2+6
- ② G IF FOLLOWED BY 2+6
- ③ TIMING WILL BE AS SHOWN IN PHASE 2+6. IT MAY TIME OUT IN THIS PHASE OR BE COMPLETED IN PHASE 2+6
- CONTROLLER TO DWELL IN PHASE 2+6 UNTIL ACTUATED BY PHASE 4+8
- UPON PEDESTRIAN ACTUATION, OTHERWISE HAND SYMBOL AT ALL TIMES
- PEDESTRIAN COUNTDOWN TIMER TO COUNT DOWN DURING FLASHING HAND INTERVAL

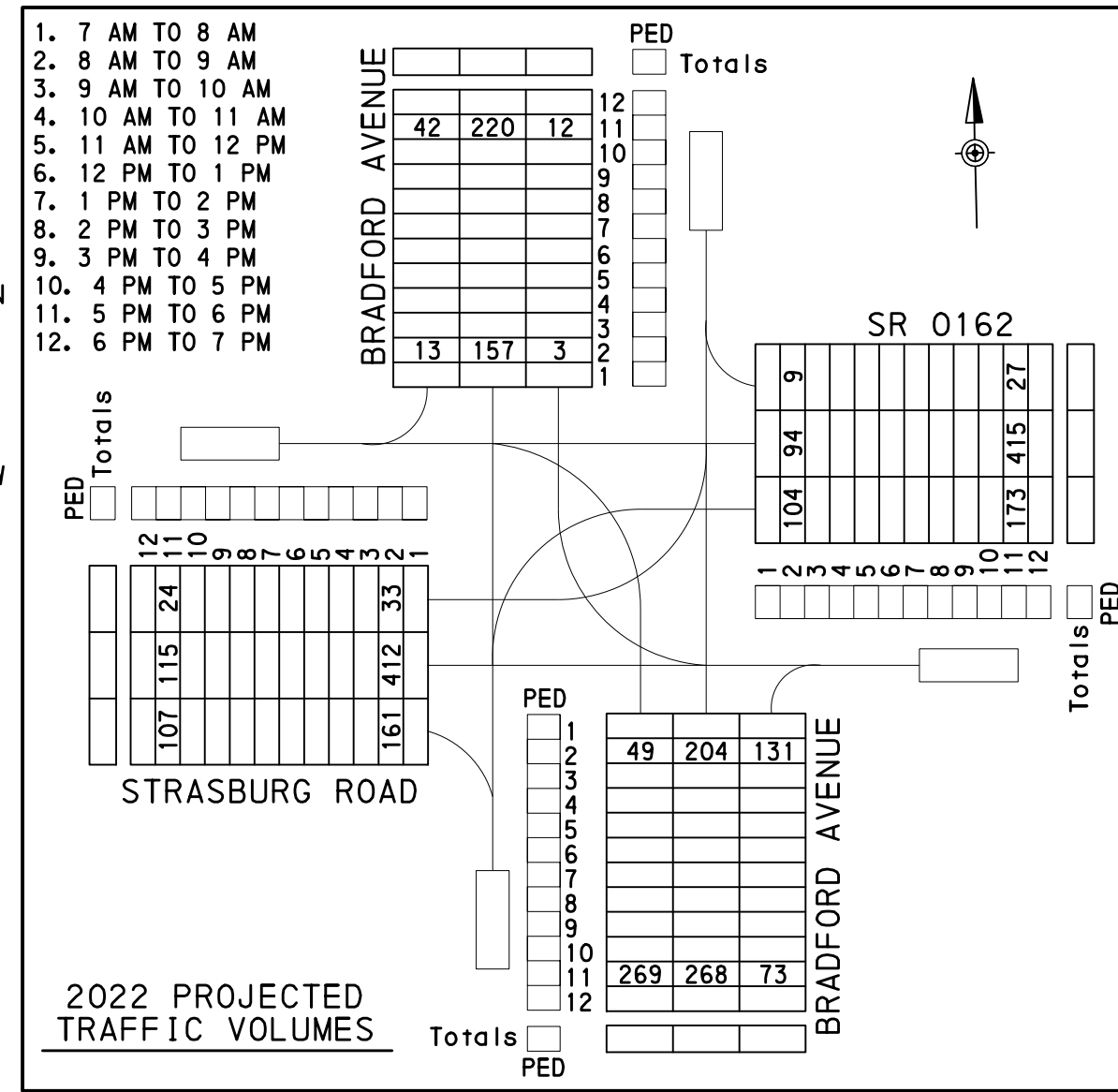
EMERGENCY PRE-EMPTION PHASING MOVEMENT, SEQUENCE, AND TIMING DIAGRAM

PHASE	1				2				3				4				5				6				7				8							
INTERVAL	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
1	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
2,3	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
4,5,6	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
7,8,9	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
10,11,12	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
13,14	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
15,16	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
FIXED	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲

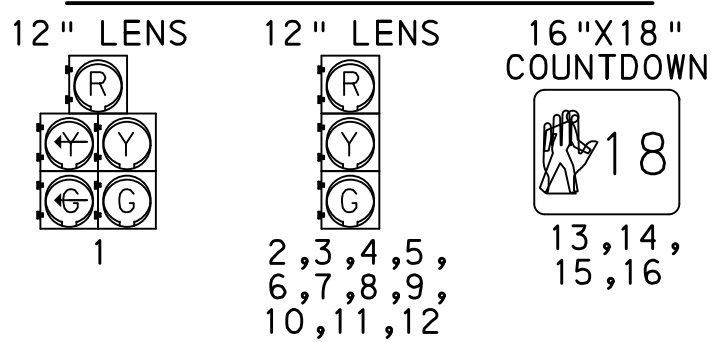
- ▲ FOR DURATION OF PRE-EMPTION
- NOTE: IF PRE-EMPTION EQUIPMENT HAS ENCODING CAPABILITIES FOR VEHICLE IDENTIFICATION, IT IS RECOMMENDED TO HAVE THE ZERO "00" FEATURE ON, TO GIVE UNCODED EMITTERS THE ABILITY TO ACTIVATE THE EMERGENCY PRE-EMPTION.
- EMERGENCY PRE-EMPTION OPERATION NOTES
- ⓐ SIGNAL TO INDICATE G WHEN RETURNING TO NORMAL OPERATION
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EMERGENCY PRE-EMPTION NOTES:

- CONTROLLER TO BE EQUIPPED WITH EMERGENCY PRE-EMPTION FOR THE NORTHBOUND AND SOUTHBOUND APPROACHES OF BRADFORD AVENUE AND THE EASTBOUND AND WESTBOUND APPROACHES OF STRASBURG ROAD (SR 0162) WITH A FAIL SAFE DEVICE FOR EACH DIRECTION OF OPERATION. THIS EMERGENCY BEACON SHALL CONSIST OF A FLASHING WHITE FLOOD LIGHT, AND SHALL FLASH WHEN THE EMERGENCY VEHICLE HAS CONTROL OF THE INTERSECTION FOR THE APPROPRIATE APPROACH.
- THE SIGNALS, WHEN ACTIVATED BY EMERGENCY VEHICLE, SHALL TERMINATE ALL GREEN INDICATIONS IMMEDIATELY, FOLLOWED BY THE COMPLETE YELLOW AND RED CLEARANCE INTERVALS. ACCORDINGLY, THEN THE GREEN INTERVAL FOR THE PRE-EMPTION PHASE SHALL FOLLOW. ONLY THOSE PHASES NOT POSING A YELLOW TRAP CONDITION MAY REMAIN GREEN (1+6) WHEN GOVERNED BY APPROACHING EMERGENCY VEHICLE.
- THE SIGNALS, WHEN ACTIVATED BY EMERGENCY VEHICLE SHALL TIME OUT ALL YELLOW AND RED INDICATIONS, FOLLOWED BY THE GREEN INTERVAL OF THE PRE-EMPTION PHASE GOVERNED BY THE APPROACHING EMERGENCY VEHICLE.
- IF THE SIGNAL HAS BEEN ACTUATED BY A PEDESTRIAN PUSH BUTTON AND THE SIGNAL IS PRE-EMPTED THE PED "WALK (MAN)" INTERVAL SHALL TERMINATE IMMEDIATELY AND THE PED "CLEAR (FLASHING HAND AND COUNTDOWN TIMER)" INTERVAL SHALL TIME OUT THIS INTERVAL, FOLLOWED BY THE APPROPRIATE SELECTIVE CLEARANCES BEFORE GOING INTO EMERGENCY PRE-EMPTION.
- IF THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, ARE FLASHING ALL SIGNALS SHALL REMAIN FLASHING.
- IF ADDITIONAL PRE-EMPTION PHASES ARE ACTIVATED WHILE IN PRE-EMPTION, THE ORIGINAL PRE-EMPTION PHASE SHALL TIME OUT BEFORE PROCEEDING TO THE NEXT PRE-EMPTION PHASE.
- UPON COMPLETION OF PRE-EMPTION PHASE 2,4,6 OR 8 IN RETURNING TO NORMAL OPERATION, PHASE 2+6 INTERVAL 5 SHALL FOLLOW.
- IN EMERGENCY PRE-EMPTION, NO PRIORITY SHALL BE ESTABLISHED, PRE-EMPTION SHALL BE A "FIRST COME, FIRST SERVE" OPERATION.
- LOCATION OF EMERGENCY VEHICLE DETECTORS ARE TO BE FIELD ADJUSTED TO ACHIEVE MAXIMUM OPERATION.



SIGNAL INDICATIONS



SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS AND LOUVERS: 7,8

REFER TO SYSTEM PERMIT #1-0057 FOR PROGRAM TIMINGS AND WEEKLY PROGRAM CHART

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P:\PTD-PW-15... tpd... 2/16/2019

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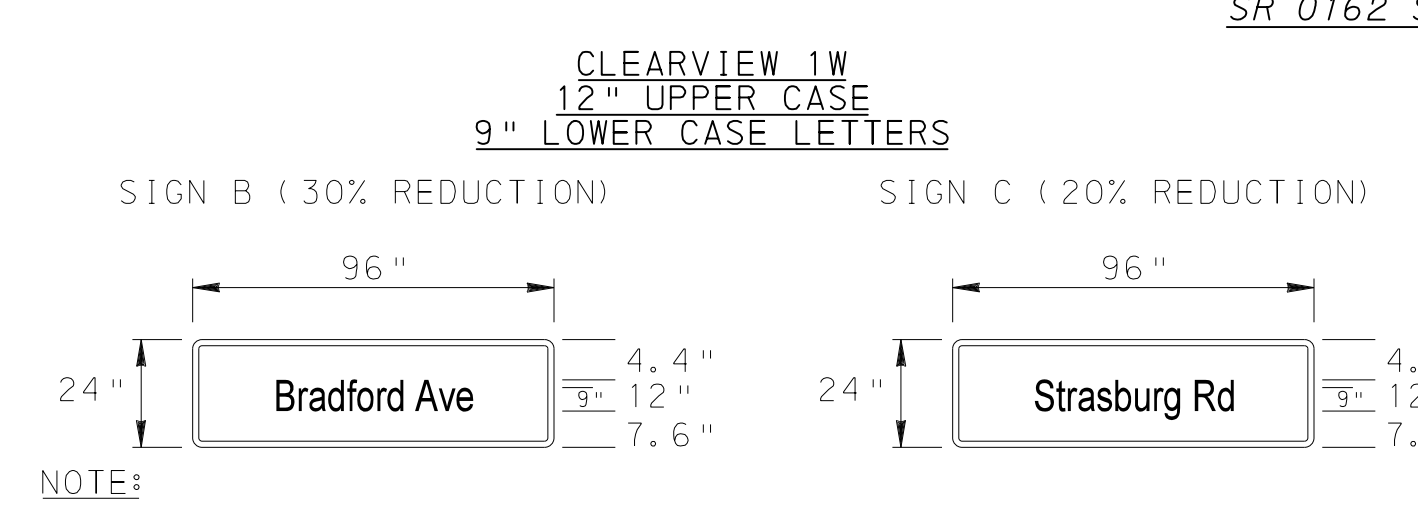
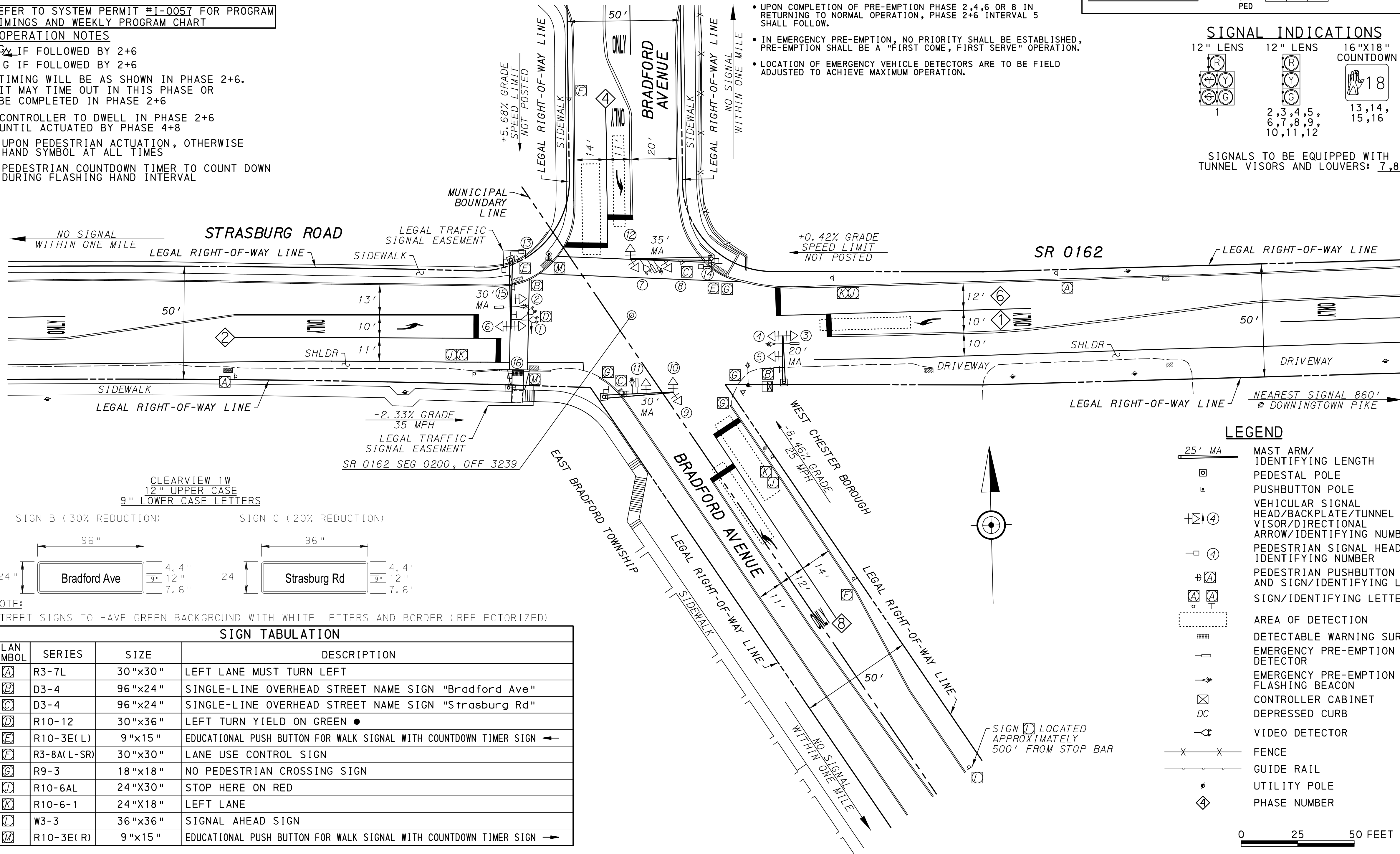
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PLAN SYMBOL	SERIES	SIZE	DESCRIPTION
	R3-7L	30"x30"	LEFT LANE MUST TURN LEFT
	D3-4	96"x24"	SINGLE-LINE OVERHEAD STREET NAME SIGN "Bradford Ave"
	D3-4	96"x24"	SINGLE-LINE OVERHEAD STREET NAME SIGN "Strasburg Rd"
	R10-12	30"x36"	LEFT TURN YIELD ON GREEN
	R10-3E(L)	9"x15"	EDUCATIONAL PUSH BUTTON FOR WALK SIGNAL WITH COUNTDOWN TIMER SIGN
	R3-8A(L-SR)	30"x30"	LANE USE CONTROL SIGN
	R9-3	18"x18"	NO PEDESTRIAN CROSSING SIGN
	R10-6AL	24"x30"	STOP HERE ON RED
	R10-6-1	24"x18"	LEFT LANE
	W3-3	36"x36"	SIGNAL AHEAD SIGN
	R10-3E(R)	9"x15"	EDUCATIONAL PUSH BUTTON FOR WALK SIGNAL WITH COUNTDOWN TIMER SIGN

LEGEND

- 25' MA MAST ARM/IDENTIFYING LENGTH
- PEDESTAL POLE
- PUSHBUTTON POLE
- VEHICULAR SIGNAL
- HEAD/BACKPLATE/TUNNEL VISOR/DIRECTIONAL ARROW/IDENTIFYING NUMBER
- PEDESTRIAN SIGNAL HEAD/IDENTIFYING NUMBER
- PEDESTRIAN PUSHBUTTON AND SIGN/IDENTIFYING LETTER
- SIGN/IDENTIFYING LETTER
- AREA OF DETECTION
- DETECTABLE WARNING SURFACE
- EMERGENCY PRE-EMPTION DETECTOR
- EMERGENCY PRE-EMPTION FLASHING BEACON
- CONTROLLER CABINET
- DEPRESSED CURB
- VIDEO DETECTOR
- FENCE
- GUIDE RAIL
- UTILITY POLE
- PHASE NUMBER

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. 212.
- 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 THE LATEST AMENDMENT TO ACT 287, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, DATED DECEMBER 20, 1974.
- 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-8800 SERIES.

SYSTEM PERMIT # 1-0057

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: CHESTER
MUNICIPALITY: WEST CHESTER BOROUGH/EAST BRADFORD TOWNSHIP
INTERSECTION: STRASBURG ROAD (SR 0162) & BRADFORD AVENUE

REVIEWED: **NOT FOR CONSTRUCTION**
CONTRACTOR TO OBTAIN SIGNED SIGNAL PLANS

MUNICIPAL OFFICIAL: _____ DATE: _____

RECOMMENDED: MARK L KRAY 9/17/91
DISTRICT TRAFFIC ENGINEER: DOUGLAS MAY 9/23/91
DATE: _____

NO	REVISION	DES/REVW	DATE	REVW	DATE	RECOM	DATE
1	CORR LANE WIDTH	NV	12/18/91	MK	1/2/92	DWM	1/2/92
2	ADD SIGNS J, K & L; CHANGE TIMING	NV	2/12/92	MK	2/18/92	DWM	2/18/92
3	ADD NORTHBOUND LEFT TURN SIGNAL MODERNIZATION, UPGRADE PED FACILITIES	TPD	7/2/10	LUTZ	7/2/10	LRB	7/7/10
4	AS-BUILT PLAN	TPD	8/28/12	LUTZ	8/28/12	LRB	9/5/12
5	RESTRIPE NO DEP FOR LEFT TURN LANE; UPGRADE RAMP & REPLACE PEDESTAL ON SWC; UPDATE CLEARANCE TIMES, ADD LATCHING LED PPS	TPD	11/7/19				
6							
7							
8							

GENERAL NOTES

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

REFER TO TRAFFIC SIGNAL PERMIT DRAWING FOR INDIVIDUAL INTERSECTION OPERATION, GEOMETRY, PHASING AND CRITICAL TIMES.

FOR CONSTRUCTION AND INSPECTION THE SYSTEM PERMIT SHOULD ALWAYS BE ACCOMPANIED WITH TRAFFIC SIGNAL PERMIT DRAWING.

TEST THE SYSTEM AT LOCAL INTERSECTION LEVEL, SUBSYSTEM LEVEL MASTER CONTROLLER LEVEL AND PERSONAL COMPUTER REMOTE DIAL UP LEVEL.

GATHER THE SYSTEM FAILURE CRITICAL ALARMS REPORT AND ARCHIVE THEM WHERE APPLICABLE.

SET UP PENNDOT DISTRICT 6-0 COMPUTER WITH THE SYSTEM DATABASE AND GRAPHICS. MODIFY THE DATABASE AND GRAPHICS FOR SYSTEMS REVISIONS.

ASSIGN LOOP DETECTORS AND PROGRAM THE CONTROLLERS TO GATHER TRAFFIC VOLUMES IN 15 MINUTE INTERVAL, WHERE APPLICABLE.

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

OBTAIN POLE ATTACHMENT PERMIT FOR AERIAL FIBER OPTIC INSTALLATION.

MAINTAIN MASTER CONTROLLER COMMUNICATION SUCH AS PHONE DROPS.

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 THE LATEST AMENDMENT TO ACT 287, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, DATED DECEMBER 20, 1974.

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-8800 SERIES.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: CHESTER

MUNICIPALITY: WEST CHESTER BOROUGH

INTERSECTION: TRAFFIC SIGNAL SYSTEM

REVIEW **NOT FOR CONSTRUCTION**
CONTRACTOR TO OBTAIN
SIGNED SIGNAL PLANS

DATE
7/1/10

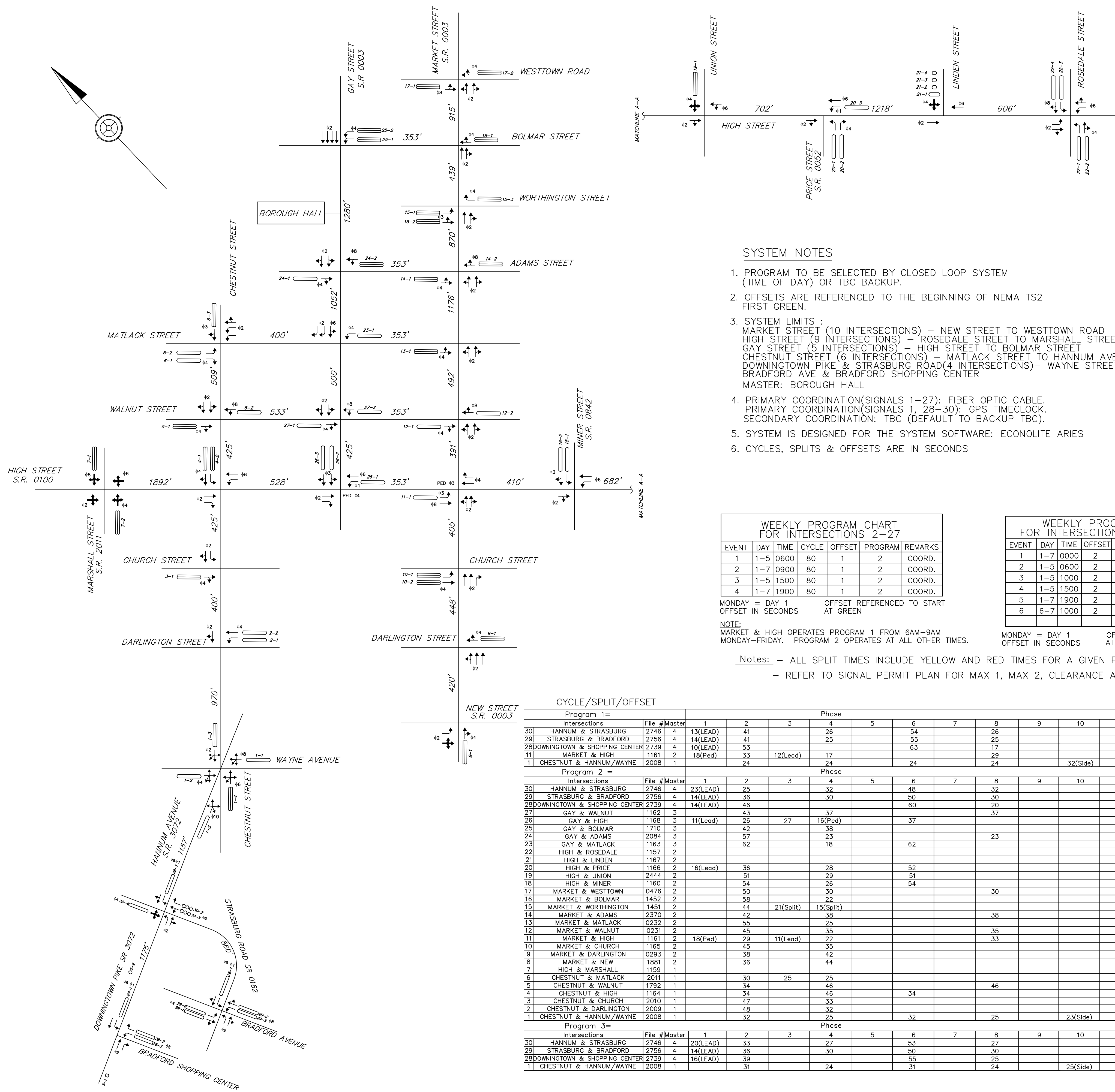
MUNICIPAL OFFICIAL DATE

RECOMMENDED:
A.B. PATEL 5/20/03

L. R. BELMONTE 5/29/03
DISTRICT TRAFFIC ENGINEER DATE

NO.	REVISION	DES./REVW.	DATE	REVW.	DATE	RECOM.	DATE
1	ADDED INTERSECTIONS 28, 29, & 30	TPD	7/3/10	LUTZ	7/2/10	LRB	7/1/10
2	REVISED PHASING INTERSECTION 23	H&K	5/9/13	LUTZ	8/27/13	ABP	8/27/13
3	MODIFY TIMINGS AT INTERSECTION #29	TPD	11/7/19				
4							
5							
6							
7							
8							

SYSTEM PERMIT # I-0056, I-0057, I-0058



NOT TO SCALE

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