

MOVEMENT, SEQUENCE, AND TIMING DIAGRAM

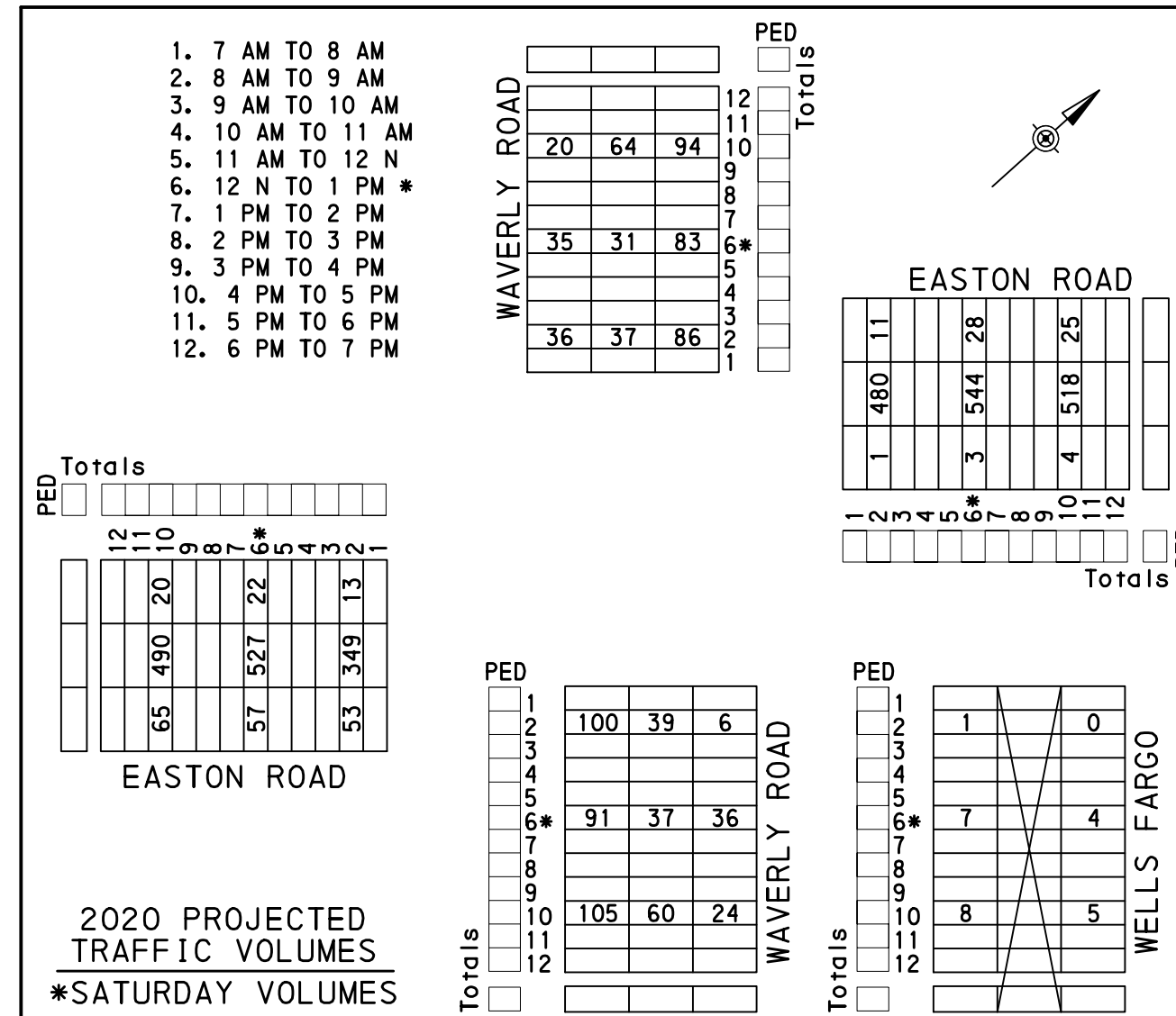
		2+6				4+8				9			
PHASE	INTERVAL	1	2	3	4	5	6	7	8	9	10	11	FLASH
1,2	G	G	Y	R	R	R	R	R	R	R	R	R	Y
3,4	G	G	Y	R	R	R	R	R	R	R	R	R	Y
5,6	R	R	R	R	G	G	Y	R	R	R	R	R	R
7,8,9	R	R	R	R	G	G	Y	R	R	R	R	R	R
10,11	R	R	R	R	R	R	R	G	Y	R	R	R	R
12,13,14,15	M	FH	H	H	H	H	H	H	H	H	H	H	OFF
16,17,18,19	H	H	H	H	M	FH	H	H	H	H	H	H	OFF

FIXED			3	4		3	3		3	5
MINIMUM	20				3				3	
PASSAGE					3				3	
MAX 1	30				18				6	
MAX 2	38				25				6	
PEDESTRIAN*	7	19			7	16				
MEMORY	MX				NL				NL	

REFER TO SYSTEM PERMIT #1-0167 FOR PROGRAM TIMINGS AND WEEKLY PROGRAM CHART

- * UPON PEDESTRIAN ACTUATION, OTHERWISE HAND SYMBOL AT ALL TIMES
- PEDESTRIAN COUNTDOWN TIMER TO COUNT DOWN DURING FLASHING HAND INTERVAL

- SIGNAL SHALL BE EQUIPPED WITH ACCESSIBLE PEDESTRIAN SIGNALS (APS) WITH THE FOLLOWING FEATURES:
 - ADA COMPLIANT PUSHBUTTON WITH LATCHING LED INDICATOR AND TONE.
 - A TACTILE DIRECTIONAL ARROW ALIGNED PARALLEL TO THE CROSSING AND WHICH VIBRATES DURING THE WALK INDICATION.
 - A PUSHBUTTON LOCATOR TONE. THE LOCATOR TONE SHALL HAVE A DURATION OF 0.15 SECONDS AND REPEAT AT 1 SECOND INTERVALS, SHALL BE INTENSITY RESPONSIVE TO AMBIENT SOUND, AND AUDIBLE FROM 6 TO 12 FEET FROM THE PUSHBUTTON.
 - ACTUATION OF THE PEDESTRIAN PUSHBUTTON SHALL BE ACCOMPANIED BY THE SPEECH MESSAGE "WAIT" WHEN THE WALK INTERVAL IS NOT TIMING.
 - THE WALK INDICATION SHALL BE AN AUDIBLE PERCUSSIVE TONE. THE AUDIBLE TONE SHALL CONSIST OF 8 TO 10 RAPID TICKS PER SECOND.



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 # 1-0167

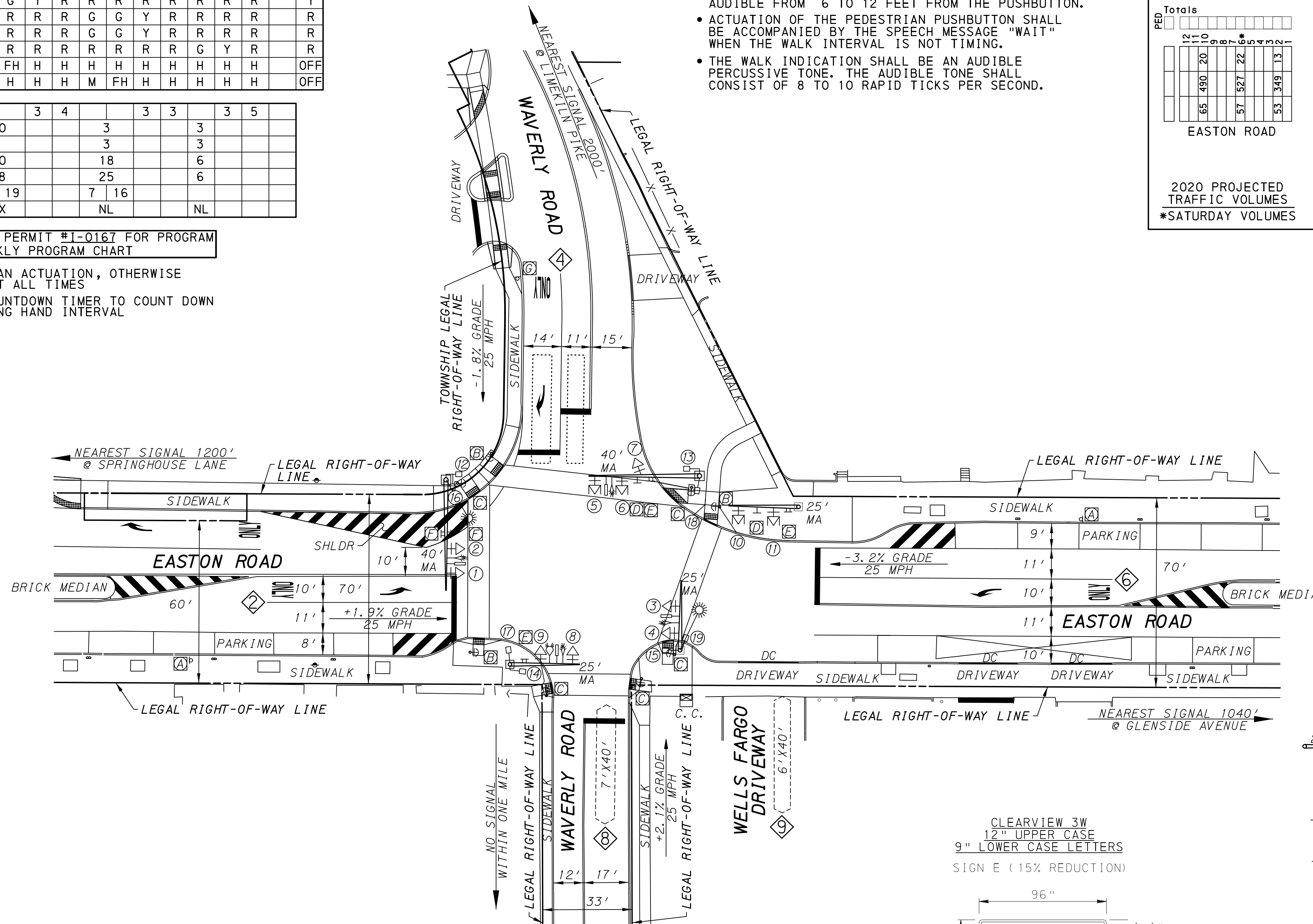
PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: MONTGOMERY
MUNICIPALITY: CHELTENHAM TOWNSHIP
INTERSECTION: EASTON ROAD AND
WAVERLY ROAD

REVIEWED: _____ DATE _____
MUNICIPAL OFFICIAL _____ DATE _____

RECOMMENDED: _____
ASHWIN B. PATEL 7/26/07
DISTRICT TRAFFIC ENGINEER DATE

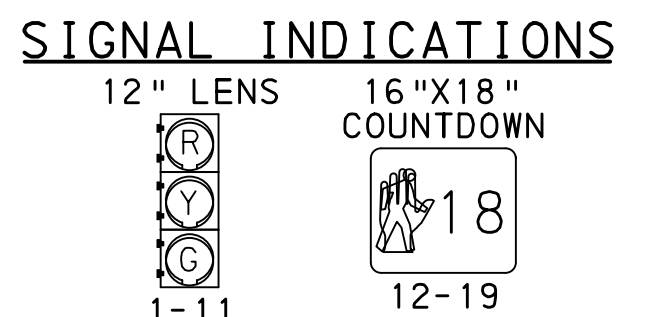
NO	REVISION	DES/REVW	DATE	REVW	DATE	RECOM	DATE
1	SR 0000 GCD AS-BUILT	JLH	12/14/10	DLA	1/3/11	ABP	1/3/11
2	REALIGN WEST LEG; REMOVE L1 PHASES; ADD INFUSE CORNER MARK; REPLACE SW CORNER MARK; ADD VIDEO DETECTION TO WEST LEG; UPGRADE H/W & ADA	TPD	11/18/19				
3							
4							
5							
6							
7							
8							



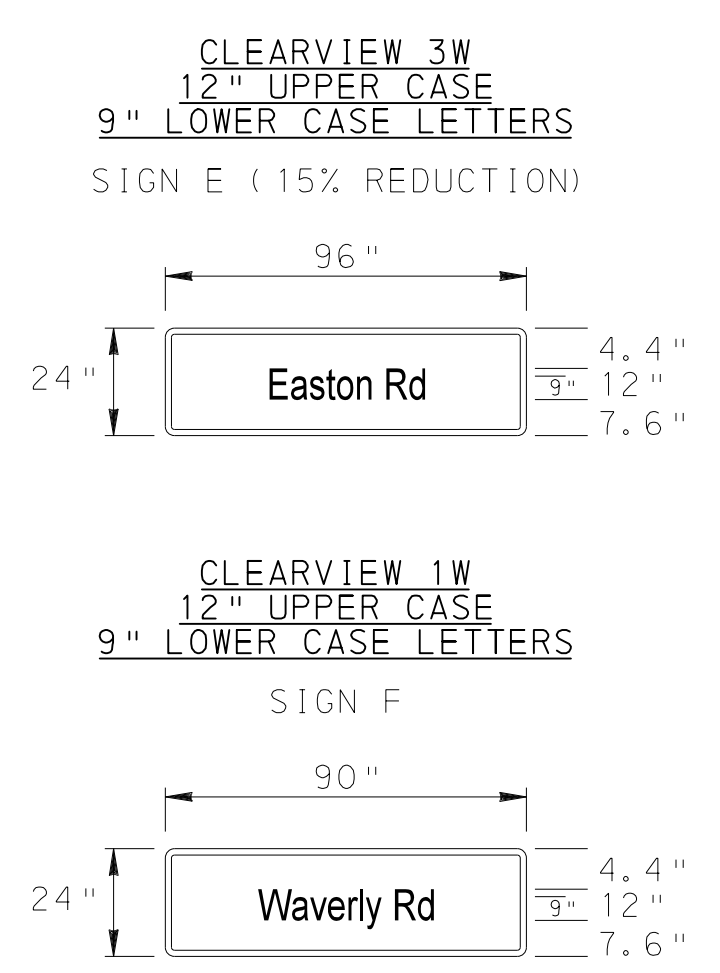
NOT FOR CONSTRUCTION
CONTRACTOR TO OBTAIN SIGNED SIGNAL PLANS

SIGN TABULATION

PLAN SYMBOL	SERIES	SIZE	DESCRIPTION
(A)	R3-7L	30"x30"	LEFT LANE MUST TURN LEFT
(B)	R10-3E(R)	9"x15"	EDUCATIONAL PUSH BUTTON FOR WALK SIGNAL WITH COUNTDOWN TIMER SIGN
(C)	R10-3E(L)	9"x15"	EDUCATIONAL PUSH BUTTON FOR WALK SIGNAL WITH COUNTDOWN TIMER SIGN
(D)	R10-11	30"x36"	NO TURN ON RED
(E)	D3-4	96"x24"	SINGLE-LINE OVERHEAD STREET NAME SIGN "Easton Rd"
(F)	D3-4	90"x24"	SINGLE-LINE OVERHEAD STREET NAME SIGN "Waverly Rd"
(G)	R3-8A(LS-R)	30"x30"	LANE USE CONTROL SIGN



SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS AND LOUVERS: 5,6,10,11



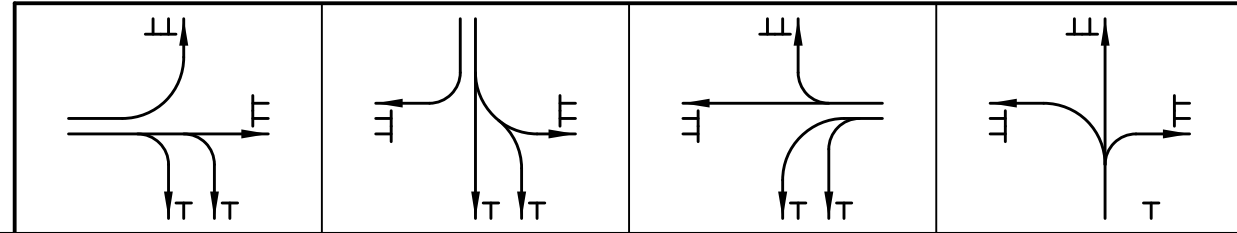
NOTE:
STREET SIGNS TO HAVE BLUE BACKGROUND WITH GOLD LETTERS AND BORDER (REFLECTORIZED)

- LEGEND**
- 25' MA: MAST ARM/IDENTIFYING LENGTH
 - (P): PEDESTAL POLE
 - (PB): PUSHBUTTON POLE
 - (V): VEHICULAR SIGNAL HEAD/BACKPLATE/TUNNEL VISOR/DIRECTIONAL ARROW/IDENTIFYING NUMBER
 - (P): PEDESTRIAN SIGNAL HEAD/IDENTIFYING NUMBER
 - (PB): PEDESTRIAN PUSHBUTTON AND SIGN/IDENTIFYING LETTER SIGN/IDENTIFYING LETTER
 - (L): LOOP SENSOR/SIZE
 - (A): AREA OF DETECTION
 - (D): DETECTABLE WARNING SURFACE
 - (E): EMERGENCY PRE-EMPTION DETECTOR
 - (F): EMERGENCY PRE-EMPTION FLASHING BEACON
 - (C): CONTROLLER CABINET
 - (DC): DEPRESSED CURB
 - (L): LUMINAIRE
 - (V): VIDEO DETECTOR
 - (X): FENCE
 - (U): UTILITY POLE
 - (N): PHASE NUMBER

0 25 50 FEET

P:\17152019\17152019-15.tpd\trf\tpd.com\TPD-Proj\ec\w\es\Documents\sa\Eng\Iner\Ine\PRPV\00040 - G\ens\de\Wava\G\ens\de - Chel\tenham\CADD (HOP - InRoads SS2)\AS\igna\en\T\ie #0993_Rev2.dgn
 11/15/2019 3:00:43 PM Traffic Planning and Design, Inc.

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



PHASE	2			4			6			8		
SIGNAL	12	13	14	15	16	17	18	19	20	21	22	23
1,2	R	R	R	R	R	R	G	Y	R	R	R	R
3,4	G	Y	R	R	R	R	R	R	R	R	R	R
5,6	R	R	R	R	R	R	R	R	R	G	Y	R
7,8,9	R	R	R	G	Y	R	R	R	R	R	R	R
10,11	R	R	R	R	R	R	R	R	R	R	R	R
12,13,14,15	H	H	H	H	H	H	H	H	H	H	H	H
16,17,18,19	H	H	H	H	H	H	H	H	H	H	H	H
FIXED	▲	3	4	▲	3	3	▲	3	4	▲	3	3

▲ 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

EMERGENCY PRE-EMPTION NOTES:

- CONTROLLER TO BE EQUIPPED WITH EMERGENCY PRE-EMPTION FOR THE NORTHBOUND AND SOUTHBOUND APPROACHES OF EASTON ROAD AND THE EASTBOUND AND WESTBOUND APPROACHES OF WAVERLY ROAD 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.
- 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 PUSHBUTTON 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, FOLLOWED BY THE APPROPRIATE SELECTIVE CLEARANCES BEFORE GOING INTO EMERGENCY PREEMPTION.
- 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 1 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.

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 # 1-0167

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: MONTGOMERY
MUNICIPALITY: CHELTENHAM TOWNSHIP
INTERSECTION: EASTON ROAD AND
WAVERLY ROAD

REVIEWED: _____ DATE _____
MUNICIPAL OFFICIAL _____ DATE _____

RECOMMENDED: _____ DATE _____
ASHWIN B. PATEL _____ 7/26/07
DISTRICT TRAFFIC ENGINEER _____ DATE _____

NO	REVISION	DES/REVW	DATE	REVW	DATE	RECOM	DATE
1	SR 0000 GCD AS-BUILT	JLH	12/14/10	DLA	1/3/11	ABP	1/3/11
2	REALIGN WEST LEG; REMOVE LT PHASES; ADD INF. SE CORNER MARK; REPLACE SW CORNER MARK; ADD VIDEO DETECTION TO WEST LEG; UPGRADE H/W & ADA	TPD	11/18/19				
3							
4							
5							
6							
7							
8							

NOT FOR CONSTRUCTION
CONTRACTOR TO OBTAIN
SIGNED SIGNAL PLANS

SHEET 3 OF 3 PERMIT # 64-0993 FILE # 0993