

**Amendment to OPSS 622, April 2017**

**622.07 CONSTRUCTION**

**622.07.02 Controller Supplied by the Contractor**

Subsection 622.07.02 of OPSS 622 is deleted in its entirety and replaced with the following:

When the controller is supplied, all pre-shipping shop tests specified in the Pre-installation Testing and Inspection clause shall be carried out.

Acceptable storage and testing facilities with temperature and humidity regulated environment shall be provided.

Each traffic signal controller cabinet shall be a model 332 traffic signal controller cabinet capable of 2 to 8 phase operation, or as specified in the Contract Documents.

Each traffic signal controller cabinet shall be complete with mounting pedestal base, and all other equipment required to perform its intended function, either in standalone operation or as part of the ministry's traffic signal control system, according to the timing sheets, PHM-125 drawing, and as specified in the Contract Documents. Without limiting the foregoing, each traffic signal controller cabinet shall include the components listed in Table 1.

All traffic signal control equipment shall be according to the Ontario Traffic Signal Control Equipment Specifications (OTSCES) or the Caltrans Transportation Electrical Equipment Specifications (TEES), and each traffic signal controller cabinet supplied shall be fully assembled and tested according to the OTSCES or TEES.

All temporary traffic signal controllers shall be equipped with an UPS system.

**622.07.06.01.05 Actuation**

Subsection 622.07.06.01.05 of OPSS 622 is amended in that it is deleted and replaced with the following:

With a test board, the effect of detection devices and pedestrian push-buttons in entering a call to the controller unit shall be tested. All modes of detector sensor unit program and vehicle extension calls shall be tested. Tests shall confirm that all calls are registered, activated, and associated with the correct traffic phase and traffic controller sequences, according to Table 2.

**622.07.08 Traffic Signal Controller Programming and Timing**

Subsection 622.07.08 of OPSS 622 is amended by deleting the first paragraph in its entirety and replacing it with the following:

Traffic signal interval timing according to Table 2 shall be installed into the traffic signal controller only after verifying that it is complete and consistent and all controller and conflict monitor programming is installed and all timing controls, switches and programming controls are set.

Subsection 622.07.08 of OPSS 622 is amended with the addition of the following clause:

**622.07.08.01 Traffic Signal Controller Timing Sheet**

Traffic signal timing for the controller shall be according to Table 2.

Table 1 of OPSS 622 is amended in that it is deleted and replaced by the following:

**TABLE 1**  
**Model 332 Traffic Controller Components**

<b>Intersection:</b>	
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<b>Item Quantity</b>	<b>Description</b>
*	Type 2070 - Traffic Signal Controller complete with USB Key
*	Conflict Monitor
*	Loop Detector, Model 222
*	Load Switch, Model 200
*	DC Isolator, Model 242
1	Uninterruptible Power Supply (UPS) system
1	Bell Mobility Sierra Modem, formatted for MTO Traffic Signals from Wireless Personal Communications Inc (WPCI). To be supplied by: _____ * _____ (Owner or Contractor)
1	Cat 5E Ethernet Cable - 2 metres
1	The MobileMark Antenna - LTM302-3C3C2C-WHT-48

[\* Designer Fill-Ins for Table 1, See Notes to Designer]

The Tables of OPSS 622 are amended by the addition of the following Table:

**TABLE 2  
GENERIC SIGNAL TIMING SHEET**

ACTUATED  PRE-TIMED  SIGNAL TO BE MAINTAINED BY: \_\_\_\_\_

LOCATION: \_\_\_\_\_ SIGNAL TO BE OPERATED BY: \_\_\_\_\_

MAIN STREET (HWY): \_\_\_\_\_ TIMING DEVELOPED BY: \_\_\_\_\_

DATE TIMING DEVELOPED: \_\_\_\_\_ CONFLICT FLASH: \_\_\_\_\_

**GENERIC TIMING IDENTIFIED HERE SHALL BE TRANSCRIBED ONTO "OFFICIAL" TIMING SHEETS FOR THE TRAFFIC SIGNAL CONTROLLER BEING USED AT THIS SIGNALIZED INTERSECTION. A COPY OF THE "OFFICIAL" LOCAL TIMING SHEETS AND COORDINATION SHEETS IF USED, SHALL BE ATTACHED TO THIS FORM AND FILED IN THE MTO REGIONAL TRAFFIC OFFICE.**

**OPERATIONAL NOTES:**

1. All Protected/Permissive left turn movements shall be followed by parent through movements without exception.
2. If serving F2 and F6 the signal must cycle to F4 and/or F8 prior to serving a call for F1 and/or F5 if these left turn movements are protected/permissive.
3. If serving F4 and F8, the signal must cycle to F2 and/or F6 prior to serving a call for F3 and/or F7 if these left turn movements are protected/permissive.
4. Through Movements shall lag left turn movements unless otherwise specified.

**FUNCTION/OPERATION**

**MOVEMENT (FAZE)**

[NB LEFT] [NB THRU] [WB LEFT] [WB THRU] [SB LEFT] [SB THRU] [EB LEFT] [EB THRU]

PERMITTED MOVEMENTS	-	-	-	-	-	-	-	-
RED LOCK	-	-	-	-	-	-	-	-
AMBER LOCK	-	-	-	-	-	-	-	-
VEHICLE RECALL	-	-	-	-	-	-	-	-
PEDESTRIAN RECALL	n/a	-	n/a	-	n/a	-	n/a	-
VEHICLE MAX RECALL	-	-	-	-	-	-	-	-
OVERLAP A	-	-	-	-	-	-	-	-
OVERLAP B	-	-	-	-	-	-	-	-
PROT/PERM LEFT TURN ARROW	-	n/a	-	n/a	-	n/a	-	n/a
PROT/PERM FAST FLASH ADVANCE GREEN	-	n/a	-	n/a	-	n/a	-	n/a
FULLY PROTECTED LEFT TURN	-	n/a	-	n/a	-	n/a	-	n/a
DISPLAY AMBER ON STARTUP	-	-	-	-	-	-	-	-
PLACE PEDESTRIAN CALLS ON STARTUP	-	-	-	-	-	-	-	-
PLACE VEHICLE CALLS ON STARTUP	-	-	-	-	-	-	-	-
REST IN WALK	n/a	-	n/a	-	n/a	-	n/a	-
MOVEMENTS MUST GAP OUT SIMUL'LY	-	-	-	-	-	-	-	-
DOUBLE ENTRY	n/a	-	n/a	-	n/a	-	n/a	-
EXCLUSIVE PHASING BY APPROACH	-	-	-	-	-	-	-	-

**n/a --- not applicable**

**INTERVAL TIMES**

	<b>MOVEMENT (FAZE)</b>							
	[NB LEFT]	[NB THRU]	[WB LEFT]	[WB THRU]	[SB LEFT]	[SB THRU]	[EB LEFT]	[EB THRU]
WALK	n/a	-	n/a	-	n/a	-	n/a	-
FLASHING DON'T WALK	n/a	-	n/a	-	n/a	-	n/a	-
MINIMUM GREEN	-	-	-	-	-	-	-	-
VEHICLE EXTENSION (PASSAGE TIME)	-	-	-	-	-	-	-	-
MAX GREEN (INCLUDES MIN GREEN)	-	-	-	-	-	-	-	-
MAX GREEN 2 (ALTERNATE MAX GREEN)	-	-	-	-	-	-	-	-
AMBER CLEARANCE	-	-	-	-	-	-	-	-
ALL RED CLEARANCE	-	-	-	-	-	-	-	-
MAX GAP (VEH. EXTENSION)	-	-	-	-	-	-	-	-
MIN GAP (VEH. EXTENSION)	-	-	-	-	-	-	-	-
REDUCE GAP BY	-	-	-	-	-	-	-	-
REDUCE GAP EVERY	-	-	-	-	-	-	-	-
MAX INITIAL GREEN TIME (VAR. INIT)	-	-	-	-	-	-	-	-
TIME ADDED/VEHICLE (VAR. INIT)	-	-	-	-	-	-	-	-
<b>n/a --- not applicable</b>								

**DETECTOR SETUP**

	<b>MOVEMENT (FAZE)</b>							
	[NB LEFT]	[NB THRU]	[WB LEFT]	[WB THRU]	[SB LEFT]	[SB THRU]	[EB LEFT]	[EB THRU]
DELAY TIME ON PRESENCE DETECTION	-	-	-	-	-	-	-	-
DELAY TIME ON LONG DIST. DETECTION	-	-	-	-	-	-	-	-
CARRY-OVER ON PRESENCE DETECTION	-	-	-	-	-	-	-	-
CARRY-OVER ON LONG DIST. DETECTION	-	-	-	-	-	-	-	-

**PRE-EMPTION**

	<b>MOVEMENT (FAZE)</b>							
	[NB LEFT]	[NB THRU]	[WB LEFT]	[WB THRU]	[SB LEFT]	[SB THRU]	[EB LEFT]	[EB THRU]
1ST EMERG. PRE-EMPT MOVEMENTS	-	-	-	-	-	-	-	-
1ST EMERG. PRE-EMPT DELAY TIME	-	-	-	-	-	-	-	-
1ST EMERG. PRE-EMPT CLEARANCE TIME	-	-	-	-	-	-	-	-
2ND EMERG. PRE-EMPT MOVEMENTS	-	-	-	-	-	-	-	-
2ND EMERG. PRE-EMPT DELAY TIME	-	-	-	-	-	-	-	-
2ND EMERG. PRE-EMPT CLEAR'CE TIME	-	-	-	-	-	-	-	-
RR PRE-EMPT TRACK CLEAR'CE MV'MTS	-	-	-	-	-	-	-	-
RR PRE-EMPT CLEARANCE TIME	-	-	-	-	-	-	-	-
RR PRE-EMPT DELAY TIME	-	-	-	-	-	-	-	-
RR PRE-EMPT LIMITED SERVICE MV'NTS	-	-	-	-	-	-	-	-

**TIME OF DAY**

	TIME OF DAY	DAY OF WEEK	<b>MOVEMENT (FAZE)</b>																
			[START]	[END]	S	M	T	W	T	F	S	[NB LEFT]	[NB THRU]	[WB LEFT]	[WB THRU]	[SB LEFT]	[SB THRU]	[EB LEFT]	[EB THRU]
OPERATIONS																			
PHASE OMIT			-	-	-	-	-	-	-	-	-	n/a	-	n/a	-	n/a	-	n/a	-
MAX RECALL			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PED RECALL			-	-	-	-	-	-	-	-	n/a	-	n/a	-	n/a	-	n/a	-	n/a
MIN RECALL			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MAX GREEN 2			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
REST IN WALK			-	-	-	-	-	-	-	-	n/a	-	n/a	-	n/a	-	n/a	-	n/a
AMBER LOCK			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RED LOCK			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>n/a --- not applicable</b>																			

[\*\* Designer Fill-Ins for Table 2, See Notes to Designer]

NOTES TO DESIGNER:

\* **Designer Fill-in for Table 1:**

Designers should consult the local Electrical Coordinator and Regional Traffic Office regarding their recommendations for filling in of Table 1 for every intersection.

\*\* **Designer Fill-in for Table 2:**

Designers should consult the Regional Traffic Office regarding its recommendations for filling in of the signal timing sheet.

Designers should use the timing sheet consistent with the one that the municipality uses where it is intended that the controller will be part of the municipal Traffic Signal system.

WARRANT: Always with these tender items.