

FINAL TECHNICAL MEMORANDUM

To: Metro

From: Iteris, Inc.

Date: November 20, 2018

RE: Metro Orange Line Model Design Memorandum

This memorandum outlines the model design assumptions used in the VISSIM microsimulation model that ultimately serves as the traffic analysis tool for comparing improvement alternatives for the Metro Orange Line (MOL). Model design assumptions detailed in this document are based on Iteris' meetings with Metro, the Los Angeles Department of Transportation (LADOT) and Iteris' work performed to-date on the MOL corridor.

Proposed improvements to the MOL include grade separating a segment of the busway at Sepulveda and Van Nuys, platooning buses and installing railroad-type four quadrant gate systems at 35 crossings.

STUDY AREA

The proposed locations for the railroad-type four quadrant gates at 35 crossings along the MOL, shown in **Figure 1**, are listed below:

1. Tujunga Avenue
2. Colfax Avenue
3. Laurel Canyon Boulevard
4. Corteen Place
5. Whitsett Avenue
6. Bellaire Avenue
7. Coldwater Canyon Avenue
8. Chandler Boulevard
9. Ethel Avenue
10. Fulton Avenue
11. Oxnard Street
12. Woodman Avenue
13. Hazeltine Avenue
14. Kester Avenue
15. Densmore Avenue
16. Private driveway*
17. Woodley Avenue
18. Balboa Boulevard
19. White Oak Avenue
20. Lindley Avenue
21. Reseda Boulevard
22. Wilbur Avenue
23. Tampa Avenue
24. Corbin Avenue
25. Victory Boulevard
26. Winnetka Avenue
27. Mason Avenue
28. De Soto Avenue
29. Vanowen Street
30. Sherman Way
31. Valerio Street
32. Saticoy Street
33. Roscoe Boulevard
34. Parthenia Street
35. Nordhoff Street

**Private driveway not in jurisdiction of LADOT*

Figure 1 – Study Area



Source: MOL Grade Separation Analysis and Operational Improvements Technical Study

MODEL DESIGN ASSUMPTIONS

As a first step, Iteris evaluated the conceptual drawings showing lane configuration changes at all gated crossings. These drawings were prepared by HNTB and Mott Macdonald under a separate contract as part of the MOL Improvements. This information was then used to develop the traffic signal phasing schemes for locations proposed to be gated, and typical layouts for all gated crossings.

The following assumptions were assumed for the development of the phasing schemes and will be applied in the VISSIM microsimulation model:

- The pertinent traffic signal timing parameters for Existing and Future No Build scenarios are coded per the timing sheets provided by LADOT.
- Pedestrian walking speed is assumed to be 3.5 feet per second.
- In order to calculate preemption parameters and represent the amount of time that the gate system warning devices (i.e. flashing lights) would be operational between when the gates are first “activated” by an approaching bus vehicle and when the gates begin going down and initiate closure of the crossing, the LADOT Railroad Preemption Form (revised on 6/23/2008) was used at each proposed gate crossing by using the storage and track clearance distance characteristics unique to each intersection. These forms are included in **Appendix A**.
 - It should be noted that the minimum track clearance distance (MTCD) was measured from the proposed limit line to six feet past the arm of exit gate.
 - The design vehicles include from 15-foot car to 65-foot semi-trailer.
 - The calculation used a design speed of 45 miles per hour.
- As a result of the conversion of the existing Metro Orange Line service from diesel buses to electric buses, the modeled buses will reflect the electric bus driving characteristics in future scenarios.
- The traffic analysis evaluates two different operating headways: 4-minute and 6-minute, and platooned bus operations. Metro provided the following operating assumptions for vehicle spacing and required braking distances from *Metro’s Operator Rulebook*. **Figure 2** from Metro’s document shows that an eight second interval would provide safe stopping distance for a 60 foot bus.
 - After further discussion with Metro, a ten second interval for platooning was used for the model simulation.

Figure 2 – Computation of Safe Stopping Distances for Metroliner Services

FULLY LOADED 40 FOOT COACH									60 FOOT COACH	
A	B	C	D	E	F	G	H	I	J	K
		=A*1.1	=A*1.1	$=\frac{(V^2*7)}{100}$	=C+D+E	=B*4	=B*5	=B*6	=F*1.425	=B*8
MPH	FEET/SEC	PERC. DIST. (FEET)	REACT DIST. (FEET)	BRAKING DIST. (FEET)	TOTAL STOPPING DIST. (FEET)	4 SEC RULE (FEET)	5 SEC (FEET)	6 SEC (FEET)	STOP DIST. (FEET)	8 SEC (FEET)
10	15	11	11	7	29	60	na	90	86	OK
20	30	22	22	28	72	120	na	180	171	OK
30	45	33	33	63	129	180	na	270	257	OK
40	60	44	44	112	200	240	na	360	342	OK
45	66	50	50	142	242	na	330	396	470	528
50	73	55	55	175	285	na	367	440	522	586
55	75	61	61	212	333	na	375	450	534	600

Source: Metro Operator Rulebook, SOP 3.128.

- For the adjacent bike path and pedestrian crossings, the traffic analysis assumed that the traffic signal controlled crossings of the adjacent bike path would still be served as a normal part of the traffic signal cycle for the crossing, while the existing busway crossing would be converted to a “railroad preemption” type of signal operation. The railroad preemption-style gate system will maintain the existing pedestrian walk interval or operate with a minimum of 7 seconds.
- Typical schematics showing how traffic signal phasing would operate with both the gate system operations as well as continued activity on the adjacent bike path and pedestrian crossings are included in **Appendix B**. The schematics show proposed preliminary signal phasing for all movements at each crossing, inclusive of BRT operations, cross traffic, and associated bicycle and pedestrian phases. This phasing may change in future analyses, leading to modified impacts and delay calculations.
- Furthermore, Iteris led two Focused Group meetings for Metro and LADOT in order to discuss the VISSIM model coding and methodology. The meetings included discussions on how to incorporate the changes being proposed on the preliminary schematics into the VISSIM model. LADOT raised the questions on operation, and Metro and Iteris concurred with the changes needed. As a result, left-turn changes were coded into the model at eight locations. **Appendix C** presents screenshots of changes to the model for documentation purposes.
 - Colfax Avenue/Chandler Boulevard:
 - Northbound and southbound lead-lag left-turn phasing
 - Eastbound and westbound lead-lag left-turn phasing
 - Laurel Canyon Boulevard/Chandler Boulevard:
 - Northbound and southbound lead-lag left-turn phasing
 - Eastbound and westbound lead-lag left-turn phasing
 - Whittsett Avenue/Chandler Boulevard:

- Northbound and southbound lead-lag left-turn phasing
- Eastbound and westbound lead-lag left-turn phasing
- Coldwater Canyon Avenue/Chandler Boulevard:
 - Northbound and southbound lead-lag left-turn phasing
- Fulton Avenue/Burbank Boulevard
 - Eastbound and westbound protected left-turn phases
- Woodley Avenue/Victory Boulevard
 - Northbound protected left turn phase
- Mason Avenue/Victory Boulevard
 - Southbound protected left turn phase
- De Soto Avenue/Victory Boulevard
 - Southbound protected left turn phase

APPENDIX A

Pre-emption Forms

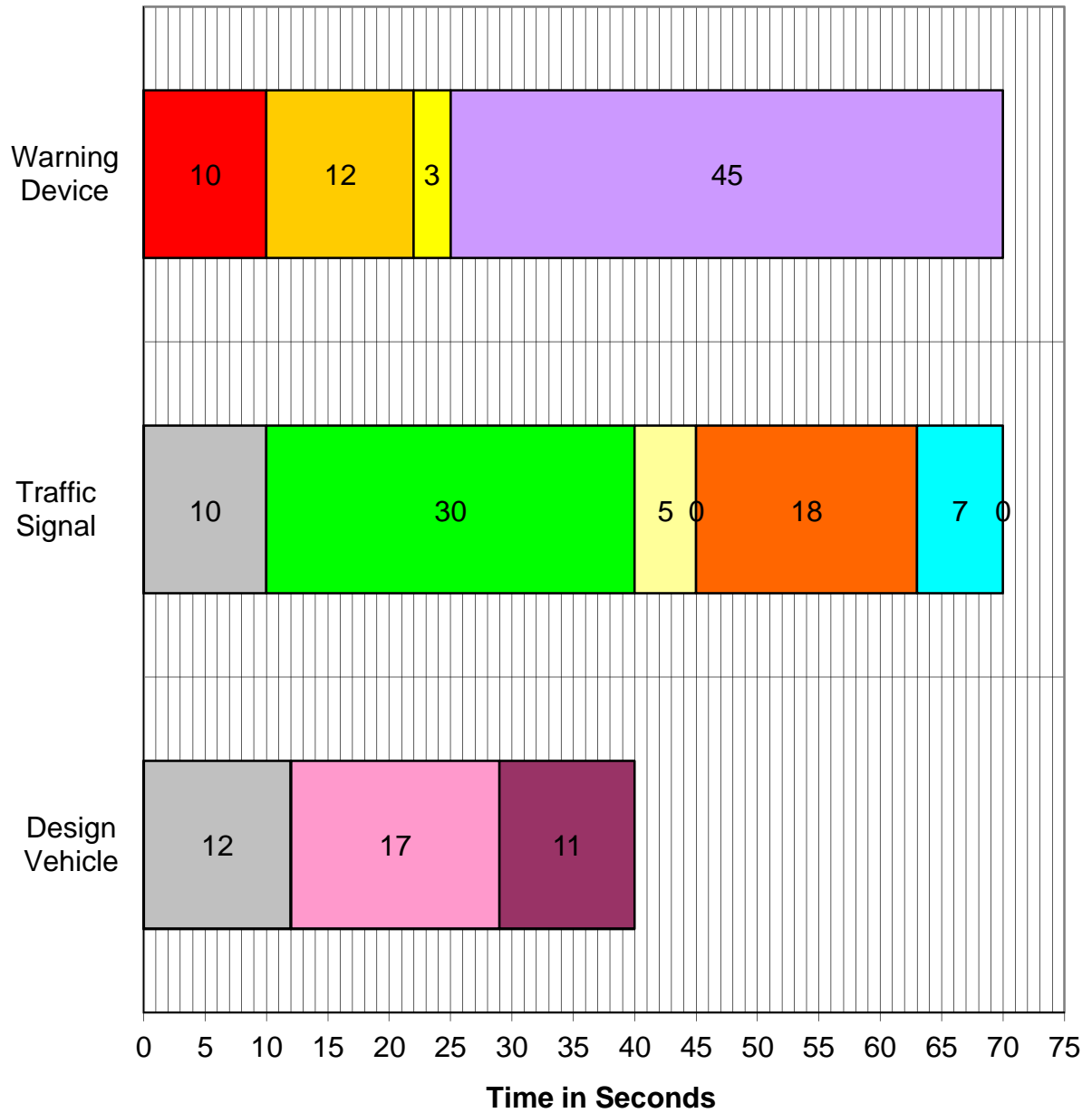
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Tujunga	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	80 ft	Grade	0.0 %		
Clear Storage Distance, CSD	56 ft				
Length, L	136 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	6	3	2	1	
Start moving last vehicle in L (sec)	11.2	6.9	6.2	7.0	11
Move front of vehicle thru L (sec)	8.0	8.9	7.4	16.1	16
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	6.6	7.9	6.9	16.6	17
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	30 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	28 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	18 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	30 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	70 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	5 sec	5 sec minimum			
Minimum Warning Time, MWT	25 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	25 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	45 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	75 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4950 ft				

Street Name:	MOL@Tujunga	Crossing No:	
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Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

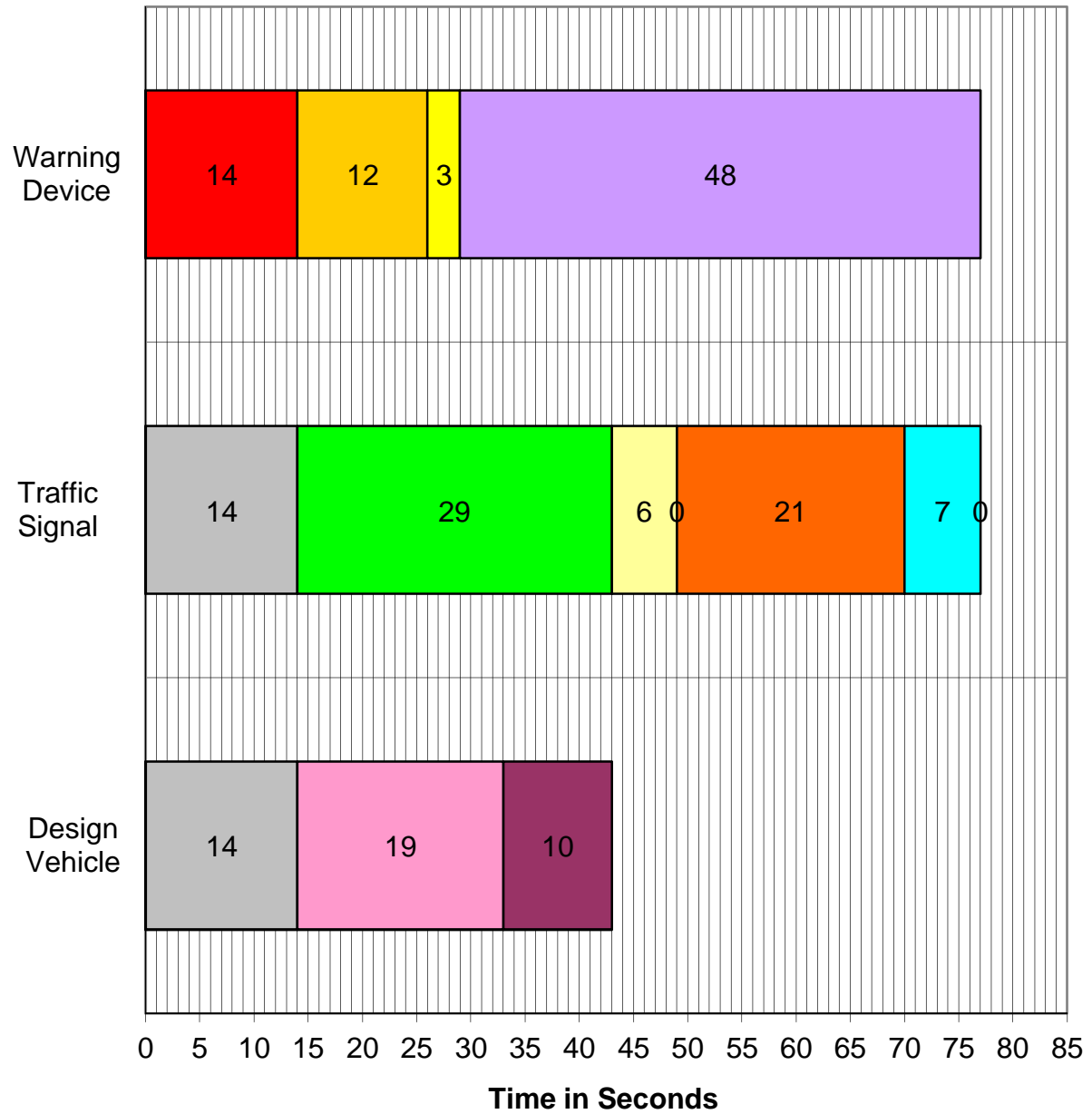
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Colfax	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	120 ft	Grade	0.0 %		
Clear Storage Distance, CSD	0 ft				
Length, L	120 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	5	3	2	1	
Start moving last vehicle in L (sec)	9.8	6.9	6.2	7.0	10
Move front of vehicle thru L (sec)	7.5	8.3	6.9	15.1	15
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	8.0	9.4	8.0	18.8	19
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	29 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	29 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	21 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	6.0 sec				
Maximum RWTT	34 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	77 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	9 sec	9 sec minimum			
Minimum Warning Time, MWT	29 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	29 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	48 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	82 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	5412 ft				

Street Name:	MOL@Colfax	Crossing No:	
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Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

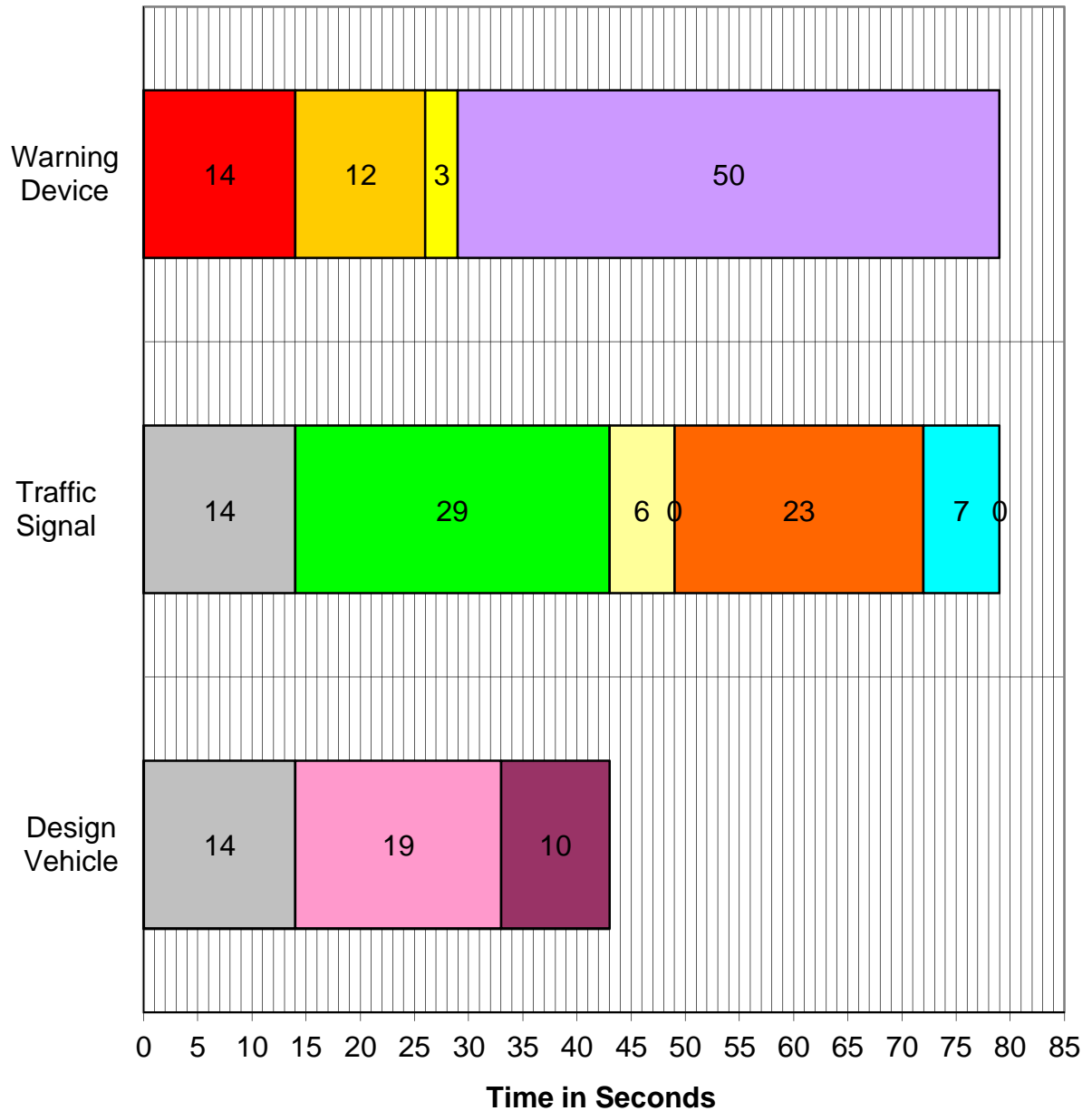
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Laurel Canyon	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	118 ft	Grade	0.0 %		
Clear Storage Distance, CSD	0 ft				
Length, L	118 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	5	3	2	1	
Start moving last vehicle in L (sec)	9.8	6.9	6.2	7.0	10
Move front of vehicle thru L (sec)	7.4	8.2	6.8	14.9	15
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	7.9	9.3	8.0	18.7	19
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	29 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	29 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	23 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	6.0 sec				
Maximum RWTT	36 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	79 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	9 sec	9 sec minimum			
Minimum Warning Time, MWT	29 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	29 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	50 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	84 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	5544 ft				

Street Name:	MOL@Laurel Canyon	Crossing No:	
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Preemption Timeline



- | | | | |
|-----------------|---------------------|--------------------|----------------------|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

LADOT Railroad Preemption Form

Revised 6/23/2008

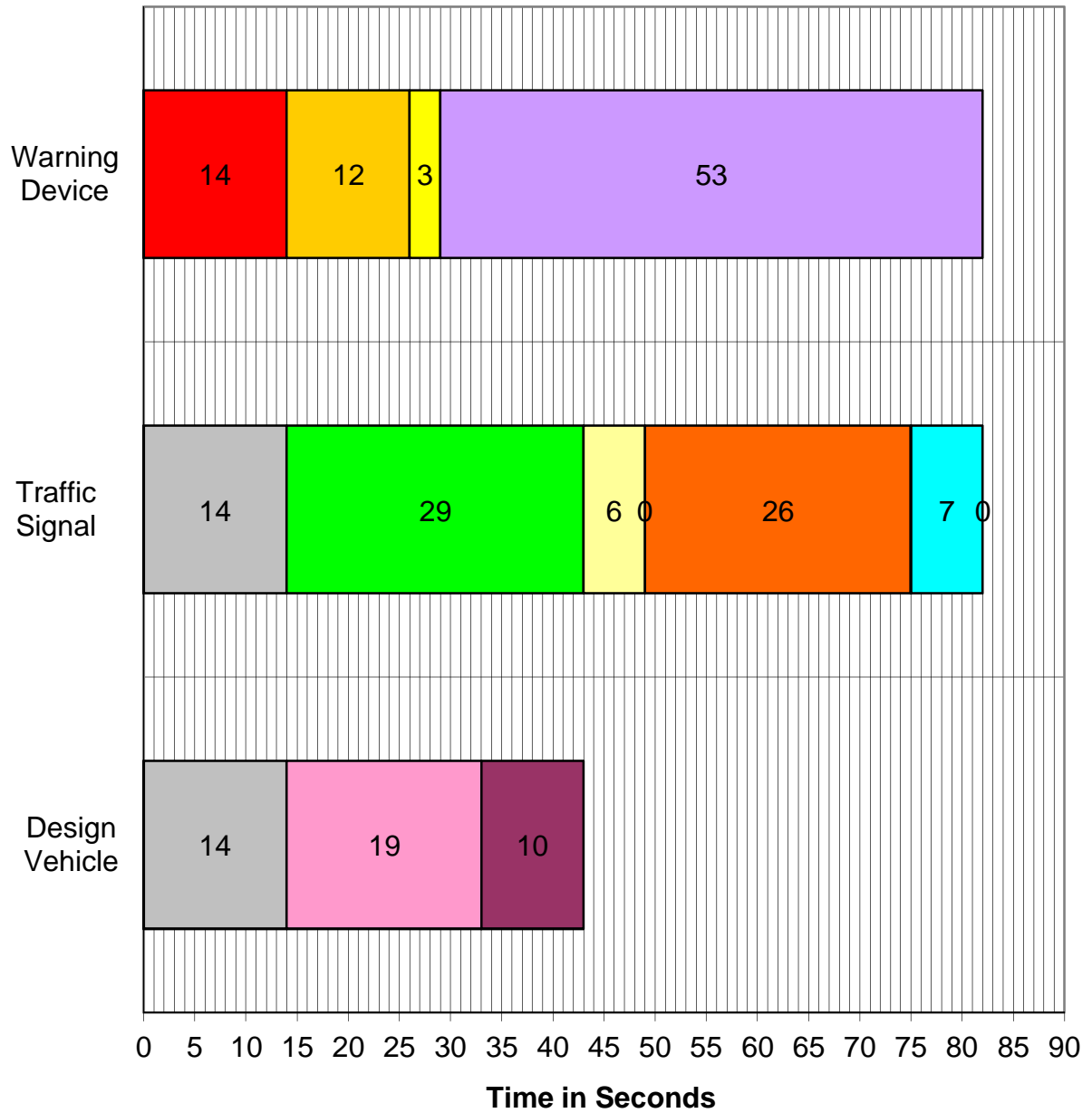
Street Name:	MOL@Corteen	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	117 ft	Grade	0.0 %		
Clear Storage Distance, CSD	0 ft				
Length, L	117 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	5	3	2	1	
Start moving last vehicle in L (sec)	9.8	6.9	6.2	7.0	10
Move front of vehicle thru L (sec)	7.4	8.2	6.8	14.9	15
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	7.9	9.3	8.0	18.7	19
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	29 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	29 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	26 sec				
Minimum Green	7 sec				
Maximum Yellow + All Red	6.0 sec				
Maximum RWTT	39 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	82 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	9 sec	9 sec minimum			
Minimum Warning Time, MWT	29 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	29 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	53 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	87 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	5742 ft				

Street Name:

MOL@Corteen

Crossing No:

Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

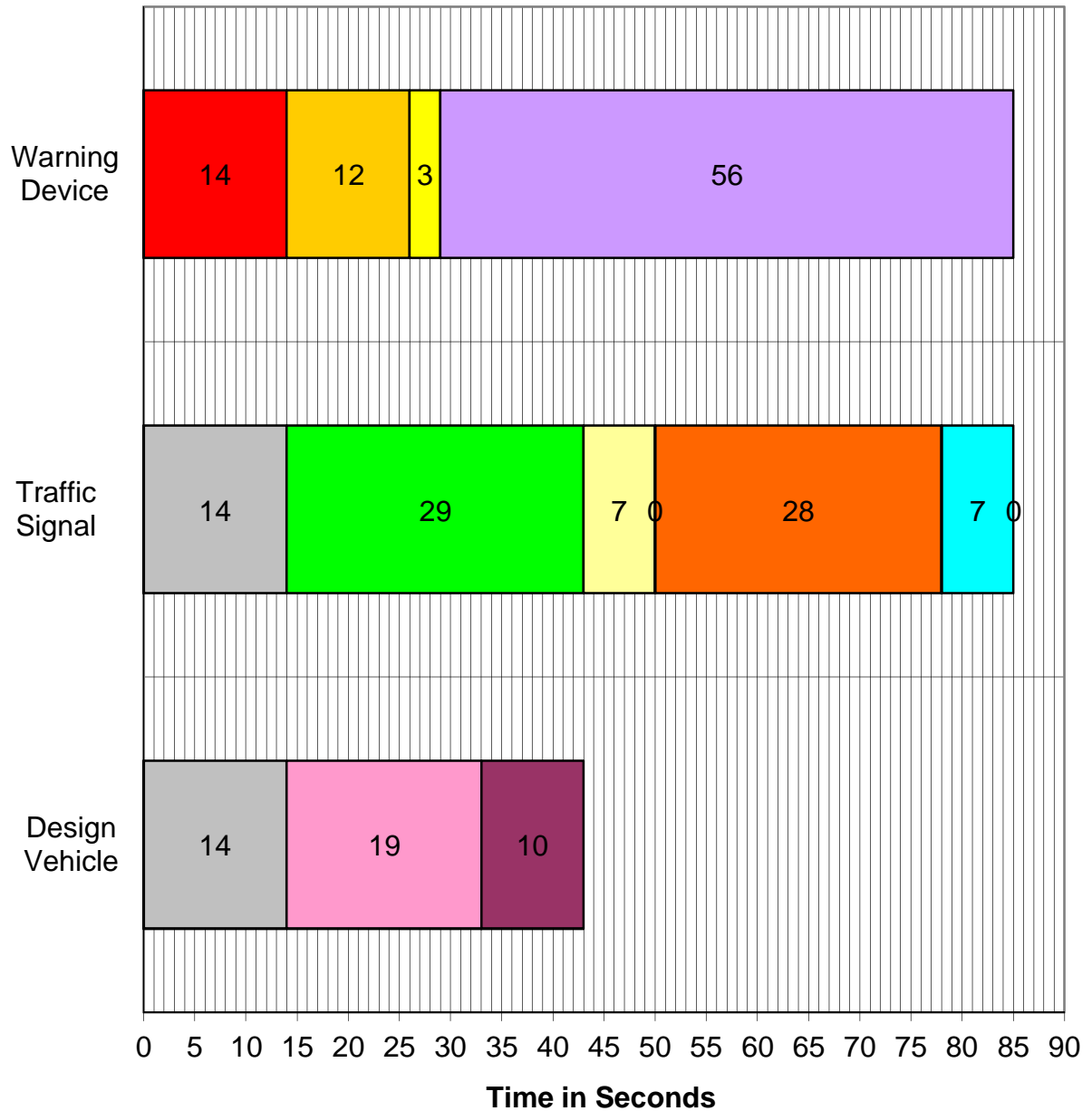
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Whitsett	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	123 ft	Grade	0.0 %		
Clear Storage Distance, CSD	0 ft				
Length, L	123 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	5	3	2	1	
Start moving last vehicle in L (sec)	9.8	6.9	6.2	7.0	10
Move front of vehicle thru L (sec)	7.6	8.4	7.0	15.2	15
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	8.1	9.5	8.1	19.0	19
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	29 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	29 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	28 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	7.0 sec				
Maximum RWTT	42 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	85 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	9 sec	9 sec minimum			
Minimum Warning Time, MWT	29 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	29 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	56 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	90 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	5940 ft				

Street Name:	MOL@Whitsett	Crossing No:	
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Preemption Timeline



- | | | | |
|-----------------|---------------------|--------------------|----------------------|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

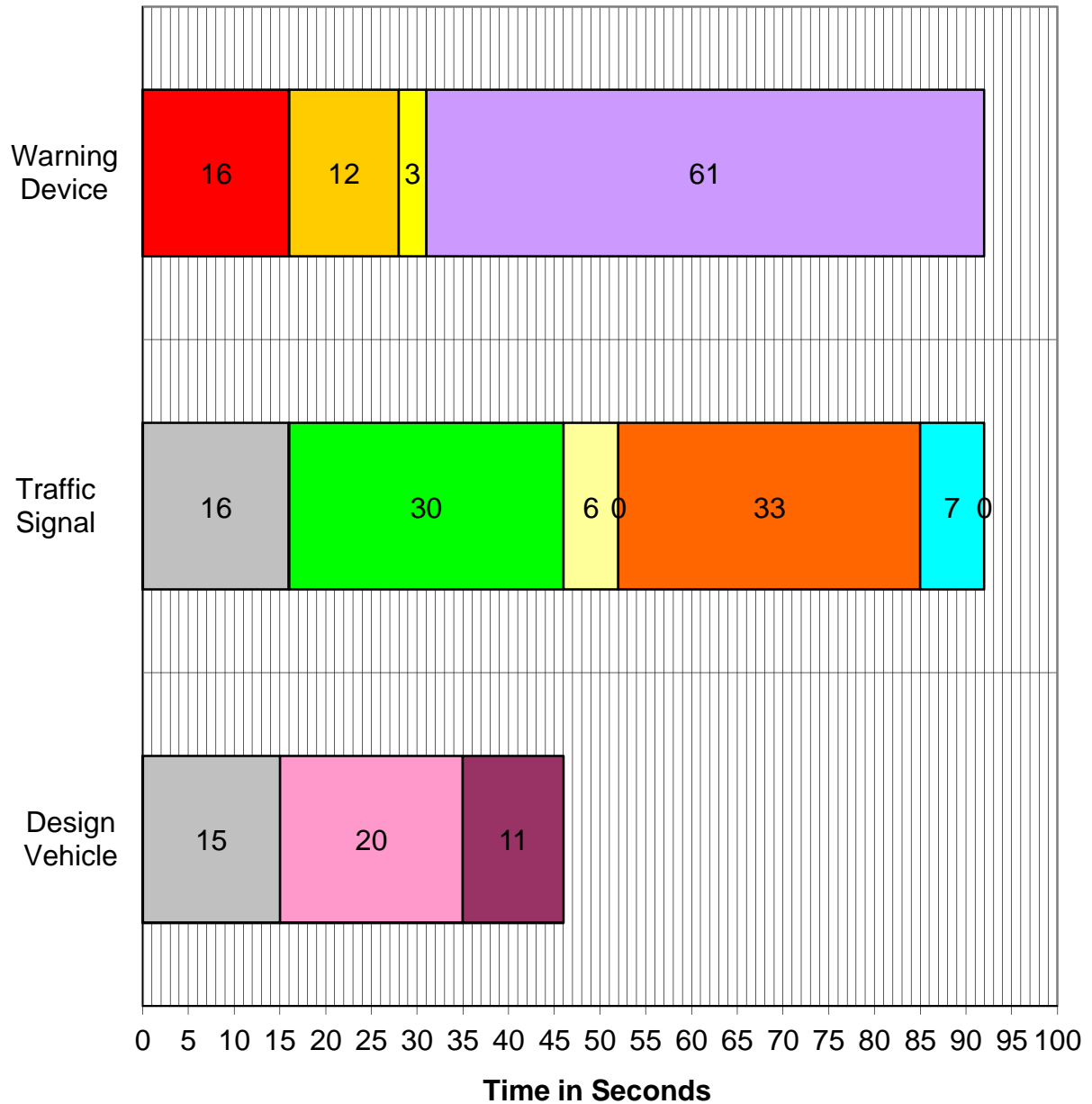
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Bellaire	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	142 ft	Grade	0.0 %		
Clear Storage Distance, CSD	0 ft				
Length, L	142 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	6	3	3	2	
Start moving last vehicle in L (sec)	11.2	6.9	8.0	10.0	11
Move front of vehicle thru L (sec)	8.2	9.1	7.6	16.4	16
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	8.7	10.1	8.6	20.0	20
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	30 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	31 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	33 sec				
Minimum Green	7 sec				
Maximum Yellow + All Red	6.0 sec				
Maximum RWTT	46 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	92 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	11 sec	11 sec minimum			
Minimum Warning Time, MWT	31 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	31 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	61 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	97 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	6402 ft				

Street Name:	MOL@Bellaire	Crossing No:	
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Preemption Timeline



- | | | | |
|-----------------|---------------------|--------------------|----------------------|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

LADOT Railroad Preemption Form

Revised 6/23/2008

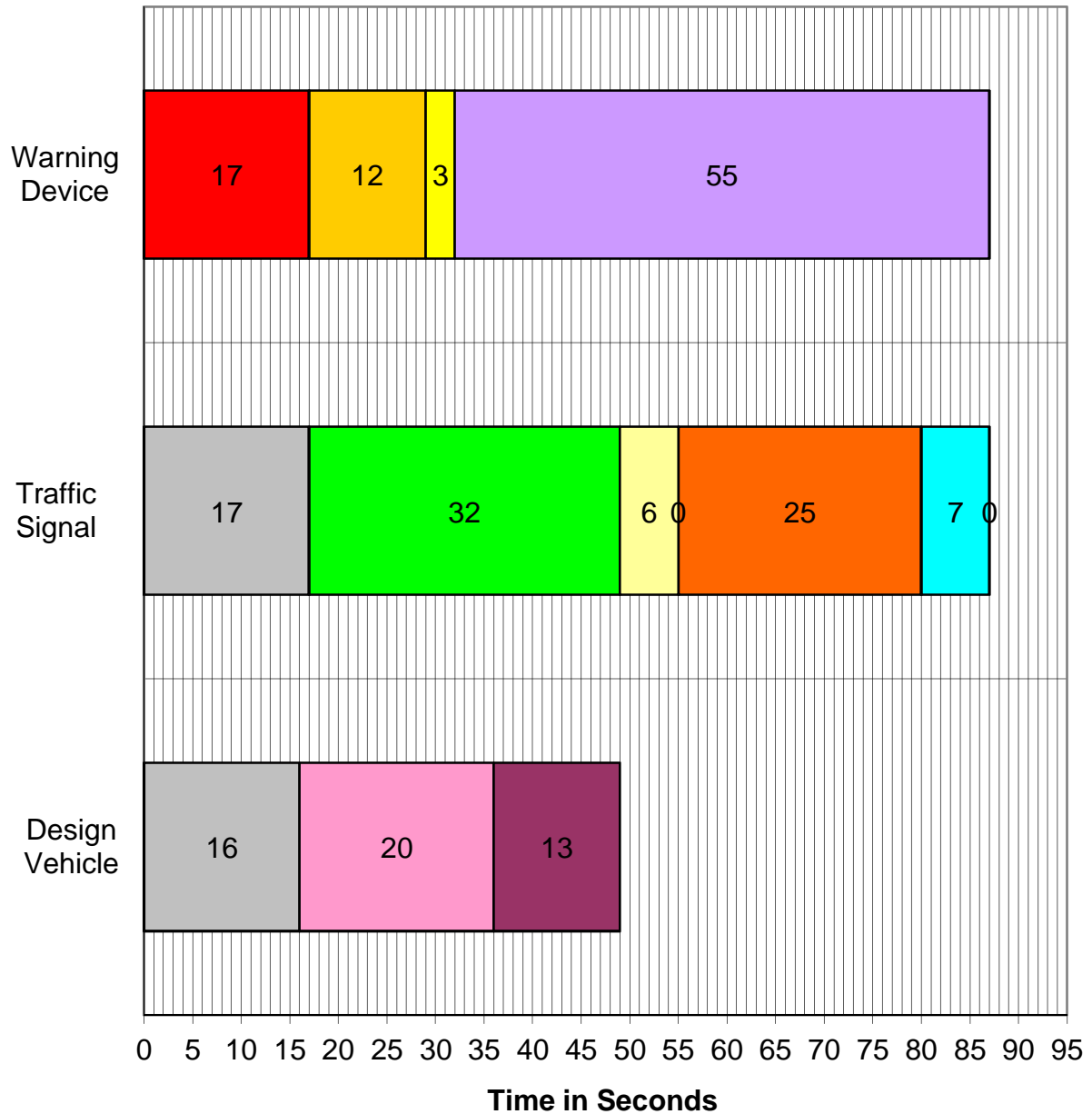
Street Name:	MOL@Coldwater	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	150 ft	Grade	0.0 %		
Clear Storage Distance, CSD	0 ft				
Length, L	150 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	7	4	3	2	
Start moving last vehicle in L (sec)	12.7	8.3	8.0	10.0	13
Move front of vehicle thru L (sec)	8.5	9.4	7.8	16.9	17
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	8.9	10.3	8.8	20.4	20
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	32 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	33 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	25 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	6.0 sec				
Maximum RWTT	38 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	87 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	12 sec	12 sec minimum			
Minimum Warning Time, MWT	32 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	32 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	55 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	92 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	6072 ft				

Street Name:

MOL@Coldwater

Crossing No:

Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

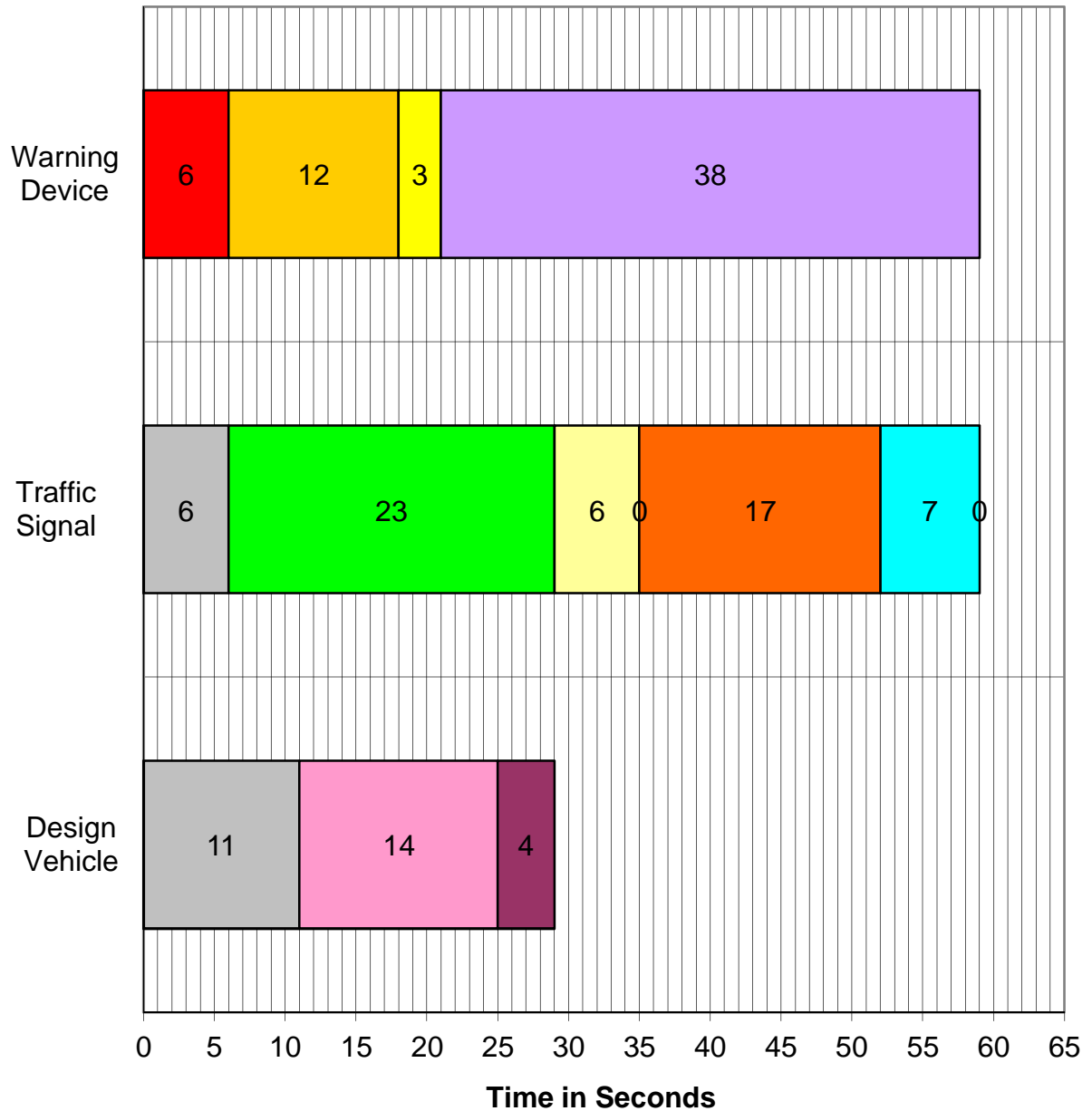
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Chandler	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	36 ft	Grade	0.0 %		
Clear Storage Distance, CSD	0 ft				
Length, L	36 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	1	1	0	0	
Start moving last vehicle in L (sec)	3.9	3.9	2.7	4.0	4
Move front of vehicle thru L (sec)	3.9	4.3	3.6	8.1	8
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	4.7	6.0	5.4	13.8	14
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	23 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	18 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	17 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	6.0 sec				
Maximum RWTT	30 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	59 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	1 sec	1 sec minimum			
Minimum Warning Time, MWT	21 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	21 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	38 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	64 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4224 ft				

Street Name:	MOL@Chandler	Crossing No.:	
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Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

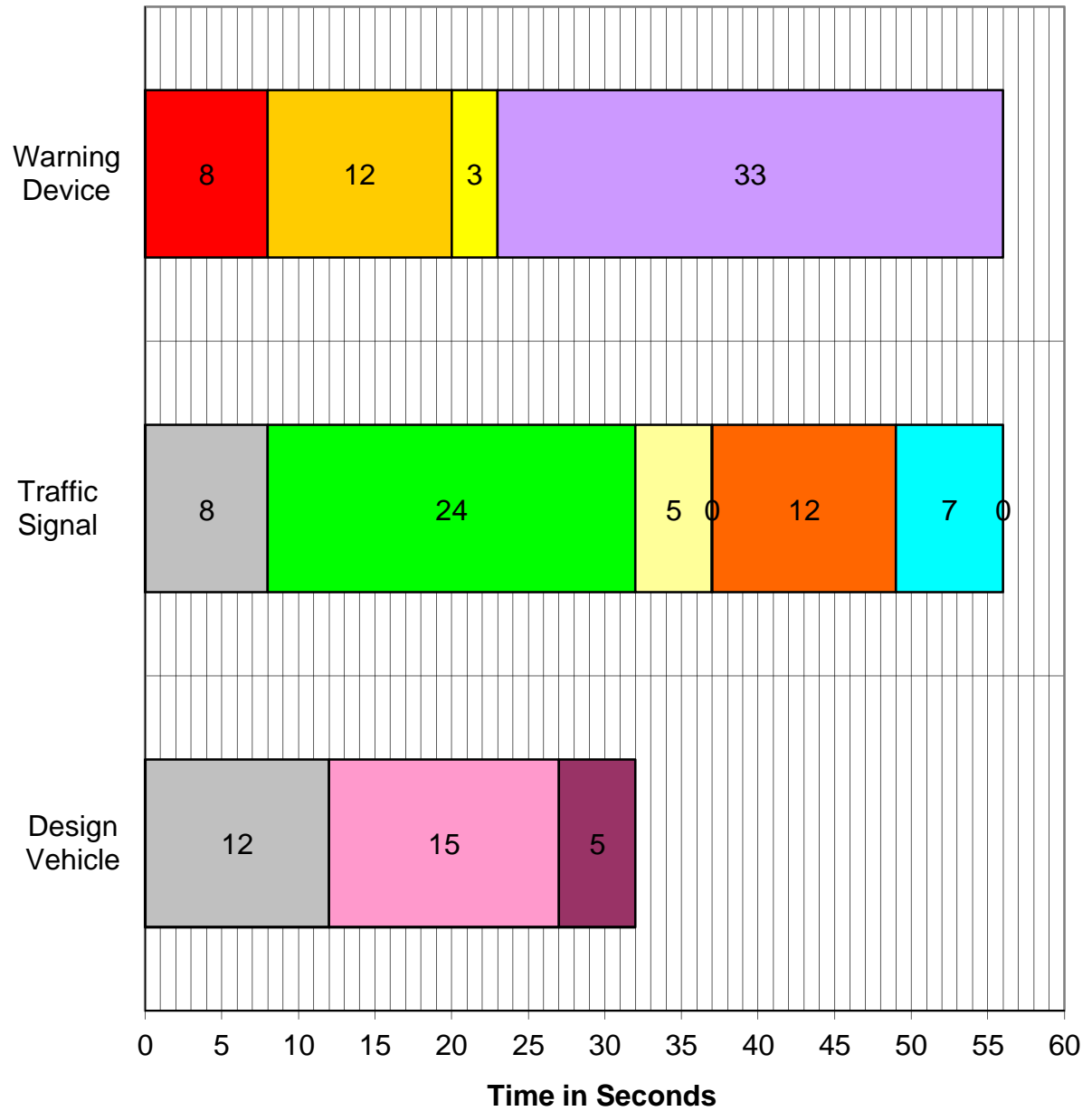
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Ethel	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	61 ft	Grade	0.0 %		
Clear Storage Distance, CSD	0 ft				
Length, L	61 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	2	1	1	0	
Start moving last vehicle in L (sec)	5.4	3.9	4.5	4.0	5
Move front of vehicle thru L (sec)	5.2	5.7	4.8	10.6	11
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	5.8	7.1	6.3	15.4	15
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	24 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	20 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	12 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	24 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	56 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	3 sec	<i>3 sec minimum</i>			
Minimum Warning Time, MWT	23 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	23 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	33 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	61 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4026 ft				

Street Name:	MOL@Ethel	Crossing No:	
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Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

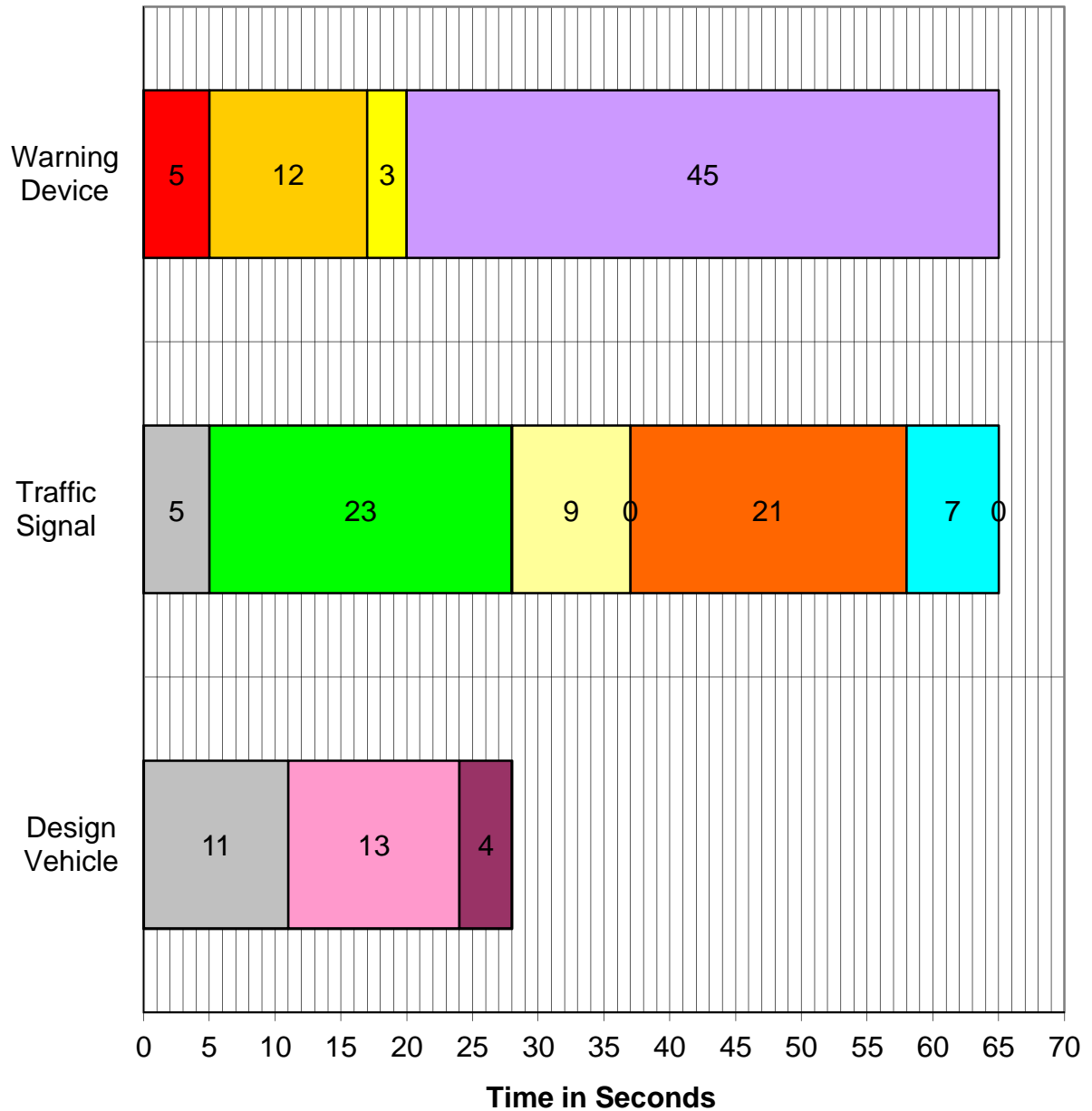
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Fulton	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0	ft	Grade		
Maximum Conflicting Move Distance	0	ft	Grade		
Minimum Track Clearance Dist, MTCD	20	ft	Grade		
Clear Storage Distance, CSD	0	ft			
Length, L	20	ft			
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	0	0	0	0	
Start moving last vehicle in L (sec)	2.5	2.5	2.7	4.0	4
Move front of vehicle thru L (sec)	2.8	3.1	2.6	5.9	6
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	3.8	5.1	4.8	12.6	13
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	23	sec	<i>Green Track Clearance extended to Gate Down</i>		
MTCD Queue Clearance Time	17	sec			
Minimum Walk	7	sec			
Maximum Ped Clearance	21	sec			
Minimum Green	10	sec			
Maximum Yellow + All Red	9.0	sec			
Maximum RWTT	37	sec			
Separation Time, ST	5	sec	<i>See Preemption Timeline for actual Separation Time</i>		
Maximum Preemption Time, MPT	65	sec			
Section 2: Railroad Information					
Lights Flash	3	sec			
Gate Descent	12	sec			
Minimum Time, MT	20	sec			
Clearance Time, CT	0	sec	<i>0 sec minimum</i>		
Minimum Warning Time, MWT	20	sec			
Buffer Time, BT	0	sec			
Total Warning Time, TWT	20	sec			
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6	ft			
Advance Preemption Time, APT	45	sec			
Equipment Response Time, ERT	5	sec			
Total Approach Time, TAT	70	sec			
Maximum Authorized Speed, MAS	45	mph			
Total Approach Distance, TAD	4620	ft			

Street Name:	MOL@Fulton	Crossing No:	
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Preemption Timeline



- | | | | |
|-----------------|---------------------|--------------------|----------------------|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

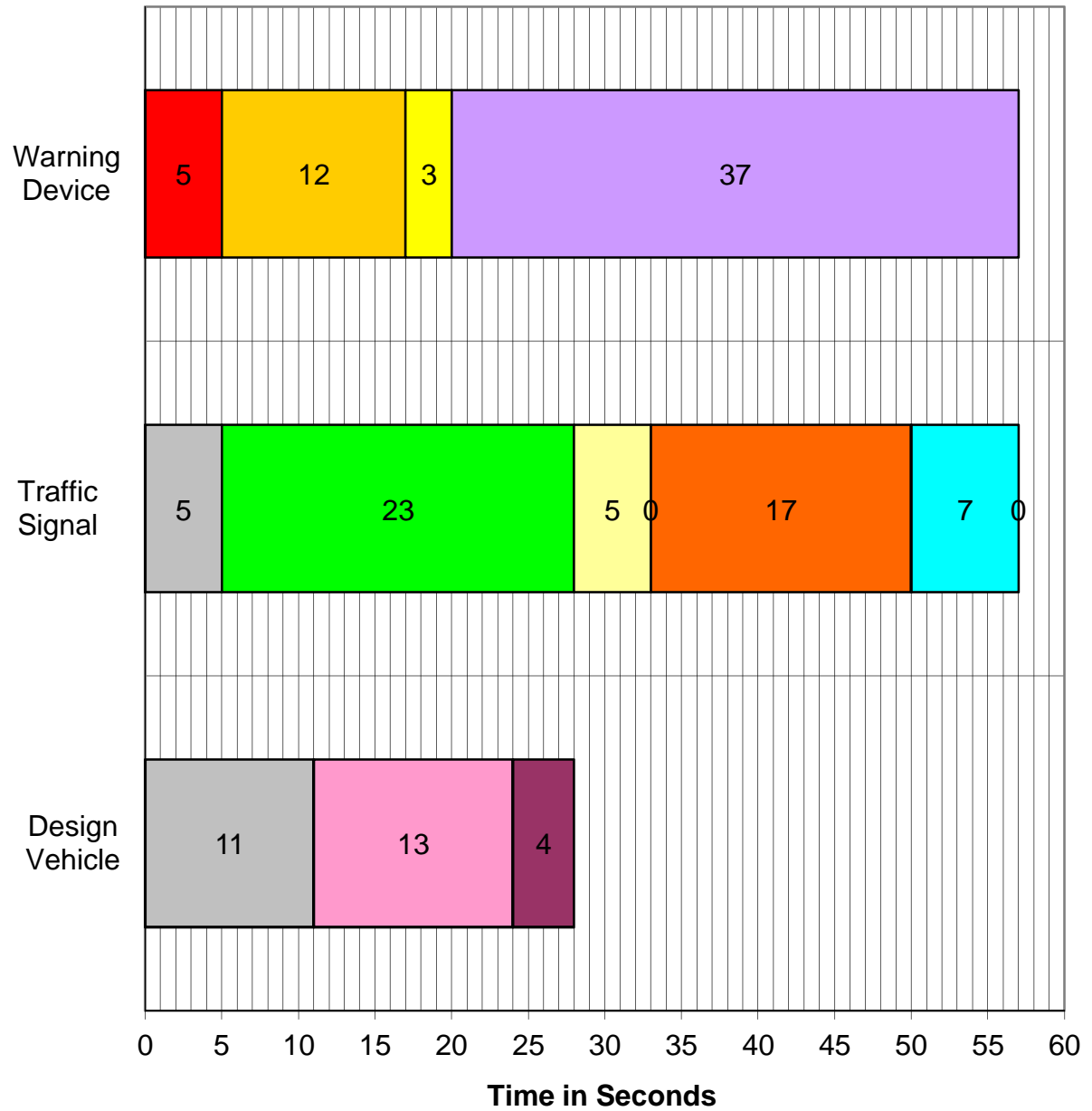
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Oxnard	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	20 ft	Grade	0.0 %		
Clear Storage Distance, CSD	0 ft				
Length, L	20 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	0	0	0	0	
Start moving last vehicle in L (sec)	2.5	2.5	2.7	4.0	4
Move front of vehicle thru L (sec)	2.8	3.1	2.6	5.9	6
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	3.8	5.1	4.8	12.6	13
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	23 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	17 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	17 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	29 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	57 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	0 sec	0 sec minimum			
Minimum Warning Time, MWT	20 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	20 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	37 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	62 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4092 ft				

Street Name:	MOL@Oxnard	Crossing No:	
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Preemption Timeline



- | | | | |
|-----------------|---------------------|--------------------|----------------------|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

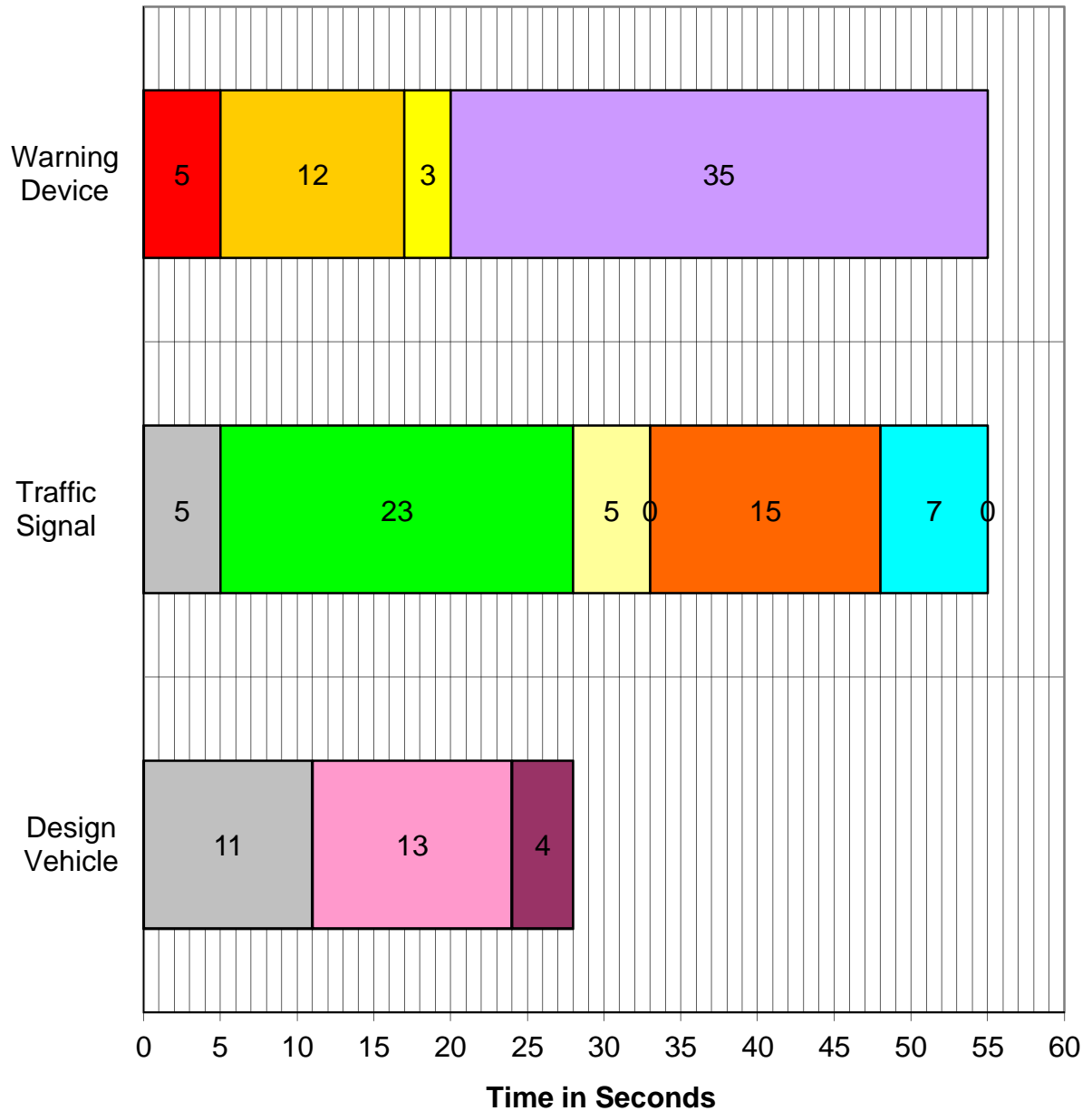
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Woodman	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	20 ft	Grade	0.0 %		
Clear Storage Distance, CSD	0 ft				
Length, L	20 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	0	0	0	0	
Start moving last vehicle in L (sec)	2.5	2.5	2.7	4.0	4
Move front of vehicle thru L (sec)	2.8	3.1	2.6	5.9	6
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	3.8	5.1	4.8	12.6	13
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	23 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	17 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	15 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	27 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	55 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	0 sec	0 sec minimum			
Minimum Warning Time, MWT	20 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	20 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	35 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	60 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	3960 ft				

Street Name:	MOL@Woodman	Crossing No.:	
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Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

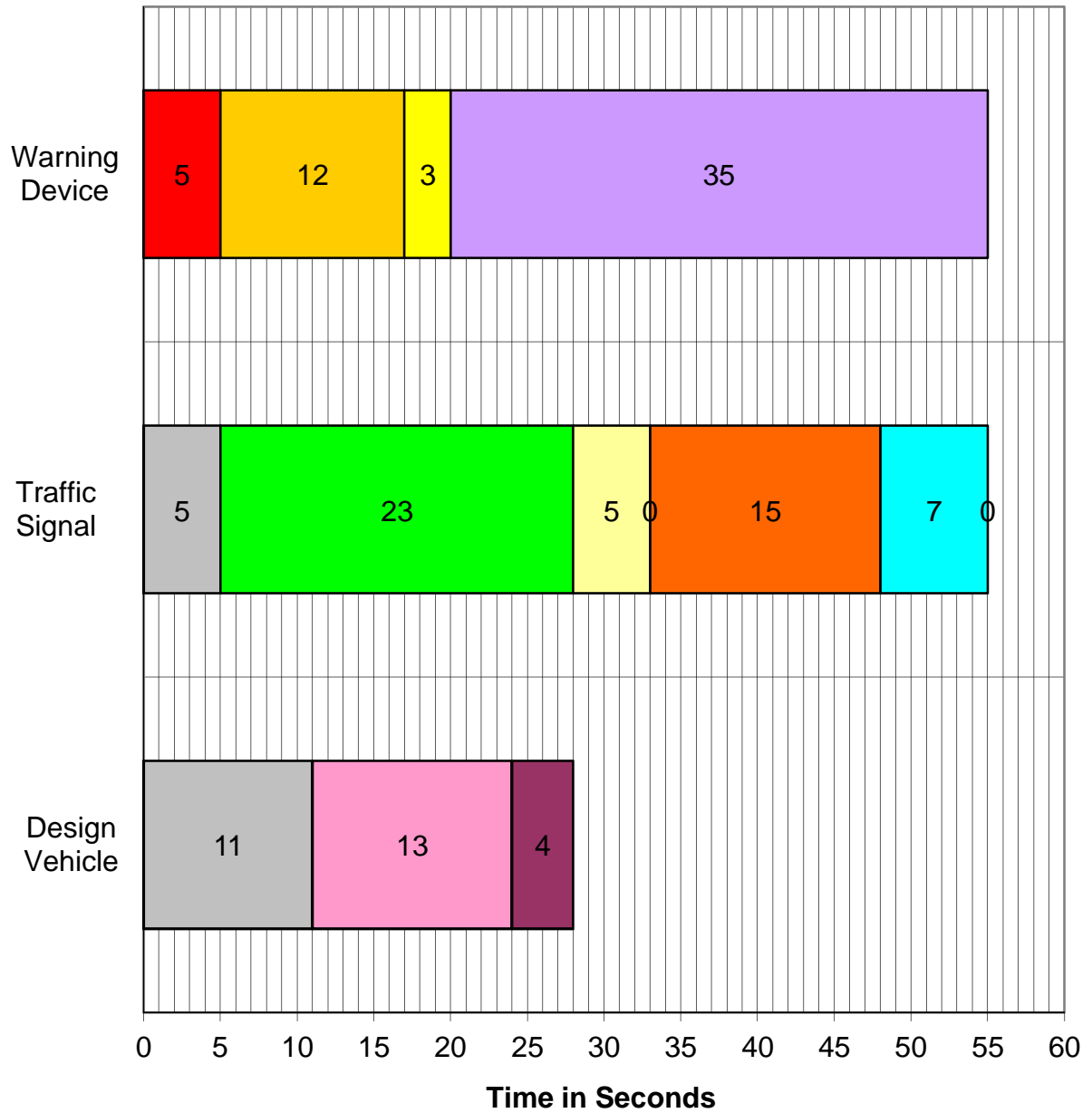
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Hazeltine	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	20 ft	Grade	0.0 %		
Clear Storage Distance, CSD	0 ft				
Length, L	20 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	0	0	0	0	
Start moving last vehicle in L (sec)	2.5	2.5	2.7	4.0	4
Move front of vehicle thru L (sec)	2.8	3.1	2.6	5.9	6
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	3.8	5.1	4.8	12.6	13
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	23 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	17 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	15 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	27 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	55 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	0 sec	0 sec minimum			
Minimum Warning Time, MWT	20 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	20 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	35 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	60 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	3960 ft				

Street Name:	MOL@Hazeltine	Crossing No:	
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Preemption Timeline



- | | | | |
|---|--|--|--|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

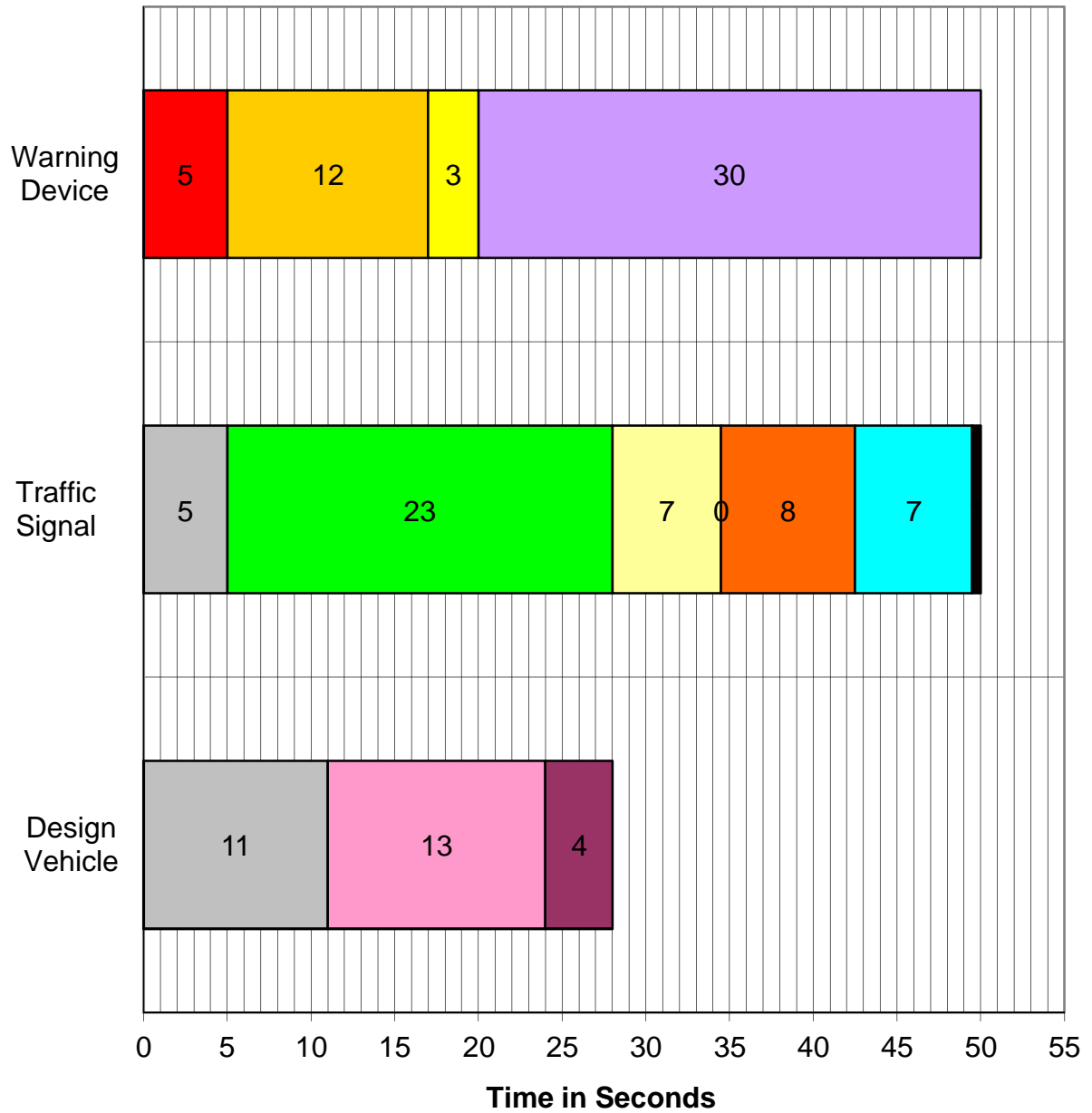
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Kester Ave	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	20 ft	Grade	0.0 %		
Clear Storage Distance, CSD	0 ft				
Length, L	20 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	0	0	0	0	
Start moving last vehicle in L (sec)	2.5	2.5	2.7	4.0	4
Move front of vehicle thru L (sec)	2.8	3.1	2.6	5.9	6
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	3.8	5.1	4.8	12.6	13
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	23 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	17 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	8 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	6.5 sec				
Maximum RWTT	22 sec				
Separation Time, ST	8 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	50 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	0 sec	0 sec minimum			
Minimum Warning Time, MWT	20 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	20 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	30 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	55 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	3630 ft				

Street Name:	MOL@Kester Ave	Crossing No:	
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Preemption Timeline



- | | | | |
|---|--|--|--|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

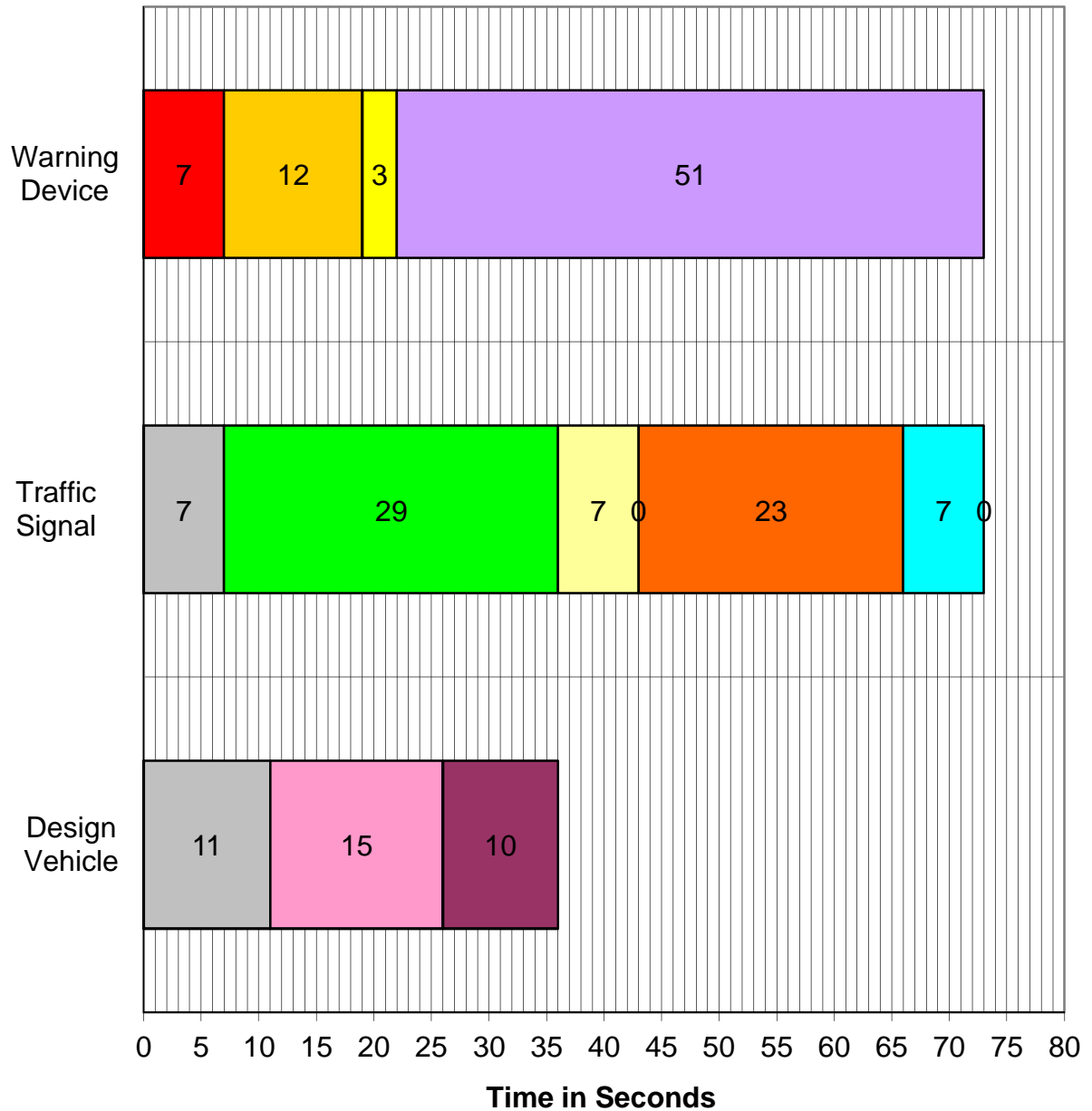
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Densmore	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	52 ft	Grade	0.0 %		
Clear Storage Distance, CSD	72 ft				
Length, L	124 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	5	3	2	1	
Start moving last vehicle in L (sec)	9.8	6.9	6.2	7.0	10
Move front of vehicle thru L (sec)	7.6	8.4	7.0	15.3	15
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	5.5	6.7	6.0	14.9	15
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	29 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	25 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	23 sec				
Minimum Green	7 sec				
Maximum Yellow + All Red	7.0 sec				
Maximum RWTT	37 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	73 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	2 sec	2 sec minimum			
Minimum Warning Time, MWT	22 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	22 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	51 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	78 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	5148 ft				

Street Name:	MOL@Densmore	Crossing No:	
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Preemption Timeline



- | | | | |
|-----------------|---------------------|--------------------|----------------------|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

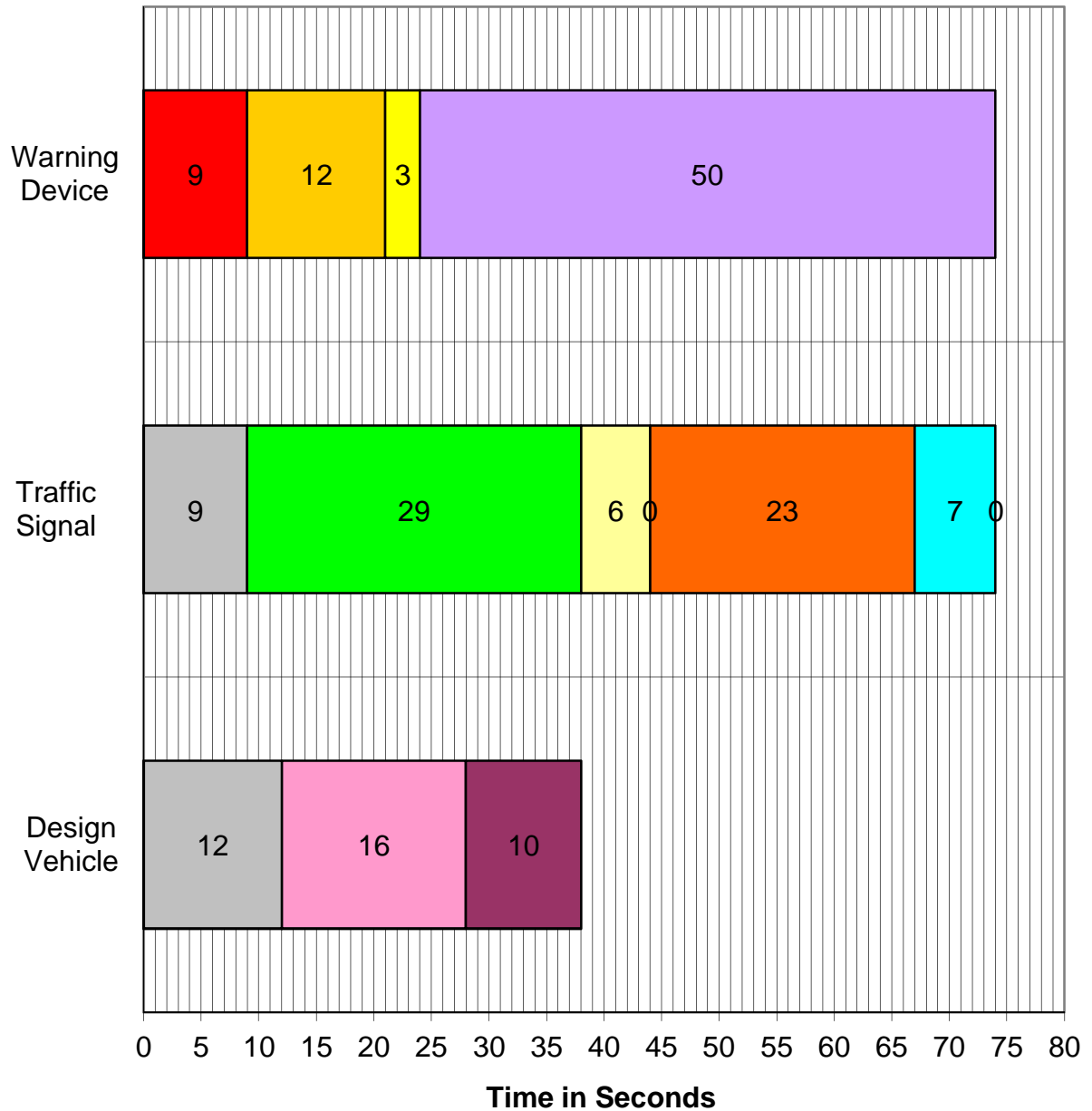
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Woodley	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	72 ft	Grade	0.0 %		
Clear Storage Distance, CSD	48 ft				
Length, L	120 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	5	3	2	1	
Start moving last vehicle in L (sec)	9.8	6.9	6.2	7.0	10
Move front of vehicle thru L (sec)	7.5	8.3	6.9	15.1	15
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	6.3	7.6	6.7	16.1	16
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	29 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	26 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	23 sec				
Minimum Green	7 sec				
Maximum Yellow + All Red	6.0 sec				
Maximum RWTT	36 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	74 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	4 sec	4 sec minimum			
Minimum Warning Time, MWT	24 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	24 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	50 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	79 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	5214 ft				

Street Name:	MOL@Woodley	Crossing No:	
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Preemption Timeline



- | | | | |
|-----------------|---------------------|--------------------|----------------------|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

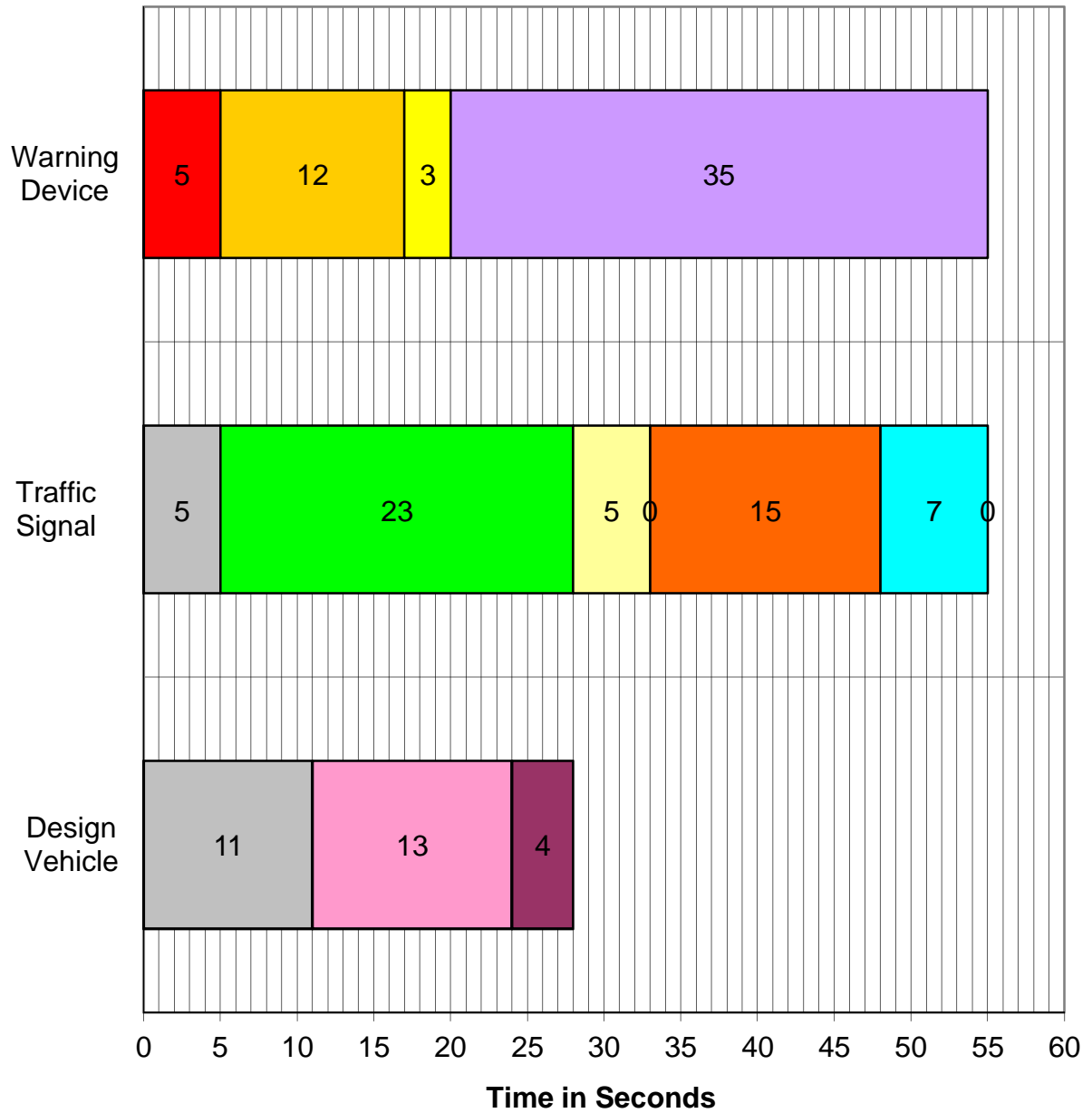
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Balboa	Crossing No.:		
Section 1: Highway and Traffic Information				
Part 1:				
Maximum Approach Move Distance	0 ft	Grade	0.0 %	
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %	
Minimum Track Clearance Dist, MTCD	20 ft	Grade	0.0 %	
Clear Storage Distance, CSD	0 ft			
Length, L	20 ft			
Part 2:				
	Car	Truck	Bus	Semi
Vehicle Length (ft)	15	30	40	65
Vehicle Height (ft)	5	14	11	14
Queue Space (ft/veh)	21	36	46	71
Vehicles within L (veh)	0	0	0	0
Start moving last vehicle in L (sec)	2.5	2.5	2.7	4.0 4
Move front of vehicle thru L (sec)	2.8	3.1	2.6	5.9 6
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0 11
Move entire vehicle thru MTCD (sec)	3.8	5.1	4.8	12.6 13
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1 4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0 0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0 0
Include as Design Vehicle?	Yes	Yes	Yes	Yes Use
Part 3:				
Green Track Clearance Time	23 sec	<i>Green Track Clearance extended to Gate Down</i>		
MTCD Queue Clearance Time	17 sec			
Minimum Walk	7 sec			
Maximum Ped Clearance	15 sec			
Minimum Green	10 sec			
Maximum Yellow + All Red	5.0 sec			
Maximum RWTT	27 sec			
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>		
Maximum Preemption Time, MPT	55 sec			
Section 2: Railroad Information				
Lights Flash	3 sec			
Gate Descent	12 sec			
Minimum Time, MT	20 sec			
Clearance Time, CT	0 sec	0 sec minimum		
Minimum Warning Time, MWT	20 sec			
Buffer Time, BT	0 sec			
Total Warning Time, TWT	20 sec			
Include vehicle-gate interaction check?	Yes			
Distance from gate to vehicle	6 ft			
Advance Preemption Time, APT	35 sec			
Equipment Response Time, ERT	5 sec			
Total Approach Time, TAT	60 sec			
Maximum Authorized Speed, MAS	45 mph			
Total Approach Distance, TAD	3960 ft			

Street Name:	MOL@Balboa	Crossing No:	
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Preemption Timeline



- | | | | |
|-----------------|---------------------|--------------------|----------------------|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

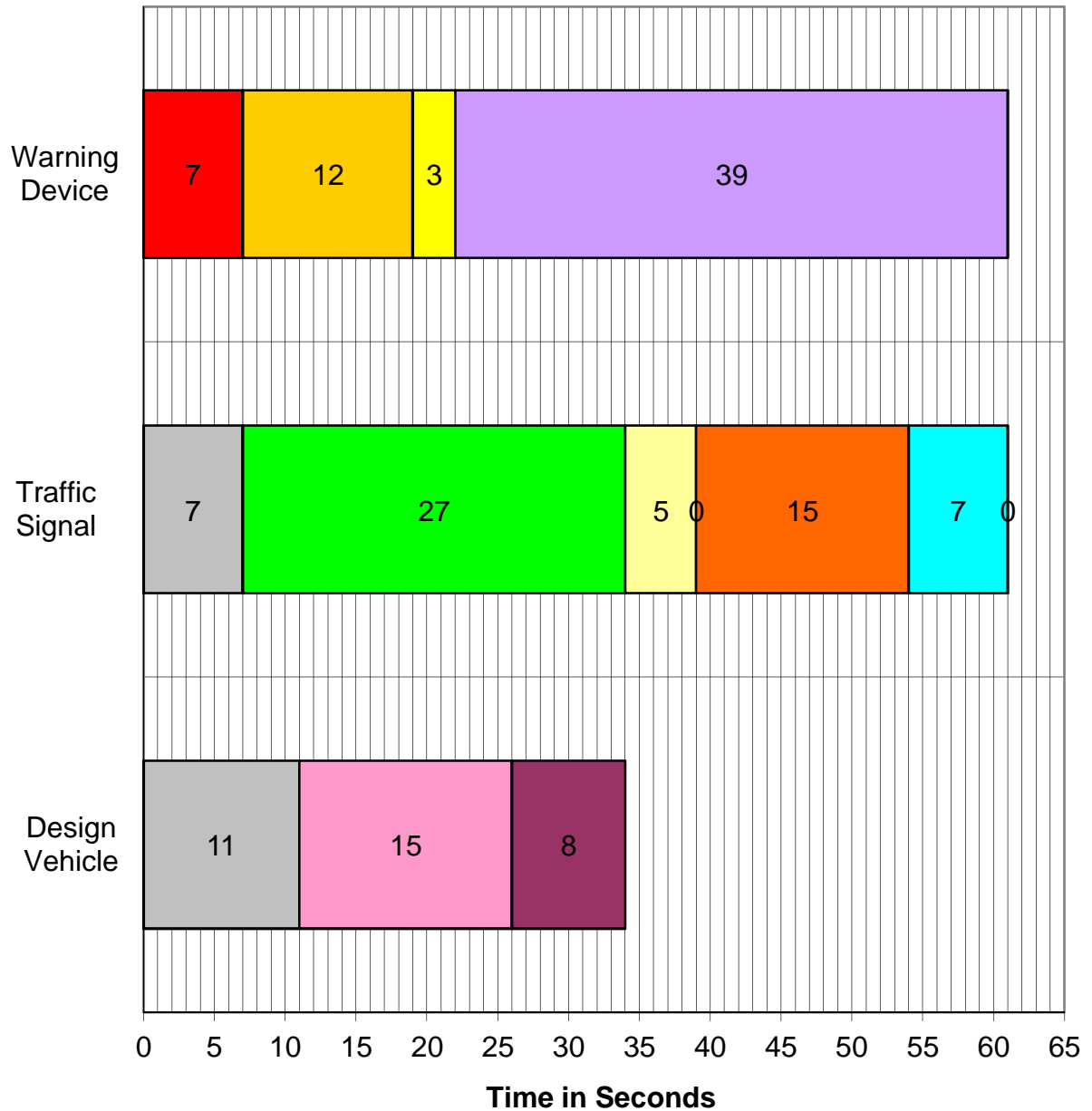
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@White Oak	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	55 ft	Grade	0.0 %		
Clear Storage Distance, CSD	48 ft				
Length, L	103 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	4	2	2	1	
Start moving last vehicle in L (sec)	8.3	5.4	6.2	7.0	8
Move front of vehicle thru L (sec)	6.9	7.6	6.4	13.9	14
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	5.6	6.9	6.1	15.1	15
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	27 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	23 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	15 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	27 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	61 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	2 sec	<i>2 sec minimum</i>			
Minimum Warning Time, MWT	22 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	22 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	39 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	66 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4356 ft				

Street Name:	MOL@White Oak	Crossing No:	
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Preemption Timeline



- | | | | |
|---|--|--|--|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

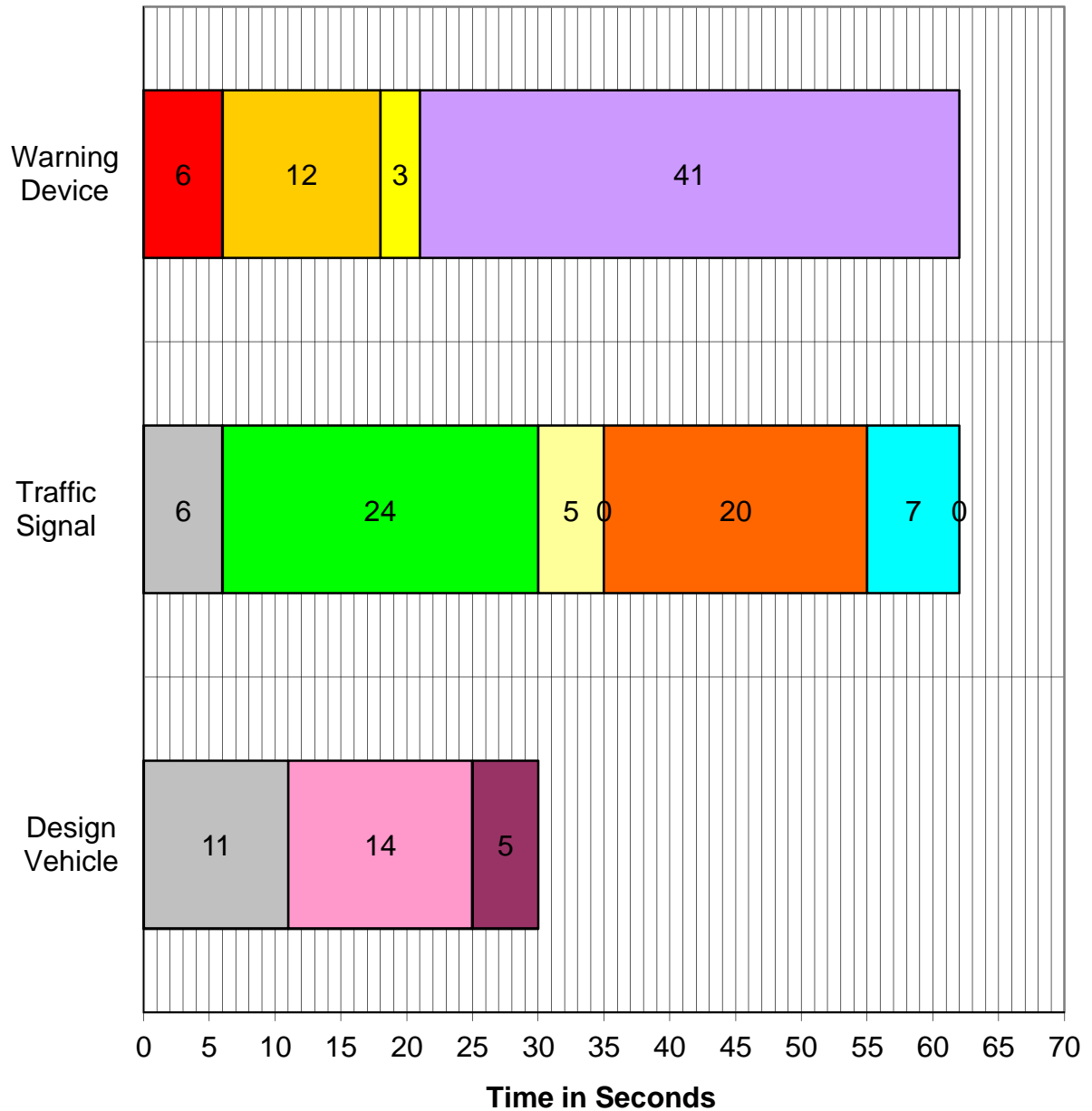
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Lindley	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	45 ft	Grade	0.0 %		
Clear Storage Distance, CSD	5 ft				
Length, L	50 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	2	1	1	0	
Start moving last vehicle in L (sec)	5.4	3.9	4.5	4.0	5
Move front of vehicle thru L (sec)	4.6	5.1	4.3	9.6	10
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	5.1	6.4	5.7	14.4	14
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	24 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	19 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	20 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	32 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	62 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	1 sec	<i>1 sec minimum</i>			
Minimum Warning Time, MWT	21 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	21 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	41 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	67 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4422 ft				

Street Name:	MOL@Lindley	Crossing No:	
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Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

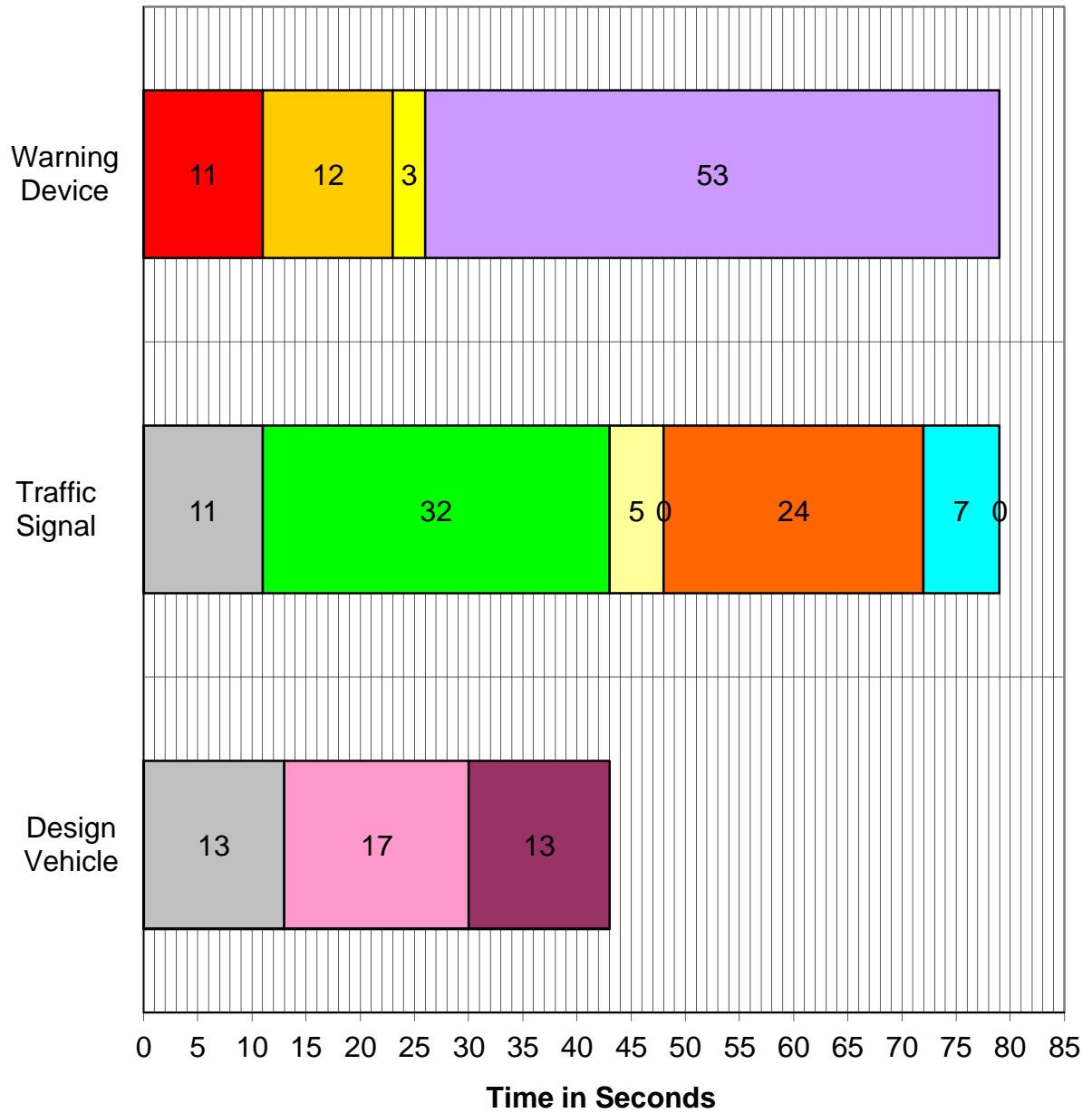
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Reseda	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	94 ft	Grade	0.0 %		
Clear Storage Distance, CSD	68 ft				
Length, L	162 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	7	4	3	2	
Start moving last vehicle in L (sec)	12.7	8.3	8.0	10.0	13
Move front of vehicle thru L (sec)	8.8	9.8	8.1	17.6	18
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	7.1	8.4	7.3	17.4	17
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	32 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	30 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	24 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	36 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	79 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	6 sec	<i>6 sec minimum</i>			
Minimum Warning Time, MWT	26 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	26 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	53 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	84 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	5544 ft				

Street Name:	MOL@Reseda	Crossing No:	
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Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

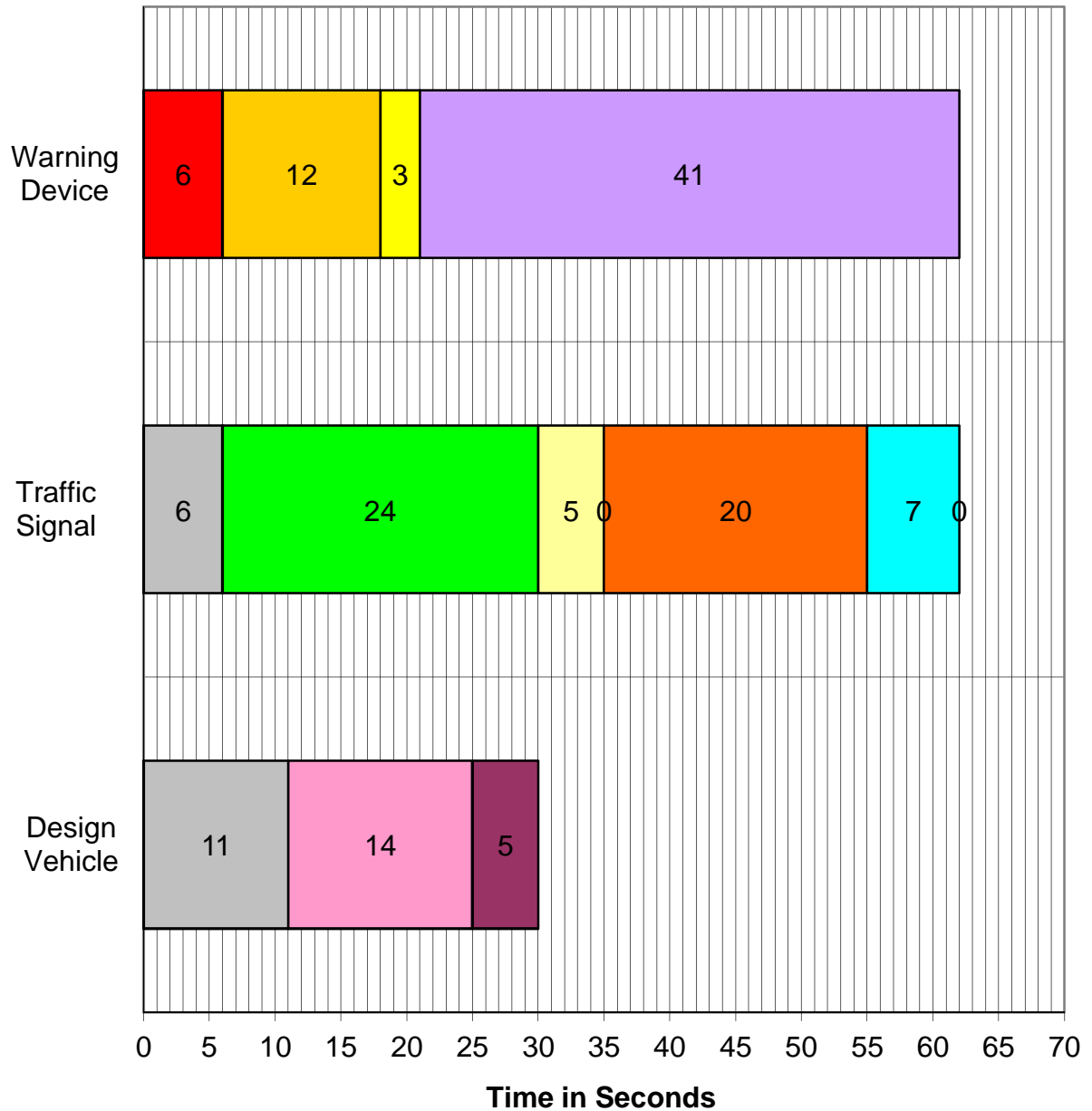
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Wilbur	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	42 ft	Grade	0.0 %		
Clear Storage Distance, CSD	11 ft				
Length, L	53 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	2	1	1	0	
Start moving last vehicle in L (sec)	5.4	3.9	4.5	4.0	5
Move front of vehicle thru L (sec)	4.8	5.3	4.5	9.9	10
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	5.0	6.3	5.6	14.2	14
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	24 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	19 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	20 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	32 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	62 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	1 sec	<i>1 sec minimum</i>			
Minimum Warning Time, MWT	21 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	21 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	41 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	67 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4422 ft				

Street Name:	MOL@Wilbur	Crossing No:	
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Preemption Timeline



- | | | | |
|---|--|--|--|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

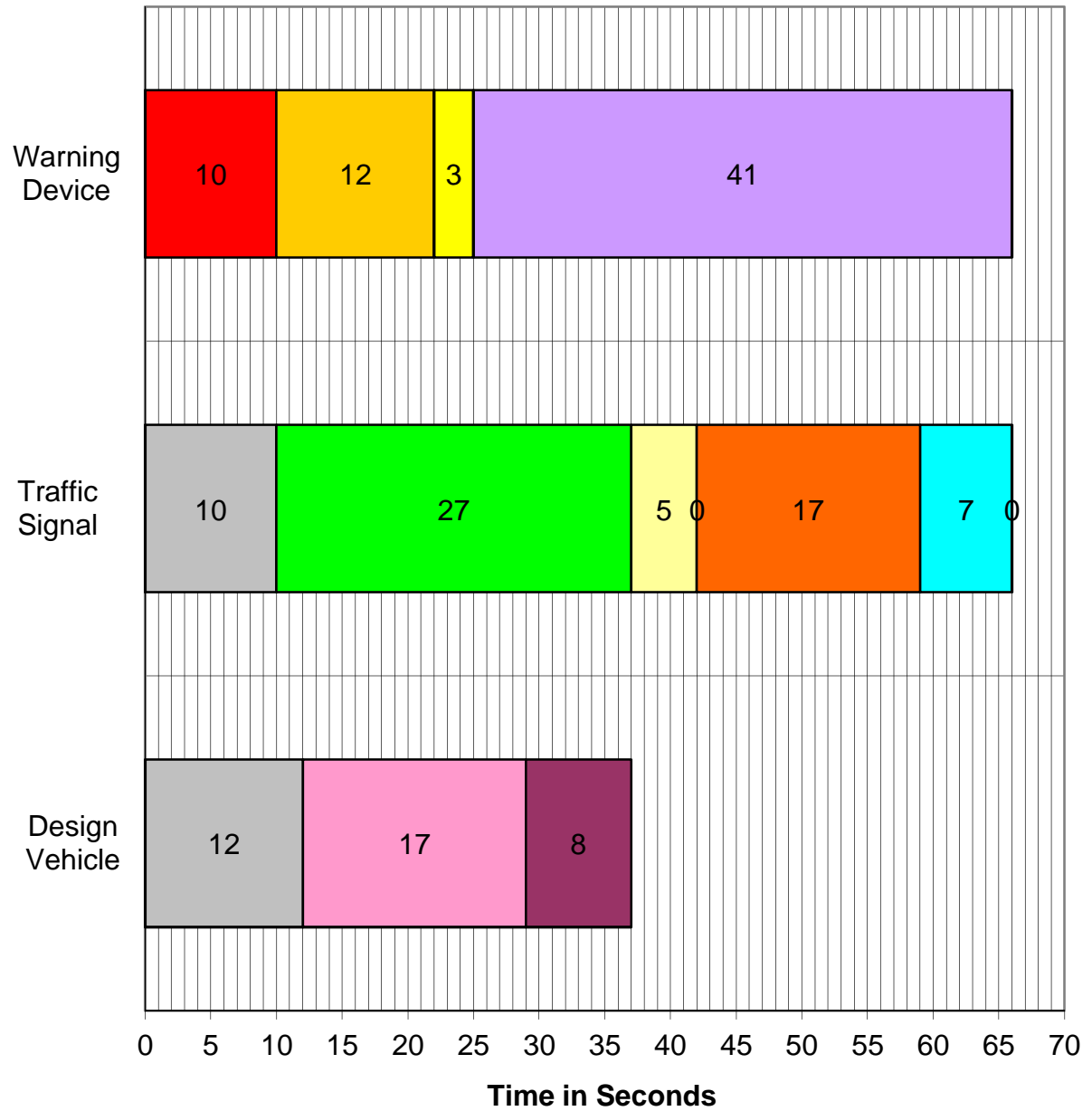
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Tampa	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	85 ft	Grade	0.0 %		
Clear Storage Distance, CSD	8 ft				
Length, L	93 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	4	2	2	1	
Start moving last vehicle in L (sec)	8.3	5.4	6.2	7.0	8
Move front of vehicle thru L (sec)	6.5	7.2	6.0	13.2	13
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	6.8	8.1	7.1	16.9	17
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	27 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	25 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	17 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	29 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	66 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	5 sec	5 sec minimum			
Minimum Warning Time, MWT	25 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	25 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	41 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	71 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4686 ft				

Street Name:	MOL@Tampa	Crossing No:	
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Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

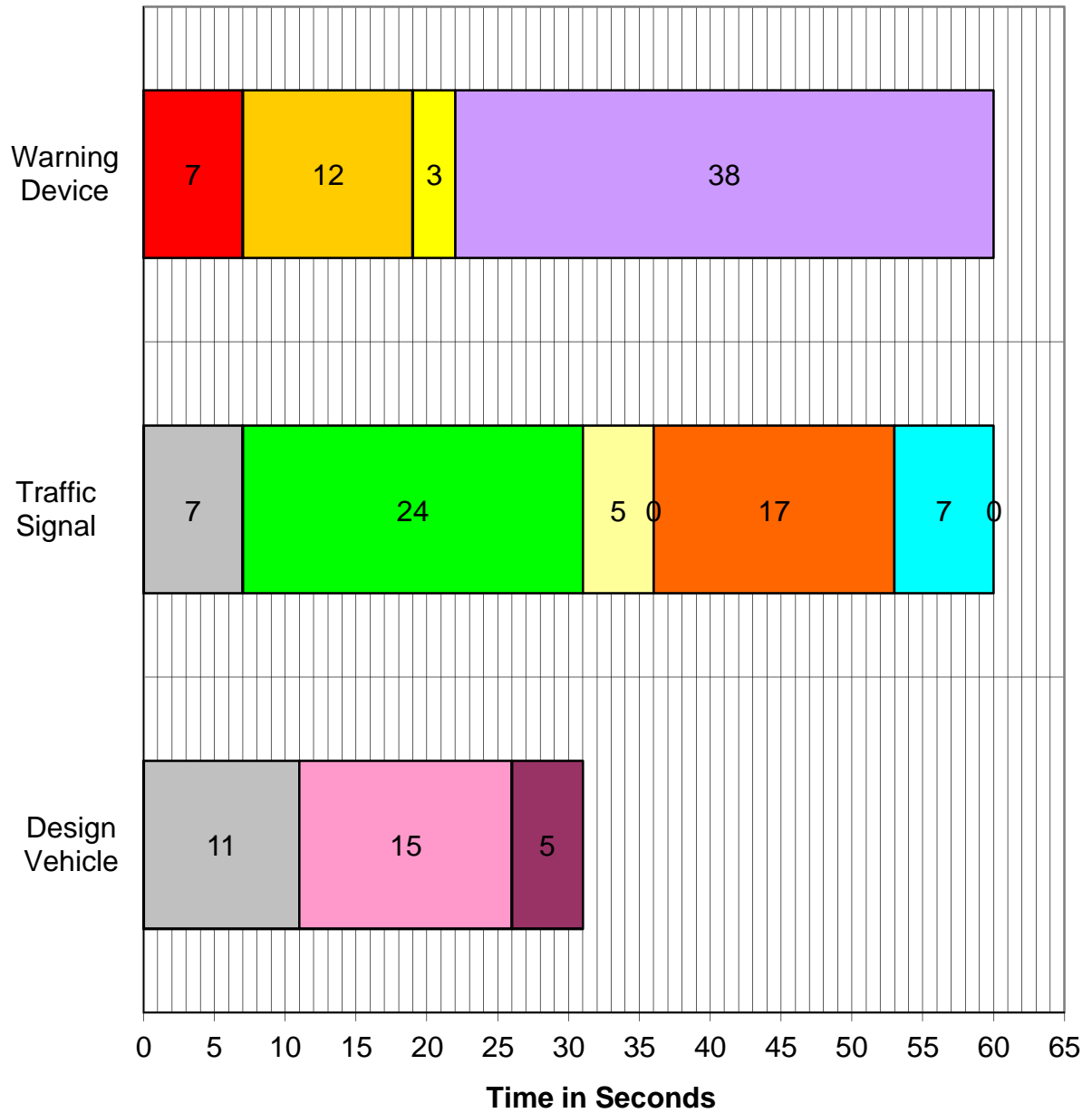
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Corbin	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	52 ft	Grade	0.0 %		
Clear Storage Distance, CSD	8 ft				
Length, L	60 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	2	1	1	0	
Start moving last vehicle in L (sec)	5.4	3.9	4.5	4.0	5
Move front of vehicle thru L (sec)	5.1	5.7	4.8	10.5	11
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	5.5	6.7	6.0	14.9	15
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	24 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	20 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	17 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	29 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	60 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	2 sec	2 sec minimum			
Minimum Warning Time, MWT	22 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	22 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	38 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	65 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4290 ft				

Street Name:	MOL@Corbin	Crossing No:	
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Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

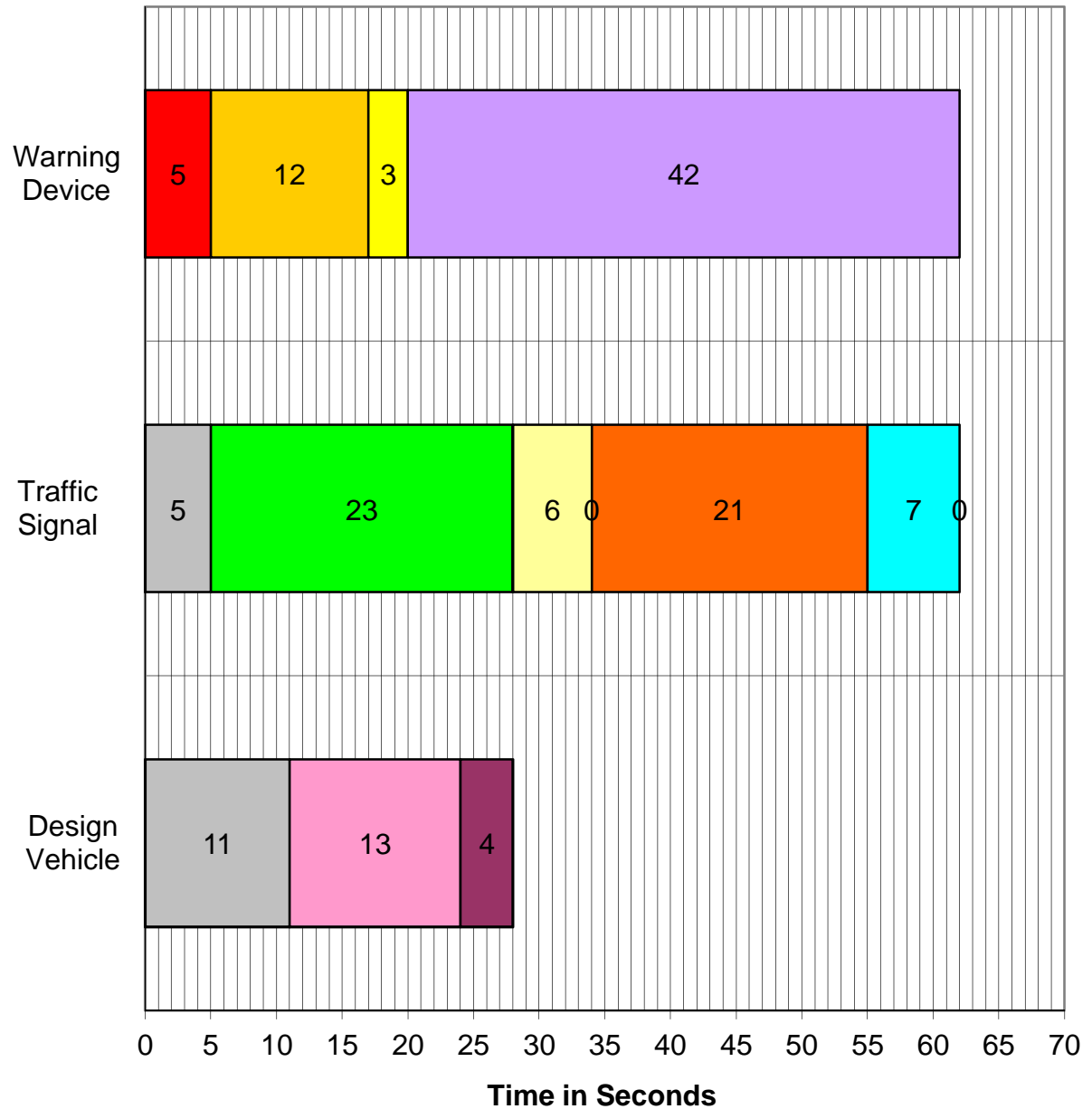
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Victory	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	20 ft	Grade	0.0 %		
Clear Storage Distance, CSD	0 ft				
Length, L	20 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	0	0	0	0	
Start moving last vehicle in L (sec)	2.5	2.5	2.7	4.0	4
Move front of vehicle thru L (sec)	2.8	3.1	2.6	5.9	6
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	3.8	5.1	4.8	12.6	13
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	23 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	17 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	21 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	6.0 sec				
Maximum RWTT	34 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	62 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	0 sec	0 sec minimum			
Minimum Warning Time, MWT	20 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	20 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	42 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	67 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4422 ft				

Street Name:	MOL@Victory	Crossing No:	
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Preemption Timeline



- | | | | |
|---|--|--|--|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

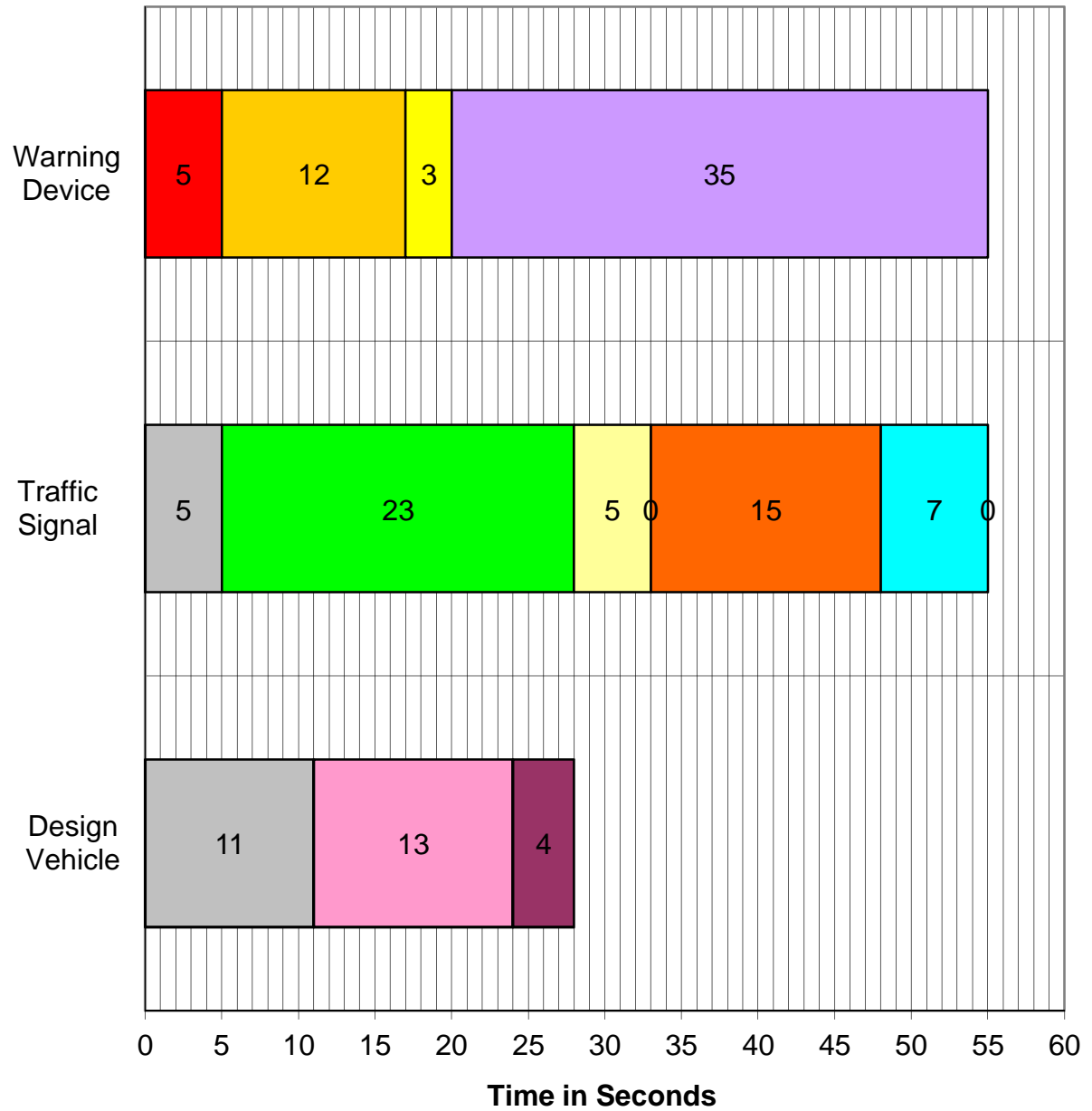
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Winnetka	Crossing No.:		
Section 1: Highway and Traffic Information				
Part 1:				
Maximum Approach Move Distance	0 ft	Grade	0.0 %	
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %	
Minimum Track Clearance Dist, MTCD	20 ft	Grade	0.0 %	
Clear Storage Distance, CSD	0 ft			
Length, L	20 ft			
Part 2:				
	Car	Truck	Bus	Semi
Vehicle Length (ft)	15	30	40	65
Vehicle Height (ft)	5	14	11	14
Queue Space (ft/veh)	21	36	46	71
Vehicles within L (veh)	0	0	0	0
Start moving last vehicle in L (sec)	2.5	2.5	2.7	4.0 4
Move front of vehicle thru L (sec)	2.8	3.1	2.6	5.9 6
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0 11
Move entire vehicle thru MTCD (sec)	3.8	5.1	4.8	12.6 13
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1 4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0 0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0 0
Include as Design Vehicle?	Yes	Yes	Yes	Yes Use
Part 3:				
Green Track Clearance Time	23 sec	<i>Green Track Clearance extended to Gate Down</i>		
MTCD Queue Clearance Time	17 sec			
Minimum Walk	7 sec			
Maximum Ped Clearance	15 sec			
Minimum Green	10 sec			
Maximum Yellow + All Red	5.0 sec			
Maximum RWTT	27 sec			
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>		
Maximum Preemption Time, MPT	55 sec			
Section 2: Railroad Information				
Lights Flash	3 sec			
Gate Descent	12 sec			
Minimum Time, MT	20 sec			
Clearance Time, CT	0 sec	<i>0 sec minimum</i>		
Minimum Warning Time, MWT	20 sec			
Buffer Time, BT	0 sec			
Total Warning Time, TWT	20 sec			
Include vehicle-gate interaction check?	Yes			
Distance from gate to vehicle	6 ft			
Advance Preemption Time, APT	35 sec			
Equipment Response Time, ERT	5 sec			
Total Approach Time, TAT	60 sec			
Maximum Authorized Speed, MAS	45 mph			
Total Approach Distance, TAD	3960 ft			

Street Name:	MOL@Winnetka	Crossing No:	
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Preemption Timeline



- | | | | |
|-----------------|---------------------|--------------------|----------------------|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

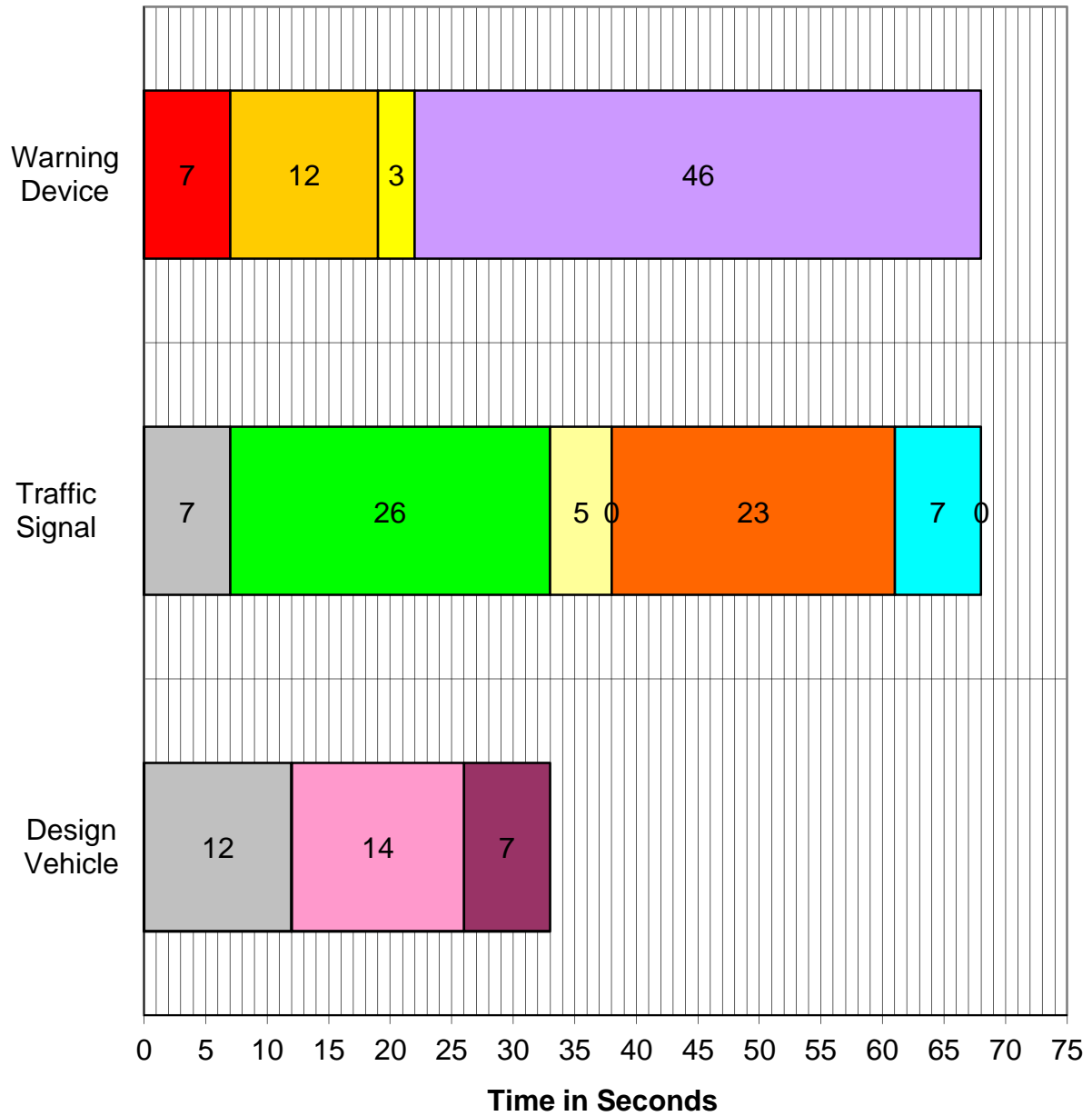
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Mason	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0	ft	Grade		
Maximum Conflicting Move Distance	0	ft	Grade		
Minimum Track Clearance Dist, MTCD	46	ft	Grade		
Clear Storage Distance, CSD	20	ft			
Length, L	66	ft			
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	3	1	1	0	
Start moving last vehicle in L (sec)	6.8	3.9	4.5	4.0	7
Move front of vehicle thru L (sec)	5.4	6.0	5.0	11.0	11
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	5.2	6.5	5.8	14.5	14
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	26	sec	<i>Green Track Clearance extended to Gate Down</i>		
MTCD Queue Clearance Time	21	sec			
Minimum Walk	7	sec			
Maximum Ped Clearance	23	sec			
Minimum Green	5	sec			
Maximum Yellow + All Red	5.0	sec			
Maximum RWTT	35	sec			
Separation Time, ST	5	sec	<i>See Preemption Timeline for actual Separation Time</i>		
Maximum Preemption Time, MPT	68	sec			
Section 2: Railroad Information					
Lights Flash	3	sec			
Gate Descent	12	sec			
Minimum Time, MT	20	sec			
Clearance Time, CT	2	sec	<i>2 sec minimum</i>		
Minimum Warning Time, MWT	22	sec			
Buffer Time, BT	0	sec			
Total Warning Time, TWT	22	sec			
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6	ft			
Advance Preemption Time, APT	46	sec			
Equipment Response Time, ERT	5	sec			
Total Approach Time, TAT	73	sec			
Maximum Authorized Speed, MAS	45	mph			
Total Approach Distance, TAD	4818	ft			

Street Name:	MOL@Mason	Crossing No:	
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Preemption Timeline



- | | | | |
|-----------------|---------------------|--------------------|----------------------|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

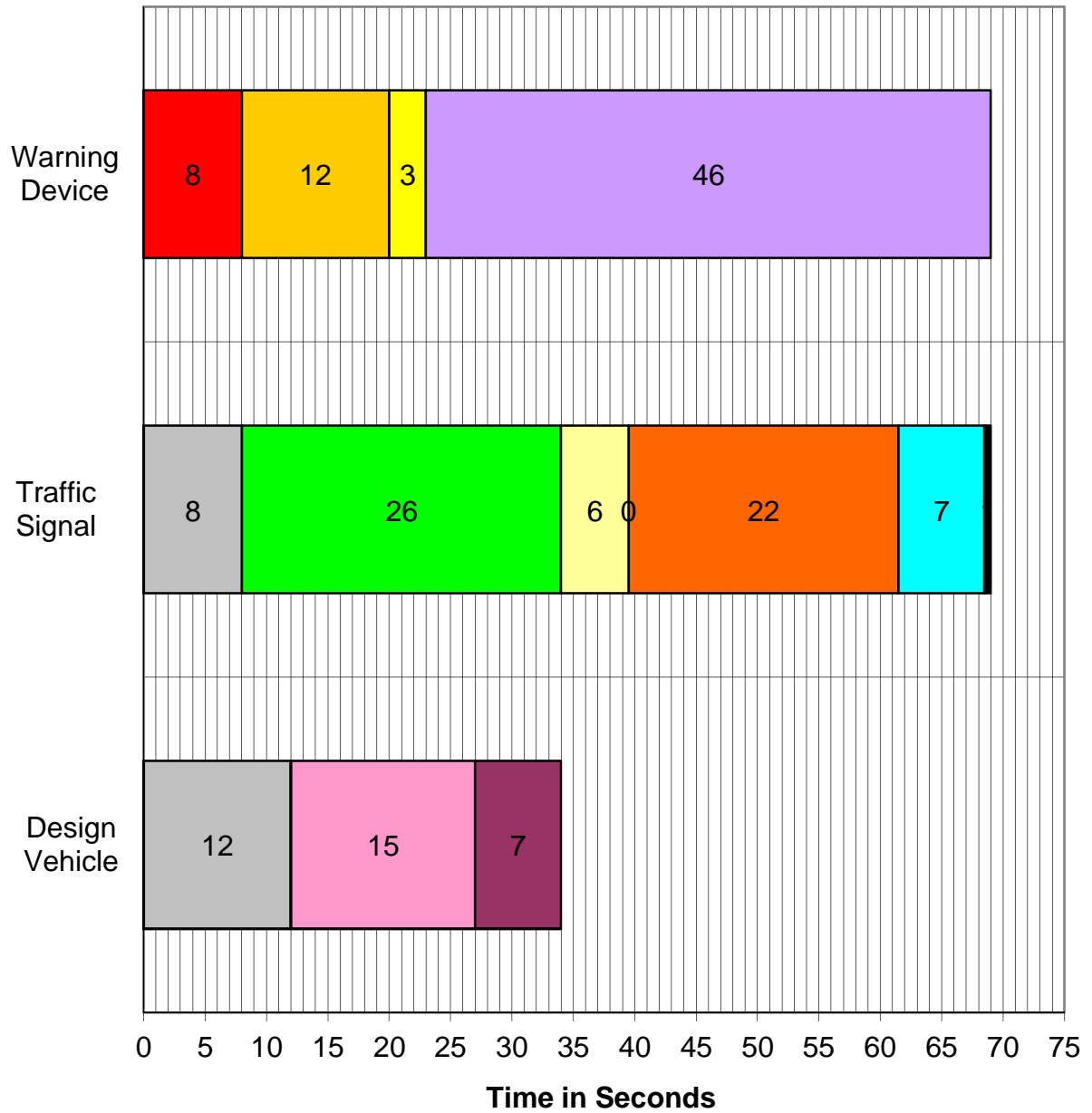
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@DeSoto	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	56 ft	Grade	0.0 %		
Clear Storage Distance, CSD	9 ft				
Length, L	65 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	3	1	1	0	
Start moving last vehicle in L (sec)	6.8	3.9	4.5	4.0	7
Move front of vehicle thru L (sec)	5.4	5.9	5.0	11.0	11
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	5.6	6.9	6.1	15.1	15
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	26 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	22 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	22 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.5 sec				
Maximum RWTT	35 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	69 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	3 sec	<i>3 sec minimum</i>			
Minimum Warning Time, MWT	23 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	23 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	46 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	74 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4884 ft				

Street Name:	MOL@DeSoto	Crossing No:	
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Preemption Timeline



- | | | | |
|-----------------|---------------------|--------------------|----------------------|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

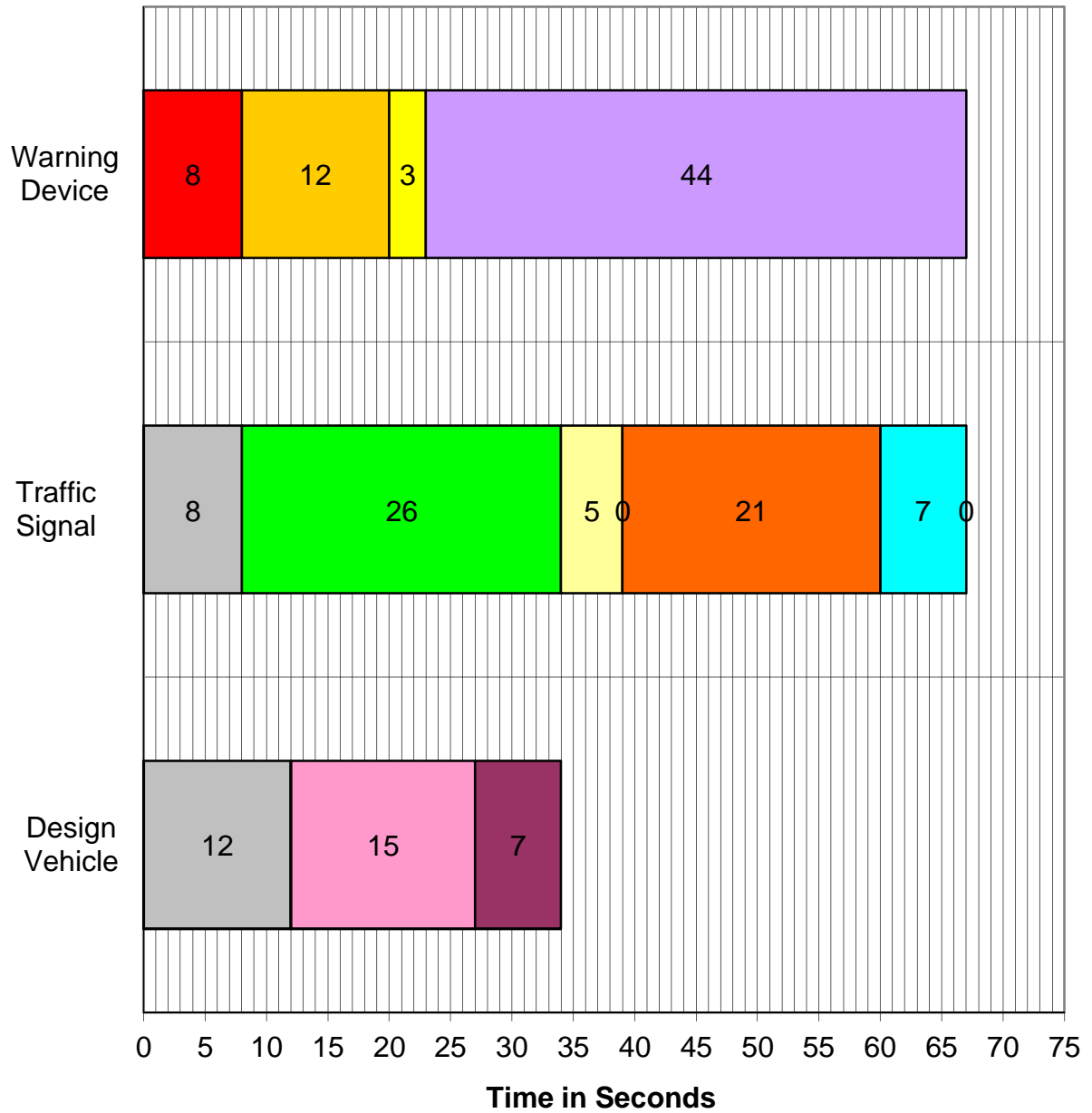
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Vanowen	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	60 ft	Grade	0.0 %		
Clear Storage Distance, CSD	5 ft				
Length, L	65 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	3	1	1	0	
Start moving last vehicle in L (sec)	6.8	3.9	4.5	4.0	7
Move front of vehicle thru L (sec)	5.4	5.9	5.0	11.0	11
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	5.8	7.1	6.3	15.4	15
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	26 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	22 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	21 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	33 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	67 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	3 sec	3 sec minimum			
Minimum Warning Time, MWT	23 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	23 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	44 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	72 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4752 ft				

Street Name:	MOL@Vanowen	Crossing No:	
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Preemption Timeline



- | | | | |
|---|--|---|--|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

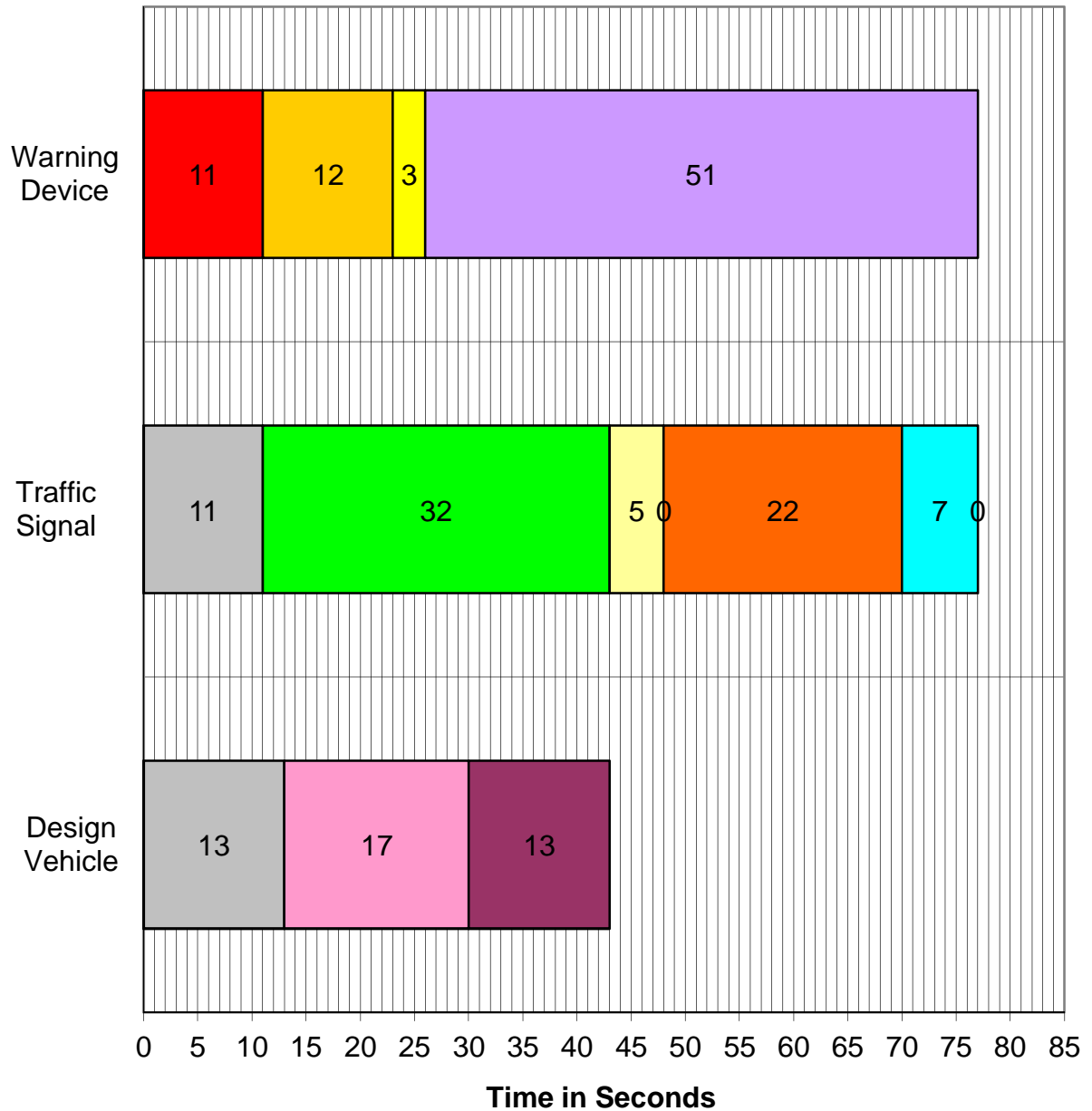
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Sherman Way	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	92 ft	Grade	0.0 %		
Clear Storage Distance, CSD	75 ft				
Length, L	167 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	7	4	3	2	
Start moving last vehicle in L (sec)	12.7	8.3	8.0	10.0	13
Move front of vehicle thru L (sec)	9.0	9.9	8.2	17.9	18
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	7.0	8.4	7.3	17.3	17
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	32 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	30 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	22 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	34 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	77 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	6 sec	<i>6 sec minimum</i>			
Minimum Warning Time, MWT	26 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	26 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	51 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	82 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	5412 ft				

Street Name:	MOL@Sherman Way	Crossing No:	
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Preemption Timeline



- | | | | |
|---|--|--|--|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

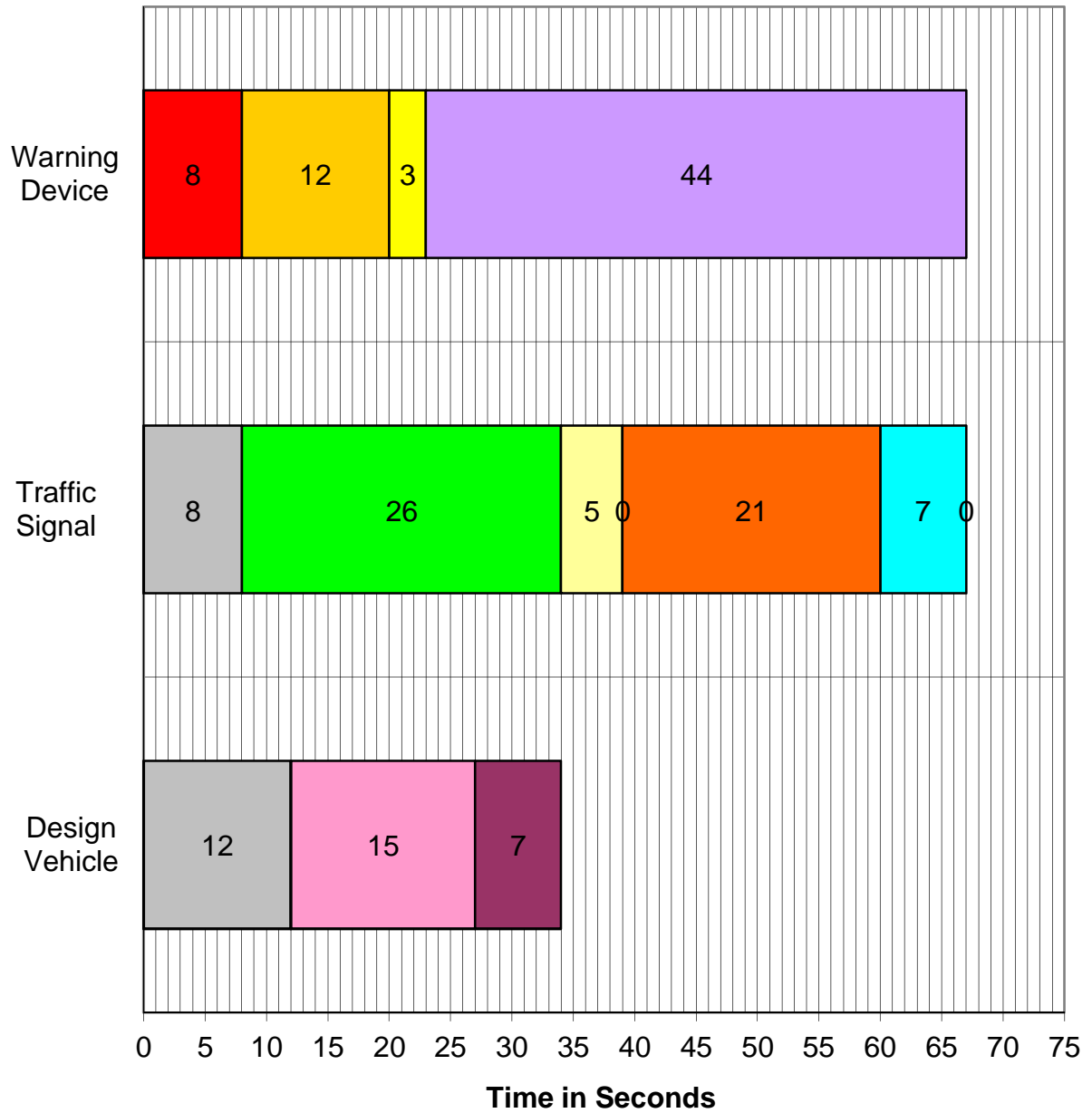
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Valerio	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	57 ft	Grade	0.0 %		
Clear Storage Distance, CSD	14 ft				
Length, L	71 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	3	1	1	1	
Start moving last vehicle in L (sec)	6.8	3.9	4.5	7.0	7
Move front of vehicle thru L (sec)	5.6	6.2	5.2	11.5	11
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	5.7	6.9	6.2	15.2	15
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	26 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	22 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	21 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	33 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	67 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	3 sec	<i>3 sec minimum</i>			
Minimum Warning Time, MWT	23 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	23 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	44 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	72 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4752 ft				

Street Name:	MOL@Valerio	Crossing No:	
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Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

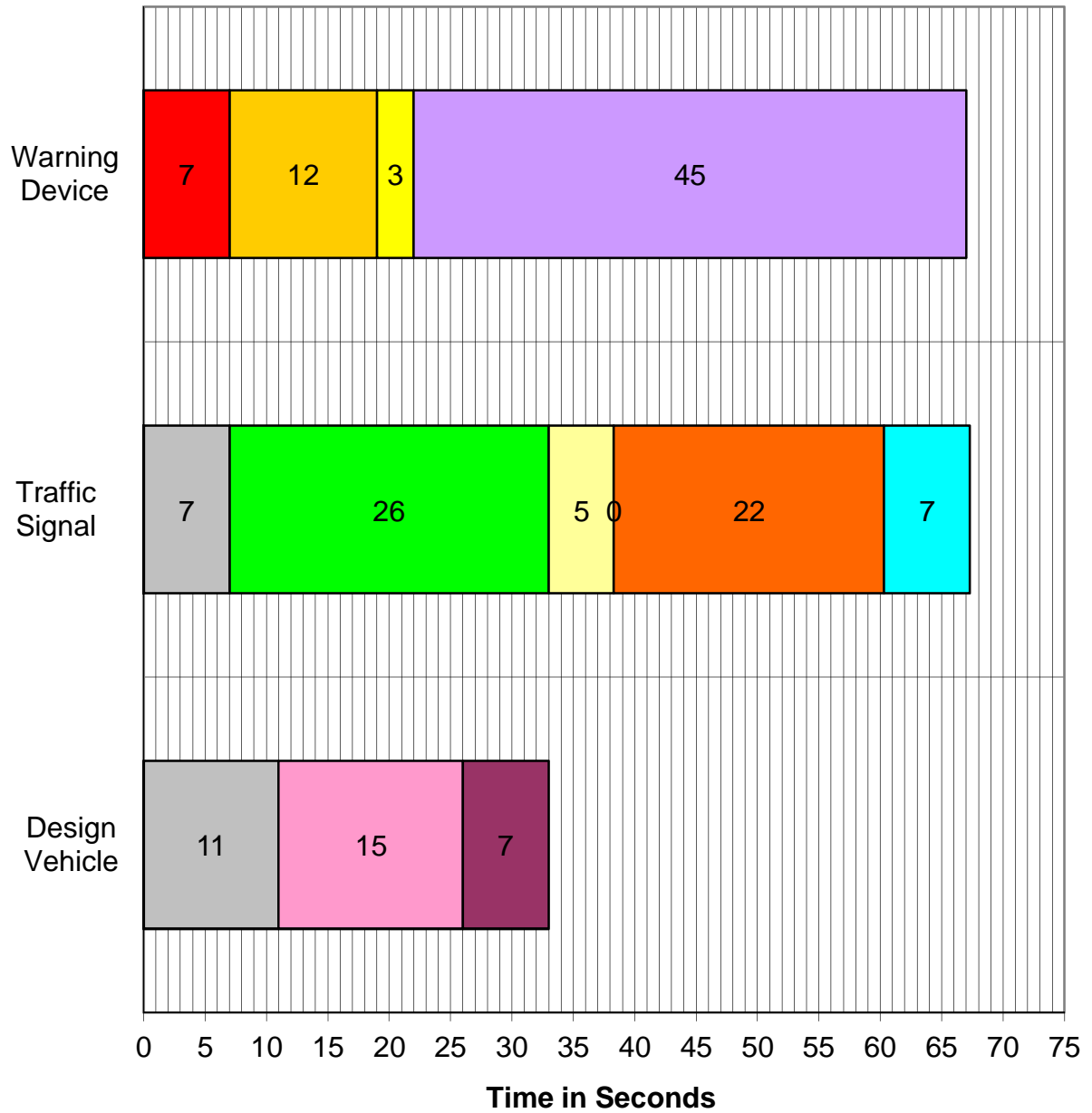
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Saticoy	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	51 ft	Grade	0.0 %		
Clear Storage Distance, CSD	29 ft				
Length, L	80 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	3	2	1	1	
Start moving last vehicle in L (sec)	6.8	5.4	4.5	7.0	7
Move front of vehicle thru L (sec)	6.0	6.6	5.6	12.2	12
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	5.4	6.7	6.0	14.8	15
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	26 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	22 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	22 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.3 sec				
Maximum RWTT	34 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	67 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	2 sec	<i>2 sec minimum</i>			
Minimum Warning Time, MWT	22 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	22 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	45 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	72 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4752 ft				

Street Name:	MOL @Saticoy	Crossing No:	
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Preemption Timeline



- | | | | |
|-----------------|---------------------|--------------------|----------------------|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

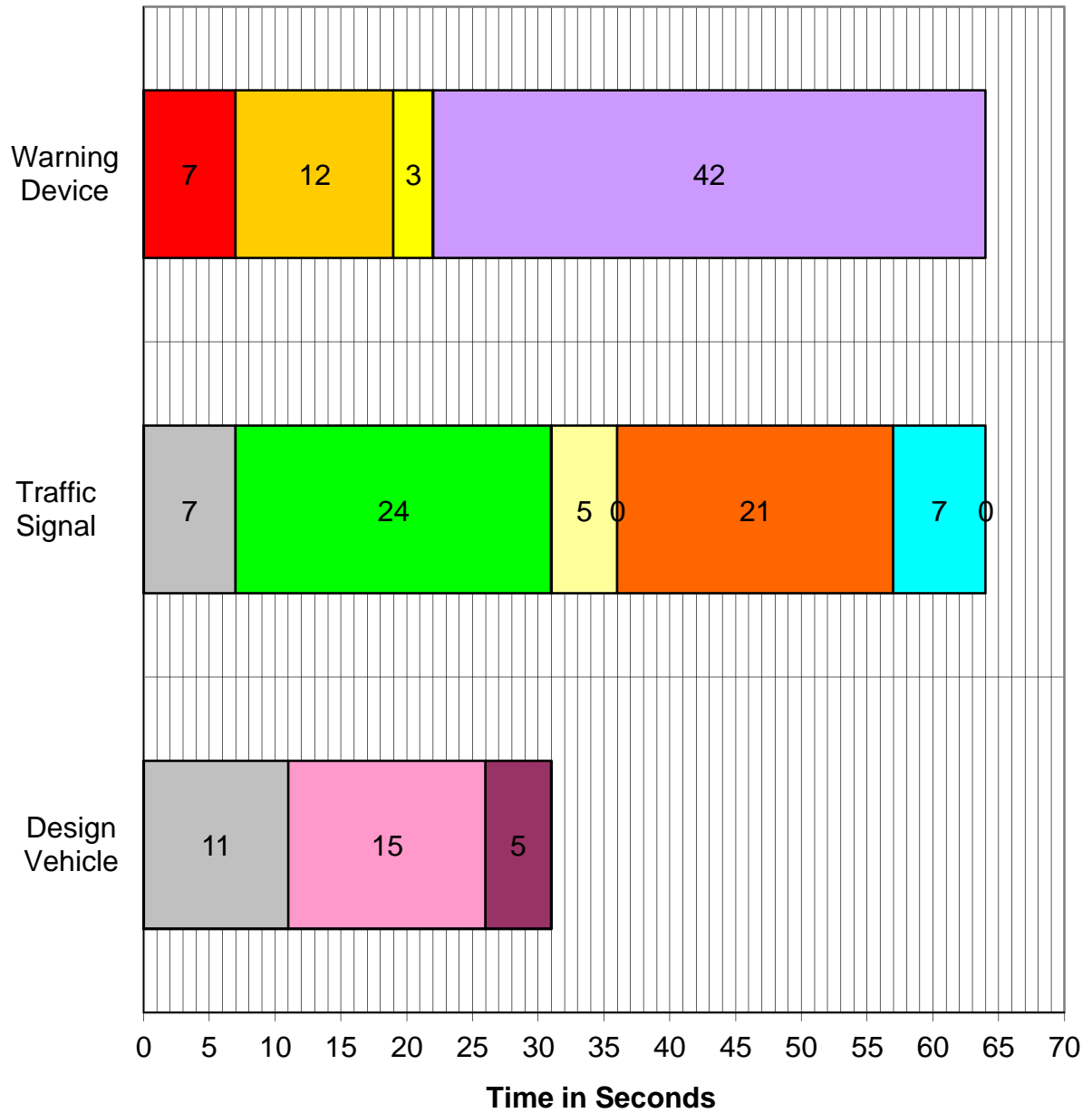
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Roscoe	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0	ft	Grade		
Maximum Conflicting Move Distance	0	ft	Grade		
Minimum Track Clearance Dist, MTCD	51	ft	Grade		
Clear Storage Distance, CSD	0	ft			
Length, L	51	ft			
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	2	1	1	0	
Start moving last vehicle in L (sec)	5.4	3.9	4.5	4.0	5
Move front of vehicle thru L (sec)	4.7	5.2	4.4	9.7	10
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	5.4	6.7	6.0	14.8	15
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	24	sec	<i>Green Track Clearance extended to Gate Down</i>		
MTCD Queue Clearance Time	20	sec			
Minimum Walk	7	sec			
Maximum Ped Clearance	21	sec			
Minimum Green	10	sec			
Maximum Yellow + All Red	5.0	sec			
Maximum RWTT	33	sec			
Separation Time, ST	5	sec	<i>See Preemption Timeline for actual Separation Time</i>		
Maximum Preemption Time, MPT	64	sec			
Section 2: Railroad Information					
Lights Flash	3	sec			
Gate Descent	12	sec			
Minimum Time, MT	20	sec			
Clearance Time, CT	2	sec	<i>2 sec minimum</i>		
Minimum Warning Time, MWT	22	sec			
Buffer Time, BT	0	sec			
Total Warning Time, TWT	22	sec			
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6	ft			
Advance Preemption Time, APT	42	sec			
Equipment Response Time, ERT	5	sec			
Total Approach Time, TAT	69	sec			
Maximum Authorized Speed, MAS	45	mph			
Total Approach Distance, TAD	4554	ft			

Street Name:	MOL@Roscoe	Crossing No:	
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Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

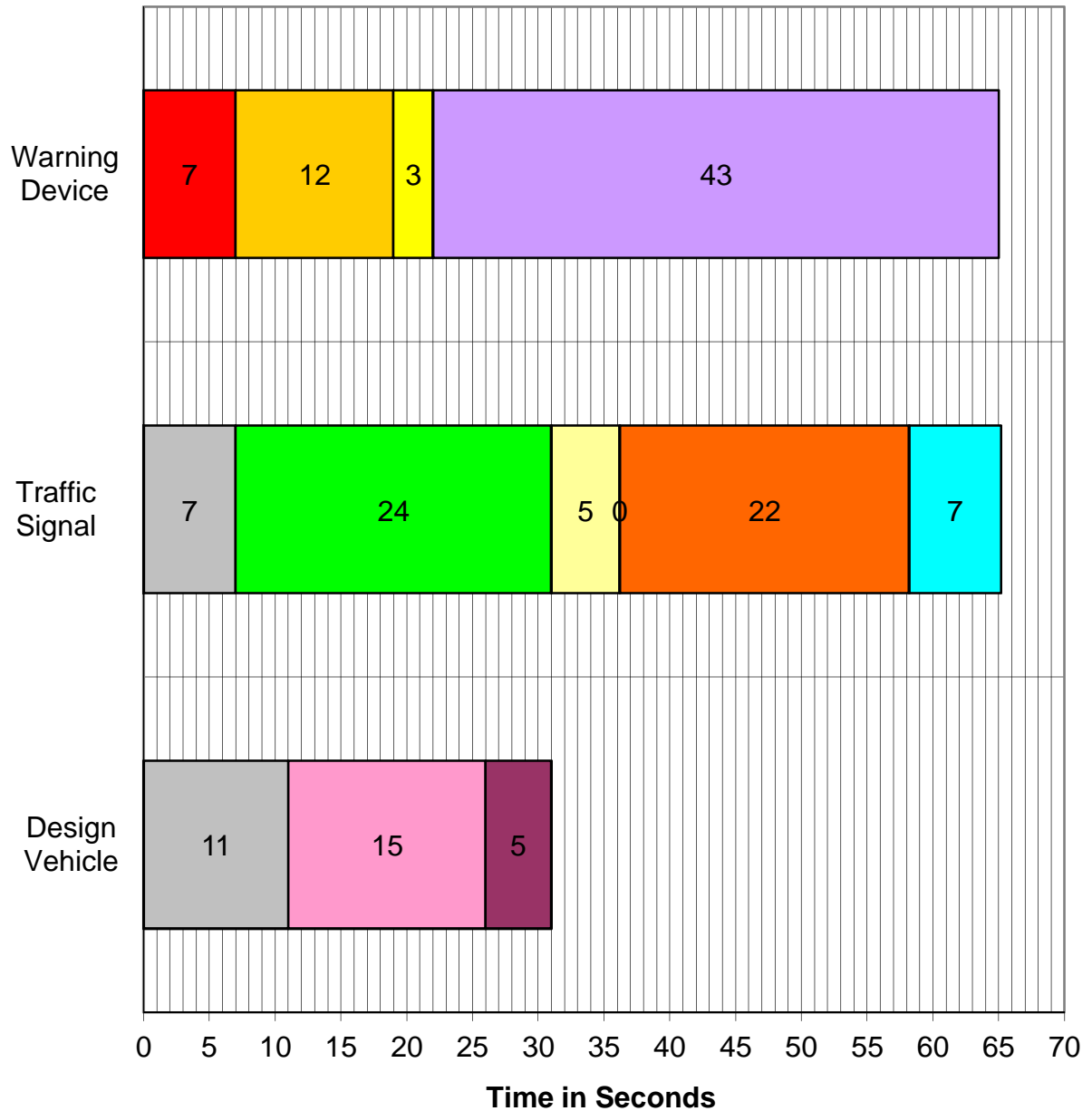
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Parthenia	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	52 ft	Grade	0.0 %		
Clear Storage Distance, CSD	0 ft				
Length, L	52 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	2	1	1	0	
Start moving last vehicle in L (sec)	5.4	3.9	4.5	4.0	5
Move front of vehicle thru L (sec)	4.7	5.2	4.4	9.8	10
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	5.5	6.7	6.0	14.9	15
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	24 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	20 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	22 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.2 sec				
Maximum RWTT	34 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	65 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	2 sec	2 sec minimum			
Minimum Warning Time, MWT	22 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	22 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	43 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	70 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4620 ft				

Street Name:	MOL@Parthenia	Crossing No:	
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Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

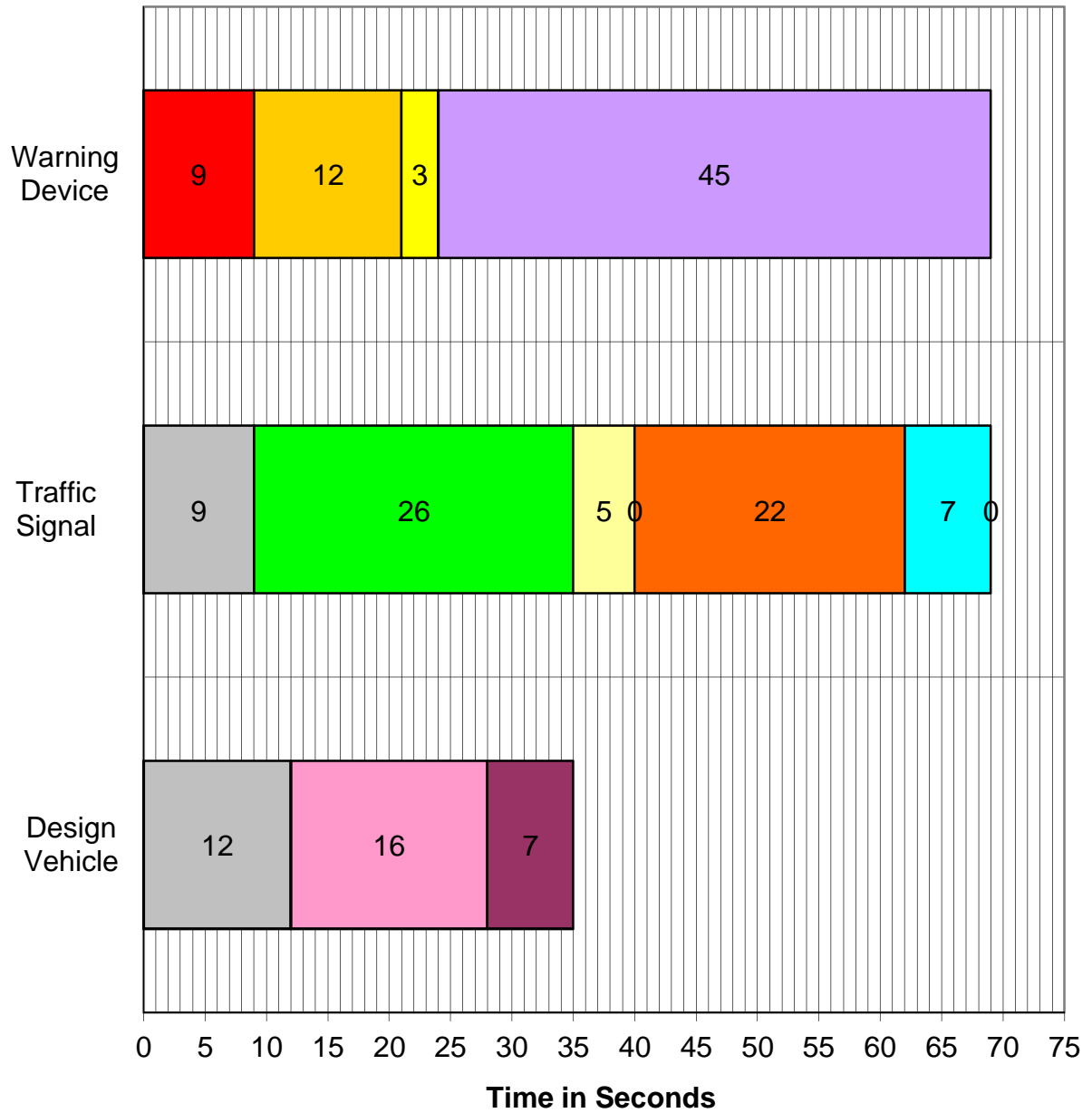
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Nordoff	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	70 ft	Grade	0.0 %		
Clear Storage Distance, CSD	0 ft				
Length, L	70 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	3	1	1	0	
Start moving last vehicle in L (sec)	6.8	3.9	4.5	4.0	7
Move front of vehicle thru L (sec)	5.6	6.2	5.2	11.4	11
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	6.2	7.5	6.6	16.0	16
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	26 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	23 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	22 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	34 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	69 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	4 sec	4 sec minimum			
Minimum Warning Time, MWT	24 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	24 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	45 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	74 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4884 ft				

Street Name:	MOL@Nordoff	Crossing No:	
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Preemption Timeline



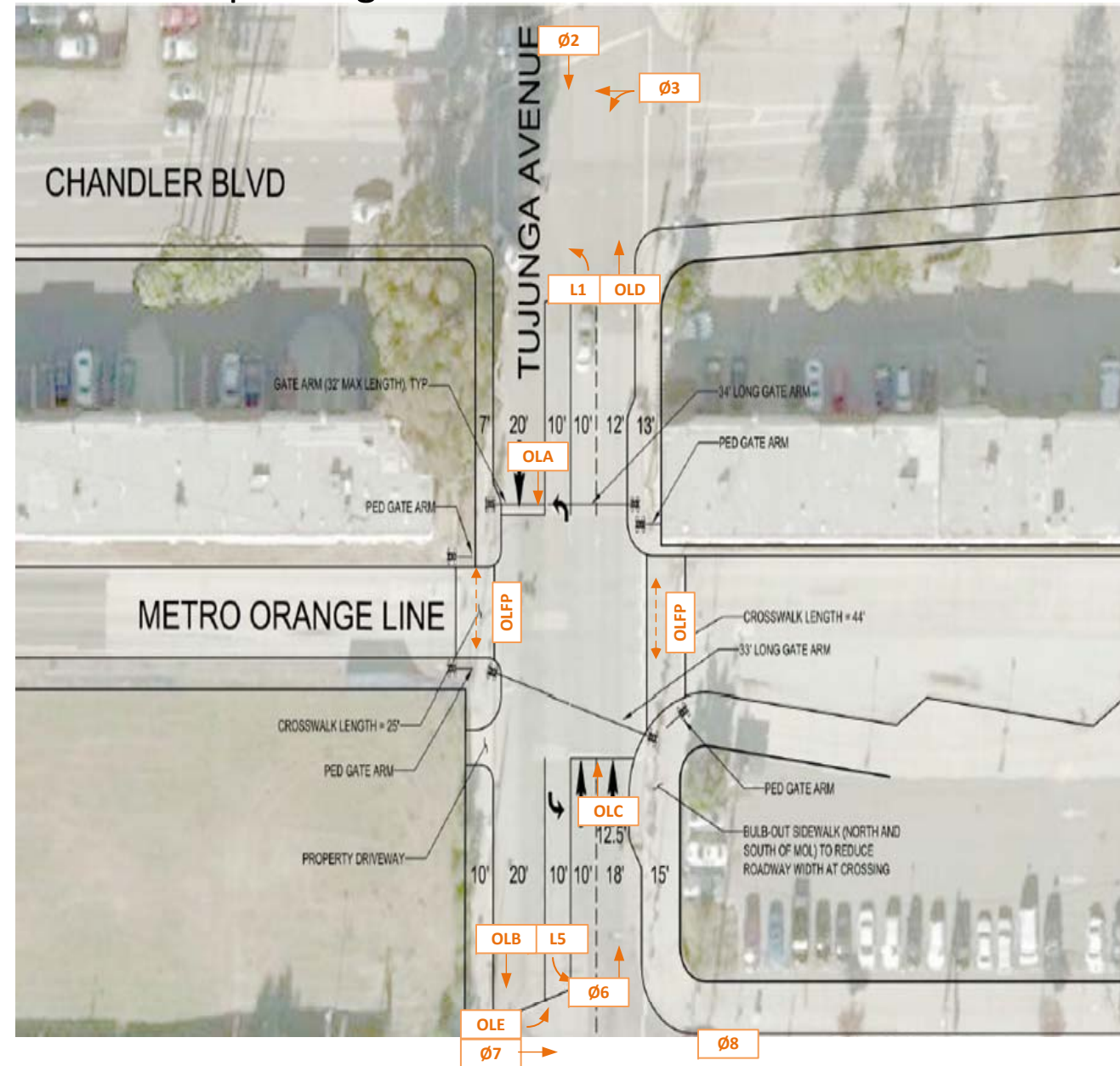
- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

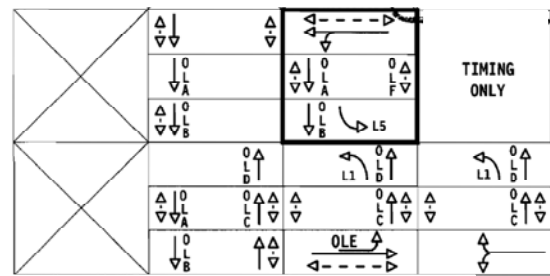
APPENDIX B

Four Quadrant Gate System Phasing Schematics

Gate Concept Design

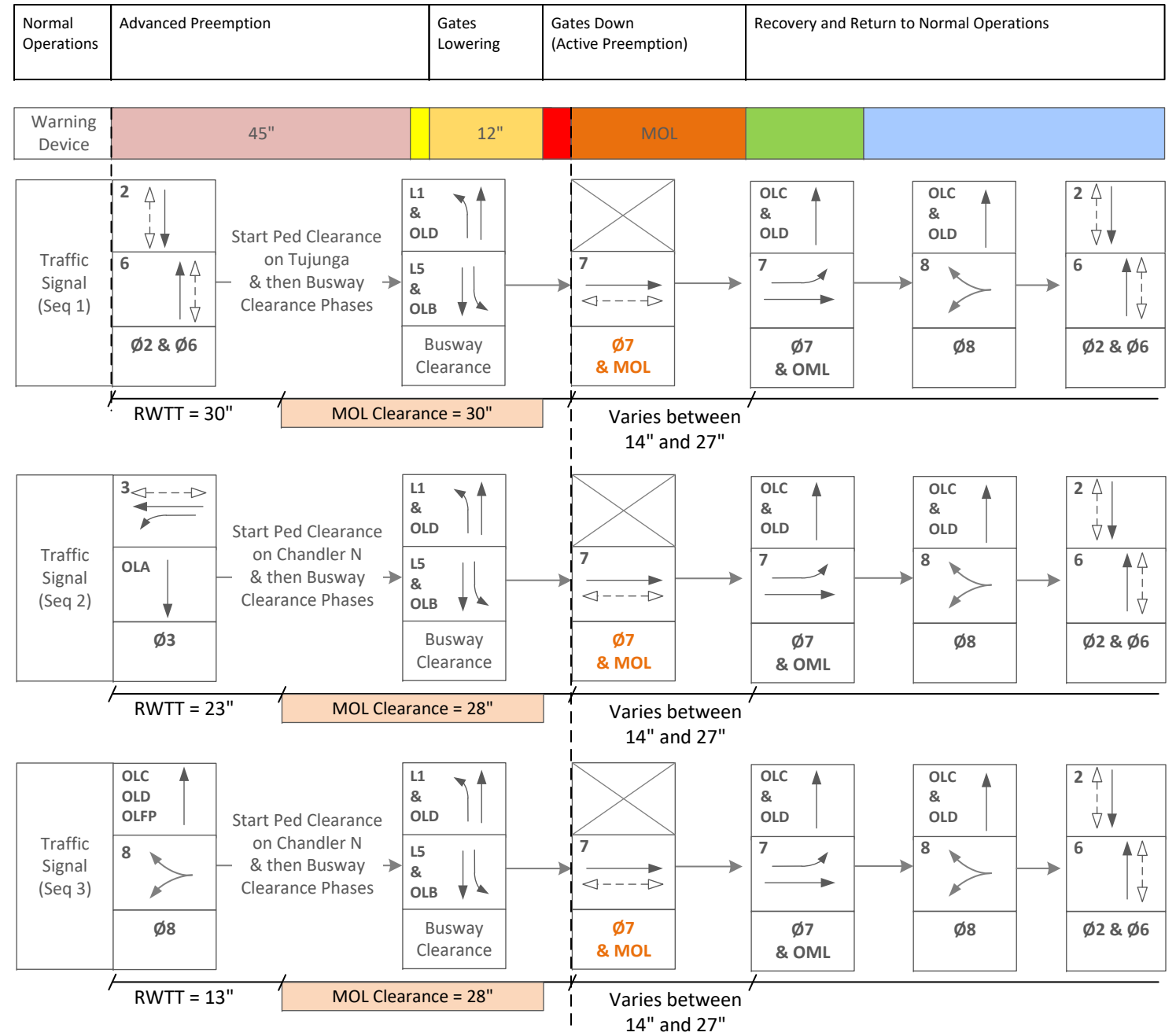


Future with Gates Phasing Diagram



- OLA: Ø2, Ø3, Ø7
- OLB: Ø2, Ø3, Ø7
- OLC: Ø6, Ø7, Ø8
- OLD: Ø6, Ø7, Ø8
- OLE: Ø7
- OLF: Ø3, Ø6, Ø7, Ø8
- L1: Ø7 & Ø8
- L5: Ø3
- Ø4 Timing Only

Preemption Sequence



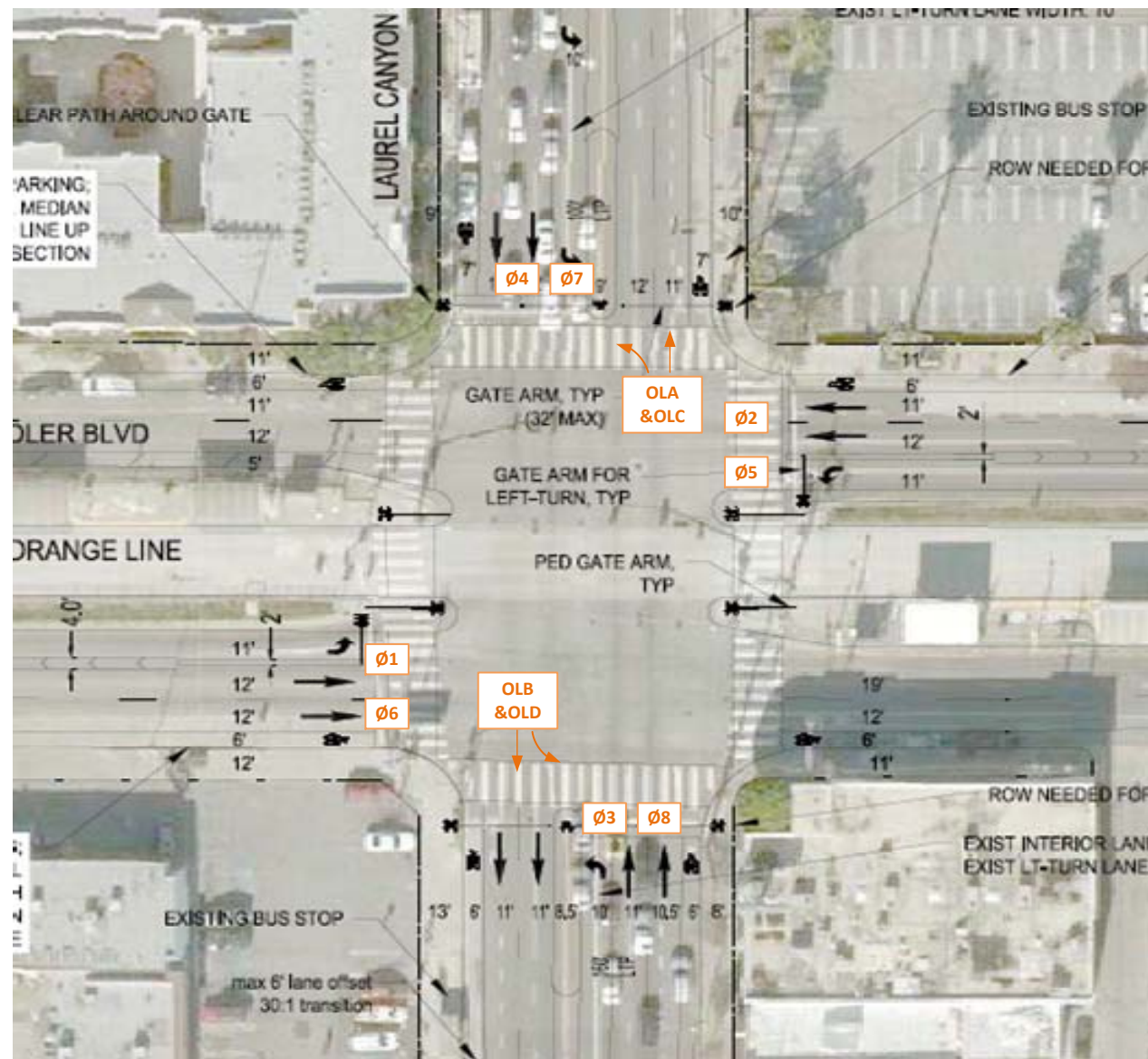
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

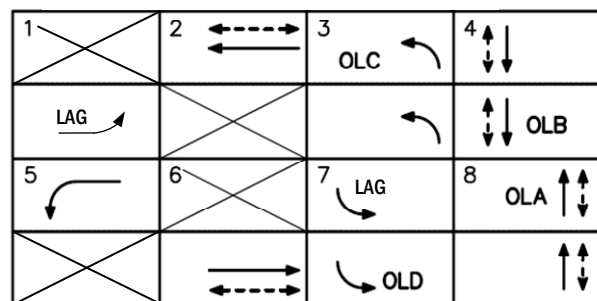
Metro Orange Line Grade Crossing
Four Quadrant Gate System Phasing Schematics

Figure 1
Chandler Boulevard and Tujunga Avenue

Gate Concept Design



Future with Gates Phasing Diagram

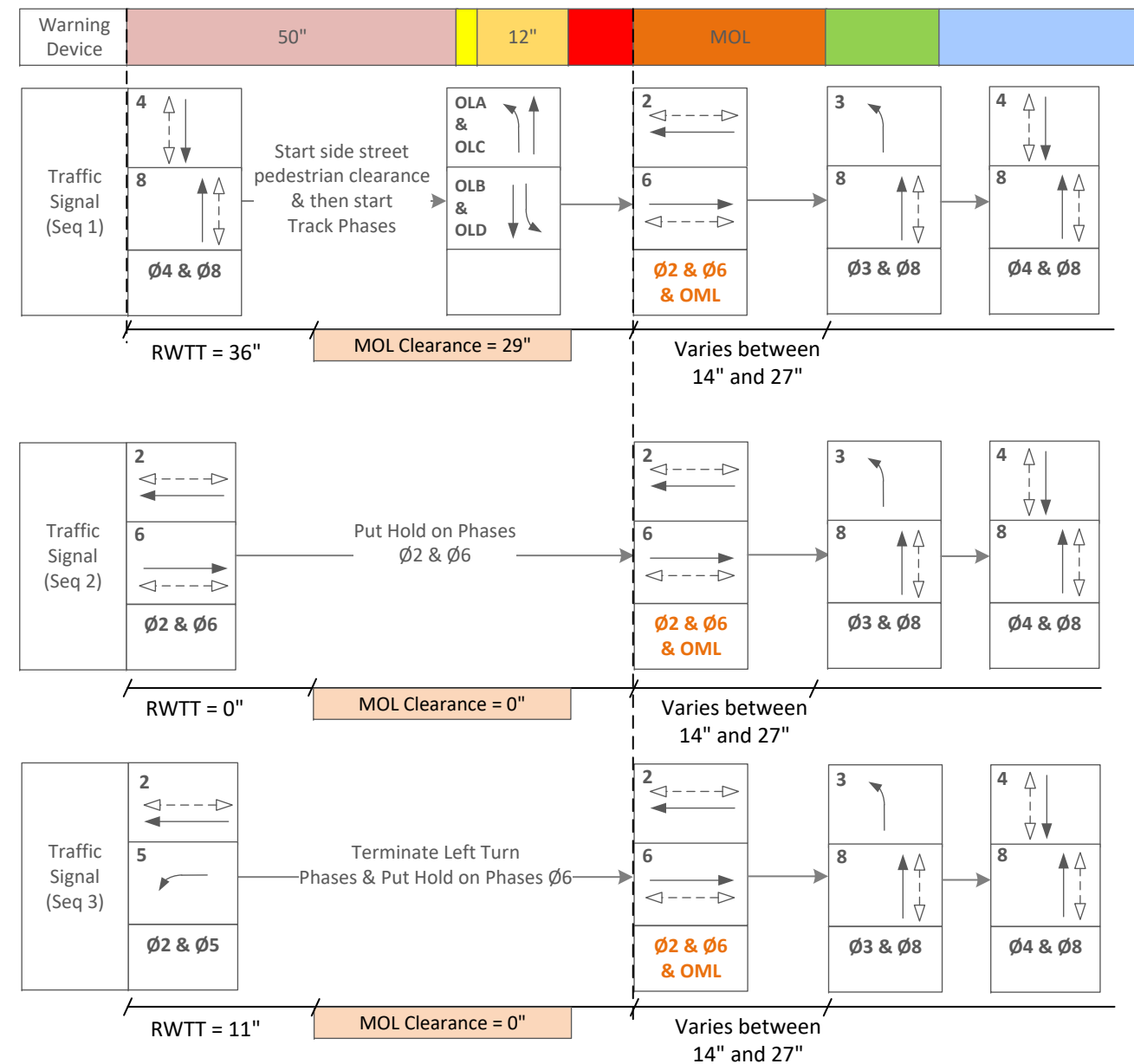


OLA: $\emptyset 8$
 OLB: $\emptyset 4$
 OLC: $\emptyset 3$
 OLD: $\emptyset 7$

OLA, OLB, OLC, OLD:
 MOL Busway Clearance

Preemption Sequence

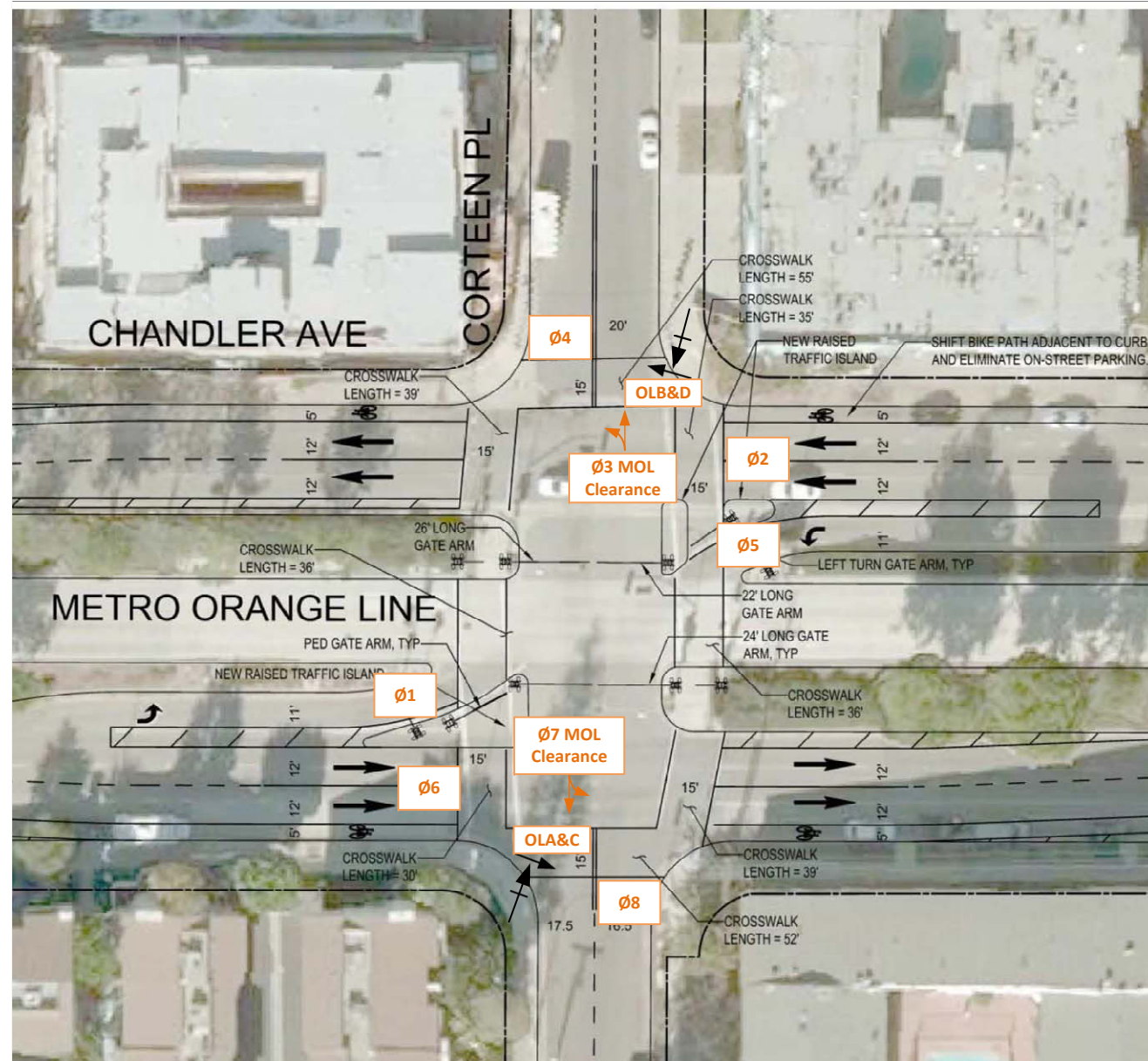
Normal Operations	Advanced Preemption	Gates Lowering	Gates Down (Active Preemption)	Recovery and Return to Normal Operations
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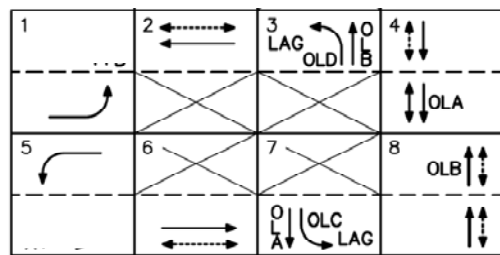
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

Gate Concept Design



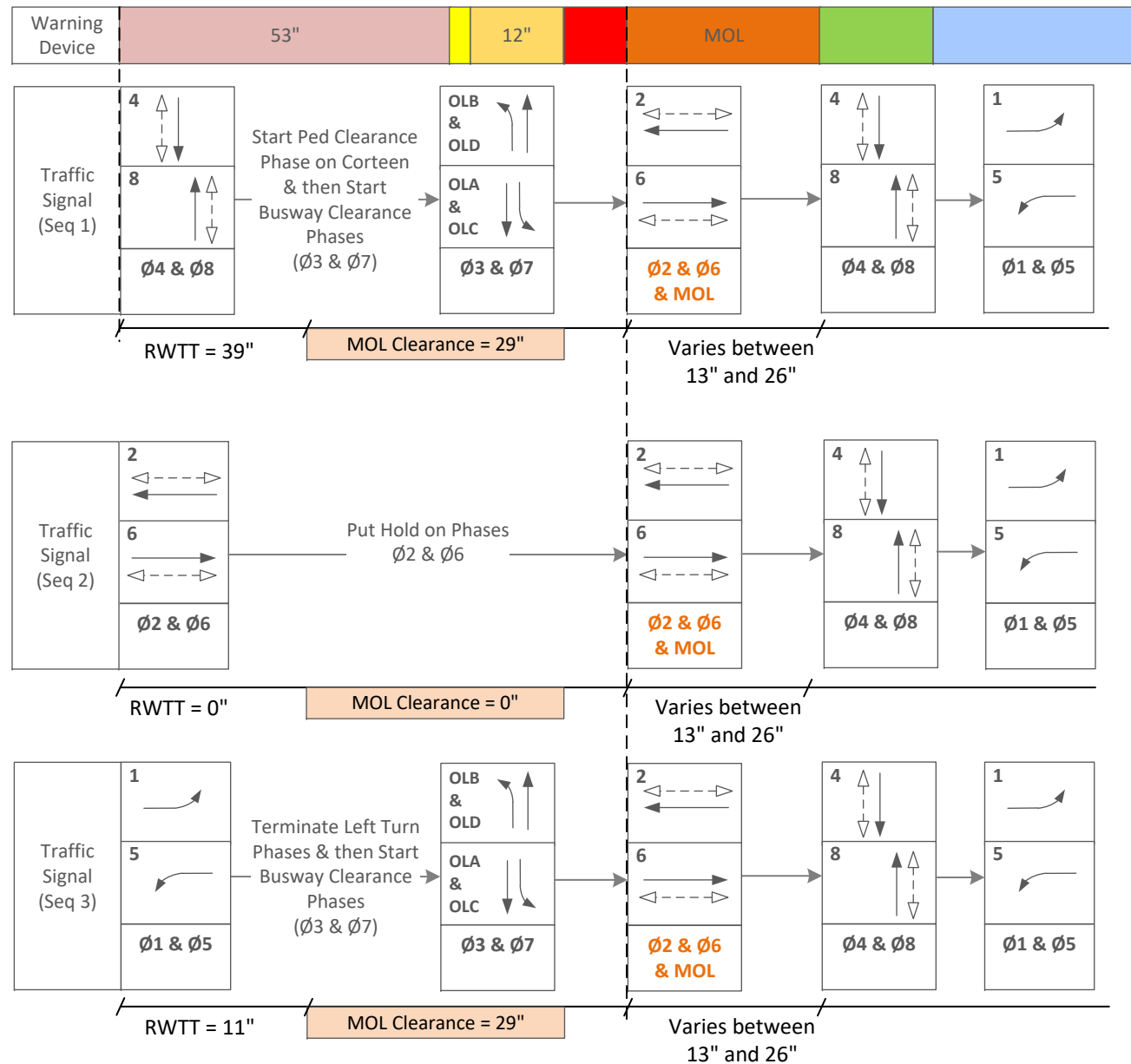
Future with Gates Phasing Diagram



OLA: Phases 3 and 4
 OLB: Phases 7 and 8
 OLC: Phase 7
 OLD: Phase 3

Preemption Sequence

Normal Operations	Advanced Preemption	Gates Lowering	Gates Down (Active Preemption)	Recovery and Return to Normal Operations
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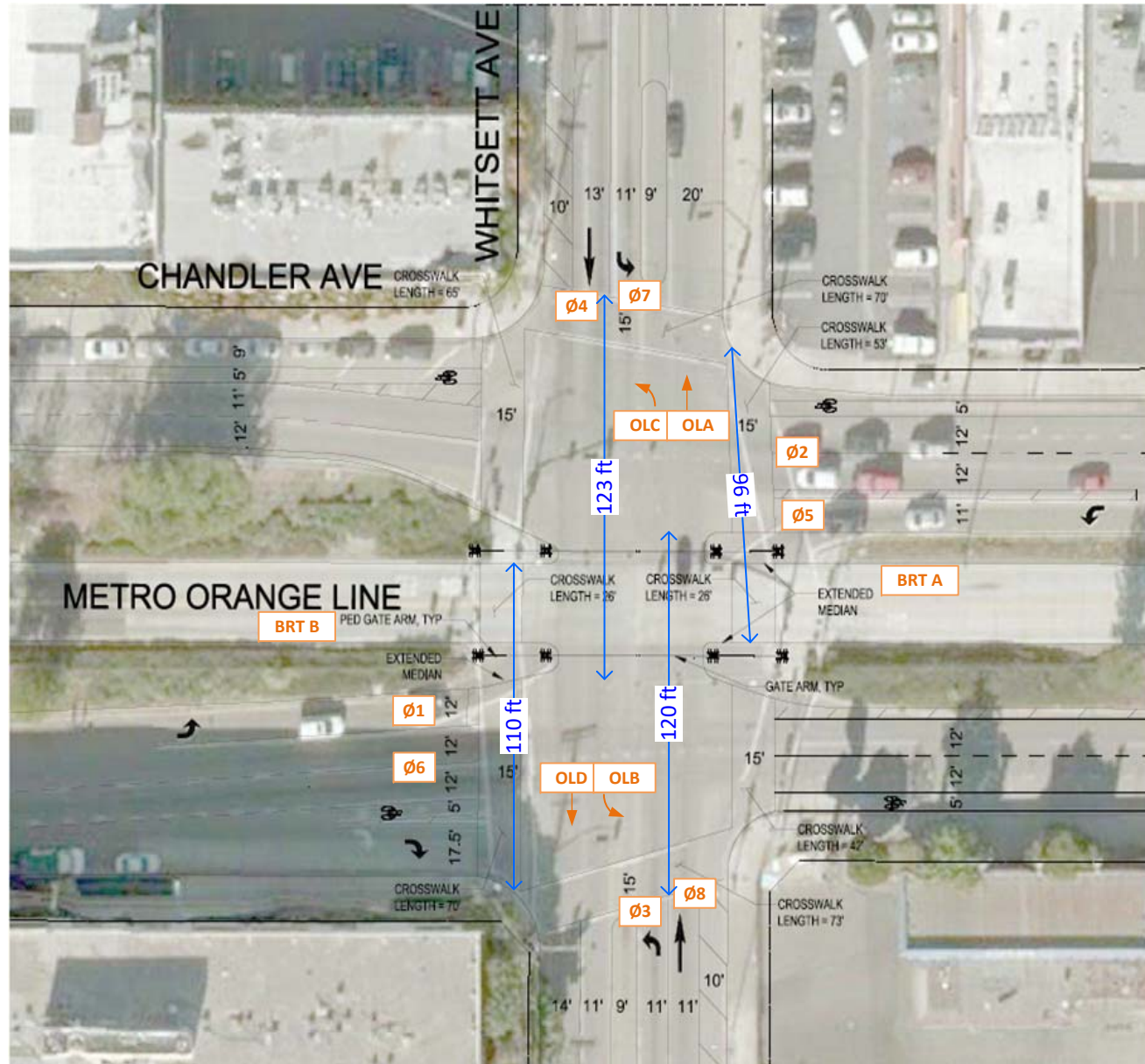
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

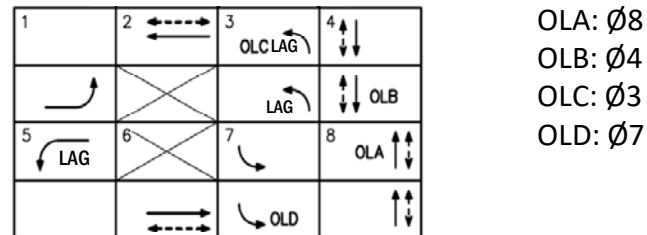
Metro Orange Line Grade Crossing
 Four Quadrant Gate System Phasing Schematics

Figure 4
 Chandler Avenue and Corteen Place

Gate Concept Design

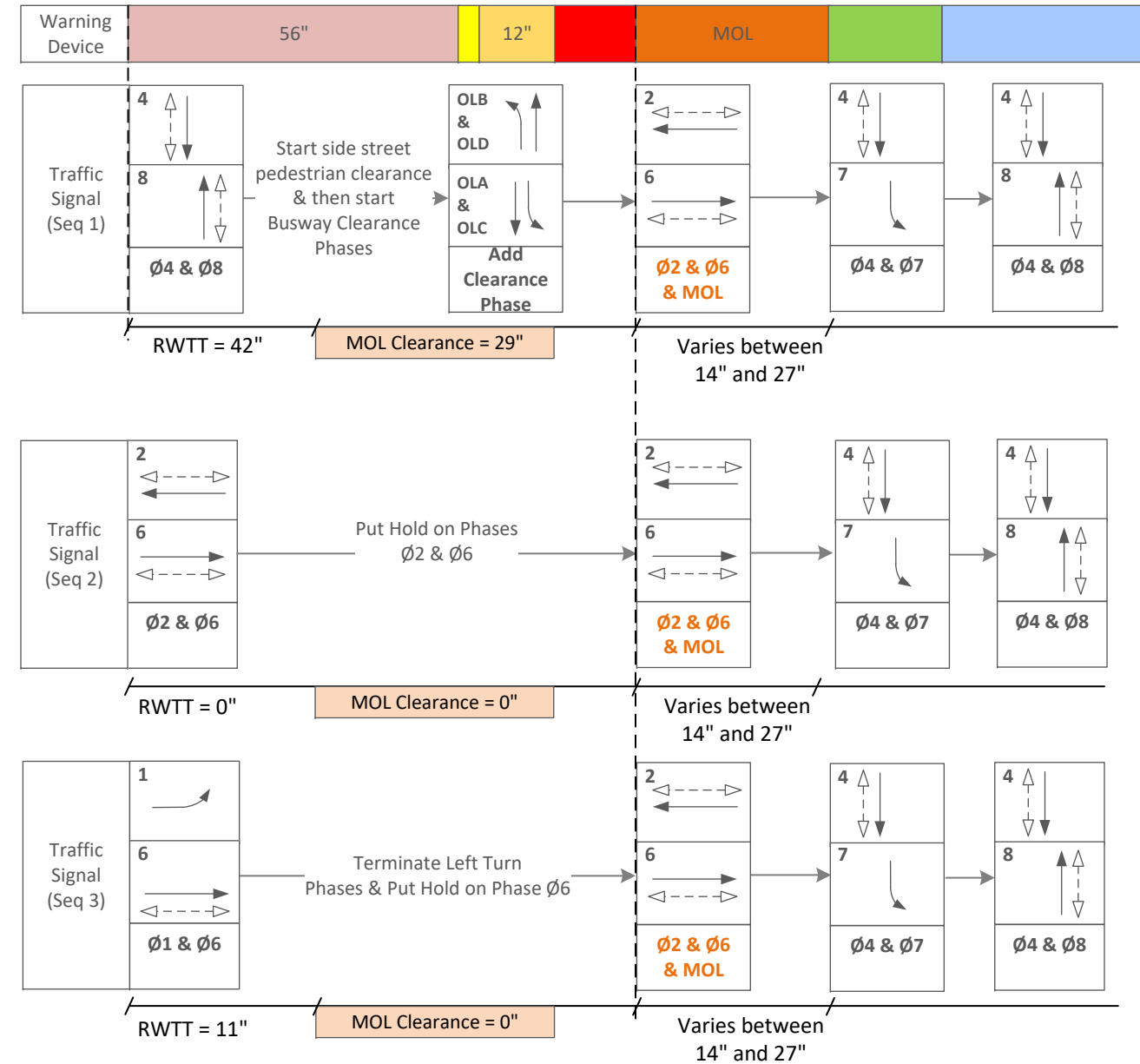


Future with Gates Phasing Diagram



Preemption Sequence

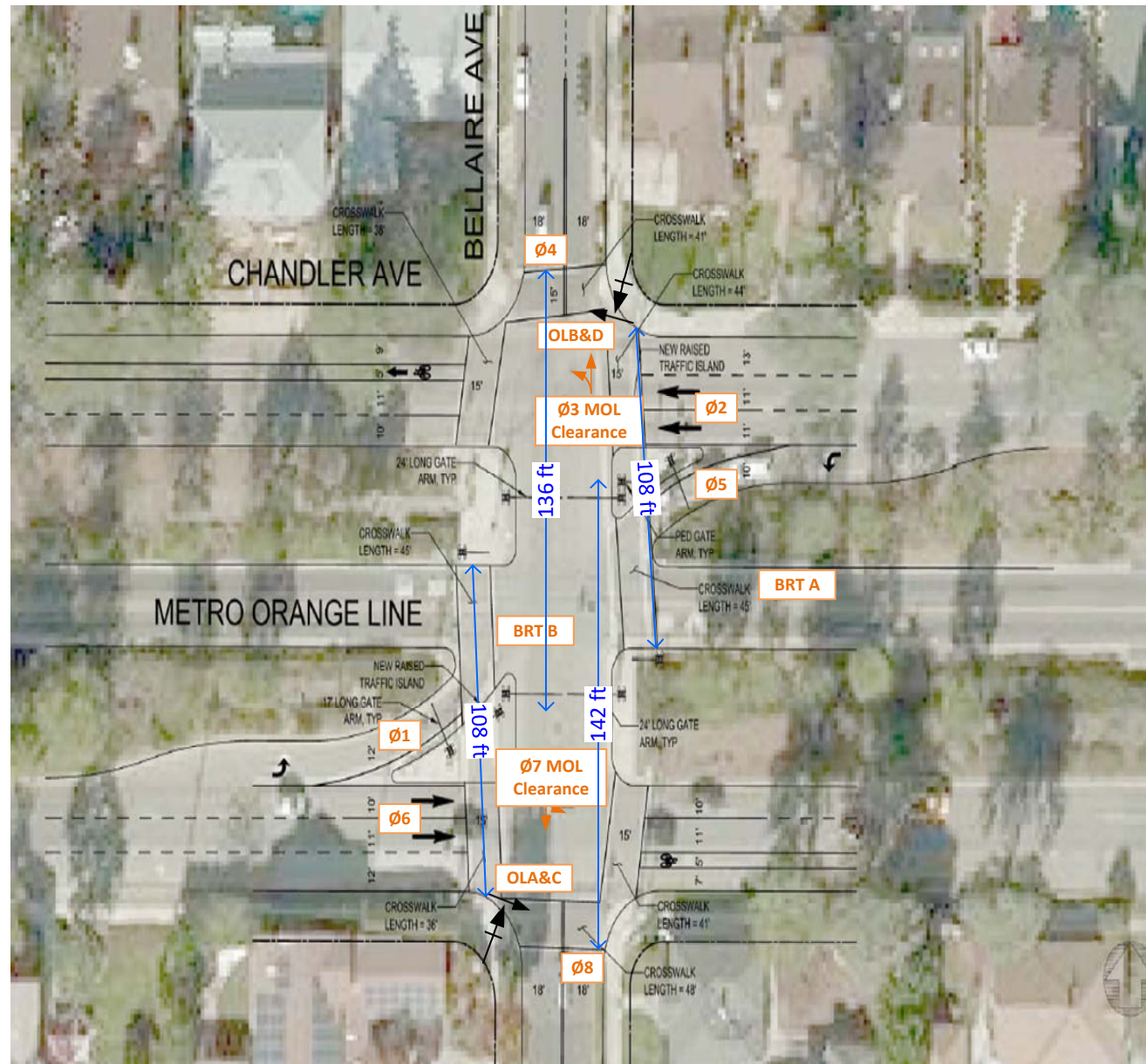
Normal Operations	Advanced Preemption	Gates Lowering	Gates Down (Active Preemption)	Recovery and Return to Normal Operations
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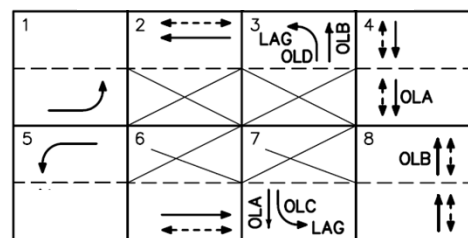
Legend

- Advance Preemption
- Lights Flash (3 seconds)
- Gate Descent (12 seconds)
- Gate Down
- MOL Phase
- Exit Phases
- Normal Operation

Gate Concept Design

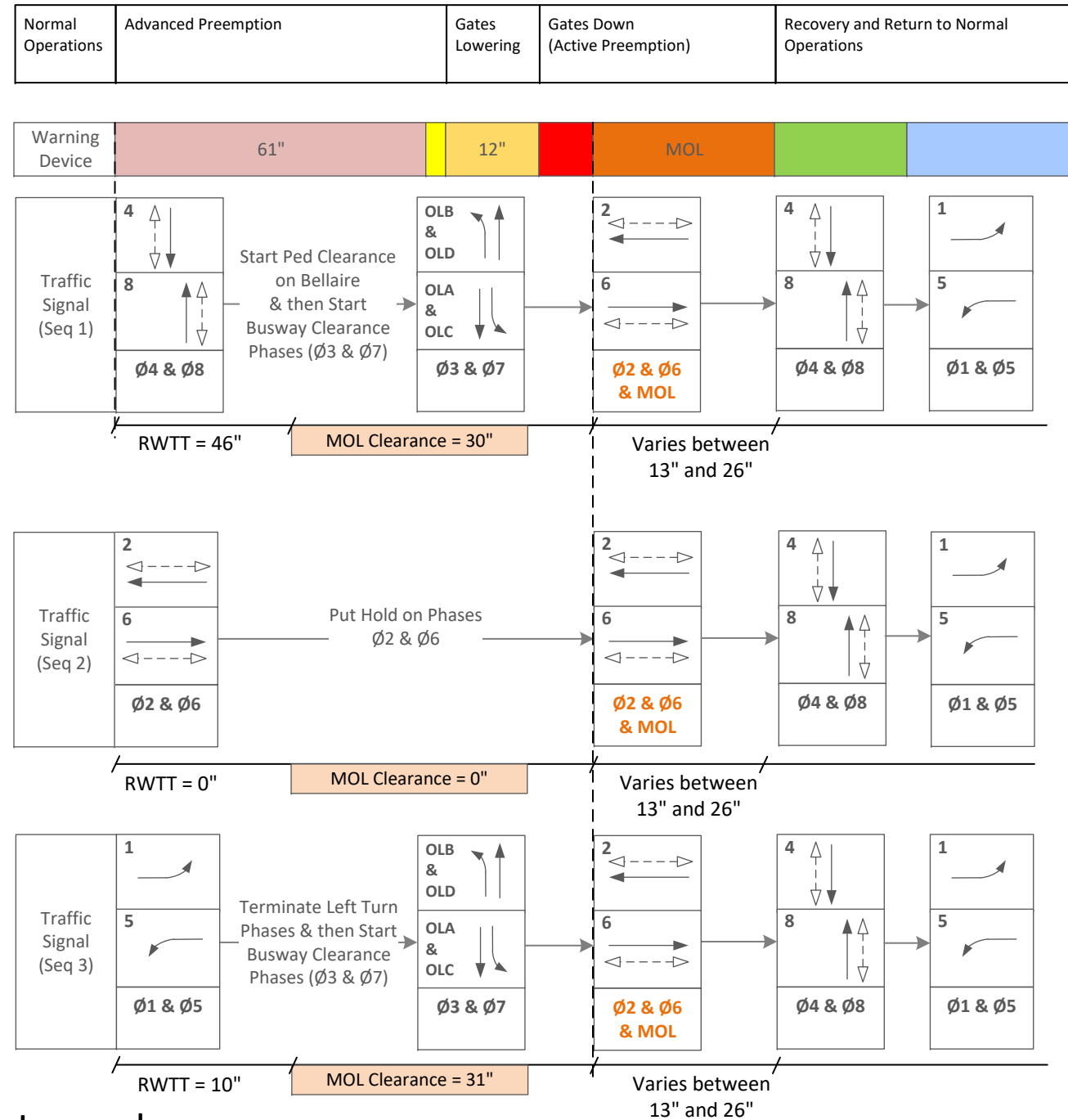


Future with Gates Phasing Diagram



OLA: Ø3, Ø4
 OLB: Ø7, Ø8
 OLC: Ø7
 OLD: Ø3
 Phase 3: MOL Busway Clearance
 Phase 7: MOL Busway Clearance

Preemption Sequence



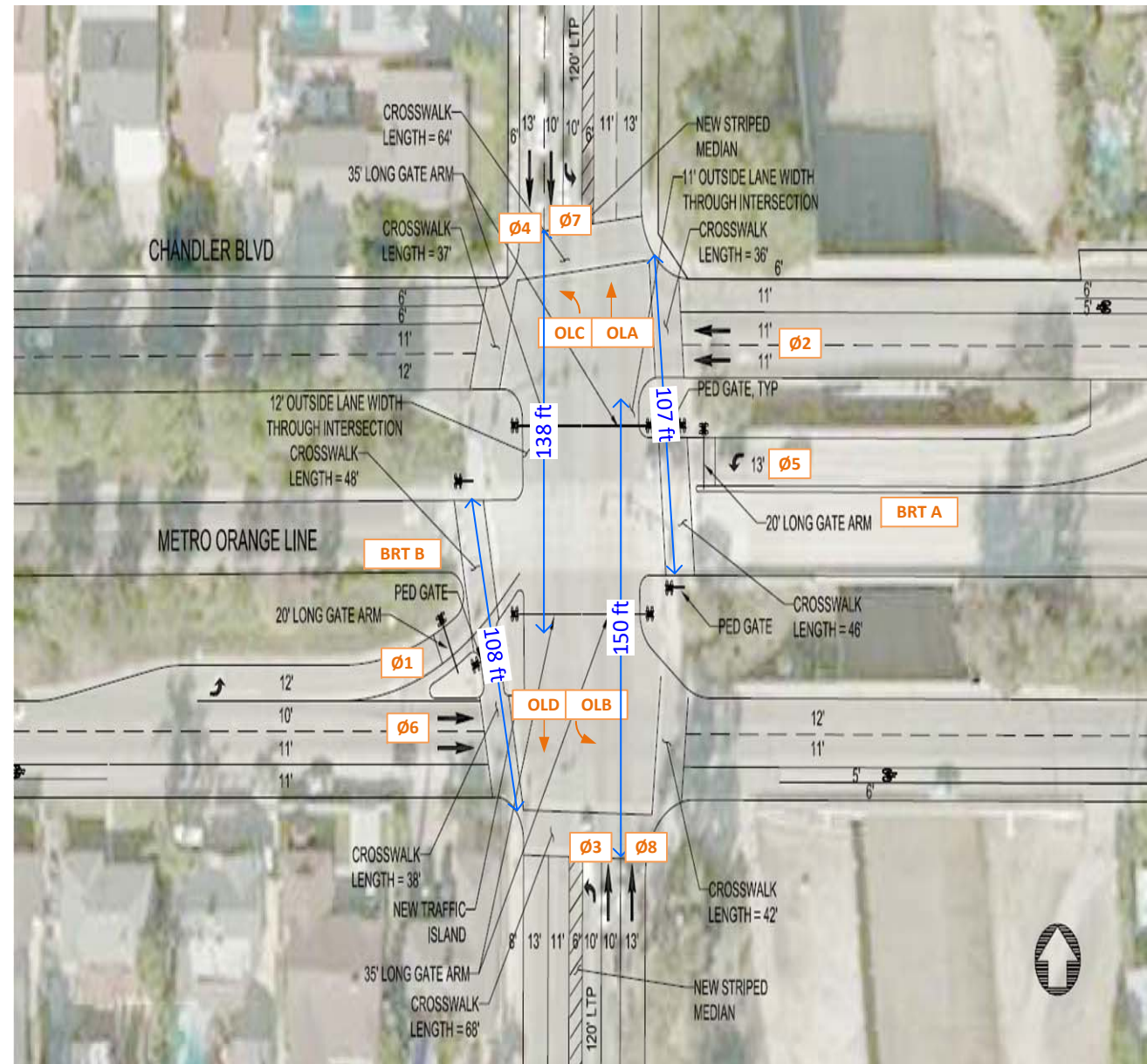
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

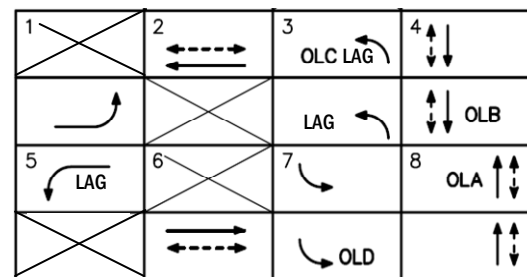
Metro Orange Line Grade Crossing
 Four Quadrant Gate System Phasing Schematics

Figure 6
 Chandler Boulevard and Bellaire Avenue

Gate Concept Design

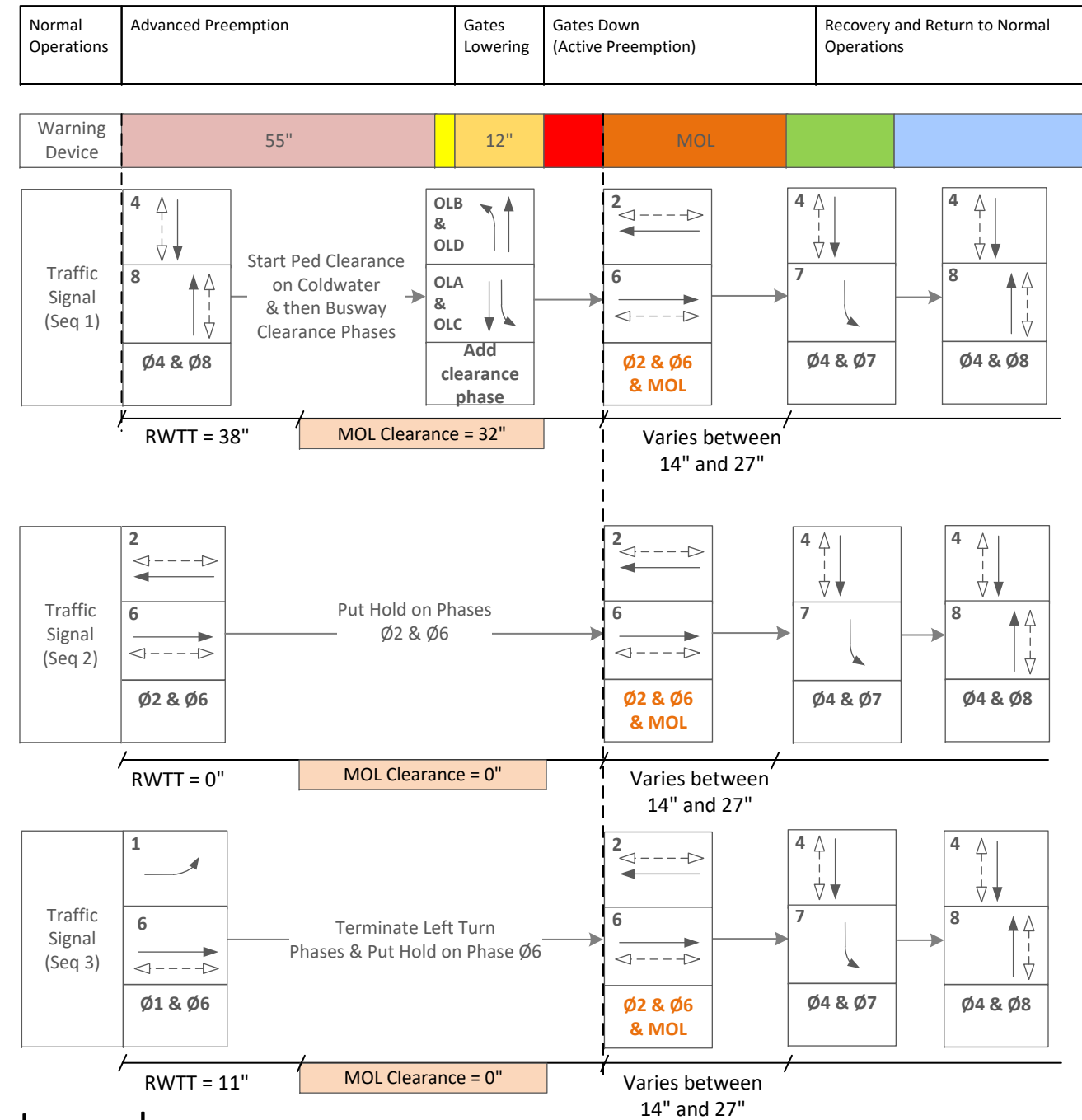


Future with Gates Phasing Diagram



OLA: ø8
 OLB: ø4
 OLC: ø3
 OLD: ø7

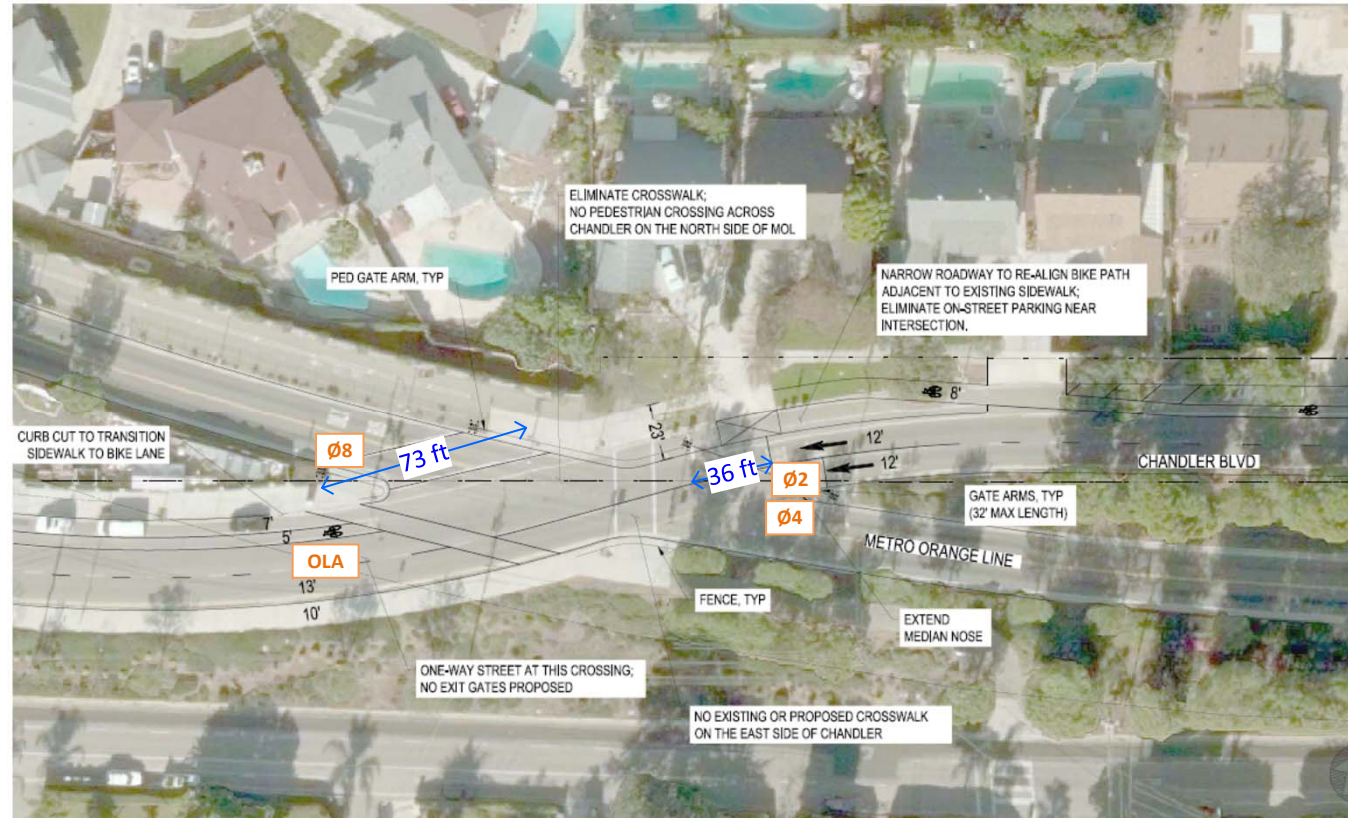
Preemption Sequence



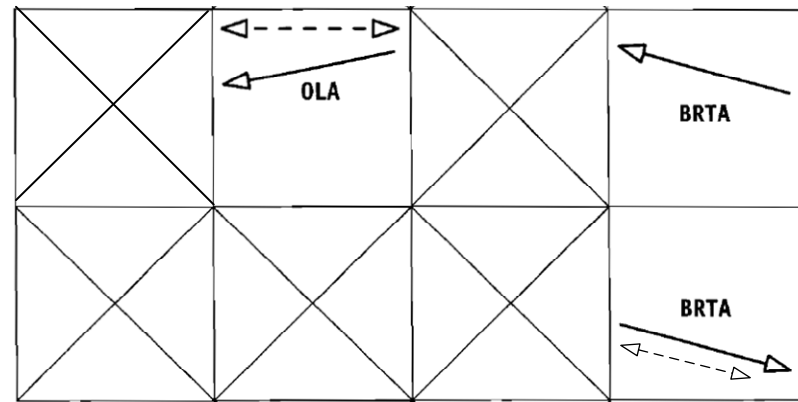
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

Gate Concept Design

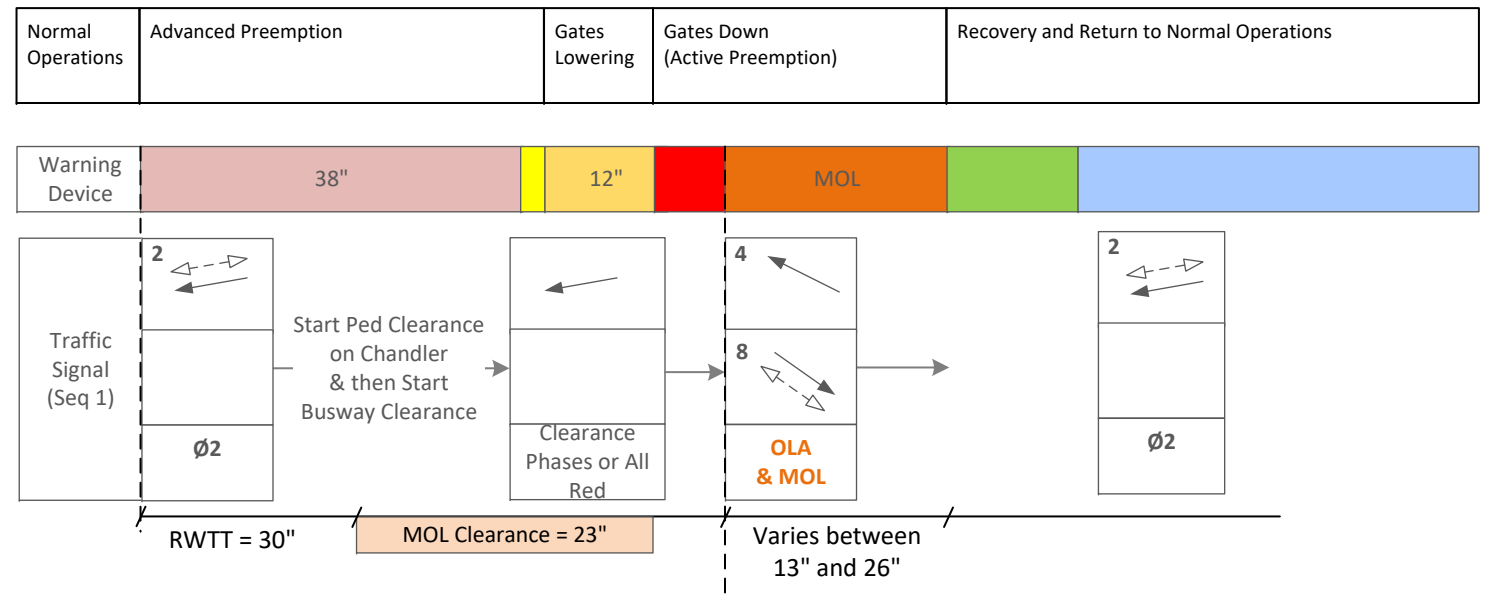


Future with Gates Phasing Diagram



OLA: Ø2, Ø4, Ø8
 Modify signal phasing to add busway clearance phase

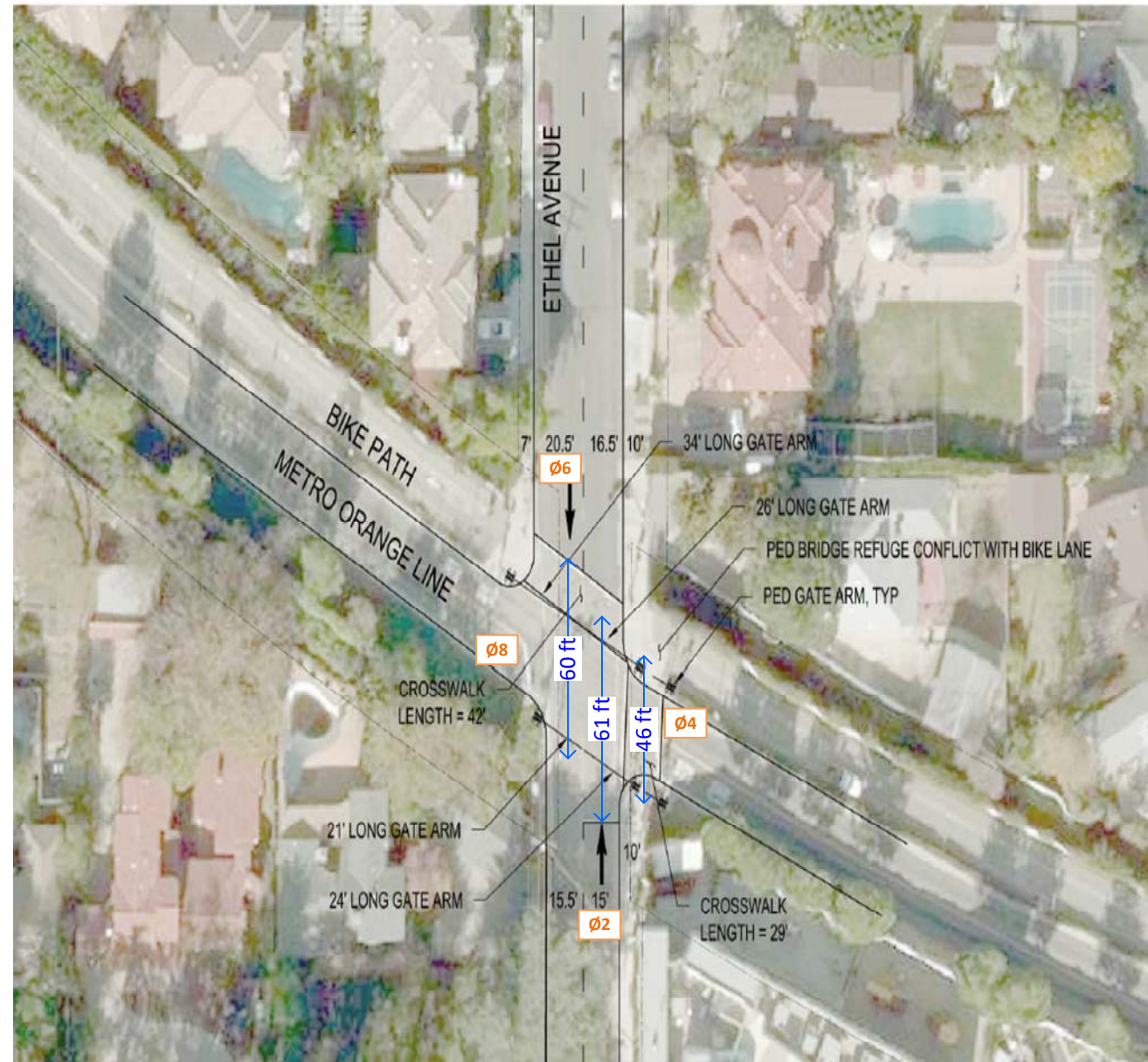
Preemption Sequence



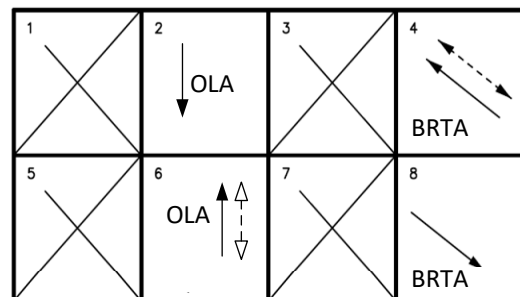
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

Gate Concept Design



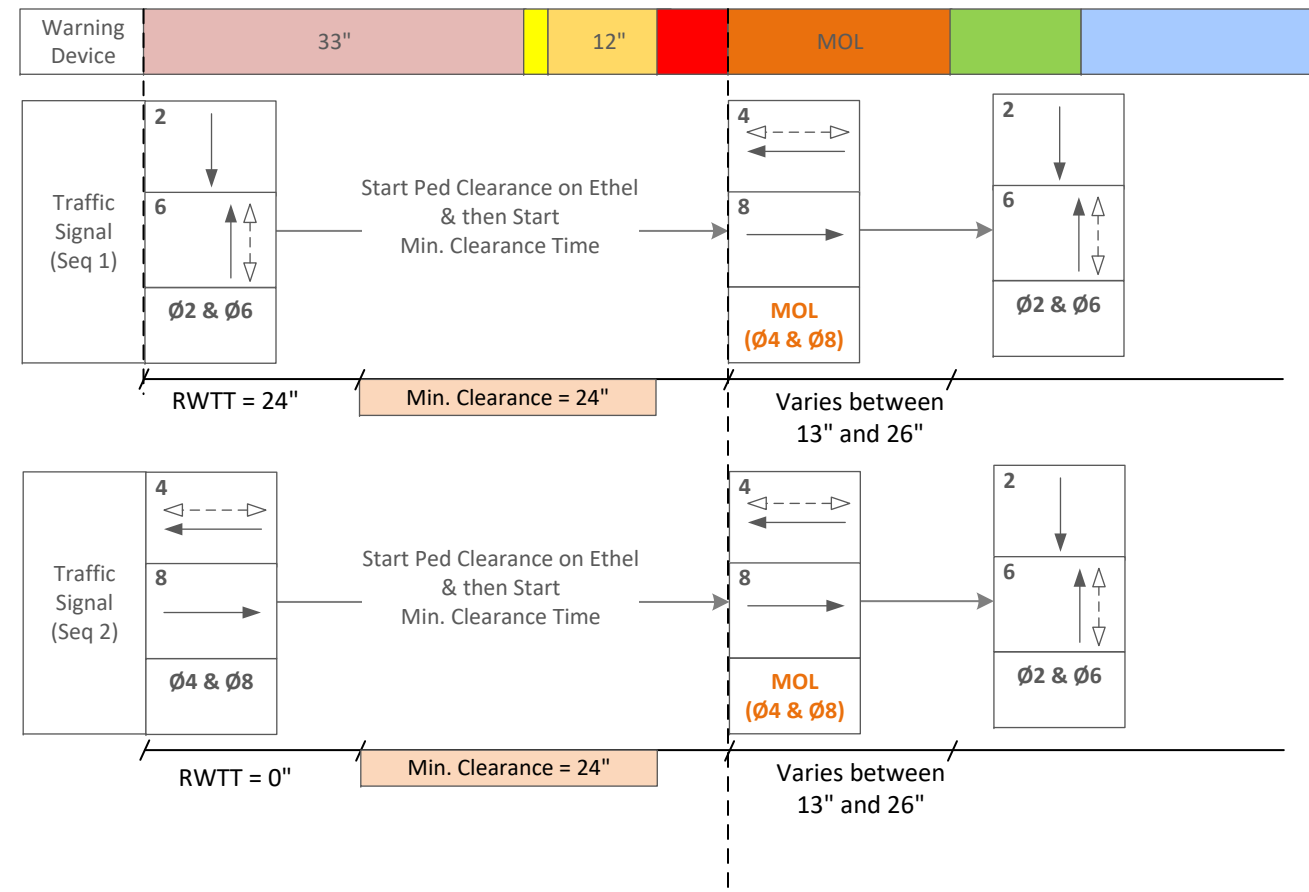
Future with Gates Phasing Diagram



OLA: Ø2, Ø6
 Modify signal phasing to add busway clearance phase

Preemption Sequence

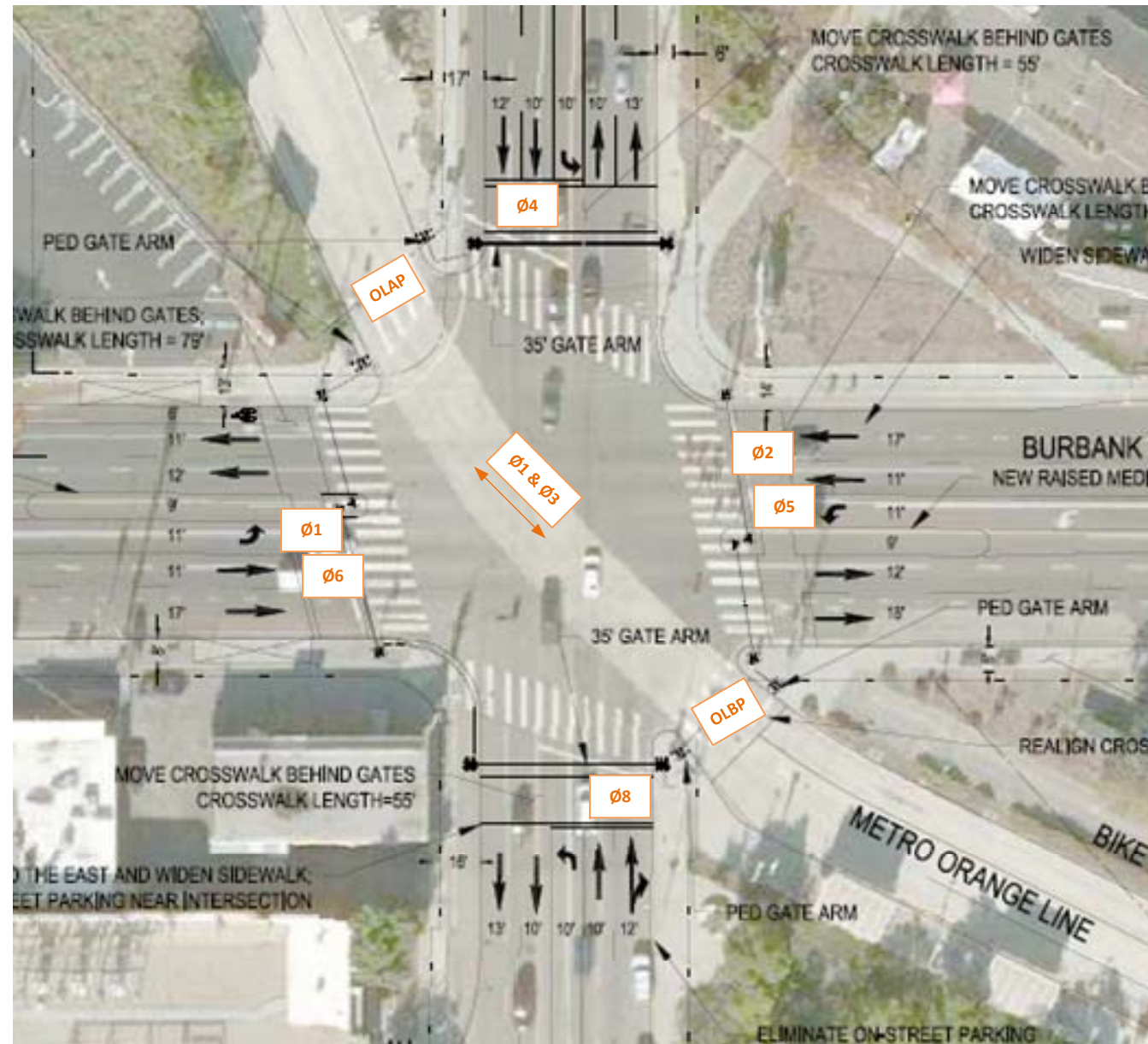
Normal Operations	Advanced Preemption	Gates Lowering	Gates Down (Active Preemption)	Recovery and Return to Normal Operations
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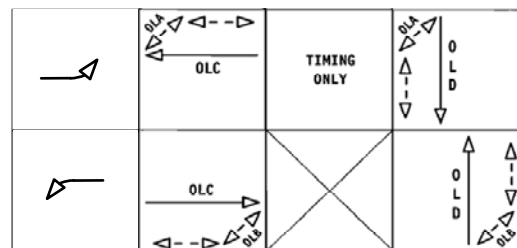
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

Gate Concept Design

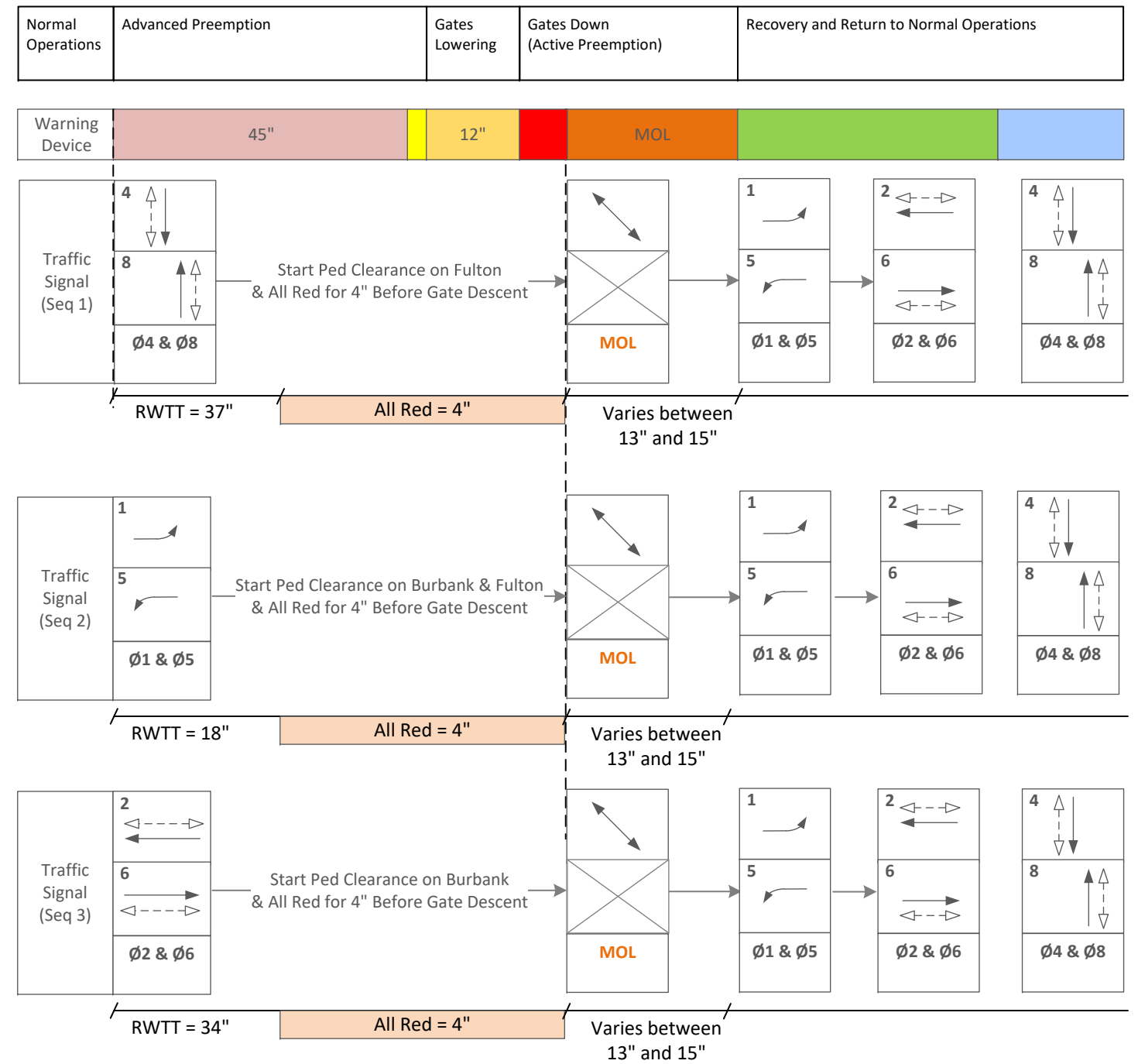


Future with Gates Phasing Diagram



OLAP: Ø2 & Ø4
 OLBP: Ø6 & Ø8
 OLC: Ø2 & Ø6
 OLD: Ø4 & Ø8

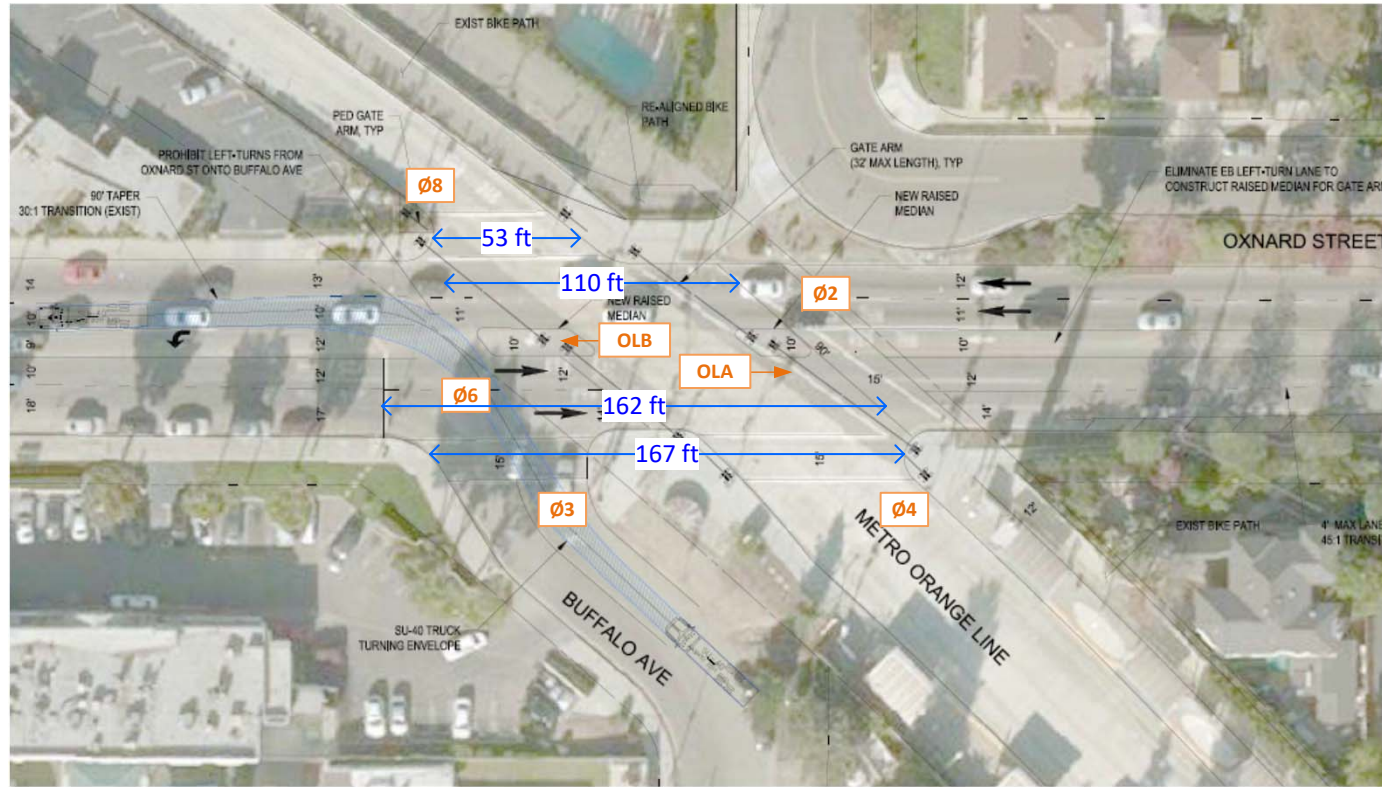
Preemption Sequence



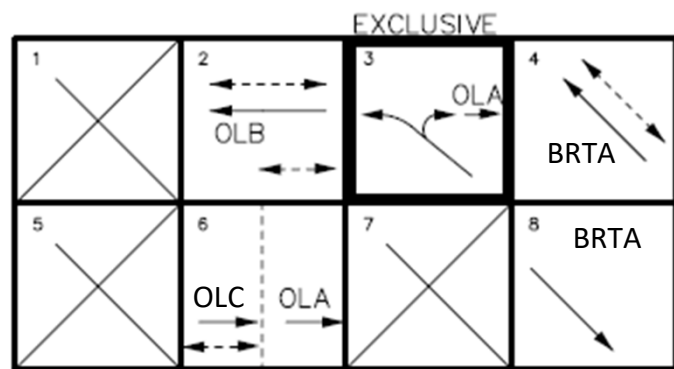
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

Gate Concept Design

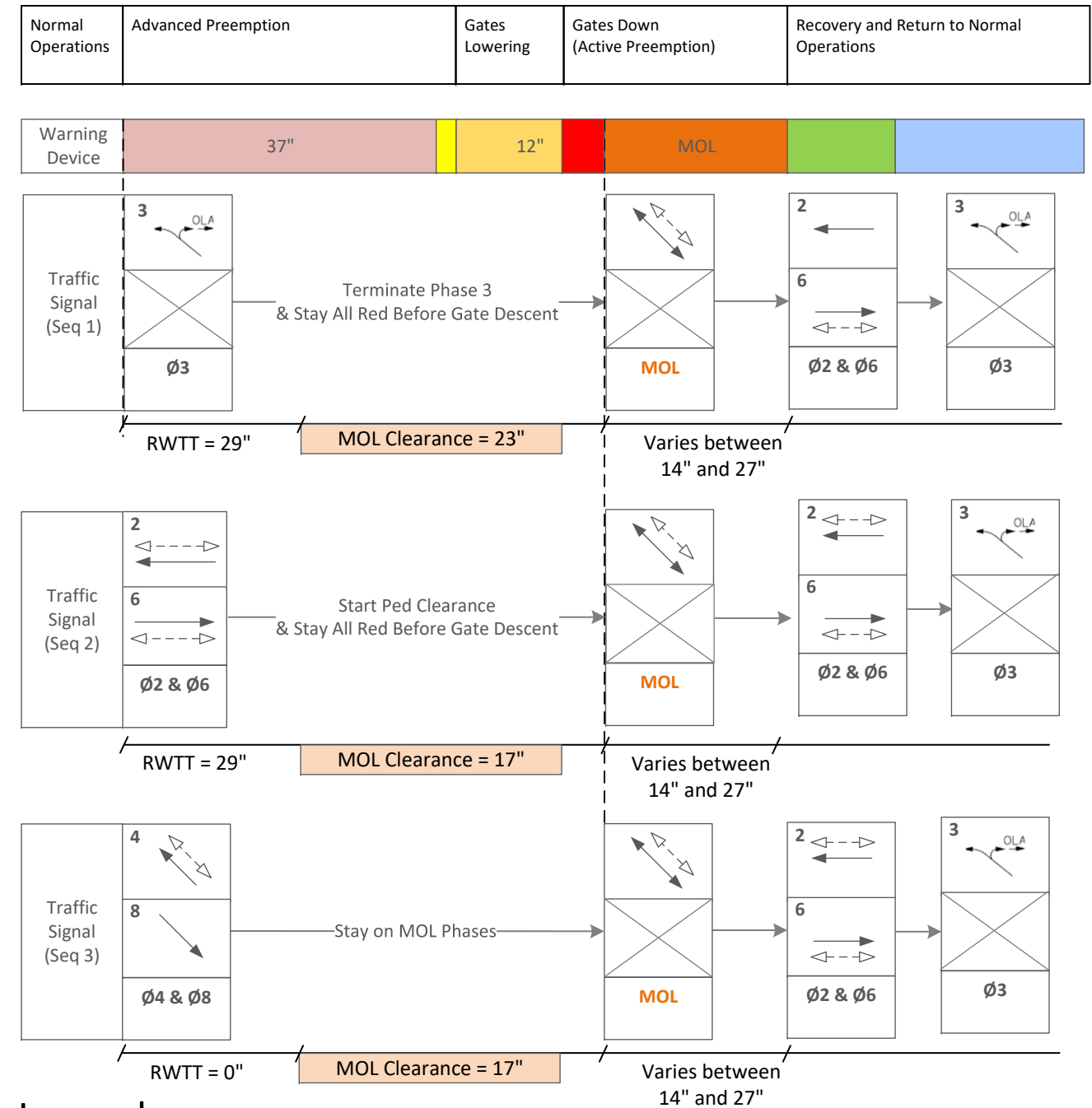


Future with Gates Phasing Diagram



OLA: Ø3 & Ø6
 OLB: Ø2
 OLC: Oxnard Street E/B (Approach)
 OLA & OLB are for slot clearance

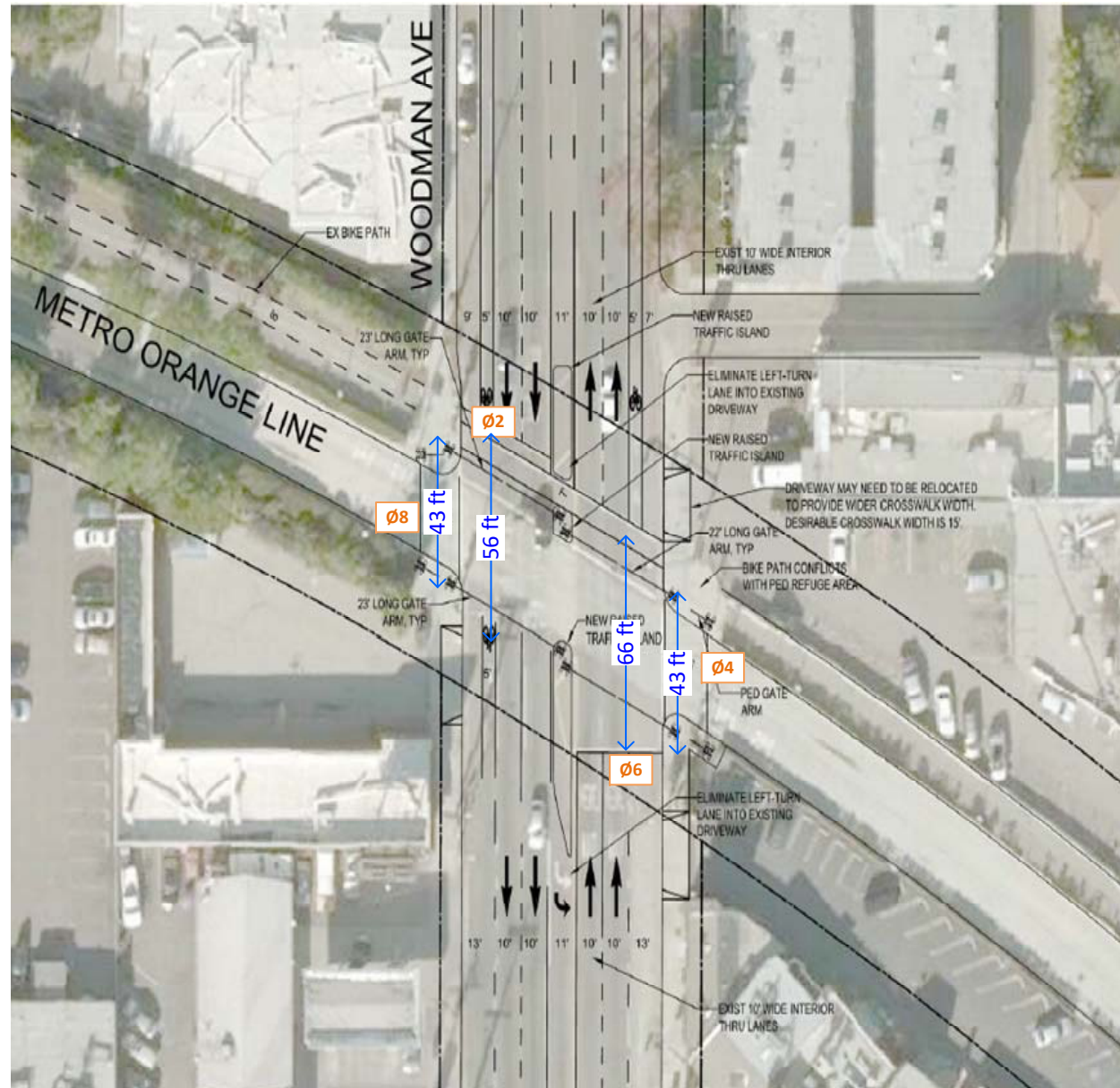
Preemption Sequence



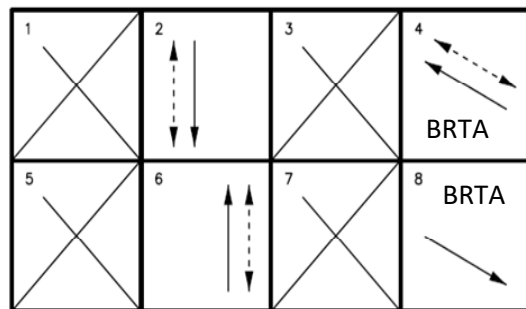
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

Gate Concept Design



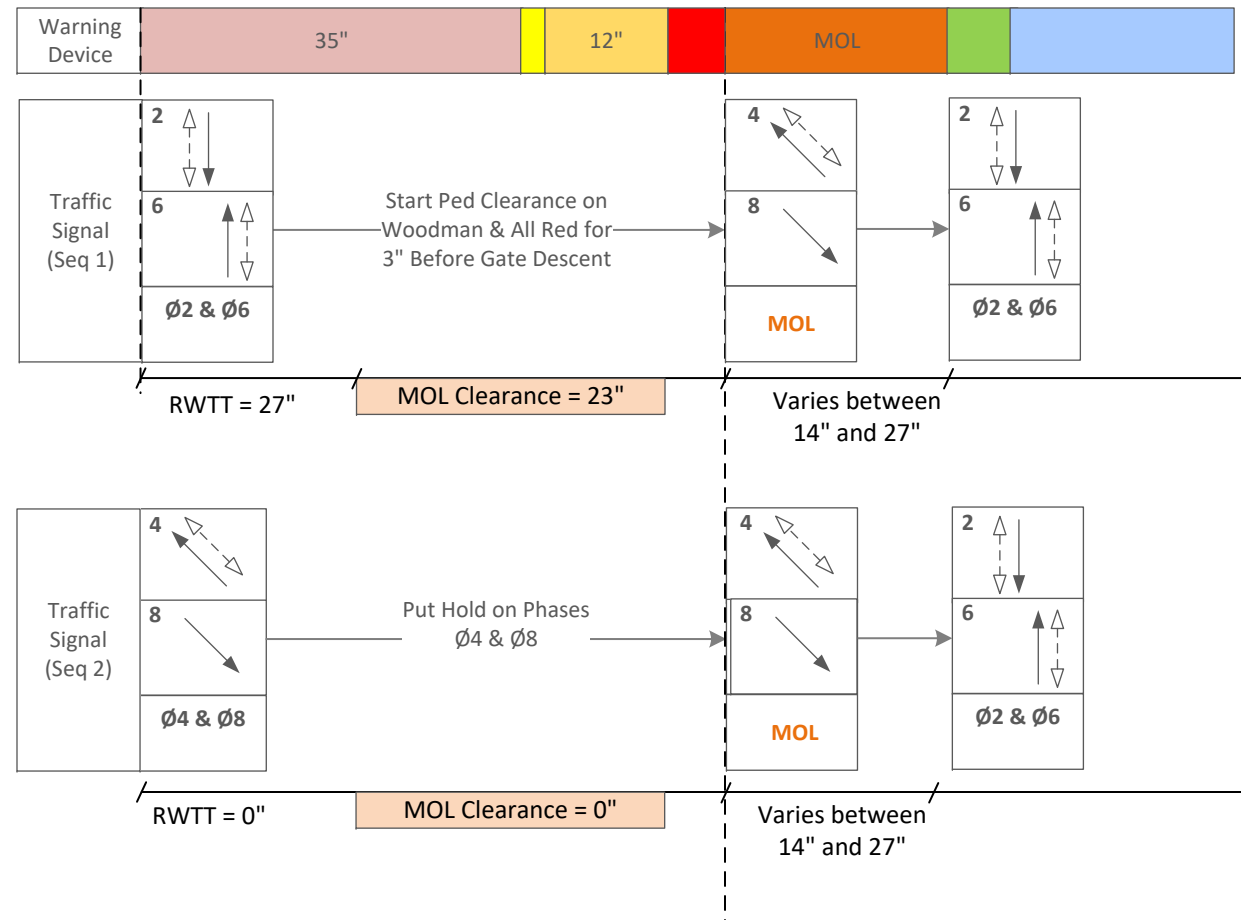
Future with Gates Phasing Diagram



Oxnard Street and Woodman Avenue is 240 ft south of busway. The storage distance between proposed gate and limit line at Woodman SB is approximately 165 ft.

Preemption Sequence

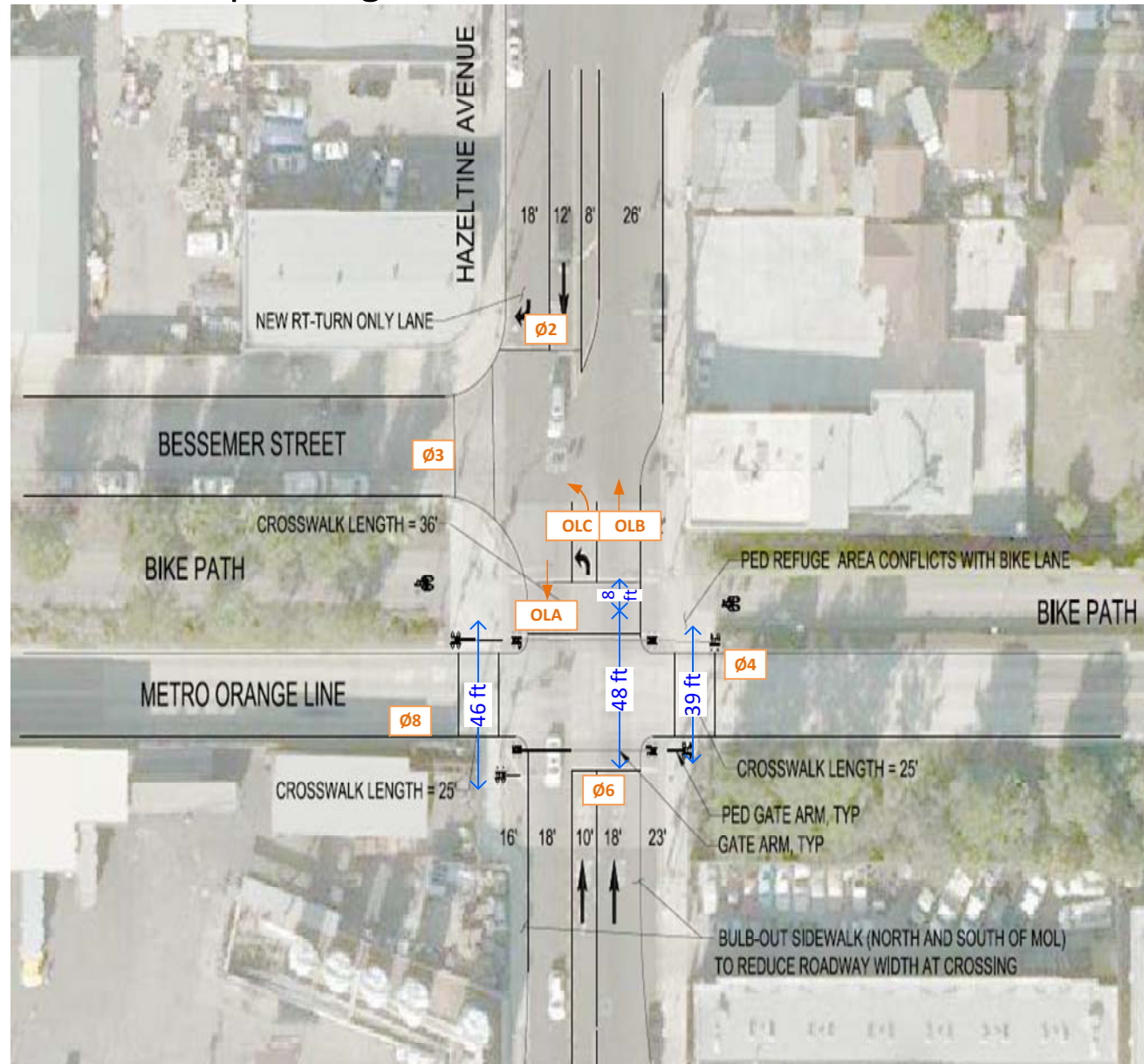
Normal Operations	Advanced Preemption	Gates Lowering	Gates Down (Active Preemption)	Recovery and Return to Normal Operations
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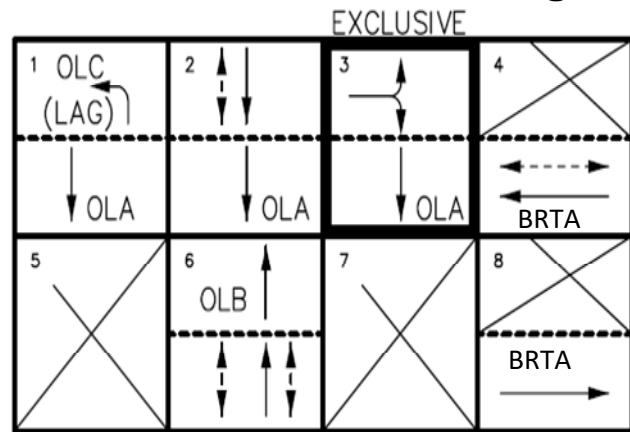
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

Gate Concept Design

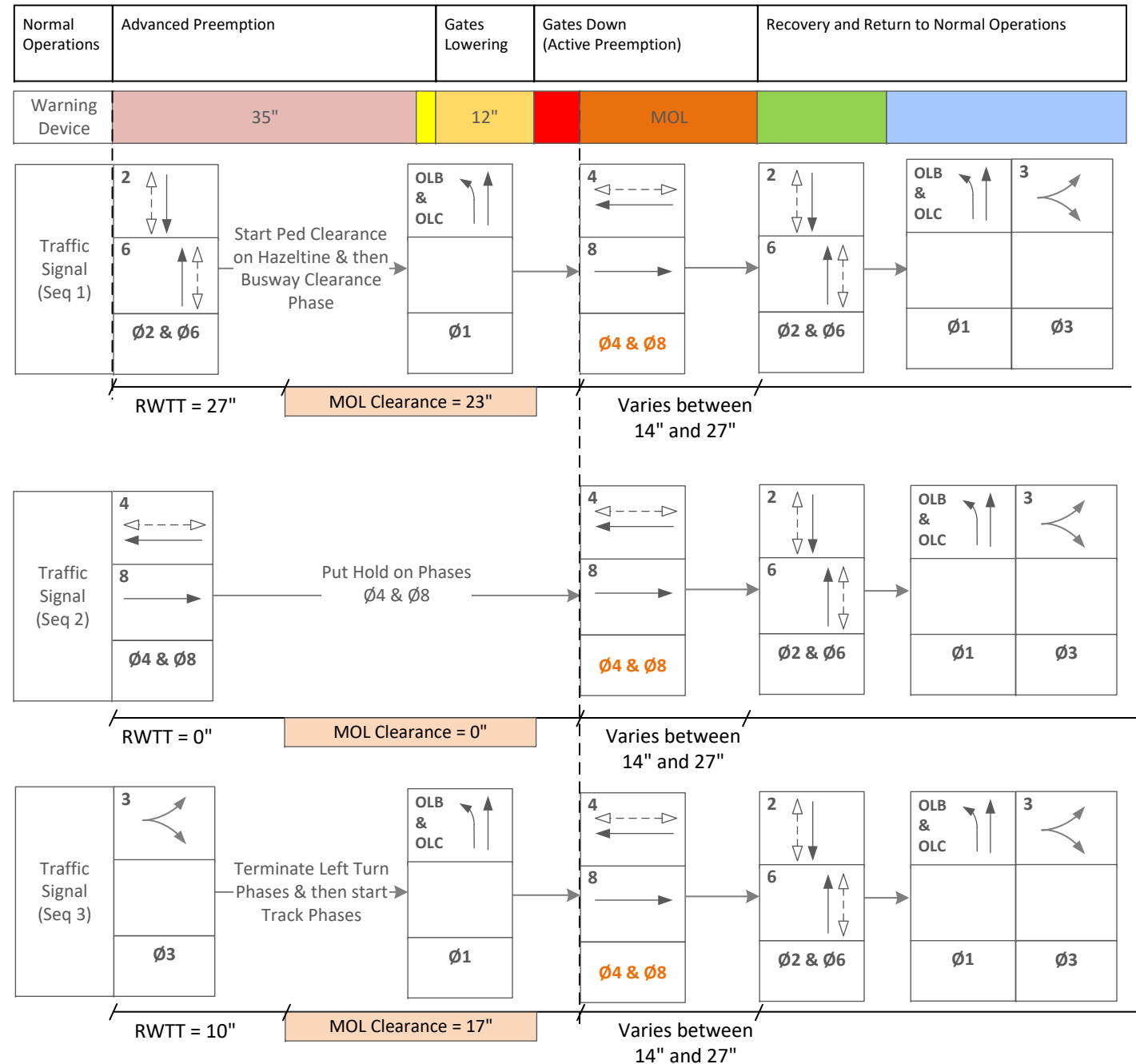


Future with Gates Phasing Diagram



OLA: Ø1, Ø2, and Ø3
 OLB: Ø6
 OLC: Ø1

Preemption Sequence



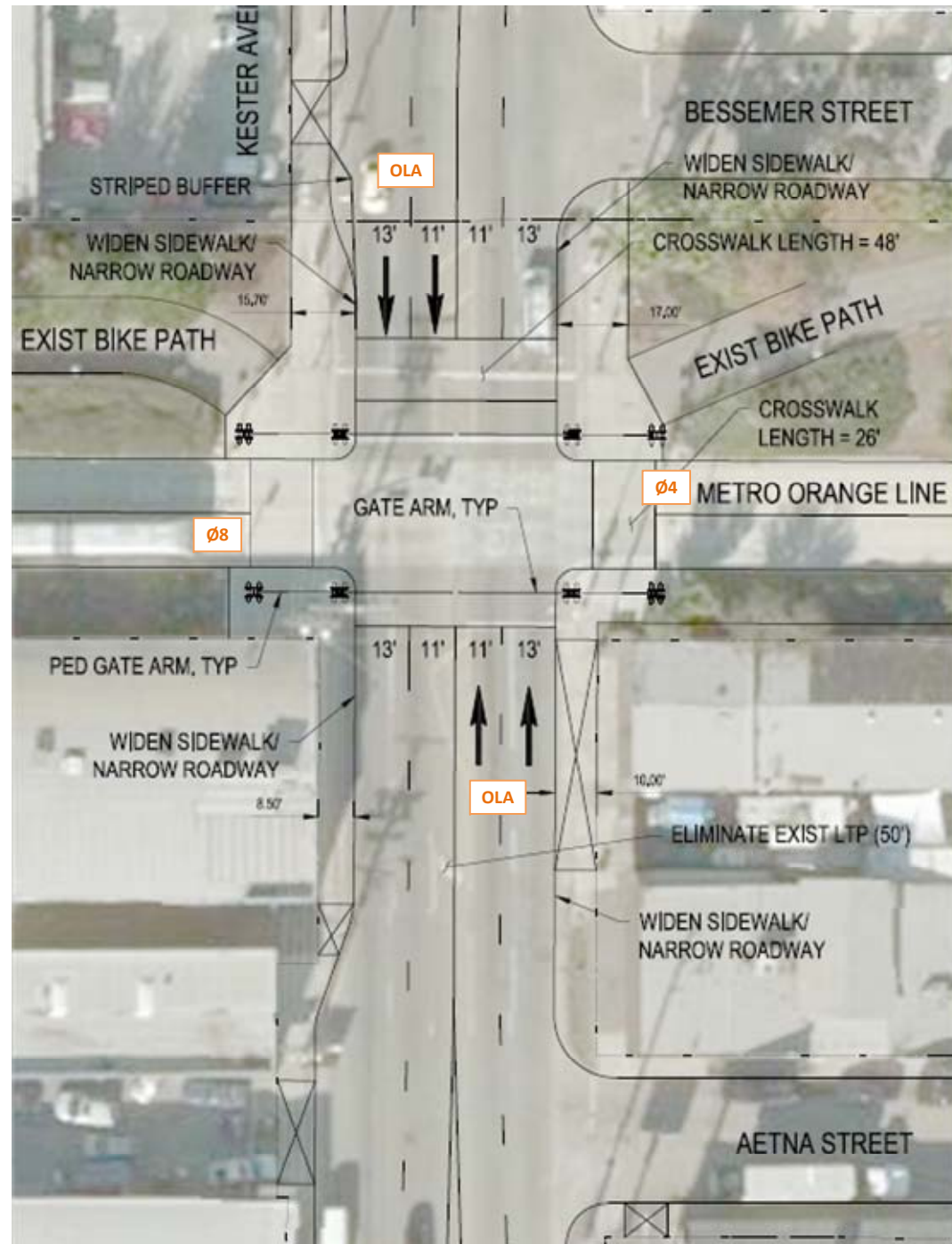
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

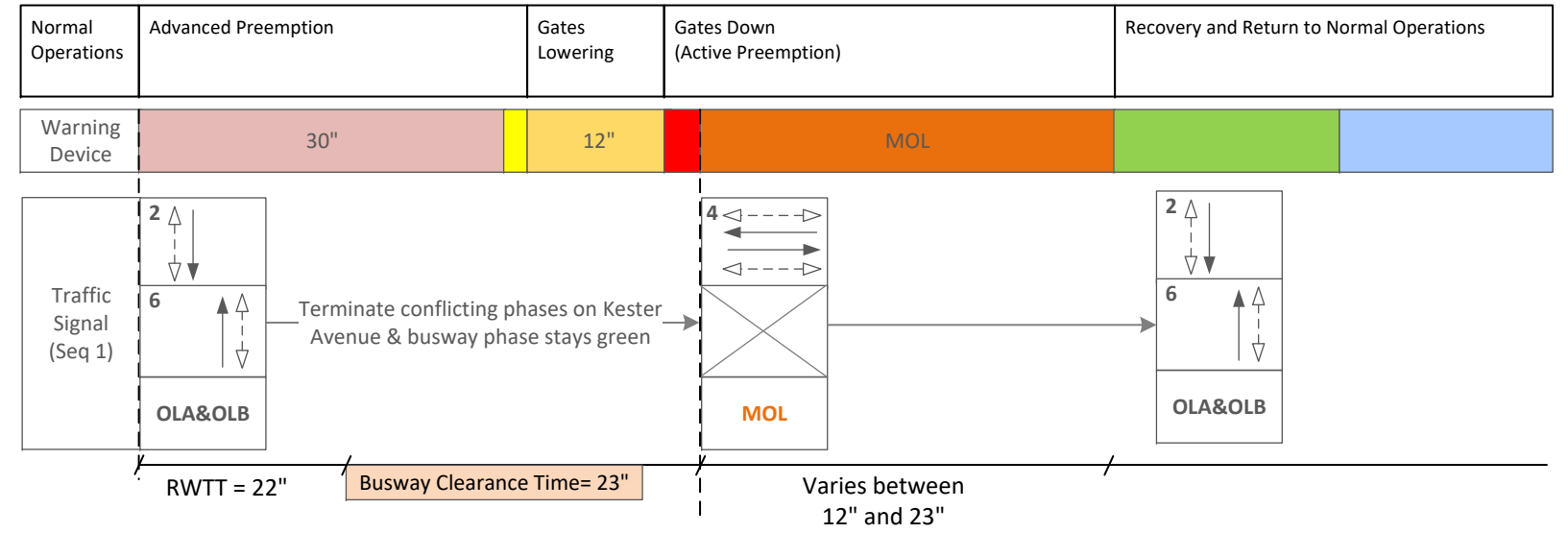
Metro Orange Line Grade Crossing
 Four Quadrant Gate System Phasing Schematics

Figure 13
 Metro Orange Line and Hazeltine Avenue

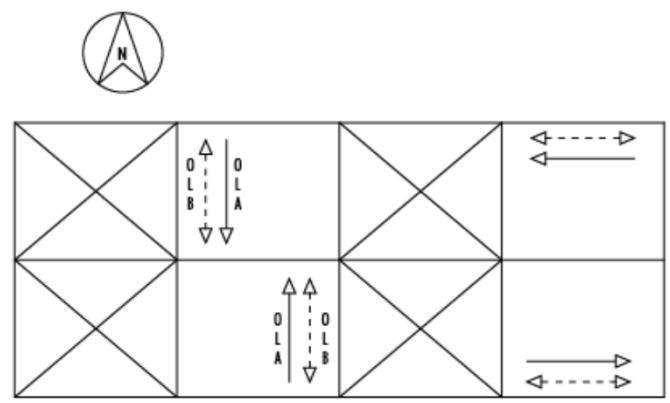
Gate Concept Design



Preemption Sequence



Signal Phasing Diagram



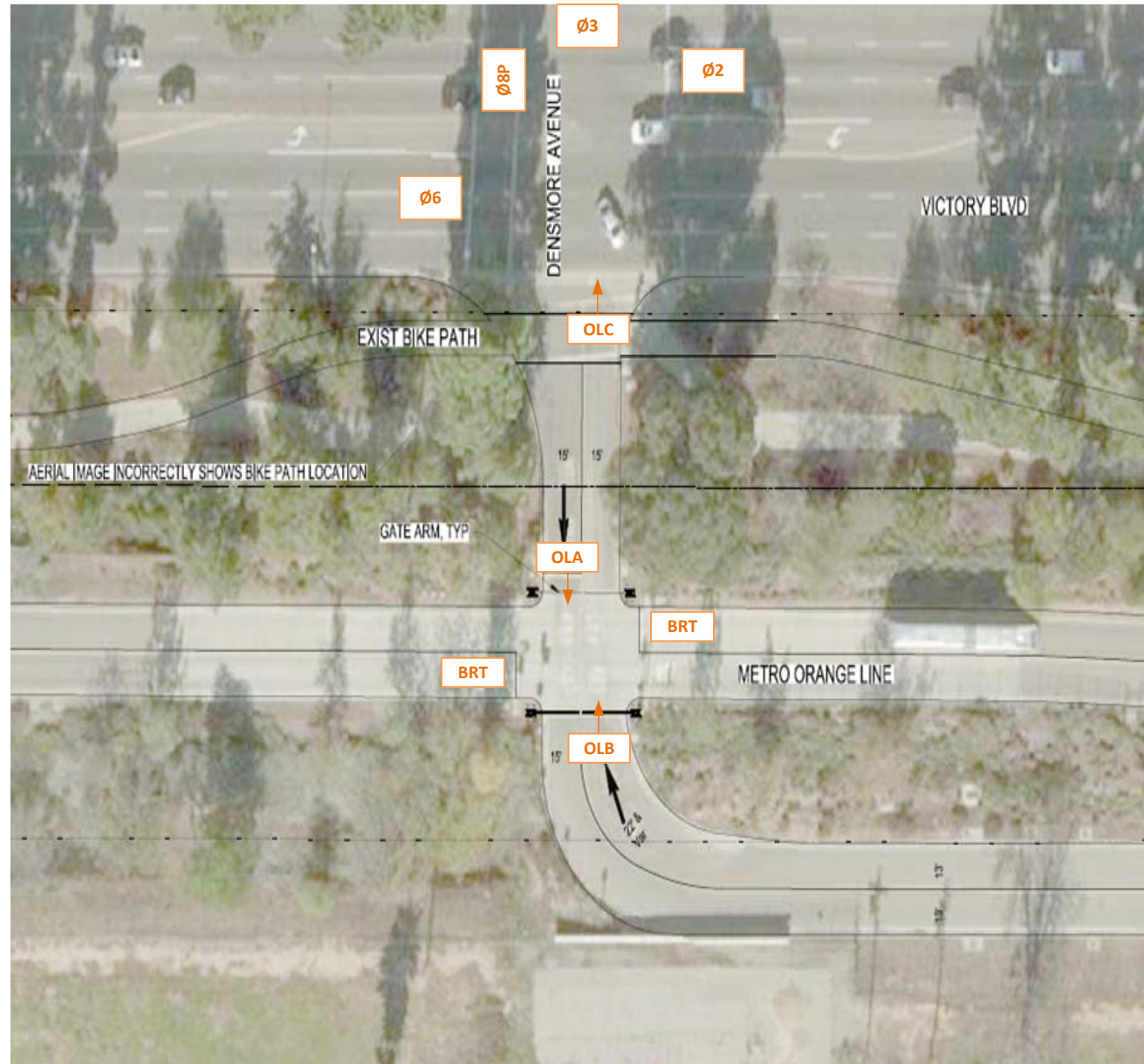
Legend

- Advance Preemption
- Lights Flash (3 seconds)
- Gate Descent (12 seconds)
- Gate Down
- MOL Phase
- Exit Phases
- Normal Operation

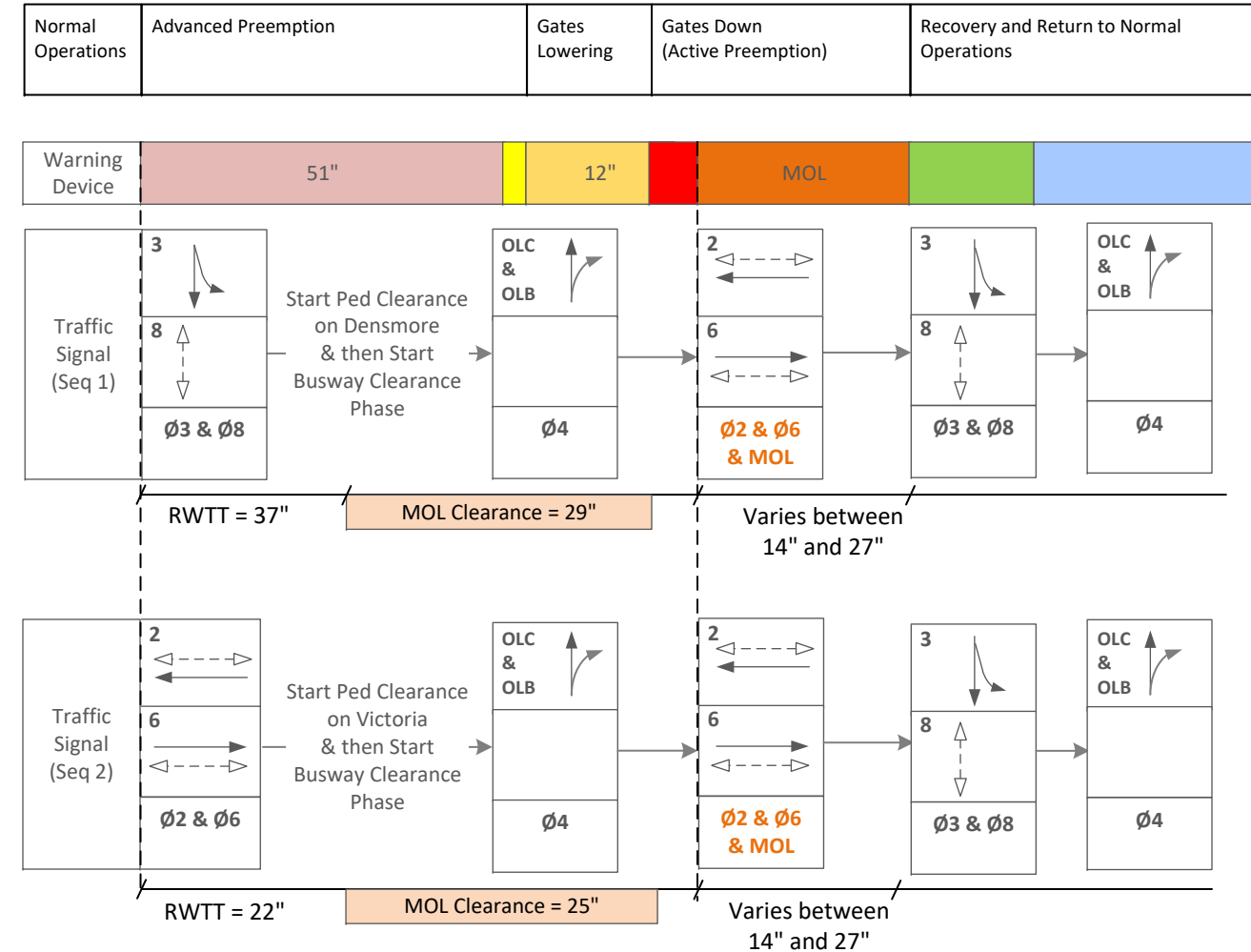
Metro Orange Line Grade Crossing
Four Quadrant Gate System Phasing Schematics

Figure 35
Kester Avenue and Busway

Gate Concept Design

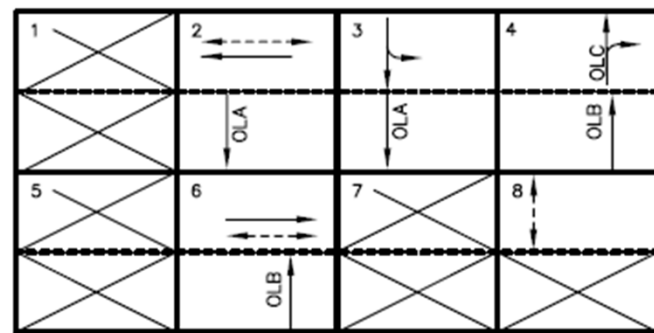


Preemption Sequence



Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

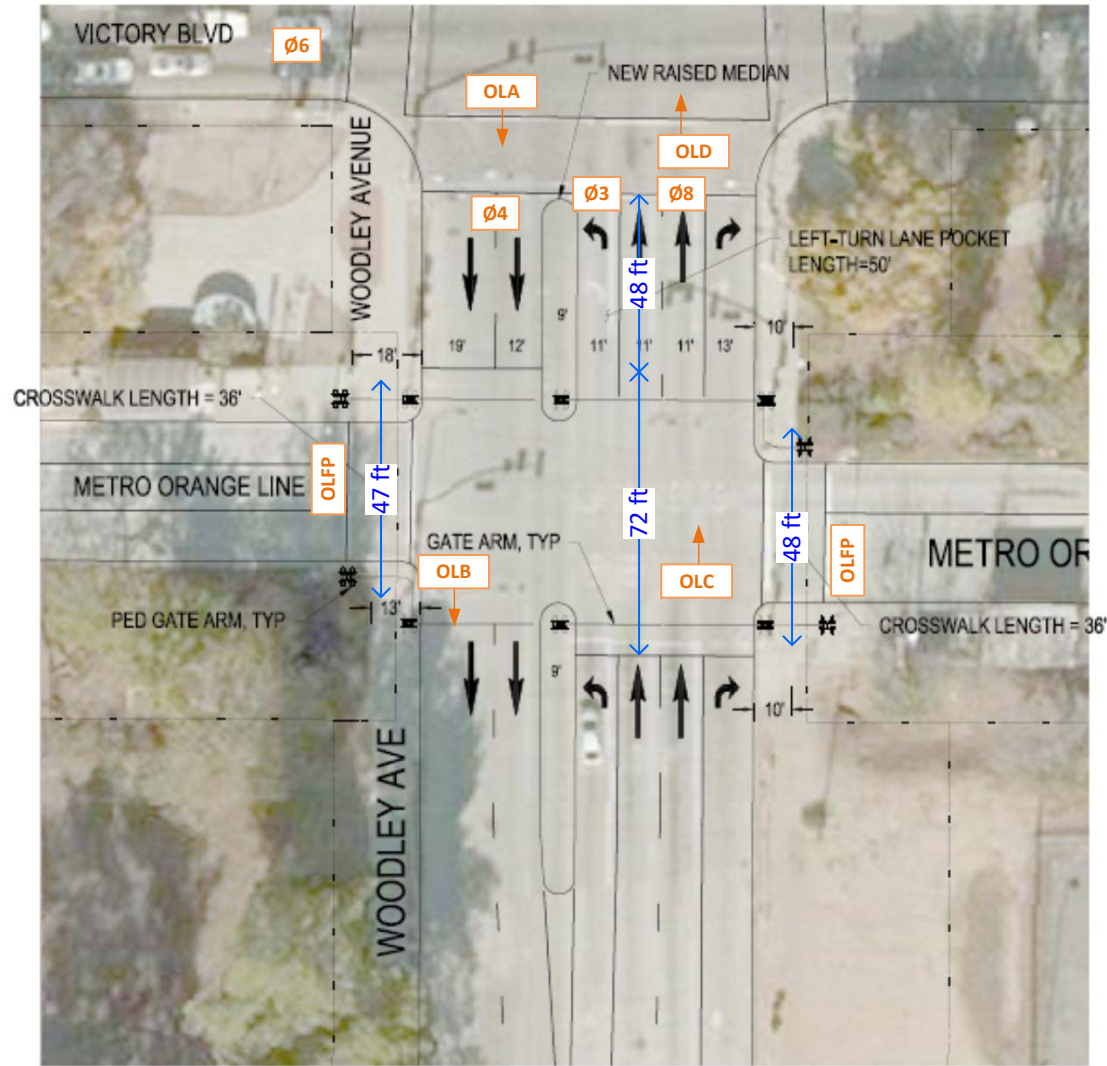


OLA: Ø2 & Ø8
 OLB: Ø3, Ø4, Ø6
 OLC: Ø4
 MOL on or next will prevent or terminate OLA and OLB

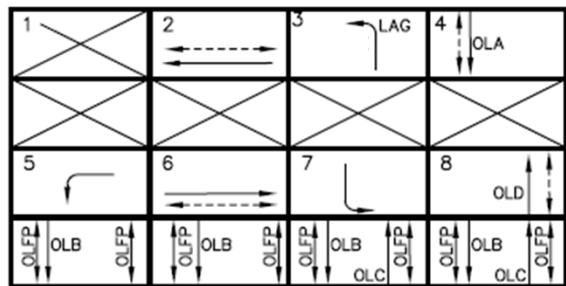
Metro Orange Line Grade Crossing
 Four Quadrant Gate System Phasing Schematics

Figure 14
 Metro Orange Line and Densmore Avenue

Gate Concept Design



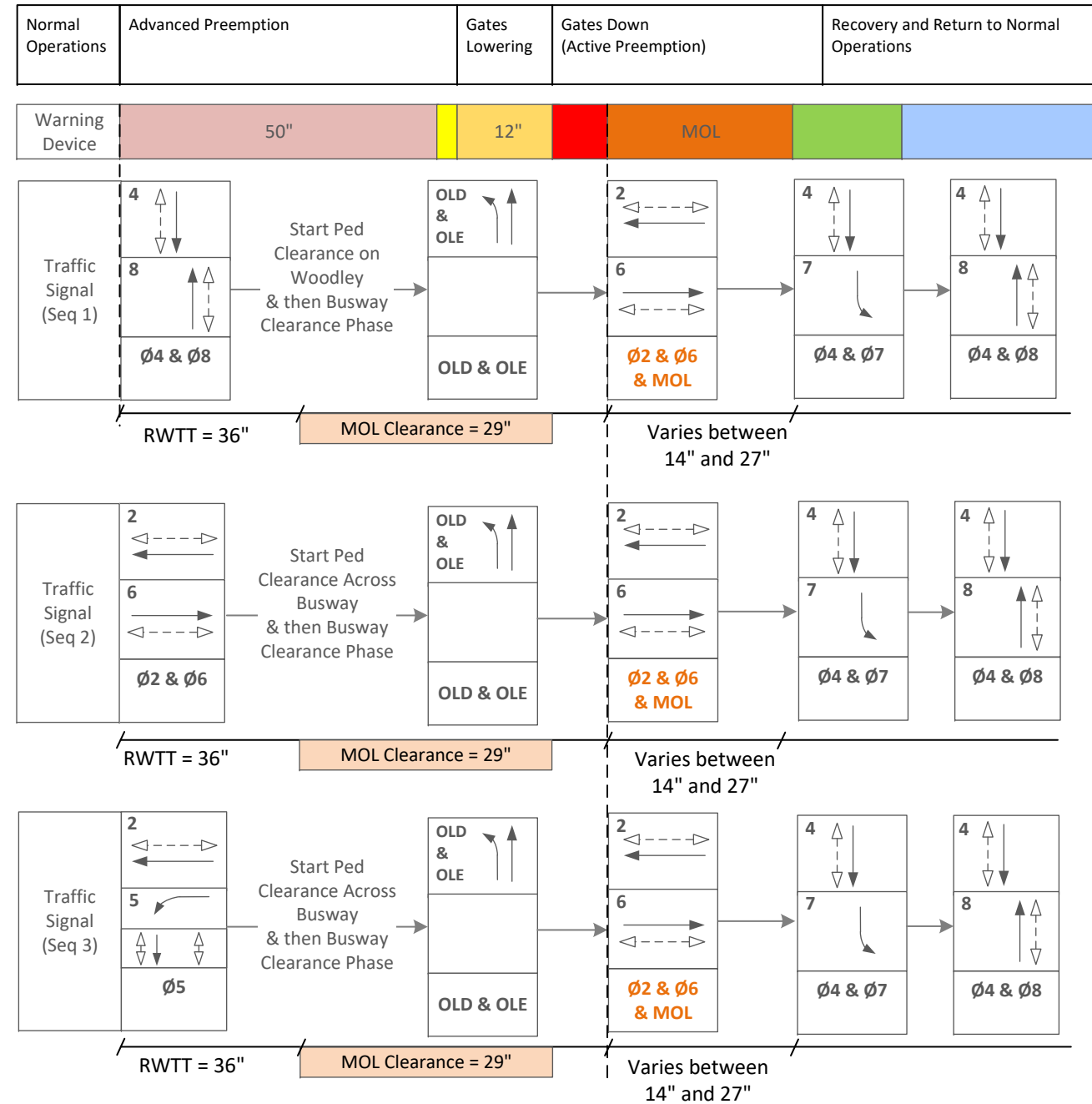
Future with Gates Phasing Diagram



- OLA: Ø4
- OLB: Ø5, Ø6, Ø7, and Ø8
- OLC: Ø3 and Ø8
- OLD: Ø8
- OLE: Ø3
- OLFP: Ø5, Ø6, Ø7 and Ø8

BRT: Busway
 OLC terminates before OLD & OLE
 BRT on or next will prevent or terminate OLB, OLC, and OLF PED

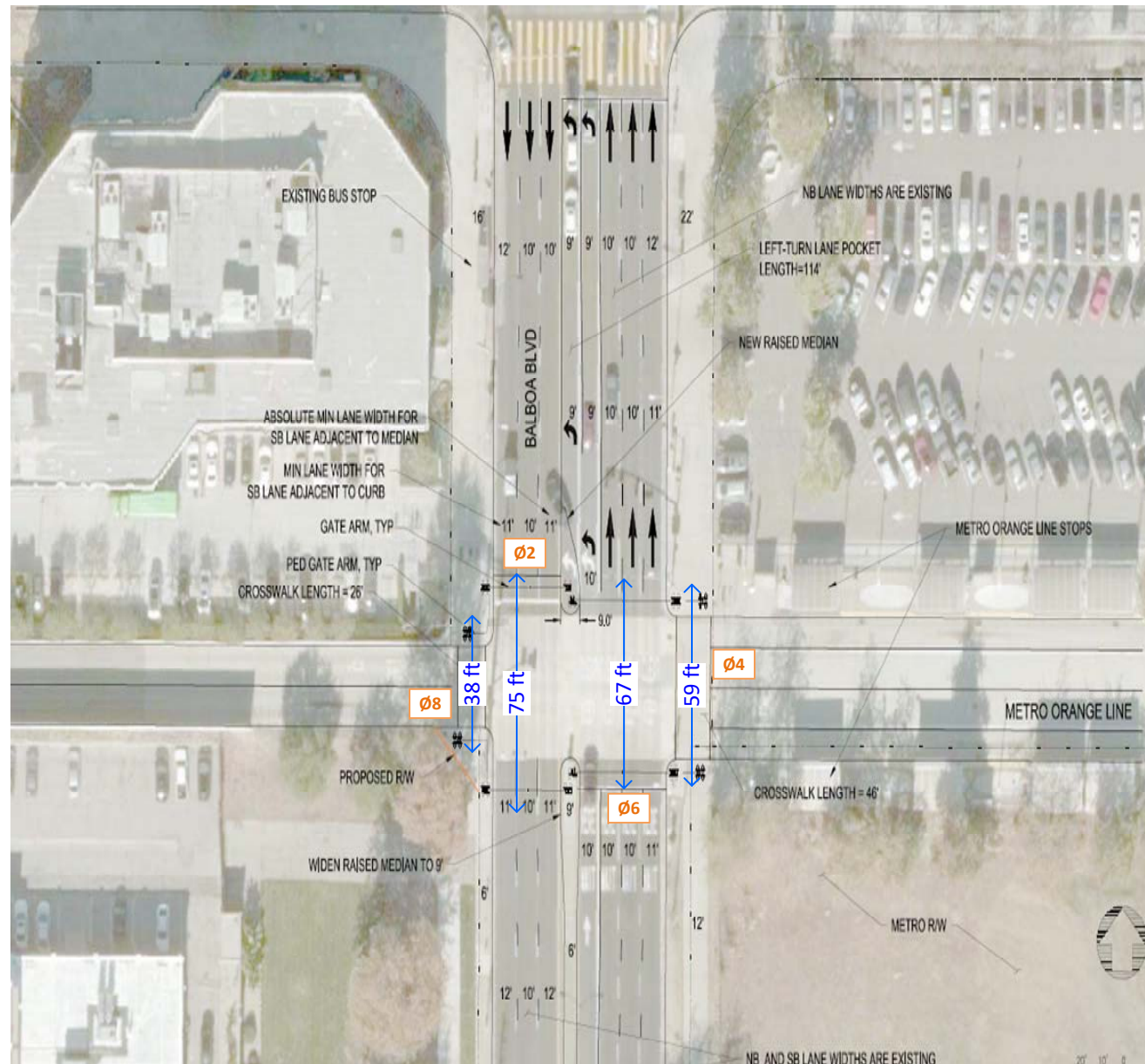
Preemption Sequence



Legend

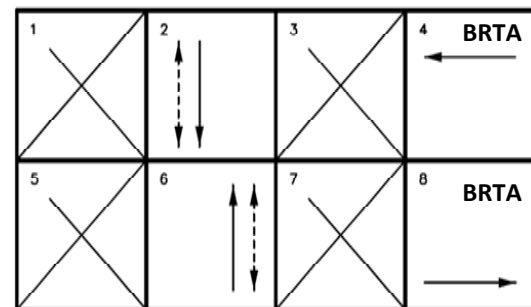
- Advance Preemption
- Lights Flash (3 seconds)
- Gate Down
- Exit Phases
- Normal Operation
- Gate Descent (12 seconds)

Gate Concept Design

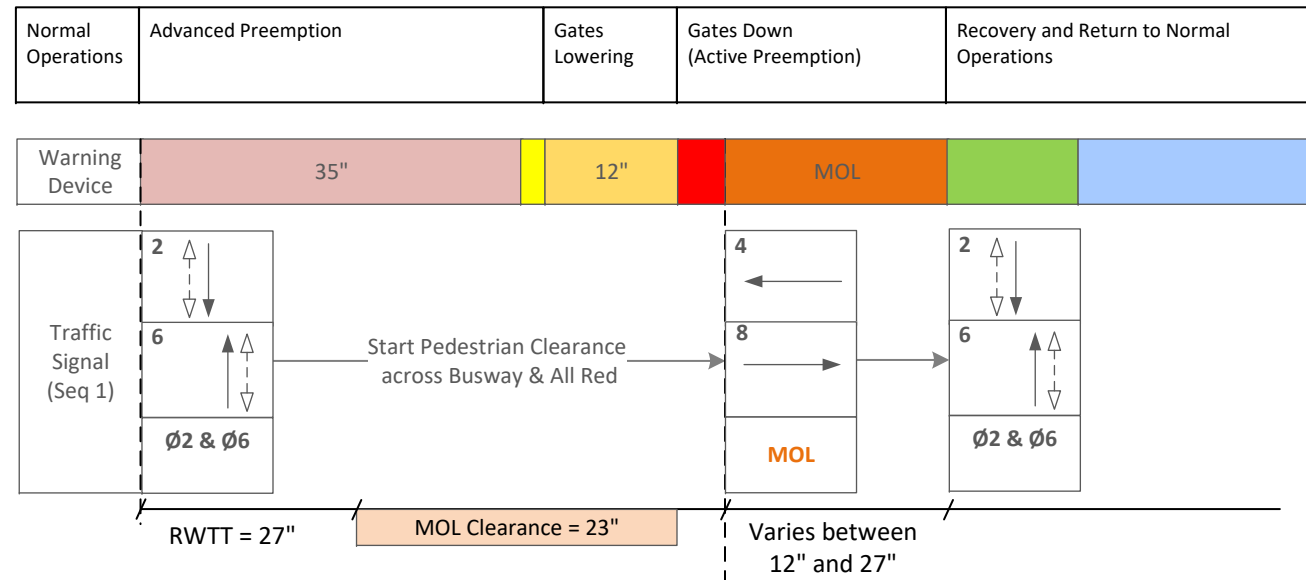


Victory and Balboa is approximately 200 feet north of this crossing.

Future with Gates Phasing Diagram



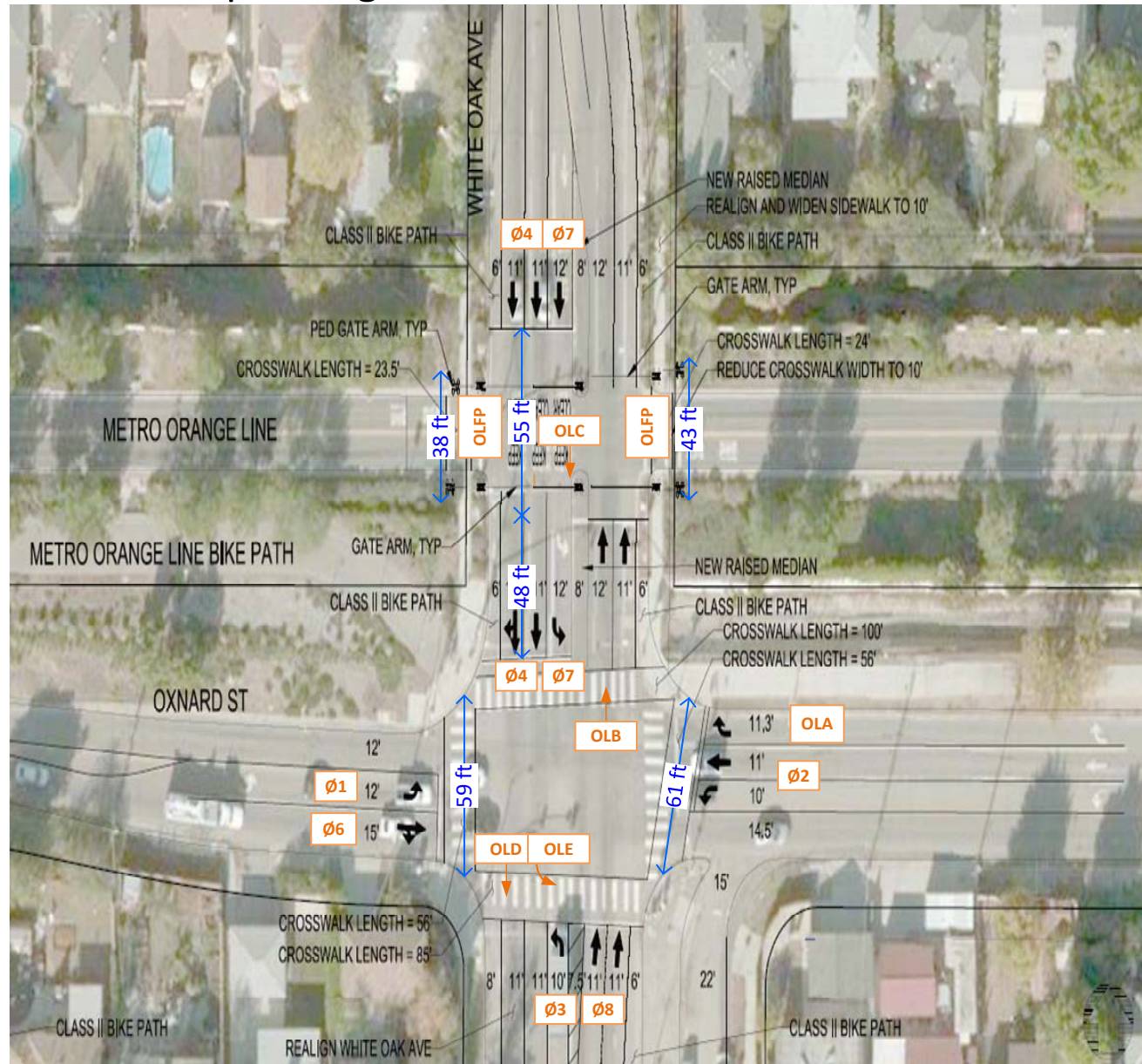
Preemption Sequence



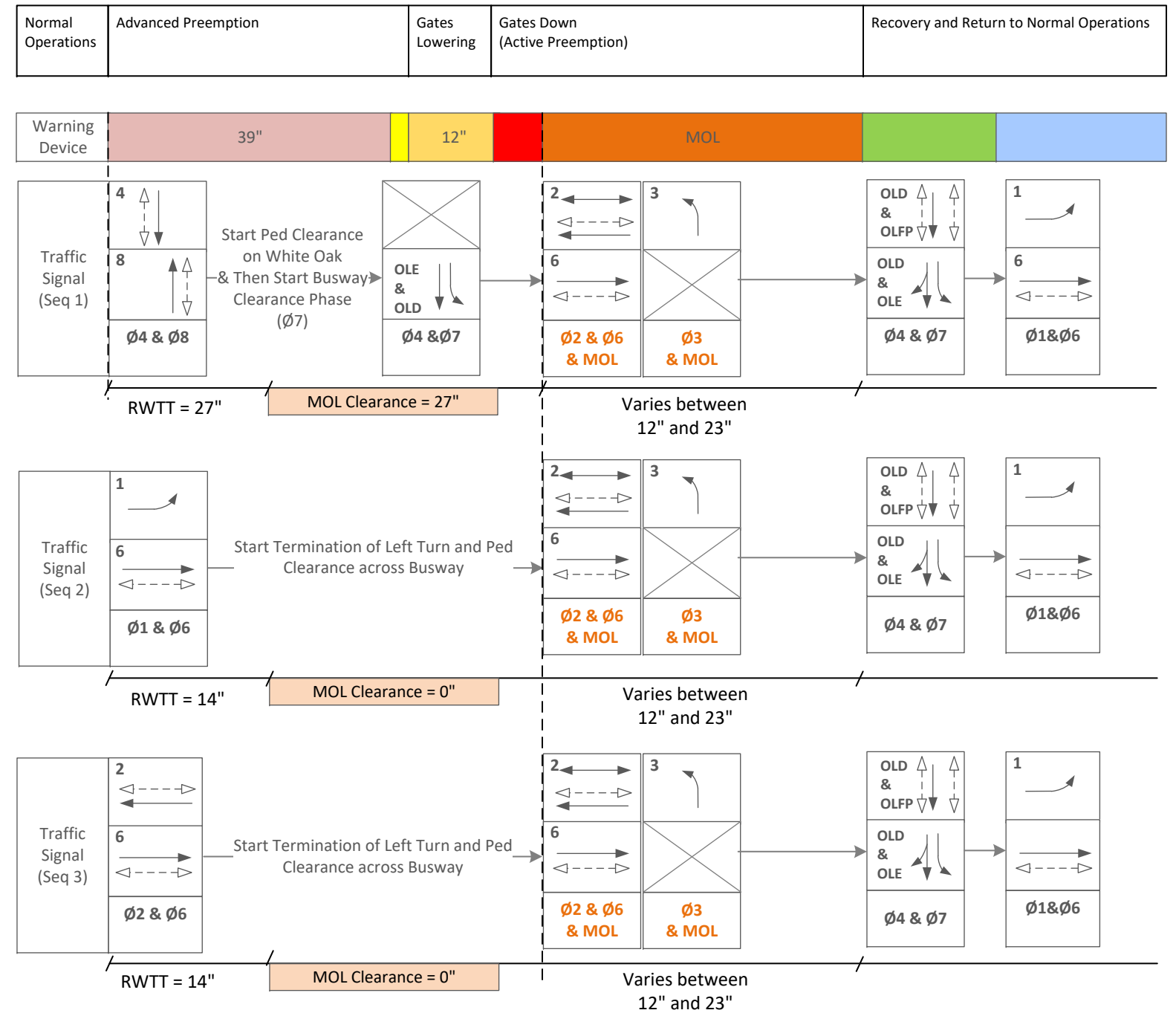
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- Gate Descent (12 seconds)
- MOL Phase
- Normal Operation

Gate Concept Design



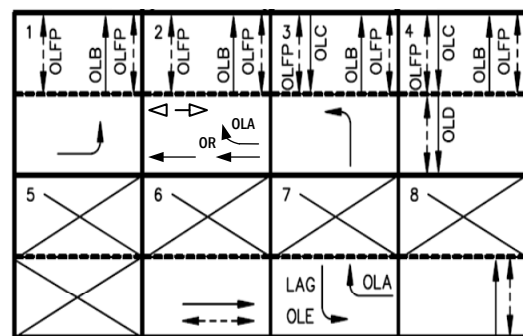
Preemption Sequence



Legend

- Advance Preemption
- Lights Flash (3 seconds)
- Gate Descent (12 seconds)
- Gate Down
- MOL Phase
- Exit Phases
- Normal Operation

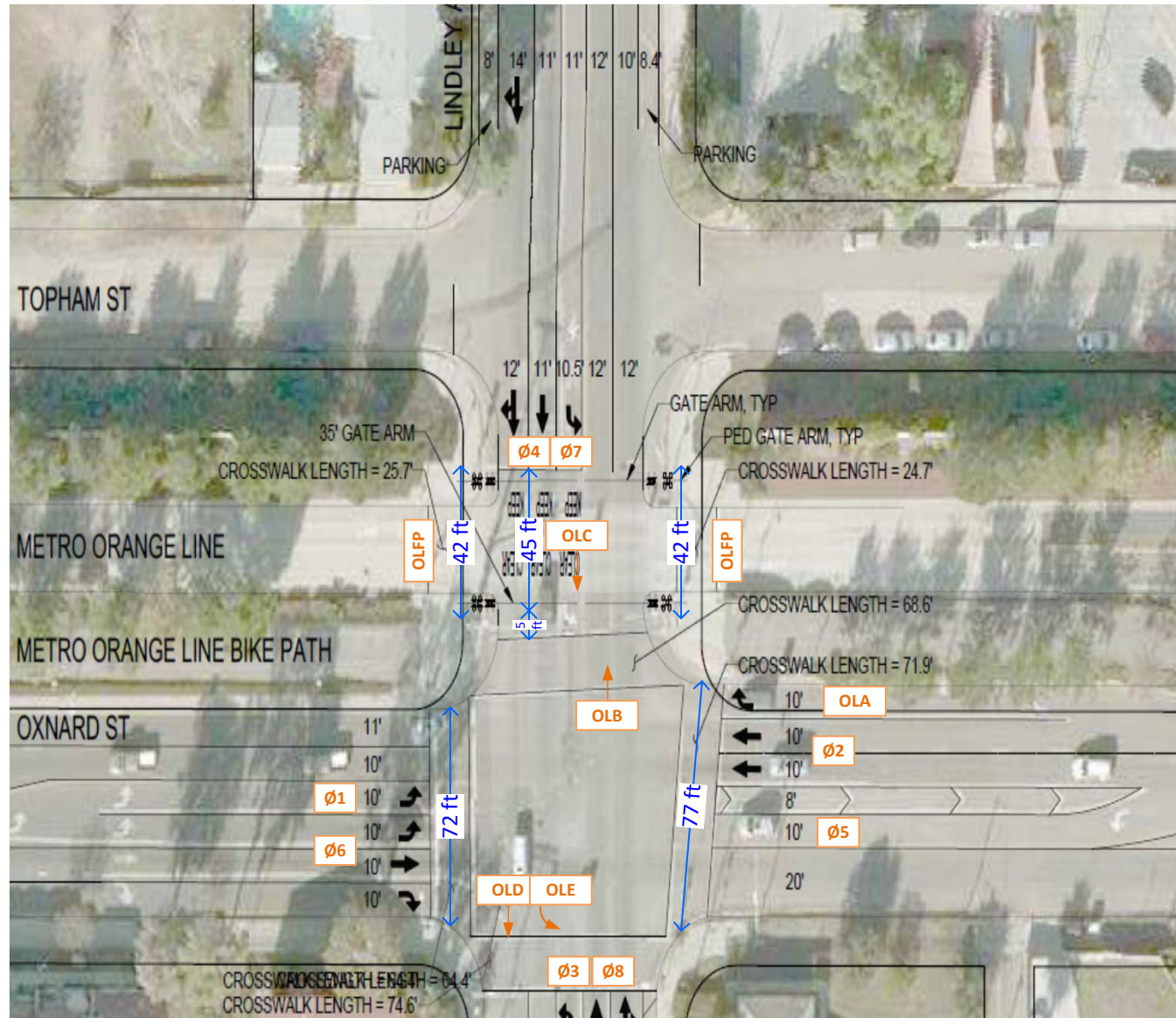
Future with Gates Phasing Diagram



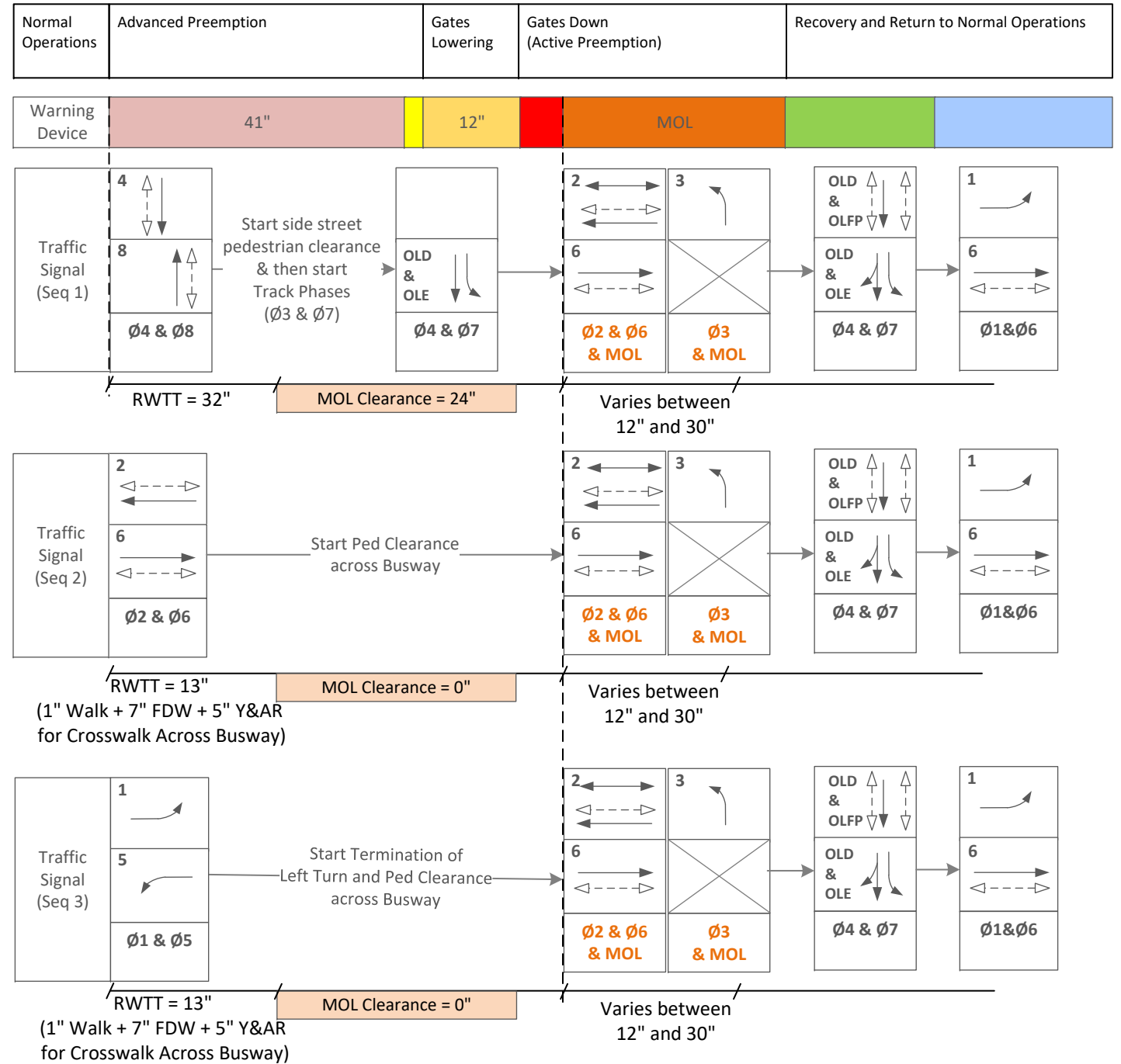
- OLA: Ø2 & Ø7
- OLB: Ø1, Ø2, Ø3, and Ø4
- OLC: Ø1, Ø2, Ø3, and Ø4
- OLD: Ø4
- OLE: Ø7
- OLF: Ø1, Ø2, Ø3, and Ø4

Update controller setting to call preemption

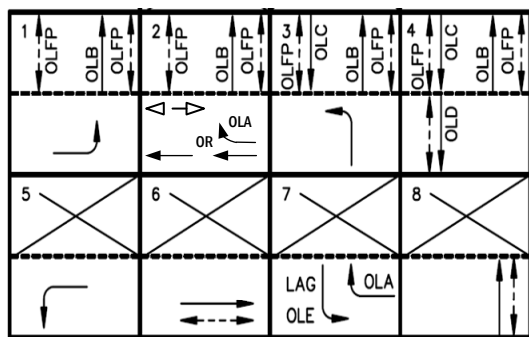
Gate Concept Design



Preemption Sequence



Future with Gates Phasing Diagram



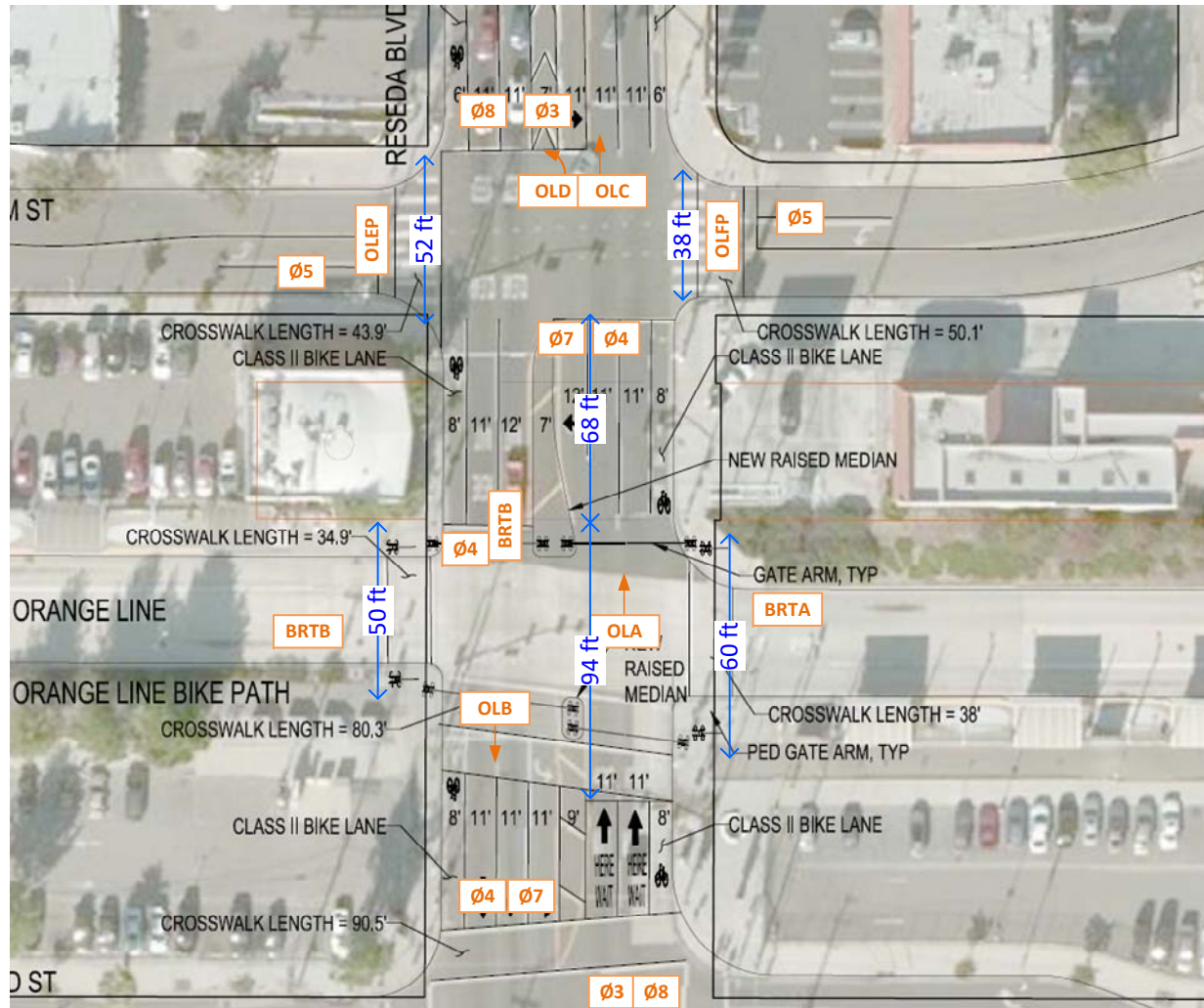
- OLA: Ø2 & Ø7
- OLB: Ø1, Ø2, Ø3, and Ø4
- OLC: Ø4
- OLD: Ø4
- OLE: Ø7
- OLF: Ø1, Ø2, Ø3, and Ø4

Update controller setting to call preemption

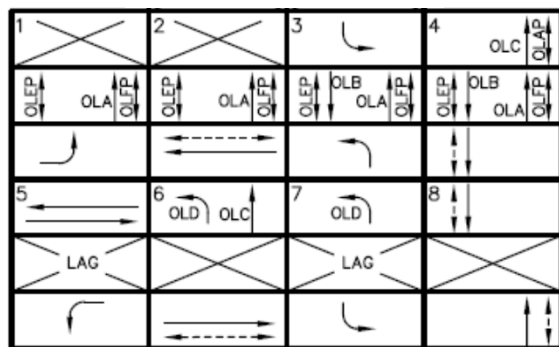
Legend

- Advance Preemption
- Lights Flash (3 seconds)
- Gate Descent (12 seconds)
- Gate Down
- MOL Phase
- Exit Phases
- Normal Operation

Gate Concept Design



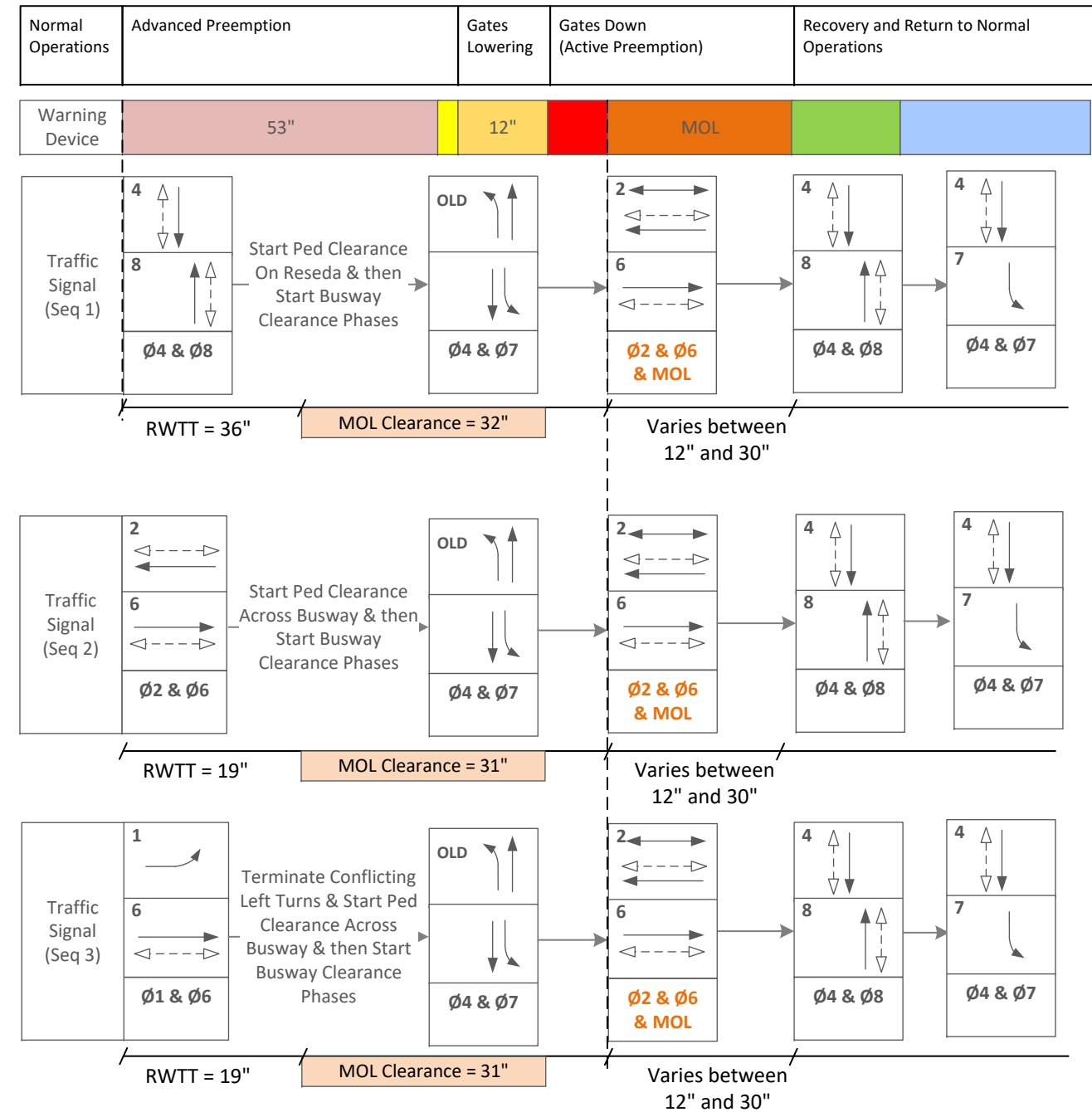
Future with Gates Phasing Diagram



- Ø1: Oxnard St E/B LT
- Ø2: Oxnard St W/B Through
- Ø3: Reseda S/B LT at Topham & N/B at Oxnard
- Ø5: Oxnard W/B LT & Bessemer W/B & Topham E/B
- Ø6: Oxnard E/B

- OLA: Ø1, Ø2, Ø3, and Ø4
- OLB: Ø1, Ø2, Ø3, and Ø4
- OLC: Ø4 & Ø6
- OLD: Ø6 & Ø7
- OLEP: Ø1, Ø2, Ø3, and Ø4
- OLFP: Ø1, Ø2, Ø3, and Ø4

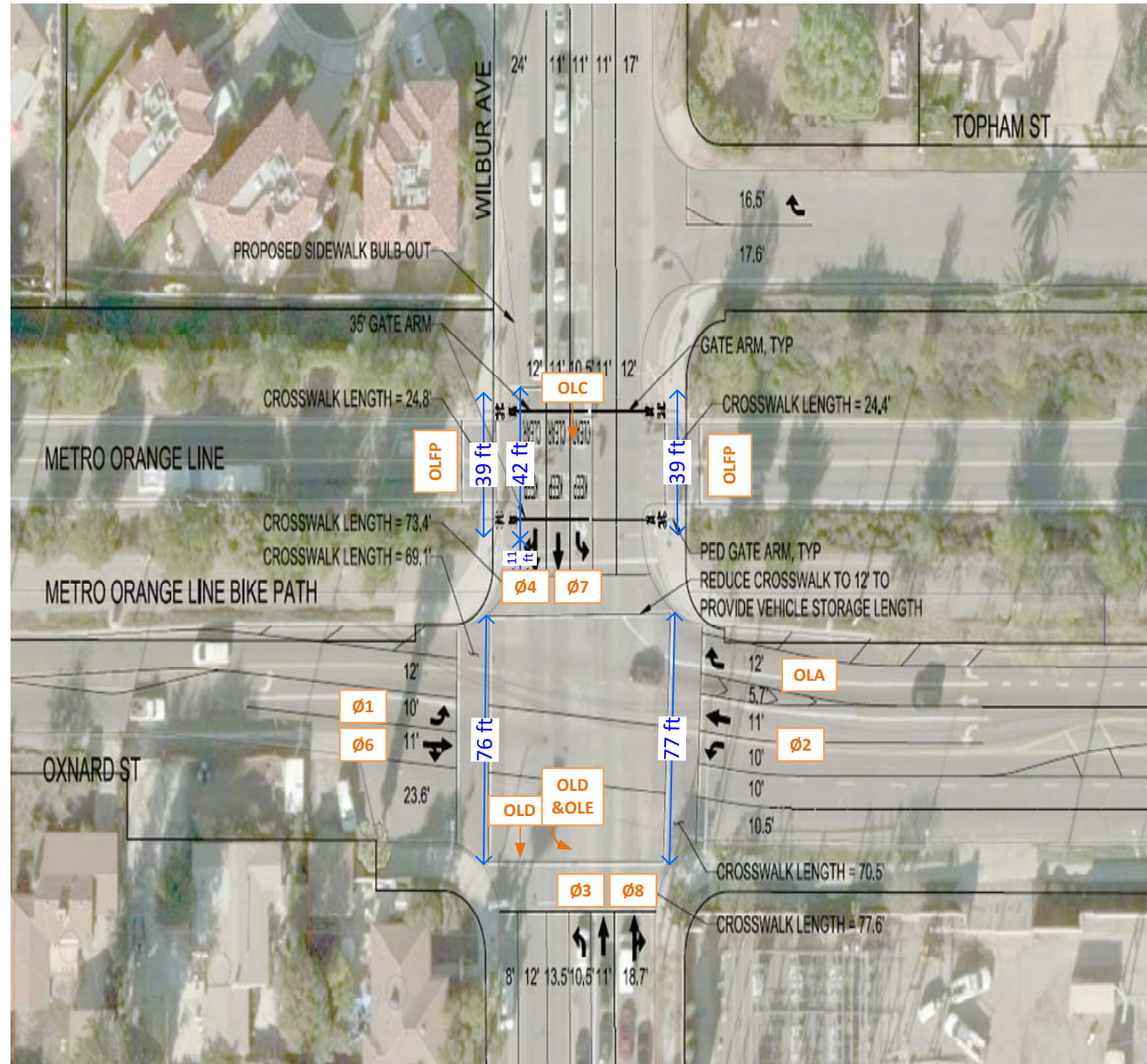
Preemption Sequence



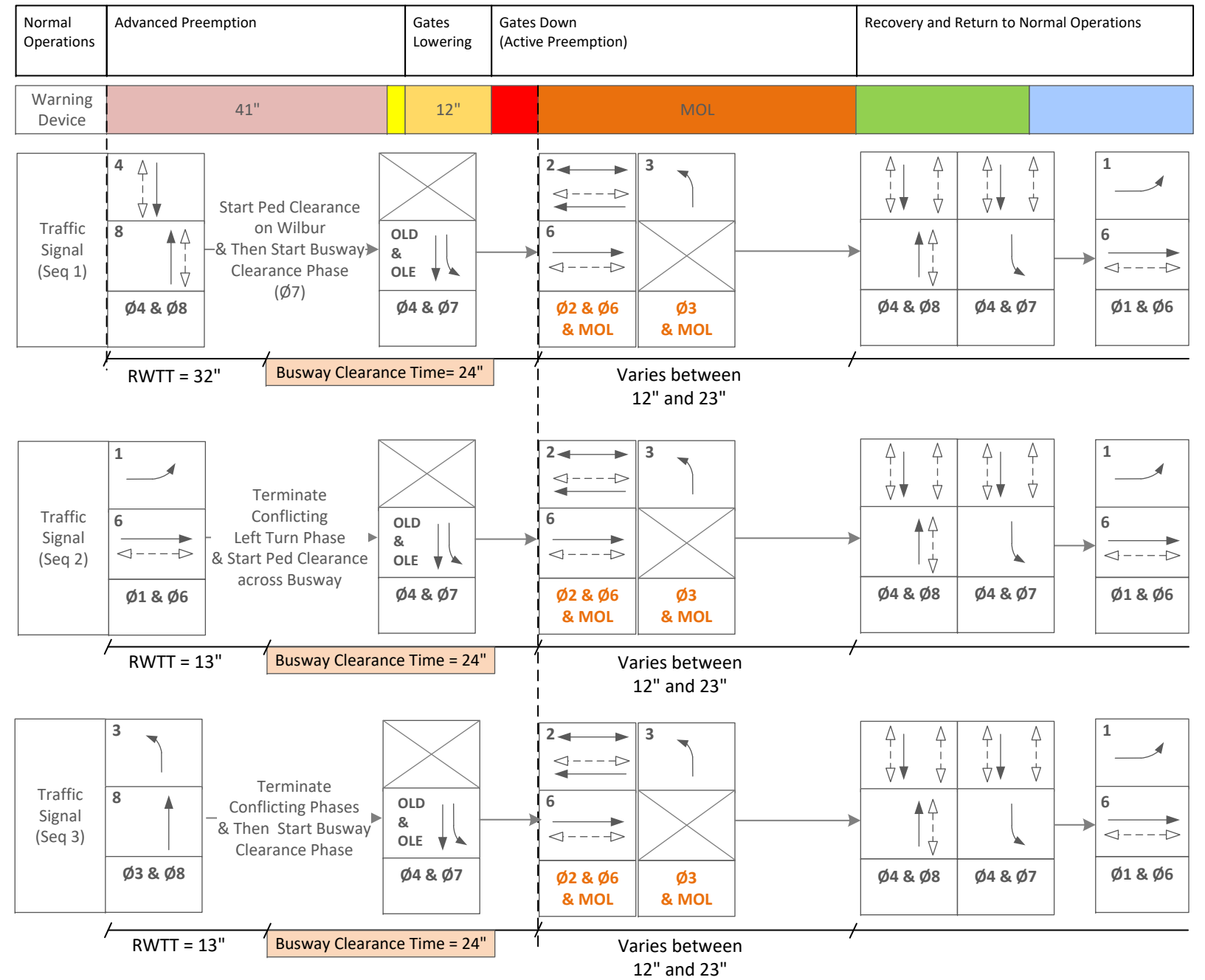
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

Gate Concept Design



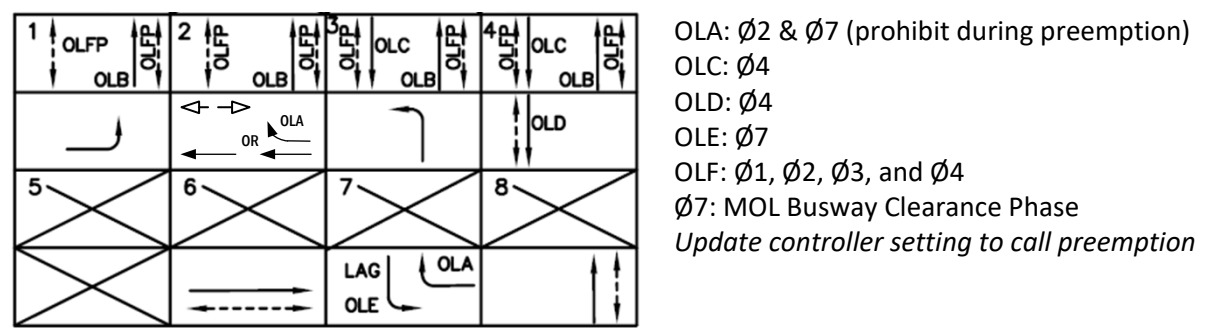
Preemption Sequence



Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

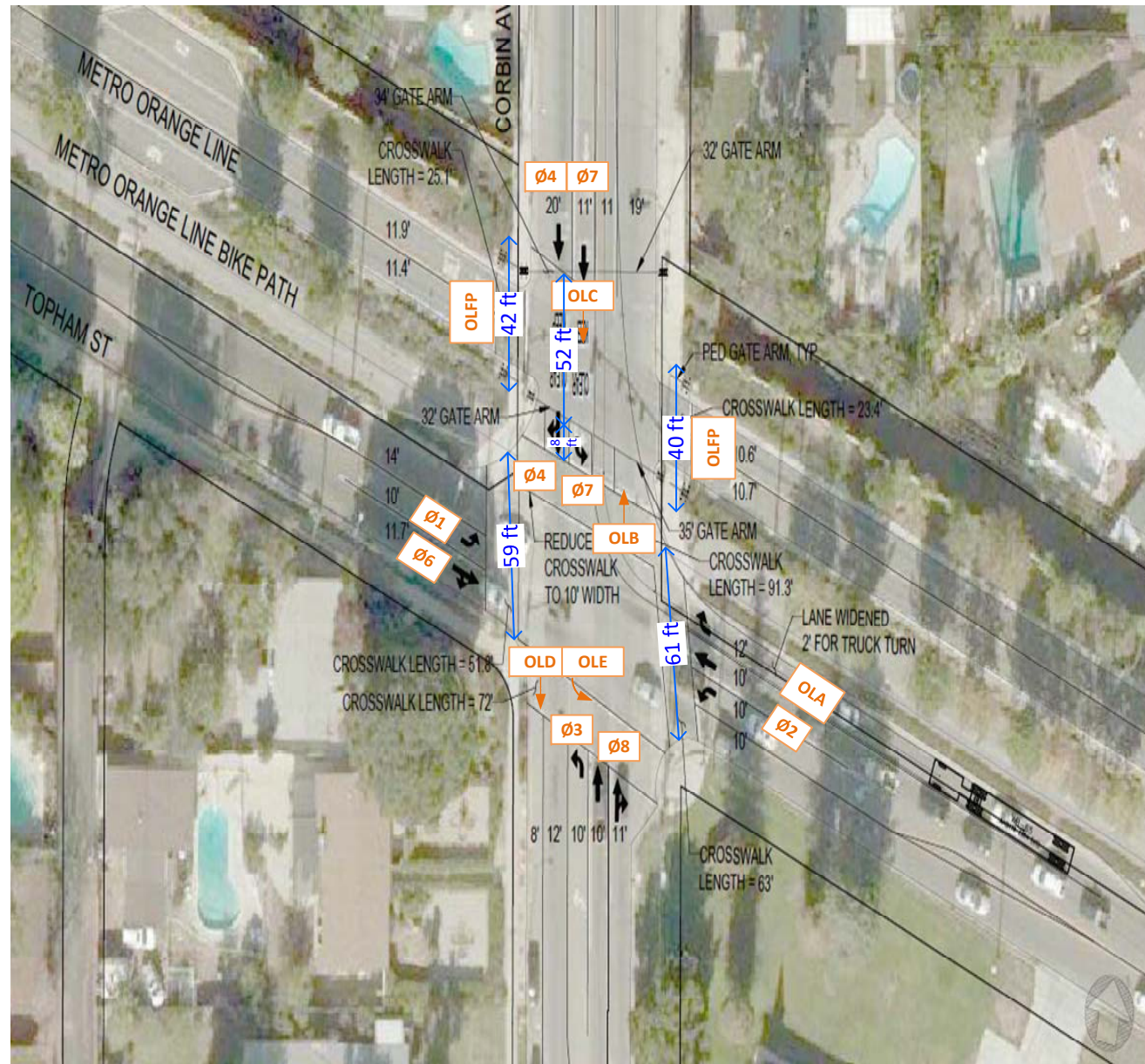
Future with Gates Phasing Diagram



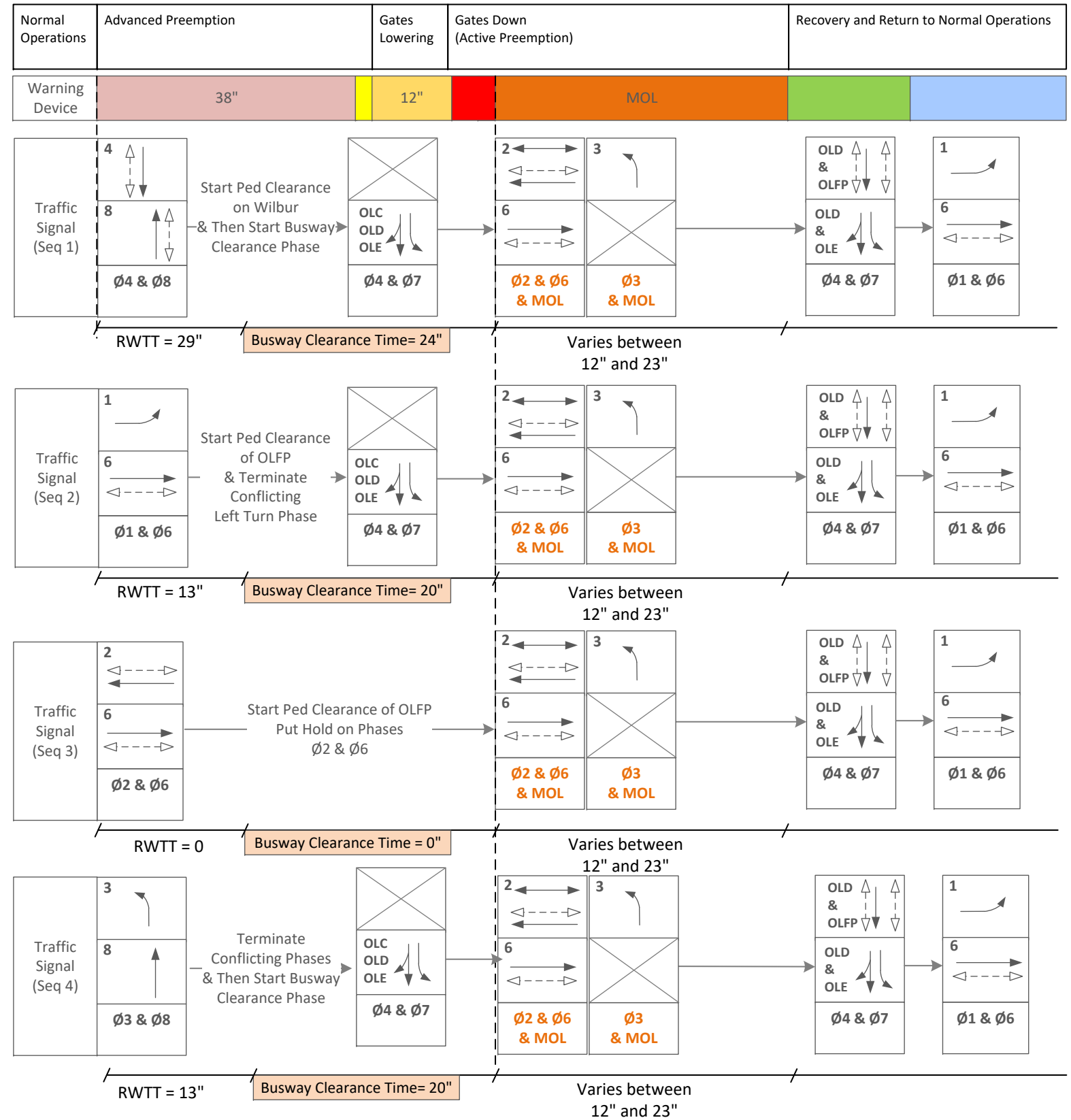
Metro Orange Line Grade Crossing
Four Quadrant Gate System Phasing Schematics

Figure 21
Oxnard Street and Wilbur Avenue

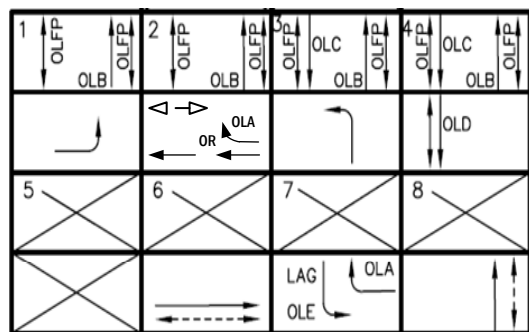
Gate Concept Design



Preemption Sequence



Future with Gates Phasing Diagram



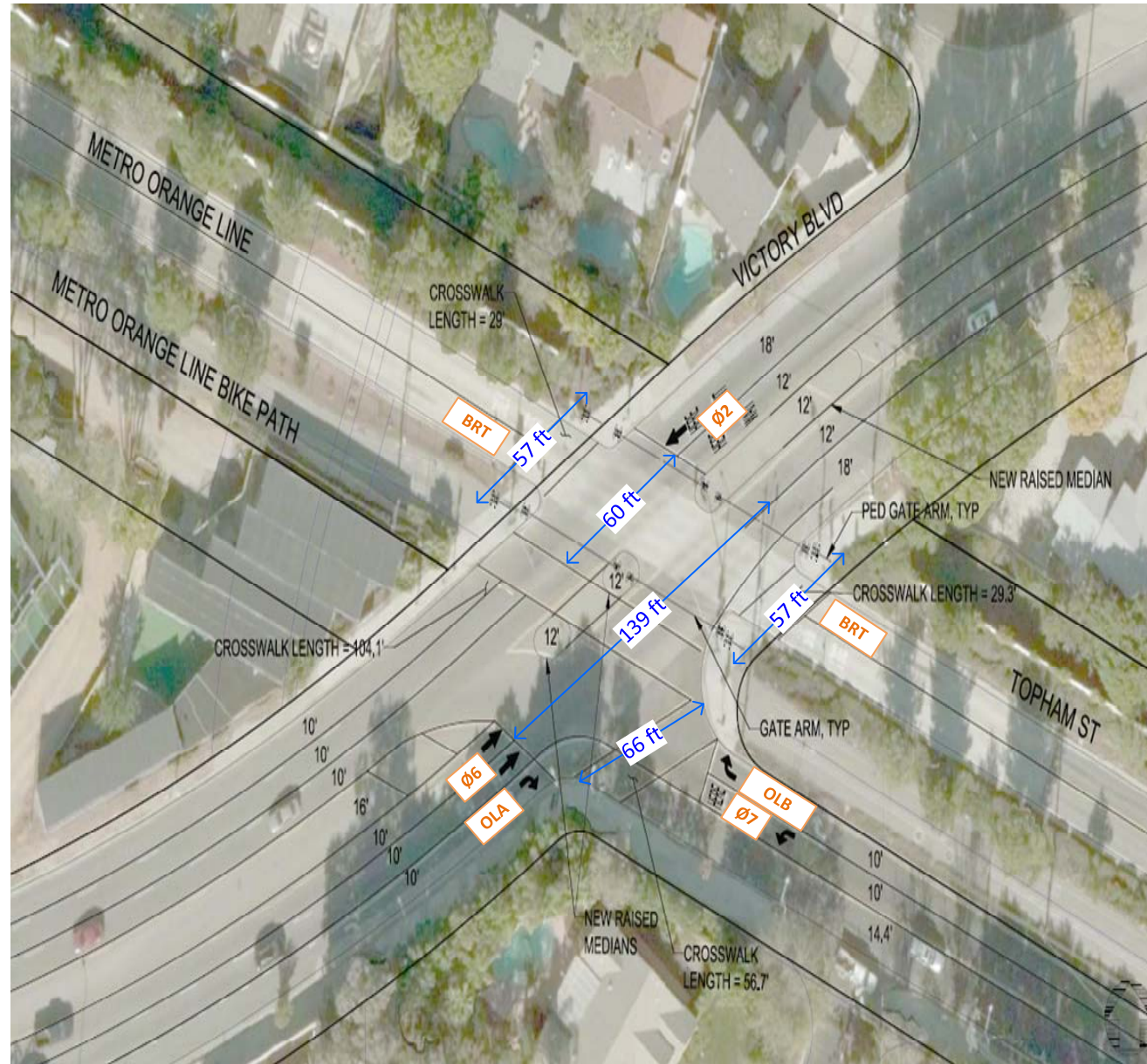
OLA: Ø2 & Ø7
 OLB: Ø1, Ø2, Ø3, and Ø4
 OLC: Ø4
 OLD: Ø4
 OLE: Ø7
 OLFP: Ø1, Ø2, Ø3, and Ø4
 Update controller setting to call preemption

Advance Preemption Gate Down Exit Phases Lights Flash (3 seconds) MOL Phase Normal Operation Gate Descent (12 seconds)

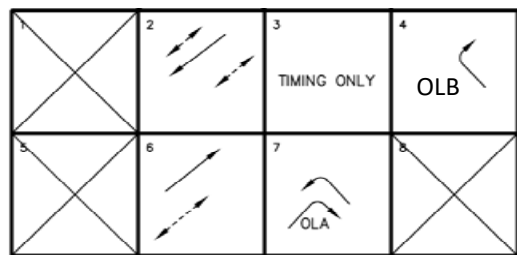
Metro Orange Line Grade Crossing
 Four Quadrant Gate System Phasing Schematics

Figure 23
 Corbin Avenue and Topham Street

Gate Concept Design

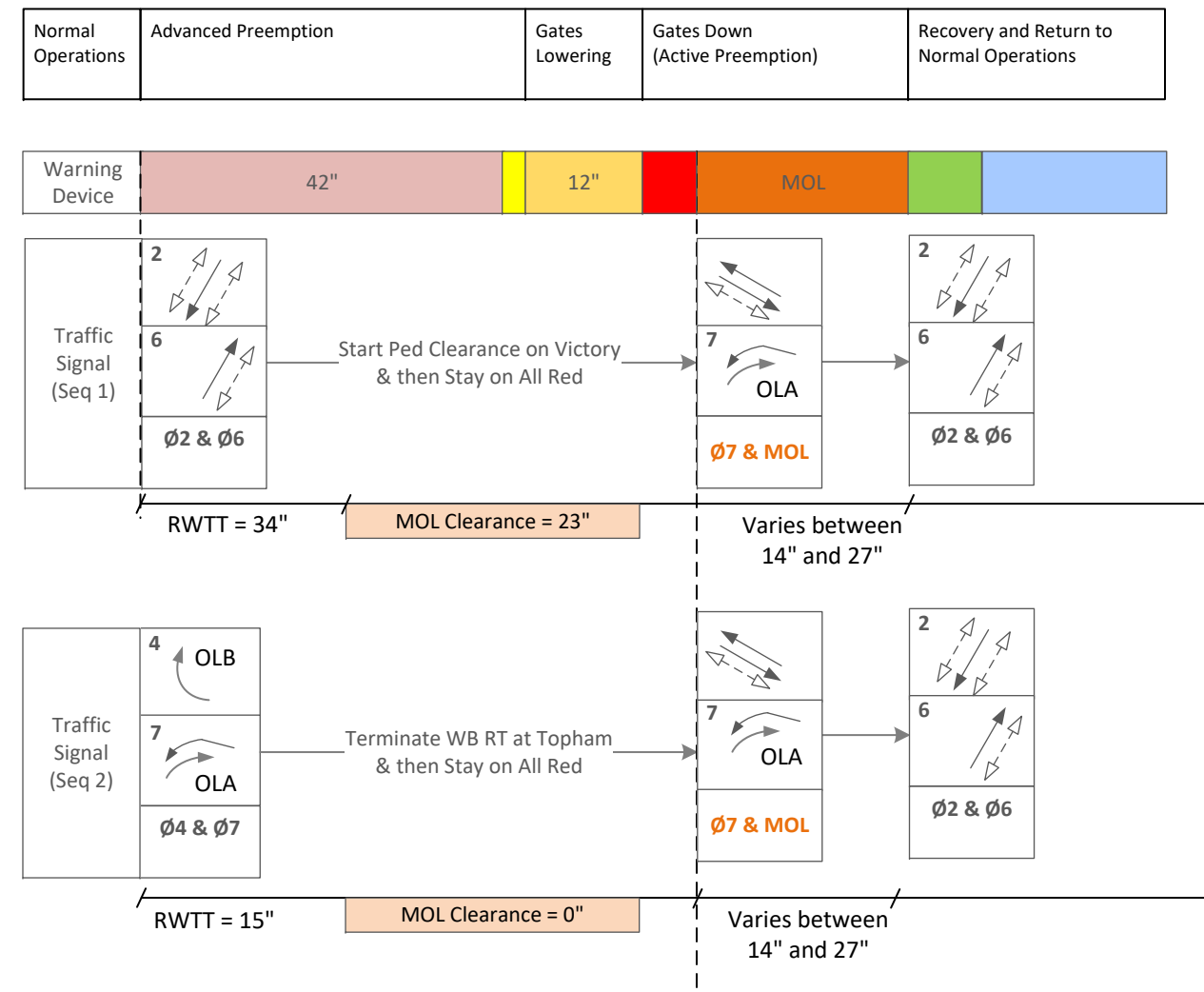


Future with Gates Phasing Diagram



OLA: Ø6, Ø7
OLB: Ø4

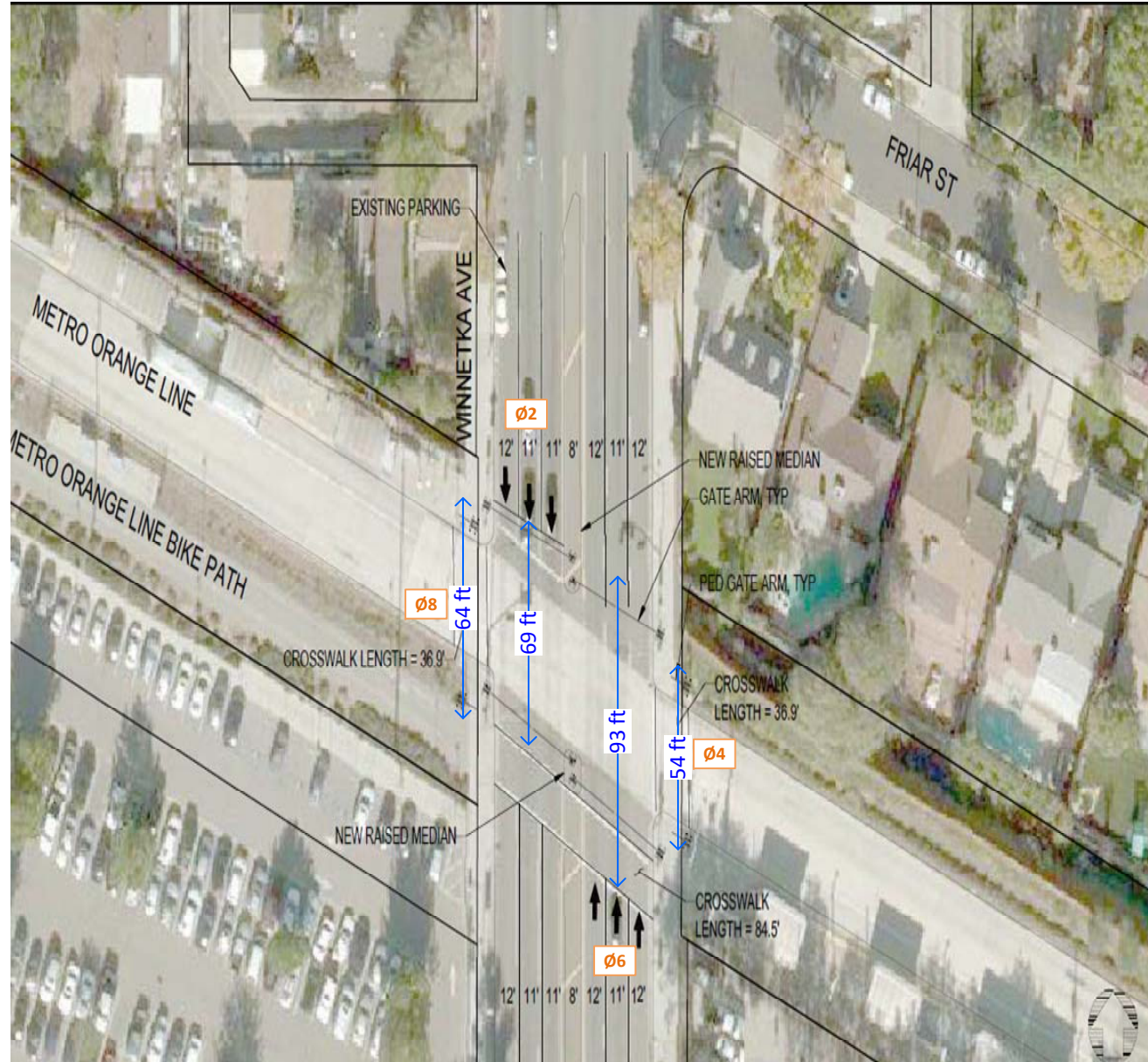
Preemption Sequence



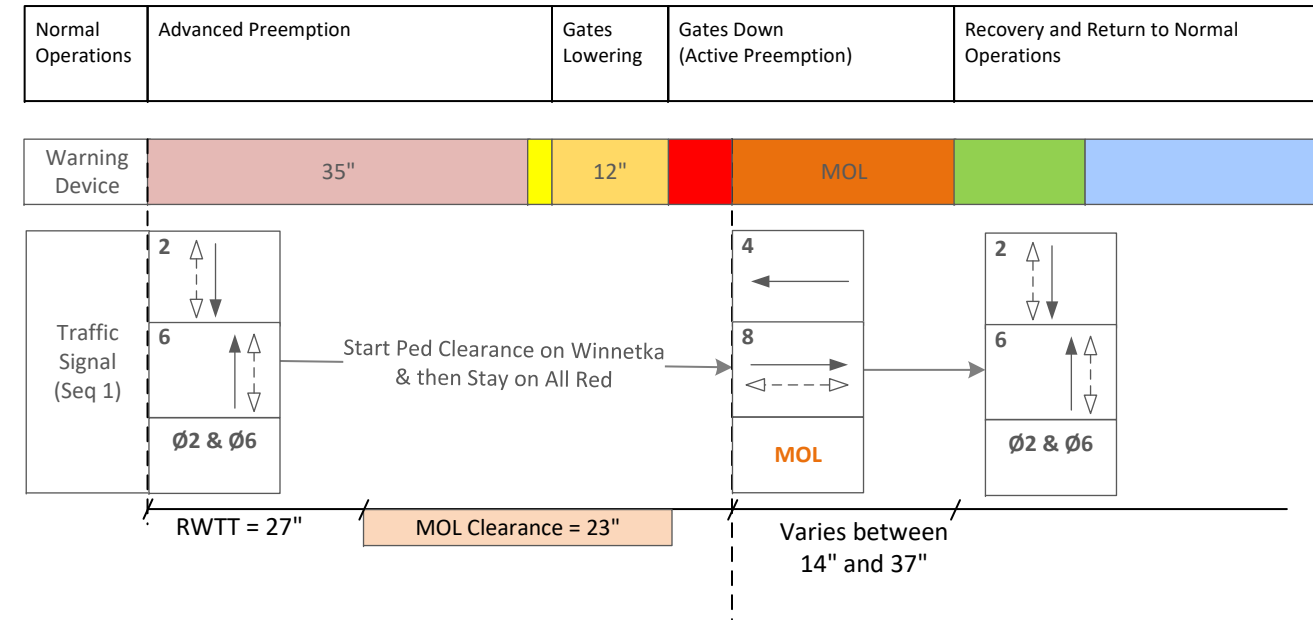
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

Gate Concept Design



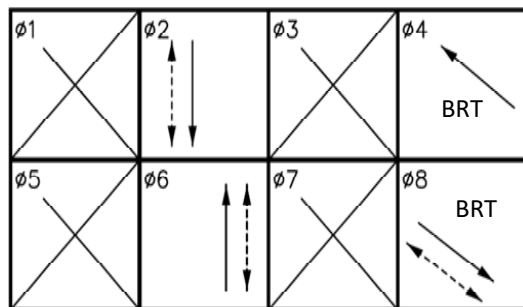
Preemption Sequence



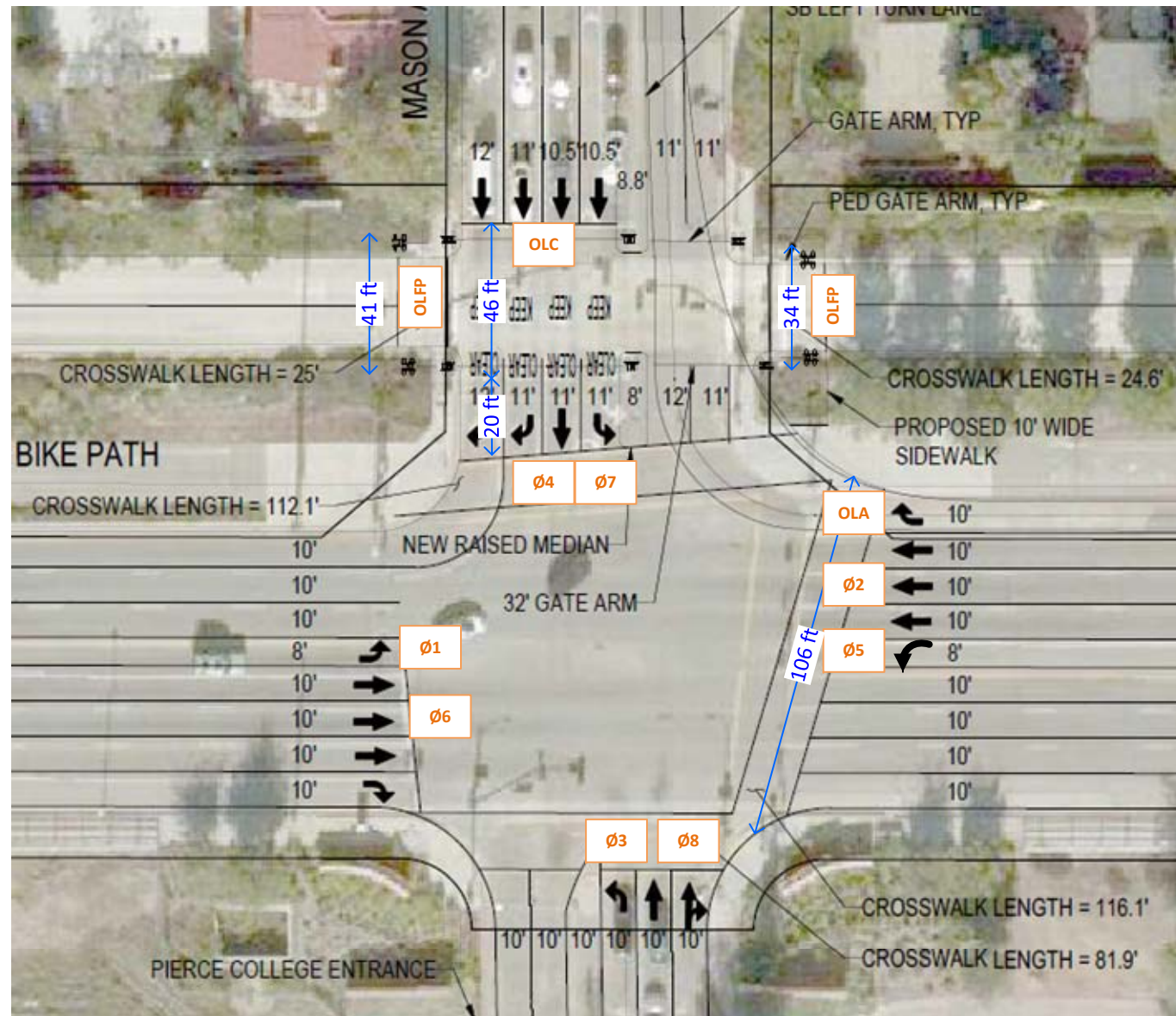
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

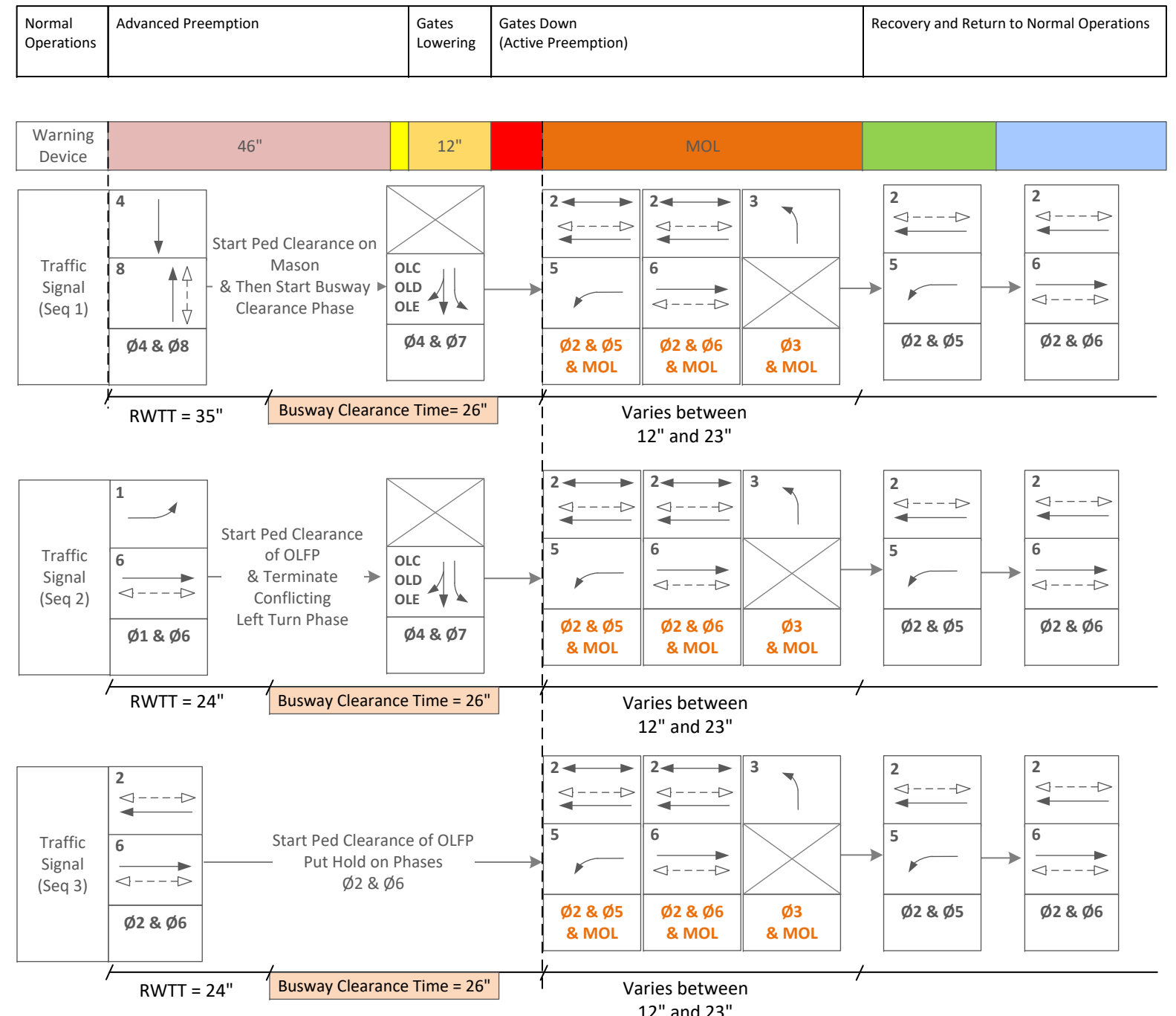
Future with Gates Phasing Diagram



Gate Concept Design



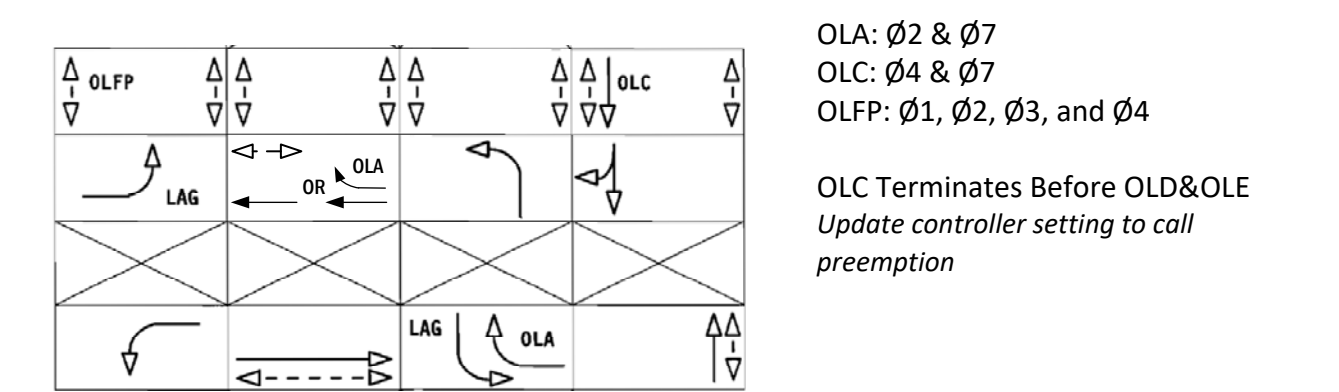
Preemption Sequence



Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

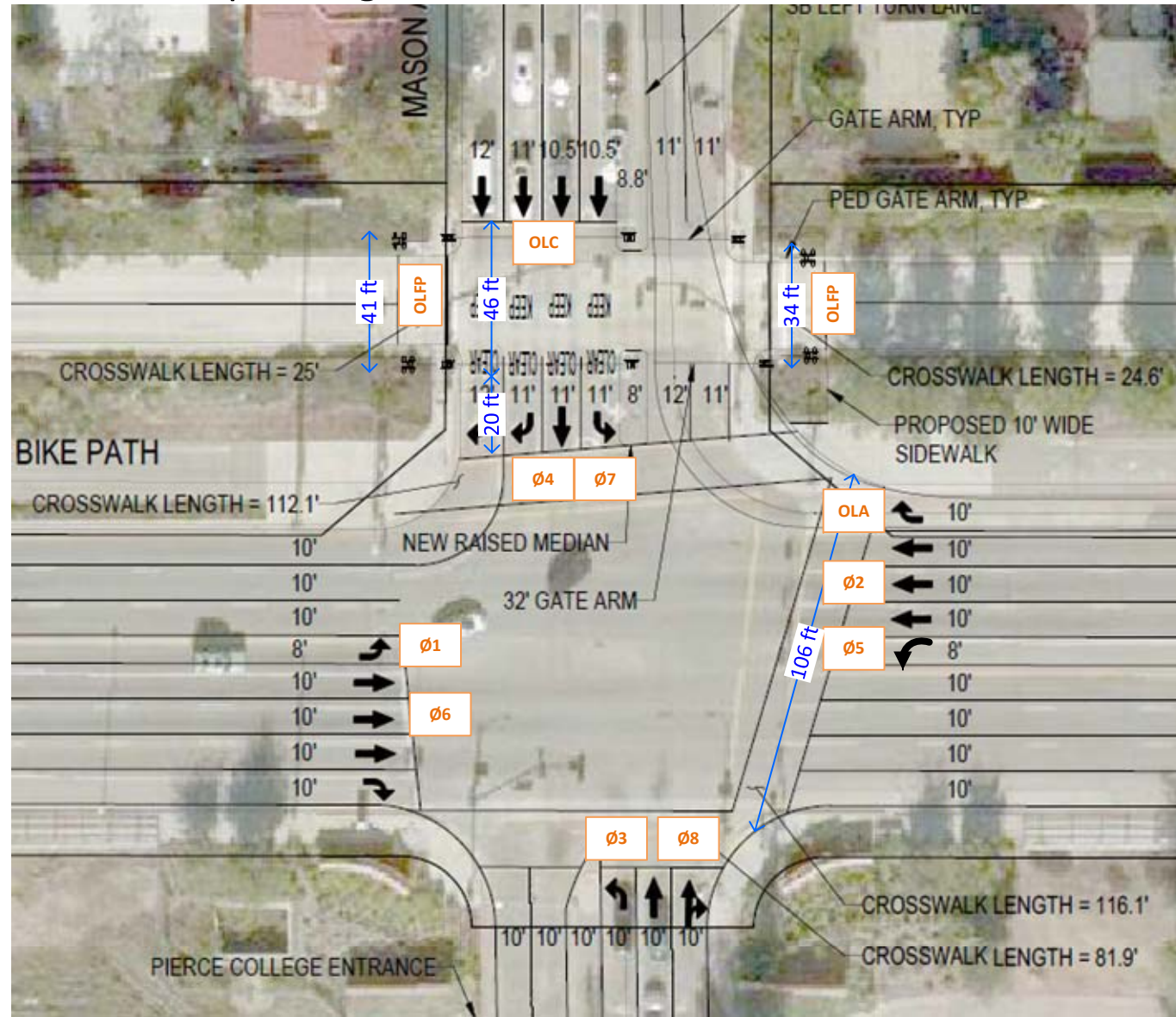
Future with Gates Phasing Diagram



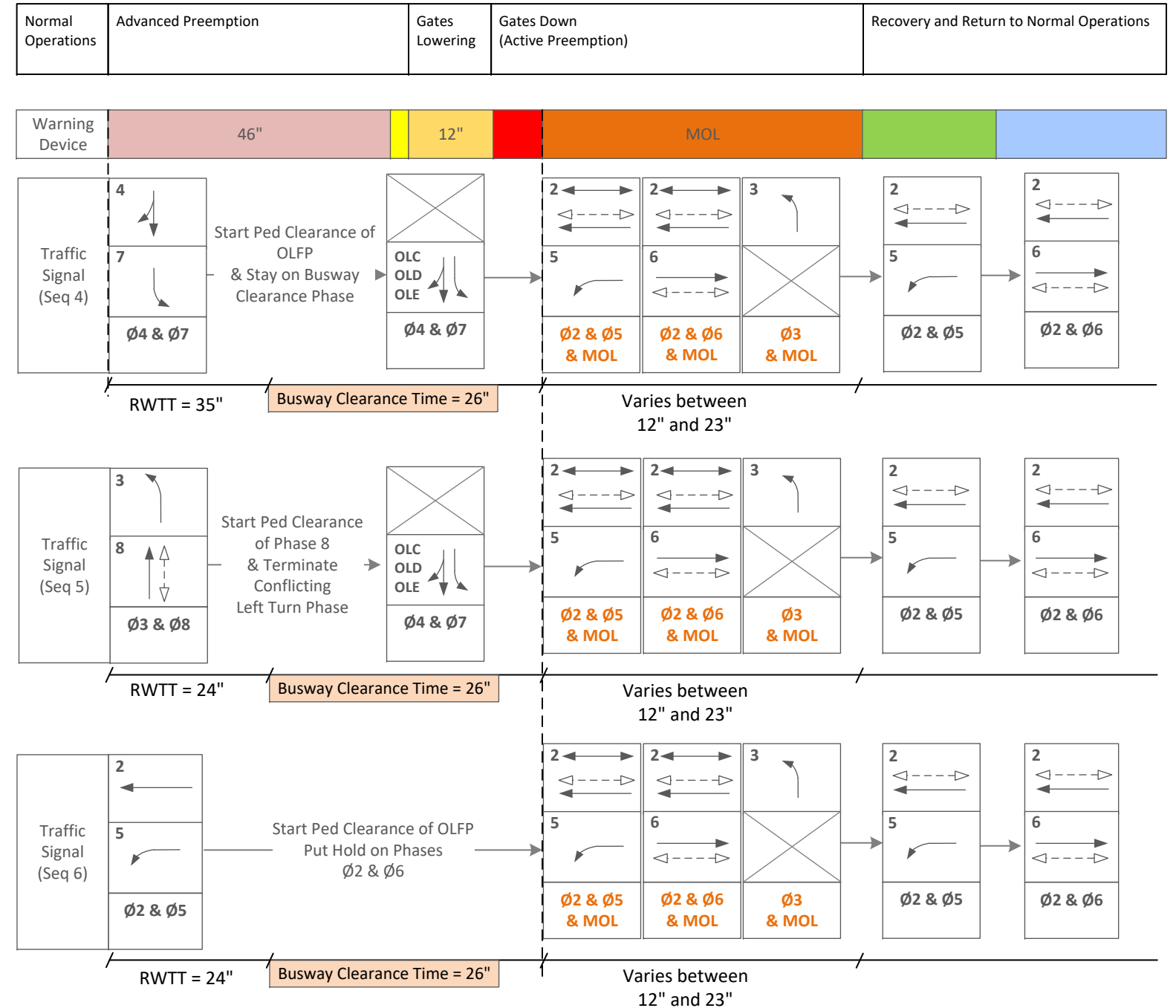
Metro Orange Line Grade Crossing
Four Quadrant Gate System Phasing Schematics

Figure 26.A
Mason Avenue and Victory Boulevard

Gate Concept Design



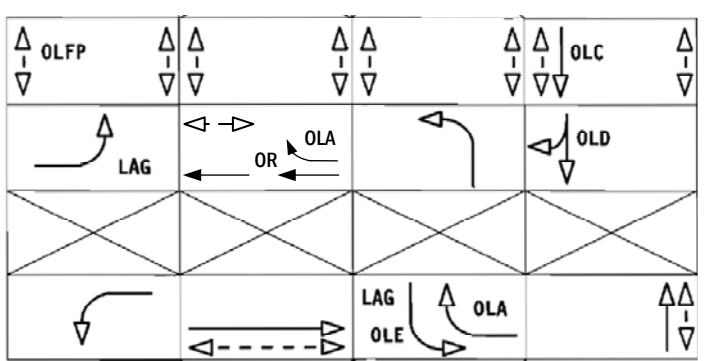
Preemption Sequence



Legend

- Advance Preemption
- Lights Flash (3 seconds)
- Gate Descent (12 seconds)
- Gate Down
- MOL Phase
- Exit Phases
- Normal Operation

Future with Gates Phasing Diagram

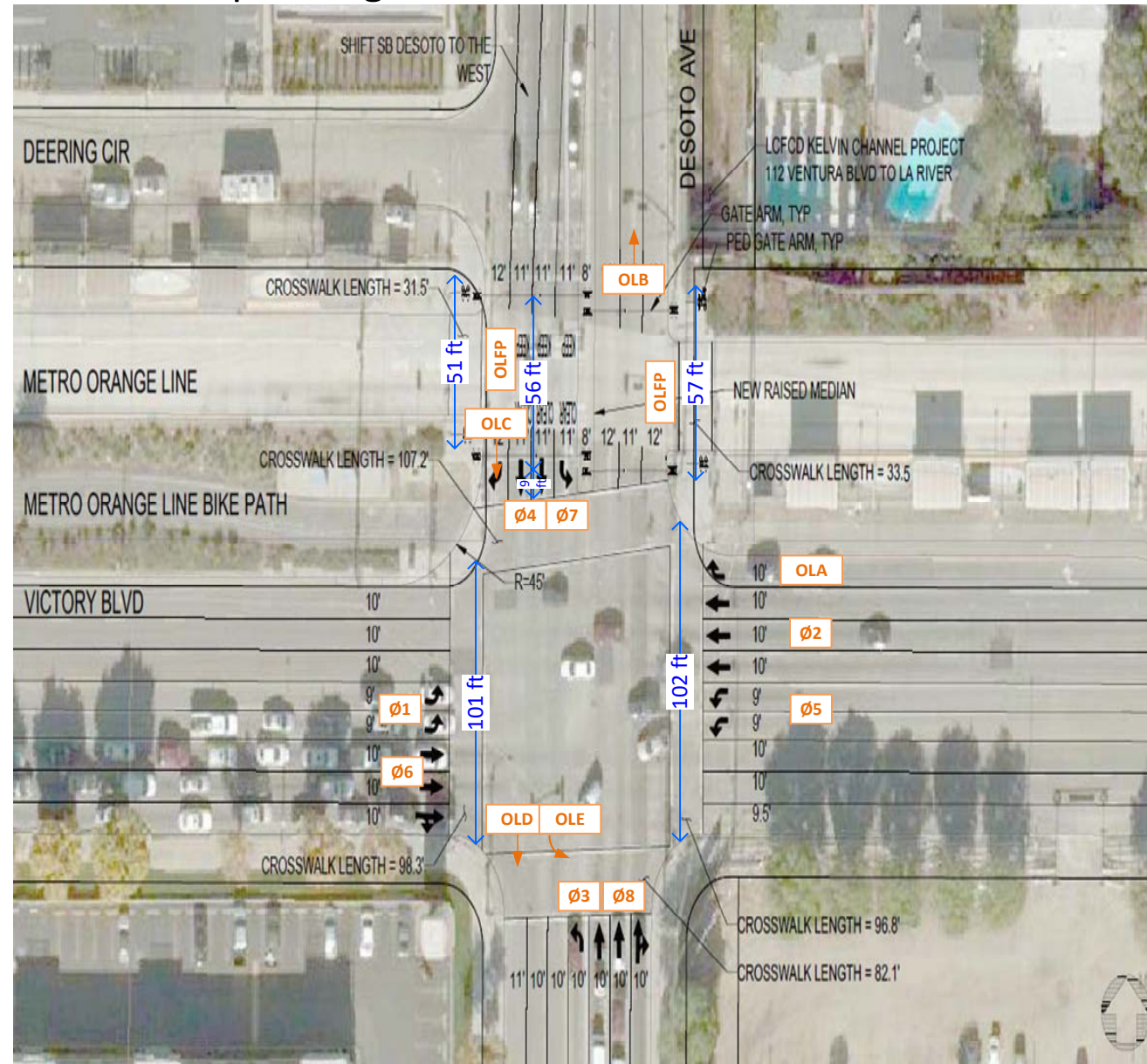


OLA: Ø2 & Ø7
 OLC: Ø4 & Ø7
 OLFP: Ø1, Ø2, Ø3, and Ø4
 OLC Terminates Before OLD&OLE
 Update controller setting to call preemption

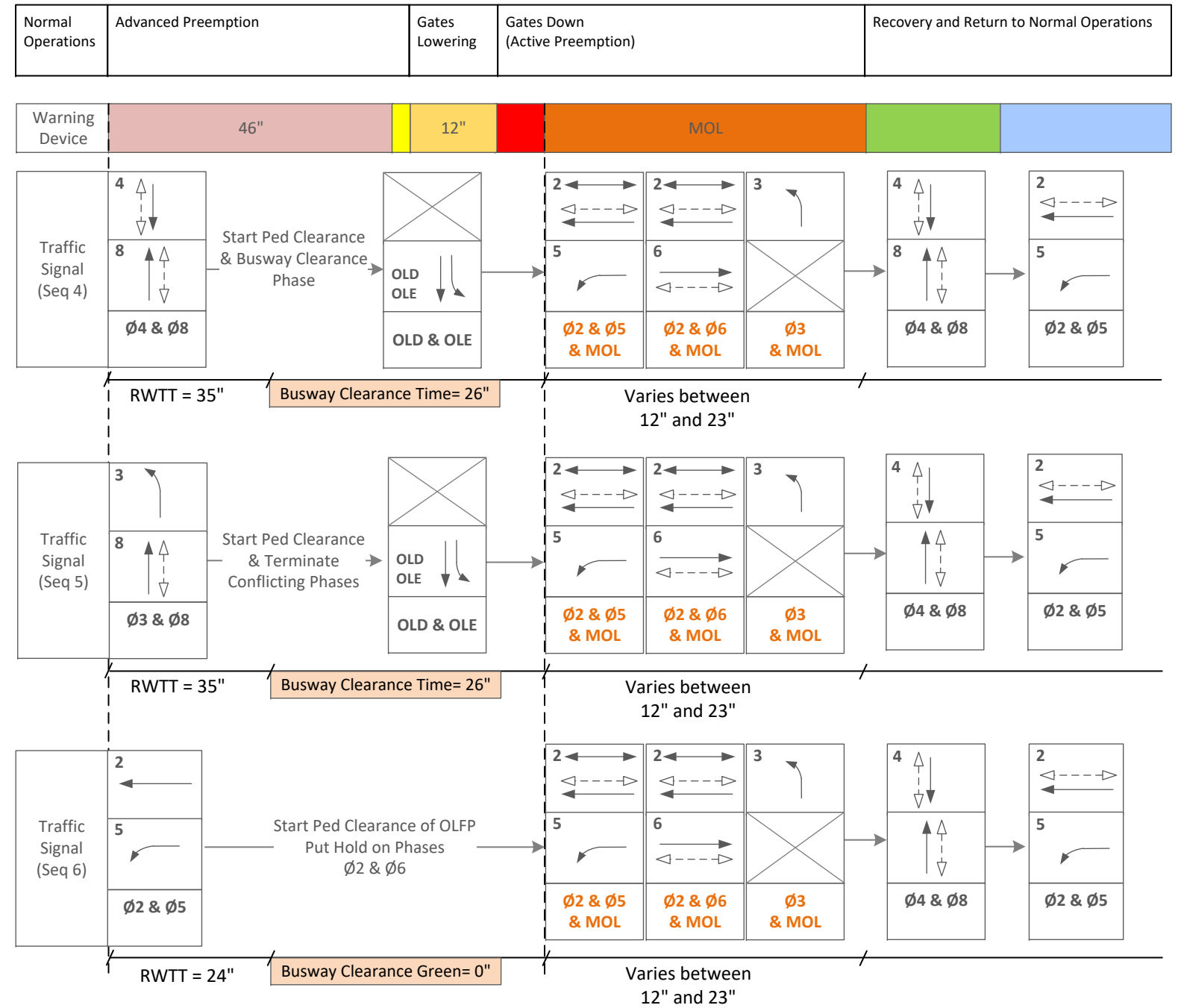
Metro Orange Line Grade Crossing
Four Quadrant Gate System Phasing Schematics

Figure 26.B
Mason Avenue and Victory Boulevard

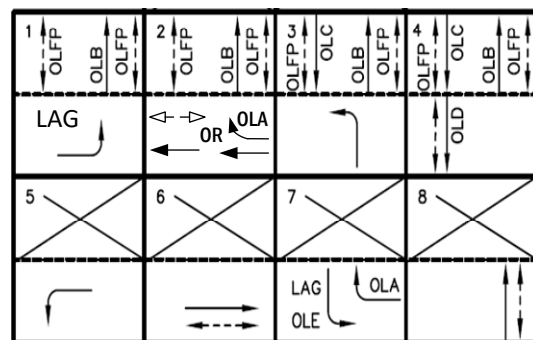
Gate Concept Design



Preemption Sequence



Future with Gates Phasing Diagram

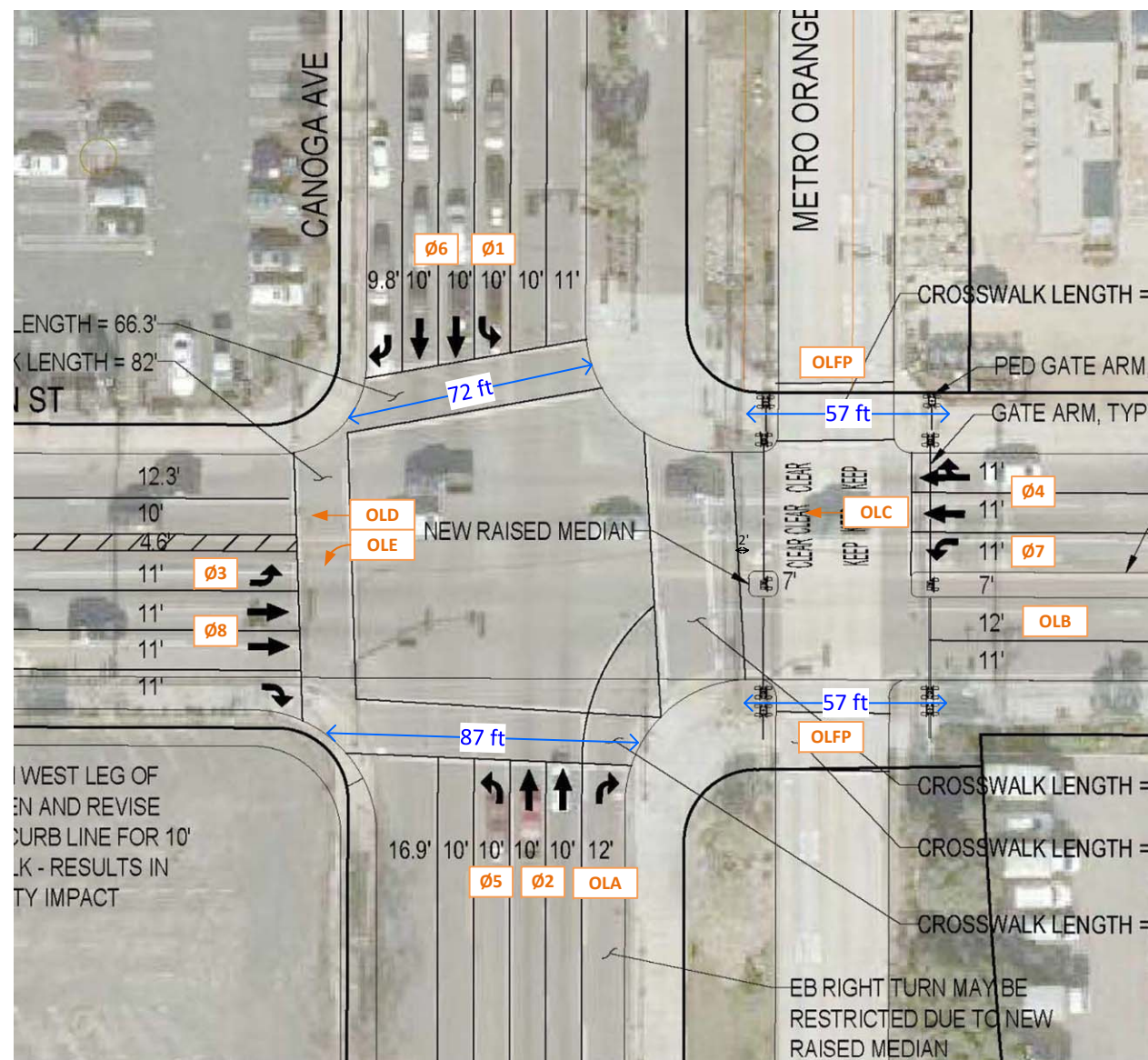


OLA: ø2 & ø7
 OLB: ø1, ø2, ø3, and ø4
 OLC: ø3 & ø4
 OLD: ø4
 OLE: ø7
 OLF: ø1, ø2, ø3, and ø4
 Update controller setting to call preemption

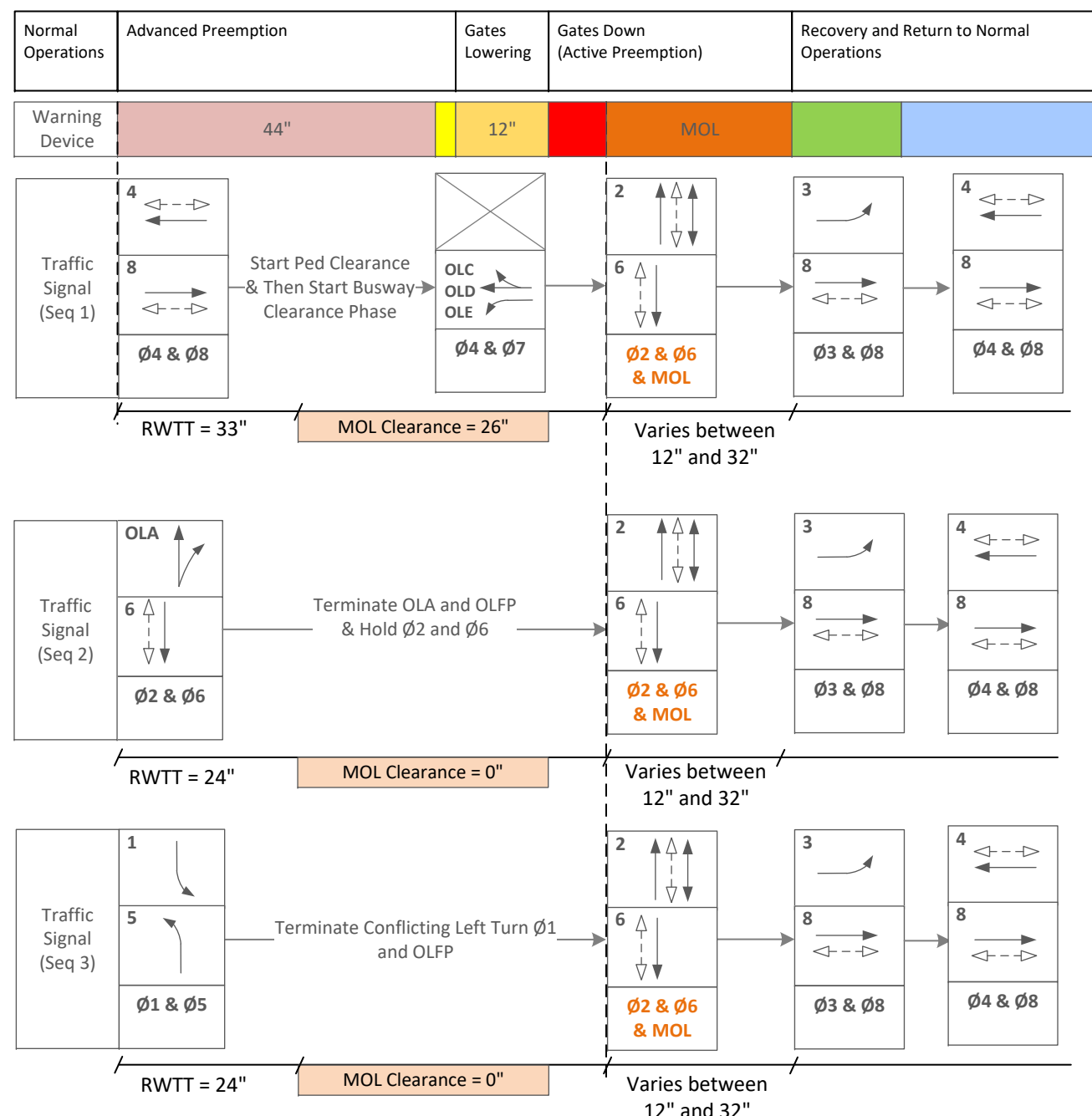
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

Gate Concept Design



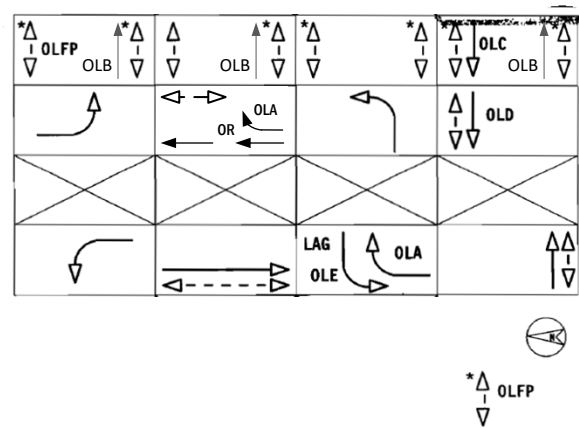
Preemption Sequence



Legend

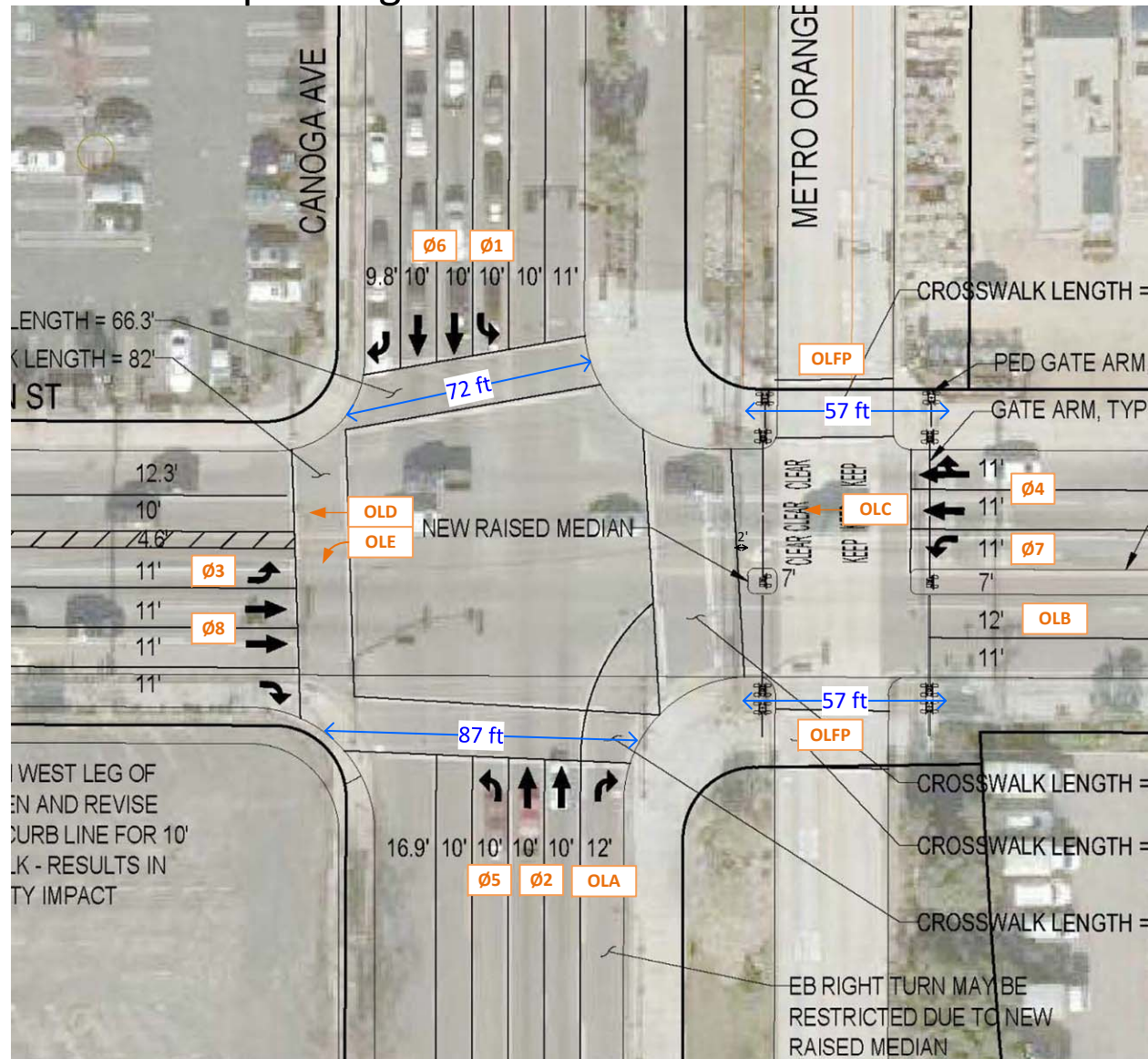
- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

Future with Gates Phasing Diagram

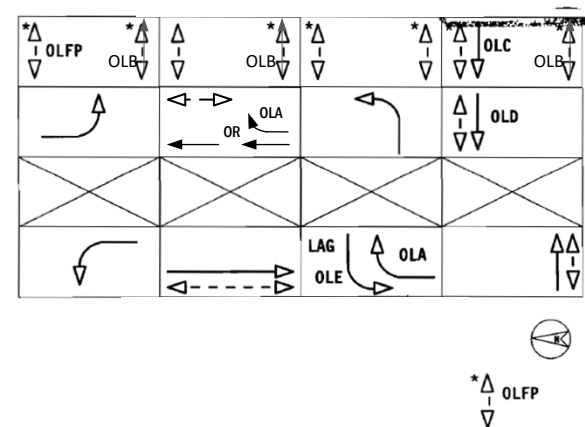


- OLA: Ø2 & Ø7
- OLB: Timing Only
- OLC: Ø4
- OLD: Ø4
- OLE: Ø7
- OLF: N/S & S/S Ped Xing at Busway
- Update controller setting to call preemption*

Gate Concept Design

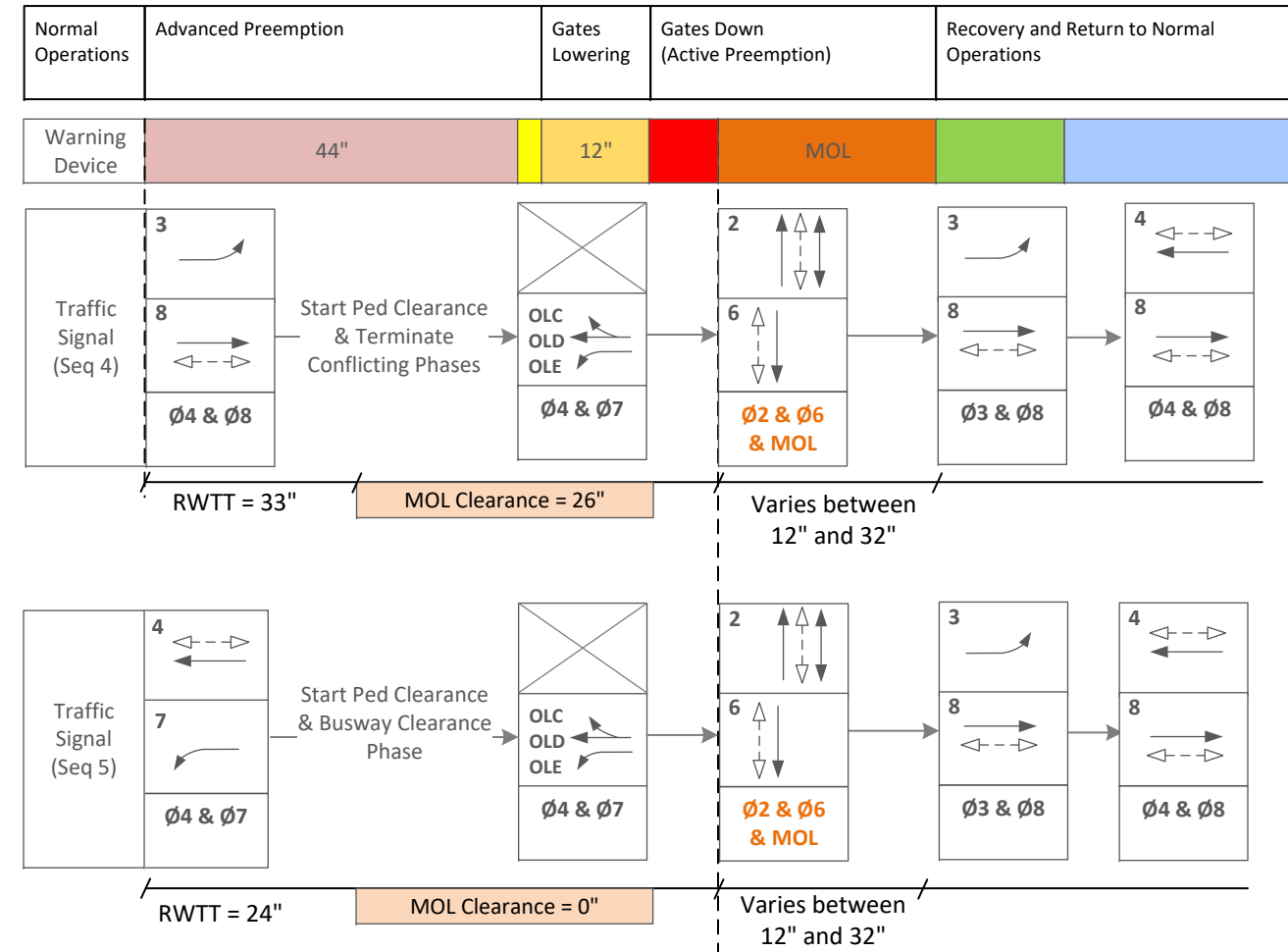


Future with Gates Phasing Diagram



OLA: Ø2 & Ø7
 OLB: Timing Only
 OLC: Ø4
 OLD: Ø4
 OLE: Ø7
 OLF: N/S & S/S Ped Xing at Busway
 Update controller setting to call preemption

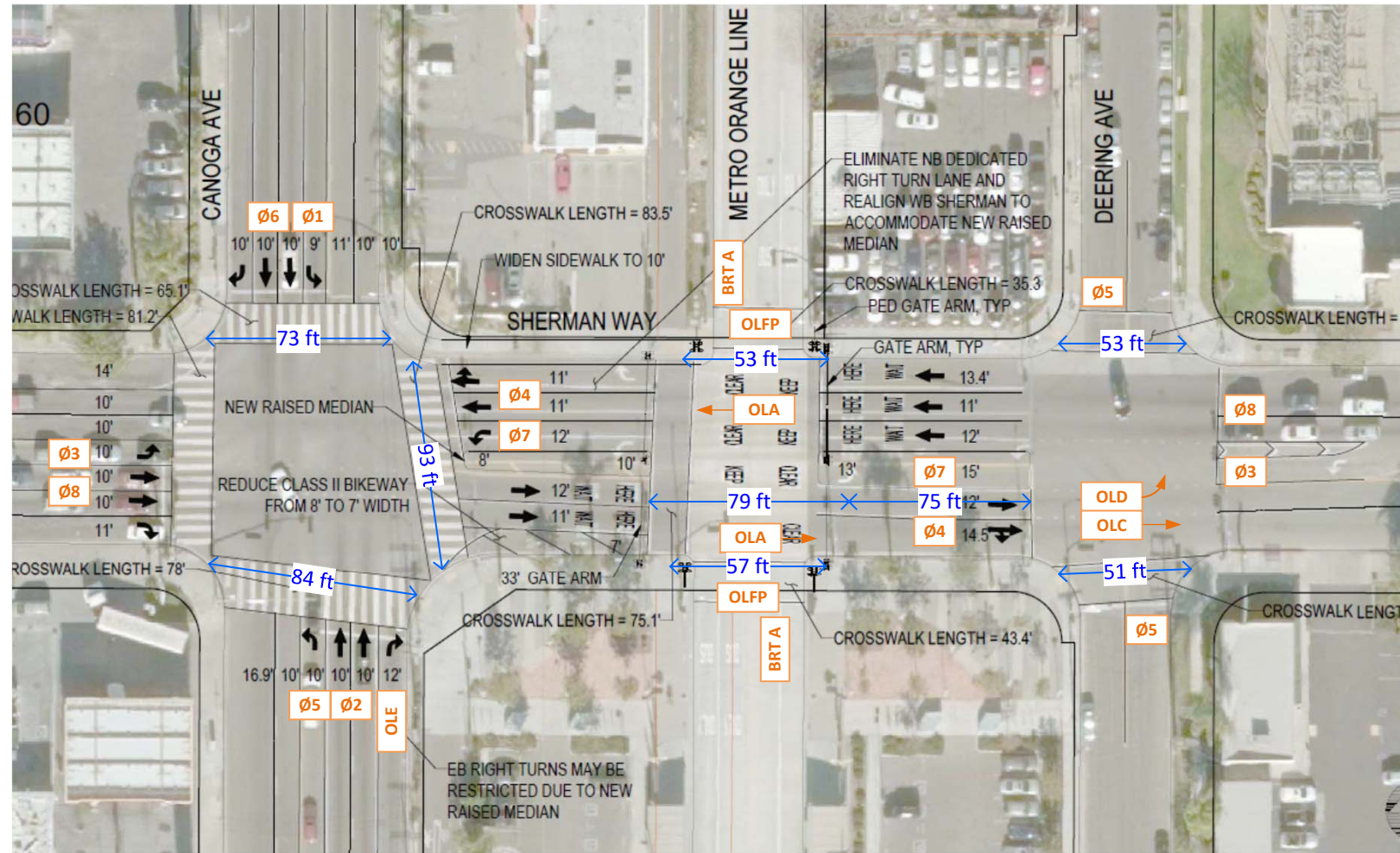
Preemption Sequence



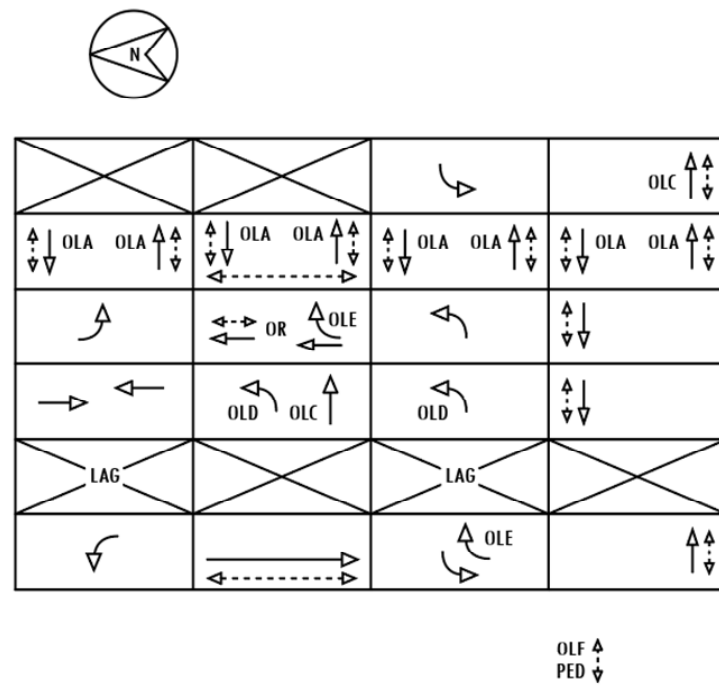
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

Gate Concept Design

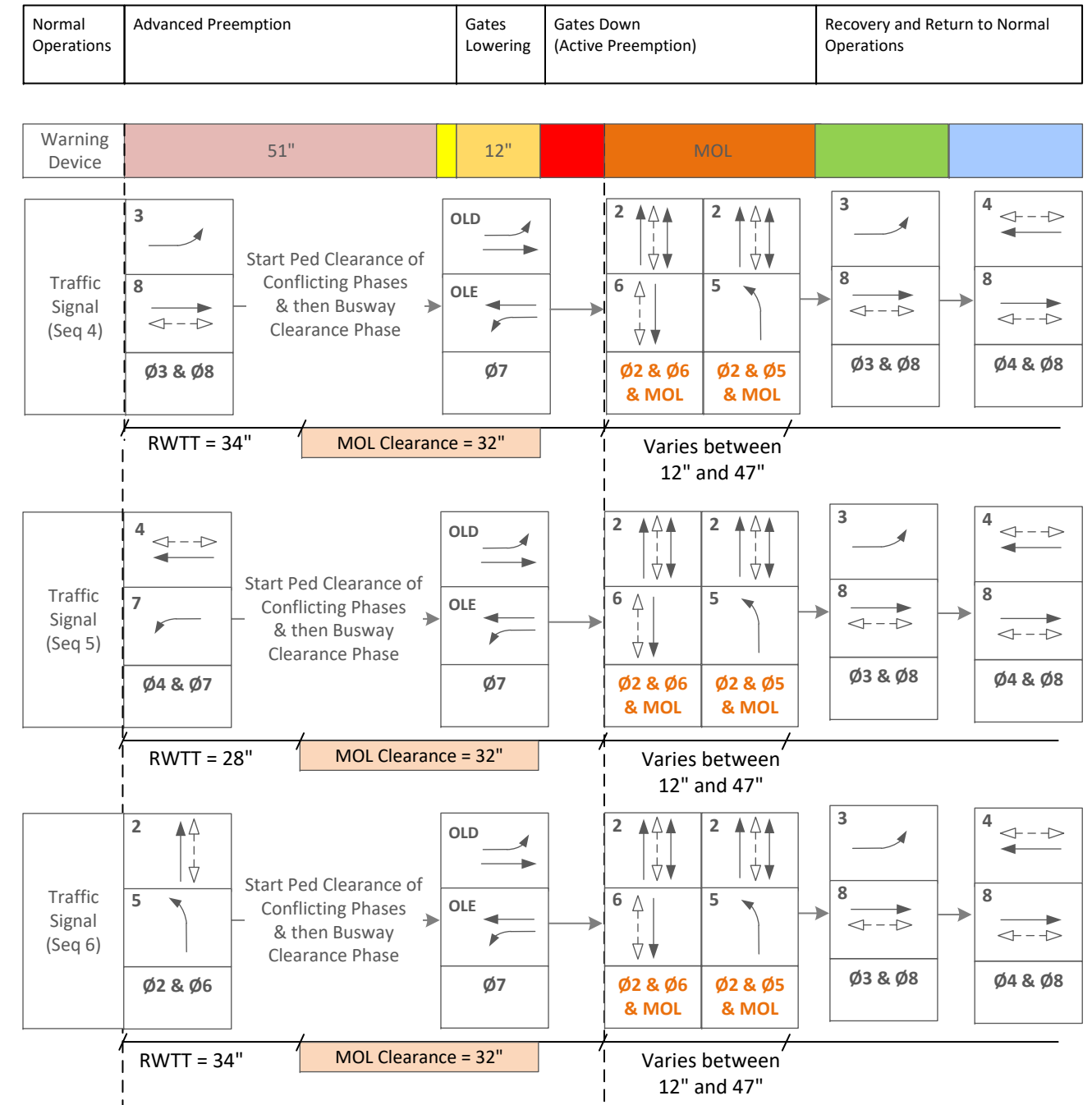


Future with Gates Phasing Diagram



OLA: Ø1, Ø2, Ø3, and Ø4
 OLC: Ø4 & Ø6
 OLD: Ø6 & Ø7
 OLE: Ø2 & Ø7
 OLF: Ø1, Ø2, Ø3, and Ø4
 Update controller setting to call preemption

Preemption Sequence



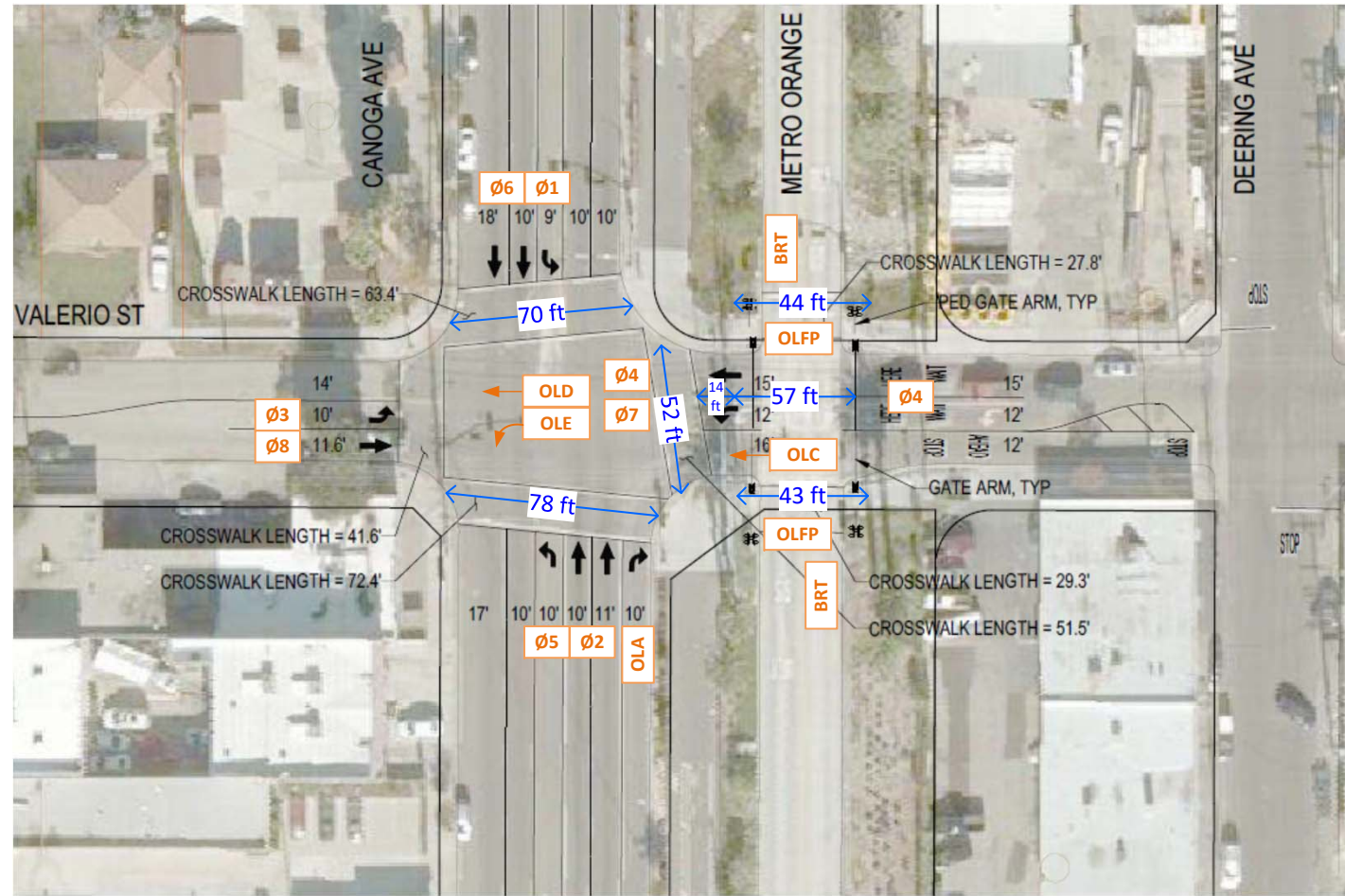
Legend

- Advance Preemption
- Lights Flash (3 seconds)
- Gate Descent (12 seconds)
- Gate Down
- MOL Phase
- Exit Phases
- Normal Operation

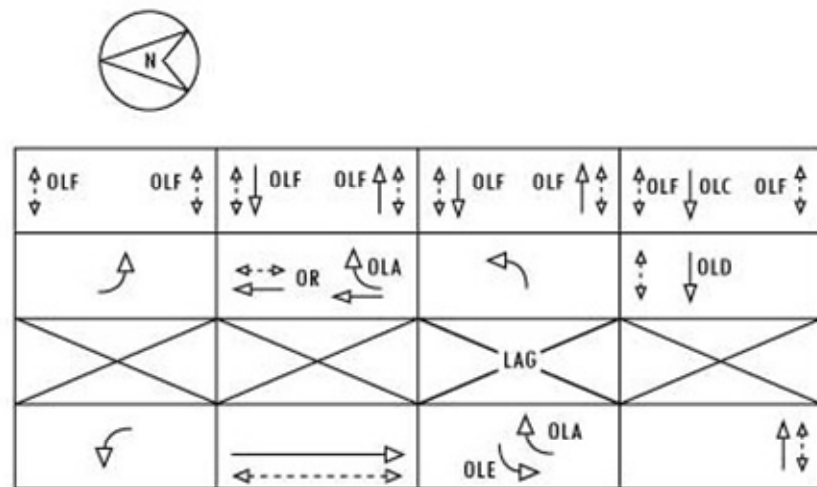
Metro Orange Line Grade Crossing
 Four Quadrant Gate System Phasing Schematics

Figure 29B
 Sherman Way and Canoga Avenue

Gate Concept Design

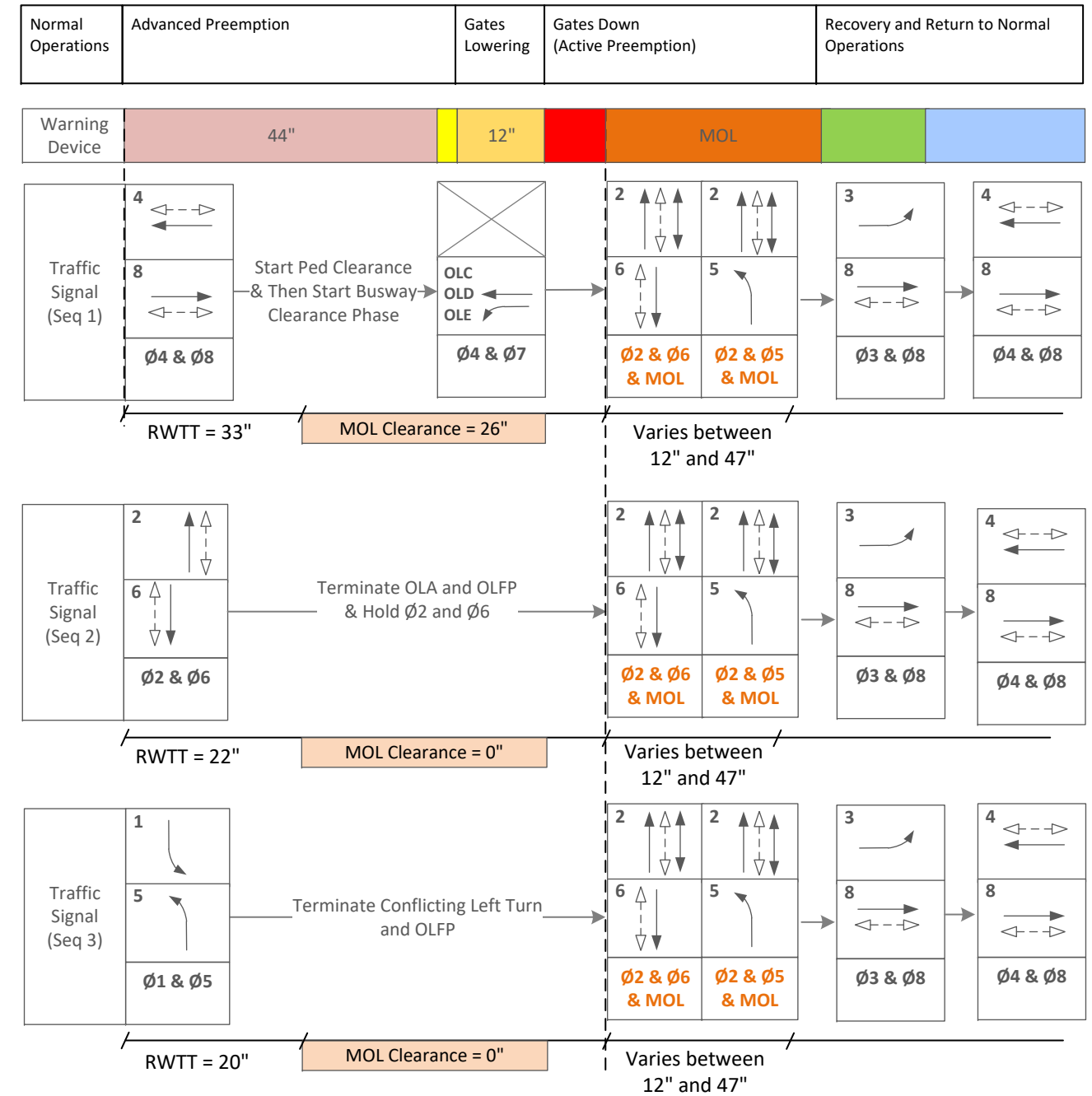


Future with Gates Phasing Diagram



OLA: Ø2 & Ø7
 OLB: Timing Only
 OLC: Ø4
 OLD: Ø4
 OLE: Ø7
 OLF: Ø1, Ø2, Ø3, Ø4

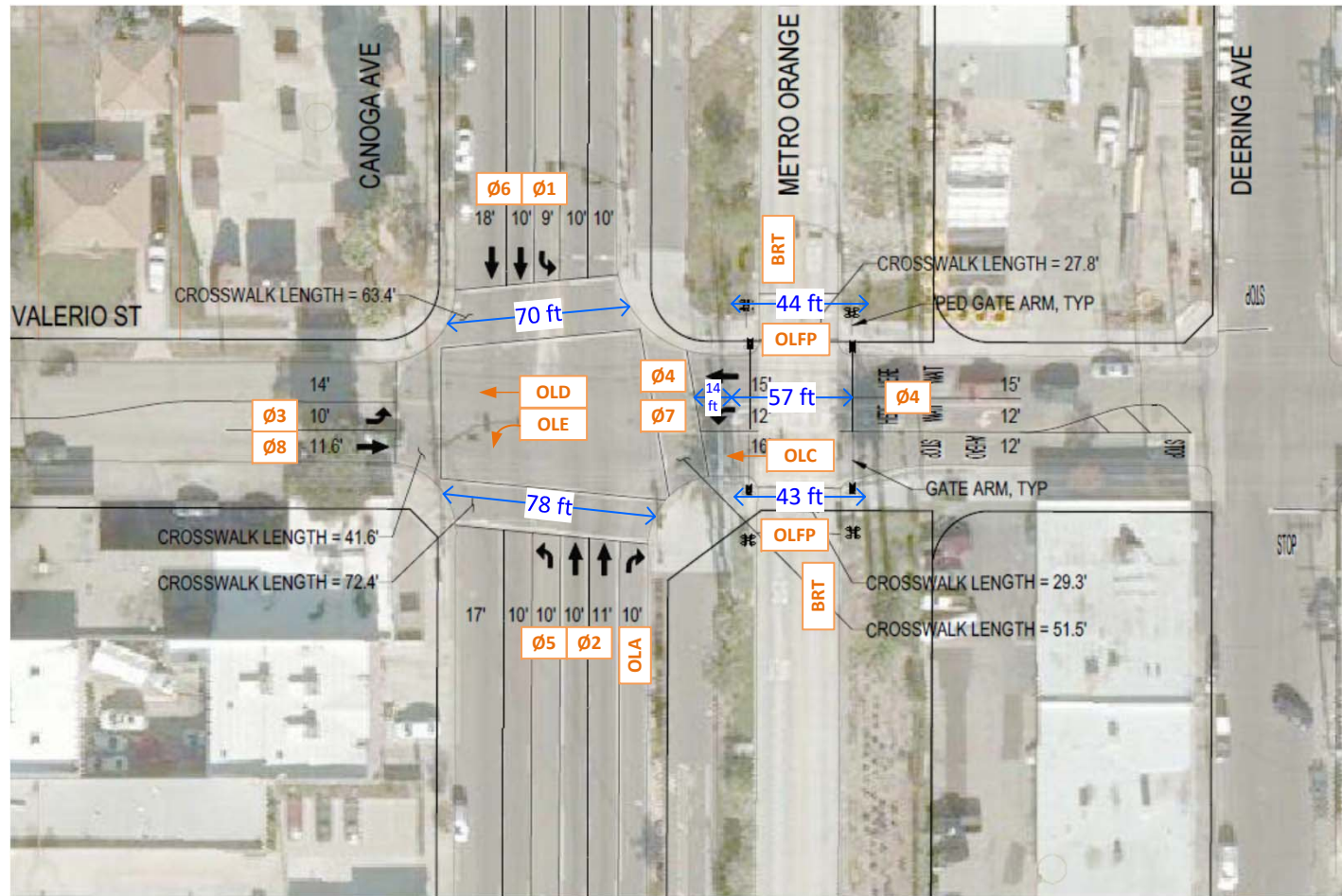
Preemption Sequence



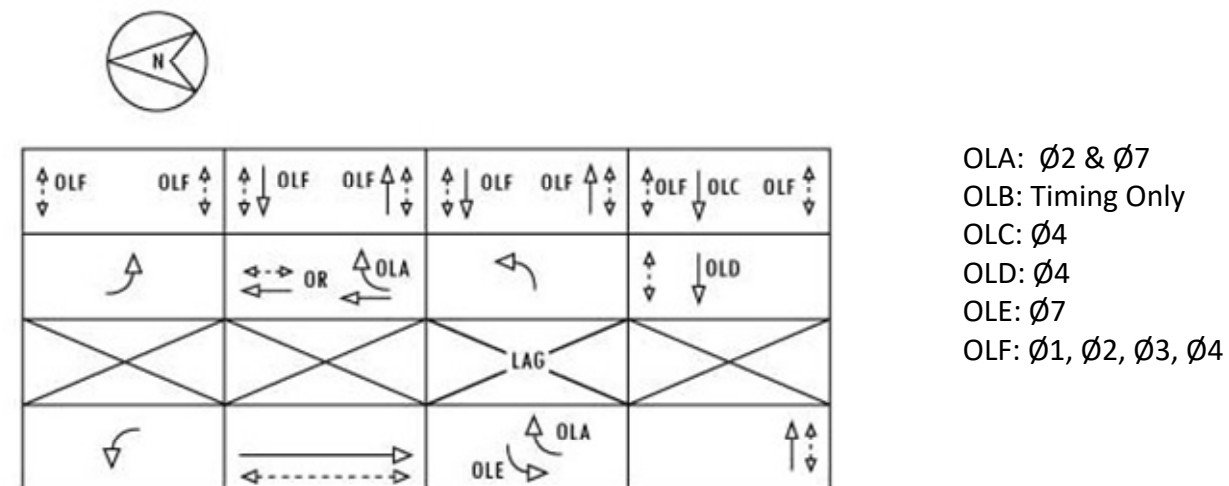
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

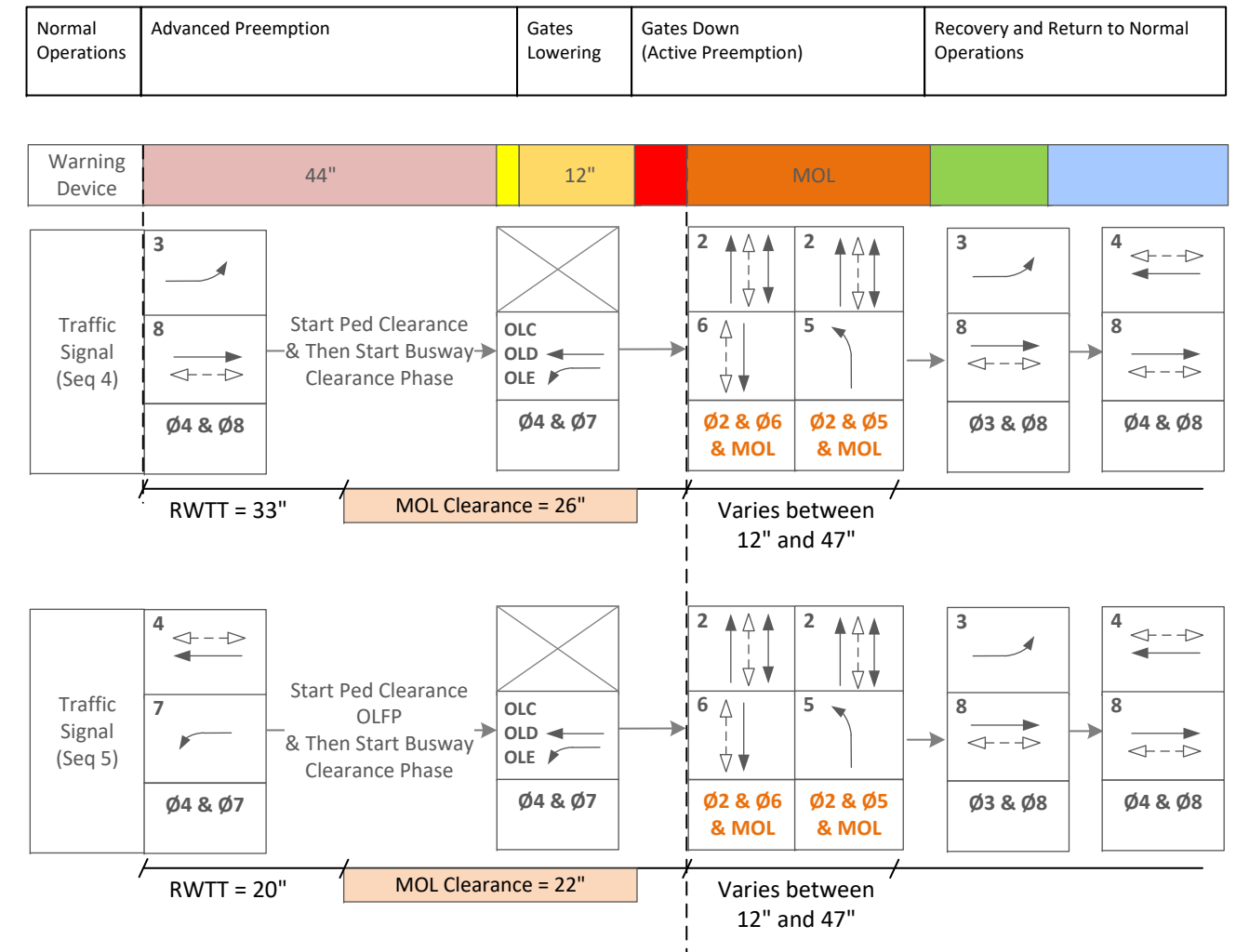
Gate Concept Design



Future with Gates Phasing Diagram



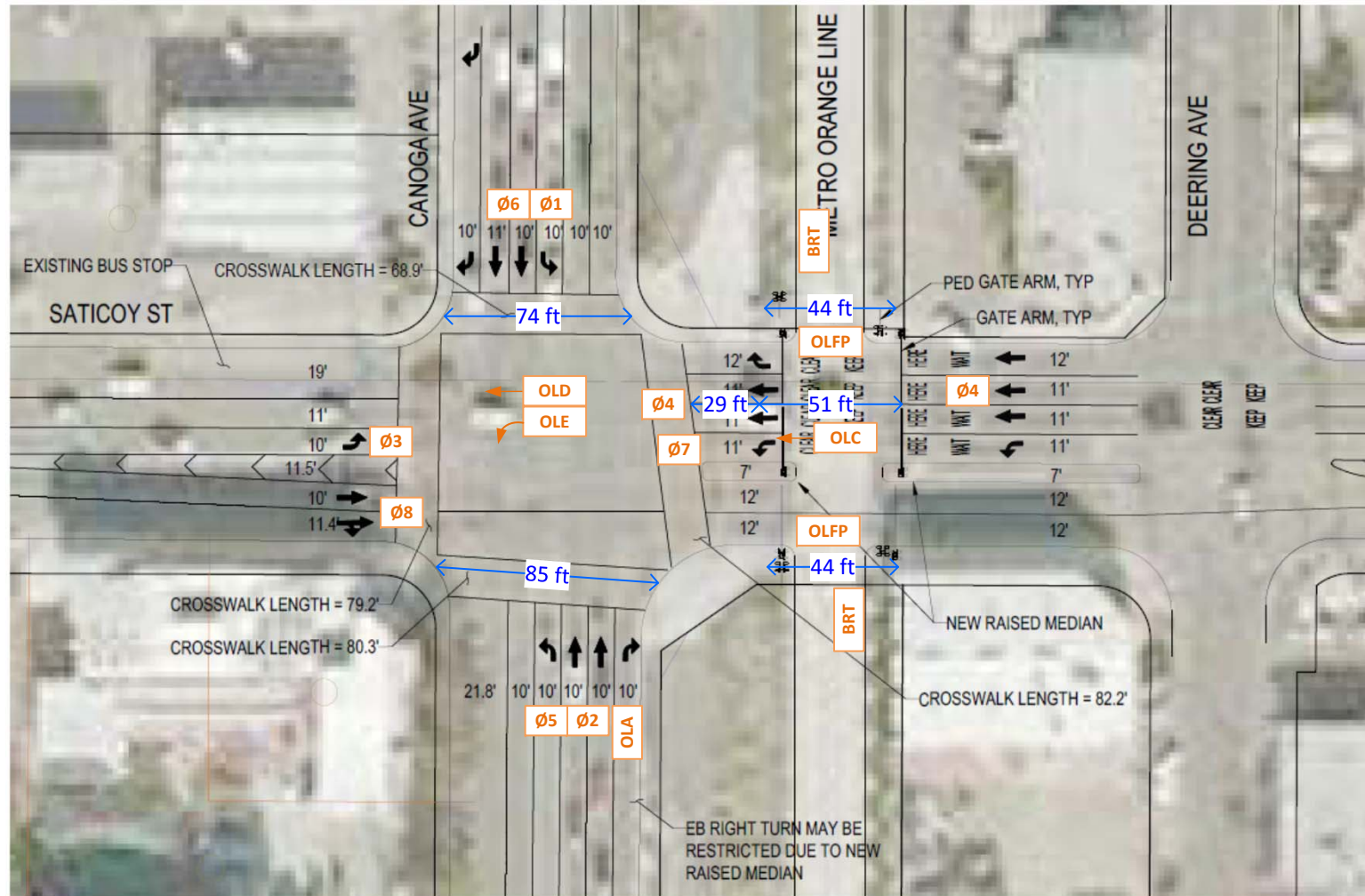
Preemption Sequence



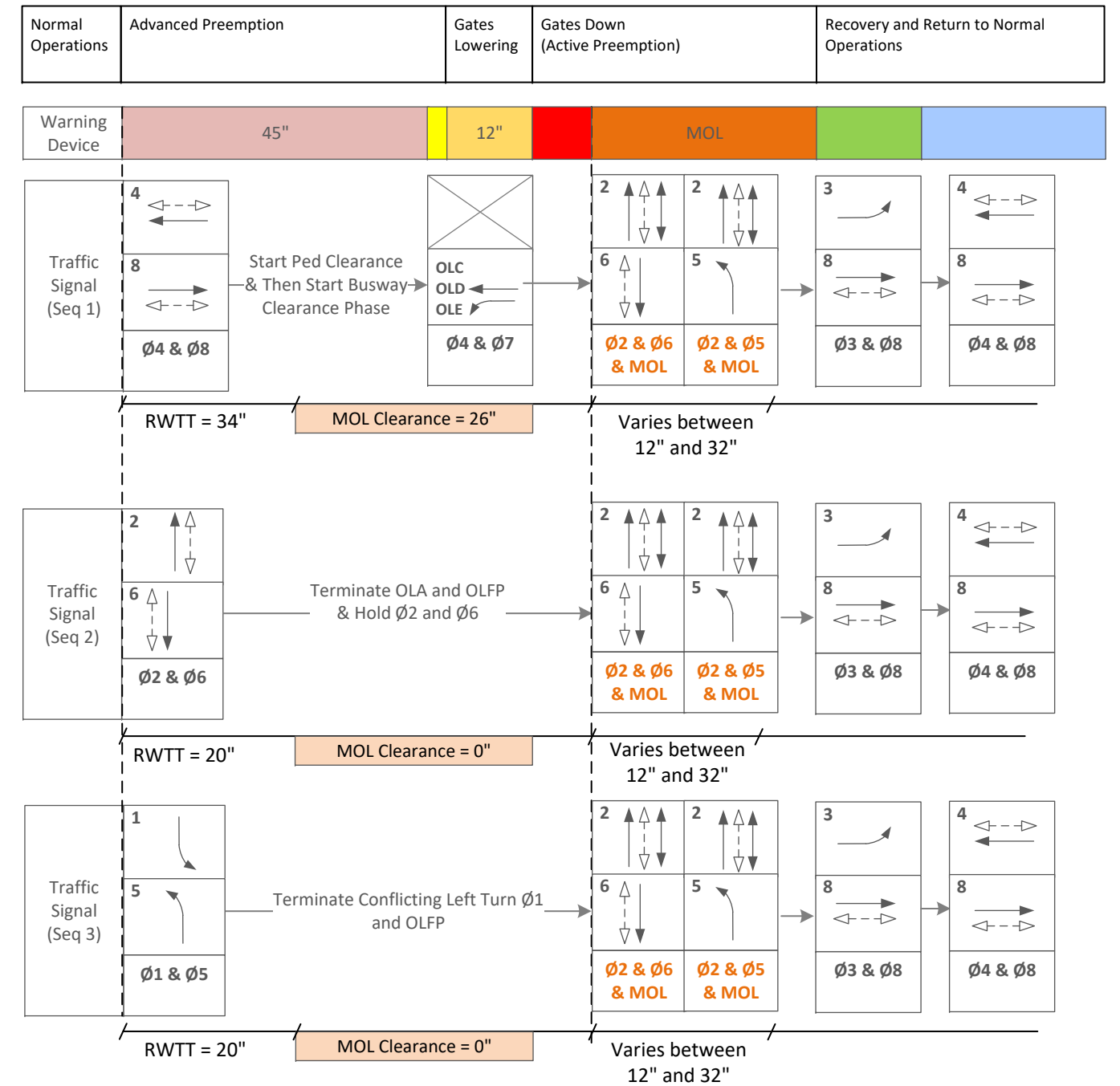
Legend

- Advance Preemption
- Lights Flash (3 seconds)
- Gate Descent (12 seconds)
- Gate Down
- MOL Phase
- Exit Phases
- Normal Operation

Gate Concept Design



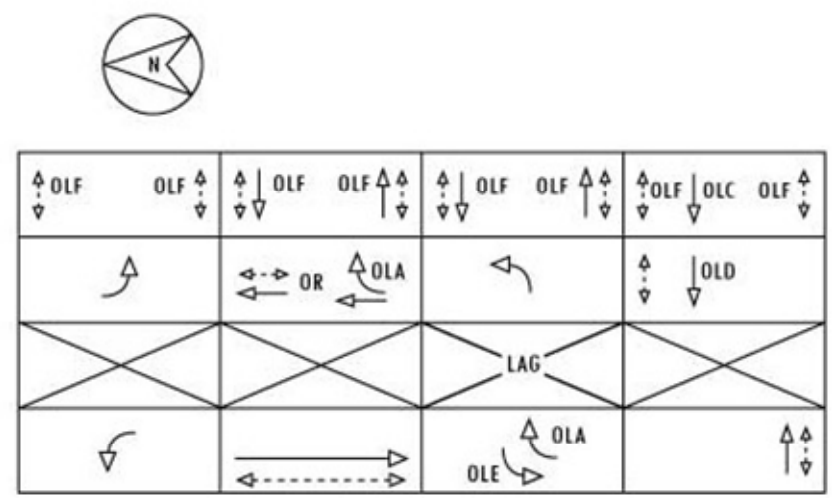
Preemption Sequence



Legend

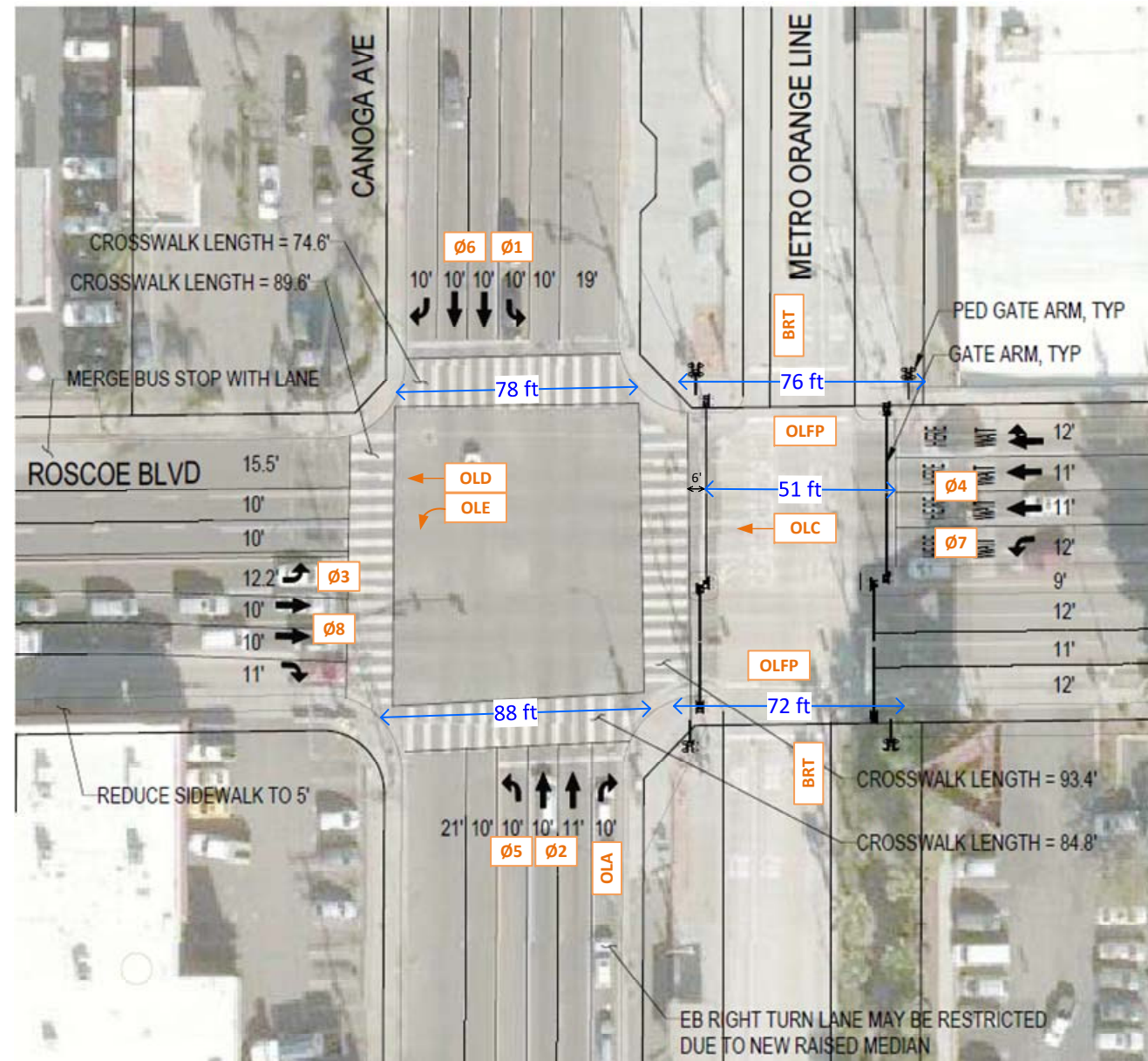


Future with Gates Phasing Diagram

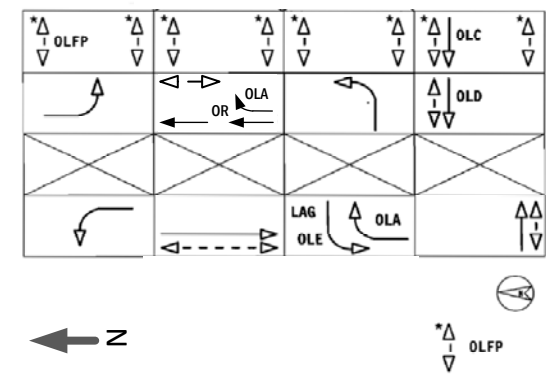


OLA: Ø2 & Ø7
 OLB: Timing Only
 OLC: Ø4
 OLD: Ø4
 OLE: Ø7
 OLF: Ø1, Ø2, Ø3, and Ø4. Roscoe Bl N/S & S/S Ped Xing at Busway

Gate Concept Design

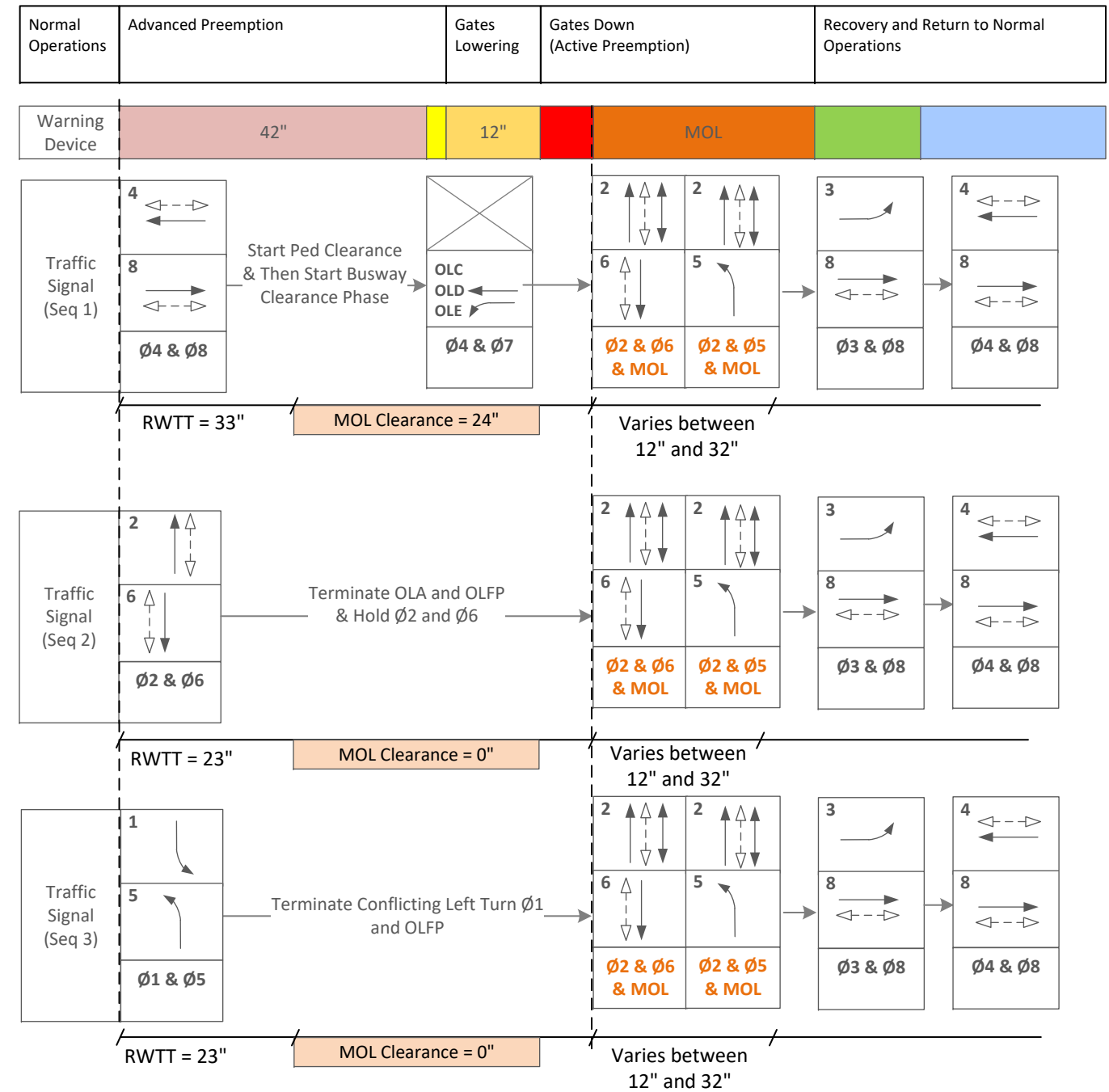


Future with Gates Phasing Diagram



OLA: Ø2 & Ø7
 OLB: Timing Only
 OLC: Ø4
 OLD: Ø4
 OLE: Ø7
 OLF: Ø1, Ø2, Ø3, and Ø4. Roscoe Bl N/S & S/S
 Ped Xing at Busway

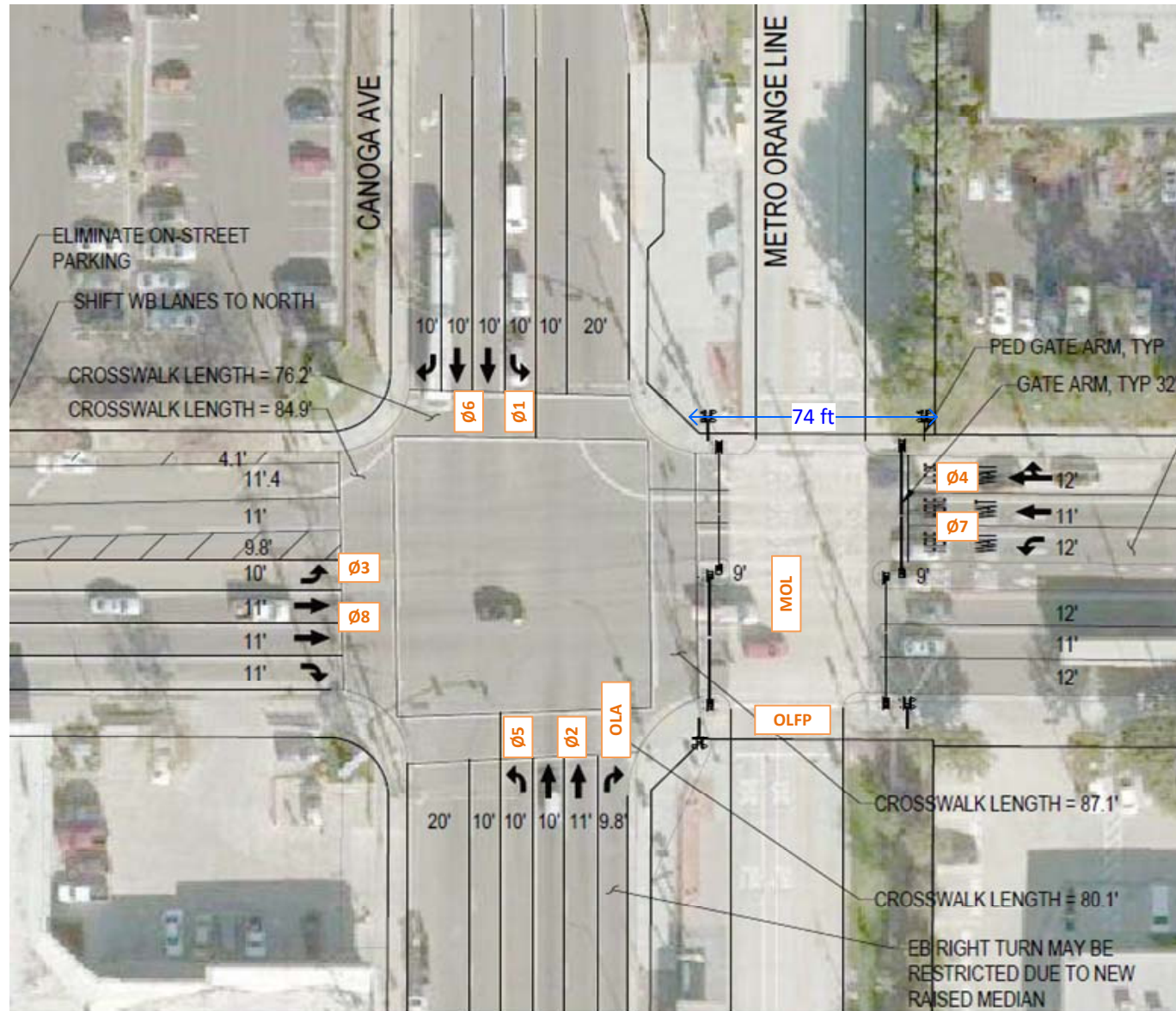
Preemption Sequence



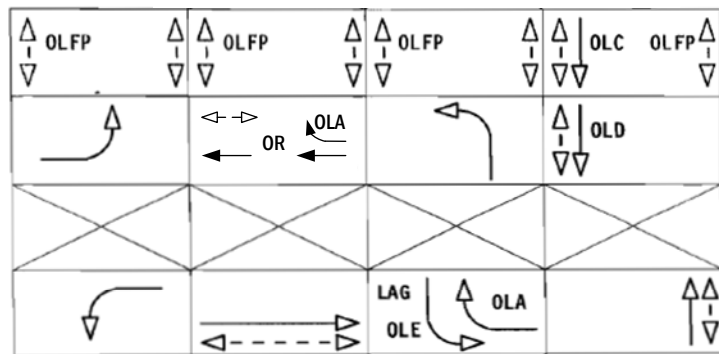
Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

Gate Concept Design

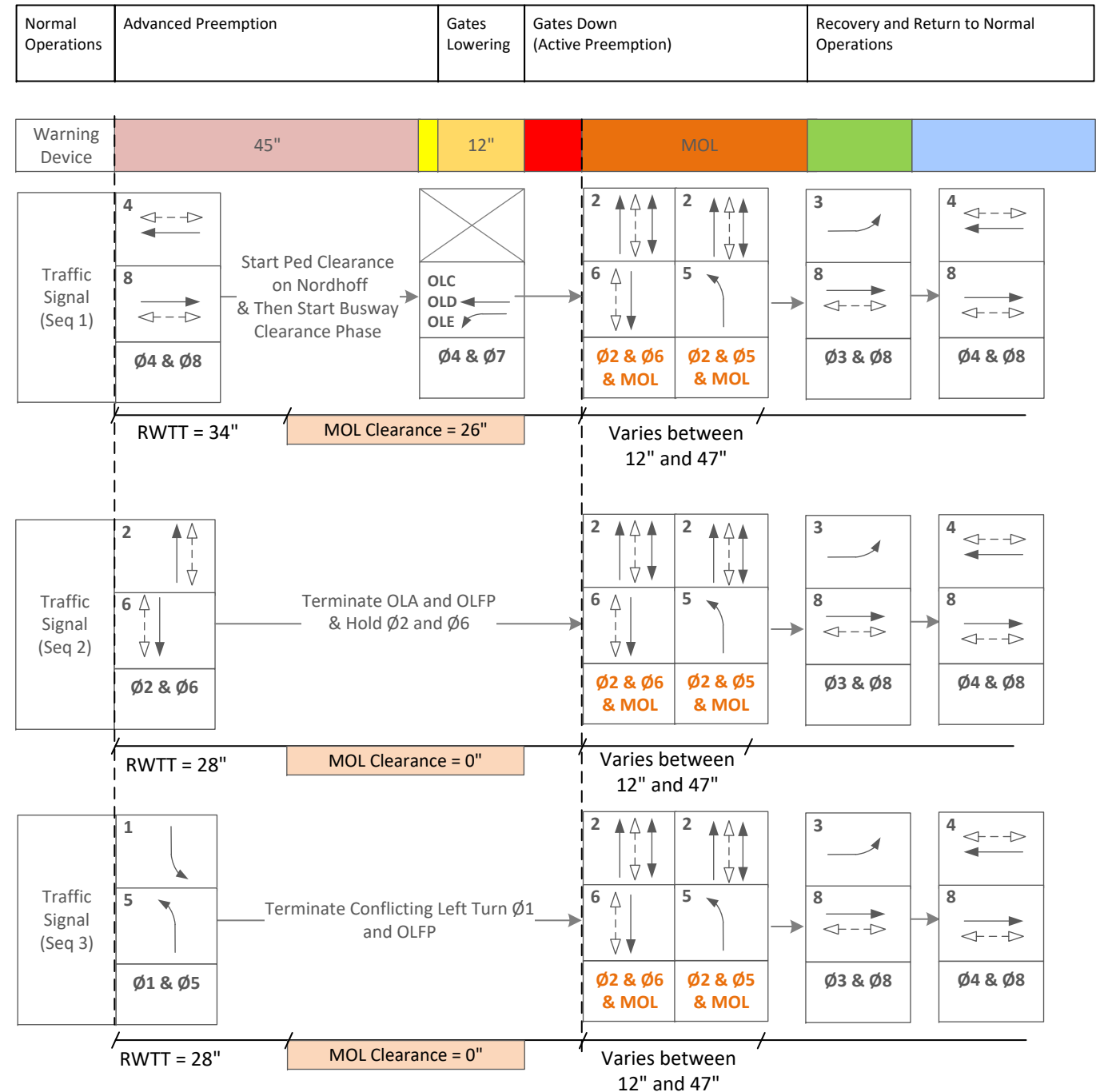


Future with Gates Phasing Diagram



OLA: ø2 & ø7
 OLC: ø4
 OLD: ø4
 OLE: ø7, MOL Clearance
 OLFP: ø1, ø2, ø3, and ø4
 ø4 On Without ø7 Calls ø7
 ø7 Timing Only
 OLC Terminates Before OLD&OLE

Preemption Sequence



Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

APPENDIX C

LADOT Comment Resolution



213.488.0345
iteris.com

801 South Grand Avenue, Suite 530
Los Angeles, CA 90017

VISSIM Signal Controller Inputs for Future 2025 Scenarios

Signal Location 1: Chandler/Tujunga

1) Basic Timing Inputs:

Ring Barrier Controller 01.70.04 (INT_001_Chandler&Tujuna&Busway.rbc)

File View Help											Notes
<input checked="" type="checkbox"/> Base Timing											
<input type="checkbox"/> Detectors											
<input type="checkbox"/> SC Communication											
<input type="checkbox"/> Preempts											
<input type="checkbox"/> Transit Priority											
Basic											
SG Number	2	3			6	7	8				
SG Name	SBT	WBT			NBT	NBL	WBT				
Min Green	10	10			10	10	10				
Veh Extension	4	3			4	4	3				
Max 1	44	18			44	20	18				
Yellow	3.9	3.9			3.9	3.9	3.9				
Red Clearance	1.1	1.1			1.1	1.1	1.1				
Ped SG Number	102	103			106	107					
Walk	7	7			7	7					
Ped Clear (FDW)	8	11			9	11					
Start Up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soft Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dual Entry	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3) Pattern (Coordination Plan) Timing Inputs:

Ring Barrier Controller 01.70.04 (INT_001_Chandler&Tujuna&Busway.rbc)

File View Help Notes Frequency 10

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern 1
 - Pattern 2
 - Pattern 3
 - Pattern 4
 - Pattern 5
 - Pattern 6
 - Pattern 7
 - Pattern 8
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps
 - Detectors
 - SC Communication
 - Preempts
 - Transit Priority

Pattern 1

Signal Group:	2	3	6	7	8
Splits	40	25	40	40	15
Splits Extension					
Floating Green					
Perm Min Green					
Min Green	10	10	10	10	10
Alternate Max					
Veh Extension	4	3	4	4	3
Transition Min					
Transition Max	48	30	48	48	18
Force Off					
Permissive Start					
Permissive End					
Max 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floating Force Off	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coordinated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walk Rest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Veh Omit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Omit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Inhibit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lead	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CNA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Veh Ped Permissive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pattern 1
CycleLength 120
Global Values

01 40sec SBT
02 15sec
03 25sec WBT
04 18sec
05 40sec NBT
06 15sec
07 40sec NBL
08 15sec WBT
09 18sec



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5) Detector Inputs:

Ring Barrier Controller 01.70.04 (INT_001_Chandler&Tujuna&Busway.rbc)

File View Help Notes

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattem 1
 - Pattem 2
 - Pattem 3
 - Pattem 4
 - Pattem 5
 - Pattem 6
 - Pattem 7
 - Pattem 8
 - Pattern Schedule
 - Sequence
 - Conflict SGs
- Overlaps
- Detectors
 - Vehicle
 - Pedestrian
 - Queue
- SC Communication
- Preempts
- Transit Priority

Negative Vehicle																	
Negative Overlap																	

Veh Detectors

Detector Number	2	3	6	7	8	11	12		
Delay									
Extend									
Carry Over									
Queue Limit									
Detector Mode	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect
Added Initial Mode	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Call	2	3	6	7	8				
Yellow Lock									
Red Lock									
Extend SGs	2	3	6	7	8				
XSwitch SGs									

Ped Detectors

Detector Number	102	103	106	107					
Call Peds	102	103	106	107					

Queue Detection

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Veh. Detector Num.	11	12													
Delay On															
Delay Off	15	36													
Control	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
Action	Preempt	Preempt	None	None	None	None	None	None	None	None	None	None	None	None	None
Action Index	Preempt 1	Preempt 2													

Pattern 1

CycleLength **120**

Global Values



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6) Preempt Inputs:

Ring Barrier Controller 01.70.04 (INT_001_Chandler&Tujuna&Busway.rbc) Frequency 10

File View Help Notes

- Base Timing
- Detectors
- SC Communication
- Preempts
- Transit Priority

Preempts				
Preempt Number	1	2	3	4
Enabled	Yes	Yes	No	No
Exit Mode	Normal	Normal	Normal	Normal
Change SG Next	No	No	No	No
Enable SGs				
Preempt Inputs	1	2		
Start Green	1	10		
Start Walk				
Start Ped Clr				

Track Clearance 1				
Preempt Number	1	2	3	4
Track Clearance 1	14	14		
TC1 Veh SGs				
TC1 Ped SGs				
TC1 Ovl SGs	12,13,14,15	12,13,14,15	12,13,14,15	12,1

Track Clearance 2				
Preempt Number	1	2	3	4
Track Clearance 2				
TC2 Veh SGs				
TC2 Ped SGs				
TC2 Ovl SGs				

Dwell				
Preempt Number	1	2	3	4
Dwell Veh SGs	7	7		
Dwell Ped SGs	107	107		
Dwell Ovl SGs				

Exit				
Preempt Number	1	2	3	4
Exit Veh SGs	7			
Exit Ped SGs	107	103		

Preempt Inputs									
Inputs	1	2	3	4	5	6	7	8	9
Detector Type	Checkin / Checkout	Checkin / Checkout	Presence	Presence	Presence	Presence	Presence	Presence	Presence
Presence			403	404	405	406	407	408	409
Check In	411	412							
Check Out	421	422							
Calling Point	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pattern 1

CycleLength **120**

Global Values

3-1: Laurel Canyon/Chandler

- Basic timing inputs:
 - Check minimum recall phase: 2,4,6,8
 - Ped recall phase: 2,4,6,8
- Pattern (coordination plan)
 - Ped recall phase: 2,4,6,8
- Preempt inputs:
 - Comment: need to reflect railroad preemption form worksheet.
- Preemption form
 - Include vehicle-gate interaction check – change to YES

VISSIM Signal Controller Inputs for Future 2025 Scenarios

Signal Location 2: Chandler/Laurel Canyon

1) Basic Timing Inputs:

Ring Barrier Controller 01.70.04 (INT_007_Chandler&LaurelCyn&Busway.rbc)

File View Help Notes

- Base Timing
- Detectors
- SC Communication
- Preempts
- Transit Priority

Basic	1	2	3	4	5	6	7	8		
SG Number	1	2	3	4	5	6	7	8		
SG Name	EBL	WBT	NBL	SBT	WBL	EBT	SBL	NBT		
Min Green	5	10	5	10	5	10	5	10		
Veh Extension	2	4.4	2	5.2	2	5.3	2	4.9		
Max 1	16	26	18	39	16	26	18	51		
Yellow	3.2	3.9	3.2	3.9	3.2	3.9	3.2	3.9		
Red Clearance	2.8	2.5	2.5	2.5	2.5	2.5	2.5	2.5		
Ped SG Number		102		104		106		108		
Walk		7		7		7		7		
Ped Clear (FDW)		16		14		16		14		
Start Up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soft Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dual Entry	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2) Pattern Number and Sequence Inputs:

Ring Barrier Controller 01.70.04 (INT_007_Chandler&LaurelCyn&Busway.rbc)

File View Help Notes

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps
- Detectors
- SC Communication
- Preempts
- Transit Priority

Schedule	
Pattern Number	Pattern Start Time
1	0

Sequence	
▶ Ring 1	1 2 3 4
Ring 2	5 6 7 8
Ring 3	
Ring 4	

Ring Barrier Controller 01.70.04 (INT_007_Chandler&LaurelCyn&Busway.rbc)

File View Help Notes Frequency 10

Base Timing

- Timing by SG
- Patterns / Coordination
- Pattern Schedule
- Sequence
- Conflict SGs
- Overlaps
- Detectors
- SC Communication
- Preempts
- Transit Priority

Pattern 1
CycleLength 120
Global Values

Basic

SG Number	1	2	3	4	5	6	7	8											
SG Name	EBL	WBT	NBL	SBT	WBL	EBT	SBL	NBT											
Min Green	5	10	5	10	5	10	5	10											
Veh Extension	2	4.4	2	5.2	2	5.3	2	4.9											
Max 1	16	26	18	39	16	26	18	51											
Yellow	3.2	3.9	3.2	3.9	3.2	3.9	3.2	3.9											
Red Clearance	2.8	2.5	2.5	2.5	2.5	2.5	2.5	2.5											
Ped SG Number		102		104		106		108											
Walk		7		7		7		7											
Ped Clear (FDW)		16		14		16		14											
Start Up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soft Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dual Entry	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

01 35sec WBT, 01 18sec EBL, 03 17sec NBL, 04 50sec SBT, 05 18sec WBL, 06 35sec EBT, 08 50sec NBT, 07 17sec SBL, 0102 23sec, 0106 23sec, 0108 21sec

Lock Diagram

Errors (0) Warnings (1) Messages (1)

OK Cancel



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3) Pattern (Coordination Plan) Timing Inputs:

Ring Barrier Controller 01.70.04 (INT_007_Chandler&LaurelCyn&Busway.rbc)

File View Help Notes Frequency 10

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern 1**
 - Pattern 2
 - Pattern 3
 - Pattern 4
 - Pattern 5
 - Pattern 6
 - Pattern 7
 - Pattern 8
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps
- Detectors
- SC Communication
- Preempts
- Transit Priority

Pattern 1

Signal Group:	1	2	3	4	5	6	7	8										
Splits	18	35	17	50	18	35	17	50										
Splits Extension																		
Floating Green																		
Perm Min Green																		
Min Green	5	10	5	10	5	10	5	10										
Alternate Max																		
Veh Extension	2	4.4	2	5.2	2	5.3	2	4.9										
Transition Min																		
Transition Max	21	42	20	60	21	42	20	60										
Force Off																		
Permissive Start																		
Permissive End																		
Max 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floating Force Off	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coordinated	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walk Rest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Veh Omit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Omit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Inhibit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lead	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CNA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Veh-Ped-Permissive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pattern 1

CycleLength 120

Global Values

01 35sec WBT 01 18sec EBL 03 17sec NBL 04 50sec SBT

0102 23sec 05 18sec WBL 06 35sec EBT 08 50sec NBT 07 17sec SBL

0106 23sec 0108 21sec

6) Preempt Inputs:

Ring Barrier Controller 01.70.04 (INT_007_Chandler&LaurelCyn&Busway.rbc)

File View Help Notes Frequency

- Base Timing
- Detectors
- SC Communication
- Preempts
- Transit Priority

Preempts				
Preempt Number	1	2	3	4
Enabled	Yes	Yes	No	No
Exit Mode	Normal	Normal	Normal	Normal
Change SG Next	No	No	No	No
Enable SGs				
Preempt Inputs	1	2		
Start Green	10	10		
Start Walk				
Start Ped Clr				

Preempts				
Preempt Number	1	2	3	4
Zero SG Walk				
Zero SG Ped Clr				
Zero SG Green	5	5		
Zero Ovl Green				
Reservice Inh. Same				
Reservice Inh. All				
Service Priority				

Track Clearance 1				
Preempt Number	1	2	3	4
Track Clearance 1	14	14		
TC1 Veh SGs				
TC1 Ped SGs				
TC1 Ovl SGs	13,14,15,16	13,14,15,16		

Track Clearance 2				
Preempt Number	1	2	3	4
Track Clearance 2				
TC2 Veh SGs				
TC2 Ped SGs				
TC2 Ovl SGs				

Dwell				
Preempt Number	1	2	3	4
Dwell Veh SGs	2,6	2,6		
Dwell Ped SGs	102,106	102,106		
Dwell Ovl SGs				

Exit				
Preempt Number	1	2	3	4
Exit Veh SGs	3,8	4,7		
Exit Ped SGs	108	104		

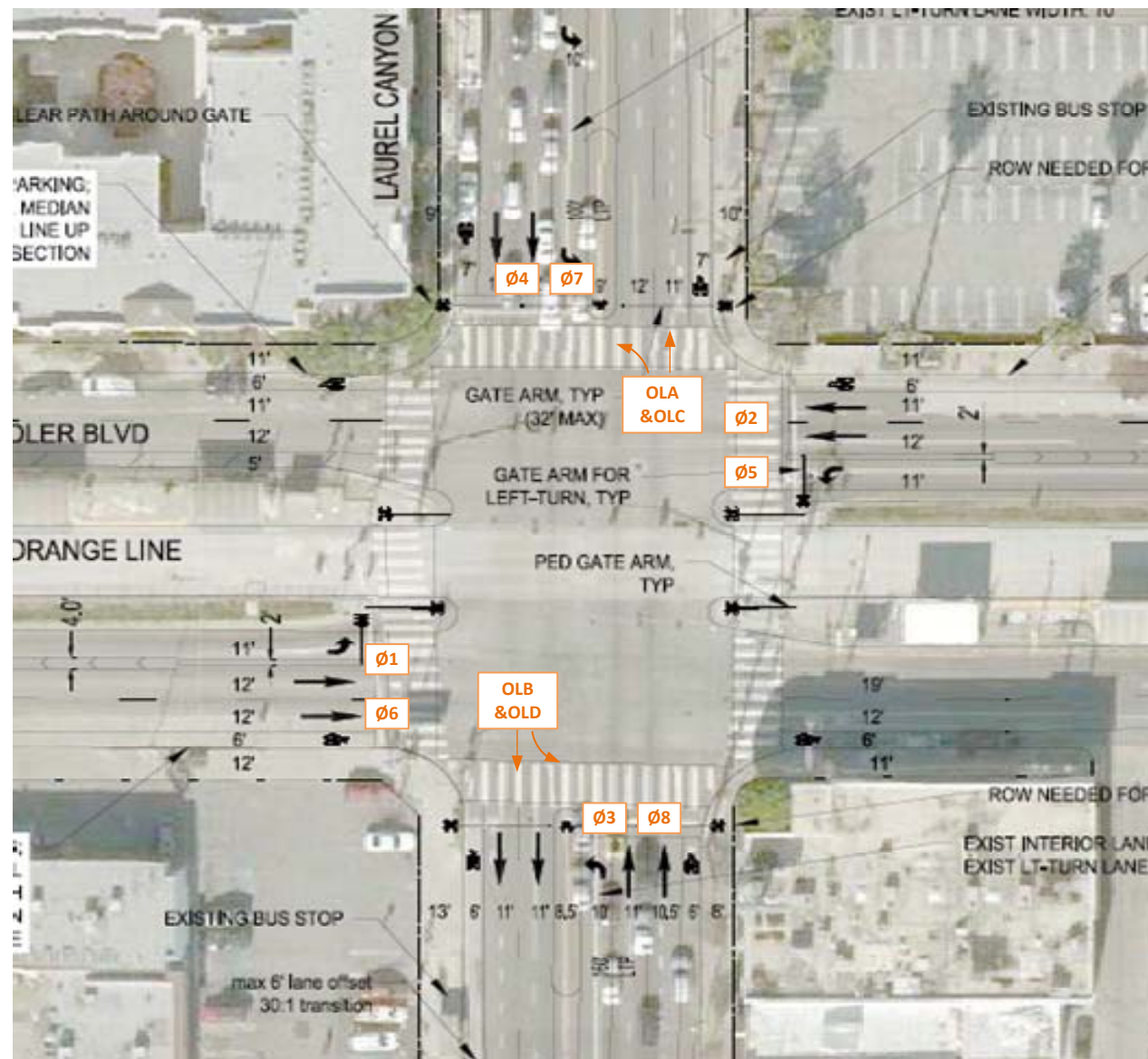
Preempt Inputs									
Inputs	1	2	3	4	5	6	7	8	9
Detector Type	Checkin / Checkout	Checkin / Checkout	Presence	Presence	Presence	Presence	Presence	Presence	Presence
Presence			403	404	405	406	407	408	409
Check In	411	412							
Check Out	421	422							
Collision Point									

Pattern 1

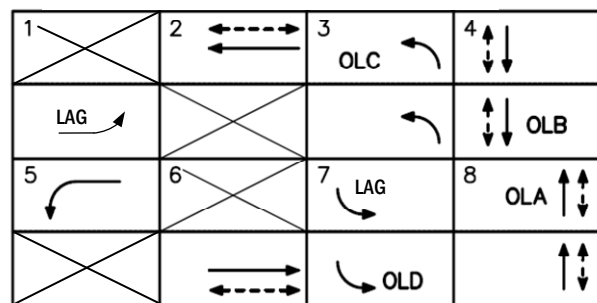
CycleLength 120

Global Values

Gate Concept Design



Future with Gates Phasing Diagram

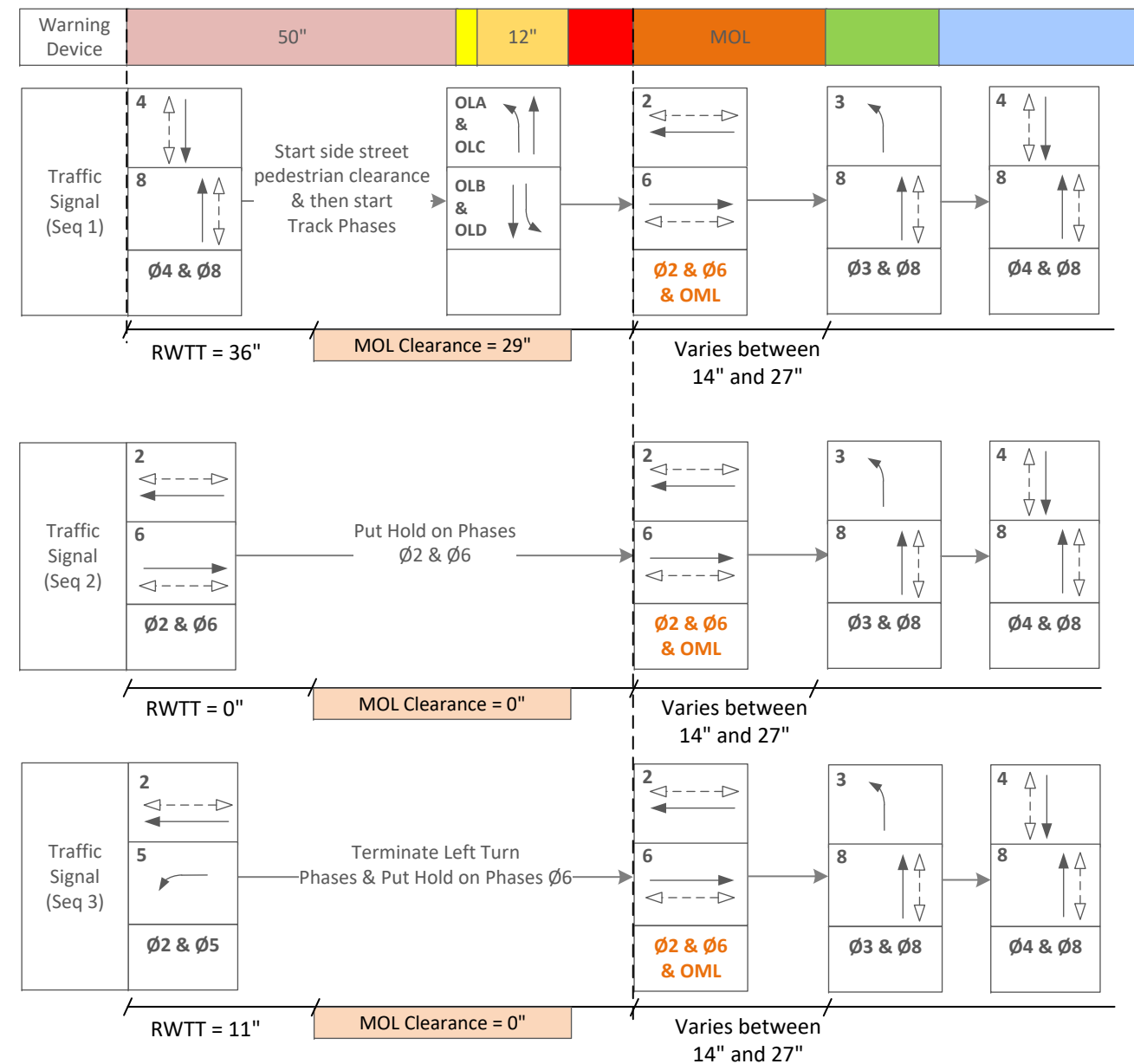


OLA: ø8
 OLB: ø4
 OLC: ø3
 OLD: ø7

OLA, OLB, OLC, OLD:
 MOL Busway Clearance

Preemption Sequence

Normal Operations	Advanced Preemption	Gates Lowering	Gates Down (Active Preemption)	Recovery and Return to Normal Operations
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Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- Gate Descent (12 seconds)
- MOL Phase
- Normal Operation

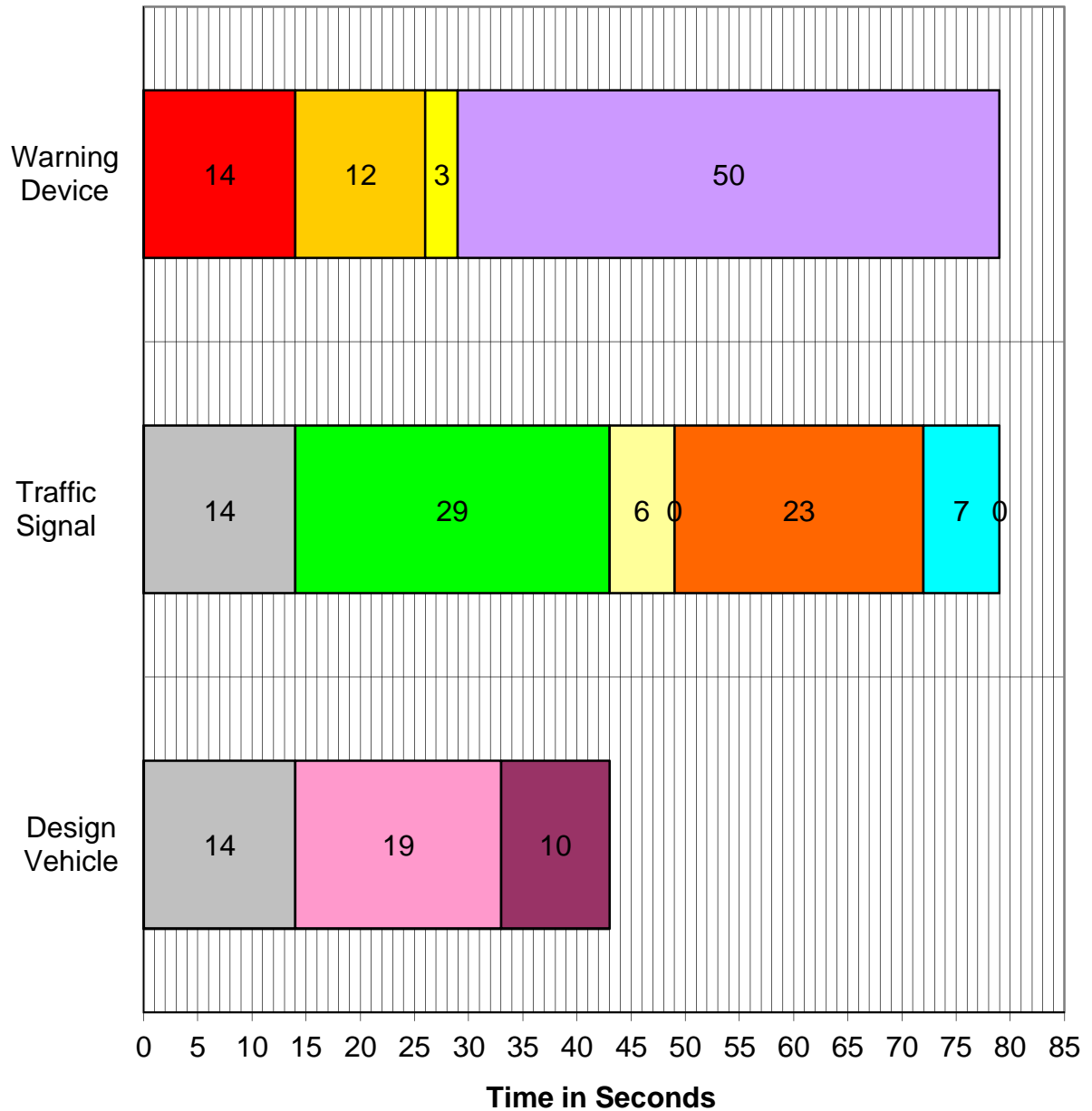
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Laurel Canyon	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	118 ft	Grade	0.0 %		
Clear Storage Distance, CSD	0 ft				
Length, L	118 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	5	3	2	1	
Start moving last vehicle in L (sec)	9.8	6.9	6.2	7.0	10
Move front of vehicle thru L (sec)	7.4	8.2	6.8	14.9	15
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	7.9	9.3	8.0	18.7	19
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	29 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	29 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	23 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	6.0 sec				
Maximum RWTT	36 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	79 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	9 sec	<i>9 sec minimum</i>			
Minimum Warning Time, MWT	29 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	29 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	50 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	84 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	5544 ft				

Street Name:	MOL@Laurel Canyon	Crossing No:	
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Preemption Timeline

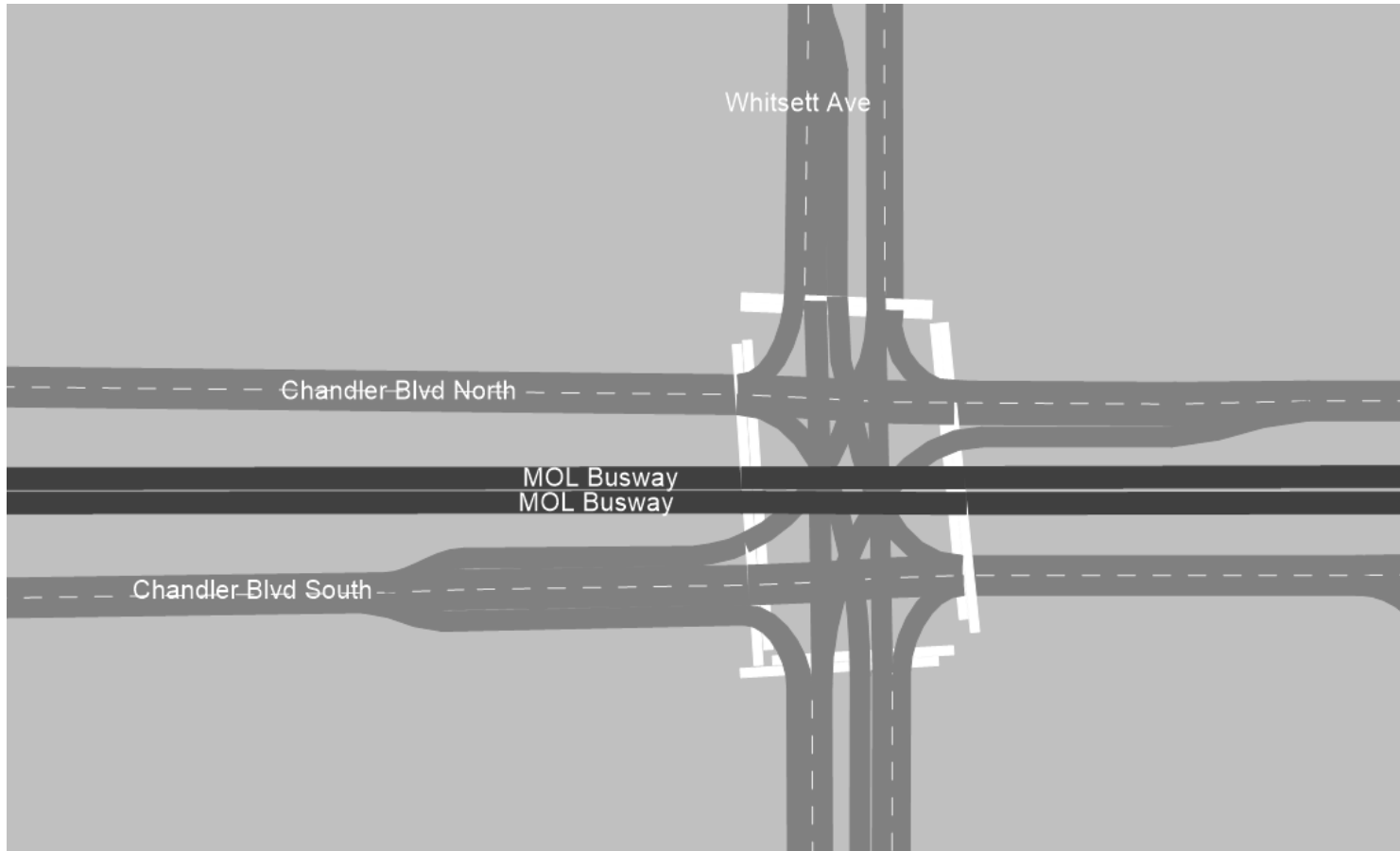


- | | | | |
|-----------------|---------------------|--------------------|----------------------|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

VISSIM Signal Controller Inputs for Future 2025 Scenarios

Signal Location 1: Chandler/Whitsett



1) Basic Timing Inputs:

Ring Barrier Controller 01.70.04 (INT_011_Chandler&Whitsett&Busway.rbc)

File View Help Notes

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps
 - Detectors
 - SC Communication
 - Preempts
 - Transit Priority

Basic		1	2	3	4	5	6	7	8		
SG Number		1	2	3	4	5	6	7	8		
SG Name		EBL	WBT	NBL	SBT	WBL	EBT	SBL	NBT		
Min Green		5	10	5	10	5	10	5	10		
Veh Extension		2	4.9	2	4.3	2	4.7	2	4.9		
Max 1		17	34	18	30	17	34	11	37		
Yellow		3.2	3.9	3.2	3.9	3.2	3.9	3.2	3.9		
Red Clearance		2.8	1.1	1.8	1.1	2.8	1.1	1.8	1.1		
Ped SG Number			102		104		106		108		
Walk			7		7		7		7		
Ped Clear (FDW)			11		18		11		15		
Start Up		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Recall		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Recall		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soft Recall		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dual Entry		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2) Pattern Number and Sequence Inputs:

Ring Barrier Controller 01.70.04 (INT_011_Chandler&Whitsett&Busway.rbc)

File View Help Notes

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps
- Detectors
- SC Communication
- Preempts
- Transit Priority

Schedule

Pattern Number	Pattern Start Time
1	0

Sequence

▶ Ring 1	1	2		3	4		
Ring 2	5	6		7	8		
Ring 3							
Ring 4							

3) Pattern (Coordination Plan) Timing Inputs:

Ring Barrier Controller 01.70.04 (INT_011_Chandler&Whitsett&Busway.rbc)

File View Help Notes Frequency 10

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern 1
 - Pattern 2
 - Pattern 3
 - Pattern 4
 - Pattern 5
 - Pattern 6
 - Pattern 7
 - Pattern 8
 - Pattern Schedule
 - Sequence
 - Conflict SGs
- Overlaps
- Detectors
- SC Communication
- Preempts
- Transit Priority

Pattern 1
CycleLength 120
Global Values

Signal Group:	1	2	3	4	5	6	7	8							
Splits	18	39	17	46	18	39	17	46							
Splits Extension															
Floating Green															
Perm Min Green															
Min Green	5	10	5	10	5	10	5	10							
Alternate Max															
Veh Extension	2	4.9	2	4.3	2	4.7	2	4.9							
Transition Min															
Transition Max	21	46	20	55	21	46	20	55							
Force Off															
Permissive Start															
Permissive End															
Max 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floating Force Off	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coordinated	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walk Rest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Veh Omit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Omit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Timing Diagram Data:

- 01 18sec EBL
- 02 39sec WBT
- 03 17sec NBL
- 04 46sec SBT
- 05 18sec EBL
- 06 39sec WBT
- 07 17sec NBL
- 08 46sec SBT
- 09 18sec EBL
- 10 39sec WBT
- 11 17sec NBL
- 12 46sec SBT



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Los Angeles, CA 90017

4) Overlap Inputs:

Ring Barrier Controller 01.70.04 (INT_011_Chandler&Whitsett&Busway.rbc)

File View Help Notes

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps
 - Overlap SG
 - Delay Green
 - Trail Green
 - Yellow Clearance
 - Red Clearance
 - Parent
 - Negative Green
 - Delay Enable
 - Trail Enable
 - Negative Vehicle
 - Negative Overlap
- Detectors
- SC Communication
- Preempts
- Transit Priority

3							
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overlaps

▶ Overlap SG	13	14	15	16			
Delay Green							
Trail Green	3.9	3.9	3.2	3.2			
Yellow Clearance	3.9	3.9	3.2	3.2			
Red Clearance	0.2	0.2	0.6	0.6			
Parent	8	4	3	7			
Negative Green							
Delay Enable							
Trail Enable	8	4	3	7			
Negative Vehicle							
Negative Overlap							

Pattern 1

CycleLength **120**

Global Values

5) Detector Inputs:

Ring Barrier Controller 01.70.04 (INT_011_Chandler&Whitsett&Busway.rbc)

File View Help Notes Frequency 10

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps
 - Overlap SG
 - Delay Green
 - Trail Green
 - Yellow Clearance
 - Red Clearance
 - Parent
 - Negative Green
 - Delay Enable
 - Trail Enable
 - Negative Vehicle
 - Negative Overlap
- Detectors
 - Vehicle
 - Pedestrian
 - Queue
- SC Communication
- Preempts
- Transit Priority

Veh Detectors

Detector Number	2	3	4	7	5	8	1	
Delay								
Extend								
Carry Over								
Queue Limit								
Detector Mode	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No I
Added Initial Mode	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	C
Call	2	3	4	7	5	8	1	
Yellow Lock								
Red Lock								
Extend SGs	2	3	4	7	5	8	1	
XSwitch SGs								

Ped Detectors

Detector Number	102	104	106	108				
Call Peds	102	104	106	108				

Queue Detection

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Veh. Detector Num.	11	12												
Delay On														
Delay Off	36	36												
Control	None	None	None	None	None	None	None	None	None	None	None	None	None	N
Action	Preempt	Preempt	None	None	None	None	None	None	None	None	None	None	None	N
Action Index	Preempt 1	Preempt 2												

Pattern 1

CycleLength **120**

Global Values

6) Preempt Inputs:

Ring Barrier Controller 01.70.04 (INT_011_Chandler&Whitsett&Busway.rbc)

File View Help Notes Frequency

- Base Timing
- Detectors
- SC Communication
- Preempts
- Transit Priority

Preempts

Preempt Number	1	2	3	4
Enabled	Yes	Yes	No	No
Exit Mode	Normal	Normal	Normal	Normal
Change SG Next	No	No	No	No
Enable SGs				
Preempt Inputs	1	2		
Start Green	10	10		
Start Walk				
Start Ped Clr				

Track Clearance 1

Preempt Number	1	2	3	4
Track Clearance 1	14	14		
TC1 Veh SGs				
TC1 Ped SGs				
TC1 Ovl SGs	13,14,15,16	13,14,15,16		

Dwell

Preempt Number	1	2	3	4
Dwell Veh SGs	2.6	2.6		
Dwell Ped SGs	102,106	102,106		
Dwell Ovl SGs				

Preempt Inputs

Inputs	1	2	3	4	5	6	7	8
Detector Type	Checkin / Checkout	Checkin / Checkout	Presence	Presence	Presence	Presence	Presence	Presence
Presence			403	404	405	406	407	408
Check In	411	412						
Check Out	421	422						
Calling Point	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Preempt Number

Preempt Number	1	2	3	4
Zero SG Walk				
Zero SG Ped Clr				
Zero SG Green	1	1		
Zero Ovl Green				
Reservice Inh. Same				
Reservice Inh. All				
Service Priority				

Track Clearance 2

Preempt Number	1	2	3	4
Track Clearance 2				
TC2 Veh SGs				
TC2 Ped SGs				
TC2 Ovl SGs				

Exit

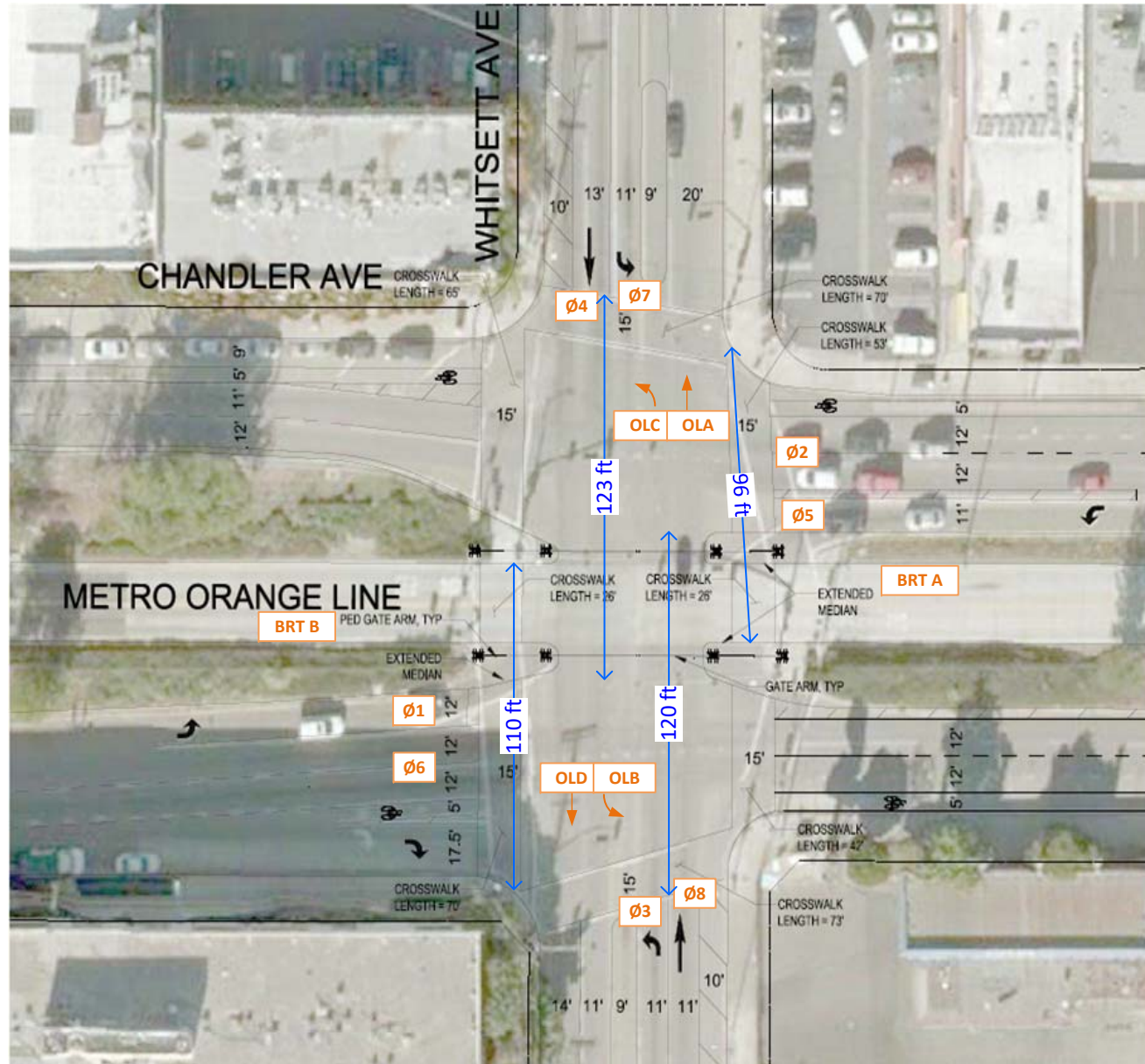
Preempt Number	1	2	3	4
Exit Veh SGs	4.7	3.8		
Exit Ped SGs	104	108		

Pattern 1

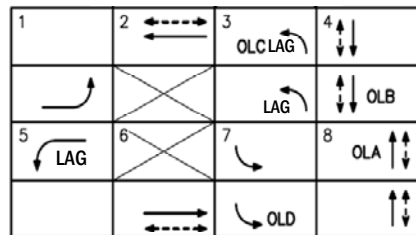
CycleLength 120

Global Values

Gate Concept Design



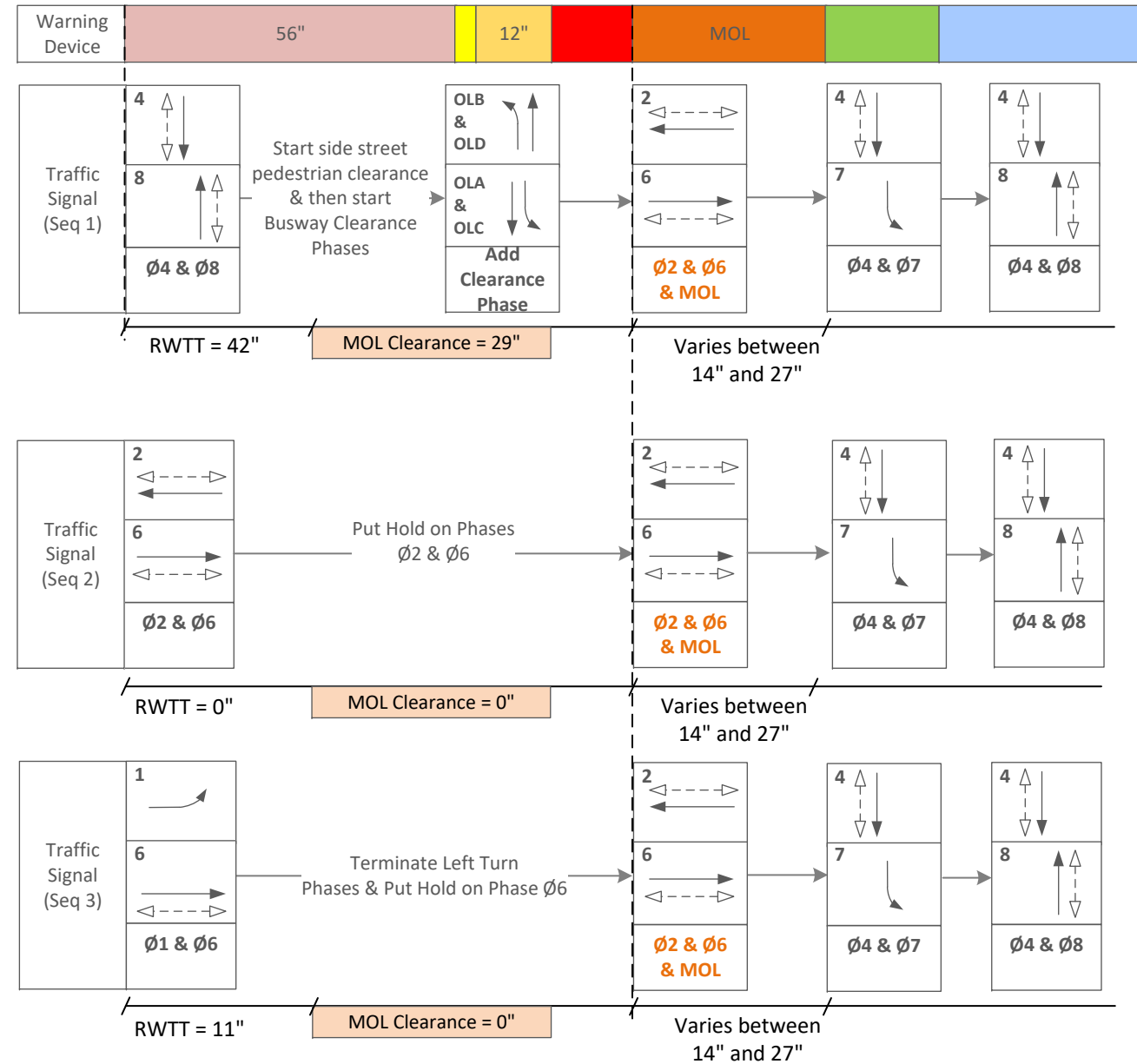
Future with Gates Phasing Diagram



OLA: Ø8
 OLB: Ø4
 OLC: Ø3
 OLD: Ø7

Preemption Sequence

Normal Operations	Advanced Preemption	Gates Lowering	Gates Down (Active Preemption)	Recovery and Return to Normal Operations
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Legend

- Advance Preemption
- Lights Flash (3 seconds)
- Gate Descent (12 seconds)
- Gate Down
- MOL Phase
- Exit Phases
- Normal Operation

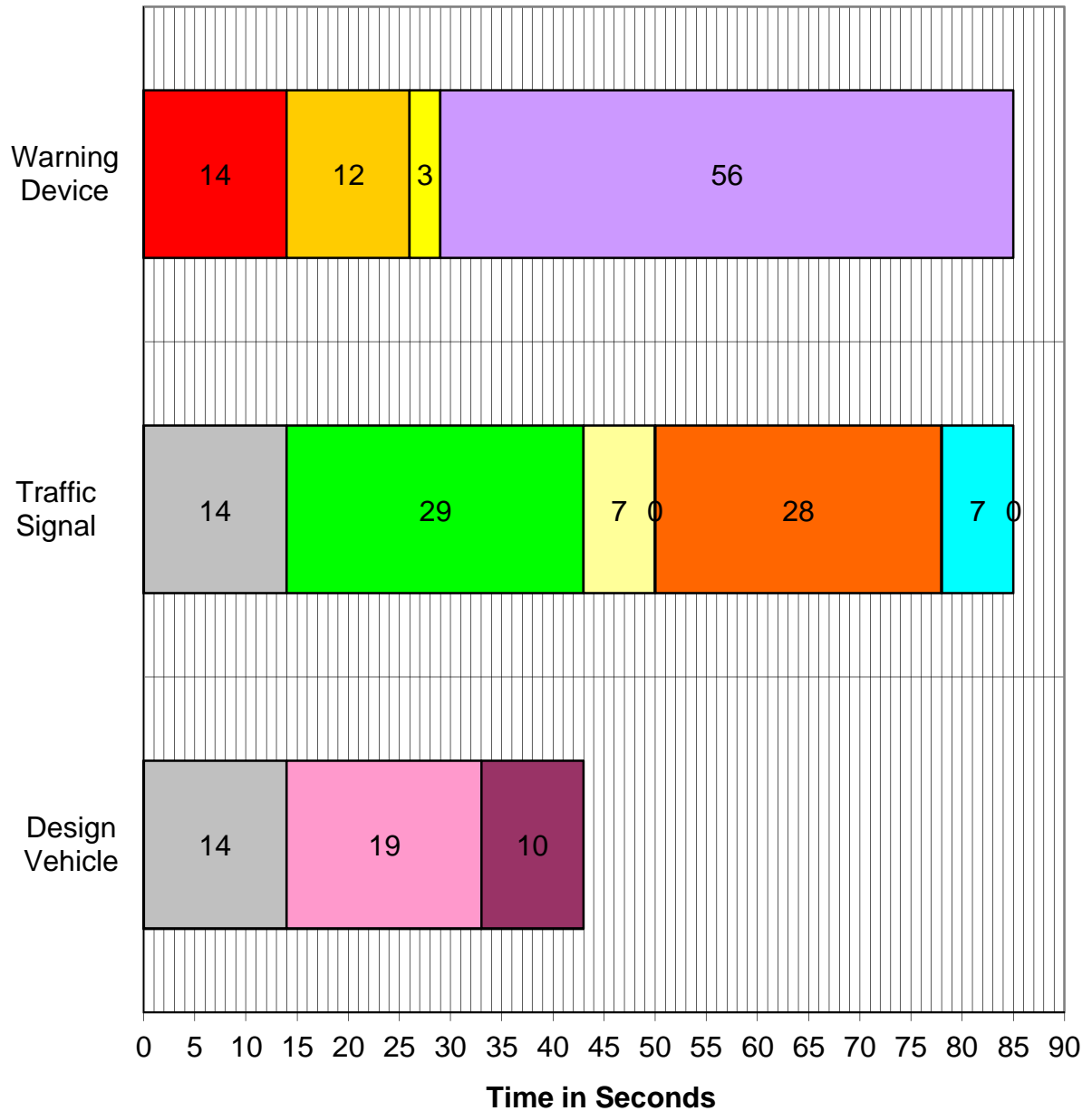
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Whitsett	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0	ft	Grade		
Maximum Conflicting Move Distance	0	ft	Grade		
Minimum Track Clearance Dist, MTCD	123	ft	Grade		
Clear Storage Distance, CSD	0	ft			
Length, L	123	ft			
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	5	3	2	1	
Start moving last vehicle in L (sec)	9.8	6.9	6.2	7.0	10
Move front of vehicle thru L (sec)	7.6	8.4	7.0	15.2	15
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	8.1	9.5	8.1	19.0	19
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	29	sec	<i>Green Track Clearance extended to Gate Down</i>		
MTCD Queue Clearance Time	29	sec			
Minimum Walk	7	sec			
Maximum Ped Clearance	28	sec			
Minimum Green	10	sec			
Maximum Yellow + All Red	7.0	sec			
Maximum RWTT	42	sec			
Separation Time, ST	5	sec	<i>See Preemption Timeline for actual Separation Time</i>		
Maximum Preemption Time, MPT	85	sec			
Section 2: Railroad Information					
Lights Flash	3	sec			
Gate Descent	12	sec			
Minimum Time, MT	20	sec			
Clearance Time, CT	9	sec	<i>9 sec minimum</i>		
Minimum Warning Time, MWT	29	sec			
Buffer Time, BT	0	sec			
Total Warning Time, TWT	29	sec			
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6	ft			
Advance Preemption Time, APT	56	sec			
Equipment Response Time, ERT	5	sec			
Total Approach Time, TAT	90	sec			
Maximum Authorized Speed, MAS	45	mph			
Total Approach Distance, TAD	5940	ft			

Street Name:	MOL@Whitsett	Crossing No:	
--------------	--------------	--------------	--

Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

VISSIM Signal Controller Inputs for Future 2025 Scenarios

Signal Location 3: Burbank/Fulton

1) Basic Timing Inputs:

Ring Barrier Controller 01.70.04 (INT_020_Burbank&Fulton&Busway.rbc)

File View Help Notes

- Base Timing
- Detectors
- SC Communication
- Preempts
- Transit Priority

Basic	1	2	4	5	6	8
SG Number	EBL	WBT	SBT	WBL	EBT	NBT
SG Name	EBL	WBT	SBT	WBL	EBT	NBT
Min Green	5	10	10	5	10	10
Veh Extension	2	3	3	2	3	3
Max 1	12	25	27	12	25	27
Yellow	3.2	3.9	3.9	3.2	3.9	3.9
Red Clearance	2.8	2.1	2.1	2.8	2.1	2.1
Ped SG Number		102	104		106	108
Walk		7	7		7	7
Ped Clear (FDW)		11	13		10	14
Start Up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ped Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Soft Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dual Entry	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2) Pattern Number and Sequence Inputs:

The screenshot shows the 'Ring Barrier Controller 01.70.04 (INT_020_Burbank&Fulton&Busway.rbc)' application window. The interface includes a menu bar (File, View, Help) and a 'Notes' tab. On the left, a tree view shows various configuration options, with 'Pattern Schedule' selected under 'Patterns / Coordination'. The main area is divided into two sections: 'Schedule' and 'Sequence'.

Schedule Table:

Pattern Number	Pattern Start Time
1	0

Sequence Table:

Ring 1	1	2		4
Ring 2	5	6		8
Ring 3				
Ring 4				



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3) Pattern (Coordination Plan) Timing Inputs:

Ring Barrier Controller 01.70.04 (INT_020_Burbank&Fulton&Busway.rbc)

File View Help Notes Frequency 10

- Base Timing
 - Timing by SG
- Patterns / Coordination
 - Pattern 1**
 - Pattern 2
 - Pattern 3
 - Pattern 4
 - Pattern 5
 - Pattern 6
 - Pattern 7
 - Pattern 8
- Pattern Schedule
- Sequence
- Conflict SGs
- Overlaps
- Detectors
- SC Communication
- Preempts
- Transit Priority

Pattern 1

Signal Group:	1	2	4	5	6	8								
Splits	15	63	27	15	63	27								
Splits Extension														
Floating Green														
Perm Min Green														
Min Green	5	10	10	5	10	10								
Alternate Max														
Veh Extension	2	3	3	2	3	3								
Transition Min														
Transition Max	18	75	32	18	75	32								
Force Off														
Permissive Start														
Permissive End														
Max 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floating Force Off	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coordinated	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walk Rest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Veh Omit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Omit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Inhibit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pattern 1

CycleLength 105

Global Values



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5) Detector Inputs:

Ring Barrier Controller 01.70.04 (INT_020_Burbank&Fulton&Busway.rbc)

File View Help Notes [] Frequency 10

Base Timing
 Timing by SG
 Basic
 Advanced
 Patterns / Coordination
 Pattern 1
 Pattern 2
 Pattern 3
 Pattern 4
 Pattern 5
 Pattern 6
 Pattern 7
 Pattern 8
 Pattern Schedule
 Sequence
 Conflict SGs
 Overlaps
 Detectors
 Vehicle
 Pedestrian
 Queue
 SC Communication
 Preempts
 Transit Priority

Pattern 1
CycleLength 105
Global Values

Negative Overlap

Detector Number	2	4	6	8	1	5	11	12
Delay								
Extend								
Carry Over								
Queue Limit								
Detector Mode	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect
Added Initial Mode	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Call	2	4	6	8	1	5		
Yellow Lock								
Red Lock								
Extend SGs	2	4	6	8	1	5		
XSwitch SGs								

Ped Detectors

Detector Number	102	104	106	108
Call Peds	102	104	106	108

Queue Detection

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh. Detector Num.	11	12														
Delay On																
Delay Off	42	40														
Control	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
Action	Preempt	Preempt	None	None	None	None	None	None	None	None	None	None	None	None	None	None

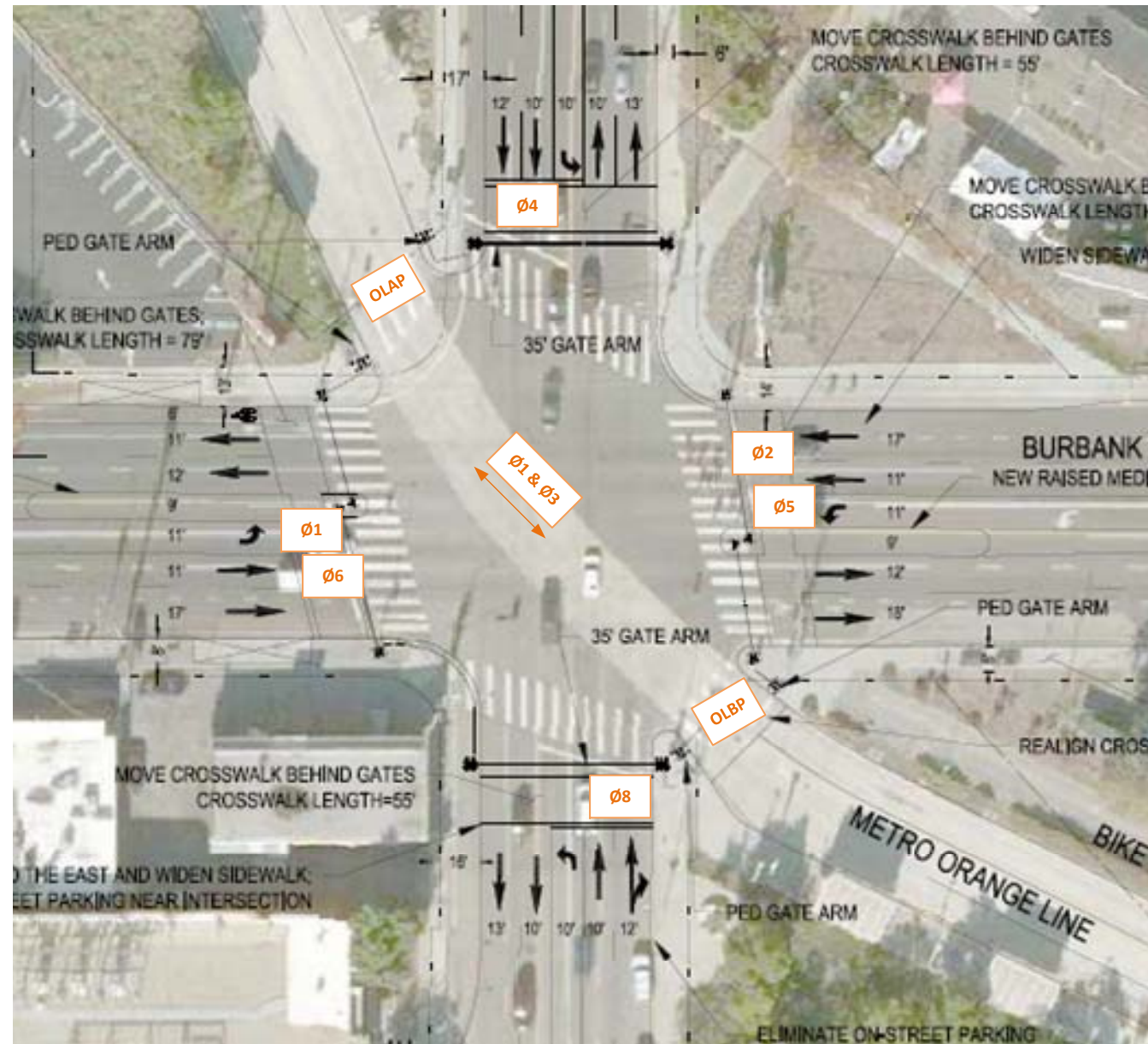
01 15sec EBL
01 63sec WBT
02 18sec
03 15sec WBL
06 63sec EBT
04 27sec SBT
08 27sec NBT
10 20sec
10 21sec

Lock Diagram

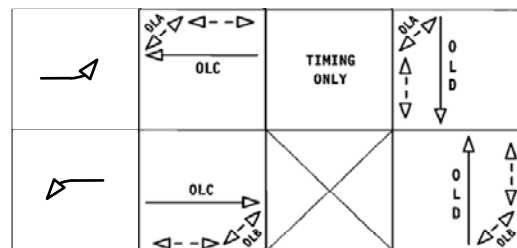
Errors (0) Warnings (1) Messages (1)

OK Cancel

Gate Concept Design

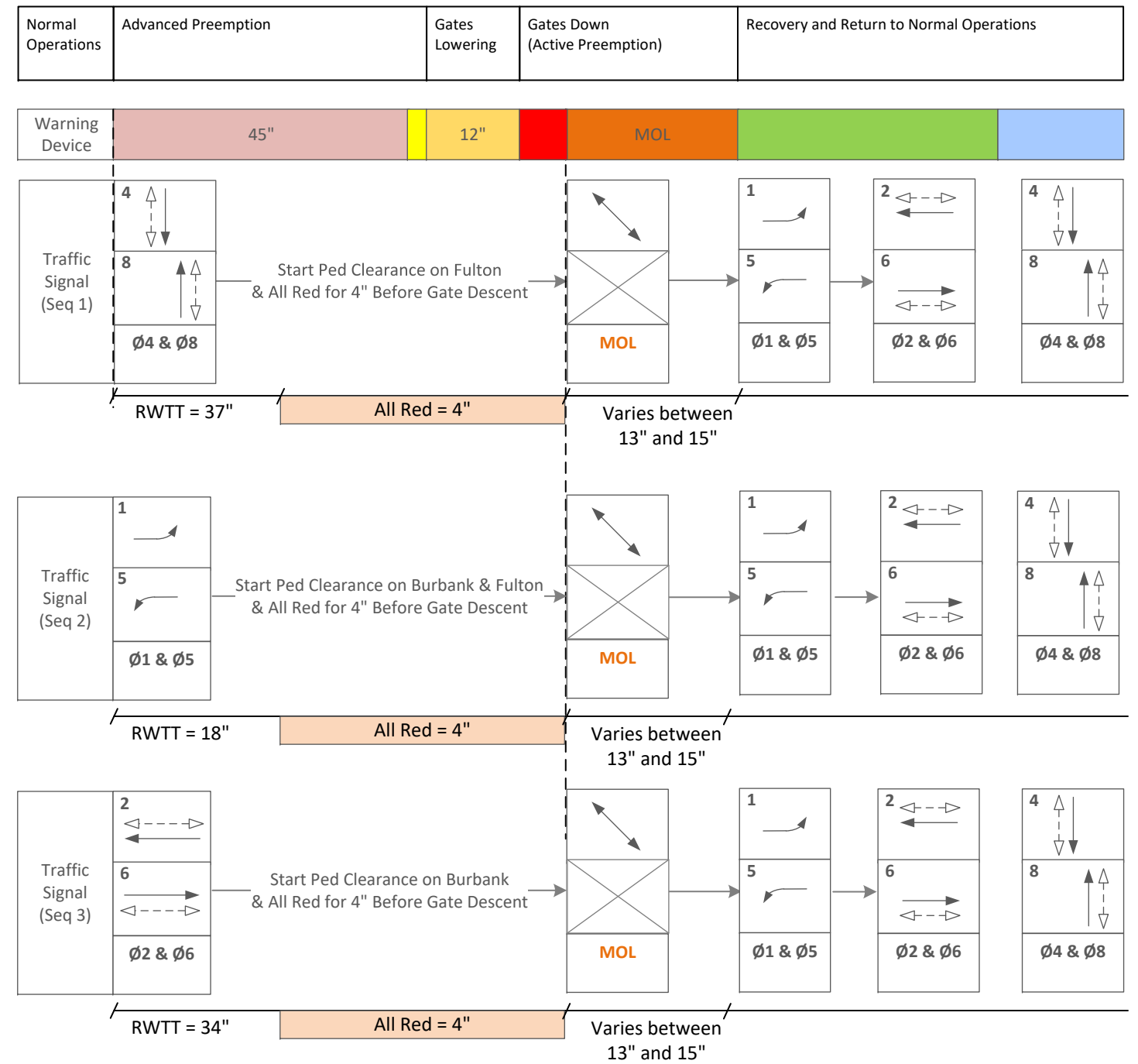


Future with Gates Phasing Diagram



OLAP: Ø2 & Ø4
 OLBP: Ø6 & Ø8
 OLC: Ø2 & Ø6
 OLD: Ø4 & Ø8

Preemption Sequence



Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

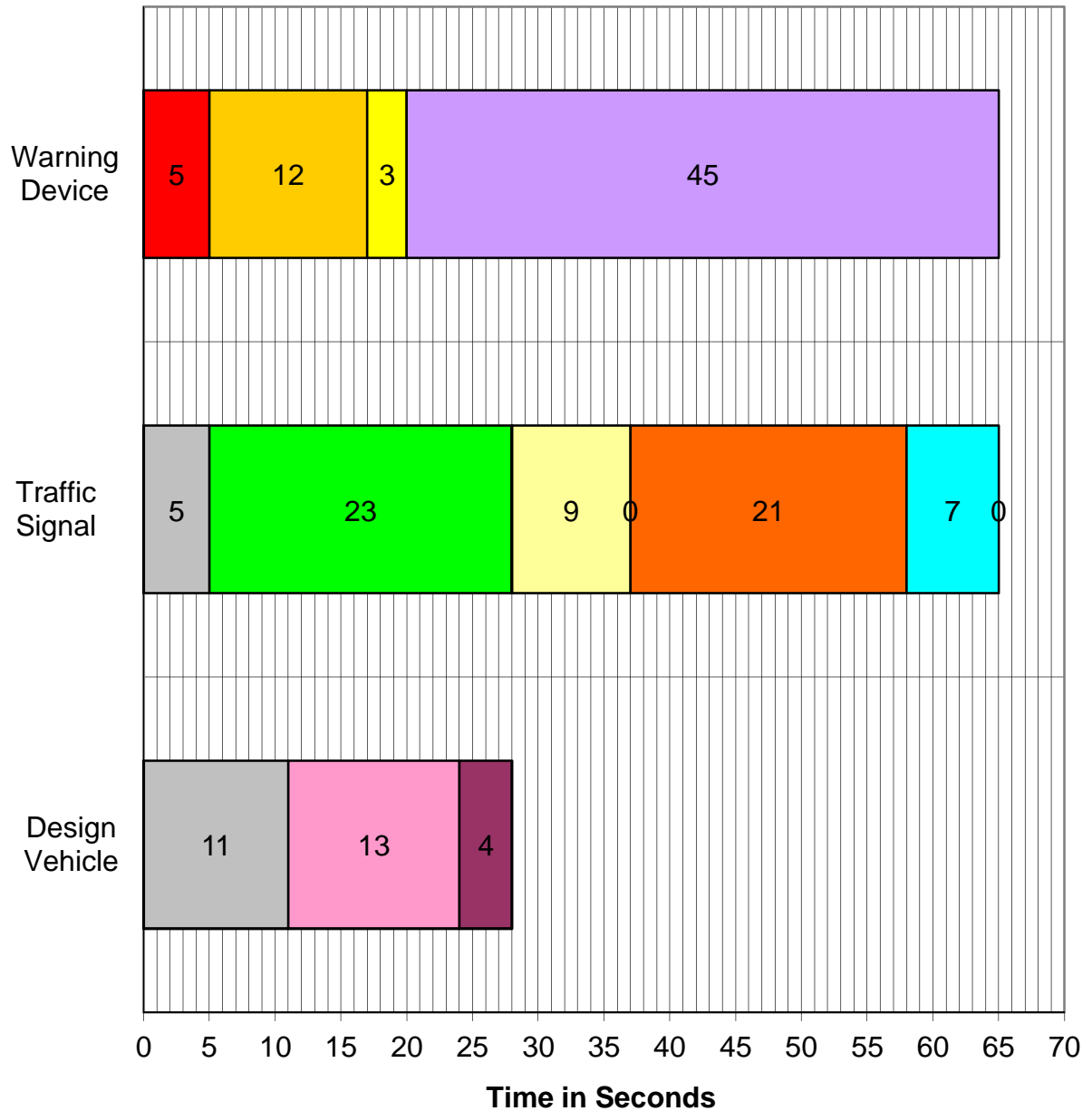
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Fulton	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	20 ft	Grade	0.0 %		
Clear Storage Distance, CSD	0 ft				
Length, L	20 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	0	0	0	0	
Start moving last vehicle in L (sec)	2.5	2.5	2.7	4.0	4
Move front of vehicle thru L (sec)	2.8	3.1	2.6	5.9	6
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	3.8	5.1	4.8	12.6	13
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	23 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	17 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	21 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	9.0 sec				
Maximum RWTT	37 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	65 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	0 sec	0 sec minimum			
Minimum Warning Time, MWT	20 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	20 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	45 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	70 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4620 ft				

Street Name:	MOL@Fulton	Crossing No:	
--------------	------------	--------------	--

Preemption Timeline



- | | | | |
|-----------------|---------------------|--------------------|----------------------|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

25-2, -3: Reseda/MOL Busway/Oxnard

- Basic timing inputs:
 - Change NBL YELLOW to 3.0
 - Check minimum recall phase 4 & 8, not phase 2 & 6
 - Ped recall phase 4 & 8
- Preempt inputs:
 - Comment: need to reflect railroad preemption form worksheet.
- Preemption form
 - Include vehicle-gate interaction check – change to YES



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VISSIM Signal Controller Inputs for Future 2025 Scenarios

Signal Location 6: Reseda/Oxnard/Busway

1) Basic Timing Inputs:

Ring Barrier Controller 01.70.04 (INT_043_Oxnard&Reseda&Busway.rbc)

File View Help Notes

- Base Timing
- Detectors
- SC Communication
- Preempts
- Transit Priority

Basic

SG Number	1	2	3	4	5	6	7	8		
SG Name	EBL	WBT	NBL	SBT	WBL	EBT	SBL	NBT		
Min Green	10	10	10	10	5	10	5	10		
Veh Extension	2	4	3	4	2	4	2	4		
Max 1	14	27	40	28	13	27	22	32		
Yellow	3	3.9	3	3.9	3.2	3.9	3.9	3.9		
Red Clearance	1	1.1	1	1.1	1.8	1.1	1	1.1		
Ped SG Number		102		104		106		108		
Walk		7		7		7		7		
Ped Clear (FDW)		20		15		20		17		
Start Up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soft Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dual Entry	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pattern 1

Cycle Length 120

2) Pattern Number and Sequence Inputs:

Ring Barrier Controller 01.70.04 (INT_043_Oxnard&Reseda&Busway.rbc)

File View Help Notes

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps
- Detectors
- SC Communication
- Preempts
- Transit Priority

Schedule

Pattern Number	Pattern Start Time
1	0

Sequence

▶ Ring 1	1	2	3	4	
Ring 2	5	6	7	8	
Ring 3					
Ring 4					

3) Pattern (Coordination Plan) Timing Inputs:

Ring Barrier Controller 01.70.04 (INT_043_Oxnard&Reseda&Busway.rbc)

File View Help Notes Frequency 10

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern 1
 - Pattern 2
 - Pattern 3
 - Pattern 4
 - Pattern 5
 - Pattern 6
 - Pattern 7
 - Pattern 8
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps
- Detectors
- SC Communication
- Preempts
- Transit Priority

Pattern 1

Signal Group:	1	2	3	4	5	6	7	8										
Splits	14	45	14	47	16	43	10	51										
Splits Extension																		
Floating Green																		
Perm Min Green																		
Min Green	10	10	10	10	5	10	5	10										
Alternate Max																		
Veh Extension	2	4	2	4	2	4	2	4										
Transition Min																		
Transition Max	16	54	16	56	19	51	12	61										
Force Off																		
Permissive Start																		
Permissive End																		
Max 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floating Force Off	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coordinated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walk Rest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Veh Omit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Omit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pattern 1 CycleLength 120 Global Values



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4) Overlap Inputs:

Ring Barrier Controller 01.70.04 (INT_043_Oxnard&Reseda&Busway.rbc)

File View Help Notes

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps
 - Detectors
 - SC Communication
 - Preempts
 - Transit Priority

5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overlaps

Overlap SG	13	14	15	16	17	18															
Delay Green																					
Trail Green	3.9	3.9			2																
Yellow Clearance	3.9	3.9	3.9	3.9	6	8															
Red Clearance	1.2	1.2	1.2	1.2	3	3															
Parent	1,2,3,4	1,2,3,4	4,6	6,7	1,2,3,4	1,2,3,4															
Negative Green																					
Delay Enable																					
Trail Enable	1,2,3,4	1,2,3,4	4,6	6,7	1,2,3,4	1,2,3,4															
Negative Vehicle																					
Negative Overlap																					

Pattern 1

CycleLength 120

Global Values



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5) Detector Inputs:

Ring Barrier Controller 01.70.04 (INT_043_Oxnard&Reseda&Busway.rbc)

File View Help Notes Frequency

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps
- Detectors
 - Vehicle
 - Pedestrian
 - Queue
- SC Communication
- Preempts
- Transit Priority

Delay Enable																	
Trail Enable	1,2,3,4	1,2,3,4	4,6	6,7	1,2,3,4	1,2,3,4											
Negative Vehicle																	
Negative Overlap																	

Veh Detectors

Detector Number	1	2	3	4	5	6	7	8
Delay								
Extend								
Canv Over								
Queue Limit								
Detector Mode	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect
Added Initial Mode	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Call	1	2	3	4	5	6	7	8
Yellow Lock								
Red Lock								
Extend SGs	1	2	3	4	5	6	7	8
XSwitch SGs								

Ped Detectors

Detector Number	102	104	106	108	110								
Call Peds	102	104	106	108									

Queue Detection

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Veh. Detector Num.	11	12												
Delay On														
Delay Off	50	50												
Control	None	None	None	None	None	None	None	None	None	None	None	None	None	None
Action	Preempt	Preempt	Preempt	Preempt	Preempt	Preempt	Preempt	Preempt	Preempt	Preempt	Preempt	Preempt	Preempt	Preempt
Action Index	Preempt 1	Preempt 2	None	None	None	None	None	None	None	None	None	None	None	None

Pattern 1

CycleLength 120

Global Values

6) Preempt Inputs:

Ring Barrier Controller 01.70.04 (INT_043_Oxnard&Reseda&Busway.rbc) Frequency 10

File View Help Notes

- Base Timing
- Detectors
- SC Communication
- Preempts
- Transit Priority

Preempts				
Preempt Number	1	2	3	4
▶ Enabled	Yes	Yes	No	No
Exit Mode	Normal	Normal	Normal	Normal
Change SG Next	No	No	No	No
Enable SGs				
Preempt Inputs	1	2		
Start Green	10	10		
Start Walk				
Start Ped Clr				

Preempt Number				
	1	2	3	4
Zero SG Walk				
Zero SG Ped Clr				
Zero SG Green	1	1		
Zero Dvl Green				
Reservice Inh. Same				
Reservice Inh. All				
▶ Service Priority				

Track Clearance 1				
Preempt Number	1	2	3	4
▶ Track Clearance 1	16	16		
TC1 Veh SGs	4.7	4.7		
TC1 Ped SGs				
TC1 Dvl SGs	15,16	15,16		

Track Clearance 2				
Preempt Number	1	2	3	4
▶ Track Clearance 2				
TC2 Veh SGs				
TC2 Ped SGs				
TC2 Dvl SGs				

Dwell				
Preempt Number	1	2	3	4
▶ Dwell Veh SGs	2.6	2.6		
Dwell Ped SGs	102,106	102,106		
Dwell Dvl SGs				

Exit				
Preempt Number	1	2	3	4
▶ Exit Veh SGs	4.8	4.8		
Exit Ped SGs	104,108	104,108		

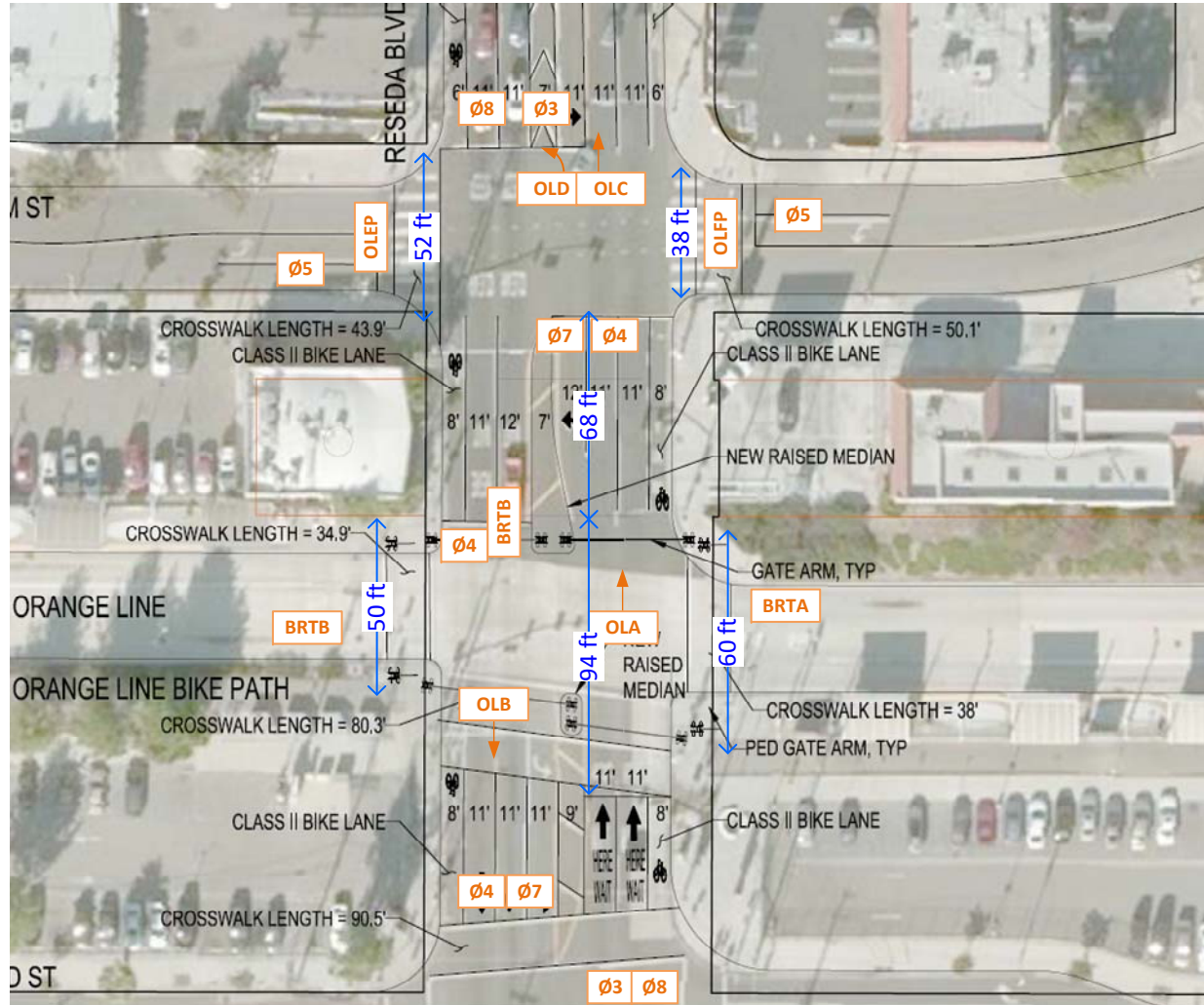
Preempt Inputs									
Inputs	1	2	3	4	5	6	7	8	9
Detector Type	Checkin / Checkout	Checkin / Checkout	Presence	Presence	Presence	Presence	Presence	Presence	Presence
Presence			403	404	405	406	407	408	409
Check In	411	412							
▶ Check Out	421	422							

Pattern 1

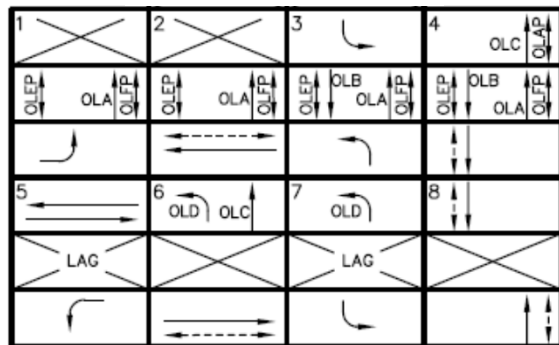
CycleLength 120

Global Values

Gate Concept Design



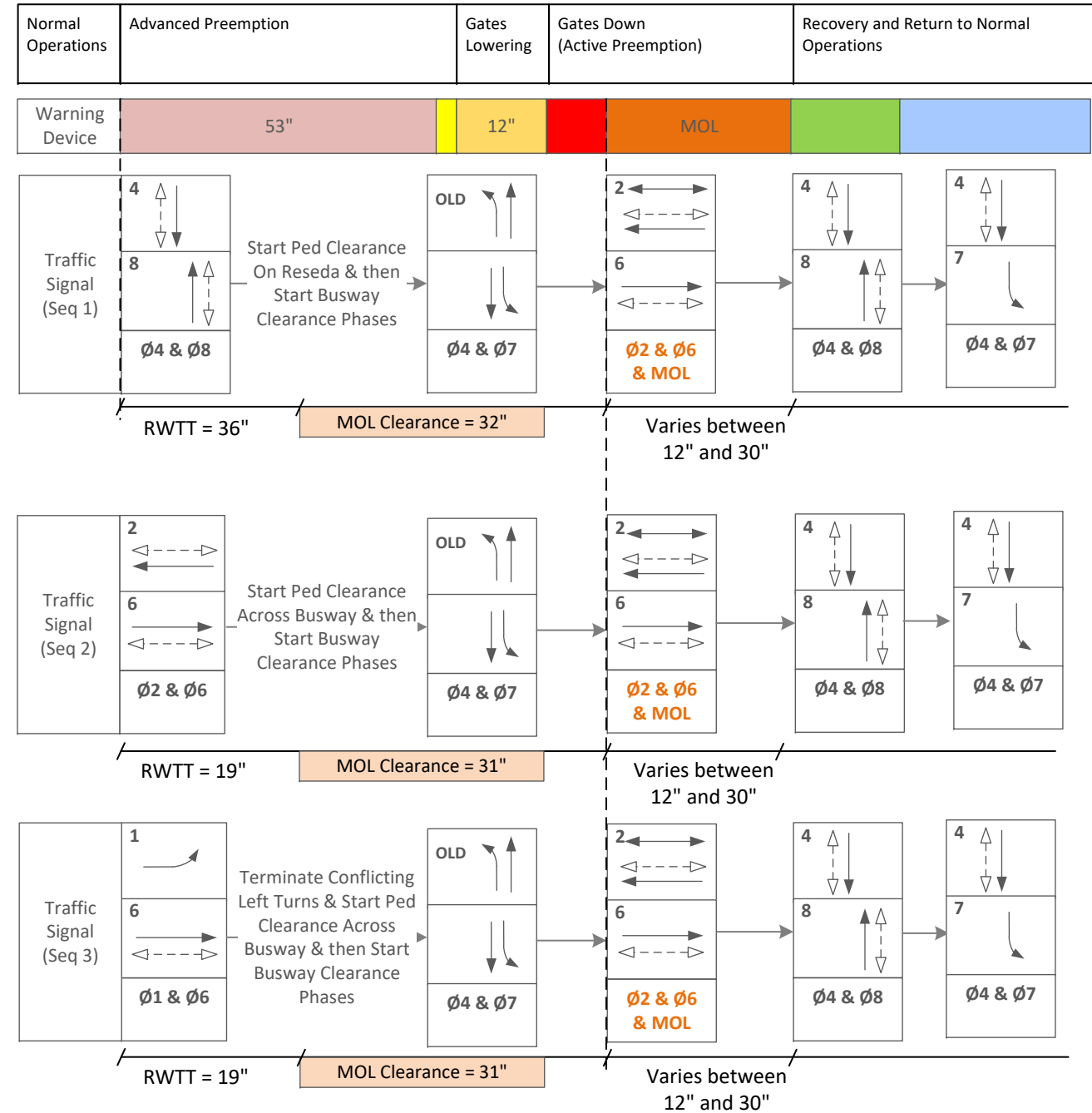
Future with Gates Phasing Diagram



- Ø1: Oxnard St E/B LT
- Ø2: Oxnard St W/B Through
- Ø3: Reseda S/B LT at Topham & N/B at Oxnard
- Ø5: Oxnard W/B LT & Bessemer W/B & Topham E/B
- Ø6: Oxnard E/B

- OLA: Ø1, Ø2, Ø3, and Ø4
- OLB: Ø1, Ø2, Ø3, and Ø4
- OLC: Ø4 & Ø6
- OLD: Ø6 & Ø7
- OLEP: Ø1, Ø2, Ø3, and Ø4
- OLFP: Ø1, Ø2, Ø3, and Ø4

Preemption Sequence



Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

LADOT Railroad Preemption Form

Revised 6/23/2008

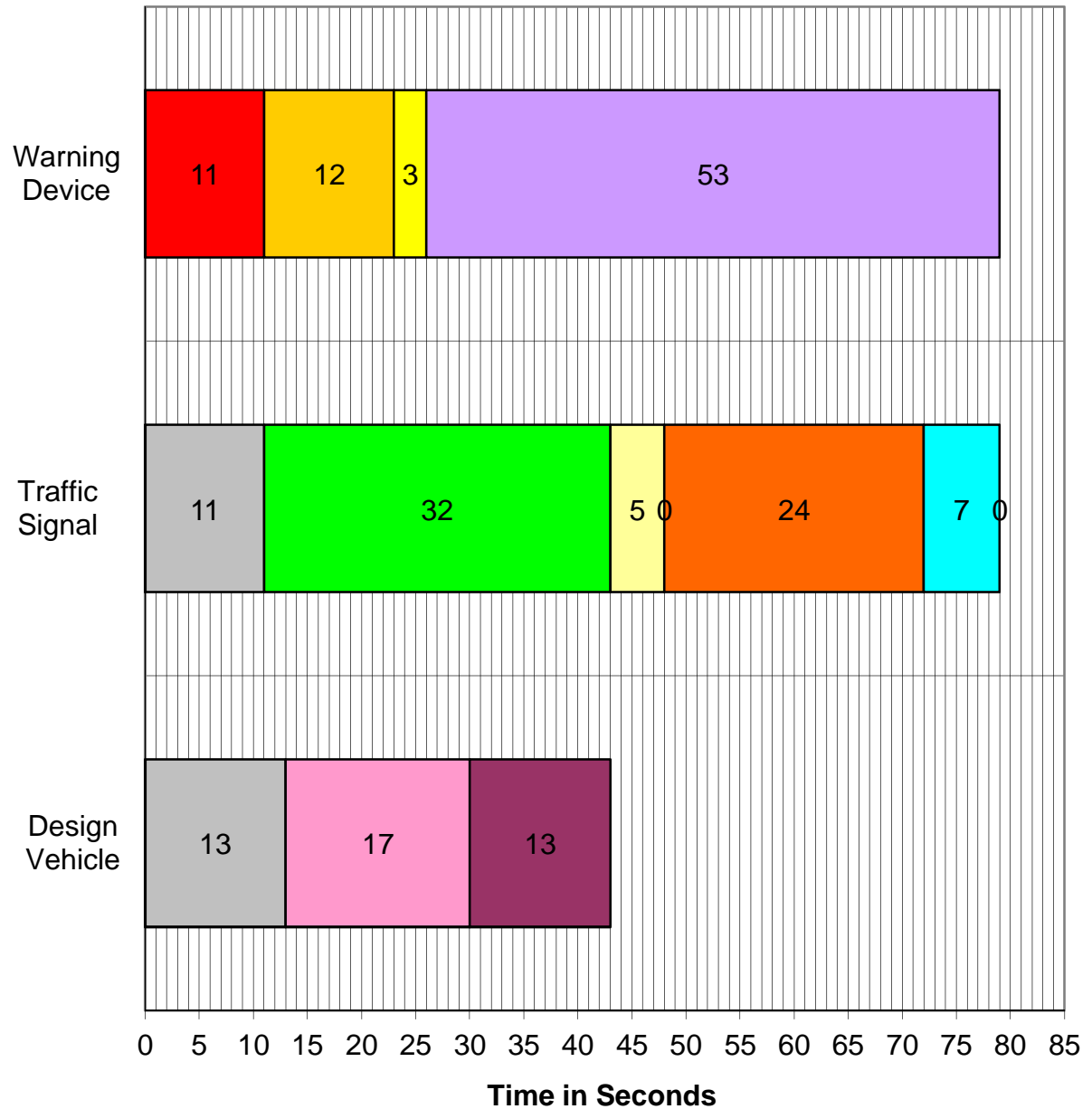
Street Name:	MOL@Reseda	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	94 ft	Grade	0.0 %		
Clear Storage Distance, CSD	68 ft				
Length, L	162 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	7	4	3	2	
Start moving last vehicle in L (sec)	12.7	8.3	8.0	10.0	13
Move front of vehicle thru L (sec)	8.8	9.8	8.1	17.6	18
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	7.1	8.4	7.3	17.4	17
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	32 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	30 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	24 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	36 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	79 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	6 sec	6 sec minimum			
Minimum Warning Time, MWT	26 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	26 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	53 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	84 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	5544 ft				

Street Name:

MOL@Reseda

Crossing No:

Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

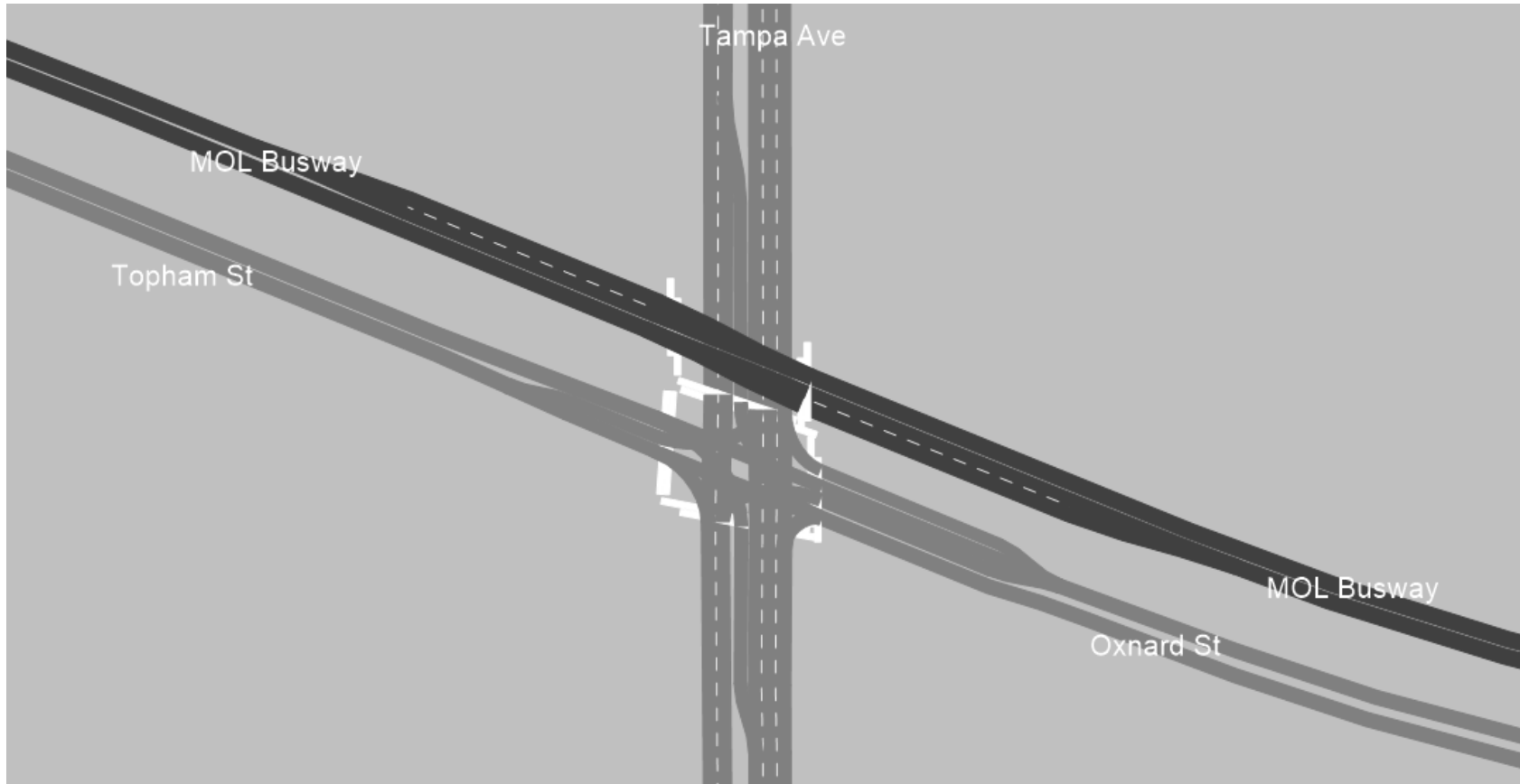
Preemption Timeline Displays Minimum RWTT?

27-1: Tampa/Topham

- Basic timing inputs:
 - Check minimum recall phase 4 & 8, not phase 2 & 6
 - Ped recall phase 4 & 8
- Preempt inputs:
 - Comment: need to reflect railroad preemption form worksheet.
- Preemption form
 - Include vehicle-gate interaction check – change to YES

VISSIM Signal Controller Inputs for Future 2025 Scenarios

Signal Location 2: Tampa/Topham



1) Basic Timing Inputs:

Ring Barrier Controller 01.70.04 (INT_045_Tamps&Topham&Busway.rbc)

File View Help Notes

- Base Timing
- Detectors
- SC Communication
- Preempts
- Transit Priority

Basic		1	2	3	4	6	7	8		
SG Number		1	2	3	4		6	7	8	
SG Name		EBL	WBT	NBL	SBT		EBT	SBL	NBT	
Min Green		5	10	5	10		10	5	10	
Veh Extension		2	4	2	3		4	2	4.6	
Max 1		5	43	10	43		43	8	43	
Yellow		3	3.9	3	3.9		3.9	3.9	3.9	
Red Clearance		1	2.1	1	1.1		2.1	1.1	1.1	
Ped SG Number			102		104		106		108	
Walk			7		7		7		7	
Ped Clear (FDW)			18		8		19		10	
Start Up		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Max Recall		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Recall		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soft Recall		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dual Entry		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2) Pattern Number and Sequence Inputs:

Ring Barrier Controller 01.70.04 (INT_045_Tamps&Topham&Busway.rbc)

File View Help Notes

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps
- Detectors
- SC Communication
- Preempts
- Transit Priority

Schedule	
Pattern Number	Pattern Start Time
1	0

Sequence					
▶ Ring 1	1	2	3	4	
Ring 2		6	7	8	
Ring 3					
Ring 4					

3) Pattern (Coordination Plan) Timing Inputs:

Ring Barrier Controller 01.70.04 (INT_045_Tamps&Topham&Busway.rbc)

File View Help Notes Frequency 10

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern 1
 - Pattern 2
 - Pattern 3
 - Pattern 4
 - Pattern 5
 - Pattern 6
 - Pattern 7
 - Pattern 8
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps
 - Detectors
 - SC Communication
 - Preempts
 - Transit Priority

Pattern 1

CycleLength 120

Global Values

Signal Group:	1	2	3	4	6	7	8
Splits	14	41	13	52	55	10	55
Splits Extension							
Floating Green							
Perm Min Green							
Min Green	5	10	5	10	10	5	10
Alternate Max							
Veh Extension	2	4	2	3	4	2	4.6
Transition Min							
Transition Max	16	49	15	62	66	12	66
Force Off							
Permissive Start							
Permissive End							
Max 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floating Force Off	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coordinated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Walk Rest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Veh Omit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Omit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Legend for Timing Diagram:

- 01 14sec EBL
- 02 41sec WBT
- 03 13sec NBL
- 04 52sec SBT
- 06 55sec EBT
- 08 55sec NBT
- 07 10s SBL

4) Overlap Inputs:

Ring Barrier Controller 01.70.04 (INT_045_Tamps&Topham&Busway.rbc)

File View Help Notes

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern 1
 - Pattern 2
 - Pattern 3
 - Pattern 4
 - Pattern 5
 - Pattern 6
 - Pattern 7
 - Pattern 8
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps**
 - Detectors
 - SC Communication
 - Preempts
 - Transit Priority

6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overlaps

	13	14	15	16	17	18
Overlap SG						
Delay Green						
Trail Green		3.9		5	5	
Yellow Clearance	3.9	3.9	3.9	3.9	3.9	5
Red Clearance	1.1	0.2	0.1	0.2	0.2	3
Parent	2,7	1,2,3,4	4	4	7	1,2,3,4
Negative Green						
Delay Enable						
Trail Enable	2,7	1,2,3,4	4	4	7	1,2,3,4
Negative Vehicle						
Negative Overlap						

Pattern 1 +

CycleLength **120** ↕

Global Values +



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5) Detector Inputs:

Ring Barrier Controller 01.70.04 (INT_045_Tamps&Topham&Busway.rbc) Frequency 10

File View Help Notes

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern 1
 - Pattern 2
 - Pattern 3
 - Pattern 4
 - Pattern 5
 - Pattern 6
 - Pattern 7
 - Pattern 8
 - Pattern Schedule
 - Sequence
 - Conflict SGs
- Overlaps
- Detectors
 - Vehicle
 - Pedestrian
 - Queue
- SC Communication
- Preempts
- Transit Priority

Negative Vehicle																	
Negative Overlap																	

Veh Detectors

Detector Number	1	2	3	4	6	7	8	
Delay								
Extend								
Carry Over								
Queue Limit								
Detector Mode	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Di
Added Initial Mode	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Dis
Call	1	2	3	4	6	7	8	
Yellow Lock								
Red Lock								
Extend SGs	1	2	3	4	6	7	8	
XSwitch SGs								

Ped Detectors

Detector Number	102	104	106	108				
Call Peds	102	104	106	108				

Queue Detection

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	1
Veh. Detector Num.	11	12													
Delay On															
Delay Off	33	33													
Control	None	None	None	None	None	None	None	None	None	None	None	None	None	None	No
Action	Preempt	Preempt	None	None	None	None	None	None	None	None	None	None	None	None	No
Action Index	Preempt 1	Preempt 2													

Pattern 1

CycleLength **120**

6) Preempt Inputs:

Ring Barrier Controller 01.70.04 (INT_045_Tamps&Topham&Busway.rbc)

File View Help Notes Frequency

- Base Timing
- Detectors
- SC Communication
- Preempts
- Transit Priority

Preempts				
Preempt Number	1	2	3	4
Enabled	Yes	Yes	No	No
Exit Mode	Normal	Normal	Normal	Normal
Change SG Next	No	No	No	No
Enable SGs				
Preempt Inputs	1	2		
Start Green	10	10		
Start Walk				
Start Ped Clr				

Preempt Number				
Preempt Number	1	2	3	4
Zero SG Walk				
Zero SG Ped Clr				
Zero SG Green	1,8	1,8		
Zero Ovl Green				
Reservice Inh. Same				
Reservice Inh. All				
Service Priority				

Track Clearance 1				
Preempt Number	1	2	3	4
Track Clearance 1	10	10		
TC1 Veh SGs	4,7	4,7		
TC1 Ped SGs				
TC1 Ovl SGs	15,16,17	15,16,17		

Track Clearance 2				
Preempt Number	1	2	3	4
Track Clearance 2				
TC2 Veh SGs				
TC2 Ped SGs				
TC2 Ovl SGs				

Dwell				
Preempt Number	1	2	3	4
Dwell Veh SGs	2,3,6	2,3,6		
Dwell Ped SGs	102,106	102,106		
Dwell Ovl SGs				

Exit				
Preempt Number	1	2	3	4
Exit Veh SGs	4,7	3,8		
Exit Ped SGs	104	108		

Preempt Inputs									
Inputs	1	2	3	4	5	6	7	8	
Detector Type	Checkin / Checkout	Checkin / Checkout	Presence	Presence	Presence	Presence	Presence	Presence	Pre
Presence			403	404	405	406	407	408	
Check In	411	412							
Check Out	421	422							

Pattern 1

CycleLength 120

Global Values

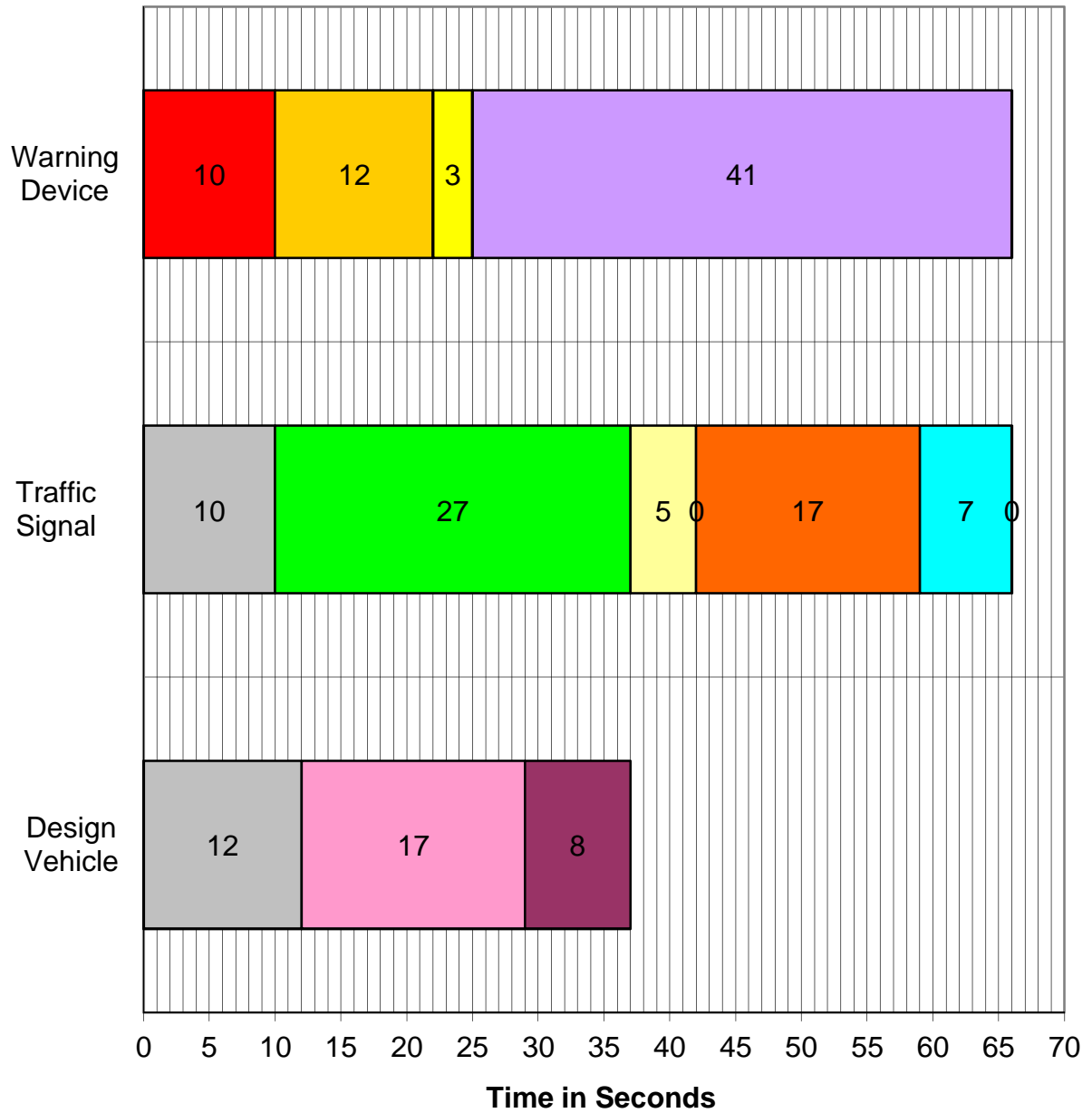
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Tampa	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	85 ft	Grade	0.0 %		
Clear Storage Distance, CSD	8 ft				
Length, L	93 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	4	2	2	1	
Start moving last vehicle in L (sec)	8.3	5.4	6.2	7.0	8
Move front of vehicle thru L (sec)	6.5	7.2	6.0	13.2	13
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	6.8	8.1	7.1	16.9	17
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	27 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	25 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	17 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	29 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	66 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	5 sec	5 sec minimum			
Minimum Warning Time, MWT	25 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	25 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	41 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	71 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4686 ft				

Street Name:	MOL@Tampa	Crossing No:	
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Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

2) Pattern Number and Sequence Inputs:

Ring Barrier Controller 01.70.04 (INT_050_Victory&DeSoto&Busway.rbc)

File View Help Notes

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps
- Detectors
- SC Communication
- Preempts
- Transit Priority

Schedule

Pattern Number	Pattern Start Time
1	0

Sequence

▶ Ring 1	1	2		3	4	
Ring 2	5	6		7	8	
Ring 3						
Ring 4						

3) Pattern (Coordination Plan) Timing Inputs:

Ring Barrier Controller 01.70.04 (INT_050_Victory&DeSoto&Busway.rbc)

File View Help Notes Frequency 10

Base Timing

- Timing by SG
- Patterns / Coordination
 - Pattern 1
 - Pattern 2
 - Pattern 3
 - Pattern 4
 - Pattern 5
 - Pattern 6
 - Pattern 7
 - Pattern 8
- Pattern Schedule
- Sequence
- Conflict SGs
- Overlaps
- Detectors
- SC Communication
- Preempts
- Transit Priority

Pattern 1

Signal Group:	1	2	3	4	5	6	7	8
Splits	16	50	12	42	16	50	8	46
Splits Extension								
Floating Green								
Perm Min Green								
Min Green	5	10	5	10	5	10	2	10
Alternate Max								
Veh Extension	2	4.5	3	3.5	2	4.5	3	4
Transition Min								
Transition Max	19	60	14	50	19	60	9	55
Force Off								
Permissive Start								
Permissive End								
Max 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floating Force Off	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coordinated	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Walk Rest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Veh Omit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Omit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Inhibit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pattern 1 CycleLength 120 Global Values

Timing diagram showing signal phases: WBT (01 50sec), EBL (01 16sec), NBL (03 12sec), SBT (04 42sec), WBL (05 16sec), EBT (06 50sec), NBT (08 46sec), and SI (07 8sec).

4) Overlap Inputs:

Ring Barrier Controller 01.70.04 (INT_050_Victory&DeSoto&Busway.rbc)

File View Help Notes

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern 1
 - Pattern 2
 - Pattern 3
 - Pattern 4
 - Pattern 5
 - Pattern 6
 - Pattern 7
 - Pattern 8
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps**
 - Detectors
 - SC Communication
 - Preempts
 - Transit Priority

4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>									
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Overlaps

Overlap SG	13	14	15	16	17	18				
Delay Green										
Trail Green		4.3		5	5					
Yellow Clearance	4.3	4.3	4.3	4.3	4.3	9				
Red Clearance		0.4		0.4	0.4	3				
Parent	2.7	1,2,3,4	3,4	4	7	1,2,3,4				
Negative Green										
Delay Enable										
Trail Enable		1,2,3,4		4	7					
Negative Vehicle										
Negative Overlap										

Pattern 1

CycleLength 120

Global Values



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5) Detector Inputs:

Ring Barrier Controller 01.70.04 (INT_050_Victory&DeSoto&Busway.rbc)

File View Help Notes Frequency 10

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern 1
 - Pattern 2
 - Pattern 3
 - Pattern 4
 - Pattern 5
 - Pattern 6
 - Pattern 7
 - Pattern 8
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps
- Detectors
 - Vehicle
 - Pedestrian
 - Queue
- SC Communication
- Preempts
- Transit Priority

Red Clearance	0.4	0.4	0.4	3													
Parent	2,7	1,2,3,4	3,4	4	7	1,2,3,4											
Negative Green																	
Delay Enable																	
Trail Enable		1,2,3,4		4	7												
Negative Vehicle																	
Negative Overlap																	

Veh Detectors

Detector Number	1	2	3	4	5	6	7	8
Delay								
Extend								
Carry Over								
Queue Limit								
Detector Mode	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect
Added Initial Mode	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Call	1	2	3	4	5	6	7	8
Yellow Lock								
Red Lock								
Extend SGs	1	2	3	4	5	6	7	8
XSwitch SGs								

Ped Detectors

Detector Number	102	104	106	108				
Call Peds	102	104	106	108				

Queue Detection

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh. Detector Num.	11	13														
Delay On																
Delay Off	40	43														
Control	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
Action	Preempt	Preempt	None	None	None	None	None	None	None	None	None	None	None	None	None	None
Action Index	Preempt 1	Preempt 2														

Pattern 1

CycleLength 120

Global Values

6) Preempt Inputs:

Ring Barrier Controller 01.70.04 (INT_050_Victory&DeSoto&Busway.rbc)

File View Help Notes Frequency

- Base Timing
- Detectors
- SC Communication
- Preempts
- Transit Priority

Preempt Number	1	2	3	4
Enabled	Yes	Yes	No	No
Exit Mode	Normal	Normal	Normal	Normal
Change SG Next	No	No	No	No
Enable SGs				
Preempt Inputs	1	2		
Start Green	10	10		
Start Walk				
Start Ped Clr				

Preempt Number	1	2	3	4
Zero SG Walk				
Zero SG Ped Clr				
Zero SG Green	1.8	1.8		
Zero Dvl Green				
Reservice Inh. Same				
Reservice Inh. All				
Service Priority				

Preempt Number	1	2	3	4
Track Clearance 1	14	14		
TC1 Veh SGs				
TC1 Ped SGs				
TC1 Dvl SGs	16,17	16,17		

Preempt Number	1	2	3	4
Track Clearance 2				
TC2 Veh SGs				
TC2 Ped SGs				
TC2 Dvl SGs				

Preempt Number	1	2	3	4
Dwell Veh SGs	2,3,5,6	2,3,5,6		
Dwell Ped SGs	102,106	102,106		
Dwell Dvl SGs				

Preempt Number	1	2	3	4
Exit Veh SGs	4,7	3,8		
Exit Ped SGs	104	108		

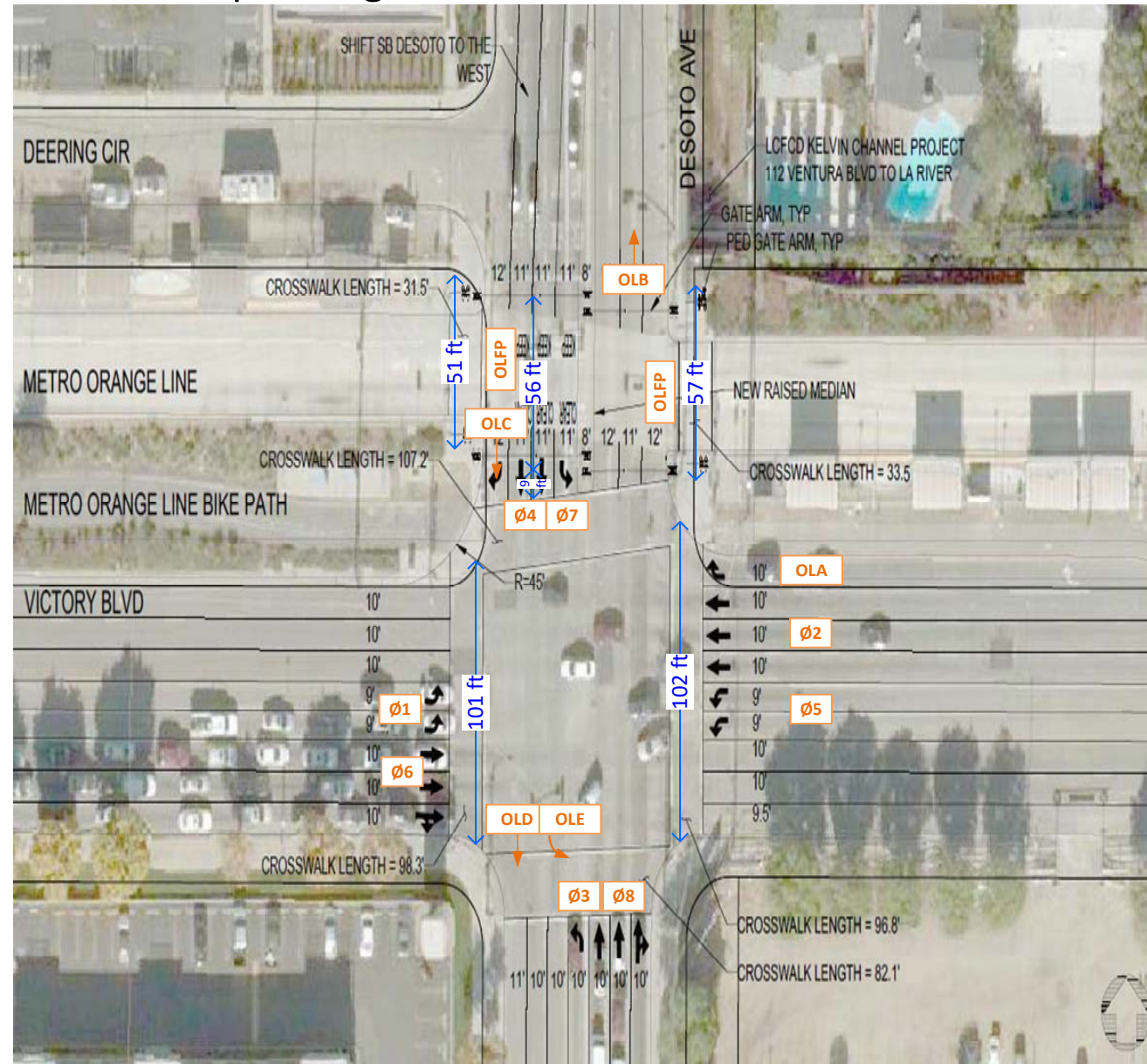
Inputs	1	2	3	4	5	6	7	8
Detector Type	Checkin / Checkout	Checkin / Checkout	Presence	Presence	Presence	Presence	Presence	Presence
Presence			403	404	405	406	407	408
Check In	411	412						
Check Out	421	422						

Pattern 1

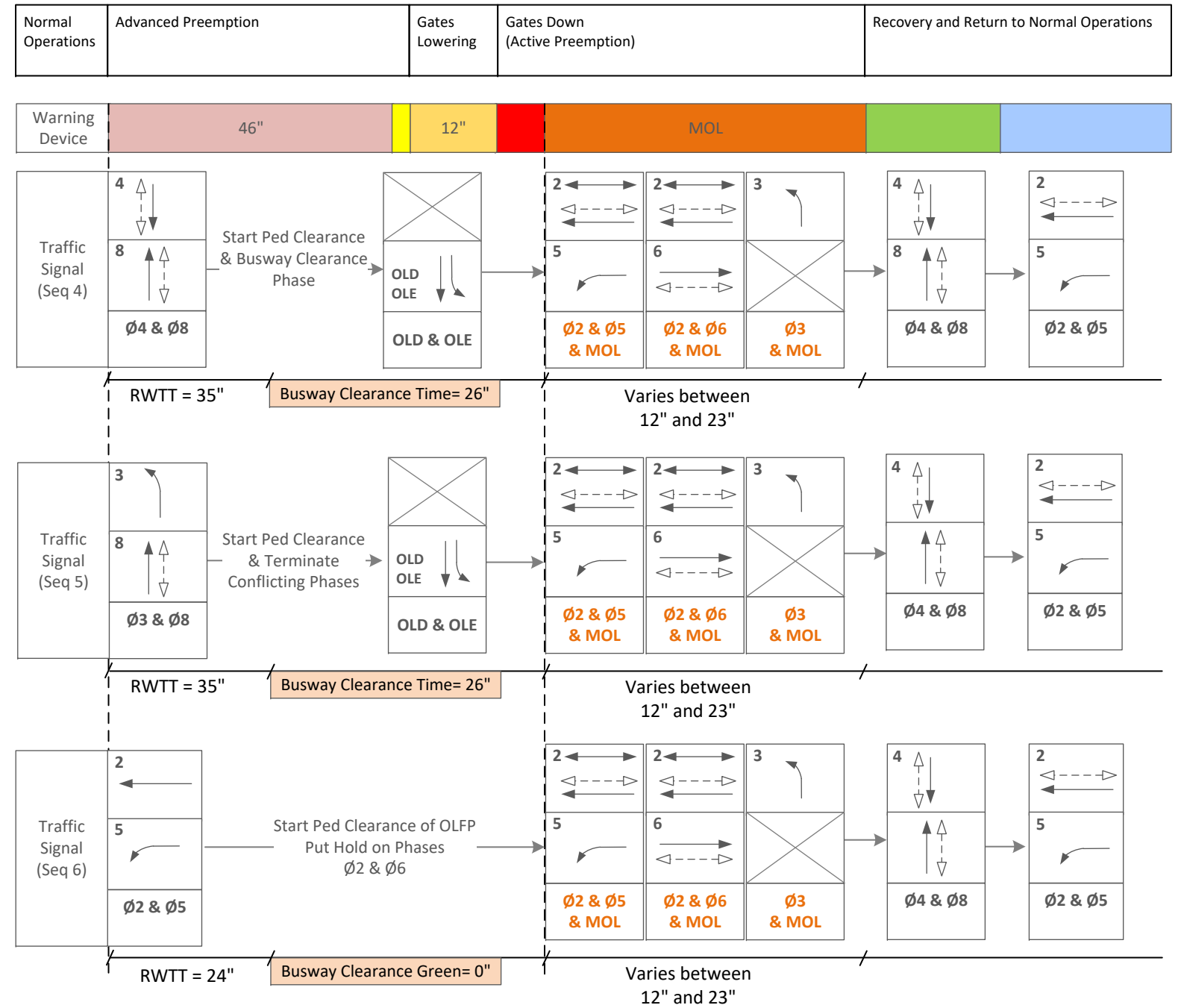
CycleLength 120

Global Values

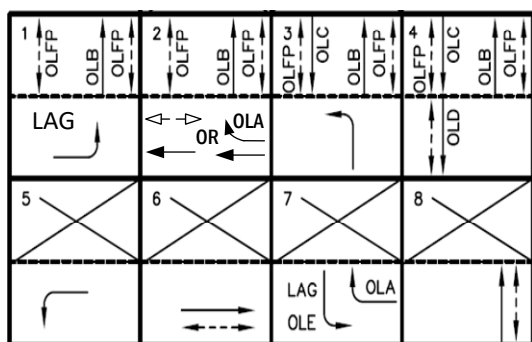
Gate Concept Design



Preemption Sequence



Future with Gates Phasing Diagram



OLA: $\phi 2$ & $\phi 7$
 OLB: $\phi 1$, $\phi 2$, $\phi 3$, and $\phi 4$
 OLC: $\phi 3$ & $\phi 4$
 OLD: $\phi 4$
 OLE: $\phi 7$
 OLF: $\phi 1$, $\phi 2$, $\phi 3$, and $\phi 4$
 Update controller setting to call preemption

Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

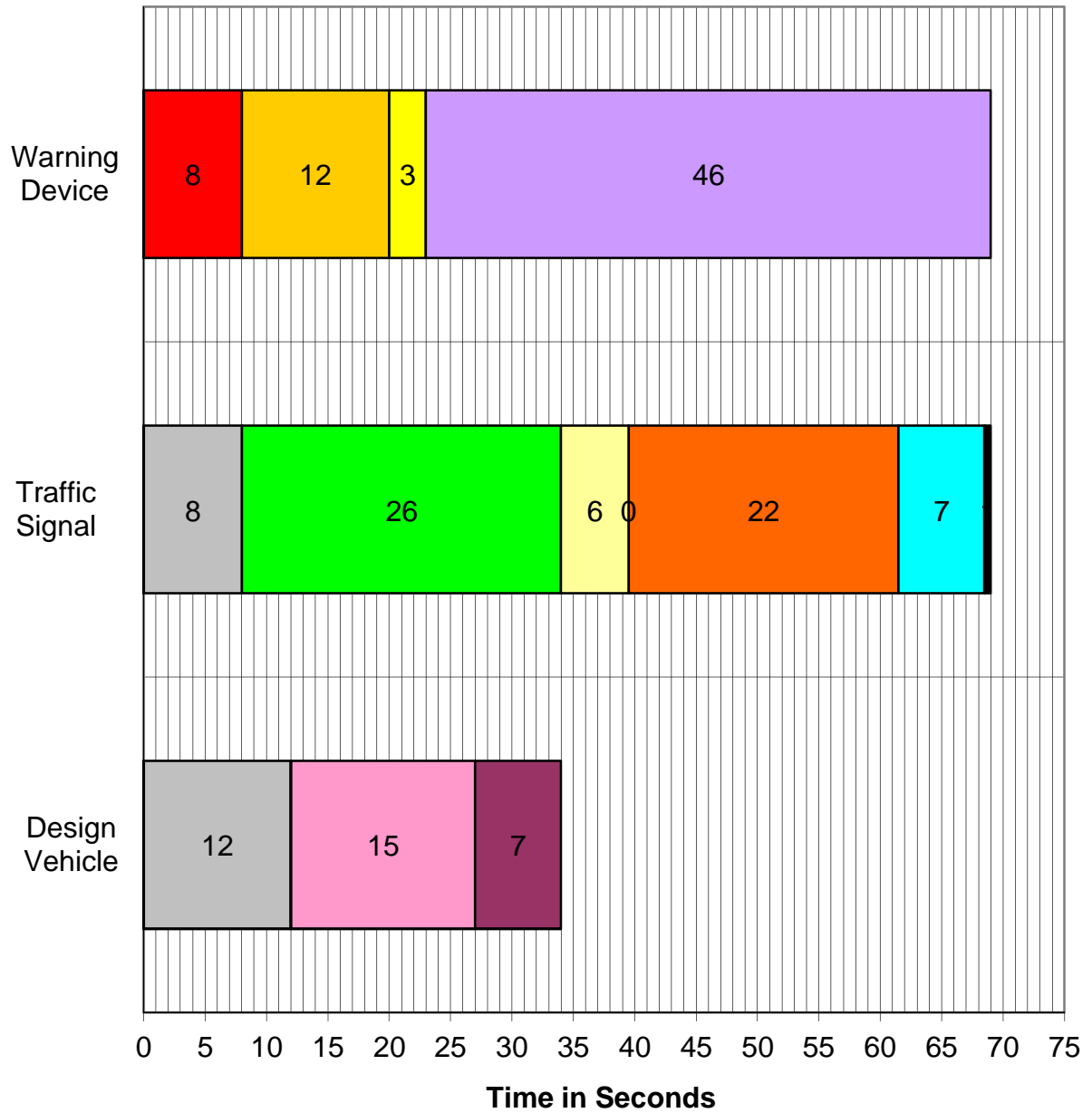
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@DeSoto	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	56 ft	Grade	0.0 %		
Clear Storage Distance, CSD	9 ft				
Length, L	65 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	3	1	1	0	
Start moving last vehicle in L (sec)	6.8	3.9	4.5	4.0	7
Move front of vehicle thru L (sec)	5.4	5.9	5.0	11.0	11
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	5.6	6.9	6.1	15.1	15
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	26 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	22 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	22 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.5 sec				
Maximum RWTT	35 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	69 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	3 sec	<i>3 sec minimum</i>			
Minimum Warning Time, MWT	23 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	23 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	46 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	74 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4884 ft				

Street Name:	MOL@DeSoto	Crossing No:	
--------------	------------	--------------	--

Preemption Timeline



- | | | | |
|-----------------|---------------------|--------------------|----------------------|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

34-1: Canoga/Sherman Way

- Basic timing inputs:
 - Check minimum recall phase 4 & 8, not phase 2 & 6
- Pattern (coordination plan)
 - Phase 5 NBL is a lag phase
 - Phase 1 & 5 are restricted and cannot be served simultaneously
- Preempt inputs:
 - Comment: need to reflect railroad preemption form worksheet.
- Preemption form
 - Include vehicle-gate interaction check – change to YES



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VISSIM Signal Controller Inputs for Future 2025 Scenarios

Signal Location 5: Canoga/Sherman Way

1) Basic Timing Inputs:

Ring Barrier Controller 01.70.04 (INT_057_Canoga&ShermanWay&Busway.rbc)

File View Help Notes

- Base Timing
- Detectors
- SC Communication
- Preempts
- Transit Priority

Basic	1	2	3	4	5	6	7	8		
SG Number	1	2	3	4	5	6	7	8		
SG Name	SBL	NBT	EBL	WBT	NBL	SBT	WBL	EBT		
Min Green	10	10	10	10	10	10	5	10		
Veh Extension	3	4.9	3	4.9	3	4.9	3	4.9		
Max 1	14	45	10	32	14	45	7	35		
Yellow	3	3.9	3	3.9	3.2	3.9	3.9	3.9		
Red Clearance	1	1.1	1	1.1	1.8	1.1	1.1	1.1		
Ped SG Number		102		104		106		108		
Walk		7		7		7		7		
Ped Clear (FDW)		15		12		16		15		
Start Up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soft Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dual Entry	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2) Pattern Number and Sequence Inputs:

Ring Barrier Controller 01.70.04 (INT_057_Canoga&ShermanWay&Busway.rbc)

File View Help Notes

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps
- Detectors
- SC Communication
- Preempts
- Transit Priority

Schedule

Pattern Number	Pattern Start Time
1	0

Sequence

▶ Ring 1	1	2		3	4	
Ring 2	5	6		7	8	
Ring 3						
Ring 4						



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3) Pattern (Coordination Plan) Timing Inputs:

Ring Barrier Controller 01.70.04 (INT_057_Canoga&ShermanWay&Busway.rbc)

File View Help Notes Frequency 10

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern 1
 - Pattern 2
 - Pattern 3
 - Pattern 4
 - Pattern 5
 - Pattern 6
 - Pattern 7
 - Pattern 8
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps
 - Detectors
 - SC Communication
 - Preempts
 - Transit Priority

Pattern 1

CycleLength 120

Global Values

Signal Group:	1	2	3	4	5	6	7	8
Splits	14	44	14	47	20	38	15	47
Splits Extension								
Floating Green								
Perm Min Green								
Min Green	10	10	10	10	10	10	5	10
Alternate Max								
Veh Extension	3	4.9	3	4.9	3	4.9	3	4.9
Transition Min								
Transition Max	16	52	16	56	24	45	18	56
Force Off								
Permissive Start								
Permissive End								
Max 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floating Force Off	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coordinated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Walk Rest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Veh Omit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Omit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Inhibit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lead	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CNA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Veh-Ped Permissive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

01 14sec SBL

02 44sec NBT

03 14sec EBL

04 47sec WBT

05 20sec NBL

06 38sec SBT

07 15sec WBL

08 47sec EBT

09 22sec

10 19sec

11 22sec

12 22sec



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5) Detector Inputs:

Ring Barrier Controller 01.70.04 (INT_057_Canoga&ShermanWay&Busway.rbc)

File View Help
Notes
Frequency 10

- Base Timing
 - Timing by SG
 - Patterns / Coordination
 - Pattern 1
 - Pattern 2
 - Pattern 3
 - Pattern 4
 - Pattern 5
 - Pattern 6
 - Pattern 7
 - Pattern 8
 - Pattern Schedule
 - Sequence
 - Conflict SGs
- Overlaps
- Detectors
 - Vehicle
 - Pedestrian
 - Queue
- SC Communication
- Preempts
- Transit Priority

Negative Vehicle																				
Negative Overlap																				
Veh Detectors																				
Detector Number	1	2	3	4	5	6	7	8		10	11									
Delay																				
Extend																				
Canv Over																				
Queue Limit																				
Detector Mode	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect	No Disconnect
Added Initial Mode	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Call	1	2	3	4	5	6	7	8												
Yellow Lock																				
Red Lock																				
Extend SGs	1	2	3	4	5	6	7	8												
XSwitch SGs																				
Ped Detectors																				
Detector Number	102	104	106	108	110															
Call Peds	102	104	106	108																
Queue Detection																				
Veh. Detector Num.	11	12																		
Delay On																				
Delay Off	39	35																		
Control	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
Action	Preempt	Preempt	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
Action Index	Preempt 1	Preempt 2																		

Pattern 1	
CycleLength	120
Global Values	

6) Preempt Inputs:

Ring Barrier Controller 01.70.04 (INT_057_Canoga&ShermanWay&Busway.rbc)

File View Help Notes

- Base Timing
- Detectors
- SC Communication
- Preempts
- Transit Priority

Preempts

Preempt Number	1	2	3	4
Enabled	Yes	Yes	No	No
Exit Mode	Normal	Normal	Normal	Normal
Change SG Next	No	No	No	No
Enable SGs				
Preempt Inputs	1	2		
Start Green	40	10		
Start Walk				
Start Ped Clr				

Preempt Number	1	2	3	4
Zero SG Walk				
Zero SG Ped Clr				
Zero SG Green	1	1		
Zero Ovl Green				
Reservice Inh. Same				
Reservice Inh. All				
Service Priority				

Track Clearance 1

Preempt Number	1	2	3	4
Track Clearance 1	17	17		
TC1 Veh SGs	4,7	4,7		
TC1 Ped SGs				
TC1 Ovl SGs	16,17	16,17		

Track Clearance 2

Preempt Number	1	2	3	4
Track Clearance 2				
TC2 Veh SGs				
TC2 Ped SGs				
TC2 Ovl SGs				

Dwell

Preempt Number	1	2	3	4
Dwell Veh SGs	2,5,6	2,5,6		
Dwell Ped SGs	102,106	102,106		
Dwell Ovl SGs				

Exit

Preempt Number	1	2	3	4
Exit Veh SGs	3,8	3,8		
Exit Ped SGs	108	108		

Preempt Inputs

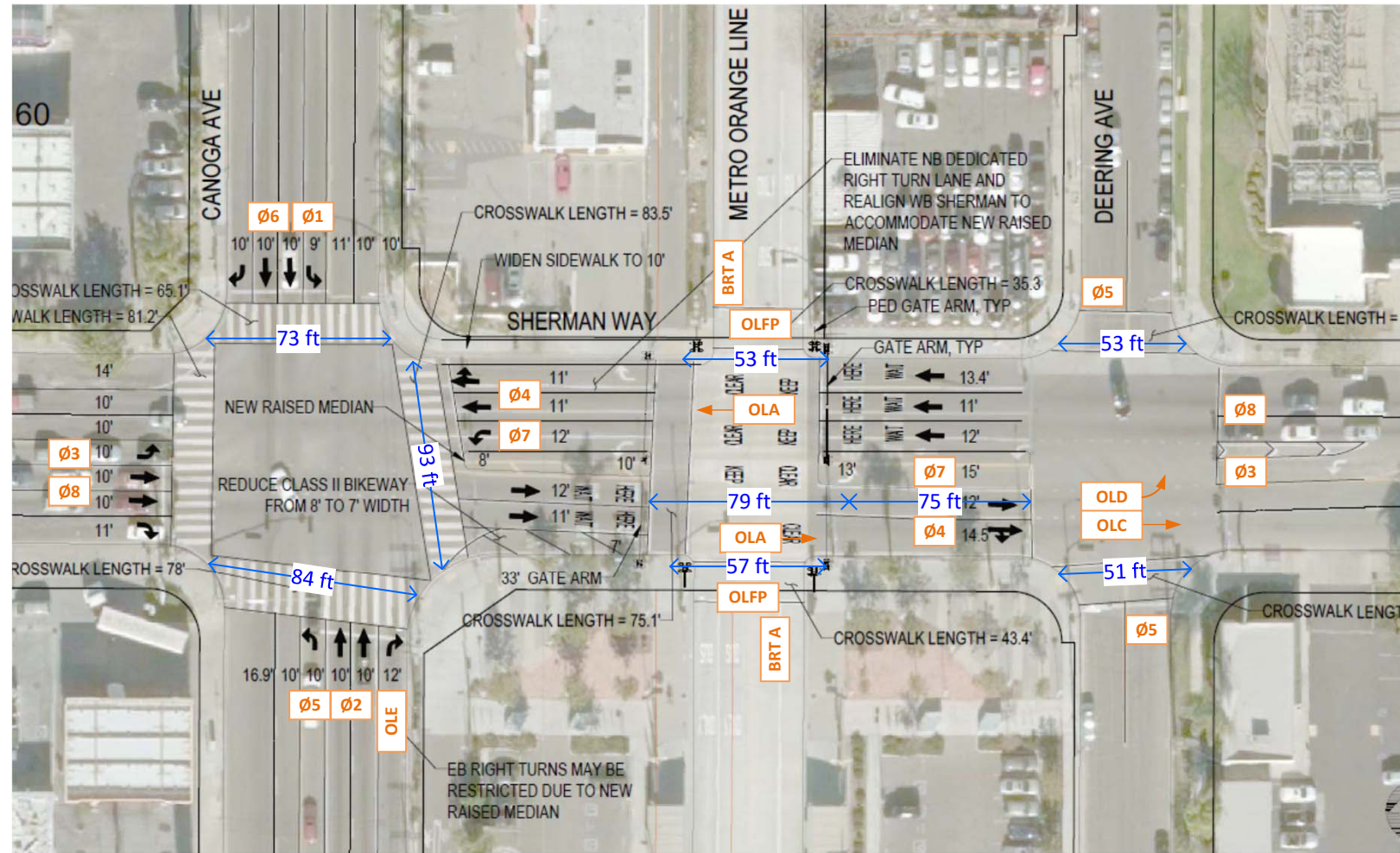
Inputs	1	2	3	4	5	6	7	8	9	10
Detector Type	Checkin / Checkout	Checkin / Checkout	Presence	Presence	Presence	Presence	Presence	Presence	Presence	Presence
Presence			403	404	405	406	407	408	409	410
Check In	411	412								

Pattern 1

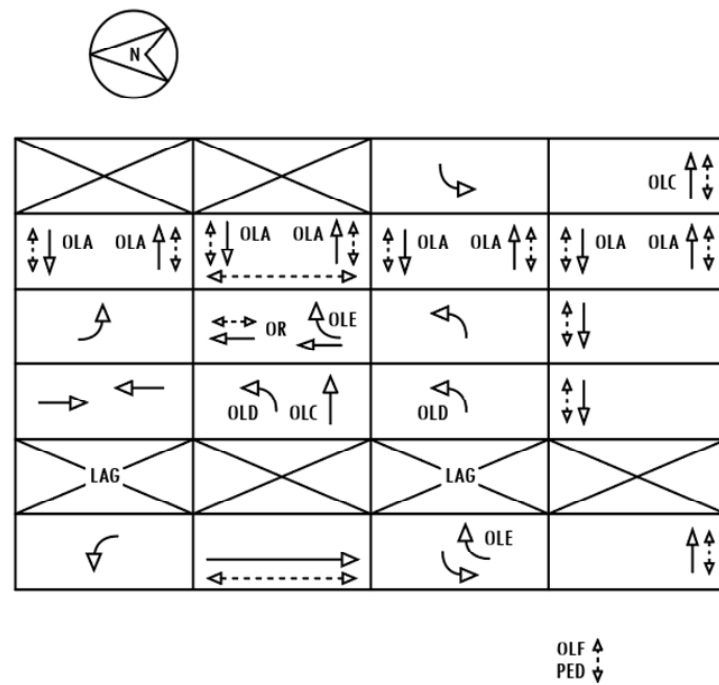
CycleLength 120

Global Values

Gate Concept Design

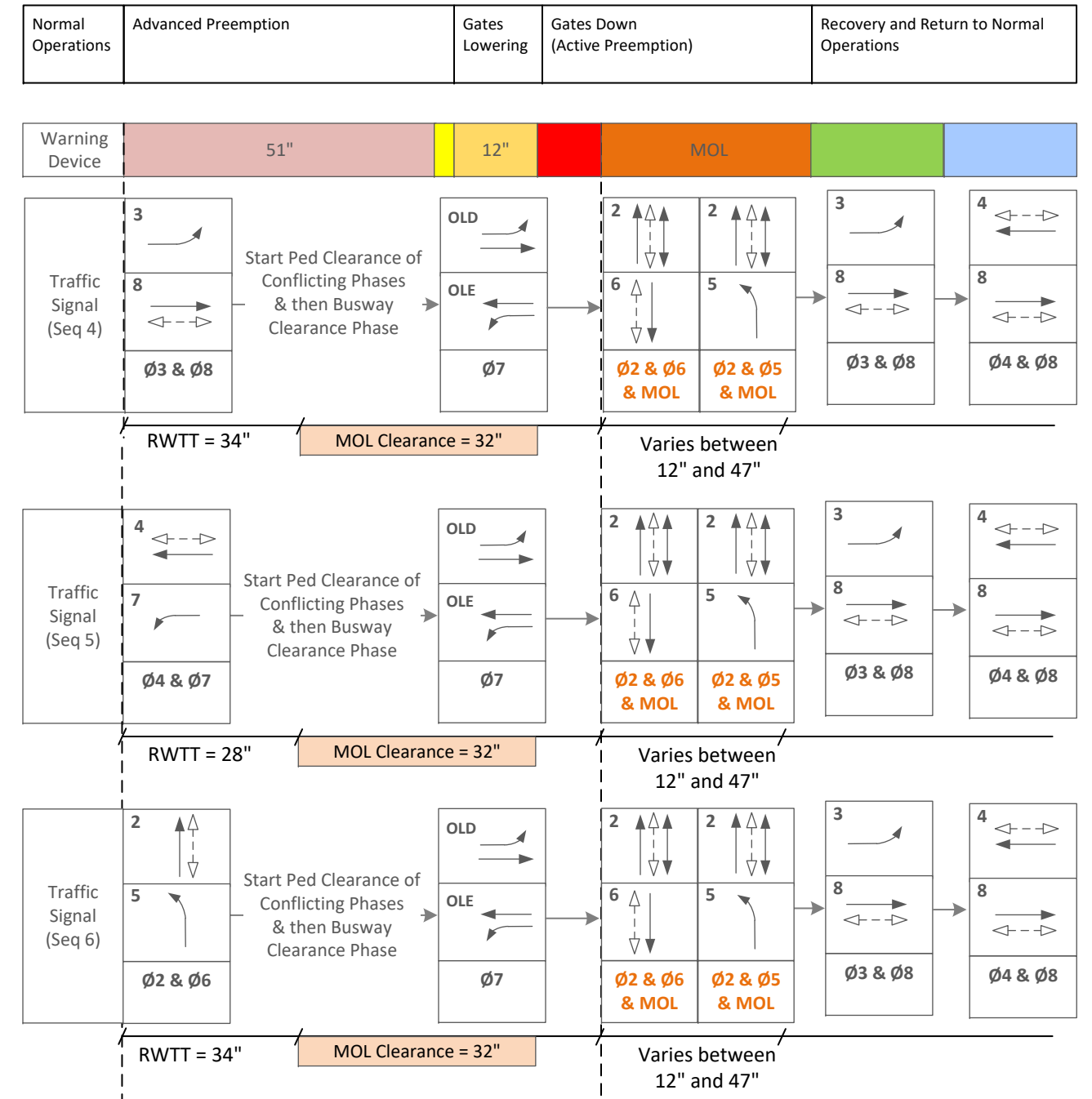


Future with Gates Phasing Diagram



OLA: $\emptyset 1, \emptyset 2, \emptyset 3,$ and $\emptyset 4$
 OLC: $\emptyset 4$ & $\emptyset 6$
 OLD: $\emptyset 6$ & $\emptyset 7$
 OLE: $\emptyset 2$ & $\emptyset 7$
 OLF: $\emptyset 1, \emptyset 2, \emptyset 3,$ and $\emptyset 4$
 Update controller setting to call preemption

Preemption Sequence



Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

Metro Orange Line Grade Crossing
 Four Quadrant Gate System Phasing Schematics

Figure 29B
 Sherman Way and Canoga Avenue

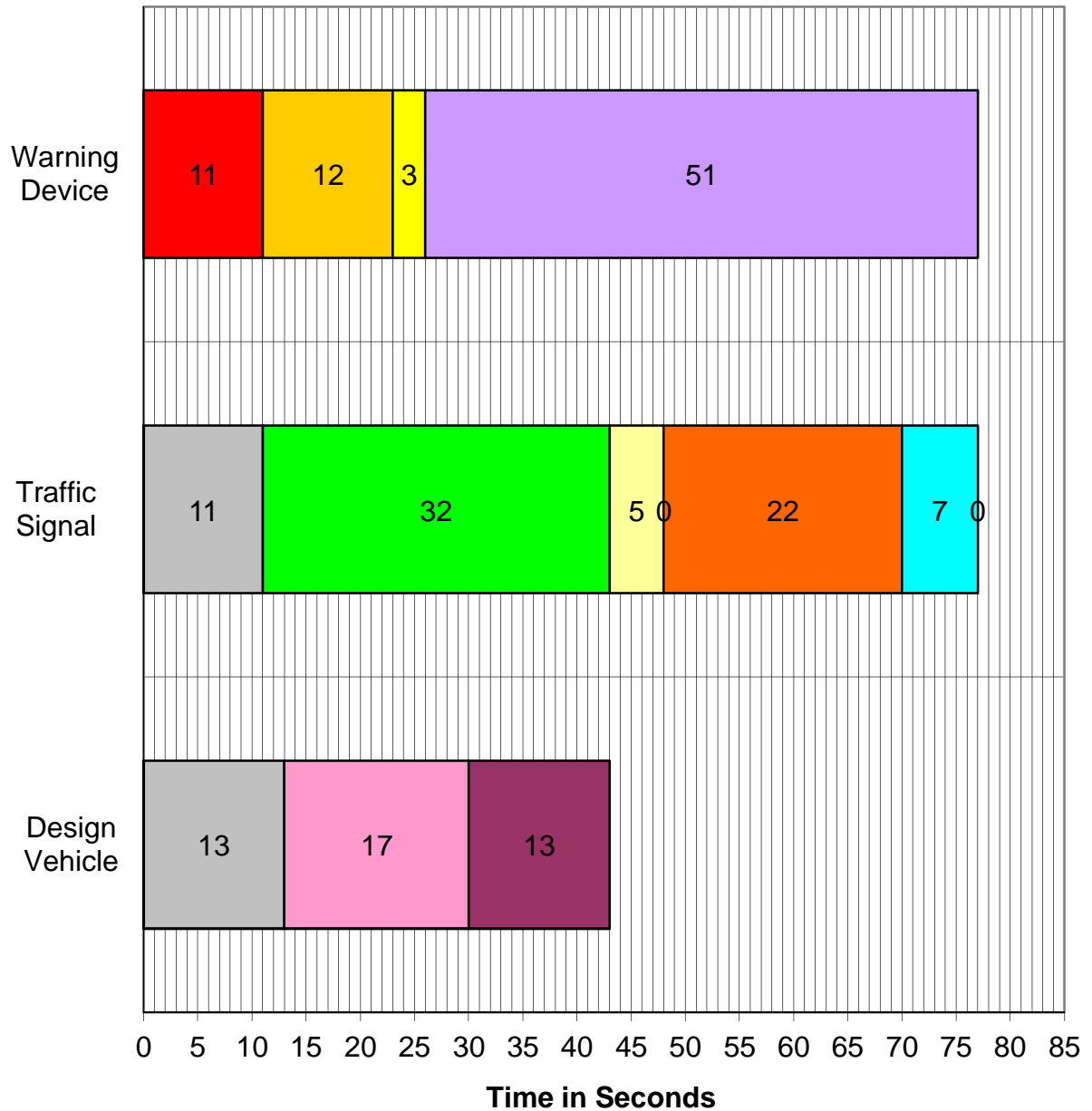
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Sherman Way	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	92 ft	Grade	0.0 %		
Clear Storage Distance, CSD	75 ft				
Length, L	167 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	7	4	3	2	
Start moving last vehicle in L (sec)	12.7	8.3	8.0	10.0	13
Move front of vehicle thru L (sec)	9.0	9.9	8.2	17.9	18
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	7.0	8.4	7.3	17.3	17
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	32 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	30 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	22 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	34 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	77 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	6 sec	6 sec minimum			
Minimum Warning Time, MWT	26 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	26 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	51 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	82 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	5412 ft				

Street Name:	MOL@Sherman Way	Crossing No:	
--------------	-----------------	--------------	--

Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

VISSIM Signal Controller Inputs for Future 2025 Scenarios

Signal Location 9: Chandler/Colfax

1) Basic Timing Inputs:

- i. Northbound and southbound lead-lag left-turn phasing
- ii. Eastbound and westbound lead-lag left-turn phasing

Ring Barrier Controller 01.70.04 (INT_003_Chandler&Colfax&Busway.rbc)

File View Help Notes Frequency 10

Base Timing
 Detectors
 SC Communication
 Preempts
 Transit Priority

SG Number	1	2	3	4	5	6	7	8										
SG Name	EBL	WBT	NBL	SBT	WBL	EBT	SBL	NBT										
Min Green	5	10	5	10	5	10	5	10										
Veh Extension	2	4.1	2	5.1	2	4.9	2	4.2										
Max 1	12	27	12	48	12	27	8	52										
Yellow	3.2	3.9	3.2	3.9	3.2	3.9	3.2	3.9										
Red Clearance	2.8	1.1	1.8	1.1	2.8	1.1	1.8	1.1										
Ped SG Number		102		104		106		108										
Walk		7		7		7		7										
Ped Clear (FDW)		11		14		11		14										
Start Up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soft Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dual Entry	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pattern 1

CycleLength 120

Global Values

Advanced

01 18sec EBL
 02 39sec WBT
 03 17sec NBL
 04 48sec SBT
 05 18sec WBL
 06 39sec EBT
 07 17sec SBL
 08 48sec NBT
 0106 18sec
 0102 18sec
 0104 21sec
 0108 21sec

Lock Diagram

Errors (0) Warnings (1) Messages (1)

OK Cancel



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2) Preempt Inputs:

Ring Barrier Controller 01.70.04 (INT_003_Chandler&Colfax&Busway.rbc)

File View Help Notes Frequency

- Base Timing
- Detectors
- SC Communication
- Preempts
 - Preempt
 - Track Clearance
 - Dwell / Exit
 - Preempt Inputs
- Transit Priority

Preempts

Preempt Number	1	2	3	4
Enabled	Yes	Yes	No	No
Exit Mode	Normal	Normal	Normal	Normal
Change SG Next	No	No	No	No
Enable SGs				
Preempt Inputs	1	2		
Start Green	10	10		
Start Walk				
Start Ped Clr				

Preempt Number

Preempt Number	1	2	3	4
Zero SG Walk				
Zero SG Ped Clr				
Zero SG Green	1	1		
Zero Ovl Green				
Reservice Inh. Same				
Reservice Inh. All				
Service Priority				

Track Clearance 1

Preempt Number	1	2	3	4
Track Clearance 1	9	9		
TC1 Veh SGs				
TC1 Ped SGs				
TC1 Ovl SGs	13,14,15,16	13,14,15,16		

Track Clearance 2

Preempt Number	1	2	3	4
Track Clearance 2				
TC2 Veh SGs				
TC2 Ped SGs				
TC2 Ovl SGs				

Dwell

Preempt Number	1	2	3	4
Dwell Veh SGs	2,6	2,6		
Dwell Ped SGs	102,106	102,106		
Dwell Ovl SGs				

Exit

Preempt Number	1	2	3	4
Exit Veh SGs	4,7	3,8		
Exit Ped SGs	104	108		

Preempt Inputs

Inputs	1	2	3	4	5	6	7	8	9	10
Detector Type	Checkin / Checkout	Checkin / Checkout	Presence	Presence	Presence	Presence	Presence	Presence	Presence	Presence
Presence			403	404	405	406	407	408	409	410
Check In	411	412								
Check Out	421	422								
Calling Point	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lateness	0	0	0	0	0	0	0	0	0	0
Delay Call Time										
Checkout Lim. Time										
Locked Call	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Pattern 1

CycleLength **120**

Global Values

VISSIM Signal Controller Inputs for Future 2025 Scenarios

Signal Location 10: Chandler/Coldwater Canyon

1) Basic Timing Inputs:

Northbound and southbound lead-lag left-turn phasing

Ring Barrier Controller 01.70.04 (INT_016_Chandler&Coldwater&Busway.rbc)

File View Help Notes Frequency 10

Pattern 1

Signal Group:	1	2	3	4	5	6	7	8
Splits	17	43	16	44	17	43	16	44
Splits Extension								
Floating Green								
Perm Min Green								
Min Green	5	10	5	10	5	10	5	10
Alternate Max								
Veh Extension	2	4.9	2	5.3	2	4.8	2	4.9
Transition Min								
Transition Max	20	51	19	52	20	51	19	52
Force Off								
Permissive Start								
Permissive End								
Max 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floating Force Off	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coordinated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walk Rest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pattern 1
CycleLength 120
Global Values

Timing Diagram:

- O1 17sec EBL
- O2 43sec WBT
- O3 16sec NBL
- O4 44sec SBT
- O5 17sec WBL
- O6 43sec EBT
- O7 16sec SBL
- O8 44sec NBT
- O101 19sec
- O104 25sec
- O106 19sec
- O108 25sec

Lock Diagram

Errors (0) Warnings (1) Messages (1)

OK Cancel



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2) Preempt Inputs:

Ring Barrier Controller 01.70.04 (INT_016_Chandler&Coldwater&Busway.rbc)

File View Help Notes Frequency 1

- Base Timing
- Detectors
- SC Communication
- Preempts
- Transit Priority

Preempts

Preempt Number	1	2	3	4
Enabled	Yes	Yes	No	No
Exit Mode	Normal	Normal	Normal	Normal
Change SG Next	No	No	No	No
Enable SGs				
Preempt Inputs	1	2		
Start Green	10	10		
Start Walk				
Start Ped Clr				

Preempt Number

Preempt Number	1	2	3	4
Zero SG Walk				
Zero SG Ped Clr				
Zero SG Green	1	1		
Zero Ovl Green				
Reservice Inh. Same				
Reservice Inh. All				
Service Priority				

Track Clearance 1

Preempt Number	1	2	3	4
Track Clearance 1	13	13		
TC1 Veh SGs				
TC1 Ped SGs				
TC1 Ovl SGs	13,14,15,16	13,14,15,16		

Track Clearance 2

Preempt Number	1	2	3	4
Track Clearance 2				
TC2 Veh SGs				
TC2 Ped SGs				
TC2 Ovl SGs				

Dwell

Preempt Number	1	2	3	4
Dwell Veh SGs	2.6	2.6		
Dwell Ped SGs	102,106	102,106		
Dwell Ovl SGs				

Exit

Preempt Number	1	2	3	4
Exit Veh SGs	4,7	3,8		
Exit Ped SGs	104	108		

Preempt Inputs

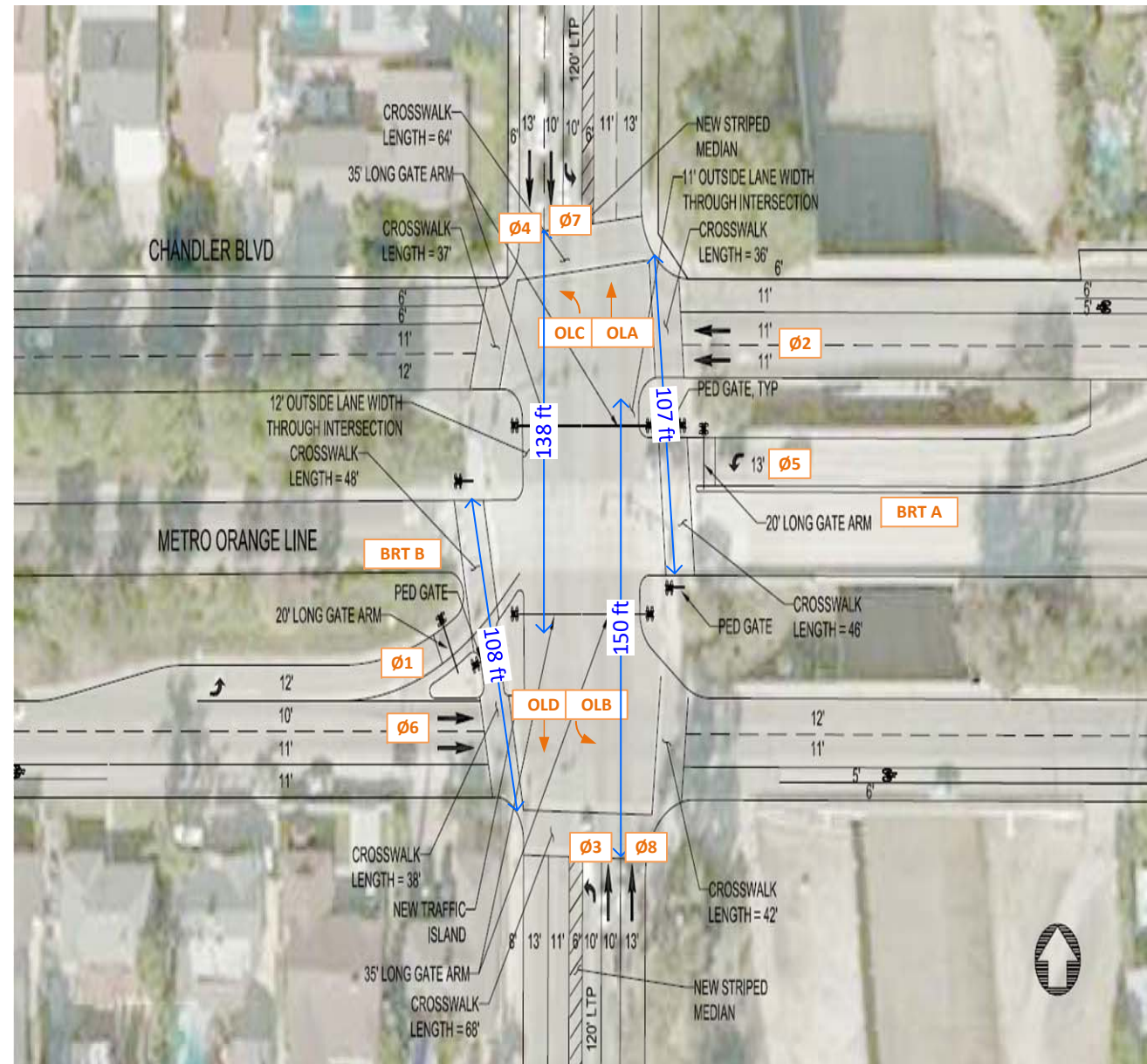
Inputs	1	2	3	4	5	6	7	8	9
Detector Type	Checkin / Checkout	Checkin / Checkout	Presence	Presence	Presence	Presence	Presence	Presence	Presence
Presence			403	404	405	406	407	408	409
Check In	411	412							
Check Out	421	422							
Calling Point	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lateness	0	0	0	0	0	0	0	0	0
Delay Call Time									
CheckOut Lim. Time									
Locked Call	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Pattern 1

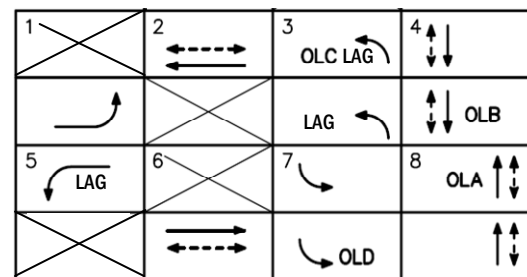
CycleLength 120

Global Values

Gate Concept Design

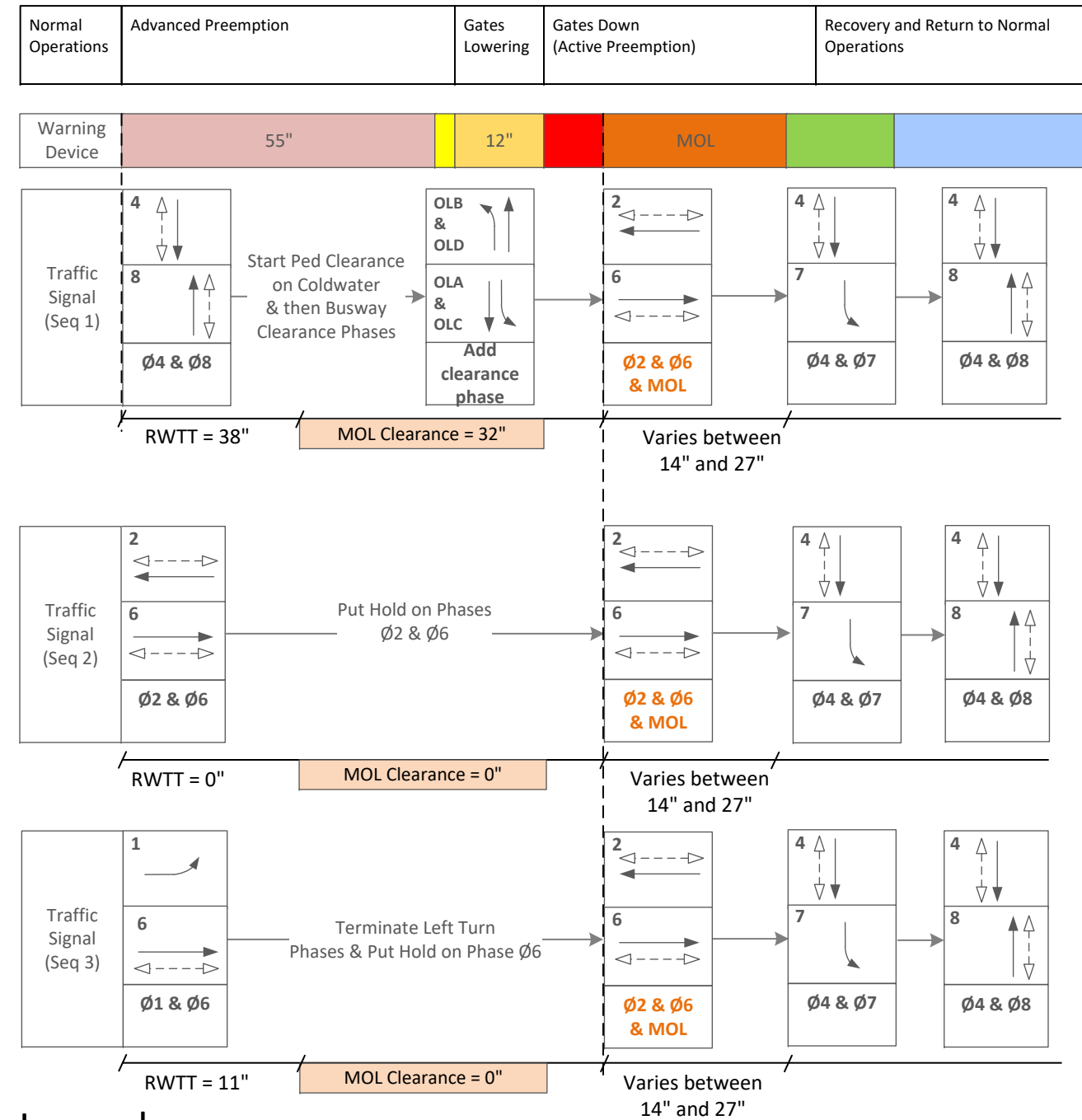


Future with Gates Phasing Diagram



OLA: Ø8
 OLB: Ø4
 OLC: Ø3
 OLD: Ø7

Preemption Sequence



Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

LADOT Railroad Preemption Form

Revised 6/23/2008

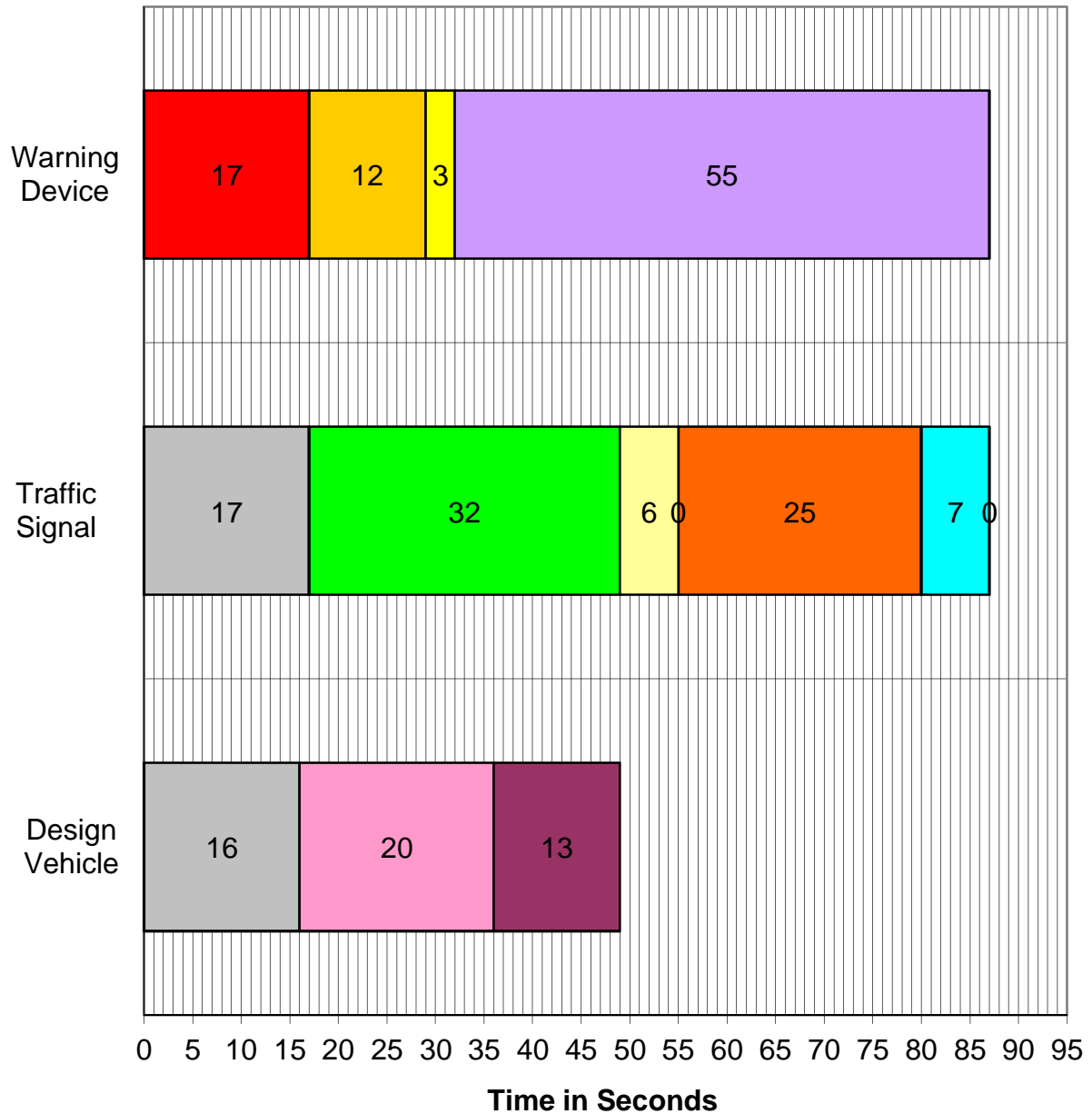
Street Name:	MOL@Coldwater	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	150 ft	Grade	0.0 %		
Clear Storage Distance, CSD	0 ft				
Length, L	150 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	7	4	3	2	
Start moving last vehicle in L (sec)	12.7	8.3	8.0	10.0	13
Move front of vehicle thru L (sec)	8.5	9.4	7.8	16.9	17
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	8.9	10.3	8.8	20.4	20
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	32 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	33 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	25 sec				
Minimum Green	10 sec				
Maximum Yellow + All Red	6.0 sec				
Maximum RWTT	38 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	87 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	12 sec	12 sec minimum			
Minimum Warning Time, MWT	32 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	32 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	55 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	92 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	6072 ft				

Street Name:

MOL@Coldwater

Crossing No:

Preemption Timeline



- Gate Down
- Gate Descent
- Lights Flash
- Advance Preemption
- Separation
- Track Clear Green
- Yellow + All Red
- Minimum Green
- Ped Clearance
- Walk
- Queue Clearance
- Queue Startup
- Phase Omit

Preemption Timeline Displays Minimum RWTT?

VISSIM Signal Controller Inputs for Future 2025 Scenarios

Signal Location 11: Woodley/Victory

1) Basic Timing Inputs:

Northbound protected left turn phase

The screenshot displays the 'Basic' timing input table for a signal controller. The table is organized by SG Number (2-8) and includes various timing parameters. The 'NBL' column (SG 3) is highlighted with a pink circle. Below the table is a signal timing diagram showing the sequence of phases: WBT (72sec), WBL (19sec), EBT (53sec), SBT (36sec), SBL (19sec), NBL (12sec), and NBT (29sec). The 'NBL' phase is also highlighted with a pink circle. The interface includes a left-hand menu with various settings like 'Base Timing', 'Patterns / Coordination', and 'Detectors'. The 'CycleLength' is set to 120. The bottom of the window shows 'Errors (0)', 'Warnings (2)', and 'Messages (1)'.

SG Number	2	3	4	5	6	7	8
SG Name	WBT	NBL	SBT	WBL	EBT	SBL	NBT
Min Green	10	5	5	5	10	5	5
Veh Extension		2	4	2	5	2	4
Max 1	80	12	23	6	58	10	27
Yellow	4.3	4.3	4.3	3	4.3	3	4.3
Red Clearance	1	1.3	1.3	1	1	1	1.3
Ped SG Number	102		104		106		108
Walk	7		7		7		7
Ped Clear (FDW)	15		16		18		16
Start Up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soft Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dual Entry	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



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2) Preempt Inputs:

Ring Barrier Controller 01.70.04 (INT_035_Victory&Woodley&Busway.rbc)

File View Help Notes Frequency

Base Timing
 Detectors
 SC Communication
 Preempts
 Transit Priority

Preempts

Preempt Number	1	2	3	4
Enabled	Yes	Yes	No	No
Exit Mode	Normal	Normal	Normal	Normal
Change SG Next	No	No	No	No
Enable SGs				
Preempt Inputs	1	2		
Start Green	5	5		
Start Walk				
Start Ped Clr				

Track Clearance 1

Preempt Number	1	2	3	4
Track Clearance 1	6	6		
TC1 Veh SGs				
TC1 Ped SGs				
TC1 Ovl SGs	16,17	16,17		

Track Clearance 2

Preempt Number	1	2	3	4
Track Clearance 2				
TC2 Veh SGs				
TC2 Ped SGs				
TC2 Ovl SGs				

Dwell

Preempt Number	1	2	3	4
Dwell Veh SGs	2,6	2,6		
Dwell Ped SGs	102,106	102,106		
Dwell Ovl SGs				

Exit

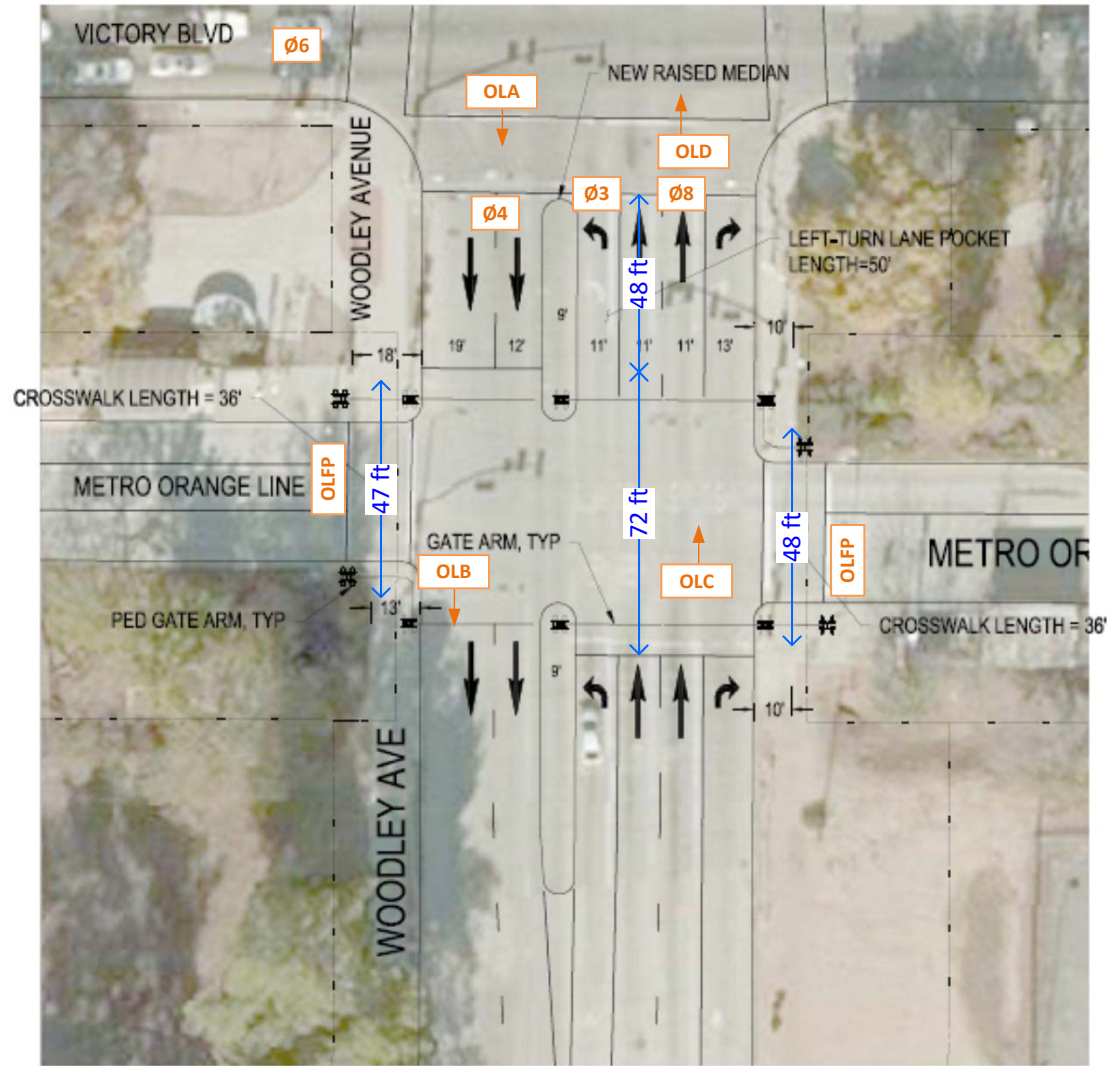
Preempt Number	1	2	3	4
Exit Veh SGs	4,7	3,8		
Exit Ped SGs	104	108		

Preempt Inputs

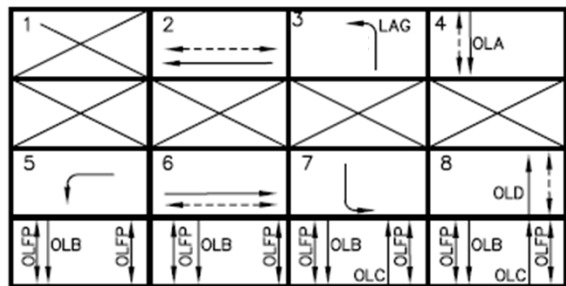
Inputs	1	2	3	4	5	6	7	8
Detector Type	Checkin / Checkout	Checkin / Checkout	Presence	Presence	Presence	Presence	Presence	Presence
Presence			403	404	405	406	407	408
Check In	411	412						
Check Out	421	422						
Calling Point	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lateness	0	0	0	0	0	0	0	0
Delay Call Time								
CheckOut Lim. Time								
Locked Call	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Pattern 1
 CycleLength 120
 Global Values

Gate Concept Design



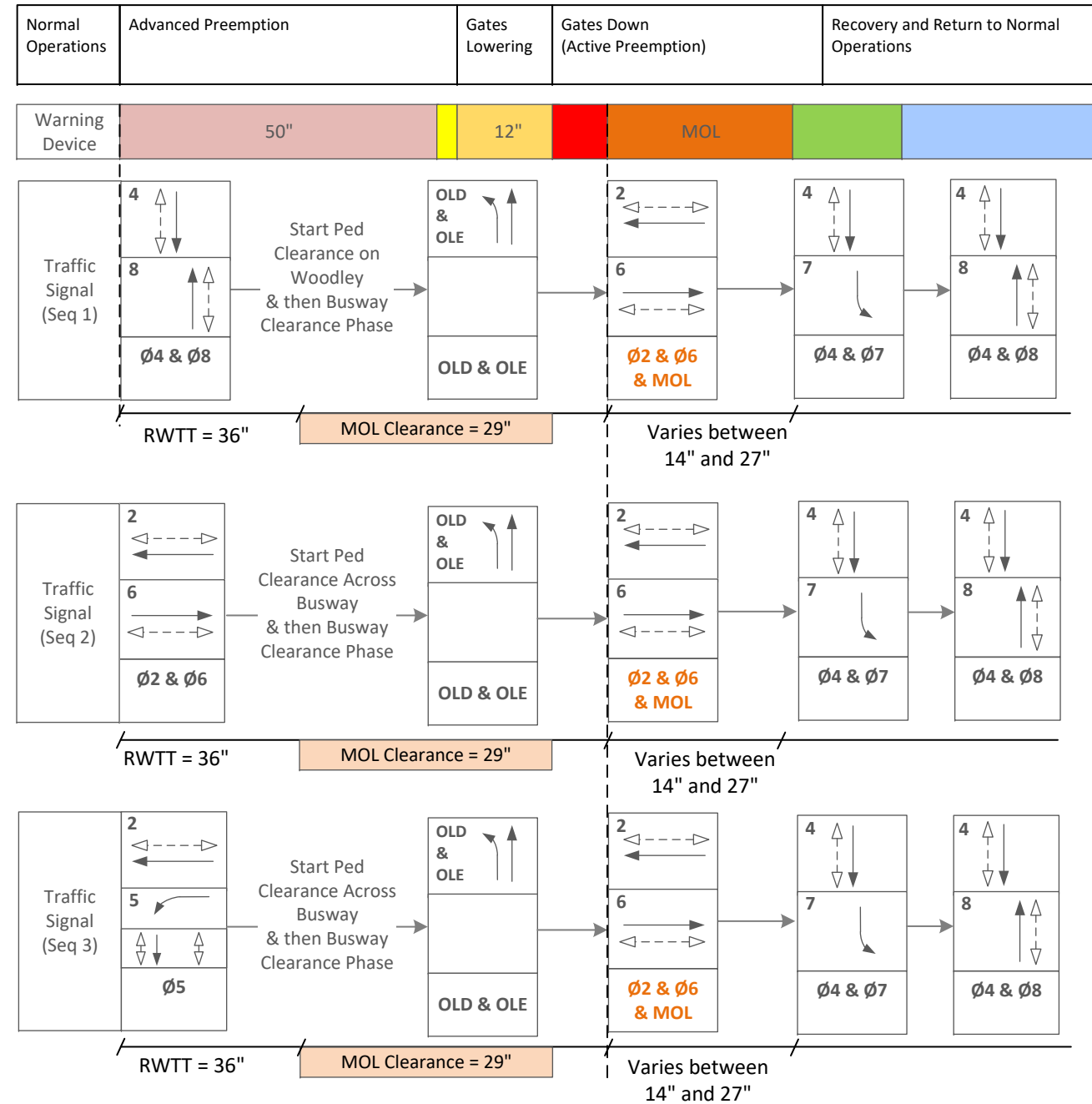
Future with Gates Phasing Diagram



- OLA: Ø4
- OLB: Ø5, Ø6, Ø7, and Ø8
- OLC: Ø3 and Ø8
- OLD: Ø8
- OLE: Ø3
- OLFP: Ø5, Ø6, Ø7 and Ø8

BRT: Busway
 OLC terminates before OLD & OLE
 BRT on or next will prevent or terminate OLB, OLC, and OLF PED

Preemption Sequence



Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

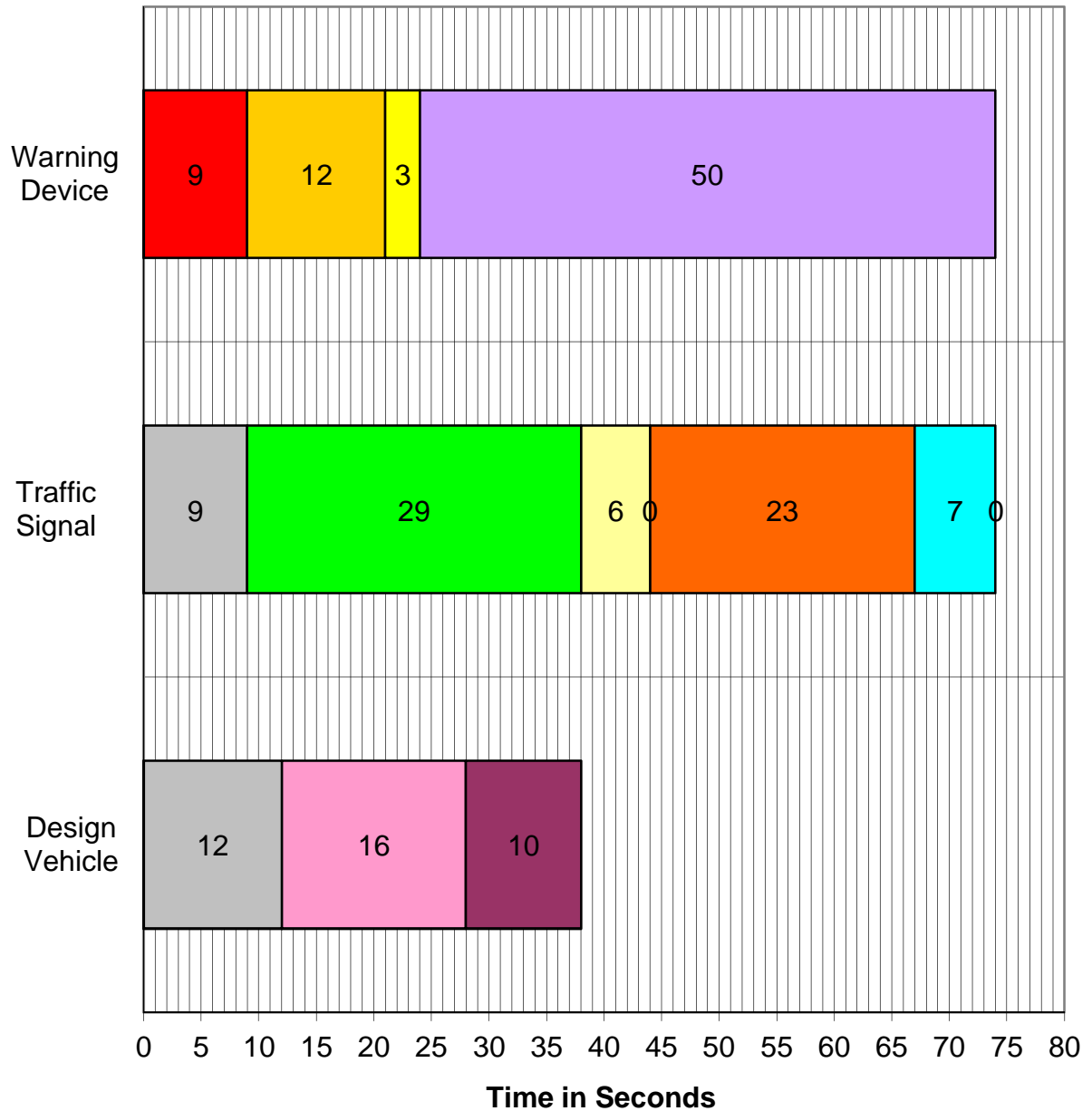
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Woodley	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	72 ft	Grade	0.0 %		
Clear Storage Distance, CSD	48 ft				
Length, L	120 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	5	3	2	1	
Start moving last vehicle in L (sec)	9.8	6.9	6.2	7.0	10
Move front of vehicle thru L (sec)	7.5	8.3	6.9	15.1	15
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	6.3	7.6	6.7	16.1	16
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	29 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	26 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	23 sec				
Minimum Green	7 sec				
Maximum Yellow + All Red	6.0 sec				
Maximum RWTT	36 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	74 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	4 sec	<i>4 sec minimum</i>			
Minimum Warning Time, MWT	24 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	24 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	50 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	79 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	5214 ft				

Street Name:	MOL@Woodley	Crossing No:	
--------------	-------------	--------------	--

Preemption Timeline



- | | | | |
|-----------------|---------------------|--------------------|----------------------|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?

VISSIM Signal Controller Inputs for Future 2025 Scenarios

Signal Location 12: Mason/Victory

1) Basic Timing Inputs:

Southbound protected left turn phase

Ring Barrier Controller 01.70.04 (INT_049_Victory&Mason&Busway.rbc)

File View Help Notes Frequency 10

Base Timing

- Timing by SG
 - Basic
 - Advanced
- Patterns / Coordination
 - Pattern 1
 - Pattern 2
 - Pattern 3
 - Pattern 4
 - Pattern 5
 - Pattern 6
 - Pattern 7
 - Pattern 8
 - Pattern Schedule
 - Sequence
 - Conflict SGs
 - Overlaps
- Detectors
- SC Communication
- Preempts
- Transit Priority

Pattern 1

CycleLength 120

Global Values

SG Number	1	2	3	4	5	6	7	8										
SG Name	EBL	WBT	NBL	SBT	WBL	EBT	SBL	NBT										
Min Green	5	10	5	5	5	10	5	5										
Veh Extension	3	4.9	3	3	3	4.7	3	3										
Max 1	18	47	10	24	18	47	13	23										
Yellow	3	4.3	3	3.9	3	4.3	3	3.9										
Red Clearance	1	1	1	1.1	1	1	1	1.1										
Ped SG Number		102				106		108										
Walk		7				7		7										
Ped Clear (FDW)		15				12		16										
Start Up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min Recall	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ped Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soft Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NSE Max Recall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dual Entry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

01 53sec WBT 01 22sec EBL 03 20sec NBL 04 25sec SBT

0101 22sec

05 20sec WBL 06 55sec EBT 08 28sec NBT 07 17sec SBL

0106 19sec 0108 23sec

Lock Diagram

Errors (0) Warnings (1) Messages (1)

OK Cancel

2) Preempt Inputs:

Ring Barrier Controller 01.70.04 (INT_049_Victory&Mason&Busway.rbc)

File View Help Notes Frequency 1

- Base Timing
- Detectors
- SC Communication
- Preempts
- Transit Priority

Preempt Number	1	2	3	4
Enabled	Yes	Yes	No	No
Exit Mode	Normal	Normal	Normal	Normal
Change SG Next	No	No	No	No
Enable SGs				
Preempt Inputs	1	2		
Start Green	5	5		
Start Walk				
Start Ped Clr				

Preempt Number	1	2	3	4
Zero SG Walk				
Zero SG Ped Clr				
Zero SG Green	1,3	1,3		
Zero Ovl Green				
Reservice Inh. Same				
Reservice Inh. All				
Service Priority				

Preempt Number	1	2	3	4
Track Clearance 1	9	9		
TC1 Veh SGs	4,7	4,7		
TC1 Ped SGs				
TC1 Ovl SGs	15,16,17	15,16,17		

Preempt Number	1	2	3	4
Track Clearance 2				
TC2 Veh SGs				
TC2 Ped SGs				
TC2 Ovl SGs				

Preempt Number	1	2	3	4
Dwell Veh SGs	2,3,5,6	2,3,5,6		
Dwell Ped SGs	102,106	102,106		
Dwell Ovl SGs				

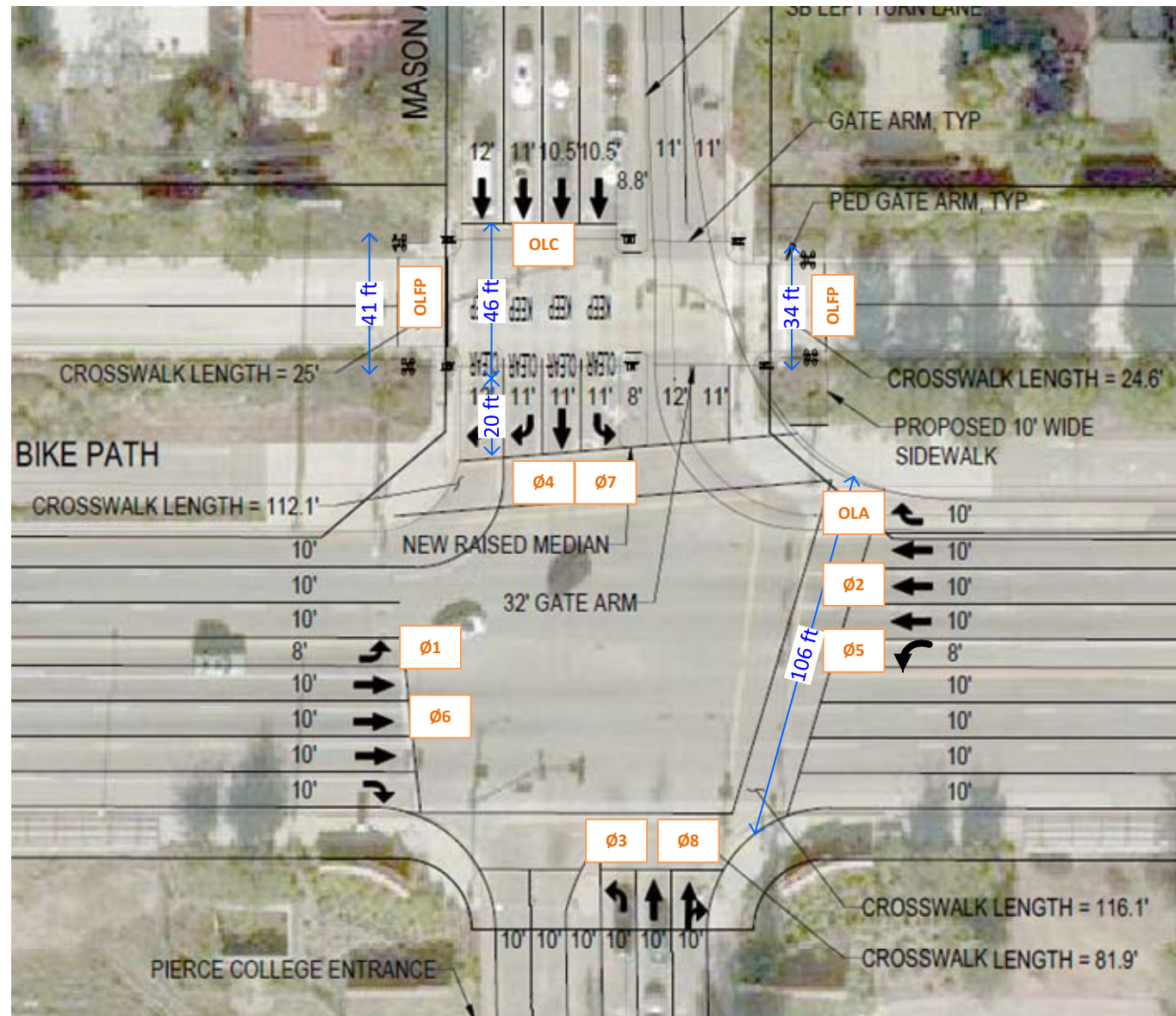
Preempt Number	1	2	3	4
Exit Veh SGs	4,7	3,8		
Exit Ped SGs		108		

Inputs	1	2	3	4	5	6	7	8	9	10
Detector Type	Checkin / Checkout	Checkin / Checkout	Presence	Presence	Presence	Presence	Presence	Presence	Presence	Presence
Presence			403	404	405	406	407	408	409	410
Check In	411	412								
Check Out	421	422								
Calling Point	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lateness	0	0	0	0	0	0	0	0	0	0
Delay Call Time										
CheckOut Lim. Time										
Locked Call	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

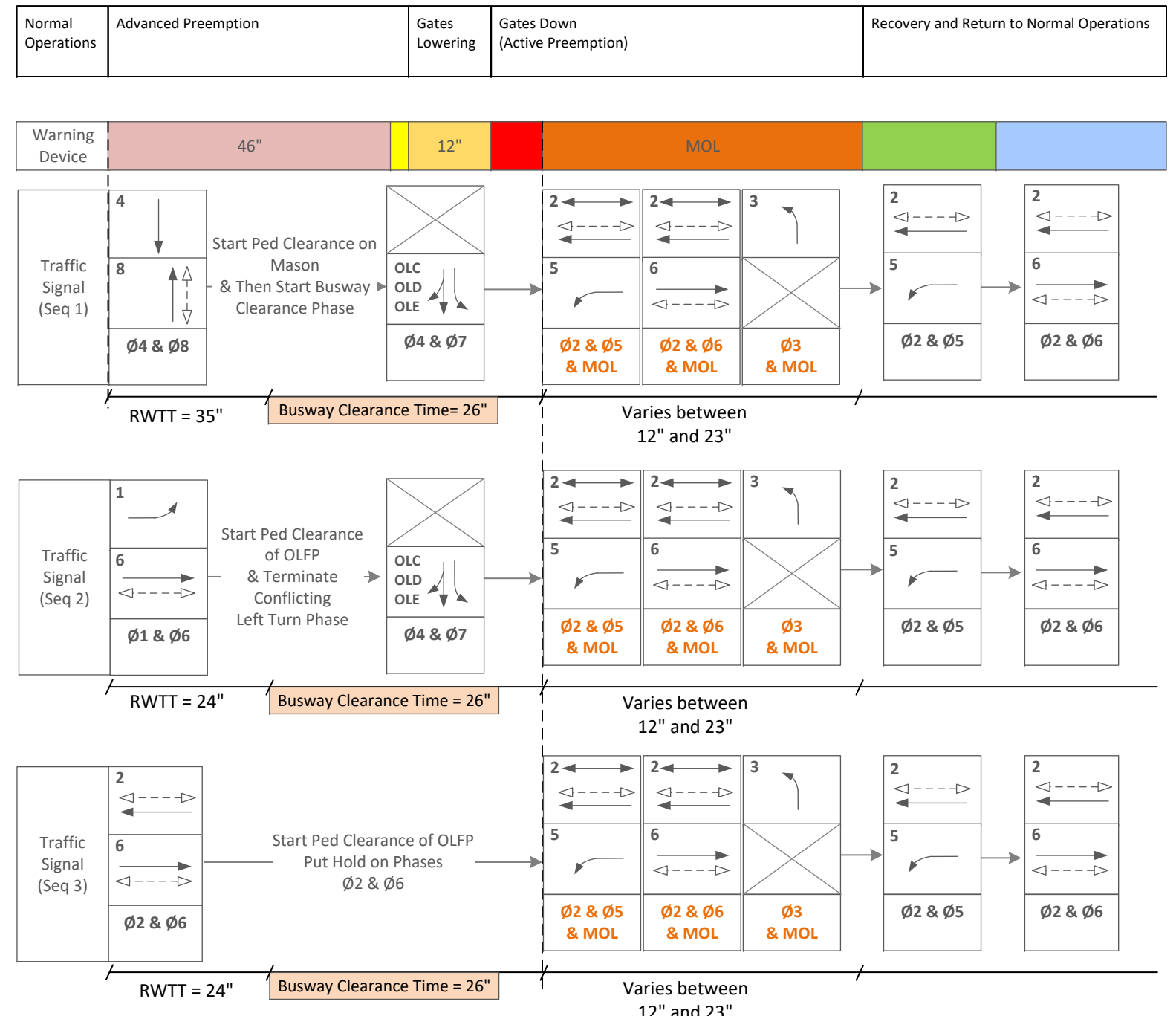
Pattern 1

CycleLength 120

Gate Concept Design



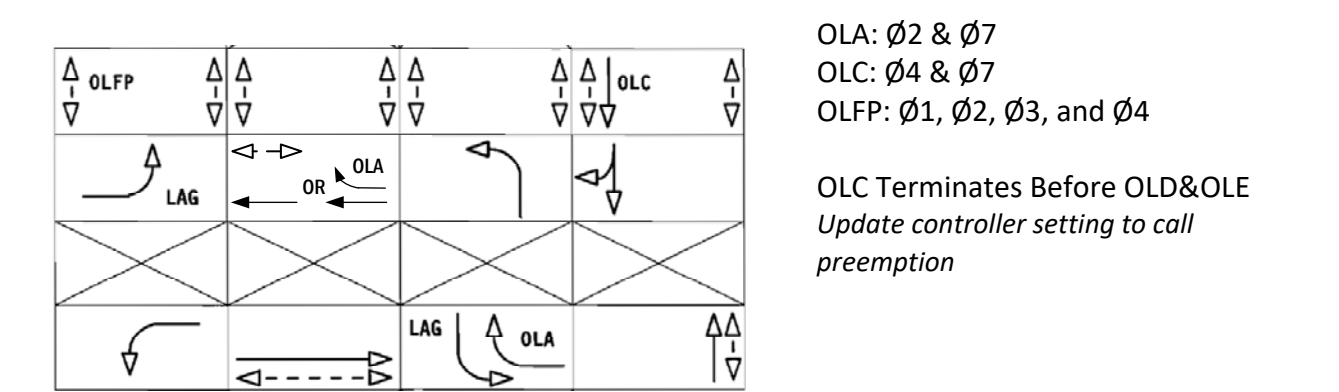
Preemption Sequence



Legend

- Advance Preemption
- Lights Flash (3 seconds)
- Gate Descent (12 seconds)
- Gate Down
- MOL Phase
- Exit Phases
- Normal Operation

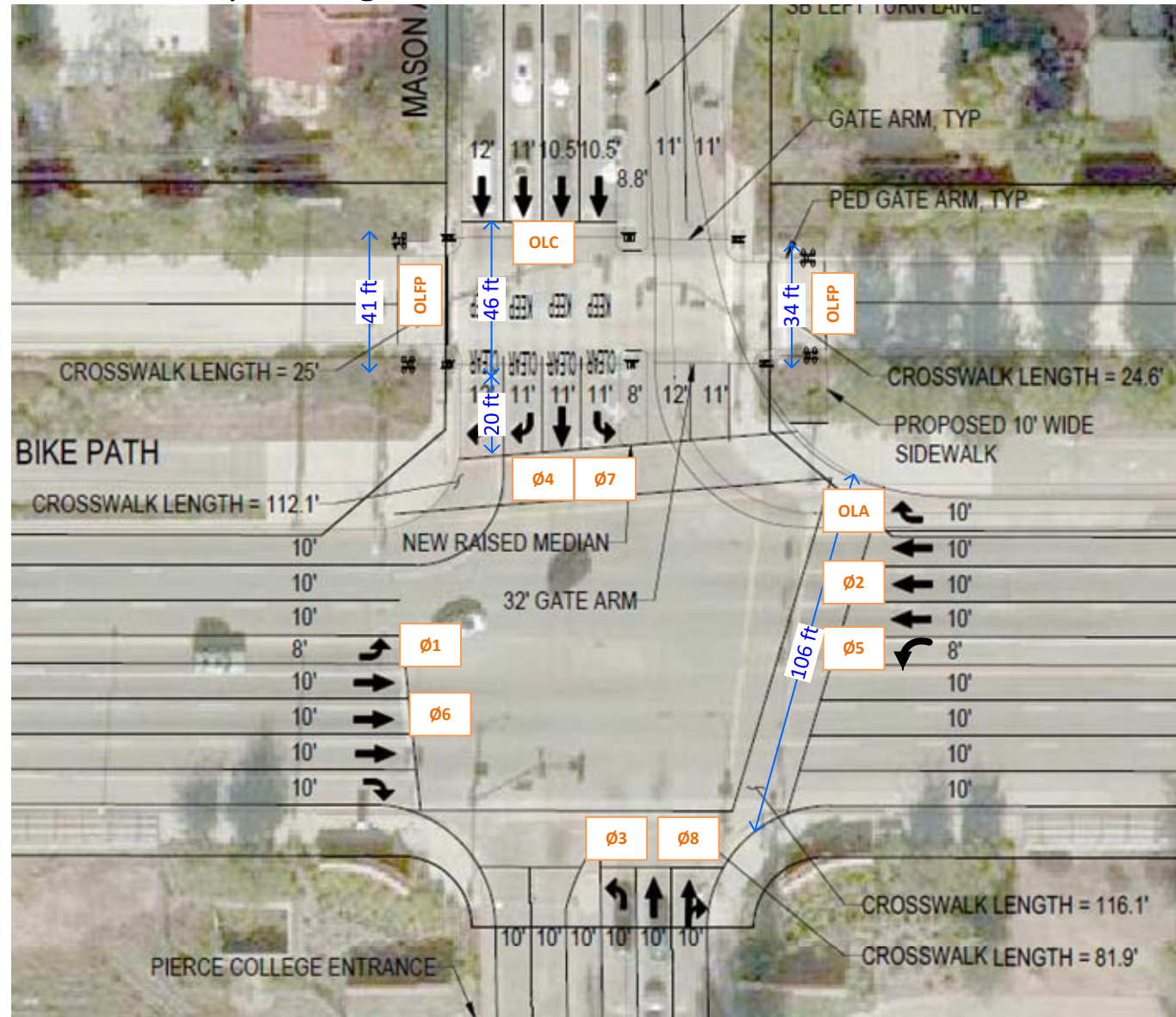
Future with Gates Phasing Diagram



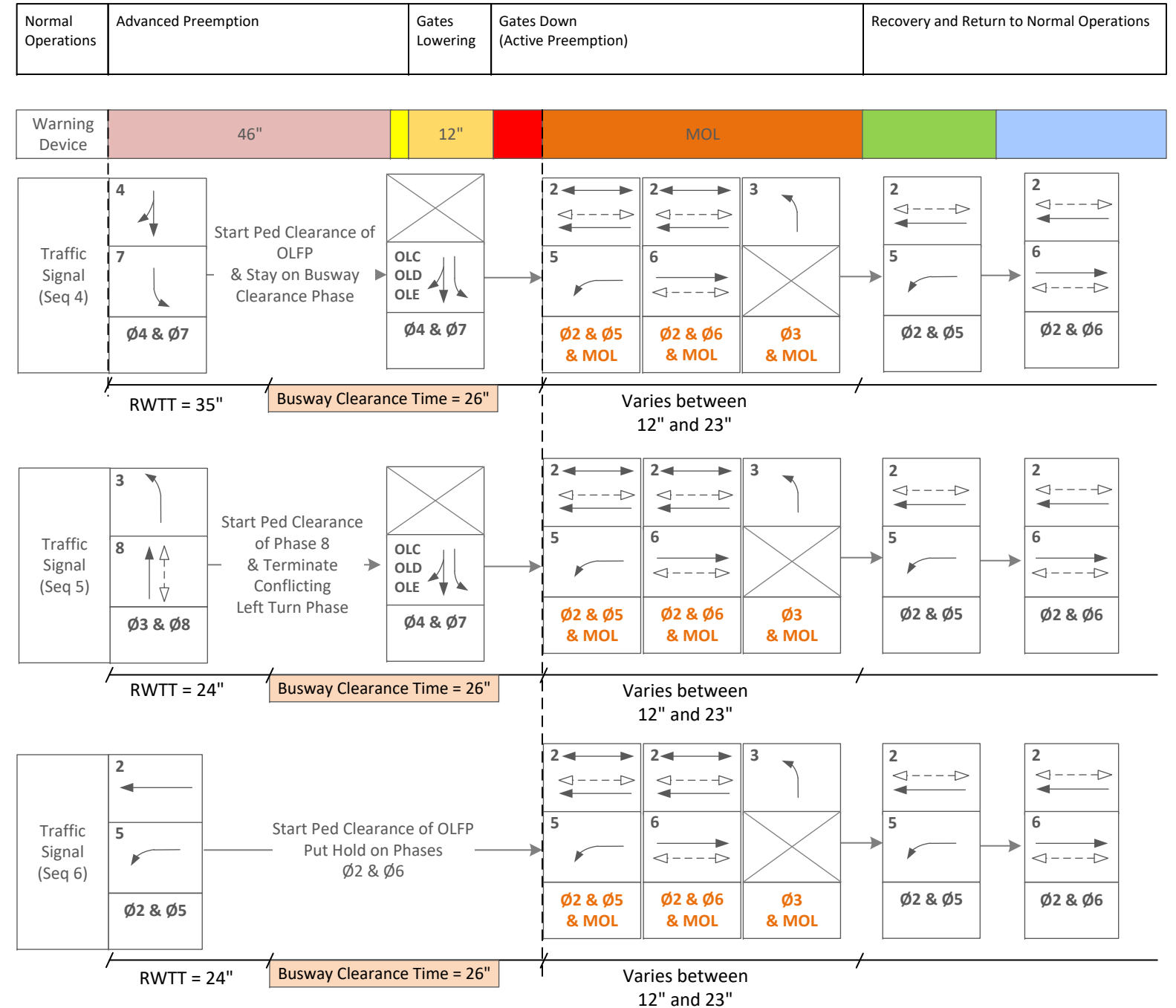
Metro Orange Line Grade Crossing
 Four Quadrant Gate System Phasing Schematics

Figure 26.A
 Mason Avenue and Victory Boulevard

Gate Concept Design



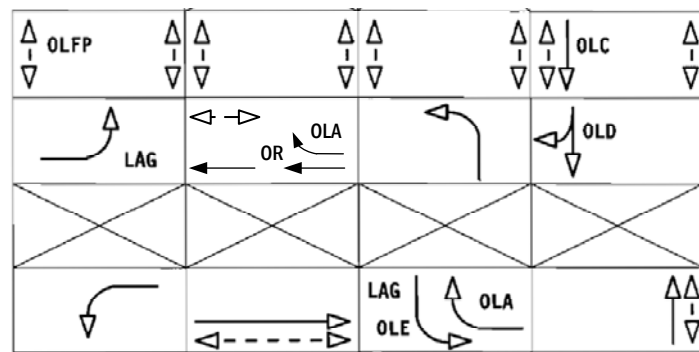
Preemption Sequence



Legend

- Advance Preemption
- Gate Down
- Exit Phases
- Lights Flash (3 seconds)
- MOL Phase
- Normal Operation
- Gate Descent (12 seconds)

Future with Gates Phasing Diagram



OLA: Ø2 & Ø7
 OLC: Ø4 & Ø7
 OLFP: Ø1, Ø2, Ø3, and Ø4
 OLC Terminates Before OLD&OLE
 Update controller setting to call preemption

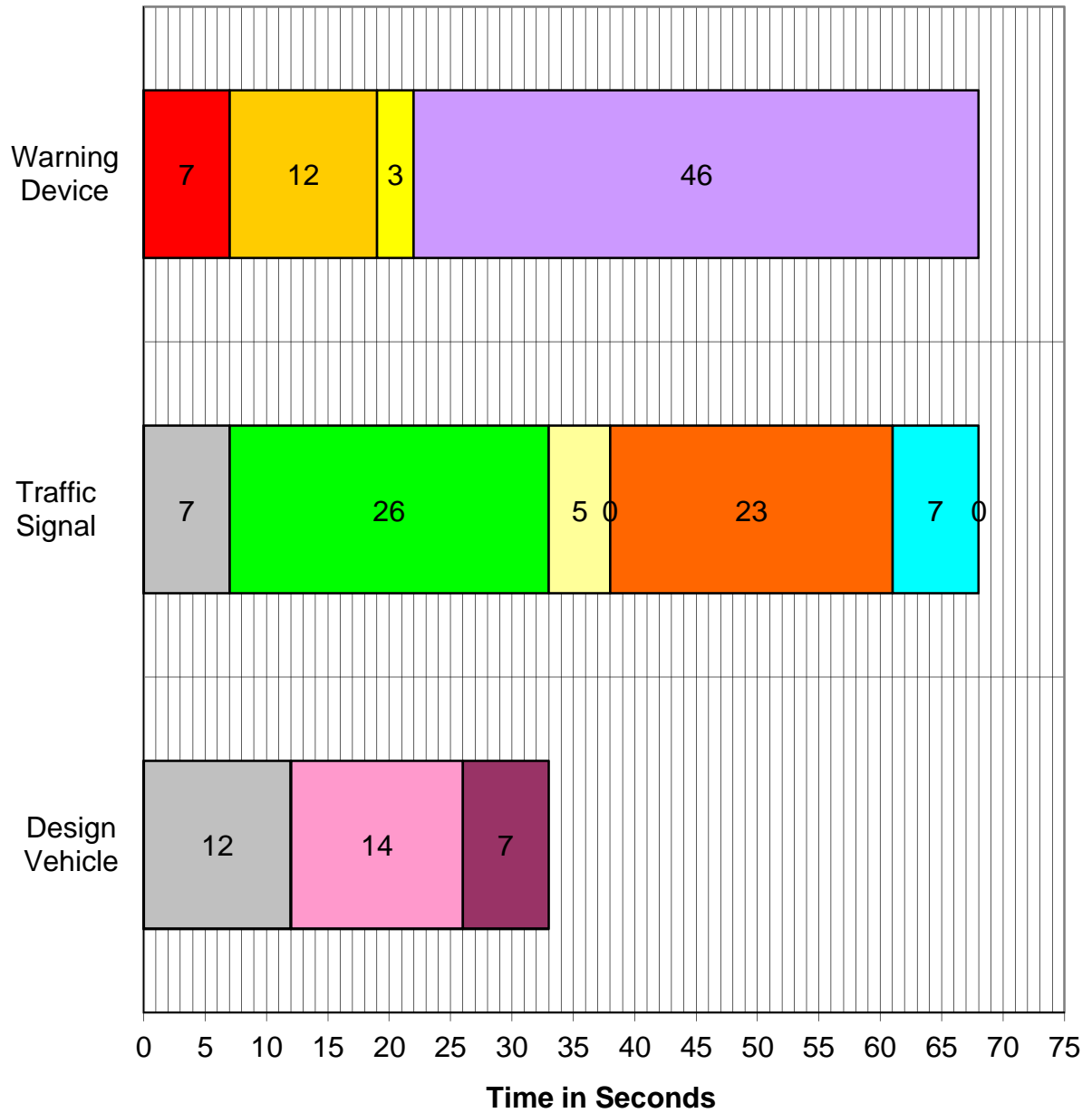
LADOT Railroad Preemption Form

Revised 6/23/2008

Street Name:	MOL@Mason	Crossing No.:			
Section 1: Highway and Traffic Information					
Part 1:					
Maximum Approach Move Distance	0 ft	Grade	0.0 %		
Maximum Conflicting Move Distance	0 ft	Grade	0.0 %		
Minimum Track Clearance Dist, MTCD	46 ft	Grade	0.0 %		
Clear Storage Distance, CSD	20 ft				
Length, L	66 ft				
Part 2:					
	Car	Truck	Bus	Semi	
Vehicle Length (ft)	15	30	40	65	
Vehicle Height (ft)	5	14	11	14	
Queue Space (ft/veh)	21	36	46	71	
Vehicles within L (veh)	3	1	1	0	
Start moving last vehicle in L (sec)	6.8	3.9	4.5	4.0	7
Move front of vehicle thru L (sec)	5.4	6.0	5.0	11.0	11
Move entire vehicle past gate (sec)	2.4	3.9	3.8	11.0	11
Move entire vehicle thru MTCD (sec)	5.2	6.5	5.8	14.5	14
Non-interaction gate descent time (sec)	10.7	4.1	5.4	4.1	4
Approach vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Conflicting vehicle clearance time (sec)	0.0	0.0	0.0	0.0	0
Include as Design Vehicle?	Yes	Yes	Yes	Yes	Use
Part 3:					
Green Track Clearance Time	26 sec	<i>Green Track Clearance extended to Gate Down</i>			
MTCD Queue Clearance Time	21 sec				
Minimum Walk	7 sec				
Maximum Ped Clearance	23 sec				
Minimum Green	5 sec				
Maximum Yellow + All Red	5.0 sec				
Maximum RWTT	35 sec				
Separation Time, ST	5 sec	<i>See Preemption Timeline for actual Separation Time</i>			
Maximum Preemption Time, MPT	68 sec				
Section 2: Railroad Information					
Lights Flash	3 sec				
Gate Descent	12 sec				
Minimum Time, MT	20 sec				
Clearance Time, CT	2 sec	2 sec minimum			
Minimum Warning Time, MWT	22 sec				
Buffer Time, BT	0 sec				
Total Warning Time, TWT	22 sec				
Include vehicle-gate interaction check?	Yes				
Distance from gate to vehicle	6 ft				
Advance Preemption Time, APT	46 sec				
Equipment Response Time, ERT	5 sec				
Total Approach Time, TAT	73 sec				
Maximum Authorized Speed, MAS	45 mph				
Total Approach Distance, TAD	4818 ft				

Street Name:	MOL@Mason	Crossing No.:	
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Preemption Timeline



- | | | | |
|-----------------|---------------------|--------------------|----------------------|
| ■ Gate Down | ■ Gate Descent | ■ Lights Flash | ■ Advance Preemption |
| ■ Separation | ■ Track Clear Green | ■ Yellow + All Red | ■ Minimum Green |
| ■ Ped Clearance | ■ Walk | ■ Queue Clearance | ■ Queue Startup |
| ■ Phase Omit | | | |

Preemption Timeline Displays Minimum RWTT?