

From: Figg, Greg [<mailto:FiggG@wsdot.wa.gov>]

Sent: Friday, December 09, 2016 3:01 PM

To: Ben Goodmansen (bgoodmansen@whipplece.com); Todd Whipple (toddw@whipplece.com)

Cc: Engle, Kathy; Sean Messner

Subject: FW: Painted Hills TIA Comments

In regard to the September 14, 2016 traffic analysis for the Painted Hills PRD the Washington State Department of Transportation (WSDOT) has completed its review of the analysis. Based on our review we have the following comments that need to be addressed:

- Figure 13A of the analysis indicates that the SB queue at the intersection of Pines and 16th will extend back into the thru lane of SR 27 as a result of the proposed project. Will the mitigation address this? This should also be identified in Table 20 in which the queue length exceeds the available length.
- Given the two closely spaced intersections of SR 27/16th and Pines/16th and the queues that will extend through the intersections the analysis tool needs to be able to model this interaction. The use of Sim Traffic or an equivalent tool needs to be used to determine what the impacts to these intersections will be.
- The comments below focus on 2030 Synchro files (most of these comments would also be applicable to the 2015 Synchro files).

SR 27 & 16th Ave.

- A Peak Hour factor of 0.85 was used, please explain how it was arrived at.
- Signal timing plan.
 - Under the timing portion for minimum split(s), EBL, EBT & EBR should all be 42.0 seconds, WCE analysis is using 10.0 seconds. There is a pedestrian phase associated with this Eastbound movement, the analysis did not take into account the W+FDW+Y+AR.
 - Detector placement is incorrect, which affects how the signal runs, (see attached).
- Link distance need to accommodate SimTraffic queues. (See node #11 and #12 in pm Synchro file, see attached).
 - Volumes not balanced, therefore, when SimTraffic is ran it does not show realistic queue lengths.
- EB 16th on the west side of Pines is one lane, between Pines and SR 27, EB 16th is 2 lanes and there is one lane for the SB slip ramp from SR 27 to Pines Road. Did not see any language that would indicate restriping or widening roadway.

SR 27 & 32nd Ave.

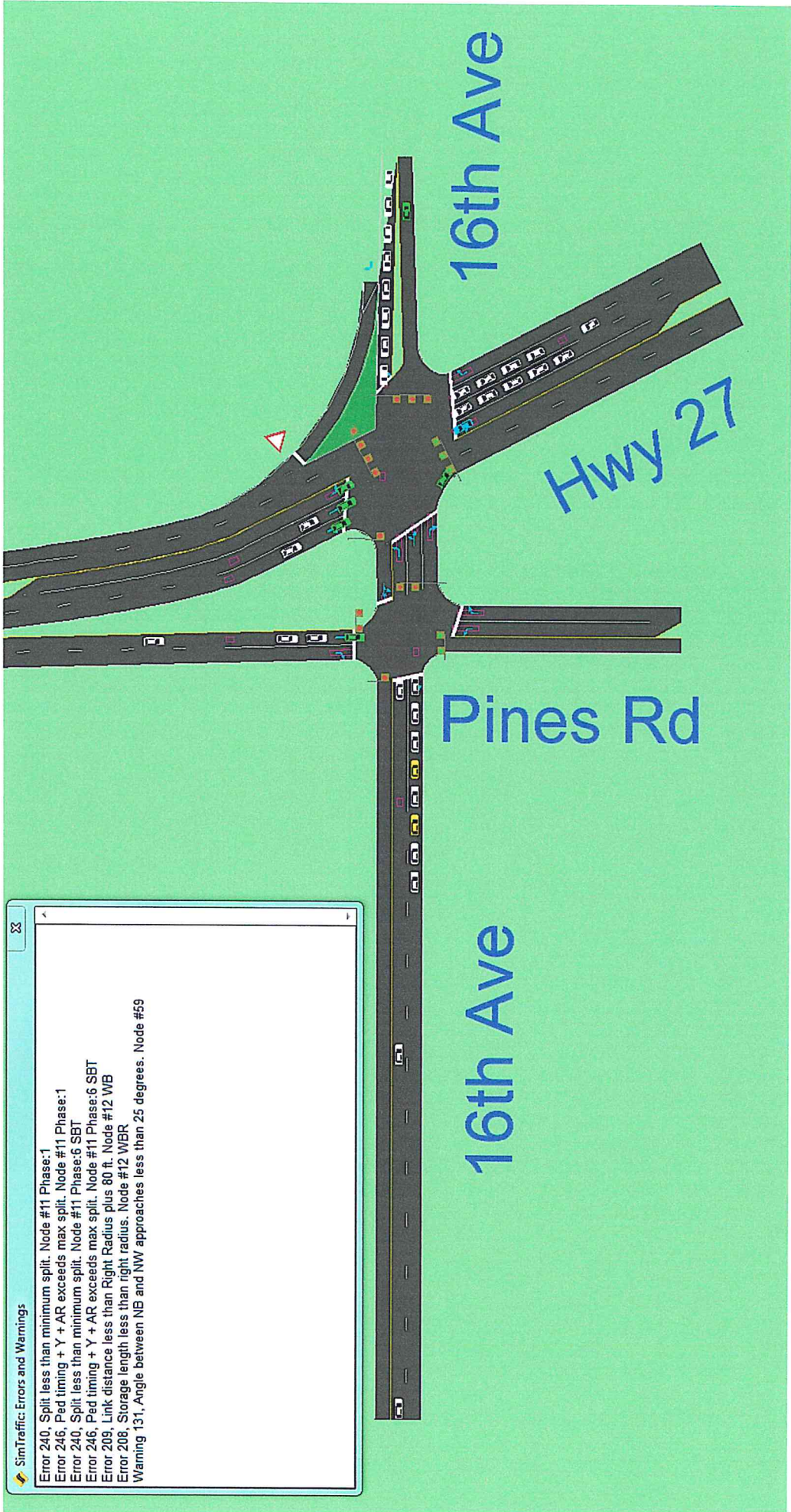
- Need to use the most current timing plan.

- Timing portion for minimum split(s) EBT, WBT, NBT & SBT need to be adjusted to reflect the pedestrian phase associated with these movements. Total split and Maximum green times are also slightly off.
- Detector placement is incorrect, see attached.
- Add volumes at adjacent nodes to better reflect queuing results in SimTraffic.

If you should have any questions about the above comments please do not hesitate to contact me.

Sincerely,

Greg Figg
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Development Services Manager
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SIGNAL FIELD REVIEW

Intersection Name:	SR 27 & 16th Avenue
Intersection ID Number:	55
State Route Number:	27
Mile Post:	84.43
Control Section:	3230

Completed By:	R. Fouts
Completed On:	12-Dec-12

DISPLAYS :	NB	NBLT	SB	SBLT	EB	WB
PHASE	6	1	2	5	8	4
# OF 3-M HEADS	0	0	0	0	0	0
PED SYMBOL (M/H OR COUNTDOWN)	-		-		M/H	-
4-SECTION HEAD (Y/N)	N	N	N	N	Y	Y
FOLLOW THROUGH (Y/N)		N		N		
TOTAL NUMBER OF VEHICLE HEADS	3	1	2	1	2	2

SIGNING:	NB	NBLT	SB	SBLT	EB	WB
NO PED X-ING (Y/N)	N		N		N	N
SIGNAL AHEAD / BEACON (S/B)	Y		Y		N	N

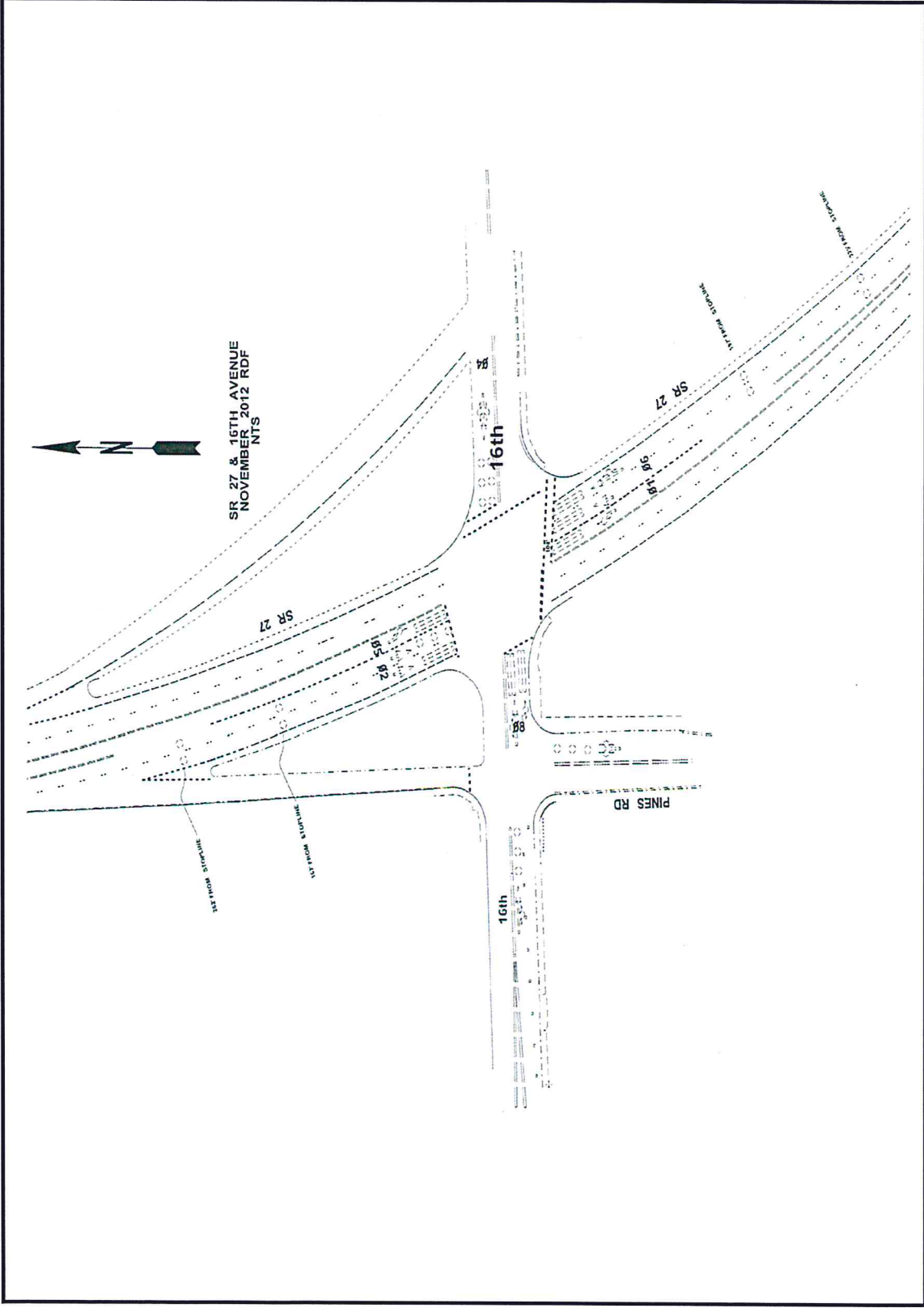
DISTANCES TO STOP LINE:	NB	NBLT	SB	SBLT	EB	WB
ADVANCE LOOPS 1 (FT)	325	0	262	0	approx 70'	0
ADVANCE LOOPS 2 (FT)	197	0	167	0	approx 110'	0
STOP LINE LOOP LENGTH (FT)	40	40	36 & 40	40	36 & 40	45
LEFT TURN POCKET (FT)		133		202		
RIGHT TURN POCKET (FT)	24' taper		slip ramp		55	slip ramp
LANE WIDTH (FT)	12	12	12	13	11	22
RAILROAD CROSSING (FT)	-	-	-	-	-	-

APPROACH CONDITION :	NB	SB	EB	WB
MAST ARM CHANNELIZATION SIGN (Y/N)	N	N	N	N
ADVANCE CHANNELIZATION SIGN (Y/N)	N	N	N	N
GRADE (%)	-1	1	0	-1
SIGHT DISTANCE (Y/N)	Y	Y	Y	Y
EMERGENCY PREEMPTION (Y/N)	Y	Y	Y	Y
POSTED SPEED (MPH)	35	35	35	35

JUSTIFICATIONS / EXPLANATIONS :

Signal timing practices revised since last review including how to measure walking distances and feet per second calculations; therefore, FDWs have been changed accordingly.

INTERSECTION SKETCH



Not to scale

SIGNAL FIELD REVIEW

Intersection Name:	32nd Avenue
Intersection ID Number:	57
State Route Number:	27
Mile Post:	83.15
Control Section:	3230

Completed By:	R. Fouts
Completed On:	4-Dec-12

DISPLAYS :	NB	NBLT	SB	SBLT	EB	EBLT	WB	WBLT
PHASE	2	5	6	1	4	7	8	3
# OF 3-M HEADS	0	0	0	0	0	0	0	0
PED SYMBOL (M/H OR COUNTDOWN)	M/H		M/H		M/H		M/H	
4-SECTION HEAD (Y/N)	N	N	N	N	N	N	N	N
FOLLOW THROUGH (Y/N)		Y		Y		N		N
TOTAL NUMBER OF VEHICLE HEADS	2	2	2	2	2	1	2	1

SIGNING:	NB	NBLT	SB	SBLT	EB	EBLT	WB	WBLT
NO PED X-ING (Y/N)	N		N		N		N	
SIGNAL AHEAD / BEACON (S/B)	S		S		N		N	

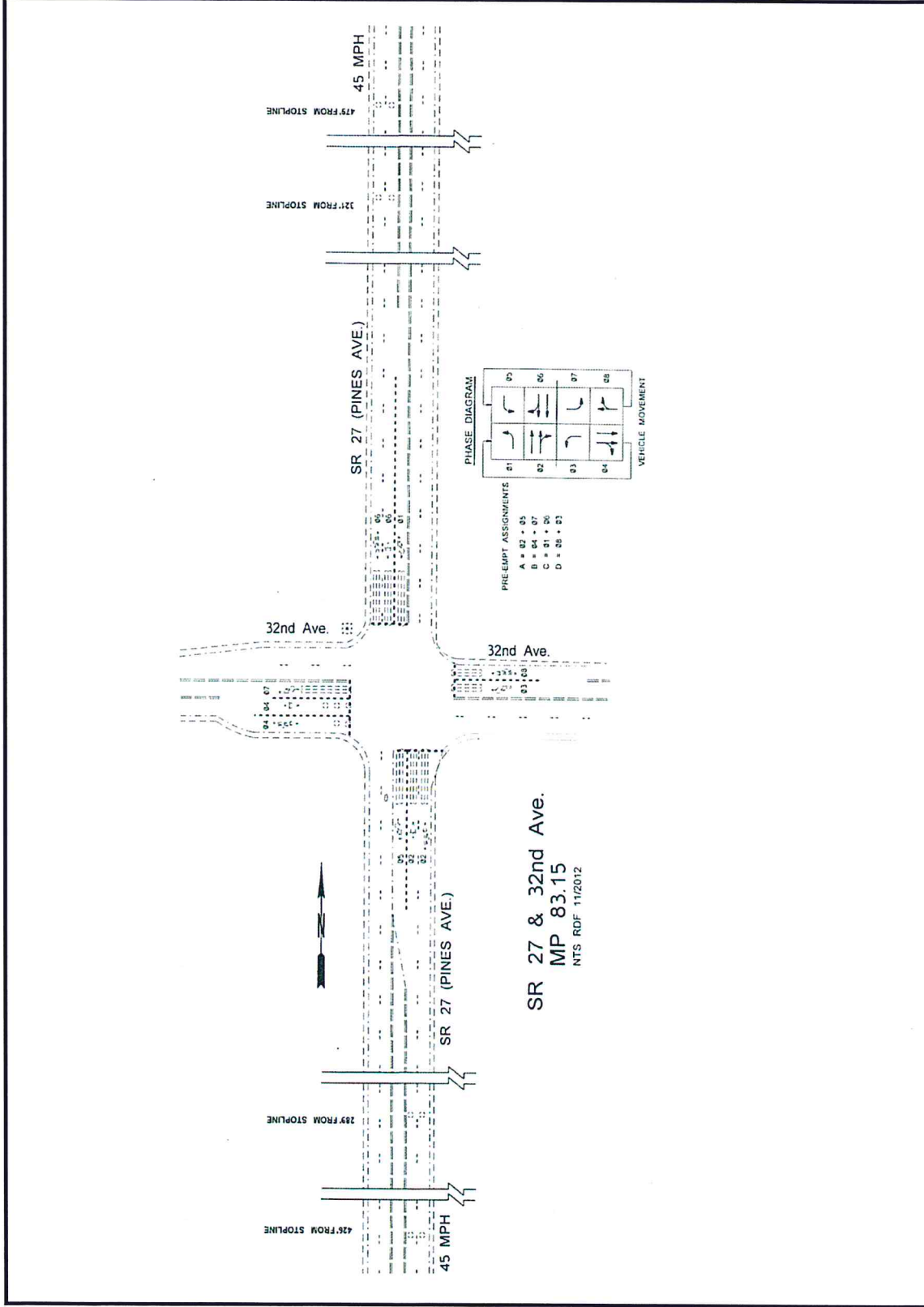
DISTANCES TO STOP LINE:	NB	NBLT	SB	SBLT	EB	EBLT	WB	WBLT
ADVANCE LOOPS 1 (FT)	426	0	479	0	0	0	0	0
ADVANCE LOOPS 2 (FT)	289	0	321	0	0	0	0	0
STOP LINE LOOP LENGTH (FT)	50	50	50	50	36 & 21	50	30	30
LEFT TURN POCKET (FT)		140		180		108		110
RIGHT TURN POCKET (FT)	125' taper		0		0		0	
LANE WIDTH (FT)	12	12	12	12	12	12	15	12
RAILROAD CROSSING (FT)	-	-	-	-	-	-	-	-

APPROACH CONDITION :	NB	SB	EB	WB
MAST ARM CHANNELIZATION SIGN (Y/N)	N	N	N	N
ADVANCE CHANNELIZATION SIGN (Y/N)	N	N	N	N
GRADE (%)	0	0	4	4
SIGHT DISTANCE (Y/N)	Y	Y	Y	Y
EMERGENCY PREEMPTION (Y/N)	Y	Y	Y	Y
POSTED SPEED (MPH)	45	45	35	35

JUSTIFICATIONS / EXPLANATIONS :

Signal timing practice revised since last review including how to measure walking distances and feet per second calculations; therefore, FDWs have been changed accordingly.

INTERSECTION SKETCH



Not to scale

Intersection Sketch

Printed on 12/5/2016

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