Crash Analysis Data

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Wellesley, MA COUNT DATE : 2008

DISTRICT : 4 UNSIGNALIZED : SIGNALIZED : Y

MHD USE ONLY

Source #

~ INTERSECTION DATA ~

MAJOR STREET : Route 9

MINOR STREET(S) : Overbrook Drive

RIN #

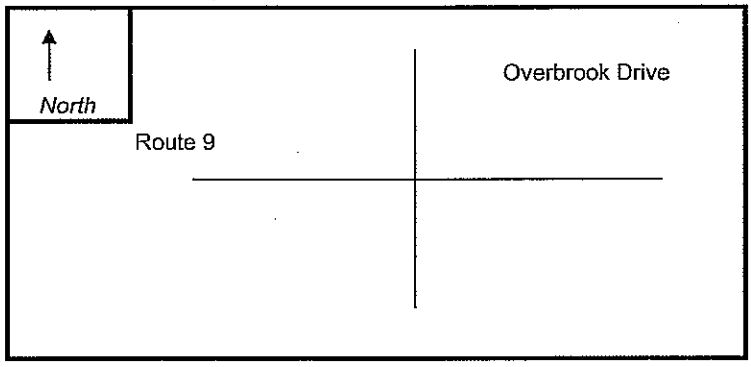
RIN #

RIN #

RIN #

RIN #

INTERSECTION DIAGRAM
(Label Approaches)



INTERSECTION REF #

Peak Hour Volumes

APPROACH :	1	2	3	4	5	6
DIRECTION :	NB	SB	EB	WB		
VOLUMES (PM) :	0	200	2070	1985		

" K " FACTOR : 0.09 APPROACH ADT : 47277.778 ADT = TOTAL VOL/"K" FACT.

TOTAL # OF ACCIDENTS : 30 # OF YEARS : 3 AVERAGE # OF ACCIDENTS (A) : 10

CRASH RATE CALCULATION : 0.58 RATE = $\frac{(A * 1{,}000{,}000)}{(ADT * 365)}$

Source (optional):

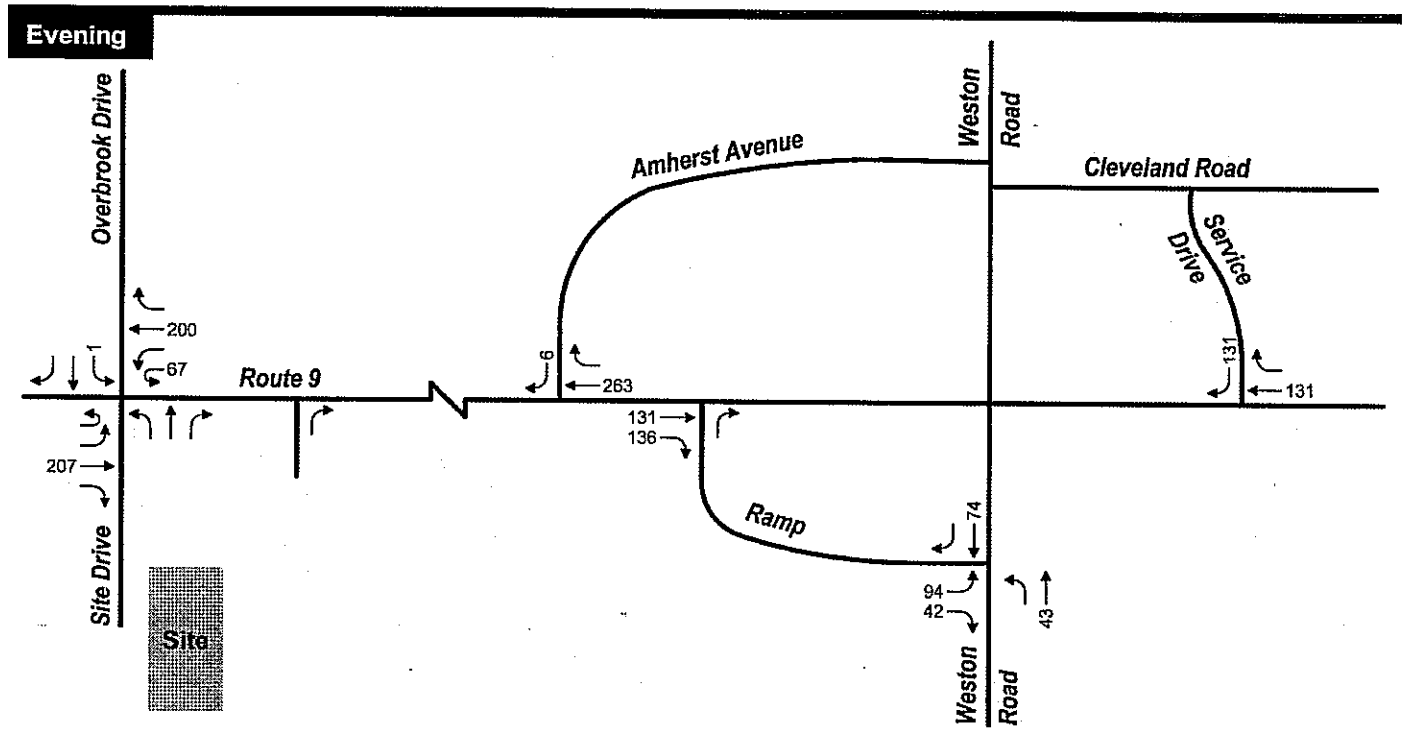
Comments:

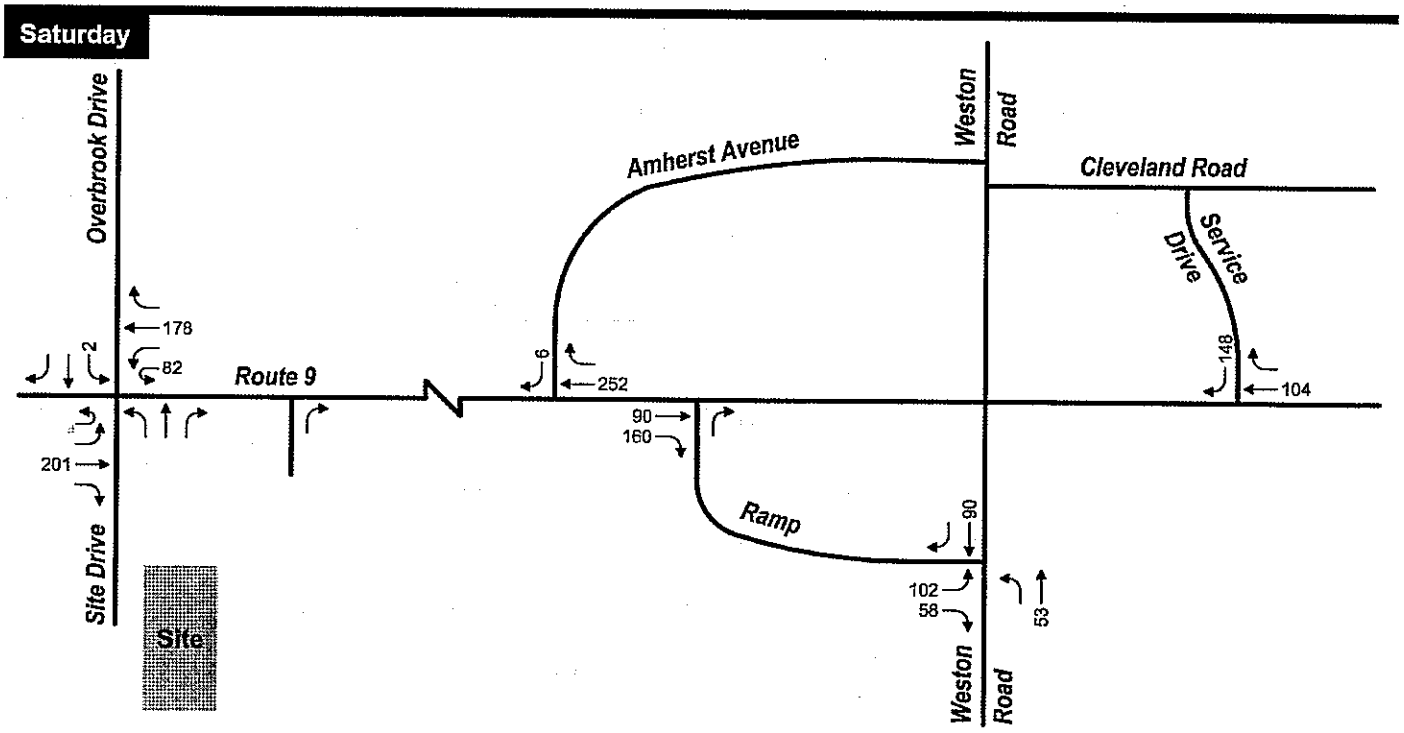
last updated: 11/06/01

WELLESLEY	2005/01/06 07:07 AM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Dawn	Clear	WORCESTER STREET	OVERBROOK DRIVE		
WELLESLEY	2005/01/17 09:59 AM	Non-fatal injury	2	1	0	Rear-end	Wet	Daylight	Snow	OVERBROOK DRIVE	WORCESTER STREET		
WELLESLEY	[illegible] 10:17 AM	Non-fatal injury	2	2	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET	OVERBROOK DRIVE		
WELLESLEY	2005/02/21 08:49 AM	Property damage only (none injured)	2	0	0	Angle	Dry	Daylight	Clear	WORCESTER STREET	OVERBROOK DRIVE		
WELLESLEY	2005/03/01 06:18 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Dark - lighted roadway	Clear			250 feet E from intersection 981 WORCESTER STREET / OVERBROOK DRIVE	
WELLESLEY	2005/03/05 12:38 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET	OVERBROOK DRIVE		
WELLESLEY	2005/06/27 06:14 PM	Property damage only (none injured)	1	0	0	Rear-end	Dry	Daylight	Clear			981 WORCESTER STREET Rte 9 W	
WELLESLEY	2005/07/11 08:08 AM	Property damage only (none injured)	2	0	0	Not reported	Dry	Daylight	Clear	OVERBROOK DRIVE	Rte 9		
WELLESLEY	2005/08/31 07:46 AM	Property damage only (none injured)	3	0	0	Rear-end	Wet	Daylight	Cloudy	WORCESTER STREET Rte 9 E	OVERBROOK DRIVE		
WELLESLEY	2005/09/12 08:27 AM	Property damage only (none injured)	1	0	0	Single vehicle crash	Wet	Daylight	Rain			941 WORCESTER STREET	
WELLESLEY	2005/09/27 12:02 PM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	Dry	Daylight	Clear			947 WORCESTER STREET Rte 9 / Rte 9	
WELLESLEY	2005/09/29 02:14 PM	Property damage only (none injured)	2	0	0	Rear-end	Wet	Daylight	Rain			981 WORCESTER STREET Rte 9 W	
WELLESLEY	2005/10/08 08:38 PM	Property damage only (none injured)	2	0	0	Angle	Dry	Dark - lighted roadway	Clear	WORCESTER STREET Rte 9 W	OVERBROOK DRIVE		
WELLESLEY	2005/10/24 05:53 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear			1005 WORCESTER STREET	
WELLESLEY	2006/11/18 11:38 AM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	Dry	Daylight	Clear			981 WORCESTER STREET Rte 9 W	
WELLESLEY	2007/01/03 07:41 AM	Property damage only (none injured)	3	0	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET Rte 9 W / OVERBROOK DRIVE	WORCESTER STREET Rte 9 W / OVERBROOK DRIVE		
WELLESLEY	2007/02/04 06:47 PM	Non-fatal injury	2	1	0	Rear-end	Dry	Dark - lighted roadway	Clear	WORCESTER STREET / OVERBROOK DRIVE	WORCESTER STREET / OVERBROOK DRIVE		
WELLESLEY	2007/02/06 04:27 PM	Property damage only (none injured)	2	0	0	Angle	Dry	Daylight	Clear	WORCESTER STREET Rte 9 W / OVERBROOK DRIVE	WORCESTER STREET Rte 9 W / OVERBROOK DRIVE		
WELLESLEY	2007/03/20 01:38 PM	Property damage only (none injured)	2	0	0	Unknown	Dry	Daylight	Clear			947 WORCESTER STREET	
WELLESLEY	2007/03/31 07:12 AM	Property damage only (none injured)	1	0	0	Single vehicle crash	Dry	Daylight	Clear			981 WORCESTER STREET	
WELLESLEY	2007/04/21 08:59 AM	Non-fatal injury	2	1	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET / OVERBROOK DRIVE	WORCESTER STREET / OVERBROOK DRIVE		
WELLESLEY	2007/04/27 03:31 PM	Property damage only (none injured)	2	0	0	Rear-end	Wet	Daylight	Clear			981 WORCESTER STREET	
WELLESLEY	2007/05/06 11:13 AM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET Rte 9 / OVERBROOK DRIVE	WORCESTER STREET Rte 9 / OVERBROOK DRIVE		
WELLESLEY	2007/06/17 08:39 PM	Non-fatal injury	2	1	0	Angle	Dry	Dark - lighted roadway	Clear	WORCESTER STREET / OVERBROOK DRIVE	WORCESTER STREET / OVERBROOK DRIVE		
WELLESLEY	2007/11/12 08:53 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET / OVERBROOK DRIVE	WORCESTER STREET / OVERBROOK DRIVE		
WELLESLEY	2007/11/12 03:16 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Cloudy			947 WORCESTER STREET	
WELLESLEY	2007/11/16 05:41 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear			981 WORCESTER STREET	
WELLESLEY	2007/12/12 04:18 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Cloudy			WORCESTER STREET	25 feet N from MIKE'S AUTO REPAIR
WELLESLEY	2007/12/14 10:07 PM	Property damage only (none injured)	2	0	0	Rear-end	Ice	Dark - lighted roadway	Cloudy	OVERBROOK DRIVE / WORCESTER STREET Rte 9 W	OVERBROOK DRIVE / WORCESTER STREET Rte 9 W		
WELLESLEY	2007/12/18 07:58 AM	Property damage only (none injured)	2	0	0	Angle	Wet	Daylight	Cloudy/Unknown	WORCESTER STREET / OVERBROOK DRIVE	WORCESTER STREET / OVERBROOK DRIVE		

WELLESLEY	2005/01/18 08:39 AM	Property damage only (none injured)	2	0	0	Rear-end	Snow	Daylight	Clear			Rte 9 E / WESTON ROAD	
WELLESLEY	2005/01/19 08:36 AM	Property damage only (none injured)	2	0	0	Angle	Dry	Daylight	Clear	WORCESTER STREET Rte 9	WESTON ROAD		
WELLESLEY	2005/02/27 07:32 AM	Property damage only (none injured)	1	0	0	Single vehicle crash	Dry	Daylight	Clear/Unknown	WORCESTER STREET Rte 9 E	WESTON ROAD	RAMP-WESTON RD TO RT 9 EB	
WELLESLEY	2005/03/14 08:02 AM	Non-fatal injury	2	1	0	Rear-end	Dry	Daylight	Clear	Rte 9	WESTON ROAD		
WELLESLEY	2005/03/16 06:30 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET	WESTON ROAD		
WELLESLEY	2005/04/27 11:35 AM	Non-fatal injury	2	1	0	Sideswipe, opposite direction	Wet	Daylight	Clear/Snow	WESTON ROAD	WORCESTER STREET / Rte 9		
WELLESLEY	[illegible] 06:13 PM	Property damage only (none injured)	2	0	0	Angle	Snow	Dark - lighted roadway	Cloudy/Snow	WORCESTER STREET Rte 9 W	WESTON ROAD		
WELLESLEY	[illegible] 01:09 PM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	Dry	Daylight	Cloudy	WORCESTER STREET Rte 9 W	WESTON ROAD		
WELLESLEY	2005/05/23 08:33 PM	Property damage only (none injured)	2	0	0	Rear-end	Wet	Daylight	Rain			100 feet W from intersection 871 WORCESTER STREET / WESTON ROAD	
WELLESLEY	2005/05/23 12:18 PM	Property damage only (none injured)	2	0	0	Rear-end	Wet	Daylight	Rain	WORCESTER STREET	WESTON ROAD		
WELLESLEY	2005/06/17 08:56 AM	Property damage only (none injured)	2	0	0	Angle	Dry	Daylight	Clear	WESTON ROAD	WORCESTER STREET / Rte 9 W		
WELLESLEY	2005/06/22 02:40 PM	Property damage only (none injured)	2	0	0	Angle	Dry	Daylight	Clear			400 feet W from intersection 871 WORCESTER STREET / WESTON ROAD	
WELLESLEY	[illegible] 01:14 PM	Non-fatal injury	2	1	0	Rear-end	Dry	Daylight	Clear	WESTON ROAD	Rte 9		
WELLESLEY	2005/09/12 02:38 PM	Non-fatal injury	2	1	0	Angle	Dry	Daylight	Clear	WORCESTER STREET	WESTON ROAD		
WELLESLEY	2005/09/09 03:17 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear			WORCESTER STREET Rte 9 / SERVICE ROAD Rte 9	
WELLESLEY	2005/09/27 02:20 PM	Property damage only (none injured)	3	0	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET	WESTON ROAD	WORCESTER STREET Rte 9 / RAMP - RT 9 EB TO RT 95 NB	
WELLESLEY	[illegible] 02:45 AM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear	Rte 9 E	WESTON ROAD Rte 9 E	WESTON ROAD Rte 9 / WESTON ROAD	
WELLESLEY	2005/09/14 11:33 PM	Property damage only (none injured)	2	0	0	Rear-end	Wet	Dark - lighted roadway	Rain	WORCESTER STREET Rte 9 E	WESTON ROAD	315 WESTON ROAD	
WELLESLEY	2005/09/22 08:46 AM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET Rte 9 E	WESTON ROAD		
WELLESLEY	2005/10/03 07:42 PM	Property damage only (none injured)	1	0	0	Single vehicle crash	Dry	Dark - lighted roadway	Clear	WORCESTER STREET	WESTON ROAD		
WELLESLEY	2005/10/13 11:38 AM	Property damage only (none injured)	2	0	0	Rear-end	Wet	Daylight	Rain/Cloudy	WORCESTER STREET	WESTON ROAD / Rte 9 E		
WELLESLEY	2005/10/18 08:48 AM	Property damage only (none injured)	2	0	0	Rear-end	Wet	Daylight	Cloudy	WORCESTER STREET	WESTON ROAD / WORCESTER STREET BRANCH		
WELLESLEY	2005/10/31 03:22 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Dark - lighted roadway	Clear			WORCESTER STREET Rte 9 / WESTON ROAD Rte 9	
WELLESLEY	2005/12/27 05:18 PM	Non-fatal injury	2	1	0	Rear-end	Dry	Daylight	Clear			859 WORCESTER STREET	
WELLESLEY	2006/01/26 08:33 AM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET	WESTON ROAD		
WELLESLEY	2006/04/04 10:10 AM	Property damage only (none injured)	2	0	0	Rear-end	Wet	Daylight	Rain	WORCESTER STREET Rte 9 E	WESTON ROAD		
WELLESLEY	2006/04/16 07:39 AM	Property damage only (none injured)	2	0	0	Angle	Dry	Daylight	Clear/Unknown	WORCESTER STREET	WESTON ROAD		
WELLESLEY	2006/05/05 12:43 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET Rte 9	WESTON ROAD		
WELLESLEY	2006/06/09 04:41 PM	Property damage only (none injured)	1	0	0	Single vehicle crash	Wet	Daylight	Cloudy	WESTON ROAD	WORCESTER STREET / Rte 9		
WELLESLEY	2006/07/14 08:11 AM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear			848 WORCESTER STREET	NEAR TYRA LIST HOUSE
WELLESLEY	2006/07/26 02:15 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Cloudy			RAMP-WESTON RD TO RT 9 EB / WORCESTER STREET Rte 9 E	
WELLESLEY	2006/07/26 02:54 PM	Non-fatal injury	2	1	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET	WESTON ROAD		
WELLESLEY	2006/09/11 09:10 AM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET Rte 9 E	WESTON ROAD		
WELLESLEY	2006/11/21 11:26 AM	Non-fatal injury	3	1	0	Head-on	Dry	Daylight	Clear			880 WORCESTER STREET Rte 9 W	
WELLESLEY	2006/10/11 08:29 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Dark - lighted roadway	Clear	WORCESTER STREET	WESTON ROAD		
WELLESLEY	2006/12/29 12:44 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear			848 WORCESTER STREET Rte 9 E	
WELLESLEY	2007/01/18 08:24 AM	Property damage only (none injured)	2	0	0	Rear-end	Wet	Daylight	Snow/Cloudy	WORCESTER STREET Rte 9 E / WESTON ROAD	WORCESTER STREET Rte 9 E / WESTON ROAD	RAMP - CEDAR STREET TO RT 9 WB	
WELLESLEY	2007/02/08 07:53 PM	Property damage only (none injured)	1	0	0	Single vehicle crash	Ice	Dark - lighted roadway	Clear			859 WORCESTER STREET	
WELLESLEY	2007/03/02 04:37 PM	Non-fatal injury	2	1	0	Angle	Dry	Daylight	Cloudy	WORCESTER STREET / WESTON ROAD	WORCESTER STREET / WESTON ROAD		
WELLESLEY	2007/04/06 11:57 AM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET Rte 9 E / WESTON ROAD	WORCESTER STREET Rte 9 E / WESTON ROAD		
WELLESLEY	2007/04/16 11:41 AM	Property damage only (none injured)	2	0	0	Rear-end	Wet	Daylight	Cloudy/Rain	WORCESTER STREET / WESTON ROAD	WORCESTER STREET / WESTON ROAD		
WELLESLEY	2007/04/26 01:24 PM	Property damage only (none injured)	3	0	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET Rte 9 W / WESTON ROAD	WORCESTER STREET Rte 9 W / WESTON ROAD		
WELLESLEY	2007/05/06 04:39 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear			WORCESTER STREET Rte 9 / WESTON ROAD Rte 9	
WELLESLEY	2007/05/06 05:08 PM	Non-fatal injury	1	1	0	Angle	Dry	Daylight	Clear			WESTON ROAD Rte 135 / WORCESTER STREET Rte 135	
WELLESLEY	[illegible] 11:37 AM	Not Reported	2	0	0	Sideswipe, same direction	Dry	Daylight	Clear			834 WORCESTER STREET Rte 9 / WESTON ROAD	
WELLESLEY	2007/08/03 04:44 PM	Non-fatal injury	2	1	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET / WESTON ROAD	WORCESTER STREET / WESTON ROAD		
WELLESLEY	2007/08/06 05:11 PM	Not Reported	2	0	0	Angle	Dry	Daylight	Clear	SERVICE ROAD Rte 9 W / BANCROFT ROAD	SERVICE ROAD Rte 9 W / BANCROFT ROAD		
WELLESLEY	[illegible] 09:26 AM	Non-fatal injury	2	1	0	Angle	Dry	Daylight	Clear			848 WORCESTER STREET	
WELLESLEY	2007/09/07 06:49 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET / WESTON ROAD	WORCESTER STREET / WESTON ROAD		
WELLESLEY	2007/09/10 06:18 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Dawn	Clear			870 WORCESTER STREET	
WELLESLEY	2007/09/11 07:35 AM	Non-fatal injury	3	2	0	Rear-end	Dry	Daylight	Cloudy			858 WORCESTER STREET	
WELLESLEY	2007/10/20 08:58 AM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET / WESTON ROAD	WORCESTER STREET / WESTON ROAD		
WELLESLEY	2007/11/08 07:33 AM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET Rte 9 E / WESTON ROAD	WORCESTER STREET Rte 9 E / WESTON ROAD		
WELLESLEY	2007/11/16 08:49 AM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear			WORCESTER STREET Rte 9 / RAMP-RTE 9 EB TO WESTON RD	
WELLESLEY	[illegible] 04:38 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear	WORCESTER STREET Rte 9 E / RAMP-WESTON RD TO RT 9 EB	WORCESTER STREET Rte 9 E / RAMP-WESTON RD TO RT 9 EB		
WELLESLEY	[illegible] 02:41 PM	Property damage only (none injured)	2	0	0	Angle	Dry	Daylight	Clear			400 feet W from intersection 871 WORCESTER STREET / WESTON ROAD	
WELLESLEY	[illegible] 07:47 AM	Non-fatal injury	2	1	0	Rear-end	Dry	Daylight	Clear			871 WORCESTER STREET	
WELLESLEY	2006/08/30 04:48 PM	Property damage only (none injured)	3	0	0	Rear-end	Dry	Daylight	Clear			871 WORCESTER STREET Rte 9 W	
WELLESLEY	2006/08/20 08:04 PM	Property damage only (none injured)	3	0	0	Rear-end	Dry	Daylight	Clear			871 WORCESTER STREET Rte 9 W	
WELLESLEY	2006/09/15 04:13 PM	Non-fatal injury	2	1	0	Rear-end	Wet	Daylight	Cloudy			871 WORCESTER STREET	
WELLESLEY	[illegible] PM	Property damage only (none injured)	2	0	0	Angle	Not reported	Daylight	Clear			871 WORCESTER STREET	
WELLESLEY	[illegible] 08:26 PM	Property damage only (none injured)	2	0	0	Rear-end	Not reported	Not reported	Not Reported			871 WORCESTER STREET	
WELLESLEY	[illegible] 02:56 PM	Property damage only (none injured)	2	0	0	Angle	Dry	Daylight	Clear			WORCESTER STREET	
WELLESLEY	[illegible] 04:27 PM	Non-fatal injury	2	1	0	Single vehicle crash	Wet	Dusk	Cloudy			871 WORCESTER STREET	
WELLESLEY	2007/12/16 02:53 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear			WORCESTER STREET Rte 9 W / RAMP-WESTON RD TO RTE 9 WB	@ WESTON ROAD ON RAMP
WELLESLEY	[illegible] 02:12 PM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	Wet	Daylight	Clear			324 WESTON ROAD	
WELLESLEY	[illegible] 06:54 PM	Property damage only (none injured)	2	0	0	Angle	Wet	Dark - lighted roadway	Rain			324 WESTON ROAD	
WELLESLEY	[illegible] 01:39 PM	Non-fatal injury	2	1	0	Rear-end	Dry	Daylight	Clear			328 WESTON ROAD	
WELLESLEY	[illegible] 01:01 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear			315 WESTON ROAD	
WELLESLEY	[illegible] 06:51 PM	Property damage only (none injured)	3	0	0	Rear-end	Wet	Dark - lighted roadway	Rain			315 WESTON ROAD	
WELLESLEY	[illegible] 01:18 PM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Cloudy			315 WESTON ROAD	
WELLESLEY	2007/05/23 09:21 AM	Property damage only (none injured)	2	0	0	Angle	Dry	Daylight	Clear			306 WESTON ROAD	
WELLESLEY	2007/09/04 07:17 AM	Property damage only (none injured)	2	0	0	Rear-end	Dry	Daylight	Clear			330 WESTON ROAD	
WELLESLEY	[illegible] 04:07 PM	Property damage only (none injured)	2	0	0	Angle	Dry	Daylight	Clear			315 WESTON ROAD	
WELLESLEY	[illegible] 05:54 PM	Property damage only (none injured)	2	0	0	Rear-end	Ice	Dark - roadway not lighted	Cloudy/Snow			WESTON ROAD	

Background Development





Not to Scale

Vanasse Hangen Brustlin, Inc.

All Background Developments
Weekday Evening and Saturday Midday
Peak Hour Traffic Volumes

Figure x

Proposed CVS Pharmacy
Wellesley, Massachusetts

ITE TRIP GENERATION WORKSHEET
(7th Edition, Updated January 2004)

LANDUSE: Single-Family Detached Housing
LANDUSE CODE: 210 Independent Variable — Number of Units

JOB NAME:
JOB NUMBER:

UNITS (#): 30

WEEKDAY

RATES:

	# Studies	R^2	Total Trip Ends Average	Low	High	Independent Variable Range Average	Low	High	Directional Distribution Enter	Exit
DAILY	350	0.96	9.57	4.31	21.85	197	2	2,900	50%	50%
AM PEAK (ADJACENT ST)	274	0.89	0.75	0.33	2.27	201	2	2,900	25%	75%
PM PEAK (ADJACENT ST)	302	0.91	1.01	0.42	2.98	214	2	2,900	63%	37%

TRIPS:

	BY AVERAGE Total	Enter	Exit	BY REGRESSION Total	Enter	Exit
DAILY	287	144	144	343	172	172
AM PEAK (ADJACENT ST)	23	6	17	30	8	23
PM PEAK (ADJACENT ST)	30	19	11	36	23	13

SATURDAY

RATES:

	# Studies	R^2	Total Trip Ends Average	Low	High	Independent Variable Range Average	Low	High	Directional Distribution Enter	Exit
DAILY	73	0.93	10.10	5.32	15.25	214	15	1,000	50%	50%
PEAK OF GENERATOR	52	0.90	0.94	0.50	1.75	220	15	675	54%	46%

TRIPS:

	BY AVERAGE Total	Enter	Exit	BY REGRESSION Total	Enter	Exit
DAILY	303	152	152	339	170	170
PEAK OF GENERATOR	28	15	13	38	20	17

SUNDAY

RATES:

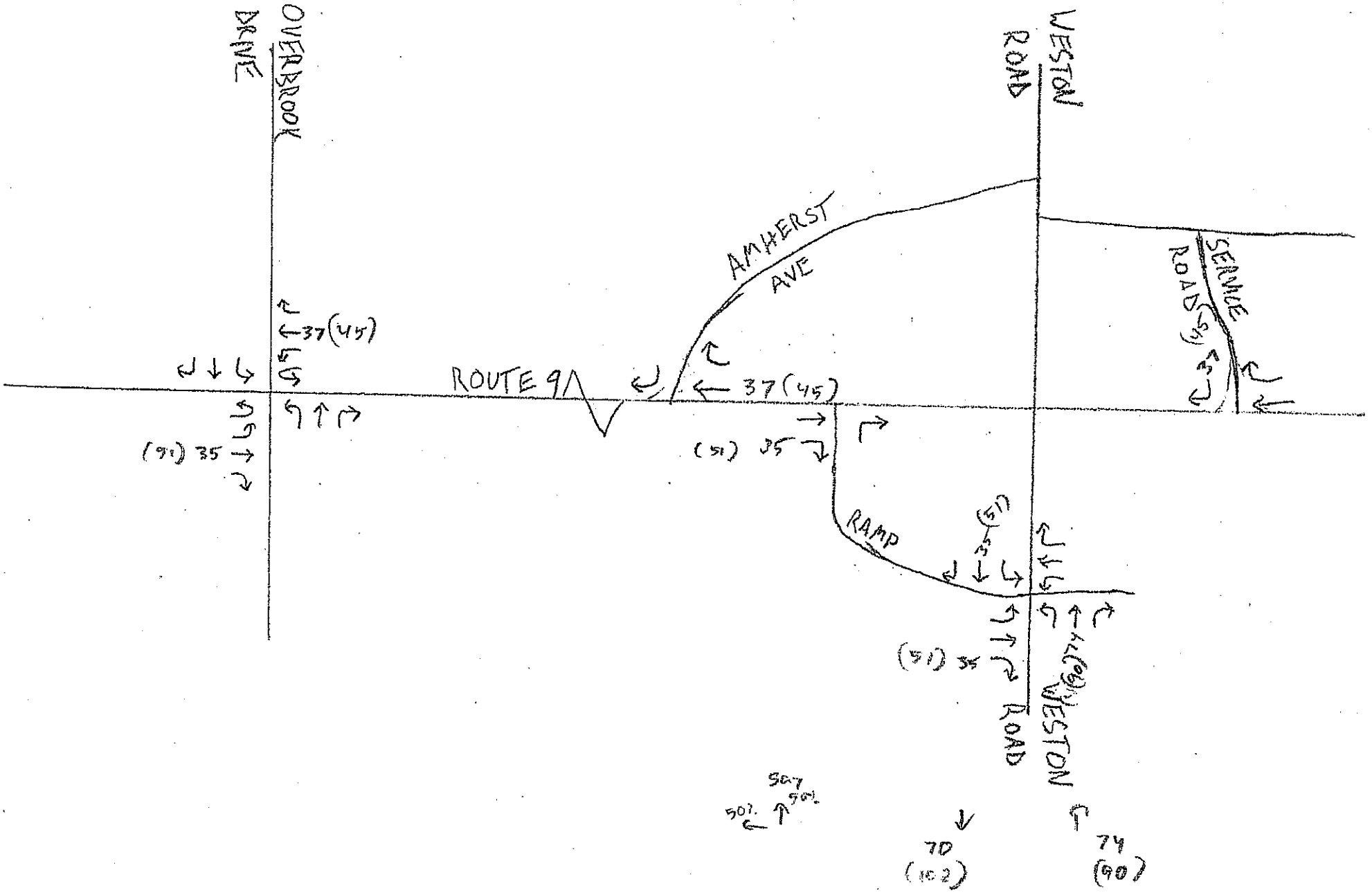
	# Studies	R^2	Total Trip Ends Average	Low	High	Independent Variable Range Average	Low	High	Directional Distribution Enter	Exit
DAILY	69	0.94	8.78	4.74	12.31	218	15	1,000	50%	50%
PEAK OF GENERATOR	51	0.88	0.86	0.55	1.48	217	15	675	53%	47%

TRIPS:

	BY AVERAGE Total	Enter	Exit	BY REGRESSION Total	Enter	Exit
DAILY	263	132	132	255	128	128
PEAK OF GENERATOR	26	14	12	32	17	15

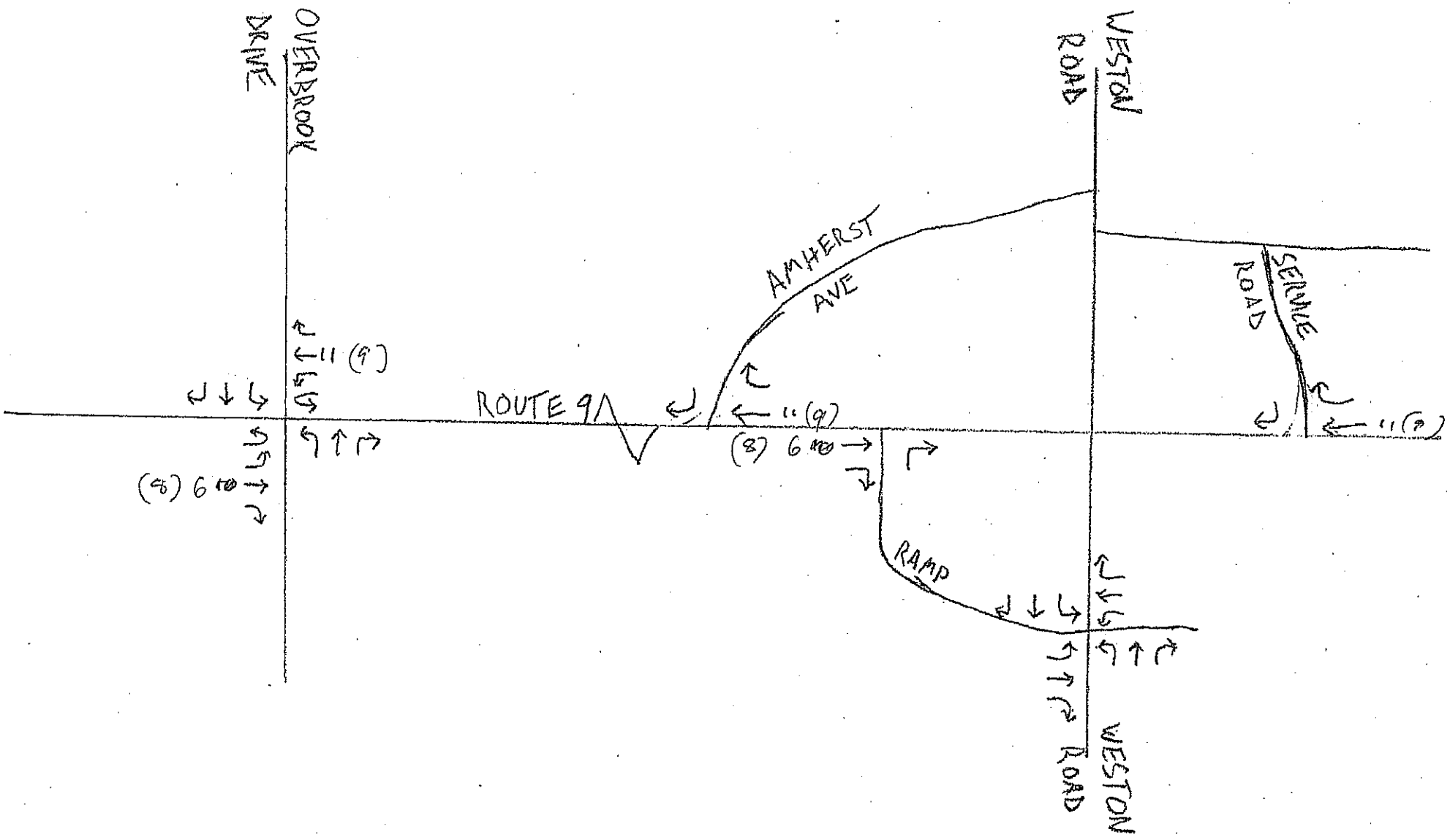
CVS
WELLESLEY, MA
09733.26

Lindon Square
PM (SAT)



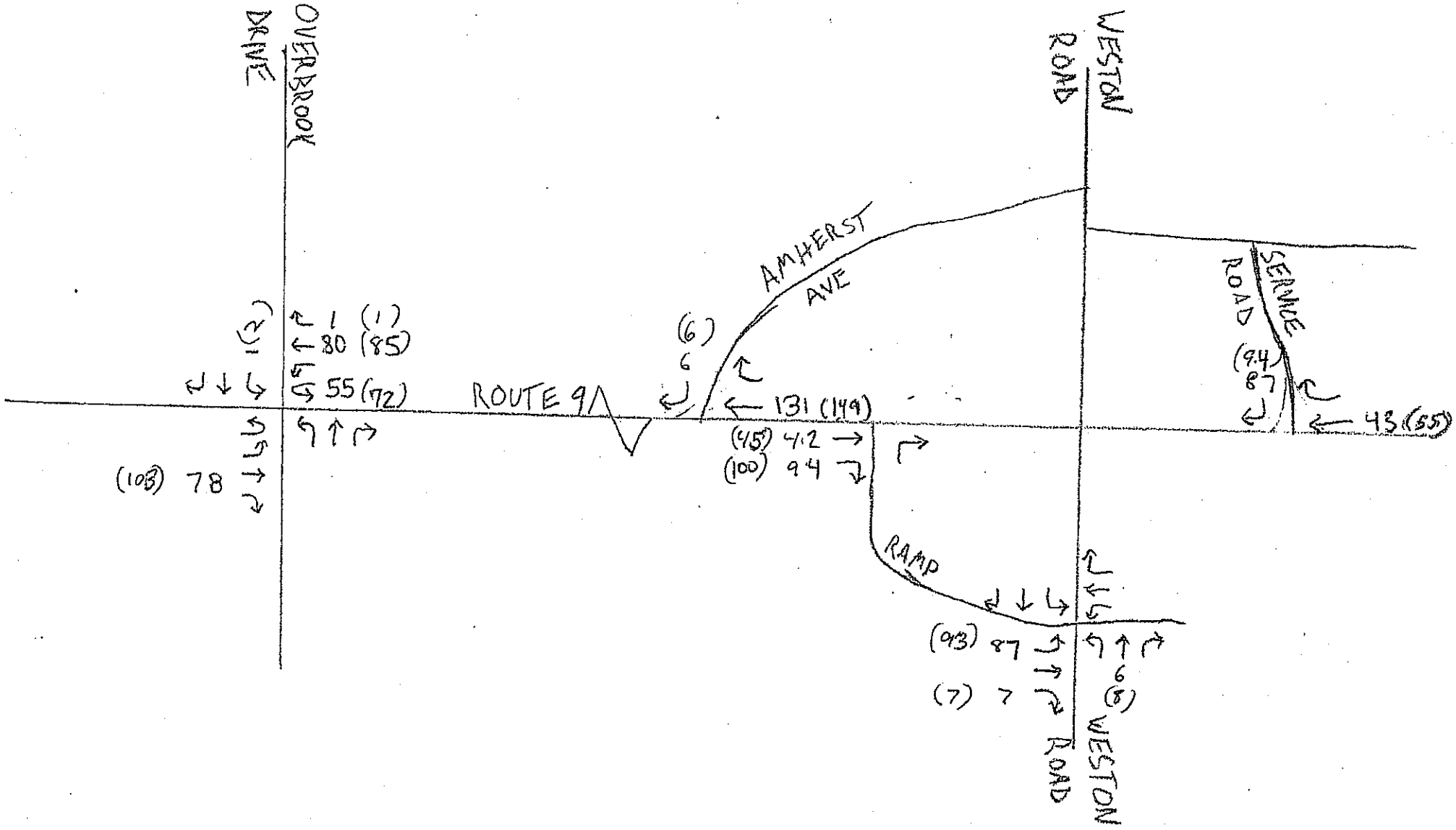
CVS
WELLESLEY, MA
09733.26

Natick Paper board
~~4 PM~~ 9A no info on sat
(SAT)



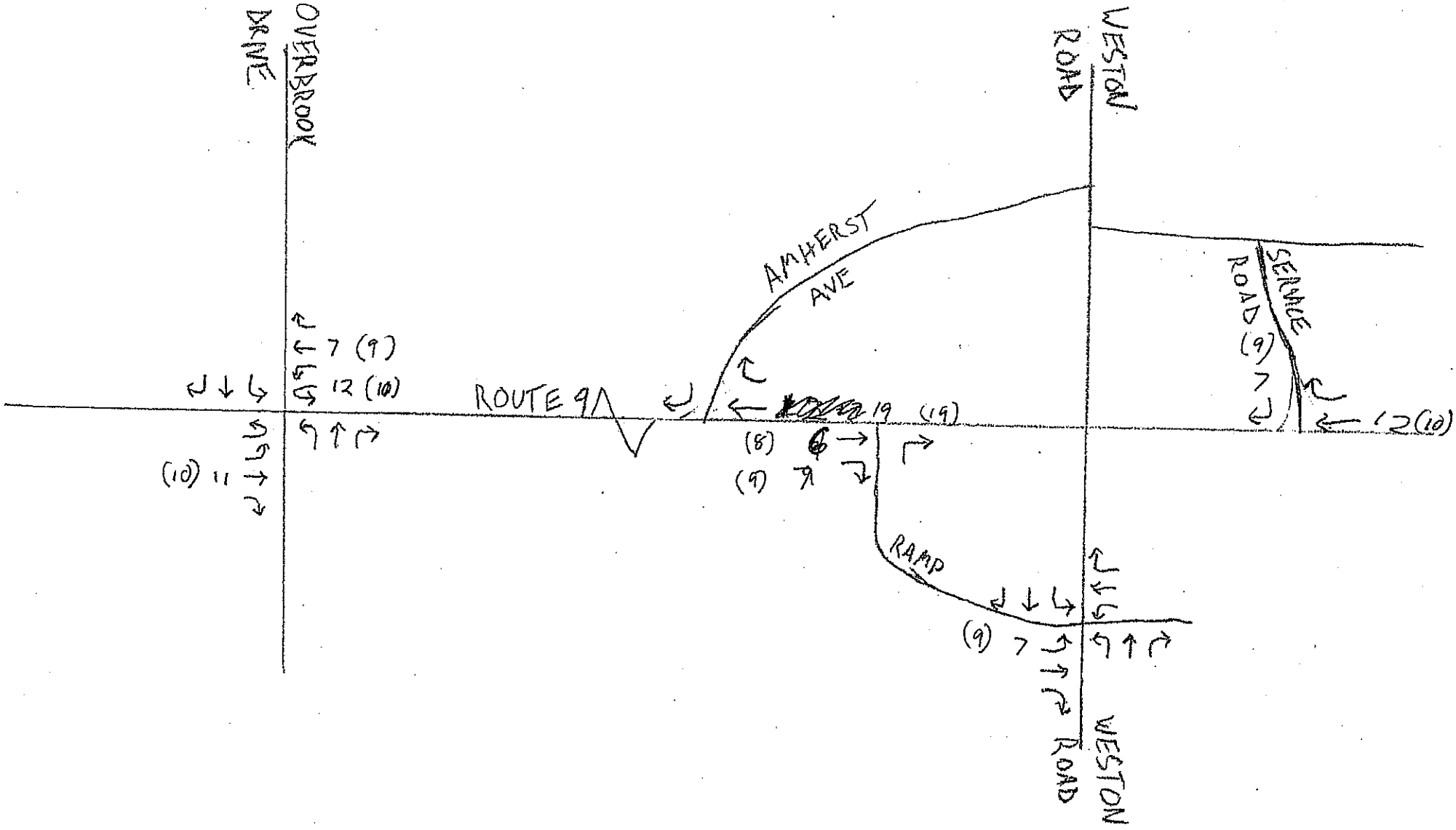
CVS
WELLESLEY, MA
09733.26

Travel Inn
PM (SAT)



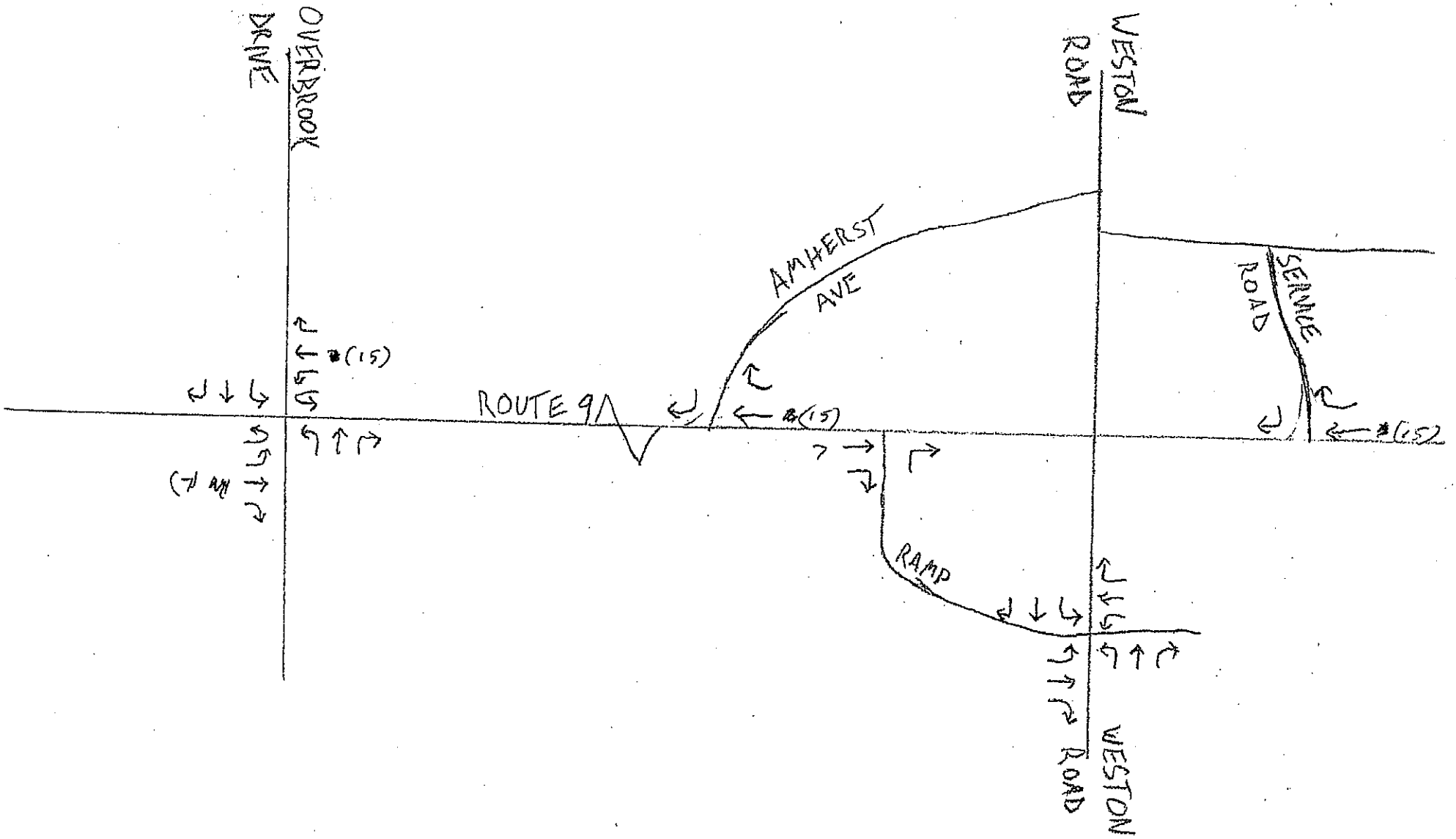
CVS
WELLESLEY, MA
09733.26

St. James Church
30 Single Family
PM (SAT)



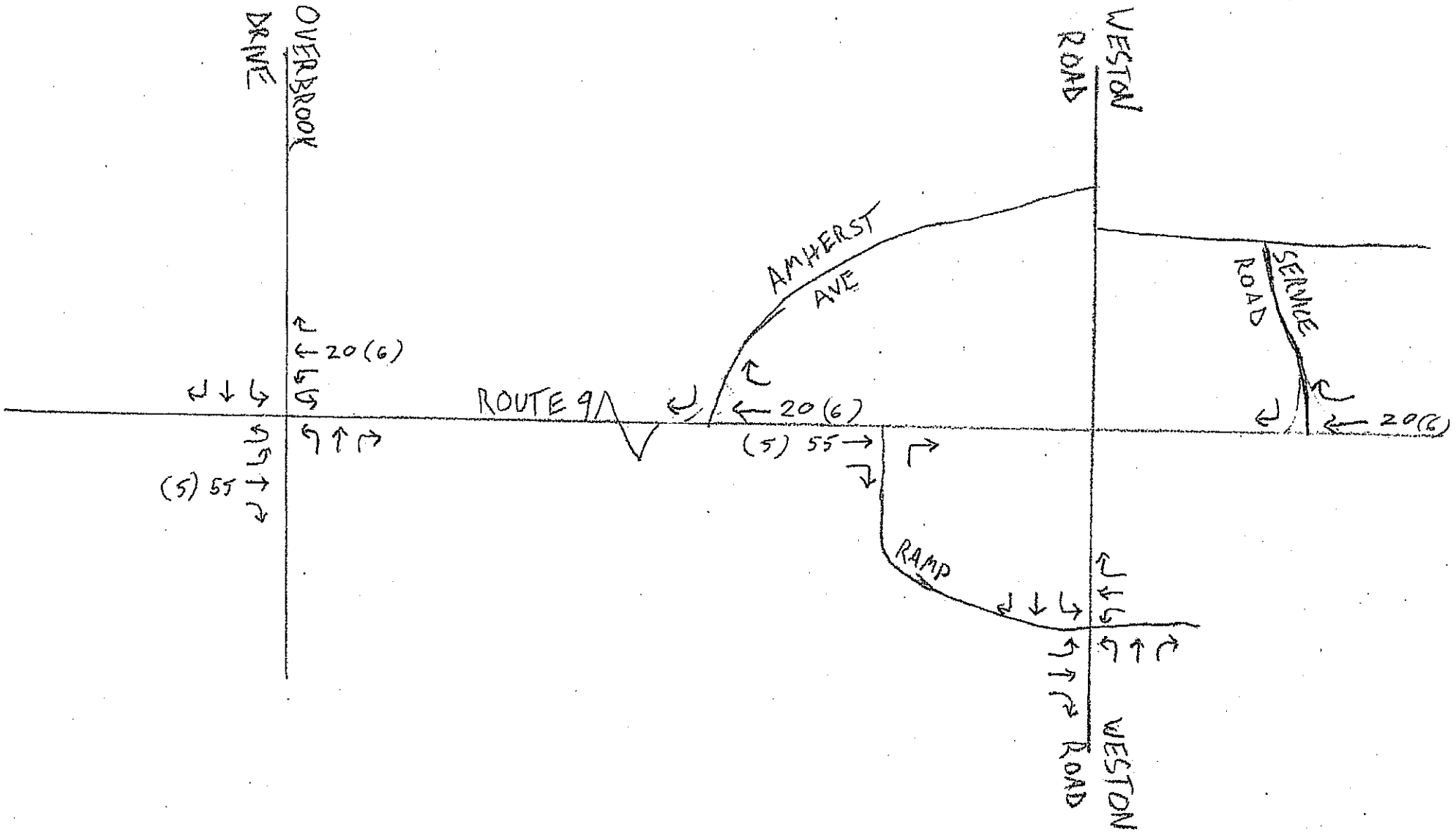
CVS
WELLESLEY, MA
09733.26

Notice Clearleaf Apartments
Add (PM) no sat data



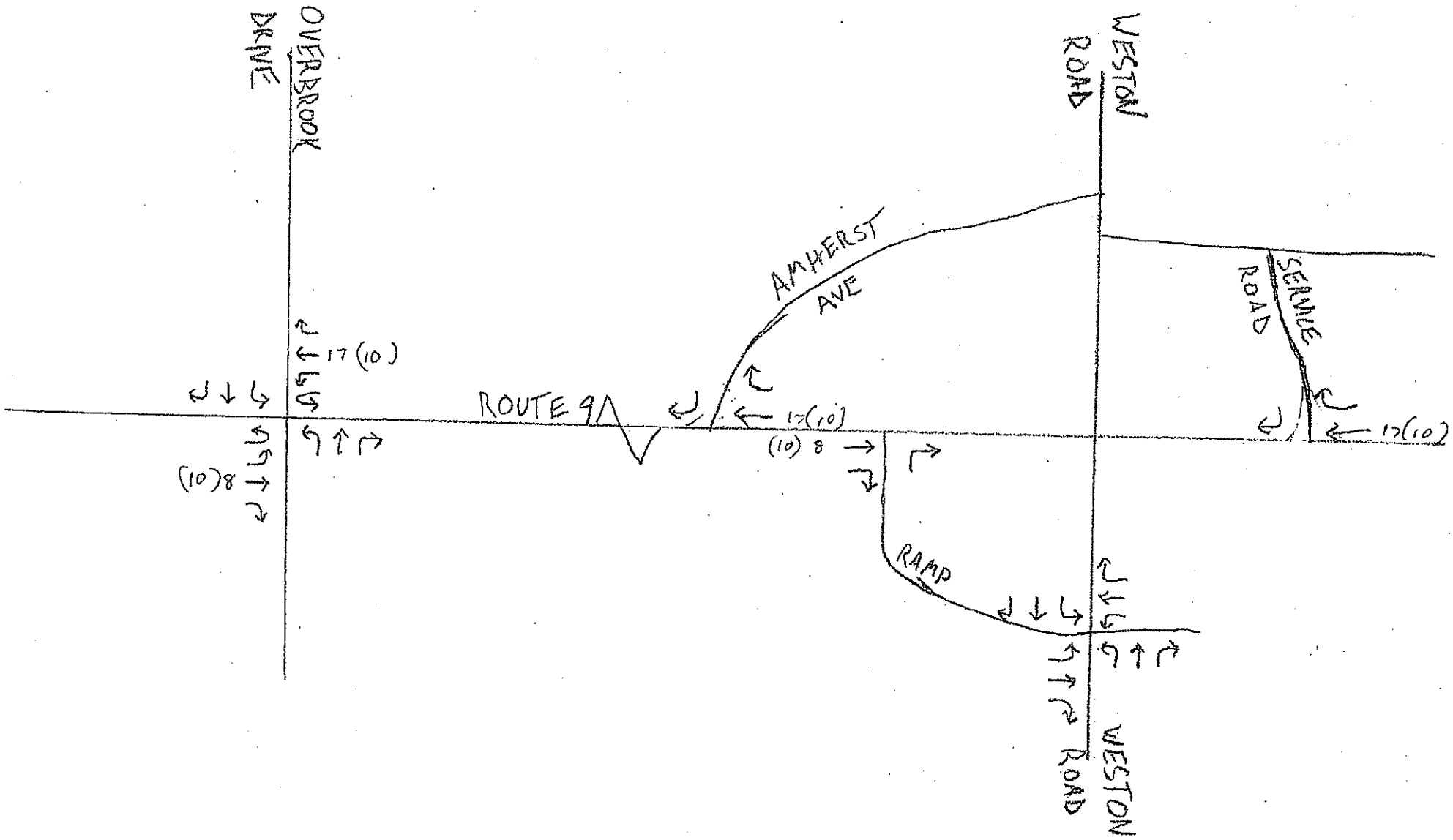
CVS
WELLESLEY, MA
09733.26

Matamorks
PM (Sat)



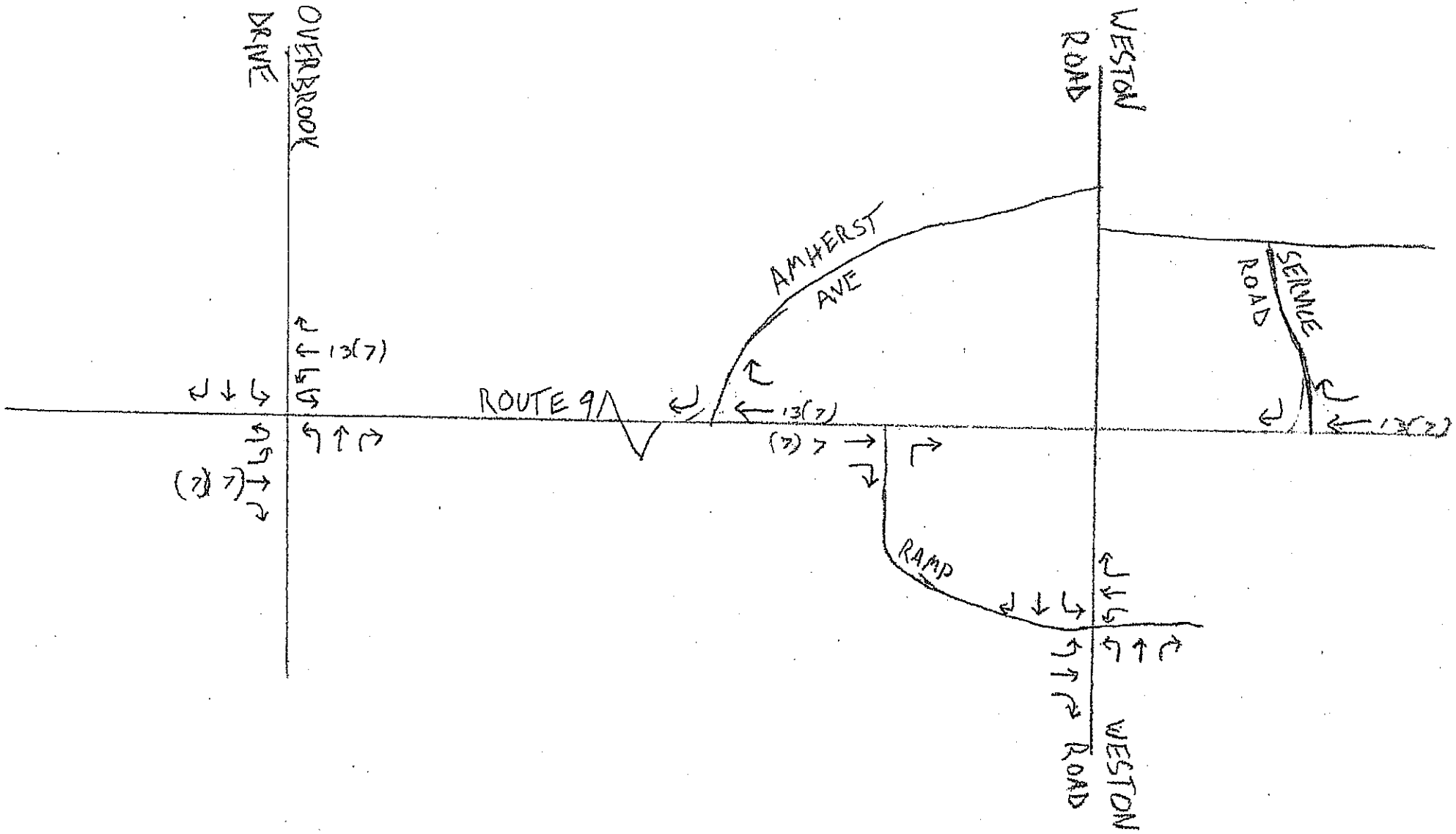
CVS
WELLESLEY, MA
09733.26

Natick Mall
(apartment only)
PM (sat)



CVS
WELLESLEY, MA
09733.26

Chrysler Rd Apartments
PM (SAT)



Trip Generation

Trip Generation Summary

CVS
9733.26

Gross Vehicles Trips, Based on Average Rates [linear, unrounded]			
Land Use	**Pharmacy w/o Pick-up window**	**Pharmacy w/ Pick-up window**	**Shopping Center**
ITE LUC	880	881	820
Period			
Weekday Daily			
Entering	657	643	313
Exiting	657	643	313
Total	1,314	1,286	626
Weekday Morning			
Entering	28	22	9
Exiting	19	17	6
Total	47	39	15
Weekday Evening			
Entering	61	62	26
Exiting	61	64	28
Total	123	126	55
Saturday Daily			
Entering	765	748	365
Exiting	765	748	365
Total	1,529	1,497	729
Saturday Mid-day			
Entering	88	89	38
Exiting	75	78	35
Total	163	167	73

* these rates are calculated as a proportion of Shopping Center rates to Pharmacy rates, since no reliable Saturday data is available for pharmacies.

ITE TRIP GENERATION WORKSHEET
(7th Edition, Updated January 2004)

LANDUSE: Pharmacy/Drugstore without Drive-Through Window
LANDUSE CODE: 880 Independent Variable --- 1,000 Sq. Feet Gross Floor Area

JOB NAME: CVS
JOB NUMBER: 9733.26

FLOOR AREA (KSF): 14.59

WEEKDAY

RATES:

	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	6	0.73	90.06	81.00	106.50	11	8.6	13.2	50%	50%
AM PEAK (ADJACENT ST)	6	0.93	3.20	1.74	4.30	11	8.6	13.2	59%	41%
PM PEAK (ADJACENT ST)	9	--	8.42	6.30	11.70	10	8.6	13.2	50%	50%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	1,314	657	657	1291	646	646
AM PEAK (ADJACENT ST)	47	28	19	72	42	30
PM PEAK (ADJACENT ST)	123	61	61	NA	NA	NA

SATURDAY

RATES:

	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	--	--	--	--	--	--	--	--	--	--
PEAK OF GENERATOR	3	--	10.68	9.26	13.09	10	9.4	10.5	49%	51%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	NA	NA	NA	NA	NA	NA
PEAK OF GENERATOR	156	76	79	NA	NA	NA

SUNDAY

RATES:

	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	--	--	--	--	--	--	--	--	--	--
PEAK OF GENERATOR	--	--	--	--	--	--	--	--	--	--

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	NA	NA	NA	NA	NA	NA
PEAK OF GENERATOR	NA	NA	NA	NA	NA	NA

ITE TRIP GENERATION WORKSHEET
(7th Edition, Updated January 2004)

LANDUSE: Pharmacy/Drugstore with Drive-Through Window
LANDUSE CODE: 881 Independent Variable --- 1,000 Sq. Feet Gross Floor Area

JOB NAME: CVS
JOB NUMBER: 9733.26

FLOOR AREA (KSF): 14.59

WEEKDAY

RATES:

	# Studies	R^2	Total Trip Ends Average	Low	High	Independent Variable Range Average	Low	High	Directional Distribution Enter	Exit
DAILY	3	--	88.16	74.95	99.74	14	9.5	15.5	50%	50%
AM PEAK (ADJACENT ST)	3	--	2.66	1.93	4.11	14	9.5	15.5	57%	43%
PM PEAK (ADJACENT ST)	12	--	8.62	4.85	17.46	14	9.5	16.5	49%	51%

TRIPS:

	BY AVERAGE Total	Enter	Exit	BY REGRESSION Total	Enter	Exit
DAILY	1,286	643	643	NA	NA	NA
AM PEAK (ADJACENT ST)	39	22	17	NA	NA	NA
PM PEAK (ADJACENT ST)	126	62	64	NA	NA	NA

SATURDAY

RATES:

	# Studies	R^2	Total Trip Ends Average	Low	High	Independent Variable Range Average	Low	High	Directional Distribution Enter	Exit
DAILY	--	--	--	--	--	--	--	--	--	--
PEAK OF GENERATOR	5	--	7.85	4.31	10.20	14	9.9	16.5	50%	50%

TRIPS:

	BY AVERAGE Total	Enter	Exit	BY REGRESSION Total	Enter	Exit
DAILY	NA	NA	NA	NA	NA	NA
PEAK OF GENERATOR	115	57	57	NA	NA	NA

SUNDAY

RATES:

	# Studies	R^2	Total Trip Ends Average	Low	High	Independent Variable Range Average	Low	High	Directional Distribution Enter	Exit
DAILY	--	--	--	--	--	--	--	--	--	--
PEAK OF GENERATOR	--	--	--	--	--	--	--	--	--	--

TRIPS:

	BY AVERAGE Total	Enter	Exit	BY REGRESSION Total	Enter	Exit
DAILY	NA	NA	NA	NA	NA	NA
PEAK OF GENERATOR	NA	NA	NA	NA	NA	NA

ITE TRIP GENERATION WORKSHEET
(7th Edition, Updated January 2004)

LANDUSE: Shopping Center (non-Christmas)
LANDUSE CODE: 820 Independent Variable --- 1,000 square feet GLA

JOB NAME: CVS **SIZE (ksf):** 14.59
JOB NUMBER: 9733.26

WEEKDAY

RATES:

	# Studies	R^2	Total Trip Ends Average	Low	High	Independent Variable Range Average	Low	High	Directional Distribution Enter	Exit
DAILY	302	0.78	42.94	12.50	270.89	328	0	1600	50%	50%
AM PEAK	98	0.52	1.03	0.10	9.05	287	0	1600	61%	39%
PM PEAK	407	0.81	3.75	0.68	29.27	379	0	2400	48%	52%

TRIPS:

	BY AVERAGE Total	Enter	Exit	BY REGRESSION Total	Enter	Exit
DAILY	626	313	313	1943	972	972
AM PEAK (ADJACENT ST)	15	9	6	49	30	19
PM PEAK (ADJACENT ST)	55	26	28	176	84	91

SATURDAY

RATES:

	# Studies	R^2	Total Trip Ends Average	Low	High	Independent Variable Range Average	Low	High	Directional Distribution Enter	Exit
DAILY	123	0.82	49.97	16.70	227.50	450	0	1600	50%	50%
PEAK OF GENERATOR	124	0.84	4.97	1.46	18.32	447	0	1600	52%	48%

TRIPS:

	BY AVERAGE Total	Enter	Exit	BY REGRESSION Total	Enter	Exit
DAILY	729	365	365	2,748	1,374	1,374
PEAK OF GENERATOR	73	38	35	248	129	119

SUNDAY

RATES:

	# Studies	R^2	Total Trip Ends Average	Low	High	Independent Variable Range Average	Low	High	Directional Distribution Enter	Exit
DAILY	77	0.52	25.24	4.15	148.15	439	0	1600	50%	50%
PEAK OF GENERATOR	39	—	3.12	0.39	12.40	369	0	1300	49%	51%

TRIPS:

	BY AVERAGE Total	Enter	Exit	BY REGRESSION Total	Enter	Exit
DAILY	368	184	184	4443	2221	2221
PEAK OF GENERATOR	46	22	23	NA	NA	NA

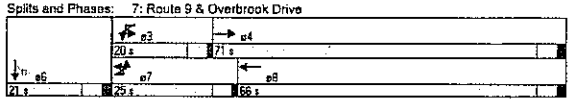
2008 Existing Capacity Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑						↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		115		0		115	0	0		0		0
Storage Lanes		1		0		1	0	0		0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50	50				50	50
Trailing Detector (ft)	0	0	0		0	0	0				0	0
Turning Speed (mph)	9	15		9	9	15		9	15	9	15	
Right Turn on Red				Yes				Yes		Yes		Yes
Link Speed (mph)			30				30		30			30
Link Distance (ft)			1199				3029		227			1412
Travel Time (s)			27.3				68.8		5.2			32.1
Volume (vph)	40	70	1960	0	20	0	1950	15	0	0	55	0	145
Peak Hour Factor	0.92	0.98	0.98	0.92	0.98	0.92	0.98	0.98	0.92	0.92	0.89	0.92	0.89
Heavy Vehicles (%)	2%	1%	1%	2%	2%	2%	2%	2%	2%	2%	4%	2%	4%
Lane Group Flow (vph)	0	114	2000	0	0	20	2005	0	0	0	0	225	0
Turn Type	Prot	Prot			Prot	Prot					Perm		
Protected Phases	7	7	4		3	3	8					6	
Permitted Phases											6		
Detector Phases	7	7	4		3	3	8				6	6	
Minimum Initial (s)	6.0	6.0	15.0		6.0	6.0	15.0				6.0	6.0	
Minimum Split (s)	11.0	11.0	21.0		11.0	11.0	21.0				12.0	12.0	
Total Split (s)	25.0	25.0	71.0	0.0	20.0	20.0	66.0	0.0	0.0	0.0	21.0	21.0	0.0
Total Split (%)	22.3%	22.3%	63.4%	0.0%	17.9%	17.9%	58.9%	0.0%	0.0%	0.0%	18.8%	18.8%	0.0%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0				4.0	4.0	
All-Red Time (s)	1.0	1.0	2.0		1.0	1.0	2.0				2.0	2.0	
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	None	Min		None	None	Min				None	None	
v/c Ratio		0.51	0.77			0.15	0.89					0.72	
Control Delay		50.1	12.9			49.4	24.1					36.9	
Queue Delay		0.0	0.0			0.0	0.0					0.0	
Total Delay		50.1	12.9			49.4	24.1					36.9	
Queue Length 50th (ft)		71	294			12	566					77	
Queue Length 95th (ft)		129	667			37	#906					167	
Internal Link Dist (ft)			1119				2949		147			1332	
Turn Bay Length (ft)		115				115							
Base Capacity (vph)		343	2616			251	2258					357	
Starvation Cap Reductn		0	0			0	0					0	
Spillback Cap Reductn		0	0			0	0					0	
Storage Cap Reductn		0	0			0	0					0	
Reduced v/c Ratio		0.33	0.76			0.08	0.89					0.63	

Intersection Summary

Area Type: Other
Cycle Length: 112
Actuated Cycle Length: 98.5
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Route 9 & Overbrook Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑						↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0					4.0	
Lane Util. Factor		1.00	0.95		1.00	0.95					1.00	
Frt		1.00	1.00		1.00	1.00					0.90	
Flt Protected		0.95	1.00		0.95	1.00					0.99	
Satd. Flow (prot)		1780	3574		1770	3535					1626	
Flt Permitted		0.95	1.00		0.95	1.00					0.99	
Satd. Flow (perm)		1780	3574		1770	3535					1626	
Volume (vph)	40	70	1960	0	20	0	1950	15	0	0	55	0	145
Peak-hour factor, PHF	0.92	0.98	0.98	0.92	0.98	0.92	0.98	0.98	0.92	0.92	0.89	0.92	0.89
Adj. Flow (vph)	43	71	2000	0	20	0	1990	15	0	0	62	0	163
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	86	0
Lane Group Flow (vph)	0	114	2000	0	0	20	2005	0	0	0	0	139	0
Heavy Vehicles (%)	2%	1%	1%	2%	2%	2%	2%	2%	2%	2%	4%	2%	4%
Turn Type	Prot	Prot			Prot	Prot					Perm		
Protected Phases	7	7	4		3	3	8					6	
Permitted Phases											6		
Actuated Green, G (s)		9.9	69.8			2.9	62.8					11.7	
Effective Green, g (s)		10.9	71.8			3.9	64.8					13.7	
Actuated g/C Ratio		0.11	0.71			0.04	0.64					0.14	
Clearance Time (s)		5.0	6.0			5.0	6.0					6.0	
Vehicle Extension (s)		3.0	3.0			3.0	3.0					3.0	
Lane Grp Cap (vph)		191	2531			68	2259					220	
v/s Ratio Prot		c0.06	c0.56			0.01	c0.57						
v/s Ratio Perm												0.09	
v/c Ratio		0.60	0.79			0.29	0.89					0.63	
Uniform Delay, d1		43.2	9.8			47.4	15.3					41.5	
Progression Factor		1.00	1.00			1.00	1.00					1.00	
Incremental Delay, d2		4.9	1.8			2.4	4.6					5.5	
Delay (s)		48.1	11.6			49.8	19.9					47.0	
Level of Service		D	B			D	B					D	
Approach Delay (s)			13.6				20.2		0.0			47.0	
Approach LOS			B				C		A			D	

HCM Signalized Intersection Capacity Analysis

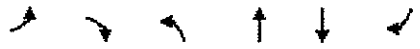
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	101.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	3%	
Volume (veh/h)	1865	260	0	2290	0	275
Peak Hour Factor	0.95	0.95	0.95	0.95	0.72	0.72
Hourly flow rate (vph)	1963	274	0	2411	0	382
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			2237		3305	1118
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2237		3305	1118
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	0
cM capacity (veh/h)			232		7	203

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1309	928	1205	1205	382
Volume Left	0	0	0	0	0
Volume Right	0	274	0	0	382
cSH	1700	1700	1700	1700	203
Volume to Capacity	0.77	0.55	0.71	0.71	1.88
Queue Length 95th (ft)	0	0	0	0	690
Control Delay (s)	0.0	0.0	0.0	0.0	455.7
Lane LOS					F
Approach Delay (s)	0.0		0.0		455.7
Approach LOS					F

Intersection Summary			
Average Delay	34.6		
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	-3%			0%	0%	
Volume (veh/h)	115	145	80	660	725	195
Peak Hour Factor	0.94	0.94	0.95	0.95	0.93	0.93
Hourly flow rate (vph)	122	154	84	695	780	210
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1748	884	989			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1748	884	989			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	55	88			
cM capacity (veh/h)	83	344	703			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	277	779	989
Volume Left	122	84	0
Volume Right	154	0	210
cSH	145	703	1700
Volume to Capacity	1.91	0.12	0.58
Queue Length 95th (ft)	534	10	0
Control Delay (s)	487.6	3.1	0.0
Lane LOS	F	A	
Approach Delay (s)	487.6	3.1	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	67.1		
Intersection Capacity Utilization	114.4%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↱			↱
Sign Control		Free	Free		Stop	
Grade		0%	0%		2%	
Volume (veh/h)	0	2125	2170	120	0	75
Peak Hour Factor	0.93	0.93	0.91	0.91	0.79	0.79
Hourly flow rate (vph)	0	2285	2385	132	0	95
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2516				3593	1258
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2516				3593	1258
tC, single (s)	4.1				6.9	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	41
cM capacity (veh/h)	180				4	161

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	1142	1142	1590	927	95
Volume Left	0	0	0	0	0
Volume Right	0	0	0	132	95
cSH	1700	1700	1700	1700	161
Volume to Capacity	0.67	0.67	0.94	0.55	0.59
Queue Length 95th (ft)	0	0	0	0	78
Control Delay (s)	0.0	0.0	0.0	0.0	55.6
Lane LOS					F
Approach Delay (s)	0.0		0.0		55.6
Approach LOS					F

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↱			↱
Sign Control		Free	Free		Stop	
Grade		0%	0%		2%	
Volume (veh/h)	0	2140	2125	245	0	165
Peak Hour Factor	0.92	0.92	0.93	0.93	0.83	0.83
Hourly flow rate (vph)	0	2326	2285	263	0	199
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2548				3580	1274
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2548				3580	1274
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	0
cM capacity (veh/h)	172				4	159

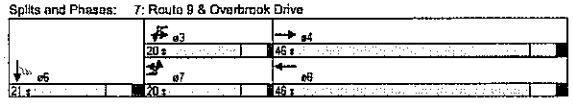
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	1163	1163	1523	1025	199
Volume Left	0	0	0	0	0
Volume Right	0	0	0	263	199
cSH	1700	1700	1700	1700	159
Volume to Capacity	0.68	0.68	0.90	0.60	1.25
Queue Length 95th (ft)	0	0	0	0	286
Control Delay (s)	0.0	0.0	0.0	0.0	209.0
Lane LOS					F
Approach Delay (s)	0.0		0.0		209.0
Approach LOS					F

Intersection Summary			
Average Delay	8.2		
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		

Lane Configurations															
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		115		0		115		0	0		0	0			0
Storage Lanes		1		0		1		0	0		0	0			0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50	50					50	50		
Trailing Detector (ft)	0	0	0		0	0	0					0	0		
Turning Speed (mph)	9	15		9	9	15		9	15		9	15			9
Right Turn on Red				Yes				Yes			Yes				Yes
Link Speed (mph)			30				30			30			30		
Link Distance (ft)			1199				3029			219			1412		
Travel Time (s)			27.3				68.8			5.0			32.1		
Volume (vph)	95	60	1575	5	20	0	1930	25	0	0	0	45	0	85	
Peak Hour Factor	0.92	0.94	0.94	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.92	0.94	
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%	
Lane Group Flow (vph)	0	167	1681	0	0	22	2125	0	0	0	0	0	138	0	
Turn Type	Prot	Prot			Prot	Prot						Perm			
Protected Phases	7	7	4		3	3	8						6		
Permitted Phases												6			
Detector Phases	7	7	4		3	3	8					6	6		
Minimum Initial (s)	6.0	6.0	15.0		6.0	6.0	15.0					6.0	6.0		
Minimum Split (s)	11.0	11.0	21.0		11.0	11.0	21.0					12.0	12.0		
Total Split (s)	20.0	20.0	46.0	0.0	20.0	20.0	46.0	0.0	0.0	0.0	0.0	21.0	21.0	0.0	
Total Split (%)	23.0%	23.0%	52.9%	0.0%	23.0%	23.0%	52.9%	0.0%	0.0%	0.0%	0.0%	24.1%	24.1%	0.0%	
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0					4.0	4.0		
All-Red Time (s)	1.0	1.0	2.0		1.0	1.0	2.0					2.0	2.0		
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag								
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes								
Recall Mode	Min	Min	Min		Min	Min	Max					None	None		
v/c Ratio		0.56	0.74			0.12	1.04						0.45		
Control Delay		37.5	13.5			35.1	52.6						18.2		
Queue Delay		0.0	0.0			0.0	0.0						0.0		
Total Delay		37.5	13.5			35.1	52.6						18.2		
Queue Length 50th (ft)		74	288			10	~618						21		
Queue Length 95th (ft)		142	453			33	#881						72		
Internal Link Dist (ft)			1119				2949			139			1332		
Turn Bay Length (ft)		115				115									
Base Capacity (vph)		369	2270			348	2039						414		
Starvation Cap Reductn		0	0			0	0						0		
Spillback Cap Reductn		0	0			0	0						0		
Storage Cap Reductn		0	0			0	0						0		
Reduced v/c Ratio		0.45	0.74			0.06	1.04						0.33		

Area Type: Other
Cycle Length: 87
Actuated Cycle Length: 74.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Route 9 & Overbrook Drive



Lane Configurations															
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			4.0	4.0						4.0		
Lane Util. Factor		1.00	0.95			1.00	0.95						1.00		
Frt		1.00	1.00			1.00	1.00						0.91		
Flt Protected		0.95	1.00			0.95	1.00						0.98		
Satd. Flow (prot)		1787	3573			1787	3567						1686		
Flt Permitted		0.95	1.00			0.95	1.00						0.98		
Satd. Flow (perm)		1787	3573			1787	3567						1686		
Volume (vph)	95	60	1575	5	20	0	1930	25	0	0	0	45	0	85	
Peak-hour factor, PHF	0.92	0.94	0.94	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.92	0.94	
Adj. Flow (vph)	103	64	1676	5	22	0	2098	27	0	0	0	48	0	90	
RTOR Reduction (vph)	0	0	0	0	0	0	1	0	0	0	0	0	80	0	
Lane Group Flow (vph)	0	167	1681	0	0	22	2124	0	0	0	0	0	58	0	
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%	
Turn Type	Prot	Prot			Prot	Prot						Perm			
Protected Phases	7	7	4		3	3	8						6		
Permitted Phases												6			
Actuated Green, G (s)		11.6	45.6			6.8	40.8						6.8		
Effective Green, g (s)		12.6	47.6			7.8	42.8						8.8		
Actuated g/C Ratio		0.17	0.62			0.10	0.56						0.12		
Clearance Time (s)		5.0	6.0			5.0	6.0						6.0		
Vehicle Extension (s)		3.0	3.0			3.0	3.0						3.0		
Lane Grp Cap (vph)		295	2232			183	2004						195		
v/s Ratio Prot		c0.09	0.47			0.01	c0.60								
v/s Ratio Perm													0.03		
v/c Ratio		0.57	0.75			0.12	1.06						0.30		
Uniform Delay, d1		29.3	10.1			31.1	16.7						30.9		
Progression Factor		1.00	1.00			1.00	1.00						1.00		
Incremental Delay, d2		2.5	1.5			0.3	36.2						0.9		
Delay (s)		31.8	11.6			31.4	54.9						31.7		
Level of Service		C	B			C	D						C		
Approach Delay (s)			13.4				54.7				0.0		31.7		
Approach LOS			B				D				A		C		

HCM Average Control Delay	35.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	76.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Sign Control	Free			Free	Stop	
Grade	0%			0%	3%	
Volume (veh/h)	1410	275	0	2060	0	245
Peak Hour Factor	0.97	0.97	0.96	0.96	0.83	0.83
Hourly flow rate (vph)	1454	284	0	2146	0	295
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1737		2668	869
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1737		2668	869
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	1
cM capacity (veh/h)			363		18	297

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	969	768	1073	1073	295
Volume Left	0	0	0	0	0
Volume Right	0	284	0	0	295
cSH	1700	1700	1700	1700	297
Volume to Capacity	0.57	0.45	0.63	0.63	0.99
Queue Length 95th (ft)	0	0	0	0	260
Control Delay (s)	0.0	0.0	0.0	0.0	89.2
Lane LOS					F
Approach Delay (s)	0.0		0.0		89.2
Approach LOS					F

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	-3%			0%	0%	
Volume (veh/h)	100	175	75	850	515	170
Peak Hour Factor	0.91	0.91	0.92	0.92	0.91	0.91
Hourly flow rate (vph)	110	192	82	924	566	187
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1746	659	753			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1746	659	753			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	59	91			
cM capacity (veh/h)	87	465	862			

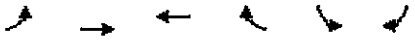
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	302	1005	753
Volume Left	110	82	0
Volume Right	192	0	187
cSH	180	862	1700
Volume to Capacity	1.68	0.09	0.44
Queue Length 95th (ft)	520	8	0
Control Delay (s)	375.7	2.6	0.0
Lane LOS	F	A	
Approach Delay (s)	375.7	2.6	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	56.4		
Intersection Capacity Utilization	112.6%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↱			↱
Sign Control		Free	Free		Stop	
Grade		0%	0%		2%	
Volume (veh/h)	0	1685	1950	110	0	135
Peak Hour Factor	0.97	0.97	0.94	0.94	0.98	0.98
Hourly flow rate (vph)	0	1737	2074	117	0	138
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2191				3002	1096
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2191				3002	1096
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	35
cM capacity (veh/h)	241				11	212

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	869	869	1383	809	138
Volume Left	0	0	0	0	0
Volume Right	0	0	0	117	138
cSH	1700	1700	1700	1700	212
Volume to Capacity	0.51	0.51	0.81	0.48	0.65
Queue Length 95th (ft)	0	0	0	0	98
Control Delay (s)	0.0	0.0	0.0	0.0	49.1
Lane LOS					E
Approach Delay (s)	0.0		0.0		49.1
Approach LOS					E

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	72.4%	ICU Level of Service	C	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↱			↱
Sign Control		Free	Free		Stop	
Grade		0%	0%		2%	
Volume (veh/h)	0	1655	1795	130	0	265
Peak Hour Factor	0.92	0.92	0.96	0.96	0.82	0.82
Hourly flow rate (vph)	0	1799	1870	135	0	323
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2005				2837	1003
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2005				2837	1003
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	0
cM capacity (veh/h)	282				14	242

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	899	899	1247	759	323
Volume Left	0	0	0	0	0
Volume Right	0	0	0	135	323
cSH	1700	1700	1700	1700	242
Volume to Capacity	0.53	0.53	0.73	0.45	1.33
Queue Length 95th (ft)	0	0	0	0	429
Control Delay (s)	0.0	0.0	0.0	0.0	215.9
Lane LOS					F
Approach Delay (s)	0.0		0.0		215.9
Approach LOS					F

Intersection Summary			
Average Delay	16.9		
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		