Traffic Volume Figures

Trip Generation Figures

Midtown Redevelopment
Turning Movement Counts
September 21, 2010 7:45am-8:45am, 4:45pm-5:45pm

Clinton Ave / Court St Intersection

Time	Clinton Ave NB			Court St EB		Total
	NB Left	NB Thru	NB Right	EB Left	EB Thru	
7:45-8:00	107	376	114	14	42	653
8:00-8:15	104	348	124	15	41	632
8:15-8:30	138	361	91	16	38	644
8:30-8:45	117	324	87	28	43	599
Total Peak Hr	466	1409	416	73	164	
Peak Hr Factor	0.84	0.94	0.84	0.65	0.95	

Time	Clinton Ave NB			Court St EB		Total
	NB Left	NB Thru	NB Right	EB Left	EB Thru	
4:45-5:00	13	268	42	23	73	419
5:00-5:15	29	243	76	34	127	509
5:15-5:30	14	247	40	28	89	418
5:30-5:45	14	224	40	21	52	351
Total Peak Hr	70	982	198	106	341	
Peak Hr Factor	0.60	0.92	0.65	0.78	0.67	

Midtown Redevelopment
Turning Movement Counts
September 23, 2010 7:45am-8:45am, 4:45pm-5:45pm

Clinton Ave / Broad St Intersection

Time	Clinton Ave NB		Broad St WB		Total
	NB Left	NB Thru	WB Thru	WB Right	
7:45-8:00	125	245	102	25	497
8:00-8:15	144	243	88	19	494
8:15-8:30	130	263	94	10	497
8:30-8:45	120	233	66	12	431
Total Peak Hr	519	984	350	66	
Peak Hr Factor	0.90	0.94	0.86	0.66	

Time	Clinton Ave NB		Broad St WB		Total
	NB Left	NB Thru	WB Thru	WB Right	
4:45-5:00	72	219	62	18	371
5:00-5:15	70	207	64	16	357
5:15-5:30	80	195	68	18	361
5:30-5:45	59	171	58	8	296
Total Peak Hr	281	792	252	60	
Peak Hr Factor	0.88	0.90	0.93	0.83	

Midtown Redevelopment
Turning Movement Counts
September 21, 2010 7:45am-8:45am, 4:45pm-5:45pm

Clinton Ave / Main St Intersection

Time	Clinton Ave NB Thru	Main St EB Thru	Main St WB Thru	Total
7:45-8:00	242	98	149	489
8:00-8:15	248	104	90	442
8:15-8:30	216	72	99	387
8:30-8:45	187	76	85	348
Total Peak Hr	893	350	423	
Peak Hr Factor	0.90	0.84	0.71	

Time	Clinton Ave NB Thru	Main St EB Thru	Main St WB Thru	Total
4:45-5:00	161	104	56	321
5:00-5:15	236	133	100	469
5:15-5:30	233	136	68	437
5:30-5:45	211	103	67	381
Total Peak Hr	841	476	291	
Peak Hr Factor	0.89	0.88	0.73	

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town Redevelopment
of Rochester, NY

File Name : Main - East AM
Site Code : 00000000
Start Date : 9/30/2010
Page No : 1

Groups Printed- Unshifted - Bank 1

	FRANKLIN From North					MAIN From East					FRANKLIN From South					MAIN From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:45 AM	6	15	1	12	34	3	91	0	51	145	0	20	0	4	24	23	71	1	4	99	302
Total	6	15	1	12	34	3	91	0	51	145	0	20	0	4	24	23	71	1	4	99	302
08:00 AM	4	16	0	15	35	3	102	0	54	159	2	15	3	8	28	15	58	0	0	73	295
08:15 AM	3	12	1	20	36	4	85	0	64	153	0	15	4	7	26	31	74	1	3	109	324
08:30 AM	12	13	0	15	40	1	67	0	53	121	0	10	1	9	20	21	61	1	4	87	268
Grand Total	25	56	2	62	145	11	345	0	222	578	2	60	8	28	98	90	264	3	11	368	1189
Apprch %	17.2	38.6	1.4	42.8		1.9	59.7	0	38.4		2	61.2	8.2	28.6		24.5	71.7	0.8	3		
Total %	2.1	4.7	0.2	5.2	12.2	0.9	29	0	18.7	48.6	0.2	5	0.7	2.4	8.2	7.6	22.2	0.3	0.9	31	
Unshifted	25	54	2	62	143	11	316	0	222	549	2	59	8	28	97	78	225	3	11	317	1106
% Unshifted	100	96.4	100	100	98.6	100	91.6	0	100	95	100	98.3	100	100	99	86.7	85.2	100	100	86.1	93
Bank 1	0	2	0	0	2	0	29	0	0	29	0	1	0	0	1	12	39	0	0	51	83
% Bank 1	0	3.6	0	0	1.4	0	8.4	0	0	5	0	1.7	0	0	1	13.3	14.8	0	0	13.9	7

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File Name : Main - East AM
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Start Date : 9/30/2010
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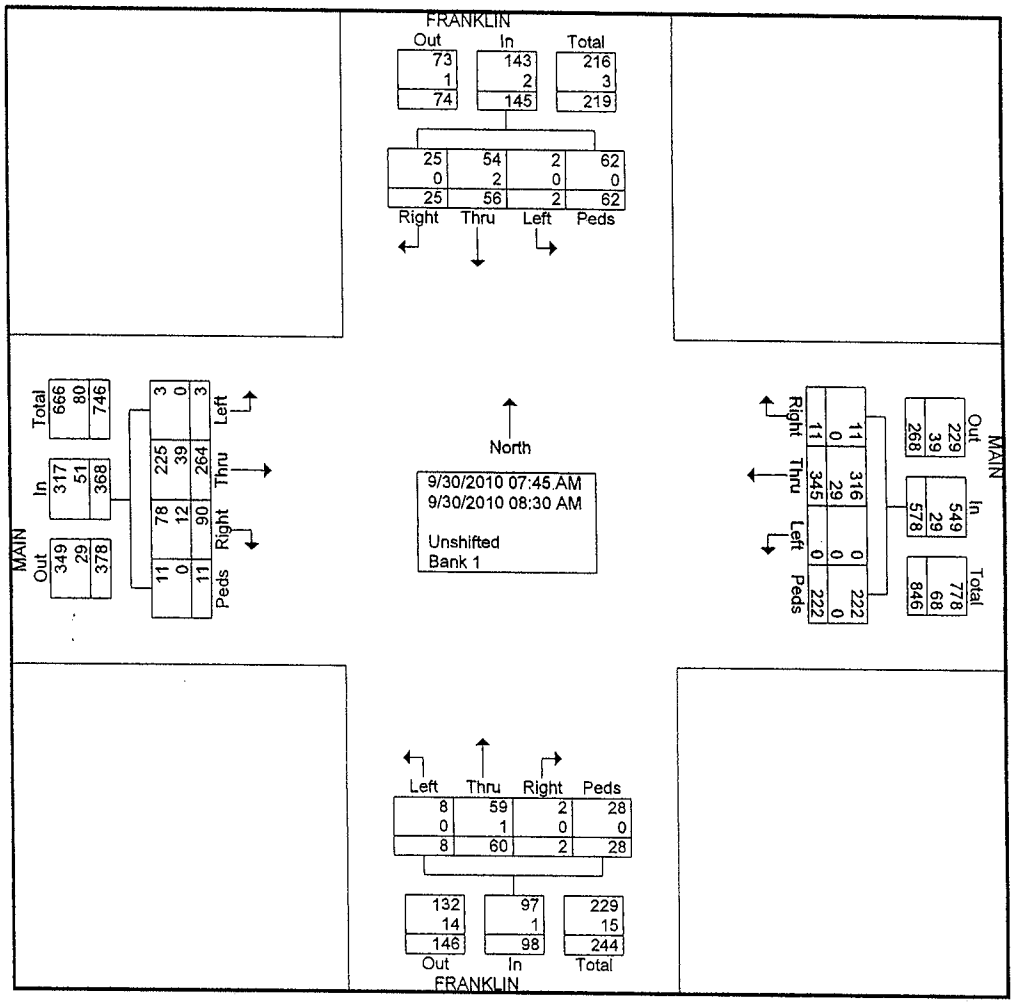

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File Name : Main - East PM
Site Code : 00000000
Start Date : 9/30/2010
Page No : 1

Groups Printed- Unshifted - Bank 1

	FRANKLIN From North					E MAIN From East					FRANKLIN From South					E MAIN From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:45 PM	2	19	0	14	35	3	91	0	34	128	0	11	2	6	19	27	92	1	1	121	303
Total	2	19	0	14	35	3	91	0	34	128	0	11	2	6	19	27	92	1	1	121	303
05:00 PM	6	36	1	21	64	1	82	0	48	131	1	12	1	12	26	30	97	3	3	133	354
05:15 PM	6	28	1	15	50	2	87	0	19	108	1	21	2	11	35	35	118	3	5	161	354
05:30 PM	2	21	0	16	39	0	78	1	30	109	0	16	3	2	21	30	80	1	2	113	282
Grand Total	16	104	2	66	188	6	338	1	131	476	2	60	8	31	101	122	387	8	11	528	1293
Apprch %	8.5	55.3	1.1	35.1		1.3	71	0.2	27.5		2	59.4	7.9	30.7		23.1	73.3	1.5	2.1		
Total %	1.2	8	0.2	5.1	14.5	0.5	26.1	0.1	10.1	36.8	0.2	4.6	0.6	2.4	7.8	9.4	29.9	0.6	0.9	40.8	
Unshifted	15	97	2	66	180	6	303	1	131	441	2	60	8	31	101	120	348	8	11	487	1209
% Unshifted	93.8	93.3	100	100	95.7	100	89.6	100	100	92.6	100	100	100	100	100	98.4	89.9	100	100	92.2	93.5
Bank 1	1	7	0	0	8	0	35	0	0	35	0	0	0	0	0	2	39	0	0	41	84
% Bank 1	6.2	6.7	0	0	4.3	0	10.4	0	0	7.4	0	0	0	0	0	1.6	10.1	0	0	7.8	6.5
	0.67	0.72	0.5			0.5	0.93	0.25			0.5	0.71	0.67	0.70		0.87	0.82				

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File Name : Main - East PM
Site Code : 00000000
Start Date : 9/30/2010
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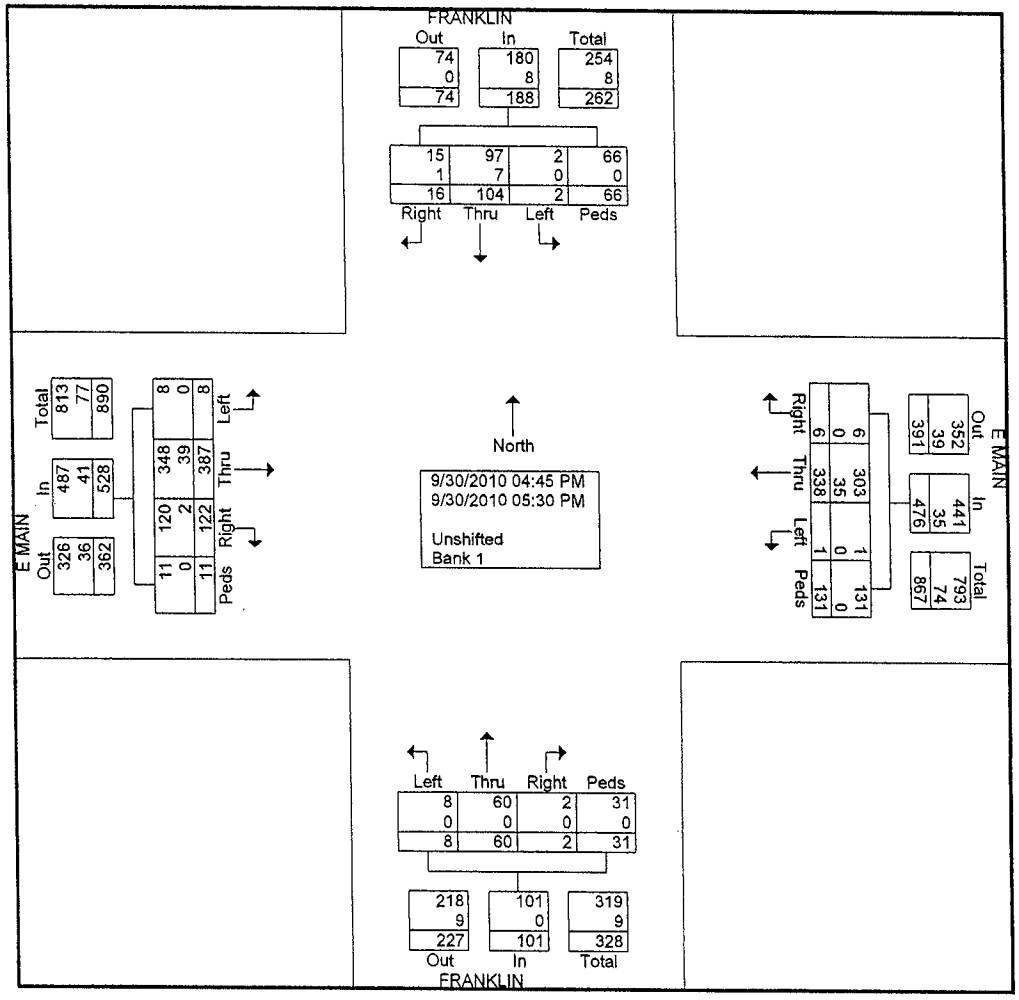

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File Name : Main - Chestnut AM
Site Code : 00000000
Start Date : 9/28/2010
Page No : 1

Groups Printed- Unshifted - Bank 1

	CHESTNUT From North					MAIN From East					CHESTNUT From South					MAIN From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:45 AM	9	145	9	4	167	18	83	46	11	158	9	83	9	1	102	2	37	29	5	73	500
Total	9	145	9	4	167	18	83	46	11	158	9	83	9	1	102	2	37	29	5	73	500
08:00 AM	12	121	6	5	144	16	69	31	15	131	6	64	4	5	79	5	37	24	6	72	426
08:15 AM	12	100	12	3	127	15	64	25	13	117	5	57	11	10	83	3	31	21	6	61	388
08:30 AM	12	94	10	12	128	11	63	26	18	118	10	64	11	7	92	4	33	15	11	63	401
Grand Total	45	460	37	24	566	60	279	128	57	524	30	268	35	23	356	14	138	89	28	269	1715
Apprch %	8	81.3	6.5	4.2		11.5	53.2	24.4	10.9		8.4	75.3	9.8	6.5		5.2	51.3	33.1	10.4		
Total %	2.6	26.8	2.2	1.4	33	3.5	16.3	7.5	3.3	30.6	1.7	15.6	2	1.3	20.8	0.8	8	5.2	1.6	15.7	
Unshifted	35	458	36	24	553	60	267	126	57	510	27	259	30	23	339	10	114	74	28	226	1628
% Unshifted	77.8	99.6	97.3	100	97.7	100	95.7	98.4	100	97.3	90	96.6	85.7	100	95.2	71.4	82.6	83.1	100	84	94.9
Bank 1	10	2	1	0	13	0	12	2	0	14	3	9	5	0	17	4	24	15	0	43	87
% Bank 1	22.2	0.4	2.7	0	2.3	0	4.3	1.6	0	2.7	10	3.4	14.3	0	4.8	28.6	17.4	16.9	0	16	5.1

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File Name : Main - Chestnut AM
Site Code : 00000000
Start Date : 9/28/2010
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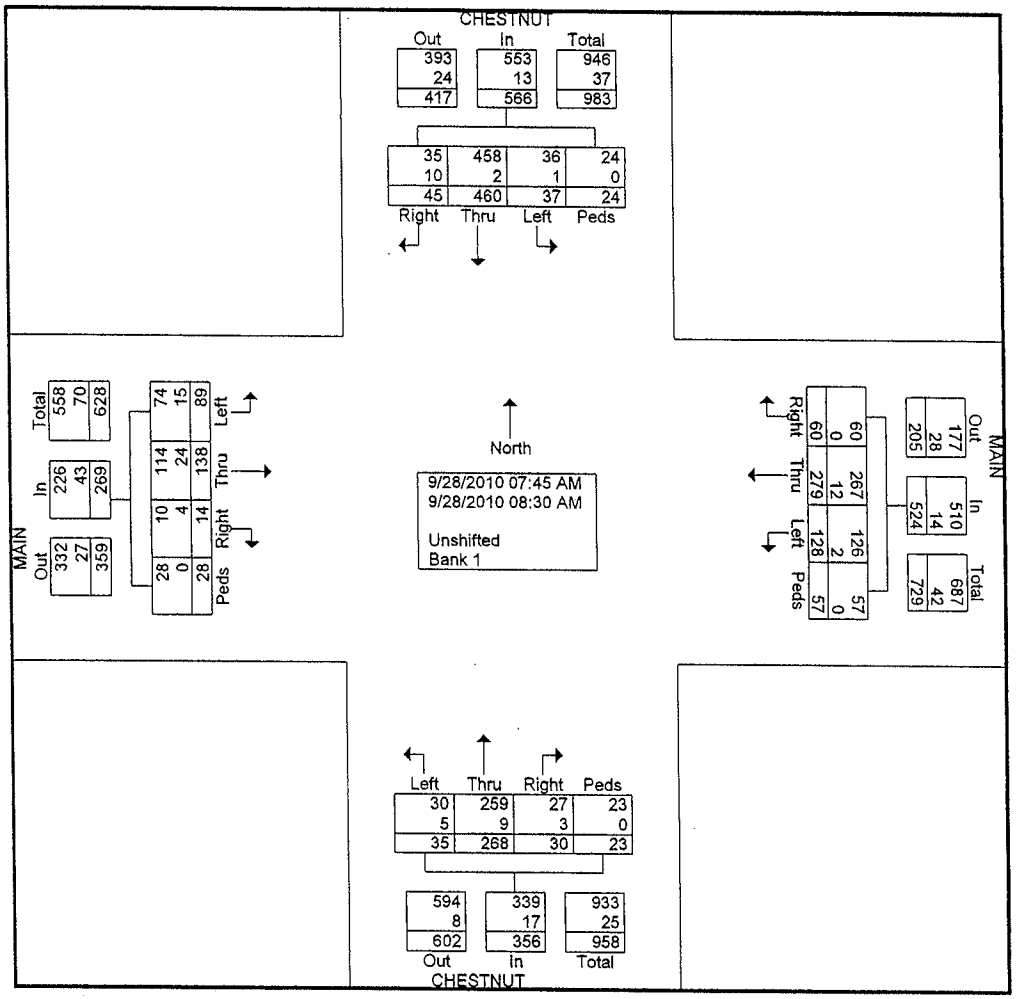

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File Name : Main - Chestnut PM
Site Code : 00000000
Start Date : 9/28/2010
Page No : 1

Groups Printed- Unshifted - Bank 1

	CHESTNUT From North					E MAIN From East					CHESTNUT From South					E MAIN From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:45 PM	18	73	10	7	108	8	68	15	20	111	14	81	4	9	108	10	52	31	14	107	434
Total	18	73	10	7	108	8	68	15	20	111	14	81	4	9	108	10	52	31	14	107	434
05:00 PM	16	110	18	13	157	5	85	22	13	125	17	95	7	7	126	6	80	43	21	150	558
05:15 PM	11	77	17	6	111	13	53	31	24	121	20	123	8	5	156	7	69	37	7	120	508
05:30 PM	20	70	18	6	114	11	78	26	11	126	25	74	6	13	118	2	61	27	4	94	452
Grand Total	65	330	63	32	490	37	284	94	68	483	76	373	25	34	508	25	262	138	46	471	1952
Apprch %	13.3	67.3	12.9	6.5		7.7	58.8	19.5	14.1		15	73.4	4.9	6.7		5.3	55.6	29.3	9.8		
Total %	3.3	16.9	3.2	1.6	25.1	1.9	14.5	4.8	3.5	24.7	3.9	19.1	1.3	1.7	26	1.3	13.4	7.1	2.4	24.1	
Unshifted	52	327	63	32	474	36	266	93	68	463	74	373	20	34	501	21	235	129	46	431	1869
% Unshifted	80	99.1	100	100	96.7	97.3	93.7	98.9	100	95.9	97.4	100	80	100	98.6	84	89.7	93.5	100	91.5	95.7
Bank 1	13	3	0	0	16	1	18	1	0	20	2	0	5	0	7	4	27	9	0	40	83
% Bank 1	20	0.9	0	0	3.3	2.7	6.3	1.1	0	4.1	2.6	0	20	0	1.4	16	10.3	6.5	0	8.5	4.3

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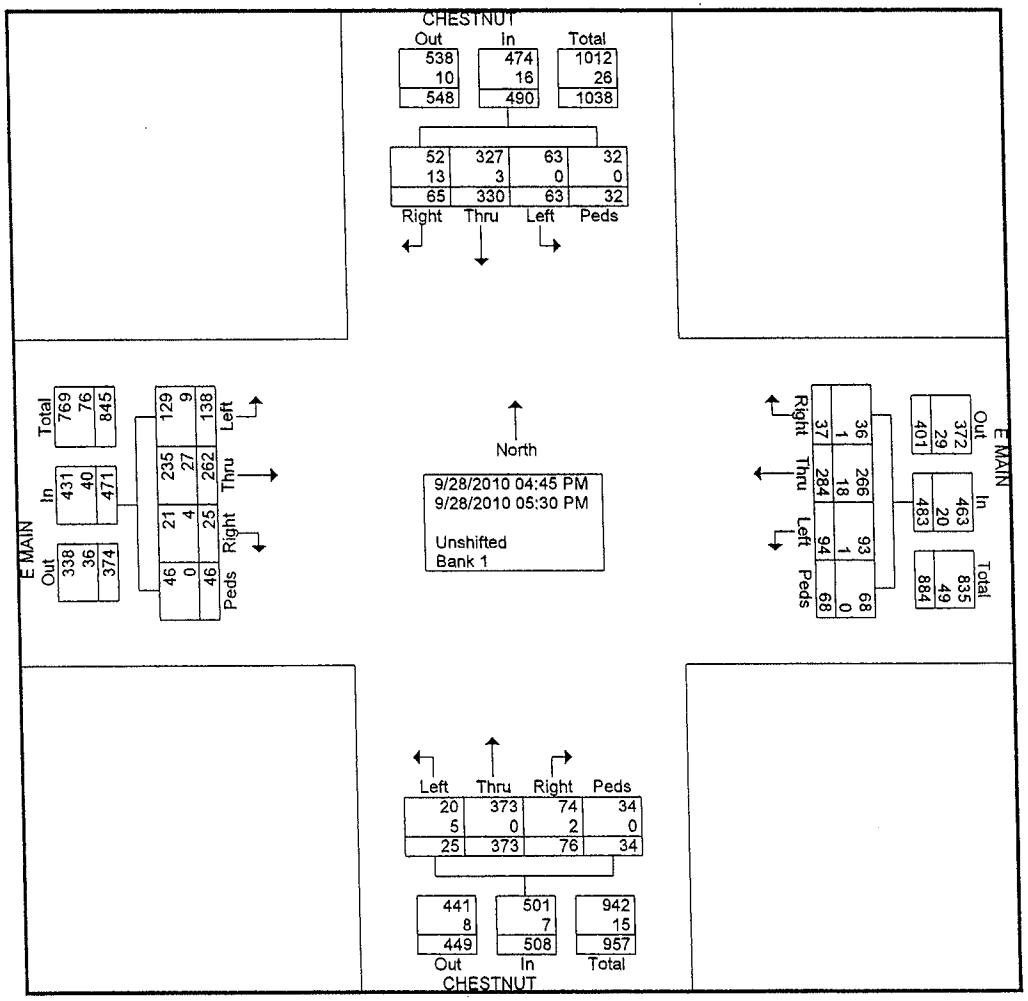
of Rochester, NY

File Name : Main - Chestnut PM
Site Code : 00000000
Start Date : 9/28/2010
Page No : 2



Midtown Redevelopment
Turning Movement Counts
September 22, 2010 7:45am-8:45am, 4:45pm-5:45pm

Chestnut St / East Ave Intersection

Time	Chestnut St NB			Chestnut St SB			East Ave EB			East Ave WB			Total
	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	
7:45-8:00	7	49	11	26	152	0	0	13	13	26	18	13	328
8:00-8:15	16	65	20	10	165	0	0	23	12	22	10	21	364
8:15-8:30	8	68	10	13	140	0	0	18	19	23	15	6	320
8:30-8:45	8	60	15	12	174	1	3	24	15	34	25	12	383
Total Peak Hr	39	242	56	61	631	1	3	78	59	105	68	52	
Peak Hr Factor	0.61	0.89	0.70	0.59	0.91	0.25	0.25	0.81	0.78	0.77	0.68	0.62	

Time	Chestnut St NB			Chestnut St SB			East Ave EB			East Ave WB			Total
	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	
4:45-5:00	6	86	23	14	101	2	1	28	21	21	10	7	320
5:00-5:15	5	114	34	11	130	2	0	46	29	28	16	17	432
5:15-5:30	8	110	27	14	115	1	1	32	20	25	13	11	377
5:30-5:45	3	84	18	14	66	0	1	30	14	13	13	4	260
Total Peak Hr	22	394	102	53	412	5	3	136	84	87	52	39	
Peak Hr Factor	0.69	0.86	0.75	0.95	0.79	0.63	0.75	0.74	0.72	0.78	0.81	0.57	

Midtown Redevelopment
Turning Movement Counts
September 28, 2010 7:45am-8:45am, 4:45pm-5:45pm

Chestnut St / Broad St Intersection

Time	Chestnut St NB		Chestnut St SB		Broad St WB			Total
	NB Left	NB Thru	SB Thru	SB Right	WB Left	WB Thru	WB Right	
7:45-8:00	19	103	148	58	10	32	1	371
8:00-8:15	25	94	118	53	4	29	0	323
8:15-8:30	24	80	111	43	8	30	1	297
8:30-8:45	27	88	96	35	7	28	0	281
Total Peak Hr	95	365	473	189	29	119	2	
Peak Hr Factor	0.88	0.89	0.80	0.81	0.73	0.93	0.50	

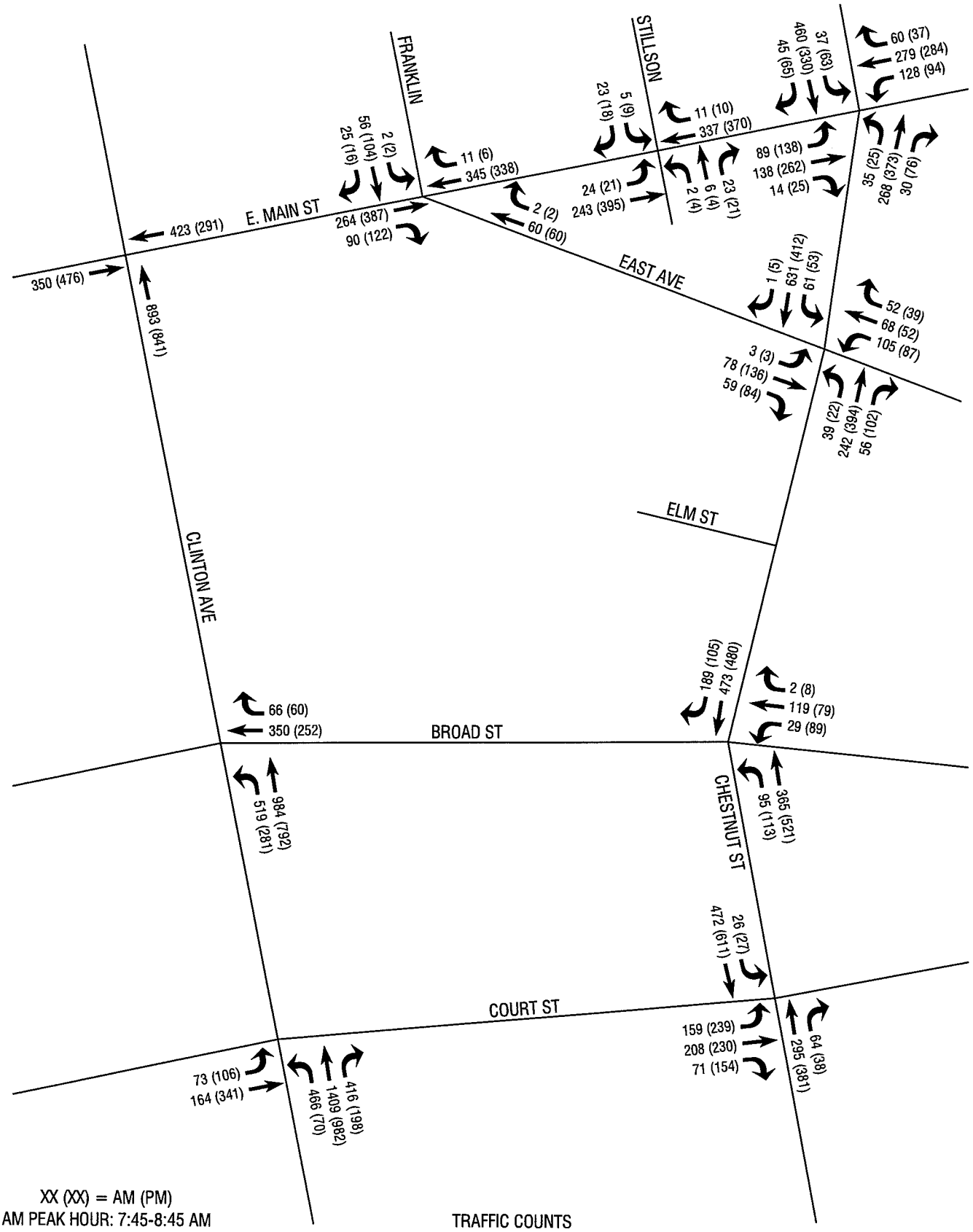
Time	Chestnut St NB		Chestnut St SB		Broad St WB			Total
	NB Left	NB Thru	SB Thru	SB Right	WB Left	WB Thru	WB Right	
4:45-5:00	23	121	104	22	22	13	0	305
5:00-5:15	39	125	160	21	30	21	5	401
5:15-5:30	27	154	125	32	21	30	3	392
5:30-5:45	24	121	91	30	16	15	0	297
Total Peak Hr	113	521	480	105	89	79	8	
Peak Hr Factor	0.72	0.85	0.75	0.88	0.74	0.66	0.40	

Midtown Redevelopment
Turning Movement Counts
September 30, 2010 7:45am-8:45am, 4:45pm-5:45pm

Chestnut St / Court St Intersection

Time	Chestnut St NB		Chestnut St SB		Court St EB			Total
	NB Thru	NB Right	SB Left	SB Thru	EB Left	EB Thru	EB Right	
7:45-8:00	83	14	4	120	32	53	12	318
8:00-8:15	73	14	2	118	41	59	28	335
8:15-8:30	69	16	10	122	44	46	11	318
8:30-8:45	70	20	10	112	42	50	20	324
Total Peak Hr	295	64	26	472	159	208	71	
Peak Hr Factor	0.89	0.80	0.65	0.97	0.90	0.88	0.63	

Time	Chestnut St NB		Chestnut St SB		Court St EB			Total
	NB Thru	NB Right	SB Left	SB Thru	EB Left	EB Thru	EB Right	
4:45-5:00	78	8	10	138	61	48	30	373
5:00-5:15	102	11	4	195	62	60	57	491
5:15-5:30	118	12	6	163	57	69	42	467
5:30-5:45	83	7	7	115	59	53	25	349
Total Peak Hr	381	38	27	611	239	230	154	
Peak Hr Factor	0.81	0.79	0.68	0.78	0.96	0.83	0.68	



XX (XX) = AM (PM)
AM PEAK HOUR: 7:45-8:45 AM
PM PEAK HOUR: 4:45-5:45 PM

TRAFFIC COUNTS
TAKEN IN SEPTEMBER 2010

N

N.T.S.

EXISTING TRAFFIC VOLUMES
AM & PM PEAK HOUR

MIDTOWN REDEVELOPMENT
CITY OF ROCHESTER, MONROE COUNTY

LABELLA Associates, P.C.
300 State Street
Rochester, NY 14614
585.454.6110

Traffic Study.dgn
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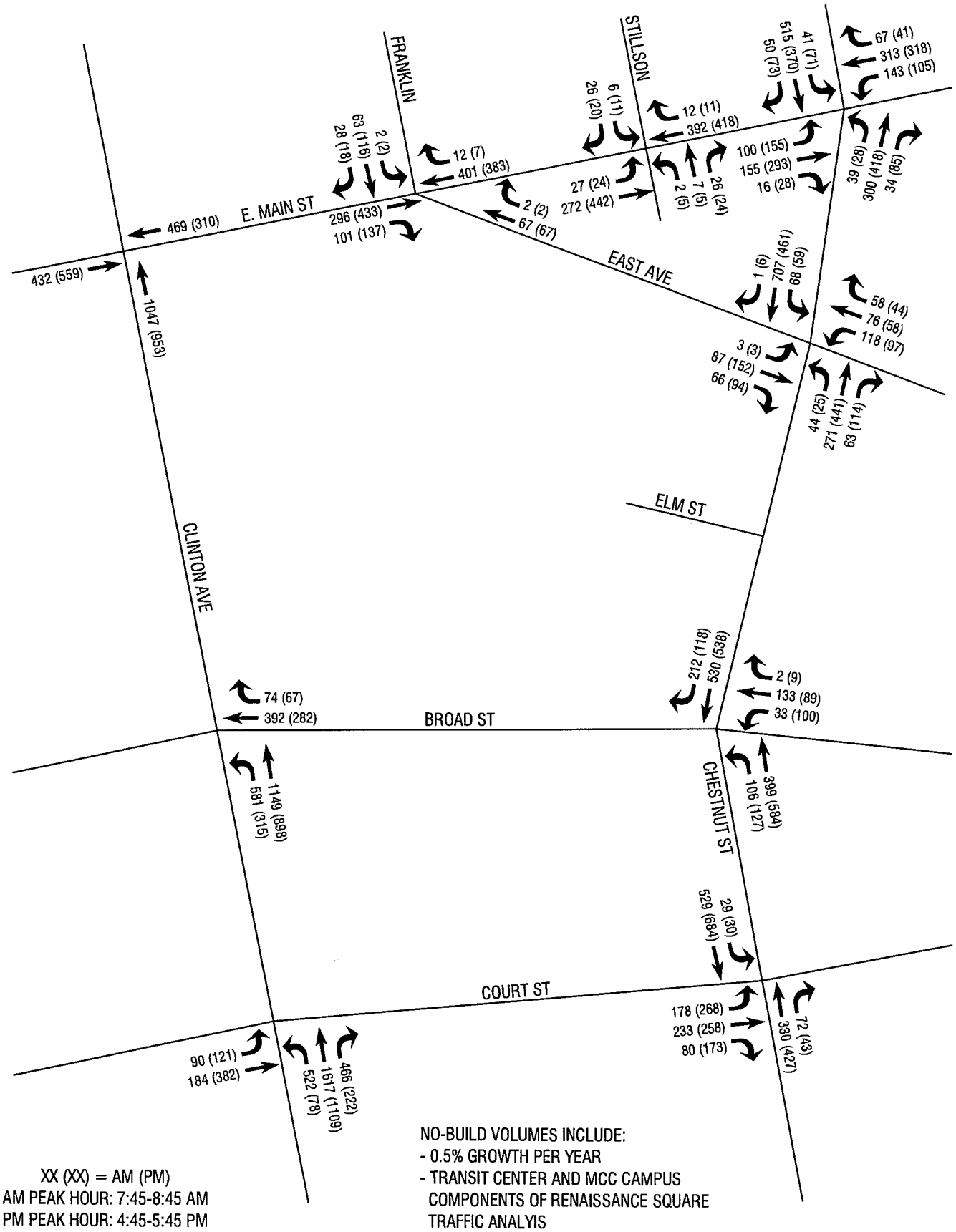

XX (XX) = AM (PM)
AM PEAK HOUR: 7:45-8:45 AM
PM PEAK HOUR: 4:45-5:45 PM

NO-BUILD VOLUMES INCLUDE:
- 0.5% GROWTH PER YEAR
- TRANSIT CENTER AND MCC CAMPUS COMPONENTS OF RENAISSANCE SQUARE TRAFFIC ANALYIS

N

N.T.S.

NO-BUILD (YEAR 2032) TRAFFIC VOLUMES AM & PM PEAK HOUR

MIDTOWN REDEVELOPMENT
CITY OF ROCHESTER, MONROE COUNTY

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Rochester, NY 14614
585.454.6110

Traffic Study.dgn
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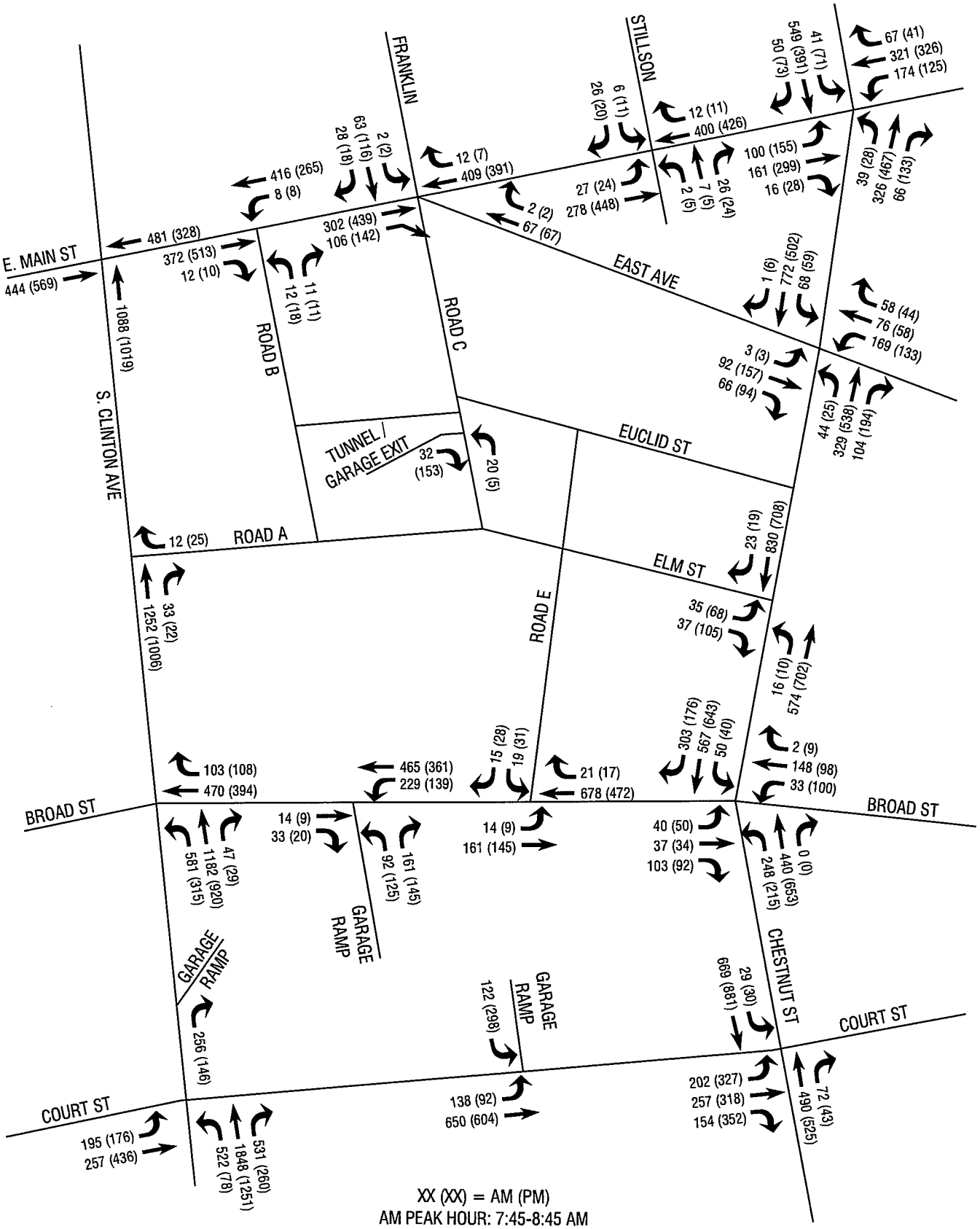

XX (XX) = AM (PM)
AM PEAK HOUR: 7:45-8:45 AM
PM PEAK HOUR: 4:45-5:45 PM

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N.T.S.

FUTURE (YEAR 2032) TRAFFIC VOLUMES AM & PM PEAK HOUR

MIDTOWN REDEVELOPMENT
CITY OF ROCHESTER, MONROE COUNTY

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585.454.6110

Traffic Study.dgn
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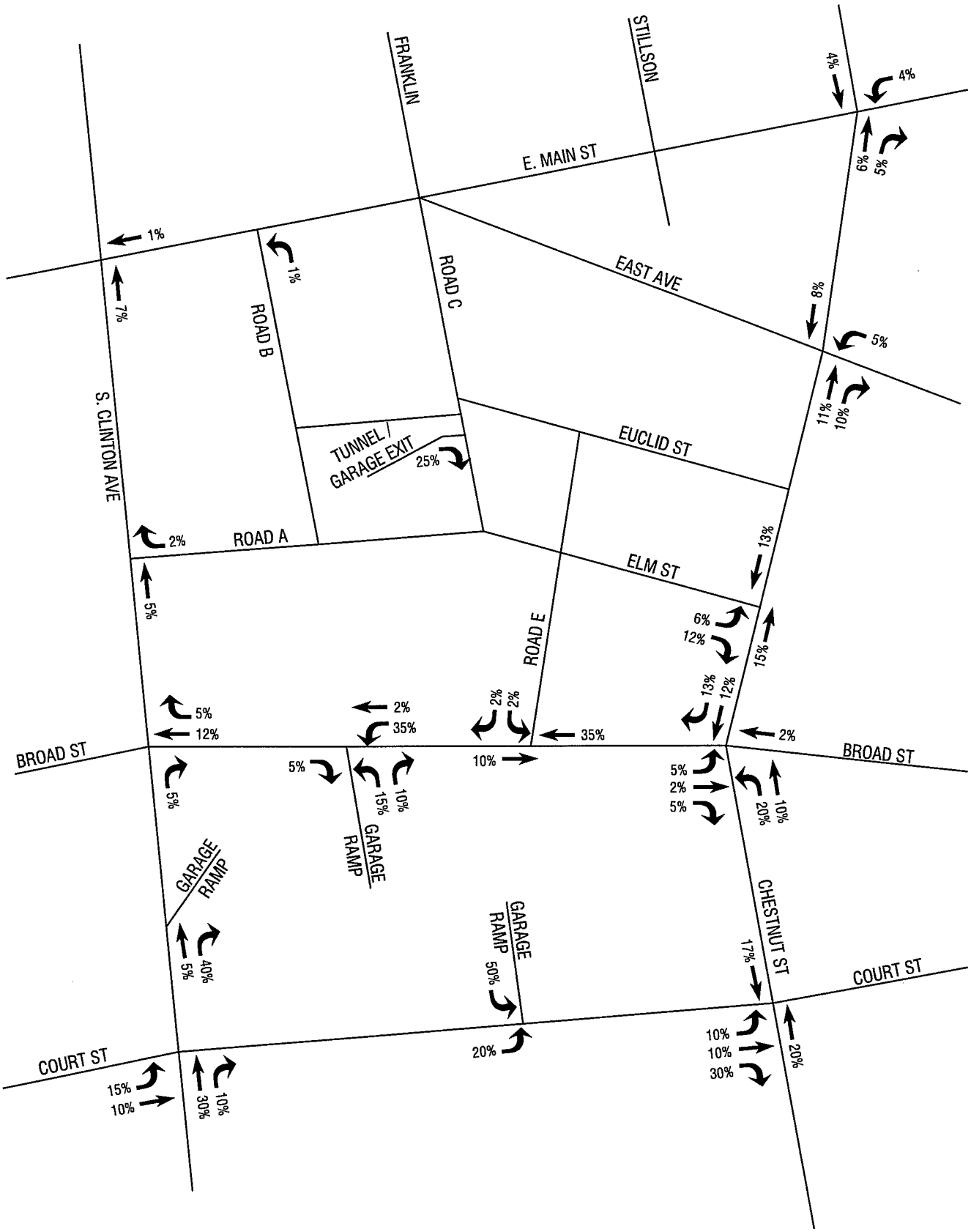

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N.T.S.

TRIP DISTRIBUTION
PAETEC / GENERAL OFFICE COMPONENT

MIDTOWN REDEVELOPMENT
CITY OF ROCHESTER, MONROE COUNTY

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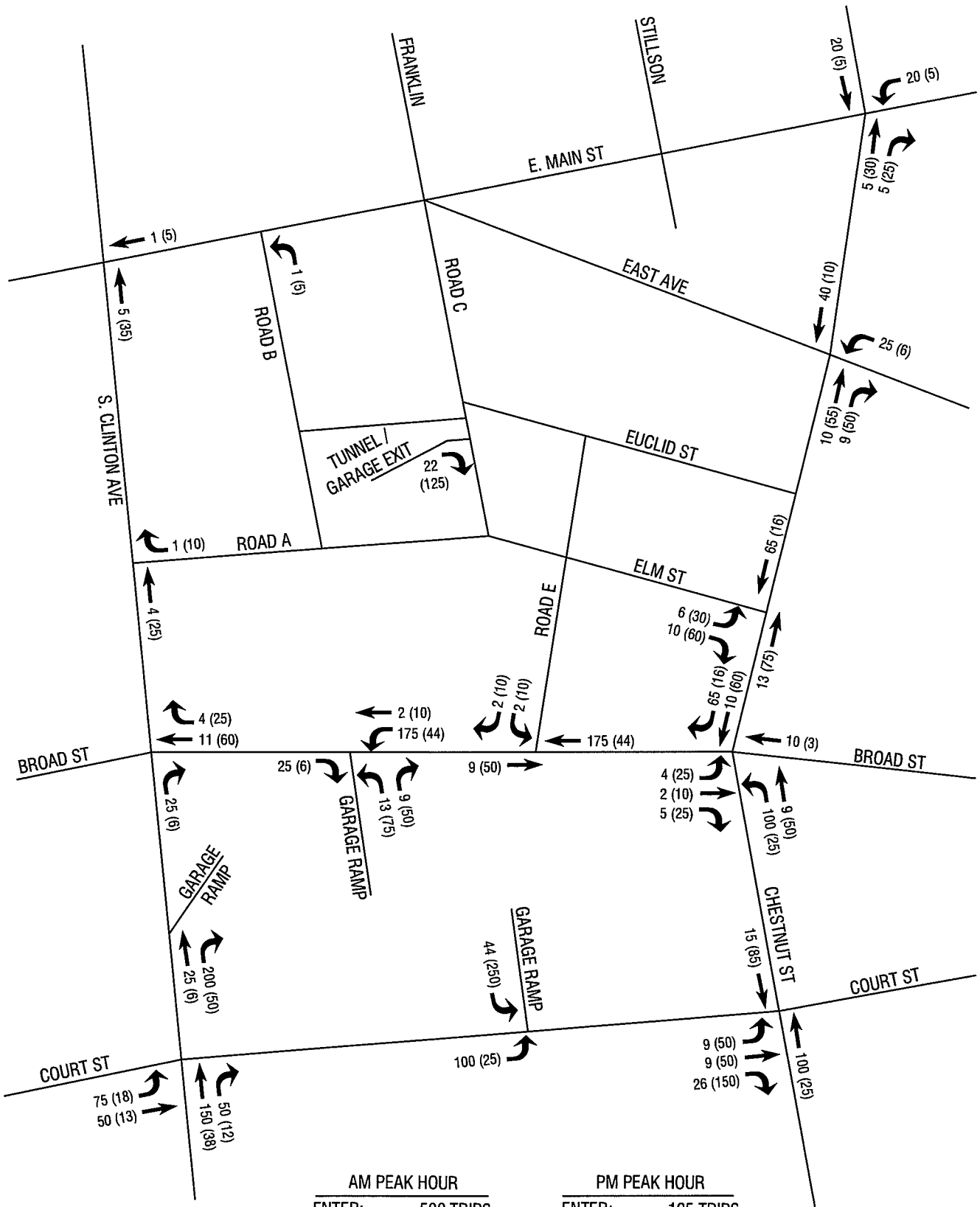


AM PEAK HOUR	
ENTER:	500 TRIPS
EXIT:	88 TRIPS
TOTAL:	588 TRIPS

PM PEAK HOUR	
ENTER:	125 TRIPS
EXIT:	500 TRIPS
TOTAL:	625 TRIPS

XX (XX) = AM (PM)

N

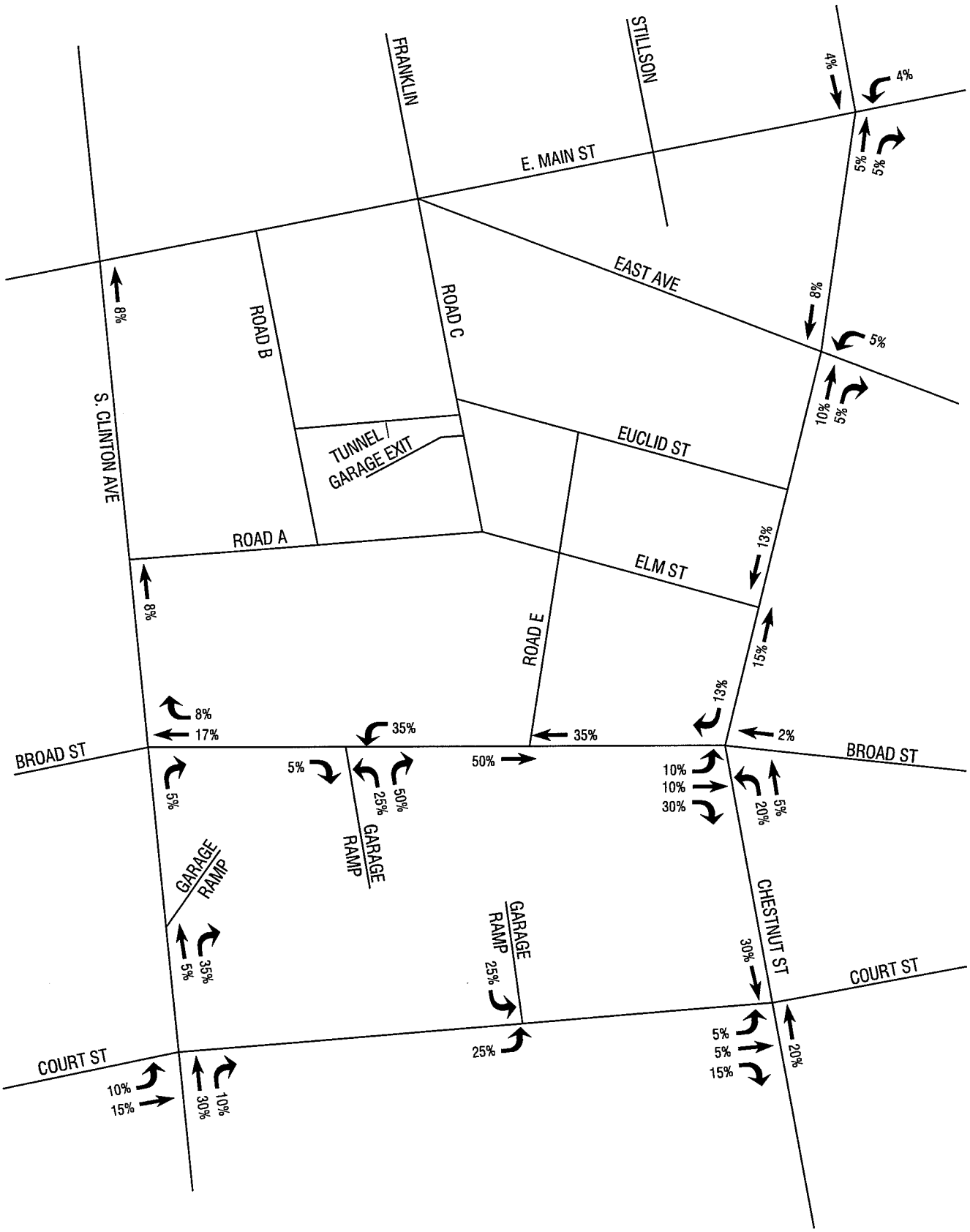
N.T.S.

TRIP GENERATION
PAETEC / GENERAL OFFICE COMPONENT
AM & PM PEAK HOURS

MIDTOWN REDEVELOPMENT
CITY OF ROCHESTER, MONROE COUNTY

LABELLA Associates, P.C.
300 State Street
Rochester, NY 14614
585.454.6110

Traffic Study.dgn
Default



N

N.T.S.

TRIP DISTRIBUTION
RESIDENTIAL COMPONENT

MIDTOWN REDEVELOPMENT
CITY OF ROCHESTER, MONROE COUNTY

LABELLA Associates, P.C.
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Rochester, NY 14614
585.454.6110

Traffic Study.dgn
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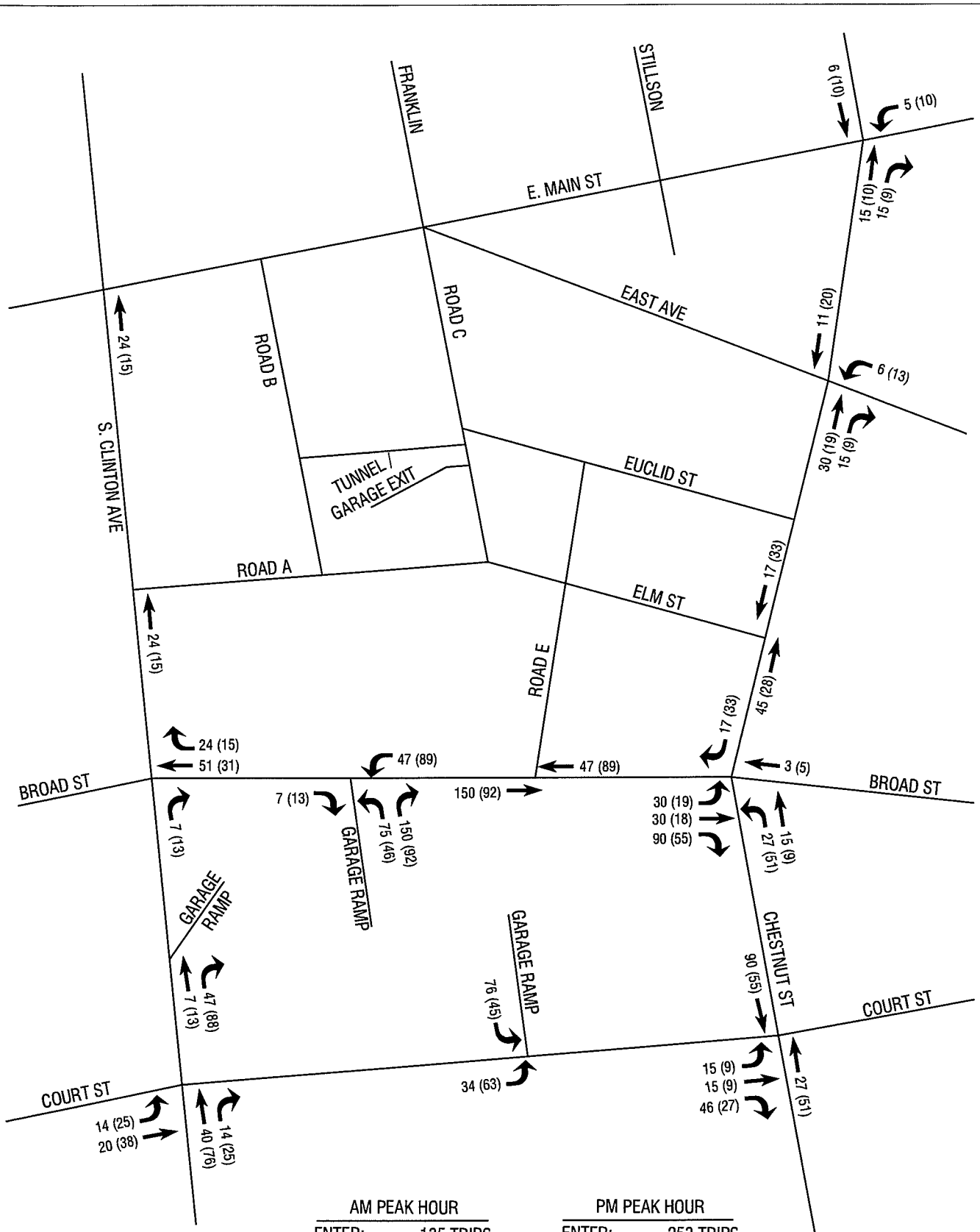

XX (XX) = AM (PM)

AM PEAK HOUR	
ENTER:	135 TRIPS
EXIT:	301 TRIPS
TOTAL:	436 TRIPS

PM PEAK HOUR	
ENTER:	253 TRIPS
EXIT:	183 TRIPS
TOTAL:	436 TRIPS

N

N.T.S.

TRIP GENERATION
RESIDENTIAL COMPONENT
AM & PM PEAK HOUR

MIDTOWN REDEVELOPMENT
CITY OF ROCHESTER, MONROE COUNTY

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585.454.6110

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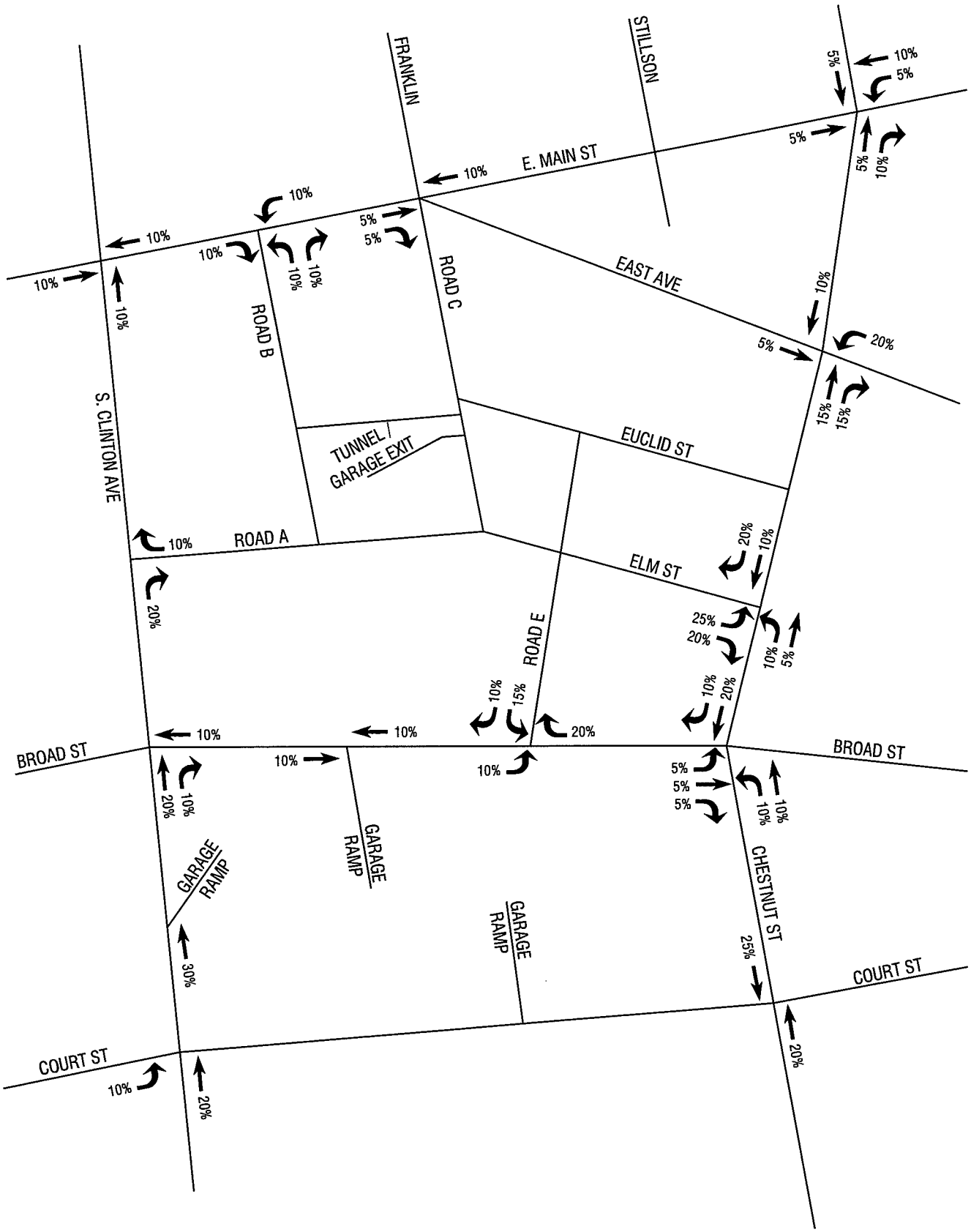


N

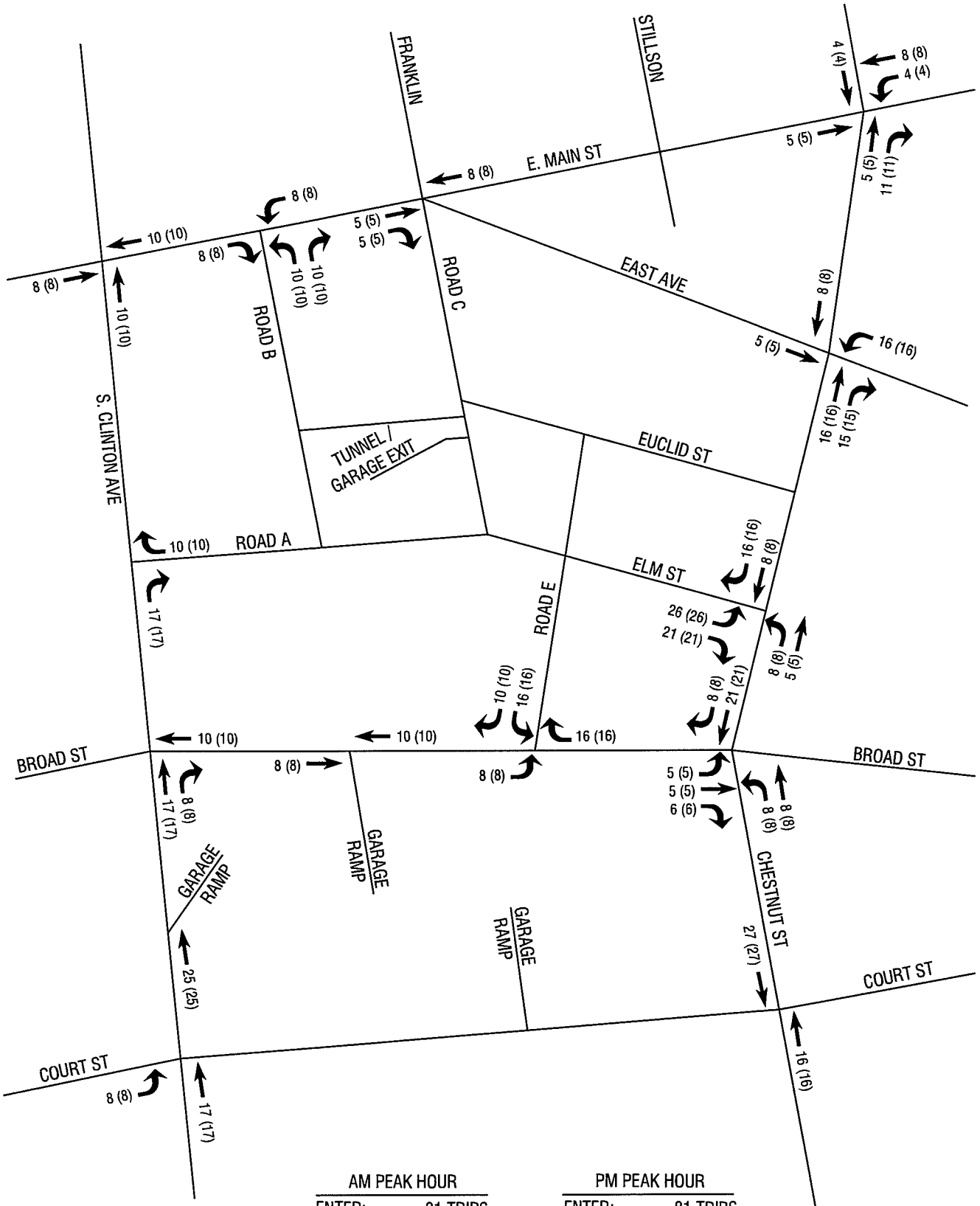
N.T.S.

TRIP DISTRIBUTION
RETAIL COMPONENT

MIDTOWN REDEVELOPMENT
CITY OF ROCHESTER, MONROE COUNTY

LABELLA Associates, P.C.
300 State Street
Rochester, NY 14614
585.454.6110

Traffic Study.dgn
Default



AM PEAK HOUR	
ENTER:	81 TRIPS
EXIT:	103 TRIPS
TOTAL:	184 TRIPS

PM PEAK HOUR	
ENTER:	81 TRIPS
EXIT:	103 TRIPS
TOTAL:	184 TRIPS

N

N.T.S.

TRIP GENERATION
RETAIL COMPONENT
AM & PM PEAK HOUR

MIDTOWN REDEVELOPMENT
CITY OF ROCHESTER, MONROE COUNTY

LABELLA Associates, P.C.
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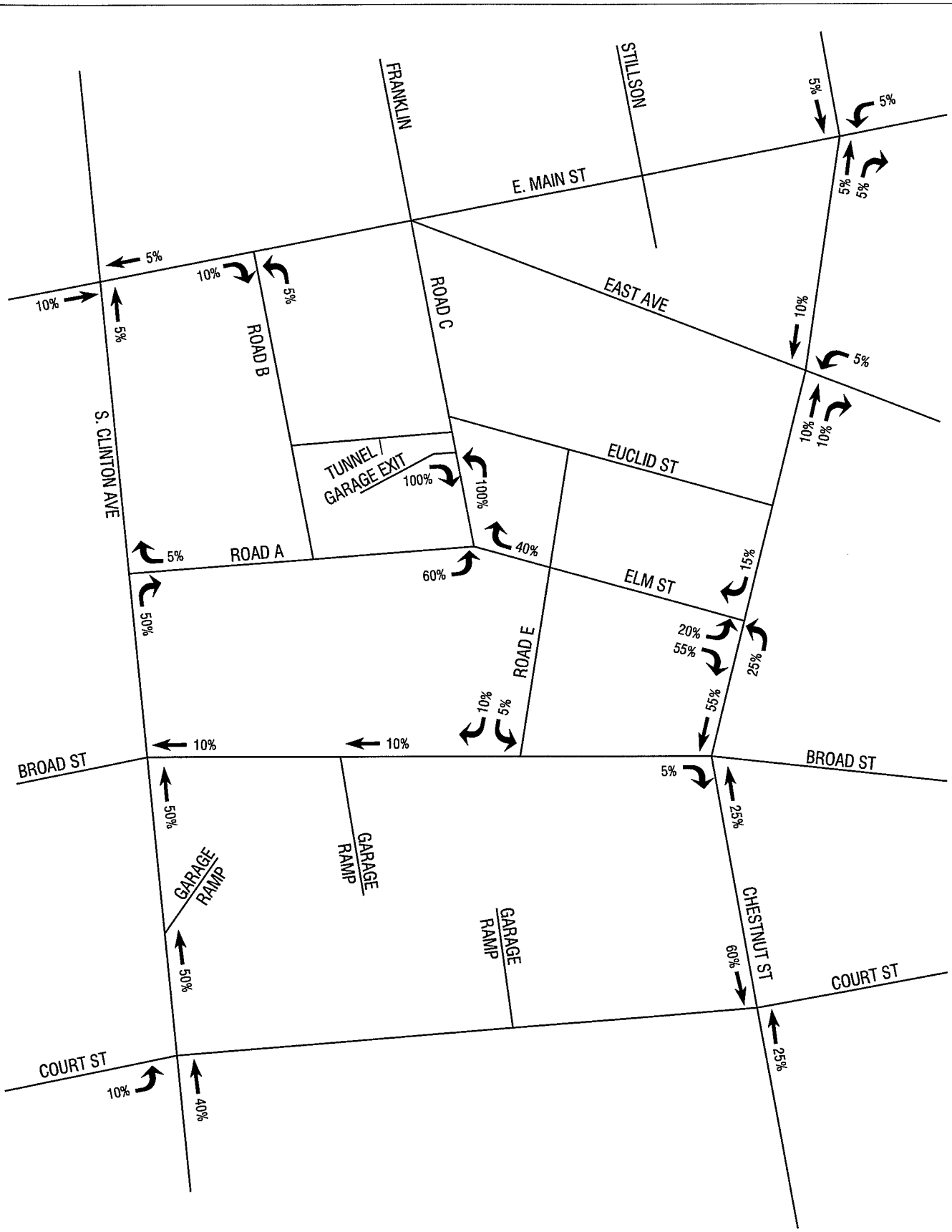
Rochester, NY 14614
585.454.6110

Traffic Study.dgn
Default



N

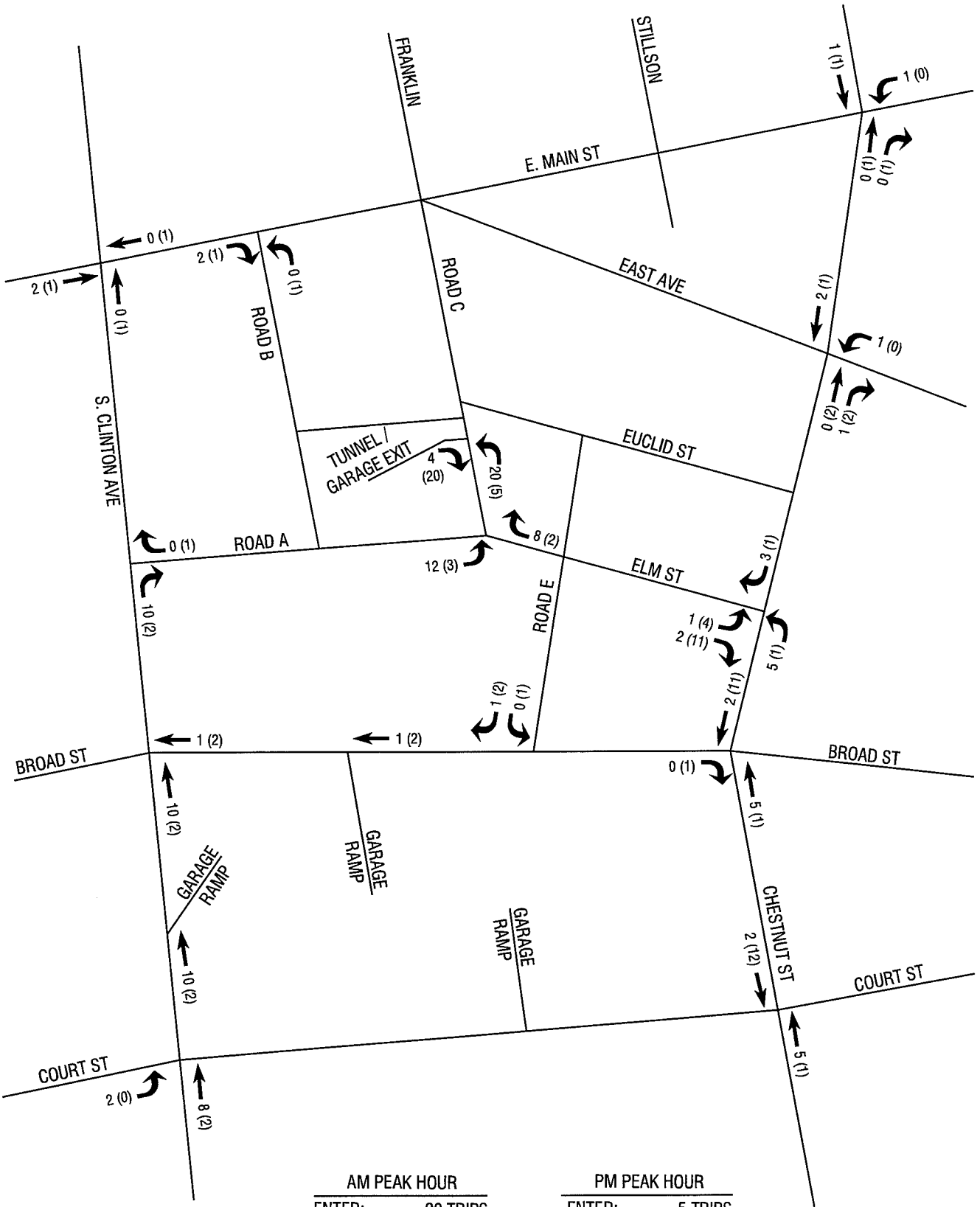
N.T.S.

TRIP DISTRIBUTION
CHASE SERVICE TUNNEL PARKING COMPONENT

MIDTOWN REDEVELOPMENT
CITY OF ROCHESTER, MONROE COUNTY

LABELLA Associates, P.C.
300 State Street
Rochester, NY 14614
585.454.6110

Traffic Study.dgn
Default



AM PEAK HOUR	
ENTER:	20 TRIPS
EXIT:	4 TRIPS
TOTAL:	24 TRIPS

PM PEAK HOUR	
ENTER:	5 TRIPS
EXIT:	20 TRIPS
TOTAL:	25 TRIPS

XX (XX) = AM (PM)

N

N.T.S.

TRIP GENERATION
CHASE SERVICE TUNNEL PARKING COMPONENT
AM & PM PEAK HOUR

MIDTOWN REDEVELOPMENT
CITY OF ROCHESTER, MONROE COUNTY

LABELLA Associates, P.C.
300 State Street
Rochester, NY 14614
585.454.6110

Traffic Study.dgn
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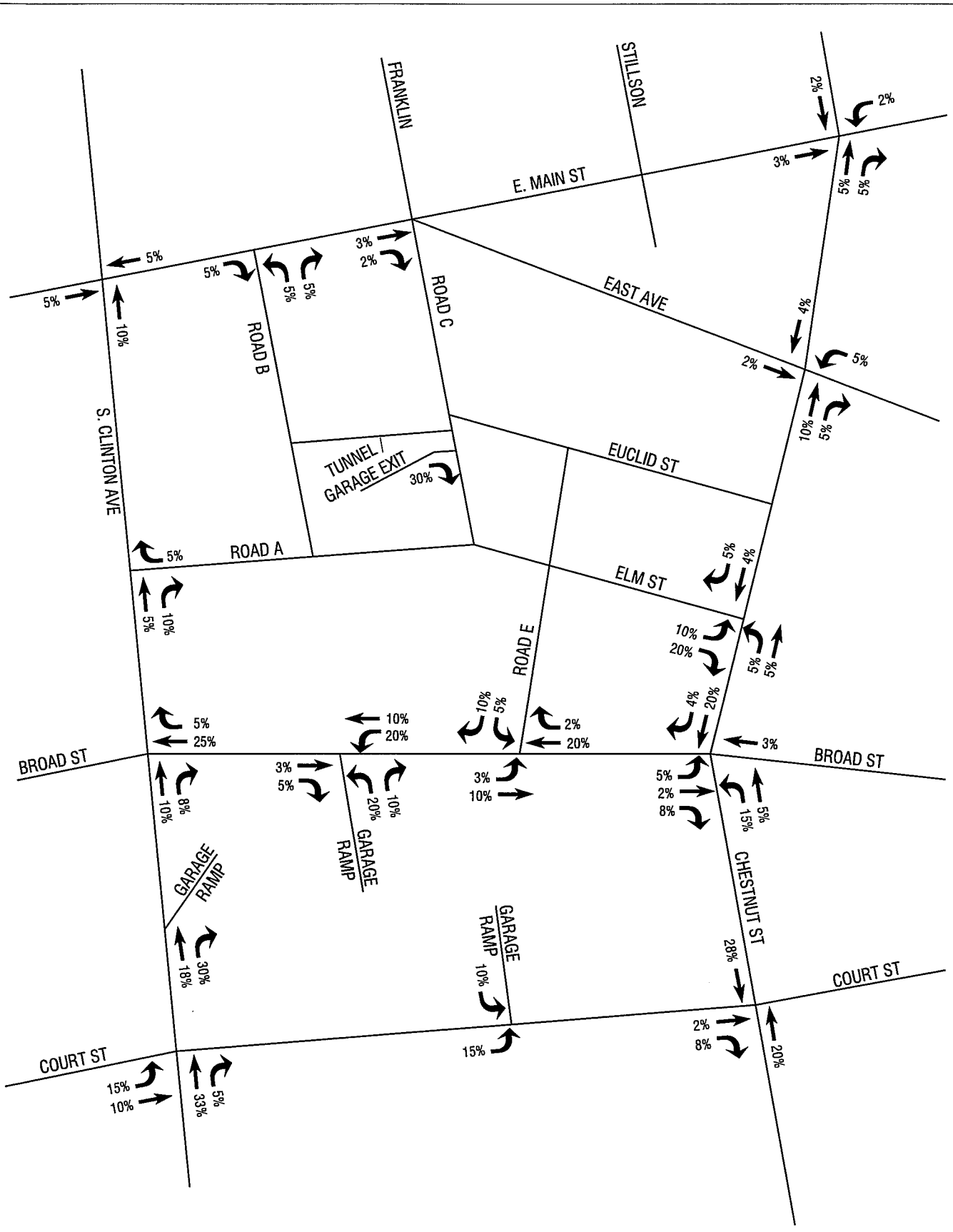


N

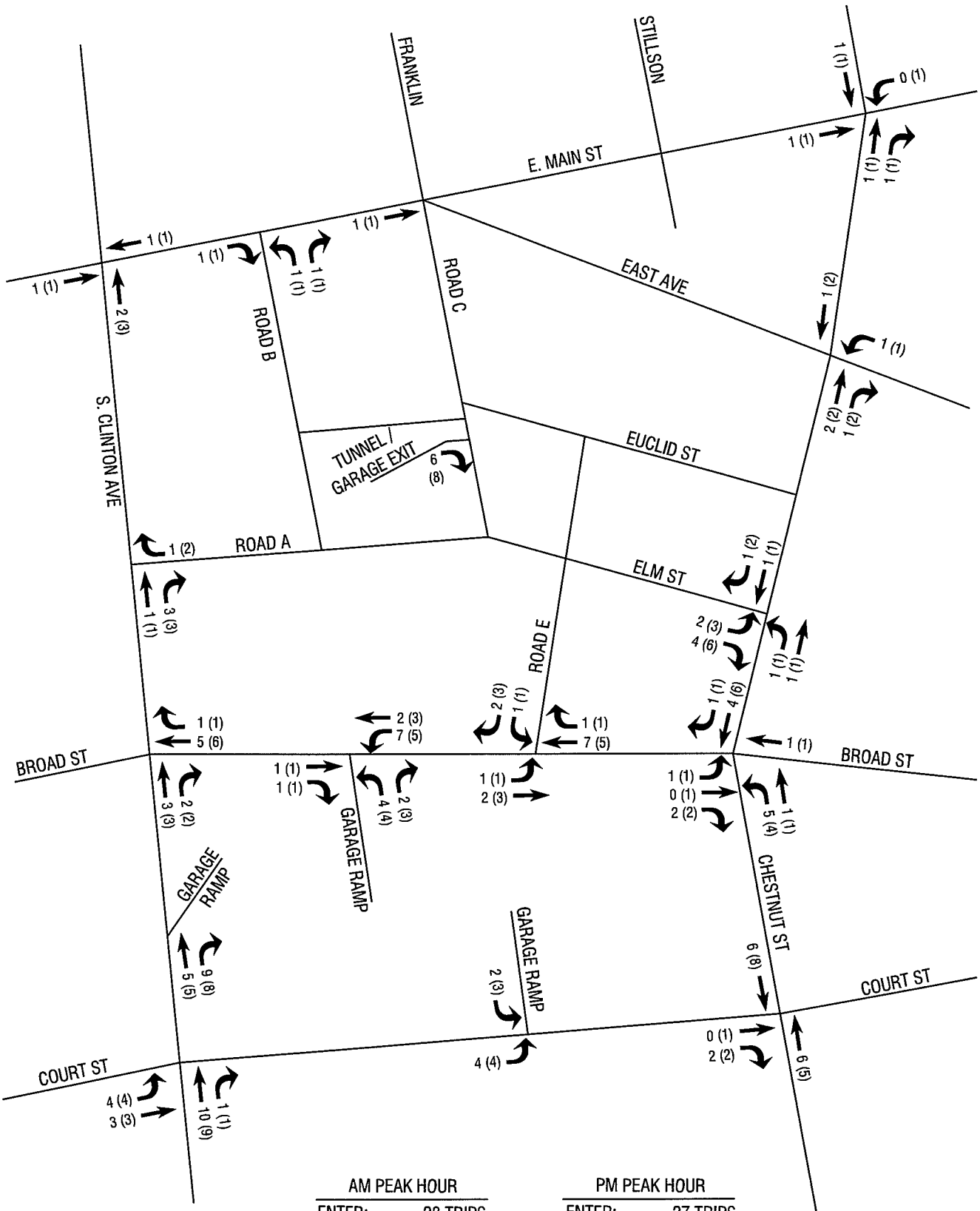
N.T.S.

TRIP DISTRIBUTION
HOTEL COMPONENT

MIDTOWN REDEVELOPMENT
CITY OF ROCHESTER, MONROE COUNTY

LABELLA Associates, P.C.
300 State Street
Rochester, NY 14614
585.454.6110

Traffic Study.dgn
Default



XX (XX) = AM (PM)

AM PEAK HOUR	
ENTER:	28 TRIPS
EXIT:	20 TRIPS
TOTAL:	48 TRIPS

PM PEAK HOUR	
ENTER:	27 TRIPS
EXIT:	27 TRIPS
TOTAL:	54 TRIPS

N

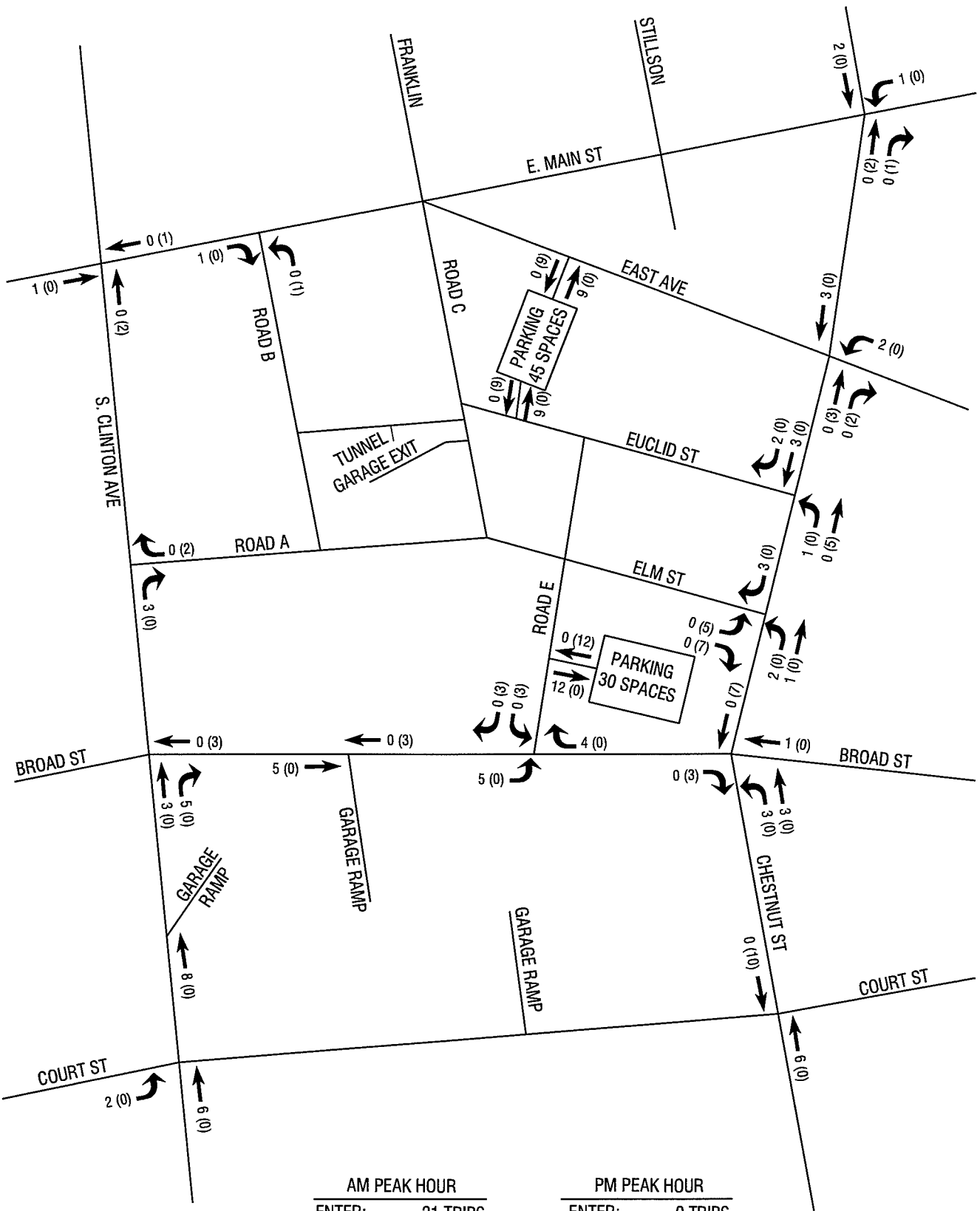
N.T.S.

TRIP GENERATION
HOTEL COMPONENT
AM & PM PEAK HOUR

MIDTOWN REDEVELOPMENT
CITY OF ROCHESTER, MONROE COUNTY

LABELLA Associates, P.C.
300 State Street
Rochester, NY 14614
585.454.6110

Traffic Study.dgn
Default



XX (XX) = AM (PM)

AM PEAK HOUR	
ENTER:	21 TRIPS
EXIT:	0 TRIPS
TOTAL:	21 TRIPS

PM PEAK HOUR	
ENTER:	0 TRIPS
EXIT:	21 TRIPS
TOTAL:	21 TRIPS

N

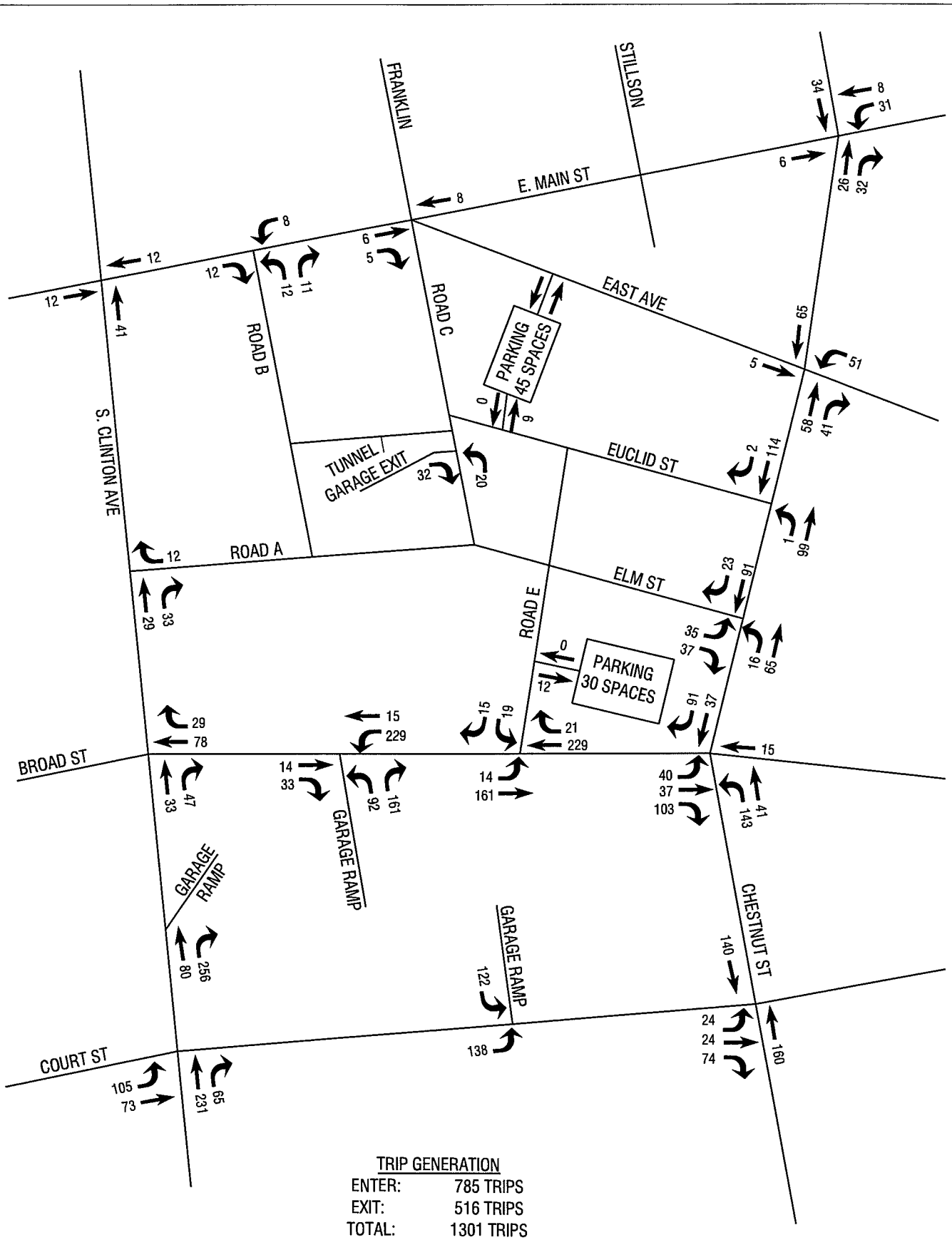
N.T.S.

TRIP GENERATION
SURFACE PARKING COMPONENT
AM & PM PEAK HOUR

MIDTOWN REDEVELOPMENT
CITY OF ROCHESTER, MONROE COUNTY

LABELLA Associates, P.C.
300 State Street
Rochester, NY 14614
585.454.6110

Traffic Study.dgn
Default



TRIP GENERATION

ENTER:	785 TRIPS
EXIT:	516 TRIPS
TOTAL:	1301 TRIPS

N

N.T.S.

TOTAL TRIP GENERATION
AM PEAK HOUR

MIDTOWN REDEVELOPMENT
CITY OF ROCHESTER, MONROE COUNTY

LABELLA Associates, P.C.
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Rochester, NY 14614
585.454.6110

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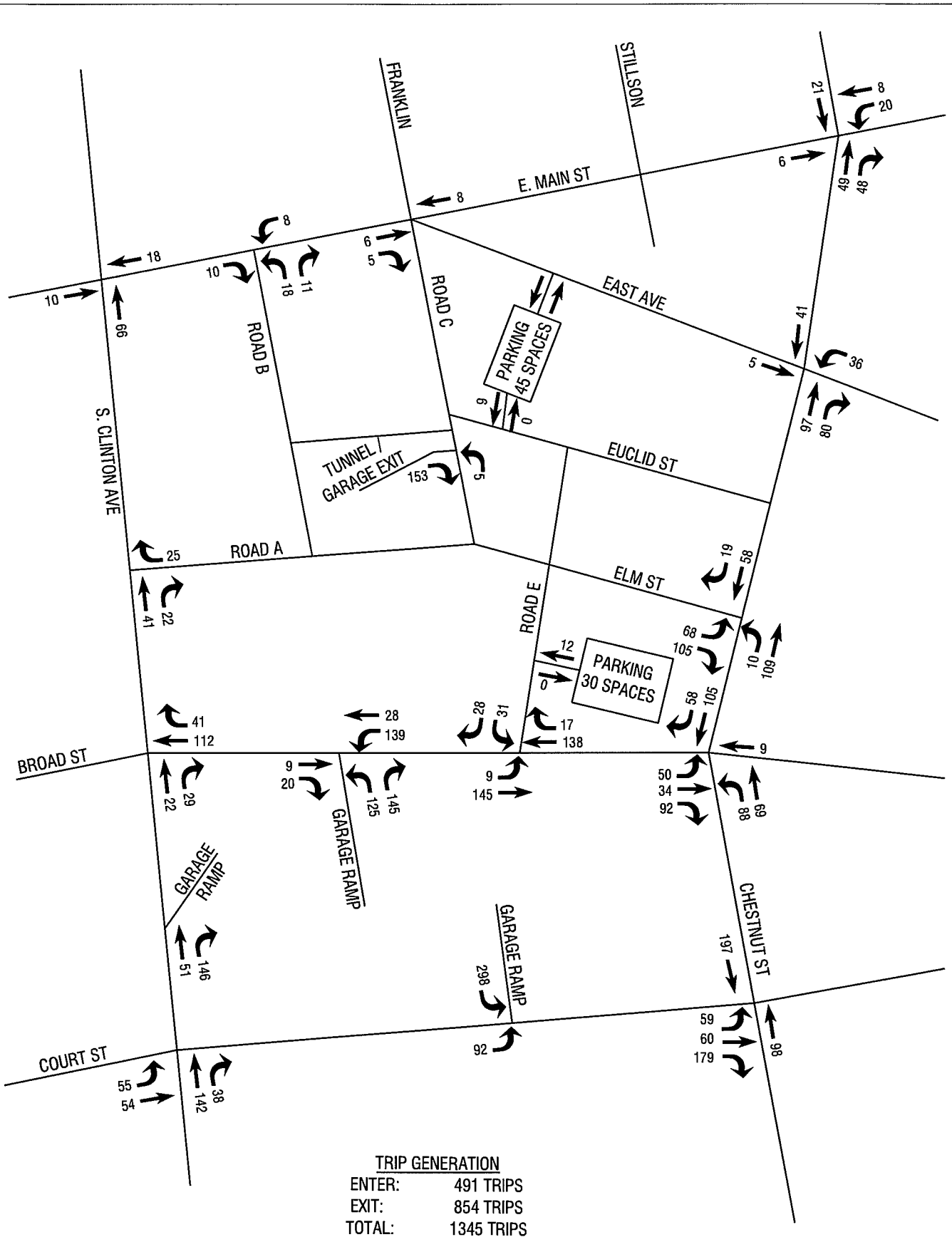


TRIP GENERATION

ENTER:	491 TRIPS
EXIT:	854 TRIPS
TOTAL:	1345 TRIPS

N

N.T.S.

TOTAL TRIP GENERATION
PM PEAK HOUR

MIDTOWN REDEVELOPMENT
CITY OF ROCHESTER, MONROE COUNTY

LABELLA Associates, P.C.
300 State Street
Rochester, NY 14614
585.454.6110

Traffic Study.dgn
Default

Level of Service Analysis
Existing (2010) Condition
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1200	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0	3.0			
Lane Util. Factor		0.95						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.89			
Flpb, ped/bikes		1.00						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.98						0.99	1.00			
Satd. Flow (prot)		2192						5018	1401			
Flt Permitted		0.98						0.99	1.00			
Satd. Flow (perm)		2192						5018	1401			
Volume (vph)	73	164	0	0	0	0	466	1409	416	0	0	0
Peak-hour factor, PHF	0.65	0.95	0.90	0.90	0.90	0.90	0.84	0.94	0.84	0.90	0.90	0.90
Adj. Flow (vph)	112	173	0	0	0	0	555	1499	495	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	131	0	0	0
Lane Group Flow (vph)	0	285	0	0	0	0	0	2054	364	0	0	0
Confl. Peds. (#/hr)			60			64			84			15
Turn Type	Split						Split		Perm			
Protected Phases	2	2					1	1				
Permitted Phases									1			
Actuated Green, G (s)		31.0						59.0	59.0			
Effective Green, g (s)		33.0						61.0	61.0			
Actuated g/C Ratio		0.33						0.61	0.61			
Clearance Time (s)		5.0						5.0	5.0			
Lane Grp Cap (vph)		723						3061	855			
v/s Ratio Prot		c0.13						c0.41				
v/s Ratio Perm									0.35			
v/c Ratio		0.39						0.67	0.43			
Uniform Delay, d1		25.8						12.9	10.3			
Progression Factor		0.87						0.37	0.06			
Incremental Delay, d2		1.6						0.7	0.9			
Delay (s)		24.1						5.5	1.5			
Level of Service		C						A	A			
Approach Delay (s)		24.1			0.0			4.7			0.0	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	NBT	NBR
Lane Configurations			
Volume (vph)	164	1409	416
Lane Group Flow (vph)	285	2054	495
Turn Type			Perm
Protected Phases	2	1	
Permitted Phases			1
Minimum Split (s)	28.0	30.0	30.0
Total Split (s)	36.0	64.0	64.0
Total Split (%)	36.0%	64.0%	64.0%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0
Lead/Lag	Lag	Lead	Lead
Lead-Lag Optimize?			
v/c Ratio	0.39	0.67	0.50
Control Delay	24.5	5.5	1.2
Queue Delay	1.8	0.5	0.5
Total Delay	26.3	6.0	1.7
Queue Length 50th (ft)	67	74	2
Queue Length 95th (ft)	100	82	m5
Internal Link Dist (ft)	124	352	
Turn Bay Length (ft)			
Base Capacity (vph)	724	3062	985
Starvation Cap Reductn	286	504	173
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.65	0.80	0.61

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 3 (3%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 252: Court & Clinton

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)					3.0		3.0	3.0				
Lane Util. Factor					0.91		0.91	0.91				
Frpb, ped/bikes					0.98		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					4848		1610	3387				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					4848		1610	3387				
Volume (vph)	0	0	0	0	350	66	519	984	0	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.86	0.66	0.90	0.94	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	407	100	577	1047	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	98	1	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	507	0	460	1065	0	0	0	0
Confl. Peds. (#/hr)			94			55			94			52
Turn Type							Split					
Protected Phases					2		1	1				
Permitted Phases												
Actuated Green, G (s)					32.0		56.0	56.0				
Effective Green, g (s)					35.0		59.0	59.0				
Actuated g/C Ratio					0.35		0.59	0.59				
Clearance Time (s)					6.0		6.0	6.0				
Lane Grp Cap (vph)					1697		950	1998				
v/s Ratio Prot					c0.10		c0.35	0.31				
v/s Ratio Perm												
v/c Ratio					0.30		0.48	0.53				
Uniform Delay, d1					23.6		11.8	12.3				
Progression Factor					1.27		0.08	0.26				
Incremental Delay, d2					0.4		1.3	0.8				
Delay (s)					30.4		2.2	4.0				
Level of Service					C		A	A				
Approach Delay (s)		0.0			30.4			3.4			0.0	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBT	NBL	NBT
Lane Configurations			
Volume (vph)	350	519	984
Lane Group Flow (vph)	507	558	1066
Turn Type		Split	
Protected Phases	2	1	1
Permitted Phases			
Minimum Split (s)	29.0	28.0	28.0
Total Split (s)	38.0	62.0	62.0
Total Split (%)	38.0%	62.0%	62.0%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lead/Lag	Lag	Lead	Lead
Lead-Lag Optimize?			
v/c Ratio	0.30	0.53	0.53
Control Delay	30.6	2.0	4.0
Queue Delay	0.0	0.3	0.3
Total Delay	30.6	2.3	4.3
Queue Length 50th (ft)	98	1	29
Queue Length 95th (ft)	124	1	34
Internal Link Dist (ft)	518		346
Turn Bay Length (ft)			
Base Capacity (vph)	1696	1048	2000
Starvation Cap Reductn	0	117	323
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.30	0.60	0.64

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 16 (16%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 256: Broad & Clinton

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0			3.0		
Lane Util. Factor	1.00			1.00		
Frpb, ped/bikes	1.00			1.00		
Flpb, ped/bikes	1.00			1.00		
Frt	1.00			1.00		
Flt Protected	1.00			1.00		
Satd. Flow (prot)	1658			1658		
Flt Permitted	1.00			1.00		
Satd. Flow (perm)	1658			1658		
Volume (vph)	350	0	0	423	0	0
Peak-hour factor, PHF	0.84	0.90	0.90	0.71	0.90	0.90
Adj. Flow (vph)	417	0	0	596	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	417	0	0	596	0	0
Confl. Peds. (#/hr)						250
Heavy Vehicles (%)	10%	10%	10%	10%	2%	2%
Bus Blockages (#/hr)	10	0	0	10	0	0
Turn Type						
Protected Phases	1			1		
Permitted Phases						
Actuated Green, G (s)	64.0			64.0		
Effective Green, g (s)	67.0			67.0		
Actuated g/C Ratio	0.67			0.67		
Clearance Time (s)	6.0			6.0		
Lane Grp Cap (vph)	1111			1111		
v/s Ratio Prot	0.25			c0.36		
v/s Ratio Perm						
v/c Ratio	0.38			0.54		
Uniform Delay, d1	7.3			8.5		
Progression Factor	0.00			0.38		
Incremental Delay, d2	0.7			1.8		
Delay (s)	0.7			5.0		
Level of Service	A			A		
Approach Delay (s)	0.7			5.0	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	3.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	33.0
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

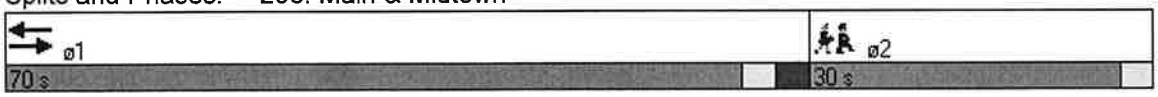
c Critical Lane Group

Lane Group	EBT	WBT	ø2
Lane Configurations	↑	↑	
Volume (vph)	350	423	
Lane Group Flow (vph)	417	596	
Turn Type			
Protected Phases	1	1	2
Permitted Phases			
Minimum Split (s)	25.0	25.0	30.0
Total Split (s)	70.0	70.0	30.0
Total Split (%)	70.0%	70.0%	30%
Yellow Time (s)	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	0.0
Lead/Lag	Lead	Lead	Lag
Lead-Lag Optimize?			
v/c Ratio	0.38	0.54	
Control Delay	0.7	5.2	
Queue Delay	0.4	1.0	
Total Delay	1.1	6.2	
Queue Length 50th (ft)	1	58	
Queue Length 95th (ft)	0	61	
Internal Link Dist (ft)	173	215	
Turn Bay Length (ft)			
Base Capacity (vph)	1111	1111	
Starvation Cap Reductn	282	103	
Spillback Cap Reductn	0	276	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.50	0.71	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 298: Main & Midtown



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)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.69		1.00	0.75		0.98			0.90	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00			1.00	
Frt		1.00	0.85		1.00	0.85		0.99			0.94	
Flt Protected		1.00	1.00		1.00	1.00		1.00			1.00	
Satd. Flow (prot)		1727	1016		1727	1102		3422			2990	
Flt Permitted		1.00	1.00		1.00	1.00		1.00			0.95	
Satd. Flow (perm)		1727	1016		1727	1102		3422			2844	
Volume (vph)	0	264	90	0	345	11	0	60	2	2	56	25
Peak-hour factor, PHF	0.90	0.89	0.73	0.90	0.85	0.69	0.90	0.75	0.25	0.50	0.88	0.52
Adj. Flow (vph)	0	297	123	0	406	16	0	80	8	4	64	48
RTOR Reduction (vph)	0	0	47	0	0	6	0	5	0	0	33	0
Lane Group Flow (vph)	0	297	76	0	406	10	0	83	0	0	83	0
Confl. Peds. (#/hr)			249			194			167			106
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	2%	2%	2%	2%	2%	2%
Turn Type			Perm			Perm				Perm		
Protected Phases		1			1			2			2	
Permitted Phases			1			1		2		2		
Actuated Green, G (s)		60.0	60.0		60.0	60.0		30.0			30.0	
Effective Green, g (s)		62.0	62.0		62.0	62.0		32.0			32.0	
Actuated g/C Ratio		0.62	0.62		0.62	0.62		0.32			0.32	
Clearance Time (s)		5.0	5.0		5.0	5.0		5.0			5.0	
Lane Grp Cap (vph)		1071	630		1071	683		1095			910	
v/s Ratio Prot		0.17			c0.24			0.03				
v/s Ratio Perm			0.12			0.01					c0.04	
v/c Ratio		0.28	0.12		0.38	0.01		0.08			0.09	
Uniform Delay, d1		8.7	7.8		9.4	7.3		23.7			23.8	
Progression Factor		0.42	0.23		0.48	0.31		0.96			0.22	
Incremental Delay, d2		0.6	0.4		1.0	0.0		0.1			0.2	
Delay (s)		4.3	2.2		5.5	2.3		22.9			5.3	
Level of Service		A	A		A	A		C			A	
Approach Delay (s)		3.7			5.4			22.9			5.3	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	264	90	345	11	60	2	56
Lane Group Flow (vph)	297	123	406	16	88	0	116
Turn Type		Perm		Perm		Perm	
Protected Phases	1		1		2		2
Permitted Phases		1		1	2	2	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	65.0	65.0	65.0	65.0	35.0	35.0	35.0
Total Split (%)	65.0%	65.0%	65.0%	65.0%	35.0%	35.0%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							
v/c Ratio	0.28	0.18	0.38	0.02	0.08		0.12
Control Delay	4.4	0.9	5.7	1.1	21.0		3.4
Queue Delay	0.4	0.0	0.3	0.0	0.0		0.5
Total Delay	4.7	0.9	6.0	1.1	21.0		4.0
Queue Length 50th (ft)	22	0	43	0	16		0
Queue Length 95th (ft)	23	0	55	1	26		0
Internal Link Dist (ft)	215		231		494		98
Turn Bay Length (ft)							
Base Capacity (vph)	1071	677	1071	689	1100		943
Starvation Cap Reductn	375	0	251	0	0		557
Spillback Cap Reductn	0	0	0	0	0		0
Storage Cap Reductn	0	0	0	0	0		0
Reduced v/c Ratio	0.43	0.18	0.50	0.02	0.08		0.30

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 2991: Main & Franklin

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)		3.0			3.0			3.0			3.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			0.99			0.95			0.94	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			0.90			0.89	
Flt Protected		1.00			1.00			1.00			0.99	
Satd. Flow (prot)		3267			3229			1586			1552	
Flt Permitted		0.90			1.00			0.99			0.97	
Satd. Flow (perm)		2958			3229			1580			1520	
Volume (vph)	24	243	0	0	337	11	2	6	23	5	0	23
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	27	270	0	0	374	12	2	7	26	6	0	26
RTOR Reduction (vph)	0	0	0	0	2	0	0	18	0	0	18	0
Lane Group Flow (vph)	0	297	0	0	384	0	0	17	0	0	14	0
Confl. Peds. (#/hr)			150			150			50			50
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	2%	2%	2%	2%	2%	2%
Turn Type	Perm						Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1						2			2		
Actuated Green, G (s)		62.0			62.0			28.0			28.0	
Effective Green, g (s)		64.0			64.0			30.0			30.0	
Actuated g/C Ratio		0.64			0.64			0.30			0.30	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		1893			2067			474			456	
v/s Ratio Prot					c0.12							
v/s Ratio Perm		0.10						c0.02			0.02	
v/c Ratio		0.16			0.19			0.04			0.03	
Uniform Delay, d1		7.2			7.4			24.8			24.7	
Progression Factor		0.35			0.45			1.00			1.00	
Incremental Delay, d2		0.2			0.2			0.1			0.1	
Delay (s)		2.7			3.5			24.9			24.8	
Level of Service		A			A			C			C	
Approach Delay (s)		2.7			3.5			24.9			24.8	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	5.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

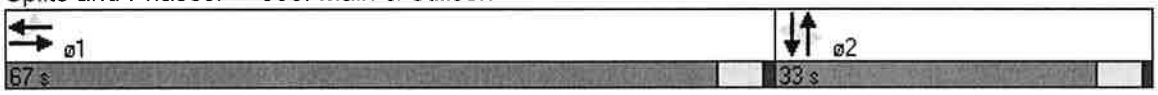
c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	24	243	337	2	6	5	0
Lane Group Flow (vph)	0	297	386	0	35	0	32
Turn Type	Perm			Perm		Perm	
Protected Phases		1	1		2		2
Permitted Phases	1			2		2	
Minimum Split (s)	27.0	27.0	27.0	33.0	33.0	33.0	33.0
Total Split (s)	67.0	67.0	67.0	33.0	33.0	33.0	33.0
Total Split (%)	67.0%	67.0%	67.0%	33.0%	33.0%	33.0%	33.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?							
v/c Ratio		0.16	0.19		0.07		0.07
Control Delay		2.7	3.5		12.7		12.0
Queue Delay		0.0	0.3		0.0		0.0
Total Delay		2.7	3.8		12.7		12.0
Queue Length 50th (ft)		10	16		4		3
Queue Length 95th (ft)		13	25		27		24
Internal Link Dist (ft)		231	188		31		96
Turn Bay Length (ft)							
Base Capacity (vph)		1892	2068		492		474
Starvation Cap Reductn		0	1073		0		0
Spillback Cap Reductn		0	0		0		0
Storage Cap Reductn		0	0		0		0
Reduced v/c Ratio		0.16	0.39		0.07		0.07

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 86 (86%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 300: Main & Stillson



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)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1641	3179		1641	3142		1770	3461		1770	3492	
Flt Permitted	0.47	1.00		0.65	1.00		0.26	1.00		0.45	1.00	
Satd. Flow (perm)	817	3179		1115	3142		486	3461		835	3492	
Volume (vph)	89	138	14	128	279	60	35	268	30	37	460	45
Peak-hour factor, PHF	0.77	0.93	0.70	0.70	0.84	0.83	0.80	0.81	0.75	0.77	0.79	0.94
Adj. Flow (vph)	116	148	20	183	332	72	44	331	40	48	582	48
RTOR Reduction (vph)	0	9	0	0	16	0	0	9	0	0	6	0
Lane Group Flow (vph)	116	159	0	183	388	0	44	362	0	48	624	0
Confl. Peds. (#/hr)			78			60			32			10
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	3	1		3	1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)	53.0	46.0		53.0	46.0		31.0	31.0		31.0	31.0	
Effective Green, g (s)	58.0	48.5		58.0	48.5		33.0	33.0		33.0	33.0	
Actuated g/C Ratio	0.58	0.48		0.58	0.48		0.33	0.33		0.33	0.33	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	552	1542		697	1524		160	1142		276	1152	
v/s Ratio Prot	0.02	0.05		c0.02	c0.13			0.11			c0.18	
v/s Ratio Perm	0.10			0.13			0.09			0.06		
v/c Ratio	0.21	0.10		0.26	0.25		0.28	0.32		0.17	0.54	
Uniform Delay, d1	9.6	14.0		9.9	15.1		24.7	25.1		23.8	27.3	
Progression Factor	2.44	2.12		0.39	0.30		0.47	0.47		0.35	0.37	
Incremental Delay, d2	0.1	0.1		0.1	0.4		4.2	0.7		1.3	1.7	
Delay (s)	23.4	29.7		3.9	5.0		15.9	12.6		9.6	11.9	
Level of Service	C	C		A	A		B	B		A	B	
Approach Delay (s)		27.1			4.6			13.0			11.7	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

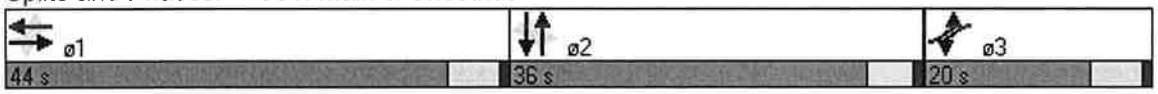
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	89	138	128	279	35	268	37	460
Lane Group Flow (vph)	116	168	183	404	44	371	48	630
Turn Type	pm+pt		pm+pt		Perm		Perm	
Protected Phases	3	1	3	1		2		2
Permitted Phases	1		1		2		2	
Detector Phases	3	1	3	1	2	2	2	2
Minimum Initial (s)	6.0	7.0	6.0	7.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	28.0	12.0	28.0	29.0	29.0	29.0	29.0
Total Split (s)	20.0	44.0	20.0	44.0	36.0	36.0	36.0	36.0
Total Split (%)	20.0%	44.0%	20.0%	44.0%	36.0%	36.0%	36.0%	36.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag		Lead		Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?								
Recall Mode	None	C-Max	None	C-Max	Max	Max	Max	Max
v/c Ratio	0.22	0.11	0.26	0.26	0.28	0.32	0.17	0.54
Control Delay	21.1	27.1	4.1	4.7	16.6	12.3	9.9	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	27.1	4.1	4.7	16.6	12.3	9.9	11.8
Queue Length 50th (ft)	54	36	17	10	10	41	9	94
Queue Length 95th (ft)	83	64	24	16	20	49	18	96
Internal Link Dist (ft)		188		225		289		561
Turn Bay Length (ft)	125		125		125		125	
Base Capacity (vph)	623	1551	769	1539	160	1152	276	1159
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.11	0.24	0.26	0.28	0.32	0.17	0.54

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 90 (90%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 301: Main & Chestnut



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)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.90		1.00	0.87	1.00	0.98		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.97		1.00	1.00	
Flt Protected		0.99	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1852	1427		1811	1380	1770	3358		1770	3535	
Flt Permitted		0.96	1.00		0.78	1.00	0.26	1.00		0.49	1.00	
Satd. Flow (perm)		1796	1427		1459	1380	487	3358		904	3535	
Volume (vph)	3	78	59	105	68	52	39	242	56	61	631	1
Peak-hour factor, PHF	0.25	0.81	0.78	0.77	0.68	0.62	0.61	0.89	0.70	0.59	0.91	0.25
Adj. Flow (vph)	12	96	76	136	100	84	64	272	80	103	693	4
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	108	76	0	236	84	64	352	0	103	697	0
Confl. Peds. (#/hr)			65			87			52			52
Turn Type	Perm		Perm	pm+pt		Perm	Perm			Perm		
Protected Phases		1		4	1 4			2			2	
Permitted Phases	1		1	1 4		1 4	2			2		
Actuated Green, G (s)		38.0	38.0		48.0	53.0	37.0	37.0		37.0	37.0	
Effective Green, g (s)		40.0	40.0		52.0	55.0	39.0	39.0		39.0	39.0	
Actuated g/C Ratio		0.40	0.40		0.52	0.55	0.39	0.39		0.39	0.39	
Clearance Time (s)		5.0	5.0				5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0	2.0				2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		718	571		801	759	190	1310		353	1379	
v/s Ratio Prot					c0.04			0.10			c0.20	
v/s Ratio Perm		0.06	0.05		c0.12	0.06	0.13			0.11		
v/c Ratio		0.15	0.13		0.29	0.11	0.34	0.27		0.29	0.51	
Uniform Delay, d1		19.2	19.0		13.6	10.8	21.4	20.8		21.0	23.2	
Progression Factor		1.67	1.68		0.85	0.85	0.78	0.77		0.41	0.40	
Incremental Delay, d2		0.4	0.5		0.1	0.0	4.6	0.5		1.9	1.2	
Delay (s)		32.5	32.5		11.7	9.2	21.3	16.5		10.5	10.5	
Level of Service		C	C		B	A	C	B		B	B	
Approach Delay (s)		32.5			11.0			17.2			10.5	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		

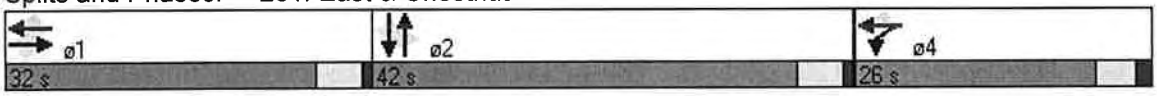
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Volume (vph)	3	78	59	105	68	52	39	242	61	631
Lane Group Flow (vph)	0	108	76	0	236	84	64	352	103	697
Turn Type	Perm		Perm	pm+pt		Perm	Perm		Perm	
Protected Phases		1		4	1 4			2		2
Permitted Phases	1		1	1 4		1 4	2		2	
Detector Phases	1	1	1	4	1 4	1 4	2	2	2	2
Minimum Initial (s)	7.0	7.0	7.0	6.0			6.0	6.0	6.0	6.0
Minimum Split (s)	27.0	27.0	27.0	15.0			30.0	30.0	30.0	30.0
Total Split (s)	32.0	32.0	32.0	26.0	58.0	58.0	42.0	42.0	42.0	42.0
Total Split (%)	32.0%	32.0%	32.0%	26.0%	58.0%	58.0%	42.0%	42.0%	42.0%	42.0%
Yellow Time (s)	4.0	4.0	4.0	3.5			4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.5			1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead				Lag	Lag	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	C-Max	C-Max	C-Max	Min			Max	Max	Max	Max
v/c Ratio		0.15	0.13		0.29	0.11	0.34	0.27	0.29	0.51
Control Delay		34.3	34.7		10.9	9.6	22.6	16.6	10.9	10.6
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.1
Total Delay		34.3	34.7		10.9	9.6	22.6	16.6	10.9	10.7
Queue Length 50th (ft)		60	42		65	21	23	65	20	71
Queue Length 95th (ft)		103	75		74	28	30	86	23	88
Internal Link Dist (ft)		494			594			382		289
Turn Bay Length (ft)							125		125	
Base Capacity (vph)		715	570		888	759	190	1310	352	1378
Starvation Cap Reductn		0	0		0	0	0	0	0	119
Spillback Cap Reductn		0	0		0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0
Reduced v/c Ratio		0.15	0.13		0.27	0.11	0.34	0.27	0.29	0.55

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 2 (2%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 261: East & Chestnut



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1770	1583		3539	3531	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1770	1583		3539	3531	
Volume (vph)	150	100	0	454	660	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	167	111	0	504	733	11
RTOR Reduction (vph)	0	84	0	0	1	0
Lane Group Flow (vph)	167	27	0	504	743	0
Turn Type		Perm				
Protected Phases	3			1 2	1	
Permitted Phases		3				
Actuated Green, G (s)	22.0	22.0		68.0	53.0	
Effective Green, g (s)	24.0	24.0		70.0	55.0	
Actuated g/C Ratio	0.24	0.24		0.70	0.55	
Clearance Time (s)	5.0	5.0			5.0	
Vehicle Extension (s)	2.0	2.0			2.0	
Lane Grp Cap (vph)	425	380		2477	1942	
v/s Ratio Prot	c0.09			c0.14	c0.21	
v/s Ratio Perm		0.07				
v/c Ratio	0.39	0.07		0.20	0.38	
Uniform Delay, d1	31.9	29.4		5.2	12.8	
Progression Factor	1.00	1.00		0.43	0.40	
Incremental Delay, d2	2.7	0.4		0.2	0.5	
Delay (s)	34.6	29.7		2.4	5.7	
Level of Service	C	C		A	A	
Approach Delay (s)	32.7			2.4	5.7	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBT	SBT	ø2
Lane Configurations					
Volume (vph)	150	100	454	660	
Lane Group Flow (vph)	167	111	504	744	
Turn Type		Perm			
Protected Phases	3		1 2	1	2
Permitted Phases		3			
Detector Phases	3	3	1 2	1	
Minimum Initial (s)	6.0	6.0		17.0	4.0
Minimum Split (s)	27.0	27.0		33.0	14.0
Total Split (s)	27.0	27.0	73.0	58.0	15.0
Total Split (%)	27.0%	27.0%	73.0%	58.0%	15%
Yellow Time (s)	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0
Lead/Lag				Lead	Lag
Lead-Lag Optimize?					
Recall Mode	Max	Max		C-Max	Max
v/c Ratio	0.39	0.24	0.20	0.38	
Control Delay	35.2	7.4	2.5	5.7	
Queue Delay	0.0	0.0	0.3	0.0	
Total Delay	35.2	7.4	2.8	5.7	
Queue Length 50th (ft)	90	0	15	44	
Queue Length 95th (ft)	152	43	31	55	
Internal Link Dist (ft)	133		153	382	
Turn Bay Length (ft)					
Base Capacity (vph)	425	464	2477	1944	
Starvation Cap Reductn	0	0	1317	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.39	0.24	0.43	0.38	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 27 (27%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 2571: Elm & Chestnut

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)					3.0		3.0	3.0			3.0	3.0
Lane Util. Factor					0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes					1.00		1.00	1.00			1.00	0.96
Flpb, ped/bikes					1.00		1.00	1.00			1.00	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)					5005		1770	3539			3539	1513
Flt Permitted					0.99		0.38	1.00			1.00	1.00
Satd. Flow (perm)					5005		706	3539			3539	1513
Volume (vph)	0	0	0	29	119	2	95	365	0	0	473	189
Peak-hour factor, PHF	0.90	0.90	0.90	0.73	0.93	0.50	0.88	0.89	0.90	0.90	0.80	0.81
Adj. Flow (vph)	0	0	0	40	128	4	108	410	0	0	591	233
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	105
Lane Group Flow (vph)	0	0	0	0	170	0	108	410	0	0	591	128
Confl. Peds. (#/hr)			64			20			30			30
Turn Type				Perm			pm+pt					Perm
Protected Phases					3		2	1 2			1	
Permitted Phases				3			1 2					1
Actuated Green, G (s)					22.0		63.0	68.0			53.0	53.0
Effective Green, g (s)					24.0		67.0	70.0			55.0	55.0
Actuated g/C Ratio					0.24		0.67	0.70			0.55	0.55
Clearance Time (s)					5.0		5.0				5.0	5.0
Vehicle Extension (s)					2.0		2.0				2.0	2.0
Lane Grp Cap (vph)					1201		601	2477			1946	832
v/s Ratio Prot							0.02	c0.12			c0.17	
v/s Ratio Perm					0.03		0.10					0.15
v/c Ratio					0.14		0.18	0.17			0.30	0.15
Uniform Delay, d1					29.9		9.0	5.1			12.2	11.1
Progression Factor					1.11		0.31	0.22			0.22	0.02
Incremental Delay, d2					0.2		0.6	0.1			0.4	0.4
Delay (s)					33.4		3.5	1.2			3.0	0.6
Level of Service					C		A	A			A	A
Approach Delay (s)		0.0			33.4			1.7			2.3	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

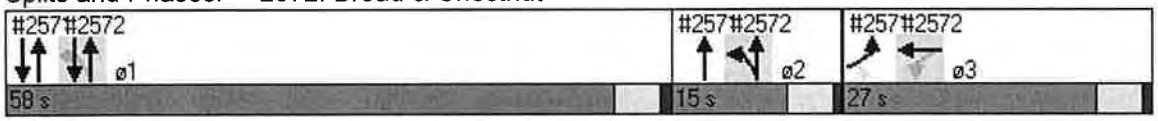
c Critical Lane Group

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Configurations					
Volume (vph)	119	95	365	473	189
Lane Group Flow (vph)	172	108	410	591	233
Turn Type		pm+pt			Perm
Protected Phases	3	2	1 2	1	
Permitted Phases		1 2			1
Detector Phases	3	2	1 2	1	1
Minimum Initial (s)	6.0	4.0		17.0	17.0
Minimum Split (s)	27.0	14.0		33.0	33.0
Total Split (s)	27.0	15.0	73.0	58.0	58.0
Total Split (%)	27.0%	15.0%	73.0%	58.0%	58.0%
Yellow Time (s)	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0
Lead/Lag		Lag		Lead	Lead
Lead-Lag Optimize?					
Recall Mode	Max	Max		C-Max	C-Max
v/c Ratio	0.14	0.18	0.17	0.30	0.25
Control Delay	33.0	2.4	1.2	3.1	0.6
Queue Delay	0.0	0.0	0.0	0.3	0.4
Total Delay	33.0	2.4	1.2	3.3	1.0
Queue Length 50th (ft)	36	4	6	17	0
Queue Length 95th (ft)	62	8	12	26	0
Internal Link Dist (ft)	614		255	153	
Turn Bay Length (ft)		125			
Base Capacity (vph)	1205	601	2477	1946	937
Starvation Cap Reductn	0	0	0	695	340
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.14	0.18	0.17	0.47	0.39

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 27 (27%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 2572: Broad & Chestnut



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)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Util. Factor		0.95	1.00					0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	0.94					1.00	0.96	1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3465	1489					3539	1518	1770	3539	
Flt Permitted		0.98	1.00					1.00	1.00	0.53	1.00	
Satd. Flow (perm)		3465	1489					3539	1518	986	3539	
Volume (vph)	159	208	71	0	0	0	0	295	64	26	472	0
Peak-hour factor, PHF	0.90	0.88	0.63	0.90	0.90	0.90	0.81	0.89	0.80	0.65	0.97	0.87
Adj. Flow (vph)	177	236	113	0	0	0	0	331	80	40	487	0
RTOR Reduction (vph)	0	0	66	0	0	0	0	0	38	0	0	0
Lane Group Flow (vph)	0	413	47	0	0	0	0	331	42	40	487	0
Confl. Peds. (#/hr)	7		34						24			12
Turn Type	Split		Perm						Perm	Perm		
Protected Phases	2	2						1			1	
Permitted Phases			2						1	1		
Actuated Green, G (s)		39.0	39.0					49.0	49.0	49.0	49.0	
Effective Green, g (s)		42.0	42.0					52.0	52.0	52.0	52.0	
Actuated g/C Ratio		0.42	0.42					0.52	0.52	0.52	0.52	
Clearance Time (s)		6.0	6.0					6.0	6.0	6.0	6.0	
Lane Grp Cap (vph)		1455	625					1840	789	513	1840	
v/s Ratio Prot		c0.12						0.09			c0.14	
v/s Ratio Perm			0.08						0.05	0.04		
v/c Ratio		0.28	0.08					0.18	0.05	0.08	0.26	
Uniform Delay, d1		19.1	17.4					12.7	11.8	12.0	13.4	
Progression Factor		1.16	1.47					0.85	1.33	1.04	0.95	
Incremental Delay, d2		0.4	0.2					0.2	0.1	0.3	0.3	
Delay (s)		22.6	25.8					11.0	15.8	12.8	13.0	
Level of Service		C	C					B	B	B	B	
Approach Delay (s)		23.3			0.0			11.9			13.0	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

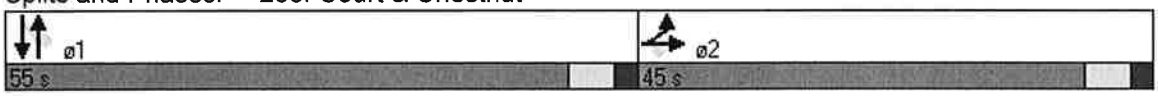
c Critical Lane Group

Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	208	71	295	64	26	472
Lane Group Flow (vph)	413	113	331	80	40	487
Turn Type		Perm		Perm	Perm	
Protected Phases	2		1			1
Permitted Phases		2		1	1	
Minimum Split (s)	29.0	29.0	31.0	31.0	31.0	31.0
Total Split (s)	45.0	45.0	55.0	55.0	55.0	55.0
Total Split (%)	45.0%	45.0%	55.0%	55.0%	55.0%	55.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?						
v/c Ratio	0.28	0.16	0.18	0.10	0.08	0.26
Control Delay	22.8	5.8	11.1	4.1	13.2	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	22.8	5.8	11.1	4.1	13.2	13.3
Queue Length 50th (ft)	95	6	64	5	9	60
Queue Length 95th (ft)	126	13	99	33	16	83
Internal Link Dist (ft)	452		376			255
Turn Bay Length (ft)					100	
Base Capacity (vph)	1455	691	1840	828	512	1840
Starvation Cap Reductn	0	0	0	0	0	591
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.16	0.18	0.10	0.08	0.39

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 20 (20%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 253: Court & Chestnut



Level of Service Analysis
Existing (2010) Condition
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1200	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0	3.0			
Lane Util. Factor		0.95						0.91	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		2212						5060	1583			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		2212						5060	1583			
Volume (vph)	106	341	0	0	0	0	70	982	198	0	0	0
Peak-hour factor, PHF	0.78	0.67	0.90	0.90	0.90	0.90	0.60	0.92	0.65	0.90	0.90	0.90
Adj. Flow (vph)	136	509	0	0	0	0	117	1067	305	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	156	0	0	0
Lane Group Flow (vph)	0	645	0	0	0	0	0	1184	149	0	0	0
Turn Type	Split						Split		Perm			
Protected Phases	2	2					1	1				
Permitted Phases									1			
Actuated Green, G (s)		47.0						43.0	43.0			
Effective Green, g (s)		49.0						45.0	45.0			
Actuated g/C Ratio		0.49						0.45	0.45			
Clearance Time (s)		5.0						5.0	5.0			
Lane Grp Cap (vph)		1084						2277	712			
v/s Ratio Prot		c0.29						c0.23				
v/s Ratio Perm									0.19			
v/c Ratio		0.60						0.52	0.21			
Uniform Delay, d1		18.4						19.7	16.7			
Progression Factor		0.92						0.46	0.04			
Incremental Delay, d2		2.4						0.8	0.6			
Delay (s)		19.2						9.8	1.3			
Level of Service		B						A	A			
Approach Delay (s)		19.2			0.0			8.1			0.0	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

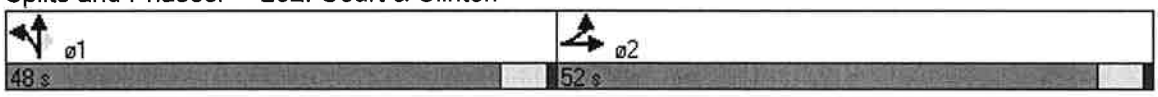
c Critical Lane Group

Lane Group	EBT	NBT	NBR
Lane Configurations			
Volume (vph)	341	982	198
Lane Group Flow (vph)	645	1184	305
Turn Type			Perm
Protected Phases	2	1	
Permitted Phases			1
Minimum Split (s)	28.0	30.0	30.0
Total Split (s)	52.0	48.0	48.0
Total Split (%)	52.0%	48.0%	48.0%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0
Lead/Lag	Lag	Lead	Lead
Lead-Lag Optimize?			
v/c Ratio	0.60	0.52	0.35
Control Delay	19.6	9.9	1.1
Queue Delay	4.7	0.1	0.0
Total Delay	24.3	10.0	1.1
Queue Length 50th (ft)	148	60	0
Queue Length 95th (ft)	143	69	0
Internal Link Dist (ft)	124	352	
Turn Bay Length (ft)			
Base Capacity (vph)	1084	2277	868
Starvation Cap Reductn	359	213	0
Spillback Cap Reductn	0	48	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.89	0.57	0.35

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 30 (30%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 252: Court & Clinton



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)					3.0		3.0	3.0				
Lane Util. Factor					0.91		0.91	0.91				
Frpb, ped/bikes					0.97		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					4774		1610	3390				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					4774		1610	3390				
Volume (vph)	0	0	0	0	252	60	281	792	0	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.93	0.83	0.88	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	271	72	319	880	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	24	0	169	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	319	0	150	880	0	0	0	0
Confl. Peds. (#/hr)			99			96			105			96
Turn Type							Split					
Protected Phases					2		1	1				
Permitted Phases												
Actuated Green, G (s)					44.0		44.0	44.0				
Effective Green, g (s)					47.0		47.0	47.0				
Actuated g/C Ratio					0.47		0.47	0.47				
Clearance Time (s)					6.0		6.0	6.0				
Lane Grp Cap (vph)					2244		757	1593				
v/s Ratio Prot					c0.07		0.20	c0.26				
v/s Ratio Perm												
v/c Ratio					0.14		0.20	0.55				
Uniform Delay, d1					15.0		15.5	19.0				
Progression Factor					1.27		0.00	0.33				
Incremental Delay, d2					0.1		0.5	1.2				
Delay (s)					19.2		0.5	7.4				
Level of Service					B		A	A				
Approach Delay (s)		0.0			19.2			5.6			0.0	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

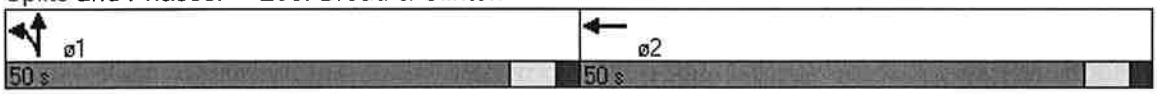
c Critical Lane Group

Lane Group	WBT	NBL	NBT
Lane Configurations			
Volume (vph)	252	281	792
Lane Group Flow (vph)	343	319	880
Turn Type		Split	
Protected Phases	2	1	1
Permitted Phases			
Minimum Split (s)	29.0	28.0	28.0
Total Split (s)	50.0	50.0	50.0
Total Split (%)	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lead/Lag	Lag	Lead	Lead
Lead-Lag Optimize?			
v/c Ratio	0.15	0.34	0.55
Control Delay	16.7	0.9	7.5
Queue Delay	0.0	0.3	0.1
Total Delay	16.7	1.1	7.5
Queue Length 50th (ft)	43	0	37
Queue Length 95th (ft)	67	0	45
Internal Link Dist (ft)	518		346
Turn Bay Length (ft)			
Base Capacity (vph)	2269	926	1593
Starvation Cap Reductn	0	194	84
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.15	0.44	0.58

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 256: Broad & Clinton



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0			3.0		
Lane Util. Factor	1.00			1.00		
Frpb, ped/bikes	1.00			1.00		
Flpb, ped/bikes	1.00			1.00		
Frt	1.00			1.00		
Flt Protected	1.00			1.00		
Satd. Flow (prot)	1863			1863		
Flt Permitted	1.00			1.00		
Satd. Flow (perm)	1863			1863		
Volume (vph)	476	0	0	291	0	0
Peak-hour factor, PHF	0.88	0.90	0.90	0.73	0.90	0.90
Adj. Flow (vph)	541	0	0	399	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	541	0	0	399	0	0
Confl. Peds. (#/hr)						250
Turn Type						
Protected Phases	1			1		
Permitted Phases						
Actuated Green, G (s)	64.0			64.0		
Effective Green, g (s)	67.0			67.0		
Actuated g/C Ratio	0.67			0.67		
Clearance Time (s)	6.0			6.0		
Lane Grp Cap (vph)	1248			1248		
v/s Ratio Prot	c0.29			0.21		
v/s Ratio Perm						
v/c Ratio	0.43			0.32		
Uniform Delay, d1	7.7			6.9		
Progression Factor	0.16			0.11		
Incremental Delay, d2	0.9			0.6		
Delay (s)	2.1			1.4		
Level of Service	A			A		
Approach Delay (s)	2.1			1.4	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	1.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	33.0
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	ø2
Lane Configurations	↑	↑	
Volume (vph)	476	291	
Lane Group Flow (vph)	541	399	
Turn Type			
Protected Phases	1	1	2
Permitted Phases			
Minimum Split (s)	25.0	25.0	30.0
Total Split (s)	70.0	70.0	30.0
Total Split (%)	70.0%	70.0%	30%
Yellow Time (s)	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	0.0
Lead/Lag	Lead	Lead	Lag
Lead-Lag Optimize?			
v/c Ratio	0.43	0.32	
Control Delay	2.1	1.4	
Queue Delay	0.3	0.2	
Total Delay	2.4	1.7	
Queue Length 50th (ft)	11	9	
Queue Length 95th (ft)	33	11	
Internal Link Dist (ft)	173	215	
Turn Bay Length (ft)			
Base Capacity (vph)	1248	1248	
Starvation Cap Reductn	227	296	
Spillback Cap Reductn	38	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.53	0.42	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 55
Control Type: Pretimed

Splits and Phases: 298: Main & Midtown

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)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.97		1.00	0.91		1.00			0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00			1.00	
Frt		1.00	0.85		1.00	0.85		0.99			0.98	
Flt Protected		1.00	1.00		1.00	1.00		1.00			1.00	
Satd. Flow (prot)		1862	1543		1863	1436		3507			3441	
Flt Permitted		1.00	1.00		1.00	1.00		1.00			0.95	
Satd. Flow (perm)		1858	1543		1863	1436		3507			3279	
Volume (vph)	4	387	122	0	338	6	0	60	2	2	104	16
Peak-hour factor, PHF	0.90	0.82	0.87	0.90	0.93	0.50	0.90	0.71	0.50	0.50	0.72	0.67
Adj. Flow (vph)	4	472	140	0	363	12	0	85	4	4	144	24
RTOR Reduction (vph)	0	0	74	0	0	6	0	2	0	0	13	0
Lane Group Flow (vph)	0	476	66	0	363	6	0	87	0	0	159	0
Confl. Peds. (#/hr)			11			66			31			11
Turn Type	Perm		Perm			Perm				Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1		1			1		2		2		
Actuated Green, G (s)		45.0	45.0		45.0	45.0		45.0			45.0	
Effective Green, g (s)		47.0	47.0		47.0	47.0		47.0			47.0	
Actuated g/C Ratio		0.47	0.47		0.47	0.47		0.47			0.47	
Clearance Time (s)		5.0	5.0		5.0	5.0		5.0			5.0	
Lane Grp Cap (vph)		873	725		876	675		1648			1541	
v/s Ratio Prot					0.19			0.03				
v/s Ratio Perm		c0.26	0.09			0.01					c0.05	
v/c Ratio		0.55	0.09		0.41	0.01		0.05			0.10	
Uniform Delay, d1		18.9	14.7		17.4	14.1		14.4			14.8	
Progression Factor		1.17	2.50		0.59	0.45		1.49			0.42	
Incremental Delay, d2		2.3	0.2		1.4	0.0		0.1			0.1	
Delay (s)		24.4	36.9		11.7	6.4		21.6			6.4	
Level of Service		C	D		B	A		C			A	
Approach Delay (s)		27.2			11.5			21.6			6.4	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

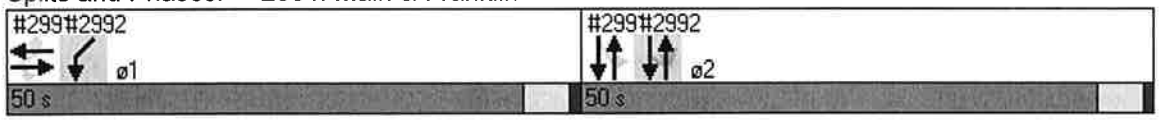
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	4	387	122	338	6	60	2	104
Lane Group Flow (vph)	0	476	140	363	12	89	0	172
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		1		1		2		2
Permitted Phases	1		1		1	2	2	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
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	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?								
v/c Ratio		0.54	0.18	0.41	0.02	0.05		0.11
Control Delay		25.0	7.2	11.9	3.3	20.8		5.6
Queue Delay		0.8	0.0	0.6	0.0	0.0		0.6
Total Delay		25.8	7.2	12.6	3.3	20.8		6.2
Queue Length 50th (ft)		172	17	66	0	18		7
Queue Length 95th (ft)		200	35	82	1	24		13
Internal Link Dist (ft)		215		231		494		98
Turn Bay Length (ft)								
Base Capacity (vph)		874	799	876	681	1650		1554
Starvation Cap Reductn		170	0	231	0	0		1091
Spillback Cap Reductn		0	0	0	0	0		0
Storage Cap Reductn		0	0	0	0	0		0
Reduced v/c Ratio		0.68	0.18	0.56	0.02	0.05		0.37

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 4 (4%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 2991: Main & Franklin



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)		3.0			3.0			3.0			3.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			0.99			0.89			0.90	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			0.90			0.91	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		3530			3491			1476			1497	
Flt Permitted		0.92			1.00			0.98			0.94	
Satd. Flow (perm)		3268			3491			1459			1435	
Volume (vph)	21	395	0	0	370	10	4	4	21	9	0	18
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	23	439	0	0	411	11	4	4	23	10	0	20
RTOR Reduction (vph)	0	0	0	0	2	0	0	16	0	0	14	0
Lane Group Flow (vph)	0	462	0	0	420	0	0	15	0	0	16	0
Confl. Peds. (#/hr)			150			150			125			125
Turn Type	Perm						Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1						2			2		
Actuated Green, G (s)		62.0			62.0			28.0			28.0	
Effective Green, g (s)		64.0			64.0			30.0			30.0	
Actuated g/C Ratio		0.64			0.64			0.30			0.30	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		2092			2234			438			431	
v/s Ratio Prot					0.12							
v/s Ratio Perm		c0.14						c0.02			0.02	
v/c Ratio		0.22			0.19			0.03			0.04	
Uniform Delay, d1		7.5			7.4			24.8			24.8	
Progression Factor		0.01			0.14			1.00			1.00	
Incremental Delay, d2		0.2			0.2			0.1			0.2	
Delay (s)		0.3			1.2			24.9			24.9	
Level of Service		A			A			C			C	
Approach Delay (s)		0.3			1.2			24.9			24.9	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	2.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	21	395	370	4	4	9	0
Lane Group Flow (vph)	0	462	422	0	31	0	30
Turn Type	Perm			Perm		Perm	
Protected Phases		1	1		2		2
Permitted Phases	1			2		2	
Minimum Split (s)	27.0	27.0	27.0	33.0	33.0	33.0	33.0
Total Split (s)	67.0	67.0	67.0	33.0	33.0	33.0	33.0
Total Split (%)	67.0%	67.0%	67.0%	33.0%	33.0%	33.0%	33.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?							
v/c Ratio		0.22	0.19		0.07		0.07
Control Delay		0.3	1.2		13.1		14.1
Queue Delay		0.2	0.3		0.0		0.0
Total Delay		0.5	1.5		13.1		14.1
Queue Length 50th (ft)		0	4		4		5
Queue Length 95th (ft)		1	5		25		26
Internal Link Dist (ft)		231	188		31		96
Turn Bay Length (ft)							
Base Capacity (vph)		2091	2236		454		445
Starvation Cap Reductn		885	1226		0		0
Spillback Cap Reductn		0	0		0		0
Storage Cap Reductn		0	0		0		0
Reduced v/c Ratio		0.38	0.42		0.07		0.07

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 7 (7%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 300: Main & Stillson

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)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3452		1770	3421		1770	3416		1770	3428	
Flt Permitted	0.46	1.00		0.48	1.00		0.38	1.00		0.34	1.00	
Satd. Flow (perm)	849	3452		891	3421		705	3416		625	3428	
Volume (vph)	138	262	25	94	284	37	25	373	76	63	330	65
Peak-hour factor, PHF	0.80	0.82	0.63	0.84	0.84	0.71	0.78	0.76	0.76	0.88	0.75	0.81
Adj. Flow (vph)	172	320	40	112	338	52	32	491	100	72	440	80
RTOR Reduction (vph)	0	9	0	0	10	0	0	17	0	0	15	0
Lane Group Flow (vph)	172	351	0	112	380	0	32	574	0	72	505	0
Confl. Peds. (#/hr)			46			68			34			32
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	3	1		3	1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)	44.0	36.2		44.0	36.2		40.0	40.0		40.0	40.0	
Effective Green, g (s)	49.0	38.7		49.0	38.7		42.0	42.0		42.0	42.0	
Actuated g/C Ratio	0.49	0.39		0.49	0.39		0.42	0.42		0.42	0.42	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	511	1336		527	1324		296	1435		263	1440	
v/s Ratio Prot	c0.03	0.10		0.02	0.11			c0.17			0.15	
v/s Ratio Perm	c0.13			0.08			0.05			0.12		
v/c Ratio	0.34	0.26		0.21	0.29		0.11	0.40		0.27	0.35	
Uniform Delay, d1	14.6	20.9		14.0	21.1		17.6	20.2		19.0	19.7	
Progression Factor	1.54	1.35		0.35	0.31		0.41	0.36		0.56	0.57	
Incremental Delay, d2	0.1	0.5		0.1	0.5		0.7	0.8		2.5	0.7	
Delay (s)	22.5	28.7		5.0	7.0		7.9	8.1		13.2	11.8	
Level of Service	C	C		A	A		A	A		B	B	
Approach Delay (s)		26.7			6.6			8.1			12.0	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	138	262	94	284	25	373	63	330
Lane Group Flow (vph)	172	360	112	390	32	591	72	520
Turn Type	pm+pt		pm+pt		Perm		Perm	
Protected Phases	3	1	3	1		2		2
Permitted Phases	1		1		2		2	
Detector Phases	3	1	3	1	2	2	2	2
Minimum Initial (s)	6.0	7.0	6.0	7.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	28.0	12.0	28.0	29.0	29.0	29.0	29.0
Total Split (s)	23.0	32.0	23.0	32.0	45.0	45.0	45.0	45.0
Total Split (%)	23.0%	32.0%	23.0%	32.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag		Lead		Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?								
Recall Mode	None	C-Max	None	C-Max	Max	Max	Max	Max
v/c Ratio	0.36	0.27	0.22	0.29	0.11	0.41	0.27	0.36
Control Delay	21.3	28.4	5.1	6.9	8.2	7.8	13.8	11.3
Queue Delay	0.0	0.5	0.0	0.0	0.0	0.2	0.0	0.0
Total Delay	21.3	28.8	5.1	6.9	8.2	8.0	13.8	11.3
Queue Length 50th (ft)	75	83	13	23	5	43	17	71
Queue Length 95th (ft)	86	85	21	31	10	44	27	51
Internal Link Dist (ft)		188		225		289		561
Turn Bay Length (ft)	125		125		125		125	
Base Capacity (vph)	599	1343	615	1333	297	1452	263	1455
Starvation Cap Reductn	14	575	0	0	0	269	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.47	0.18	0.29	0.11	0.50	0.27	0.36

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 10 (10%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 301: Main & Chestnut

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)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.89		1.00	0.85	1.00	0.98		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.97		1.00	1.00	
Flt Protected		1.00	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1861	1406		1805	1342	1770	3342		1770	3525	
Flt Permitted		1.00	1.00		0.72	1.00	0.39	1.00		0.35	1.00	
Satd. Flow (perm)		1854	1406		1348	1342	721	3342		652	3525	
Volume (vph)	3	136	84	87	52	39	22	394	102	53	412	5
Peak-hour factor, PHF	0.75	0.74	0.72	0.78	0.81	0.57	0.69	0.86	0.75	0.95	0.79	0.63
Adj. Flow (vph)	4	184	117	112	64	68	32	458	136	56	522	8
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	188	117	0	176	68	32	594	0	56	530	0
Confl. Peds. (#/hr)			75			105			66			84
Turn Type	Perm		Perm	pm+pt		Perm	Perm			Perm		
Protected Phases		1		4	1 4			2			2	
Permitted Phases	1		1	1 4		1 4	2			2		
Actuated Green, G (s)		32.9	32.9		41.0	46.0	44.0	44.0		44.0	44.0	
Effective Green, g (s)		34.9	34.9		45.0	48.0	46.0	46.0		46.0	46.0	
Actuated g/C Ratio		0.35	0.35		0.45	0.48	0.46	0.46		0.46	0.46	
Clearance Time (s)		5.0	5.0				5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0	2.0				2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		647	491		653	644	332	1537		300	1622	
v/s Ratio Prot					c0.03			c0.18			0.15	
v/s Ratio Perm		c0.10	0.08		0.09	0.05	0.04			0.09		
v/c Ratio		0.29	0.24		0.27	0.11	0.10	0.39		0.19	0.33	
Uniform Delay, d1		23.6	23.1		17.2	14.2	15.3	17.7		15.9	17.2	
Progression Factor		1.33	1.31		0.67	0.70	0.52	0.51		0.38	0.40	
Incremental Delay, d2		1.1	1.1		0.1	0.0	0.6	0.7		1.3	0.5	
Delay (s)		32.4	31.5		11.6	10.0	8.6	9.8		7.4	7.4	
Level of Service		C	C		B	A	A	A		A	A	
Approach Delay (s)		32.1			11.1			9.7			7.4	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Volume (vph)	3	136	84	87	52	39	22	394	53	412
Lane Group Flow (vph)	0	188	117	0	176	68	32	594	56	530
Turn Type	Perm		Perm	pm+pt		Perm	Perm		Perm	
Protected Phases		1		4	1 4			2		2
Permitted Phases	1		1	1 4		1 4	2		2	
Detector Phases	1	1	1	4	1 4	1 4	2	2	2	2
Minimum Initial (s)	7.0	7.0	7.0	6.0			6.0	6.0	6.0	6.0
Minimum Split (s)	27.0	27.0	27.0	15.0			30.0	30.0	30.0	30.0
Total Split (s)	31.0	31.0	31.0	20.0	51.0	51.0	49.0	49.0	49.0	49.0
Total Split (%)	31.0%	31.0%	31.0%	20.0%	51.0%	51.0%	49.0%	49.0%	49.0%	49.0%
Yellow Time (s)	4.0	4.0	4.0	3.5			4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.5			1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead				Lag	Lag	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	C-Max	C-Max	C-Max	Min			Max	Max	Max	Max
v/c Ratio		0.29	0.24		0.27	0.11	0.10	0.39	0.19	0.33
Control Delay		33.6	33.0		11.0	10.5	8.9	9.9	7.7	7.5
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		33.6	33.0		11.0	10.5	8.9	9.9	7.7	7.5
Queue Length 50th (ft)		116	72		37	14	7	67	9	49
Queue Length 95th (ft)		140	93		78	26	13	82	19	51
Internal Link Dist (ft)		494			594			382		289
Turn Bay Length (ft)							125		125	
Base Capacity (vph)		646	490		717	644	332	1538	300	1622
Starvation Cap Reductn		0	0		0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0
Reduced v/c Ratio		0.29	0.24		0.25	0.11	0.10	0.39	0.19	0.33

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 8 (8%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 261: East & Chestnut

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1770	1583		3539	3530	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1770	1583		3539	3530	
Volume (vph)	150	100	0	529	580	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	167	111	0	588	644	11
RTOR Reduction (vph)	0	84	0	0	1	0
Lane Group Flow (vph)	167	27	0	588	654	0
Turn Type		Perm				
Protected Phases	3			1	1	
Permitted Phases		3				
Actuated Green, G (s)	22.0	22.0		68.0	68.0	
Effective Green, g (s)	24.0	24.0		70.0	70.0	
Actuated g/C Ratio	0.24	0.24		0.70	0.70	
Clearance Time (s)	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	425	380		2477	2471	
v/s Ratio Prot	c0.09			0.17	c0.19	
v/s Ratio Perm		0.07				
v/c Ratio	0.39	0.07		0.24	0.26	
Uniform Delay, d1	31.9	29.4		5.4	5.5	
Progression Factor	1.00	1.00		0.19	0.69	
Incremental Delay, d2	2.7	0.4		0.2	0.3	
Delay (s)	34.6	29.7		1.2	4.0	
Level of Service	C	C		A	A	
Approach Delay (s)	32.7			1.2	4.0	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	31.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Volume (vph)	150	100	529	580
Lane Group Flow (vph)	167	111	588	655
Turn Type		Perm		
Protected Phases	3		1	1
Permitted Phases		3		
Detector Phases	3	3	1	1
Minimum Initial (s)	6.0	6.0	17.0	17.0
Minimum Split (s)	27.0	27.0	33.0	33.0
Total Split (s)	27.0	27.0	73.0	73.0
Total Split (%)	27.0%	27.0%	73.0%	73.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	Max	Max	C-Max	C-Max
v/c Ratio	0.39	0.24	0.24	0.26
Control Delay	35.2	7.4	1.2	4.1
Queue Delay	0.0	0.0	0.2	0.0
Total Delay	35.2	7.4	1.5	4.1
Queue Length 50th (ft)	90	0	9	52
Queue Length 95th (ft)	152	43	10	72
Internal Link Dist (ft)	133		153	382
Turn Bay Length (ft)				
Base Capacity (vph)	425	464	2477	2472
Starvation Cap Reductn	0	0	1104	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.39	0.24	0.43	0.26

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 30 (30%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2571: Elm & Chestnut

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)					3.0		3.0	3.0			3.0	3.0
Lane Util. Factor					0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes					0.98		1.00	1.00			1.00	0.76
Flpb, ped/bikes					1.00		1.00	1.00			1.00	1.00
Frt					0.99		1.00	1.00			1.00	0.85
Flt Protected					0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)					4798		1770	3539			3539	1201
Flt Permitted					0.98		0.39	1.00			1.00	1.00
Satd. Flow (perm)					4798		719	3539			3539	1201
Volume (vph)	0	0	0	89	79	8	113	521	0	0	480	105
Peak-hour factor, PHF	0.90	0.90	0.90	0.74	0.66	0.40	0.72	0.85	0.75	0.90	0.75	0.88
Adj. Flow (vph)	0	0	0	120	120	20	157	613	0	0	640	119
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	0	250	0	157	613	0	0	640	106
Confl. Peds. (#/hr)			64			210			158			211
Turn Type				Perm			Perm					Perm
Protected Phases					3			1			1	
Permitted Phases				3			1					1
Actuated Green, G (s)					22.0		68.0	68.0			68.0	68.0
Effective Green, g (s)					24.0		70.0	70.0			70.0	70.0
Actuated g/C Ratio					0.24		0.70	0.70			0.70	0.70
Clearance Time (s)					5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)					2.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					1152		503	2477			2477	841
v/s Ratio Prot								0.17			0.18	
v/s Ratio Perm					0.05		c0.22					0.10
v/c Ratio					0.22		0.31	0.25			0.26	0.13
Uniform Delay, d1					30.5		5.8	5.4			5.5	4.9
Progression Factor					0.85		1.82	1.65			0.31	0.15
Incremental Delay, d2					0.4		1.6	0.2			0.2	0.3
Delay (s)					26.3		12.0	9.2			2.0	1.0
Level of Service					C		B	A			A	A
Approach Delay (s)		0.0			26.3			9.8			1.8	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

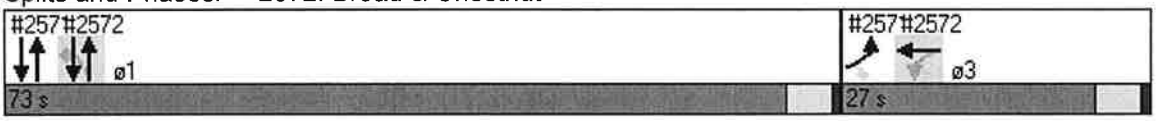
c Critical Lane Group

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Configurations					
Volume (vph)	79	113	521	480	105
Lane Group Flow (vph)	260	157	613	640	119
Turn Type		Perm			Perm
Protected Phases	3		1	1	
Permitted Phases		1			1
Detector Phases	3	1	1	1	1
Minimum Initial (s)	6.0	17.0	17.0	17.0	17.0
Minimum Split (s)	27.0	33.0	33.0	33.0	33.0
Total Split (s)	27.0	73.0	73.0	73.0	73.0
Total Split (%)	27.0%	73.0%	73.0%	73.0%	73.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Max	C-Max	C-Max	C-Max	C-Max
v/c Ratio	0.22	0.31	0.25	0.26	0.14
Control Delay	25.1	12.7	9.3	2.0	0.8
Queue Delay	0.0	0.0	0.3	0.3	0.5
Total Delay	25.1	12.7	9.6	2.3	1.3
Queue Length 50th (ft)	43	37	76	14	0
Queue Length 95th (ft)	49	100	91	23	0
Internal Link Dist (ft)	614		255	153	
Turn Bay Length (ft)		125			
Base Capacity (vph)	1160	503	2477	2477	854
Starvation Cap Reductn	0	0	1198	1123	455
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.22	0.31	0.48	0.47	0.30

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 30 (30%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2572: Broad & Chestnut



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)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Util. Factor		0.95	1.00					0.95	1.00	1.00	0.95	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3457	1583					3539	1583	1770	3539	
Flt Permitted		0.98	1.00					1.00	1.00	0.46	1.00	
Satd. Flow (perm)		3457	1583					3539	1583	863	3539	
Volume (vph)	239	230	154	0	0	0	0	381	38	27	611	0
Peak-hour factor, PHF	0.96	0.83	0.68	0.90	0.90	0.90	0.90	0.81	0.79	0.68	0.78	0.90
Adj. Flow (vph)	249	277	226	0	0	0	0	470	48	40	783	0
RTOR Reduction (vph)	0	0	160	0	0	0	0	0	17	0	0	0
Lane Group Flow (vph)	0	526	66	0	0	0	0	470	31	40	783	0
Turn Type	Split		Perm						Perm	Perm		
Protected Phases	2	2						1			1	
Permitted Phases			2						1	1		
Actuated Green, G (s)		26.0	26.0					62.0	62.0	62.0	62.0	
Effective Green, g (s)		29.0	29.0					65.0	65.0	65.0	65.0	
Actuated g/C Ratio		0.29	0.29					0.65	0.65	0.65	0.65	
Clearance Time (s)		6.0	6.0					6.0	6.0	6.0	6.0	
Lane Grp Cap (vph)		1003	459					2300	1029	561	2300	
v/s Ratio Prot		c0.15						0.13			c0.22	
v/s Ratio Perm			0.14						0.03	0.05		
v/c Ratio		0.52	0.14					0.20	0.03	0.07	0.34	
Uniform Delay, d1		29.7	26.3					7.1	6.2	6.4	7.9	
Progression Factor		0.91	0.68					0.99	1.53	0.63	0.59	
Incremental Delay, d2		1.7	0.6					0.2	0.1	0.2	0.4	
Delay (s)		28.9	18.4					7.2	9.6	4.3	5.0	
Level of Service		C	B					A	A	A	A	
Approach Delay (s)		25.7			0.0			7.4			5.0	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	230	154	381	38	27	611
Lane Group Flow (vph)	526	226	470	48	40	783
Turn Type		Perm		Perm	Perm	
Protected Phases	2		1			1
Permitted Phases		2		1	1	
Minimum Split (s)	29.0	29.0	31.0	31.0	31.0	31.0
Total Split (s)	32.0	32.0	68.0	68.0	68.0	68.0
Total Split (%)	32.0%	32.0%	68.0%	68.0%	68.0%	68.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?						
v/c Ratio	0.52	0.36	0.20	0.05	0.07	0.34
Control Delay	29.1	4.1	7.2	3.1	4.4	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay	29.1	4.1	7.2	3.1	4.4	5.3
Queue Length 50th (ft)	129	5	41	0	6	68
Queue Length 95th (ft)	147	5	82	12	11	70
Internal Link Dist (ft)	452		376			255
Turn Bay Length (ft)					100	
Base Capacity (vph)	1003	620	2300	1046	560	2300
Starvation Cap Reductn	0	0	0	0	0	779
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.36	0.20	0.05	0.07	0.51

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 25 (25%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 253: Court & Chestnut

Level of Service Analysis
No-Build (2032) Condition
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1200	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0	3.0			
Lane Util. Factor		0.95						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.89			
Flpb, ped/bikes		1.00						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.98						0.99	1.00			
Satd. Flow (prot)		2190						5019	1401			
Flt Permitted		0.98						0.99	1.00			
Satd. Flow (perm)		2190						5019	1401			
Volume (vph)	90	184	0	0	0	0	522	1617	466	0	0	0
Peak-hour factor, PHF	0.65	0.95	0.90	0.90	0.90	0.90	0.84	0.94	0.84	0.90	0.90	0.90
Adj. Flow (vph)	138	194	0	0	0	0	621	1720	555	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	120	0	0	0
Lane Group Flow (vph)	0	332	0	0	0	0	0	2341	435	0	0	0
Confl. Peds. (#/hr)			60			64			84			15
Turn Type	Split						Split		Perm			
Protected Phases	2	2					1	1				
Permitted Phases									1			
Actuated Green, G (s)		31.0						59.0	59.0			
Effective Green, g (s)		33.0						61.0	61.0			
Actuated g/C Ratio		0.33						0.61	0.61			
Clearance Time (s)		5.0						5.0	5.0			
Lane Grp Cap (vph)		723						3062	855			
v/s Ratio Prot		c0.15						c0.47				
v/s Ratio Perm									0.40			
v/c Ratio		0.46						0.76	0.51			
Uniform Delay, d1		26.5						14.3	11.0			
Progression Factor		0.87						0.37	0.09			
Incremental Delay, d2		2.1						1.0	1.2			
Delay (s)		25.1						6.3	2.2			
Level of Service		C						A	A			
Approach Delay (s)		25.1			0.0			5.5			0.0	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	NBT	NBR
Lane Configurations			
Volume (vph)	184	1617	466
Lane Group Flow (vph)	332	2341	555
Turn Type			Perm
Protected Phases	2	1	
Permitted Phases			1
Minimum Split (s)	28.0	30.0	30.0
Total Split (s)	36.0	64.0	64.0
Total Split (%)	36.0%	64.0%	64.0%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0
Lead/Lag	Lag	Lead	Lead
Lead-Lag Optimize?			
v/c Ratio	0.46	0.76	0.57
Control Delay	25.5	6.4	1.8
Queue Delay	2.3	0.7	0.5
Total Delay	27.8	7.1	2.3
Queue Length 50th (ft)	79	84	4
Queue Length 95th (ft)	115	93	m8
Internal Link Dist (ft)	124	352	
Turn Bay Length (ft)			
Base Capacity (vph)	723	3062	974
Starvation Cap Reductn	263	361	132
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.72	0.87	0.66

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 3 (3%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 252: Court & Clinton

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)					3.0		3.0	3.0				
Lane Util. Factor					0.91		0.91	0.91				
Frpb, ped/bikes					0.98		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					4848		1610	3389				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					4848		1610	3389				
Volume (vph)	0	0	0	0	392	74	581	1149	0	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.86	0.66	0.90	0.94	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	456	112	646	1222	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	81	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	568	0	554	1233	0	0	0	0
Confl. Peds. (#/hr)			94			55			94			52
Turn Type							Split					
Protected Phases					2		1	1				
Permitted Phases												
Actuated Green, G (s)					32.0		56.0	56.0				
Effective Green, g (s)					35.0		59.0	59.0				
Actuated g/C Ratio					0.35		0.59	0.59				
Clearance Time (s)					6.0		6.0	6.0				
Lane Grp Cap (vph)					1697		950	2000				
v/s Ratio Prot					c0.12		c0.39	0.36				
v/s Ratio Perm												
v/c Ratio					0.33		0.58	0.62				
Uniform Delay, d1					23.9		12.8	13.2				
Progression Factor					1.25		0.07	0.26				
Incremental Delay, d2					0.5		1.7	0.9				
Delay (s)					30.3		2.6	4.4				
Level of Service					C		A	A				
Approach Delay (s)		0.0			30.3			3.8			0.0	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

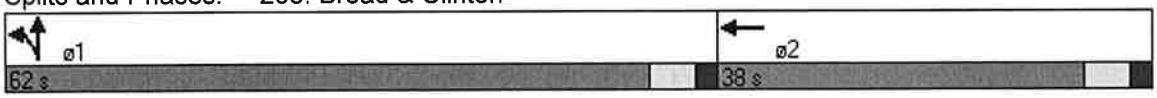
c Critical Lane Group

Lane Group	WBT	NBL	NBT
Lane Configurations			
Volume (vph)	392	581	1149
Lane Group Flow (vph)	568	635	1233
Turn Type		Split	
Protected Phases	2	1	1
Permitted Phases			
Minimum Split (s)	29.0	28.0	28.0
Total Split (s)	38.0	62.0	62.0
Total Split (%)	38.0%	62.0%	62.0%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lead/Lag	Lag	Lead	Lead
Lead-Lag Optimize?			
v/c Ratio	0.33	0.62	0.62
Control Delay	30.5	2.4	4.5
Queue Delay	0.0	0.5	0.4
Total Delay	30.5	2.9	4.9
Queue Length 50th (ft)	110	4	39
Queue Length 95th (ft)	137	6	58
Internal Link Dist (ft)	518		346
Turn Bay Length (ft)			
Base Capacity (vph)	1696	1031	2001
Starvation Cap Reductn	0	116	317
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.33	0.69	0.73

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 16 (16%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 256: Broad & Clinton



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0			3.0		
Lane Util. Factor	1.00			1.00		
Frpb, ped/bikes	1.00			1.00		
Flpb, ped/bikes	1.00			1.00		
Frt	1.00			1.00		
Flt Protected	1.00			1.00		
Satd. Flow (prot)	1658			1658		
Flt Permitted	1.00			1.00		
Satd. Flow (perm)	1658			1658		
Volume (vph)	432	0	0	469	0	0
Peak-hour factor, PHF	0.84	0.90	0.90	0.71	0.90	0.90
Adj. Flow (vph)	514	0	0	661	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	514	0	0	661	0	0
Confl. Peds. (#/hr)						250
Heavy Vehicles (%)	10%	10%	10%	10%	2%	2%
Bus Blockages (#/hr)	10	0	0	10	0	0
Turn Type						
Protected Phases	1			1		
Permitted Phases						
Actuated Green, G (s)	64.0			64.0		
Effective Green, g (s)	67.0			67.0		
Actuated g/C Ratio	0.67			0.67		
Clearance Time (s)	6.0			6.0		
Lane Grp Cap (vph)	1111			1111		
v/s Ratio Prot	0.31			c0.40		
v/s Ratio Perm						
v/c Ratio	0.46			0.59		
Uniform Delay, d1	7.9			9.1		
Progression Factor	0.08			0.35		
Incremental Delay, d2	0.7			2.3		
Delay (s)	1.3			5.4		
Level of Service	A			A		
Approach Delay (s)	1.3			5.4	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	3.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	33.0
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	ø2
Lane Configurations	↑	↑	
Volume (vph)	432	469	
Lane Group Flow (vph)	514	661	
Turn Type			
Protected Phases	1	1	2
Permitted Phases			
Minimum Split (s)	25.0	25.0	30.0
Total Split (s)	70.0	70.0	30.0
Total Split (%)	70.0%	70.0%	30%
Yellow Time (s)	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	0.0
Lead/Lag	Lead	Lead	Lag
Lead-Lag Optimize?			
v/c Ratio	0.46	0.59	
Control Delay	1.3	5.6	
Queue Delay	0.6	2.0	
Total Delay	2.0	7.6	
Queue Length 50th (ft)	1	60	
Queue Length 95th (ft)	m0	62	
Internal Link Dist (ft)	173	215	
Turn Bay Length (ft)			
Base Capacity (vph)	1111	1111	
Starvation Cap Reductn	282	2	
Spillback Cap Reductn	0	295	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.62	0.81	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 298: Main & Midtown

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)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.69		1.00	0.75		0.98			0.90	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00			1.00	
Frt		1.00	0.85		1.00	0.85		0.99			0.94	
Flt Protected		1.00	1.00		1.00	1.00		1.00			1.00	
Satd. Flow (prot)		1727	1016		1727	1102		3433			2988	
Flt Permitted		1.00	1.00		1.00	1.00		1.00			0.95	
Satd. Flow (perm)		1727	1016		1727	1102		3433			2843	
Volume (vph)	0	296	101	0	401	12	0	67	2	2	63	28
Peak-hour factor, PHF	0.90	0.89	0.73	0.90	0.85	0.69	0.90	0.75	0.25	0.50	0.88	0.52
Adj. Flow (vph)	0	333	138	0	472	17	0	89	8	4	72	54
RTOR Reduction (vph)	0	0	52	0	0	6	0	5	0	0	37	0
Lane Group Flow (vph)	0	333	86	0	472	11	0	92	0	0	93	0
Confl. Peds. (#/hr)			249			194			167			106
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	2%	2%	2%	2%	2%	2%
Turn Type			Perm			Perm				Perm		
Protected Phases		1			1			2			2	
Permitted Phases			1			1		2		2		
Actuated Green, G (s)		60.0	60.0		60.0	60.0		30.0			30.0	
Effective Green, g (s)		62.0	62.0		62.0	62.0		32.0			32.0	
Actuated g/C Ratio		0.62	0.62		0.62	0.62		0.32			0.32	
Clearance Time (s)		5.0	5.0		5.0	5.0		5.0			5.0	
Lane Grp Cap (vph)		1071	630		1071	683		1099			910	
v/s Ratio Prot		0.19			c0.27			0.03				
v/s Ratio Perm			0.14			0.02					c0.05	
v/c Ratio		0.31	0.14		0.44	0.02		0.08			0.10	
Uniform Delay, d1		8.9	7.9		9.9	7.3		23.8			23.9	
Progression Factor		0.55	0.80		0.43	0.23		0.96			0.21	
Incremental Delay, d2		0.7	0.4		1.3	0.0		0.1			0.2	
Delay (s)		5.6	6.7		5.6	1.7		22.9			5.2	
Level of Service		A	A		A	A		C			A	
Approach Delay (s)		5.9			5.5			22.9			5.2	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	296	101	401	12	67	2	63
Lane Group Flow (vph)	333	138	472	17	97	0	130
Turn Type		Perm		Perm		Perm	
Protected Phases	1		1		2		2
Permitted Phases		1		1	2	2	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	65.0	65.0	65.0	65.0	35.0	35.0	35.0
Total Split (%)	65.0%	65.0%	65.0%	65.0%	35.0%	35.0%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							
v/c Ratio	0.31	0.20	0.44	0.02	0.09		0.14
Control Delay	5.7	1.8	5.7	0.8	21.2		3.3
Queue Delay	0.3	0.0	0.3	0.0	0.0		0.5
Total Delay	6.1	1.8	6.0	0.8	21.2		3.8
Queue Length 50th (ft)	23	0	48	0	18		1
Queue Length 95th (ft)	69	9	57	0	28		0
Internal Link Dist (ft)	215		231		494		98
Turn Bay Length (ft)							
Base Capacity (vph)	1071	682	1071	690	1104		947
Starvation Cap Reductn	322	0	168	0	0		541
Spillback Cap Reductn	0	0	0	0	0		0
Storage Cap Reductn	0	0	0	0	0		0
Reduced v/c Ratio	0.44	0.20	0.52	0.02	0.09		0.32

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 2991: Main & Franklin

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)		3.0			3.0			3.0			3.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			0.99			0.95			0.94	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			0.90			0.89	
Flt Protected		1.00			1.00			1.00			0.99	
Satd. Flow (prot)		3267			3233			1586			1553	
Flt Permitted		0.89			1.00			0.99			0.97	
Satd. Flow (perm)		2928			3233			1580			1518	
Volume (vph)	27	272	0	0	392	12	2	7	26	6	0	26
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	30	302	0	0	436	13	2	8	29	7	0	29
RTOR Reduction (vph)	0	0	0	0	2	0	0	20	0	0	20	0
Lane Group Flow (vph)	0	332	0	0	447	0	0	19	0	0	16	0
Confl. Peds. (#/hr)			150			150			50			50
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	2%	2%	2%	2%	2%	2%
Turn Type	Perm						Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1						2			2		
Actuated Green, G (s)		62.0			62.0			28.0			28.0	
Effective Green, g (s)		64.0			64.0			30.0			30.0	
Actuated g/C Ratio		0.64			0.64			0.30			0.30	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		1874			2069			474			455	
v/s Ratio Prot					c0.14							
v/s Ratio Perm		0.11						c0.02			0.02	
v/c Ratio		0.18			0.22			0.04			0.03	
Uniform Delay, d1		7.3			7.5			24.8			24.8	
Progression Factor		0.32			0.46			1.00			1.00	
Incremental Delay, d2		0.2			0.2			0.2			0.1	
Delay (s)		2.5			3.7			24.9			24.9	
Level of Service		A			A			C			C	
Approach Delay (s)		2.5			3.7			24.9			24.9	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	5.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		

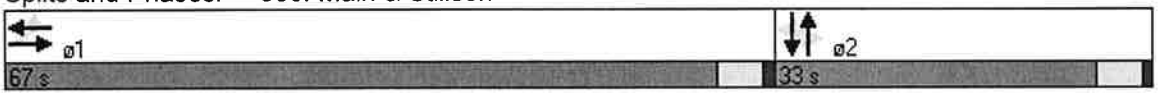
c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	27	272	392	2	7	6	0
Lane Group Flow (vph)	0	332	449	0	39	0	36
Turn Type	Perm			Perm		Perm	
Protected Phases		1	1		2		2
Permitted Phases	1			2		2	
Minimum Split (s)	27.0	27.0	27.0	33.0	33.0	33.0	33.0
Total Split (s)	67.0	67.0	67.0	33.0	33.0	33.0	33.0
Total Split (%)	67.0%	67.0%	67.0%	33.0%	33.0%	33.0%	33.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?							
v/c Ratio		0.18	0.22		0.08		0.08
Control Delay		2.5	3.7		12.4		11.7
Queue Delay		0.0	0.3		0.0		0.0
Total Delay		2.5	4.0		12.4		11.7
Queue Length 50th (ft)		10	20		4		3
Queue Length 95th (ft)		13	30		29		26
Internal Link Dist (ft)		231	188		31		96
Turn Bay Length (ft)							
Base Capacity (vph)		1873	2072		495		476
Starvation Cap Reductn		0	994		0		0
Spillback Cap Reductn		0	0		0		0
Storage Cap Reductn		0	0		0		0
Reduced v/c Ratio		0.18	0.42		0.08		0.08

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 86 (86%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 300: Main & Stillson



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)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1641	3177		1641	3141		1770	3461		1770	3493	
Flt Permitted	0.44	1.00		0.63	1.00		0.22	1.00		0.41	1.00	
Satd. Flow (perm)	760	3177		1091	3141		403	3461		768	3493	
Volume (vph)	100	155	16	143	313	67	39	300	34	41	515	50
Peak-hour factor, PHF	0.77	0.93	0.70	0.70	0.84	0.83	0.80	0.81	0.75	0.77	0.79	0.94
Adj. Flow (vph)	130	167	23	204	373	81	49	370	45	53	652	53
RTOR Reduction (vph)	0	9	0	0	16	0	0	9	0	0	6	0
Lane Group Flow (vph)	130	181	0	204	438	0	49	406	0	53	699	0
Confl. Peds. (#/hr)			78			60			32			10
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	3	1		3	1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)	53.0	45.7		53.0	45.7		31.0	31.0		31.0	31.0	
Effective Green, g (s)	58.0	48.2		58.0	48.2		33.0	33.0		33.0	33.0	
Actuated g/C Ratio	0.58	0.48		0.58	0.48		0.33	0.33		0.33	0.33	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	527	1531		687	1514		133	1142		253	1153	
v/s Ratio Prot	0.02	0.06		c0.03	c0.14			0.12			c0.20	
v/s Ratio Perm	0.12			0.14			0.12			0.07		
v/c Ratio	0.25	0.12		0.30	0.29		0.37	0.36		0.21	0.61	
Uniform Delay, d1	9.7	14.2		10.1	15.6		25.6	25.4		24.1	28.1	
Progression Factor	2.26	1.97		0.39	0.31		0.48	0.48		0.42	0.45	
Incremental Delay, d2	0.1	0.2		0.1	0.5		7.6	0.9		1.8	2.2	
Delay (s)	22.1	28.2		4.0	5.3		19.7	13.1		11.9	14.9	
Level of Service	C	C		A	A		B	B		B	B	
Approach Delay (s)		25.7			4.9			13.8			14.7	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

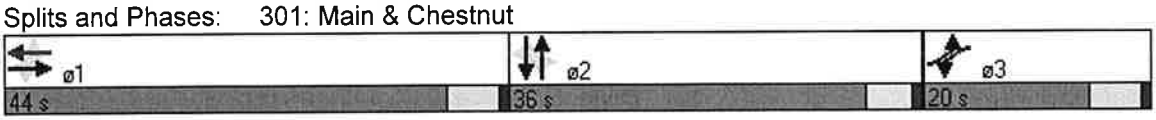
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	100	155	143	313	39	300	41	515
Lane Group Flow (vph)	130	190	204	454	49	415	53	705
Turn Type	pm+pt		pm+pt		Perm		Perm	
Protected Phases	3	1	3	1		2		2
Permitted Phases	1		1		2		2	
Detector Phases	3	1	3	1	2	2	2	2
Minimum Initial (s)	6.0	7.0	6.0	7.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	28.0	12.0	28.0	29.0	29.0	29.0	29.0
Total Split (s)	20.0	44.0	20.0	44.0	36.0	36.0	36.0	36.0
Total Split (%)	20.0%	44.0%	20.0%	44.0%	36.0%	36.0%	36.0%	36.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag		Lead		Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?								
Recall Mode	None	C-Max	None	C-Max	Max	Max	Max	Max
v/c Ratio	0.26	0.12	0.30	0.30	0.37	0.36	0.21	0.61
Control Delay	20.0	26.2	4.3	5.1	20.8	12.8	12.2	14.9
Queue Delay	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.0
Total Delay	20.0	26.2	4.4	5.3	20.8	12.8	12.2	14.9
Queue Length 50th (ft)	65	44	19	18	12	47	11	132
Queue Length 95th (ft)	77	61	26	28	23	55	24	130
Internal Link Dist (ft)		188		225		289		561
Turn Bay Length (ft)	125		125		125		125	
Base Capacity (vph)	597	1542	754	1531	133	1152	254	1159
Starvation Cap Reductn	43	0	73	465	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.12	0.30	0.43	0.37	0.36	0.21	0.61

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 90 (90%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 301: Main & Chestnut



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)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.90		1.00	0.87	1.00	0.98		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.97		1.00	1.00	
Flt Protected		0.99	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1853	1427		1810	1380	1770	3357		1770	3535	
Flt Permitted		0.97	1.00		0.77	1.00	0.22	1.00		0.45	1.00	
Satd. Flow (perm)		1798	1427		1438	1380	407	3357		845	3535	
Volume (vph)	3	87	66	118	76	58	44	271	63	68	707	1
Peak-hour factor, PHF	0.25	0.81	0.78	0.77	0.68	0.62	0.61	0.89	0.70	0.59	0.91	0.25
Adj. Flow (vph)	12	107	85	153	112	94	72	304	90	115	777	4
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	119	85	0	265	94	72	394	0	115	781	0
Confl. Peds. (#/hr)			65			87			52			52
Turn Type	Perm		Perm	pm+pt		Perm	Perm			Perm		
Protected Phases		1		4	1 4			2			2	
Permitted Phases	1		1	1 4		1 4	2			2		
Actuated Green, G (s)		37.2	37.2		48.0	53.0	37.0	37.0		37.0	37.0	
Effective Green, g (s)		39.2	39.2		52.0	55.0	39.0	39.0		39.0	39.0	
Actuated g/C Ratio		0.39	0.39		0.52	0.55	0.39	0.39		0.39	0.39	
Clearance Time (s)		5.0	5.0				5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0	2.0				2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		705	559		795	759	159	1309		330	1379	
v/s Ratio Prot					c0.04			0.12			c0.22	
v/s Ratio Perm		0.07	0.06		c0.13	0.07	0.18			0.14		
v/c Ratio		0.17	0.15		0.33	0.12	0.45	0.30		0.35	0.57	
Uniform Delay, d1		19.8	19.7		13.9	10.9	22.6	21.1		21.5	23.9	
Progression Factor		1.68	1.68		0.85	0.85	0.79	0.75		0.40	0.39	
Incremental Delay, d2		0.5	0.6		0.1	0.0	8.8	0.6		2.5	1.5	
Delay (s)		33.8	33.6		12.0	9.3	26.8	16.5		11.2	10.8	
Level of Service		C	C		B	A	C	B		B	B	
Approach Delay (s)		33.7			11.2			18.1			10.9	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

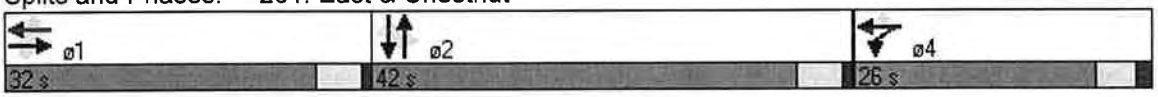
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Volume (vph)	3	87	66	118	76	58	44	271	68	707
Lane Group Flow (vph)	0	119	85	0	265	94	72	394	115	781
Turn Type	Perm		Perm	pm+pt		Perm	Perm		Perm	
Protected Phases		1		4	1 4			2		2
Permitted Phases	1		1	1 4		1 4	2		2	
Detector Phases	1	1	1	4	1 4	1 4	2	2	2	2
Minimum Initial (s)	7.0	7.0	7.0	6.0			6.0	6.0	6.0	6.0
Minimum Split (s)	27.0	27.0	27.0	15.0			30.0	30.0	30.0	30.0
Total Split (s)	32.0	32.0	32.0	26.0	58.0	58.0	42.0	42.0	42.0	42.0
Total Split (%)	32.0%	32.0%	32.0%	26.0%	58.0%	58.0%	42.0%	42.0%	42.0%	42.0%
Yellow Time (s)	4.0	4.0	4.0	3.5			4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.5			1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead				Lag	Lag	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	C-Max	C-Max	C-Max	Min			Max	Max	Max	Max
v/c Ratio		0.17	0.15		0.33	0.12	0.45	0.30	0.35	0.57
Control Delay		35.6	35.8		11.2	9.7	28.6	16.6	11.6	10.9
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.2
Total Delay		35.6	35.8		11.2	9.7	28.6	16.6	11.6	11.1
Queue Length 50th (ft)		68	49		74	24	25	72	22	80
Queue Length 95th (ft)		113	84		83	31	38	90	25	97
Internal Link Dist (ft)		494			594			382		289
Turn Bay Length (ft)							125		125	
Base Capacity (vph)		703	559		880	759	159	1310	330	1378
Starvation Cap Reductn		0	0		0	0	0	0	0	118
Spillback Cap Reductn		0	0		0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0
Reduced v/c Ratio		0.17	0.15		0.30	0.12	0.45	0.30	0.35	0.62

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 2 (2%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 261: East & Chestnut



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1770	1583		3539	3532	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1770	1583		3539	3532	
Volume (vph)	150	100	0	509	739	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	167	111	0	566	821	11
RTOR Reduction (vph)	0	84	0	0	1	0
Lane Group Flow (vph)	167	27	0	566	831	0
Turn Type		Perm				
Protected Phases	3			1 2	1	
Permitted Phases		3				
Actuated Green, G (s)	22.0	22.0		68.0	53.0	
Effective Green, g (s)	24.0	24.0		70.0	55.0	
Actuated g/C Ratio	0.24	0.24		0.70	0.55	
Clearance Time (s)	5.0	5.0			5.0	
Vehicle Extension (s)	2.0	2.0			2.0	
Lane Grp Cap (vph)	425	380		2477	1943	
v/s Ratio Prot	c0.09			c0.16	c0.24	
v/s Ratio Perm		0.07				
v/c Ratio	0.39	0.07		0.23	0.43	
Uniform Delay, d1	31.9	29.4		5.4	13.2	
Progression Factor	1.00	1.00		0.48	0.39	
Incremental Delay, d2	2.7	0.4		0.2	0.6	
Delay (s)	34.6	29.7		2.8	5.8	
Level of Service	C	C		A	A	
Approach Delay (s)	32.7			2.8	5.8	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBT	SBT	ø2
Lane Configurations					
Volume (vph)	150	100	509	739	
Lane Group Flow (vph)	167	111	566	832	
Turn Type		Perm			
Protected Phases	3		1 2	1	2
Permitted Phases		3			
Detector Phases	3	3	1 2	1	
Minimum Initial (s)	6.0	6.0		17.0	4.0
Minimum Split (s)	27.0	27.0		33.0	14.0
Total Split (s)	27.0	27.0	73.0	58.0	15.0
Total Split (%)	27.0%	27.0%	73.0%	58.0%	15%
Yellow Time (s)	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0
Lead/Lag				Lead	Lag
Lead-Lag Optimize?					
Recall Mode	Max	Max		C-Max	Max
v/c Ratio	0.39	0.24	0.23	0.43	
Control Delay	35.2	7.4	2.8	5.8	
Queue Delay	0.0	0.0	0.3	0.1	
Total Delay	35.2	7.4	3.1	5.9	
Queue Length 50th (ft)	90	0	22	50	
Queue Length 95th (ft)	152	43	37	61	
Internal Link Dist (ft)	133		153	382	
Turn Bay Length (ft)					
Base Capacity (vph)	425	464	2477	1944	
Starvation Cap Reductn	0	0	1240	160	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.39	0.24	0.46	0.47	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 27 (27%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 2571: Elm & Chestnut

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)					3.0		3.0	3.0			3.0	3.0
Lane Util. Factor					0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes					1.00		1.00	1.00			1.00	0.96
Flpb, ped/bikes					1.00		1.00	1.00			1.00	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)					5007		1770	3539			3539	1513
Flt Permitted					0.99		0.34	1.00			1.00	1.00
Satd. Flow (perm)					5007		640	3539			3539	1513
Volume (vph)	0	0	0	33	133	2	106	399	0	0	530	212
Peak-hour factor, PHF	0.90	0.90	0.90	0.73	0.93	0.50	0.88	0.89	0.90	0.90	0.80	0.81
Adj. Flow (vph)	0	0	0	45	143	4	120	448	0	0	662	262
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	118
Lane Group Flow (vph)	0	0	0	0	190	0	120	448	0	0	662	144
Confl. Peds. (#/hr)			64			20			30			30
Turn Type				Perm			pm+pt					Perm
Protected Phases					3		2	1 2			1	
Permitted Phases				3			1 2					1
Actuated Green, G (s)					22.0		63.0	68.0			53.0	53.0
Effective Green, g (s)					24.0		67.0	70.0			55.0	55.0
Actuated g/C Ratio					0.24		0.67	0.70			0.55	0.55
Clearance Time (s)					5.0		5.0				5.0	5.0
Vehicle Extension (s)					2.0		2.0				2.0	2.0
Lane Grp Cap (vph)					1202		564	2477			1946	832
v/s Ratio Prot							0.03	c0.13			c0.19	
v/s Ratio Perm					0.04		0.12					0.17
v/c Ratio					0.16		0.21	0.18			0.34	0.17
Uniform Delay, d1					30.0		9.9	5.2			12.5	11.2
Progression Factor					1.11		0.37	0.23			0.20	0.01
Incremental Delay, d2					0.3		0.8	0.2			0.4	0.4
Delay (s)					33.6		4.5	1.3			3.0	0.5
Level of Service					C		A	A			A	A
Approach Delay (s)		0.0			33.6			2.0			2.3	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

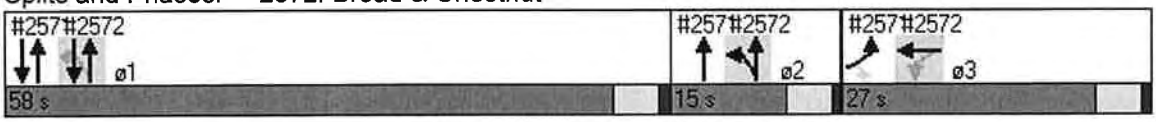
c Critical Lane Group

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Configurations					
Volume (vph)	133	106	399	530	212
Lane Group Flow (vph)	192	120	448	662	262
Turn Type		pm+pt			Perm
Protected Phases	3	2	1 2	1	
Permitted Phases		1 2			1
Detector Phases	3	2	1 2	1	1
Minimum Initial (s)	6.0	4.0		17.0	17.0
Minimum Split (s)	27.0	14.0		33.0	33.0
Total Split (s)	27.0	15.0	73.0	58.0	58.0
Total Split (%)	27.0%	15.0%	73.0%	58.0%	58.0%
Yellow Time (s)	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0
Lead/Lag		Lag		Lead	Lead
Lead-Lag Optimize?					
Recall Mode	Max	Max		C-Max	C-Max
v/c Ratio	0.16	0.21	0.18	0.34	0.28
Control Delay	33.3	3.0	1.3	3.0	0.7
Queue Delay	0.0	0.0	0.0	0.2	0.4
Total Delay	33.3	3.0	1.3	3.2	1.0
Queue Length 50th (ft)	41	4	7	18	0
Queue Length 95th (ft)	68	13	15	27	0
Internal Link Dist (ft)	614		255	153	
Turn Bay Length (ft)		125			
Base Capacity (vph)	1203	564	2477	1946	950
Starvation Cap Reductn	0	0	0	585	307
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.16	0.21	0.18	0.49	0.41

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 27 (27%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 2572: Broad & Chestnut



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)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Util. Factor		0.95	1.00					0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	0.94					1.00	0.96	1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3465	1489					3539	1518	1770	3539	
Flt Permitted		0.98	1.00					1.00	1.00	0.50	1.00	
Satd. Flow (perm)		3465	1489					3539	1518	935	3539	
Volume (vph)	178	233	80	0	0	0	0	330	72	29	529	0
Peak-hour factor, PHF	0.90	0.88	0.63	0.90	0.90	0.90	0.81	0.89	0.80	0.65	0.97	0.87
Adj. Flow (vph)	198	265	127	0	0	0	0	371	90	45	545	0
RTOR Reduction (vph)	0	0	74	0	0	0	0	0	43	0	0	0
Lane Group Flow (vph)	0	463	53	0	0	0	0	371	47	45	545	0
Confl. Peds. (#/hr)	7		34						24			12
Turn Type	Split		Perm						Perm	Perm		
Protected Phases	2	2						1			1	
Permitted Phases			2						1	1		
Actuated Green, G (s)		39.0	39.0					49.0	49.0	49.0	49.0	
Effective Green, g (s)		42.0	42.0					52.0	52.0	52.0	52.0	
Actuated g/C Ratio		0.42	0.42					0.52	0.52	0.52	0.52	
Clearance Time (s)		6.0	6.0					6.0	6.0	6.0	6.0	
Lane Grp Cap (vph)		1455	625					1840	789	486	1840	
v/s Ratio Prot		c0.13						0.10			c0.15	
v/s Ratio Perm			0.09						0.06	0.05		
v/c Ratio		0.32	0.09					0.20	0.06	0.09	0.30	
Uniform Delay, d1		19.4	17.4					12.9	11.9	12.1	13.6	
Progression Factor		1.16	1.49					0.87	1.26	1.07	0.98	
Incremental Delay, d2		0.5	0.2					0.2	0.1	0.4	0.4	
Delay (s)		23.0	26.2					11.5	15.1	13.4	13.8	
Level of Service		C	C					B	B	B	B	
Approach Delay (s)		23.7			0.0			12.2			13.8	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

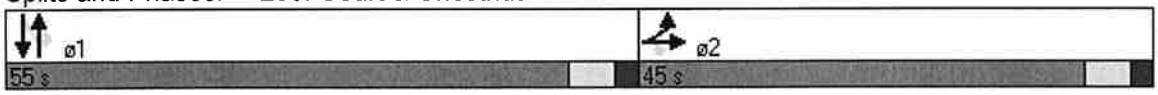
c Critical Lane Group

Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	233	80	330	72	29	529
Lane Group Flow (vph)	463	127	371	90	45	545
Turn Type		Perm		Perm	Perm	
Protected Phases	2		1			1
Permitted Phases		2		1	1	
Minimum Split (s)	29.0	29.0	31.0	31.0	31.0	31.0
Total Split (s)	45.0	45.0	55.0	55.0	55.0	55.0
Total Split (%)	45.0%	45.0%	55.0%	55.0%	55.0%	55.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?						
v/c Ratio	0.32	0.18	0.20	0.11	0.09	0.30
Control Delay	23.2	5.6	11.6	3.7	13.8	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	23.2	5.6	11.6	3.7	13.8	14.1
Queue Length 50th (ft)	108	7	72	5	11	71
Queue Length 95th (ft)	143	13	108	33	19	96
Internal Link Dist (ft)	452		376			255
Turn Bay Length (ft)					100	
Base Capacity (vph)	1455	699	1840	833	486	1840
Starvation Cap Reductn	0	0	0	0	0	529
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.18	0.20	0.11	0.09	0.42

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 20 (20%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 253: Court & Chestnut



Level of Service Analysis
No-Build (2032) Condition
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1200	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0	3.0			
Lane Util. Factor		0.95						0.91	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		2212						5061	1583			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		2212						5061	1583			
Volume (vph)	121	382	0	0	0	0	78	1109	222	0	0	0
Peak-hour factor, PHF	0.78	0.67	0.90	0.90	0.90	0.90	0.60	0.92	0.65	0.90	0.90	0.90
Adj. Flow (vph)	155	570	0	0	0	0	130	1205	342	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	131	0	0	0
Lane Group Flow (vph)	0	725	0	0	0	0	0	1335	211	0	0	0
Turn Type	Split						Split		Perm			
Protected Phases	2	2					1	1				
Permitted Phases									1			
Actuated Green, G (s)		47.0						43.0	43.0			
Effective Green, g (s)		49.0						45.0	45.0			
Actuated g/C Ratio		0.49						0.45	0.45			
Clearance Time (s)		5.0						5.0	5.0			
Lane Grp Cap (vph)		1084						2277	712			
v/s Ratio Prot		c0.33						c0.26				
v/s Ratio Perm									0.22			
v/c Ratio		0.67						0.59	0.30			
Uniform Delay, d1		19.3						20.5	17.4			
Progression Factor		0.92						0.55	0.06			
Incremental Delay, d2		3.3						1.0	1.0			
Delay (s)		21.0						12.3	2.1			
Level of Service		C						B	A			
Approach Delay (s)		21.0			0.0			10.2			0.0	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

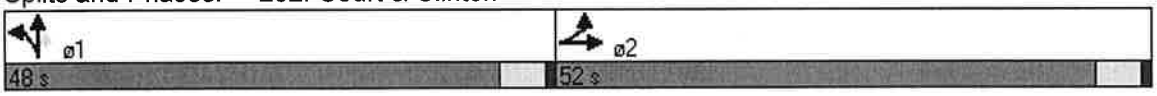
c Critical Lane Group

Lane Group	EBT	NBT	NBR
Lane Configurations			
Volume (vph)	382	1109	222
Lane Group Flow (vph)	725	1335	342
Turn Type			Perm
Protected Phases	2	1	
Permitted Phases			1
Minimum Split (s)	28.0	30.0	30.0
Total Split (s)	52.0	48.0	48.0
Total Split (%)	52.0%	48.0%	48.0%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0
Lead/Lag	Lag	Lead	Lead
Lead-Lag Optimize?			
v/c Ratio	0.67	0.59	0.41
Control Delay	21.5	12.4	1.7
Queue Delay	9.8	0.1	0.1
Total Delay	31.3	12.5	1.9
Queue Length 50th (ft)	170	112	0
Queue Length 95th (ft)	161	156	0
Internal Link Dist (ft)	124	352	
Turn Bay Length (ft)			
Base Capacity (vph)	1083	2277	844
Starvation Cap Reductn	328	190	84
Spillback Cap Reductn	0	55	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.96	0.64	0.45

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 30 (30%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 252: Court & Clinton



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)					3.0		3.0	3.0				
Lane Util. Factor					0.91		0.91	0.91				
Frpb, ped/bikes					0.97		1.00	1.00				
Flpb, ped/bikes					1.00		1.00	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					4772		1610	3390				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					4772		1610	3390				
Volume (vph)	0	0	0	0	282	67	315	898	0	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.93	0.83	0.88	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	303	81	358	998	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	17	0	190	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	367	0	168	998	0	0	0	0
Confl. Peds. (#/hr)			99			96			105			96
Turn Type							Split					
Protected Phases					2		1	1				
Permitted Phases												
Actuated Green, G (s)					44.0		44.0	44.0				
Effective Green, g (s)					47.0		47.0	47.0				
Actuated g/C Ratio					0.47		0.47	0.47				
Clearance Time (s)					6.0		6.0	6.0				
Lane Grp Cap (vph)					2243		757	1593				
v/s Ratio Prot					c0.08		0.22	c0.29				
v/s Ratio Perm												
v/c Ratio					0.16		0.22	0.63				
Uniform Delay, d1					15.2		15.7	19.9				
Progression Factor					1.21		0.00	0.33				
Incremental Delay, d2					0.2		0.5	1.5				
Delay (s)					18.5		0.6	8.1				
Level of Service					B		A	A				
Approach Delay (s)		0.0			18.5			6.1			0.0	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

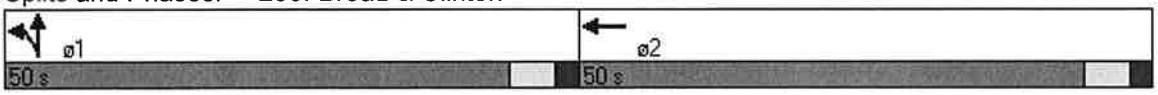
c Critical Lane Group

Lane Group	WBT	NBL	NBT
Lane Configurations			
Volume (vph)	282	315	898
Lane Group Flow (vph)	384	358	998
Turn Type		Split	
Protected Phases	2	1	1
Permitted Phases			
Minimum Split (s)	29.0	28.0	28.0
Total Split (s)	50.0	50.0	50.0
Total Split (%)	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lead/Lag	Lag	Lead	Lead
Lead-Lag Optimize?			
v/c Ratio	0.17	0.38	0.63
Control Delay	17.0	0.9	8.2
Queue Delay	0.0	0.4	0.1
Total Delay	17.0	1.3	8.3
Queue Length 50th (ft)	51	0	43
Queue Length 95th (ft)	76	0	51
Internal Link Dist (ft)	518		346
Turn Bay Length (ft)			
Base Capacity (vph)	2259	946	1593
Starvation Cap Reductn	0	216	82
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.17	0.49	0.66

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 256: Broad & Clinton



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0			3.0		
Lane Util. Factor	1.00			1.00		
Frpb, ped/bikes	1.00			1.00		
Flpb, ped/bikes	1.00			1.00		
Frt	1.00			1.00		
Flt Protected	1.00			1.00		
Satd. Flow (prot)	1863			1863		
Flt Permitted	1.00			1.00		
Satd. Flow (perm)	1863			1863		
Volume (vph)	559	0	0	310	0	0
Peak-hour factor, PHF	0.88	0.90	0.90	0.73	0.90	0.90
Adj. Flow (vph)	635	0	0	425	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	635	0	0	425	0	0
Confl. Peds. (#/hr)						250
Turn Type						
Protected Phases	1			1		
Permitted Phases						
Actuated Green, G (s)	64.0			64.0		
Effective Green, g (s)	67.0			67.0		
Actuated g/C Ratio	0.67			0.67		
Clearance Time (s)	6.0			6.0		
Lane Grp Cap (vph)	1248			1248		
v/s Ratio Prot	c0.34			0.23		
v/s Ratio Perm						
v/c Ratio	0.51			0.34		
Uniform Delay, d1	8.3			7.1		
Progression Factor	0.15			0.08		
Incremental Delay, d2	1.0			0.7		
Delay (s)	2.2			1.3		
Level of Service	A			A		
Approach Delay (s)	2.2			1.3	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	1.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	33.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	ø2
Lane Configurations	↑	↑	
Volume (vph)	559	310	
Lane Group Flow (vph)	635	425	
Turn Type			
Protected Phases	1	1	2
Permitted Phases			
Minimum Split (s)	25.0	25.0	30.0
Total Split (s)	70.0	70.0	30.0
Total Split (%)	70.0%	70.0%	30%
Yellow Time (s)	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	0.0
Lead/Lag	Lead	Lead	Lag
Lead-Lag Optimize?			
v/c Ratio	0.51	0.34	
Control Delay	2.3	1.3	
Queue Delay	0.4	0.2	
Total Delay	2.7	1.4	
Queue Length 50th (ft)	12	7	
Queue Length 95th (ft)	38	9	
Internal Link Dist (ft)	173	215	
Turn Bay Length (ft)			
Base Capacity (vph)	1248	1248	
Starvation Cap Reductn	227	237	
Spillback Cap Reductn	47	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.62	0.42	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 298: Main & Midtown

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)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.97		1.00	0.91		1.00			0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00			1.00	
Frt		1.00	0.85		1.00	0.85		0.99			0.98	
Flt Protected		1.00	1.00		1.00	1.00		1.00			1.00	
Satd. Flow (prot)		1862	1543		1863	1436		3510			3440	
Flt Permitted		1.00	1.00		1.00	1.00		1.00			0.95	
Satd. Flow (perm)		1858	1543		1863	1436		3510			3279	
Volume (vph)	4	433	137	0	383	7	0	67	2	2	116	18
Peak-hour factor, PHF	0.90	0.82	0.87	0.90	0.93	0.50	0.90	0.71	0.50	0.50	0.72	0.67
Adj. Flow (vph)	4	528	157	0	412	14	0	94	4	4	161	27
RTOR Reduction (vph)	0	0	83	0	0	7	0	2	0	0	13	0
Lane Group Flow (vph)	0	532	74	0	412	7	0	96	0	0	179	0
Confl. Peds. (#/hr)			11			66			31			11
Turn Type	Perm		Perm			Perm				Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1		1			1		2		2		
Actuated Green, G (s)		45.0	45.0		45.0	45.0		45.0			45.0	
Effective Green, g (s)		47.0	47.0		47.0	47.0		47.0			47.0	
Actuated g/C Ratio		0.47	0.47		0.47	0.47		0.47			0.47	
Clearance Time (s)		5.0	5.0		5.0	5.0		5.0			5.0	
Lane Grp Cap (vph)		873	725		876	675		1650			1541	
v/s Ratio Prot					0.22			0.03				
v/s Ratio Perm		c0.29	0.10			0.01					c0.06	
v/c Ratio		0.61	0.10		0.47	0.01		0.06			0.12	
Uniform Delay, d1		19.7	14.8		18.0	14.1		14.4			14.9	
Progression Factor		1.19	2.95		0.58	0.46		1.48			0.46	
Incremental Delay, d2		2.8	0.3		1.8	0.0		0.1			0.2	
Delay (s)		26.2	43.8		12.2	6.5		21.5			7.0	
Level of Service		C	D		B	A		C			A	
Approach Delay (s)		30.2			12.0			21.5			7.0	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		

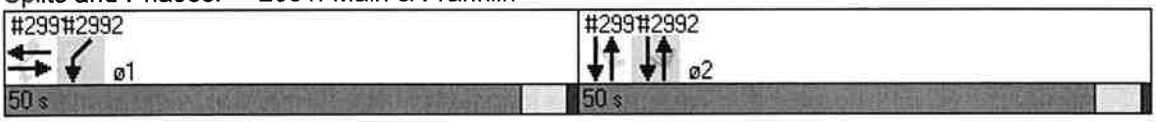
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Configurations		↑	↱	↑	↱	↑↑↱		↑↑↱
Volume (vph)	4	433	137	383	7	67	2	116
Lane Group Flow (vph)	0	532	157	412	14	98	0	192
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		1		1		2		2
Permitted Phases	1		1		1	2	2	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
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	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?								
v/c Ratio		0.61	0.19	0.47	0.02	0.06		0.12
Control Delay		26.9	8.0	12.4	3.1	20.8		6.2
Queue Delay		0.7	0.4	0.6	0.0	0.0		0.7
Total Delay		27.6	8.5	13.1	3.1	20.8		6.9
Queue Length 50th (ft)		191	21	75	0	20		11
Queue Length 95th (ft)		237	49	91	1	26		15
Internal Link Dist (ft)		215		231		494		98
Turn Bay Length (ft)								
Base Capacity (vph)		874	808	876	682	1652		1554
Starvation Cap Reductn		115	346	189	0	0		1077
Spillback Cap Reductn		0	0	0	0	0		0
Storage Cap Reductn		0	0	0	0	0		0
Reduced v/c Ratio		0.70	0.34	0.60	0.02	0.06		0.40

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 4 (4%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 2991: Main & Franklin



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)		3.0			3.0			3.0			3.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			0.99			0.89			0.90	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			0.91			0.91	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		3530			3493			1498			1505	
Flt Permitted		0.92			1.00			0.98			0.93	
Satd. Flow (perm)		3240			3493			1473			1431	
Volume (vph)	24	442	0	0	418	11	5	5	24	11	0	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	27	491	0	0	464	12	6	6	27	12	0	22
RTOR Reduction (vph)	0	0	0	0	2	0	0	19	0	0	15	0
Lane Group Flow (vph)	0	518	0	0	474	0	0	20	0	0	19	0
Confl. Peds. (#/hr)			150			150			125			125
Turn Type	Perm						Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1						2			2		
Actuated Green, G (s)		62.0			62.0			28.0			28.0	
Effective Green, g (s)		64.0			64.0			30.0			30.0	
Actuated g/C Ratio		0.64			0.64			0.30			0.30	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		2074			2236			442			429	
v/s Ratio Prot					0.14							
v/s Ratio Perm		c0.16						c0.03			0.02	
v/c Ratio		0.25			0.21			0.05			0.04	
Uniform Delay, d1		7.7			7.5			24.8			24.8	
Progression Factor		0.01			0.14			1.00			1.00	
Incremental Delay, d2		0.2			0.2			0.2			0.2	
Delay (s)		0.3			1.2			25.0			25.0	
Level of Service		A			A			C			C	
Approach Delay (s)		0.3			1.2			25.0			25.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	2.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

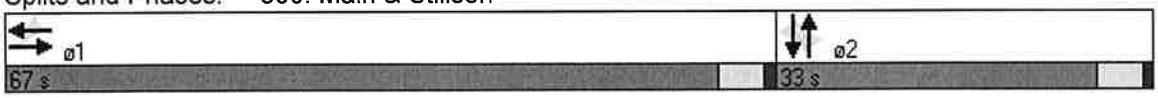
c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	24	442	418	5	5	11	0
Lane Group Flow (vph)	0	518	476	0	39	0	34
Turn Type	Perm			Perm		Perm	
Protected Phases		1	1		2		2
Permitted Phases	1			2		2	
Minimum Split (s)	27.0	27.0	27.0	33.0	33.0	33.0	33.0
Total Split (s)	67.0	67.0	67.0	33.0	33.0	33.0	33.0
Total Split (%)	67.0%	67.0%	67.0%	33.0%	33.0%	33.0%	33.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?							
v/c Ratio		0.25	0.21		0.08		0.08
Control Delay		0.3	1.2		13.3		14.2
Queue Delay		0.2	0.3		0.0		0.0
Total Delay		0.5	1.5		13.3		14.2
Queue Length 50th (ft)		0	4		5		5
Queue Length 95th (ft)		1	6		30		28
Internal Link Dist (ft)		231	188		31		96
Turn Bay Length (ft)							
Base Capacity (vph)		2075	2237		461		445
Starvation Cap Reductn		867	1153		0		0
Spillback Cap Reductn		0	0		0		0
Storage Cap Reductn		0	0		0		0
Reduced v/c Ratio		0.43	0.44		0.08		0.08

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 7 (7%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 300: Main & Stillson



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)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3453		1770	3421		1770	3416		1770	3428	
Flt Permitted	0.42	1.00		0.44	1.00		0.34	1.00		0.30	1.00	
Satd. Flow (perm)	779	3453		828	3421		634	3416		551	3428	
Volume (vph)	155	293	28	105	318	41	28	418	85	71	370	73
Peak-hour factor, PHF	0.80	0.82	0.63	0.84	0.84	0.71	0.78	0.76	0.76	0.88	0.75	0.81
Adj. Flow (vph)	194	357	44	125	379	58	36	550	112	81	493	90
RTOR Reduction (vph)	0	8	0	0	11	0	0	17	0	0	15	0
Lane Group Flow (vph)	194	393	0	125	426	0	36	645	0	81	568	0
Confl. Peds. (#/hr)			46			68			34			32
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	3	1		3	1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)	44.0	35.4		44.0	35.4		40.0	40.0		40.0	40.0	
Effective Green, g (s)	49.0	37.9		49.0	37.9		42.0	42.0		42.0	42.0	
Actuated g/C Ratio	0.49	0.38		0.49	0.38		0.42	0.42		0.42	0.42	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	492	1309		510	1297		266	1435		231	1440	
v/s Ratio Prot	c0.04	0.12		0.03	0.13			c0.19			0.17	
v/s Ratio Perm	c0.15			0.09			0.06			0.15		
v/c Ratio	0.39	0.30		0.25	0.33		0.14	0.45		0.35	0.39	
Uniform Delay, d1	14.8	21.8		14.2	22.0		17.8	20.7		19.7	20.2	
Progression Factor	1.40	1.22		0.41	0.36		0.41	0.36		0.61	0.59	
Incremental Delay, d2	0.2	0.6		0.1	0.7		1.0	1.0		4.1	0.8	
Delay (s)	20.9	27.1		5.9	8.7		8.3	8.4		16.0	12.7	
Level of Service	C	C		A	A		A	A		B	B	
Approach Delay (s)		25.1			8.1			8.4			13.1	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	155	293	105	318	28	418	71	370
Lane Group Flow (vph)	194	401	125	437	36	662	81	583
Turn Type	pm+pt		pm+pt		Perm		Perm	
Protected Phases	3	1	3	1		2		2
Permitted Phases	1		1		2		2	
Detector Phases	3	1	3	1	2	2	2	2
Minimum Initial (s)	6.0	7.0	6.0	7.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	28.0	12.0	28.0	29.0	29.0	29.0	29.0
Total Split (s)	23.0	32.0	23.0	32.0	45.0	45.0	45.0	45.0
Total Split (%)	23.0%	32.0%	23.0%	32.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag		Lead		Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?								
Recall Mode	None	C-Max	None	C-Max	Max	Max	Max	Max
v/c Ratio	0.42	0.30	0.26	0.33	0.14	0.46	0.35	0.40
Control Delay	20.1	27.1	6.0	8.6	8.6	8.2	16.9	12.3
Queue Delay	0.0	0.5	0.0	0.4	0.0	0.2	0.0	0.0
Total Delay	20.1	27.6	6.0	9.0	8.6	8.4	16.9	12.3
Queue Length 50th (ft)	77	84	16	31	6	50	24	102
Queue Length 95th (ft)	87	87	26	48	11	50	45	57
Internal Link Dist (ft)		188		225		289		561
Turn Bay Length (ft)	125		125		125		125	
Base Capacity (vph)	575	1319	593	1309	266	1452	231	1455
Starvation Cap Reductn	6	533	0	406	0	224	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.51	0.21	0.48	0.14	0.54	0.35	0.40

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 10 (10%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 301: Main & Chestnut

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)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.89		1.00	0.85	1.00	0.98		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.97		1.00	1.00	
Flt Protected		1.00	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1861	1406		1806	1342	1770	3343		1770	3523	
Flt Permitted		1.00	1.00		0.67	1.00	0.35	1.00		0.31	1.00	
Satd. Flow (perm)		1855	1406		1253	1342	652	3343		581	3523	
Volume (vph)	3	152	94	97	58	44	25	441	114	59	461	6
Peak-hour factor, PHF	0.75	0.74	0.72	0.78	0.81	0.57	0.69	0.86	0.75	0.95	0.79	0.63
Adj. Flow (vph)	4	205	131	124	72	77	36	513	152	62	584	10
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	209	131	0	196	77	36	665	0	62	594	0
Confl. Peds. (#/hr)			75			105			66			84
Turn Type	Perm		Perm	pm+pt		Perm	Perm			Perm		
Protected Phases		1		4	1 4			2			2	
Permitted Phases	1		1	1 4		1 4	2			2		
Actuated Green, G (s)		32.4	32.4		41.0	46.0	44.0	44.0		44.0	44.0	
Effective Green, g (s)		34.4	34.4		45.0	48.0	46.0	46.0		46.0	46.0	
Actuated g/C Ratio		0.34	0.34		0.45	0.48	0.46	0.46		0.46	0.46	
Clearance Time (s)		5.0	5.0				5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0	2.0				2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		638	484		622	644	300	1538		267	1621	
v/s Ratio Prot					c0.03			c0.20			0.17	
v/s Ratio Perm		c0.11	0.09		0.11	0.06	0.06			0.11		
v/c Ratio		0.33	0.27		0.32	0.12	0.12	0.43		0.23	0.37	
Uniform Delay, d1		24.2	23.7		17.6	14.3	15.4	18.2		16.3	17.5	
Progression Factor		1.28	1.27		0.68	0.70	0.51	0.50		0.37	0.40	
Incremental Delay, d2		1.4	1.4		0.1	0.0	0.8	0.9		1.9	0.6	
Delay (s)		32.5	31.5		12.0	10.1	8.7	9.9		8.0	7.6	
Level of Service		C	C		B	B	A	A		A	A	
Approach Delay (s)		32.1			11.5			9.8			7.6	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

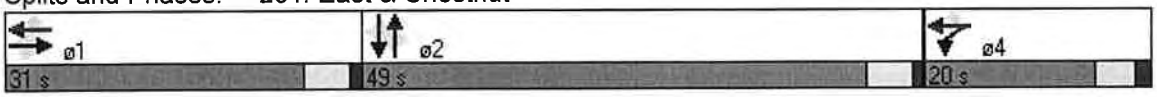
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Volume (vph)	3	152	94	97	58	44	25	441	59	461
Lane Group Flow (vph)	0	209	131	0	196	77	36	665	62	594
Turn Type	Perm		Perm	pm+pt		Perm	Perm		Perm	
Protected Phases		1		4	1 4			2		2
Permitted Phases	1		1	1 4		1 4	2		2	
Detector Phases	1	1	1	4	1 4	1 4	2	2	2	2
Minimum Initial (s)	7.0	7.0	7.0	6.0			6.0	6.0	6.0	6.0
Minimum Split (s)	27.0	27.0	27.0	15.0			30.0	30.0	30.0	30.0
Total Split (s)	31.0	31.0	31.0	20.0	51.0	51.0	49.0	49.0	49.0	49.0
Total Split (%)	31.0%	31.0%	31.0%	20.0%	51.0%	51.0%	49.0%	49.0%	49.0%	49.0%
Yellow Time (s)	4.0	4.0	4.0	3.5			4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.5			1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead				Lag	Lag	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	C-Max	C-Max	C-Max	Min			Max	Max	Max	Max
v/c Ratio		0.33	0.27		0.32	0.12	0.12	0.43	0.23	0.37
Control Delay		33.7	33.0		11.5	10.6	9.0	10.0	8.4	7.6
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.2
Total Delay		33.7	33.0		11.5	10.6	9.0	10.0	8.4	7.8
Queue Length 50th (ft)		132	81		42	16	7	73	10	54
Queue Length 95th (ft)		150	100		86	28	14	86	21	57
Internal Link Dist (ft)		494			594			382		289
Turn Bay Length (ft)							125		125	
Base Capacity (vph)		637	483		681	644	300	1538	267	1620
Starvation Cap Reductn		0	0		0	0	0	0	0	338
Spillback Cap Reductn		0	0		0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0
Reduced v/c Ratio		0.33	0.27		0.29	0.12	0.12	0.43	0.23	0.46

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 8 (8%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 261: East & Chestnut



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1770	1583		3539	3531	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1770	1583		3539	3531	
Volume (vph)	150	100	0	593	650	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	167	111	0	659	722	11
RTOR Reduction (vph)	0	84	0	0	1	0
Lane Group Flow (vph)	167	27	0	659	732	0
Turn Type		Perm				
Protected Phases	3			1	1	
Permitted Phases		3				
Actuated Green, G (s)	22.0	22.0		68.0	68.0	
Effective Green, g (s)	24.0	24.0		70.0	70.0	
Actuated g/C Ratio	0.24	0.24		0.70	0.70	
Clearance Time (s)	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	425	380		2477	2472	
v/s Ratio Prot	c0.09			0.19	c0.21	
v/s Ratio Perm		0.07				
v/c Ratio	0.39	0.07		0.27	0.30	
Uniform Delay, d1	31.9	29.4		5.5	5.7	
Progression Factor	1.00	1.00		0.18	0.68	
Incremental Delay, d2	2.7	0.4		0.3	0.3	
Delay (s)	34.6	29.7		1.3	4.1	
Level of Service	C	C		A	A	
Approach Delay (s)	32.7			1.3	4.1	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Volume (vph)	150	100	593	650
Lane Group Flow (vph)	167	111	659	733
Turn Type		Perm		
Protected Phases	3		1	1
Permitted Phases		3		
Detector Phases	3	3	1	1
Minimum Initial (s)	6.0	6.0	17.0	17.0
Minimum Split (s)	27.0	27.0	33.0	33.0
Total Split (s)	27.0	27.0	73.0	73.0
Total Split (%)	27.0%	27.0%	73.0%	73.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	Max	Max	C-Max	C-Max
v/c Ratio	0.39	0.24	0.27	0.30
Control Delay	35.2	7.4	1.3	4.1
Queue Delay	0.0	0.0	0.2	0.0
Total Delay	35.2	7.4	1.5	4.1
Queue Length 50th (ft)	90	0	10	60
Queue Length 95th (ft)	152	43	11	80
Internal Link Dist (ft)	133		153	382
Turn Bay Length (ft)				
Base Capacity (vph)	425	464	2477	2474
Starvation Cap Reductn	0	0	989	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.39	0.24	0.44	0.30

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 30 (30%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2571: Elm & Chestnut

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)					3.0		3.0	3.0			3.0	3.0
Lane Util. Factor					0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes					0.98		1.00	1.00			1.00	0.76
Flpb, ped/bikes					1.00		1.00	1.00			1.00	1.00
Frt					0.99		1.00	1.00			1.00	0.85
Flt Protected					0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)					4801		1770	3539			3539	1201
Flt Permitted					0.98		0.35	1.00			1.00	1.00
Satd. Flow (perm)					4801		656	3539			3539	1201
Volume (vph)	0	0	0	100	89	9	127	584	0	0	538	118
Peak-hour factor, PHF	0.90	0.90	0.90	0.74	0.66	0.40	0.72	0.85	0.75	0.90	0.75	0.88
Adj. Flow (vph)	0	0	0	135	135	22	176	687	0	0	717	134
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	0	283	0	176	687	0	0	717	122
Confl. Peds. (#/hr)			64			210			158			211
Turn Type				Perm			Perm					Perm
Protected Phases					3			1			1	
Permitted Phases				3			1					1
Actuated Green, G (s)					22.0		68.0	68.0			68.0	68.0
Effective Green, g (s)					24.0		70.0	70.0			70.0	70.0
Actuated g/C Ratio					0.24		0.70	0.70			0.70	0.70
Clearance Time (s)					5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)					2.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					1152		459	2477			2477	841
v/s Ratio Prot								0.19			0.20	
v/s Ratio Perm					0.06		c0.27					0.11
v/c Ratio					0.25		0.38	0.28			0.29	0.15
Uniform Delay, d1					30.7		6.2	5.6			5.6	5.0
Progression Factor					0.87		1.85	1.62			0.29	0.14
Incremental Delay, d2					0.5		2.3	0.3			0.3	0.4
Delay (s)					27.2		13.7	9.3			1.9	1.1
Level of Service					C		B	A			A	A
Approach Delay (s)		0.0			27.2			10.2			1.8	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

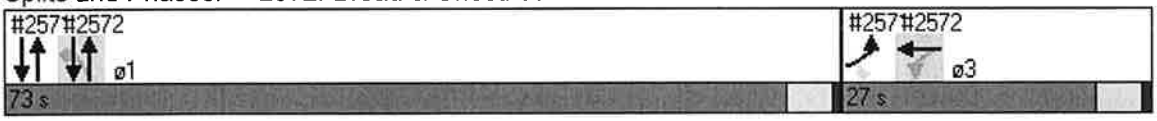
c Critical Lane Group

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Configurations					
Volume (vph)	89	127	584	538	118
Lane Group Flow (vph)	292	176	687	717	134
Turn Type		Perm			Perm
Protected Phases	3		1	1	
Permitted Phases		1			1
Detector Phases	3	1	1	1	1
Minimum Initial (s)	6.0	17.0	17.0	17.0	17.0
Minimum Split (s)	27.0	33.0	33.0	33.0	33.0
Total Split (s)	27.0	73.0	73.0	73.0	73.0
Total Split (%)	27.0%	73.0%	73.0%	73.0%	73.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Max	C-Max	C-Max	C-Max	C-Max
v/c Ratio	0.25	0.38	0.28	0.29	0.16
Control Delay	26.2	14.6	9.4	1.9	0.9
Queue Delay	0.0	0.0	0.3	0.3	0.5
Total Delay	26.2	14.6	9.8	2.2	1.4
Queue Length 50th (ft)	49	83	86	15	0
Queue Length 95th (ft)	54	117	101	24	0
Internal Link Dist (ft)	614		255	153	
Turn Bay Length (ft)		125			
Base Capacity (vph)	1161	459	2477	2477	852
Starvation Cap Reductn	0	0	1130	1007	433
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.25	0.38	0.51	0.49	0.32

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 30 (30%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 2572: Broad & Chestnut



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)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Util. Factor		0.95	1.00					0.95	1.00	1.00	0.95	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3457	1583					3539	1583	1770	3539	
Flt Permitted		0.98	1.00					1.00	1.00	0.43	1.00	
Satd. Flow (perm)		3457	1583					3539	1583	806	3539	
Volume (vph)	268	258	173	0	0	0	0	427	43	30	684	0
Peak-hour factor, PHF	0.96	0.83	0.68	0.90	0.90	0.90	0.90	0.81	0.79	0.68	0.78	0.90
Adj. Flow (vph)	279	311	254	0	0	0	0	527	54	44	877	0
RTOR Reduction (vph)	0	0	132	0	0	0	0	0	19	0	0	0
Lane Group Flow (vph)	0	590	122	0	0	0	0	527	35	44	877	0
Turn Type	Split		Perm						Perm	Perm		
Protected Phases	2	2						1			1	
Permitted Phases			2						1	1		
Actuated Green, G (s)		26.0	26.0					62.0	62.0	62.0	62.0	
Effective Green, g (s)		29.0	29.0					65.0	65.0	65.0	65.0	
Actuated g/C Ratio		0.29	0.29					0.65	0.65	0.65	0.65	
Clearance Time (s)		6.0	6.0					6.0	6.0	6.0	6.0	
Lane Grp Cap (vph)		1003	459					2300	1029	524	2300	
v/s Ratio Prot		c0.17						0.15			c0.25	
v/s Ratio Perm			0.16						0.03	0.05		
v/c Ratio		0.59	0.27					0.23	0.03	0.08	0.38	
Uniform Delay, d1		30.4	27.3					7.2	6.3	6.5	8.1	
Progression Factor		0.87	0.65					1.00	1.48	0.62	0.58	
Incremental Delay, d2		2.1	1.2					0.2	0.1	0.3	0.5	
Delay (s)		28.6	18.9					7.4	9.3	4.3	5.2	
Level of Service		C	B					A	A	A	A	
Approach Delay (s)		25.6			0.0			7.6			5.1	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

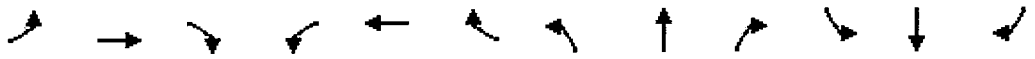
Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	258	173	427	43	30	684
Lane Group Flow (vph)	590	254	527	54	44	877
Turn Type		Perm		Perm	Perm	
Protected Phases	2		1			1
Permitted Phases		2		1	1	
Minimum Split (s)	29.0	29.0	31.0	31.0	31.0	31.0
Total Split (s)	32.0	32.0	68.0	68.0	68.0	68.0
Total Split (%)	32.0%	32.0%	68.0%	68.0%	68.0%	68.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?						
v/c Ratio	0.59	0.43	0.23	0.05	0.08	0.38
Control Delay	28.9	7.5	7.5	2.8	4.5	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	28.9	7.5	7.5	2.8	4.5	5.5
Queue Length 50th (ft)	141	18	48	0	7	77
Queue Length 95th (ft)	158	20	93	12	12	78
Internal Link Dist (ft)	452		376			255
Turn Bay Length (ft)					100	
Base Capacity (vph)	1003	591	2300	1048	525	2300
Starvation Cap Reductn	0	0	0	0	0	682
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.43	0.23	0.05	0.08	0.54

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 25 (25%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 253: Court & Chestnut

Level of Service Analysis
Future (2032) Condition
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1200	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0	3.0			
Lane Util. Factor		0.95						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.89			
Flpb, ped/bikes		1.00						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.97						0.99	1.00			
Satd. Flow (prot)		2178						5025	1401			
Flt Permitted		0.97						0.99	1.00			
Satd. Flow (perm)		2178						5025	1401			
Volume (vph)	195	257	0	0	0	0	522	1848	531	0	0	0
Peak-hour factor, PHF	0.65	0.95	0.90	0.90	0.90	0.90	0.84	0.94	0.84	0.90	0.90	0.90
Adj. Flow (vph)	300	271	0	0	0	0	621	1966	632	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	88	0	0	0
Lane Group Flow (vph)	0	571	0	0	0	0	0	2587	544	0	0	0
Confl. Peds. (#/hr)			60			64			84			15
Turn Type	Split						Split		Perm			
Protected Phases	2	2					1	1				
Permitted Phases									1			
Actuated Green, G (s)		31.0						59.0	59.0			
Effective Green, g (s)		33.0						61.0	61.0			
Actuated g/C Ratio		0.33						0.61	0.61			
Clearance Time (s)		5.0						5.0	5.0			
Lane Grp Cap (vph)		719						3065	855			
v/s Ratio Prot		c0.26						c0.51				
v/s Ratio Perm									0.45			
v/c Ratio		0.79						0.84	0.64			
Uniform Delay, d1		30.4						15.7	12.4			
Progression Factor		0.93						0.40	0.18			
Incremental Delay, d2		8.8						1.8	2.1			
Delay (s)		37.0						8.1	4.3			
Level of Service		D						A	A			
Approach Delay (s)		37.0			0.0			7.3			0.0	
Approach LOS		D			A			A			A	

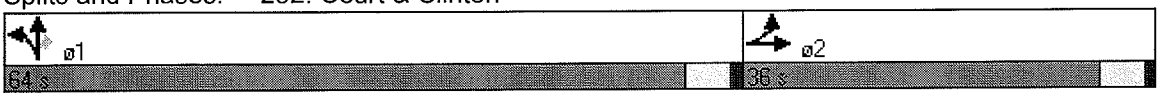
Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	NBT	NBR
Lane Configurations			
Volume (vph)	257	1848	531
Lane Group Flow (vph)	571	2587	632
Turn Type			Perm
Protected Phases	2	1	
Permitted Phases			1
Minimum Split (s)	28.0	30.0	30.0
Total Split (s)	36.0	64.0	64.0
Total Split (%)	36.0%	64.0%	64.0%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0
Lead/Lag	Lag	Lead	Lead
Lead-Lag Optimize?			
v/c Ratio	0.80	0.84	0.67
Control Delay	37.9	8.2	3.7
Queue Delay	68.8	1.1	0.6
Total Delay	106.7	9.4	4.3
Queue Length 50th (ft)	157	97	23
Queue Length 95th (ft)	#241	138	31
Internal Link Dist (ft)	124	352	
Turn Bay Length (ft)			
Base Capacity (vph)	718	3065	942
Starvation Cap Reductn	218	253	90
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.14	0.92	0.74

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 23 (23%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 70
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 252: Court & Clinton



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)					3.0		3.0	3.0	3.0			
Lane Util. Factor					0.95		0.91	0.91	1.00			
Frpb, ped/bikes					0.98		1.00	1.00	0.76			
Flpb, ped/bikes					1.00		1.00	1.00	1.00			
Frt					0.97		1.00	1.00	0.85			
Flt Protected					1.00		0.95	1.00	1.00			
Satd. Flow (prot)					3354		1610	3389	1204			
Flt Permitted					1.00		0.95	1.00	1.00			
Satd. Flow (perm)					3354		1610	3389	1204			
Volume (vph)	0	0	0	0	470	103	581	1182	47	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.86	0.66	0.90	0.94	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	547	156	646	1257	52	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	57	0	21	0	0	0
Lane Group Flow (vph)	0	0	0	0	703	0	580	1266	31	0	0	0
Confl. Peds. (#/hr)			94			55			94			52
Turn Type							custom		Perm			
Protected Phases					2		1	1				
Permitted Phases					2		1	1	1			
Actuated Green, G (s)					32.0		56.0	56.0	56.0			
Effective Green, g (s)					35.0		59.0	59.0	59.0			
Actuated g/C Ratio					0.35		0.59	0.59	0.59			
Clearance Time (s)					6.0		6.0	6.0	6.0			
Lane Grp Cap (vph)					1174		950	2000	710			
v/s Ratio Prot					c0.21		c0.40	0.37				
v/s Ratio Perm									0.04			
v/c Ratio					0.60		0.61	0.63	0.04			
Uniform Delay, d1					26.7		13.1	13.4	8.6			
Progression Factor					0.80		0.24	0.38	0.02			
Incremental Delay, d2					2.1		1.5	0.8	0.1			
Delay (s)					23.4		4.7	6.0	0.2			
Level of Service					C		A	A	A			
Approach Delay (s)		0.0			23.4			5.4			0.0	
Approach LOS		A			C			A			A	

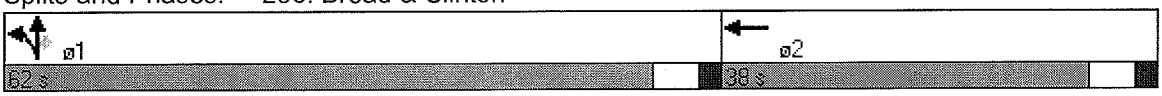
Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBT	NBL	NBT	NBR
Lane Configurations				
Volume (vph)	470	581	1182	47
Lane Group Flow (vph)	703	637	1266	52
Turn Type		custom		Perm
Protected Phases	2	1	1	
Permitted Phases	2	1	1	1
Minimum Split (s)	29.0	28.0	28.0	28.0
Total Split (s)	38.0	62.0	62.0	62.0
Total Split (%)	38.0%	62.0%	62.0%	62.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?				
v/c Ratio	0.60	0.63	0.63	0.07
Control Delay	23.7	4.1	6.1	0.1
Queue Delay	0.3	1.1	0.8	0.0
Total Delay	24.0	5.2	6.9	0.1
Queue Length 50th (ft)	163	29	63	0
Queue Length 95th (ft)	227	m38	72	m0
Internal Link Dist (ft)	104		346	
Turn Bay Length (ft)				
Base Capacity (vph)	1174	1007	2001	732
Starvation Cap Reductn	0	167	410	0
Spillback Cap Reductn	102	4	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.66	0.76	0.80	0.07

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 36 (36%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 256: Broad & Clinton



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.92	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	0.93	
Flt Protected	1.00	1.00		1.00	0.97	
Satd. Flow (prot)	1658	1468		1657	1567	
Flt Permitted	1.00	1.00		0.99	0.97	
Satd. Flow (perm)	1658	1468		1646	1567	
Volume (vph)	372	12	8	416	12	11
Peak-hour factor, PHF	0.84	0.80	0.80	0.71	0.80	0.80
Adj. Flow (vph)	443	15	10	586	15	14
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	443	15	0	596	29	0
Confl. Peds. (#/hr)						100
Heavy Vehicles (%)	10%	10%	10%	10%	2%	2%
Bus Blockages (#/hr)	10	0	0	10	0	0
Turn Type		Perm	Perm			
Protected Phases	1			1	8	
Permitted Phases		1	1			
Actuated Green, G (s)	65.0	65.0		65.0	25.0	
Effective Green, g (s)	67.0	67.0		67.0	27.0	
Actuated g/C Ratio	0.67	0.67		0.67	0.27	
Clearance Time (s)	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	1111	984		1103	423	
v/s Ratio Prot	0.27				c0.02	
v/s Ratio Perm		0.01		c0.36		
v/c Ratio	0.40	0.02		0.54	0.07	
Uniform Delay, d1	7.4	5.5		8.5	27.1	
Progression Factor	0.00	0.00		0.30	1.00	
Incremental Delay, d2	0.5	0.0		1.8	0.3	
Delay (s)	0.5	0.0		4.4	27.5	
Level of Service	A	A		A	C	
Approach Delay (s)	0.5			4.4	27.5	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	3.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

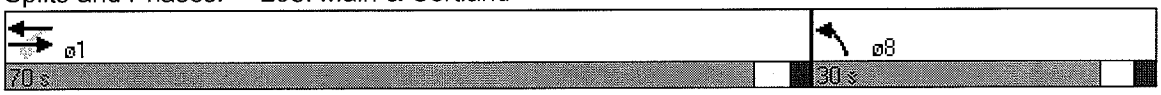
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Configurations					
Volume (vph)	372	12	8	416	12
Lane Group Flow (vph)	443	15	0	596	29
Turn Type		Perm	Perm		
Protected Phases	1			1	8
Permitted Phases		1	1		
Minimum Split (s)	25.0	25.0	25.0	25.0	30.0
Total Split (s)	70.0	70.0	70.0	70.0	30.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag					
Lead-Lag Optimize?					
v/c Ratio	0.40	0.02		0.54	0.07
Control Delay	0.5	0.0		4.5	27.9
Queue Delay	0.8	0.0		1.9	0.0
Total Delay	1.3	0.0		6.4	27.9
Queue Length 50th (ft)	0	0		43	14
Queue Length 95th (ft)	m0	m0		45	32
Internal Link Dist (ft)	173			215	84
Turn Bay Length (ft)					
Base Capacity (vph)	1111	984		1103	423
Starvation Cap Reductn	377	0		17	0
Spillback Cap Reductn	0	0		340	0
Storage Cap Reductn	0	0		0	0
Reduced v/c Ratio	0.60	0.02		0.78	0.07

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 3 (3%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 298: Main & Cortland



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)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.69		1.00	0.75		0.98			0.90	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00			1.00	
Frt		1.00	0.85		1.00	0.85		0.99			0.94	
Flt Protected		1.00	1.00		1.00	1.00		1.00			1.00	
Satd. Flow (prot)		1727	1016		1727	1102		3433			2988	
Flt Permitted		1.00	1.00		1.00	1.00		1.00			0.95	
Satd. Flow (perm)		1727	1016		1727	1102		3433			2843	
Volume (vph)	0	302	106	0	409	12	0	67	2	2	63	28
Peak-hour factor, PHF	0.90	0.89	0.73	0.90	0.85	0.69	0.90	0.75	0.25	0.50	0.88	0.52
Adj. Flow (vph)	0	339	145	0	481	17	0	89	8	4	72	54
RTOR Reduction (vph)	0	0	55	0	0	6	0	5	0	0	37	0
Lane Group Flow (vph)	0	339	90	0	481	11	0	92	0	0	93	0
Confl. Peds. (#/hr)			249			194			167			106
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	2%	2%	2%	2%	2%	2%
Turn Type			Perm			Perm				Perm		
Protected Phases		1			1			2			2	
Permitted Phases			1			1		2		2		
Actuated Green, G (s)		60.0	60.0		60.0	60.0		30.0			30.0	
Effective Green, g (s)		62.0	62.0		62.0	62.0		32.0			32.0	
Actuated g/C Ratio		0.62	0.62		0.62	0.62		0.32			0.32	
Clearance Time (s)		5.0	5.0		5.0	5.0		5.0			5.0	
Lane Grp Cap (vph)		1071	630		1071	683		1099			910	
v/s Ratio Prot		0.20			c0.28			0.03				
v/s Ratio Perm			0.14			0.02					c0.05	
v/c Ratio		0.32	0.14		0.45	0.02		0.08			0.10	
Uniform Delay, d1		9.0	7.9		10.0	7.3		23.8			23.9	
Progression Factor		0.53	0.36		0.39	0.17		1.00			0.21	
Incremental Delay, d2		0.7	0.4		1.3	0.0		0.1			0.2	
Delay (s)		5.5	3.3		5.3	1.3		24.0			5.2	
Level of Service		A	A		A	A		C			A	
Approach Delay (s)		4.8			5.2			24.0			5.2	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

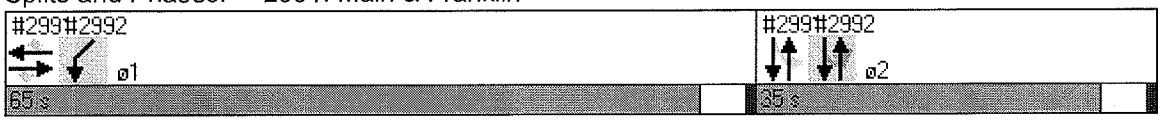
c Critical Lane Group

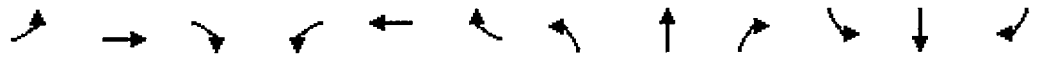
Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	302	106	409	12	67	2	63
Lane Group Flow (vph)	339	145	481	17	97	0	130
Turn Type		Perm		Perm		Perm	
Protected Phases	1		1		2		2
Permitted Phases		1		1	2	2	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	65.0	65.0	65.0	65.0	35.0	35.0	35.0
Total Split (%)	65.0%	65.0%	65.0%	65.0%	35.0%	35.0%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							
v/c Ratio	0.32	0.21	0.45	0.02	0.09		0.14
Control Delay	5.6	1.2	5.4	0.7	22.2		3.3
Queue Delay	0.4	0.0	0.2	0.0	0.0		0.5
Total Delay	6.0	1.2	5.7	0.7	22.2		3.8
Queue Length 50th (ft)	32	0	46	0	18		1
Queue Length 95th (ft)	51	0	54	0	30		0
Internal Link Dist (ft)	215		231		494		98
Turn Bay Length (ft)							
Base Capacity (vph)	1071	685	1071	690	1104		947
Starvation Cap Reductn	347	0	157	0	0		541
Spillback Cap Reductn	0	0	0	0	0		0
Storage Cap Reductn	0	0	0	0	0		0
Reduced v/c Ratio	0.47	0.21	0.53	0.02	0.09		0.32

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 3 (3%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 2991: Main & Franklin





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)		3.0			3.0			3.0			3.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			0.99			0.95			0.94	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			0.90			0.89	
Flt Protected		1.00			1.00			1.00			0.99	
Satd. Flow (prot)		3267			3233			1586			1553	
Flt Permitted		0.89			1.00			0.99			0.97	
Satd. Flow (perm)		2929			3233			1580			1518	
Volume (vph)	27	278	0	0	400	12	2	7	26	6	0	26
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	30	309	0	0	444	13	2	8	29	7	0	29
RTOR Reduction (vph)	0	0	0	0	2	0	0	20	0	0	20	0
Lane Group Flow (vph)	0	339	0	0	455	0	0	19	0	0	16	0
Confl. Peds. (#/hr)			150			150			50			50
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	2%	2%	2%	2%	2%	2%
Turn Type	Perm						Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1						2			2		
Actuated Green, G (s)		62.0			62.0			28.0			28.0	
Effective Green, g (s)		64.0			64.0			30.0			30.0	
Actuated g/C Ratio		0.64			0.64			0.30			0.30	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		1875			2069			474			455	
v/s Ratio Prot					c0.14							
v/s Ratio Perm		0.12						c0.02			0.02	
v/c Ratio		0.18			0.22			0.04			0.03	
Uniform Delay, d1		7.3			7.5			24.8			24.8	
Progression Factor		0.31			0.49			1.00			1.00	
Incremental Delay, d2		0.2			0.2			0.2			0.1	
Delay (s)		2.5			3.9			24.9			24.9	
Level of Service		A			A			C			C	
Approach Delay (s)		2.5			3.9			24.9			24.9	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	5.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		

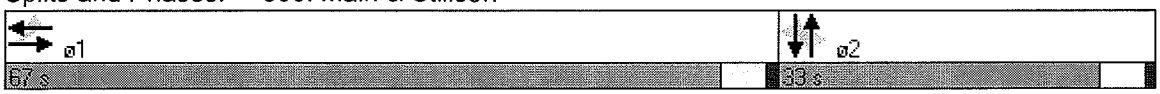
c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	27	278	400	2	7	6	0
Lane Group Flow (vph)	0	339	457	0	39	0	36
Turn Type	Perm			Perm		Perm	
Protected Phases		1	1		2		2
Permitted Phases	1			2		2	
Minimum Split (s)	27.0	27.0	27.0	33.0	33.0	33.0	33.0
Total Split (s)	67.0	67.0	67.0	33.0	33.0	33.0	33.0
Total Split (%)	67.0%	67.0%	67.0%	33.0%	33.0%	33.0%	33.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?							
v/c Ratio		0.18	0.22		0.08		0.08
Control Delay		2.5	3.9		12.4		11.7
Queue Delay		0.0	0.3		0.0		0.0
Total Delay		2.5	4.2		12.4		11.7
Queue Length 50th (ft)		10	22		4		3
Queue Length 95th (ft)		13	32		29		26
Internal Link Dist (ft)		231	188		31		96
Turn Bay Length (ft)							
Base Capacity (vph)		1876	2072		495		476
Starvation Cap Reductn		0	972		0		0
Spillback Cap Reductn		0	0		0		0
Storage Cap Reductn		0	0		0		0
Reduced v/c Ratio		0.18	0.42		0.08		0.08

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 6 (6%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 300: Main & Stillson



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)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1641	3180		1641	3144		1770	3410		1770	3495	
Flt Permitted	0.43	1.00		0.63	1.00		0.19	1.00		0.36	1.00	
Satd. Flow (perm)	746	3180		1081	3144		358	3410		662	3495	
Volume (vph)	100	161	16	174	321	67	39	326	66	41	549	50
Peak-hour factor, PHF	0.77	0.93	0.70	0.70	0.84	0.83	0.80	0.81	0.75	0.77	0.79	0.94
Adj. Flow (vph)	130	173	23	249	382	81	49	402	88	53	695	53
RTOR Reduction (vph)	0	9	0	0	16	0	0	19	0	0	5	0
Lane Group Flow (vph)	130	187	0	249	447	0	49	471	0	53	743	0
Confl. Peds. (#/hr)			78			60			32			10
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	3	1		3	1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)	53.0	44.9		53.0	44.9		31.0	31.0		31.0	31.0	
Effective Green, g (s)	58.0	47.4		58.0	47.4		33.0	33.0		33.0	33.0	
Actuated g/C Ratio	0.58	0.47		0.58	0.47		0.33	0.33		0.33	0.33	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	528	1507		686	1490		118	1125		218	1153	
v/s Ratio Prot	0.03	0.06		c0.04	0.15			0.14			c0.21	
v/s Ratio Perm	0.12			c0.17			0.14			0.08		
v/c Ratio	0.25	0.12		0.36	0.30		0.42	0.42		0.24	0.64	
Uniform Delay, d1	9.7	14.7		10.4	16.1		26.0	26.0		24.4	28.5	
Progression Factor	2.17	1.87		0.43	0.35		0.37	0.45		0.45	0.49	
Incremental Delay, d2	0.1	0.2		0.1	0.5		10.1	1.1		2.5	2.7	
Delay (s)	21.3	27.6		4.6	6.2		19.6	12.9		13.5	16.6	
Level of Service	C	C		A	A		B	B		B	B	
Approach Delay (s)		25.1			5.6			13.5			16.4	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

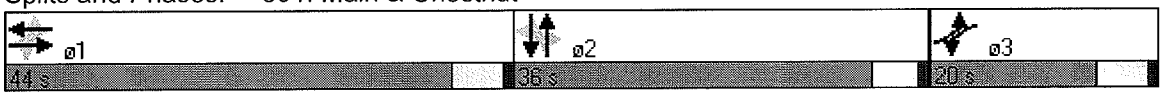
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	100	161	174	321	39	326	41	549
Lane Group Flow (vph)	130	196	249	463	49	490	53	748
Turn Type	pm+pt		pm+pt		Perm		Perm	
Protected Phases	3	1	3	1		2		2
Permitted Phases	1		1		2		2	
Detector Phases	3	1	3	1	2	2	2	2
Minimum Initial (s)	6.0	7.0	6.0	7.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	28.0	12.0	28.0	29.0	29.0	29.0	29.0
Total Split (s)	20.0	44.0	20.0	44.0	36.0	36.0	36.0	36.0
Total Split (%)	20.0%	44.0%	20.0%	44.0%	36.0%	36.0%	36.0%	36.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag		Lead		Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?								
Recall Mode	None	C-Max	None	C-Max	Max	Max	Max	Max
v/c Ratio	0.25	0.13	0.37	0.31	0.42	0.43	0.24	0.65
Control Delay	19.3	25.8	5.1	6.0	20.6	12.3	14.0	16.6
Queue Delay	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0
Total Delay	19.3	25.8	5.2	6.2	20.6	12.3	14.0	16.6
Queue Length 50th (ft)	61	41	27	24	10	42	13	155
Queue Length 95th (ft)	81	66	34	34	19	50	26	148
Internal Link Dist (ft)		188		225		289		561
Turn Bay Length (ft)	125		125		125		125	
Base Capacity (vph)	592	1517	750	1507	118	1144	219	1158
Starvation Cap Reductn	37	0	49	460	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.13	0.36	0.44	0.42	0.43	0.24	0.65

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 10 (10%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 301: Main & Chestnut



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)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.90		1.00	0.87	1.00	0.98		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.96		1.00	1.00	
Flt Protected		1.00	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1854	1427		1803	1380	1770	3311		1770	3535	
Flt Permitted		0.96	1.00		0.70	1.00	0.19	1.00		0.37	1.00	
Satd. Flow (perm)		1791	1427		1303	1380	345	3311		683	3535	
Volume (vph)	3	92	66	169	76	58	44	329	104	68	772	1
Peak-hour factor, PHF	0.25	0.81	0.78	0.77	0.68	0.62	0.61	0.89	0.70	0.59	0.91	0.25
Adj. Flow (vph)	12	114	85	219	112	94	72	370	149	115	848	4
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	126	85	0	331	94	72	519	0	115	852	0
Confl. Peds. (#/hr)			65			87			52			52
Turn Type	Perm		Perm	pm+pt		Perm	Perm			Perm		
Protected Phases		1		4	1 4			2			2	
Permitted Phases	1		1	1 4		1 4	2			2		
Actuated Green, G (s)		35.2	35.2		48.0	53.0	37.0	37.0		37.0	37.0	
Effective Green, g (s)		37.2	37.2		52.0	55.0	39.0	39.0		39.0	39.0	
Actuated g/C Ratio		0.37	0.37		0.52	0.55	0.39	0.39		0.39	0.39	
Clearance Time (s)		5.0	5.0				5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0	2.0				2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		666	531		752	759	135	1291		266	1379	
v/s Ratio Prot					c0.07			0.16			c0.24	
v/s Ratio Perm		0.07	0.06		c0.16	0.07	0.21			0.17		
v/c Ratio		0.19	0.16		0.44	0.12	0.53	0.40		0.43	0.62	
Uniform Delay, d1		21.2	21.0		14.9	10.9	23.5	22.1		22.4	24.5	
Progression Factor		1.63	1.63		0.89	0.85	1.92	1.91		0.42	0.41	
Incremental Delay, d2		0.6	0.6		0.1	0.0	14.1	0.9		4.3	1.8	
Delay (s)		35.2	34.9		13.5	9.2	59.1	43.1		13.6	11.8	
Level of Service		D	C		B	A	E	D		B	B	
Approach Delay (s)		35.1			12.6			45.1			12.1	
Approach LOS		D			B			D			B	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

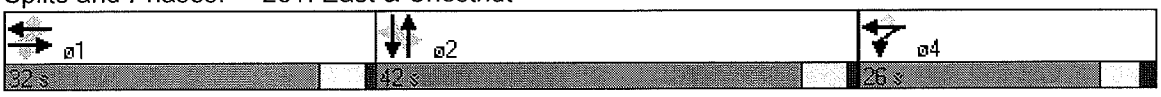
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Volume (vph)	3	92	66	169	76	58	44	329	68	772
Lane Group Flow (vph)	0	126	85	0	331	94	72	519	115	852
Turn Type	Perm		Perm	pm+pt		Perm	Perm		Perm	
Protected Phases		1		4	1 4			2		2
Permitted Phases	1		1	1 4		1 4	2		2	
Detector Phases	1	1	1	4	1 4	1 4	2	2	2	2
Minimum Initial (s)	7.0	7.0	7.0	6.0			6.0	6.0	6.0	6.0
Minimum Split (s)	27.0	27.0	27.0	15.0			30.0	30.0	30.0	30.0
Total Split (s)	32.0	32.0	32.0	26.0	58.0	58.0	42.0	42.0	42.0	42.0
Total Split (%)	32.0%	32.0%	32.0%	26.0%	58.0%	58.0%	42.0%	42.0%	42.0%	42.0%
Yellow Time (s)	4.0	4.0	4.0	3.5			4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.5			1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead				Lag	Lag	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	C-Max	C-Max	C-Max	Min			Max	Max	Max	Max
v/c Ratio		0.19	0.16		0.45	0.12	0.53	0.40	0.43	0.62
Control Delay		37.6	37.6		12.8	9.7	65.0	43.6	14.1	12.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.2
Total Delay		37.6	37.6		12.8	9.7	65.0	43.6	14.1	12.2
Queue Length 50th (ft)		72	49		97	24	0	175	24	92
Queue Length 95th (ft)		117	83		102	31	63	225	26	111
Internal Link Dist (ft)		494			594			382		289
Turn Bay Length (ft)							125		125	
Base Capacity (vph)		665	531		818	759	135	1291	267	1378
Starvation Cap Reductn		0	0		0	0	0	0	0	114
Spillback Cap Reductn		0	0		0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0
Reduced v/c Ratio		0.19	0.16		0.40	0.12	0.53	0.40	0.43	0.67

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 22 (22%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 261: East & Chestnut



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	3.0	3.0	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.93		1.00	1.00	1.00	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1644		1770	3539	3525	
Flt Permitted	0.98		0.29	1.00	1.00	
Satd. Flow (perm)	1644		544	3539	3525	
Volume (vph)	35	37	16	574	830	23
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	39	41	18	638	922	26
RTOR Reduction (vph)	37	0	0	0	1	0
Lane Group Flow (vph)	43	0	18	638	947	0
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Turn Type			Perm			
Protected Phases	3			1	1	
Permitted Phases			1			
Actuated Green, G (s)	6.9		83.1	83.1	83.1	
Effective Green, g (s)	8.9		85.1	85.1	85.1	
Actuated g/C Ratio	0.09		0.85	0.85	0.85	
Clearance Time (s)	5.0		5.0	5.0	5.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	146		463	3012	3000	
v/s Ratio Prot	c0.05			0.18	c0.27	
v/s Ratio Perm			0.03			
v/c Ratio	0.29		0.04	0.21	0.32	
Uniform Delay, d1	42.6		1.1	1.4	1.5	
Progression Factor	1.00		2.73	3.92	3.46	
Incremental Delay, d2	1.1		0.2	0.2	0.2	
Delay (s)	43.7		3.3	5.5	5.5	
Level of Service	D		A	A	A	
Approach Delay (s)	43.7			5.4	5.5	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

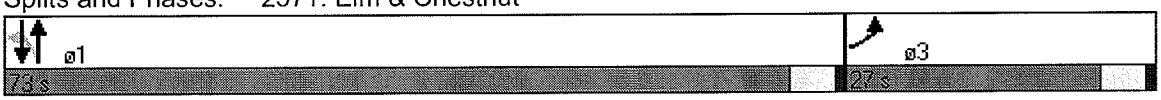
c Critical Lane Group

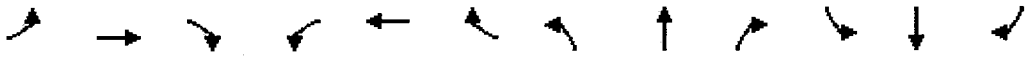
Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Volume (vph)	35	16	574	830
Lane Group Flow (vph)	80	18	638	948
Turn Type		Perm		
Protected Phases	3		1	1
Permitted Phases		1		
Detector Phases	3	1	1	1
Minimum Initial (s)	6.0	17.0	17.0	17.0
Minimum Split (s)	27.0	33.0	33.0	33.0
Total Split (s)	27.0	73.0	73.0	73.0
Total Split (%)	27.0%	73.0%	73.0%	73.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
v/c Ratio	0.39	0.04	0.21	0.31
Control Delay	23.9	5.1	6.3	6.2
Queue Delay	0.1	0.0	0.6	0.3
Total Delay	24.0	5.1	6.9	6.5
Queue Length 50th (ft)	23	3	144	179
Queue Length 95th (ft)	66	m20	205	246
Internal Link Dist (ft)	133		153	382
Turn Bay Length (ft)				
Base Capacity (vph)	426	428	3068	3056
Starvation Cap Reductn	0	0	1944	1311
Spillback Cap Reductn	62	0	0	148
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.22	0.04	0.57	0.54

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2571: Elm & Chestnut





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)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.93		1.00	1.00		1.00	1.00		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.89		1.00	1.00		1.00	1.00		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1533		1770	1854		1770	3539		1770	3289	
Flt Permitted	0.57	1.00		0.58	1.00		0.10	1.00		0.38	1.00	
Satd. Flow (perm)	1066	1533		1088	1854		191	3539		714	3289	
Volume (vph)	40	37	103	33	148	2	248	440	0	50	567	303
Peak-hour factor, PHF	0.90	0.90	0.90	0.73	0.93	0.50	0.88	0.89	0.90	0.90	0.80	0.81
Adj. Flow (vph)	44	41	114	45	159	4	282	494	0	56	709	374
RTOR Reduction (vph)	0	79	0	0	1	0	0	0	0	0	69	0
Lane Group Flow (vph)	44	76	0	45	162	0	282	494	0	56	1014	0
Confl. Peds. (#/hr)			64			20			30			30
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		3			3		1	2		1	2	
Permitted Phases	3			3			2			2		
Actuated Green, G (s)	29.0	29.0		29.0	29.0		56.0	37.0		56.0	37.0	
Effective Green, g (s)	31.0	31.0		31.0	31.0		60.0	39.0		60.0	39.0	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.60	0.39		0.60	0.39	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	330	475		337	575		446	1380		650	1283	
v/s Ratio Prot		c0.10			0.09		c0.13	0.14		0.02	c0.33	
v/s Ratio Perm	0.04			0.04			0.25			0.03		
v/c Ratio	0.13	0.16		0.13	0.28		0.63	0.36		0.09	0.79	
Uniform Delay, d1	24.8	25.1		24.8	26.1		21.4	21.6		8.5	26.9	
Progression Factor	1.03	1.07		1.11	1.11		0.58	0.79		0.82	0.59	
Incremental Delay, d2	0.8	0.7		0.8	1.2		6.5	0.7		0.3	4.9	
Delay (s)	26.4	27.6		28.3	30.2		18.8	17.8		7.3	20.8	
Level of Service	C	C		C	C		B	B		A	C	
Approach Delay (s)		27.3			29.8			18.2			20.1	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

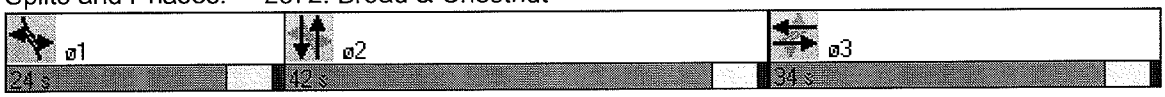
c Critical Lane Group

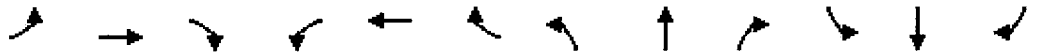
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	40	37	33	148	248	440	50	567
Lane Group Flow (vph)	44	155	45	163	282	494	56	1083
Turn Type	Perm		Perm		pm+pt		pm+pt	
Protected Phases		3		3	1	2	1	2
Permitted Phases	3		3		2		2	
Detector Phases	3	3	3	3	1	2	1	2
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	7.0	6.0	7.0
Minimum Split (s)	27.0	27.0	27.0	27.0	12.0	32.0	12.0	32.0
Total Split (s)	34.0	34.0	34.0	34.0	24.0	42.0	24.0	42.0
Total Split (%)	34.0%	34.0%	34.0%	34.0%	24.0%	42.0%	24.0%	42.0%
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	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	C-Max	Max	C-Max	Max
v/c Ratio	0.13	0.28	0.13	0.28	0.63	0.36	0.09	0.80
Control Delay	27.0	10.5	29.0	30.5	17.9	17.9	6.2	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.6	0.0	67.3
Total Delay	27.0	10.5	29.0	30.5	18.0	18.5	6.2	86.7
Queue Length 50th (ft)	21	20	26	95	47	115	7	156
Queue Length 95th (ft)	48	68	51	166	82	164	25	215
Internal Link Dist (ft)		142		614		255		153
Turn Bay Length (ft)					125			
Base Capacity (vph)	330	554	337	575	447	1380	650	1351
Starvation Cap Reductn	0	0	0	0	6	499	0	404
Spillback Cap Reductn	0	0	0	0	0	105	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.28	0.13	0.28	0.64	0.56	0.09	1.14

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 47 (47%), Referenced to phase 1:NBSBL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 2572: Broad & Chestnut





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)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Util. Factor		0.91	1.00					0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	0.94					1.00	0.96	1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		4977	1489					3539	1518	1770	3539	
Flt Permitted		0.98	1.00					1.00	1.00	0.39	1.00	
Satd. Flow (perm)		4977	1489					3539	1518	731	3539	
Volume (vph)	202	257	154	0	0	0	0	490	72	29	669	0
Peak-hour factor, PHF	0.90	0.88	0.63	0.90	0.90	0.90	0.81	0.89	0.80	0.65	0.97	0.87
Adj. Flow (vph)	224	292	244	0	0	0	0	551	90	45	690	0
RTOR Reduction (vph)	0	0	104	0	0	0	0	0	43	0	0	0
Lane Group Flow (vph)	0	516	140	0	0	0	0	551	47	45	690	0
Confl. Peds. (#/hr)	7		34						24			12
Turn Type	Split		Perm						Perm	Perm		
Protected Phases	2	2						1			1	
Permitted Phases			2						1	1		
Actuated Green, G (s)		39.0	39.0					49.0	49.0	49.0	49.0	
Effective Green, g (s)		42.0	42.0					52.0	52.0	52.0	52.0	
Actuated g/C Ratio		0.42	0.42					0.52	0.52	0.52	0.52	
Clearance Time (s)		6.0	6.0					6.0	6.0	6.0	6.0	
Lane Grp Cap (vph)		2090	625					1840	789	380	1840	
v/s Ratio Prot		0.10						0.16			c0.19	
v/s Ratio Perm			0.16						0.06	0.06		
v/c Ratio		0.25	0.22					0.30	0.06	0.12	0.38	
Uniform Delay, d1		18.8	18.6					13.6	11.9	12.3	14.3	
Progression Factor		1.07	1.17					0.92	0.99	1.63	1.51	
Incremental Delay, d2		0.2	0.7					0.4	0.1	0.4	0.4	
Delay (s)		20.3	22.3					13.0	11.9	20.4	22.0	
Level of Service		C	C					B	B	C	C	
Approach Delay (s)		20.9			0.0			12.9			21.9	
Approach LOS		C			A			B			C	

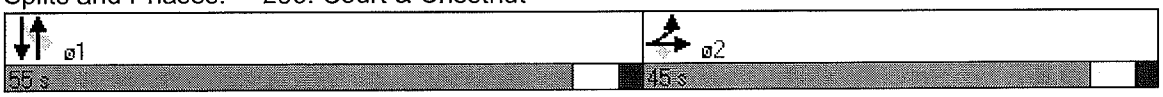
Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	257	154	490	72	29	669
Lane Group Flow (vph)	516	244	551	90	45	690
Turn Type		Perm		Perm	Perm	
Protected Phases	2		1			1
Permitted Phases		2		1	1	
Minimum Split (s)	29.0	29.0	31.0	31.0	31.0	31.0
Total Split (s)	45.0	45.0	55.0	55.0	55.0	55.0
Total Split (%)	45.0%	45.0%	55.0%	55.0%	55.0%	55.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?						
v/c Ratio	0.25	0.33	0.30	0.11	0.12	0.38
Control Delay	20.4	7.8	13.2	3.0	21.2	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.2
Total Delay	20.4	7.8	13.2	3.0	21.2	23.4
Queue Length 50th (ft)	77	26	110	3	18	148
Queue Length 95th (ft)	m99	29	152	24	m27	213
Internal Link Dist (ft)	178		376			255
Turn Bay Length (ft)					100	
Base Capacity (vph)	2091	730	1840	833	381	1840
Starvation Cap Reductn	0	0	0	0	0	867
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.33	0.30	0.11	0.12	0.71

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

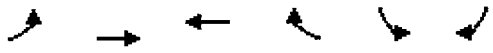
Splits and Phases: 253: Court & Chestnut



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	12	1252	33	0	0
Peak Hour Factor	0.90	0.80	0.90	0.80	0.90	0.90
Hourly flow rate (vph)	0	15	1391	41	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			366			393
pX, platoon unblocked						
vC, conflicting volume	1412	716			1432	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1412	716			1432	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			100	
cM capacity (veh/h)	129	372			470	

Direction, Lane #	WB 1	NB 1	NB 2
Volume Total	15	927	505
Volume Left	0	0	0
Volume Right	15	0	41
cSH	372	1700	1700
Volume to Capacity	0.04	0.55	0.30
Queue Length 95th (ft)	3	0	0
Control Delay (s)	15.1	0.0	0.0
Lane LOS	C		
Approach Delay (s)	15.1	0.0	
Approach LOS	C		

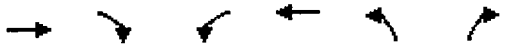
Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	14	161	678	21	19	15
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	18	201	848	26	24	19
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		376	222			
pX, platoon unblocked	0.82				0.82	0.82
vC, conflicting volume	874				1097	861
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	847				1118	831
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				87	94
cM capacity (veh/h)	651				184	304

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	18	201	874	42
Volume Left	18	0	0	24
Volume Right	0	0	26	19
cSH	651	1700	1700	223
Volume to Capacity	0.03	0.12	0.51	0.19
Queue Length 95th (ft)	2	0	0	17
Control Delay (s)	10.7	0.0	0.0	25.0
Lane LOS	B			C
Approach Delay (s)	0.9		0.0	25.0
Approach LOS				C

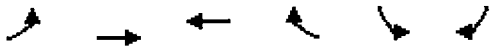
Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	14	33	229	465	92	161
Peak Hour Factor	0.80	0.80	0.85	0.86	0.85	0.85
Hourly flow rate (vph)	18	41	269	541	108	189
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)	184			414		
pX, platoon unblocked					0.93	
vC, conflicting volume			59		1118	38
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			59		1126	38
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			83		38	82
cM capacity (veh/h)			1545		174	1034

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	59	269	541	298
Volume Left	0	269	0	108
Volume Right	41	0	0	189
cSH	1700	1545	1700	370
Volume to Capacity	0.03	0.17	0.32	0.81
Queue Length 95th (ft)	0	16	0	175
Control Delay (s)	0.0	7.8	0.0	44.7
Lane LOS		A		E
Approach Delay (s)	0.0	2.6		44.7
Approach LOS				E

Intersection Summary			
Average Delay	13.2		
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	138	650	0	0	122	0
Peak Hour Factor	0.85	0.95	0.80	0.80	0.85	0.85
Hourly flow rate (vph)	162	684	0	0	144	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		274	258			
pX, platoon unblocked						
vC, conflicting volume	0				553	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				553	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	90				66	100
cM capacity (veh/h)	1622				417	1084

Direction, Lane #	EB 1	EB 2	EB 3	SB 1
Volume Total	299	274	274	144
Volume Left	162	0	0	144
Volume Right	0	0	0	0
cSH	1622	1700	1700	417
Volume to Capacity	0.10	0.16	0.16	0.34
Queue Length 95th (ft)	8	0	0	38
Control Delay (s)	4.4	0.0	0.0	18.1
Lane LOS	A			C
Approach Delay (s)	1.6			18.1
Approach LOS				C

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		

Safety Analysis

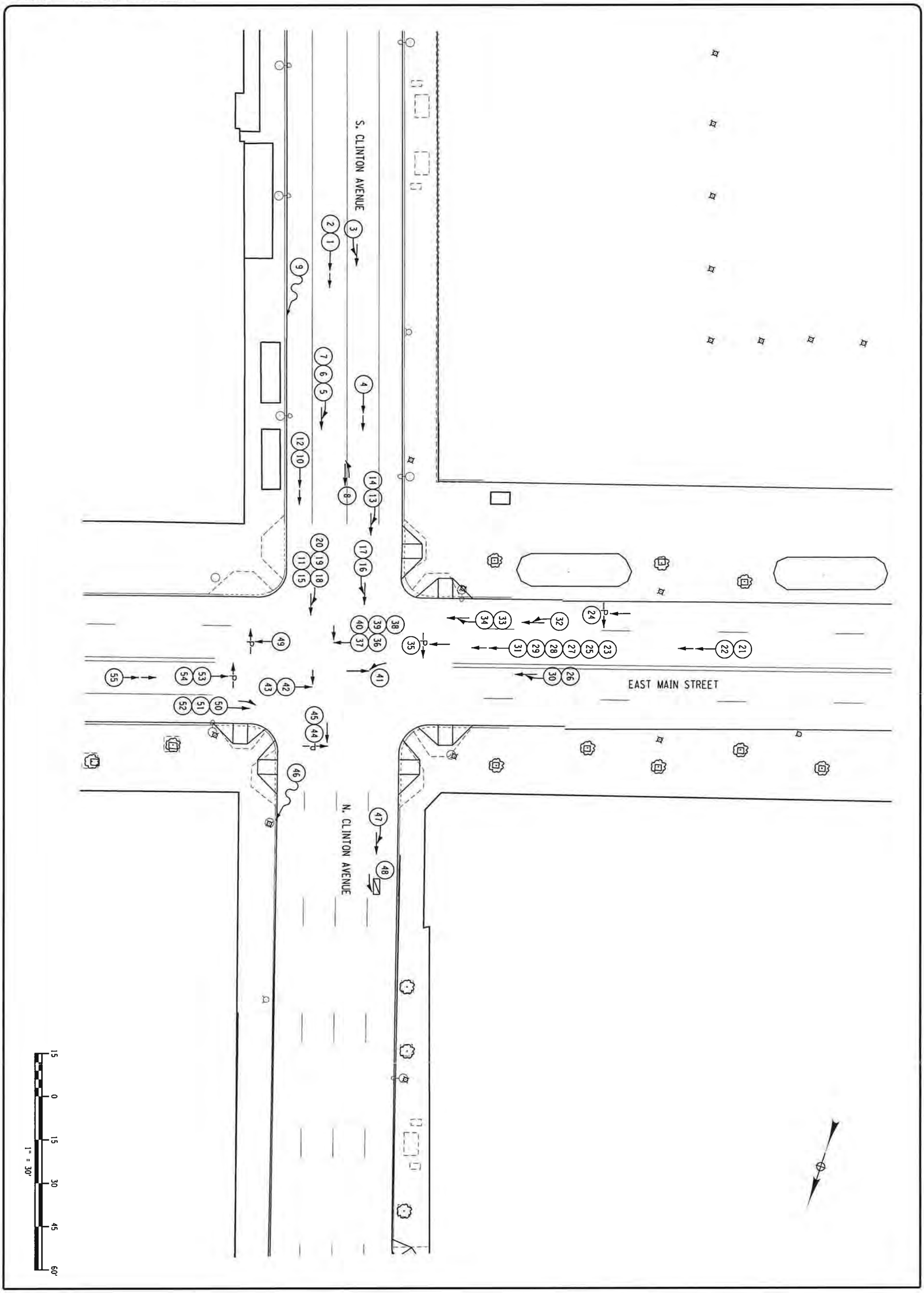


FIG-01

210301

ACCIDENT DIAGRAM

DRAWN BY: DAD

DATE: FEBRUARY 25, 2011

DESIGNED BY: TWM

DRAWN BY: CDN

REVIEWED BY: RJV

MIDTOWN REDEVELOPMENT PROJECT
(FORMER MIDTOWN PLAZA SITE)
CITY OF ROCHESTER
DEPARTMENT OF ENVIRONMENTAL SERVICES

LABELLA Associates, P.C.
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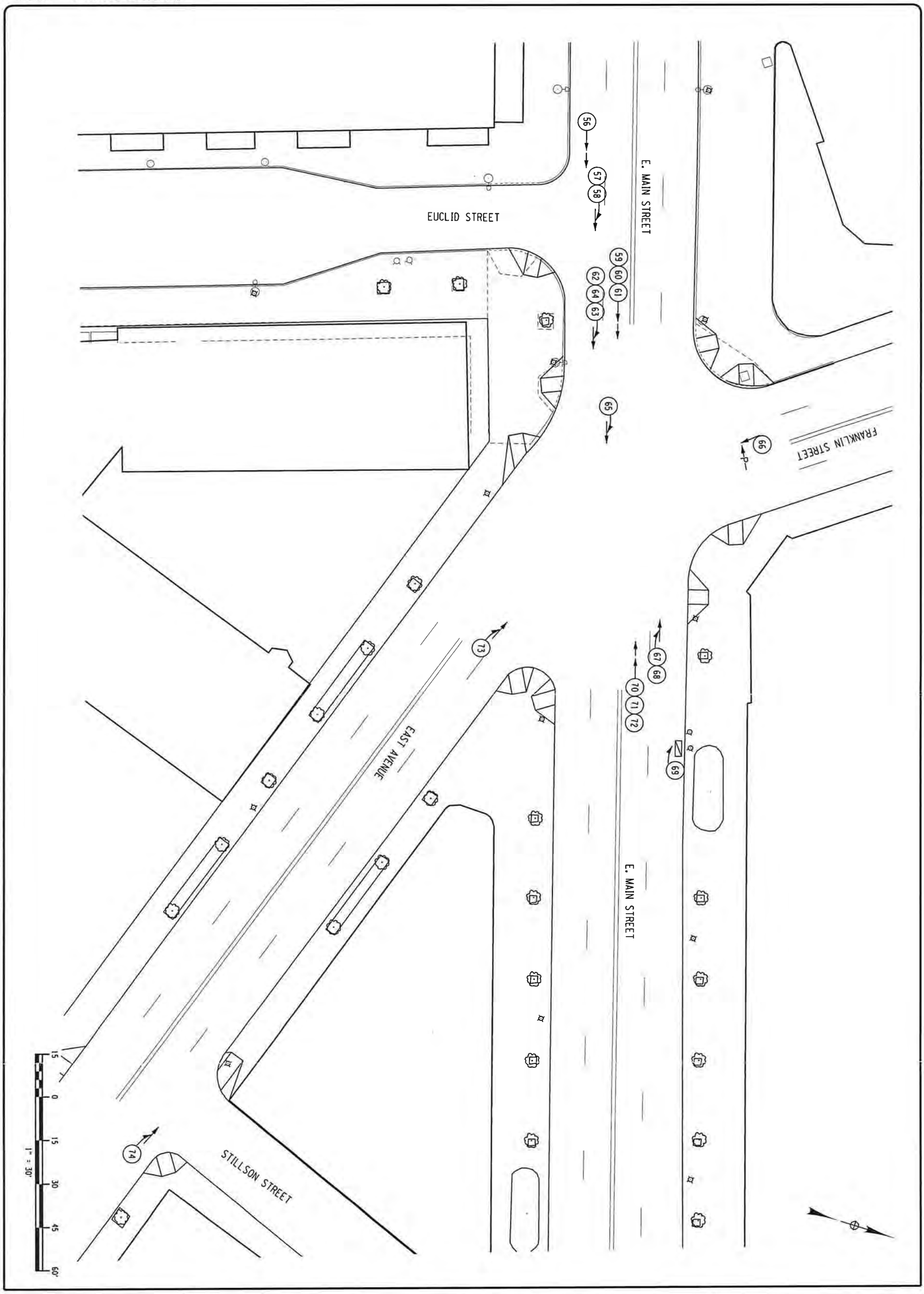

PROJECT/DRAWING NUMBER: 210301

SHEET XXX OF XXX

FIG-02

DRAWING TITLE

ACCIDENT DIAGRAM

ISSUED FOR: DAD

DATE: FEBRUARY 25, 2011

DESIGNED BY: TWM

DRAWN BY: CDN

REVIEWED BY: RTV

PROJECT/CLIENT

MIDTOWN REDEVELOPMENT PROJECT
(FORMER MIDTOWN PLAZA SITE)

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ENVIRONMENTAL SERVICES

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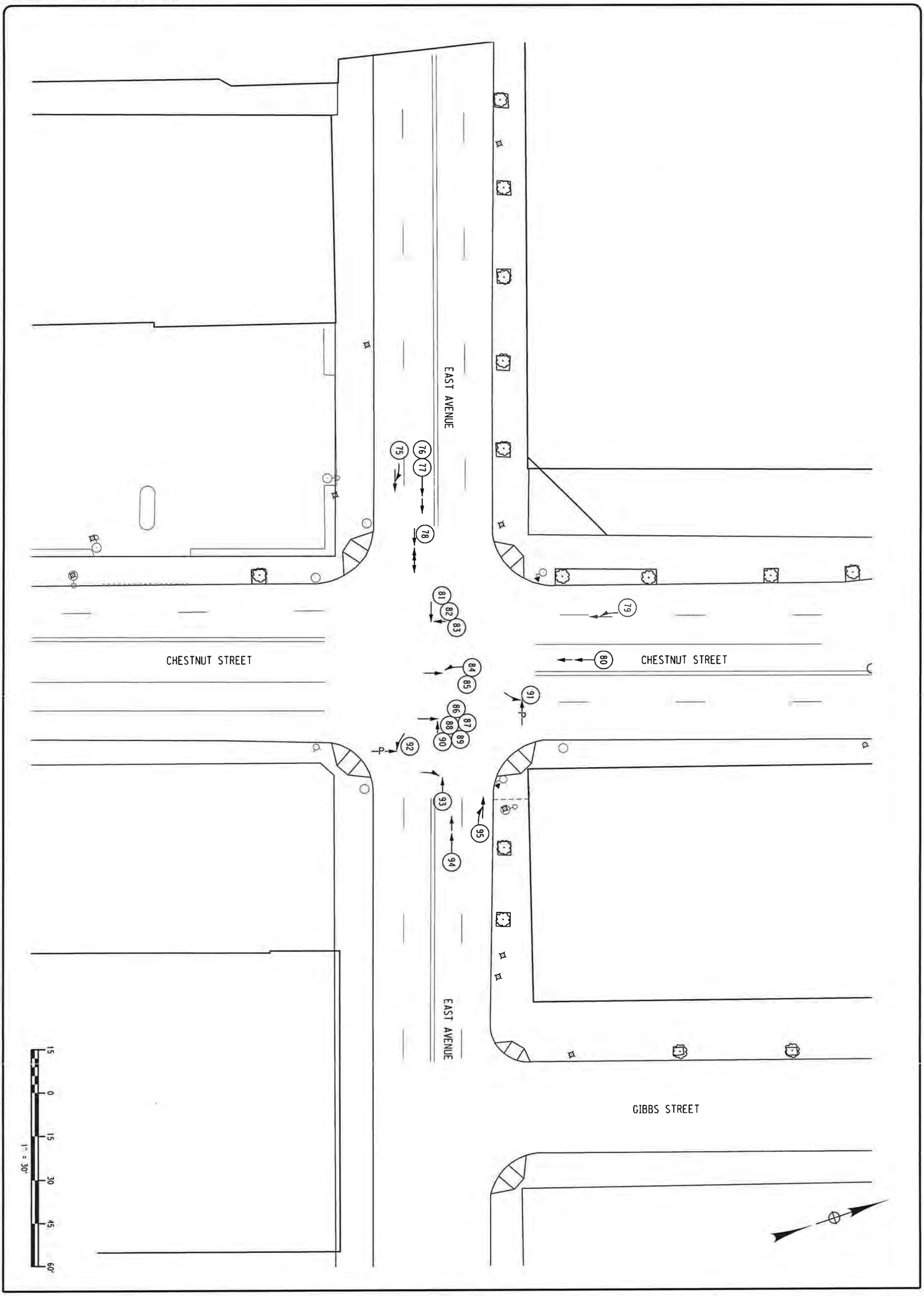

PROJECT/DRAWING NUMBER
210301
FIG-03
SHEET xxx OF xxx

DRAWING TITLE
ACCIDENT DIAGRAM

ISSUED FOR
DAD
DATE FEBRUARY 25, 2011

DESIGNED BY: RSH
DRAWN BY: CDN
REVIEWED BY: RTV

PROJECT/CLIENT
MIDTOWN REDEVELOPMENT PROJECT
(FORMER MIDTOWN PLAZA SITE)
CITY OF ROCHESTER
DEPARTMENT OF ENVIRONMENTAL SERVICES

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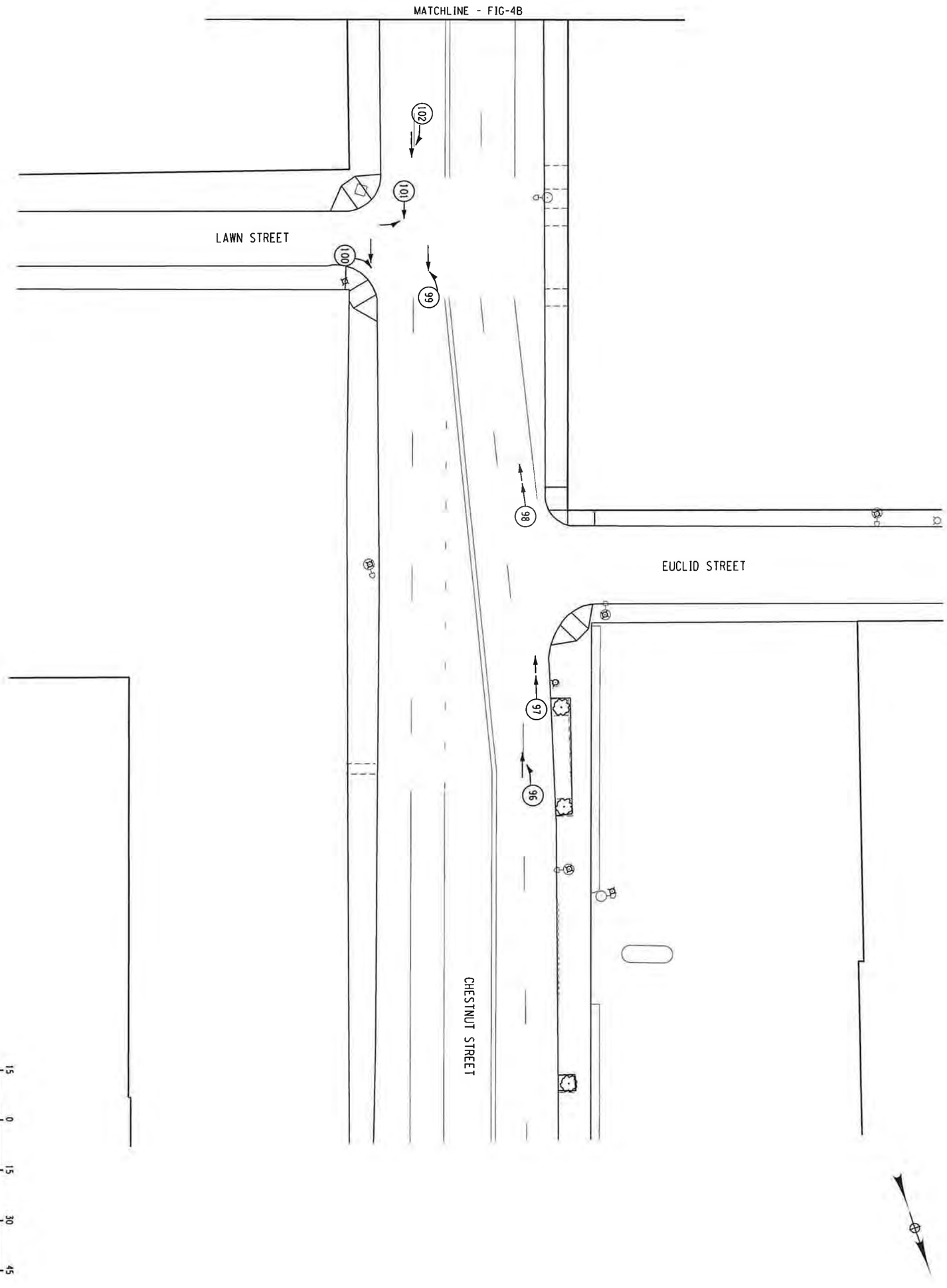

FIG-4A

SHEET xxx OF xxx

PROJECT/DRAWING NUMBER: 210301

DRAWING TITLE: ACCIDENT DIAGRAM

ISSUED FOR: DAD

DATE: FEBRUARY 25, 2011

DESIGNED BY: RGH
DRAWN BY: CDN
REVIEWED BY: RTV

PROJECT/CLIENT: MIDTOWN REDEVELOPMENT PROJECT (FORMER MIDTOWN PLAZA SITE)
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DEPARTMENT OF ENVIRONMENTAL SERVICES

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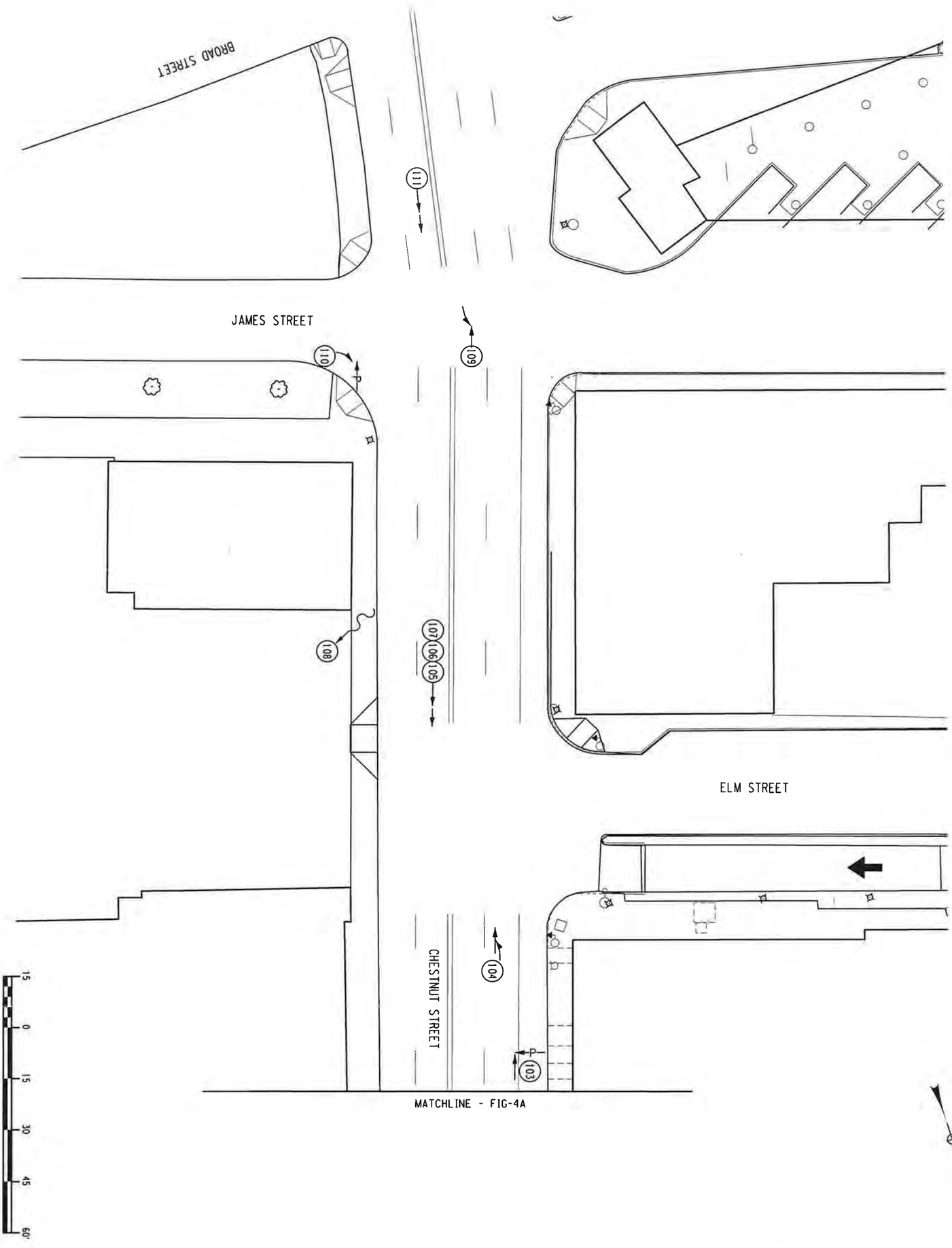

FIG-4B

210301

ACCIDENT DIAGRAM

ASSIGNED FOR: DAD

DATE: FEBRUARY 25, 2011

DESIGNED BY: RSH
DRAWN BY: CDN
REVIEWED BY: RTV

MIDTOWN REDEVELOPMENT PROJECT
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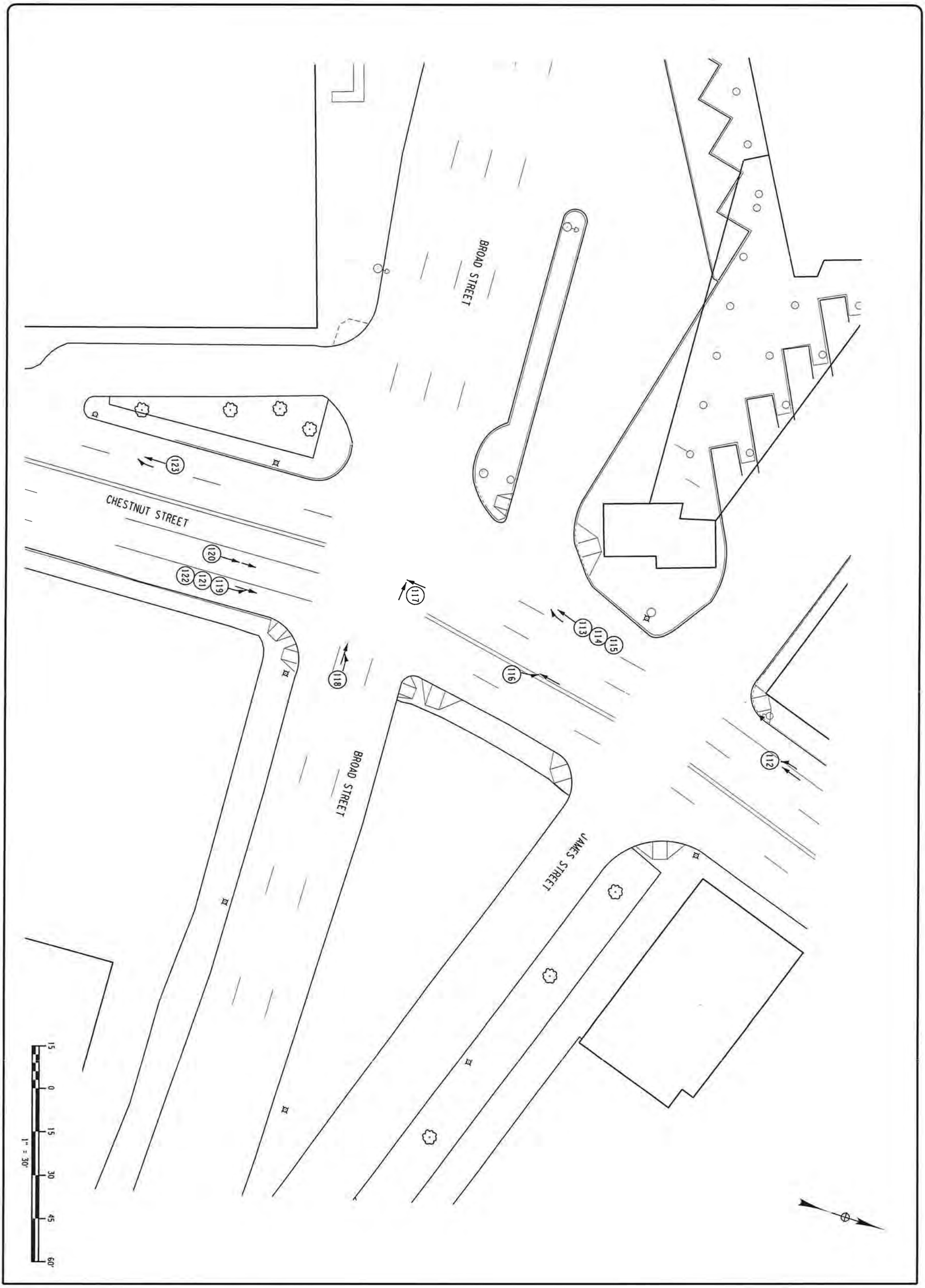

FIG-05

210301

PROJECT/DRAWING NUMBER

SHEET xxxx OF xxxx

DRAWING TITLE

ACCIDENT DIAGRAM

ISSUED FOR: DAD

DATE: FEBRUARY 25, 2011

DESIGNED BY: RGH
DRAWN BY: CDW
REVIEWED BY: RTV

PROJECTED EXIT

MIDTOWN REDEVELOPMENT PROJECT
(FORMER MIDTOWN PLAZA SITE)

CITY OF ROCHESTER
DEPARTMENT OF
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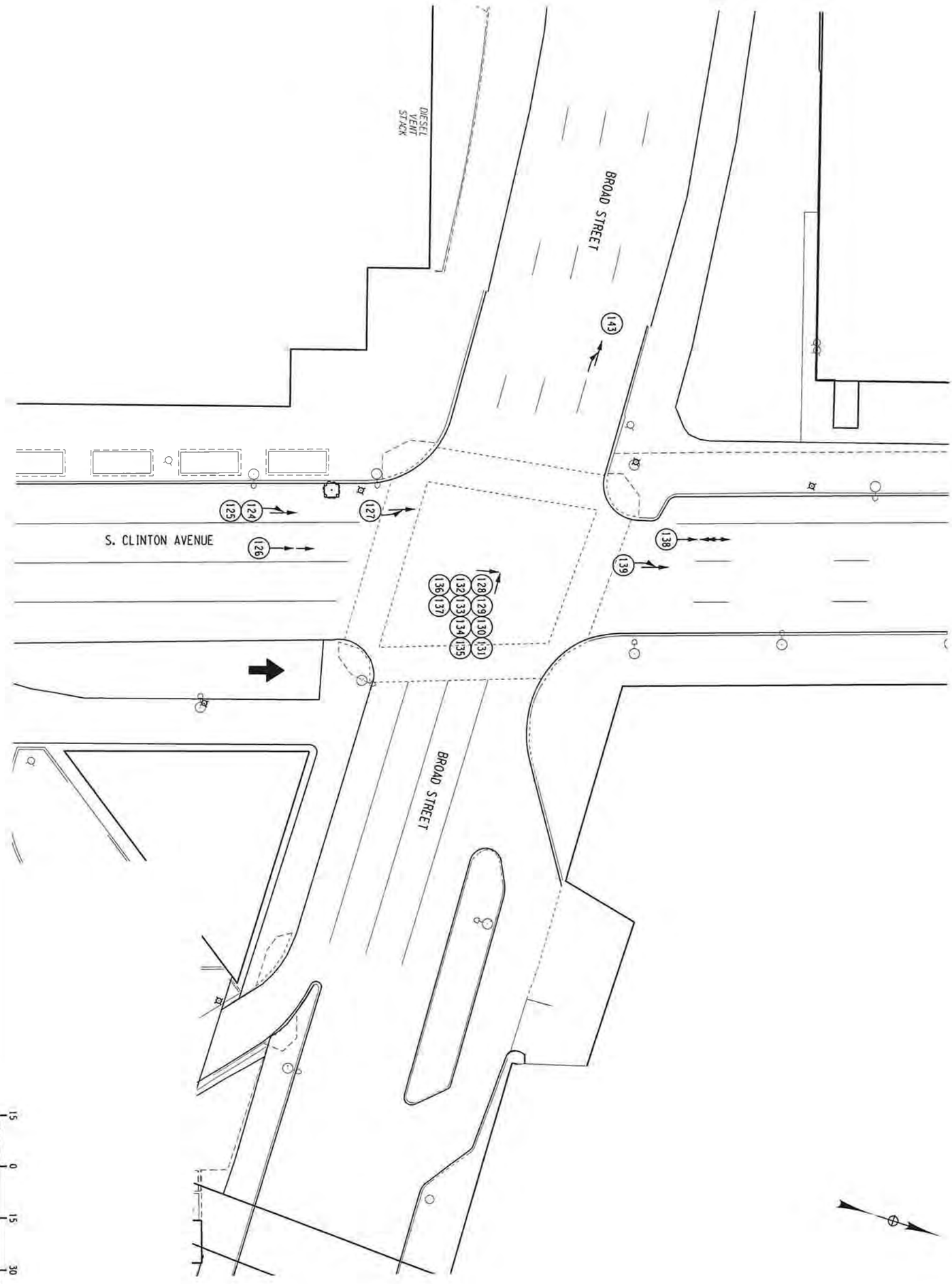

FIG-06

210301

ACCIDENT DIAGRAM

ISSUED FOR: DAD

DATE: FEBRUARY 25, 2011

DESIGNED BY: TWM
DRAWN BY: CDN
REVIEWED BY: RTV

MIDTOWN REDEVELOPMENT PROJECT
(FORMER MIDTOWN PLAZA SITE)
CITY OF ROCHESTER
DEPARTMENT OF
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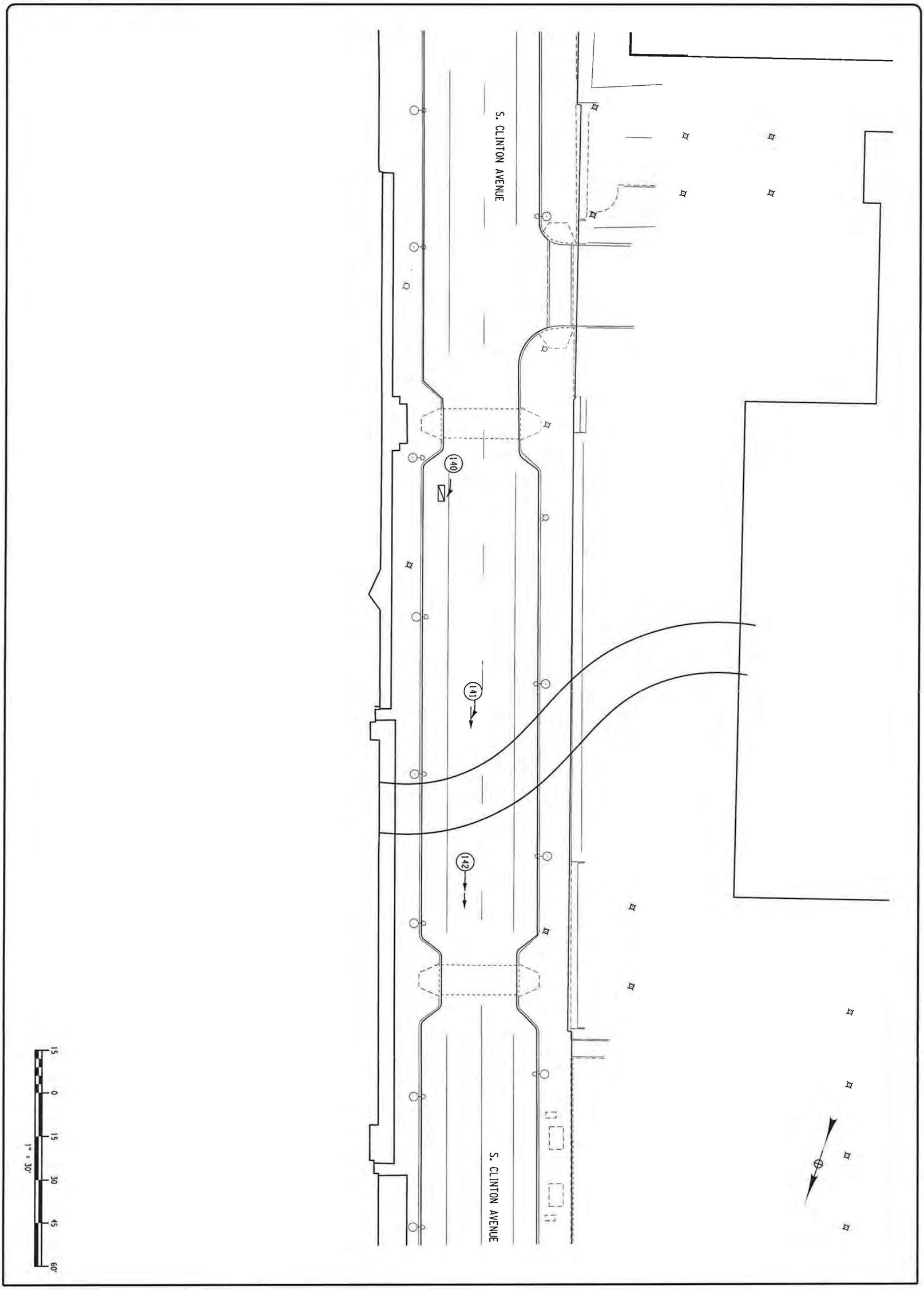

FIG-07

SHEET XXX OF XXX

PROJECT/DRAWING NUMBER: 210301

DRAWING TITLE: ACCIDENT DIAGRAM

ISSUED FOR: DAD

DATE: FEBRUARY 25, 2011

DESIGNED BY: TWM

DRAWN BY: CDN

REVIEWED BY: RTV

PROJECT/CLIENT:

MIDTOWN REDEVELOPMENT PROJECT
(FORMER MIDTOWN PLAZA SITE)

CITY OF ROCHESTER
DEPARTMENT OF
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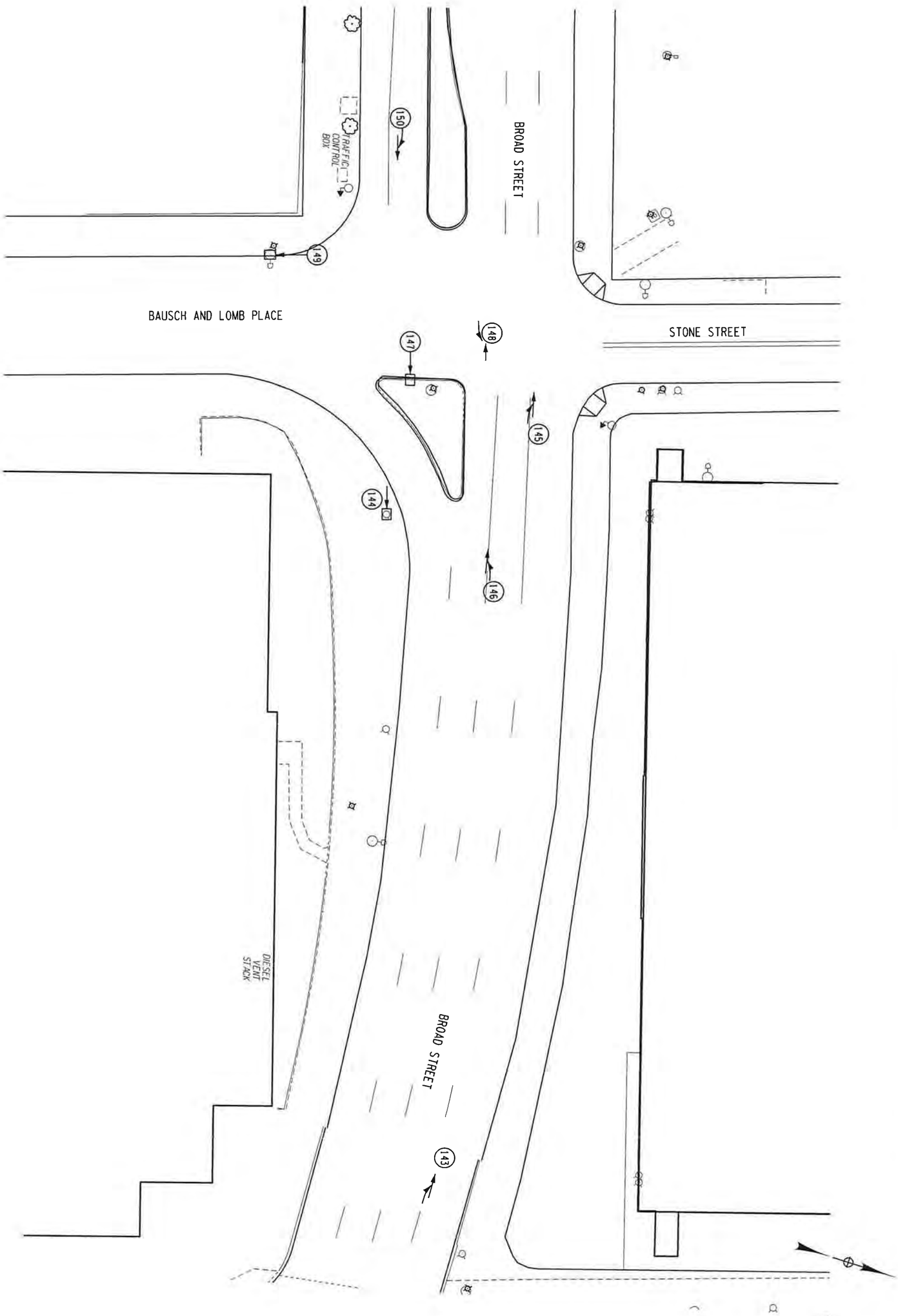

FIG-08

SHEET XXX OF XXX

210301

PROJECT/DRAWING NUMBER

DRAWING TITLE

ACCIDENT DIAGRAM

ISSUED FOR: DAD

DATE: FEBRUARY 25, 2011

DESIGNED BY: TWM

DRAWN BY: CDN

REVIEWED BY: RTV

PROJECT/CLIENT

MIDTOWN REDEVELOPMENT PROJECT
(FORMER MIDTOWN PLAZA SITE)

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DEPARTMENT OF
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Midtown Redevelopment
Accident Rate Calculations

Intersection: Clinton Ave & Main St

Accidents

55 accidents over 3 years = 18.3 accidents per year
12 accidents with injury, no fatalities

- 24 sideswipe
- 14 rear end (4 with injury)
- 7 right angle (1 with injury)
- 7 pedestrian (7 with injury)
- 2 out of control
- 1 left turn

Traffic Volume:

Clinton Ave Northbound: 12,950 veh/day
Main St Eastbound: (13,585 veh/day)/2 = 6,793 veh/day
Main St Westbound: (12,614 veh/day)/2 = 6,307 veh/day

Total: 26,050 veh/day x 365 day/yr = 9,508,250 veh/yr = 9.51 MEV/yr

Accident Rate:

$\frac{\text{18.3 accidents/year}}{\text{9.51 MEV/year}}$ = 1.92 Acc/MEV

State Average: 0.32 Acc/MEV
MCDOT Average: 0.50 Acc/MEV

Intersection: Main St / East Ave / Franklin St

Accidents

18 accidents over 3 years = 6 accidents per year
5 accidents with injury, no fatalities

- 10 sideswipe (2 with injury)
- 7 rear end (2 with injury)
- 1 pedestrian (1 with injury)

Traffic Volume:

East Ave Northbound: (4,917 veh/day)/2 = 2,459 veh/day
Franklin St Southbound: (3,500 veh/day)/2 = 1,750 veh/day (estimated)
Main St Eastbound: (12,614 veh/day)/2 = 6,307 veh/day
Main St Westbound: (11,731 veh/day)/2 = 5,866 veh/day

Total: 16,382 veh/day x 365 day/yr = 5,979,430 veh/yr = 5.98 MEV/yr

Accident Rate:

$$\frac{\text{6 accidents/year}}{\text{5.98 MEV/year}} = 1.00 \text{ Acc/MEV}$$

State Average: 0.32 Acc/MEV
MCDOT Average: 0.50 Acc/MEV

Intersection: Chestnut St / East Ave

Accidents

21 accidents over 3 years = 7 accidents per year
6 accidents with injury, no fatalities

- 8 right angle (2 with injury)
- 4 rear end
- 3 sideswipe (1 with injury)
- 2 pedestrian (2 with injury)
- 2 left turn (1 with injury)
- 1 right turn
- 1 backing

Traffic Volume:

Chestnut St Northbound: (13,208 veh/day)/2 = 6,604 veh/day
Chestnut St Southbound: (11,681 veh/day)/2 = 5,841 veh/day
East Ave Eastbound: (4,917 veh/day)/2 = 2,459 veh/day
East Ave Westbound: (9,215 veh/day)/2 = 4,608 veh/day

Total: 19,512 veh/day x 365 day/yr = 7,121,880 veh/yr = 7.12 MEV/year

Accident Rate:

$$\frac{\text{7 accidents/year}}{\text{7.12 MEV/year}} = 0.98 \text{ Acc/MEV}$$

State Average: 0.32 Acc/MEV
MCDOT Average: 0.50 Acc/MEV

Intersection: Chestnut St / Elm St

Accidents

4 accidents over 3 years = 1.33 accidents per year
0 accidents with injury, no fatalities

- 3 rear end
- 1 sideswipe

Traffic Volume:

Chestnut St Northbound: (13,208 veh/day)/2 = 6,604 veh/day
Chestnut St Southbound: (13,208 veh/day)/2 = 6,604 veh/day

Total: 13,208 veh/day x 365 day/yr = 4,820,920 veh/yr = 4.82 MEV/year

Accident Rate:

$$\frac{1.33 \text{ accidents/year}}{4.82 \text{ MEV/year}} = 0.28 \text{ Acc/MEV}$$

MCDOT Average: 0.25 Acc/MEV

Intersection: Chestnut St / Broad St

Accidents

11 accidents over 3 years = 3.7 accidents per year
1 accident with injury, no fatalities

- 8 sideswipe (1 with injury)
- 1 rear end
- 1 left turn
- 1 right angle

Traffic Volume:

Chestnut St Northbound: (11,800 veh/day)/2 = 5,900 veh/day
Chestnut St Southbound: (13,208 veh/day)/2 = 6,604 veh/day
Broad St Westbound: 2,716 veh/day

Total: 15,220 veh/day x 365 day/yr = 5,555,300 veh/yr = 5.56 MEV/year

Accident Rate:

$$\frac{\text{3.7 accidents/year}}{\text{5.56 MEV/year}} = 0.67 \text{ Acc/MEV}$$

State Average: 0.32 Acc/MEV
MCDOT Average: 0.50 Acc/MEV

Intersection: Clinton Ave / Broad St

Accidents

16 accidents over 3 years = 5.3 accidents per year
2 accidents with injury, no fatalities

- 10 right angle (2 with injury)
- 4 sideswipe
- 1 rear end
- 1 backing

Traffic Volume:

Clinton Ave Northbound: 15,400 veh/day
Broad St Westbound: 4,721 veh/day

Total: 20,121 veh/day x 365 day/yr = 7,344,165 veh/yr = 7.34 MEV/year

Accident Rate:

$$\frac{5.3 \text{ accidents/year}}{7.34 \text{ MEV/year}} = 0.72 \text{ Acc/MEV}$$

State Average: 0.32 Acc/MEV
MCDOT Average: 0.50 Acc/MEV

Intersection: Broad St / Stone St

Accidents

7 accidents over 3 years = 2.3 accidents per year
1 accident with injury, no fatalities

- 3 fixed object
- 3 sideswipe (1 with injury)
- 1 left turn

Traffic Volume:

Broad St Eastbound: 9,956 veh/day x 0.2 (k-factor) = 1991 veh/day
Broad St Westbound: 6,971 veh/day
Stone St Southbound: (2,431 veh/day)/2 = 1,216 veh/day

Total: 10,178 veh/day x 365 day/yr = 3,714,970 veh/yr = 3.71 MEV/year

Accident Rate:

$$\frac{\text{2.3 accidents/year}}{\text{3.71 MEV/year}} = 0.62 \text{ Acc/MEV}$$

State Average: 0.32 Acc/MEV
MCDOT Average: 0.25 Acc/MEV

Level of Service Analysis
Future (2032) Condition
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1200	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0	3.0			
Lane Util. Factor		0.95						0.91	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		2207						5063	1583			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		2207						5063	1583			
Volume (vph)	176	436	0	0	0	0	78	1251	260	0	0	0
Peak-hour factor, PHF	0.78	0.67	0.90	0.90	0.90	0.90	0.60	0.92	0.65	0.90	0.90	0.90
Adj. Flow (vph)	226	651	0	0	0	0	130	1360	400	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	106	0	0	0
Lane Group Flow (vph)	0	877	0	0	0	0	0	1490	294	0	0	0
Turn Type	Split						Split		Perm			
Protected Phases	2	2					1	1				
Permitted Phases									1			
Actuated Green, G (s)		47.0						43.0	43.0			
Effective Green, g (s)		49.0						45.0	45.0			
Actuated g/C Ratio		0.49						0.45	0.45			
Clearance Time (s)		5.0						5.0	5.0			
Lane Grp Cap (vph)		1081						2278	712			
v/s Ratio Prot		c0.40						c0.29				
v/s Ratio Perm									0.25			
v/c Ratio		0.81						0.65	0.41			
Uniform Delay, d1		21.6						21.4	18.6			
Progression Factor		1.00						0.62	0.22			
Incremental Delay, d2		6.6						1.4	1.7			
Delay (s)		28.2						14.6	5.7			
Level of Service		C						B	A			
Approach Delay (s)		28.2			0.0			12.7			0.0	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

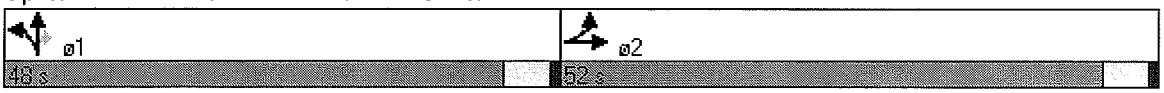
c Critical Lane Group

Lane Group	EBT	NBT	NBR
Lane Configurations			
Volume (vph)	436	1251	260
Lane Group Flow (vph)	877	1490	400
Turn Type			Perm
Protected Phases	2	1	
Permitted Phases			1
Minimum Split (s)	28.0	30.0	30.0
Total Split (s)	52.0	48.0	48.0
Total Split (%)	52.0%	48.0%	48.0%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0
Lead/Lag	Lag	Lead	Lead
Lead-Lag Optimize?			
v/c Ratio	0.81	0.65	0.49
Control Delay	29.0	14.8	4.1
Queue Delay	39.3	0.2	0.2
Total Delay	68.3	14.9	4.3
Queue Length 50th (ft)	224	247	8
Queue Length 95th (ft)	196	286	8
Internal Link Dist (ft)	124	352	
Turn Bay Length (ft)			
Base Capacity (vph)	1081	2279	818
Starvation Cap Reductn	265	172	67
Spillback Cap Reductn	0	28	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.07	0.71	0.53

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 30 (30%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 252: Court & Clinton



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)					3.0		3.0	3.0	3.0			
Lane Util. Factor					0.95		0.91	0.91	1.00			
Frpb, ped/bikes					0.97		1.00	1.00	0.73			
Flpb, ped/bikes					1.00		1.00	1.00	1.00			
Frt					0.96		1.00	1.00	0.85			
Flt Protected					1.00		0.95	1.00	1.00			
Satd. Flow (prot)					3297		1610	3390	1164			
Flt Permitted					1.00		0.95	1.00	1.00			
Satd. Flow (perm)					3297		1610	3390	1164			
Volume (vph)	0	0	0	0	394	108	315	920	29	0	0	0
Peak-hour factor, PHF	0.80	0.80	0.90	0.90	0.93	0.83	0.88	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	424	130	358	1022	32	0	0	0
RTOR Reduction (vph)	0	0	0	0	16	0	180	0	17	0	0	0
Lane Group Flow (vph)	0	0	0	0	538	0	178	1022	15	0	0	0
Confl. Peds. (#/hr)			99			96			105			96
Turn Type							Split		Perm			
Protected Phases					2		1	1				
Permitted Phases									1			
Actuated Green, G (s)					44.0		44.0	44.0	44.0			
Effective Green, g (s)					47.0		47.0	47.0	47.0			
Actuated g/C Ratio					0.47		0.47	0.47	0.47			
Clearance Time (s)					6.0		6.0	6.0	6.0			
Lane Grp Cap (vph)					1550		757	1593	547			
v/s Ratio Prot					c0.17		0.22	c0.30				
v/s Ratio Perm									0.03			
v/c Ratio					0.35		0.24	0.64	0.03			
Uniform Delay, d1					16.8		15.8	20.1	14.2			
Progression Factor					1.27		0.00	0.35	0.00			
Incremental Delay, d2					0.6		0.5	1.5	0.1			
Delay (s)					21.9		0.5	8.4	0.1			
Level of Service					C		A	A	A			
Approach Delay (s)		0.0			21.9			6.3			0.0	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBT	NBL	NBT	NBR
Lane Configurations				
Volume (vph)	394	315	920	29
Lane Group Flow (vph)	554	358	1022	32
Turn Type		Split		Perm
Protected Phases	2	1	1	
Permitted Phases				1
Minimum Split (s)	29.0	28.0	28.0	28.0
Total Split (s)	50.0	50.0	50.0	50.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?				
v/c Ratio	0.35	0.38	0.64	0.06
Control Delay	21.0	0.9	8.6	0.1
Queue Delay	0.0	0.4	0.3	0.0
Total Delay	21.0	1.3	8.8	0.1
Queue Length 50th (ft)	134	0	55	0
Queue Length 95th (ft)	m169	m0	65	m0
Internal Link Dist (ft)	114		346	
Turn Bay Length (ft)				
Base Capacity (vph)	1566	936	1593	564
Starvation Cap Reductn	0	229	143	0
Spillback Cap Reductn	25	2	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.36	0.51	0.70	0.06

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

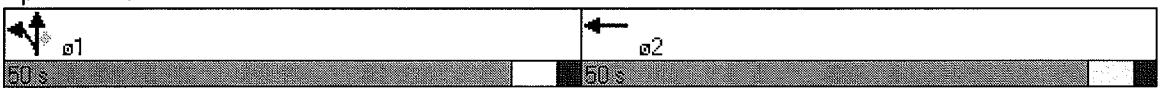
Offset: 40 (40%), Referenced to phase 1:NBTL, Start of Green

Natural Cycle: 60

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 256: Broad & Clinton



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.89	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	0.95	
Flt Protected	1.00	1.00		1.00	0.97	
Satd. Flow (prot)	1863	1583		1860	1516	
Flt Permitted	1.00	1.00		0.99	0.97	
Satd. Flow (perm)	1863	1583		1838	1516	
Volume (vph)	513	10	8	265	18	11
Peak-hour factor, PHF	0.88	0.90	0.90	0.73	0.80	0.80
Adj. Flow (vph)	583	11	9	363	22	14
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	583	11	0	372	36	0
Confl. Peds. (#/hr)						250
Turn Type		Perm	Perm			
Protected Phases	1			1	2	
Permitted Phases		1	1			
Actuated Green, G (s)	64.0	64.0		64.0	27.0	
Effective Green, g (s)	67.0	67.0		67.0	27.0	
Actuated g/C Ratio	0.67	0.67		0.67	0.27	
Clearance Time (s)	6.0	6.0		6.0	3.0	
Lane Grp Cap (vph)	1248	1061		1231	409	
v/s Ratio Prot	c0.31				c0.02	
v/s Ratio Perm		0.01		0.20		
v/c Ratio	0.47	0.01		0.30	0.09	
Uniform Delay, d1	7.9	5.5		6.8	27.3	
Progression Factor	0.15	0.28		0.08	1.00	
Incremental Delay, d2	0.8	0.0		0.6	0.4	
Delay (s)	2.1	1.5		1.1	27.7	
Level of Service	A	A		A	C	
Approach Delay (s)	2.0			1.1	27.7	
Approach LOS	A			A	C	

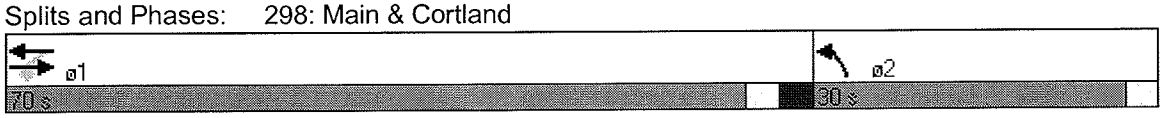
Intersection Summary			
HCM Average Control Delay	2.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

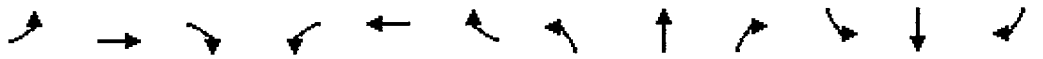
Lane Group	EBT	EBR	WBL	WBT	NBL
Lane Configurations					
Volume (vph)	513	10	8	265	18
Lane Group Flow (vph)	583	11	0	372	36
Turn Type		Perm	Perm		
Protected Phases	1			1	2
Permitted Phases		1	1		
Minimum Split (s)	25.0	25.0	25.0	25.0	30.0
Total Split (s)	70.0	70.0	70.0	70.0	30.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	3.0	0.0
Lead/Lag	Lead	Lead	Lead	Lead	Lag
Lead-Lag Optimize?					
v/c Ratio	0.47	0.01		0.30	0.09
Control Delay	2.1	1.6		1.2	28.1
Queue Delay	0.5	0.0		0.2	0.1
Total Delay	2.6	1.6		1.4	28.2
Queue Length 50th (ft)	11	0		6	17
Queue Length 95th (ft)	35	m1		8	37
Internal Link Dist (ft)	173			215	84
Turn Bay Length (ft)					
Base Capacity (vph)	1248	1061		1232	409
Starvation Cap Reductn	304	0		309	0
Spillback Cap Reductn	62	0		36	68
Storage Cap Reductn	0	0		0	0
Reduced v/c Ratio	0.62	0.01		0.40	0.11

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 298: Main & Cortland





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)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.97		1.00	0.91		1.00			0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00			1.00	
Frt		1.00	0.85		1.00	0.85		0.99			0.98	
Flt Protected		1.00	1.00		1.00	1.00		1.00			1.00	
Satd. Flow (prot)		1863	1543		1863	1436		3510			3440	
Flt Permitted		1.00	1.00		1.00	1.00		1.00			0.95	
Satd. Flow (perm)		1863	1543		1863	1436		3510			3279	
Volume (vph)	0	439	142	0	391	7	0	67	2	2	116	18
Peak-hour factor, PHF	0.90	0.82	0.87	0.90	0.93	0.50	0.90	0.71	0.50	0.50	0.72	0.67
Adj. Flow (vph)	0	535	163	0	420	14	0	94	4	4	161	27
RTOR Reduction (vph)	0	0	86	0	0	7	0	2	0	0	13	0
Lane Group Flow (vph)	0	535	77	0	420	7	0	96	0	0	179	0
Confl. Peds. (#/hr)			11			66			31			11
Turn Type			Perm			Perm				Perm		
Protected Phases		1			1			2			2	
Permitted Phases			1			1		2		2		
Actuated Green, G (s)		45.0	45.0		45.0	45.0		45.0			45.0	
Effective Green, g (s)		47.0	47.0		47.0	47.0		47.0			47.0	
Actuated g/C Ratio		0.47	0.47		0.47	0.47		0.47			0.47	
Clearance Time (s)		5.0	5.0		5.0	5.0		5.0			5.0	
Lane Grp Cap (vph)		876	725		876	675		1650			1541	
v/s Ratio Prot		c0.29			0.23			0.03				
v/s Ratio Perm			0.11			0.01					c0.06	
v/c Ratio		0.61	0.11		0.48	0.01		0.06			0.12	
Uniform Delay, d1		19.7	14.8		18.1	14.1		14.4			14.9	
Progression Factor		1.18	2.87		0.55	0.39		1.51			0.46	
Incremental Delay, d2		3.0	0.3		1.9	0.0		0.1			0.2	
Delay (s)		26.3	42.6		11.8	5.6		21.9			7.0	
Level of Service		C	D		B	A		C			A	
Approach Delay (s)		30.1			11.6			21.9			7.0	
Approach LOS		C			B			C			A	

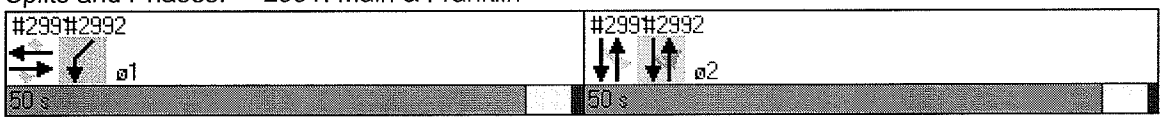
Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	439	142	391	7	67	2	116
Lane Group Flow (vph)	535	163	420	14	98	0	192
Turn Type		Perm		Perm		Perm	
Protected Phases	1		1		2		2
Permitted Phases		1		1	2	2	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?							
v/c Ratio	0.61	0.20	0.48	0.02	0.06		0.12
Control Delay	27.0	7.8	12.0	2.7	21.2		6.2
Queue Delay	0.9	0.4	0.6	0.0	0.0		0.7
Total Delay	27.9	8.2	12.7	2.7	21.2		6.9
Queue Length 50th (ft)	198	19	74	0	20		11
Queue Length 95th (ft)	250	46	90	1	27		15
Internal Link Dist (ft)	215		231		494		98
Turn Bay Length (ft)							
Base Capacity (vph)	876	812	876	682	1652		1554
Starvation Cap Reductn	138	339	181	0	0		1077
Spillback Cap Reductn	0	0	0	0	0		0
Storage Cap Reductn	0	0	0	0	0		0
Reduced v/c Ratio	0.72	0.34	0.60	0.02	0.06		0.40

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 4 (4%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 2991: Main & Franklin



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)		3.0			3.0			3.0			3.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			0.99			0.89			0.90	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			0.91			0.91	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		3530			3494			1498			1505	
Flt Permitted		0.92			1.00			0.98			0.93	
Satd. Flow (perm)		3240			3494			1473			1431	
Volume (vph)	24	448	0	0	426	11	5	5	24	11	0	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	27	498	0	0	473	12	6	6	27	12	0	22
RTOR Reduction (vph)	0	0	0	0	2	0	0	19	0	0	15	0
Lane Group Flow (vph)	0	525	0	0	483	0	0	20	0	0	19	0
Confl. Peds. (#/hr)			150			150			125			125
Turn Type	Perm						Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1						2			2		
Actuated Green, G (s)		62.0			62.0			28.0			28.0	
Effective Green, g (s)		64.0			64.0			30.0			30.0	
Actuated g/C Ratio		0.64			0.64			0.30			0.30	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Lane Grp Cap (vph)		2074			2236			442			429	
v/s Ratio Prot					0.14							
v/s Ratio Perm		c0.16						c0.03			0.02	
v/c Ratio		0.25			0.22			0.05			0.04	
Uniform Delay, d1		7.7			7.5			24.8			24.8	
Progression Factor		0.01			0.15			1.00			1.00	
Incremental Delay, d2		0.2			0.2			0.2			0.2	
Delay (s)		0.3			1.3			25.0			25.0	
Level of Service		A			A			C			C	
Approach Delay (s)		0.3			1.3			25.0			25.0	
Approach LOS		A			A			C			C	

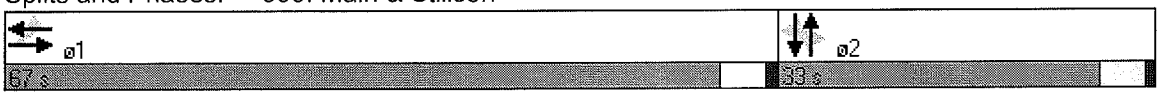
Intersection Summary			
HCM Average Control Delay	2.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Volume (vph)	24	448	426	5	5	11	0
Lane Group Flow (vph)	0	525	485	0	39	0	34
Turn Type	Perm			Perm		Perm	
Protected Phases		1	1		2		2
Permitted Phases	1			2		2	
Minimum Split (s)	27.0	27.0	27.0	33.0	33.0	33.0	33.0
Total Split (s)	67.0	67.0	67.0	33.0	33.0	33.0	33.0
Total Split (%)	67.0%	67.0%	67.0%	33.0%	33.0%	33.0%	33.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?							
v/c Ratio		0.25	0.22		0.08		0.08
Control Delay		0.3	1.3		13.3		14.2
Queue Delay		0.3	0.3		0.0		0.0
Total Delay		0.6	1.7		13.3		14.2
Queue Length 50th (ft)		0	5		5		5
Queue Length 95th (ft)		1	7		30		28
Internal Link Dist (ft)		231	188		31		96
Turn Bay Length (ft)							
Base Capacity (vph)		2072	2237		461		445
Starvation Cap Reductn		861	1142		0		0
Spillback Cap Reductn		0	0		0		0
Storage Cap Reductn		0	0		0		0
Reduced v/c Ratio		0.43	0.44		0.08		0.08

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 7 (7%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 300: Main & Stillson



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)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3455		1770	3424		1770	3378		1770	3433	
Flt Permitted	0.41	1.00		0.44	1.00		0.32	1.00		0.23	1.00	
Satd. Flow (perm)	767	3455		817	3424		604	3378		432	3433	
Volume (vph)	155	299	28	125	326	41	28	467	133	71	391	73
Peak-hour factor, PHF	0.80	0.82	0.63	0.84	0.84	0.71	0.78	0.76	0.76	0.88	0.75	0.81
Adj. Flow (vph)	194	365	44	149	388	58	36	614	175	81	521	90
RTOR Reduction (vph)	0	8	0	0	11	0	0	26	0	0	14	0
Lane Group Flow (vph)	194	401	0	149	435	0	36	763	0	81	597	0
Confl. Peds. (#/hr)			46			68			34			32
Turn Type	pm+pt			pm+pt			Perm			Perm		
Protected Phases	3	1		3	1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)	44.0	35.4		44.0	35.4		40.0	40.0		40.0	40.0	
Effective Green, g (s)	49.0	37.9		49.0	37.9		42.0	42.0		42.0	42.0	
Actuated g/C Ratio	0.49	0.38		0.49	0.38		0.42	0.42		0.42	0.42	
Clearance Time (s)	5.5	5.5		5.5	5.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	487	1309		506	1298		254	1419		181	1442	
v/s Ratio Prot	c0.04	0.12		0.03	0.13			c0.23			0.18	
v/s Ratio Perm	c0.15			0.11			0.06			0.19		
v/c Ratio	0.40	0.31		0.29	0.34		0.14	0.54		0.45	0.41	
Uniform Delay, d1	14.9	21.8		14.4	22.1		17.9	21.7		20.7	20.4	
Progression Factor	1.33	1.15		0.45	0.40		0.68	0.63		0.68	0.61	
Incremental Delay, d2	0.2	0.6		0.1	0.7		1.1	1.3		7.6	0.9	
Delay (s)	19.9	25.6		6.5	9.5		13.2	15.0		21.6	13.2	
Level of Service	B	C		A	A		B	B		C	B	
Approach Delay (s)		23.8			8.7			14.9			14.2	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

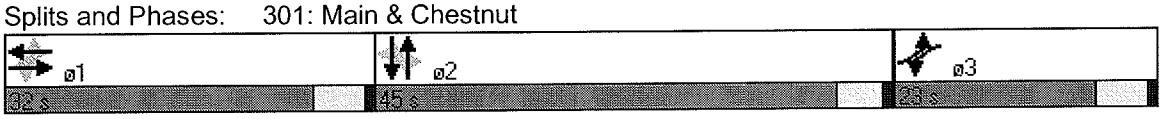
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	155	299	125	326	28	467	71	391
Lane Group Flow (vph)	194	409	149	446	36	789	81	611
Turn Type	pm+pt		pm+pt		Perm		Perm	
Protected Phases	3	1	3	1		2		2
Permitted Phases	1		1		2		2	
Detector Phases	3	1	3	1	2	2	2	2
Minimum Initial (s)	6.0	7.0	6.0	7.0	6.0	6.0	6.0	6.0
Minimum Split (s)	12.0	28.0	12.0	28.0	29.0	29.0	29.0	29.0
Total Split (s)	23.0	32.0	23.0	32.0	45.0	45.0	45.0	45.0
Total Split (%)	23.0%	32.0%	23.0%	32.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag		Lead		Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?								
Recall Mode	None	C-Max	None	C-Max	Max	Max	Max	Max
v/c Ratio	0.43	0.31	0.31	0.34	0.14	0.55	0.45	0.42
Control Delay	19.2	25.6	6.8	9.4	13.7	14.3	23.0	12.9
Queue Delay	0.0	0.5	0.0	0.4	0.0	0.3	0.0	0.0
Total Delay	19.2	26.1	6.8	9.8	13.7	14.6	23.0	12.9
Queue Length 50th (ft)	72	80	21	35	8	85	41	126
Queue Length 95th (ft)	84	86	33	63	m13	76	100	60
Internal Link Dist (ft)		188		225		289		561
Turn Bay Length (ft)	125		125		125		125	
Base Capacity (vph)	571	1319	590	1309	254	1445	181	1456
Starvation Cap Reductn	5	527	0	409	0	190	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.52	0.25	0.50	0.14	0.63	0.45	0.42

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 10 (10%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 301: Main & Chestnut



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)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00	0.89		1.00	0.85	1.00	0.97		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.96		1.00	1.00	
Flt Protected		1.00	1.00		0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1861	1406		1799	1342	1770	3288		1770	3524	
Flt Permitted		1.00	1.00		0.57	1.00	0.32	1.00		0.21	1.00	
Satd. Flow (perm)		1854	1406		1067	1342	600	3288		392	3524	
Volume (vph)	3	157	94	133	58	44	25	538	194	59	502	6
Peak-hour factor, PHF	0.75	0.74	0.72	0.78	0.81	0.57	0.69	0.86	0.75	0.95	0.79	0.63
Adj. Flow (vph)	4	212	131	171	72	77	36	626	259	62	635	10
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	216	131	0	243	77	36	885	0	62	645	0
Confl. Peds. (#/hr)			75			105			66			84
Turn Type	Perm		Perm	pm+pt		Perm	Perm			Perm		
Protected Phases		1		4	1 4			2			2	
Permitted Phases	1		1	1 4		1 4	2			2		
Actuated Green, G (s)		30.9	30.9		41.0	46.0	44.0	44.0		44.0	44.0	
Effective Green, g (s)		32.9	32.9		45.0	48.0	46.0	46.0		46.0	46.0	
Actuated g/C Ratio		0.33	0.33		0.45	0.48	0.46	0.46		0.46	0.46	
Clearance Time (s)		5.0	5.0				5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0	2.0				2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		610	463		569	644	276	1512		180	1621	
v/s Ratio Prot					c0.05			c0.27			0.18	
v/s Ratio Perm		0.12	0.09		c0.14	0.06	0.06			0.16		
v/c Ratio		0.35	0.28		0.43	0.12	0.13	0.59		0.34	0.40	
Uniform Delay, d1		25.5	24.8		18.7	14.3	15.5	20.0		17.3	17.8	
Progression Factor		1.25	1.23		0.72	0.74	0.90	0.72		0.38	0.42	
Incremental Delay, d2		1.6	1.5		0.2	0.0	1.0	1.6		4.9	0.7	
Delay (s)		33.4	32.2		13.7	10.7	14.9	15.9		11.4	8.1	
Level of Service		C	C		B	B	B	B		B	A	
Approach Delay (s)		32.9			13.0			15.9			8.4	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		

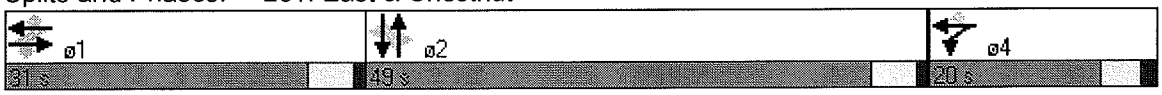
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Volume (vph)	3	157	94	133	58	44	25	538	59	502
Lane Group Flow (vph)	0	216	131	0	243	77	36	885	62	645
Turn Type	Perm		Perm	pm+pt		Perm	Perm		Perm	
Protected Phases		1		4	1 4			2		2
Permitted Phases	1		1	1 4		1 4	2		2	
Detector Phases	1	1	1	4	1 4	1 4	2	2	2	2
Minimum Initial (s)	7.0	7.0	7.0	6.0			6.0	6.0	6.0	6.0
Minimum Split (s)	27.0	27.0	27.0	15.0			30.0	30.0	30.0	30.0
Total Split (s)	31.0	31.0	31.0	20.0	51.0	51.0	49.0	49.0	49.0	49.0
Total Split (%)	31.0%	31.0%	31.0%	20.0%	51.0%	51.0%	49.0%	49.0%	49.0%	49.0%
Yellow Time (s)	4.0	4.0	4.0	3.5			4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.5			1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead				Lag	Lag	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	C-Max	C-Max	C-Max	Min			Max	Max	Max	Max
v/c Ratio		0.35	0.28		0.44	0.12	0.13	0.59	0.34	0.40
Control Delay		34.8	33.8		13.4	11.3	15.5	16.1	12.0	8.2
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.5	0.0	0.2
Total Delay		34.8	33.8		13.4	11.3	15.5	16.6	12.0	8.4
Queue Length 50th (ft)		136	82		58	18	9	124	12	64
Queue Length 95th (ft)		155	101		105	28	24	195	24	66
Internal Link Dist (ft)		494			594			382		289
Turn Bay Length (ft)							125		125	
Base Capacity (vph)		609	462		616	641	276	1512	181	1622
Starvation Cap Reductn		0	0		0	0	0	245	0	308
Spillback Cap Reductn		0	0		0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0
Reduced v/c Ratio		0.35	0.28		0.39	0.12	0.13	0.70	0.34	0.49

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 8 (8%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 261: East & Chestnut



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.0	3.0	3.0	
Lane Util. Factor	1.00		1.00	0.95	0.95	
Frt	0.92		1.00	1.00	1.00	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1629		1770	3539	3525	
Flt Permitted	0.98		0.33	1.00	1.00	
Satd. Flow (perm)	1629		618	3539	3525	
Volume (vph)	68	105	10	702	708	19
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	76	117	11	780	787	21
RTOR Reduction (vph)	62	0	0	0	1	0
Lane Group Flow (vph)	131	0	11	780	807	0
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Turn Type			Perm			
Protected Phases	3			1	1	
Permitted Phases			1			
Actuated Green, G (s)	12.7		77.3	77.3	77.3	
Effective Green, g (s)	14.7		79.3	79.3	79.3	
Actuated g/C Ratio	0.15		0.79	0.79	0.79	
Clearance Time (s)	5.0		5.0	5.0	5.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	239		490	2806	2795	
v/s Ratio Prot	c0.12			0.22	c0.23	
v/s Ratio Perm			0.02			
v/c Ratio	0.55		0.02	0.28	0.29	
Uniform Delay, d1	39.6		2.2	2.7	2.8	
Progression Factor	1.00		1.99	1.67	1.30	
Incremental Delay, d2	2.6		0.1	0.2	0.2	
Delay (s)	42.1		4.4	4.8	3.9	
Level of Service	D		A	A	A	
Approach Delay (s)	42.1			4.8	3.9	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

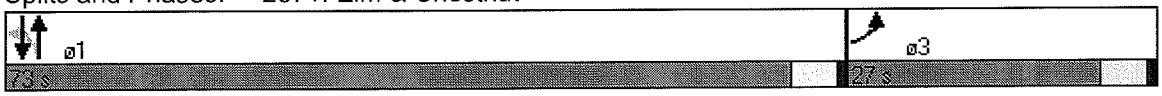
c Critical Lane Group

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Volume (vph)	68	10	702	708
Lane Group Flow (vph)	193	11	780	808
Turn Type		Perm		
Protected Phases	3		1	1
Permitted Phases		1		
Detector Phases	3	1	1	1
Minimum Initial (s)	6.0	17.0	17.0	17.0
Minimum Split (s)	27.0	33.0	33.0	33.0
Total Split (s)	27.0	73.0	73.0	73.0
Total Split (%)	27.0%	73.0%	73.0%	73.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
v/c Ratio	0.64	0.02	0.28	0.29
Control Delay	26.7	6.6	5.5	4.4
Queue Delay	0.1	0.0	1.0	0.1
Total Delay	26.8	6.6	6.6	4.5
Queue Length 50th (ft)	72	2	62	62
Queue Length 95th (ft)	135	m6	136	108
Internal Link Dist (ft)	133		153	382
Turn Bay Length (ft)				
Base Capacity (vph)	447	467	2808	2798
Starvation Cap Reductn	0	0	1686	888
Spillback Cap Reductn	14	0	0	701
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.45	0.02	0.70	0.42

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2571: Elm & Chestnut



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)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.93		1.00	0.96		1.00	1.00		1.00	0.92	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.89		1.00	0.98		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1535		1770	1754		1770	3539		1770	3177	
Flt Permitted	0.59	1.00		0.60	1.00		0.10	1.00		0.22	1.00	
Satd. Flow (perm)	1093	1535		1124	1754		196	3539		409	3177	
Volume (vph)	50	34	92	100	98	9	215	653	0	40	643	176
Peak-hour factor, PHF	0.80	0.80	0.80	0.74	0.66	0.40	0.72	0.85	0.75	0.80	0.75	0.88
Adj. Flow (vph)	62	42	115	135	148	22	299	768	0	50	857	200
RTOR Reduction (vph)	0	73	0	0	5	0	0	0	0	0	22	0
Lane Group Flow (vph)	62	84	0	135	165	0	299	768	0	50	1035	0
Confl. Peds. (#/hr)			64			210			158			211
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		3			3		1	2		1	2	
Permitted Phases	3	3		3	3		2	2		2	2	
Actuated Green, G (s)	34.9	34.9		34.9	34.9		50.1	36.1		50.1	36.1	
Effective Green, g (s)	36.9	36.9		36.9	36.9		54.1	38.1		54.1	38.1	
Actuated g/C Ratio	0.37	0.37		0.37	0.37		0.54	0.38		0.54	0.38	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	403	566		415	647		358	1348		439	1210	
v/s Ratio Prot		0.10			0.10		c0.13	0.22		0.02	c0.33	
v/s Ratio Perm	0.06			c0.12			0.32			0.04		
v/c Ratio	0.15	0.15		0.33	0.25		0.84	0.57		0.11	0.86	
Uniform Delay, d1	21.1	21.1		22.6	22.0		25.7	24.5		12.0	28.4	
Progression Factor	1.00	1.01		0.86	0.85		0.68	1.26		1.01	0.88	
Incremental Delay, d2	0.8	0.6		2.1	0.9		14.2	0.3		0.0	5.8	
Delay (s)	22.0	21.8		21.4	19.5		31.7	31.1		12.2	30.7	
Level of Service	C	C		C	B		C	C		B	C	
Approach Delay (s)		21.9			20.4			31.3			29.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

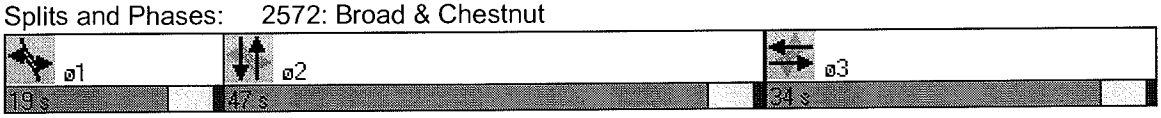
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	50	34	100	98	215	653	40	643
Lane Group Flow (vph)	62	157	135	170	299	768	50	1057
Turn Type	Perm		Perm		pm+pt		pm+pt	
Protected Phases		3		3	1	2	1	2
Permitted Phases	3	3	3	3	2	2	2	2
Detector Phases	3	3	3	3	1	2	1	2
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	17.0	6.0	17.0
Minimum Split (s)	27.0	27.0	27.0	27.0	12.0	33.0	12.0	33.0
Total Split (s)	34.0	34.0	34.0	34.0	19.0	47.0	19.0	47.0
Total Split (%)	34.0%	34.0%	34.0%	34.0%	19.0%	47.0%	19.0%	47.0%
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	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	C-Max	None	C-Max	None
v/c Ratio	0.16	0.25	0.34	0.26	0.79	0.57	0.11	0.86
Control Delay	25.3	9.4	24.2	20.4	28.9	31.2	8.7	27.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.6	0.0	44.7
Total Delay	25.3	9.4	24.2	20.4	28.9	31.8	8.7	72.0
Queue Length 50th (ft)	27	18	60	70	91	255	12	265
Queue Length 95th (ft)	55	54	95	93	84	292	23	269
Internal Link Dist (ft)		132		614		255		153
Turn Bay Length (ft)					125			
Base Capacity (vph)	387	639	399	653	379	1557	462	1418
Starvation Cap Reductn	0	0	0	0	0	410	0	447
Spillback Cap Reductn	6	0	0	10	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.25	0.34	0.26	0.79	0.67	0.11	1.09

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 30 (30%), Referenced to phase 1:NBSBL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 2572: Broad & Chestnut



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)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Util. Factor		0.91	1.00					0.95	1.00	1.00	0.95	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		4968	1583					3539	1583	1770	3539	
Flt Permitted		0.98	1.00					1.00	1.00	0.37	1.00	
Satd. Flow (perm)		4968	1583					3539	1583	695	3539	
Volume (vph)	327	318	352	0	0	0	0	525	43	30	881	0
Peak-hour factor, PHF	0.96	0.83	0.85	0.90	0.90	0.90	0.90	0.81	0.79	0.68	0.78	0.90
Adj. Flow (vph)	341	383	414	0	0	0	0	648	54	44	1129	0
RTOR Reduction (vph)	0	0	77	0	0	0	0	0	19	0	0	0
Lane Group Flow (vph)	0	724	337	0	0	0	0	648	35	44	1129	0
Turn Type	Split		Perm						Perm	Perm		
Protected Phases	2	2						1			1	
Permitted Phases			2						1	1		
Actuated Green, G (s)		26.0	26.0					62.0	62.0	62.0	62.0	
Effective Green, g (s)		29.0	29.0					65.0	65.0	65.0	65.0	
Actuated g/C Ratio		0.29	0.29					0.65	0.65	0.65	0.65	
Clearance Time (s)		6.0	6.0					6.0	6.0	6.0	6.0	
Lane Grp Cap (vph)		1441	459					2300	1029	452	2300	
v/s Ratio Prot		0.15						0.18			c0.32	
v/s Ratio Perm			0.26						0.03	0.06		
v/c Ratio		0.50	0.73					0.28	0.03	0.10	0.49	
Uniform Delay, d1		29.5	32.0					7.5	6.3	6.5	9.0	
Progression Factor		0.92	0.89					1.01	1.36	0.84	0.64	
Incremental Delay, d2		1.1	9.1					0.3	0.1	0.3	0.6	
Delay (s)		28.2	37.5					7.9	8.6	5.8	6.3	
Level of Service		C	D					A	A	A	A	
Approach Delay (s)		31.6			0.0			8.0			6.3	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

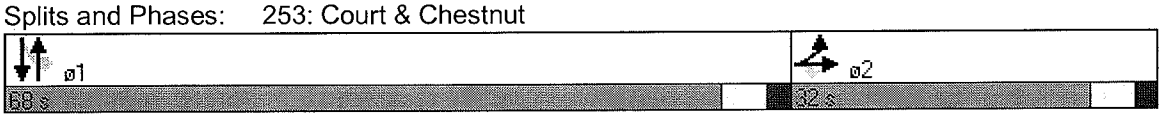
c Critical Lane Group

Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	318	352	525	43	30	881
Lane Group Flow (vph)	724	414	648	54	44	1129
Turn Type		Perm		Perm	Perm	
Protected Phases	2		1			1
Permitted Phases		2		1	1	
Minimum Split (s)	29.0	29.0	31.0	31.0	31.0	31.0
Total Split (s)	32.0	32.0	68.0	68.0	68.0	68.0
Total Split (%)	32.0%	32.0%	68.0%	68.0%	68.0%	68.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?						
v/c Ratio	0.50	0.77	0.28	0.05	0.10	0.49
Control Delay	28.4	31.3	8.0	2.6	6.0	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.6
Total Delay	28.4	31.3	8.0	2.6	6.0	7.0
Queue Length 50th (ft)	114	141	68	1	6	87
Queue Length 95th (ft)	147	m250	117	11	m14	139
Internal Link Dist (ft)	178		376			255
Turn Bay Length (ft)					100	
Base Capacity (vph)	1441	536	2300	1048	452	2300
Starvation Cap Reductn	0	0	0	0	0	704
Spillback Cap Reductn	0	0	282	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.77	0.32	0.05	0.10	0.71

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 25 (25%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

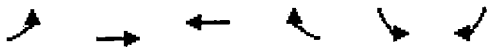
Splits and Phases: 253: Court & Chestnut



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	25	1006	22	0	0
Peak Hour Factor	0.90	0.80	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	31	1118	24	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			375			384
pX, platoon unblocked						
vC, conflicting volume	1130	571			1142	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1130	571			1142	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	93			100	
cM capacity (veh/h)	197	464			607	

Direction, Lane #	WB 1	NB 1	NB 2
Volume Total	31	745	397
Volume Left	0	0	0
Volume Right	31	0	24
cSH	464	1700	1700
Volume to Capacity	0.07	0.44	0.23
Queue Length 95th (ft)	5	0	0
Control Delay (s)	13.3	0.0	0.0
Lane LOS	B		
Approach Delay (s)	13.3	0.0	
Approach LOS	B		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	9	145	472	17	31	28
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	11	181	590	21	39	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		386	212			
pX, platoon unblocked	0.88				0.88	0.88
vC, conflicting volume	611				804	601
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	558				778	546
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				88	93
cM capacity (veh/h)	891				317	473

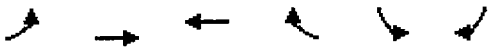
Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	11	181	611	74
Volume Left	11	0	0	39
Volume Right	0	0	21	35
cSH	891	1700	1700	376
Volume to Capacity	0.01	0.11	0.36	0.20
Queue Length 95th (ft)	1	0	0	18
Control Delay (s)	9.1	0.0	0.0	16.9
Lane LOS	A			C
Approach Delay (s)	0.5		0.0	16.9
Approach LOS				C

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	9	20	139	361	125	145
Peak Hour Factor	0.80	0.80	0.85	0.93	0.85	0.85
Hourly flow rate (vph)	11	25	164	388	147	171
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)	194			404		
pX, platoon unblocked						
vC, conflicting volume			36		739	24
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			36		739	24
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			90		57	84
cM capacity (veh/h)			1575		345	1053

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	36	164	388	318
Volume Left	0	164	0	147
Volume Right	25	0	0	171
cSH	1700	1575	1700	540
Volume to Capacity	0.02	0.10	0.23	0.59
Queue Length 95th (ft)	0	9	0	94
Control Delay (s)	0.0	7.6	0.0	20.8
Lane LOS		A		C
Approach Delay (s)	0.0	2.2		20.8
Approach LOS				C

Intersection Summary			
Average Delay	8.6		
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	92	604	0	0	298	0
Peak Hour Factor	0.80	0.80	0.80	0.80	0.85	0.80
Hourly flow rate (vph)	115	755	0	0	351	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		274	258			
pX, platoon unblocked						
vC, conflicting volume	0				482	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				482	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				27	100
cM capacity (veh/h)	1622				477	1084

Direction, Lane #	EB 1	EB 2	EB 3	SB 1
Volume Total	266	302	302	351
Volume Left	115	0	0	351
Volume Right	0	0	0	0
cSH	1622	1700	1700	477
Volume to Capacity	0.07	0.18	0.18	0.73
Queue Length 95th (ft)	6	0	0	151
Control Delay (s)	3.5	0.0	0.0	30.7
Lane LOS	A			D
Approach Delay (s)	1.1			30.7
Approach LOS				D

Intersection Summary			
Average Delay	9.6		
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		

TRAFFIC ANALYSIS

Broad Street Two-Way Conversion

Chestnut Street to Stone Street
City of Rochester, New York

March 2011

Prepared by:

LABELLA Associates, P.C.

300 State Street, Suite 201
Rochester, NY 14614

Introduction

The City of Rochester and Monroe County Department of Transportation are investigating the conversion of Broad St from one-way to two-way traffic. The segment of Broad St to the east of Chestnut St is being analyzed as part of the City's Broad-Court-Chestnut (BCC) project, while the segment between Chestnut St and Stone St has been analyzed as part of the Midtown Redevelopment project. Phase 1 of the Midtown project would include the two-way conversion between Chestnut St and S. Clinton Ave, and Phase 2 would include the two-way conversion between S. Clinton Ave and Stone St.

The traffic analysis for the two-way conversion of Broad St between Chestnut St and Stone St has been completed by LaBella Associates per discussions at a coordination meeting on December 3, 2010. The analysis incorporates design and analysis that has recently been completed by Clark Patterson-Lee and SRF & Associates for the portion of Broad St to the east of Chestnut St as part of the City's BCC project.

Following is a description of the methodology used, proposed lane and intersection configuration, and a summary of the results that support the full two-way conversion of Broad St. Plans, traffic volume diagrams, and Synchro capacity analysis reports are included in the Appendix.

Methodology

Intersections Analyzed

- Broad St / Chestnut St
- Broad St / Road "E" (Future Intersection)
- Broad St / Midtown Garage Ramp
- Broad St / Clinton Ave
- Broad St / Stone St / Bausch & Lomb Place
- Broad St / South Ave

Existing Traffic Counts

Traffic counts were taken by LaBella Associates at the intersections with Clinton Ave and Chestnut St in September 2010. Traffic counts from 2008 were used at the Stone St and South Ave intersections. Refer to Figure 1 for a summary of the existing traffic volumes along Broad Street.

Background Traffic Volumes

The existing traffic counts were projected to the design year 2032 (ETC+20 for the Midtown Redevelopment) using a growth rate of 0.5% per year. Traffic volumes for the components of the former Renaissance Square project (downtown transit center, MCC campus) were also added to determine background, or "No-Build" traffic volumes. Refer to Figure 2 for a summary of the Broad St background traffic volumes.

Future Traffic Volumes

Trips generated from the proposed Midtown Redevelopment were added to the background traffic volumes (refer to Figure 3 for Midtown trip generation volumes). Broad St eastbound traffic volumes were derived from the MCDOT City Coordination Spreadsheet and also added to the background traffic volumes (refer to Figure 4). The background, Midtown and Broad St eastbound volumes were combined to determine the future traffic volumes with a full two-way conversion of Broad St (refer to Figure 5). The Synchro software package was utilized to model the studied intersections. Existing signal timings (provided by MCDOT and verified in the field) were used.

Proposed Intersection and Lane Configuration

Following is a description of the proposed travel lane and intersection configuration for the segments of Broad Street and intersections affected by the two-way conversion (also refer to Dwgs. BP-01 and BP-02):

- Chestnut St to S. Clinton Ave Segment: This segment of Broad Street will generally consist of three lanes plus recessed parking lanes. Broad St westbound will include one travel lane with recessed parking, which widens to two travel lanes at the Clinton Ave intersection. The eastbound direction will include one travel lane with recessed parking. A center two-way left turn lane will be provided between Atlas St and the Midtown Parking Garage ramps.

- S. Clinton Ave to Stone St Segment: This segment will include two westbound travel lanes and one eastbound travel lane. The northern curb line and existing recessed parking area for the Clinton Square building will be maintained.

- Stone St to South Ave Segment: The existing curb lines will be maintained. The proposed lane configuration includes one eastbound travel lane and two westbound travel lanes (with left turn lanes at the South Ave intersection). A portion of the existing concrete median will need to be reconstructed to the north to accommodate an eastbound left turn / U-turn lane at Stone St.

- Broad St / Chestnut St Intersection: This intersection will be reconstructed as part of the City's Broad-Court-Chestnut (BCC) project, which will likely precede the Midtown Redevelopment project. Initially, the Broad Street westbound approach will be constructed with two lanes (through / left and through / right). This approach will require re-striping to include one through lane and one left turn lane once the two-way conversion of Broad St is implemented between Chestnut St and S. Clinton Ave. The Broad St eastbound approach will include a left turn lane and a through/right turn lane. It is expected that the BCC project will include underground conduit for the future signal equipment needed for the eastbound approach.

- Broad St / Clinton Ave Intersection: The new Broad St eastbound approach will include a through lane and left turn lane. The westbound approach will include two through travel lanes. On S. Clinton Ave, the existing right curb lane is proposed to be converted to a right turn only lane, as this travel lane becomes a parking / bus lane north of the Broad St intersection. The northbound dual left turn from S. Clinton Ave to Broad St will be maintained, and "cat tracks" may be helpful to guide vehicles through the turn. New signal equipment will be installed for the eastbound approach.

- Broad St / Stone St / B&L Place Intersection: The existing splitter island will be removed to accommodate the new eastbound through movement. A portion of the existing concrete median at the eastbound approach will be reconstructed to allow for a left turn lane. Many vehicles currently make a u-turn at the eastbound approach in order to access the South Ave Parking Garage. AASHTO turning templates indicate that the proposed geometry will accommodate the eastbound u-turn movement. The proposed left turn lane from Broad St westbound to Bausch & Lomb Place will be separated with a striped median to align with the eastbound left turn lane. Signal equipment for the eastbound approach will be relocated (from the splitter island) or replaced.

- Broad St / South Ave Intersection: The existing lane configuration will be maintained at this intersection.

Level of Service Analysis

A level of service analysis was completed for the Future (Year 2032) condition with the conversion of Broad St to two-way traffic. Results of the analysis are summarized in the following tables:

Broad St / Chestnut St Intersection (Signalized)

Street & Approach		Peak Hour	ETC+20 LOS (Approach Delay)
Broad St Eastbound	Left	AM	C (24.7)
		PM	C (28.4)
	Thru/Right	AM	C (21.8)
		PM	C (33.3)
	Overall	**AM**	**C (22.8)**
		PM	**C (31.9)**
Broad St Westbound	Left	AM	C (24.5)
		PM	D (36.7)
	Thru/Right	AM	C (25.8)
		PM	C (21.7)
	Overall	**AM**	**C (25.5)**
		PM	**C (28.4)**
Chestnut St Northbound	Left	AM	B (18.4)
		PM	D (48.4)
	Thru	AM	C (25.8)
		PM	B (18.3)
	Overall	**AM**	**C (23.3)**
		PM	**C (25.9)**
Chestnut St Southbound	Left	AM	A (2.5)
		PM	B (14.0)
	Thru/Right	AM	C (22.1)
		PM	D (37.8)
	Overall	**AM**	**C (21.6)**
		PM	**D (37.2)**
Overall Intersection		**AM**	**C (22.6)**
		PM	**C (31.1)**

Broad St / Future Road "E" Intersection (Unsignalized)

Street & Approach		Peak Hour	ETC+20 LOS (Approach Delay)
Broad St Eastbound	Left	AM	B (10.2)
		PM	A (8.8)
Road "E" Southbound	Overall	AM	D (28.9)
		PM	C (17.2)
Overall Intersection		**AM**	**A (1.1)**
		PM	**A (1.5)**

Broad St / Midtown Garage Ramp Intersection (Unsignalized)

Street & Approach		Peak Hour	ETC+20 LOS (Approach Delay)
Broad St Westbound	Left	AM	A (9.9)
		PM	A (8.2)
Garage Ramp Northbound	Overall	AM	F (168.9) v/c=1.2
		PM	E (38.8) v/c=0.77
Overall Intersection		**AM**	**B (31.7)**
		PM	**A (11.7)**

Broad St / Clinton Ave Intersection (Signalized)

Street & Approach		Peak Hour	ETC+20 LOS (Approach Delay)
Broad St Eastbound	Left	AM	C (32.1)
		PM	E (58.3) v/c 0.69
	Thru	AM	C (30.2)
		PM	D (40.1)
	Overall	**AM**	**C (30.5)**
		PM	**D (46.7)**
Broad St Westbound	**Overall**	**AM**	**C (25.2)**
		PM	**D (43.4)**
Clinton Ave Northbound	Left	AM	A (6.3)
		PM	A (2.2)
	Thru	AM	A (5.2)
		PM	A (2.2)
	Right	AM	A (0.9)
		PM	A (0.2)
	Overall	**AM**	**A (5.0)**
		PM	**A (2.0)**
Overall Intersection		**AM**	**B (11.8)**
		PM	**B (16.2)**

Broad St / Stone St Intersection (Signalized)

Street & Approach		Peak Hour	ETC+20 LOS (Approach Delay)
Broad St Eastbound	Left	AM	A (6.2)
		PM	A (2.9)
	Thru/Right	AM	A (0.3)
		PM	A (1.5)
	Overall	**AM**	**A (2.3)**
		PM	**A (1.8)**
Broad St Westbound	Left	AM	A (4.1)
		PM	A (8.3)
	Thru/Right	AM	A (5.3)
		PM	A (9.6)
	Overall	**AM**	**A (5.2)**
		PM	**A (9.5)**
Stone St Southbound	**Overall**	**AM**	**D (46.2)**
		PM	**D (41.0)**
Overall Intersection		**AM**	**A (4.4)**
		PM	**B (12.7)**

Broad St / South Ave Intersection (Signalized)

Street & Approach		Peak Hour	ETC+20 LOS (Approach Delay)	ETC+20 LOS (Approach Delay) With Improvements
Broad St Eastbound	Thru	AM	D (48.4)	N/A
		PM	D (41.4)	C (31.8)
	Right	AM	C (31.9)	N/A
		PM	F (136.7)	E (56.7) v/c 0.89
	Overall	**AM**	**D (44.0)**	**N/A**
		PM	**F (94.6)**	**D (45.7)**
Broad St Westbound	Left	AM	C (33.5)	N/A
		PM	C (25.5)	C (28.9)
	Thru/Right	AM	B (14.3)	N/A
		PM	B (10.9)	B (12.2)
	Overall	**AM**	**B (18.6)**	**N/A**
		PM	**B (16.8)**	**B (18.9)**
South Ave Southbound	Left	AM	A (9.1)	N/A
		PM	B (11.7)	B (12.6)
	Thru/Right	AM	A (7.5)	N/A
		PM	B (13.1)	B (14.7)
	Overall	**AM**	**A (7.7)**	**N/A**
		PM	**B (13.0)**	**B (14.5)**
Overall Intersection		**AM**	**C (20.4)**	**N/A**
		PM	**C (29.5)**	**C (21.8)**

Conclusions

The level of service analysis indicates that the Broad St intersections with Chestnut St, Future Road "E", Clinton Ave and Stone St will operate with acceptable levels of service and delay upon the conversion of Broad St from one-way to two-way traffic.

At the Broad St / South Ave intersection, the eastbound approach is projected to operate at LOS "F" under future conditions. Signal timing modifications could improve the approach LOS to "E" with a volume-to-capacity ratio of 0.89. The timing changes include reducing the green time for the exclusive westbound left turn phase and adding the time to the combined eastbound / westbound phase (the existing cycle length would be maintained, as would the phasing for the South Ave approach). This intersection should be monitored once the two-way conversion is implemented and the Midtown site redevelopment progresses to determine if signal timing modifications are needed.

At the Broad St / Midtown Parking Garage ramp intersection, the level of service analysis indicates that the ramp approach will operate at LOS "F" during the morning peak hour. The volume of vehicles exiting the garage is projected based on expected distribution percentages for the garage exit ramps. The majority of the vehicles using the Broad St exit ramp will likely be coming from Level C, where the ramp originates. These vehicles also have the option to use the Court St exit ramp. If the projected delays at the Broad St ramp are realized, then it is likely that more vehicles will utilize the Court St ramp instead. For example, if 30 of the left turning vehicles at the Broad St ramp instead used the Court St ramp, the v/c ratio at the Broad St ramp would be less than 1.0.

Actual delays at the Broad St ramp may be less than projected, due to the likelihood that the nearby signals at S. Clinton Ave and Chestnut St will provide gaps in traffic along Broad St. Nonetheless, this intersection should be monitored as the Midtown Redevelopment progresses in order to evaluate actual traffic volumes and garage usage patterns.

Refer to the Appendix for plans showing the proposed Broad St lane configuration, traffic volume diagrams, turning movement figures, and Synchro capacity analysis reports.

Preliminary Plans

NORTH

FOR BROAD STREET CONTINUATION, SEE DRAWING BP-02

BAUSCH & LOMB

CLINTON SQUARE

CHASE TOWER

SOUTH CLINTON AVENUE

ONE WAY

SOUTH CLINTON AVENUE

EXISTING UNDERGROUND GARAGE ENTRANCE

FIRST UNIVERSALIST CHURCH

ONE WAY

XEROX TOWER

2

48.0' R.O.W.

FUTURE ROAD A

PROPOSED PEDESTRIAN TUNNEL

EXISTING SERVICE TUNNEL

PROPOSED PAETEC DEVELOPMENT

1

EAST MAIN STREET

SIBLEY'S BUILDING

BROAD STREET

PEDESTRIAN CORRIDOR

FUTURE ROAD B

COURT STREET

EXISTING UNDERGROUND GARAGE ENTRANCE/EXIT

MIDTOWN TOWER

3

PROPOSED MORGAN/CHRISTA DEVELOPMENT

OPEN SPACE

4

FUTURE ROAD D

PROPOSED SERVICE TUNNEL

NEW SIGNALIZED INTERSECTION

5

XEROX AUDITORIUM

FUTURE ROAD C

FUTURE ROAD E

7

GARAGE STAIRWELL

6a

6b

PROPOSED SERVICE TUNNEL/GARAGE EXIT

LIBERTY POLE

BANK OF AMERICA

FRANKLIN STREET

MWOOD ESTATES

ELM STREET

ATLAS STREET

SURFACE PARKING

NEW SIGNAL EQUIPMENT

CHESTNUT STREET

CADILLAC HOTEL

RELOCATE GARAGE EXIT

MIDTOWN CAFE

ACTION FOR A BETTER COMMUNITY

RIEDMAN AGENCY

EAST AVENUE

EAST MAIN STREET

EUCLID STREET

ONE WAY (CHESTNUT TO ATLAS ONLY)

STILLSON STREET

CHESTNUT PLAZA

LAWN STREET

SURFACE PARKING

KEY

1. PARCEL #1, 1.859 ACRES
2. PARCEL #2, 0.790 ACRES
3. PARCEL #3, 1.687 ACRES
4. PARCEL #4, 0.268 ACRES
5. PARCEL #5, 0.933 ACRES
6a. PARCEL #6a, 0.239 ACRES
6b. PARCEL #6b, 0.207 ACRES
7. PARCEL #7, 0.337 ACRES

LEGEND

- PROPOSED PAETEC BUILDING
- PROPOSED MIDTOWN REDEVELOPMENT
- EXISTING PROPERTY LINES/HIGHWAY BOUNDARY
- PROPOSED PROPERTY LINES/HIGHWAY BOUNDARY
- EXISTING UNDERGROUND PARKING GARAGE
- PROPOSED TUNNEL
- EXISTING TUNNEL

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1" = 50'

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NO.	REVISION	BY	DATE
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2			
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6			

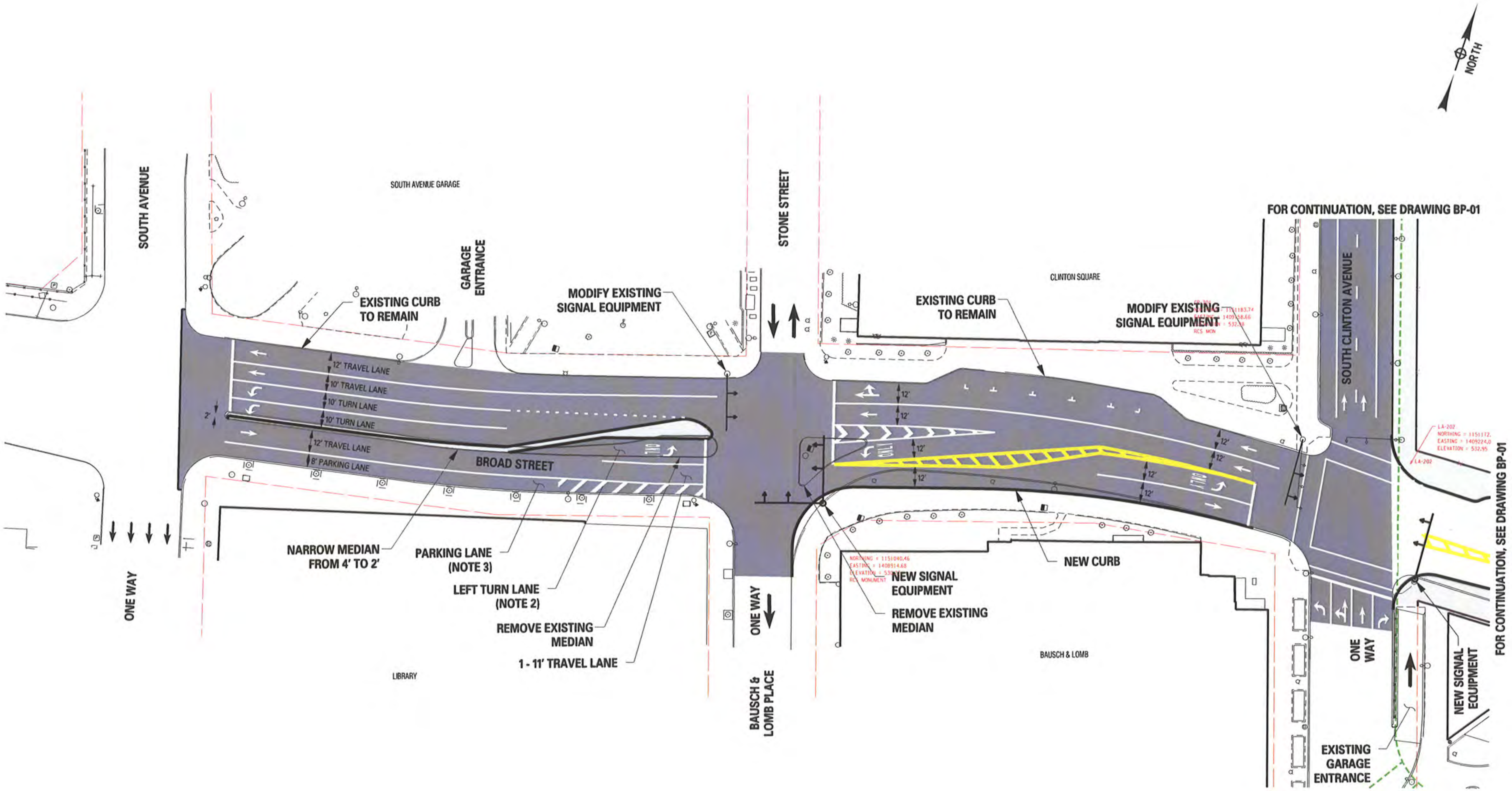
LABELA Associates, P.C.
300 STATE STREET
ROCHESTER, NY 14614
P: (585) 454-6110
F: (585) 454-3066
www.labelapc.com

PROJECT/CLIENT
MIDTOWN REDEVELOPMENT PROJECT
(FORMER MIDTOWN PLAZA SITE)
CITY OF ROCHESTER
DEPARTMENT OF ENVIRONMENTAL SERVICES

DRAWING TITLE
BASE PLAN

ISSUED FOR: FDR
DATE: APRIL 19, 2011
DESIGNED BY: RAY
DRAWN BY: CDN
REVIEWED BY: BSM

PROJECT/DRAWING NUMBER
210301
BP-01



NOTES:

1. PAVEMENT REHABILITATION (MILL AND OVERLAY) IS ANTICIPATED ON BROAD STREET.
2. U-TURNS WOULD CONTINUE TO BE PERMITTED AT STONE STREET.
3. THE LOSS OF THREE OR FOUR PARKING SPACES IS ANTICPATED ADJACENT TO THE LIBRARY.

LEGEND

- PROPOSED PAETEC BUILDING
- PROPOSED MIDTOWN REDEVELOPMENT
- EXISTING PROPERTY LINES/HIGHWAY BOUNDARY
- PROPOSED PROPERTY LINES/HIGHWAY BOUNDARY
- EXISTING UNDERGROUND PARKING GARAGE
- PROPOSED TUNNEL
- EXISTING TUNNEL

30 0 30 60 90 120'

1" = 30'

NO	REVISION	BY	DATE
1			
2			
3			
4			
5			
6			

It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to alter an item in any way. If an item bearing the seal of an architect, engineer, or land surveyor is altered, the altering architect, engineer or land surveyor shall affix to the item their seal and notation "altered by" followed by their signature and date of such alteration, and a specific description of the alteration.

LABELLA Associates, P.C.
300 STATE STREET
ROCHESTER, NY 14614
P: (585) 454-6110
F: (585) 454-3066
www.labellapc.com

PROJECT/CLIENT

MIDTOWN REDEVELOPMENT PROJECT (FORMER MIDTOWN PLAZA SITE)
CITY OF ROCHESTER DEPARTMENT OF ENVIRONMENTAL SERVICES

DRAWING TITLE

BROAD STREET ONE-WAY CONVERSION

ISSUED FOR: FDR
DATE: APRIL 19, 2011
DESIGNED BY: RAH
DRAWN BY: CON
REVIEWED BY: BRM

PROJECT/DRAWING NUMBER
210301
BP-02

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Traffic Volume Figures

Traffic Study.dgn
Default

BROAD ST TRAFFIC VOLUMES
EXISTING (YEAR 2010)

XX (XX) = AM (PM)
AM PEAK HOUR: 7:45-8:45 AM
PM PEAK HOUR: 4:45-5:45 PM

N

N.T.S.

FIGURE 1
EXISTING (YEAR 2010) TRAFFIC VOLUMES
AM & PM PEAK HOUR

MIDTOWN REDEVELOPMENT
BROAD ST TRAFFIC ANALYSIS
CITY OF ROCHESTER, MONROE COUNTY

LABELLA Associates, P.C.
300 State Street
Rochester, NY 14614
585.454.6110

Traffic Study.dgn
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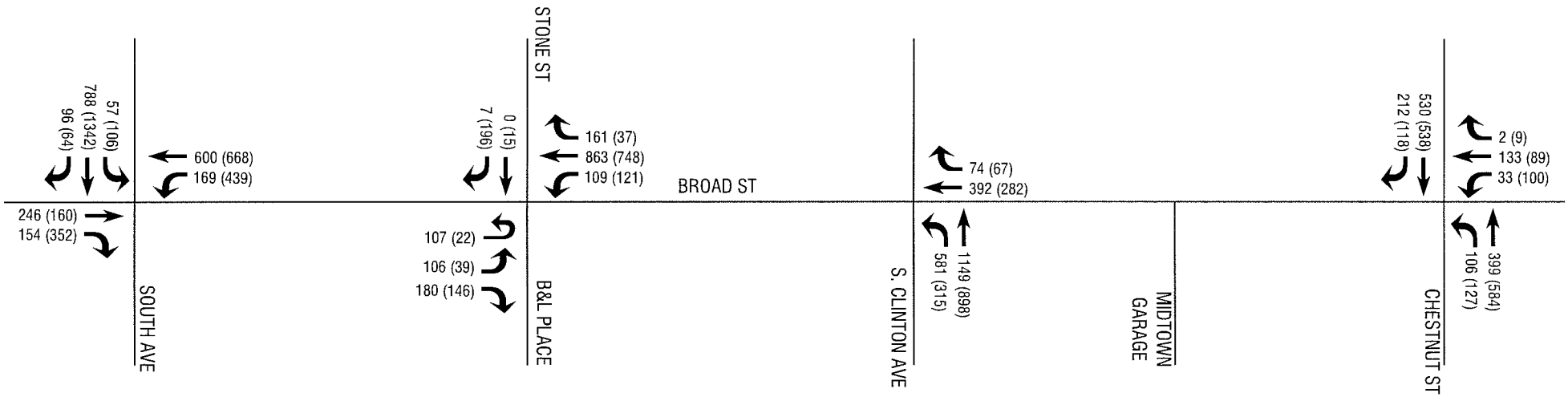

BROAD ST TRAFFIC VOLUMES
NO-BUILD (YEAR 2032)

XX (XX) = AM (PM)
AM PEAK HOUR: 7:45-8:45 AM
PM PEAK HOUR: 4:45-5:45 PM

N

N.T.S.

FIGURE 2
NO-BUILD (YEAR 2032) TRAFFIC VOLUMES
AM & PM PEAK HOUR

MIDTOWN REDEVELOPMENT
BROAD ST TRAFFIC ANALYSIS
CITY OF ROCHESTER, MONROE COUNTY

LABELLA Associates, P.C.
300 State Street
Rochester, NY 14614
585.454.6110

Traffic Study.dgn
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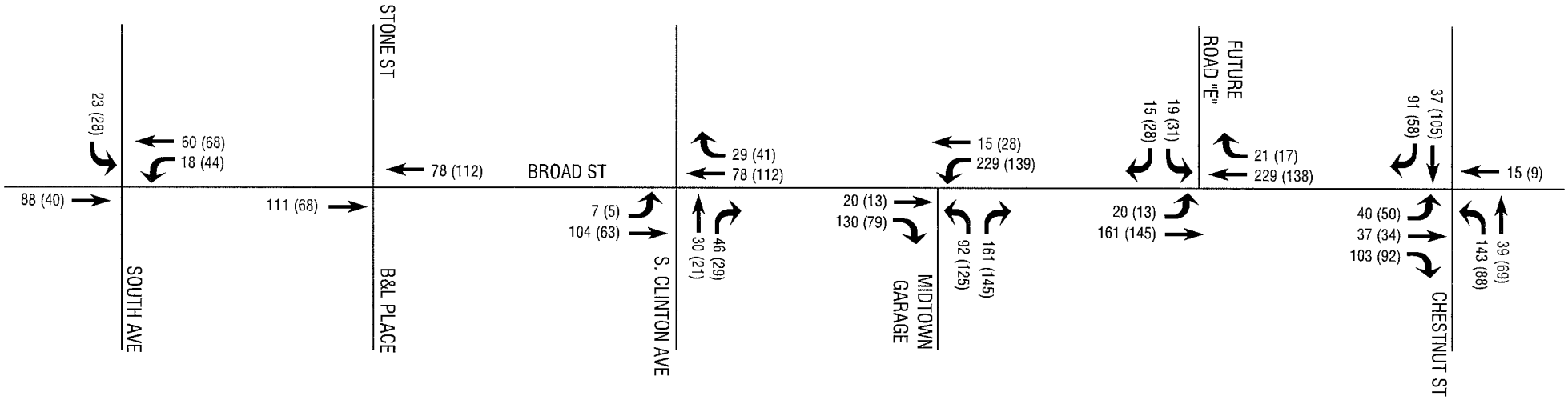

MIDTOWN REDEVELOPMENT
TRIP GENERATION
(ASSUMING BROAD ST IS TWO-WAY)

XX (XX) = AM (PM)
AM PEAK HOUR: 7:45-8:45 AM
PM PEAK HOUR: 4:45-5:45 PM

N

N.T.S.

FIGURE 3
MIDTOWN REDEVELOPMENT TRIP GENERATION
AM & PM PEAK HOUR

MIDTOWN REDEVELOPMENT
BROAD ST TRAFFIC ANALYSIS
CITY OF ROCHESTER, MONROE COUNTY

LABELLA Associates, P.C.
300 State Street
Rochester, NY 14614
585.454.6110

Traffic Study.dgn
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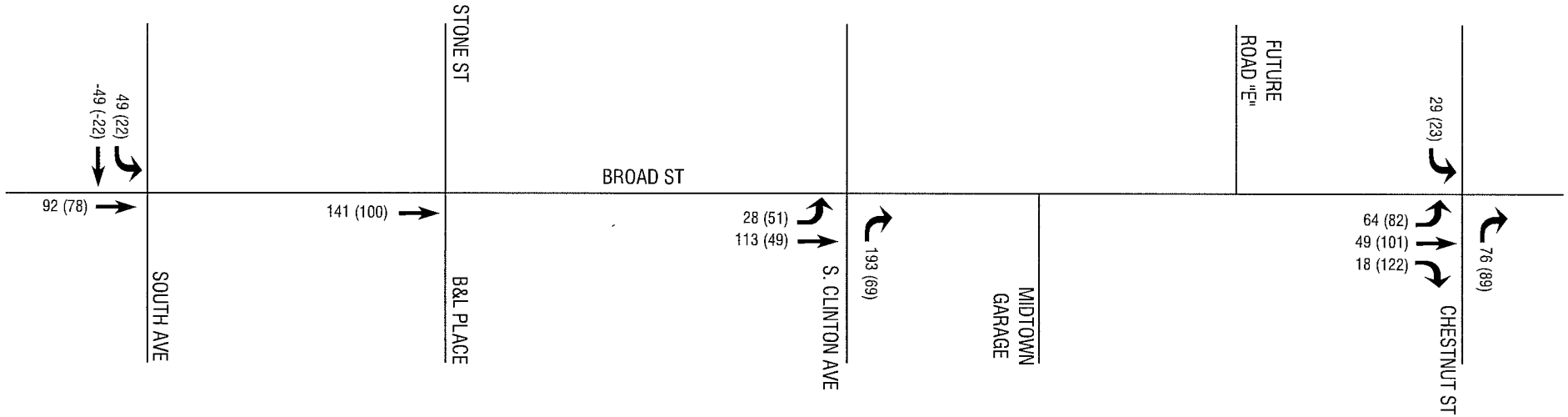

BROAD ST TWO-WAY CONVERSION VOLUMES
(EASTBOUND VOLUMES DERIVED FROM
MCDOT CITY COORDINATION SPREADSHEET)

XX (XX) = AM (PM)
AM PEAK HOUR: 7:45-8:45 AM
PM PEAK HOUR: 4:45-5:45 PM

N

N.T.S.

FIGURE 4
BROAD ST TWO-WAY CONVERSION VOLUMES
AM & PM PEAK HOUR

MIDTOWN REDEVELOPMENT
BROAD ST TRAFFIC ANALYSIS
CITY OF ROCHESTER, MONROE COUNTY

LABELLA Associates, P.C.
300 State Street
Rochester, NY 14614
585.454.6110

Traffic Study.dgn
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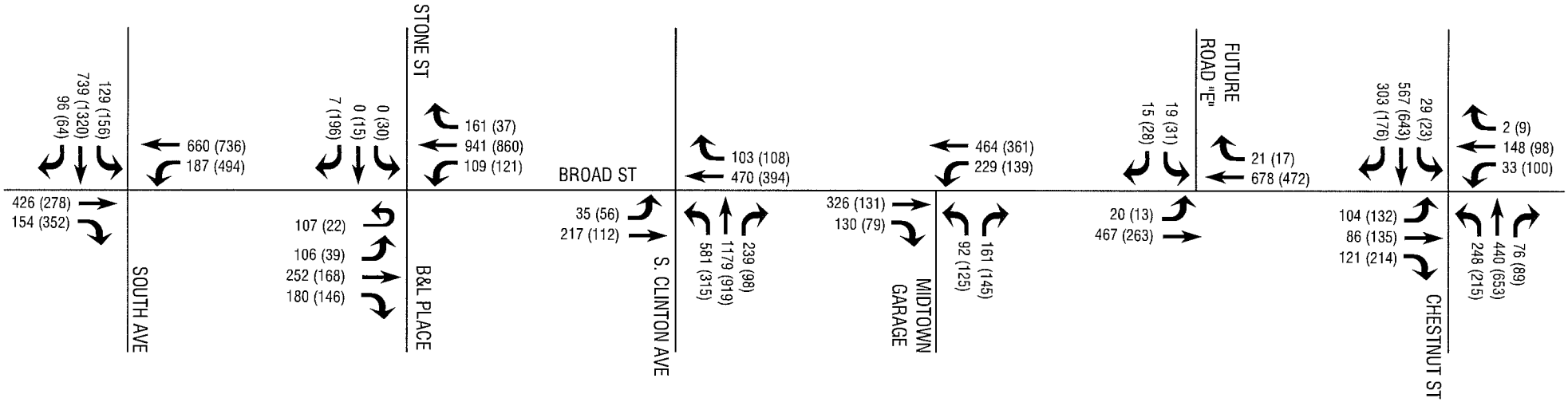


BROAD ST TRAFFIC VOLUMES
FUTURE (YEAR 2032)
WITH FULL TWO-WAY CONVERSION
AND MIDTOWN REDEVELOPMENT

XX (XX) = AM (PM)
AM PEAK HOUR: 7:45-8:45 AM
PM PEAK HOUR: 4:45-5:45 PM

N

N.T.S.

FIGURE 5
FUTURE (YEAR 2032) TRAFFIC VOLUMES
AM & PM PEAK HOUR

MIDTOWN REDEVELOPMENT
BROAD ST TRAFFIC ANALYSIS
CITY OF ROCHESTER, MONROE COUNTY

LABELLA Associates, P.C.
300 State Street
Rochester, NY 14614
585.454.6110

Level of Service Analysis
Future (2032) Condition
AM Peak Hour

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)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.94		1.00	1.00		1.00	0.99		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	1.00		1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1599		1770	1854		1770	3425		1770	3270	
Flt Permitted	0.57	1.00		0.47	1.00		0.13	1.00		0.33	1.00	
Satd. Flow (perm)	1066	1599		883	1854		247	3425		615	3270	
Volume (vph)	104	86	121	33	148	2	248	402	76	29	567	303
Peak-hour factor, PHF	0.90	0.90	0.90	0.73	0.93	0.50	0.88	0.89	0.90	0.90	0.80	0.81
Adj. Flow (vph)	116	96	134	45	159	4	282	452	84	32	709	374
RTOR Reduction (vph)	0	50	0	0	1	0	0	15	0	0	64	0
Lane Group Flow (vph)	116	180	0	45	162	0	282	521	0	32	1019	0
Confl. Peds. (#/hr)			64			20			30			30
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		3			3		5	2		1	6	
Permitted Phases	3	3		3	3		2			6		
Actuated Green, G (s)	29.0	29.0		29.0	29.0		52.0	37.0		60.0	41.0	
Effective Green, g (s)	31.0	31.0		31.0	31.0		56.0	39.0		63.0	43.0	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.56	0.39		0.63	0.43	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	330	496		274	575		397	1336		630	1406	
v/s Ratio Prot		c0.14			0.09		c0.12	0.16		0.01	c0.33	
v/s Ratio Perm	0.11			0.05			0.28			0.02		
v/c Ratio	0.35	0.36		0.16	0.28		0.71	0.39		0.05	0.72	
Uniform Delay, d1	26.7	26.8		25.1	26.1		18.3	21.9		7.6	23.6	
Progression Factor	0.81	0.74		0.93	0.94		0.68	1.14		0.33	0.87	
Incremental Delay, d2	2.9	2.0		1.3	1.2		5.9	0.9		0.0	1.5	
Delay (s)	24.7	21.8		24.5	25.8		18.4	25.8		2.5	22.1	
Level of Service	C	C		C	C		B	C		A	C	
Approach Delay (s)		22.8			25.5			23.3			21.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

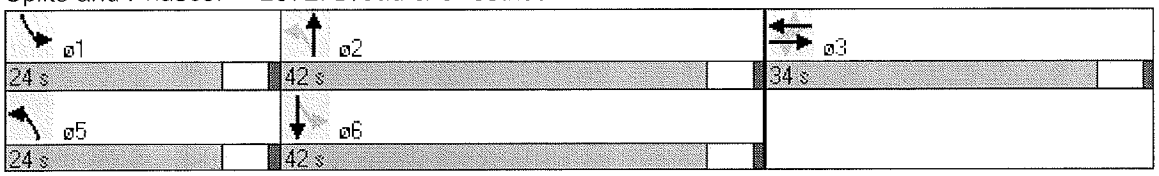
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	104	86	33	148	248	402	29	567
Lane Group Flow (vph)	116	230	45	163	282	536	32	1083
Turn Type	Perm		Perm		pm+pt		pm+pt	
Protected Phases		3		3	5	2	1	6
Permitted Phases	3	3	3	3	2		6	
Detector Phases	3	3	3	3	5	2	1	6
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	17.0
Minimum Split (s)	27.0	27.0	27.0	27.0	12.0	12.0	12.0	32.0
Total Split (s)	34.0	34.0	34.0	34.0	24.0	42.0	24.0	42.0
Total Split (%)	34.0%	34.0%	34.0%	34.0%	24.0%	42.0%	24.0%	42.0%
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	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	Max	C-Max	None
v/c Ratio	0.35	0.42	0.16	0.28	0.75	0.40	0.05	0.74
Control Delay	25.4	16.2	25.3	26.1	21.8	24.9	2.5	22.5
Queue Delay	61.2	0.0	0.0	12.9	0.1	0.5	0.0	105.3
Total Delay	86.6	16.2	25.3	38.9	21.9	25.4	2.5	127.9
Queue Length 50th (ft)	46	56	26	95	66	144	2	357
Queue Length 95th (ft)	85	110	50	164	112	193	7	122
Internal Link Dist (ft)		142		614		255		153
Turn Bay Length (ft)					125			
Base Capacity (vph)	330	546	274	575	447	1350	642	1469
Starvation Cap Reductn	0	0	0	0	7	424	0	588
Spillback Cap Reductn	220	0	0	383	0	126	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.42	0.16	0.85	0.64	0.58	0.05	1.23

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 19 (19%), Referenced to phase 1:SBL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 2572: Broad & Chestnut



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)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Util. Factor	1.00	1.00			0.95		1.00	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			0.98		1.00	1.00	0.76			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.97		1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1770	1863			3354		1770	3539	1204			
Flt Permitted	0.23	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	433	1863			3354		1770	3539	1204			
Volume (vph)	35	217	0	0	470	103	581	1179	239	0	0	0
Peak-hour factor, PHF	0.80	0.90	0.90	0.90	0.86	0.66	0.90	0.94	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	241	0	0	547	156	646	1254	266	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	84	0	0	0
Lane Group Flow (vph)	44	241	0	0	703	0	646	1254	182	0	0	0
Confl. Peds. (#/hr)			94			55			94			52
Turn Type	Perm						Split		Perm			
Protected Phases		2			2		1	1				
Permitted Phases	2	2			2				1			
Actuated Green, G (s)	32.0	32.0			32.0		56.0	56.0	56.0			
Effective Green, g (s)	35.0	35.0			35.0		59.0	59.0	59.0			
Actuated g/C Ratio	0.35	0.35			0.35		0.59	0.59	0.59			
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Lane Grp Cap (vph)	152	652			1174		1044	2088	710			
v/s Ratio Prot		0.13			c0.21		c0.37	0.35				
v/s Ratio Perm	0.10								0.22			
v/c Ratio	0.29	0.37			0.60		0.62	0.60	0.26			
Uniform Delay, d1	23.5	24.3			26.7		13.2	13.0	9.9			
Progression Factor	1.17	1.18			0.87		0.34	0.33	0.03			
Incremental Delay, d2	4.6	1.6			2.1		1.9	0.9	0.6			
Delay (s)	32.1	30.2			25.2		6.3	5.2	0.9			
Level of Service	C	C			C		A	A	A			
Approach Delay (s)		30.5			25.2			5.0			0.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

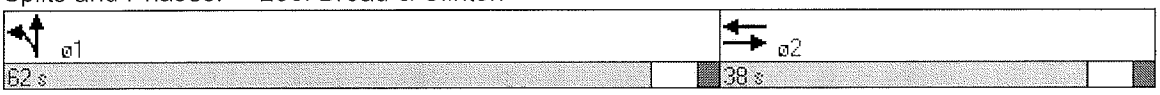
c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Configurations						
Volume (vph)	35	217	470	581	1179	239
Lane Group Flow (vph)	44	241	703	646	1254	266
Turn Type	Perm			Split		Perm
Protected Phases		2	2	1	1	
Permitted Phases	2	2	2			1
Minimum Split (s)	29.0	29.0	29.0	28.0	28.0	28.0
Total Split (s)	38.0	38.0	38.0	62.0	62.0	62.0
Total Split (%)	38.0%	38.0%	38.0%	62.0%	62.0%	62.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?						
v/c Ratio	0.29	0.37	0.60	0.62	0.60	0.34
Control Delay	34.1	30.8	25.5	6.5	5.3	0.9
Queue Delay	0.0	1.4	0.2	1.1	0.6	0.0
Total Delay	34.1	32.2	25.7	7.7	5.9	0.9
Queue Length 50th (ft)	25	136	199	79	75	0
Queue Length 95th (ft)	50	203	229	m130	97	m0
Internal Link Dist (ft)		249	104		346	
Turn Bay Length (ft)						
Base Capacity (vph)	152	652	1174	1044	2088	794
Starvation Cap Reductn	0	243	0	194	430	0
Spillback Cap Reductn	0	0	89	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.59	0.65	0.76	0.76	0.34

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 16 (16%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 256: Broad & Clinton



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0						3.0
Lane Util. Factor		1.00	1.00		1.00	0.95						1.00
Frpb, ped/bikes		1.00	0.93		1.00	0.98						0.96
Flpb, ped/bikes		1.00	1.00		1.00	1.00						1.00
Frt		1.00	0.94		1.00	0.98						0.86
Flt Protected		0.95	1.00		0.95	1.00						1.00
Satd. Flow (prot)		1770	1622		1770	3382						1549
Flt Permitted		0.19	1.00		0.48	1.00						1.00
Satd. Flow (perm)		351	1622		903	3382						1549
Volume (vph)	107	106	252	180	109	941	161	0	0	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	119	118	280	200	121	1046	179	0	0	0	0	0
RTOR Reduction (vph)	0	0	8	0	0	7	0	0	0	0	0	9
Lane Group Flow (vph)	0	237	472	0	121	1218	0	0	0	0	0	0
Confl. Peds. (#/hr)				68			62			1		
Turn Type	custom	pm+pt			Perm						Perm	
Protected Phases		2	1 2			1						3
Permitted Phases	2	1 2	1 2		1	1					3	
Actuated Green, G (s)		83.0	88.0		69.9	69.9						1.5
Effective Green, g (s)		87.0	90.0		71.9	71.9						4.0
Actuated g/C Ratio		0.87	0.90		0.72	0.72						0.04
Clearance Time (s)		5.0			5.0	5.0						5.5
Vehicle Extension (s)		2.0			2.0	2.0						5.0
Lane Grp Cap (vph)		520	1460		649	2432						62
v/s Ratio Prot		c0.07	0.30			c0.36						c0.01
v/s Ratio Perm		0.33			0.13							
v/c Ratio		0.46	0.32		0.19	0.50						0.01
Uniform Delay, d1		7.4	0.7		4.6	6.2						46.1
Progression Factor		0.81	0.41		0.77	0.76						1.00
Incremental Delay, d2		0.2	0.0		0.5	0.6						0.1
Delay (s)		6.2	0.3		4.1	5.3						46.2
Level of Service		A	A		A	A						D
Approach Delay (s)			2.3			5.2			0.0			46.2
Approach LOS			A			A			A			D

Intersection Summary			
HCM Average Control Delay	4.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

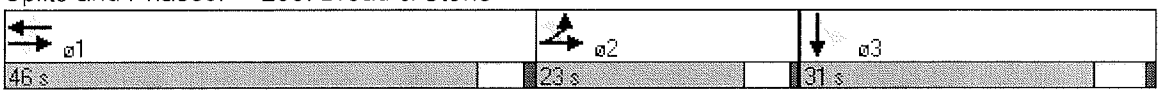
c Critical Lane Group

Lane Group	EBU	EBL	EBT	WBL	WBT	SBT
Lane Configurations						
Volume (vph)	107	106	252	109	941	0
Lane Group Flow (vph)	0	237	480	121	1225	9
Turn Type	custom	pm+pt		Perm		
Protected Phases		2	1 2		1	3
Permitted Phases	2	1 2	1 2	1	1	
Detector Phases	2	2	1 2	1	1	3
Minimum Initial (s)	3.0	3.0		13.0	13.0	6.0
Minimum Split (s)	12.0	12.0		28.0	28.0	30.0
Total Split (s)	23.0	23.0	69.0	46.0	46.0	31.0
Total Split (%)	23.0%	23.0%	69.0%	46.0%	46.0%	31.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0
Lead/Lag	Lag	Lag		Lead	Lead	
Lead-Lag Optimize?						
Recall Mode	None	None		C-Max	C-Max	None
v/c Ratio		0.59	0.31	0.22	0.47	0.03
Control Delay		14.9	0.6	5.1	4.8	0.0
Queue Delay		0.0	0.1	0.0	0.4	0.0
Total Delay		14.9	0.7	5.1	5.2	0.0
Queue Length 50th (ft)		84	0	11	64	0
Queue Length 95th (ft)		m133	m29	m58	312	0
Internal Link Dist (ft)			285		249	648
Turn Bay Length (ft)		30				
Base Capacity (vph)		481	1568	544	2586	574
Starvation Cap Reductn		0	170	0	769	0
Spillback Cap Reductn		0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0
Reduced v/c Ratio		0.49	0.34	0.22	0.67	0.02

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 10 (10%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 255: Broad & Stone



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)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Util. Factor		1.00	1.00	0.97	0.95					1.00	0.86	
Frpb, ped/bikes		1.00	0.89	1.00	1.00					1.00	0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	
Frt		1.00	0.85	1.00	1.00					1.00	0.98	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1863	1407	3433	3539					1770	6259	
Flt Permitted		1.00	1.00	0.13	1.00					0.95	1.00	
Satd. Flow (perm)		1863	1407	482	3539					1770	6259	
Volume (vph)	0	426	154	187	660	0	0	0	0	123	739	96
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	473	171	208	733	0	0	0	0	137	821	107
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	24	0
Lane Group Flow (vph)	0	473	171	208	733	0	0	0	0	137	904	0
Confl. Peds. (#/hr)			61			35			96			27
Turn Type			Perm	custom						Prot		
Protected Phases		3		4	3 4 7					2	2 6	
Permitted Phases			3	3 4								
Actuated Green, G (s)		28.0	28.0	39.0	48.0					37.5	41.5	
Effective Green, g (s)		30.0	30.0	43.0	50.0					40.0	44.0	
Actuated g/C Ratio		0.30	0.30	0.43	0.50					0.40	0.44	
Clearance Time (s)		5.0	5.0	5.0						5.5		
Lane Grp Cap (vph)		559	422	591	1770					708	2754	
v/s Ratio Prot		c0.25		0.05	c0.21					0.08	c0.15	
v/s Ratio Perm			0.12	0.11								
v/c Ratio		0.85	0.41	0.35	0.41					0.19	0.33	
Uniform Delay, d1		32.8	27.9	34.5	15.8					19.5	18.3	
Progression Factor		1.03	1.04	0.93	0.87					0.44	0.40	
Incremental Delay, d2		14.5	2.9	1.5	0.6					0.5	0.3	
Delay (s)		48.4	31.9	33.5	14.3					9.1	7.5	
Level of Service		D	C	C	B					A	A	
Approach Delay (s)		44.0			18.6			0.0			7.7	
Approach LOS		D			B			A			A	

Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

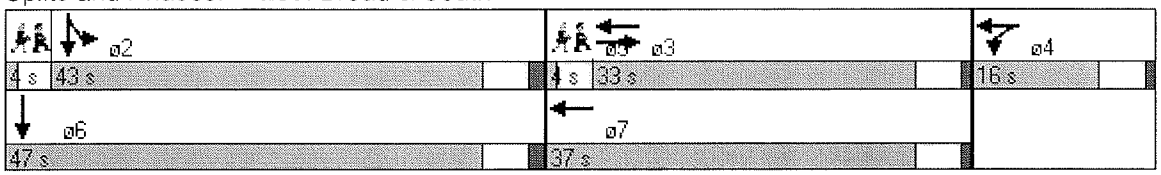
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø5	ø6	ø7
Lane Configurations										
Volume (vph)	426	154	187	660	123	739				
Lane Group Flow (vph)	473	171	208	733	137	928				
Turn Type		Perm	custom		Prot					
Protected Phases	3		4	3 4 7	2	2 6	1	5	6	7
Permitted Phases		3	3 4							
Minimum Split (s)	23.0	23.0	12.0		26.0		4.0	4.0	30.0	27.0
Total Split (s)	33.0	33.0	16.0	86.0	43.0	90.0	4.0	4.0	47.0	37.0
Total Split (%)	33.0%	33.0%	16.0%	86.0%	43.0%	90.0%	4%	4%	47%	37%
Yellow Time (s)	4.0	4.0	4.0		4.0		3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.5		0.0	0.0	1.5	1.0
Lead/Lag	Lag	Lag			Lag		Lead	Lead		
Lead-Lag Optimize?										
v/c Ratio	0.85	0.41	0.35	0.41	0.19	0.33				
Control Delay	49.4	32.6	26.0	14.5	9.2	7.2				
Queue Delay	0.0	0.0	0.0	0.5	0.0	0.0				
Total Delay	49.4	32.6	26.0	15.0	9.2	7.2				
Queue Length 50th (ft)	281	88	43	164	15	25				
Queue Length 95th (ft)	#456	149	60	200	34	31				
Internal Link Dist (ft)	987			285		637				
Turn Bay Length (ft)					100					
Base Capacity (vph)	559	422	591	1770	708	2778				
Starvation Cap Reductn	0	0	0	567	0	0				
Spillback Cap Reductn	0	0	0	0	0	0				
Storage Cap Reductn	0	0	0	0	0	0				
Reduced v/c Ratio	0.85	0.41	0.35	0.61	0.19	0.33				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 74 (74%), Referenced to phase 2:SBTL and 6:SBT, Start of Green
Natural Cycle: 70
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

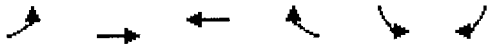
Splits and Phases: 239: Broad & South



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	326	130	229	464	92	161
Peak Hour Factor	0.90	0.80	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	362	162	254	516	102	179
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)	184			414		
pX, platoon unblocked			0.90		0.94	0.90
vC, conflicting volume			525		1468	443
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			474		1370	384
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			74		9	70
cM capacity (veh/h)			983		113	600

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	525	254	516	281
Volume Left	0	254	0	102
Volume Right	162	0	0	179
cSH	1700	983	1700	233
Volume to Capacity	0.31	0.26	0.30	1.20
Queue Length 95th (ft)	0	26	0	342
Control Delay (s)	0.0	9.9	0.0	168.9
Lane LOS		A		F
Approach Delay (s)	0.0	3.3		168.9
Approach LOS				F

Intersection Summary			
Average Delay	31.7		
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	20	467	678	21	19	15
Peak Hour Factor	0.80	0.90	0.90	0.80	0.80	0.80
Hourly flow rate (vph)	25	519	753	26	24	19
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		376	222			
pX, platoon unblocked	0.83				0.85	0.83
vC, conflicting volume	780				1335	766
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	733				1320	717
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				83	95
cM capacity (veh/h)	720				141	355

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	25	519	780	42
Volume Left	25	0	0	24
Volume Right	0	0	26	19
cSH	720	1700	1700	192
Volume to Capacity	0.03	0.31	0.46	0.22
Queue Length 95th (ft)	3	0	0	20
Control Delay (s)	10.2	0.0	0.0	28.9
Lane LOS	B			D
Approach Delay (s)	0.5		0.0	28.9
Approach LOS				D

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

Level of Service Analysis
Future (2032) Condition
PM Peak Hour

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)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.94		1.00	0.96		1.00	0.96		1.00	0.92	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.98		1.00	0.98		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1586		1770	1754		1770	3325		1770	3177	
Flt Permitted	0.59	1.00		0.32	1.00		0.10	1.00		0.16	1.00	
Satd. Flow (perm)	1090	1586		599	1754		195	3325		305	3177	
Volume (vph)	132	135	214	100	98	9	215	653	89	23	643	176
Peak-hour factor, PHF	0.90	0.90	0.90	0.74	0.66	0.40	0.72	0.85	0.75	0.80	0.75	0.88
Adj. Flow (vph)	147	150	238	135	148	22	299	768	119	29	857	200
RTOR Reduction (vph)	0	53	0	0	5	0	0	14	0	0	22	0
Lane Group Flow (vph)	147	335	0	135	165	0	299	873	0	29	1035	0
Confl. Peds. (#/hr)			64			210			158			211
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		3			3		5	2		1	6	
Permitted Phases	3	3		3	3		2			6		
Actuated Green, G (s)	34.5	34.5		34.5	34.5		49.9	36.5		51.1	37.1	
Effective Green, g (s)	36.5	36.5		36.5	36.5		53.9	38.5		55.1	39.1	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.54	0.38		0.55	0.39	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		3.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	398	579		219	640		348	1280		402	1242	
v/s Ratio Prot		c0.24			0.10		c0.13	0.27		c0.01	c0.33	
v/s Ratio Perm	0.13			0.23			0.33			0.03		
v/c Ratio	0.37	0.58		0.62	0.26		0.86	0.68		0.07	0.83	
Uniform Delay, d1	23.3	25.6		26.0	22.3		26.0	25.7		12.2	27.5	
Progression Factor	1.11	1.14		0.94	0.93		1.15	0.67		1.15	1.20	
Incremental Delay, d2	2.6	4.2		12.3	1.0		18.4	1.2		0.0	4.7	
Delay (s)	28.4	33.3		36.7	21.7		48.4	18.3		14.0	37.8	
Level of Service	C	C		D	C		D	B		B	D	
Approach Delay (s)		31.9			28.4			25.9			37.2	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	31.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

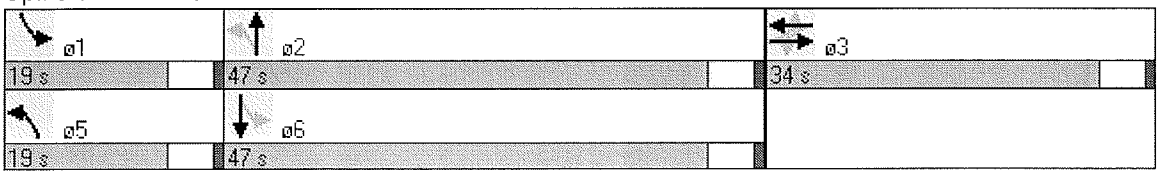
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	132	135	100	98	215	653	23	643
Lane Group Flow (vph)	147	388	135	170	299	887	29	1057
Turn Type	Perm		Perm		pm+pt		pm+pt	
Protected Phases		3		3	5	2	1	6
Permitted Phases	3	3	3	3	2		6	
Detector Phases	3	3	3	3	5	2	1	6
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	27.0	27.0	27.0	27.0	12.0	12.0	19.0	22.0
Total Split (s)	34.0	34.0	34.0	34.0	19.0	47.0	19.0	47.0
Total Split (%)	34.0%	34.0%	34.0%	34.0%	19.0%	47.0%	19.0%	47.0%
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	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	None	None	C-Max	None
v/c Ratio	0.38	0.61	0.77	0.26	0.81	0.68	0.07	0.84
Control Delay	31.4	29.1	58.8	22.4	37.8	18.2	9.6	35.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.1	0.0	5.9
Total Delay	31.4	29.1	58.8	22.4	37.8	19.3	9.6	41.3
Queue Length 50th (ft)	72	169	77	62	102	170	10	323
Queue Length 95th (ft)	140	292	#131	74	118	181	16	266
Internal Link Dist (ft)		132		614		255		153
Turn Bay Length (ft)					125			
Base Capacity (vph)	382	631	175	645	380	1476	429	1418
Starvation Cap Reductn	0	0	0	0	0	336	0	305
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.61	0.77	0.26	0.79	0.78	0.07	0.95

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 98 (98%), Referenced to phase 1:SBL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2572: Broad & Chestnut



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)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Util. Factor	1.00	1.00			0.95		1.00	0.95	1.00			
Frpb, ped/bikes	1.00	1.00			0.97		1.00	1.00	0.73			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.96		1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1770	1863			3297		1770	3539	1164			
Flt Permitted	0.23	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	425	1863			3297		1770	3539	1164			
Volume (vph)	56	112	0	0	394	108	315	919	98	0	0	0
Peak-hour factor, PHF	0.80	0.90	0.90	0.90	0.93	0.83	0.88	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	70	124	0	0	424	130	358	1021	109	0	0	0
RTOR Reduction (vph)	0	0	0	0	23	0	0	0	33	0	0	0
Lane Group Flow (vph)	70	124	0	0	531	0	358	1021	76	0	0	0
Confl. Peds. (#/hr)			99			96			105			96
Turn Type	Perm						Split		Perm			
Protected Phases		2			2		1	1				
Permitted Phases	2								1			
Actuated Green, G (s)	21.0	21.0			21.0		67.0	67.0	67.0			
Effective Green, g (s)	24.0	24.0			24.0		70.0	70.0	70.0			
Actuated g/C Ratio	0.24	0.24			0.24		0.70	0.70	0.70			
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0	6.0			
Vehicle Extension (s)	2.0	2.0			2.0		2.0	2.0	2.0			
Lane Grp Cap (vph)	102	447			791		1239	2477	815			
v/s Ratio Prot		0.07			c0.17		0.20	c0.29				
v/s Ratio Perm	0.16								0.09			
v/c Ratio	0.69	0.28			0.67		0.29	0.41	0.09			
Uniform Delay, d1	34.6	30.9			34.4		5.6	6.3	4.8			
Progression Factor	1.30	1.29			1.21		0.30	0.28	0.00			
Incremental Delay, d2	13.5	0.1			1.6		0.5	0.4	0.2			
Delay (s)	58.3	40.1			43.4		2.2	2.2	0.2			
Level of Service	E	D			D		A	A	A			
Approach Delay (s)		46.7			43.4			2.0			0.0	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

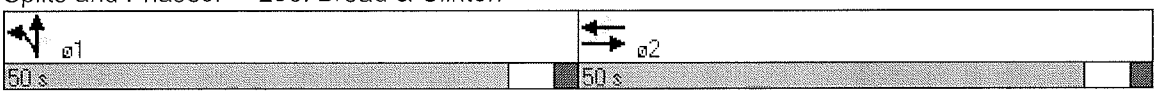
c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Configurations						
Volume (vph)	56	112	394	315	919	98
Lane Group Flow (vph)	70	124	554	358	1021	109
Turn Type	Perm			Split		Perm
Protected Phases		2	2	1	1	
Permitted Phases	2					1
Detector Phases	2	2	2	1	1	1
Minimum Initial (s)	6.0	6.0	6.0	7.0	7.0	7.0
Minimum Split (s)	29.0	29.0	29.0	28.0	28.0	28.0
Total Split (s)	50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?						
Recall Mode	None	None	None	C-Max	C-Max	C-Max
v/c Ratio	0.42	0.28	0.68	0.29	0.41	0.13
Control Delay	41.9	38.9	39.5	2.4	2.4	0.3
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0
Total Delay	41.9	38.9	39.5	2.6	2.4	0.3
Queue Length 50th (ft)	44	78	171	21	32	0
Queue Length 95th (ft)	76	128	m195	32	43	m0
Internal Link Dist (ft)		249	114		346	
Turn Bay Length (ft)						
Base Capacity (vph)	329	876	1566	1239	2478	848
Starvation Cap Reductn	0	0	0	273	203	0
Spillback Cap Reductn	0	0	135	33	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.14	0.39	0.37	0.45	0.13

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 1:NBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 256: Broad & Clinton



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0						3.0
Lane Util. Factor		1.00	1.00		1.00	0.95						1.00
Frpb, ped/bikes		1.00	0.85		1.00	0.99						0.86
Flpb, ped/bikes		1.00	1.00		1.00	1.00						1.00
Frt		1.00	0.93		1.00	0.99						0.89
Flt Protected		0.95	1.00		0.95	1.00						0.99
Satd. Flow (prot)		1770	1463		1770	3466						1419
Flt Permitted		0.23	1.00		0.51	1.00						0.99
Satd. Flow (perm)		432	1463		947	3466						1419
Volume (vph)	22	39	168	146	121	860	37	0	0	0	30	15
Peak-hour factor, PHF	0.90	0.80	0.90	0.80	0.80	0.90	0.80	0.90	0.90	0.90	0.80	0.80
Adj. Flow (vph)	24	49	187	182	151	956	46	0	0	0	38	19
RTOR Reduction (vph)	0	0	27	0	0	3	0	0	0	0	0	123
Lane Group Flow (vph)	0	73	342	0	151	999	0	0	0	0	0	179
Confl. Peds. (#/hr)				129			128			51		
Turn Type	custom	pm+pt			Perm						Perm	
Protected Phases		2	1 2			1						3
Permitted Phases	2	1 2	1 2		1	1					3	
Actuated Green, G (s)		66.2	71.2		61.7	61.7						18.3
Effective Green, g (s)		70.2	73.2		63.7	63.7						20.8
Actuated g/C Ratio		0.70	0.73		0.64	0.64						0.21
Clearance Time (s)		5.0			5.0	5.0						5.5
Vehicle Extension (s)		2.0			2.0	2.0						5.0
Lane Grp Cap (vph)		390	1071		603	2208						295
v/s Ratio Prot		0.01	c0.25			c0.29						
v/s Ratio Perm		0.12			0.16							0.21
v/c Ratio		0.19	0.32		0.25	0.45						0.61
Uniform Delay, d1		10.1	4.7		7.8	9.3						35.9
Progression Factor		0.28	0.31		0.94	0.97						1.00
Incremental Delay, d2		0.1	0.1		1.0	0.7						5.1
Delay (s)		2.9	1.5		8.3	9.6						41.0
Level of Service		A	A		A	A						D
Approach Delay (s)			1.8			9.5			0.0			41.0
Approach LOS			A			A			A			D

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

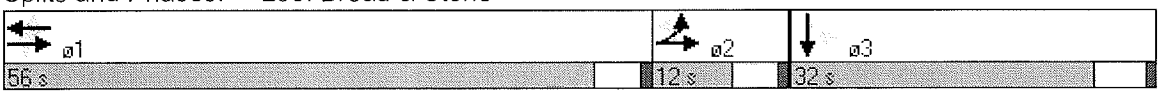
c Critical Lane Group

Lane Group	EBU	EBL	EBT	WBL	WBT	SBT
Lane Configurations						
Volume (vph)	22	39	168	121	860	15
Lane Group Flow (vph)	0	73	369	151	1002	302
Turn Type	custom	pm+pt		Perm		
Protected Phases		2	1 2		1	3
Permitted Phases	2	1 2	1 2	1	1	
Detector Phases	2	2	1 2	1	1	3
Minimum Initial (s)	3.0	3.0		13.0	13.0	6.0
Minimum Split (s)	12.0	12.0		28.0	28.0	30.0
Total Split (s)	12.0	12.0	68.0	56.0	56.0	32.0
Total Split (%)	12.0%	12.0%	68.0%	56.0%	56.0%	32.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0
Lead/Lag	Lag	Lag		Lead	Lead	
Lead-Lag Optimize?						
Recall Mode	None	None		C-Max	C-Max	None
v/c Ratio		0.21	0.34	0.26	0.45	0.72
Control Delay		3.0	2.1	10.7	10.9	20.7
Queue Delay		0.0	0.2	0.0	1.3	0.0
Total Delay		3.0	2.3	10.7	12.1	20.7
Queue Length 50th (ft)		0	0	52	191	87
Queue Length 95th (ft)		m18	90	90	282	124
Internal Link Dist (ft)			285		249	648
Turn Bay Length (ft)						
Base Capacity (vph)		393	1132	570	2210	528
Starvation Cap Reductn		0	273	0	924	0
Spillback Cap Reductn		0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0
Reduced v/c Ratio		0.19	0.43	0.26	0.78	0.57

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 21 (21%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 255: Broad & Stone



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)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Util. Factor		1.00	1.00	0.97	0.95					1.00	0.86	
Frpb, ped/bikes		1.00	0.80	1.00	1.00					1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	
Frt		1.00	0.85	1.00	1.00					1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1863	1259	3433	3539					1770	6339	
Flt Permitted		1.00	1.00	0.32	1.00					0.95	1.00	
Satd. Flow (perm)		1863	1259	1139	3539					1770	6339	
Volume (vph)	0	278	352	494	736	0	0	0	0	156	1320	64
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	309	391	549	818	0	0	0	0	173	1467	71
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	7	0
Lane Group Flow (vph)	0	309	391	549	818	0	0	0	0	173	1532	0
Confl. Peds. (#/hr)			118			39			118			48
Turn Type			Perm	custom						Prot		
Protected Phases		3		4	3 4 7					2	2 6	
Permitted Phases			3	3 4								
Actuated Green, G (s)		25.0	25.0	48.0	57.0					28.5	32.5	
Effective Green, g (s)		27.0	27.0	52.0	59.0					31.0	35.0	
Actuated g/C Ratio		0.27	0.27	0.52	0.59					0.31	0.35	
Clearance Time (s)		5.0	5.0	5.0						5.5		
Lane Grp Cap (vph)		503	340	1166	2088					549	2219	
v/s Ratio Prot		0.17		c0.12	c0.23					0.10	c0.24	
v/s Ratio Perm			0.31	0.13								
v/c Ratio		0.61	1.15	0.47	0.39					0.32	0.69	
Uniform Delay, d1		31.9	36.5	23.0	10.9					26.4	27.9	
Progression Factor		1.13	1.13	1.06	0.95					0.40	0.42	
Incremental Delay, d2		5.4	95.6	1.3	0.5					1.2	1.5	
Delay (s)		41.4	136.7	25.5	10.9					11.7	13.1	
Level of Service		D	F	C	B					B	B	
Approach Delay (s)		94.6			16.8			0.0			13.0	
Approach LOS		F			B			A			B	

Intersection Summary			
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

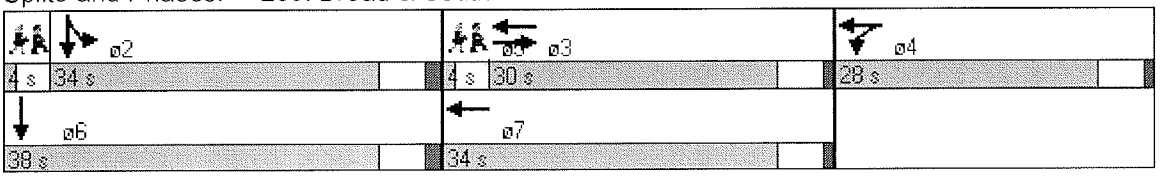
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø5	ø6	ø7
Lane Configurations										
Volume (vph)	278	352	494	736	156	1320				
Lane Group Flow (vph)	309	391	549	818	173	1538				
Turn Type		Perm	custom		Prot					
Protected Phases	3		4	3 4 7	2	2 6	1	5	6	7
Permitted Phases		3	3 4							
Minimum Split (s)	23.0	23.0	12.0		26.0		4.0	4.0	30.0	27.0
Total Split (s)	30.0	30.0	28.0	92.0	34.0	72.0	4.0	4.0	38.0	34.0
Total Split (%)	30.0%	30.0%	28.0%	92.0%	34.0%	72.0%	4%	4%	38%	34%
Yellow Time (s)	4.0	4.0	4.0		4.0		3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.5		0.0	0.0	1.5	1.0
Lead/Lag	Lag	Lag			Lag		Lead	Lead		
Lead-Lag Optimize?										
v/c Ratio	0.61	1.15	0.47	0.39	0.32	0.69				
Control Delay	42.2	133.9	22.0	11.0	11.9	13.1				
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0				
Total Delay	42.2	133.9	22.0	11.4	11.9	13.1				
Queue Length 50th (ft)	177	~301	123	187	52	179				
Queue Length 95th (ft)	267	#488	115	120	m76	179				
Internal Link Dist (ft)	987			285		637				
Turn Bay Length (ft)					100					
Base Capacity (vph)	503	340	1166	2088	549	2225				
Starvation Cap Reductn	0	0	0	716	0	0				
Spillback Cap Reductn	0	0	0	0	0	0				
Storage Cap Reductn	0	0	0	0	0	0				
Reduced v/c Ratio	0.61	1.15	0.47	0.60	0.32	0.69				

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 99 (99%), Referenced to phase 2:SBTL and 6:SBT, Start of Green
Natural Cycle: 75
Control Type: Pretimed
~ 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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 239: Broad & South



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	131	79	139	361	125	145
Peak Hour Factor	0.90	0.80	0.80	0.90	0.90	0.90
Hourly flow rate (vph)	146	99	174	401	139	161
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)	194			404		
pX, platoon unblocked			0.95		0.95	0.95
vC, conflicting volume			244		944	195
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			204		941	152
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			87		42	81
cM capacity (veh/h)			1298		240	849

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	244	174	401	300
Volume Left	0	174	0	139
Volume Right	99	0	0	161
cSH	1700	1298	1700	391
Volume to Capacity	0.14	0.13	0.24	0.77
Queue Length 95th (ft)	0	12	0	159
Control Delay (s)	0.0	8.2	0.0	38.8
Lane LOS		A		E
Approach Delay (s)	0.0	2.5		38.8
Approach LOS				E

Intersection Summary			
Average Delay	11.7		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	13	263	472	17	31	28
Peak Hour Factor	0.80	0.90	0.90	0.80	0.80	0.80
Hourly flow rate (vph)	16	292	524	21	39	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		386	212			
pX, platoon unblocked	0.89				0.89	0.89
vC, conflicting volume	546				860	535
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	489				842	477
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				87	93
cM capacity (veh/h)	954				292	523

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	16	292	546	74
Volume Left	16	0	0	39
Volume Right	0	0	21	35
cSH	954	1700	1700	369
Volume to Capacity	0.02	0.17	0.32	0.20
Queue Length 95th (ft)	1	0	0	18
Control Delay (s)	8.8	0.0	0.0	17.2
Lane LOS	A			C
Approach Delay (s)	0.5		0.0	17.2
Approach LOS				C

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		

MITIGATION - REVISED SIGNAL TIMING
PM PEAK HOUR

HCM Signalized Intersection Capacity Analysis
239: Broad & South

6/10/2011

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)		3.0	3.0	3.0	3.0					3.0	3.0	
Lane Util. Factor		1.00	1.00	0.97	0.95					1.00	0.86	
Frpb, ped/bikes		1.00	0.80	1.00	1.00					1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	
Frt		1.00	0.85	1.00	1.00					1.00	0.99	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1863	1259	3433	3539					1770	6339	
Flt Permitted		1.00	1.00	0.40	1.00					0.95	1.00	
Satd. Flow (perm)		1863	1259	1449	3539					1770	6339	
Volume (vph)	0	278	352	494	736	0	0	0	0	156	1320	64
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	309	391	549	818	0	0	0	0	173	1467	71
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	7	0
Lane Group Flow (vph)	0	309	391	549	818	0	0	0	0	173	1532	0
Confl. Peds. (#/hr)			118			39			118			48
Turn Type			Perm	custom						Prot		
Protected Phases		3		4	3 4 7					2	2 6	
Permitted Phases			3	3 4								
Actuated Green, G (s)		33.0	33.0	48.0	57.0					28.5	32.5	
Effective Green, g (s)		35.0	35.0	52.0	59.0					31.0	35.0	
Actuated g/C Ratio		0.35	0.35	0.52	0.59					0.31	0.35	
Clearance Time (s)		5.0	5.0	5.0						5.5		
Lane Grp Cap (vph)		652	441	1091	2088					549	2219	
v/s Ratio Prot		0.17		c0.09	c0.23					0.10	c0.24	
v/s Ratio Perm			0.31	0.18								
v/c Ratio		0.47	0.89	0.50	0.39					0.32	0.69	
Uniform Delay, d1		25.3	30.6	23.3	10.9					26.4	27.9	
Progression Factor		1.16	1.14	1.18	1.07					0.43	0.47	
Incremental Delay, d2		2.4	21.9	1.5	0.5					1.2	1.5	
Delay (s)		31.8	56.7	28.9	12.2					12.6	14.7	
Level of Service		C	E	C	B					B	B	
Approach Delay (s)		45.7			18.9			0.0			14.5	
Approach LOS		D			B			A			B	

Intersection Summary			
HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

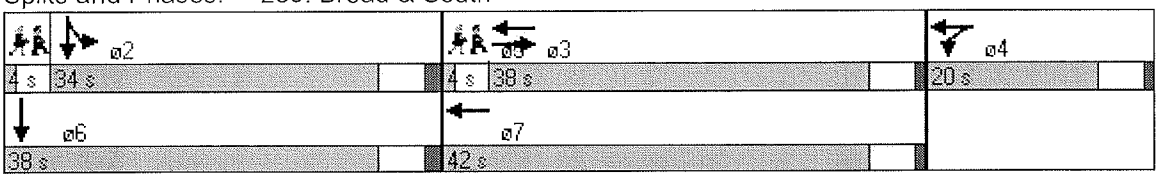
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	ø1	ø5	ø6	ø7
Lane Configurations										
Volume (vph)	278	352	494	736	156	1320				
Lane Group Flow (vph)	309	391	549	818	173	1538				
Turn Type		Perm	custom		Prot					
Protected Phases	3		4	3 4 7	2	2 6	1	5	6	7
Permitted Phases		3	3 4							
Minimum Split (s)	23.0	23.0	12.0		26.0		4.0	4.0	30.0	27.0
Total Split (s)	38.0	38.0	20.0	100.0	34.0	72.0	4.0	4.0	38.0	42.0
Total Split (%)	38.0%	38.0%	20.0%	100.0%	34.0%	72.0%	4%	4%	38%	42%
Yellow Time (s)	4.0	4.0	4.0		4.0		3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.5		0.0	0.0	1.5	1.0
Lead/Lag	Lag	Lag			Lag		Lead	Lead		
Lead-Lag Optimize?										
v/c Ratio	0.47	0.89	0.50	0.39	0.32	0.69				
Control Delay	32.4	58.1	21.7	12.3	12.8	14.7				
Queue Delay	0.0	0.0	0.0	0.5	0.0	0.0				
Total Delay	32.4	58.1	21.7	12.8	12.8	14.7				
Queue Length 50th (ft)	156	237	128	196	62	233				
Queue Length 95th (ft)	241	#412	117	157	m90	225				
Internal Link Dist (ft)	987			285		637				
Turn Bay Length (ft)					100					
Base Capacity (vph)	652	441	1091	2088	549	2225				
Starvation Cap Reductn	0	0	0	765	0	0				
Spillback Cap Reductn	0	0	0	0	0	0				
Storage Cap Reductn	0	0	0	0	0	0				
Reduced v/c Ratio	0.47	0.89	0.50	0.62	0.32	0.69				

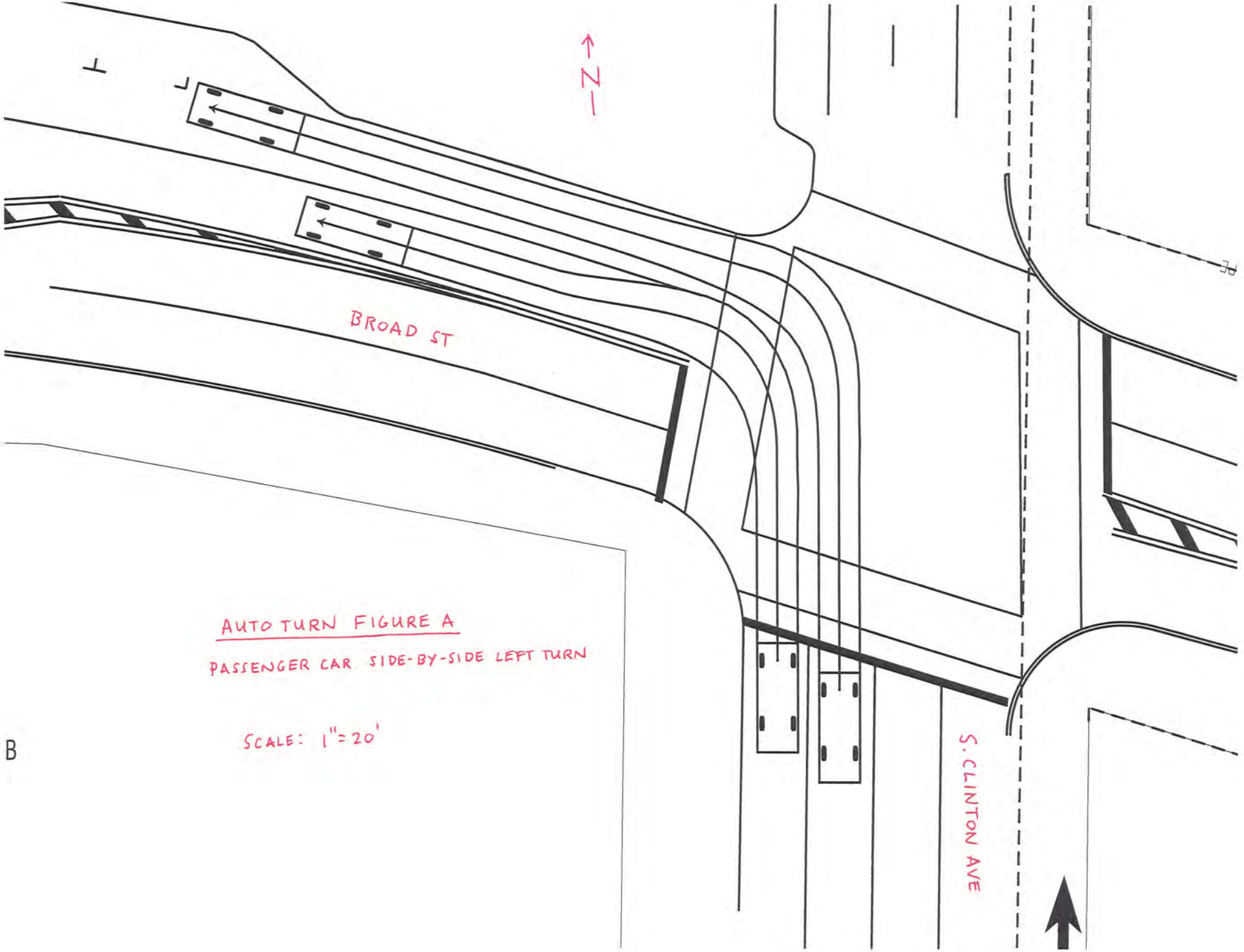
Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 2 (2%), Referenced to phase 2:SBTL and 6:SBT, Start of Green
Natural Cycle: 75
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 239: Broad & South



Turning Movement Figures

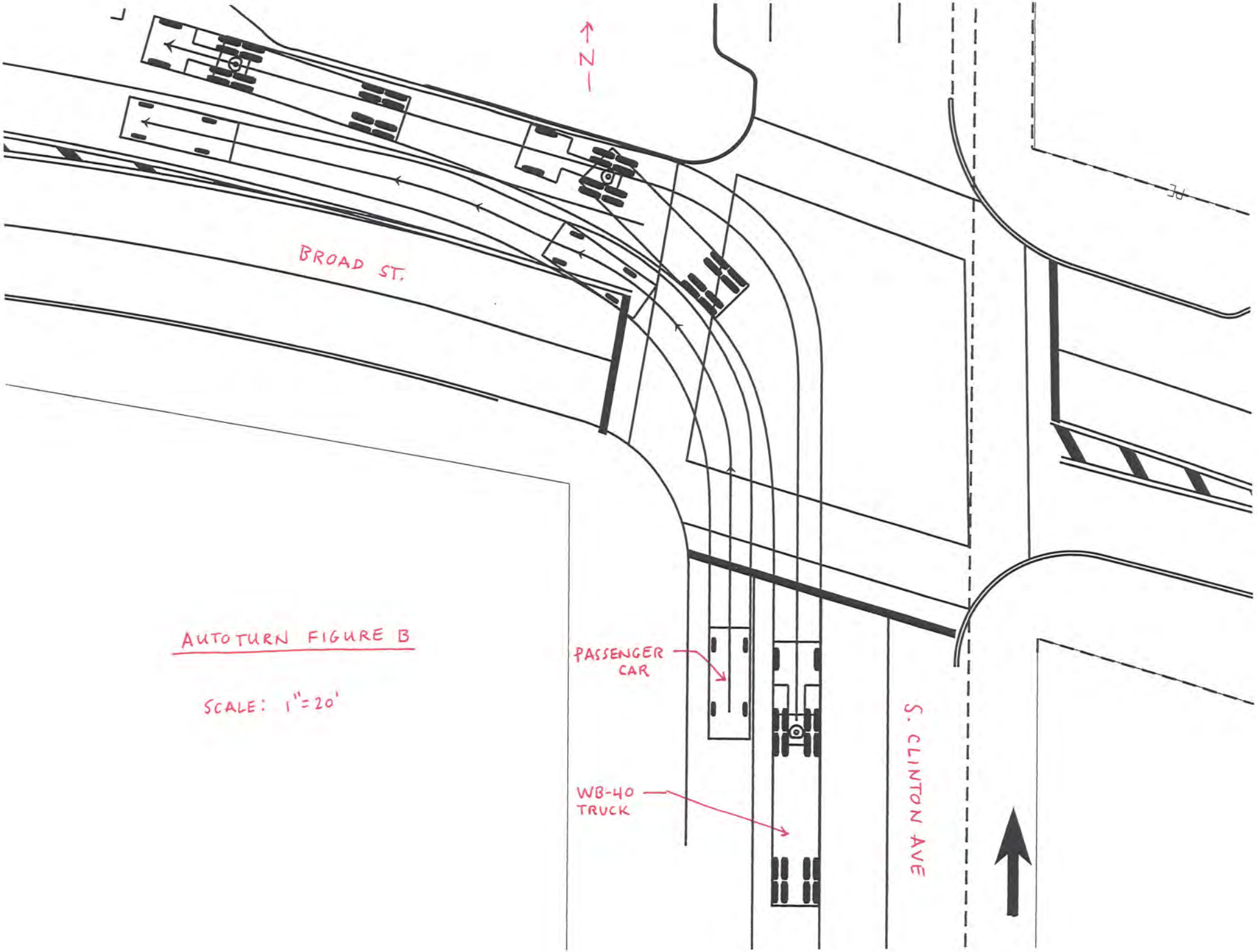


AUTO TURN FIGURE A

PASSENGER CAR SIDE-BY-SIDE LEFT TURN

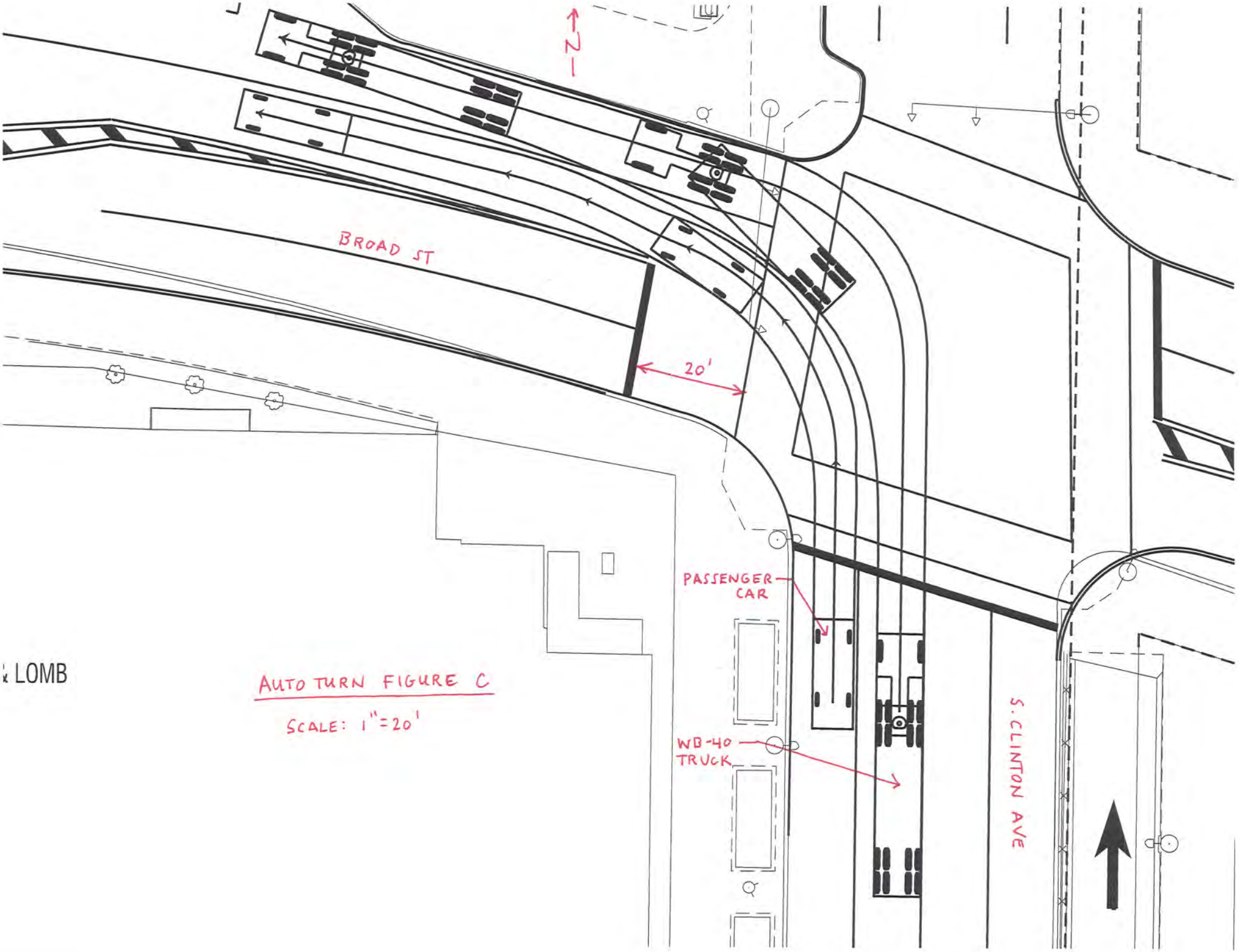
SCALE: 1"=20'

B

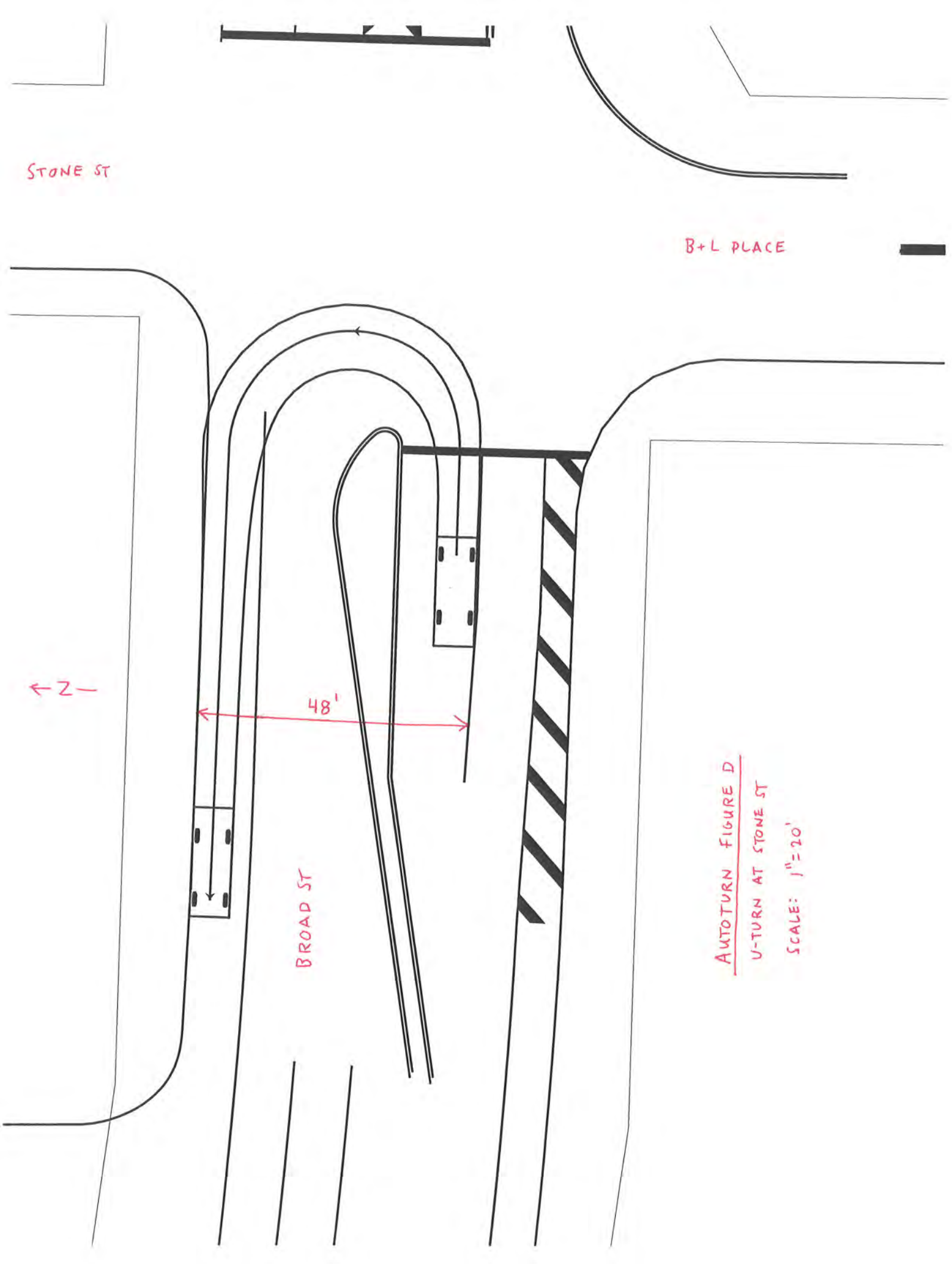


AUTOTURN FIGURE B

SCALE: 1"=20'


N
BROAD ST
20'
PASSENGER CAR
WB-40 TRUCK
S. CLINTON AVE
AUTO TURN FIGURE C
SCALE: 1"=20'

LOMB


STONE ST
B+L PLACE
48'
BROAD ST
AUTOTURN FIGURE D
U-TURN AT STONE ST
SCALE: 1"=20'