

Appendix E:

Future CLV Worksheets

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date:

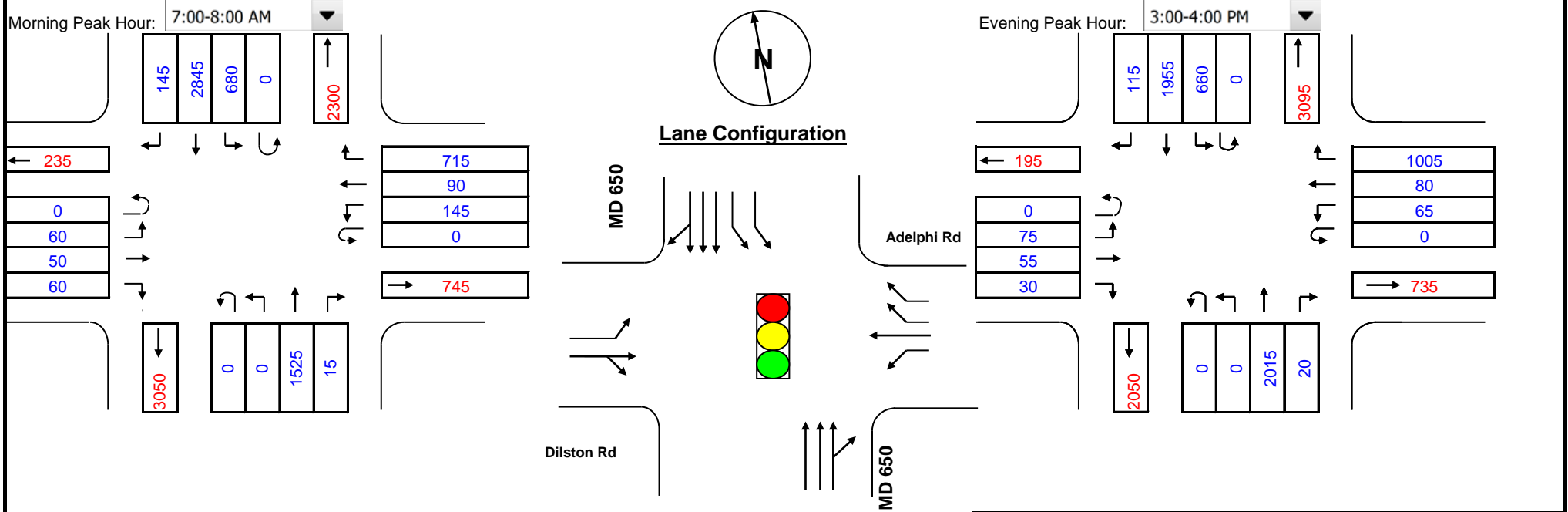
Location: MD 650 at Adelphi

Conditions: No-Build

Design Year: 2040

Computed by:

Date 5/25/2016



Phasing

RTOR/Overlap

- Northbound
- Southbound
- Eastbound
- Westbound

Split Phasing

- East/West
- North/South
- None

Inx. Control

- Signal
- Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	<= 1000	<= 199	1.1
2	= 0.53	B	<= 1150	<= 599	2.0
3	= 0.37	C	<= 1300	<= 799	3.0
4	= 0.30	D	<= 1450	<= 999	4.0
5	= 0.25	E	<= 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	1540	0.37	570	408	978			NB	2035	0.37	753	396	1149	*
	SB	2990	0.37	1106	0	1106	*		SB	2070	0.37	766	0	766	
	EB	110	1.00	110	145	255	*		EB	85	1.00	85	65	150	
	WB	307	0.53	163	60	223			WB	609	0.53	323	75	398	*

Remarks:	* Critical volume	Total	1361	Remarks:	* Critical volume	Total	1547
	Level of service (V/C)		0.85		Level of service (V/C)		0.97
			D				E

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date:

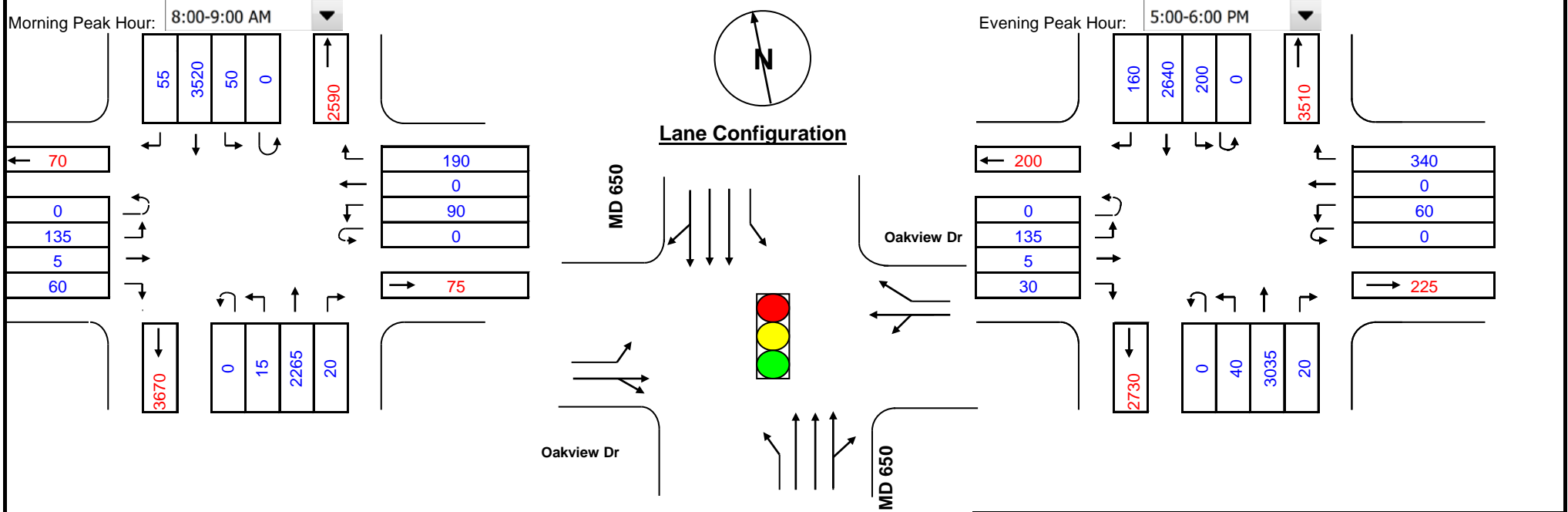
Location: MD 650 at Oakview

Conditions: Existing

Design Year:

Computed by:

Date 5/25/2016



Phasing

RTOR/Overlap

- Northbound
- Southbound
- Eastbound
- Westbound

Split Phasing

- East/West
- North/South
- None

Inx. Control

- Signal
- Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	≤ 1000	≤ 199	1.1
2	= 0.53	B	≤ 1150	≤ 599	2.0
3	= 0.37	C	≤ 1300	≤ 799	3.0
4	= 0.30	D	≤ 1450	≤ 999	4.0
5	= 0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	2285	0.37	845	50	895			NB	3055	0.37	1130	200	1330	*
	SB	3575	0.37	1323	15	1338	*		SB	2800	0.37	1036	40	1076	
	EB	65	1.00	65	90	155			EB	35	1.00	35	60	95	
	WB	140	1.00	140	135	275	*		WB	140	1.00	140	135	275	*

Remarks:	* Critical volume	Total	1613	Remarks:	* Critical volume	Total	1605
	Level of service (V/C)		1.01		Level of service (V/C)		1.00
			F				F

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 1/13/2015

Location: MD 650 at Elton and 495 Ramps

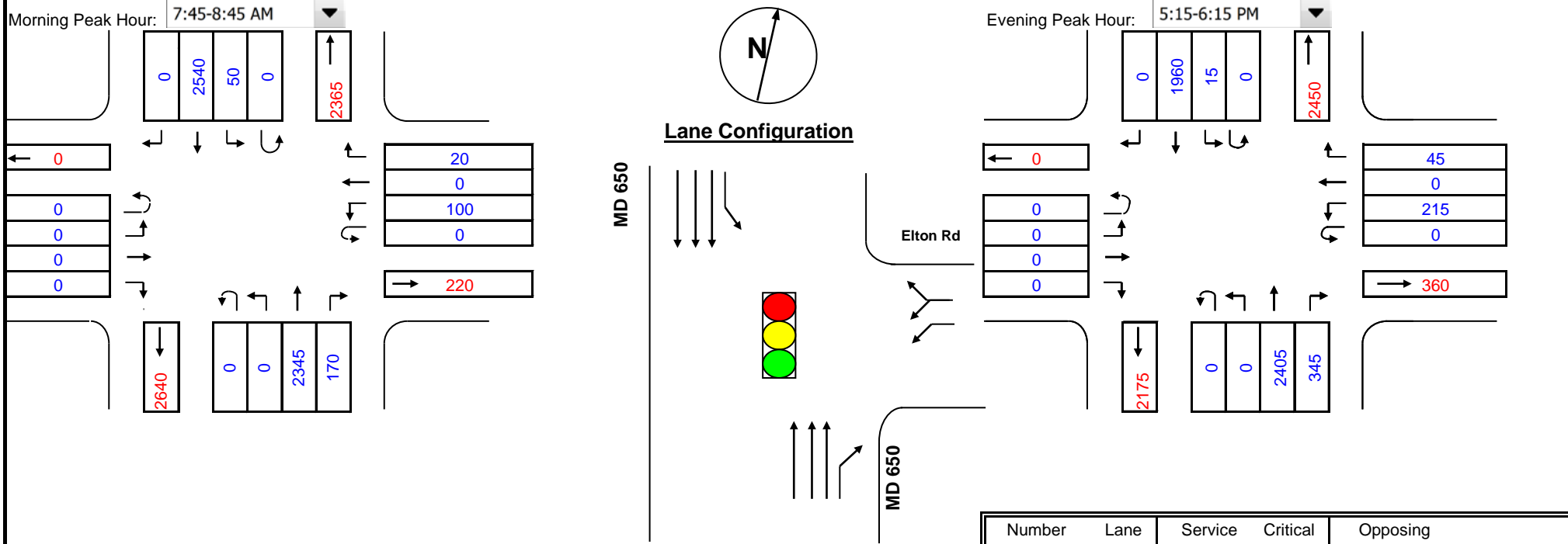
Conditions: Existing

Computed by: RS

Date: 5/25/2016

Morning Peak Hour: 7:45-8:45 AM

Evening Peak Hour: 5:15-6:15 PM



Phasing

RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	<= 1000	<= 199	1.1
2	= 0.53	B	<= 1150	<= 599	2.0
3	= 0.37	C	<= 1300	<= 799	3.0
4	= 0.30	D	<= 1450	<= 999	4.0
5	= 0.25	E	<= 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	2345	0.37	868	50	918			NB	2405	0.37	890	15	905	*
	SB	2540	0.37	940	0	940	*		SB	1960	0.37	725	0	725	
	EB	0	0.00	0	0	0			EB	0	0.00	0	0	0	
	WB	120	0.60	72	0	72	*		WB	260	0.60	156	0	156	*

Remarks:	* Critical volume	Total	1012	Remarks:	* Critical volume	Total	1061
	Level of service (V/C)		0.63		Level of service (V/C)		0.66
			B				B

Count Date:

Location: MD 650 (New Hampshire Ave) at Powder Mill Rd

Conditions: Existing

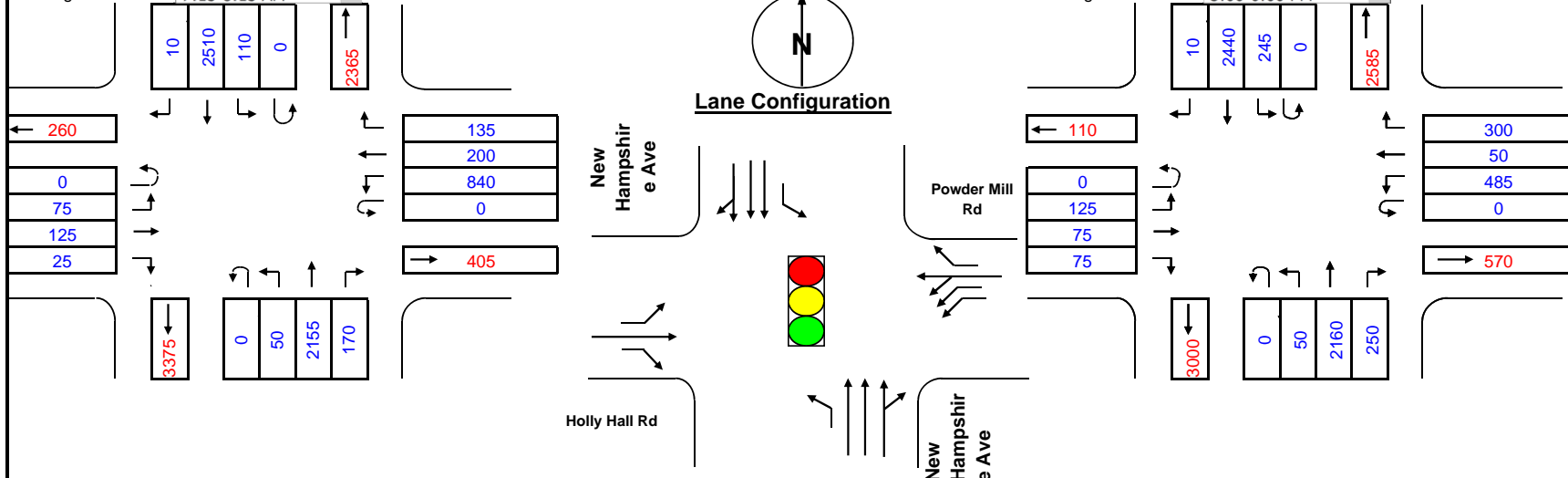
Design Year:

Computed by: RS

Date 5/25/2016

Morning Peak Hour: 7:15-8:15 AM

Evening Peak Hour: 5:00-6:00 PM



Phasing			

RTOR/Overlap

- Northbound
- Southbound
- Eastbound
- Westbound

Split Phasing

- East/West
- North/South
- None

Inx. Control

- Signal
- Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	<= 1000	<= 199	1.1
2	= 0.53	B	<= 1150	<= 599	2.0
3	= 0.37	C	<= 1300	<= 799	3.0
4	= 0.30	D	<= 1450	<= 999	4.0
5	= 0.25	E	<= 1600	> 1000	5.0
DbI-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	2325	0.37	860	110	970			NB	2410	0.37	892	245	1137	*
	SB	2520	0.37	932	50	982	*		SB	2450	0.37	907	50	957	
	EB	125	1.00	125		125	*		EB	125	1.00	125		125	*
	WB	1040	0.37	385		385	*		WB	535	0.37	198		198	*

Remarks:	* Critical volume	Total	1492	Remarks:	* Critical volume	Total	1460
	Level of service (V/C)		0.93		Level of service (V/C)		0.91
			E				E

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 1/29/2015

Location: MD 650 at Chalmers Rd

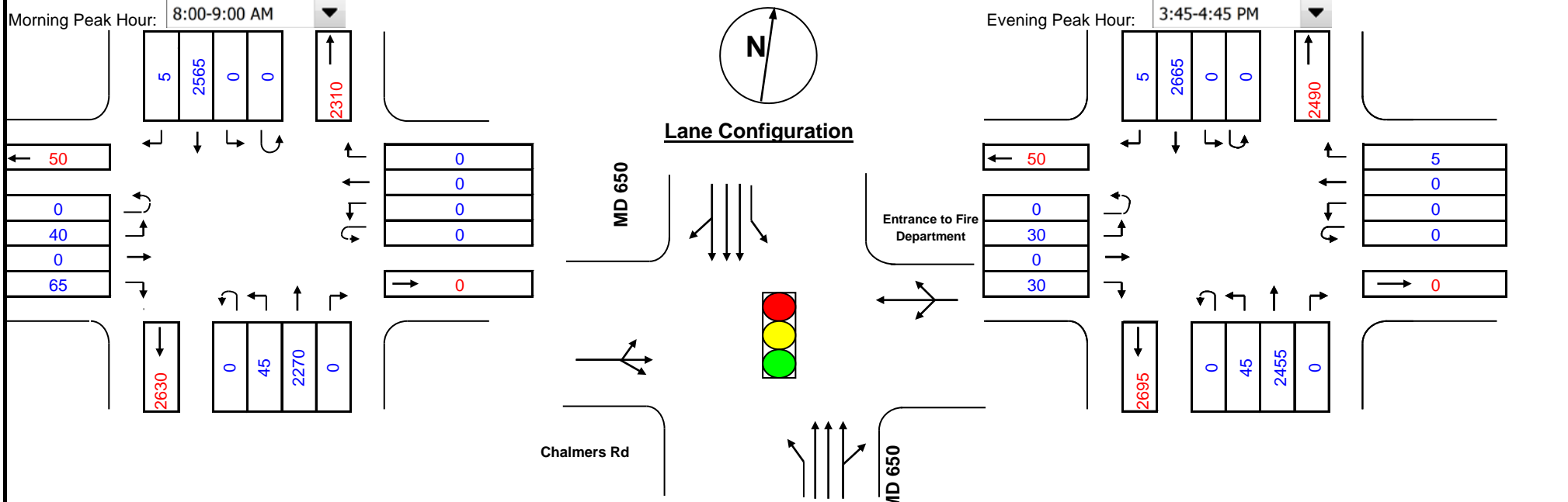
Conditions: Existing

Computed by: RS

Date: 5/25/2016

Morning Peak Hour: 8:00-9:00 AM

Evening Peak Hour: 3:45-4:45 PM



RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Phasing:

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	2270	0.37	840	0	840			NB	2455	0.37	908	0	908	
	SB	2570	0.37	951	45	996	*		SB	2670	0.37	988	45	1033	*
	EB	109	1.00	109	0	109	*		EB	63	1.00	63	0	63	*
	WB	0	1.00	0	40	40			WB	5	1.00	5	30	35	

Remarks:	* Critical volume	Total	1105	Remarks:	* Critical volume	Total	1096
	Level of service (V/C)		0.69		Level of service (V/C)		0.68
			B				B

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date:

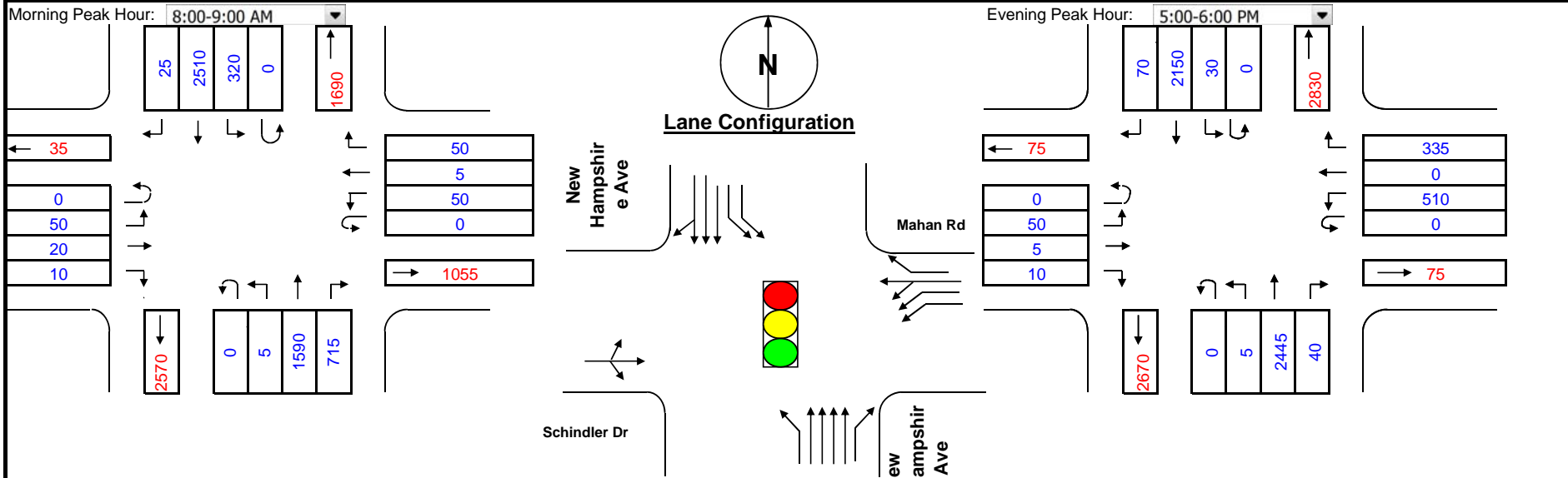
Location: New Hampshire Ave at Mahan/Schindler

Conditions: Existing

Design Year:

Computed by:

Date 5/25/2016



Phasing			

<input checked="" type="checkbox"/> Northbound	<input checked="" type="radio"/> East/West	<input checked="" type="radio"/> Signal
<input type="checkbox"/> Southbound	<input type="radio"/> North/South	<input type="radio"/> Stop
<input type="checkbox"/> Eastbound	<input checked="" type="radio"/> None	
<input checked="" type="checkbox"/> Westbound		

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	<= 1000	<= 199	1.1
2	= 0.53	B	<= 1150	<= 599	2.0
3	= 0.37	C	<= 1300	<= 799	3.0
4	= 0.30	D	<= 1450	<= 999	4.0
5	= 0.25	E	<= 1600	> 1000	5.0
DbI-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	1590	0.30	477	192	669	*		NB	2445	0.30	734	18	752	*
	SB	2535	0.37	938	5	943	*		SB	2220	0.37	821	5	826	*
	EB	80	1.00	80		80	*		EB	65	1.00	65		65	*
	WB	55	0.37	20		20	*		WB	317	1.00	317		317	*

Remarks: * Critical volume Total **1043**
Level of service (V/C) **0.65** **B**

Remarks: * Critical volume Total **1208**
Level of service (V/C) **0.76** **C**

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date:

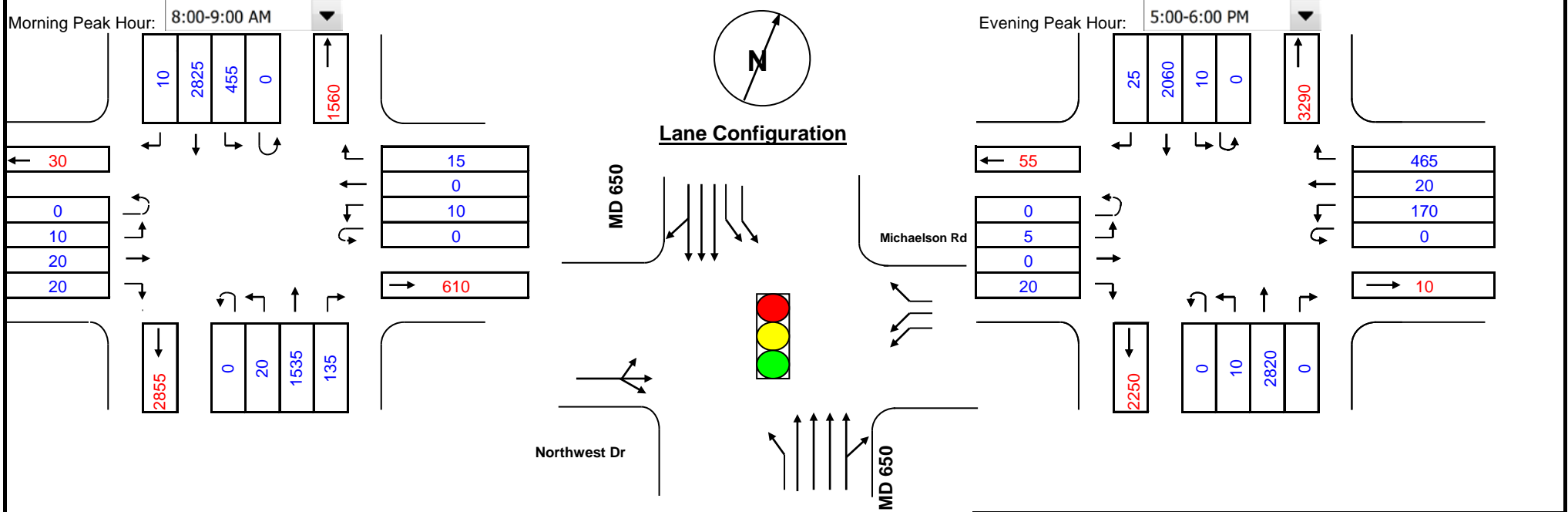
Location: MD 650 at Michaelson and Northwest

Conditions: Existing

Design Year:

Computed by:

Date 5/25/2016



Phasing

RTOR/Overlap Northbound
 Southbound
 Eastbound
 Westbound

Split Phasing East/West
 North/South
 None

Inx. Control Signal
 Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	≤ 1000	≤ 199	1.1
2	= 0.53	B	≤ 1150	≤ 599	2.0
3	= 0.37	C	≤ 1300	≤ 799	3.0
4	= 0.30	D	≤ 1450	≤ 999	4.0
5	= 0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	1670	0.30	501	273	774			NB	2820	0.30	846	6	852	*
	SB	2835	0.37	1049	20	1069	*		SB	2085	0.37	771	10	781	
	EB	51	1.00	51	6	57	*		EB	30	1.00	30	102	132	
	WB	15	1.00	15	10	25			WB	485	1.00	485	5	490	*

Remarks:	* Critical volume	Total	1126	Remarks:	* Critical volume	Total	1342
	Level of service (V/C)		0.70		Level of service (V/C)		0.84
			B				D

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date:

Location: MD 650 (New Hampshire Ave) at Lockwood Dr

Conditions: No-Build

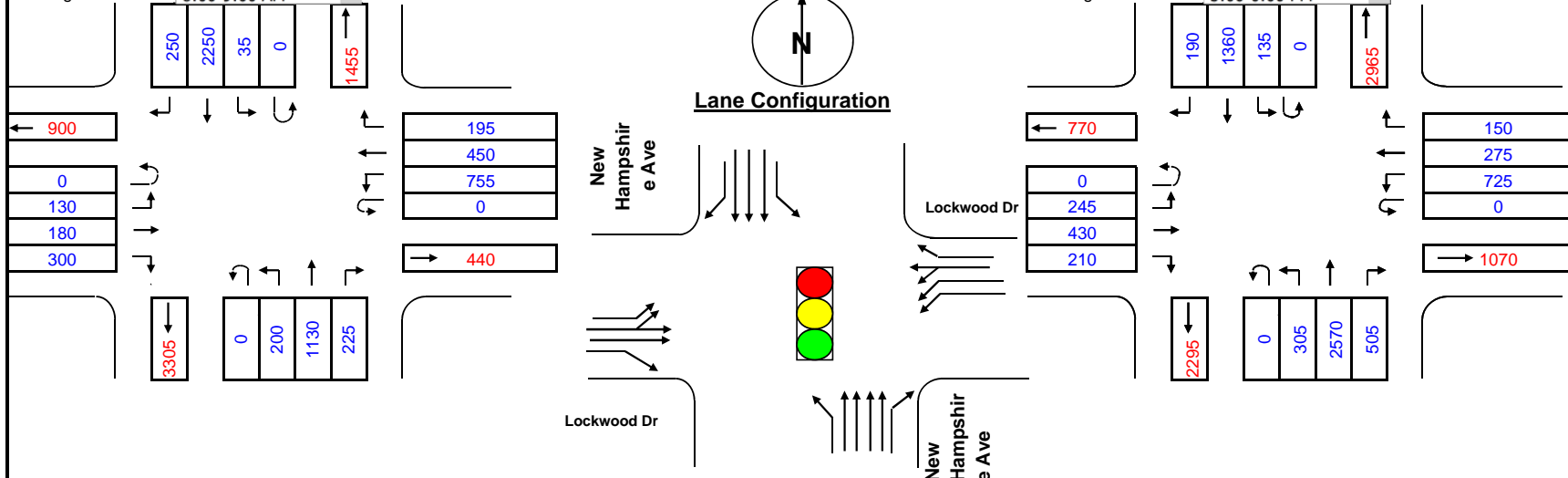
Design Year: 2040

Computed by:

Date 5/25/2016

Morning Peak Hour: 8:00-9:00 AM

Evening Peak Hour: 5:00-6:00 PM



Phasing			

RTOR/Overlap

Northbound
 Southbound
 Eastbound
 Westbound

Split Phasing

East/West
 North/South
 None

Inx. Control

Signal
 Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	<= 1000	<= 199	1.1
2	= 0.53	B	<= 1150	<= 599	2.0
3	= 0.37	C	<= 1300	<= 799	3.0
4	= 0.30	D	<= 1450	<= 999	4.0
5	= 0.25	E	<= 1600	> 1000	5.0
DbI-Lt = 0.60		F > 1600			

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	1130	0.30	339	35	374			NB	2570	0.30	771	135	906	*
	SB	2250	0.37	833	200	1033	*		SB	1360	0.37	503	305	808	
	EB	310	0.37	116		116	*		EB	675	0.37	250		250	*
	WB	1205	0.37	446		446	*		WB	1000	0.37	370		370	*

Remarks:	* Critical volume	Total	1594	Remarks:	* Critical volume	Total	1526
	Level of service (V/C)		1.00		Level of service (V/C)		0.95
			E				E

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date:

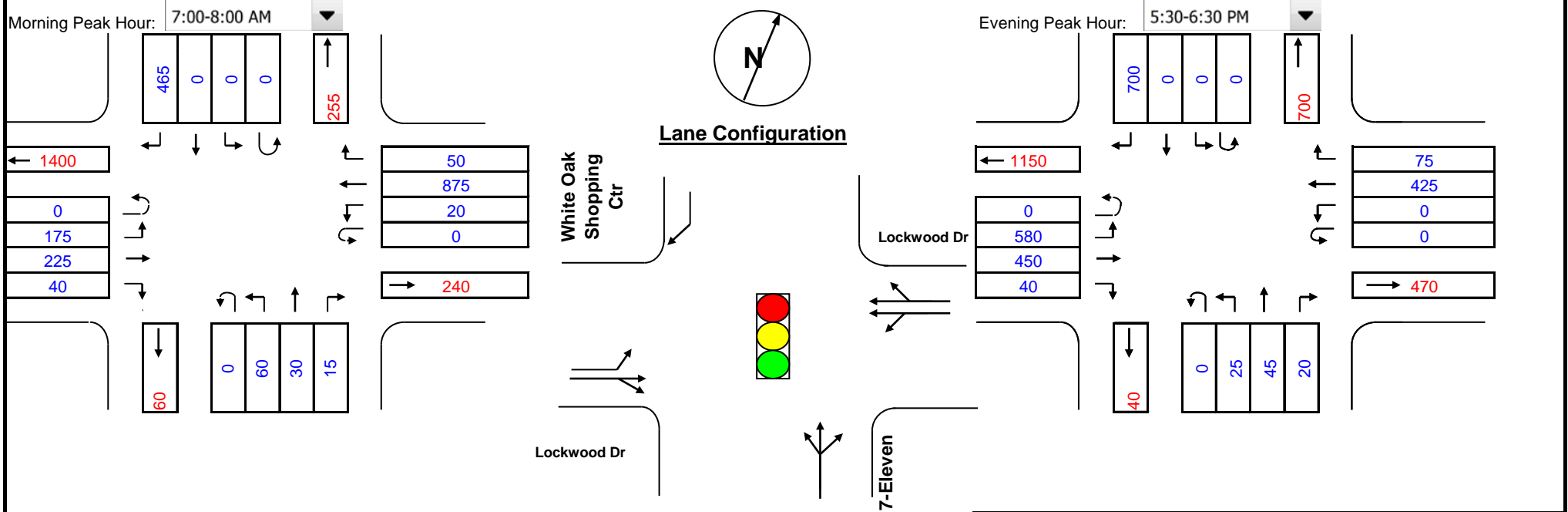
Location: Lockwood Dr at White Oak Shopping Ctr

Conditions: No-Build

Design Year: 2040

Computed by:

Date 5/25/2016



Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phasing

RTOR/Overlap

Split Phasing

Inx. Control

Northbound
 Southbound
 Eastbound
 Westbound

East/West
 North/South
 None

Signal
 Stop

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	165	1.00	165	0	165			NB	140	1.00	140	0	140	
	SB	290	1.00	290	60	350	*		SB	120	1.00	120	25	145	*
	EB	265	1.00	265	20	285			EBT	490	1.00	490	0	490	
	WB	945	0.53	501	175	676	*		WB	500	0.53	265	580	845	*

Remarks: * Critical volume Total **1026** Level of service (V/C) **0.64** **B**

Remarks: * Critical volume Total **990** Level of service (V/C) **0.62** **A**

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date:

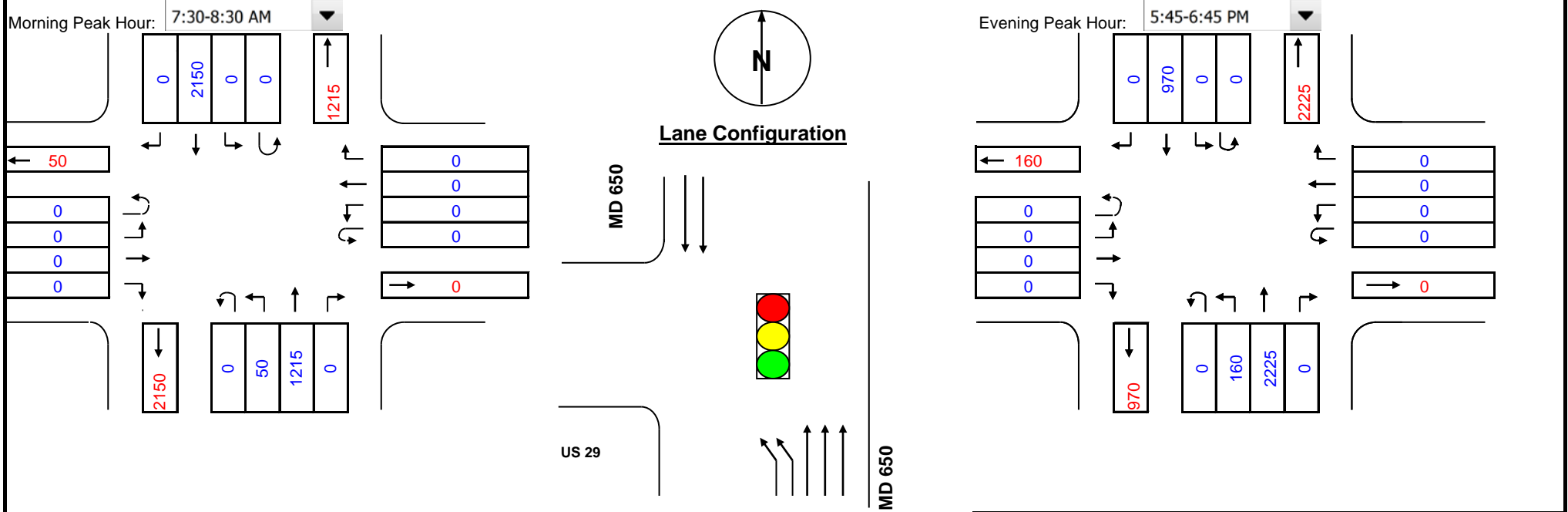
Location: MD 650/ US 29 SB Ramps

Conditions: No-Build

Design Year: 2040

Computed by:

Date 5/25/2016



RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	1215	0.37	450	0	450			NB	2225	0.37	823	0	823	*
	SB	2150	0.53	1140	30	1170	*		SB	970	0.53	514	96	610	
	EB	0	0.00	0	0	0			EB	0	0.00	0	0	0	
	WB	0	0.00	0	0	0			WB	0	0.00	0	0	0	

Remarks:	* Critical volume	Total	1170	Remarks:	* Critical volume	Total	823
	Level of service (V/C)		0.73		Level of service (V/C)		0.51
			C				A

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

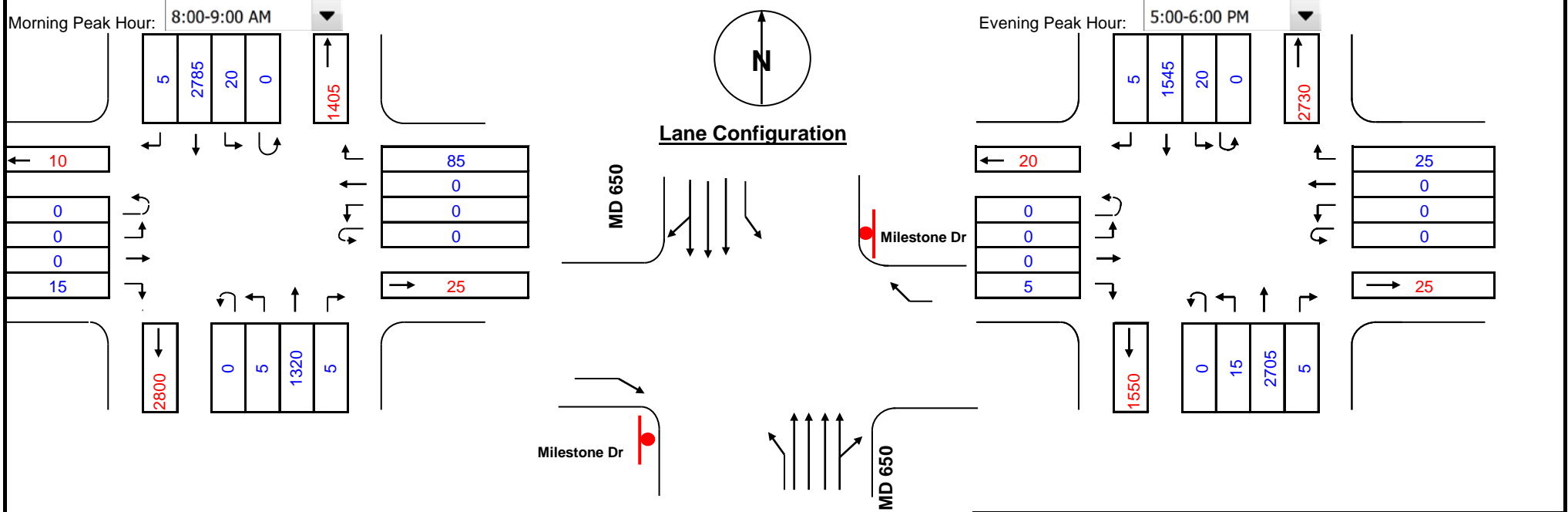
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 6/11/2014
Conditions: No-Build
Design Year: 2040

Location: MD 650 at Milestone

Computed by:

Date 5/25/2016



RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	1325	0.30	398	20	418			NB	2710	0.30	813	20	833	*
	SB	2790	0.37	1032	5	1037	*		SB	1550	0.37	574	15	589	
	EB	10	1.00	10	0	10	*		EB	0	1.00	0	0	0	
	WB	65	1.00	65	0	65	*		WB	5	1.00	5	0	5	*

Remarks:	* Critical volume	Total	1102	Remarks:	* Critical volume	Total	838
	Level of service (V/C)		0.69		Level of service (V/C)		0.52
			B				A

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date:

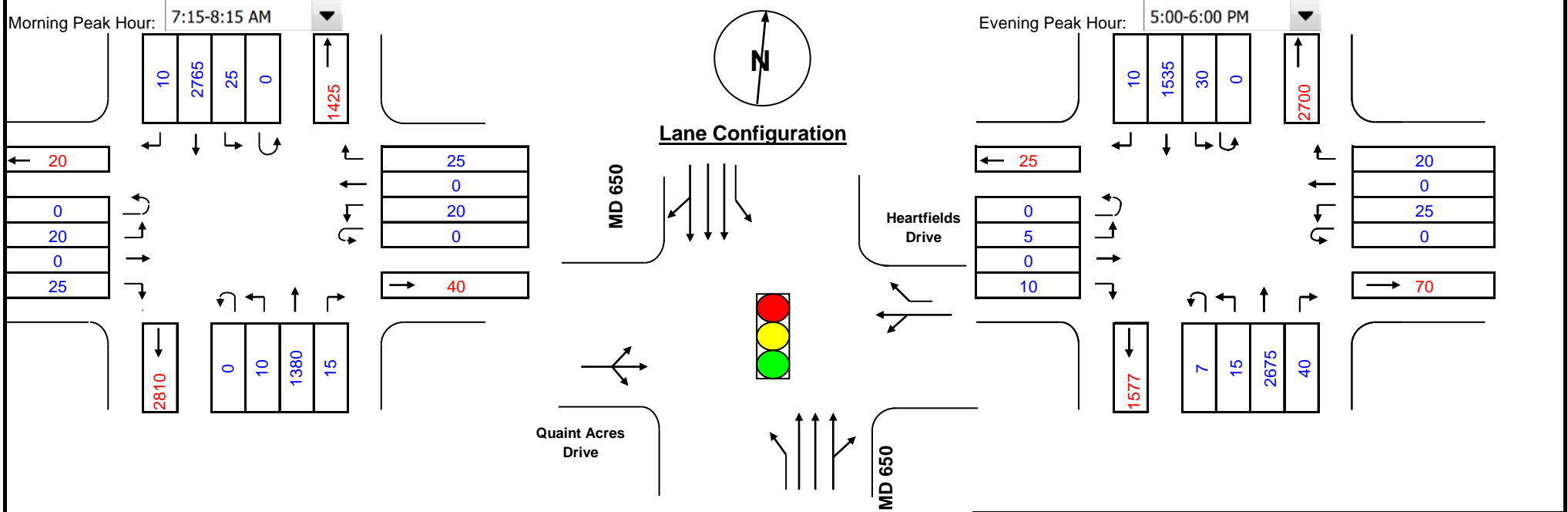
Location: MD 650 at Quaint Acres and Heartfields

Conditions: No-Build

Design Year: 2040

Computed by:

Date 5/25/2016



RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Phasing: [Diagram showing phasing for left, through, and right movements]

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	1395	0.37	516	25	541			NB	2715	0.37	1005	30	1035	*
	SB	2775	0.37	1027	10	1037	*		SB	1545	0.37	572	15	587	
	EB	47	1.00	47	20	67	*		EB	16	1.00	16	25	41	*
	WB	22	1.00	22	20	42			WB	28	1.00	28	5	33	

Remarks:	* Critical volume	Total	1104	Remarks:	* Critical volume	Total	1075
	Level of service (V/C)		0.69		Level of service (V/C)		0.67
			B				B

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

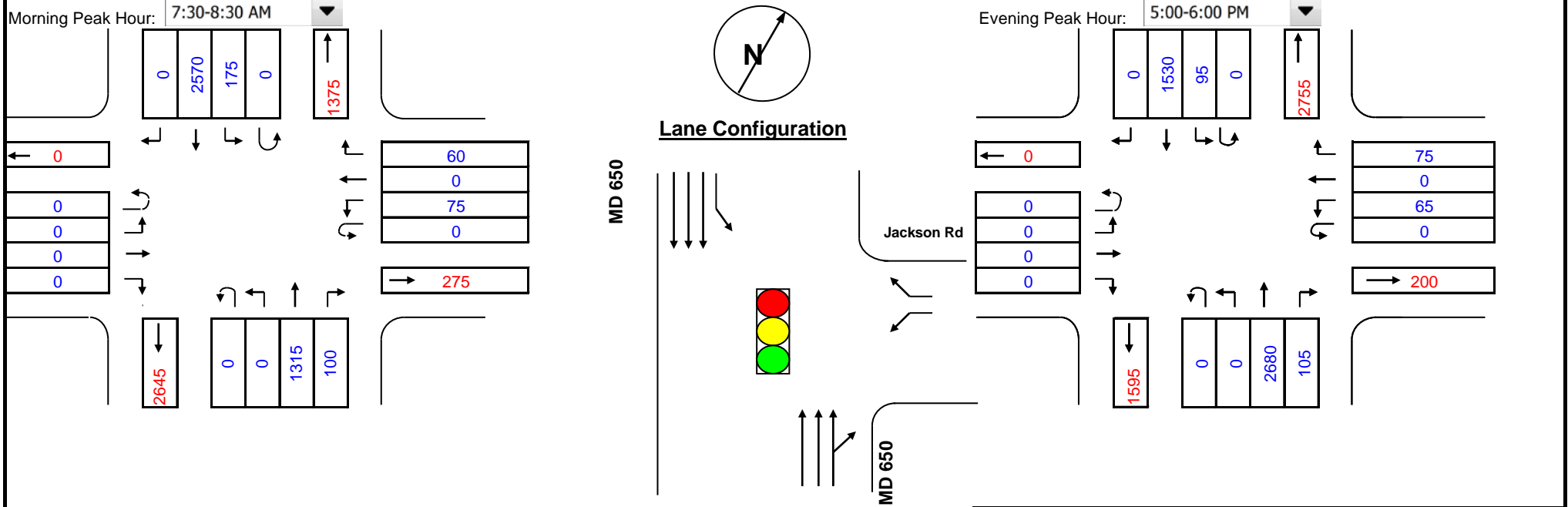
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 5/19/2015
Conditions: No-Build
Design Year: 2040

Location: MD 650 at Jackson

Computed by: RS

Date: 5/25/2016



Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phasing

RTOR/Overlap

Split Phasing

Inx. Control

Northbound
 Southbound
 Eastbound
 Westbound

East/West
 North/South
 None

Signal
 Stop

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	1415	0.37	524	175	699			NB	2785	0.37	1030	95	1125	*
	SB	2570	0.37	951	0	951	*		SB	1530	0.37	566	0	566	
	EB	0	0.00	0	0	0			EB	0	0.00	0	0	0	
	WB	75	1.00	75	0	75	*		WB	65	1.00	65	0	65	*

Remarks:	* Critical volume	Total	1026	Remarks:	* Critical volume	Total	1190
	Level of service (V/C)		0.64		Level of service (V/C)		0.74
			B				C

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date:

Location: US 29 at MD 193 EBL

Conditions: Future

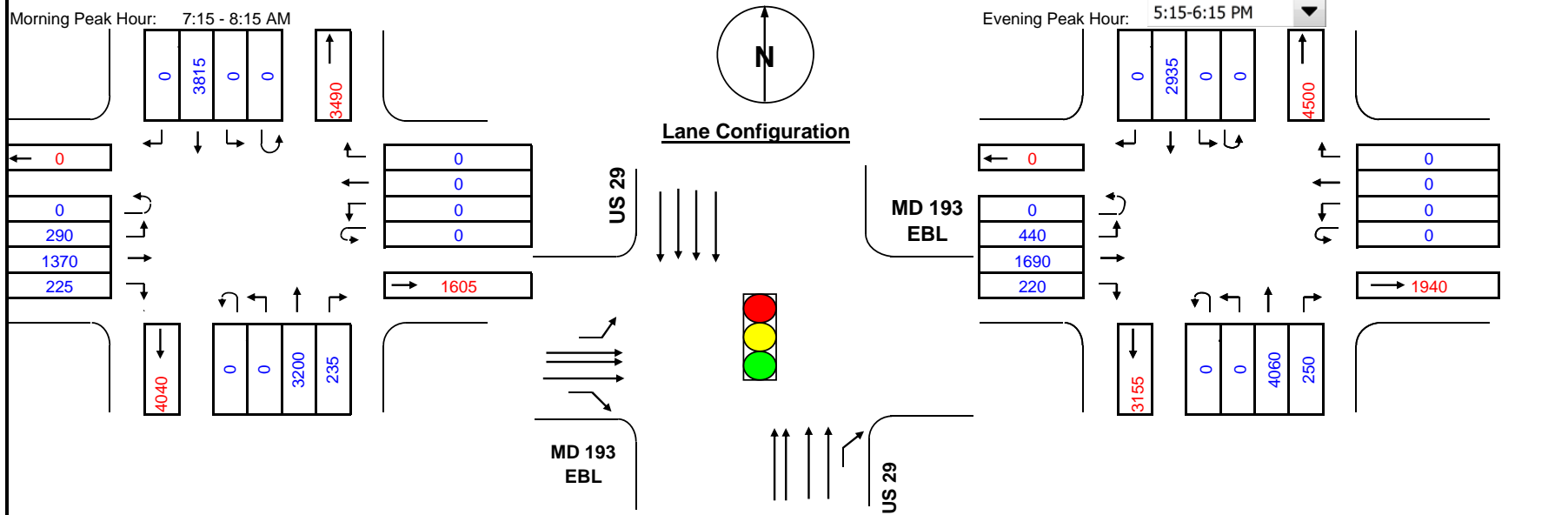
Design Year: 2040

Computed by:

Date 5/25/2016

Morning Peak Hour: 7:15 - 8:15 AM

Evening Peak Hour: 5:15-6:15 PM



Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A <= 1000		<= 199	1.1
2	= 0.53	B <= 1150		<= 599	2.0
3	= 0.37	C <= 1300		<= 799	3.0
4	= 0.30	D <= 1450		<= 999	4.0
DbI-Lt = 0.60		E <= 1600		> 1000	5.0
		F > 1600			

Phasing

RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	3200	0.30	960	0	960			NB	4060	0.30	1218	0	1218	*
	SB	3815	0.30	1145	0	1145	*		SB	2935	0.30	881	0	881	
	EB	1370	0.37	507	0	507	*		EB	1690	0.37	625	0	625	*
	WB	0	0.00	0	290	290			WB	0	0.00	0	440	440	

Remarks: * Critical volume Total **1651** Level of service (V/C) **1.03** **F** Remarks: * Critical volume Total **1843** Level of service (V/C) **1.15** **F**

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date:

Location: US 29 at MD 193 WBL

Conditions: Future No-Build

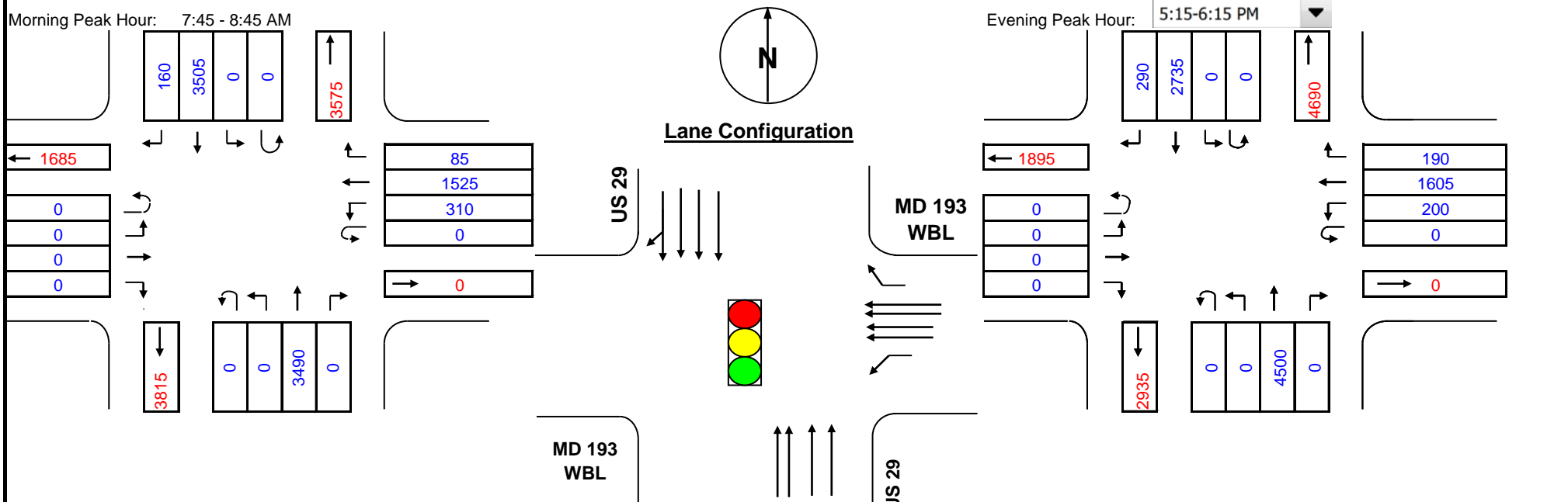
Design Year: 2040

Computed by:

Date 5/25/2016

Morning Peak Hour: 7:45 - 8:45 AM

Evening Peak Hour: 5:15-6:15 PM



Phasing

↕	←		

RTOR/Overlap

- Northbound
- Southbound
- Eastbound
- Westbound

Split Phasing

- East/West
- North/South
- None

Inx. Control

- Signal
- Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
Dbl-Lt = 0.60		E	≤ 1600	> 1000	5.0
		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	3490	0.30	1047	0	1047			NB	4500	0.30	1350	0	1350	*
	SB	3665	0.30	1100	0	1100	*		SB	3025	0.30	908	0	908	
	EB	0	0.30	0	310	310			EB	0	0.30	0	200	200	
	WB	1525	0.30	458	0	458	*		WB	1605	0.30	482	0	482	*

Remarks:	* Critical volume	Total	1557	Remarks:	* Critical volume	Total	1832
	Level of service (V/C)		0.97		Level of service (V/C)		1.14
			E				F

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

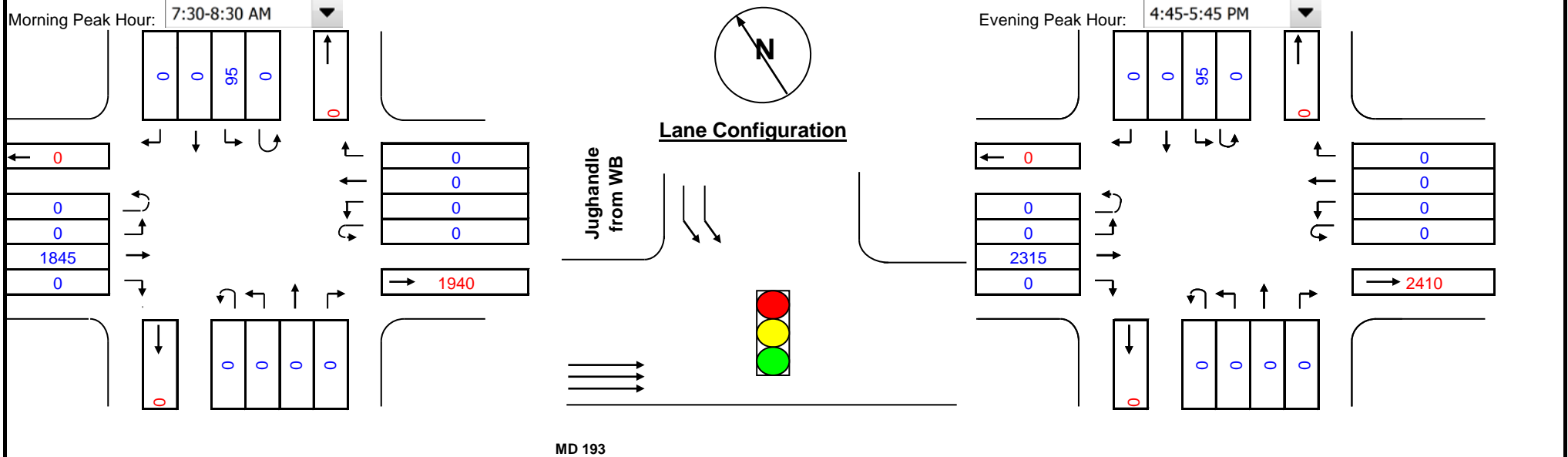
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 5/19/2015
Conditions: No-Build
Design Year: 2040

Location: MD 193 EB at Jughandle from WB

Computed by: RS

Date: 5/25/2016



Phasing

RTOR/Overlap

- Northbound
- Southbound
- Eastbound
- Westbound

Split Phasing

- East/West
- North/South
- None

Inx. Control

- Signal
- Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A <= 1000		<= 199	1.1
2	= 0.53	B <= 1150		<= 599	2.0
3	= 0.37	C <= 1300		<= 799	3.0
4	= 0.30	D <= 1450		<= 999	4.0
5	= 0.25	E <= 1600		> 1000	5.0
Dbl-Lt = 0.60		F > 1600			

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	0	0.00	0	0	0			NB	0	0.00	0	0	0	
	SB	95	0.60	57	0	57	*		SB	95	0.60	57	0	57	*
	EB	1845	0.37	683	0	683	*		EB	2315	0.37	857	0	857	*
	WB	0	0.00	0	0	0			WB	0	0.00	0	0	0	

Remarks:	* Critical volume	Total	740	Remarks:	* Critical volume	Total	914
	Level of service (V/C)		0.46		Level of service (V/C)		0.57
			A				A

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date:

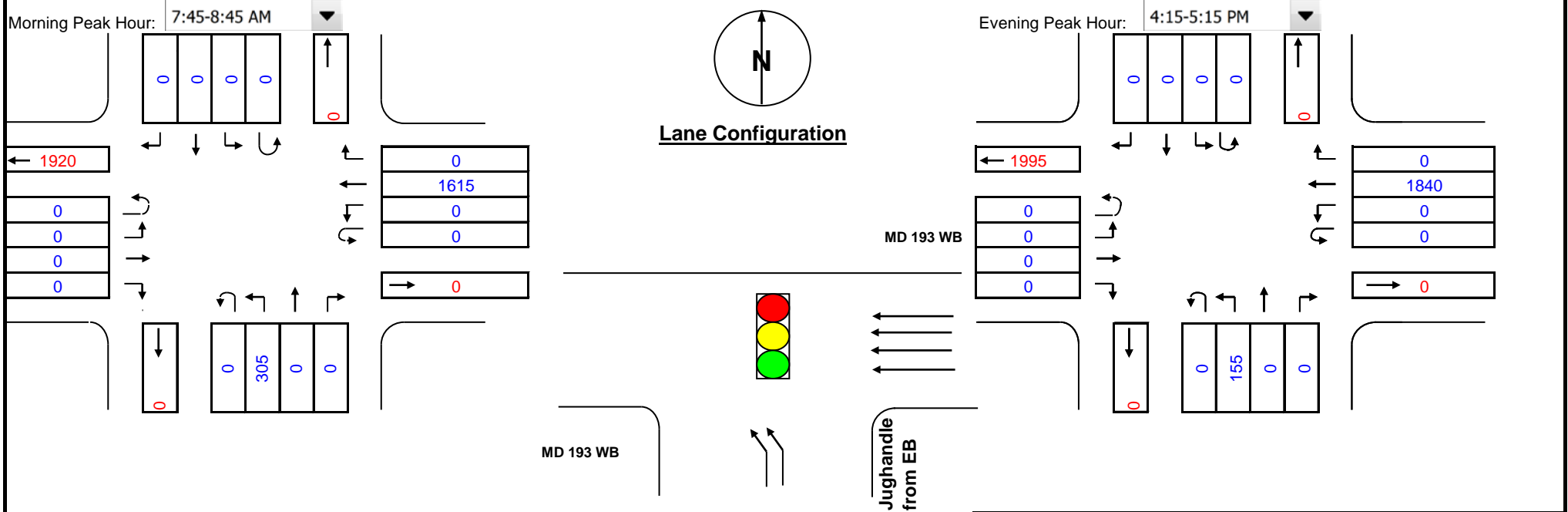
Location: MD 193 WB at Jughandle from EB

Conditions: No-Build

Design Year: 2040

Computed by:

Date 5/25/2016



RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	305	0.60	183	0	183	*		NB	155	0.60	93	0	93	*
	SB	0	0.00	0	0	0			SB	0	0.00	0	0	0	
	EB	0	0.00	0	0	0			EB	0	0.00	0	0	0	
	WB	1615	0.30	485	0	485	*		WB	1840	0.30	552	0	552	*

Remarks: * Critical volume Total **668** Level of service (V/C) **0.42** **A** Remarks: * Critical volume Total **645** Level of service (V/C) **0.40** **A**

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 5/28/2015

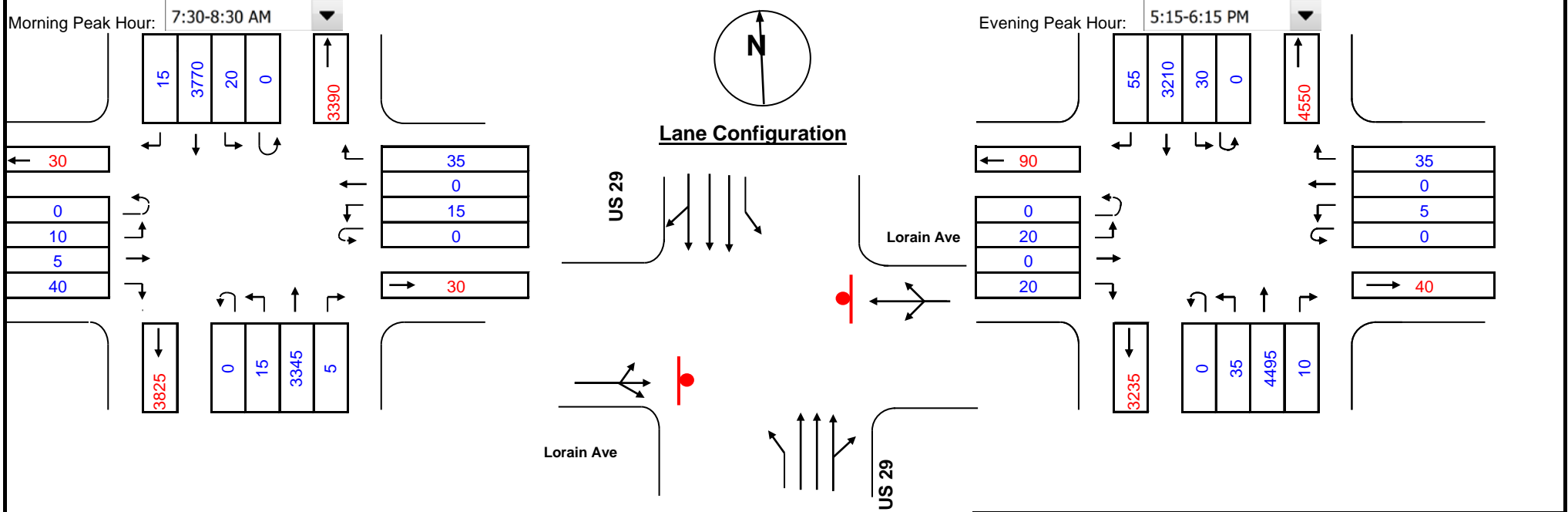
Location: US 29 at Lorain Ave

Conditions: Future No-Build

Design Year: 2040

Computed by: NB

Date: 5/25/2016



Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	≤ 1000	≤ 199	1.1
2	= 0.55	B	≤ 1150	≤ 599	2.0
3	= 0.40	C	≤ 1300	≤ 799	3.0
4	= 0.30	D	≤ 1450	≤ 999	4.0
5	= 0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phasing				RTOR/Overlap		Split Phasing		Inx. Control	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	3350	0.37	1240	20	1260			NB	4505	0.37	1667	30	1697	*
	SB	3785	0.37	1400	15	1415	*		SB	3265	0.37	1208	35	1243	
	EB	56	1.00	56	15	71	*		EB	42	1.00	42	5	47	
	WB	52	1.00	52	10	62			WB	41	1.00	41	20	61	*

Remarks:	* Critical volume	Total	1486	Remarks:	* Critical volume	Total	1757
	Level of service (V/C)		0.93		Level of service (V/C)		1.10
			E				F

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 6/24/2014

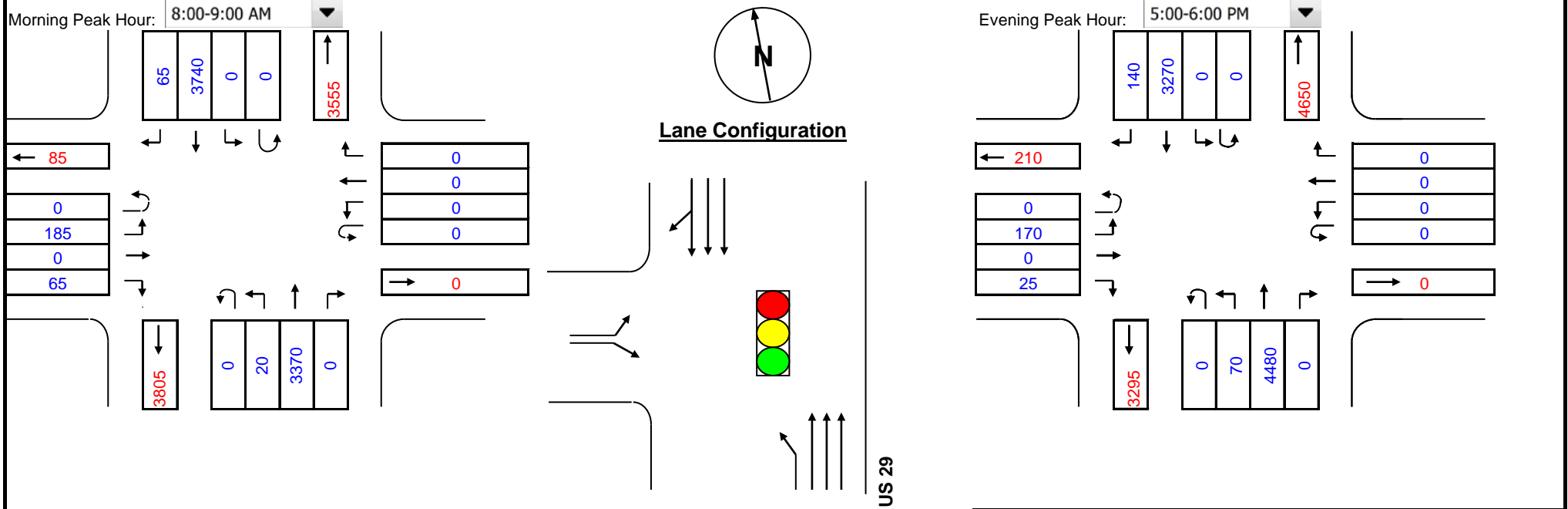
Location: US 29 at Southwood and Eastwood

Conditions: Future No-Build

Design Year: 2040

Computed by: RS

Date: 5/25/2016



Phasing

RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	<= 1000	<= 199	1.1
2	= 0.53	B	<= 1150	<= 599	2.0
3	= 0.37	C	<= 1300	<= 799	3.0
4	= 0.30	D	<= 1450	<= 999	4.0
5	= 0.25	E	<= 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	3370	0.37	1247	0	1247			NB	4480	0.37	1658	0	1658	*
	SB	3805	0.37	1408	20	1428	*		SB	3410	0.37	1262	70	1332	
	EB	185	1.00	185	0	185	*		EB	170	1.00	170	0	170	*
	WB	0	0.00	0	0	0			WB	0	0.00	0	0	0	

Remarks:	* Critical volume	Total	1613	Remarks:	* Critical volume	Total	1828
	Level of service (V/C)		1.01		Level of service (V/C)		1.14
			F				F

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 9/16/2014

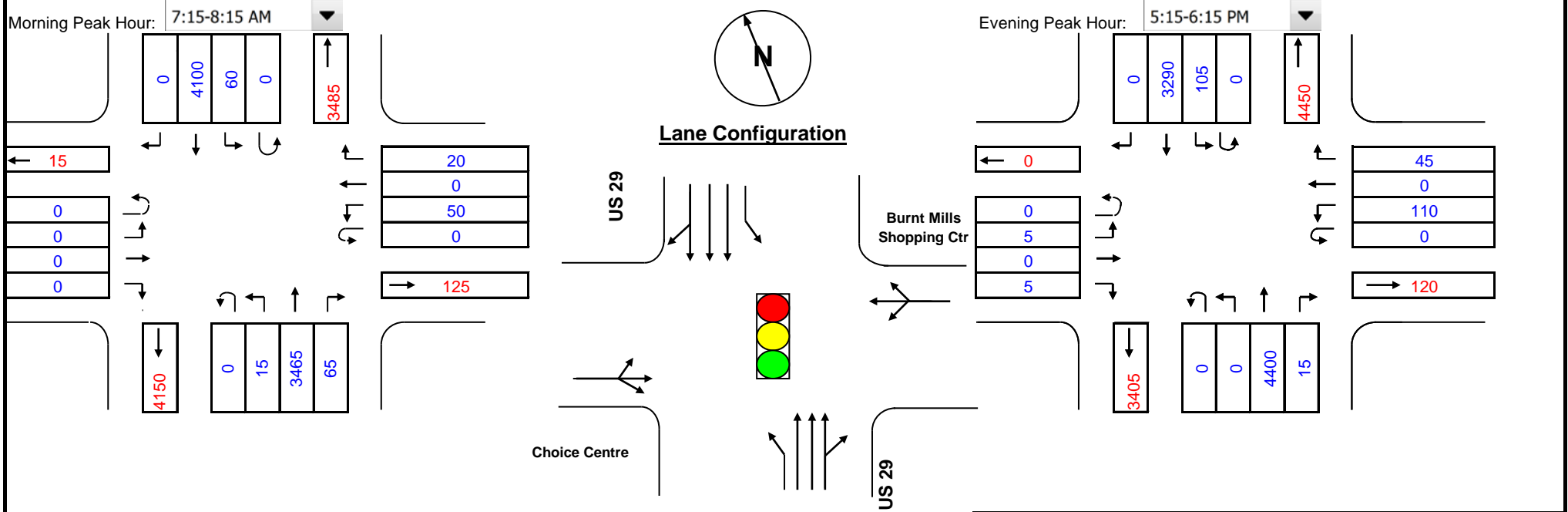
Location: US 29 at Burnt Mills Shopping Ctr

Conditions: Future No-Build

Design Year: 2040

Computed by: RS

Date 5/25/2016



Phasing

RTOR/Overlap

- Northbound
- Southbound
- Eastbound
- Westbound

Split Phasing

- East/West
- North/South
- None

Inx. Control

- Signal
- Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1 = 1.00		A ≤ 1000		≤ 199	1.1
2 = 0.53		B ≤ 1150		≤ 599	2.0
3 = 0.37		C ≤ 1300		≤ 799	3.0
4 = 0.30		D ≤ 1450		≤ 999	4.0
5 = 0.25		E ≤ 1600		> 1000	5.0
Dbl-Lt = 0.60		F > 1600			

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	3530	0.37	1306	60	1366			NB	4415	0.37	1634	105	1739	*
	SB	4100	0.37	1517	15	1532	*		SB	3290	0.37	1217	0	1217	
	EB	0	1.00	0	50	50			EB	11	1.00	11	110	121	
	WB	75	1.00	75	0	75	*		WB	166	1.00	166	5	171	*

Remarks:	* Critical volume	Total	1607	Remarks:	* Critical volume	Total	1910
	Level of service (V/C)		1.00		Level of service (V/C)		1.19
			F				F

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 9/16/2014

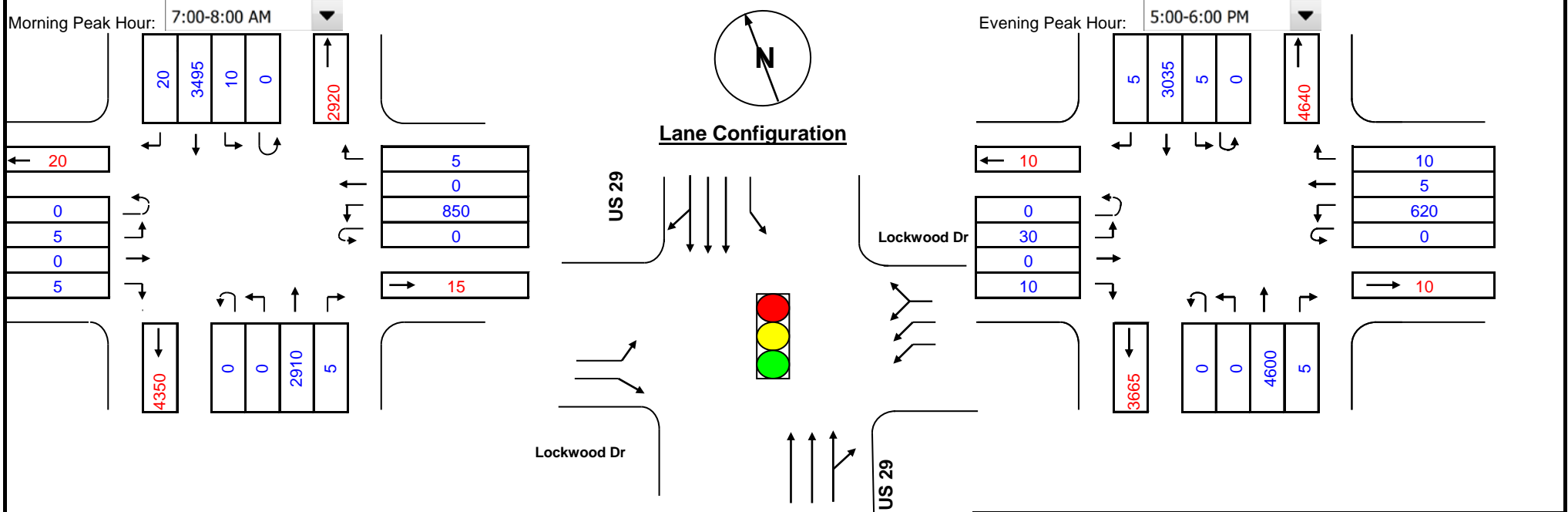
Location: US 29 at Lockwood

Conditions: Future No-Build

Design Year: 2040

Computed by: RS

Date: 5/25/2016



Phasing

RTOR/Overlap

- Northbound
- Southbound
- Eastbound
- Westbound

Split Phasing

- East/West
- North/South
- None

Inx. Control

- Signal
- Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	2915	0.37	1079	10	1089			NB	4605	0.37	1704	5	1709	*
	SB	3515	0.37	1301	0	1301	*		SB	3040	0.37	1125	0	1125	
	EB	5	1.00	5	0	5			EB	10	1.00	10	0	10	
	WB	855	0.37	316	5	321	*		WB	635	0.37	235	30	265	*

Remarks:	* Critical volume	Total	1622	Remarks:	* Critical volume	Total	1974
	Level of service (V/C)		1.01		Level of service (V/C)		1.23
			F				F

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date:

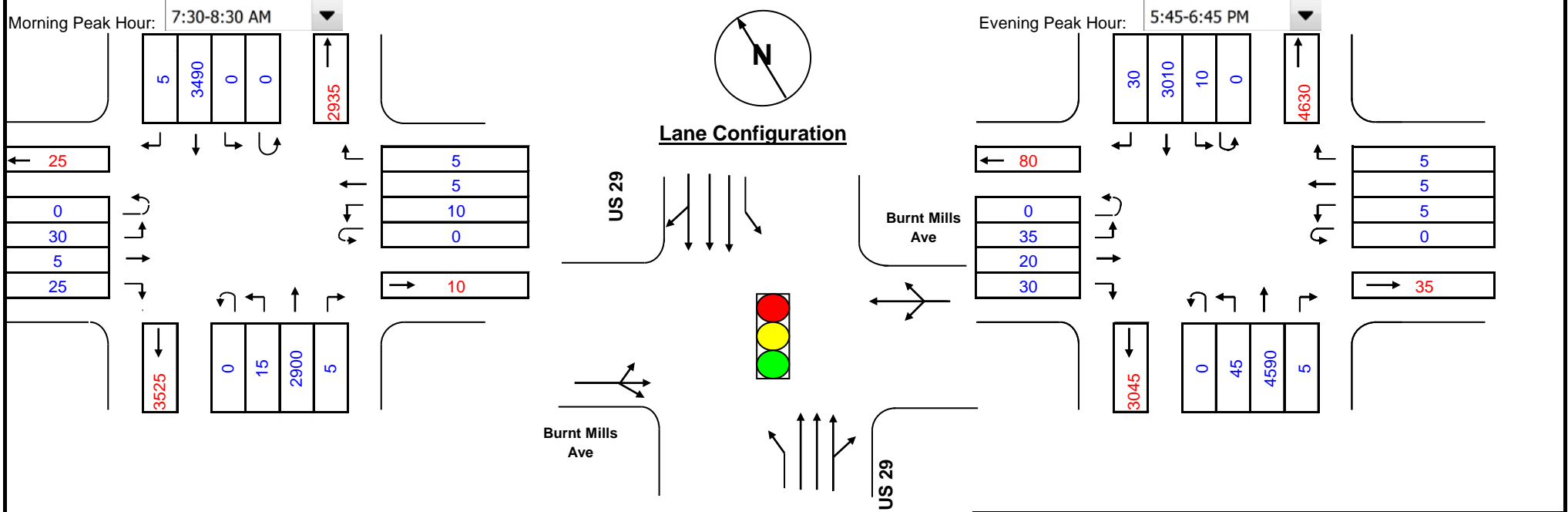
Location: US 29 at Burnt Mills

Conditions: No-Build

Design Year: 2040

Computed by:

Date 5/25/2016



RTOR/Overlap Northbound
 Southbound
 Eastbound
 Westbound

Split Phasing East/West
 North/South
 None

Inx. Control Signal
 Stop

Phasing

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
Dbl-Lt = 0.60		E	≤ 1600	> 1000	5.0
		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	2905	0.37	1075	0	1075			NB	4595	0.37	1700	10	1710	*
	SB	3495	0.37	1293	15	1308	*		SB	3040	0.37	1125	45	1170	
	EB	63	1.00	63	10	73	*		EB	89	1.00	89	5	94	*
	WB	21	1.00	21	30	51			WB	16	1.00	16	35	51	

Remarks:	* Critical volume	Total	1381	Remarks:	* Critical volume	Total	1804
	Level of service (V/C)		0.86		Level of service (V/C)		1.13
			D				F

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 5/20/2015
Conditions: No-Build
Design Year: 2040

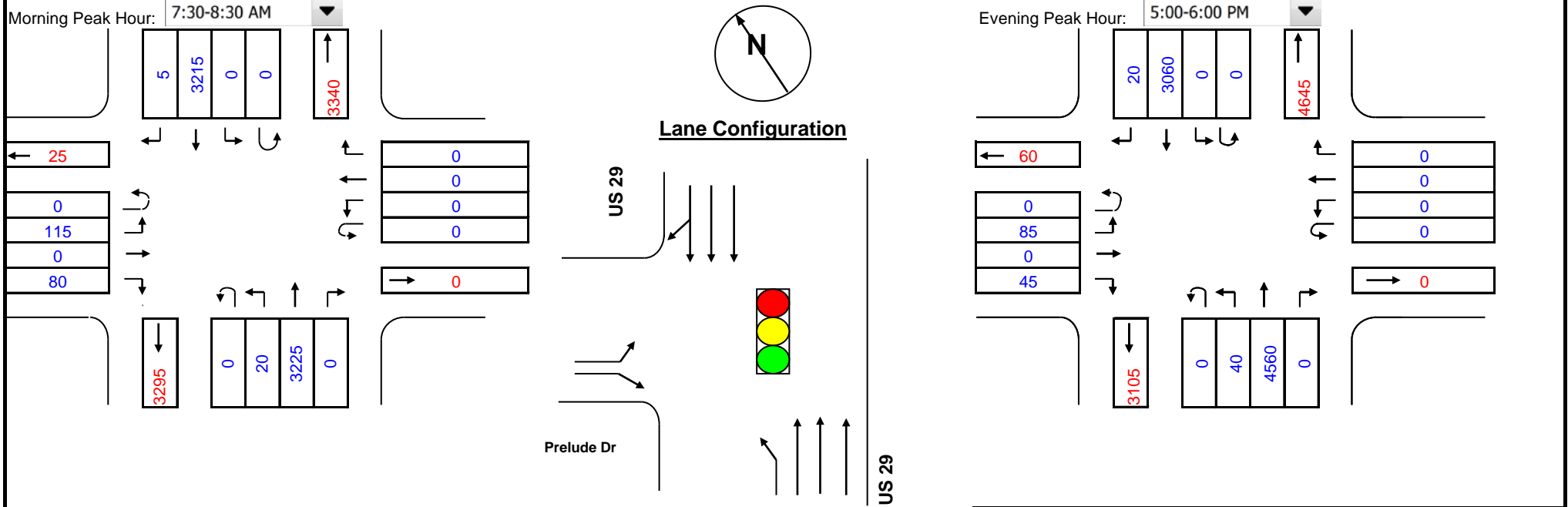
Location: US 29 at Prelude

Computed by: RS

Date: 5/25/2016

Morning Peak Hour: 7:30-8:30 AM

Evening Peak Hour: 5:00-6:00 PM



RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Phasing: [Diagram showing phasing for Northbound, Southbound, Eastbound, and Westbound movements]

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	3225	0.37	1193	0	1193			NB	4560	0.37	1687	0	1687	*
	SB	3220	0.37	1191	20	1211	*		SB	3080	0.37	1140	40	1180	
	EB	115	1.00	115	0	115	*		EB	85	1.00	85	0	85	*
	WB	0	0.00	0	0	0			WB	0	0.00	0	0	0	

Remarks:	* Critical volume	Total	1326	Remarks:	* Critical volume	Total	1772
	Level of service (V/C)		0.83		Level of service (V/C)		1.11
			D				F

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

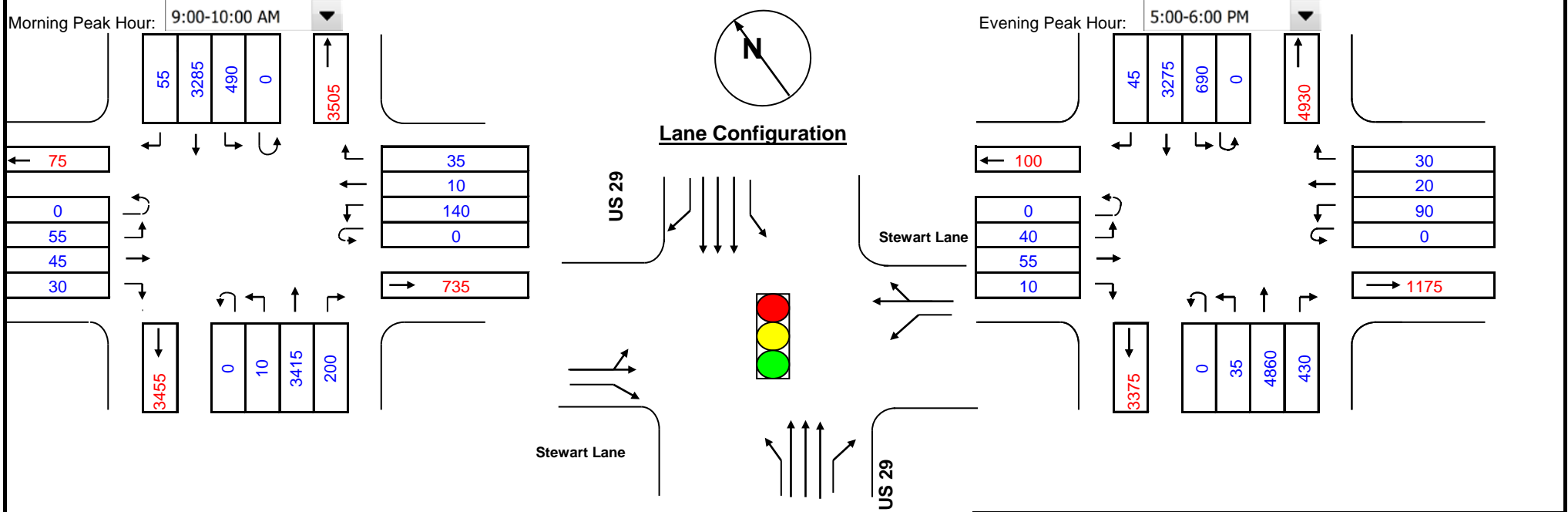
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 7/8/2014
Conditions: No-Build
Design Year: 2040

Location: US 29 and Stewart Lane

Computed by: RS

Date: 5/25/2016



Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	≤ 1000	≤ 199	1.1
2	= 0.53	B	≤ 1150	≤ 599	2.0
3	= 0.37	C	≤ 1300	≤ 799	3.0
4	= 0.30	D	≤ 1450	≤ 999	4.0
5	= 0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Phasing:

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	3415	0.37	1264	490	1754	*		NB	4860	0.37	1798	690	2488	*
	SB	3285	0.37	1215	10	1225			SB	3275	0.37	1212	35	1247	
	EB	106	1.00	106	140	246	*		EB	99	1.00	99	90	189	*
	WB	45	1.00	45	55	100			WB	50	1.00	50	40	90	

Remarks:	* Critical volume	Total	1999	Remarks:	* Critical volume	Total	2677
	Level of service (V/C)		1.25		Level of service (V/C)		1.67
			F				F

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

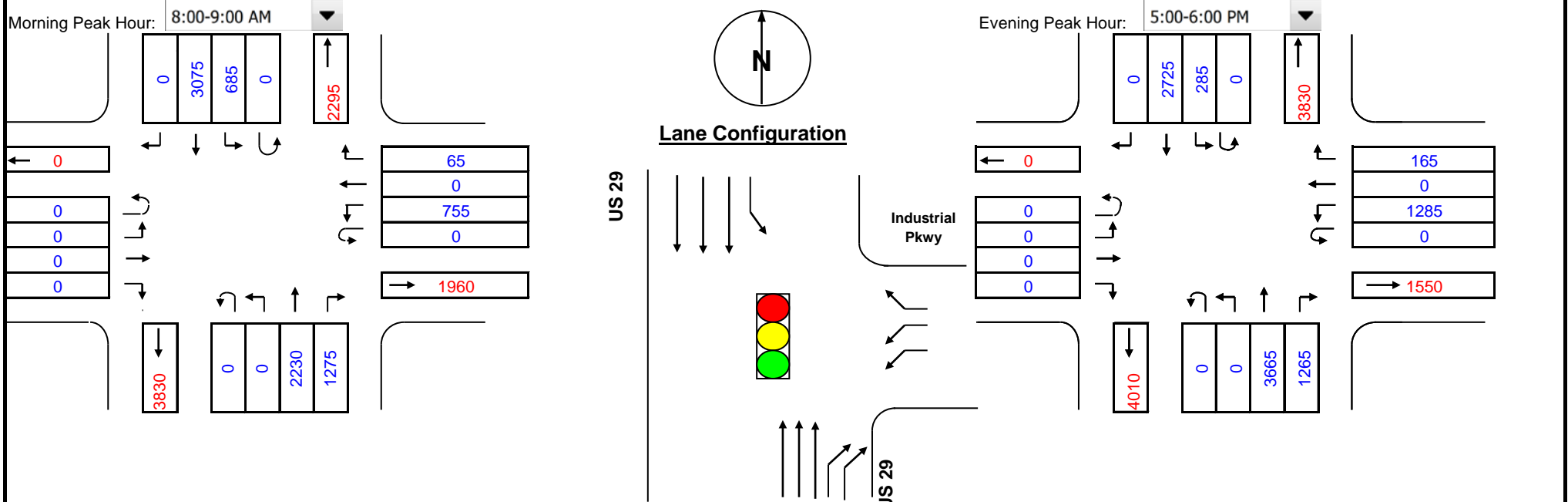
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 6/27/2012
Conditions: No-Build
Design Year: 2040

Location: US 29 at Industrial Road

Computed by: RS

Date: 5/25/2016



Phasing

RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	2230	0.37	825	685	1510	*		NB	3665	0.37	1356	285	1641	*
	SB	3075	0.37	1138	0	1138			SB	2725	0.37	1008	0	1008	
	EB	0	0.00	0	0	0			EB	0	0.00	0	0	0	
	WB	755	0.60	453	0	453	*		WB	1285	0.60	771	0	771	*

Remarks:	* Critical volume	Total	1963	Remarks:	* Critical volume	Total	2412
	Level of service (V/C)		1.23		Level of service (V/C)		1.51
			F				F

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

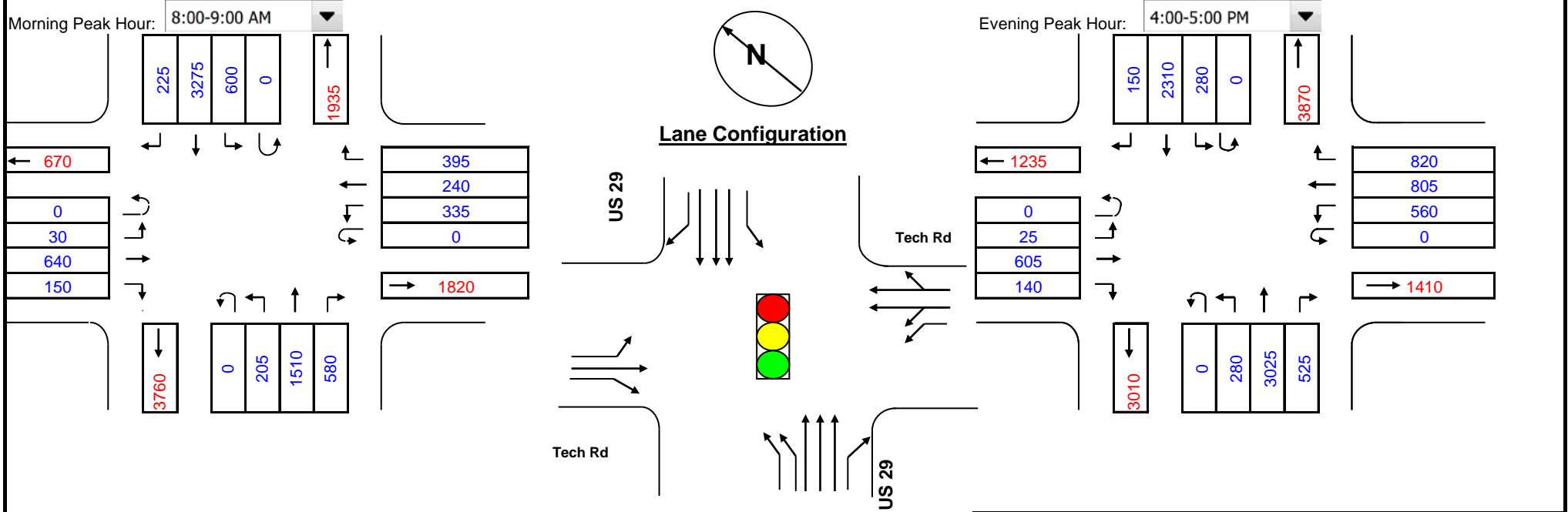
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 5/6/2014
Conditions: No-Build
Design Year: ###

Location: US 29 at Tech Road

Computed by: RS

Date 5/25/2016



Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	<= 1000	<= 199	1.1
2	= 0.53	B	<= 1150	<= 599	2.0
3	= 0.37	C	<= 1300	<= 799	3.0
4	= 0.30	D	<= 1450	<= 999	4.0
5	= 0.25	E	<= 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phasing

RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	1510	0.37	559	600	1159	*		NB	3025	0.37	1119	280	1399	*
	SB	3275	0.37	1212	123	1335	*		SB	2310	0.37	855	168	1023	*
	EB	640	1.00	640	0	640	*		EB	605	1.00	605	0	605	*
	WB	970	0.37	359	0	359	*		WB	2185	0.37	808	0	808	*

Remarks:	* Critical volume	Total	2334	Remarks:	* Critical volume	Total	2813
	Level of service (V/C)		1.46		Level of service (V/C)		1.76
			F				F

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

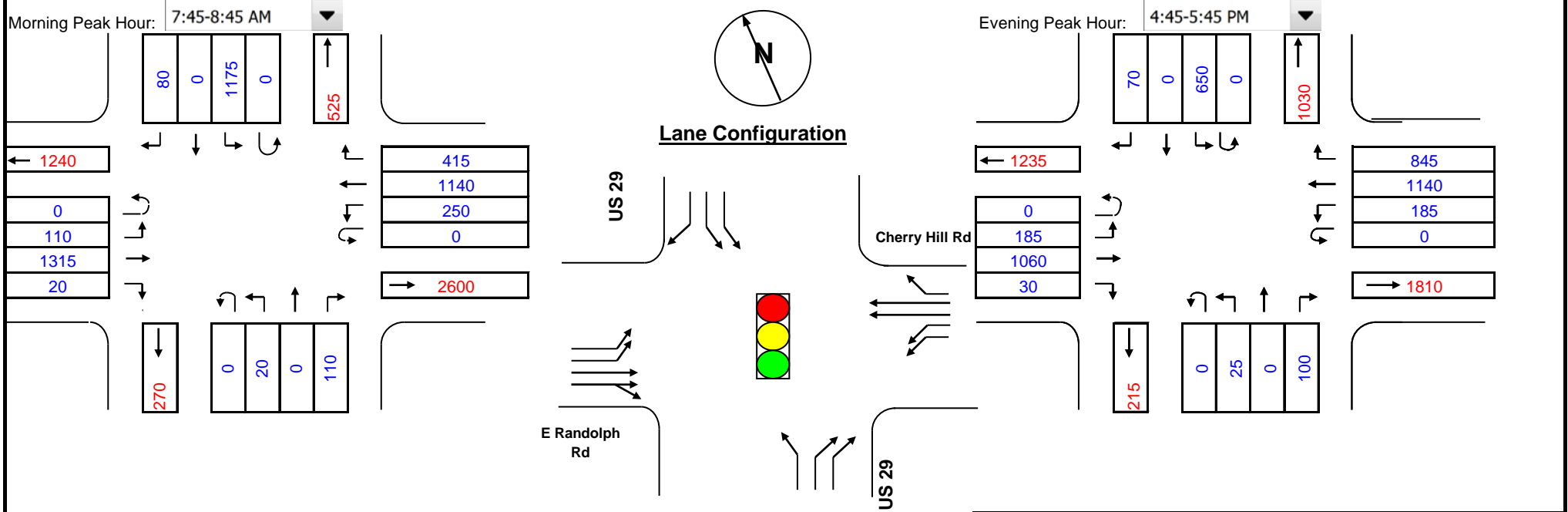
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 5/27/2015
Conditions: No-Build
Design Year: 2040

Location: Randolph at Cherry Hill and US 29 Ramps

Computed by:

Date 5/25/2016



Phasing

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RTOR/Overlap

- Northbound
- Southbound
- Eastbound
- Westbound

Split Phasing

- East/West
- North/South
- None

Inx. Control

- Signal
- Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	20	1.00	20	0	20	*		NB	25	1.00	25	0	25	*
	SB	1175	0.60	705	0	705	*		SB	650	0.60	390	0	390	*
	EB	1335	0.53	708	150	858	*		EB	1090	0.53	578	111	689	*
	WB	1140	0.53	604	66	670	*		WB	1140	0.53	604	111	715	*

Remarks:	* Critical volume	Total	1583	Remarks:	* Critical volume	Total	1130
	Level of service (V/C)		0.99		Level of service (V/C)		0.71
			E				B

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

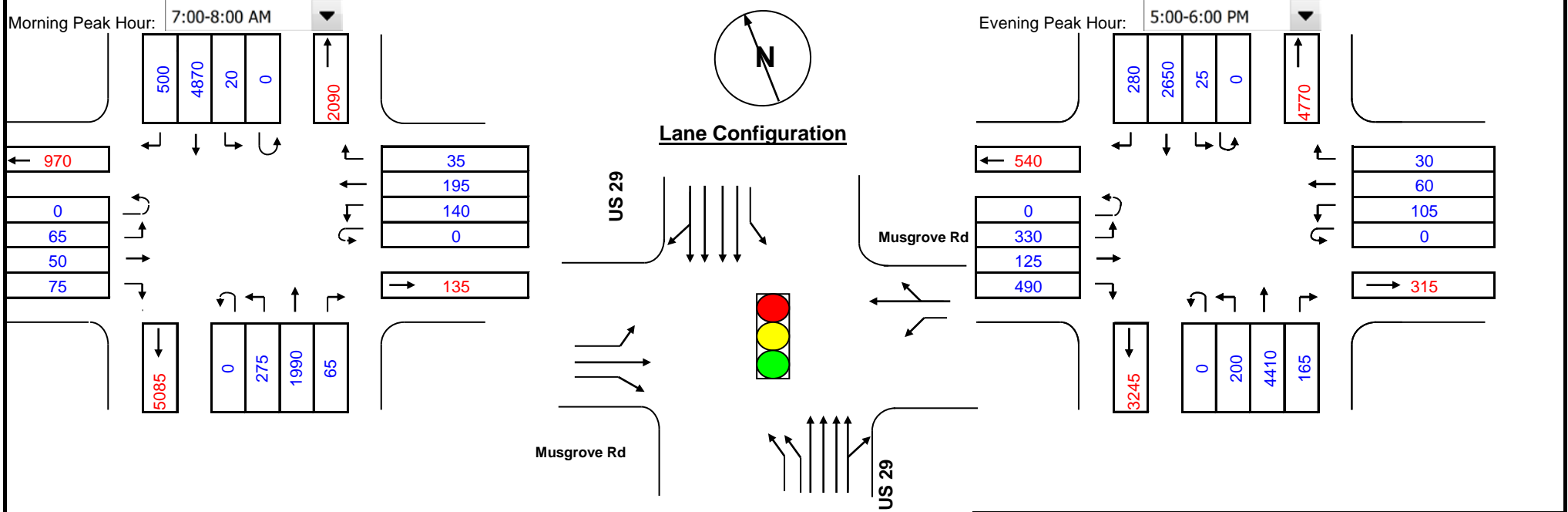
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 12/11/2013
Conditions: No-Build
Design Year: 2040

Location: US 29 at Musgrove

Computed by: RS

Date: 5/25/2016



Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	<= 1000	<= 199	1.1
2	= 0.53	B	<= 1150	<= 599	2.0
3	= 0.37	C	<= 1300	<= 799	3.0
4	= 0.30	D	<= 1450	<= 999	4.0
5	= 0.25	E	<= 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phasing

RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	2055	0.30	617	20	637			NB	4575	0.30	1373	25	1398	*
	SB	5370	0.30	1611	165	1776	*		SB	2930	0.30	879	120	999	
	EB	50	1.00	50	140	190			EB	370	1.00	370	105	475	*
	WB	230	1.00	230	65	295	*		WB	90	1.00	90	330	420	

Remarks:	* Critical volume	Total	2071	Remarks:	* Critical volume	Total	1873
	Level of service (V/C)		1.29		Level of service (V/C)		1.17
			F				F

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

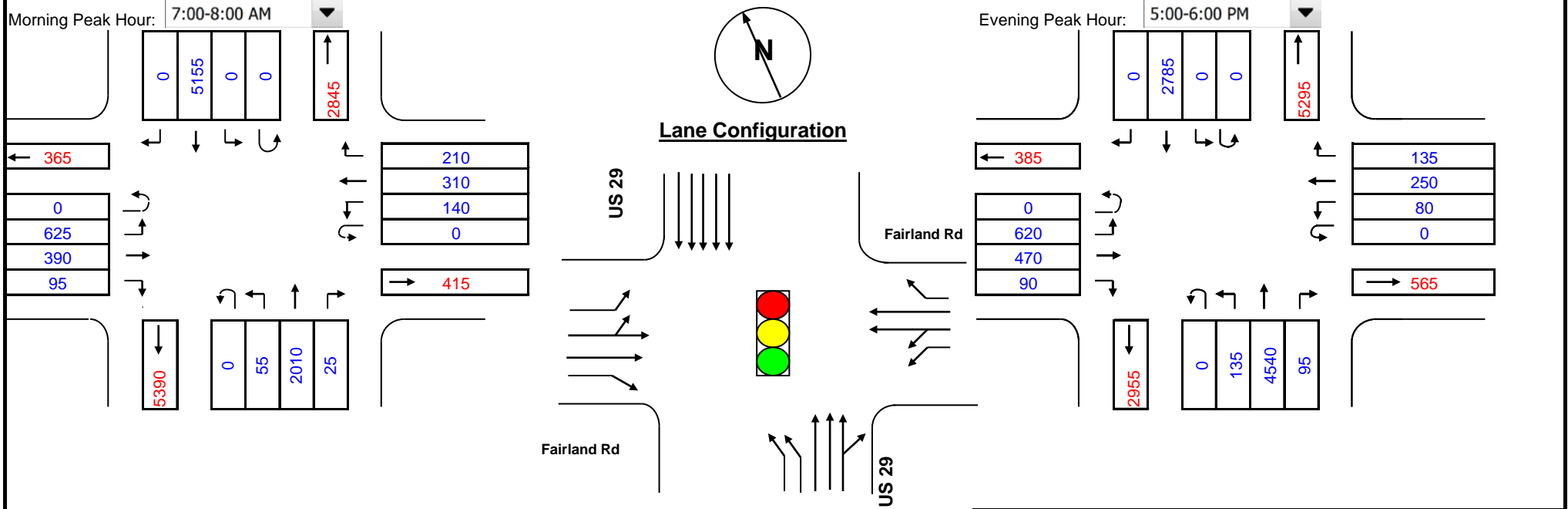
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 9/18/2014
Conditions: No-Build
Design Year: 2040

Location: US 29 at Fairland

Computed by: RS

Date: 5/25/2016



Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	<= 1000	<= 199	1.1
2	= 0.53	B	<= 1150	<= 599	2.0
3	= 0.37	C	<= 1300	<= 799	3.0
4	= 0.30	D	<= 1450	<= 999	4.0
5	= 0.25	E	<= 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phasing

RTOR/Overlap

Split Phasing

Inx. Control

Northbound
 Southbound
 Eastbound
 Westbound

East/West
 North/South
 None

Signal
 Stop

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	2035	0.37	753	0	753			NB	4635	0.37	1715	0	1715	*
	SB	5155	0.25	1289	33	1322	*		SB	2785	0.25	696	81	777	
	EB	1015	0.37	376	0	376	*		EB	1090	0.37	403	0	403	*
	WB	210	1.00	210	0	210	*		WB	135	1.00	135	0	135	*

Remarks:	* Critical volume	Total	1907	Remarks:	* Critical volume	Total	2253
	Level of service (V/C)		1.19		Level of service (V/C)		1.41
			F				F

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date:

Location: Old Columbia Pike at Fairland Rd

Conditions: No-Build

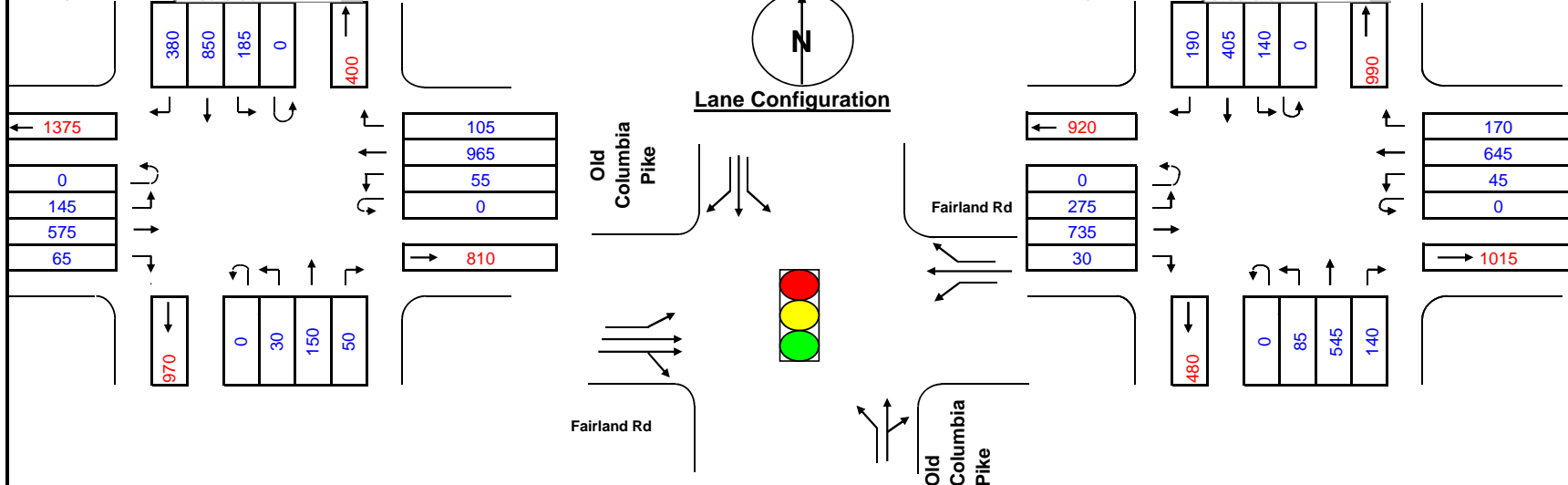
Design Year: 2040

Computed by:

Date 5/25/2016

Morning Peak Hour: 7:00-8:00 AM

Evening Peak Hour: 5:00-6:00 PM



Phasing			

RTOR/Overlap

Northbound

Southbound

Eastbound

Westbound

Split Phasing

East/West

North/South

None

Inx. Control

Signal

Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	<= 1000	<= 199	1.1
2	= 0.53	B	<= 1150	<= 599	2.0
3	= 0.37	C	<= 1300	<= 799	3.0
4	= 0.30	D	<= 1450	<= 999	4.0
5	= 0.25	E	<= 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	200	1.00	200	185	385			NB	685	1.00	685	140	825	*
	SB	850	1.00	850	30	880	*		SB	405	1.00	405	85	490	
	EB	640	0.53	339	55	394			EB	765	0.53	405	45	450	
	WB	965	1.00	965	145	1110	*		WB	645	1.00	645	275	920	*

Remarks:	* Critical volume	Total	1990	Remarks:	* Critical volume	Total	1745
	Level of service (V/C)		1.24		Level of service (V/C)		1.09
			F				F

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

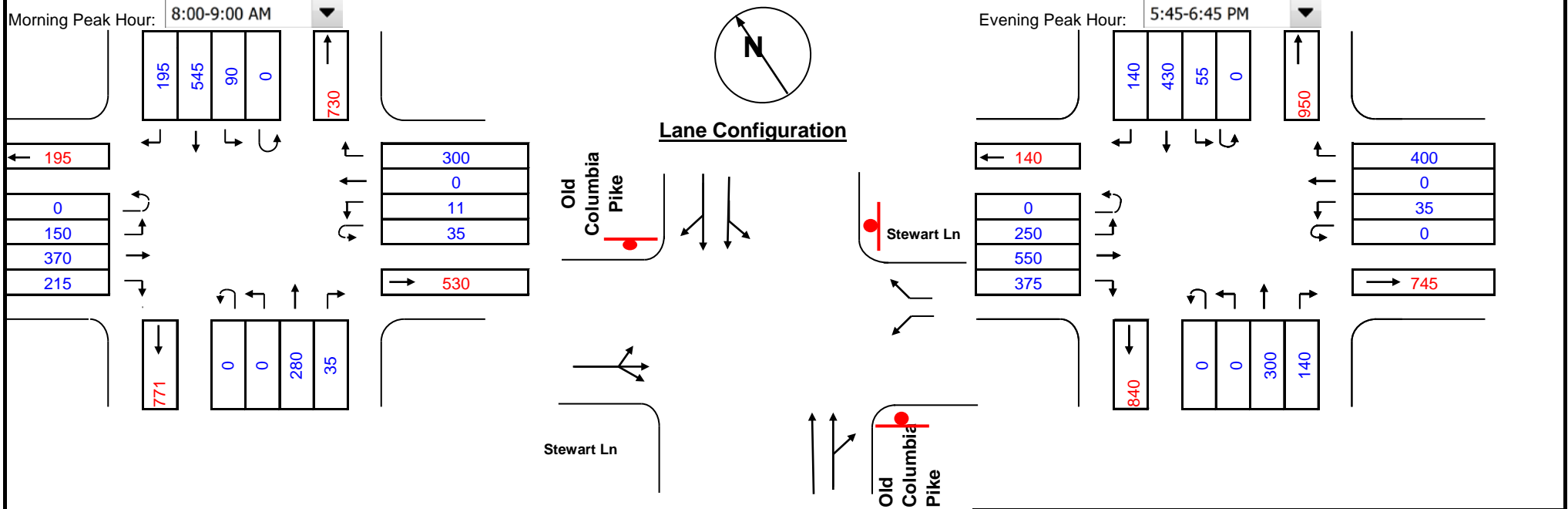
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 5/14/2015
Conditions: No-Build
Design Year: 2040

Location: Old Columbia Pike at Stewart Ln

Computed by: RS

Date: 5/25/2016



Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	<= 1000	<= 199	1.1
2	= 0.53	B	<= 1150	<= 599	2.0
3	= 0.37	C	<= 1300	<= 799	3.0
4	= 0.30	D	<= 1450	<= 999	4.0
5	= 0.25	E	<= 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	315	0.53	167	90	257			NB	440	0.53	233	55	288	
	SB	839	0.53	445	0	445	*		SB	680	0.53	360	0	360	*
	EB	735	1.00	735	0	735	*		EB	1175	1.00	1175	0	1175	*
	WB	210	1.00	210	150	360			WB	345	1.00	345	250	595	

Remarks: * Critical volume Total **1180** Level of service (V/C) **0.74** **C** Remarks: * Critical volume Total **1535** Level of service (V/C) **0.96** **E**

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

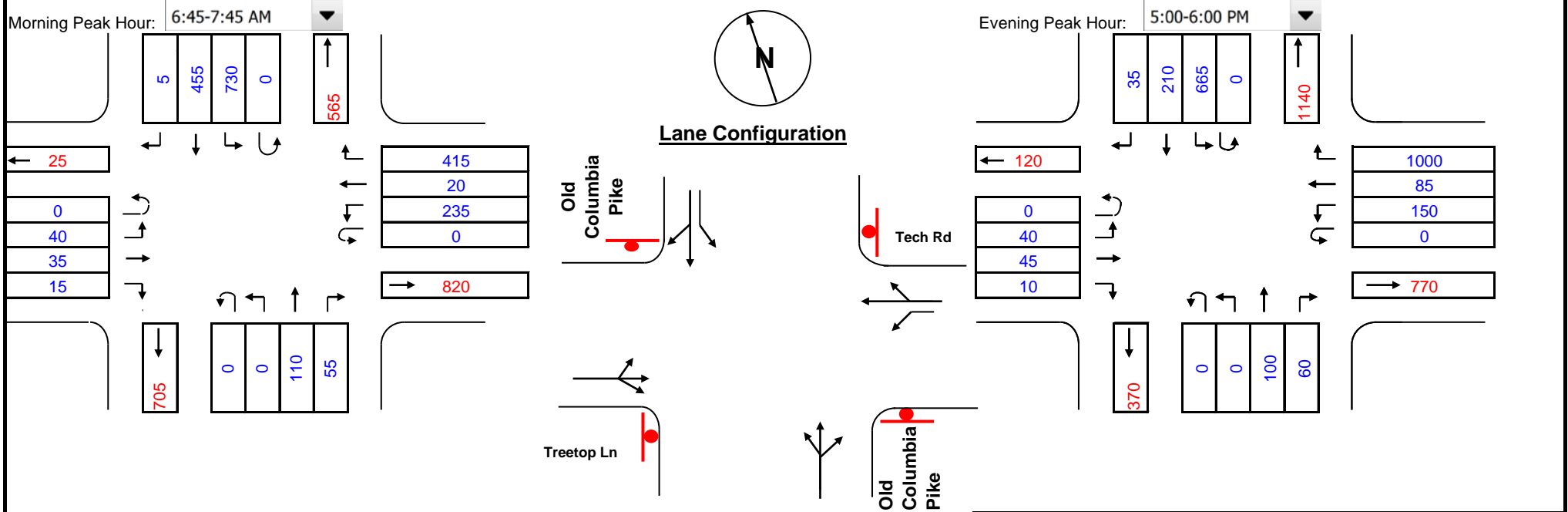
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 5/14/2015
Conditions: No-Build
Design Year: 2040

Location: Old Columbia Pike at Tech Rd

Computed by: RS

Date 5/25/2016



Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phasing

RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	165	1.00	165	730	895	*		NB	160	1.00	160	665	825	*
	SB	460	1.00	460	0	460			SB	245	1.00	245	0	245	
	EB	130	1.00	130	235	365			EB	255	1.00	255	150	405	
	WB	435	1.00	435	40	475	*		WB	1085	1.00	1085	40	1125	*

Remarks: * Critical volume Total **1370** Level of service (V/C) **0.86** **D** Remarks: * Critical volume Total **1950** Level of service (V/C) **1.22** **F**

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

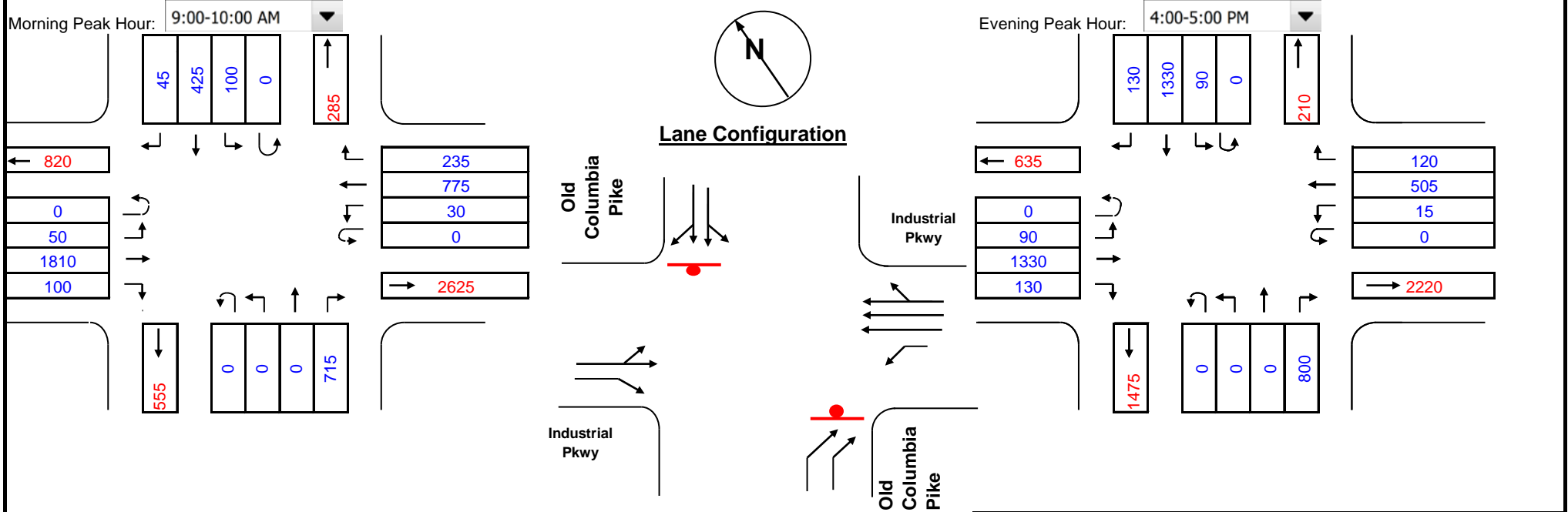
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 5/12/2015
Conditions: No-Build
Design Year: 2040

Location: Old Columbia Pike at Industrial

Computed by: RS

Date: 5/25/2016



RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	685	0.53	363	100	463	*		NB	785	0.53	416	90	506	
	SB	725	0.53	384	0	384			SB	1690	0.53	896	0	896	*
	EB	2060	1.00	2060	30	2090	*		EB	1510	1.00	1510	15	1525	*
	WB	1010	0.37	374	50	424			WB	625	0.37	231	90	321	

Remarks:	* Critical volume	Total	2553	Remarks:	* Critical volume	Total	2421
	Level of service (V/C)		1.60		Level of service (V/C)		1.51
			F				F

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date:

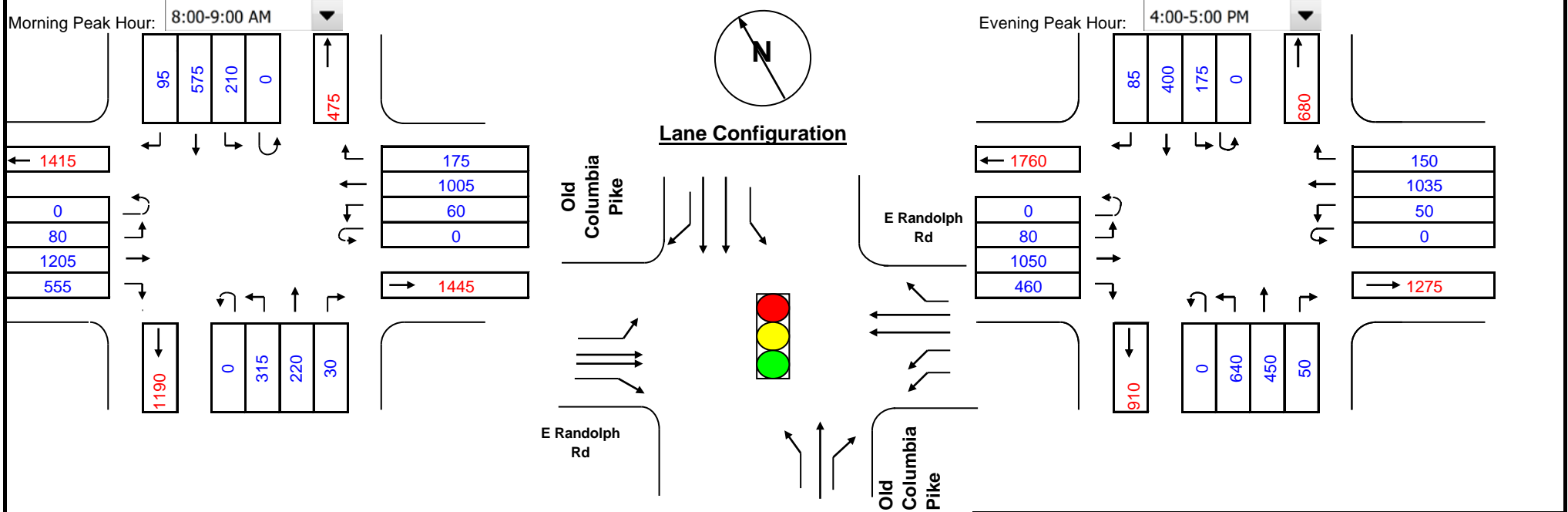
Location: Old Columbia Pike at Randolph

Conditions: No-Build

Design Year: 2040

Computed by: RS

Date: 5/25/2016



Phasing

RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	220	1.00	220	210	430			NB	450	1.00	450	175	625	
	SB	575	0.53	305	315	620	*		SB	400	0.53	212	640	852	*
	EB	1205	0.53	639	36	675	*		EB	1050	0.53	557	30	587	
	WB	1005	0.53	533	80	613			WB	1035	0.53	549	80	629	*

Remarks:	* Critical volume	Total	1294	Remarks:	* Critical volume	Total	1481
	Level of service (V/C)		0.81		Level of service (V/C)		0.93
			C				E

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

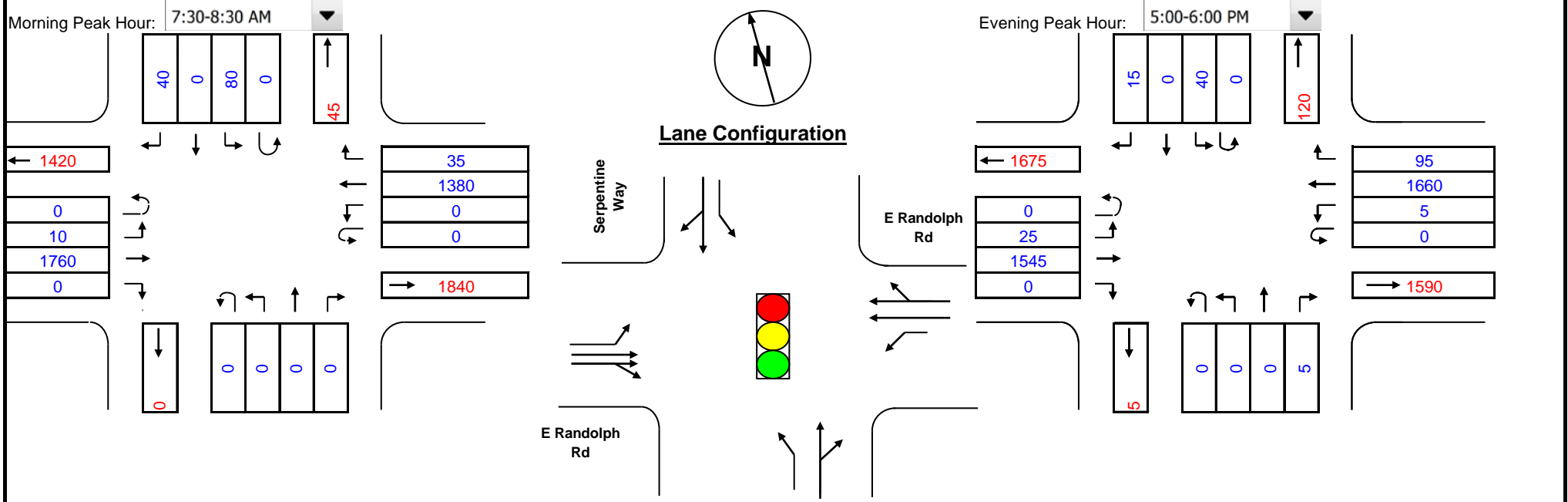
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 5/19/2015
Conditions: No-Build
Design Year: 2040

Location: Randolph at Serpentine

Computed by: RS

Date: 5/25/2016



Phasing

RTOR/Overlap

- Northbound
- Southbound
- Eastbound
- Westbound

Split Phasing

- East/West
- North/South
- None

Inx. Control

- Signal
- Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	0	1.00	0	80	80	*		NB	5	1.00	5	40	45	*
	SB	40	1.00	40	0	40			SB	15	1.00	15	0	15	
	EB	1760	0.53	933	0	933	*		EB	1545	0.53	819	5	824	
	WB	1415	0.53	750	10	760			WB	1755	0.53	930	25	955	*

Remarks: * Critical volume Total **1013** Level of service (V/C) **0.63** **B**

Remarks: * Critical volume Total **1000** Level of service (V/C) **0.63** **B**

Count Date:

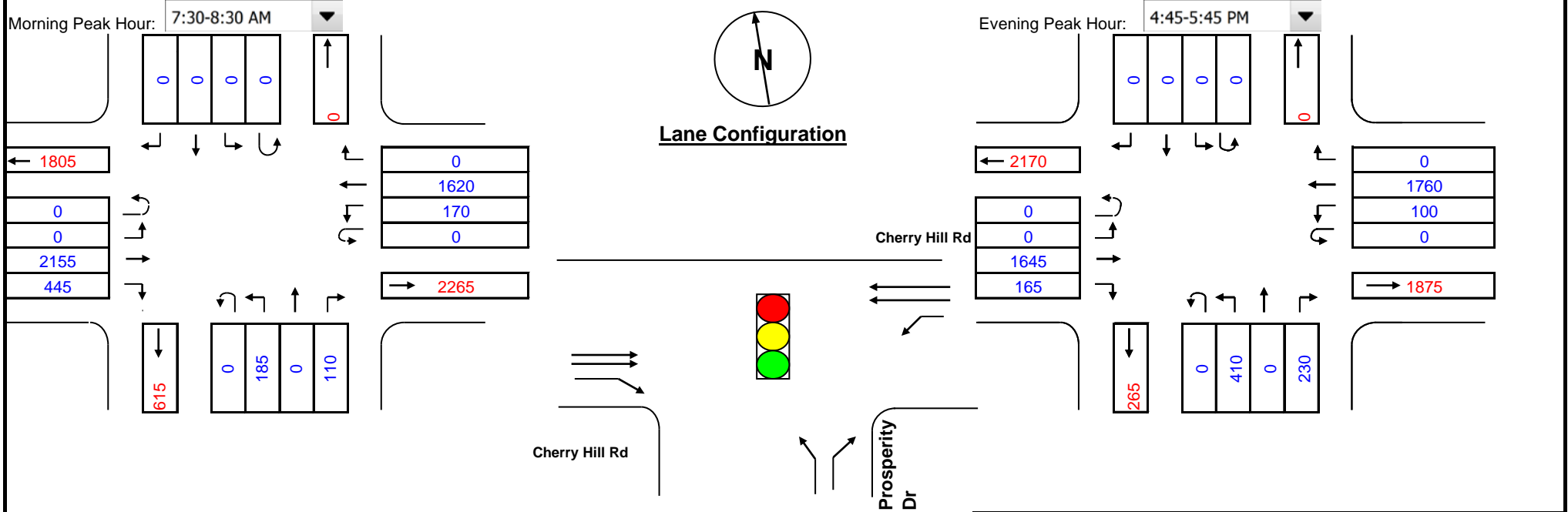
Location: Cherry Hill at Prosperity

Conditions: No-Build

Design Year: 2040

Computed by: RS

Date: 5/25/2016



Phasing

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RTOR/Overlap

- Northbound
- Southbound
- Eastbound
- Westbound

Split Phasing

- East/West
- North/South
- None

Inx. Control

- Signal
- Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	185	1.00	185	0	185	*		NB	410	1.00	410	0	410	*
	SB	0	0.00	0	0	0			SB	0	0.00	0	0	0	
	EB	2155	0.53	1142	170	1312	*		EB	1645	0.53	872	100	972	*
	WB	1620	0.53	859	0	859			WB	1760	0.53	933	0	933	

Remarks:	* Critical volume	Total	1497	Remarks:	* Critical volume	Total	1382
	Level of service (V/C)		0.94		Level of service (V/C)		0.86
			E				D

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date:

Location: Cherry Hill Rd at Broadbirch/Calverton

Conditions: **No-Build**

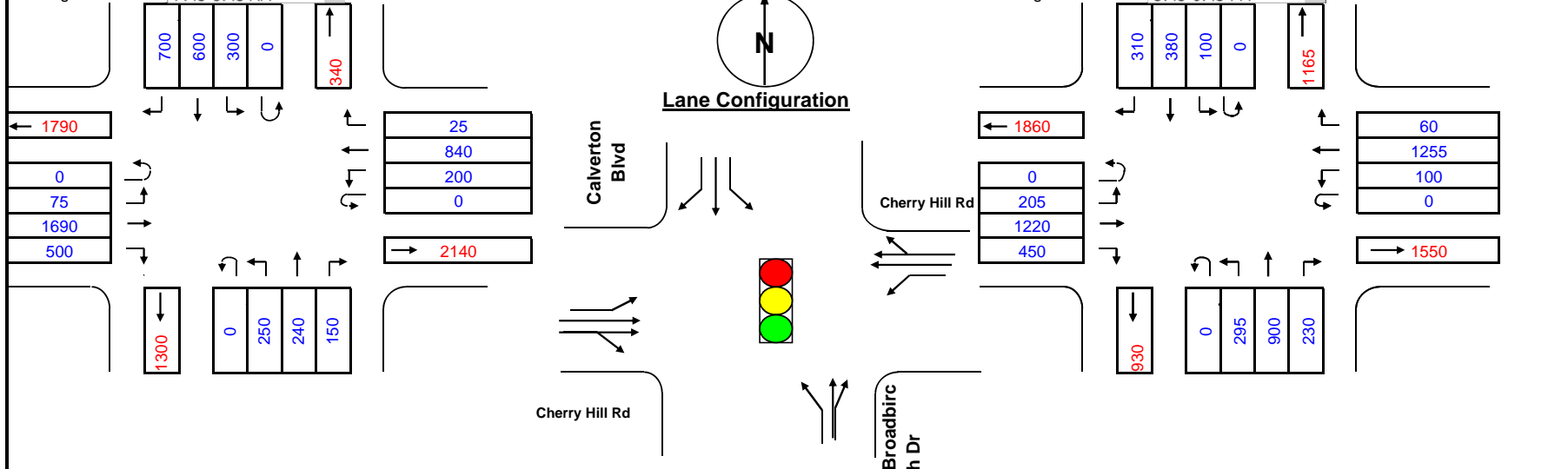
Design Year: **2040**

Computed by:

Date: **5/25/2016**

Morning Peak Hour: **7:45-8:45 AM**

Evening Peak Hour: **5:45-6:45 PM**



Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	<= 1000	<= 199	1.1
2	= 0.53	B	<= 1150	<= 599	2.0
3	= 0.37	C	<= 1300	<= 799	3.0
4	= 0.30	D	<= 1450	<= 999	4.0
5	= 0.25	E	<= 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phasing

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RTOR/Overlap

- Northbound
- Southbound
- Eastbound
- Westbound

Split Phasing

- East/West
- North/South
- None

Inx. Control

- Signal
- Stop

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	390	1.00	390	300	690			NB	1130	1.00	1130	100	1230	*
	SB	600	1.00	600	250	850	*		SB	380	1.00	380	295	675	
	EB	2190	0.53	1161	200	1361	*		EB	1670	0.53	885	100	985	*
	WB	865	0.53	458	75	533			WB	1315	0.53	697	205	902	

Remarks: * Critical volume Total **2211** Level of service (V/C) **1.38** **F** Remarks: * Critical volume Total **2215** Level of service (V/C) **1.38** **F**

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date:

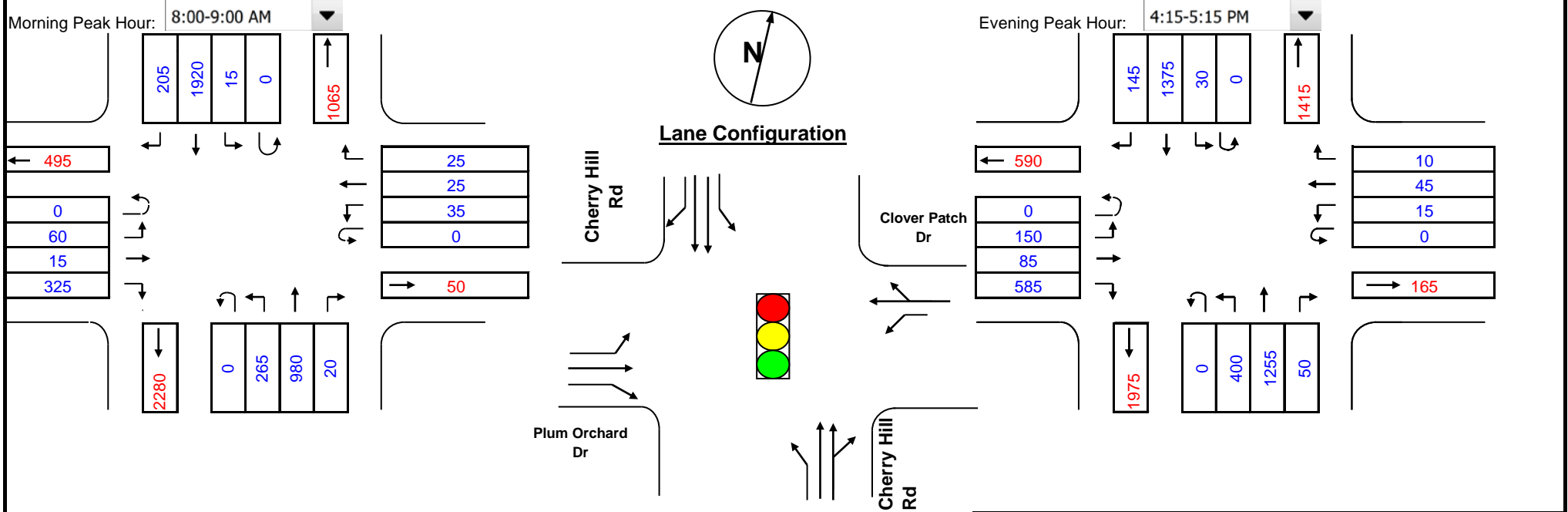
Location: Cherry Hill at Plum Orchard

Conditions: No-Build

Design Year: 2040

Computed by: RS

Date: 5/25/2016



Phasing

RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	<= 1000	<= 199	1.1
2	= 0.53	B	<= 1150	<= 599	2.0
3	= 0.37	C	<= 1300	<= 799	3.0
4	= 0.30	D	<= 1450	<= 999	4.0
5	= 0.25	E	<= 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	1000	0.53	530	15	545			NB	1305	0.53	692	30	722	
	SB	1920	0.53	1018	265	1283	*		SB	1375	0.53	729	400	1129	*
	EB	15	1.00	15	35	50	*		EB	85	1.00	85	15	100	*
	WB	50	1.00	50	60	110	*		WB	55	1.00	55	150	205	*

Remarks:	* Critical volume	Total	1393	Remarks:	* Critical volume	Total	1334
	Level of service (V/C)		0.87		Level of service (V/C)		0.83
			D				D

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

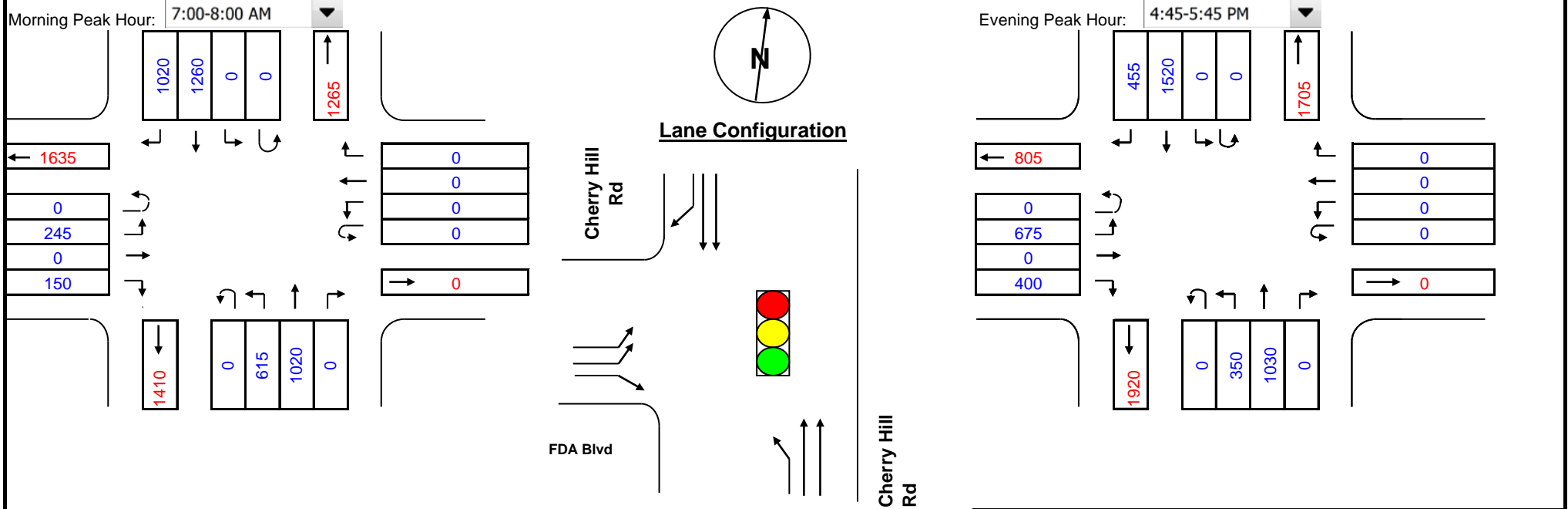
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 5/20/2015
Conditions: No-Build
Design Year: 2040

Location: Cherry Hill at FDA Blvd

Computed by: RS

Date: 5/25/2016



Phasing

RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	<= 1000	<= 199	1.1
2	= 0.53	B	<= 1150	<= 599	2.0
3	= 0.37	C	<= 1300	<= 799	3.0
4	= 0.30	D	<= 1450	<= 999	4.0
5	= 0.25	E	<= 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	1020	0.53	541	0	541			NB	1030	0.53	546	0	546	
	SB	1260	0.53	668	615	1283	*		SB	1520	0.53	806	350	1156	*
	EB	245	0.60	147	0	147	*		EB	50	1.00	50	0	50	*
	WB	0	0.00	0	0	0			WB	0	0.00	0	0	0	

Remarks:	* Critical volume	Total	1430	Remarks:	* Critical volume	Total	1206
	Level of service (V/C)		0.89		Level of service (V/C)		0.75
			D				C

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

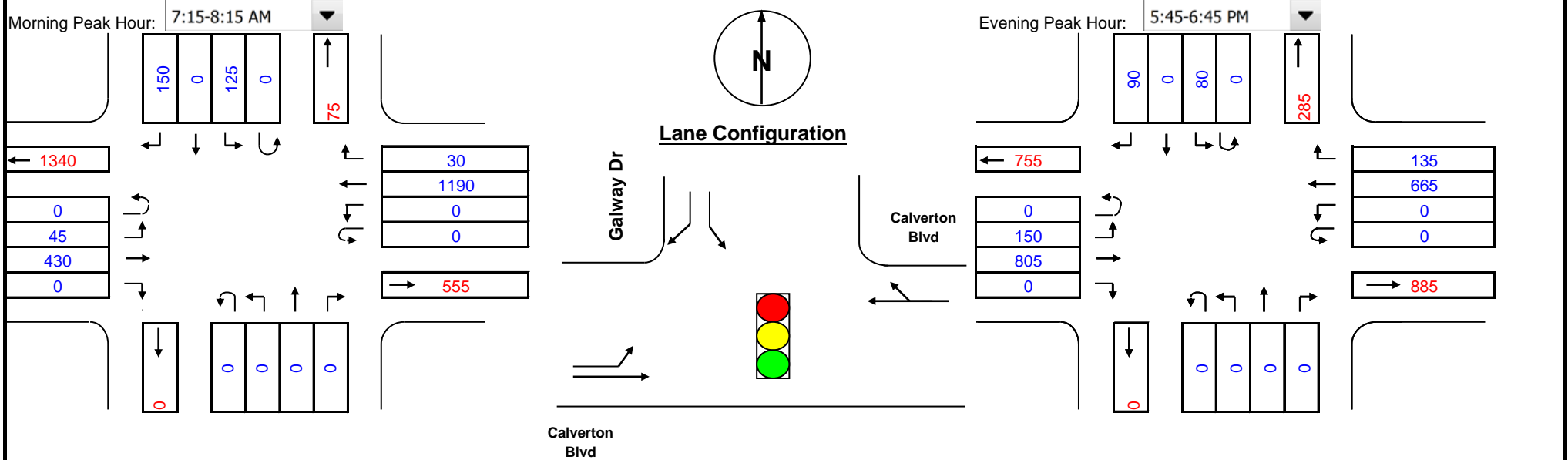
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 5/28/2015
Conditions: No-Build
Design Year: 2040

Location: Calverton Blvd at Galway Dr

Computed by: RS

Date: 5/25/2016



Phasing

RTOR/Overlap

- Northbound
- Southbound
- Eastbound
- Westbound

Split Phasing

- East/West
- North/South
- None

Inx. Control

- Signal
- Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	0	0.00	0	0	0			NB	0	0.00	0	0	0	
	SB	125	1.00	125	0	125	*		SB	80	1.00	80	0	80	*
	EB	430	1.00	430	0	430	*		EB	805	1.00	805	0	805	*
	WB	1220	1.00	1220	45	1265	*		WB	800	1.00	800	150	950	*

Remarks: * Critical volume Total **1390** Level of service (V/C) **0.87** **D** Remarks: * Critical volume Total **1030** Level of service (V/C) **0.64** **B**

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

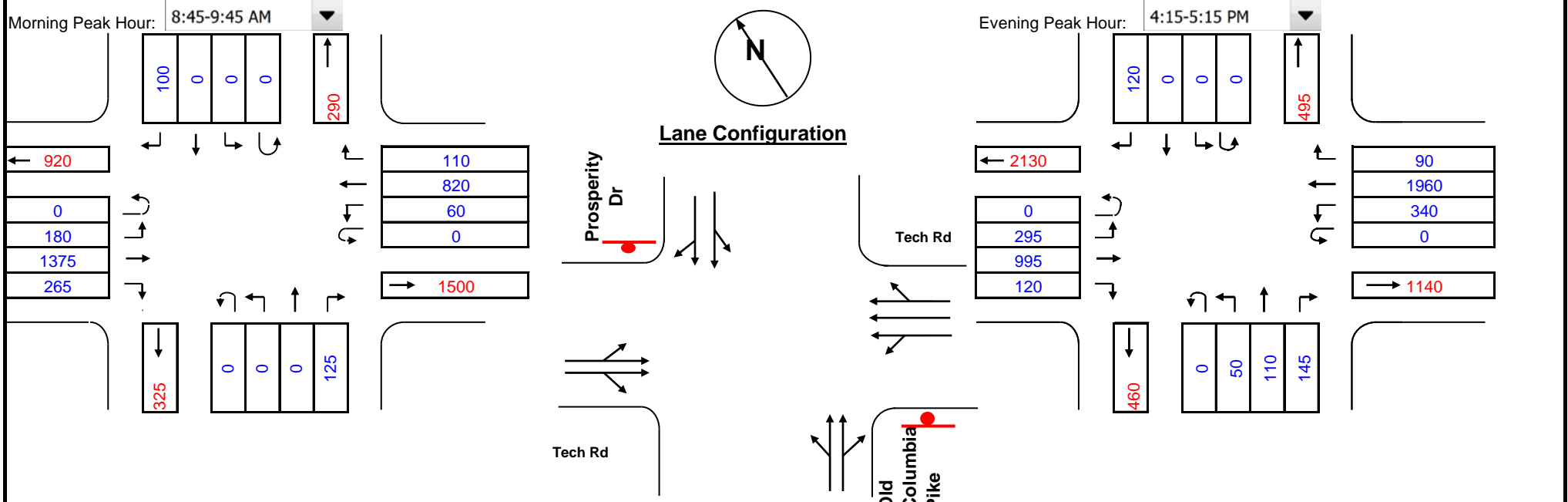
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 5/14/2015
Conditions: No-Build
Design Year: 2040

Location: Tech Road at Prosperity

Computed by: RS

Date 5/25/2016



Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1 = 1.00		A ≤ 1000		≤ 199	1.1
2 = 0.53		B ≤ 1150		≤ 599	2.0
3 = 0.37		C ≤ 1300		≤ 799	3.0
4 = 0.30		D ≤ 1450		≤ 999	4.0
5 = 0.25		E ≤ 1600		> 1000	5.0
Dbl-Lt = 0.60		F > 1600			

Phasing			

- RTOR/Overlap
- Northbound
 - Southbound
 - Eastbound
 - Westbound
- Split Phasing
- East/West
 - North/South
 - None
- Inx. Control
- Signal
 - Stop

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	125	0.53	66	0	66	*		NB	355	0.53	188	0	188	*
	SB	100	0.53	53	0	53			SB	120	0.53	64	50	114	
	EB	2360	0.53	1251	60	1311	*		EB	2590	0.53	1373	340	1713	*
	WB	1230	0.37	455	180	635			WB	3750	0.37	1388	295	1683	

Remarks: * Critical volume Total **1377** Level of service (V/C) **0.86** **D** Remarks: * Critical volume Total **1901** Level of service (V/C) **1.19** **F**

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

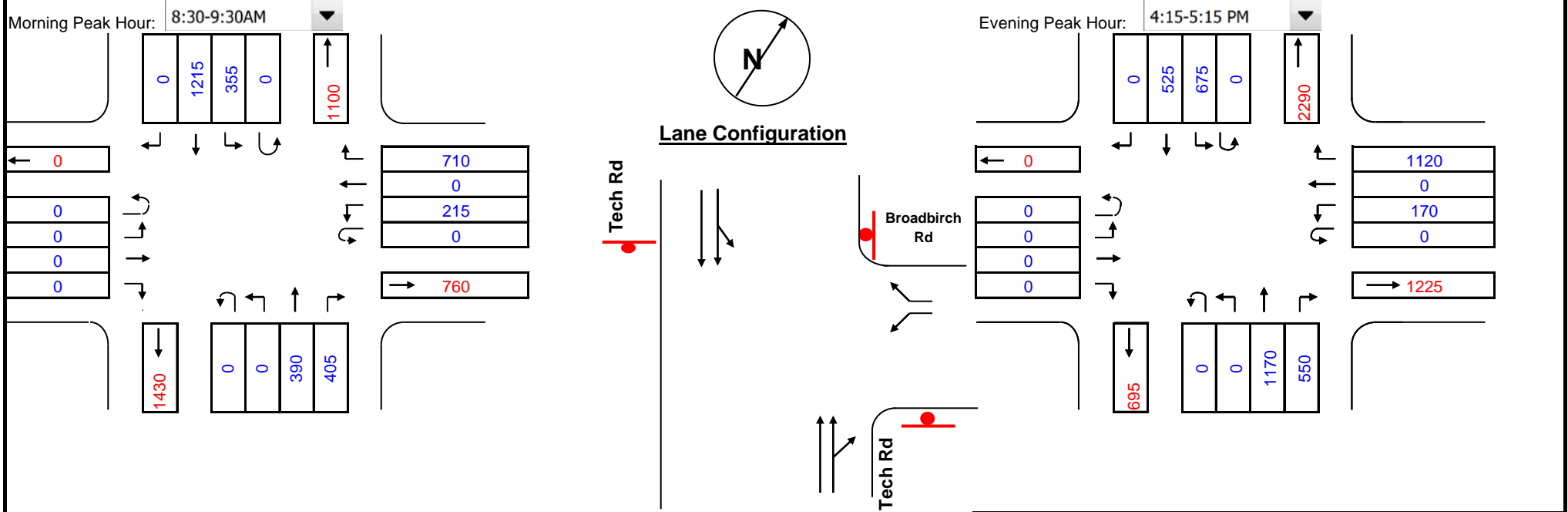
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 5/14/2015
Conditions: No-Build
Design Year: 2040

Location: Tech Road at Broadbirch

Computed by: RS

Date: 5/25/2016



Phasing				RTOR/Overlap			Split Phasing			Inx. Control			Number of Lanes		Lane Use Factor		Service Level		Critical Lane Vol		Opposing Volume (VPH)		PCE	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 = 1.00	2 = 0.53	A <= 1000	B <= 1150	<= 199	<= 599	1.1	2.0				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3 = 0.37	4 = 0.30	C <= 1300	D <= 1450	<= 799	<= 999	3.0	4.0				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5 = 0.25	Dbl-Lt = 0.60	E <= 1600	F > 1600	<= 999	> 1000	4.0	5.0				
Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*									
	NB	795	0.53	421	355	776			NB	1720	0.53	912	675	1587										
	SB	2280	0.53	1208	0	1208	*		SB	3900	0.53	2067	0	2067	*									
	EB	0	0.00	0	0	0			EB	0	0.00	0	0	0										
	WB	355	1.00	355	0	355	*		WB	445	1.00	445	0	445	*									
Remarks:		* Critical volume				Total		1563	Remarks:		* Critical volume				Total		2512							
		Level of service (V/C)						0.98			Level of service (V/C)						1.57	F						

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

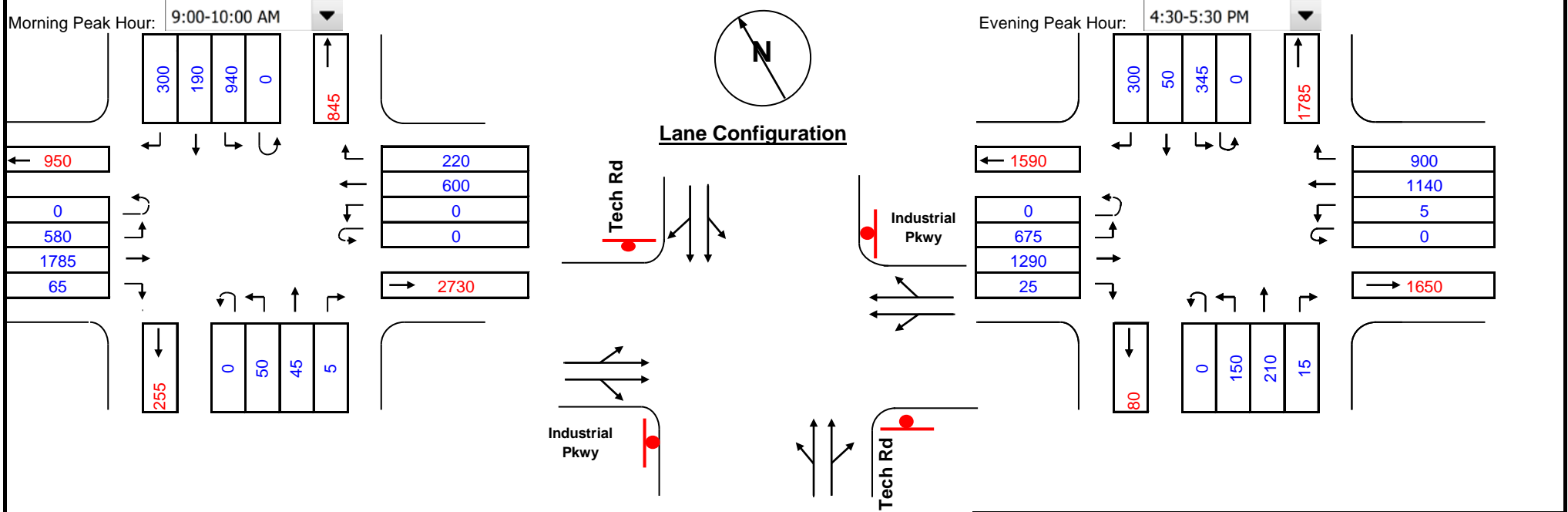
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 5/14/2015
Conditions: No-Build
Design Year: 2040

Location: Tech Road at Industrial Pkwy

Computed by: RS

Date 5/25/2016



Lane Configuration

RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	150	0.53	80	940	1020	*		NB	525	0.53	278	345	623	
	SB	1524	0.53	808	50	858			SB	1040	0.53	551	150	701	*
	EB	4170	0.53	2210	0	2210	*		EB	4690	0.53	2486	5	2491	*
	WB	820	0.53	435	580	1015			WB	2065	0.53	1094	675	1769	

Remarks:	* Critical volume	Total	3230	Remarks:	* Critical volume	Total	3192
	Level of service (V/C)		2.02		Level of service (V/C)		1.99
			F				F

Count Date:

Location: MD 212 (Powder Mill Rd) at Riggs Rd

Conditions: No-Build

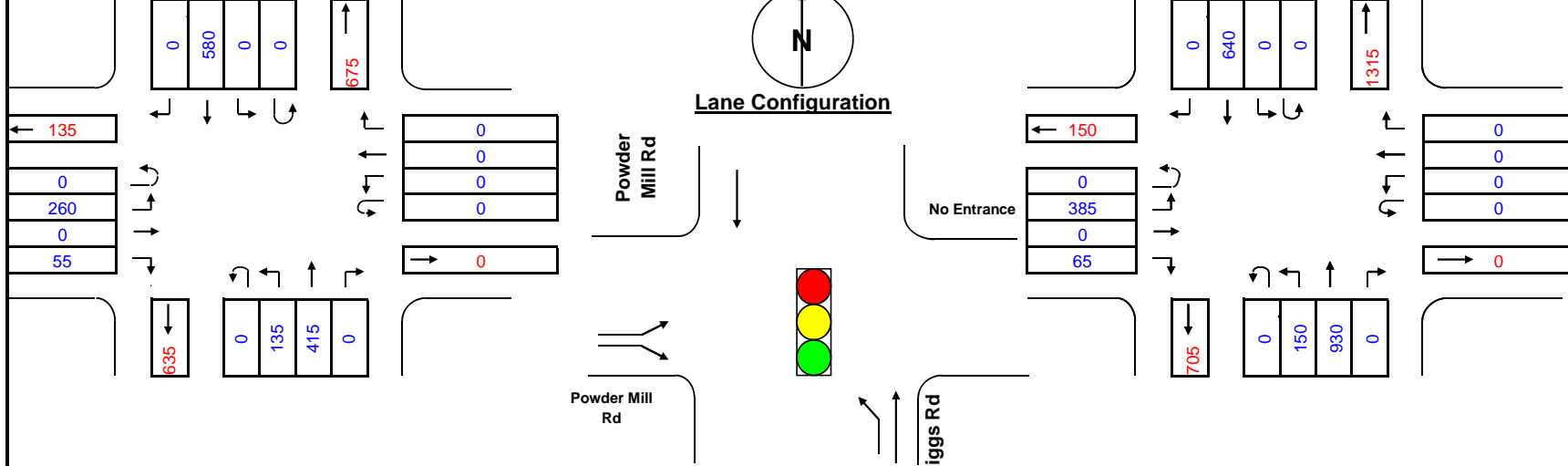
Design Year: 2040

Computed by:

Date 5/25/2016

Morning Peak Hour: 8:00-9:00 AM

Evening Peak Hour: 5:00-6:00 PM



Phasing			

- RTOR/Overlap
- Northbound
 - Southbound
 - Eastbound
 - Westbound
- Split Phasing
- East/West
 - North/South
 - None
- Inx. Control
- Signal
 - Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	<= 1000	<= 199	1.1
2	= 0.53	B	<= 1150	<= 599	2.0
3	= 0.37	C	<= 1300	<= 799	3.0
4	= 0.30	D	<= 1450	<= 999	4.0
5	= 0.25	E	<= 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	415	1.00	415	0	415			NB	930	1.00	930	0	930	*
	SB	580	1.00	580	135	715	*		SB	640	1.00	640	150	790	
	EB	260	1.00	260	0	260	*		EB	385	1.00	385	0	385	*
	WB	0	0.00	0	0	0			WB	0	0.00	0	0	0	

Remarks:	* Critical volume	Total	975	Remarks:	* Critical volume	Total	1315
	Level of service (V/C)		0.61		Level of service (V/C)		0.82
			A				D

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date:

Location: MD 212 (Powder Mill Rd) at Cherry Hill Rd

Conditions: No-Build

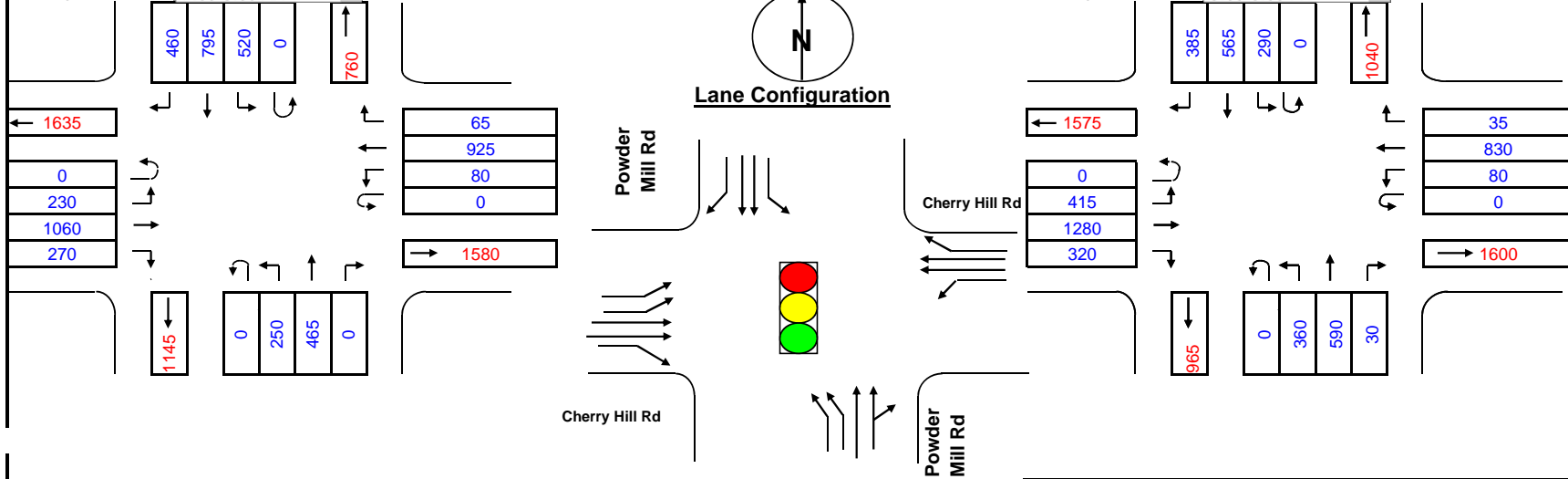
Design Year: 2040

Computed by:

Date 5/25/2016

Morning Peak Hour: 7:00-8:00 AM

Evening Peak Hour: 5:00-6:00 PM



Phasing			

RTOR/Overlap

- Northbound
- Southbound
- Eastbound
- Westbound

Split Phasing

- East/West
- North/South
- None

Inx. Control

- Signal
- Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	<= 1000	<= 199	1.1
2	= 0.53	B	<= 1150	<= 599	2.0
3	= 0.37	C	<= 1300	<= 799	3.0
4	= 0.30	D	<= 1450	<= 999	4.0
5	= 0.25	E	<= 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	465	0.53	246	520	766	*		NB	620	0.53	329	290	619	*
	SB	795	0.53	421	150	571			SB	565	0.53	299	216	515	
	EB	1060	0.53	562	80	642	*		EB	1280	0.53	678	80	758	*
	WB	925	0.53	490	138	628			WB	830	0.53	440	249	689	

Remarks:	* Critical volume	Total	1408	Remarks:	* Critical volume	Total	1377
	Level of service (V/C)		0.88		Level of service (V/C)		0.86
			D				D

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

Prepared by: Sabra, Wang & Associates, Inc.

Count Date:

Location: Powder Mill Rd at Beltsville Rd

Conditions: No-Build

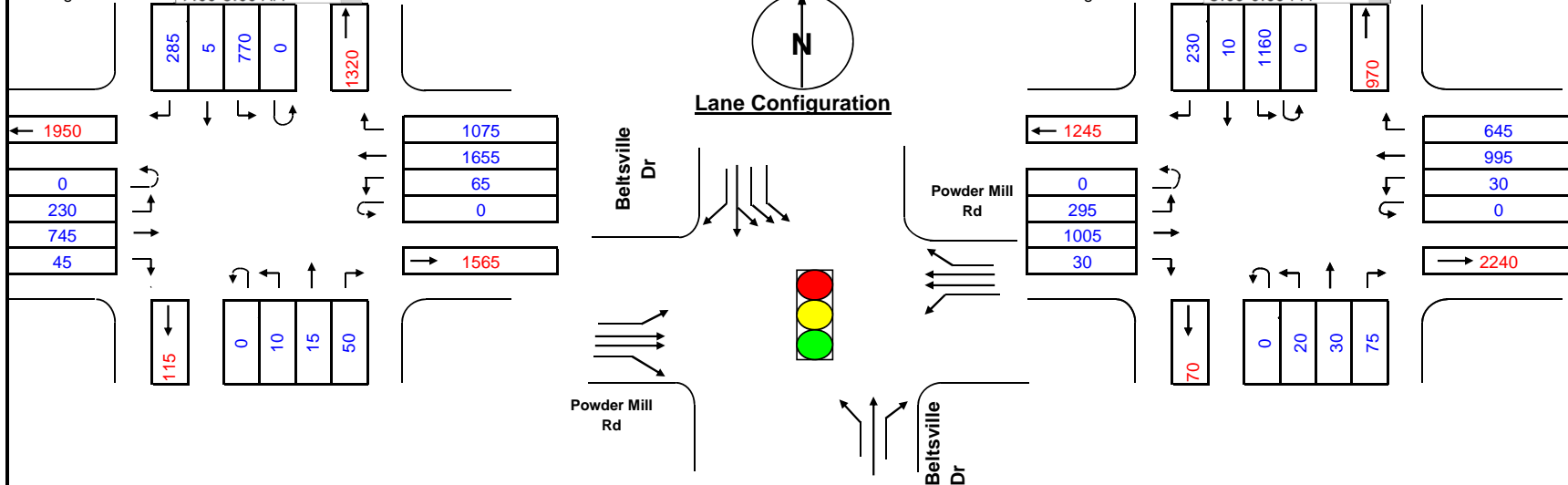
Design Year: 2040

Computed by:

Date 5/25/2016

Morning Peak Hour: 7:00-8:00 AM

Evening Peak Hour: 5:00-6:00 PM



Phasing			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

RTOR/Overlap	
<input checked="" type="checkbox"/>	Northbound
<input checked="" type="checkbox"/>	Southbound
<input checked="" type="checkbox"/>	Eastbound
<input checked="" type="checkbox"/>	Westbound

Split Phasing	
<input type="radio"/>	East/West
<input checked="" type="radio"/>	North/South
<input type="radio"/>	None

Inx. Control	
<input checked="" type="radio"/>	Signal
<input type="radio"/>	Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	= 1.00	A	<= 1000	<= 199	1.1
2	= 0.53	B	<= 1150	<= 599	2.0
3	= 0.37	C	<= 1300	<= 799	3.0
4	= 0.30	D	<= 1450	<= 999	4.0
5	= 0.25	E	<= 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	15	1.00	15	0	15	*		NB	45	1.00	45	0	45	*
	SB	775	0.37	287	0	287	*		SB	1170	0.37	433	0	433	*
	EB	745	0.53	395	65	460	*		EB	1005	0.53	533	30	563	*
	WB	1655	0.53	877	230	1107	*		WB	995	0.53	527	295	822	*

Remarks: * Critical volume Total 1409 Level of service (V/C) 0.88 D

Remarks: * Critical volume Total 1300 Level of service (V/C) 0.81 D

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

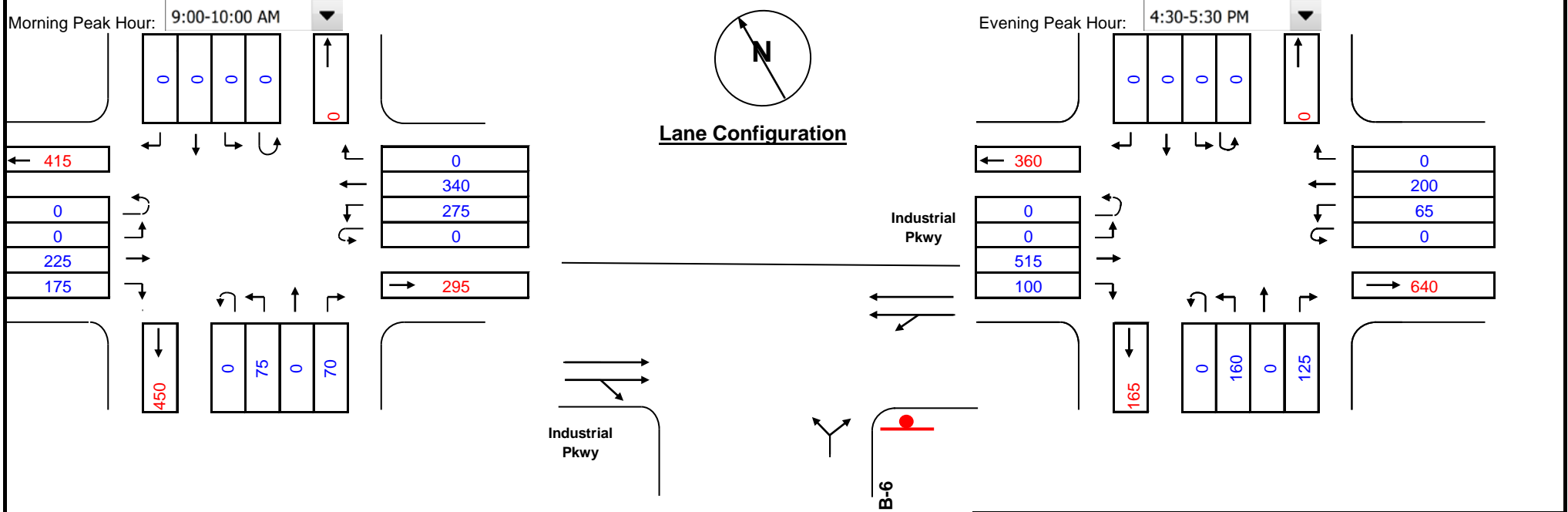
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 5/14/2015
Conditions: No-Build
Design Year: 2040

Location: Prosperity Dr at B-6

Computed by: JC

Date 5/25/2016



Phasing

RTOR/Overlap

- Northbound
- Southbound
- Eastbound
- Westbound

Split Phasing

- East/West
- North/South
- None

Inx. Control

- Signal
- Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1 = 1.00		A <= 1000		<= 199	1.1
2 = 0.53		B <= 1150		<= 599	2.0
3 = 0.37		C <= 1300		<= 799	3.0
4 = 0.30		D <= 1450		<= 999	4.0
5 = 0.25		E <= 1600		> 1000	5.0
Dbl-Lt = 0.60		F > 1600			

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	145	1.00	145	0	145	*		NB	285	1.00	285	0	285	*
	SB	0	0.53	0	0	0			SB	0	0.53	0	0	0	
	EB	400	0.53	212	275	487	*		EB	615	0.53	326	65	391	*
	WB	890	0.53	472	0	472			WB	395	0.53	209	0	209	

Remarks:	* Critical volume	Total	632	Remarks:	* Critical volume	Total	676
	Level of service (V/C)		0.40		Level of service (V/C)		0.42
			A				A

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

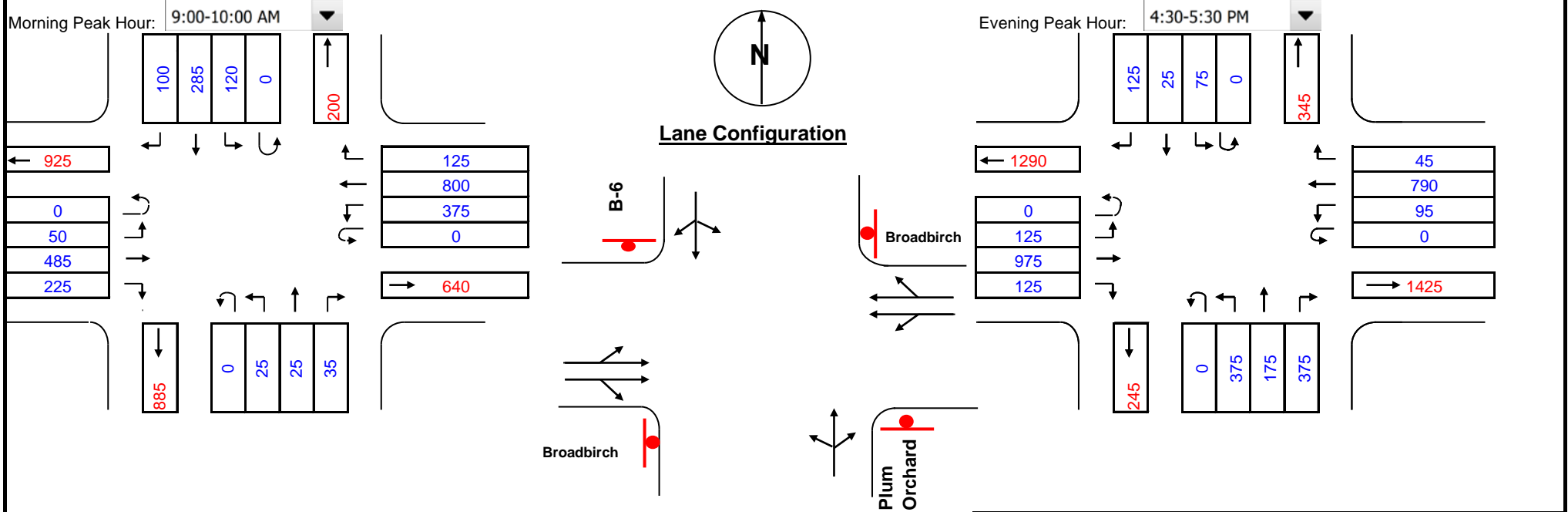
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 5/14/2015
Conditions: No-Build
Design Year: 2040

Location: Plum Orchard at Broadbirch

Computed by: JC

Date 5/25/2016



Phasing

RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	110	1.00	110	120	230			NB	963	1.00	963	75	1038	*
	SB	517	1.00	517	25	542	*		SB	300	1.00	300	375	675	
	EB	910	0.53	482	375	857	*		EB	1600	0.53	848	95	943	*
	WB	2050	0.53	1087	50	1137	*		WB	1310	0.53	694	125	819	

Remarks: * Critical volume Total **1679** Level of service (V/C) **1.05** **F** Remarks: * Critical volume Total **1981** Level of service (V/C) **1.24** **F**

Montgomery County Department of Transportation
Turning Movement Summary and Level of Service

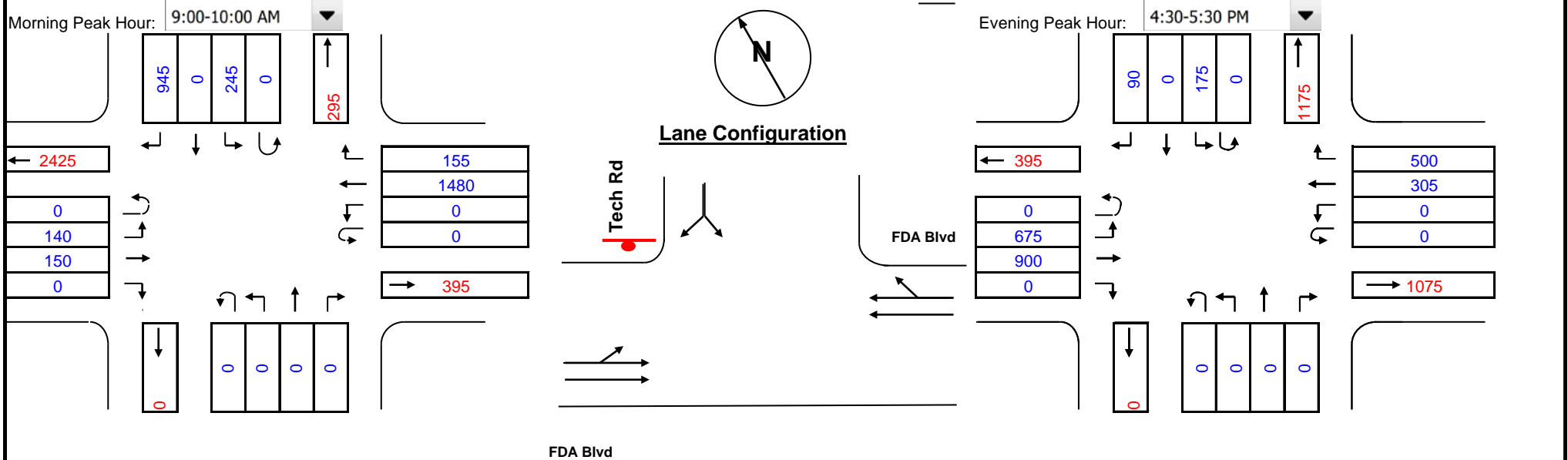
Prepared by: Sabra, Wang & Associates, Inc.

Count Date: 5/14/2015
Conditions: No-Build
Design Year: 2040

Location: FDA Blvd at B-5

Computed by: JC

Date: 5/25/2016



Phasing

RTOR/Overlap: Northbound, Southbound, Eastbound, Westbound

Split Phasing: East/West, North/South, None

Inx. Control: Signal, Stop

Number of Lanes	Lane Use Factor	Service Level	Critical Lane Vol	Opposing Volume (VPH)	PCE
1	1.00	A	≤ 1000	≤ 199	1.1
2	0.53	B	≤ 1150	≤ 599	2.0
3	0.37	C	≤ 1300	≤ 799	3.0
4	0.30	D	≤ 1450	≤ 999	4.0
5	0.25	E	≤ 1600	> 1000	5.0
Dbl-Lt = 0.60		F	> 1600		

Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. volume	*	Phase	Movement	Volume 1	Lane Use Factor - 2	Lane volume 1 X 2	Opposing Movement	Critical In. Volume	*
	NB	0	1.00	0	0	0			NB	0	1.00	0	0	0	
	SB	1190	1.00	1190	0	1190	*		SB	265	1.00	265	0	265	*
	EB	850	0.53	451	0	451	*		EB	3600	0.53	1908	0	1908	*
	WB	1635	0.53	867	140	1007	*		WB	805	0.53	427	675	1102	

Remarks:	* Critical volume	Total	2197	Remarks:	* Critical volume	Total	2173
	Level of service (V/C)		1.37		Level of service (V/C)		1.36
			F				F