

1 August 2014

OUR REF: TO3131TOI00

Bronson Inc. 786 King Street West

Toronto, ON M5V 1M6

#### Attention: Ms. Debbie Macdonald

Dear Ms. Macdonald:

### Re: 192 Bronson Avenue – Residential Development Transportation Brief Addendum #1

### **1. REPORT CONTEXT**

This Addendum #1 has been prepared to identify the transportation-related implications of the revised Site Plan of the 192 Bronson Avenue residential development, which includes the removal of the driveway connection to Cambridge Street, a proposed driveway connection to Bronson Avenue, a reduction of ground floor retail GFA and a reduction of residential units.

### 2. REVISED DEMAND FORECASTING

#### 2.1 Revised Trip Generation

Based on the revised Site Plan, projected vehicle trips for the ground floor retail and residential units have been reduced based on the revised Site Plan. The following Table 1 summarized the updated trip generation for the proposed site.

Land Use	Data	Area		AM Peal	<b>(</b>		PM Peal	<b>(</b>
Lanu Use	Source	Alea	In	Out	Total	In	Out	Total
High-Rise Condominium	ITE 232	211 units	11	47	58	35	22	57
Specialty Retail	ITE 826	1,613 ft <sup>2</sup>	4	4	8	7	10	17
Less	30% Reta	ail Pass-by	-1	-1	-2	-3	-3	-6
Resu	Iting Net	Increase	14	50	64	39	29	68

Table 1: Revised Site-Trip Generation	Table 1:	<b>Revised Site-Trip Generation</b>
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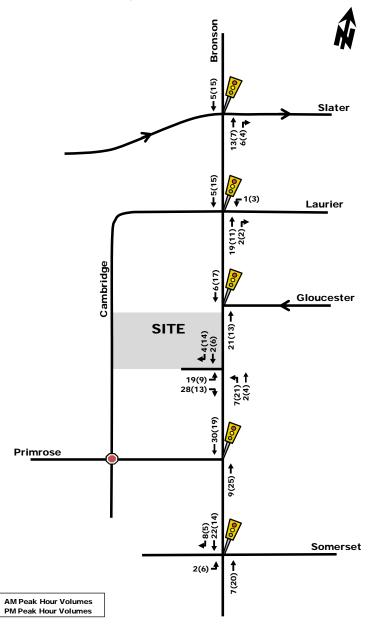
As shown in Table 1, the resulting two-way vehicle trip generation for the revised site is approximately 65 and 70 veh/h during the morning and afternoon peak hours, respectively. As mentioned in the original TB, the site is currently occupied by an approximate 40 space

parking lot. Therefore the revised 'net' two-way vehicle increase in traffic is approximately 45 and 50 veh/h during the weekday morning and afternoon peak hours, respectively. This is approximately 5 to 10 veh/h less than the site-trip generation assessed in the original TB.

#### 2.2 Revised Vehicle Traffic Distribution and Assignment

Traffic distribution and assignment was revised to reflect the proposed site access/egress to Bronson Street and the update site trip-generation. The revised site-generated 'new' and 'pass-by' trips are illustrated in Figure 1. As no retail parking is proposed for the subject site, the retail trips will not use the site driveway. This is reflected in Figure 1.

#### Figure 1: Revised 'New' and 'Pass-by' Site-Generated Traffic Volumes



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#### 3. REVISED FUTURE TRAFFIC OPERATIONS

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#### 3.1 Revised Projected Conditions at Full Site Development

Total projected volumes associated with the revised Site Plan for the proposed development are illustrated in Figure 3. They were derived by superimposing 'new' and 'pass-by' site-generated volumes (Figure 1) onto existing traffic volumes (illustrated as Figure 4 in the original TB).

#### Figure 2: Revised Total Projected Peak Hour Traffic Volumes

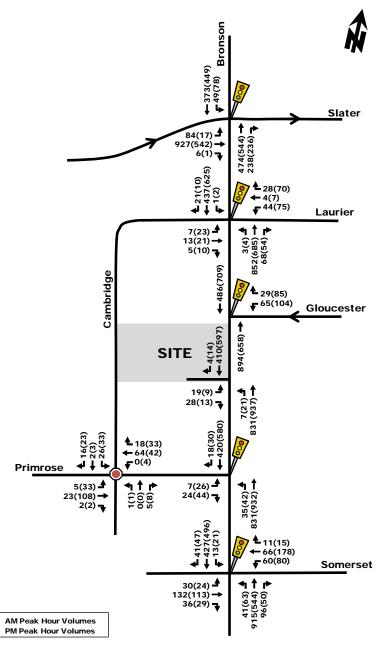


Table 2 provides a summary of the projected performance of study area intersections at full site build-out. The SYNCHRO model output of projected conditions is provided within Appendix A.

		I	Weekday AM	Peak (PM Pe	ak)	
		Critical Mov	ement	Intersec	tion 'as	a whole'
Intersection	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Bronson/Slater	E(B)	0.96(0.68)	EBT(NBT)	25.2(14.1)	C(B)	0.80(0.61)
Bronson/Laurier	A(A)	0.44(0.58)	NBT(WBT)	4.5(6.8)	A(A)	0.36(0.41)
Bronson/Gloucester	A(A)	0.40(0.36)	NBT(SBT)	2.7(3.3)	A(A)	0.39(0.36)
Bronson/Primrose	A(A)	0.39(0.50)	NBT(NBT)	4.8(8.1)	A(A)	0.38(0.48)
Bronson/Somerset	D(A)	0.83(0.57)	NBT(NBT)	24.8(21.8)	B(A)	0.65(0.50)
Cambridge/Primrose	A(A)	7.4(8.1)	WBT(EBT)	7.3(7.8)	-	-
Bronson/Site	B(B)	12.0(11.8)	EBL(EBL)	0.5(0.3)	-	-
Note: Analysis of sign and a CBD type		ersections assur	mes a PHF of 0.95	5, a saturation flo	w rate of	1800 veh/h/lane,

Table 2: Revised Projected Performance of Study Area Intersections

As shown in Table 2, with the revised Site Plan, the study area intersections are projected to operate similar to, if not the same as, the projection conditions summarized in Table 7 of the original TB.

The proposed site driveway connection to Bronson Avenue is projected to operate with acceptable delays of approximately 12 seconds with 95<sup>th</sup> percentile queues of approximately 2.5 metres (no more than 1 vehicle in queue) during peak hours. An auxiliary northbound left-turn lane is warranted with a storage length of 15 m. However, as this auxiliary lane is only warranted during the afternoon peak hour and given the existing roadway geometry of Bronson Avenue (proximity to the existing Bronson/Gloucester intersection and lack of available right-of-way to accommodate a turn lane and taper), it is not recommended. Also, it is noteworthy that no other existing driveways or intersections along this section of Bronson Avenue have auxiliary left-turn lanes. The left-turn lane warrant analysis is provided as Appendix B.

#### 4. REVISED SITE PLAN REVIEW

This section provides an overview of site access and parking requirements associated with the revised Site Plan, which is included as Appendix C.

#### Parking

A total of 170 residential parking spaces (plus 5 'small car' spaces), 17 visitor parking spaces and no retail parking spaces are proposed to serve the subject site. This amount of

residential and retail parking is sufficient with respect to the City's Zoning By-Law requirements for a Traditional Mainstreet located in Area B, identified in Schedule 1 of the City's Zoning By-Law. The proponent will be seeking a reduced rate for visitor parking of 0.083 per residential unit as per the old City of Ottawa guidelines.

According to the City of Ottawa's Parking Operations Memo, dated December 2013, existing on-street parking activity on Cambridge Street North and Primrose Avenue within the vicinity of the site is currently at or above capacity, but there is capacity available both at off-street lots within walking distance of the proposed site, and also on-street along Bronson Avenue (where on-street parking is permitted outside of the weekday peak periods). The City memo recommends that less residential parking and more retail/visitor parking be provided as part of the proposed development, and that parking be "unbundled", meaning that parking spaces are rented or sold separately from the residential units, with any excess spaces not purchased used as public parking. While we agree that this is a potential option, the substantial reduction in retail GFA (to the point where no retail parking is required under the proposed zoning) and re-orientation of the site access to Bronson Avenue impacts the viability of a public parking garage on this site. The 17 proposed visitor parking spaces, while significantly less than the 40 required under the City's current Zoning By-Law, is considered sufficient given the site's highly urban location and proximity to good pedestrian, cycling and transit links, and the availability of on-street parking along Bronson Avenue during weekday evenings and on weekends, when demand for residential visitor parking is highest.

#### Access Requirements

The proposed location of the ramp is noted as approximately 1.5 m from the southern property line. The proposed ramp starts approximately 5 m from the eastern property line with a 5% grade for 3 m, which increases to 7.5% for an additional 3 m, finally increasing to 15% approximately 11 m from the property line. These revised dimensions and ramp location are considered acceptable and will result in good sight lines for exiting vehicles approaching the sidewalk and road edge.

#### Bicycles

A total of 116 bicycle parking lockers are proposed to serve the residential development and 12 bicycle parking spaces are proposed to serve the retail development. This amount of bicycle parking is sufficient with respect to the City's By-Law requirement. The residential bicycle parking spaces are located at ground level and on parking level 1. Cyclists should have the ability to access the parking garages/storage lockers via the parking garage elevators as the 15% ramp grade is considered too steep for pedestrians/cyclists.

Based on the foregoing, the proposed 192 Bronson Street mixed use development continues to be recommended from a transportation perspective. If there are any questions, please call.

Prepared By:

André Jane Sponder, B.A.Sc. Analyst, Transportation Ottawa Operations

Attachment

Reviewed By:

Paul Croft, MCIP, RPP Senior Transportation Planner Ottawa Operations



Appendix A SYNCHRO Capacity Analysis

#### Projected AM 1: Bronson & Slater

	-	Ť	1	Ŧ	
Lane Group	EBT	NBT	SBL	SBT	
Lane Configurations	ta ≜ta	<b>≜t</b> ⊾	5	**	
Volume (vph)	927	474	49	373	
Lane Group Flow (vph)	1070	750	52	393	
Turn Type	NA	NA	Perm	NA	
Protected Phases	4	2		6	
Permitted Phases		2	6	Ū	
Detector Phase	4	2	6	6	
Switch Phase	T	2	0	0	
Minimum Initial (s)	10.0	10.0	10.0	10.0	
Minimum Split (s)	19.9	26.0	26.0	26.0	
Total Split (s)	28.0	32.0	32.0	32.0	
		53.3%		53.3%	
Total Split (%)	46.7% 3.3		53.3% 3.3		
Yellow Time (s)		3.3		3.3	
All-Red Time (s)	2.6	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	6.0	6.0	6.0	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	22.1	26.0	26.0	26.0	
Actuated g/C Ratio	0.37	0.43	0.43	0.43	
v/c Ratio	0.96	0.60	0.24	0.30	
Control Delay	39.6	12.4	14.3	11.8	
Queue Delay	0.0	0.1	0.0	0.0	
Total Delay	39.6	12.5	14.3	11.8	
LOS	D	В	В	В	
Approach Delay	39.6	12.5		12.1	
Approach LOS	D	В		В	
Queue Length 50th (m)	58.6	11.1	3.4	14.0	
Queue Length 95th (m)	#98.0	28.5	10.3	22.3	
Internal Link Dist (m)	157.6	69.3	,	35.9	
Turn Bay Length (m)	107.0	57.0	17.0	50.7	
Base Capacity (vph)	1116	1249	220	1322	
Starvation Cap Reductn	0	42	0	0	
Spillback Cap Reductin	0	42	0	0	
Storage Cap Reductin	0	0	0	0	
Reduced v/c Ratio	0.96	0.62	0.24	0.30	
REUULEU V/L RAIIU	0.90	U.02	0.24	0.30	
Intersection Summary					
Cycle Length: 60					
Actuated Cycle Length: 60					
Offset: 13 (22%), Referenced to p	hase 2.NRT an	d 6.SBTI	Start of Gree	n	
Natural Cycle: 60				211	
Control Type: Actuated-Coordinal	tod				
Movimum v/o Detice 0.0/	leu				
Maximum v/c Ratio: 0.96					
Intersection Signal Delay: 25.2					ersection LOS: C
Intersection Capacity Utilization 8	34.1%			IC	J Level of Service E
Analysis Period (min) 15					
# 95th percentile volume excee		eue may be	longer.		
Queue shown is maximum afte	er two cycles.				
Splits and Phases: 1: Bronson	& Slater				4
					2
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32 s					28 s
No.					
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37.6					

#### Projected AM 2: Bronson & Laurier

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ane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
ane Configurations		4.		ф,		đ þ		<b>4</b> 16	
Volume (vph)	7	13	44	4	3	852	1	437	
ane Group Flow (vph)	0	26	0	79	0	972	0	483	
Furn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	
Protected Phases		4	1 0.111	8		2	1 0	6	
Permitted Phases	4	Т	8	0	2	۷	6	0	
Detector Phase	4	4	8	8	2	2	6	6	
Switch Phase	4	4	0	0	2	2	0	0	
Ainimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
						30.5		30.5	
Ainimum Split (s)	23.4	23.4	23.4	23.4	30.5		30.5		
Total Split (s)	24.0	24.0	24.0	24.0	36.0	36.0	36.0	36.0	
Total Split (%)	40.0%	40.0%	40.0%	40.0%	60.0%	60.0%	60.0%	60.0%	
'ellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	
ost Time Adjust (s)		0.0		0.0		0.0		0.0	
otal Lost Time (s)		5.4		5.4		5.5		5.5	
_ead/Lag									
ead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max	
ct Effct Green (s)		11.8		11.8		45.7		45.7	
Actuated g/C Ratio		0.20		0.20		0.76		0.76	
/c Ratio		0.10		0.35		0.44		0.22	
Control Delay		16.4		24.3		4.1		1.6	
Queue Delay		0.0		0.0		0.0		0.0	
otal Delay		16.4		24.3		4.1		1.6	
.0S		В		С		A		A	
Approach Delay		16.4		24.3		4.1		1.6	
Approach LOS		В		C		A		A	
Queue Length 50th (m)		2.0		7.9		11.2		2.3	
Queue Length 95th (m)		6.2		15.5		23.3		m4.6	
nternal Link Dist (m)		67.7		479.7		47.5		69.3	
Furn Bay Length (m)		07.7		4/7./		47.J		07.5	
Base Capacity (vph)		425		358		2187		2197	
		425		506 0		2107			
Starvation Cap Reductn								0	
pillback Cap Reductn		0		0		0		0	
torage Cap Reductn		0		0		0		0	
educed v/c Ratio		0.06		0.22		0.45		0.22	
tersection Summary									
Cycle Length: 60 Actuated Cycle Length: 60 Offset: 13 (22%), Referenced to pha:		nd 4.SDTI	Start of Cro	an an					
latural Cycle: 55 Control Type: Actuated-Coordinated	se z.indila	110 0.3DTL,	Start of Gre	:01					
laximum v/c Ratio: 0.44 tersection Signal Delay: 4.5				Ini	tersection L(	1S: V			
itersection Capacity Utilization 56.4	%				U Level of S				
nalysis Period (min) 15	/0			IC.	O LEVELUI 3	DEIVICE D			
Volume for 95th percentile queu	e is metered	by upstream	m signal.						
plits and Phases: 2: Bronson & L	aurier								
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36 s						2	4 s		
D.,									

# Projected AM 3: Bronson & Gloucester

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Lane Group	WBL	WBR	NBT	SBT
Lane Configurations	5	1	**	<b>*</b> *
Volume (vph)	65	29	894	486
Lane Group Flow (vph)	68	31	941	512
Turn Type	Prot	Perm	NA	NA
Protected Phases	8	1 CIIII	2	6
	ŏ	0	2	0
Permitted Phases	0	8	0	,
Detector Phase	8	8	2	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	25.1	25.1	25.1	22.1
Total Split (s)	22.0	22.0	38.0	38.0
Total Split (%)	36.7%	36.7%	63.3%	63.3%
Yellow Time (s)	3.3	3.3	3.3	3.3
All-Red Time (s)	3.3 1.8	3.3 1.8	3.3 1.8	3.3 1.8
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1	5.1	5.1
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	11.4	11.4	46.5	46.5
Actuated g/C Ratio	0.19	0.19	0.78	0.78
v/c Ratio	0.24	0.11	0.40	0.22
Control Delay	21.8	8.5	1.9	1.3
Queue Delay	0.0	0.0	0.0	0.1
Total Delay	21.8	8.5	1.9	1.3
LOS	С	А	А	А
Approach Delay	17.7		1.9	1.3
Approach LOS	В		А	А
Queue Length 50th (m)	6.6	0.0	21.5	3.3
Queue Length 95th (m)	13.6	5.0	3.6	4.7
Internal Link Dist (m)	364.2		29.0	47.5
Turn Bay Length (m)	501.2		27.0	17.0
	400	204	2241	2364
Base Capacity (vph)	429	396	2364	
Starvation Cap Reductn	0	0	0	606
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.16	0.08	0.40	0.29
Interception Summers				
Intersection Summary				
Cycle Length: 60				
Actuated Cycle Length: 60				
Offset: 16 (27%), Referenced to ph	nase 2:NBT an	d 6:SBT, St	art of Green	l
Natural Cycle: 55				
Control Type: Actuated-Coordinate	ed			
Maximum v/c Ratio: 0.40				
Intersection Signal Delay: 2.7				Int
Intersection Capacity Utilization 49	6%			ICI
Applycic Deried (min) 15	.070			ICI
Analysis Period (min) 15				
	Gloucester			
Splits and Phases: 3: Bronson &				
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#### Projected AM 4: Bronson & Primrose

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ane Group	EBL	NBL	NBT	SBT	
ane Configurations	¥۲.			<b>≜</b> 1,	
/olume (vph)	7	35	831	420	
ane Group Flow (vph)	32	0	912	461	
urn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	
Permitted Phases		2			
Detector Phase	4	2	2	6	
Switch Phase					
/inimum Initial (s)	10.0	10.0	10.0	10.0	
/inimum Split (s)	25.2	23.2	23.2	23.2	
otal Split (s)	26.0	34.0	34.0	34.0	
otal Split (%)	43.3%	56.7%	56.7%	56.7%	
'ellow Time (s)	3.3	3.3	3.3	3.3	
II-Red Time (s)	1.9	1.9	1.9	1.9	
ost Time Adjust (s)	0.0		0.0	0.0	
otal Lost Time (s)	5.2		5.2	5.2	
.ead/Lag					
.ead-Lag Optimize?					
Recall Mode	None	C-Max	C-Max	C-Max	
Act Effct Green (s)	12.0		49.8	49.8	
Actuated g/C Ratio	0.20		0.83	0.83	
/c Ratio	0.11		0.39	0.18	
Control Delay	9.8		5.3	3.5	
Queue Delay	0.0		0.0	0.0	
otal Delay	9.8		5.3	3.5	
.0S	А		А	А	
Approach Delay	9.8		5.3	3.5	
Approach LOS	А		А	А	
Queue Length 50th (m)	0.7		0.0	0.0	
Queue Length 95th (m)	5.2		54.0	18.1	
nternal Link Dist (m)	71.5		171.7	51.1	
urn Bay Length (m)					
Base Capacity (vph)	490		2341	2516	
tarvation Cap Reductn	0		0	0	
pillback Cap Reductn	0		0	0	
Storage Cap Reductn	0		0	0	
Reduced v/c Ratio	0.07		0.39	0.18	
ntersection Summary					
Cycle Length: 60					
Actuated Cycle Length: 60 Dffset: 12 (20%), Referenced to pha		and GCDT	Start of Crov	n	
	ISE Z.INDIL C	IIIU 0.3D1, .	Start of Gree	11	
latural Cycle: 55 Control Type: Actuated-Coordinated	1				
Jontrol Type: Actuated-Coordinated Maximum v/c Ratio: 0.39	1				
ntersection Signal Delay: 4.8				Inte	rsection LOS: A
ntersection Capacity Utilization 70.7	70/				I Level of Service C
Analysis Period (min) 15	/ 70			ICL	
-					
Splits and Phases: 4: Bronson &	Primrose				
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# Projected AM 6: Bronson & Somerset W

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	ø1	ø3	ø5	ø7
Lane Configurations	7	٦,	٦	ĥ		ፈቴ		ፈቴ				
Volume (vph)	30	132	60	66	41	915	13	427				
Lane Group Flow (vph)	32	177	63	81	0	1107	0	506				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		4		8		2		6	1	3	5	7
Permitted Phases	4		8	_	2	-	6					
Detector Phase	4	4	8	8	2	2	6	6				
Switch Phase	40.0	10.0	40.0	40.0	10.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	18.9	18.9	18.9	18.9	18.8	18.8	18.8	18.8	7.0	20.0	7.0	20.0
Total Split (s)	32.0	32.0	32.0	32.0	53.0	53.0	53.0	53.0	5.0	5.0	5.0	5.0
Total Split (%)	33.7%	33.7%	33.7%	33.7%	55.8%	55.8%	55.8%	55.8%	5%	5%	5%	5%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.0	2.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0 5.9	0.0		0.0		0.0				
Total Lost Time (s)	5.9	5.9		5.9	Log	5.8	Log	5.8	Lood	Lood	Lood	Lood
Lead/Lag Lead-Lag Optimize?	Lag Yes	Lag	Lag	Lag	Lag Yes	Lag	Lag	Lag Yes	Lead	Lead Yes	Lead Yes	Lead
Recall Mode	Max	Yes Max	Yes Max	Yes Max	C-Max	Yes C-Max	Yes C-Max	C-Max	Yes Min	Min	Min	Yes Min
Act Effct Green (s)	26.1	26.1	26.1	26.1	C-IVIAX	47.2	C-IVIAX	47.2	IVIIII	IVIIII	IVIIII	IVIIII
Actuated g/C Ratio	0.27	0.27	0.27	0.27		47.2 0.50		0.50				
v/c Ratio	0.27	0.27	0.27	0.27		0.83		0.38				
Control Delay	27.2	32.3	30.8	27.9		27.1		15.8				
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0				
Total Delay	27.2	32.3	30.8	27.9		27.1		15.8				
LOS	27.2 C	52.5 C	50.0 C	C		C		B				
Approach Delay	C	31.5	C	29.2		27.1		15.8				
Approach LOS		C		C		C		B				
Queue Length 50th (m)	4.4	26.7	9.0	11.4		87.2		28.8				
Queue Length 95th (m)	11.5	46.0	20.2	22.9		116.7		40.6				
Internal Link Dist (m)		306.8	2012	381.0		115.2		171.7				
Turn Bay Length (m)												
Base Capacity (vph)	281	411	235	424		1337		1345				
Starvation Cap Reductn	0	0	0	0		0		0				
Spillback Cap Reductn	0	0	0	0		0		0				
Storage Cap Reductn	0	0	0	0		0		0				
Reduced v/c Ratio	0.11	0.43	0.27	0.19		0.83		0.38				
Intersection Summary												
Cycle Length: 95 Actuated Cycle Length: 95 Offset: 22 (23%), Referenced to phase Natural Cycle: 90	2:NBTL a	nd 6:SBTL,	Start of Gre	een								
Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.83				Ini	areastian L	05.0						
Intersection Signal Delay: 24.8					tersection L							
Intersection Capacity Utilization 90.7% Analysis Period (min) 15				IL	U Level of S	Service E						
Splits and Phases: 6: Bronson & So	merset W											
#1 ø2 (R)							∳ <b>i</b> s₀β	 ø4				
5 s 53 s							5 s 32	2 s				
A 4 06 (R)							₽₿ <sub>ø7</sub>	¥ ø8				
5 s 53 s							5 s 32	2 <b>s</b>				

#### Projected AM 5: Cambridge & Primrose

	≯	-	$\mathbf{i}$	•	+	•	•	1	1	1	Ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			4			4			\$	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	5	23	2	0	64	18	1	0	5	26	2	16
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	24	2	0	67	19	1	0	5	27	2	17
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	32	86	6	46								
Volume Left (vph)	5	0	1	27								
Volume Right (vph)	2	19	5	17								
Hadj (s)	0.03	-0.10	-0.43	-0.07								
Departure Headway (s)	4.1	3.9	3.8	4.1								
Degree Utilization, x	0.04	0.09	0.01	0.05								
Capacity (veh/h)	854	895	915	853								
Control Delay (s)	7.3	7.4	6.8	7.3								
Approach Delay (s)	7.3	7.4	6.8	7.3								
Approach LOS	А	А	А	А								
Intersection Summary												
Delay			7.3									
Level of Service			А									
Intersection Capacity Utilization			26.7%	ICI	U Level of S	ervice			А			
Analysis Period (min)			15									

#### Projected AM 8: Bronson & Site

× 🔨	<u> </u>		- <b>+</b>	< _
Movement EBL EBR	NBL	NBT	• SBT	SBR
Lane Configurations		1	<b>1</b>	0.511
Volume (veh/h) 19 28	7	<b>61 T</b> 831	410	4
Sign Control Stop	- /	Free	Free	4
Grade 0%		0%	0%	
Peak Hour Factor 0.95 0.95	0.95	0.95	0.95	0.95
	0.95	875	432	0.95
Hourly flow rate (vph) 20 29 Pedestrians	/	8/0	432	4
Lane Width (m)				
Walking Speed (m/s)				
Percent Blockage				
Right turn flare (veh)				
Median type		None	None	
Median storage veh)				
Upstream signal (m)		75	53	
pX, platoon unblocked 0.91 0.99	0.99			
vC, conflicting volume 886 218	436			
vC1, stage 1 conf vol				
vC2, stage 2 conf vol				
vCu, unblocked vol 611 185	405			
tC, single (s) 6.8 6.9	4.1			
tC, 2 stage (s)				
tF (s) 3.5 3.3	2.2			
p0 queue free % 95 96	99			
cM capacity (veh/h) 383 816	1136			
Direction, Lane # EB 1 NB 1	NB 2	SB 1	SB 2	
Volume Total 49 299	583	288	148	
Volume Left 20 7	0	0	0	
Volume Right 29 0	0	0	4	
cSH 560 1136	1700	1700	1700	
Volume to Capacity 0.09 0.01	0.34	0.17	0.09	
Outment Capacity         0.09         0.01           Queue Length 95th (m)         2.2         0.1	0.34	0.17	0.09	
Control Delay (s) 12.0 0.3	0.0	0.0	0.0	
Lane LOS B A	0.0	0.0	0.0	
		0.0		
		0.0		
LL				
Intersection Summary	0.5			
Average Delay	0.5			
Intersection Capacity Utilization	39.4%	ICL	J Level of Serv	lice
Analysis Period (min)	15			

#### Projected PM 1: Bronson & Slater

	-	1	1	Ŧ	
Lane Group	EBT	NBT	SBL	SBT	
Lane Configurations	<b>4</b> ∿	<b>≜</b> 16	۲	<b>*</b> *	
/olume (vph)	542	544	78	449	
ane Group Flow (vph)	590	821	82	473	
Furn Type	NA	NA	Perm	NA	
Protected Phases	4	2		6	
Permitted Phases			6		
Detector Phase	4	2	6	6	
Switch Phase		10.0	10.0		
Minimum Initial (s)	10.0	10.0	10.0	10.0	
Minimum Split (s)	19.9	26.0	26.0	26.0	
Total Split (s)	26.0	29.0	29.0	29.0	
Total Split (%)	47.3%	52.7%	52.7%	52.7%	
Yellow Time (s)	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.6	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.9	6.0	6.0	6.0	
Lead/Lag					
Lead-Lag Optimize?	N 4 - · ·	C M	0.14	0.14	
Recall Mode	Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	20.1	23.0	23.0	23.0	
Actuated g/C Ratio	0.37	0.42	0.42	0.42	
v/c Ratio	0.53	0.68	0.44	0.37	
Control Delay	15.9	13.4	20.4	12.1	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	15.9	13.5	20.4	12.1	
LOS	B	B	С	B	
Approach Delay	15.9	13.5		13.3	
Approach LOS	B	B		B	
Queue Length 50th (m)	23.5	17.1	5.5	16.1	
Queue Length 95th (m)	36.2	36.2	16.9	25.5	
Internal Link Dist (m)	157.6	69.3	47.0	35.9	
Turn Bay Length (m)		4010	17.0	4075	
Base Capacity (vph)	1112	1212	188	1275	
Starvation Cap Reductn	0	3	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.53	0.68	0.44	0.37	
Intersection Summary					
Cycle Length: 55					
Actuated Cycle Length: 55					
Offset: 48 (87%), Referenced to ph	hase 2·NRT an	d 6:SBTL	Start of Gree	en en	
Natural Cycle: 50		G 0.0DTL, .			
Control Type: Actuated-Coordinate	he				
Maximum v/c Ratio: 0.68	Ju				
Intersection Signal Delay: 14.1				Int	rsection LOS: B
Intersection Capacity Utilization 71	1.5%				Level of Service C
Analysis Period (min) 15	1.370				Level of Service C
mayor tonu (IIIII) 10					
Splits and Phases: 1: Bronson &	& Slater				
					A
Ø2 (R)					
29 s					26 s
🕈 🖗 ø6 (R)				_	

#### Projected PM 2: Bronson & Laurier

	٦	-	1	-	1	1	1	Ŧ	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations		<b>4</b> 4		4		đ þ		<b>≜</b> 1≽	
/olume (vph)	23	21	75	7	4	685	2	625	
Lane Group Flow (vph)	0	57	0	160	0	782	0	671	
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	
Protected Phases		4		8		2		6	
Permitted Phases	4		8	Ū	2	-	6		
Detector Phase	4	4	8	8	2	2	6	6	
Switch Phase	-	7	0	0	2	۷	0	0	
Vinimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Vinimum Split (s)	23.4	23.4	23.4	23.4	30.5	30.5	30.5	30.5	
	23.4	23.4		23.4	30.5	30.5	30.5	30.5	
Total Split (s)			24.0						
Fotal Split (%)	43.6%	43.6%	43.6%	43.6%	56.4%	56.4%	56.4%	56.4%	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	
_ost Time Adjust (s)		0.0		0.0		0.0		0.0	
Total Lost Time (s)		5.4		5.4		5.5		5.5	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)		13.2		13.2		35.1		35.1	
Actuated g/C Ratio		0.24		0.24		0.64		0.64	
//c Ratio		0.18		0.58		0.43		0.36	
Control Delay		14.1		26.3		5.9		2.5	
Queue Delay		0.0		0.0		0.1		0.0	
Total Delay		14.1		26.3		6.0		2.5	
LOS		B		20.3 C		A		2.5 A	
Approach Delay		14.1		26.3		6.0		2.5	
		14.1 B		20.3 C		0.0 A			
Approach LOS								A	
Queue Length 50th (m)		3.7		14.3		8.8		4.1	
Queue Length 95th (m)		9.4		25.7		26.3		7.7	
nternal Link Dist (m)		66.2		479.7		47.5		69.3	
Furn Bay Length (m)									
Base Capacity (vph)		444		391		1831		1850	
Starvation Cap Reductn		0		0		132		0	
Spillback Cap Reductn		0		0		0		0	
Storage Cap Reductn		0		0		0		0	
Reduced v/c Ratio		0.13		0.41		0.46		0.36	
ntersection Summary Cycle Length: 55									
Actuated Cycle Length: 55									
Offset: 52 (95%), Referenced to pha	ase 2:NBTL a	nd 6:SBTL	Start of Gre	een					
Vatural Cycle: 55									
Control Type: Actuated-Coordinated	d								
Maximum v/c Ratio: 0.58	-								
ntersection Signal Delay: 6.8				In	tersection L	A ·20			
ntersection Capacity Utilization 52.	0%				CU Level of S				
Analysis Period (min) 15	7 /0			IC	O Level of 3	DEI VILE A			
Splits and Phases: 2: Bronson &	Laurior								
<b>≜</b>	Launei								
ø2 (R)							4		
31 s						24 s			
N-						+			
🕈 👘 🖉 🖉						- V a	8		
21						24 s			

24 s

# Projected PM 3: Bronson & Gloucester

1	•	T.	ŧ	
WBL	WBR	NBT	SBT	
*	1	**	**	
104		658	709	
109	89	693	746	
Prot	Perm	NA	NA	
8		2	6	
	8			
8	8	2	6	
10.0	10.0	10.0	10.0	
	25.1	25.1	22.1	
			33.0	
			60.0%	
			3.3	
	0.0	0.0	0.0	
5.1		5.1		
None	None	C-Max	C-Max	
			37.3	
14.4		1.4		
В		А	А	
	0.0			
17.7	7.8			
364.2				
468	460	2070	2070	
	0	0	214	
0	0	0	0	
0	0	0	0	
-				
		and of Cross		
Z:IND I all	u 0:5BT, St	art of Greer	1	
			Int	tersection LOS: A
				U Level of Service A
			iC	
oucester				
				₹ <sub>08</sub>
,	104 109 Prot 8 8 10.0 25.1 22.0 40.0% 3.3 1.8 8 0.0 5.1 11.5 0.21 0.34 20.9 0.0 20.9 C 14.4 B 9.7 17.7 364.2 468 0 0 0 0.23	WBL         WBR           104         85           109         89           Prot         Perm           8         8           8         8           8         8           10.0         10.0           25.1         25.1           22.0         22.0           40.0%         40.0%           3.3         3.3           1.8         1.8           0.0         0.0           5.1         5.1           None         None           11.5         11.5           0.21         0.21           0.34         0.26           20.9         6.6           C         A           14.4         B           9.7         0.0           17.7         7.8           364.2         468           468         460           0         0           0.23         0.19	WBL         WBR         NBT           104         85         658           109         89         693           Prot         Perm         NA           8         2         8           8         8         2           10.0         10.0         10.0           25.1         25.1         25.1           22.0         22.0         33.0           40.0%         40.0%         60.0%           3.3         3.3         3.3           1.8         1.8         1.8           0.0         0.0         0.0           5.1         5.1         5.1           None         None           None         None         C-Max           11.5         11.5         37.3           0.21         0.26         0.33           20.9         6.6         1.4           0.0         0.0         0.0           20.9         6.6         1.4           C         A         A           14.4         1.4         364.2           9.7         0.0         0.7           17.7         7.8         1.4	WBL         WBR         NBT         SBT           104         85         658         709           109         89         693         746           Prot         Perm         NA         NA           8         2         6           8         8         2         6           10.0         10.0         10.0         10.0           25.1         25.1         25.1         22.1           22.0         22.0         33.0         33.0           40.0%         40.0%         60.0%         60.0%           3.3         3.3         3.3         3.3         3.3           1.8         1.8         1.8         1.8         1.8           0.0         0.0         0.0         0.0         0.0           5.1         5.1         5.1         5.1           V         V         0.6         1.4         2.0           0.0         0.0         0.0         0.0         0.0           0.1         0.21         0.68         0.48         0.40           0.29         6.6         1.4         2.1         C           C         A         A<

#### Projected PM 4: Bronson & Primrose

Lane ConfigurationsYVolume (vph)26Lane Group Flow (vph)73Turn TypeProtProtected Phases4Permitted Phases2Detector Phase4Switch Phase4Switch Phase4Minimum Initial (s)10.0Minimum Split (s)25.2Total Split (s)26.0Total Split (%)47.3%Yellow Time (s)1.9Lost Time Adjust (s)0.0Total Lost Time (s)5.2Lead-LagLead-Lag Optimize?	2 2 10.0 10 23.2 23 29.0 29 2.7% 52.7' 3.3 3	<b>1</b> 2 580 5 643	0 3
Volume (vph)         26           Lane Group Flow (vph)         73           Turn Type         Prot           Protected Phases         4           Permitted Phases         4           Switch Phase         4           Minimum Initial (s)         10.0           Minimum Split (s)         25.2           Total Split (s)         26.0           Total Split (%)         47.3%           Yellow Time (s)         3.3           All-Red Time (s)         1.9           Lost Time Adjust (s)         0.0           Total Lost Time (s)         5.2           Lead/Lag         Lead-Lag Optimize?           Recall Mode         None           Actuated g/C Ratio         0.22           v/c Ratio         0.21           Control Delay         9.6           Queue Delay         0.0           Total Lost Time         9.6           LOS         A           Approach Delay         9.6           Queue Length 50th (m)         2.3           Queue Length 50th (m)         8.2           Internal Link Dist (m)         71.5           Turn Bay Length (m)         8ase           Base Capacity (vph)         <	42 93 0 102 Perm N 2 2 10.0 10 23.2 23 29.0 29 2.7% 52.7' 3.3 3	2 580 5 643 A NA 2 6	0 3
Volume (vph)         26           Lane Group Flow (vph)         73           Turn Type         Prot           Protected Phases         4           Permitted Phases         4           Switch Phase         4           Minimum Initial (s)         10.0           Minimum Split (s)         25.2           Total Split (s)         26.0           Total Split (%)         47.3%           Yellow Time (s)         3.3           All-Red Time (s)         1.9           Lost Time Adjust (s)         0.0           Total Lost Time (s)         5.2           Lead-Lag Optimize?         Recall Mode         None           Recall Mode         None         C-           Act affect Green (s)         12.0         Actuated g/C Ratio         0.22           v/c Ratio         0.21         Control Delay         9.6           Queue Delay         0.0         Total Lost         A           Approach Delay         9.6         Queue Length 50th (m)         2.3           Queue Length 50th (m)         2.3         Queue Length 95th (m)         8.2           Internal Link Dist (m)         71.5         Turn Bay Length (m)           Base Capacity (vph)	42 93 0 102 Perm N 2 2 10.0 10 23.2 23 29.0 29 2.7% 52.7' 3.3 3	2 580 5 643 A NA 2 6	0 3
Lane Group Flow (vph)         73           Turn Type         Prot         F           Protected Phases         4         Permitted Phases         4           Detector Phase         4         Switch Phase         50           Minimum Initial (s)         10.0         Minimum Split (s)         25.2           Total Split (s)         26.0         70         73           Total Split (s)         26.0         70         73           Total Split (s)         26.0         70         73           Total Split (s)         26.0         70         74         73         52           Lost Time (s)         1.9         Lost Time (s)         1.9         Lost Time Adjust (s)         0.0         70           Total Lost Time (s)         5.2         Lead/Lag	0 102 Perm N 2 2 10.0 10 23.2 23 29.0 29 2.7% 52.7' 3.3 3	5 643 A NA 2 6	
Furn Type         Prot         F           Protected Phases         4         Permitted Phases         2           Detector Phase         4         Switch Phase         4           Switch Phase         4         Switch Phase         4           Jinimum Initial (s)         10.0         4         52           Fotal Split (s)         25.2         Fotal Split (s)         26.0           Fotal Split (s)         26.0         52         52           Fotal Split (s)         26.0         52         52           Fotal Split (s)         26.0         52         52           Cost Time (s)         1.9         53         52           Lead-Lag         5.2         19         52           Lead-Lag Optimize?         Recall Mode         None         C-           Act Effct Green (s)         12.0         52         52           Control Delay         9.6         50         52         52           Queue Delay         0.0         6         50         52         52           Cottral Delay         9.6         00         54         50         52         52         52         52         52         54         54	Perm         N           2         2           10.0         10           23.2         23           29.0         29           2.7%         52.7'           3.3         3	A NA 2 6	-
Protected Phases 4 Permitted Phases Detector Phase 4 Switch Phase Animum Initial (s) 10.0 Animum Split (s) 25.2 Total Split (s) 26.0 Total Split (s) 1.9 .ost Time Adjust (s) 0.0 Total Lost Time (s) 5.2 .ead/Lag .ead-Lag Optimize? Recall Mode None C- Act Effct Green (s) 12.0 Actuated g/C Ratio 0.22 //c Ratio 0.21 Control Delay 9.6 Dueue Delay 0.0 Total Delay 9.6 .os A Approach Delay 9.6 Dueue Length 50th (m) 2.3 Dueue Length 50th (m) 8.2 Internal Link Dist (m) 71.5 Turn Bay Length (m) Base Capacity (vph) 561 Starvation Cap Reductn 0 Storage Cap Reduct	2 2 10.0 10 23.2 23 29.0 29 2.7% 52.7' 3.3 3	2 6	A
Permitted Phases         4           Detector Phase         4           Switch Phase         4           Minimum Initial (s)         10.0           Inimum Split (s)         25.2           ford Split (s)         26.0           ford Split (s)         3.3           UR ed Time (s)         3.3           UR ed Time (s)         5.2           ead/Lag         ead-Lag Optimize?           Recall Mode         None         C-           cxt Effct Green (s)         12.0           cct atio         0.21         Control Delay           Queue Delay         0.0         foral Delay           Queue Delay         0.0         foral Delay           Queue Delay         0.6         OS           A         A         A           Approach LOS         A         A           Queue Length 50th (m)         2.3         C           Queue Length 95th (m)         361	2 2 10.0 10 23.2 23 29.0 29 2.7% 52.7' 3.3 3		
avetector Phase         4           witch Phase         10.0           linimum Initial (s)         10.0           linimum Split (s)         25.2           otal Split (s)         26.0           otal Split (s)         26.0           otal Split (%)         47.3%         52           fellow Time (s)         3.3         3           JI-Red Time (s)         1.9         52           oat Lost Time Adjust (s)         0.0         52           ead/Lag         pead/Lag         64           aed-Lag Optimize?         2         2           cecall Mode         None         C-           cct Effct Green (s)         12.0         c.tuated g/C Ratio         0.22           /c Ratio         0.21         2         2           control Delay         9.6         2         2           Queue Delay         0.0         2         2           control Delay         9.6         2         2           otal LoS         A         2         2           control Delay         9.6         2         2           otal Delay         9.6         2         2           otal Delay         9.6         <	2 10.0 10 23.2 23 29.0 29 2.7% 52.7' 3.3 3	2 6	
witch Phase           linimum Initial (s)         10.0           tinimum Split (s)         25.2           otal Split (s)         26.0           otal Split (%)         47.3%         52           ellow Time (s)         3.3           II-Red Time (s)         1.9           ost Time Adjust (s)         0.0           otal Split (?         5.2           ead/Lag         ead-Lag Optimize?           tecall Mode         None         C-           ct Effct Green (s)         12.0           ctuated g/C Ratio         0.21           control Delay         9.6           Queue Delay         0.0           otal Delay         9.6           Queue Delay         0.0           otal Delay         9.6           QS         A           pproach Delay         9.6           pueue Length 50th (m)         2.3           ueue Length 95th (m)         8.2           termal Link Dist (m)         71.5           urn Bay Length (m)         3.2           ase Capacity (vph)         561           tarvation Cap Reductn         0           pillback Cap Reductn         0           torage Cap Reductn	10.0         10           23.2         23           29.0         29           2.7%         52.7'           3.3         3	2 0	6
finimum Initial (s)       10.0         finimum Split (s)       25.2         otal Split (s)       26.0         otal Split (%)       47.3%       52         otal Split (%)       47.3%       52         ellow Time (s)       3.3       3.3         II-Red Time (s)       1.9       0.0         otal Lost Time Adjust (s)       0.0       0.0         otal Lost Time (s)       5.2       ead-Lag Optimize?         ead-Lag Optimize?       2       2         cecall Mode       None       C-         ct Effct Green (s)       12.0       .0.21         control Delay       9.6       0.0         otal Delay       0.0       0.0         otal Delay       9.6       0.0         otal Delay       9.6       0.0         otal Delay       9.6       0         Queue Delay       0.0       0         otal Delay       9.6       0         Queue Length SOth (m)       2.3       0         ueue Length SOth (m)       8.2       0         itarvation Cap Reductn       0       0         pillback Cap Reductn       0       0         itarvation Cap Reductn       0<	23.2       23         29.0       29         2.7%       52.7'         3.3       3		0
Alinimum Split (s) $25.2$ iotal Split (s) $26.0$ iotal Split (%) $47.3\%$ 52 $52$ (ellow Time (s) $3.3$ ull-Red Time (s) $1.9$ ost Time Adjust (s) $0.0$ iotal Lost Time (s) $5.2$ ead/Lagead-Lag Optimize?Recall ModeNoneC-C-act Effct Green (s) $12.0$ cct table g/C Ratio $0.22$ /c Ratio $0.22$ /c Ratio $0.21$ Control Delay $9.6$ Queue Delay $0.0$ iotal Delay $9.6$ Queue Length S0th (m) $2.3$ Queue Length 50th (m) $8.2$ hternal Link Dist (m) $71.5$ ium Bay Length (m) $8ase$ Capacity (vph)Starvation Cap Reductn $0$ cotrade Cycle Length: 55 $55$ cutuated Cycle Length: 55 $55$ cutuated Cycle Length: 55 $55$ cutuated Cycle S0 $16$ Aaximum v/c Ratio: 0.50 $16$ tersection Signal Delay: 8.1 $15$ tersection Signal Delay: 8.1 $15$ intersection Signal Delay: 8.1 $15$	23.2       23         29.0       29         2.7%       52.7'         3.3       3	0 10.0	0
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otal Split (%)         47.3%         52           fellow Time (s)         3.3         3.3           III-Red Time (s)         1.9         ost Time Adjust (s)         0.0           otal Lost Time (s)         5.2         ead/Lag         ead-Lag Optimize?           eecall Mode         None         C-         C-           ct Effct Green (s)         12.0         ctuated g/C Ratio         0.22           /C Ratio         0.21         control Delay         9.6           Queue Delay         0.0         otal Delay         9.6           QS         A         pproach Delay         9.6           QS         A         pproach LOS         A           pueue Length 95th (m)         2.3         pueue Length 95th (m)         8.2           uternal Link Dist (m)         71.5         mas Bay Length (m)         sase Capacity (vph)         561           viarge Cap Reductn         0         storage Cap Reductn         0         storage Cap Reductn         0           vibravet Cycle Length: 55         5         ctuated Cycle Length: 55         0         1           vibravet Cycle Length: 55         5         ctuated Cycle : 60         0         1           otaray Cap Reductn         0	2.7% 52.7 <sup>v</sup> 3.3 3		
reliow Time (s)       3.3         III-Red Time (s)       1.9         ost Time Adjust (s)       0.0         otal Lost Time (s)       5.2         ead/Lag       5.2         ead-Lag Optimize?       2         Recall Mode       None       C-         ct Effct Green (s)       12.0       2         /c Ratio       0.22       //         /c Ratio       0.21       2         control Delay       9.6       0         Dueue Delay       0.0       0         otal Delay       9.6       0         Dueue Length Soth (m)       2.3       2         pproach LOS       A       0         poproach LOS       A       0         ueue Length 95th (m)       8.2       1         tremal Link Dist (m)       71.5       1         um Bay Length (m)       3.3       1         tarvation Cap Reductn       0       1         pillback Cap Reductn       0       1         tarvation Cap Reductn       0       1         tarvation Cap Reductn       0       1         tersection Summary       2       2         Cycle Length: 55       5	3.3 3		
III-Red Time (s)       1.9         ost Time Adjust (s)       0.0         otal Lost Time (s)       5.2         ead/Lag       5.2         ead-Lag Optimize?       2         ecall Mode       None       C-         cct Effct Green (s)       12.0       2         /c Ratio       0.22       ////////////////////////////////////			
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total Lost Time (s)       5.2         ead/Lag       ead/Lag         ead-Lag Optimize?       ead-Lag Optimize?         Recall Mode       None       C-         Accuated g/C Ratio       0.22       ////////////////////////////////////	1.9 1		
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ead/Lag ead-Lag Optimize? Recall Mode None C- cct Effct Green (s) 12.0 cctuated g/C Ratio 0.22 /c Ratio 0.21 control Delay 9.6 Dueue Delay 9.6 OS A opproach Delay 9.6 OS A opproach Delay 9.6 OS A oueue Length 50th (m) 2.3 Dueue Length 50th (m) 8.2 onternal Link Dist (m) 71.5 furn Bay Length (m) 8.2 onternal Link Dist (m) 71.5 furn Bay Length (m) Base Capacity (vph) 561 starvation Cap Reductn 0 storage Cap Reductn 0 Reduced v/c Ratio 0.13 <b>tresection Summary</b> Cycle Length: 55 octuated Cycle Length: 55 Offset: 49 (89%), Referenced to phase 2:NBTL and 6: latural Cycle: 60 Control Type: Actuated-Coordinated Aaximum v/c Ratio: 0.50 ttersection Signal Delay: 8.1 ttersection Capacity Utilization 78.4% analysis Period (min) 15	5	2 5.2	2
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actuated g/C Ratio         0.22           /c Ratio         0.21           Control Delay         9.6           Dueue Delay         0.0           otal Delay         9.6           OS         A           opproach Delay         9.6           Oueue Length 50th (m)         2.3           oueue Length 90th (m)         8.2           otarenal Link Dist (m)         71.5           furn Bay Length (m)         561           dsave Capacity (vph)         561           dstarvation Cap Reductn         0           opillback Cap Reductn         0           otarage Cap Reductn         0           Staruated Cycle Length: 55         0           cutated Cycle	40		
/c Ratio       0.21         Control Delay       9.6         Dueue Delay       0.0         Total Delay       9.6         OS       A         opproach Delay       9.6         OS       A         opproach Delay       9.6         OS       A         opproach Delay       9.6         OS       A         upproach Delay       9.6         upproach Delay       8.1         tersection Signal Delay       8.1         netersection Capacity Utilization 78.4%       10.15         upplicat Signal Delay       8.1 <tr< td=""><td>0.7</td><td></td><td></td></tr<>	0.7		
Control Delay       9.6         Queue Delay       0.0         Total Delay       9.6         OS       A         Approach Delay       9.6         OS       A         Approach Delay       9.6         OS       A         Approach Delay       9.6         Approach LOS       A         Queue Length 50th (m)       2.3         Queue Length 95th (m)       8.2         Internal Link Dist (m)       71.5         Turn Bay Length (m)       8.2         Base Capacity (vph)       561         Starvation Cap Reductn       0         Storage Cap Reduct	0.5		
Dueue Delay       0.0         Total Delay       9.6         LOS       A         Approach Delay       9.6         LOS       A         Approach Delay       9.6         Approach Delay       9.6         Approach Delay       9.6         Approach LOS       A         Dueue Length 50th (m)       2.3         Dueue Length 95th (m)       8.2         Internal Link Dist (m)       71.5         Turn Bay Length (m)       8.2         Base Capacity (vph)       561         Starvation Cap Reductn       0         Storage Cap Reductn       0         Storage Cap Reductn       0         Storage Cap Reductn       0         Storage Cap Reductn       0         Reduced v/c Ratio       0.13         Intersection Summary       2         Cycle Length: 55       5         Statural Cycle: 60       2         Control Type: Actuated-Coordinated       7         Aaximum v/c Ratio: 0.50       1         Intersection Signal Delay: 8.1       1         Intersection Capacity Utilization 78.4%       4         Malysis Period (min) 15       95	8		
total Delay       9.6         OS       A         opproach Delay       9.6         opproach LOS       A         pueue Length 50th (m)       2.3         pueue Length 95th (m)       8.2         nternal Link Dist (m)       71.5         urn Bay Length (m)       sase Capacity (vph)         sase Capacity (vph)       561         travation Cap Reductn       0         pillback Cap Reductn       0         torage Cap Reductn       0	0		
OS       A         pproach Delay       9.6         pproach LOS       A         bueue Length 50th (m)       2.3         bueue Length 50th (m)       8.2         ternal Link Dist (m)       71.5         urn Bay Length (m)       ase Capacity (vph)         ase Capacity (vph)       561         tarvation Cap Reductn       0         pillback Cap Reductn       0         torage Cap Reductn       0         tersection Summary       9.6         tycle Length: 55       55         ctuated Cycle Length: 55       55         optical Cycle Length: 55       56         iatural Cycle: 60       0         iontrol Type: Actuated-Coordinated       1         laximum v/c Ratio: 0.50       1         itersection Signal Delay: 8.1       1         itersection Capacity Utilization 78.4%       1         nalysis Period (min) 15       95th percentile volume exceeds capacity, queue n			
approach Delay       9.6         approach LOS       A         bueue Length 50th (m)       2.3         bueue Length 95th (m)       8.2         ternal Link Dist (m)       71.5         tim Bay Length (m)       561         tarvation Cap Reductn       0         pillback Cap Reductn       0         torage Cap Reductn       0	8		
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Dueue Length 50th (m)       2.3         Dueue Length 95th (m)       8.2         Iternal Link Dist (m)       71.5         urn Bay Length (m)       561         itarvation Cap Reductn       0         ipillback Cap Reductn       0         itorage	8		
Bueue Length 95th (m)       8.2         Internal Link Dist (m)       71.5         urn Bay Length (m)       382         ase Capacity (vph)       561         tarvation Cap Reductn       0         pillback Cap Reductn       0         torage Cap Reductn       0         teduced v/c Ratio       0.13         Intersection Summary       55         tycle Length: 55       55         offset: 49 (89%), Referenced to phase 2:NBTL and 6:         iatural Cycle: 60       50         control Type: Actuated-Coordinated         faximum v/c Ratio: 0.50         intersection Signal Delay: 8.1         intersection Capacity Utilization 78.4%         nalysis Period (min) 15         95th percentile volume exceeds capacity, queue n		A A	
nternal Link Dist (m) 71.5 furn Bay Length (m) tase Capacity (vph) 561 itarvation Cap Reductn 0 itarvation Cap Reductn 0 itorage Cap Reductn 0 Reduced v/c Ratio 0.13 <b>ntersection Summary</b> Evcle Length: 55 cituated Cycle Length: 55 fifset: 49 (89%), Referenced to phase 2:NBTL and 6: latural Cycle: 60 control Type: Actuated-Coordinated faximum v/c Ratio: 0.50 intersection Signal Delay: 8.1 intersection Capacity Utilization 78.4% inalysis Period (min) 15 95th percentile volume exceeds capacity, queue n	26		
iurn Bay Length (m) tase Capacity (vph) 561 tarvation Cap Reductn 0 torage Cap Reductn 0 torage Cap Reductn 0 teduced v/c Ratio 0.13 <b>ntersection Summary</b> Cycle Length: 55 cctuated Cycle Length: 55 Offset: 49 (89%), Referenced to phase 2:NBTL and 6: latural Cycle: 60 control Type: Actuated-Coordinated faximum v/c Ratio: 0.50 ntersection Signal Delay: 8.1 ntersection Capacity Utilization 78.4% inalysis Period (min) 15 95th percentile volume exceeds capacity, queue n	#77	8 30.7	7
tase Capacity (vph) 561 tarvation Cap Reductn 0 pillback Cap Reductn 0 torage Cap Reductn 0 teduced v/c Ratio 0.13 <b>ntersection Summary</b> Cycle Length: 55 cutated Cycle Length: 55 Strutated C	171	7 46.0	0
tase Capacity (vph) 561 tarvation Cap Reductn 0 pillback Cap Reductn 0 torage Cap Reductn 0 teduced v/c Ratio 0.13 <b>ntersection Summary</b> Cycle Length: 55 cutated Cycle Length: 55 Strutated C			
tarvation Cap Reductn 0 pillback Cap Reductn 0 torage Cap Reductn 0 Reduced v/c Ratio 0.13 <b>Itersection Summary</b> Sycle Length: 55 ctuated Cycle Length: 55 ffset: 49 (89%), Referenced to phase 2:NBTL and 6: latural Cycle: 60 control Type: Actuated-Coordinated faximum v/c Ratio: 0.50 Intersection Signal Delay: 8.1 Intersection Capacity Utilization 78.4% inalysis Period (min) 15 95th percentile volume exceeds capacity, queue n	205	2 2241	1
pillback Cap Reductn 0 storage Cap Reductn 0 Reduced v/c Ratio 0.13 Intersection Summary Cycle Length: 55 sctuated Cycle Length: 55 Jiffset: 49 (89%), Referenced to phase 2:NBTL and 6: Jatural Cycle: 60 Control Type: Actuated-Coordinated Jaximum v/c Ratio: 0.50 Intersection Signal Delay: 8.1 Intersection Capacity Utilization 78.4% analysis Period (min) 15 95th percentile volume exceeds capacity, queue n		0 0	0
torage Cap Reductn 0 Reduced v/c Ratio 0.13 Intersection Summary Cycle Length: 55 cctuated Cycle Length: 55 Software State		0 0	
Reduced v/c Ratio 0.13  Intersection Summary  Cycle Length: 55 Cycle Lengt		0 0	
htersection Summary Cycle Length: 55 Sycle Length: 55 Offset: 49 (89%), Referenced to phase 2:NBTL and 6: latural Cycle: 60 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.50 Intersection Signal Delay: 8.1 Intersection Capacity Utilization 78.4% analysis Period (min) 15 95th percentile volume exceeds capacity, queue n	0.5		
ycle Length: 55 ctuated Cycle Length: 55 ffset: 49 (89%), Referenced to phase 2:NBTL and 6: atural Cycle: 60 ontrol Type: Actuated-Coordinated laximum v/c Ratio: 0.50 ttersection Signal Delay: 8.1 ttersection Capacity Utilization 78.4% nalysis Period (min) 15 95th percentile volume exceeds capacity, queue n	0.0	0.27	/
Ctuated Cycle Length: 55         Offset: 49 (89%), Referenced to phase 2:NBTL and 6:         Jatural Cycle: 60         Control Type: Actuated-Coordinated         Maximum v/c Ratio: 0.50         Intersection Signal Delay: 8.1         Intersection Capacity Utilization 78.4%         Maysis Period (min) 15         95th percentile volume exceeds capacity, queue n			
Ctuated Cycle Length: 55 Offset: 49 (89%), Referenced to phase 2:NBTL and 6: latural Cycle: 60 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.50 Intersection Signal Delay: 8.1 Intersection Capacity Utilization 78.4% Intersection Capacity Utilization 78.4% Intersecti			
Offset: 49 (89%), Referenced to phase 2:NBTL and 6: latural Cycle: 60 Control Type: Actuated-Coordinated Aaximum v/c Ratio: 0.50 Intersection Signal Delay: 8.1 Intersection Capacity Utilization 78.4% Analysis Period (min) 15 95th percentile volume exceeds capacity, queue n			
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Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.50 Intersection Signal Delay: 8.1 Intersection Capacity Utilization 78.4% Inalysis Period (min) 15 95th percentile volume exceeds capacity, queue n			
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ntersection Capacity Utilization 78.4% analysis Period (min) 15 95th percentile volume exceeds capacity, queue n			Intersection LOS: A
nalysis Period (min) 15 95th percentile volume exceeds capacity, queue n			ICU Level of Service D
95th percentile volume exceeds capacity, queue n		I	
	nav bo longer		
Queue shown is maximum after two cycles.	lay be lunger.		
plits and Phases: 4: Bronson & Primrose			
ø2 (R)			<u>∕</u> ≉ <sub>ø4</sub>
/ 1.02 (K)			
29.5			26 s
🔻 ø6 (R)			

# Projected PM 6: Bronson & Somerset W

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	ø1	ø3	ø5	ø7
Lane Configurations	٦ ۲	٦,	5	ĥ		ፈቴ		ፈቴ				
Volume (vph)	24	113	80	178	63	544	21	496				
Lane Group Flow (vph)	25	150	84	203	0	692	0	593				
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA				
Protected Phases		4		8		2		6	1	3	5	7
Permitted Phases	4		8	_	2	_	6					
Detector Phase	4	4	8	8	2	2	6	6				
Switch Phase	10.0	10.0	40.0	40.0	10.0	40.0	40.0	10.0	1.0	4.0	1.0	1.0
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	1.0	1.0	1.0
Minimum Split (s)	18.9	18.9	18.9	18.9	18.8	18.8	18.8	18.8	7.0	7.0	7.0	7.0
Total Split (s)	32.0	32.0	32.0	32.0	53.0	53.0	53.0	53.0	5.0	5.0	5.0	5.0
Total Split (%)	33.7%	33.7%	33.7%	33.7%	55.8%	55.8%	55.8%	55.8%	5%	5%	5%	5%
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.0	2.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0 5.9	0.0		0.0		0.0				
Total Lost Time (s)	5.9	5.9		5.9	Log	5.8	Log	5.8	Lood	Lood	Lood	Lood
Lead/Lag Lead-Lag Optimize?	Lag Yes	Lag	Lag	Lag	Lag Yes	Lag	Lag	Lag Yes	Lead	Lead Yes	Lead Yes	Lead
Recall Mode	Max	Yes Max	Yes Max	Yes Max	C-Max	Yes C-Max	Yes C-Max	C-Max	Yes Min	Min	Min	Yes Min
Act Effct Green (s)	26.1	26.1	26.1	26.1	C-IVIAX	47.2	C-IVIAX	47.2	IVIIII	IVIIII	IVIIII	IVIIII
Actuated g/C Ratio	0.27	0.27	0.27	0.27		47.2 0.50		47.2 0.50				
v/c Ratio	0.27	0.27	0.27	0.27		0.50		0.30				
Control Delay	27.4	31.2	34.5	33.0		19.1		16.7				
Queue Delay	0.0	0.0	0.0	0.0		0.0		0.0				
Total Delay	27.4	31.2	34.5	33.0		19.1		16.7				
LOS	27.4 C	C	C	55.0 C		B		B				
Approach Delay	U	30.7	U	33.4		19.1		16.7				
Approach LOS		C		C		B		B				
Queue Length 50th (m)	3.4	22.2	12.5	31.0		44.8		35.2				
Queue Length 95th (m)	9.9	39.5	26.4	51.7		61.9		48.7				
Internal Link Dist (m)		306.8	2011	381.0		115.2		171.7				
Turn Bay Length (m)		00010		00110		11012						
Base Capacity (vph)	228	399	216	431		1213		1345				
Starvation Cap Reductn	0	0	0	0		0		0				
Spillback Cap Reductn	0	0	0	0		0		0				
Storage Cap Reductn	0	0	0	0		0		0				
Reduced v/c Ratio	0.11	0.38	0.39	0.47		0.57		0.44				
Intersection Summary												
Cycle Length: 95 Actuated Cycle Length: 95 Offset: 24 (25%), Referenced to phase Natural Cycle: 60	2:NBTL a	nd 6:SBTL,	Start of Gre	en								
Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.57												
Intersection Signal Delay: 21.8					tersection L							
Intersection Capacity Utilization 81.0% Analysis Period (min) 15				IC	U Level of S	Service D						
Splits and Phases: 6: Bronson & So	merset W					_						
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5 s 53 s							5 s 32	2 s				
A (R)							₽ <b>k</b> ø7	¥ ø8				
5 s 53 s							5 s 32	2 s				

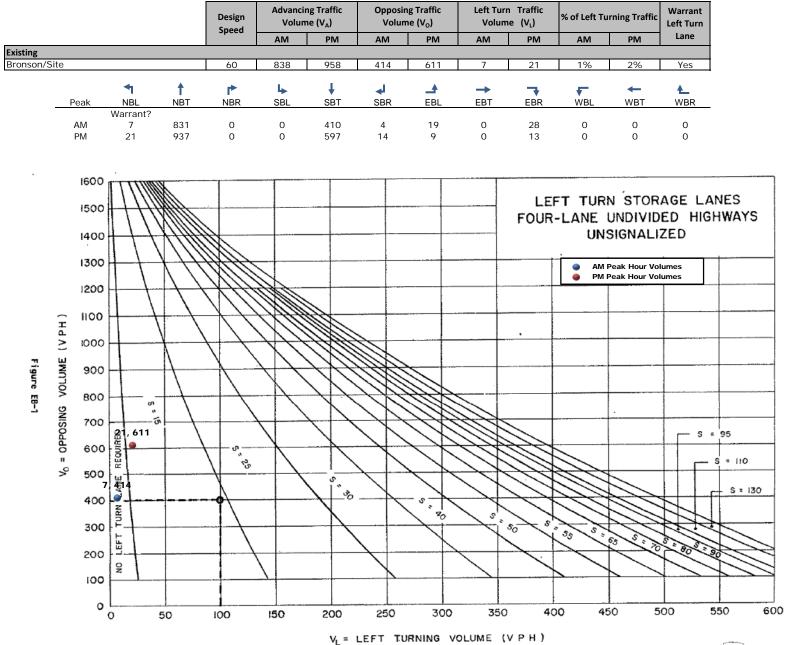
#### Projected PM 5: Cambridge & Primrose

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			4			4			\$	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	33	108	2	4	42	33	1	0	8	33	3	23
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	35	114	2	4	44	35	1	0	8	35	3	24
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	151	83	9	62								
Volume Left (vph)	35	4	1	35								
Volume Right (vph)	2	35	8	24								
Hadj (s)	0.07	-0.21	-0.48	-0.09								
Departure Headway (s)	4.2	4.0	4.0	4.3								
Degree Utilization, x	0.18	0.09	0.01	0.07								
Capacity (veh/h)	835	874	837	777								
Control Delay (s)	8.1	7.4	7.0	7.7								
Approach Delay (s)	8.1	7.4	7.0	7.7								
Approach LOS	А	А	А	А								
Intersection Summary												
Delay			7.8									
Level of Service			А									
Intersection Capacity Utilization			33.8%	IC	U Level of S	ervice			А			
Analysis Period (min)			15									

#### Projected PM 8: Bronson & Site

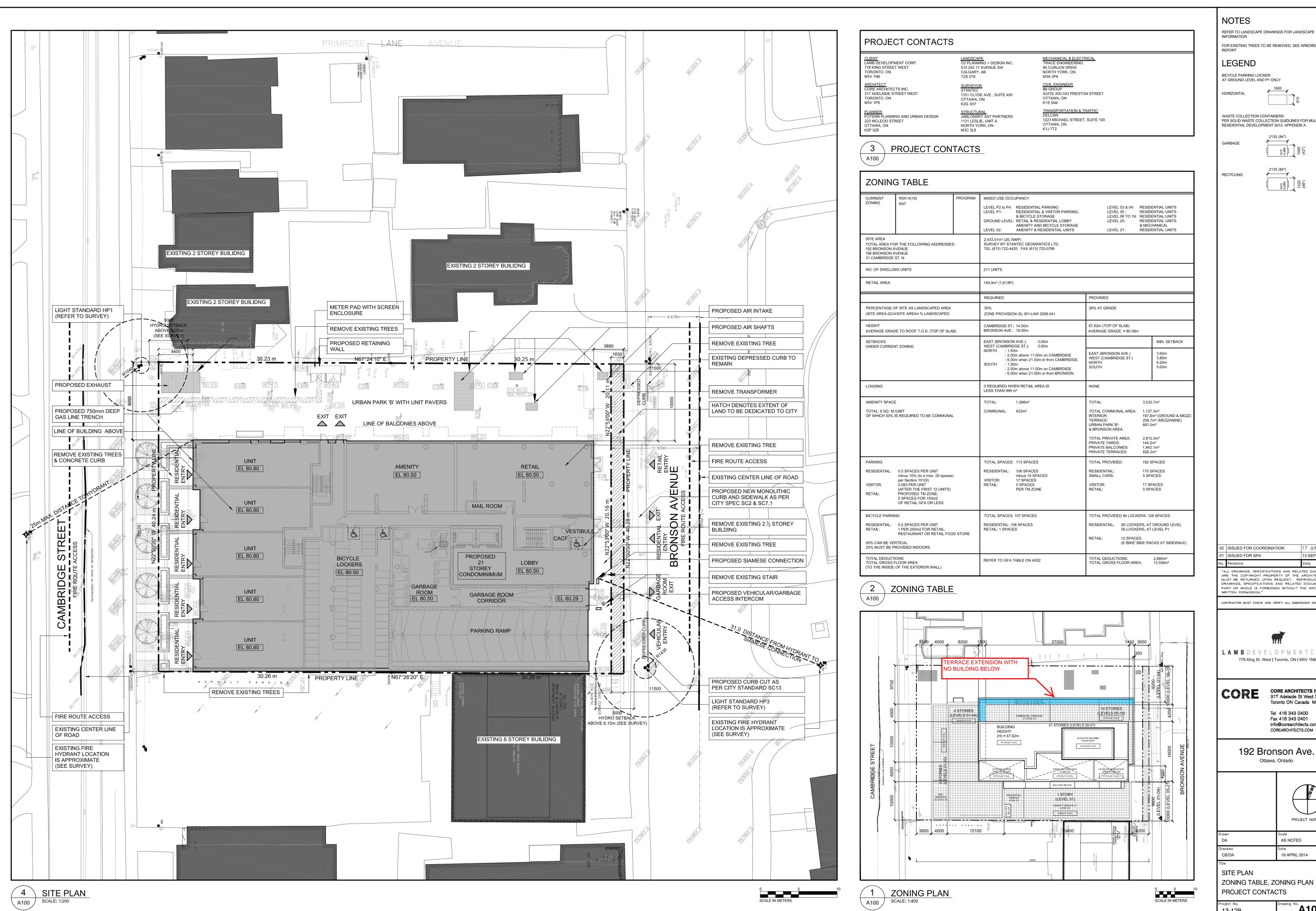
	≯	1	•	1	¥ .	<	
Movement	EBL	EBR	• NBL	NBT	• SBT	SBR	
Lane Configurations	¥	LDIK	NDL			JUK	
	<b>Y</b> 9	13	21	<b>9</b> 37	<b>*1</b> 5 597	14	
Volume (veh/h) Sign Control		13	21	937 Free	597 Free	14	
Grade	Stop 0%			0%	0%		
		0.05	0.05			0.05	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Hourly flow rate (vph)	9	14	22	986	628	15	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None	None		
Median storage veh)							
Upstream signal (m)				70	58		
pX, platoon unblocked	0.88	0.94	0.94				
vC, conflicting volume	1173	322	643				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	597	141	484				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	97	98	98				
cM capacity (veh/h)	373	826	1007				
				00.4			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2		
Volume Total	23	351	658	419	224		
Volume Left	9	22	0	0	0		
Volume Right	14	0	0	0	15		
cSH	552	1007	1700	1700	1700		
Volume to Capacity	0.04	0.02	0.39	0.25	0.13		
Queue Length 95th (m)	1.0	0.5	0.0	0.0	0.0		
Control Delay (s)	11.8	0.8	0.0	0.0	0.0		
Lane LOS	В	А					
Approach Delay (s)	11.8	0.3		0.0			
Approach LOS	В						
Intersection Summary							
Average Delay			0.3				
Intersection Capacity Utilization			53.2%	ICI	U Level of Servi	ice	
Analysis Period (min)			15				

Appendix B Left-Turn Warrant Analysis



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Appendix C Revised Site Plan



| BICYCLE PARKING L<br>AT GROUND LEVEL                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       |
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| HORIZONTAL                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       |
|                                                                                                                                                                                                                                   | 615 J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                       |
|                                                                                                                                                                                                                                   | N CONTAINERS:<br>COLLECTION GUIDLINES FOR MULTI-UN<br>LOPMENT 2012, APPENDIX A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | IIT                                   |
| GARBAGE                                                                                                                                                                                                                           | 2135 (84")<br>f                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       |
| GANDAGE                                                                                                                                                                                                                           | (42")<br>(42")                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                       |
| RECYCLING                                                                                                                                                                                                                         | 2135 (84")                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                       |
| RECTOLING                                                                                                                                                                                                                         | 4 4yrd.<br>R.RIN<br>(48")                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                       |
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| o. Revisions                                                                                                                                                                                                                      | PA 13 SEPT 207<br>Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 13                                    |
| 1 ISSUED FOR SI<br>0. Revisions<br>"ALL DRAWINGS, SF<br>ARE THE COPYRIG<br>MUST BE RETURNE                                                                                                                                        | PA 13 SEPT 20<br>Date<br>PECIFICATIONS AND RELATED DOCUME<br>HT PROPERTY OF THE ARCHITECT A<br>D UPON REQUEST. REPRODUCTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 13<br>NTS<br>AND<br>OF                |
| ARE THE COPYRIG<br>MUST BE RETURNE<br>DRAWINGS, SPECIF                                                                                                                                                                            | PA 13 SEPT 20<br>Date<br>Date<br>PECIFICATIONS AND RELATED DOCUME<br>HT PROPERTY OF THE ARCHITECT A<br>DUPON REQUEST. REPRODUCTION<br>ICATIONS AND RELATED DOCUMENTS<br>S FORBIDDEN WITHOUT THE ARCHITEC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | NTS<br>AND<br>OF                      |
| ARE THE COPYRIG<br>MUST BE RETURNE<br>DRAWINGS, SPECIF<br>PART OR WHOLE IS<br>WRITTEN PERMISSIO                                                                                                                                   | PA 13 SEPT 20<br>Date<br>Date<br>PECIFICATIONS AND RELATED DOCUME<br>HT PROPERTY OF THE ARCHITECT A<br>DUPON REQUEST. REPRODUCTION<br>ICATIONS AND RELATED DOCUMENTS<br>S FORBIDDEN WITHOUT THE ARCHITEC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 13<br>NTS<br>ND<br>OF<br>S IN<br>CT'S |
| ARE THE COPYRIG<br>MUST BE RETURNE<br>DRAWINGS, SPECIF<br>PART OR WHOLE IS<br>WRITTEN PERMISSIO                                                                                                                                   | PA 13 SEPT 20<br>Date<br>Date<br>PECIFICATIONS AND RELATED DOCUME<br>HT PROPERTY OF THE ARCHITECT A<br>DUPON REQUEST. REPRODUCTION<br>ICATIONS AND RELATED DOCUMENTS<br>S FORBIDDEN WITHOUT THE ARCHITEC<br>DN."                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 13<br>NTS<br>ND<br>OF<br>S IN<br>CT'S |
| ARE THE COPYRIG<br>MUST BE RETURNE<br>DRAWINGS, SPECIF<br>PART OR WHOLE IS<br>WRITTEN PERMISSIO                                                                                                                                   | PA 13 SEPT 20<br>Date<br>PECIFICATIONS AND RELATED DOCUME<br>HT PROPERTY OF THE ARCHITECT A<br>D UPON REQUEST. REPRODUCTION<br>ICATIONS AND RELATED DOCUMENTS<br>S FORBIDDEN WITHOUT THE ARCHITEC<br>DN."<br>HECK AND VERIFY ALL DIMENSIONS ON THE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 13<br>NTS<br>ND<br>OF<br>S IN<br>CT'S |
| 1 ISSUED FOR SI<br>2. Revisions<br>"ALL DRAWINGS, SF<br>ARE THE COPYRIG<br>MUST BE RETURNE<br>DRAWINGS, SPECIF<br>PART OR WHOLE IS<br>WRITTEN PERMISSIO<br>CONTRACTOR MUST CH                                                     | PA 13 SEPT 207<br>Date<br>Date<br>PECIFICATIONS AND RELATED DOCUMEN<br>TO UPON REQUEST. REPRODUCTION<br>ICATIONS AND RELATED DOCUMENTS<br>S FORBIDDEN WITHOUT THE ARCHITEC<br>DN."<br>HECK AND VERIFY ALL DIMENSIONS ON THE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | I3<br>NTS<br>OF<br>S IN<br>CT'S       |
| LAMBDE                                                                                                                                                                                                                            | PA 13 SEPT 20<br>Date<br>PECIFICATIONS AND RELATED DOCUME<br>HT PROPERTY OF THE ARCHITECT A<br>D UPON REQUEST. REPRODUCTION<br>ICATIONS AND RELATED DOCUMENTS<br>S FORBIDDEN WITHOUT THE ARCHITEC<br>DN."<br>HECK AND VERIFY ALL DIMENSIONS ON THE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | I3<br>NTS<br>OF<br>S IN<br>CT'S       |
| LAMBDE                                                                                                                                                                                                                            | PA 13 SEPT 207<br>Date<br>Date<br>PECIFICATIONS AND RELATED DOCUMENT<br>TO UPON REQUEST. REPRODUCTION<br>ICATIONS AND RELATED DOCUMENTS<br>S FORBIDDEN WITHOUT THE ARCHITEC<br>ON."<br>HECK AND VERIFY ALL DIMENSIONS ON THE<br>VELOPMENTCOF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | I3<br>NTS<br>OF<br>S IN<br>CT'S       |
| I ISSUED FOR SI<br>C. Revisions<br>"ALL DRAWINGS, SF<br>ARE THE COPYRIG<br>MUST BE RETURNE<br>DRAWINGS, SPECIF<br>PART OR WHOLE IS<br>WRITTEN PERMISSION<br>CONTRACTOR MUST CH<br>LAMBDE<br>778 King S                            | PA 13 SEPT 207<br>Date<br>Date<br>PECIFICATIONS AND RELATED DOCUME<br>TO UPON REQUEST. REPRODUCTION<br>ICATIONS AND RELATED DOCUMENTS<br>S FORBIDDEN WITHOUT THE ARCHITEC<br>S FORBIDDEN WITHOUT THE ARCHITEC<br>SN."<br>HECK AND VERIFY ALL DIMENSIONS ON THE<br>WELOPMENTCOF<br>St. West   Toronto, ON   M5V 1N6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | I3<br>NTS<br>OF<br>SIN<br>CT'S        |
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