

HCM 2010 TWSC
4: Collins Ct & 9 Street

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕					
Traffic Vol, veh/h	190	102	1	17	107	42	2	0	0	0	0	0
Future Vol, veh/h	190	102	1	17	107	42	2	0	0	0	0	0
Conflicting Peds, #/hr	40	0	96	96	0	40	6	0	14	14	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	229	123	1	20	129	51	2	0	0	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	220	0	0	220	0	0	878	937	233			
Stage 1	-	-	-	-	-	-	677	677	-			
Stage 2	-	-	-	-	-	-	201	260	-			
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22			
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-			
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318			
Pot Cap-1 Maneuver	1349	-	-	1349	-	-	318	265	806			
Stage 1	-	-	-	-	-	-	505	452	-			
Stage 2	-	-	-	-	-	-	833	693	-			
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1342	-	-	1333	-	-	234	0	733			
Mov Cap-2 Maneuver	-	-	-	-	-	-	234	0	-			
Stage 1	-	-	-	-	-	-	380	0	-			
Stage 2	-	-	-	-	-	-	815	0	-			
Approach	EB			WB			NB					
HCM Control Delay, s	5.3			0.8			20.5					
HCM LOS							C					
Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR					
Capacity (veh/h)	234	1342	-	-	1333	-	-					
HCM Lane V/C Ratio	0.01	0.171	-	-	0.015	-	-					
HCM Control Delay (s)	20.5	8.2	0	-	7.7	0	-					
HCM Lane LOS	C	A	A	-	A	A	-					
HCM 95th %tile Q(veh)	0	0.6	-	-	0	-	-					

HCM 2010 TWSC
5: Collins Ct & 10 Street

Intersection												
Int Delay, s/veh		5.7										
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔				
Traffic Vol, veh/h	11	105	0	0	103	1	101	3	109	0	0	0
Future Vol, veh/h	11	105	0	0	103	1	101	3	109	0	0	0
Conflicting Peds, #/hr	28	0	0	0	0	28	9	0	8	8	0	9
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	114	0	0	112	1	110	3	118	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	141	0	-	-	-	0	259	279	122			
Stage 1	-	-	-	-	-	-	138	138	-			
Stage 2	-	-	-	-	-	-	121	141	-			
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22			
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-			
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318			
Pot Cap-1 Maneuver	1442	-	0	0	-	-	730	629	929			
Stage 1	-	-	0	0	-	-	889	782	-			
Stage 2	-	-	0	0	-	-	904	780	-			
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1431	-	-	-	-	-	718	0	923			
Mov Cap-2 Maneuver	-	-	-	-	-	-	718	0	-			
Stage 1	-	-	-	-	-	-	881	0	-			
Stage 2	-	-	-	-	-	-	897	0	-			
Approach	EB			WB			NB					
HCM Control Delay, s	0.7			0			11.2					
HCM LOS							B					
Minor Lane/Major Mvm	NBLn1	EBL	EBT	WBT	WBR							
Capacity (veh/h)	812	1431	-	-	-							
HCM Lane V/C Ratio	0.285	0.008	-	-	-							
HCM Control Delay (s)	11.2	7.5	0	-	-							
HCM Lane LOS	B	A	A	-	-							
HCM 95th %tile Q(veh)	1.2	0	-	-	-							

HCM 2010 Signalized Intersection Summary

6: Collins Avenue & 11 Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Traffic Volume (veh/h)	22	40	21	16	30	31	111	574	16	22	563	29
Future Volume (veh/h)	22	40	21	16	30	31	111	574	16	22	563	29
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.62		0.44	0.61		0.44	1.00		0.87	0.95		0.87
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1667	1700	1700	1667	1700	1667	1667	1700	1667	1667	1700
Adj Flow Rate, veh/h	24	43	23	17	32	33	119	617	17	24	605	31
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	90	42	52	67	57	537	1224	34	630	1187	61
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	1.00	1.00	1.00	0.76	0.76	0.76
Sat Flow, veh/h	212	619	285	128	455	393	789	1607	44	754	1558	80
Grp Volume(v), veh/h	90	0	0	82	0	0	119	0	634	24	0	636
Grp Sat Flow(s),veh/h/ln	1116	0	0	977	0	0	789	0	1651	754	0	1638
Q Serve(g_s), s	0.0	0.0	0.0	0.6	0.0	0.0	4.9	0.0	0.0	1.0	0.0	19.7
Cycle Q Clear(g_c), s	8.6	0.0	0.0	9.1	0.0	0.0	24.5	0.0	0.0	1.0	0.0	19.7
Prop In Lane	0.27		0.26	0.21		0.40	1.00		0.03	1.00		0.05
Lane Grp Cap(c), veh/h	198	0	0	176	0	0	537	0	1257	630	0	1248
V/C Ratio(X)	0.45	0.00	0.00	0.47	0.00	0.00	0.22	0.00	0.50	0.04	0.00	0.51
Avail Cap(c_a), veh/h	236	0	0	210	0	0	537	0	1257	630	0	1248
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.48	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.2	0.0	0.0	51.5	0.0	0.0	2.4	0.0	0.0	3.8	0.0	6.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.7	0.0	0.0	1.0	0.0	1.4	0.1	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.0	2.8	0.0	0.0	1.2	0.0	0.5	0.2	0.0	9.3
LnGrp Delay(d),s/veh	51.5	0.0	0.0	52.2	0.0	0.0	3.4	0.0	1.4	3.9	0.0	7.5
LnGrp LOS	D			D			A		A	A		A
Approach Vol, veh/h		90			82			753			660	
Approach Delay, s/veh		51.5			52.2			1.8			7.4	
Approach LOS		D			D			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		105.0		25.0		105.0		25.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		94.0		24.0		94.0		24.0				
Max Q Clear Time (g_c+I1), s		21.7		11.1		26.5		10.6				
Green Ext Time (p_c), s		3.9		0.6		3.9		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			9.5									
HCM 2010 LOS			A									

HCM 2010 TWSC
7: Collins Avenue & Parking Garage

Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	101	604	82	16	583
Future Vol, veh/h	0	101	604	82	16	583
Conflicting Peds, #/hr	0	0	0	263	263	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	105	629	85	17	607
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1576	935	0	0	978	0
Stage 1	935	-	-	-	-	-
Stage 2	641	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	121	322	-	-	706	-
Stage 1	382	-	-	-	-	-
Stage 2	525	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	91	251	-	-	706	-
Mov Cap-2 Maneuver	91	-	-	-	-	-
Stage 1	298	-	-	-	-	-
Stage 2	506	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	29.3		0		0.3	
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBLn1	SBL	SBT		
Capacity (veh/h)	-	- 251	706	-		
HCM Lane V/C Ratio	-	- 0.419	0.024	-		
HCM Control Delay (s)	-	- 29.3	10.2	0		
HCM Lane LOS	-	- D	B	A		
HCM 95th %tile Q(veh)	-	- 2	0.1	-		

HCM 2010 Signalized Intersection Summary

8: Collins Avenue & 10 Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	37	31	25	43	28	18	499	28	27	536	27
Future Volume (veh/h)	118	37	31	25	43	28	18	499	28	27	536	27
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.80		0.70	1.00		0.71	0.96		0.87	0.95		0.87
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1700	1667	1700	1700	1667	1700	1667	1667	1700	1667	1667	1700
Adj Flow Rate, veh/h	124	39	33	26	45	29	19	525	29	28	564	28
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	172	47	35	91	139	80	617	1134	63	646	1141	57
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	1.00	1.00	1.00	0.97	0.97	0.97
Sat Flow, veh/h	659	245	183	291	725	415	789	1551	86	808	1562	78
Grp Volume(v), veh/h	196	0	0	100	0	0	19	0	554	28	0	592
Grp Sat Flow(s),veh/h/ln	1087	0	0	1431	0	0	789	0	1637	808	0	1639
Q Serve(g_s), s	15.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	2.5
Cycle Q Clear(g_c), s	23.2	0.0	0.0	8.0	0.0	0.0	2.6	0.0	0.0	0.1	0.0	2.5
Prop In Lane	0.63		0.17	0.26		0.29	1.00		0.05	1.00		0.05
Lane Grp Cap(c), veh/h	254	0	0	310	0	0	617	0	1196	646	0	1198
V/C Ratio(X)	0.77	0.00	0.00	0.32	0.00	0.00	0.03	0.00	0.46	0.04	0.00	0.49
Avail Cap(c_a), veh/h	254	0	0	310	0	0	617	0	1196	646	0	1198
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.47	0.00	0.47	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.0	0.0	0.0	45.7	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5
Incr Delay (d2), s/veh	12.3	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.6	0.1	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	0.0	3.1	0.0	0.0	0.0	0.0	0.2	0.1	0.0	1.3
LnGrp Delay(d),s/veh	64.3	0.0	0.0	45.9	0.0	0.0	0.1	0.0	0.6	0.6	0.0	2.0
LnGrp LOS	E			D			A		A	A		A
Approach Vol, veh/h		196			100			573			620	
Approach Delay, s/veh		64.3			45.9			0.6			1.9	
Approach LOS		E			D			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		100.0		30.0		100.0		30.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		95.0		25.0		95.0		25.0				
Max Q Clear Time (g_c+I1), s		4.5		10.0		4.6		25.2				
Green Ext Time (p_c), s		3.1		0.8		3.1		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			12.6									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary

9: Collins Avenue & 9 Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Traffic Volume (veh/h)	29	33	37	37	53	46	39	514	42	37	499	55
Future Volume (veh/h)	29	33	37	37	53	46	39	514	42	37	499	55
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.86		0.77	0.84		0.79	0.99		0.73	0.97		0.73
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h	1700	1667	1700	1700	1667	1700	1667	1667	1700	1667	1667	1700
Adj Flow Rate, veh/h	31	35	39	39	56	49	41	547	45	39	531	59
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	179	184	172	169	217	163	192	663	55	211	637	71
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.45	0.45	0.45	0.30	0.30	0.30
Sat Flow, veh/h	294	506	473	270	597	447	811	1470	121	798	1412	157
Grp Volume(v), veh/h	105	0	0	144	0	0	41	0	592	39	0	590
Grp Sat Flow(s), veh/h	1272	0	0	1314	0	0	811	0	1591	798	0	1569
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	21.1	3.0	0.0	22.8
Cycle Q Clear(g_c), s	3.4	0.0	0.0	4.6	0.0	0.0	25.9	0.0	21.1	24.1	0.0	22.8
Prop In Lane	0.30		0.37	0.27		0.34	1.00		0.08	1.00		0.10
Lane Grp Cap(c), veh/h	535	0	0	549	0	0	192	0	718	211	0	708
V/C Ratio(X)	0.20	0.00	0.00	0.26	0.00	0.00	0.21	0.00	0.82	0.18	0.00	0.83
Avail Cap(c_a), veh/h	535	0	0	549	0	0	201	0	734	220	0	724
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.80	0.00	0.80
Uniform Delay (d), s/veh	14.2	0.0	0.0	14.6	0.0	0.0	27.7	0.0	15.6	30.9	0.0	20.4
Incr Delay (d2), s/veh	0.8	0.0	0.0	1.2	0.0	0.0	0.4	0.0	7.3	0.2	0.0	6.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh	0.0	0.0	0.0	2.0	0.0	0.0	0.7	0.0	10.7	0.7	0.0	11.2
LnGrp Delay(d), s/veh	15.0	0.0	0.0	15.8	0.0	0.0	28.1	0.0	22.9	31.1	0.0	26.9
LnGrp LOS	B			B			C		C	C		C
Approach Vol, veh/h	105			144			633			629		
Approach Delay, s/veh	15.0			15.8			23.2			27.1		
Approach LOS	B			B			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		29.7		35.3		29.7		35.3				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		23.0		30.0		23.0		30.0				
Max Q Clear Time (g_c+I1), s		5.4		27.9		6.6		26.1				
Green Ext Time (p_c), s		0.6		1.4		0.6		2.4				
Intersection Summary												
HCM 2010 Ctrl Delay				23.6								
HCM 2010 LOS				C								

Timings

1: Washington Avenue & 11 Street

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	67	76	94	63	54	698	36	664
Future Volume (vph)	67	76	94	63	54	698	36	664
Turn Type	D.Pm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		8		4		2		6
Permitted Phases	4		4		2		6	
Detector Phase	4	8	4	4	2	2	6	6
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	35.0	35.0	35.0	35.0	28.0	28.0	28.0	28.0
Total Split (s)	35.0	35.0	35.0	35.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%	38.9%	38.9%	61.1%	61.1%	61.1%	61.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0		5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)		19.2		19.2	60.8	60.8		60.8
Actuated g/C Ratio		0.21		0.21	0.68	0.68		0.68
v/c Ratio		0.81		0.93	0.23	0.40		0.42
Control Delay		48.2		74.7	6.9	4.8		8.5
Queue Delay		0.0		0.0	0.0	0.0		0.0
Total Delay		48.2		74.7	6.9	4.8		8.5
LOS		D		E	A	A		A
Approach Delay		48.2		74.7		5.0		8.5
Approach LOS		D		E		A		A

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 63 (70%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 18.7

Intersection LOS: B

Intersection Capacity Utilization 83.3%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Washington Avenue & 11 Street

 Ø2 (R)	 Ø4
55 s	35 s
 Ø6 (R)	 Ø8
55 s	35 s

Phasings

1: Washington Avenue & 11 Street

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Protected Phases		8		4		2		6
Permitted Phases	4		4		2		6	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	35.0	35.0	35.0	35.0	28.0	28.0	28.0	28.0
Total Split (s)	35.0	35.0	35.0	35.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%	38.9%	38.9%	61.1%	61.1%	61.1%	61.1%
Maximum Green (s)	30.0	30.0	30.0	30.0	50.0	50.0	50.0	50.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0	2.5	1.0	1.0	1.0	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	23.0	23.0	23.0	23.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0
90th %ile Green (s)	28.2	28.2	28.2	28.2	51.8	51.8	51.8	51.8
90th %ile Term Code	Gap	Hold	Gap	Gap	Coord	Coord	Coord	Coord
70th %ile Green (s)	22.9	22.9	22.9	22.9	57.1	57.1	57.1	57.1
70th %ile Term Code	Gap	Hold	Gap	Gap	Coord	Coord	Coord	Coord
50th %ile Green (s)	19.1	19.1	19.1	19.1	60.9	60.9	60.9	60.9
50th %ile Term Code	Hold	Gap	Hold	Hold	Coord	Coord	Coord	Coord
30th %ile Green (s)	15.4	15.4	15.4	15.4	64.6	64.6	64.6	64.6
30th %ile Term Code	Hold	Gap	Hold	Hold	Coord	Coord	Coord	Coord
10th %ile Green (s)	10.2	10.2	10.2	10.2	69.8	69.8	69.8	69.8
10th %ile Term Code	Hold	Gap	Hold	Hold	Coord	Coord	Coord	Coord
Intersection Summary								
Cycle Length: 90								
Actuated Cycle Length: 90								
Offset: 63 (70%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow								
Control Type: Actuated-Coordinated								

Queues

1: Washington Avenue & 11 Street

	→	←	↖	↑	↓
Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	237	211	56	749	761
v/c Ratio	0.81	0.93	0.23	0.40	0.42
Control Delay	48.2	74.7	6.9	4.8	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	48.2	74.7	6.9	4.8	8.5
Queue Length 50th (ft)	110	109	7	53	88
Queue Length 95th (ft)	172	176	m18	74	170
Internal Link Dist (ft)	195	287		370	360
Turn Bay Length (ft)			150		
Base Capacity (vph)	438	346	242	1885	1802
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.54	0.61	0.23	0.40	0.42

Intersection Summary

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

Timings

2: Washington Avenue & 10 Street

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	28	52	55	71	28	637	25	798
Future Volume (vph)	28	52	55	71	28	637	25	798
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	29.0	29.0	29.0	29.0	28.0	28.0	28.0	28.0
Total Split (s)	29.0	29.0	29.0	29.0	61.0	61.0	61.0	61.0
Total Split (%)	32.2%	32.2%	32.2%	32.2%	67.8%	67.8%	67.8%	67.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)		17.1		17.1	62.9	62.9	62.9	62.9
Actuated g/C Ratio		0.19		0.19	0.70	0.70	0.70	0.70
v/c Ratio		0.54		0.87	0.10	0.35	0.07	0.43
Control Delay		31.1		58.5	6.5	5.8	4.5	4.7
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.1
Total Delay		31.1		58.5	6.5	5.8	4.5	4.8
LOS		C		E	A	A	A	A
Approach Delay		31.1		58.5		5.8		4.8
Approach LOS		C		E		A		A

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 70 (78%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 13.0

Intersection LOS: B

Intersection Capacity Utilization 53.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Washington Avenue & 10 Street

 Ø2 (R)	 Ø4
61 s	29 s
 Ø6 (R)	 Ø8
61 s	29 s

Phasings

2: Washington Avenue & 10 Street

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	29.0	29.0	29.0	29.0	28.0	28.0	28.0	28.0
Total Split (s)	29.0	29.0	29.0	29.0	61.0	61.0	61.0	61.0
Total Split (%)	32.2%	32.2%	32.2%	32.2%	67.8%	67.8%	67.8%	67.8%
Maximum Green (s)	24.0	24.0	24.0	24.0	56.0	56.0	56.0	56.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	16.0	16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0
90th %ile Green (s)	25.2	25.2	25.2	25.2	54.8	54.8	54.8	54.8
90th %ile Term Code	Hold	Hold	Gap	Gap	Coord	Coord	Coord	Coord
70th %ile Green (s)	20.6	20.6	20.6	20.6	59.4	59.4	59.4	59.4
70th %ile Term Code	Hold	Hold	Gap	Gap	Coord	Coord	Coord	Coord
50th %ile Green (s)	17.2	17.2	17.2	17.2	62.8	62.8	62.8	62.8
50th %ile Term Code	Hold	Hold	Gap	Gap	Coord	Coord	Coord	Coord
30th %ile Green (s)	13.7	13.7	13.7	13.7	66.3	66.3	66.3	66.3
30th %ile Term Code	Hold	Hold	Gap	Gap	Coord	Coord	Coord	Coord
10th %ile Green (s)	8.7	8.7	8.7	8.7	71.3	71.3	71.3	71.3
10th %ile Term Code	Hold	Hold	Gap	Gap	Coord	Coord	Coord	Coord
Intersection Summary								
Cycle Length: 90								
Actuated Cycle Length: 90								
Offset: 70 (78%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow								
Control Type: Actuated-Coordinated								

Queues

2: Washington Avenue & 10 Street

	→	←	↖	↑	↘	↓
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	146	242	32	765	28	934
v/c Ratio	0.54	0.87	0.10	0.35	0.07	0.43
Control Delay	31.1	58.5	6.5	5.8	4.5	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	31.1	58.5	6.5	5.8	4.5	4.8
Queue Length 50th (ft)	58	115	5	65	3	77
Queue Length 95th (ft)	102	177	17	106	m9	97
Internal Link Dist (ft)	183	99		400		370
Turn Bay Length (ft)			200		200	
Base Capacity (vph)	371	377	318	2188	384	2205
Starvation Cap Reductn	0	0	0	0	0	306
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.64	0.10	0.35	0.07	0.49

Intersection Summary

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

Timings

3: Washington Avenue & 9 Street

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	18	66	24	40	35	632	204	634
Future Volume (vph)	18	66	24	40	35	632	204	634
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Total Split (s)	34.0	34.0	34.0	34.0	56.0	56.0	56.0	56.0
Total Split (%)	37.8%	37.8%	37.8%	37.8%	62.2%	62.2%	62.2%	62.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)		10.9		10.9	67.1	67.1	67.1	67.1
Actuated g/C Ratio		0.12		0.12	0.75	0.75	0.75	0.75
v/c Ratio		0.70		0.63	0.09	0.35	0.54	0.32
Control Delay		47.8		39.0	4.6	4.8	12.2	2.8
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		47.8		39.0	4.6	4.8	12.2	2.8
LOS		D		D	A	A	B	A
Approach Delay		47.8		39.0		4.8		4.9
Approach LOS		D		D		A		A

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 65 (72%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 9.9

Intersection LOS: A

Intersection Capacity Utilization 72.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Washington Avenue & 9 Street

 Ø2 (R)	 Ø4
56 s	34 s
 Ø6 (R)	 Ø8
56 s	34 s

Phasings

3: Washington Avenue & 9 Street

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Total Split (s)	34.0	34.0	34.0	34.0	56.0	56.0	56.0	56.0
Total Split (%)	37.8%	37.8%	37.8%	37.8%	62.2%	62.2%	62.2%	62.2%
Maximum Green (s)	28.0	28.0	28.0	28.0	50.0	50.0	50.0	50.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	21.0	21.0	21.0	21.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0
90th %ile Green (s)	16.6	16.6	16.6	16.6	61.4	61.4	61.4	61.4
90th %ile Term Code	Gap	Gap	Hold	Hold	Coord	Coord	Coord	Coord
70th %ile Green (s)	12.8	12.8	12.8	12.8	65.2	65.2	65.2	65.2
70th %ile Term Code	Gap	Gap	Hold	Hold	Coord	Coord	Coord	Coord
50th %ile Green (s)	10.3	10.3	10.3	10.3	67.7	67.7	67.7	67.7
50th %ile Term Code	Gap	Gap	Hold	Hold	Coord	Coord	Coord	Coord
30th %ile Green (s)	7.7	7.7	7.7	7.7	70.3	70.3	70.3	70.3
30th %ile Term Code	Gap	Gap	Hold	Hold	Coord	Coord	Coord	Coord
10th %ile Green (s)	7.0	7.0	7.0	7.0	71.0	71.0	71.0	71.0
10th %ile Term Code	Min	Min	Hold	Hold	Coord	Coord	Coord	Coord
Intersection Summary								
Cycle Length: 90								
Actuated Cycle Length: 90								
Offset: 65 (72%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow								
Control Type: Actuated-Coordinated								

Queues

3: Washington Avenue & 9 Street

	→	←	↖	↑	↘	↓
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	133	115	36	722	213	711
v/c Ratio	0.70	0.63	0.09	0.35	0.54	0.32
Control Delay	47.8	39.0	4.6	4.8	12.2	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.8	39.0	4.6	4.8	12.2	2.8
Queue Length 50th (ft)	57	40	4	56	13	22
Queue Length 95th (ft)	110	89	16	108	181	73
Internal Link Dist (ft)	540	104		230		400
Turn Bay Length (ft)			130		150	
Base Capacity (vph)	444	406	419	2038	395	2217
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	0.30	0.28	0.09	0.35	0.54	0.32
Intersection Summary						

Timings

6: Collins Avenue & 11 Street

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	22	40	16	30	111	574	22	563
Future Volume (vph)	22	40	16	30	111	574	22	563
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	26.0	26.0	27.0	27.0	33.0	33.0	25.0	25.0
Total Split (s)	30.0	30.0	30.0	30.0	100.0	100.0	100.0	100.0
Total Split (%)	23.1%	23.1%	23.1%	23.1%	76.9%	76.9%	76.9%	76.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)		12.6		12.6	105.4	105.4	105.4	105.4
Actuated g/C Ratio		0.10		0.10	0.81	0.81	0.81	0.81
v/c Ratio		0.76		0.68	0.27	0.48	0.05	0.49
Control Delay		84.9		66.8	3.3	3.0	3.5	5.8
Queue Delay		0.0		0.0	0.0	0.6	0.0	0.1
Total Delay		84.9		66.8	3.3	3.6	3.5	6.0
LOS		F		E	A	A	A	A
Approach Delay		84.9		66.8		3.5		5.9
Approach LOS		F		E		A		A

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 85 (65%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 12.4

Intersection LOS: B

Intersection Capacity Utilization 73.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 6: Collins Avenue & 11 Street

 Ø2 (R)	 Ø4
100 s	30 s
 Ø6 (R)	 Ø8
100 s	30 s

Phasings

6: Collins Avenue & 11 Street

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	26.0	26.0	27.0	27.0	33.0	33.0	25.0	25.0
Total Split (s)	30.0	30.0	30.0	30.0	100.0	100.0	100.0	100.0
Total Split (%)	23.1%	23.1%	23.1%	23.1%	76.9%	76.9%	76.9%	76.9%
Maximum Green (s)	24.0	24.0	24.0	24.0	94.0	94.0	94.0	94.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0
90th %ile Green (s)	19.4	19.4	19.4	19.4	98.6	98.6	98.6	98.6
90th %ile Term Code	Gap	Gap	Hold	Hold	Coord	Coord	Coord	Coord
70th %ile Green (s)	15.1	15.1	15.1	15.1	102.9	102.9	102.9	102.9
70th %ile Term Code	Gap	Gap	Hold	Hold	Coord	Coord	Coord	Coord
50th %ile Green (s)	12.2	12.2	12.2	12.2	105.8	105.8	105.8	105.8
50th %ile Term Code	Gap	Gap	Hold	Hold	Coord	Coord	Coord	Coord
30th %ile Green (s)	9.3	9.3	9.3	9.3	108.7	108.7	108.7	108.7
30th %ile Term Code	Gap	Gap	Hold	Hold	Coord	Coord	Coord	Coord
10th %ile Green (s)	7.0	7.0	7.0	7.0	111.0	111.0	111.0	111.0
10th %ile Term Code	Min	Min	Min	Min	Coord	Coord	Coord	Coord
Intersection Summary								
Cycle Length: 130								
Actuated Cycle Length: 130								
Offset: 85 (65%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow								
Control Type: Actuated-Coordinated								

Queues

6: Collins Avenue & 11 Street

	→	←	↖	↑	↘	↓
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	90	82	119	634	24	636
v/c Ratio	0.76	0.68	0.27	0.48	0.05	0.49
Control Delay	84.9	66.8	3.3	3.0	3.5	5.8
Queue Delay	0.0	0.0	0.0	0.6	0.0	0.1
Total Delay	84.9	66.8	3.3	3.6	3.5	6.0
Queue Length 50th (ft)	65	49	7	37	3	132
Queue Length 95th (ft)	120	101	m32	178	12	258
Internal Link Dist (ft)	287	162		90		368
Turn Bay Length (ft)			190		170	
Base Capacity (vph)	214	209	449	1325	450	1304
Starvation Cap Reductn	0	0	0	329	0	0
Spillback Cap Reductn	0	1	0	0	0	127
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.39	0.27	0.64	0.05	0.54
Intersection Summary						
m Volume for 95th percentile queue is metered by upstream signal.						

Timings

8: Collins Avenue & 10 Street

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	118	37	25	43	18	499	27	536
Future Volume (vph)	118	37	25	43	18	499	27	536
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	26.0	26.0	29.0	29.0	23.0	23.0	23.0	23.0
Total Split (s)	30.0	30.0	30.0	30.0	100.0	100.0	100.0	100.0
Total Split (%)	23.1%	23.1%	23.1%	23.1%	76.9%	76.9%	76.9%	76.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)		36.2		36.2	83.8	83.8	83.8	83.8
Actuated g/C Ratio		0.28		0.28	0.64	0.64	0.64	0.64
v/c Ratio		0.71		0.28	0.06	0.53	0.09	0.57
Control Delay		55.4		33.3	13.6	19.6	12.0	19.8
Queue Delay		0.0		0.0	0.0	0.9	0.0	0.4
Total Delay		55.4		33.3	13.6	20.5	12.0	20.2
LOS		E		C	B	C	B	C
Approach Delay		55.4		33.3		20.3		19.8
Approach LOS		E		C		C		B

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 95 (73%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 25.6

Intersection LOS: C

Intersection Capacity Utilization 61.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Collins Avenue & 10 Street

 Ø2 (R)	 Ø4
100 s	30 s
 Ø6 (R)	 Ø8
100 s	30 s

Phasings

8: Collins Avenue & 10 Street

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	26.0	26.0	29.0	29.0	23.0	23.0	23.0	23.0
Total Split (s)	30.0	30.0	30.0	30.0	100.0	100.0	100.0	100.0
Total Split (%)	23.1%	23.1%	23.1%	23.1%	76.9%	76.9%	76.9%	76.9%
Maximum Green (s)	25.0	25.0	25.0	25.0	95.0	95.0	95.0	95.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Walk Time (s)	7.0	7.0	10.0	10.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	14.0	14.0	14.0	14.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0
90th %ile Green (s)	39.1	39.1	39.1	39.1	80.9	80.9	80.9	80.9
90th %ile Term Code	Gap	Gap	Hold	Hold	Coord	Coord	Coord	Coord
70th %ile Green (s)	37.0	37.0	37.0	37.0	83.0	83.0	83.0	83.0
70th %ile Term Code	Gap	Gap	Hold	Hold	Coord	Coord	Coord	Coord
50th %ile Green (s)	35.7	35.7	35.7	35.7	84.3	84.3	84.3	84.3
50th %ile Term Code	Gap	Gap	Hold	Hold	Coord	Coord	Coord	Coord
30th %ile Green (s)	34.8	34.8	34.8	34.8	85.2	85.2	85.2	85.2
30th %ile Term Code	Gap	Gap	Hold	Hold	Coord	Coord	Coord	Coord
10th %ile Green (s)	34.4	34.4	34.4	34.4	85.6	85.6	85.6	85.6
10th %ile Term Code	Gap	Gap	Hold	Hold	Coord	Coord	Coord	Coord
Intersection Summary								
Cycle Length: 130								
Actuated Cycle Length: 130								
Offset: 95 (73%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow								
Control Type: Actuated-Coordinated								

Queues

8: Collins Avenue & 10 Street

	→	←	↖	↑	↘	↓
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	196	100	19	554	28	592
v/c Ratio	0.71	0.28	0.06	0.53	0.09	0.57
Control Delay	55.4	33.3	13.6	19.6	12.0	19.8
Queue Delay	0.0	0.0	0.0	0.9	0.0	0.4
Total Delay	55.4	33.3	13.6	20.5	12.0	20.2
Queue Length 50th (ft)	145	57	8	248	10	317
Queue Length 95th (ft)	231	104	m8	437	m27	524
Internal Link Dist (ft)	106	50		400		200
Turn Bay Length (ft)			200		160	
Base Capacity (vph)	278	359	352	1173	369	1177
Starvation Cap Reductn	0	0	0	343	0	220
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.28	0.05	0.67	0.08	0.62

Intersection Summary

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

Timings

9: Collins Avenue & 9 Street

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	29	33	37	53	39	514	37	499
Future Volume (vph)	29	33	37	53	39	514	37	499
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		4		8
Permitted Phases	2		6		4		8	
Detector Phase	2	2	6	6	4	4	8	8
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	24.3	24.3	24.3	24.3	30.0	30.0	30.0	30.0
Total Split (s)	29.0	29.0	29.0	29.0	36.0	36.0	36.0	36.0
Total Split (%)	44.6%	44.6%	44.6%	44.6%	55.4%	55.4%	55.4%	55.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None	None
Act Effct Green (s)		24.0		24.0	29.0	29.0	29.0	29.0
Actuated g/C Ratio		0.37		0.37	0.45	0.45	0.45	0.45
v/c Ratio		0.23		0.30	0.23	0.82	0.22	0.83
Control Delay		13.5		14.6	12.6	24.7	11.6	24.2
Queue Delay		0.0		0.0	0.0	0.7	0.0	0.0
Total Delay		13.5		14.6	12.6	25.3	11.6	24.2
LOS		B		B	B	C	B	C
Approach Delay		13.5		14.6		24.5		23.4
Approach LOS		B		B		C		C

Intersection Summary

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 36 (55%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 22.4

Intersection LOS: C

Intersection Capacity Utilization 59.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 9: Collins Avenue & 9 Street

 Ø2 (R)	 Ø4
29 s	36 s
 Ø6 (R)	 Ø8
29 s	36 s

Phasings

9: Collins Avenue & 9 Street

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Protected Phases		2		6		4		8
Permitted Phases	2		6		4		8	
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	24.3	24.3	24.3	24.3	30.0	30.0	30.0	30.0
Total Split (s)	29.0	29.0	29.0	29.0	36.0	36.0	36.0	36.0
Total Split (%)	44.6%	44.6%	44.6%	44.6%	55.4%	55.4%	55.4%	55.4%
Maximum Green (s)	23.0	23.0	23.0	23.0	30.0	30.0	30.0	30.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	1.0	1.0	1.0	1.0	2.5	2.5	2.5	2.5
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)	9.0	9.0	9.0	9.0	14.0	14.0	14.0	14.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0
90th %ile Green (s)	15.7	15.7	15.7	15.7	37.3	37.3	37.3	37.3
90th %ile Term Code	Coord	Coord	Coord	Coord	Hold	Hold	Gap	Gap
70th %ile Green (s)	21.3	21.3	21.3	21.3	31.7	31.7	31.7	31.7
70th %ile Term Code	Coord	Coord	Coord	Coord	Hold	Hold	Gap	Gap
50th %ile Green (s)	23.4	23.4	23.4	23.4	29.6	29.6	29.6	29.6
50th %ile Term Code	Coord	Coord	Coord	Coord	Hold	Hold	Gap	Gap
30th %ile Green (s)	27.0	27.0	27.0	27.0	26.0	26.0	26.0	26.0
30th %ile Term Code	Coord	Coord	Coord	Coord	Hold	Hold	Gap	Gap
10th %ile Green (s)	32.5	32.5	32.5	32.5	20.5	20.5	20.5	20.5
10th %ile Term Code	Coord	Coord	Coord	Coord	Hold	Hold	Gap	Gap
Intersection Summary								
Cycle Length: 65								
Actuated Cycle Length: 65								
Offset: 36 (55%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow								
Control Type: Actuated-Coordinated								

Queues

9: Collins Avenue & 9 Street

	→	←	↖	↑	↘	↓
Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	105	144	41	592	39	590
v/c Ratio	0.23	0.30	0.23	0.82	0.22	0.83
Control Delay	13.5	14.6	12.6	24.7	11.6	24.2
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0
Total Delay	13.5	14.6	12.6	25.3	11.6	24.2
Queue Length 50th (ft)	17	27	9	188	8	163
Queue Length 95th (ft)	59	81	22	237	m35	412
Internal Link Dist (ft)	111	366		230		400
Turn Bay Length (ft)			200		200	
Base Capacity (vph)	496	521	192	793	196	780
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	1	1	0	44	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.28	0.21	0.79	0.20	0.76

Intersection Summary

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

APPENDIX G

Queuing Analyses

Queuing Analysis based on ITE Procedures

$q = 75$ veh/hr (demand rate)

$Q = 20$ veh/hr (service rate)

$$p = \frac{q}{NQ} = 0.625 \text{ (N = 6 valet runners)}$$

$$Q_M = 0.625$$

Using Acceptable Probability of 10% (90% Confidence Level)

$$M = \left(\frac{\ln(x > M) - \ln(Q_M)}{\ln(p)} \right) - 1$$

$$M = \left(\frac{\ln(0.10) - \ln(0.625)}{\ln(0.625)} \right) - 1$$

$$M = \left(\frac{-2.3026 - (-0.4700)}{-0.4700} \right) - 1$$

$$M = 3.89 - 1 = 2.89, \text{ say 3 vehicles}$$

The valet parking service rate was calculated by adding the time it will take him to park or retrieve a vehicle from parking garage (driving time), the delay time at the intersections from the parking garage to the valet station (delay time), and the time it will take him to walk to/from the parking area to retrieve a vehicle inside parking garage (walking time). A processing time of 3 minutes per vehicle was use in the analysis. The driving time for the valet attendant was calculated on a conservative speed of 25 mph and the walking time for the valet attendant was calculated on a jogging speed of 6ft/sec.

Following is the calculated valet service rate:

- Driving time: $2,391\text{ft} * 1\text{mile}/5280\text{ft} * 1\text{hr}/25\text{miles} * 60\text{min}/\text{hr} = 1.08\text{min}$
- Delay time: $59\text{ sec} = 0.98\text{ min}$
- Walking time: $200\text{ft} * 1\text{sec}/6\text{ft} * 1\text{min}/60\text{sec} = 0.55\text{ min}$

Total time: $1.08\text{ min} + 0.98\text{ min} + 0.55\text{ min} = 2.61$, USED = 3 min.

THE AUDIO BUG, INC.

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August 29, 2016

Thomas R. Mooney, Director
City of Miami Beach Planning Department
1700 Convention Center Drive, 2nd Floor
Miami Beach, Florida 33139
Phone: (305) 673-7550, Fax: (786) 394-4799

Reference: Conditional Use Permit Application
Moxy Hotel South Beach
915 - 955 Washington Avenue
Miami Beach, Florida 33139

Dear Mr. Mooney,

This letter is an appendix to our June 20, 2016 Sound Study Report. I am providing more detailed specifications for the sound systems in each of the venues to be located on various levels of the property. These venues include:

- 1) First floor Indoor Restaurant and Outdoor Café
- 2) Second floor Bar Lounge and Bar Terrace
- 3) Second floor Hotel Pool Deck
- 4) Rooftop Pool Deck

As indicated in my Peer Review Response dated August 12, 2016, I have been engaged by the applicant to design the sound systems which will be used at the Moxy. I will be in a very good position to ensure that the systems are properly designed, installed and adjusted, guaranteeing that the systems will have no adverse impact the surrounding properties.

All of the systems will be based on the distributed loudspeaker design concept. This will ensure uniformity of sound levels and avoid excessive sound levels in each area. Once each system has been installed, it will be calibrated to ensure no impact on neighboring properties. Sound levels will be documented at the two hotels located on the west side of Washington Avenue and once the appropriate levels have been established, each system will be locked to prevent any future mis-adjustments which might cause impact on neighboring properties. The only systems which will be allowed to be active at any of the venues will be the installed, house systems. No additional equipment will be acceptable.

One architectural addition I would recommend is the installation of vestibules at the two ground floor restaurant doors on Washington Avenue. The attached drawings indicate the locations of these vestibules and details of this element can be discussed in more detail with the architect. The vestibules will help mitigate sounds which may exit the restaurant when guests enter or exit the restaurant.

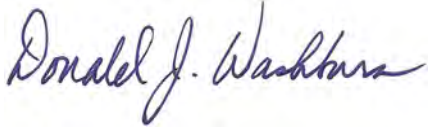


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By introducing the design recommendations discussed above, we can assure the City and neighboring residential properties that the Moxy Hotel will have no adverse acoustical impact on them. I welcome any questions you or your staff may have and look forward to assisting with the successful implementation of this facility.

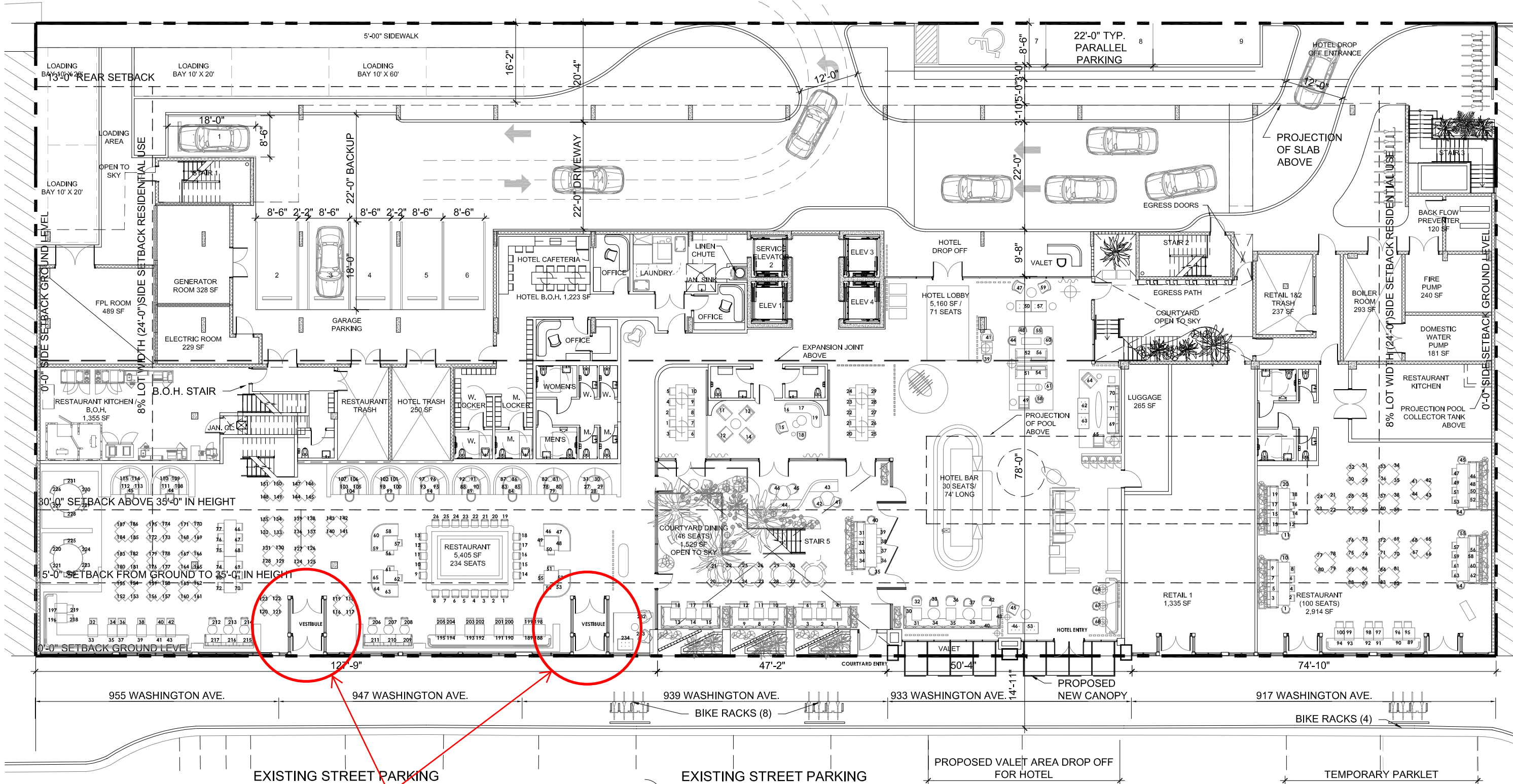
Respectfully submitted,



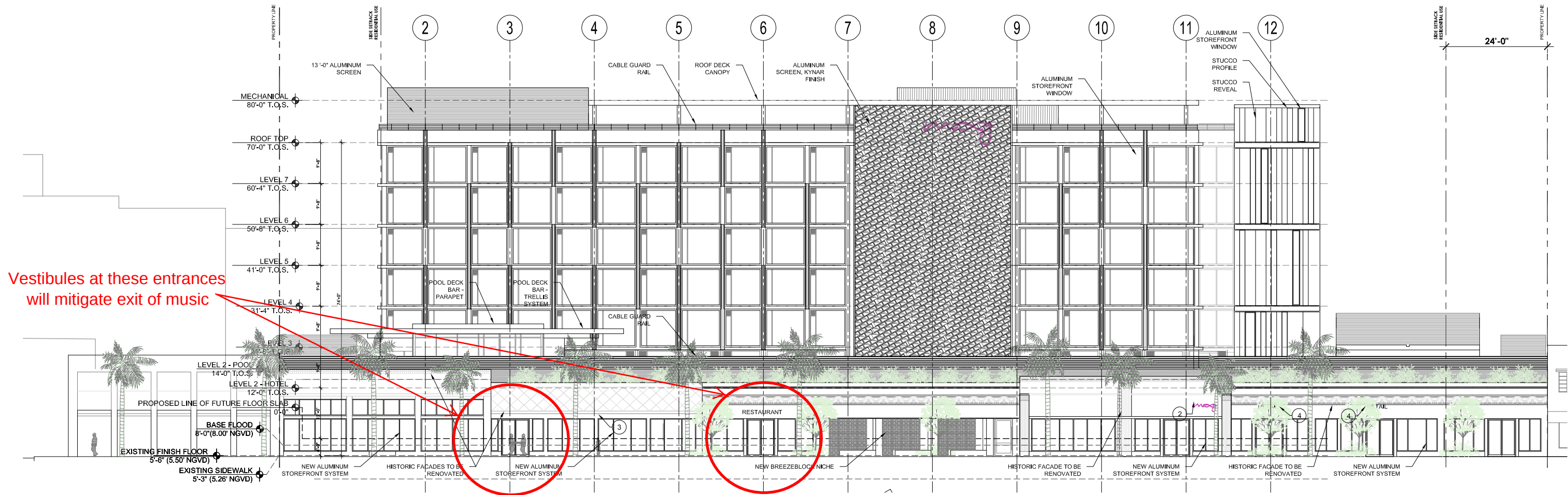
Donald J. Washburn
President



COLLINS COURT 20' R.O.W.



Vestibules at these entrances
will mitigate exit of music



1611

moxxy
HOTELS

915 Washington Avenue
Miami Beach, FL 33139

OWNER

LIGHTSTONE

460 Park Avenue
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O: 212.616.9969

INTERIOR DESIGNER

ROCKWELLGROUP

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LANDSCAPE DESIGNER

NATURALFICIAL

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Coconut Grove, FL 33233
O: 305.321.2341

LIGHTING DESIGNER

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KOBI KARP



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AIA ASID NCARB
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Historic Preservation and Planning Board Submission

PROPOSED WEST ELEVATION

SCALE : 1" = 20'-0"

08-29-2016

A 4.00

Moxy South Beach

915 - 955 WASHINGTON AVENUE
MIAMI BEACH, FLORIDA

915-955 Washington Avenue,
Miami Beach, FL, 33139

CONCEPT STATEMENT:	<u>3</u>
VENUES:	<u>5</u>
STAFFING LEVELS:	<u>13</u>
HOTEL ACCESS:	<u>14</u>
DELIVERIES & COLLECTIONS:	<u>16</u>
SECURITY:	<u>17</u>
CONDITIONAL USE PERMIT SUMMARY:	<u>18</u>

BRAND VALUES

MOXY IS A BUDGET HOTEL WITH THE SOUL OF A BOUTIQUE HOTEL.

DESIGNED TO ENTICE AND EXCITE A NEW GENERATION OF TRAVELERS,
OUR BRAND ESSENCE IS BEST CAPTURED IN **NOW & WOW**.

MOXY IS **THOUGHTFUL** – WITH AN INNOVATIVE HOTEL CONCEPT THAT IS
CAREFULLY CONSIDERED AND PERFECTLY DESIGNED.

MOXY IS **SPIRITED** – BUZZING WITH ENERGY, WITH THE COURAGE
TO DARE TO BE A GAME-CHANGER.

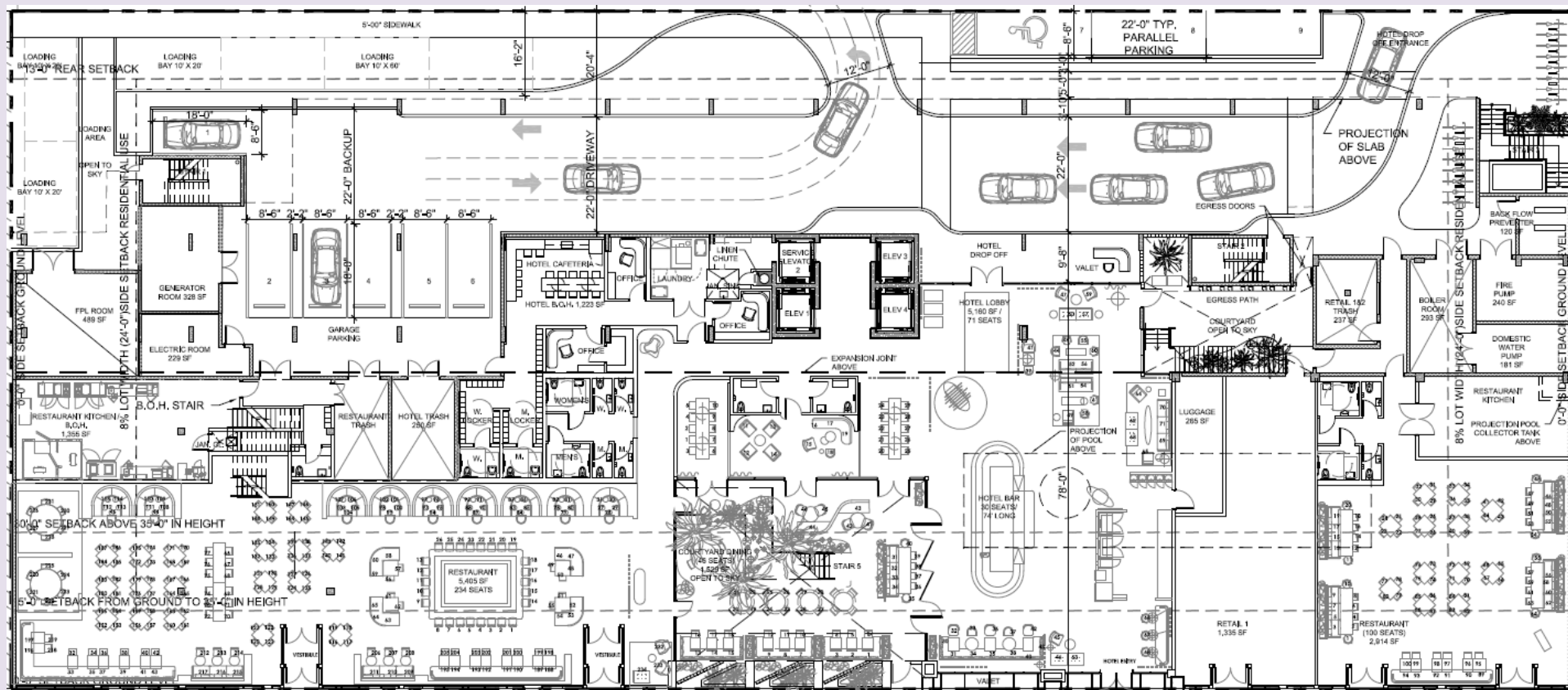
MOXY IS **FUN** – BECAUSE TRAVEL IS FUN. WE ARE YOUNG AT HEART,
EAGER TO MEET NEW PEOPLE – AND HAVE A GREAT TIME
(AND A FEW LAUGHS ALONG THE WAY).

AND EVEN THOUGH WE KNOW WE ARE GOOD, WE DON'T TAKE OURSELVES
TOO SERIOUSLY. JUST ENOUGH TO MAKE SURE WE DO THE VERY BEST FOR
OUR GUESTS. AFTER ALL, MOXY IS A HOTEL. BUT NOT JUST ANY HOTEL...



GROUND FLOOR

915 -955 WASHINGTON AVENUE HOTEL DEVELOPMENT



INDOOR RESTAURANT & OUTDOOR CAFE

OPERATOR : TBD

EMPLOYEES : 35

CONCEPT: TBD

SEATS: RESTAURANT: 234

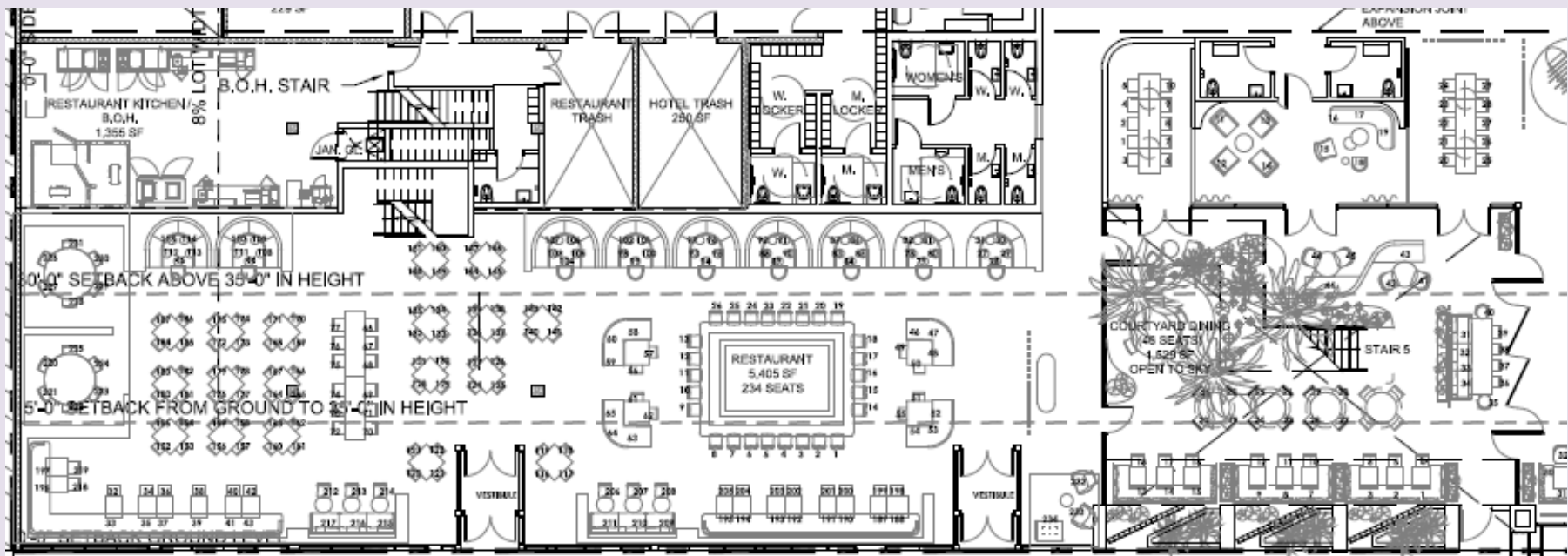
COURTYARD DINING: 46

HOURS OF OPERATION (RESTAURANT): 7 AM - 5 AM

HOURS OF OPERATION (COURTYARD): 7 AM - 2 AM

HOURS OF ENTERTAINMENT: INDOOR (DJ/LIVE) DURING OPERATING HOURS & OUTDOOR (DJ/LIVE UNTIL 11PM)

THREE MEAL RESTAURANT AND OUTDOOR COURTYARD CAFE SERVING BREAKFAST, LUNCH, DINNER AND LATE NIGHT BITES.
ENTRY THROUGH HOTEL LOBBY OR FROM WASHINGTON AVENUE.



HOTEL BAR & LOUNGE

OPERATOR : TBD

EMPLOYEES : 10

CONCEPT: TBD

SEATS: HOTEL BAR: 30

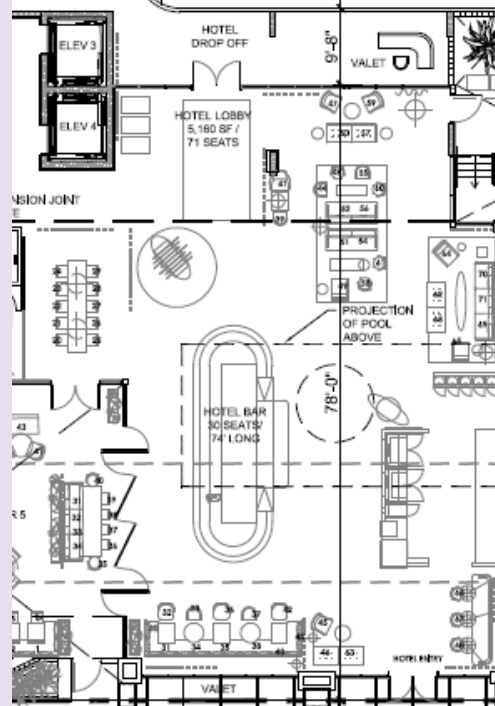
HOTEL LOUNGE: 71

HOURS OF OPERATION (BAR): 7 AM - 2 AM

HOURS OF OPERATION (LOUNGE): 7 AM - 2 AM

HOURS OF ENTERTAINMENT: AMBIENT MUSIC ONLY

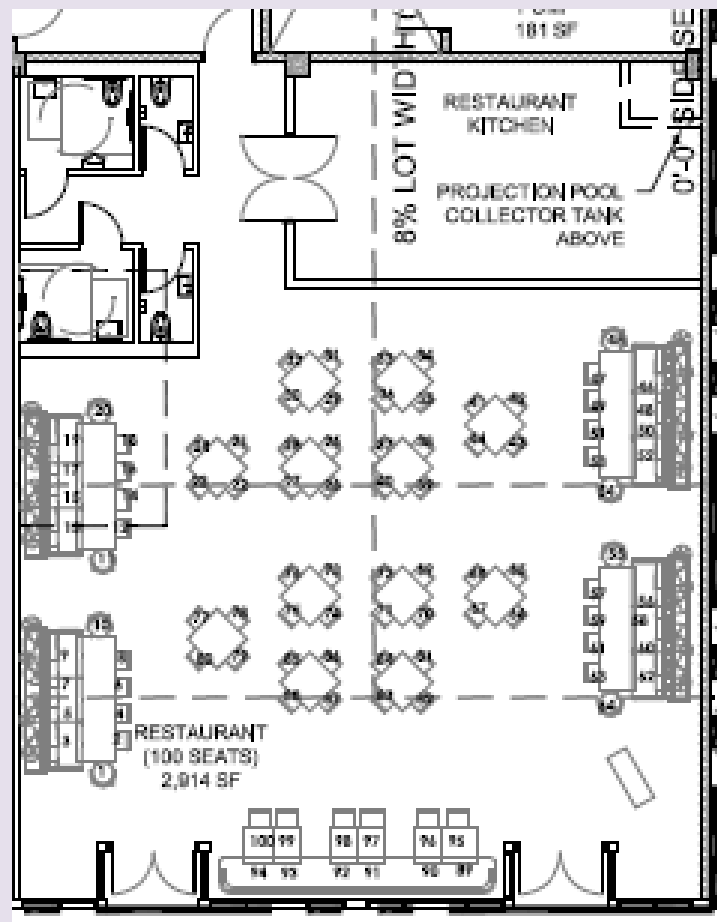
HOTEL BAR AND LOUNGE, WITH GRAB AND GO FOOD SERVICE THROUGH THE 24-HOUR MARKETPLACE.



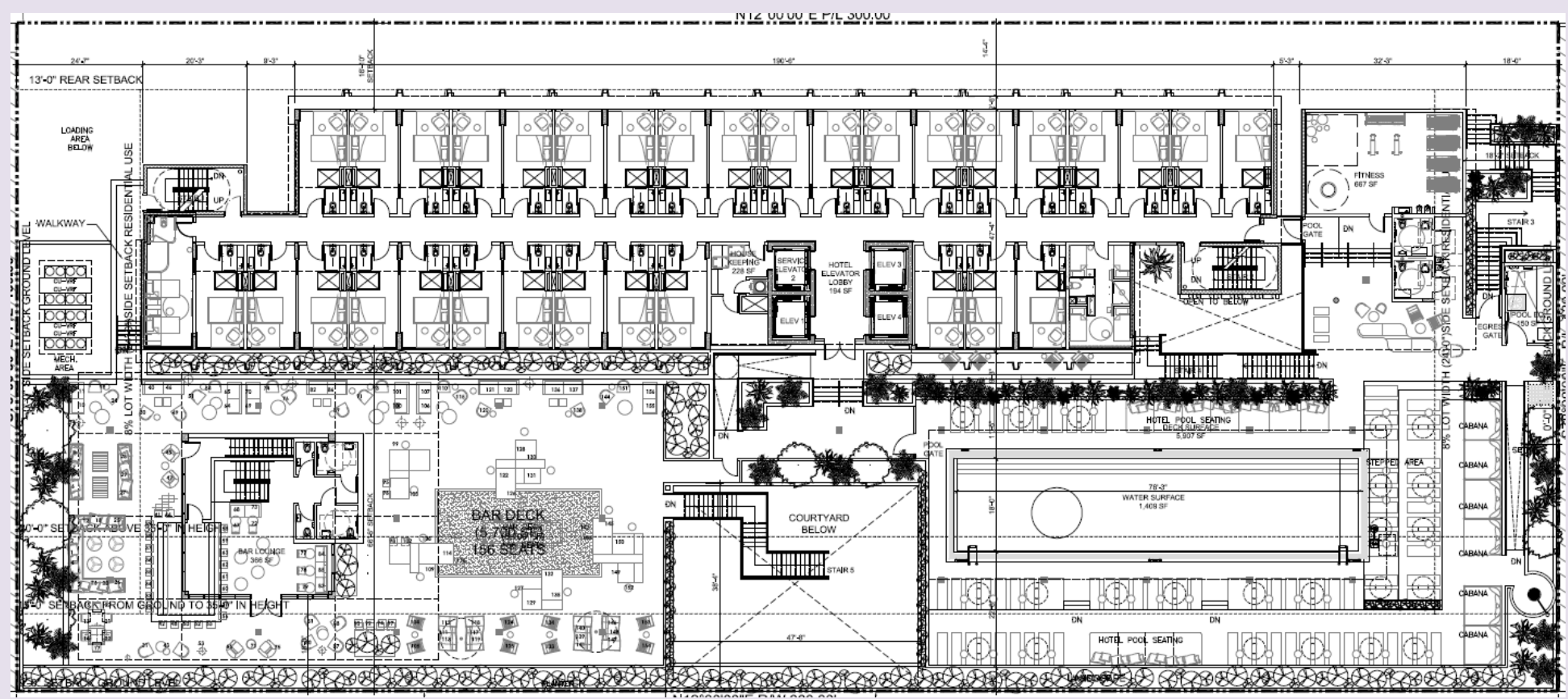
RETAIL 2

ANTICIPATED USE: 100-SEAT RESTAURANT UNDER SEPARATE OPERATION AS PART OF A 3RD PARTY LEASE

LOCATION: FAR SOUTH OF PROPERTY



SECOND FLOOR



2ND LEVEL BAR

OPERATOR: TBD

EMPLOYEES: 20

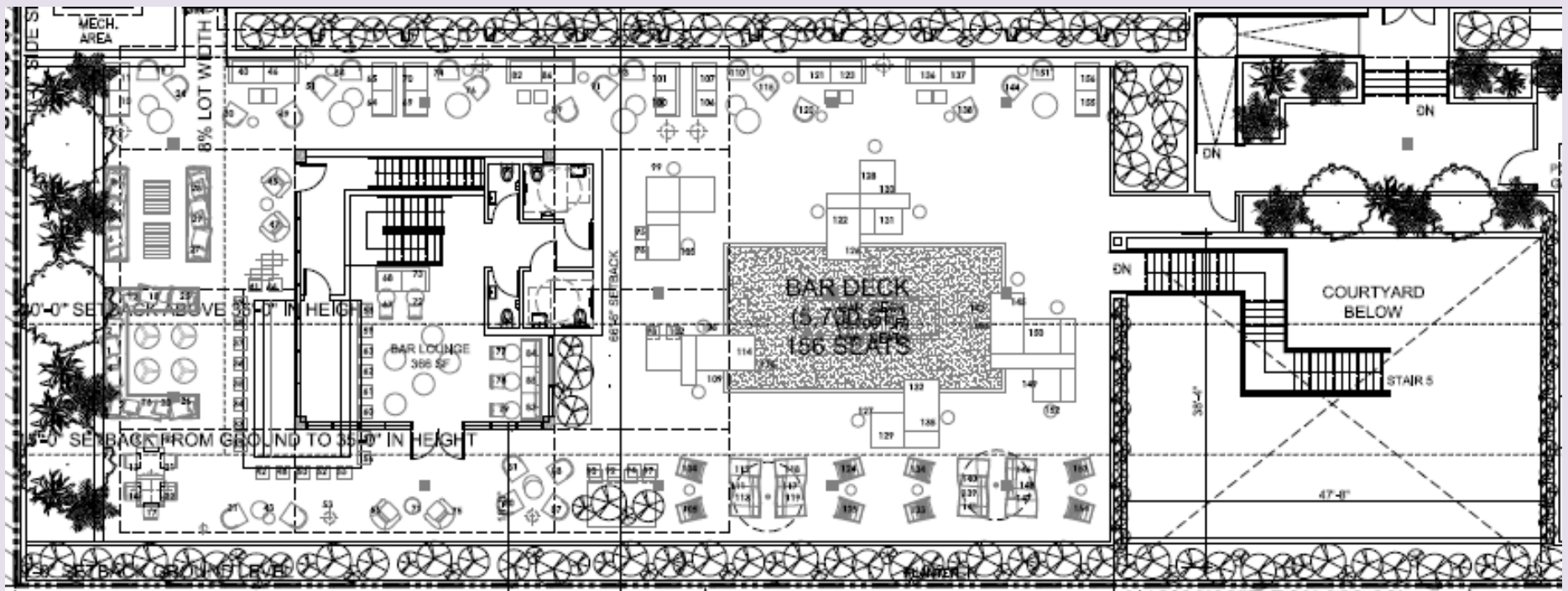
CONCEPT: TBD

SEATS: BAR + LOUNGE: 156

HOURS OF OPERATION : 11 AM - 2 AM (OUTDOOR BAR COUNTER CLOSED AT MIDNIGHT)

HOURS OF ENTERTAINMENT: 11 AM – 11 PM (DJ/LIVE); AMBIENT MUSIC THEREAFTER

DESCRIPTION: THE 2ND FLOOR BAR WILL BE OPEN TO HOTEL GUESTS AND THE PUBLIC, WITH ACCESS FROM THE GROUND FLOOR RESTAURANT AND COURTYARD. EGRESS AND SERVICE ACCESS WILL BE PROVIDED TO THE HOTEL POOL AREA.



POOL AREA

OPERATOR: TBD

EMPLOYEES: 15

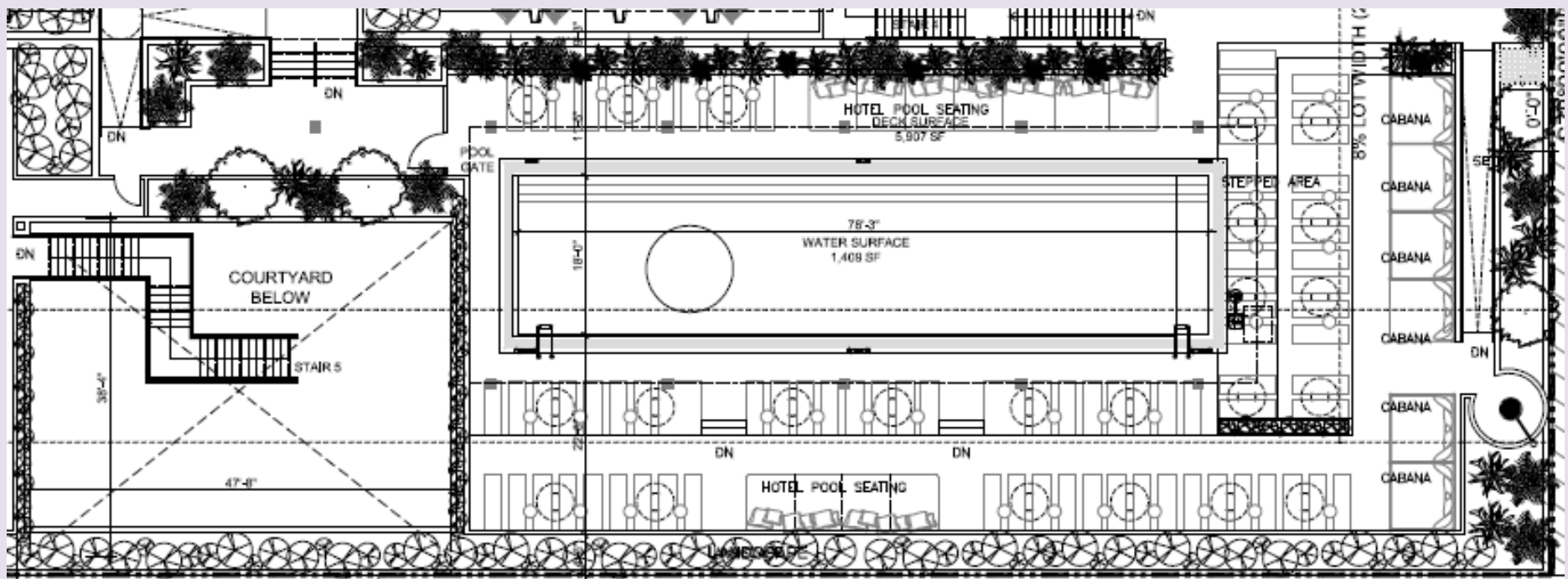
CONCEPT: TBD

SEATS: HOTEL POOL TERRACE: 139

HOURS OF OPERATION: 7 AM – 11 PM

HOURS OF ENTERTAINMENT: 11 AM – 11 PM (DJ/LIVE); AMBIENT MUSIC THEREAFTER

DESCRIPTION: ACTIVE POOL ENVIRONMENT, WITH LIVE ENTERTAINMENT. OPEN TO HOTEL GUESTS ONLY.



ROOFTOP AREA

OPERATOR: TBD

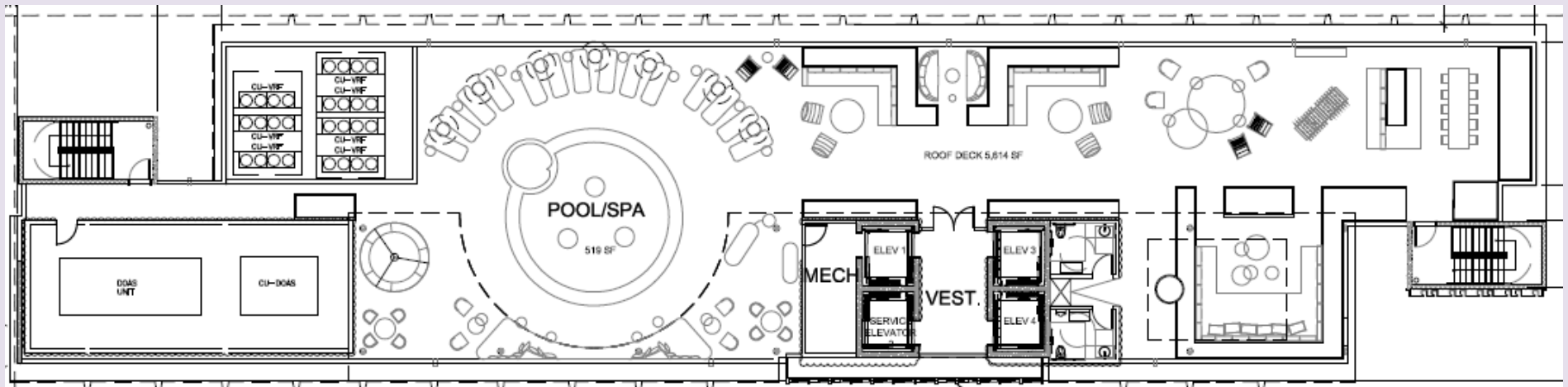
EMPLOYEES: 10

CONCEPT: TBD

SEATS: UPPER POOL DECK: 80

HOURS OF OPERATION: 7 AM – 2 AM
AMBIENT MUSIC ONLY

DESCRIPTION: FOR HOTEL GUESTS AND PRIVATE PARTIES, ACCESSIBLE THROUGH THE HOTEL TOWER ELEVATORS



VENUE	EMPLOYEES
Indoor Restaurant	30
Outdoor Café	5
Hotel Bar & Lounge	10
2nd Level Bar	20
Pool Deck	15
Rooftop	10

THE EMPLOYEE COUNT AS NOTED ABOVE IS BASED ON HIGH SEASON AND HIGH OCCUPANCY AT ANY GIVEN TIME.

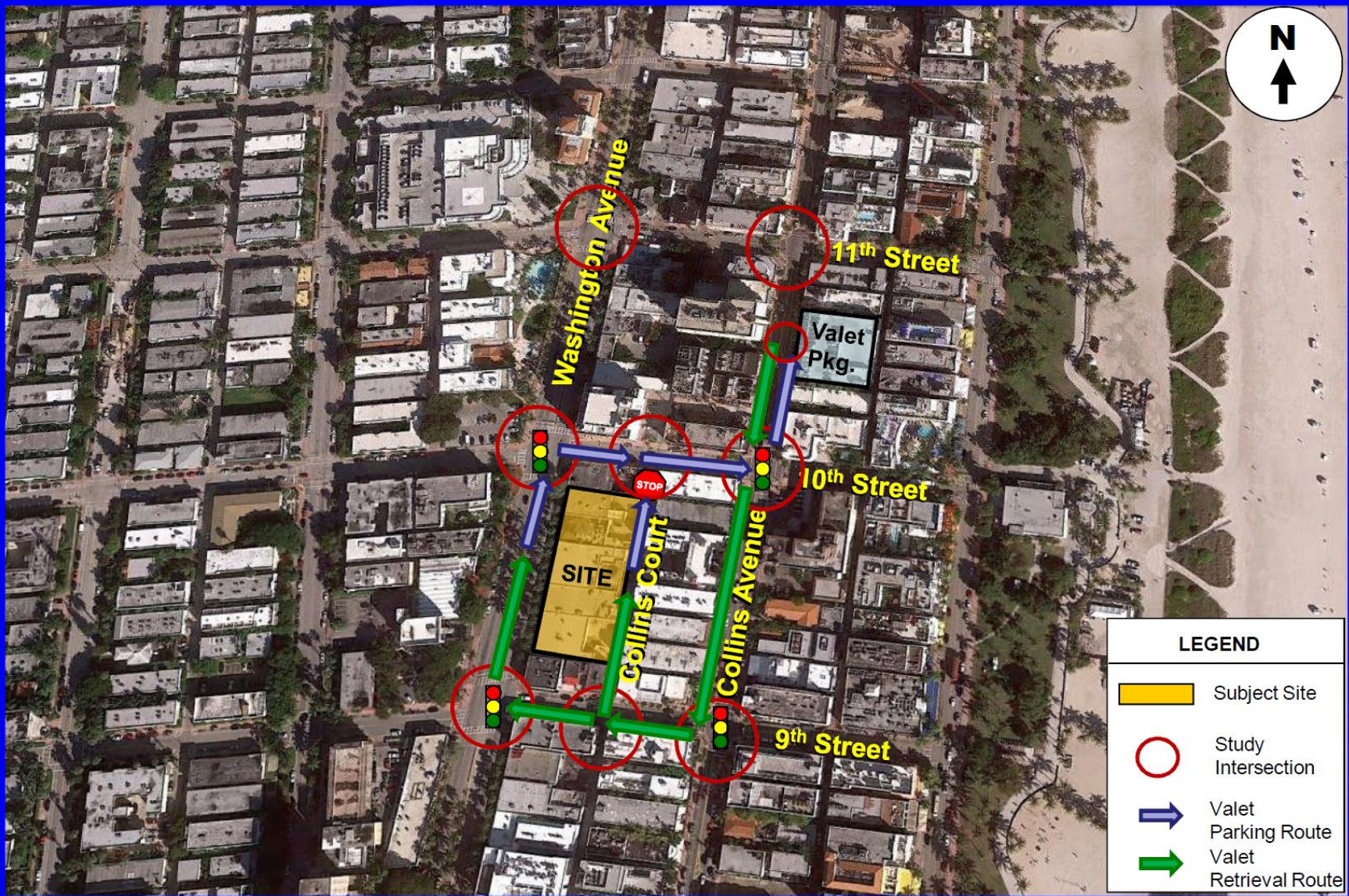
THE FOLLOWING GROUPS MAY ACCESS THE HOTEL AND PUBLIC AREAS:

HOTEL GUESTS

HOTEL GUESTS WILL ARRIVE IN THE BREEZEWAY COMING FROM COLLINS COURT OR WASHINGTON AVENUE, WHERE THEY MAY VALET THEIR CAR AND BE GREETED BY A HOTEL BELLMAN WHO WILL DIRECT THEM TO HOTEL RECEPTION.

THE PUBLIC

RESTAURANT AND CAFE PATRONS WILL ARRIVE IN THE SAME FASHION AS DESCRIBED ABOVE FOR HOTEL GUESTS, OR DIRECTLY TO THE RESTAURANT THROUGH WASHINGTON AVENUE. FROM THE GROUND FLOOR RESTAURANT OR COURTYARD, GUESTS MAY TRAVEL UP TO THE 2ND FLOOR ROOF DECK.



Traf Tech
ENGINEERING, INC.

**VALET ROUTE
& Proposed Study Intersections**

FIGURE 1
915 Washington
Miami Beach, Florida

DELIVERIES & COLLECTIONS

IN AN EFFORT TO ENSURE MINIMAL IMPACT ON LOCAL RESIDENTS, HOTEL GUESTS AND STREET TRAFFIC, THE FOLLOWING PROCEDURES WILL TAKE PLACE:

DELIVERIES:

- THE PROJECT HAS BEEN DESIGNED TO ACCOMMODATE LARGE AND SMALL SCALE DELIVERIES.
- LARGE DELIVERIES WILL BE ACCOMMODATED IN A NEWLY CREATED PULL-OFF AREA TO THE EAST OF THE BUILDING
- SMALL DELIVERIES WILL BE ACCOMMODATED IN THE LOADING AREA WITHIN THE BUILDING
- NO DELIVERIES WILL TAKE PLACE EARLIER THAN 6 AM

REFUSE & RECYCLING:

- REFUSE AND RECYCLING COLLECTION WILL BE NO EARLIER THAN 8 AM

SECURITY

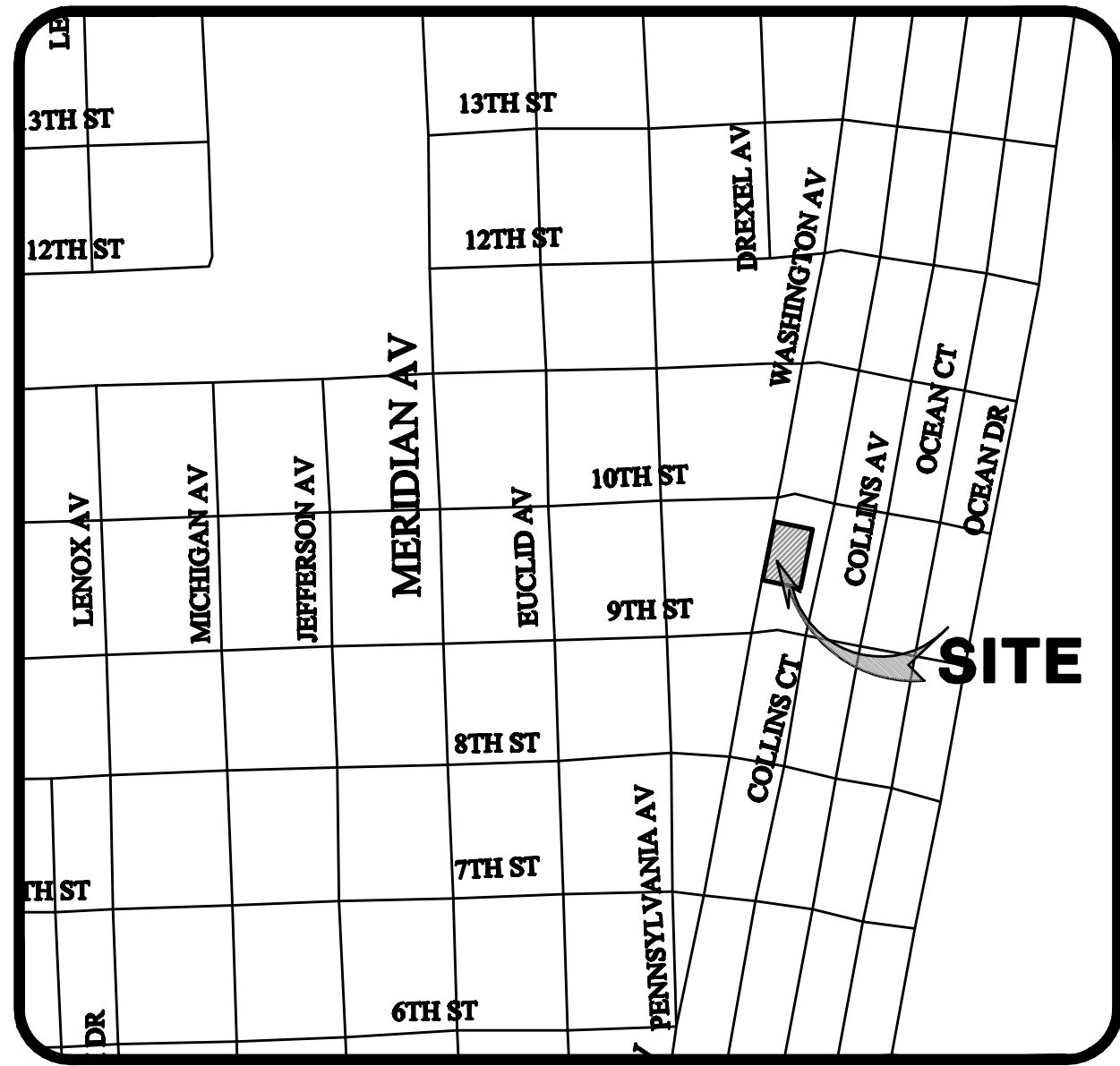
PURSUANT TO THE POLICIES OF THE HOTEL, ALL SECURITY WILL BE ADMINISTERED BY HOTEL MANAGEMENT AND THE FOLLOWING MEASURES WILL BE IMPLEMENTED:

1. SECURITY WILL BE PRESENT 24-HOURS A DAY
2. SECURITY CAMERAS WILL BE LOCATED AT MAJOR ENTRANCE AND EXIT POINTS OF THE PROPERTY
3. SECURITY CAMERAS WILL BE INSTALLED TO MONITOR ALL POINTS OF SALE
4. SECURITY CAMERAS WILL BE INSTALLED IN ELEVATORS TO MONITOR GUEST FLOW
5. EXTRA SECURITY WILL BE SCHEDULED ON HIGH OCCUPANCY DAYS
6. SECURITY TO BE ASSIGNED TO POOL DECK AS REQUIRED

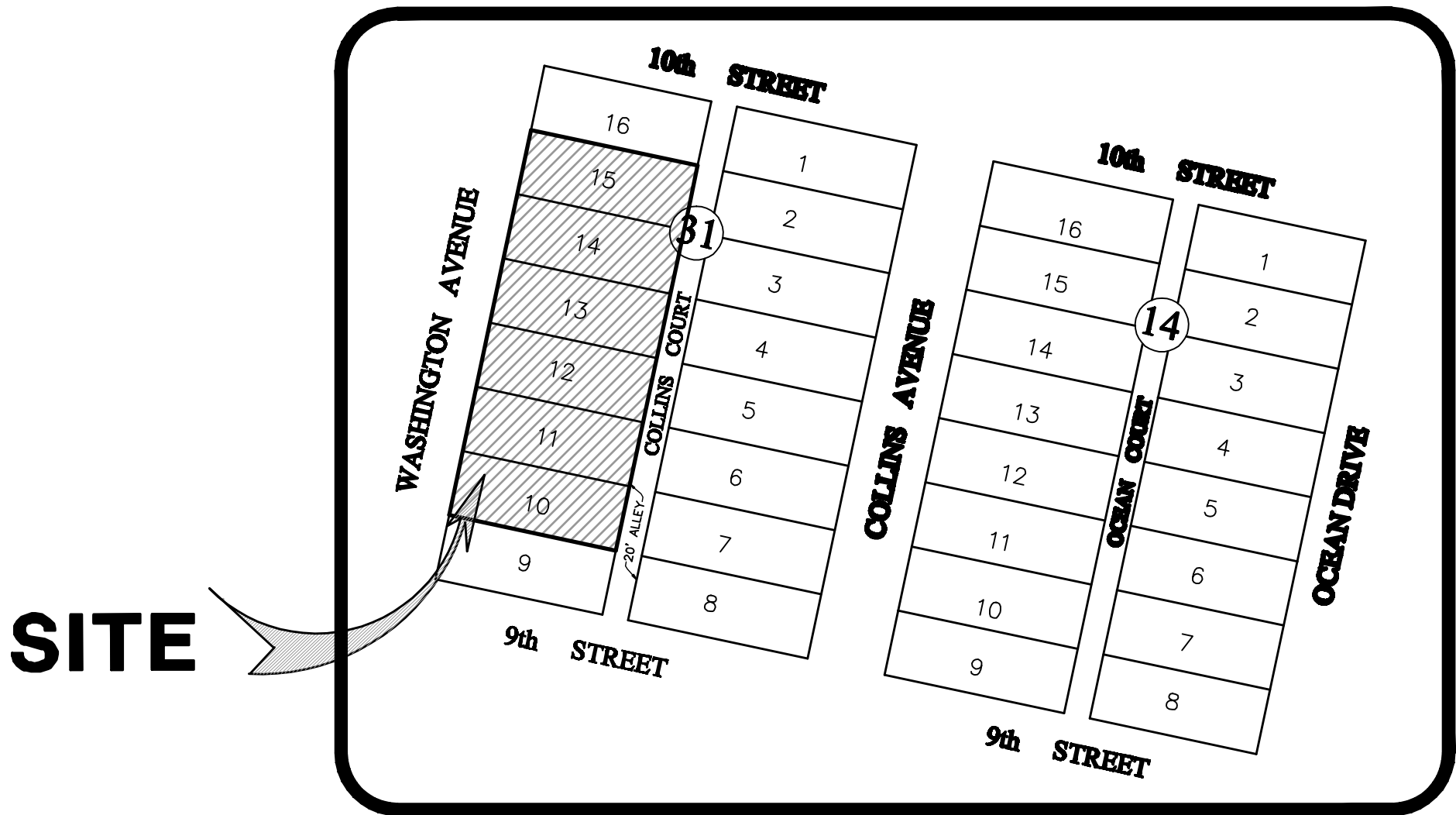
CONDITIONAL USE PERMIT - SUMMARY OF ACCESSORY USES

VENUE	FLOOR	INDOOR/ OUTDOOR	SEAT COUNT	MAX OCCUPANCY	PUBLIC/ HOTEL- ONLY	HOURS OF OPERATION	HOURS OF ENTERTAINMENT	ENTERTAINMENT
Indoor Restaurant	Ground	Indoor	234	246	Public	7 AM - 5 AM	7 AM - 5 AM	DJ/Live
Outdoor Café	Ground	Outdoor	46	46	Public	7 AM - 2 AM	7 AM - 11 PM	DJ/Live
Hotel Bar & Lounge	Ground	Indoor	101	134	Public	7 AM - 2 AM	N/A	Ambient
2nd Level Bar	2nd	Indoor/ Outdoor	156	454	Public	11 AM - 2 AM (Outdoor Bar Counter Closed at Midnight)	11 AM - 11 PM	DJ/Live
Pool Deck	2nd	Outdoor	139	226	Hotel-Only	7 AM - 11 PM	11 AM - 11 PM	DJ/Live
Rooftop	7th	Outdoor	80	199	Public	7 AM - 2 AM	N/A	Ambient

BOUNDARY SURVEY
of
915-943 WASHINGTON AVENUE, MIAMI BEACH,
MIAMI-DADE COUNTY, FLORIDA 33139
for
LIGHTSTONE



VICINITY MAP
NOT TO SCALE



LOCATION SKETCH
NOT TO SCALE

SURVEYOR'S NOTES:

1. Field Survey was completed on: June 7th, 2016.

2. LEGAL DESCRIPTION:

All that certain lot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the City of Miami Beach, County of Miami-Dade, State of Florida.

Lots 10 to 15 inclusive, Block 31, of OCEAN BEACH ADDITION NO. 2, according to the Plat thereof, as recorded in Plat Book 2, Page 56, of the Public Records of Miami-Dade County, Florida.

Containing .39,000 Square Feet or 0.90 Acres more or less by calculations.

3. SOURCES OF DATA:

AS TO HORIZONTAL CONTROL:

North Arrow and bearings refer to an assumed value of S78°00'00"E along the Southerly line of the Subject property, Miami-Dade County, Florida. Said line is considered well-established and monumented.

AS TO VERTICAL CONTROL:

By scaled determination the subject property lies in Flood Zone AE, Base Flood Elev. 8 feet, as per Federal Emergency Management Agency (FEMA) Community-Panel Number 120651 Map No. 12086C0319, Suffix L, Firm Index Date: 09-11-2009. An accurate Zone determination should be made by the preparer of the map, the Federal Emergency Management Agency, or the Local Government Agency having jurisdiction over such matters prior to any judgments being made from the Zone as noted. The referenced Federal Emergency Management Agency Map states in the notes to the user that "this map is for insurance purposes only".

The vertical control element of this survey was derived from the National Geodetic Vertical Datum of 1929.

Benchmark used:

Miami-Dade County Benchmark: X-310-R
Elevation: 8.12 feet (National Geodetic Vertical Datum)
Location:
11 ST --- 55' North of north edge of pavement
Washington AVE --- 105' West of west edge of pavement

4. ACCURACY:

The accuracy obtained by measurement and calculation of closed geometric figures was found to exceed this requirement.

5. LIMITATIONS:

The above Legal Description provided by client.

Since no other information other than what is cited in the Sources of Data was furnished, the Client is hereby advised that there may be legal restrictions on the Subject Property that are not shown on the Survey Map or contained within this Report that may be found in the Public Records of Miami-Dade County, or the records of any other public and private entities as their jurisdictions may appear. The Surveyor makes no representation as to ownership or possession of the Subject Property by any entity or individual who may appear in public records. No excavation or determination was made as to how the Subject Property is served by utilities. No improvements were located, other than those shown. No underground foundations, improvements and/or utilities were located or shown hereon. This notice is required by the "Standards of Practice for Land Surveying in the State of Florida," pursuant to Rule 5J-17 of the Florida Administrative Code.

CERTIFY TO:

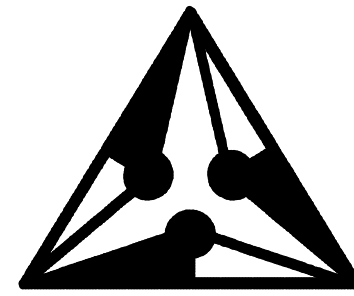
SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY: That the Boundary Survey of the above described property is true and correct to the best of my knowledge and belief as recently surveyed under my direction. Further, there are no above ground encroachments unless shown. This survey meets the Standards of Practice set forth by the Florida Board of Professional Surveyors and Mappers, in Chapter 5J-17, Florida Administrative Code, pursuant to section 472.027 Florida Statutes. Examination of the abstract of title will have to be made to determine recorded instruments, if any, affecting the property. Location and identification of utilities adjacent to the property were not secured as such information was not requested. Ownership is subject to opinion of title.

J. BONFILL & ASSOCIATES, INC.
Florida Certificate of Authorization Number LB 33398

By: **ORIA JANNET SUAREZ**
Professional Surveyor and Mapper No. 6781
State of Florida

NOTICE: Not valid without the signature and original raised seal of a Florida Licensed Surveyor and Mapper. Additions or deletions to Survey Maps by other than the signing party are prohibited without the written consent of the signing party.



J. Bonfill & Associates, Inc.
REGISTERED LAND SURVEYORS & MAPPERS
Florida Certificate of Authorization LB33398
7100 S.W. 99th Avenue, Suite 104
Miami, Florida 33173 (305) 598-8383

BOUNDARY SURVEY
of
915-943 WASHINGTON AVENUE, MIAMI BEACH,
MIAMI-DADE COUNTY, FLORIDA 33139
for
LIGHTSTONE

REVISIONS	BY

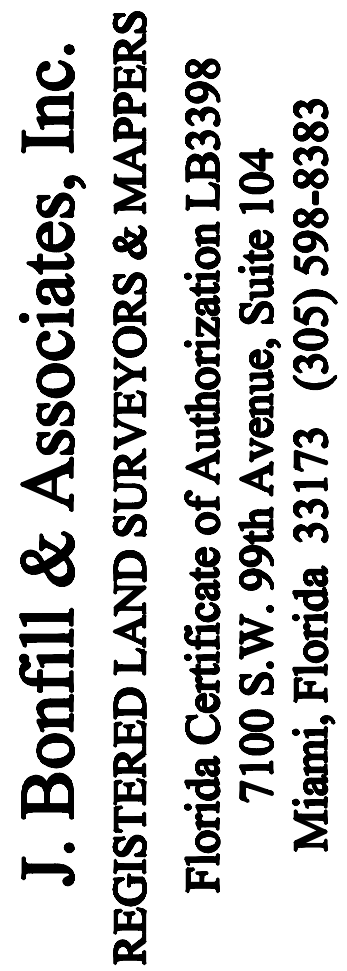
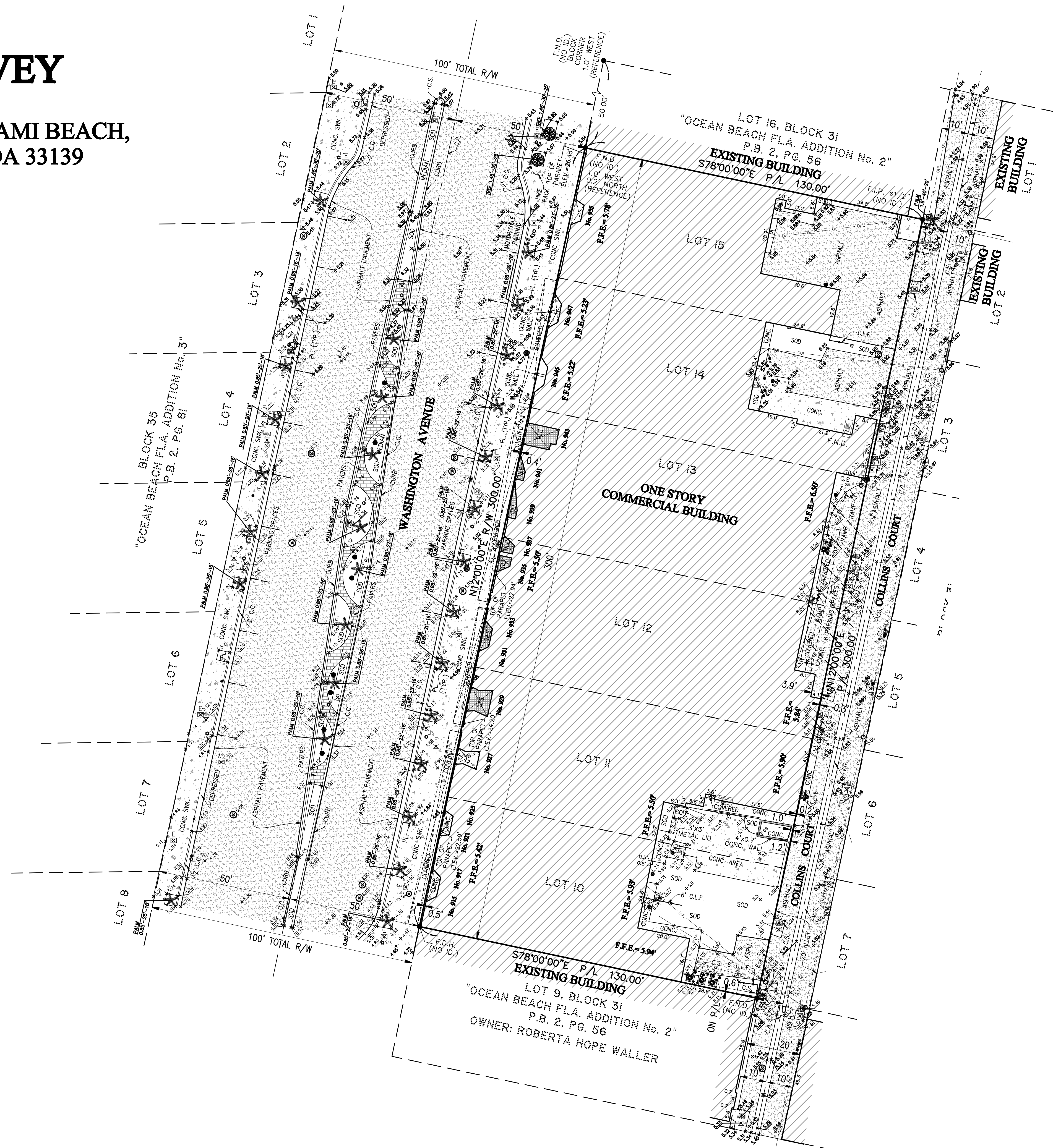
Proj:	16-0065
Job:	16-0070
Date:	06-07-2016
Drawn:	G.P., J.S., C.B., A.A.
Checked:	J.S.
Scale:	AS SHOWN
Field Book:	ON FILE
SHEET 1 OF 2	

of
915-943 WASHINGTON AVENUE, MIAMI BEACH,
MIAMI-DADE COUNTY, FLORIDA 33139
for
LIGTHSTONE



- ## ABBREVIATIONS

- | | |
|--------|------------------------------|
| A | Arc Length |
| A/C | Air Conditioner Pad |
| ASPH. | Asphalt |
| B.M. | Benchmark |
| C.B.S. | Concrete Block Structure |
| C.G. | Curb & Gutter |
| C/L | Center Line |
| C.L.F. | Chain Link Fence |
| CONC. | Concrete |
| C.S. | Concrete Slab |
| DWY. | Driveway |
| E.T.P. | Electric Transformer Pad |
| F.F.E. | Finished Floor Elevation |
| F.I.P. | Found Iron Pipe |
| F.N.D. | Found Nail & Disc |
| F.R. | Found Rebar |
| ID. | Identification |
| INV. | Inverts |
| L.F.E. | Lowest Floor Elevation |
| M/L | Monument Line |
| P.B. | Plat Book |
| P.C.P. | Permanent Control Point |
| PG. | Page |
| PL | Plaster |
| P/L | Property Line |
| P.O.B. | Point of Beginning |
| P.O.C. | Point of Commencement |
| P/S | Parking Spaces |
| P.R.M. | Permanent Reference Monument |
| R/W | Right-of-Way Line |
| SWK. | Sidewalk |
| T.B.M. | Temporary Benchmark |
| T.O.B. | Top of Bank |
| U.E. | Utility Easement |
| V.G. | Valley Gutter |
| W.F. | Wood Fence |
| (TYP.) | Typical |
| E.O.W. | Edge of Water |
| P.B. | Plat Book |
| R | Recorded |



**BOUNDARY SURVEY
of
915-943 WASHINGTON AVENUE, MIAMI BEACH,
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for
LIGHTSTONE**

[illegible]