DAVID PLUMMER & ASSOCIATES
TRAFFIC ENGINEERING • CIVIL ENGINEERING • TRANSPORTATION PLANNING

1750 PONCE DE LEON BOULEVARD | CORAL GABLES, FLORIDA 33134
305•447•0900 | DPA@DPLUMMER.COM

September 2, 2021

Mr. Firat Akcay, M.S.C.E. MBA
Transportation Engineer
Miami Beach Transportation and Mobility Department
1688 Meridian Avenue, Suite 801
Miami Beach, FL 33139
(305) 673-7000
FiratAkcay@miamibeachfl.gov

RE: Ritz-Carlton Sagamore Miami Beach Trip Generation and Queuing Analysis - #21111

Dear Firat,

The Ritz-Carlton Sagamore development is located at 1 Lincoln Road in Miami Beach, Florida. (See Attachment A for the site plan). The Ritz-Carlton Sagamore Miami Beach development is proposing an addition to the Sagamore Hotel that will replace 93 rooms within the hotel with a mixed-use tower consisting of 52 multifamily dwelling units and 53 hotel rooms. The traffic caused by the addition will utilize the same parking garage and optional valet drop-off / pick-up service area as the existing Ritz-Carlton Hotel located at the east end of Lincoln Road. (Residential parking will be available on the first floor of the existing parking garage). Vehicular access to the site will be provided via Lincoln Road, east of SR-A1A. The residential loading will utilize the hotel's existing loading bays located at the southwest corner of the Ritz-Carlton parking garage, west of the garage entrance. Access to the loading area is also provided on Lincoln Road. The residential loading will follow the same loading restrictions that the hotel currently utilizes. All loading will be restricted between the hours of 9 am and 5 pm and will have to be scheduled and managed by the loading areas' dockmaster. Pedestrian access to the addition will be through the existing lobby of the Ritz-Carlton Hotel or through the main entrance of the existing Sagamore Hotel (located on the east side of A1A). Short and long-term bicycle parking will be available in the southeast corners of the first and basement levels of the parking garage.

The purpose of this traffic statement is to conduct a trip generation analysis and queuing analysis for the proposed residential / hotel tower addition. A trip generation analysis was performed to estimate the trips during the AM and PM peak hour of the adjacent street. A queueing analysis was performed at the valet station to analyze if the queues will exceed the provided valet storage. Trip generation was also performed to establish the critical morning or afternoon peak volumes to use for the queuing analysis.

Trip Generation

A trip generation analysis was conducted for the proposed Sagamore Miami Beach project. The project trip generation was based on the rates/equations published by the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10th Edition. Land Use 221, Multifamily Housing Mid-Rise and Land Use 310, Hotel were used in the analysis. A 20% reduction for other modes of transportation was applied at the request of the City. Trip generation calculations were performed for a typical weekday daily, AM and PM peak hours of the adjacent street. Trip generation for the proposed and existing site are summarized in Exhibit 1. Support documentation is provided in Attachment B.

Exhibit 1
Trip Generation

Proposed ITE Land Use Designation[1]	Number of Units	Daily Vehicle Trips	AM Peak Hour Vehicle Trips			PM Peak Hour Vehicle Trips		
			In	Out	Total	In	Out	Total
Hotel *Land Use Code: 310*	53 Rooms	172	12	9	21	7	7	14
Multifamily Housing (Mid-Rise) *Land Use Code: 221*	52 DU	282	5	13	18	14	9	23
Total Gross Trips		**454**	**17**	**22**	**39**	**21**	**16**	**37**
Other Modes of Transportation[2]		20.0%	-3	-4	-7	-5	-3	-8
Net Proposed Trips			**14**	**18**	**32**	**16**	**13**	**29**

Existing ITE Land Use Designation[1]	Number of Units	Daily Vehicle Trips	AM Peak Hour Vehicle Trips			PM Peak Hour Vehicle Trips		
			In	Out	Total	In	Out	Total
Hotel *Land Use Code: 310*	93 Rooms	624	24	17	41	22	21	43
Total Gross Trips		**624**	**24**	**17**	**41**	**22**	**21**	**43**
Other Modes of Transportation[2]		20.0%	-5	-3	-8	-4	-4	-8
Net Existing Trips			**13**	**10**	**23**	**12**	**11**	**23**

dpa Since 1978

	Daily Vehicle Trips	AM Peak Hour Vehicle Trips			PM Peak Hour Vehicle Trips		
		In	Out	Total	In	Out	Total
Proposed	454	14	18	32	16	13	29
Existing	624	13	10	23	12	11	23
Net Trip Difference	-170	1	8	9	4	2	6

[1] Based on ITE Trip Generation Manual, 10th Edition.

[2] A 20% reduction was used for the transportation reduction per City request.

The results of the analysis show that the proposed Ritz-Carlton Sagamore tower will generate 170 less daily trips than the existing hotel and a total increase of 9 and 6 vehicle trips during morning and afternoon peak hours respectively.

Queuing Analysis

As previously stated, the proposed tower will utilize the existing parking garage and valet station. The existing valet station is located on Lincoln Road at the existing Ritz-Carlton entrance under a porte-cochere. A queuing analysis was performed for the valet station to determine if a queue will form at the proposed valet reception area that will spill back onto Lincoln Road and interfere with the internal circulation of vehicles entering and exiting the parking garage.

The queuing analysis for the proposed valet drop-off / pick-up area was performed based on the methodology outlined in the *Institute of Transportation Engineers (ITE) Transportation and Land Development*. The analysis was performed to determine the number of valet parking attendants required during the peak hour so that the queue does not extend past the valet storage area (95% confidence level analysis). The potential queues were calculated based on the peak hour traffic published by the Institute of Transportation Engineers (ITE) trip generation rates and/or equations. As the valet station currently serves and will continue to serve the traffic from the Ritz-Carlton Hotel and the proposed Sagamore Hotel residential tower, trip generation for the existing Ritz-Carlton Hotel and the Sagamore Hotel's proposed development plan was performed to determine the demand at the valet station. The PM peak hour of generator (worst case scenario) was used for the purpose of calculating the expected queues at the valet station. A 20% reduction for other modes of transportation and a 44% rideshare reduction were applied at the request of the City.

As previously mentioned hotel guests and residents have the option to self-park or use valet parking. Residential parking will be available within the first level of the parking garage, valet parking will utilize the basement level of the existing parking garage. (See attachment C for valet and residential access exhibits). For the valet station it was assumed that 80% of the hotel guests and 20% of the residents would use the valet services. The proposed AM and PM peak hours of generator trip generation is summarized in Exhibit 2. Queuing and queuing trip generation documentation are available in Attachment C.

Exhibit 2

Valet Trip Generation

ITE Land Use Designation[1]	Number of Units	AM Peak Hour of Generator Vehicle Trips			PM Peak Hour of Generator Vehicle Trips		
		In	Out	Total	In	Out	Total
Sagamore Hotel *Land Use Code: 310*	53 Rooms	19	17	36	20	15	35
Sagamore Multifamily Housing *Land Use Code: 221*	52 DU	5	15	20	15	10	25
Existing Ritz-Carlton Hotel *Land Use Code: 310*	374 Rooms	101	86	187	125	90	215
Total Gross Trips		**125**	**118**	**243**	**160**	**115**	**275**
Other Modes of Transportation[2]	20%	-25	-24	-49	-32	-23	-55
Rideshare Services[3]	44%	-44	-41	-85	-56	-40	-96
Net Proposed Trips		**56**	**53**	**109**	**72**	**52**	**124**
Demand at Valet Station[4]		43	38	81	53	39	92

[1] Based on ITE Trip Generation Manual, 10th Edition.

[2] A 20% reduction was used for the transportation reduction per City request.

[3] A 44% rideshare reduction was used at the valet station per City request.

[4] See Attachment C for Residential / Hotel Valet Demand Calculations

The results of the trip generation show that the critical peak hour for valet parking is the PM peak hour of the generator with a total of 92 vehicle trips (in/out).

The queuing analysis used the single-channel waiting line model with Poisson arrivals and exponential service times. The analysis is based on the coefficient of utilization (ρ) which is the ratio of the average arrival rate of vehicles to the average service rate.

dpa Since 1978

$$\rho = \frac{Average\ Demand\ Rate}{Average\ Sevice\ Rate}$$

The average service rate corresponds to the time it will take a valet parking attendant to park or retrieve a vehicle. If the coefficient of utilization is greater than 1, then the calculation will yield an infinite queue length.

The required queue storage (M) is determined using the following equation:

$$M = \left[\frac{\ln P(x > M) - \ln Q_M}{\ln \rho}\right] - 1$$

In this equation, *P(x > M)* is set at 5% to yield a 95% confidence that the queue will not back-up onto the adjacent street.

Since the distance from the valet drop-off / pick-up area differs for inbound and outbound trips, a weighted average was taken of the inbound / outbound valet processing time. The weighted average was based on the inbound / outbound trip distribution, which is 58% inbound and 42% outbound.

The processing rates were calculated by adding the time it will take a valet attendant to process the vehicles (**processing time**), the time it will take the attendant to circulate to the parking space (**driving time)**, the time it will take the attendant to park or retrieve a vehicle (**park processing time**), and the time it will take the attendant to walk to/from the parking area (**walking time**).

A processing time of 60 seconds per vehicle was used in the analysis. This information was provided by the City of Miami Beach. The driving time for the valet attendant was calculated on a conservative speed of 15 mph, and the walking time for the valet attendant was calculated on a jogging speed of 5 ft / sec (provided by the City). The valet processing rate for the valet station can be seen in Exhibit 3.

Exhibit 3
Valet Station Processing Rate
Valet Drop-off / Pick-up

Valet Time (Inbound)	
***Processing time*:**	60 sec / 60 sec / 1 min = ***1.00 min***
***Driving time*:**	865 ft * 1 mile / 5280 ft * 1hr / 15 miles * 60 min / hr = ***0.66 min***
***Park Processing Time*:**	= ***0.15 min***
Walking time:	575 ft / 5 ft / sec / 60 sec / min = ***1.92 min***
Total	**= 3.72 min**
Valet Time (Outbound)	
***Processing time*:**	60 sec / 60 sec / 1 min = ***1.00 min***
***Driving time*:**	630 ft * 1 mile / 5280 ft * 1hr / 15 miles * 60 min / hr = ***0.48 min***
***Park Processing Time*:**	= ***0.15 min***
Walking time:	575 ft / 5 ft / sec / 60 sec / min = ***1.92 min***
Total	**= 3.54 min**
Weighted Valet Time	
58% Inbound:	0.58*3.72 min = ***2.16 min***
58% Outbound:	0.42*3.54 min = ***0.68 min***
Total	**= 2.84 min**

An iterative approach was used to determine the minimum number of valet attendants required during the PM peak hour to serve both the entering and exiting vehicles that will ensure that the average queue at the valet station will not extend past the valet storage. Exhibit 4 shows the calculations for the inbound / outbound valet drop-off / pick-up area during the PM peak hour of the generator.

dpa Since 1978

Exhibit 4
Valet Station Queuing Calculations

Q = Processing Rate = $\frac{60\ min/hr}{2.84\ min/process} = 21.11\ process/hr$

q = Demand Rate = $92\ \frac{veh}{hr}$

N = Service Positions = 8 Attendants

ρ = Utilization factor = $\frac{q}{(NQ)} = \frac{92\ veh/hr}{8 \times 21.11\ process/hr} = 0.5448$

Q_m = Table Value = 0.0951

M = queue length which is exceeded 5% of the time [P(x>M)]

$M = \frac{\ln P(x>M) - \ln(Q_m)}{\ln(\rho)} - 1 = \frac{\ln(0.05) - \ln(0.0951)}{\ln(0.5448)} - 1 = 0.058, \quad say\ 1$ Vehicle on queue

The results of the analysis show that a total of 8 valet attendants would be able to handle the demand during the PM peak hour of generator at the valet station with an average queue of approximately one vehicle or less. Based on the site plan, the valet station has approximately 60 feet of storage; this distance is enough to accommodate two vehicles in the queue. It should be noted that the queuing analysis considers the worst case scenario during the peak hours to make sure that the queue never spills onto the public right-of-way or interferes with site operations. Once operational, the development can assess the actual need for valet attendants at different times of the day.

Conclusion

The Ritz-Carlton Sagamore project is proposing an addition that will replace 93 rooms of the existing Sagamore Hotel with a mixed-use tower consisting of 52 residential units and 53 hotel rooms. The tower is anticipated to generate 170 less daily trips than the existing site and only adds a total of 9 and 6 vehicle trips during morning and afternoon peak hours respectively. As the addition is adding less than 10 trips to the roadway network during peak hours, the additional vehicle trips and impacts on the adjacent roadway network can be consider *de minimis.*

As discussed above, the new tower will utilize the parking within the existing parking garage and the valet station provided on Lincoln Road at the existing Ritz-Carlton entrance. The results of the analysis show that a total of 8 valet attendants would be able to handle the demand during the PM

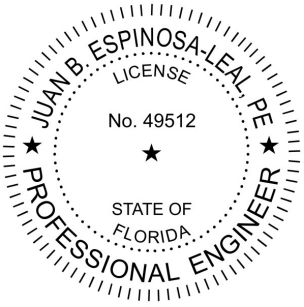
dpa Since 1978

peak hour of generator (worst case scenario) at the drop-off / pick-up area with an average queue of approximately 1 vehicle or less. It is our professional opinion that the additional trips from the proposed tower will not have an adverse impact on the operations of the existing valet station on Lincoln Road and will not impede the access to/from the existing parking garage. A Transportation Demand Management (TDM) plan was developed for the project and added as Attachment D.

We stand ready to provide any support needed for this project. Should you have any questions or comments, please call me at (305) 447-0900.

Sincerely,

Juan Espinosa, PE
Vice-President – Transportation

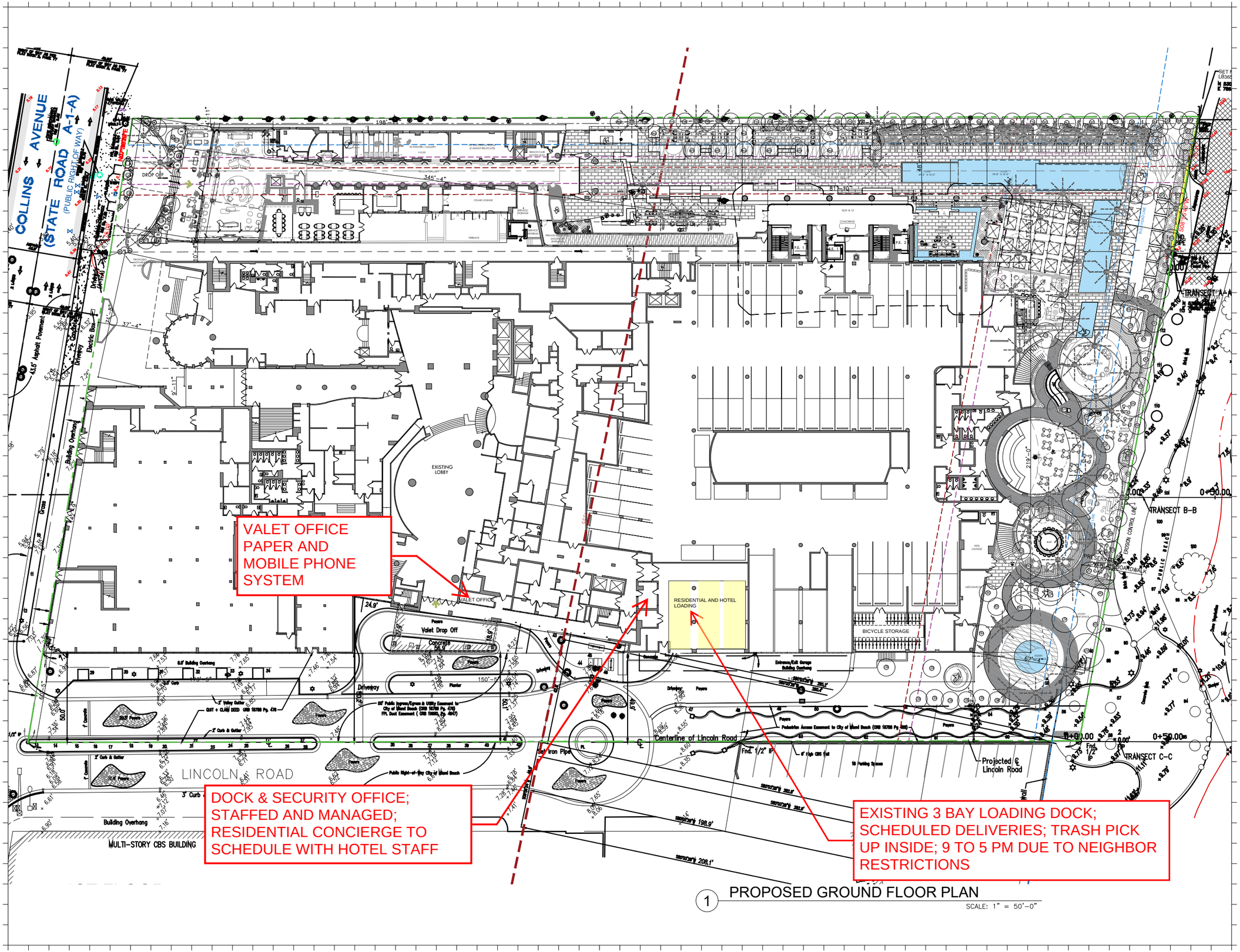


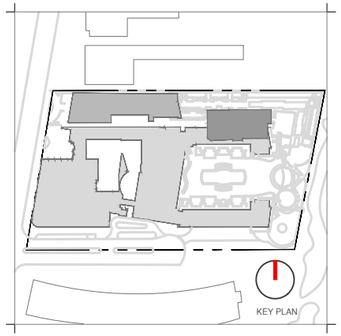
Digitally signed by Juan Espinosa
Reason: I am the author of this document
Date: 2021-09-03 14:12:26

w:\21\21111\city comments aug 9 2021\sagamore trip gen & queuing letter_june 2021.docx

dpa Since 1978

Attachment A





Rev.	Date	Rev.	Date

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF KOBI KARP AIA, AND MAY NOT BE DUPLICATED, USED, OR DISCLOSED WITHOUT THE EXPRESS WRITTEN CONSENT OF KOBI KARP ARCHITECTURE & INTERIOR DESIGN, INC. AIA. (c) 2020

Ritz-Sagamore
1 Lincoln Road
Miami Beach, FL 33139

Owner:
Name — Di Lido Beach Resort LLC.
Address — EBJ Sagamore LLC.
Address — Sobe Sky Development LLC.
Tel:
Email

Consultant:
Name — STUDIO MUNGE.
Address — 25 Wingold Avenue,
Address — Toronto, ON Canada M6B 1P8
Tel: — 416.588.1668
Email

Consultant:
Name — LANDSCAPE ARCHITECT
Address — Naturalficial.
Address — 6915 Red Road, Suite 224
Tel: — Coral Gables, FL 33143
Email — 786.717.6564

Consultant:
Name — MEP
Address — MG Engineering.
Address — 6915 Red Road, Suite 224
Tel: — 2800 Biscayne Blvd
Email — Miami, FL, 33137
305.755.3833

Consultant:
Name
Address — Desimore Consulting Engineering
Address — 900 Brickell Avenue, 6th Floor
Tel: — Miami, FL 33131
Email — 305.441.0755

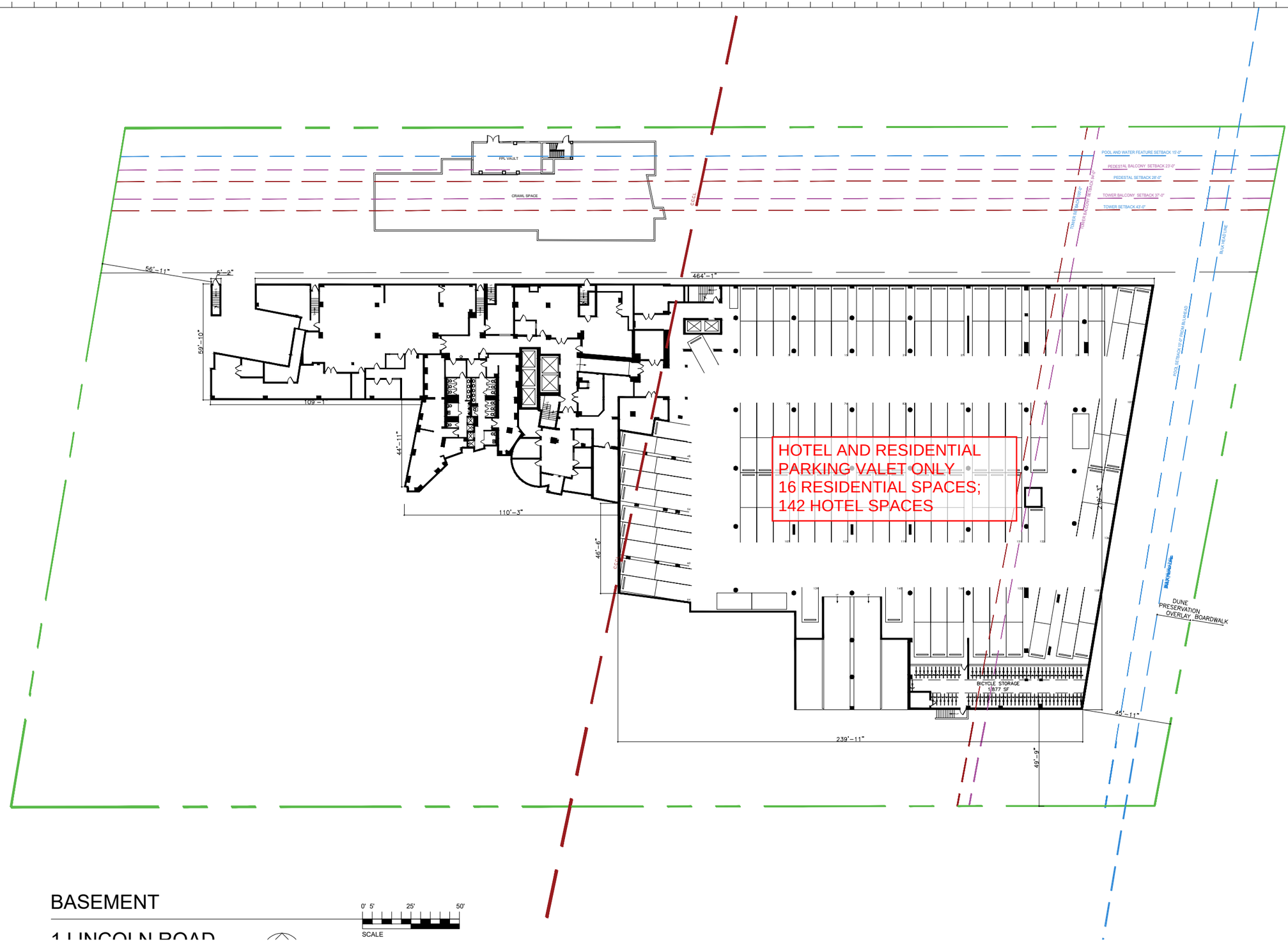
Architect of Record:
Kobi Karp Architecture and Interior Design, Inc.
571 NW 28TH ST
Miami, Florida 33137 USA
Tel: +1(305) 573 1818
Fax: +1(305) 573 3766

KOBI KARP
Lic. # AR0012578

PROPOSED FLOOR PLAN

RITZ-SAGAMORE

Date	08-16-2021	Sheet No.	A2.01
Scale	AS SHOWN		
Project	2018		



BASEMENT

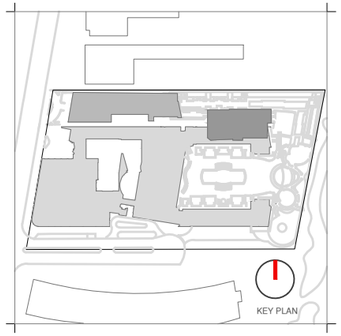
1 LINCOLN ROAD

0' 5' 25' 50'

SCALE

1 PROPOSED BASEMENT FLOOR PLAN

SCALE: 1" = 50'-0"



Rev.	Date	Rev.	Date

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF KOBI KARP AIA, AND MAY NOT BE DUPLICATED, USED, OR DISCLOSED WITHOUT THE EXPRESS WRITTEN CONSENT OF KOBI KARP ARCHITECTURE & INTERIOR DESIGN, INC. AIA. (c) 2020

Ritz-Sagamore
1 Lincoln Road
Miami Beach, FL 33139

Owner:
Name Di Lido Beach Resort LLC.
Address EBJ Sagamore LLC.
Address Sobe Sky Development LLC.
Tel:
Email

Consultant:
Name STUDIO MUNGE.
Address 25 Wingold Avenue,
Address Toronto, ON Canada M6B 1P8
Tel: 416.588.1668
Email

Consultant: LANDSCAPE ARCHITECT
Name Naturalficial.
Address 6915 Red Road, Suite 224
Address Coral Gables, FL 33143
Tel: 786.717.6564
Email

Consultant: MEP
Name MG Engineering.
Address 6915 Red Road, Suite 224
Address 2800 Biscayne Blvd
Tel: Miami, FL, 33137
Email 305.755.3833

Consultant:
Name Desimore Consulting Engineering
Address 800 Brickell Avenue, 6th Floor
Address Miami, FL 33131
Tel: 305.441.0755
Email

Architect of Record:
Kobi Karp Architecture and Interior Design, Inc.
571 NW 28TH ST
Miami, Florida 33137 USA
Tel: +1(305) 573 1818
Fax: +1(305) 573 3766

KOBI KARP
Lic. # AR0012578

PROPOSED FLOOR PLAN

RITZ-SAGAMORE

Date	08-16-2021	Sheet No.	A2.00
Scale	1"=50'-0"		
Project	2018		

Attachment B

Scenario - 1

Scenario Name: Existing
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning: The time periods among the land uses do not appear to match.

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method Rate/Equation	Entry Split%	Exit Split%	Total
310 - Hotel	General Urban/Suburban	Rooms	93	Weekday	Best Fit (LIN)	312	312	624
Data Source: Trip Gen Manual, 10th Ed					T = 11.29(X) - 426.97	50%	50%	
310(1) - Hotel	General Urban/Suburban	Rooms	93	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	24	17	41
Data Source: Trip Gen Manual, 10th Ed					T = 0.50(X) - 5.34	59%	41%	
310(2) - Hotel	General Urban/Suburban	Rooms	93	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	22	21	43
Data Source: Trip Gen Manual, 10th Ed					T = 0.75(X) - 26.02	51%	49%	

Scenario - 2

Scenario Name: Proposed
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning: The time periods among the land uses do not appear to match.

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method Rate/Equation	Entry Split%	Exit Split%	Total
310 - Hotel	General Urban/Suburban	Rooms	53	Weekday	Best Fit (LIN)	86	86	172
Data Source: Trip Gen Manual, 10th Ed					T = 11.29(X) - 426.97	50%	50%	
310(1) - Hotel	General Urban/Suburban	Rooms	53	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	12	9	21
Data Source: Trip Gen Manual, 10th Ed					T = 0.50(X) - 5.34	59%	41%	
310(2) - Hotel	General Urban/Suburban	Rooms	53	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	7	7	14
Data Source: Trip Gen Manual, 10th Ed					T = 0.75(X) - 26.02	51%	49%	
221 - Multifamily Housing (Mid-Rise)	General Urban/Suburban	Dwelling Units	52	Weekday	Best Fit (LIN)	141	141	282
Data Source: Trip Gen Manual, 10th Ed					T = 5.45(X) - 1.75	50%	50%	
221(1) - Multifamily Housing (Mid-Rise)	General Urban/Suburban	Dwelling Units	52	Weekday, Peak Hour of Adjacent Street	Best Fit (LOG)	5	13	18
Data Source: Trip Gen Manual, 10th Ed					Ln(T) =0.98Ln(X) - 0.98	26%	74%	
221(2) - Multifamily Housing (Mid-Rise)	General Urban/Suburban	Dwelling Units	52	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	14	9	23
Data Source: Trip Gen Manual, 10th Ed					Ln(T) =0.96Ln(X) - 0.63	61%	39%	

COMMUTING CHARACTERISTICS BY SEX

United States Census Bureau

Note: This is a modified view of the original table produced by the U.S. Census Bureau. This download or printed version may have missing information from the original table.

	Census Tract 42.06, Miami-Dade County, Florida	
	Total	
Label	Estimate	Margin of Error
Workers 16 years and over	735	±187
MEANS OF TRANSPORTATION TO WORK		
Car, truck, or van	53.2%	±12.5
Drove alone	36.1%	±14.9
Carpooled	17.1%	±10.5
In 2-person carpool	15.5%	±9.8
In 3-person carpool	0.0%	±5.3
In 4-or-more person carpool	1.6%	±2.5
Workers per car, truck, or van	1.20	±0.17
Public transportation (excluding taxicab)	10.6%	±8.8
Walked	25.0%	±10.4
Bicycle	0.4%	±1.2
Taxicab, motorcycle, or other means	7.1%	±5.1
Worked at home	3.7%	±3.9
PLACE OF WORK		
Worked in state of residence	91.8%	±6.6
Worked in county of residence	91.8%	±6.6
Worked outside county of residence	0.0%	±5.3
Worked outside state of residence	8.2%	±6.6
Living in a place	100.0%	±5.3
Worked in place of residence	35.1%	±13.8
Worked outside place of residence	64.9%	±13.8
Not living in a place	0.0%	±5.3
Living in 12 selected states	0.0%	±5.3
Worked in minor civil division of residence	0.0%	±5.3
Worked outside minor civil division of residence	0.0%	±5.3
Not living in 12 selected states	100.0%	±5.3

Table Notes

COMMUTING CHARACTERISTICS BY SEX

Survey/Program:
American Community Survey
Year:
2018
Estimates:
5-Year
Table ID:
S0801

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

Source: U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates

When information is missing or inconsistent, the Census Bureau logically assigns an acceptable value using the response to a related question or questions. If a logical assignment is not possible, data are filled using a statistical process called allocation, which uses a similar individual or household to provide a donor value. The "Allocated" section is the number of respondents who received an allocated value for a particular subject.

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see ACS Technical Documentation). The effect of nonsampling error is not represented in these tables.

The 12 selected states are Connecticut, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Wisconsin.

Workers include members of the Armed Forces and civilians who were at work last week.

While the 2014-2018 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Explanation of Symbols:

- An "**" entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
- An "-" entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution, or the margin of error associated with a median was larger than the median itself.
- An "-" following a median estimate means the median falls in the lowest interval of an open-ended distribution.

An "+" following a median estimate means the median falls in the upper interval of an open-ended distribution.
An "***" entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
An "*****" entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
An "N" entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
An "(X)" means that the estimate is not applicable or not available.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Attachment C

Scenario - 3

Scenario Name: Queuing
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:

Warning: The time periods among the land uses do not appear to match.

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
310(2) - Hotel	General Urban/Suburban	Rooms	53	Weekday, AM Peak Hour of Generator	Best Fit (LOG)	19	17	36
Data Source: Trip Gen Manual, 10th Ed					Ln(T) =0.84Ln(X) + 0.25	54%	46%	
221 - Multifamily Housing (Mid-Rise)	General Urban/Suburban	Dwelling Units	52	Weekday, AM Peak Hour of Generator	Best Fit (LOG)	5	15	20
Data Source: Trip Gen Manual, 10th Ed					Ln(T) =0.83Ln(X) - 0.27	27%	73%	
310(1) - Hotel	General Urban/Suburban	Rooms	374	Weekday, AM Peak Hour of Generator	Best Fit (LOG)	101	86	187
Data Source: Trip Gen Manual, 10th Ed					Ln(T) =0.84Ln(X) + 0.25	54%	46%	
310(3) - Hotel	General Urban/Suburban	Rooms	53	Weekday, PM Peak Hour of Generator	Best Fit (LOG)	20	15	35
Data Source: Trip Gen Manual, 10th Ed					Ln(T) =0.93Ln(X) - 0.14	58%	42%	
221(1) - Multifamily Housing (Mid-Rise)	General Urban/Suburban	Dwelling Units	52	Weekday, PM Peak Hour of Generator	Best Fit (LOG)	15	10	25
Data Source: Trip Gen Manual, 10th Ed					Ln(T) =0.83Ln(X) - 0.05	60%	40%	
310(4) - Hotel	General Urban/Suburban	Rooms	374	Weekday, PM Peak Hour of Generator	Best Fit (LOG)	125	90	215
Data Source: Trip Gen Manual, 10th Ed					Ln(T) =0.93Ln(X) - 0.14	58%	42%	

location, a 5% probability of back-up onto the adjacent street is judged to be acceptable. Demand on the system for design is expected to be 110 vehicles in a 45-minute period. Average service time was expected to be 2.2 minutes. Is the queue storage adequate?

Such problems can be quickly solved using Equation (8–9b) given in Table 8-10 and repeated below for convenience.

$$M = \left[\frac{\ln P(x > M) - \ln Q_M}{\ln \rho}\right] - 1$$

where:

M = queue length which is exceeded p percent of the time
N = number of service channels (drive-in positions)
Q = service rate per channel (vehicles per hour)
$\rho = \dfrac{\text{demand rate}}{\text{service rate}} = \dfrac{q}{NQ}$ = utilization factor
q = demand rate on the system (vehicles per hour)
Q_M = tabled values of the relationship between queue length, number of channels, and utilization factor (see Table 8.11)

TABLE 8-11
Table of Q_M Values

ρ	$N = 1$	2	3	4	6	8	10
0.0	0.0000	0.0000	0.0000	0.0000			
0.1	.1000	.0182	.0037	.0008	.0000	0.0000	0.0000
.2	.2000	.0666	.0247	.0096	.0015	.0002	.0000
.3	.3000	.1385	.0700	.0370	.0111	.0036	.0011
.4	.4000	.2286	.1411	.0907	.0400	.0185	.0088
.5	.5000	.3333	.2368	.1739	.0991	.0591	.0360
.6	.6000	.4501	.3548	.2870	.1965	.1395	.1013
.7	.7000	.5766	.4923	.4286	.3359	.2706	.2218
.8	.8000	.7111	.6472	.5964	.5178	.4576	.4093
.9	.9000	.8526	.8172	.7878	.7401	.7014	.6687
1.0	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

$\rho = \dfrac{q}{NQ} = \dfrac{\text{arrival rate, total}}{(\text{number of channels})(\text{service rate per channel})}$
N = number of channels (service positions)

Solution

Step 1: $Q = \dfrac{60 \text{ min/hr}}{2.2 \text{ min/service}} = 27.3$ services per hour

Step 2: $q = (110 \text{ veh}/45 \text{ min}) \times (60 \text{ min/hr}) = 146.7$ vehicles per hour

Step 3: $\rho = \dfrac{q}{NQ} = \dfrac{146.7}{(6)(27.3)} = 0.8956$

Step 4: $Q_M = 0.7303$ by interpolation between 0.8 and 0.9 for $N = 6$ from the table of Q_M values (see Table 8-11).

Step 5: The acceptable probability of the queue, M, being longer than the storage, 18 spaces in this example, was stated to be 5%. $P(x > M) = 0.05$, and:

$$M = \left[\frac{\ln 0.05 - \ln 0.7303}{\ln 0.8956}\right] - 1 = \left[\frac{-2.996 - (-0.314)}{-0.110}\right] - 1$$
$$= 24.38 - 1 = 23.38, \text{ say } 23 \text{ vehicles.}$$

Ritz Carlton / Sagamore

Valet Station Demand Calculations

ITE Land Use Designation[1]	Number of Units	AM Peak of Generator Vehicle Trips			PM Peak of Generator Vehicle Trips		
		In	Out	Total	In	Out	Total
Sagamore Hotel *Land Use Code: 310*	53 Rooms	19	17	36	20	15	35
Sagamore Multifamily Housing (Mid-Rise) *Land Use Code: 221*	52 DU	5	15	20	15	10	25
Existing Ritz-Carlton Hotel *Land Use Code: 310*	374 Rooms	101	86	187	125	90	215
Total Gross Trips		**125**	**118**	**243**	**160**	**115**	**275**
Other Modes of Transportation[2] (Hotel)	20%	-24	-21	-45	-29	-21	-50
Other Modes of Transportation[2] (Residential)	20%	-1	-3	-4	-3	-2	-5
Transportation check		**-25**	**-24**	**-49**	**-32**	**-23**	**-55**
Rideshare Services[3] (Hotel)	44%	-42	-36	-78	-51	-36	-87
Rideshare Services[3] (Residential)	44%	-2	-5	-7	-5	-4	-9
Rideshare check		**-44**	**-41**	**-85**	**-56**	**-40**	**-96**
Net Proposed Trips (Hotel)		54	46	100	65	48	113
Net Proposed Trips (Residential)		2	7	9	7	4	11
Net Proposed Trips check		**56**	**53**	**109**	**72**	**52**	**124**
Demand at Valet Station (Hotel)	80%	43	37	80	52	38	90
Demand at Valet Station (Residential)[4]	20%	0	1	1	1	1	2
Demand at Valet Station		**43**	**38**	**81**	**53**	**39**	**92**

[1] Based on ITE Trip Generation Manual, 10th Edition.

[2] A 20% reduction was used for the transportation reduction per City request.

[3] A 44% rideshare reduction was used at the valet station per City request.

[4] Residential demand based split of residential valet & self-parking spaces

Shops at Merrick Park
Aurora Parking Garage

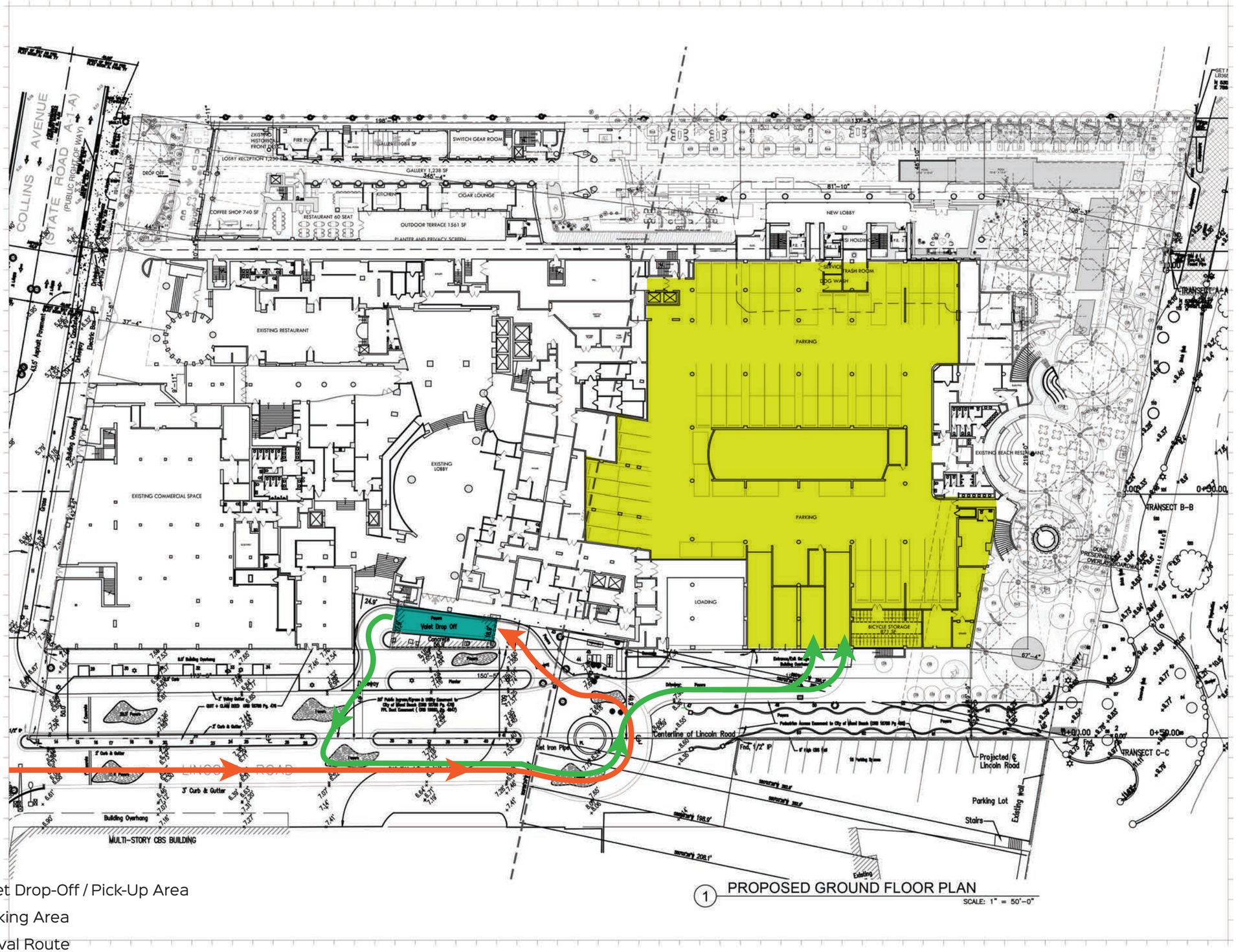
Garage Entrance Processing Time

Date: 2-May-17
Time: 5 - 6 pm

Car	Processing Time (sec)	Transaction Type	Car	Processing Time (sec)	Transaction Type
1	6.32	T	21	6.92	T
2	9.57	T	22	6.27	T
3	7.47	T	23	6.58	T
4	6.18	T	24	6.16	T
5	8.54	T	25	4.64	C
6	6.61	C	26	3.84	C
7	4.2	C	27	3.43	C
8	6.6	T	28	7.18	C
9	10.66	T	29	3.74	C
10	9.94	T	30	7.23	T
11	4.77	C	31	3.2	C
12	6.51	T	32	3.11	C
13	6.33	T	33	7.17	T
14	5.4	T	34	9.4	T
15	6.28	T	35	5.84	C
16	3.24	C	36	3.57	C
17	3.37	C			
18	7.97	T			
19	3.04	C			
20	6.07	T			

T= Ticket Dispenser
C= Card Reader

Ticket Dispenser Average	7.31	sec
Card Reader Average	4.25	sec
Combined Average	6.04	sec



1 PROPOSED GROUND FLOOR PLAN
SCALE: 1" = 50'-0"

Valet Operations - Arrival

Rev.	Date	Rev.	Date

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF KOBI KARP AIA, AND MAY NOT BE DUPLICATED, USED, OR DISCLOSED WITHOUT THE EXPRESS WRITTEN CONSENT OF KOBI KARP ARCHITECTURE & INTERIOR DESIGN, INC. ©IA 2020

Ritz-Sagamore
1 Lincoln Road
Miami Beach, FL 33139

Owner:
Name — Di Lido Beach Resort LLC.
Address — EBJ Sagamore LLC.
Address — Sobe Sky Development LLC.
Tel:
Email

Consultant:
Name — STUDIO MUNGE.
Address — 25 Wingold Avenue,
Address — Toronto, ON Canada M6B 1P8
Tel: — 416.588.1668
Email

Consultant: LANDSCAPE ARCHITECT
Name — Naturalficial,
Address — 6915 Red Road, Suite 224
Address — Coral Gables, FL 33143
Tel: — 786.717.6564
Email

Consultant: MEP
Name — MG Engineering
Address — 6915 Red Road, Suite 224
Address — 2800 Biscayne Blvd
Tel: — Miami, FL 33137
Email — 305.755.3833

Consultant:
Name — Desimone Consulting Engineering
Address — 800 Brickell Avenue, 6th Floor
Address — Miami, FL 33131
Tel: — 305.441.0755
Email

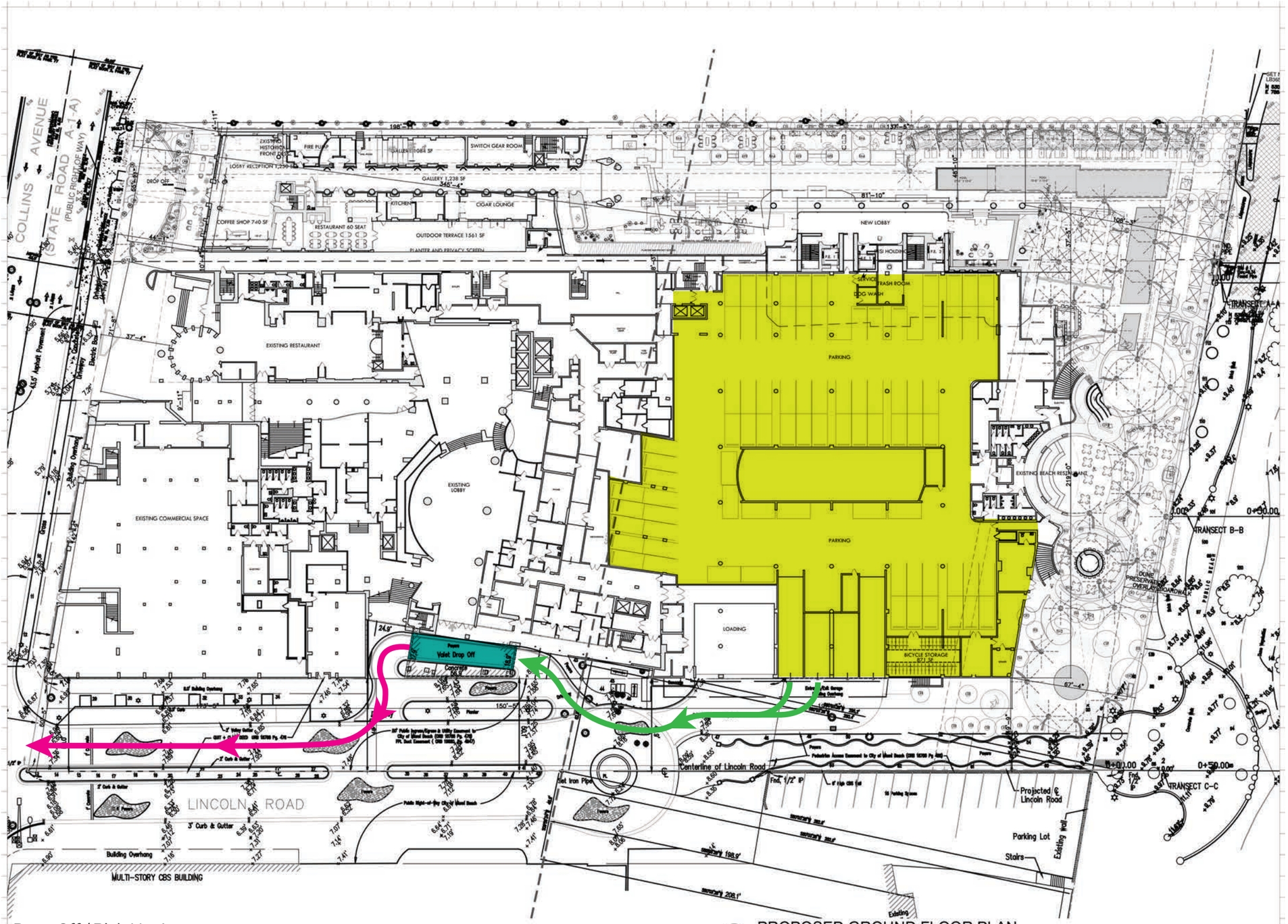
Architect of Record:
Kobi Karp Architecture and Interior Design, Inc.
571 NW 28TH ST
Miami, Florida 33137 USA
Tel. +1(305) 573 1818
Fax: +1(305) 573 3766

KOBI KARP
Lic. # AR0012578

PROPOSED FLOOR PLAN

RITZ-SAGAMORE

Date	08-16-2021	Sheet No.	A2.01
Scale	AS SHOWN		
Project	2018		



1 PROPOSED GROUND FLOOR PLAN
SCALE: 1" = 50'-0"

Valet Drop-Off / Pick-Up Area

Parking Area

Departure Route

From Valet Parking

Valet Operations - Departure

Rev.	Date	Rev.	Date

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF KOBI KARP AIA, AND MAY NOT BE DUPLICATED, USED, OR DISCLOSED WITHOUT THE EXPRESS WRITTEN CONSENT OF KOBI KARP ARCHITECTURE & INTERIOR DESIGN, INC. ©IA 2020

Ritz-Sagamore
1 Lincoln Road
Miami Beach, FL 33139

Owner:
Name — Di Lido Beach Resort LLC.
Address — EBJ Sagamore LLC.
Address — Sobe Sky Development LLC.
Tel:
Email

Consultant:
Name — STUDIO MUNGE.
Address — 25 Wingold Avenue,
Address — Toronto, ON Canada M6B 1P8
Tel: — 416.588.1668
Email

Consultant: LANDSCAPE ARCHITECT
Name — Naturalficial,
Address — 6915 Red Road, Suite 224
Address — Coral Gables, FL 33143
Tel: — 786.717.6564
Email

Consultant: MEP
Name — MG Engineering
Address — 6915 Red Road, Suite 224
Address — 2800 Biscayne Blvd
Tel: — Miami, FL 33137
Email — 305.755.3833

Consultant:
Name — Desimore Consulting Engineering
Address — 800 Brickell Avenue, 6th Floor
Address — Miami, FL 33131
Tel: — 305.441.0755
Email

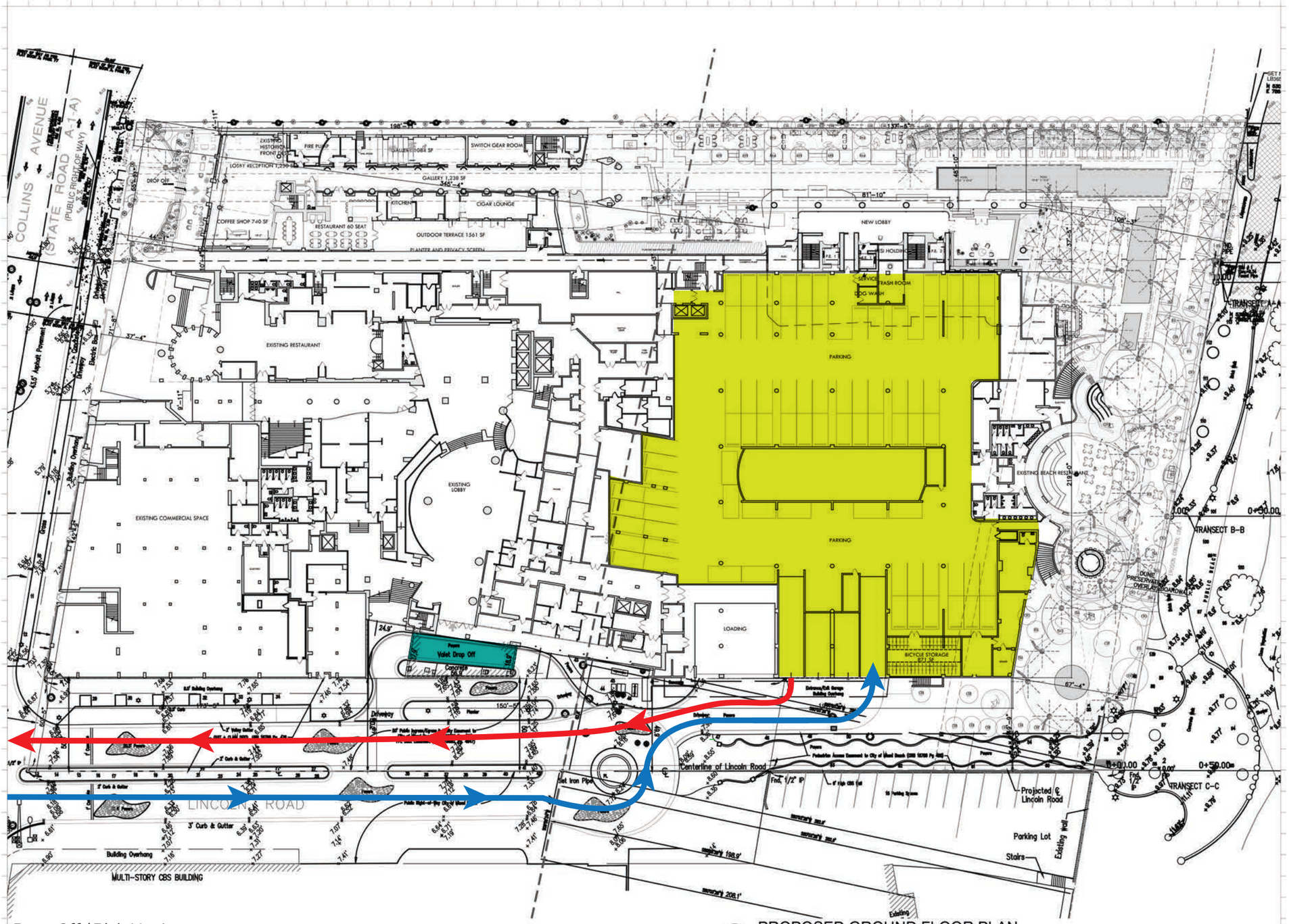
Architect of Record:
Kobi Karp Architecture and Interior Design, Inc.
571 NW 28TH ST
Miami, Florida 33137 USA
Tel. +1(305) 573 1818
Fax: +1(305) 573 3766

KOBI KARP
Lic. # AR0012578

PROPOSED FLOOR PLAN

RITZ-SAGAMORE

Date	08-16-2021	Sheet No.	A2.01
Scale	AS SHOWN		
Project	2018		



1 PROPOSED GROUND FLOOR PLAN
SCALE: 1" = 50'-0"

- Valet Drop-Off / Pick-Up Area
- Parking Area
- Resident Inbound (Self Parking)
- Resident Outbound (Self Parking)

Residential Circulation

Rev.	Date	Rev.	Date

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF KOBI KARP AIA, AND MAY NOT BE DUPLICATED, USED, OR DISCLOSED WITHOUT THE EXPRESS WRITTEN CONSENT OF KOBI KARP ARCHITECTURE & INTERIOR DESIGN, INC. ©IA 2020

Ritz-Sagamore
1 Lincoln Road
Miami Beach, FL 33139

Owner:
Name — Di Lido Beach Resort LLC.
Address — EBJ Sagamore LLC.
Address — Sobe Sky Development LLC.
Tel:
Email

Consultant:
Name — STUDIO MUNGE.
Address — 25 Wingold Avenue,
Address — Toronto, ON Canada M6B 1P8
Tel: — 416.588.1668
Email

Consultant: LANDSCAPE ARCHITECT
Name — Naturalficial,
Address — 6915 Red Road, Suite 224
Address — Coral Gables, FL 33143
Tel: — 786.717.6564
Email

Consultant: MEP
Name — MG Engineering
Address — 6915 Red Road, Suite 224
Address — 2800 Biscayne Blvd
Tel: — Miami, FL 33137
Email — 305.755.3833

Consultant:
Name — Desimore Consulting Engineering
Address — 800 Brickell Avenue, 6th Floor
Tel: — Miami, FL 33131
Email — 305.441.0755

Architect of Record:
Kobi Karp Architecture and Interior Design, Inc.
571 NW 28TH ST
Miami, Florida 33137 USA
Tel. +1(305) 573 1818
Fax: +1(305) 573 3766

KOBI KARP
Lic. # AR0012578

PROPOSED FLOOR PLAN
RITZ-SAGAMORE

Date	08-16-2021	Sheet No.	A2.01
Scale	AS SHOWN		
Project	2018		

Attachment D

Ritz-Carlson Sagamore
TRANSPORTATION DEMAND MANAGEMENT PLAN

The project's design and location will reduce the project vehicular traffic volumes as follows:

- The project is a proposed residential tower will be located in the existing Sagamore Hotel and will connect to the existing Ritz-Carlson Hotel. The existing hotels provide various onsite restaurants, retail, and recreational facilities which will result in a portion of the trips being captured within the development, or internal to the site.
- The project is offering covered bicycle storage for tenants, employees, and retail patrons on the southeast side of the parking garage.
- The project is located in South Beach, an extremely walkable and pedestrian area that offers the following:
    - Sidewalks along all roadways, midblock-crosswalks, and crosswalks at signalized intersections.
    - Various restaurants, retail, and recreational facilities (beaches, escape rooms, tours, ect.)
    - A CitiBike station is located approximately 0.1 miles southwest of the project location
    - A Bike and Segway rental shop is located approximately 0.1 mile west of the project location
- The project is in South Beach which provides residents, employees, and visitor's accessibility to mass transit. This feature will allow residents to use mass transit for their trip to/from home, work, and recreation. The closest transit stops to the project are located along the northeast side of the Washington Avenue / Lincoln Road intersection and south side of Lincoln Road approximately 200 feet east of the Washington Avenue / Lincoln Road intersection. These two stops accommodate the following transit:
    - The Collins Express and Middle Beach Loop trollies
    - Miami-Dade bus routes: S, 115, M, 150, 120, and C.

The development will also do the following to further reduce peak hour vehicle trips:

- Will encourage employers / landlords to participate in ridesharing programs through South Florida Commuter Services. Available information will be obtained and distributed to all residents and employees in the development.
- Miami-Dade County Transportation Agency current local and regional mass transit route and schedule information will be provided to potential transit users in a prominent public area of the development. The information provided and maintained on the premises will be updated, when necessary, at no less than six month intervals.

The location and implementation of these items will result in a reduction of peak hour vehicle trips.