Surfstyle

1155 Collins Avenue

Miami Beach, Florida

traffic study

prepared for:

CG Tides Village LLC

Traf Tech
ENGINEERING, INC.

January 2014

Traf Tech
ENGINEERING, INC.

January 29, 2014

Ms. Jeanine Rodriguez
Project Manager
CG Tides Village LLC
3200 Stirling Road
Hollywood, FL 33021

Re: Surfstyle – Miami Beach, Florida
Traffic Study

Dear Jeanine:

Traf Tech Engineering, Inc. is pleased to provide you with the results of the traffic study undertaken in connection with the proposed Surfstyle project located at 1155 Collins Avenue in the City of Miami Beach, Florida.

It has been a pleasure working with you on this project.

Sincerely,

TRAF TECH ENGINEERING, INC.

Joaquin E. Vargas, P.E.
Senior Transportation Engineer

8400 North University Drive, Suite 309, Tamarac, Florida 33321
Tel: (954) 582-0988 Fax: (954) 582-0989

TABLE OF CONTENTS

INTRODUCTION 1

INVENTORY 3
Existing Land Use and Access
Proposed Land Uses and Access 3

EXISTING CONDITIONS 4
Roadway System 4
Nearby Intersections 4

TRAFFIC COUNTS 6

TRIP GENERATION 8

TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT 10

TRAFFIC ANALYSES 13
Future Conditions Traffic Volumes 13
Level of Service (LOS) Analyses 14

OTHER MODES OF TRANSPORTATION 19
Miami-Dade Transit 19
Airport Shuttle Service 19
DecoBike 20
Pedestrian Network 20

PARKING AND QUEUING ANALYSIS 21

SUMMARY & CONCLUSIONS 23

LIST OF FIGURES

FIGURE 1 – Project Location Map 2
FIGURE 2 – Existing Lane Geometry 5
FIGURE 3 – Existing Traffic Counts – Peak Hour 7
FIGURE 4 – Project Trip Distribution 11
FIGURE 5 – Project Traffic Assignment 12
FIGURE 6 – Projected Current Year (2014) Traffic Volumes 15
FIGURE 7 – Background Traffic Conditions (Year 2015) 16
FIGURE 8 – Total Traffic with Project (Year 2015) 17

LIST OF TABLES

TABLE 1 – Trip Generation Summary 9
TABLE 2 – Intersection Levels of Service 18

Appendices

INTRODUCTION

Surfstyle is a proposed development to be located on the southeast corner of the intersection of Collins Avenue (State Road A1A) and 12th Street in the City of Miami Beach, Miami-Dade County, Florida. More specifically, the subject site is located at 1155 Collins Avenue. This project involves the redevelopment of the existing surface parking lot with retail space and a parking garage. The location of the project site is illustrated in Figure 1 on the following page.

Traf Tech Engineering, Inc. has been retained by CG Tides Village LLC to conduct a traffic study[1] in connection with the redevelopment of this property. This study addresses trip generation and the traffic impacts created by the proposed project on the nearby transportation network. This study is divided into nine (9) sections, as listed below:

1. Inventory
2. Existing Conditions
3. Traffic Counts
4. Trip Generation
5. Trip Distribution and Traffic Assignment
6. Traffic Analyses
7. Other Modes of Transportation
8. Parking and Queuing Analysis
9. Summary & Conclusions

[1] The methodology employed for this traffic impact study was discussed and agreed upon with City of Miami Beach staff on Friday, December 20, 2013. A summary of this meeting is presented in Appendix A.

Traf Tech
ENGINEERING, INC.

PROJECT LOCATION MAP

FIGURE 1
Surfstyle
Miami Beach, Florida

Existing Land Use and Access

As mentioned previously, the subject site currently contains a 45-space surface parking lot. Access to this parking lot is presently provided by two (2) driveways located on 12th Street.

Proposed Land Uses and Access

The proposed project will include 10,663 square feet of specialty retail space and a 148-space parking garage. Vehicular ingress to this project will be provided by a full access driveway to be located on 12th Street. Vehicular egress from the site will be provided via a left-turn only driveway onto Ocean Court. The proposed project is anticipated to be built and occupied by mid-2015. Appendix B contains the proposed site plan for the Surfstyle project.

EXISTING CONDITIONS

This section of the report addresses the transportation system located in the vicinity of the project site.

Roadway System

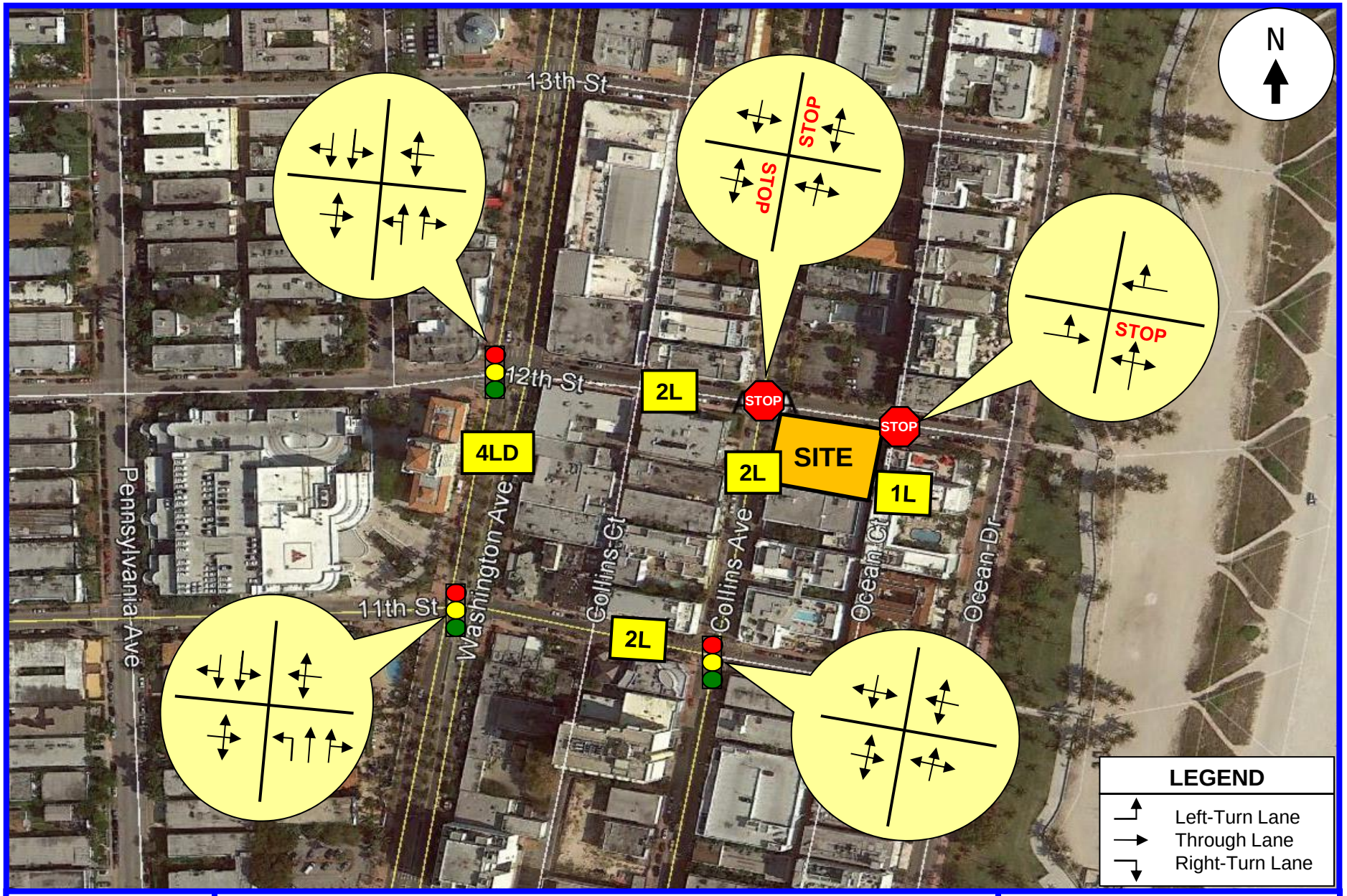
The roadway system located near the site includes Collins Avenue (State Road A1A), Washington Avenue, Ocean Court, 11th Street, and 12th Street. Collins Avenue is a two-lane undivided, north-south state-maintained principal arterial facility with a posted speed limit of 30 miles per hour (mph). There is on-street parking along both sides of this section of Collins Avenue. Washington Avenue is a four-lane divided, north-south local principal arterial roadway with on-street parking on both sides of the roadway. Ocean Court is a one-lane northbound local roadway. 11th Street and 12th Street are city-maintained two-lane local roadways with metered on-street parking throughout.

Nearby Intersections

With the assistance of City of Miami Beach staff, five (5) nearby intersections were identified as the locations that will be impacted most by the proposed redevelopment project. These intersections are:

- Collins Avenue and 11th Street (signalized)
- Collins Avenue and 12th Street (stop-controlled)
- Washington Avenue and 11th Street (signalized)
- Washington Avenue and 12th Street (signalized)
- Ocean Court and 12th Street (stop-controlled)

Figure 2 shows the existing lane geometry of the five (5) intersections selected for analysis purposes. The number of lanes on the street system surrounding the project site is also depicted in this figure.



Traf Tech
ENGINEERING, INC.

EXISTING LANE GEOMETRY

FIGURE 2
Surfstyle
Miami Beach, Florida

TRAFFIC COUNTS

As a result of the presently ongoing roadway construction along Collins Avenue, traffic counts performed for a previous analysis at this site were utilized for this analysis. Intersection turning movement counts at the following five (5) study intersections were obtained:

- Collins Avenue and 11th Street (signalized)
- Collins Avenue and 12th Street (stop-controlled)
- Washington Avenue and 11th Street (signalized)
- Washington Avenue and 12th Street (signalized)
- Ocean Court and 12th Street (stop-controlled)

Based upon a peak period analysis performed for this study area between February 16, 2012 (Thursday) and February 19, 2012 (Sunday), the peak period was determined to be on Saturdays between 8:30 PM and 10:30 PM. As a result, turning movement counts were performed on Saturday, March 3, 2012 during these peak hours. Figure 3 summarizes the results of the intersection turning movement counts undertaken during this time period. Appendix C contains the intersection turning movement counts, as collected in the field.

The signalized intersections within the project study area are maintained and operated by Miami-Dade County's Traffic Signals and Signs Division. The current signal timing plans for these intersections were obtained from the County and are included in Appendix D.

Traf Tech
ENGINEERING, INC.

EXISTING TRAFFIC COUNTS – PEAK HOUR

FIGURE 3
Surfstyle
Miami Beach, Florida

TRIP GENERATION

The trip generation for the Surfstyle project was based upon information contained in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual (9th Edition)*. According to the subject ITE manual, the most appropriate land use category for the proposed development is: Land Use 826 – Specialty Retail Center. The trip generation rates used to determine the vehicle trips associated with the Surfstyle project are presented below.

ITE Land Use 826 – Specialty Retail Center

Saturday Trip Generation
T = 42.04 (X)
Where T = number of Saturday trips and X = 1,000 SF of gross leasable area

PM Peak Hour of Generator
T = 5.02 (X) (56% inbound and 44% outbound) [1]
Where T = number of peak hour trips and X = 1,000 SF of gross leasable area

Given the urban location of the Surfstyle project, a multimodal reduction of 20% was applied to reflect reduced vehicle usage and greater reliance on walking, bicycling and public transportation. The proximity and operating characteristics of these alternative modes are described in subsequent sections of this report.

With 31 parking spaces required for the proposed retail component of this development, 117 parking spaces within the accompanying garage will be available for use of other nearby developments. According to the Urban Land Institute (ULI), public parking garages typically exhibit a turnover rate of approximately 20% during the peak hour. In order to conduct a conservative analysis, a 30% turnover rate was applied to the proposed Surfstyle parking garage. For the remaining 117 parking spaces, this translates to 35 trips during the PM peak hour. In addition, a trip credit, based upon field counts, was applied for the traffic associated with the existing surface parking lot.

[1] In the absence of Saturday - PM peak hour trip generation data for this land use, the data for the PM peak of the generator on a weekday was utilized for this analysis.

Table 1 below summarizes the gross and net new vehicle trips associated with the proposed redevelopment of the Surfstyle site.

TABLE 1
Trip Generation Summary
Surfstyle – Miami Beach, FL

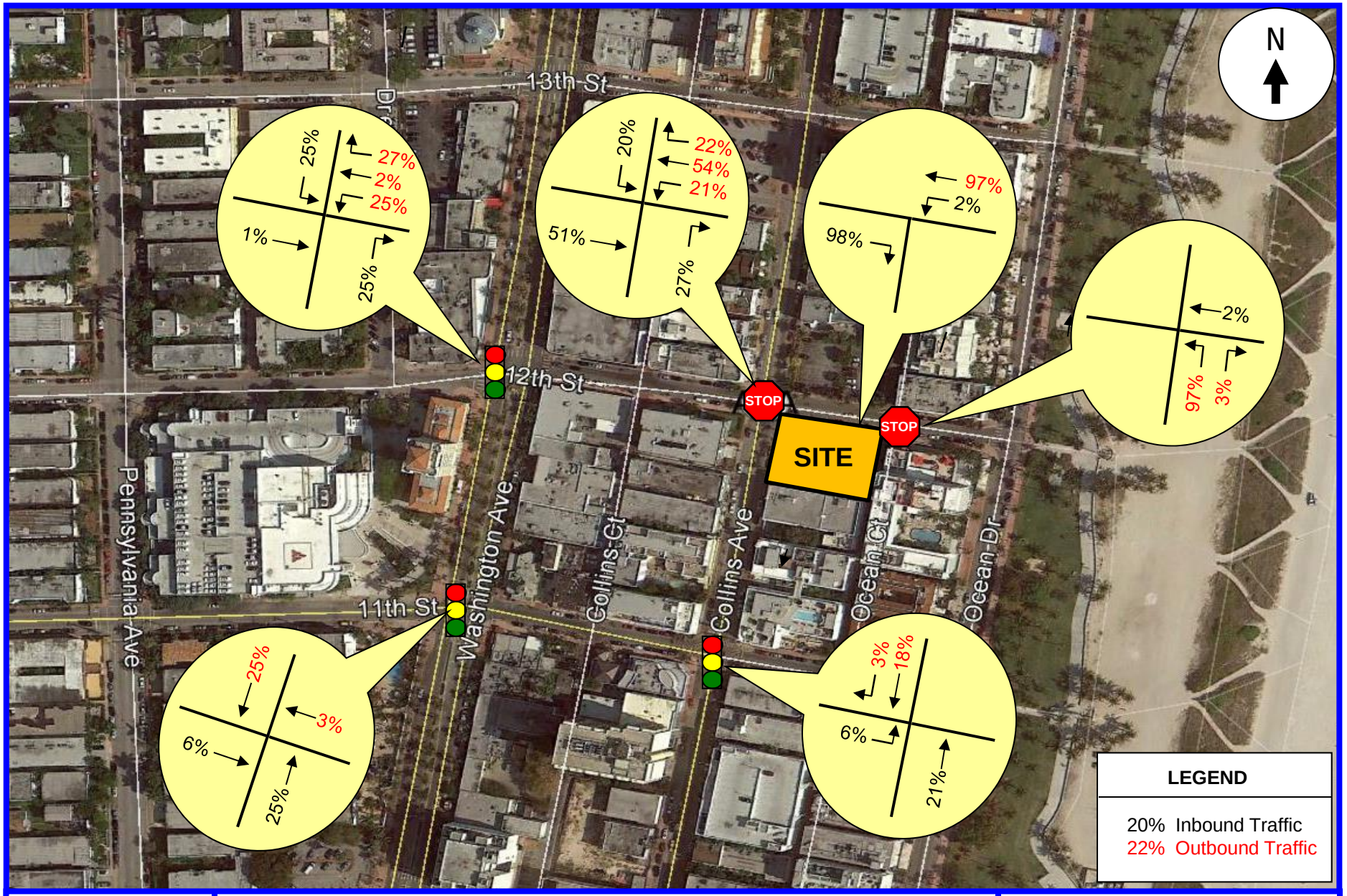
Land Use	Size	Daily Trips	PM Peak Hour Trips		
			Inbound	Outbound	Total
Specialty Retail	10,663 SF	448	30	24	54
Multimodal Reduction	-20%	-90	-6	-5	-11
Sub Total	**-**	**358**	**24**	**19**	**43**
Parking Garage	117 Spaces	-	18	17	35
Sub Total	**-**	**-**	**42**	**36**	**78**
Existing Trips	-	-	-18	-16	-34
Net New Trips	**-**	**-**	**24**	**20**	**44**

Source: ITE Trip Generation Manual (9th Edition) and Traf Tech Engineering, Inc. (January 2014).

As indicated in Table 1 above, the net new external trips anticipated to be generated by the proposed Surfstyle project consists of approximately 44 trips during the PM peak hour of the generator (24 inbound and 20 outbound trips).

TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

Consistent with the previous analysis conducted for this site, the trip distribution and traffic assignment for the project was based upon turning movement counts collected at the nearby study intersections. Figure 4 presents the project's trip distribution percentages and Figure 5 presents the project's PM peak hour traffic assignment.



Traf Tech
ENGINEERING, INC.

PROJECT TRAFFIC TRIP DISTRIBUTION

FIGURE 4
Surfstyle
Miami Beach, Florida

Traf Tech
ENGINEERING, INC.

PROJECT TRAFFIC ASSIGNMENT

FIGURE 5
Surfstyle
Miami Beach, Florida

TRAFFIC ANALYSES

This section of the study is divided into two (2) parts. The first part consists of developing the future conditions traffic volumes for the study area. The second part includes level-of-service analyses for existing and future conditions.

Future Conditions Traffic Volumes

Two (2) sets of future traffic volumes were developed. The first set includes project build-out conditions without the proposed Surfstyle project and the second set adds the net new vehicle trips anticipated to be generated by the subject project.

Peak Season Conversion Factor – In order to develop year 2015 background traffic volumes, two separate analyses were undertaken. The first analysis converts the existing peak hour traffic counts collected in the field during the month of March to average peak season conditions. Based on FDOT's Peak Season Factor Category report, an adjustment factor of 0.98 is required to convert traffic counts collected in early March to average peak season conditions (please see Appendix E).

Background Traffic Growth – The second analysis includes a growth factor to project 2012 peak season traffic volumes to the 2015 build-out year. Based on traffic growth data published by the FDOT for the traffic count stations located near the project (Site #5170 – Collins Avenue north of 21st Street has exhibited a slightly negative change in traffic volumes over the past 5 years while Site #5159 – Collins Avenue 200 feet north of 5th Street has exhibited a 3.15% annual growth rate over the past 5 years) and upon long range traffic data contained in the latest SERPM model (annual growth rate of 0.83% per year for the period 2005 to 2035), an annual growth rate of 1.0% was applied for the purposes of this study. Background data for this analysis is included in Appendix E.

Committed Traffic – The traffic associated with the approved but not yet constructed project to be located at 1201 Collins Avenue has also been accounted for in this project. Excerpts from the traffic study for this project are included in Appendix F.

Planned Roadway Improvements – The ongoing construction on Collins Avenue is associated with a Florida Department of Transportation (FDOT) Resurfacing, Restoration, and Rehabilitation (3R) project. Planned improvements within the project study area include:

- Northbound and southbound left turn lanes at Collins Avenue and 11th Street
- Northbound and southbound left turn lanes at Collins Avenue and 12th Street
- Signalization at the intersection of Collins Avenue and 12th Street

Future Traffic – The new trips generated by the Surfstyle project (refer to Table 1 and Figure 5) were added to the 2015 background traffic in order to develop future total traffic conditions. The future traffic projections for the study intersections (peak season adjustments, growth rates, committed traffic, and project traffic) are presented in tabular format in Appendix G. Figure 6 presents the projected current year (2014) volumes for each of the study intersections. Figures 7 and 8 present the year 2015 future traffic volumes for the study area. Figure 7 includes background traffic only (without the proposed project) and Figure 8 includes the additional traffic anticipated to be generated by the Surfstyle project.

Level of Service (LOS) Analyses

Intersection capacity/level of service (LOS) analyses were conducted for the five (5) study intersections. These analyses were undertaken following the capacity / level of service procedures outlined in the Highway Capacity Manual (HCM) using the SYNCHRO software. The results of the capacity analyses are summarized in Table 2. As indicated in Table 2, all study intersections are currently operating adequately and will continue to operate at a very good level of service in the year 2015 with the proposed project in place. The SYNCHRO printouts of the intersection capacity analyses are contained in Appendix H.

Traf Tech
ENGINEERING, INC.

EXISTING (2014) PEAK HOUR TRAFFIC VOLUMES

FIGURE 6
Surfstyle
Miami Beach, Florida

Traf Tech
ENGINEERING, INC.

FUTURE (2015) PEAK HOUR BACKGROUND (WITHOUT PROJECT) TRAFFIC VOLUMES

FIGURE 7
Surfstyle
Miami Beach, Florida

Traf Tech
ENGINEERING, INC.

FUTURE (2015) PEAK HOUR BACKGROUND (WITH PROJECT) TRAFFIC VOLUMES

FIGURE 8
Surfstyle
Miami Beach, Florida

TABLE 2 Intersection Levels of Service Surfstyle – Miami Beach, FL			
		Future Traffic Conditions	
Intersection	**2014 Existing**	**2015 w/o Project**	**2015 With Project**
Collins Ave / 11th Street	B (17.9)	B (18.0)	B (18.1)
Collins Ave / 12th Street	D (33.7) *	B (14.4)	B (16.1)
Washington Ave / 11th Street	B (13.7)	B (13.8)	B (13.8)
Washington Ave / 12th Street	B (11.8)	B (11.9)	B (12.1)
Ocean Ct / 12th Street	A (7.5) *	A (8.5) *	A (8.8) *

Source: Highway Capacity Manual and SYNCHRO
Legend: B (11.9) = LOS (Average Delay – Seconds / Vehicle)
** At stop-controlled intersections, the LOS on the critical side street is documented in this table.*

OTHER MODES OF TRANSPORTATION

Throughout much of Miami Beach, and specifically within the immediate area of the proposed Surfstyle project, there are many convenient and cost-effective transportation alternatives for residents and visitors alike. As noted earlier in this report, a trip reduction factor of 20% was incorporated into this traffic analysis to reflect those patrons that are likely to avail themselves of these alternative travel modes as opposed to the automobile. Several of the more prominent modes in this area include bus transit services, the Deco Bike, the airport shuttle service and the sidewalk network throughout the surrounding area. Each of these is explained in further detail below.

Miami-Dade Transit

Transit services on Miami Beach are provided by Miami-Dade Transit. There are numerous transit routes serving the immediate study area including 103 Route C, Route 150, Route 120 Beach MAX and the Route 123 SB Local. These transit routes provide frequent service and access to all of Miami-Dade County as well as connections to other destinations outside of the County. Miami-Dade Transit bus stops are provided between 11th Street and 12th Street along Washington Avenue.

Airport Shuttle Service

Shuttle service to and from the Miami International Airport (MIA) is provided by Miami-Dade Transit via Route 150 which is also known as the Miami Beach Airport Flyer. This transit service is offered from 44th Street on the north to South Pointe Drive on the south. Within the Surfstyle project study area, this service is provided along Washington Avenue with designated stops at 9th Street and 13th Street. On weekdays, this service is provided every 30 minutes between 6:00 AM and 12:00 AM (midnight).

DecoBike

DecoBike is a bicycle sharing and rental program on Miami Beach. This program offers a network of over 100 solar-powered bicycle rental stations and a fleet of over 1,000 bicycles which can be rented 24 hours per day. Within the immediate area of the Surfstyle, there are at least three (3) convenient DecoBike rental stations. These stations are as follows:

- Station 119: 11th Street and Washington Avenue
- Station 118: 13th Street and Washington Avenue
- Station 115: 13th Street and Collins Avenue

Pedestrian Network

Most of Miami Beach is considered a very walkable environment. Specifically within the project study area, each of the existing roadways has sidewalks on both sides and crosswalks are present at each of the major intersections. There are many attractive destinations within easy access to the Surfstyle and the project has been designed in such a manner as to provide direct access to this sidewalk network.

In summary, this project is located within an area that provides excellent access to alternative modes of transportation. It is expected that many of the patrons of the Surfstyle will utilize these services as opposed to driving passenger vehicles.

PARKING AND QUEUING ANALYSIS

Parking for the Surfstyle project will be provided via a 148-space mechanical parking garage. Access to the parking garage will be provided by a two-lane driveway on 12th Street and egress will be provided by a connection to Ocean Court. All parking will be valet only. The proposed design will provide a storage capacity for four (4) vehicles in advance of the mechanical elevators that will take vehicles to parking located on the third level, fourth level, and on the roof.

A queuing analysis has been conducted for the valet station associated with the mechanical garage. The vehicle storage (or queue) anticipated for this location was determined using information contained in ITE's *Transportation and Land Development*, Chapter 8 – Drive-In Facilities[1]. For this analysis, the following input variables were used:

- **Service Rate:** With a service rate of approximately two (2) minutes per vehicle, the two (2) mechanical elevators will be able to process approximately 60 vehicles in an hour.

- **Demand Rate:** Based upon the trip generation analysis, the inbound / outbound split of traffic is nearly 50% in / 50% out (42 inbound and 36 outbound). As a result, a lift that delivers a vehicle to a parking position will typically be able to return to the ground floor with another vehicle. As such, this analysis focuses on the peak hour demand of 42 inbound vehicles.

Using equation 8-9b and Table 8-11 of ITE's *Transportation and Land Development*, the maximum valet demand anticipated at the Surfstyle development, at the 90% confidence level, is four (4) vehicles. This queue (or storage) can be accommodated by the proposed number of service positions in advance of the mechanical elevator lifts. The results of this analysis are contained in Appendix I.

[1] By Vergil G. Stover and Frank J. Koepke.

During peak time periods, it is recommended that up to seven (7) valet attendants be stationed within the garage to ensure optimal operations. Of these valet attendants, it is recommended that four (4) be stationed within the vehicle drop-off / pick-up area to expedite the transition of the vehicle between the driver and the garage. The remaining three (3) attendants should be located on each of the three (3) floors of parking. This will expedite the maneuvering of the vehicles on and off of the mechanical elevator lifts.

SUMMARY & CONCLUSIONS

Surfstyle is a proposed development to be located on the southeast corner of the intersection of Collins Avenue (State Road A1A) and 12th Street in the City of Miami Beach, Miami-Dade County, Florida. More specifically, the subject site is located at 1155 Collins Avenue. This project involves the redevelopment of the existing surface parking lot with retail space and a parking garage.

Traf Tech Engineering, Inc. has been retained by CG Tides Village LLC to conduct a traffic study in connection with the redevelopment of this property. This study addresses trip generation and the traffic impacts created by the proposed project on the nearby transportation network. The conclusions of the traffic study are presented below:

- The net new external trips anticipated to be generated by the proposed Surfstyle project consists of approximately 44 trips during the PM peak hour of the generator (24 inbound and 20 outbound trips).

- All study intersections are currently operating adequately and will continue to operate at an acceptable level of service in the year 2015 with the proposed project in place.

- A review of the vehicle storage capacity provided at the subject valet drop-off / pick-up area indicates that up to four (4) vehicles can be accommodated. Based upon the queuing analysis performed for this site, this storage capacity is adequate to meet the anticipated peak demand. It is recommended that up to seven (7) valet attendants be stationed at this site during the peak time periods to ensure adequate operations and to minimize the possibility of occasional back-ups on the adjacent street system.

Traf Tech
ENGINEERING, INC.

TO: Xavier Falconi, PE
City of Miami Beach

FROM: Joaquin Vargas, PE
Karl Peterson, PE
Traf Tech Engineering

DATE: April 1, 2014

SUBJECT: Surfstyle Traffic Study
Response to Peer Review Comments

Surfstyle is a proposed retail facility and parking garage planned to be located at 1155 Collins Avenue in the City of Miami Beach, Florida. A traffic study for this project was submitted to the City in February 2014. A peer review of this study was performed by The Corradino Group. The following are our responses to their comments:

1. **Page 9 / Table 1 – It is not clear how the trip credit for the existing surface parking lot was calculated. Please provide supporting documentation.**

   Response: *The traffic (i.e. trip credit) associated with the existing surface parking lot was obtained from traffic counts performed at the parking lot driveways. These counts, which are included in Appendix C of the report, indicate that the peak hour inbound volume is 18 vehicles and the peak hour outbound volume is 16 vehicles. This information has been extracted from the appendices and presented as Attachment A to this memorandum. We have also summarized the results of these counts in Figure A-1. The source of this information should have been more clearly explained in the report and we apologize for the confusion.*

2. **Page 21 / Demand Rate – The inbound and outbound trips should match the trips in Table 1. Please revise language and associated analysis.**

   Response: *We believe that the volumes (42 inbound and 36 outbound) presented in the Demand Rate analysis section are consistent with those documented in Table 1. The sum of the vehicle trips associated with the specialty retail component (less the multimodal reduction) and the parking garage are 42 inbound vehicles and 36 outbound vehicles. There is a credit for existing trips associated with the existing surface parking lot; however, that does not apply to the actual demand for the proposed parking garage.*

3. **Page 21 / Parking and Queuing Analysis – The valet/mechanical parking operation is not explained clearly. The valet operation should be explained with the help of a figure, highlighting the distance from valet stalls to the parking facility. The valet and mechanical parking operation is also not explained for ground, second and third floors. This should include time required for elevators to reach the top most floors, the distance from the elevators to the farthest parking space and the time required to park the vehicle in farthest mechanical parking. In short, clarification is needed for providing the proposed 7 valet attendants, as there may be more valet attendants needed to adequately perform these operations during peak hours.**

   Response: *The queuing analysis is only applicable to the mechanical system. It was conservatively assumed that each vehicle will be parked or unparked within a 2-minute period. The purpose of the queuing evaluation was to ensure that thes storage capacity available in advance of the lift station is adequate which the report addresses.*

4. **The delivery vehicle path is not mentioned in the report. If off-site parking is proposed for deliveries then permit must be obtained through the City Parking Department.**

   Response: *Off-site parking for deliveries is not being sought for this project. Given the small scale nature of the retail component for the Surfstyle site, only small delivery vehicles will be used. These vehicles will make deliveries during off-peak periods and will utilize the driveway on 12th Street or the access point on the adjacent alley to access the first floor of the building where they will park for short durations.*

5. **Synchro Analysis – If required, revise synchro analysis based on above comment# 2. For all the three signalized intersections the cycle lengths and offsets are off when compared to MDC signal timing sheets. Please revise.**

   Response: *No adjustments to the Synchro analyses are required as a result of comment #2. Each of the signalized intersection analyses have been reviewed and the cycle lengths have been confirmed and the offsets have been corrected. The revised analyses are included in Attachment B.*

Traf Tech
ENGINEERING, INC.

August 6, 2018

Matthew Amster, Esq.
Bercow Radell Fernandez & Larkin
200 S. Biscayne Boulevard
Suite 850
Miami, Florida 33131

Re: Valet Operations Plan for 1155 Collins Avenue - Miami Beach

Dear Matt:

Pursuant to your request, Traf Tech Engineering, Inc. has prepared an updated valet analysis in connection with the previously approved Surfstyle project located on the south side of 12th Street between Collins Avenue and Ocean Court in the City of Miami Beach. Figure 1 on the following page shows the location of the project site. The purpose of this updated valet analysis is to document the anticipated number of valet attendants and the maximum on-site queueing anticipated with the new parking usage data, specifically after midnight use for 24/7 operation. The following is a summary of our findings.

Background Information

Parking will be provided via a 148-space mechanical parking garage. All parking will be valet only. The proposed design will provide a storage capacity for four (4) vehicles in advance of the mechanical elevators that will take vehicles to parking located on the second level, third level and on the roof (refer to Attachment A). The 148 parking spaces will be assigned as follows:

- 35 parking spaces for the retail use on the site
- 43 parking spaces dedicated to the Tides Village Hotel located on Ocean Drive (Attachment B shows the location of Tides Village Hotel and its relation to the 1155 Collins development)
- 70 parking spaces available to the public

Trip Generation

The trip generation associated with the three parking users was determined based on time-of-day parking utilization data published in the Urban Land Institute (ULI) *Shared Parking* (Second Edition) document. According to ULI, retail use has an hourly variation of up to 20% in parking usage. Similarly, hotel land uses have an hourly variation of up to 10%. Assuming that the peak parking of all three users (on-site retail, Tides Village Hotel and general public) coincides, the maximum hourly volume anticipated at the 1155 Collins garage is approximately 26 vehicles per hour (35 x 20% for on-site retail + 43 x 10% for the hotel users + 70 x 20% for general public).

Traf Tech
ENGINEERING, INC.

PROJECT LOCATION MAP

FIGURE 1
1155 Collins
Miami Beach, Florida

A queuing analysis has been conducted for the valet station associated with the mechanical garage. The vehicle storage (or queue) anticipated for this location was determined using information contained in ITE's *Transportation and Land Development*, Chapter 8 – Drive-In Facilities[1]. For this analysis, the following input variables were used:

- **Service Rate:** With a service rate of approximately two (2) minutes per vehicle, the two (2) mechanical elevators will be able to process approximately 60 vehicles in an hour.

- **Demand Rate:** As presented in the trip generation above, a maximum of approximately 26 peak hour vehicles are anticipated at this facility.

Using equation 8-9b and Table 8-11 of ITE's *Transportation and Land Development*, the maximum valet demand anticipated at the 1155 Collins development, at the 95% confidence level, is one (1) vehicle. This queue (or storage) can be accommodated by the proposed number of service positions in advance of the mechanical elevator lifts. The results of this analysis are contained in Attachment C.

During peak time periods, it is recommended that up to five (5) valet attendants be stationed within the garage to ensure optimal operations. Of these valet attendants, it is recommended that two (2) be stationed within the vehicle drop-off / pick-up area to expedite the transition of the vehicle between the driver and the garage. The remaining three (3) attendants should be located on each of the three (3) floors of parking. This will expedite the maneuvering of the vehicles on and off of the mechanical elevator lifts.

Please give me a call if you have any questions.

TRAF TECH ENGINEERING, INC.

Joaquin E. Vargas, P.E.
Senior Transportation Engineer

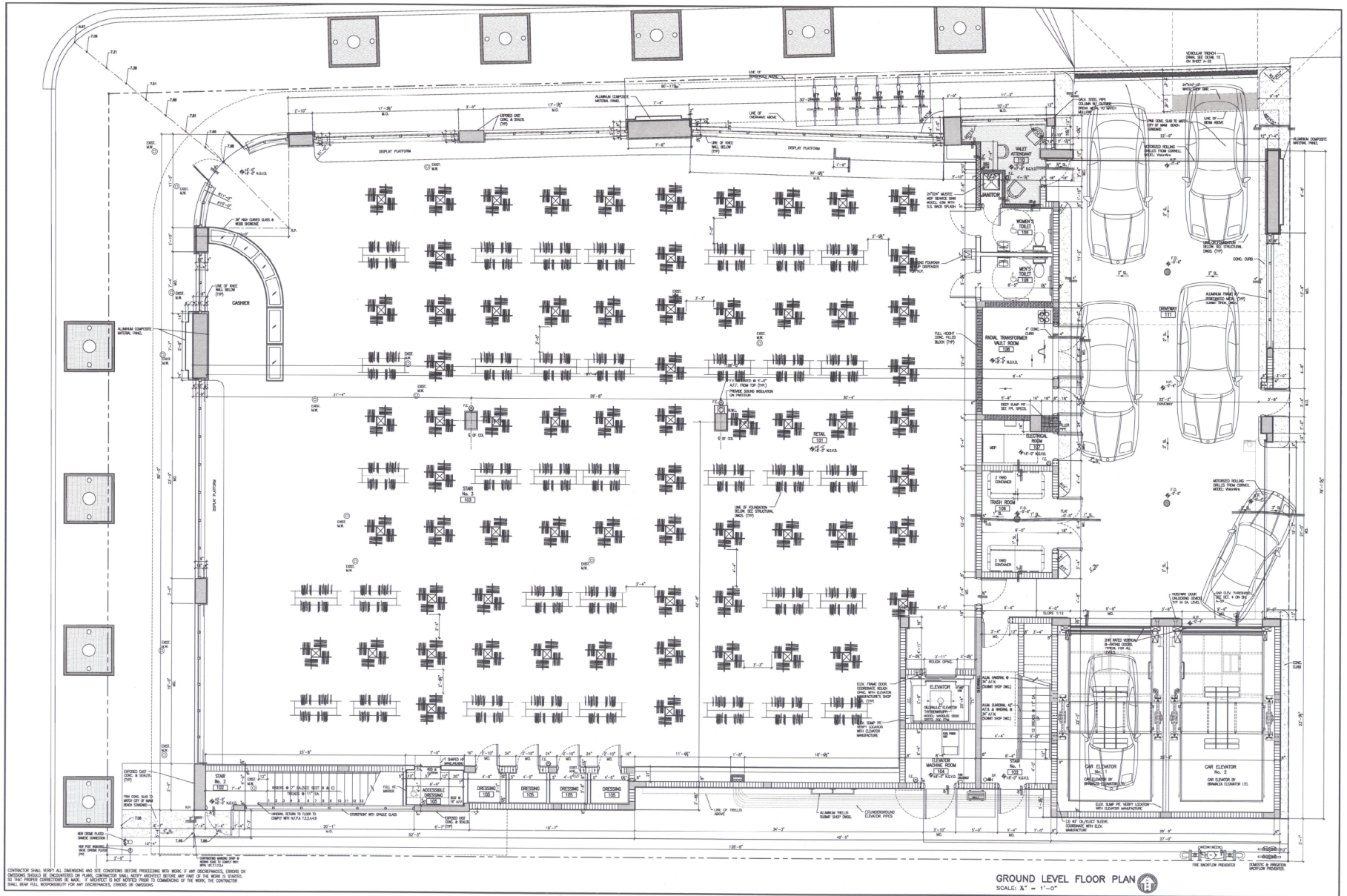
JOAQUIN E. VARGAS LICENSE No 44174 STATE OF FLORIDA PROFESSIONAL ENGINEER

August 6, 2018

[1] By Vergil G. Stover and Frank J. Koepke.

ATTACHMENT A

Ground Floor Plan



CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SITE CONDITIONS BEFORE PROCEEDING WITH WORK. IF ANY DISCREPANCIES, ERRORS OR OMISSIONS SHOULD BE ENCOUNTERED ON PLANS, CONTRACTOR SHALL NOTIFY ARCHITECT BEFORE ANY PART OF THE WORK IS STARTED, SO THAT PROPER CORRECTIONS BE MADE. IF ARCHITECT IS NOT NOTIFIED PRIOR TO COMMENCING OF THE WORK, THE CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR ANY DISCREPANCIES, ERRORS OR OMISSIONS.

These drawings and copies thereof furnished by the architect are his property they are not to be used on other work and are to be returned upon demand at the completion of work. If this drawing or any part thereof is used in any manner without the consent of the architect, the user thereof becomes indebted to the architect for full comission.

NEW RETAIL/PARKING BUILDING FOR:

SURFSTYLE

1155 Collins Ave. Miami Beach, FL 33139

CHARLES H. BENSON & ASSOCIATES ARCHITECTS, P.A.
architect planner interiors
1665 WASHINGTON AVE. 2nd. FLOOR, MIAMI BEACH, FLORIDA 33139 Ph: 305-532-6161 * Fax: 305-532-6151
ARCHITECTURE LICENSE # AR14022 NCARB CERTIFICATE # 42,136

DRAWN BY	SCALE	DATE	PROJECT NUMBER
Charles H. Benson	AS SHOWN	10-28-13	21315

A-2 of 12

ATTACHMENT B

Project Location Map and Tides Village Hotel Site

ALTA/NSPS LAND TITLE SURVEY

PREPARED FOR:
CG TIDES VILLAGE LLC
LYING AND BEING IN SECTION 3, TOWNSHIP 54 SOUTH, RANGE 42 EAST
CITY OF MIAMI BEACH, MIAMI-DADE COUNTY, FLORIDA.

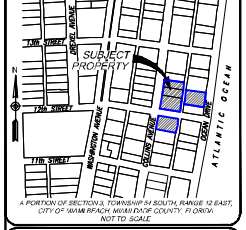
J.Hernandez & Associates Inc
LAND SURVEYORS AND MAPPERS
CERTIFICATE OF AUTHORIZATION No. LB6362
6905 NW 79th AVE, SUITE #9, MIAMI, FL 33166
(P) 305-526-6906 (E) info@jhsurveys.com

DRAWN BY: M.J.M.	CHECKED BY: J.G.H.	JOB NUM.: 151660
DATE: 11/10/16	DATE: 11/11/16	F.B. NO.: PG. 41

LEGEND AND ABBREVIATIONS

CONCRETE POLE
CONCRETE POWER POLE
CONCRETE LIGHT POLE
ALUMINUM POLE
ALUMINUM LIGHT POLE
WOOD POLE
WOOD POWER POLE
WOOD LIGHT POLE
TRAFFIC BOX
STREET LIGHT BOX
PHONE BOX
IRRIGATION BOX
ELECTRIC BOX
COMMUNICATION BOX
CABLE T.V. BOX
UNKNOWN BOX
TRAFFIC CONTROL BOX
CLEANOUT
BOLLARD
MINI GATE
ANCHOR
WATER METER
IRRIGATION METER
GAS METER
ELECTRIC METER
SECURICOLUMN
ROUND COLUMN
WALL BOX
IRRIGATION PUMP
GUARD POST
GROUND LIGHT
FLAG POLE
DRAINAGE WELL
SQUARE DRAINAGE
PB — PG — PB & PG
P.B. INLET
C.B.
CURB INLET
CIRCULAR DRAINAGE
CATCH BASIN
ACCESS MANHOLE
SWALE INLET
TRAFFIC SIGNAL POLE
TRAFFIC SIGN
SURVEILLANCE CAMERA
PEDESTRIAN CROSS SIGNAL
PAVEMENT ASPHALT
HANDICAP PAINT MARK
BABY STROLLER PAINT MARK
UNKNOWN MANHOLE
WATER MANHOLE
SEWER MANHOLE
PHONE MANHOLE
IRRIGATION MANHOLE
DRAIN TYP. MANHOLE
GAS MANHOLE
FIRE/GAS MANHOLE
ELECTRICITY MANHOLE
DRAINAGE MANHOLE
COMMUNICATION MANHOLE
WELL BRUSH MANHOLE
PARKING METER
PARKING MESH
WATER VALVE
SEWER VALVE
IRRIGATION VALVE
GAS VALVE
FORCE MAIN VALVE
VACUUM BREAKER ASSEMBLY
SIAMESE CONNECTION
POST INDICATOR VALVE
FIRE HYDRANT
DOUBLE DETECTOR CHECK VALVE
BACK FLOW PREVENTER
PROPERTY LINE
CENTERLINE
RIGHT-OF-WAY
BENCH
DELTA ANGLE
ARC DISTANCE
PERMANENT CONTROL POINT
PERMANENT REFERENCE MONUMENT
FLAT SLOPE AND TRIES
OVERHEAD UTILITY WIRES
OFFICIAL RECORDS BOOK
CONCRETE BLOCK STRUCTURE
CHORD BEARING
CHAIN LINK FENCE
WOOD FENCE
CALCULATED DISTANCE
FOUND IRON PIPE
FOUND NAIL & BRASS DISC
CLEAR
ENCROACHMENT
SEED OR LEGAL DISTANCE
MEASURED DISTANCE
RECORD OR PLATTED DISTANCE
RECORD CALCULATED
UTILITY EASEMENT
CONCRETE

LOCATION MAP



A PORTION OF SECTION 3, TOWNSHIP 54 SOUTH, RANGE 42 EAST, CITY OF MIAMI BEACH, MIAMI-DADE COUNTY, FLORIDA.
NOT TO SCALE

NOTES REGARDING SCHEDULE B-II OF TITLE COMMITMENT, FILE No.: 1062-3558101, ISSUED FIRST AMERICAN TITLE INSURANCE COMPANY, HAVING AN EFFECTIVE DATE OF OCTOBER 14, 2016 AT 8:00 P.M.

ITEM 10, NOTE: SCHEDULE B, PART I, WILL BE AMENDED TO ADD THE FOLLOWING:

14. COVENANT IN LIEU OF UNITY OF TITLE FOR OFF-STREET PARKING, RECORDED MARCH 20, 2015, IN OFFICIAL RECORDS BOOK 29596, AT PAGE 3355 (TRACTS 1 AND 3) - AFFECTS PROPERTY BUT NOT PLOTTABLE.
15. AMENDED AND RESTATED DECLARATION OF RESTRICTIVE COVENANTS FOR VALET PARKING, RECORDED MARCH 20, 2015, IN OFFICIAL RECORDS BOOK 29546, AT PAGE 2185, (TRACT 3) - AFFECTS PROPERTY BUT NOT PLOTTABLE.
16. UNITY OF TITLE AND RELEASE OF UNITIES OF TITLE, RECORDED OCTOBER 29, 2015, IN OFFICIAL RECORDS BOOK 29803, AT PAGE 1130, (TRACT 1) - AFFECTS PROPERTY BUT NOT PLOTTABLE.

ITEM 11, NOTE: SCHEDULE B, PART II, WILL BE AMENDED TO ADD THE FOLLOWING:

8. UNDERGROUND EASEMENT (BUSINESS) GRANTED TO LONZA POWER AND LIGHT COMPANY, RECORDED FEBRUARY 19, 2016, IN OFFICIAL RECORDS BOOK 29980 AT PAGE 917, (TRACT 1) - SHOWN ON SURVEY.
8. UNDERGROUND EASEMENT (BUSINESS) GRANTED TO FLORIDA POWER AND LIGHT COMPANY, RECORDED FEBRUARY 19, 2016, IN OFFICIAL RECORDS BOOK 29980 AT PAGE 915, (TRACT 3) - SHOWN ON SURVEY.
10. GRANT OF EASEMENT IN FAVOR OF ATLANTIC BROADBAND (MIAMI), LLC, RECORDED FEBRUARY 19, 2016, IN OFFICIAL RECORDS BOOK 29980, AT PAGE 915, (TRACT 1) - SHOWN ON SURVEY.
11. GRANT OF EASEMENT IN FAVOR OF ATLANTIC BROADBAND (MIAMI), LLC, RECORDED FEBRUARY 19, 2016, IN OFFICIAL RECORDS BOOK 29980, AT PAGE 922, (TRACT 1) - SHOWN ON SURVEY.
12. GRANT OF EASEMENT IN FAVOR OF ATLANTIC BROADBAND (MIAMI), LLC, RECORDED FEBRUARY 19, 2016, IN OFFICIAL RECORDS BOOK 29980, AT PAGE 926, (TRACT 1) - SHOWN ON SURVEY.
13. GRANT OF EASEMENT IN FAVOR OF ATLANTIC BROADBAND (MIAMI), LLC, RECORDED FEBRUARY 19, 2016, IN OFFICIAL RECORDS BOOK 29980, AT PAGE 4088, (TRACT 3, SHOWS SKETCH OF TRACT 1 IN ERROR) - SHOWN ON SURVEY.
14. CLAIM OF LIEN FILED BY RC GROUP, LLC, RECORDED JUNE 15, 2016, IN OFFICIAL RECORDS BOOK 30114, AT PAGE 2222, (TRACT 1) - AFFECTS PROPERTY BUT NOT PLOTTABLE.

PROPERTY INFORMATION

- OWNER: CG TIDES LLC, CG TIDES VILLAGE I & II, LLC, 1155 COLLINS LLC
- PROPERTY ADDRESS:
  TRACT 1: 1201-1221 COLLINS AVENUE, MIAMI BEACH FL 33139
  TRACT 2: 1155 COLLINS AVENUE, MIAMI BEACH, FL 33139
  TRACT 3: 1220 OCEAN DRIVE, MIAMI BEACH FL 33139
- PROPERTY FOLIO NUMBER: 02-3234-008-0430, 02-3234-008-0430, 02-3234-008-0450, 02-3234-008-0360 & 02-3234-008-0410
- PROPERTY IS ZONED "MXE" (MIXED USE ENTERTAINMENT)

REVISIONS

DATE	JOB No.	REV.	BY:

DATUM AND BENCHMARKS

1. ELEVATIONS SHOWN HEREON REFER TO NATIONAL GEODETIC VERTICAL DATUM OF 1929 (N.G.V.D. 1929) AND ARE EXPRESSED IN FEET.
2. BENCHMARKS:
   a. MIAMI-DADE MONUMENT X-70144 - (LEV. 9.12 LOC. - N. ST — 1st NORTH OF NORTH CODE OF PAVEMENT, WASHINGTON AVE — 105' WEST OF WEST EDGE OF PAVEMENT
   RM DESC.: US C & G BRASS DISC IN CORAL ROCK BASE OF AMERICAN LEGION WAR MEMORIAL DISK IS IN THE NE CORNER OF MEMORIAL MONUMENT.

SETBACK REQUIREMENTS

1201 - 1225 COLLINS AVENUE

SETBACK INFORMATION AS SHOWN ON 1201 VILLAGE CODES AND DATE SHEET A1.03, DATE 10/02/2012, LAST REVISED ON 03/14/2013, PREPARED BY KOBY KATZ ARCHITECTS.

FRONT (COLLINS AVE)	0.0'
SIDE INTERIOR	5.0'
SIDE STREET (12TH)	5.0'
REAR (ALLEY)	0.0'

SETBACK REQUIREMENTS

1155 COLLINS AVENUE

SETBACK INFORMATION AS SHOWN ON SURVEY-LE, SITE PLAN, SHEET A1, LAST REVISED ON 07/03/2014, PREPARED BY CHARLES H. BENSON & ASSOCIATES ARCHITECTS

FRONT (COLLINS AVE)	10.0'
SIDE INTERIOR	5.0'
SIDE STREET (12TH)	5.0'
REAR (ALLEY)	0.0'

SETBACK REQUIREMENTS

1220 OCEAN DRIVE

SETBACK INFORMATION AS SHOWN ON CITY OF MIAMI BEACH, CODE OF ORDINANCE SEC. 142-341, RESTRICTED MINIMUM, HOTEL MXE MIXED USE ENTERTAINMENT DISTRICT

PEDESTAL FRONT (OCEAN DRIVE)	10.0'
PEDESTAL SIDE INTERIOR	5.0'
PEDESTAL SIDE STREET	5.0'
REAR (ALLEY)	0.0'

LEGAL DESCRIPTION

TRACT 1:

PARCEL 1:
LOT 5, AND THE SOUTH 40 FEET OF LOT 10, BLOCK 17, OF OCEAN BEACH, ADDITION NO. 2, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 2, AT PAGE 56, OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA.

PARCEL 2:
LOT 11, AND (TO NORTH "0" FEET OF LOT 10, BLOCK 17, OF OCEAN BEACH, ADDITION NO. 2, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 2, AT PAGE 56, OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA.

PARCEL 3:
LOT 12, BLOCK 17, OF OCEAN BEACH, ADDITION NO. 2, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 2, AT PAGE 56, OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA.

TRACT 2:

LOTS 6 AND 7, BLOCK 17, OF OCEAN BEACH, ADDITION NO. 2, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 2, AT PAGE 56, OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA, LESS THE FOLLOWING PERCENTAGES OF INTERESTS:

1.0993% HELD BY JOEL F. RUSSELL
0.0870% HELD BY ELLADORE LIMITED, AN ISLE OF MAN COMPANY
0.0870% HELD BY ELLADORE LIMITED, AN ISLE OF MAN COMPANY
1.5307% HELD BY GV INVESTMENTS MANAGEMENT, LLC, A FLORIDA LIMITED LIABILITY COMPANY

TRACT 3:

LOTS 13 AND 14, BLOCK 16, OF OCEAN BEACH, ADDITION NO. 2, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 2, AT PAGE 56, OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA.

TOGETHER WITH

RIGHTS AND BENEFITS OF THE EASEMENT AS CREATED IN THE GRANT OF EASEMENT FOR AIR RIGHTS, RECORDED MARCH 29, 2015, IN OFFICIAL RECORDS BOOK 29551, AT PAGE 3807.

LYING AND BEING IN SECTION 3, TOWNSHIP 54 SOUTH, RANGE 42 EAST, CITY OF MIAMI BEACH, MIAMI-DADE COUNTY, FLORIDA.

SURVEYOR'S NOTES

1. FIELD SURVEY WAS COMPLETED ON: NOVEMBER 10, 2016
2. LEGAL DESCRIPTION AS PROVIDED BY THE CLIENT
3. BUILDING DIMENSIONS:
   TRACT 1: 26,316± SQ.FT. (0.600 ACRES)
   TRACT 2: 12,998± SQ.FT. (0.298 ACRES)
   TRACT 3: 13,076± SQ.FT. (0.299 ACRES)
4. BEARINGS BASED ON AN ASSUMED BEARING OF S89°56'47"W ALONG THE WEST LINE OF LOTS 1 TO 7, BLOCK 17.
5. DISTANCES ALONG BOUNDARY LINES, AS SHOWN HEREON, ARE MEASURED AND/OR MEASURED UNLESS OTHERWISE NOTED.
6. INTERIOR LOT LINES, AS SHOWN HEREON, ARE FOR INFORMATIONAL PURPOSE ONLY, UNLESS OTHERWISE NOTED.
7. UNDERGROUND FOOTINGS, FOUNDATIONS AND UTILITIES HAVE NOT BEEN LOCATED AT THE TIME OF THIS SURVEY, UNLESS OTHERWISE NOTED.
8. ABOVEGROUND AND/OR VISIBLE UTILITIES HAVE BEEN LOCATED AT THE TIME OF THIS SURVEY, UNLESS OTHERWISE NOTED.
9. SUBJECT PROPERTY HAS A DIRECT PHYSICAL ACCESS TO AND FROM OCEAN DRIVE, 12th STREET, COLLINS AVENUE AND LOCAL COUNTY, ALL PUBLIC DEDICATED RIGHTS-OF-WAYS.
10. THIS ALTA/NSPS LAND TITLE SURVEY REFLECTS PLOTTABLE EASEMENTS AND RIGHTS-OF-WAYS SHOWN IN SCHEDULE B-II OF TITLE COMMITMENT FILE NO. 1062-3558101, ISSUED FIRST AMERICAN TITLE INSURANCE COMPANY, HAVING AN EFFECTIVE DATE OF OCTOBER 14, 2016 AT 8:00 P.M.
11. PARCELS 1, 2 AND 3 (TRACT 1) ARE CONTIGUOUS WITHOUT ANY GORES, GAP, OVERLAPS OR STRIPS OF LAND SEPARATING THEM.

FLOOD ZONE INFORMATION

SUBJECT PROPERTY IS LOCATED WITHIN FEDERAL FLOOD ZONE "AH" - EL 8' AS SHOWN ON FLOOD INSURANCE RATE MAP NUMBER 12086C0317L, DATED SEPTEMBER 11, 2009.

ELEVATION REFER TO NATIONAL GEODETIC VERTICAL DATUM OF 1929 AND IS EXPRESSED IN FEET.

CERTIFY TO:

- FIRST AMERICAN TITLE INSURANCE COMPANY
- OCEAN BANK, A FLORIDA BANKING CORPORATION ("SADA")
- ATIMA
- KTR TITLE COMPANY, INC.

SURVEYOR'S CERTIFICATION:

THIS IS CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE "2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS," JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 6, 7(a), 7(b)(1), 7(c), 8, 9, 11, 13, AND 17 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON NOVEMBER 10, 2016

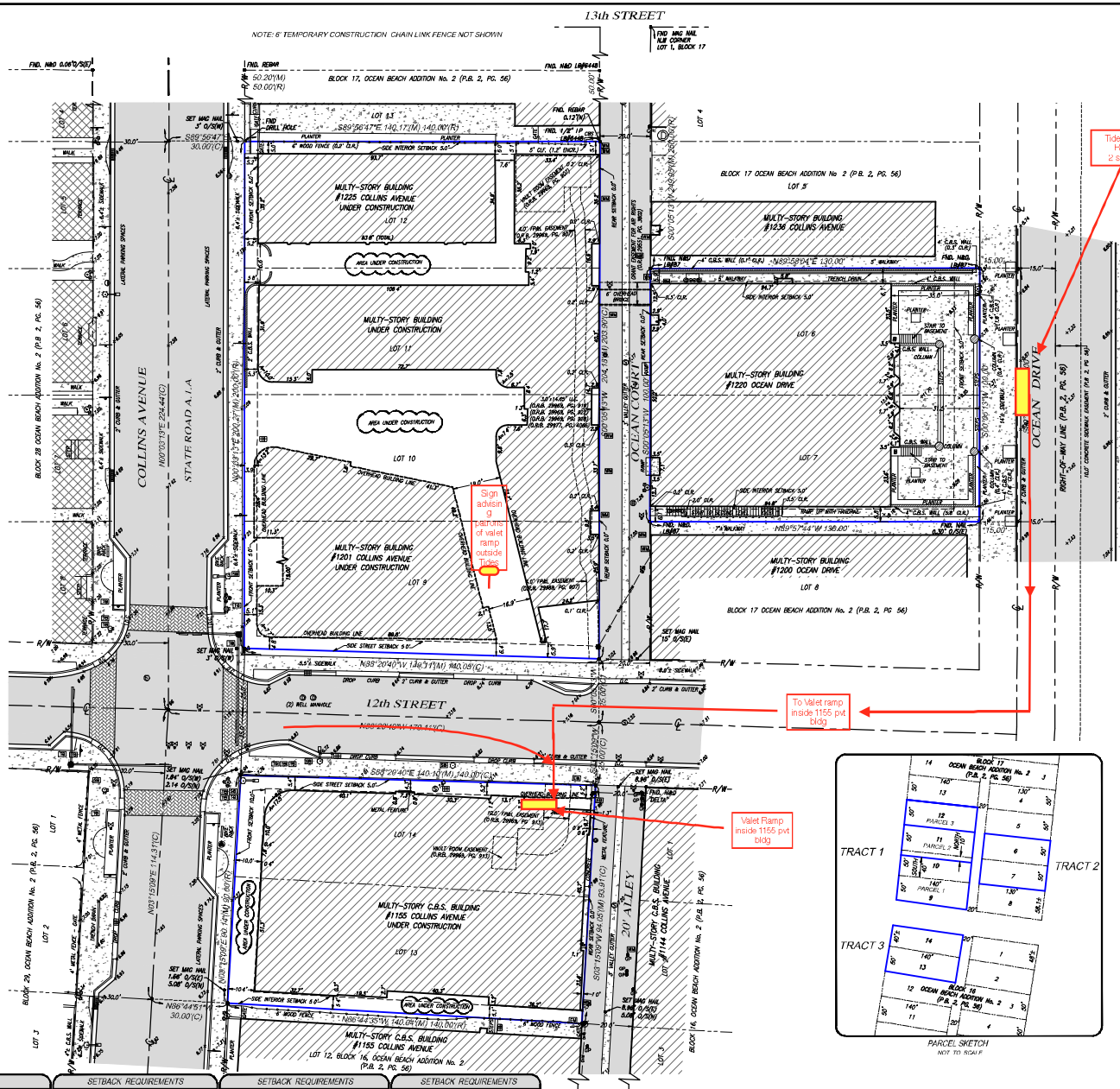
I HEREBY CERTIFY THAT THIS "ALTA/NSPS LAND TITLE SURVEY" OF THE PROPERTY DESCRIBED HEREON IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AS HEREINAFTER SURVEYED AND DRAWN UNDER MY SUPERVISION AND DIRECTION. THIS SURVEY COMPLIES WITH STANDARDS OF PRACTICE REQUIREMENTS ADOPTED BY THE FLORIDA STATE BOARD OF SURVEYORS AND MAPPERS AND PURSUANT TO CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE.

THIS CERTIFICATION DOES NOT EXTEND TO ANY UNNAMED PARTIES.

JOSE G. HERNANDEZ, PRESIDENT
PROFESSIONAL LAND SURVEYOR No. 6952
STATE OF FLORIDA

THIS SURVEY IS NOT VALID UNLESS IT BEARS THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

THIS IS A BOUNDARY SURVEY
PROJECT NUMBER: MD-135
SHEET NUMBER: 1 OF 1


13th STREET
12th STREET
11th STREET
COLLINS AVENUE
STATE ROAD A1A
OCEAN DRIVE
20' ALLEY
NOTE: 6' TEMPORARY CONSTRUCTION CHAIN LINK FENCE NOT SHOWN
BLOCK 17, OCEAN BEACH ADDITION No. 2 (P.B. 2, PG. 56)
BLOCK 28, OCEAN BEACH ADDITION No. 2 (P.B. 2, PG. 56)
BLOCK 29, OCEAN BEACH ADDITION No. 2 (P.B. 2, PG. 56)
BLOCK 16, OCEAN BEACH ADDITION No. 2 (P.B. 2, PG. 56)
MULTY-STORY BUILDING #1225 COLLINS AVENUE UNDER CONSTRUCTION
MULTY-STORY BUILDING #1236 COLLINS AVENUE
MULTY-STORY BUILDING UNDER CONSTRUCTION
MULTY-STORY BUILDING #1201 COLLINS AVENUE UNDER CONSTRUCTION
MULTY-STORY BUILDING #1220 OCEAN DRIVE
MULTY-STORY BUILDING #1200 OCEAN DRIVE
MULTY-STORY C.B.S. BUILDING #1155 COLLINS AVENUE UNDER CONSTRUCTION
MULTY-STORY C.B.S. BUILDING #1144 COLLINS AVENUE
AREA UNDER CONSTRUCTION
Tides Valet Ramp 2 spaces
Sign advising of patrons of valet ramp outside Tides
To Valet ramp inside 1155 pvt bldg
Valet Ramp inside 1155 pvt bldg
LOT 1
LOT 2
LOT 3
LOT 4
LOT 5
LOT 6
LOT 7
LOT 8
LOT 9
LOT 10
LOT 11
LOT 12
LOT 13
LOT 14
SET MAG NAIL 3" D/S(NE)
SET MAG NAIL 3" D/S(W)
FND. NAIL & DISK
FND. REBAR
FND. NAIL
FND. CROSS
FND. P.K. NAIL
FND. 1/2" I.P. CRC
FND. NAIL & DISK "LB6362"
FND. NAIL & DISK "LB6448"
FND. NAIL & DISK "LB6362" 0.12'(W)
FND. NAIL & DISK "LB6362" 0.13'(W)
FND. NAIL & DISK "LB6362" 0.19'(W)
FND. NAIL & DISK "LB6362" 0.20'(W)
FND. NAIL & DISK "LB6362" 0.06'(S&E)
FND. NAIL & DISK "LB6362" 0.09'(S&E)
FND. NAIL & DISK "LB6362" 0.10'(S&E)
FND. NAIL & DISK "LB6362" 0.11'(S&E)
FND. NAIL & DISK "LB6362" 0.12'(S&E)
FND. NAIL & DISK "LB6362" 0.13'(S&E)
FND. NAIL & DISK "LB6362" 0.14'(S&E)
FND. NAIL & DISK "LB6362" 0.15'(S&E)
FND. NAIL & DISK "LB6362" 0.16'(S&E)
FND. NAIL & DISK "LB6362" 0.17'(S&E)
FND. NAIL & DISK "LB6362" 0.18'(S&E)
FND. NAIL & DISK "LB6362" 0.19'(S&E)
FND. NAIL & DISK "LB6362" 0.20'(S&E)
FND. NAIL & DISK "LB6362" 0.21'(S&E)
FND. NAIL & DISK "LB6362" 0.22'(S&E)
FND. NAIL & DISK "LB6362" 0.23'(S&E)
FND. NAIL & DISK "LB6362" 0.24'(S&E)
FND. NAIL & DISK "LB6362" 0.25'(S&E)
FND. NAIL & DISK "LB6362" 0.26'(S&E)
FND. NAIL & DISK "LB6362" 0.27'(S&E)
FND. NAIL & DISK "LB6362" 0.28'(S&E)
FND. NAIL & DISK "LB6362" 0.29'(S&E)
FND. NAIL & DISK "LB6362" 0.30'(S&E)
FND. NAIL & DISK "LB6362" 0.31'(S&E)
FND. NAIL & DISK "LB6362" 0.32'(S&E)
FND. NAIL & DISK "LB6362" 0.33'(S&E)
FND. NAIL & DISK "LB6362" 0.34'(S&E)
FND. NAIL & DISK "LB6362" 0.35'(S&E)
FND. NAIL & DISK "LB6362" 0.36'(S&E)
FND. NAIL & DISK "LB6362" 0.37'(S&E)
FND. NAIL & DISK "LB6362" 0.38'(S&E)
FND. NAIL & DISK "LB6362" 0.39'(S&E)
FND. NAIL & DISK "LB6362" 0.40'(S&E)
FND. NAIL & DISK "LB6362" 0.41'(S&E)
FND. NAIL & DISK "LB6362" 0.42'(S&E)
FND. NAIL & DISK "LB6362" 0.43'(S&E)
FND. NAIL & DISK "LB6362" 0.44'(S&E)
FND. NAIL & DISK "LB6362" 0.45'(S&E)
FND. NAIL & DISK "LB6362" 0.46'(S&E)
FND. NAIL & DISK "LB6362" 0.47'(S&E)
FND. NAIL & DISK "LB6362" 0.48'(S&E)
FND. NAIL & DISK "LB6362" 0.49'(S&E)
FND. NAIL & DISK "LB6362" 0.50'(S&E)
FND. NAIL & DISK "LB6362" 0.51'(S&E)
FND. NAIL & DISK "LB6362" 0.52'(S&E)
FND. NAIL & DISK "LB6362" 0.53'(S&E)
FND. NAIL & DISK "LB6362" 0.54'(S&E)
FND. NAIL & DISK "LB6362" 0.55'(S&E)
FND. NAIL & DISK "LB6362" 0.56'(S&E)
FND. NAIL & DISK "LB6362" 0.57'(S&E)
FND. NAIL & DISK "LB6362" 0.58'(S&E)
FND. NAIL & DISK "LB6362" 0.59'(S&E)
FND. NAIL & DISK "LB6362" 0.60'(S&E)
FND. NAIL & DISK "LB6362" 0.61'(S&E)
FND. NAIL & DISK "LB6362" 0.62'(S&E)
FND. NAIL & DISK "LB6362" 0.63'(S&E)
FND. NAIL & DISK "LB6362" 0.64'(S&E)
FND. NAIL & DISK "LB6362" 0.65'(S&E)
FND. NAIL & DISK "LB6362" 0.66'(S&E)
FND. NAIL & DISK "LB6362" 0.67'(S&E)
FND. NAIL & DISK "LB6362" 0.68'(S&E)
FND. NAIL & DISK "LB6362" 0.69'(S&E)
FND. NAIL & DISK "LB6362" 0.70'(S&E)
FND. NAIL & DISK "LB6362" 0.71'(S&E)
FND. NAIL & DISK "LB6362" 0.72'(S&E)
FND. NAIL & DISK "LB6362" 0.73'(S&E)
FND. NAIL & DISK "LB6362" 0.74'(S&E)
FND. NAIL & DISK "LB6362" 0.75'(S&E)
FND. NAIL & DISK "LB6362" 0.76'(S&E)
FND. NAIL & DISK "LB6362" 0.77'(S&E)
FND. NAIL & DISK "LB6362" 0.78'(S&E)
FND. NAIL & DISK "LB6362" 0.79'(S&E)
FND. NAIL & DISK "LB6362" 0.80'(S&E)
FND. NAIL & DISK "LB6362" 0.81'(S&E)
FND. NAIL & DISK "LB6362" 0.82'(S&E)
FND. NAIL & DISK "LB6362" 0.83'(S&E)
FND. NAIL & DISK "LB6362" 0.84'(S&E)
FND. NAIL & DISK "LB6362" 0.85'(S&E)
FND. NAIL & DISK "LB6362" 0.86'(S&E)
FND. NAIL & DISK "LB6362" 0.87'(S&E)
FND. NAIL & DISK "LB6362" 0.88'(S&E)
FND. NAIL & DISK "LB6362" 0.89'(S&E)
FND. NAIL & DISK "LB6362" 0.90'(S&E)
FND. NAIL & DISK "LB6362" 0.91'(S&E)
FND. NAIL & DISK "LB6362" 0.92'(S&E)
FND. NAIL & DISK "LB6362" 0.93'(S&E)
FND. NAIL & DISK "LB6362" 0.94'(S&E)
FND. NAIL & DISK "LB6362" 0.95'(S&E)
FND. NAIL & DISK "LB6362" 0.96'(S&E)
FND. NAIL & DISK "LB6362" 0.97'(S&E)
FND. NAIL & DISK "LB6362" 0.98'(S&E)
FND. NAIL & DISK "LB6362" 0.99'(S&E)
FND. NAIL & DISK "LB6362" 1.00'(S&E)
FOUND NAIL & DISK "LB6362" 4.04' D/S
S89°56'47"E 140.17'(M) 140.00'(R)
N89°58'04"E 130.00'
N89°57'44"W 136.00'
N88°20'40"W 140.11'(M) 140.00'(R)
S89°20'40"E 140.10'(M) 140.00'(R)
N88°44'38"W 140.08'(M) 140.00'(R)
S00°15'09"E 140.00'(M) 140.00'(R)
N00°15'09"E 140.00

ATTACHMENT C

Valet Analysis

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

	$N = 1$	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

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

N = number of channels (service positions)

0.4 ------- 0.2286
0.433 ---- X
0.4 ------- 0.3333

X = 0.2632

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:

$$M = \left[\frac{\ln 0.05 - \ln 0.7303}{\ln 0.8956}\right] - 1 = \left[\frac{-2.996 - (-0.314)}{-0.110}\right] - 1$$

$$= 24.38 - 1 = 23.38, \text{ say } 23 \text{ vehicles.}$$

Queuing Analysis based on ITE Procedures

q = 26 veh/hr (demand rate)

Q = 30 veh/hr (service rate)

N = 2 (service channels)

$$p = \frac{q}{NQ} = 0.4333 \text{ (N = two)}$$

$Q_M = 0.2632$ (for N = 2)

Using Acceptable Probability of 5% (95% Confidence Level)

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

$$M = \left(\frac{Ln(0.05) - Ln(0.2632)}{Ln(0.4333)} \right) - 1$$

$$M = \left(\frac{-2.9957 - (-1.3348)}{-0.8363} \right) - 1$$

M = 1.98 – 1 = 0.98, say 1 vehicle

Traf Tech
ENGINEERING, INC.

Planning Board Application
PB18-0223
1155 Collins Avenue

View to SE from Collins Avenue & 12th Street

View E from Collins Avenue

Planning Board Application
PB18-0223
1155 Collins Avenue

View to NE from Collins Avenue

View to South from 12th Street

Planning Board Application
PB18-0223
1155 Collins Avenue

View to South from 12th Street

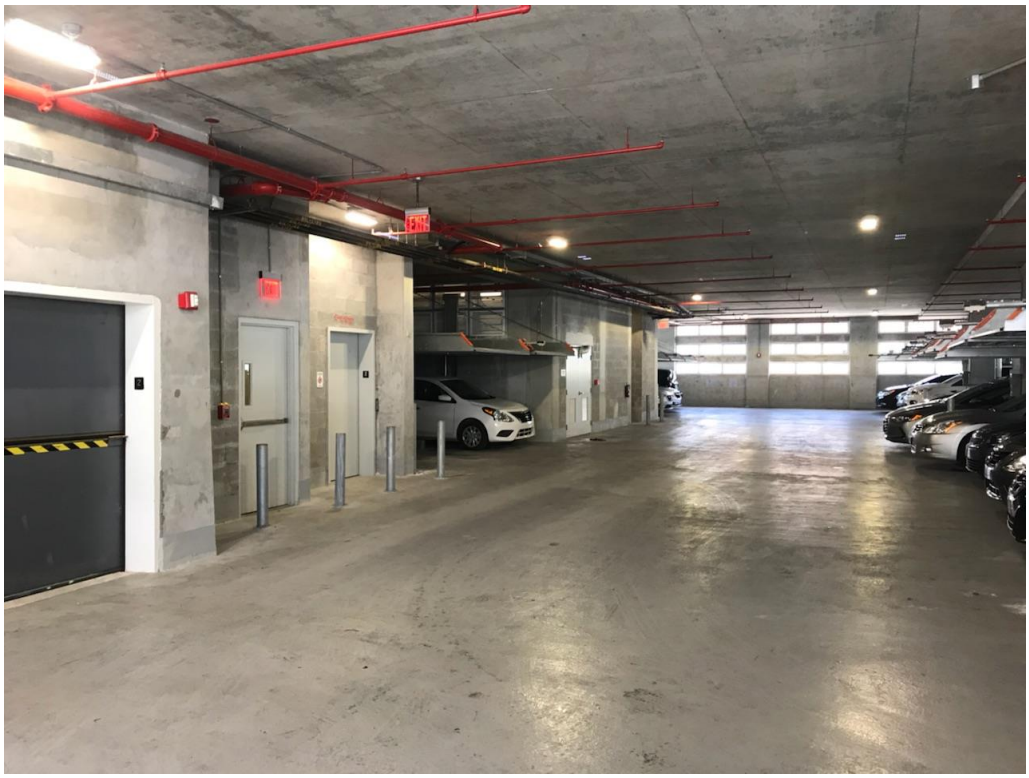
View of Entrance at NE Corner of Building

Planning Board Application
PB18-0223
1155 Collins Avenue

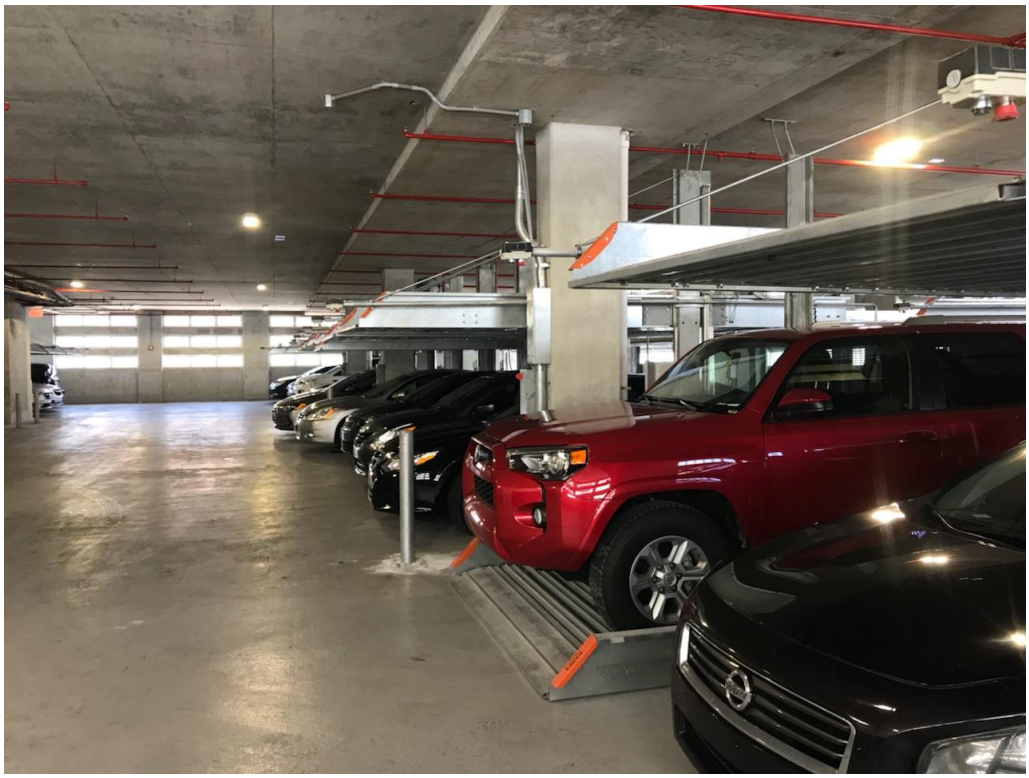
View of Entrance and Adjacent Alley

View of Inside of Garage

Planning Board Application
PB18-0223
1155 Collins Avenue



View of Inside of Garage



View of Inside of Garage