

TRAFFIC

Technical Memorandum:

**TRAFFIC IMPACT ASSESSMENT (UPDATE)
N STREET FOLLIES HOTEL BOARD OF
ZONING ADJUSTMENT APPLICATION,
NORTHWEST, WASHINGTON, D.C.**

(Case No.17337)

Prepared for:

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July 30, 2009

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TECHNICAL MEMORANDUM

DATE: July 30, 2009

TO: Mr. Morton A. Bender, President
“N” Street Follies, Inc.

FROM: Osborne R. George, P.E., PTOE/Ziqianli Wang

RE: Traffic Impact Assessment (Update) – Board of Zoning Adjustment
Application No. 17337, 1700 Block N Street, NW, Washington, D.C.

1.0 INTRODUCTION AND BACKGROUND

The Applicant, “N” Street Follies, Inc., plans to develop a hotel along the north side of N Street, in Northwest, Washington, D.C., within the property located at 1743 -1755 N Street. The property is zoned SP-1 (Special Purpose: Medium Density Residential/Limited Office), and is situated within the Dupont Circle Historic Overlay District. The proposal is to develop a boutique hotel consisting of ninety-eight (98) rooms, supported by 98 off-street parking spaces that would be accessed via the abutting public alley serving Square 158.

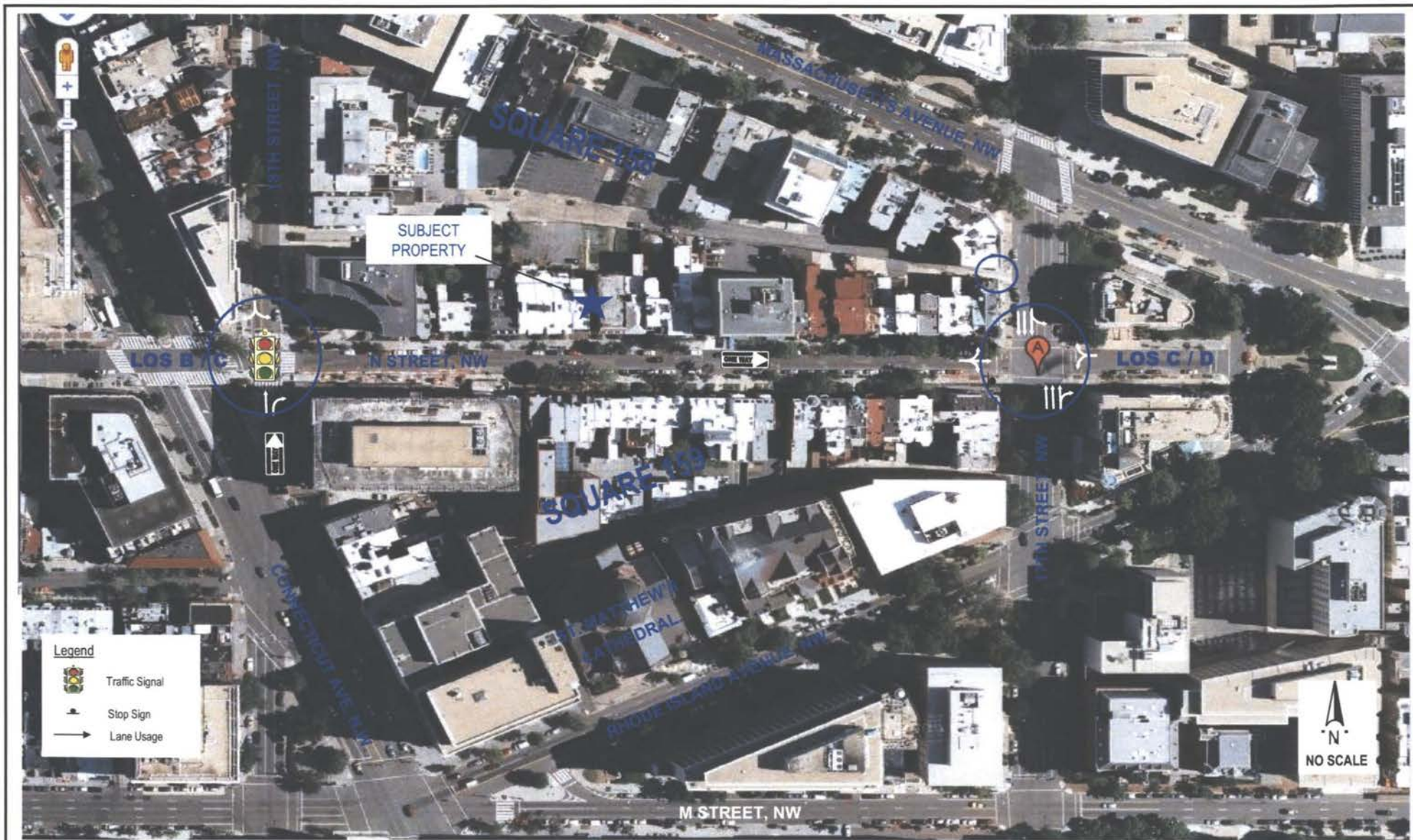
The Application was in the public hearing phase in early 2006, but was halted by a decision of the Board of Zoning Adjustment (BZA) regarding the status of review by the Historic Preservation Board. The BZA has resumed hearing the case, and they have directed the Applicant to submit any updates of plans and reports in preparation for a public hearing scheduled for October 6, 2009. This technical report presents the updated analysis with respect to the traffic and parking elements of the application.

As context, it is noted that a traffic impact assessment dated December, 2005 was included in the Applicant Statement (as Tab C). In addition, supplementary data was submitted in a memorandum dated February 20, 2006, and is in the Case Record as Exhibit 51. The current update focuses on a change in the number of rooms (i.e., from 77 to 98) and modification of the access to the parking off the public alley.

The District of Columbia Department of Transportation (DDOT) had reviewed the traffic studies referenced above, and issued a referral to the BZA. A copy of that document is included in Attachment A. DDOT’s primary concern pertained to the number of off-street parking spaces. For the current update, we also consulted with DDOT and copies of relevant items of correspondence are also included in Attachment A.

Given the location and the type of use proposed, this study finds that the Applicant's proposal does satisfy the requirements of the Zoning Regulation. The subject application involves a Special Exception in the DC/SP-1 Zone. This is in reference to the section which stipulates that the Applicant must demonstrate that the development proposal "is not likely to have adverse and objectionable impacts due to traffic and parking conditions." The remaining sections of this memorandum present the basis for this conclusion. In order to facilitate the presentation, the site location is highlighted on Exhibit 1.

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Exhibit 1: Site Location Map

1743 - 1755 N Street, Northwest, Washington, D.C.
 (BZA Application Case No. 17337)

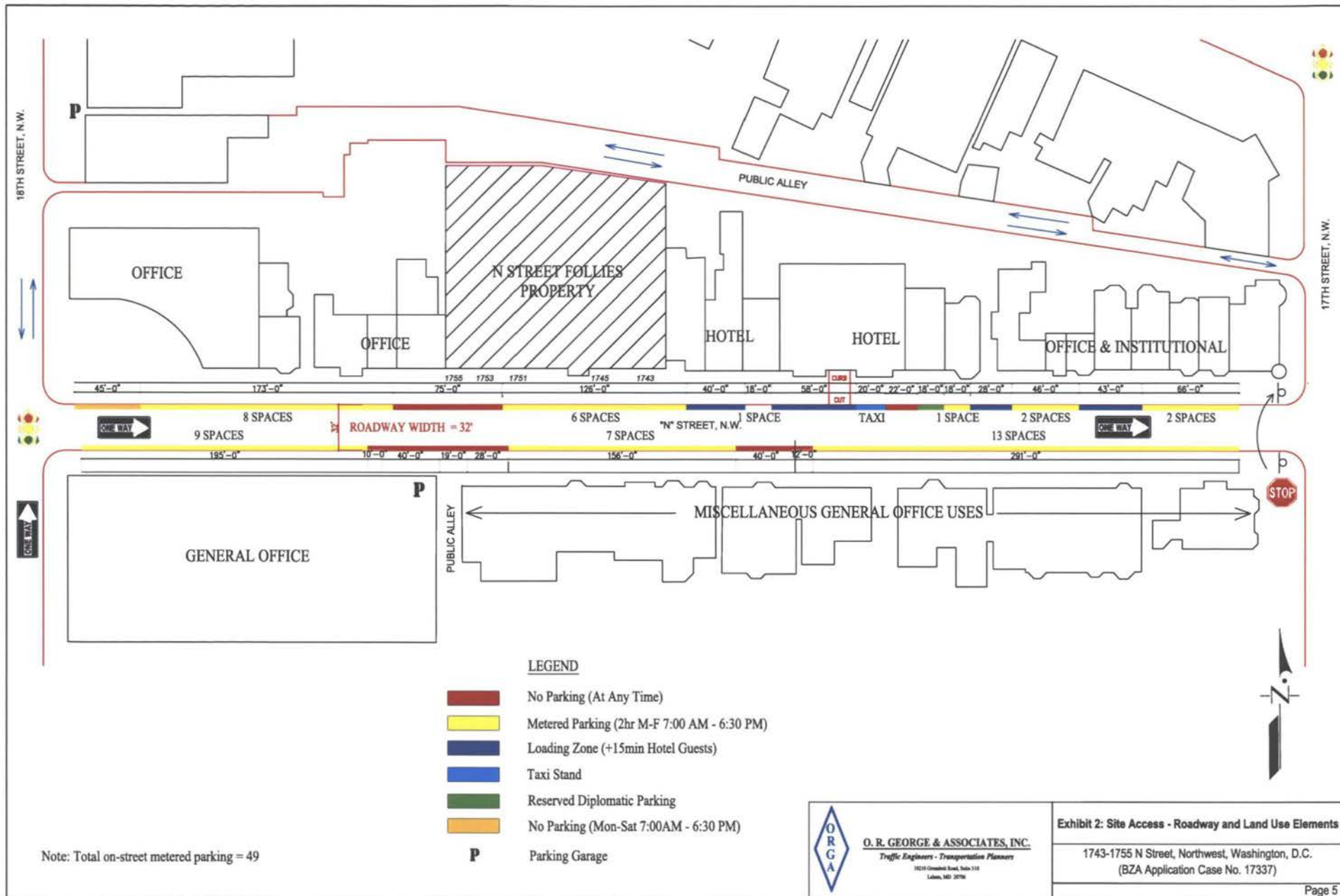
2.0 SITE LOCATION AND ACCESS SITUATION

There has been no change in the roadway network since the previous analyses were submitted. The following elements are highlighted with respect to the localized access to the subject property.

- 1) **1700 Block, N Street:** This is a 32-Ft. wide local roadway, serving one-way traffic flow (eastbound) within the 1700 Block, with metered parking provided along both sides of the roadway. The intersection with 18th Street is signalized, while the intersection with 17th Street is stop-sign controlled (on the N Street approach). The speed limit is not posted, and the 2 MPH restriction applies.
- 2) **17th Street:** This is a six (6) lane Minor Arterial roadway. The section south of Massachusetts Avenue serves two-way traffic flow, except during the AM peak period (7:00 - 9:30 AM) on weekdays when it is one-way southbound. On-street metered parking is allowed along both sides of 17th Street, NW within the defined study area, except during peak hours.
- 3) **18th Street:** This is a Minor Arterial on the City's roadway system. This roadway provides three (3) travel lanes in the vicinity of the site; and metered parking is also provided along this roadway.

It is important to note that the 1700 Block of N Street is situated within the City's Central Employment Area. The roadway section is quite typical of a local street block in terms of its cross-section, including adjacent sidewalks, on street parking, loading zones, alley and driveway access, etc. Permitted parking along this section of roadway is all metered. Abutting land uses are also quite mixed, as is typical for the Downtown area. Posted speed limit signs are not provided along the subject block of N Street, and the 25 MPH restriction would apply. This section of N Street serves approximately 2,500 vehicles on an average weekday, which is well within the typical range for this class of roadway.

Exhibit 2 shows the key roadway and land use elements which have a bearing on site access provisions for the subject property. Exhibit 3 shows the overall land use pattern and traffic controls for the broader sub-area that is bordered by Massachusetts Avenue to the north, Rhode Island Avenue to the south, 17th Street to the east, and 18th Street to the west.





3.0 PROPOSED BOUTIQUE HOTEL USE

As noted earlier, the Applicant proposes to convert the existing historic structure into a boutique hotel consisting of ninety-eight (98) rooms. In terms of potential trip generation and access needs of this use, it was important to appropriately define and characterize the Applicant's proposal. In discussion with hotel operators representing the Applicant¹, the following principal characteristics were determined to apply.

- a) **Definition:** Boutique hotel is a North American term describing hotels that are noted to be intimate and usually luxurious, and well differentiated from larger chain/branded hotels and motels. They provide highly personalized accommodation and associated services and facilities.
- b) **Hotel Size:** Boutique hotels are typically considerably smaller than main stream hotels and range in size from 3 to 100 guest rooms. Guest services are attended to by a 24-hour on-site staff.

The Applicant's site plans show that the proposed hotel will have rooms with considerable variation in size, ranging from 280 SF to 850 SF. The hotel's function rooms and restaurant are intended to serve the hotel guests and are not intended to cater to the public.

4.0 EXISTING TRAFFIC SITUATION

In conducting a traffic impact study, one of the principal determining factors is the level of weekday peak hour vehicle trip generation that can be expected from the proposed use. As is shown in Section 6.0, it is projected that the subject site will attract 20 – 25 vehicle trips during the typical weekday peak hour. Typically this level of trip generation does not require a formal traffic impact study. The previous submissions included an assessment of traffic conditions principally to address the access to the parking, and to assess potential safety considerations, appropriate for the Special Exception process.

The traffic data presented in the 2005 – 2006 studies were updated based on counts performed during July, 2009. The count volumes are shown in Exhibit 4 on page 9. [Note: Counts performed in July 2009 were shown to be appreciably less than the 2005/2006 data. The data was therefore factored by 2.0 percent per year to provide the basis for the current analysis. Further counts will be conducted after Labor Day, and any necessary adjustments will be documented in a memorandum supplement.] The factored data was analyzed using the capacity analysis procedures prescribed by DDOT, and the results are summarized in Table 1 on the following page.

¹ The Bernstein Companies, Northwest, Washington, D.C.

Table 1
Summary of Capacity Analysis Results –
Existing (2009) Weekday Peak Hour Traffic Situation

Intersection	AM Peak Hour		PM Peak Hour	
	Level of Service	Average Delay	Level of Service	Average Delay
1. N Street @ 17 th Street, NW*.	C	16.3	D	31.5
2. N Street @ 18 th Street, NW**	B	16.7	C	20.4

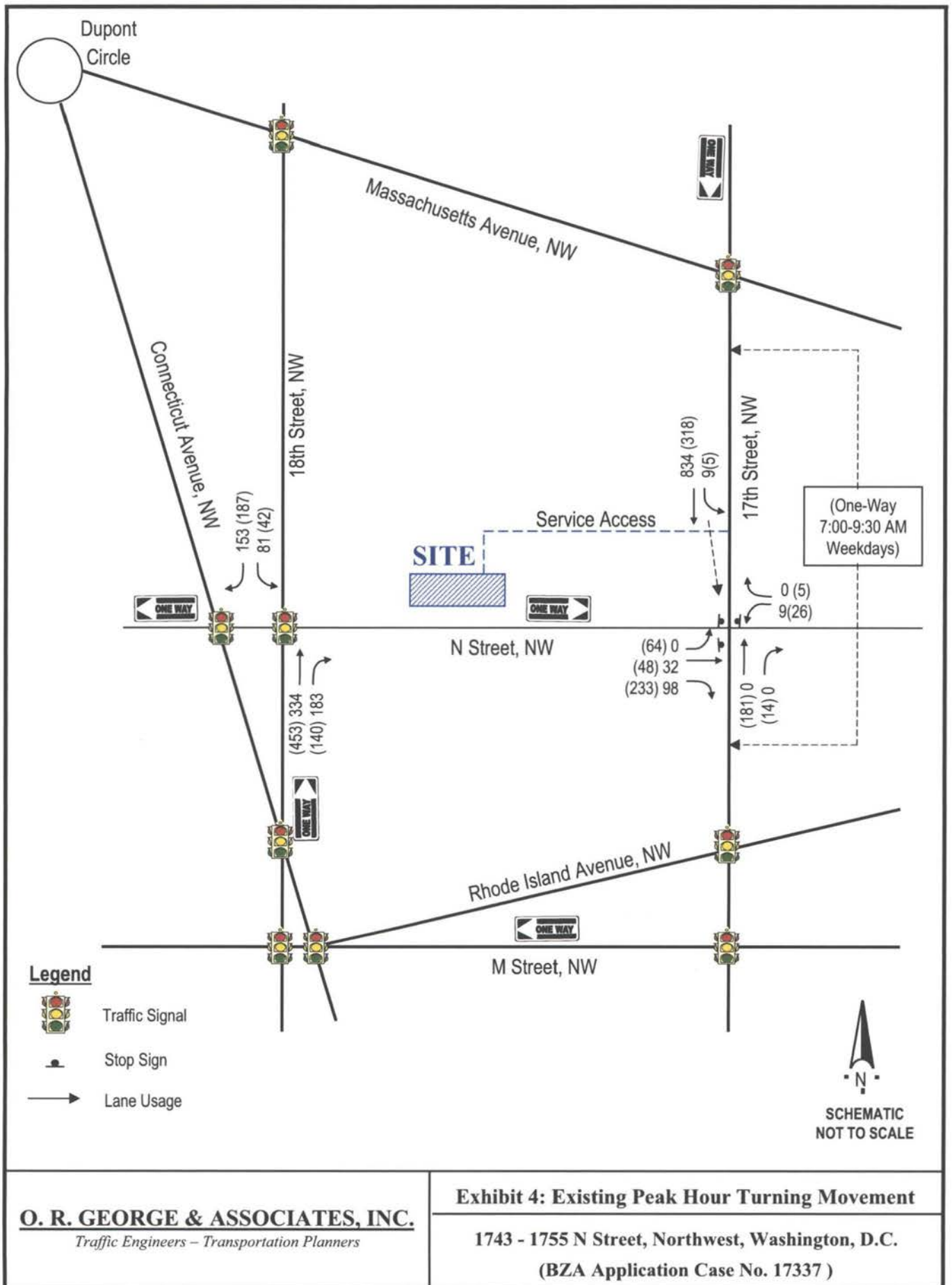
* Unsignalized intersection

** Signalized intersection

Source: O. R. George & Associates.

The capacity analysis results show quite favorable Levels of Service², due primarily to the limited numbers of conflicting movements, particularly for the N Street at 18th Street intersection, which has traffic flowing into the intersections from only two (2) directions. The same factor applies to the 17th Street at N Street intersection during the morning peak hour, when 17th Street operates one-way southbound. The Level of Service D condition shown for this location refers to the delays experienced along the N Street approach. The capacity analysis worksheets are included as Attachment C.

² "Level of Service" is a qualitative measure describing operational conditions within a traffic stream or at an intersection, and reflects their perception by drivers and other roadway users. Principal considerations are factors such as speed and travel time, delay, and freedom of maneuver, traffic interruptions, comfort, convenience and safety. Current engineering practice defines six (6) Levels of Service (A-F), with "A" representing best operating conditions, and Level of Service "F" representing the worst conditions. Level of Service D is generally considered by the District of Columbia as the minimum acceptable conditions for planning and design purposes.



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Exhibit 4: Existing Peak Hour Turning Movement

1743 - 1755 N Street, Northwest, Washington, D.C.
(BZA Application Case No. 17337)

5.0 EXISTING ALLEYWAY ACCESS AND PARKING SITUATION

As noted earlier, the Applicant's plan calls for access to the off-site parking and loading facilities to be provided off the alleyway abutting the property to the north. The previous and current proposal for parking and loading are summarized in the table following.

	<u>Previous (2005/2006)</u>	<u>Current (July 2009)</u>
• Off-Street Parking	96 Spaces	98 Spaces
• Loading Facilities	One 30-Ft Berth One 20-Ft Berth	One 30-Ft Berth None

The orientation of the loading facilities has been modified to be perpendicular to the alleyway. This change improves the ease in which vehicles can access the loading berths and platform areas. The parking spaces will continue to be within a modern automated parking structure. Information regarding the operational aspects of the automated parking are being developed by the project architects.

As part of the BZA proceedings in early 2006, considerable details were provided regarding traffic operations within the alley. This information has been reviewed and updated and summarized in Sections 5.1 and 5.2 following.

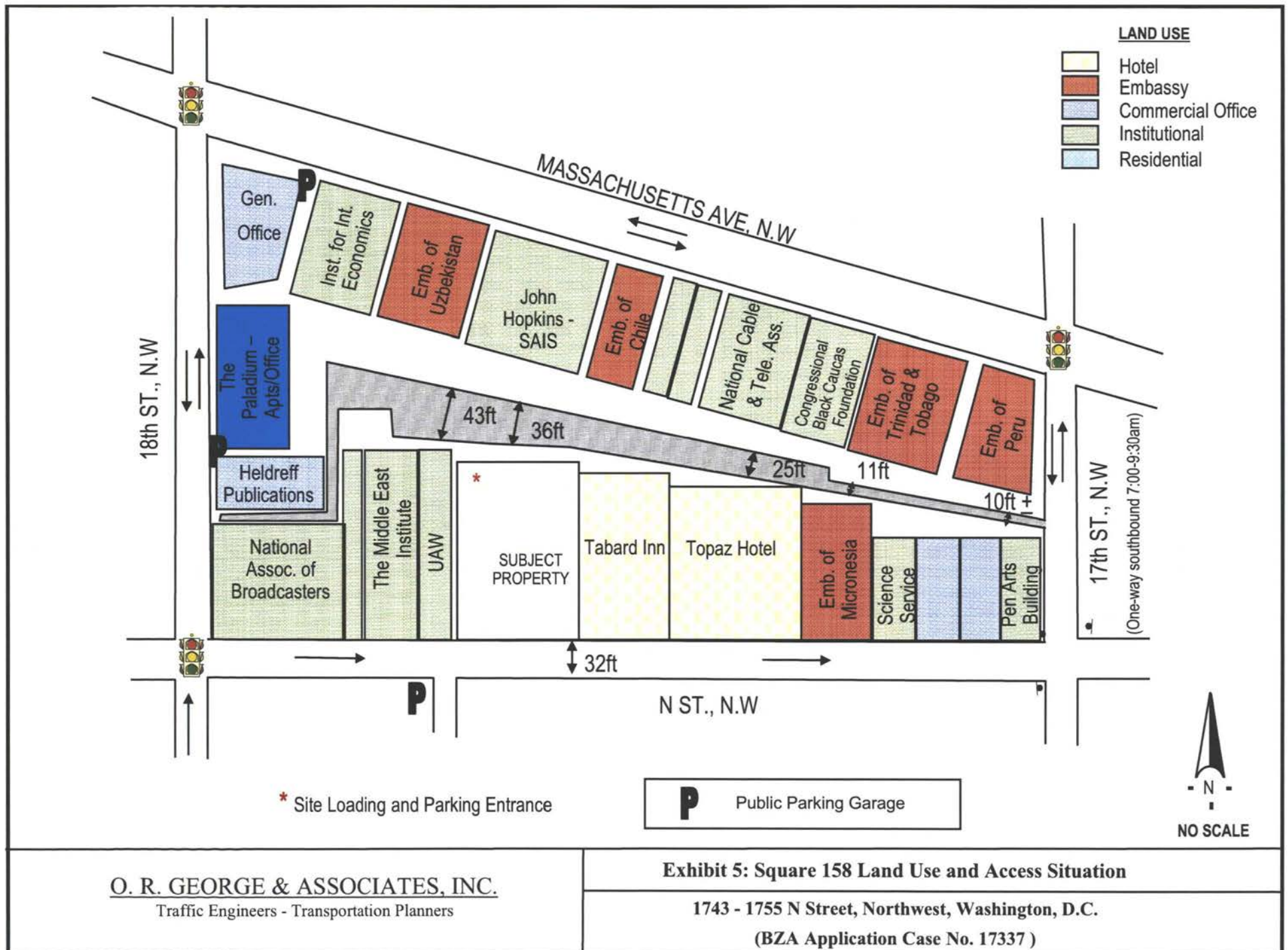
5.1 Existing Alleyway Usage

Exhibit 5 shows the configuration and key dimensions of the alleyway system serving Square 158. Usage of the alley is related to the abutting land uses served. Therefore Exhibit 5 shows the current uses of all the improved properties within the Square. As part of the preparation for the 2006 public hearings, a traffic survey for the alley was done on Saturday, January 21, 2006 and on Monday, January 23, 2006. Subsequently, a survey was done on Wednesday, February 8th. The data from these surveys are presented in Table 2 (page 12).

Of the vehicles surveyed over the three-day period comprising 21 hours (for which the data is shown in Table 2), the broad classification of vehicles using the alleyway was as follows:

- Passenger Vehicles 412 (95.6%)
- Trucks and Vans 19 (4.4%)

The data for the survey conducted specifically in response to the BZA's request included further classification by vehicle types, and is summarized in Table 3 (on page 13). It is important to note that the data presented in Tables 2 and 3 indicate vehicles entering and exiting, in order to show directional splits and the potential level of vehicle conflicts within the alley.



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Table 2
Square 158 Alleyway Usage Survey

	Sat. (Jan. 21, 2006)				Mon. (Jan. 23, 2006)				Wed. (Feb. 8, 2006)			
	Inbound		Outbound		Inbound		Outbound		Inbound		Outbound	
Time	Pass. Veh.	Truck	Pass. Veh.	Truck	Pass. Veh.	Truck	Pass. Veh.	Truck	Pass. Veh.	Truck	Pass. Veh.	Truck
7:00 – 8:00 AM					20	2	2	2	24	4	3	2
8:00 – 9:00 AM					65	2	6	2	61	2	7	2
9:00 – 10:00 AM									55	2	5	3
10:00 – 11:00 AM									14	1	10	0
11:00 – 12:00 PM	9	0	11	0								
12:00 – 1:00 PM	10	0	9	0	9	0	16	0				
1:00 – 2:00 PM	6	1	9	1	7	0	9	0				
2:00 – 3:00 PM	12	0	9	0								
3:00 – 4:00 PM	7	0	9	0					10	2	23	0
4:00 – 5:00 PM	5	0	9	0	7	0	28	1	10	2	22	4
5:00 – 6:00 PM					20	0	55	0	28	0	60	0
6:00 – 7:00 PM					12	0	58	0	11	2	61	1
Total	49	1	56	1	140	4	174	5	213	15	191	12

- Inbound Vehicles.
- Outbound Vehicles.

Source: Case Exhibit #51.

Table 3
Square 158 Alley Usage Survey - Classified

Time Period	Wednesday, February 8, 2006											
	Entering Alleyway						Exiting Alleyway					
	Pass. Veh	Trucks	Trash	Vans	Motor-cycles	Total	Pass. Veh	Trucks	Trash	Vans	Motor-cycles	Total
7:00 - 8:00 AM	24	1	1	2	0	28	3	1	1	0	0	5
8:00 - 9:00 AM	61	1	1	0	0	63	7	1	1	0	0	9
9:00 - 10:00 AM	55	0	2	0	1	58	5	1	2	0	0	8
10:00 - 11:00 AM	14	0	0	1	0	15	10	0	0	0	0	10
Total (AM)	154	2	4	3	1	164	25	3	4	0	0	32
3:00 - 4:00 PM	10	1	0	1	0	12	23	0	0	0	0	23
4:00 - 5:00 PM	10	0	0	2	0	12	22	1	0	3	0	26
5:00 - 6:00 PM	28	0	0	0	0	28	60	0	0	0	1	61
6:00 - 7:00 PM	11	0	0	2	0	13	61	0	0	1	0	62
Total (PM)	59	1	0	5	0	65	166	1	0	4	1	172
GRAND TOTAL	213	3	4	8	1	229	191	4	4	4	1	204

Source: Case Exhibit #51.

The data in the previous two (2) tables were intended to show the overall breakdown of vehicle types using the alley. However, an additional consideration is the level of vehicular activity occurring within the alley during the peak hours of operation. These peaks occur between 8:00 to 9:00 AM and 5:00 to 6:00 PM on weekdays. Table 4 summarizes vehicular activity in the alley obtained during weekday morning and afternoon peak hours in January and February, 2006, and again in April, 2009. Table 4 shows that the alley usage has dropped noticeably in 2009, but that passenger vehicles continue to be the dominant vehicle type. It is also important to note that vehicular traffic flow within the alleyway is heavily directional; that is to say predominantly inbound during the morning peak hour and predominantly outbound during the afternoon peak hour.

Table 4
Square 158 Alleyway Usage Survey – Comparisons (2006 – 2009)

Time	Mon. Jan 23 th , 2006				Wed. Feb 8 th , 2006				Thurs. April 16 th , 2009			
	Inbound		Inbound		Inbound		Inbound		Inbound		Inbound	
	Pass. Veh.	Truck	Pass. Veh.	Truck	Pass. Veh.	Truck	Pass. Veh.	Truck	Pass. Veh.	Truck	Pass. Veh.	Truck
8:00 – 9:00 AM	65	2	2	2	61	2	7	2	54	1	4	3
5:00 – 6:00 PM	20	0	55	0	28	0	60	0	19	0	44	0

Source: O.R. George & Associates, Inc (Case Exhibit #51).

The parking situation along the 1700 Block of N Street is also relevant. Details of the 49 metered parking spaces, reserved diplomatic spaces, loading zones and no parking zones were provided on Exhibit 2 (page 5). A parking usage survey was also conducted over the period 9:00 AM to 5:00 PM during April, 2009. The results are shown in Exhibit 6. The data shows heavy demand throughout the day, often with no spaces available, particularly between 3:00 and 5:00 PM.

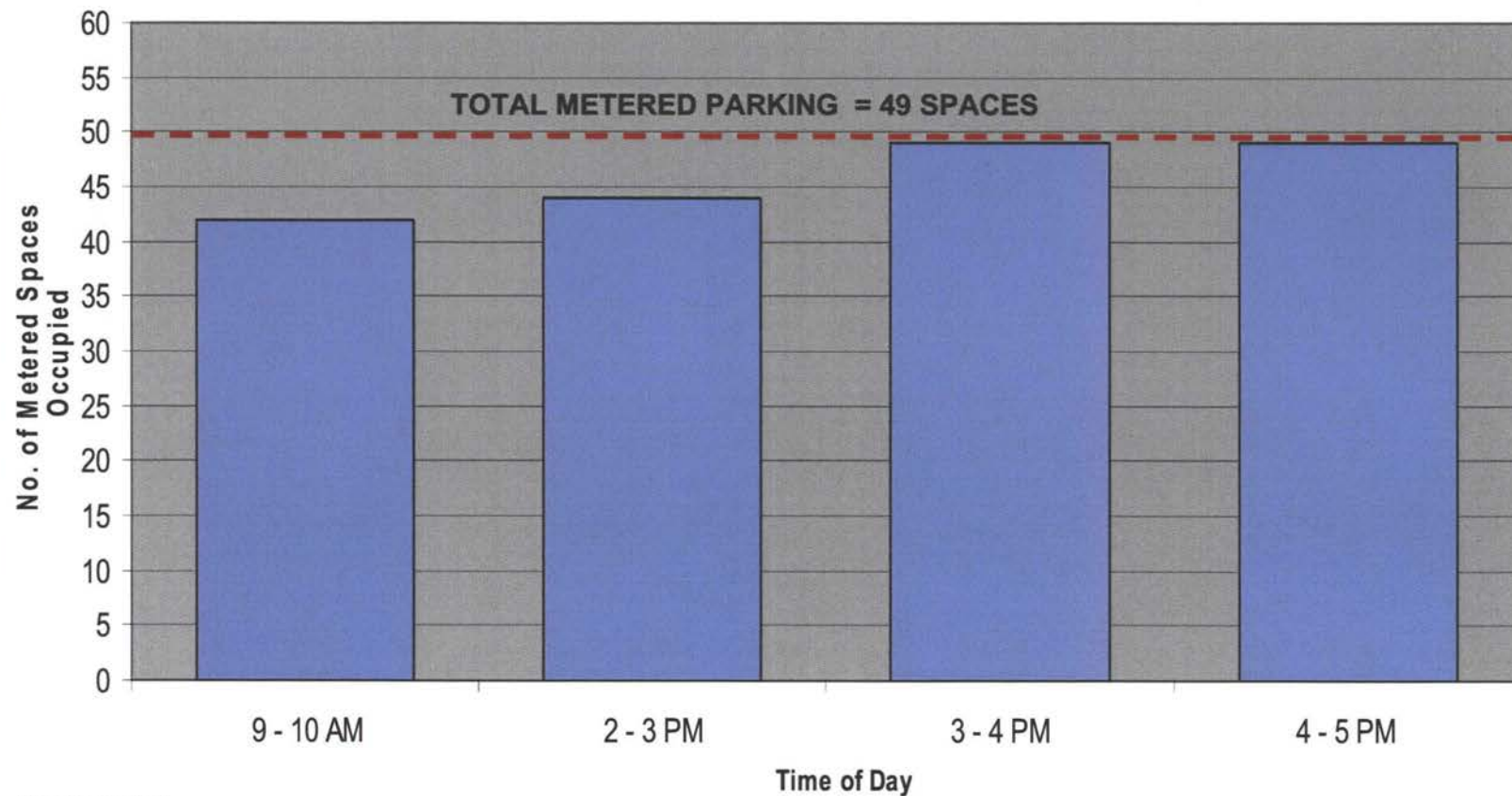
5.2 Alleyway at 17th Street - Pedestrian Usage/Safety Considerations

As discussed in Section 6.0 (Future Traffic Situation), it is projected that hotel usage of the alleyway will be generated primarily during the check-out (7:00 – 11:00 AM) and check-in (3:00 – 7:00 PM) periods. These timeframes also include the peak hours of the adjacent street system. In conjunction with vehicle counts undertaken on February 8th, pedestrian traffic along the west sidewalk of 17th Street at the alleyway was also counted. The data is presented in Table 5.

Table 5
Square 158 Alleyway at 17th Street – Pedestrian Survey

Time Period	Northbound	Southbound
7:00 – 8:00 AM	26	90
8:00 – 9:00 AM	68	214
9:00 – 10:00 AM	45	204
10:00 – 11:00 AM	34	95
Total	173	603
3:00 – 4:00 PM	76	57
4:00 – 5:00 PM	74	66
5:00 – 6:00 PM	229	117
6:00 – 7:00 PM	213	95
Total	592	335

N Street, NW (1700 Block) Parking Utilization Summary



(April 2009)

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Exhibit 6: Parking Utilization Survey

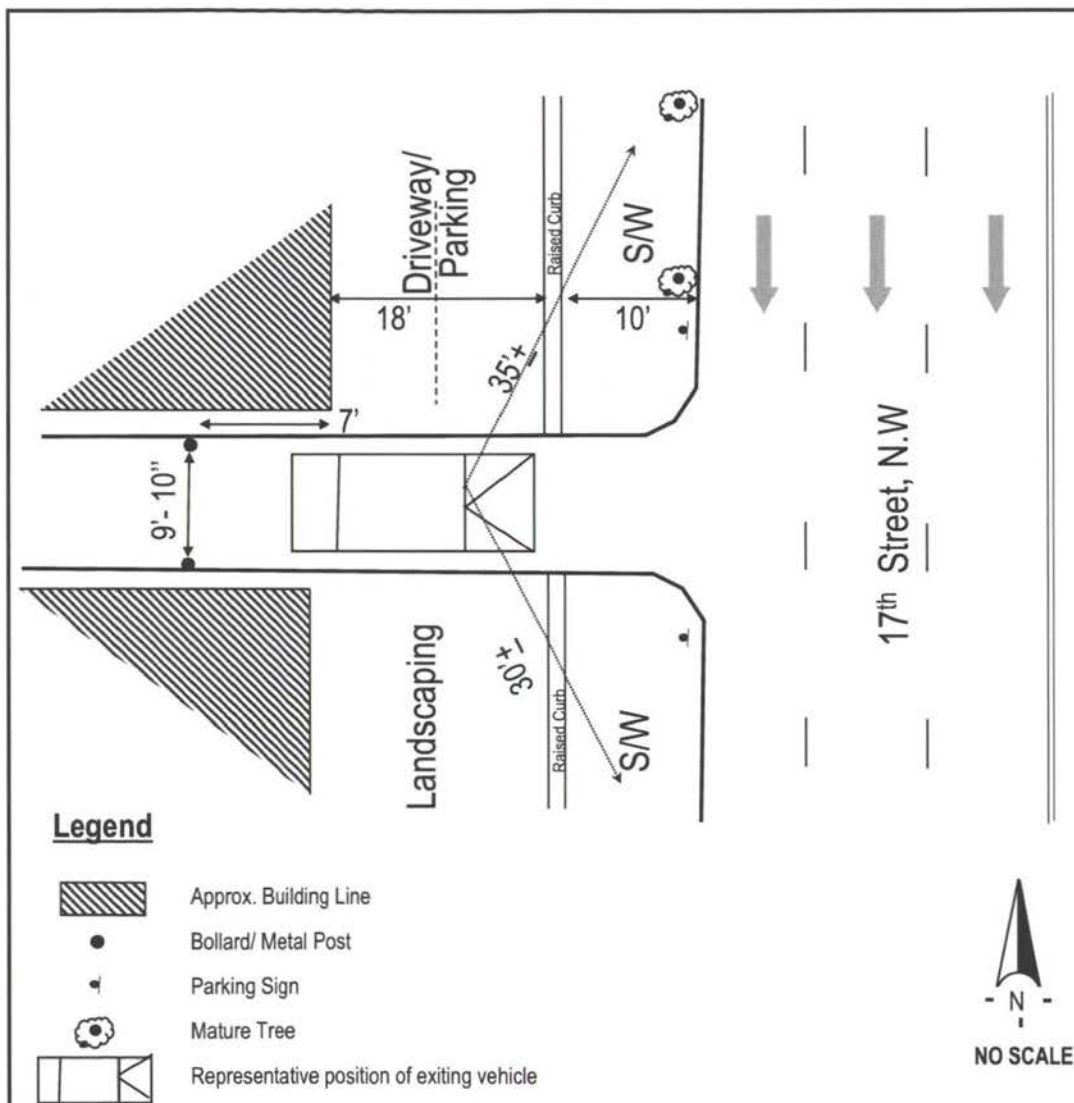
1743 - 1755 N Street, Northwest, Washington, D.C.
(BZA Application Case No. 17337)

Alleyway at 17th Street - Pedestrian Usage/Safety Considerations (continued)

During the 2006 proceedings, the BZA raised issues pertaining to potential vehicle-pedestrian conflicts and safety in the area of the alleyway entrance off 17th Street. Exhibit 7 was therefore prepared to illustrate the geometrics and sight distances available for vehicles and pedestrians at that point. The exhibit shows that the buildings abutting the alley at the entrance onto 17th Street are setback from the sidewalk by approximately 18-Ft, and by approximately 30-Ft from the curb along 17th Street. These setbacks enable safe sight distances for vehicles exiting the alleyway onto 17th Street and also entering the alley from 17th Street. Exhibit 7 shows approximate sight distances of 35-Ft± that would be available to drivers exiting as the vehicle approaches the sidewalk. It is noteworthy that the vehicles exiting the alley would be traveling at very low rates of speed. DDOT has also posted signs advising of the restricted access situation within the alley. [See Exhibit 7.]

Observations made during 21 hours of surveys showed no significant vehicle-pedestrian conflicts that are based on vehicle volumes, or that would suggest sight distance deficiencies. It was also observed that the relatively narrow width of the alleyway at 17th Street results in vehicles entering and exiting the alleyway at low speeds, and that this enhances safety at this location. Furthermore, this type of access arrangement is quite typical within the Central Employment Area of the City, where access to major parking garages are provided across sidewalks serving very high volumes of pedestrian traffic.

The land use aspects of the subject property and the “fit” of the proposed use within the Dupont Circle Historic Overlay District will be dealt with by others with the appropriate expertise. However, as further background and context in addressing the operational situation at the 17th Street/Alley access point to Square 158, it is important to note that the situation is “mirrored” by the alleyway off 17th Street immediately to the south within Square 159 (between N Street and Rhode Island Avenue). This situation is illustrated in Exhibit 1 on page 3.



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Exhibit 7: Square 158 17th Street Alleyway Access and Safety Illustration

1743 - 1755 N Street, Northwest, Washington, D.C.

(BZA Application Case No. 17337)

6.0 FUTURE TRAFFIC SITUATION

6.1 Future Traffic Operations (General)

As noted earlier, the current proposal is for a 98-room boutique hotel. This land use type was described in Section 1.0 in considerable detail, with emphasis on the trip generation characteristics of the future hotel patrons. In accordance with the DDOT's guidelines, trip generation estimates were developed for the site using rates recommended by the Institute of Transportation Engineers (ITE) "*Trip Generation Manual*" (8th Edition, 2008). However, the ITE data is representative of sites located within suburban settings, well outside Central Business Districts, typically without easy access to transit, taxi service and opportunities for walking. It is also relevant to note that the boutique hotel is somewhat of a new phenomenon, and is not included in the ITE database. Attachment B includes descriptions of the typical hotel types as presented in the ITE Trip Generation Manual.

For purposes of estimating the site trips, the typical hotel room category was utilized and a 25.0% non-vehicle trip rate was applied. These factors are quite conservative and would yield a trip generation considerably higher than the characteristics of this hotel type would indicate. However, this conservative approach was taken in order to project the worst-case scenario. The trip estimates also assume full occupancy of the hotel, which would generally be a rare occurrence (particularly since this hotel does not have convention facilities that would attract this level of occupancy). The trip estimates are shown in Table 6, below.

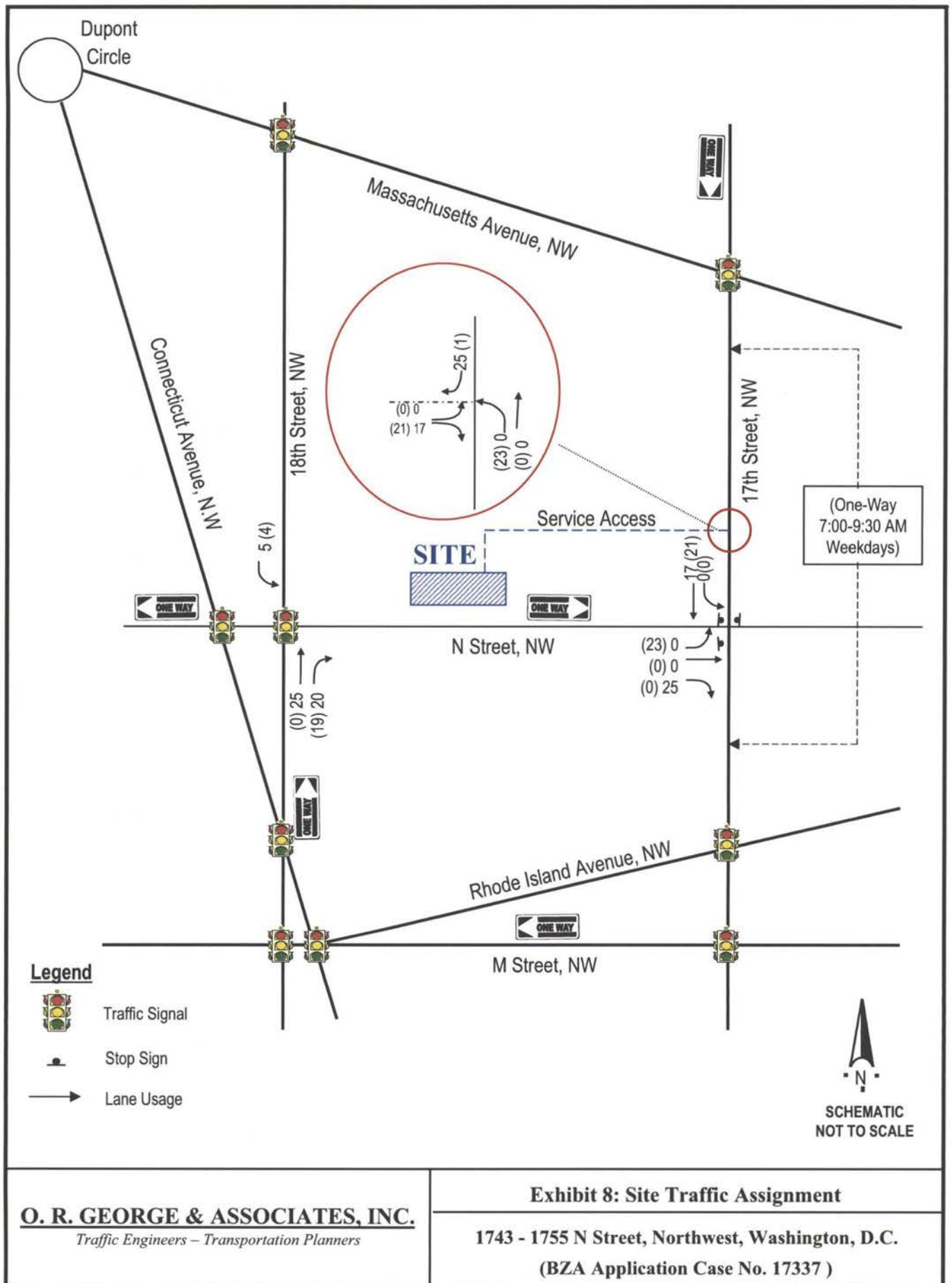
Table 6
Projected Trip Generation –
Proposed N Street Follies Hotel Development

Trip Rates	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
• Trips/Hotel Room [Land Use Code 310]	0.34	0.22	0.56	0.31	0.28	0.59
- With 25% Transit Use	0.25	0.17	0.42	0.23	0.21	0.44
Trip Generation						
• Trips/98 Hotel Rooms	25	17	42	23	21	44

Source: ITE Trip Generation Manual (2008), WMATA and O.R. George & Associates.

Two aspects of the trip generation should be underscored. First, some of the vehicle trips would be via taxi, limousine service and other "drop-off" means. Secondly, the hotel would provide a valet services to guests arriving with personal vehicles. These valet attendants would have responsibility for dropping-off and retrieving vehicles that would be parked in the hotel garage off the alleyway.

It is quite apparent that the level of vehicle trips shown in Table 6 would not have an appreciable impact on the two (2) intersections considered in this study. However, for completion the trips were assigned to the study area roadway network as shown in Exhibit 8.



The projected total traffic situation upon build-out and occupancy of the hotel is shown in Exhibit 9. The total traffic volumes were analyzed using the prescribed capacity analysis procedures, and the results are summarized in Table 7. The levels of service would continue to be acceptable. The capacity analysis worksheets are included in Attachment D.

Table 7
Summary of Capacity Analysis Results –
Projected 2010 Total Traffic Situation

Intersection	AM Peak Hour		PM Peak Hour	
	Level of Service	Average Delay	Level of Service	Average Delay
1. N Street @ 17 th Street, NW*	C	18.5	D	36.5
2. N Street @ 18 th Street, NW**	B	17.8	C	21.5

* Unsignalized intersection

** Signalized intersection

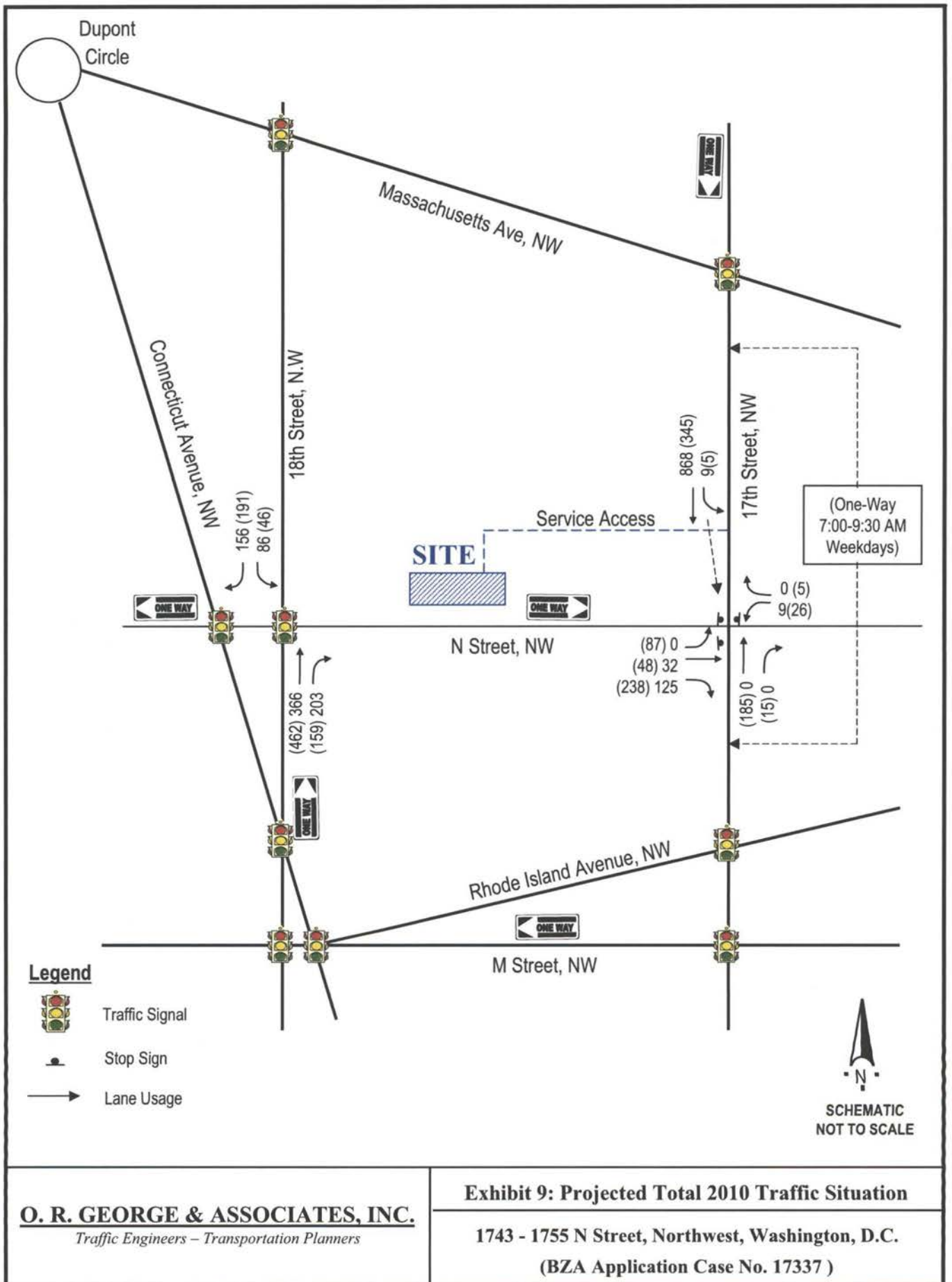
Source: O. R. George & Associates.

6.2 Future Hotel Alleyway Usage Management

There is no formal methodology for analysis of the proposed use of the alleyway. The following are practical aspects of the operations that are submitted for the City's consideration.

- a) The hotel management plans to provide parking within the garage (management staff only). The management would subsidize transit usage by its employees as part of a Transportation Management Plan.
- b) The hotel management plans to implement a valet service utilizing a commercial parking operator. Under this arrangement, all vehicles will be parked and retrieved by the valet service.
- c) The hotel management will make application to the District Department of Transportation for designation of a guest vehicle parking/drop-off area in the area of the hotel entrance.

The Applicant envisions that Item (c) above would be an effective complement to the valet operations, and would allow for "metered" flow within the alley. The above arrangements would also involve use of the alleyway by employees only. This would introduce the element of "familiarity," which would be quite significant in the context of the traffic operations with the alley specifically, and within the local area in general. [Note: The Applicant has initiated discussions with DDOT, and intends to develop a Transportation Management Plan (TMP) which would incorporate the operational and management measures noted above.]



6.3 Projected Truck Usage of Alleyway

As noted earlier, the proposed hotel will be served by a loading zone 30 Ft in length along its N Street frontage. A 30-Ft loading berth and platform area will also be provided off the alley. Based on information provided by the Applicant, the following is an estimate of the typical daily truck/delivery activity.

- | | |
|--|--------------------------------------|
| - Deliveries via N Street,
utilizing vans (FedEx/UPS, etc.) | 8 – 10 Delivery Trucks |
| - Trash pick-up via alley | 1 daily |
| - Other deliveries
(30-Ft/single-unit trucks) | 2 via alley,
(using loading zone) |

This was developed based on the 2005/2006 site plans. It is to be noted that, the level of truck activities is likely to be considerably less than what was estimated under the previous scheme. This is because the meeting space and restaurant elements have been substantially downscaled. Details are addressed in the Architect's drawing, and will be detailed during testimony. However, for purposes of this analysis, the estimates that had been presented in the 2006 assessment were maintained.

Based on the above, it is projected that, on average, one trash truck and two (2) single-unit (30-Ft) trucks would use the alley on a daily basis to serve the proposed hotel. The Applicant has indicated that deliveries would generally be through contracted service, which would utilize regular drivers (likely those having Commercial Drivers Licenses). These drivers would be familiar with the location and layout of the alleyway and loading docks. Also, some of these deliveries could be scheduled to occur outside of the peak access activities within the alley. *[Note: This would be discussed with DDOT for potential inclusions as an element of the Transportation Management Plan.]*

The current plans have modified the orientation of the loading berth access off the alley. The 30-Ft berth is arranged to be perpendicular to the alley alignment, this revised arrangement greatly facilitates access by trucks. Exhibit 10 shows the loading berth arrangement, and truck tracking diagrams for the two types of vehicles are presented in Attachment E.



7.0 SUMMARY AND CONCLUSION

The foregoing data, discussion and analysis have shown that the development of the 98-unit hotel, as currently proposed, would have no significant adverse impacts on the operational efficiency and safety of the study area roadways. More specifically, the analysis has determined the following:

- a) Current traffic operational conditions at the intersections within the defined study area are quite acceptable, and well within the City's Level of Service (LOS) standards.
- b) The proposed development is favorably situated relative to public transportation facilities, as well as major employment, institutional and retail uses.
- c) The projected weekday peak hour vehicle trip generation for the proposed development would be quite low (i.e., 20 – 30 trips), and would have a minimal impact on traffic and parking conditions within the local area.
- d) Analysis of the future total traffic situation shows very little change (in levels of service) compared with the existing situation.
- e) The proposed parking, loading and access elements of the site development plan should quite adequately meet the needs of the subject site, based on practical considerations and the trip-making characteristics of the facility.
- f) The Applicant proposes to have in place a valet service for hotel patrons. This would ensure that only operators of this service and management personnel assigned parking within the garage would access the alleyway.
- g) Vehicles accessing of the alleyway would be quite staggered/dispersed, corresponding to the arrival/departure patterns of this non-convention type hotel,

This study concludes that development of the subject site, per the submitted application, would satisfy the requirements of the Zoning Regulations, from the perspective of impacts associated with transportation (i.e., vehicular access, parking, and loading).

In addition to the above, the Applicant proposes to develop a Transportation Management Plan in consultation with the District Department of Transportation, Policy and Planning Administration. This plan will incorporate aspects discussed, notably in Section 6.2 (Future Hotel Alleyway Usage Management) of the report. Such a plan would provide further support for the conclusion that the proposed use is not likely to result in adverse or objectionable impacts on the local area based on traffic and parking conditions.

ATTACHMENT

A

Relevant Correspondence with DDOT staff

O. R. GEORGE & ASSOCIATES, INC.
Traffic Engineers – Transportation Planners

10210 Greenbelt Road, Suite 310 • Lanham, MD 20706-2218
Tel: (301) 794-7700 • Fax: (301) 794-4400
E-mail: orgeorge@orgengineering.com

July 22, 2009

Mr. Jeffery Jennings, Development Review Coordinator
District Department of Transportation
(Transportation Policy & Planning Administration)
2000 14th Street, NW, 7th Floor
Washington, DC 20009

Re: Board of Zoning Adjustment Application No. 17337 for
N Street Follies, 1700 Block N Street, NW, Washington, D.C.

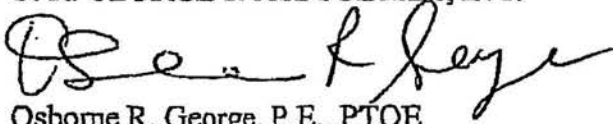
Dear Mr. Jennings:

We are consultants to the Applicant in the referenced matter. The case was in the public hearing phase during early 2006, but was halted by a decision of the Board regarding the status of review by the Historic Preservation Review Board. The Board of Zoning Adjustment has resumed hearing the case, and they have directed the applicant to submit any updates of plans and reports in preparation for a public hearing scheduled for October 6, 2009.

The proposed use remains the same (i.e., a boutique hotel). However, the applicant plans to increase the number of rooms (from 77 to approximately 98). The off-street parking will remain about the same as under the previous plan. The attached aerial map shows the property location and the intersections we had analyzed in our previous studies. Access to the off-street parking will continue to be via the alleyway immediately to the north of the property. For your convenience, we are also attaching DDOT's referral memorandum dated February 28, 2006.

We propose to use the same parameters as was used in the 2005/2006 studies in updating our study. If your office has any additional issues, concerns, or information that could be useful to our analysis, we would appreciate hearing from you. Thanks as always for your attention and assistance in this matter.

Sincerely,
O. R. GEORGE & ASSOCIATES, INC.


Osborne R. George, P.E., PTOE
President

ORG/wa

Attachments: As Noted

cc: Mr. Morton K. Bender
George R. Keys, Esquire (Jordan & Keys, PLLC)

GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION



Transportation Policy and Planning Administration

Memorandum

To: Sherry Schellin, Acting Secretary, Zoning Commission
From: Ken Laden, Associate Director, DDOT *KG*
Subject: N Street Follies BZA Case No. 17337
Date: February 28, 2006
CC: Travis Parker, OP

The applicant proposes construction of a 96 room hotel behind the façade of three existing historic buildings on the north side of the 1700 block of N Street NW. Zoning requires 31 parking spaces for a hotel of this size, the applicant proposes 96 parking spaces. All parking will be accessed via an alley entrance on 17th Street NW between N Street and Massachusetts Avenue. The historic nature of the buildings precludes the possibility of access to the rear parking via N Street. The alley in question varies in width from just under 10 feet at 17th Street to as wide as 43 feet behind the applicant's properties. Vehicles exiting and entering the alley must yield to oncoming traffic to exit or enter the alley. Beyond the first 60 feet, the narrow right of way is somewhat mitigated by private parking pads on either side that allow vehicles to slowly pass each other. However, because these parking pads are private space, this is not an acceptable traffic management strategy.

The alley usage diagram (table 1-Suplimentary Data Presentation) provided by the applicant shows the potential for conflict between entering and exiting vehicles in the weakday PM peak under existing conditions (Wednesday Feb 8 from 5:00 to 6:00-28 vehicles entered the alley, 60 exited). The addition of 96 parking spaces to this alley would further exacerbate the existing unsafe condition in this alley.

Due to the potential conflicts between entering and exiting vehicles in the narrowest section of the alley, the District of Columbia Department of Transportation recommends that the application be approved with only the 31 parking spaces required under the zoning code. If you have any additional questions, please contact Ramona Burns, of my staff, at 202/671-2234.

ATTACHMENT

B

Description of "Boutique" Hotel
and
Typical Hotel

Boutique hotel

from Wikipedia, the free encyclopedia

Boutique hotel is a term originating in North America to describe intimate, usually luxurious or quirky hotel environments. Boutique hotels differentiate themselves from larger chain/branded hotels and motels by providing personalized level accommodation and services / facilities.

Typically boutique hotels are furnished in a themed, stylish and/or aspirational manner. Although usually considerably smaller than a mainstream hotel, ranging from 3 to 100 guest rooms, boutique hotels are fitted with telephony and Wi-Fi Internet, air-conditioning, honesty bars and often cable/pay TV. Guest services are attended to by 24 hour hotel staff. Many boutique hotels have on-site dining facilities, and the majority offer bars and lounges which may also be open to the general public.

Retrieved from "http://en.wikipedia.org/wiki/Boutique_hotel"

Categories: Business stubs | Hotel types

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Harry Nobles
Hospitality Consulting

What Is a Boutique Hotel?

E-mail: hospsvc001@aol.com

Harry Nobles & Cheryl Thompson, September 2001

What specific attributes qualify a hotel for this appellation? What makes one hotel a boutique while another is not? We believe there are several characteristics that contribute to the accurate application of the term. One is size. What is the maximum number of rooms allowable for a boutique hotel? In our opinion, and in the opinion of some others, 100 rooms seems to be the upper limit.

Is atmosphere a factor? We believe atmosphere is a very important component of all boutique hotels. If atmosphere is considered the sum total of the physical facilities and all the intangibles that comprise a memorable hotel experience, this may be the single

most critical factor. Our definition of atmosphere includes decor, ambience, personalized service, the attitude of management and staff, and how all these ingredients must combine to create a genuine sense of intimacy.

An intimate atmosphere may be the one absolutely essential component without which a hotel cannot be called boutique. In our opinion, the difficulty lies in creating an atmosphere of intimacy without familiarity. We define intimacy as caring, warm, personalized, yet totally professional. Familiarity involves using guests' first name, hugs, excessive hand shakes, and other physical contact.

The boutique environment also includes anticipating guests' needs and desires rather than simply responding to a request. Knowing what a guest wants, when they want it, and how they want it is a major difference between good service and great service. The goal of any fine hotel, boutique or otherwise, must be great service.

We suggest that a unique theme is one important component of "boutiqueness". We are seeing a variety of interesting themes around the country, ranging from a library concept in New York City to a hotel in Washington, DC for guests interested in the occult.

We find this quite interesting and feel that a segment of the public

Ask Harry and Cheryl
We encourage readers to email us with questions on ratings, guest services, design, decor, etc. We'll directly respond to your questions.
Email Harry and Cheryl

What Is a Boutique Hotel?

E-mail: hospsvc001@aol.com

Harry Nobles & Cheryl Thompson, September 2001

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Ask Harry and Cheryl
We encourage readers to email us with questions on ratings, guest services, design, decor, etc. We'll directly respond to your questions. Email Harry and Cheryl

will respond positively. Our only question is where does a trend end and a fad begin.

So, what is a real boutique hotel? Can you create a checklist of very specific characteristics that will apply to every property? Can you develop a profile that applies to all?

We suggest it is a hotel that makes guests happy to be there, makes them feel special, makes them want to return soon, and makes them want to tell others.

That description makes a boutique hotel sound like any other fine hotel, only smaller, right?

As with many intangibles, "boutiqueness", like beauty may be in the eye of the beholder.

###

Contact:

Harry Nobles Hospitality Consulting

POC: Harry Nobles

E-mail: hospsvc001@aol.com

Phone: 757-564-3761

Fax: 757-564-0076

www.optimumrating.com

Credentials:

- Former head of AAA Lodging/Dining Ratings Program.
- An independent consultant serving the hospitality industry.
- A Special Training Consultant to the Educational Institute, American Hotel/Motel Association

Also See:

The Non-negotiable Traits of Leaders / Oct 2001
How Important is Service? / Sept 2001
Front Desk Service Mistakes / Aug 2001
Food & Beverage Mistakes & How to Correct Them / July 2001
Bell Staff Mistakes & How to Correct Them / July 2001
Attitude vs. Aptitude / June 2001
Female Business Travelers' Expectations / June 2001
Is Outsourcing Your Training a Viable Alternative? / June 2001
Unique Identity & Consistent Service = Success / May 2001
AAA Standards vs. Guests' Expectations / May 2001
Are Your Guests Better Informed than Your Staff? / April 2001
Are U.S. Hotels Rated Differently from Other North American Hotels? / April 2001

The Design Theme - AAA / Mobil Ratings Connection / March 2001
Attitude Can Make the Difference / January 2001
How Should Casino Hotels be Rated? / Dec 2000
Does AAA Rate Resorts Fairly? / Nov 2000
Is Your Property Suffering From Design Deficiency? / Nov 2000
The Future of AAA Ratings / September 2000
What Is Your Optimum AAA Rating? / August 2000
If You Disagree With Your AAA Rating / June 2000
Are AAA Ratings Always Accurate and Objective / May 2000
Creating Atmosphere / Jan 2000
What is "Atmosphere"? / December 1999
Maintaining Your AAA Rating / Nov 1999
Parallels AAA Rating vs Maintaining a AAA Rating - Which is More Difficult? / Oct 1999
Can Outstanding Service Offset Hotel Physical Deficiencies in the Rating System? / Harry Nobles / June 1999
Consistency - The Hallmark of a Fine Hotel / September 1999
Who Should Train Your Employees / Aug 2000
Mobil Travel Guide Announces 1998 Mobil Four and Five Star Award Winners / Jan 1998
Key to Success - Training - Follow Up / June 2000
The Legend of the Pineapple / Harry Nobles / Feb 1999

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Please contact [Hotel Online](#) with your comments and suggestions.

Land Use: 310

Hotel

Description

Hotels are places of lodging that provide sleeping accommodations and supporting facilities such as restaurants; cocktail lounges; meeting and banquet rooms or convention facilities; limited recreational facilities (pool, fitness room); and/or other retail and service shops. Some of the sites included in this land use category are actually large motels providing the hotel facilities noted above. All suites hotel (Land Use 311), business hotel (Land Use 312), motel (Land Use 320) and resort hotel (Land Use 330) are related uses.

Additional Data

Studies of hotel employment density indicate that, on the average, a hotel will employ 0.9 employees per room.¹

Thirty studies provided information on occupancy rates at the time the studies were conducted. The average occupancy rate for these studies was approximately 83 percent.

The hotels surveyed were primarily located outside central business districts in suburban areas.

The sites were surveyed between the late 1960s and the 2000s throughout the United States.

For all lodging uses, it is important to collect data on occupied rooms as well as total rooms in order to accurately predict trip generation characteristics for the site.

Source Numbers

4, 5, 12, 13, 18, 55, 72, 170, 187, 254, 260, 262, 277, 280, 301, 306, 357, 422, 436, 507, 577

¹ Buttke, Carl H. Unpublished studies of building employment densities, Portland, Oregon.

Land Use: 311 All Suites Hotel

Description

All suites hotels are places of lodging that provide sleeping accommodations, a small restaurant and lounge and small amounts of meeting space. Each suite includes a sitting room and separate bedroom; limited kitchen facilities are provided within the suite. These hotels are located primarily in suburban areas. Hotel (Land Use 310), business hotel (Land Use 312), motel (Land Use 320) and resort hotel (Land Use 330) are related uses.

Additional Data

Only one hotel provided employment data; this site had 0.10 employees per room.

Four studies provided information on occupancy rates at the time the studies were conducted. The average occupancy rate for these studies was approximately 74 percent.

The peak hour of the generator typically coincided with the peak hour of the adjacent street traffic.

The sites were surveyed in the mid-1980s and the 1990s in Georgia and Florida.

For all lodging uses, it is important to collect data on occupied rooms as well as total rooms in order to accurately predict trip generation characteristics for the site.

Source Numbers

216, 436

B-6

Land Use: 312 Business Hotel

Description

Business hotels are places of lodging aimed toward the business traveler. These hotels provide sleeping accommodations and other limited facilities, such as a breakfast buffet bar and afternoon beverage bar (no lunch or dinner is served and no meeting facilities are provided). Each unit is a large single room. Business hotels provide very few or none of the supporting facilities provided at hotels or suite hotels and are usually smaller in size. All locations nationwide are in suburban areas. Hotel (Land Use 310), all suites hotel (Land Use 311), motel (Land Use 320) and resort hotel (Land Use 330) are related uses.

Additional Data

The peak hour of the generator typically coincided with the peak hour of the adjacent street traffic.

The sites were surveyed in the late 1980s in suburban Atlanta, Georgia and Dallas, Texas; all of the sites had approximately 130 rooms and employed 8 to 12 persons.

For all lodging uses, it is important to collect data on occupied rooms as well as total rooms in order to accurately predict trip generation characteristics for the site.

Source Numbers

216, 306

B-7

ATTACHMENT

C

Capacity Analysis Worksheets –
Existing (Year 2009) Traffic Situation

TWO-WAY STOP CONTROL SUMMARY

General Information				Site Information			
Analyst	zw			Intersection	N St @ 17th St		
Agency/Co.	ORGA			Jurisdiction	Washington DC		
Date Performed	7/15/2009			Analysis Year	2009		
Analysis Time Period	AM Peak Hour						
Project Description N Street Follies, Bender							
East/West Street: N St, NW				North/South Street: 17th St, NW			
Intersection Orientation: North-South				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume	0	0	0	9	417	0	
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.87	0.87	1.00	
Hourly Flow Rate, HFR	0	0	0	10	479	0	
Percent Heavy Vehicles	0	—	—	1	—	—	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	0	0	1	2	0	
Configuration				L	T		
Upstream Signal		0			1		
Minor Street	Westbound			Eastbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume	0	0	9	0	32	98	
Peak-Hour Factor, PHF	0.56	1.00	0.56	0.85	0.85	0.85	
Hourly Flow Rate, HFR	0	0	16	0	37	115	
Percent Heavy Vehicles	1	0	1	1	1	1	
Percent Grade (%)	0			0			
Flared Approach		N			Y		
Storage		1			1		
RT Channelized			0			0	
Lanes	0	0	0	0	1	0	
Configuration		LR				TR	
Delay, Queue Length, and Level of Service							
Approach	NB	SB	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11
Lane Configuration		L		LR			TR
v (vph)		10		16			152
C (m) (vph)		1584		741			468
v/c		0.01		0.02			0.32
95% queue length		0.02		0.07			1.39
Control Delay		7.3		10.0			16.3
LOS		A		A			C
Approach Delay	—	—	10.0			16.3	
Approach LOS	—	—	A			C	

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C-1

TWO-WAY STOP CONTROL SUMMARY

General Information				Site Information			
Analyst	zw			Intersection	N St @ 17th St		
Agency/Co.	ORGA			Jurisdiction	Washington DC		
Date Performed	7/15/2009			Analysis Year	2009		
Analysis Time Period	PM Peak Hour						
Project Description N Street Follies, Bender							
East/West Street: N St, NW				North/South Street: 17th St, NW			
Intersection Orientation: North-South				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume	0	181	14	5	318	0	
Peak-Hour Factor, PHF	1.00	0.83	0.83	0.77	0.77	1.00	
Hourly Flow Rate, HFR	0	218	16	6	412	0	
Percent Heavy Vehicles	0	—	—	1	—	—	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	2	0	1	2	0	
Configuration		T	TR	L	T		
Upstream Signal		1			1		
Minor Street	Westbound			Eastbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume	26	0	5	64	48	233	
Peak-Hour Factor, PHF	0.66	1.00	0.66	0.83	0.83	0.83	
Hourly Flow Rate, HFR	39	0	7	77	57	280	
Percent Heavy Vehicles	1	0	1	1	1	1	
Percent Grade (%)	0			0			
Flared Approach		N			Y		
Storage		0			1		
RT Channelized			0			0	
Lanes	0	0	0	0	1	0	
Configuration		LR			LTR		
Delay, Queue Length, and Level of Service							
Approach	NB	SB	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11
Lane Configuration		L		LR			LTR
v (vph)		6		46			414
C (m) (vph)		1300		181			674
v/c		0.00		0.25			0.61
95% queue length		0.01		0.97			4.23
Control Delay		7.8		31.5			18.5
LOS		A		D			C
Approach Delay	—	—	31.5			18.5	
Approach LOS	—	—	D			C	

SHORT REPORT

General Information

Analyst *ZW*
Agency or Co. *ORGA*
Date Performed *7/15/2009*
Time Period *AM peak hour*

Site Information

Intersection *N St @ 18th St*
Area Type *CBD or Similar*
Jurisdiction *Washington DC*
Analysis Year *2009*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	0	0	0	0	0	0	1	1	0	0	0
Lane group								T	R		LR	
Volume (vph)								334	183	81		153
% Heavy veh								1	1	1		1
PHF								0.94	0.94	0.84		0.84
Actuated (P/A)								P	P	P		P
Startup lost time								2.0	2.0		2.0	
Ext. eff. green								2.0	2.0		2.0	
Arrival type								3	3		3	
Unit Extension								3.0	3.0		3.0	
Ped/Bike/RTOR Volume							154	0	0	206	0	0
Lane Width								11.0	11.0		10.0	
Parking/Grade/Parking	N		N	N		N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr								0	0		0	
Unit Extension								3.0	3.0		3.0	
Phasing	Peds Only	02	03	04	NS Perm	06	07	08				
Timing	G = 35.0	G =	G =	G =	G = 55.0	G =	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 100.0					

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adj. flow rate								355	195		278	
Lane group cap.								900	658		439	
v/c ratio								0.39	0.30		0.63	
Green ratio								0.55	0.55		0.55	
Unif. delay d1								12.9	12.1		15.5	
Delay factor k								0.50	0.50		0.50	
Increm. delay d2								1.3	1.1		6.8	
PF factor								1.000	1.000		1.000	
Control delay								14.2	13.2		22.3	
Lane group LOS								B	B		C	
Apprch. delay							13.9			22.3		
Approach LOS							B			C		
Intersec. delay	16.7			Intersection LOS						B		

SHORT REPORT

General Information				Site Information			
Analyst	zw			Intersection	N St @ 18th St		
Agency or Co.	ORGA			Area Type	CBD or Similar		
Date Performed	7/15/2009			Jurisdiction	Washington DC		
Time Period	PM peak hour			Analysis Year	2009		

Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	0	0	0	0	0	0	1	1	0	0	0
Lane group								T	R		LR	
Volume (vph)								453	140	42		187
% Heavy veh								1	1	1		1
PHF								0.88	0.88	0.84		0.84
Actuated (P/A)								P	P	P		P
Startup lost time								2.0	2.0		2.0	
Ext. eff. green								2.0	2.0		2.0	
Arrival type								3	3		3	
Unit Extension								3.0	3.0		3.0	
Ped/Bike/RTOR Volume							102	0	0	356	0	0
Lane Width								11.0	11.0		10.0	
Parking/Grade/Parking	N		N	N		N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr								0	0		0	
Unit Extension								3.0	3.0		3.0	
Phasing	Peds Only	02	03	04	NS Perm	06	07	08				
Timing	G = 35.0	G =	G =	G =	G = 55.0	G =	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25						Cycle Length C = 100.0						

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adj. flow rate							515	159		273		
Lane group cap.							900	694		362		
v/c ratio							0.57	0.23		0.75		
Green ratio							0.55	0.55		0.55		
Unif. delay d1							14.8	11.6		17.3		
Delay factor k							0.50	0.50		0.50		
Increm. delay d2							2.6	0.8		13.6		
PF factor							1.000	1.000		1.000		
Control delay							17.4	12.4		30.9		
Lane group LOS							B	B		C		
Apprch. delay							16.2			30.9		
Approach LOS							B			C		
Intersec. delay	20.4			Intersection LOS						C		

ATTACHMENT

D

Capacity Analysis Worksheets –
Projected (Year 2010) Total Traffic Condition

TWO-WAY STOP CONTROL SUMMARY

General Information				Site Information			
Analyst	zw			Intersection	N St @ 17th St		
Agency/Co.	ORGA			Jurisdiction	Washington DC		
Date Performed	7/15/2009			Analysis Year	2010		
Analysis Time Period	AM Peak Hour						
Project Description N Street Follies, Bender							
East/West Street: N St, NW				North/South Street: 17th St, NW			
Intersection Orientation: North-South				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume	0	0	0	9	434	0	
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.87	0.87	1.00	
Hourly Flow Rate, HFR	0	0	0	10	498	0	
Percent Heavy Vehicles	0	-	-	1	-	-	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	0	0	1	2	0	
Configuration				L	T		
Upstream Signal		0			1		
Minor Street	Westbound			Eastbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume	0	0	9	0	32	125	
Peak-Hour Factor, PHF	0.56	1.00	0.56	0.85	0.85	0.85	
Hourly Flow Rate, HFR	0	0	16	0	37	147	
Percent Heavy Vehicles	1	0	1	1	1	1	
Percent Grade (%)	0			0			
Flared Approach		N			Y		
Storage		1			1		
RT Channelized			0			0	
Lanes	0	0	0	0	1	0	
Configuration		LR				TR	
Delay, Queue Length, and Level of Service							
Approach	NB	SB	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11
Lane Configuration		L		LR			TR
v (vph)		10		16			184
C (m) (vph)		1584		741			449
v/c		0.01		0.02			0.41
95% queue length		0.02		0.07			1.97
Control Delay		7.3		10.0			18.5
LOS		A		A			C
Approach Delay	-	-	10.0			18.5	
Approach LOS	-	-	A			C	

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TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information	
Analyst	zw		Intersection	N St @ 17th St
Agency/Co.	ORGA		Jurisdiction	Washington DC
Date Performed	7/15/2009		Analysis Year	2010
Analysis Time Period	PM Peak Hour			
Project Description N Street Follies, Bender				
East/West Street: N St, NW			North/South Street: 17th St, NW	
Intersection Orientation: North-South			Study Period (hrs): 0.25	

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	185	15	5	345	0
Peak-Hour Factor, PHF	1.00	0.83	0.83	0.77	0.77	1.00
Hourly Flow Rate, HFR	0	222	18	6	448	0
Percent Heavy Vehicles	0	—	—	1	—	—
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	2	0	1	2	0
Configuration		T	TR	L	T	
Upstream Signal		1			1	
Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	26	0	5	87	48	238
Peak-Hour Factor, PHF	0.66	1.00	0.66	0.83	0.83	0.83
Hourly Flow Rate, HFR	39	0	7	104	57	286
Percent Heavy Vehicles	1	0	1	1	1	1
Percent Grade (%)	0			0		
Flared Approach		N			Y	
Storage		0			1	
RT Channelized			0			0
Lanes	0	0	0	0	1	0
Configuration		LR			LTR	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L		LR			LTR	
v (vph)		6		46			447	
C (m) (vph)		1293		167			630	
v/c		0.00		0.28			0.71	
95% queue length		0.01		1.07			5.84	
Control Delay		7.8		34.6			23.4	
LOS		A		D			C	
Approach Delay	—	—	34.6			23.4		
Approach LOS	—	—	D			C		

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SHORT REPORT

General Information

Analyst *zw*
 Agency or Co. *ORGA*
 Date Performed *7/15/2009*
 Time Period *AM peak hour*

Site Information

Intersection *N St @ 18th St*
 Area Type *CBD or Similar*
 Jurisdiction *Washington DC*
 Analysis Year *2010*

Volume and Timing Input

			EB			WB			NB			SB			
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes			0	0	0	0	0	0	0	1	1	0	0	0	
Lane group										T	R		LR		
Volume (vph)										366	203	86		156	
% Heavy veh										1	1	1		1	
PHF										0.94	0.94	0.84		0.84	
Actuated (P/A)										P	P	P		P	
Startup lost time										2.0	2.0		2.0		
Ext. eff. green										2.0	2.0		2.0		
Arrival type										3	3		3		
Unit Extension										3.0	3.0		3.0		
Ped/Bike/RTOR Volume									154	0	0	206	0	0	
Lane Width										11.0	11.0		10.0		
Parking/Grade/Parking			N		N	N		N	N	0	N	N	0	N	
Parking/hr															
Bus stops/hr										0	0		0		
Unit Extension										3.0	3.0		3.0		
Phasing	Peds Only	02	03		04		NS Perm		06		07		08		
Timing	G = 35.0	G =	G =		G =		G = 55.0		G =		G =		G =		
	Y = 5	Y =	Y =		Y =		Y = 5		Y =		Y =		Y =		
Duration of Analysis (hrs) = 0.25										Cycle Length C = 100.0					

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adj. flow rate								389	216		288	
Lane group cap.								900	658		422	
v/c ratio								0.43	0.33		0.68	
Green ratio								0.55	0.55		0.55	
Unif. delay d1								13.3	12.4		16.2	
Delay factor k								0.50	0.50		0.50	
Increm. delay d2								1.5	1.3		8.6	
PF factor								1.000	1.000		1.000	
Control delay								14.8	13.7		24.9	
Lane group LOS								B	B		C	
Apprch. delay							14.4			24.9		
Approach LOS							B			C		
Intersec. delay	17.8			Intersection LOS						B		

SHORT REPORT

General Information

Analyst **zw**
 Agency or Co. **ORGA**
 Date Performed **7/15/2009**
 Time Period **PM peak hour**

Site Information

Intersection **N St @ 18th St**
 Area Type **CBD or Similar**
 Jurisdiction **Washington DC**
 Analysis Year **2010**

Volume and Timing Input

			EB			WB			NB			SB		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes			0	0	0	0	0	0	0	1	1	0	0	0
Lane group										T	R		LR	
Volume (vph)										462	159	46		191
% Heavy veh										1	1	1		1
PHF										0.88	0.88	0.84		0.84
Actuated (P/A)										P	P	P		P
Startup lost time										2.0	2.0		2.0	
Ext. eff. green										2.0	2.0		2.0	
Arrival type										3	3		3	
Unit Extension										3.0	3.0		3.0	
Ped/Bike/RTOR Volume									102	0	0	356	0	0
Lane Width										11.0	11.0		10.0	
Parking/Grade/Parking			N		N	N		N	N	0	N	N	0	N
Parking/hr														
Bus stops/hr										0	0		0	
Unit Extension										3.0	3.0		3.0	
Phasing	Peds Only	02	03		04		NS Perm		06		07		08	
Timing	G = 35.0	G =	G =		G =		G = 55.0		G =		G =		G =	
	Y = 5	Y =	Y =		Y =		Y = 5		Y =		Y =		Y =	
Duration of Analysis (hrs) = 0.25										Cycle Length C = 100.0				

Lane Group Capacity, Control Delay, and LOS Determination

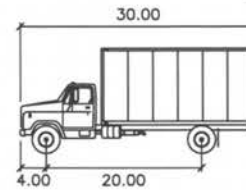
	EB			WB			NB			SB		
Adj. flow rate								525	181		282	
Lane group cap.								900	694		357	
v/c ratio								0.58	0.26		0.79	
Green ratio								0.55	0.55		0.55	
Unif. delay d1								14.9	11.8		17.9	
Delay factor k								0.50	0.50		0.50	
Increm. delay d2								2.8	0.9		16.2	
PF factor								1.000	1.000		1.000	
Control delay								17.7	12.7		34.1	
Lane group LOS								B	B		C	
Apprch. delay							16.4			34.1		
Approach LOS							B			C		
Intersec. delay	21.5			Intersection LOS						C		

ATTACHMENT

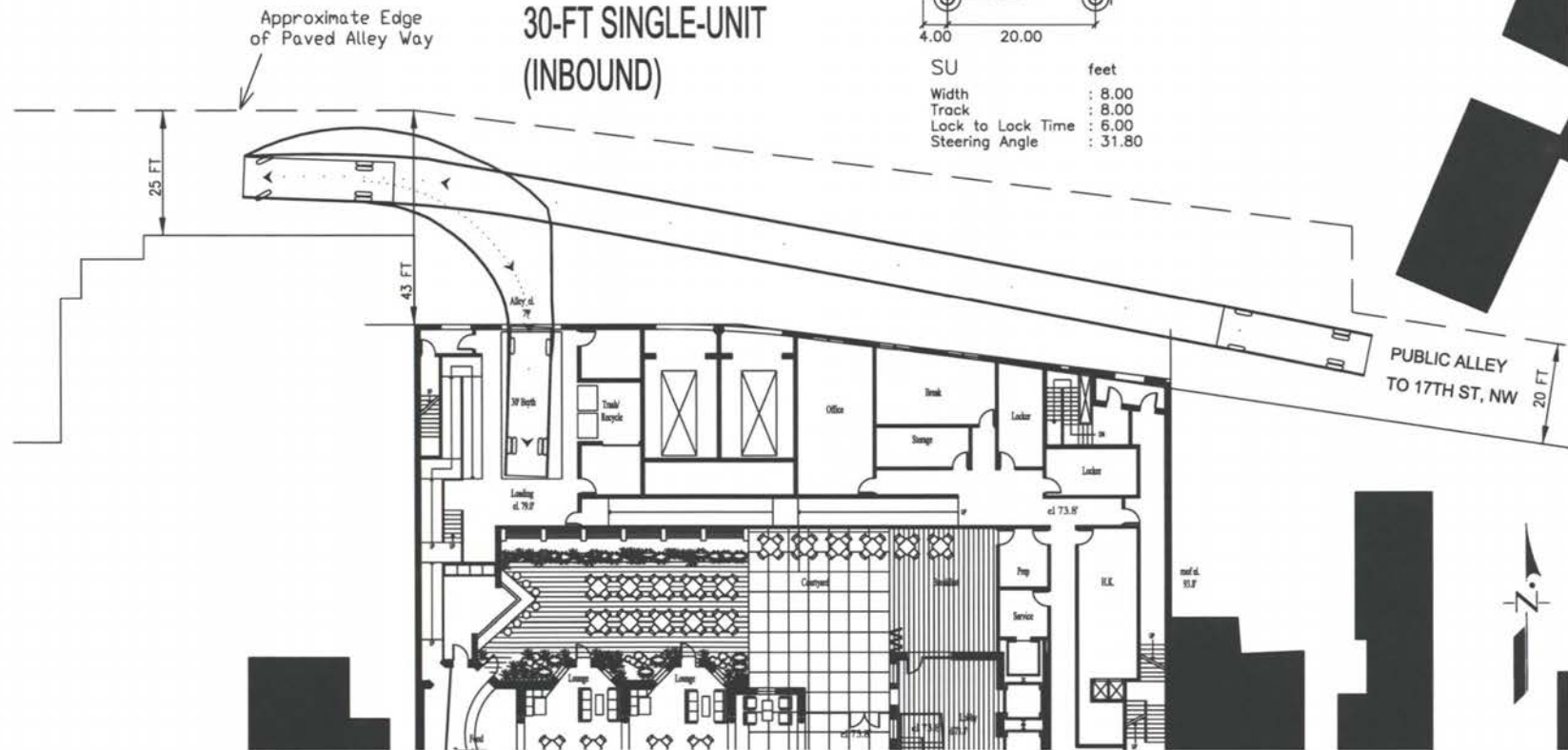
E

Truck Tracking Diagram

TRUCK TRACKING DIAGRAM 30-FT SINGLE-UNIT (INBOUND)



SU feet
Width : 8.00
Track : 8.00
Lock to Lock Time : 6.00
Steering Angle : 31.80



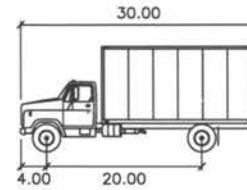
Source: Base drawing provided by Andrulis Janezich Architects pllc



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Lanham, MD 20706

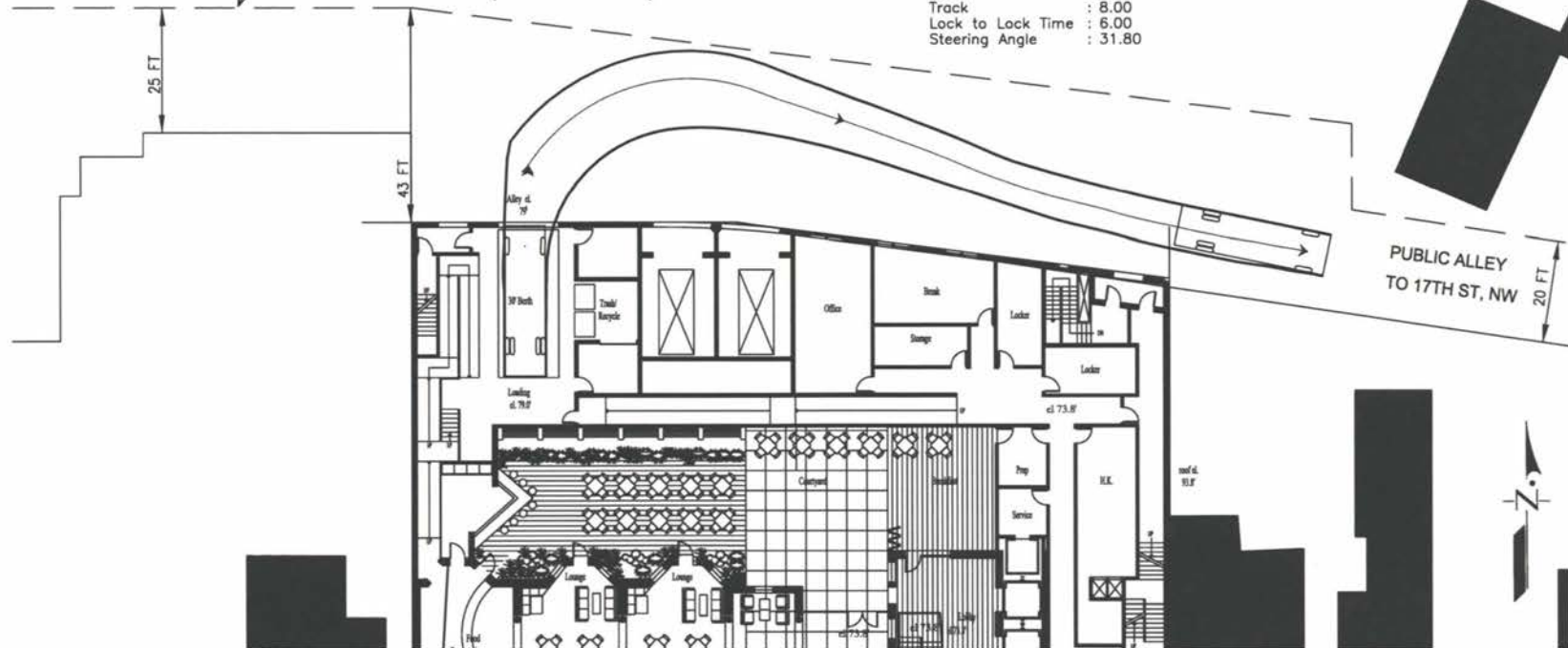
Attachment E-1			
TRUCK TRACKING DIAGRAM			
(30-FT SINGLE UNIT)			
1700 BLOCK N. STREET, N.W.			
WASHINGTON, D.C.			
DATE	10/10/09	PROJECT NO.	N STREET FOLLOWER
DRAWN BY	10/10/09	SCALE	AS SHOWN (SEE LAYOUTS AND NOTES)
CHECKED BY	10/10/09	DATE	10/10/09

TRUCK TRACKING DIAGRAM 30-FT SINGLE-UNIT (OUTBOUND)



SU feet
Width : 8.00
Track : 8.00
Lock to Lock Time : 6.00
Steering Angle : 31.80

Approximate Edge
of Paved Alley Way



PUBLIC ALLEY
TO 17TH ST, NW
20 FT

Source: Base drawing provided by Andrulis Janezich Architects pllc



O. R. GEORGE & ASSOCIATES, INC.
Traffic Engineers - Transportation Planners
1022 Connecticut Road, Suite 100
Lanham, MD 20656

Attachment E-2			
TRUCK TRACKING DIAGRAM			
(30-FT SINGLE UNIT)			
1700 BLOCK N. STREET, N.W.			
WASHINGTON, D.C.			
DATE: 01/10/09	PROJECT: N. STREET POLICE	BY: [Signature]	NO: 5
SCALE: 1" = 20'	30 FOOT DECK, LOADING BERTH - TRUCKING		3 OF 3