WELLS + ASSOCIATES

100 V STREET SW

UPDATED COMPREHENSIVE TRANSPORTATION REPORT

January 2021

100 V Street SW

Updated Comprehensive Transportation Report

Washington, DC

January 2021

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INTRODUCTION

OVERVIEW

This report presents an Updated Comprehensive Transportation Review (CTR) conducted in conjunction with the Large Tract Review submitted by SW Land Holder, LLC (herein referred to as the Applicant). The site of the proposed development is located on Squares 0609 and 0611 in the Buzzard Point neighborhood in Southwest Washington, DC. The site currently is zoned CG-4 and generally is bounded by 1st Street SW to the east, 2nd Street SW to the west, T Street SW to the north, and the V Street SW to the south, as shown on Figure 1. The existing site currently is occupied by a 646-space surface parking lot.

The Applicant proposes to redevelop the site with a mixed-use project, including approximately 2,105 apartment dwelling units, 80,428 SF of office space, two hotels with a total of 423 keys, and 71,848 SF of retail space.[1] The proposed development is to be constructed in two phases. The first phase is projected to be delivered in 2024 and includes 1,177 apartment dwelling units, a 184-key hotel, and 45,042 SF of retail space. The second phase is projected to be delivered in 2028. The project will include eight parcels with a single, shared below-grade parking and loading structure. For zoning purposes, the project consists of two buildings: one for each phase. Access to the parking will be provided via three new curb cuts: one on 1st Street, one on 2nd Street, and one on T Street. Access to the below-grade loading facility will be provided via a new curb cut on 2nd Street and has been designed so that trucks can enter and exit the site front-first via 2nd Street. A private east-west roadway (U Street) will be constructed through the site connecting 1st Street and 2nd Street. Five curb cuts that serve the existing parking lot will be abandoned: two on 2nd Street and three on 1st Street.

The purpose of this report is to:

- Evaluate existing traffic operational and safety conditions,
- Evaluate phase one and full build out future traffic conditions without the proposed development,
- Evaluate phase one and full build out future traffic conditions with the proposed development,
- Identify existing mode choice alternatives,
- Identify any traffic operational impacts associated with the proposed development,
- Evaluate the appropriateness of the proposed parking,
- Evaluate effectiveness of the proposed loading facilities, and
- Recommend transportation improvements (including roadway, operational, and demand management strategies) to mitigate the impact of the development and

[1] Shared amenity space, common areas, and back of house space was proportionally divided among the uses.

promote the safe and efficient flow of vehicular and pedestrian traffic associated with the proposed development.

STUDY SCOPE

This study was undertaken to assess the impacts of the proposed development on the surrounding roadway network. The scope of the study and proposed methodologies were approved by the District Department of Transportation (DDOT) prior to beginning the study. The agreed upon scoping document is included in Appendix A.

The study area was selected based on those roadway segments that potentially could be impacted by the proposed development. The following intersections were identified for detailed analysis and agreed to by DDOT:

- 2nd Street/P Street,
- 2nd Street/Q Street,
- 2nd Street/R Street,
- 2nd Street/T Street,
- 2nd Street/V Street,
- 1st Street/V Street,
- 1st Street/T Street, and
- 1st Street/R Street/Potomac Avenue.

TRANSPORTATION FACILITIES

ROADWAY NETWORK

Existing Conditions

General details regarding the surrounding roadway segments, including functional classification, average daily traffic volume (ADT), and speed limit are summarized in Table 1. All roadways in the study area operate as two-way streets, with two exceptions. East of 1st Street, V Street operates as a one-way eastbound and 1st Street operates as one-way northbound between R Street and Q Street. At the time traffic counts were conducted, 2nd Street operated as a southbound one-way street, but has since been converted to two-ways.

Table 1
Existing Conditions by Roadway Segment Details

Roadway	Functional Classification	Average Daily Traffic (vehicles per day)*	Speed Limit (miles per hour)
2nd Street	Collector	1000	25
1st Street	Local	N/A	25
P Street	Minor Arterial	3,000	25
Q Street	Local	N/A	25†
R Street	Local	N/A	25†
T Street	Local	N/A	25†
V Street	Collector/Local‡	0	25†
Potomac Avenue	Collector	6,000	25

* The ADT volume is based on DDOT historical traffic volume data collected in 2018, which are the most recent data available.
† Speed limit unposted in the study area; assumed to be 25 mph.
‡ The functional classification of V Street is collector between 2nd Street and 1st Street, and local between 1st Street and Half Street.

Future Conditions

A number of roadway improvements are proposed in the Buzzard Point neighborhood as a result of the construction of the proposed South Capitol Street Corridor Improvement Project and improvements proposed in conjunction with approved developments in the area.

As requested by DDOT, the following improvements from the Buzzard Point Vision Framework and Implementation Plan are anticipated to be complete prior to build out of the 100 V Street project:

- Conversion of 2nd Street from one-way to two-ways (completed),
- Conversion of 1st Street from one-way to two-ways and potential widening to accommodate parking and bike lanes (conversion to two-ways completed),
- Closure of R Street between Half and 1st Streets (completed),
- Conversion of Potomac Avenue from two-ways to one-way westbound between the Circle and Half Street (uncomplete, not assumed in this study),
- Conversion of R Street from two-ways to one-way eastbound between Half Street and South Capitol Street (uncomplete, not assumed in this study),
- Conversion of Q Street from two-ways to one-way westbound between Half Street and South Capitol Street (uncomplete, not assumed in this study),
- A vehicular connection for 1st Street between Potomac Ave and T Street which will operate as two-way street with northbound right out from 1st Street to Potomac Avenue, right in from R Street to 1st Street, and left in from Potomac Avenue to 1st Street with

some traffic restrictions on days when soccer games are scheduled (complete but left turns from 1st Street onto Potomac Avenue are permitted), and

- Completion of South Capitol Street Circle (uncomplete).

Likewise, the following improvements associated with approved projects in the area are anticipated to be complete prior to completion of the 100 V Street project:

- Installation of appropriate signing and pavement markings for Water Street between Half Street and S Street,
- Installation of curb extensions at the Water Street/T Street intersection to ensure roadway widths on each side match,
- Reconstruction and realignment of V Street between 1st Street and Half Street to provide two 10-foot travel lanes and an eight-foot parking lane on either side of the roadway, and to re-center the roadway within the right-of-way,
- Reconstruction of 1st Street south of V Street to provide two 10-foot travel lanes and an eight-foot parking lane on either side of the roadway,
- Reconstruction of V Street in between 1st Street and 2nd Street to provide two 10-foot travel lanes and an eight-foot parking lane on either side of the roadway,
- Reconstruction of 2nd Street south of V Street to provide two 10-foot travel lanes in each direction, an eight-foot parking lane on east side of the roadway, and an 11-foot cycle track (two-way) on the west side of the roadway,
- Restriping along the eastbound approach at P Street/2nd Street to accommodate a separate eastbound right turn with a storage of 150 feet along with appropriate signage (condition of approval associated with River Point; however, DDOT subsequently determined a bike lane would be installed in lieu of a right turn storage lane).

The above improvements were all considered to be completed in the traffic analysis of the future 100 V Street build out, except for the eastbound approach at P Street/2nd Street restriping.

MULTI-MODAL TRANSPORTATION FACILITIES

Existing Public Transportation Facilities and Services

Public transportation facilities in the vicinity of the site are closer to the newly built DC United Soccer Stadium. As the Buzzard Point area continues to redevelop, with the recent construction of the DC United Soccer Stadium, 1900 Half Street and 88 V Street and the approval for projects at 2100 2nd Street (River Point), along with the subject development at 100 V Street, public transportation services are expected to be extended to the area. In fact, as the result of discussions between the Applicant, other property owners in Buzzard Point, the Capitol Riverfront Business Improvement District (BID), and the Washington Metropolitan Area Transit

Authority (WMATA), Route 74, which currently runs along P Street SW between Half Street and 4th Street, will be modified to extend the route from the Half Street/O Street SW terminus to V Street, as shown on Figure 2. WMATA officially announced that the new route will be in effect in August 2020, with new bus stop signs added appropriately; however, the expanded route does not appear to be in operation currently.

Metrorail Service

The proposed project is located approximately one mile from both the Navy Yard-Ballpark Metro Station and Waterfront Metro Station. Both stations provide access to the Metro Green line. Riders can transfer to the Blue, Orange, Silver, and Yellow lines at L'Enfant Plaza Metro Station or to the Red Line at Gallery Place-Chinatown Metro Station.

The minimum, maximum, and average headways for the Green Line are summarized in Table 2.

Table 2
Metrorail Headways (in minutes)

Headway*	**AM Rush** 5:00 AM – 9:30 AM	**Midday** 9:30 AM – 3:00 PM	**PM Rush** 3:00 PM – 7:00 PM	**Evening** 7:00 PM – 9:30 PM	**Late Night** 9:30 PM – Close	**Weekend** Open – 9:30 PM	**Weekend** 9:30 PM – Close
Green Line (Navy Yard - Ballpark Metro Station/Waterfront Metro Station)							
Min	0:08	0:15	0:08	0:15	0:20	0:15	0:20
Max	0:08	0:15	0:08	0:15	0:20	0:15	0:20

* Headways presented represent headways in both directions and reflect pre-pandemic conditions.

According to WMATA's Metrorail Station Access and Capacity Study, the Navy Yard Metro Station had the 14th highest pedestrian access during the PM peak period in 2002 out of the 86 stations studied (the Silver Line was not open at the time of the study). The station also is among the list of high forecasted development stations and is expected to see an increase in ridership of 80 percent between 2005 and 2030. The projected increase in ridership is based on an anticipated 87.2 percent increase in households and 61.3 percent increase in jobs in the area during the same time period. Similarly, the Waterfront Metro Station is expected to see an increase in ridership of approximately 11.4 percent between 2005 and 2030.

The Metrorail Station Access and Capacity Study provided a list of recommendations for the Navy Yard-Ballpark Metro Station, including the following:

- Relocate kiosk, fare gate and fare card vendor to surface,
- Add additional fare gates and fare card vendors,
- Construct new stair between mezzanine and platform, and
- Install new elevator between surface and platform.

These improvements were made at the west station entrance in conjunction with the construction of the office building at 55 M Street prior to the opening of Nationals' Park. The improvements tripled the operating capacity of the station (from 5,000 to 15,000 persons per hour).

Bus Service

The site also is approximately one mile from bus stops serving nine WMATA routes, the DC Circulator (Eastern Market – L'Enfant Plaza), Maryland Transit Authority (MTA), Potomac and Rappahannock Transportation Commission (PRTC), and Loudon County Transit routes. Stops on P Street currently are served by one Metrobus Route 74, which will also serve stops on 2nd Street and V Street in the future. Stops along M Street are served by five Metrobus routes (P6, V1, V4, A9, and W9).

The minimum, maximum, and average headways for the WMATA and DC Circulator routes are provided in Table 3. The minimum, maximum, and average headways for the commuter bus routes are provided in Table 4 and reflect pre-pandemic conditions.

Table 3
Metrobus and DC Circulator Headways (in minutes)

Headway	Northbound/Westbound			Southbound/Eastbound		
	AM Peak 7:00 AM – 10:00 AM	Midday 10:00 AM – 4:00 PM	PM Peak 4:00 PM – 7:00 PM	AM Peak 7:00 AM – 10:00 AM	Midday 10:00 AM – 4:00 PM	PM Peak 4:00 PM – 7:00 PM
Martin Luther King Jr. Avenue Limited Line (A9)						
Min	0:15	N/A	N/A	N/A	N/A	0:14
Max	0:19	N/A	N/A	N/A	N/A	0:25
Avg	0:16	N/A	N/A	N/A	N/A	0:18
Anacostia – Eckington Line (P6)						
Min	0:10	0:15	0:15	0:11	0:15	0:11
Max	0:24	0:24	0:24	0:31	0:25	0:30
Avg	0:17	0:20	0:18	0:17	0:22	0:17
Benning Heights – M Street Line (V1)						
Min	0:16	N/A	N/A	N/A	0:22	0:19
Max	0:29	N/A	N/A	N/A	0:22	0:22
Avg	0:22	N/A	N/A	N/A	0:22	0:22
Capitol Heights – Minnesota Avenue Line (V4)						
Min	0:12	0:19	0:16	0:15	0:16	0:16
Max	0:21	0:38	0:25	0:30	0:30	0:20
Avg	0:16	0:30	0:18	0:19	0:25	0:18

Table 3 (continued)
Metrobus and DC Circulator Headways (in minutes)

Headway	Northbound/Westbound			Southbound/Eastbound		
	AM Peak 7:00 AM – 10:00 AM	Midday 10:00 AM – 4:00 PM	PM Peak 4:00 PM – 7:00 PM	AM Peak 7:00 AM – 10:00 AM	Midday 10:00 AM – 4:00 PM	PM Peak 4:00 PM – 7:00 PM
Convention Center – Southwest Waterfront Line (74)						
Min	0:12	0:20	0:13	0:11	0:20	0:13
Max	0:20	0:22	0:21	0:20	0:21	0:21
Avg	0:14	0:20	0:16	0:14	0:20	0:16
L'Enfant Plaza – Coast Guard Limited Line (W9)						
Min	N/A	N/A	0:11	0:14	N/A	N/A
Max	N/A	N/A	0:35	0:27	N/A	N/A
Avg	N/A	N/A	0:25	0:21	N/A	N/A
DC Circulator Eastern Market—L'Enfant Plaza Line						
Min	0:10	0:10	0:10	0:10	0:10	0:10
Max	0:10	0:10	0:10	0:10	0:10	0:10
Avg	0:10	0:10	0:10	0:10	0:10	0:10

Table 4
Commuter Bus Headways (in minutes)

Headway	Northbound/Westbound		Southbound/Eastbound	
	AM Peak Period	PM Peak Period	AM Peak Period	PM Peak Period
MTA Commuter Bus: Columbia and Silver Spring – Washington DC (315)				
Min	N/A	0:20	0:20	N/A
Max	N/A	0:30	0:28	N/A
Avg	N/A	0:23	0:24	N/A
MTA Commuter Bus: Charlotte Hall/Waldorf –Washington DC (735)				
Min	0:20	N/A	N/A	0:15
Max	0:30	N/A	N/A	0:30
Avg	0:27	N/A	N/A	0:24
Loudoun County Transit Commuter Bus: Arlington, VA & Washington, DC				
Min	N/A	0:02	0:05	N/A
Max	N/A	0:37	1:24	N/A
Avg	N/A	0:15	0:41	N/A
PRTC OmniRide: Dale City – Washington Navy Yard (D300)				
Min	N/A	0:14	0:25	N/A
Max	N/A	1:47	0:31	N/A
Avg	N/A	0:56	0:28	N/A

Existing bus and Metrorail service are shown on Figure 2.

Pedestrian Facilities

MoveDC is a 25-year vision for the District's Transportation Infrastructure. Priorities outlined in moveDC have been incorporated in the District of Columbia's Statewide Transportation Improvement Program (DC STIP). MoveDC provides infrastructure and policy recommendations for all modes of transportation, including Pedestrians.

According to the *Pedestrian Element* of moveDC, several opportunities for improvement exist within the District, including:

- Enhancing accessibility, which includes evaluating and improving uncontrolled crosswalks on high-speed multi-lane roadways and improving signalized intersections with high pedestrian crash rates;
- Improving the pedestrian network outside of downtown, which includes providing pedestrian facility enhancements where sidewalks are lacking;
- Making priority investments, which includes prioritizing pedestrian needs in critical locations near schools, transit stations, and high hazard locations;
- Promoting enforcement, which includes enforcement policy changes; and
- Improving intersection designs, which includes closing gaps in the pedestrian network and improvement in intersection lighting, crosswalks, signage, refuge islands, and pedestrian signalization/phasing.

The *Pedestrian Element's* Recommended Pedestrian Network includes the extension of the Anacostia Riverwalk Trail from its current terminus at 1st Street SE to the 2nd Street SW/V Street SW intersection along a path following the river. The Recommended Pedestrian Network also includes new sidewalks at the following locations within the study area:

- 1st Street between Q and T Streets,
- 2nd Street between Q and T Streets,
- T Street between 1st and 2nd Streets,
- S Street between 2nd and Water Streets,
- Water Street between Half and S Streets, and
- Half Street, south of Water Street.

Per DDOT's request, an assessment of existing conditions for all pedestrian facilities within one block of the proposed development, including the route to the nearest Metro Station, was conducted. The results of this assessment are depicted on Figure 3. A summary of the existing pedestrian facilities provided at each of the study intersections is presented in Table 5.

Table 5
Pedestrian Inventory by Intersection

Intersection	Pedestrian Heads/ Countdown	Type of Crosswalks	One Ramp/ Crosswalk	Tactile Warning Strip
2nd Street/P Street (Unsignalized)	N/A	All Legs – High Visibility	Yes	Yes
2nd Street/Q Street (Unsignalized)	N/A	West Leg – High Visibility Note 1	No Note 2	No Note 2
2nd Street/R Street (Unsignalized)	Note 3			
2nd Street/T Street (Unsignalized)	Note 3			
2nd Street/V Street (Unsignalized)	N/A	East and North leg – High Visibility Note 4	No Note 5	No Note 6
1st Street/V Street (Unsignalized)	N/A	All Legs – Standard Note 7	No Note 8	No Note 9
1st Street/T Street (Unsignalized)	Note 10			
1st Street/R Street/Potomac Avenue (Unsignalized)	N/A	All Legs – High Visibility	Yes	Yes

1. Crosswalk only along the western leg.
2. Ramps missing on the northeast and southeast corner of the intersection.
3. No crosswalk present at the intersection, since the sidewalk is present only on 2nd Street.
4. Crosswalk present on the eastern and northern leg.
5. One ramp on northwest corner, one ramp on northeast corner, one ramp on southwest corner, and two ramps on southeast corner.
6. Tactile warning strip missing on all ramps. Crosswalk only on the western and northern legs.
7. No crosswalk present on the eastern and southern leg.
8. One ramp on northeast corner, two ramps on northwest corner, and one ramp on southwest corner.
9. Tactile warning strips are only present for the ramp on the northwest corner of the intersection.
10. No crosswalk present at the intersection, since there are no sidewalks on 1st Street and T Street.

In conjunction with redevelopment of 1900 Half Street, the developer of the project is to construct a Riverwalk from the rear of the property to the riverbank of the Anacostia River and design and construct to tie in to the proposed Riverwalk Trail as it is completed on adjacent properties. The developer also agreed to install missing sidewalks and crosswalks along Half Street SW, Water Street SW, and T Street SW, and to construct a sidewalk along the east side of Half Street, between T Street and S Street. On Half Street, construction of sidewalks appears to be underway with segments on both the east and west side completed. On Half Street between S and T Streets, sidewalks on the west side of the street are completed with shared path

pavement. On Half Street between T and V Streets, sidewalks on the east side of the street are completed with brick pavers.

As a part of the DC United Stadium Study, improvements to the sidewalks along Half Street north of S Street to Potomac Avenue and along Potomac Avenue to South Capitol Street, and along 2nd Street and R Street were completed.

As part of the 88 V Street development, sidewalks along the east side of 1st Street between T Street and V Street were constructed. In the future, the River Point project will provide an 8-foot sidewalk and an 8-foot tenant zone on V Street along the property frontage. A 10-foot sidewalk and a 10-foot tenant zone is also proposed on 1st Street along the property frontage. On the east side of 2nd Street a 10-foot sidewalk is proposed, while a 6-foot sidewalk is proposed on the west side of 2nd Street. A 12-foot shared-use path will be provided on the south side of the site to connect to the Riverwalk Trail.

Bicycle Facilities

According to the *Bicycle Element* of moveDC, several opportunities for improvement exist within the District, including:

- Improving the cycling experience on bridges and approaches to bridges;
- Minimizing barriers such as complex intersections, security barriers, freeway ramps, and driveways;
- Expanding investment in the bicycle network beyond downtown; and
- Improving safety by educating all road users and increasing public awareness.

The *Bicycle Element's* Recommended Bicycle Network includes the following improvements within the study area:

- Bike lanes along Potomac Avenue (complete),
- A cycle track along 2nd Street south of P Street (complete), and
- A cycle track along P Street between 4th Street SW and South Capitol Street.

In conjunction with the 1900 Half Street redevelopment, a cycle track will be constructed along T Street, between the Riverwalk and Water Street. This cycle track has not been constructed yet.

In conjunction with the River Point redevelopment, a cycle track will be constructed along the west side of 2nd Street south of V Street. A shared-use path would be constructed along the southern side of River Point.

Capital Bikeshare

Capital Bikeshare is an automated bicycle rental or bicycle sharing program that provides over approximately 5,000 bicycles at 580 stations across Washington, DC, Arlington, VA, Alexandria, VA, Montgomery County, MD, and Fairfax County, VA.

Membership, which is required to use Capital Bikeshare, includes five options for joining: single trip ($2), 24 hours ($8), three days ($17), 30 days ($28), or one year ($85).

Under any membership option, the first 30 minutes of use are free; users then are charged a usage fee for each additional 30-minute period. Bicycles can be returned to any station with an available dock.

As shown on Figure 2, the closest Bikeshare station is located one block east of the site at the Half Street/Water Street SE intersection and includes 15 docks. The next closest Bikeshare station is located at Potomac Avenue/Half Street SW and includes 23 docks. Additional Bikeshare stations are located more than ½ mile from the site at 1st Street/N Street, SE and M Street/4th Street, SW. The station on 1st Street/N Street, SE includes 39 docks and the station on M Street/4th Street, SW includes 23 docks.

The District of Columbia Capital Bikeshare Development Plan in 2015 outlined a system-wide expansion plan including 99 new Bikeshare stations by the end of 2018 and 21 existing stations to be expanded by the end of 2017. The two stations within ½ mile of the site have been installed since the 2015 Plan. A draft Capital Bikeshare Plan Update has been published in 2020 with system-wide expansion plan including 81 new Bikeshare stations by 2025.

The River Point redevelopment will install a Capital Bikeshare station in the vicinity of the project.

Car Sharing Services

Two car-sharing providers currently operate in the District. Zipcar uses a reserved space model meaning cars must be returned to the same designated parking spaces from which they were picked up. One Zipcar is located at 525 Water Condos, within one mile of the site.

Free2Move uses a point-to-point model, which means a vehicle does not have to be returned to its original location; a Free2Move vehicle can be parked in any unrestricted curbside parking space, in any metered curbside parking space (without paying meter fees), or in any residential permit parking space. Free2Move currently has 600 vehicles in the District.

EXISTING CONDITIONS ANALYSIS

TRAFFIC VOLUMES

Vehicular turning movement, bicycle, and pedestrian counts were conducted by Wells + Associates on February 16, 2017 from 7:00 AM to 10:00 AM and from 4:00 PM to 7:00 PM, and March 2, 2017 from 7:00 AM to 9:00 AM and from 5:00 PM to 7:00 PM. AM and PM peak hours for each of the study intersections were determined individually to provide the most conservative peak hour analysis. In order to adjust the 2017 field counts to 2020, several growth adjustment factors were taken into account. 2017 counts were increased a growth rate of one percent per year from 2017 to 2020. Additionally, 2017 counts were rerouted on 1st and 2nd Streets to account for the conversion of the streets from one-way to two-way since the counts were done. Additionally, 88 V Street has been built and occupied since the last counts; therefore, the trips generated by this development have been included in the 2020 existing volumes.

Existing vehicular peak hour traffic volumes are shown on Figure 4. Pedestrian volumes are shown on Figure 5. Traffic count data are included in Appendix B.

CAPACITY ANALYSIS

Capacity/level of service (LOS) analyses were conducted at the study intersections based on the existing lane use and traffic control shown on Figure 6, baseline traffic volumes shown on Figure 4, and pedestrian volumes shown on Figure 5.

Synchro software (Version 10.3, Build 151) was used to evaluate levels of service at the study intersections for the AM and PM peak hours. Synchro is a macroscopic model used to evaluate the effects of changing intersection geometrics, traffic demands, traffic control, and/or traffic signal settings and to optimize traffic signal timings. The levels of service reported were taken from the Highway Capacity Manual (HCM) 2000 reports generated by Synchro[2]. Level of service descriptions are included in Appendix C.

The results of the analyses are summarized in Table 6. Capacity analysis worksheets are included in Appendix D.

As shown in Table 6, all approaches at the study intersections operate at a LOS D or better under existing conditions.

[2] HCM 2000 reports typically are used because HCM 2010 does not allow for many of the non-standard intersection configurations present in the District.

QUEUE ANALYSIS

A queuing analysis was conducted for existing conditions using the 95th percentile queue lengths reported by HCM 2000 and 2010 (HCM 2010 was only used for queues at all way stop intersections since HCM 2000 does not provide queues for such intersections). The results are summarized in Table 7. Queue reports are provided in Appendix D.

As shown in Table 7, no queues exceed the available storage under existing conditions.

SAFETY ANALYSIS

Crash data at the study intersections were obtained from DDOT. The information provided by DDOT included the total number of crashes over the period from 2015 through 2017 at each intersection and was further categorized by type of crash. Based on the data, Table 8 shows the overall intersection crash rates at each of the study intersections.

Table 6
Level of Service Summary

Approach	Existing Conditions		2024 Background Conditions		Phase 1 Total Future Conditions		2028 Background Conditions		Total Future Conditions	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1. 2nd Street/P Street										
EB	A	D	A	F [61.2]	B	F [142.6]	B	F [74.6]	B	F [280.9]
WB	A	A	B	B	B	B	B	B	C	C
NB	A	B	A	B	B	D	A	B	C	F [120.5]
SB	A	B	B	B	B	C	B	B	C	F [53.5]
Overall	**A**	**C**	**B**	**E [40.8]**	**B**	**F [78.4]**	**B**	**E [48.8]**	**C**	**F [159.7]**
2. 2nd Street/Q Street										
EB	B	C	B	E [38.8]	B	F [89.7]	B	E [44.7]	C	F [324.5]
WB	B	B	B	B	B	C	B	C	C	D
NB	A	A	A	A	A	A	N/A	N/A	A	A
SB	A	A	A	A	A	A	A	A	A	A
3. 2nd Street/R Street										
WB	A	A	A	D	B	F [224.4]	A	D	C	F [ERR]
NB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SB	A	A	A	A	A	A	A	A	A	A
4. 2nd Street/T Street										
WB	A	A	A	A	A	A	A	A	A	B
NB	A	A	A	A	A	A	A	A	B	B
SB	A	A	A	A	A	C	A	A	B	F [91.4]
Overall	**A**	**A**	**A**	**A**	**A**	**B**	**A**	**A**	**B**	**F [60.3]**
5. 2nd Street/V Street										
EB	A	A	A	A	A	A	A	A	A	A
WB	A	A	A	B	A	B	A	B	A	B
NB	A	A	A	A	A	A	A	A	A	A
SB	A	A	A	B	A	B	A	B	A	B
Overall	**A**	**A**	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**

Table 6 continued on next page

Table 6 Continued
Level of Service Summary

Approach	Existing Conditions		2024 Background Conditions		Phase 1 Total Future Conditions		2028 Background Conditions		Total Future Conditions	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
6. 1st Street/V Street										
EB	A	A	B	B	B	B	B	B	B	C
NB	A	A	A	A	A	A	A	A	A	A
SB	A	A	A	A	A	A	A	A	A	A
7. 1st Street/T Street										
EB	A	A	A	B	B	C	A	B	B	C
NB	N/A	N/A	N/A	N/A	A	A	N/A	N/A	A	A
SB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8A. 1st Street/R Street/Potomac Avenue										
EB	A	A	A	A	A	A	A	A	A	B
WB	A	A	A	A	A	A	A	A	A	B
SB	NA	NA	A	A	A	A	A	A	A	A
Overall	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**B**
8B. 1st Street/R Street/Potomac Avenue										
EB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WB	A	A	A	A	A	A	A	A	A	A
NB	A	B	A	B	B	C	A	B	B	C

[x.x] = unsignalized intersection control delay in sec/veh
(x.x) = signalized intersection control delay in sec/veh
* Denotes existing lane configuration.

Table 7
Synchro 95th Percentile Queue Summary (in feet)

Approach	Available Storage§	Existing Conditions		2024 Background Conditions		Phase 1 Total Future Conditions		2028 Background Conditions		Total Future Conditions	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1. 2nd Street/P Street											
EBLTR	130'/375'	25	248	28	423	35	680	30	495	50	943
WBLTR	355'	20	8	25	13	38	30	28	13	70	63
NBLTR	390'	5	28	10	53	40	133	10	55	115	425
SBLTR	150'/290'	30	23	38	53	53	110	40	53	108	240
2. 2nd Street/Q Street											
EBLTR	890'	3	38	4	61	5	112	4	72	8	207
WBLTR	355'	9	4	12	6	16	10	12	8	24	20
NBLTR	420'	0	0	0	0	0	0	0	0	0	0
SBLTR/SBTR	390'	1	13	1	15	1	17	1	16	1	21
3. 2nd Street/R Street											
WBLR	365'	0	0	3	67	12	376	3	71	46	ERR
NBTR	430'	0	0	0	0	0	0	0	0	0	0
SBL	80'	-	-	-	-	-	-	-	-	-	-
SBLT/SBT	410'	2	14	2	15	3	19	2	16	3	25
4. 2nd Street/T Street											
WBLR	375'	0	3	0	3	13	20	0	3	30	43
NBTR	920'	0	0	5	5	18	13	5	5	25	50
SBLT	320'	0	8	5	38	18	138	5	40	58	540
5. 2nd Street/V Street											
EBLTR	30'/440'	0	0	0	0	0	0	0	0	0	0
WBLTR	350'	0	0	5	25	5	28	5	25	5	28
NBLTR	320'	0	0	15	33	15	33	15	33	15	33
SBLTR	920'	3	5	8	58	10	68	8	58	15	83

Table 7 continued on next page

Table 7 (Continued)
Synchro 95th Percentile Queue Summary (in feet)

Approach	Available Storage§	Existing Conditions		2024 Background Conditions		Phase 1 Total Future Conditions		2028 Background Conditions		Total Future Conditions	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
6. 1st Street/V Street											
EBLTR	350’	2	6	15	46	22	60	15	47	31	86
NBLTR	300’	0	0	0	0	0	0	1	0	1	0
SBLTR	910’	0	1	0	1	1	1	0	1	2	2
7. 1st Street/T Street											
EBLR	360’	1	3	1	5	8	22	1	5	22	60
NBLT	910’	0	0	0	0	0	0	0	0	0	0
SBTR	910’	0	0	0	0	0	0	0	0	0	0
8A. 1st Street/R Street/Potomac Avenue											
EBLT	365’	0	0	0	0	13	43	0	0	18	65
WBTR	110’	0	0	0	0	8	28	0	0	13	40
SBLR	360’	0	0	0	0	3	5	0	0	5	13
8B. 1st Street/R Street/Potomac Avenue											
EBTR	110’	0	0	0	0	0	0	0	0	0	0
WBLT	400’	1	3	2	16	5	29	2	16	11	46
NBR	920’	4	6	16	39	29	64	16	40	45	119

§ All distances measured to nearest intersection or end of turn lane, as appropriate. Where two storage lengths are given, the first is the distance to the driveway, the second is the distance to the nearest intersection.

Table 8
Crash Data Summary

Intersection	Type of Control	No. of Crashes (3 Years)	ADT (veh/day)	Crash Rate (MEV)
2nd Street/P Street	All-way Stop	3	7,420	0.37
2nd Street/Q Street	Two-way Stop	1	5,560	0.16
2nd Street/R Street	Two-way Stop	1	2,510	0.36
2nd Street/T Street	Two-way Stop	1	2,560	0.36
2nd Street/V Street*	All-way Stop	N/A	2,320	N/A
1st Street/V Street*	Two-way Stop	N/A	2,330	N/A
1st Street/T Street	Two-way Stop	2	N/A	N/A
1st Street/R Street/Potomac Avenue‡	Two-way Stop	2	N/A	N/A

*No crashes reported for the intersection.
‡ Under existing conditions, the intersection under construction.

As shown in Table 8, none of the study intersections have a crash rate greater than or equal to 1.0 MEV.

2024 BACKGROUND CONDITIONS

TRAFFIC VOLUMES

Overview

The proposed development is to be constructed in two phases. The first phase is projected to be delivered in 2024. In order to forecast year 2024 background traffic volumes in the study area without the proposed development, increases in traffic associated with growth outside the immediate site vicinity (regional growth) and increases in traffic associated with planned or approved but not yet constructed developments in the study area (pipeline developments) were considered.

Regional Growth

DDOT's historical average daily traffic (ADT) volume maps were examined to determine an appropriate growth rate for the study area. Consistent with the previously approved methodology, a growth rate of one percent per year compounded annually over four years (2020 to 2024) was applied to the existing vehicular volumes shown on Figure 4. The resulting 2024 volumes with regional growth are shown on Figure 7.

Pipeline Developments

Three additional pipeline developments planned in the study area were identified. Traffic volumes for the pipeline developments are shown on Figure 8. A summary of the pipeline developments is provided below.

1900 Half Street SW

1900 Half Street SW is a mixed-use development that will feature approximately 462 residential dwelling units and 24,000 SF of retail space. Construction is complete and occupancy is underway. Site trip assignments for the development were taken from the Comprehensive Transportation Review for 1900 Half Street SW prepared by Gorove/Slade, dated May 19, 2016. According to the study, the 1900 Half Street SW development will generate an estimated 150 AM peak hour vehicle trips and 207 PM peak hour vehicle trips.

River Point

River Point will feature approximately 485 residential dwelling units, 33,368 SF of retail space, and 38,087 SF of restaurant space. It is anticipated that construction will be completed in 2020. Site trip assignments for the development were taken from the 2100 2nd Street, SW Comprehensive Transportation Review prepared by Wells + Associates, dated April 2017. According to the study, the River Point development will generate an estimated 178 AM peak hour vehicle trips and 483 PM peak hour vehicle trips.

1530-1550 1st Street SW

1530-1550 1st Street SW will feature 177 residential dwelling units and 10,800 square feet of retail space. It is anticipated that construction will be completed prior to 2024. The proposed development will generate an estimated 42 AM peak hour vehicle trips and 71 PM peak hour vehicle trips.

Background Forecasts

Background 2024 traffic forecasts (without the phase one of the proposed development) were developed by combining the traffic grown to the year 2024 (shown on Figure 7) with the pipeline traffic volumes shown on Figure 8. The resulting 2024 background traffic forecasts are shown on Figure 9.

CAPACITY ANALYSIS

Capacity/level of service (LOS) analyses were conducted at the study intersections based on the future background traffic forecasts shown on Figure 9.

The level of service results for the 2024 background conditions are presented in Appendix E and summarized in Table 6. As shown in Table 6, background conditions are generally consistent with existing conditions. All approaches operate at a LOS D or better except for the eastbound approach at 2nd Street/P Street (LOS F during the PM peak hour) and eastbound approach at 2nd/Q Street (LOS E during the PM peak hour).

QUEUE ANALYSIS

A queuing analysis was conducted for 2024 background conditions using the 95th percentile queues reported by Synchro. The results are summarized in Table 7. Queue reports are provided in Appendix E.

As shown in Table 7, the 95th percentile queues at the study intersections under 2024 background conditions are generally consistent with existing conditions. No queues exceed the available storage under background conditions, with the exception of the eastbound approach at 2nd Street/P Street during the PM peak hour.

2028 BACKGROUND CONDITIONS

TRAFFIC VOLUMES

Overview

The second phase of the project is anticipated to be delivered in 2028. In order to forecast year 2028 background traffic volumes in the study area without the proposed development, increases in traffic associated with growth outside the immediate site vicinity (regional growth) and increases in traffic associated with planned or approved but not yet constructed developments in the study area (pipeline developments) were considered.

Regional Growth

Consistent with the 2024 Background, a growth rate of one percent per year compounded annually over eight years (2020 to 2028) was applied to the existing vehicular volumes shown on Figure 4. The resulting 2028 volumes with regional growth are shown on Figure 10.

Background Forecasts

Background 2028 traffic forecasts (without the proposed development) were developed by combining the traffic volumes grown to the year 2028 (shown on Figure 10) with the pipeline traffic volumes shown on Figure 8. The resulting 2028 background traffic forecasts are shown on Figure 11.

CAPACITY ANALYSIS

Capacity/level of service (LOS) analyses were conducted at the study intersections based on the 2028 background traffic forecasts shown on Figure 11.

The level of service results for the 2028 background conditions are presented in Appendix F and summarized in Table 6. As shown in Table 6, 2028 background conditions are generally consistent with existing conditions. All approaches operate at a LOS D or better except for the eastbound approach at 2nd Street/P Street (LOS F during the PM peak hour) and the eastbound approach at 2nd/Q Street (LOS E during the PM peak hour).

QUEUE ANALYSIS

A queuing analysis was conducted for 2028 background conditions using the 95th percentile queues reported by Synchro. The results are summarized in Table 7. Queue reports are provided in Appendix F.

As shown in Table 7, the 95th percentile queues at the study intersections under 2028 background conditions are generally consistent with existing conditions. No queues exceed the available storage under background conditions, with the exception of the eastbound approach at 2nd Street/P Street during the PM peak hour.

SITE ANALYSIS

OVERVIEW

The subject site is located on Squares 0611 and 0609 in Ward 6 and is located in the Southwest quadrant of the District. The site is bordered by 1st Street SW to the east, 2nd Street SW to the west, T Street SW to the north, and V Street SW to the south. The property is located in the CG-4 zone and currently is occupied by a surface parking lot, housing approximately 646 parking spaces.

At full build out, the proposed development will include approximately 2,105 apartment dwelling units, 80,428 SF of office, two hotels totaling 423 keys, and 71,848 SF of retail.

SITE ACCESS AND CIRCULATION

Vehicular Access

Access to the existing surface parking lot that currently occupies the site is provided via five curb cuts: three on 1st Street and two on 2nd Street. Parking access to the proposed below-grade parking for the project is proposed via three curb cuts: one on 1st Street (24 feet wide), one on 2nd Street (20 feet wide), and one on T Street (24 feet wide). Access to the below-grade loading facilities is proposed via a curb cut on 2nd Street (20 feet wide). All curb cuts will meet the spacing criteria outlined in the 2019 *Design and Engineering Manual* and all curb cuts will allow for front-in/front-out maneuvers.

Pedestrian and Bicycle Access

The proposed development plan would create significant pedestrian and bicycle pathways internally through the site. A curved pedestrian and bicycle spine is proposed longitudinally through the site along with a shared street (U Street) horizontally through the site that will be designed to primarily serve pedestrians and bicycles. Automobiles also will be accommodated; however, the street will be designed so as not to encourage significant cut-through traffic. It is envisioned that U Street, between 1st Street and 2nd Street primarily will serve drop-off/pick-up traffic for the project. The curb cuts for U Street on 1st Street and 2nd Street are proposed to be 22 feet in width, in accordance with direction from the Public Space Committee.

The proposed pedestrian and bicycle accommodations through the site will provide connectivity to the cycle track on 2nd Street and the planned extension of the Anacostia River Walk Trail a block to the south along the waterfront.

Additionally, the proposed development of 100 V Street also will provide improved streetscapes and sidewalks along the north side of V Street, between 1st Street and 2nd Street; along the east side of 2nd Street, between V Street and T Street; along the west side of 1st Street,

between V Street and T Street; and along the south side of T Street, between 1st Street and 2nd Street. The Applicant also is proposing a raised mid-block crosswalk on V Street, between 1st and 2nd Streets to facilitate the anticipated heavy pedestrian flow between the site and the River Point development to the south.

A conceptual diagram depicting the proposed pedestrian and bicycle facilities through the site is shown on Figure 12.

PROPOSED PARKING

Vehicular Parking

Based on parking requirements prescribed in the 2016 Zoning Regulations (ZR16), a **minimum** of 926 parking spaces would be required at full build out of the proposed development. A summary of the parking required and provided for each land use is provided in Table 9.

Table 9
Parking Summary

Land Use	Required Parking			Proposed Parking
	Phase 1	Phase 2	Total	
Residential	1 per 3 units (in excess of four units)			1,049 spaces
	(1,177-4)/3 = 391 spaces	(928-4)/3 = 308 spaces	699	
Office	0.5 per 1,000 SF in excess of 3,000 SF			
	NA	0.5*(80.428-3) = 39 spaces	39	
Retail	1.33 per 1,000 SF in excess of 3,000 SF			102 spaces
	1.33*(45.042-3) = 56 spaces	1.33*(26.806-3) = 32 spaces	88	
Hotel	0.5 per 1,000 SF in excess of 3,000 SF			116 spaces
	0.5*(80.071-3) = 39 spaces	0.5*(125.288-3) = 61 spaces	100	
Total	**486 spaces**	**440 spaces**	**926 spaces**	**1,332 spaces**

† A portion of the residential spaces will not be dedicated exclusively for residential use. They will be shared with visitors.
‡ Parking requirement calculated based on the Institutional, general category of ZR16.
* The 45,794 SF Elementary School is assumed to have 60 staff

While ZR16 does not include maximum parking caps, DDOT has established DDOT Preferred Vehicle Parking Rates, expressed as maximums. The rates vary depending on the distance from Metrorail. Preferred maximum parking ratios for sites within one mile of Metrorail are summarized below in Table 10.

Table 10
Summary of DDOT Preferred Parking Rates
Within one mile of Metrorail

Land Use	Parking Requirement	Max No. of Spaces (at Full Build Out)
Residential	≤ 0.5 spaces/unit	1,053
Retail	≤ 1.6 spaces/1,000 SF	115
Office	≤ 0.65/1,000 SF	52
Hotel	≤ 0.6/1,000 SF	126
Total		**1,346**

With a proposed parking supply of 1,332 spaces, the supply would be below DDOT's Preferred Parking Maximum.

Bicycle Parking

The proposed development also would be required to provide long-term and short-term bicycle parking. Long-term bicycle parking is intended for use by employees and residents and must be located on the first level below grade or on the ground floor of each building. Short-term bicycle parking is intended for use by visitors to the site and should be located in public space with input from DDOT during the public space process. The required bicycle parking for the development is summarized in Table 11 below.

Table 11
Bicycle Parking Summary

Land Use	Required Parking						Proposed Parking	
	Long-term†			Short-term			Long-term	Short-term
	Ph 1	Ph 2	Total	Ph 1	Ph 2	Total		
Residential	1 per 3 units			1 per 20 units			**401**	**101**
	221†	180	401	55†	46	101		
Office	1 per 2,500 SF			1 per 40,000 SF			**32**	**2**
	NA	32	32	NA	2	2		
Retail	1 per 10,000 SF			1 per 3,500 SF			**8**	**21**
	5	3	8	13	8	21		
Hotel	1 per 10,000 SF†			1 per 40,000 SF			**21**	**5**
	8	13	21	2	3	5		
Total	**234**	**228**	**462**	**70**	**59**	**129**	**462**	**129**

† Note that per §802.2, after the first 50 bicycle parking spaces are provided for a use additional spaces are required at one half the specified ratio.

Proposed Loading

The loading requirements for the proposed development are prescribed by the ZR16 and are summarized in Table 12. Access to the loading berths is provided via a curb cut on 2nd Street such that the truck enters/exit the site front first. The below-grade loading facilities will accommodate WB-40 trucks, SU-30 trucks and service/delivery vehicles. Eleven berths and five service/delivery spaces will be provided. Truck maneuvers are provided in Appendix G.

Table 12
Loading Summary

Land Use	Required Loading	
	Phase 1	Phase 2
Residential	> 50 DU 1 loading berth + platform 1 service/delivery space	> 50 DU 1 loading berth + platform 1 service/delivery space
Retail	> 20,000 SF and < 100,000 SF of GFA 2 loading berths + platforms 1 service/delivery space	> 20,000 SF and < 100,000 SF of GFA 2 loading berths + platforms 1 service/delivery space
Office	NA	> 50,000 and < 200,000 SF of GFA 2 loading berths + platforms 1 service/delivery space
Hotel	> 50,000 and < 100,000 SF of GFA 2 loading berths + platforms 0 service/delivery spaces	> 100,000 SF and < 500,000 SF of GFA 3 loading berths + platforms 0 service/delivery spaces
Total[†]	5 loading berths + platforms 2 service/delivery spaces	

[†] Per §901.8 of ZR16, where two or more uses share a building or structure, the uses may share loading as long as internal access is provided from all shared uses requiring loading.

TRIP GENERATION ANALYSIS

Overview

The total number of trips generated by the proposed development would be comprised of vehicular trips, pedestrian trips, bicycle trips, and transit trips.

Total Trips

The total number of trips anticipated to be generated by the proposed development was estimated based on the Institute of Transportation Engineers' (ITE's) Trip Generation Manual. Land Use Code (LUC) 220 (Apartment), LUC 710 (Office), LUC 310 (Hotel), and LUC 820 (Retail) were used to estimate the total number of trips to/from the proposed project.

The trip generation for the proposed development is summarized in Tables 13A for phase one and 13B for full build out. As shown in Table 13B, the proposed development would generate 1,547 ***total*** AM peak hour trips and 2,078 ***total*** PM peak hour trips at full build out.

Table 13A
Phase One Site Trip Generation Summary

Land Use		AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Proposed Development							
1,177 DU Apartment (LUC 220)	Total Trips	116	464	580	432	233	665
	Non-auto Trips	*58*	*232*	*290*	*216*	*117*	*333*
	Transit	*43*	*171*	*214*	*160*	*86*	*246*
	Bicycle	*5*	*19*	*24*	*17*	*10*	*27*
	Pedestrian	*10*	*42*	*52*	*39*	*21*	*60*
	Vehicle Trips	58	232	290	216	116	332
45,042 SF Retail (LUC 820)	Total Trips	59	37	96	169	182	351
	Non-auto Trips	35	22	57	101	109	210
	Transit	*9*	*5*	*14*	*25*	*27*	*52*
	Bicycle	*6*	*4*	*10*	*17*	*18*	*35*
	Pedestrian	*20*	*13*	*33*	*59*	*64*	*123*
	Vehicle Trips	24	15	39	68	73	141
184 Rooms Hotel (LUC 310)	Total Trips	58	40	98	56	54	110
	Non-auto Trips	12	8	20	11	11	22
	Transit	*6*	*4*	*10*	*6*	*6*	*12*
	Bicycle	*-*	*-*	*-*	*-*	*-*	*-*
	Pedestrian	*6*	*4*	*10*	*5*	*5*	*10*
	Vehicle Trips	46	32	78	45	43	88
Phase One Total Proposed Development	Total Trips	233	541	774	657	469	1,126
	Non-auto Trips	105	262	367	328	237	565
	Transit	*65*	*181*	*246*	*192*	*129*	*321*
	Bicycle	*12*	*23*	*35*	*35*	*30*	*65*
	Pedestrian	*37*	*59*	*96*	*104*	*92*	*196*
	Vehicle Trips	128	279	407	329	232	561

Table 13B
Full Build Out Site Trip Generation Summary

Land Use		AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Proposed Development							
2,105 DU Apartment (LUC 220)	Total Trips	207	828	1,035	764	411	1,175
	Non-auto Trips	*104*	*414*	*518*	*382*	*206*	*588*
	Transit	*77*	*306*	*383*	*283*	*152*	*435*
	Bicycle	*8*	*33*	*41*	*30*	*17*	*47*
	Pedestrian	*19*	*75*	*94*	*69*	*37*	*106*
	Vehicle Trips	103	414	517	382	205	587
80,428 SF Office (LUC 710)	Total Trips	142	19	161	29	140	169
	Non-auto Trips	21	3	24	4	21	25
	Transit	*15*	*2*	*17*	*3*	*15*	*18*
	Bicycle	*3*	*0*	*3*	*0*	*3*	*3*
	Pedestrian	*3*	*1*	*4*	*1*	*3*	*4*
	Vehicle Trips	121	16	137	25	119	144
71,848 SF Retail (LUC 820)	Total Trips	79	48	127	230	250	480
	Non-auto Trips	*47*	*29*	*76*	*138*	*150*	*288*
	Transit	*12*	*7*	*19*	*35*	*37*	*72*
	Bicycle	*8*	*5*	*13*	*23*	*25*	*48*
	Pedestrian	*27*	*17*	*44*	*80*	*88*	*168*
	Vehicle Trips	32	19	51	92	100	192
432 Rooms Hotel (LUC 310)	Total Trips	132	92	224	130	124	254
	Non-auto Trips	*26*	*18*	*44*	*26*	*25*	*51*
	Transit	*13*	*9*	*22*	*13*	*13*	*25*
	Bicycle	-	-	-	-	-	-
	Pedestrian	*13*	*9*	*22*	*13*	*12*	*25*
	Vehicle Trips	106	74	180	104	99	203
Total Build Out Proposed Development	Total Trips	560	987	1,547	1,153	925	2,078
	Non-auto Trips	*298*	*464*	*662*	*550*	*402*	*952*
	Transit	*117*	*324*	*441*	*334*	*217*	*551*
	Bicycle	*19*	*38*	*57*	*53*	*45*	*98*
	Pedestrian	*62*	*102*	*164*	*163*	*140*	*303*
	Vehicle Trips	362	523	885	603	523	1,126

Non-auto Mode Split

A portion of the trips generated by the proposed development would be made via non-auto modes of transportation. The percentage of site-generated trips that would use public transportation is dependent on the proximity of the site to transit stops, the walkability of the surrounding area, and the degree to which the use of public transit is encouraged, such as by implementation of a transportation demand management (TDM) program.

According to US Census data, approximately 40 percent of residents in the vicinity of the site take public transportation, 11 percent walk, and two percent bike. Another four percent carpool and another seven percent stay home, for a total non-auto mode split of 64 percent. However, a non-auto mode split of 50 percent was used for the residential component based on the proposed parking supply and the fact that the subject site is situated further from the Metro station than other locations within the same Census Tract. As agreed by DDOT, the non-auto mode split for the retail component was estimated to be 60 percent for the retail use based on the neighborhood serving nature of the proposed retail. A non-auto mode split of 15 percent was used for office. A non-auto mode split of 20 percent was used for the hotel uses.

Based on these mode split estimates, the project at full build out is expected to generate 662 AM peak hour trips and 952 PM peak hour trips by non-auto modes of transportation.

The non-auto trips will be comprised of transit, pedestrian, and bicycle trips. The estimates for the specific modes were based on data contained in the 2005 WMATA Ridership Survey. The breakdown of trips by specific modes is provided in Tables 13A and 13B.

Net New Vehicle Trips for Project

Taking into account the non-auto mode share, the proposed development at full build out would generate an estimated 885 AM peak hour vehicle trips and 1,126 PM peak hour vehicle trips, as shown on Table 13B. As a result of changes in the development program and a substantial reduction in parking since completion of the original CTR, the trip generation has decreased by 387 AM peak hour trips (30 percent) and 419 PM peak hour trips (27 percent).

Site Trip Distribution and Assignment

The distribution of peak hour site trips generated by the proposed development was based on existing traffic patterns in the study area and general knowledge of commuter routes to/from the site.

The trip distributions shown in Table 14 were applied to the vehicle trip generation for the proposed development. The resulting traffic assignments for phase one of the development are as shown on Figure 13A for the residential, Figure 13B for the retail, and Figure 13C for the hotel. The combined site trips for the development are shown on Figure 13D.

The resulting traffic assignments for full build out of the development are as shown on Figure 14A for the residential, Figure 14B for the retail, Figure 14C for the office, and Figure 14D for the hotel. The combined site trips for the development are shown on Figure 14E.

Table 14
Site Trip Distributions

Roadway	Direction	Distribution
2nd Street	South	25%
Potomac Avenue	South	45%
P Street	West	30%

2024 TOTAL FUTURE CONDITIONS

TRAFFIC FORECASTS

Phase one total future traffic forecasts with the proposed development were determined by combining the 2024 background traffic forecasts shown in Figure 9 with the site traffic volumes shown on Figure 13D to yield the 2024 total future traffic forecasts shown on Figure 15.

CAPACITY ANALYSIS

Capacity analyses were performed at the study intersections using the total future peak hour traffic forecasts shown on Figure 15. The level of service results for the 2024 total future conditions with the proposed development are included in Appendix H and summarized in Table 6.

By comparing total future levels of service to background levels of service, the impact of the proposed development can be identified. In accordance with the methodology outlined in DDOT's *Guidance for Comprehensive Transportation Review*, an impact is defined as follows:

- Degradation in overall or approach level of service to LOS E or LOS F, or
- Increase in overall or approach delay by more than five percent when compared to background conditions for intersections operating at an approach delay of LOS E or LOS F.

As shown in Table 6, intersection approaches are projected to maintain acceptable levels of service (LOS D or better) under Phase 1 conditions with the exception of:

- 2nd Street/P Street – the eastbound approach is projected to drop to a LOS F during the PM peak hour;
- 2nd Street/Q Street – the eastbound (driveway) approach is projected to drop to a LOS F during the PM peak hour; and
- 2nd Street/R Street – the westbound approach is projected to drop to a LOS F during the PM peak hour.

QUEUE ANALYSIS

A queuing analysis was conducted for 2024 total future conditions. Synchro was used to conduct the analyses, using the 95th percentile queue lengths. The results are summarized in Table 7 and queue reports are provided in Appendix H.

By comparing total future queues to background queues, the impact of the proposed development can be identified. In accordance with DDOT guidelines, an impact is defined as:

- An increase in the 95th percentile queue greater than 150 feet when compared to background conditions, or
- An 95th percentile queue that exceeds the available storage length as the result of the proposed development.

As shown in Table 7, the queue lengths would increase by more than 150 feet under the 2024 phase one future conditions with the proposed development are:

- 2nd Street/P Street – the eastbound approach in the PM peak hour and
- 2nd Street/R Street – the westbound approach in the PM peak hour.

Phase 1 Improvement Analysis

2nd Street/P Street

As previously mentioned, the River Point project was required as a condition of approval to restripe the eastbound approach of the 2nd Street/P Street intersection to provide an exclusive right turn lane. Because DDOT decided to install bike lanes on P Street, they requested a monetary contribution in lieu of the restriping. If the right turn lane would have been implemented to mitigate the impact of the River Point development, the 100 V development would not have had an impact under Phase 1 conditions, as shown in Tables 15 and 16. Results of the analysis are included in Appendix I.

Table 15
Level of Service Results
2nd Street/P Street with Eastbound Right Turn Lane

Approach	Background Conditions		Total Future Conditions	
	AM Peak	PM Peak	AM Peak	PM Peak
EB	A	C	A	D
WB	B	B	B	B
NB	A	B	B	C
SB	B	B	B	C
Overall	**A**	**C**	**B**	**D**

Table 16
95th Percentile Queue Results
2nd Street/P Street with Eastbound Right Turn Lane

Approach	Available Storage	Background Conditions		Total Future Conditions	
		AM Peak	PM Peak	AM Peak	PM Peak
EBLT	130'/375'	10	48	23	63
EBR		18	145	10	245
WB	355'	28	13	40	33
NB	390'	10	53	43	168
SB	150'/290'	38	53	58	123

2nd Street/Q Street

Under 2024 total future conditions, the eastbound, Fort McNair driveway, approach is projected to drop to a LOS F during the PM peak hour. Traffic signal warrants were evaluated to determine if signalization would be an appropriate form of mitigation. Warrants contained in the *Manual on Uniform Traffic Control Devices* (MUTCD) were evaluated.

The MUTCD provides nine warrants for evaluating the need for and appropriateness of signalization:

- Warrant 1, Eight-Hour Vehicular Volume – requires certain volume thresholds on the major street in combination with certain volume thresholds on the minor street to be met for eight hours on a typical day;
- Warrant 2, Four-Hour Vehicular Volume – requires certain volume thresholds on the major street in combination with certain volume thresholds on the minor street to be met for four hours on a typical day;
- Warrant 3, Peak Hour – requires certain volume thresholds on the major street in combination with certain volume thresholds on the minor street to be met for a single hour on a typical day;
- Warrant 4, Pedestrian Volume – Requires certain volume thresholds on the major street in combination with certain pedestrian volume thresholds crossing the major street to be met for four hours on a typical day or higher thresholds to be required for a single hour;
- Warrant 5, School Crossing – applies to locations with a designated school crossing;
- Warrant 6, Coordinated Signal System – applies to signalized corridors where additional signals would improve vehicle platooning;
- Warrant 7, Crash Experience – requires five or more crashes that are of the type that potentially would be correctable by signalization and requires certain volume thresholds to be met for eight hours of a typical day;
- Warrant 8, Roadway Network - applies only to the intersection of two major roadways;

- Warrant 9, Intersection Near a Grade Crossing – applies to intersections near a rail grade crossing.

Projected 2024 AM and PM peak hour traffic volumes were used to conduct a preliminary evaluation as to whether signalization at the intersection would be warranted. The preliminary evaluation is summarized in Table 17. Details of the evaluation can be found in Appendix I.

Table 17
Preliminary Signal Warrant Evaluation (2024 Total Future Conditions)
2nd Street/Q Street

Warrant	Peak Hours Met	Comments
1 – 8 Hour Volume	PM	Since only the PM peak hour meets the volume threshold, it is very unlikely that 8 hours would be satisfied (i.e. 7 additional hours on a typical day would need to have volumes higher than the AM peak hour and high enough to meet the warrant thresholds).
2 – 4 Hour Volume	Neither	Since neither the AM nor PM peak hour meets the volume threshold, the 4 hour volume warrant would not be met.
3 – Peak Hour Volume	Neither	Since neither the AM nor PM peak hour meets the volume threshold,
4 – Ped Volume		Not met with current ped volumes. Significant ped volumes would need to be realized in the future for this warrant to be met.
5 – School Crossing	Not Applicable	
6 – Coordinated Signal	Not Applicable	
7 – Crash Experience	NA	Crash history indicates that the warrant would not be met.
8 – Roadway Network	Not Applicable	
9 – Grade Crossing	Not Applicable	

Based on the preliminary evaluation of traffic signal warrants, it is highly unlikely that the 2nd Street/Q Street intersection would meet traffic signal warrants in 2024 under Phase 1 conditions.

2nd Street/R Street

Under 2024 total future conditions, the westbound, R Street, approach is projected to drop to a LOS F during the PM peak hour. Traffic signal warrants were evaluated to determine if signalization would be an appropriate form of mitigation. The preliminary evaluation is summarized in Table 18. Details of the evaluation can be found in Appendix I.

Table 18
Preliminary Signal Warrant Evaluation (2024 Total Future Conditions)
2nd Street/R Street

Warrant	Peak Hours Met	Comments
1 – 8 Hour Volume	PM	Since only the PM peak hour meets the volume threshold, it is very unlikely that 8 hours would be satisfied (i.e. 7 additional hours on a typical day would need to have volumes higher than the AM peak hour and high enough to meet the warrant thresholds).
2 – 4 Hour Volume	PM	Since only the PM peak hour meets the volume threshold, it is unlikely that 4 hours would be satisfied (i.e. 3 additional hours on a typical day would need to have volumes higher than the AM peak hour and high enough to meet the warrant thresholds).
3 – Peak Hour Volume	Neither	Since neither the AM nor PM peak hour meets the volume threshold,
4 – Ped Volume	Neither	Not met with current ped volumes. Significant ped volumes would need to be realized in the future for this warrant to be met.
5 – School Crossing	Not Applicable	
6 – Coordinated Signal	Not Applicable	
7 – Crash Experience	NA	Crash history indicates that the warrant would not be met.
8 – Roadway Network	Not Applicable	
9 – Grade Crossing	Not Applicable	

Based on the preliminary evaluation of traffic signal warrants, it is very unlikely that the 2nd Street/R Street intersection would meet traffic signal warrants in 2024 under Phase 1 conditions.

2028 TOTAL FUTURE CONDITIONS

TRAFFIC FORECASTS

Total future traffic forecasts with the proposed development were determined by combining the 2028 background traffic forecasts shown in Figure 11 with the site traffic volumes shown on Figure 14E to yield the 2028 total future traffic forecasts shown on Figure 16.

CAPACITY ANALYSIS

Capacity analyses were performed at the study intersections using the total future peak hour traffic forecasts shown on Figure 16. The level of service results for the 2028 total future conditions with the proposed development are included in Appendix J and summarized in Table 6.

As shown in Table 6, intersection approaches are projected to maintain acceptable levels of service (LOS D or better) with the exception of:

- 2nd Street/P Street – the eastbound, northbound, and southbound approaches are projected to drop to LOS F during the PM peak hour;
- 2nd Street/Q Street – the eastbound approach is projected to drop to a LOS F during the PM peak hour;
- 2nd Street/R Street – the westbound approach is projected to drop to a LOS F during the PM peak hour; and
- 2nd Street/T Street – the southbound approach is projected to drop to a LOS F during the PM peak hour.

QUEUE ANALYSIS

A queuing analysis was conducted for 2028 total future conditions. Synchro was used to conduct the analyses, using the 95th percentile queue lengths. The results are summarized in Table 7 and queue reports are provided in Appendix J.

As shown in Table 7, the queue lengths would increase by more than 150 feet under total future conditions with the proposed development are:

- 2nd Street/P Street – eastbound, northbound and southbound approaches in the PM peak hour;
- 2nd Street/Q Street – eastbound approach in the PM peak hour;
- 2nd Street/R Street – westbound approach in the PM peak hour; and
- 2nd Street/T Street – southbound approach in the PM peak hour.

As shown in Table 7, all approaches have queue lengths that **would not exceed the available storage** under total future conditions with the proposed development with the following exceptions:

- 2nd Street/P Street – the eastbound and northbound approaches during the PM peak hour;
- 2nd Street/R Street – the westbound approach during the PM peak hour; and
- 2nd Street/T Street—the southbound approach during the PM peak hour.

Phase 2 Improvement Analysis

2nd Street/P Street

Under 2028 Total Future Conditions, the northbound and southbound approaches and overall intersection are projected to drop to a LOS F during the PM peak hour. Traffic signal warrants were evaluated to determine if signalization would be an appropriate form of mitigation. Warrants contained in the *Manual on Uniform Traffic Control Devices* (MUTCD) were evaluated.

Projected 2028 AM and PM peak hour traffic volumes were used to conduct a preliminary evaluation as to whether signalization at the intersection would be warranted. The preliminary evaluation is summarized in Table 19. Details of the evaluation can be found in Appendix K.

Based on the preliminary evaluation, a signal may be warranted at the 2nd Street/P Street intersection under 2028 total future conditions. A detailed Traffic Signal Warrant Study would need to be completed upon full build out of the project to ensure warrants are met.

Table 19
Preliminary Signal Warrant Evaluation (2028 Total Future Conditions)
2nd Street/P Street

Warrant	Peak Hours Met	Comments
1 – 8 Hour Volume	AM/PM	Since only the PM peak hour meets the volume threshold, it is very unlikely that 8 hours would be satisfied (i.e. 7 additional hours on a typical day would need to have volumes higher than the AM peak hour and high enough to meet the warrant thresholds).
2 – 4 Hour Volume	PM	Since only the PM peak hour meets the volume threshold, it is unlikely that 4 hours would be satisfied (i.e. 3 additional hours on a typical day would need to have volumes higher than the AM peak hour and high enough to meet the warrant thresholds).
3 – Peak Hour Volume	PM	The PM peak hour is projected to meet the threshold; therefore, this warrant is projected to be met.
4 – Ped Volume		Not met with current ped volumes. Significant ped volumes would need to be realized in the future for this warrant to be met.
5 – School Crossing	Not Applicable	
6 – Coordinated Signal	Not Applicable	
7 – Crash Experience	NA	Crash history indicates that the warrant would not be met.
8 – Roadway Network	Not Applicable	
9 – Grade Crossing	Not Applicable	

2nd Street/Q Street

Under 2028 total future conditions, the eastbound, Fort McNair driveway, approach is projected to drop to a LOS F during the PM peak hour (similar to 2024 conditions). Peak hour traffic signal warrants were evaluated to determine if signalization would be an appropriate form of mitigation. Warrants contained in the *Manual on Uniform Traffic Control Devices* (MUTCD) for traffic signals were evaluated.

Projected 2028 AM and PM peak hour traffic volumes were used to conduct a preliminary evaluation as to whether signalization at the intersection would be warranted. The preliminary evaluation is summarized in Table 20. Details of the evaluation can be found in Appendix K.

Table 20
Preliminary Signal Warrant Evaluation (2028 Total Future Conditions)
2nd Street/Q Street

Warrant	Peak Hours Met	Comments
1 – 8 Hour Volume	PM	Since only the PM peak hour meets the volume threshold, it is very unlikely that 8 hours would be satisfied (i.e. 7 additional hours on a typical day would need to have volumes higher than the AM peak hour and high enough to meet the warrant thresholds).
2 – 4 Hour Volume	Neither	Since neither the AM nor PM peak hour meets the volume threshold, the 4 hour volume warrant would not be met.
3 – Peak Hour Volume	Neither	Since neither the AM nor PM peak hour meets the volume threshold, this warrant would not be met.
4 – Ped Volume		Not met with current ped volumes. Significant ped volumes would need to be realized in the future for this warrant to be met.
5 – School Crossing	Not Applicable	
6 – Coordinated Signal	Not Applicable	
7 – Crash Experience	NA	Crash history indicates that the warrant would not be met.
8 – Roadway Network	Not Applicable	
9 – Grade Crossing	Not Applicable	

Based on the preliminary evaluation of traffic signal warrants, it is highly unlikely that the 2nd Street/Q Street intersection would meet traffic signal warrants in 2028 under full build out conditions.

2nd Street/R Street

Under 2028 total future conditions, the westbound, R Street, approach is projected to drop to a LOS F during the PM peak hour. Traffic signal warrants were evaluated to determine if signalization would be an appropriate form of mitigation.

Projected 2028 AM and PM peak hour traffic volumes were used to conduct a preliminary evaluation as to whether signalization at the intersection would be warranted. The preliminary evaluation is summarized in Table 21. Details of the evaluation can be found in Appendix K.

Table 21
Preliminary Signal Warrant Evaluation (2028 Total Future Conditions)
2nd Street/R Street

Warrant	Peak Hours Met	Comments
1 – 8 Hour Volume	PM	Since only the PM peak hour meets the volume threshold, it is very unlikely that 8 hours would be satisfied (i.e. 7 additional hours on a typical day would need to have volumes higher than the AM peak hour and high enough to meet the warrant thresholds).
2 – 4 Hour Volume	PM	Since only the PM peak hour meets the volume threshold, it is unlikely that 4 hours would be satisfied (i.e. 3 additional hours on a typical day would need to have volumes higher than the AM peak hour and high enough to meet the warrant thresholds).
3 – Peak Hour Volume	PM	The PM peak hour is projected to meet the threshold; therefore, this warrant is projected to be met.
4 – Ped Volume	Neither	Not met with current ped volumes. Significant ped volumes would need to be realized in the future for this warrant to be met.
5 – School Crossing	Not Applicable	
6 – Coordinated Signal	Not Applicable	
7 – Crash Experience	NA	Crash history indicates that the warrant would not be met.
8 – Roadway Network	Not Applicable	
9 – Grade Crossing	Not Applicable	

Based on the preliminary evaluation, a signal may be warranted at the 2nd Street/R Street intersection under 2028 total future conditions. A detailed Traffic Signal Warrant Study would need to be completed upon full build out of the project to ensure warrants are met.

2nd Street/T Street

Under 2028 total future conditions, the southbound, 2nd Street, approach is projected to drop to a LOS F during the PM peak hour. Peak hour traffic signal warrants were evaluated to determine if signalization would be an appropriate form of mitigation. Warrants contained in the *Manual on Uniform Traffic Control Devices* (MUTCD) traffic signals were evaluated.

Projected 2028 AM and PM peak hour traffic volumes were used to conduct a preliminary evaluation as to whether signalization at the intersection would be warranted. The preliminary evaluation is summarized in Table 22. Details of the evaluation can be found in Appendix K.

Table 22
Preliminary Signal Warrant Evaluation (2028 Total Future Conditions)
2nd Street/T Street

Warrant	Peak Hours Met	Comments
1 – 8 Hour Volume	PM	Since only the PM peak hour meets the volume threshold, it is very unlikely that 8 hours would be satisfied (i.e. 7 additional hours on a typical day would need to have volumes higher than the AM peak hour and high enough to meet the warrant thresholds).
2 – 4 Hour Volume	PM	Since only the PM peak hour meets the volume threshold, it is unlikely that 4 hours would be satisfied (i.e. 3 additional hours on a typical day would need to have volumes higher than the AM peak hour and high enough to meet the warrant thresholds).
3 – Peak Hour Volume	Neither	Since neither the AM nor PM peak hour meets the volume threshold, this warrant would not be met.
4 – Ped Volume		Not met with current ped volumes. Significant ped volumes would need to be realized in the future for this warrant to be met.
5 – School Crossing	Not Applicable	
6 – Coordinated Signal	Not Applicable	
7 – Crash Experience	NA	Crash history indicates that the warrant would not be met.
8 – Roadway Network	Not Applicable	
9 – Grade Crossing	Not Applicable	

Based on the preliminary evaluation of traffic signal warrants, it is highly unlikely that the 2nd Street/T Street intersection would meet traffic signal warrants in 2028 under full build out conditions.

TRANSPORTATION DEMAND MANAGEMENT PLAN

Traffic and parking congestion can be solved in one of two ways: 1) increase supply or 2) decrease demand. Increasing supply requires building new roads, widening existing roads, building more parking spaces, or operating additional transit service. These solutions are often infeasible in constrained conditions in urban environments and, where feasible, can be expensive, time consuming, and in many instances, unacceptable to businesses, government agencies, and/or the general public. The demand for travel and parking can be influenced by TDM plans. Typical TDM measures include incentives to use transit or other non-auto modes of transportation, bicycle and pedestrian amenities, parking management, alternative work schedules, telecommuting, and better management of existing resources. TDM plans are most effective when tailored to a specific project or user group. A summary of the proposed TDM strategies for the project is provided below:

RESIDENTIAL STRATEGIES

- The cost of vehicle parking will be unbundled from the lease or purchase agreement for each residential unit and charge a minimum rate based on the average market rate within ¼ mile of the site.
- A Transportation Coordinator will be identified. The Transportation Coordinator will act as a point of contact with DDOT, goDCgo, and Zoning Enforcement. Transportation Coordinator's contact information will be provided to goDCgo. Transportation Coordinator's duties will include (duties may be part of other duties assigned to the individual):
    - Conducting an annual commuter survey of residents on-site and reporting TDM activities and data collection efforts to goDCgo once per year.
    - Developing, distributing, and marketing various transportation alternatives and options to the residents, including promoting transportation events (i.e., Bike to Work Day, National Walking Day, Car Free Day) on property website and in any internal building newsletters or communications.
    - Providing welcome packets, which may be digital, to all new residents that should, at a minimum, include the Metrorail pocket guide, brochures of local bus lines (Circulator and Metrobus), and carpool and vanpool information. Guaranteed Ride Home (GRH) brochure, and the most recent DC Bike Map. Brochures can be ordered from DDOT's goDCgo program by emailing info@godcgo.com.
    - Providing residents who wish to carpool with detailed carpooling information and referring them to other carpool matching services sponsored by the Metropolitan Washington Council of Governments (MWCOG) or other comparable service if MWCOG does not offer this in the future.

  - Posting all TDM commitments on website, allowing the public to see what commitments have been promised.

- Transportation Coordinators will receive TDM training from goDCgo to learn about the TDM conditions for this project and available options for implementing the TDM Plan.
- Transportation Coordinators will subscribe to goDCgo's residential newsletter.
- Short- and long-term bicycle parking will be provided in accordance with the requirements of ZR16.
- Long-term bicycle storage rooms will accommodate various sized bikes as is common to similar projects in the area.

OFFICE STRATEGIES

- The cost of vehicle parking will be unbundled from the lease or purchase agreement for each office unit.
- A Transportation Coordinator will be identified. The Transportation Coordinator will act as a point of contact with DDOT, goDCgo, and Zoning Enforcement. Transportation Coordinator's contact information will be provided to goDCgo. Transportation Coordinator's duties will include (duties may be part of other duties assigned to the individual):
  - Conducting an annual commuter survey of employees on-site and reporting TDM activities and data collection efforts to goDCgo once per year.
  - Developing, distributing, and marketing various transportation alternatives and options to the employees, including promoting transportation events (i.e., Bike to Work Day, National Walking Day, Car Free Day) on property website and in any internal building newsletters or communications.
  - Notifying goDCgo each time a new office tenant moves in and provide TDM information to each tenant when they move in.
  - Providing links to CommuterConnections.com and goDCgo.com on property website(s).
  - Providing employees who wish to carpool with detailed carpooling information and referring them to other carpool matching services sponsored by the MWCOG or other comparable service if MWCOG does not offer this in the future, or implementing a carpooling system that will allow individuals working in the building who wish to carpool to easily locate other employees who live nearby.
  - Distributing information on the Commuter Connections Guaranteed Ride Home (GRH) program, which provides commutes who regularly carpool, vanpool, bike, walk, or take transit to work with a free and reliable ride home in an emergency.
- Transportation Coordinators will receive TDM training from goDCgo to learn about the TDM conditions for this project and available options for implementing the TDM Plan.

- Transportation Coordinators will notify goDCgo each time a new office tenant moves in and provide TDM information to each tenant upon move in.
- Transportation Coordinator will demonstrate to goDCgo that tenants with 20 or more employees are in compliance with the DC Commuter Benefits Law and participate in at least one of the three transportation benefits outlined in the law (employee-paid pre-tax benefit, employer-paid direct benefit, or shuttle service), as well as any other commuter benefits related laws that may be implemented in the future
- Five parking spaces in each phase, located in convenient locations, will be designated as carpooling or vanpooling spaces.
- Short- and long-term bicycle parking will be provided in accordance with the requirements of ZR16.
- Long-term bicycle storage will be provided free of charge to employees and will accommodate various sized bikes as is common to similar projects in the area.
- Showers and lockers will be provided in accordance with the requirements of ZR16.

RETAIL STRATEGIES

- The cost of parking will be unbundled from the cost to lease retail space.
- A Transportation Coordinator will be identified. The Transportation Coordinator will act as a point of contact with DDOT, goDCgo, and Zoning Enforcement. The Transportation Coordinator's contact information will be provided to goDCgo. The Transportation Coordinator's duties will include (duties may be part of other duties assigned to the individual):
    - Conducting an annual commuter survey of employees on-site and reporting TDM activities and data collection efforts to goDCgo once per year.
    - Developing, distributing, and marketing various transportation alternatives and options to employees and customers, including promoting transportation events (i.e., Bike to Work Day, National Walking Day, Car Free Day) on property website and in any internal building newsletters or communications.
    - Posting "getting here" information in a visible and prominent location on the website with a focus on non-automotive travel modes. Also, links will be provided to goDCgo.com, CommuterConnections.com, transit agencies around the metropolitan area, and instructions for customers discouraging parking on-street in Residential Permit Parking (RPP) zones.
    - Demonstrating to goDCgo that tenants with 20 or more employees are in compliance with the DC Commuter Benefits Law and participate in one of the three transportation benefits outlined in the law (employee-paid pre-tax benefit, employer-paid direct benefit, or shuttle service), as well as any other commuter benefits related laws that may be implemented in the future.

  - Providing employees who wish to carpool with detailed carpooling information, including information for other carpool matching services sponsored by the MWCOG or other comparable service.

- Transportation Coordinators will receive TDM training from goDCgo to learn about the TDM conditions for this project and available options for implementing the TDM Plan.
- Short- and long-term bicycle parking will be provided in accordance with the requirements of ZR16.
- Long-term bicycle storage will be provided free of charge to employees and will accommodate various sized bikes as is common to similar projects in the area.
- Showers and lockers will be provided in accordance with the requirements of ZR16.

HOTEL STRATEGIES

- The cost of parking will be unbundled from the cost to lease the building.
- A Transportation Coordinator will be identified. The Transportation Coordinator will act as points of contact with DDOT, goDCgo, and Zoning Enforcement. Transportation Coordinator's contact information will be provided to goDCgo. The Transportation Coordinator's duties will include (duties may be part of other duties assigned to the individual):
  - Conducting an annual commuter survey of employees on-site and reporting TDM activities and data collection efforts to goDCgo once per year.
  - Developing, distributing, and marketing various transportation alternatives and options to employees and guests, including promoting transportation events (i.e., Bike to Work Day, National Walking Day, Car Free Day) on property website and in any internal building newsletters or communications.
  - Posting "getting here" information in a visible and prominent location on the website with a focus on non-automotive travel modes. Also, links will be provided to goDCgo.com, CommuterConnections.com, transit agencies around the metropolitan area, and instructions for customers discouraging parking on-street in Residential Permit Parking (RPP) zones.
  - Providing comprehensive transportation information and directions on hotels' websites, including promoting the use of non-automotive modes of transportation and links to website for goDCgo, Capital Bikeshare, DC Circulator, and the WMATA.
  - Providing brochures with information on non-automotive options for traveling to the property available at all times in a visible location in the lobby.
  - Demonstrating to goDCgo that tenants with 20 or more employees are in compliance with the DC Commuter Benefits Law and participate in one of the three transportation benefits outlined in the law (employee-paid pre-tax benefit,

employer-paid direct benefit, or shuttle service), as well as any other commuter benefits related laws that may be implemented in the future.

  - Providing employees who wish to carpool with detailed carpooling information, including information for other carpool matching services sponsored by the MWCOG or other comparable service.

- Transportation Coordinators will receive TDM training from goDCgo to learn about the TDM conditions for this project and available options for implementing the TDM Plan.
- Front office and customer-facing staff will be provided training by goDCgo (either in-person or webinar) to learn of the non-automotive options for traveling to the property.
- Guests will be provided with goDCgo's Get around Guide either by making it available on the property website or in printed format for front office or customer-facing staff.
- Transportation Coordinator will subscribe to goDCgo's hospitality newsletter.
- Short- and long-term bicycle parking will be provided in accordance with the requirements of ZR16.
- Long-term bicycle storage will be provided free of charge to employees and will accommodate various sized bikes as is common to similar projects in the area.
- Showers and lockers will be provided in accordance with the requirements of ZR16.
- Hotels will participate in the Capital Bikeshare Corporate Membership program and offer discounted annual memberships to employees.

CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations of this study are as follows:

1. The proposed project will transform an existing 646-space surface parking lot into a vibrant-mixed use development including, 2,105 apartments; 80,428 SF of office; two hotels totaling 423 keys; and 71,848 SF of retail. The project is proposed to be developed in two phases.

2. Five existing curb cuts will be replaced by four proposed curb cuts and two intersections. Each of the proposed curb cuts will meet width and spacing criteria outlined in the 2019 *Design and Engineering Manual* and have been designed to allow for front-in/front-out maneuvers.

3. Approximately, 1,332 parking spaces are proposed in a below-grade shared parking garage. Access to the proposed below grade parking will be provided via one curb cut on 2nd Street, one curb cut on 1st Street, and one curb cut on T Street. The proposed parking will meet the minimum parking requirements prescribed by ZR16 and will fall below DDOT's preferred parking maximums.

4. Access to the below-grade shared loading facility will be provided via a new curb cut on 2nd Street and has been designed so that trucks can enter and exit the site front-first via 2nd Street. The loading facility will accommodate up to a WB-40 truck.

5. A new connection is proposed through the site. U Street will be designed as a shared street, focused primarily on pedestrian and bicycle traffic. U Street will intersect with a longitudinal pedestrian/bicycle spine in the center of the site. This intersection of two pedestrian/bicycle paths is expected to help create a strong sense of place vital to the viability of the project. It is anticipated that vehicular traffic using U Street will be primarily pick-up/drop-off traffic for the project.

6. The Applicant will construct new streetscape along the property frontage on V Street, 1st Street, 2nd Street, and T Street.

7. The proposed development is anticipated to generate a 885 AM peak hour vehicle trips and 1,126 PM peak hour vehicle trips. This represents a reduction of 387 AM peak hour trips and 419 PM peak hour trips analyzed in the original CTR.

8. The Applicant will implement a Transportation Demand Management Plan to encourage the use of non-auto modes of transportation.

9. In order to offset the impact of the proposed development, traffic signals were considered at the following intersections:

   - 2nd Street/P Street (full build out),
   - 2nd Street/Q Street (phase one and full build out),
   - 2nd Street/R Street (phase one and full build out), and
   - 2nd Street/T Street (full build out).

   Projected volumes indicate that traffic signals **may** be warranted under 2028 total future traffic conditions at the 2nd Street/P Street and 2nd Street/R Street intersections. Detailed Traffic Signal Warrant Studies would need to be conducted for the two intersections upon full build out of the proposed development to ensure signal warrants are met.

10. In lieu of installation of traffic signals at intersections where meeting required volume thresholds for traffic warrants is not guaranteed, the Applicant proposes to contribute toward the installation of a portion of the Anacostia Riverwalk Trail that is approximately 2,400 feet in length and is the longest section of Trail in Buzzard Point that is not under the obligation of a private developer to construct. The Applicant proposes to work with DDOT to determine the appropriate form of contribution (i.e. design and permitting, monetary, etc.).

FIGURES

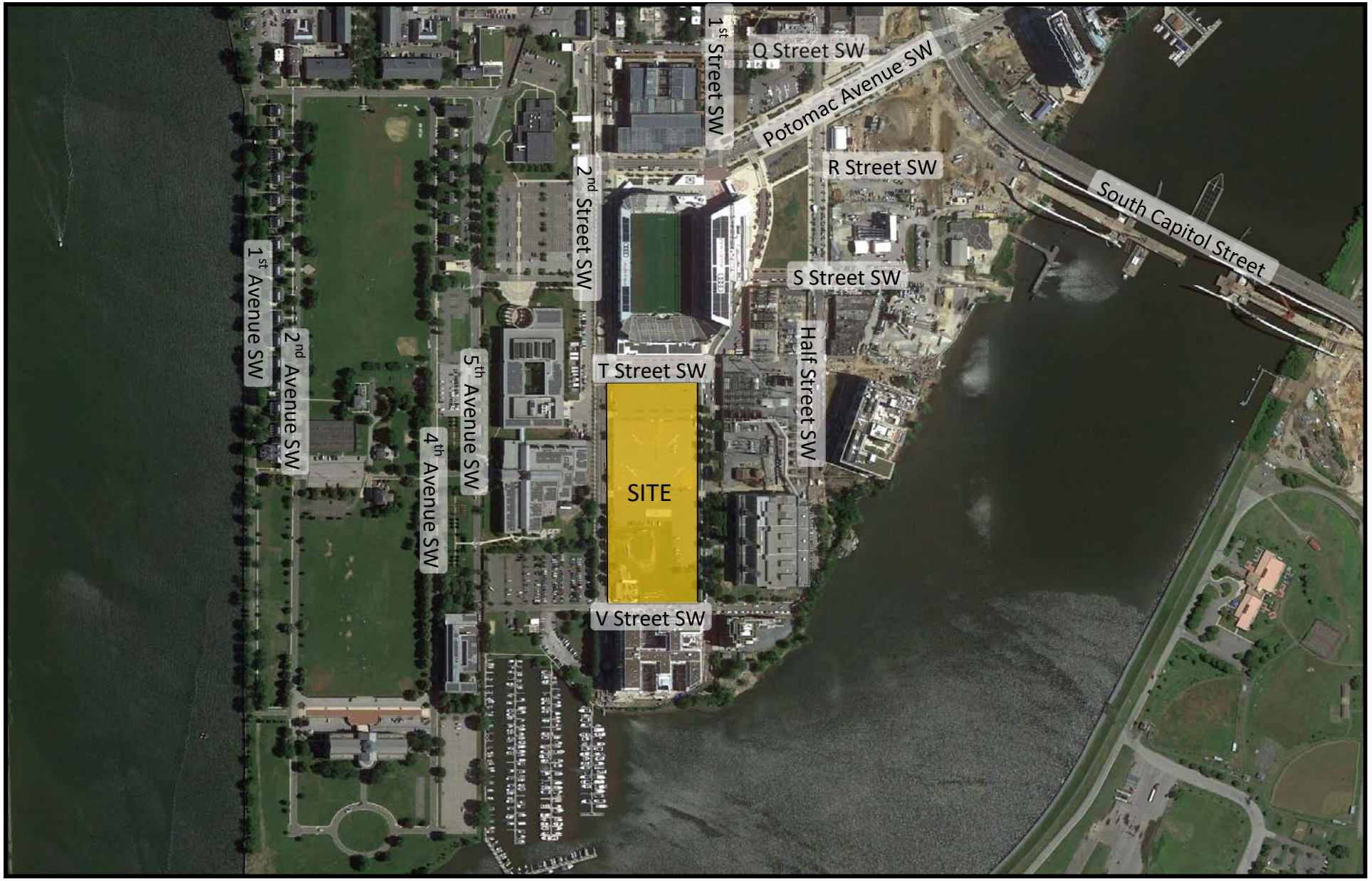

Figure 1
Site Location

NORTH

100 V Street SW
Washington, DC

Figure 2
Multi-Modal Transportation Network

Capital Bikeshare Locations (Number of Docks)
XX Metrobus Route XX MetroExtra Route
Bus Stop M Metrorail Station (Green Line)
Likely walk/bike route to/from transit stops
Zipcar (Number of Cars)

NORTH
100 V Street SW
Washington, DC

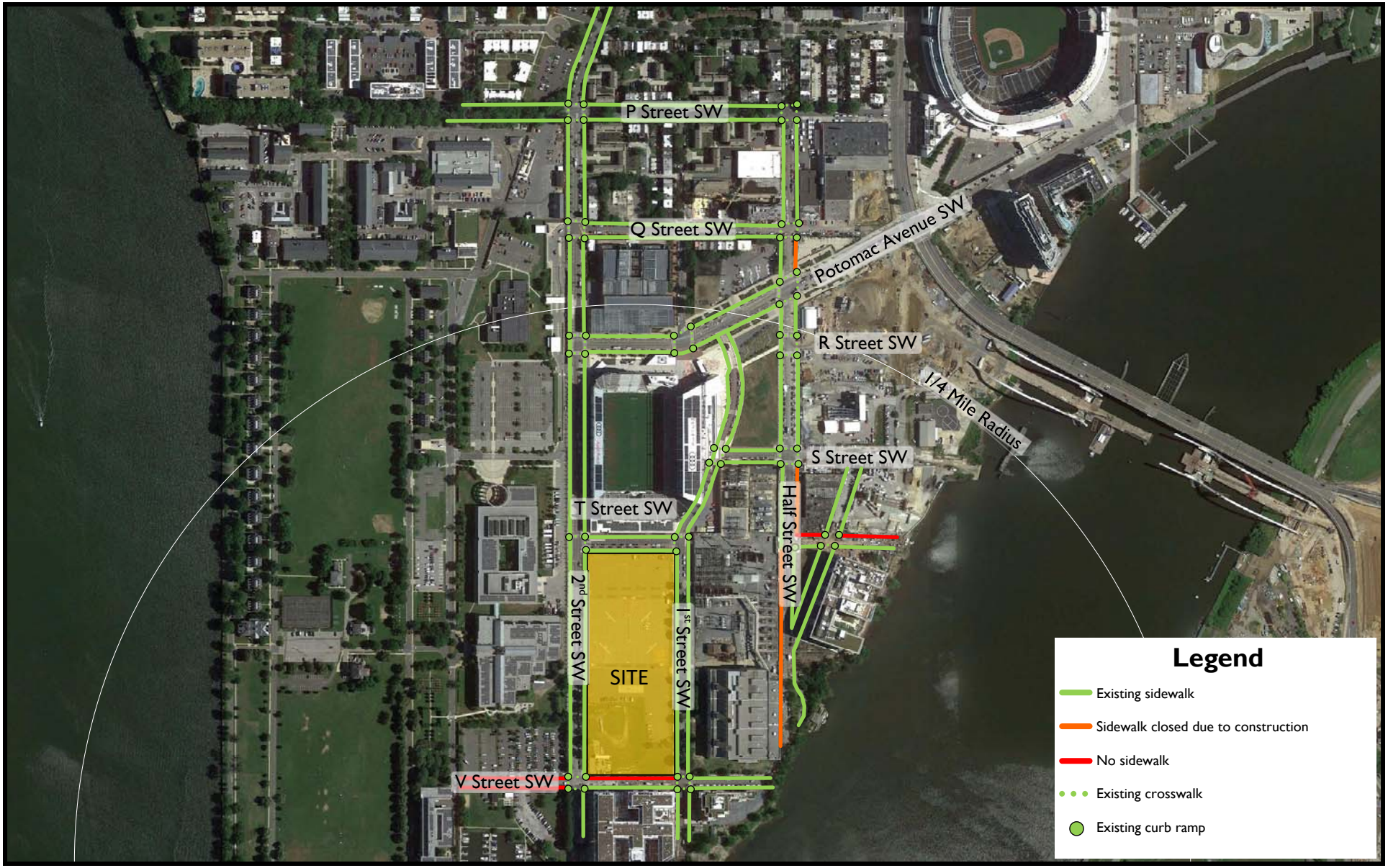

Figure 3
Qualitative Pedestrian Analysis

NORTH

100 V Street SW
Washington, DC

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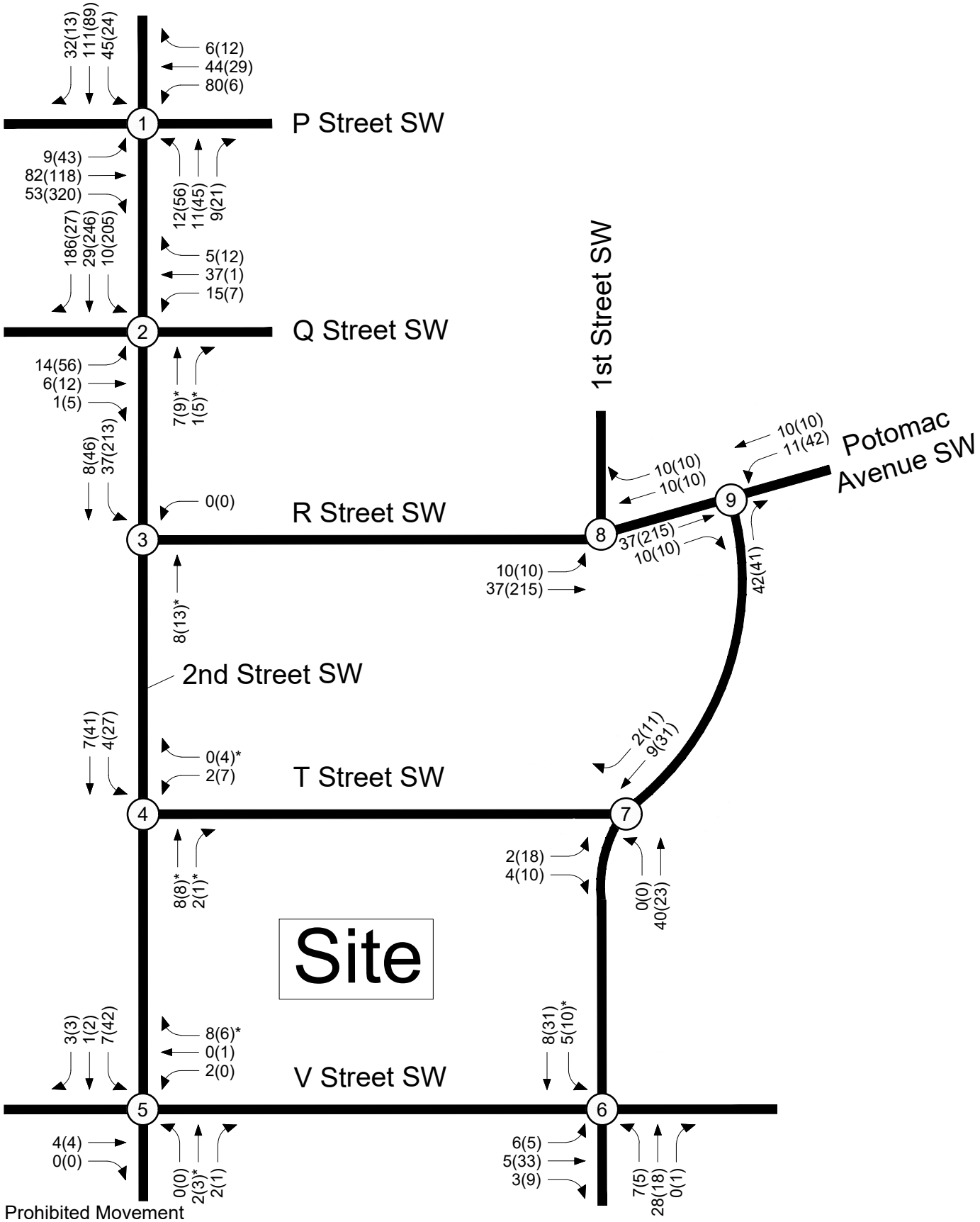

*Denotes a Prohibited Movement

Note: Intersections 7 and 8 were closed due to construction at the time counts were conducted.

Figure 4

Existing Peak Hour Traffic Volumes

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH

100 V Street SW
Washington, DC

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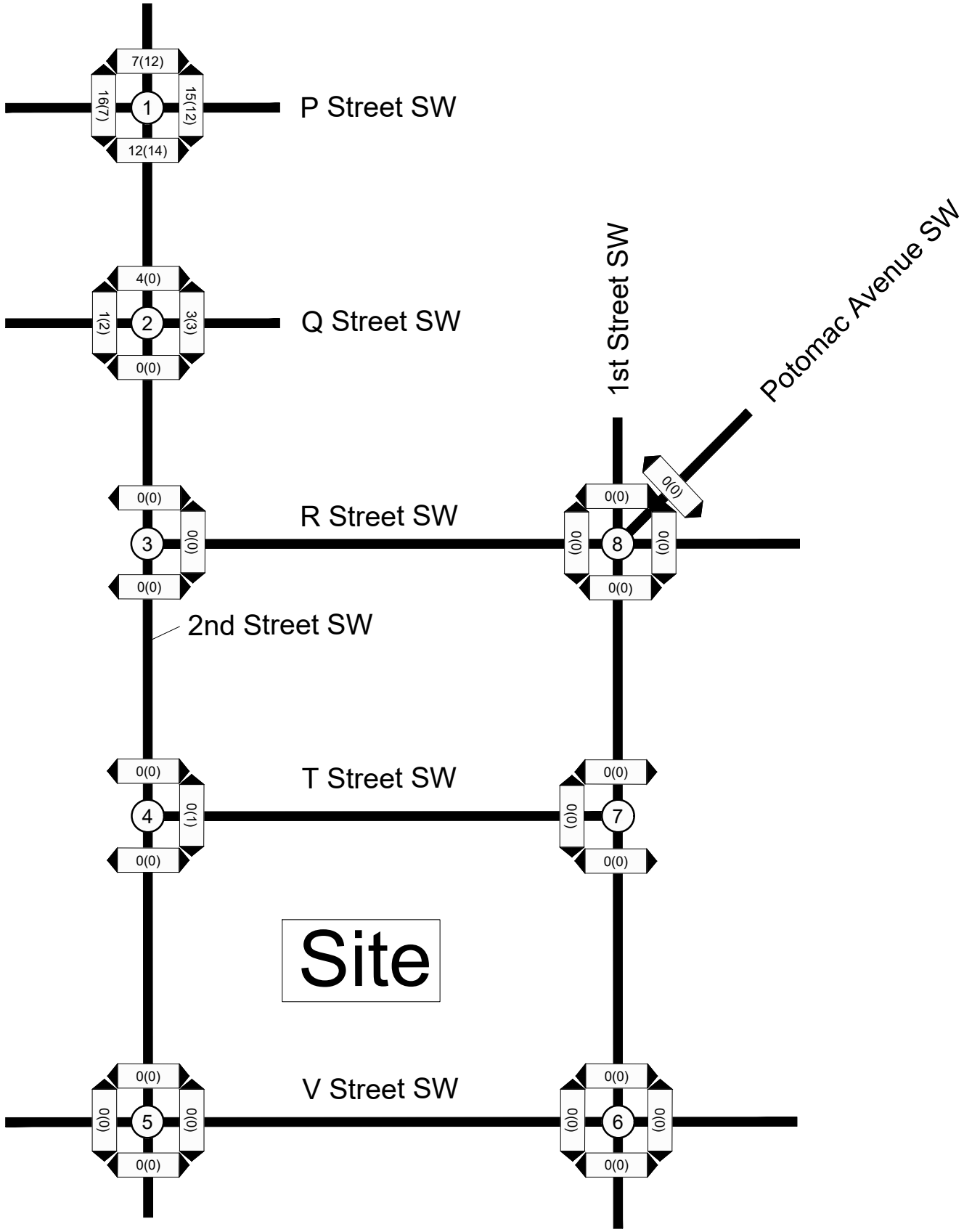

Note: Pedestrian volumes are from counts conducted in February 2017.

Figure 5
Existing Pedestrian Volumes

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH
100 V Street SW
Washington, DC

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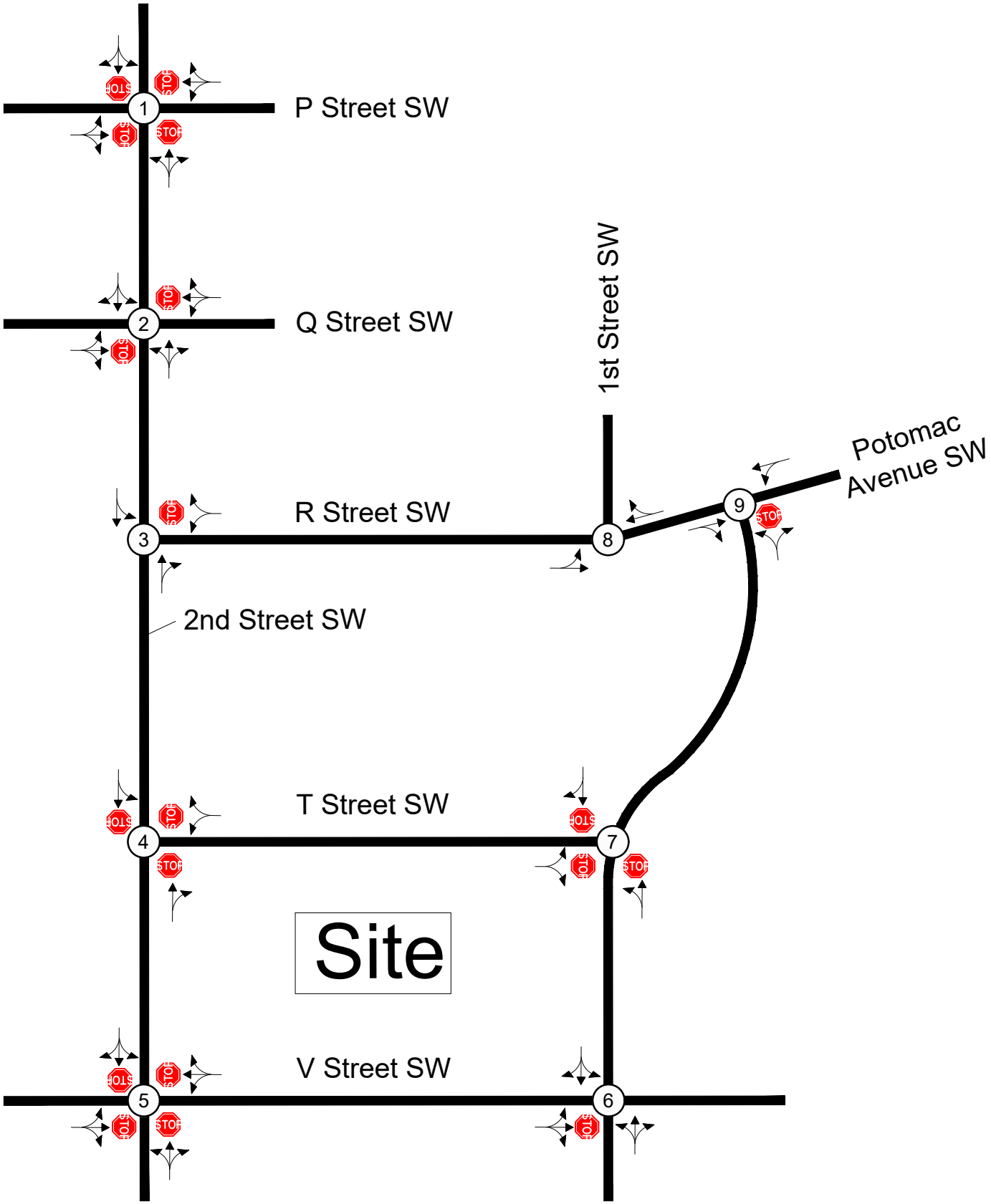
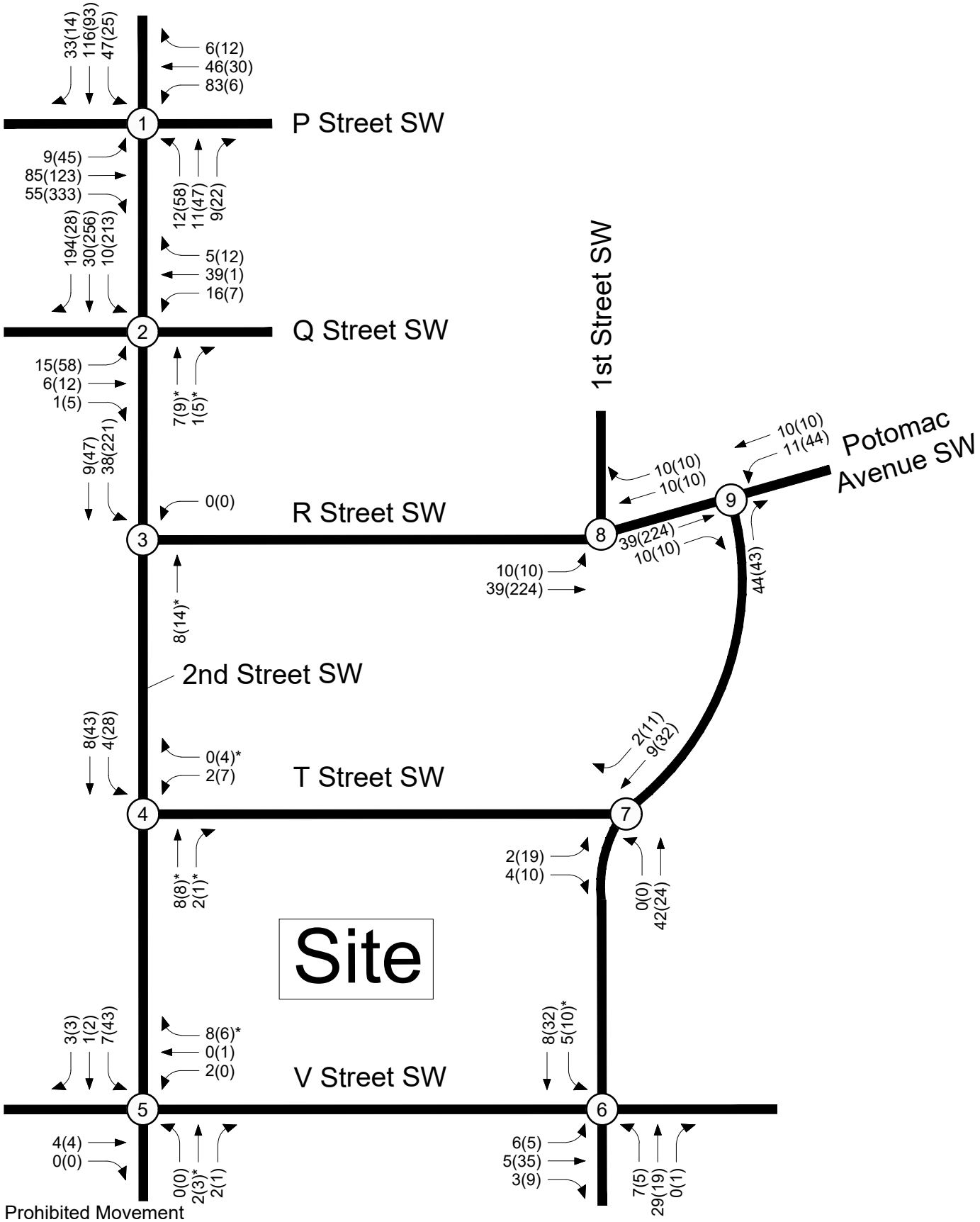


Figure 6
Existing Lane Use and Traffic Control

Represents One Travel Lane
Stop Sign

NORTH
100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG



*Denotes a Prohibited Movement

Note: Intersections 7 and 8 were closed due to construction at the time counts were conducted.

Figure 7

Existing Peak Hour Traffic Volumes with Regional Growth - Phase I (2024)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH

100 V Street SW
Washington, DC

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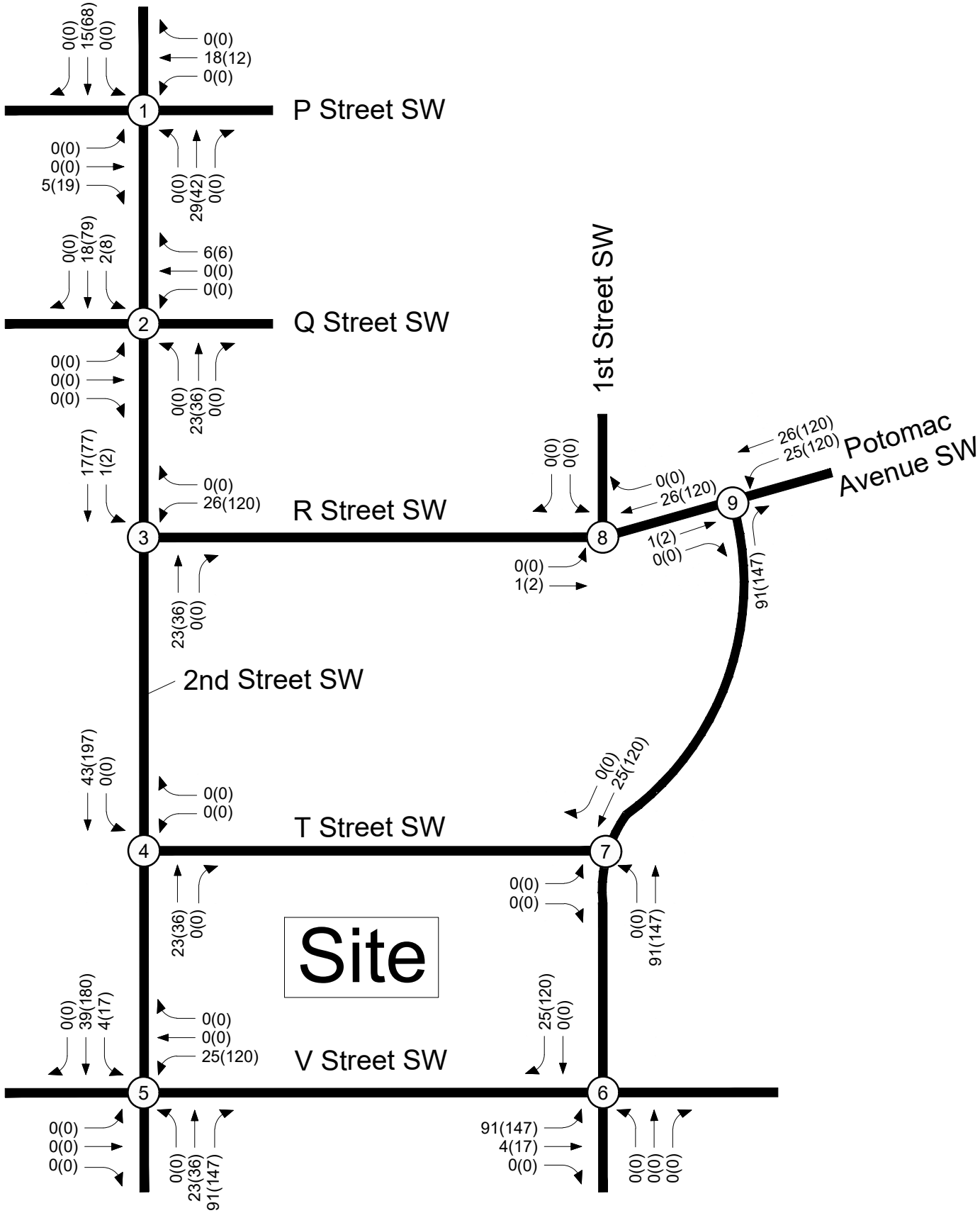
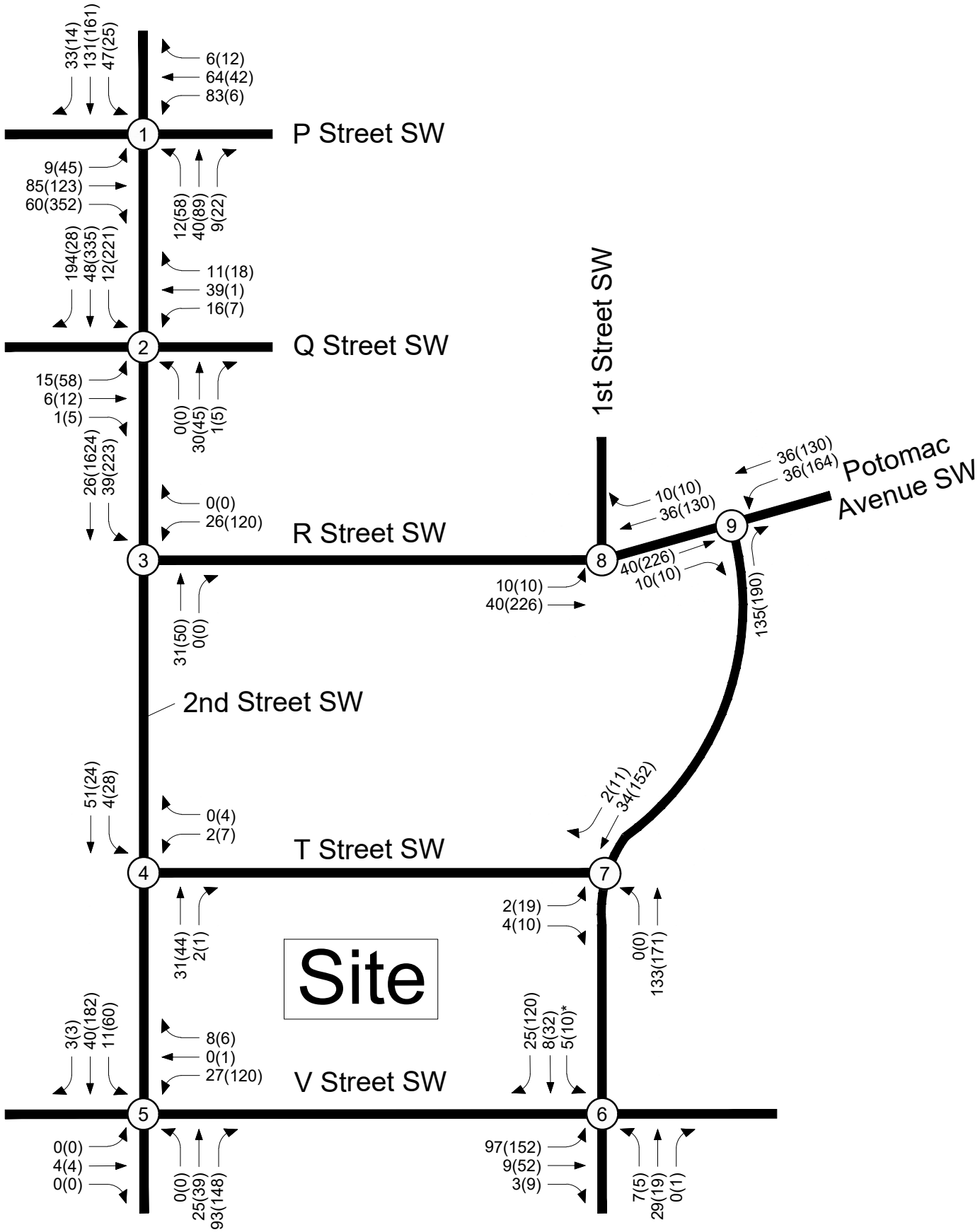


Figure 8
Pipeline Volumes

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH
100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG



*Denotes a Prohibited Movement.

Figure 9

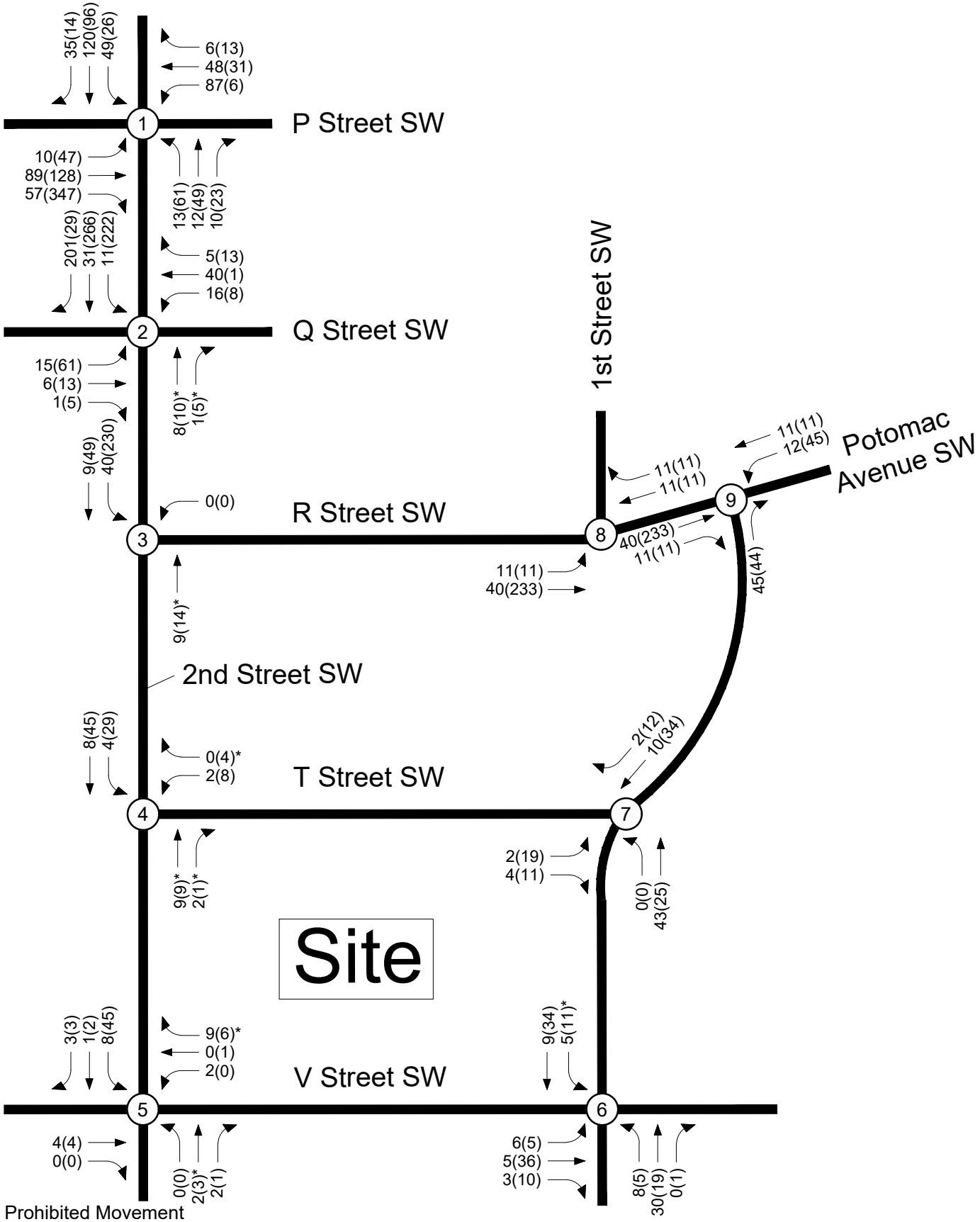
2024 Background Traffic Volumes - Phase I (2024)

000 (000) AM PEAK HOUR / PM PEAK HOUR

NORTH

100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG



*Denotes a Prohibited Movement

Note: Intersections 7 and 8 were closed due to construction at the time counts were conducted.

Figure 10

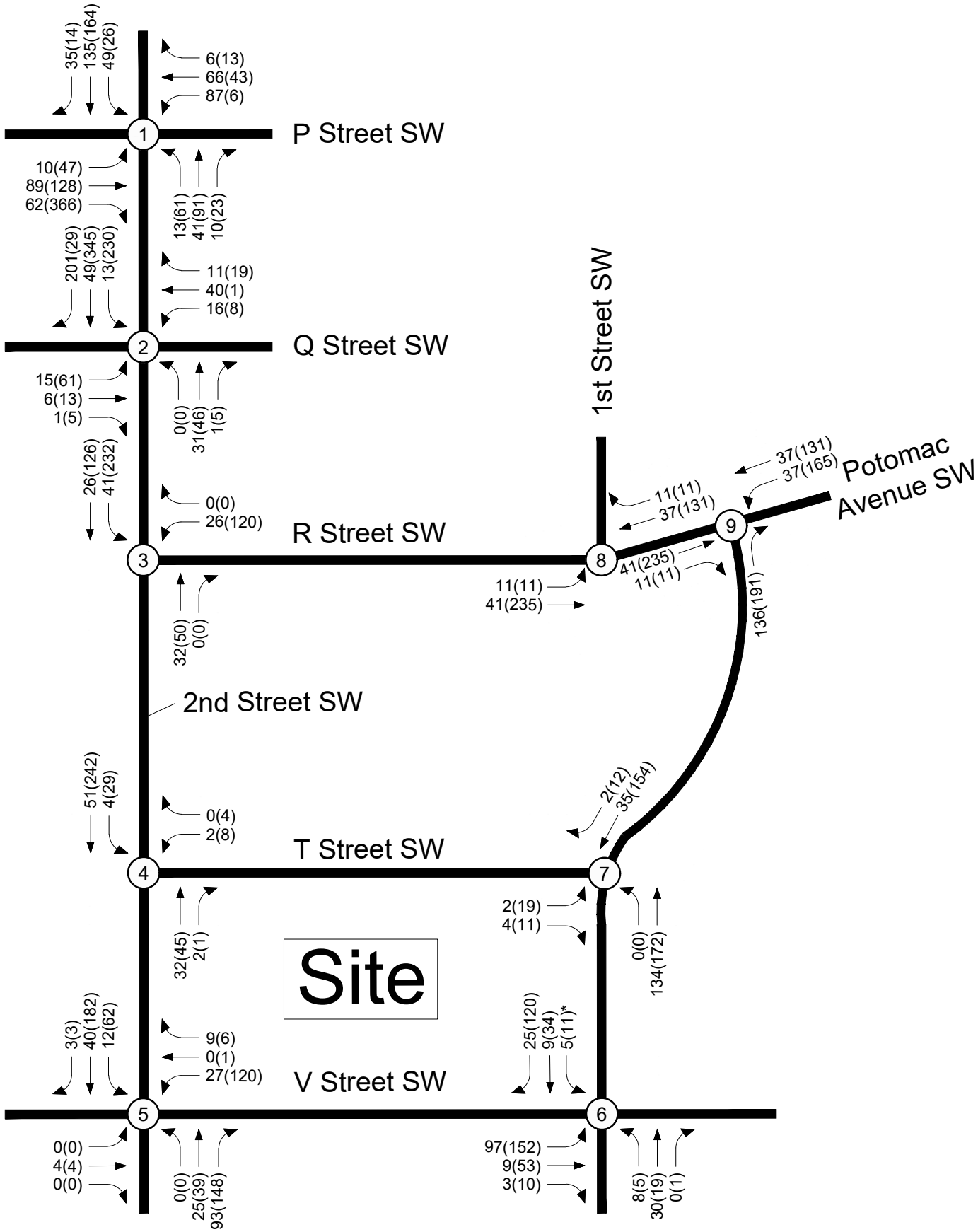
Existing Peak Hour Traffic Volumes
with Regional Growth - Full Build Out (2028)

000 (000) AM PEAK HOUR / PM PEAK HOUR

NORTH

100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG



*Denotes a Prohibited Movement.

Figure 11
2028 Background Traffic Volumes
Full Build Out (2028)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH
100 V Street SW
Washington, DC

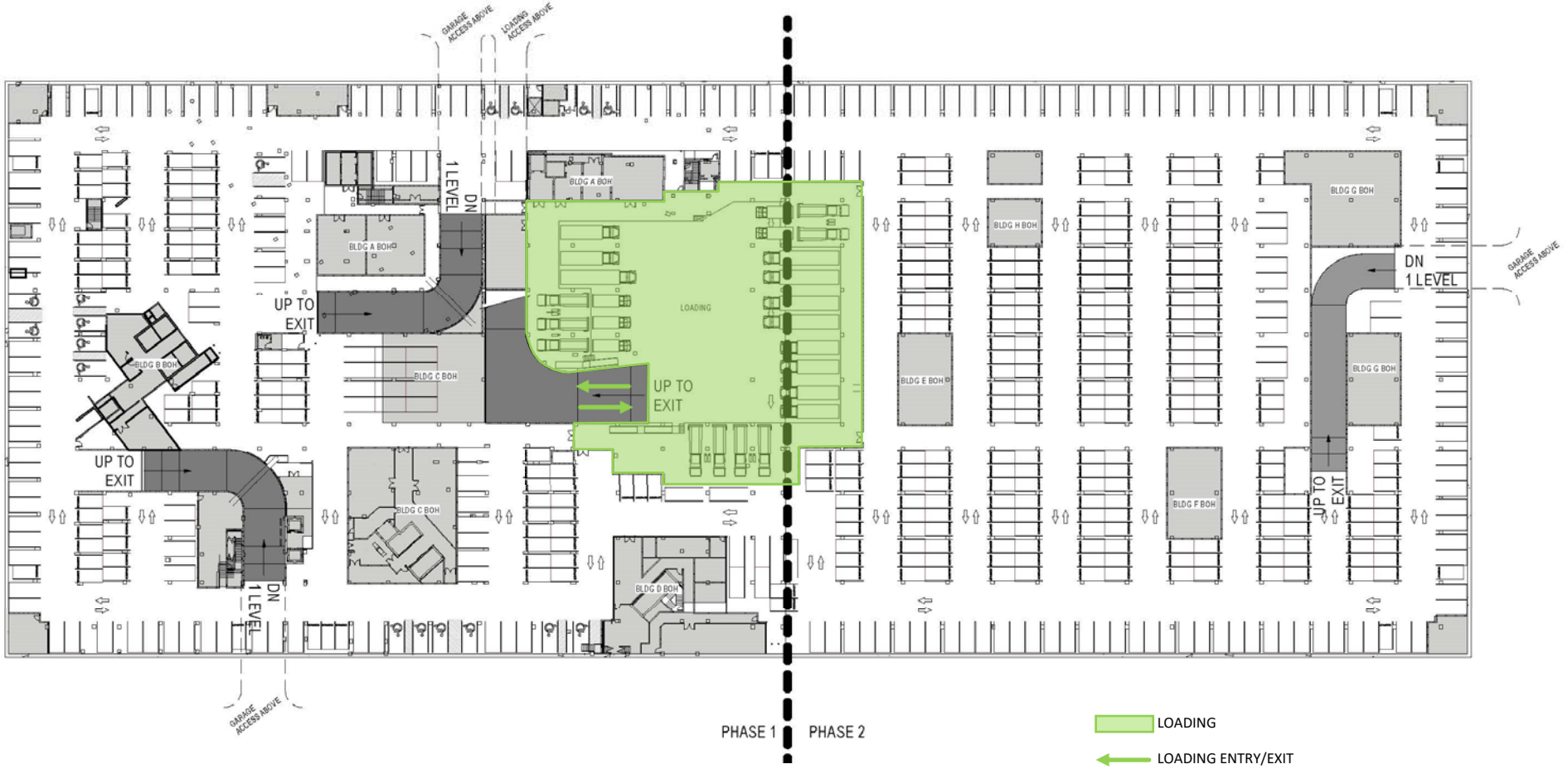


Figure 12A
Proposed Circulation
P1 Level

NORTH
100 V Street SW
Washington, DC

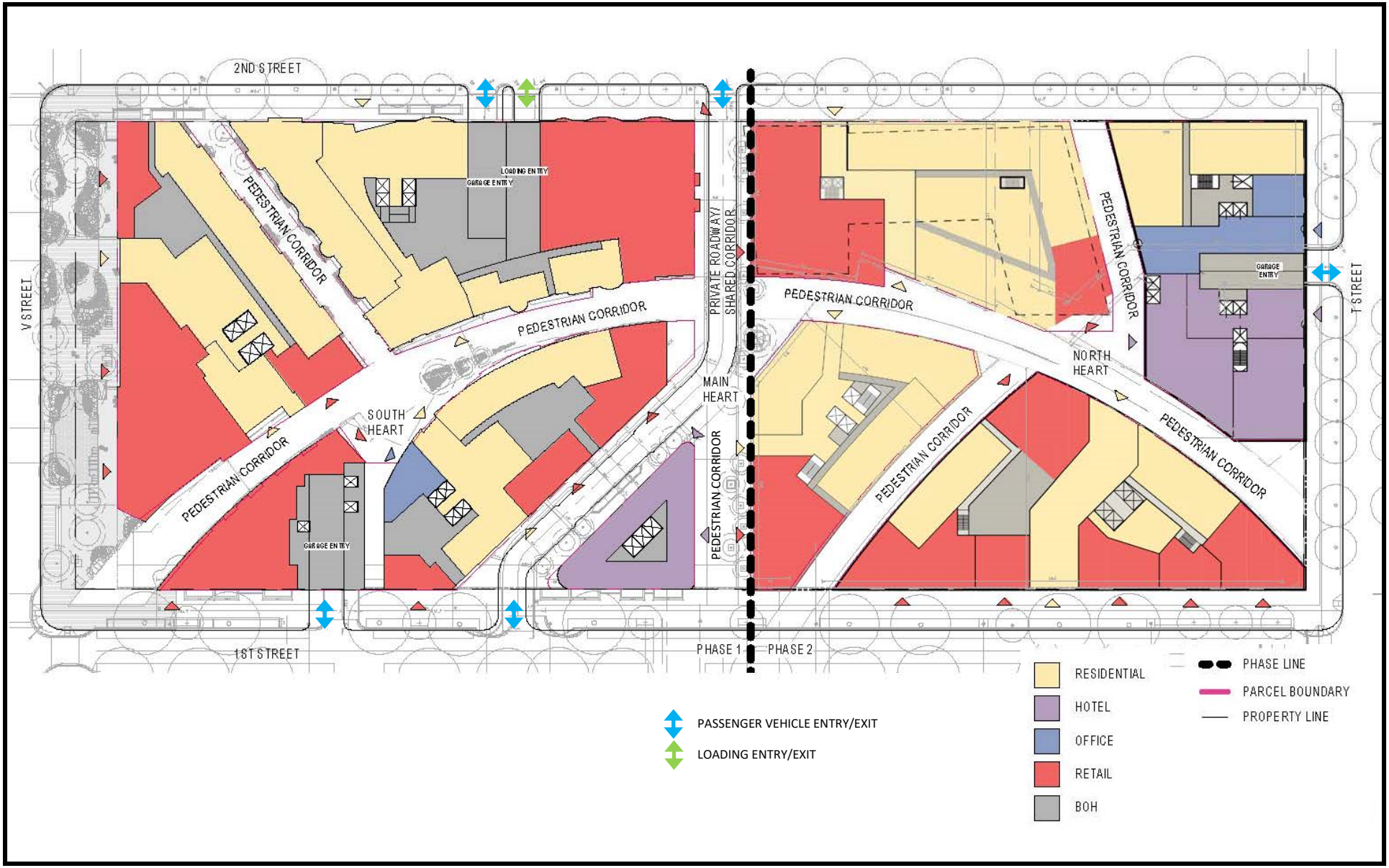
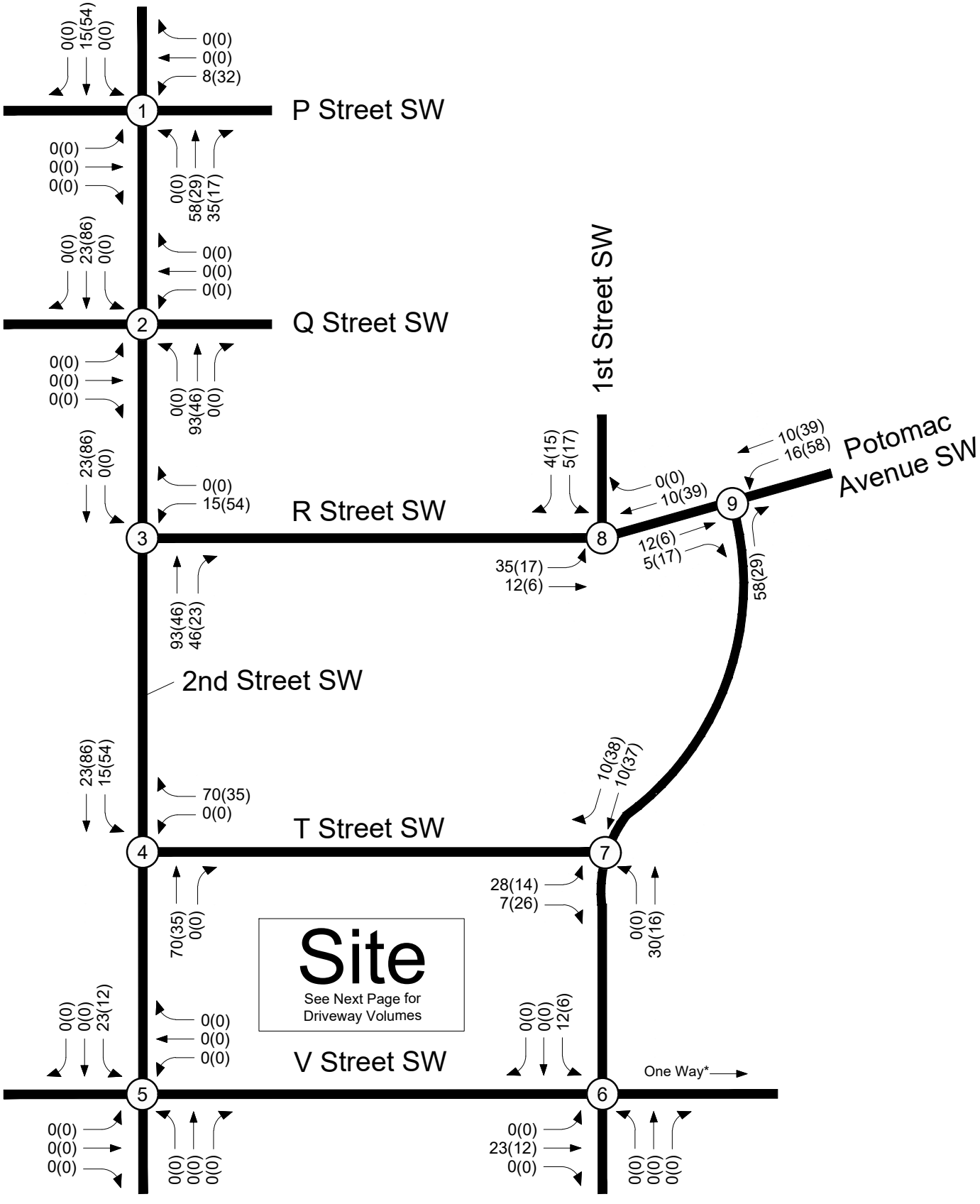


Figure 12B
Proposed Circulation
Ground Level

NORTH
100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG



* Per DDOT, V Street east of 1st Street was analyzed as one-way eastbound.

Figure 13A

Residential Site Trips - Phase I (2024)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH

100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG

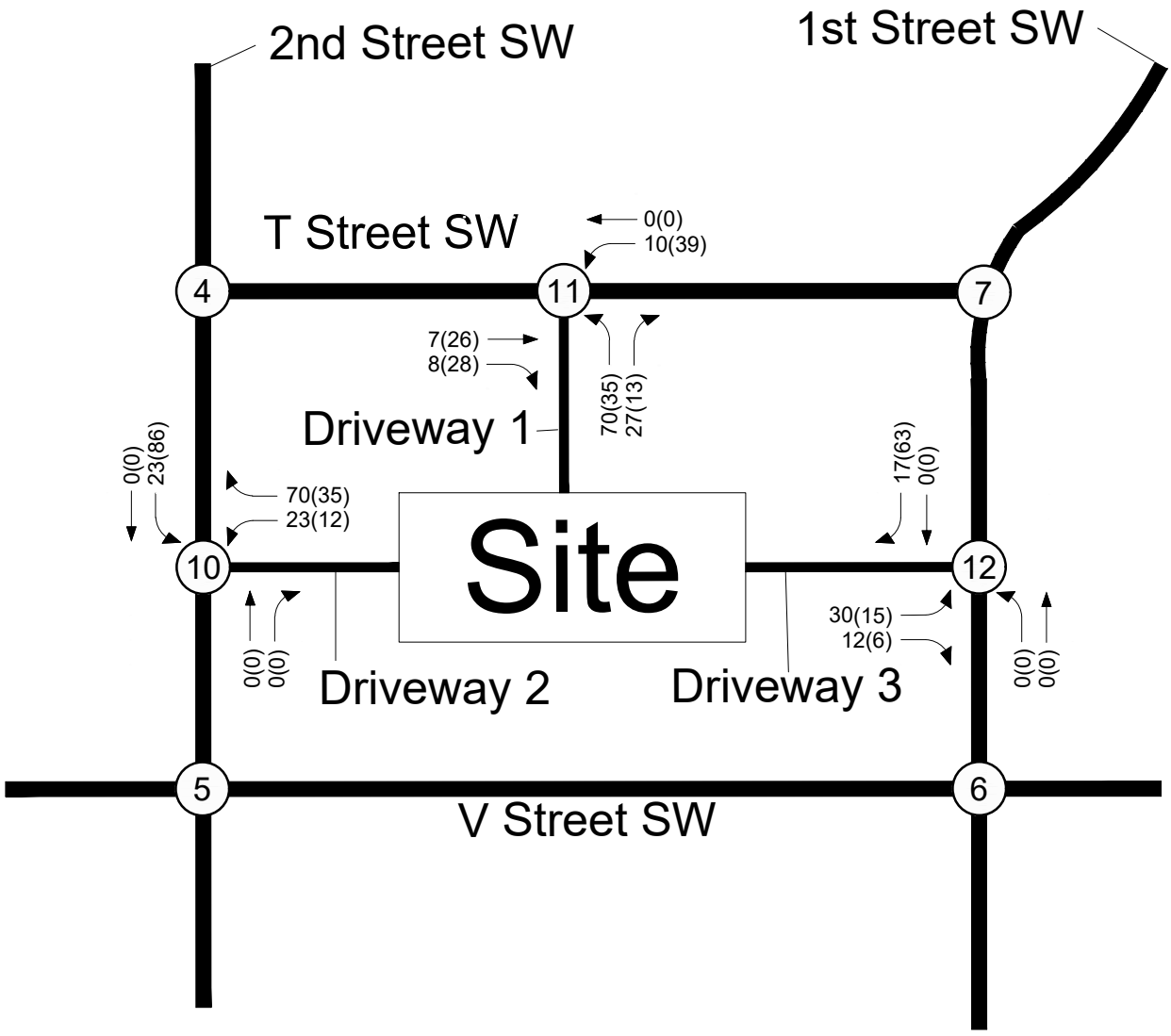
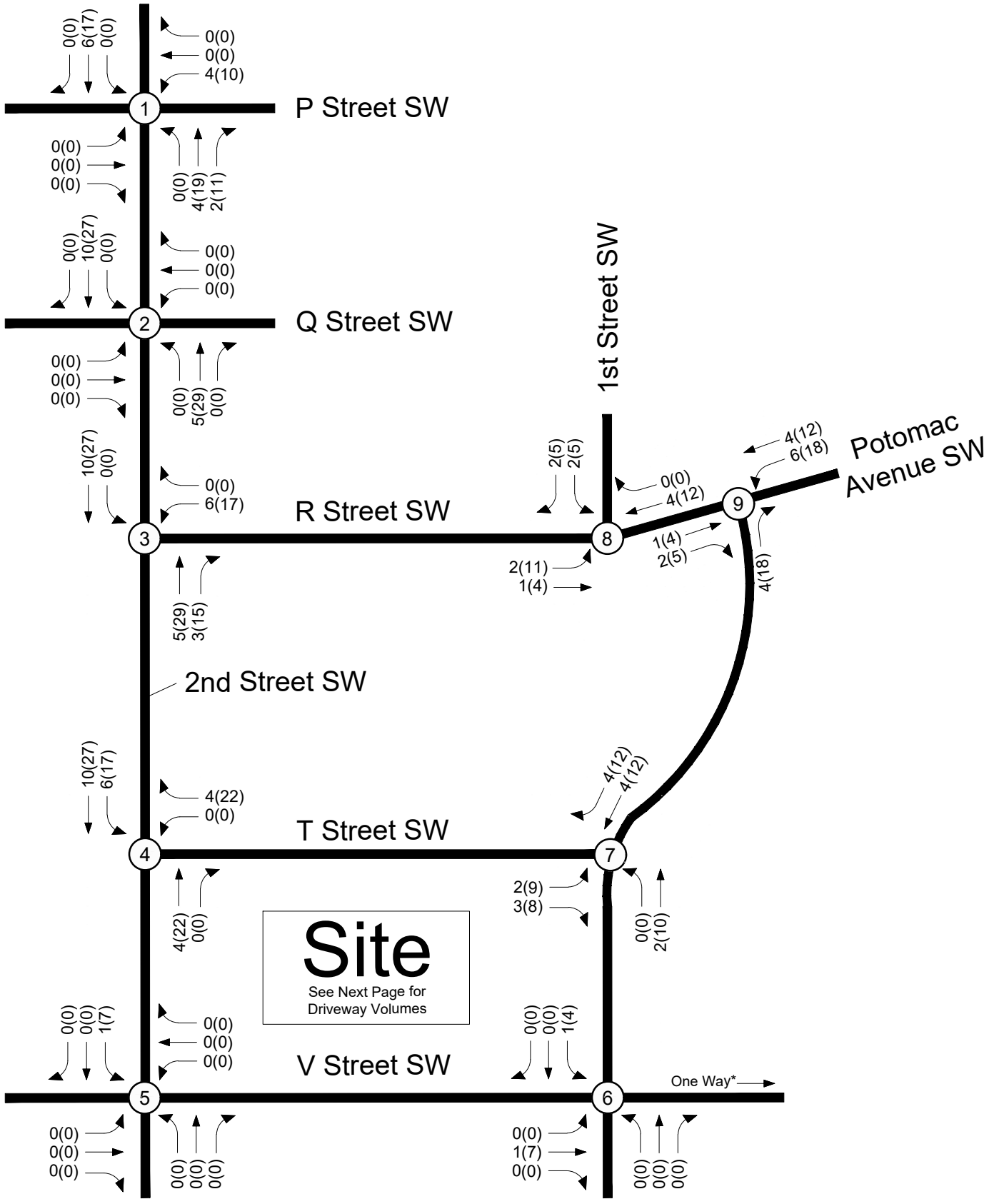


Figure 13A - Cont.
Residential Site Trips - Phase I (2024)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH
100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG



* Per DDOT, V Street east of 1st Street was analyzed as one-way eastbound.

Figure 13B

Retail Site Trips - Phase I (2024)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH

100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG

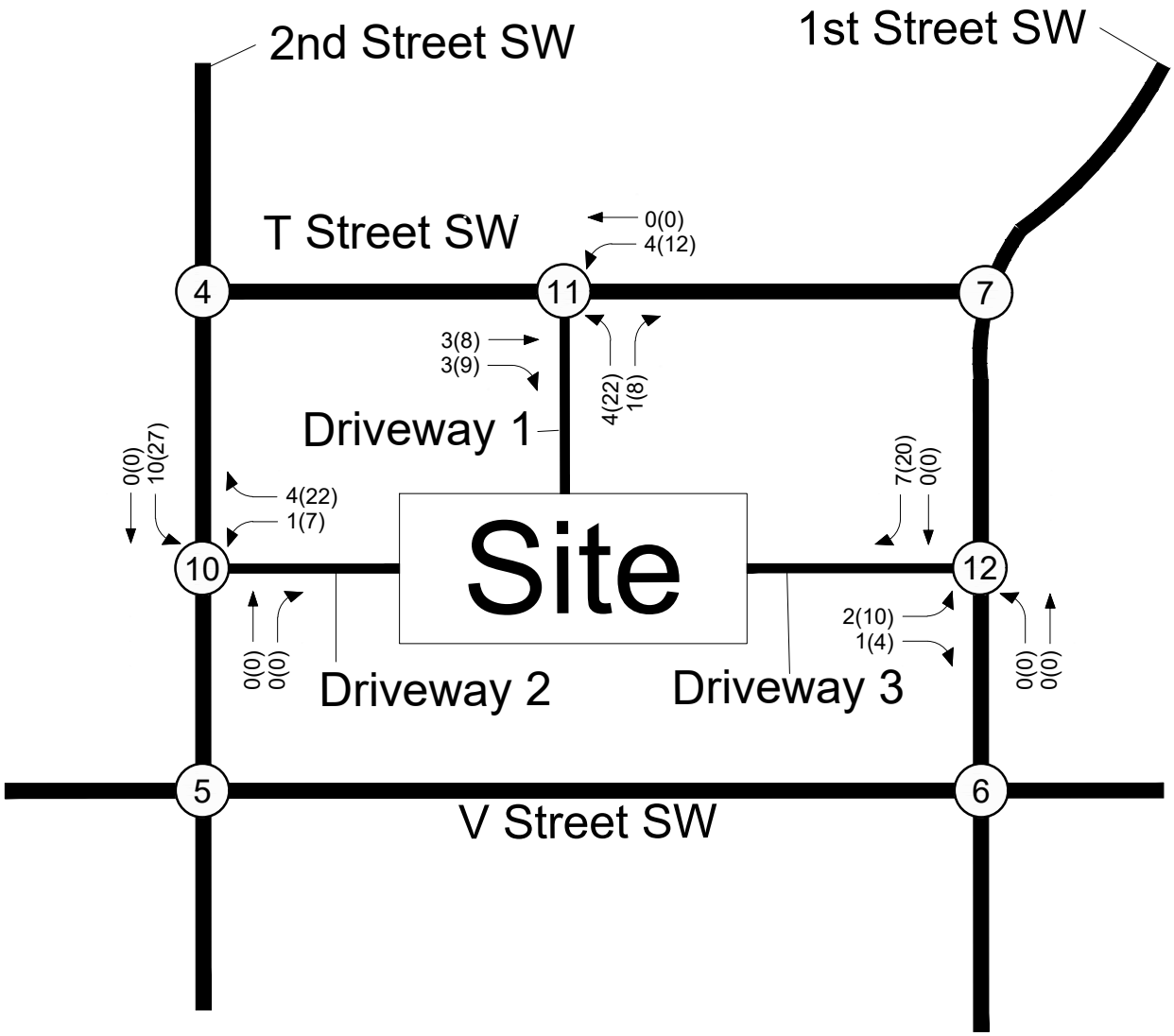


Figure 13B - Cont.
Retail Site Trips - Phase I (2024)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH
100 V Street SW
Washington, DC

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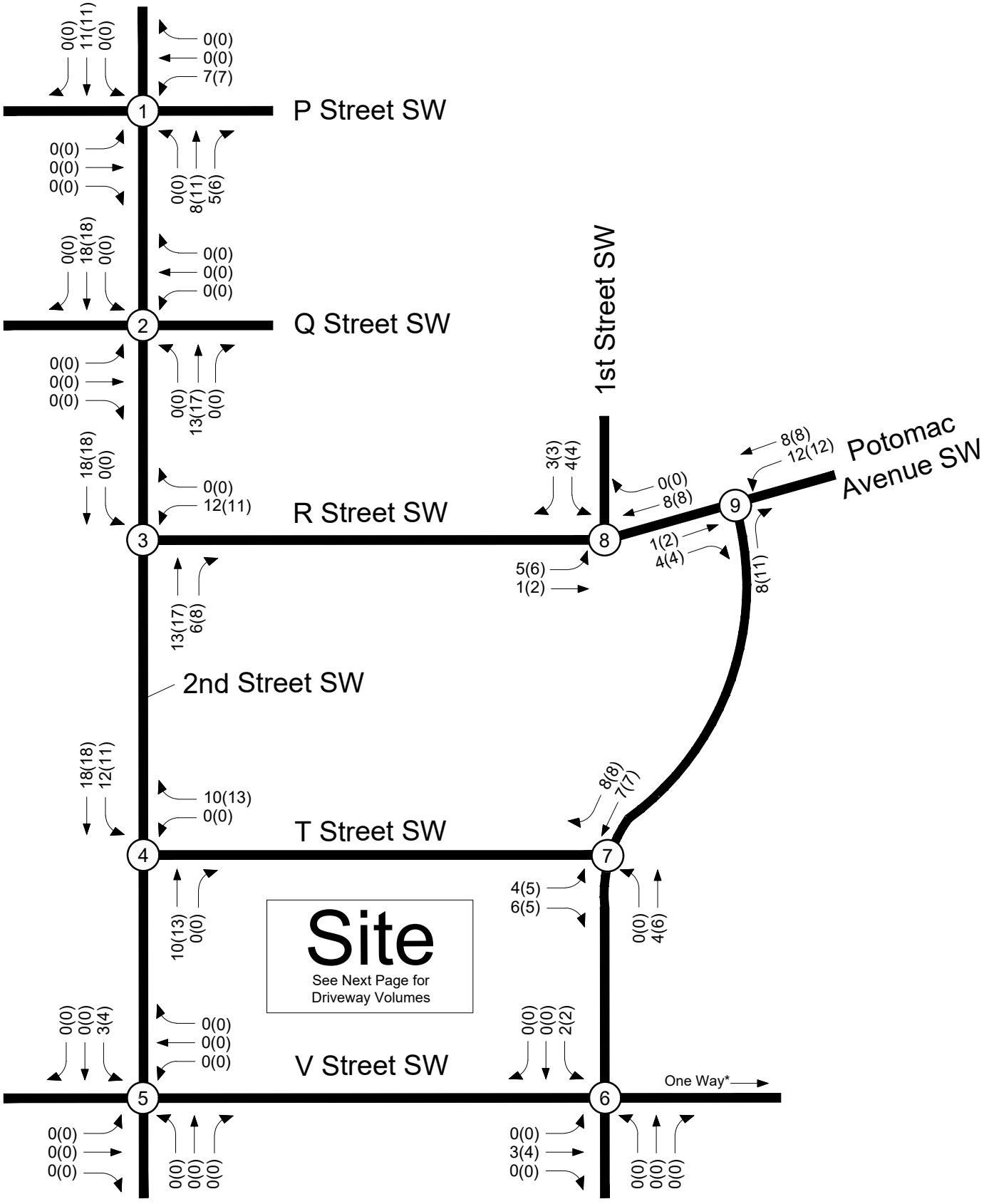

* Per DDOT, V Street east of 1st Street was analyzed as one-way eastbound.

Figure 13C
Hotel Site Trips - Phase I (2024)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH
100 V Street SW
Washington, DC

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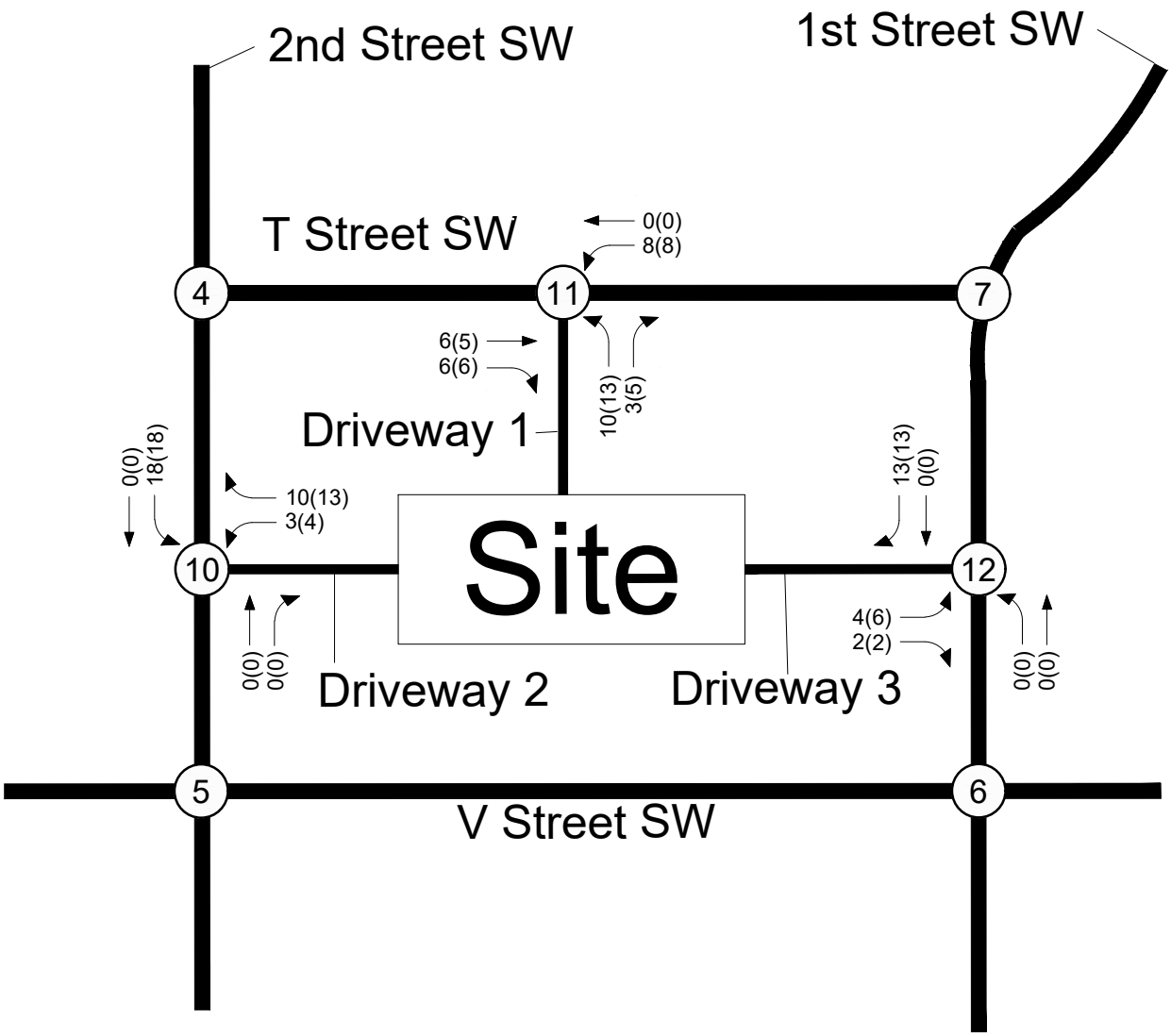
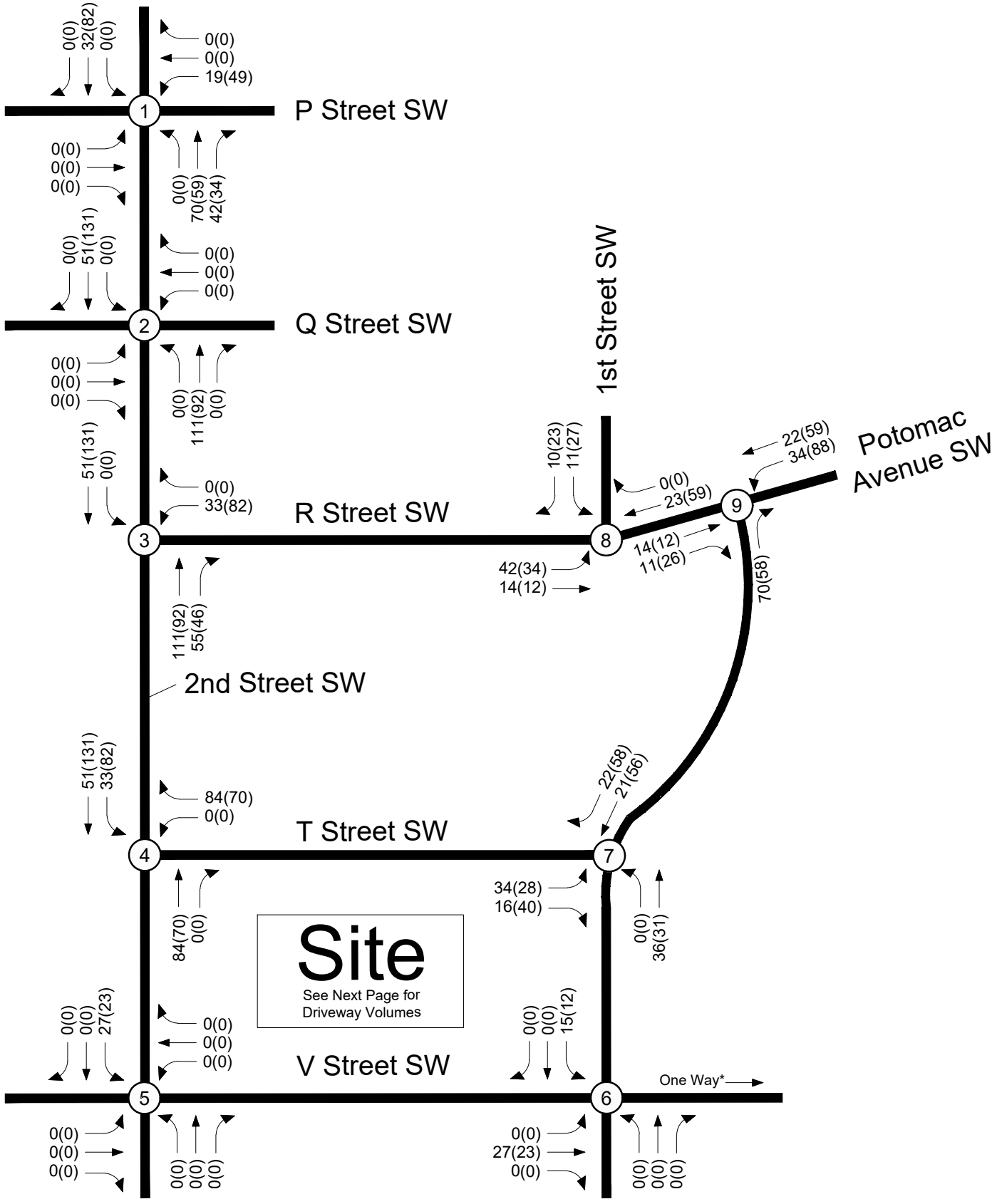


Figure 13C - Cont.
Hotel Site Trips - Phase I (2024)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH
100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG



* Per DDOT, V Street east of 1st Street was analyzed as one-way eastbound.

Figure 13D
Total Site Trips - Phase I (2024)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH
100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG

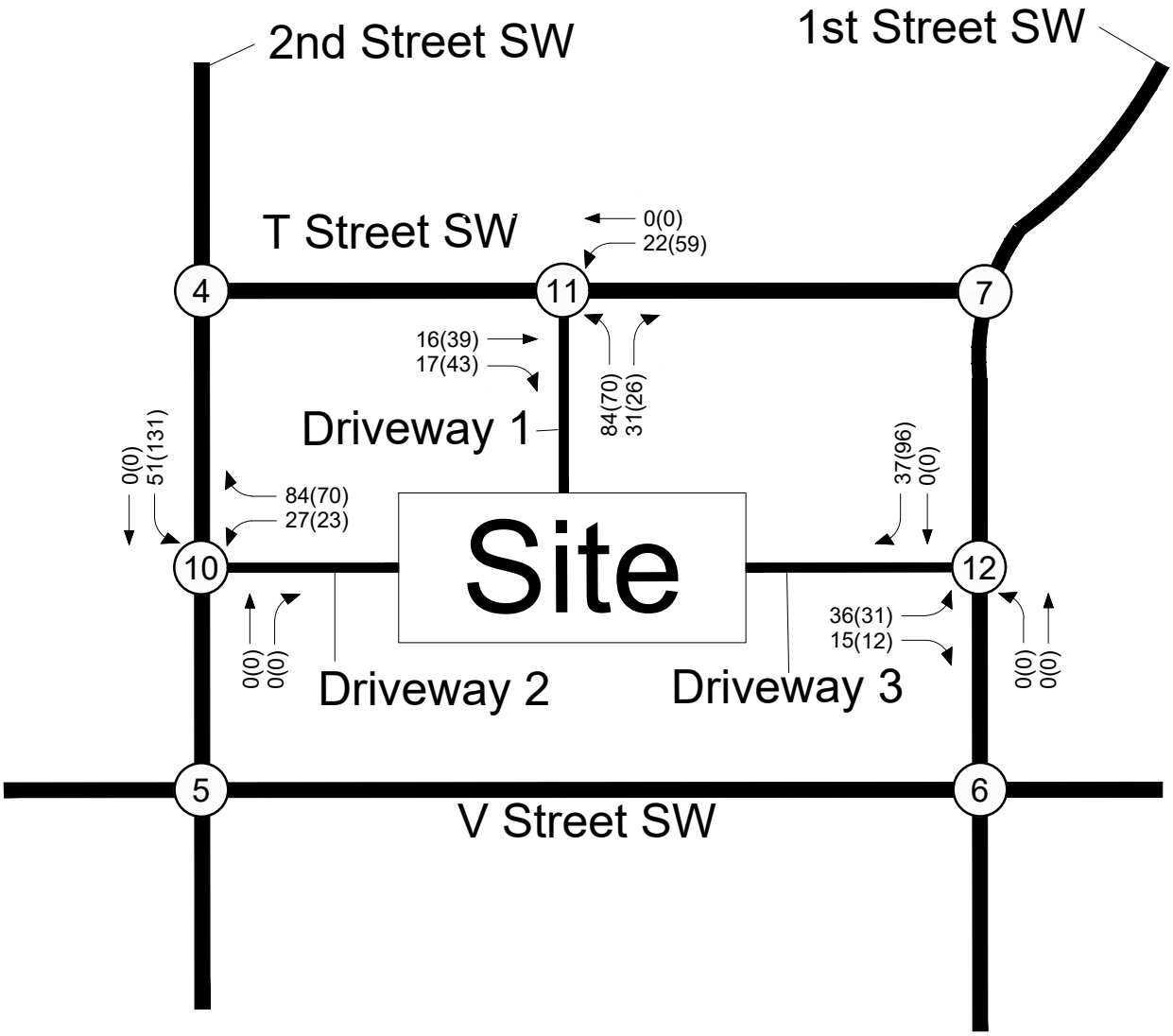
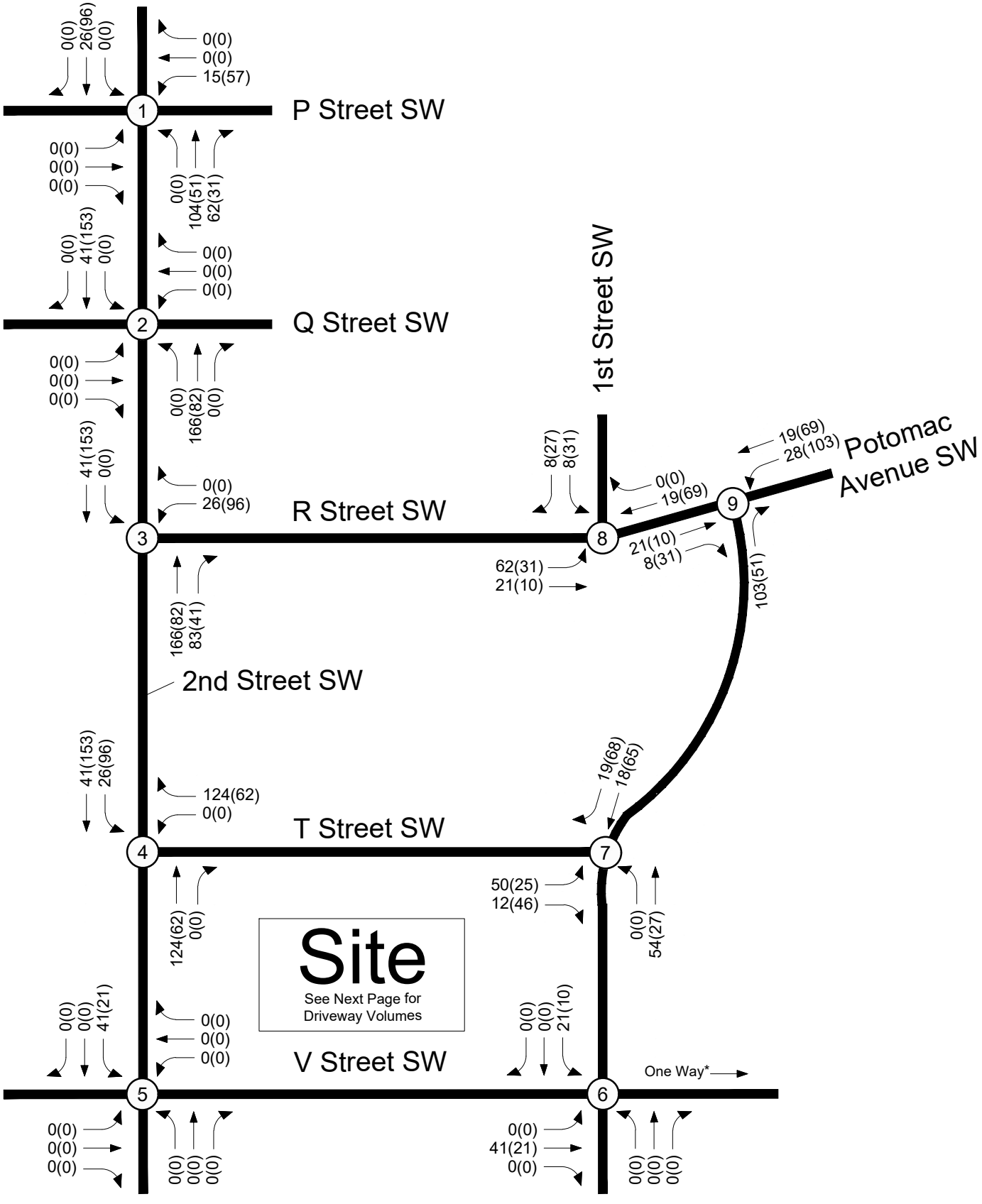


Figure 13D - Cont.
Total Site Trips - Phase I (2024)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH
100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG



* Per DDOT, V Street east of 1st Street was analyzed as one-way eastbound.

Figure 14A

Residential Site Trips - Full Build Out (2028)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH

100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG

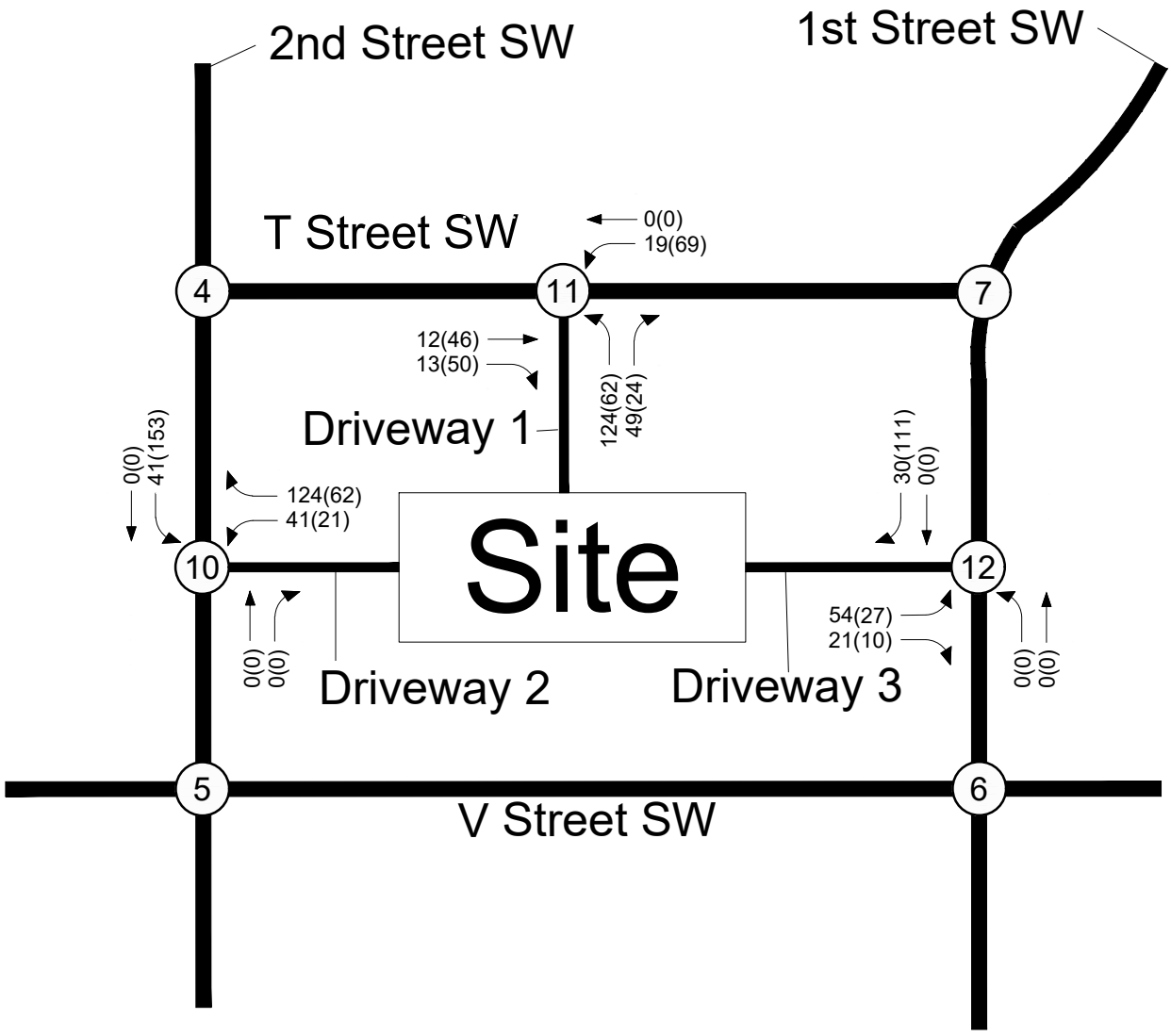
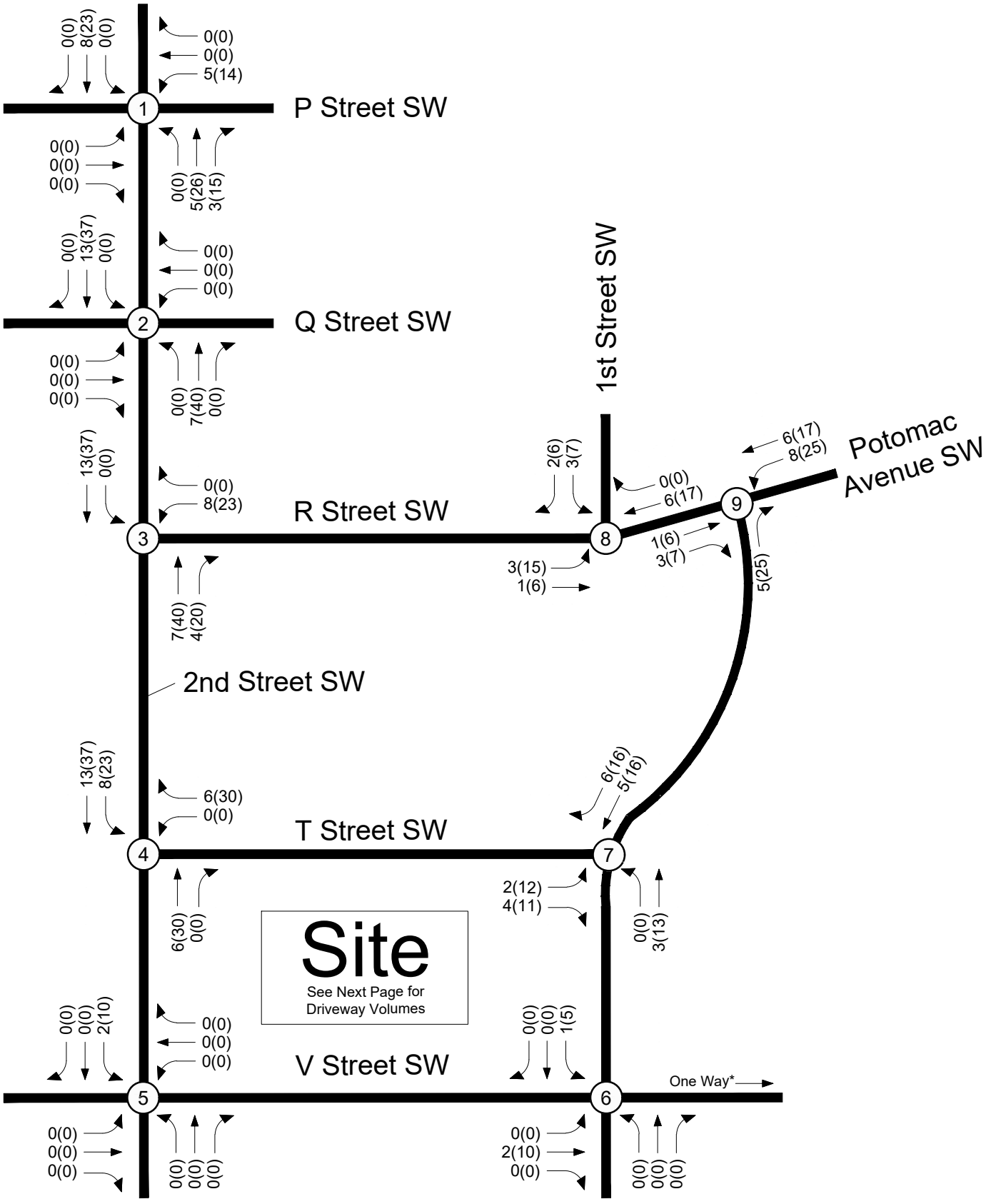


Figure 14A - Cont.
Residential Site Trips - Full Build Out (2028)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH
100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG



* Per DDOT, V Street east of 1st Street was analyzed as one-way eastbound.

Figure 14B

Retail Site Trips - Full Build Out (2028)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH

100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG

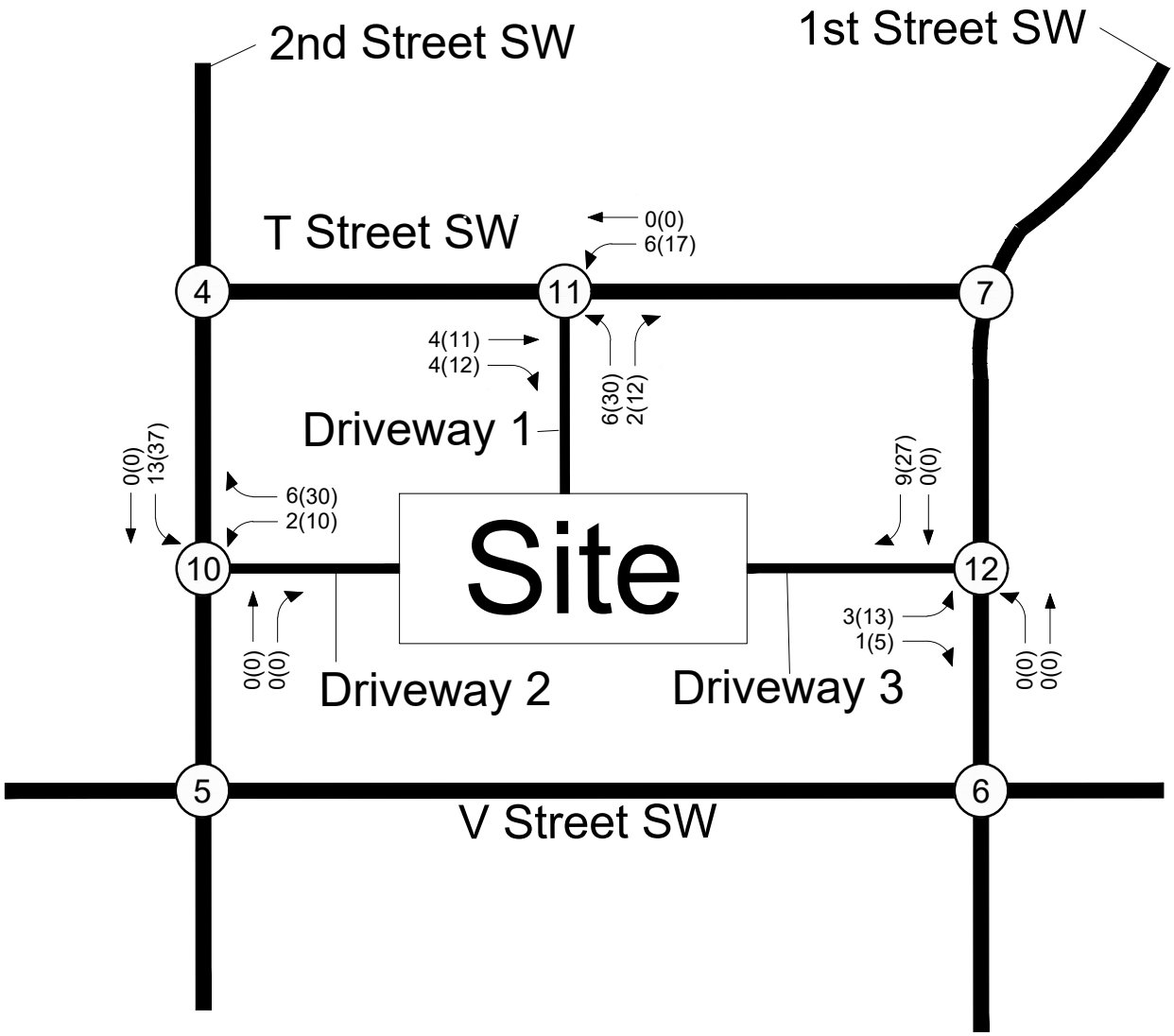


Figure 14B - Cont.
Retail Site Trips - Full Build Out (2028)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH
100 V Street SW
Washington, DC

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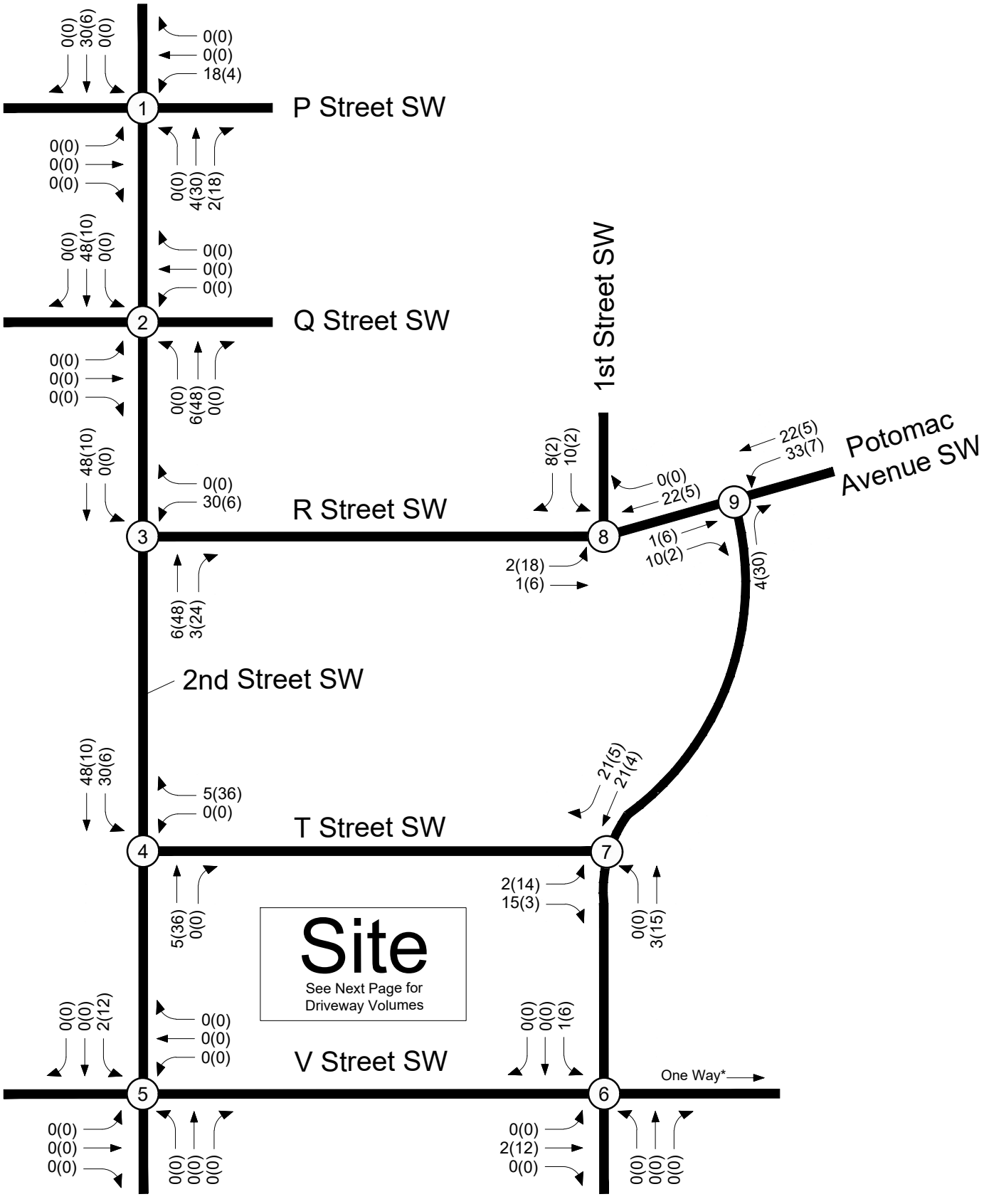


* Per DDOT, V Street east of 1st Street was analyzed as one-way eastbound.

Figure 14C

Office Site Trips - Full Build Out (2028)

000 (000) — AM PEAK HOUR / PM PEAK HOUR

NORTH

100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG

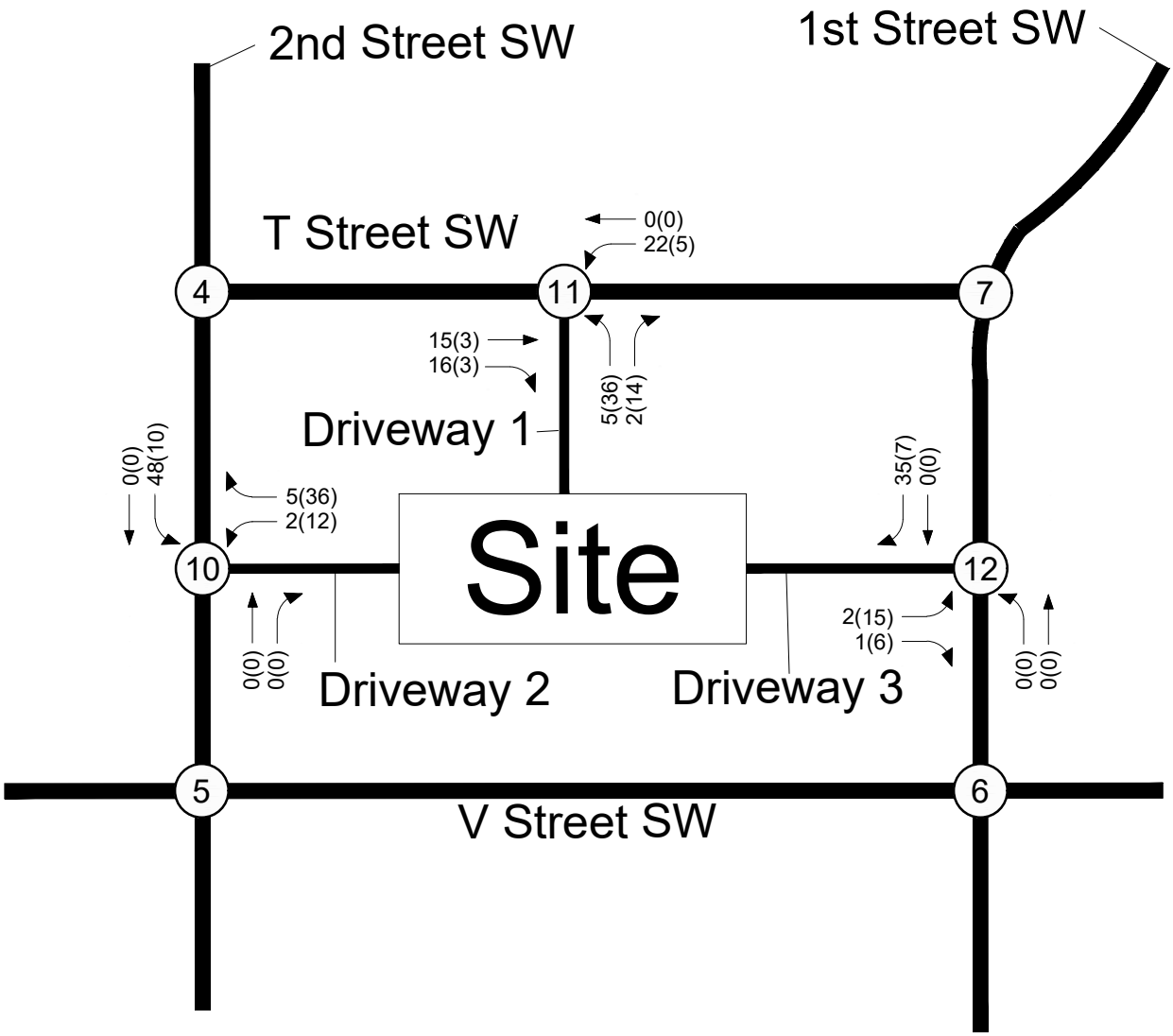
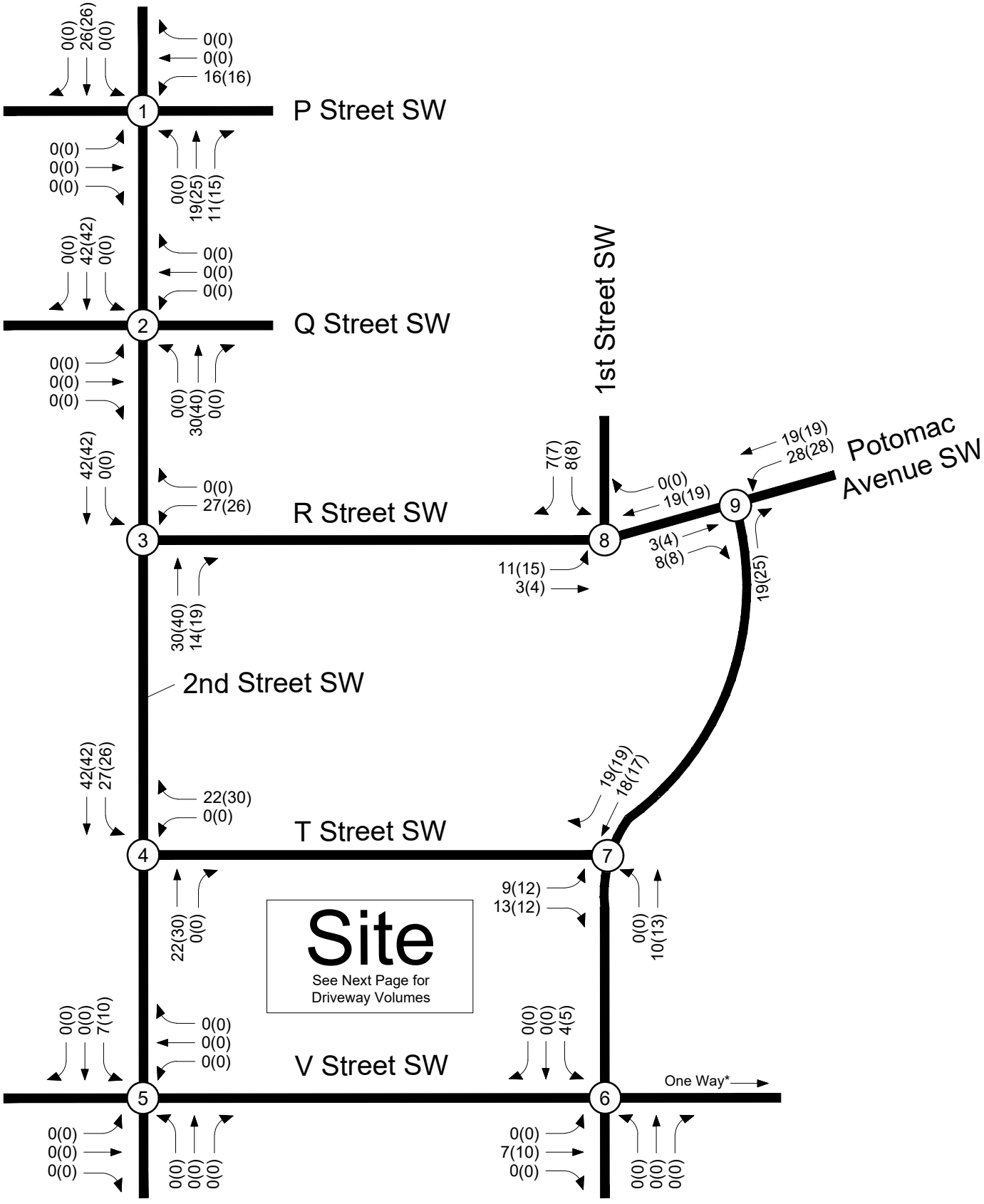


Figure 14C - Cont.
Office Site Trips - Full Build Out (2028)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH
100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG



* Per DDOT, V Street east of 1st Street was analyzed as one-way eastbound.

Figure 14D

Hotel Site Trips - Full Build Out (2028)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH

100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG

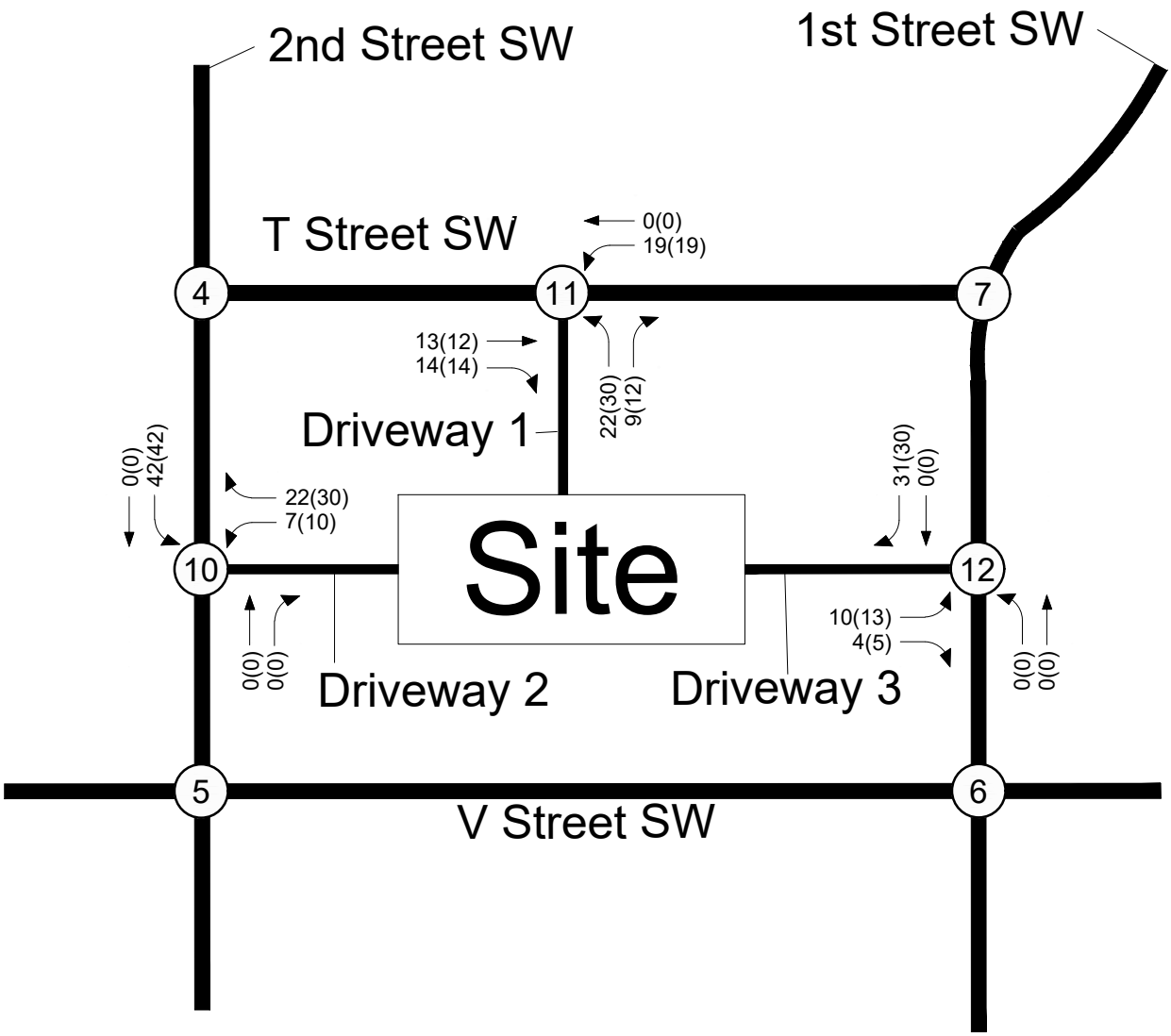
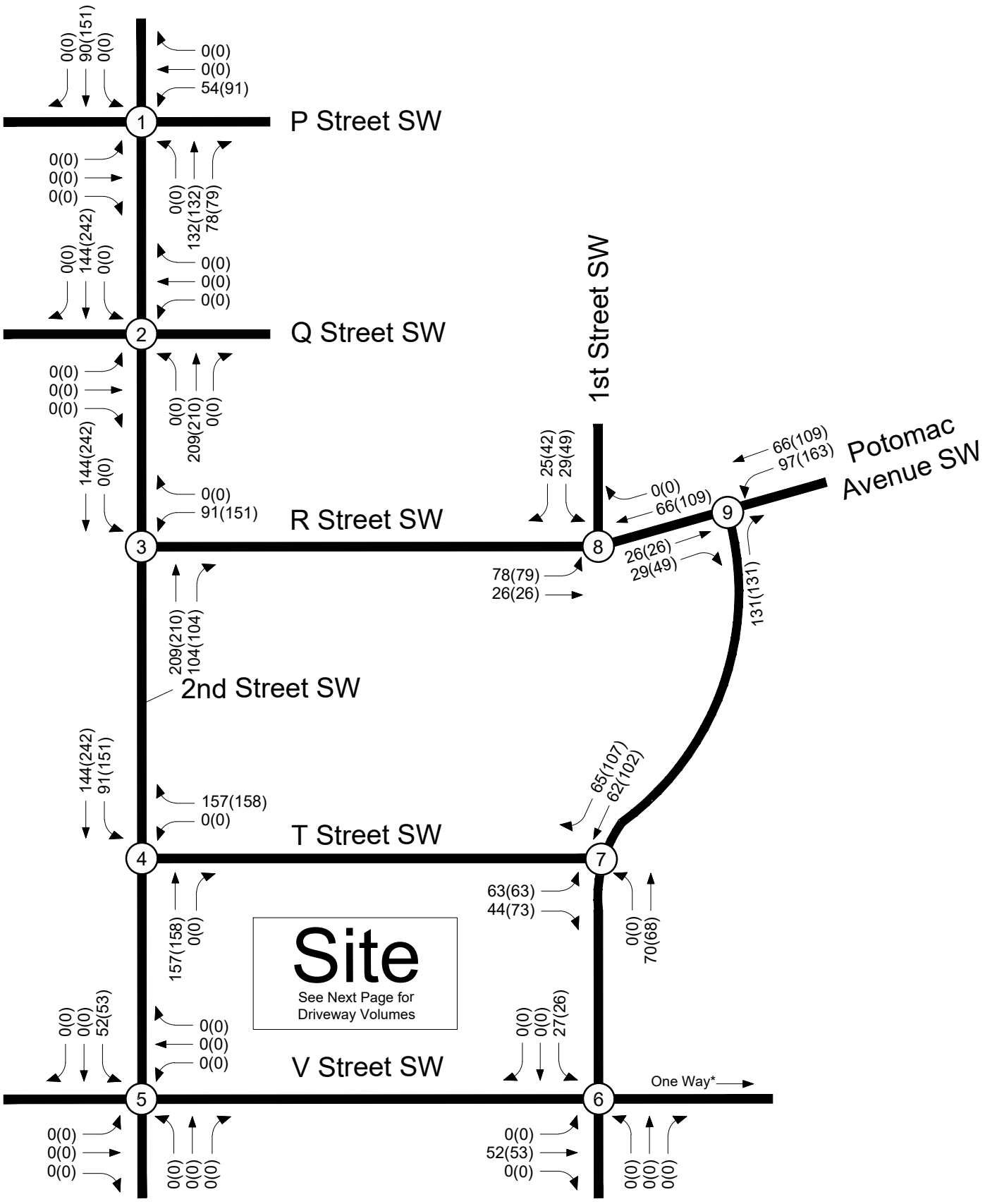


Figure 14D - Cont.
Hotel Site Trips - Full Build Out (2028)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH
100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG



* Per DDOT, V Street east of 1st Street was analyzed as one-way eastbound.

Figure 14E

Total Site Trips - Full Build Out (2028)

000 (000) — AM PEAK HOUR / PM PEAK HOUR

NORTH

100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG

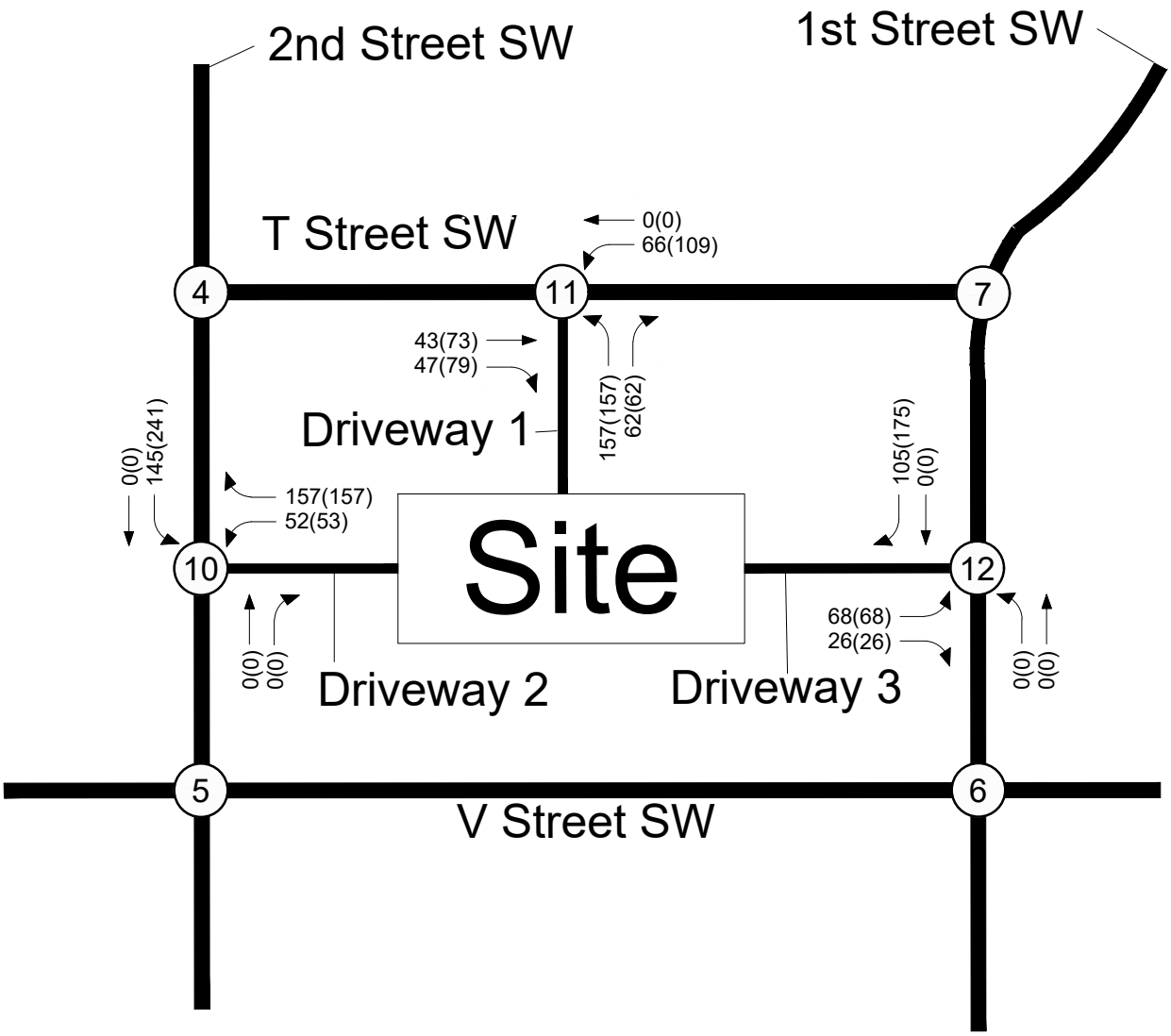
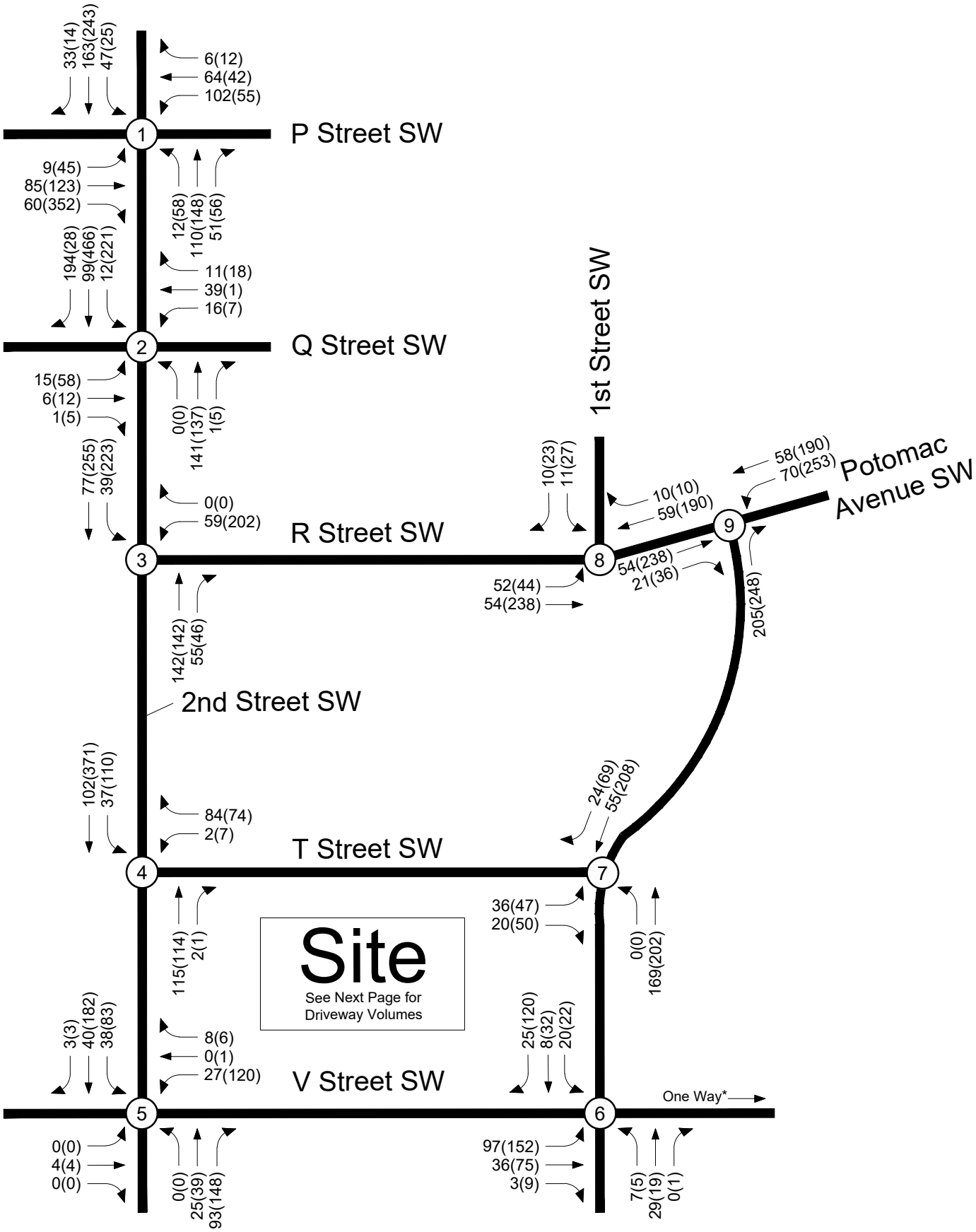


Figure 14E - Cont.
Total Site Trips - Full Build Out (2028)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH
100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG



* Per DDOT, V Street east of 1st Street was analyzed as one-way eastbound.

Figure 15

Total Future Traffic Volumes - Phase I (2024)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH

100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG

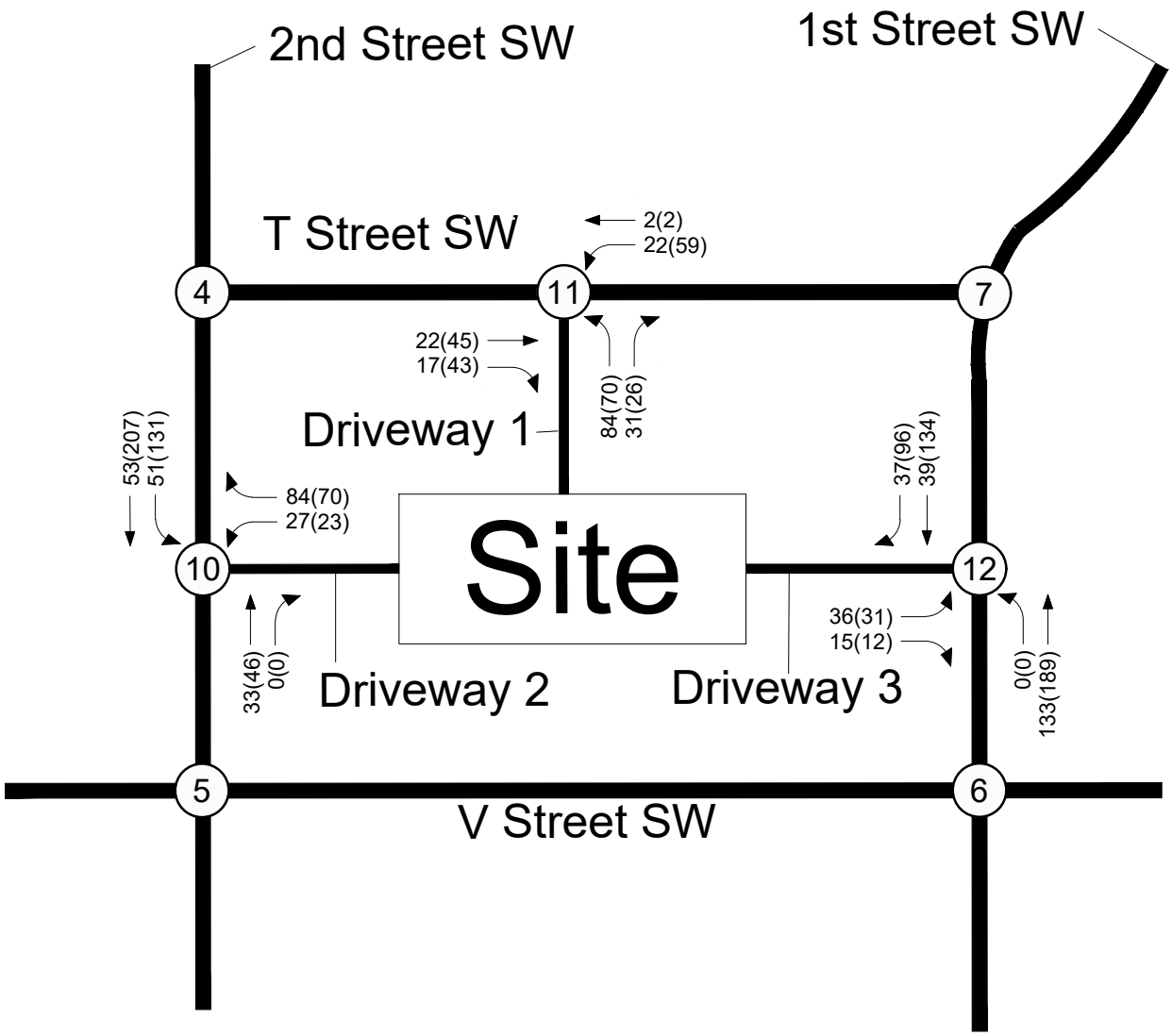


Figure 15 - Cont.
Total Future Traffic Volumes - Phase I (2024)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH
100 V Street SW
Washington, DC

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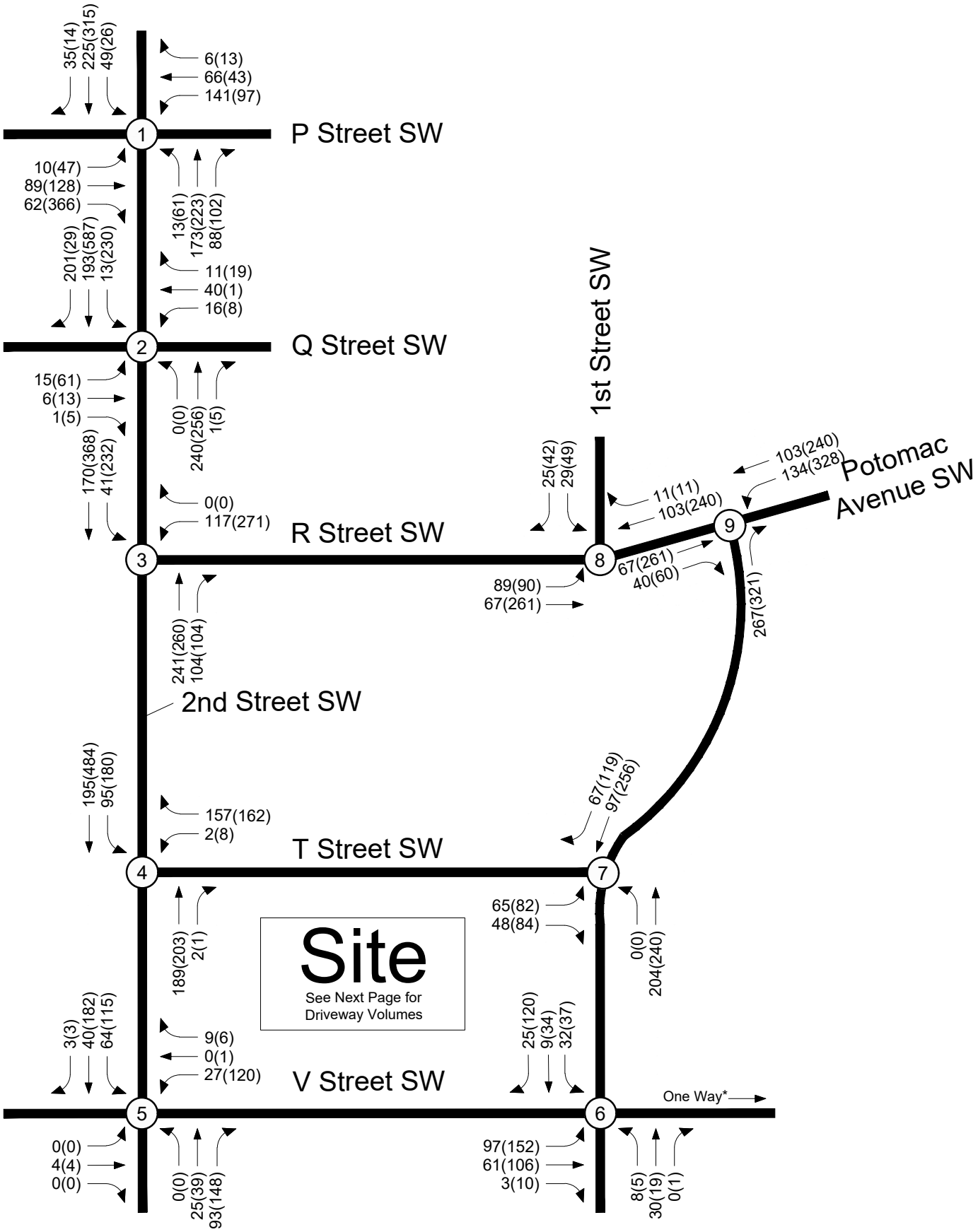

* Per DDOT, V Street east of 1st Street was analyzed as one-way eastbound.

Figure 16
Total Future Traffic Volumes
Full Bulid Out (2028)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH
100 V Street SW
Washington, DC

O:\PROJECTS\8001-8500\8107 100 V STREET (2020)\GRAPHICS\8107 RTP GRAPHICS.DWG

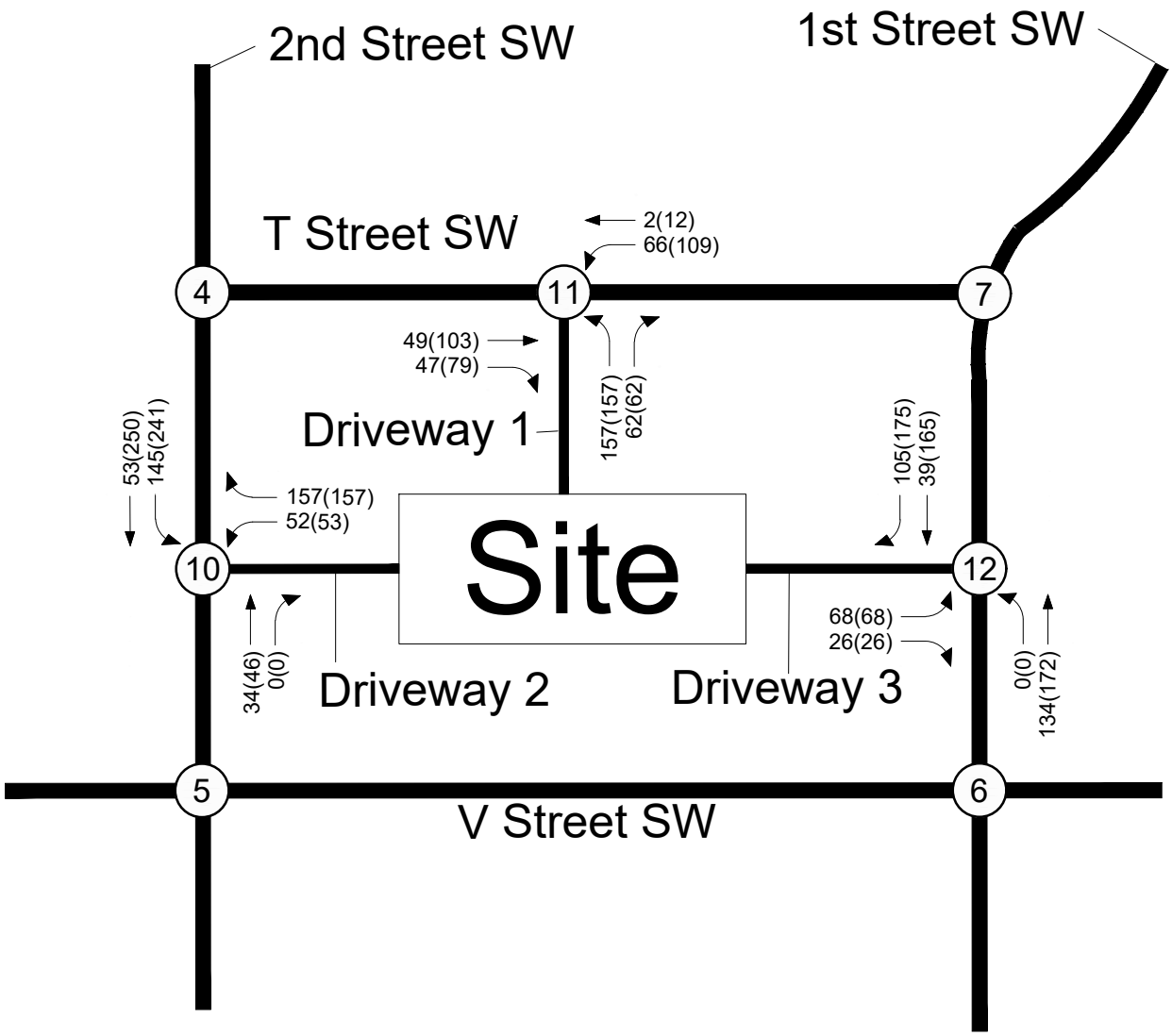

Figure 16 - Cont.
Total Future Traffic Volumes
Full Build Out (2028)

AM PEAK HOUR
PM PEAK HOUR
000 (000)

NORTH
100 V Street SW
Washington, DC