RETURN TO L'ENFANT
Transportation Impact Analysis
Washington, DC

Prepared for:
Louis Dreyfus Property Group

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TABLE OF CONTENTS

TABLE OF CONTENTS CONTINUED

LIST OF FIGURES

LIST OF FIGURES CONTINUED

RETURN TO L'ENFANT
Transportation Impact Analysis
Washington, DC

LIST OF TABLES

RETURN TO L'ENFANT
Transportation Impact Analysis
Washington, DC

LIST OF APPENDICES

Appendix	Title
A	Existing Counts
B	Existing Peak Hour LOS: City Street Network
C	Existing Peak Hour LOS: I-395 Network
D	Background Peak Hour LOS: City Street Network
E	Background Peak Hour LOS: I-395 Network
F	Total Future Peak Hour LOS: City Street Network
G	Total Future Peak Hour LOS: I-395 Network

Note; Appendices are NOT included in this study. Copies of the full appendices have been submitted to the District Department of Transportation (DDOT).

Section 1:
Introduction

This report presents an evaluation of the transportation impacts of the Louis Dreyfus Property Group's (LDPG) proposal to acquire and develop the air rights above the Center Leg Freeway (I-395), between E Street and Massachusetts Avenue.

The site of the I-395 Air Rights project, Return to L'Enfant, is located in the northwest section of Washington, D.C., as shown on Figure 1.1. It consists of three (3) blocks as shown on Figure 1.2: (1) the north block between G Street and Massachusetts Avenue, (2) the center block between F and G Streets, and (3) the south block between E and F Streets. It is zoned HR/C-3-C.

I-395 consists of two (2) northbound and two (2) southbound travel lanes within the subject right-of-way. There are three (3) ramps along this section of the freeway: (1) a southbound off-ramp that intersects 3rd Street between E and F Streets, (2) a southbound on-ramp that begins on 3rd Street south of Massachusetts Avenue, and (3) a northbound off-ramp that intersects 2nd Street at G Street (right of way).

LDPG proposes to develop three (3) commercial office buildings and one (1) residential building along a central, north-south plaza, as shown on Figure 1.3. The commercial buildings would contain a total of 1,988,657 S.F. of commercial space (1,918,651 S.F. office, 70,000 S.F. retail) at an 8.85 floor area ratio (FAR); the residential building would contain 180,384 S.F., or 165 units. The property is proposed to be zoned C-4.

The planning horizon for the analyses contained herein assumes that the proposed project would be completed by 2021.

These uses would be parked according to the District of Columbia Zoning Regulations. The commercial space would be served by 1,078 spaces; the residential building would be served by approximately 42 spaces. These spaces would be located on five (5) levels of below-grade parking. Garage driveways will be located at the following locations: (1) 3rd Street between G Street and Massachusetts Avenue; (2) 3rd Street between E and F Streets; and (3) Reconnected F Street between 2nd and 3rd Streets.

LDPG would partially reconnect the surface street grid that currently is disrupted by the freeway. F Street would be reconnected between 2nd and 3rd Streets. It would serve vehicular, pedestrian, and bicycle traffic. G Street would be extended between 2nd and 3rd Streets for pedestrian traffic only.

The LDPG proposal would modify the I-395 ramps by: (1) eliminating the lightly-used southbound off-ramp; (2) re-configuring the southbound on-ramp at 3rd Street; and (3) re-configuring the northbound off-ramp at 2nd Street. The I-395 mainline and I-395 ramp terminals would not be modified under this plan.

It is important to note that the site is currently zoned HR/C-3-C and would allow for development up to 6.5 Floor Area Ratio (FAR). This study reviews the development level at 8.85 FAR; therefore, the study does not evaluate the incremental increase in proposed density, which would be less than that shown here (i.e., 8.85 FAR – 6.5 FAR = 2.35 FAR increase).

The following tasks were undertaken in accordance with a scoping agreement with the District Department of Transportation (DDOT):

1. Review LDPG's proposed development plans, studies prepared in the area by DDOT, and other background data.

2. A field reconnaissance of existing roadway and intersection geometrics, traffic controls, traffic signal phasing/timings, and speed limits.

3. Agreement with the DDOT staff regarding the traffic study scope.

4. Counts of existing traffic at 30 surface street intersections, the I-395 mainline, and the I-395 ramps between D Street and New York Avenue.

5. Review of historic link traffic counts.

6. Analysis of existing levels of service.

7. Background future traffic volumes were forecasted for 2021 based on existing traffic counts, traffic that will be generated by previously approved projects that have not yet been built or fully occupied, and background traffic growth.

8. Background levels of service were calculated based on background traffic forecasts, existing traffic controls, and existing intersection geometrics.

9. The number of weekday AM and PM peak hour trips that would be generated by the proposed project were estimated based on: (1) Institute of Transportation Engineers (ITE) trip generation rates; (2) the proximity of the project to the nearest Metro station; (3) the proposed parking supply; and (4) experience with other comparable projects in Washington, D.C.

10. Total future traffic volumes were forecasted for 2021 based on the background future traffic forecasts, diversion of traffic due to the southbound off-ramp closure at 3rd Street, reconnection of F Street between 2nd and 3rd Streets, redesignation of 2nd Street as a two-way roadway between E Street and G Street right of way, and site-generated traffic

11. Total future levels of service were calculated.

12. Operational improvements required to adequately accommodate site traffic were identified.

Sources of data for this analysis included traffic counts conducted by Wells + Associates, ITE, the Washington Metropolitan Area Transit Authority (WMATA), the District of Columbia government, Skidmore Owings & Merrill LLP, and LDPG.

The conclusions of this study are as follows:

1. ***The subject site is served by a network of streets, sidewalks, and bicycle facilities. I-395 severed F and G Streets. Reconnecting F and G Streets would restore the former grid of east-west streets, unite the east and west sides of the freeway, improve around-the-block circulation and driver convenience in the site vicinity, and improve access to the subject site.***

2. ***The subject site also is served by three (3) Metro stations and fifteen (15) bus lines. Public transportation would be a viable alternative for future employees, residents, and visitors, to driving a private automobile.***

3. ***The I-395 mainline presently carries 7,580 to 8,693 peak hour trips south of D Street, and 2,568 to 3,763 peak hour trips south of New York Avenue.***

4. ***The southbound I-395 off ramp, which is proposed to be eliminated, presently carries only 44 to 66 peak hour trips. The southbound on-ramp carries 829 to 1,233 peak hour trips, and the northbound off ramp carries 1,228 to 1,269 peak hour trips.***

5. ***Twenty-three (23) of 30 intersections presently operate at level of service (LOS) "D" or better, and all approaches operate at LOS "D" or better, during both the AM and PM peak hours. Two (2) intersections operate at an overall LOS "D" but one approach operates near or at capacity, at LOS "E" or "F". The New York Avenue/I-395/4th Street intersection presently operates near capacity at LOS "E" during the AM peak hour, and at capacity at LOS "F"***

during the PM peak hour, due to long delays in both directions on New York Avenue. Five (5) intersections operate near of at capacity at LOS "E" or "F".

6. *Long queues were observed at several intersections, including New York Avenue/I-395, 2nd Street/I-395 northbound off ramp, and H Street/Massachusetts Avenue.*

7. *These problems can be partially, if not completely, mitigated by optimizing existing traffic signal timings.*

8. *The I-395 mainline presently operates at acceptable levels of service. The northbound D Street exit diverge point, the northbound weave section between the C Street/Canal Street on-ramp and D Street off-ramp, and the southbound weave section between the D Street on-ramp and Virginia Avenue off-ramp presently operate near or at capacity during the AM or PM peak hours.*

9. *Twenty-one (21) pipeline projects, totaling in excess of 5 million square feet (S.F.) of commercial space and over 2,000 residential dwelling units, will generate 4,491 AM peak hour trips, and 5,102 PM peak hour trips, upon buildout and full occupancy by 2021.*

10. *These pipeline project trips plus background traffic growth will cause 12 of the 25 intersections that presently operate at an overall LOS "D" to operate near or at capacity at LOS "E" or "F". A total of seventeen (17) intersections are projected to operate at LOS "E" or "F".*

11. *These future substandard levels of service can be partially, if not completely, mitigated by optimizing traffic signal timings.*

12. *All sections of the I-395 mainline will continue to operate at acceptable levels of service in 2021, without the Return to L'Enfant project, except for I-395 northbound, north of the C Street/Canal Street on-ramp. Several diverge points, and weave sections are projected to operate near or at capacity during the AM or PM peak hours, however.*

13. *LDPG would partially reconnect the surface street grid that currently is disrupted by the freeway. This would reconnect the neighborhoods east and west of the freeway, and thereby improve access and circulation to the subject site and vicinity for motorists, pedestrians, and bicyclists.*

14. Elimination of the existing southbound I-395 off-ramp at 3rd Street would have no significant adverse traffic impact since it carries little traffic.

15. The realigned southbound I-395 on-ramp at 3rd Street would provide sufficient capacity to adequately accommodate projected traffic.

16. The proposed modification of the northbound I-395 off-ramp at 2nd Street would increase intersection capacity and pedestrian convenience and safety.

17. The proposed Return to L'Enfant project, which would consist of 1,988,657 S.F. and 165 dwelling units, would be parked according to the District of Columbia Zoning Regulations at approximately 1,120 spaces. A sufficient number of loading berths also would be provided.

18. The Return to L'Enfant project would generate 656 AM peak hour vehicle-trips and 744 PM Peak hour vehicle-trips at full buildout and occupancy by 2021.

19. The proposed Return to L'Enfant project would have modest impacts on the city street grid. The project would not change most of the levels of service projected under 2021 background conditions.

20. Project-generated traffic impacts can be partially mitigated by optimizing traffic signal timings.

21. This study evaluates the impact of the full 8.85 FAR development program and <u>not</u> the incremental increase above the current zoning which permits all commercial development up to 6.5 FAR. For this reason, this analysis does <u>not</u> capture and present the site's net-additional traffic impacts beyond the 6.5 FAR, but rather the overall impacts of the 8.85 FAR development program. Therefore, the true impacts associated with this proposal, or impacts from development above 6.5 FAR, would only be a portion of what is assumed herein.

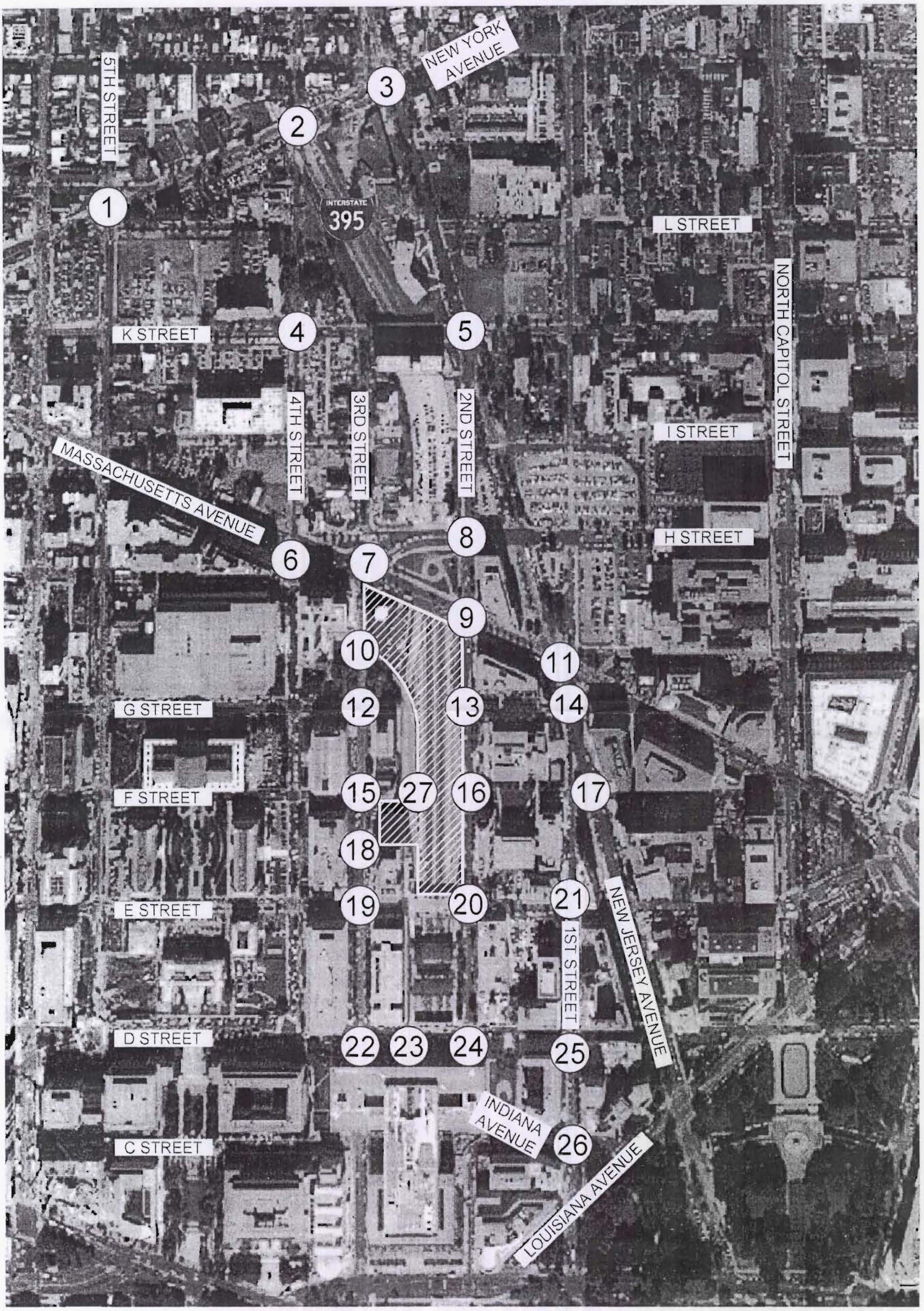

Figure 1.1
Site Location

North

Return to L'Enfant

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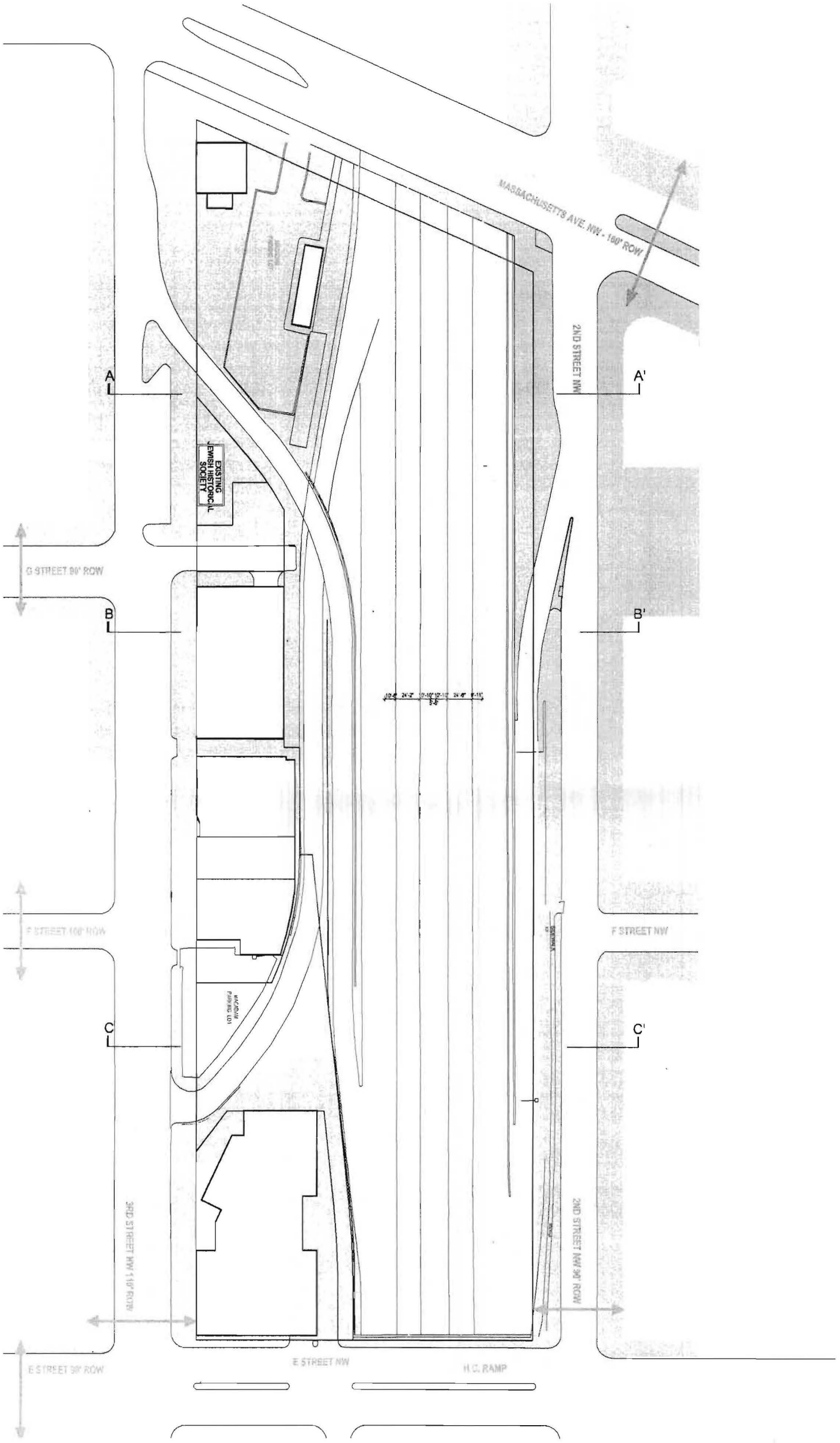

SOURCE: SOM

Figure 12
Existing Site Condition

North

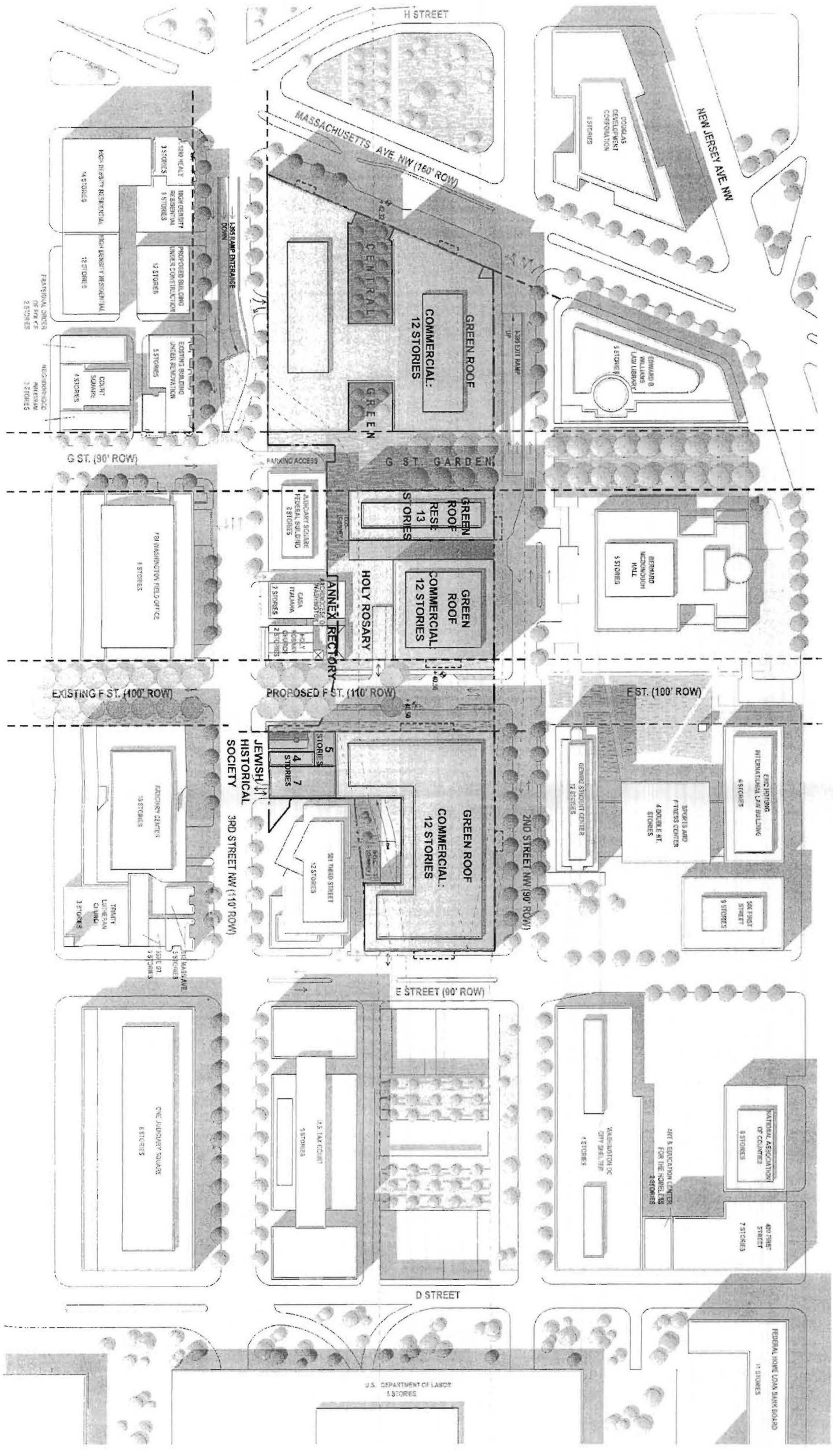

Figure 1.3
Proposed Site Plan

North

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Section 2:
Existing Conditions

Overview

This section presents an evaluation of existing transportation conditions, which includes: descriptions of the existing street, highway, public transportation, pedestrian, and bicycle networks; existing vehicular and pedestrian traffic counts; and existing street and freeway levels of service.

Streets and Highways

Overview. Regional access to the subject site is provided by I-395, New York Avenue, and Massachusetts Avenue. Local access is provided by the city street grid, including most particularly 2nd, 3rd, E, and F Streets.

The subject site is served by a connected network of arterial, collector, and local streets. F and G Streets are severed between 2nd and 3rd Streets by I-395. I-395 is a barrier to east-west travel by motorists, pedestrians, and bicyclists.

City Streets. The functional classification of the at-grade city street network is shown on Figure 2.1 and in Table 2.1. Table 2.1 also shows the basic number of lanes and posted speed limits on each of these streets. The lane arrangements and traffic controls at each of the 30 at-grade intersections is shown on Figure 2.2.

Freeway. The Center Leg Freeway is a limited access Interstate Highway, designated I-395. The number of through travel lanes on the I-395 mainline varies from two (2) to four (4) lanes in each direction between the I-395/I-295 split and its northern terminus at New York Avenue, as shown on Figure 2.3.

I-395 has a posted speed limit of 45 mph. The height limit within the tunnel is 13'-0".

There are two (2) southbound lanes south of New York Avenue. A third lane is added at the 3rd Street on-ramp; a fourth lane is added at the D Street on-ramp.

There are four (4) northbound lanes south of the D Street off-ramp. Two (2) lanes are dropped at the 2nd Street off-ramp. The Center Leg Freeway ends at New York Avenue where these two (2) lanes turn right onto northeast-bound New York Avenue.

Public Transportation

The subject site is served by fifteen (15) Metrobus lines within ¼ mile, and three (3) Metrorail stations, as shown on Figure 2.4. The Judiciary Square Metro station is located two (2) blocks (or 950 feet) to the west. Station entrances are located at F Street and 4th Street. The Union Station Metro station is located three (3) blocks (or 1,700 feet) to the east. The station entrance is located at the west entrance of Union Station at 1st Street, NE. The Gallery Place – Chinatown Metro station is located four (4) blocks (or 2,000 feet) to the west. Station entrances are located on 7th Street at F Street and H Street.

The following are the fifteen (15) Metrobus lines and the roads traveled within ¼ mile of the site:

A11- *Martin Luther King Jr. Highway Line*, travels along Constitution Avenue in site vicinity,
D1, 3, 6- *Sibley Hospital-Stadium-Armory Line*, travels along E Street in site vicinity
D4- *Ivy City-Union Station Line*, travels along N. Capitol Street and Massachusetts Avenue in site vicinity
P1, 2, 6- *Anacostia-Eckington Line*, travels along H Street, 5th Street and New York Avenue in site vicinity
80- *North Capitol Street Line*, travels along H Street and Massachusetts Avenue in site vicinity
96, 97- *East Capitol Street-Cardozo Line*, travels along Massachusetts Avenue and New Jersey Avenue in site vicinity
X1- *Benning Road Line*, travels along N. Capitol Street in site vicinity
X2- *Benning Road-H Street Line*, travels along H Street in site vicinity
MTA 950- *Kent Island-Washington D.C. Commuter Line*, travels along Massachusetts Avenue in site vicinity
N22- *Navy Yard Shuttle Line*, travels along N. Capitol Street in site vicinity

Pedestrians and Bicycles

The subject site and vicinity are served by a connected network of streets with sidewalks on both sides. This network would be enriched by reconnecting F and G Streets.

The nearest bicycle lanes are located on E Street, as shown on Figure 2.5, which appears in the District of Columbia Bicycle Master Plan. The Metropolitan Branch Trail is located three (3) blocks to the east at Union Station. There are no special on- or off-street bicycle treatments in the immediate vicinity of the site.

DDOT plans to extend the E Street bike lanes to the east and west, as shown on Figure 2.6, which also appears in the District of Columbia Bicycle Master Plan. A signed bicycle route is planned on Massachusetts Avenue.

New bicycle routes are planned on F and G Streets to the west. These could be extended to the east, if F and G Streets are reconnected between 2nd and 3rd Streets.

Existing Traffic Counts

Vehicular Traffic. Existing weekday AM and PM peak period traffic counts were conducted by Wells + Associates at 30 city street intersections and at three (3) locations on I-395, from 7:00 to 10:00 AM and from 4:00 to 7:00 PM, on the following days and dates:

Tuesday, October 16, 2007,
Thursday, October 18, 2007, and
Tuesday, December 4, 2007.

The U.S. Congress was in session on each of these days. Events were held at the Washington Convention Center on each of these days. Events were held at the Verizon Center on October 16 and 18 but not on December 4. The raw counts are included in Appendix A which are not included herewith, but have been provided to the District Department of Transportation.

The AM peak hour generally occurred from 7:45 to 8:45 AM, and the PM peak hour generally occurred from 4:45 to 5:45 PM.

The counts during the common peak hours were balanced between adjacent intersections to account for different counts days, as shown on Figure 2.7. The counts along I-395 are shown on Figure 2.8.

The I-395 mainline presently carries 7,580 to 8,693 peak hour trips south of D Street, and 2,568 to 3,763 peak hour trips south of New York Avenue. The southbound I-395 off ramp, which is proposed to be eliminated, presently carries only 44 to 66 peak hour trips. The southbound on-ramp carries 829 to 1,233 peak hour trips, and the northbound off ramp carries 1,228 to 1,269 peak hour trips.

Pedestrian Traffic. Counts of the number of pedestrians crossing each leg of each intersection also were conducted on the same days, dates, and times as the vehicular traffic counts. The results are presented on Figure 2.9. The raw counts are also included in Appendix A.

Intersection Capacity Analysis

Levels of Service. Existing peak hour levels of service in 2007 were estimated at 30 at-grade intersections in the study area based on the existing lane usage and traffic control shown on Figure 2.2, the existing vehicular traffic counts shown on Figure 2.7, the existing pedestrian traffic counts shown on Figure 2.9, and the Highway Capacity Manual (HCM) 2000 methodologies, using Synchro Version 7 software. The results are presented in Appendix B and summarized in Table 2.2.

Twenty-three (23) of 30 intersections presently operate at level of service (LOS) "D" or better, and all approaches operate at LOS "D" or better, during both the AM and PM peak hours.

During the AM peak hour, two (2) intersections operate at an overall LOS "D" but one approach operates near or at capacity, at LOS "E" or "F". Southeast-bound Massachusetts Avenue operates at capacity at LOS "F" at 4th Street. Eastbound C Street operates near capacity at LOS "E" at Indiana Avenue. During the PM peak hour, northbound 3rd Street operates at capacity at LOS "F" at D Street.

The New York Avenue/I-395/4th Street intersection presently operates near capacity at LOS "E" during the AM peak hour, and at capacity at LOS "F" during the PM peak hour, due to long delays in both directions on New York Avenue.

The Massachusetts Avenue/4th Street intersection presently operates at an overall LOS "F" during the PM peak hour due to long delays on southeast-bound Massachusetts Avenue.

The H Street/4th Street intersection operates at overall LOS "F" during both the AM and PM peak hours due to long delays on eastbound H Street.

The Massachusetts Avenue/H Street/3rd Street intersection operates at an overall LOS "E" during the AM peak hour, and LOS "F" during the PM peak hour, due to long delays experienced by motorists turning from south-westbound H Street to southbound 3rd Street (most of whom turn onto the southbound I-395 on-ramp) and motorists traveling through the intersection on eastbound H Street.

The northbound traffic on 2nd Street that is controlled by a STOP sign at the I-395 off-ramp operates at capacity at LOS "F" during both the AM and PM peak hours.

The northbound traffic on 3rd Street at D Street presently operates at LOS "F" during the PM peak hour.

Queues. Long queues were observed during both the AM and PM peak hours at the following locations:

1. In both directions on New York Avenue at I-395.

2. At the STOP sign on northbound 2nd Street at the I-395 off ramp, due to heavy I-395 off-ramp volume,

3. On the I-395 off-ramp at 2nd Street, due to heavy volume,

4. Northbound 2nd Street at Massachusetts Avenue, due to heavy volume and limited side street green time (i.e., 45-seconds of a 100-second cycle),

5. Westbound H Street at Massachusetts Avenue, including both the two (2) lanes that serve westbound H Street through traffic and the two (2) lanes that serve southbound 3rd Street and the southbound I-395 on-ramp traffic, due to limited side street green time (i.e., 18-seconds of a 100-second cycle).

6. On the southbound I-395 on-ramp at D Street due to back-ups on the southbound I-395 mainline at the I-395/I-295 split, and

7. On westbound D Street at the southbound I-395 on-ramp due to back-ups on the ramp caused by mainline capacity constraints.

Mitigation. Operation of the existing surface street system could be improved by optimizing existing traffic signal timings, as shown in Table 2.2. Solutions involving additional pavement are limited due to restricted rights of way and potential adverse impacts on pedestrians and bicyclists.

Three (3) intersections would continue to operate at LOS "E" or "F" but with reduced delays: (1) New York Avenue/4th Street/I-395, (2) H Street/4th Street, and (3) Massachusetts Avenue/H Street/3rd Street. Approaches that today operate at LOS "E" or "F" could operate at LOS "D" or better at: (1) D Street/3rd Street/I-395 southbound on-ramp and (2) C Street/1st Street/Indiana Avenue.

The I-395 northbound off-ramp intersection with 2nd Street, which operates today at LOS "F" under STOP sign control, could operate at LOS "B" or "C" under signal control, if warranted and approved by DDOT.

Freeway Capacity Analysis

Existing peak hour levels of service on I-395 in 2007 were estimated based on the existing freeway geometrics shown on Figure 2.3, the existing vehicular traffic counts shown on Figure 2.8, and the Highway Capacity Manual (HCM) 2000 methodologies, using Highway Capacity Software (HCS+). The results are presented in Appendix C and summarized on Figure 2.10.

Figure 2.10 indicates that the mainline presently operates at LOS "C" or better during both the AM and PM peak hours in both the northbound and southbound directions.

The I-395 northbound D Street exit diverge point operates at capacity at LOS "F" during the AM peak hour because the exiting volume (2,222 vph) exceeds the ramp capacity (1,800 vph) by 23 percent. It operates at an acceptable LOS "B" during the PM peak hour. The I-395 southbound 3rd Street exit diverge point, and the I-395 southbound Virginia Avenue exit diverge point, operate at LOS "B" or "C" during both the AM and PM peak hours.

The I-395 northbound weave section between the C Street/Canal Street on-ramp and D Street off-ramp presently operates at capacity at LOS "F" during the AM peak hour, and at an acceptable LOS "C" during the PM peak hour. The I-395 southbound weave section between the D Street on-ramp and Virginia Avenue off-ramp presently operates at an acceptable LOS "D" during the AM peak hour, and near capacity at LOS "E" during the PM peak hour.

The 2nd Street off-ramp and 3rd Street on-ramp currently operate at 38 to 62 percent of capacity.

Table 2 1
I-395 Air Rights
Street Characteristics

Street	Number of Lanes	Posted Speed Limit
1st Street	2	25
2nd Street	1-2	25
3rd Street	1-2	25
4th Street	1	25
5th Street	1-2	25
C Street	2	25
D Street	2	25
E Street	1	25
F Street	1	25
G Street	1	25
H Street	3-4	25
K Street	1-2	25
L Street	2	25
New York Avenue	3	30
New Jersey Avenue	1-2	25
Massachusetts Avenue	2-3	25

Table 2 2
Return to L'Enfant
Level of Service Table (1) (2) (3)

Intersection		Traffic Control	Critical Movement	Existing (2007) AM Peak	Existing (2007) PM Peak	Optimize Signal Timings Existing (2007) AM Peak	Optimize Signal Timings Existing (2007) PM Peak
1a	New York Avenue/ 5th Street/ L Street	SIGNAL	EB "NY Avenue"	B (17 2)	C (23 5)	B (19 3)	C (25.8)
			WB "NY Avenue"	B (16 5)	B (19 4)	B (17.6)	B (14.5)
			NB 5th Street	C (32.7)	C (32.9)	C (32.7)	C (32.9)
			Overall	**B (18 8)**	**C (23 3)**	**C (20.1)**	**C (23 3)**
1b		SIGNAL	WB "L Street"	A (6 9)	B (11 7)	B (10 6)	A (7 2)
			NB "5th Street"	C (24 4)	C (20 8)	C (23 7)	B (18 1)
			Overall	**B (15 2)**	**B (18 3)**	**B (16 8)**	**B (15 1)**
2	New York Avenue/4th Street I-395 Terminus	SIGNAL	EB "NY Avenue"	E (69 4)	F (263 5)	F (84.7)	F (194 3)
			WB "NY Avenue"	E (71 8)	C (22 5)	E (77 1)	E (79 2)
			SB "4th Street"	F (304 5)	F (333 2)	F (186 0)	F (104 1)
			NB "I-395 Off-Ramp"	B (14 4)	A (8 1)	B (15 5)	A (9.6)
			Overall	**E (75.4)**	**F (132 8)**	**E (71.2)**	**F (113 6)**
3	New York Avenue/ New jersey Avenue/ 3rd Street	SIGNAL	EB "NY Avenue"	B (11 1)	B (11 9)	A (9 4)	A (2 4)
			WB "NY Avenue"	C (21 6)	B (11 2)	C (21.6)	B (11 2)
			NB "New Jersey Avenue"	C (23 7)	C (30 4)	C (23 7)	C (30 4)
			SB "3rd Street"	D (36.0)	C (31 7)	D (36.0)	C (31 7)
			Overall	**B (19 8)**	**B (16 8)**	**B (19 3)**	**B (13.4)**
4	K Street/ 4th Street	SIGNAL	EB	B (17.5)	C (21.0)	B (17 5)	C (21 0)
			WB	B (13.6)	C (21.3)	B (13.6)	C (21 3)
			SB	D (40.5)	C (30.2)	D (42.7)	D (37.1)
			Overall	**B (16.8)**	**C (22.0)**	**B (17.0)**	**C (22 6)**
5	K Street/ New Jersey Avenue/ 2nd Street	SIGNAL	EB	A (1 4)	B (10.4)	A (1 4)	B (10 4)
			WB	B (19.3)	C (24.4)	B (19.3)	C (24.4)
			NB	A (6.6)	C (21.8)	A (6.7)	C (21 8)
			Overall	**B (10.5)**	**B (19 5)**	**B (10 5)**	**B (19 5)**
6a	Massachusetts Avenue/ 4th Street	SIGNAL	SEB	F (82 6)	F (360 7)	B (13.8)	C (22.2)
			NWB	C (25.8)	A (3.7)	A (6.8)	A (2 6)
			SB	D (42 0)	D (45 5)	D (41 2)	D (46 4)
			Overall	**D (43.7)**	**F (171 3)**	**B (12.9)**	**B (18 6)**
6b	H Street/ 4th Street	SIGNAL	EB	F (178 8)	F (885 4)	C (31 6)	F (96.5)
			WB	D (37 5)	C (23 1)	C (23 5)	B (13.8)
			SB	A (3.8)	A (3 5)	A (5.3)	A (8 0)
			Overall	**F (84 3)**	**F (623.8)**	**C (24 7)**	**E (71 1)**
7a	Massachusetts Avenue/ H Street	STOP	WBR	B [13 1]	B [10 3]	B [13 3]	B [10 2]
7b	H Street/ 3rd Street	STOP	SBR	B [11 2]	B [10 1]	B [11 2]	B [10 1]
7c	Massachusetts Avenue/ H Street/3rd Street	SIGNAL	EB "H Street"	E (57 8)	F (393.0)	E (58.0)	F (280.3)
			WB "H Street"	D (36 4)	C (28 9)	C (34 3)	C (24 0)
			SEB "Mass Avenue"	C (25 1)	B (16 6)	A (7 5)	A (8.2)
			NWB "Mass Avenue"	E (78 9)	C (26 8)	F (99 8)	C (34 5)
			SWB "H to 3rd"	F (244 2)	F (219 7)	F (92.6)	F (108 1)
			Overall	**E (77.0)**	**F (116 1)**	**E (58 6)**	**F (91.2)**
8	H Street/ 2nd Street	SIGNAL	EB	A (4 2)	B (12 5)	A (4 2)	B (12 5)
			WB	B (14 8)	B (13 7)	B (14 8)	B (13 7)
			NB	D (37.8)	D (44 5)	D (37.9)	D (44.5)
			Overall	**C (25 2)**	**C (28.4)**	**C (25.2)**	**C (28 4)**
9	Massachusetts Avenue/ 2nd Street	SIGNAL	EB	C (29.1)	B (17 4)	C (29.3)	B (17 4)
			WB	B (13 5)	C (23 8)	B (13 5)	C (23.8)
			NB	D (36 0)	D (36 5)	C (27 7)	D (36 5)
			Overall	**C (29.0)**	**C (28 3)**	**C (24.5)**	**C (28 3)**
10.	3rd Street/ North Site Access	STOP	SBL	FUTURE INTERSECTION		FUTURE INTERSECTION	
			WBL	FUTURE INTERSECTION		FUTURE INTERSECTION	
11.	Massachusetts Avenue/ New Jersey Avenue	SIGNAL	EB	A (9 2)	B (18 4)	A (8 9)	B (18.4)
			WB	B (19 0)	B (15 4)	B (19 0)	B (15.4)
			NB	A (9 6)	C (27.6)	A (9.6)	C (27.6)
			SB	C (22 8)	C (23 3)	C (22.8)	C (23 3)
			Overall	**B (14 5)**	**B (19 5)**	**B (14 4)**	**B (19 5)**
12	G Street/ 3rd Street	SIGNAL	EB	B (19 2)	B (18 3)	B (19 2)	B (18.3)
			WB	C (29 7)	C (29.2)	C (29 7)	C (29 2)
			NB	B (17.1)	C (20 9)	B (17.5)	C (20.9)
			SB	D (42 1)	D (44.5)	D (39 9)	D (44.5)
			Overall	**C (21.2)**	**C (22 2)**	**C (21.1)**	**C (22 2)**
13	I-395 Northbound Off-Ramp/ 2nd Street	STOP	NBT	F [788.2]	F [271 7]	N/A	N/A
	Add Traffic Signal	SIGNAL	NB	N/A	N/A	D (54.2)	B (18.1)
			NEB	N/A	N/A	B (17 3)	B (13 5)
			Overall	N/A	N/A	**C (27 6)**	**B (14.5)**
14.	G Street/ New Jersey Avenue	SIGNAL	EB	C (32.9)	C (34.6)	C (32.9)	C (34.6)
			WB	D (44.1)	D (52 9)	D (44.4)	D (52 9)
			NB	B (12 5)	B (11 5)	B (12.5)	B (11.5)
			SB	B (12 2)	A (7.0)	B (12 2)	A (7.0)
			Overall	**B (15 7)**	**B (18.6)**	**B (15.7)**	**B (18.6)**

Table 2.2
Return to L'Enfant
Level of Service Table (1) (2) (3)

Intersection		Traffic Control	Critical Movement	Existing (2007) AM Peak	Existing (2007) PM Peak	Optimize Signal Timings Existing (2007) AM Peak	Optimize Signal Timings Existing (2007) PM Peak
15.	F Street/	STOP	EBL	D [29.6]	C [20 8]	D [29.6]	C [20.8]
	3rd Street		EBTR	A [10.0]	B [12.7]	A [10.0]	B [12.7]
			WBLTR	D [26 2]	C [23 8]	D [26 2]	C [23.8]
			NBLTR	A [3 2]	A [2 0]	A [3 2]	A [2.0]
			SBLT	--	--	--	--
16	F Street/	STOP	EBLR	FUTURE INTERSECTION		FUTURE INTERSECTION	
	2nd Street		NBLT	FUTURE INTERSECTION		FUTURE INTERSECTION	
17a.	New Jersey Avenue/	SIGNAL	EB	A (0 5)	A (2 6)	A (0.5)	A (2 6)
	1st Street		WB	A (10.0)	A (3 5)	A (10 0)	A (3.5)
			NB	B (14 4)	B (10.7)	B (14 4)	B (10.7)
			Overall	A (8 6)	A (4 8)	A (8 6)	A (4.8)
17b.	Driveway/F Street/	SIGNAL	EB	--	C (34 5)	--	C (34 5)
	1st Street		NB	C (29 6)	D (45 5)	C (28 0)	D (45 5)
			SB	B (12 0)	A (3 1)	B (12 0)	A (3.1)
			Overall	C (20 3)	C (20 1)	B (19 6)	C (20.1)
17c	F Street/	SIGNAL	EB	A (8 3)	A (8 2)	A (8 2)	A (8 2)
	New Jersey Avenue		NB	B (17 8)	B (18 2)	B (17 8)	B (18.2)
			SB	A (2 7)	B (10 2)	A (2 7)	B (10 2)
			Overall	B (11 6)	B (15.2)	B (11.6)	B (15.2)
18	I-395 SB Off Ramp/	STOP	EBLTR	C [18 0]	C [16.6]	C [18 0]	C [16 6]
	3rd Street/		WBLTR	D [26.4]	C [19.6]	D [26.4]	C [19 6]
	South Site Access		NBLTR	B [12.2]	A [10.0]	B [12 2]	A [10.0]
			SBLT	A [0 9]	A [0 1]	A [0 9]	A [0.1]
19	E Street/	SIGNAL	EB	C (22 0)	C (26.9)	C (22 0)	C (26.9)
	3rd Street		WB	D (50 3)	A (7.3)	B (18.8)	A (7 3)
			NB	C (21 9)	B (10.7)	C (22 2)	B (10 4)
			SB	B (13 2)	B (16 0)	B (12 6)	B (16 0)
			Overall	C (30 9)	B (15 0)	B (19.5)	B (15 0)
20	E Street/	SIGNAL	EB	B (10 1)	A (3 3)	A (6 6)	A (3 3)
	2nd Street		WB	B (13 7)	C (20 4)	B (13 7)	C (20.4)
			NB	D (48.9)	C (29 4)	D (48 9)	C (29 4)
			Overall	C (30.7)	B (16 0)	C (30 1)	B (16 0)
21.	E Street/	SIGNAL	EB	A (7.2)	B (10 9)	A (5.1)	B (11.0)
	1st Street		WB	A (9 7)	B (16.4)	A (9.7)	B (16.4)
			NB	C (23.1)	B (14.5)	C (22.9)	B (14.5)
			SB	C (29 9)	C (31 5)	C (29.9)	C (31 5)
			Overall	B (13.4)	B (16 7)	B (12.6)	B (16.8)
22	D Street/	SIGNAL	EB	C (31 6)	C (33 7)	C (31 6)	C (33 7)
	3rd Street/I-395 SB On Ramp		WB	C (27 7)	B (19.4)	C (27 7)	B (18 1)
			NB	C (26 4)	F (87.6)	C (26.4)	D (51.7)
			SB	A (7 2)	A (7.3)	A (7.0)	A (7.9)
			Overall	C (23.7)	C (31 2)	C (23.6)	C (23 1)
23	D Street/	STOP	WBL	--	--	--	--
	I-395 SB On Ramp/Driveway		SBR	B [14 9]	B [10 4]	B [14.9]	B [10.4]
24	D Street/	SIGNAL	WB	B (12.7)	B (11 8)	B (13 5)	B (11.8)
	2nd Street/I-395 NB Off Ramp		NB	D (36 6)	C (30.5)	D (36.6)	C (30 5)
			Overall	C (30 4)	C (22 2)	C (30 6)	C (22 2)
25	D Street/	SIGNAL	EB	B (16 3)	C (30 8)	B (16 3)	C (30 8)
	1st Street		WB	C (27 6)	C (23 0)	C (27 6)	C (23 0)
			NB	B (12.0)	B (14.3)	B (13 4)	B (14 3)
			SB	C (30 5)	B (18 7)	C (29 4)	B (18 5)
			Overall	C (22 3)	C (22 6)	C (22 3)	C (22 5)
26	C Street/1st Street/	SIGNAL	EB	E (67 8)	D (38 3)	D (53 9)	D (38 3)
	Indiana Avenue		WB	C (34 0)	C (30 0)	C (34 9)	C (30.0)
			NB	C (28 8)	C (24.7)	C (28 8)	C (24 7)
			SB	C (26 0)	C (20 8)	B (17 6)	C (20.8)
			SEB	C (34 1)	C (30 6)	C (35 0)	C (30 6)
			Overall	D (54 6)	C (30 22)	D (44 4)	C (30 2)
27	F Street/	STOP	EBLT	FUTURE INTERSECTION		FUTURE INTERSECTION	
	Site Access		WBTR	FUTURE INTERSECTION		FUTURE INTERSECTION	
			SBLR	FUTURE INTERSECTION		FUTURE INTERSECTION	

Notes

(1) Numbers in parentheses, ( ), represent approach delay, in seconds per vehicle for signalized intersections.
(2) Numbers in brackets, [ ], represent approach delay, in seconds per vehicle for unsignalized intersections.
(3) Analyses conducted using Synchro Version 7, Software

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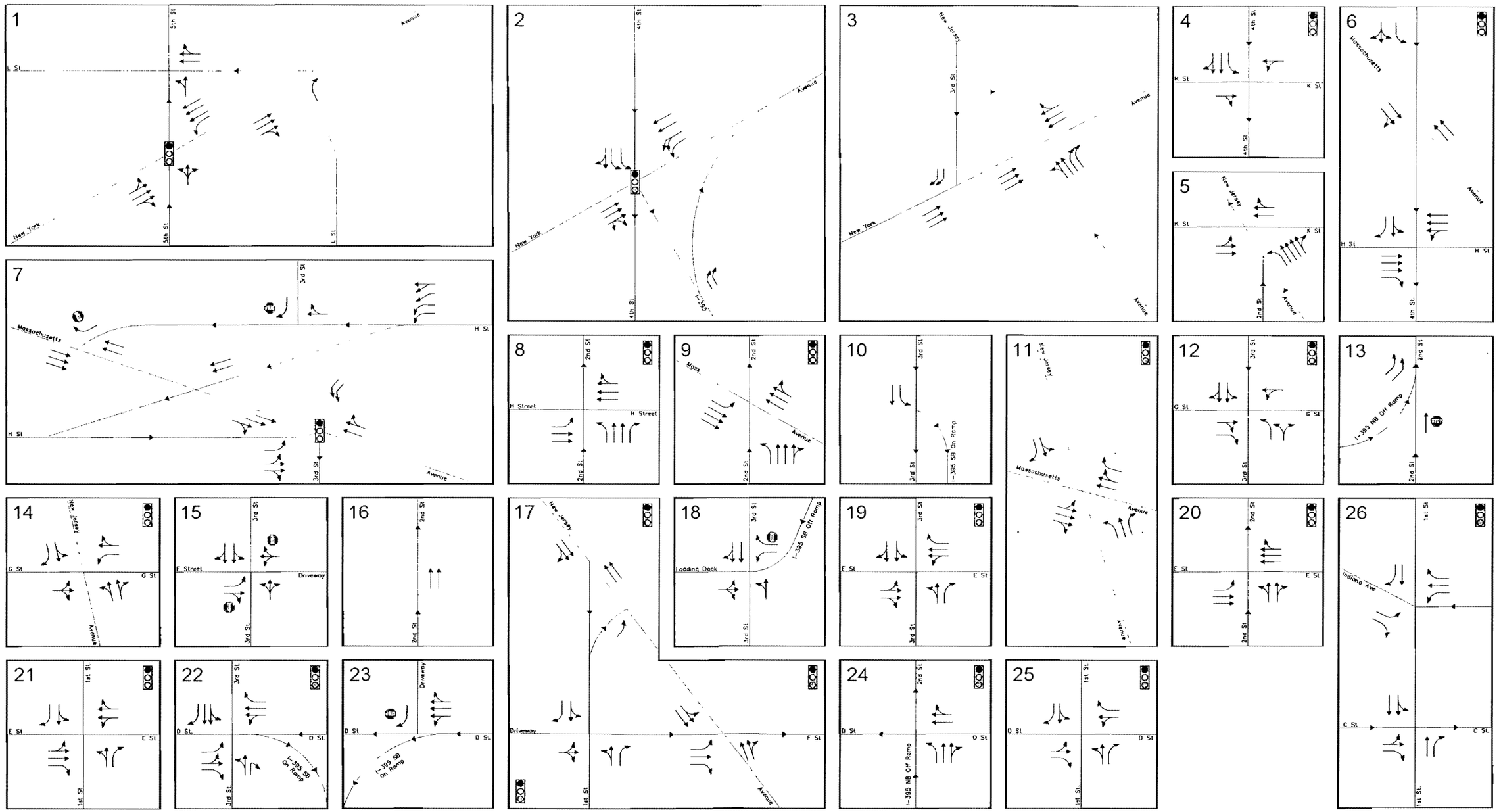

Figure 2.2
Intersection Lane Use and Traffic Control

Represents One Travel Lane
Signalized Intersection
Stop Sign

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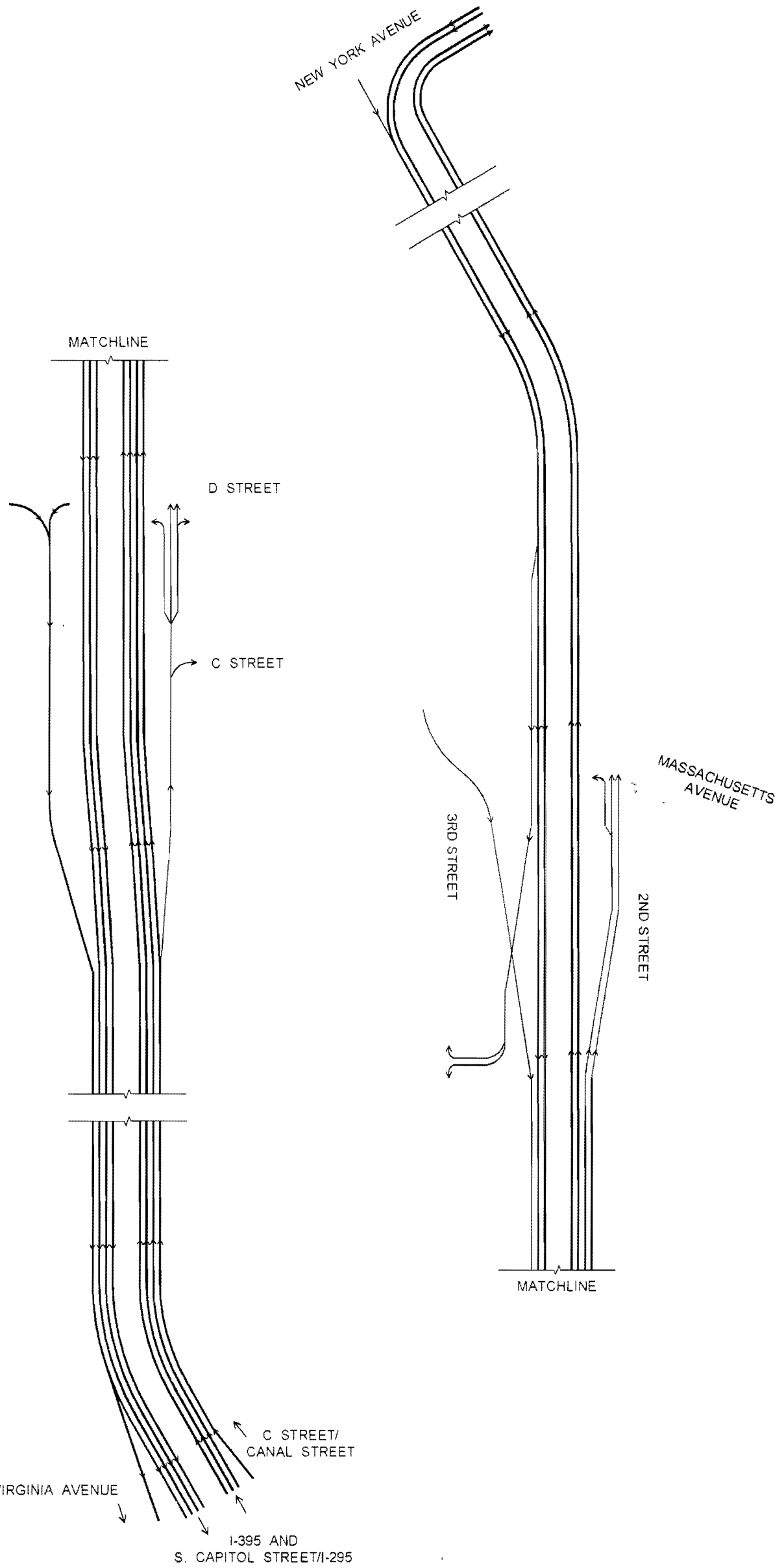

Figure 2.3
I–395 Ramp and Lane Configuration

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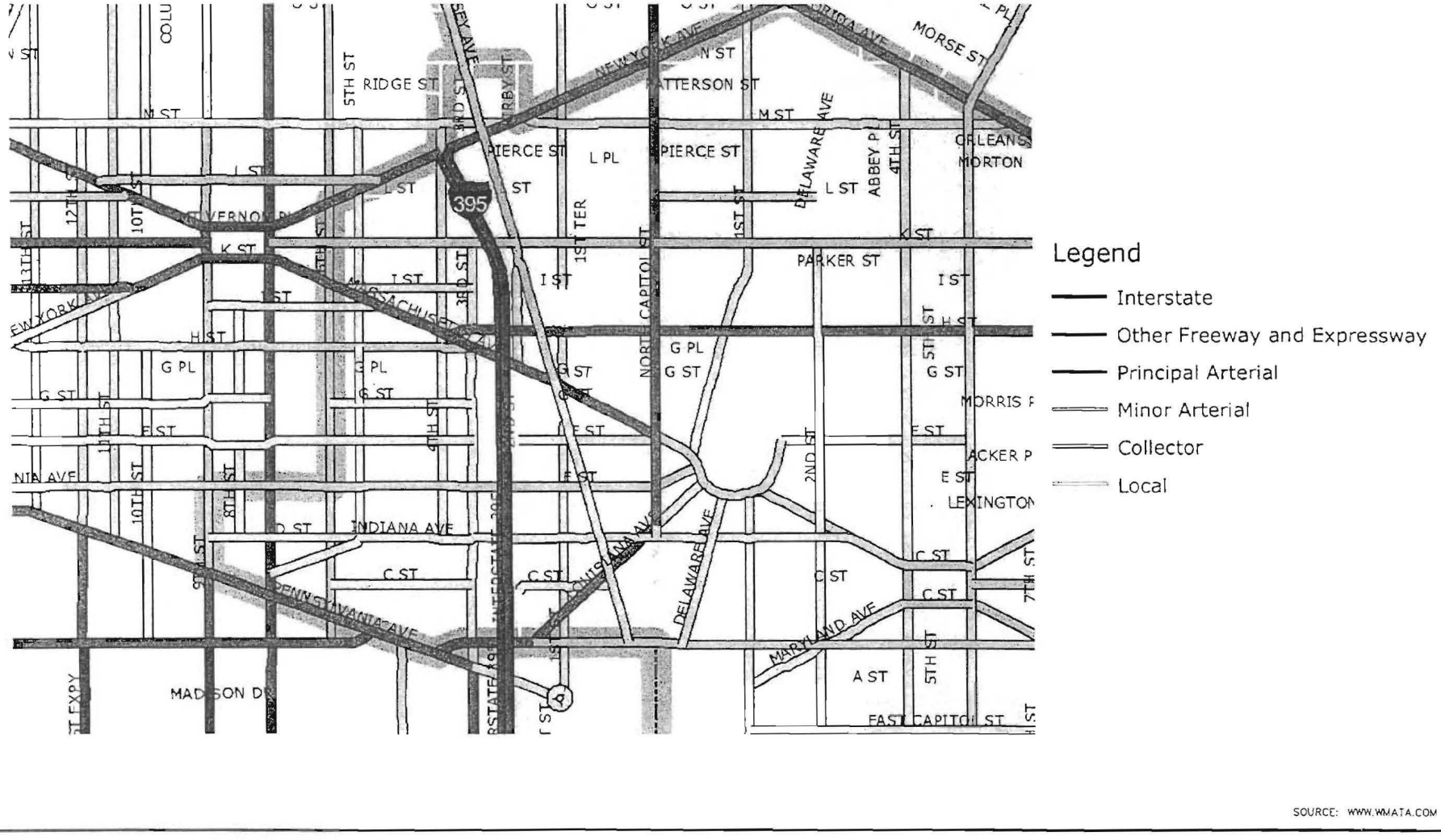

SOURCE: WWW.WMATA.COM

Figure 2.1
City Street Functional Classification

North

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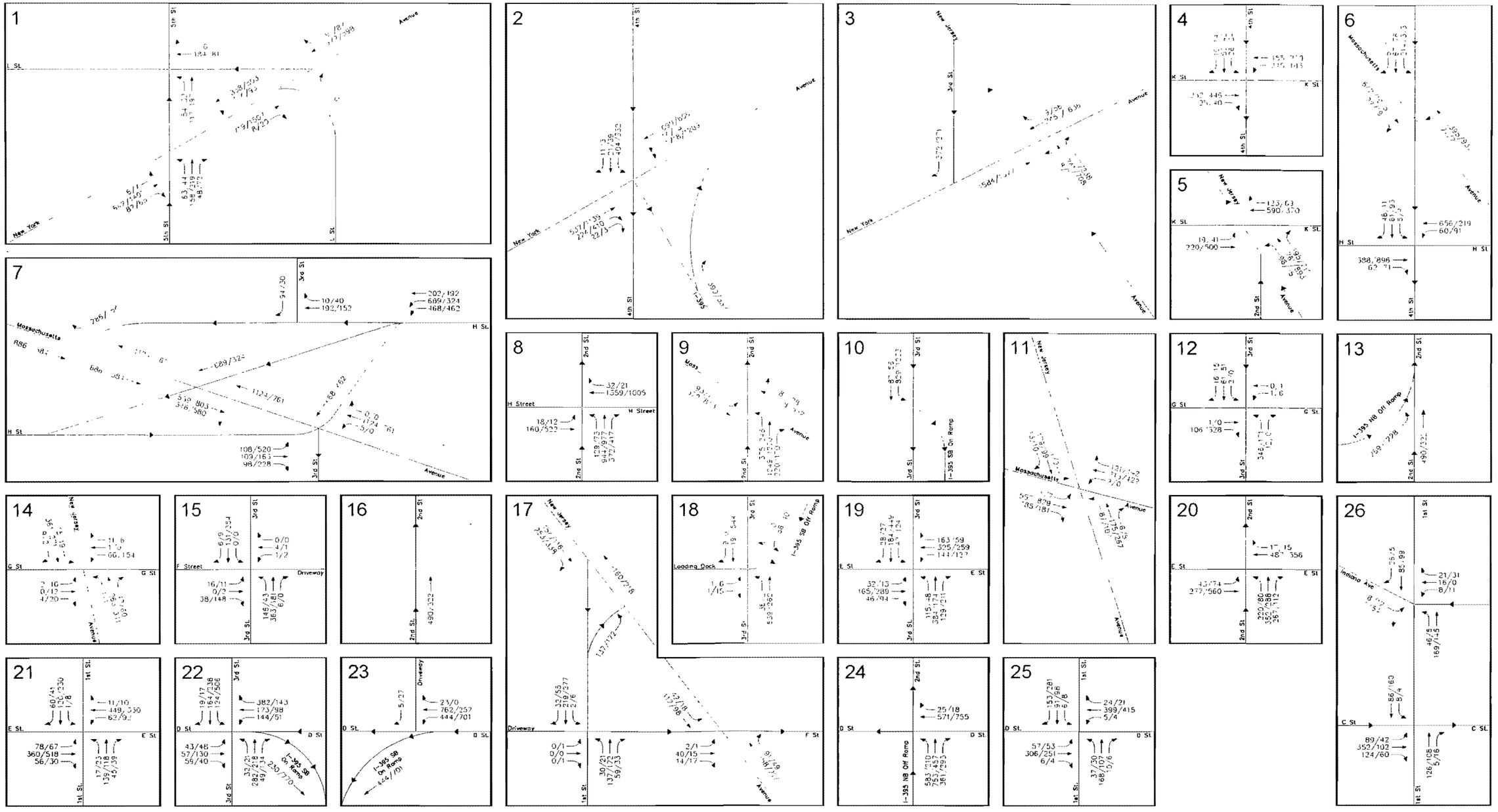

Figure 2.7
Existing Peak Hour Vehicle Traffic Volumes

AM PEAK HOUR
PM PEAK HOUR
000/000

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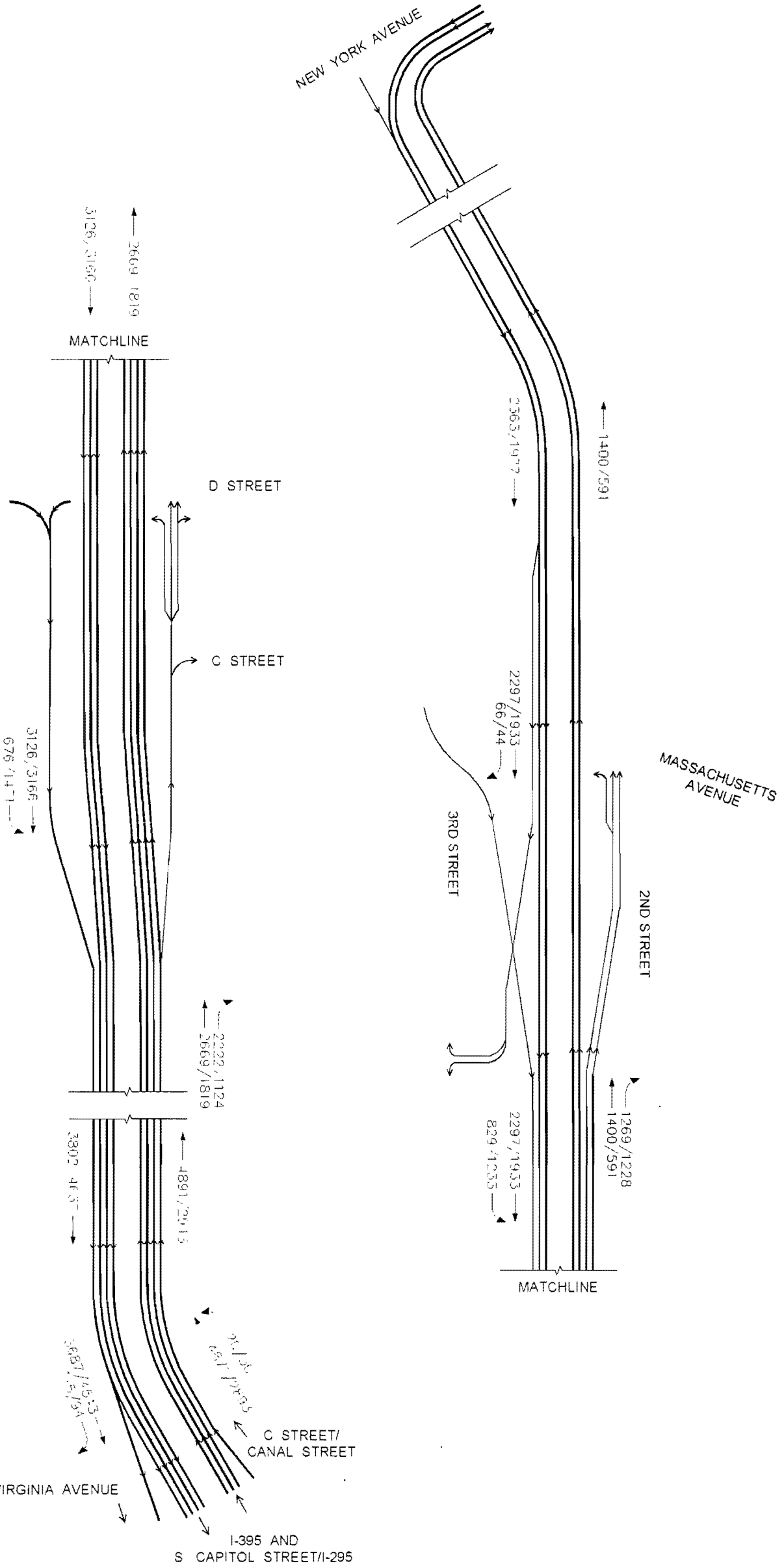

Figure 2.8
Existing Peak Hour Vehicle Traffic Volumes: I–395 Network (2007)

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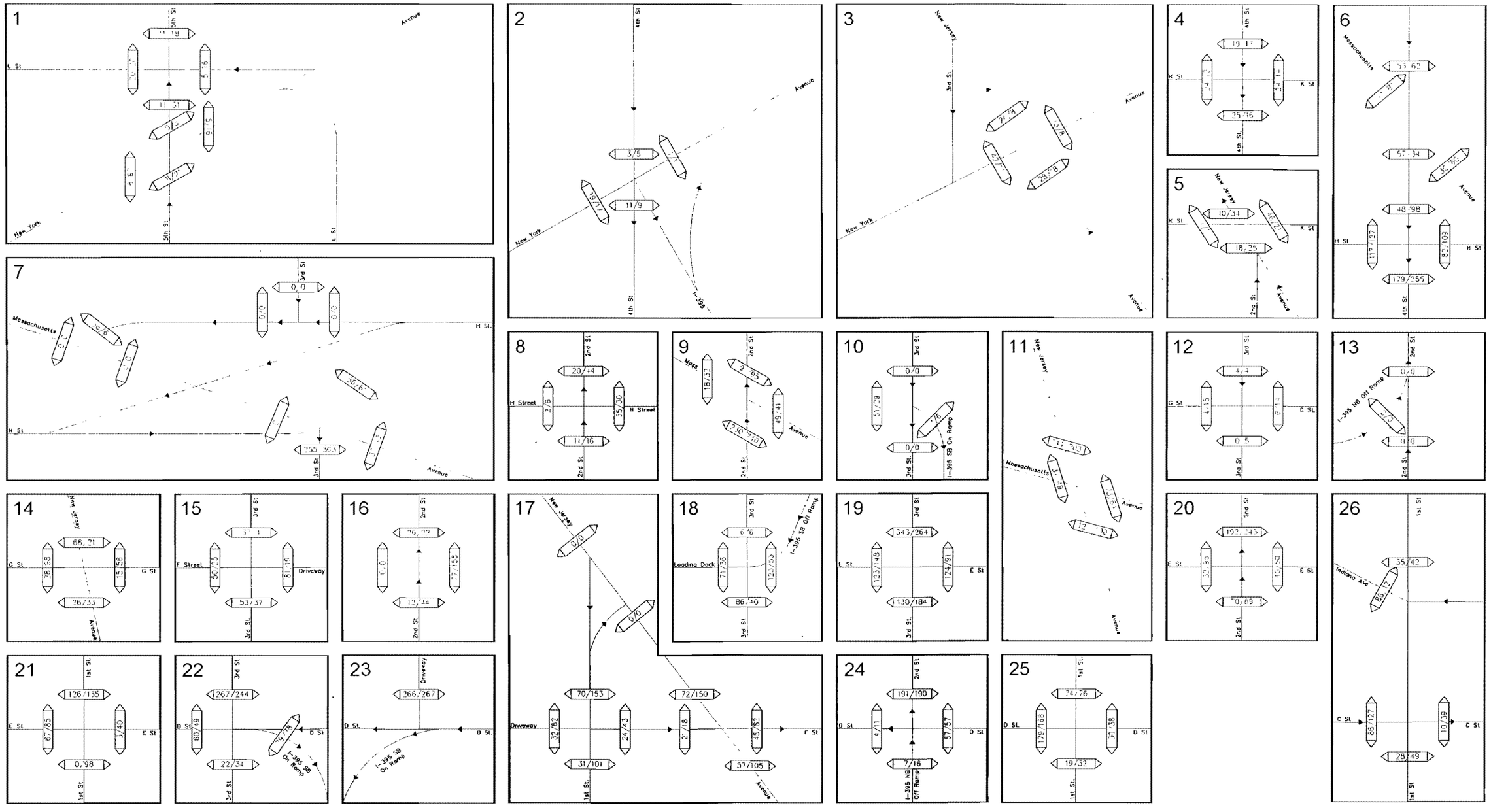

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Figure 2.9
Existing Peak Hour Pedestrian Traffic Volumes

Pedestrian Volume
AM/PM

Peak Hour of Vehicular Traffic
AM 7:45 - 8:45
PM 4:45 - 5:45

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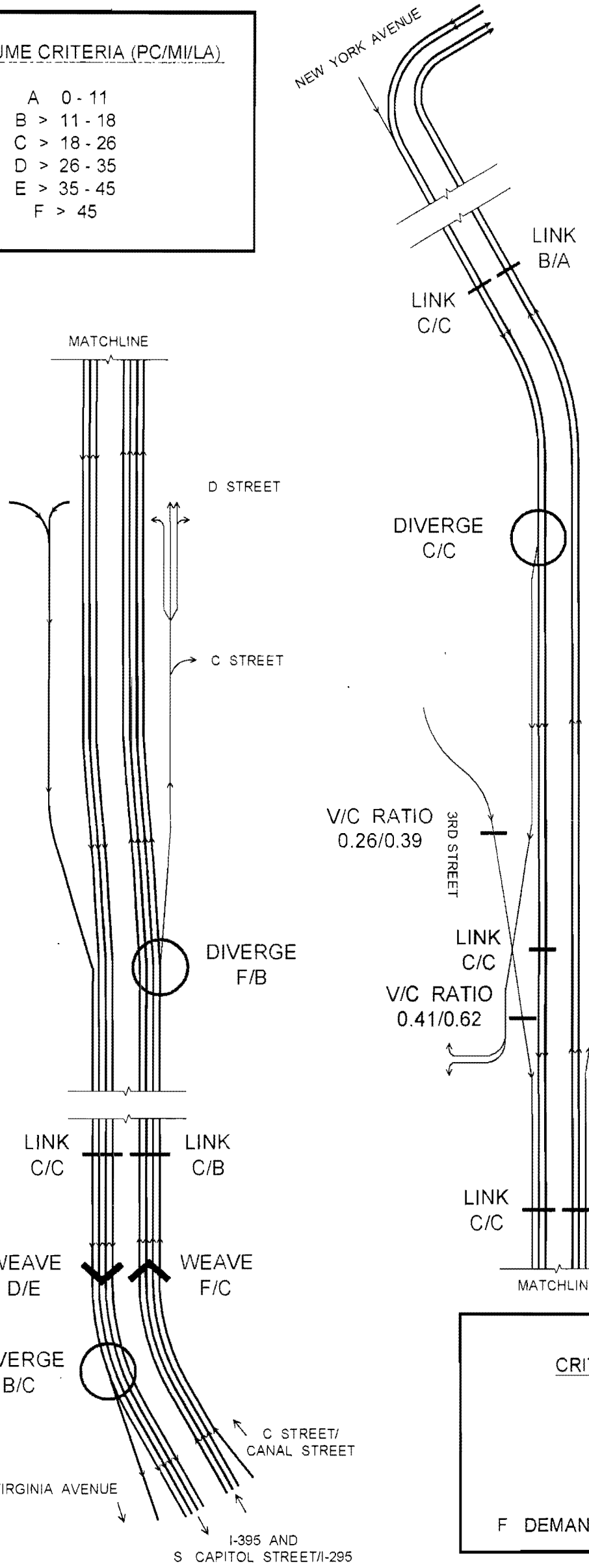
LINK VOLUME CRITERIA (PC/MI/LA)

A 0 - 11
B > 11 - 18
C > 18 - 26
D > 26 - 35
E > 35 - 45
F > 45



FREEWAY WEAVING CRITERIA (PC/MI/LA)

A ≤ 10.0
B > 10.0 - 20.0
C > 20.0 - 28.0
D > 28.0 - 35.0
E > 35.0 - 43.0
F > 43.0

DIVERGE CRITERIA (PC/MI/LA)

A ≤ 10
B > 10 - 20
C > 20 - 28
D > 28 - 35
E > 35
F DEMAND EXCEEDS CAPACITY

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Figure 2.10
Existing I-395 Levels of Service

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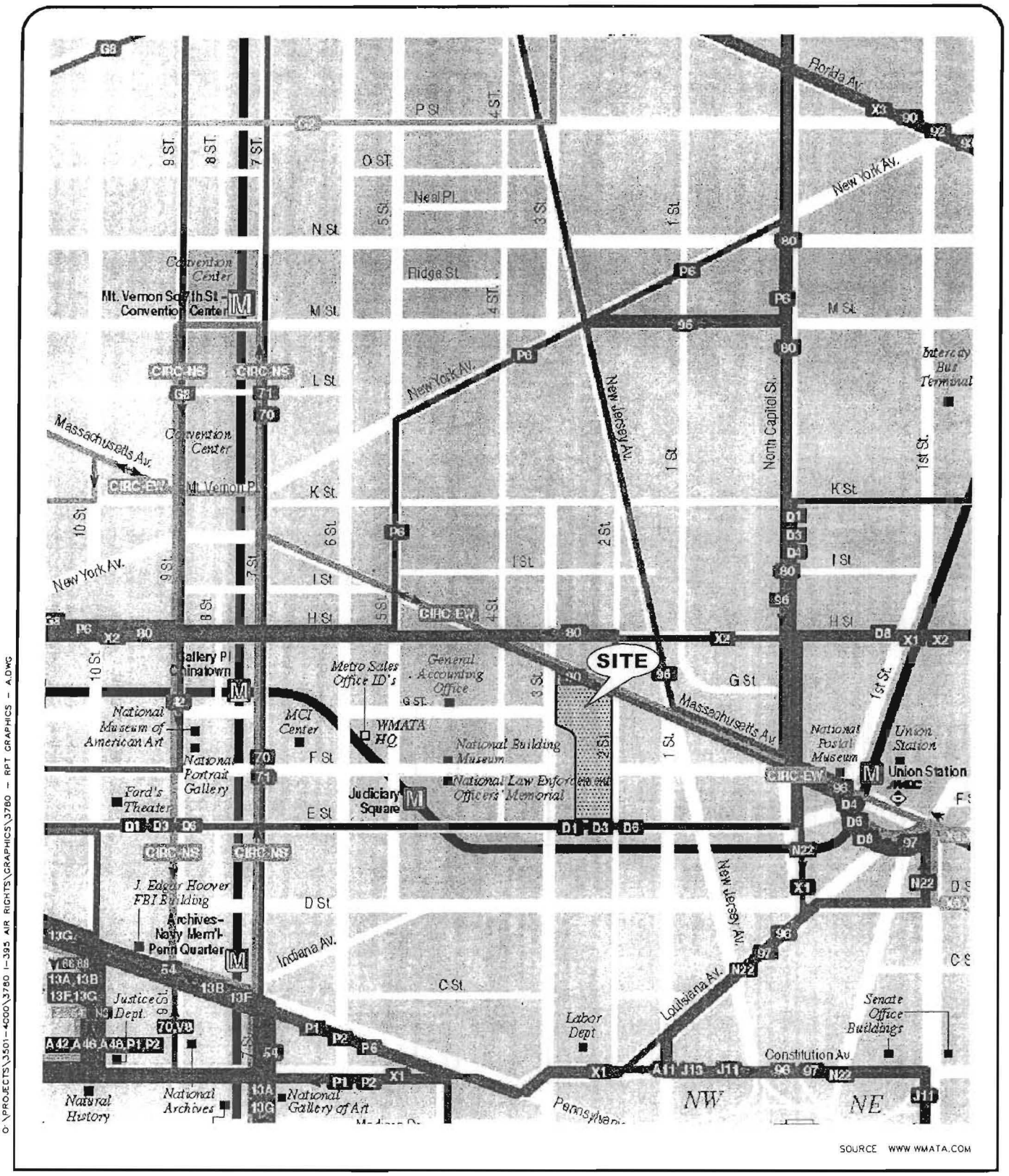
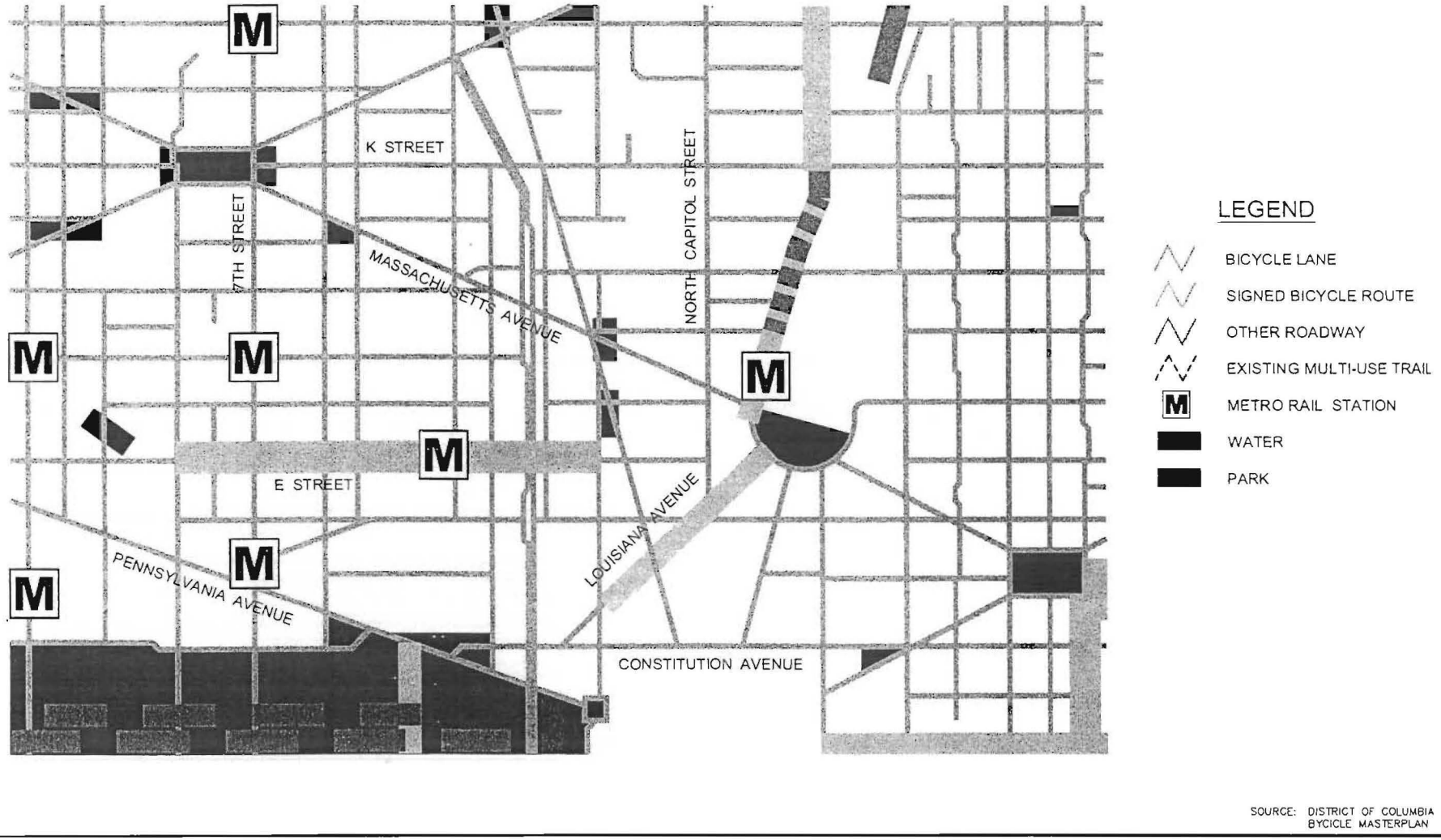


Figure 2.4
Metro Rail and Metro Bus Service

North



SOURCE: DISTRICT OF COLUMBIA BYCICLE MASTERPLAN

Figure 2.5
Bicycle Master Plan: Existing Bicycle Facilities

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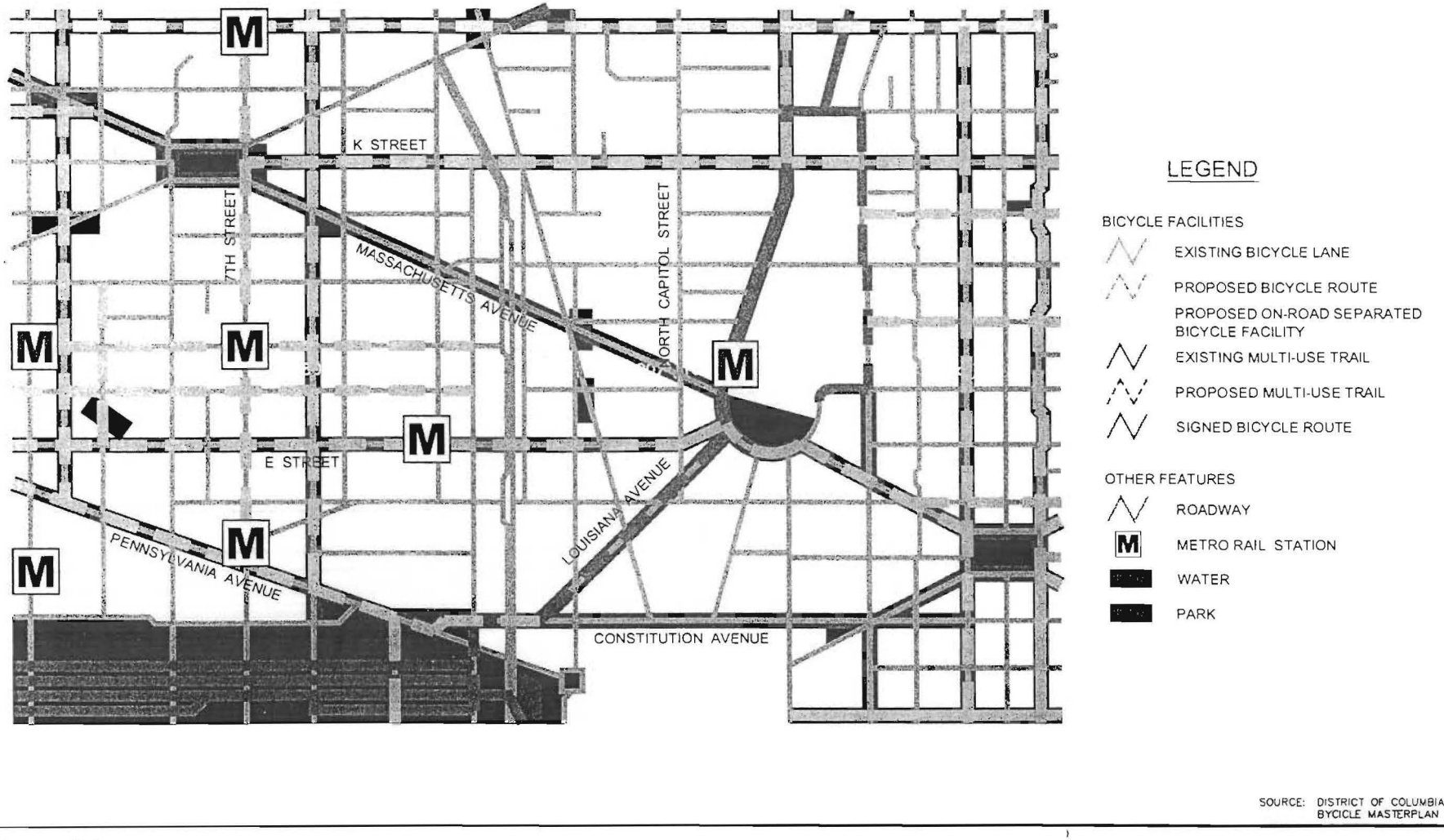

SOURCE: DISTRICT OF COLUMBIA BYCICLE MASTERPLAN

Figure 2.6
Bicycle Master Plan: Proposed Bicycle Facilities

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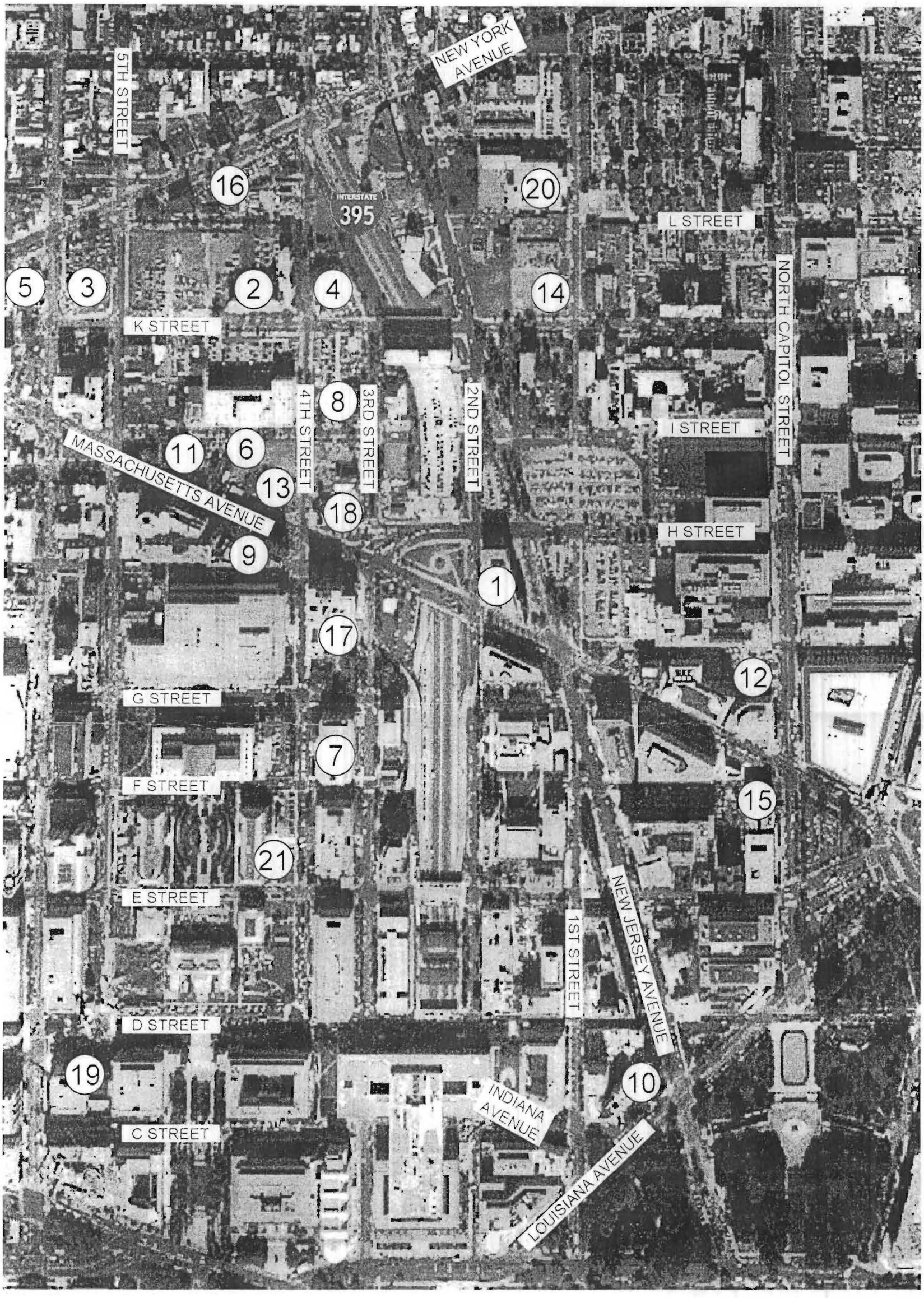

Figure 3.1
Pipeline Development Map

North

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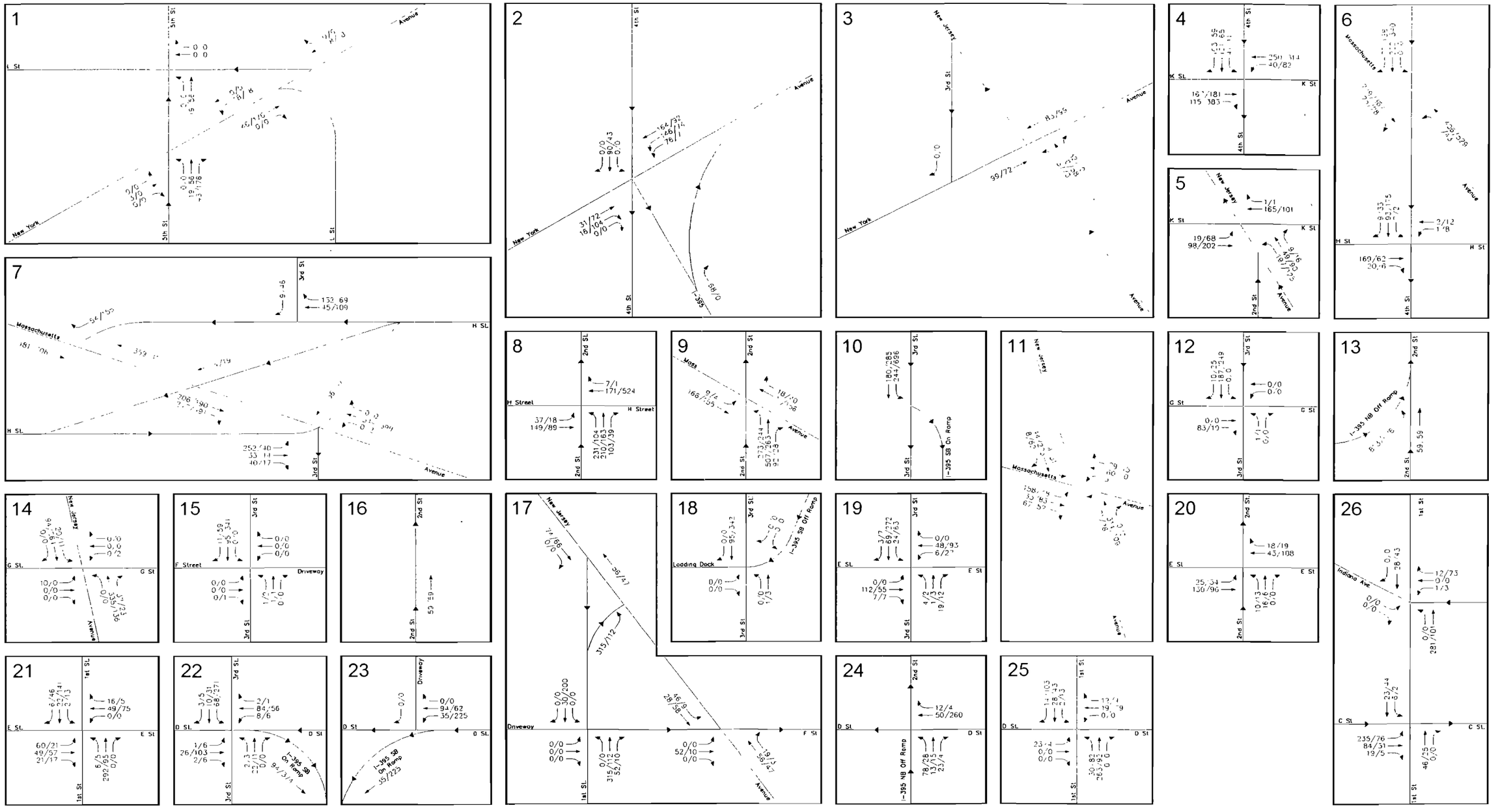

Figure 3.2
Pipeline Project Traffic Assignments to City Street Network Without Reconnected F Street

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