

Section 3

Future Conditions, Without Return to L'Enfant Development

Overview

This section presents an evaluation of traffic conditions in 2021, without modification of the I-395 ramps, re-connecting F or G Streets, or development of air rights above I-395. It includes: estimates of traffic that will be added to the public street network by projects that have been approved but are not yet been built or fully occupied (i.e., pipeline projects); background traffic growth; derivation of 2021 background traffic forecasts; calculation of background future street and freeway levels of service; and mitigation of substandard levels of service.

Pipeline Projects

This study explicitly considers the traffic impacts of 21 pipeline projects, which are located throughout the study area as shown on Figure 3.1. These projects include a combined total of approximately 5 million square feet (S.F.) of commercial space and 2,000 residential dwelling units, as shown in Table 3.1.

The number of weekday AM and PM peak hour trips that would be generated by these pipeline projects were estimated based on: (1) their respective development programs; (2) Institute of Transportation Engineers (ITE) trip generation rates and/or equations; (3) the proximity of the project to the Judiciary Square, Union Station, Gallery Place – Chinatown, and Metro Center Metro stations; and (4) experience with other comparable projects in Washington, D.C.

As shown in Table 3.1, it is estimated that these projects will generate a total of 4,491 AM peak hour trips, and 5,102 PM peak hour trips, upon buildout and full occupancy by 2021.

Trip Distribution Analysis

The distribution of peak hour trips generated by the proposed Return to L'Enfant project and other approved projects was determined based on a cordon analysis of the surrounding site area. It is estimated that:

40 percent of all trips would be oriented to I-395 to the south;
4 percent would be oriented to the south on the surface road network,
11 percent would be oriented to/from the east,
23 percent would be oriented to/from the west, and
22 percent would be oriented to/from the north.

Pipeline Project Traffic Assignments

The trips shown in Table 3.1 were assigned to the public road network based on this trip distribution. Figures 3.2 and 3.3 show the pipeline project trip assignments *without* the reconnected F Street on the city street network and I-395, respectively. Figures 3.4 and 3.5 show the pipeline project trip assignments *with* the reconnected F Street on the city street network and I-395, respectively.

Background Traffic Growth

Background traffic growth on the city street network, not attributable to the Return to L'Enfant or pipeline projects, was assumed to be 1.0-percent (1%) per year compounded, in accordance with the scoping agreement with DDOT. At this rate, existing traffic counts would increase by 1.1495-percent between now (2007) and build-out of the Return to L'Enfant project (2021).

This background traffic growth on the city street network and I-395 is shown on Figures 3.6 and 3.7, respectively.

Background Traffic Forecasts

Background 2021 traffic forecasts on the city street network and I-395, *without* reconnection of F Street or modification of the I-395 ramps, were derived as the sum of the existing traffic counts shown on Figures 2.7 and 2.8, the pipeline project traffic assignments shown on Figures 3.2 and 3.3, and the background traffic growth shown on Figures 3.6 and 3.7. The results are presented on Figures 3.8 and 3.9, respectively.

Background Future Intersection Capacity Analyses

Levels of Service. Background future peak hour levels of service 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 background future vehicular traffic forecasts shown on Figure 3.8, 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 D and summarized in Table 3.2.

Table 3.2 indicates thirteen (13) of the 30 intersections that presently operate at an overall LOS "D", and where all approaches operate at LOS "D" or better, during both the AM and PM peak hours, will continue to operate at LOS "D" or better in 2021, **without** the Return to L'Enfant project. The following approaches, which currently operate at LOS "D" or better, are projected to operate near capacity at LOS "E", while the intersections will continue to operate at LOS "D" or better:

1. Westbound New York Avenue at New Jersey Avenue/3rd Street (LOS "E" in AM) and northbound New Jersey Avenue at New York Avenue (LOS "E" in AM and PM),
2. Westbound G Street at New Jersey Avenue (LOS "E" in PM),
3. I-395 southbound off-ramp at 3rd Street (LOS "E" in AM), and
4. Northbound 1st Street at E Street (LOS "E" in AM).

The following intersections will operate at an overall LOS "E" or "F" instead of LOS "D" or better:

1. New York Avenue/5th Street/L Street, which will operate at LOS "E" in the PM peak hour due to long delays on northbound 5th Street,
2. K Street/4th Street, which will operate at LOS "F" during both the AM and PM peak hours due to long delays on eastbound K Street (PM) and westbound K Street (AM and PM),
3. H Street/2nd Street, which will operate at LOS "F" during both the AM and PM peak hours due to long delays on northbound 2nd Street,
4. Massachusetts Avenue/2nd Street, which will operate at LOS "F" during the AM peak hour, and at LOS "E" during the PM peak hour, due to long delays on northbound 3rd Street

5. F Street/3rd Street where eastbound left turns and westbound lefts, throughs, and rights will operate at LOS "E" or "F" during the AM and PM peak hours,
6. E Street/2nd Street, which will operate at LOS "E" during the AM peak hour due to long delays on northbound 2nd Street (LOS "F" in AM and LOS "E" in PM),
7. D Street/2nd Street/I-395 off-ramp, which will operate at LOS "E" during the AM peak hour due to long delays on northbound 2nd Street,
8. D Street/1st Street, which will operate at LOS "E" during the AM peak hour due to long delays on eastbound D Street, and
9. C Street/1st Street/Indiana Avenue, which will operate at LOS "F" during the AM peak hour due to long delays on eastbound C Street.

Mitigation. Future traffic operations could be optimized by modifying existing traffic signal timings, as shown in Table 3.2. Opportunities for increasing capacity by adding pavement are limited due to restricted rights of way and potential adverse impacts on pedestrians and bicyclists.

The following intersections would operate at LOS "E" or "F" but with reduced delays, with optimized signal timings:

1. New York Avenue/4th Street/I-395,
2. K Street/4th Street,
3. Massachusetts Avenue/4th Street,
4. H Street/4th Street,
5. Massachusetts Avenue/H Street/3rd Street,
6. Massachusetts Avenue/2nd Street, and
7. C Street/1st Street/Indiana Avenue

The following intersections would operate at LOS "D" or better instead of LOS "E" or "F", if traffic signal timings were optimized:

1. New York Avenue/5th Street/L Street,
2. H Street/2nd Street,
3. F Street/1st Street/Driveway,
4. E Street/2nd Street,
5. D Street/2nd Street/I-395 northbound off-ramp, and
6. D Street/1st Street,

Certain movements at the F Street/3rd Street intersection would operate at LOS "E" or "F" under STOP sign control. This intersection would operate at LOS "A" or "B", if a new traffic signal was installed, if warranted and approved by DDOT. Delays also would be reduced at the I-395 northbound off-ramp/2nd Street intersection, if a new traffic signal was installed.

Background Future Freeway Capacity Analysis

Background future peak hour levels of service on I-395 in 2021 were estimated based on the existing freeway geometrics shown on Figure 2.3, the background future vehicular traffic forecasts shown on Figure 3.9, and the Highway Capacity Manual (HCM) 2000 methodologies using Highway Capacity Software (HCS+). The results are presented in Appendix E and summarized on Figure 3.10.

Figure 3.10 indicates that I-395 northbound north of the C Street/Canal Street on-ramp is projected to operate near capacity at LOS "E" during the AM peak hour, but at an acceptable LOS "C" during the PM peak hour. All other sections of the I-395 mainline will continue to operate at acceptable levels of service (i.e., LOS "D" 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 is projected to continue to operate at capacity at LOS "F" during the AM peak hour because the projected volume (3,006) is projected to exceed the ramp capacity (1,800 vph) by 67 percent. It is projected to operate 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, are projected to operate at acceptable levels of service (LOS "C" or "D") 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 will continue to operate at capacity at LOS "F" during the AM peak hour, and at an acceptable LOS "D" during the PM peak hour. The I-395 southbound weave section between the D Street on-ramp and Virginia Avenue off-ramp is projected to operate near capacity at LOS "E" during the AM peak hour, and at capacity at LOS "F" during the PM peak hour.

The I-395 northbound off-ramp at 2nd Street is projected to operate at 59 to 71 percent of capacity. The I-395 southbound on-ramp at 3rd Street is projected to operate within its capacity (at 60 percent) during the AM peak hour, but above capacity (at 106 percent) during the PM peak hour.

Table 3.2
Return to L'Enfant
Level of Service Table (1) (2) (3)

Intersection	Traffic Control	Critical Movement	Background (2021)		Optimize Signal Timings Background (2021)		
			AM Peak	PM Peak	AM Peak	PM Peak	
1a New York Avenue/ 5th Street/ L Street	SIGNAL	EB "NY Avenue"	B (18.0)	C (28.9)	C (20.2)	E (58.8)	
		WB "NY Avenue"	C (22.2)	C (24.2)	B (19.5)	C (26.0)	
		NB 5th Street	D (39.2)	F (173.4)	D (39.7)	E (74.4)	
		Overall	C (23.4)	E (56.5)	C (22.7)	D (53.6)	
1b.	SIGNAL	WB "L Street"	A (6.2)	B (11.2)	B (10.1)	B (12.2)	
		NB "5th Street"	C (24.7)	B (17.5)	C (24.0)	B (16.1)	
		Overall	B (15.3)	B (16.0)	B (17.0)	B (15.1)	
2 New York Avenue/4th Street I-395 Terminus	SIGNAL	EB "NY Avenue"	F (143.5)	F (445.4)	F (168.0)	F (227.8)	
		WB "NY Avenue"	F (160.3)	E (63.7)	F (166.9)	F (165.5)	
		SB "4th Street"	F (357.2)	F (403.9)	F (233.1)	F (244.7)	
		NB "I-395 Off-Ramp"	D (35.4)	A (8.6)	D (35.4)	B (13.1)	
Overall	F (144.2)	F (227.4)	F (140.2)	F (177.7)			
3. New York Avenue/ New Jersey Avenue/ 3rd Street	SIGNAL	EB "NY Avenue"	B (11.6)	B (16.6)	B (11.4)	A (4.0)	
		WB "NY Avenue"	E (78.3)	B (13.7)	E (78.3)	B (17.3)	
		NB "New Jersey Avenue"	E (73.9)	E (65.4)	E (76.1)	D (46.8)	
		SB "3rd Street"	D (39.6)	C (33.4)	D (39.6)	C (29.4)	
Overall	D (54.9)	C (27.7)	E (55.3)	C (20.1)			
4. K Street/ 4th Street	SIGNAL	EB	C (30.8)	F (256.3)	E (71.4)	F (193.8)	
		WB	F (309.0)	F (1445.4)	F (239.3)	F (634.2)	
		SB	C (27.2)	C (27.7)	D (54.2)	C (31.8)	
		Overall	F (179.1)	F (713.7)	F (158.2)	F (355.1)	
5. K Street/ New Jersey Avenue/ 2nd Street	SIGNAL	EB	A (1.7)	B (19.9)	A (0.8)	B (12.8)	
		WB	C (23.6)	C (27.1)	C (24.7)	C (27.1)	
		NB	B (16.5)	C (23.7)	B (13.7)	C (23.7)	
		Overall	B (16.9)	C (23.2)	B (15.7)	C (21.2)	
6a. Massachusetts Avenue/ 4th Street	SIGNAL	SEB	F (345.9)	F (752.9)	B (13.4)	C (22.8)	
		NWB	F (153.4)	F (196.0)	F (136.1)	F (170.4)	
		SB	F (104.5)	F (374.5)	E (61.1)	F (340.9)	
		Overall	F (200.5)	F (452.1)	F (88.6)	F (151.3)	
6b. H Street/ 4th Street	SIGNAL	EB	F (468.2)	F (*)	C (35.0)	F (319.2)	
		WB	D (41.7)	C (28.0)	C (28.8)	B (12.6)	
		SB	A (4.8)	A (9.2)	B (11.0)	C (21.6)	
		Overall	F (203.7)	F (726.3)	C (28.6)	F (204.7)	
7a. Massachusetts Avenue/ H Street	STOP	WBR	E [35.1]	C [16.5]	D [29.6]	C [17.8]	
7b. H Street/ 3rd Street	STOP	SBR	B [13.6]	B [13.0]	B [13.6]	B [13.0]	
7c. Massachusetts Avenue/ H Street/3rd Street	SIGNAL	EB "H Street"	E (77.5)	F (626.5)	F (155.8)	F (439.4)	
		WB "H Street"	D (43.8)	C (29.9)	C (34.8)	C (25.6)	
		SEB "Mass Avenue"	C (32.8)	C (27.6)	B (15.0)	D (48.4)	
		NWB "Mass. Avenue"	F (292.6)	C (20.1)	F (326.0)	F (240.9)	
		SWB "H to 3rd"	E (500.8)	E (924.6)	F (282.6)	F (592.4)	
Overall	F (183.5)	F (310.0)	F (167.6)	F (249.7)			
8 H Street/ 2nd Street	SIGNAL	EB	A (7.0)	B (13.8)	A (8.3)	B (18.3)	
		WB	B (18.0)	B (18.5)	C (25.8)	C (26.0)	
		NB	F (137.4)	F (153.3)	E (61.5)	D (54.9)	
		Overall	F (80.4)	F (80.9)	D (43.4)	D (38.4)	
9. Massachusetts Avenue/ 2nd Street	SIGNAL	EB	D (41.8)	C (26.9)	D (36.7)	C (31.2)	
		WB	C (24.2)	C (26.4)	D (48.3)	D (37.5)	
		NB	F (205.2)	F (122.4)	F (127.7)	E (62.3)	
		Overall	F (135.5)	E (77.0)	F (93.3)	D (48.6)	
10. 3rd Street/ North Site Access	STOP	SBL WBL	FUTURE INTERSECTION FUTURE INTERSECTION	FUTURE INTERSECTION FUTURE INTERSECTION	FUTURE INTERSECTION FUTURE INTERSECTION		
11. Massachusetts Avenue/ New Jersey Avenue	SIGNAL	EB	A (8.3)	C (21.2)	A (6.7)	C (21.2)	
		WB	C (22.5)	B (17.1)	C (22.5)	B (17.1)	
		NB	C (20.2)	D (41.1)	B (15.5)	D (41.1)	
		SB	C (24.8)	D (43.7)	C (24.8)	D (43.7)	
		Overall	B (17.6)	C (27.1)	B (16.0)	C (27.1)	
12. G Street/ 3rd Street	SIGNAL	EB	B (19.6)	B (18.7)	B (19.6)	B (18.7)	
		WB	C (29.7)	C (29.2)	C (29.7)	C (29.2)	
		NB	B (18.2)	C (20.6)	B (18.0)	A (6.0)	
		SB	D (38.6)	D (47.1)	D (40.3)	D (44.2)	
		Overall	C (25.0)	C (29.6)	C (25.4)	C (25.5)	
13 I-395 Northbound Off-Ramp/ 2nd Street	STOP	NBT	F [248.2]	F [136.0]	N/A	N/A	
		Add Traffic Signal	SIGNAL	N/A	N/A	F (129.2)	C (30.2)
		Overall	N/A	N/A	F (179.3)	D (47.7)	
14 G Street/ New Jersey Avenue	SIGNAL	EB	C (33.0)	D (35.0)	C (33.0)	C (33.1)	
		WB	D (45.0)	E (67.3)	D (44.5)	E (55.2)	
		NB	B (20.0)	B (13.6)	B (20.0)	B (14.5)	
		SB	B (14.7)	B (11.4)	B (12.3)	B (12.9)	
		Overall	B (19.7)	C (20.3)	B (18.7)	B (19.7)	

Table 3.2
Return to L'Enfant
Level of Service Table (1) (2) (3)

Intersection	Traffic Control	Critical Movement	Background (2021)		Optimize Signal Timings Background (2021)		
			AM Peak	PM Peak	AM Peak	PM Peak	
15. F Street/ 3rd Street	STOP	EBL	F [53.3]	E [39.9]	N/A	N/A	
		EBTR	B [10.6]	C [15.1]	N/A	N/A	
		WBLTR	E [39.8]	E [35.9]	N/A	N/A	
		NBLTR	A [3.8]	A [2.7]	N/A	N/A	
		SBLT	--	--	N/A	N/A	
	Add Traffic Signal	SIGNAL	EB	N/A	N/A	D (36.2)	C (26.9)
			WB	N/A	N/A	D (35.6)	C (24.6)
			NB	N/A	N/A	A (4.2)	A (6.6)
			SB	N/A	N/A	<u>A (4.2)</u>	<u>B (17.8)</u>
			Overall	N/A	N/A	A (6.5)	B (16.8)
16. F Street/ 2nd Street	STOP	EBLR	FUTURE INTERSECTION	FUTURE INTERSECTION	FUTURE INTERSECTION	FUTURE INTERSECTION	
		NBLT	FUTURE INTERSECTION	FUTURE INTERSECTION	FUTURE INTERSECTION	FUTURE INTERSECTION	
17a. New Jersey Avenue/ 1st Street	SIGNAL	EB	B (17.7)	B (11.2)	B (19.9)	B (12.9)	
		WB	A (9.3)	A (2.9)	A (6.0)	A (2.9)	
		NB	<u>B (13.4)</u>	<u>B (17.2)</u>	<u>B (13.4)</u>	<u>B (17.4)</u>	
		Overall	B (14.5)	A (9.6)	B (14.7)	B (10.3)	
17b. Driveway/F Street/ 1st Street	SIGNAL	EB	--	C (34.5)	--	C (34.5)	
		NB	F (183.3)	E (74.9)	D (48.8)	D (51.1)	
		SB	<u>B (11.4)</u>	<u>A (7.2)</u>	<u>A (6.8)</u>	<u>A (6.5)</u>	
		Overall	F (125.0)	C (33.9)	C (34.5)	C (24.1)	
17c. F Street/ New Jersey Avenue	SIGNAL	EB	A (5.2)	A (5.8)	A (6.2)	A (7.4)	
		NB	B (18.8)	B (19.0)	B (18.8)	B (19.0)	
		SB	<u>A (4.1)</u>	<u>B (10.5)</u>	<u>A (3.2)</u>	<u>B (10.5)</u>	
		Overall	B (11.5)	B (15.1)	B (11.4)	B (15.2)	
18. I-395 SB Off Ramp/ 3rd Street/ South Site Access	STOP	EBLTR	D [25.7]	D [25.4]	D [25.7]	C [18.8]	
		WBLTR	E [43.8]	D [25.9]	E [43.3]	C [17.4]	
		NBLTR	B [13.2]	B [10.3]	B [13.2]	B [10.3]	
		SBLT	A [1.1]	A [0.1]	A [1.1]	A [0.1]	
19. E Street/ 3rd Street	SIGNAL	EB	C (24.5)	C (29.5)	C (24.5)	C (29.5)	
		WB	D (49.4)	C (23.3)	B (17.9)	C (23.4)	
		NB	D (40.4)	B (12.5)	D (38.2)	B (17.8)	
		SB	<u>B (15.4)</u>	<u>C (28.2)</u>	<u>B (11.4)</u>	<u>B (16.8)</u>	
		Overall	D (36.5)	C (24.3)	C (24.5)	C (21.0)	
20. E Street/ 2nd Street	SIGNAL	EB	B (15.8)	A (4.7)	A (7.8)	A (6.3)	
		WB	B (13.9)	C (24.9)	B (14.3)	C (24.3)	
		NB	<u>F (125.0)</u>	<u>E (57.4)</u>	<u>D (52.4)</u>	<u>C (30.9)</u>	
		Overall	E (65.5)	C (25.5)	C (30.3)	B (18.4)	
21. E Street/ 1st Street	SIGNAL	EB	A (8.3)	B (14.9)	A (8.2)	B (16.6)	
		WB	B (11.1)	C (20.1)	B (12.3)	C (20.1)	
		NB	E (62.7)	B (14.2)	D (42.1)	B (15.6)	
		SB	<u>C (26.6)</u>	<u>C (31.6)</u>	<u>C (30.3)</u>	<u>C (30.9)</u>	
		Overall	C (24.7)	C (20.1)	C (20.4)	C (20.8)	
22. D Street/ 3rd Street/I-395 SB On Ramp	SIGNAL	EB	C (34.3)	D (43.6)	C (34.3)	D (49.8)	
		WB	C (33.1)	C (26.3)	C (32.7)	C (32.3)	
		NB	C (30.6)	F (189.7)	C (30.6)	E (60.2)	
		SB	<u>B (12.4)</u>	<u>B (16.2)</u>	<u>A (7.0)</u>	<u>B (11.7)</u>	
		Overall	C (28.1)	D (54.2)	C (26.8)	C (30.0)	
23. D Street/ I-395 SB On Ramp/Driveway	STOP	WBL	--	--	--	--	
		SBR	C [16.1]	B [10.7]	C [16.1]	B [10.7]	
24. D Street/ 2nd Street/I-395 NB Off Ramp	SIGNAL	WB	B (15.3)	B (18.9)	B (18.0)	B (18.8)	
		NB	<u>F (85.5)</u>	<u>D (36.5)</u>	<u>D (50.4)</u>	<u>D (36.5)</u>	
		Overall	E (66.8)	C (27.7)	D (41.8)	C (27.6)	
25. D Street/ 1st Street	SIGNAL	EB	F (205.0)	D (50.8)	D (47.1)	D (50.8)	
		WB	C (32.5)	C (30.4)	C (23.2)	C (30.4)	
		NB	C (26.7)	C (28.4)	D (37.1)	C (24.7)	
		SB	<u>C (26.8)</u>	<u>C (26.3)</u>	<u>B (12.2)</u>	<u>C (26.6)</u>	
		Overall	E (71.6)	C (32.6)	C (31.0)	C (32.0)	
26. C Street/1st Street/ Indiana Avenue	SIGNAL	EB	F (391.3)	E (67.5)	F (98.8)	D (49.6)	
		WB	C (34.1)	C (30.7)	C (35.0)	C (30.7)	
		NB	C (31.3)	C (25.8)	F (114.3)	C (28.4)	
		SB	C (23.1)	C (24.9)	D (41.0)	A (9.3)	
		SEB	<u>C (34.2)</u>	<u>C (30.7)</u>	<u>D (35.1)</u>	<u>C (30.7)</u>	
		Overall	F (316.8)	D (41.4)	F (91.2)	C (33.7)	
27. F Street/ Site Access	STOP	EBLT	FUTURE INTERSECTION	FUTURE INTERSECTION	FUTURE INTERSECTION	FUTURE INTERSECTION	
		WBTR	FUTURE INTERSECTION	FUTURE INTERSECTION	FUTURE INTERSECTION	FUTURE INTERSECTION	
		SBLR	FUTURE INTERSECTION	FUTURE INTERSECTION	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.

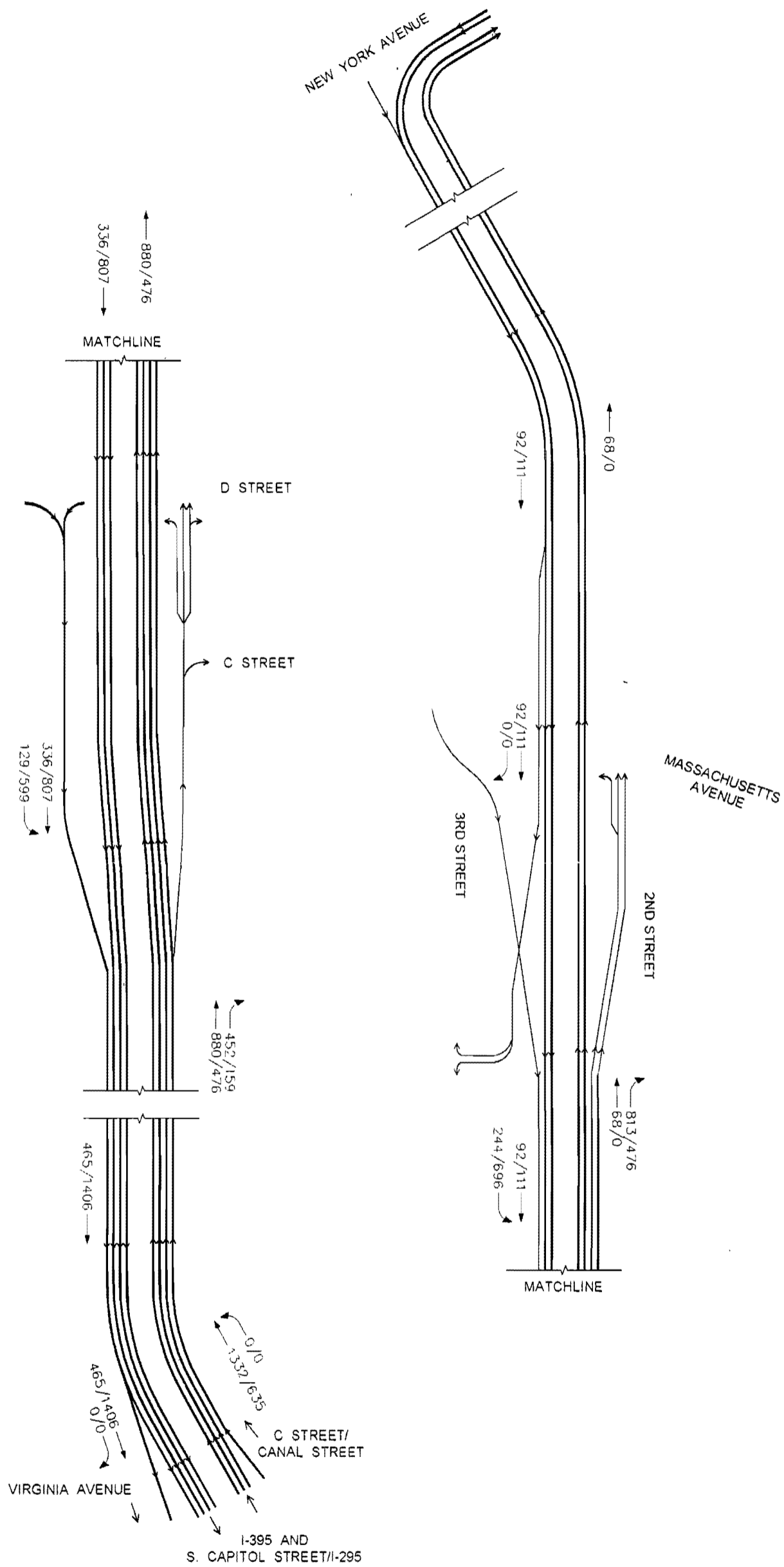


Figure 3.3
Pipeline Project Traffic Assignments to I-395 Network
Without Reconnected F Street and Ramp Closure



C:\PROJECTS\3501-4000\3780 I-395 AIR RIGHTS\GRAPHICS\3780 - RTI GRAPHICS - A.DWG

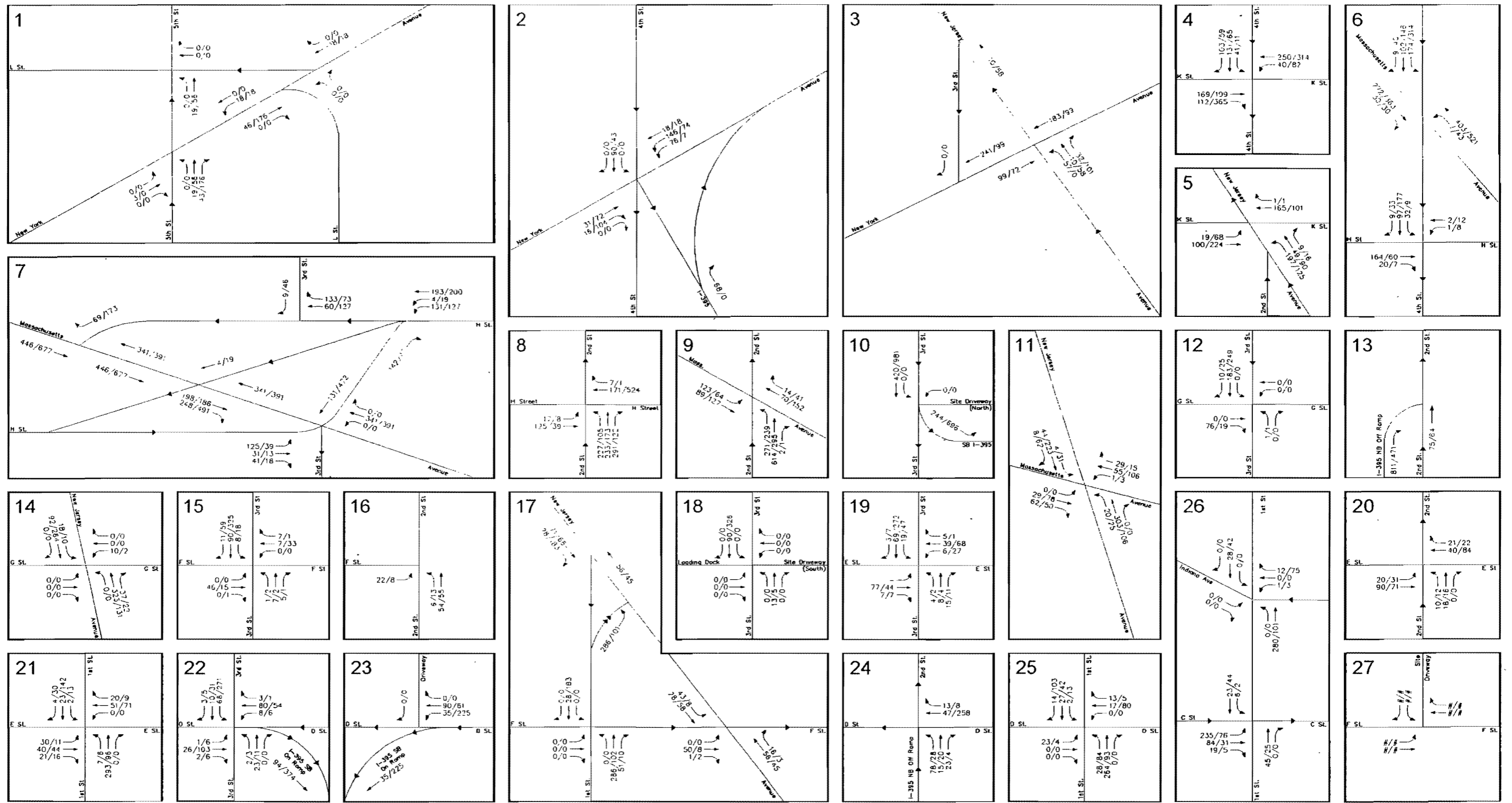


Figure 3.4
Pipeline Project Traffic Assignments to City Street Network with Reconnected F Street

AM PEAK HOUR
PM PEAK HOUR
000/000



Return to L'Enfant
Washington, D.C.



O:\PROJECTS\3501-4000\3780 I-395 AIR RIGHTS\GRAPHICS\3780 - RPT GRAPHICS - A.DWG

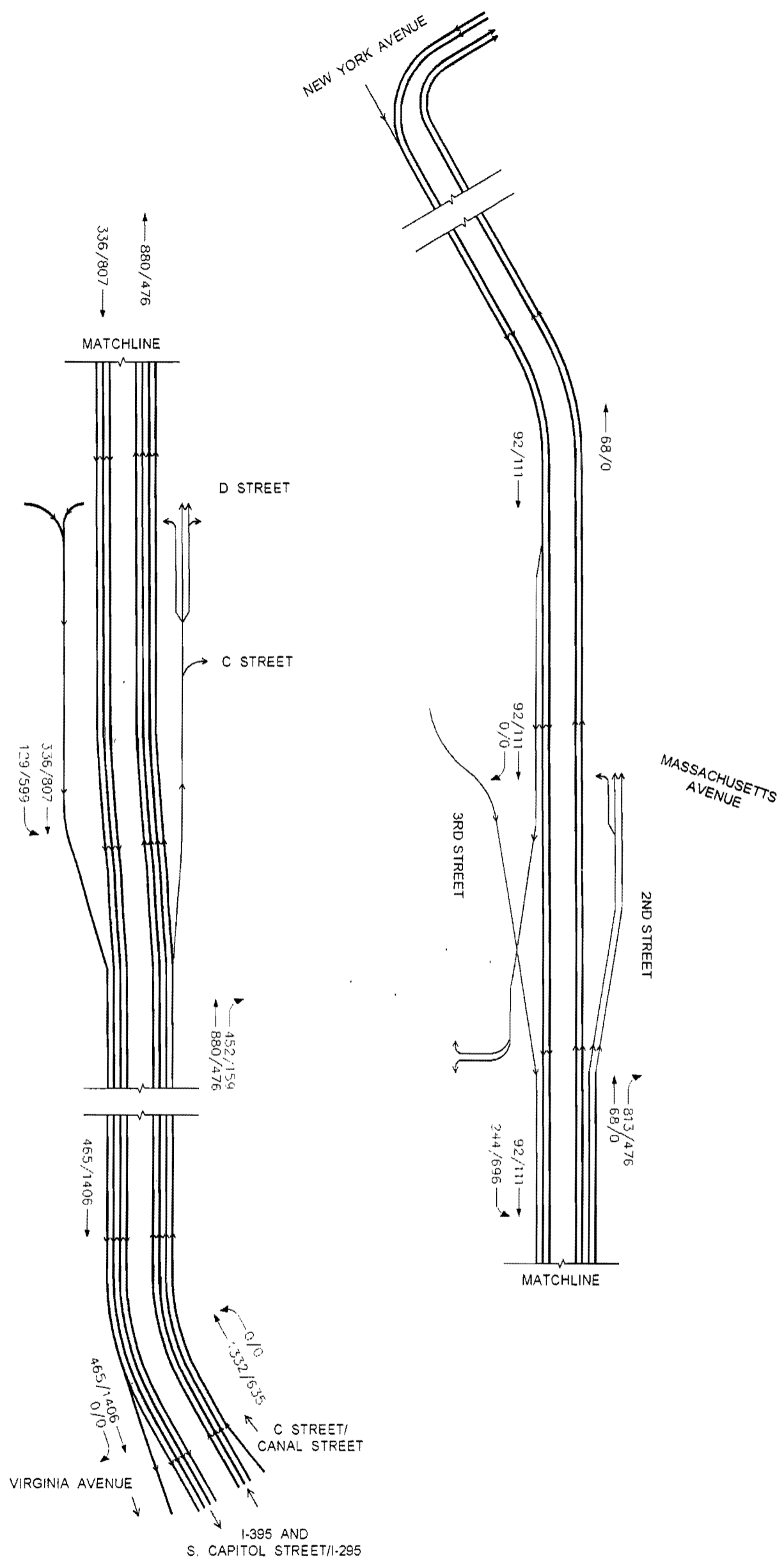


Figure 3.5
Pipeline Project Traffic Assignments to I-395 Network
With Reconnected F Street and Ramp Closure



North



Table 3.1
Return to L'Enfant
Background Development Trip Generation Summary (1)

Land Use	ITE Code	Size	Units	AM Peak Hour			PM Peak Hour		
				IN	OUT	TOTAL	IN	OUT	TOTAL
1 Prevocational School Site	Office	710	1,865,700 SF	884	121	1,005	190	928	1,118
	Retail	820	26,000 SF	31	20	51	90	98	188
	Total			915	141	1,056	280	1,026	1,306
2 400 K Street	Office	710	585,000 SF	373	121	424	69	335	404
	Retail	820	15,000 SF	24	14	38	66	71	137
	Total			397	135	462	135	406	541
3 CityVista The K & The V	Mixed-use	220	536 DU	30	122	153	116	63	179
	Retail	820	117,000 SF	76	49	125	242	262	504
	Total			106	171	278	358	325	683
4 300 K Street	Office	710	550,000 SF	364	49	413	66	325	391
5 6th Street & K Street office	Office	710	400,000 SF	254	35	289	46	222	268
6 DuMont West	Residential	220	370 DU	20	78	98	76	41	117
7 DC Courts Expansion	Office	710	351,500 SF	191	27	218	34	166	200
8 Mount Vernon Place	Residential	220	250 DU	15	62	77	61	33	94
9 Madrigal Lofts	Residential	220	259 DU	14	55	69	55	30	85
10 300 New Jersey Avenue	Office	710	253,000 SF	178	24	202	32	154	186
	Retail	820	2,000 SF	7	4	11	17	17	34
	Total			185	28	213	49	171	220
11 455 Massachusetts Avenue	Office	710	229,872 SF	158	22	180	28	138	166
	Retail	820	12,494 SF	19	13	32	54	58	112
	Total			177	35	212	82	196	278
12 Republic Square Phase II	Office	710	185,000 SF	122	17	139	22	108	139
	Retail	820	14,387 SF	20	13	33	57	60	117
	Total			142	30	172	79	168	247
13 DuMont East	Residential	220	187 DU	10	41	51	47	22	64
14 Golden Rule	Residential	220	170 DU	12	47	59	49	27	76
	Retail	820	11,000 SF	20	13	33	55	60	115
	Total			32	60	92	104	87	191
15 20 F Street	Office	710	175,890 SF	116	16	132	21	102	123
16 CityVista The L	Residential	220	149 DU	10	41	51	43	23	66
17 Ashton Judiciary Square	Residential	220	120 DU	5	22	27	23	12	35
18 251 Massachusetts Avenue	Office	710	100,000 SF	81	12	93	16	78	94
19 H Carl Moultrie Courthouse	Office	710	92,900 SF	72	10	82	14	71	85
20 Walker Jones Elementary School	Education	520	91,000 SF	211	179	390			
21 National Law Enforcement Museum	Museum	(3)	90,000 SF	12	4	16	2	12	14
Total Vehicle Trips				3,329	1,231	4,491	1,586	3,516	5,102

Notes

- (1) Trip Generation, Seventh Edition, Institute of Transportation Engineers (ITE)
- (2) Development Related Ridership Survey II, Washington Metropolitan Area Transit Authority, December 1989
- (3) Counts based on existing traffic counts conducted at Hillwood Museum on Wednesday, November 12, 2003 in Northwest Washington, DC

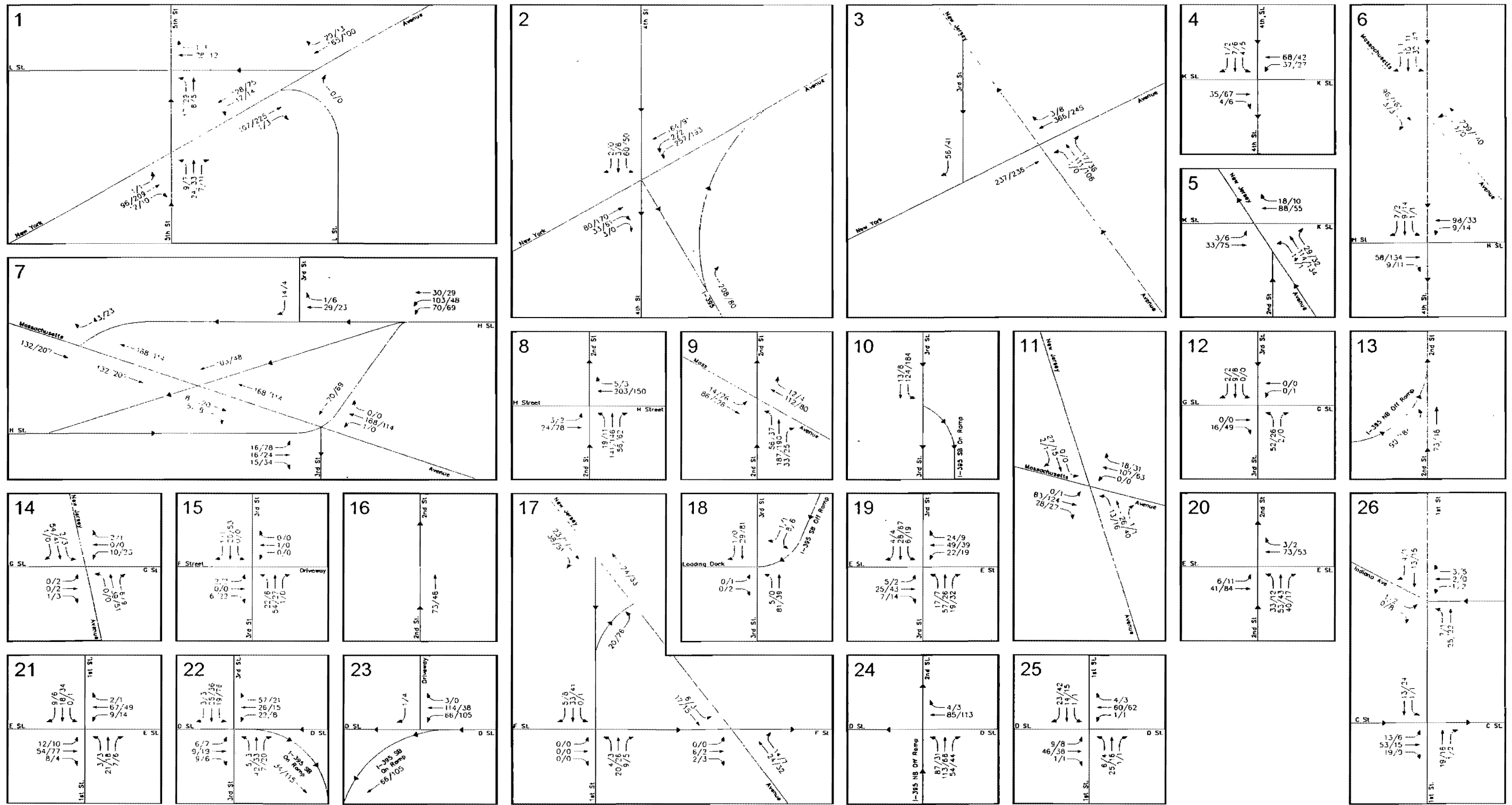


Figure 3.6
Background Traffic Growth: City Street Network

AM PEAK HOUR
PM PEAK HOUR
000/000

North

Return to L'Entant
Washington, D.C.



O:\PROJECTS\3501-4000\3780 I-395 AIR RIGHTS\GRAPHICS\3780 - RPT GRAPHICS - A.DWG

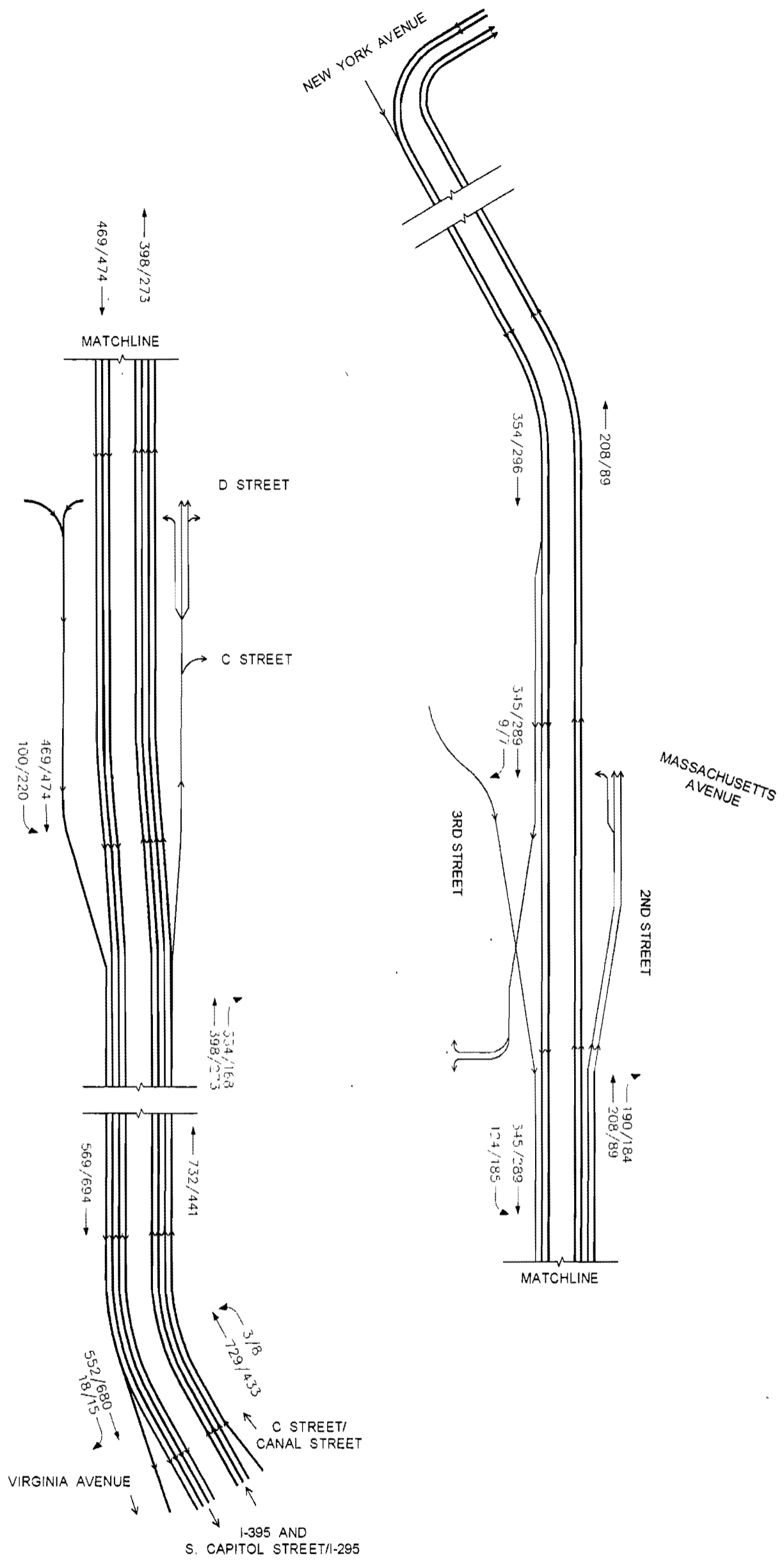


Figure 3.7
Background Traffic Growth: I-395 Network



O:\PROJECTS\3501-4000\3780 I-395 AIR RIGHTS\GRAPHICS\3780 - RPT GRAPHICS - A.DWG

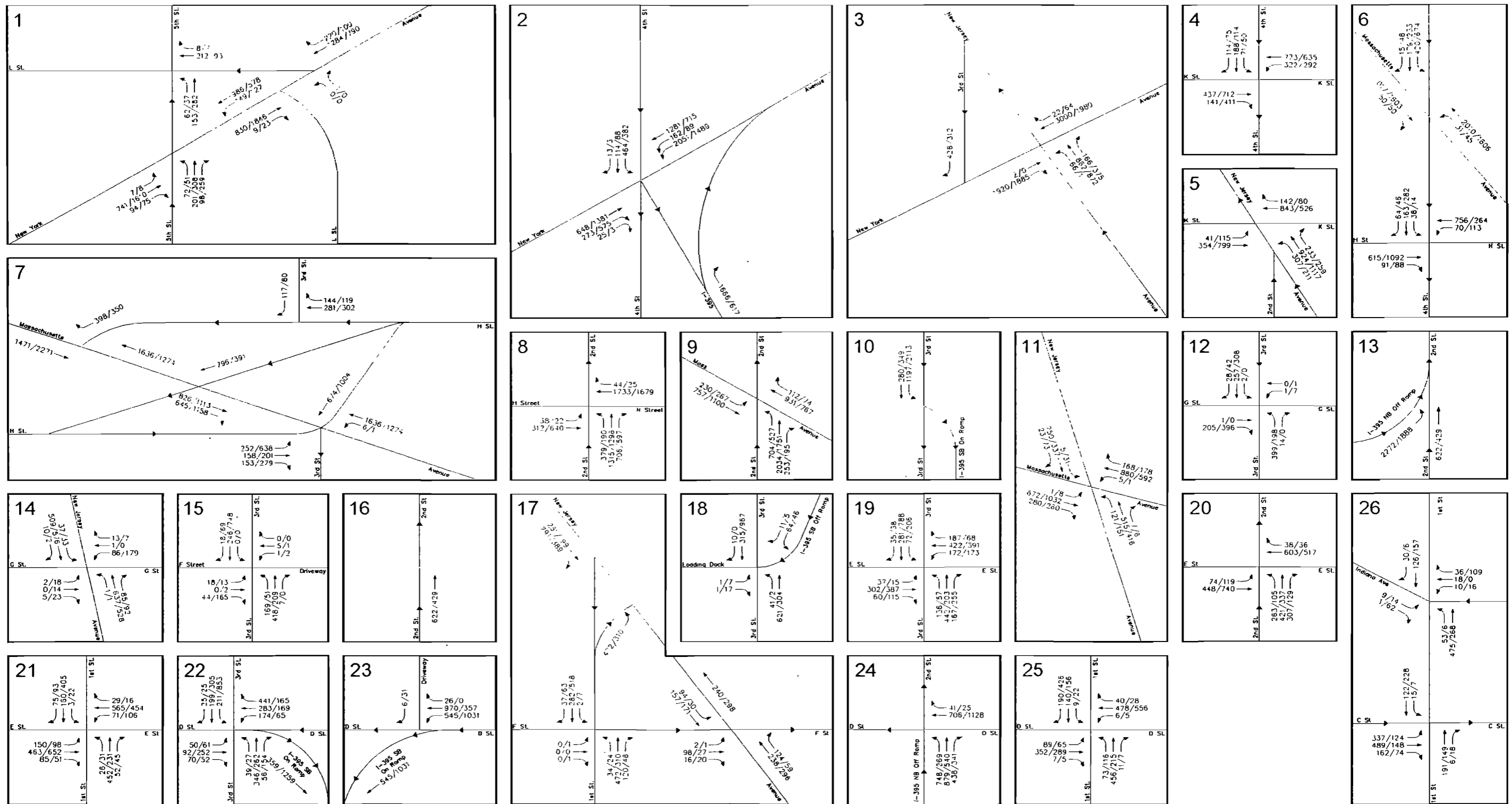


Figure 3.8
Background Future Peak Hour Vehicle Traffic Forecast (2021): City Street Network

AM PEAK HOUR
PM PEAK HOUR
000/000



Return to L'Enfant
Washington, D.C.



O:\PROJECTS\3501-4000\3780-1-395 AIR RIGHTS\GRAPHICS\3780 - RPT GRAPHICS - A.DWG

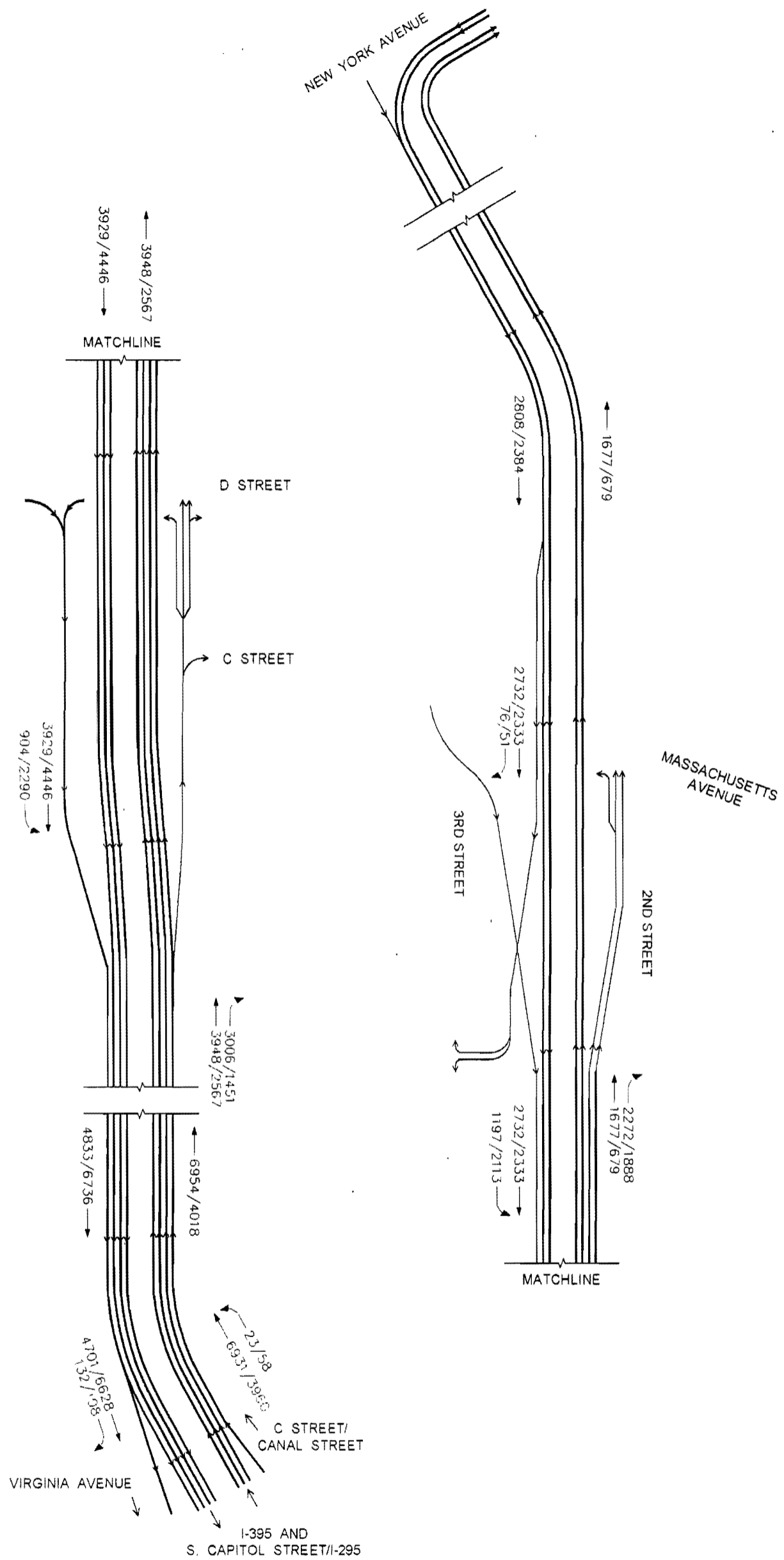


Figure 3.9
Background 2021 Volumes

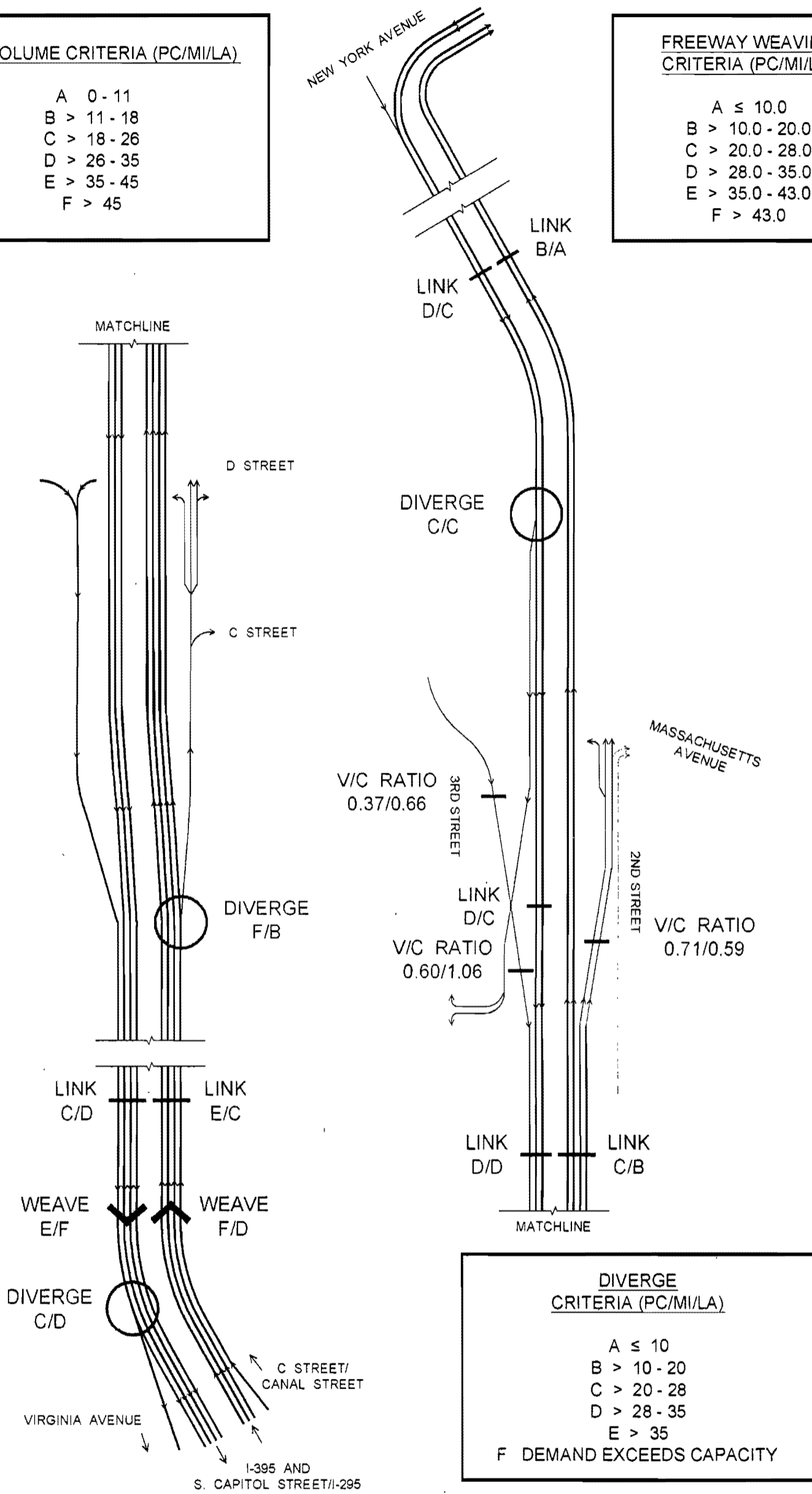


LINK VOLUME CRITERIA (PC/MI/LA)

- 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

Figure 3.10
Background I-395 Levels of Service (2021)



O:\PROJECTS\3501-4000\3780 1-395 AIR RIGHTS\GRAPHICS\3780 - RPT GRAPHICS - A.DWG

Section 4: Future Conditions, With Return to L'Enfant Development

Overview

This section presents an evaluation of traffic conditions in 2021, with the Return to L'Enfant development proposed by LDPG and associated I-395 ramp modifications and reconnection of F and G Streets. It includes: evaluation of existing traffic that will be diverted by elimination of the southbound I-395 off-ramp at 3rd Street, reconnection of F Street between 2nd and 3rd Streets, and the redesignation of 2nd Street as a two-way roadway between E Street and F Street; estimates of traffic that will be added to the public street network by the proposed Return to L'Enfant project; derivation of 2021 future traffic forecasts; calculation of total future street and freeway levels of service; and identification of mitigation measures. As noted above, this study does not evaluate the incremental impact beyond the current zoning, but rather a conservative estimate of the entire 8.85 FAR development. The incremental impact above the current zoning would be about 1/3.

City Street Connections

Reconnect the Grid. 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 from 2nd Street to G Street for pedestrian traffic only.

F Street Connection. F Street would be re-built across I-395 between 2nd and 3rd Streets within a 110-foot right-of-way at a 38-foot curb-to-curb dimension. This section could accommodate two-way vehicular traffic with one (1) travel lane in each direction, parking on both sides, and, possibly, bicycle accommodations as envisioned in the Bicycle Master Plan for F Street, west of 3rd Street.

Crosswalks would be marked on all four (4) legs of the intersection, and new traffic signals would be installed as warranted by traffic volumes and pedestrian safety, at the 3rd Street/F Street and 2nd Street/F Street intersections.

It is estimated that approximately 219 AM peak hour vehicle-trips, and 197 PM peak hour vehicle-trips, that currently use other parallel street would be diverted to the reconnected F Street, as shown on Figure 4.1. This is based on the assumptions that approximately 15% of westbound traffic on D Street, 20% of westbound traffic on E Street and 5% of eastbound traffic on E Street would use F Street.

G Street Connection. G Street is proposed to be re-opened to pedestrians between 2nd Street and 3rd Street. An at-grade crossing of 2nd Street would exist in the southern 20 feet of the G Street right of way. The crossing would be above the grade of the I-395 northbound off-ramp, thus increasing pedestrian convenience and safety.

Two-Way 2nd Street (Between E Street and G Street Right of Way). 2nd Street is proposed to operate under two-way conditions between E Street and the southern G Street right of way. This would allow for more efficient traffic distributions to and from the site. Additionally, the Georgetown University Law School shuttle would realize added routing potential with 2nd Street opened in the southbound direction to E Street.

Ramp Modifications

Eliminate Southbound I-395 Off-Ramp. Removal of the existing southbound I-395 off-ramp would create significant air rights development opportunities. It would provide a larger building and parking garage footprint on solid ground.

This ramp carries low traffic volumes, only 66 vehicle-trips during the AM peak hour and 44 vehicle-trips during the PM peak hour. Elimination of this ramp would divert these trips to 3rd Street as shown on Figure 4.2.

Modify Southbound I-395 On-Ramp. The southbound I-395 on-ramp is proposed to be depressed in 3rd Street. The two-lane ramp would then be fully below-grade where it would turn left, then right, to run parallel with the I-395 mainline, as shown on Figure 4.3. The ramp would then merge from two (2) lanes to one (1) lane, and maintain an added free-flow lane onto the I-395 mainline. The point at which the on-ramp would join the I-395 mainline would be nearly identical to its current alignment. The inside radius of the left curve would be 150 feet and the radius of the right curve would be 174 feet. The design speed of the turns is approximately 25 miles per hour (mph), according to AASHTO¹. The capacity of a one-lane ramp with a design speed of 25 mph is 1,900 passenger cars per hour (pc/h), according to the Transportation Research Board². The capacity of a two-lane ramp is 3,500 pc/h. The capacity of the additional freeway lane at the lower ramp junction is approximately 2,000 pc/h.

Motorists who wish to travel southbound on 3rd Street may stay to the right of the I-395 southbound on-ramp. Motorists who wish to utilize the site's northern 3rd Street

¹ American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, 2004, Exhibit 3-15, p. 147.

² Transportation Research Board, Highway Capacity Manual, 2000, Exhibit 25-3, p. 25-4.

garage access may stay to the left of the I-395 southbound on-ramp. These motorists can then turn left into the garage access or continue south to 3rd Street and G Street. This configuration also allows for safer pedestrian crossings at the 3rd Street/G Street intersection.

Modify Northbound I-395 Off-Ramp The existing northbound I-395 off-ramp would be realigned by shifting it to the east towards 2nd Street, as shown on Figure 4.4. As described above, pedestrians would be able to cross the I-395 off-ramp above-grade, and 2nd Street at-grade. This would increase intersection capacity as well as pedestrian convenience and safety. After the changes to the ramp configuration, the I-395 off-ramp would no longer have a direct interaction with 2nd Street northbound. This would alleviate the congestion at the existing I-395 off-ramp/2nd Street intersection, which currently operates under STOP control.

Return to L'Enfant Development Proposal

Program. LDPG proposes to zone the subject property to the C-4 zoning designation 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.

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

Parking. 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 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.

Loading. Loading berths and service spaces for the site would be provided from E Street in a central, below-grade, loading area. Eight (8) berths measuring approximately 30' by 12' will be provided and four (4) service vehicle spaces measuring approximately 20' by 10' will be provided in the below-grade service area. One retail loading berth, measuring approximately 12' by 55' will also be provided.

The loading requirements, per the District of Columbia Zoning Regulations, result in a total of four (4) 30' truck berths, three (3) 20' service vehicle spaces, and two (2) 55'

truck berths. As noted above, a total of eight (8) 30' truck berths would be provided; this is four (4) more than, or 2 times, what is required. These eight (8) 30' truck berths would serve most of the loading and unloading occurring on-site. A total of four (4) service vehicle spaces would also serve the site; this is one (1) more than what is required. Due to the prevalence of 30' truck berths provided, the residential and retail uses are proposed to share the 55' truck berth, as needed. Based on the number of residential units proposed on-site, the anticipated demand for a 55' loading berth for the residential use, and "move-in/move-out" policies that would be a component of the residential building, the single 55' truck berth would be adequate to serve the site. Additionally, a coordinated loading management plan would allow the loading docks to be used in an efficient manner that would adequately serve the site's loading demands.

Return to L'Enfant Vehicle-Trips

The number of weekday AM and PM peak hour trips that would be generated by the proposed Return to L'Enfant project were estimated based on: (1) Institute of Transportation Engineers (ITE) trip generation rates and/or equations; (2) the proximity of the project to the Judiciary Square, Union Station, and Gallery Place – Chinatown Metro stations; (3) the proposed parking supply; and (4) experience with other comparable projects in Washington, D.C.

As shown in Table 4.1, it is estimated that 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. This assumes that:

1. The commercial space would be parked at the minimum required by the Zoning Regulations (i.e., 1,078 spaces or 0.54 spaces per 1,000 S.F.),
2. The commercial space would be occupied by approximately 3.5 persons per 1,000 gross square feet,
3. A maximum of 15-percent (15%) of all office workers could drive to work (i.e., $0.54/3.5 = 0.15$),
4. On average, 1.8 workers would occupy each car driven to work,
5. Approximately 30 percent of all office workers would commute by auto during peak hours (i.e., $15\% * 1.8 = 27\% \approx 30\%$), and
6. Approximately 70 percent of all office employees would commute by Metrorail, Metrobus, or some other non-auto mode.

Return to L'Enfant Traffic Assignments

These trips were assigned to the city street network and I-395 in accordance with the previously-mentioned distributions. The results are shown on Figure 4.5 and 4.6, respectively

The Return to L'Enfant project potentially would add up to 220 AM peak hour trips, and 61 PM peak hour trips to I-395 northbound and 42 AM and 237 PM peak hour to trips to I-395 southbound.

Total Future Traffic Forecasts

Total future 2021 traffic forecasts on the city street network and I-395, with reconnection of F Street between 2nd and 3rd Streets, modification of the I-395 ramps, and redesignation of 2nd Street as a two-way road between E Street and G Street right of way, were derived as the sum of existing traffic shown on Figures 2.7 and 2.8, background developments under the proposed network shown on Figures 3.4 and 3.5, background traffic growth shown on Figures 3.6 and 3.7, the existing vehicle trips re-routed to reconnected F Street shown on Figure 4.1, the existing I-395 southbound off-ramp (at 3rd Street) vehicle trips re-routed shown on Figure 4.2, and the site traffic assignments shown on Figures 4.5 and 4.6. The results are presented on Figures 4.7 and 4.8, respectively.

Total Future Intersection Capacity Analyses

Levels of Service. Total future peak hour levels of service were estimated at 33 at-grade intersections in the study area based on the existing lane usage and traffic control shown on Figure 2.2, the total future vehicular traffic forecasts shown on Figure 4.7, the existing pedestrian traffic counts shown on Figure 2.9, and the Highway Capacity Manual (HCS) methodologies using Synchro 7 software. The results are presented in Appendix F and summarized in Table 4.2.

Table 4.2 indicates that 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.

The following intersections, which were projected to operate at LOS "D" or better without the project, would operate near capacity at LOS "E" with the project:

1. E Street/2nd Street (PM)

The following intersections, which were projected to operate at LOS "E" without the project, would operate at LOS "F" with the project:

1. Massachusetts Avenue/2nd Street (PM)
2. E Street/2nd Street (AM)

Motorists turning left from the south site driveway on 3rd Street will rely on the gaps in southbound and northbound 3rd Street traffic created by the 3rd Street/F Street traffic signal.

Mitigation. As shown in Table 4.2, traffic signal timing optimization would mitigate project impacts for specific movements at intersections, as well as for overall levels of service.

A traffic signal would continue to be needed at the intersection of F Street and 3rd Street to mitigate delays on the minor street.

Total Future Freeway Capacity Analysis

Total future peak hour levels of service on I-395 and the various merge, diverge, and weave sections were estimated based on the existing freeway geometrics shown on Figure 2.3, the total future vehicular traffic forecasts shown on Figure 4.8, and the Highway Capacity Manual (HCM) 2000 methodologies using Highway Capacity Software (HCS+). The results are presented in Appendix G and summarized on Figure 4.9.

Figure 4.9 indicates that the proposed Return to L'Enfant project would have little impact on the I-395 mainline, merge points, or weave sections.

The Return to L'Enfant project would not negatively impact the levels of service on the I-395 mainline, when compared to background conditions.

The Return to L'Enfant project would not negatively impact the levels of service at the I-395 northbound D Street exit, or I-395 southbound Virginia Avenue exit, diverge points during the AM or PM peak hour. The project would eliminate the I-395 southbound 3rd Street off-ramp.

The I-395 northbound weave section between the C Street/Canal Street on-ramp and D Street off-ramp will continue to operate at capacity at LOS "F" during the AM peak hour. The I-395 southbound weave section between the D Street on-ramp and Virginia

Avenue off-ramp would continue to operate at capacity at LOS "F" during the PM peak hour.

The I-395 northbound off-ramp at 2nd Street is projected to operate at 59- to 71-percent of its capacity in 2021 with the Return to L'Enfant project. The two-lane, upper section of the I-395 southbound on-ramp at 3rd Street is projected to operate at 37- to 66-percent of its capacity.

The Return to L'Enfant project would add 220 vehicles during the AM peak hour to I-395 northbound and 237 vehicles during the PM peak hour to I-395 southbound.

Table 4 I
Return to L'Enfant
Site Trip Generation Analysis

Building/ Land Use	ITE Land Use Code	Size	Units	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
ITE Vehicle-Trips (1)									
Residential	220	165	D.U.	17	68	85	70	38	108
Office	710	1,988,651	S.F.	1,805	246	2,051	392	1,914	2,306
Total				1,822	314	2,136	462	1,952	2,414
ITE Person-Trips (4)									
Residential	220	165	D.U.	20	78	98	81	43	124
Office	710	1,988,651	S.F.	2,347	320	2,666	510	2,488	2,998
Total				2,367	398	2,764	591	2,531	3,122
Project Vehicle-Trips (3,6)									
Residential	220	165	D.U.	8	33	41	34	18	52
Office	710	1,988,651	S.F.	542	73	615	118	574	692
Net Trips				550	106	656	152	592	744

- Notes. (1) Trip Generation Seventh Edition, Institute of Transportation Engineers (ITE)
(4) Assumptions.

	<u>Residential</u>	<u>Office</u>
Non-auto mode split:	0%	0%
Average vehicle occupancy (persons per vehicle)	1.15	1.30

- (5) Assumptions:

	<u>Residential</u>	<u>Office</u>
Non-auto mode split:	50%	70%
Average vehicle occupancy (persons per vehicle)	1.20	1.30

Distance to D.C. Core 0.71 miles

- (6) Development Related Ridership Survey II, Washington Metropolitan Area Transit Authority December 1989

Table 4.2
Return to L'Enfant
Level of Service Table (1) (2) (3)

Intersection	Traffic Control	Critical Movement	Total Future (2021)		Optimize Signal Timings Total Future (2021)	
			AM Peak	PM Peak	AM Peak	PM Peak
1a. New York Avenue/ 5th Street/ L Street	SIGNAL	EB "NY Avenue"	B (17.2)	C (23.7)	B (19.3)	C (34.7)
		WB "NY Avenue"	B (18.7)	C (21.9)	B (19.1)	C (25.2)
		NB 5th Street	<u>D (36.5)</u>	<u>F (137.8)</u>	<u>D (36.5)</u>	<u>E (57.3)</u>
		Overall	C (21.0)	D (44.4)	C (21.9)	D (35.7)
1b.	SIGNAL	WB "L Street"	A (6.3)	B (11.3)	B (10.6)	B (13.0)
		NB "5th Street"	<u>A (4.4)</u>	<u>A (8.1)</u>	<u>A (4.3)</u>	<u>A (5.7)</u>
		Overall	A (5.4)	A (8.8)	A (7.5)	A (7.3)
2. New York Avenue/4th Street I-395 Terminus	SIGNAL	EB "NY Avenue"	F (132.5)	F (425.5)	F (155.2)	F (214.6)
		WB "NY Avenue"	D (46.5)	F (115.2)	D (45.3)	F (238.5)
		SB "4th Street"	F (483.0)	F (539.6)	F (332.2)	F (347.0)
		NB "I-395 Off-Ramp"	<u>B (16.8)</u>	<u>A (8.1)</u>	<u>B (16.8)</u>	<u>B (12.3)</u>
Overall	F (103.9)	F (254.3)	F (89.1)	F (218.6)		
3. New York Avenue/ New Jersey Avenue/ 3rd Street	SIGNAL	EB "NY Avenue"	B (11.7)	B (13.1)	A (9.7)	A (3.2)
		WB "NY Avenue"	D (35.3)	B (11.9)	D (35.3)	B (14.9)
		NB "New Jersey Avenue"	D (35.8)	D (46.7)	D (36.9)	D (38.7)
		SB "3rd Street"	<u>D (36.2)</u>	<u>C (32.5)</u>	<u>D (36.2)</u>	<u>C (28.7)</u>
Overall	C (24.9)	B (15.0)	C (24.9)	B (15.8)		
4. K Street/ 4th Street	SIGNAL	EB	C (27.7)	F (216.7)	E (71.8)	F (159.3)
		WB	F (216.8)	F (1317.9)	F (259.5)	F (559.0)
		SB	<u>C (32.2)</u>	<u>C (25.5)</u>	<u>E (75.8)</u>	<u>C (31.3)</u>
		Overall	F (125.1)	F (635.6)	F (171.3)	F (304.7)
5. K Street/ New Jersey Avenue/ 2nd Street	SIGNAL	EB	A (1.6)	B (18.4)	A (0.4)	B (11.4)
		WB	C (21.9)	C (26.1)	C (21.9)	C (26.1)
		NB	<u>B (13.6)</u>	<u>C (22.6)</u>	<u>B (13.4)</u>	<u>C (22.6)</u>
		Overall	B (14.8)	C (22.0)	B (14.6)	B (20.0)
6a. Massachusetts Avenue/ 4th Street	SIGNAL	SEB	F (300.9)	F (645.4)	B (12.8)	B (17.9)
		NWB	F (85.6)	F (112.3)	E (68.6)	F (82.8)
		SB	<u>F (136.5)</u>	<u>F (343.9)</u>	<u>F (90.4)</u>	<u>F (312.3)</u>
		Overall	F (157.4)	F (371.0)	E (56.6)	F (111.9)
6b. H Street/ 4th Street	SIGNAL	EB	F (504.4)	F (1063.7)	D (37.3)	F (260.5)
		WB	D (40.5)	C (24.6)	C (28.7)	B (12.5)
		SB	<u>A (5.3)</u>	<u>A (9.2)</u>	<u>B (11.8)</u>	<u>C (21.4)</u>
		Overall	F (195.4)	F (607.2)	C (29.5)	F (154.7)
7a. Massachusetts Avenue/ H Street	STOP	WBR	C [21.7]	B [14.3]	C [23.6]	C [17.6]
7b. H Street/ 3rd Street	STOP	SBR	B [12.9]	B [12.6]	B [12.9]	B [13.0]
7c. Massachusetts Avenue/ H Street/3rd Street	SIGNAL	EB "H Street"	F (80.8)	F (506.9)	F (147.5)	F (343.6)
		WB "H Street"	D (36.2)	C (29.2)	C (29.1)	C (25.0)
		SEB "Mass Avenue"	C (32.5)	A (8.9)	B (15.2)	D (35.7)
		NWB "Mass. Avenue"	F (209.7)	F (85.0)	F (241.3)	F (173.8)
		SVB "H to 3rd"	<u>F (550.1)</u>	<u>F (873.8)</u>	<u>F (319.6)</u>	<u>F (554.4)</u>
Overall	F (181.2)	F (282.6)	F (161.3)	F (221.9)		
8. H Street/ 2nd Street	SIGNAL	EB	A (5.1)	B (13.0)	A (7.8)	C (27.3)
		WB	B (16.3)	B (17.1)	C (22.6)	D (36.8)
		NB	<u>F (94.1)</u>	<u>F (94.5)</u>	<u>C (30.5)</u>	<u>F (147.6)</u>
		Overall	E (57.8)	D (53.1)	C (25.7)	F (89.8)
9. Massachusetts Avenue/ 2nd Street	SIGNAL	EB	D (36.2)	C (22.0)	D (36.0)	C (32.7)
		WB	C (22.4)	C (25.5)	D (39.2)	D (39.1)
		NB	<u>F (309.9)</u>	<u>F (251.6)</u>	<u>F (225.0)</u>	<u>E (79.9)</u>
		Overall	F (183.5)	F (139.8)	F (139.5)	E (59.4)
10. 3rd Street/ North Site Access	STOP	WBL	B [12.6]	B [10.8]	B [12.6]	B [10.8]
		SBL	A [7.5]	A [7.3]	A [7.5]	A [7.3]
11. Massachusetts Avenue/ New Jersey Avenue	SIGNAL	EB	A (9.8)	C (20.0)	A (7.6)	C (20.0)
		WB	C (20.5)	B (16.5)	C (20.5)	B (16.5)
		NB	B (16.6)	D (36.2)	B (12.2)	D (36.2)
		SB	<u>C (24.0)</u>	<u>D (36.8)</u>	<u>C (24.0)</u>	<u>D (36.8)</u>
		Overall	B (16.5)	C (24.7)	B (14.8)	C (24.7)
12. G Street/ 3rd Street	SIGNAL	EB	C (20.0)	C (26.8)	C (28.0)	C (27.8)
		WB	C (26.7)	D (38.8)	D (39.3)	D (38.8)
		NB	E (77.3)	F (974.0)	F (211.3)	F (715.0)
		SB	<u>F (89.1)</u>	<u>F (136.1)</u>	<u>D (48.3)</u>	<u>F (136.1)</u>
		Overall	E (56.8)	F (453.0)	F (103.0)	F (342.1)
13. I-395 Northbound Off-Ramp/ 2nd Street	STOP	NBT	N/A	N/A	N/A	N/A
14. G Street/ New Jersey Avenue	SIGNAL	EB	C (32.9)	C (34.6)	C (32.9)	C (32.8)
		WB	D (44.8)	D (54.1)	D (44.1)	D (47.5)
		NB	B (14.2)	B (11.1)	C (20.4)	B (11.6)
		SB	<u>B (13.9)</u>	<u>B (10.4)</u>	<u>B (11.8)</u>	<u>B (11.7)</u>
		Overall	B (16.4)	B (16.9)	B (18.8)	B (16.8)

Table 4 2
Return to L'Enfant
Level of Service Table (1) (2) (3)

Intersection	Traffic Control	Critical Movement	Total Future (2021)		Optimize Signal Timings Total Future (2021)	
			AM Peak	PM Peak	AM Peak	PM Peak
15. F Street/ 3rd Street	STOP	EBL	F [Err]	F [Err]	N/A	N/A
		EBTR	F [70.0]	F [72.8]	N/A	N/A
		WBLTR	F [975.5]	F [Err]	N/A	N/A
		NBLTR	A [3.5]	A [4.0]	N/A	N/A
		SBLT	A [1.6]	A [1.0]	N/A	N/A
		<i>Add Traffic Signal</i>	SIGNAL	EB	N/A	N/A
		WB	N/A	N/A	C (28.3)	F (97.5)
		NB	N/A	N/A	B (12.2)	A (8.6)
		SB	N/A	N/A	<u>A (7.7)</u>	<u>B (12.4)</u>
		Overall	N/A	N/A	B (17.0)	C (31.2)
16. F Street/ 2nd Street	STOP	EBLR	F [55.4]	C [24.4]	F [55.4]	C [24.4]
		NBLT	A [4.8]	A [4.0]	A [4.8]	A [4.0]
17a. New Jersey Avenue/ 1st Street	SIGNAL	EB	A (4.2)	A (3.2)	A (3.9)	A (3.7)
		WB	A (9.3)	A (3.1)	A (6.1)	A (1.8)
		NB	<u>B (13.9)</u>	<u>B (16.6)</u>	<u>B (13.9)</u>	<u>B (16.8)</u>
		Overall	A (7.9)	A (6.5)	A (7.0)	A (6.3)
17b. Driveway/F Street/ 1st Street	SIGNAL	EB	C (34.9)	C (34.9)	D (38.5)	C (34.9)
		NB	F (154.5)	E (64.9)	D (37.3)	D (49.1)
		SB	<u>B (11.9)</u>	<u>A (6.3)</u>	<u>A (7.4)</u>	<u>A (5.8)</u>
		Overall	F (108.1)	C (30.3)	C (27.8)	C (23.6)
17c. F Street/ New Jersey Avenue	SIGNAL	EB	A (5.6)	A (6.9)	A (6.6)	A (8.4)
		NB	B (18.4)	B (18.6)	B (18.4)	B (18.6)
		SB	<u>A (3.6)</u>	<u>B (11.2)</u>	<u>A (2.9)</u>	<u>A (8.4)</u>
		Overall	B (11.0)	B (14.8)	B (11.0)	B (14.1)
18. I-395 SB Off Ramp/ 3rd Street/ South Site Access	STOP	EBLTR	E [35.3]	E [43.1]	D [30.4]	C [24.1]
		WBLTR	E [42.1]	F [132.7]	D [34.9]	D [26.1]
		NBLTR	A [1.0]	A [0.1]	A [1.0]	A [0.1]
		SBLT	A [3.7]	A [0.5]	A [3.7]	A [0.5]
		Overall				
19. E Street/ 3rd Street	SIGNAL	EB	C (23.8)	C (27.9)	C (23.8)	C (27.9)
		WB	D (45.4)	B (12.5)	B (18.9)	B (10.9)
		NB	C (28.9)	B (14.3)	C (27.8)	B (18.2)
		SB	<u>B (11.2)</u>	<u>D (52.4)</u>	<u>B (14.3)</u>	<u>D (44.9)</u>
		Overall	C (29.8)	C (34.4)	C (21.8)	C (31.2)
20. E Street/ 2nd Street	SIGNAL	EB	N/A	N/A	N/A	N/A
		WB	N/A	N/A	N/A	N/A
		NB	N/A	N/A	N/A	N/A
		Overall	N/A	N/A	N/A	N/A
		<i>Add Southbound 2nd Street</i>	SIGNAL	EB	B (13.2)	A (5.3)
		WB	B (14.2)	C (23.0)	B (13.7)	C (23.1)
		NB	F (337.6)	F (354.2)	F (334.6)	F (355.4)
		SB	<u>C (29.0)</u>	<u>E (71.4)</u>	<u>C (29.0)</u>	<u>E (71.4)</u>
		Overall	F (174.7)	F (122.5)	F (172.2)	F (122.5)
21. E Street/ 1st Street	SIGNAL	EB	A (7.2)	B (11.7)	A (5.4)	B (13.4)
		WB	B (10.1)	B (17.1)	B (11.2)	B (17.1)
		NB	E (65.5)	B (13.9)	D (44.1)	B (15.0)
		SB	<u>C (28.5)</u>	<u>C (28.9)</u>	<u>C (32.3)</u>	<u>C (30.9)</u>
		Overall	C (26.2)	B (17.3)	C (20.5)	B (18.6)
22. D Street/ 3rd Street/I-395 SB On Ramp	SIGNAL	EB	C (33.5)	D (41.0)	C (33.5)	D (45.9)
		WB	C (31.3)	C (24.3)	C (29.0)	C (32.0)
		NB	C (28.1)	F (154.2)	C (28.1)	D (50.4)
		SB	<u>B (10.8)</u>	<u>C (23.4)</u>	<u>A (5.8)</u>	<u>B (12.3)</u>
		Overall	C (26.2)	D (47.3)	C (24.1)	C (26.2)
23. D Street/ I-395 SB On Ramp/Driveway	STOP	WBL	A [6.9]	B [10.5]	A [6.9]	B [10.5]
		SBR	C [15.0]	B [12.6]	C [15.0]	B [12.8]
24. D Street/ 2nd Street/I-395 NB Off Ramp	SIGNAL	WB	B (14.7)	B (17.4)	C (23.6)	B (17.1)
		NB	<u>E (64.6)</u>	<u>C (33.6)</u>	<u>C (25.4)</u>	<u>C (26.1)</u>
		Overall	D (51.9)	C (25.5)	C (25.0)	D (35.8)
25. D Street/ 1st Street	SIGNAL	EB	C (33.8)	C (34.1)	C (29.3)	C (34.1)
		WB	C (28.6)	C (26.4)	C (21.1)	C (26.4)
		NB	C (25.4)	C (28.2)	C (32.9)	C (24.5)
		SB	<u>C (28.8)</u>	<u>C (22.8)</u>	<u>B (10.2)</u>	<u>C (20.5)</u>
		Overall	C (28.8)	C (27.0)	C (24.7)	C (25.6)
26. C Street/1st Street/ Indiana Avenue	SIGNAL	EB	F (345.6)	E (59.2)	E (73.8)	D (46.0)
		WB	C (34.1)	C (30.6)	C (34.9)	C (30.6)
		NB	C (30.8)	C (25.5)	F (98.5)	C (28.0)
		SB	C (23.8)	C (24.2)	D (40.0)	A (9.1)
		SEB	<u>C (34.1)</u>	<u>C (30.6)</u>	<u>C (35.0)</u>	<u>C (30.6)</u>
		Overall	F (264.8)	C (34.5)	E (70.7)	C (29.0)
27. F Street/ Site Access	STOP	EBLT	A [5.6]	A [1.9]	A [5.6]	A [1.9]
		SBLR	B [11.3]	B [12.1]	B [11.3]	B [12.1]

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.

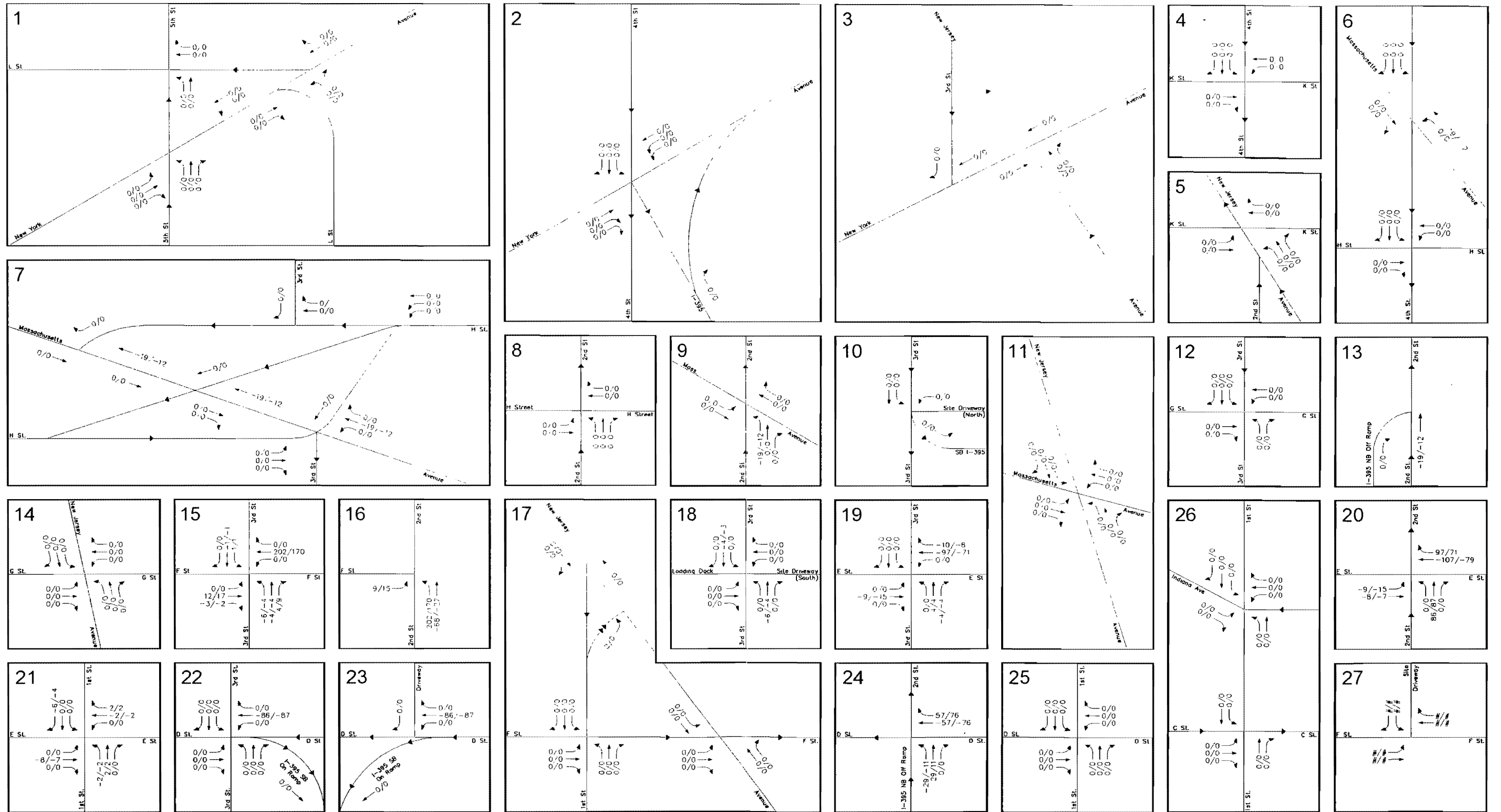


Figure 4.1
Existing Vehicle Trips Rerouted to Reconnected F Street

AM PEAK HOUR
PM PEAK HOUR
000/000



North

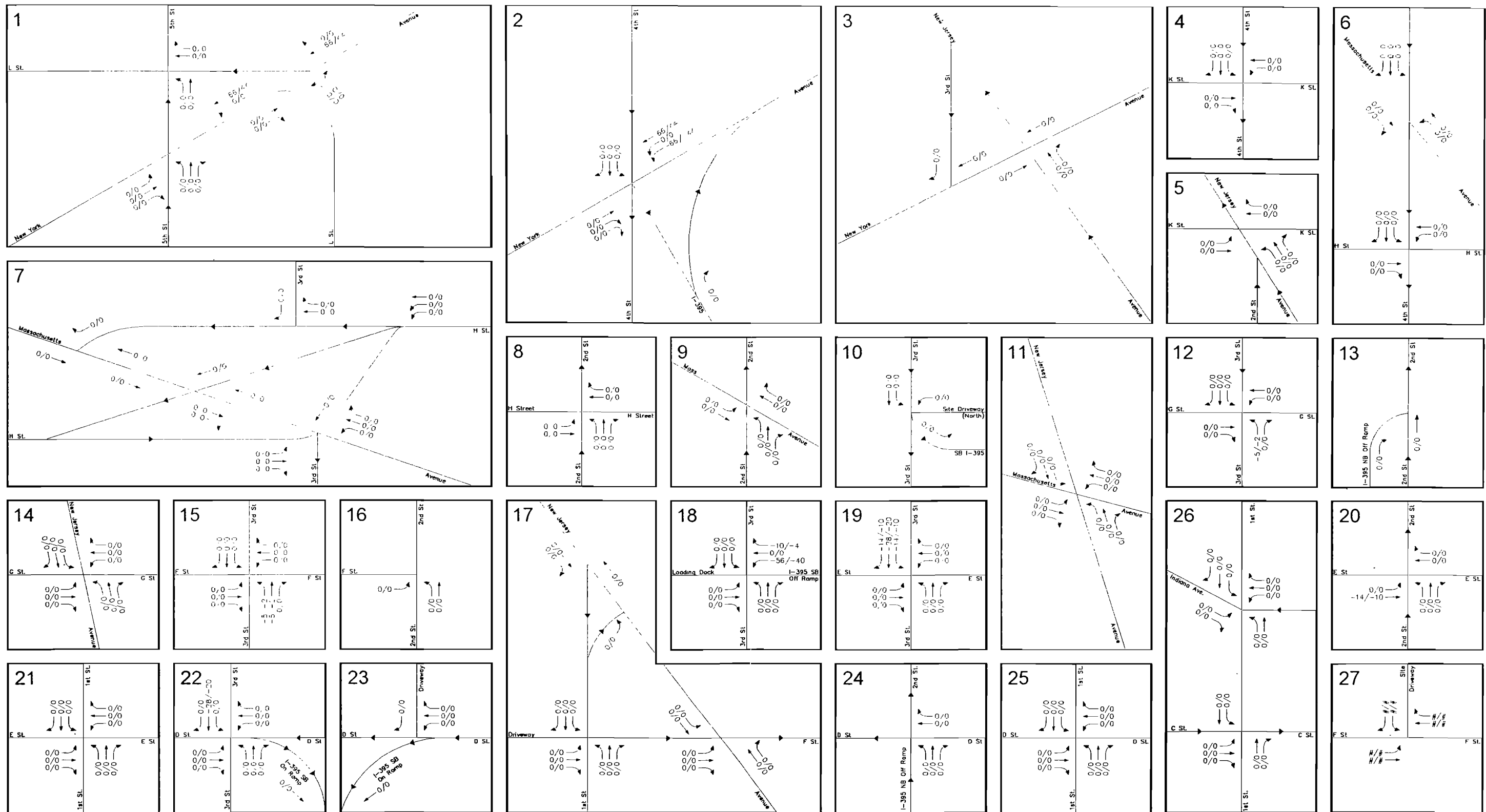


Figure 4.2
Existing I-395 Vehicle Trips Rerouted

AM Peak Hour
000/000
PM Peak Hour
North

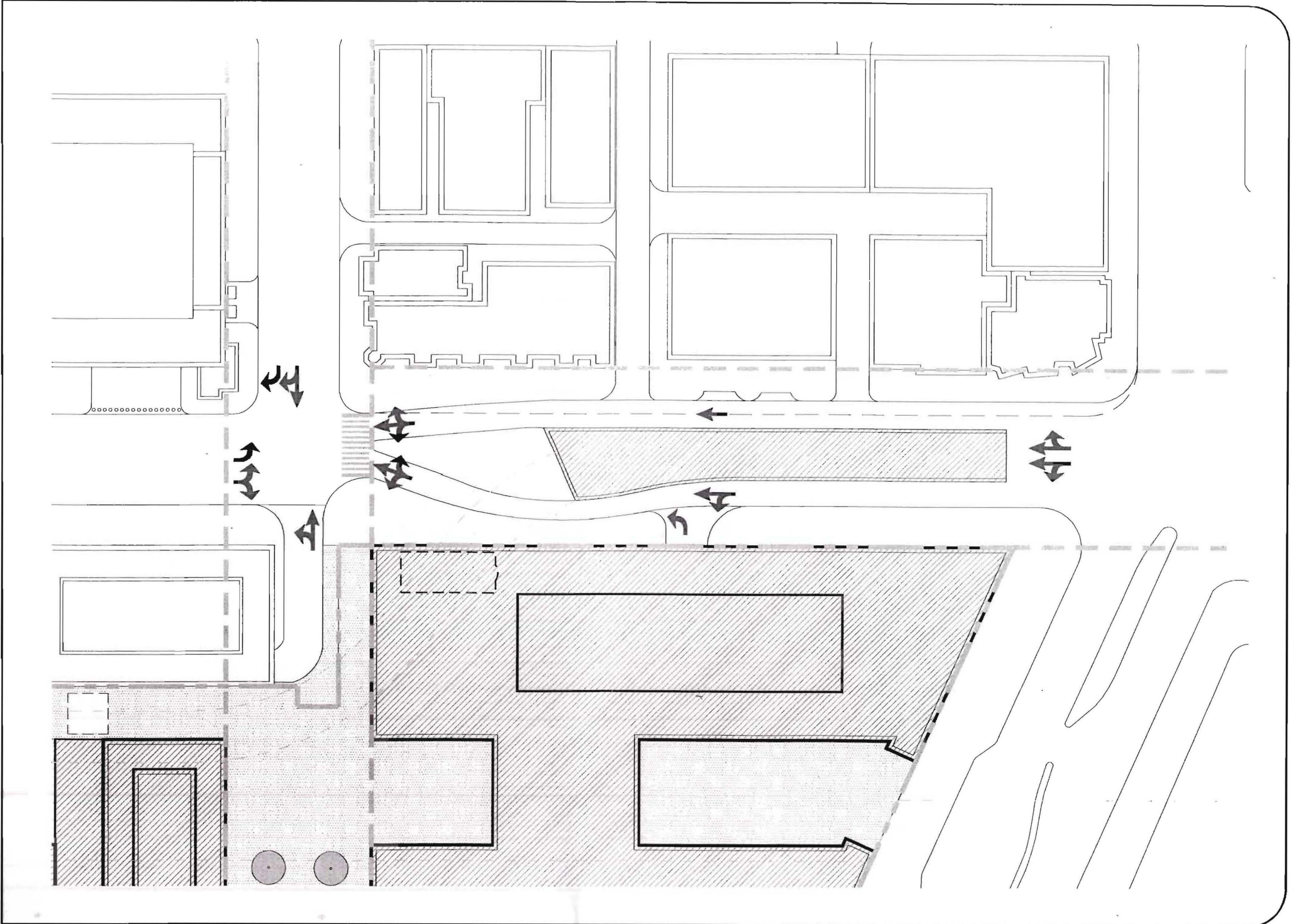


Figure 4.3
3rd Street/G Street Intersection Geometrics Plan



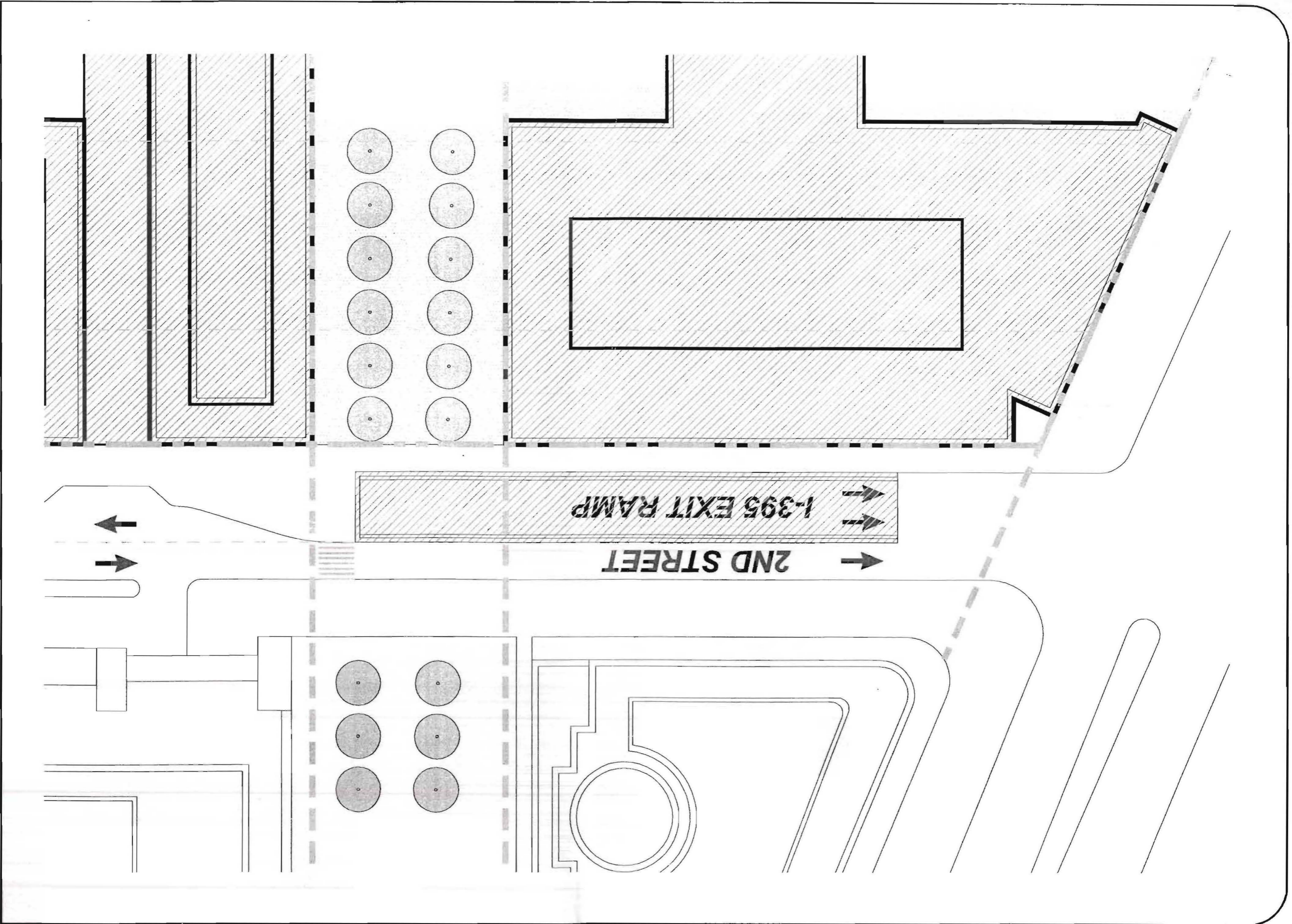


Figure 4.4
Northbound I-395 Off-Ramp/2nd Street Intersection
Geometrics Plan



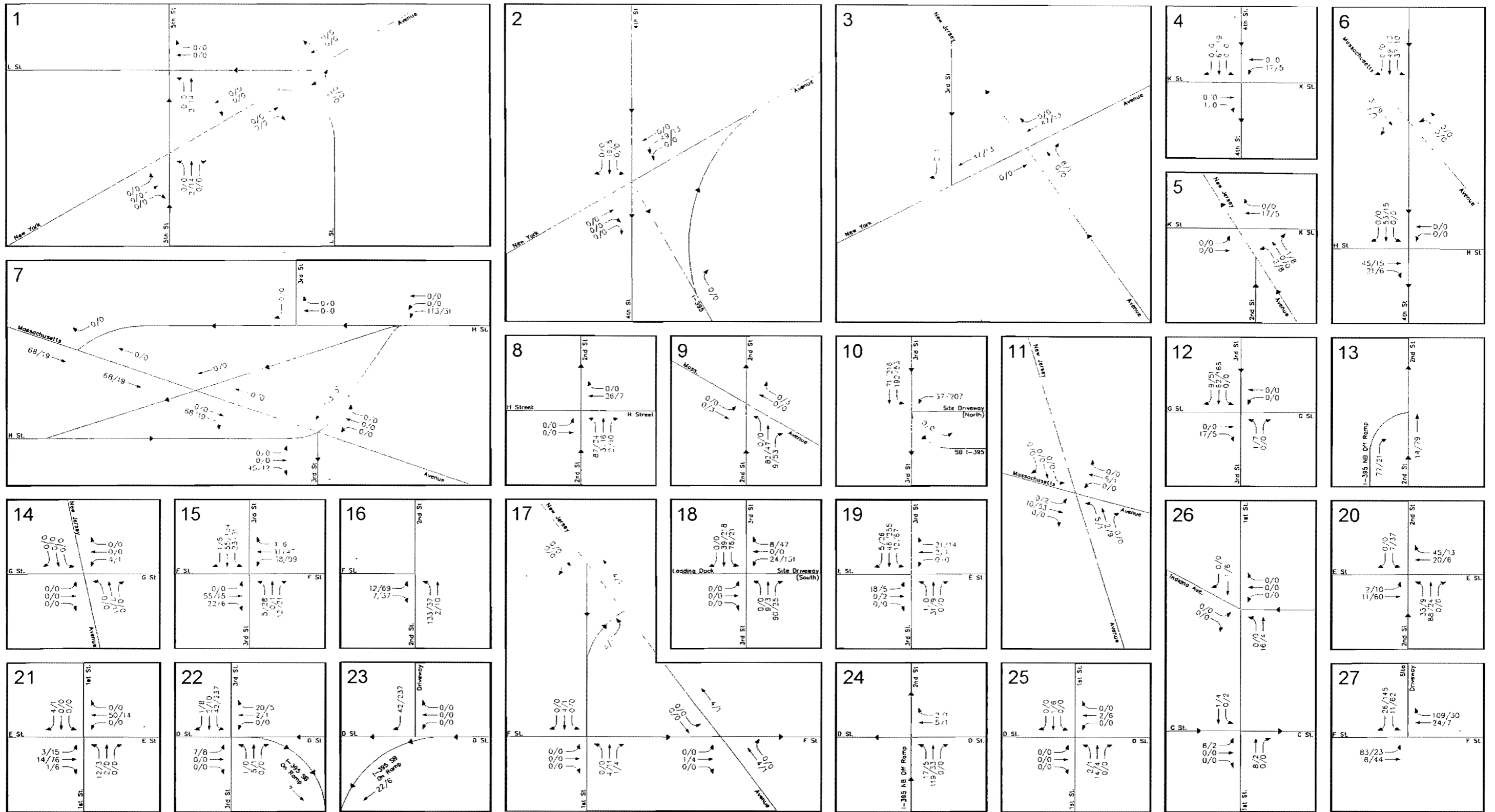


Figure 4.5
Site Traffic Assignments to City Street Network

AM PEAK HOUR
PM PEAK HOUR
000/000



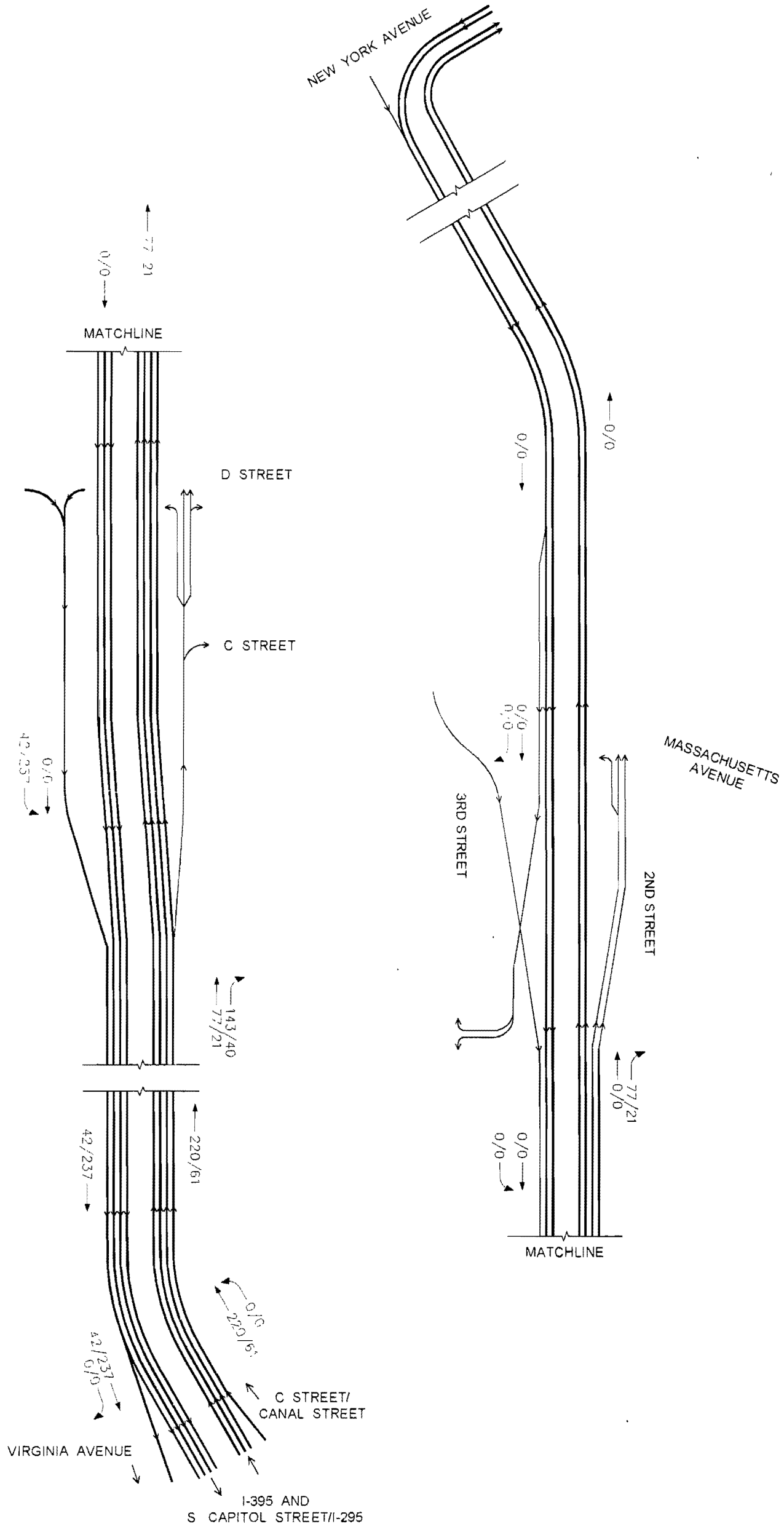


Figure 4.6
Site Traffic Assignments to I-395 Network



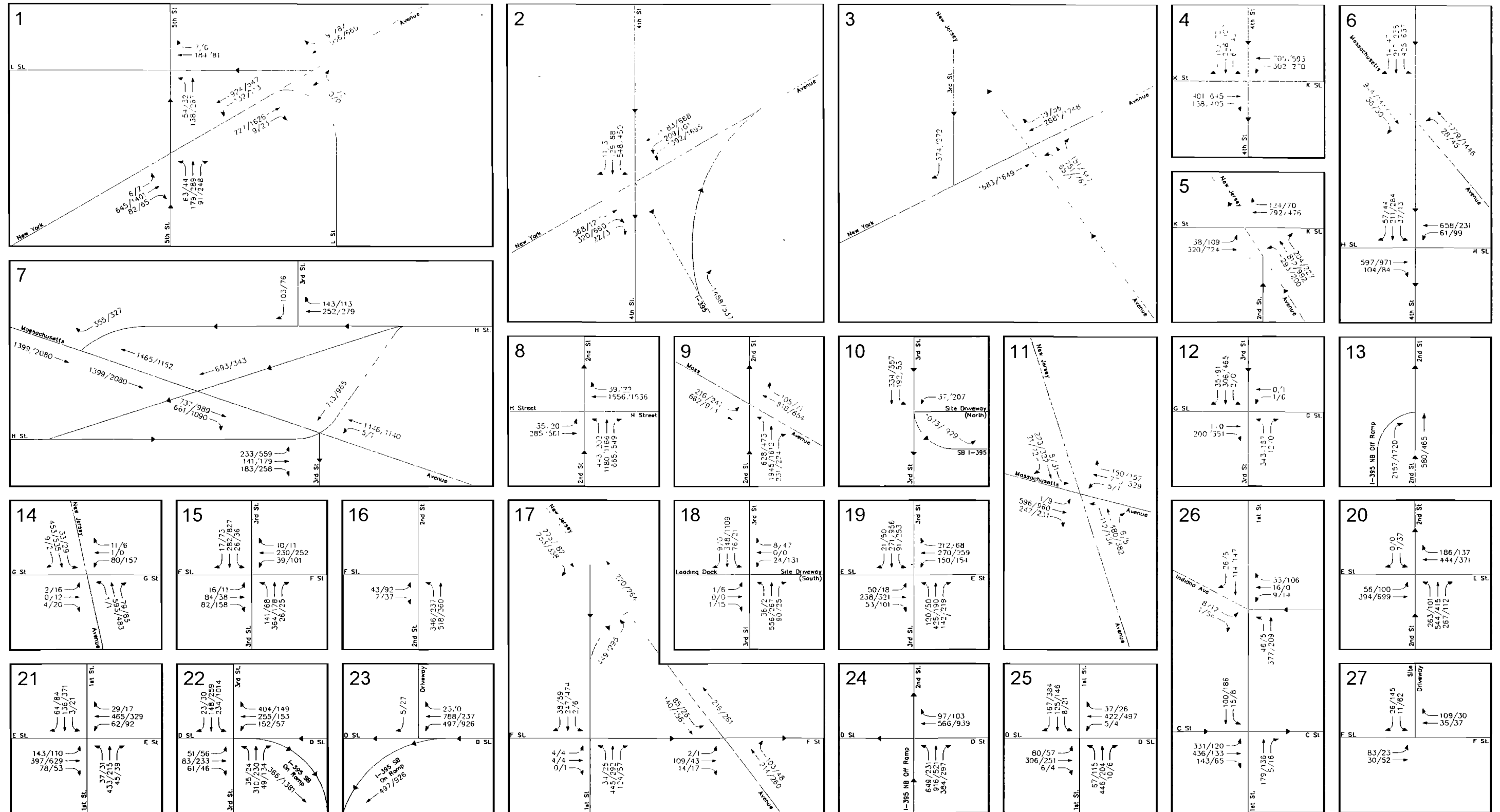


Figure 4.7
Total Future Peak Hour Vehicle Traffic Forecast (2021): City Street Network

AM PEAK HOUR
PM PEAK HOUR
000/000

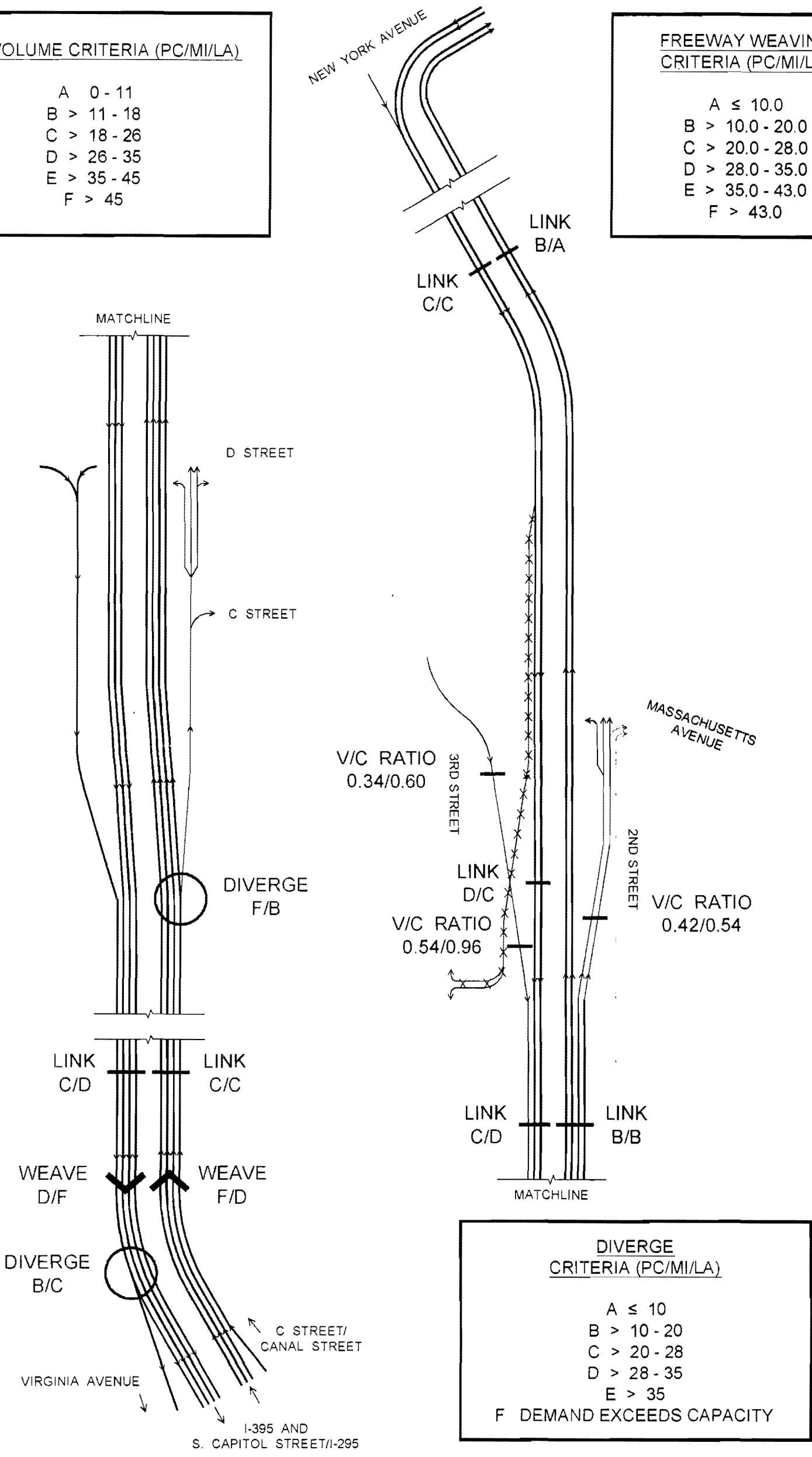
North

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

O:\PROJECTS\3501-4000\3780 I-395 AIR RIGHTS\GRAPHICS\3780 - RPT GRAPHICS - A.DWG

Figure 4.9
Total Future I-395 Levels of Service (2021)



Section 5: Conclusions

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 or 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 build-out 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 build-out 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 not the incremental increase above the current zoning which permits all commercial development up to 6.5 FAR. For this reason, this analysis does not 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.**