MTA / LIRR EAST SIDE ACCESS FEIS

TECHNICAL APPENDIX:
TRAFFIC AND PEDESTRIAN LEVEL OF SERVICE ANALYSES

Prepared by:

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INTRODUCTION

This Technical Appendix contains the detailed traffic and pedestrian level of service analyses conducted for existing conditions and for the No Build and Build (East Side Access) Alternatives. The contents of this Technical Appendix is subdivided into the three geographical areas addressed in the FEIS: Midtown Manhattan; Sunnyside, Queens; and Eastern Queens and Long Island.

CONTENTS OF THE MIS/FEIS AND THE TECHNICAL APPENDIX

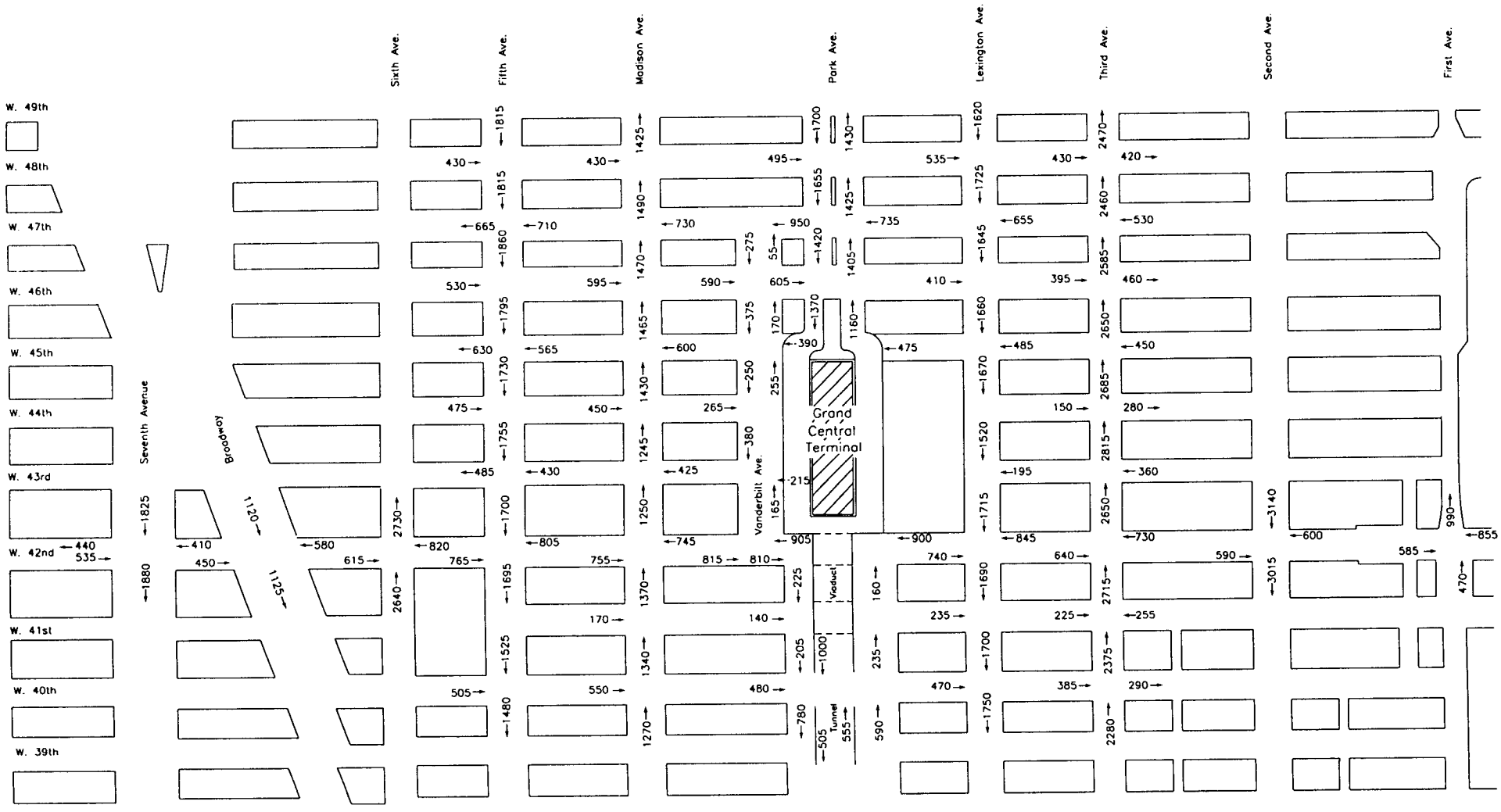
The FEIS contains a full verbal and graphic description of traffic and pedestrian conditions in the three study areas under existing conditions and the various alternatives. In terms of traffic level of service findings, the MIS/FEIS presents an overview of the impacts associated with the alternatives — where significant impacts are expected and what types of improvements would be needed to mitigate adverse impacts. This Technical Appendix provides an additional layer of analysis details. For vehicular traffic, it includes volume-to-capacity (v/c) ratios, average vehicle delays, and levels of service by approach and by lane group for each intersection analyzed for each alternative, as well as for the mitigated conditions under the alternatives. For pedestrian and passenger flow analyses, it includes v/c ratios, time-space analyses, and levels of service for conditions within Grand Central Terminal, for Lexington Avenue subway station facilities, and for on-street sidewalk and crosswalk analyses. Additional levels of detail — e.g., intersection capacity analysis worksheets themselves — are available within a series of books at the offices of Eng-Wong, Taub & Associates.

The contents of this Technical Appendix include the following Figures and Tables:

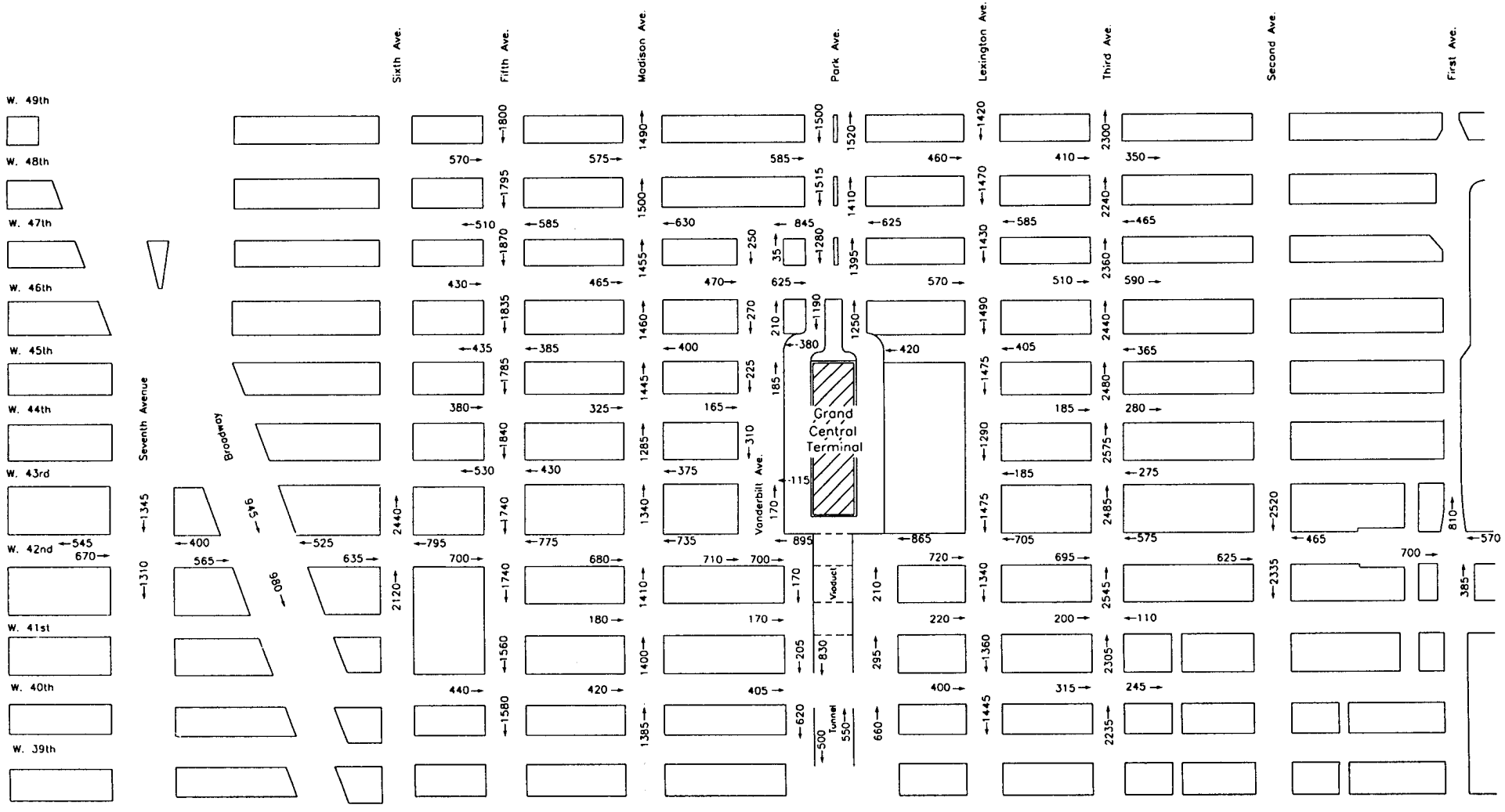
Grand Central Terminal (GCT) Area

FIGURE M-1

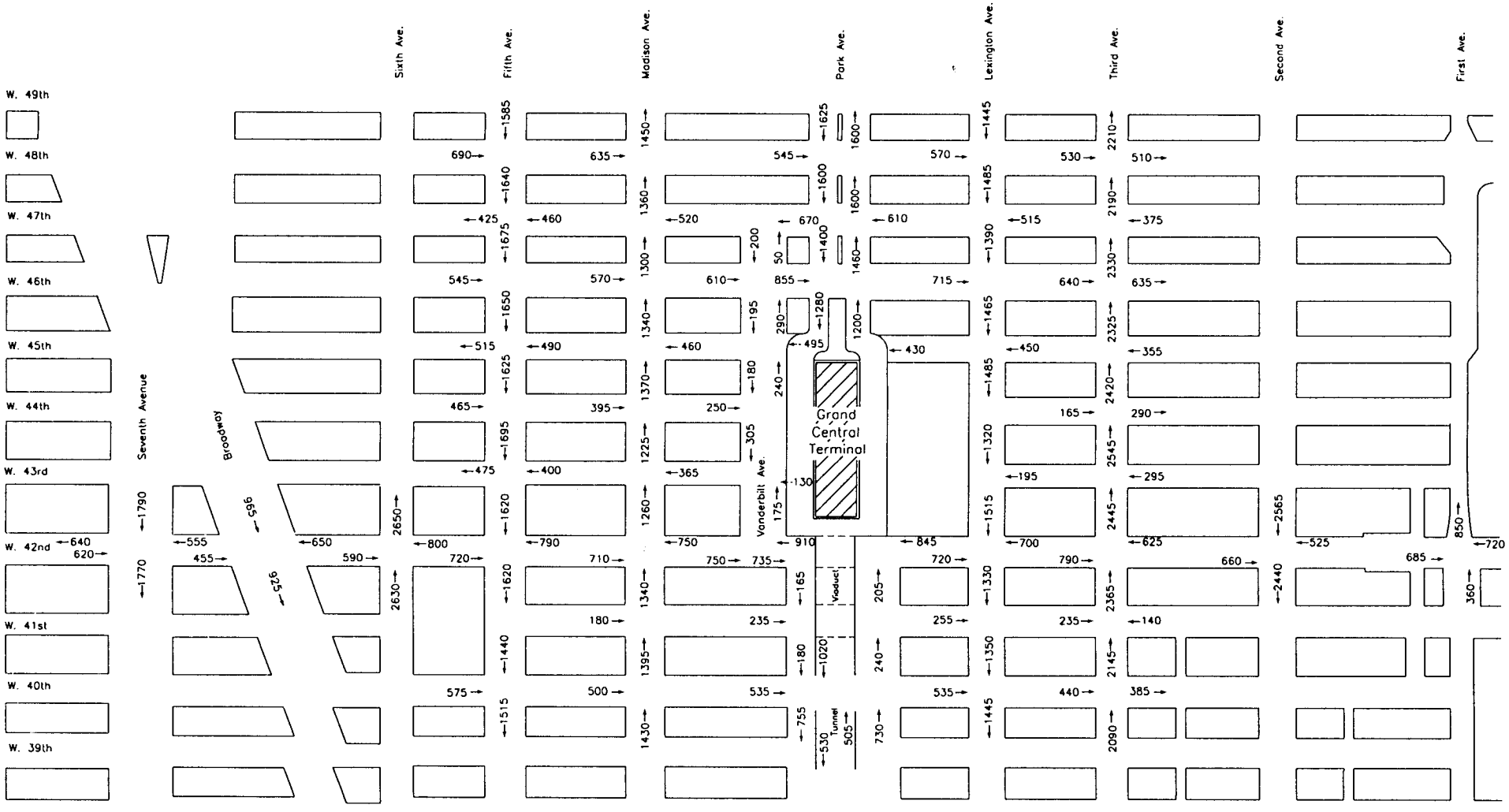
EXISTING TRAFFIC VOLUMES



INTERSECTION APPROACH VOLUMES : EXISTING AM PEAK



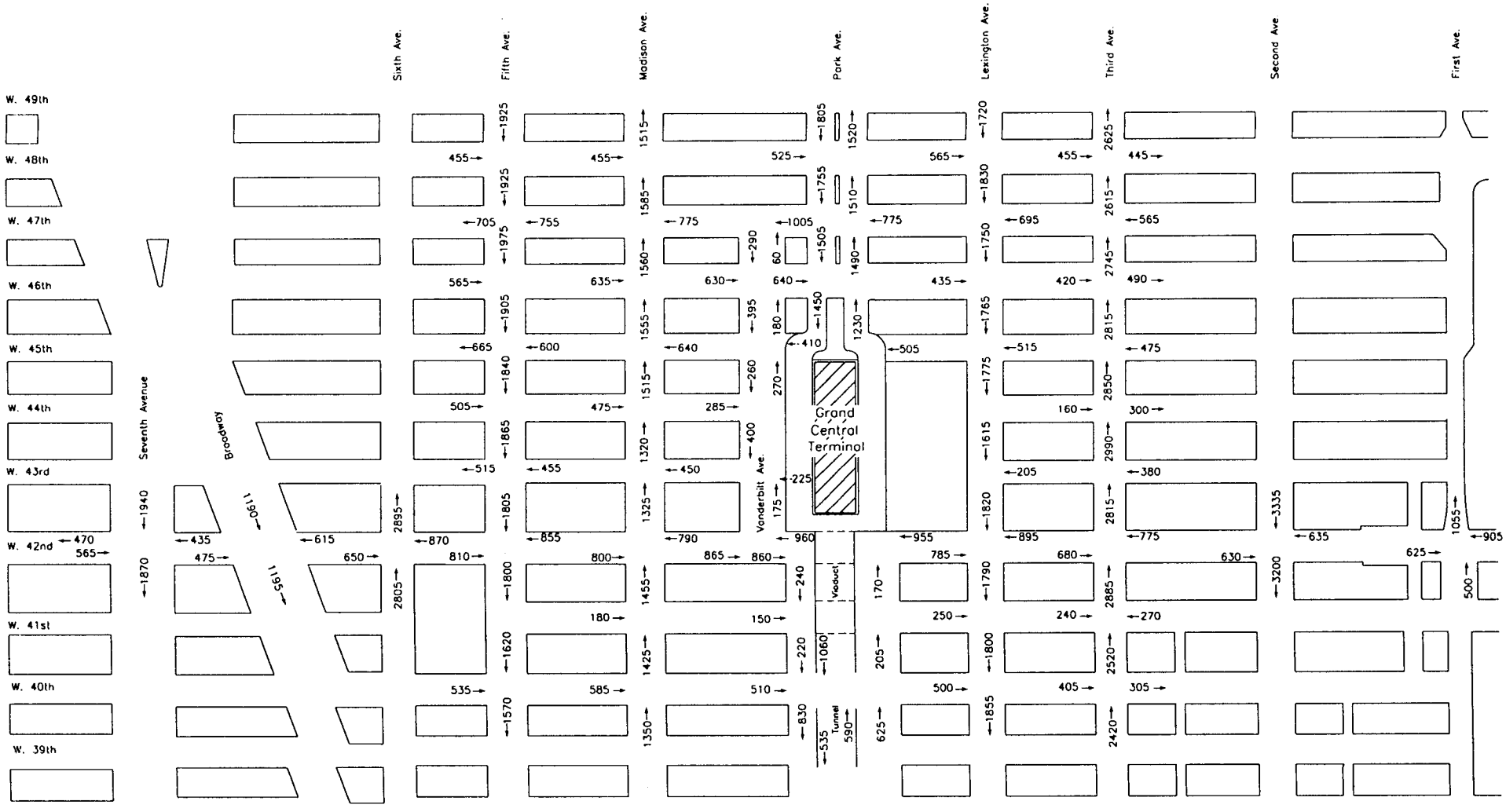
INTERSECTION APPROACH VOLUMES : EXISTING MIDDAY PEAK



INTERSECTION APPROACH VOLUMES : EXISTING PM PEAK

FIGURE M-2

2010 NO BUILD TRAFFIC VOLUMES



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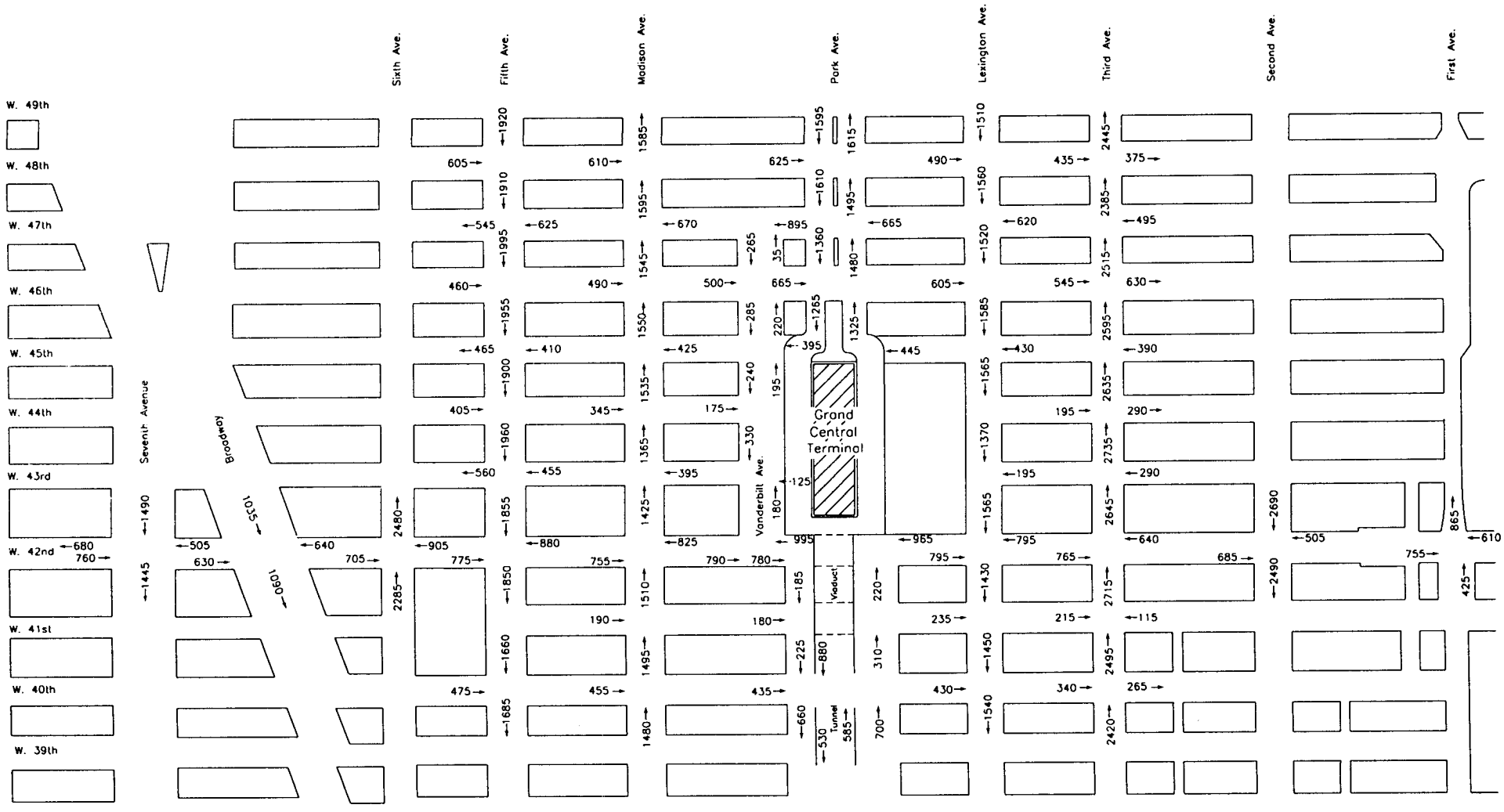
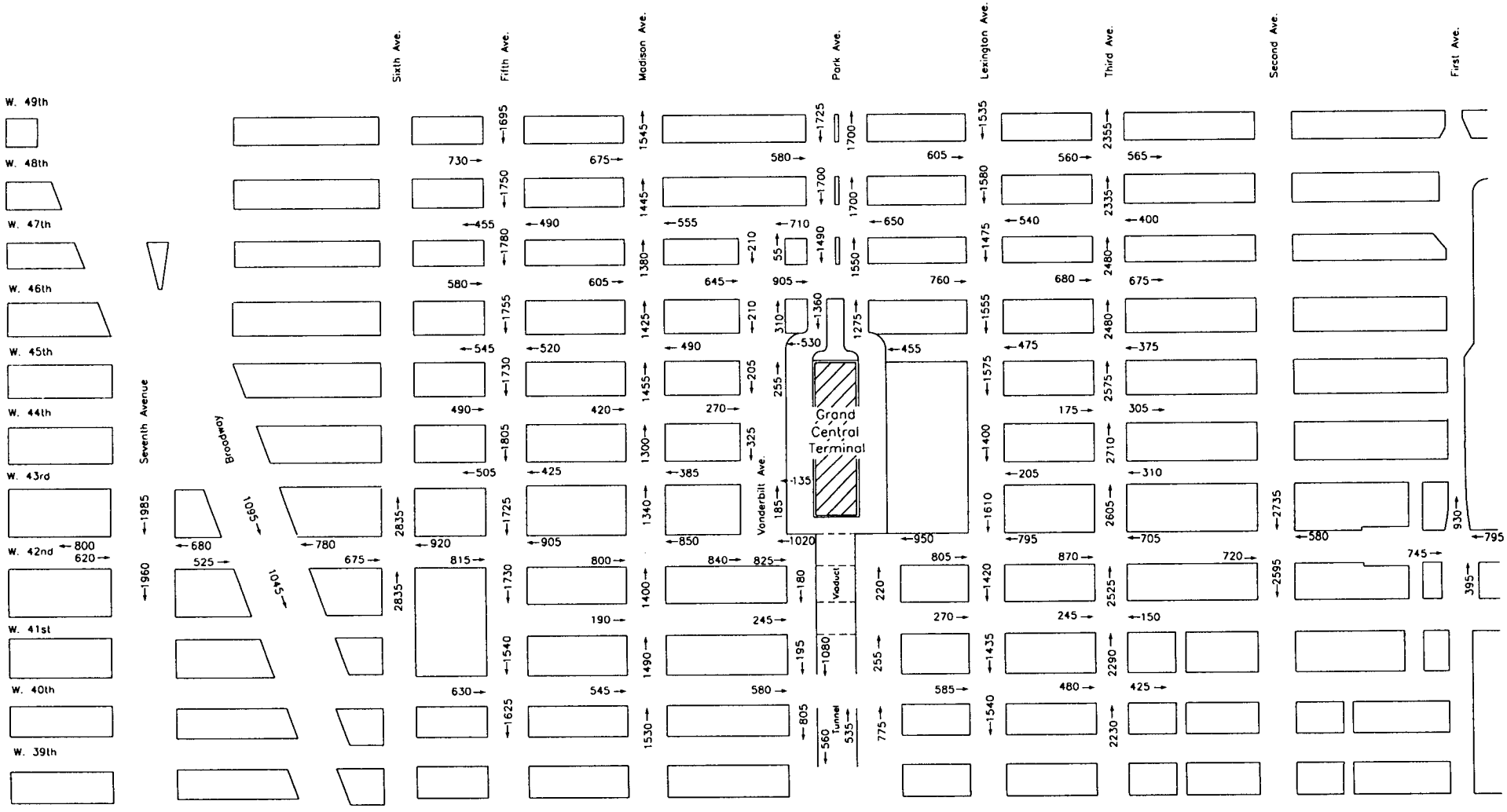


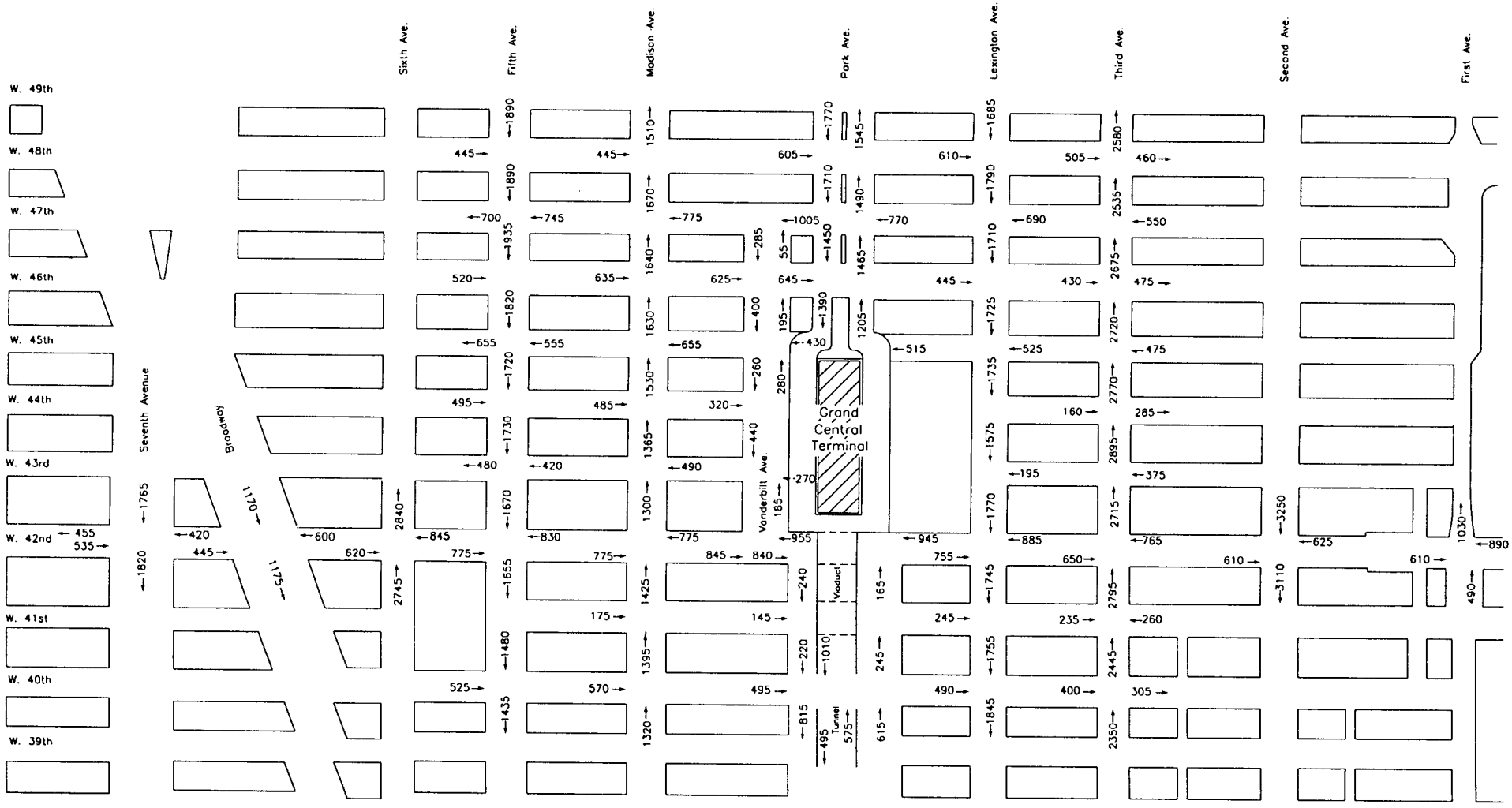
INTERSECTION APPROACH VOLUMES : NO BUILD MIDDAY PEAK



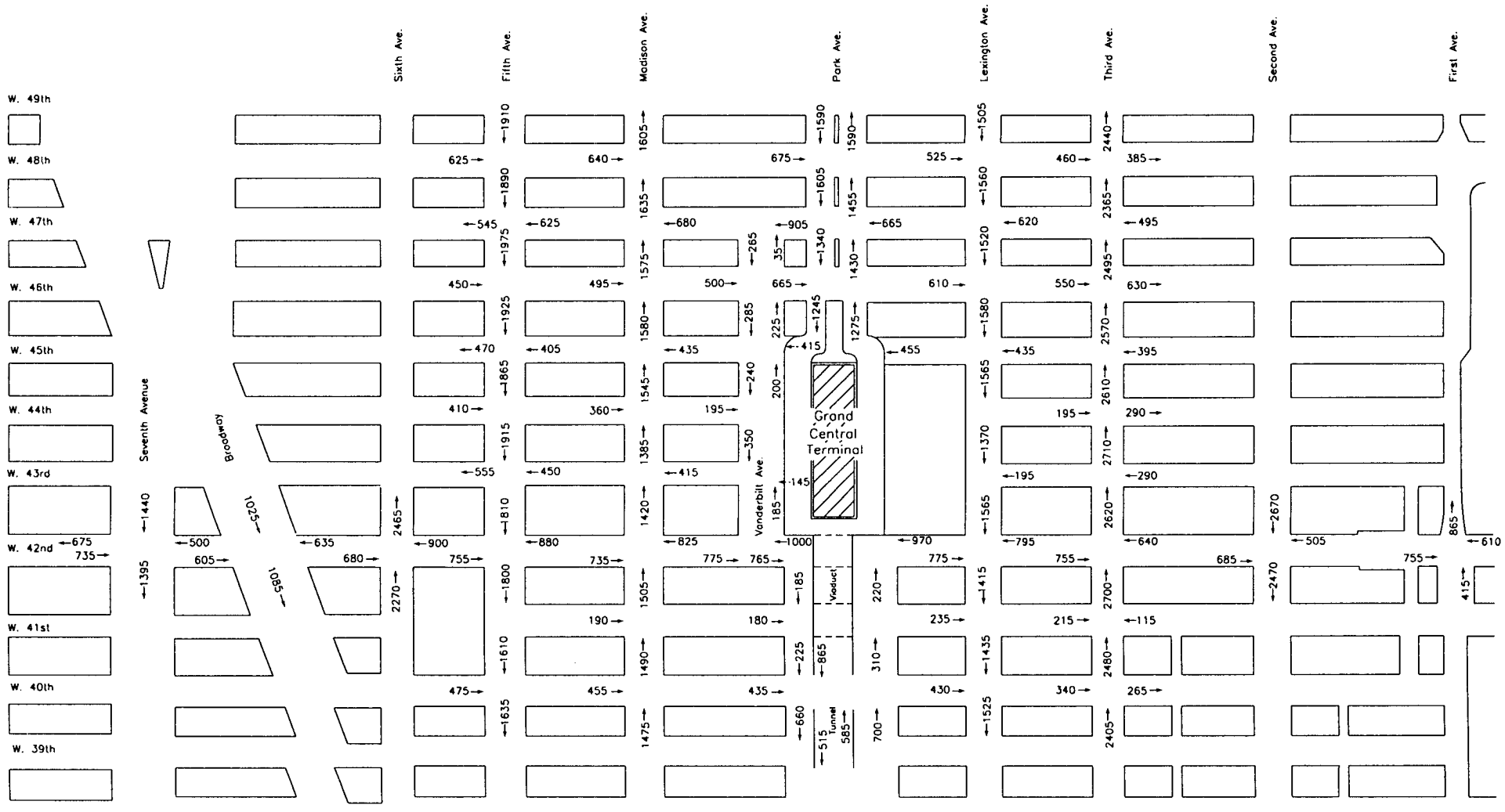
INTERSECTION APPROACH VOLUMES : NO BUILD PM PEAK

FIGURE M-3

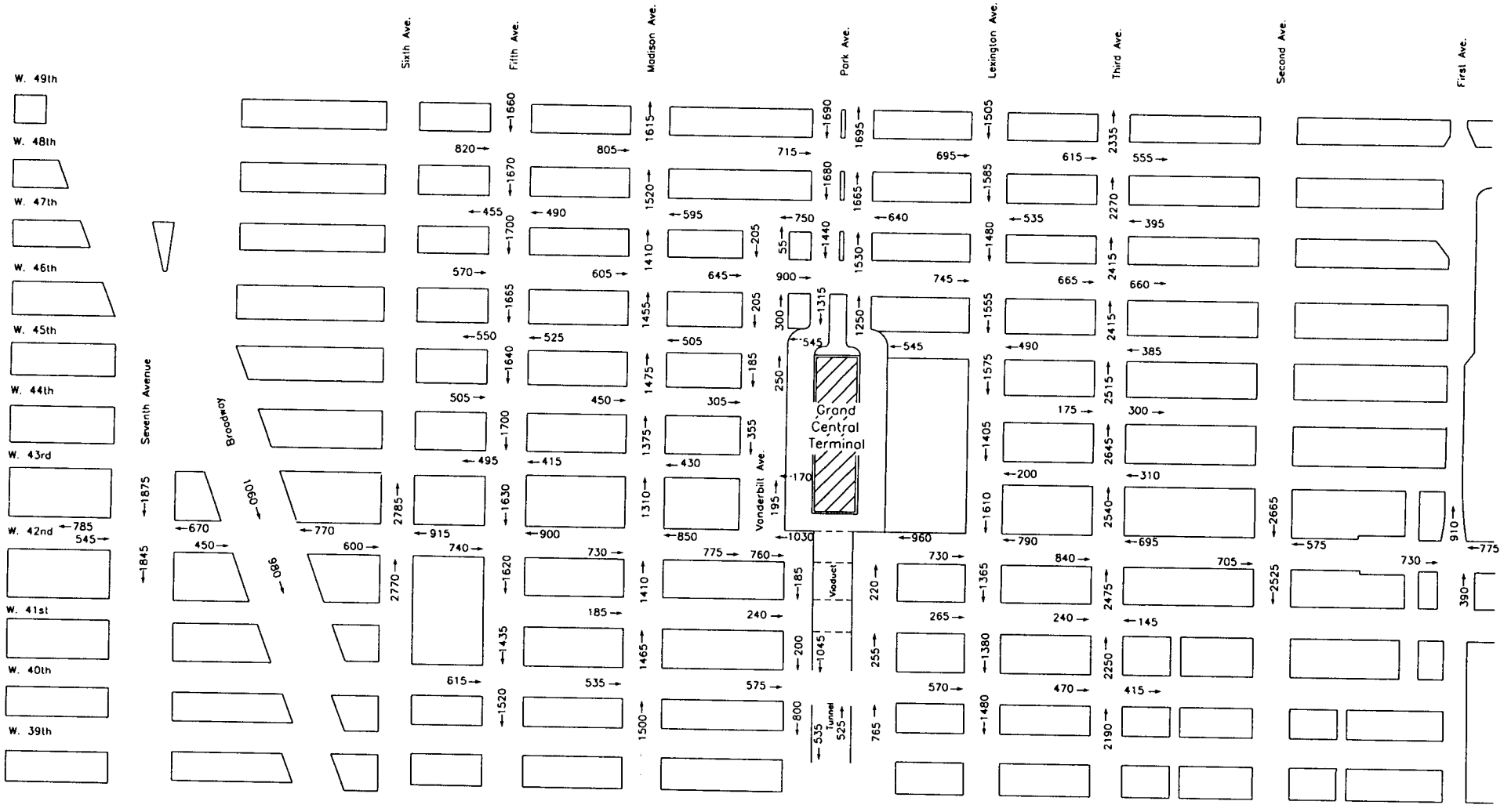
2010 BUILD TRAFFIC VOLUMES



INTERSECTION APPROACH VOLUMES : BUILD AM PEAK



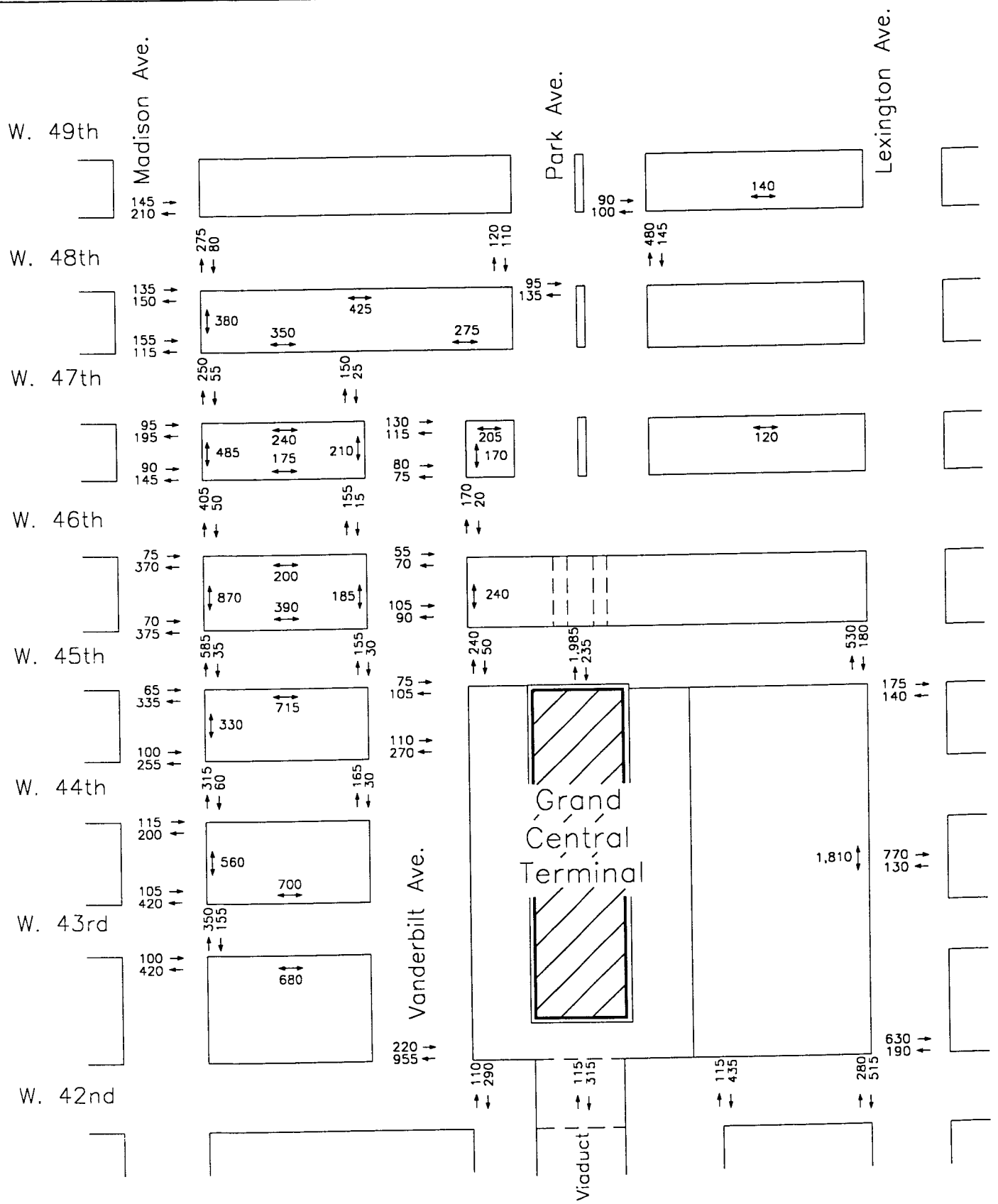
INTERSECTION APPROACH VOLUMES : BUILD MIDDAY PEAK



INTERSECTION APPROACH VOLUMES : BUILD PM PEAK

FIGURE M-4

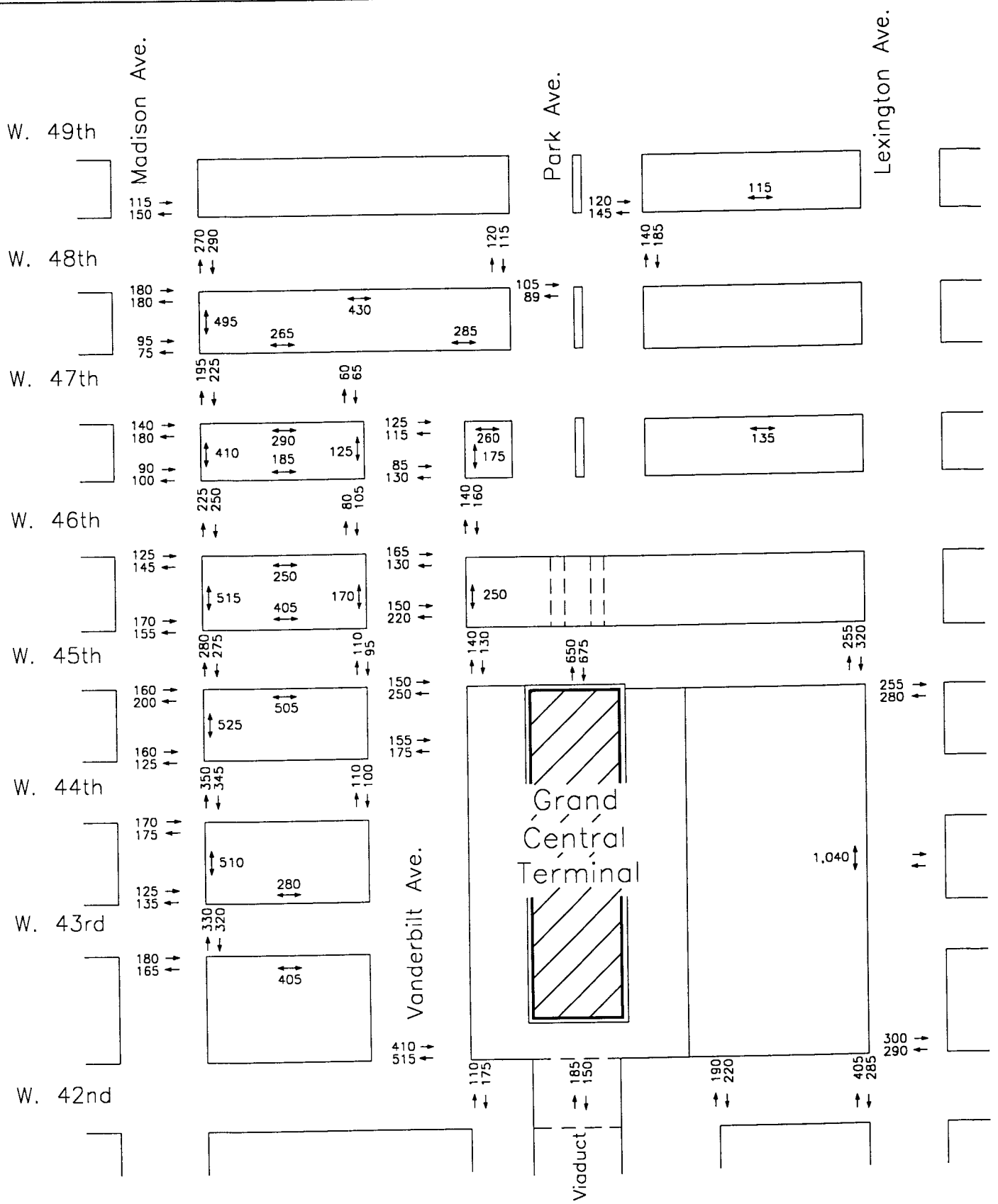
EXISTING GCT EXTERNAL PEDESTRIAN VOLUMES



LIRR–GCT
EAST SIDE ACCESS

EXISTING PEDESTRIAN VOLUMES
AM PEAK 15 MINUTES

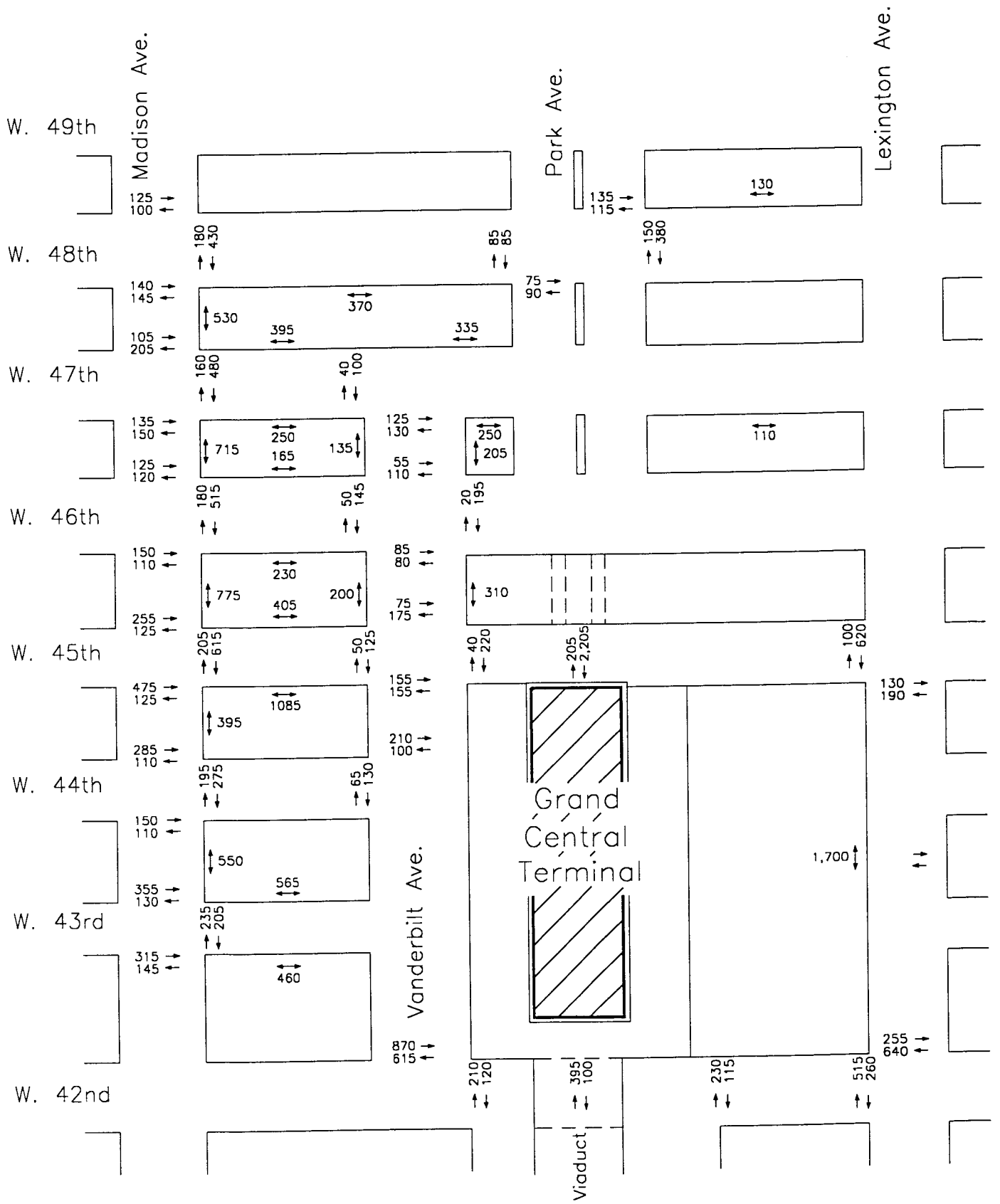
Eng-Wong, Taub & Associates
Traffic and Transportation Consultants



LIRR–GCT
EAST SIDE ACCESS

EXISTING PEDESTRIAN VOLUMES
MIDDAY PEAK 15 MINUTES

Eng-Wong, Taub & Associates
Traffic and Transportation Consultants



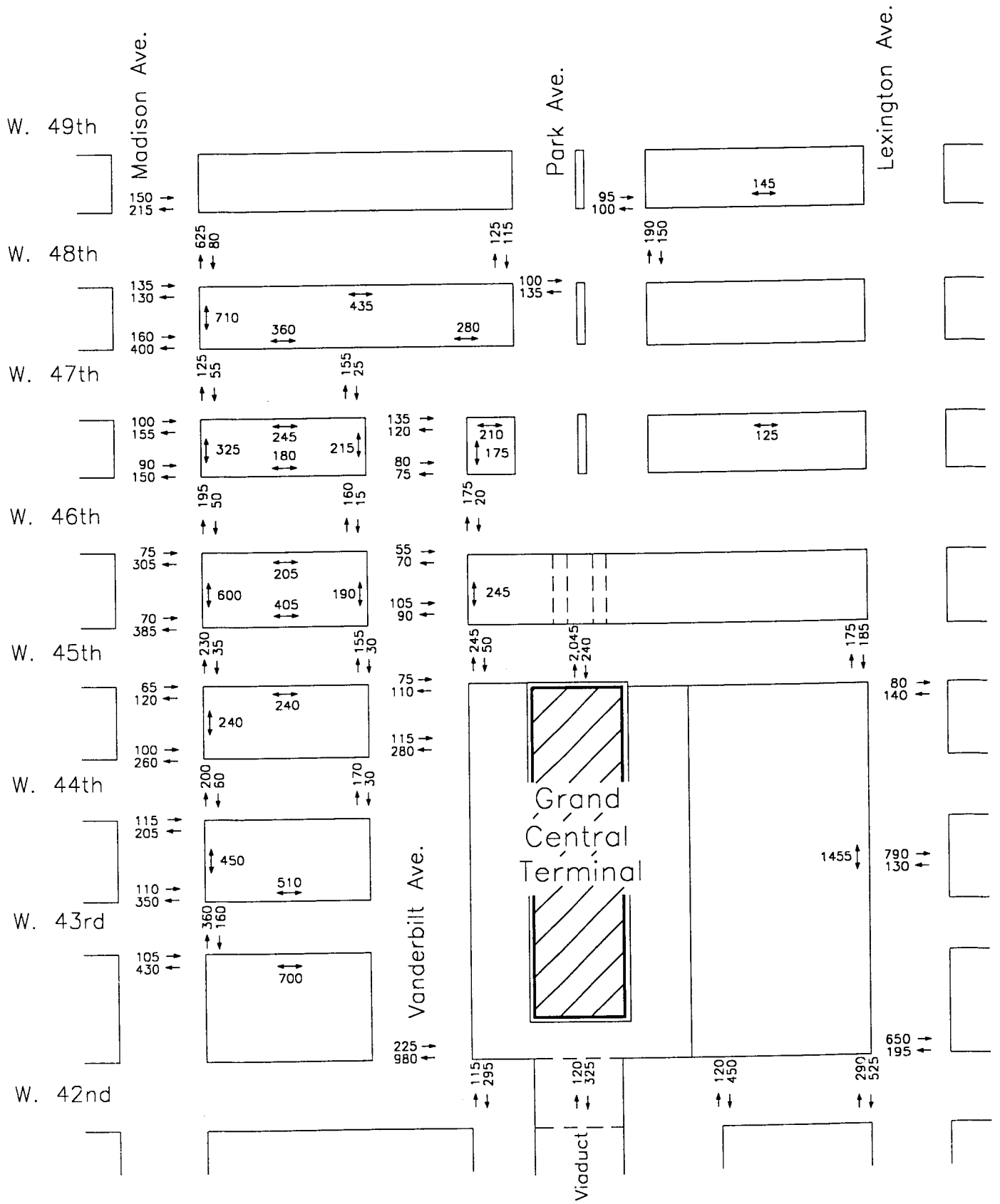
LIRR–GCT
EAST SIDE ACCESS

EXISTING PEDESTRIAN VOLUMES
PM PEAK 15 MINUTES

Eng-Wong, Taub & Associates
Traffic and Transportation Consultants

FIGURE M-5

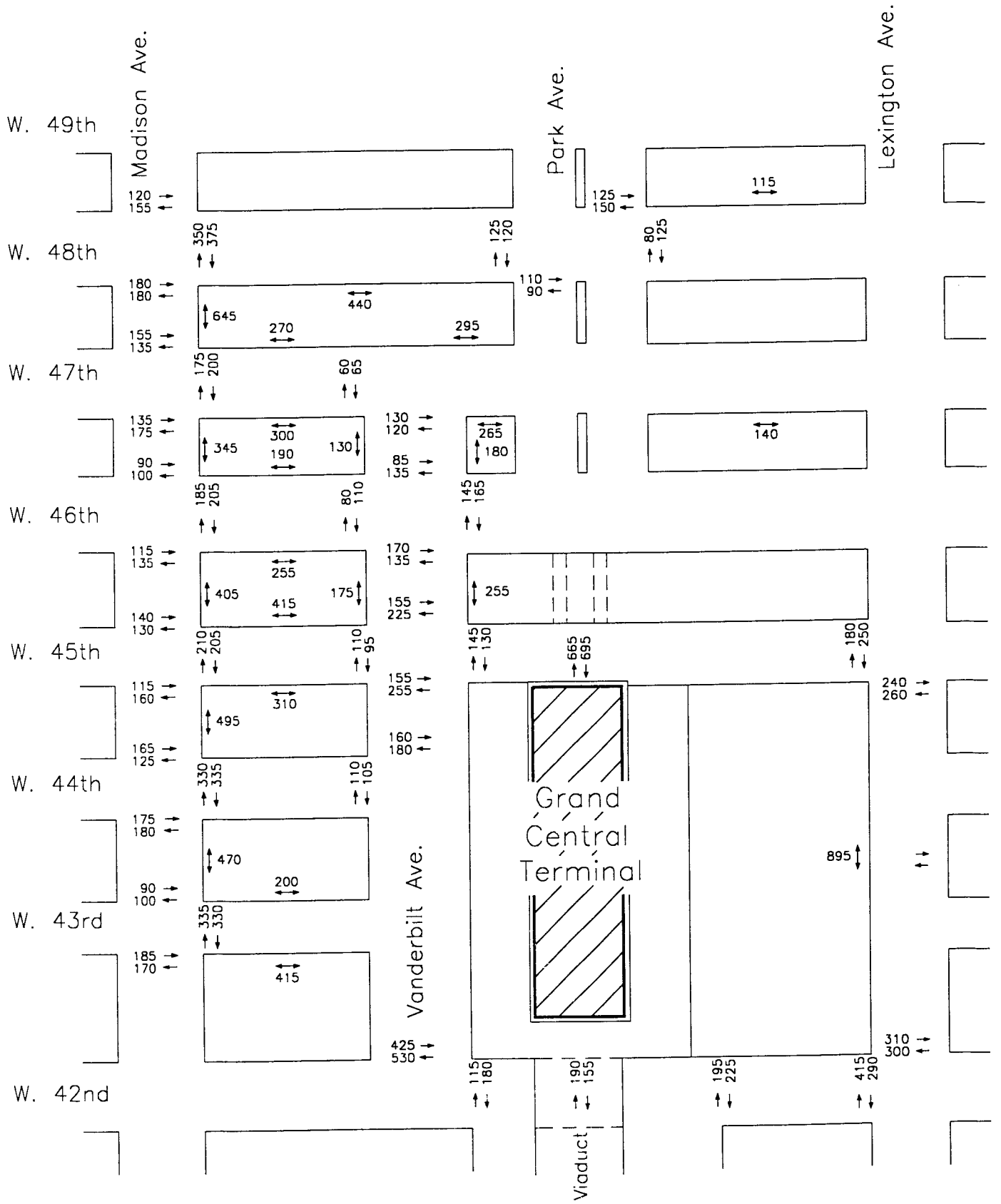
2010 NO BUILD
GCT EXTERNAL
PEDESTRIAN VOLUMES



LIRR–GCT
EAST SIDE ACCESS

2010 NO BUILD PEDESTRIAN VOLUMES
AM PEAK 15 MINUTES

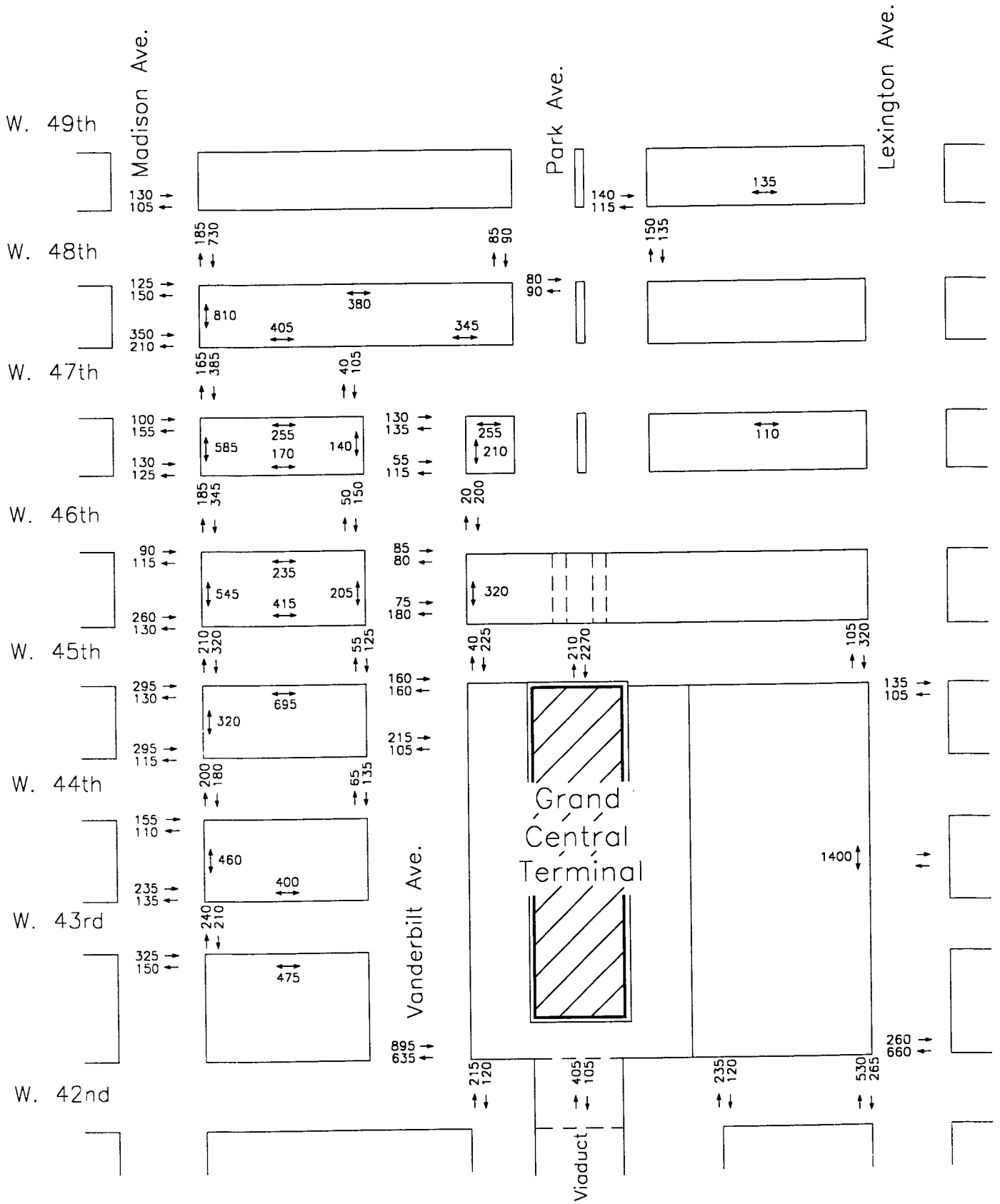
Eng-Wong, Taub & Associates
Traffic and Transportation Consultants



LIRR–GCT
EAST SIDE ACCESS

2010 NO BUILD PEDESTRIAN VOLUMES
MIDDAY PEAK 15 MINUTES

Eng-Wong, Taub & Associates
Traffic and Transportation Consultants



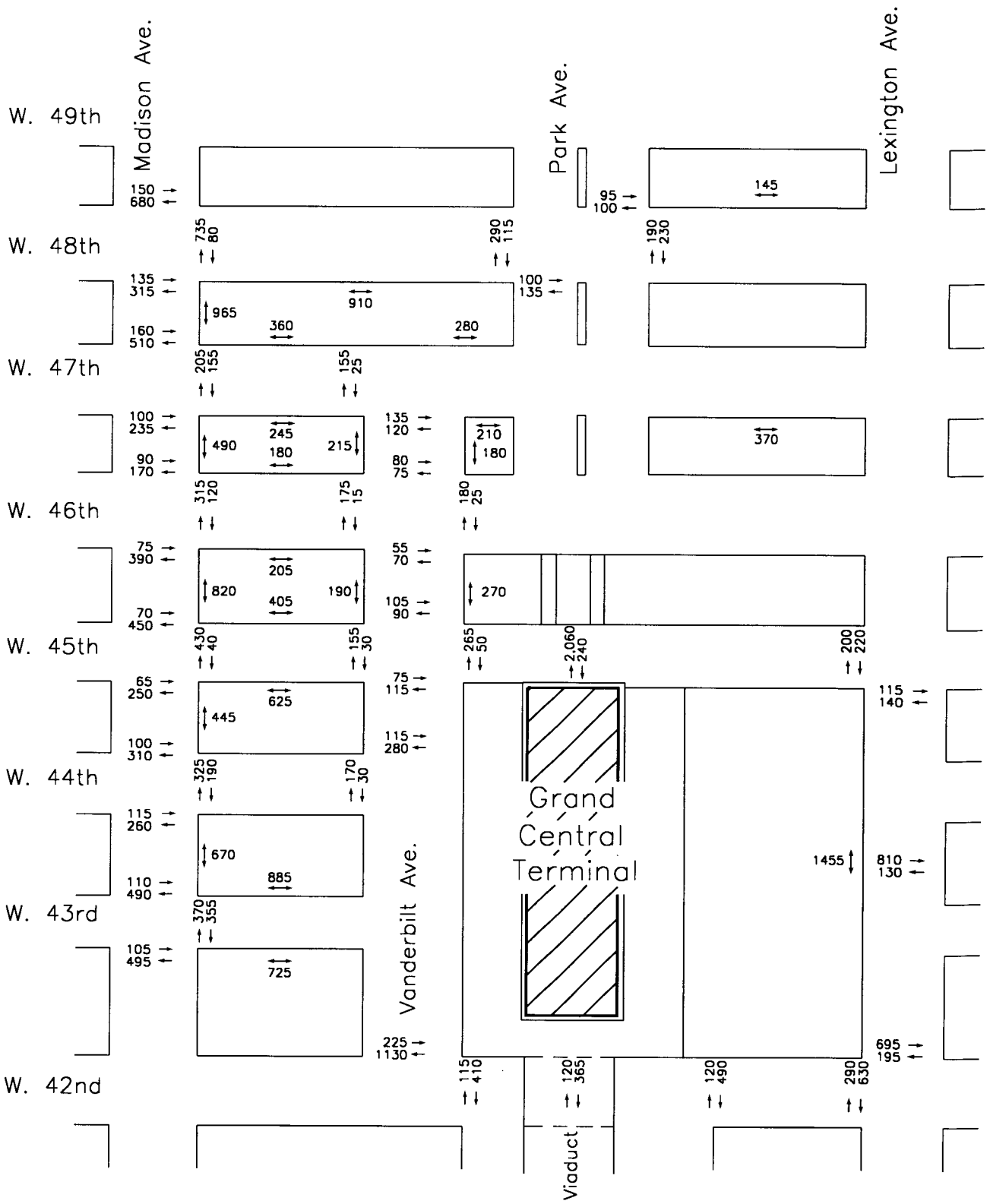
LIRR–GCT
EAST SIDE ACCESS

2010 NO BUILD PEDESTRIAN VOLUMES
PM PEAK 15 MINUTES

Eng-Wong, Taub & Associates
Traffic and Transportation Consultants

FIGURE M-6

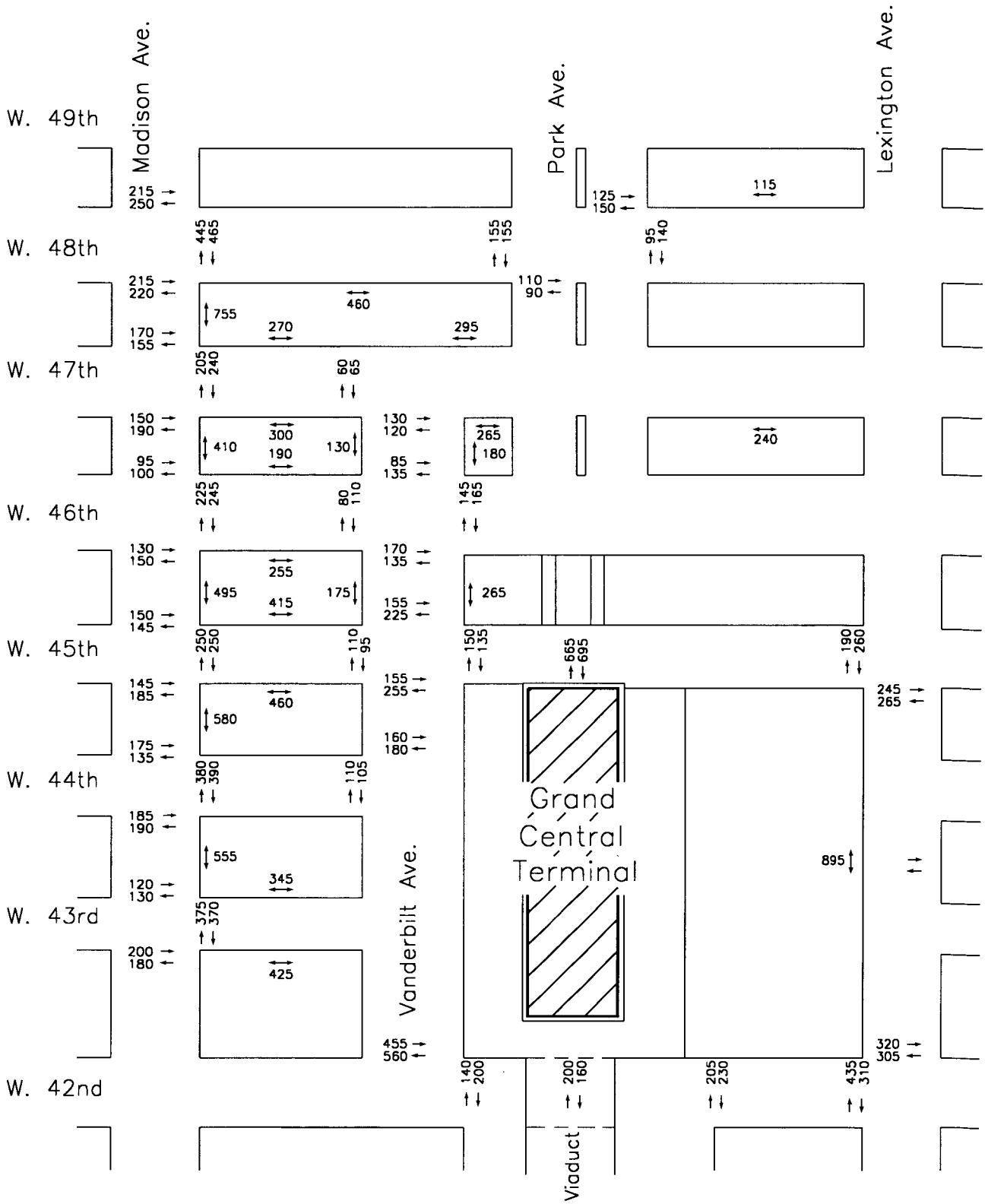
2010 BUILD
GCT EXTERNAL
PEDESTRIAN VOLUMES



LIRR–GCT
EAST SIDE ACCESS

2010 BUILD PEDESTRIAN VOLUMES
AM PEAK 15 MINUTES

Eng-Wong, Taub & Associates
Traffic and Transportation Consultants



LIRR–GCT
EAST SIDE ACCESS

2010 BUILD PEDESTRIAN VOLUMES
MIDDAY PEAK 15 MINUTES

Eng-Wong, Taub & Associates
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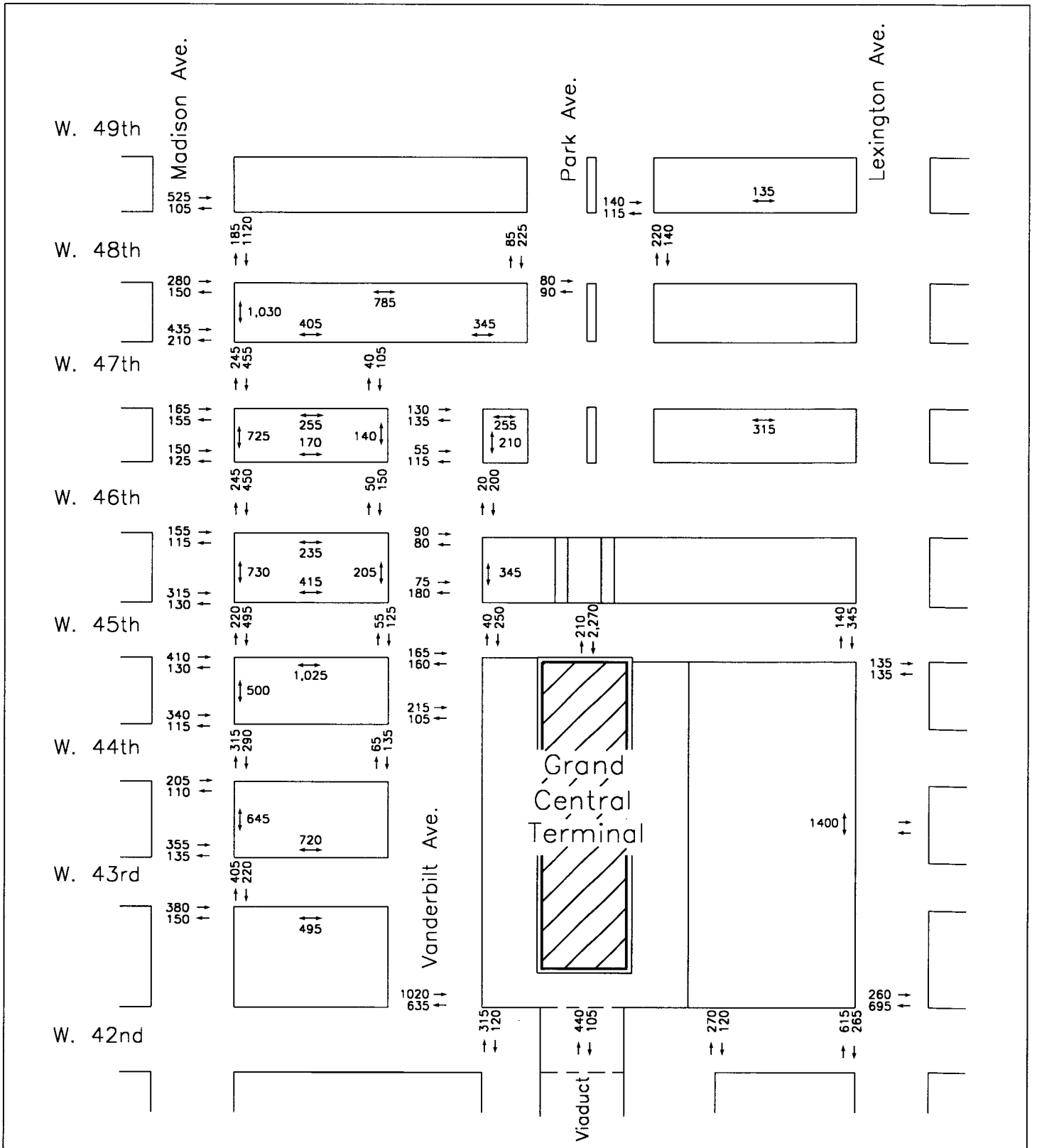


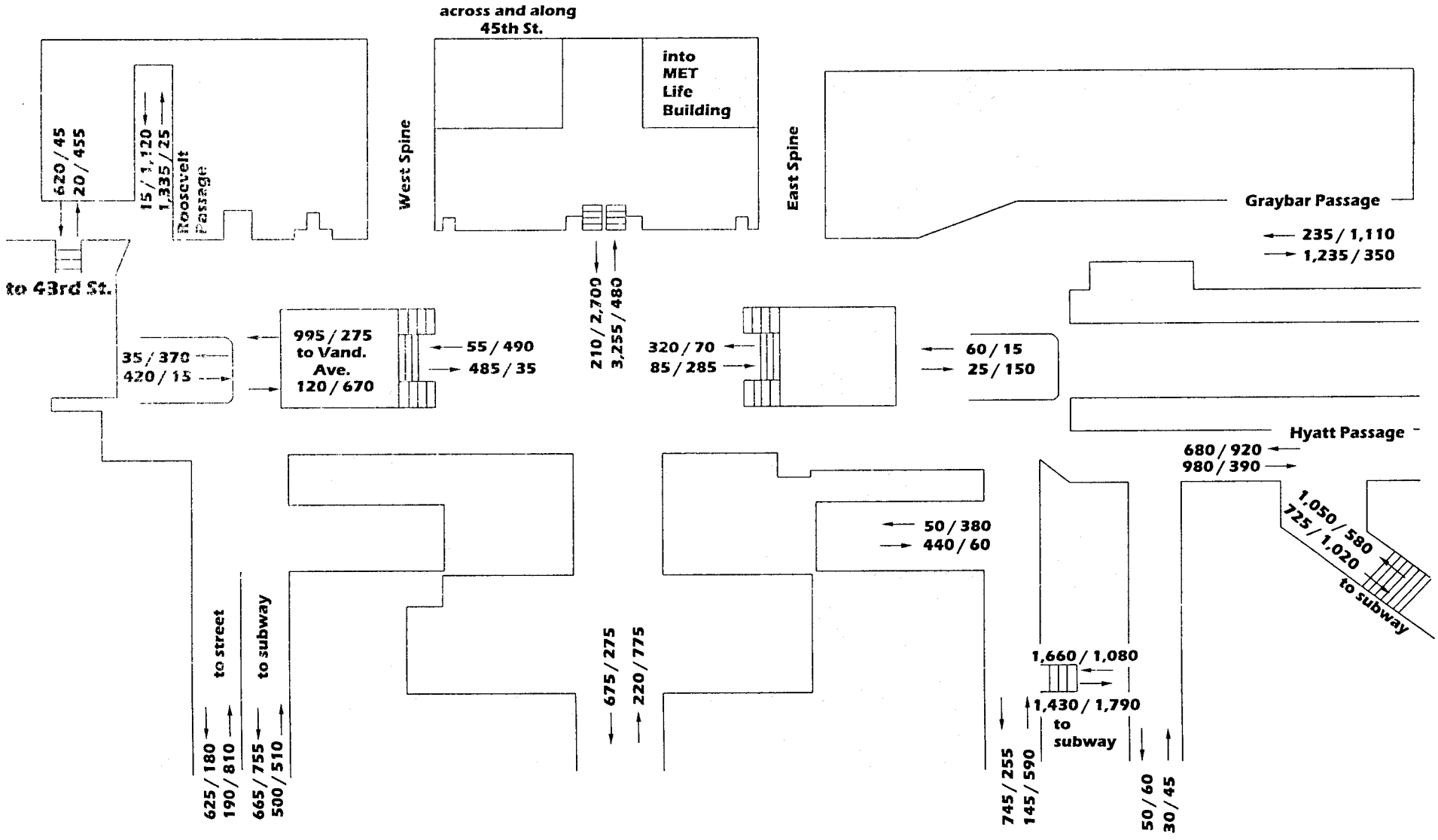
LIRR–GCT
EAST SIDE ACCESS

2010 BUILD PEDESTRIAN VOLUMES
PM PEAK 15 MINUTES

Eng-Wong, Taub & Associates
Traffic and Transportation Consultants

FIGURE M-7

GCT UPPER CONCOURSE PEDESTRIAN VOLUMES



AM / PM

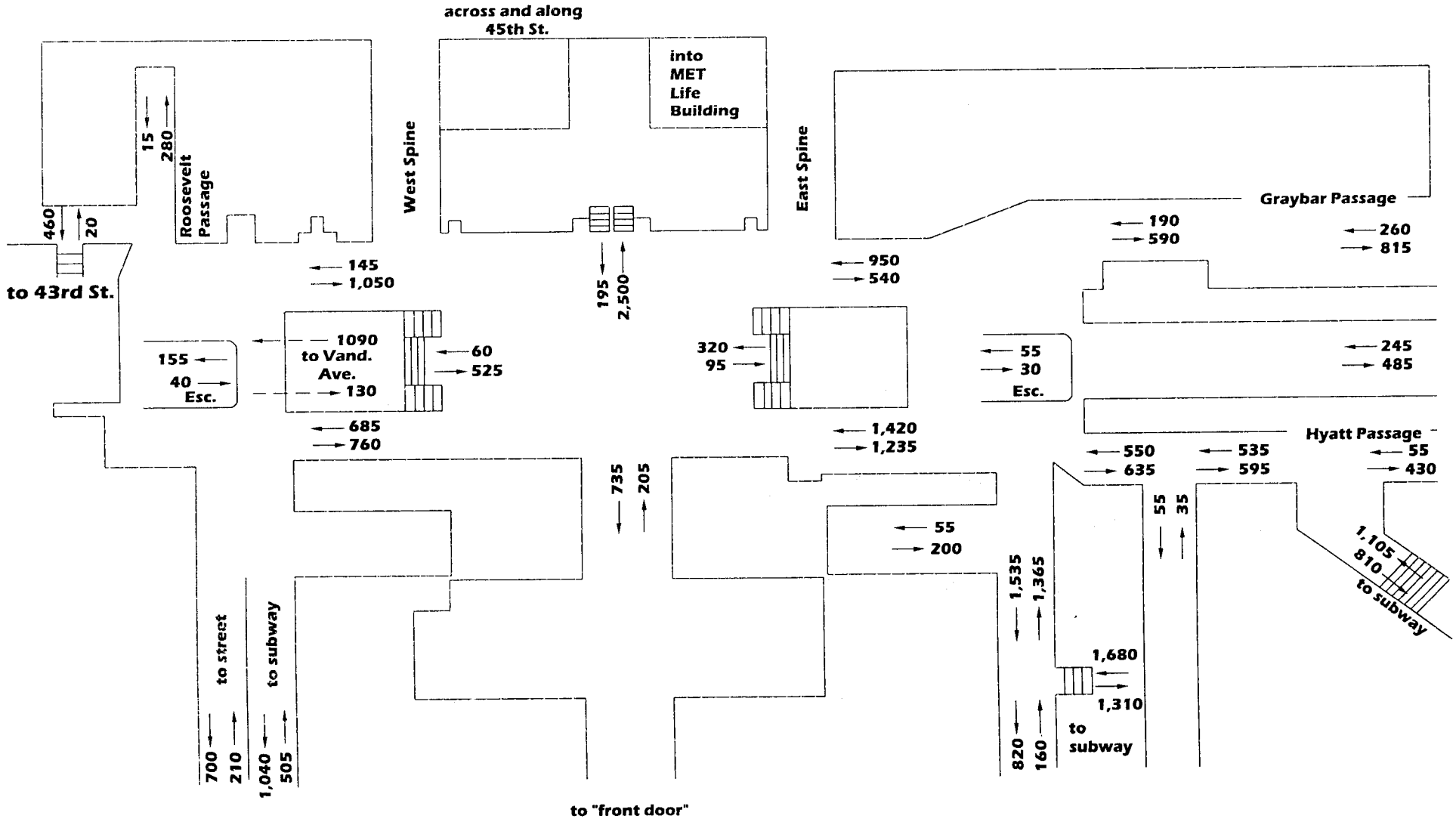
GCT UPPER CONCOURSE

1999 Existing Peak 15-Minute

Pedestrian Flows

Eng-Wong, Taub & Associates

Traffic and Transportation Consultants



GCT UPPER CONCOURSE

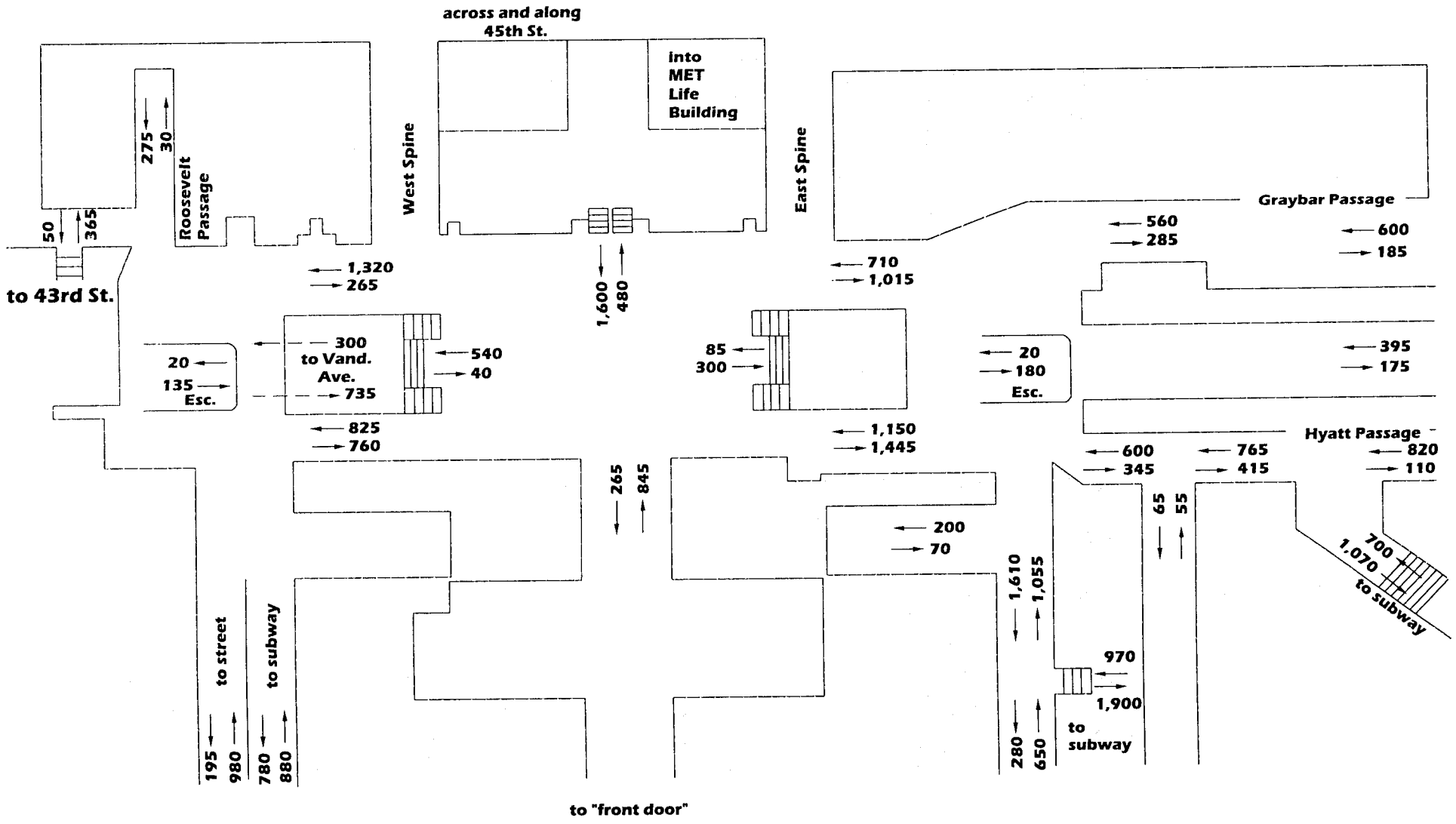
2010 Future No Build Conditions

Pedestrian Flows

AM Peak 15 minutes

Eng-Wong, Taub & Associates

Traffic and Transportation Consultants



GCT UPPER CONCOURSE

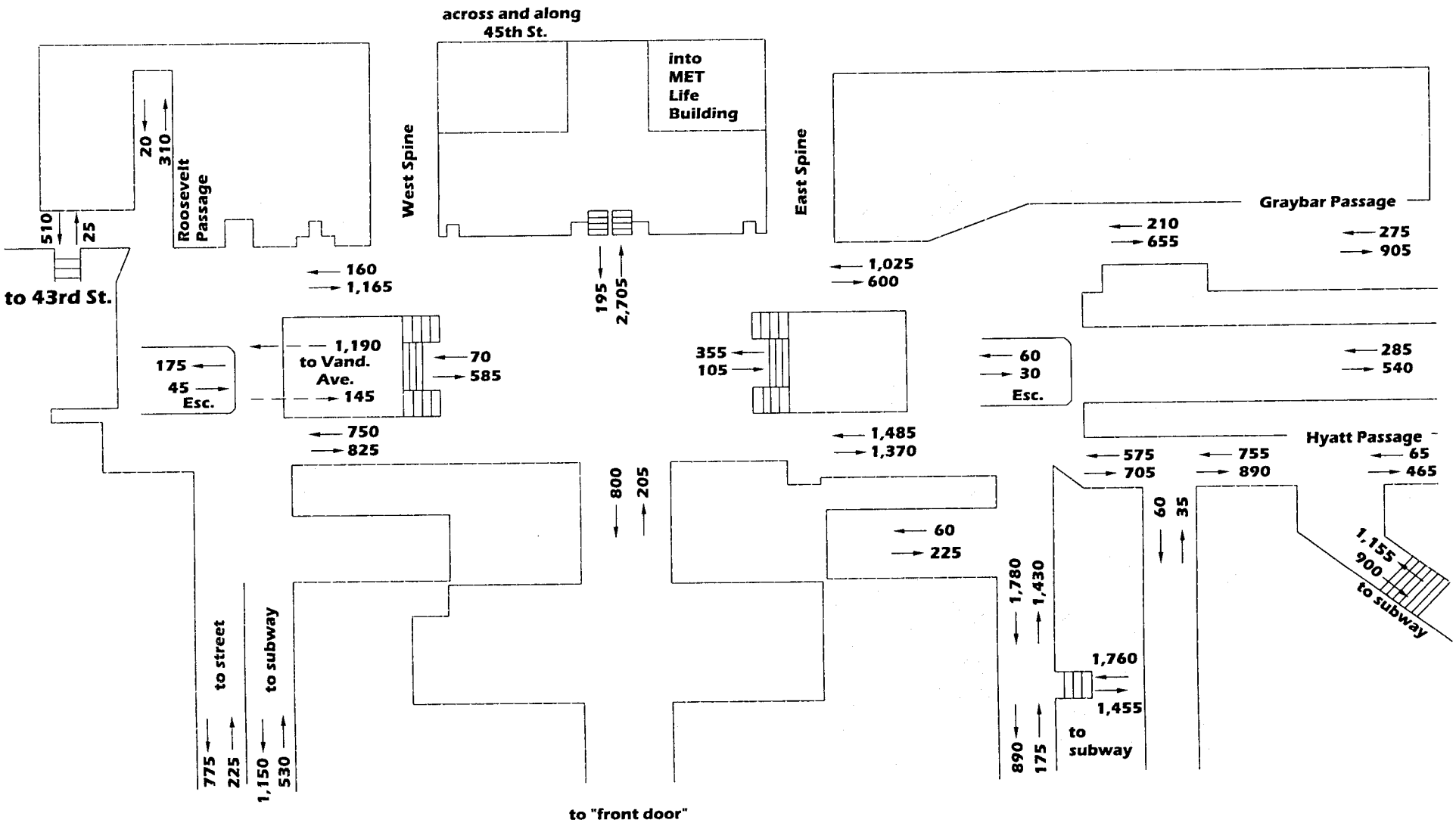
2010 Future No Build Conditions

Pedestrian Flows

PM Peak 15 minutes

Eng-Wong, Taub & Associates

Traffic and Transportation Consultants



GCT UPPER CONCOURSE

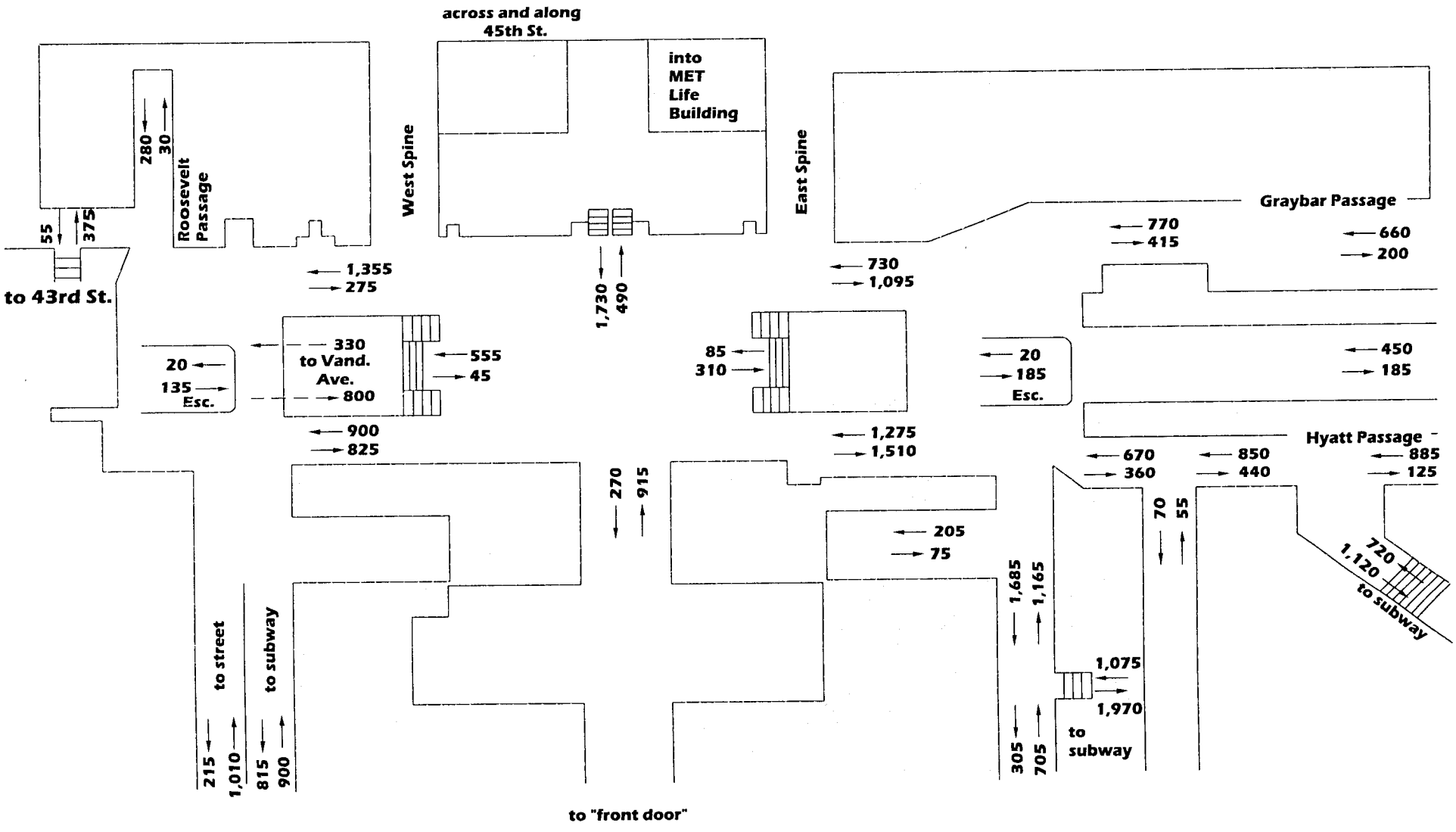
2020 Future No Build Conditions

Pedestrian Flows

AM Peak 15 minutes

Eng-Wong, Taub & Associates

Traffic and Transportation Consultants



GCT UPPER CONCOURSE

2020 Future No Build Conditions

Pedestrian Flows

PM Peak 15 minutes

Eng-Wong, Taub & Associates

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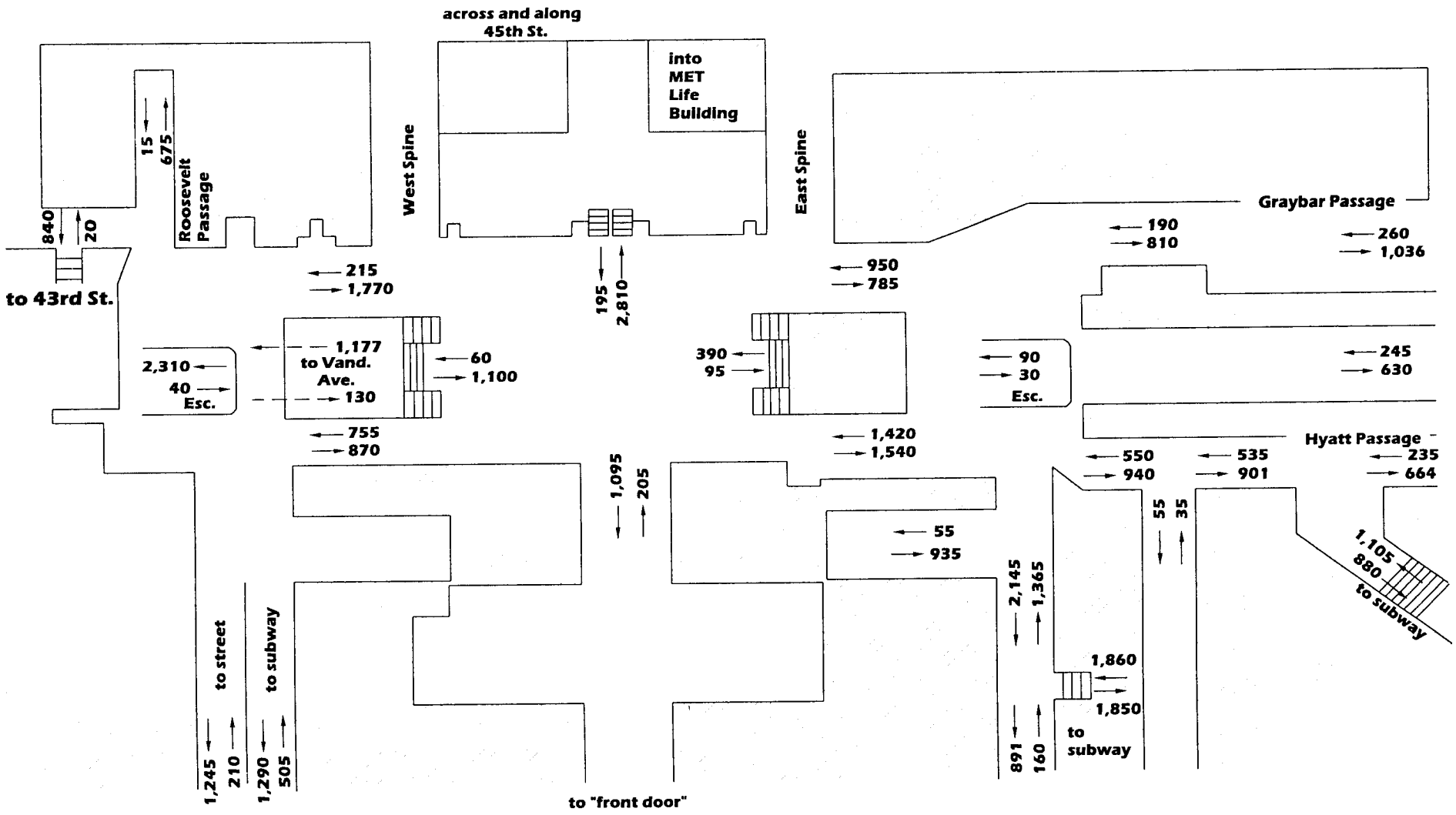

GCT UPPER CONCOURSE

2010 Future Build Conditions

AM Peak 15 minutes

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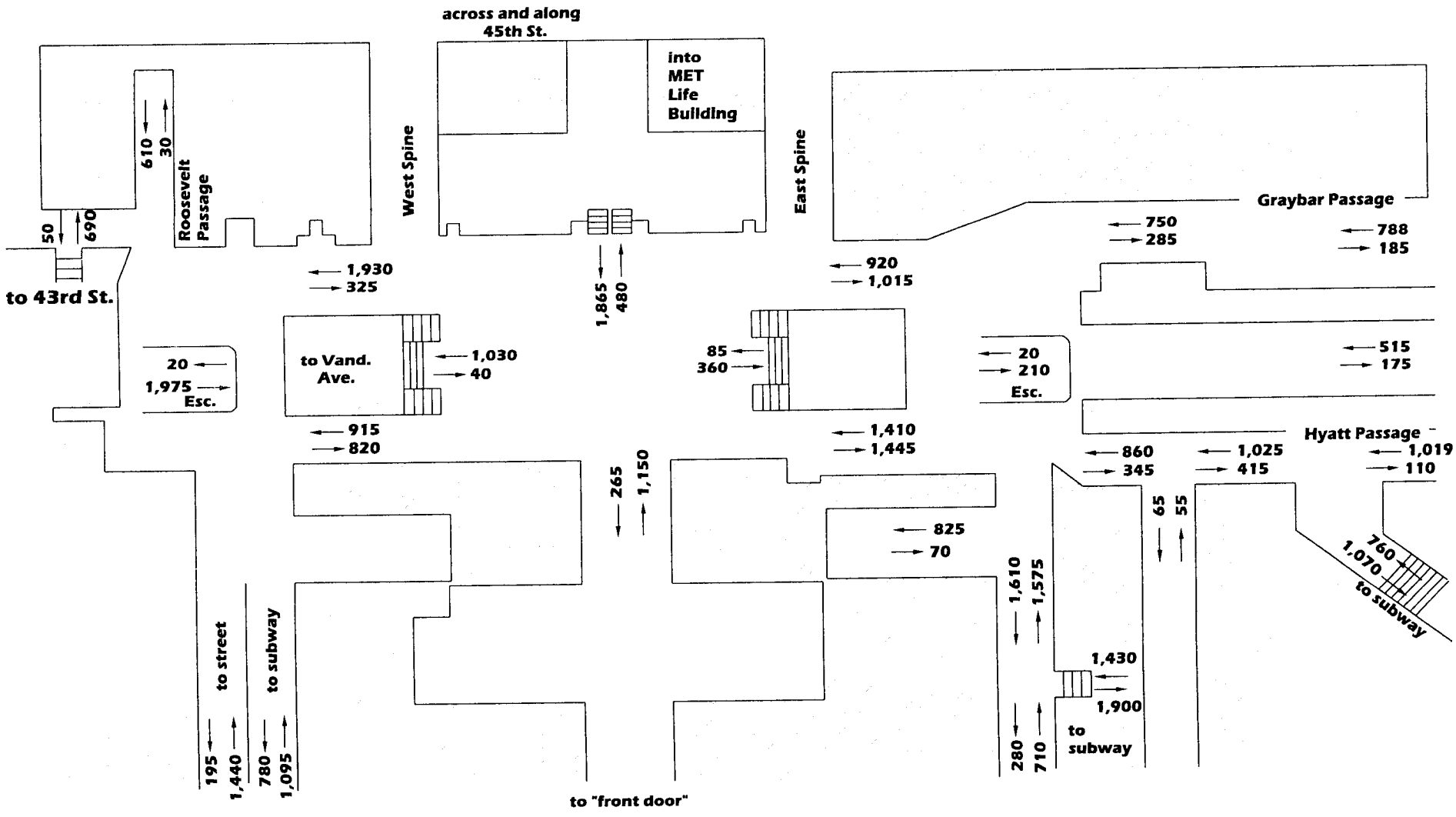


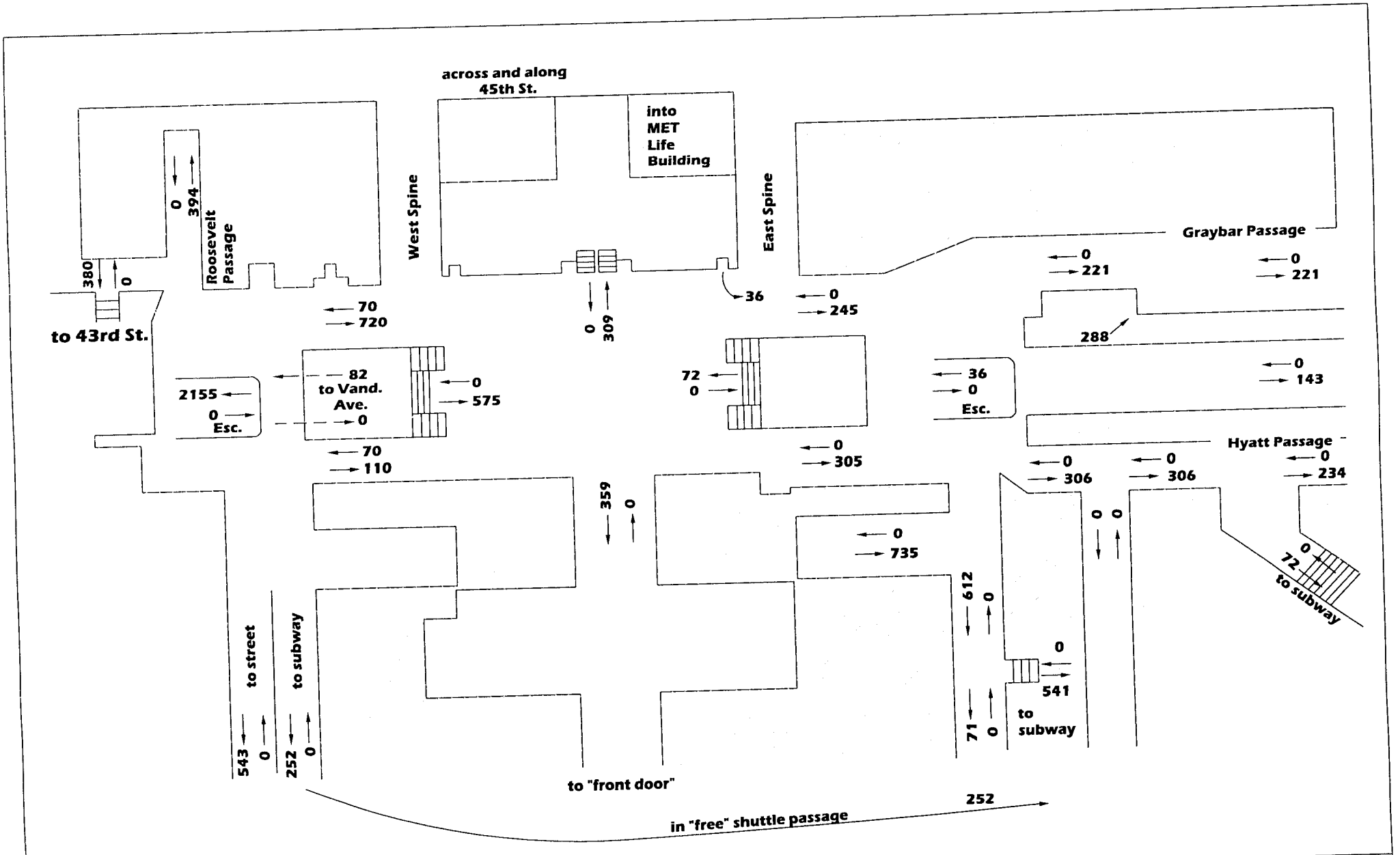
GCT UPPER CONCOURSE

2010 Future Build Conditions

PM Peak 15 minutes

Eng-Wong, Taub & Associates

Traffic and Transportation Consultants



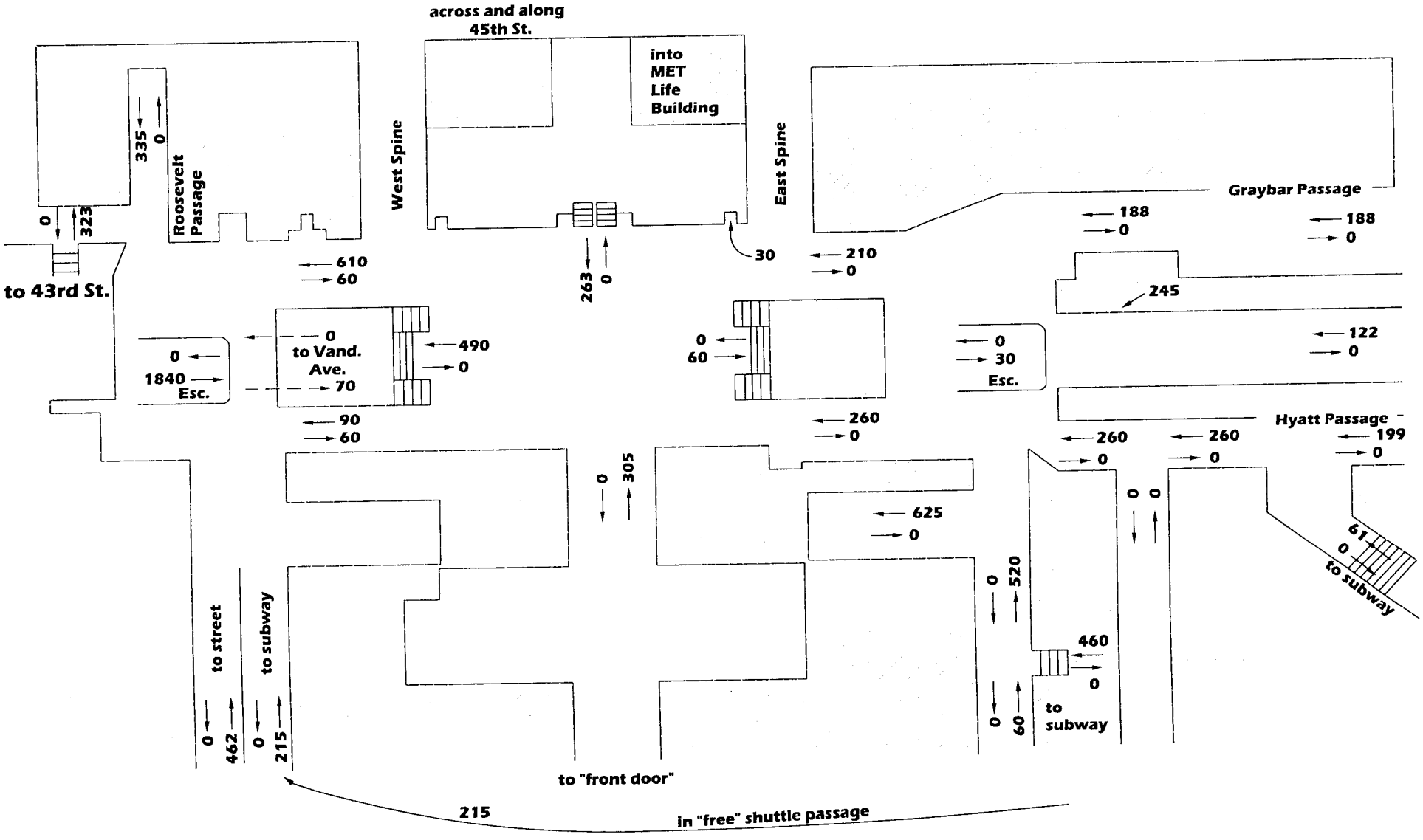
GCT UPPER CONCOURSE

2010 Future Build Increment

Pedestrian Flows
AM Peak 15 minutes

Eng-Wong, Taub & Associates

Traffic and Transportation Consultants



GCT UPPER CONCOURSE

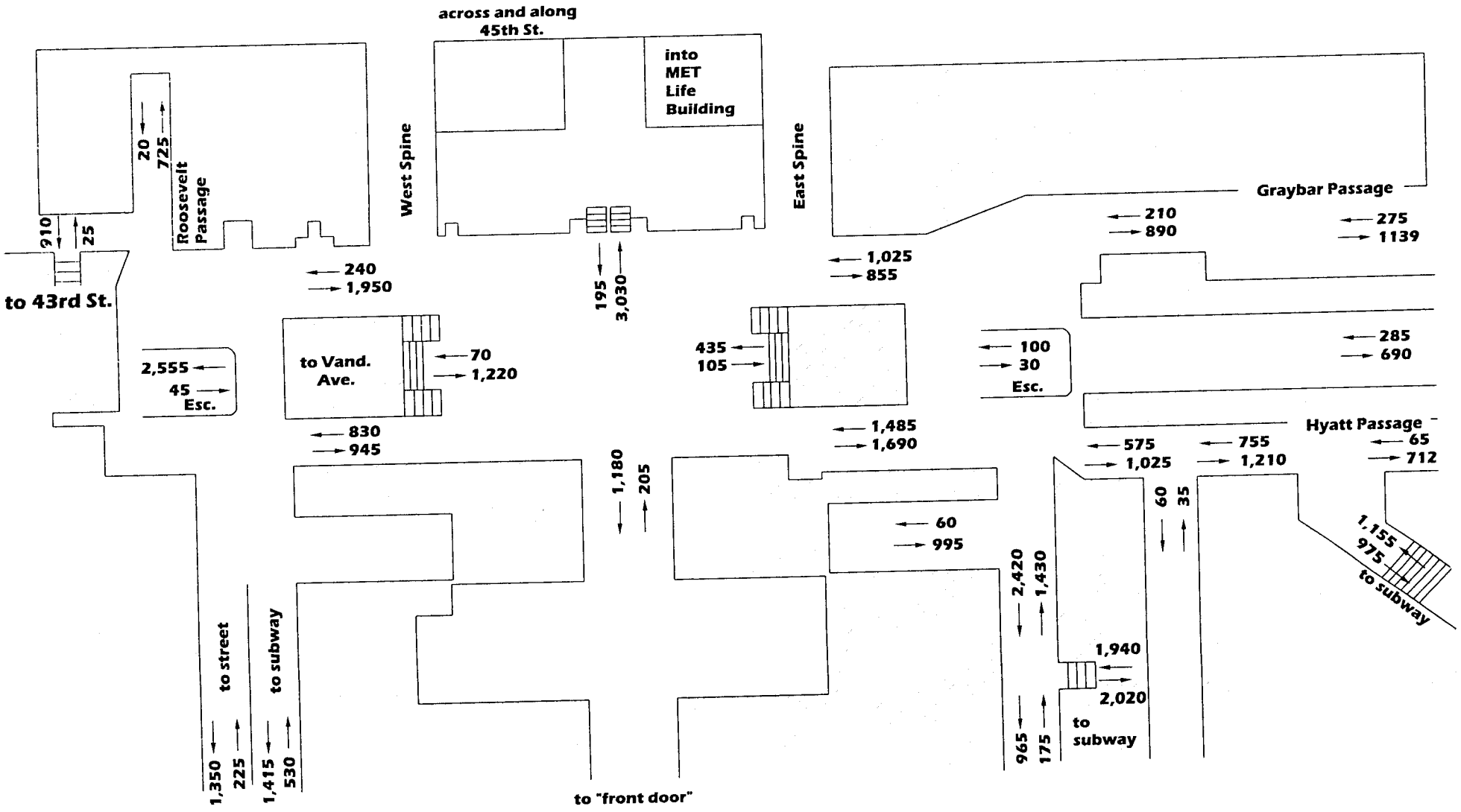
2010 Future Build Increment

Pedestrian Flows

PM Peak 15 minutes

Eng-Wong, Taub & Associates

Traffic and Transportation Consultants



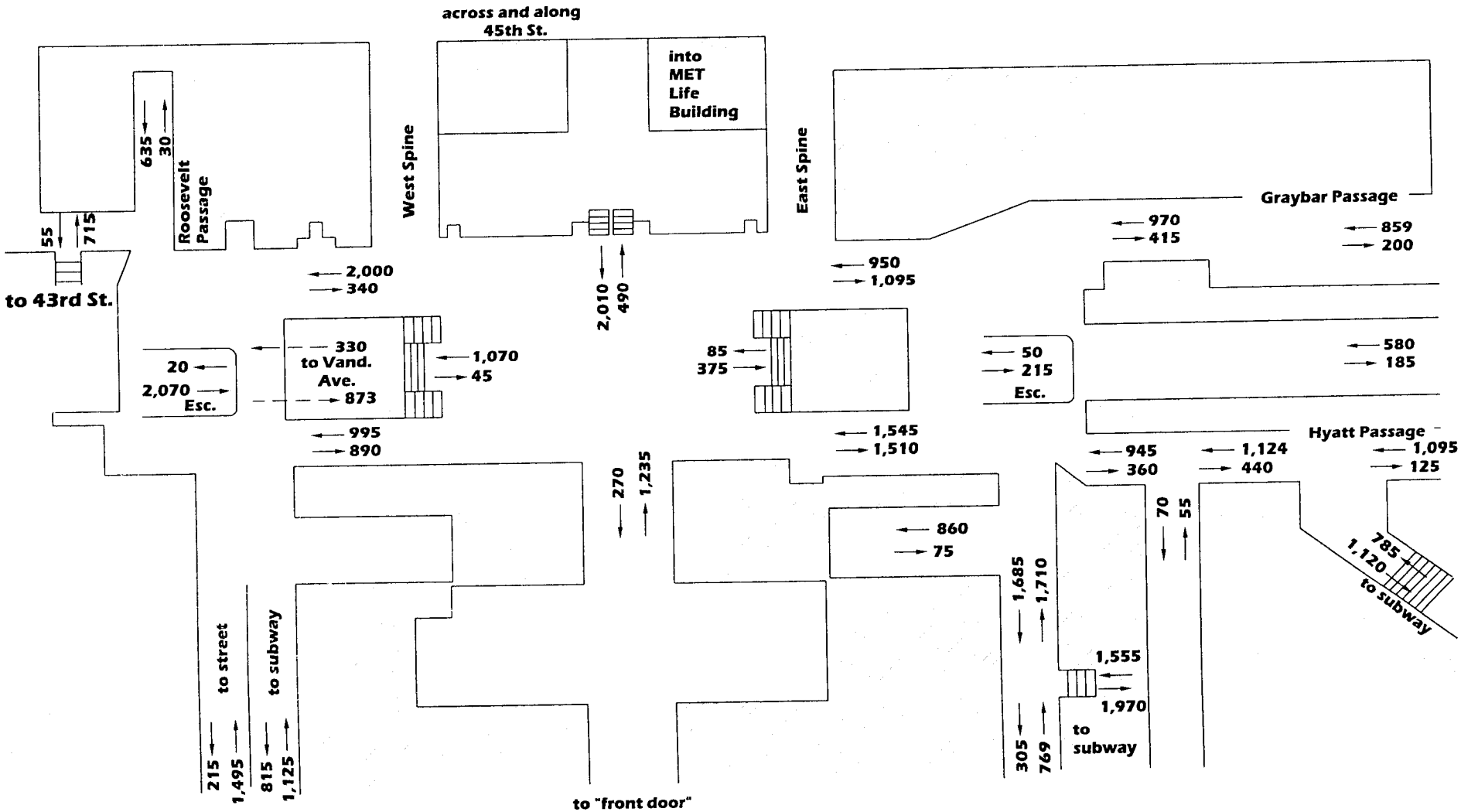
GCT UPPER CONCOURSE

2020 Future Build Conditions

AM Peak 15 minutes

Eng-Wong, Taub & Associates

Traffic and Transportation Consultants



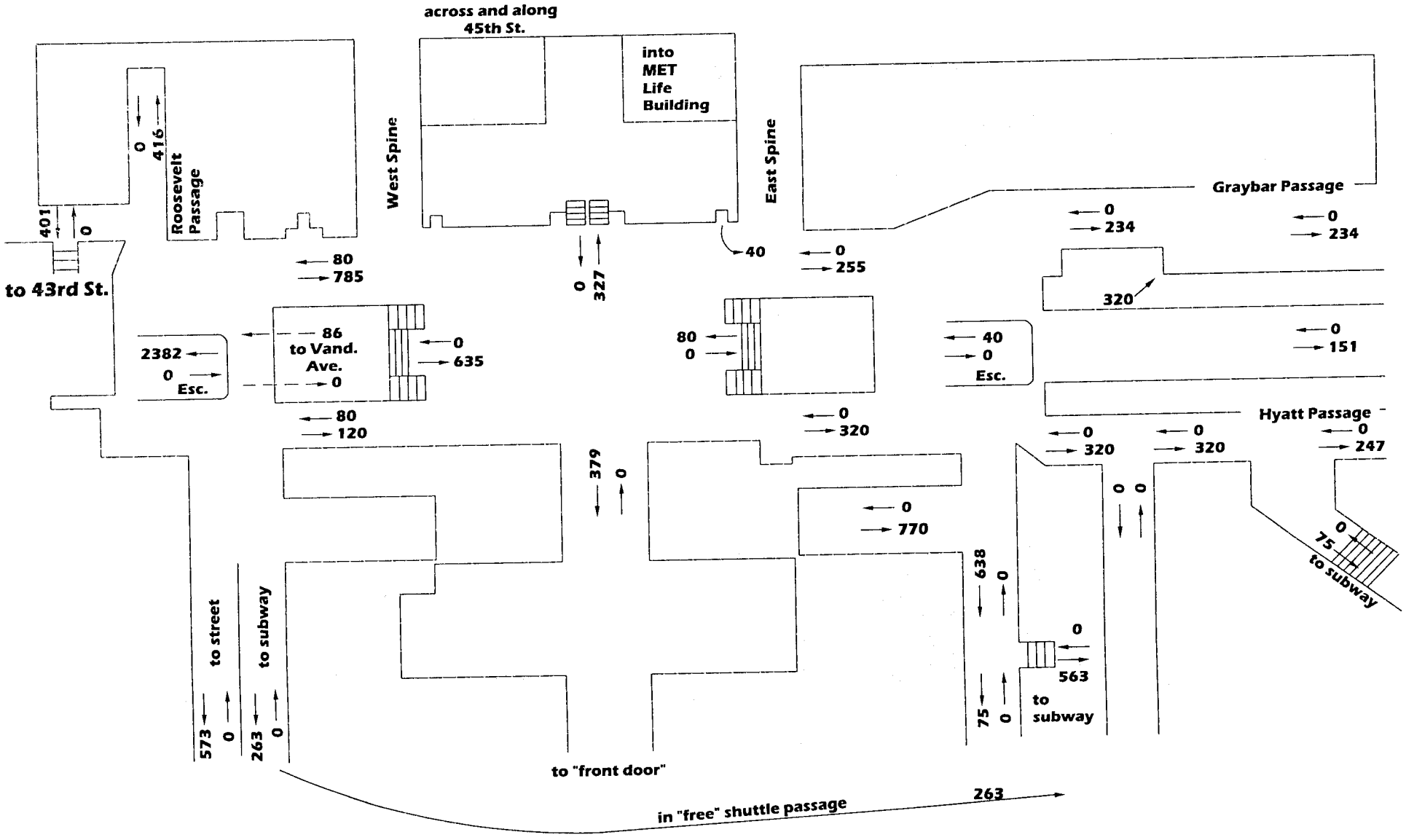
GCT UPPER CONCOURSE

2020 Future Build Conditions

PM Peak 15 minutes

Eng-Wong, Taub & Associates

Traffic and Transportation Consultants



GCT UPPER CONCOURSE

2020 Future Build Increment

Pedestrian Flows

AM Peak 15 minutes

Eng-Wong, Taub & Associates

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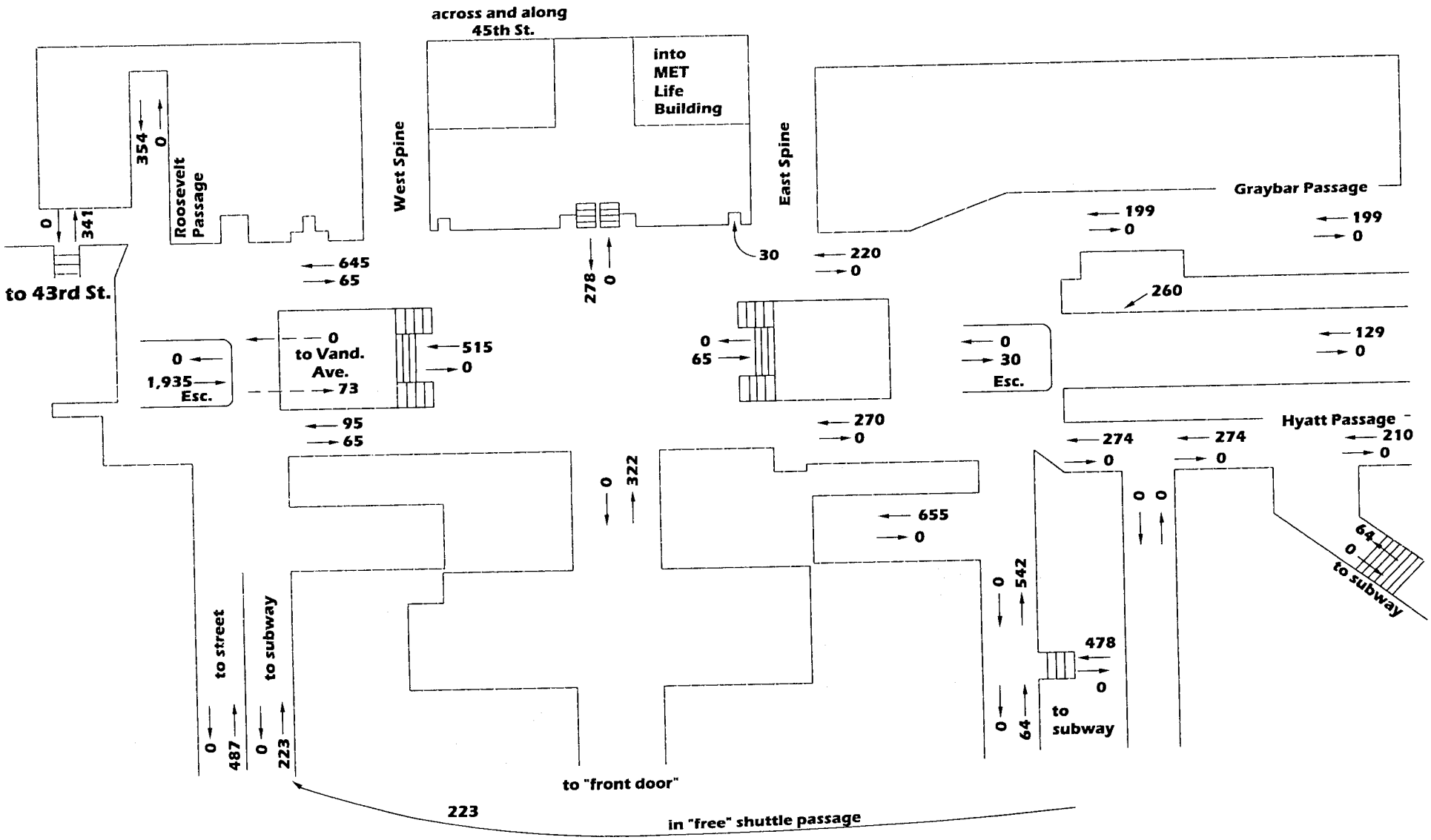


GCT UPPER CONCOURSE

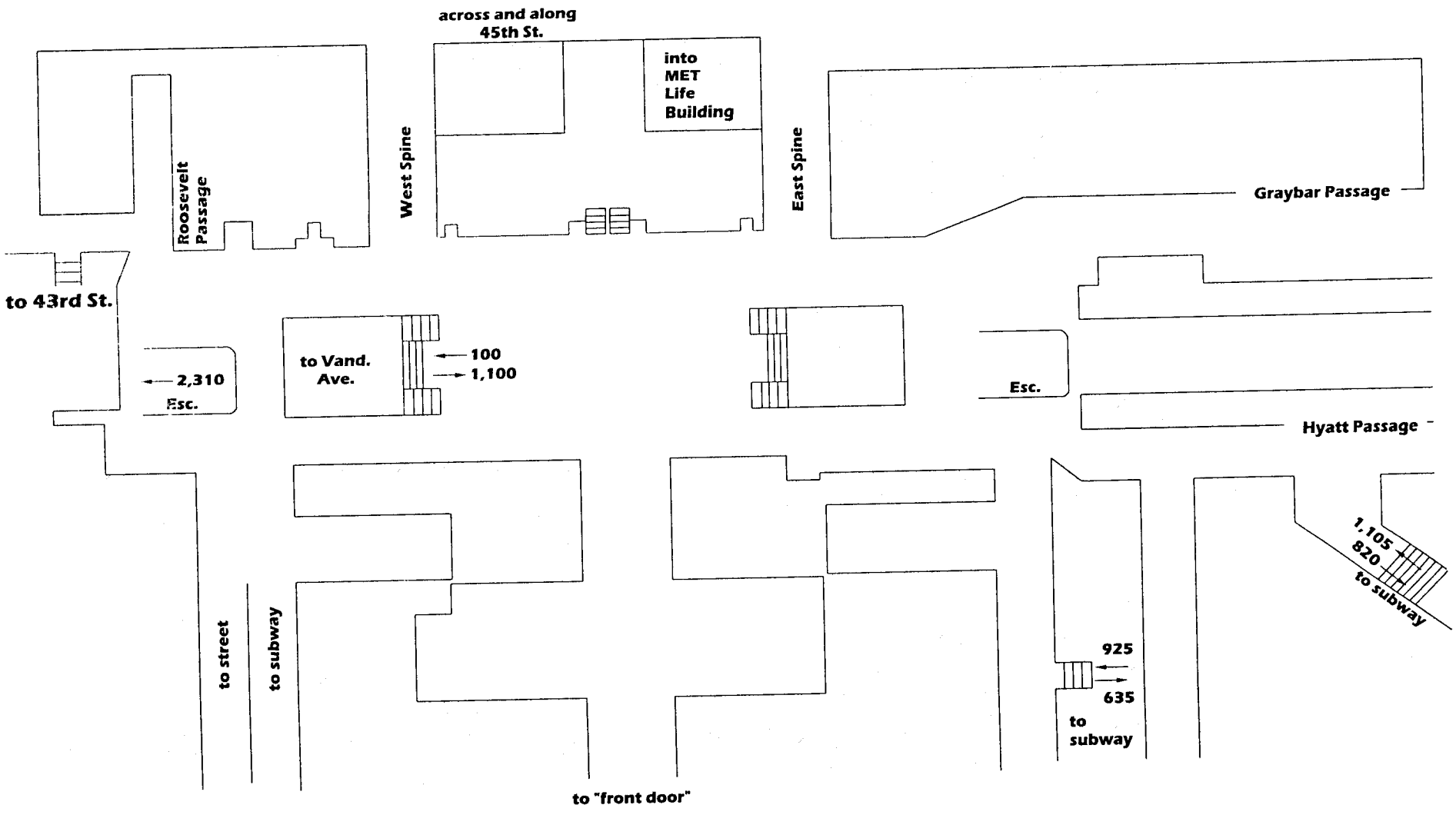
2020 Future Build Increment

Pedestrian Flows

PM Peak 15 minutes

Eng-Wong, Taub & Associates

Traffic and Transportation Consultants



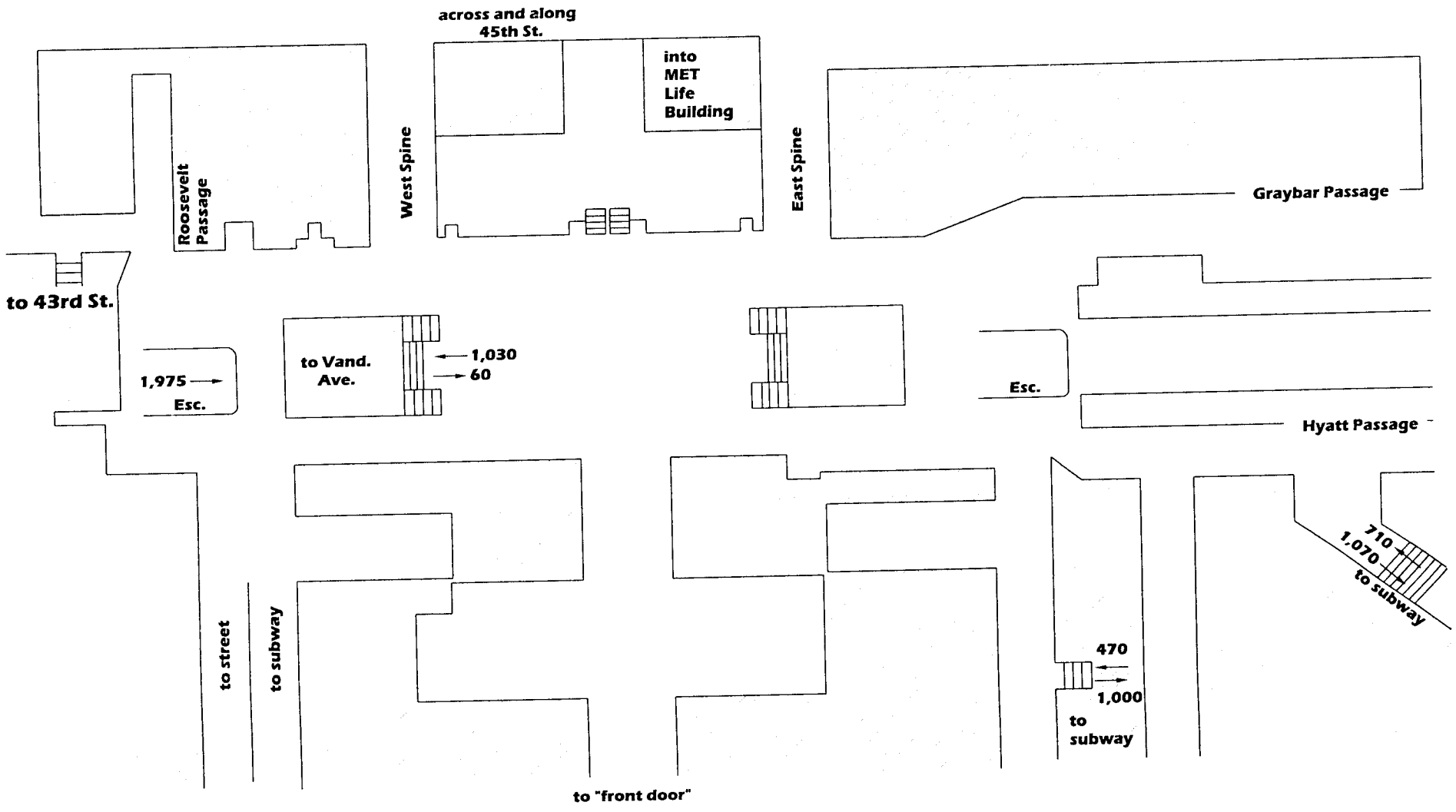
GCT UPPER CONCOURSE

2010 Mitigated Build Conditions

AM Peak 15 minutes

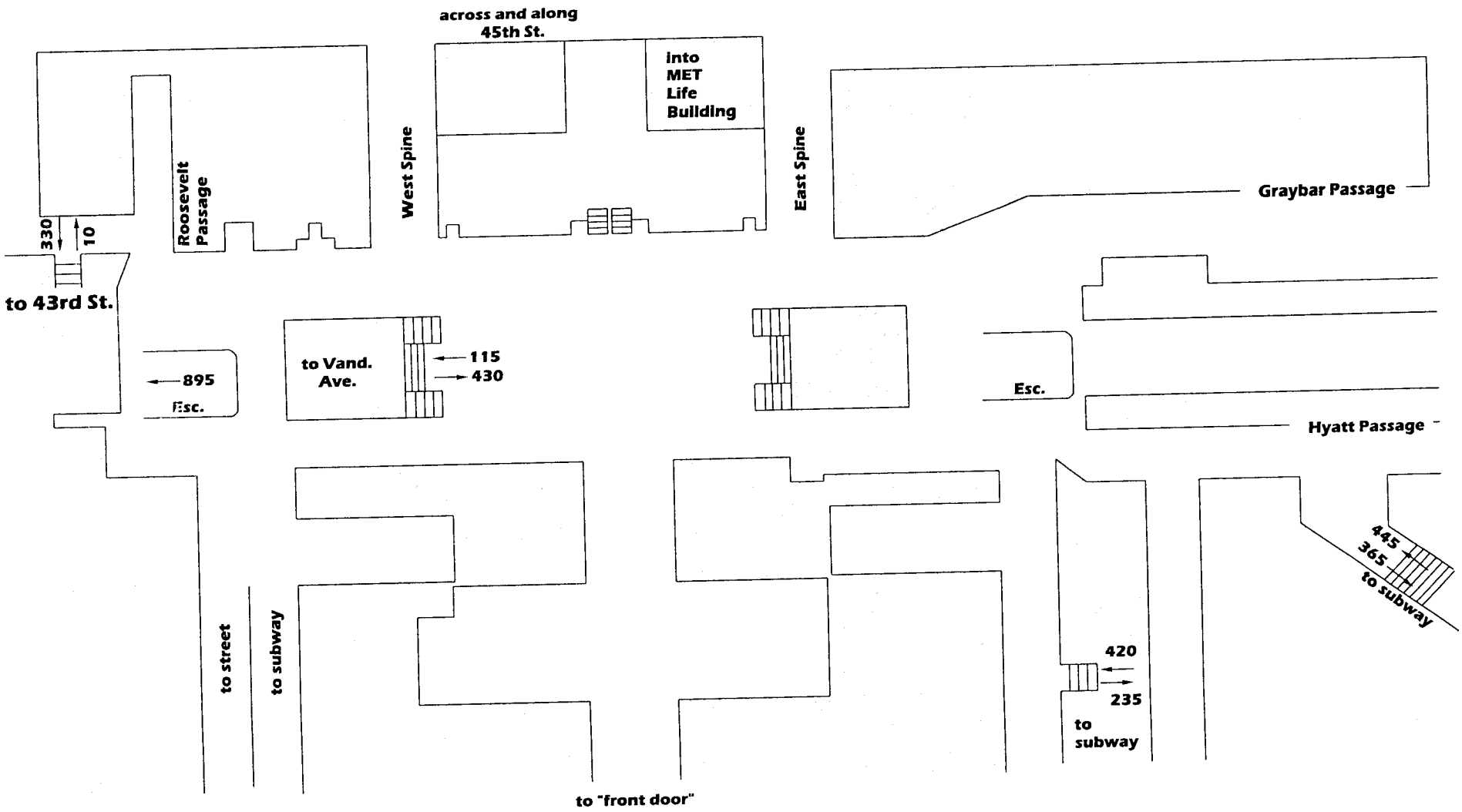
Eng-Wong, Taub & Associates

Traffic and Transportation Consultants



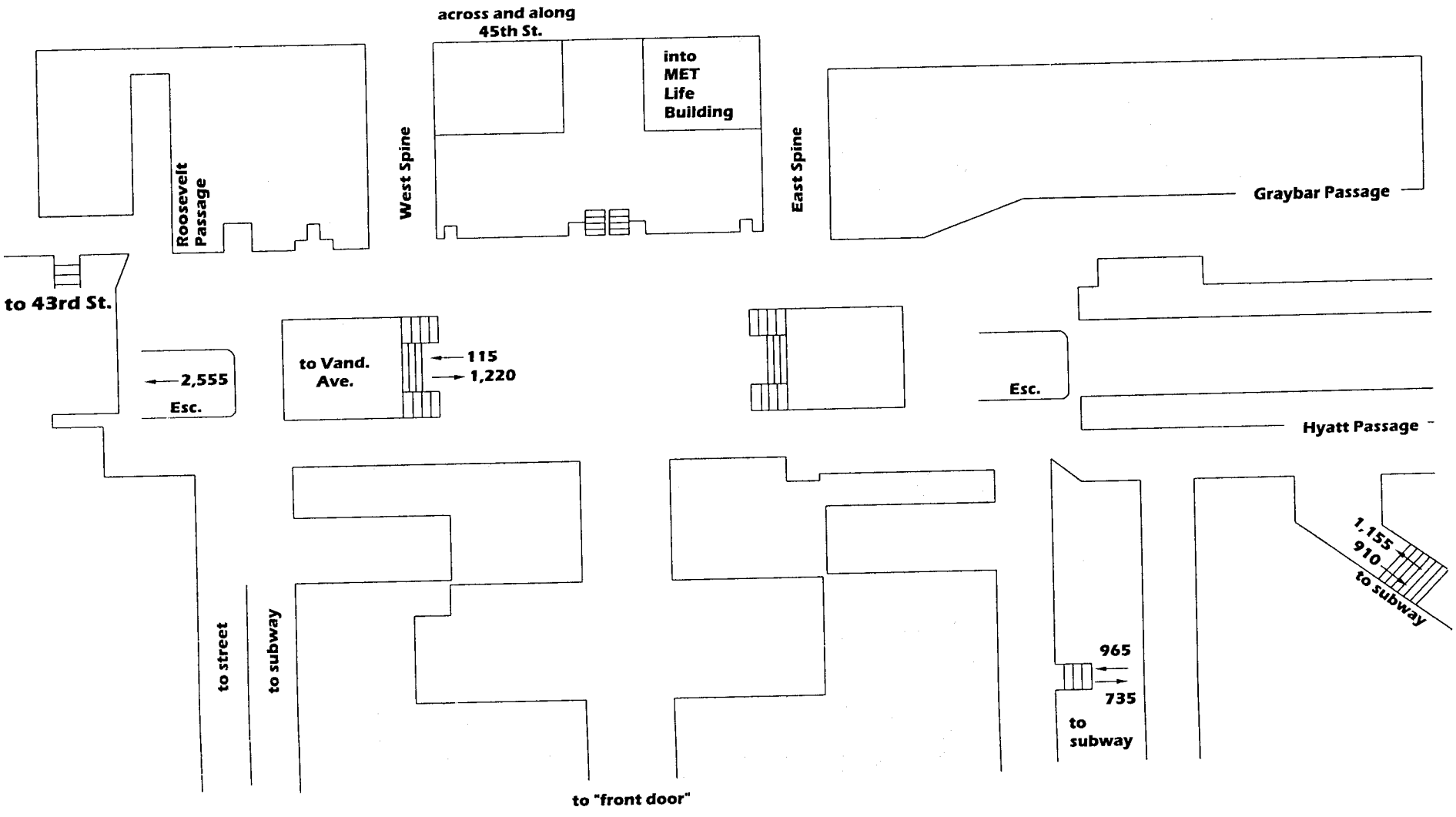
GCT UPPER CONCOURSE
2010 Mitigated Build Conditions
PM Peak 15 minutes

Eng-Wong, Taub & Associates
Traffic and Transportation Consultants



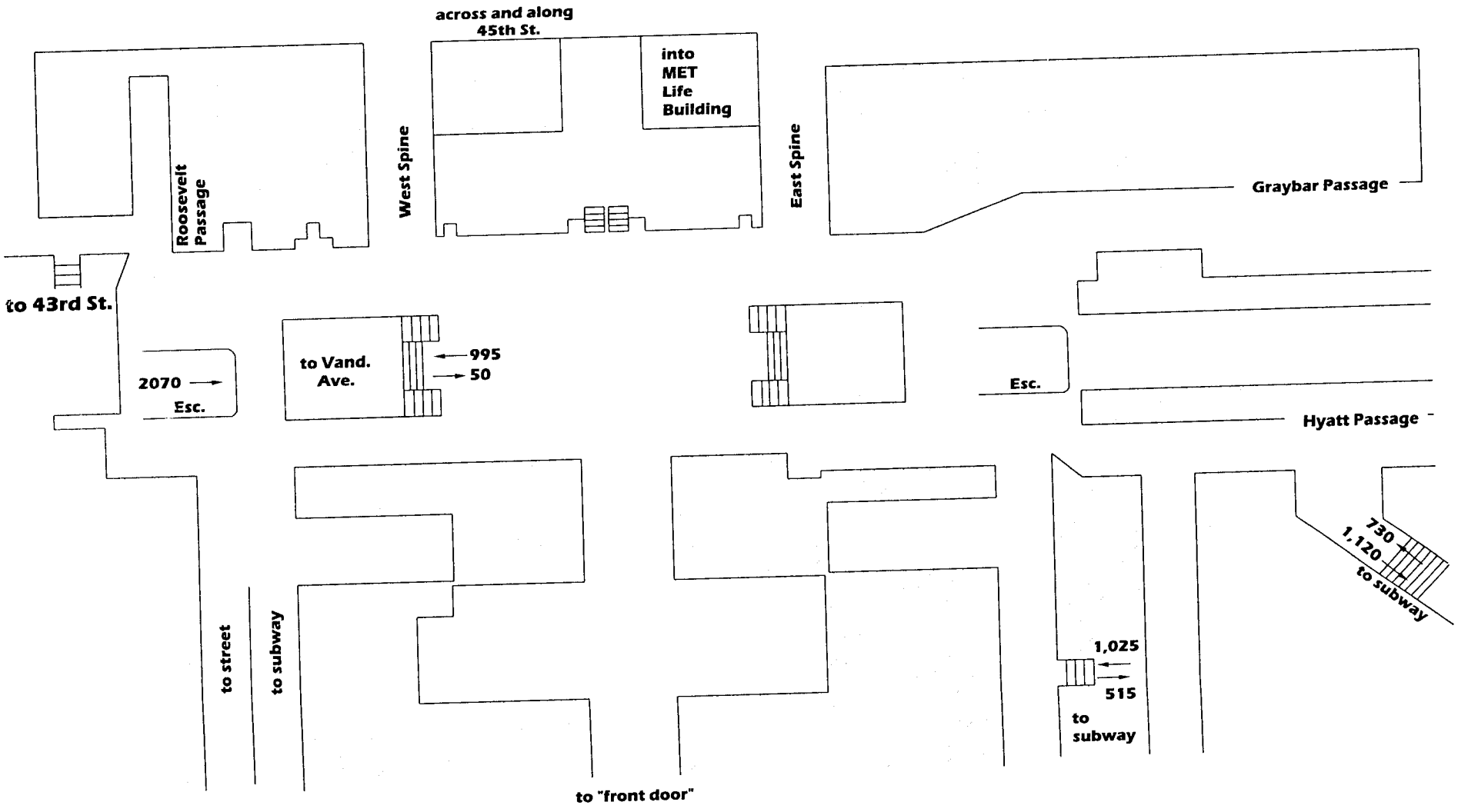
GCT UPPER CONCOURSE
2020 Mitigated Build Conditions
AM Peak 5 minutes

Eng-Wong, Taub & Associates
Traffic and Transportation Consultants



GCT UPPER CONCOURSE
2020 Mitigated Build Conditions
AM Peak 15 minutes

Eng-Wong, Taub & Associates
Traffic and Transportation Consultants



GCT UPPER CONCOURSE

2020 Mitigated Build Conditions

PM Peak 15 minutes

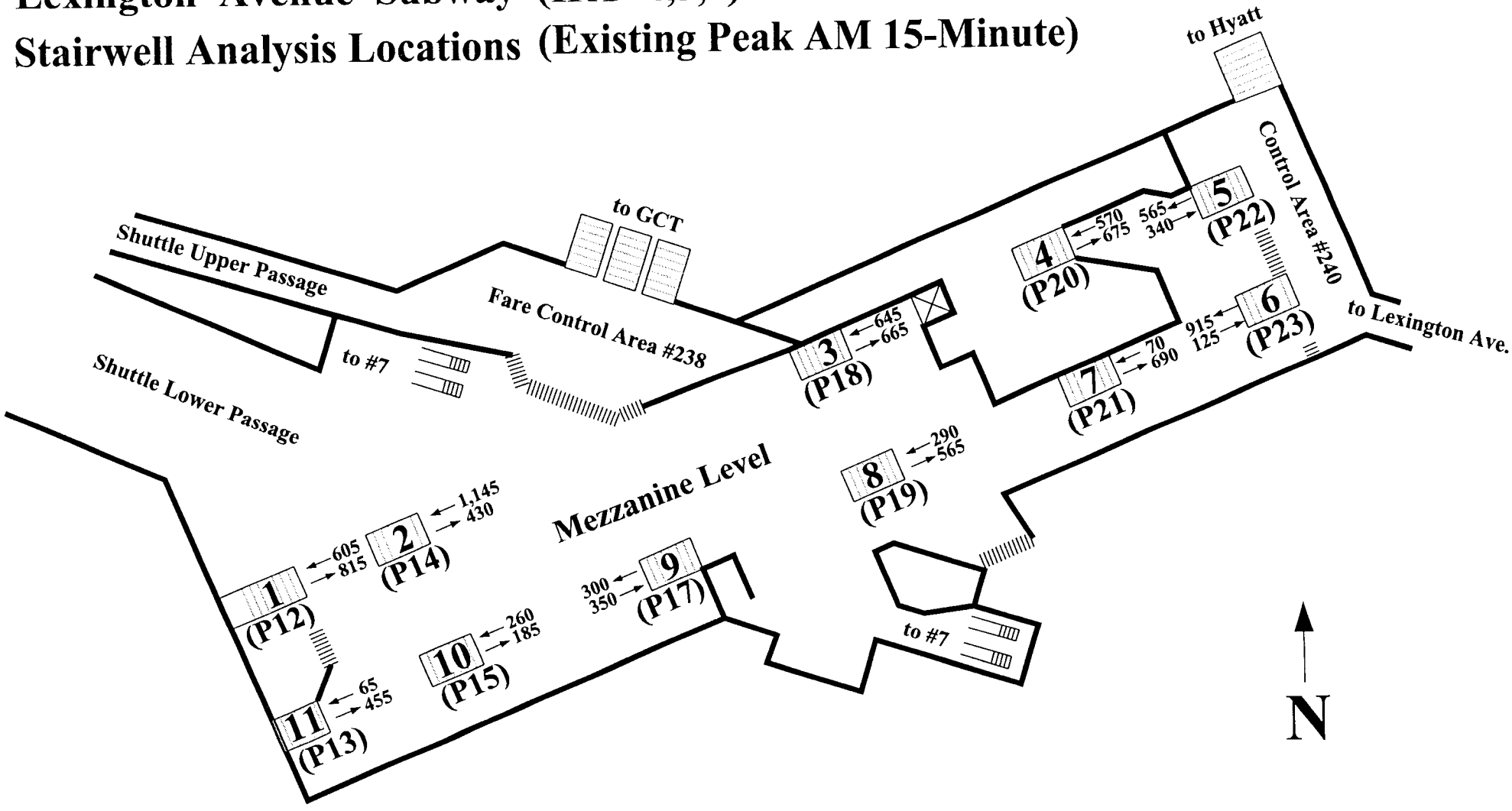
Eng-Wong, Taub & Associates

Traffic and Transportation Consultants

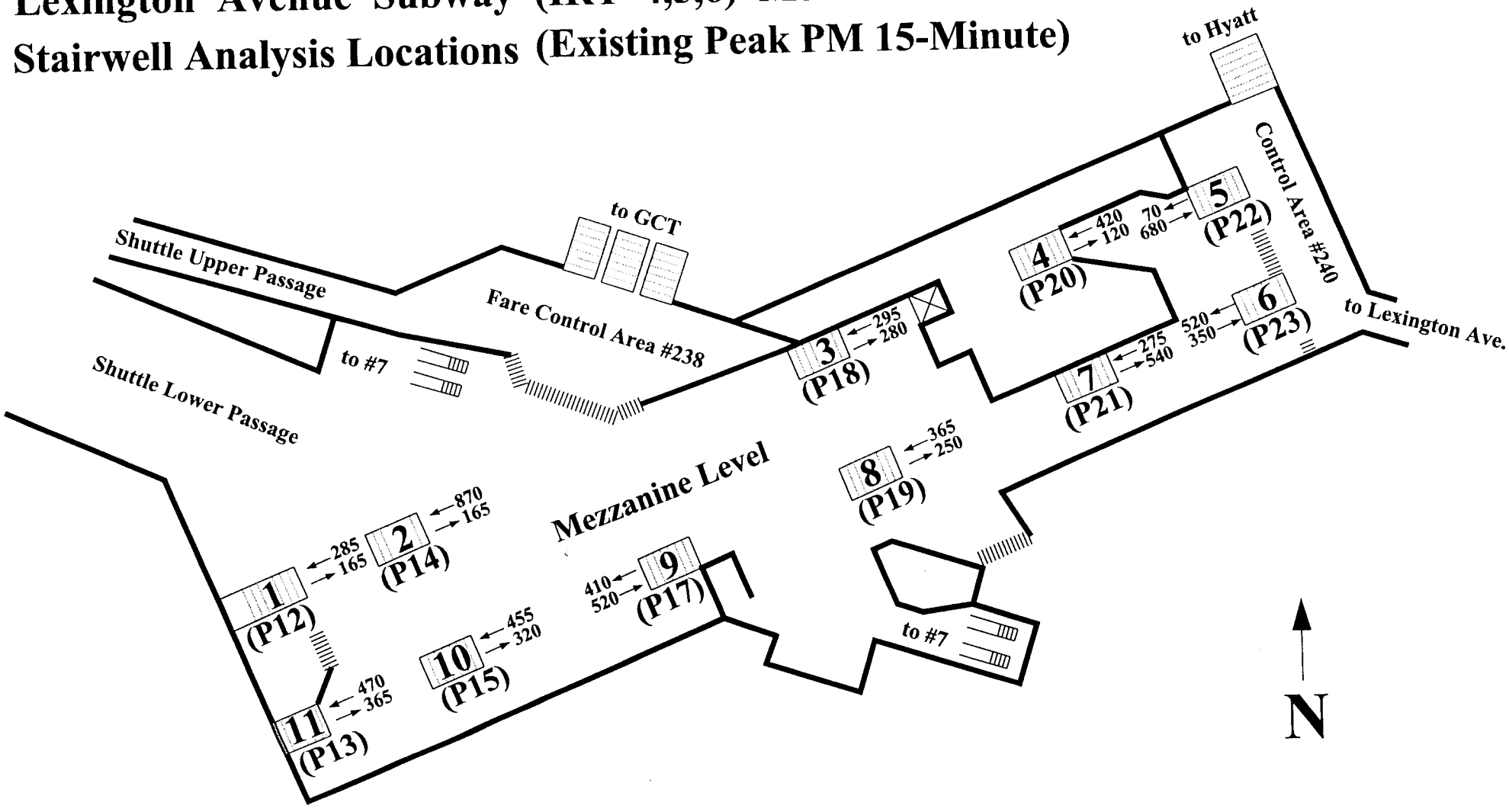
FIGURE M-8

LEXINGTON AVENUE SUBWAY STAIRWELL VOLUMES

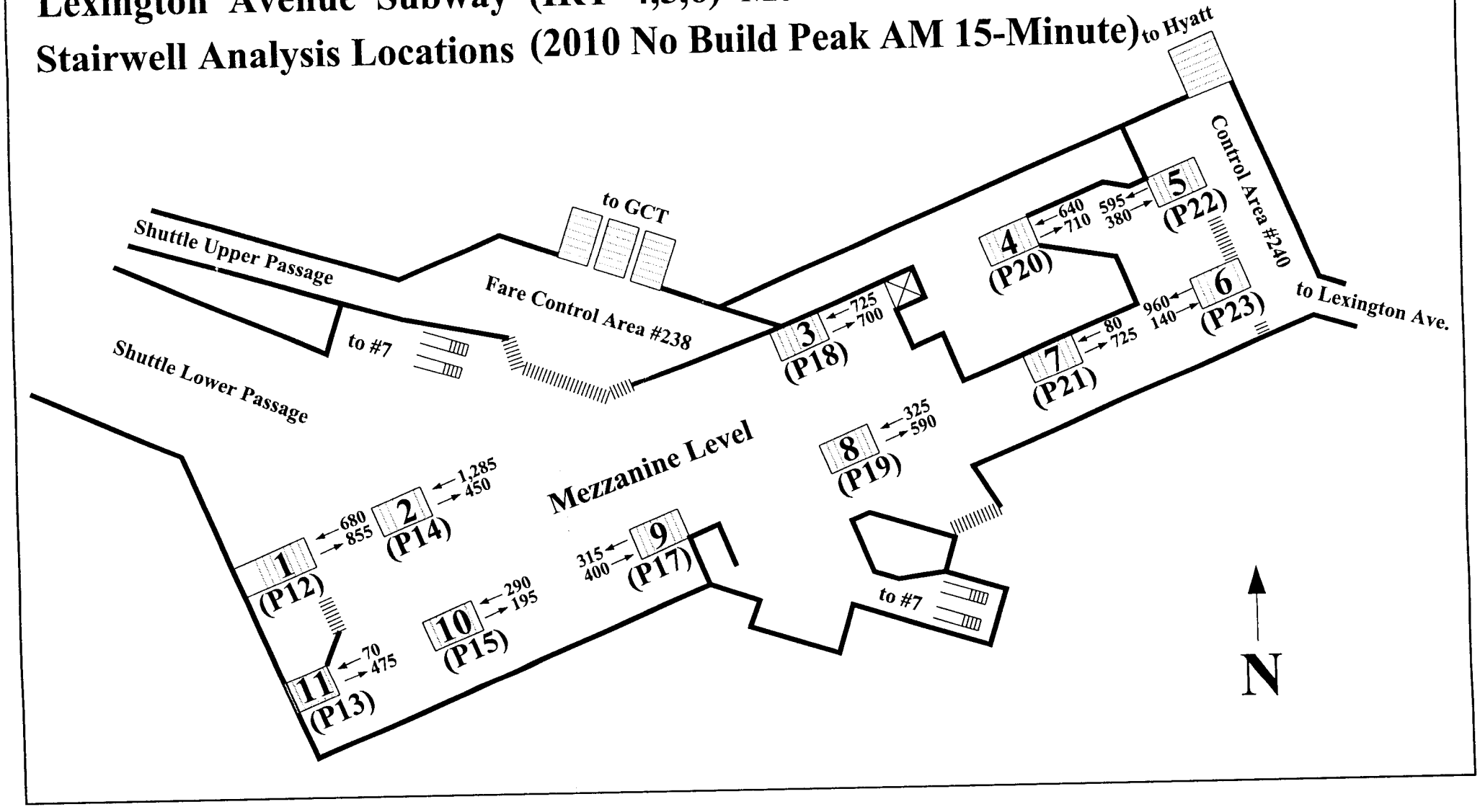
Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations (Existing Peak AM 15-Minute)



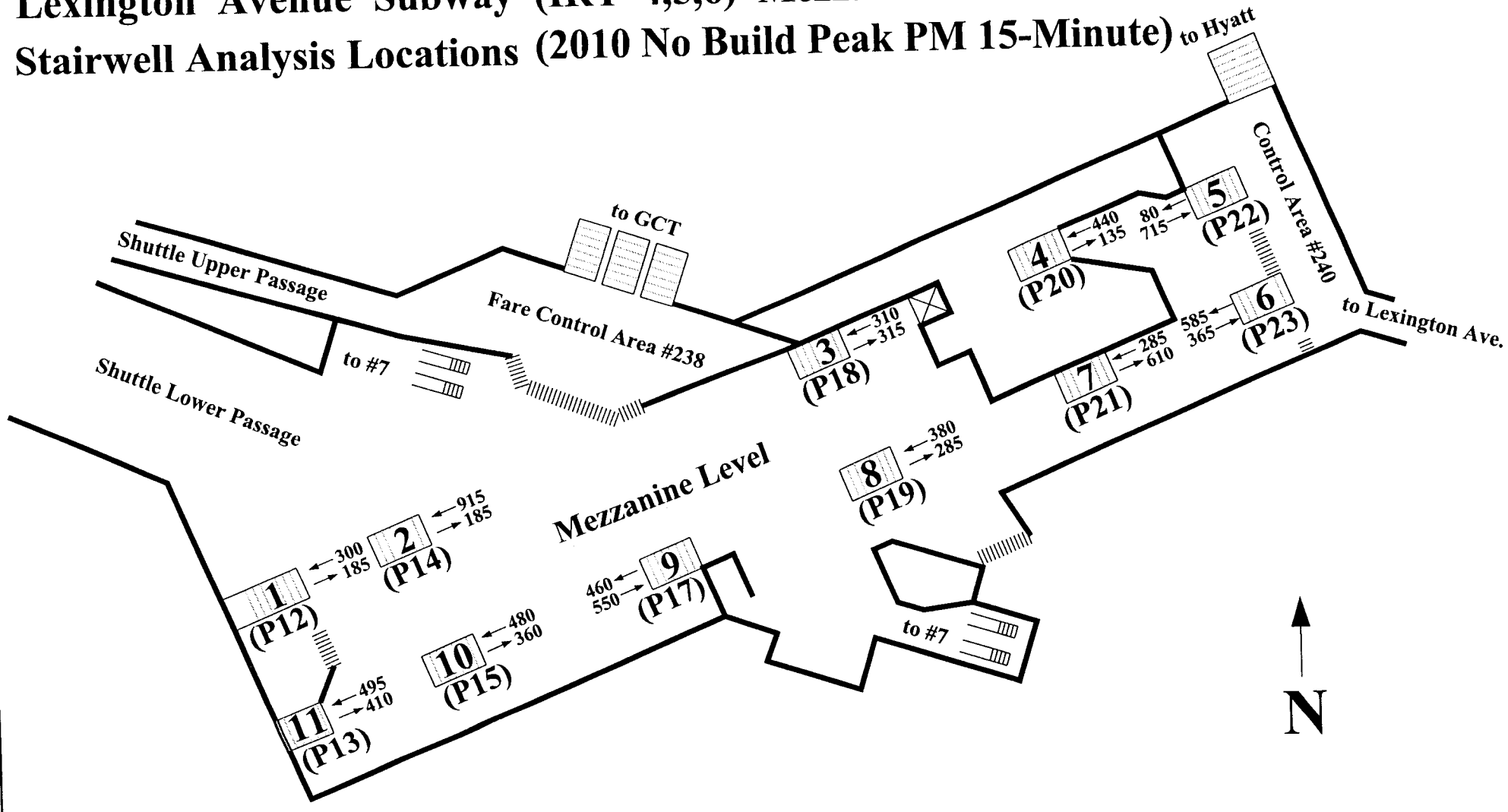
Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations (Existing Peak PM 15-Minute)



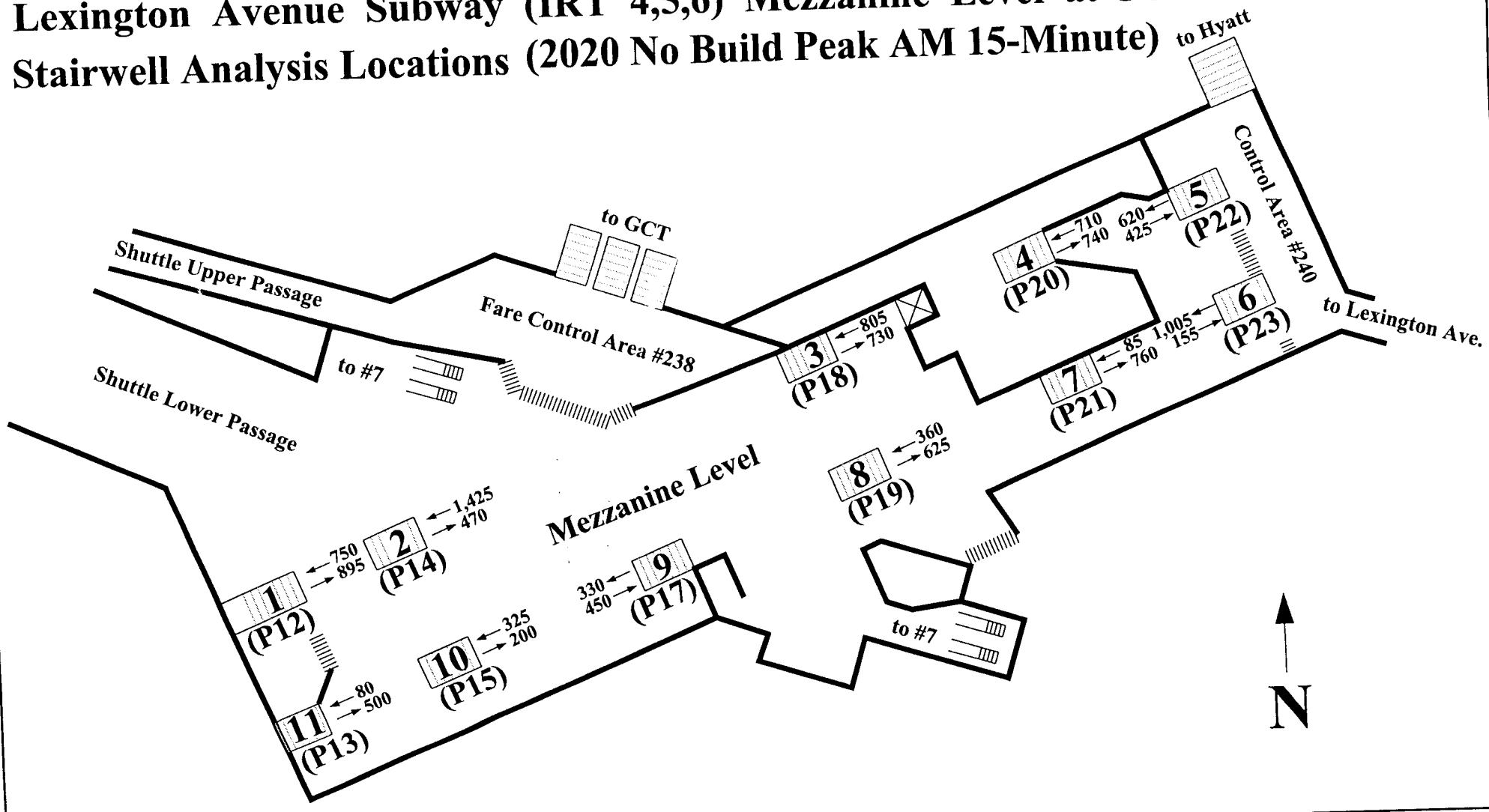
Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations (2010 No Build Peak AM 15-Minute)



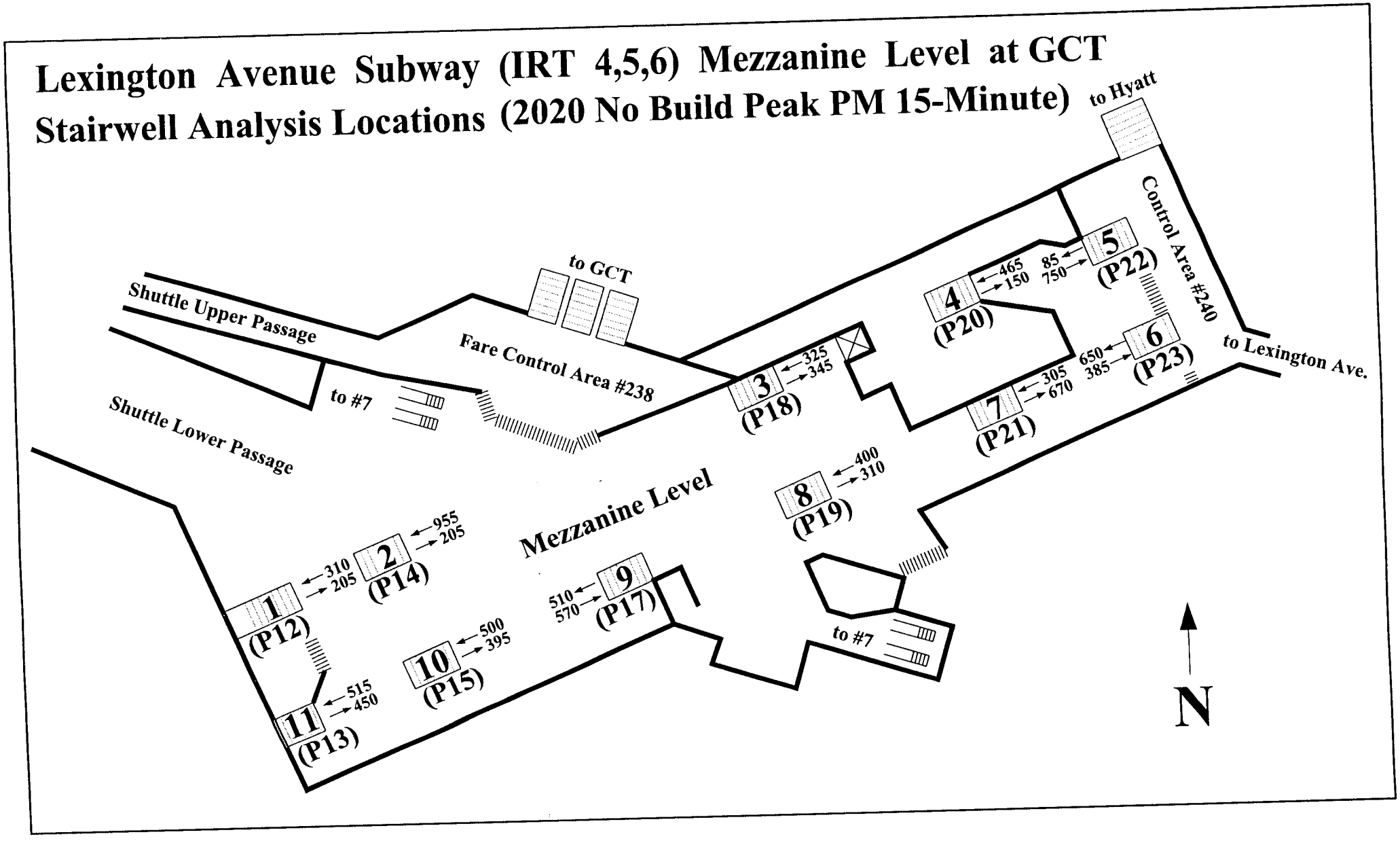
Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations (2010 No Build Peak PM 15-Minute)



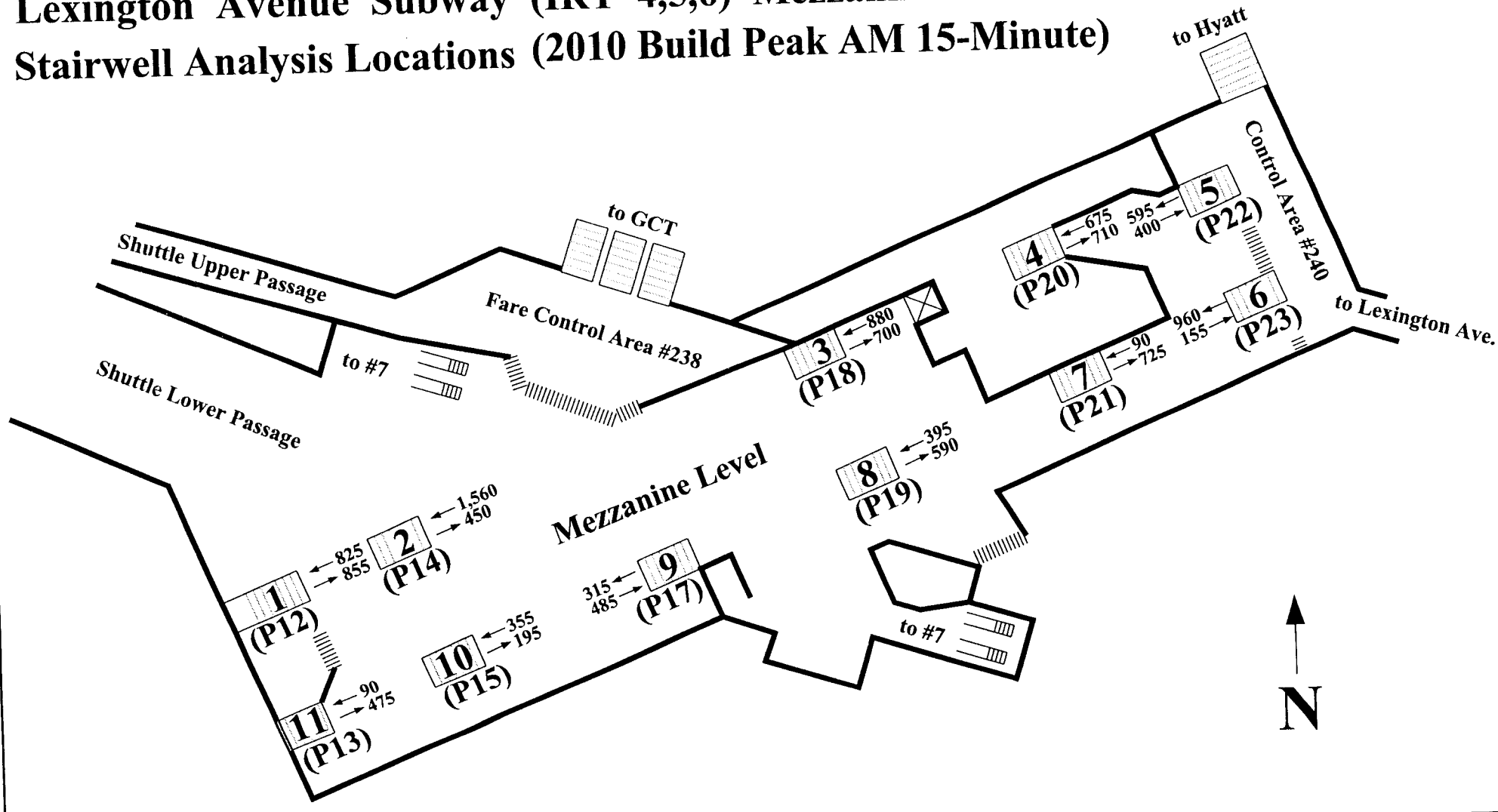
Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations (2020 No Build Peak AM 15-Minute)



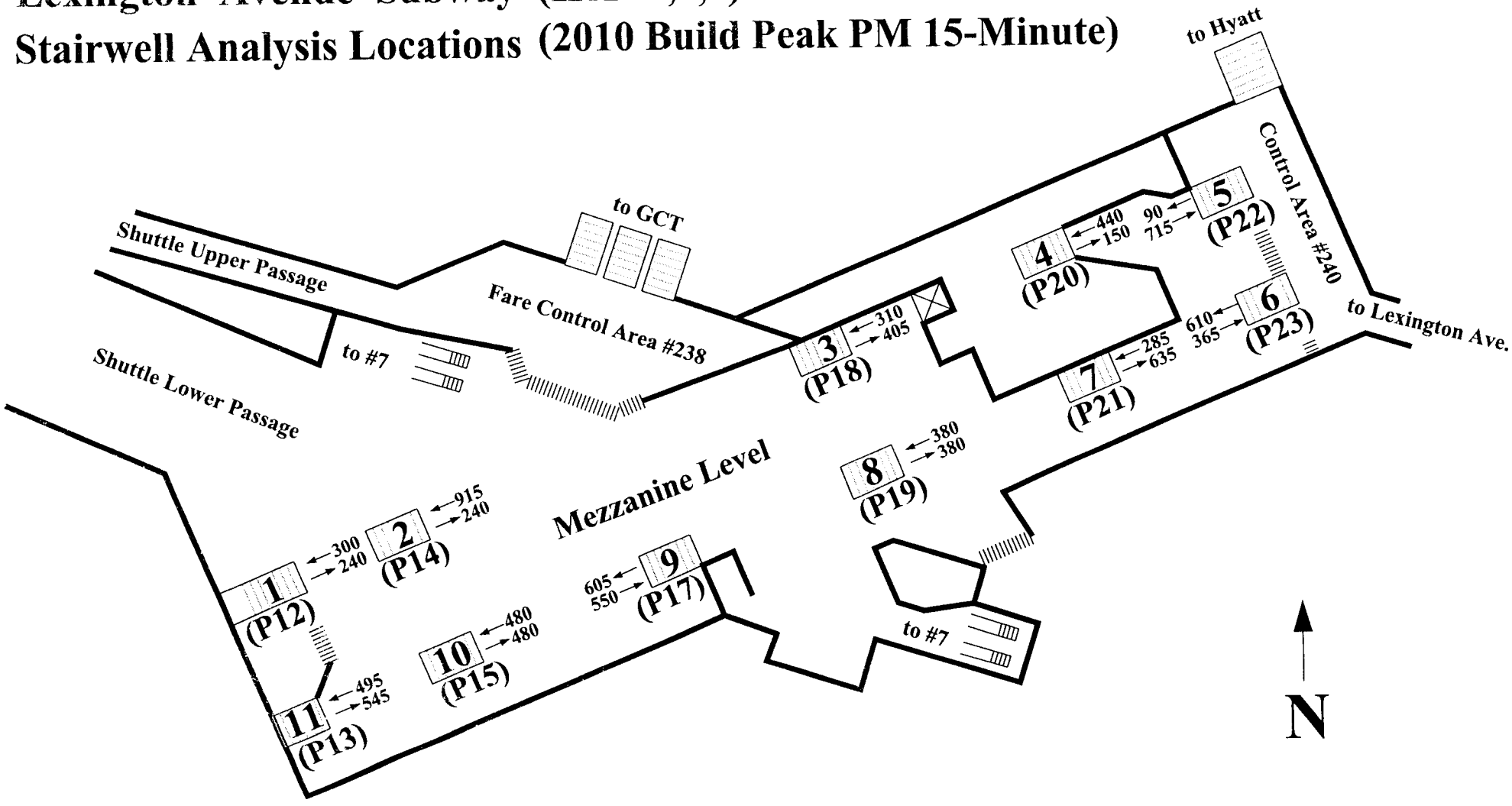
Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations (2020 No Build Peak PM 15-Minute)



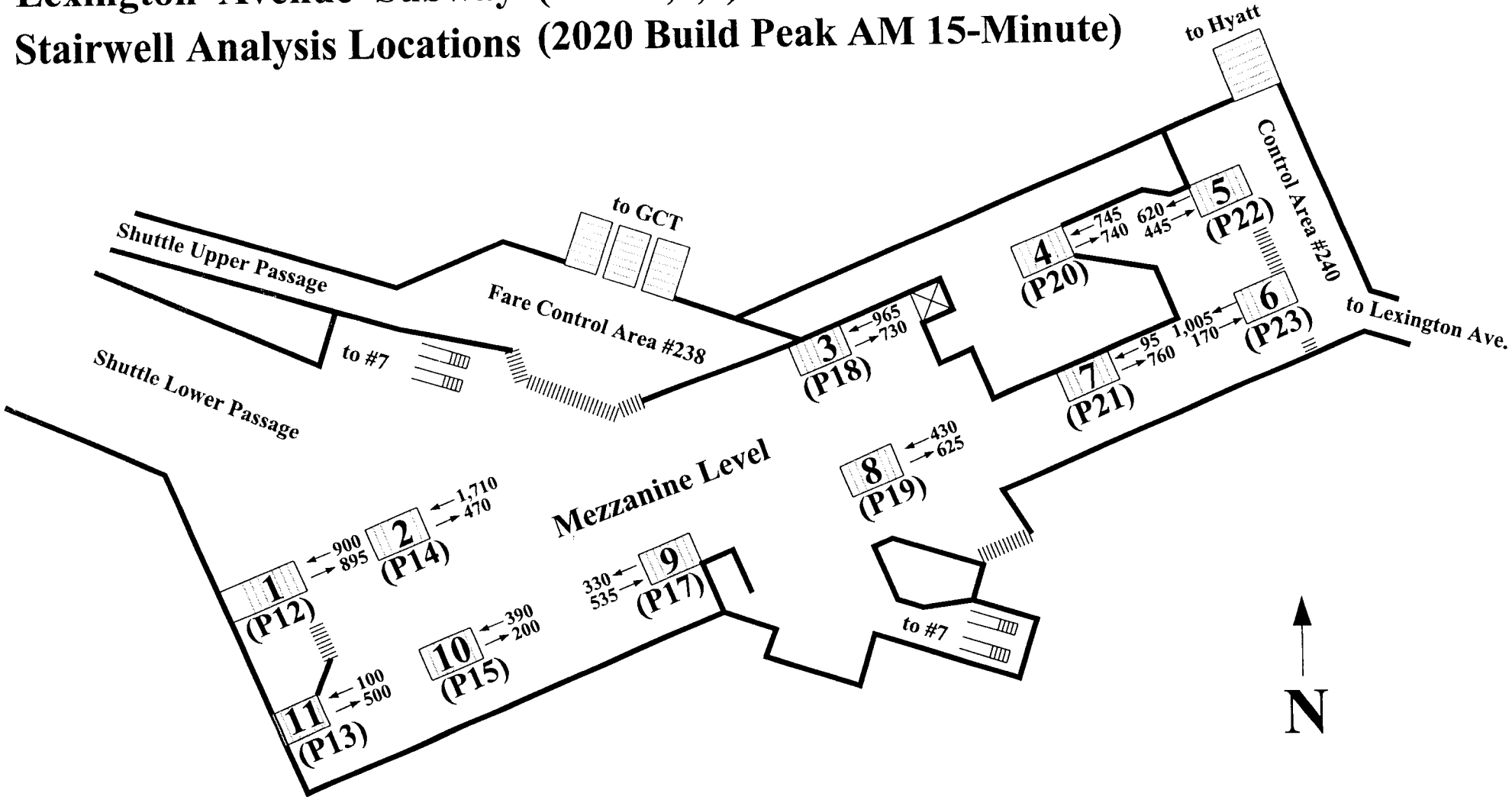
Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations (2010 Build Peak AM 15-Minute)



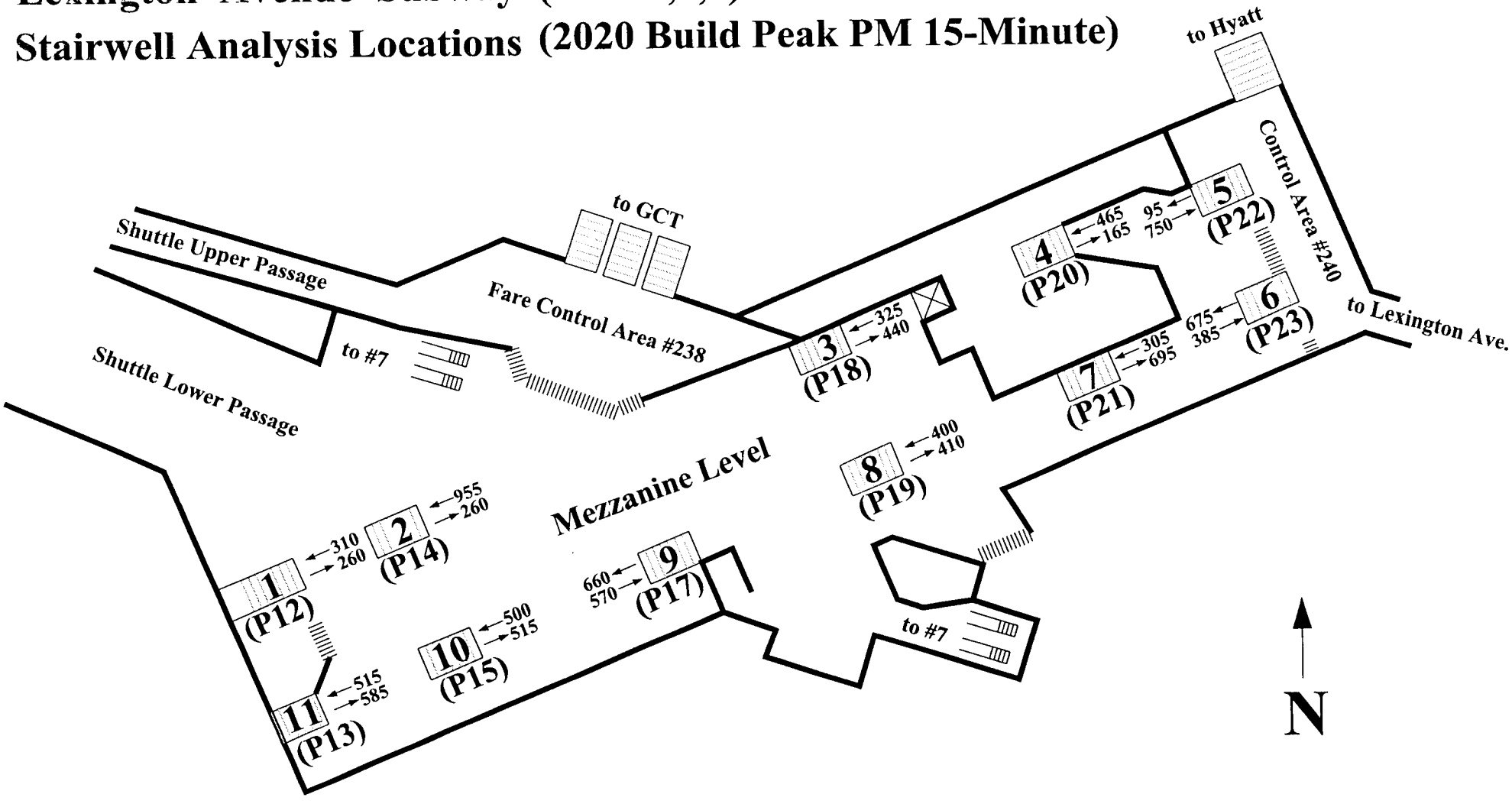
Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations (2010 Build Peak PM 15-Minute)



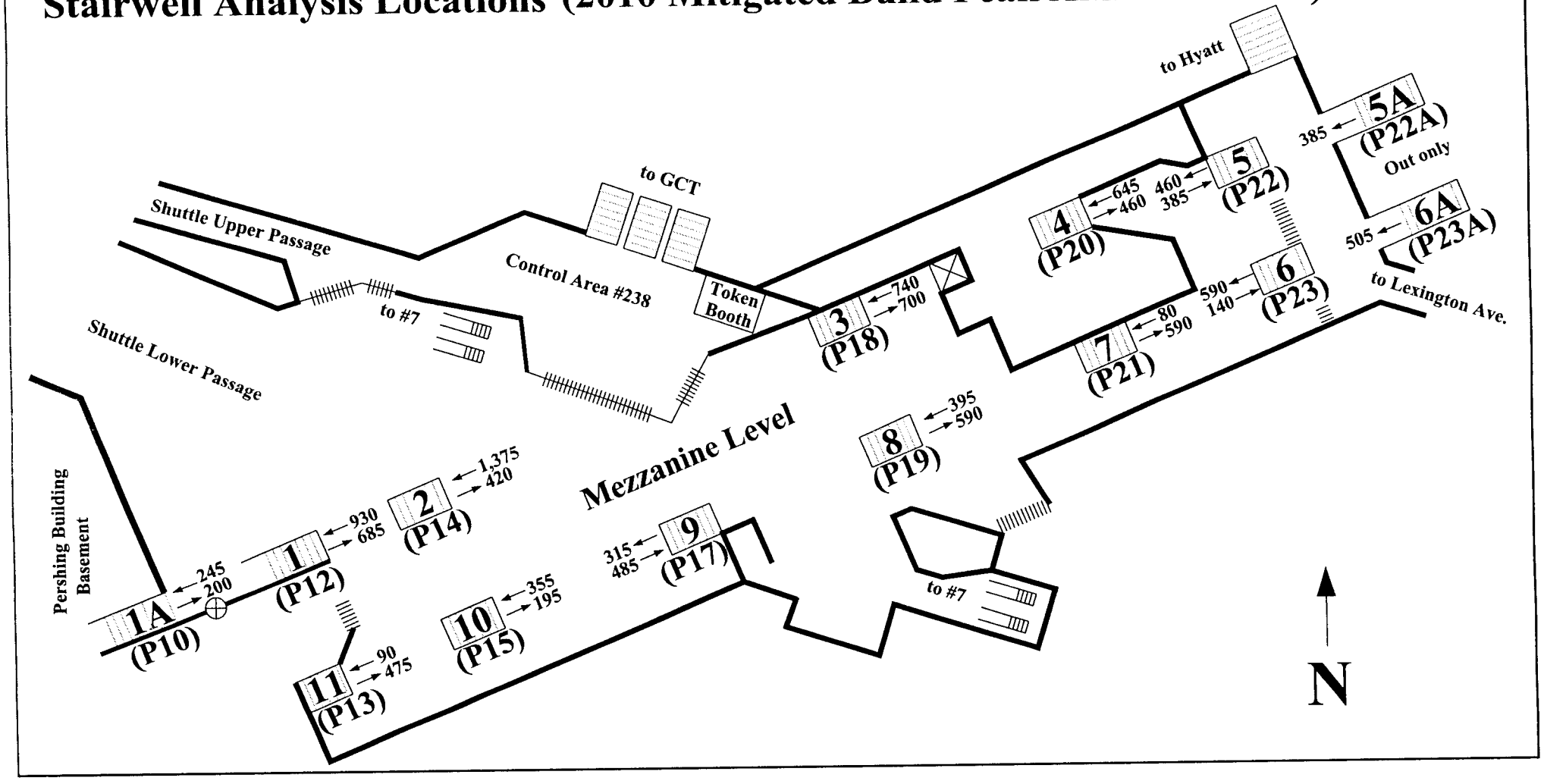
Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations (2020 Build Peak AM 15-Minute)



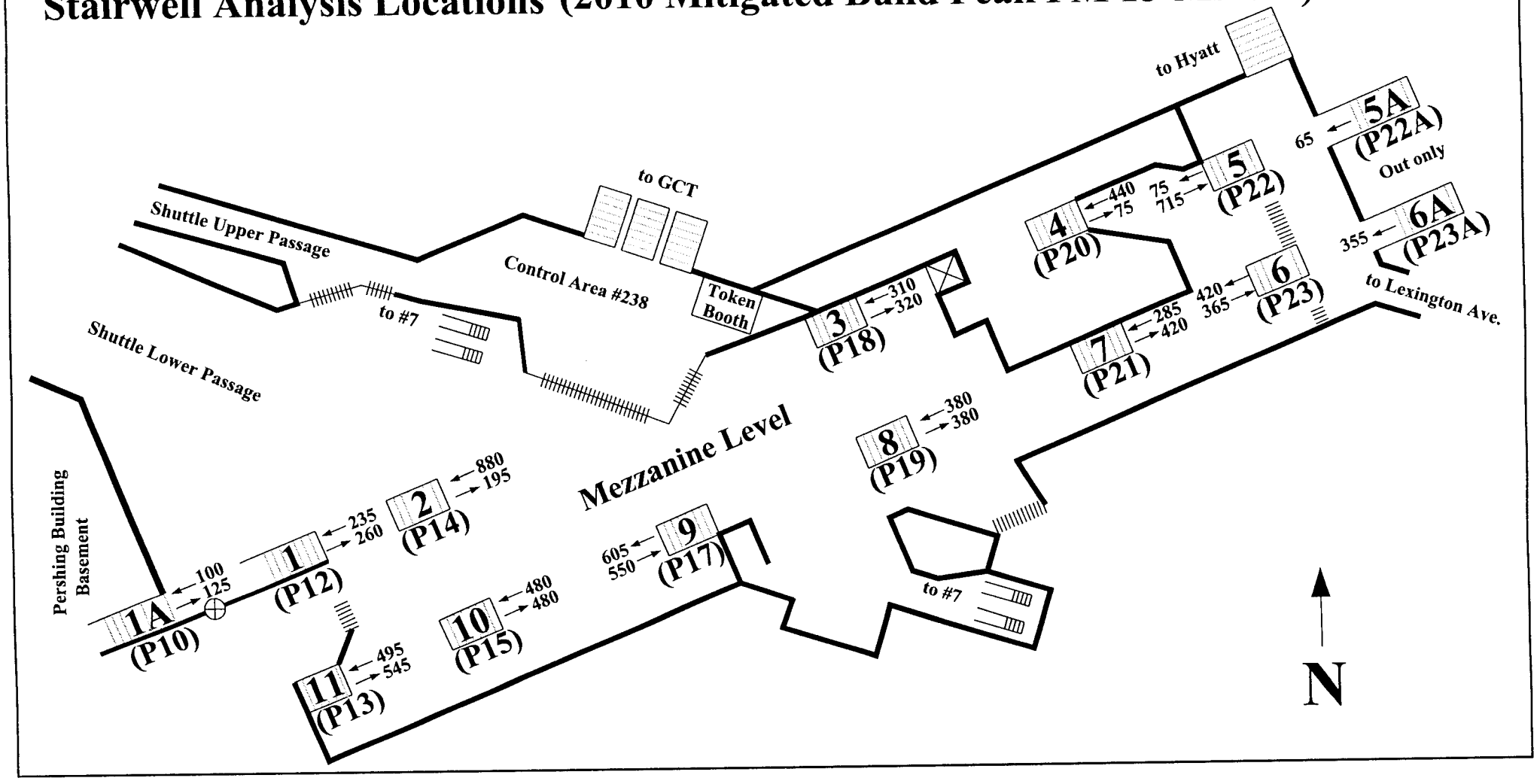
Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations (2020 Build Peak PM 15-Minute)



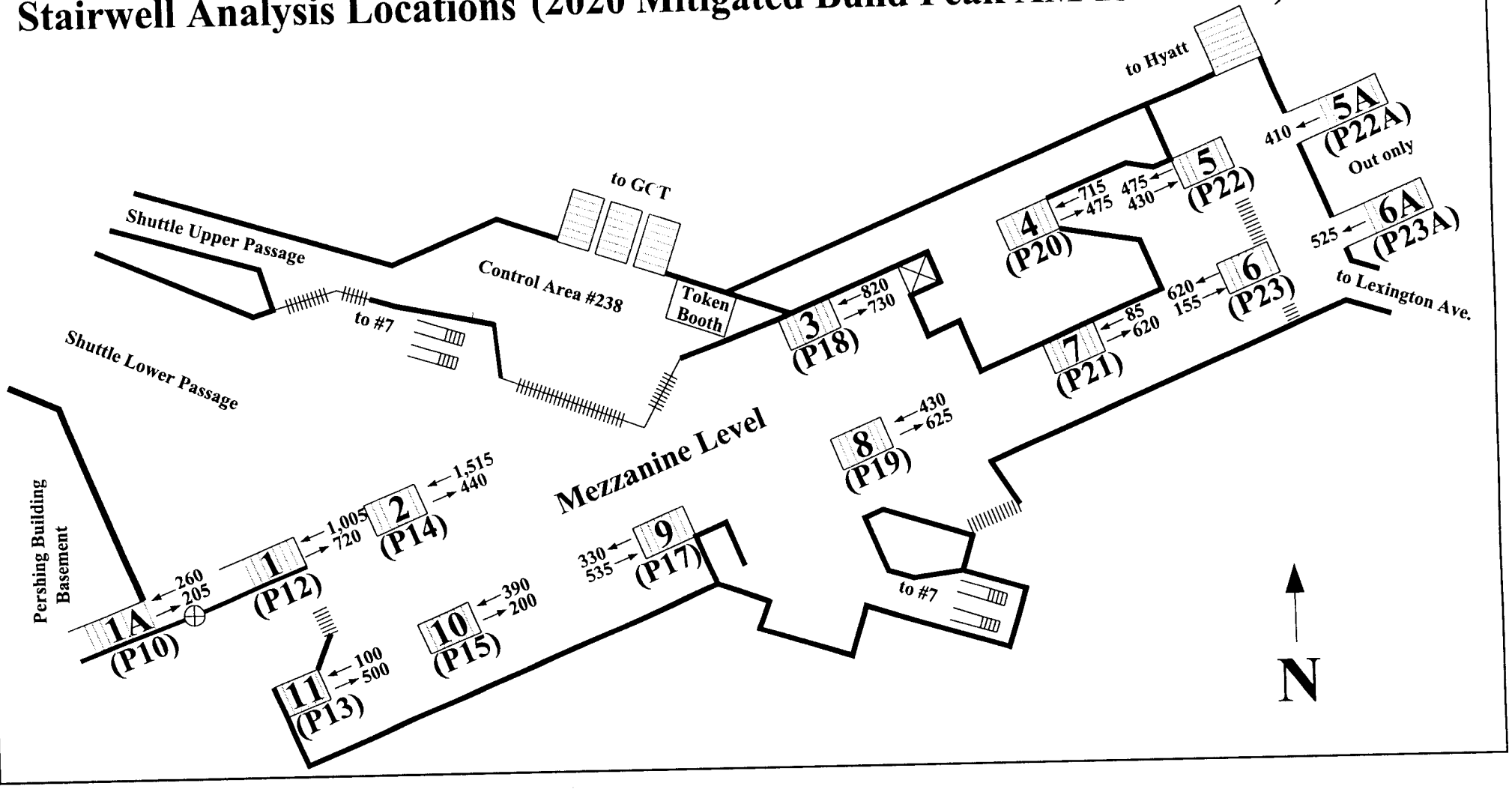
Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations (2010 Mitigated Build Peak AM 15-Minute)



Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations (2010 Mitigated Build Peak PM 15-Minute)



Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations (2020 Mitigated Build Peak AM 15-Minute)



Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations (2020 Mitigated Build Peak PM 15-Minute)

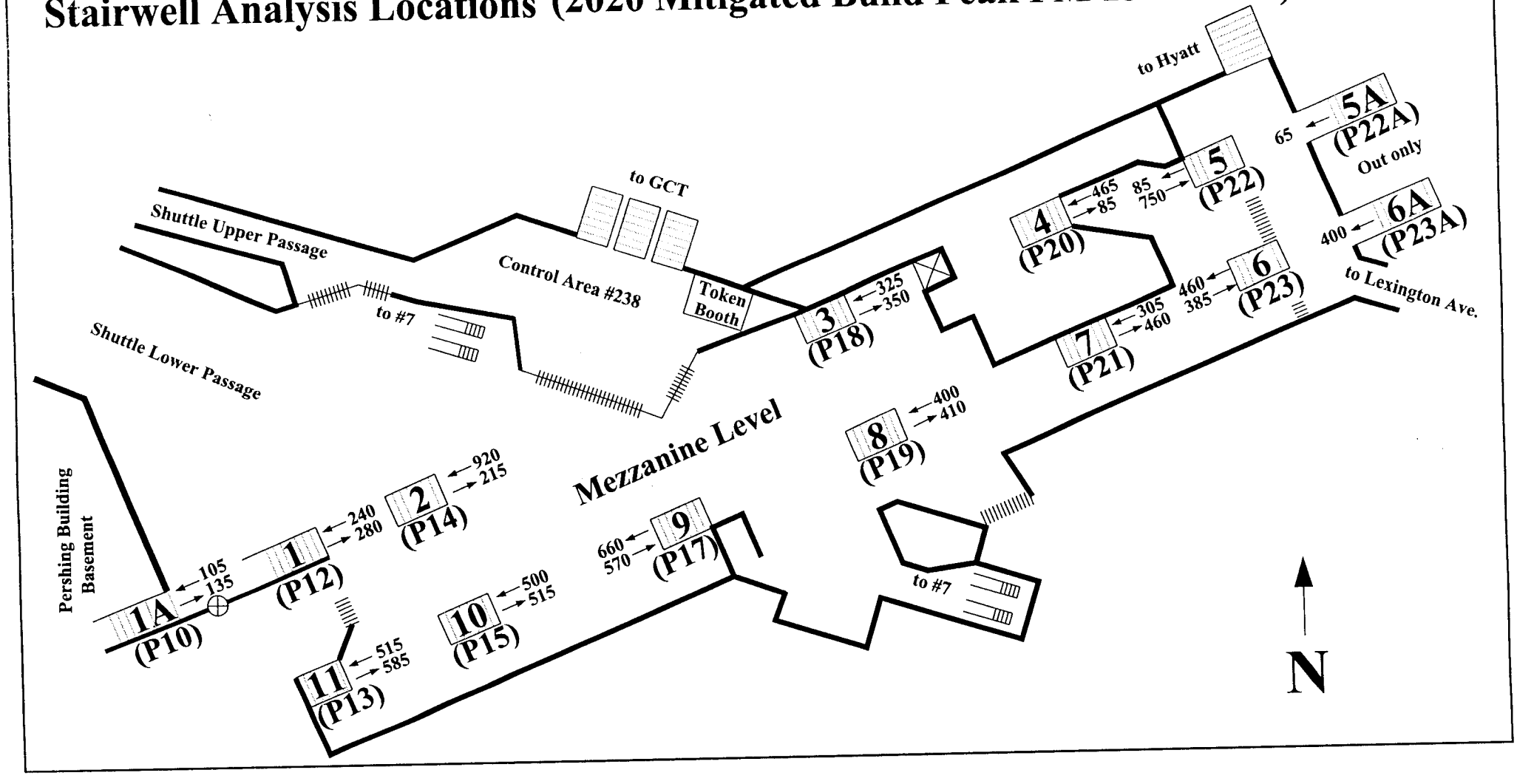


TABLE M-1

EXISTING
LIRR / GCT TRAFFIC
LEVELS OF SERVICE

Table M-1

EXISTING 1998 TRAFFIC LEVELS OF SERVICE

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		AM Peak Hour (8 - 9 AM) Mvt.	v/c	Delay	LOS	Midday Peak Hour (12 - 1 PM) Mvt.	v/c	Delay	LOS	PM Peak Hour (5:15 - 6:15 PM) Mvt.	v/c	Delay	LOS
(1) SEVENTH AVENUE & 42nd STREET													
Seventh Avenue	SB	LTR	0.99	28.8	D	LTR	0.60	11.3	B	LTR	0.73	12.8	B
42nd Street	EB	TR	0.74	20.1	C	TR	0.75	19.8	C	TR	0.65	17.9	C
42nd Street	WB	LT	0.56	16.6	C	LT	0.50	15.7	C	LT	0.72	19.4	C
Overall Intersection		-	**0.88**	**25.4**	**D**	-	**0.67**	**14.3**	**B**	-	**0.72**	**14.9**	**B**
(2) BROADWAY & 42nd STREET													
Broadway	SB	LTR	0.69	13.3	B	LTR	0.55	11.6	B	LTR	0.58	12.0	B
42nd Street	EB	TR	0.51	14.9	B	TR	0.60	16.0	C	TR	0.48	14.6	B
42nd Street	WB	L	0.98	63.8	F	LT	0.92	31.9	D	LT	1.01	48.7	E
		T	1.00	52.3	E	-	-	-	-	-	-	-	-
Overall Intersection		-	**0.83**	**24.4**	**C**	-	**0.72**	**17.9**	**C**	-	**0.78**	**23.8**	**C**
(3) SIXTH AVENUE & 42nd STREET													
Sixth Avenue	NB	LT	0.99	26.5	D	LT	0.81	14.7	B	LTR	0.97	24.1	C
		R	0.67	16.7	C	R	0.30	9.5	B	R	0.55	12.9	B
42nd Street	EB	LT	0.74	19.2	C	LT	0.70	18.3	C	LT	0.67	17.5	C
42nd Street	WB	TR	0.72	18.5	C	TR	0.61	16.5	C	TR	0.63	16.9	C
		R	1.02	81.2	F	R	1.00	69.0	F	R	1.02	76.7	F
Overall Intersection		-	**1.00**	**25.9**	**D**		**0.89**	**18.2**	**C**	-	**0.99**	**24.0**	**C**
(4) FIFTH AVENUE & 48th STREET													
Fifth Avenue	SB	LT	0.75	9.9	B	LT	0.80	13.6	B	LT	0.67	9.1	B
48th Street	EB	TR	0.49	15.2	C	TR	0.54	13.4	B	TR	0.76	19.7	C
Overall Intersection		-	**0.63**	**10.9**	**B**	-	**0.67**	**13.5**	**B**	-	**0.71**	**12.2**	**B**
(5) FIFTH AVENUE & 47th STREET													
Fifth Avenue	SB	TR	0.65	8.8	B	TR	0.75	12.8	B	TR	0.64	8.9	B
47th Street	WB	LT	0.67	17.5	C	LT	0.59	14.0	B	LT	0.51	15.4	C
Overall Intersection		-	**0.66**	**11.2**	**B**	-	**0.67**	**13.1**	**B**	-	**0.59**	**10.2**	**B**
(6) FIFTH AVENUE & 46th STREET													
Fifth Avenue	SB	LT	0.67	9.1	B	LT	0.81	13.8	B	LT	0.67	9.1	B
46th Street	EB	TR	0.48	15.1	C	TR	0.49	12.9	B	TR	0.61	16.6	C
Overall Intersection		-	**0.59**	**10.4**	**B**	-	**0.65**	**13.6**	**B**	-	**0.64**	**10.9**	**B**
(7) FIFTH AVENUE & 45th STREET													
Fifth Avenue	SB	TR	0.74	9.9	B	TR	0.81	13.8	B	TR	0.68	9.3	B
45th Street	WB	LT	0.55	15.8	C	LT	0.96	43.1	E	LT	0.51	15.4	C
Overall Intersection		-	**0.66**	**11.3**	**B**	-	**0.89**	**18.5**	**C**	-	**0.61**	**10.6**	**B**
(8) FIFTH AVENUE & 44th STREET													
Fifth Avenue	SB	LT	0.72	9.6	B	LT	0.78	13.3	B	LT	0.68	9.2	B
44th Street	EB	TR	0.57	16.1	C	TR	0.45	12.6	B	TR	0.60	16.6	C
Overall Intersection		-	**0.65**	**11.0**	**B**	-	**0.62**	**13.2**	**B**	-	**0.64**	**10.8**	**B**
(9) FIFTH AVENUE & 43rd STREET													
Fifth Avenue	SB	TR	0.74	9.8	B	TR	0.82	14.1	B	TR	0.72	9.6	B
43rd Street	WB	LT	0.48	15.1	C	LT	1.03	58.4	E	LT	0.46	14.9	B
Overall Intersection		-	**0.63**	**10.8**	**B**		**0.93**	**21.9**	**C**	-	**0.60**	**10.6**	**B**
(10) FIFTH AVENUE & 42nd STREET													
Fifth Avenue	SB	LTR	0.66	12.3	B	LTR	0.67	12.4	B	LTR	0.63	12.0	B
42nd Street	EB	TR	0.85	23.2	C	TR	0.80	20.9	C	TR	0.81	21.5	C
42nd Street	WB	LT	0.98	39.5	D	LT	0.91	28.3	D	LT	0.96	34.4	D
Overall Intersection		-	**0.80**	**21.3**	**C**	-	**0.78**	**18.0**	**C**	-	**0.78**	**19.6**	**C**

Table M-1

EXISTING 1998 TRAFFIC LEVELS OF SERVICE

SIGNALIZED INTERSECTIONS		AM Peak Hour (8 - 9 AM)				Midday Peak Hour (12 - 1 PM)				PM Peak Hour (5:15 - 6:15 PM)			
INTERSECTION & APPROACH		Mvt.	v/c	Delay	LOS	Mvt.	v/c	Delay	LOS	Mvt.	v/c	Delay	LOS
(11) FIFTH AVENUE & 41st STREET													
Fifth Avenue	SB	LT	0.65	5.9	B	LT	0.63	5.7	B	LT	0.64	5.8	B
Overall Intersection		-	**0.40**	**5.9**	**B**	-	**0.38**	**5.7**	**B**	-	**0.39**	**5.8**	**B**
(12) FIFTH AVENUE & 40th STREET													
Fifth Avenue	SB	LT	0.68	9.2	B	LT	0.64	8.8	B	LT	0.65	8.9	B
40th Street	EB	TR	0.55	15.8	C	TR	0.52	15.5	C	TR	0.67	17.7	C
Overall Intersection		-	**0.62**	**10.8**	**B**	-	**0.59**	**10.2**	**B**	-	**0.66**	**11.3**	**B**
(13) MADISON AVENUE & 40th STREET													
Madison Avenue	NB	TR	0.80	11.2	B	TR	0.90	17.2	C	TR	0.84	12.0	B
40th Street	EB	LT	0.65	17.4	C	LT	0.44	12.4	B	LT	0.53	15.6	C
Overall Intersection		-	**0.73**	**13.0**	**B**	-	**0.67**	**16.2**	**C**	-	**0.70**	**12.9**	**B**
(14) MADISON AVENUE & 41st STREET													
Madison Avenue	NB	TR	0.84	12.0	B	TR	0.89	16.8	C	TR	0.81	11.2	B
41st Street	EB	LT	0.71	23.0	C	LT	0.54	14.3	B	LT	0.48	15.4	C
Overall Intersection		-	**0.78**	**13.1**	**B**	-	**0.72**	**16.6**	**C**	-	**0.66**	**11.7**	**B**
(15) MADISON AVENUE & 42nd STREET													
Madison Avenue	NB	LTR	0.83	16.2	C	LTR	0.88	20.3	C	LTR	0.80	15.1	C
42nd Street	EB	LT	1.00	43.3	E	LT	1.00	48.0	E	LT	0.87	24.7	C
42nd Street	WB	T	0.86	24.2	C	T	0.70	15.9	C	TR	0.81	21.3	C
Overall Intersection		-	**0.91**	**25.2**	**D**	-	**0.79**	**25.7**	**D**	-	**0.83**	**19.1**	**C**
(16) MADISON AVENUE & 43rd STREET													
Madison Avenue	NB	LT	0.56	8.3	B	LT	0.62	11.4	B	LT	0.55	8.1	B
43rd Street	WB	TR	0.52	15.5	C	TR	0.39	12.0	B	TR	0.42	14.5	B
Overall Intersection		-	**0.54**	**10.0**	**B**	-	**0.51**	**11.5**	**B**	-	**0.49**	**9.5**	**B**
(17) MADISON AVENUE & 44th STREET													
Madison Avenue	NB	TR	0.54	8.1	B	TR	0.55	10.8	B	TR	0.49	7.8	B
44th Street	EB	LT	0.90	31.6	D	LT	0.68	16.6	C	LT	0.58	16.4	C
Overall Intersection		-	**0.70**	**14.1**	**B**	-	**0.62**	**12.0**	**B**	-	**0.53**	**9.8**	**B**
(18) MADISON AVENUE & 45th STREET													
Madison Avenue	NB	LT	0.63	8.8	B	LT	0.65	11.7	B	LT	0.60	8.5	B
45th Street	WB	TR	0.66	17.4	C	TR	0.93	36.4	D	TR	0.52	15.5	C
Overall Intersection		-	**0.64**	**11.2**	**B**	-	**0.79**	**16.4**	**C**	-	**0.57**	**10.2**	**B**
(19) MADISON AVENUE & 46th STREET													
Madison Avenue	NB	TR	0.58	8.4	B	TR	0.65	11.7	B	TR	0.59	8.5	B
46th Street	EB	LT	0.63	16.8	C	LT	0.92	32.3	D	LT	0.65	17.4	C
Overall Intersection		-	**0.60**	**10.7**	**B**	-	**0.78**	**16.2**	**C**	-	**0.62**	**11.0**	**B**
(20) MADISON AVENUE & 47th STREET													
Madison Avenue	NB	LT	0.62	8.7	B	LT	0.63	11.5	B	LT	0.53	8.0	B
47th Street	WB	TR	0.68	17.6	C	TR	0.54	13.4	B	TR	0.53	15.5	C
Overall Intersection		-	**0.65**	**11.5**	**B**	-	**0.59**	**12.0**	**B**	-	**0.53**	**10.1**	**B**
(21) MADISON AVENUE & 48th STREET													
Madison Avenue	NB	TR	0.65	8.9	B	TR	0.66	11.8	B	TR	0.54	8.1	B
48th Street	EB	LT	0.44	14.7	B	LT	0.53	13.3	B	LT	0.64	17.0	C
Overall Intersection		-	**0.56**	**10.2**	**B**	-	**0.60**	**12.2**	**B**	-	**0.59**	**10.8**	**B**

Table M-1

EXISTING 1998 TRAFFIC LEVELS OF SERVICE

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		AM Peak Hour (8 - 9 AM) Mvt.	v/c	Delay	LOS	Midday Peak Hour (12 - 1 PM) Mvt.	v/c	Delay	LOS	PM Peak Hour (5:15 - 6:15 PM) Mvt.	v/c	Delay	LOS
(22) VANDERBILT AVENUE & 47th STREET													
Vanderbilt Avenue	NB	L	0.18	12.8	B	L	0.11	12.5	B	L	0.16	12.7	B
47th Street	WB	LT	0.81	16.3	C	LT	0.72	14.0	B	LT	0.58	11.7	B
Overall Intersection		-	**0.53**	**16.1**	**C**	-	**0.46**	**13.9**	**B**	-	**0.40**	**11.8**	**B**
(23) VANDERBILT AVENUE & 46th STREET													
Vanderbilt Avenue	NB	TR	0.44	12.8	B	TR	0.70	19.2	C	TR	0.40	12.2	B
Vanderbilt Avenue	SB	LT	0.38	12.0	B	LT	0.35	11.8	B	LT	0.30	11.4	B
46th Street	EB	LTR	0.54	13.4	B	LTR	0.41	12.1	B	LTR	0.52	13.1	B
Overall Intersection		-	**0.49**	**12.9**	**B**	-	**0.55**	**13.6**	**B**	-	**0.46**	**12.6**	**B**
(24) VANDERBILT AVENUE & 45th STREET													
Vanderbilt Avenue	NB	LT	0.89	35.5	D	LT	0.29	11.3	B	LT	0.35	11.7	B
Vanderbilt Avenue	SB	TR	0.73	18.1	C	TR	0.50	13.2	B	TR	0.34	11.7	B
45th Street	WB	LTR	0.81	22.4	C	LTR	0.37	11.8	B	LTR	0.87	25.3	D
Overall Intersection		-	**0.85**	**24.1**	**C**	-	**0.43**	**12.1**	**B**	-	**0.61**	**19.0**	**C**
(27) VANDERBILT AVENUE & 42nd STREET													
42nd Street	EB	LT	0.83	20.0	C	LT	0.73	16.5	C	LT	0.81	19.1	C
42nd Street	WB	TR	0.86	20.9	C	TR	0.80	18.1	C	TR	0.81	18.4	C
Overall Intersection		-	**0.41**	**20.5**	**C**	-	**0.38**	**17.4**	**C**	-	**0.39**	**18.7**	**C**
(28) PARK AVENUE & 40th STREET													
Park Avenue	NB	TR	0.43	8.6	B	TR	0.49	8.7	B	TR	0.56	9.7	B
Park Avenue	SB	T	0.28	7.7	B	T	0.27	7.3	B	T	0.24	7.5	B
Park Avenue (tunnel)	NB	T	0.62	10.8	B	T	0.60	10.1	B	T	0.57	10.1	B
Park Avenue (viaduct)	SB	T	0.65	10.7	B	T	0.53	9.0	B	T	0.65	10.8	B
40th Street	EB	LT	0.91	36.0	D	LT	0.74	23.3	C	LTR	0.97	46.9	E
		R	0.42	17.1	C	R	0.49	19.0	C	R	0.49	18.3	C
Overall Intersection		-	**0.75**	**13.7**	**B**	-	**0.65**	**11.0**	**B**	-	**0.78**	**15.7**	**C**
(29) PARK AVENUE(SB) & 41st STREET													
Park Avenue	SB	LT	0.36	8.2	B	LT	0.26	7.6	B	LT	0.23	7.4	B
41st Street	EB	TR	0.41	16.6	C	TR	0.55	18.7	C	TR	0.67	21.3	C
Overall Intersection		-	**0.38**	**11.4**	**B**	-	**0.37**	**13.1**	**B**	-	**0.40**	**15.6**	**C**
(30) PARK AVENUE(NB) & 41st STREET													
Park Avenue	NB	TR	0.22	7.3	B	TR	0.27	7.6	B	TR	0.19	7.2	B
41st Street	EB	LT	0.46	17.2	C	LT	0.40	16.5	C	LT	0.62	19.9	C
Overall Intersection		-	**0.31**	**11.2**	**B**	-	**0.33**	**10.4**	**B**	-	**0.36**	**13.1**	**B**
(31) PARK AVENUE & 42nd STREET													
Park Avenue	NB	LR	0.20	14.4	B	LR	0.33	15.4	C	LR	0.29	15.0	B
		R	0.84	43.6	E	R	1.05	101.9	F	R	0.76	32.9	D
42nd Street	EB	TR	1.03	52.1	E	T	0.49	14.7	B	T	0.52	15.0	B
		-	-	-	-	R	0.63	15.5	C	R	0.98	62.8	F
42nd Street	WB	LT	0.71	12.4	B	LT	0.64	11.1	B	LT	0.61	10.8	B
Overall Intersection		-	**0.76**	**31.4**	**D**	-	**0.80**	**19.0**	**C**	-	**0.89**	**17.8**	**C**
(32) PARK AVENUE & 46th STREET													
Park Avenue	NB	TR	0.78	17.6	C	TR	0.94	26.3	D	TR	0.81	18.5	C
Park Avenue	SB	L	0.99	91.3	F	L	1.05	116.1	F	L	0.32	11.9	B
		T	0.98	32.1	D	T	0.85	20.1	C	T	0.86	20.3	C
46th Street	EB	LTR	0.45	12.0	B	LTR	0.61	13.9	B	LTR	0.56	13.0	B
Overall Intersection		-	**0.75**	**24.0**	**C**	-	**0.86**	**23.7**	**C**	-	**0.70**	**17.3**	**C**

Table M-1

EXISTING 1998 TRAFFIC LEVELS OF SERVICE

SIGNALIZED INTERSECTIONS		AM Peak Hour (8 - 9 AM)				Midday Peak Hour (12 - 1 PM)				PM Peak Hour (5:15 - 6:15 PM)			
INTERSECTION & APPROACH		Mvt.	v/c	Delay	LOS	Mvt.	v/c	Delay	LOS	Mvt.	v/c	Delay	LOS
(33) PARK AVENUE & 47th STREET													
Park Avenue	NB	DFL	0.73	28.6	D	DFL	0.93	67.0	F	DFL	0.79	37.1	D
		T	0.81	9.3	B	T	0.80	9.0	B	T	0.84	10.1	B
Park Avenue	SB	T	0.55	6.2	B	TR	0.73	7.7	B	TR	0.75	8.0	B
		R	0.90	23.2	C	-	-	-	-	-	-	-	-
47th Street	WB	LTR	0.86	25.8	D	LTR	0.77	21.8	C	LTR	0.86	26.7	D
Overall Intersection		-	**0.89**	**12.7**	**B**	-	**0.90**	**11.8**	**B**	-	**0.85**	**12.3**	**B**
(34) PARK AVENUE & 48th STREET													
Park Avenue	NB	TR	0.65	6.9	B	TR	0.62	6.7	B	TR	0.72	7.5	B
Park Avenue	SB	DFL	1.05	112.3	F	DFL	0.73	28.6	D	DFL	0.73	28.6	D
	SB	T	0.96	16.5	C	T	0.85	10.2	B	T	0.92	13.7	B
48th Street	EB	LTR	0.72	21.0	C	LTR	0.89	29.3	D	LTR	0.73	21.1	C
Overall Intersection		-	**0.95**	**15.2**	**C**	-	**0.86**	**12.2**	**B**	-	**0.85**	**12.2**	**B**
(35) LEXINGTON AVENUE & 48th STREET													
Lexington Avenue	SB	LT	0.82	9.2	B	LT	0.86	15.5	C	LT	0.75	8.0	B
48th Street	EB	TR	0.70	20.2	C	TR	0.48	12.8	B	TR	0.67	19.5	C
Overall Intersection		-	**0.77**	**11.9**	**B**	-	**0.67**	**14.9**	**B**	-	**0.72**	**11.1**	**B**
(36) LEXINGTON AVENUE & 47th STREET													
Lexington Avenue	SB	TR	0.98	19.7	C	TR	0.92	18.4	C	TR	0.84	9.7	B
47th Street	WB	LT	0.73	20.7	C	LT	0.92	30.4	D	LT	0.61	18.5	C
Overall Intersection		-	**0.89**	**20.0**	**C**	-	**0.92**	**21.6**	**C**	-	**0.75**	**11.9**	**B**
(37) LEXINGTON AVENUE & 46th STREET													
Lexington Avenue	SB	LT	0.83	9.3	B	LT	0.84	14.8	B	LT	0.69	7.3	B
46th Street	EB	TR	0.77	24.3	C	TR	0.94	33.9	D	TR	0.76	21.2	C
Overall Intersection		-	**0.81**	**11.9**	**B**	-	**0.89**	**19.9**	**C**	-	**0.72**	**11.9**	**B**
(38) LEXINGTON AVENUE & 45th STREET													
Lexington Avenue	SB	TR	1.05	40.9	E	TR	1.05	47.5	E	TR	0.93	18.4	C
45th Street	WB	LT	0.72	21.0	C	LT	0.87	27.5	D	LT	0.65	19.3	C
Overall Intersection		-	**0.82**	**36.6**	**D**	-	**0.90**	**43.4**	**E**	-	**0.73**	**18.6**	**C**
(39) LEXINGTON AVENUE & 44th STREET													
Lexington Avenue	SB	LT	0.84	15.1	C	LT	1.05	50.3	E	LT	0.98	25.1	D
Overall Intersection		-	**0.39**	**15.1**	**C**	-	**0.45**	**50.3**	**E**	-	**0.46**	**25.1**	**D**
(40) LEXINGTON AVENUE & 43rd STREET													
Lexington Avenue	SB	T	0.95	21.7	C	T	0.70	10.1	B	T	0.79	14.4	B
43rd Street	WB	L	0.77	27.5	D	L	0.73	25.3	D	L	0.77	27.5	D
Overall Intersection		-	**0.77**	**22.3**	**C**	-	**0.67**	**11.9**	**B**	-	**0.69**	**16.0**	**C**
(41) LEXINGTON AVENUE & 42nd STREET													
Lexington Avenue	SB	LTR	1.04	43.6	E	LTR	0.95	23.9	C	LTR	0.97	27.0	D
42nd Street	EB	TR	1.03	52.1	E	TR	0.86	24.3	C	TR	0.85	23.6	C
42nd Street	WB	LT	0.98	38.7	D	LT	0.76	19.7	C	LT	0.78	20.3	C
Overall Intersection		-	**1.04**	**44.2**	**E**	-	**0.91**	**23.0**	**C**	-	**0.92**	**24.6**	**C**

Table M-1

EXISTING 1998 TRAFFIC LEVELS OF SERVICE

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		AM Peak Hour (8 - 9 AM) Mvt.	v/c	Delay	LOS	Midday Peak Hour (12 - 1 PM) Mvt.	v/c	Delay	LOS	PM Peak Hour (5:15 - 6:15 PM) Mvt.	v/c	Delay	LOS
(42) LEXINGTON AVENUE & 41st STREET													
Lexington Avenue	SB	LT	0.94	16.9	C	LT	0.73	9.9	B	LT	0.70	9.6	B
41st Street	EB	TR	0.76	24.1	C	TR	0.70	20.8	C	TR	0.70	20.6	C
Overall Intersection		-	**0.86**	**17.7**	**C**	-	**0.71**	**11.3**	**B**	-	**0.70**	**11.2**	**B**
(43) LEXINGTON AVENUE & 40th STREET													
Lexington Avenue	SB	LT	0.88	10.6	B	LT	0.69	7.3	B	LT	0.65	7.0	B
40th Street	EB	TR	0.56	17.9	C	TR	0.56	17.9	C	TR	0.65	19.1	C
Overall Intersection		-	**0.75**	**12.0**	**B**	-	**0.64**	**9.6**	**B**	-	**0.65**	**10.3**	**B**
(44) THIRD AVENUE & 40th STREET													
Third Avenue	NB	TR	0.69	7.1	B	TR	0.68	7.0	B	TR	0.61	6.5	B
40th Street	EB	LT	0.63	19.2	C	LT	0.52	17.5	C	LT	0.63	19.0	C
Overall Intersection		-	**0.66**	**8.8**	**B**	-	**0.61**	**8.2**	**B**	-	**0.62**	**8.6**	**B**
(45) THIRD AVENUE & 41st STREET													
Third Avenue	NB	TR	0.70	7.2	B	TR	0.69	7.1	B	TR	0.61	6.5	B
41st Street	EB	LT	0.25	15.2	C	LT	0.52	18.0	C	LT	0.55	18.3	C
41st Street	WB	R	0.84	30.4	D	R	0.61	21.5	C	R	0.76	30.1	D
Overall Intersection		-	**0.75**	**9.9**	**B**	-	**0.66**	**8.4**	**B**	-	**0.67**	**8.8**	**B**
(46) THIRD AVENUE & 42nd STREET													
Third Avenue	NB	LT	0.98	27.3	D	LT	0.88	19.1	C	LT	0.81	16.7	C
		R	0.63	17.6	C	R	0.98	58.3	E	R	0.66	18.7	C
42nd Street	EB	LT	0.75	17.2	C	LT	0.77	17.8	C	LT	0.85	21.1	C
42nd Street	WB	T	0.72	22.8	C	T	0.52	19.8	C	T	0.58	20.5	C
		R	0.93	61.7	F	R	0.91	54.3	E	R	1.00	78.7	F
Overall Intersection		-	**0.86**	**25.8**	**D**	-	**0.88**	**22.2**	**C**	-	**0.83**	**20.3**	**C**
(47) THIRD AVENUE & 43rd STREET													
Third Avenue	NB	LT	0.80	8.3	B	LT	0.73	7.5	B	LT	0.70	7.2	B
43rd Street	WB	TR	1.02	64.4	F	TR	0.90	39.8	D	TR	0.93	42.6	E
Overall Intersection		-	**0.89**	**13.9**	**B**	-	**0.80**	**10.4**	**B**	-	**0.79**	**10.7**	**B**
(48) THIRD AVENUE & 44th STREET													
Third Avenue	NB	TR	0.88	9.9	B	TR	0.78	8.0	B	TR	0.75	7.7	B
44th Street	EB	LT	0.63	21.5	C	LT	0.70	23.6	C	LT	0.52	18.1	C
Overall Intersection		-	**0.78**	**10.4**	**B**	-	**0.75**	**8.9**	**B**	-	**0.66**	**8.3**	**B**
(49) THIRD AVENUE & 45th STREET													
Third Avenue	NB	LT	0.84	8.9	B	LT	0.75	7.7	B	LT	0.71	7.3	B
45th Street	WB	T	0.63	19.6	C	TR	0.91	38.4	D	TR	0.91	36.9	D
		R	0.84	38.6	D	-	-	-	-	-	-	-	-
Overall Intersection		-	**0.84**	**11.1**	**B**	-	**0.81**	**10.9**	**B**	-	**0.79**	**10.8**	**B**
(50) THIRD AVENUE & 46th STREET													
Third Avenue	NB	TR	0.77	7.9	B	TR	0.84	14.2	B	TR	0.64	6.7	B
46th Street	EB	LT	0.94	42.1	E	LT	0.45	12.5	B	LT	0.71	20.1	C
Overall Intersection		-	**0.84**	**11.6**	**B**	-	**0.65**	**13.9**	**B**	-	**0.66**	**9.5**	**B**
(51) THIRD AVENUE & 47th STREET													

Table M-1

EXISTING 1998 TRAFFIC LEVELS OF SERVICE

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		AM Peak Hour (8 - 9 AM) Mvt.	v/c	Delay	LOS	Midday Peak Hour (12 - 1 PM) Mvt.	v/c	Delay	LOS	PM Peak Hour (5:15 - 6:15 PM) Mvt.	v/c	Delay	LOS
(51) THIRD AVENUE & 47th STREET													
Third Avenue	NB	LT	0.77	7.9	B	LT	0.83	14.0	B	LT	0.66	6.9	B
47th Street	WB	TR	0.60	18.4	C	TR	1.00	48.9	E	TR	1.02	65.5	F
Overall Intersection		-	**0.70**	**9.6**	**B**	-	**0.92**	**19.3**	**C**	-	**0.80**	**13.6**	**B**
(52) THIRD AVENUE & 48th STREET													
Third Avenue	NB	TR	0.73	7.5	B	TR	0.81	13.6	B	TR	0.62	6.6	B
48th Street	EB	LT	1.04	67.1	F	LT	0.97	43.0	E	LT	0.67	19.5	C
Overall Intersection		-	**0.85**	**15.0**	**B**	-	**0.89**	**17.8**	**C**	-	**0.64**	**9.0**	**B**
(53) SECOND AVENUE & 42nd STREET													
Second Avenue	SB	LTR	0.87	16.0	C	LTR	0.85	15.7	C	LTR	0.84	15.2	C
42nd Street	EB	TR	0.73	19.1	C	TR	0.72	18.8	C	TR	0.75	19.3	C
42nd Street	WB	LT	1.04	59.9	E	LT	0.76	20.7	C	LT	0.82	23.0	C
Overall Intersection		-	**0.95**	**22.3**	**C**	-	**0.81**	**16.9**	**C**	-	**0.83**	**16.9**	**C**
(54) FIRST AVENUE & 42nd STREET													
First Avenue	NB	LTR	0.27	11.2	B	LTR	0.22	10.8	B	LTR	0.21	10.8	B
42nd Street	EB	L	1.01	67.5	F	L	0.86	31.1	D	L	0.92	42.1	E
		T	0.72	18.4	C	T	0.75	19.1	C	T	0.81	22.3	C
42nd Street	WB	TR	0.51	17.2	C	T	0.29	15.4	C	T	0.37	16.0	C
		R	1.00	58.8	E	R	0.81	27.6	D	R	0.98	51.2	E
Overall Intersection		-	**0.64**	**29.9**	**D**		**0.57**	**20.2**	**C**	-	**0.58**	**27.3**	**D**

UNSIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		Mvt.	Avg. Total Delay	95% Queue Length	LOS	Mvt.	Avg. Total Delay	95% Queue Length	LOS	Mvt.	Avg. Total Delay	95% Queue Length	LOS
(25) VANDERBILT AVENUE & 44th STREET													
44th Street	EB	L	7.4	1.0	B	L	6.2	0.4	B	L	6.3	0.8	B
		R	3.4	0.4	A	R	3.2	0.2	A	R	3.2	0.3	A
(26) VANDERBILT AVENUE & 43rd STREET													
Vanderbilt Avenue	NB	L	2.7	0.2	A	L	2.9	0.2	A	L	2.8	0.1	A
43rd Street	WB	TR	6.8	1.5	B	TR	5.5	0.6	B	TR	6.1	0.8	B

GENERAL NOTES:

1. "MVT" refers to the specific intersection approach lane(s) and how the lane(s) operate and/or specific pavement striping.
refers to exclusive right- or left-turn movement lane(s), and LTR is a mixed lane(s) that
cto left-turn" lane that is formed due to a very heavy left-turn volume; in effect, only left
es change in different time periods. For example, a very heavy right-turn volume
may exceed a single lane capacity, thus forcing drivers to use (or "share") an adjacent lane for additional travel capacity in the AM, but as flows decrease later in the day, a shared lane may not be needed.

2. "v/c" is the volume-to-capacity ratio for the MVT listed in the first column.

3. "Delay" is expressed in seconds per vehicle for the MVT listed in the first column.

4. "LOS" is based on average stopped delay per vehicle (sec/veh) for each signaled lane group, and on total average delay for unsignalized approaches as listed in the 1994 HCM, TRB SR 209.

5. " * " indicates that v/c ratios that exceed 1.05 and corresponding average delays are greater than 120 seconds.

6. 95% queue length is expressed in vehicles.

TABLE M-2

2010 NO BUILD
LIRR / GCT TRAFFIC
LEVELS OF SERVICE

Table M-2

2010 NO BUILD TRAFFIC LEVELS OF SERVICE

SIGNALIZED INTERSECTIONS		AM Peak Hour (8 - 9 AM)				Midday Peak Hour (12 - 1 PM)				PM Peak Hour (5:15 - 6:15 PM)			
INTERSECTION & APPROACH		Mvt.	v/c	Delay	LOS	Mvt.	v/c	Delay	LOS	Mvt.	v/c	Delay	LOS
(1) SEVENTH AVENUE & 42nd STREET													
Seventh Avenue	SB	LTR	1.05	120.0+	*F**	LTR	0.68	12.1	B	LTR	0.81	14.5	B
42nd Street	EB	TR	0.79	21.8	C	TR	0.85	23.8	C	TR	0.80	22.0	C
42nd Street	WB	LT	0.60	17.1	C	LT	0.64	17.6	C	LT	0.90	28.4	D
Overall Intersection		-	**0.94**	**120.0+**	**F***	-	**0.75**	**16.2**	**C**	-	**0.85**	**18.7**	**C**
(2) BROADWAY & 42nd STREET													
Broadway	SB	LTR	0.73	14.1	B	LTR	0.60	12.2	B	LTR	0.67	13.1	B
42nd Street	EB	TR	0.54	15.3	C	TR	0.67	17.2	C	TR	0.56	15.5	C
42nd Street	WB	L	1.09	120.0+	*F**	LT	1.17	120.0+	*F**	LT	1.20+	120.0+	*F**
		T	1.06	120.0+	*F**	-	-	-	-	-	-	-	-
Overall Intersection		-	**0.89**	**120.0+**	**F***	-	**0.86**	**120.0+**	**F***	-	**0.94**	**120.0+**	**F***
(3) SIXTH AVENUE & 42nd STREET													
Sixth Avenue	NB	LT	1.05	43.1	E	LT	0.87	16.7	C	LTR	1.08	120.0+	F*
		R	0.77	23.2	C	R	0.37	10.1	B	R	0.47	11.3	B
42nd Street	EB	LT	0.79	20.7	C	LT	0.79	20.7	C	LT	0.79	20.9	C
42nd Street	WB	TR	0.79	20.6	C	TR	0.71	18.2	C	TR	0.74	19.0	C
		R	1.08	105.2	*F**	R	1.16	120.0+	*F**	R	1.16	120.0+	*F**
Overall Intersection		-	**1.06**	**120.0+**	**F***	-	**1.00**	**120.0+**	**F***	-	**1.12**	**120.0+**	**F***
(4) FIFTH AVENUE & 48th STREET													
Fifth Avenue	SB	LT	0.79	10.6	B	LT	0.85	14.8	B	LT	0.72	9.6	B
48th Street	EB	TR	0.52	15.6	C	TR	0.59	14.0	B	TR	0.82	21.7	C
Overall Intersection		-	**0.67**	**11.5**	**B**	-	**0.72**	**14.6**	**B**	-	**0.76**	**13.1**	**B**
(5) FIFTH AVENUE & 47th STREET													
Fifth Avenue	SB	TR	0.69	9.2	B	TR	0.81	13.7	B	TR	0.69	9.3	B
47th Street	WB	LT	0.73	18.5	C	LT	0.63	14.7	B	LT	0.55	15.9	C
Overall Intersection		-	**0.70**	**11.8**	**B**	-	**0.72**	**13.9**	**B**	-	**0.63**	**10.7**	**B**
(6) FIFTH AVENUE & 46th STREET													
Fifth Avenue	SB	LT	0.72	9.5	B	LT	0.87	15.1	C	LT	0.72	9.6	B
46th Street	EB	TR	0.52	15.4	C	TR	0.54	13.5	B	TR	0.65	17.3	C
Overall Intersection		-	**0.63**	**10.8**	**B**	-	**0.70**	**14.8**	**B**	-	**0.69**	**11.4**	**B**
(7) FIFTH AVENUE & 45th STREET													
Fifth Avenue	SB	TR	0.79	10.6	B	TR	0.86	15.1	C	TR	0.73	9.7	B
45th Street	WB	LT	0.60	16.3	C	LT	1.05	66.0	F	LT	0.55	15.8	C
Overall Intersection		-	**0.71**	**11.9**	**B**	-	**0.96**	**23.2**	**C**	-	**0.65**	**11.1**	**B**
(8) FIFTH AVENUE & 44th STREET													
Fifth Avenue	SB	LT	0.77	10.2	B	LT	0.83	14.3	B	LT	0.72	9.7	B
44th Street	EB	TR	0.62	16.8	C	TR	0.50	13.0	B	TR	0.65	17.5	C
Overall Intersection		-	**0.70**	**11.6**	**B**	-	**0.66**	**14.0**	**B**	-	**0.69**	**11.3**	**B**
(9) FIFTH AVENUE & 43rd STREET													
Fifth Avenue	SB	TR	0.79	10.5	B	TR	0.88	15.6	C	TR	0.77	10.3	B
43rd Street	WB	LT	0.52	15.5	C	LT	1.10	120.0+	*F**	LT	0.49	15.2	C
Overall Intersection		-	**0.67**	**11.5**	**B**	-	**0.99**	**120.0+**	**F***	-	**0.65**	**11.2**	**B**
(10) FIFTH AVENUE & 42nd STREET													
Fifth Avenue	SB	LTR	0.70	12.9	B	LTR	0.72	13.1	B	LTR	0.68	12.5	B
42nd Street	EB	TR	0.90	26.6	D	TR	0.88	25.5	D	TR	0.93	29.4	D
42nd Street	WB	LT	1.06	120.0+	*F**	LT	1.05	55.4	E	LT	1.13	120.0+	*F**
Overall Intersection		-	**0.86**	**120.0+**	**F***	-	**0.86**	**26.1**	**D**	-	**0.88**	**120.0+**	**F***

Table M-2

2010 NO BUILD TRAFFIC LEVELS OF SERVICE

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		AM Peak Hour (8 - 9 AM)				Midday Peak Hour (12 - 1 PM)				PM Peak Hour (5:15 - 6:15 PM)			
		Mvt.	v/c	Delay	LOS	Mvt.	v/c	Delay	LOS	Mvt.	v/c	Delay	LOS
(11) FIFTH AVENUE & 41st STREET													
Fifth Avenue	SB	LT	0.69	6.2	B	LT	0.67	6.0	B	LT	0.68	6.2	B
Overall Intersection		-	**0.42**	**6.2**	**B**	-	**0.41**	**6.0**	**B**	-	**0.42**	**6.2**	**B**
(12) FIFTH AVENUE & 40th STREET													
Fifth Avenue	SB	LT	0.72	9.7	B	LT	0.68	9.2	B	LT	0.69	9.4	B
40th Street	EB	TR	0.59	16.3	C	TR	0.56	16.0	C	TR	0.74	19.3	C
Overall Intersection		-	**0.66**	**11.3**	**B**	-	**0.63**	**10.7**	**B**	-	**0.71**	**12.1**	**B**
(13) MADISON AVENUE & 40th STREET													
Madison Avenue	NB	TR	0.85	12.4	B	TR	0.96	22.2	C	TR	0.90	14.3	B
40th Street	EB	LT	0.70	18.4	C	LT	0.48	12.8	B	LT	0.58	16.2	C
Overall Intersection		-	**0.79**	**14.2**	**B**	-	**0.72**	**20.1**	**C**	-	**0.76**	**14.8**	**B**
(14) MADISON AVENUE & 41st STREET													
Madison Avenue	NB	TR	0.89	13.9	B	TR	0.95	21.2	C	TR	0.86	12.7	B
41st Street	EB	LT	0.77	27.0	D	LT	0.59	15.3	C	LT	0.50	15.8	C
Overall Intersection		-	**0.84**	**15.2**	**C**	-	**0.77**	**20.5**	**C**	-	**0.70**	**13.0**	**B**
(15) MADISON AVENUE & 42nd STREET													
Madison Avenue	NB	LTR	0.89	18.4	C	LTR	0.95	25.9	D	LTR	0.86	17.1	C
42nd Street	EB	LT	1.09	120.0+	*F**	LT	1.11	120.0+	*F**	LT	1.03	51.1	E
42nd Street	WB	T	0.92	28.7	D	T	0.79	18.0	C	T	0.92	28.5	D
Overall Intersection		-	**0.98**	**120.0+**	**F***	-	**0.87**	**120.0+**	**F***	-	**0.93**	**28.8**	**D**
(16) MADISON AVENUE & 43rd STREET													
Madison Avenue	NB	LT	0.60	8.5	B	LT	0.66	11.8	B	LT	0.58	8.4	B
43rd Street	WB	TR	0.54	15.8	C	TR	0.41	12.2	B	TR	0.44	14.7	B
Overall Intersection		-	**0.58**	**10.3**	**B**	-	**0.54**	**11.9**	**B**	-	**0.52**	**9.7**	**B**
(17) MADISON AVENUE & 44th STREET													
Madison Avenue	NB	TR	0.57	8.3	B	TR	0.59	11.1	B	TR	0.52	8.0	B
44th Street	EB	LT	0.95	38.7	D	LT	0.73	18.1	C	LT	0.62	17.0	C
Overall Intersection		-	**0.74**	**16.1**	**C**	-	**0.66**	**12.5**	**B**	-	**0.56**	**10.1**	**B**
(18) MADISON AVENUE & 45th STREET													
Madison Avenue	NB	LT	0.67	9.1	B	LT	0.69	12.1	B	LT	0.64	8.9	B
45th Street	WB	TR	0.71	18.3	C	TR	1.00	50.4	E	TR	0.55	15.9	C
Overall Intersection		-	**0.68**	**11.7**	**B**	-	**0.84**	**19.5**	**C**	-	**0.60**	**10.6**	**B**
(19) MADISON AVENUE & 46th STREET													
Madison Avenue	NB	TR	0.62	8.7	B	TR	0.69	12.1	B	TR	0.63	8.8	B
46th Street	EB	LT	0.67	17.6	C	LT	0.97	40.8	E	LT	0.69	18.1	C
Overall Intersection		-	**0.64**	**11.2**	**B**	-	**0.83**	**18.3**	**C**	-	**0.66**	**11.5**	**B**
(20) MADISON AVENUE & 47th STREET													
Madison Avenue	NB	LT	0.66	9.0	B	LT	0.67	11.8	B	LT	0.57	8.3	B
47th Street	WB	TR	0.73	18.5	C	TR	0.58	13.9	B	TR	0.57	16.0	C
Overall Intersection		-	**0.69**	**12.1**	**B**	-	**0.63**	**12.4**	**B**	-	**0.57**	**10.4**	**B**
(21) MADISON AVENUE & 48th STREET													
Madison Avenue	NB	TR	0.69	9.3	B	TR	0.70	12.2	B	TR	0.58	8.3	B
48th Street	EB	LT	0.47	15.0	B	LT	0.57	13.8	B	LT	0.69	17.8	C
Overall Intersection		-	**0.59**	**10.5**	**B**	-	**0.64**	**12.6**	**B**	-	**0.62**	**11.2**	**B**

Table M-2

2010 NO BUILD TRAFFIC LEVELS OF SERVICE

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		AM Peak Hour (8 - 9 AM) Mvt.	v/c	Delay	LOS	Midday Peak Hour (12 - 1 PM) Mvt.	v/c	Delay	LOS	PM Peak Hour (5:15 - 6:15 PM) Mvt.	v/c	Delay	LOS
(22) VANDERBILT AVENUE & 47th STREET													
Vanderbilt Avenue	NB	L	0.21	13.0	B	L	0.12	12.5	B	L	0.19	12.9	B
47th Street	WB	LT	0.86	18.7	C	LT	0.77	15.2	A	LT	0.62	12.2	B
Overall Intersection		-	**0.57**	**18.4**	**C**	-	**0.49**	**15.1**	**C**	-	**0.43**	**12.3**	**B**
(23) VANDERBILT AVENUE & 46th STREET													
Vanderbilt Avenue	NB	TR	0.49	13.4	B	TR	0.78	23.8	C	TR	0.44	12.6	B
Vanderbilt Avenue	SB	LT	0.40	12.1	B	LT	0.37	11.9	B	LT	0.32	11.5	B
46th Street	EB	LTR	0.58	13.8	B	LTR	0.43	12.3	B	LTR	0.54	13.4	B
Overall Intersection		-	**0.53**	**13.3**	**B**	-	**0.61**	**14.7**	**B**	-	**0.49**	**12.8**	**B**
(24) VANDERBILT AVENUE & 45th STREET													
Vanderbilt Avenue	NB	LT	1.05	76.9	F	LT	0.30	11.4	B	LT	0.37	11.9	B
Vanderbilt Avenue	SB	TR	0.78	20.2	C	TR	0.53	13.7	B	TR	0.37	12.0	B
45th Street	WB	LTR	0.86	26.4	D	LTR	0.39	12.0	B	LTR	0.94	33.9	D
Overall Intersection		-	**0.96**	**36.8**	**D**	-	**0.46**	**12.4**	**B**	-	**0.66**	**23.6**	**C**
(27) VANDERBILT AVENUE & 42nd STREET													
42nd Street	EB	LT	0.88	22.9	C	LT	0.82	19.2	C	LT	0.91	25.3	D
42nd Street	WB	TR	0.91	24.7	C	TR	0.88	22.1	C	TR	0.90	23.5	C
Overall Intersection		-	**0.44**	**23.9**	**C**	-	**0.43**	**20.8**	**C**	-	**0.44**	**24.3**	**C**
(28) PARK AVENUE & 40th STREET													
Park Avenue	NB	TR	0.46	8.8	B	TR	0.52	9.0	B	TR	0.60	10.2	B
Park Avenue	SB	T	0.30	7.8	B	T	0.30	7.4	B	T	0.26	7.6	B
Park Avenue (tunnel)	NB	T	0.66	11.5	B	T	0.64	10.6	B	T	0.60	10.5	B
Park Avenue (viaduct)	SB	T	0.69	11.3	B	T	0.56	9.3	B	T	0.69	11.4	B
40th Street	EB	LT	0.97	45.7	E	LT	0.80	26.2	D	LT	1.06	120.0+	*F**
		R	0.52	19.4	C	R	0.56	21.1	C	R	0.56	20.4	C
Overall Intersection		-	**0.80**	**15.5**	**C**	-	**0.70**	**11.7**	**B**	-	**0.84**	**120.0+**	**F***
(29) PARK AVENUE(SB) & 41st STREET													
Park Avenue	SB	LT	0.39	8.4	B	LT	0.28	7.7	B	LT	0.25	7.5	B
41st Street	EB	TR	0.45	17.1	C	TR	0.59	19.7	C	TR	0.69	22.2	C
Overall Intersection		-	**0.41**	**11.8**	**B**	-	**0.40**	**13.6**	**B**	-	**0.42**	**16.0**	**C**
(30) PARK AVENUE(NB) & 41st STREET													
Park Avenue	NB	TR	0.24	7.4	B	TR	0.29	7.7	B	TR	0.20	7.3	B
41st Street	EB	LT	0.49	17.6	C	LT	0.42	16.7	C	LT	0.65	20.7	C
Overall Intersection		-	**0.34**	**11.4**	**B**	-	**0.34**	**10.4**	**B**	-	**0.38**	**13.5**	**B**
(31) PARK AVENUE & 42nd STREET													
Park Avenue	NB	LR	0.27	14.9	B	LR	0.37	15.8	C	LR	0.31	15.2	C
		R	1.02	92.7	F	R	1.20+	120.0+	*F**	R	0.98	80.2	F
42nd Street	EB	TR	1.11	120.0+	*F**	T	0.55	15.3	C	T	0.59	15.8	C
		-			-	R	1.20+	120.0+	*F**	R	1.20+	120.0+	*F**
42nd Street	WB	LT	0.77	13.6	B	LT	0.72	12.4	B	LT	0.70	12.1	B
Overall Intersection		-	**0.87**	**120.0+**	**F***	-	**1.20+**	**120.0+**	**F***	-	**1.16**	**120.0+**	**F***
(32) PARK AVENUE & 46th STREET													
Park Avenue	NB	TR	0.83	19.0	C	TR	0.99	35.3	D	TR	0.87	20.4	C
Park Avenue	SB	L	1.11	120.0+	*F**	L	1.19	120.0+	*F**	L	1.20+	120.0+	*F**
		T	1.04	46.0	E	T	0.90	23.3	C	T	0.91	23.6	C
46th Street	EB	LTR	0.48	12.3	B	LTR	0.66	14.6	B	LTR	0.60	13.5	B
Overall Intersection		-	**0.83**	**120.0+**	**F***	-	**0.96**	**120.0+**	**F***	-	**1.12**	**120.0+**	**F***

Table M-2

2010 NO BUILD TRAFFIC LEVELS OF SERVICE

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		AM Peak Hour (8 - 9 AM) Mvt.	v/c	Delay	LOS	Midday Peak Hour (12 - 1 PM) Mvt.	v/c	Delay	LOS	PM Peak Hour (5:15 - 6:15 PM) Mvt.	v/c	Delay	LOS
(33) PARK AVENUE & 47th STREET													
Park Avenue	NB	DFL	0.79	37.1	D	DFL	0.99	87.5	F	DFL	0.85	48.5	E
		T	0.86	10.7	B	T	0.85	10.2	B	T	0.90	12.1	B
Park Avenue	SB	T	0.58	6.4	B	TR	0.78	8.4	B	TR	0.80	8.7	B
		R	1.04	55.3	E	-	-	-	-	-	-	-	-
47th Street	WB	LTR	0.91	30.1	D	LTR	0.82	24.0	C	LTR	0.93	33.6	D
Overall Intersection		-	**0.99**	**16.6**	**C**	-	**0.97**	**13.3**	**B**	-	**0.92**	**14.7**	**B**
(34) PARK AVENUE & 48th STREET													
Park Avenue	NB	TR	0.69	7.2	B	TR	0.66	7.0	B	TR	0.76	8.1	B
Park Avenue	SB	DFL	1.19	120.0+	*F**	DFL	0.85	48.5	E	DFL	0.85	48.5	E
		T	1.01	27.1	D	T	0.90	12.2	B	T	0.98	20.0	C
48th Street	EB	LTR	0.78	22.8	C	LTR	0.97	40.6	E	LTR	0.79	23.1	C
Overall Intersection		-	**1.08**	**120.0+**	**F***	-	**0.93**	**15.4**	**C**	-	**0.91**	**15.6**	**C**
(35) LEXINGTON AVENUE & 48th STREET													
Lexington Avenue	SB	LT	0.88	10.7	B	LT	0.92	18.1	C	LT	0.80	8.7	B
48th Street	EB	TR	0.75	21.7	C	TR	0.52	13.2	B	TR	0.72	20.5	C
Overall Intersection		-	**0.83**	**13.3**	**B**	-	**0.72**	**16.9**	**C**	-	**0.77**	**11.9**	**B**
(36) LEXINGTON AVENUE & 47th STREET													
Lexington Avenue	SB	TR	1.04	34.1	D	TR	0.98	24.3	C	TR	0.89	11.3	B
47th Street	WB	LT	0.79	22.3	C	LT	0.99	41.4	E	LT	0.64	19.0	C
Overall Intersection		-	**0.94**	**31.0**	**D**	-	**0.98**	**28.9**	**D**	-	**0.79**	**13.2**	**B**
(37) LEXINGTON AVENUE & 46th STREET													
Lexington Avenue	SB	LT	0.89	10.9	B	LT	0.89	16.5	C	LT	0.73	7.8	B
46th Street	EB	TR	0.84	28.6	D	TR	1.01	48.6	E	TR	0.81	22.9	C
Overall Intersection		-	**0.87**	**13.9**	**B**	-	**0.95**	**25.0**	**C**	-	**0.76**	**12.8**	**B**
(38) LEXINGTON AVENUE & 45th STREET													
Lexington Avenue	SB	TR	1.12	120.0+	*F**	TR	1.12	**120.0+**	*F**	TR	0.99	25.3	D
45th Street	WB	LT	0.79	23.4	C	LT	0.95	38.9	D	LT	0.69	20.3	C
Overall Intersection		-	**0.88**	**120.0+**	**F***	-	**0.97**	**120.0+**	**F***	-	**0.78**	**24.2**	**C**
(39) LEXINGTON AVENUE & 44th STREET													
Lexington Avenue	SB	LT	0.89	16.8	C	LT	1.12	**120.0+**	*F**	LT	1.04	40.2	E
Overall Intersection		-	**0.42**	**16.8**	**C**	-	**0.48**	**120.0+**	**F***	-	**0.49**	**40.2**	**E**
(40) LEXINGTON AVENUE & 43rd STREET													
Lexington Avenue	SB	T	1.01	31.9	D	T	0.74	10.6	B	T	0.84	15.5	C
43rd Street	WB	L	0.97	58.7	E	L	0.92	48.0	E	L	0.97	58.7	E
Overall Intersection		-	**0.87**	**34.7**	**D**	-	**0.77**	**15.0**	**B**	-	**0.79**	**20.7**	**C**
(41) LEXINGTON AVENUE & 42nd STREET													
Lexington Avenue	SB	LTR	1.11	120.0+	*F**	LTR	1.00	33.6	D	LTR	1.03	41.2	E
42nd Street	EB	TR	1.09	120.0+	*F**	TR	0.95	33.5	D	TR	0.95	32.9	D
42nd Street	WB	LT	1.06	120.0+	*F**	LT	0.88	25.3	D	LT	0.92	28.4	D
Overall Intersection		-	**1.10**	**120.0+**	**F***	-	**0.98**	**31.5**	**D**	-	**1.00**	**36.1**	**D**

Table M-2

2010 NO BUILD TRAFFIC LEVELS OF SERVICE

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		AM Peak Hour (8 - 9 AM) Mvt.	v/c	Delay	LOS	Midday Peak Hour (12 - 1 PM) Mvt.	v/c	Delay	LOS	PM Peak Hour (5:15 - 6:15 PM) Mvt.	v/c	Delay	LOS
(42) LEXINGTON AVENUE & 41st STREET													
Lexington Avenue	SB	LT	1.00	25.5	D	LT	0.78	10.6	B	LT	0.75	10.2	B
41st Street	EB	TR	0.82	28.4	D	TR	0.75	23.4	C	TR	0.75	22.9	C
Overall Intersection		-	**0.92**	**25.8**	**D**	-	**0.77**	**12.3**	**B**	-	**0.75**	**12.1**	**B**
(43) LEXINGTON AVENUE & 40th STREET													
Lexington Avenue	SB	LT	0.93	12.9	B	LT	0.73	7.8	B	LT	0.69	7.3	B
40th Street	EB	TR	0.60	18.4	C	TR	0.61	18.6	C	TR	0.71	20.5	C
Overall Intersection		-	**0.80**	**14.0**	**B**	-	**0.68**	**10.2**	**B**	-	**0.70**	**11.0**	**B**
(44) THIRD AVENUE & 40th STREET													
Third Avenue	NB	TR	0.73	7.5	B	TR	0.72	7.4	B	TR	0.66	6.8	B
40th Street	EB	LT	0.68	20.2	C	LT	0.57	18.2	C	LT	0.69	20.2	C
Overall Intersection		-	**0.71**	**9.2**	**B**	-	**0.66**	**8.7**	**B**	-	**0.67**	**9.1**	**B**
(45) THIRD AVENUE & 41st STREET													
Third Avenue	NB	TR	0.74	7.6	B	TR	0.74	7.6	B	TR	0.66	6.8	B
41st Street	EB	LT	0.27	15.3	C	LT	0.56	18.6	C	LT	0.57	18.7	C
41st Street	WB	R	0.96	49.1	E	R	0.69	25.5	D	R	0.89	46.7	E
Overall Intersection		-	**0.83**	**12.0**	**B**	-	**0.72**	**9.0**	**B**	-	**0.75**	**9.9**	**B**
(46) THIRD AVENUE & 42nd STREET													
Third Avenue	NB	LT	1.05	43.4	E	LT	0.95	23.3	C	LT	0.87	18.3	C
		R	0.73	23.2	C	R	1.14	120.0+	*F**	R	0.76	24.9	C
42nd Street	EB	LT	0.81	19.4	C	LT	0.87	22.5	C	LT	0.97	34.4	D
42nd Street	WB	T	0.76	23.8	C	T	0.59	20.6	C	T	0.67	21.8	C
		R	1.09	120.0+	*F**	R	1.06	120.0+	*F**	R	1.16	120.0+	*F**
Overall Intersection		-	**0.93**	**120.0+**	**F***	-	**1.00**	**120.0+**	**F***	-	**0.92**	**120.0+**	**F***
(47) THIRD AVENUE & 43rd STREET													
Third Avenue	NB	LT	0.85	9.2	B	LT	0.78	8.0	B	LT	0.75	7.7	B
43rd Street	WB	TR	1.13	120.0+	*F**	TR	0.99	57.3	E	TR	1.01	63.8	F
Overall Intersection		-	**0.96**	**120.0+**	**F***	-	**0.86**	**12.5**	**B**	-	**0.85**	**13.2**	**B**
(48) THIRD AVENUE & 44th STREET													
Third Avenue	NB	TR	0.94	12.2	B	TR	0.83	8.7	B	TR	0.80	8.3	B
44th Street	EB	LT	0.70	24.2	C	LT	0.75	26.6	D	LT	0.57	19.1	C
Overall Intersection		-	**0.84**	**12.8**	**B**	-	**0.80**	**9.8**	**B**	-	**0.71**	**8.9**	**B**
(49) THIRD AVENUE & 45th STREET													
Third Avenue	NB	LT	0.89	10.0	B	LT	0.80	8.2	B	LT	0.76	7.8	B
45th Street	WB	T	0.66	20.4	C	TR	0.99	55.9	E	TR	0.97	47.4	E
		R	0.97	65.2	F	-	-	-	-	-	-	-	-
Overall Intersection		-	**0.92**	**13.4**	**B**	-	**0.87**	**13.4**	**B**	-	**0.84**	**12.5**	**B**
(50) THIRD AVENUE & 46th STREET													
Third Avenue	NB	TR	0.82	8.6	B	TR	0.90	15.7	C	TR	0.68	7.0	B
46th Street	EB	LT	1.02	62.8	F	LT	0.49	12.9	B	LT	0.76	21.3	C
Overall Intersection		-	**0.90**	**14.6**	**B**	-	**0.69**	**15.2**	**C**	-	**0.71**	**10.0**	**B**

Table M-2

2010 NO BUILD TRAFFIC LEVELS OF SERVICE

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		AM Peak Hour (8 - 9 AM)				Midday Peak Hour (12 - 1 PM)				PM Peak Hour (5:15 - 6:15 PM)			
		Mvt.	v/c	Delay	LOS	Mvt.	v/c	Delay	LOS	Mvt.	v/c	Delay	LOS
(51) THIRD AVENUE & 47th STREET													
Third Avenue	NB	LT	0.82	8.6	B	LT	0.90	15.5	C	LT	0.71	7.2	B
47th Street	WB	TR	0.65	19.1	C	TR	1.08	120.0+	*F**	TR	1.12	120.0+	*F**
Overall Intersection		-	**0.75**	**10.3**	**B**	-	**0.98**	**120.0+**	**F***	-	**0.87**	**120.0+**	**F***
(52) THIRD AVENUE & 48th STREET													
Third Avenue	NB	TR	0.78	8.0	B	TR	0.86	14.8	B	TR	0.66	6.9	B
48th Street	EB	LT	1.13	120.0+	*F**	LT	1.05	65.1	F	LT	0.71	20.5	C
Overall Intersection		-	**0.92**	**120.0+**	**F***	-	**0.96**	**21.9**	**C**	-	**0.68**	**9.4**	**B**
(53) SECOND AVENUE & 42nd STREET													
Second Avenue	SB	LTR	0.93	18.5	C	LTR	0.92	18.2	C	LTR	0.90	17.1	C
42nd Street	EB	TR	0.78	20.7	C	TR	0.79	20.7	C	TR	0.82	21.7	C
42nd Street	WB	LT	1.14	120.0+	*F**	LT	0.86	26.0	D	LT	0.94	35.0	D
Overall Intersection		-	**1.02**	**120.0+**	**F***	-	**0.89**	**19.6**	**C**	-	**0.92**	**20.4**	**C**
(54) FIRST AVENUE & 42nd STREET													
First Avenue	NB	LTR	0.29	11.3	B	LTR	0.24	10.9	B	LTR	0.23	10.9	B
42nd Street	EB	L	1.13	120.0+	*F**	L	0.96	46.2	E	L	1.06	120.0+	*F**
		T	0.77	20.3	C	T	0.81	22.0	C	T	0.88	28.4	D
42nd Street	WB	TR	0.54	17.6	C	T	0.31	15.5	C	T	0.40	16.2	C
		R	1.07	120.0+	*F**	R	0.86	32.6	D	R	1.11	120.0+	*F**
Overall Intersection		-	**0.70**	**120.0+**	**F***		**0.61**	**24.6**	**C**	-	**0.67**	**120.0+**	**F***

Table M-2

2010 NO BUILD TRAFFIC LEVELS OF SERVICE

UNSIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		Mvt.	Avg. Total Delay	95% Queue Length	LOS	Mvt.	Avg. Total Delay	95% Queue Length	LOS	Mvt.	Avg. Total Delay	95% Queue Length	LOS
(25) VANDERBILT AVENUE & 44th STREET													
44th Street	EB	L	10.3	1.5	C	L	6.5	0.5	B	L	6.6	0.9	B
		R	3.5	0.4	A	R	3.3	0.2	A	R	3.3	0.4	A
(26) VANDERBILT AVENUE & 43rd STREET													
Vanderbilt Avenue	NB	L	2.8	0.2	A	L	2.9	0.2	A	L	2.8	0.1	A
43rd Street	WB	TR	7.4	1.7	B	TR	5.7	0.7	B	TR	6.4	0.9	B

GENERAL NOTES:

1. "MVT" refers to the specific intersection approach lane(s) and how the lane(s) operate and/or specific pavement striping. refers to exclusive right- or left-turn movement lane(s), and LTR is a mixed lane(s) that acto left-turn" lane that is formed due to a very heavy left-turn volume; in effect, only left es change in different time periods. For example, a very heavy right-turn volume may exceed a single lane capacity, thus forcing drivers to use (or "share") an adjacent lane for additional travel capacity in the AM, but as flows decrease later in the day, a shared lane may not be needed.

2. "v/c" is the volume-to-capacity ratio for the MVT listed in the first column.

3. "Delay" is expressed in seconds per vehicle for the MVT listed in the first column.

4. "LOS" is based on average stopped delay per vehicle (sec/veh) for each signaled lane group, and on total average delay for unsignalized approaches as listed in the 1994 HCM, TRB SR 209.

5. " * " indicates that Delay and Level of Service are not meaningful when any v/c is greater than 1.2 or 1/PHF. Also, it is beyond the scope of HCM to assess delay for an approach which operates in oversaturated conditions.

6. 95% queue length is expressed in vehicles.

TABLE M-3

2010 BUILD / MITIGATED LIRR / GCT TRAFFIC LEVELS OF SERVICE

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE
AM PEAK HOUR (8-9 AM)

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		No Build Mvt.	No Build v/c	No Build Delay	No Build LOS	Build Mvt.	Build v/c	Build Delay	Build LOS	Mitigated Build Mvt.	Mitigated Build v/c	Mitigated Build Delay	Mitigated Build LOS	Mitigation
(1) SEVENTH AVENUE & 42nd STREET														
Seventh Avenue	SB	LTR	1.05	47.4	*F**	LTR	0.96	23.8	C					
42nd Street	EB	TR	0.79	21.8	C	TR	0.76	20.6	C			n/a		
42nd Street	WB	LT	0.60	17.1	C	LT	0.56	16.6	C					
Overall Intersection		-	**0.94**	**38.3**	F*	-	**0.87**	**22.1**	**C**					
(2) BROADWAY & 42nd STREET														
Broadway	SB	LTR	0.73	14.1	B	LTR	0.72	13.9	B					
42nd Street	EB	TR	0.54	15.3	C	TR	0.50	14.9	B			n/a		
42nd Street	WB	L	1.09	106.8	*F**	L	1.02	76.8	F					
		T	1.06	71.4	*F**	T	1.02	58.6	E					
Overall Intersection		-	**0.89**	**31.5**	**F***	-	**0.86**	**26.9**	**D**					
(3) SIXTH AVENUE & 42nd STREET														
Sixth Avenue	NB	LT	1.05	43.1	E	LT	1.03	35.8	D					
		R	0.77	23.2	C	R	0.75	21.6	C					
42nd Street	EB	LT	0.79	20.7	C	LT	0.75	19.5	C			n/a		
42nd Street	WB	TR	0.79	20.6	C	TR	0.77	19.9	C					
		R	1.08	105.2	*F**	R	1.06	96.2	*F**					
Overall Intersection		-	**1.06**	**37.6**	**F***	-	**1.04**	**32.5**	**F***					
(4) FIFTH AVENUE & 48th STREET														
Fifth Avenue	SB	LT	0.79	10.6	B	LT	0.80	10.8	B					
48th Street	EB	TR	0.52	15.6	C	TR	0.55	15.9	C			n/a		
Overall Intersection		-	**0.67**	**11.5**	**B**	-	**0.69**	**11.7**	**B**					
(5) FIFTH AVENUE & 47th STREET														
Fifth Avenue	SB	TR	0.69	9.2	B	TR	0.68	9.1	B					
47th Street	WB	LT	0.73	18.5	C	LT	0.75	19.3	C			n/a		
Overall Intersection		-	**0.70**	**11.8**	**B**	-	**0.71**	**11.9**	**B**					
(6) FIFTH AVENUE & 46th STREET														
Fifth Avenue	SB	LT	0.72	9.5	B	LT	0.72	9.5	B					
46th Street	EB	TR	0.52	15.4	C	TR	0.51	15.3	C			n/a		
Overall Intersection		-	**0.63**	**10.8**	**B**	-	**0.63**	**10.7**	**B**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE
AM PEAK HOUR (8-9 AM)

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		No Build Mvt.	No Build v/c	No Build Delay	No Build LOS	Build Mvt.	Build v/c	Build Delay	Build LOS	Mitigated Build Mvt.	Mitigated Build v/c	Mitigated Build Delay	Mitigated Build LOS	Mitigation
(7) FIFTH AVENUE & 45th STREET														
Fifth Avenue	SB	TR	0.79	10.6	B	TR	0.77	10.2	B					
45th Street	WB	LT	0.60	16.3	C	LT	0.55	15.8	C			n/a		
Overall Intersection		**-**	**0.71**	**11.9**	**B**	**-**	**0.67**	**11.5**	**B**					
(8) FIFTH AVENUE & 44th STREET														
Fifth Avenue	SB	LT	0.77	10.2	B	LT	0.73	9.8	B					
44th Street	EB	TR	0.62	16.8	C	TR	0.64	17.2	C			n/a		
Overall Intersection		**-**	**0.70**	**11.6**	**B**	**-**	**0.69**	**11.4**	**B**					
(9) FIFTH AVENUE & 43rd STREET														
Fifth Avenue	SB	TR	0.79	10.5	B	TR	0.74	9.9	B					
43rd Street	WB	LT	0.52	15.5	C	LT	0.52	15.5	C			n/a		
Overall Intersection		**-**	**0.67**	**11.5**	**B**	**-**	**0.64**	**10.9**	**B**					
(10) FIFTH AVENUE & 42nd STREET														
Fifth Avenue	SB	LTR	0.70	12.9	B	LTR	0.66	12.3	B					
42nd Street	EB	TR	0.90	26.6	D	TR	0.86	24.0	C			n/a		
42nd Street	WB	LT	1.06	62.3	*F**	LT	1.02	47.7	E					
Overall Intersection		**-**	**0.86**	**27.9**	**F***	**-**	**0.82**	**23.7**	**C**					
(11) FIFTH AVENUE & 41st STREET														
Fifth Avenue	SB	LT	0.69	6.2	B	LT	0.66	6.0	B			n/a		
Overall Intersection		**-**	**0.42**	**6.2**	**B**	**-**	**0.40**	**6.0**	**B**					
(12) FIFTH AVENUE & 40th STREET														
Fifth Avenue	SB	LT	0.72	9.7	B	LT	0.67	9.2	B					
40th Street	EB	TR	0.59	16.3	C	TR	0.58	16.1	C			n/a		
Overall Intersection		**-**	**0.66**	**11.3**	**B**	**-**	**0.63**	**10.9**	**B**					
(13) MADISON AVENUE & 40th STREET														
Madison Avenue	NB	TR	0.85	12.4	B	TR	0.84	12.2	B					
40th Street	EB	LT	0.70	18.4	C	LT	0.71	18.7	C			n/a		
Overall Intersection		**-**	**0.79**	**14.2**	**B**	**-**	**0.79**	**14.1**	**B**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE
AM PEAK HOUR (8-9 AM)

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		No Build Mvt.	No Build v/c	No Build Delay	No Build LOS	Build Mvt.	Build v/c	Build Delay	Build LOS	Mitigated Build Mvt.	Mitigated Build v/c	Mitigated Build Delay	Mitigated Build LOS	Mitigation
(14) MADISON AVENUE & 41st STREET														
Madison Avenue	NB	TR	0.89	13.9	B	TR	0.89	13.9	B	TR	0.89	13.9	B	-Daylight the north curb on the EB approach to create a left-turn lane eastbound and provide a protected EB LT phase.
41st Street	EB	LT	0.77	27.0	D	LT	1.09	*108.1*	*F**	L	0.67	22.5	C	
										T	0.13	12.5	B	
Overall Intersection		**-**	**0.84**	**15.2**	**C**	**-**	**0.97**	**23.5**	**F***	**-**	**0.79**	**14.4**	**B**	
(15) MADISON AVENUE & 42nd STREET														
Madison Avenue	NB	LTR	0.89	18.4	C	LTR	0.87	17.5	C			n/a		
42nd Street	EB	LT	1.09	74.9	*F**	LT	1.05	57.4	E					
42nd Street	WB	T	0.92	28.7	D	T	0.90	26.9	D					
Overall Intersection		**-**	**0.98**	**35.5**	**F***	**-**	**0.95**	**30.1**	**D**					
(16) MADISON AVENUE & 43rd STREET														
Madison Avenue	NB	LT	0.60	8.5	B	LT	0.57	8.3	B			n/a		
43rd Street	WB	TR	0.54	15.8	C	TR	0.65	17.4	C					
Overall Intersection		**-**	**0.58**	**10.3**	**B**	**-**	**0.61**	**10.7**	**B**					
(17) MADISON AVENUE & 44th STREET														
Madison Avenue	NB	TR	0.57	8.3	B	TR	0.60	8.5	B			n/a		
44th Street	EB	LT	0.95	38.7	D	LT	0.92	33.8	D					
Overall Intersection		**-**	**0.74**	**16.1**	**C**	**-**	**0.74**	**15.0**	**B**					
(18) MADISON AVENUE & 45th STREET														
Madison Avenue	NB	LT	0.67	9.1	B	LT	0.66	9.0	B			n/a		
45th Street	WB	TR	0.71	18.3	C	TR	0.75	19.5	C					
Overall Intersection		**-**	**0.68**	**11.7**	**B**	**-**	**0.70**	**12.0**	**B**					
(19) MADISON AVENUE & 46th STREET														
Madison Avenue	NB	TR	0.62	8.7	B	TR	0.64	8.9	B			n/a		
46th Street	EB	LT	0.67	17.6	C	LT	0.67	17.6	C					
Overall Intersection		**-**	**0.64**	**11.2**	**B**	**-**	**0.66**	**11.2**	**B**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE
AM PEAK HOUR (8-9 AM)

SIGNALIZED INTERSECTIONS

		No Build				Build				Mitigated Build				
INTERSECTION & APPROACH		**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mitigation**
(20) MADISON AVENUE & 47th STREET														
Madison Avenue	NB	LT	0.66	9.0	B	LT	0.70	9.4	B					
47th Street	WB	TR	0.73	18.5	C	TR	0.76	19.4	C			n/a		
Overall Intersection		**-**	**0.69**	**12.1**	**B**	**-**	**0.73**	**12.5**	**B**					
(21) MADISON AVENUE & 48th STREET														
Madison Avenue	NB	TR	0.69	9.3	B	TR	0.79	10.6	B					
48th Street	EB	LT	0.47	15.0	B	LT	0.48	15.1	C			n/a		
Overall Intersection		**-**	**0.59**	**10.5**	**B**	**-**	**0.65**	**11.5**	**B**					
(22) VANDERBILT AVENUE & 47th STREET														
Vanderbilt Avenue	NB	L	0.21	13.0	B	L	0.19	12.9	B					
47th Street	WB	LT	0.86	18.7	C	LT	0.86	18.7	C			n/a		
Overall Intersection		**-**	**0.57**	**18.4**	**C**	**-**	**0.57**	**18.4**	**C**					
(23) VANDERBILT AVENUE & 46th STREET														
Vanderbilt Avenue	NB	TR	0.49	13.4	B	TR	0.55	14.4	B					
Vanderbilt Avenue	SB	LT	0.40	12.1	B	LT	0.39	12.1	B			n/a		
46th Street	EB	LTR	0.58	13.8	B	LTR	0.58	13.8	B					
Overall Intersection		**-**	**0.53**	**13.3**	**B**	**-**	**0.56**	**13.5**	**B**					
(24) VANDERBILT AVENUE & 45th STREET														
Vanderbilt Avenue	NB	LT	1.05	76.9	F	LT	1.06	80.7	*F**					
Vanderbilt Avenue	SB	TR	0.78	20.2	C	TR	0.80	21.5	C			n/a		
45th Street	WB	LTR	0.86	26.4	D	LTR	0.90	30.6	D					
Overall Intersection		**-**	**0.96**	**36.8**	**D**	**-**	**0.98**	**40.0**	**F***					
(27) VANDERBILT AVENUE & 42nd STREET														
42nd Street	EB	LT	0.88	22.9	C	LT	0.87	21.6	C					
42nd Street	WB	TR	0.91	24.7	C	TR	0.91	24.3	C			n/a		
Overall Intersection		**-**	**0.44**	**23.9**	**C**	**-**	**0.44**	**23.0**	**C**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE
AM PEAK HOUR (8-9 AM)

SIGNALIZED INTERSECTIONS

		No Build				Build				Mitigated Build				
INTERSECTION & APPROACH		**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mitigation**
(28) PARK AVENUE & 40th STREET														
Park Avenue	NB	TR	0.46	8.8	B	TR	0.47	8.9	B					
Park Avenue	SB	T	0.30	7.8	B	T	0.30	7.8	B					
Park Avenue (tunnel)	NB	T	0.66	11.5	B	T	0.64	11.2	B			n/a		
Park Avenue (viaduct)	SB	T	0.69	11.3	B	T	0.65	10.8	B					
40th Street	EB	LT	0.97	45.7	E	LT	0.94	41.4	E					
		R	0.52	19.4	C	R	0.52	19.4	C					
Overall Intersection		**-**	**0.80**	**15.5**	**C**	**-**	**0.77**	**14.7**	**C**					
(29) PARK AVENUE(SB) & 41st STREET														
Park Avenue	SB	LT	0.39	8.4	B	LT	0.40	8.5	B					
41st Street	EB	TR	0.45	17.1	C	TR	0.43	16.8	C			n/a		
Overall Intersection		**-**	**0.41**	**11.8**	**B**	**-**	**0.41**	**11.7**	**B**					
(30) PARK AVENUE(NB) & 41st STREET														
Park Avenue	NB	TR	0.24	7.4	B	TR	0.27	7.6	B					
41st Street	EB	LT	0.49	17.6	C	LT	0.42	16.7	C			n/a		
Overall Intersection		**-**	**0.34**	**11.4**	**B**	**-**	**0.33**	**10.9**	**B**					
(31) PARK AVENUE & 42nd STREET														
Park Avenue	NB	LR	0.27	14.9	B	LR	0.05	13.5	B	L	0.05	13.5	B	-Remove parking along the NB approach
		R	1.02	92.7	F	R	1.20+	120.0+	*F**	R	0.49	17.2	C	to provide two right-turn lanes and one
42nd Street	EB	TR	1.11	84.6	*F**	TR	1.10	76.2	*F**	TR	1.10	76.7	*F**	left lane, adjust the signal timing to
42nd Street	WB	LT	0.77	13.6	B	LT	0.77	13.6	B	LT	0.77	13.6	B	provide a protected NB movement.
Overall Intersection		**-**	**0.87**	**48.3**	**F***	**-**	**1.20+**	**120.0+**	**F***	**-**	**0.65**	**48.3**	**F***	
(32) PARK AVENUE & 46th STREET														
Park Avenue	NB	TR	0.83	19.0	C	TR	0.81	18.3	C	TR	0.81	18.3	C	-Remove parking along the SB approach
Park Avenue	SB	L	1.11	120.0+	*F**	L	1.19	120.0+	*F**	L	0.13	10.8	B	to provide two left-turn lanes and two
		T	1.04	46.0	E	T	0.99	34.2	D	T	0.93	24.8	C	through lanes.
46th Street	EB	LTR	0.48	12.3	B	LTR	0.50	12.4	B	LTR	0.50	12.4	B	
Overall Intersection		**-**	**0.83**	**31.7**	**F***	**-**	**0.88**	**28.0**	**F***	**-**	**0.71**	**19.5**	**C**	

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE
AM PEAK HOUR (8-9 AM)

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		No Build				Build				Mitigated Build				
		Mvt.	v/c	Delay	LOS	Mvt.	v/c	Delay	LOS	Mvt.	v/c	Delay	LOS	Mitigation
(33) PARK AVENUE & 47th STREET														
Park Avenue	NB	DFL	0.79	37.1	D	DFL	0.79	37.1	D	LT	0.60	6.5	B	-Provide a protected N/S phase.
		T	0.86	10.7	B	T	0.85	10.2	B	-	-	-	-	
Park Avenue	SB	T	0.58	6.4	B	T	0.56	6.2	B	T	0.56	6.2	B	
		R	1.04	55.3	E	R	1.20+	120.0+	*F**	R	0.95	30.2	D	
47th Street	WB	LTR	0.91	30.1	D	LTR	0.93	31.5	D	LTR	0.93	31.5	D	
Overall Intersection		**-**	**0.92**	**16.6**	**C**	**-**	**1.15**	**30.4**	**F***	**-**	**0.94**	**13.1**	**B**	
(34) PARK AVENUE & 48th STREET														
Park Avenue	NB	TR	0.69	7.2	B	TR	0.70	7.4	B	TR	0.69	7.2	B	-Provide a protected N/S phase and
Park Avenue	SB	DFL	1.19	120.0+	*F**	DFL	1.20+	120.0+	*F**	LT	0.72	7.5	B	daylight the south curb of the EB
		T	1.01	27.1	D	T	0.99	21.2	C	-	-	-	-	approach.
48th Street	EB	LTR	0.78	22.8	C	LTR	0.95	37.8	D	LTR	0.89	29.7	D	
Overall Intersection		**-**	**1.08**	**22.0**	**F***	**-**	**1.20+**	**25.0**	**F***	**-**	**0.79**	**10.8**	**B**	
(35) LEXINGTON AVENUE & 48th STREET														
Lexington Avenue	SB	LT	0.88	10.7	B	LT	0.86	10.2	B					
48th Street	EB	TR	0.75	21.7	C	TR	0.82	24.0	C		n/a			
Overall Intersection		**-**	**0.83**	**13.3**	**B**	**-**	**0.84**	**13.7**	**B**					
(36) LEXINGTON AVENUE & 47th STREET														
Lexington Avenue	SB	TR	1.04	34.1	D	TR	1.02	27.2	D					
47th Street	WB	LT	0.79	22.3	C	LT	0.81	23.3	C		n/a			
Overall Intersection		**-**	**0.94**	**31.0**	**D**	**-**	**0.94**	**26.2**	**D**					
(37) LEXINGTON AVENUE & 46th STREET														
Lexington Avenue	SB	LT	0.89	10.9	B	LT	0.86	10.2	B					
46th Street	EB	TR	0.84	28.6	D	TR	0.85	29.2	D		n/a			
Overall Intersection		**-**	**0.87**	**13.9**	**B**	**-**	**0.86**	**13.5**	**B**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE
AM PEAK HOUR (8-9 AM)

SIGNALIZED INTERSECTIONS

		No Build				Build				Mitigated Build				
INTERSECTION & APPROACH		**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mitigation**
(38) LEXINGTON AVENUE & 45th STREET														
Lexington Avenue	SB	TR	1.12	77.9	*F**	TR	1.09	66.3	*F**					
45th Street	WB	LT	0.79	23.4	C	LT	0.88	29.2	D			n/a		
Overall Intersection		-	**0.88**	**65.9**	**F***	-	**0.90**	**57.9**	**F***					
(39) LEXINGTON AVENUE & 44th STREET														
Lexington Avenue	SB	LT	0.89	16.8	C	LT	0.87	16.2	C			n/a		
Overall Intersection		-	**0.42**	**16.8**	**C**	-	**0.41**	**16.2**	**C**					
(40) LEXINGTON AVENUE & 43rd STREET														
Lexington Avenue	SB	T	1.01	31.9	D	T	0.99	26.6	D	T	0.99	26.6	D	-Provide a protected WB signal phase.
43rd Street	WB	L	0.97	58.7	E	L	1.20+	120.0+	*F**	L	0.66	21.4	C	
Overall Intersection		-	**0.87**	**34.7**	**D**	-	**1.20+**	**120.0+**	**F***	-	**0.74**	**26.1**	**D**	
(41) LEXINGTON AVENUE & 42nd STREET														
Lexington Avenue	SB	LTR	1.11	71.7	*F**	LTR	1.08	58.3	*F**					
42nd Street	EB	TR	1.09	75.6	*F**	TR	1.06	64.3	*F**			n/a		
42nd Street	WB	LT	1.06	61.0	*F**	LT	1.04	52.0	*E*					
Overall Intersection		-	**1.10**	**69.9**	**F***	-	**1.07**	**58.0**	**F***					
(42) LEXINGTON AVENUE & 41st STREET														
Lexington Avenue	SB	LT	1.00	25.5	D	LT	0.98	21.4	C					
41st Street	EB	TR	0.82	28.4	D	TR	0.84	30.7	D			n/a		
Overall Intersection		-	**0.92**	**25.8**	**D**	-	**0.92**	**22.4**	**C**					
(43) LEXINGTON AVENUE & 40th STREET														
Lexington Avenue	SB	LT	0.93	12.9	B	LT	0.91	11.8	B					
40th Street	EB	TR	0.60	18.4	C	TR	0.67	19.6	C			n/a		
Overall Intersection		-	**0.80**	**14.0**	**B**	-	**0.81**	**13.5**	**B**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE
AM PEAK HOUR (8-9 AM)

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		No Build Mvt.	No Build v/c	No Build Delay	No Build LOS	Build Mvt.	Build v/c	Build Delay	Build LOS	Mitigated Build Mvt.	Mitigated Build v/c	Mitigated Build Delay	Mitigated Build LOS	Mitigation
(44) THIRD AVENUE & 40th STREET														
Third Avenue	NB	TR	0.73	7.5	B	TR	0.71	7.3	B					
40th Street	EB	LT	0.68	20.2	C	LT	0.68	20.4	C		n/a			
Overall Intersection		**-**	**0.71**	**9.2**	**B**	**-**	**0.70**	**9.1**	**B**					
(45) THIRD AVENUE & 41st STREET														
Third Avenue	NB	TR	0.74	7.6	B	TR	0.72	7.4	B	TR	0.72	7.4	B	-Provide a protected E/W signal phase.
41st Street	EB	LT	0.27	15.3	C	LT	0.27	15.2	C	LT	0.27	15.2	C	
41st Street	WB	R	0.96	49.1	E	R	1.10	99.8	*F**	R	0.67	20.6	C	
Overall Intersection		**-**	**0.83**	**12.0**	**B**	**-**	**0.87**	**16.4**	**F***	**-**	**0.70**	**9.2**	**B**	
(46) THIRD AVENUE & 42nd STREET														
Third Avenue	NB	LT	1.05	43.4	E	LT	1.05	44.4	E	LT	1.05	44.3	E	-Provide a protected E/W signal phase.
		R	0.73	23.2	C	R	0.77	27.3	D	R	0.77	27.3	D	
42nd Street	EB	LT	0.81	19.4	C	LT	0.76	17.5	C	LT	0.76	17.5	C	
42nd Street	WB	T	0.76	23.8	C	T	0.75	23.7	C	T	0.75	23.7	C	
		R	1.09	120.0+	*F**	R	1.20+	120.0+	*F**	R	0.95	68.5	F	
Overall Intersection		**-**	**0.93**	**38.5**	**F***	**-**	**0.90**	**35.6**	**F***	**-**	**0.90**	**37.5**	**D**	
(47) THIRD AVENUE & 43rd STREET														
Third Avenue	NB	LT	0.85	9.2	B	LT	0.83	8.7	B	LT	0.83	8.7	B	-Daylight the north curb to provide an
43rd Street	WB	TR	1.13	113.8	*F**	TR	1.20+	120.0+	*F**	T	0.22	15.0	B	exclusive RT lane WB and provide a
										R	1.03	75.4	F	protected WB signal phase.
Overall Intersection		**-**	**0.96**	**19.6**	**F***	**-**	**1.02**	**109.4**	**F***	**-**	**0.91**	**13.5**	**B**	
(48) THIRD AVENUE & 44th STREET														
Third Avenue	NB	TR	0.94	12.2	B	TR	0.91	10.7	B					
44th Street	EB	LT	0.70	24.2	C	LT	0.70	24.2	C		n/a			
Overall Intersection		**-**	**0.84**	**12.8**	**B**	**-**	**0.83**	**11.4**	**B**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE
AM PEAK HOUR (8-9 AM)

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		No Build Mvt.	No Build v/c	No Build Delay	No Build LOS	Build Mvt.	Build v/c	Build Delay	Build LOS	Mitigated Build Mvt.	Mitigated Build v/c	Mitigated Build Delay	Mitigated Build LOS	Mitigation
(49) THIRD AVENUE & 45th STREET														
Third Avenue	NB	LT	0.89	10.0	B	LT	0.87	9.5	B	LT	0.87	9.5	B	-Daylight the north curb of the WB
45th Street	WB	T	0.66	20.4	C	T	0.67	20.6	C	T	0.67	20.6	C	approach to allow for a right-turn lane.
		R	0.97	65.2	F	R	1.05	94.3	F	R	0.92	52.3	E	
Overall Intersection		-	**0.92**	**13.4**	**B**	-	**0.94**	**14.2**	**B**	-	**0.89**	**12.4**	**B**	
(50) THIRD AVENUE & 46th STREET														
Third Avenue	NB	TR	0.82	8.6	B	TR	0.80	8.2	B	TR	0.80	8.2	B	-Daylight the north curb of the EB
46th Street	EB	LT	1.02	62.8	F	LT	1.12	101.8	*F**	L	0.94	59.6	E	approach to allow for a left-turn lane.
										T	0.51	17.7	C	
Overall Intersection		-	**0.90**	**14.6**	**B**	-	**0.92**	**19.0**	**F***	-	**0.85**	**11.1**	**B**	
(51) THIRD AVENUE & 47th STREET														
Third Avenue	NB	LT	0.82	8.6	B	LT	0.81	8.4	B			n/a		
47th Street	WB	TR	0.65	19.1	C	TR	0.63	18.8	C					
Overall Intersection		-	**0.75**	**10.3**	**B**	-	**0.74**	**10.1**	**B**					
(52) THIRD AVENUE & 48th STREET														
Third Avenue	NB	TR	0.78	8.0	B	TR	0.76	7.8	B	TR	0.76	7.8	B	-Daylight the north curb of the EB
48th Street	EB	LT	1.13	105.2	*F**	LT	1.20+	120.0+	*F**	L	0.96	59.1	E	approach to allow for a left-turn lane.
										T	0.61	19.2	C	
Overall Intersection		-	**0.92**	**20.3**	**F***	-	**0.97**	**38.6**	**F***	-	**0.84**	**11.6**	**B**	

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE
AM PEAK HOUR (8-9 AM)

SIGNALIZED INTERSECTIONS

		No Build				Build				Mitigated Build				
INTERSECTION & APPROACH		**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mitigation**
(53) SECOND AVENUE & 42nd STREET														
Second Avenue	SB	LTR	0.93	18.5	C	LTR	0.91	17.7	C					
42nd Street	EB	TR	0.78	20.7	C	TR	0.76	19.9	C			n/a		
42nd Street	WB	LT	1.14	104.8	*F**	LT	1.11	88.2	*F**					
Overall Intersection		**-**	**1.02**	**30.3**	**F***	**-**	**1.00**	**27.5**	**F***					
(54) FIRST AVENUE & 42nd STREET														
First Avenue	NB	LTR	0.29	11.3	B	LTR	0.29	11.2	B					
42nd Street	EB	L	1.13	113.3	*F**	L	1.08	87.6	*F**					
		T	0.77	20.3	C	T	0.75	19.7	C			n/a		
42nd Street	WB	TR	0.54	17.6	C	TR	0.53	17.4	C					
		R	1.07	83.2	*F**	R	1.05	73.8	F					
Overall Intersection		**-**	**0.70**	**41.1**	**F***	**-**	**0.68**	**35.6**	**F***					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE
AM PEAK HOUR (8-9 AM)

UNSIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		Mvt.	Avg. Total Delay	95% Queue Length	LOS	Mvt.	Avg. Total Delay	95% Queue Length	LOS	Mvt.	Avg. Total Delay	95% Queue Length	LOS
(25) VANDERBILT AVENUE & 44th STREET													
44th Street	EB	L	7.8	1.1	B	L	7.9	1.1	B				
		R	3.5	0.4	A	R	3.6	0.6	A			n/a	
(26) VANDERBILT AVENUE & 43rd STREET													
Vanderbilt Avenue	NB	L	2.8	0.2	A	L	2.8	0.2	A				
43rd Street	WB	TR	7.4	1.7	B	TR	8.0	2.1	B			n/a	

GENERAL NOTES:

1. "MVT" refers to the specific intersection approach lane(s) and how the lane(s) operate and/or specific pavement striping. TR is a combined through-right turn lane(s), R or L refers to exclusive right- or left-turn movement lane(s), and LTR is a mixed lane(s) that allows for all movement types. DfL refers to a "defacto left-turn" lane that is formed due to a very heavy left-turn volume; in effect, only left turners use this lane. It is possible that lane uses change in different time periods. For example, a very heavy right-turn volume may exceed a single lane capacity, thus forcing drivers to use (or "share") an adjacent lane for additional travel capacity in the AM, but as flows decrease later in the day, a shared lane may not be needed.

2. "v/c" is the volume-to-capacity ratio for the MVT listed in the first column.

3. "Delay" is expressed in seconds per vehicle for the MVT listed in the first column.

4. "LOS" is based on average stopped delay per vehicle (sec/veh) for each signaled lane group, and on total average delay for unsignalized approaches as listed in the 1994 HCM, TRB SR 209.

5. " * " indicates that Delay and Level of Service are not meaningful when any v/c is greater than 1.2 or 1/PHF. Also, it is beyond the scope of HCM to assess delay for an approach which operates in oversaturated conditions.

6. 95% queue length is expressed in vehicles.

7. Significant Impact is defined as No Action LOS A,B,C, or D deteriorating to LOS E or F under the Build condition providing that the average vehicle delay increase is 10 seconds or more ; and No Action LOS E deteriorating to LOS F for the Build condition providing that the average vehicle delay increases by 10 seconds or more. Deterioration from the No Action condition to the Build condition within either LOS E or F with 10 seconds or more of additional delay is defined as a significant worsening of a pre-existing problem.

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

MIDDAY PEAK HOUR (12-1 PM)

SIGNALIZED INTERSECTIONS

		No Build				Build				Mitigated Build				
INTERSECTION & APPROACH		**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mitigation**
(1) SEVENTH AVENUE & 42nd STREET														
Seventh Avenue	SB	LTR	0.68	12.1	B	LTR	0.66	11.9	B					
42nd Street	EB	TR	0.85	23.8	C	TR	0.82	22.4	C			n/a		
42nd Street	WB	LT	0.64	17.6	C	LT	0.62	17.4	C					
Overall Intersection		**-**	**0.75**	**16.2**	**C**	**-**	**0.73**	**15.7**	**C**					
(2) BROADWAY & 42nd STREET														
Broadway	SB	LTR	0.60	12.2	B	LTR	0.60	12.1	B					
42nd Street	EB	TR	0.67	17.2	C	TR	0.65	16.7	C			n/a		
42nd Street	WB	LT	1.17	120.0+	*F**	LT	1.14	104.0	*F**					
		-	-	-	-	-	-	-	-					
Overall Intersection		**-**	**0.86**	**43.5**	**F***	**-**	**0.84**	**38.5**	**F***					
(3) SIXTH AVENUE & 42nd STREET														
Sixth Avenue	NB	LT	0.87	16.7	C	LT	0.87	16.4	C					
		R	0.37	10.1	B	R	0.37	10.1	B					
42nd Street	EB	LT	0.79	20.7	C	LT	0.76	19.8	C			n/a		
42nd Street	WB	TR	0.71	18.2	C	TR	0.70	18.2	C					
		R	1.16	120.0+	*F**	R	1.16	120.0+	*F**					
Overall Intersection		**-**	**1.00**	**23.7**	**F***	**-**	**1.00**	**23.4**	**F***					
(4) FIFTH AVENUE & 48th STREET														
Fifth Avenue	SB	LT	0.85	14.8	B	LT	0.86	15.1	C					
48th Street	EB	TR	0.59	14.0	B	TR	0.61	14.3	B			n/a		
Overall Intersection		**-**	**0.72**	**14.6**	**B**	**-**	**0.74**	**14.9**	**B**					
(5) FIFTH AVENUE & 47th STREET														
Fifth Avenue	SB	TR	0.81	13.7	B	TR	0.79	13.4	B					
47th Street	WB	LT	0.63	14.7	B	LT	0.64	14.7	B			n/a		
Overall Intersection		**-**	**0.72**	**13.9**	**B**	**-**	**0.71**	**13.7**	**B**					
(6) FIFTH AVENUE & 46th STREET														
Fifth Avenue	SB	LT	0.86	15.1	C	LT	0.86	15.0	B					
46th Street	EB	TR	0.54	13.5	B	TR	0.55	13.6	B			n/a		
Overall Intersection		**-**	**0.70**	**14.8**	**B**	**-**	**0.71**	**14.8**	**B**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

MIDDAY PEAK HOUR (12-1 PM)

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		No Build Mvt.	No Build v/c	No Build Delay	No Build LOS	Build Mvt.	Build v/c	Build Delay	Build LOS	Mitigated Build Mvt.	Mitigated Build v/c	Mitigated Build Delay	Mitigated Build LOS	Mitigation
(7) FIFTH AVENUE & 45th STREET														
Fifth Avenue	SB	TR	0.86	15.1	C	TR	0.86	14.8	B					
45th Street	WB	LT	1.05	66.0	F	LT	1.06	70.5	*F**			n/a		
Overall Intersection		**-**	**0.96**	**23.2**	**C**	**-**	**0.95**	**23.7**	**F***					
(8) FIFTH AVENUE & 44th STREET														
Fifth Avenue	SB	LT	0.83	14.3	B	LT	0.82	14.1	B					
44th Street	EB	TR	0.50	13.0	B	TR	0.52	13.2	B			n/a		
Overall Intersection		**-**	**0.66**	**14.0**	**B**	**-**	**0.67**	**14.0**	**B**					
(9) FIFTH AVENUE & 43rd STREET														
Fifth Avenue	SB	TR	0.88	15.6	C	TR	0.86	15.1	C					
43rd Street	WB	LT	1.10	89.4	*F**	LT	1.12	96.1	*F**			n/a		
Overall Intersection		**-**	**0.99**	**28.5**	**F***	**-**	**0.99**	**29.3**	**F***					
(10) FIFTH AVENUE & 42nd STREET														
Fifth Avenue	SB	LTR	0.72	13.1	B	LTR	0.70	12.8	B					
42nd Street	EB	TR	0.88	25.5	D	TR	0.86	24.2	C			n/a		
42nd Street	WB	LT	1.05	55.4	E	LT	1.04	54.1	E					
Overall Intersection		**-**	**0.86**	**26.1**	**D**	**-**	**0.85**	**25.5**	**D**					
(11) FIFTH AVENUE & 41st STREET														
Fifth Avenue	SB	LT	0.67	6.0	B	LT	0.66	5.9	B			n/a		
Overall Intersection		**-**	**0.41**	**6.0**	**B**	**-**	**0.40**	**5.9**	**B**					
(12) FIFTH AVENUE & 40th STREET														
Fifth Avenue	SB	LT	0.68	9.2	B	LT	0.67	9.1	B					
40th Street	EB	TR	0.56	16.0	C	TR	0.56	16.0	C			n/a		
Overall Intersection		**-**	**0.63**	**10.7**	**B**	**-**	**0.62**	**10.6**	**B**					
(13) MADISON AVENUE & 40th STREET														
Madison Avenue	NB	TR	0.96	22.2	C	TR	0.96	22.7	C					
40th Street	EB	LT	0.48	12.8	B	LT	0.48	12.8	B			n/a		
Overall Intersection		**-**	**0.72**	**20.1**	**C**	**-**	**0.72**	**20.4**	**C**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

MIDDAY PEAK HOUR (12-1 PM)

SIGNALIZED INTERSECTIONS

		No Build				Build				Mitigated Build				
INTERSECTION & APPROACH		**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mitigation**
(14) MADISON AVENUE & 41st STREET														
Madison Avenue	NB	TR	0.95	21.2	C	TR	0.96	21.6	C					
41st Street	EB	LT	0.59	15.3	C	LT	0.63	16.5	C			n/a		
Overall Intersection		**-**	**0.77**	**20.5**	**C**	**-**	**0.79**	**21.1**	**C**					
(15) MADISON AVENUE & 42nd STREET														
Madison Avenue	NB	LTR	0.95	25.9	D	LTR	0.95	25.6	D					
42nd Street	EB	LT	1.11	87.7	*F**	LT	1.08	75.5	*F**			n/a		
42nd Street	WB	T	0.79	18.0	C	T	0.79	18.0	C					
Overall Intersection		**-**	**0.87**	**38.6**	**F***	**-**	**0.87**	**35.3**	**F***					
(16) MADISON AVENUE & 43rd STREET														
Madison Avenue	NB	LT	0.66	11.8	B	LT	0.66	11.8	B					
43rd Street	WB	TR	0.41	12.2	B	TR	0.45	12.5	B			n/a		
Overall Intersection		**-**	**0.54**	**11.9**	**B**	**-**	**0.55**	**11.9**	**B**					
(17) MADISON AVENUE & 44th STREET														
Madison Avenue	NB	TR	0.59	11.1	B	TR	0.60	11.2	B					
44th Street	EB	LT	0.73	18.1	C	LT	0.70	17.2	C			n/a		
Overall Intersection		**-**	**0.66**	**12.5**	**B**	**-**	**0.65**	**12.4**	**B**					
(18) MADISON AVENUE & 45th STREET														
Madison Avenue	NB	LT	0.69	12.1	B	LT	0.69	12.1	B					
45th Street	WB	TR	1.00	50.4	E	TR	1.03	58.7	E			n/a		
Overall Intersection		**-**	**0.84**	**19.5**	**C**	**-**	**0.86**	**21.2**	**C**					
(19) MADISON AVENUE & 46th STREET														
Madison Avenue	NB	TR	0.69	12.1	B	TR	0.70	12.2	B					
46th Street	EB	LT	0.97	40.8	E	LT	0.97	42.5	E			n/a		
Overall Intersection		**-**	**0.83**	**18.3**	**C**	**-**	**0.84**	**18.7**	**C**					
(20) MADISON AVENUE & 47th STREET														
Madison Avenue	NB	LT	0.67	11.8	B	LT	0.68	12.0	B					
47th Street	WB	TR	0.58	13.9	B	TR	0.61	14.3	B			n/a		
Overall Intersection		**-**	**0.63**	**12.4**	**B**	**-**	**0.65**	**12.7**	**B**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

MIDDAY PEAK HOUR (12-1 PM)

SIGNALIZED INTERSECTIONS

		No Build				Build				Mitigated Build				
INTERSECTION & APPROACH		**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mitigation**
(21) MADISON AVENUE & 48th STREET														
Madison Avenue	NB	TR	0.70	12.2	B	TR	0.75	12.9	B					
48th Street	EB	LT	0.57	13.8	B	LT	0.64	14.8	B			n/a		
Overall Intersection		**-**	**0.64**	**12.6**	**B**	**-**	**0.70**	**13.4**	**B**					
(22) VANDERBILT AVENUE & 47th STREET														
Vanderbilt Avenue	NB	L	0.12	12.5	B	L	0.12	12.5	B					
47th Street	WB	LT	0.77	15.2	C	LT	0.78	15.4	C			n/a		
Overall Intersection		**-**	**0.49**	**15.1**	**C**	**-**	**0.49**	**15.3**	**C**					
(23) VANDERBILT AVENUE & 46th STREET														
Vanderbilt Avenue	NB	TR	0.78	23.8	C	TR	0.82	26.8	D					
Vanderbilt Avenue	SB	LT	0.37	11.9	B	LT	0.37	11.9	B			n/a		
46th Street	EB	LTR	0.43	12.3	B	LTR	0.43	12.3	B					
Overall Intersection		**-**	**0.61**	**14.7**	**B**	**-**	**0.62**	**15.4**	**C**					
(24) VANDERBILT AVENUE & 45th STREET														
Vanderbilt Avenue	NB	LT	0.30	11.4	B	LT	0.31	11.4	B					
Vanderbilt Avenue	SB	TR	0.53	13.7	B	TR	0.53	13.7	B			n/a		
45th Street	WB	LTR	0.39	12.0	B	LTR	0.40	12.1	B					
Overall Intersection		**-**	**0.46**	**12.4**	**B**	**-**	**0.47**	**12.5**	**B**					
(27) VANDERBILT AVENUE & 42nd STREET														
42nd Street	EB	LT	0.82	19.2	C	LT	0.80	18.7	C					
42nd Street	WB	TR	0.88	22.1	C	TR	0.89	22.5	C			n/a		
Overall Intersection		**-**	**0.43**	**20.8**	**C**	**-**	**0.43**	**20.8**	**C**					
(28) PARK AVENUE & 40th STREET														
Park Avenue	NB	TR	0.52	9.0	B	TR	0.53	9.1	B					
Park Avenue	SB	T	0.30	7.4	B	T	0.30	7.4	B					
Park Avenue (tunnel)	NB	T	0.64	10.6	B	T	0.64	10.6	B					
Park Avenue (viaduct)	SB	T	0.56	9.3	B	T	0.55	9.2	B			n/a		
40th Street	EB	LTR	0.80	26.2	D	LTR	0.80	26.2	D					
		R	0.56	21.1	C	R	0.56	21.1	C					
Overall Intersection		**-**	**0.70**	**11.7**	**B**	**-**	**0.70**	**11.1**	**B**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

MIDDAY PEAK HOUR (12-1 PM)

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		No Build Mvt.	No Build v/c	No Build Delay	No Build LOS	Build Mvt.	Build v/c	Build Delay	Build LOS	Mitigated Build Mvt.	Mitigated Build v/c	Mitigated Build Delay	Mitigated Build LOS	Mitigation
(29) PARK AVENUE(SB) & 41st STREET														
Park Avenue	SB	LT	0.28	7.7	B	LT	0.28	7.7	B					
41st Street	EB	TR	0.59	19.7	C	TR	0.59	19.7	C		n/a			
Overall Intersection		**-**	**0.40**	**13.6**	**B**	**-**	**0.40**	**13.6**	**B**					
(30) PARK AVENUE(NB) & 41st STREET														
Park Avenue	NB	TR	0.29	7.7	B	TR	0.31	7.8	B					
41st Street	EB	LT	0.42	16.7	C	LT	0.42	16.7	C		n/a			
Overall Intersection		**-**	**0.34**	**10.4**	**B**	**-**	**0.35**	**10.5**	**B**					
(31) PARK AVENUE & 42nd STREET														
Park Avenue	NB	LR	0.37	15.8	C	LR	0.40	16.2	C	L	0.07	14.5	B	-Remove parking along the NB approach
		R	1.20+	120.0+	*F**	R	1.20+	120.0+	*F**	R	0.64	21.0	C	to provide two right-turn lanes and one
42nd Street	EB	T	0.55	15.3	C	T	0.53	15.1	C	T	0.51	13.9	B	left lane, adjust the signal timing to
		R	1.20+	120.0+	*F**	R	1.20+	120.0+	*F**	R	1.20+	120.0+	*F**	provide a protected NB phase, and shift
42nd Street	WB	LT	0.72	12.4	B	LT	0.74	12.9	B	LT	0.71	11.5	B	2 seconds of green time from the NB phase to the E/W phase.
Overall Intersection		**-**	**1.20+**	**54.4**	**F***	**-**	**1.20+**	**104.9**	**F***	**-**	**1.05**	**34.1**	**F***	
(32) PARK AVENUE & 46th STREET														
Park Avenue	NB	TR	0.99	35.3	D	TR	0.99	35.4	D					
Park Avenue	SB	L	1.19	120.0+	*F**	L	1.19	120.0+	*F**					
		T	0.90	23.3	C	T	0.89	22.2	C		n/a			
46th Street	EB	LTR	0.66	14.6	B	LTR	0.66	14.6	B					
Overall Intersection		**-**	**0.96**	**31.0**	**F***	**-**	**0.96**	**28.0**	**F***					
(33) PARK AVENUE & 47th STREET														
Park Avenue	NB	DFL	0.99	87.5	F	DFL	0.99	87.5	F					
		T	0.85	10.2	B	T	0.82	9.4	B					
Park Avenue	SB	TR	0.78	8.4	B	TR	0.79	8.5	B		n/a			
47th Street	WB	LTR	0.82	24.0	C	LTR	0.82	24.1	C					
Overall Intersection		**-**	**0.97**	**13.3**	**B**	**-**	**0.97**	**13.1**	**B**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

MIDDAY PEAK HOUR (12-1 PM)

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		No Build Mvt.	No Build v/c	No Build Delay	No Build LOS	Build Mvt.	Build v/c	Build Delay	Build LOS	Mitigated Build Mvt.	Mitigated Build v/c	Mitigated Build Delay	Mitigated Build LOS	Mitigation
(34) PARK AVENUE & 48th STREET														
Park Avenue	NB	TR	0.66	7.0	B	TR	0.65	6.9	B	TR	0.65	6.9	B	-Provide a protected N/S phase and
Park Avenue	SB	DFL	0.85	48.5	E	DFL	0.93	67.0	F	LT	0.64	6.8	B	daylight the south curb of the EB
		T	0.90	12.2	B	T	0.89	11.9	B	-	-	-	-	approach.
48th Street	EB	LTR	0.97	40.6	E	LTR	1.03	56.5	E	LTR	0.97	39.8	D	
Overall Intersection		**-**	**0.93**	**15.4**	**C**	**-**	**1.00**	**19.0**	**C**	**-**	**0.77**	**12.7**	**B**	
(35) LEXINGTON AVENUE & 48th STREET														
Lexington Avenue	SB	LT	0.92	18.1	C	LT	0.92	18.0	C					
48th Street	EB	TR	0.52	13.2	B	TR	0.56	13.7	B		n/a			
Overall Intersection		**-**	**0.72**	**16.9**	**C**	**-**	**0.74**	**16.9**	**C**					
(36) LEXINGTON AVENUE & 47th STREET														
Lexington Avenue	SB	TR	0.98	24.3	C	TR	0.98	24.4	C					
47th Street	WB	LT	0.99	41.4	E	LT	1.01	47.0	E		n/a			
Overall Intersection		**-**	**0.98**	**28.9**	**D**	**-**	**0.99**	**30.4**	**D**					
(37) LEXINGTON AVENUE & 46th STREET														
Lexington Avenue	SB	LT	0.89	16.5	C	LT	0.89	16.6	C					
46th Street	EB	TR	1.01	48.6	E	TR	1.03	54.0	E		n/a			
Overall Intersection		**-**	**0.95**	**25.0**	**C**	**-**	**0.96**	**26.6**	**D**					
(38) LEXINGTON AVENUE & 45th STREET														
Lexington Avenue	SB	TR	1.12	83.8	*F**	TR	1.12	82.3	*F**					
45th Street	WB	LT	0.95	38.9	D	LT	0.42	12.2	B		n/a			
Overall Intersection		**-**	**0.97**	**74.7**	**F***	**-**	**0.70**	**67.4**	**F***					
(39) LEXINGTON AVENUE & 44th STREET														
Lexington Avenue	SB	LT	1.12	81.3	*F**	LT	1.12	81.3	*F**		n/a			
Overall Intersection		**-**	**0.48**	**81.3**	**F***	**-**	**0.48**	**81.3**	**F***					
(40) LEXINGTON AVENUE & 43rd STREET														
Lexington Avenue	SB	T	0.74	10.6	B	T	0.74	10.6	B	T	0.74	10.6	B	-Provide a protected WB signal phase.
43rd Street	WB	L	0.92	48.0	E	L	1.20+	120.0+	*F**	L	0.56	18.6	C	
Overall Intersection		**-**	**0.77**	**15.0**	**B**	**-**	**1.02**	**74.8**	**F***	**-**	**0.62**	**11.5**	**B**	

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

MIDDAY PEAK HOUR (12-1 PM)

SIGNALIZED INTERSECTIONS

		No Build				Build				Mitigated Build				
INTERSECTION & APPROACH		**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mitigation**
(41) LEXINGTON AVENUE & 42nd STREET														
Lexington Avenue	SB	LTR	1.00	33.6	D	LTR	1.01	34.5	D					
42nd Street	EB	TR	0.95	33.5	D	TR	0.92	29.2	D			n/a		
42nd Street	WB	LT	0.88	25.3	D	LT	0.88	24.7	C					
Overall Intersection		**-**	**0.98**	**31.5**	**D**	**-**	**0.97**	**30.8**	**D**					
(42) LEXINGTON AVENUE & 41st STREET														
Lexington Avenue	SB	LT	0.78	10.6	B	LT	0.77	10.5	B					
41st Street	EB	TR	0.75	23.4	C	TR	0.76	23.9	C			n/a		
Overall Intersection		**-**	**0.77**	**12.3**	**B**	**-**	**0.76**	**12.2**	**B**					
(43) LEXINGTON AVENUE & 40th STREET														
Lexington Avenue	SB	LT	0.73	7.8	B	LT	0.73	7.7	B					
40th Street	EB	TR	0.61	18.6	C	TR	0.61	18.6	C			n/a		
Overall Intersection		**-**	**0.68**	**10.2**	**B**	**-**	**0.68**	**10.1**	**B**					
(44) THIRD AVENUE & 40th STREET														
Third Avenue	NB	TR	0.72	7.4	B	TR	0.72	7.4	B					
40th Street	EB	LT	0.57	18.2	C	LT	0.57	18.3	C			n/a		
Overall Intersection		**-**	**0.66**	**8.7**	**B**	**-**	**0.66**	**8.7**	**B**					
(45) THIRD AVENUE & 41st STREET														
Third Avenue	NB	TR	0.74	7.6	B	TR	0.73	7.5	B					
41st Street	EB	LT	0.56	18.6	C	LT	0.56	18.6	C			n/a		
41st Street	WB	R	0.69	25.5	D	R	0.73	28.5	D					
Overall Intersection		**-**	**0.72**	**9.0**	**B**	**-**	**0.73**	**9.1**	**B**					
(46) THIRD AVENUE & 42nd STREET														
Third Avenue	NB	LT	0.95	23.3	C	LT	0.96	24.4	C	LT	1.01	34.1	D	-Provide a protected NB signal phase,
		R	1.14	120.0+	*F**	R	1.19	120.0+	*F**	R	0.96	51.9	E	shift 3 seconds of green time from the NB
42nd Street	EB	LT	0.87	22.5	C	LT	0.86	21.6	C	LT	0.80	17.4	C	phase to the E/W phase and daylight the
42nd Street	WB	T	0.59	20.6	C	T	0.59	20.6	C	T	0.53	18.4	C	west curb of the NB approach.
		R	1.06	101.7	*F**	R	1.16	120.0+	*F**	R	1.05	96.4	F	
Overall Intersection		**-**	**1.00**	**30.8**	**F***	**-**	**1.03**	**35.1**	**F***	**-**	**0.90**	**32.3**	**D**	

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

MIDDAY PEAK HOUR (12-1 PM)

SIGNALIZED INTERSECTIONS

		No Build				Build				Mitigated Build				
INTERSECTION & APPROACH		**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mitigation**
(47) THIRD AVENUE & 43rd STREET														
Third Avenue	NB	LT	0.78	8.0	B	LT	0.77	7.9	B	LT	0.82	10.3	B	-Shift 3 seconds of green time from the NB
43rd Street	WB	TR	0.99	57.3	E	TR	1.05	77.9	F	TR	0.96	49.8	E	phase to the WB phase.
Overall Intersection		**-**	**0.86**	**12.5**	**B**	**-**	**0.88**	**14.4**	**B**	**-**	**0.88**	**13.9**	**B**	
(48) THIRD AVENUE & 44th STREET														
Third Avenue	NB	TR	0.83	8.7	B	TR	0.82	8.5	B					
44th Street	EB	LT	0.75	26.6	D	LT	0.76	26.7	D			n/a		
Overall Intersection		**-**	**0.80**	**9.8**	**B**	**-**	**0.79**	**9.7**	**B**					
(49) THIRD AVENUE & 45th STREET														
Third Avenue	NB	LT	0.80	8.2	B	LT	0.79	8.1	B					
45th Street	WB	TR	0.99	55.9	E	TR	1.01	60.4	F			n/a		
Overall Intersection		**-**	**0.87**	**13.4**	**B**	**-**	**0.88**	**13.9**	**B**					
(50) THIRD AVENUE & 46th STREET														
Third Avenue	NB	TR	0.90	15.7	C	TR	0.89	15.4	C					
46th Street	EB	LT	0.49	12.9	B	LT	0.50	13.0	B			n/a		
Overall Intersection		**-**	**0.69**	**15.2**	**C**	**-**	**0.70**	**15.0**	**B**					
(51) THIRD AVENUE & 47th STREET														
Third Avenue	NB	LT	0.90	15.5	C	LT	0.88	15.3	C					
47th Street	WB	TR	1.08	76.3	*F**	TR	1.08	77.6	*F**			n/a		
Overall Intersection		**-**	**0.98**	**24.7**	**F***	**-**	**0.98**	**24.8**	**F***					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

MIDDAY PEAK HOUR (12-1 PM)

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		No Build Mvt.	No Build v/c	No Build Delay	No Build LOS	Build Mvt.	Build v/c	Build Delay	Build LOS	Mitigated Build Mvt.	Mitigated Build v/c	Mitigated Build Delay	Mitigated Build LOS	Mitigation
(52) THIRD AVENUE & 48th STREET														
Third Avenue	NB	TR	0.86	14.8	B	TR	0.86	14.6	B	TR	0.86	14.6	B	-Daylight the north curb to provide a
48th Street	EB	LT	1.05	65.1	F	LT	1.12	96.1	*F**	L	0.93	45.4	E	left-turn lane eastbound.
										T	0.40	12.2	B	
Overall Intersection		**-**	**0.96**	**21.9**	**C**	**-**	**0.99**	**26.9**	**F***	**-**	**0.90**	**16.6**	**C**	
(53) SECOND AVENUE & 42nd STREET														
Second Avenue	SB	LTR	0.92	18.2	C	LTR	0.91	18.1	C					
42nd Street	EB	TR	0.79	20.7	C	TR	0.80	21.1	C		n/a			
42nd Street	WB	LT	0.86	26.0	D	LT	0.86	26.5	D					
Overall Intersection		**-**	**0.89**	**19.6**	**C**	**-**	**0.89**	**19.7**	**C**					
(54) FIRST AVENUE & 42nd STREET														
First Avenue	NB	LTR	0.24	10.9	B	LTR	0.24	10.9	B					
42nd Street	EB	L	0.96	46.2	E	L	0.96	46.2	E					
		T	0.81	22.0	C	T	0.81	22.0	C		n/a			
42nd Street	WB	T	0.31	15.5	C	T	0.31	15.5	C					
		R	0.86	32.6	D	R	0.88	34.5	D					
Overall Intersection			**0.61**	**24.6**	**C**		**0.61**	**24.9**	**C**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

MIDDAY PEAK HOUR (12-1 PM)

UNSIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		Mvt.	Avg. Total Delay	95% Queue Length	LOS	Mvt.	Avg. Total Delay	95% Queue Length	LOS	Mvt.	Avg. Total Delay	95% Queue Length	LOS
(25) VANDERBILT AVENUE & 44th STREET													
44th Street	EB	L	6.5	0.5	B	L	6.6	0.5	B		n/a		
		R	3.3	0.2	A	R	3.3	0.3	A				
(26) VANDERBILT AVENUE & 43rd STREET													
Vanderbilt Avenue	NB	L	2.9	0.2	A	L	3.0	0.3	A		n/a		
43rd Street	WB	TR	5.7	0.7	B	TR	6.1	0.9	B				

GENERAL NOTES:

1. "MVT" refers to the specific intersection approach lane(s) and how the lane(s) operate and/or specific pavement striping. TR is a combined through-right turn lane(s), R or L refers to exclusive right- or left-turn movement lane(s), and LTR is a mixed lane(s) that allows for all movement types. DfL refers to a "defacto left-turn" lane that is formed due to a very heavy left-turn volume; in effect, only left turners use this lane. It is possible that lane uses change in different time periods. For example, a very heavy right-turn volume may exceed a single lane capacity, thus forcing drivers to use (or "share") an adjacent lane for additional travel capacity in the AM, but as flows decrease later in the day, a shared lane may not be needed.

2. "v/c" is the volume-to-capacity ratio for the MVT listed in the first column.

3. "Delay" is expressed in seconds per vehicle for the MVT listed in the first column.

4. "LOS" is based on average stopped delay per vehicle (sec/veh) for each signaled lane group, and on total average delay for unsignalized approaches as listed in the 1994 HCM, TRB SR 209.

5. " * " indicates that Delay and Level of Service are not meaningful when any v/c is greater than 1.2 or 1/PHF. Also, it is beyond the scope of HCM to assess delay for an approach which operates in oversaturated conditions.

6. 95% queue length is expressed in vehicles.

7. Significant Impact is defined as No Action LOS A,B,C, or D deteriorating to LOS E or F under the Build condition providing that the average vehicle delay increase is 10 seconds or more ; and No Action LOS E deteriorating to LOS F for the Build condition providing that the average vehicle delay increases by 10 seconds or more. Deterioration from the No Action condition to the Build condition within either LOS E or F with 10 seconds or more of additional delay is defined as a significant worsening of a pre-existing problem.

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

PM PEAK HOUR (5:15-6:15 PM)

SIGNALIZED INTERSECTIONS

		No Build				Build				Mitigated Build				
INTERSECTION & APPROACH		**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mitigation**
(1) SEVENTH AVENUE & 42nd STREET														
Seventh Avenue	SB	LTR	0.81	14.5	B	LTR	0.77	13.6	B					
42nd Street	EB	TR	0.80	22.0	C	TR	0.72	19.5	C					
42nd Street	WB	LT	0.90	28.4	D	LT	0.87	25.4	D			n/a		
Overall Intersection		-	**0.85**	**18.7**	**C**	-	**0.81**	**17.1**	**C**					
(2) BROADWAY & 42nd STREET														
Broadway	SB	LTR	0.67	13.1	B	LTR	0.65	12.8	B					
42nd Street	EB	TR	0.56	15.5	C	TR	0.48	14.6	B			n/a		
42nd Street	WB	LT	1.20+	120.0+	*F**	LT	1.18	120.0+	*F**					
		-	-	-	-	-	-	-	-					
Overall Intersection		-	**0.94**	**66.4**	**F***	-	**0.89**	**49.2**	**F***					
(3) SIXTH AVENUE & 42nd STREET														
Sixth Avenue	NB	LTR	1.08	57.8	F*	LTR	1.03	35.9	D	LTR	1.05	43.5	E	-Shift 1 second of green time from
		R	0.47	11.3	B	R	0.66	16.5	C	R	0.68	17.6	C	the NB phase to the E/W phase.
42nd Street	EB	LT	0.79	20.9	C	LT	0.71	18.4	C	LT	0.69	17.6	C	
42nd Street	WB	TR	0.74	19.0	C	TR	0.73	18.8	C	TR	0.71	17.9	C	
		R	1.16	120.0+	*F**	R	1.19	120.0+	*F**	R	1.16	120.0+	*F**	
Overall Intersection		-	**1.12**	**48.6**	**F***	-	**1.10**	**35.5**	**F***	-	**1.10**	**39.1**	**F***	
(4) FIFTH AVENUE & 48th STREET														
Fifth Avenue	SB	LT	0.72	9.6	B	LT	0.75	10.0	B					
48th Street	EB	TR	0.82	21.7	C	TR	0.92	28.1	D			n/a		
Overall Intersection		-	**0.76**	**13.1**	**B**	-	**0.82**	**15.8**	**C**					
(5) FIFTH AVENUE & 47th STREET														
Fifth Avenue	SB	TR	0.69	9.3	B	TR	0.66	9.0	B					
47th Street	WB	LT	0.55	15.9	C	LT	0.58	16.2	C			n/a		
Overall Intersection		-	**0.63**	**10.7**	**B**	-	**0.63**	**10.6**	**B**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

PM PEAK HOUR (5:15-6:15 PM)

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		No Build Mvt.	No Build v/c	No Build Delay	No Build LOS	Build Mvt.	Build v/c	Build Delay	Build LOS	Mitigated Build Mvt.	Mitigated Build v/c	Mitigated Build Delay	Mitigated Build LOS	Mitigation
(6) FIFTH AVENUE & 46th STREET														
Fifth Avenue	SB	LT	0.72	9.6	B	LT	0.69	9.3	B					
46th Street	EB	TR	0.65	17.3	C	TR	0.67	17.6	C			n/a		
Overall Intersection		-	**0.69**	**11.4**	**B**	-	**0.68**	**11.3**	**B**					
(7) FIFTH AVENUE & 45th STREET														
Fifth Avenue	SB	TR	0.73	9.7	B	TR	0.70	9.4	B					
45th Street	WB	LT	0.55	15.8	C	LT	0.58	16.2	C			n/a		
Overall Intersection		-	**0.65**	**11.1**	**B**	-	**0.65**	**11.0**	**B**					
(8) FIFTH AVENUE & 44th STREET														
Fifth Avenue	SB	LT	0.72	9.7	B	LT	0.70	9.4	B					
44th Street	EB	TR	0.65	17.5	C	TR	0.69	18.3	C			n/a		
Overall Intersection		-	**0.69**	**11.3**	**B**	-	**0.69**	**11.4**	**B**					
(9) FIFTH AVENUE & 43rd STREET														
Fifth Avenue	SB	TR	0.77	10.3	B	TR	0.73	9.8	B					
43rd Street	WB	LT	0.49	15.2	C	LT	0.50	15.3	C			n/a		
Overall Intersection		-	**0.65**	**11.2**	**B**	-	**0.63**	**10.9**	**B**					
(10) FIFTH AVENUE & 42nd STREET														
Fifth Avenue	SB	LTR	0.68	12.5	B	LTR	0.64	12.1	B					
42nd Street	EB	TR	0.93	29.4	D	TR	0.84	23.1	C			n/a		
42nd Street	WB	LT	1.13	94.6	*F**	LT	1.09	75.2	*F**					
Overall Intersection		-	**0.88**	**37.4**	**F***	-	**0.84**	**31.5**	**F***					
(11) FIFTH AVENUE & 41st STREET														
Fifth Avenue	SB	LT	0.68	6.2	B	LT	0.66	6.0	B			n/a		
Overall Intersection		-	**0.42**	**6.2**	**B**	-	**0.40**	**6.0**	**B**					
(12) FIFTH AVENUE & 40th STREET														
Fifth Avenue	SB	LT	0.69	9.4	B	LT	0.66	9.0	B					
40th Street	EB	TR	0.74	19.3	C	TR	0.75	19.6	C			n/a		
Overall Intersection		-	**0.71**	**12.1**	**B**	-	**0.70**	**12.1**	**B**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

PM PEAK HOUR (5:15-6:15 PM)

SIGNALIZED INTERSECTIONS

		No Build				Build				Mitigated Build				
INTERSECTION & APPROACH		Mvt.	v/c	Delay	LOS	Mvt.	v/c	Delay	LOS	Mvt.	v/c	Delay	LOS	Mitigation
(13) MADISON AVENUE & 40th STREET														
Madison Avenue	NB	TR	0.90	14.3	B	TR	0.90	14.1	B					
40th Street	EB	LT	0.58	16.2	C	LT	0.58	16.2	C			n/a		
Overall Intersection		-	**0.76**	**14.8**	**B**	-	**0.76**	**14.7**	**B**					
(14) MADISON AVENUE & 41st STREET														
Madison Avenue	NB	TR	0.86	12.7	B	TR	0.87	12.8	B					
41st Street	EB	LT	0.50	15.8	C	LT	0.52	16.1	C			n/a		
Overall Intersection		-	**0.70**	**13.0**	**B**	-	**0.71**	**13.2**	**B**					
(15) MADISON AVENUE & 42nd STREET														
Madison Avenue	NB	LTR	0.86	17.1	C	LTR	0.85	16.8	C					
42nd Street	EB	LT	1.03	51.1	E	LT	0.95	33.1	D					
42nd Street	WB	T	0.92	28.5	D	T	0.92	28.5	D			n/a		
Overall Intersection		-	**0.93**	**28.8**	**D**	-	**0.89**	**23.9**	**C**					
(16) MADISON AVENUE & 43rd STREET														
Madison Avenue	NB	LT	0.58	8.4	B	LT	0.57	8.3	B					
43rd Street	WB	TR	0.44	14.7	B	TR	0.56	16.0	C			n/a		
Overall Intersection		-	**0.52**	**9.7**	**B**	-	**0.56**	**10.1**	**B**					
(17) MADISON AVENUE & 44th STREET														
Madison Avenue	NB	TR	0.52	8.0	B	TR	0.53	8.0	B					
44th Street	EB	LT	0.62	17.0	C	LT	0.62	16.9	C			n/a		
Overall Intersection		-	**0.56**	**10.1**	**B**	-	**0.57**	**10.2**	**B**					
(18) MADISON AVENUE & 45th STREET														
Madison Avenue	NB	LT	0.64	8.9	B	LT	0.65	8.9	B					
45th Street	WB	TR	0.55	15.9	C	TR	0.57	16.1	C			n/a		
Overall Intersection		-	**0.60**	**10.6**	**B**	-	**0.61**	**10.7**	**B**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

PM PEAK HOUR (5:15-6:15 PM)

SIGNALIZED INTERSECTIONS

		No Build				Build				Mitigated Build				
INTERSECTION & APPROACH		**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mitigation**
(19) MADISON AVENUE & 46th STREET														
Madison Avenue	NB	TR	0.63	8.8	B	TR	0.64	8.9	B					
46th Street	EB	LT	0.69	18.1	C	LT	0.69	18.1	C			n/a		
Overall Intersection		**-**	**0.66**	**11.5**	**B**	**-**	**0.66**	**11.5**	**B**					
(20) MADISON AVENUE & 47th STREET														
Madison Avenue	NB	LT	0.57	8.3	B	LT	0.58	8.4	B					
47th Street	WB	TR	0.57	16.0	C	TR	0.68	17.9	C			n/a		
Overall Intersection		**-**	**0.57**	**10.4**	**B**	**-**	**0.63**	**11.1**	**B**					
(21) MADISON AVENUE & 48th STREET														
Madison Avenue	NB	TR	0.58	8.3	B	TR	0.61	8.6	B					
48th Street	EB	LT	0.69	17.8	C	LT	0.84	22.6	C			n/a		
Overall Intersection		**-**	**0.62**	**11.2**	**B**	**-**	**0.71**	**13.3**	**B**					
(22) VANDERBILT AVENUE & 47th STREET														
Vanderbilt Avenue	NB	L	0.2	12.9	B	L	0.19	12.9	B					
47th Street	WB	LT	0.6	12.2	B	LT	0.65	12.6	B			n/a		
Overall Intersection		**-**	**0.43**	**12.3**	**B**	**-**	**0.45**	**12.7**	**B**					
(23) VANDERBILT AVENUE & 46th STREET														
Vanderbilt Avenue	NB	TR	0.44	12.6	B	TR	0.45	12.6	B					
Vanderbilt Avenue	SB	LT	0.32	11.5	B	LT	0.31	11.4	B			n/a		
46th Street	EB	LTR	0.54	13.4	B	LTR	0.54	13.4	B					
Overall Intersection		**-**	**0.49**	**12.8**	**B**	**-**	**0.50**	**12.9**	**B**					
(24) VANDERBILT AVENUE & 45th STREET														
Vanderbilt Avenue	NB	LT	0.37	11.9	B	LT	0.36	11.9	B					
Vanderbilt Avenue	SB	TR	0.37	12.0	B	TR	0.37	11.9	B			n/a		
45th Street	WB	LTR	0.94	33.9	D	LTR	0.96	38.4	D					
Overall Intersection		**-**	**0.66**	**23.6**	**C**	**-**	**0.66**	**26.3**	**D**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

PM PEAK HOUR (5:15-6:15 PM)

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		No Build Mvt.	No Build v/c	No Build Delay	No Build LOS	Build Mvt.	Build v/c	Build Delay	Build LOS	Mitigated Build Mvt.	Mitigated Build v/c	Mitigated Build Delay	Mitigated Build LOS	Mitigation
(27) VANDERBILT AVENUE & 42nd STREET														
42nd Street	EB	LT	0.91	25.3	D	LT	0.85	20.8	C					
42nd Street	WB	TR	0.90	23.5	C	TR	0.91	24.2	C		n/a			
Overall Intersection		-	**0.44**	**24.3**	**C**	-	**0.44**	**22.8**	**C**					
(28) PARK AVENUE & 40th STREET														
Park Avenue	NB	TR	0.60	10.2	B	TR	0.61	10.4	B					
Park Avenue	SB	T	0.26	7.6	B	T	0.27	7.6	B					
Park Avenue (tunnel)	NB	T	0.60	10.5	B	T	0.59	10.3	B					
Park Avenue (viaduct)	SB	T	0.69	11.4	B	T	0.67	11.1	B		n/a			
40th Street	EB	LTR	1.06	73.8	*F**	LTR	1.06	70.4	*F**					
		R	0.56	20.4	C	R	0.56	20.4	C					
Overall Intersection		-	**0.78**	**20.4**	**F***	-	**0.82**	**19.8**	**F***					
(29) PARK AVENUE(SB) & 41st STREET														
Park Avenue	SB	LT	0.25	7.5	B	LT	0.26	7.6	B					
41st Street	EB	TR	0.69	22.2	C	TR	0.68	21.8	C		n/a			
Overall Intersection		-	**0.42**	**16.0**	**C**	-	**0.43**	**15.6**	**C**					
(30) PARK AVENUE(NB) & 41st STREET														
Park Avenue	NB	TR	0.20	7.3	B	TR	0.22	7.3	B					
41st Street	EB	LT	0.65	20.7	C	LT	0.68	21.8	C		n/a			
Overall Intersection		-	**0.38**	**13.5**	**B**	-	**0.40**	**14.2**	**B**					
(31) PARK AVENUE & 42nd STREET														
Park Avenue	NB	LR	0.31	15.2	C	LR	0.33	15.3	C	L	0.16	15.1	C	-Remove parking along the NB approach
		R	0.98	80.2	F	R	1.20+	120.0+	*F**	R	0.49	18.1	C	to provide two right-turn lanes and one
42nd Street	EB	T	0.59	15.8	C	T	0.53	15.0	C	T	0.50	13.8	B	left lane, provide a protected NB phase,
		R	1.20+	120.0+	*F**	R	1.20+	120.0+	*F**	R	1.20+	120.0+	*F**	and shift 2 seconds of green time from the
42nd Street	WB	LT	0.70	12.1	B	LT	0.76	13.3	B	LT	0.73	11.8	B	NB phase to the E/W phase.
Overall Intersection		-	**1.16**	**35.5**	**F***	-	**1.20+**	**104.7**	**F***	-	**0.99**	**30.7**	**F***	

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

PM PEAK HOUR (5:15-6:15 PM)

SIGNALIZED INTERSECTIONS

		No Build				Build				Mitigated Build				
INTERSECTION & APPROACH		**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mitigation**
(32) PARK AVENUE & 46th STREET														
Park Avenue	NB	TR	0.87	20.4	C	TR	0.85	19.7	C					
Park Avenue	SB	L	1.20+	120.0+	*F**	L	0.30	11.8	B					
		T	0.91	23.6	C	T	0.88	21.4	C		n/a			
46th Street	EB	LTR	0.60	13.5	B	LTR	0.60	13.5	B					
Overall Intersection		**-**	**1.12**	**64.1**	**F***	**-**	**0.74**	**18.2**	**C**					
(33) PARK AVENUE & 47th STREET														
Park Avenue	NB	DFL	0.85	48.5	E	DFL	0.99	87.5	F	LT	0.63	6.7	B	-Provide a protected N/S phase.
		T	0.90	12.1	B	T	0.88	11.2	B	-	-	-	-	
Park Avenue	SB	TR	0.80	8.7	B	TR	0.81	8.9	B	TR	0.80	8.6	B	
47th Street	WB	LTR	0.93	33.6	D	LTR	0.92	32.2	D	LTR	0.92	32.2	D	
Overall Intersection		**-**	**0.92**	**14.7**	**B**	**-**	**1.01**	**15.1**	**C**	**-**	**0.84**	**11.7**	**B**	
(34) PARK AVENUE & 48th STREET														
Park Avenue	NB	TR	0.76	8.1	B	TR	0.76	8.0	B	TR	0.75	7.9	B	-Daylight the south curb of the eastbound
Park Avenue	SB	DFL	0.85	48.5	E	DFL	0.93	67.0	F	-	-	-	-	approach and provide a protected N/S
		T	0.98	20.0	C	T	0.96	16.5	C	LT	0.68	7.2	B	phase.
48th Street	EB	LTR	0.79	23.1	C	LTR	0.97	38.6	D	LTR	0.91	29.8	D	
Overall Intersection		**-**	**0.91**	**15.6**	**C**	**-**	**0.98**	**17.6**	**C**	**-**	**0.81**	**11.4**	**B**	
(35) LEXINGTON AVENUE & 48th STREET														
Lexington Avenue	SB	LT	0.80	8.7	B	LT	0.78	8.5	B					
48th Street	EB	TR	0.72	20.5	C	TR	0.85	25.6	D		n/a			
Overall Intersection		**-**	**0.77**	**11.9**	**B**	**-**	**0.81**	**13.7**	**B**					
(36) LEXINGTON AVENUE & 47th STREET														
Lexington Avenue	SB	TR	0.89	11.3	B	TR	0.89	11.4	B					
47th Street	WB	LT	0.64	19.0	C	LT	0.67	19.5	C		n/a			
Overall Intersection		**-**	**0.79**	**13.2**	**B**	**-**	**0.80**	**13.4**	**B**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

PM PEAK HOUR (5:15-6:15 PM)

SIGNALIZED INTERSECTIONS

		No Build				Build				Mitigated Build				
INTERSECTION & APPROACH		**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mvt.**	**v/c**	**Delay**	**LOS**	**Mitigation**
(37) LEXINGTON AVENUE & 46th STREET														
Lexington Avenue	SB	LT	0.73	7.8	B	LT	0.74	7.8	B					
46th Street	EB	TR	0.81	22.9	C	TR	0.80	22.6	C			n/a		
Overall Intersection		**-**	**0.76**	**12.8**	**B**	**-**	**0.76**	**12.6**	**B**					
(38) LEXINGTON AVENUE & 45th STREET														
Lexington Avenue	SB	TR	0.99	25.3	D	TR	0.99	25.8	D					
45th Street	WB	LT	0.69	20.3	C	LT	0.76	22.4	C			n/a		
Overall Intersection		**-**	**0.78**	**24.2**	**C**	**-**	**0.81**	**25.0**	**C**					
(39) LEXINGTON AVENUE & 44th STREET														
Lexington Avenue	SB	LT	1.04	40.2	E	LT	1.04	39.3	D			n/a		
Overall Intersection		**-**	**0.49**	**40.2**	**E**	**-**	**0.49**	**39.3**	**D**					
(40) LEXINGTON AVENUE & 43rd STREET														
Lexington Avenue	SB	T	0.84	15.5	C	T	0.84	15.6	C	T	0.84	15.6	C	-Provide a protected WB phase.
43rd Street	WB	L	0.97	58.7	E	L	1.20+	120.0+	*F**	L	0.68	22.1	C	
Overall Intersection		**-**	**0.79**	**20.7**	**C**	**-**	**1.20+**	**120.0+**	**F***	**-**	**0.68**	**16.4**	**C**	
(41) LEXINGTON AVENUE & 42nd STREET														
Lexington Avenue	SB	LTR	1.03	41.2	E	LTR	1.04	41.7	E					
42nd Street	EB	TR	0.95	32.9	D	TR	0.82	21.9	C			n/a		
42nd Street	WB	LT	0.92	28.4	D	LT	0.88	25.2	D					
Overall Intersection		**-**	**1.00**	**36.1**	D	**-**	**0.97**	**33.1**	**D**					
(42) LEXINGTON AVENUE & 41st STREET														
Lexington Avenue	SB	LT	0.75	10.2	B	LT	0.72	9.8	B					
41st Street	EB	TR	0.75	22.9	C	TR	0.76	23.3	C			n/a		
Overall Intersection		**-**	**0.75**	**12.1**	**B**	**-**	**0.74**	**11.9**	**B**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

PM PEAK HOUR (5:15-6:15 PM)

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		No Build Mvt.	No Build v/c	No Build Delay	No Build LOS	Build Mvt.	Build v/c	Build Delay	Build LOS	Mitigated Build Mvt.	Mitigated Build v/c	Mitigated Build Delay	Mitigated Build LOS	Mitigation
(43) LEXINGTON AVENUE & 40th STREET														
Lexington Avenue	SB	LT	0.69	7.3	B	LT	0.67	7.1	B					
40th Street	EB	TR	0.71	20.5	C	TR	0.70	20.1	C		n/a			
Overall Intersection		**-**	**0.70**	**11.0**	**B**	**-**	**0.68**	**10.8**	**B**					
(44) THIRD AVENUE & 40th STREET														
Third Avenue	NB	TR	0.66	6.8	B	TR	0.65	6.8	B					
40th Street	EB	LT	0.69	20.2	C	LT	0.68	20.0	C		n/a			
Overall Intersection		**-**	**0.67**	**9.1**	**B**	**-**	**0.66**	**9.0**	**B**					
(45) THIRD AVENUE & 41st STREET														
Third Avenue	NB	TR	0.66	6.8	B	TR	0.64	6.8	B	TR	0.64	6.8	B	-Daylight the north curb of the westbound
41st Street	EB	LT	0.57	18.7	C	LT	0.56	18.5	C	LT	0.56	18.5	C	approach.
41st Street	WB	R	0.89	46.7	E	R	1.00	77.1	F	R	0.87	44.4	E	
Overall Intersection		**-**	**0.75**	**9.9**	**B**	**-**	**0.78**	**11.3**	**B**	**-**	**0.73**	**9.6**	**B**	
(46) THIRD AVENUE & 42nd STREET														
Third Avenue	NB	LT	0.87	18.3	C	LT	0.87	18.6	C	LT	0.87	18.6	C	-Provide a protect phase for the E/W
		R	0.76	24.9	C	R	0.83	32.2	D	R	0.83	32.1	D	movements.
42nd Street	EB	LT	0.97	34.4	D	LT	0.93	27.4	D	LT	0.93	27.4	D	
42nd Street	WB	T	0.67	21.8	C	T	0.66	21.7	C	T	0.66	21.7	C	
		R	1.16	120.0+	*F**	R	1.20+	120.0+	*F**	R	0.97	69.1	F	
Overall Intersection		**-**	**0.92**	**27.0**	**F***	**-**	**0.90**	**82.0**	**F***	**-**	**0.90**	**23.0**	**C**	
(47) THIRD AVENUE & 43rd STREET														
Third Avenue	NB	LT	0.75	7.7	B	LT	0.74	7.5	B	LT	0.82	11.3	B	-Shift 5 seconds of green time from the NB
43rd Street	WB	TR	1.01	63.8	F	TR	1.15	120.0+	F*	TR	0.99	56.3	E	phase to the WB phase.
Overall Intersection		**-**	**0.85**	**13.2**	**B**	**-**	**0.90**	**18.8**	**F***	**-**	**0.90**	**15.8**	**C**	

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

PM PEAK HOUR (5:15-6:15 PM)

SIGNALIZED INTERSECTIONS

		No Build				Build				Mitigated Build				
INTERSECTION & APPROACH		Mvt.	v/c	Delay	LOS	Mvt.	v/c	Delay	LOS	Mvt.	v/c	Delay	LOS	Mitigation
(48) THIRD AVENUE & 44th STREET														
Third Avenue	NB	TR	0.80	8.3	B	TR	0.78	8.0	B					
44th Street	EB	LT	0.57	19.1	C	LT	0.57	19.1	C			n/a		
Overall Intersection		-	**0.71**	**8.9**	**B**	-	**0.70**	**8.7**	**B**					
(49) THIRD AVENUE & 45th STREET														
Third Avenue	NB	LT	0.76	7.8	B	LT	0.75	7.7	B					
45th Street	WB	TR	0.97	47.4	E	TR	0.99	52.1	E			n/a		
Overall Intersection		-	**0.84**	**12.5**	**B**	-	**0.84**	**13.1**	**B**					
(50) THIRD AVENUE & 46th STREET														
Third Avenue	NB	TR	0.68	7.0	B	TR	0.66	6.9	B					
46th Street	EB	LT	0.76	21.3	C	LT	0.75	21.2	C			n/a		
Overall Intersection		-	**0.71**	**10.0**	**B**	-	**0.70**	**9.9**	**B**					
(51) THIRD AVENUE & 47th STREET														
Third Avenue	NB	LT	0.70	7.2	B	LT	0.69	7.1	B					
47th Street	WB	TR	1.12	105.7	*F**	TR	1.10	95.0	*F**			n/a		
Overall Intersection		-	**0.87**	**18.7**	**F***	-	**0.85**	**17.5**	**F***					
(52) THIRD AVENUE & 48th STREET														
Third Avenue	NB	TR	0.66	6.9	B	TR	0.65	6.8	B					
48th Street	EB	LT	0.71	20.5	C	LT	0.81	23.6	C			n/a		
Overall Intersection		-	**0.68**	**9.4**	**B**	-	**0.71**	**10.2**	**B**					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

PM PEAK HOUR (5:15-6:15 PM)

SIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		No Build Mvt.	No Build v/c	No Build Delay	No Build LOS	Build Mvt.	Build v/c	Build Delay	Build LOS	Mitigated Build Mvt.	Mitigated Build v/c	Mitigated Build Delay	Mitigated Build LOS	Mitigation
(53) SECOND AVENUE & 42nd STREET														
Second Avenue	SB	LTR	0.90	17.1	C	LTR	0.88	16.4	C					
42nd Street	EB	TR	0.82	21.7	C	TR	0.80	21.0	C			n/a		
42nd Street	WB	LT	0.94	35.0	D	LT	0.93	32.7	D					
Overall Intersection		**-**	**0.92**	**20.4**	**C**	**-**	**0.90**	**19.5**	**C**					
(54) FIRST AVENUE & 42nd STREET														
First Avenue	NB	LTR	0.23	10.9	B	LTR	0.23	10.9	B					
42nd Street	EB	L	1.06	75.3	*F**	L	1.02	67.0	F					
		T	0.88	28.4	D	T	0.86	26.4	D			n/a		
42nd Street	WB	T	0.40	16.2	C	T	0.40	16.2	C					
		R	1.11	96.6	*F**	R	1.12	102.6	*F**					
Overall Intersection		**-**	**0.67**	**43.2**	**F***	**-**	**0.66**	**42.5**	**F***					

Table M - 3

2010 BUILD / MITIGATED TRAFFIC LEVELS OF SERVICE

PM PEAK HOUR (5:15-6:15 PM)

UNSIGNALIZED INTERSECTIONS

INTERSECTION & APPROACH		Mvt.	Avg. Total Delay	95% Queue Length	LOS	Mvt.	Avg. Total Delay	95% Queue Length	LOS	Mvt.	Avg. Total Delay	95% Queue Length	LOS
(25) VANDERBILT AVENUE & 44th STREET													
44th Street	EB	L	6.6	0.9	B	L	6.6	0.9	B			n/a	
		R	3.3	0.4	A	R	3.4	0.6	A				
(26) VANDERBILT AVENUE & 43rd STREET													
Vanderbilt Avenue	NB	L	2.8	0.1	A	L	2.8	0.2	A			n/a	
43rd Street	WB	TR	6.4	0.9	B	TR	7.2	1.2	B				

GENERAL NOTES:

1. "MVT" refers to the specific intersection approach lane(s) and how the lane(s) operate and/or specific pavement striping. TR is a combined through-right turn lane(s), R or L refers to exclusive right- or left-turn movement lane(s), and LTR is a mixed lane(s) that allows for all movement types. DfL refers to a "defacto left-turn" lane that is formed due to a very heavy left-turn volume; in effect, only left turners use this lane. It is possible that lane uses change in different time periods. For example, a very heavy right-turn volume may exceed a single lane capacity, thus forcing drivers to use (or "share") an adjacent lane for additional travel capacity in the AM, but as flows decrease later in the day, a shared lane may not be needed.

2. "v/c" is the volume-to-capacity ratio for the MVT listed in the first column.

3. "Delay" is expressed in seconds per vehicle for the MVT listed in the first column.

4. "LOS" is based on average stopped delay per vehicle (sec/veh) for each signaled lane group, and on total average delay for unsignalized approaches as listed in the 1994 HCM, TRB SR 209.

5. " * " indicates that Delay and Level of Service are not meaningful when any v/c is greater than 1.2 or 1/PHF. Also, it is beyond the scope of HCM to assess delay for an approach which operates in oversaturated conditions.

6. 95% queue length is expressed in vehicles.

7. Significant Impact is defined as No Action LOS A,B,C, or D deteriorating to LOS E or F under the Build condition providing that the average vehicle delay increase is 10 seconds or more ; and No Action LOS E deteriorating to LOS F for the Build condition providing that the average vehicle delay increases by 10 seconds or more. Deterioration from the No Action condition to the Build condition within either LOS E or F with 10 seconds or more of additional delay is defined as a significant worsening of a pre-existing problem.

TABLE M-4

EXISTING
GCT EXTERNAL
PEDESTRIAN ANALYSES

Table M - 4
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS EXTERIOR TO GRAND CENTRAL TERMINAL
1999 EXISTING CONDITIONS AM, MIDDAY, PM PEAK PERIODS

INTERSECTION and ELEMENT	8 - 9 AM Peak Period				12 - 1 Mid-Day Peak Period				5 - 6 PM Peak Period			
	Average		Maximum Surge		Average		Maximum Surge		Average		Maximum Surge	
	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS
LEXINGTON AVENUE @ 42nd Street												
Northwest Corner	15.8	D			27.7	C			22.2	D		
North Crosswalk	30	C	13	E	41	B	19	D	27	C	12	E
West Crosswalk	30	C	14	E	33	C	16	D	30	C	15	E
LEXINGTON AVENUE between 43rd & 44th Street												
Crosswalk	22	D	11	E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LEXINGTON AVENUE @ 45th Street												
Southwest Corner	7.7	E			8.5	E			12.6	E		
South Crosswalk	45	B	26	C	38	C	17	D	45	B	25	C
West Crosswalk	32	C	14	E	32	C	14	E	32	C	13	E
MADISON AVENUE @ 43rd Street												
Northeast Corner	22.2	D			31.4	C			31.2	C		
North Crosswalk	41	B	21	D	96	B	45	B	45	B	22	D
East Crosswalk	52	B	15	D	36	C	11	E	60	B	18	D
Southeast Corner	22.1	D			29.1	C			33.6	C		
South Crosswalk	47	B	22	D	82	B	36	C	53	B	25	C
East Crosswalk	52	B	15	D	36	C	11	E	60	B	18	D
MADISON AVENUE @ 44th Street												
Northeast Corner	40.7	B			30.2	C			35.4	C		
North Crosswalk	58	B	33	C	87	B	45	B	55	B	30	C
East Crosswalk	67	B	21	D	31	C	10	E	55	B	17	D
Southeast Corner	26.6	C			17.5	D			28.7	C		
South Crosswalk	55	B	26	C	58	B	26	C	66	B	32	C
East Crosswalk	67	B	21	D	31	C	10	E	55	B	17	D
MADISON AVENUE @ 45th Street												
Northeast Corner	10.1	E			17.2	D			8.6	E		
North Crosswalk	32	C	17	D	52	B	25	C	39	C	20	D
East Crosswalk	47	B	15	D	47	B	16	D	36	C	12	E
Southeast Corner	18.9	D			27.0	C			20.5	D		
South Crosswalk	50	B	24	C	65	B	29	C	34	C	16	D
East Crosswalk	47	B	15	D	47	B	16	D	36	C	12	E
MADISON AVENUE @ 46th Street												
Northeast Corner	48	B			48.1	B			30.6	C		
North Crosswalk	103	B	53	B	148	A	71	B	98	B	51	B
East Crosswalk	47	B	14	E	39	C	12	E	30	C	9	E
Southeast Corner	20.9	D			32.8	C			28.3	C		
South Crosswalk	41	B	20	D	79	B	35	C	71	B	34	C
East Crosswalk	47	B	14	E	39	C	12	E	30	C	9	E
MADISON AVENUE @ 47th Street												
Northeast Corner	61.6	B			59.5	B			32.1	C		
North Crosswalk	93	B	48	B	169	A	83	B	79	B	42	B
East Crosswalk	75	B	20	D	48	B	13	E	36	C	9	E
Southeast Corner	33.4	C			27.7	C			24.3	C		
South Crosswalk	70	B	34	C	73	B	33	C	71	B	34	C
East Crosswalk	75	B	20	D	48	B	13	E	36	C	9	E
MADISON AVENUE @ 48th Street												
Northeast Corner	56.5	B			46.4	B			46.4	B		
North Crosswalk	54	B	27	C	81	B	40	C	83	B	43	B
East Crosswalk	83	B	27	C	45	B	16	D	53	B	16	D
Southeast Corner	114.8	B			78.6	B			82.8	B		
South Crosswalk	101	B	49	B	93	B	42	B	101	B	49	B
East Crosswalk	83	B	27	C	45	B	16	D	53	B	16	D

ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS EXTERIOR TO GRAND CENTRAL TERMINAL
1999 EXISTING CONDITIONS AM, MIDDAY, PM PEAK PERIODS

INTERSECTION and ELEMENT	8 - 9 AM Peak Period				12 - 1 Mid-Day Peak Period				5 - 6 PM Peak Period			
	Average		Maximum Surge		Average		Maximum Surge		Average		Maximum Surge	
	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS
VANDERBILT AVENUE @ 42nd Street												
Northeast Corner	19.6	D			33.5	C			21.9	D		
North Crosswalk	27	C	10	E	35	C	12	E	22	D	8	E
East Crosswalk	67	B	30	C	93	B	42	B	81	B	36	C
VANDERBILT AVENUE @ 44th Street												
Northwest Corner	53.3	B			52.6	B			49.7	B		
North Crosswalk	60	B	22	D	71	B	26	C	74	B	28	C
West Crosswalk	111	B	35	C	103	B	32	C	111	B	35	C
VANDERBILT AVENUE @ 45th Street												
Northwest Corner	31.5	C			17.2	D			24.0	C		
North Crosswalk	86	B	23	D	48	B	12	E	67	B	18	D
West Crosswalk	77	B	34	C	82	B	31	C	99	B	36	C
Southwest Corner	43.4	B			26.5	C			34.8	C		
South Crosswalk	98	B	25	C	44	B	11	E	57	B	15	E
West Crosswalk	77	B	34	C	82	B	31	C	99	B	36	C
Southeast Corner	49.1	B			25.9	C			31.6	C		
South Crosswalk	98	B	25	C	44	B	11	E	57	B	15	E
East Crosswalk	66	B	23	D	71	B	24	C	74	B	25	C
VANDERBILT AVENUE @ 46th Street												
Northeast Corner	54.5	B			32.1	C			41.6	B		
North Crosswalk	125	B	45	B	90	B	32	C	118	B	42	B
East Crosswalk	90	B	29	C	55	B	18	D	69	B	25	C
Southeast Corner	52.1	B			28.7	C			49.9	B		
South Crosswalk	147	A	56	B	66	B	24	D	118	B	42	B
East Crosswalk	90	B	29	C	55	B	18	D	69	B	25	C
Northwest Corner	54.4	B			41.7	B			45.3	B		
North Crosswalk	125	B	45	B	90	B	32	C	118	B	42	B
West Crosswalk	113	B	31	C	104	B	28	C	98	B	27	C
Southwest Corner	61.2	B			38.7	C			54.7	B		
South Crosswalk	147	A	56	B	66	B	24	D	118	B	42	B
West Crosswalk	113	B	31	C	104	B	28	C	98	B	27	C
VANDERBILT AVENUE @ 47th Street												
Southwest Corner	33.1	C			42.2	B			40.3	B		
South Crosswalk	80	B	32	C	84	B	33	C	82	B	31	C
West Crosswalk	83	B	25	C	116	B	35	C	104	B	31	C
PARK AVENUE @ 48th Street												
Northeast Corner	44.9	B			55.3	B			43.0	B		
North Crosswalk	82	B	78	B	58	B	56	B	63	B	59	B
East Crosswalk	35	C	12	E	73	B	22	D	43	B	14	E
Southwest Corner	76.4	B			81.1	B			107.5	B		
South Crosswalk	72	B	68	B	84	B	80	B	101	B	94	B
West Crosswalk	117	B	29	C	115	B	29	C	158	A	40	C
PARK AVENUE @ 42nd Street												
East Crosswalk	37	C	23	D	49	B	31	C	61	B	36	C
West Crosswalk	49	B	28	C	62	B	35	C	41	B	24	D

Table M - 4
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS EXTERIOR TO GRAND CENTRAL TERMINAL
1999 EXISTING CONDITIONS AM, MIDDAY, PM PEAK PERIODS

INTERSECTION and ELEMENT	AM Peak Period				Mid-Day Peak Period				PM Peak Period			
	Average		Platoon		Average		Platoon		Average		Platoon	
	Volume (ped/min/ft)	LOS	Volume (ped/min/ft)	LOS	Volume (ped/min/ft)	LOS	Volume (ped/min/ft)	LOS	Volume (ped/min/ft)	LOS	Volume (ped/min/ft)	LOS
LEXINGTON AVENUE between 43rd & 44th Street												
Walkway	15.1	E	19.1	E	8.7	C	12.7	D	14.2	D	18.2	E
MADISON AVENUE between 43rd & 44th Street												
Walkway	3.7	B	7.7	C	3.4	B	7.4	C	4.6	B	8.6	C
MADISON AVENUE between 44rd & 45th Street												
Walkway	2.9	B	6.9	B	4.7	B	8.7	C	5.3	B	9.3	C
MADISON AVENUE between 45th & 46th Street												
Walkway	7.5	C	11.5	D	4.5	B	8.5	C	8.0	C	12.0	D
MADISON AVENUE between 46th & 47th Street												
Walkway	4.6	B	8.6	C	3.9	B	7.9	C	6.8	B	10.8	D
MADISON AVENUE between 47th & 48th Street												
Walkway	3.2	B	7.2	C	4.1	B	8.1	C	4.4	B	8.4	C
VANDERBILT AVENUE between 45th & 46th Street												
Walkway (East Side)	2.6	B	6.6	B	2.7	B	6.7	B	3.3	B	7.3	C
Walkway (West Side)	1.9	A	5.9	B	1.8	A	5.8	B	2.1	B	6.1	B
VANDERBILT AVENUE between 46th & 47th Street												
Walkway (East Side)	1.7	A	5.7	B	1.8	A	5.8	B	2.1	B	6.1	B
Walkway (West Side)	2.0	A	6.0	B	1.2	A	5.2	B	1.3	A	5.3	B
43rd STREET between Madison & Vanderbilt Avenue												
Walkway (North Side)	11.7	D	15.7	E	4.7	B	8.7	C	9.4	C	13.4	D
Walkway (South Side)	5.0	B	9.0	C	3.0	B	7.0	B	3.4	B	7.4	C
45th STREET between Madison & Vanderbilt Avenue												
Walkway (North side)	4.0	B	8.0	C	4.2	B	8.2	C	4.2	B	8.2	C
Walkway (South side)	9.9	C	13.9	D	7.0	C	11.0	D	15.1	E	19.1	E
46th STREET between Vanderbilt & Madison Avenue												
Walkway (North Side)	1.1	A	5.1	B	1.2	A	5.2	B	1.0	A	5.0	B
Walkway (South Side)	1.3	A	5.3	B	1.6	A	5.6	B	1.5	A	5.5	B
47th STREET between Park & Lexington Avenue												
Walkway	0.7	A	4.7	B	0.8	A	4.8	B	0.7	A	4.7	B
47th STREET between Vanderbilt & Park Avenue												
Walkway (North Side)	1.6	A	5.6	B	1.7	A	5.7	B	1.9	A	5.9	B
Walkway (South Side)	1.0	A	5.0	B	1.3	A	5.3	B	1.3	A	5.3	B
47th STREET between Vanderbilt & Madison Avenue												
Walkway (North Side)	1.0	A	5.0	B	0.8	A	4.8	B	1.2	A	5.2	B
Walkway (South Side)	1.7	A	5.7	B	2.0	B	6.0	B	1.8	A	5.8	B
48th STREET between Park & Lexington Avenue												
Walkway	1.6	A	5.6	B	1.3	A	5.3	B	1.4	A	5.4	B
48th STREET between Madison & Park Avenue												
Walkway	1.8	A	5.8	B	1.8	A	5.8	B	1.5	A	5.5	B

TABLE M-5

2010 NO BUILD
GCT EXTERNAL
PEDESTRIAN ANALYSES

Table M - 5
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS EXTERIOR TO GRAND CENTRAL TERMINAL
2010 NO BUILD CONDITIONS AM, MIDDAY, PM PEAK PERIODS

INTERSECTION and ELEMENT	8 - 9 AM Peak Period				12 - 1 Mid-Day Peak Period				5 - 6 PM Peak Period			
	Average		Maximum Surge		Average		Maximum Surge		Average		Maximum Surge	
	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS
LEXINGTON AVENUE @ 42nd Street												
Northwest Corner	15.1	D			26.8	C			21.5	D		
North Crosswalk	29	C	13	E	40	B	18	D	27	C	12	E
West Crosswalk	29	C	14	E	32	C	16	D	29	C	14	E
LEXINGTON AVENUE between 43rd & 44th Street												
Crosswalk	22	D	11	E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LEXINGTON AVENUE @ 45th Street												
Southwest Corner	23.6	D			11.7	E			18.5	D		
South Crosswalk	62	B	37	C	40	C	19	D	61	B	34	C
West Crosswalk	63	B	27	C	42	B	19	D	54	B	23	D
MADISON AVENUE @ 43rd Street												
Northeast Corner	27.2	C			34.4	C			36.5	C		
North Crosswalk	46	B	23	D	131	A	61	B	58	B	29	C
East Crosswalk	51	B	15	E	35	C	11	E	59	B	17	D
Southeast Corner	21.2	D			28.3	C			32.6	C		
South Crosswalk	46	B	21	D	80	B	35	C	52	B	24	C
East Crosswalk	51	B	15	E	35	C	11	E	59	B	17	D
MADISON AVENUE @ 44th Street												
Northeast Corner	46.4	B			31.1	C			39.6	C		
North Crosswalk	57	B	33	C	86	B	44	B	53	B	29	C
East Crosswalk	96	B	30	C	33	C	11	E	68	B	21	D
Southeast Corner	33.6	C			18.1	D			32.0	C		
South Crosswalk	54	B	26	C	56	B	25	C	65	B	31	C
East Crosswalk	96	B	30	C	33	C	11	E	68	B	21	D
MADISON AVENUE @ 45th Street												
Northeast Corner	15.3	D			24.8	C			16.7	D		
North Crosswalk	32	C	17	D	62	B	30	C	38	C	20	D
East Crosswalk	111	B	36	C	62	B	21	D	55	B	18	D
Southeast Corner	62.0	B			37.4	C			30.1	C		
South Crosswalk	109	B	53	B	85	B	38	C	47	B	23	D
East Crosswalk	111	B	36	C	62	B	21	D	55	B	18	D
MADISON AVENUE @ 46th Street												
Northeast Corner	57.6	B			49.6	B			34.1	C		
North Crosswalk	98	B	52	B	148	A	71	B	95	B	49	B
East Crosswalk	84	B	25	C	48	B	15	E	39	C	12	E
Southeast Corner	35.8	C			38.8	C			36.0	C		
South Crosswalk	49	B	23	D	85	B	38	C	90	B	43	B
East Crosswalk	84	B	25	C	48	B	15	E	39	C	12	E
MADISON AVENUE @ 47th Street												
Northeast Corner	73.4	B			73.4	B			35.9	C		
North Crosswalk	90	B	47	B	169	A	83	B	77	B	41	B
East Crosswalk	127	B	33	C	54	B	15	E	42	B	11	E
Southeast Corner	49.7	B			30.3	C			27.5	C		
South Crosswalk	79	B	38	C	75	B	34	C	79	B	38	C
East Crosswalk	127	B	33	C	54	B	15	E	42	B	11	E
MADISON AVENUE @ 48th Street												
Northeast Corner	66.4	B			47.1	B			49.8	B		
North Crosswalk	51	B	27	C	78	B	38	C	80	B	41	B
East Crosswalk	105	B	34	C	47	B	16	D	58	B	17	D
Southeast Corner	137.5	A			80.5	B			89.0	B		
South Crosswalk	109	B	52	B	93	B	42	B	105	B	50	B
East Crosswalk	105	B	34	C	47	B	16	D	58	B	17	D

ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS EXTERIOR TO GRAND CENTRAL TERMINAL
2010 NO BUILD CONDITIONS AM, MIDDAY, PM PEAK PERIODS

INTERSECTION and ELEMENT	8 - 9 AM Peak Period				12 - 1 Mid-Day Peak Period				5 - 6 PM Peak Period			
	Average		Maximum Surge		Average		Maximum Surge		Average		Maximum Surge	
	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS
VANDERBILT AVENUE @ 42nd Street												
Northeast Corner	18.8	D			32.1	C			21.1	D		
North Crosswalk	27	C	9	E	32	C	12	E	21	D	7	E
East Crosswalk	65	B	29	C	90	B	41	B	80	B	36	C
VANDERBILT AVENUE @ 44th Street												
Northwest Corner	51.5	B			51.0	B			47.9	B		
North Crosswalk	56	B	22	D	69	B	25	C	72	B	27	C
West Crosswalk	108	B	34	C	101	B	31	C	108	B	34	C
VANDERBILT AVENUE @ 45th Street												
Northwest Corner	31.5	C			16.8	D			23.5	D		
North Crosswalk	86	B	23	D	44	B	12	E	66	B	18	D
West Crosswalk	77	B	34	C	82	B	31	C	96	B	35	C
Southwest Corner	42.9	B			26.0	C			33.5	C		
South Crosswalk	95	B	24	C	41	B	11	E	55	B	14	E
West Crosswalk	77	B	34	C	82	B	31	C	96	B	35	C
Southeast Corner	47.7	B			25.1	C			30.8	C		
South Crosswalk	95	B	24	C	41	B	11	E	55	B	14	E
East Crosswalk	65	B	22	D	70	B	24	D	72	B	25	C
VANDERBILT AVENUE @ 46th Street												
Northeast Corner	53.8	B			31.0	C			40.3	B		
North Crosswalk	125	B	45	B	88	B	32	C	114	B	41	B
East Crosswalk	88	B	28	C	53	B	18	D	68	B	25	C
Southeast Corner	51.2	B			27.6	C			49.3	B		
South Crosswalk	147	A	56	B	64	B	23	D	118	B	42	B
East Crosswalk	88	B	28	C	53	B	18	D	68	B	25	C
Northwest Corner	80.9	B			63.1	B			68.7	B		
North Crosswalk	125	B	45	B	88	B	32	C	114	B	41	B
West Crosswalk	109	B	30	C	101	B	27	C	96	B	26	C
Southwest Corner	60.1	B			37.5	C			54.0	B		
South Crosswalk	147	A	56	B	64	B	23	D	118	B	42	B
West Crosswalk	109	B	30	C	101	B	27	C	96	B	26	C
VANDERBILT AVENUE @ 47th Street												
Southwest Corner	48.8	B			60.5	B			56.8	B		
South Crosswalk	77	B	31	C	79	B	32	C	79	B	30	C
West Crosswalk	77	B	24	C	116	B	35	C	100	B	30	C
PARK AVENUE @ 48th Street												
Northeast Corner	67.5	B			67.7	B			66.6	B		
North Crosswalk	80	B	76	B	55	B	54	B	61	B	58	B
East Crosswalk	65	B	21	D	116	B	35	C	80	B	25	C
Southwest Corner	73.6	B			78.0	B			104.1	B		
South Crosswalk	71	B	66	B	82	B	78	B	98	B	92	B
West Crosswalk	112	B	28	C	110	B	27	C	154	A	38	C
PARK AVENUE @ 42nd Street												
East Crosswalk	36	C	22	D	47	B	30	C	58	B	35	C
West Crosswalk	47	B	27	C	61	B	34	C	40	C	23	D

Table M - 5
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS EXTERIOR TO GRAND CENTRAL TERMINAL
2010 NO BUILD CONDITIONS AM, MIDDAY, PM PEAK PERIODS

INTERSECTION and ELEMENT	AM Peak Period				Mid-Day Peak Period				PM Peak Period			
	Average		Platoon		Average		Platoon		Average		Platoon	
	Volume (ped/min/ft)	LOS	Volume (ped/min/ft)	LOS	Volume (ped/min/ft)	LOS	Volume (ped/min/ft)	LOS	Volume (ped/min/ft)	LOS	Volume (ped/min/ft)	LOS
LEXINGTON AVENUE between 43rd & 44th Street												
Walkway	12.1	D	16.1	E	7.5	C	11.5	D	11.7	D	15.7	E
MADISON AVENUE between 43rd & 44th Street												
Walkway	3.0	B	7.0	B	3.1	B	7.1	C	3.8	B	7.8	C
MADISON AVENUE between 44rd & 45th Street												
Walkway	2.1	B	6.1	B	4.4	B	8.4	C	4.3	B	8.3	C
MADISON AVENUE between 45th & 46th Street												
Walkway	5.2	B	9.2	C	3.5	B	7.5	C	4.7	B	8.7	C
MADISON AVENUE between 46th & 47th Street												
Walkway	3.1	B	7.1	C	3.3	B	7.3	C	5.6	B	9.6	C
MADISON AVENUE between 47th & 48th Street												
Walkway	2.4	B	6.4	B	3.9	B	7.9	C	3.8	B	7.8	C
VANDERBILT AVENUE between 45th & 46th Street												
Walkway (East Side)	2.6	B	6.6	B	2.7	B	6.7	B	3.4	B	7.4	C
Walkway (West Side)	2.0	A	6.0	B	1.8	A	5.8	B	2.1	B	6.1	B
VANDERBILT AVENUE between 46th & 47th Street												
Walkway (East Side)	1.8	A	5.8	B	1.8	A	5.8	B	2.1	B	6.1	B
Walkway (West Side)	2.0	B	6.0	B	1.2	A	5.2	B	1.3	A	5.3	B
43rd STREET between Madison & Vanderbilt Avenue												
Walkway (North Side)	8.5	C	12.5	D	3.3	B	7.3	C	6.7	B	10.7	D
Walkway (South Side)	5.2	B	9.2	C	3.1	B	7.1	C	3.5	B	7.5	C
45th STREET between Madison & Vanderbilt Avenue												
Walkway (North side)	4.2	B	8.2	C	4.3	B	8.3	C	4.3	B	8.3	C
Walkway (South side)	3.3	B	7.3	C	4.3	B	8.3	C	9.7	C	13.7	D
46th STREET between Vanderbilt & Madison Avenue												
Walkway (North Side)	1.1	A	5.1	B	1.2	A	5.2	B	1.1	A	5.1	B
Walkway (South Side)	1.3	A	5.3	B	1.6	A	5.6	B	1.5	A	5.5	B
47th STREET between Park & Lexington Avenue												
Walkway	0.8	A	4.8	B	0.9	A	4.9	B	0.7	A	4.7	B
47th STREET between Vanderbilt & Park Avenue												
Walkway (North Side)	1.6	A	5.6	B	1.7	A	5.7	B	2.0	A	6.0	B
Walkway (South Side)	1.1	A	5.1	B	1.3	A	5.3	B	1.3	A	5.3	B
47th STREET between Vanderbilt & Madison Avenue												
Walkway (North Side)	1.1	A	5.1	B	0.8	A	4.8	B	1.2	A	5.2	B
Walkway (South Side)	1.7	A	5.7	B	2.1	B	6.1	B	1.8	A	5.8	B
48th STREET between Park & Lexington Avenue												
Walkway	1.6	A	5.6	B	1.3	A	5.3	B	1.5	A	5.5	B
48th STREET between Madison & Park Avenue												
Walkway	1.3	A	5.3	B	1.3	A	5.8	B	1.6	A	5.6	B

TABLE M-6

2010 BUILD
GCT EXTERNAL
PEDESTRIAN ANALYSES

Table M - 6
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS EXTERIOR TO GRAND CENTRAL TERMINAL
2010 BUILD CONDITIONS AM, MIDDAY, PM PEAK PERIODS

INTERSECTION and ELEMENT	8 - 9 AM Peak Period				12 - 1 Mid-Day Peak Period				5 - 6 PM Peak Period			
	Average		Maximum Surge		Average		Maximum Surge		Average		Maximum Surge	
	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS
LEXINGTON AVENUE @ 42nd Street												
Northwest Corner	12.5	E			25.4	C			20.1	D		
North Crosswalk	28	C	12	E	39	C	18	D	26	C	12	E
West Crosswalk	26	C	12	E	30	C	15	D	26	C	13	E
LEXINGTON AVENUE between 43rd & 44th Street												
Crosswalk	21	D	11	E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LEXINGTON AVENUE @ 45th Street												
Southwest Corner	18.9	D			11.1	E			16.1	D		
South Crosswalk	53	B	32	C	39	C	18	D	52	B	30	C
West Crosswalk	54	B	23	D	41	B	18	D	48	B	20	D
MADISON AVENUE @ 43rd Street												
Northeast Corner	14.9	E			27.0	C			24.9	C		
North Crosswalk	34	C	18	D	100	B	46	B	42	B	22	D
East Crosswalk	36	C	11	E	31	C	9	E	42	B	12	E
Southeast Corner	16.2	D			26.9	C			24.6	C		
South Crosswalk	41	B	19	D	86	B	37	C	46	B	22	D
East Crosswalk	36	C	11	E	31	C	9	E	42	B	12	E
MADISON AVENUE @ 44th Street												
Northeast Corner	30.4	C			26.2	C			29.0	C		
North Crosswalk	50	B	29	C	80	B	41	B	48	B	26	C
East Crosswalk	48	B	16	D	28	C	9	E	43	B	13	E
Southeast Corner	19.6	D			15.3	D			21.6	D		
South Crosswalk	46	B	22	D	53	B	24	D	55	B	26	C
East Crosswalk	48	B	16	D	28	C	9	E	43	B	13	E
MADISON AVENUE @ 45th Street												
Northeast Corner	10.8	E			20.1	D			12.0	E		
North Crosswalk	27	C	15	E	57	B	28	C	32	C	17	D
East Crosswalk	62	B	20	D	52	B	18	D	43	B	14	E
Southeast Corner	25.4	C			28.6	C			21.1	D		
South Crosswalk	64	B	31	C	71	B	32	C	37	C	18	D
East Crosswalk	62	B	20	D	52	B	18	D	41	B	13	E
MADISON AVENUE @ 46th Street												
Northeast Corner	41.0	B			43.0	B			26.8	C		
North Crosswalk	90	B	48	B	144	A	69	B	88	B	45	B
East Crosswalk	50	B	14	E	39	C	12	E	30	C	9	E
Southeast Corner	21.9	D			32.5	C			27.0	C		
South Crosswalk	40	C	19	D	76	B	34	C	68	B	33	C
East Crosswalk	50	B	14	E	39	C	12	E	30	C	9	E
MADISON AVENUE @ 47th Street												
Northeast Corner	28.1	C			49.3	B			25.3	C		
North Crosswalk	37	C	19	D	89	B	43	B	37	C	20	D
East Crosswalk	64	B	17	D	45	B	12	E	33	C	9	E
Southeast Corner	28.6	C			23.2	D			21.0	D		
South Crosswalk	60	B	29	C	69	B	31	C	63	B	30	C
East Crosswalk	64	B	17	D	45	B	12	E	33	C	9	E
MADISON AVENUE @ 48th Street												
Northeast Corner	19.0	D			24.9	C			15.2	D		
North Crosswalk	23	D	12	E	46	B	23	D	30	C	15	D
East Crosswalk	34	C	12	E	27	C	10	E	25	C	7	E
Southeast Corner	50.2	B			51.1	B			42.8	B		
South Crosswalk	64	B	31	C	77	B	34	C	67	B	32	C
East Crosswalk	34	C	12	E	27	C	10	E	25	C	7	E

Table M - 6
LIRR EAST SIDE ACCESS ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS EXTERIOR TO GRAND CENTRAL TERMINAL
2010 BUILD CONDITIONS AM, MIDDAY, PM PEAK PERIODS

INTERSECTION and ELEMENT	8 - 9 AM Peak Period				12 - 1 Mid-Day Peak Period				5 - 6 PM Peak Period			
	Average		Maximum Surge		Average		Maximum Surge		Average		Maximum Surge	
	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS
VANDERBILT AVENUE @ 42nd Street												
Northeast Corner	25.9	C			45.9	B			29.8	C		
North Crosswalk	23	D	8	E	32	C	11	E	19	D	7	E
East Crosswalk	50	B	23	D	77	B	35	C	61	B	28	C
VANDERBILT AVENUE @ 44th Street												
Northwest Corner	51.5	B			51.0	B			47.9	B		
North Crosswalk	56	B	22	D	69	B	25	C	72	B	27	C
West Crosswalk	108	B	34	C	101	B	31	C	108	B	34	C
VANDERBILT AVENUE @ 45th Street												
Northwest Corner	31.5	C			16.8	D			23.5	D		
North Crosswalk	86	B	23	D	44	B	12	E	66	B	18	D
West Crosswalk	77	B	34	C	82	B	31	C	96	B	35	C
Southwest Corner	42.4	B			26.0	C			33.2	C		
South Crosswalk	93	B	24	D	41	B	11	E	54	B	14	E
West Crosswalk	77	B	34	C	82	B	31	C	96	B	35	C
Southeast Corner	43.9	B			24.8	C			29.7	C		
South Crosswalk	93	B	24	D	41	B	11	E	54	B	14	E
East Crosswalk	60	B	20	D	67	B	23	D	66	B	23	D
VANDERBILT AVENUE @ 46th Street												
Northeast Corner	53.2	B			31.0	C			40.3	B		
North Crosswalk	125	B	45	B	88	B	32	C	114	B	41	B
East Crosswalk	86	B	27	C	53	B	18	D	68	B	25	C
Southeast Corner	48.3	B			27.1	C			47.1	B		
South Crosswalk	147	A	56	B	64	B	23	D	114	B	41	B
East Crosswalk	86	B	27	C	53	B	18	D	68	B	25	C
Northwest Corner	80.9	B			63.1	B			68.7	B		
North Crosswalk	125	B	45	B	88	B	32	C	114	B	41	B
West Crosswalk	109	B	30	C	101	B	27	C	96	B	26	C
Southwest Corner	55.6	B			37.5	C			53.2	B		
South Crosswalk	147	A	56	B	64	B	23	D	114	B	41	B
West Crosswalk	109	B	30	C	101	B	27	C	96	B	26	C
VANDERBILT AVENUE @ 47th Street												
Southwest Corner	48.8	B			60.5	B			56.8	B		
South Crosswalk	77	B	31	C	79	B	32	C	79	B	30	C
West Crosswalk	81	B	24	C	116	B	35	C	100	B	30	C
PARK AVENUE @ 48th Street												
Northeast Corner	30.4	C			44.4	B			33.4	C		
North Crosswalk	77	B	76	B	55	B	54	B	61	B	58	B
East Crosswalk	50	B	17	D	101	B	31	C	64	B	20	D
Southwest Corner	51.6	B			67.4	B			74.8	B		
South Crosswalk	70	B	62	B	82	B	78	B	96	B	92	B
West Crosswalk	66	B	17	D	87	B	22	D	87	B	22	D
PARK AVENUE @ 42nd Street												
East Crosswalk	34	C	21	D	46	B	29	C	52	B	32	C
West Crosswalk	43	B	24	C	58	B	33	C	37	C	22	D

Table M - 6
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS EXTERIOR TO GRAND CENTRAL TERMINAL
2010 BUILD CONDITIONS AM, MIDDAY, PM PEAK PERIODS

INTERSECTION and ELEMENT	AM Peak Period				Mid-Day Peak Period				PM Peak Period			
	Average		Platoon		Average		Platoon		Average		Platoon	
	Volume (ped/min/ft)	LOS	Volume (ped/min/ft)	LOS	Volume (ped/min/ft)	LOS	Volume (ped/min/ft)	LOS	Volume (ped/min/ft)	LOS	Volume (ped/min/ft)	LOS
LEXINGTON AVENUE between 43rd & 44th Street												
Walkway	12.1	D	16.1	E	7.5	C	11.5	D	11.7	D	15.7	E
MADISON AVENUE between 43rd & 44th Street												
Walkway	4.5	B	8.5	C	3.7	B	7.7	C	4.3	B	9.4	C
MADISON AVENUE between 44rd & 45th Street												
Walkway	4.0	B	8.0	C	5.2	B	9.2	C	6.7	B	10.7	D
MADISON AVENUE between 45th & 46th Street												
Walkway	7.1	C	11.1	D	4.3	B	8.3	C	6.3	B	10.3	D
MADISON AVENUE between 46th & 47th Street												
Walkway	4.7	B	8.7	C	3.9	B	7.9	C	6.9	B	10.9	D
MADISON AVENUE between 47th & 48th Street												
Walkway	8.0	C	12.0	D	6.3	B	10.3	D	8.6	C	12.6	D
VANDERBILT AVENUE between 45th & 46th Street												
Walkway (East Side)	2.9	B	6.9	B	2.8	B	6.8	B	3.7	B	7.7	C
Walkway (West Side)	2.0	A	6.0	B	1.8	A	5.8	B	2.1	B	6.1	B
VANDERBILT AVENUE between 46th & 47th Street												
Walkway (East Side)	1.8	A	5.8	B	1.8	A	5.8	B	2.1	B	6.1	B
Walkway (West Side)	2.0	B	6.0	B	1.2	A	5.2	B	1.3	A	5.3	B
43rd STREET between Madison & Vanderbilt Avenue												
Walkway (North Side)	14.8	D	18.8	E	5.8	B	9.8	C	12.0	D	16.0	E
Walkway (South Side)	5.4	B	9.4	C	3.1	B	7.1	C	3.7	B	7.7	C
45th STREET between Madison & Vanderbilt Avenue												
Walkway (North side)	4.2	B	8.2	C	4.3	B	8.3	C	4.3	B	8.3	C
Walkway (South side)	8.7	C	12.7	D	6.4	B	10.4	D	14.2	D	18.2	E
46th STREET between Vanderbilt & Madison Avenue												
Walkway (North Side)	1.1	A	5.1	B	1.2	A	5.2	B	1.1	A	5.1	B
Walkway (South Side)	1.3	A	5.3	B	1.6	A	5.6	B	1.5	A	5.5	B
47th STREET between Park & Lexington Avenue												
Walkway	2.3	B	6.3	B	1.5	A	5.5	B	1.9	A	5.9	B
47th STREET between Vanderbilt & Park Avenue												
Walkway (North Side)	1.6	A	5.6	B	1.7	A	5.7	B	2.0	A	6.0	B
Walkway (South Side)	1.1	A	5.1	B	1.3	A	5.3	B	1.3	A	5.3	B
47th STREET between Vanderbilt & Madison Avenue												
Walkway (North Side)	1.1	A	5.1	B	0.8	A	4.8	B	1.2	A	5.2	B
Walkway (South Side)	1.7	A	5.7	B	2.1	B	6.1	B	1.8	A	5.8	B
48th STREET between Park & Lexington Avenue												
Walkway	1.6	A	5.6	B	1.3	A	5.3	B	1.5	A	5.5	B
48th STREET between Madison & Park Avenue												
Walkway	3.8	B	7.8	C	2.6	B	6.6	B	3.3	B	7.3	C

TABLE M-7

2010 MITIGATED BUILD GCT EXTERNAL PEDESTRIAN ANALYSES

Table M - 7
ANALYSIS OF CORNERS EXTERIOR TO GRAND CENTRAL TERMINAL
(BUILD VS. MITIGATED) AM, MIDDAY, PM PEAK PERIODS

INTERSECTION and ELEMENT	BUILD CONDITIONS 8 - 9 AM Average Space (sf/ped)	LOS	12 - 1 PM Average Space (sf/ped)	LOS	5 - 6 PM Average Space (sf/ped)	LOS	MITIGATED BUILD CONDITIONS 8 - 9 AM Average Space (sf/ped)	LOS	12 - 1 PM Average Space (sf/ped)	LOS	5 - 6 PM Average Space (sf/ped)	LOS	COMMENTS
LEXINGTON AVENUE @ 42nd Street													
Northwest Corner	12.5	E	25.4	C	20.1	D	19.4	D	34.4	C	26.9	C	Remove refuse cans & widen west crosswalk from 13 feet to 15 feet.
LEXINGTON AVENUE between 43rd & 44th Street													
Crosswalk	N/A	N/A	N/A	N/A	N/A	N/A							
LEXINGTON AVENUE @ 45th Street													
Southwest Corner	18.9	D	11.1	E	16.1	D							
MADISON AVENUE @ 43rd Street													
Northeast Corner	14.9	E	27.0	C	24.9	C							
Southeast Corner	16.2	D	26.9	C	24.6	C							
MADISON AVENUE @ 44th Street													
Northeast Corner	30.4	C	26.2	C	29.0	C							
Southeast Corner	19.6	D	15.3	D	21.6	D							
MADISON AVENUE @ 45th Street													
Northeast Corner	10.8	E	20.1	D	11.3	E	21.7	D	36.5	C	22.5	D	Widen East Crosswalk from 15.5 feet to 17 feet.
Southeast Corner	25.4	C	28.6	C	21.1	D							
MADISON AVENUE @ 46th Street													
Northeast Corner	41.0	B	43.0	B	26.8	C							
Southeast Corner	21.9	D	32.5	C	27.0	C							
MADISON AVENUE @ 47th Street													
Northeast Corner	28.1	C	49.3	B	25.3	C							
Southeast Corner	28.6	C	23.2	D	21.0	D							
MADISON AVENUE @ 48th Street													
Northeast Corner	19.0	D	24.9	C	15.2	D							
Southeast Corner	50.2	B	51.1	B	42.8	B							
VANDERBILT AVENUE @ 42nd Street													
Northeast Corner	25.9	C	45.9	B	29.8	C							
VANDERBILT AVENUE @ 44th Street													
Northwest Corner	51.5	B	51.0	B	47.9	B							
VANDERBILT AVENUE @ 45th Street													
Northwest Corner	31.5	C	16.8	D	23.5	D							
Southwest Corner	42.4	B	26.0	C	33.2	C							
Southeast Corner	43.9	B	24.8	C	29.7	C							
VANDERBILT AVENUE @ 46th Street													
Northeast Corner	53.2	B	31.0	C	40.3	B							
Southeast Corner	48.3	B	27.1	C	47.1	B							
Northwest Corner	80.9	B	63.1	B	68.7	B							
Southwest Corner	55.6	B	37.5	C	53.2	B							
VANDERBILT AVENUE @ 47th Street													
Southwest Corner	48.8	B	60.5	B	56.8	B							
PARK AVENUE @ 48th Street													
Northeast Corner	30.4	C	44.4	B	33.4	C							
Southwest Corner	51.6	B	67.4	B	74.8	B							

Table M - 7
ANALYSIS OF CROSSWALKS EXTERIOR TO GRAND CENTRAL TERMINAL
(BUILD VS. MITIGATED) AM, MIDDAY, PM PEAK PERIODS

INTERSECTION and ELEMENT	BUILD CONDITIONS						MITIGATED BUILD CONDITIONS						COMMENTS
	8 - 9 AM		12 - 1 PM		5 - 6 PM		8 - 9 AM		12 - 1 PM		5 - 6 PM		
	Max Surge		Max Surge		Max Surge		Max Surge		Max Surge		Max Surge		
	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	
LEXINGTON AVENUE @ 42nd Street													
North Crosswalk	12	E	18	D	12	E	13	E	19	D	12	E	Widen north crosswalk from 17ft to 18ft.
West Crosswalk	12	E	15	D	13	E	14	E	17	D	15	E	Remove refuse cans & widen west crosswalk from 13 ft to 15 ft.
LEXINGTON AVENUE between 43rd & 44th Street													
Crosswalk	11	E	N/A	N/A	N/A	N/A							
LEXINGTON AVENUE @ 45th Street													
South Crosswalk	32	C	18	D	30	C							
West Crosswalk	23	D	18	D	20	D							
MADISON AVENUE @ 43rd Street													
North Crosswalk	18	D	46	B	22	D							
East Crosswalk	11	E	9	E	12	E	15	D	14	E	18	D	Widen east crosswalk from 14 ft to 20 ft.
South Crosswalk	19	D	37	C	22	D							
MADISON AVENUE @ 44th Street													
North Crosswalk	29	C	41	B	26	C							
East Crosswalk	16	D	9	E	13	E	18	D	11	E	15	E	Widen east crosswalk from 14 ft to 17 ft.
South Crosswalk	22	D	24	D	26	C							
MADISON AVENUE @ 45th Street													
North Crosswalk	15	E	28	C	17	D							
East Crosswalk	20	D	18	D	13	E	22	D	19	D	15	E	Widen east crosswalk from 15.5 ft to 17 ft.
South Crosswalk	31	C	32	C	18	D							
MADISON AVENUE @ 46th Street													
North Crosswalk	48	B	69	B	45	B							
East Crosswalk	14	E	12	E	9	E	19	D	16	D	12	E	Widen east crosswalk from 12.5 ft to 17 ft.
South Crosswalk	19	D	34	C	33	C							
MADISON AVENUE @ 47th Street													
North Crosswalk	19	D	43	B	20	D							
East Crosswalk	17	D	12	E	9	E	21	D	15	D	11	E	Widen east crosswalk from 12 ft to 15 ft.
South Crosswalk	29	C	31	C	30	C							
MADISON AVENUE @ 48th Street													
North Crosswalk	12	E	23	D	15	D	15	D	29	C	20	D	Widen north crosswalk from 14 ft to 18 ft.
East Crosswalk	12	E	10	E	7	E	17	D	14	E	11	E	Widen east crosswalk from 15 ft to 25 ft.
South Crosswalk	31	C	34	C	32	C							
VANDERBILT AVENUE @ 42nd Street													
North Crosswalk	8	E	11	E	7	E	9	E	12	E	7	E	Widen north crosswalk from 22 ft to 23 ft.
East Crosswalk	23	D	35	C	28	C							
VANDERBILT AVENUE @ 44th Street													
North Crosswalk	22	D	25	C	27	C							
West Crosswalk	34	C	31	C	34	C							
VANDERBILT AVENUE @ 45th Street													
North Crosswalk	23	D	12	E	18	D							
West Crosswalk	34	C	31	C	35	C							
South Crosswalk	24	D	11	E	14	E							
East Crosswalk	20	D	23	D	23	D							
VANDERBILT AVENUE @ 46th Street													
North Crosswalk	45	B	32	C	41	B							
East Crosswalk	27	C	18	D	25	C							
South Crosswalk	56	B	23	D	41	B							
West Crosswalk	30	C	27	C	26	C							
VANDERBILT AVENUE @ 47th Street													
South Crosswalk	31	C	32	C	30	C							
West Crosswalk	24	C	35	C	30	C							
PARK AVENUE @ 48th Street													
North Crosswalk	76	B	54	B	58	B							
East Crosswalk	17	D	31	C	20	D							
South Crosswalk	62	B	78	B	92	B							
West Crosswalk	17	D	22	D	22	D							
PARK AVENUE @ 42nd Street													
East Crosswalk	21	D	29	D	32	C							
West Crosswalk	24	C	33	C	22	D							

Table M - 7
ANALYSIS OF MID-BLOCK WALKWAYS EXTERIOR TO GRAND CENTRAL TERMINAL
(BUILD VS. MITIGATED) AM, MIDDAY, PM PEAK PERIODS

INTERSECTION and ELEMENT	BUILD CONDITIONS 8 - 9 AM Platoon Volume (ped/min/ft)	LOS	12 - 1 PM Platoon Volume (ped/min/ft)	LOS	5 - 6 PM Platoon Volume (ped/min/ft)	LOS	MITIGATED BUILD CONDITIONS 8 - 9 AM Platoon Volume (ped/min/ft)	LOS	12 - 1 PM Platoon Volume (ped/min/ft)	LOS	5 - 6 PM Platoon Volume (ped/min/ft)	LOS	COMMENTS
LEXINGTON AVENUE between 43rd & 44th Street													
Walkway	16.1	E	11.5	D	15.7	E							
MADISON AVENUE between 43rd & 44th Street													
Walkway	8.5	C	7.7	C	9.4	C							
MADISON AVENUE between 44rd & 45th Street													
Walkway	8.0	C	9.2	C	10.7	D							
MADISON AVENUE between 45th & 46th Street													
Walkway	11.1	D	8.3	C	10.3	D							
MADISON AVENUE between 46th & 47th Street													
Walkway	8.7	C	7.9	C	10.9	D							
MADISON AVENUE between 47th & 48th Street													
Walkway	12.0	D	10.3	D	12.6	D							
VANDERBILT AVENUE between 45th & 46th Street													
Walkway (East Side)	6.9	B	6.8	B	7.7	C							
Walkway (West Side)	6.0	B	5.8	B	6.1	B							
VANDERBILT AVENUE between 46th & 47th Street													
Walkway (East Side)	5.8	B	5.8	B	6.1	B							
Walkway (West Side)	6.0	B	5.2	B	5.3	B							
43rd STREET between Madison & Vanderbilt Avenue													
Walkway (North Side)	18.8	E	9.8	C	16.0	E	11.4	D	6.9	B	10.0	C	Remove planters & Refuse cans Effective width = 8 feet
Walkway (South Side)	9.4	C	7.1	C	7.7	C							
45th STREET between Madison & Vanderbilt Avenue													
Walkway (North side)	8.2	C	8.3	C	8.3	C							
Walkway (South side)	12.7	D	10.4	D	18.2	E	9.2	C	7.8	C	12.5	D	Remove phone booths & Newspaper seller Effective width = 8 feet
46th STREET between Vanderbilt & Madison Avenue													
Walkway (North Side)	5.1	B	5.2	B	5.1	B							
Walkway (South Side)	5.3	B	5.6	B	5.5	B							
47th STREET between Park & Lexington Avenue													
Walkway	6.3	B	5.5	B	5.9	B							
47th STREET between Vanderbilt & Park Avenue													
Walkway (North Side)	5.6	B	5.7	B	6.0	B							
Walkway (South Side)	5.1	B	5.3	B	5.3	B							
47th STREET between Vanderbilt & Madison Avenue													
Walkway (North Side)	5.1	B	4.8	B	5.2	B							
Walkway (South Side)	5.7	B	6.1	B	5.8	B							
48th STREET between Park & Lexington Avenue													
Walkway	5.6	B	5.3	B	5.5	B							
48th STREET between Madison & Park Avenue													
Walkway	7.8	C	6.6	B	7.3	C							

Table M - 7
ANALYSIS OF MID-BLOCK WALKWAYS EXTERIOR TO GRAND CENTRAL TERMINAL
(BUILD VS. MITIGATED) AM, MIDDAY, PM PEAK PERIODS

INTERSECTION and ELEMENT	BUILD CONDITIONS 8 - 9 AM Platoon Volume (ped/min/ft)	LOS	12 - 1 PM Platoon Volume (ped/min/ft)	LOS	5 - 6 PM Platoon Volume (ped/min/ft)	LOS	MITIGATED BUILD CONDITIONS 8 - 9 AM Platoon Volume (ped/min/ft)	LOS	12 - 1 PM Platoon Volume (ped/min/ft)	LOS	5 - 6 PM Platoon Volume (ped/min/ft)	LOS	COMMENTS
LEXINGTON AVENUE between 43rd & 44th Street													
Walkway	16.1	E	11.5	D	15.7	E							
MADISON AVENUE between 43rd & 44th Street													
Walkway	8.5	C	7.7	C	9.4	C							
MADISON AVENUE between 44rd & 45th Street													
Walkway	8.0	C	9.2	C	10.7	D							
MADISON AVENUE between 45th & 46th Street													
Walkway	11.1	D	8.3	C	10.3	D							
MADISON AVENUE between 46th & 47th Street													
Walkway	8.7	C	7.9	C	10.9	D							
MADISON AVENUE between 47th & 48th Street													
Walkway	12.0	D	10.3	D	12.6	D							
VANDERBILT AVENUE between 45th & 46th Street													
Walkway (East Side)	6.9	B	6.8	B	7.7	C							
Walkway (West Side)	6.0	B	5.8	B	6.1	B							
VANDERBILT AVENUE between 46th & 47th Street													
Walkway (East Side)	5.8	B	5.8	B	6.1	B							
Walkway (West Side)	6.0	B	5.2	B	5.3	B							
43rd STREET between Madison & Vanderbilt Avenue													
Walkway (North Side)	18.8	E	9.8	C	16.0	E	11.4	D	6.9	B	10.0	C	Remove planters & Refuse cans Effective width = 8 feet
Walkway (South Side)	9.4	C	7.1	C	7.7	C							
45th STREET between Madison & Vanderbilt Avenue													
Walkway (North side)	8.2	C	8.3	C	8.3	C							
Walkway (South side)	12.7	D	10.4	D	18.2	E	9.2	C	7.8	C	12.5	D	Remove phone booths & Newspaper seller Effective width = 8 feet
46th STREET between Vanderbilt & Madison Avenue													
Walkway (North Side)	5.1	B	5.2	B	5.1	B							
Walkway (South Side)	5.3	B	5.6	B	5.5	B							
47th STREET between Park & Lexington Avenue													
Walkway	6.3	B	5.5	B	5.9	B							
47th STREET between Vanderbilt & Park Avenue													
Walkway (North Side)	5.6	B	5.7	B	6.0	B							
Walkway (South Side)	5.1	B	5.3	B	5.3	B							
47th STREET between Vanderbilt & Madison Avenue													
Walkway (North Side)	5.1	B	4.8	B	5.2	B							
Walkway (South Side)	5.7	B	6.1	B	5.8	B							
48th STREET between Park & Lexington Avenue													
Walkway	5.6	B	5.3	B	5.5	B							
48th STREET between Madison & Park Avenue													
Walkway	7.8	C	6.6	B	7.3	C							

Table M - 12
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
2020 BUILD CONDITIONS (NEA) PEAK AM 15-MINUTE PERIOD (8:35-8:50)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	3 Up Escalators	3,030	-	3,030	-	-	-	225	0.90	under capacity
	1 Down Escalator	-	195	195	-	-	-	75	0.17	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	210	890	1,100	20.0	18.0	20	216	0.34	A
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	380	20	400	9.0	8.0	20	64	0.42	A
	South Stairs from LL	55	85	140	9.0	8.0	10	72	0.13	A
	Up Escalator (3)	100	-	100	-	-	-	60	0.11	under capacity
	Down Escalator (3)	-	30	30	-	-	-	60	0.03	under capacity
	North Corridor	1,025	855	1,880	26.0	24.0	10	324	0.39	A
	South Corridor	1,485	1,690	3,175	21.0	19.0	10	257	0.83	C
3A. 43rd STREET PASSAGEWAY	Corridor	285	690	975	22.0	20.0	20	240	0.27	A
4. HYATT PASSAGEWAY	Corridor	575	1,025	1,600	19.0	17.0	10	230	0.46	B
5. EASTERN IRT SUBWAY STAIRS	Stairs	1,155	975	2,130	19.0	16.0	10	144	0.99	C
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	905	850	1,755	9.0	8.0	10	72	1.63	E *
	Up Escalator	1,035	-	1,035	-	-	-	75	0.92	under capacity
	Down Escalator	-	1,170	1,170	-	-	-	75	**1.04**	**over capacity** *
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	1,430	2,420	3,850	30.0	28.0	10	378	0.68	B
8. LOWER CONCOURSE EAST RAMP	Ramp	60	995	1,055	17.0	15.0	20	180	0.39	A
9. 42nd ST. MAIN ENTRANCE	Corridor	205	1,180	1,385	21.0	19.0	20	228	0.40	A
10. SHUTTLE PASSAGEWAY	Corridor	530	1,415	1,945	19.0	17.0	20	204	0.64	B
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	225	1,350	1,575	14.0	12.0	20	144	0.73	C
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	1,160	30	1,190	9.0	8.0	20	64	1.24	D *
	South Stairs from LL	60	40	100	9.0	8.0	10	72	0.09	A
	Up Escalator (4)	2,555	-	2,555	-	-	-	75	**2.27**	**over capacity** *
	Down Escalator (4)	-	45	45	-	-	-	75	0.04	under capacity
	North Corridor	1,950	240	2,190	26.0	24.0	20	288	0.51	B
	South Corridor	945	830	1,775	21.0	19.0	10	257	0.46	B
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	25	910	935	9.0	8.0	20	64	0.97	C
14. ROOSEVELT PASSAGEWAY	Corridor	20	725	745	11.0	9.0	20	108	0.46	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

" * " Denotes significant pedestrian impact per NYCDCP CEQR Technical Manual.

Table M - 12
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
2020 BUILD CONDITIONS (NEA) PEAK 5 MINUTES WITHIN PEAK PM 15-MINUTE PERIOD (5:10-5:25)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	1 Up Escalator	185	-	185	-	-	-	75	0.49	under capacity
	3 Down Escalators	-	685	685	-	-	-	225	0.61	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	275	120	395	20.0	18.0	20	216	0.37	A
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	10	115	125	9.0	8.0	20	64	0.39	A
	South Stairs from LL	20	35	55	9.0	8.0	10	72	0.15	A
	Up Escalator (3)	5	-	5	-	-	-	60	0.02	under capacity
	Down Escalator (3)	-	85	85	-	-	-	60	0.28	under capacity
	North Corridor	355	460	815	26.0	24.0	10	324	0.50	B
	South Corridor	570	540	1,110	21.0	19.0	10	257	0.87	C
3A. 43rd STREET PASSAGEWAY	Corridor	200	65	265	22.0	20.0	20	240	0.22	A
4. HYATT PASSAGEWAY	Corridor	335	130	465	19.0	17.0	20	204	0.46	B
5. EASTERN IRT SUBWAY STAIRS	Stairs	330	430	760	19.0	16.0	10	144	1.06	D
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	245	415	660	9.0	8.0	10	72	**1.83**	F
	Up Escalator	325	-	325	-	-	-	75	0.87	under capacity
	Down Escalator	-	325	325	-	-	-	75	0.87	under capacity
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	650	645	1,295	30.0	28.0	10	378	0.69	B
8. LOWER CONCOURSE EAST RAMP	Ramp	410	30	440	17.0	15.0	20	180	0.49	B
9. 42nd ST. MAIN ENTRANCE	Corridor	435	110	545	21.0	19.0	20	228	0.48	B
10. SHUTTLE PASSAGEWAY	Corridor	435	335	770	19.0	17.0	10	230	0.67	B
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	520	85	605	14.0	12.0	20	144	0.84	C
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	15	375	390	9.0	8.0	20	64	1.22	D *
	South Stairs from LL	5	30	35	9.0	8.0	20	64	0.11	A
	Up Escalator (4)	5	-	5	-	-	-	75	0.01	under capacity
	Down Escalator (4)	-	780	780	-	-	-	75	**2.08**	**over capacity** *
	North Corridor	140	735	875	26.0	24.0	20	288	0.61	B
	South Corridor	360	295	655	21.0	19.0	10	257	0.51	B
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	245	30	275	9.0	8.0	20	64	0.86	C
14. ROOSEVELT PASSAGEWAY	Corridor	220	10	230	11.0	9.0	20	108	0.43	A

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

" * " Denotes significant pedestrian impact per NYCDCP CEQR Technical Manual.

Table M - 12
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
2020 BUILD CONDITIONS (NEA) PEAK PM 15-MINUTE PERIOD (5:10-5:25)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	1 Up Escalator	490	-	490	-	-	-	75	0.44	under capacity
	3 Down Escalators	-	2,010	2,010	-	-	-	225	0.60	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	970	415	1,385	20.0	18.0	20	216	0.43	A
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	55	85	140	9.0	8.0	10	72	0.13	A
	South Stairs from LL	30	290	320	9.0	8.0	20	64	0.33	A
	Up Escalator (3)	50	-	50	-	-	-	60	0.06	under capacity
	Down Escalator (3)	-	215	215	-	-	-	60	0.24	under capacity
	North Corridor	950	1,095	2,045	26.0	24.0	10	324	0.42	A
	South Corridor	1,545	1,510	3,055	21.0	19.0	10	257	0.79	C
3A. 43rd STREET PASSAGEWAY	Corridor	580	185	765	22.0	20.0	20	240	0.21	A
4. HYATT PASSAGEWAY	Corridor	945	360	1,305	19.0	17.0	20	204	0.43	A
5. EASTERN IRT SUBWAY STAIRS	Stairs	785	1,120	1,905	19.0	16.0	10	144	0.88	C
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	635	1,025	1,660	9.0	8.0	10	72	1.54	E *
	Up Escalator	920	-	920	-	-	-	75	0.82	under capacity
	Down Escalator	-	945	945	-	-	-	75	0.84	under capacity
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	1,710	1,685	3,395	30.0	28.0	10	378	0.60	B
8. LOWER CONCOURSE EAST RAMP	Ramp	860	75	935	17.0	15.0	20	180	0.35	A
9. 42nd ST. MAIN ENTRANCE	Corridor	1,235	270	1,505	21.0	19.0	20	228	0.44	A
10. SHUTTLE PASSAGEWAY	Corridor	1,125	815	1,940	19.0	17.0	10	230	0.56	B
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	1,495	215	1,710	14.0	12.0	20	144	0.79	C
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	30	995	1,025	9.0	8.0	20	64	1.07	D *
	South Stairs from LL	15	75	90	9.0	8.0	20	64	0.09	A
	Up Escalator (4)	20	-	20	-	-	-	75	0.02	under capacity
	Down Escalator (4)	-	2,070	2,070	-	-	-	75	**1.84**	**over capacity** *
	North Corridor	340	2,000	2,340	26.0	24.0	20	288	0.54	B
	South Corridor	890	995	1,885	21.0	19.0	10	257	0.49	B
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	715	55	770	9.0	8.0	20	64	0.80	C
14. ROOSEVELT PASSAGEWAY	Corridor	635	30	665	11.0	9.0	20	108	0.41	A

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

" * " Denotes significant pedestrian impact per NYCDCP CEQR Technical Manual.

TABLE M-13

2010 MITIGATED BUILD GCT INTERNAL PEDESTRIAN ANALYSES

Table M - 13

ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL

2010 MITIGATED BUILD CONDITIONS (NEA) PEAK 5 MINUTES WITHIN PEAK AM 15-MINUTE PERIOD (8:35-8:50)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)	MITIGATION MEASURE
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)			
5. EASTERN IRT SUBWAY STAIRS	Stairs	425	330	755	19.0	16.0	10	144	1.05	D	Reassigned pedestrian flows into "free" shuttle passageway.
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	390	215	605	9.0	8.0	10	72	**1.68**	**F** *	
12. VANDERBILT AVENUE STAIRS / ESCALATORS	North Stairs from LL	375	45	420	9.0	8.0	20	64	1.31	D *	Although significant impact noted, a more balanced flow and acceptable LOS between north and south stairs will likely result.
	South Stairs from LL	20	10	30	9.0	8.0	20	64	0.09	A	
	Up Escalators (4)	840	-	840	-	-	-	150	**1.12**	**over capacity** *	Direct both escalators up in AM (reassign down flow to nearest stair).

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively. Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.

The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A, < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

" * " Denotes unmitigated significant pedestrian impact per NYCDCP CEQR Technical Manual.

TABLE M-8

EXISTING
GCT INTERNAL
PEDESTRIAN ANALYSES

Table M - 8

ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL

1999 EXISTING CONDITIONS (without NEA) PEAK 5 MINUTES WITHIN PEAK AM 15-MINUTE PERIOD (8:35-8:50)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	3 Up Escalators	1,210	-	1,210	-	-	-	225	**1.08**	**over capacity**
	1 Down Escalator	-	80	80	-	-	-	75	0.21	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	80	425	505	20.0	18.0	20	216	0.47	B
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	120	5	125	9.0	8.0	20	64	0.39	A
	South Stairs from LL	20	25	45	9.0	8.0	10	72	0.13	A
	Up Escalator (3)	25	-	25	-	-	-	60	0.08	under capacity
	Down Escalator (3)	-	10	10	-	-	-	60	0.03	under capacity
	North Corridor	410	280	690	26.0	24.0	10	324	0.43	A
	South Corridor	480	445	925	21.0	19.0	10	257	0.72	C
4. HYATT PASSAGEWAY	Corridor	240	385	625	19.0	17.0	10	230	0.54	B
5. EASTERN IRT SUBWAY STAIRS	Stairs	405	290	695	19.0	16.0	10	144	0.97	C
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	360	215	575	9.0	8.0	10	72	1.60	E
	Up Escalator	435	-	435	-	-	-	75	**1.16**	**over capacity**
	Down Escalator	-	295	295	-	-	-	75	0.79	under capacity
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	510	610	1,120	30.0	28.0	10	378	0.59	B
8. LOWER CONCOURSE EAST RAMP	Ramp	20	200	220	17.0	15.0	20	180	0.24	A
9. 42nd ST. MAIN ENTRANCE	Corridor	80	250	330	21.0	19.0	20	228	0.29	A
10. SHUTTLE PASSAGEWAY	Corridor	275	260	535	19.0	17.0	10	230	0.47	B
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	75	260	335	14.0	12.0	20	144	0.47	B
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	180	15	195	9.0	8.0	20	64	0.61	B
	South Stairs from LL	10	10	20	9.0	8.0	10	72	0.06	A
	Up Escalator (4)	215	-	215	-	-	-	75	0.57	under capacity
	Down Escalator (4)	-	20	20	-	-	-	75	0.05	under capacity
	North Corridor	485	195	680	26.0	24.0	20	288	0.47	B
	South Corridor	375	240	615	21.0	19.0	10	257	0.48	B
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	10	235	245	9.0	8.0	20	64	0.77	C
14. ROOSEVELT PASSAGEWAY	Corridor	10	520	530	11.0	9.0	20	108	0.98	C

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

Table M - 8

ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL

1999 EXISTING CONDITIONS (without NEA) PEAK AM 15-MINUTE PERIOD (8:35-8:50)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	3 Up Escalators	3,355	-	3,355	-	-	-	225	0.99	under capacity
	1 Down Escalator	-	210	210	-	-	-	75	0.19	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	235	1,235	1,470	20.0	18.0	20	216	0.45	B
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	280	15	295	9.0	8.0	20	64	0.31	A
	South Stairs from LL	40	70	110	9.0	8.0	10	72	0.10	A
	Up Escalator (3)	60	-	60	-	-	-	60	0.07	under capacity
	Down Escalator (3)	-	25	25	-	-	-	60	0.03	under capacity
	North Corridor	870	825	1,695	26.0	24.0	10	324	0.35	A
	South Corridor	1,350	1,250	2,600	21.0	19.0	10	257	0.68	B
4. HYATT PASSAGEWAY	Corridor	695	1,015	1,710	19.0	17.0	10	230	0.50	B
5. EASTERN IRT SUBWAY STAIRS	Stairs	1,050	725	1,775	19.0	16.0	10	144	0.82	C
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	770	600	1,370	9.0	8.0	10	72	1.27	D
	Up Escalator	890	-	890	-	-	-	75	0.79	under capacity
	Down Escalator	-	830	830	-	-	-	75	0.74	under capacity
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	1,295	1,705	3,000	30.0	28.0	10	378	0.53	B
8. LOWER CONCOURSE EAST RAMP	Ramp	50	440	490	17.0	15.0	20	180	0.18	A
9. 42nd ST. MAIN ENTRANCE	Corridor	220	675	895	21.0	19.0	20	228	0.26	A
10. SHUTTLE PASSAGEWAY	Corridor	500	665	1,165	19.0	17.0	10	230	0.34	A
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	190	625	815	14.0	12.0	20	144	0.38	A
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	465	25	490	9.0	8.0	20	64	0.51	B
	South Stairs from LL	20	30	50	9.0	8.0	10	72	0.05	A
	Up Escalator (4)	420	-	420	-	-	-	75	0.37	under capacity
	Down Escalator (4)	-	35	35	-	-	-	75	0.03	under capacity
	North Corridor	1,075	460	1,535	26.0	24.0	20	288	0.36	A
	South Corridor	880	580	1,460	21.0	19.0	10	257	0.38	A
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	20	620	640	9.0	8.0	20	64	0.67	B
14. ROOSEVELT PASSAGEWAY	Corridor	15	1,335	1,350	11.0	9.0	20	108	0.83	C

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

Table M - 8
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
1999 EXISTING CONDITIONS (without NEA) PEAK 5 MINUTES WITHIN PEAK PM 15-MINUTE PERIOD (5:10-5:25)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	1 Up Escalator	180	-	180	-	-	-	75	0.48	under capacity
	3 Down Escalators	-	920	920	-	-	-	225	0.82	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	400	135	535	20.0	18.0	20	216	0.50	B
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	10	90	100	9.0	8.0	20	64	0.31	A
	South Stairs from LL	15	25	40	9.0	8.0	10	72	0.11	A
	Up Escalator (3)	5	-	5	-	-	-	60	0.02	under capacity
	Down Escalator (3)	-	60	60	-	-	-	60	0.20	under capacity
	North Corridor	305	390	695	26.0	24.0	10	324	0.43	A
	South Corridor	400	490	890	21.0	19.0	10	257	0.69	B
4. HYATT PASSAGEWAY	Corridor	340	155	495	19.0	17.0	20	204	0.49	B
5. EASTERN IRT SUBWAY STAIRS	Stairs	250	390	640	19.0	16.0	10	144	0.89	C
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	180	380	560	9.0	8.0	20	64	1.75	F
	Up Escalator	235	-	235	-	-	-	75	0.63	under capacity
	Down Escalator	-	295	295	-	-	-	75	0.79	under capacity
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	465	585	1,050	30.0	28.0	10	378	0.56	B
8. LOWER CONCOURSE EAST RAMP	Ramp	155	25	180	17.0	15.0	20	180	0.20	A
9. 42nd ST. MAIN ENTRANCE	Corridor	275	110	385	21.0	19.0	20	228	0.34	A
10. SHUTTLE PASSAGEWAY	Corridor	205	310	515	19.0	17.0	10	230	0.45	A
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	285	70	355	14.0	12.0	20	144	0.49	B
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	10	195	205	9.0	8.0	20	64	0.64	B
	South Stairs from LL	5	10	15	9.0	8.0	20	64	0.05	A
	Up Escalator (4)	5	-	5	-	-	-	75	0.01	under capacity
	Down Escalator (4)	-	160	160	-	-	-	75	0.43	under capacity
	North Corridor	340	460	800	26.0	24.0	10	324	0.49	B
	South Corridor	280	285	565	21.0	19.0	10	257	0.44	A
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	25	155	180	9.0	8.0	20	64	0.56	B
14. ROOSEVELT PASSAGEWAY	Corridor	390	10	400	11.0	9.0	20	108	0.74	C

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

Table M - 8
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
1999 EXISTING CONDITIONS (without NEA) PEAK PM 15-MINUTE PERIOD (5:10-5:25)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	1 Up Escalator	480	-	480	-	-	-	75	0.43	under capacity
	3 Down Escalators	-	2,700	2,700	-	-	-	225	0.80	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	1,110	350	1,460	20.0	18.0	20	216	0.45	B
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	25	220	245	9.0	8.0	20	64	0.26	A
	South Stairs from LL	45	65	110	9.0	8.0	10	72	0.10	A
	Up Escalator (3)	15	-	15	-	-	-	60	0.02	under capacity
	Down Escalator (3)	-	150	150	-	-	-	60	0.17	under capacity
	North Corridor	895	930	1,825	26.0	24.0	10	324	0.38	A
	South Corridor	1,155	1,375	2,530	21.0	19.0	10	257	0.66	B
4. HYATT PASSAGEWAY	Corridor	950	435	1,385	19.0	17.0	20	204	0.45	B
5. EASTERN IRT SUBWAY STAIRS	Stairs	580	1,020	1,600	19.0	16.0	10	144	0.74	C
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	445	930	1,375	9.0	8.0	20	64	1.43	E
	Up Escalator	635	-	635	-	-	-	75	0.56	under capacity
	Down Escalator	-	860	860	-	-	-	75	0.76	under capacity
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	1,160	1,525	2,685	30.0	28.0	10	378	0.47	B
8. LOWER CONCOURSE EAST RAMP	Ramp	380	60	440	17.0	15.0	20	180	0.16	A
9. 42nd ST. MAIN ENTRANCE	Corridor	775	275	1,050	21.0	19.0	20	228	0.31	A
10. SHUTTLE PASSAGEWAY	Corridor	510	755	1,265	19.0	17.0	10	230	0.37	A
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	810	180	990	14.0	12.0	20	144	0.46	B
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	25	455	480	9.0	8.0	20	64	0.50	B
	South Stairs from LL	10	35	45	9.0	8.0	20	64	0.05	A
	Up Escalator (4)	15	-	15	-	-	-	75	0.01	under capacity
	Down Escalator (4)	-	370	370	-	-	-	75	0.33	under capacity
	North Corridor	485	1,215	1,700	26.0	24.0	20	288	0.39	A
	South Corridor	710	750	1,460	21.0	19.0	10	257	0.38	A
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	45	455	500	9.0	8.0	20	64	0.52	B
14. ROOSEVELT PASSAGEWAY	Corridor	1,120	25	1,145	11.0	9.0	20	108	0.71	C

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

TABLE M-9

2010 NO BUILD
GCT INTERNAL
PEDESTRIAN ANALYSES

Table M - 9

ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL

2010 FUTURE NO BUILD CONDITIONS (NEA) PEAK 5 MINUTES WITHIN PEAK AM 15-MINUTE PERIOD (8:35-8:50)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	3 Up Escalators	900	-	900	-	-	-	225	0.80	under capacity
	1 Down Escalator	-	75	75	-	-	-	75	0.20	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	70	205	275	20.0	18.0	20	216	0.25	A
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	125	5	130	9.0	8.0	20	64	0.41	A
	South Stairs from LL	20	30	50	9.0	8.0	10	72	0.14	A
	Up Escalator (3)	25	-	25	-	-	-	60	0.08	under capacity
	Down Escalator (3)	-	10	10	-	-	-	60	0.03	under capacity
	North Corridor	445	180	625	26.0	24.0	20	288	0.43	A
	South Corridor	505	435	940	21.0	19.0	10	257	0.73	C
3A. 43rd STREET PASSAGEWAY	Corridor	90	180	270	22.0	20.0	20	240	0.23	A
4. HYATT PASSAGEWAY	Corridor	190	335	525	19.0	17.0	10	230	0.46	B
5. EASTERN IRT SUBWAY STAIRS	Stairs	425	325	750	19.0	16.0	10	144	1.04	D
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	390	185	575	9.0	8.0	20	64	**1.80**	**F**
	Up Escalator	435	-	435	-	-	-	75	**1.16**	**over capacity**
	Down Escalator	-	250	250	-	-	-	75	0.67	under capacity
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	535	550	1,085	30.0	28.0	10	378	0.57	B
8. LOWER CONCOURSE EAST RAMP	Ramp	25	90	115	17.0	15.0	20	180	0.13	A
9. 42nd ST. MAIN ENTRANCE	Corridor	75	270	345	21.0	19.0	20	228	0.30	A
10. SHUTTLE PASSAGEWAY	Corridor	285	425	710	19.0	17.0	10	230	0.62	B
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	80	290	370	14.0	12.0	20	144	0.51	B
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	190	20	210	9.0	8.0	20	64	0.66	B
	South Stairs from LL	10	10	20	9.0	8.0	10	72	0.06	A
	Up Escalator (4)	110	-	110	-	-	-	75	0.29	under capacity
	Down Escalator (4)	-	25	25	-	-	-	75	0.07	under capacity
	North Corridor	485	60	545	26.0	24.0	20	288	0.38	A
	South Corridor	335	280	615	21.0	19.0	10	257	0.48	B
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	10	175	185	9.0	8.0	20	64	0.58	B
14. ROOSEVELT PASSAGEWAY	Corridor	10	120	130	11.0	9.0	20	108	0.24	A

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

Table M - 9
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
2010 FUTURE NO BUILD CONDITIONS (NEA) PEAK AM 15-MINUTE PERIOD (8:35-8:50)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	3 Up Escalators	2,500	-	2,500	-	-	-	225	0.74	under capacity
	1 Down Escalator	-	195	195	-	-	-	75	0.17	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	190	590	780	20.0	18.0	20	216	0.24	A
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	280	15	295	9.0	8.0	20	64	0.31	A
	South Stairs from LL	40	80	120	9.0	8.0	20	64	0.13	A
	Up Escalator (3)	55	-	55	-	-	-	60	0.06	under capacity
	Down Escalator (3)	-	30	30	-	-	-	60	0.03	under capacity
	North Corridor	950	540	1,490	26.0	24.0	10	324	0.31	A
	South Corridor	1,420	1,235	2,655	21.0	19.0	10	257	0.69	B
3A. 43rd STREET PASSAGEWAY	Corridor	245	485	730	22.0	20.0	10	270	0.18	A
4. HYATT PASSAGEWAY	Corridor	550	635	1,185	19.0	17.0	10	230	0.34	A
5. EASTERN IRT SUBWAY STAIRS	Stairs	1,105	810	1,915	19.0	16.0	10	144	0.89	C
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	925	550	1,475	9.0	8.0	10	72	1.37	E
	Up Escalator	935	-	935	-	-	-	75	0.83	under capacity
	Down Escalator	-	760	760	-	-	-	75	0.68	under capacity
7 EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	1,365	1,535	2,900	30.0	28.0	10	378	0.51	B
8. LOWER CONCOURSE EAST RAMP	Ramp	55	200	255	17.0	15.0	20	180	0.09	A
9. 42nd ST. MAIN ENTRANCE	Corridor	205	735	940	21.0	19.0	20	228	0.27	A
10. SHUTTLE PASSAGEWAY	Corridor	505	1,040	1,545	19.0	17.0	20	204	0.50	B
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	210	700	910	14.0	12.0	20	144	0.42	A
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	500	25	525	9.0	8.0	20	64	0.55	B
	South Stairs from LL	25	35	60	9.0	8.0	10	72	0.06	A
	Up Escalator (4)	155	-	155	-	-	-	75	0.14	under capacity
	Down Escalator (4)	-	40	40	-	-	-	75	0.04	under capacity
	North Corridor	1,050	145	1,195	26.0	24.0	20	288	0.28	A
	South Corridor	760	685	1,445	21.0	19.0	10	257	0.38	A
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	20	460	480	9.0	8.0	20	64	0.50	B
14. ROOSEVELT PASSAGEWAY	Corridor	15	280	295	11.0	9.0	20	108	0.18	A

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
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(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

Table M - 9
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
2010 FUTURE NO BUILD CONDITIONS (NEA) PEAK 5 MINUTES WITHIN PEAK PM 15-MINUTE PERIOD (5:10-5:25)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	1 Up Escalator	180	-	180	-	-	-	75	0.48	under capacity
	3 Down Escalators	-	545	545	-	-	-	225	0.48	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	185	110	295	20.0	18.0	10	243	0.24	A
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	10	95	105	9.0	8.0	20	64	0.33	A
	South Stairs from LL	20	25	45	9.0	8.0	10	72	0.13	A
	Up Escalator (3)	5	-	5	-	-	-	60	0.02	under capacity
	Down Escalator (3)	-	70	70	-	-	-	60	0.23	under capacity
	North Corridor	220	425	645	26.0	24.0	10	324	0.40	A
	South Corridor	390	515	905	21.0	19.0	10	257	0.71	C
3A. 43rd STREET PASSAGEWAY	Corridor	145	65	210	22.0	20.0	20	240	0.18	A
4. HYATT PASSAGEWAY	Corridor	220	125	345	19.0	17.0	10	230	0.30	A
5. EASTERN IRT SUBWAY STAIRS	Stairs	280	410	690	19.0	16.0	10	144	0.96	C
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	160	400	560	9.0	8.0	20	64	1.75	F
	Up Escalator	210	-	210	-	-	-	75	0.56	under capacity
	Down Escalator	-	310	310	-	-	-	75	0.83	under capacity
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	425	615	1,040	30.0	28.0	10	378	0.55	B
8. LOWER CONCOURSE EAST RAMP	Ramp	80	30	110	17.0	15.0	20	180	0.12	A
9. 42nd ST. MAIN ENTRANCE	Corridor	300	110	410	21.0	19.0	20	228	0.36	A
10. SHUTTLE PASSAGEWAY	Corridor	325	320	645	19.0	17.0	10	230	0.56	B
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	320	75	395	14.0	12.0	20	144	0.55	B
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	15	190	205	9.0	8.0	20	64	0.64	B
	South Stairs from LL	5	15	20	9.0	8.0	20	64	0.06	A
	Up Escalator (4)	5	-	5	-	-	-	75	0.01	under capacity
	Down Escalator (4)	-	120	120	-	-	-	75	0.32	under capacity
	North Corridor	105	470	575	26.0	24.0	20	288	0.40	A
	South Corridor	315	240	555	21.0	19.0	10	257	0.43	A
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	120	25	145	9.0	8.0	20	64	0.45	B
14. ROOSEVELT PASSAGEWAY	Corridor	90	10	100	11.0	9.0	20	108	0.19	A

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions. Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

Table M - 9
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
2010 FUTURE NO BUILD CONDITIONS (NEA) PEAK PM 15-MINUTE PERIOD (5:10-5:25)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	1 Up Escalator	480	-	480	-	-	-	75	0.43	under capacity
	3 Down Escalators	-	1,600	1,600	-	-	-	225	0.47	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	560	285	845	20.0	18.0	10	243	0.23	A
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	75	55	130	9.0	8.0	10	72	0.12	A
	South Stairs from LL	10	245	255	9.0	8.0	20	64	0.27	A
	Up Escalator (3)	20	-	20	-	-	-	60	0.02	under capacity
	Down Escalator (3)	-	180	180	-	-	-	60	0.20	under capacity
	North Corridor	710	1,015	1,725	26.0	24.0	10	324	0.35	A
	South Corridor	1,150	1,445	2,595	21.0	19.0	10	257	0.67	B
3A. 43rd STREET PASSAGEWAY	Corridor	395	175	570	22.0	20.0	20	240	0.16	A
4. HYATT PASSAGEWAY	Corridor	600	345	945	19.0	17.0	10	230	0.27	A
5. EASTERN IRT SUBWAY STAIRS	Stairs	700	1,070	1,770	19.0	16.0	10	144	0.82	C
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	400	1,000	1,400	9.0	8.0	20	64	1.46	E
	Up Escalator	570	-	570	-	-	-	75	0.51	under capacity
	Down Escalator	-	900	900	-	-	-	75	0.80	under capacity
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	1,055	1,610	2,665	30.0	28.0	10	378	0.47	B
8. LOWER CONCOURSE EAST RAMP	Ramp	200	70	270	17.0	15.0	20	180	0.10	A
9. 42nd ST. MAIN ENTRANCE	Corridor	845	265	1,110	21.0	19.0	20	228	0.32	A
10. SHUTTLE PASSAGEWAY	Corridor	880	780	1,660	19.0	17.0	10	230	0.48	B
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	980	195	1,175	14.0	12.0	20	144	0.54	B
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	35	505	540	9.0	8.0	20	64	0.56	B
	South Stairs from LL	5	35	40	9.0	8.0	20	64	0.04	A
	Up Escalator (4)	20	-	20	-	-	-	75	0.02	under capacity
	Down Escalator (4)	-	135	135	-	-	-	75	0.12	under capacity
	North Corridor	265	1,320	1,585	26.0	24.0	20	288	0.37	A
	South Corridor	760	825	1,585	21.0	19.0	10	257	0.41	A
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	365	50	415	9.0	8.0	20	64	0.43	A
14. ROOSEVELT PASSAGEWAY	Corridor	275	30	305	11.0	9.0	20	108	0.19	A

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A, < 0.70 signifies LOS B; < 1.00 signifies LOS C, < 1.33 signifies LOS D, < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

TABLE M-10

2020 NO BUILD
GCT INTERNAL
PEDESTRIAN ANALYSES

Table M - 10
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
2020 FUTURE NO BUILD CONDITIONS (NEA) PEAK 5 MINUTES WITHIN PEAK AM 15-MINUTE PERIOD (8:35-8:50)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	3 Up Escalators	975	-	975	-	-	-	225	0.87	under capacity
	1 Down Escalator	-	80	80	-	-	-	75	0.21	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	70	230	300	20.0	18.0	20	216	0.28	A
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	140	5	145	9.0	8.0	20	64	0.45	B
	South Stairs from LL	20	30	50	9.0	8.0	10	72	0.14	A
	Up Escalator (3)	25	-	25	-	-	-	60	0.08	under capacity
	Down Escalator (3)	-	10	10	-	-	-	60	0.03	under capacity
	North Corridor	485	200	685	26.0	24.0	20	288	0.48	B
	South Corridor	525	485	1,010	21.0	19.0	10	257	0.79	C
3A. 43rd STREET PASSAGEWAY	Corridor	95	200	295	22.0	20.0	20	240	0.25	A
4. HYATT PASSAGEWAY	Corridor	200	280	480	19.0	17.0	10	230	0.42	A
5. EASTERN IRT SUBWAY STAIRS	Stairs	445	360	805	19.0	16.0	10	144	1.12	D
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	420	205	625	9.0	8.0	20	64	**1.95**	**F**
	Up Escalator	435	-	435	-	-	-	75	**1.16**	**over capacity**
	Down Escalator	-	280	280	-	-	-	75	0.75	under capacity
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	565	605	1,170	30.0	28.0	10	378	0.62	B
8. LOWER CONCOURSE EAST RAMP	Ramp	25	100	125	17.0	15.0	20	180	0.14	A
9. 42nd ST. MAIN ENTRANCE	Corridor	80	295	375	21.0	19.0	20	228	0.33	A
10. SHUTTLE PASSAGEWAY	Corridor	295	470	765	19.0	17.0	10	230	0.67	B
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	90	325	415	14.0	12.0	20	144	0.58	B
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	215	20	235	9.0	8.0	20	64	0.73	C
	South Stairs from LL	10	10	20	9.0	8.0	10	72	0.06	A
	Up Escalator (4)	125	-	125	-	-	-	75	0.33	under capacity
	Down Escalator (4)	-	25	25	-	-	-	75	0.07	under capacity
	North Corridor	540	70	610	26.0	24.0	20	288	0.42	A
	South Corridor	365	305	670	21.0	19.0	10	257	0.52	B
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	10	195	205	9.0	8.0	20	64	0.64	B
14. ROOSEVELT PASSAGEWAY	Corridor	10	130	140	11.0	9.0	20	108	0.26	A

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

Table M -10
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
2020 FUTURE NO BUILD CONDITIONS (NEA) PEAK AM 15-MINUTE PERIOD (8:35-8:50)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	3 Up Escalators	2,705	-	2,705	-	-	-	225	1.00	under capacity
	1 Down Escalator	-	195	195	-	-	-	75	0.17	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	210	655	865	20.0	18.0	20	216	0.27	A
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	310	20	330	9.0	8.0	20	64	0.34	A
	South Stairs from LL	45	85	130	9.0	8.0	10	72	0.12	A
	Up Escalator (3)	60	-	60	-	-	-	60	0.07	under capacity
	Down Escalator (3)	-	30	30	-	-	-	60	0.03	under capacity
	North Corridor	1,025	600	1,625	26.0	24.0	10	324	0.33	A
	South Corridor	1,485	1,370	2,855	21.0	19.0	10	257	0.74	C
3A. 43rd STREET PASSAGEWAY	Corridor	285	540	825	22.0	20.0	10	270	0.20	A
4. HYATT PASSAGEWAY	Corridor	575	705	1,280	19.0	17.0	10	230	0.37	A
5. EASTERN IRT SUBWAY STAIRS	Stairs	1,155	900	2,055	19.0	16.0	10	144	0.95	C
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	965	640	1,605	9.0	8.0	10	72	1.49	E
	Up Escalator	975	-	975	-	-	-	75	0.87	under capacity
	Down Escalator	-	815	815	-	-	-	75	0.72	under capacity
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	1,430	1,780	3,210	30.0	28.0	10	378	0.57	B
8. LOWER CONCOURSE EAST RAMP	Ramp	60	225	285	17.0	15.0	20	180	0.11	A
9. 42nd ST. MAIN ENTRANCE	Corridor	205	800	1,005	21.0	19.0	20	228	0.29	A
10. SHUTTLE PASSAGEWAY	Corridor	530	1,150	1,680	19.0	17.0	20	204	0.55	B
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	225	775	1,000	14.0	12.0	20	144	0.46	B
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	555	30	585	9.0	8.0	20	64	0.61	B
	South Stairs from LL	30	40	70	9.0	8.0	10	72	0.06	A
	Up Escalator (4)	175	-	175	-	-	-	75	0.16	under capacity
	Down Escalator (4)	-	45	45	-	-	-	75	0.04	under capacity
	North Corridor	1,165	160	1,325	26.0	24.0	20	288	0.31	A
	South Corridor	825	750	1,575	21.0	19.0	10	257	0.41	A
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	25	510	535	9.0	8.0	20	64	0.56	B
14. ROOSEVELT PASSAGEWAY	Corridor	20	310	330	11.0	9.0	20	108	0.20	A

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

Table M - 10
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
2020 FUTURE NO BUILD CONDITIONS (NEA) PEAK 5 MINUTES WITHIN PEAK PM 15-MINUTE PERIOD (5:10-5:25)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	1 Up Escalator	185	-	185	-	-	-	75	0.49	under capacity
	3 Down Escalators	-	590	590	-	-	-	225	0.52	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	210	120	330	20.0	18.0	10	243	0.27	A
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	10	100	110	9.0	8.0	20	64	0.34	A
	South Stairs from LL	20	30	50	9.0	8.0	10	72	0.14	A
	Up Escalator (3)	5	-	5	-	-	-	60	0.02	under capacity
	Down Escalator (3)	-	75	75	-	-	-	60	0.25	under capacity
	North Corridor	245	460	705	26.0	24.0	10	324	0.44	A
	South Corridor	435	540	975	21.0	19.0	10	257	0.76	C
3A. 43rd STREET PASSAGEWAY	Corridor	155	65	220	22.0	20.0	20	240	0.18	A
4. HYATT PASSAGEWAY	Corridor	245	130	375	19.0	17.0	10	230	0.33	A
5. EASTERN IRT SUBWAY STAIRS	Stairs	310	430	740	19.0	16.0	10	144	1.03	D
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	175	415	590	9.0	8.0	20	64	**1.84**	**F**
	Up Escalator	235	-	235	-	-	-	75	0.63	under capacity
	Down Escalator	-	325	325	-	-	-	75	0.87	under capacity
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	470	645	1,115	30.0	28.0	10	378	0.59	B
8. LOWER CONCOURSE EAST RAMP	Ramp	85	30	115	17.0	15.0	20	180	0.13	A
9. 42nd ST. MAIN ENTRANCE	Corridor	325	110	435	21.0	19.0	20	228	0.38	A
10. SHUTTLE PASSAGEWAY	Corridor	360	335	695	19.0	17.0	10	230	0.61	B
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	355	85	440	14.0	12.0	20	144	0.61	B
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	15	215	230	9.0	8.0	20	64	0.72	C
	South Stairs from LL	5	15	20	9.0	8.0	20	64	0.06	A
	Up Escalator (4)	5	-	5	-	-	-	75	0.01	under capacity
	Down Escalator (4)	-	130	130	-	-	-	75	0.35	under capacity
	North Corridor	120	520	640	26.0	24.0	20	288	0.44	A
	South Corridor	340	265	605	21.0	19.0	10	257	0.47	B
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	130	30	160	9.0	8.0	20	64	0.50	B
14. ROOSEVELT PASSAGEWAY	Corridor	100	10	110	11.0	9.0	20	108	0.20	A

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

Table M - 10
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
2020 FUTURE NO BUILD CONDITIONS (NEA) PEAK PM 15-MINUTE PERIOD (5:10-5:25)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	1 Up Escalator	490	-	490	-	-	-	75	0.44	under capacity
	3 Down Escalators	-	1,730	1,730	-	-	-	225	0.51	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	770	415	1,185	20.0	18.0	10	243	0.33	A
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	55	70	125	9.0	8.0	10	72	0.12	A
	South Stairs from LL	30	240	270	9.0	8.0	20	64	0.28	A
	Up Escalator (3)	20	-	20	-	-	-	60	0.02	under capacity
	Down Escalator (3)	-	185	185	-	-	-	60	0.21	under capacity
	North Corridor	730	1,095	1,825	26.0	24.0	10	324	0.38	A
	South Corridor	1,275	1,510	2,785	21.0	19.0	10	257	0.72	C
3A. 43rd STREET PASSAGEWAY	Corridor	450	185	635	22.0	20.0	20	240	0.18	A
4. HYATT PASSAGEWAY	Corridor	670	360	1,030	19.0	17.0	10	230	0.30	A
5. EASTERN IRT SUBWAY STAIRS	Stairs	720	1,120	1,840	19.0	16.0	10	144	0.85	C
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	440	1,025	1,465	9.0	8.0	20	64	1.53	E
	Up Escalator	635	-	635	-	-	-	75	0.56	under capacity
	Down Escalator	-	945	945	-	-	-	75	0.84	under capacity
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	1,165	1,685	2,850	30.0	28.0	10	378	0.50	B
8. LOWER CONCOURSE EAST RAMP	Ramp	205	75	280	17.0	15.0	20	180	0.10	A
9. 42nd ST. MAIN ENTRANCE	Corridor	915	270	1,185	21.0	19.0	20	228	0.35	A
10. SHUTTLE PASSAGEWAY	Corridor	900	815	1,715	19.0	17.0	10	230	0.50	B
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	1010	215	1,225	14.0	12.0	20	144	0.57	B
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	30	515	545	9.0	8.0	20	64	0.57	B
	South Stairs from LL	15	40	55	9.0	8.0	20	64	0.06	A
	Up Escalator (4)	20	-	20	-	-	-	75	0.02	under capacity
	Down Escalator (4)	-	135	135	-	-	-	75	0.12	under capacity
	North Corridor	275	1,355	1,630	26.0	24.0	20	288	0.38	A
	South Corridor	825	900	1,725	21.0	19.0	10	257	0.45	A
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	375	55	430	9.0	8.0	20	64	0.45	A
14. ROOSEVELT PASSAGEWAY	Corridor	280	30	310	11.0	9.0	20	108	0.19	A

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

TABLE M-11

2010 BUILD
GCT INTERNAL
PEDESTRIAN ANALYSES

Table M - 11
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
2010 BUILD CONDITIONS (NEA) PEAK 5 MINUTES WITHIN PEAK AM 15-MINUTE PERIOD (8:35-8:50)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	3 Up Escalators	1,005	-	1,005	-	-	-	225	0.89	under capacity
	1 Down Escalator	-	75	75	-	-	-	75	0.20	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	70	280	350	20.0	18.0	20	216	0.32	A
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	150	5	155	9.0	8.0	20	64	0.48	B
	South Stairs from LL	20	30	50	9.0	8.0	10	72	0.14	A
	Up Escalator (3)	35	-	35	-	-	-	60	0.12	under capacity
	Down Escalator (3)	-	10	10	-	-	-	60	0.03	under capacity
	North Corridor	445	260	705	26.0	24.0	10	324	0.44	A
	South Corridor	505	535	1,040	21.0	19.0	10	257	0.81	C
3A. 43rd STREET PASSAGEWAY	Corridor	90	230	320	22.0	20.0	20	240	0.27	A
4. HYATT PASSAGEWAY	Corridor	190	355	545	19.0	17.0	10	230	0.47	B
5. EASTERN IRT SUBWAY STAIRS	Stairs	425	350	775	19.0	16.0	10	144	1.08	D *
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	390	260	650	9.0	8.0	10	72	**1.81**	**F**
	Up Escalator	435	-	435	-	-	-	75	**1.16**	**over capacity**
	Down Escalator	-	360	360	-	-	-	75	0.96	under capacity
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	535	755	1,290	30.0	28.0	10	378	0.68	B
8. LOWER CONCOURSE EAST RAMP	Ramp	25	335	360	17.0	15.0	20	180	0.40	A
9. 42nd ST. MAIN ENTRANCE	Corridor	75	390	465	21.0	19.0	20	228	0.41	A
10. SHUTTLE PASSAGEWAY	Corridor	285	510	795	19.0	17.0	10	230	0.69	B
11. RAMP TO VANDERBILT AVE / 42nd ST NE CORNER	Ramp	80	475	555	14.0	12.0	20	144	0.77	C
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	375	20	395	9.0	8.0	20	64	1.23	D *
	South Stairs from LL	20	10	30	9.0	8.0	20	64	0.09	A
	Up Escalator (4)	840	-	840	-	-	-	75	**2.24**	**over capacity** *
	Down Escalator (4)	-	25	25	-	-	-	75	0.07	under capacity
	North Corridor	725	85	810	26.0	24.0	20	288	0.56	B
	South Corridor	370	305	675	21.0	19.0	10	257	0.53	B
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	10	305	315	9.0	8.0	20	64	0.98	C
14. ROOSEVELT PASSAGEWAY	Corridor	10	255	265	11.0	9.0	20	108	0.49	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

" * " Denotes significant pedestrian impact per NYCDCP CEQR Technical Manual.

Table M-11
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
2010 BUILD CONDITIONS (NEA) PEAK AM 15-MINUTE PERIOD (8:35-8:50)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	3 Up Escalators	2,810	-	2,810	-	-	-	225	0.83	under capacity
	1 Down Escalator	-	195	195	-	-	-	75	0.17	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	190	810	1,000	20.0	18.0	20	216	0.31	A
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	345	15	360	9.0	8.0	20	64	0.38	A
	South Stairs from LL	45	80	125	9.0	8.0	10	72	0.12	A
	Up Escalator (3)	90	-	90	-	-	-	60	0.10	under capacity
	Down Escalator (3)	-	30	30	-	-	-	60	0.03	under capacity
	North Corridor	950	785	1,735	26.0	24.0	10	324	0.36	A
	South Corridor	1,420	1,540	2,960	21.0	19.0	10	257	0.77	C
3A. 43rd STREET PASSAGEWAY	Corridor	245	630	875	22.0	20.0	20	240	0.24	A
4. HYATT PASSAGEWAY	Corridor	550	940	1,490	19.0	17.0	10	230	0.43	A
5. EASTERN IRT SUBWAY STAIRS	Stairs	1,105	880	1,985	19.0	16.0	10	144	0.92	C
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	875	775	1,650	9.0	8.0	10	72	1.53	E *
	Up Escalator	985	-	985	-	-	-	75	0.88	under capacity
	Down Escalator	-	1,075	1,075	-	-	-	75	0.96	under capacity
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	1,365	2,145	3,510	30.0	28.0	10	378	0.62	B
8. LOWER CONCOURSE EAST RAMP	Ramp	55	935	990	17.0	15.0	20	180	0.37	A
9. 42nd ST. MAIN ENTRANCE	Corridor	205	1,095	1,300	21.0	19.0	20	228	0.38	A
10. SHUTTLE PASSAGEWAY	Corridor	505	1,290	1,795	19.0	17.0	20	204	0.59	B
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	210	1,245	1,455	14.0	12.0	20	144	0.67	B
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	1,045	25	1,070	9.0	8.0	20	64	1.11	D *
	South Stairs from LL	55	35	90	9.0	8.0	10	72	0.08	A
	Up Escalator (4)	2,310	-	2,310	-	-	-	75	**2.05**	**over capacity** *
	Down Escalator (4)	-	40	40	-	-	-	75	0.04	under capacity
	North Corridor	1,770	215	1,985	26.0	24.0	20	288	0.46	B
	South Corridor	870	755	1,625	21.0	19.0	10	257	0.42	A
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	20	840	860	9.0	8.0	20	64	0.90	C
14. ROOSEVELT PASSAGEWAY	Corridor	15	675	690	11.0	9.0	20	108	0.43	A

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

" * " Denotes significant pedestrian impact per NYCDCP CEQR Technical Manual.

Table M - 11

ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL

2010 BUILD CONDITIONS (NEA) PEAK 5 MINUTES WITHIN PEAK PM 15-MINUTE PERIOD (5:10-5:25)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	1 Up Escalator	180	-	180	-	-	-	75	0.48	under capacity
	3 Down Escalators	-	635	635	-	-	-	225	0.56	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	245	110	355	20.0	18.0	20	216	0.33	A
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	10	110	120	9.0	8.0	20	64	0.38	A
	South Stairs from LL	20	30	50	9.0	8.0	10	72	0.14	A
	Up Escalator (3)	5	-	5	-	-	-	60	0.02	under capacity
	Down Escalator (3)	-	80	80	-	-	-	60	0.27	under capacity
	North Corridor	290	425	715	26.0	24.0	10	324	0.44	A
	South Corridor	475	515	990	21.0	19.0	10	257	0.77	C
3A. 43rd STREET PASSAGEWAY	Corridor	185	65	250	22.0	20.0	20	240	0.21	A
4. HYATT PASSAGEWAY	Corridor	310	125	435	19.0	17.0	20	204	0.43	A
5. EASTERN IRT SUBWAY STAIRS	Stairs	300	410	710	19.0	16.0	10	144	0.99	C
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	225	400	625	9.0	8.0	10	72	**1.74**	**F**
	Up Escalator	300	-	300	-	-	-	75	0.80	under capacity
	Down Escalator	-	310	310	-	-	-	75	0.83	under capacity
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	600	615	1,215	30.0	28.0	10	378	0.64	B
8. LOWER CONCOURSE EAST RAMP	Ramp	290	30	320	17.0	15.0	20	180	0.36	A
9. 42nd ST. MAIN ENTRANCE	Corridor	405	110	515	21.0	19.0	20	228	0.45	B
10. SHUTTLE PASSAGEWAY	Corridor	400	320	720	19.0	17.0	10	230	0.63	B
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	475	75	550	14.0	12.0	20	144	0.76	C
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	15	345	360	9.0	8.0	20	64	1.13	D *
	South Stairs from LL	5	25	30	9.0	8.0	20	64	0.09	A
	Up Escalator (4)	5	-	5	-	-	-	75	0.01	under capacity
	Down Escalator (4)	-	740	740	-	-	-	75	**1.97**	**over capacity**
	North Corridor	125	675	800	26.0	24.0	20	288	0.56	B
	South Corridor	335	270	605	21.0	19.0	10	257	0.47	B
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	230	25	255	9.0	8.0	20	64	0.80	C
14. ROOSEVELT PASSAGEWAY	Corridor	205	10	215	11.0	9.0	20	108	0.40	A

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
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(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

" * " Denotes significant pedestrian impact per NYCDCP CEQR Technical Manual.

Table M - 11

ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL

2010 BUILD CONDITIONS (NEA) PEAK PM 15-MINUTE PERIOD (5:10-5:25)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	1 Up Escalator	480	-	480	-	-	-	75	0.43	under capacity
	3 Down Escalators	-	1,865	1,865	-	-	-	225	0.55	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	750	285	1,035	20.0	18.0	20	216	0.32	A
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	75	65	140	9.0	8.0	10	72	0.13	A
	South Stairs from LL	10	295	305	9.0	8.0	20	64	0.32	A
	Up Escalator (3)	20	-	20	-	-	-	60	0.02	under capacity
	Down Escalator (3)	-	210	210	-	-	-	60	0.23	under capacity
	North Corridor	920	1,015	1,935	26.0	24.0	10	324	0.40	A
	South Corridor	1,410	1,445	2,855	21.0	19.0	10	257	0.74	C
3A. 43rd STREET PASSAGEWAY	Corridor	515	175	690	22.0	20.0	20	240	0.19	A
4. HYATT PASSAGEWAY	Corridor	860	345	1,205	19.0	17.0	20	204	0.39	A
5. EASTERN IRT SUBWAY STAIRS	Stairs	760	1,070	1,830	19.0	16.0	10	144	0.85	C
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	585	990	1,575	9.0	8.0	10	72	1.46	E
	Up Escalator	845	-	845	-	-	-	75	0.75	under capacity
	Down Escalator	-	910	910	-	-	-	75	0.81	under capacity
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	1,575	1,610	3,185	30.0	28.0	10	378	0.56	B
8. LOWER CONCOURSE EAST RAMP	Ramp	825	70	895	17.0	15.0	20	180	0.33	A
9. 42nd ST. MAIN ENTRANCE	Corridor	1,150	265	1,415	21.0	19.0	20	228	0.41	A
10. SHUTTLE PASSAGEWAY	Corridor	1,095	780	1,875	19.0	17.0	10	230	0.54	B
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	1,440	195	1,635	14.0	12.0	20	144	0.76	C
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	35	970	1,005	9.0	8.0	20	64	1.05	D *
	South Stairs from LL	5	60	65	9.0	8.0	20	64	0.07	A
	Up Escalator (4)	20	-	20	-	-	-	75	0.02	under capacity
	Down Escalator (4)	-	1,975	1,975	-	-	-	75	**1.76**	**over capacity** *
	North Corridor	325	1,930	2,255	26.0	24.0	20	288	0.52	B
	South Corridor	820	915	1,735	21.0	19.0	10	257	0.45	B
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	690	50	740	9.0	8.0	20	64	0.77	C
14. ROOSEVELT PASSAGEWAY	Corridor	610	30	640	11.0	9.0	20	108	0.40	A

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
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(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A, < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

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TABLE M-12

2020 BUILD
GCT INTERNAL
PEDESTRIAN ANALYSES

Table M - 12

ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL

2020 BUILD CONDITIONS (NEA) PEAK 5 MINUTES WITHIN PEAK AM 15-MINUTE PERIOD (8:35-8:50)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1. MET LIFE BUILDING ESCALATORS	3 Up Escalators	1,085	-	1,085	-	-	-	225	0.96	under capacity
	1 Down Escalator	-	80	80	-	-	-	75	0.21	under capacity
2. GRAYBAR PASSAGEWAY	Corridor	70	310	380	20.0	18.0	20	216	0.35	A
3. LEXINGTON AVE. STAIRS / ESCALATORS	North Stairs from LL	160	5	165	9.0	8.0	20	64	0.52	B
	South Stairs from LL	25	30	55	9.0	8.0	10	72	0.15	A
	Up Escalator (3)	40	-	40	-	-	-	60	0.13	under capacity
	Down Escalator (3)	-	10	10	-	-	-	60	0.03	under capacity
	North Corridor	485	285	770	26.0	24.0	10	324	0.48	B
	South Corridor	525	595	1,120	21.0	19.0	10	257	0.87	C
3A. 43rd STREET PASSAGEWAY	Corridor	95	250	345	22.0	20.0	20	240	0.29	A
4. HYATT PASSAGEWAY	Corridor	200	390	590	19.0	17.0	10	230	0.51	B
5. EASTERN IRT SUBWAY STAIRS	Stairs	445	385	830	19.0	16.0	10	144	1.15	D
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	420	285	705	9.0	8.0	10	72	**1.96**	F *
	Up Escalator	435	-	435	-	-	-	75	**1.16**	**over capacity**
	Down Escalator	-	390	390	-	-	-	75	**1.04**	**over capacity** *
7. EAST PASSAGEWAY TO 42nd ST. (PARK - LEX)	Corridor	565	820	1,385	30.0	28.0	10	378	0.73	C
8. LOWER CONCOURSE EAST RAMP	Ramp	25	360	385	17.0	15.0	20	180	0.43	A
9. 42nd ST. MAIN ENTRANCE	Corridor	80	425	505	21.0	19.0	20	228	0.44	A
10. SHUTTLE PASSAGEWAY	Corridor	295	560	855	19.0	17.0	10	230	0.75	C
11. RAMP TO VANDERBILT AVE / 42nd ST. NE CORNER	Ramp	90	520	610	14.0	12.0	20	144	0.85	C
12. VANDERBILT AVE. STAIRS / ESCALATORS	North Stairs from LL	410	20	430	9.0	8.0	20	64	1.34	E *
	South Stairs from LL	20	10	30	9.0	8.0	20	64	0.09	A
	Up Escalator (4)	895	-	895	-	-	-	75	**2.39**	**over capacity** *
	Down Escalator (4)	-	25	25	-	-	-	75	0.07	under capacity
	North Corridor	785	95	880	26.0	24.0	20	288	0.61	B
	South Corridor	400	330	730	21.0	19.0	10	257	0.57	B
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	10	330	340	9.0	8.0	20	64	1.06	D *
14. ROOSEVELT PASSAGEWAY	Corridor	10	270	280	11.0	9.0	20	108	0.52	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
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(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

" * " Denotes significant pedestrian impact per NYCDCP CEQR Technical Manual.

Table M - 13
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
2010 MITIGATED BUILD CONDITIONS (NEA) PEAK AM 15-MINUTE PERIOD (8:35-8:50)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)	MITIGATION MEASURE
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)			
5. EASTERN IRT SUBWAY STAIRS	Stairs	1,105	820	1,925	19.0	16.0	10	144	0.89	C	Reassigned pedestrian flows into "free" shuttle passageway.
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	925	635	1,560	9.0	8.0	10	72	1.44	E *	
12. VANDERBILT AVENUE STAIRS / ESCALATORS	North Stairs from LL South Stairs from LL	1,045 55	65 35	1,110 90	9.0 9.0	8.0 8.0	20 10	64 72	1.16 0.08	D * A	Although significant impact noted, a more balanced flow and acceptable LOS between north and south stairs will likely result.
	Up Escalators (4)	2,310	-	2,310	-	-	-	150	**1.03**	**over capacity** *	Direct both escalators up in AM (reassign down flow to nearest stair).

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

" * " Denotes unmitigated significant pedestrian impact per NYCDCP CEQR Technical Manual.

Table M - 13

ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL

2010 MITIGATED BUILD CONDITIONS (NEA) PEAK 5 MINUTES WITHIN PEAK PM 15-MINUTE PERIOD (5:10-5:25)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)	MITIGATION MEASURE
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)			
5. EASTERN IRT SUBWAY STAIRS	Stairs	285	410	695	19.0	16.0	10	144	0.97	C	Reassigned pedestrian flows into "free" shuttle passageway.
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	185	400	585	9.0	8.0	20	64	**1.83**	F *	
12. VANDERBILT AVENUE STAIRS / ESCALATORS	North Stairs from LL South Stairs from LL	20 5	345 25	365 30	9.0 9.0	8.0 8.0	20 20	64 64	1.14 0.09	D * A	Although significant impact noted, a more balanced flow and acceptable LOS between north and south stairs will likely result.
	Down Escalators (4)	-	740	740	-	-	-	150	0.99	under capacity	Direct both escalators down in PM (reassign up flow to nearest stair).

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

" * " Denotes unmitigated significant pedestrian impact per NYCDCP CEQR Technical Manual.

Table M - 13
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
2010 MITIGATED BUILD CONDITIONS (NEA) PEAK PM 15-MINUTE PERIOD (5:10-5:25)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)	MITIGATION MEASURE
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)			
5. EASTERN IRT SUBWAY STAIRS	Stairs	710	1,070	1,780	19.0	16.0	10	144	0.82	C	Reassigned pedestrian flows into "free" shuttle passageway.
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	470	1,000	1,470	9.0	8.0	20	64	1.53	E *	
12. VANDERBILT AVENUE STAIRS / ESCALATORS	North Stairs from LL	55	970	1,025	9.0	8.0	20	64	1.07	D *	Although significant impact noted, a more balanced flow and acceptable LOS between north and south stairs will likely result.
	South Stairs from LL	5	60	65	9.0	8.0	20	64	0.07	A	
	Down Escalators (4)	-	1,975	1,975	-	-	-	150	0.88	under capacity	Direct both escalators down in PM (reassign up flow to nearest stair).

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions. Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A, < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

" * " Denotes unmitigated significant pedestrian impact per NYCDCP CEQR Technical Manual.

TABLE M-14

2020 MITIGATED BUILD GCT INTERNAL PEDESTRIAN ANALYSES

Table M - 14

ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL

2020 MITIGATED BUILD CONDITIONS (NEA) PEAK 5 MINUTES WITHIN PEAK AM 15-MINUTE PERIOD (8:35-8:50)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)	MITIGATION MEASURE
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)			
5. EASTERN IRT SUBWAY STAIRS	Stairs	445	365	810	19.0	16.0	10	144	1.13	D	Reassigned pedestrian flows into "free" shuttle passageway.
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	420	235	655	9.0	8.0	10	72	**1.82**	**F** *	
12. VANDERBILT AVENUE STAIRS / ESCALATORS	North Stairs from LL	410	45	455	9.0	8.0	20	64	1.42	E *	Although significant impact noted, a more balanced flow and acceptable LOS between north and south stairs will likely result.
	South Stairs from LL	20	10	30	9.0	8.0	20	64	0.09	A	
	Up Escalators (4)	895	-	895	-	-	-	150	**1.19**	**over capacity** *	Direct both escalators up in AM (reassign down flow to nearest stair).
13. 43rd ST. STAIRS IN BILTMORE ROOM	Stairs	10	330	340	9.0	8.0	20	64	1.06	D *	

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

" * " Denotes unmitigated significant pedestrian impact per NYCDCP CEQR Technical Manual.

Table M - 14
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS (NEA) PEAK AM 15-MINUTE PERIOD (8:35-8:50)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)	MITIGATION MEASURE
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)			
5. EASTERN IRT SUBWAY STAIRS	Stairs	1,155	910	2,065	19.0	16.0	10	144	0.96	C	Reassigned pedestrian flows into "free" shuttle passageway.
6. WESTERN IRT SUBWAY STAIRS / ESCALATORS	Stairs	965	735	1,700	9.0	8.0	10	72	1.57	E *	
12. VANDERBILT AVENUE STAIRS / ESCALATORS	North Stairs from LL	1,160	75	1,235	9.0	8.0	20	64	1.29	D *	Although significant impact noted, a more balanced flow and acceptable LOS between north and south stairs will likely result.
	South Stairs from LL	60	40	100	9.0	8.0	10	72	0.09	A	
	Up Escalators (4)	2,555	-	2,555	-	-	-	150	**1.14**	**over capacity** *	Direct both escalators up in AM (reassign down flow to nearest stair).

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

" * " Denotes unmitigated significant pedestrian impact per NYCDCP CEQR Technical Manual.

Table M - 14
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS (NEA) PEAK 5 MINUTES WITHIN PEAK PM 15-MINUTE PERIOD (5:10-5:25)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)	MITIGATION MEASURE
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)			
5. EASTERN IRT SUBWAY STAIRS	Stairs	315	430	745	19.0	16.0	10	144	1.03	D	Reassigned pedestrian flows into "free" shuttle passageway.
6. WESTERN IRT SUBWA STAIRS / ESCALATORS	Stairs	200	415	615	9.0	8.0	20	64	**1.92**	F *	
12. VANDERBILT AVENUE STAIRS / ESCALATORS	North Stairs from LL	20	375	395	9.0	8.0	20	64	1.23	D *	Although significant impact noted, a more balanced flow and acceptable LOS between north and south stairs will likely result.
	South Stairs from LL	5	30	35	9.0	8.0	20	64	0.11	A	
	Down Escalators (4)	-	780	780	-	-	-	150	**1.04**	**over capacity** *	Direct both escalators down in PM (reassign up flow to nearest stair).

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

" * " Denotes unmitigated significant pedestrian impact per NYCDCP CEQR Technical Manual.

Table M - 14
ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS WITHIN GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS (NEA) PEAK PM 15-MINUTE PERIOD (5:10-5:25)

PEDESTRIAN CIRCULATION ELEMENT		PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)	MITIGATION MEASURE
LOCATION	SECTION	UP / IN	DOWN / OUT	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)			
5. EASTERN IRT SUBWAY STAIRS	Stairs	730	1,120	1,850	19.0	16.0	10	144	0.86	C	Reassigned pedestrian flows into "free" shuttle passageway.
6. WESTERN IRT SUBWA STAIRS / ESCALATORS	Stairs	515	1,025	1,540	9.0	8.0	10	72	1.43	E	
12. VANDERBILT AVENUE STAIRS / ESCALATORS	North Stairs from LL	50	995	1,045	9.0	8.0	20	64	1.09	D *	Although significant impact noted, a more balanced flow and acceptable LOS between north and south stairs will likely result.
	South Stairs from LL	15	75	90	9.0	8.0	20	64	0.09	A	
	Down Escalators (4)	-	2,070	2,070	-	-	-	150	0.92	under capacity	Direct both escalators down in PM (reassign up flow to nearest stair).

NOTES:

(1) Based on an average unit (effective) width flow rate of 15 pax/ft/min for walkways and 10 pax/ft/min for stairwells, signifying LOS C/D per NYCDCP CEQR Technical Manual.
Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.
Escalator capacity ranges between 60 and 130 persons per minute, based on speed and width. The listed maximum processing rates for escalators represent values observed under heavy-demand conditions.
The CEQR Technical Manual and NYCT Station Planning and Design Guidelines do not list escalator levels of service since these type of elements operate either under or over capacity.

(2) Per NYCDCP CEQR Technical Manual, stairway and passageway level-of-service thresholds are as follows: V/C ratios < 0.45 signifies LOS A; < 0.70 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

(3) Elements just east of Hudson News

(4) Elements facing NYCT Museum Store

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TABLE M-15

SUBWAY MEZZANINE "B" PEDESTRIAN ANALYSES

Table M - 15
TIME-SPACE ANALYSES OF IRT MEZZANINE 'B' @ GRAND CENTRAL TERMINAL
2010 NO BUILD CONDITIONS -- 5/15 MINUTES DURING AM/PM PEAK PERIODS

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped) (7)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped) (7)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
AM Peak Period Analysis																	
				Analysis Duration: 5 min.													
Using LOS C/D Analysis Criteria																	
1	730	5.0	3,650	631	1.0	7.0	4,414	575	40	224	0.18	102.7	16.0	1,643	6,057	**166%**	**fails**
2	380	5.0	1,900	315	1.0	7.0	2,207	685	35	224	0.16	107.0	16.0	1,713	3,920	**206%**	**fails**
Using LOS D/E Analysis Criteria																	
1	730	5.0	3,650	631	1.0	3.0	1,892	575	40	198	0.20	116.2	11.0	1,278	3,169	87%	OK
2	380	5.0	1,900	315	1.0	3.0	946	685	35	198	0.18	121.1	11.0	1,332	2,278	**120%**	**fails**
Using LOS E/F Analysis Criteria																	
1	730	5.0	3,650	631	1.0	2.0	1,261	575	40	150	0.27	153.3	6.0	920	2,181	60%	OK
2	380	5.0	1,900	315	1.0	2.0	631	685	35	150	0.23	159.8	6.0	959	1,590	84%	OK
				Analysis Duration: 15 min.													
Using LOS C/D Analysis Criteria																	
1	730	15.0	10,950	1,419	1.0	7.0	9,931	1,475	40	224	0.18	263.4	16.0	4,215	14,146	**129%**	**fails**
2	380	15.0	5,700	631	1.0	7.0	4,414	1,725	35	224	0.16	269.6	16.0	4,313	8,727	**153%**	**fails**
Using LOS D/E Analysis Criteria																	
1	730	15.0	10,950	1,419	1.0	3.0	4,256	1,475	40	198	0.20	298.0	11.0	3,278	7,534	69%	OK
2	380	15.0	5,700	631	1.0	3.0	1,892	1,725	35	198	0.18	304.9	11.0	3,354	5,246	92%	OK
Using LOS E/F Analysis Criteria																	
1	730	15.0	10,950	1,419	1.0	2.0	2,837	1,475	40	150	0.27	393.3	6.0	2,360	5,197	47%	OK
2	380	15.0	5,700	631	1.0	2.0	1,261	1,725	35	150	0.23	402.5	6.0	2,415	3,676	64%	OK
PM Peak Period Analysis																	
				Analysis Duration: 5 min.													
Using LOS C/D Analysis Criteria																	
1	730	5.0	3,650	168	1.0	7.0	1,177	560	40	224	0.18	100.0	16.0	1,600	2,777	76%	OK
2	380	5.0	1,900	84	1.0	7.0	589	520	35	224	0.16	81.3	16.0	1,300	1,889	99%	OK
Using LOS D/E Analysis Criteria																	
1	730	5.0	3,650	168	1.0	3.0	504	560	40	198	0.20	113.1	11.0	1,244	1,749	48%	OK
2	380	5.0	1,900	84	1.0	3.0	252	520	35	198	0.18	91.9	11.0	1,011	1,263	66%	OK
Using LOS E/F Analysis Criteria																	
1	730	5.0	3,650	168	1.0	2.0	336	560	40	150	0.27	149.3	6.0	896	1,232	34%	OK
2	380	5.0	1,900	84	1.0	2.0	168	520	35	150	0.23	121.3	6.0	728	896	47%	OK
				Analysis Duration: 15 min.													
Using LOS C/D Analysis Criteria																	
1	730	15.0	10,950	378	1.0	7.0	2,649	1,400	40	224	0.18	250.0	16.0	4,000	6,649	61%	OK
2	380	15.0	5,700	168	1.0	7.0	1,177	1,470	35	224	0.16	229.7	16.0	3,675	4,852	85%	OK
Using LOS D/E Analysis Criteria																	
1	730	15.0	10,950	378	1.0	3.0	1,135	1,400	40	198	0.20	282.8	11.0	3,111	4,246	39%	OK
2	380	15.0	5,700	168	1.0	3.0	504	1,470	35	198	0.18	259.8	11.0	2,858	3,363	59%	OK
Using LOS E/F Analysis Criteria																	
1	730	15.0	10,950	378	1.0	2.0	757	1,400	40	150	0.27	373.3	6.0	2,240	2,997	27%	OK
2	380	15.0	5,700	168	1.0	2.0	336	1,470	35	150	0.23	343.0	6.0	2,058	2,394	42%	OK

NOTES:
(1) Analysis period is the 5-minute period just before train doors open during peak PM period.
(2) Based on observations.
(3) Average queue space of 7, 3, and 2 square feet per pedestrian signify LOS C/D, D/E, and E/F conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224, 198, and 150 feet per minute signify LOS C/D, D/E, and E/F conditions, respectively. Italicized figure based on field measurement of walk speeds.
(6) Average walk space of 16, 11, and 6 square feet per pedestrian signify LOS C/D, D/E, and E/F conditions, respectively. Italicized figure corresponds to LOS F conditions.
(7) In AM, uses "TA" growth factor since people queuing at stair/esc in Mezz B are coming from IRT subway; (for 2010, 1.0509; in 2020, 1.0993)
in PM, uses "MN" growth factor since people queuing at stair/esc in Mezz B are destined to MNR trains. (for 2010, 1.1211; in 2020, 1.244)

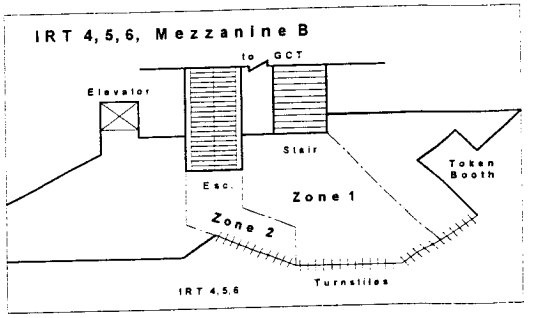


Table M - 15
TIME-SPACE ANALYSES OF IRT MEZZANINE 'B' @ GRAND CENTRAL TERMINAL
2020 NO BUILD CONDITIONS -- 5/15 MINUTES DURING AM/PM PEAK PERIODS

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped) (7)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
AM Peak Period Analysis																	
				Analysis Duration: 5 min.													
Using LOS C/D Analysis Criteria																	
1	730	5.0	3,650	660	1.0	7.0	4,617	625	40	224	0.18	111.6	16.0	1,786	6,403	**175%**	fails
2	380	5.0	1,900	330	1.0	7.0	2,309	715	35	224	0.16	111.7	16.0	1,788	4,096	**216%**	fails
Using LOS D/E Analysis Criteria																	
1	730	5.0	3,650	660	1.0	3.0	1,979	625	40	198	0.20	126.3	11.0	1,389	3,368	92%	OK
2	380	5.0	1,900	330	1.0	3.0	989	715	35	198	0.18	126.4	11.0	1,390	2,380	**125%**	fails
Using LOS E/F Analysis Criteria																	
1	730	5.0	3,650	660	1.0	2.0	1,319	625	40	150	0.27	166.7	6.0	1,000	2,319	64%	OK
2	380	5.0	1,900	330	1.0	2.0	660	715	35	150	0.23	166.8	6.0	1,001	1,661	87%	OK
				Analysis Duration: 15 min.													
Using LOS C/D Analysis Criteria																	
1	730	15.0	10,950	1,484	1.0	7.0	10,388	1,605	40	224	0.18	286.6	16.0	4,586	14,975	**137%**	fails
2	380	15.0	5,700	660	1.0	7.0	4,617	1,790	35	224	0.16	279.7	16.0	4,475	9,092	**160%**	fails
Using LOS D/E Analysis Criteria																	
1	730	15.0	10,950	1,484	1.0	3.0	4,452	1,605	40	198	0.20	324.2	11.0	3,567	8,019	73%	OK
2	380	15.0	5,700	660	1.0	3.0	1,979	1,790	35	198	0.18	316.4	11.0	3,481	5,459	96%	OK
Using LOS E/F Analysis Criteria																	
1	730	15.0	10,950	1,484	1.0	2.0	2,968	1,605	40	150	0.27	428.0	6.0	2,568	5,536	51%	OK
2	380	15.0	5,700	660	1.0	2.0	1,319	1,790	35	150	0.23	417.7	6.0	2,506	3,825	67%	OK
PM Peak Period Analysis																	
				Analysis Duration: 5 min.													
Using LOS C/D Analysis Criteria																	
1	730	5.0	3,650	187	1.0	7.0	1,306	590	40	224	0.18	105.4	16.0	1,686	2,992	82%	OK
2	380	5.0	1,900	93	1.0	7.0	653	560	35	224	0.16	87.5	16.0	1,400	2,053	**108%**	fails
Using LOS D/E Analysis Criteria																	
1	730	5.0	3,650	187	1.0	3.0	560	590	40	198	0.20	119.2	11.0	1,311	1,871	51%	OK
2	380	5.0	1,900	93	1.0	3.0	280	560	35	198	0.18	99.0	11.0	1,089	1,369	72%	OK
Using LOS E/F Analysis Criteria																	
1	730	5.0	3,650	187	1.0	2.0	373	590	40	150	0.27	157.3	6.0	944	1,317	36%	OK
2	380	5.0	1,900	93	1.0	2.0	187	560	35	150	0.23	130.7	6.0	784	971	51%	OK
				Analysis Duration: 15 min.													
Using LOS C/D Analysis Criteria																	
1	730	15.0	10,950	420	1.0	7.0	2,939	1,465	40	224	0.18	261.6	16.0	4,186	7,125	65%	OK
2	380	15.0	5,700	187	1.0	7.0	1,306	1,580	35	224	0.16	246.9	16.0	3,950	5,257	92%	OK
Using LOS D/E Analysis Criteria																	
1	730	15.0	10,950	420	1.0	3.0	1,260	1,465	40	198	0.20	296.0	11.0	3,256	4,515	41%	OK
2	380	15.0	5,700	187	1.0	3.0	560	1,580	35	198	0.18	279.3	11.0	3,072	3,632	64%	OK
Using LOS E/F Analysis Criteria																	
1	730	15.0	10,950	420	1.0	2.0	840	1,465	40	150	0.27	390.7	6.0	2,344	3,184	29%	OK
2	380	15.0	5,700	187	1.0	2.0	373	1,580	35	150	0.23	368.7	6.0	2,212	2,585	45%	OK

NOTES:

(1) Analysis period is the 5-minute period just before train doors open during peak PM period.
(2) Based on observations.
(3) Average queue space of 7, 3, and 2 square feet per pedestrian signify LOS C/D, D/E, and E/F conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224, 198, and 150 feet per minute signify LOS C/D, D/E, and E/F conditions, respectively. Italicized figure based on field measurement of walk speeds.
(6) Average walk space of 16, 11, and 6 square feet per pedestrian signify LOS C/D, D/E, and E/F conditions, respectively. Italicized figure corresponds to LOS F conditions.
(7) In AM, uses "TA" growth factor since people queuing at stair/esc in Mezz B are coming from IRT subway; (for 2010, 1.0509; in 2020, 1.0993)
in PM, uses "MN" growth factor since people queuing at stair/esc in Mezz B are destined to MNR trains. (for 2010, 1.1211; in 2020, 1.244)

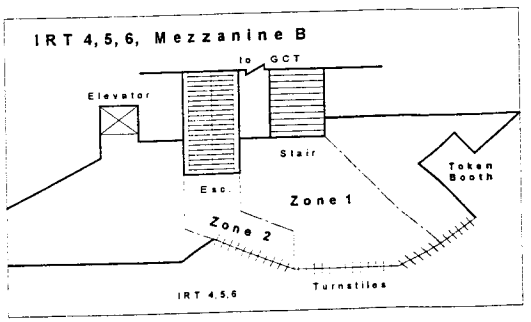


Table M - 15
TIME-SPACE ANALYSES OF IRT MEZZANINE 'B' @ GRAND CENTRAL TERMINAL
2010 BUILD CONDITIONS -- 5/15 MINUTES DURING AM/PM PEAK PERIODS

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped) (7)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
AM Peak Period Analysis																	
				Analysis Duration: 5 min.													
Using LOS C/D Analysis Criteria																	
1	730	5.0	3,650	631	1.0	7.0	4,414	575	40	224	0.18	102.7	16.0	1,643	6,057	**166%**	fails
2	380	5.0	1,900	315	1.0	7.0	2,207	730	35	224	0.16	114.1	16.0	1,825	4,032	**212%**	fails
Using LOS D/E Analysis Criteria																	
1	730	5.0	3,650	631	1.0	3.0	1,892	575	40	198	0.20	116.2	11.0	1,278	3,169	87%	OK
2	380	5.0	1,900	315	1.0	3.0	946	730	35	198	0.18	129.0	11.0	1,419	2,365	**124%**	fails
Using LOS E/F Analysis Criteria																	
1	730	5.0	3,650	631	1.0	2.0	1,261	575	40	150	0.27	153.3	6.0	920	2,181	60%	OK
2	380	5.0	1,900	315	1.0	2.0	631	730	35	*90*	0.39	283.9	*4.5*	1,278	1,908	100%	OK
				Analysis Duration: 15 min.													
Using LOS C/D Analysis Criteria																	
1	730	15.0	10,950	1,419	1.0	7.0	9,931	1,370	40	224	0.18	244.7	16.0	3,915	13,846	**126%**	fails
2	380	15.0	5,700	631	1.0	7.0	4,414	1,720	35	224	0.16	268.8	16.0	4,300	8,714	**153%**	fails
Using LOS D/E Analysis Criteria																	
1	730	15.0	10,950	1,419	1.0	3.0	4,256	1,370	40	198	0.20	276.8	11.0	3,044	7,301	67%	OK
2	380	15.0	5,700	631	1.0	3.0	1,892	1,720	35	198	0.18	304.0	11.0	3,344	5,236	92%	OK
Using LOS E/F Analysis Criteria																	
1	730	15.0	10,950	1,419	1.0	2.0	2,837	1,370	40	150	0.27	365.3	6.0	2,192	5,029	46%	OK
2	380	15.0	5,700	631	1.0	2.0	1,261	1,720	35	150	0.23	401.3	6.0	2,408	3,669	64%	OK
PM Peak Period Analysis																	
				Analysis Duration: 5 min.													
Using LOS C/D Analysis Criteria																	
1	730	5.0	3,650	168	1.0	7.0	1,177	560	40	224	0.18	100.0	16.0	1,600	2,777	76%	OK
2	380	5.0	1,900	84	1.0	7.0	589	530	35	224	0.16	82.8	16.0	1,325	1,914	101%	fails
Using LOS D/E Analysis Criteria																	
1	730	5.0	3,650	168	1.0	3.0	504	560	40	198	0.20	113.1	11.0	1,244	1,749	48%	OK
2	380	5.0	1,900	84	1.0	3.0	252	530	35	198	0.18	93.7	11.0	1,031	1,283	68%	OK
Using LOS E/F Analysis Criteria																	
1	730	5.0	3,650	168	1.0	2.0	336	560	40	150	0.27	149.3	6.0	896	1,232	34%	OK
2	380	5.0	1,900	84	1.0	2.0	168	530	35	150	0.23	123.7	6.0	742	910	48%	OK
				Analysis Duration: 15 min.													
Using LOS C/D Analysis Criteria																	
1	730	15.0	10,950	355	1.0	7.0	2,483	1,375	40	224	0.18	245.6	16.0	3,929	6,412	59%	OK
2	380	15.0	5,700	158	1.0	7.0	1,103	1,495	35	224	0.16	233.6	16.0	3,738	4,841	85%	OK
Using LOS D/E Analysis Criteria																	
1	730	15.0	10,950	355	1.0	3.0	1,064	1,375	40	198	0.20	277.8	11.0	3,056	4,120	38%	OK
2	380	15.0	5,700	158	1.0	3.0	473	1,495	35	198	0.18	264.3	11.0	2,907	3,380	59%	OK
Using LOS E/F Analysis Criteria																	
1	730	15.0	10,950	355	1.0	2.0	709	1,375	40	150	0.27	366.7	6.0	2,200	2,909	27%	OK
2	380	15.0	5,700	158	1.0	2.0	315	1,495	35	150	0.23	348.8	6.0	2,093	2,408	42%	OK

NOTES:
(1) Analysis period is the 5-minute period just before train doors open during peak PM period.
(2) Based on observations.
(3) Average queue space of 7, 3, and 2 square feet per pedestrian signify LOS C/D, D/E, and E/F conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224, 198, and 150 feet per minute signify LOS C/D, D/E, and E/F conditions, respectively. Italicized figure based on field measurement of walk speeds.
(6) Average walk space of 16, 11, and 6 square feet per pedestrian signify LOS C/D, D/E, and E/F conditions, respectively. Italicized figure corresponds to LOS F conditions.
(7) Uses No Build volumes and adds Build increment.

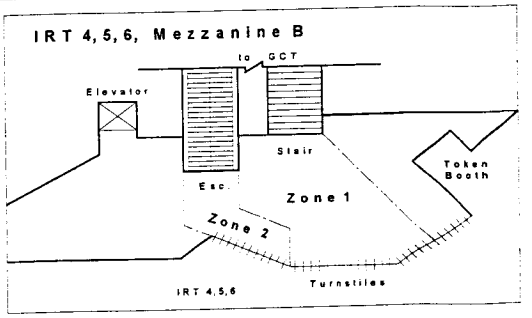


Table M - 15
TIME-SPACE ANALYSES OF IRT MEZZANINE 'B' @ GRAND CENTRAL TERMINAL
2020 BUILD CONDITIONS -- 5/15 MINUTES DURING AM/PM PEAK PERIODS

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped) (7)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
AM Peak Period Analysis																	
					Analysis Duration: 5 min.												
Using LOS C/D Analysis Criteria																	
1	730	5.0	3,650	660	1.0	7.0	4,617	575	40	224	0.18	102.7	16.0	1,643	6,260	**172%**	fails
2	380	5.0	1,900	330	1.0	7.0	2,309	730	35	224	0.16	114.1	16.0	1,825	4,134	**218%**	fails
Using LOS D/E Analysis Criteria																	
1	730	5.0	3,650	660	1.0	3.0	1,979	575	40	198	0.20	116.2	11.0	1,278	3,257	89%	OK
2	380	5.0	1,900	330	1.0	3.0	989	730	35	198	0.18	129.0	11.0	1,419	2,409	**127%**	fails
Using LOS E/F Analysis Criteria																	
1	730	5.0	3,650	660	1.0	2.0	1,319	575	40	150	0.27	153.3	6.0	920	2,239	61%	OK
2	380	5.0	1,900	330	1.0	2.0	660	730	35	*90*	0.39	283.9	*4.5*	1,278	1,937	102%	fails
					Analysis Duration: 15 min.												
Using LOS C/D Analysis Criteria																	
1	730	15.0	10,950	1,484	1.0	7.0	10,388	1,370	40	224	0.18	244.7	16.0	3,915	14,303	**131%**	fails
2	380	15.0	5,700	660	1.0	7.0	4,617	1,720	35	224	0.16	268.8	16.0	4,300	8,917	**156%**	fails
Using LOS D/E Analysis Criteria																	
1	730	15.0	10,950	1,484	1.0	3.0	4,452	1,370	40	198	0.20	276.8	11.0	3,044	7,497	68%	OK
2	380	15.0	5,700	660	1.0	3.0	1,979	1,720	35	198	0.18	304.0	11.0	3,344	5,323	93%	OK
Using LOS E/F Analysis Criteria																	
1	730	15.0	10,950	1,484	1.0	2.0	2,968	1,370	40	150	0.27	365.3	6.0	2,192	5,160	47%	OK
2	380	15.0	5,700	660	1.0	2.0	1,319	1,720	35	150	0.23	401.3	6.0	2,408	3,727	65%	OK
PM Peak Period Analysis																	
					Analysis Duration: 5 min.												
Using LOS C/D Analysis Criteria																	
1	730	5.0	3,650	187	1.0	7.0	1,306	560	40	224	0.18	100.0	16.0	1,600	2,906	80%	OK
2	380	5.0	1,900	93	1.0	7.0	653	530	35	224	0.16	82.8	16.0	1,325	1,978	104%	fails
Using LOS D/E Analysis Criteria																	
1	730	5.0	3,650	187	1.0	3.0	560	560	40	198	0.20	113.1	11.0	1,244	1,804	49%	OK
2	380	5.0	1,900	93	1.0	3.0	280	530	35	198	0.18	93.7	11.0	1,031	1,310	69%	OK
Using LOS E/F Analysis Criteria																	
1	730	5.0	3,650	187	1.0	2.0	373	560	40	150	0.27	149.3	6.0	896	1,269	35%	OK
2	380	5.0	1,900	93	1.0	2.0	187	530	35	150	0.23	123.7	6.0	742	929	49%	OK
					Analysis Duration: 15 min.												
Using LOS C/D Analysis Criteria																	
1	730	15.0	10,950	420	1.0	7.0	2,939	1,375	40	224	0.18	245.6	16.0	3,929	6,868	63%	OK
2	380	15.0	5,700	187	1.0	7.0	1,306	1,495	35	224	0.16	233.6	16.0	3,738	5,044	88%	OK
Using LOS D/E Analysis Criteria																	
1	730	15.0	10,950	420	1.0	3.0	1,260	1,375	40	198	0.20	277.8	11.0	3,056	4,315	39%	OK
2	380	15.0	5,700	187	1.0	3.0	560	1,495	35	198	0.18	264.3	11.0	2,907	3,467	61%	OK
Using LOS E/F Analysis Criteria																	
1	730	15.0	10,950	420	1.0	2.0	840	1,375	40	150	0.27	366.7	6.0	2,200	3,040	28%	OK
2	380	15.0	5,700	187	1.0	2.0	373	1,495	35	150	0.23	348.8	6.0	2,093	2,466	43%	OK

NOTES:
(1) Analysis period is the 5-minute period just before train doors open during peak PM period.
(2) Based on observations.
(3) Average queue space of 7, 3, and 2 square feet per pedestrian signify LOS C/D, D/E, and E/F conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224, 198, and 150 feet per minute signify LOS C/D, D/E, and E/F conditions, respectively. Italicized figure based on field measurement of walk speeds.
(6) Average walk space of 16, 11, and 6 square feet per pedestrian signify LOS C/D, D/E, and E/F conditions, respectively. Italicized figure corresponds to LOS F conditions.
(7) Uses No Build volumes and adds Build increment.

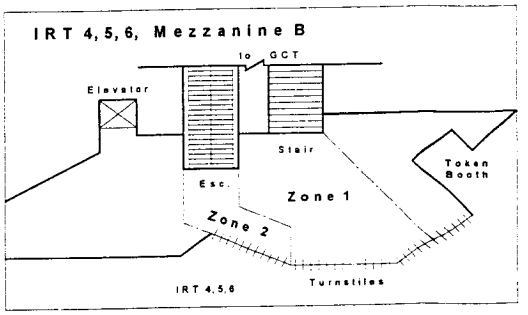


Table M - 15
TIME-SPACE ANALYSES OF IRT MEZZANINE 'B' @ GRAND CENTRAL TERMINAL
2010 MITIGATED BUILD CONDITIONS -- 5/15 MINUTES DURING AM/PM PEAK PERIODS

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped) (7)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
AM Peak Period Analysis																	
				Analysis Duration: 5 min.													
Using LOS C/D Analysis Criteria																	
1	1,500	5.0	7,500	631	1.0	7.0	4,414	675	40	224	0.18	120.5	16.0	1,929	6,343	85%	OK
2	500	5.0	2,500	315	1.0	7.0	2,207	830	35	224	0.16	129.7	16.0	2,075	4,282	**171%**	**fails**
Using LOS D/E Analysis Criteria																	
1	1,500	5.0	7,500	631	1.0	3.0	1,892	675	40	198	0.20	136.4	11.0	1,500	3,392	45%	OK
2	500	5.0	2,500	315	1.0	3.0	946	830	35	198	0.18	146.7	11.0	1,614	2,560	**102%**	**fails**
Using LOS E/F Analysis Criteria																	
1	1,500	5.0	7,500	631	1.0	2.0	1,261	675	40	150	0.27	180.0	6.0	1,080	2,341	31%	OK
2	500	5.0	2,500	315	1.0	2.0	631	830	35	150	0.23	193.7	6.0	1,162	1,793	72%	OK
				Analysis Duration: 15 min.													
Using LOS C/D Analysis Criteria																	
1	1,500	15.0	22,500	1,419	1.0	7.0	9,931	1,680	40	224	0.18	300.0	16.0	4,800	14,731	65%	OK
2	500	15.0	7,500	631	1.0	7.0	4,414	2,055	35	224	0.16	321.1	16.0	5,138	9,552	**127%**	**fails**
Using LOS D/E Analysis Criteria																	
1	1,500	15.0	22,500	1,419	1.0	3.0	4,256	1,680	40	198	0.20	339.4	11.0	3,733	7,989	36%	OK
2	500	15.0	7,500	631	1.0	3.0	1,892	2,055	35	198	0.18	363.3	11.0	3,996	5,887	78%	OK
Using LOS E/F Analysis Criteria																	
1	1,500	15.0	22,500	1,419	1.0	2.0	2,837	1,680	40	150	0.27	448.0	6.0	2,688	5,525	25%	OK
2	500	15.0	7,500	631	1.0	2.0	1,261	2,055	35	150	0.23	479.5	6.0	2,877	4,138	55%	OK
PM Peak Period Analysis																	
				Analysis Duration: 5 min.													
Using LOS C/D Analysis Criteria																	
1	1,500	5.0	7,500	168	1.0	7.0	1,177	655	40	224	0.18	117.0	16.0	1,872	3,049	41%	OK
2	500	5.0	2,500	84	1.0	7.0	589	640	35	224	0.16	100.0	16.0	1,600	2,189	88%	OK
Using LOS D/E Analysis Criteria																	
1	1,500	5.0	7,500	168	1.0	3.0	504	655	40	198	0.20	132.3	11.0	1,456	1,960	26%	OK
2	500	5.0	2,500	84	1.0	3.0	252	640	35	198	0.18	113.1	11.0	1,244	1,497	60%	OK
Using LOS E/F Analysis Criteria																	
1	1,500	5.0	7,500	168	1.0	2.0	336	655	40	150	0.27	174.7	6.0	1,048	1,384	18%	OK
2	500	5.0	2,500	84	1.0	2.0	168	640	35	150	0.23	149.3	6.0	896	1,064	43%	OK
				Analysis Duration: 15 min.													
Using LOS C/D Analysis Criteria																	
1	1,500	15.0	22,500	378	1.0	7.0	2,649	1,660	40	224	0.18	296.5	16.0	4,743	7,392	33%	OK
2	500	15.0	7,500	168	1.0	7.0	1,177	1,845	35	224	0.16	288.3	16.0	4,613	5,790	77%	OK
Using LOS D/E Analysis Criteria																	
1	1,500	15.0	22,500	378	1.0	3.0	1,135	1,660	40	198	0.20	335.4	11.0	3,689	4,824	21%	OK
2	500	15.0	7,500	168	1.0	3.0	504	1,845	35	198	0.18	326.1	11.0	3,588	4,092	55%	OK
Using LOS E/F Analysis Criteria																	
1	1,500	15.0	22,500	378	1.0	2.0	757	1,660	40	150	0.27	442.7	6.0	2,656	3,413	15%	OK
2	500	15.0	7,500	168	1.0	2.0	336	1,845	35	150	0.23	430.5	6.0	2,583	2,919	39%	OK

NOTES:
(1) Analysis period is the 5-minute period just before train doors open during peak PM period.
(2) Based on observations.
(3) Average queue space of 7, 3, and 2 square feet per pedestrian signify LOS C/D, D/E, and E/F conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224, 198, and 150 feet per minute signify LOS C/D, D/E, and E/F conditions, respectively. Italicized figure based on field measurement of walk speeds.
(6) Average walk space of 16, 11, and 6 square feet per pedestrian signify LOS C/D, D/E, and E/F conditions, respectively. Italicized figure corresponds to LOS F conditions.
(7) Uses No Build volumes and adds Build increment.

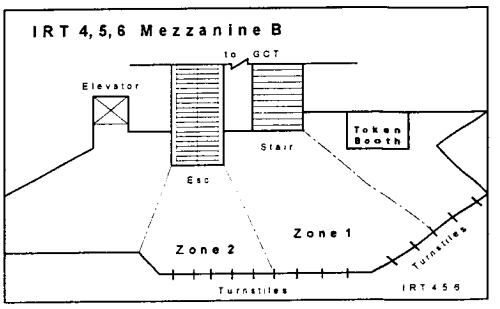


Table M - 15
TIME-SPACE ANALYSES OF IRT MEZZANINE 'B' @ GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS -- 5/15 MINUTES DURING AM/PM PEAK PERIODS

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped) (7)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
AM Peak Period Analysis																	
				Analysis Duration: 5 min.													
Using LOS C/D Analysis Criteria																	
1	1,500	5.0	7,500	660	1.0	7.0	4,617	740	40	224	0.18	132.2	16.0	2,114	6,732	90%	OK
2	500	5.0	2,500	330	1.0	7.0	2,309	860	35	224	0.16	134.4	16.0	2,150	4,459	**178%**	**fails**
Using LOS D/E Analysis Criteria																	
1	1,500	5.0	7,500	660	1.0	3.0	1,979	740	40	198	0.20	149.5	11.0	1,644	3,623	48%	OK
2	500	5.0	2,500	330	1.0	3.0	989	860	35	198	0.18	152.0	11.0	1,672	2,662	**106%**	**fails**
Using LOS E/F Analysis Criteria																	
1	1,500	5.0	7,500	660	1.0	2.0	1,319	740	40	150	0.27	197.3	6.0	1,184	2,503	33%	OK
2	500	5.0	2,500	330	1.0	2.0	660	860	35	150	0.23	200.7	6.0	1,204	1,864	75%	OK
				Analysis Duration: 15 min.													
Using LOS C/D Analysis Criteria																	
1	1,500	15.0	22,500	1,484	1.0	7.0	10,388	1,790	40	224	0.18	319.7	16.0	5,115	15,503	69%	OK
2	500	15.0	7,500	660	1.0	7.0	4,617	2,265	35	224	0.16	353.9	16.0	5,663	10,280	**137%**	**fails**
Using LOS D/E Analysis Criteria																	
1	1,500	15.0	22,500	1,484	1.0	3.0	4,452	1,790	40	198	0.20	361.6	11.0	3,978	8,430	37%	OK
2	500	15.0	7,500	660	1.0	3.0	1,979	2,265	35	198	0.18	400.4	11.0	4,404	6,383	85%	OK
Using LOS E/F Analysis Criteria																	
1	1,500	15.0	22,500	1,484	1.0	2.0	2,968	1,790	40	150	0.27	477.3	6.0	2,864	5,832	26%	OK
2	500	15.0	7,500	660	1.0	2.0	1,319	2,265	35	150	0.23	528.5	6.0	3,171	4,490	60%	OK
PM Peak Period Analysis																	
				Analysis Duration: 5 min.													
Using LOS C/D Analysis Criteria																	
1	1,500	5.0	7,500	187	1.0	7.0	1,306	690	40	224	0.18	123.2	16.0	1,972	3,278	44%	OK
2	500	5.0	2,500	93	1.0	7.0	653	680	35	224	0.16	106.3	16.0	1,700	2,353	94%	OK
Using LOS D/E Analysis Criteria																	
1	1,500	5.0	7,500	187	1.0	3.0	560	690	40	198	0.20	139.4	11.0	1,533	2,093	28%	OK
2	500	5.0	2,500	93	1.0	3.0	280	680	35	198	0.18	120.2	11.0	1,322	1,602	64%	OK
Using LOS E/F Analysis Criteria																	
1	1,500	5.0	7,500	187	1.0	2.0	373	690	40	150	0.27	184.0	6.0	1,104	1,477	20%	OK
2	500	5.0	2,500	93	1.0	2.0	187	680	35	150	0.23	158.7	6.0	952	1,139	46%	OK
				Analysis Duration: 15 min.													
Using LOS C/D Analysis Criteria																	
1	1,500	15.0	22,500	420	1.0	7.0	2,939	1,745	40	224	0.18	311.6	16.0	4,986	7,925	35%	OK
2	500	15.0	7,500	187	1.0	7.0	1,306	1,960	35	224	0.16	306.3	16.0	4,900	6,207	83%	OK
Using LOS D/E Analysis Criteria																	
1	1,500	15.0	22,500	420	1.0	3.0	1,260	1,745	40	198	0.20	352.5	11.0	3,878	5,137	23%	OK
2	500	15.0	7,500	187	1.0	3.0	560	1,960	35	198	0.18	346.5	11.0	3,811	4,371	58%	OK
Using LOS E/F Analysis Criteria																	
1	1,500	15.0	22,500	420	1.0	2.0	840	1,745	40	150	0.27	465.3	6.0	2,792	3,632	16%	OK
2	500	15.0	7,500	187	1.0	2.0	373	1,960	35	150	0.23	457.3	6.0	2,744	3,117	42%	OK

NOTES:

(1) Analysis period is the 5-minute period just before train doors open during peak PM period.
(2) Based on observations.
(3) Average queue space of 7, 3, and 2 square feet per pedestrian signify LOS C/D, D/E, and E/F conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224, 198, and 150 feet per minute signify LOS C/D, D/E, and E/F conditions, respectively. Italicized figure based on field measurement of walk speeds.
(6) Average walk space of 16, 11, and 6 square feet per pedestrian signify LOS C/D, D/E, and E/F conditions, respectively. Italicized figure corresponds to LOS F conditions.
(7) Uses No Build volumes and adds Build increment.

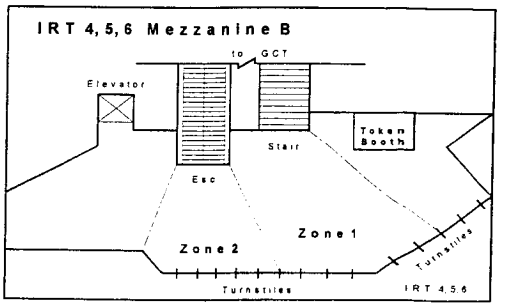


TABLE M-16

EXISTING SUBWAY STAIRS ANALYSES

Table M - 16
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
1999 EXISTING CONDITIONS PEAK 5 MINUTES WITHIN PEAK AM 15-MINUTE PERIOD (8:35 - 8:50)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	325	230	555	11.0	10.0	10	90	1.23	D
2 (P14)	170	445	615	11.0	10.0	20	80	1.54	E
3 (P18)	290	270	560	11.0	10.0	10	90	1.24	D
4 (P20)	245	195	440	11.0	10.0	10	90	0.98	C
5 (P22)	235	135	370	6.5	5.5	10	50	1.49	E
6 (P23)	360	45	405	6.5	5.5	20	44	1.84	F
7 (P21)	280	25	305	11.0	10.0	20	80	0.76	C
8 (P19)	200	120	320	11.0	10.0	10	90	0.71	C
9 (P17)	110	130	240	11.0	10.0	10	90	0.53	B
10 (P15)	70	100	170	11.0	10.0	10	90	0.38	A
11 (P13)	165	35	200	11.0	10.0	20	80	0.50	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

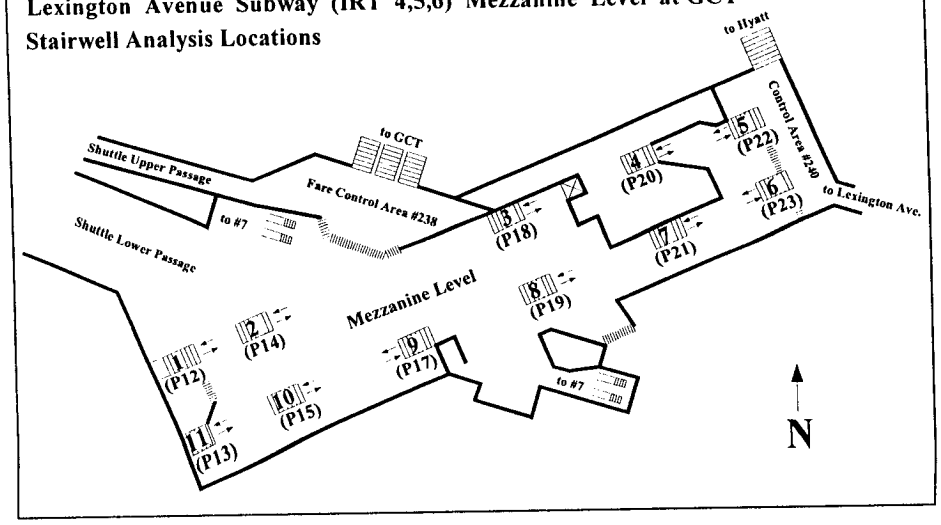


Table M - 16
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
1999 EXISTING CONDITIONS 15 MINUTE AM PEAK PERIOD (8:35 - 8:50)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	815	605	1,420	11.0	10.0	10	90	1.05	D
2 (P14)	430	1,145	1,575	11.0	10.0	20	80	1.31	D
3 (P18)	665	645	1,310	11.0	10.0	10	90	0.97	C
4 (P20)	675	570	1,245	11.0	10.0	10	90	0.92	C
5 (P22)	565	340	905	6.5	5.5	10	50	1.22	D
6 (P23)	915	125	1,040	6.5	5.5	20	44	1.58	E
7 (P21)	690	70	760	11.0	10.0	20	80	0.63	B
8 (P19)	565	290	855	11.0	10.0	10	90	0.63	B
9 (P17)	300	350	650	11.0	10.0	10	90	0.48	B
10 (P15)	185	260	445	11.0	10.0	10	90	0.33	A
11 (P13)	455	65	520	11.0	10.0	20	80	0.43	A

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

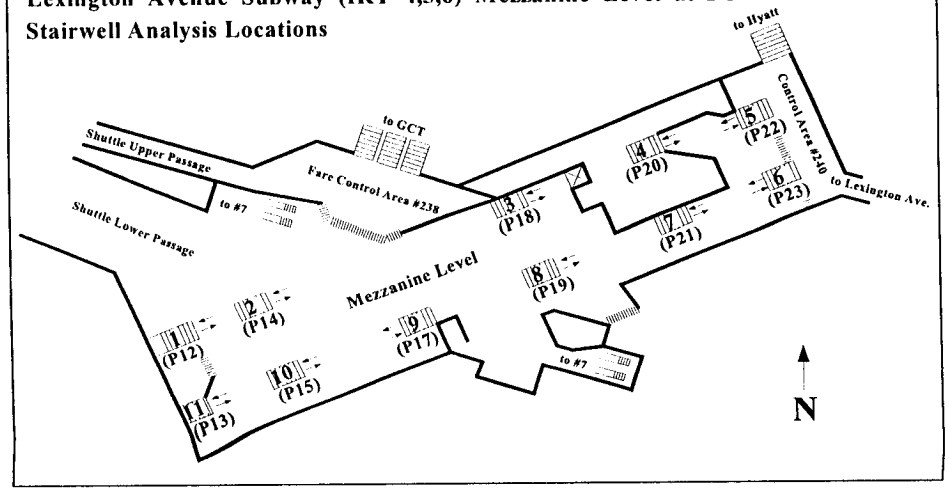


Table M - 16
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
1999 EXISTING CONDITIONS PEAK 5 MINUTES WITHIN PEAK PM 15-MINUTE PERIOD (5:10 - 5:25)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	65	115	180	11.0	10.0	10	90	0.40	A
2 (P14)	60	310	370	11.0	10.0	20	80	0.93	C
3 (P18)	110	105	215	11.0	10.0	10	90	0.48	B
4 (P20)	50	165	215	11.0	10.0	20	80	0.54	B
5 (P22)	35	245	280	6.5	5.5	20	44	1.27	D
6 (P23)	210	210	420	6.5	5.5	10	50	1.70	F
7 (P21)	210	115	325	11.0	10.0	10	90	0.72	C
8 (P19)	110	130	240	11.0	10.0	10	90	0.53	B
9 (P17)	170	185	355	11.0	10.0	10	90	0.79	C
10 (P15)	140	170	310	11.0	10.0	10	90	0.69	B
11 (P13)	170	200	370	11.0	10.0	10	90	0.82	C

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

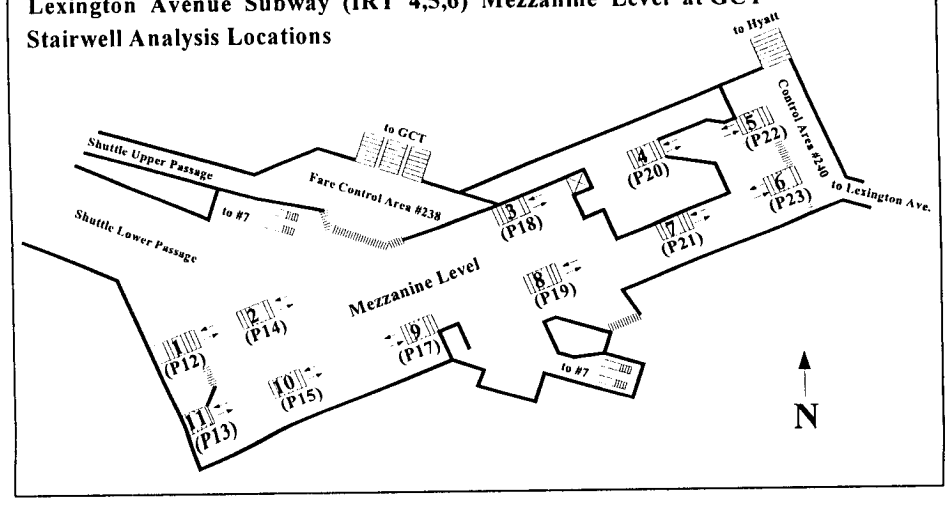


Table M - 16
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
1999 EXISTING CONDITIONS 15 MINUTE PM PEAK PERIOD (5:10 - 5:25)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	165	285	450	11.0	10.0	10	90	0.33	A
2 (P14)	165	870	1,035	11.0	10.0	20	80	0.86	C
3 (P18)	280	295	575	11.0	10.0	10	90	0.43	A
4 (P20)	120	420	540	11.0	10.0	20	80	0.45	B
5 (P22)	70	680	750	6.5	5.5	20	44	1.14	D
6 (P23)	520	350	870	6.5	5.5	10	50	1.17	D
7 (P21)	540	275	815	11.0	10.0	10	90	0.60	B
8 (P19)	250	365	615	11.0	10.0	10	90	0.46	B
9 (P17)	410	520	930	11.0	10.0	10	90	0.69	B
10 (P15)	320	455	775	11.0	10.0	10	90	0.57	B
11 (P13)	365	470	835	11.0	10.0	10	90	0.62	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

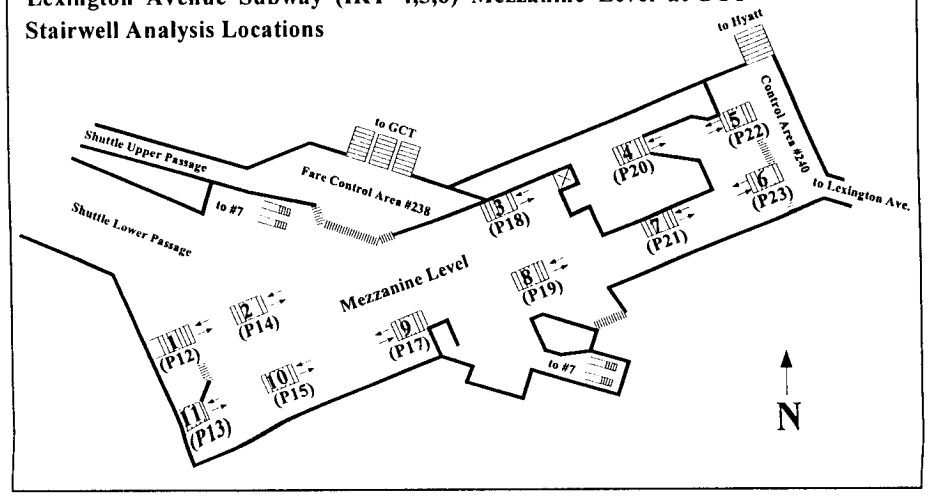


TABLE M-17

2010 NO BUILD SUBWAY STAIRS ANALYSES

Table M - 17
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 NO BUILD CONDITIONS PEAK 5 MINUTES WITHIN PEAK AM 15-MINUTE PERIOD (8:35 - 8:50)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	340	255	595	11.0	10.0	10	90	1.32	D
2 (P14)	180	500	680	11.0	10.0	20	80	1.70	F
3 (P18)	305	305	610	11.0	10.0	10	90	1.36	E
4 (P20)	255	220	475	11.0	10.0	10	90	1.06	D
5 (P22)	245	150	395	6.5	5.5	10	50	1.60	E
6 (P23)	380	50	430	6.5	5.5	20	44	1.95	F
7 (P21)	295	30	325	11.0	10.0	20	80	0.81	C
8 (P19)	210	135	345	11.0	10.0	10	90	0.77	C
9 (P17)	115	145	260	11.0	10.0	10	90	0.58	B
10 (P15)	75	110	185	11.0	10.0	10	90	0.41	A
11 (P13)	175	40	215	11.0	10.0	20	80	0.54	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

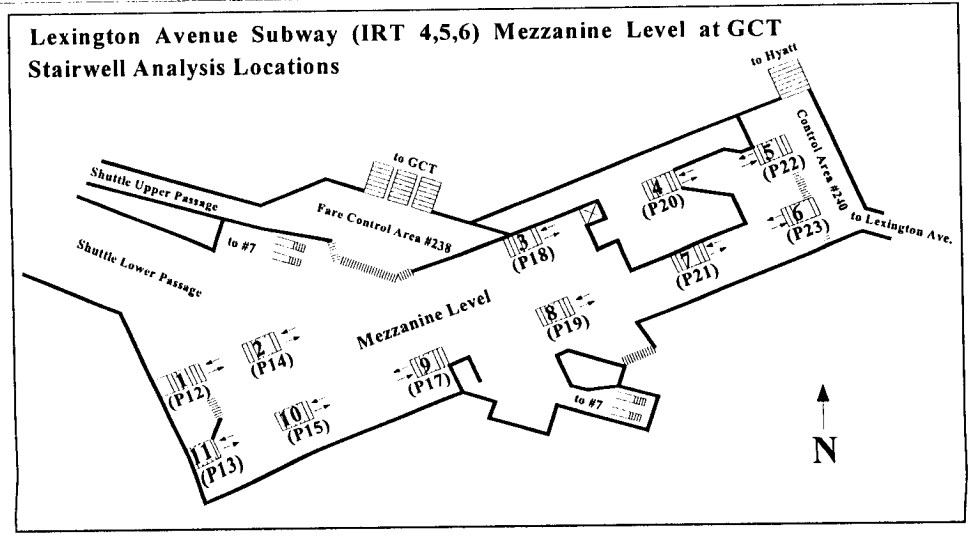


Table M -17
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 NO BUILD CONDITIONS 15 MINUTE AM PEAK PERIOD (8:35 - 8:50)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	855	680	1,535	11.0	10.0	10	90	1.14	D
2 (P14)	450	1,285	1,735	11.0	10.0	20	80	1.45	E
3 (P18)	700	725	1,425	11.0	10.0	10	90	1.06	D
4 (P20)	710	640	1,350	11.0	10.0	10	90	1.00	D
5 (P22)	595	380	975	6.5	5.5	10	50	1.31	D
6 (P23)	960	140	1,100	6.5	5.5	20	44	1.67	E
7 (P21)	725	80	805	11.0	10.0	20	80	0.67	B
8 (P19)	590	325	915	11.0	10.0	10	90	0.68	B
9 (P17)	315	400	715	11.0	10.0	10	90	0.53	B
10 (P15)	195	290	485	11.0	10.0	10	90	0.36	A
11 (P13)	475	70	545	11.0	10.0	20	80	0.45	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

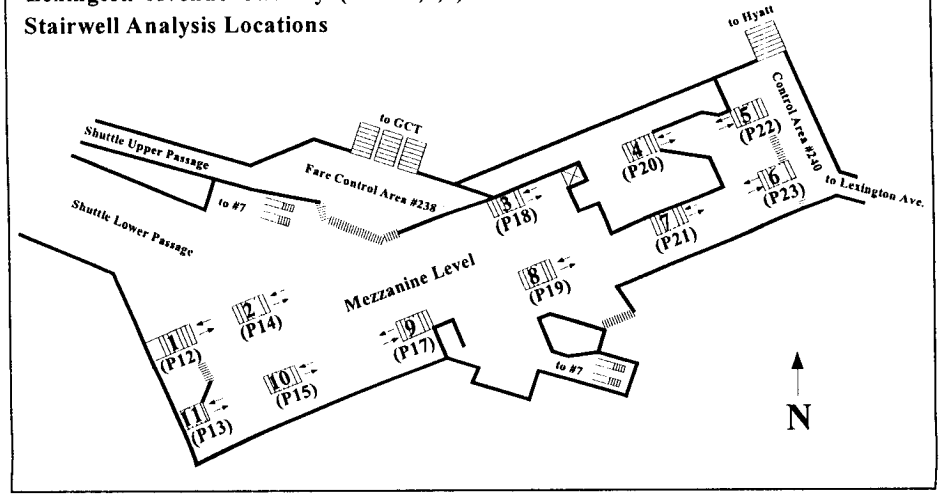


Table M - 17
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 NO BUILD CONDITIONS PEAK 5 MINUTES WITHIN PEAK PM 15-MINUTE PERIOD (5:10 - 5:25)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	70	120	190	11.0	10.0	10	90	0.42	A
2 (P14)	65	330	395	11.0	10.0	20	80	0.99	C
3 (P18)	120	110	230	11.0	10.0	10	90	0.51	B
4 (P20)	55	170	225	11.0	10.0	20	80	0.56	B
5 (P22)	40	260	300	6.5	5.5	20	44	1.36	E
6 (P23)	235	220	455	6.5	5.5	10	50	1.84	F
7 (P21)	235	120	355	11.0	10.0	10	90	0.79	C
8 (P19)	125	135	260	11.0	10.0	10	90	0.58	B
9 (P17)	195	195	390	11.0	10.0	10	90	0.87	C
10 (P15)	155	175	330	11.0	10.0	10	90	0.73	C
11 (P13)	190	210	400	11.0	10.0	10	90	0.89	C

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

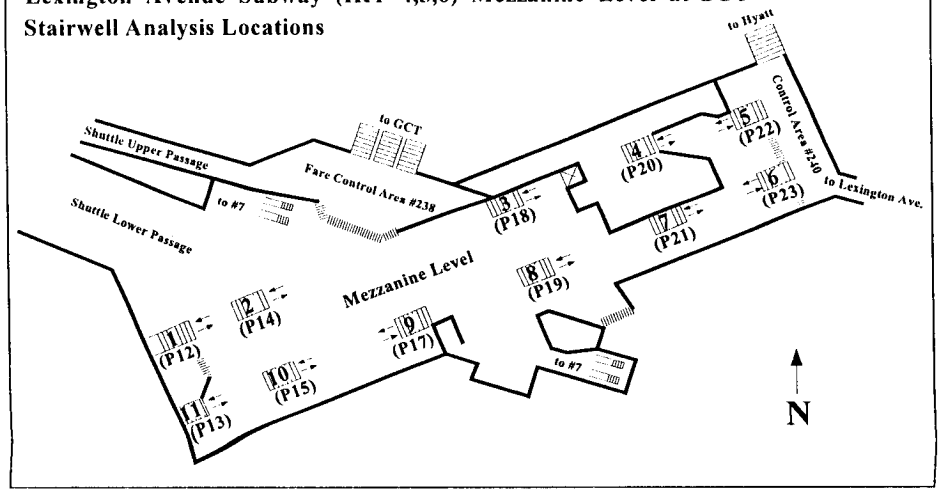


Table M - 17
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 NO BUILD CONDITIONS 15 MINUTE PM PEAK PERIOD (5:10 - 5:25)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	185	300	485	11.0	10.0	10	90	0.36	A
2 (P14)	185	915	1,100	11.0	10.0	20	80	0.92	C
3 (P18)	315	310	625	11.0	10.0	10	90	0.46	B
4 (P20)	135	440	575	11.0	10.0	20	80	0.48	B
5 (P22)	80	715	795	6.5	5.5	20	44	1.20	D
6 (P23)	585	365	950	6.5	5.5	10	50	1.28	D
7 (P21)	610	285	895	11.0	10.0	20	80	0.75	C
8 (P19)	285	380	665	11.0	10.0	10	90	0.49	B
9 (P17)	460	550	1,010	11.0	10.0	10	90	0.75	C
10 (P15)	360	480	840	11.0	10.0	10	90	0.62	B
11 (P13)	410	495	905	11.0	10.0	10	90	0.67	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

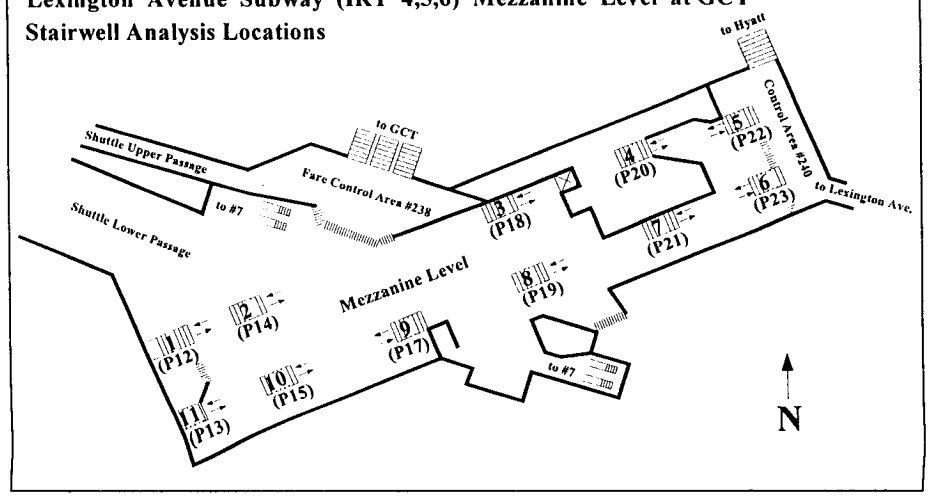


TABLE M-18

2020 NO BUILD
SUBWAY STAIRS
ANALYSES

Table M - 18
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 NO BUILD CONDITIONS PEAK 5 MINUTES WITHIN PEAK AM 15-MINUTE PERIOD (8:35 - 8:50)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	365	285	650	11.0	10.0	10	90	1.44	E
2 (P14)	185	550	735	11.0	10.0	20	80	1.84	F
3 (P18)	320	335	655	11.0	10.0	10	90	1.46	E
4 (P20)	270	245	515	11.0	10.0	10	90	1.14	D
5 (P22)	260	170	430	6.5	5.5	10	50	1.74	F
6 (P23)	395	55	450	6.5	5.5	20	44	2.05	F
7 (P21)	305	30	335	11.0	10.0	20	80	0.84	C
8 (P19)	220	150	370	11.0	10.0	10	90	0.82	C
9 (P17)	120	160	280	11.0	10.0	10	90	0.62	B
10 (P15)	70	125	195	11.0	10.0	10	90	0.43	A
11 (P13)	170	40	210	11.0	10.0	20	80	0.53	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

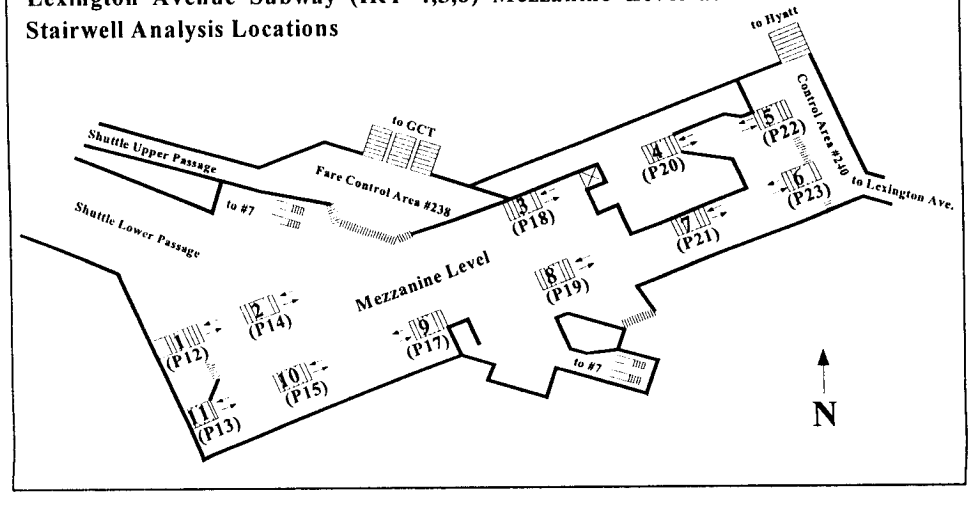


Table M - 18
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 NO BUILD CONDITIONS 15 MINUTE AM PEAK PERIOD (8:35 - 8:50)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	895	750	1,645	11.0	10.0	10	90	1.22	D
2 (P14)	470	1,425	1,895	11.0	10.0	20	80	1.58	E
3 (P18)	730	805	1,535	11.0	10.0	10	90	1.14	D
4 (P20)	740	710	1,450	11.0	10.0	10	90	1.07	D
5 (P22)	620	425	1,045	6.5	5.5	10	50	1.41	E
6 (P23)	1,005	155	1,160	6.5	5.5	20	44	1.76	F
7 (P21)	760	85	845	11.0	10.0	20	80	0.70	C
8 (P19)	625	360	985	11.0	10.0	10	90	0.73	C
9 (P17)	330	450	780	11.0	10.0	10	90	0.58	B
10 (P15)	200	325	525	11.0	10.0	10	90	0.39	A
11 (P13)	500	80	580	11.0	10.0	20	80	0.48	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

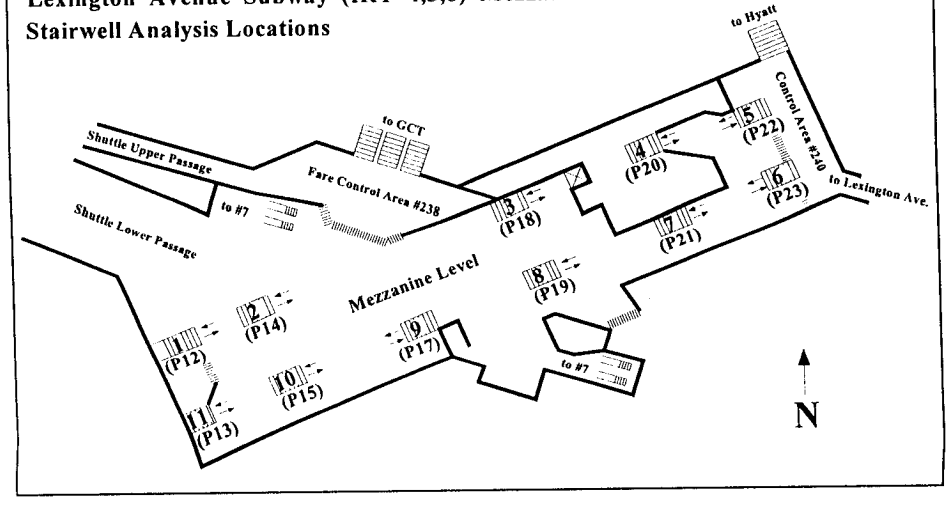


Table M - 18
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 NO BUILD CONDITIONS PEAK 5 MINUTES WITHIN PEAK PM 15-MINUTE PERIOD (5:10 - 5:25)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	80	125	205	11.0	10.0	10	90	0.46	B
2 (P14)	70	340	410	11.0	10.0	20	80	1.03	D
3 (P18)	135	115	250	11.0	10.0	10	90	0.56	B
4 (P20)	60	180	240	11.0	10.0	20	80	0.60	B
5 (P22)	40	270	310	6.5	5.5	20	44	1.41	E
6 (P23)	265	230	495	6.5	5.5	10	50	2.00	F
7 (P21)	265	125	390	11.0	10.0	20	80	0.98	C
8 (P19)	140	145	285	11.0	10.0	10	90	0.63	B
9 (P17)	210	200	410	11.0	10.0	10	90	0.91	C
10 (P15)	175	185	360	11.0	10.0	10	90	0.80	C
11 (P13)	210	220	430	11.0	10.0	10	90	0.96	C

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

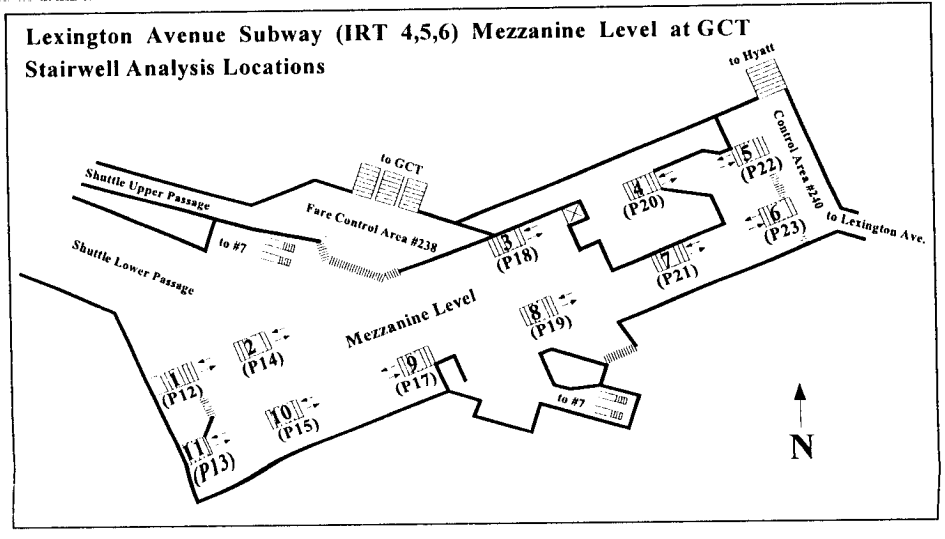


Table M - 18
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 NO BUILD CONDITIONS 15 MINUTE PM PEAK PERIOD (5:10 - 5:25)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	205	310	515	11.0	10.0	10	90	0.38	A
2 (P14)	205	955	1,160	11.0	10.0	20	80	0.97	C
3 (P18)	345	325	670	11.0	10.0	10	90	0.50	B
4 (P20)	150	465	615	11.0	10.0	20	80	0.51	B
5 (P22)	85	750	835	6.5	5.5	20	44	1.27	D
6 (P23)	650	385	1,035	6.5	5.5	10	50	1.39	E
7 (P21)	670	305	975	11.0	10.0	20	80	0.81	C
8 (P19)	310	400	710	11.0	10.0	10	90	0.53	B
9 (P17)	510	570	1,080	11.0	10.0	10	90	0.80	C
10 (P15)	395	500	895	11.0	10.0	10	90	0.66	B
11 (P13)	450	515	965	11.0	10.0	10	90	0.71	C

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

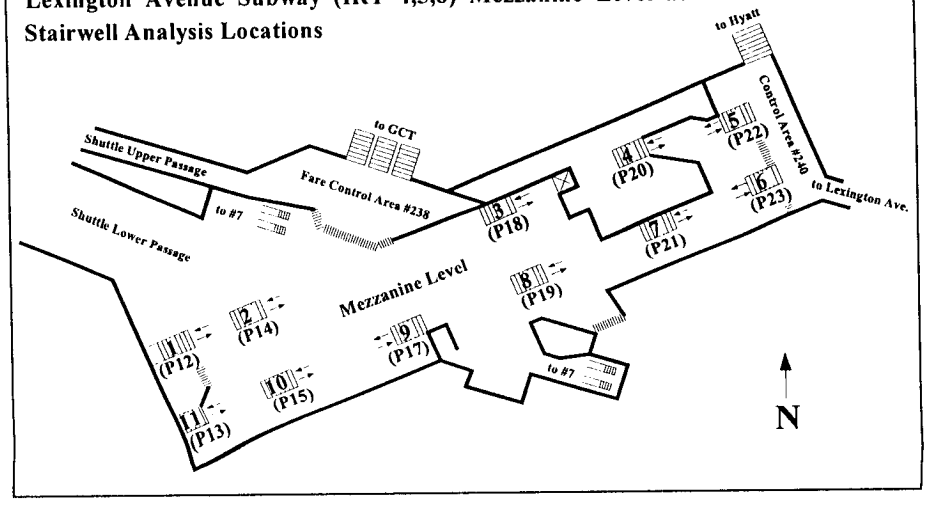


TABLE M-19

2010 BUILD
SUBWAY STAIRS
ANALYSES

Table M - 19
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 BUILD CONDITIONS PEAK 5 MINUTES WITHIN PEAK AM 15-MINUTE PERIOD (8:35 - 8:50)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	340	305	645	11.0	10.0	10	90	1.43	E *
2 (P14)	180	590	770	11.0	10.0	20	80	1.93	F *
3 (P18)	305	365	670	11.0	10.0	10	90	1.49	E *
4 (P20)	255	230	485	11.0	10.0	10	90	1.08	D
5 (P22)	245	160	405	6.5	5.5	10	50	1.64	E
6 (P23)	380	55	435	6.5	5.5	20	44	1.98	F
7 (P21)	295	35	330	11.0	10.0	20	80	0.83	C
8 (P19)	210	160	370	11.0	10.0	10	90	0.82	C
9 (P17)	115	175	290	11.0	10.0	10	90	0.64	B
10 (P15)	75	130	205	11.0	10.0	10	90	0.46	B
11 (P13)	175	50	225	11.0	10.0	20	80	0.56	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

" * " Significant Impact

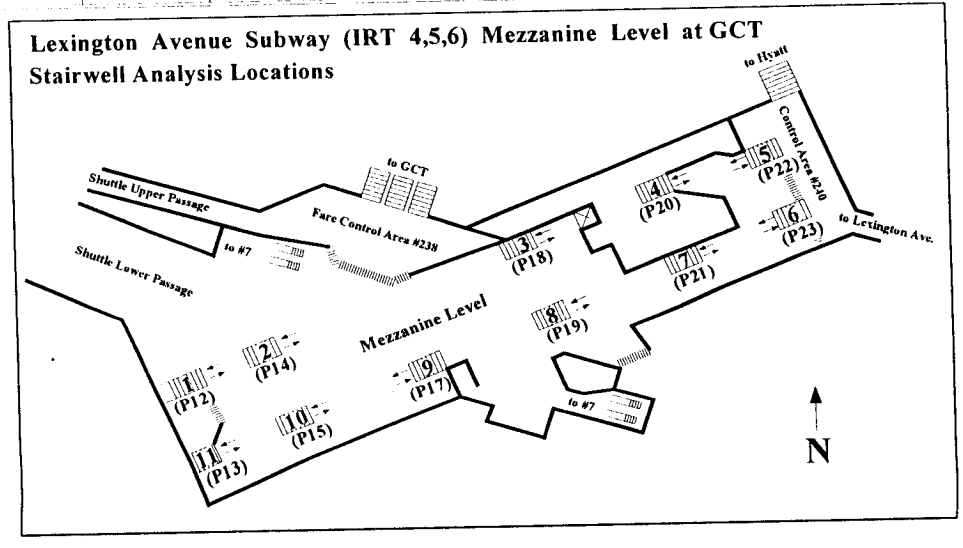


Table M - 19
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 BUILD CONDITIONS 15 MINUTE AM PEAK PERIOD (8:35 - 8:50)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	855	825	1,680	11.0	10.0	10	90	1.24	D *
2 (P14)	450	1,560	2,010	11.0	10.0	20	80	1.68	F *
3 (P18)	700	880	1,580	11.0	10.0	10	90	1.17	D *
4 (P20)	710	675	1,385	11.0	10.0	10	90	1.03	D
5 (P22)	595	400	995	6.5	5.5	10	50	1.34	E
6 (P23)	960	155	1,115	6.5	5.5	20	44	1.69	F
7 (P21)	725	90	815	11.0	10.0	20	80	0.68	B
8 (P19)	590	395	985	11.0	10.0	10	90	0.73	C
9 (P17)	315	485	800	11.0	10.0	10	90	0.59	B
10 (P15)	195	355	550	11.0	10.0	10	90	0.41	A
11 (P13)	475	90	565	11.0	10.0	20	80	0.47	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

"*" Significant Impact

Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

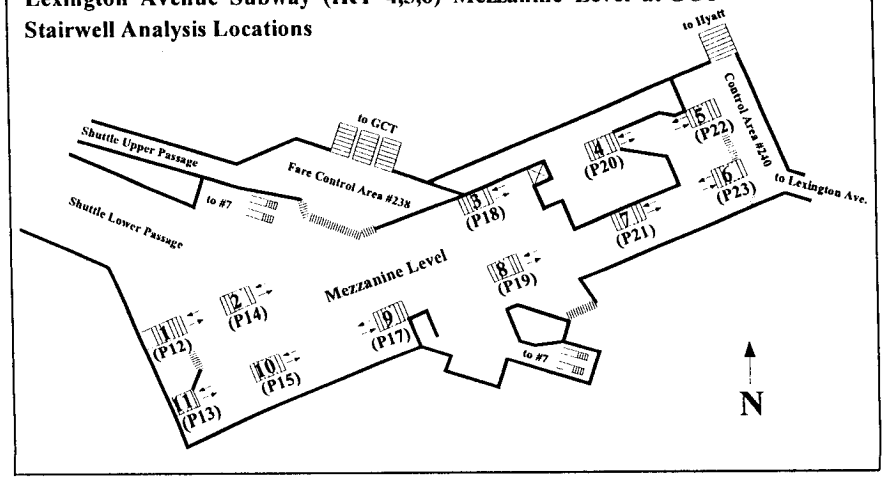


Table M - 19
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 BUILD CONDITIONS PEAK 5 MINUTES WITHIN PEAK PM 15-MINUTE PERIOD (5:10 - 5:25)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	90	120	210	11.0	10.0	10	90	0.47	B
2 (P14)	85	330	415	11.0	10.0	20	80	1.04	D *
3 (P18)	150	110	260	11.0	10.0	10	90	0.58	B
4 (P20)	60	170	230	11.0	10.0	20	80	0.58	B
5 (P22)	45	260	305	6.5	5.5	20	44	1.39	E
6 (P23)	245	220	465	6.5	5.5	10	50	1.88	F
7 (P21)	245	120	365	11.0	10.0	20	80	0.91	C
8 (P19)	155	135	290	11.0	10.0	10	90	0.64	B
9 (P17)	245	195	440	11.0	10.0	10	90	0.98	C
10 (P15)	195	175	370	11.0	10.0	10	90	0.82	C
11 (P13)	240	210	450	11.0	10.0	10	90	1.00	D

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

" * " Significant Impact

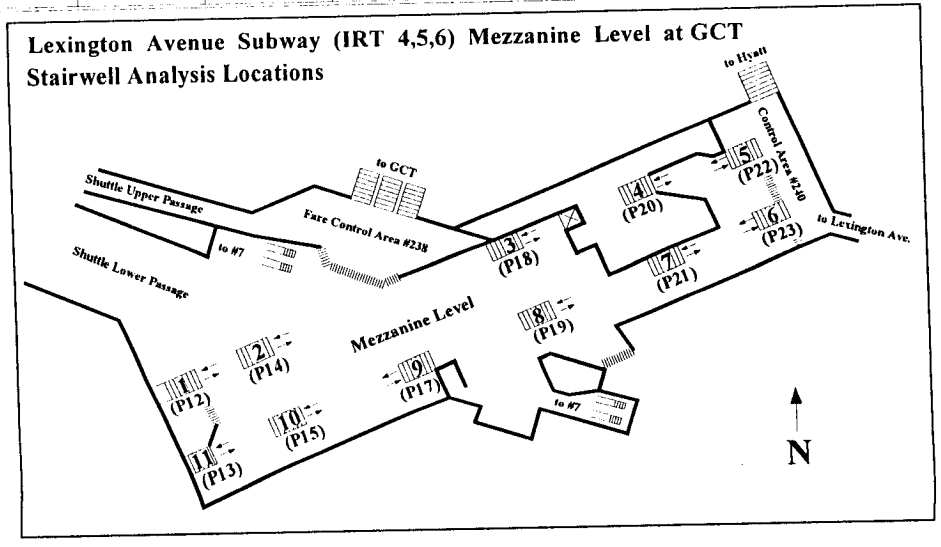


Table M - 19
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 BUILD CONDITIONS 15 MINUTE PM PEAK PERIOD (5:10 - 5:25)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	240	300	540	11.0	10.0	10	90	0.40	A
2 (P14)	240	915	1,155	11.0	10.0	20	80	0.96	C
3 (P18)	405	310	715	11.0	10.0	10	90	0.53	B
4 (P20)	150	440	590	11.0	10.0	20	80	0.49	B
5 (P22)	90	715	805	6.5	5.5	20	44	1.22	D
6 (P23)	610	365	975	6.5	5.5	10	50	1.31	D
7 (P21)	635	285	920	11.0	10.0	20	80	0.77	C
8 (P19)	380	380	760	11.0	10.0	10	90	0.56	B
9 (P17)	605	550	1,155	11.0	10.0	10	90	0.86	C
10 (P15)	480	480	960	11.0	10.0	10	90	0.71	C
11 (P13)	545	495	1,040	11.0	10.0	10	90	0.77	C

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

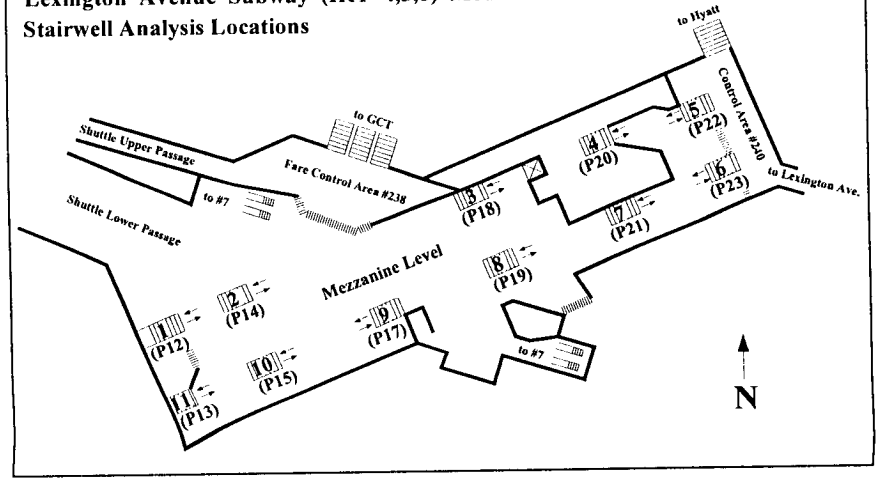


TABLE M-20

2020 BUILD
SUBWAY STAIRS
ANALYSES

Table M - 20
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 BUILD CONDITIONS PEAK 5 MINUTES WITHIN PEAK AM 15-MINUTE PERIOD (8:35 - 8:50)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	365	335	700	11.0	10.0	10	90	1.56	E *
2 (P14)	185	645	830	11.0	10.0	20	80	2.08	F *
3 (P18)	320	395	715	11.0	10.0	10	90	1.59	E *
4 (P20)	270	260	530	11.0	10.0	10	90	1.18	D
5 (P22)	260	180	440	6.5	5.5	10	50	1.78	F
6 (P23)	395	60	455	6.5	5.5	20	44	2.07	F
7 (P21)	305	35	340	11.0	10.0	20	80	0.85	C
8 (P19)	220	175	395	11.0	10.0	10	90	0.88	C
9 (P17)	120	190	310	11.0	10.0	10	90	0.69	B
10 (P15)	70	150	220	11.0	10.0	20	80	0.55	B
11 (P13)	170	50	220	11.0	10.0	20	80	0.55	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

"*" Significant Impact

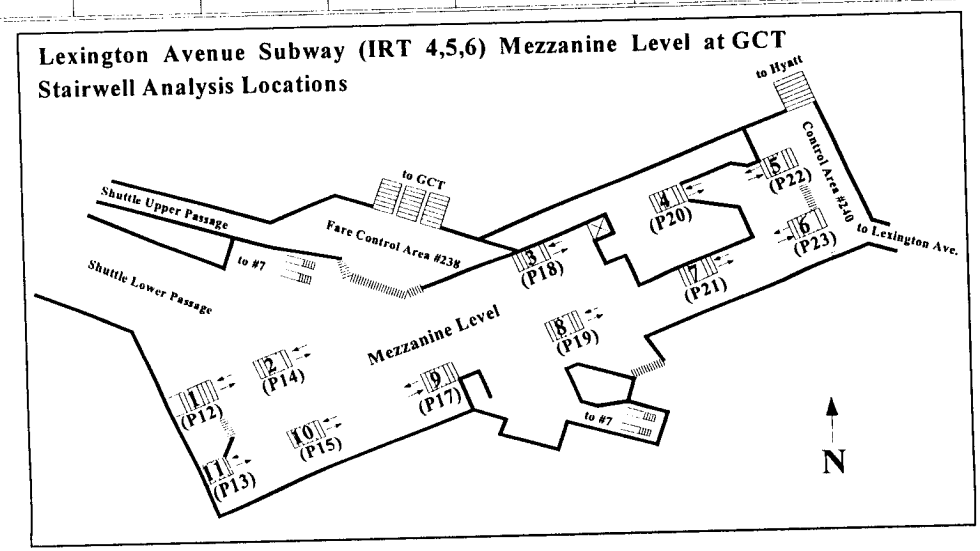


Table M - 20
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 BUILD CONDITIONS 15 MINUTE AM PEAK PERIOD (8:35 - 8:50)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	895	900	1,795	11.0	10.0	10	90	1.33	D *
2 (P14)	470	1,710	2,180	11.0	10.0	20	80	1.82	F *
3 (P18)	730	965	1,695	11.0	10.0	10	90	1.26	D *
4 (P20)	740	745	1,485	11.0	10.0	10	90	1.10	D
5 (P22)	620	445	1,065	6.5	5.5	10	50	1.43	E
6 (P23)	1,005	170	1,175	6.5	5.5	20	44	1.78	F
7 (P21)	760	95	855	11.0	10.0	20	80	0.71	C
8 (P19)	625	430	1,055	11.0	10.0	10	90	0.78	C
9 (P17)	330	535	865	11.0	10.0	10	90	0.64	B
10 (P15)	200	390	590	11.0	10.0	10	90	0.44	A
11 (P13)	500	100	600	11.0	10.0	20	80	0.50	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

"*" Significant Impact

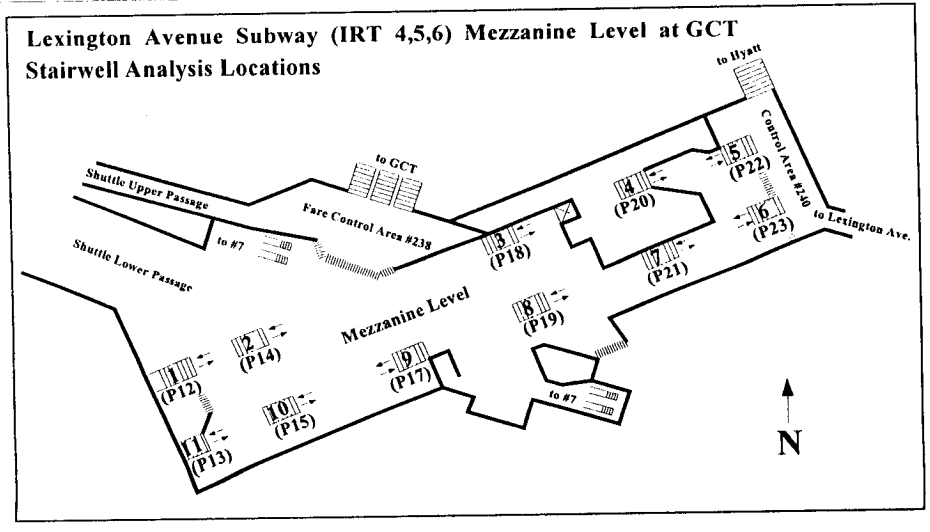


Table M - 20
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 BUILD CONDITIONS PEAK 5 MINUTES WITHIN PEAK PM 15-MINUTE PERIOD (5:10 - 5:25)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	100	125	225	11.0	10.0	10	90	0.50	B
2 (P14)	90	340	430	11.0	10.0	20	80	1.08	D
3 (P18)	170	115	285	11.0	10.0	10	90	0.63	B
4 (P20)	65	180	245	11.0	10.0	20	80	0.61	B
5 (P22)	45	270	315	6.5	5.5	20	44	1.43	E
6 (P23)	270	230	500	6.5	5.5	10	50	2.02	F
7 (P21)	275	125	400	11.0	10.0	20	80	1.00	D
8 (P19)	175	145	320	11.0	10.0	10	90	0.71	C
9 (P17)	260	200	460	11.0	10.0	10	90	1.02	D *
10 (P15)	220	185	405	11.0	10.0	10	90	0.90	C
11 (P13)	260	220	480	11.0	10.0	10	90	1.07	D *

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

"*" Significant Impact

Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

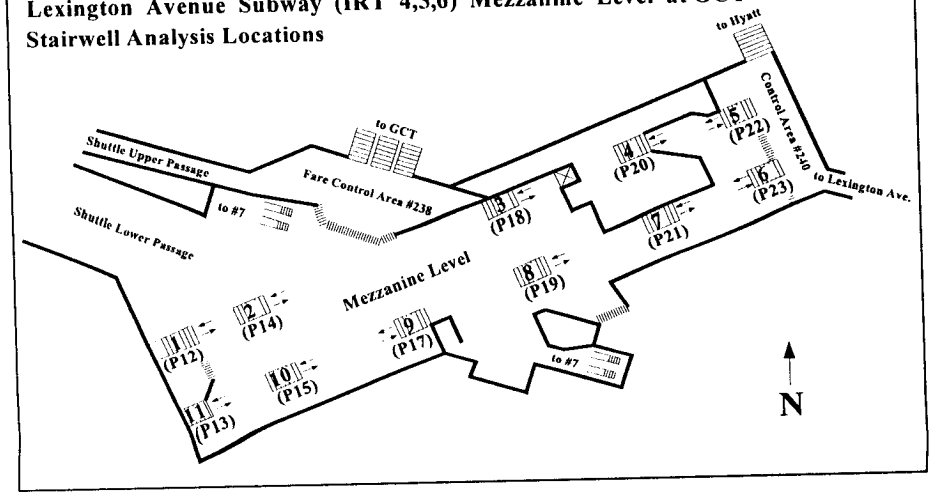


Table M - 20
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 BUILD CONDITIONS 15 MINUTE PM PEAK PERIOD (5:10 - 5:25)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1 (P12)	260	310	570	11.0	10.0	10	90	0.42	A
2 (P14)	260	955	1,215	11.0	10.0	20	80	1.01	D
3 (P18)	440	325	765	11.0	10.0	10	90	0.57	B
4 (P20)	165	465	630	11.0	10.0	20	80	0.53	B
5 (P22)	95	750	845	6.5	5.5	20	44	1.28	D
6 (P23)	675	385	1,060	6.5	5.5	10	50	1.43	E
7 (P21)	695	305	1,000	11.0	10.0	20	80	0.83	C
8 (P19)	410	400	810	11.0	10.0	10	90	0.60	B
9 (P17)	660	570	1,230	11.0	10.0	10	90	0.91	C
10 (P15)	515	500	1,015	11.0	10.0	10	90	0.75	C
11 (P13)	585	515	1,100	11.0	10.0	10	90	0.81	C

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

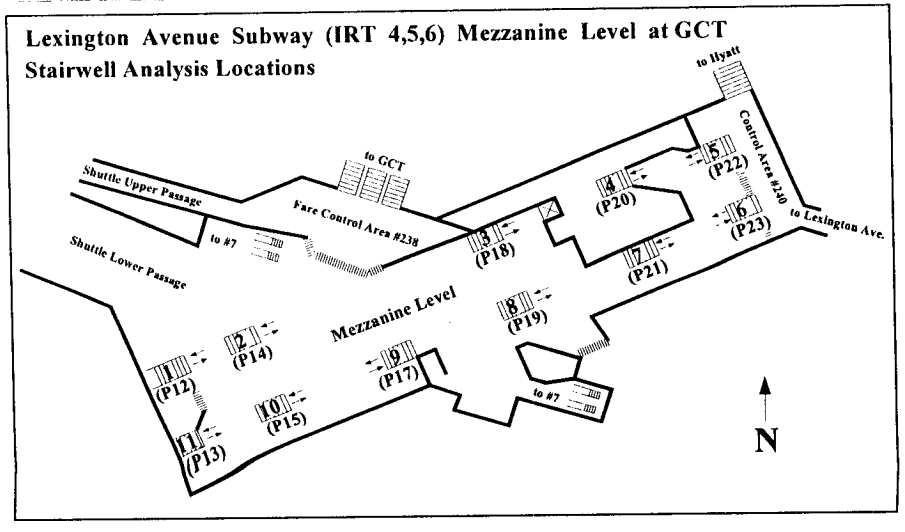


TABLE M-21

2010 MITIGATED BUILD SUBWAY STAIRS ANALYSES

Table M - 21
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 MITIGATED BUILD CONDITIONS PEAK 5 MINUTES WITHIN PEAK AM 15-MINUTE PERIOD (8:35 - 8:50)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1A (P10)	70	85	155	11.0	10.0	10	90	0.34	A
1 (P12)	280	335	615	11.0	10.0	10	90	1.37	E *
2 (P14)	170	535	705	11.0	10.0	20	80	1.76	F *
3 (P18)	305	310	615	11.0	10.0	10	90	1.37	E
4 (P20)	255	230	485	11.0	10.0	10	90	1.08	D
5 (P22)	245	160	405	6.5	5.5	10	50	1.64	E
6 (P23)	380	55	435	6.5	5.5	20	44	1.98	F
7 (P21)	295	35	330	11.0	10.0	20	80	0.83	C
8 (P19)	210	160	370	11.0	10.0	10	90	0.82	C
9 (P17)	115	175	290	11.0	10.0	10	90	0.64	B
10 (P15)	75	130	205	11.0	10.0	10	90	0.46	B
11 (P13)	175	50	225	11.0	10.0	20	80	0.56	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

"*" Unmitigated Impact

Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

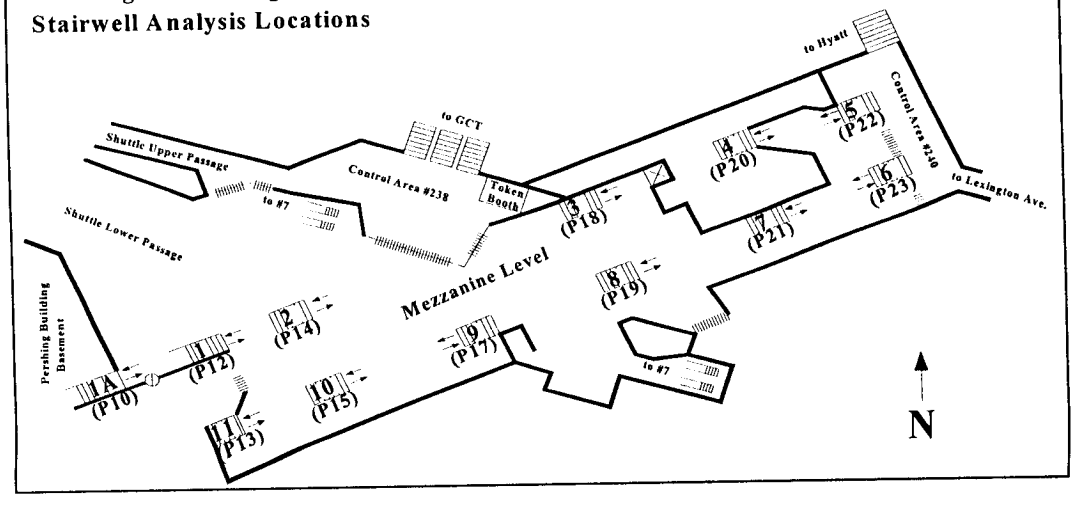


Table M - 21
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 MITIGATED BUILD CONDITIONS 15 MINUTE AM PEAK PERIOD (8:35 - 8:50)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1A (P10)	200	245	445	11.0	10.0	10	90	0.33	A
1 (P12)	685	930	1,615	11.0	10.0	10	90	1.20	D *
2 (P14)	420	1,375	1,795	11.0	10.0	20	80	1.50	E *
3 (P18)	700	740	1,440	11.0	10.0	10	90	1.07	D *
4 (P20)	710	675	1,385	11.0	10.0	10	90	1.03	D
5 (P22)	595	400	995	6.5	5.5	10	50	1.34	E
6 (P23)	960	155	1,115	6.5	5.5	20	44	1.69	F
7 (P21)	725	90	815	11.0	10.0	20	80	0.68	B
8 (P19)	590	395	985	11.0	10.0	10	90	0.73	C
9 (P17)	315	485	800	11.0	10.0	10	90	0.59	B
10 (P15)	195	355	550	11.0	10.0	10	90	0.41	A
11 (P13)	475	90	565	11.0	10.0	20	80	0.47	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

"*" Unmitigated Impact

Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

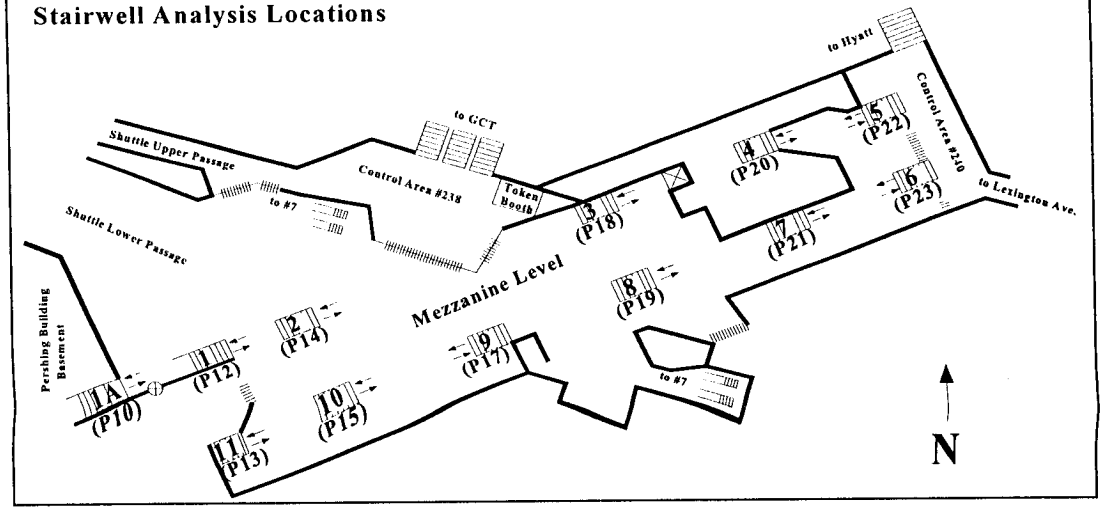


Table M - 21
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 MITIGATED BUILD CONDITIONS PEAK 5 MINUTES WITHIN PEAK PM 15-MINUTE PERIOD (5:10 - 5:25)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1A (P10)	45	30	75	11.0	10.0	10	90	0.17	A
1 (P12)	95	100	195	11.0	10.0	10	90	0.43	A
2 (P14)	70	320	390	11.0	10.0	20	80	0.98	C
3 (P18)	120	110	230	11.0	10.0	10	90	0.51	B
4 (P20)	60	170	230	11.0	10.0	20	80	0.58	B
5 (P22)	45	260	305	6.5	5.5	20	44	1.39	E
6 (P23)	245	220	465	6.5	5.5	10	50	1.88	F
7 (P21)	245	120	365	11.0	10.0	20	80	0.91	C
8 (P19)	155	135	290	11.0	10.0	10	90	0.64	B
9 (P17)	245	195	440	11.0	10.0	10	90	0.98	C
10 (P15)	195	175	370	11.0	10.0	10	90	0.82	C
11 (P13)	240	210	450	11.0	10.0	10	90	1.00	D

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

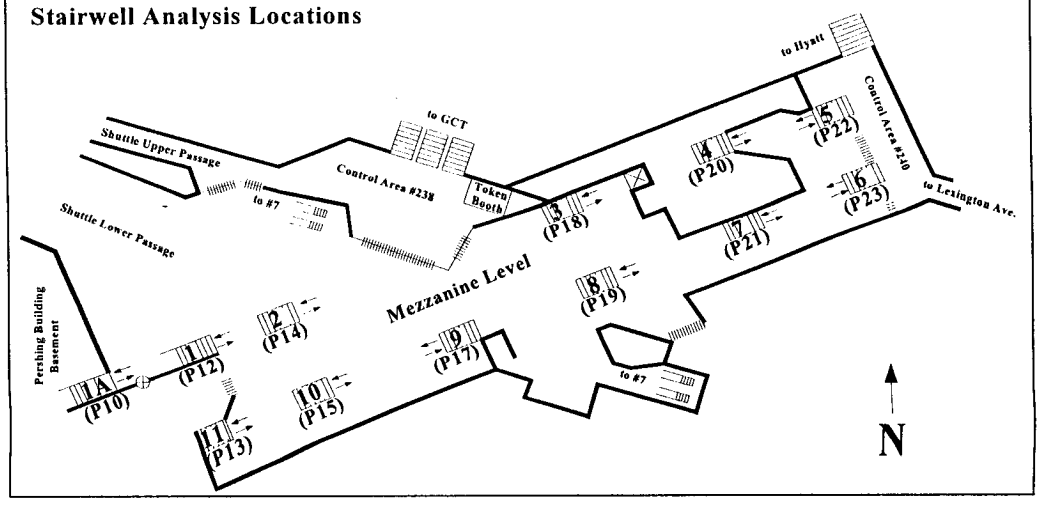


Table M - 21
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 MITIGATED BUILD CONDITIONS 15 MINUTE PM PEAK PERIOD (5:10 - 5:25)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1A (P10)	125	100	225	11.0	10.0	10	90	0.17	A
1 (P12)	260	235	495	11.0	10.0	10	90	0.37	A
2 (P14)	195	880	1,075	11.0	10.0	20	80	0.90	C
3 (P18)	320	310	630	11.0	10.0	10	90	0.47	B
4 (P20)	150	440	590	11.0	10.0	20	80	0.49	B
5 (P22)	90	715	805	6.5	5.5	20	44	1.22	D
6 (P23)	610	365	975	6.5	5.5	10	50	1.31	D
7 (P21)	635	285	920	11.0	10.0	20	80	0.77	C
8 (P19)	380	380	760	11.0	10.0	10	90	0.56	B
9 (P17)	605	550	1,155	11.0	10.0	10	90	0.86	C
10 (P15)	480	480	960	11.0	10.0	10	90	0.71	C
11 (P13)	545	495	1,040	11.0	10.0	10	90	0.77	C

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

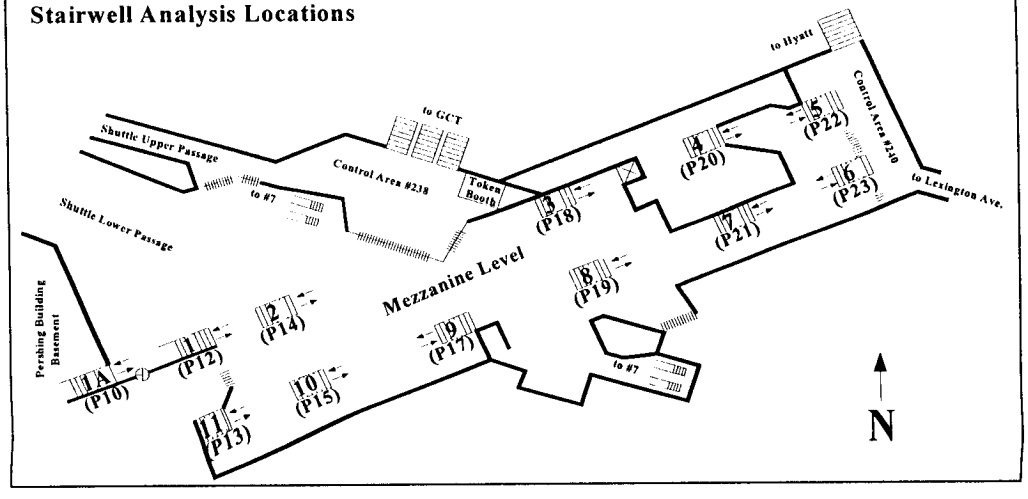


TABLE M-22

2020 MITIGATED BUILD SUBWAY STAIRS ANALYSES

Table M - 22
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS PEAK 5 MINUTES WITHIN PEAK AM 15-MINUTE PERIOD (8:35 - 8:50)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1A (P10)	70	90	160	11.0	10.0	10	90	0.36	A
1 (P12)	305	365	670	11.0	10.0	10	90	1.49	E *
2 (P14)	175	585	760	11.0	10.0	20	80	1.90	F *
3 (P18)	320	340	660	11.0	10.0	10	90	1.47	E
4 (P20)	270	260	530	11.0	10.0	10	90	1.18	D
5 (P22)	260	180	440	6.5	5.5	10	50	1.78	F
6 (P23)	395	60	455	6.5	5.5	20	44	2.07	F
7 (P21)	305	35	340	11.0	10.0	20	80	0.85	C
8 (P19)	220	175	395	11.0	10.0	10	90	0.88	C
9 (P17)	120	190	310	11.0	10.0	10	90	0.69	B
10 (P15)	70	150	220	11.0	10.0	20	80	0.55	B
11 (P13)	170	50	220	11.0	10.0	20	80	0.55	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

"*" Unmitigated Impact

Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

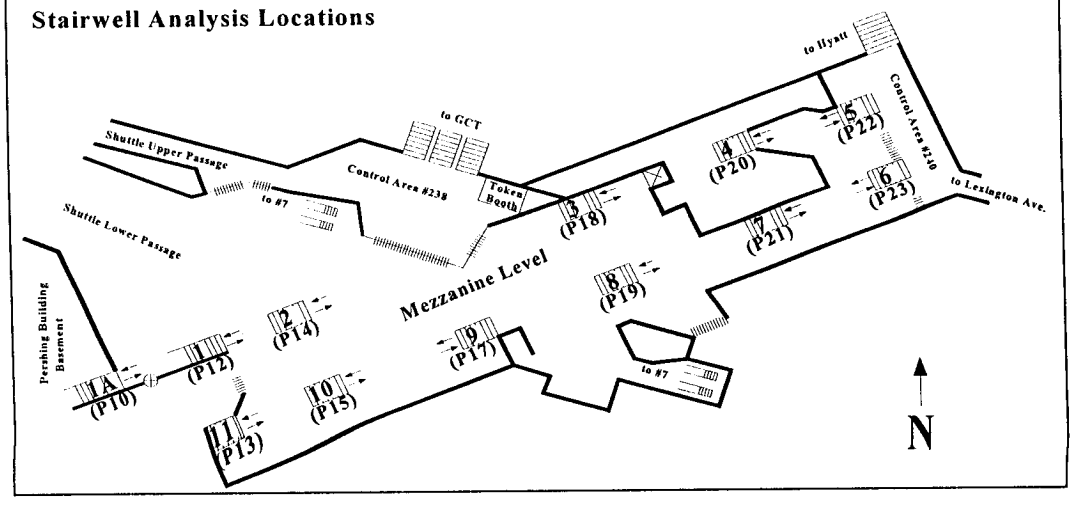


Table M - 22
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS 15 MINUTE AM PEAK PERIOD (8:35 - 8:50)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1A (P10)	205	260	465	11.0	10.0	10	90	0.34	A
1 (P12)	720	1,005	1,725	11.0	10.0	10	90	1.28	D
2 (P14)	440	1,515	1,955	11.0	10.0	20	80	1.63	E *
3 (P18)	730	820	1,550	11.0	10.0	10	90	1.15	D
4 (P20)	740	745	1,485	11.0	10.0	10	90	1.10	D
5 (P22)	620	445	1,065	6.5	5.5	10	50	1.43	E
6 (P23)	1,005	170	1,175	6.5	5.5	20	44	1.78	F
7 (P21)	760	95	855	11.0	10.0	20	80	0.71	C
8 (P19)	625	430	1,055	11.0	10.0	10	90	0.78	C
9 (P17)	330	535	865	11.0	10.0	10	90	0.64	B
10 (P15)	200	390	590	11.0	10.0	10	90	0.44	A
11 (P13)	500	100	600	11.0	10.0	20	80	0.50	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

"*" Unmitigated Impact

Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

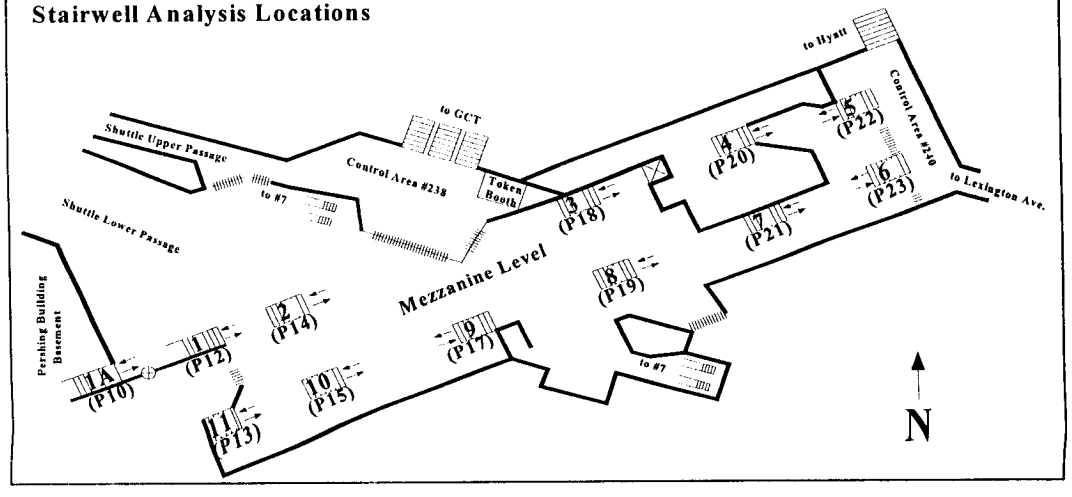


Table M - 22
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS PEAK 5 MINUTES WITHIN PEAK PM 15-MINUTE PERIOD (5:10 - 5:25)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1A (P10)	45	35	80	11.0	10.0	10	90	0.18	A
1 (P12)	110	100	210	11.0	10.0	10	90	0.47	B
2 (P14)	75	330	405	11.0	10.0	20	80	1.01	D
3 (P18)	135	115	250	11.0	10.0	10	90	0.56	B
4 (P20)	65	180	245	11.0	10.0	20	80	0.61	B
5 (P22)	45	270	315	6.5	5.5	20	44	1.43	E
6 (P23)	270	230	500	6.5	5.5	10	50	2.04	F
7 (P21)	275	125	400	11.0	10.0	20	80	1.00	D
8 (P19)	175	145	320	11.0	10.0	10	90	0.71	C
9 (P17)	260	200	460	11.0	10.0	10	90	1.02	D *
10 (P15)	220	185	405	11.0	10.0	10	90	0.90	C
11 (P13)	260	220	480	11.0	10.0	10	90	1.07	D *

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

"*" Unmitigated Impact

Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

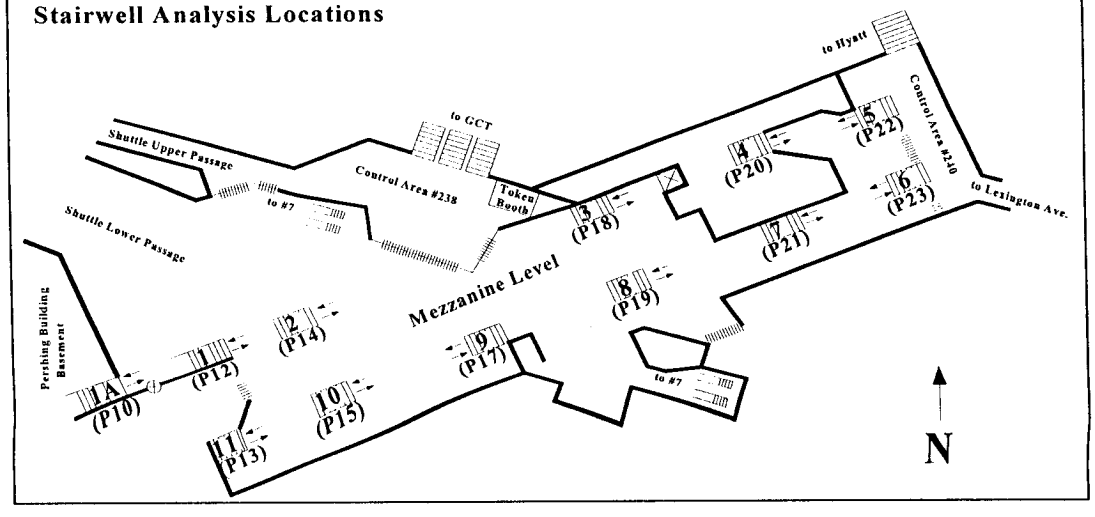


Table M - 22
EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS 15 MINUTE PM PEAK PERIOD (5:10 - 5:25)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1A (P10)	135	105	240	11.0	10.0	10	90	0.18	A
1 (P12)	280	240	520	11.0	10.0	10	90	0.39	A
2 (P14)	215	920	1,135	11.0	10.0	20	80	0.95	C
3 (P18)	350	325	675	11.0	10.0	10	90	0.50	B
4 (P20)	165	465	630	11.0	10.0	20	80	0.53	B
5 (P22)	95	750	845	6.5	5.5	20	44	1.28	D
6 (P23)	675	385	1,060	6.5	5.5	10	50	1.43	E
7 (P21)	695	305	1,000	11.0	10.0	20	80	0.83	C
8 (P19)	410	400	810	11.0	10.0	10	90	0.60	B
9 (P17)	660	570	1,230	11.0	10.0	10	90	0.91	C
10 (P15)	515	500	1,015	11.0	10.0	10	90	0.75	C
11 (P13)	585	515	1,100	11.0	10.0	10	90	0.81	C

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

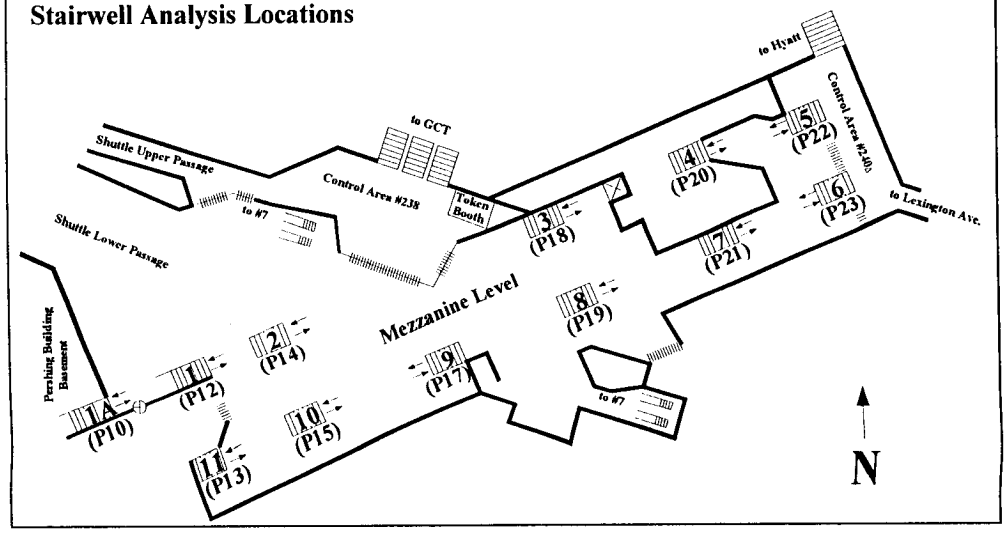


TABLE M-23

EXISTING
SUBWAY PLATFORM
TIME-SPACE ANALYSES

Table M - 23
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
1999 EXISTING CONDITIONS 5 MINUTE AM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	5	**5,575**	125	1	7	875	430	37	224	0.17	71.0	16	1,136	**2,011**	**36%**	**C/D or better**
Zone 2	580	5	**2,899**	25	1	7	175	50	26	224	0.12	5.8	16	93	**268**	**9%**	**C/D or better**
Zone 3	865	5	**4,325**	50	1	7	350	355	40	224	0.18	63.4	16	1,014	**1,364**	**32%**	**C/D or better**
Zone 4	835	5	**4,175**	125	1	7	875	60	35	224	0.16	9.4	16	150	**1,025**	**25%**	**C/D or better**
Zone 5	970	5	**4,850**	325	1	7	2,275	600	49	224	0.22	131.3	16	2,100	**4,375**	**90%**	**C/D - Mid-D**
Zone 6	575	5	**2,875**	75	1	7	525	135	30	224	0.13	18.1	16	289	**814**	**28%**	**C/D or better**
Zone 7	550	5	**2,750**	75	1	7	525	185	29	224	0.13	24.0	16	383	**908**	**33%**	**C/D or better**
Zone 8	2,165	5	**10,825**	75	1	7	525	220	48	224	0.21	47.1	16	754	**1,279**	**12%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	5	**9,600**	225	1	7	1,575	630	51	224	0.23	143.4	16	2,295	**3,870**	**40%**	**C/D or better**
Zone 2	570	5	**2,850**	100	1	7	700	625	27	224	0.12	75.3	16	1,205	**1,905**	**67%**	**C/D or better**
Zone 3	610	5	**3,050**	50	1	7	350	130	30	224	0.13	17.4	16	279	**629**	**21%**	**C/D or better**
Zone 4	1,050	5	**5,250**	175	1	7	1,225	615	49	224	0.22	134.5	16	2,153	**3,378**	**64%**	**C/D or better**
Zone 5	330	5	**1,650**	75	1	7	525	65	21	224	0.09	6.1	16	98	**623**	**38%**	**C/D or better**
Zone 6	810	5	**4,050**	100	1	7	700	470	42	224	0.19	88.1	16	1,410	**2,110**	**52%**	**C/D or better**
Zone 7	770	5	**3,850**	100	1	7	700	70	33	224	0.15	10.3	16	165	**865**	**22%**	**C/D or better**
Zone 8	1,155	5	**5,775**	125	1	7	875	400	29	224	0.13	51.8	16	829	**1,704**	**29%**	**C/D or better**

NOTES:
(1) Analysis period is the peak 5 minutes within the 15-minute peak AM period (8:35-8:50).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 square feet per pedestrian signifies LOS C/D conditions.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 feet per minute signifies LOS C/D conditions.
(6) Average walk space of 16 square feet per pedestrian signifies LOS C/D conditions.

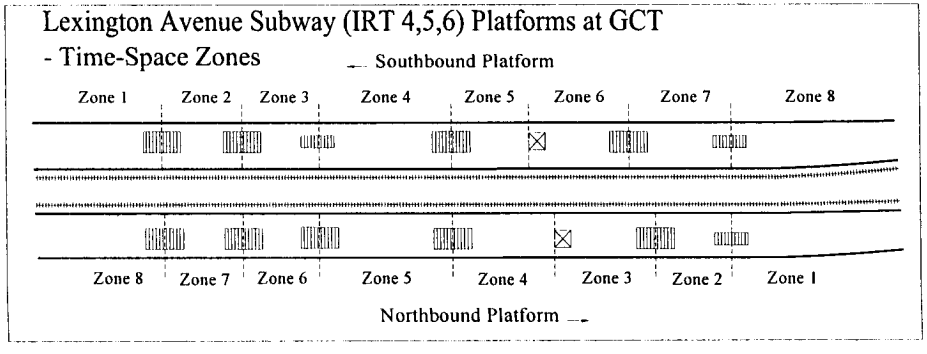


Table M - 23
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
1999 EXISTING CONDITIONS 15 MINUTE AM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	15	**16,725**	375	1	7	2,625	1,115	37	224	0.17	184.2	16	2,947	**5,572**	**33%**	**C/D or better**
Zone 2	580	15	**8,697**	75	1	7	525	150	26	224	0.12	17.4	16	279	**804**	**9%**	**C/D or better**
Zone 3	865	15	**12,975**	150	1	7	1,050	910	40	224	0.18	162.5	16	2,600	**3,650**	**28%**	**C/D or better**
Zone 4	835	15	**12,525**	375	1	7	2,625	180	35	224	0.16	28.1	16	450	**3,075**	**25%**	**C/D or better**
Zone 5	970	15	**14,550**	975	1	7	6,825	1,695	49	224	0.22	370.8	16	5,933	**12,758**	**88%**	**C/D or better**
Zone 6	575	15	**8,625**	225	1	7	1,575	405	30	224	0.13	54.2	16	868	**2,443**	**28%**	**C/D or better**
Zone 7	550	15	**8,250**	225	1	7	1,575	490	29	224	0.13	63.4	16	1,015	**2,590**	**31%**	**C/D or better**
Zone 8	2,165	15	**32,475**	225	1	7	1,575	580	48	224	0.21	124.3	16	1,989	**3,564**	**11%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	15	**28,800**	675	1	7	4,725	1,705	51	224	0.23	388.2	16	6,211	**10,936**	**38%**	**C/D or better**
Zone 2	570	15	**8,550**	300	1	7	2,100	1,605	27	224	0.12	193.5	16	3,095	**5,195**	**61%**	**C/D or better**
Zone 3	610	15	**9,150**	150	1	7	1,050	390	30	224	0.13	52.2	16	836	**1,886**	**21%**	**C/D or better**
Zone 4	1,050	15	**15,750**	525	1	7	3,675	1,505	49	224	0.22	329.2	16	5,268	**8,943**	**57%**	**C/D or better**
Zone 5	330	15	**4,950**	225	1	7	1,575	195	21	224	0.09	18.3	16	293	**1,868**	**38%**	**C/D or better**
Zone 6	810	15	**12,150**	300	1	7	2,100	1,335	42	224	0.19	250.3	16	4,005	**6,105**	**50%**	**C/D or better**
Zone 7	770	15	**11,550**	300	1	7	2,100	210	33	224	0.15	30.9	16	495	**2,595**	**22%**	**C/D or better**
Zone 8	1,155	15	**17,325**	375	1	7	2,625	995	29	224	0.13	128.8	16	2,061	**4,686**	**27%**	**C/D or better**

NOTES:
(1) Analysis period is the 15-minute peak AM period (8:35-8:50).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 square feet per pedestrian signifies LOS C/D conditions.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 feet per minute signifies LOS C/D conditions.
(6) Average walk space of 16 square feet per pedestrian signifies LOS C/D conditions.

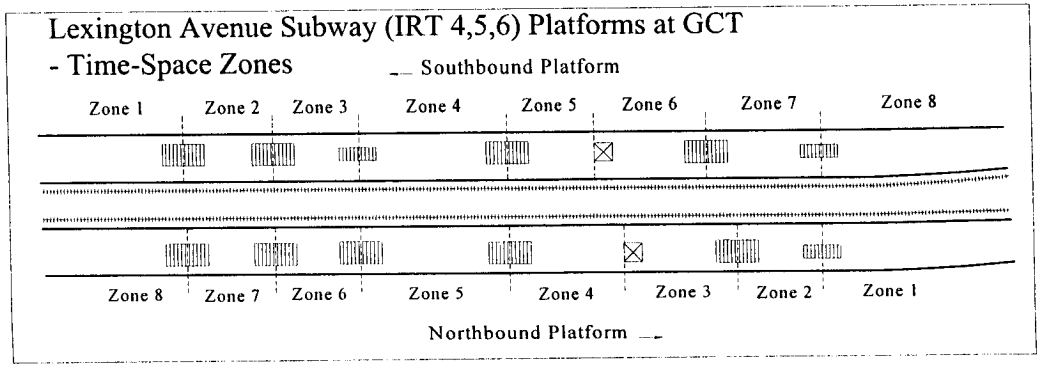


Table M - 23
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
1999 EXISTING CONDITIONS 5 MINUTE PM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	5	**5,575**	200	1	7	1,400	355	37	224	0.17	58.6	16	938	**2,338**	**42%**	**C/D or better**
Zone 2	580	5	**2,899**	50	1	7	350	55	26	224	0.12	6.4	16	102	**452**	**16%**	**C/D or better**
Zone 3	865	5	**4,325**	125	1	7	875	410	40	224	0.18	73.2	16	1,171	**2,046**	**47%**	**C/D or better**
Zone 4	835	5	**4,175**	100	1	7	700	115	35	224	0.16	18.0	16	288	**988**	**24%**	**C/D or better**
Zone 5	970	5	**4,850**	200	1	7	1,400	665	49	224	0.22	145.5	16	2,328	**3,728**	**77%**	**C/D or better**
Zone 6	575	5	**2,875**	100	1	7	700	125	30	224	0.13	16.7	16	268	**968**	**34%**	**C/D or better**
Zone 7	550	5	**2,750**	100	1	7	700	370	29	224	0.13	47.9	16	766	**1,466**	**53%**	**C/D or better**
Zone 8	2,165	5	**10,825**	400	1	7	2,800	400	48	224	0.21	85.7	16	1,371	**4,171**	**39%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	5	**9,600**	275	1	7	1,925	280	51	224	0.23	63.8	16	1,020	**2,945**	**31%**	**C/D or better**
Zone 2	570	5	**2,850**	125	1	7	875	430	27	224	0.12	51.8	16	829	**1,704**	**60%**	**C/D or better**
Zone 3	610	5	**3,050**	75	1	7	525	120	30	224	0.13	16.1	16	257	**782**	**26%**	**C/D or better**
Zone 4	1,050	5	**5,250**	100	1	7	700	295	49	224	0.22	64.5	16	1,033	**1,733**	**33%**	**C/D or better**
Zone 5	330	5	**1,650**	50	1	7	350	100	21	224	0.09	9.4	16	150	**500**	**30%**	**C/D or better**
Zone 6	810	5	**4,050**	100	1	7	700	270	42	224	0.19	50.6	16	810	**1,510**	**37%**	**C/D or better**
Zone 7	770	5	**3,850**	125	1	7	875	65	33	224	0.15	9.6	16	153	**1,028**	**27%**	**C/D or better**
Zone 8	1,155	5	**5,775**	200	1	7	1,400	305	29	224	0.13	39.5	16	632	**2,032**	**35%**	**C/D or better**

NOTES:
(1) Analysis period is the peak 5 minutes within the 15-minute peak PM period (5:10-5:25).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 square feet per pedestrian signifies LOS C/D conditions.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 feet per minute signifies LOS C/D conditions.
(6) Average walk space of 16 square feet per pedestrian signifies LOS C/D conditions.

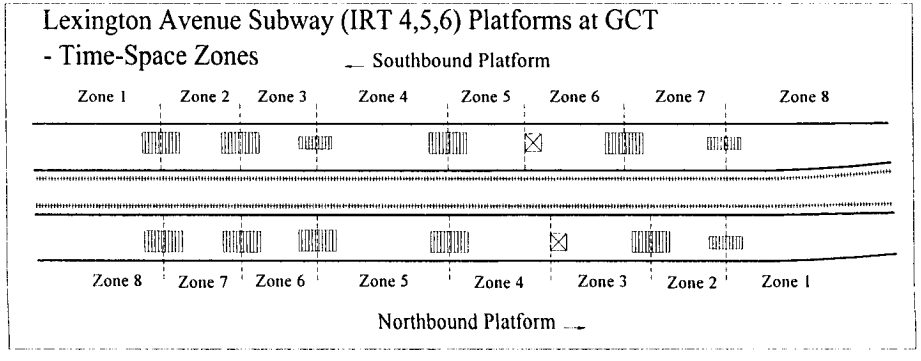


Table M - 23
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
1999 EXISTING CONDITIONS 15 MINUTE PM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	15	**16,725**	600	1	7	4,200	975	37	224	0.17	161.0	16	2,577	**6,777**	**41%**	**C/D or better**
Zone 2	580	15	**8,697**	150	1	7	1,050	165	26	224	0.12	19.2	16	306	**1,356**	**16%**	**C/D or better**
Zone 3	865	15	**12,975**	375	1	7	2,625	1,070	40	224	0.18	191.1	16	3,057	**5,682**	**44%**	**C/D or better**
Zone 4	835	15	**12,525**	300	1	7	2,100	345	35	224	0.16	53.9	16	863	**2,963**	**24%**	**C/D or better**
Zone 5	970	15	**14,550**	600	1	7	4,200	1,755	49	224	0.22	383.9	16	6,143	**10,343**	**71%**	**C/D or better**
Zone 6	575	15	**8,625**	300	1	7	2,100	375	30	224	0.13	50.2	16	804	**2,904**	**34%**	**C/D or better**
Zone 7	550	15	**8,250**	300	1	7	2,100	955	29	224	0.13	123.6	16	1,978	**4,078**	**49%**	**C/D or better**
Zone 8	2,165	15	**32,475**	1,200	1	7	8,400	925	48	224	0.21	198.2	16	3,171	**11,571**	**36%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	15	**28,800**	825	1	7	5,775	750	51	224	0.23	170.8	16	2,732	**8,507**	**30%**	**C/D or better**
Zone 2	570	15	**8,550**	375	1	7	2,625	1,215	27	224	0.12	146.5	16	2,343	**4,968**	**58%**	**C/D or better**
Zone 3	610	15	**9,150**	225	1	7	1,575	360	30	224	0.13	48.2	16	771	**2,346**	**26%**	**C/D or better**
Zone 4	1,050	15	**15,750**	300	1	7	2,100	815	49	224	0.22	178.3	16	2,853	**4,953**	**31%**	**C/D or better**
Zone 5	330	15	**4,950**	150	1	7	1,050	300	21	224	0.09	28.1	16	450	**1,500**	**30%**	**C/D or better**
Zone 6	810	15	**12,150**	300	1	7	2,100	705	42	224	0.19	132.2	16	2,115	**4,215**	**35%**	**C/D or better**
Zone 7	770	15	**11,550**	375	1	7	2,625	195	33	224	0.15	28.7	16	460	**3,085**	**27%**	**C/D or better**
Zone 8	1,155	15	**17,325**	600	1	7	4,200	825	29	224	0.13	106.8	16	1,709	**5,909**	**34%**	**C/D or better**

NOTES:
(1) Analysis period is the 15-minute peak PM period (5:10-5:25).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 square feet per pedestrian signifies LOS C/D conditions.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 feet per minute signifies LOS C/D conditions.
(6) Average walk space of 16 square feet per pedestrian signifies LOS C/D conditions.

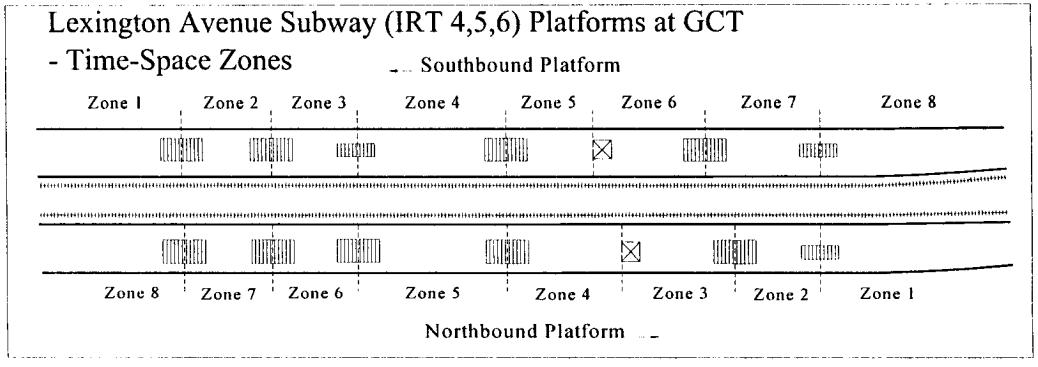


TABLE M-24

2010 NO BUILD
SUBWAY PLATFORM
TIME-SPACE ANALYSES

Table M - 24
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 NO BUILD CONDITIONS 5 MINUTE AM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	5	**5,575**	125	1	7	875	455	37	224	0.17	75.2	16	1,203	**2,078**	**37%**	**C/D or better**
Zone 2	580	5	**2,899**	25	1	7	175	55	26	224	0.12	6.4	16	102	**277**	**10%**	**C/D or better**
Zone 3	865	5	**4,325**	50	1	7	350	375	40	224	0.18	67.0	16	1,071	**1,421**	**33%**	**C/D or better**
Zone 4	835	5	**4,175**	125	1	7	875	60	35	224	0.16	9.4	16	150	**1,025**	**25%**	**C/D or better**
Zone 5	970	5	**4,850**	350	1	7	2,450	645	49	224	0.22	141.1	16	2,258	**4,708**	**97%**	**C/D - Mid-D**
Zone 6	575	5	**2,875**	75	1	7	525	145	30	224	0.13	19.4	16	311	**836**	**29%**	**C/D or better**
Zone 7	550	5	**2,750**	75	1	7	525	200	29	224	0.13	25.9	16	414	**939**	**34%**	**C/D or better**
Zone 8	2,165	5	**10,825**	75	1	7	525	235	48	224	0.21	50.4	16	806	**1,331**	**12%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	5	**9,600**	225	1	7	1,575	675	51	224	0.23	153.7	16	2,459	**4,034**	**42%**	**C/D or better**
Zone 2	570	5	**2,850**	100	1	7	700	690	27	224	0.12	83.2	16	1,331	**2,031**	**71%**	**C/D or better**
Zone 3	610	5	**3,050**	50	1	7	350	140	30	224	0.13	18.8	16	300	**650**	**21%**	**C/D or better**
Zone 4	1,050	5	**5,250**	175	1	7	1,225	670	49	224	0.22	146.6	16	2,345	**3,570**	**68%**	**C/D or better**
Zone 5	330	5	**1,650**	75	1	7	525	65	21	224	0.09	6.1	16	98	**623**	**38%**	**C/D or better**
Zone 6	810	5	**4,050**	100	1	7	700	505	42	224	0.19	94.7	16	1,515	**2,215**	**55%**	**C/D or better**
Zone 7	770	5	**3,850**	100	1	7	700	75	33	224	0.15	11.0	16	177	**877**	**23%**	**C/D or better**
Zone 8	1,155	5	**5,775**	125	1	7	875	425	29	224	0.13	55.0	16	880	**1,755**	**30%**	**C/D or better**

NOTES:
(1) Analysis period is the peak 5 minutes within the 15-minute peak AM period (8:35-8:50).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 square feet per pedestrian signifies LOS C/D conditions.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 feet per minute signifies LOS C/D conditions.
(6) Average walk space of 16 square feet per pedestrian signifies LOS C/D conditions.

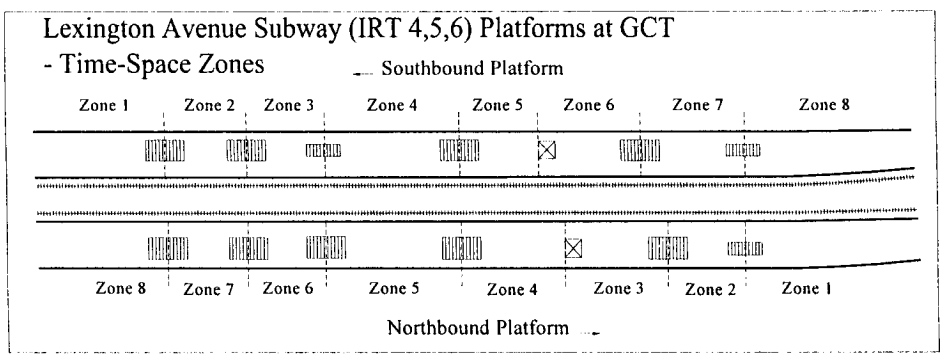


Table M - 24
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 NO BUILD CONDITIONS 15 MINUTE AM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	15	**16,725**	375	1	7	2,625	1,180	37	224	0.17	194.9	16	3,119	**5,744**	**34%**	**C/D or better**
Zone 2	580	15	**8,697**	75	1	7	525	160	26	224	0.12	18.6	16	297	**822**	**9%**	**C/D or better**
Zone 3	865	15	**12,975**	150	1	7	1,050	965	40	224	0.18	172.3	16	2,757	**3,807**	**29%**	**C/D or better**
Zone 4	835	15	**12,525**	375	1	7	2,625	195	35	224	0.16	30.5	16	488	**3,113**	**25%**	**C/D or better**
Zone 5	970	15	**14,550**	1,050	1	7	7,350	1,825	49	224	0.22	399.2	16	6,388	**13,738**	**94%**	**C/D - Mid-D**
Zone 6	575	15	**8,625**	225	1	7	1,575	445	30	224	0.13	59.6	16	954	**2,529**	**29%**	**C/D or better**
Zone 7	550	15	**8,250**	225	1	7	1,575	530	29	224	0.13	68.6	16	1,098	**2,673**	**32%**	**C/D or better**
Zone 8	2,165	15	**32,475**	225	1	7	1,575	610	48	224	0.21	130.7	16	2,091	**3,666**	**11%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	15	**28,800**	675	1	7	4,725	1,845	51	224	0.23	420.1	16	6,721	**11,446**	**40%**	**C/D or better**
Zone 2	570	15	**8,550**	300	1	7	2,100	1,765	27	224	0.12	212.7	16	3,404	**5,504**	**64%**	**C/D or better**
Zone 3	610	15	**9,150**	150	1	7	1,050	425	30	224	0.13	56.9	16	911	**1,961**	**21%**	**C/D or better**
Zone 4	1,050	15	**15,750**	525	1	7	3,675	1,635	49	224	0.22	357.7	16	5,723	**9,398**	**60%**	**C/D or better**
Zone 5	330	15	**4,950**	225	1	7	1,575	205	21	224	0.09	19.2	16	308	**1,883**	**38%**	**C/D or better**
Zone 6	810	15	**12,150**	300	1	7	2,100	1,450	42	224	0.19	271.9	16	4,350	**6,450**	**53%**	**C/D or better**
Zone 7	770	15	**11,550**	300	1	7	2,100	230	33	224	0.15	33.9	16	542	**2,642**	**23%**	**C/D or better**
Zone 8	1,155	15	**17,325**	375	1	7	2,625	1,075	29	224	0.13	139.2	16	2,227	**4,852**	**28%**	**C/D or better**

NOTES:
(1) Analysis period is the 15-minute peak AM period (8:35-8:50).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 square feet per pedestrian signifies LOS C/D conditions.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 feet per minute signifies LOS C/D conditions.
(6) Average walk space of 16 square feet per pedestrian signifies LOS C/D conditions.

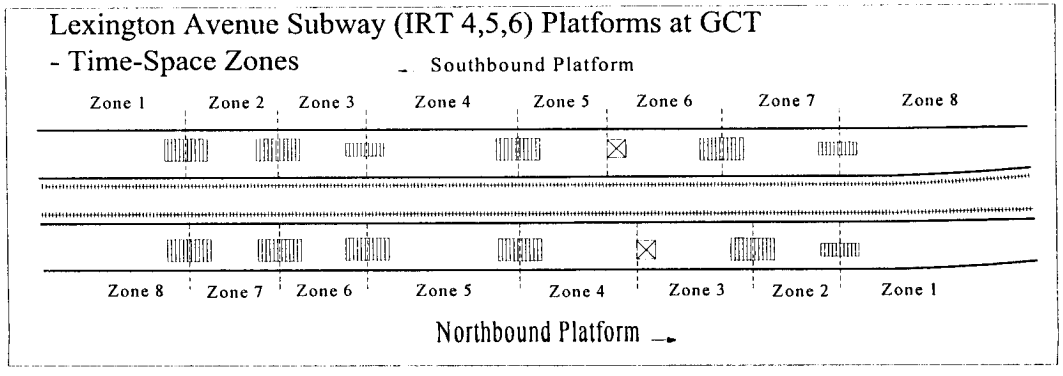


Table M - 24
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 NO BUILD CONDITIONS 5 MINUTE PM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	5	**5,575**	200	1	7	1,400	490	37	224	0.17	80.9	16	1,295	**2,695**	**48%**	**C/D or better**
Zone 2	580	5	**2,899**	50	1	7	350	55	26	224	0.12	6.4	16	102	**452**	**16%**	**C/D or better**
Zone 3	865	5	**4,325**	125	1	7	875	445	40	224	0.18	79.5	16	1,271	**2,146**	**50%**	**C/D or better**
Zone 4	835	5	**4,175**	100	1	7	700	125	35	224	0.16	19.5	16	313	**1,013**	**24%**	**C/D or better**
Zone 5	970	5	**4,850**	200	1	7	1,400	725	49	224	0.22	158.6	16	2,538	**3,938**	**81%**	**C/D or better**
Zone 6	575	5	**2,875**	100	1	7	700	135	30	224	0.13	18.1	16	289	**989**	**34%**	**C/D or better**
Zone 7	550	5	**2,750**	100	1	7	700	390	29	224	0.13	50.5	16	808	**1,508**	**55%**	**C/D or better**
Zone 8	2,165	5	**10,825**	425	1	7	2,975	430	48	224	0.21	92.1	16	1,474	**4,449**	**41%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	5	**9,600**	300	1	7	2,100	300	51	224	0.23	68.3	16	1,093	**3,193**	**33%**	**C/D or better**
Zone 2	570	5	**2,850**	125	1	7	875	460	27	224	0.12	55.4	16	887	**1,762**	**62%**	**C/D or better**
Zone 3	610	5	**3,050**	75	1	7	525	125	30	224	0.13	16.7	16	268	**793**	**26%**	**C/D or better**
Zone 4	1,050	5	**5,250**	100	1	7	700	315	49	224	0.22	68.9	16	1,103	**1,803**	**34%**	**C/D or better**
Zone 5	330	5	**1,650**	50	1	7	350	110	21	224	0.09	10.3	16	165	**515**	**31%**	**C/D or better**
Zone 6	810	5	**4,050**	100	1	7	700	280	42	224	0.19	52.5	16	840	**1,540**	**38%**	**C/D or better**
Zone 7	770	5	**3,850**	125	1	7	875	65	33	224	0.15	9.6	16	153	**1,028**	**27%**	**C/D or better**
Zone 8	1,155	5	**5,775**	200	1	7	1,400	325	29	224	0.13	42.1	16	673	**2,073**	**36%**	**C/D or better**

NOTES:
(1) Analysis period is the peak 5 minutes within the 15-minute peak PM period (5:10-5:25).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 square feet per pedestrian signifies LOS C/D conditions.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 feet per minute signifies LOS C/D conditions.
(6) Average walk space of 16 square feet per pedestrian signifies LOS C/D conditions.

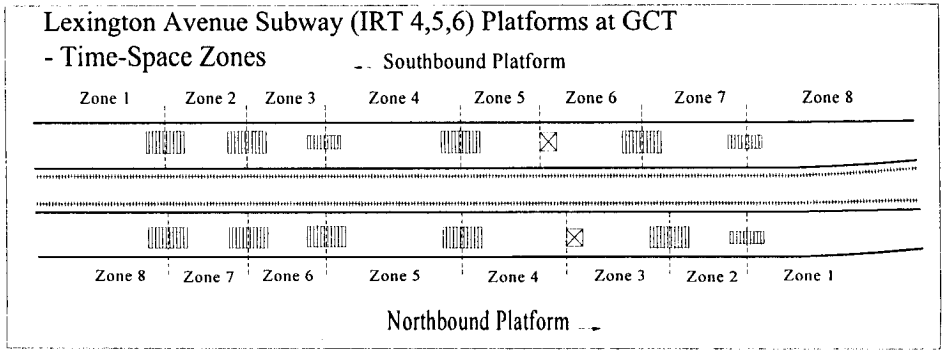


Table M - 24
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 NO BUILD CONDITIONS 15 MINUTE PM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	15	**16,725**	600	1	7	4,200	1,065	37	224	0.17	175.9	16	2,815	**7,015**	**42%**	**C/D or better**
Zone 2	580	15	**8,697**	150	1	7	1,050	175	26	224	0.12	20.3	16	325	**1,375**	**16%**	**C/D or better**
Zone 3	865	15	**12,975**	375	1	7	2,625	1,165	40	224	0.18	208.0	16	3,329	**5,954**	**46%**	**C/D or better**
Zone 4	835	15	**12,525**	300	1	7	2,100	375	35	224	0.16	58.6	16	938	**3,038**	**24%**	**C/D or better**
Zone 5	970	15	**14,550**	600	1	7	4,200	1,895	49	224	0.22	414.5	16	6,633	**10,833**	**74%**	**C/D or better**
Zone 6	575	15	**8,625**	300	1	7	2,100	400	30	224	0.13	53.6	16	857	**2,957**	**34%**	**C/D or better**
Zone 7	550	15	**8,250**	300	1	7	2,100	1,030	29	224	0.13	133.3	16	2,134	**4,234**	**51%**	**C/D or better**
Zone 8	2,165	15	**32,475**	1,275	1	7	8,925	1,000	48	224	0.21	214.3	16	3,429	**12,354**	**38%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	15	**28,800**	900	1	7	6,300	800	51	224	0.23	182.1	16	2,914	**9,214**	**32%**	**C/D or better**
Zone 2	570	15	**8,550**	375	1	7	2,625	1,315	27	224	0.12	158.5	16	2,536	**5,161**	**60%**	**C/D or better**
Zone 3	610	15	**9,150**	225	1	7	1,575	390	30	224	0.13	52.2	16	836	**2,411**	**26%**	**C/D or better**
Zone 4	1,050	15	**15,750**	300	1	7	2,100	870	49	224	0.22	190.3	16	3,045	**5,145**	**33%**	**C/D or better**
Zone 5	330	15	**4,950**	150	1	7	1,050	325	21	224	0.09	30.5	16	488	**1,538**	**31%**	**C/D or better**
Zone 6	810	15	**12,150**	300	1	7	2,100	750	42	224	0.19	140.6	16	2,250	**4,350**	**36%**	**C/D or better**
Zone 7	770	15	**11,550**	375	1	7	2,625	195	33	224	0.15	28.7	16	460	**3,085**	**27%**	**C/D or better**
Zone 8	1,155	15	**17,325**	600	1	7	4,200	875	29	224	0.13	113.3	16	1,813	**6,013**	**35%**	**C/D or better**

NOTES:
(1) Analysis period is the 15-minute peak PM period (5:10-5:25).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 square feet per pedestrian signifies LOS C/D conditions.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 feet per minute signifies LOS C/D conditions.
(6) Average walk space of 16 square feet per pedestrian signifies LOS C/D conditions.

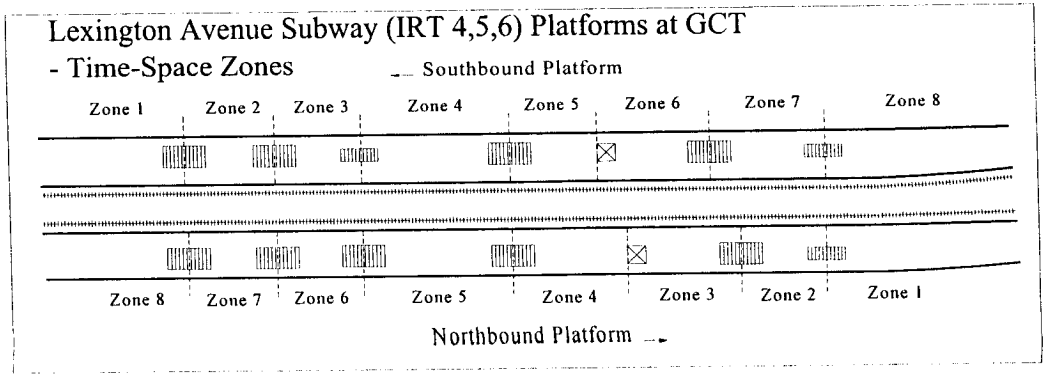


TABLE M-25

2020 NO BUILD
SUBWAY PLATFORM
TIME-SPACE ANALYSES

Table M - 25
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 NO BUILD CONDITIONS 5 MINUTE AM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	5	**5,575**	150	1	7	1,050	475	37	224	0.17	78.5	16	1,255	**2,305**	**41%**	**C/D or better**
Zone 2	580	5	**2,899**	25	1	7	175	60	26	224	0.12	7.0	16	111	**286**	**10%**	**C/D or better**
Zone 3	865	5	**4,325**	50	1	7	350	395	40	224	0.18	70.5	16	1,129	**1,479**	**34%**	**C/D or better**
Zone 4	835	5	**4,175**	150	1	7	1,050	70	35	224	0.16	10.9	16	175	**1,225**	**29%**	**C/D or better**
Zone 5	970	5	**4,850**	400	1	5	2,000	695	49	211	0.23	161.4	13.5	2,179	**4,179**	**86%**	**Mid-D**
Zone 6	575	5	**2,875**	100	1	7	700	160	30	224	0.13	21.4	16	343	**1,043**	**36%**	**C/D or better**
Zone 7	550	5	**2,750**	100	1	7	700	210	29	224	0.13	27.2	16	435	**1,135**	**41%**	**C/D or better**
Zone 8	2,165	5	**10,825**	100	1	7	700	240	48	224	0.21	51.4	16	823	**1,523**	**14%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	5	**9,600**	275	1	7	1,925	725	51	224	0.23	165.1	16	2,641	**4,566**	**48%**	**C/D or better**
Zone 2	570	5	**2,850**	125	1	7	875	745	27	224	0.12	89.8	16	1,437	**2,312**	**81%**	**C/D or better**
Zone 3	610	5	**3,050**	50	1	7	350	155	30	224	0.13	20.8	16	332	**682**	**22%**	**C/D or better**
Zone 4	1,050	5	**5,250**	225	1	7	1,575	720	49	224	0.22	157.5	16	2,520	**4,095**	**78%**	**C/D or better**
Zone 5	330	5	**1,650**	100	1	7	700	75	21	224	0.09	7.0	16	113	**813**	**49%**	**C/D or better**
Zone 6	810	5	**4,050**	125	1	7	875	545	42	224	0.19	102.2	16	1,635	**2,510**	**62%**	**C/D or better**
Zone 7	770	5	**3,850**	125	1	7	875	85	33	224	0.15	12.5	16	200	**1,075**	**28%**	**C/D or better**
Zone 8	1,155	5	**5,775**	150	1	7	1,050	460	29	224	0.13	59.6	16	953	**2,003**	**35%**	**C/D or better**

NOTES:
(1) Analysis period is the peak 5 minutes within the 15-minute peak AM period (8:35-8:50).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 and 5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 and 211 feet per minute signify LOS C/D and mid-D conditions, respectively.
(6) Average walk space of 16 and 13.5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.

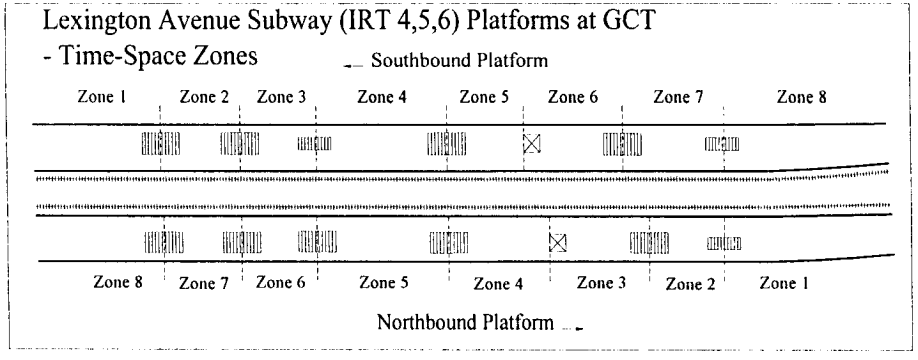


Table M - 25
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 NO BUILD CONDITIONS 15 MINUTE AM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	15	**16,725**	450	1	7	3,150	1,245	37	224	0.17	205.6	16	3,290	**6,440**	**39%**	**C/D or better**
Zone 2	580	15	**8,697**	75	1	7	525	175	26	224	0.12	20.3	16	325	**850**	**10%**	**C/D or better**
Zone 3	865	15	**12,975**	150	1	7	1,050	1,015	40	224	0.18	181.3	16	2,900	**3,950**	**30%**	**C/D or better**
Zone 4	835	15	**12,525**	450	1	7	3,150	205	35	224	0.16	32.0	16	513	**3,663**	**29%**	**C/D or better**
Zone 5	970	15	**14,550**	1,200	1	5	6,000	1,965	49	211	0.23	456.3	13.5	6,160	**12,160**	**84%**	**Mid-D**
Zone 6	575	15	**8,625**	300	1	7	2,100	470	30	224	0.13	62.9	16	1,007	**3,107**	**36%**	**C/D or better**
Zone 7	550	15	**8,250**	300	1	7	2,100	580	29	224	0.13	75.1	16	1,201	**3,301**	**40%**	**C/D or better**
Zone 8	2,165	15	**32,475**	300	1	7	2,100	650	48	224	0.21	139.3	16	2,229	**4,329**	**13%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	15	**28,800**	825	1	7	5,775	1,980	51	224	0.23	450.8	16	7,213	**12,988**	**45%**	**C/D or better**
Zone 2	570	15	**8,550**	375	1	7	2,625	1,900	27	224	0.12	229.0	16	3,664	**6,289**	**74%**	**C/D or better**
Zone 3	610	15	**9,150**	150	1	7	1,050	465	30	224	0.13	62.3	16	996	**2,046**	**22%**	**C/D or better**
Zone 4	1,050	15	**15,750**	675	1	7	4,725	1,760	49	224	0.22	385.0	16	6,160	**10,885**	**69%**	**C/D or better**
Zone 5	330	15	**4,950**	300	1	7	2,100	225	21	224	0.09	21.1	16	338	**2,438**	**49%**	**C/D or better**
Zone 6	810	15	**12,150**	375	1	7	2,625	1,550	42	224	0.19	290.6	16	4,650	**7,275**	**60%**	**C/D or better**
Zone 7	770	15	**11,550**	375	1	7	2,625	245	33	224	0.15	36.1	16	578	**3,203**	**28%**	**C/D or better**
Zone 8	1,155	15	**17,325**	450	1	7	3,150	1,145	29	224	0.13	148.2	16	2,372	**5,522**	**32%**	**C/D or better**

NOTES:
(1) Analysis period is the 15-minute peak AM period (8:35-8:50).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 and 5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 and 211 feet per minute signify LOS C/D and mid-D conditions, respectively.
(6) Average walk space of 16 and 13.5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.

Lexington Avenue Subway (IRT 4,5,6) Platforms at GCT
- Time-Space Zones

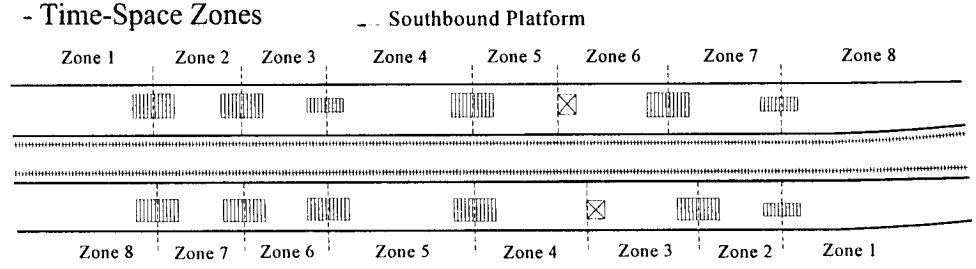


Table M - 25
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 NO BUILD CONDITIONS 5 MINUTE PM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	5	**5,575**	225	1	7	1,575	530	37	224	0.17	87.5	16	1,401	**2,976**	**53%**	**C/D or better**
Zone 2	580	5	**2,899**	50	1	7	350	60	26	224	0.12	7.0	16	111	**461**	**16%**	**C/D or better**
Zone 3	865	5	**4,325**	125	1	7	875	485	40	224	0.18	86.6	16	1,386	**2,261**	**52%**	**C/D or better**
Zone 4	835	5	**4,175**	100	1	7	700	130	35	224	0.16	20.3	16	325	**1,025**	**25%**	**C/D or better**
Zone 5	970	5	**4,850**	225	1	7	1,575	770	49	224	0.22	168.4	16	2,695	**4,270**	**88%**	**C/D or better**
Zone 6	575	5	**2,875**	100	1	7	700	140	30	224	0.13	18.8	16	300	**1,000**	**35%**	**C/D or better**
Zone 7	550	5	**2,750**	100	1	7	700	425	29	224	0.13	55.0	16	880	**1,580**	**57%**	**C/D or better**
Zone 8	2,165	5	**10,825**	450	1	7	3,150	460	48	224	0.21	98.6	16	1,577	**4,727**	**44%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	5	**9,600**	300	1	7	2,100	315	51	224	0.23	71.7	16	1,148	**3,248**	**34%**	**C/D or better**
Zone 2	570	5	**2,850**	125	1	7	875	475	27	224	0.12	57.3	16	916	**1,791**	**63%**	**C/D or better**
Zone 3	610	5	**3,050**	75	1	7	525	135	30	224	0.13	18.1	16	289	**814**	**27%**	**C/D or better**
Zone 4	1,050	5	**5,250**	100	1	7	700	340	49	224	0.22	74.4	16	1,190	**1,890**	**36%**	**C/D or better**
Zone 5	330	5	**1,650**	50	1	7	350	115	21	224	0.09	10.8	16	173	**523**	**32%**	**C/D or better**
Zone 6	810	5	**4,050**	100	1	7	700	300	42	224	0.19	56.3	16	900	**1,600**	**40%**	**C/D or better**
Zone 7	770	5	**3,850**	125	1	7	875	70	33	224	0.15	10.3	16	165	**1,040**	**27%**	**C/D or better**
Zone 8	1,155	5	**5,775**	225	1	7	1,575	335	29	224	0.13	43.4	16	694	**2,269**	**39%**	**C/D or better**

NOTES:
(1) Analysis period is the peak 5 minutes within the 15-minute peak PM period (5:10-5:25).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 square feet per pedestrian signifies LOS C/D conditions.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 feet per minute signifies LOS C/D conditions.
(6) Average walk space of 16 square feet per pedestrian signifies LOS C/D conditions.

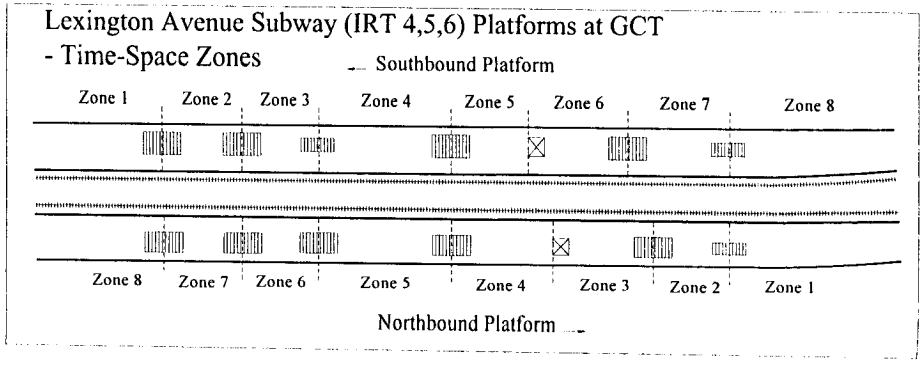


Table M - 25
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 NO BUILD CONDITIONS 15 MINUTE PM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	15	**16,725**	675	1	7	4,725	1,150	37	224	0.17	190.0	16	3,039	**7,764**	**46%**	**C/D or better**
Zone 2	580	15	**8,697**	150	1	7	1,050	180	26	224	0.12	20.9	16	334	**1,384**	**16%**	**C/D or better**
Zone 3	865	15	**12,975**	375	1	7	2,625	1,255	40	224	0.18	224.1	16	3,586	**6,211**	**48%**	**C/D or better**
Zone 4	835	15	**12,525**	300	1	7	2,100	400	35	224	0.16	62.5	16	1,000	**3,100**	**25%**	**C/D or better**
Zone 5	970	15	**14,550**	675	1	7	4,725	2,020	49	224	0.22	441.9	16	7,070	**11,795**	**81%**	**C/D or better**
Zone 6	575	15	**8,625**	300	1	7	2,100	435	30	224	0.13	58.3	16	932	**3,032**	**35%**	**C/D or better**
Zone 7	550	15	**8,250**	300	1	7	2,100	1,090	29	224	0.13	141.1	16	2,258	**4,358**	**53%**	**C/D or better**
Zone 8	2,165	15	**32,475**	1,350	1	7	9,450	1,065	48	224	0.21	228.2	16	3,651	**13,101**	**40%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	15	**28,800**	900	1	7	6,300	845	51	224	0.23	192.4	16	3,078	**9,378**	**33%**	**C/D or better**
Zone 2	570	15	**8,550**	375	1	7	2,625	1,360	27	224	0.12	163.9	16	2,623	**5,248**	**61%**	**C/D or better**
Zone 3	610	15	**9,150**	225	1	7	1,575	415	30	224	0.13	55.6	16	889	**2,464**	**27%**	**C/D or better**
Zone 4	1,050	15	**15,750**	300	1	7	2,100	935	49	224	0.22	204.5	16	3,273	**5,373**	**34%**	**C/D or better**
Zone 5	330	15	**4,950**	150	1	7	1,050	350	21	224	0.09	32.8	16	525	**1,575**	**32%**	**C/D or better**
Zone 6	810	15	**12,150**	300	1	7	2,100	795	42	224	0.19	149.1	16	2,385	**4,485**	**37%**	**C/D or better**
Zone 7	770	15	**11,550**	375	1	7	2,625	210	33	224	0.15	30.9	16	495	**3,120**	**27%**	**C/D or better**
Zone 8	1,155	15	**17,325**	675	1	7	4,725	915	29	224	0.13	118.5	16	1,895	**6,620**	**38%**	**C/D or better**

NOTES:
(1) Analysis period is the 15-minute peak PM period (5:10-5:25).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 square feet per pedestrian signifies LOS C/D conditions.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 feet per minute signifies LOS C/D conditions.
(6) Average walk space of 16 square feet per pedestrian signifies LOS C/D conditions.

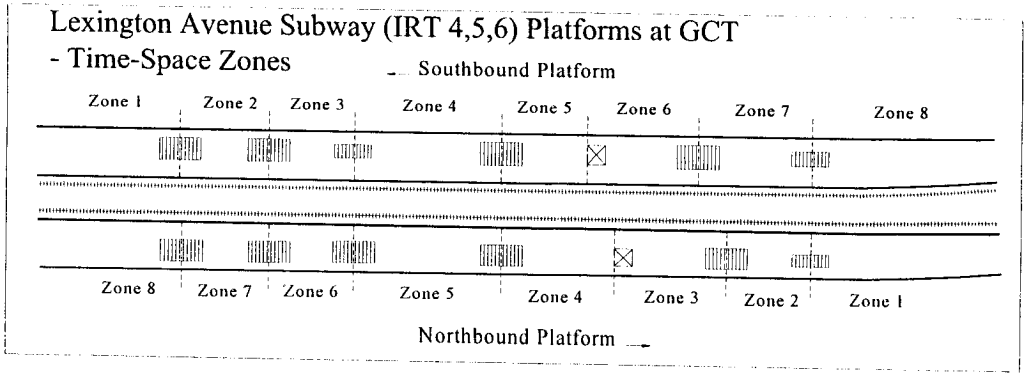


TABLE M-26

2010 BUILD
SUBWAY PLATFORM
TIME-SPACE ANALYSES

Table M - 26
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 BUILD CONDITIONS 5 MINUTE AM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	5	**5,575**	125	1	7	875	460	37	224	0.17	76.0	16	1,216	**2,091**	**38%**	**C/D or better**
Zone 2	580	5	**2,899**	25	1	7	175	55	26	224	0.12	6.4	16	102	**277**	**10%**	**C/D or better**
Zone 3	865	5	**4,325**	50	1	7	350	380	40	224	0.18	67.9	16	1,086	**1,436**	**33%**	**C/D or better**
Zone 4	835	5	**4,175**	125	1	7	875	60	35	224	0.16	9.4	16	150	**1,025**	**25%**	**C/D or better**
Zone 5	970	5	**4,850**	400	1	5	2,000	695	49	211	0.23	161.4	13.5	2,179	**4,179**	**86%**	**Mid-D**
Zone 6	575	5	**2,875**	75	1	7	525	145	30	224	0.13	19.4	16	311	**836**	**29%**	**C/D or better**
Zone 7	550	5	**2,750**	75	1	7	525	220	29	224	0.13	28.5	16	456	**981**	**36%**	**C/D or better**
Zone 8	2,165	5	**10,825**	100	1	7	700	240	48	224	0.21	51.4	16	823	**1,523**	**14%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	5	**9,600**	275	1	7	1,925	730	51	224	0.23	166.2	16	2,659	**4,584**	**48%**	**C/D or better**
Zone 2	570	5	**2,850**	125	1	7	875	790	27	224	0.12	95.2	16	1,524	**2,399**	**84%**	**C/D or better**
Zone 3	610	5	**3,050**	50	1	7	350	140	30	224	0.13	18.8	16	300	**650**	**21%**	**C/D or better**
Zone 4	1,050	5	**5,250**	225	1	7	1,575	735	49	224	0.22	160.8	16	2,573	**4,148**	**79%**	**C/D or better**
Zone 5	330	5	**1,650**	75	1	7	525	65	21	224	0.09	6.1	16	98	**623**	**38%**	**C/D or better**
Zone 6	810	5	**4,050**	100	1	7	700	515	42	224	0.19	96.6	16	1,545	**2,245**	**55%**	**C/D or better**
Zone 7	770	5	**3,850**	100	1	7	700	75	33	224	0.15	11.0	16	177	**877**	**23%**	**C/D or better**
Zone 8	1,155	5	**5,775**	125	1	7	875	435	29	224	0.13	56.3	16	901	**1,776**	**31%**	**C/D or better**

NOTES:

(1) Analysis period is the peak 5 minutes within the 15-minute peak AM period (8:35-8:50).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 and 5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 and 211 feet per minute signify LOS C/D and mid-D conditions, respectively.
(6) Average walk space of 16 and 13.5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.

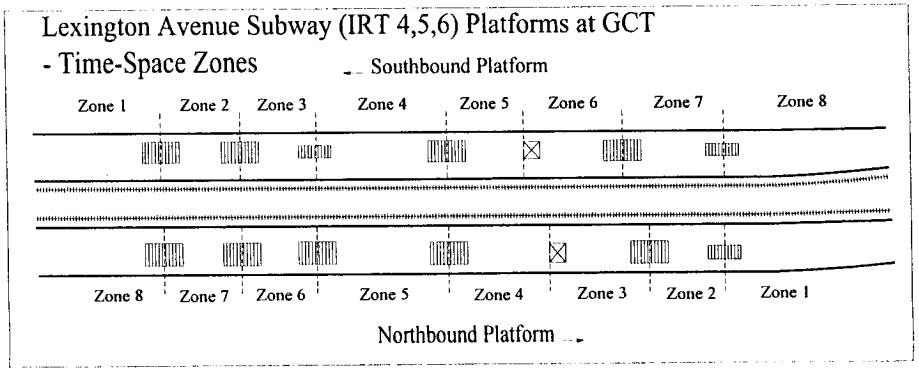


Table M - 26
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 BUILD CONDITIONS 15 MINUTE AM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	15	**16,725**	375	1	7	2,625	1,195	37	224	0.17	197.4	16	3,158	**5,783**	**35%**	**C/D or better**
Zone 2	580	15	**8,697**	75	1	7	525	165	26	224	0.12	19.2	16	306	**831**	**10%**	**C/D or better**
Zone 3	865	15	**12,975**	150	1	7	1,050	975	40	224	0.18	174.1	16	2,786	**3,836**	**30%**	**C/D or better**
Zone 4	835	15	**12,525**	375	1	7	2,625	195	35	224	0.16	30.5	16	488	**3,113**	**25%**	**C/D or better**
Zone 5	970	15	**14,550**	1,200	1	5	6,000	1,975	49	211	0.23	458.6	13.5	6,192	**12,192**	**84%**	**Mid-D**
Zone 6	575	15	**8,625**	225	1	7	1,575	445	30	224	0.13	59.6	16	954	**2,529**	**29%**	**C/D or better**
Zone 7	550	15	**8,250**	225	1	7	1,575	590	29	224	0.13	76.4	16	1,222	**2,797**	**34%**	**C/D or better**
Zone 8	2,165	15	**32,475**	300	1	7	2,100	630	48	224	0.21	135.0	16	2,160	**4,260**	**13%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	15	**28,800**	825	1	7	5,775	2,035	51	224	0.23	463.3	16	7,413	**13,188**	**46%**	**C/D or better**
Zone 2	570	15	**8,550**	375	1	7	2,625	2,040	27	224	0.12	245.9	16	3,934	**6,559**	**77%**	**C/D or better**
Zone 3	610	15	**9,150**	150	1	7	1,050	425	30	224	0.13	56.9	16	911	**1,961**	**21%**	**C/D or better**
Zone 4	1,050	15	**15,750**	675	1	7	4,725	1,815	49	224	0.22	397.0	16	6,353	**11,078**	**70%**	**C/D or better**
Zone 5	330	15	**4,950**	225	1	7	1,575	205	21	224	0.09	19.2	16	308	**1,883**	**38%**	**C/D or better**
Zone 6	810	15	**12,150**	300	1	7	2,100	1,485	42	224	0.19	278.4	16	4,455	**6,555**	**54%**	**C/D or better**
Zone 7	770	15	**11,550**	300	1	7	2,100	240	33	224	0.15	35.4	16	566	**2,666**	**23%**	**C/D or better**
Zone 8	1,155	15	**17,325**	375	1	7	2,625	1,095	29	224	0.13	141.8	16	2,268	**4,893**	**28%**	**C/D or better**

NOTES:

(1) Analysis period is the 15-minute peak AM period (8:35-8:50).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 and 5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 and 211 feet per minute signify LOS C/D and mid-D conditions, respectively.
(6) Average walk space of 16 and 13.5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.

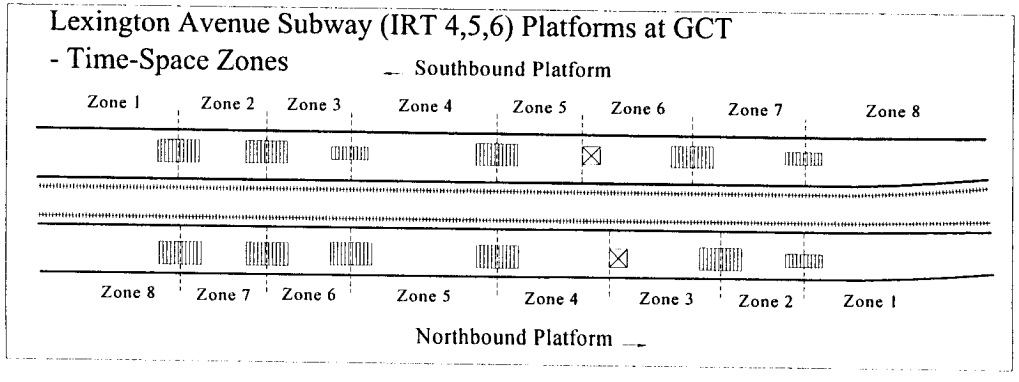


Table M - 26
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 BUILD CONDITIONS 5 MINUTE PM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	5	**5,575**	200	1	7	1,400	530	37	224	0.17	87.5	16	1,401	**2,801**	**50%**	**C/D or better**
Zone 2	580	5	**2,899**	50	1	7	350	55	26	224	0.12	6.4	16	102	**452**	**16%**	**C/D or better**
Zone 3	865	5	**4,325**	125	1	7	875	455	40	224	0.18	81.3	16	1,300	**2,175**	**50%**	**C/D or better**
Zone 4	835	5	**4,175**	100	1	7	700	125	35	224	0.16	19.5	16	313	**1,013**	**24%**	**C/D or better**
Zone 5	970	5	**4,850**	250	1	7	1,750	815	49	224	0.22	178.3	16	2,853	**4,603**	**95%**	**C/D - Mid-D**
Zone 6	575	5	**2,875**	100	1	7	700	140	30	224	0.13	18.8	16	300	**1,000**	**35%**	**C/D or better**
Zone 7	550	5	**2,750**	125	1	7	875	440	29	224	0.13	57.0	16	911	**1,786**	**65%**	**C/D or better**
Zone 8	2,165	5	**10,825**	550	1	7	3,850	485	48	224	0.21	103.9	16	1,663	**5,513**	**51%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	5	**9,600**	350	1	7	2,450	330	51	224	0.23	75.1	16	1,202	**3,652**	**38%**	**C/D or better**
Zone 2	570	5	**2,850**	150	1	7	1,050	485	27	224	0.12	58.5	16	935	**1,985**	**70%**	**C/D or better**
Zone 3	610	5	**3,050**	75	1	7	525	125	30	224	0.13	16.7	16	268	**793**	**26%**	**C/D or better**
Zone 4	1,050	5	**5,250**	125	1	7	875	355	49	224	0.22	77.7	16	1,243	**2,118**	**40%**	**C/D or better**
Zone 5	330	5	**1,650**	50	1	7	350	110	21	224	0.09	10.3	16	165	**515**	**31%**	**C/D or better**
Zone 6	810	5	**4,050**	100	1	7	700	285	42	224	0.19	53.4	16	855	**1,555**	**38%**	**C/D or better**
Zone 7	770	5	**3,850**	125	1	7	875	65	33	224	0.15	9.6	16	153	**1,028**	**27%**	**C/D or better**
Zone 8	1,155	5	**5,775**	200	1	7	1,400	325	29	224	0.13	42.1	16	673	**2,073**	**36%**	**C/D or better**

NOTES:
(1) Analysis period is the peak 5 minutes within the 15-minute peak PM period (5:10-5:25).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 square feet per pedestrian signifies LOS C/D conditions.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 feet per minute signifies LOS C/D conditions.
(6) Average walk space of 16 square feet per pedestrian signifies LOS C/D conditions.

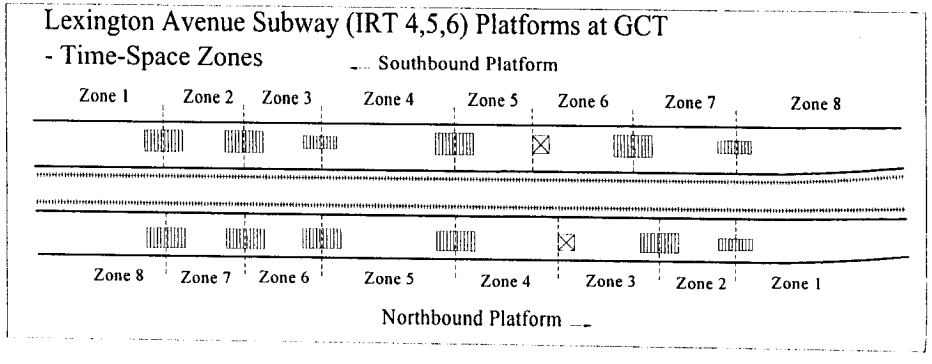


Table M - 26
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 BUILD CONDITIONS 15 MINUTE PM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	15	**16,725**	600	1	7	4,200	1,095	37	224	0.17	180.9	16	2,894	**7,094**	**42%**	**C/D or better**
Zone 2	580	15	**8,697**	150	1	7	1,050	180	26	224	0.12	20.9	16	334	**1,384**	**16%**	**C/D or better**
Zone 3	865	15	**12,975**	375	1	7	2,625	1,195	40	224	0.18	213.4	16	3,414	**6,039**	**47%**	**C/D or better**
Zone 4	835	15	**12,525**	300	1	7	2,100	375	35	224	0.16	58.6	16	938	**3,038**	**24%**	**C/D or better**
Zone 5	970	15	**14,550**	750	1	7	5,250	2,190	49	224	0.22	479.1	16	7,665	**12,915**	**89%**	**C/D or better**
Zone 6	575	15	**8,625**	300	1	7	2,100	410	30	224	0.13	54.9	16	879	**2,979**	**35%**	**C/D or better**
Zone 7	550	15	**8,250**	375	1	7	2,625	1,195	29	224	0.13	154.7	16	2,475	**5,100**	**62%**	**C/D or better**
Zone 8	2,165	15	**32,475**	1,650	1	7	11,550	1,155	48	224	0.21	247.5	16	3,960	**15,510**	**48%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	15	**28,800**	1,050	1	7	7,350	875	51	224	0.23	199.2	16	3,188	**10,538**	**37%**	**C/D or better**
Zone 2	570	15	**8,550**	450	1	7	3,150	1,365	27	224	0.12	164.5	16	2,633	**5,783**	**68%**	**C/D or better**
Zone 3	610	15	**9,150**	225	1	7	1,575	390	30	224	0.13	52.2	16	836	**2,411**	**26%**	**C/D or better**
Zone 4	1,050	15	**15,750**	375	1	7	2,625	985	49	224	0.22	215.5	16	3,448	**6,073**	**39%**	**C/D or better**
Zone 5	330	15	**4,950**	150	1	7	1,050	325	21	224	0.09	30.5	16	488	**1,538**	**31%**	**C/D or better**
Zone 6	810	15	**12,150**	300	1	7	2,100	770	42	224	0.19	144.4	16	2,310	**4,410**	**36%**	**C/D or better**
Zone 7	770	15	**11,550**	375	1	7	2,625	210	33	224	0.15	30.9	16	495	**3,120**	**27%**	**C/D or better**
Zone 8	1,155	15	**17,325**	600	1	7	4,200	880	29	224	0.13	113.9	16	1,823	**6,023**	**35%**	**C/D or better**

NOTES:
(1) Analysis period is the 15-minute peak PM period (5:10-5:25).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 square feet per pedestrian signifies LOS C/D conditions.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 feet per minute signifies LOS C/D conditions.
(6) Average walk space of 16 square feet per pedestrian signifies LOS C/D conditions.

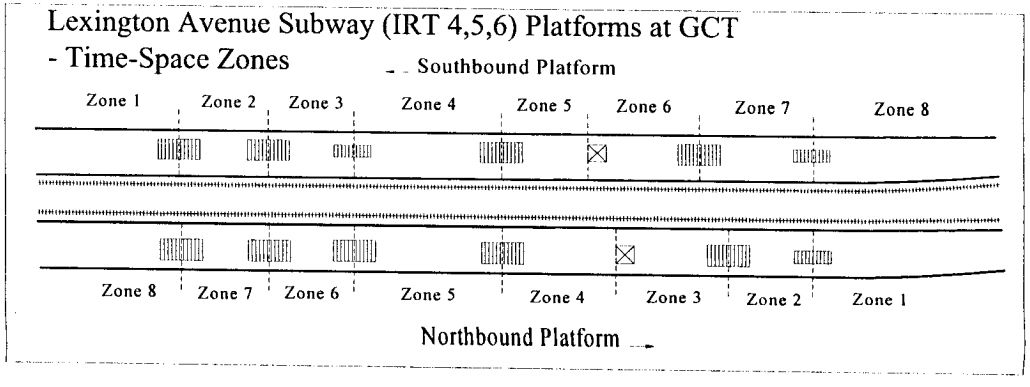


TABLE M-27

2020 BUILD
SUBWAY PLATFORM
TIME-SPACE ANALYSES

Table M - 27

EIS PEDESTRIAN TIME - SPACE ANALYSES

LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL

2020 BUILD CONDITIONS 5 MINUTE AM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	5	**5,575**	150	1	7	1,050	480	37	224	0.17	79.3	16	1,269	**2,319**	**42%**	**C/D or better**
Zone 2	580	5	**2,899**	25	1	7	175	60	26	224	0.12	7.0	16	111	**286**	**10%**	**C/D or better**
Zone 3	865	5	**4,325**	50	1	7	350	400	40	224	0.18	71.4	16	1,143	**1,493**	**35%**	**C/D or better**
Zone 4	835	5	**4,175**	150	1	7	1,050	65	35	224	0.16	10.2	16	163	**1,213**	**29%**	**C/D or better**
Zone 5	970	5	**4,850**	450	1	5	2,250	745	49	211	0.23	173.0	13.5	2,336	**4,586**	**95%**	**Mid-D - D/E**
Zone 6	575	5	**2,875**	100	1	7	700	160	30	224	0.13	21.4	16	343	**1,043**	**36%**	**C/D or better**
Zone 7	550	5	**2,750**	100	1	7	700	230	29	224	0.13	29.8	16	476	**1,176**	**43%**	**C/D or better**
Zone 8	2,165	5	**10,825**	100	1	7	700	235	48	224	0.21	50.4	16	806	**1,506**	**14%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	5	**9,600**	325	1	7	2,275	790	51	224	0.23	179.9	16	2,878	**5,153**	**54%**	**C/D or better**
Zone 2	570	5	**2,850**	150	1	7	1,050	840	27	224	0.12	101.3	16	1,620	**2,670**	**94%**	**C/D - Mid-D**
Zone 3	610	5	**3,050**	50	1	7	350	155	30	224	0.13	20.8	16	332	**682**	**22%**	**C/D or better**
Zone 4	1,050	5	**5,250**	275	1	7	1,925	785	49	224	0.22	171.7	16	2,748	**4,673**	**89%**	**C/D or better**
Zone 5	330	5	**1,650**	100	1	7	700	75	21	224	0.09	7.0	16	113	**813**	**49%**	**C/D or better**
Zone 6	810	5	**4,050**	125	1	7	875	555	42	224	0.19	104.1	16	1,665	**2,540**	**63%**	**C/D or better**
Zone 7	770	5	**3,850**	125	1	7	875	85	33	224	0.15	12.5	16	200	**1,075**	**28%**	**C/D or better**
Zone 8	1,155	5	**5,775**	150	1	7	1,050	470	29	224	0.13	60.8	16	974	**2,024**	**35%**	**C/D or better**

NOTES:

(1) Analysis period is the peak 5 minutes within the 15-minute peak AM period (8:35-8:50).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 and 5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 and 211 feet per minute signify LOS C/D and mid-D conditions, respectively.
(6) Average walk space of 16 and 13.5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.

Lexington Avenue Subway (IRT 4,5,6) Platforms at GCT

- Time-Space Zones

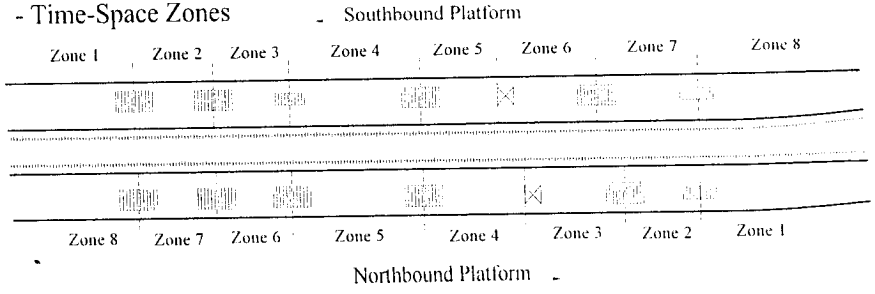


Table M - 27
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 BUILD CONDITIONS 15 MINUTE AM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	AVAILABLE TIME - SPACE			QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	15	**16,725**	450	1	7	3,150	1,260	37	224	0.17	208.1	16	3,330	**6,480**	**39%**	**C/D or better**
Zone 2	580	15	**8,697**	75	1	7	525	180	26	224	0.12	20.9	16	334	**859**	**10%**	**C/D or better**
Zone 3	865	15	**12,975**	150	1	7	1,050	1,030	40	224	0.18	183.9	16	2,943	**3,993**	**31%**	**C/D or better**
Zone 4	835	15	**12,525**	450	1	7	3,150	205	35	224	0.16	32.0	16	513	**3,663**	**29%**	**C/D or better**
Zone 5	970	15	**14,550**	1,350	1	5	6,750	2,125	49	211	0.23	493.5	13.5	6,662	**13,412**	**92%**	**Mid-D - D/E**
Zone 6	575	15	**8,625**	300	1	7	2,100	470	30	224	0.13	62.9	16	1,007	**3,107**	**36%**	**C/D or better**
Zone 7	550	15	**8,250**	300	1	7	2,100	645	29	224	0.13	83.5	16	1,336	**3,436**	**42%**	**C/D or better**
Zone 8	2,165	15	**32,475**	300	1	7	2,100	670	48	224	0.21	143.6	16	2,297	**4,397**	**14%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	15	**28,800**	975	1	7	6,825	2,070	51	224	0.23	471.3	16	7,541	**14,366**	**50%**	**C/D or better**
Zone 2	570	15	**8,550**	450	1	7	3,150	2,215	27	224	0.12	267.0	16	4,272	**7,422**	**87%**	**C/D or better**
Zone 3	610	15	**9,150**	150	1	7	1,050	465	30	224	0.13	62.3	16	996	**2,046**	**22%**	**C/D or better**
Zone 4	1,050	15	**15,750**	825	1	7	5,775	1,950	49	224	0.22	426.6	16	6,825	**12,600**	**80%**	**C/D or better**
Zone 5	330	15	**4,950**	300	1	7	2,100	225	21	224	0.09	21.1	16	338	**2,438**	**49%**	**C/D or better**
Zone 6	810	15	**12,150**	375	1	7	2,625	1,585	42	224	0.19	297.2	16	4,755	**7,380**	**61%**	**C/D or better**
Zone 7	770	15	**11,550**	375	1	7	2,625	255	33	224	0.15	37.6	16	601	**3,226**	**28%**	**C/D or better**
Zone 8	1,155	15	**17,325**	450	1	7	3,150	1,165	29	224	0.13	150.8	16	2,413	**5,563**	**32%**	**C/D or better**

NOTES:
(1) Analysis period is the 15-minute peak AM period (8:35-8:50).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 and 5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 and 211 feet per minute signify LOS C/D and mid-D conditions, respectively.
(6) Average walk space of 16 and 13.5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.

Lexington Avenue Subway (IRT 4,5,6) Platforms at GCT
- Time-Space Zones

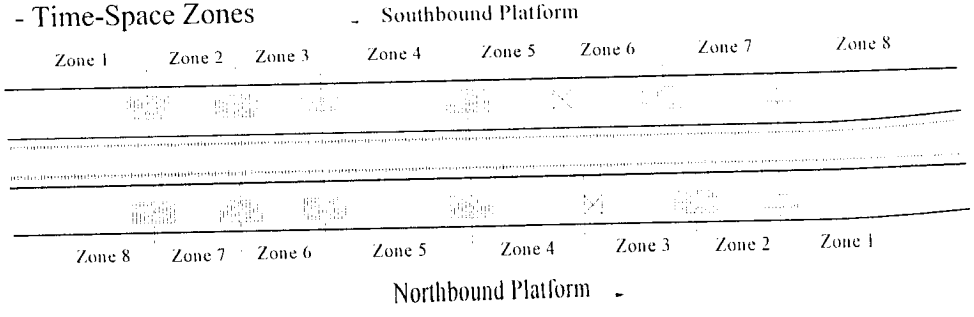


Table M - 27
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 BUILD CONDITIONS 5 MINUTE PM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	AVAILABLE TIME - SPACE			QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	5	**5,575**	225	1	7	1,575	535	37	224	0.17	88.4	16	1,414	**2,989**	**54%**	**C/D or better**
Zone 2	580	5	**2,899**	50	1	7	350	60	26	224	0.12	7.0	16	111	**461**	**16%**	**C/D or better**
Zone 3	865	5	**4,325**	125	1	7	875	490	40	224	0.18	87.5	16	1,400	**2,275**	**53%**	**C/D or better**
Zone 4	835	5	**4,175**	100	1	7	700	130	35	224	0.16	20.3	16	325	**1,025**	**25%**	**C/D or better**
Zone 5	970	5	**4,850**	300	1	5	1,500	865	49	211	0.23	200.9	13.5	2,712	**4,212**	**87%**	**Mid-D** *
Zone 6	575	5	**2,875**	100	1	7	700	140	30	224	0.13	18.8	16	300	**1,000**	**35%**	**C/D or better**
Zone 7	550	5	**2,750**	125	1	7	875	480	29	224	0.13	62.1	16	994	**1,869**	**68%**	**C/D or better**
Zone 8	2,165	5	**10,825**	575	1	7	4,025	515	48	224	0.21	110.4	16	1,766	**5,791**	**53%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	5	**9,600**	350	1	7	2,450	345	51	224	0.23	78.5	16	1,257	**3,707**	**39%**	**C/D or better**
Zone 2	570	5	**2,850**	150	1	7	1,050	500	27	224	0.12	60.3	16	964	**2,014**	**71%**	**C/D or better**
Zone 3	610	5	**3,050**	75	1	7	525	135	30	224	0.13	18.1	16	289	**814**	**27%**	**C/D or better**
Zone 4	1,050	5	**5,250**	125	1	7	875	380	49	224	0.22	83.1	16	1,330	**2,205**	**42%**	**C/D or better**
Zone 5	330	5	**1,650**	50	1	7	350	115	21	224	0.09	10.8	16	173	**523**	**32%**	**C/D or better**
Zone 6	810	5	**4,050**	100	1	7	700	305	42	224	0.19	57.2	16	915	**1,615**	**40%**	**C/D or better**
Zone 7	770	5	**3,850**	125	1	7	875	70	33	224	0.15	10.3	16	165	**1,040**	**27%**	**C/D or better**
Zone 8	1,155	5	**5,775**	225	1	7	1,575	340	29	224	0.13	44.0	16	704	**2,279**	**39%**	**C/D or better**

NOTES:
(1) Analysis period is the peak 5 minutes within the 15-minute peak PM period (5:10-5:25).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 and 5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 and 211 feet per minute signify LOS C/D and mid-D conditions, respectively.
(6) Average walk space of 16 and 13.5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.

" * " Signifigant Impacts

Lexington Avenue Subway (IRT 4,5,6) Platforms at GCT
- Time-Space Zones

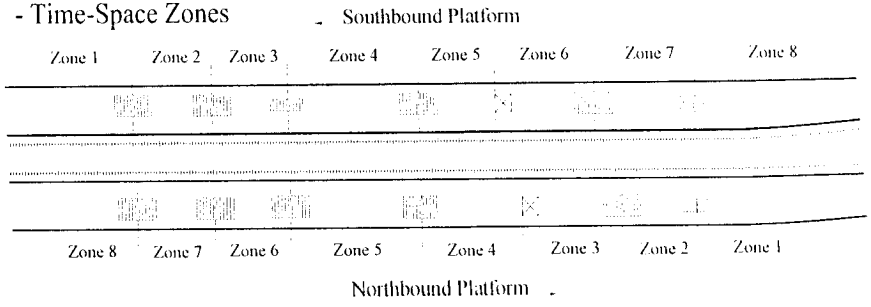


Table M - 27
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 BUILD CONDITIONS 15 MINUTE PM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	AVAILABLE TIME - SPACE			QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	15	**16,725**	675	1	7	4,725	1,170	37	224	0.17	193.3	16	3,092	**7,817**	**47%**	**C/D or better**
Zone 2	580	15	**8,697**	150	1	7	1,050	185	26	224	0.12	21.5	16	344	**1,394**	**16%**	**C/D or better**
Zone 3	865	15	**12,975**	375	1	7	2,625	1,290	40	224	0.18	230.4	16	3,686	**6,311**	**49%**	**C/D or better**
Zone 4	835	15	**12,525**	300	1	7	2,100	400	35	224	0.16	62.5	16	1,000	**3,100**	**25%**	**C/D or better**
Zone 5	970	15	**14,550**	900	1	5	4,500	2,325	49	211	0.23	539.9	13.5	7,289	**11,789**	**81%**	**Mid-D**
Zone 6	575	15	**8,625**	300	1	7	2,100	435	30	224	0.13	58.3	16	932	**3,032**	**35%**	**C/D or better**
Zone 7	550	15	**8,250**	375	1	7	2,625	1,260	29	224	0.13	163.1	16	2,610	**5,235**	**63%**	**C/D or better**
Zone 8	2,165	15	**32,475**	1,725	1	7	12,075	1,225	48	224	0.21	262.5	16	4,200	**16,275**	**50%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	1,920	15	**28,800**	1,050	1	7	7,350	930	51	224	0.23	211.7	16	3,388	**10,738**	**37%**	**C/D or better**
Zone 2	570	15	**8,550**	450	1	7	3,150	1,450	27	224	0.12	174.8	16	2,796	**5,946**	**70%**	**C/D or better**
Zone 3	610	15	**9,150**	225	1	7	1,575	415	30	224	0.13	55.6	16	889	**2,464**	**27%**	**C/D or better**
Zone 4	1,050	15	**15,750**	375	1	7	2,625	1,060	49	224	0.22	231.9	16	3,710	**6,335**	**40%**	**C/D or better**
Zone 5	330	15	**4,950**	150	1	7	1,050	350	21	224	0.09	32.8	16	525	**1,575**	**32%**	**C/D or better**
Zone 6	810	15	**12,150**	300	1	7	2,100	815	42	224	0.19	152.8	16	2,445	**4,545**	**37%**	**C/D or better**
Zone 7	770	15	**11,550**	375	1	7	2,625	215	33	224	0.15	31.7	16	507	**3,132**	**27%**	**C/D or better**
Zone 8	1,155	15	**17,325**	675	1	7	4,725	920	29	224	0.13	119.1	16	1,906	**6,631**	**38%**	**C/D or better**

NOTES:
(1) Analysis period is the 15-minute peak PM period (5:10-5:25).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 and 5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 and 211 feet per minute signify LOS C/D and mid-D conditions, respectively.
(6) Average walk space of 16 and 13.5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.

Lexington Avenue Subway (IRT 4,5,6) Platforms at GCT
- Time-Space Zones

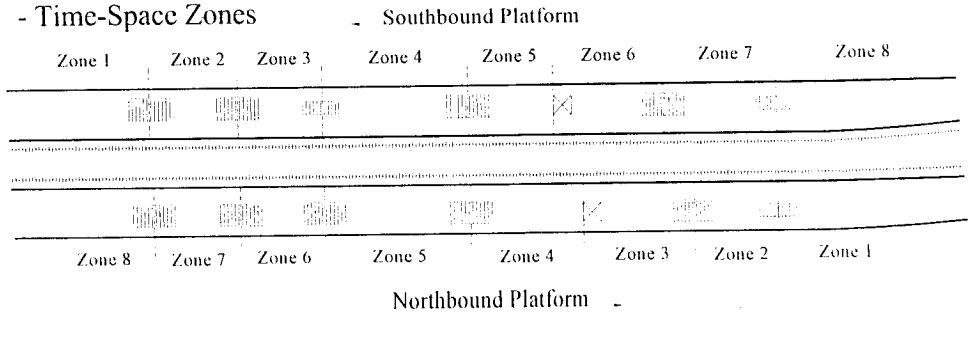


TABLE M-28

2010 MITIGATED BUILD SUBWAY PLATFORM TIME-SPACE ANALYSES

Table M - 28
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 MITIGATED BUILD CONDITIONS 5 MINUTE AM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	5	**5,575**	150	1	7	1,050	515	37	224	0.17	85.1	16	1,361	**2,411**	**43%**	**C/D or better**
Zone 2	580	5	**2,899**	25	1	7	175	55	26	224	0.12	6.4	16	102	**277**	**10%**	**C/D or better**
Zone 3	865	5	**4,325**	50	1	7	350	310	40	224	0.18	55.4	16	886	**1,236**	**29%**	**C/D or better**
Zone 4	835	5	**4,175**	125	1	7	875	60	35	224	0.16	9.4	16	150	**1,025**	**25%**	**C/D or better**
Zone 5	970	5	**4,850**	400	1	5	2,000	695	49	211	0.23	161.4	13.5	2,179	**4,179**	**86%**	**Mid-D**
Zone 6	575	5	**2,875**	75	1	7	525	145	30	224	0.13	19.4	16	311	**836**	**29%**	**C/D or better**
Zone 7	550	5	**2,750**	75	1	7	525	220	29	224	0.13	28.5	16	456	**981**	**36%**	**C/D or better**
Zone 8	2,165	5	**10,825**	100	1	7	700	240	48	224	0.21	51.4	16	823	**1,523**	**14%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	2,820	5	**14,100**	325	1	7	2,275	870	51	224	0.23	198.1	16	3,169	**5,444**	**39%**	**C/D or better**
Zone 2	570	5	**2,850**	125	1	7	875	715	27	224	0.12	86.2	16	1,379	**2,254**	**79%**	**C/D or better**
Zone 3	610	5	**3,050**	50	1	7	350	140	30	224	0.13	18.8	16	300	**650**	**21%**	**C/D or better**
Zone 4	1,050	5	**5,250**	200	1	7	1,400	680	49	224	0.22	148.8	16	2,380	**3,780**	**72%**	**C/D or better**
Zone 5	330	5	**1,650**	75	1	7	525	65	21	224	0.09	6.1	16	98	**623**	**38%**	**C/D or better**
Zone 6	810	5	**4,050**	75	1	7	525	430	42	224	0.19	80.6	16	1,290	**1,815**	**45%**	**C/D or better**
Zone 7	770	5	**3,850**	100	1	7	700	75	33	224	0.15	11.0	16	177	**877**	**23%**	**C/D or better**
Zone 8	1,155	5	**5,775**	150	1	7	1,050	505	29	224	0.13	65.4	16	1,046	**2,096**	**36%**	**C/D or better**

NOTES:

(1) Analysis period is the peak 5 minutes within the 15-minute peak AM period (8:35-8:50).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 and 5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 and 211 feet per minute signify LOS C/D and mid-D conditions, respectively.
(6) Average walk space of 16 and 13.5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.

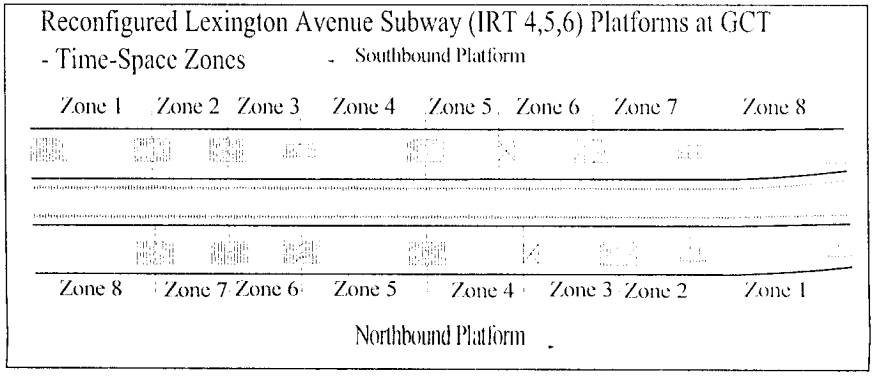


Table M - 28
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 MITIGATED BUILD CONDITIONS 15 MINUTE AM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	15	**16,725**	225	1	7	1,575	1,310	37	224	0.17	216.4	16	3,462	**5,037**	**30%**	**C/D or better**
Zone 2	580	15	**8,697**	75	1	7	525	165	26	224	0.12	19.2	16	306	**831**	**10%**	**C/D or better**
Zone 3	865	15	**12,975**	150	1	7	1,050	825	40	224	0.18	147.3	16	2,357	**3,407**	**26%**	**C/D or better**
Zone 4	835	15	**12,525**	375	1	7	2,625	195	35	224	0.16	30.5	16	488	**3,113**	**25%**	**C/D or better**
Zone 5	970	15	**14,550**	1,200	1	5	6,000	1,975	49	211	0.23	458.6	13.5	6,192	**12,192**	**84%**	**Mid-D**
Zone 6	575	15	**8,625**	225	1	7	1,575	445	30	224	0.13	59.6	16	954	**2,529**	**29%**	**C/D or better**
Zone 7	550	15	**8,250**	225	1	7	1,575	590	29	224	0.13	76.4	16	1,222	**2,797**	**34%**	**C/D or better**
Zone 8	2,165	15	**32,475**	300	1	7	2,100	630	48	224	0.21	135.0	16	2,160	**4,260**	**13%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	2,820	15	**42,300**	975	1	7	6,825	2,470	51	224	0.23	562.4	16	8,998	**15,823**	**37%**	**C/D or better**
Zone 2	570	15	**8,550**	300	1	7	2,100	1,825	27	224	0.12	220.0	16	3,520	**5,620**	**66%**	**C/D or better**
Zone 3	610	15	**9,150**	150	1	7	1,050	425	30	224	0.13	56.9	16	911	**1,961**	**21%**	**C/D or better**
Zone 4	1,050	15	**15,750**	600	1	7	4,200	1,665	49	224	0.22	364.2	16	5,828	**10,028**	**64%**	**C/D or better**
Zone 5	330	15	**4,950**	225	1	7	1,575	205	21	224	0.09	19.2	16	308	**1,883**	**38%**	**C/D or better**
Zone 6	810	15	**12,150**	225	1	7	1,575	1,200	42	224	0.19	225.0	16	3,600	**5,175**	**43%**	**C/D or better**
Zone 7	770	15	**11,550**	300	1	7	2,100	240	33	224	0.15	35.4	16	566	**2,666**	**23%**	**C/D or better**
Zone 8	1,155	15	**17,325**	300	1	7	2,100	1,325	29	224	0.13	171.5	16	2,745	**4,845**	**28%**	**C/D or better**

NOTES:

(1) Analysis period is the 15-minute peak AM period (8:35-8:50).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 and 5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 and 211 feet per minute signify LOS C/D and mid-D conditions, respectively.
(6) Average walk space of 16 and 13.5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.

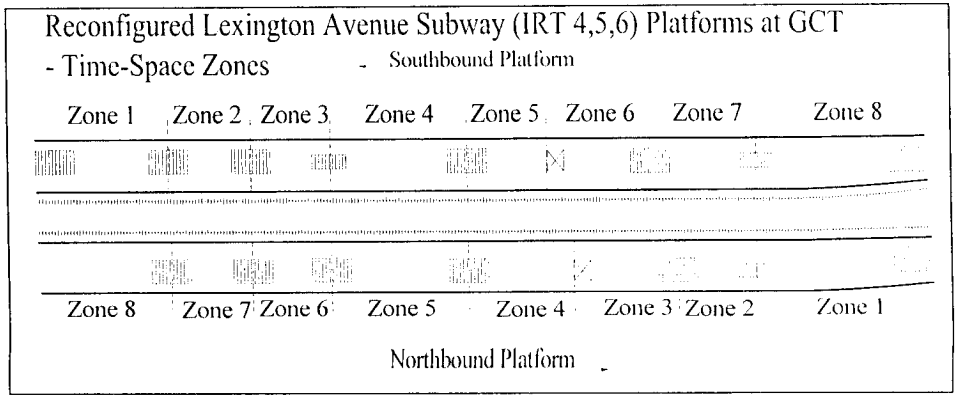


Table M - 28

EIS PEDESTRIAN TIME - SPACE ANALYSES

LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL

2010 MITIGATED BUILD CONDITIONS 5 MINUTE PM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	5	**5,575**	225	1	7	1,575	560	37	224	0.17	92.5	16	1,480	**3,055**	**55%**	**C/D or better**
Zone 2	580	5	**2,899**	50	1	7	350	55	26	224	0.12	6.4	16	102	**452**	**16%**	**C/D or better**
Zone 3	865	5	**4,325**	100	1	7	700	365	40	224	0.18	65.2	16	1,043	**1,743**	**40%**	**C/D or better**
Zone 4	835	5	**4,175**	100	1	7	700	125	35	224	0.16	19.5	16	313	**1,013**	**24%**	**C/D or better**
Zone 5	970	5	**4,850**	250	1	7	1,750	815	49	224	0.22	178.3	16	2,853	**4,603**	**95%**	**C/D - Mid-D**
Zone 6	575	5	**2,875**	100	1	7	700	140	30	224	0.13	18.8	16	300	**1,000**	**35%**	**C/D or better**
Zone 7	550	5	**2,750**	125	1	7	875	440	29	224	0.13	57.0	16	911	**1,786**	**65%**	**C/D or better**
Zone 8	2,165	5	**10,825**	550	1	7	3,850	485	48	224	0.21	103.9	16	1,663	**5,513**	**51%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	2,820	5	**14,100**	450	1	7	3,150	410	51	224	0.23	93.3	16	1,494	**4,644**	**33%**	**C/D or better**
Zone 2	570	5	**2,850**	150	1	7	1,050	460	27	224	0.12	55.4	16	887	**1,937**	**68%**	**C/D or better**
Zone 3	610	5	**3,050**	75	1	7	525	125	30	224	0.13	16.7	16	268	**793**	**26%**	**C/D or better**
Zone 4	1,050	5	**5,250**	100	1	7	700	320	49	224	0.22	70.0	16	1,120	**1,820**	**35%**	**C/D or better**
Zone 5	330	5	**1,650**	50	1	7	350	110	21	224	0.09	10.3	16	165	**515**	**31%**	**C/D or better**
Zone 6	810	5	**4,050**	100	1	7	700	250	42	224	0.19	46.9	16	750	**1,450**	**36%**	**C/D or better**
Zone 7	770	5	**3,850**	125	1	7	875	65	33	224	0.15	9.6	16	153	**1,028**	**27%**	**C/D or better**
Zone 8	1,155	5	**5,775**	200	1	7	1,400	340	29	224	0.13	44.0	16	704	**2,104**	**36%**	**C/D or better**

NOTES:

(1) Analysis period is the peak 5 minutes within the 15-minute peak PM period (5:10-5:25).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 square feet per pedestrian signifies LOS C/D conditions.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 feet per minute signifies LOS C/D conditions.
(6) Average walk space of 16 square feet per pedestrian signifies LOS C/D conditions.

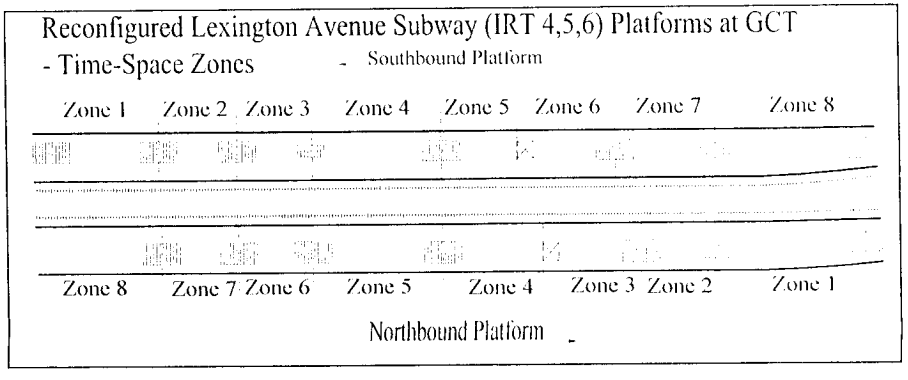


Table M - 28
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 MITIGATED BUILD CONDITIONS 15 MINUTE PM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	15	**16,725**	750	1	7	5,250	1,270	37	224	0.17	209.8	16	3,356	**8,606**	**51%**	**C/D or better**
Zone 2	580	15	**8,697**	150	1	7	1,050	180	26	224	0.12	20.9	16	334	**1,384**	**16%**	**C/D or better**
Zone 3	865	15	**12,975**	300	1	7	2,100	940	40	224	0.18	167.9	16	2,686	**4,786**	**37%**	**C/D or better**
Zone 4	835	15	**12,525**	300	1	7	2,100	375	35	224	0.16	58.6	16	938	**3,038**	**24%**	**C/D or better**
Zone 5	970	15	**14,550**	750	1	7	5,250	2,190	49	224	0.22	479.1	16	7,665	**12,915**	**89%**	**C/D or better**
Zone 6	575	15	**8,625**	300	1	7	2,100	410	30	224	0.13	54.9	16	879	**2,979**	**35%**	**C/D or better**
Zone 7	550	15	**8,250**	375	1	7	2,625	1,195	29	224	0.13	154.7	16	2,475	**5,100**	**62%**	**C/D or better**
Zone 8	2,165	15	**32,475**	1,650	1	7	11,550	1,155	48	224	0.21	247.5	16	3,960	**15,510**	**48%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	2,820	15	**42,300**	1,350	1	7	9,450	1,115	51	224	0.23	253.9	16	4,062	**13,512**	**32%**	**C/D or better**
Zone 2	570	15	**8,550**	450	1	7	3,150	1,275	27	224	0.12	153.7	16	2,459	**5,609**	**66%**	**C/D or better**
Zone 3	610	15	**9,150**	225	1	7	1,575	390	30	224	0.13	52.2	16	836	**2,411**	**26%**	**C/D or better**
Zone 4	1,050	15	**15,750**	300	1	7	2,100	885	49	224	0.22	193.6	16	3,098	**5,198**	**33%**	**C/D or better**
Zone 5	330	15	**4,950**	150	1	7	1,050	325	21	224	0.09	30.5	16	488	**1,538**	**31%**	**C/D or better**
Zone 6	810	15	**12,150**	300	1	7	2,100	685	42	224	0.19	128.4	16	2,055	**4,155**	**34%**	**C/D or better**
Zone 7	770	15	**11,550**	375	1	7	2,625	210	33	224	0.15	30.9	16	495	**3,120**	**27%**	**C/D or better**
Zone 8	1,155	15	**17,325**	675	1	7	4,725	935	29	224	0.13	121.0	16	1,937	**6,662**	**38%**	**C/D or better**

NOTES:
(1) Analysis period is the 15-minute peak PM period (5:10-5:25).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 square feet per pedestrian signifies LOS C/D conditions.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 feet per minute signifies LOS C/D conditions.
(6) Average walk space of 16 square feet per pedestrian signifies LOS C/D conditions.

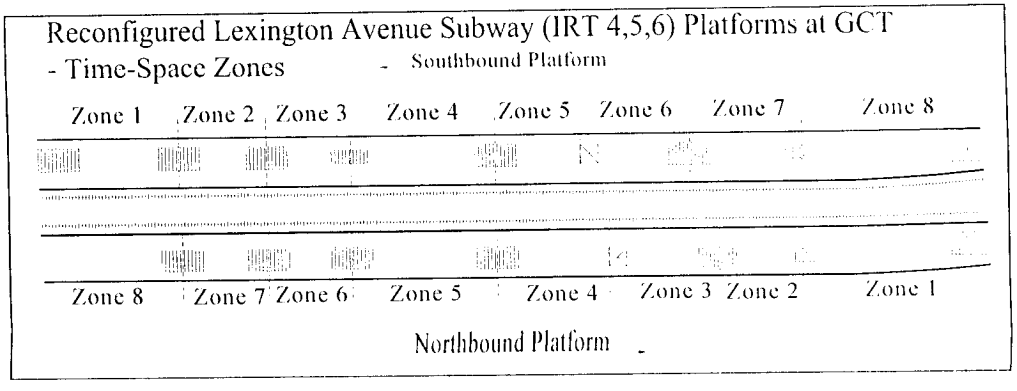


TABLE M-29

2020 MITIGATED BUILD SUBWAY PLATFORM TIME-SPACE ANALYSES

Table M - 29
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS 5 MINUTE AM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	5	**5,575**	175	1	7	1,225	535	37	224	0.17	88.4	16	1,414	**2,639**	**47%**	**C/D or better**
Zone 2	580	5	**2,899**	25	1	7	175	60	26	224	0.12	7.0	16	111	**286**	**10%**	**C/D or better**
Zone 3	865	5	**4,325**	50	1	7	350	330	40	224	0.18	58.9	16	943	**1,293**	**30%**	**C/D or better**
Zone 4	835	5	**4,175**	150	1	7	1,050	65	35	224	0.16	10.2	16	163	**1,213**	**29%**	**C/D or better**
Zone 5	970	5	**4,850**	450	1	5	2,250	745	49	211	0.23	173.0	13.5	2,336	**4,586**	**95%**	**Mid-D - D/E**
Zone 6	575	5	**2,875**	100	1	7	700	160	30	224	0.13	21.4	16	343	**1,043**	**36%**	**C/D or better**
Zone 7	550	5	**2,750**	100	1	7	700	230	29	224	0.13	29.8	16	476	**1,176**	**43%**	**C/D or better**
Zone 8	2,165	5	**10,825**	100	1	7	700	235	48	224	0.21	50.4	16	806	**1,506**	**14%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	2,820	5	**14,100**	375	1	7	2,625	930	51	224	0.23	211.7	16	3,388	**6,013**	**43%**	**C/D or better**
Zone 2	570	5	**2,850**	125	1	7	875	770	27	224	0.12	92.8	16	1,485	**2,360**	**83%**	**C/D or better**
Zone 3	610	5	**3,050**	50	1	7	350	155	30	224	0.13	20.8	16	332	**682**	**22%**	**C/D or better**
Zone 4	1,050	5	**5,250**	250	1	7	1,750	725	49	224	0.22	158.6	16	2,538	**4,288**	**82%**	**C/D or better**
Zone 5	330	5	**1,650**	100	1	7	700	75	21	224	0.09	7.0	16	113	**813**	**49%**	**C/D or better**
Zone 6	810	5	**4,050**	100	1	7	700	465	42	224	0.19	87.2	16	1,395	**2,095**	**52%**	**C/D or better**
Zone 7	770	5	**3,850**	125	1	7	875	85	33	224	0.15	12.5	16	200	**1,075**	**28%**	**C/D or better**
Zone 8	1,155	5	**5,775**	175	1	7	1,225	545	29	224	0.13	70.6	16	1,129	**2,354**	**41%**	**C/D or better**

NOTES:

(1) Analysis period is the peak 5 minutes within the 15-minute peak AM period (8:35-8:50).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 and 5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 and 211 feet per minute signify LOS C/D and mid-D conditions, respectively.
(6) Average walk space of 16 and 13.5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.

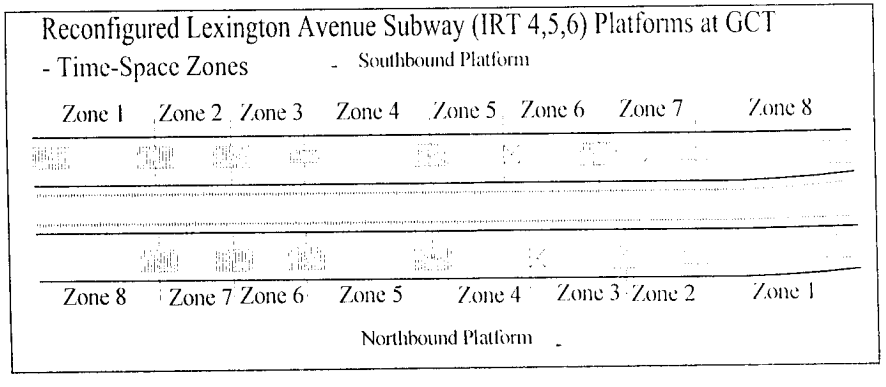


Table M - 29
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS 15 MINUTE AM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	AVAILABLE TIME - SPACE			QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	15	**16,725**	525	1	7	3,675	1,385	37	224	0.17	228.8	16	3,660	**7,335**	**44%**	**C/D or better**
Zone 2	580	15	**8,697**	75	1	7	525	180	26	224	0.12	20.9	16	334	**859**	**10%**	**C/D or better**
Zone 3	865	15	**12,975**	150	1	7	1,050	870	40	224	0.18	155.4	16	2,486	**3,536**	**27%**	**C/D or better**
Zone 4	835	15	**12,525**	450	1	7	3,150	205	35	224	0.16	32.0	16	513	**3,663**	**29%**	**C/D or better**
Zone 5	970	15	**14,550**	1,350	1	5	6,750	2,125	49	211	0.23	493.5	13.5	6,662	**13,412**	**92%**	**Mid-D - D/E**
Zone 6	575	15	**8,625**	300	1	7	2,100	470	30	224	0.13	62.9	16	1,007	**3,107**	**36%**	**C/D or better**
Zone 7	550	15	**8,250**	300	1	7	2,100	645	29	224	0.13	83.5	16	1,336	**3,436**	**42%**	**C/D or better**
Zone 8	2,165	15	**32,475**	300	1	7	2,100	670	48	224	0.21	143.6	16	2,297	**4,397**	**14%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	2,820	15	**42,300**	1,200	1	7	8,400	2,490	51	224	0.23	566.9	16	9,071	**17,471**	**41%**	**C/D or better**
Zone 2	570	15	**8,550**	375	1	7	2,625	1,990	27	224	0.12	239.9	16	3,838	**6,463**	**76%**	**C/D or better**
Zone 3	610	15	**9,150**	150	1	7	1,050	465	30	224	0.13	62.3	16	996	**2,046**	**22%**	**C/D or better**
Zone 4	1,050	15	**15,750**	750	1	7	5,250	1,795	49	224	0.22	392.7	16	6,283	**11,533**	**73%**	**C/D or better**
Zone 5	330	15	**4,950**	300	1	7	2,100	225	21	224	0.09	21.1	16	338	**2,438**	**49%**	**C/D or better**
Zone 6	810	15	**12,150**	300	1	7	2,100	1,285	42	224	0.19	240.9	16	3,855	**5,955**	**49%**	**C/D or better**
Zone 7	770	15	**11,550**	375	1	7	2,625	255	33	224	0.15	37.6	16	601	**3,226**	**28%**	**C/D or better**
Zone 8	1,155	15	**17,325**	525	1	7	3,675	1,425	29	224	0.13	184.5	16	2,952	**6,627**	**38%**	**C/D or better**

NOTES:
(1) Analysis period is the 15-minute peak AM period (8:35-8:50).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 and 5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 and 211 feet per minute signify LOS C/D and mid-D conditions, respectively.
(6) Average walk space of 16 and 13.5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.

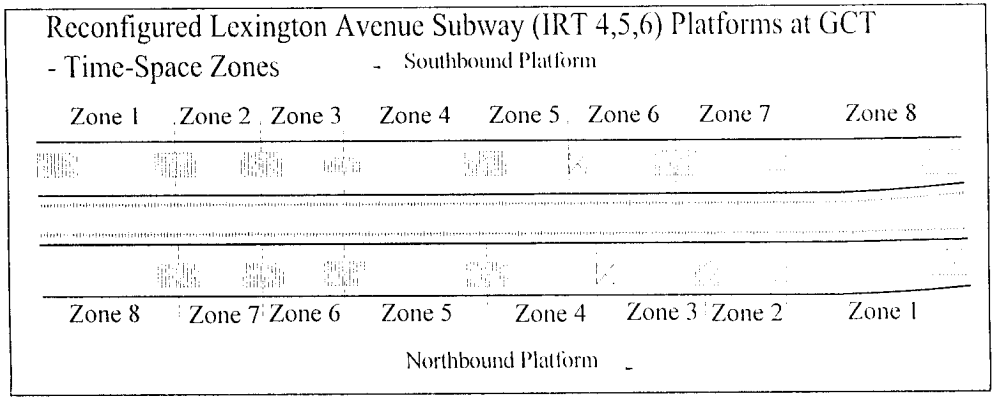


Table M - 29
EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS 5 MINUTE PM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	5	**5,575**	250	1	7	1,750	610	37	224	0.17	100.8	16	1,612	**3,362**	60%	C/D or better
Zone 2	580	5	**2,899**	50	1	7	350	60	26	224	0.12	7.0	16	111	**461**	16%	C/D or better
Zone 3	865	5	**4,325**	100	1	7	700	390	40	224	0.18	69.6	16	1,114	**1,814**	42%	C/D or better
Zone 4	835	5	**4,175**	100	1	7	700	130	35	224	0.16	20.3	16	325	**1,025**	25%	C/D or better
Zone 5	970	5	**4,850**	300	1	5	1,500	865	49	211	0.23	200.9	13.5	2,712	**4,212**	87%	Mid-D
Zone 6	575	5	**2,875**	100	1	7	700	140	30	224	0.13	18.8	16	300	**1,000**	35%	C/D or better
Zone 7	550	5	**2,750**	125	1	7	875	480	29	224	0.13	62.1	16	994	**1,869**	68%	C/D or better
Zone 8	2,165	5	**10,825**	575	1	7	4,025	515	48	224	0.21	110.4	16	1,766	**5,791**	53%	C/D or better
Southbound IRT Platform																	
Zone 1	2,820	5	**14,100**	450	1	7	3,150	425	51	224	0.23	96.8	16	1,548	**4,698**	33%	C/D or better
Zone 2	570	5	**2,850**	150	1	7	1,050	475	27	224	0.12	57.3	16	916	**1,966**	69%	C/D or better
Zone 3	610	5	**3,050**	75	1	7	525	135	30	224	0.13	18.1	16	289	**814**	27%	C/D or better
Zone 4	1,050	5	**5,250**	100	1	7	700	345	49	224	0.22	75.5	16	1,208	**1,908**	36%	C/D or better
Zone 5	330	5	**1,650**	50	1	7	350	115	21	224	0.09	10.8	16	173	**523**	32%	C/D or better
Zone 6	810	5	**4,050**	100	1	7	700	270	42	224	0.19	50.6	16	810	**1,510**	37%	C/D or better
Zone 7	770	5	**3,850**	125	1	7	875	70	33	224	0.15	10.3	16	165	**1,040**	27%	C/D or better
Zone 8	1,155	5	**5,775**	250	1	7	1,750	360	29	224	0.13	46.6	16	746	**2,496**	43%	C/D or better

NOTES:
(1) Analysis period is the peak 5 minutes within the 15-minute peak PM period (5:10-5:25).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 and 5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 and 211 feet per minute signify LOS C/D and mid-D conditions, respectively.
(6) Average walk space of 16 and 13.5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.

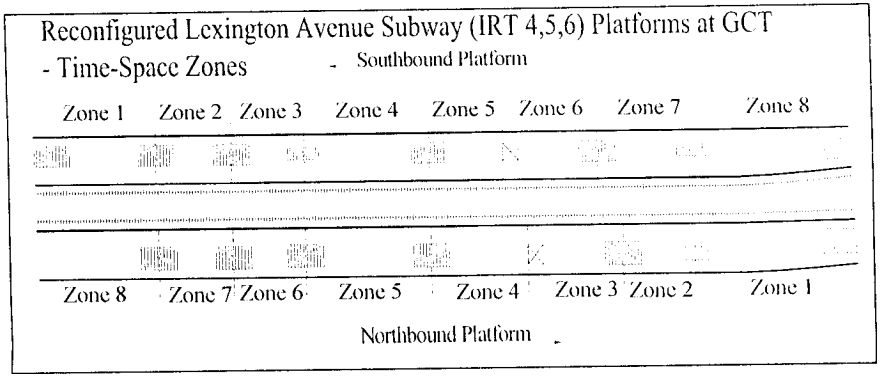


Table M - 29

EIS PEDESTRIAN TIME - SPACE ANALYSES

LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL

2020 MITIGATED BUILD CONDITIONS 15 MINUTE PM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	AVAILABLE TIME - SPACE			QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	15	**16,725**	825	1	7	5,775	1,370	37	224	0.17	226.3	16	3,621	**9,396**	**56%**	**C/D or better**
Zone 2	580	15	**8,697**	150	1	7	1,050	185	26	224	0.12	21.5	16	344	**1,394**	**16%**	**C/D or better**
Zone 3	865	15	**12,975**	300	1	7	2,100	1,010	40	224	0.18	180.4	16	2,886	**4,986**	**38%**	**C/D or better**
Zone 4	835	15	**12,525**	300	1	7	2,100	400	35	224	0.16	62.5	16	1,000	**3,100**	**25%**	**C/D or better**
Zone 5	970	15	**14,550**	900	1	7	6,300	2,325	49	224	0.22	508.6	16	8,138	**14,438**	**99%**	**C/D - Mid-D**
Zone 6	575	15	**8,625**	300	1	7	2,100	435	30	224	0.13	58.3	16	932	**3,032**	**35%**	**C/D or better**
Zone 7	550	15	**8,250**	375	1	7	2,625	1,260	29	224	0.13	163.1	16	2,610	**5,235**	**63%**	**C/D or better**
Zone 8	2,165	15	**32,475**	1,725	1	7	12,075	1,225	48	224	0.21	262.5	16	4,200	**16,275**	**50%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	2,820	15	**42,300**	1,425	1	7	9,975	1,180	51	224	0.23	268.7	16	4,299	**14,274**	**34%**	**C/D or better**
Zone 2	570	15	**8,550**	450	1	7	3,150	1,355	27	224	0.12	163.3	16	2,613	**5,763**	**67%**	**C/D or better**
Zone 3	610	15	**9,150**	225	1	7	1,575	415	30	224	0.13	55.6	16	889	**2,464**	**27%**	**C/D or better**
Zone 4	1,050	15	**15,750**	300	1	7	2,100	955	49	224	0.22	208.9	16	3,343	**5,443**	**35%**	**C/D or better**
Zone 5	330	15	**4,950**	150	1	7	1,050	350	21	224	0.09	32.8	16	525	**1,575**	**32%**	**C/D or better**
Zone 6	810	15	**12,150**	225	1	7	1,575	725	42	224	0.19	135.9	16	2,175	**3,750**	**31%**	**C/D or better**
Zone 7	770	15	**11,550**	375	1	7	2,625	215	33	224	0.15	31.7	16	507	**3,132**	**27%**	**C/D or better**
Zone 8	1,155	15	**17,325**	750	1	7	5,250	980	29	224	0.13	126.9	16	2,030	**7,280**	**42%**	**C/D or better**

NOTES:

(1) Analysis period is the 15-minute peak PM period (5:10-5:25).

(2) Based on one-minute platform observations.

(3) Average queue space of 7 square feet per pedestrian signifies LOS C/D conditions.

(4) Average walking distance across time-space zone.

(5) Average walk speed of 224 feet per minute signifies LOS C/D conditions.

(6) Average walk space of 16 square feet per pedestrian signifies LOS C/D conditions.

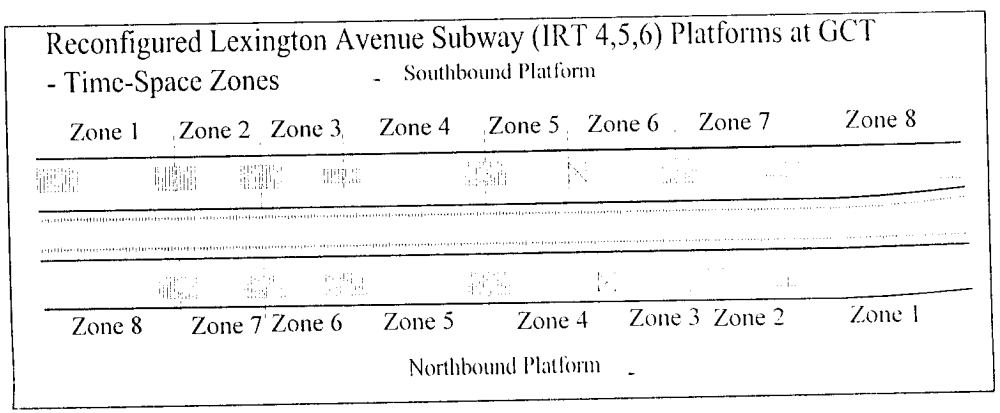


TABLE M-30

LIRR PLATFORM ANALYSES

Table M - 30
PLATFORM STAIRS ANALYSES
LIRR PLATFORMS 1 - 5 @ GRAND CENTRAL TERMINAL
2010 BUILD CONDITIONS 5 MINUTES WITHIN PEAK AM PERIOD

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax / min)		
48th Street Stair	285	0	285	6.0	5.5	0	55	1.04	D
47th Street Stair	280	0	280	6.0	5.5	0	55	1.02	D
45th Street Stair	80	0	80	6.0	5.5	0	55	0.29	A
45th Street Escalator	160	0	160	-	-	-	75	0.43	under capacity
43rd Street Stair to 43rd Street Underpass (Plat. 4 / 5)	115	0	115	6.0	5.5	0	55	0.42	A
43rd Street Esc. to Biltmore Room (Plat. 4 / 5)	135	0	135	-	-	-	75	0.36	under capacity
43rd Street Stair to Suburban Concourse (Plat. 1 / 2 / 3)	60	0	60	6.0	5.5	0	55	0.22	A
43rd Street Esc. to Suburban Concourse (Plat. 1 / 2 / 3)	125	0	125	-	-	-	75	0.33	under capacity

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min. signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; < 1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Table M - 30
PLATFORM STAIRS ANALYSES
LIRR PLATFORMS 1 - 5 @ GRAND CENTRAL TERMINAL
2020 BUILD CONDITIONS 5 MINUTES WITHIN PEAK AM PERIOD

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax / min)		
48th Street Stair	300	0	300	6.0	5.5	0	55	1.09	D
47th Street Stair	295	0	295	6.0	5.5	0	55	1.07	D
45th Street Stair	85	0	85	6.0	5.5	0	55	0.31	A
45th Street Escalator	170	0	170	-	-	-	75	0.45	under capacity
43rd Street Stair to 43rd Street Underpass (Plat. 4 / 5)	120	0	120	6.0	5.5	0	55	0.44	A
43rd Street Esc. to Biltmore Room (Plat. 4 / 5)	140	0	140	-	-	-	75	0.37	under capacity
43rd Street Stair to Suburban Concourse (Plat. 1 / 2 / 3)	65	0	65	6.0	5.5	0	55	0.24	A
43rd Street Esc. to Suburban Concourse (Plat. 1 / 2 / 3)	130	0	130	-	-	-	75	0.35	under capacity

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

TABLE M-31

GCT EXTERNAL / NEA ANALYSES

Table M - 31
TIME-SPACE ANALYSES OF CROSSPASSAGEWAYS @ GRAND CENTRAL TERMINAL
FUTURE BUILD CONDITIONS -- 5/15-MINUTES DURING PM PEAK PERIOD

% waiting in xpassage: 50%
LIRR pax load (one 12-car train): 1,356
MNR pax load (one 10-car train): 1,130

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
48th Street Crosspassage (LIRR only)								% pax using :		22.5%							
5-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	8,400	5.0	42,000	305	5.0	7.0	10,679	305	100	224	0.45	136.2	16.0	2,179	12,858	31%	OK
Using LOS mid-D Analysis Criteria																	
1	8,400	5.0	42,000	305	5.0	5.0	7,628	305	100	211	0.47	144.6	13.5	1,952	9,579	23%	OK
Using LOS mid-E Analysis Criteria																	
1	8,400	5.0	42,000	305	5.0	2.5	3,814	305	100	174	0.57	175.3	8.5	1,490	5,304	13%	OK
15-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	8,400	15.0	126,000	915	7.5	7.0	48,053	915	100	224	0.45	408.7	16.0	6,538	54,592	43%	OK
Using LOS mid-D Analysis Criteria																	
1	8,400	15.0	126,000	915	7.5	5.0	34,324	915	100	211	0.47	433.8	13.5	5,856	40,179	32%	OK
Using LOS mid-E Analysis Criteria																	
1	8,400	15.0	126,000	915	7.5	2.5	17,162	915	100	174	0.57	526.0	8.5	4,471	21,633	17%	OK
47th Street Crosspassage (LIRR / MNR)							% LIRR / MNR pax using :			22.1%	27.1%						
5-minute Analysis Period with one time-space zone (the entire crosspassageway)																	
Using LOS C/D Analysis Criteria																	
1	18,000	5.0	90,000	606	5.0	7.0	21,207	606	320	224	1.43	865.7	16.0	13,851	35,057	39%	OK
Using LOS mid-D Analysis Criteria																	
1	18,000	5.0	90,000	606	5.0	5.0	15,148	606	320	211	1.52	918.8	13.5	12,404	27,552	31%	OK
Using LOS mid-E Analysis Criteria																	
1	18,000	5.0	90,000	606	5.0	2.5	7,574	606	320	174	1.84	1,114.3	8.5	9,472	17,045	19%	OK
15-minute Analysis Period with one time-space zone (the entire crosspassageway)																	
Using LOS C/D Analysis Criteria																	
1	18,000	15.0	270,000	1,818	7.5	7.0	95,430	1,818	320	224	1.43	2,597.0	16.0	41,552	136,982	51%	OK
Using LOS mid-D Analysis Criteria																	
1	18,000	15.0	270,000	1,818	7.5	5.0	68,164	1,818	320	211	1.52	2,756.5	13.5	37,212	105,377	39%	OK
Using LOS mid-E Analysis Criteria																	
1	18,000	15.0	270,000	1,818	7.5	2.5	34,082	1,818	320	174	1.84	3,342.9	8.5	28,415	62,497	23%	OK
5-minute Analysis Period w/ 2 time-space zones							% LIRR / MNR pax using :			22.1%	27.1%						
Using LOS C/D Analysis Criteria																	
1	9,200	5.0	46,000	409	5.0	7.0	14,317	409	318	224	1.42	581.4	16.0	9,302	23,618	51%	OK
2	8,800	5.0	44,000	197	5.0	7.0	6,890	197	320	224	1.43	281.3	16.0	4,500	11,390	26%	OK
Using LOS mid-D Analysis Criteria																	
1	9,200	5.0	46,000	409	5.0	5.0	10,226	409	318	211	1.51	617.1	13.5	8,330	18,556	40%	OK
2	8,800	5.0	44,000	197	5.0	5.0	4,922	197	320	224	1.43	281.3	13.5	3,797	8,719	20%	OK
Using LOS mid-E Analysis Criteria																	
1	9,200	5.0	46,000	409	5.0	2.5	5,113	409	318	174	1.83	748.3	8.5	6,361	11,474	25%	OK
2	8,800	5.0	44,000	197	5.0	2.5	2,461	197	320	224	1.43	281.3	8.5	2,391	4,851	11%	OK
15-minute Analysis Period w/ 2 time-space zones																	
Using LOS C/D Analysis Criteria																	
1	9,200	15.0	138,000	1,227	7.5	7.0	64,424	1,227	318	224	1.42	1,744.1	16.0	27,905	92,330	67%	OK
2	8,800	15.0	132,000	591	7.5	7.0	31,006	591	320	224	1.43	843.8	16.0	13,500	44,506	34%	OK
Using LOS mid-D Analysis Criteria																	
1	9,200	15.0	138,000	1,227	7.5	5.0	46,017	1,227	318	224	1.42	1,744.1	13.5	23,545	69,562	50%	OK
2	8,800	15.0	132,000	591	7.5	5.0	22,147	591	320	224	1.43	843.8	13.5	11,391	33,538	25%	OK
Using LOS mid-E Analysis Criteria																	
1	9,200	15.0	138,000	1,227	7.5	2.5	23,009	1,227	318	174	1.83	2,245.0	8.5	19,083	42,092	31%	OK
2	8,800	15.0	132,000	591	7.5	2.5	11,073	591	320	224	1.43	843.8	8.5	7,172	18,246	14%	OK
45th Street Crosspassage (LIRR only)								% pax using :		9.6%							
5-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	4,400	5.0	22,000	130	5.0	7.0	4,556	130	100	224	0.45	58.1	16.0	930	5,486	25%	OK
Using LOS mid-D Analysis Criteria																	
1	4,400	5.0	22,000	130	5.0	5.0	3,254	130	100	211	0.47	61.7	13.5	833	4,087	19%	OK
Using LOS mid-E Analysis Criteria																	
1	4,400	5.0	22,000	130	5.0	2.5	1,627	130	100	174	0.57	74.8	8.5	636	2,263	10%	OK
15-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	4,400	15.0	66,000	391	7.5	7.0	20,503	391	100	224	0.45	174.4	16.0	2,790	23,292	35%	OK
Using LOS mid-D Analysis Criteria																	
1	4,400	15.0	66,000	391	7.5	5.0	14,645	391	100	211	0.47	185.1	13.5	2,498	17,143	26%	OK
Using LOS mid-E Analysis Criteria																	
1	4,400	15.0	66,000	391	7.5	2.5	7,322	391	100	174	0.57	224.4	8.5	1,908	9,230	14%	OK

NOTES:
(1) Analysis period is the 5/15-minute period just before train doors open during peak PM period.
(2) Based on percentage of passengers arriving before the start of the analysis period.
(3) Average queue space of 7, 5, and 2.5 square feet per pedestrian signify LOS C/D, mid-D, and mid-E conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224, 211, and 174 feet per minute signify LOS C/D, mid-D, and mid-E conditions, respectively.
(6) Average walk space of 16, 13.5, and 8.5 square feet per pedestrian signify LOS C/D,mid-D, and mid-E conditions, respectively.

Table M - 31
TIME-SPACE ANALYSES OF CROSSPASSAGEWAYS @ GRAND CENTRAL TERMINAL
FUTURE BUILD CONDITIONS -- 5/15-MINUTES DURING PM PEAK PERIOD

% waiting in xpassage: 75%
LIRR pax load (one 12-car train): 1,356
MNR pax load (one 10-car train): 1,130

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
48th Street Crosspassage (LIRR only)								% pax using :		22.5%							
5-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	8,400	5.0	42,000	458	5.0	7.0	16,018	458	100	224	0.45	204.3	16.0	3,269	19,287	46%	OK
Using LOS mid-D Analysis Criteria																	
1	8,400	5.0	42,000	458	5.0	5.0	11,441	458	100	211	0.47	216.9	13.5	2,928	14,369	34%	OK
Using LOS mid-E Analysis Criteria																	
1	8,400	5.0	42,000	458	5.0	2.5	5,721	458	100	174	0.57	263.0	8.5	2,236	7,956	19%	OK
15-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	8,400	15.0	126,000	1,373	7.5	7.0	72,080	1,373	100	224	0.45	613.0	16.0	9,808	81,888	65%	OK
Using LOS mid-D Analysis Criteria																	
1	8,400	15.0	126,000	1,373	7.5	5.0	51,486	1,373	100	211	0.47	650.6	13.5	8,783	60,269	48%	OK
Using LOS mid-E Analysis Criteria																	
1	8,400	15.0	126,000	1,373	7.5	2.5	25,743	1,373	100	174	0.57	789.1	8.5	6,707	32,450	26%	OK
47th Street Crosspassage (LIRR / MNR)							% LIRR / MNR pax using :			22.1%	27.1%						
5-minute Analysis Period with one time-space zone (the entire crosspassageway)																	
Using LOS C/D Analysis Criteria																	
1	18,000	5.0	90,000	909	5.0	7.0	31,810	909	320	224	1.43	1,298.5	16.0	20,776	52,586	58%	OK
Using LOS mid-D Analysis Criteria																	
1	18,000	5.0	90,000	909	5.0	5.0	22,721	909	320	211	1.52	1,378.2	13.5	18,606	41,328	46%	OK
Using LOS mid-E Analysis Criteria																	
1	18,000	5.0	90,000	909	5.0	2.5	11,361	909	320	174	1.84	1,671.5	8.5	14,207	25,568	28%	OK
15-minute Analysis Period with one time-space zone (the entire crosspassageway)																	
Using LOS C/D Analysis Criteria																	
1	18,000	15.0	270,000	2,727	7.5	7.0	143,145	2,727	320	224	1.43	3,895.5	16.0	62,327	205,473	76%	OK
Using LOS mid-D Analysis Criteria																	
1	18,000	15.0	270,000	2,727	7.5	5.0	102,247	2,727	320	211	1.52	4,134.7	13.5	55,818	158,065	59%	OK
Using LOS mid-E Analysis Criteria																	
1	18,000	15.0	270,000	2,727	7.5	2.5	51,123	2,727	320	174	1.84	5,014.4	8.5	42,622	93,746	35%	OK
5-minute Analysis Period w/ 2 time-space zones							% LIRR / MNR pax using :			22.1%	27.1%						
Using LOS C/D Analysis Criteria																	
1	9,200	5.0	46,000	614	5.0	7.0	21,475	614	318	224	1.42	872.0	16.0	13,953	35,427	77%	OK
2	8,800	5.0	44,000	295	5.0	7.0	10,335	295	320	224	1.43	421.9	16.0	6,750	17,085	39%	OK
Using LOS mid-D Analysis Criteria																	
1	9,200	5.0	46,000	614	5.0	5.0	15,339	614	318	211	1.51	925.6	13.5	12,495	27,835	61%	OK
2	8,800	5.0	44,000	295	5.0	5.0	7,382	295	320	224	1.43	421.9	13.5	5,695	13,078	30%	OK
Using LOS mid-E Analysis Criteria																	
1	9,200	5.0	46,000	614	5.0	2.5	7,670	614	318	174	1.83	1,122.5	8.5	9,541	17,211	37%	OK
2	8,800	5.0	44,000	295	5.0	2.5	3,691	295	320	224	1.43	421.9	8.5	3,586	7,277	17%	OK
15-minute Analysis Period w/ 2 time-space zones																	
Using LOS C/D Analysis Criteria																	
1	9,200	15.0	138,000	1,841	7.5	7.0	96,637	1,841	318	224	1.42	2,616.1	16.0	41,858	138,494	100%	OK
2	8,800	15.0	132,000	886	7.5	7.0	46,509	886	320	224	1.43	1,265.7	16.0	20,250	66,759	51%	OK
Using LOS mid-D Analysis Criteria																	
1	9,200	15.0	138,000	1,841	7.5	5.0	69,026	1,841	318	224	1.42	2,616.1	13.5	35,317	104,344	76%	OK
2	8,800	15.0	132,000	886	7.5	5.0	33,220	886	320	224	1.43	1,265.7	13.5	17,086	50,307	38%	OK
Using LOS mid-E Analysis Criteria																	
1	9,200	15.0	138,000	1,841	7.5	2.5	34,513	1,841	318	174	1.83	3,367.6	8.5	28,624	63,137	46%	OK
2	8,800	15.0	132,000	886	7.5	2.5	16,610	886	320	224	1.43	1,265.7	8.5	10,758	27,368	21%	OK
45th Street Crosspassage (LIRR only)								% pax using :		9.6%							
5-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	4,400	5.0	22,000	195	5.0	7.0	6,834	195	100	224	0.45	87.2	16.0	1,395	8,229	37%	OK
Using LOS mid-D Analysis Criteria																	
1	4,400	5.0	22,000	195	5.0	5.0	4,882	195	100	211	0.47	92.5	13.5	1,249	6,131	28%	OK
Using LOS mid-E Analysis Criteria																	
1	4,400	5.0	22,000	195	5.0	2.5	2,441	195	100	174	0.57	112.2	8.5	954	3,395	15%	OK
15-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	4,400	15.0	66,000	586	7.5	7.0	30,754	586	100	224	0.45	261.5	16.0	4,185	34,939	53%	OK
Using LOS mid-D Analysis Criteria																	
1	4,400	15.0	66,000	586	7.5	5.0	21,967	586	100	211	0.47	277.6	13.5	3,748	25,715	39%	OK
Using LOS mid-E Analysis Criteria																	
1	4,400	15.0	66,000	586	7.5	2.5	10,984	586	100	174	0.57	336.7	8.5	2,862	13,845	21%	OK

NOTES:
(1) Analysis period is the 5/15-minute period just before train doors open during peak PM period.
(2) Based on percentage of passengers arriving before the start of the analysis period.
(3) Average queue space of 7, 5, and 2.5 square feet per pedestrian signify LOS C/D, mid-D, and mid-E conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224, 211, and 174 feet per minute signify LOS C/D, mid-D, and mid-E conditions, respectively.
(6) Average walk space of 16, 13.5, and 8.5 square feet per pedestrian signify LOS C/D,mid-D, and mid-E conditions, respectively.

Table M - 31
TIME-SPACE ANALYSES OF CROSSPASSAGEWAYS @ GRAND CENTRAL TERMINAL
FUTURE BUILD CONDITIONS -- 5/15-MINUTES DURING PM PEAK PERIOD

% waiting in xpassage: 75%
LIRR pax load (one 12-car train): 1,254
MNR pax load (one 10-car train): 1,045

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
48th Street Crosspassage (LIRR only)								% pax using :		22.5%							
5-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	8,400	5.0	42,000	423	5.0	7.0	14,816	423	100	224	0.45	189.0	16.0	3,024	17,840	42%	OK
Using LOS mid-D Analysis Criteria																	
1	8,400	5.0	42,000	423	5.0	5.0	10,583	423	100	211	0.47	200.6	13.5	2,708	13,291	32%	OK
Using LOS mid-E Analysis Criteria																	
1	8,400	5.0	42,000	423	5.0	2.5	5,292	423	100	174	0.57	243.3	8.5	2,068	7,360	18%	OK
15-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	8,400	15.0	126,000	1,270	7.5	7.0	66,674	1,270	100	224	0.45	567.0	16.0	9,072	75,746	60%	OK
Using LOS mid-D Analysis Criteria																	
1	8,400	15.0	126,000	1,270	7.5	5.0	47,624	1,270	100	211	0.47	601.8	13.5	8,125	55,749	44%	OK
Using LOS mid-E Analysis Criteria																	
1	8,400	15.0	126,000	1,270	7.5	2.5	23,812	1,270	100	174	0.57	729.9	8.5	6,204	30,016	24%	OK
47th Street Crosspassage (LIRR / MNR)							% LIRR / MNR pax using :			22.1%	40.0%						
5-minute Analysis Period with one time-space zone (the entire crosspassageway)																	
Using LOS C/D Analysis Criteria																	
1	18,000	5.0	90,000	1,043	5.0	7.0	36,503	1,043	320	224	1.43	1,490.1	16.0	23,841	60,344	67%	OK
Using LOS mid-D Analysis Criteria																	
1	18,000	5.0	90,000	1,043	5.0	5.0	26,074	1,043	320	211	1.52	1,581.6	13.5	21,351	47,425	53%	OK
Using LOS mid-E Analysis Criteria																	
1	18,000	5.0	90,000	1,043	5.0	2.5	13,037	1,043	320	174	1.84	1,918.1	8.5	16,304	29,340	33%	OK
15-minute Analysis Period with one time-space zone (the entire crosspassageway)																	
Using LOS C/D Analysis Criteria																	
1	18,000	15.0	270,000	3,129	7.5	7.0	164,265	3,129	320	224	1.43	4,470.2	16.0	71,523	235,788	87%	OK
Using LOS mid-D Analysis Criteria																	
1	18,000	15.0	270,000	3,129	7.5	5.0	117,332	3,129	320	211	1.52	4,744.7	13.5	64,054	181,386	67%	OK
Using LOS mid-E Analysis Criteria																	
1	18,000	15.0	270,000	3,129	7.5	2.5	58,666	3,129	320	174	1.84	5,754.2	8.5	48,911	107,577	40%	OK
5-minute Analysis Period w/ 2 time-space zones							% LIRR / MNR pax using :			22.1%	40.0%						
Using LOS C/D Analysis Criteria																	
1	9,200	5.0	46,000	640	5.0	7.0	22,392	640	318	224	1.42	909.3	16.0	14,549	36,941	80%	OK
2	8,800	5.0	44,000	403	5.0	7.0	14,111	403	320	224	1.43	576.0	16.0	9,216	23,327	53%	OK
Using LOS mid-D Analysis Criteria																	
1	9,200	5.0	46,000	640	5.0	5.0	15,995	640	318	211	1.51	965.1	13.5	13,029	29,024	63%	OK
2	8,800	5.0	44,000	403	5.0	5.0	10,079	403	320	224	1.43	576.0	13.5	7,776	17,855	41%	OK
Using LOS mid-E Analysis Criteria																	
1	9,200	5.0	46,000	640	5.0	2.5	7,997	640	318	174	1.83	1,170.5	8.5	9,949	17,946	39%	OK
2	8,800	5.0	44,000	403	5.0	2.5	5,040	403	320	224	1.43	576.0	8.5	4,896	9,936	23%	OK
15-minute Analysis Period w/ 2 time-space zones																	
Using LOS C/D Analysis Criteria																	
1	9,200	15.0	138,000	1,919	7.5	7.0	100,766	1,919	318	224	1.42	2,727.9	16.0	43,646	144,412	105%	fails
2	8,800	15.0	132,000	1,210	7.5	7.0	63,499	1,210	320	224	1.43	1,728.0	16.0	27,648	91,147	69%	OK
Using LOS mid-D Analysis Criteria																	
1	9,200	15.0	138,000	1,919	7.5	5.0	71,976	1,919	318	224	1.42	2,727.9	13.5	36,826	108,802	79%	OK
2	8,800	15.0	132,000	1,210	7.5	5.0	45,356	1,210	320	224	1.43	1,728.0	13.5	23,328	68,685	52%	OK
Using LOS mid-E Analysis Criteria																	
1	9,200	15.0	138,000	1,919	7.5	2.5	35,988	1,919	318	174	1.83	3,511.5	8.5	29,847	65,835	48%	OK
2	8,800	15.0	132,000	1,210	7.5	2.5	22,678	1,210	320	224	1.43	1,728.0	8.5	14,688	37,366	28%	OK
45th Street Crosspassage (LIRR only)								% pax using :		9.6%							
5-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	4,400	5.0	22,000	181	5.0	7.0	6,322	181	100	224	0.45	80.6	16.0	1,290	7,612	35%	OK
Using LOS mid-D Analysis Criteria																	
1	4,400	5.0	22,000	181	5.0	5.0	4,515	181	100	211	0.47	85.6	13.5	1,156	5,671	26%	OK
Using LOS mid-E Analysis Criteria																	
1	4,400	5.0	22,000	181	5.0	2.5	2,258	181	100	174	0.57	103.8	8.5	882	3,140	14%	OK
15-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	4,400	15.0	66,000	542	7.5	7.0	28,448	542	100	224	0.45	241.9	16.0	3,871	32,318	49%	OK
Using LOS mid-D Analysis Criteria																	
1	4,400	15.0	66,000	542	7.5	5.0	20,320	542	100	211	0.47	256.8	13.5	3,467	23,786	36%	OK
Using LOS mid-E Analysis Criteria																	
1	4,400	15.0	66,000	542	7.5	2.5	10,160	542	100	174	0.57	311.4	8.5	2,647	12,807	19%	OK

NOTES:
(1) Analysis period is the 5/15-minute period just before train doors open during peak PM period.
(2) Based on percentage of passengers arriving before the start of the analysis period.
(3) Average queue space of 7, 5, and 2.5 square feet per pedestrian signify LOS C/D, mid-D, and mid-E conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224, 211, and 174 feet per minute signify LOS C/D, mid-D, and mid-E conditions, respectively.
(6) Average walk space of 16, 13.5, and 8.5 square feet per pedestrian signify LOS C/D,mid-D, and mid-E conditions, respectively.

Table M - 31
TIME-SPACE ANALYSES OF CROSSPASSAGEWAYS @ GRAND CENTRAL TERMINAL
FUTURE BUILD CONDITIONS -- 5/15-MINUTES DURING PM PEAK PERIOD

% waiting in xpassage: 50%
LIRR pax load (one 12-car train): 1,254
MNR pax load (one 10-car train): 1,045

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
48th Street Crosspassage (LIRR only)								% pax using :		22.5%							
5-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	8,400	5.0	42,000	282	5.0	7.0	9,878	282	100	224	0.45	126.0	16.0	2,016	11,894	28%	OK
Using LOS mid-D Analysis Criteria																	
1	8,400	5.0	42,000	282	5.0	5.0	7,055	282	100	211	0.47	133.7	13.5	1,805	8,861	21%	OK
Using LOS mid-E Analysis Criteria																	
1	8,400	5.0	42,000	282	5.0	2.5	3,528	282	100	174	0.57	162.2	8.5	1,379	4,906	12%	OK
15-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	8,400	15.0	126,000	847	7.5	7.0	44,449	847	100	224	0.45	378.0	16.0	6,048	50,497	40%	OK
Using LOS mid-D Analysis Criteria																	
1	8,400	15.0	126,000	847	7.5	5.0	31,749	847	100	211	0.47	401.2	13.5	5,416	37,166	29%	OK
Using LOS mid-E Analysis Criteria																	
1	8,400	15.0	126,000	847	7.5	2.5	15,875	847	100	174	0.57	486.6	8.5	4,136	20,011	16%	OK
47th Street Crosspassage (LIRR / MNR)							% LIRR / MNR pax using :			22.1%	40.0%						
5-minute Analysis Period with one time-space zone (the entire crosspassageway)																	
Using LOS C/D Analysis Criteria																	
1	18,000	5.0	90,000	695	5.0	7.0	24,336	695	320	224	1.43	993.4	16.0	15,894	40,230	45%	OK
Using LOS mid-D Analysis Criteria																	
1	18,000	5.0	90,000	695	5.0	5.0	17,383	695	320	211	1.52	1,054.4	13.5	14,234	31,617	35%	OK
Using LOS mid-E Analysis Criteria																	
1	18,000	5.0	90,000	695	5.0	2.5	8,691	695	320	174	1.84	1,278.7	8.5	10,869	19,560	22%	OK
15-minute Analysis Period with one time-space zone (the entire crosspassageway)																	
Using LOS C/D Analysis Criteria																	
1	18,000	15.0	270,000	2,086	7.5	7.0	109,510	2,086	320	224	1.43	2,980.1	16.0	47,682	157,192	58%	OK
Using LOS mid-D Analysis Criteria																	
1	18,000	15.0	270,000	2,086	7.5	5.0	78,221	2,086	320	211	1.52	3,163.2	13.5	42,703	120,924	45%	OK
Using LOS mid-E Analysis Criteria																	
1	18,000	15.0	270,000	2,086	7.5	2.5	39,111	2,086	320	174	1.84	3,836.1	8.5	32,607	71,718	27%	OK
5-minute Analysis Period w/ 2 time-space zones							% LIRR / MNR pax using :			22.1%	40.0%						
Using LOS C/D Analysis Criteria																	
1	9,200	5.0	46,000	427	5.0	7.0	14,928	427	318	224	1.42	606.2	16.0	9,699	24,627	54%	OK
2	8,800	5.0	44,000	269	5.0	7.0	9,407	269	320	224	1.43	384.0	16.0	6,144	15,551	35%	OK
Using LOS mid-D Analysis Criteria																	
1	9,200	5.0	46,000	427	5.0	5.0	10,663	427	318	211	1.51	643.4	13.5	8,686	19,349	42%	OK
2	8,800	5.0	44,000	269	5.0	5.0	6,719	269	320	224	1.43	384.0	13.5	5,184	11,904	27%	OK
Using LOS mid-E Analysis Criteria																	
1	9,200	5.0	46,000	427	5.0	2.5	5,332	427	318	174	1.83	780.3	8.5	6,633	11,964	26%	OK
2	8,800	5.0	44,000	269	5.0	2.5	3,360	269	320	224	1.43	384.0	8.5	3,264	6,624	15%	OK
15-minute Analysis Period w/ 2 time-space zones																	
Using LOS C/D Analysis Criteria																	
1	9,200	15.0	138,000	1,280	7.5	7.0	67,177	1,280	318	224	1.42	1,818.6	16.0	29,097	96,275	70%	OK
2	8,800	15.0	132,000	806	7.5	7.0	42,333	806	320	224	1.43	1,152.0	16.0	18,432	60,765	46%	OK
Using LOS mid-D Analysis Criteria																	
1	9,200	15.0	138,000	1,280	7.5	5.0	47,984	1,280	318	224	1.42	1,818.6	13.5	24,551	72,535	53%	OK
2	8,800	15.0	132,000	806	7.5	5.0	30,238	806	320	224	1.43	1,152.0	13.5	15,552	45,790	35%	OK
Using LOS mid-E Analysis Criteria																	
1	9,200	15.0	138,000	1,280	7.5	2.5	23,992	1,280	318	174	1.83	2,341.0	8.5	19,898	43,890	32%	OK
2	8,800	15.0	132,000	806	7.5	2.5	15,119	806	320	224	1.43	1,152.0	8.5	9,792	24,911	19%	OK
45th Street Crosspassage (LIRR only)								% pax using :		9.6%							
5-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	4,400	5.0	22,000	120	5.0	7.0	4,214	120	100	224	0.45	53.8	16.0	860	5,075	23%	OK
Using LOS mid-D Analysis Criteria																	
1	4,400	5.0	22,000	120	5.0	5.0	3,010	120	100	211	0.47	57.1	13.5	770	3,781	17%	OK
Using LOS mid-E Analysis Criteria																	
1	4,400	5.0	22,000	120	5.0	2.5	1,505	120	100	174	0.57	69.2	8.5	588	2,093	10%	OK
15-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	4,400	15.0	66,000	361	7.5	7.0	18,965	361	100	224	0.45	161.3	16.0	2,581	21,546	33%	OK
Using LOS mid-D Analysis Criteria																	
1	4,400	15.0	66,000	361	7.5	5.0	13,546	361	100	211	0.47	171.2	13.5	2,311	15,857	24%	OK
Using LOS mid-E Analysis Criteria																	
1	4,400	15.0	66,000	361	7.5	2.5	6,773	361	100	174	0.57	207.6	8.5	1,765	8,538	13%	OK

NOTES:
(1) Analysis period is the 5/15-minute period just before train doors open during peak PM period.
(2) Based on percentage of passengers arriving before the start of the analysis period.
(3) Average queue space of 7, 5, and 2.5 square feet per pedestrian signify LOS C/D, mid-D, and mid-E conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224, 211, and 174 feet per minute signify LOS C/D, mid-D, and mid-E conditions, respectively.
(6) Average walk space of 16, 13.5, and 8.5 square feet per pedestrian signify LOS C/D,mid-D, and mid-E conditions, respectively.

Table M - 31
TIME-SPACE ANALYSES OF CROSSPASSAGEWAYS @ GRAND CENTRAL TERMINAL
FUTURE BUILD CONDITIONS -- 5/15-MINUTES DURING PM PEAK PERIOD

% waiting in xpassage: 25%
LIRR pax load (one 12-car train): 1,254
MNR pax load (one 10-car train): 1,045

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
48th Street Crosspassage (LIRR only)								% pax using :		22.5%							
5-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	8,400	5.0	42,000	141	5.0	7.0	4,939	141	100	224	0.45	63.0	16.0	1,008	5,947	14%	OK
Using LOS mid-D Analysis Criteria																	
1	8,400	5.0	42,000	141	5.0	5.0	3,528	141	100	211	0.47	66.9	13.5	903	4,430	11%	OK
Using LOS mid-E Analysis Criteria																	
1	8,400	5.0	42,000	141	5.0	2.5	1,764	141	100	174	0.57	81.1	8.5	689	2,453	6%	OK
15-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	8,400	15.0	126,000	423	7.5	7.0	22,225	423	100	224	0.45	189.0	16.0	3,024	25,249	20%	OK
Using LOS mid-D Analysis Criteria																	
1	8,400	15.0	126,000	423	7.5	5.0	15,875	423	100	211	0.47	200.6	13.5	2,708	18,583	15%	OK
Using LOS mid-E Analysis Criteria																	
1	8,400	15.0	126,000	423	7.5	2.5	7,937	423	100	174	0.57	243.3	8.5	2,068	10,005	8%	OK
47th Street Crosspassage (LIRR / MNR)							% LIRR / MNR pax using :			22.1%	40.0%						
5-minute Analysis Period with one time-space zone (the entire crosspassageway)																	
Using LOS C/D Analysis Criteria																	
1	18,000	5.0	90,000	348	5.0	7.0	12,168	348	320	224	1.43	496.7	16.0	7,947	20,115	22%	OK
Using LOS mid-D Analysis Criteria																	
1	18,000	5.0	90,000	348	5.0	5.0	8,691	348	320	211	1.52	527.2	13.5	7,117	15,808	18%	OK
Using LOS mid-E Analysis Criteria																	
1	18,000	5.0	90,000	348	5.0	2.5	4,346	348	320	174	1.84	639.4	8.5	5,435	9,780	11%	OK
15-minute Analysis Period with one time-space zone (the entire crosspassageway)																	
Using LOS C/D Analysis Criteria																	
1	18,000	15.0	270,000	1,043	7.5	7.0	54,755	1,043	320	224	1.43	1,490.1	16.0	23,841	78,596	29%	OK
Using LOS mid-D Analysis Criteria																	
1	18,000	15.0	270,000	1,043	7.5	5.0	39,111	1,043	320	211	1.52	1,581.6	13.5	21,351	60,462	22%	OK
Using LOS mid-E Analysis Criteria																	
1	18,000	15.0	270,000	1,043	7.5	2.5	19,555	1,043	320	174	1.84	1,918.1	8.5	16,304	35,859	13%	OK
5-minute Analysis Period w/ 2 time-space zones							% LIRR / MNR pax using :			22.1%	40.0%						
Using LOS C/D Analysis Criteria																	
1	9,200	5.0	46,000	213	5.0	7.0	7,464	213	318	224	1.42	303.1	16.0	4,850	12,314	27%	OK
2	8,800	5.0	44,000	134	5.0	7.0	4,704	134	320	224	1.43	192.0	16.0	3,072	7,776	18%	OK
Using LOS mid-D Analysis Criteria																	
1	9,200	5.0	46,000	213	5.0	5.0	5,332	213	318	211	1.51	321.7	13.5	4,343	9,675	21%	OK
2	8,800	5.0	44,000	134	5.0	5.0	3,360	134	320	224	1.43	192.0	13.5	2,592	5,952	14%	OK
Using LOS mid-E Analysis Criteria																	
1	9,200	5.0	46,000	213	5.0	2.5	2,666	213	318	174	1.83	390.2	8.5	3,316	5,982	13%	OK
2	8,800	5.0	44,000	134	5.0	2.5	1,680	134	320	224	1.43	192.0	8.5	1,632	3,312	8%	OK
15-minute Analysis Period w/ 2 time-space zones																	
Using LOS C/D Analysis Criteria																	
1	9,200	15.0	138,000	640	7.5	7.0	33,589	640	318	224	1.42	909.3	16.0	14,549	48,137	35%	OK
2	8,800	15.0	132,000	403	7.5	7.0	21,166	403	320	224	1.43	576.0	16.0	9,216	30,382	23%	OK
Using LOS mid-D Analysis Criteria																	
1	9,200	15.0	138,000	640	7.5	5.0	23,992	640	318	224	1.42	909.3	13.5	12,275	36,267	26%	OK
2	8,800	15.0	132,000	403	7.5	5.0	15,119	403	320	224	1.43	576.0	13.5	7,776	22,895	17%	OK
Using LOS mid-E Analysis Criteria																	
1	9,200	15.0	138,000	640	7.5	2.5	11,996	640	318	174	1.83	1,170.5	8.5	9,949	21,945	16%	OK
2	8,800	15.0	132,000	403	7.5	2.5	7,559	403	320	224	1.43	576.0	8.5	4,896	12,455	9%	OK
45th Street Crosspassage (LIRR only)								% pax using :		9.6%							
5-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	4,400	5.0	22,000	60	5.0	7.0	2,107	60	100	224	0.45	26.9	16.0	430	2,537	12%	OK
Using LOS mid-D Analysis Criteria																	
1	4,400	5.0	22,000	60	5.0	5.0	1,505	60	100	211	0.47	28.5	13.5	385	1,890	9%	OK
Using LOS mid-E Analysis Criteria																	
1	4,400	5.0	22,000	60	5.0	2.5	753	60	100	174	0.57	34.6	8.5	294	1,047	5%	OK
15-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	4,400	15.0	66,000	181	7.5	7.0	9,483	181	100	224	0.45	80.6	16.0	1,290	10,773	16%	OK
Using LOS mid-D Analysis Criteria																	
1	4,400	15.0	66,000	181	7.5	5.0	6,773	181	100	211	0.47	85.6	13.5	1,156	7,929	12%	OK
Using LOS mid-E Analysis Criteria																	
1	4,400	15.0	66,000	181	7.5	2.5	3,387	181	100	174	0.57	103.8	8.5	882	4,269	6%	OK

NOTES:
(1) Analysis period is the 5/15-minute period just before train doors open during peak PM period.
(2) Based on percentage of passengers arriving before the start of the analysis period.
(3) Average queue space of 7, 5, and 2.5 square feet per pedestrian signify LOS C/D, mid-D, and mid-E conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224, 211, and 174 feet per minute signify LOS C/D, mid-D, and mid-E conditions, respectively.
(6) Average walk space of 16, 13.5, and 8.5 square feet per pedestrian signify LOS C/D,mid-D, and mid-E conditions, respectively.

Table M - 31
TIME-SPACE ANALYSES OF CROSSPASSAGEWAYS @ GRAND CENTRAL TERMINAL
FUTURE BUILD CONDITIONS -- 5/15-MINUTES DURING PM PEAK PERIOD

% waiting in xpassage: 25%
LIRR pax load (one 12-car train): 1,356
MNR pax load (one 10-car train): 1,130

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
48th Street Crosspassage (LIRR only)								% pax using :		22.5%							
5-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	8,400	5.0	42,000	153	5.0	7.0	5,339	153	100	224	0.45	68.1	16.0	1,090	6,429	15%	OK
Using LOS mid-D Analysis Criteria																	
1	8,400	5.0	42,000	153	5.0	5.0	3,814	153	100	211	0.47	72.3	13.5	976	4,790	11%	OK
Using LOS mid-E Analysis Criteria																	
1	8,400	5.0	42,000	153	5.0	2.5	1,907	153	100	174	0.57	87.7	8.5	745	2,652	6%	OK
15-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	8,400	15.0	126,000	458	7.5	7.0	24,027	458	100	224	0.45	204.3	16.0	3,269	27,296	22%	OK
Using LOS mid-D Analysis Criteria																	
1	8,400	15.0	126,000	458	7.5	5.0	17,162	458	100	211	0.47	216.9	13.5	2,928	20,090	16%	OK
Using LOS mid-E Analysis Criteria																	
1	8,400	15.0	126,000	458	7.5	2.5	8,581	458	100	174	0.57	263.0	8.5	2,236	10,817	9%	OK
47th Street Crosspassage (LIRR / MNR)							% LIRR / MNR pax using :			22.1%	27.1%						
5-minute Analysis Period with one time-space zone (the entire crosspassageway)																	
Using LOS C/D Analysis Criteria																	
1	18,000	5.0	90,000	303	5.0	7.0	10,603	303	320	224	1.43	432.8	16.0	6,925	17,529	19%	OK
Using LOS mid-D Analysis Criteria																	
1	18,000	5.0	90,000	303	5.0	5.0	7,574	303	320	211	1.52	459.4	13.5	6,202	13,776	15%	OK
Using LOS mid-E Analysis Criteria																	
1	18,000	5.0	90,000	303	5.0	2.5	3,787	303	320	174	1.84	557.2	8.5	4,736	8,523	9%	OK
15-minute Analysis Period with one time-space zone (the entire crosspassageway)																	
Using LOS C/D Analysis Criteria																	
1	18,000	15.0	270,000	909	7.5	7.0	47,715	909	320	224	1.43	1,298.5	16.0	20,776	68,491	25%	OK
Using LOS mid-D Analysis Criteria																	
1	18,000	15.0	270,000	909	7.5	5.0	34,082	909	320	211	1.52	1,378.2	13.5	18,606	52,688	20%	OK
Using LOS mid-E Analysis Criteria																	
1	18,000	15.0	270,000	909	7.5	2.5	17,041	909	320	174	1.84	1,671.5	8.5	14,207	31,249	12%	OK
5-minute Analysis Period w/ 2 time-space zones							% LIRR / MNR pax using :			22.1%	27.1%						
Using LOS C/D Analysis Criteria																	
1	9,200	5.0	46,000	205	5.0	7.0	7,158	205	318	224	1.42	290.7	16.0	4,651	11,809	26%	OK
2	8,800	5.0	44,000	98	5.0	7.0	3,445	98	320	224	1.43	140.6	16.0	2,250	5,695	13%	OK
Using LOS mid-D Analysis Criteria																	
1	9,200	5.0	46,000	205	5.0	5.0	5,113	205	318	211	1.51	308.5	13.5	4,165	9,278	20%	OK
2	8,800	5.0	44,000	98	5.0	5.0	2,461	98	320	224	1.43	140.6	13.5	1,898	4,359	10%	OK
Using LOS mid-E Analysis Criteria																	
1	9,200	5.0	46,000	205	5.0	2.5	2,557	205	318	174	1.83	374.2	8.5	3,180	5,737	12%	OK
2	8,800	5.0	44,000	98	5.0	2.5	1,230	98	320	224	1.43	140.6	8.5	1,195	2,426	6%	OK
15-minute Analysis Period w/ 2 time-space zones																	
Using LOS C/D Analysis Criteria																	
1	9,200	15.0	138,000	614	7.5	7.0	32,212	614	318	224	1.42	872.0	16.0	13,953	46,165	33%	OK
2	8,800	15.0	132,000	295	7.5	7.0	15,503	295	320	224	1.43	421.9	16.0	6,750	22,253	17%	OK
Using LOS mid-D Analysis Criteria																	
1	9,200	15.0	138,000	614	7.5	5.0	23,009	614	318	224	1.42	872.0	13.5	11,772	34,781	25%	OK
2	8,800	15.0	132,000	295	7.5	5.0	11,073	295	320	224	1.43	421.9	13.5	5,695	16,769	13%	OK
Using LOS mid-E Analysis Criteria																	
1	9,200	15.0	138,000	614	7.5	2.5	11,504	614	318	174	1.83	1,122.5	8.5	9,541	21,046	15%	OK
2	8,800	15.0	132,000	295	7.5	2.5	5,537	295	320	224	1.43	421.9	8.5	3,586	9,123	7%	OK
45th Street Crosspassage (LIRR only)								% pax using :		9.6%							
5-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	4,400	5.0	22,000	65	5.0	7.0	2,278	65	100	224	0.45	29.1	16.0	465	2,743	12%	OK
Using LOS mid-D Analysis Criteria																	
1	4,400	5.0	22,000	65	5.0	5.0	1,627	65	100	211	0.47	30.8	13.5	416	2,044	9%	OK
Using LOS mid-E Analysis Criteria																	
1	4,400	5.0	22,000	65	5.0	2.5	814	65	100	174	0.57	37.4	8.5	318	1,132	5%	OK
15-minute Analysis Period																	
Using LOS C/D Analysis Criteria																	
1	4,400	15.0	66,000	195	7.5	7.0	10,251	195	100	224	0.45	87.2	16.0	1,395	11,646	18%	OK
Using LOS mid-D Analysis Criteria																	
1	4,400	15.0	66,000	195	7.5	5.0	7,322	195	100	211	0.47	92.5	13.5	1,249	8,572	13%	OK
Using LOS mid-E Analysis Criteria																	
1	4,400	15.0	66,000	195	7.5	2.5	3,661	195	100	174	0.57	112.2	8.5	954	4,615	7%	OK

NOTES:
(1) Analysis period is the 5/15-minute period just before train doors open during peak PM period.
(2) Based on percentage of passengers arriving before the start of the analysis period.
(3) Average queue space of 7, 5, and 2.5 square feet per pedestrian signify LOS C/D, mid-D, and mid-E conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224, 211, and 174 feet per minute signify LOS C/D, mid-D, and mid-E conditions, respectively.
(6) Average walk space of 16, 13.5, and 8.5 square feet per pedestrian signify LOS C/D,mid-D, and mid-E conditions, respectively.

TABLE M-32

SUBWAY STAIRS ANALYSES OF P16 STAIRWELL

Table M-32

EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 MITIGATED BUILD CONDITIONS PEAK 5 MINUTES WITHIN PEAK AM 15-MINUTE PERIOD (8:35 - 8:50)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1A (P10)	70	85	155	11.0	10.0	10	90	0.34	A
1 (P12)	195	270	465	11.0	10.0	10	90	1.03	D
2 (P14)	135	395	530	11.0	10.0	20	80	1.33	D
2A (P16)	205	280	485	11.0	10.0	10	90	1.08	D
3 (P18)	230	240	470	11.0	10.0	10	90	1.04	D
4 (P20)	255	230	485	11.0	10.0	10	90	1.08	D
5 (P22)	245	160	405	6.5	5.5	10	50	1.64	E
6 (P23)	380	55	435	6.5	5.5	20	44	1.98	F
7 (P21)	295	35	330	11.0	10.0	20	80	0.83	C
8 (P19)	210	160	370	11.0	10.0	10	90	0.82	C
9 (P17)	115	175	290	11.0	10.0	10	90	0.64	B
10 (P15)	75	130	205	11.0	10.0	10	90	0.46	B
11 (P13)	175	50	225	11.0	10.0	20	80	0.56	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT Stairwell Analysis Locations

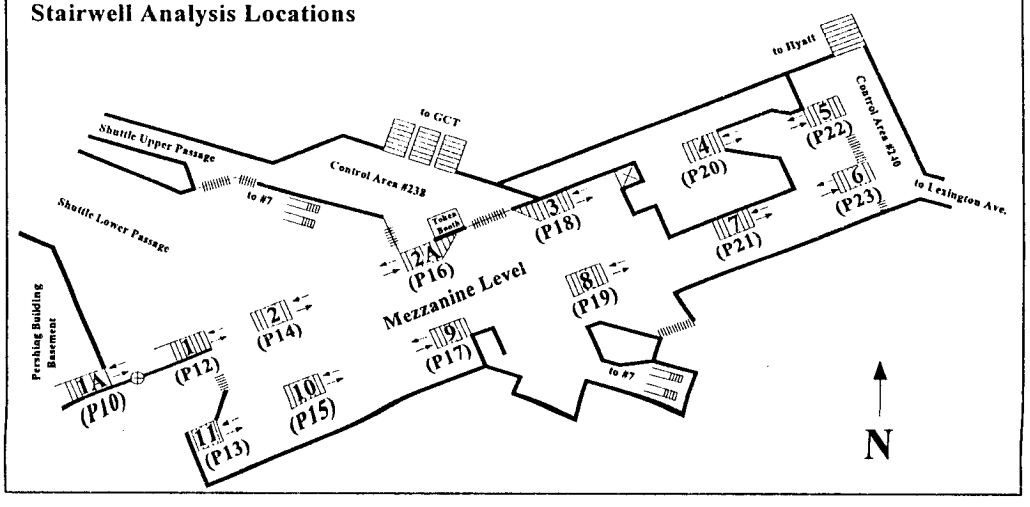


Table M-32

EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 MITIGATED BUILD CONDITIONS 15 MINUTE AM PEAK PERIOD (8:35 - 8:50)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1A (P10)	200	245	445	11.0	10.0	10	90	0.33	A
1 (P12)	470	755	1,225	11.0	10.0	10	90	0.91	C
2 (P14)	335	1,020	1,355	11.0	10.0	20	80	1.13	D
2A (P16)	505	710	1,215	11.0	10.0	10	90	0.90	C
3 (P18)	525	575	1,100	11.0	10.0	10	90	0.81	C
4 (P20)	710	675	1,385	11.0	10.0	10	90	1.03	D
5 (P22)	595	400	995	6.5	5.5	10	50	1.34	E
6 (P23)	960	155	1,115	6.5	5.5	20	44	1.69	F
7 (P21)	725	90	815	11.0	10.0	20	80	0.68	B
8 (P19)	590	395	985	11.0	10.0	10	90	0.73	C
9 (P17)	315	485	800	11.0	10.0	10	90	0.59	B
10 (P15)	195	355	550	11.0	10.0	10	90	0.41	A
11 (P13)	475	90	565	11.0	10.0	20	80	0.47	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT Stairwell Analysis Locations

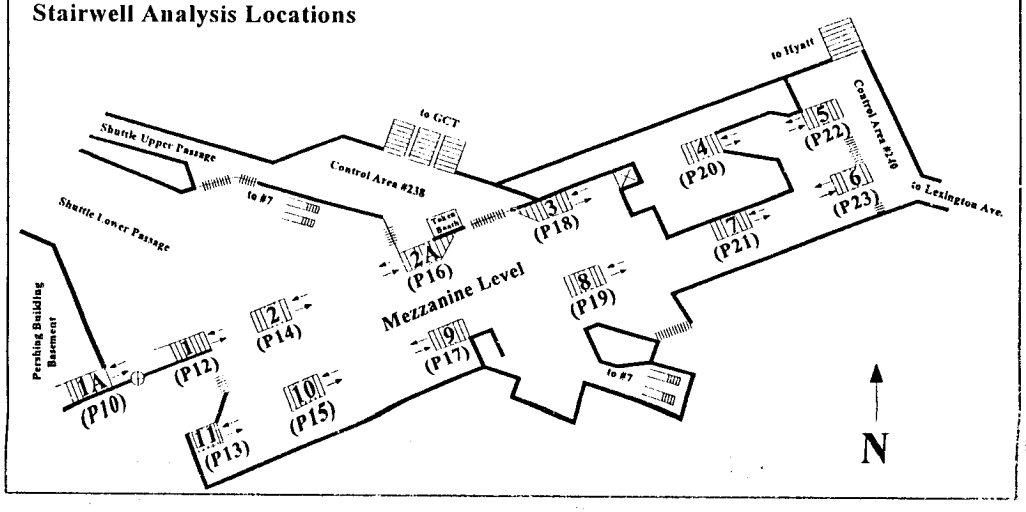


Table M-32

EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 MITIGATED BUILD CONDITIONS PEAK 5 MINUTES WITHIN PEAK PM 15-MINUTE PERIOD (5:10 - 5:25)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1A (P10)	45	30	75	11.0	10.0	10	90	0.17	A
1 (P12)	75	70	145	11.0	10.0	10	90	0.32	A
2 (P14)	60	245	305	11.0	10.0	20	80	0.76	C
2A (P16)	70	145	215	11.0	10.0	10	80	0.54	B
3 (P18)	95	80	175	11.0	10.0	10	90	0.39	A
4 (P20)	60	170	230	11.0	10.0	20	80	0.58	B
5 (P22)	45	260	305	6.5	5.5	20	44	1.39	E
6 (P23)	245	220	465	6.5	5.5	10	50	1.88	F
7 (P21)	245	120	365	11.0	10.0	20	80	0.91	C
8 (P19)	155	135	290	11.0	10.0	10	90	0.64	B
9 (P17)	245	195	440	11.0	10.0	10	90	0.98	C
10 (P15)	195	175	370	11.0	10.0	10	90	0.82	C
11 (P13)	240	210	450	11.0	10.0	10	90	1.00	D

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT Stairwell Analysis Locations

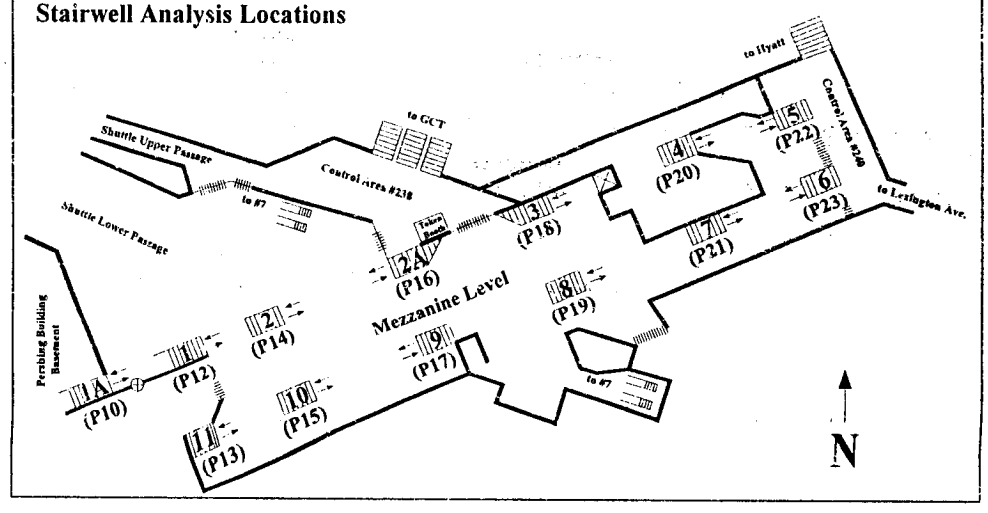


Table M-32

EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 MITIGATED BUILD CONDITIONS 15 MINUTE PM PEAK PERIOD (5:10 - 5:25)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1A (P10)	125	100	225	11.0	10.0	10	90	0.17	A
1 (P12)	210	160	370	11.0	10.0	10	90	0.27	A
2 (P14)	160	685	845	11.0	10.0	20	80	0.70	C
2A (P16)	185	385	570	11.0	10.0	10	80	0.48	B
3 (P18)	245	230	475	11.0	10.0	10	90	0.35	A
4 (P20)	150	440	590	11.0	10.0	20	80	0.49	B
5 (P22)	90	715	805	6.5	5.5	20	44	1.22	D
6 (P23)	610	365	975	6.5	5.5	10	50	1.31	D
7 (P21)	635	285	920	11.0	10.0	20	80	0.77	C
8 (P19)	380	380	760	11.0	10.0	10	90	0.56	B
9 (P17)	605	550	1,155	11.0	10.0	10	90	0.86	C
10 (P15)	480	480	960	11.0	10.0	10	90	0.71	C
11 (P13)	545	495	1,040	11.0	10.0	10	90	0.77	C

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT Stairwell Analysis Locations

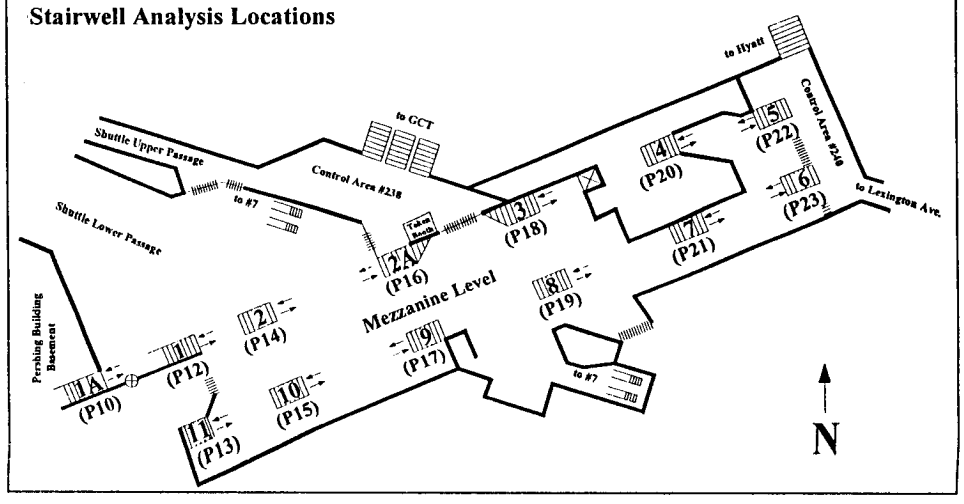


Table M-32

EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS PEAK 5 MINUTES WITHIN PEAK AM 15-MINUTE PERIOD (8:35 - 8:50)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1A (P10)	70	90	160	11.0	10.0	10	90	0.36	A
1 (P12)	215	295	510	11.0	10.0	10	90	1.13	D
2 (P14)	140	430	570	11.0	10.0	20	80	1.43	E
2A (P16)	215	310	525	11.0	10.0	10	90	1.17	D
3 (P18)	235	260	495	11.0	10.0	10	90	1.10	D
4 (P20)	270	260	530	11.0	10.0	10	90	1.18	D
5 (P22)	260	180	440	6.5	5.5	10	50	1.78	F
6 (P23)	395	60	455	6.5	5.5	20	44	2.07	F
7 (P21)	305	35	340	11.0	10.0	20	80	0.85	C
8 (P19)	220	175	395	11.0	10.0	10	90	0.88	C
9 (P17)	120	190	310	11.0	10.0	10	90	0.69	B
10 (P15)	70	150	220	11.0	10.0	20	80	0.55	B
11 (P13)	170	50	220	11.0	10.0	20	80	0.55	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT
Stairwell Analysis Locations

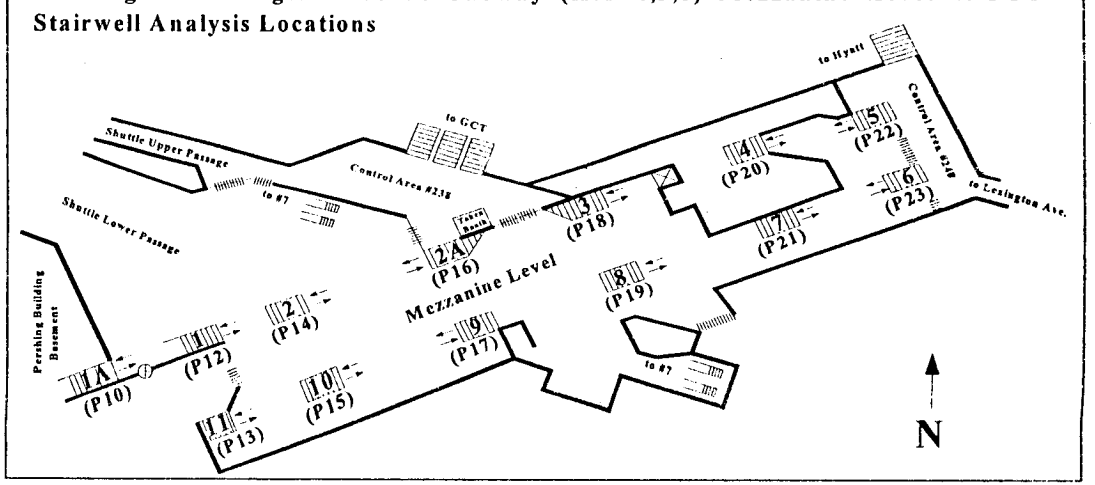


Table M-32

FIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS 15 MINUTE AM PEAK PERIOD (8:35 - 8:50)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1A (P10)	205	260	465	11.0	10.0	10	90	0.34	A
1 (P12)	495	810	1,305	11.0	10.0	10	90	0.97	C
2 (P14)	350	1,130	1,480	11.0	10.0	20	80	1.23	D
2A (P16)	530	790	1,320	11.0	10.0	10	90	0.98	C
3 (P18)	545	635	1,180	11.0	10.0	10	90	0.87	C
4 (P20)	740	745	1,485	11.0	10.0	10	90	1.10	D
5 (P22)	620	445	1,065	6.5	5.5	10	50	1.43	E
6 (P23)	1,005	170	1,175	6.5	5.5	20	44	1.78	F
7 (P21)	760	95	855	11.0	10.0	20	80	0.71	C
8 (P19)	625	430	1,055	11.0	10.0	10	90	0.78	C
9 (P17)	330	535	865	11.0	10.0	10	90	0.64	B
10 (P15)	200	390	590	11.0	10.0	10	90	0.44	A
11 (P13)	500	100	600	11.0	10.0	20	80	0.50	B

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT Stairwell Analysis Locations

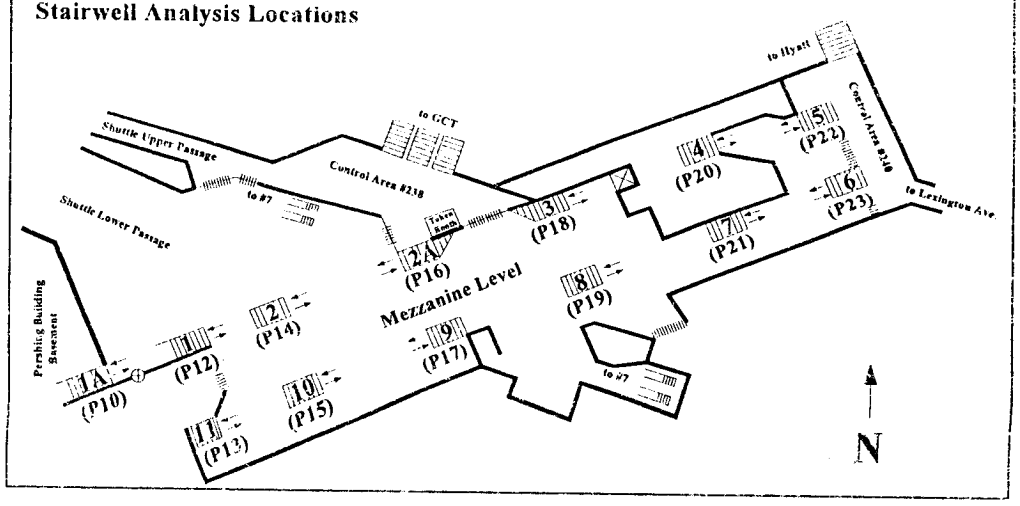


Table M-32

EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS PEAK 5 MINUTES WITHIN PEAK PM 15-MINUTE PERIOD (5:10 - 5:25)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1A (P10)	45	35	80	11.0	10.0	10	90	0.18	A
1 (P12)	90	70	160	11.0	10.0	10	90	0.36	A
2 (P14)	65	255	320	11.0	10.0	20	80	0.80	C
2A (P16)	75	145	220	11.0	10.0	10	90	0.49	B
3 (P18)	105	85	190	11.0	10.0	10	90	0.42	A
4 (P20)	65	180	245	11.0	10.0	20	80	0.61	B
5 (P22)	45	270	315	6.5	5.5	20	44	1.43	E
6 (P23)	270	230	500	6.5	5.5	10	50	2.02	F
7 (P21)	275	125	400	11.0	10.0	20	80	1.00	D
8 (P19)	175	145	320	11.0	10.0	10	90	0.71	C
9 (P17)	260	200	460	11.0	10.0	10	90	1.02	D *
10 (P15)	220	185	405	11.0	10.0	10	90	0.90	C
11 (P13)	260	220	480	11.0	10.0	10	90	1.07	D *

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

"*" Unmitigated Impact

Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT Stairwell Analysis Locations

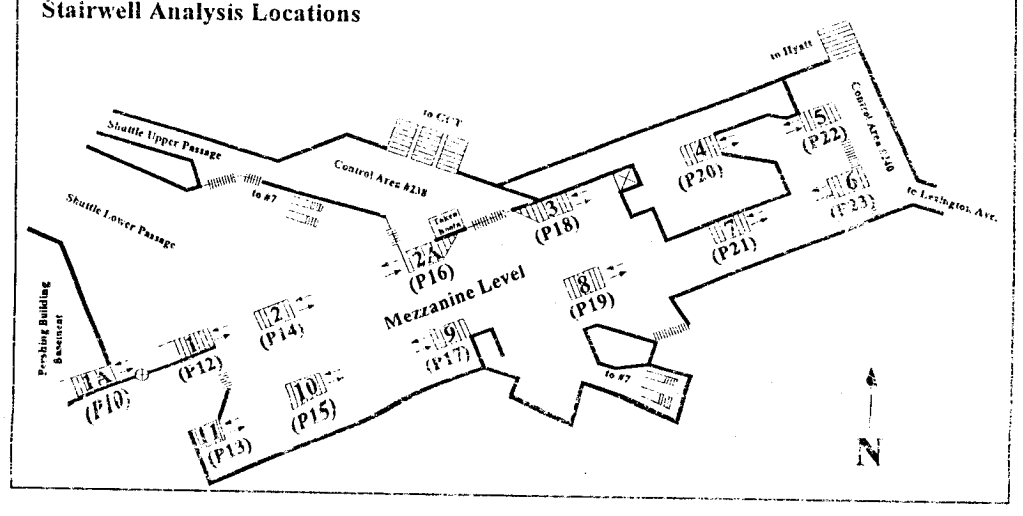


Table M-32

EIS SUBWAY STAIRS ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS 15 MINUTE PM PEAK PERIOD (5:10 - 5:25)

PEDESTRIAN CIRCULATION ELEMENT	PEDESTRIAN VOLUME (pax)			WIDTH (ft)		MAXIMUM PROCESSING RATE (1)		V/C	LOS (2)
STAIRWELL NUMBER	UP	DOWN	TOTAL	GROSS	EFFECTIVE	% REDUCTION	(pax/min)		
1A (P10)	135	105	240	11.0	10.0	10	90	0.18	A
1 (P12)	225	160	385	11.0	10.0	10	90	0.29	A
2 (P14)	175	715	890	11.0	10.0	20	80	0.74	C
2A (P16)	200	400	600	11.0	10.0	10	80	0.50	B
3 (P18)	270	245	515	11.0	10.0	10	90	0.38	A
4 (P20)	165	465	630	11.0	10.0	20	80	0.53	B
5 (P22)	95	750	845	6.5	5.5	20	44	1.28	D
6 (P23)	675	385	1,060	6.5	5.5	10	50	1.43	E
7 (P21)	695	305	1,000	11.0	10.0	20	80	0.83	C
8 (P19)	410	400	810	11.0	10.0	10	90	0.60	B
9 (P17)	660	570	1,230	11.0	10.0	10	90	0.91	C
10 (P15)	515	500	1,015	11.0	10.0	10	90	0.75	C
11 (P13)	585	515	1,100	11.0	10.0	10	90	0.81	C

NOTES:

(1) Based on an average unit (effective) width flow rate of 10 pax/ft/min, signifying LOS C/D threshold. Also adjusted for pedestrian flow in opposing directions: Capacity reduction factors of 0%, 10%, and 20% applied for 100%, 50-66%, and 67-99% pedestrian flow in one direction, respectively.

(2) V/C ratios < 0.45 signifies LOS A; < 0.7 signifies LOS B; < 1.00 signifies LOS C; <1.33 signifies LOS D; < 1.67 signifies LOS E; > 1.67 signifies LOS F.

Reconfigured Lexington Avenue Subway (IRT 4,5,6) Mezzanine Level at GCT Stairwell Analysis Locations

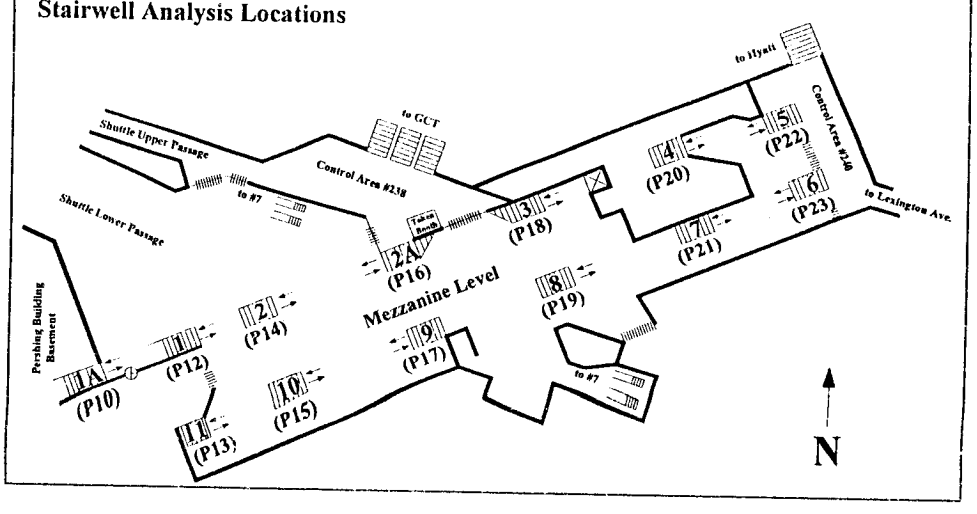


Table M-32

EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 MITIGATED BUILD CONDITIONS 5 MINUTE AM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	5	**5,575**	150	1	7	1,050	515	37	224	0.17	85.1	16	1,361	**2,411**	**43%**	**C/D or better**
Zone 2	580	5	**2,899**	25	1	7	175	55	26	224	0.12	6.4	16	102	**277**	**10%**	**C/D or better**
Zone 3	865	5	**4,325**	50	1	7	350	310	40	224	0.18	55.4	16	886	**1,236**	**29%**	**C/D or better**
Zone 4	835	5	**4,175**	125	1	7	875	60	35	224	0.16	9.4	16	150	**1,025**	**25%**	**C/D or better**
Zone 5	970	5	**4,850**	400	1	5	2,000	695	49	211	0.23	161.4	13.5	2,179	**4,179**	**86%**	**Mid-D**
Zone 6	575	5	**2,875**	75	1	7	525	145	30	224	0.13	19.4	16	311	**836**	**29%**	**C/D or better**
Zone 7	550	5	**2,750**	75	1	7	525	220	29	224	0.13	28.5	16	456	**981**	**36%**	**C/D or better**
Zone 8	2,165	5	**10,825**	100	1	7	700	240	48	224	0.21	51.4	16	823	**1,523**	**14%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	2,820	5	**14,100**	225	1	7	1,575	710	51	224	0.23	161.7	16	2,586	**4,161**	**30%**	**C/D or better**
Zone 2	570	5	**2,850**	100	1	7	700	540	27	224	0.12	65.1	16	1,041	**1,741**	**61%**	**C/D or better**
Zone 3	610	5	**3,050**	150	1	7	1,050	140	30	224	0.13	18.8	16	300	**1,350**	**44%**	**C/D or better**
Zone 4	1,050	5	**5,250**	225	1	7	1,575	1,040	49	224	0.22	227.5	16	3,640	**5,215**	**99%**	**C/D - Mid-D**
Zone 5	330	5	**1,650**	75	1	7	525	65	21	224	0.09	6.1	16	98	**623**	**38%**	**C/D or better**
Zone 6	810	5	**4,050**	75	1	7	525	430	42	224	0.19	80.6	16	1,290	**1,815**	**45%**	**C/D or better**
Zone 7	770	5	**3,850**	100	1	7	700	75	33	224	0.15	11.0	16	177	**877**	**23%**	**C/D or better**
Zone 8	1,155	5	**5,775**	150	1	7	1,050	505	29	224	0.13	65.4	16	1,046	**2,096**	**36%**	**C/D or better**

NOTES:
(1) Analysis period is the peak 5 minutes within the 15-minute peak AM period (8:35-8:50).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 and 5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 and 211 feet per minute signify LOS C/D and mid-D conditions, respectively.
(6) Average walk space of 16 and 13.5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.

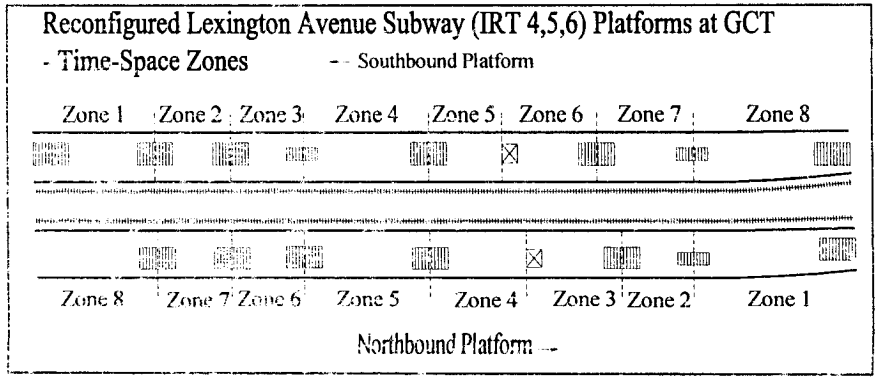


Table M-32

EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 MITIGATED BUILD CONDITIONS 15 MINUTE AM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	15	**16,725**	225	1	7	1,575	1,310	37	224	0.17	216.4	16	3,462	**5,037**	**30%**	**C/D or better**
Zone 2	580	15	**8,697**	75	1	7	525	165	26	224	0.12	19.2	16	306	**831**	**10%**	**C/D or better**
Zone 3	865	15	**12,975**	150	1	7	1,050	825	40	224	0.18	147.3	16	2,357	**3,407**	**26%**	**C/D or better**
Zone 4	835	15	**12,525**	375	1	7	2,625	195	35	224	0.16	30.5	16	488	**3,113**	**25%**	**C/D or better**
Zone 5	970	15	**14,550**	1,200	1	5	6,000	1,975	49	211	0.23	458.6	13.5	6,192	**12,192**	**84%**	**Mid-D**
Zone 6	575	15	**8,625**	225	1	7	1,575	445	30	224	0.13	59.6	16	954	**2,529**	**29%**	**C/D or better**
Zone 7	550	15	**8,250**	225	1	7	1,575	590	29	224	0.13	76.4	16	1,222	**2,797**	**34%**	**C/D or better**
Zone 8	2,165	15	**32,475**	300	1	7	2,100	630	48	224	0.21	135.0	16	2,160	**4,260**	**13%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	2,820	15	**42,300**	825	1	7	5,775	2,050	51	224	0.23	466.7	16	7,468	**13,243**	**31%**	**C/D or better**
Zone 2	570	15	**8,550**	300	1	7	2,100	1,405	27	224	0.12	169.4	16	2,710	**4,810**	**56%**	**C/D or better**
Zone 3	610	15	**9,150**	450	1	7	3,150	425	30	224	0.13	56.9	16	911	**4,061**	**44%**	**C/D or better**
Zone 4	1,050	15	**15,750**	675	1	7	4,725	2,605	49	224	0.22	569.8	16	9,118	**13,843**	**88%**	**C/D or better**
Zone 5	330	15	**4,950**	225	1	7	1,575	205	21	224	0.09	19.2	16	308	**1,883**	**38%**	**C/D or better**
Zone 6	810	15	**12,150**	225	1	7	1,575	1,200	42	224	0.19	225.0	16	3,600	**5,175**	**43%**	**C/D or better**
Zone 7	770	15	**11,550**	300	1	7	2,100	240	33	224	0.15	35.4	16	566	**2,666**	**23%**	**C/D or better**
Zone 8	1,155	15	**17,325**	300	1	7	2,100	1,325	29	224	0.13	171.5	16	2,745	**4,845**	**28%**	**C/D or better**

NOTES:

(1) Analysis period is the 15-minute peak AM period (8:35-8:50).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 and 5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.
(4) Average walking distance across time-space zone
(5) Average walk speed of 224 and 211 feet per minute signify LOS C/D and mid-D conditions, respectively.
(6) Average walk space of 16 and 13.5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.

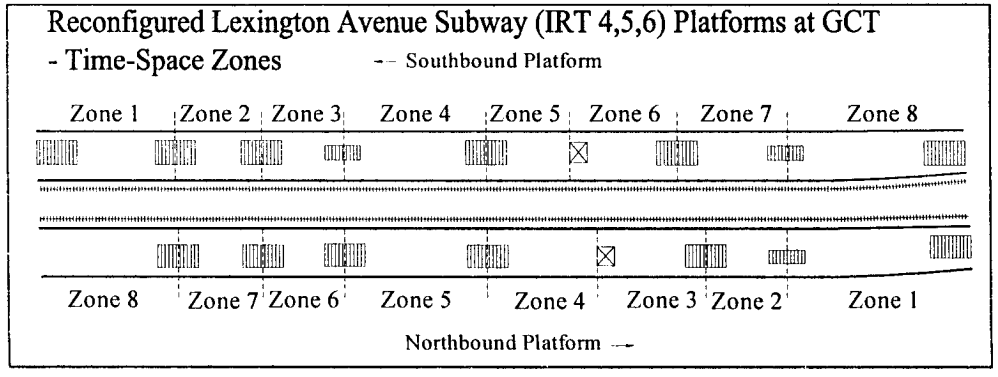


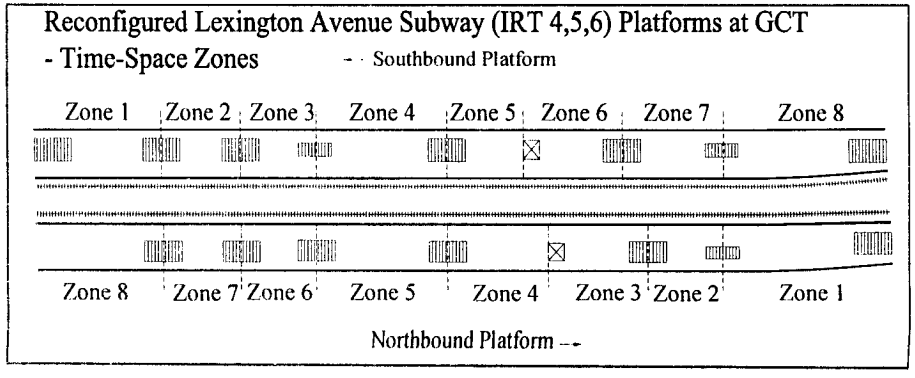
Table M-32

EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2010 MITIGATED BUILD CONDITIONS 5 MINUTE PM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	5	**5,575**	225	1	7	1,575	560	37	224	0.17	92.5	16	1,480	**3,055**	**55%**	**C/D or better**
Zone 2	580	5	**2,899**	50	1	7	350	55	26	224	0.12	6.4	16	102	**452**	**16%**	**C/D or better**
Zone 3	865	5	**4,325**	100	1	7	700	365	40	224	0.18	65.2	16	1,043	**1,743**	**40%**	**C/D or better**
Zone 4	835	5	**4,175**	100	1	7	700	125	35	224	0.16	19.5	16	313	**1,013**	**24%**	**C/D or better**
Zone 5	970	5	**4,850**	250	1	7	1,750	815	49	224	0.22	178.3	16	2,853	**4,603**	**95%**	**C/D - Mid-D**
Zone 6	575	5	**2,875**	100	1	7	700	140	30	224	0.13	18.8	16	300	**1,000**	**35%**	**C/D or better**
Zone 7	550	5	**2,750**	125	1	7	875	440	29	224	0.13	57.0	16	911	**1,786**	**65%**	**C/D or better**
Zone 8	2,165	5	**10,825**	550	1	7	3,850	485	48	224	0.21	103.9	16	1,663	**5,513**	**51%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	2,820	5	**14,100**	375	1	7	2,625	345	51	224	0.23	78.5	16	1,257	**3,882**	**28%**	**C/D or better**
Zone 2	570	5	**2,850**	125	1	7	875	315	27	224	0.12	38.0	16	608	**1,483**	**52%**	**C/D or better**
Zone 3	610	5	**3,050**	75	1	7	525	125	30	224	0.13	16.7	16	268	**793**	**26%**	**C/D or better**
Zone 4	1,050	5	**5,250**	175	1	7	1,225	515	49	224	0.22	112.7	16	1,803	**3,028**	**58%**	**C/D or better**
Zone 5	330	5	**1,650**	50	1	7	350	110	21	224	0.09	10.3	16	165	**515**	**31%**	**C/D or better**
Zone 6	810	5	**4,050**	100	1	7	700	250	42	224	0.19	46.9	16	750	**1,450**	**36%**	**C/D or better**
Zone 7	770	5	**3,850**	125	1	7	875	65	33	224	0.15	9.6	16	153	**1,028**	**27%**	**C/D or better**
Zone 8	1,155	5	**5,775**	200	1	7	1,400	340	29	224	0.13	44.0	16	704	**2,104**	**36%**	**C/D or better**

NOTES:

(1) Analysis period is the peak 5 minutes within the 15-minute peak PM period (5:10-5:25).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 square feet per pedestrian signifies LOS C/D conditions.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 feet per minute signifies LOS C/D conditions.
(6) Average walk space of 16 square feet per pedestrian signifies LOS C/D conditions.



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EIS PEDESTRIAN TIME - SPACE ANALYSES
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2010 MITIGATED BUILD CONDITIONS 15 MINUTE PM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	15	**16,725**	750	1	7	5,250	1,270	37	224	0.17	209.8	16	3,356	**8,606**	**51%**	**C/D or better**
Zone 2	580	15	**8,697**	150	1	7	1,050	180	26	224	0.12	20.9	16	334	**1,384**	**16%**	**C/D or better**
Zone 3	865	15	**12,975**	300	1	7	2,100	940	40	224	0.18	167.9	16	2,686	**4,786**	**37%**	**C/D or better**
Zone 4	835	15	**12,525**	300	1	7	2,100	375	35	224	0.16	58.6	16	938	**3,038**	**24%**	**C/D or better**
Zone 5	970	15	**14,550**	750	1	7	5,250	2,190	49	224	0.22	479.1	16	7,665	**12,915**	**89%**	**C/D or better**
Zone 6	575	15	**8,625**	300	1	7	2,100	410	30	224	0.13	54.9	16	879	**2,979**	**35%**	**C/D or better**
Zone 7	550	15	**8,250**	375	1	7	2,625	1,195	29	224	0.13	154.7	16	2,475	**5,100**	**62%**	**C/D or better**
Zone 8	2,165	15	**32,475**	1,650	1	7	11,550	1,155	48	224	0.21	247.5	16	3,960	**15,510**	**48%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	2,820	15	**42,300**	1,200	1	7	8,400	960	51	224	0.23	218.6	16	3,497	**11,897**	**28%**	**C/D or better**
Zone 2	570	15	**8,550**	300	1	7	2,100	1,010	27	224	0.12	121.7	16	1,948	**4,048**	**47%**	**C/D or better**
Zone 3	610	15	**9,150**	225	1	7	1,575	390	30	224	0.13	52.2	16	836	**2,411**	**26%**	**C/D or better**
Zone 4	1,050	15	**15,750**	525	1	7	3,675	1,405	49	224	0.22	307.3	16	4,918	**8,593**	**55%**	**C/D or better**
Zone 5	330	15	**4,950**	150	1	7	1,050	325	21	224	0.09	30.5	16	488	**1,538**	**31%**	**C/D or better**
Zone 6	810	15	**12,150**	300	1	7	2,100	685	42	224	0.19	128.4	16	2,055	**4,155**	**34%**	**C/D or better**
Zone 7	770	15	**11,550**	375	1	7	2,625	210	33	224	0.15	30.9	16	495	**3,120**	**27%**	**C/D or better**
Zone 8	1,155	15	**17,325**	675	1	7	4,725	935	29	224	0.13	121.0	16	1,937	**6,662**	**38%**	**C/D or better**

NOTES:
(1) Analysis period is the 15-minute peak PM period (5:10-5:25)
(2) Based on one-minute platform observations.
(3) Average queue space of 7 square feet per pedestrian signifies LOS C/D conditions.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 feet per minute signifies LOS C/D conditions
(6) Average walk space of 16 square feet per pedestrian signifies LOS C/D conditions.

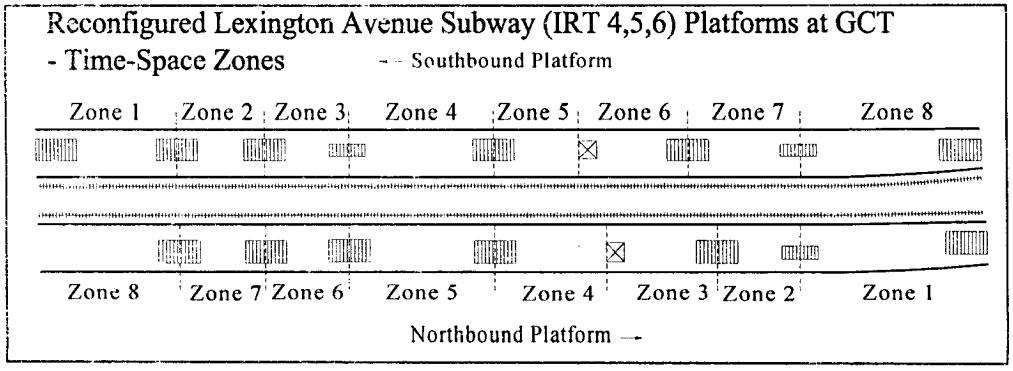


Table M-32

EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS 5 MINUTE AM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	5	5,575	175	1	7	1,225	535	37	224	0.17	88.4	16	1,414	**2,639**	**47%**	**C/D or better**
Zone 2	580	5	**2,899**	25	1	7	175	60	26	224	0.12	7.0	16	111	**286**	**10%**	**C/D or better**
Zone 3	865	5	**4,325**	50	1	7	350	330	40	224	0.18	58.9	16	943	**1,293**	**30%**	**C/D or better**
Zone 4	835	5	**4,175**	150	1	7	1,050	65	35	224	0.16	10.2	16	163	**1,213**	**29%**	**C/D or better**
Zone 5	970	5	**4,850**	450	1	5	2,250	745	49	211	0.23	173.0	13.5	2,336	**4,586**	**95%**	**Mid-D - D/E**
Zone 6	575	5	**2,875**	100	1	7	700	160	30	224	0.13	21.4	16	343	**1,043**	**36%**	**C/D or better**
Zone 7	550	5	**2,750**	100	1	7	700	230	29	224	0.13	29.8	16	476	**1,176**	**43%**	**C/D or better**
Zone 8	2,165	5	**10,825**	100	1	7	700	235	48	224	0.21	50.4	16	806	**1,506**	**14%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	2,820	5	**14,100**	325	1	7	2,275	760	51	224	0.23	173.0	16	2,769	**5,044**	**36%**	**C/D or better**
Zone 2	570	5	**2,850**	100	1	7	700	580	27	224	0.12	69.9	16	1,119	**1,819**	**64%**	**C/D or better**
Zone 3	610	5	**3,050**	150	1	7	1,050	155	30	224	0.13	20.8	16	332	**1,382**	**45%**	**C/D or better**
Zone 4	1,050	5	**5,250**	300	1	5	1,500	1,105	49	211	0.23	256.6	13.5	3,464	**4,964**	**95%**	**Mid-D - D/E**
Zone 5	330	5	**1,650**	100	1	7	700	75	21	224	0.09	7.0	16	113	**813**	**49%**	**C/D or better**
Zone 6	810	5	**4,050**	100	1	7	700	465	42	224	0.19	87.2	16	1,395	**2,095**	**52%**	**C/D or better**
Zone 7	770	5	**3,850**	125	1	7	875	85	33	224	0.15	12.5	16	200	**1,075**	**28%**	**C/D or better**
Zone 8	1,155	5	**5,775**	175	1	7	1,225	545	29	224	0.13	70.6	16	1,129	**2,354**	**41%**	**C/D or better**

NOTES:

(1) Analysis period is the peak 5 minutes within the 15-minute peak AM period (8:35-8:50).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 and 5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 and 211 feet per minute signify LOS C/D and mid-D conditions, respectively.
(6) Average walk space of 16 and 13.5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.

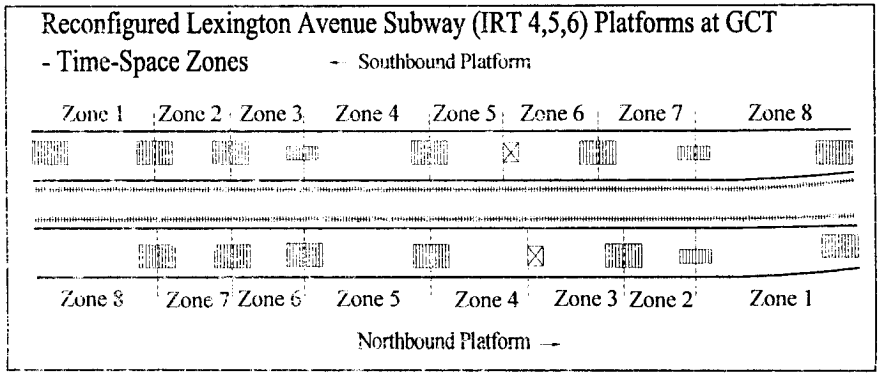


Table M-32

EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS 15 MINUTE AM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	15	**16,725**	525	1	7	3,675	1,385	37	224	0.17	228.8	16	3,660	**7,335**	**44%**	**C/D or better**
Zone 2	580	15	**8,697**	75	1	7	525	180	26	224	0.12	20.9	16	334	**859**	**10%**	**C/D or better**
Zone 3	865	15	**12,975**	150	1	7	1,050	870	40	224	0.18	155.4	16	2,486	**3,536**	**27%**	**C/D or better**
Zone 4	835	15	**12,525**	450	1	7	3,150	205	35	224	0.16	32.0	16	513	**3,663**	**29%**	**C/D or better**
Zone 5	970	15	**14,550**	1,350	1	5	6,750	2,125	49	211	0.23	493.5	13.5	6,662	**13,412**	**92%**	**Mid-D - D/E**
Zone 6	575	15	**8,625**	300	1	7	2,100	470	30	224	0.13	62.9	16	1,007	**3,107**	**36%**	**C/D or better**
Zone 7	550	15	**8,250**	300	1	7	2,100	645	29	224	0.13	83.5	16	1,336	**3,436**	**42%**	**C/D or better**
Zone 8	2,165	15	**32,475**	300	1	7	2,100	670	48	224	0.21	143.6	16	2,297	**4,397**	**14%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	2,820	15	**42,300**	975	1	7	6,825	2,045	51	224	0.23	465.6	16	7,450	**14,275**	**34%**	**C/D or better**
Zone 2	570	15	**8,550**	300	1	7	2,100	1,515	27	224	0.12	182.6	16	2,922	**5,022**	**59%**	**C/D or better**
Zone 3	610	15	**9,150**	450	1	7	3,150	465	30	224	0.13	62.3	16	996	**4,146**	**45%**	**C/D or better**
Zone 4	1,050	15	**15,750**	1,200	1	5	6,000	2,815	49	211	0.23	653.7	13.5	8,825	**14,825**	**94%**	**Mid-D - D/E**
Zone 5	330	15	**4,950**	300	1	7	2,100	225	21	224	0.09	21.1	16	338	**2,438**	**49%**	**C/D or better**
Zone 6	810	15	**12,150**	300	1	7	2,100	1,285	42	224	0.19	240.9	16	3,855	**5,955**	**49%**	**C/D or better**
Zone 7	770	15	**11,550**	375	1	7	2,625	255	33	224	0.15	37.6	16	601	**3,226**	**28%**	**C/D or better**
Zone 8	1,155	15	**17,325**	525	1	7	3,675	1,425	29	224	0.13	184.5	16	2,952	**6,627**	**38%**	**C/D or better**

NOTES:
(1) Analysis period is the 15-minute peak AM period (8:35-8:50).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 and 5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 and 211 feet per minute signify LOS C/D and mid-D conditions, respectively.
(6) Average walk space of 16 and 13.5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.

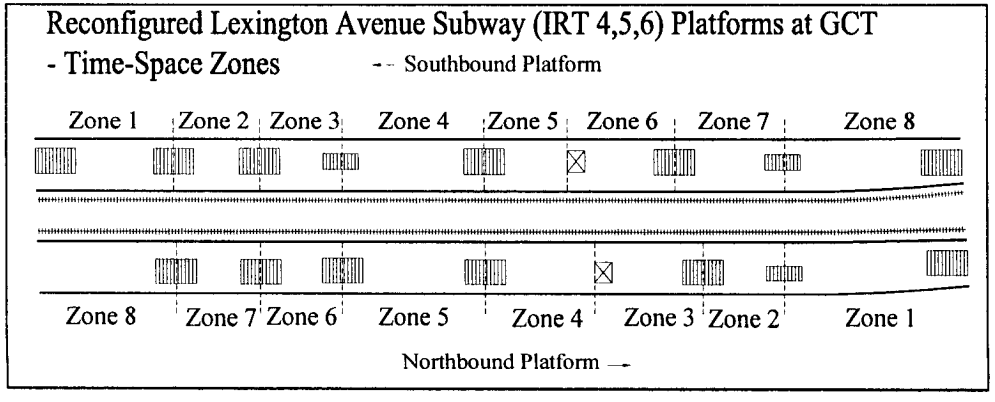


Table M-32

EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS 5 MINUTE PM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	5	**5,575**	250	1	7	1,750	610	37	224	0.17	100.8	16	1,612	**3,362**	**60%**	**C/D or better**
Zone 2	580	5	**2,899**	50	1	7	350	60	26	224	0.12	7.0	16	111	**461**	**16%**	**C/D or better**
Zone 3	865	5	**4,325**	100	1	7	700	390	40	224	0.18	69.6	16	1,114	**1,814**	**42%**	**C/D or better**
Zone 4	835	5	**4,175**	100	1	7	700	130	35	224	0.16	20.3	16	325	**1,025**	**25%**	**C/D or better**
Zone 5	970	5	**4,850**	300	1	5	1,500	865	49	211	0.23	200.9	13.5	2,712	**4,212**	**87%**	**Mid-D**
Zone 6	575	5	**2,875**	100	1	7	700	140	30	224	0.13	18.8	16	300	**1,000**	**35%**	**C/D or better**
Zone 7	550	5	**2,750**	125	1	7	875	480	29	224	0.13	62.1	16	994	**1,869**	**68%**	**C/D or better**
Zone 8	2,165	5	**10,825**	575	1	7	4,025	515	48	224	0.21	110.4	16	1,766	**5,791**	**53%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	2,820	5	**14,100**	375	1	7	2,625	365	51	224	0.23	83.1	16	1,330	**3,955**	**28%**	**C/D or better**
Zone 2	570	5	**2,850**	125	1	7	875	380	27	224	0.12	45.8	16	733	**1,608**	**56%**	**C/D or better**
Zone 3	610	5	**3,050**	75	1	7	525	135	30	224	0.13	18.1	16	289	**814**	**27%**	**C/D or better**
Zone 4	1,050	5	**5,250**	175	1	7	1,225	540	49	224	0.22	118.1	16	1,890	**3,115**	**59%**	**C/D or better**
Zone 5	330	5	**1,650**	50	1	7	350	115	21	224	0.09	10.8	16	173	**523**	**32%**	**C/D or better**
Zone 6	810	5	**4,050**	100	1	7	700	270	42	224	0.19	50.6	16	810	**1,510**	**37%**	**C/D or better**
Zone 7	770	5	**3,850**	125	1	7	875	70	33	224	0.15	10.3	16	165	**1,040**	**27%**	**C/D or better**
Zone 8	1,155	5	**5,775**	250	1	7	1,750	360	29	224	0.13	46.6	16	746	**2,496**	**43%**	**C/D or better**

NOTES:
(1) Analysis period is the peak 5 minutes within the 15-minute peak PM period (5:10-5:25).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 and 5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 and 211 feet per minute signify LOS C/D and mid-D conditions, respectively.
(6) Average walk space of 16 and 13.5 square feet per pedestrian signify LOS C/D and mid-D conditions, respectively.

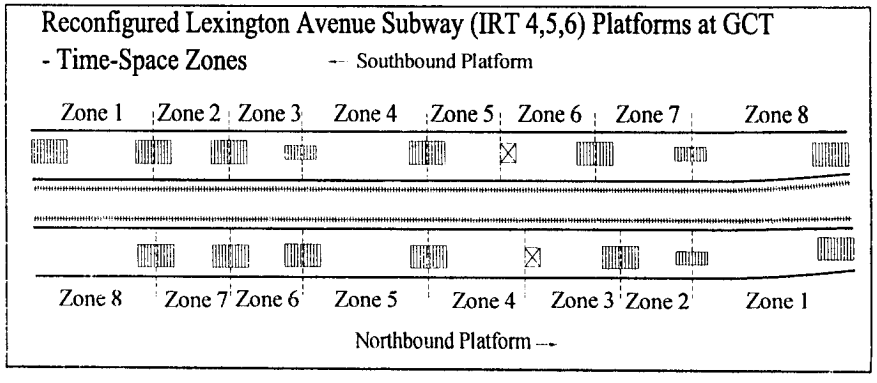


Table M-32

EIS PEDESTRIAN TIME - SPACE ANALYSES
LEXINGTON AVENUE SUBWAY (IRT 4,5,6) PLATFORMS @ GRAND CENTRAL TERMINAL
2020 MITIGATED BUILD CONDITIONS 15 MINUTE PM PEAK PERIOD

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
AVAILABLE TIME - SPACE				QUEUE TIME - SPACE				WALK TIME - SPACE									
Time - Space Zone	Effective Space Available (sqft)	Analysis Duration (1) (min)	Total Time - Space Available (sqft-min) B * C	Number of Pax Waiting (ped)	Average Wait Time (2) (min)	Average Wait Space (3) (sqft/ped)	Total Wait Time - Space (sqft-min) E * F * G	Total Pax Volume (ped)	Average Walk Distance (4) (ft)	Average Walk Speed (5) (fpm)	Average Walk Time (min) J / K	Total Walk Time (ped-min) I * L	Average Walk Space (6) (sqft/ped)	Total Walk Time - Space (sqft-min) M * N	Total Time - Space Required (sqft-min) H + O	Time-Space Required as % of Time-Space Available (sqft-min) P / D	Level of Service (LOS)
Northbound IRT Platform																	
Zone 1	1,115	15	**16,725**	825	1	7	5,775	1,370	37	224	0.17	226.3	16	3,621	**9,396**	**56%**	**C/D or better**
Zone 2	580	15	**8,697**	150	1	7	1,050	185	26	224	0.12	21.5	16	344	**1,394**	**16%**	**C/D or better**
Zone 3	865	15	**12,975**	300	1	7	2,100	1,010	40	224	0.18	180.4	16	2,886	**4,986**	**38%**	**C/D or better**
Zone 4	835	15	**12,525**	300	1	7	2,100	400	35	224	0.16	62.5	16	1,000	**3,100**	**25%**	**C/D or better**
Zone 5	970	15	**14,550**	900	1	7	6,300	2,325	49	224	0.22	508.6	16	8,138	**14,438**	**99%**	**C/D - Mid-D**
Zone 6	575	15	**8,625**	300	1	7	2,100	435	30	224	0.13	58.3	16	932	**3,032**	**35%**	**C/D or better**
Zone 7	550	15	**8,250**	375	1	7	2,625	1,260	29	224	0.13	163.1	16	2,610	**5,235**	**63%**	**C/D or better**
Zone 8	2,165	15	**32,475**	1,725	1	7	12,075	1,225	48	224	0.21	262.5	16	4,200	**16,275**	**50%**	**C/D or better**
Southbound IRT Platform																	
Zone 1	2,820	15	**42,300**	1,200	1	7	8,400	1,005	51	224	0.23	228.8	16	3,661	**12,061**	**29%**	**C/D or better**
Zone 2	570	15	**8,550**	300	1	7	2,100	1,070	27	224	0.12	129.0	16	2,064	**4,164**	**49%**	**C/D or better**
Zone 3	610	15	**9,150**	225	1	7	1,575	415	30	224	0.13	55.6	16	889	**2,464**	**27%**	**C/D or better**
Zone 4	1,050	15	**15,750**	525	1	7	3,675	1,505	49	224	0.22	329.2	16	5,268	**8,943**	**57%**	**C/D or better**
Zone 5	330	15	**4,950**	150	1	7	1,050	350	21	224	0.09	32.8	16	525	**1,575**	**32%**	**C/D or better**
Zone 6	810	15	**12,150**	225	1	7	1,575	725	42	224	0.19	135.9	16	2,175	**3,750**	**31%**	**C/D or better**
Zone 7	770	15	**11,550**	375	1	7	2,625	215	33	224	0.15	31.7	16	507	**3,132**	**27%**	**C/D or better**
Zone 8	1,155	15	**17,325**	750	1	7	5,250	980	29	224	0.13	126.9	16	2,030	**7,280**	**42%**	**C/D or better**

NOTES:
(1) Analysis period is the 15-minute peak PM period (5:10-5:25).
(2) Based on one-minute platform observations.
(3) Average queue space of 7 square feet per pedestrian signifies LOS C/D conditions.
(4) Average walking distance across time-space zone.
(5) Average walk speed of 224 feet per minute signifies LOS C/D conditions.
(6) Average walk space of 16 square feet per pedestrian signifies LOS C/D conditions.

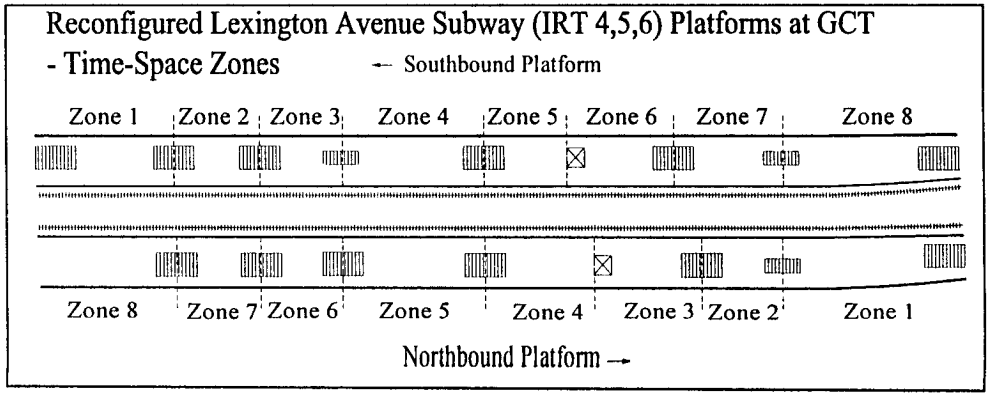
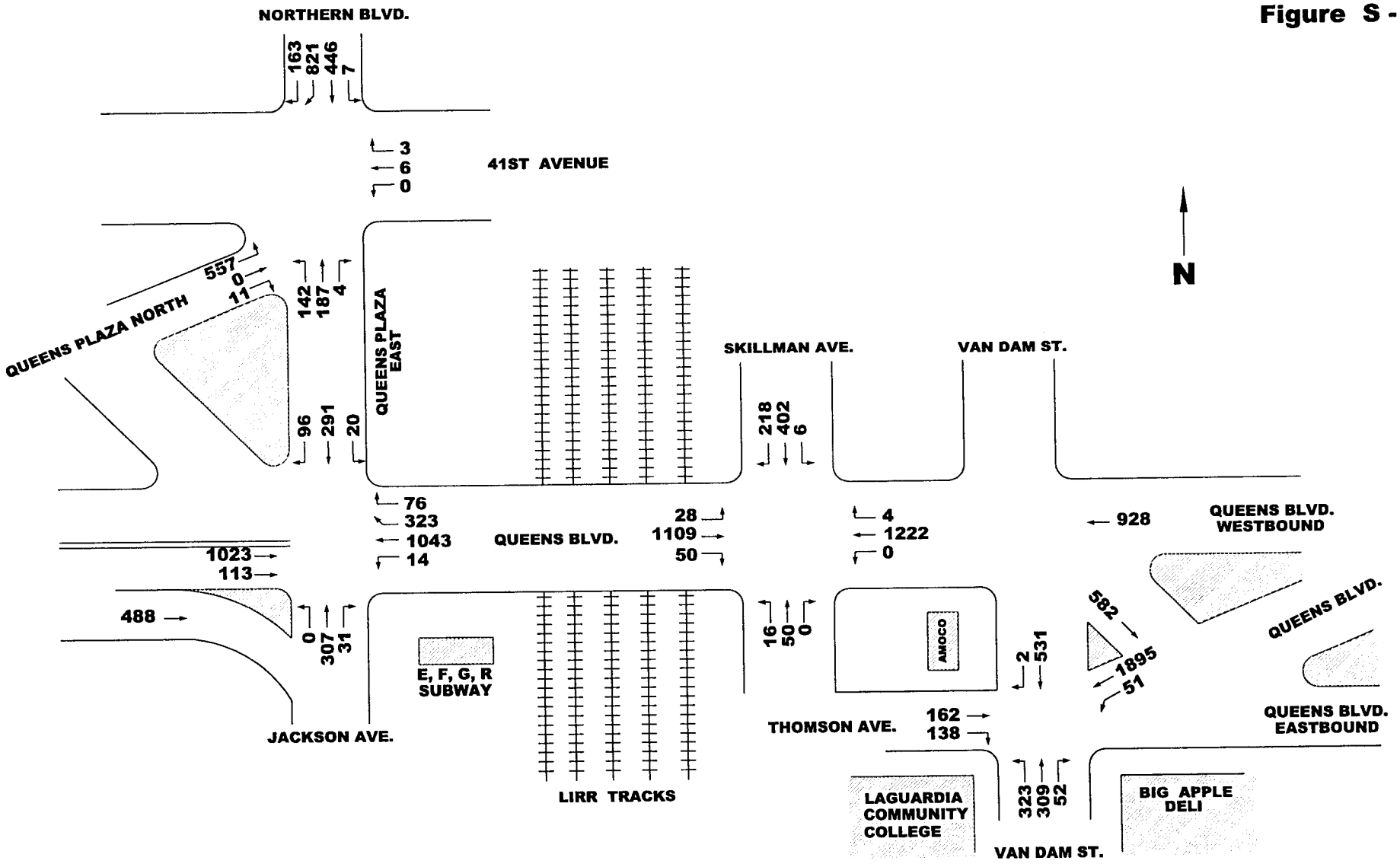


FIGURE S-1

EXISTING SUNNYSIDE AREA TRAFFIC VOLUMES

Figure S - 1



SUNNYSIDE

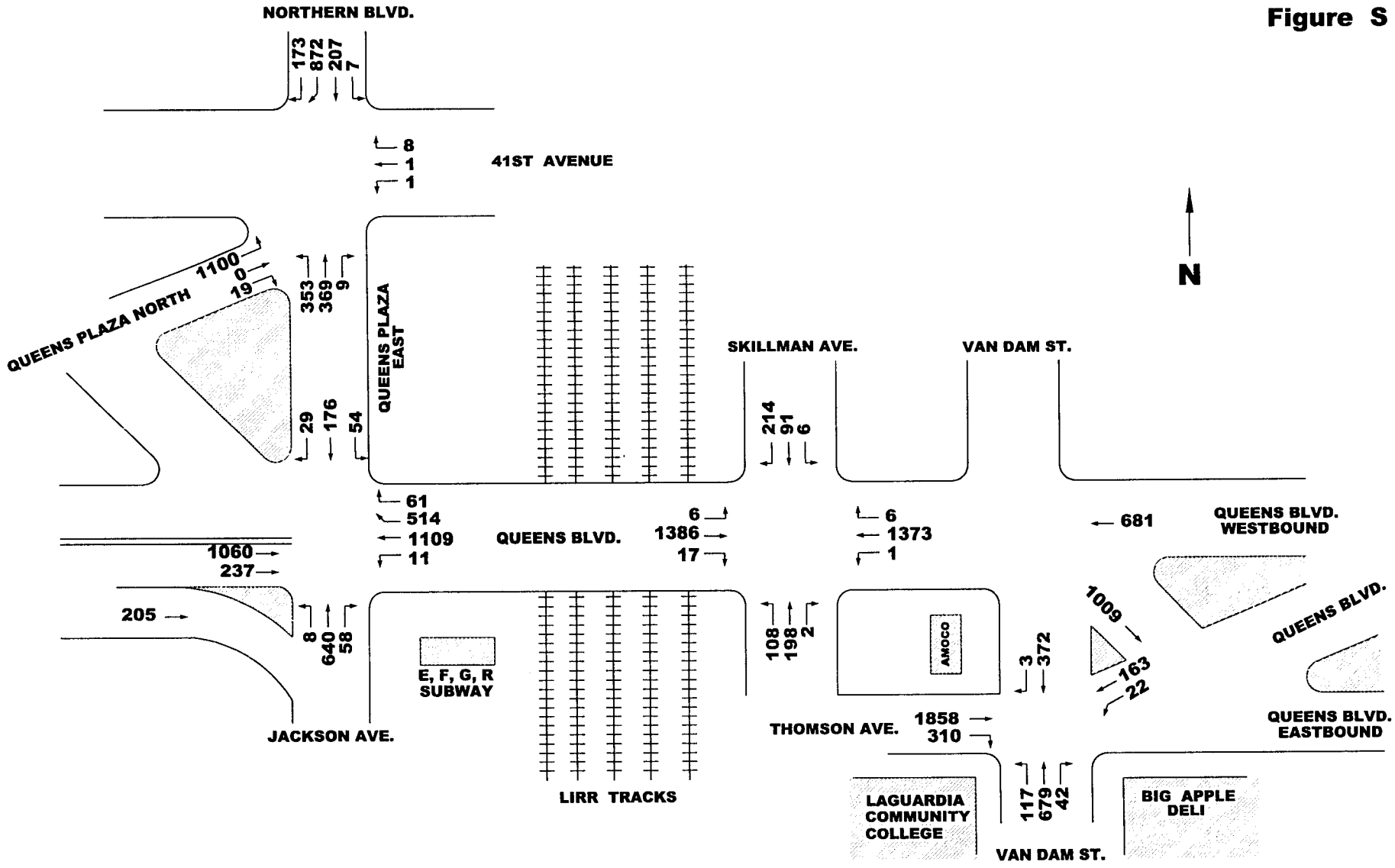
AM Peak Period

1999 Existing Traffic Flows

Eng-Wong, Taub & Associates

Traffic and Transportation Consultants

Figure S - 1



SUNNYSIDE

PM Peak Period

1999 Existing Traffic Flows

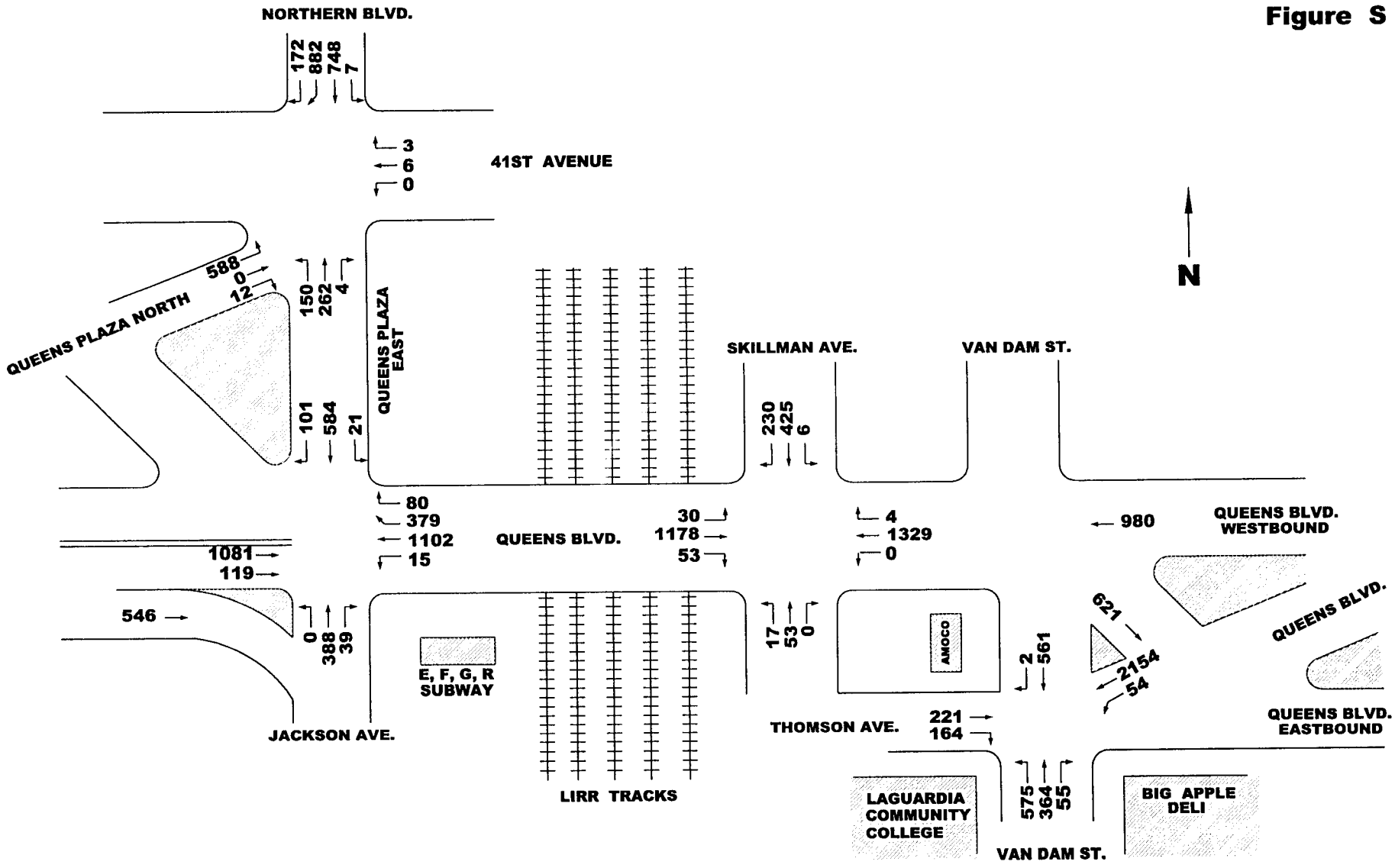
Eng-Wong, Taub & Associates

Traffic and Transportation Consultants

FIGURE S-2

2010 NO BUILD SUNNYSIDE AREA TRAFFIC VOLUMES

Figure S - 2



SUNNYSIDE

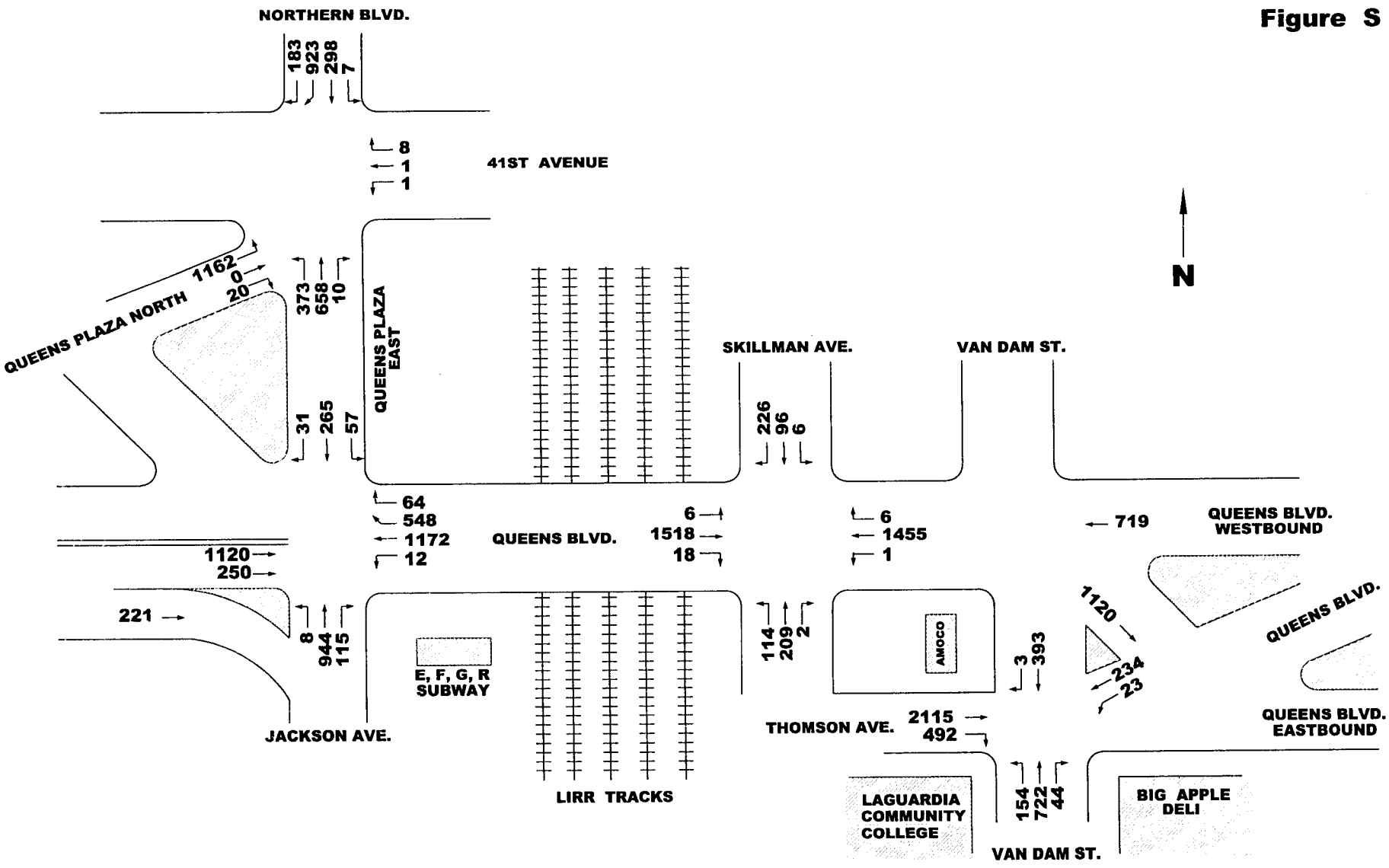
AM Peak Period

2010 No Build Traffic Flows

Eng-Wong, Taub & Associates

Traffic and Transportation Consultants

Figure S - 2



SUNNYSIDE

PM Peak Period

2010 No Build Traffic Flows

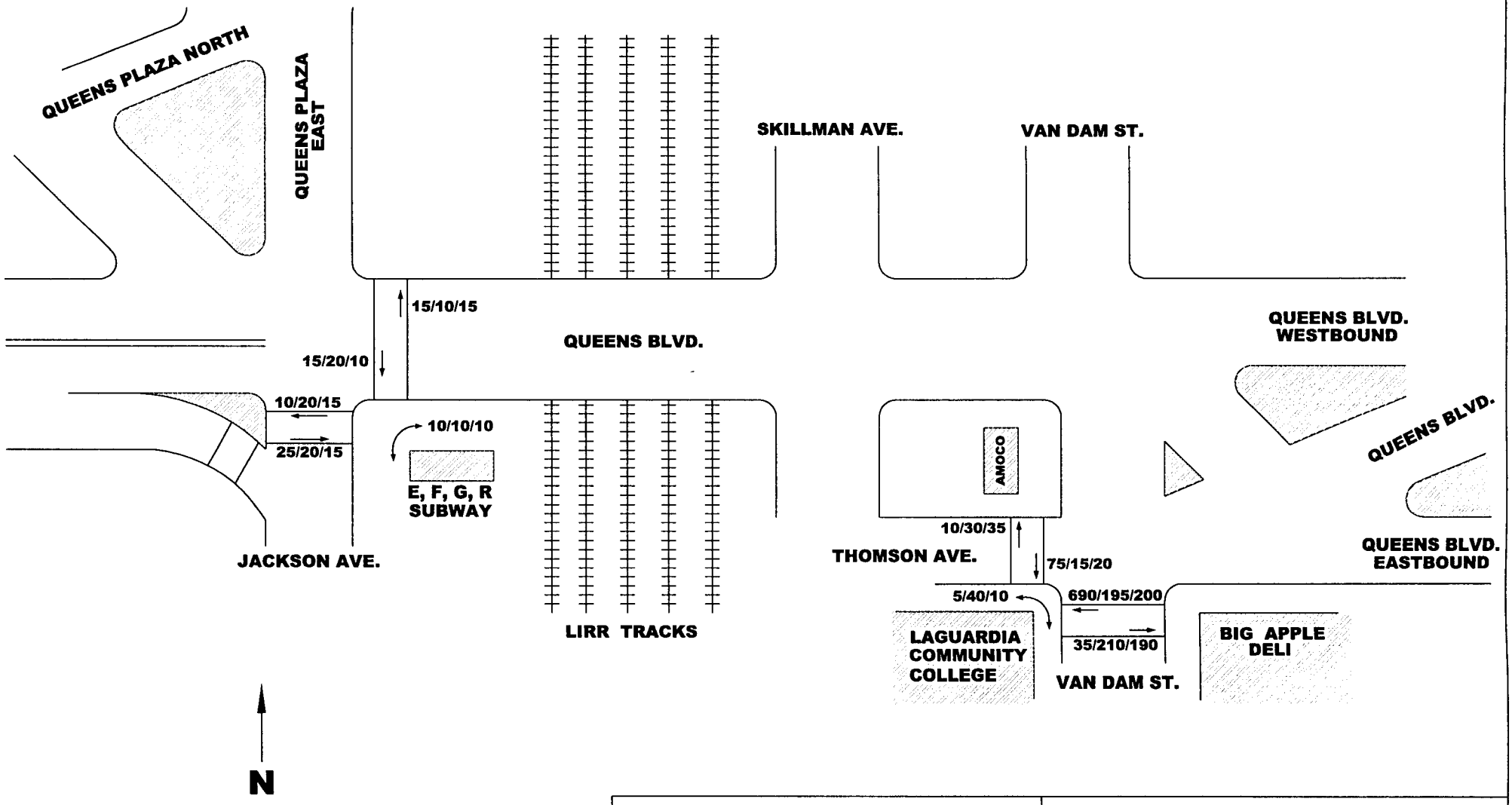
Eng-Wong, Taub & Associates

Traffic and Transportation Consultants

FIGURE S-3

SUNNYSIDE
PEDESTRIAN VOLUMES

Figure S - 3



XX/XX/XX = (AM/MD/PM)

SUNNYSIDE

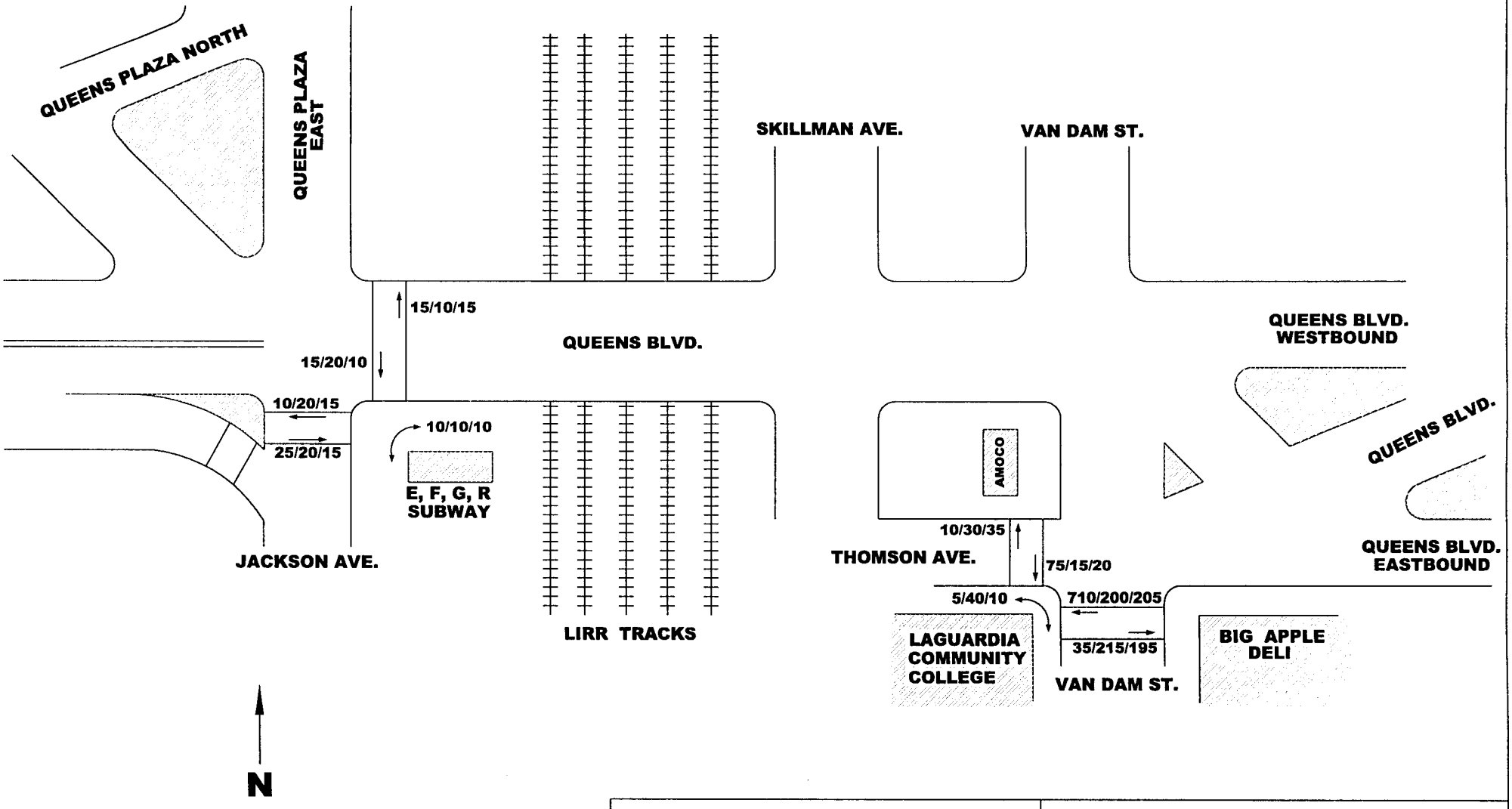
AM, MIDDAY, PM Peak Period

Existing Pedestrian Flows

Eng-Wong, Taub & Associates

Traffic and Transportation Consultants

Figure S - 3



XX/XX/XX = (AM/MD/PM)

SUNNYSIDE

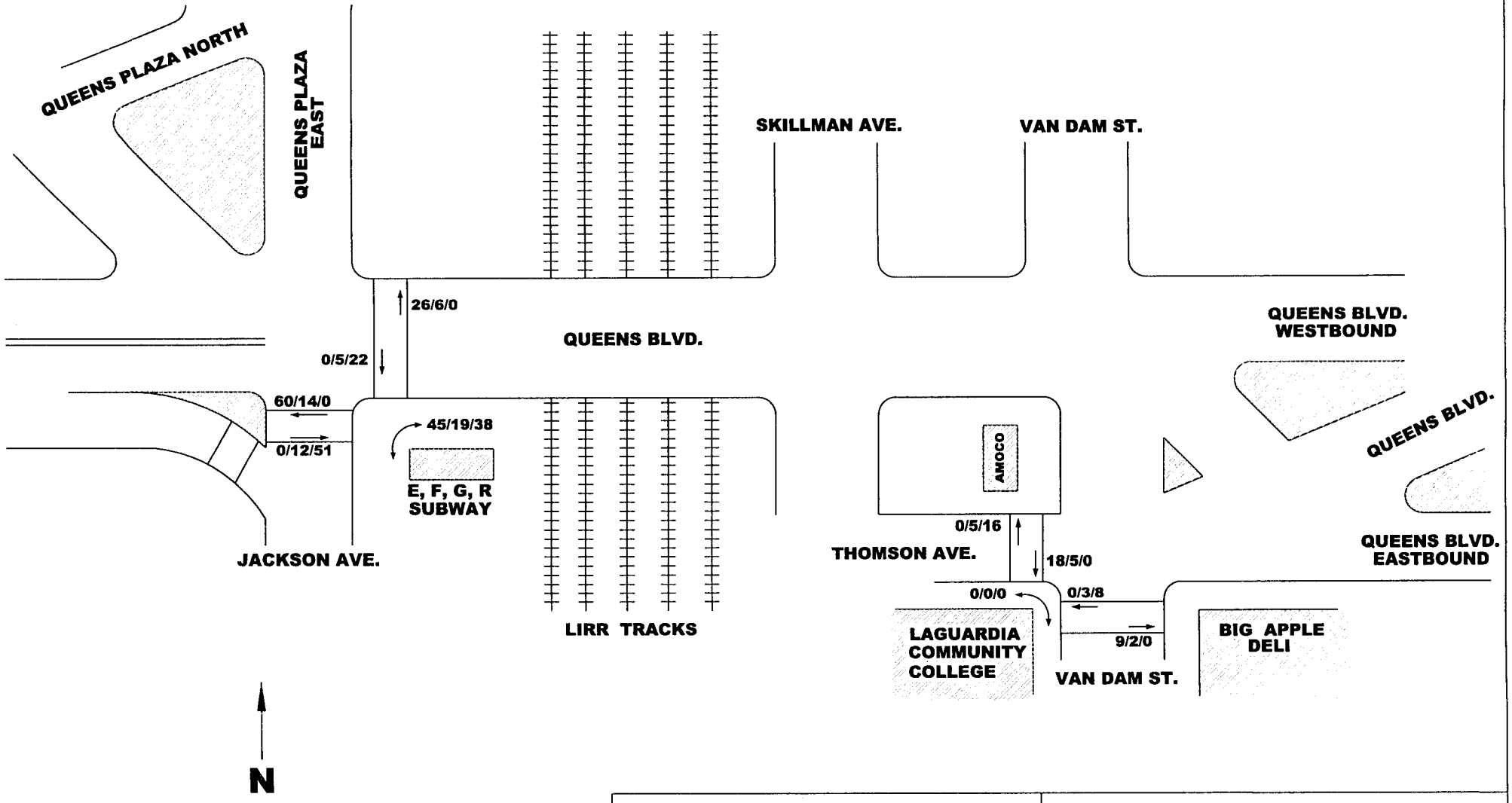
AM, MIDDAY, PM Peak Period

2010 No Build Pedestrian Flows

Eng-Wong, Taub & Associates

Traffic and Transportation Consultants

Figure S - 3



XX/XX/XX = (AM/MD/PM)

SUNNYSIDE

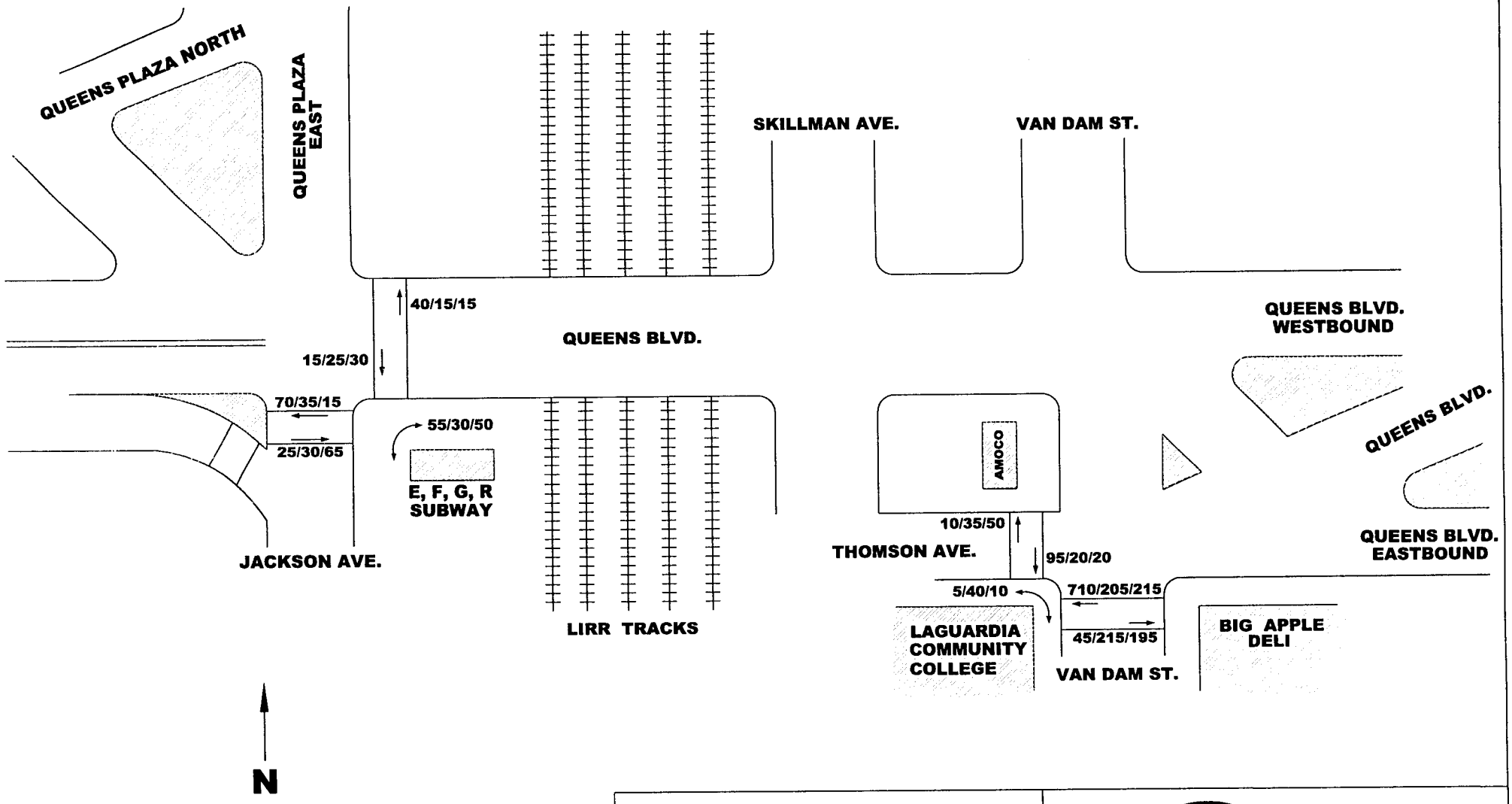
AM, MIDDAY, PM Peak Period

2010 Build Increment

Eng-Wong, Taub & Associates

Traffic and Transportation Consultants

Figure S - 3



XX/XX/XX = (AM/MD/PM)

SUNNYSIDE

AM, MIDDAY, PM Peak Period

2010 Build Pedestrian Flows

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TABLE S-1

EXISTING SUNNYSIDE TRAFFIC LEVELS OF SERVICE

Table S - 1

EXISTING LIRR STATION AREA TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
SUNNYSIDE									
1 Queens Boulevard & Van Dam Street / Thomson Avenue									
Van Dam Street	NB	L	1.04	*	F*	L	0.63	25.7	D
		TR	0.99	66.2	F	TR	1.04	*	F*
Van Dam Street (from viaduct)	SB	TR	1.03	*	F*	TR	0.58	32.3	D
Thomson Avenue	EB	TR	0.18	8.8	B	TR	1.04	42.1	E
Queens Boulevard	EB	T	1.00	64.9	F	T	0.89	29.3	D
Queens Boulevard (to Thomson Avenue)	WB	LT	1.01	40.2	E	DfL	0.37	28.9	D
						T	0.20	25.9	D
Queens Boulevard (to lower level)	WB	R	0.57	7.2	B	R	1.04	*	F*
Overall Intersection		-	*	*	**F***	-	*	*	**F***
2 Queens Boulevard & Skillman Avenue									
Skillman Avenue	NB	LTR	0.78	50.8	E	LTR	1.03	*	F*
	SB	LTR	1.07	83.1	F	LTR	0.72	36.0	D
Queens Boulevard	EB	LTR	1.04	46.1	E	LTR	1.03	*	F*
	WB	LTR	1.04	*	F*	LTR	1.02	*	F*
Overall Intersection		-	*	*	**F***	-	*	*	**F***
3 Queens Boulevard & Jackson Avenue / Queens Plaza East									
Jackson Avenue	NB	LT	0.80	41.7	E	LT	0.99	58.6	E
		R	0.18	30.9	D	R	0.21	29.9	D
Queens Plaza East	SB	LTR	0.50	27.1	D	LTR	0.34	24.5	C
Queens Plaza South (2 lane approach)	EB	T	0.80	23.0	C	T	0.92	25.1	D
Queens Plaza South (1 lane approach)		T	0.18	14.2	B	T	0.53	12.3	B
Queens Boulevard	WB	LT	1.06	*	F*	LT	1.03	*	F*
		R	1.00	53.6	E	R	0.85	19.9	C
Overall Intersection		-	*	*	**F***	-	*	*	**F***
4 Northern Boulevard & Queens Plaza North / 41st Avenue									
Queens Plaza East	NB	LTR	0.96	44.2	E	LTR	0.88	34.0	D
Northern Boulevard	SB	LT	0.94	42.9	E	LT	0.64	32.2	D
		R	1.03	*	F*	R	0.96	21.7	C
Queens Plaza North	EB	LTR	0.86	40.9	E	LTR	0.92	30.5	D
41st Avenue	WB	LTR	0.08	32.7	D	LTR	0.10	36.7	D
Overall Intersection		-	*	*	**F***	-	**0.81**	**28.4**	**D**

Notes

(1) Delay is measured in seconds per vehicle.

(2) Level of service for signalized intersections is based upon average stopped delay per vehicle (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(3) Level of Service for unsignalized intersections is based upon average total delay (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(4) Asterick (*) indicates that Delay and Levels of Service are not meaningful when v/c is greater than 1.2 or 1/PHF.

TABLE S-2

2010 NO BUILD SUNNYSIDE LEVELS OF SERVICE

Table S - 2

2010 NO BUILD LIRR STATION AREA TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
SUNNYSIDE									
1 Queens Boulevard & Van Dam Street / Thomson Avenue									
Van Dam Street	NB	L	1.20+	120.0+	F *	L	0.83	39.1	D
		TR	1.15	120.0+	F *	TR	1.11	120.0+	F *
Van Dam Street (from viaduct)	SB	TR	1.09	120.0+	F *	TR	0.61	32.8	D
Thomson Avenue	EB	TR	0.22	9.1	B	TR	1.26	120.0+	F *
Queens Boulevard	EB	T	1.07	120.0+	F *	T	0.99	42.1	E
Queens Boulevard (to Thomson Avenue)	WB	LT	1.16	120.0+	F *	DfL	0.38	29.3	D
						T	0.29	26.6	D
Queens Boulevard (to lower level)	WB	R	0.60	7.5	B	R	1.09	120.0+	F *
Overall Intersection		-	**1.20+**	**120.0+**	**F ***	-	**1.20+**	**120.0+**	**F ***
2 Queens Boulevard & Skillman Avenue									
Skillman Avenue	NB	LTR	0.90	72.0	F	LTR	1.09	120.0+	F *
	SB	LTR	1.13	120.0+	F *	LTR	0.77	38.2	D
Queens Boulevard	EB	DfL	0.32	8.0	B	DfL	-	-	-
		TR	1.16	120.0+	F *	TR	1.13	120.0+	
	WB	TR	1.13	120.0+	F*	TR	1.08	120.0+	F *
Overall Intersection		-	**1.20+**	**120.0+**	**F ***	-	**1.20+**	**120.0+**	**F ***
3 Queens Boulevard & Jackson Avenue / Queens Plaza East									
Jackson Avenue	NB	T	1.01	71.3	F	LT	1.20+	120.0+	F *
		R	0.22	31.2	D	R	0.41	31.8	D
Queens Plaza East	SB	LTR	0.83	34.6	D	LTR	0.54	26.8	D
Queens Plaza South (2 lane approach)	EB	T	0.84	24.8	C	T	0.97	32.7	D
Queens Plaza South (1 lane approach)		T	0.19	14.2	B	T	0.55	12.8	B
Queens Boulevard	WB	LT	1.14	120.0+	F *	LT	1.08	120.0+	F *
		R	1.15	120.0+	F *	R	0.91	25.0	C
Overall Intersection		-	**1.20+**	**120.0+**	**F ***	-	**1.20+**	**120.0+**	**F ***
4 Northern Boulevard & Queens Plaza North / 41st Avenue									
Queens Plaza East	NB	LTR	1.05	68.7	F	LTR	1.20+	120.0+	F *
Northern Boulevard	SB	LT	1.20+	120.0+	F *	LT	0.97	64.2	F
		R	1.11	120.0+	F *	R	1.01	33.5	D
Queens Plaza North	EB	LTR	0.91	45.4	E	LTR	0.97	37.2	D
41st Avenue	WB	LTR	0.08	32.7	D	LTR	0.10	36.7	D
Overall Intersection		-	**1.20+**	**120.0+**	**F ***	-	**1.20+**	**120.0+**	**F ***

Notes

(1) Delay is measured in seconds per vehicle.

(2) Level of service for signalized intersections is based upon average stopped delay per vehicle (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(3) Level of Service for unsignalized intersections is based upon average total delay (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(4) Asterick (*) indicates that Delay and Levels of Service are not meaningful when v/c is greater than 1.2 or 1/PHF.

TABLE S-3

SUNNYSIDE
PEDESTRIAN ANALYSES

Table S - 3

LIRR EAST SIDE ACCESS ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS OF SUNNYSIDE

1999 EXISTING CONDITIONS AM, MIDDAY, PM PEAK PERIODS

INTERSECTION and ELEMENT	8 - 9 AM Peak Period				12 - 1 Mid-Day Peak Period				5 - 6 PM Peak Period			
	Average		Maximum Surge		Average		Maximum Surge		Average		Maximum Surge	
	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS
JACKSON AVENUE @ QUEENS PLAZA EAST												
Southeast Corner	585.9	A			550.6	A			675.5	A		
South Crosswalk	633	A	361	A	646	A	332	A	862	A	443	A
East Crosswalk	414	A	326	A	442	A	332	A	531	A	398	A
THOMSON AVENUE @ QUEENS BOULEVARD												
Southwest Corner	67.5	B			92.1	B			102.4	B		
South Crosswalk	35	C	16	D	19	D	21	D	27	C	22	D
West Crosswalk	91	B	126	B	324	A	257	A	242	A	199	A

LIRR EAST SIDE ACCESS ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS OF SUNNYSIDE

2010 NO BUILD CONDITIONS AM, MIDDAY, PM PEAK PERIODS

INTERSECTION and ELEMENT	8 - 9 AM Peak Period				12 - 1 Mid-Day Peak Period				5 - 6 PM Peak Period			
	Average		Maximum Surge		Average		Maximum Surge		Average		Maximum Surge	
	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS
JACKSON AVENUE @ QUEENS PLAZA EAST												
Southeast Corner	585.9	A			550.6	A			675.5	A		
South Crosswalk	627	A	361	A	641	A	332	A	854	A	443	A
East Crosswalk	414	A	326	A	442	A	332	A	531	A	398	A
THOMSON AVENUE @ QUEENS BOULEVARD												
Southwest Corner	65.9	B			89.8	B			99.8	B		
South Crosswalk	34	C	16	D	18	D	20	D	25	C	22	D
West Crosswalk	86	B	126	B	316	A	257	A	242	A	199	A

LIRR EAST SIDE ACCESS ANALYSIS OF CRITICAL PEDESTRIAN ELEMENTS OF SUNNYSIDE

2010 BUILD CONDITIONS AM, MIDDAY, PM PEAK PERIODS

INTERSECTION and ELEMENT	8 - 9 AM Peak Period				12 - 1 Mid-Day Peak Period				5 - 6 PM Peak Period			
	Average		Maximum Surge		Average		Maximum Surge		Average		Maximum Surge	
	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS	Space (sf/ped)	LOS
JACKSON AVENUE @ QUEENS PLAZA EAST												
Southeast Corner	202.6	A			322.7	A			250.9	A		
South Crosswalk	231	A	133	A	394	A	204	A	320	A	166	A
East Crosswalk	226	A	178	A	332	A	249	A	295	A	221	A
THOMSON AVENUE @ QUEENS BOULEVARD												
Southwest Corner	63.4	B			86.8	B			93.2	B		
South Crosswalk	34	C	15	D	18	D	20	D	25	C	21	D
West Crosswalk	70	B	102	B	258	A	210	A	190	A	157	A

FIGURES L - 1 to L - 15

EXISTING LONG ISLAND RAIL ROAD STATION AREA TRAFFIC VOLUMES

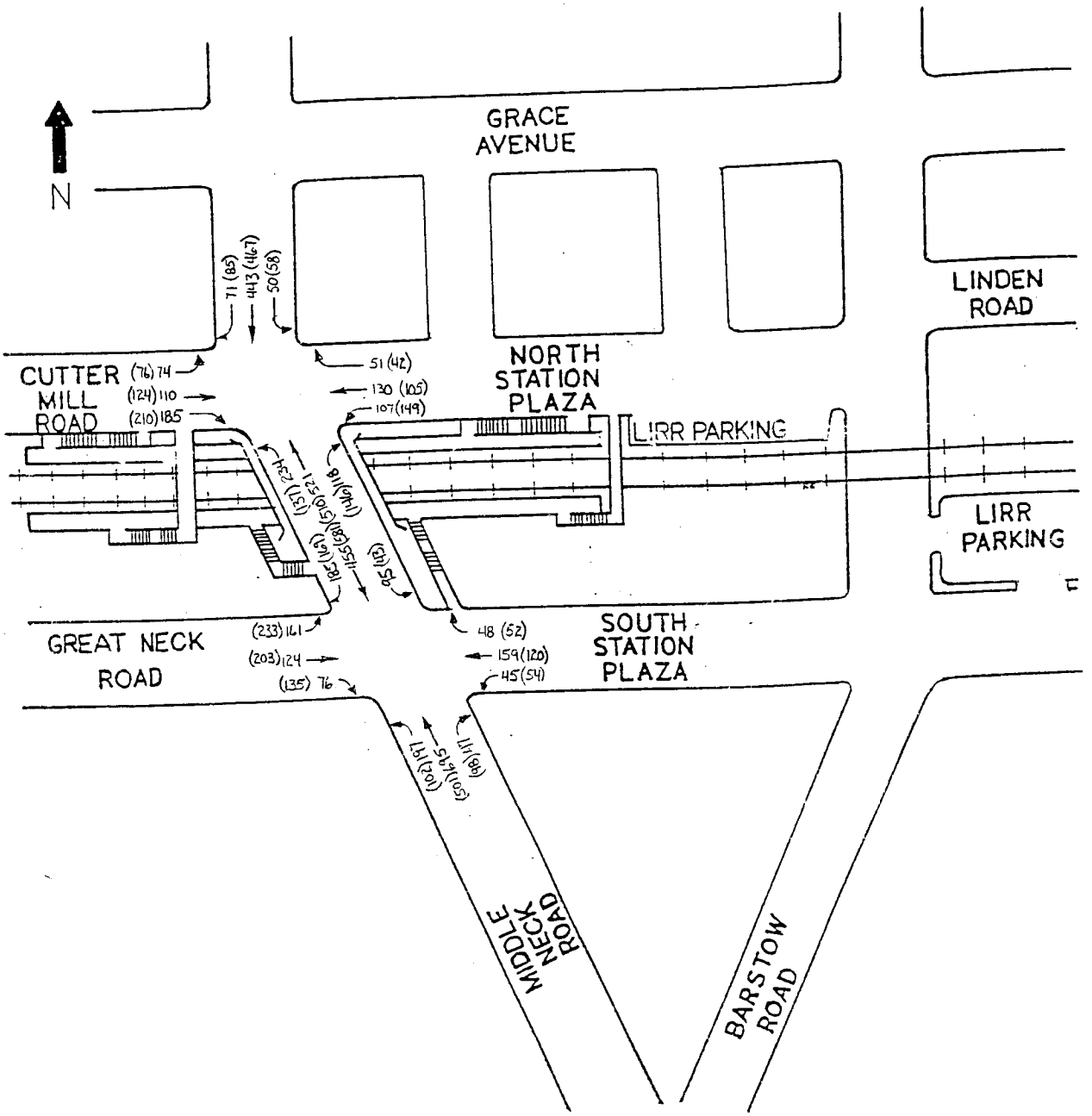

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FIGURE L1
EXISTING LIRR TRAFFIC VOLUMES
AM AND (PM) PEAK HOURS

GREAT NECK LIRR STATION
GREAT NECK NY 11021

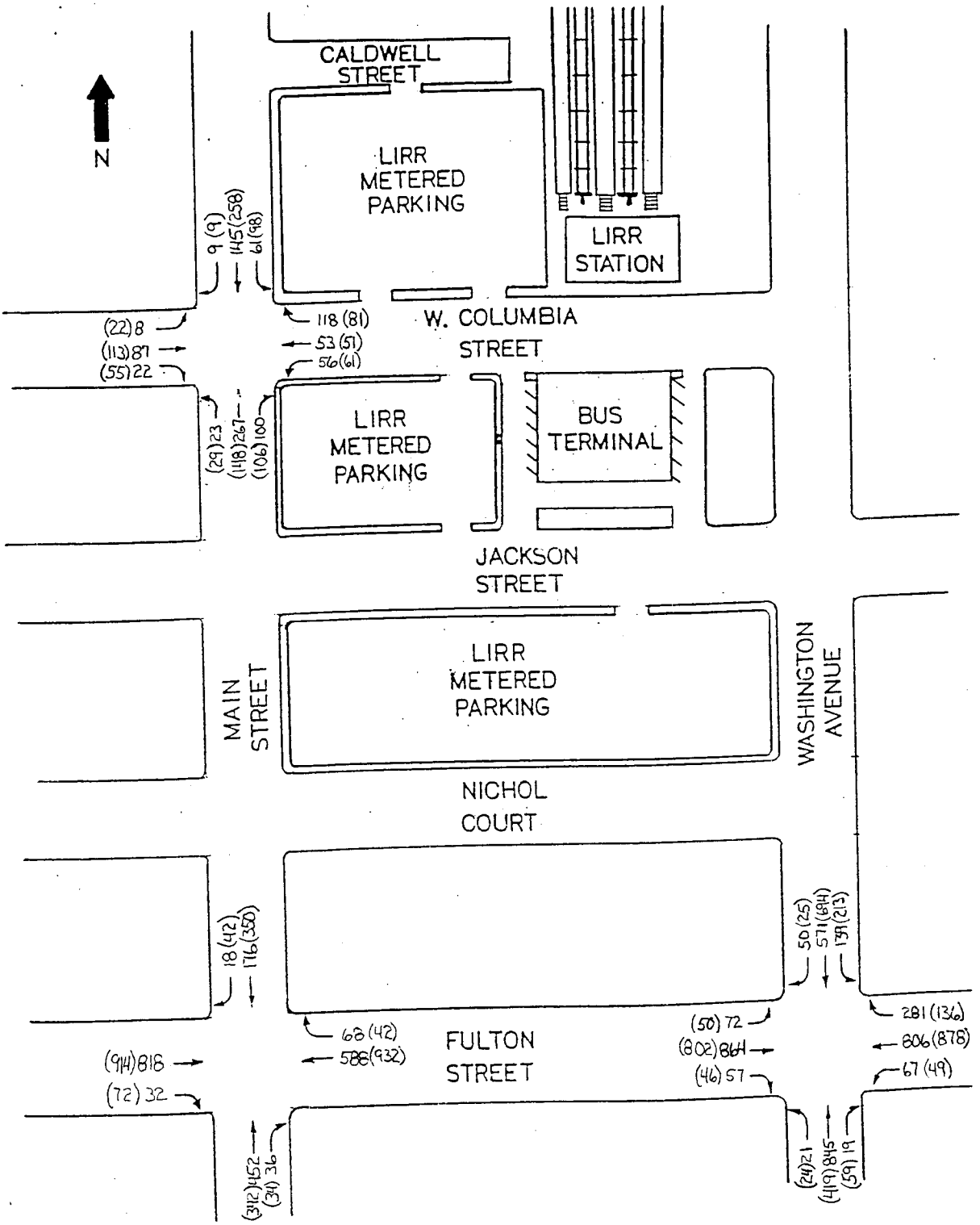

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FIGURE L2
EXISTING LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

HEMPSTEAD LIRR STATION
HEMPSTEAD NY 11550

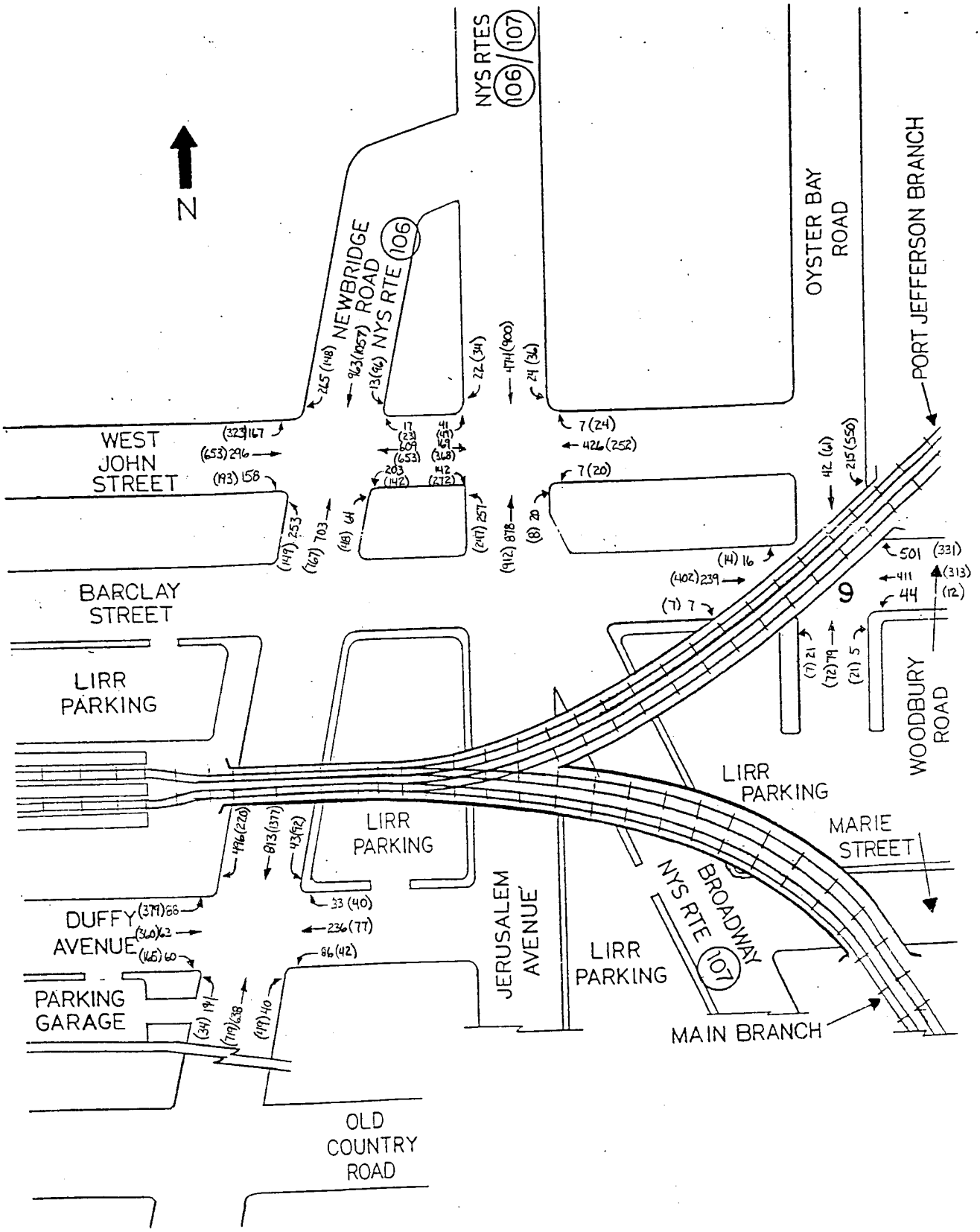

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FIGURE L3
EXISTING LIRR TRAFFIC VOLUMES
AM AND (PM) PEAK HOURS

HICKSVILLE LIRR STATION
HICKSVILLE NY 11803

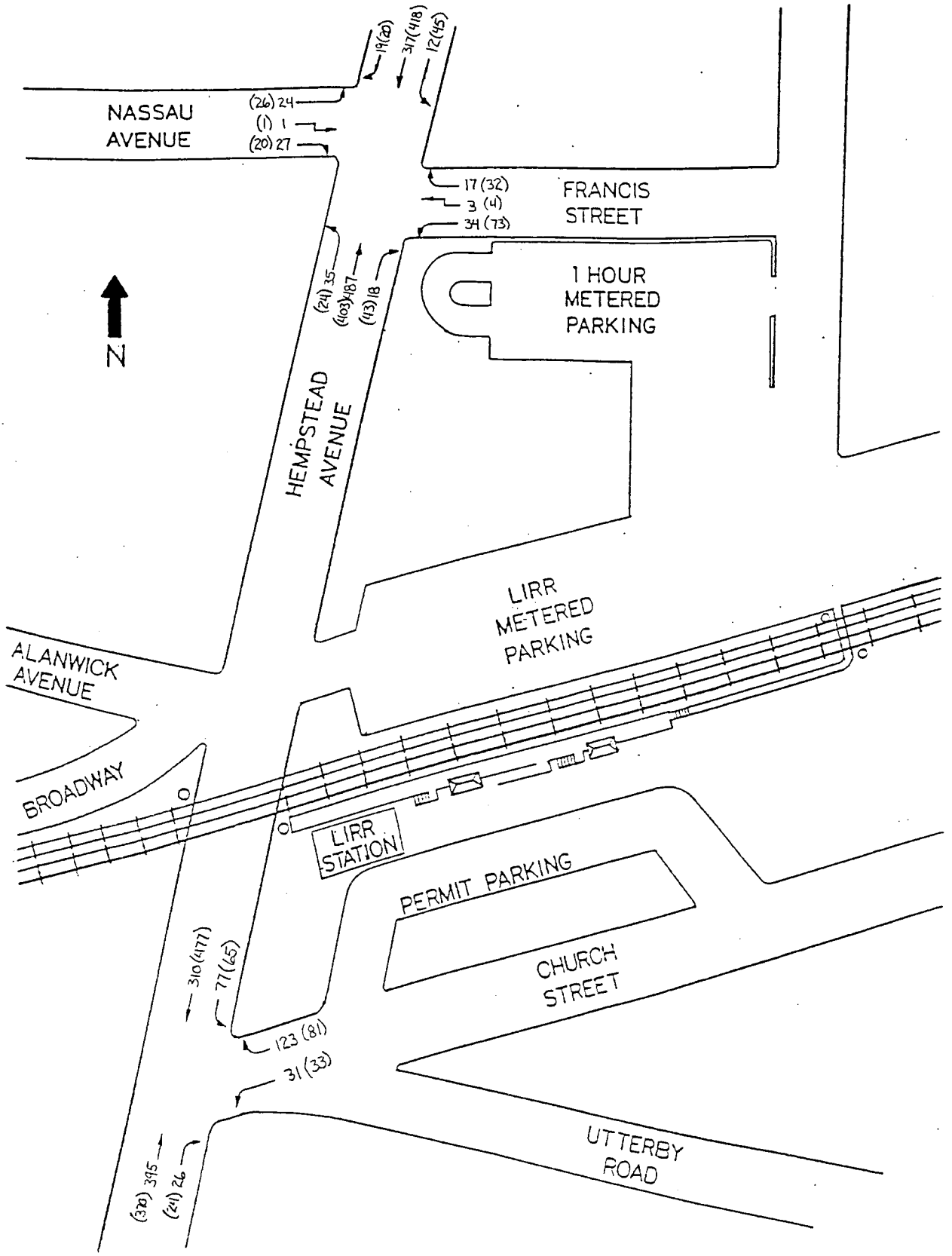

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FIGURE L4
EXISTING LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS
MALVERNE LIRR STATION
MALVERNE NY 11565

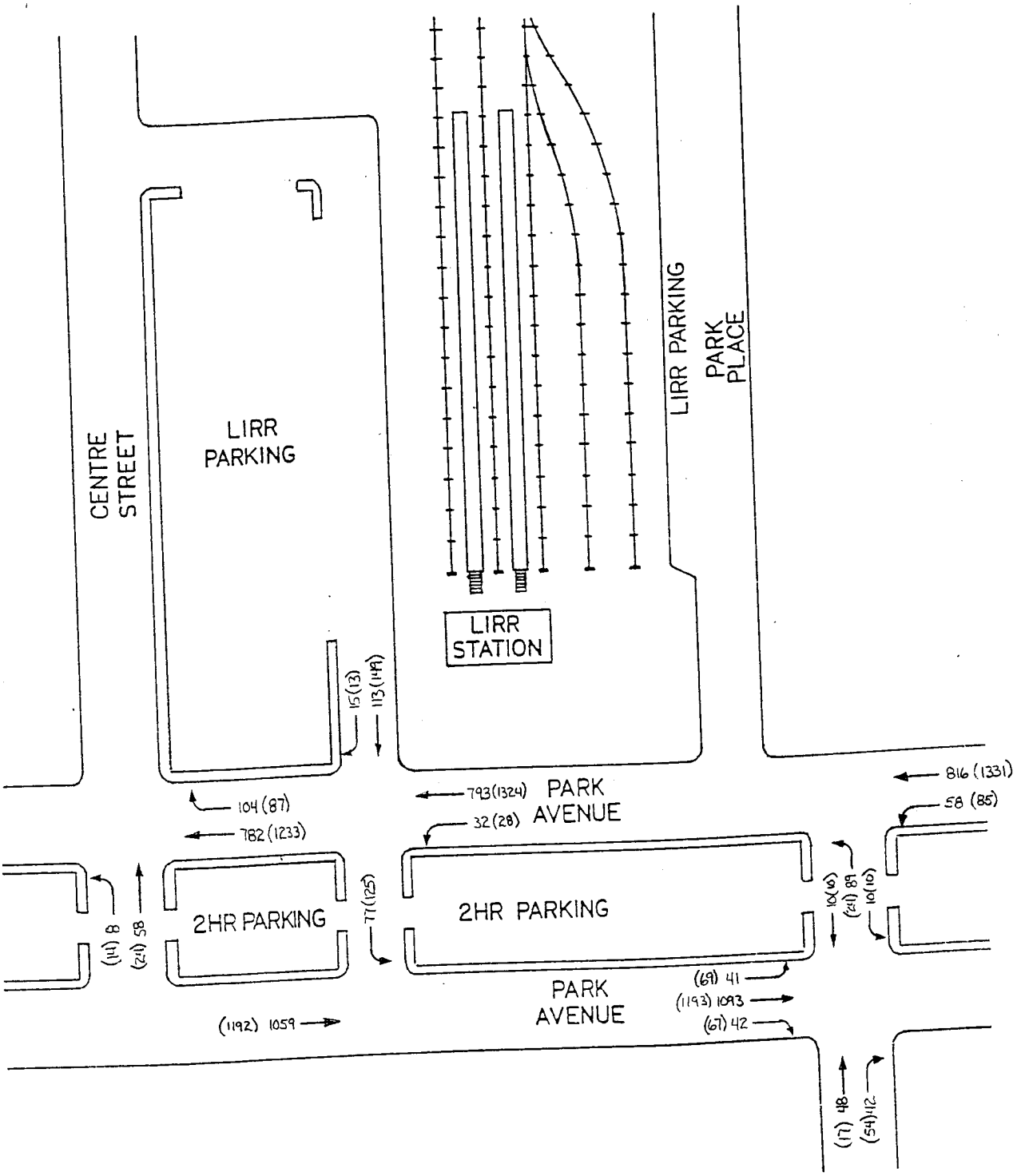

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FIGURE L5
EXISTING LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

LONG BEACH LIRR STATION
LONG BEACH NY 11561

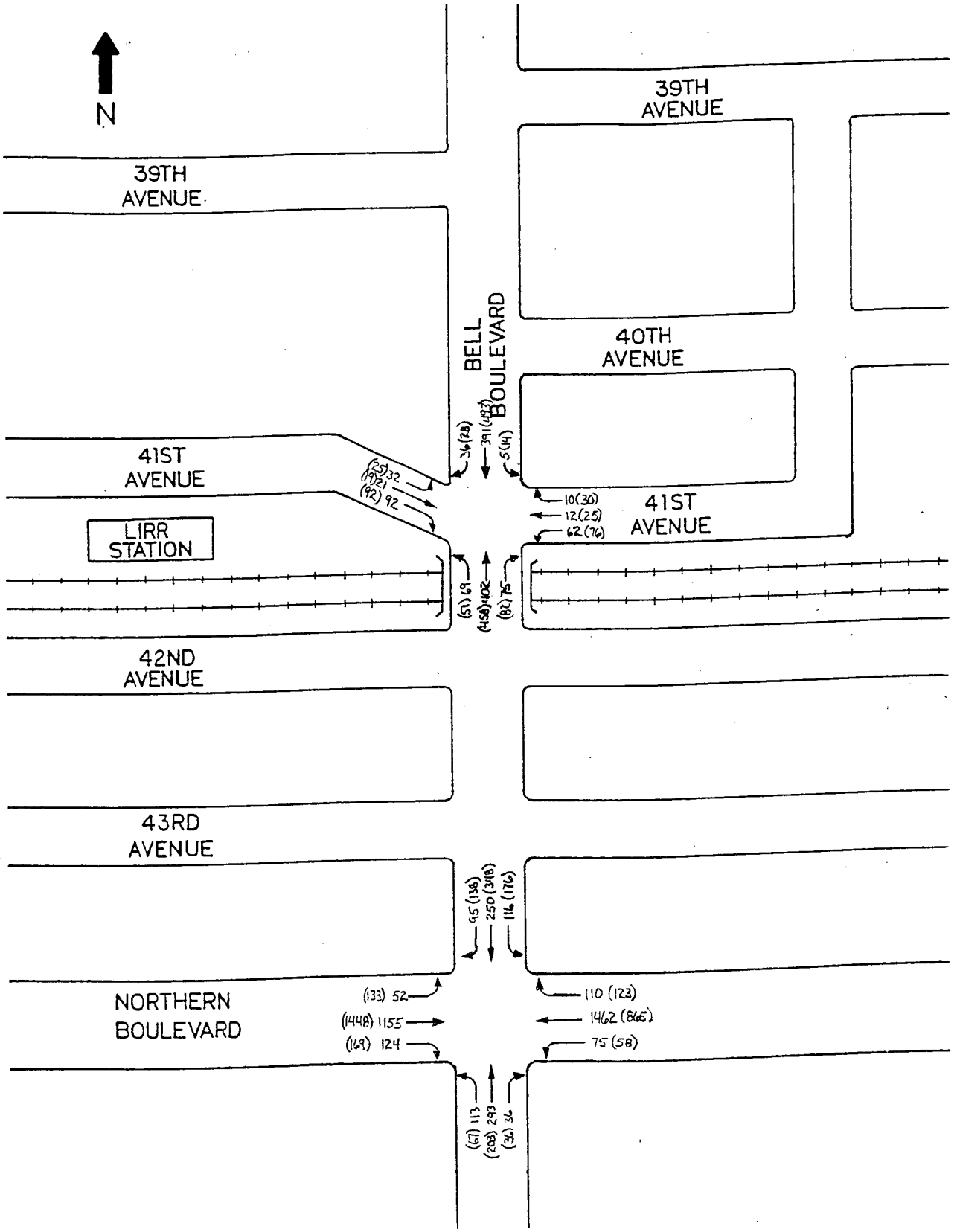

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FIGURE L6
EXISTING LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS
BAYSIDE LIRR STATION
BAYSIDE NY 11361

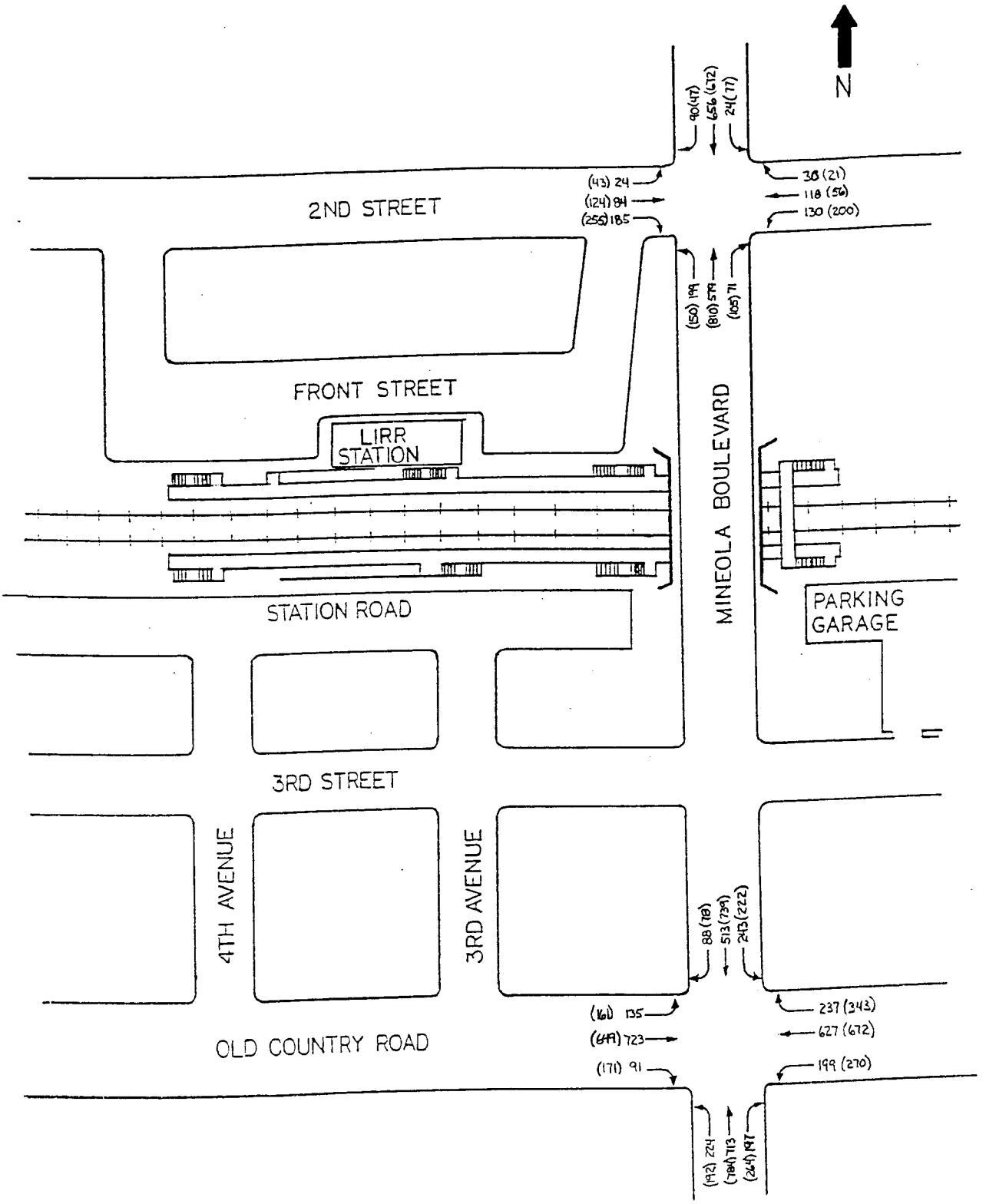

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FIGURE L7
EXISTING LIRR TRAFFIC VOLUMES
AM AND (PM) PEAK HOURS

MINEOLA LIRR STATION
MINEOLA NY 11501

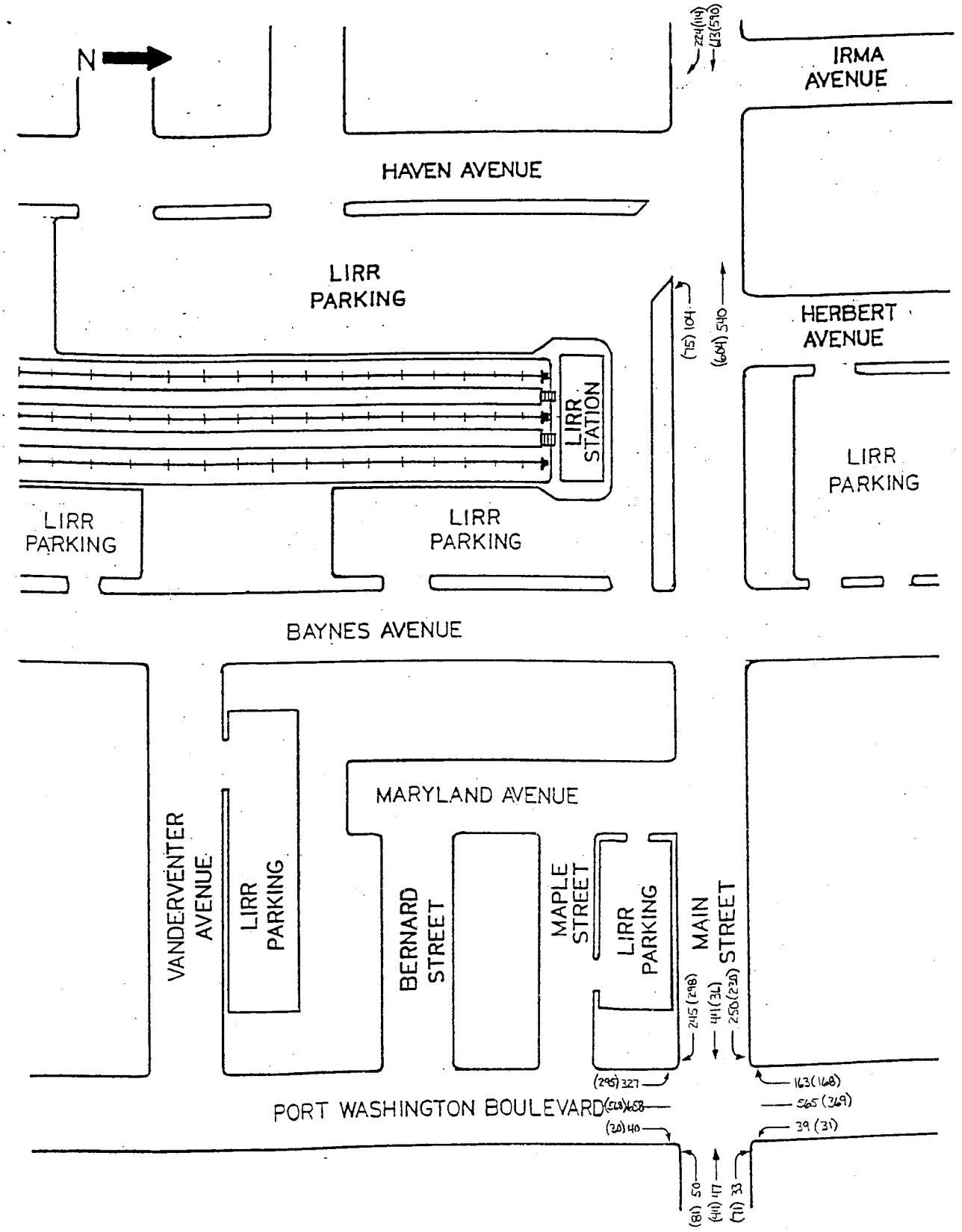

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FIGURE L8
EXISTING LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

PORT WASHINGTON LIRR STATION
PORT WASHINGTON NY 11050

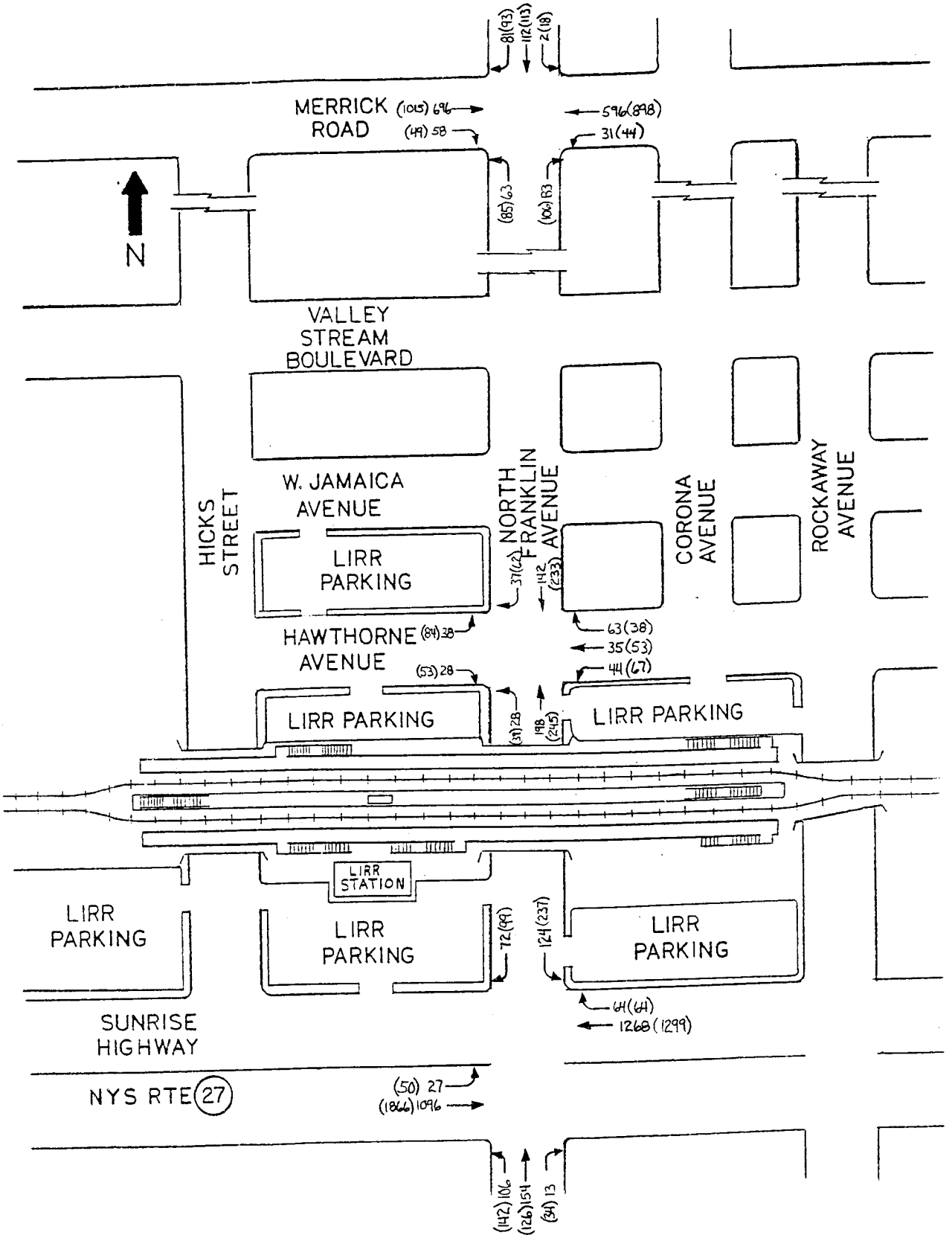

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FIGURE L9
EXISTING LIRR TRAFFIC VOLUMES
AM AND (PM) PEAK HOURS

VALLEY STREAM LIRR STATION
VALLEY STREAM NY 11580

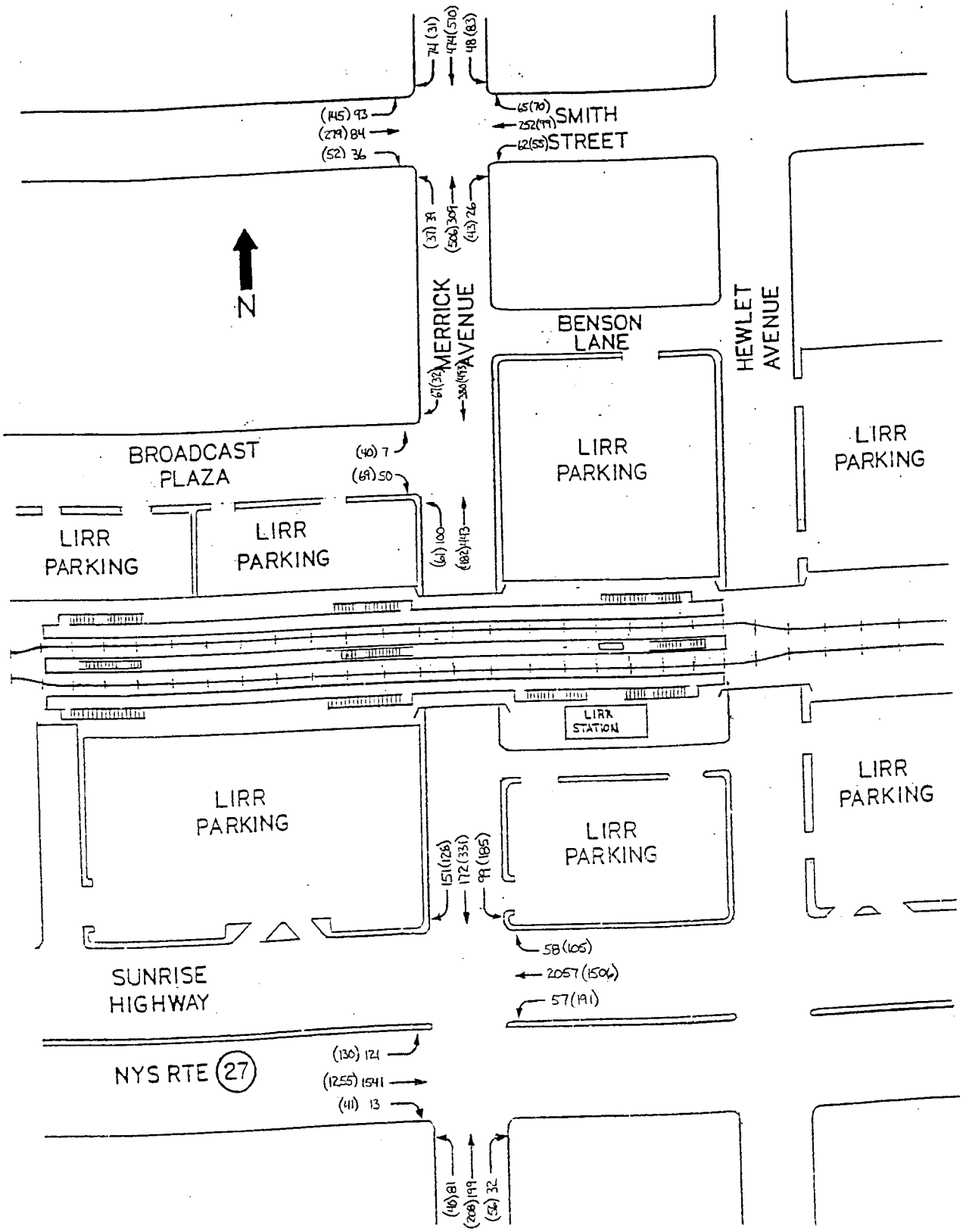

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FIGURE L10
EXISTING LIRR TRAFFIC VOLUMES:
AM AND(PM)PEAK HOURS
MERRICK LIRR STATION
MERRICK NY 11566

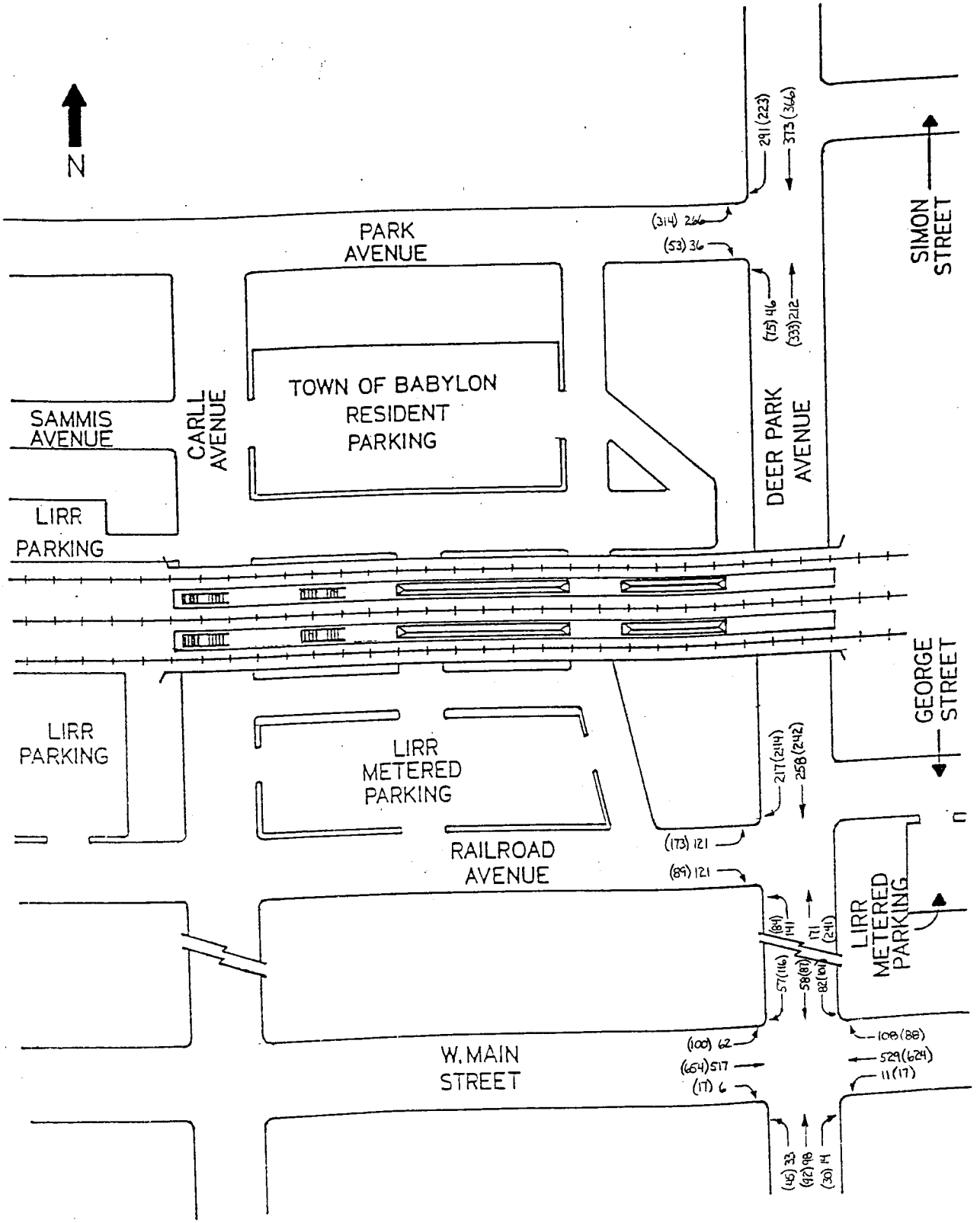

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FIGURE L11
EXISTING LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS
BABYLON LIRR STATION
BABYLON NY 11702

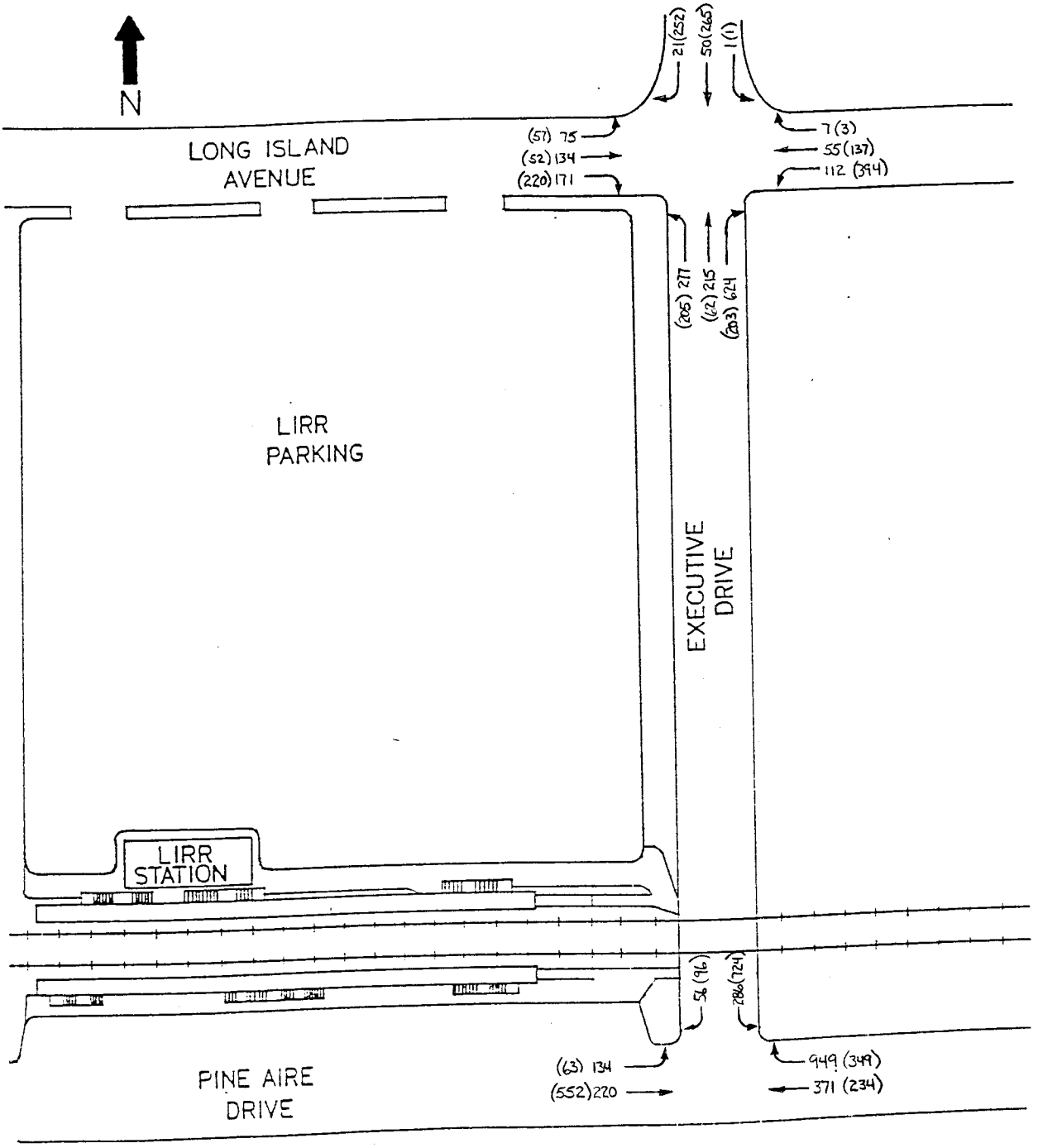

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FIGURE L12
EXISTING LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

DEER PARK LIRR STATION
EDGEWOOD NY 11717

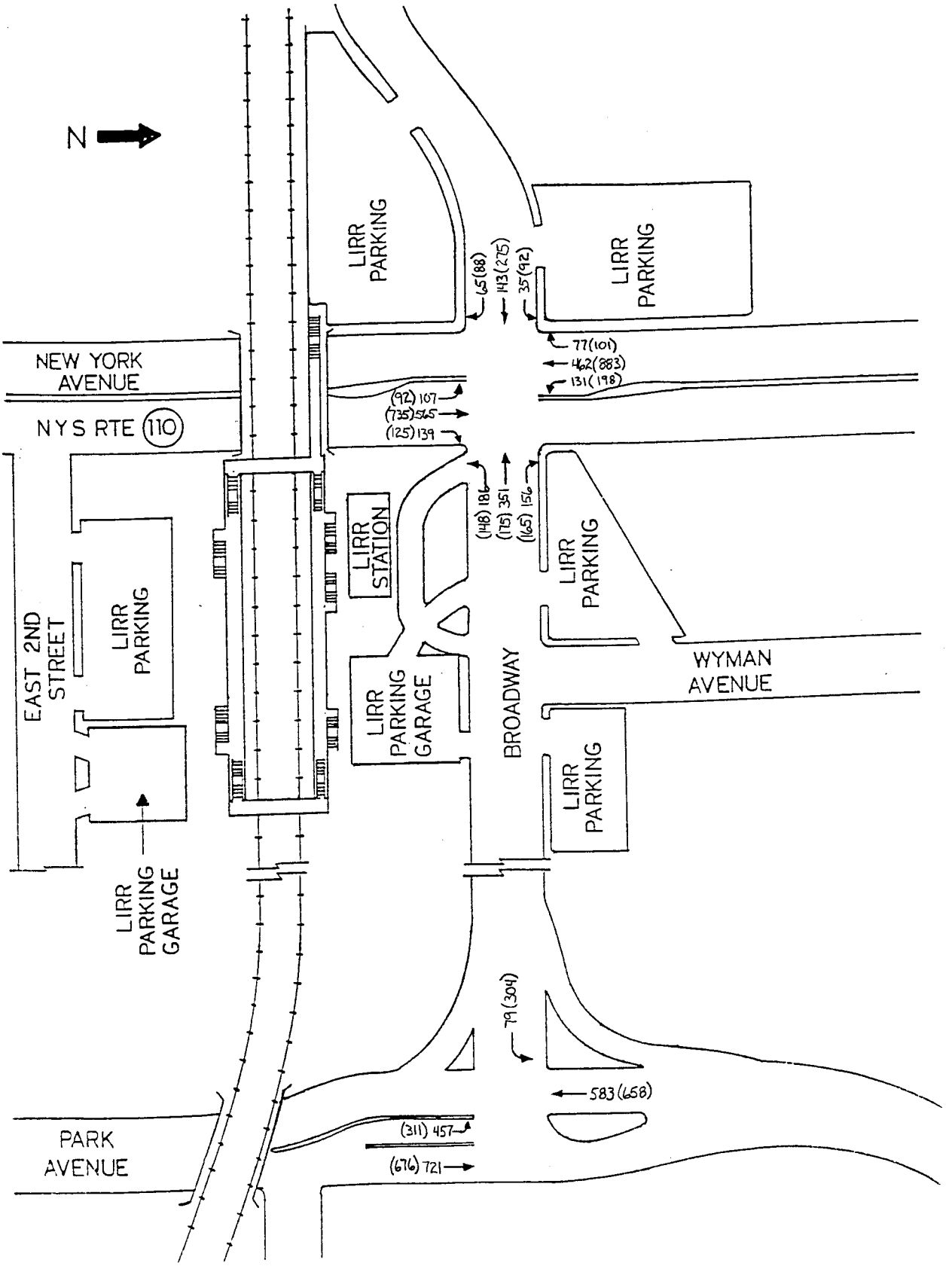

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FIGURE L13
EXISTING LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

HUNTINGTON LIRR STATION
HUNTINGTON MANOR NY 11746

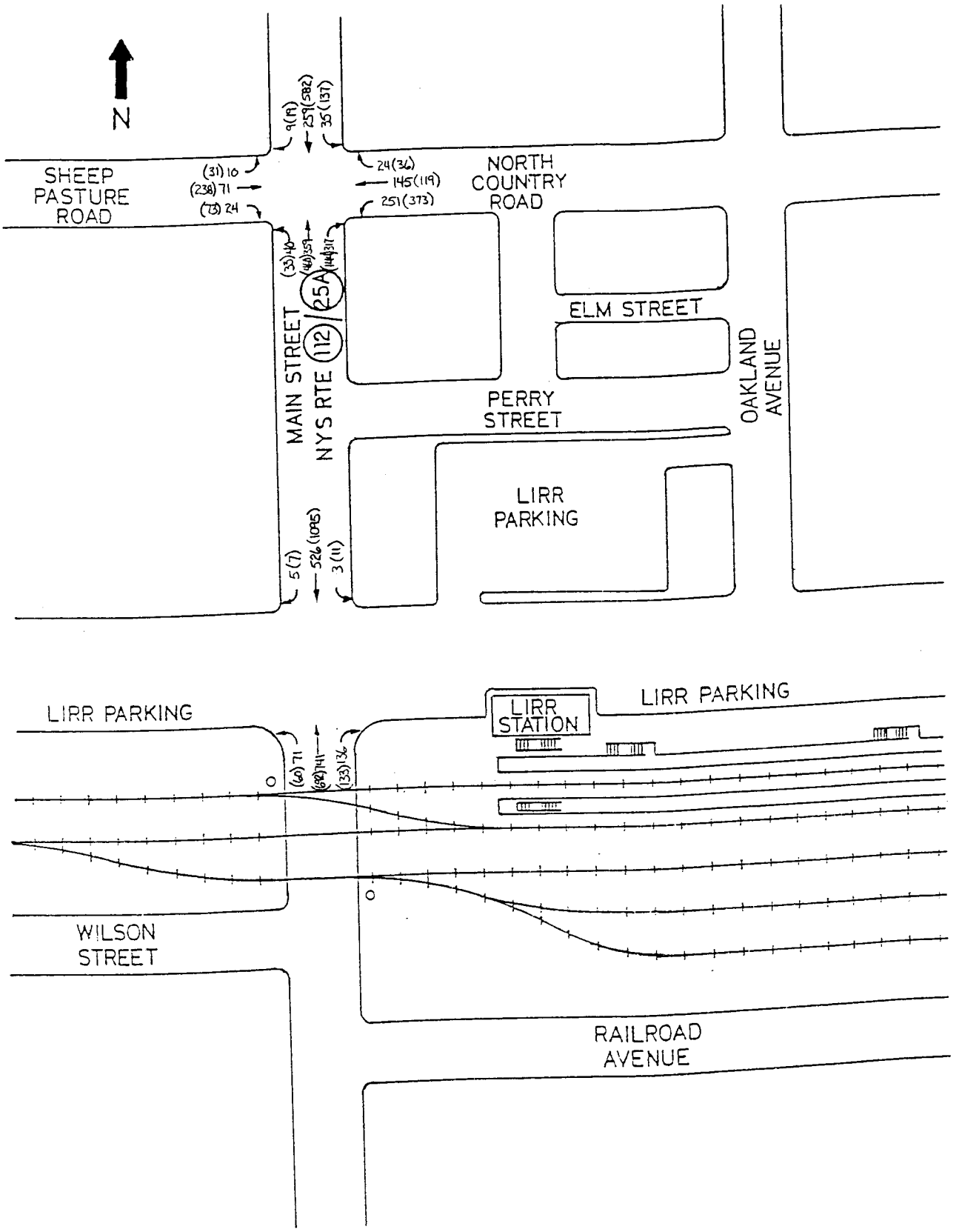

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FIGURE L14
EXISTING LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS
PORT JEFFERSON LIRR STATION
PORT JEFFERSON STATION NY 11776

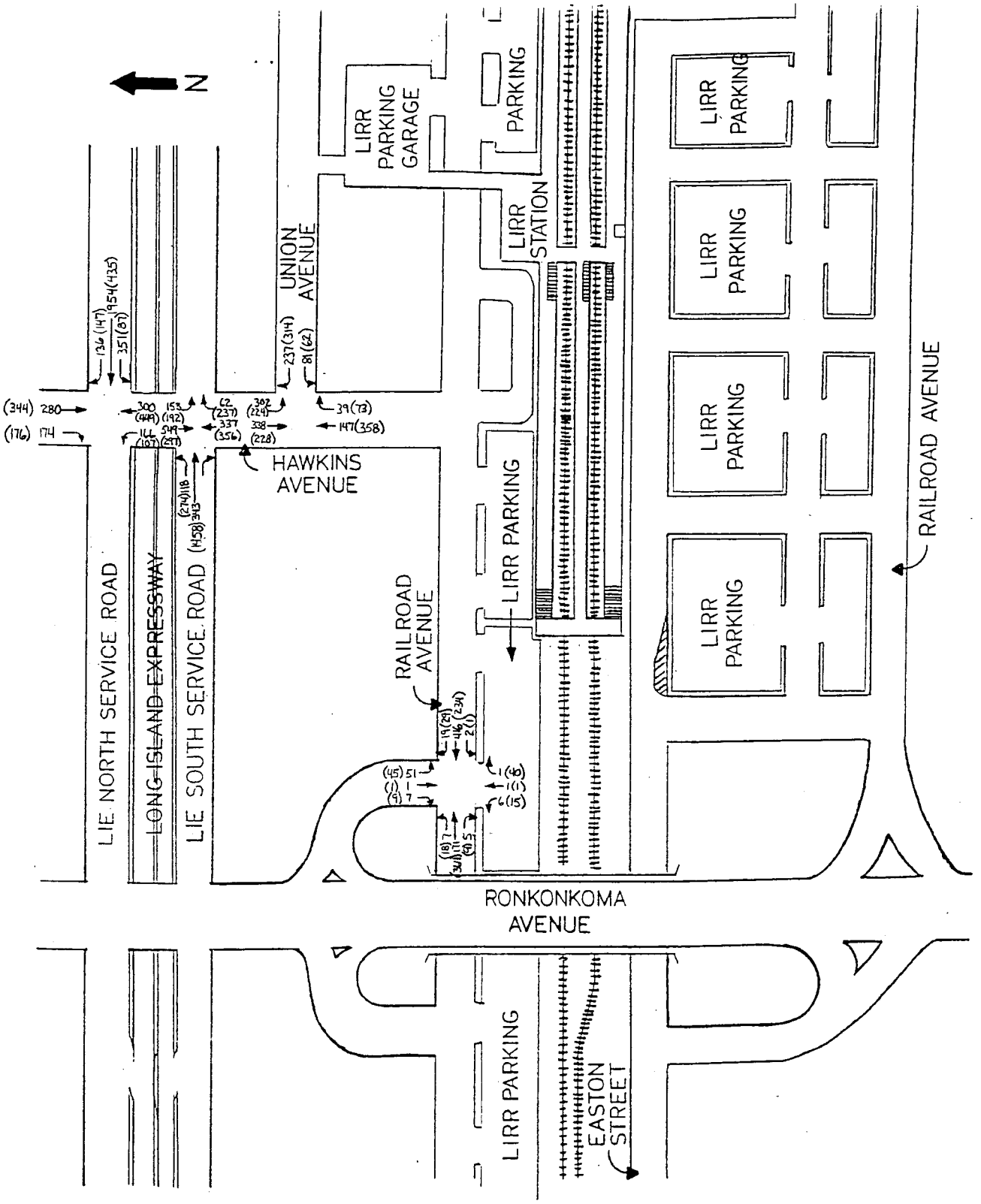

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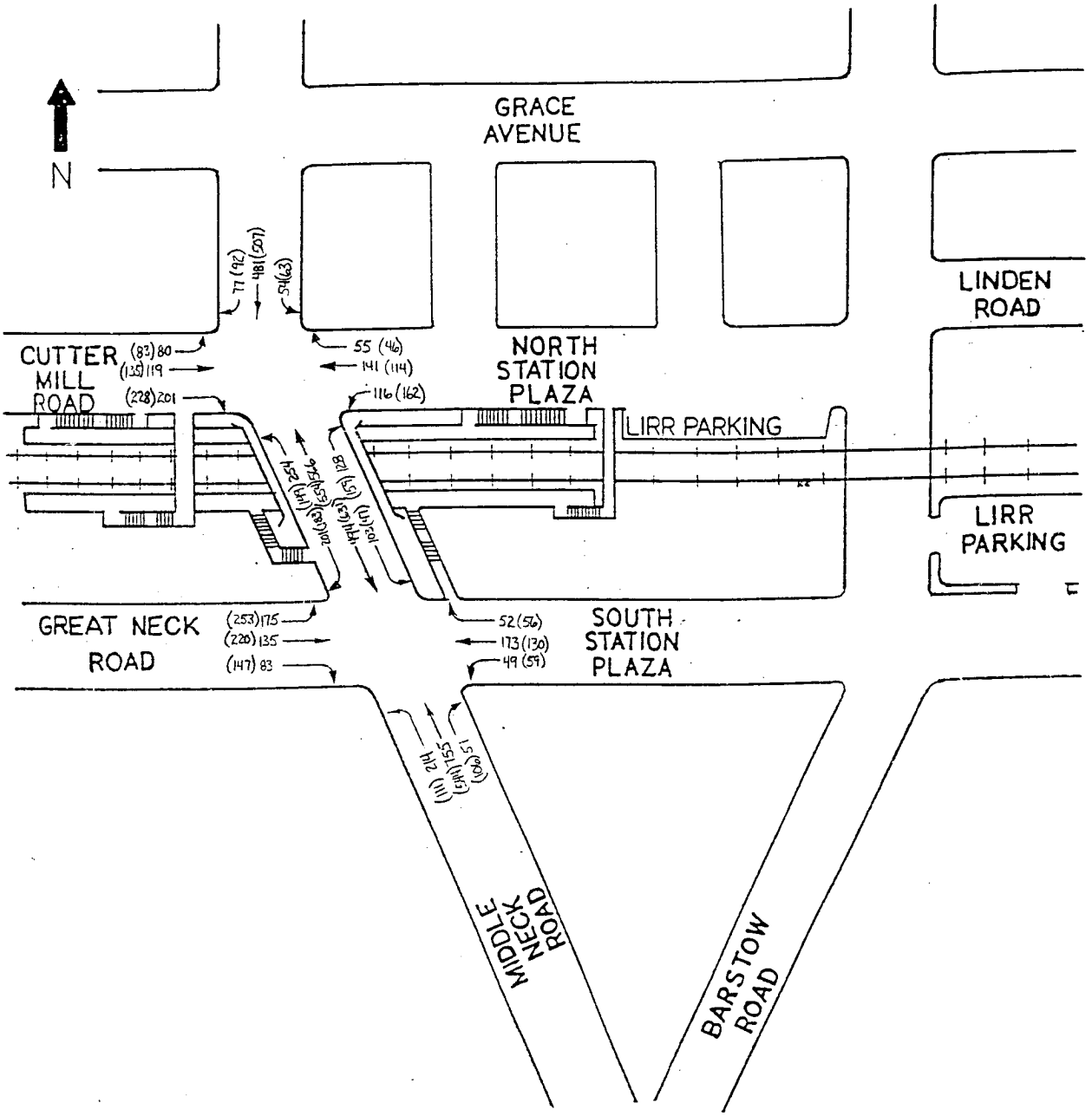
FIGURE L15
EXISTING LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

RONKONKOMA LIRR STATION
RONKONKOMA NY 11779

FIGURES L - 16 to L - 30

NO BUILD LONG ISLAND RAIL ROAD STATION AREA TRAFFIC VOLUMES



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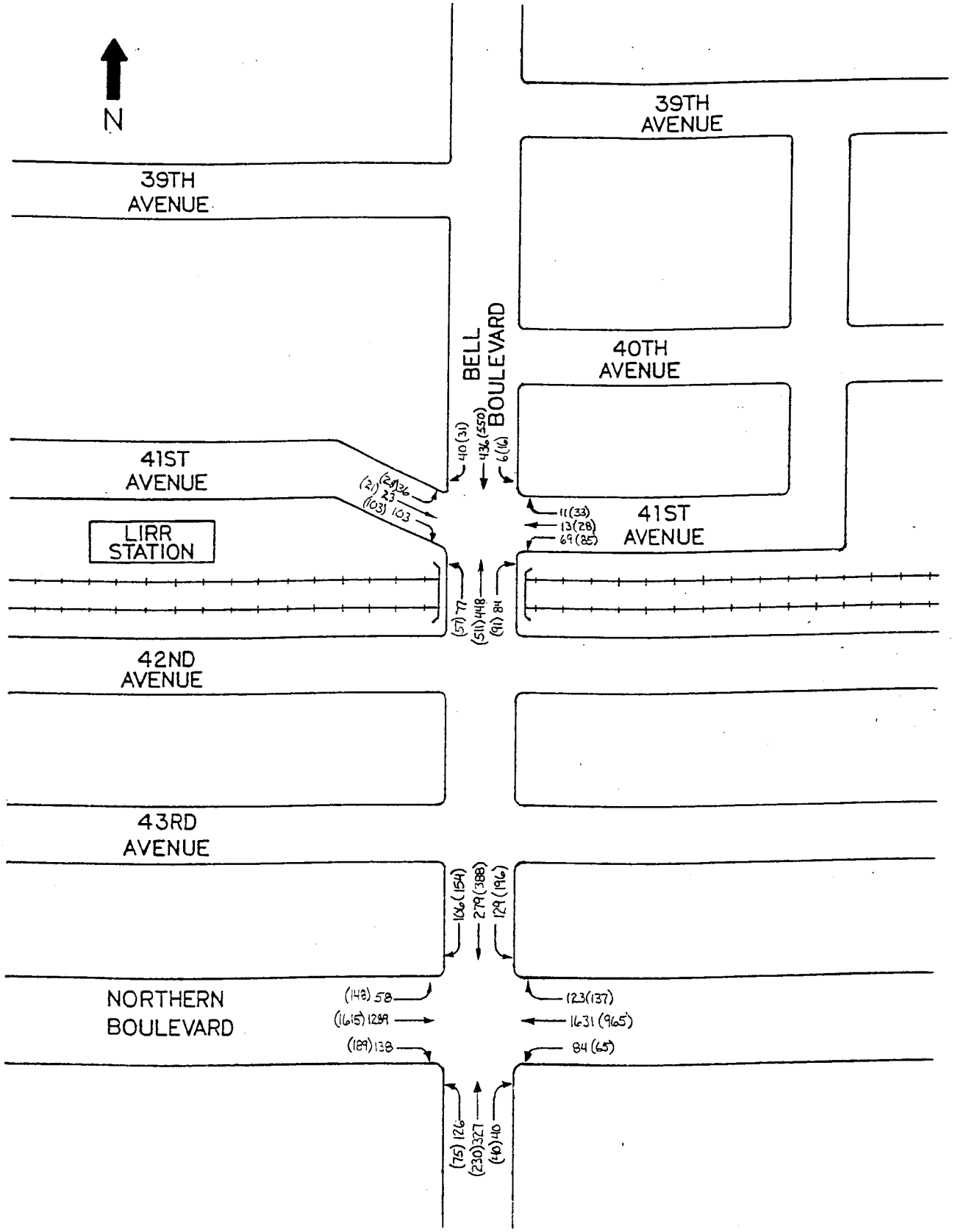
Traffic and Transportation Consultants

FIGURE L16
NO BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS
GREAT NECK LIRR STATION
GREAT NECK NY 11021



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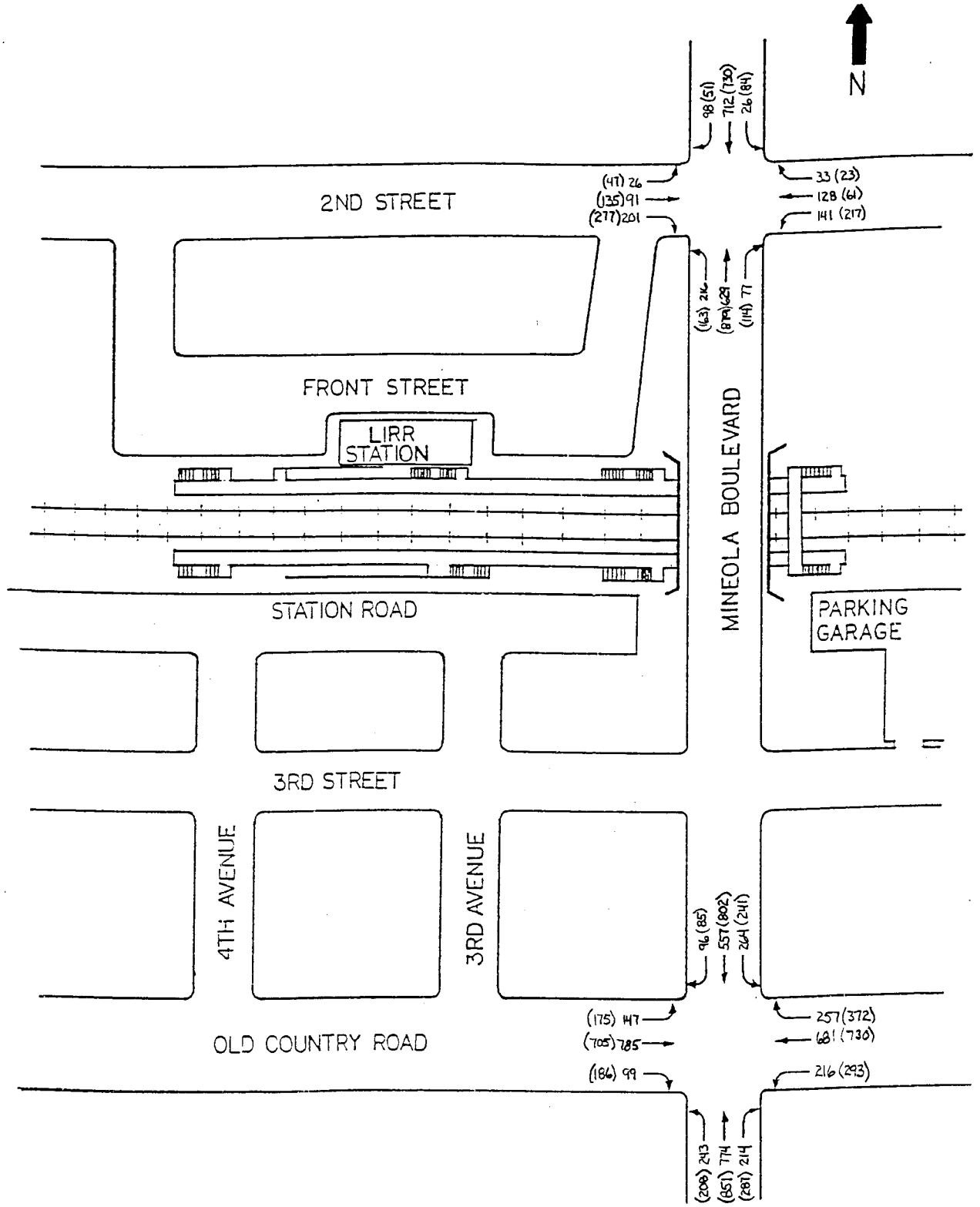
Traffic and Transportation Consultants

FIGURE L21
NO BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS
BAYSIDE LIRR STATION
BAYSIDE NY 11361



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Traffic and Transportation Consultants

FIGURE L22
NO BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS
MINEOLA LIRR STATION
MINEOLA NY 11501

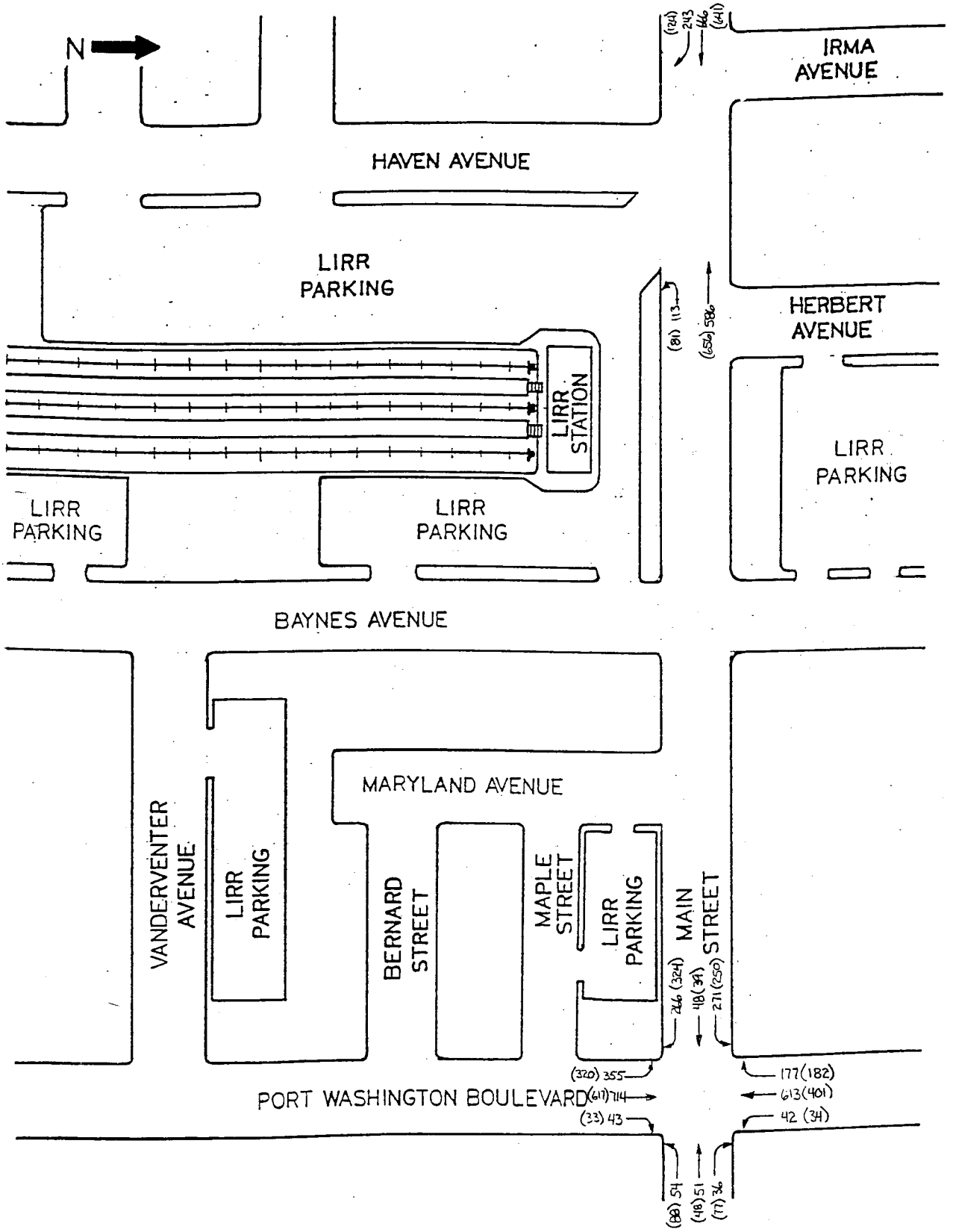

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FIGURE L23
NO BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

PORT WASHINGTON LIRR STATION
PORT WASHINGTON NY 11050

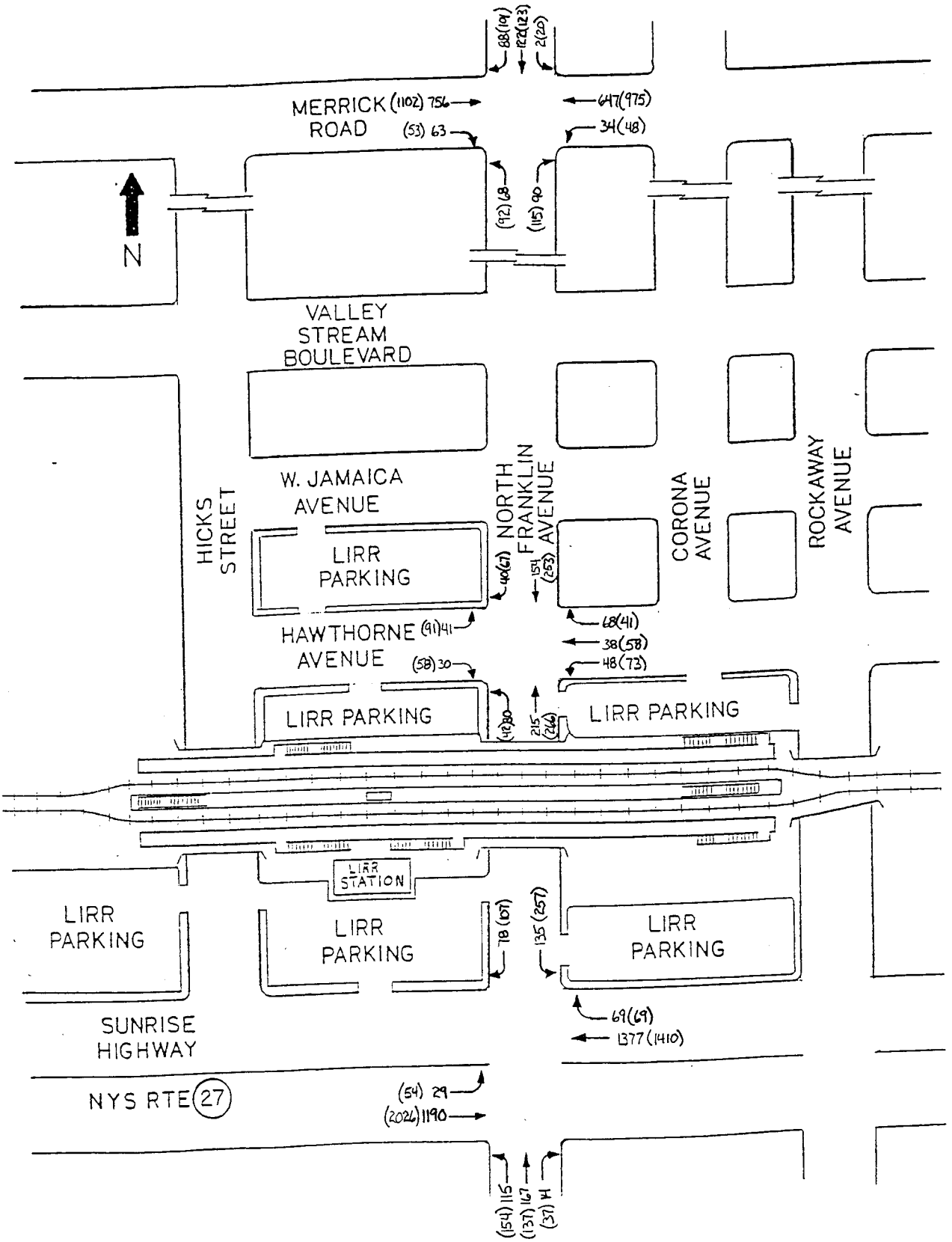

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FIGURE L24
NO BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

VALLEY STREAM LIRR STATION
VALLEY STREAM NY 11580

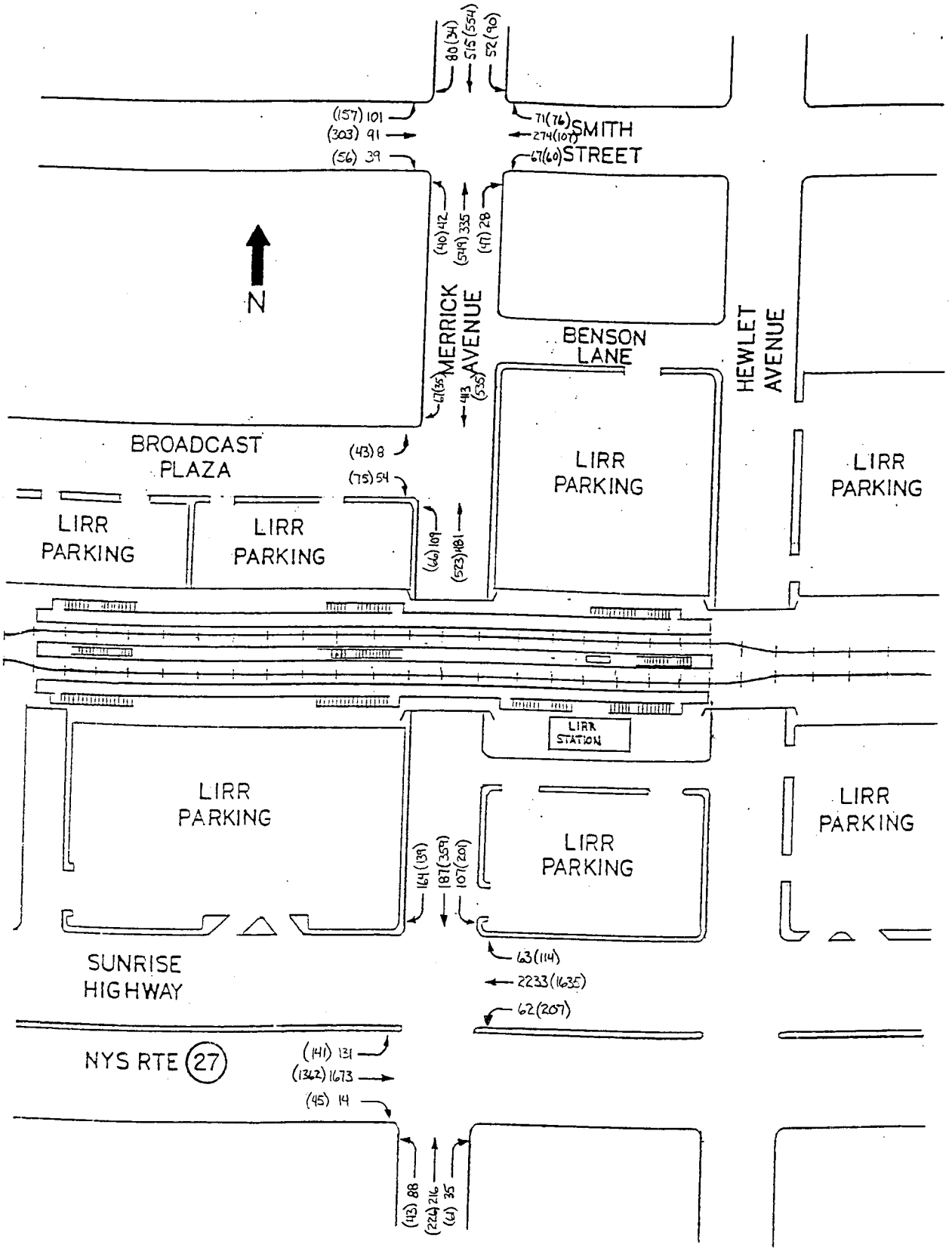

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FIGURE L25
NO BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS
MERRICK LIRR STATION
MERRICK NY 11566

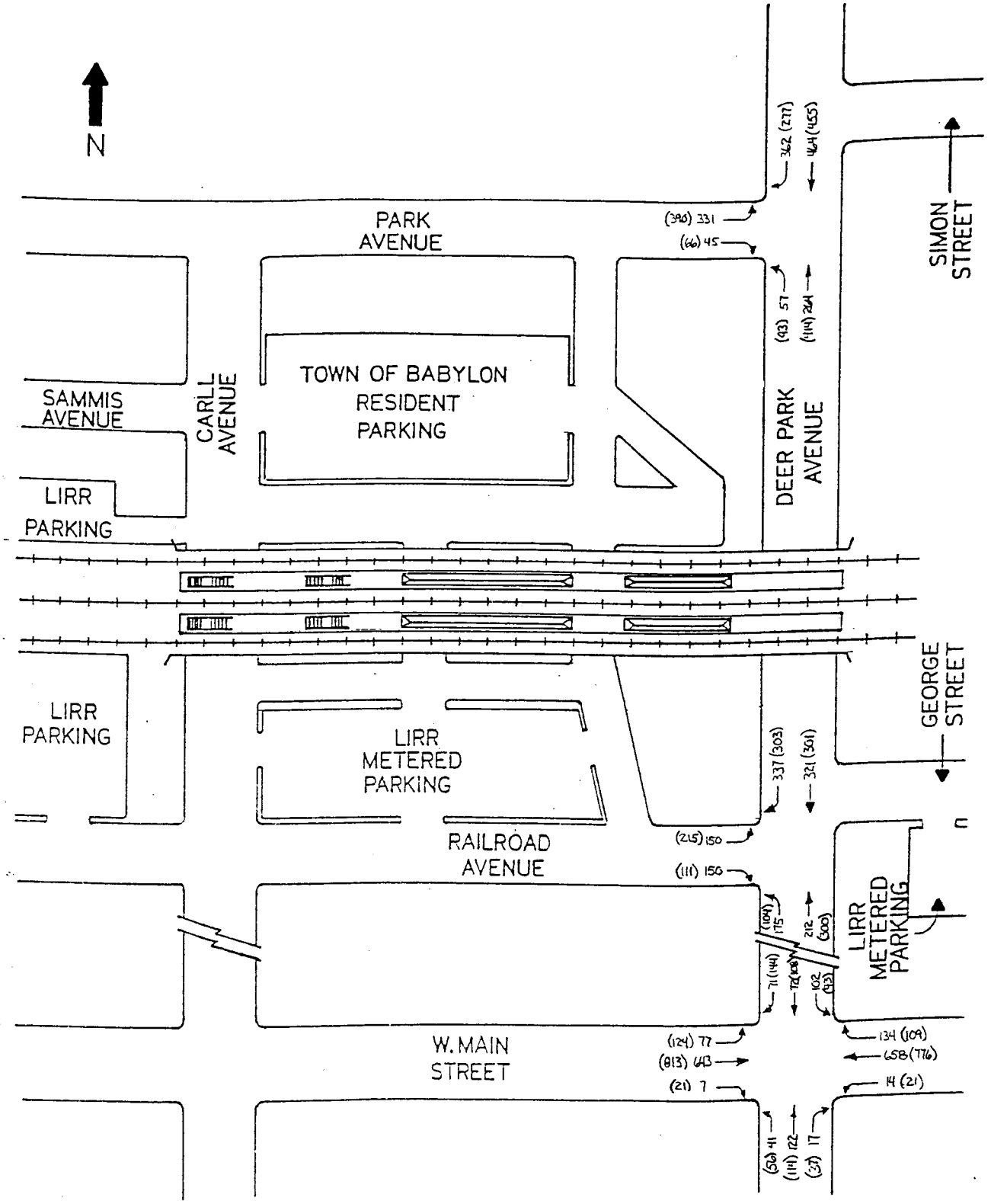

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FIGURE L26
NO BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

BABYLON LIRR STATION
BABYLON NY 11702

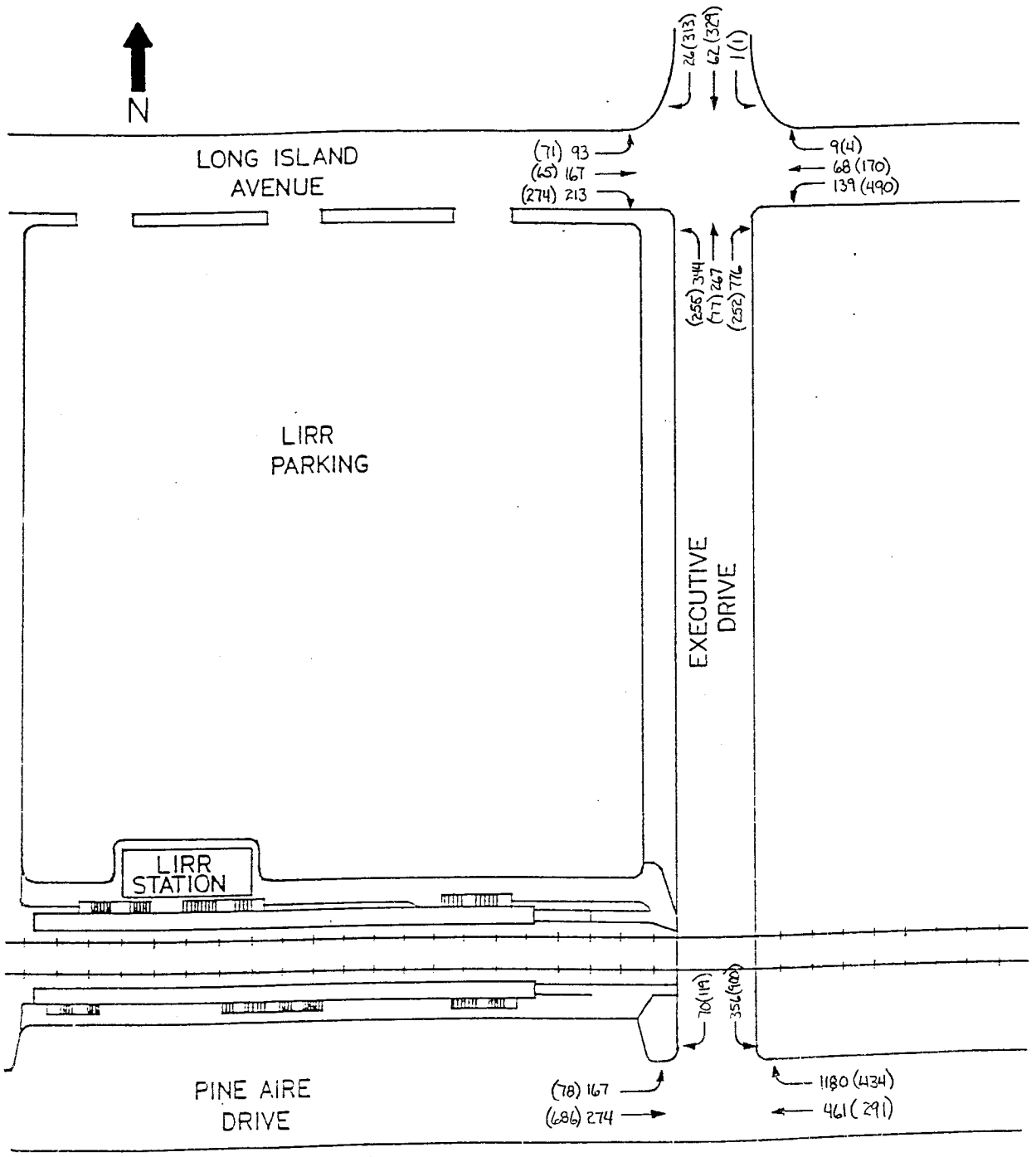

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FIGURE L27
NO BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

DEER PARK LIRR STATION
EDGEWOOD NY 11717

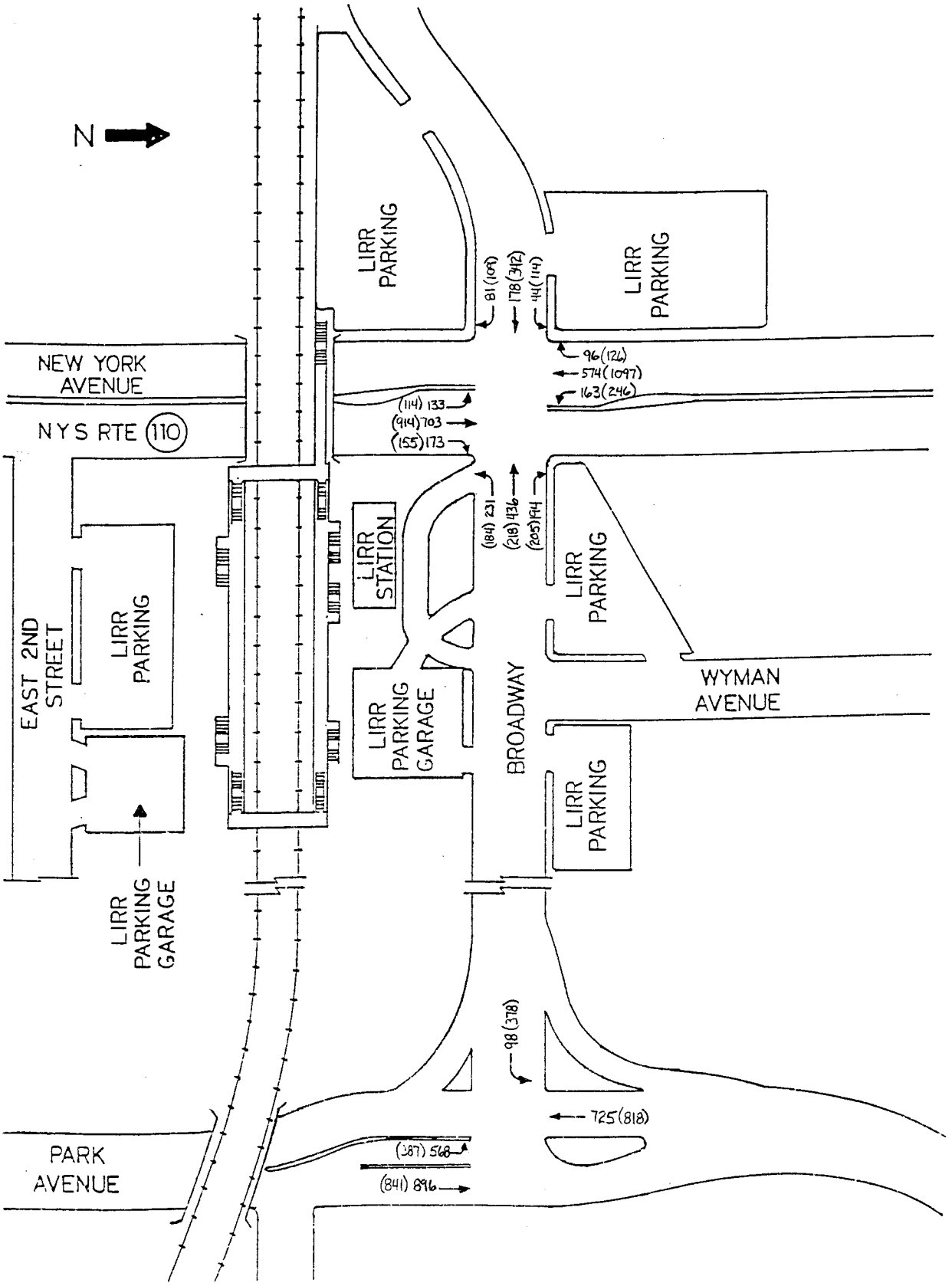

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FIGURE L28
NO BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

HUNTINGTON LIRR STATION
HUNTINGTON MANOR NY 11746

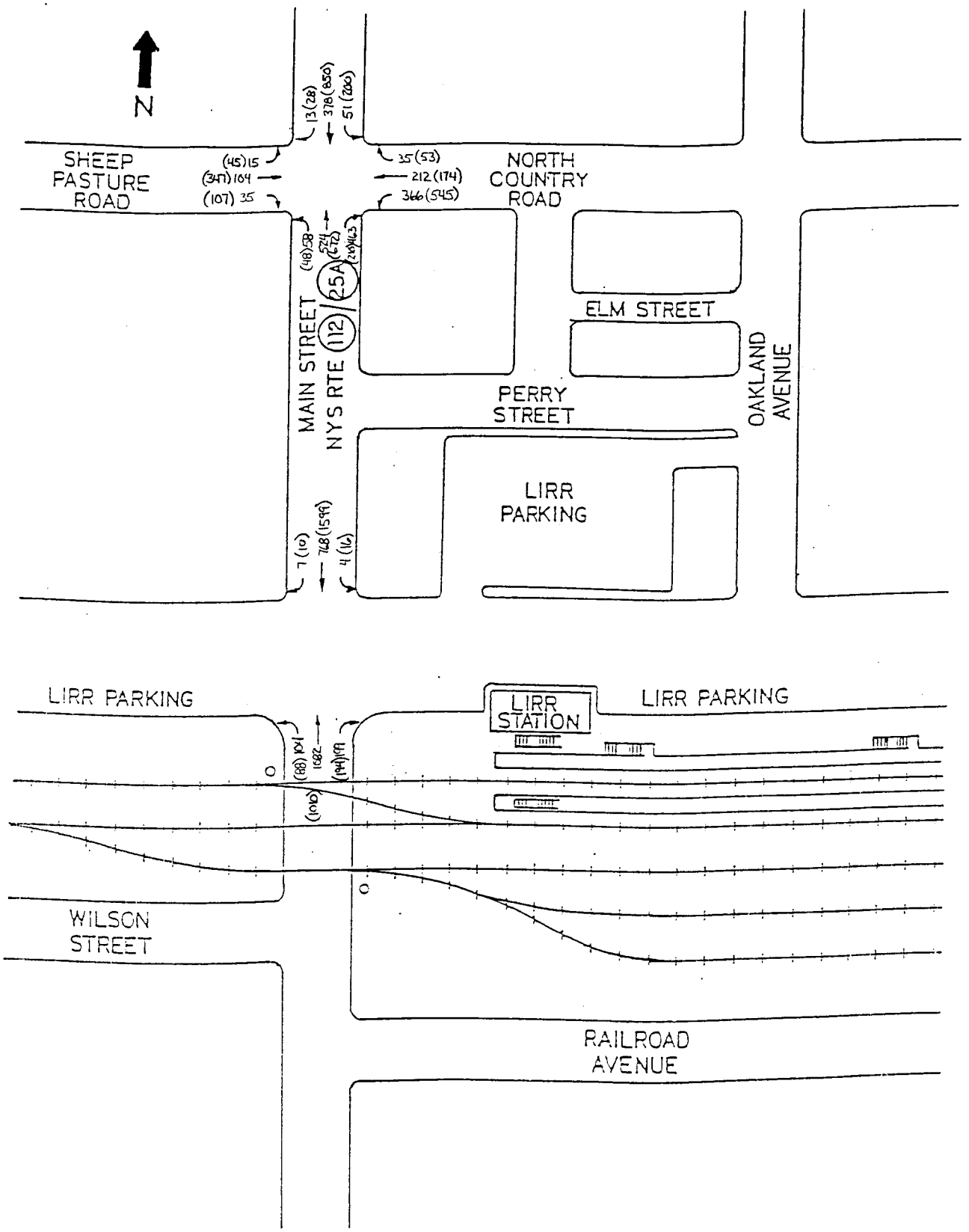

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FIGURE L29
NO BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS
PORT JEFFERSON LIRR STATION
PORT JEFFERSON STATION, NY 11776

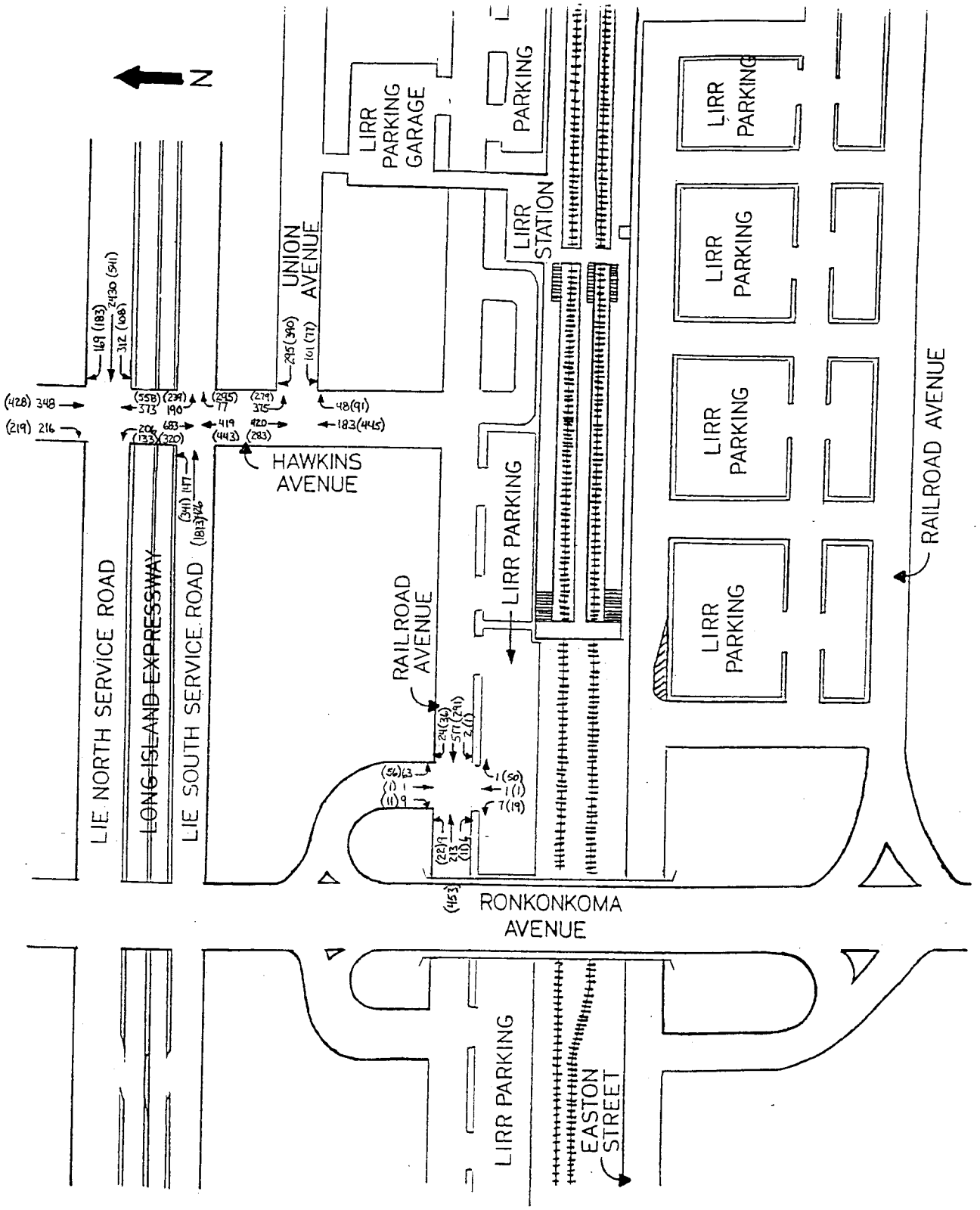

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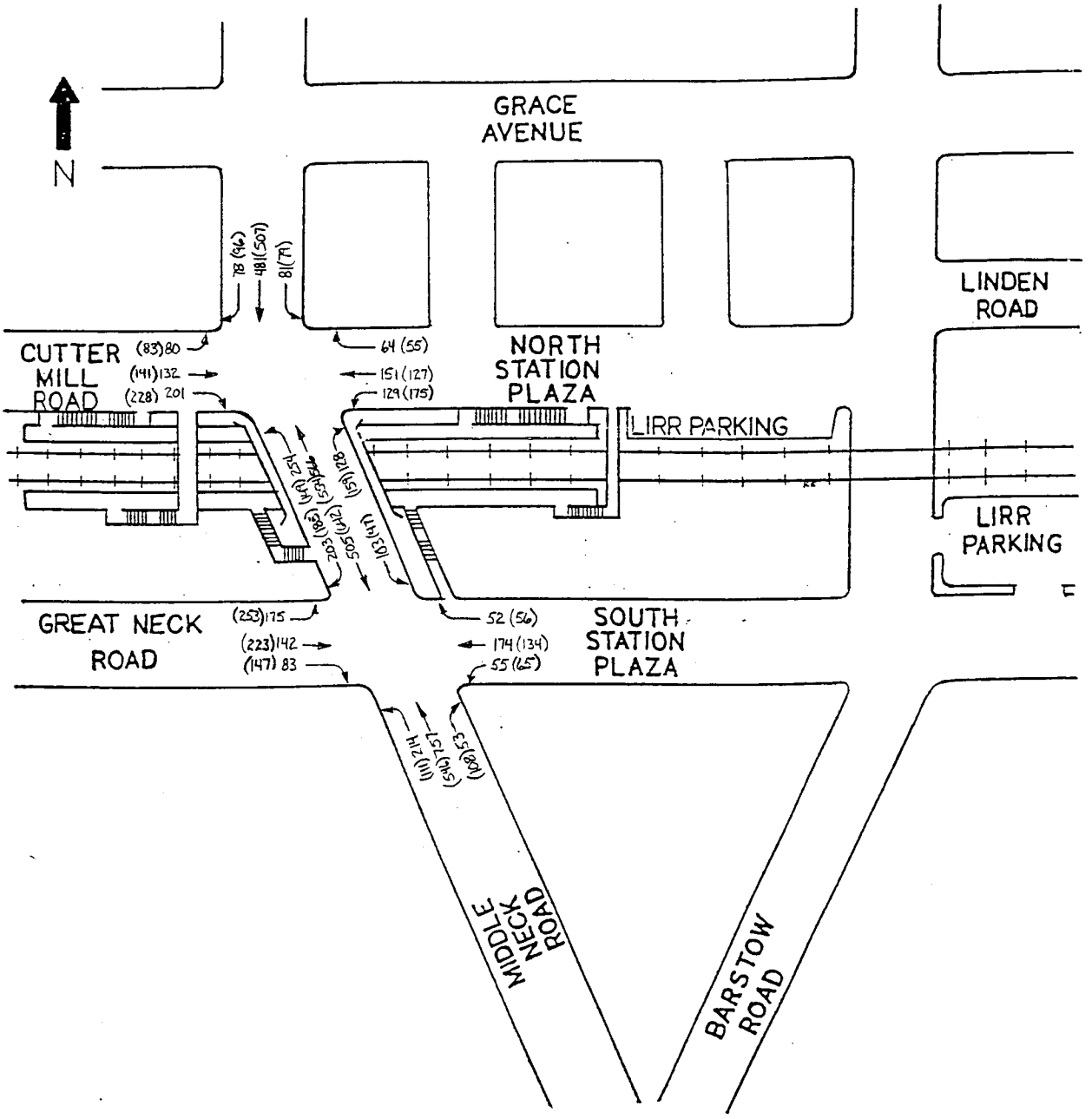
FIGURE L30
NO BUILD LIRR TRAFFIC VOLUMES
AM AND (PM) PEAK HOURS

RONKONKOMA LIRR STATION
RONKONKOMA NY 11779

FIGURES L - 31 to L - 45

BUILD LONG ISLAND RAIL ROAD STATION AREA TRAFFIC VOLUMES



Eng-Wong, Taub & Associates
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FIGURE L31
BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

GREAT NECK LIRR STATION
GREAT NECK NY 11021

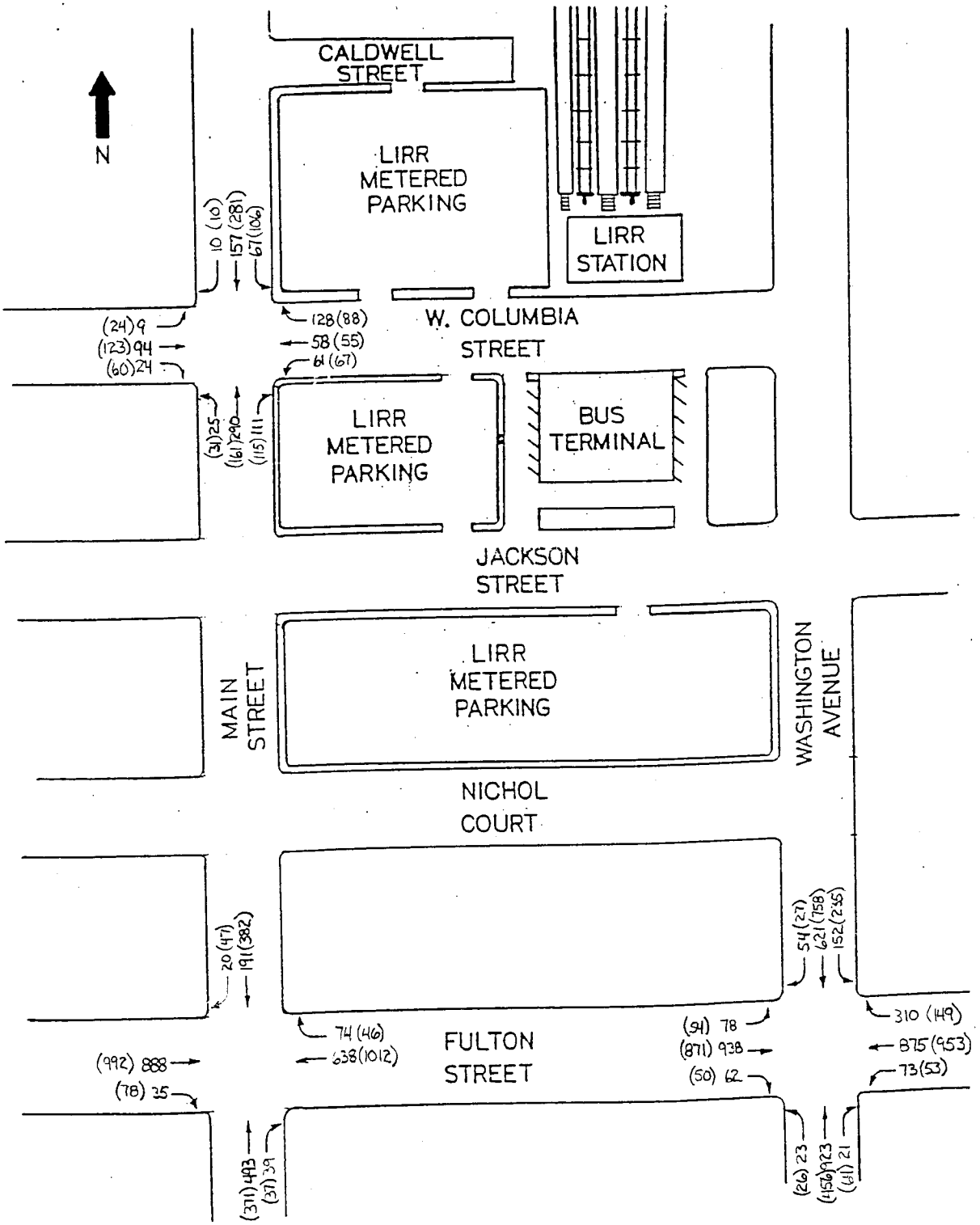

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FIGURE L32
BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

HEMPSTEAD LIRR STATION
HEMPSTEAD NY 11550

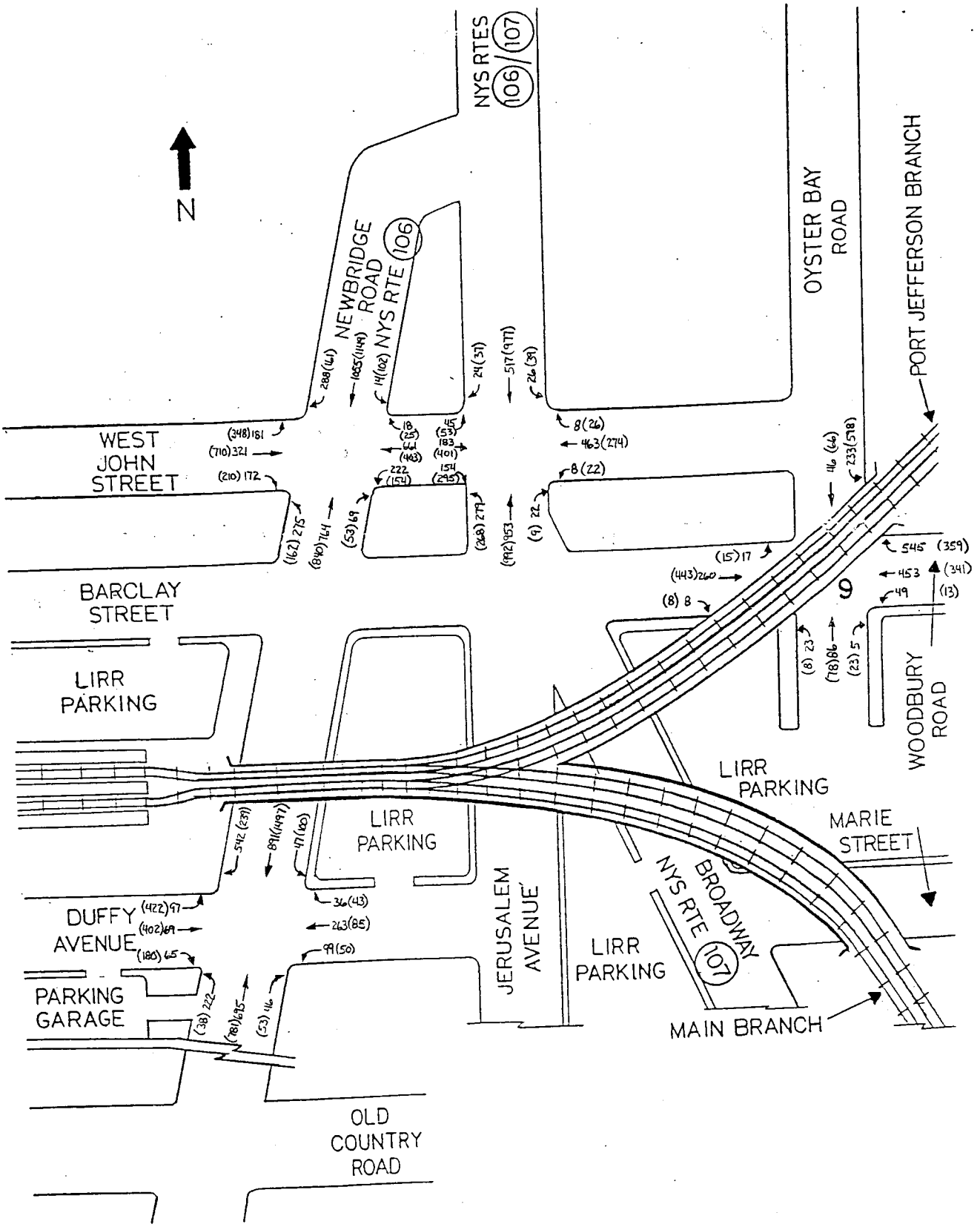

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FIGURE L33
BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

HICKSVILLE LIRR STATION
HICKSVILLE NY 11803

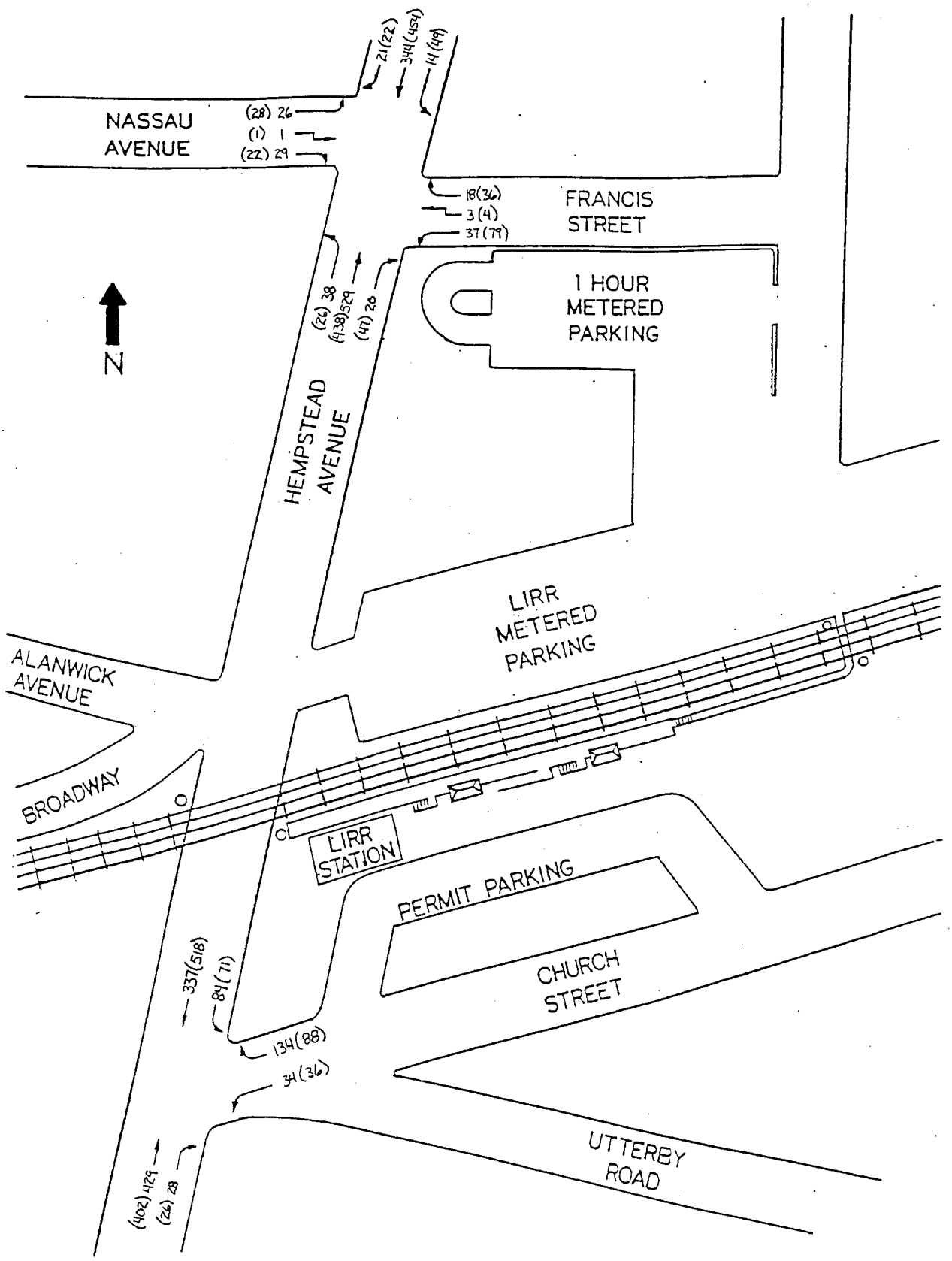

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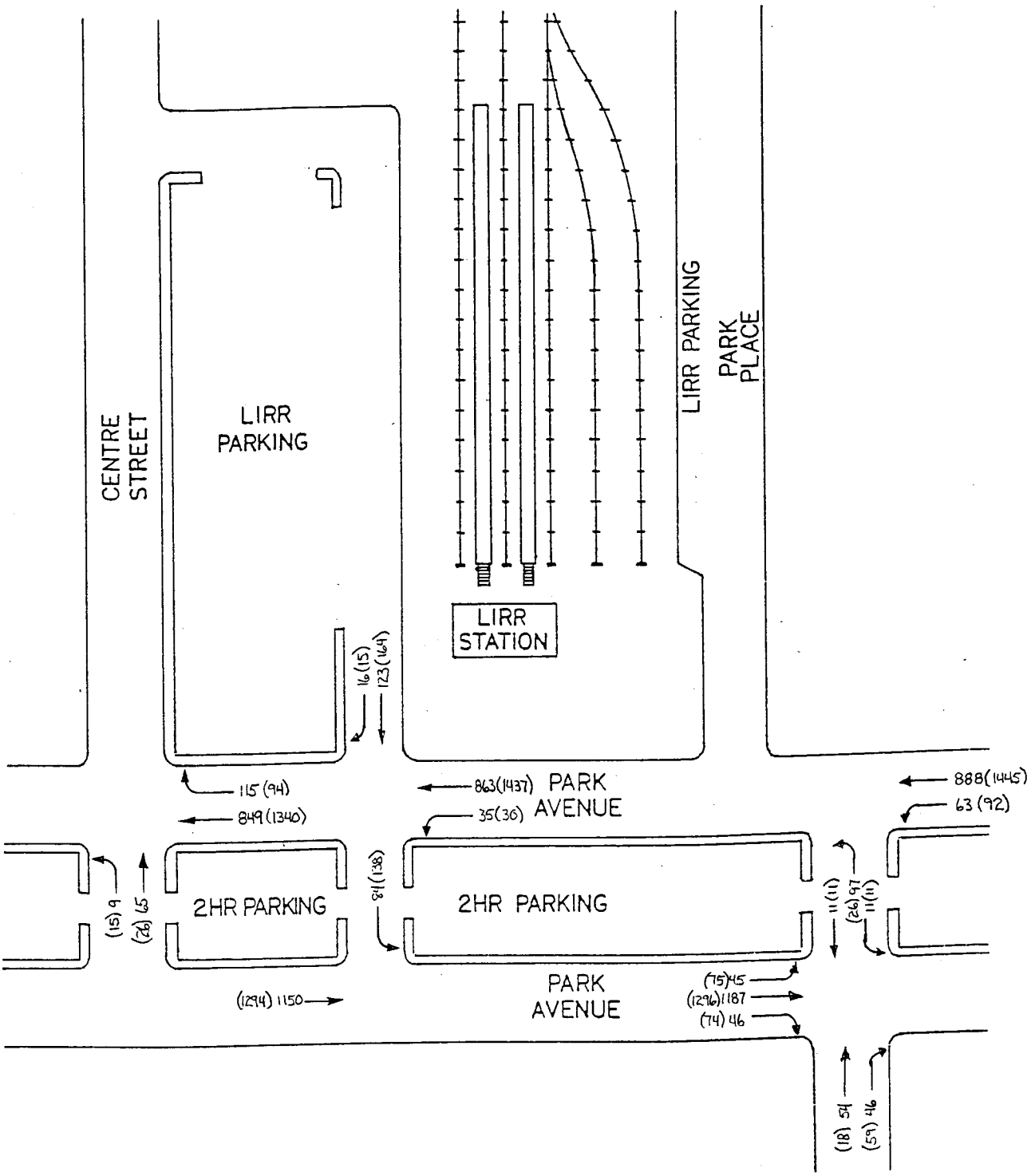
FIGURE L34
BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

MALVERNE LIRR STATION
MALVERNE NY 11565



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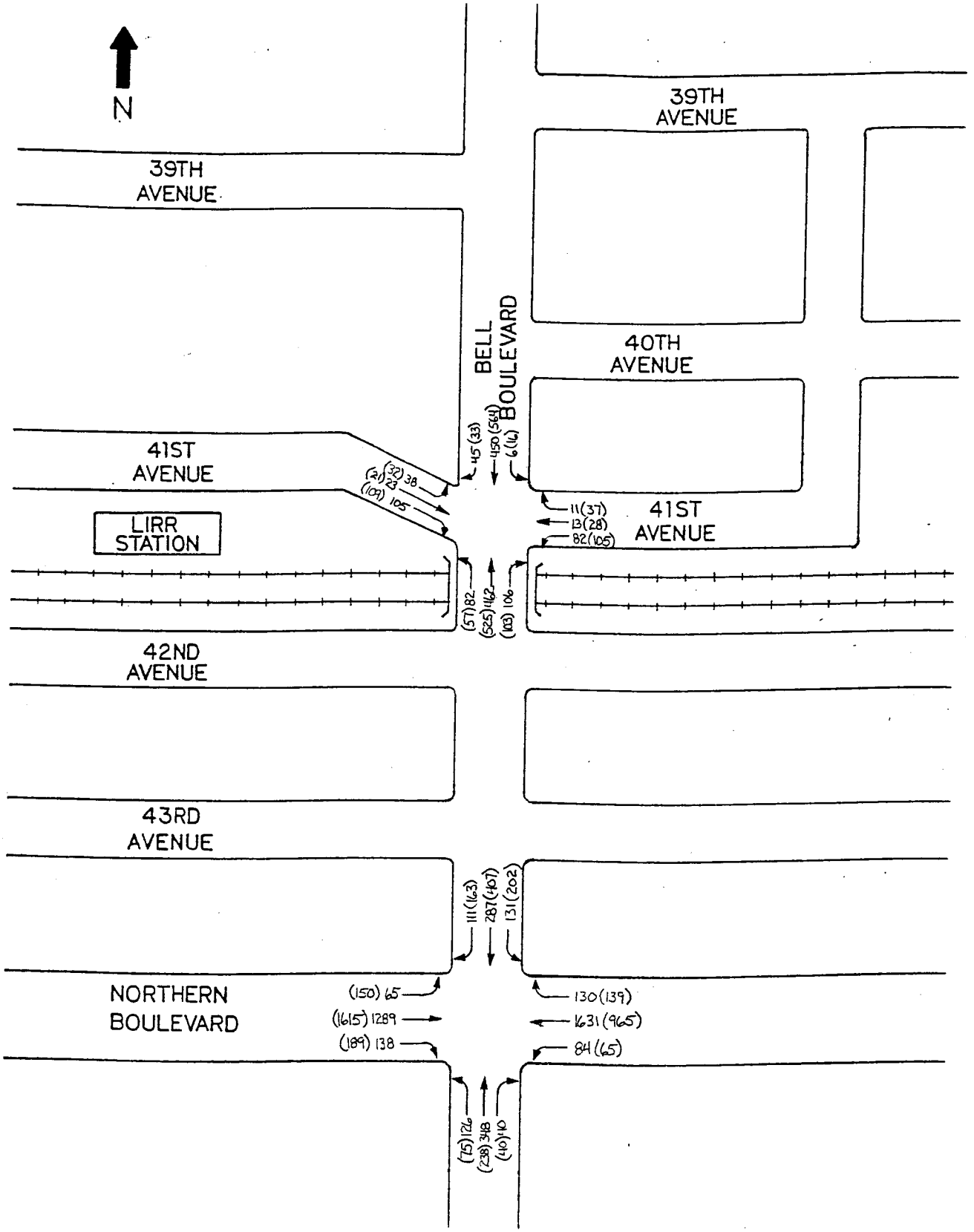
Traffic and Transportation Consultants

FIGURE L35
BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

LONG BEACH LIRR STATION
LONG BEACH NY 11561



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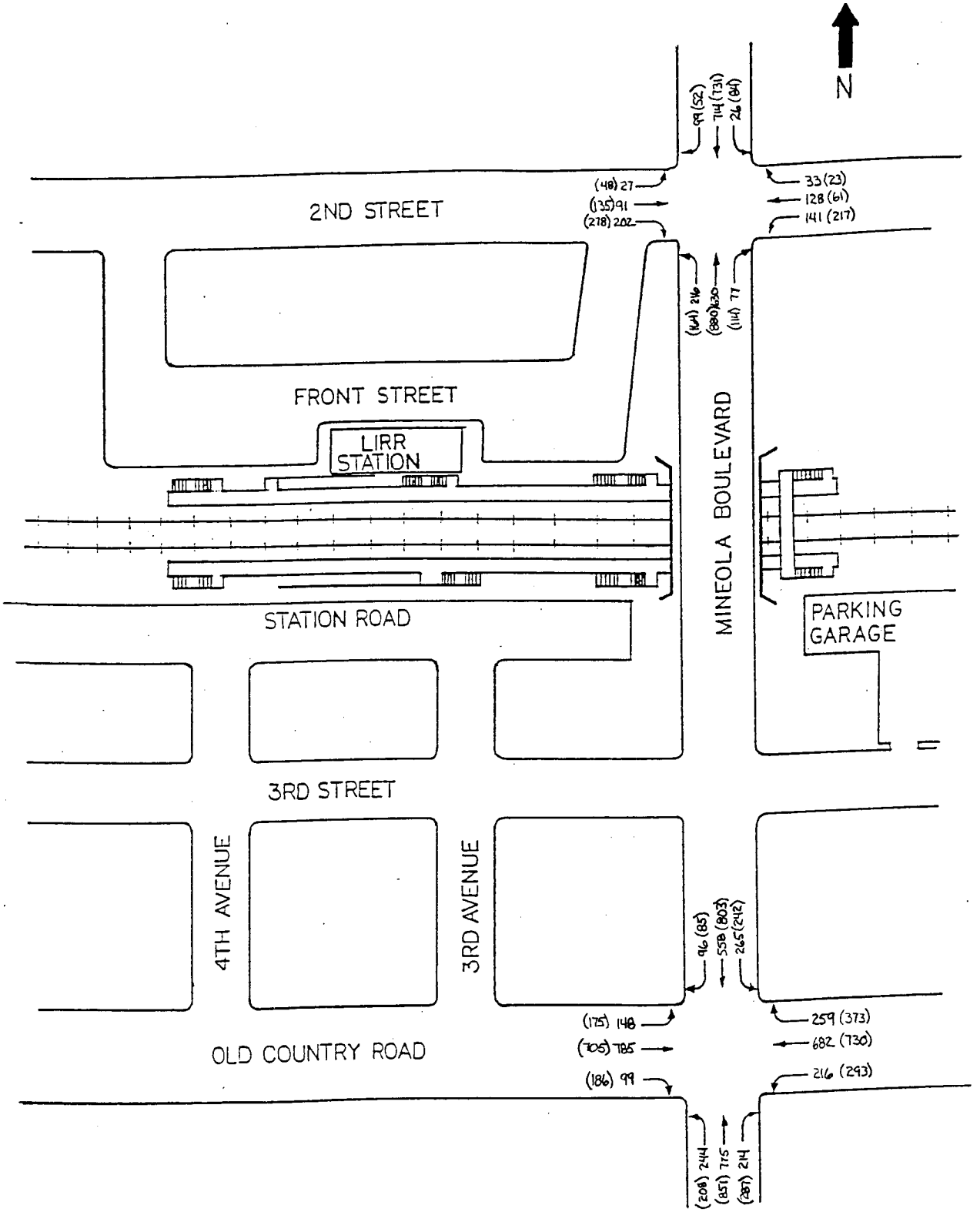
Traffic and Transportation Consultants

FIGURE L36
BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS
BAYSIDE LIRR STATION
BAYSIDE NY 11361



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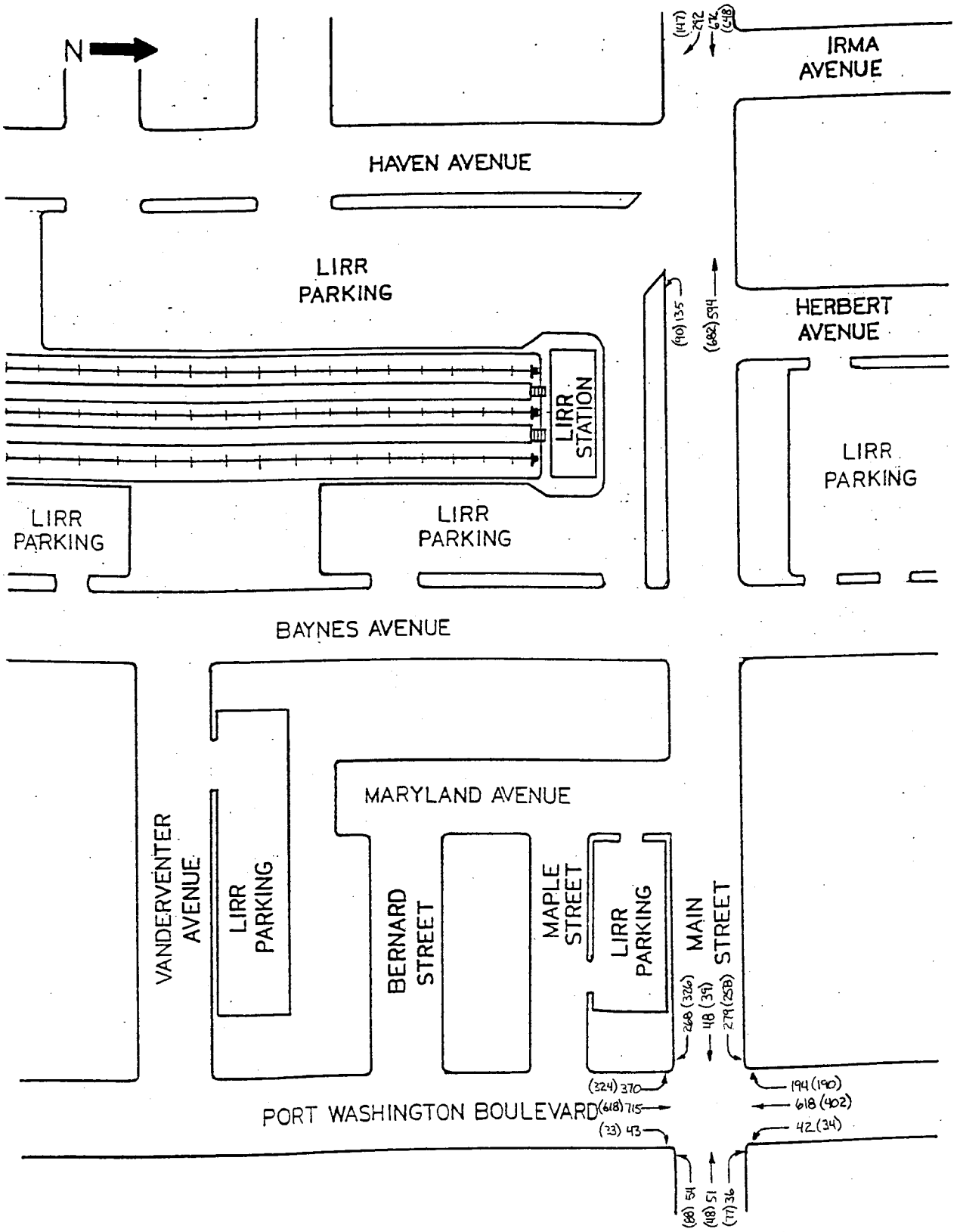
Traffic and Transportation Consultants

FIGURE L37
BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

MINEOLA LIRR STATION
MINEOLA NY 11501



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Traffic and Transportation Consultants

FIGURE L38
BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

PORT WASHINGTON LIRR STATION
PORT WASHINGTON NY 11050

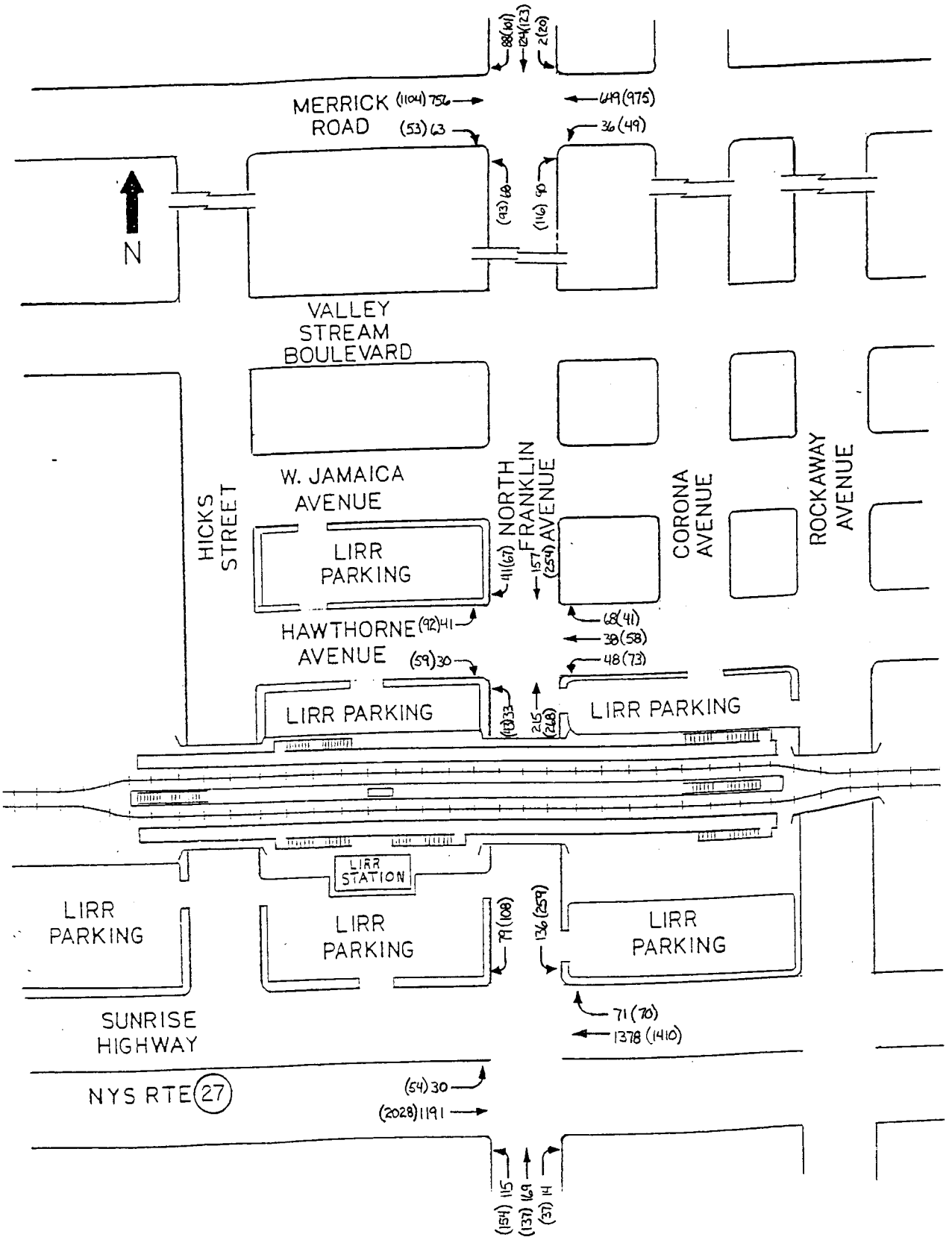

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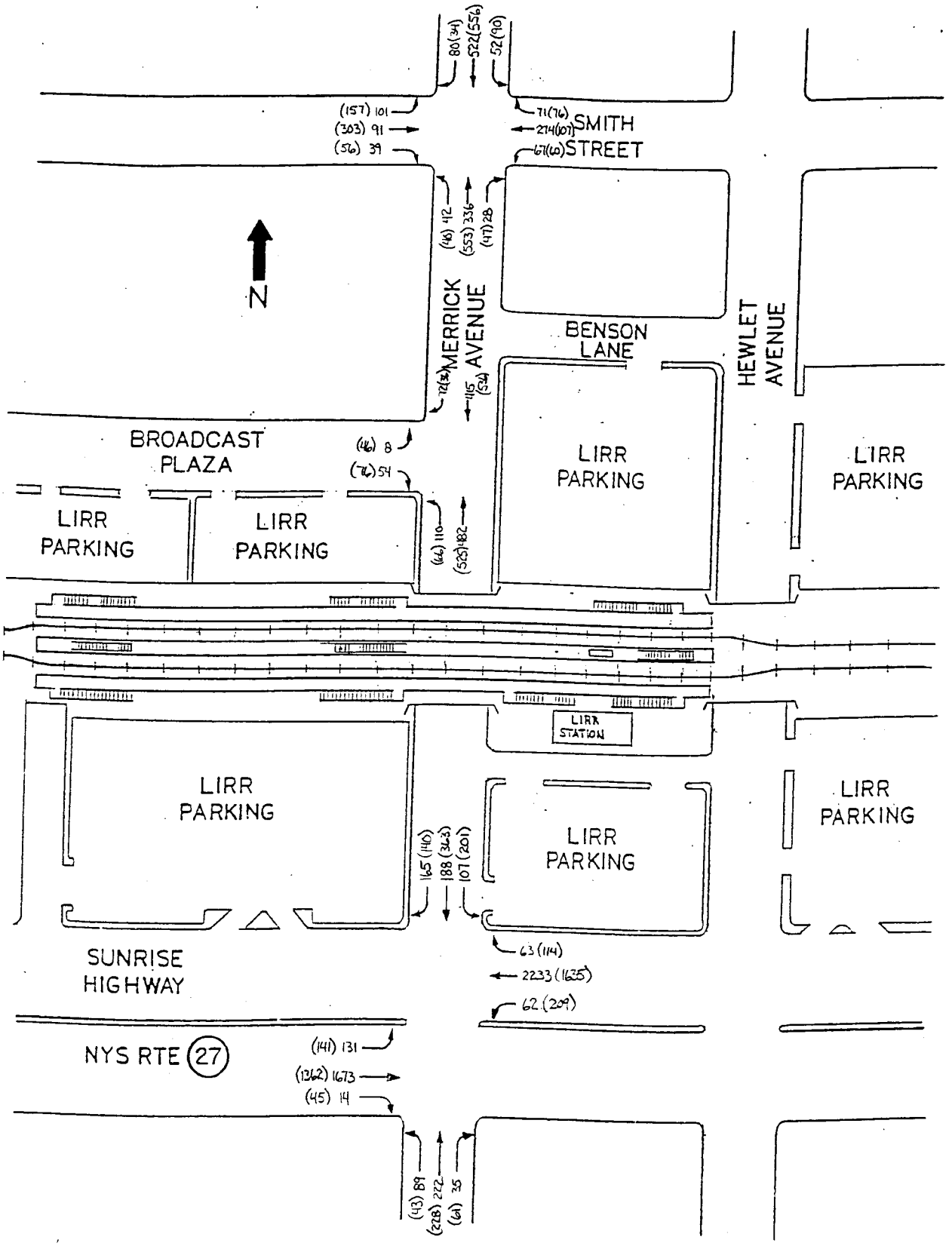
FIGURE L39
BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

VALLEY STREAM LIRR STATION
VALLEY STREAM NY 11580



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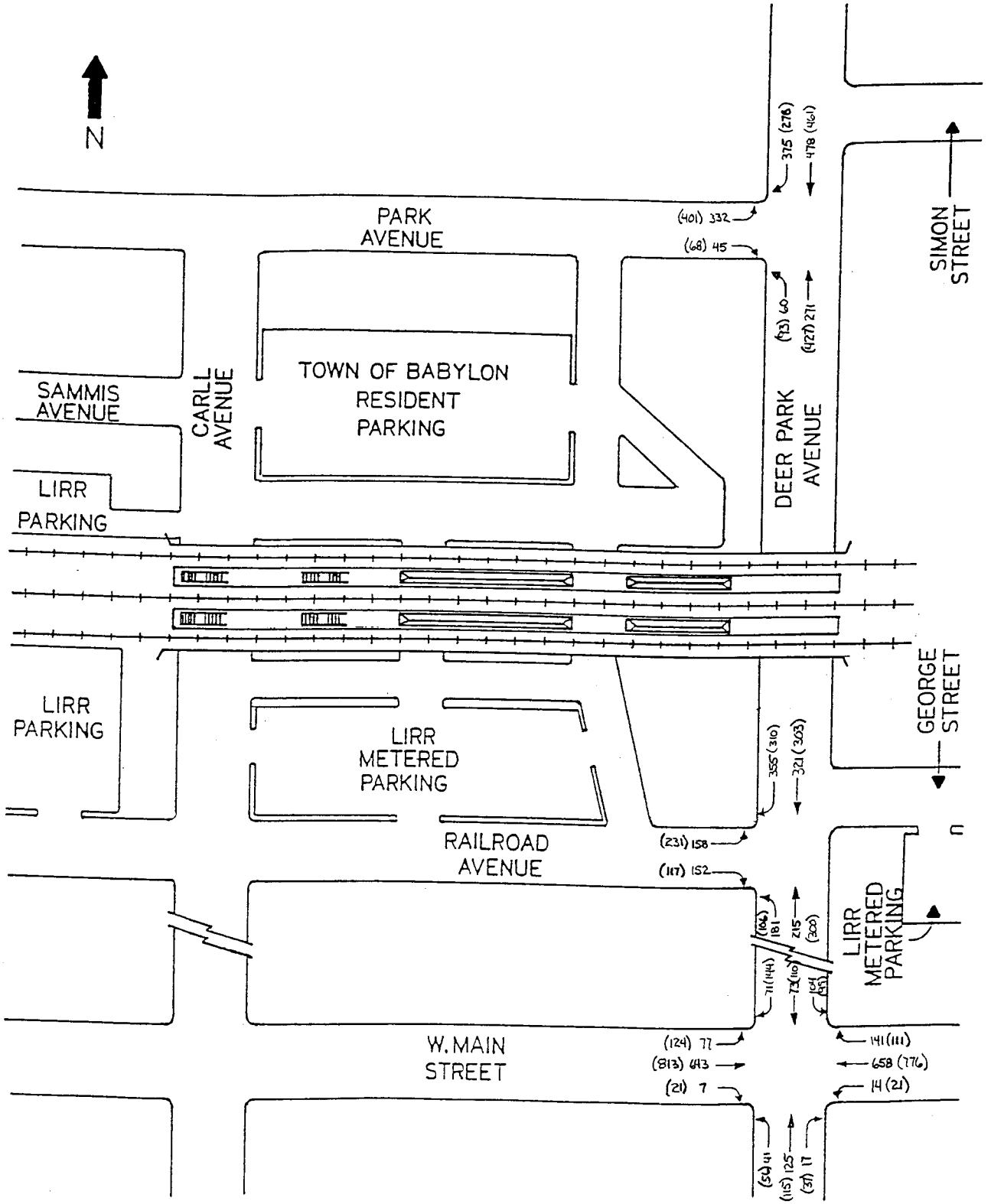
Traffic and Transportation Consultants

FIGURE L40
BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS
MERRICK LIRR STATION
MERRICK NY 11566



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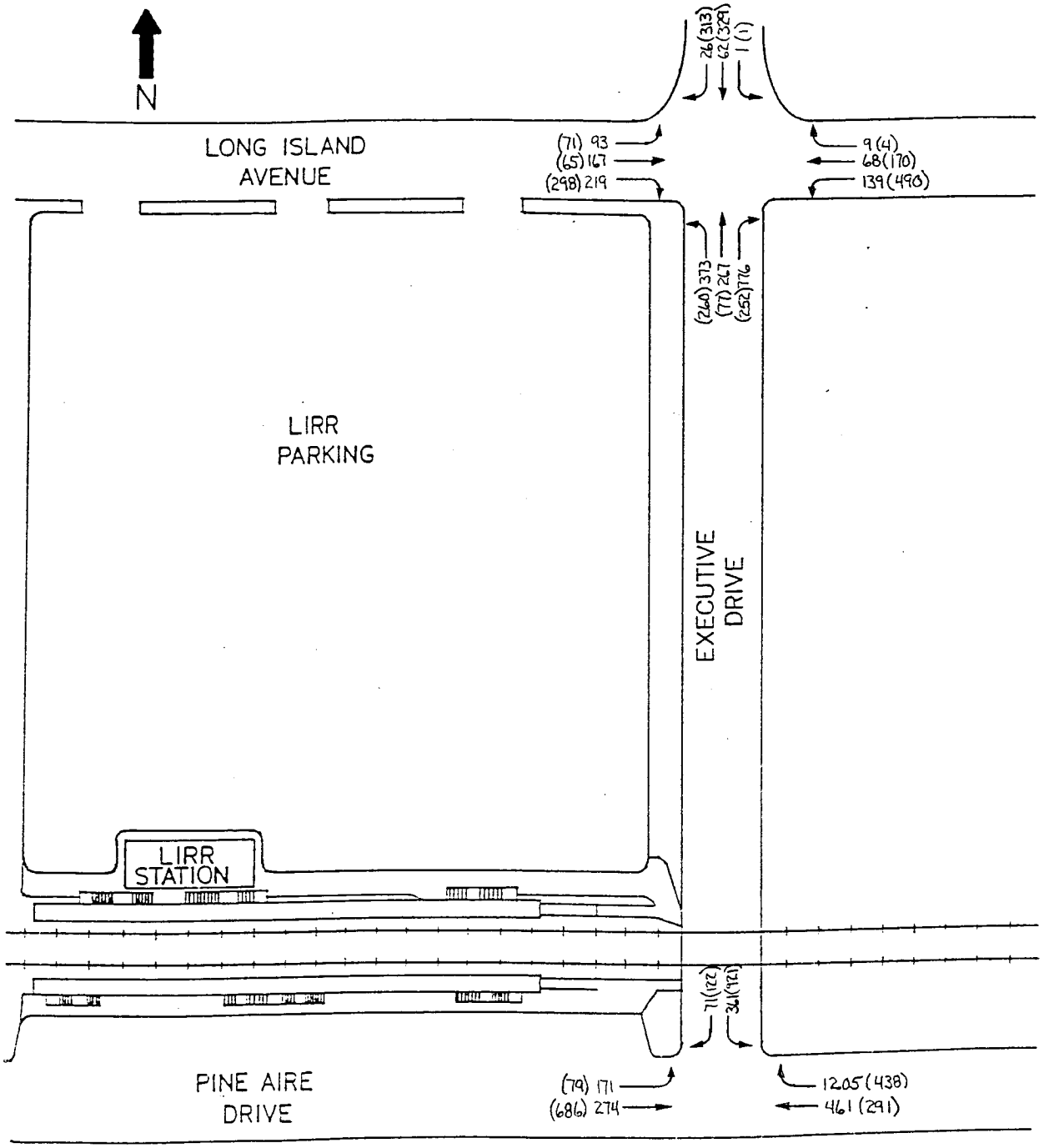
Traffic and Transportation Consultants

FIGURE L41
BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS
BABYLON LIRR STATION
BABYLON NY 11702



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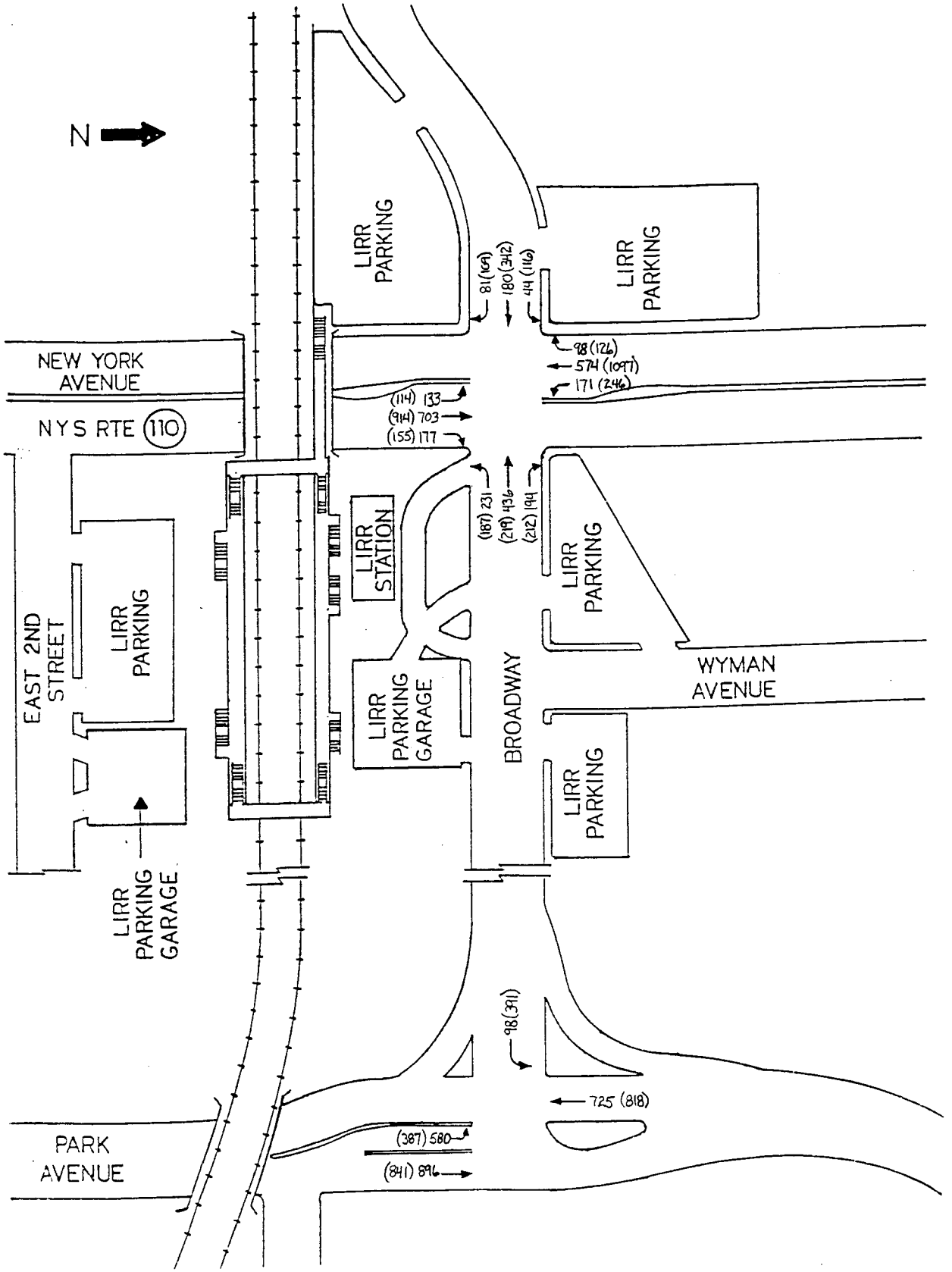
Traffic and Transportation Consultants

FIGURE L42
BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

DEER PARK LIRR STATION
EDGEWOOD NY 11717



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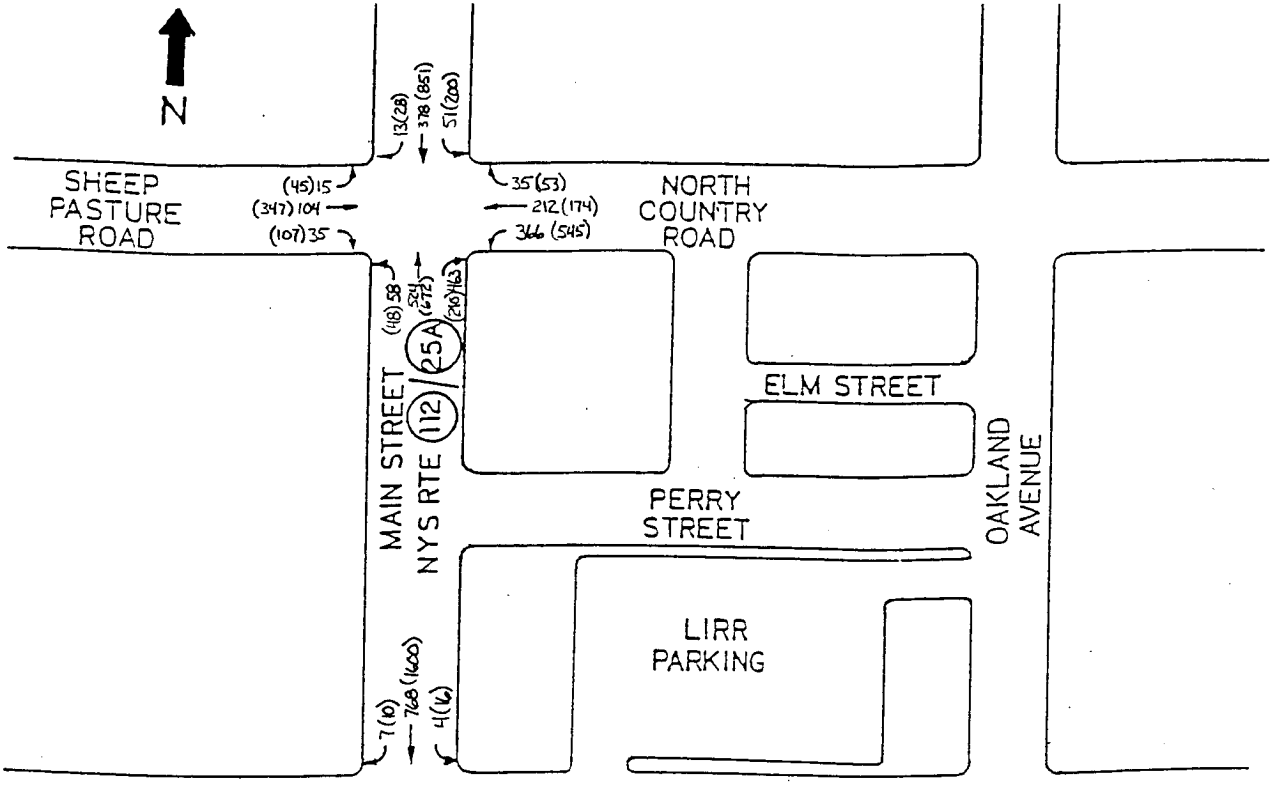
Traffic and Transportation Consultants

FIGURE L43
BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

HUNTINGTON LIRR STATION
HUNTINGTON MANOR NY 11746



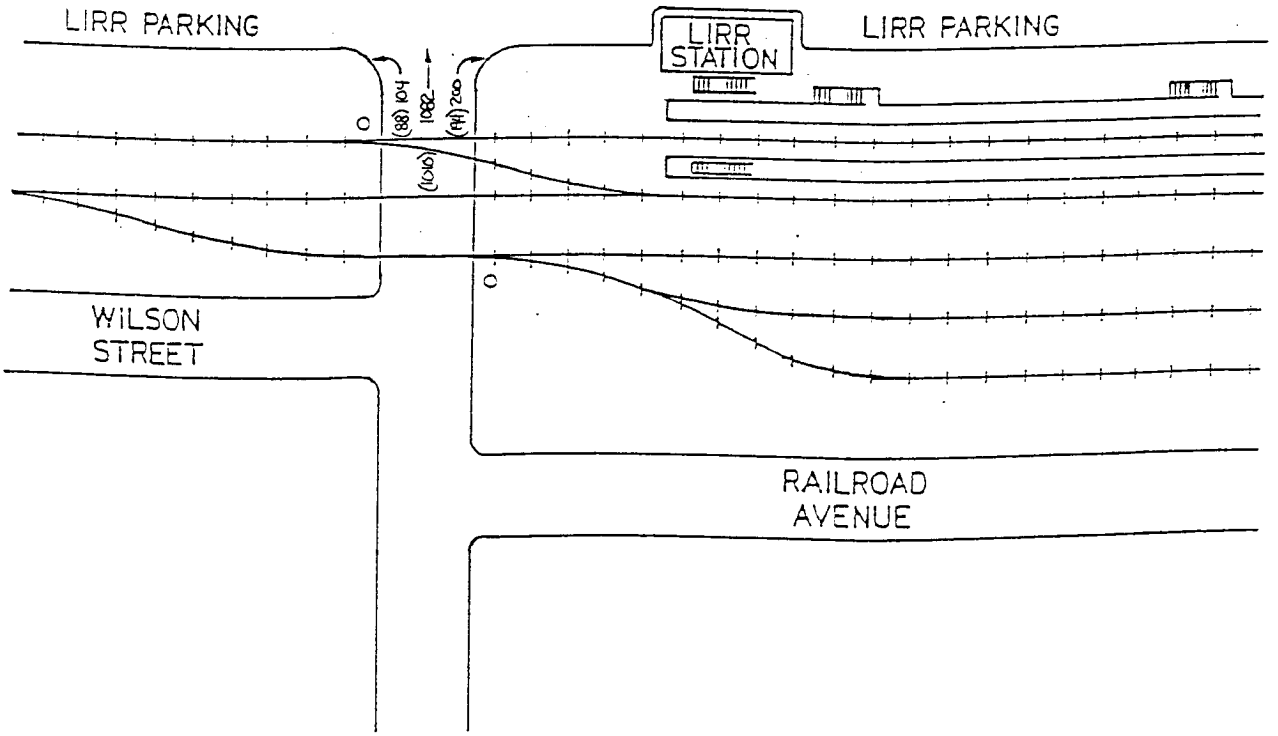


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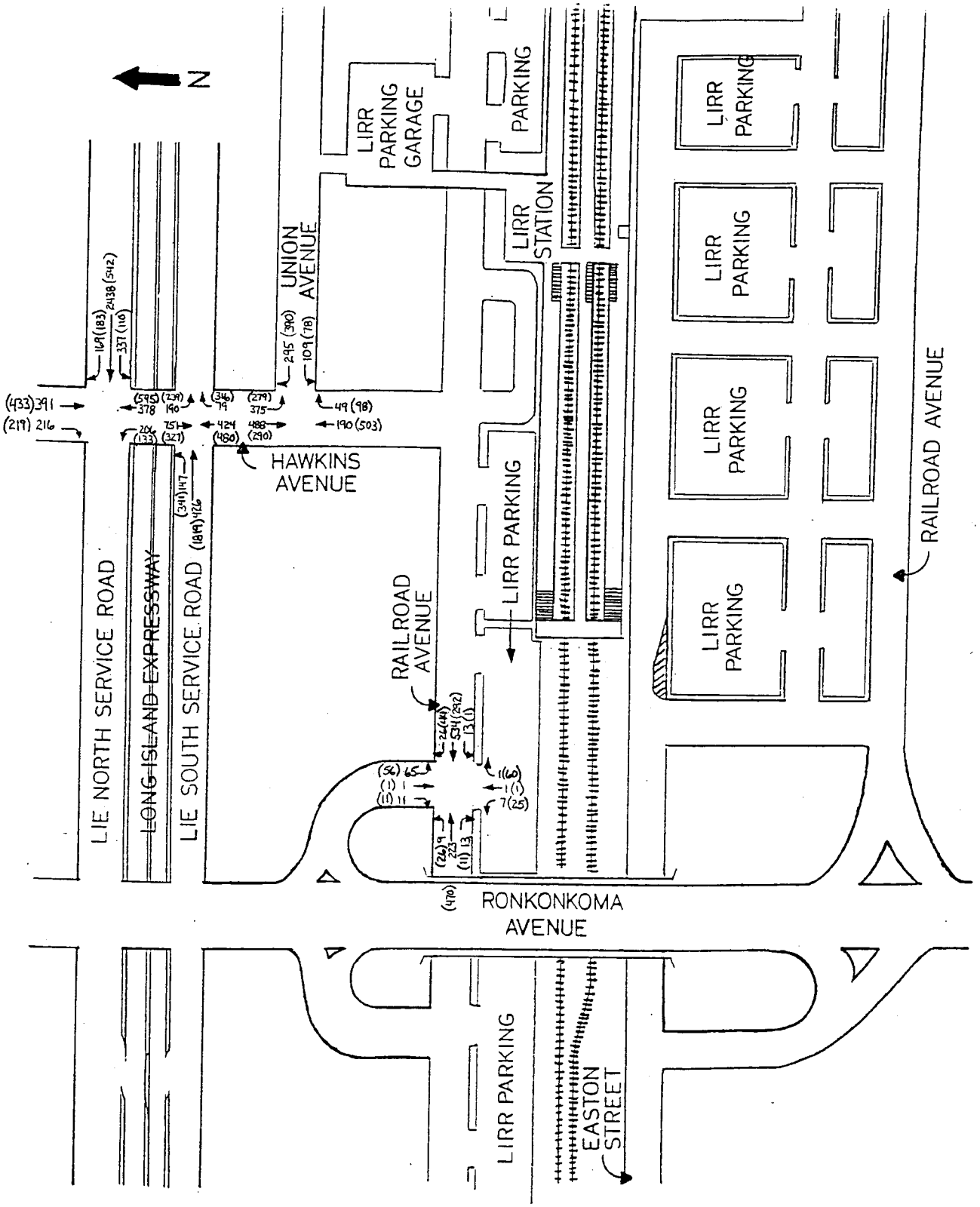
FIGURE L44
BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS
PORT JEFFERSON LIRR STATION
PORT JEFFERSON STATION NY 11776



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Traffic and Transportation Consultants

FIGURE L45
BUILD LIRR TRAFFIC VOLUMES:
AM AND (PM) PEAK HOURS

RONKONKOMA LIRR STATION
RONKONKOMA NY 11779

TABLE L-1

EXISTING
LIRR STATIONS TRAFFIC
LEVELS OF SERVICE

Table L - 1

EXISTING LIRR STATION AREA TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
GREAT NECK									
1 Middle Neck Road & North Station Plaza									
Middle Neck Road	NB	L	0.86	34.1	D	L	0.56	16.9	C
		TR	0.40	8.2	B	TR	0.42	8.3	B
	SB	LTR	0.66	13.5	B	LTR	0.73	15.0	B
North Station Plaza	EB	L	0.23	11.5	B	L	0.24	11.6	B
		TR	0.46	13.1	B	TR	0.59	14.6	B
	WB	L	0.56	16.1	C	L	0.91	59.3	E
		TR	0.23	11.5	B	TR	0.19	11.3	B
Overall Intersection		-	**0.79**	**13.9**	**B**	-	**0.89**	**14.3**	**B**
2 Middle Neck Road & South Station Plaza									
Middle Neck Road	NB	L	0.89	35.9	D	L	0.66	15.2	C
		TR	0.45	7.5	B	TR	0.35	6.8	B
	SB	L	0.63	13.3	B	L	0.18	6.1	B
		TR	0.42	7.2	B	TR	0.45	7.4	B
South Station Plaza	EB	DfL	0.76	24.6	C	LTR	0.88	25.4	D
		TR	0.47	14.6	B				
	WB	L	0.23	12.8	B	L	0.59	20.2	C
		TR	0.47	14.6	B	TR	0.43	14.2	B
Overall Intersection		-	**0.84**	**12.2**	**B**	-	**0.75**	**13.0**	**B**
HEMPSTEAD									
3 Main Street & West Columbia Street									
Main Street	NB	LT	0.28	4.3	A	LT	0.22	4.1	A
		R	0.09	3.7	A	R	0.10	3.7	A
	SB	LTR	0.38	4.8	A	LTR	0.65	7.5	B
West Columbia Street	EB	LTR	0.33	18.3	C	LTR	0.50	19.8	C
	WB	LTR	0.76	27.3	D	LTR	0.74	27.2	D
Overall Intersection		-	**0.49**	**11.9**	**B**	-	**0.67**	**12.4**	**B**
4 Main Street & Fulton Street (NYS Rt. 24)									
Main Street	NB	TR	0.54	17.6	C	TR	0.44	16.8	C
	SB	TR	0.51	17.9	C	TR	0.94	40.0	D
Fulton Street (NYS Rt.24)	EB	TR	0.53	3.9	A	TR	0.57	4.1	A
	WB	TR	0.39	3.4	A	TR	0.53	3.9	A
Overall Intersection		-	**0.53**	**8.0**	**B**	-	**0.70**	**10.7**	**B**
5 Fulton Street (NYS Rt. 24) & Washington Ave.									
Washington Avenue	NB	L	0.07	10.9	B	L	0.09	12.4	B
		TR	0.86	20.7	C	TR	0.49	14.1	B
	SB	L	0.46	18.5	C	L	0.66	19.8	C
		TR	0.62	15.4	C	TR	0.69	16.3	C
Fulton Street (NYS Rt. 24)	EB	LTR	0.92	20.0	C	LTR	0.89	18.0	C
	WB	LT	0.98	28.8	D	LT	1.04	43.5	E
		R	0.54	11.0	B	R	0.25	9.0	B
Overall Intersection		-	**0.86**	**20.6**	**C**	-	**0.94**	**23.4**	**C**
HICKSVILLE									
6 Newbridge Road (NYS Rt. 106) & West John Street									
Newbridge Road (NYS Rt. 106)	NB	L	0.86	38.4	D	L	0.75	26.9	D
		T	0.38	9.6	B	T	0.47	10.3	B
		R	0.07	7.9	B	R	0.06	7.8	B
	SB	L	0.10	13.0	B	L	0.68	29.0	D
		T	0.78	20.6	C	T	0.73	19.5	C
		R	0.44	15.8	C	R	0.23	13.8	B
West John Street	EB	L	0.74	25.7	D	L	0.91	39.3	D
		T	0.37	23.7	C	T	0.83	32.9	D
		R	0.39	24.0	C	R	0.50	26.3	D
	WB	L	0.62	19.0	C	L	0.59	19.9	C
		TR	0.79	29.9	D	TR	0.55	26.2	D
Overall Intersection		-	**0.83**	**21.0**	**C**	-	**0.83**	**22.0**	**C**

Table L - 1 (continued)

EXISTING LIRR STATION AREA TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
7 Newbridge Road (NYS Rt. 106) & Duffy Avenue									
Newbridge Road (NYS Rt. 106)	NB	L	0.80	29.4	D	L	0.19	14.8	B
		T	0.52	17.5	C	T	0.62	18.0	C
		R	0.05	13.9	B	R	0.07	13.4	B
	SB	L	0.16	9.2	B	L	0.45	12.4	B
		T	0.68	19.6	C	T	1.01	41.8	E
		R	0.92	35.5	D	R	0.34	15.2	C
Duffy Avenue	EB	L	0.35	16.1	C	L	0.91	35.6	D
		T	0.11	13.9	B	T	0.53	16.4	C
		R	0.12	14.0	B	R	0.31	14.2	B
	WB	LTR	0.86	36.3	D	LTR	0.73	31.4	D
Overall Intersection		-	**0.89**	**23.8**	**C**	-	**0.91**	**28.8**	**D**
8 Broadway (NYS Rt 107) & East John Street									
Broadway (NYS Rt 107)	NB	L	0.76	45.1	E	L	0.60	37.0	D
		TR	0.45	7.6	B	TR	0.47	8.7	B
	SB	L	0.28	12.4	B	L	0.49	19.6	C
		TR	0.32	12.4	B	TR	0.68	18.6	C
East John Street	EB	L	0.29	24.2	C	L	0.23	20.6	C
		T	0.24	28.8	D	T	0.51	29.0	D
		R	0.33	25.1	D	R	0.60	25.8	D
	WB	LTR	0.70	34.3	D	LTR	0.55	29.6	D
Overall Intersection		-	**0.51**	**20.0**	**C**	-	**0.64**	**20.2**	**C**
9 Bay Avenue & East Barclay Street/Woodbury Road									
Bay Avenue	NB	LTR	0.26	20.0	C	LTR	0.31	20.2	C
	SB	L	0.34	17.0	C	L	0.76	24.1	C
		LT	0.38	17.3	C	LT	0.82	27.6	D
East Barclay Street	EB	LTR	0.21	6.6	B	LTR	0.35	7.2	B
Woodbury Road	WB	LT	0.34	7.1	B	LT	0.24	6.7	B
		R	0.43	1.9	A	R	0.28	1.5	A
Overall Intersection		-	**0.40**	**8.2**	**B**	-	**0.46**	**12.9**	**B**
MALVERNE									
10 Hempstead Avenue & Nassau Avenue/Francis Street -- LIRR Entrance									
Hempstead Avenue	NB	LTR	0.85	15.2	C	LTR	0.74	10.8	B
	SB	LTR	0.48	6.8	B	LTR	0.80	12.9	B
Nassau Avenue	EB	LTR	0.17	10.0	B	LTR	0.19	10.1	B
Francis Street - LIRR Entrance	WB	LTR	0.19	10.1	B	LTR	0.35	10.9	B
Overall Intersection		-	**0.59**	**11.7**	**B**	-	**0.62**	**11.7**	**B**
11 Hempstead Avenue & Utterby Road									
Hempstead Avenue	NB	TR	0.83	20.3	C	TR	0.71	15.5	C
	SB	LT	0.52	6.2	B	LT	0.57	6.7	B
Utterby Road	WB	L	0.18	20.1	C	L	0.24	20.3	C
		R	0.71	29.1	D	R	0.58	24.2	C
Overall Intersection		-	**0.46**	**15.1**	**C**	-	**0.48**	**12.0**	**B**
LONG BEACH									
12a LIRR Parking Lot Exit & West Park Avenue									
LIRR Parking Lot Exit	SB	L	0.11	14.5	B	L	0.15	14.7	B
West Park Avenue	EB	T	0.40	6.3	B	T	0.47	6.8	B
Overall Intersection		-	**0.30**	**7.0**	**B**	-	**0.36**	**7.5**	**B**
12b LIRR Parking Lot Exit & West Park Avenue									
LIRR Parking Lot Exit	SB	TR	0.16	14.7	B	TR	0.17	14.8	B
West Park Avenue	WB	LT	0.41	6.4	B	LT	0.50	6.9	B
Overall Intersection		-	**0.32**	**7.4**	**B**	-	**0.38**	**7.8**	**B**

Table L - 1 (continued)

EXISTING LIRR STATION AREA TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
13 Center Street & West Park Avenue									
Center Street	NB	LT	0.09	14.4	B	LT	0.04	14.1	B
West Park Avenue	WB	TR	0.39	6.3	B	TR	0.46	6.7	B
Overall Intersection		-	**0.29**	**6.9**	**B**	-	**0.32**	**7.0**	**B**
14a Edwards Boulevard & West Park Avenue									
Edwards Boulevard	NB	TR	0.13	14.6	B	TR	0.10	14.4	B
	SB	DfL	0.03	14.1	B	DfL	0.02	14.1	B
		T	0.02	14.0	B	T	0.02	14.0	B
West Park Avenue	EB	LTR	0.47	6.8	B	LTR	0.54	7.3	B
Overall Intersection		-	**0.35**	**7.6**	**B**	-	**0.39**	**7.8**	**B**
14b Edwards Boulevard & West Park Avenue									
Edwards Boulevard	NB	L	0.10	14.4	B	L	0.03	14.1	B
West Park Avenue	WB	LT	0.44	6.7	B	LT	0.51	7.0	B
Overall Intersection		-	**0.33**	**7.6**	**B**	-	**0.34**	**7.2**	**B**
BAYSIDE									
15 Northern Boulevard (NYS Rt. 25A) & Bell Boulevard									
Bell Boulevard	NB	LTR	0.90	44.9	E	LTR	0.83	40.6	E
	SB	LTR	0.53	25.5	D	LTR	0.76	29.4	D
Northern Boulevard (NYS Rt. 25A)	EB	DfL	0.54	14.1	B		-	-	-
		T	0.58	5.3	B	LT	0.83	8.3	B
		R	0.17	3.7	A	R	0.23	3.8	A
	WB	L	0.67	12.5	B	L	0.52	7.2	B
		T	0.74	6.9	B	T	0.45	4.6	A
		R	0.14	3.6	A	R	0.16	3.7	A
Overall Intersection		-	**0.67**	**12.8**	**B**	-	**0.81**	**13.6**	**B**
16 Bell Boulevard & 41st Avenue									
Bell Boulevard	NB	LTR	0.93	24.0	C	LTR	0.88	17.9	C
	SB	LTR	0.58	7.9	B	LTR	0.68	9.2	B
41st Avenue	EB	LTR	0.47	11.7	B	LTR	0.48	11.8	B
	WB	LTR	0.28	10.3	B	LTR	0.53	12.5	B
Overall Intersection		-	**0.74**	**15.7**	**C**	-	**0.74**	**13.4**	**B**
MINEOLA									
17 Mineola Boulevard & Old Country Boulevard									
Mineola Boulevard	NB	L	0.90	34.2	D	L	0.70	16.5	C
		TR	0.96	32.7	D	TR	0.98	36.3	D
	SB	L	0.90	34.7	D	L	0.84	26.8	D
		TR	0.68	18.5	C	TR	0.78	20.6	C
Old Country Road	EB	L	0.64	14.3	B	L	0.66	14.8	B
		TR	0.97	35.4	D	TR	0.84	22.7	C
	WB	L	0.83	26.3	D	L	0.89	32.4	D
		T	0.68	18.6	C	T	0.67	18.4	C
		R	0.50	16.8	C	R	0.68	19.9	C
Overall Intersection		-	**0.98**	**27.2**	**D**		**0.93**	**24.7**	**C**
18 Mineola Boulevard & 2nd Street									
Mineola Boulevard	NB	L	0.92	52.3	E	L	0.55	11.7	B
		TR	0.33	4.6	A	TR	0.44	5.7	B
	SB	L	0.11	3.9	A	L	0.81	38.0	D
		TR	0.87	14.0	B	TR	0.97	33.8	D
2nd Street	EB	L	0.10	10.9	B	L	0.14	14.6	B
		TR	0.63	15.0	B	TR	0.79	24.1	C
	WB	LTR	0.95	45.7	E	LTR	0.94	51.2	E
Overall Intersection		-	**0.93**	**16.1**	**C**		**0.94**	**21.5**	**C**

Table L - 1 (continued)

EXISTING LIRR STATION AREA TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
PORT WASHINGTON									
19 Main Street & LIRR Parking Entrance[3]									
Main Street	WB	L		7.9	B	L		5.5	B
Overall Intersection		-		**0.6**	**A**	-		**0.3**	**A**
20 Main Street & Port Washington Boulevard (NYS Rte. 101)									
Port Washington Boulevard (NYS Rt. 101)	NB	L	1.05	55.5	E	L	0.81	10.1	B
		TR	0.36	2.6	A	TR	0.33	3.8	A
	SB	L	0.27	8.4	B	L	0.17	9.6	B
		TR	0.48	9.6	B	TR	0.35	10.7	B
Main Street	EB	LT	1.02	75.9	F	LT	0.87	43.8	E
		R	0.41	18.5	C	R	0.45	17.5	C
	WB	LTR	0.50	28.3	D	LTR	0.67	30.1	D
Overall Intersection		-	**1.07**	**21.1**	**C**		**0.76**	**14.0**	**B**
VALLEY STREAM									
21 South Franklin Avenue & Merrick Road									
South Franklin Avenue	NB	LR	0.44	14.7	B	LR	0.65	18.2	C
	SB	LTR	0.23	13.2	B	LTR	0.24	13.2	B
Merrick Road	EB	TR	0.39	5.1	B	TR	0.49	5.7	B
	WB	LT	0.53	6.0	B	LT	0.87	13.1	B
Overall Intersection		-	**0.50**	**7.3**	**B**	-	**0.79**	**10.4**	**B**
22 South Franklin Avenue & West Hawthorne Avenue									
South Franklin Avenue	NB	LT	0.18	7.1	B	LT	0.27	7.5	B
	SB	TR	0.13	6.9	B	TR	0.23	7.3	B
West Hawthorne Avenue	EB	LR	0.16	10.0	B	LR	0.39	11.4	B
	WB	LTR	0.16	10.0	B	LTR	0.17	10.1	B
Overall Intersection		-	**0.17**	**8.1**	**B**	-	**0.32**	**8.5**	**B**
23 South Franklin Avenue & Sunrise Highway (NYS Rt.27)									
South Franklin Avenue	NB	LTR	0.42	32.3	D	LTR	0.49	33.1	D
	SB	L	0.65	40.1	E	L	0.91	60.0	E
		R	0.20	30.6	D	R	0.28	31.2	D
Sunrise Highway (NYS Rt. 27)	EB	L	0.25	4.3	A	L	0.44	6.6	B
		T	0.35	4.5	A	T	0.55	5.7	B
	WB	T	0.42	4.8	A	T	0.41	4.8	A
		R	0.07	3.5	A	R	0.07	3.5	A
Overall Intersection		-	**0.47**	**8.7**	**B**	-	**0.63**	**10.7**	**B**
MERRICK									
24 Merrick Avenue & Broadcast Plaza[3]									
Merrick Avenue	NB	L		4.3	A	L		4.3	A
Broadcast Plaza	EB	LR		6.7	B	LR		14.1	C
Overall Intersection		-		**0.8**	**A**	-		**1.5**	**A**
25 Merrick Avenue & Smith Street									
Merrick Avenue	NB	L	0.57	20.6	C	L	0.42	16.0	C
		TR	0.79	21.3	C	TR	0.95	36.1	D
	SB	L	0.20	9.1	B	L	0.33	10.6	B
		TR	0.92	26.8	D	TR	0.86	20.6	C
Smith Street	EB	L	0.47	10.4	B	L	0.38	8.8	B
		TR	0.31	13.6	B	TR	0.67	17.8	C
	WB	L	0.16	8.0	B	L	0.24	8.8	B
		TR	0.79	22.0	C	TR	0.42	14.4	B
Overall Intersection		-	**0.85**	**20.9**	**C**	-	**0.80**	**21.8**	**C**

Table L - 1 (continued)

EXISTING LIRR STATION AREA TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
26 Merrick Avenue & Sunrise Highway (NYS Rt. 27)									
Merrick Avenue	NB	L	0.40	30.2	D	L	0.36	27.1	D
		TR	0.58	32.5	D	TR	0.64	30.4	D
	SB	L	0.43	22.9	C	L	0.87	39.2	D
		T	0.31	22.4	C	T	0.57	22.4	C
		R	0.29	22.2	C	R	0.23	18.7	C
Sunrise Highway (NYS Rt. 27)	EB	L	0.52	36.7	D	L	0.49	32.6	D
		T	0.82	24.0	C	T	0.69	21.6	C
		R	0.03	14.2	B	R	0.08	15.6	C
	WB	L	0.23	33.4	D	L	0.67	36.6	D
		T	1.03	45.6	E	T	0.77	23.2	C
		R	0.10	14.7	B	R	0.18	16.3	C
Overall Intersection		-	**0.80**	**34.7**	**D**	-	**0.74**	**24.3**	**C**
BABYLON									
27 Deer Park Avenue & Railroad Avenue[3]									
Deer Park Avenue	NB	L		5.0	B	L		4.5	A
Railroad Avenue	EB	L		17.5	C	L		37.8	E
		R		5.3	B	R		5.0	B
Overall Intersection		-		**3.2**	**A**	-		**6.9**	**B**
28 Deer Park Avenue & Park Avenue									
Deer Park Avenue	NB	LT	0.30	4.9	A	LT	0.51	5.9	B
	SB	TR	0.85	14.0	B	TR	0.81	11.9	B
Park Avenue	EB	LR	0.66	12.3	B	LR	0.73	13.9	B
Overall Intersection		-	**0.77**	**11.2**	**B**	-	**0.78**	**10.4**	**B**
29 Deer Park Avenue/Fire Island Avenue & West Main Street/East Main Street									
Fire Island Avenue	NB	LTR	0.50	24.4	C	LTR	0.80	37.3	D
Deer Park Avenue	SB	DtL	0.50	25.0	C	LTR	0.87	37.9	D
		TR	0.44	23.7	C	-	-	-	-
West Main Street	EB	L	0.41	8.8	B	L	0.64	16.1	C
		TR	0.52	5.2	B	TR	0.62	6.2	B
East Main Street	WB	L	0.11	5.6	B	L	0.17	5.9	B
		TR	0.72	11.0	B	TR	0.71	10.7	B
Overall Intersection		-	**0.66**	**11.9**	**B**	-	**0.77**	**16.2**	**C**
DEER PARK									
30 Executive Drive & Long Island Avenue									
Executive Drive	NB	L	0.39	9.2	B	L	0.47	10.4	B
		TR	0.55	10.8	B	TR	0.18	8.2	B
	SB	L	0.01	19.7	C	L	0.01	19.7	C
		T	0.19	20.5	C	T	0.75	28.8	D
		R	0.07	20.0	C	R	0.32	9.0	B
Long Island Avenue	EB	L	0.23	18.4	C	L	0.24	18.5	C
		T	0.16	18.0	C	T	0.07	17.5	C
		R	0.45	20.2	C	R	0.57	21.8	C
	WB	L	0.26	12.6	B	L	0.81	22.6	C
		T	0.05	11.1	B	T	0.12	11.5	B
		R	0.02	10.9	B	R	0.01	10.9	B
Overall Intersection		-	**0.44**	**12.8**	**B**	-	**0.73**	**17.1**	**C**
31 Executive Drive & Pine Aire Drive									
Executive Drive	SB	L	0.41	19.7	C	L	0.74	26.5	D
		LR	0.40	19.7	C	LR	0.73	26.4	D
Pine Aire Drive	EB	L	0.34	6.8	B	L	0.14	9.7	B
		T	0.23	4.2	A	T	0.59	9.3	B
	WB	LT	0.56	14.9	B	LT	0.46	18.6	C
		R	0.97	27.6	D	R	0.42	8.7	B
Overall Intersection		-	**0.48**	**19.5**	**C**	-	**0.64**	**16.8**	**C**

Table L - 1 (continued)

EXISTING LIRR STATION AREA TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
HUNTINGTON									
32 New York Avenue (NYS Rt. 110) & Railroad Street/Broadway									
New York Avenue (NYS Rt. 110)	NB	L	0.31	8.5	B	L	0.41	12.1	B
		T	0.43	16.1	C	T	0.54	17.2	C
		R	0.24	14.5	B	R	0.21	14.2	B
	SB	L	0.44	9.5	B	L	0.82	28.7	D
		T	0.36	15.4	C	T	0.67	19.2	C
		R	0.14	13.7	B	R	0.18	14.0	B
Railroad Street	EB	L	0.35	28.6	D	L	0.45	28.9	D
		TR	0.68	33.0	D	TR	0.96	54.6	E
Broadway	WB	L	0.62	21.5	C	L	0.63	23.0	C
		T	0.61	22.6	C	T	0.32	19.1	C
		R	0.36	19.4	C	R	0.40	19.9	C
Overall Intersection		-	**0.61**	**18.3**	**C**	-	**0.80**	**23.1**	**C**
33 Park Avenue & Broadway									
Park Avenue	NB	L	0.95	42.5	E	L	0.72	22.5	C
		T	0.32	2.3	A	T	0.28	2.2	A
	SB	T	0.43	9.9	B	T	0.43	9.9	B
Broadway	EB	L	0.31	19.4	C	L	0.78	29.1	D
Overall Intersection		-	**0.55**	**13.8**	**B**	-	**0.58**	**11.6**	**B**
PORT JEFFERSON									
34 Main Street (NYS Rt. 25A) & LIRR Parking Entrance[3]									
Main Street	NB	L		4.5	A	L		25.3	D
	SB	L		6.4	B	L		10.1	C
Overall Intersection		-		**0.2**	**A**	-		**0.8**	**A**
35 Main Street (NYS Rt. 25A) & North Country Road									
Main Street (NYS Rt. 25A)	NB	LTR	0.85	16.1	C	LTR	0.97	37.3	D
	SB	L	0.29	6.5	B	L	0.94	60.2	F
		TR	0.26	6.0	B	TR	0.59	12.0	B
Sheep Pasture Road	EB	LTR	0.25	23.3	C	LTR	0.63	28.5	D
North Country Road	WB	L	0.79	27.9	D	L	0.93	39.8	D
		TR	0.35	18.1	C	TR	0.22	15.7	C
Overall Intersection		-	**0.81**	**17.1**	**C**	-	**0.92**	**28.7**	**D**
RONKONKOMA									
36 Hawkins Avenue & Union Avenue									
Hawkins Avenue	NB	TR	0.36	9.5	B	TR	0.63	9.1	B
	SB	L	0.67	5.8	B	L	0.80	22.0	C
		T	0.36	3.2	A	T	0.18	2.2	A
Union Avenue	WB	L	0.26	16.6	C	L	0.21	19.9	C
		R	0.32	8.5	B	R	0.49	15.1	C
Overall Intersection		-	**0.49**	**6.8**	**B**	-	**0.58**	**11.8**	**B**
37 Hawkins Avenue & LIE North Service Road									
Hawkins Avenue	NB	L	0.65	32.5	D	L	0.31	22.7	C
		T	0.30	19.6	C	T	0.30	15.2	C
	SB	TR	0.66	29.6	D	TR	0.48	24.0	C
L.I.E. North Service Road	WB	LTR	0.83	12.6	B	LTR	0.31	13.2	B
Overall Intersection		-	**0.83**	**16.3**	**C**	-	**0.46**	**17.3**	**C**
38 Hawkins Avenue & LIE South Service Road									
Hawkins Avenue	NB	TR	0.46	21.5	C	TR	0.83	33.6	D
	SB	L	0.68	32.5	D	L	0.48	24.8	C
		T	0.45	17.4	C	T	0.18	13.9	B
L.I.E. South Service Road	EB	LT	0.24	10.9	B	LT	0.79	16.0	C
Overall Intersection		-	**0.53**	**18.0**	**C**	-	**0.75**	**19.8**	**C**
39 Ronkonkoma Avenue Ramp/LIRR Parking Lot & Railroad Avenue									
LIRR Parking Lot	NB	L	0.02	12.2	B	L	0.05	12.3	B
		TR	0.01	12.2	B	TR	0.16	12.6	B
Ronkonkoma Avenue Ramp	SB	L	0.18	12.6	B	L	0.20	12.7	B
		TR	0.03	12.2	B	TR	0.04	12.3	B
Railroad Avenue	EB	L	0.04	1.9	A	L	0.04	1.9	A
		T	0.19	2.1	A	T	0.34	2.5	A
		R	0.01	1.9	A	R	0.01	1.9	A
	WB	L	0.01	1.8	A	L	0.01	1.8	A
		TR	0.50	3.1	A	TR	0.29	2.3	A
Overall Intersection		-	**0.42**	**3.7**	**A**	-	**0.31**	**4.1**	**A**

Notes

(1) Delay is measured in seconds per vehicle.

(2) Level of service for signalized intersections is based upon average stopped delay per vehicle (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(3) Level of Service for unsignalized intersections is based upon average total delay (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(4) Asterick (*) indicates that Delay and Levels of Service are not meaningful when v/c is greater than 1.2 or 1/PHF.

TABLE L-2

2010 NO BUILD
LIRR STATIONS TRAFFIC
LEVELS OF SERVICE

Table L - 2

2010 NO BUILD STATION AREA TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
GREAT NECK									
1 Middle Neck Road & North Station Plaza									
Middle Neck Road	NB	L	1.03	*	F*	L	0.67	22.2	C
		TR	0.44	8.4	B	TR	0.46	8.6	B
	SB	LTR	0.74	15.4	C	LTR	0.83	18.6	C
North Station Plaza	EB	L	0.26	11.8	B	L	0.27	11.8	B
		TR	0.50	13.5	B	TR	0.64	15.4	C
	WB	L	0.69	21.5	C	L	1.32	*	F*
		TR	0.25	11.6	B	TR	0.21	11.4	B
Overall Intersection		-	*	*	F*	-	1.09	26.2	D
2 Middle Neck Road & South Station Plaza									
Middle Neck Road	NB	L	1.19	*	F*	L	0.87	38.2	D
		TR	0.49	7.7	B	TR	0.38	7.0	B
	SB	L	0.83	31.4	D	L	0.22	6.3	B
		TR	0.45	7.5	B	TR	0.49	7.7	B
South Station Plaza	EB	DtL	0.91	41.4	E	LTR	0.98	39.0	D
		TR	0.52	15.1	C	-			-
	WB	L	0.27	13.1	B	L	0.76	33.8	D
		TR	0.52	15.1	C	TR	0.47	14.5	B
Overall Intersection		-	*	*	F*	-	0.91	17.9	C
HEMPSTEAD									
3 Main Street & West Columbia Street									
Main Street	NB	LT	0.31	4.4	A	LT	0.25	4.2	A
		R	0.10	3.7	A	R	0.11	3.7	A
	SB	LTR	0.43	5.1	B	LTR	0.72	9.0	B
West Columbia Street	EB	LTR	0.35	18.5	C	LTR	0.55	20.4	C
	WB	LTR	0.85	34.1	D	LTR	0.86	36.4	D
Overall Intersection		-	0.55	13.8	B	-	0.76	14.8	B
4 Main Street & Fulton Street (NYS Rt. 24)									
Main Street	NB	TR	0.59	18.1	C	TR	0.48	17.1	C
	SB	TR	0.56	18.5	C	TR	1.02	58.5	E
Fulton Street (NYS Rt.24)	EB	TR	0.57	4.2	A	TR	0.62	4.4	A
	WB	TR	0.43	3.5	A	TR	0.57	4.1	A
Overall Intersection		-	0.58	8.3	B	-	0.76	13.3	B
5 Fulton Street (NYS Rt. 24) & Washington Ave.									
Washington Avenue	NB	L	0.08	11.5	B	L	0.09	13.2	B
		TR	0.94	26.1	D	TR	0.53	14.4	B
	SB	L	0.50	19.3	C	L	0.74	23.2	C
		TR	0.68	16.1	C	TR	0.75	17.3	C
Fulton Street (NYS Rt. 24)	EB	LTR	1.04	41.3	E	LTR	0.98	28.7	D
	WB	LT	1.13	*	F*	LT	1.17	*	F*
		R	0.59	11.5	B	R	0.27	9.1	B
Overall Intersection		-	*	*	F*	-	*	*	F*
HICKSVILLE									
6 Newbridge Road (NYS Rt. 106) & West John Street									
Newbridge Road (NYS Rt. 106)	NB	L	0.96	57.2	E	L	0.82	33.3	D
		T	0.41	9.9	B	T	0.51	10.7	B
		R	0.08	7.9	B	R	0.06	7.8	B
	SB	L	0.13	13.2	B	L	0.81	46.1	E
		T	0.84	22.8	C	T	0.80	21.1	C
		R	0.49	16.3	C	R	0.25	14.0	B
West John Street	EB	L	0.80	30.3	D	L	1.04	*	F*
		T	0.40	23.9	C	T	0.90	37.9	D
		R	0.43	24.4	C	R	0.55	27.0	D
	WB	L	0.69	21.0	C	L	0.64	21.3	C
		TR	0.85	32.7	D	TR	0.59	26.8	D
Overall Intersection		-	0.87	23.6	C	-	*	*	F*

Table L - 2 (continued)

2010 NO BUILD STATION AREA TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
13 Center Street & West Park Avenue									
Center Street	NB	LT	0.09	14.4	B	LT	0.04	14.2	B
West Park Avenue	WB	TR	0.43	6.5	B	TR	0.50	7.0	B
Overall Intersection		-	**0.31**	**7.1**	**B**	-	**0.34**	**7.2**	**B**
14a Edwards Boulevard & West Park Avenue									
Edwards Boulevard	NB	TR	0.14	14.6	B	TR	0.11	14.5	B
	SB	DfL	0.03	14.1	B	DfL	0.03	14.1	B
		T	0.02	14.0	B	T	0.02	14.0	B
West Park Avenue	EB	LTR	0.51	7.0	B	LTR	0.59	7.7	B
Overall Intersection		-	**0.38**	**7.8**	**B**	-	**0.42**	**8.1**	**B**
14b Edwards Boulevard & West Park Avenue									
Edwards Boulevard	NB	L	0.11	14.5	B	L	0.03	14.1	B
West Park Avenue	WB	LT	0.48	6.9	B	LT	0.55	7.4	B
Overall Intersection		-	**0.35**	**7.8**	**B**	-	**0.37**	**7.5**	**B**
BAYSIDE									
15 Northern Boulevard (NYS Rt. 25A) & Bell Boulevard									
Bell Boulevard	NB	LTR	1.06	*	F*	LTR	0.95	53.9	E
	SB	LTR	0.60	26.4	D	LTR	0.85	32.7	D
Northern Boulevard (NYS Rt. 25A)	EB	DfL	0.70	25.2	D	-	-	-	-
		T	0.65	5.8	B	LT	0.94	13.3	B
		R	0.19	3.7	A	R	0.25	3.9	A
	WB	L	0.79	22.6	C	L	0.61	10.2	B
		T	0.83	8.3	B	T	0.50	4.9	A
		R	0.16	3.6	A	R	0.18	3.7	A
Overall Intersection		-	*	*	**F***	-	**0.91**	**17.5**	**C**
16 Bell Boulevard & 41st Avenue									
Bell Boulevard	NB	LTR	1.08	63.7	F	LTR	1.07	59.5	E
	SB	LTR	0.65	8.8	B	LTR	0.78	11.8	B
41st Avenue	EB	LTR	0.53	12.4	B	LTR	0.54	12.6	B
	WB	LTR	0.31	10.5	B	LTR	0.62	14.2	B
Overall Intersection		-	**0.86**	**33.7**	**D**	-	**0.89**	**31.3**	**D**
MINEOLA									
17 Mineola Boulevard & Old Country Boulevard									
Mineola Boulevard	NB	L	0.98	50.2	E	L	0.76	19.5	C
		TR	1.04	52.4	E	TR	1.07	*	F*
	SB	L	0.93	41.6	E	L	0.91	36.7	D
		TR	0.70	18.8	C	TR	0.85	23.0	C
Old Country Road	EB	L	0.70	16.5	C	L	0.71	17.1	C
		TR	1.06	57.4	E	TR	0.91	27.4	D
	WB	L	0.90	36.1	D	L	0.97	50.1	E
		T	0.74	19.7	C	T	0.73	19.4	C
		R	0.54	17.4	C	R	0.74	21.8	C
Overall Intersection		-	**1.00**	**38.7**	**D**	-	*	*	**F***
18 Mineola Boulevard & 2nd Street									
Mineola Boulevard	NB	L	1.08	*	F*	L	0.60	14.0	B
		TR	0.36	4.7	A	TR	0.48	5.9	B
	SB	L	0.14	4.0	A	L	0.92	59.4	E
		TR	0.95	21.4	C	TR	1.06	*	F*
2nd Street	EB	L	0.12	11.0	B	L	0.16	14.7	B
		TR	0.68	16.1	C	TR	0.85	28.8	D
	WB	LTR	1.21	*	F*	LTR	1.06	*	F*
Overall Intersection		-	*	*	**F***	-	*	*	**F***

Table L - 2 (continued)

2010 NO BUILD STATION AREA TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
PORT WASHINGTON									
19 Main Street & LIRR Parking Entrance[3]									
Main Street	WB	L		9.2	B	L		6.0	B
Overall Intersection		-		**0.6**	**A**	-		**0.3**	**A**
20 Main Street & Port Washington Boulevard (NYS Rte. 101)									
Port Washington Boulevard (NYS Rt. 101)	NB	L	1.23	*	F*	L	0.96	27.0	D
		TR	0.40	2.7	A	TR	0.36	3.9	A
	SB	L	0.33	9.0	B	L	0.22	9.9	B
		TR	0.53	10.0	B	TR	0.38	10.9	B
Main Street	EB	LT	1.20	*	F*	LT	0.99	67.5	F
		R	0.45	18.9	C	R	0.50	18.2	C
	WB	LTR	0.62	31.2	D	LTR	0.99	67.8	F
Overall Intersection		-	*	*	**F***	-	**0.95**	**22.5**	**C**
VALLEY STREAM									
21 South Franklin Avenue & Merrick Road									
South Franklin Avenue	NB	LR	0.49	15.3	C	LR	0.72	20.7	C
	SB	LTR	0.26	13.3	B	LTR	0.27	13.3	B
Merrick Road	EB	TR	0.42	5.3	B	TR	0.53	5.9	B
	WB	LT	0.61	6.7	B	LT	0.98	24.7	C
Overall Intersection		-	**0.57**	**7.7**	**B**	-	**0.89**	**15.4**	**C**
22 South Franklin Avenue & West Hawthorne Avenue									
South Franklin Avenue	NB	LT	0.19	7.2	B	LT	0.29	7.6	B
	SB	TR	0.15	7.0	B	TR	0.25	7.4	B
West Hawthorne Avenue	EB	LR	0.18	10.1	B	LR	0.38	11.3	B
	WB	LTR	0.17	10.1	B	DrL	0.17	10.1	B
						TR	0.17	10.1	B
Overall Intersection		-	**0.19**	**8.2**	**B**	-	**0.33**	**8.6**	**B**
23 South Franklin Avenue & Sunrise Highway (NYS Rt.27)									
South Franklin Avenue	NB	LTR	0.45	32.7	D	LTR	0.53	33.6	D
	SB	L	0.78	51.6	E	L	0.99	79.9	F
		R	0.23	30.8	D	R	0.31	31.4	D
Sunrise Highway (NYS Rt. 27)	EB	L	0.28	4.5	A	L	0.49	7.6	B
		T	0.38	4.6	A	T	0.60	6.1	B
	WB	T	0.46	5.1	B	T	0.45	5.0	A
		R	0.08	3.5	A	R	0.07	3.5	A
Overall Intersection		-	**0.53**	**9.3**	**B**	-	**0.69**	**12.0**	**B**
MERRICK									
24 Merrick Avenue & Broadcast Plaza[3]									
Merrick Avenue	NB	L		4.6	A	L		4.6	A
Broadcast Plaza	EB	LR		7.5	B	LR		17.6	C
Overall Intersection		-		**0.9**	**A**	-		**1.9**	**A**
25 Merrick Avenue & Smith Street									
Merrick Avenue	NB	L	0.61	22.9	C	L	0.46	16.8	C
		TR	0.85	25.2	D	TR	1.03	*	F*
	SB	L	0.22	9.5	B	L	0.36	10.8	B
		TR	1.00	41.7	E	TR	0.94	28.8	D
Smith Street	EB	L	0.52	11.2	B	L	0.44	9.2	B
		TR	0.34	13.8	B	TR	0.73	19.3	C
	WB	L	0.18	8.0	B	L	0.27	9.1	B
		TR	0.86	26.8	D	TR	0.45	14.7	B
Overall Intersection		-	**0.93**	**27.7**	**D**	-	*	*	**F***

Table L - 2 (continued)

2010 NO BUILD STATION AREA TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
26 Merrick Avenue & Sunrise Highway (NYS Rt. 27)									
Merrick Avenue	NB	L	0.45	31.0	D	L	0.47	29.3	D
		TR	0.63	33.6	D	TR	0.70	31.9	D
	SB	L	0.50	24.0	C	L	1.01	71.5	F
		T	0.34	22.6	C	T	0.61	23.2	C
		R	0.31	22.4	C	R	0.25	18.9	C
Sunrise Highway (NYS Rt. 27)	EB	L	0.56	37.5	D	L	0.53	33.3	D
		T	0.89	27.0	D	T	0.75	22.7	C
		R	0.03	14.2	B	R	0.09	15.7	C
	WB	L	0.25	33.5	D	L	0.72	38.8	D
		T	1.11	*	F*	T	0.84	25.0	C
		R	0.10	14.7	B	R	0.20	16.4	C
Overall Intersection		-	*	*	F*	-	0.89	27.0	D
BABYLON									
27 Deer Park Avenue & Railroad Avenue[3]									
Deer Park Avenue	NB	L		6.6	B	L		5.6	B
Railroad Avenue	EB	L		47.3	E	L		197.8	F
		R		6.6	B	R		6.1	B
Overall Intersection		-		6.9	B	-		32.8	D
28 Deer Park Avenue & Park Avenue									
Deer Park Avenue	NB	LT	0.41	5.4	B	LT	0.71	8.3	B
	SB	TR	1.08	*	F*	TR	1.03	43.1	E
Park Avenue	EB	LR	0.82	17.5	C	LR	0.91	24.5	C
Overall Intersection		-	*	*	F*	-	0.98	26.0	D
29 Deer Park Avenue/Fire Island Avenue & West Main Street/East Main Street									
Fire Island Avenue	NB	LTR	0.68	28.6	D	LTR	1.18	*	F*
Deer Park Avenue	SB	DtL	0.72	33.7	D	LTR	1.06	79.8	F
		TR	0.55	25.4	D	-	-	-	-
West Main Street	EB	L	0.54	15.8	C	L	0.81	36.6	D
		TR	0.65	6.5	B	TR	0.78	9.1	B
East Main Street	WB	L	0.15	5.8	B	L	0.25	6.5	B
		TR	0.89	18.5	C	TR	0.88	17.2	C
Overall Intersection		-	0.85	16.7	C	-	*	*	F*
DEER PARK									
30 Executive Drive & Long Island Avenue									
Executive Drive	NB	L	0.50	10.0	B	L	0.59	12.7	B
		TR	0.70	12.5	B	TR	0.23	8.5	B
	SB	L	0.01	19.7	C	L	0.01	19.7	C
		T	0.24	20.8	C	T	0.93	45.0	E
		R	0.10	20.1	C	R	0.41	9.6	B
Long Island Avenue	EB	L	0.29	18.8	C	L	0.34	19.3	C
		T	0.20	18.2	C	T	0.08	17.6	C
		R	0.57	21.9	C	R	0.73	26.2	D
	WB	L	0.34	13.8	B	L	1.04	57.5	E
		T	0.06	11.2	B	T	0.15	11.6	B
		R	0.02	11.0	B	R	0.01	10.9	B
Overall Intersection		-	0.57	14.1	B	-	0.90	28.3	D
31 Executive Drive & Pine Aire Drive									
Executive Drive	SB	L	0.50	20.7	C	L	0.92	40.2	E
		LR	0.51	20.8	C	LR	0.92	40.1	E
Pine Aire Drive	EB	L	0.45	10.4	B	L	0.19	10.3	B
		T	0.22	4.4	A	T	0.74	12.0	B
	WB	LT	0.70	17.3	C	LT	0.98	54.8	E
		R	1.23	*	F*	R	0.54	9.9	B
Overall Intersection		-	*	*	F*	-	0.80	27.6	D

Table L - 2 (continued)

2010 NO BUILD STATION AREA TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
HUNTINGTON									
32 New York Avenue (NYS Rt. 110) & Railroad Street/Broadway									
New York Avenue (NYS Rt. 110)	NB	L	0.46	9.8	B	L	0.50	16.7	C
		T	0.54	17.3	C	T	0.67	19.1	C
		R	0.30	15.0	B	R	0.26	14.6	B
	SB	L	0.66	14.6	B	L	1.12	*	F*
		T	0.45	16.3	C	T	0.83	23.4	C
		R	0.17	14.0	B	R	0.22	14.3	B
Railroad Street	EB	L	0.82	62.3	F	L	0.66	34.3	D
		TR	0.84	40.9	E	TR	1.20	*	F*
Broadway	WB	L	0.88	35.8	D	L	0.78	28.2	D
		T	0.76	26.1	D	T	0.40	19.8	C
		R	0.45	20.4	C	R	0.50	21.1	C
Overall Intersection		-	**0.74**	**22.0**	**C**	-	*	*	**F***
33 Park Avenue & Broadway									
Park Avenue	NB	L	1.23	*	F*	L	0.90	34.7	D
		T	0.39	2.5	A	T	0.34	2.4	A
	SB	T	0.53	10.6	B	T	0.54	10.7	B
Broadway	EB	L	0.38	19.9	C	L	1.01	63.1	F
Overall Intersection		-	*	*	**F***	-	**0.73**	**18.3**	**C**
PORT JEFFERSON									
34 Main Street (NYS Rt. 25A) & LIRR Parking Entrance[3]									
Main Street	NB	L		6.5	B	L		245.8	F
	SB	L		10.4	C	L		21.2	D
Overall Intersection		-		**0.3**	**A**	-		**7.5**	**B**
35 Main Street (NYS Rt. 25A) & North Country Road									
Main Street (NYS Rt. 25A)	NB	LTR	1.37	*	F*	LTR	2.71	*	F*
	SB	L	0.45	8.8	B	L	1.61	*	F*
		TR	0.38	6.7	B	TR	0.87	20.2	C
Sheep Pasture Road	EB	LTR	0.38	24.2	C	LTR	0.96	49.1	E
North Country Road	WB	L	1.31	*	F*	L	1.66	*	F*
		TR	0.52	19.8	C	TR	0.32	16.5	C
Overall Intersection		-	*	*	**F***	-	*	*	**F***
RONKONKOMA									
36 Hawkins Avenue & Union Avenue									
Hawkins Avenue	NB	TR	0.45	10.2	B	TR	0.79	12.6	B
	SB	L	0.92	22.1	C	L	1.01	59.9	E
		T	0.45	3.6	A	T	0.23	2.3	A
Union Avenue	WB	L	0.33	17.0	C	L	0.26	20.2	C
		R	0.42	9.1	B	R	0.63	17.1	C
Overall Intersection		-	**0.73**	**11.7**	**B**	-	**0.90**	**20.1**	**C**
37 Hawkins Avenue & LIE North Service Road									
Hawkins Avenue	NB	L	0.82	42.4	E	L	0.46	29.8	D
		T	0.37	20.1	C	T	0.37	15.8	C
	SB	TR	0.84	35.3	D	TR	0.61	25.7	D
L.I.E. North Service Road	WB	LTR	1.04	35.4	D	LTR	0.39	13.9	B
Overall Intersection		-	**0.99**	**34.3**	**D**	-	**0.59**	**18.6**	**C**
38 Hawkins Avenue & LIE South Service Road									
Hawkins Avenue	NB	TR	0.58	22.8	C	TR	1.05	67.9	F
	SB	L	1.06	99.9	F	L	0.59	27.1	D
		T	0.56	18.6	C	T	0.23	14.2	B
L.I.E. South Service Road	EB	LT	0.30	11.3	B	LT	0.98	27.5	D
Overall Intersection		-	**0.62**	**25.1**	**D**	-	**0.90**	**34.4**	**D**
39 Ronkonkoma Avenue Ramp/LIRR Parking Lot & Railroad Avenue									
LIRR Parking Lot	NB	L	0.03	12.2	B	L	0.07	12.3	B
		TR	0.01	12.2	B	TR	0.20	12.7	B
Ronkonkoma Avenue Ramp	SB	L	0.22	12.8	B	L	0.26	13.0	B
		TR	0.04	12.2	B	TR	0.05	12.3	B
Railroad Avenue	EB	L	0.09	2.0	A	L	0.06	1.9	A
		T	0.24	2.2	A	T	0.43	2.8	A
		R	0.01	1.9	A	R	0.01	1.9	A
	WB	L	0.01	1.8	A	L	0.01	1.8	A
		TR	0.62	3.9	A	TR	0.36	2.6	A
Overall Intersection		-	**0.52**	**4.2**	**A**	-	**0.39**	**4.3**	**A**

Notes

(1) Delay is measured in seconds per vehicle.

(2) Level of service for signalized intersections is based upon average stopped delay per vehicle (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(3) Level of Service for unsignalized intersections is based upon average total delay (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(4) Asterick (*) indicates that Delay and Levels of Service are not meaningful when v/c is greater than 1.2 or 1/PHF.

TABLE L-3

2020 NO BUILD
LIRR STATIONS TRAFFIC
LEVELS OF SERVICE

Table L - 3
2020 NO BUILD LIRR STATION AREA LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
GREAT NECK									
1 Middle Neck Road & North Station Plaza									
Middle Neck Road	NB	L	1.20	159.1	F	L	0.78	30.3	D
		TR	0.47	8.7	B	TR	0.50	8.8	B
	SB	LTR	0.84	19.0	C	LTR	0.93	26.2	D
North Station Plaza	EB	L	0.31	12.1	B	L	0.31	12.0	B
		TR	0.54	13.9	B	TR	0.69	16.4	C
	WB	L	0.83	35.9	D	L	1.50	508.9	F
		TR	0.27	11.7	B	TR	0.22	11.5	B
Overall Intersection		-	**0.96**	**39.3**	**D**	-	**1.18**	**38.6**	**D**
2 Middle Neck Road & South Station Plaza									
Middle Neck Road	NB	L	1.55	570.1	F*	L	1.15	150.6	F
		TR	0.53	8.0	B	TR	0.41	7.2	B
	SB	L	1.06	95.4	F	L	0.26	6.6	B
		TR	0.49	7.7	B	TR	0.53	8.0	B
South Station Plaza	EB	DfL	1.06	85.4	F	LTR	1.08	71.1	F
		TR	0.56	15.6	C	-	-	-	*
	WB	L	0.31	13.5	B	L	0.96	77.4	F
		TR	0.55	15.6	C	TR	0.50	14.9	B
Overall Intersection		-	**1.36**	**55.9**	**E**	-	**1.12**	**31.8**	**D**
HICKSVILLE									
6 Newbridge Road (NYS Rt. 106) & West John Street									
Newbridge Road (NYS Rt. 106)	NB	L	1.05	82.1	F	L	0.88	42.5	E
		T	0.44	10.1	B	T	0.55	11.1	B
		R	0.08	7.9	B	R	0.07	7.9	B
	SB	L	0.15	13.4	B	L	0.95	79.6	F
		T	0.91	26.4	D	T	0.86	23.4	C
		R	0.53	16.8	C	R	0.26	14.1	B
West John Street	EB	L	0.86	36.9	D	L	1.19	155.7	F
		T	0.43	24.2	C	T	0.98	47.8	E
		R	0.46	24.8	C	R	0.59	27.9	D
	WB	L	0.77	24.7	C	L	0.69	23.1	C
		TR	0.92	37.7	D	TR	0.64	27.5	D
Overall Intersection		-	**1.06**	**27.4**	**D**	-	**1.21**	**34.7**	**D**
7 Newbridge Road (NYS Rt. 106) & Duffy Avenue									
Newbridge Road (NYS Rt. 106)	NB	L	0.93	48.5	E	L	0.23	15.0	B
		T	0.61	18.5	C	T	0.73	19.8	C
		R	0.06	14.0	B	R	0.09	13.5	B
	SB	L	0.22	9.9	B	L	0.52	14.4	B
		T	0.79	22.1	C	T	1.18	123.4	F
		R	1.08	77.7	F	R	0.40	15.8	C
Duffy Avenue	EB	L	0.44	17.1	C	L	1.12	107.2	F
		T	0.12	14.0	B	T	0.62	17.7	C
		R	0.14	14.1	B	R	0.36	14.6	B
	WB	LTR	1.02	66.1	F	LTR	1.04	88.5	F
Overall Intersection		-	**1.03**	**36.7**	**D**	-	**1.14**	**70.3**	**F**
8 Broadway (NYS Rt 107) & East John Street									
Broadway (NYS Rt 107)	NB	L	0.89	55.6	E	L	0.71	39.4	D
		TR	0.53	8.3	B	TR	0.55	9.5	B
	SB	L	0.35	13.5	B	L	0.65	29.7	D
		TR	0.37	12.8	B	TR	0.79	21.3	C
East John Street	EB	L	0.39	25.3	D	L	0.29	21.0	C
		T	0.28	29.1	D	T	0.59	30.0	D
		R	0.39	25.7	D	R	0.70	28.4	D
	WB	LTR	0.82	38.6	D	LTR	0.70	32.7	D
Overall Intersection		-	**0.60**	**22.3**	**C**	-	**0.75**	**22.2**	**C**
9 Bay Avenue & East Barclay Street/Woodbury Road									
Bay Avenue	NB	LTR	0.25	6.7	B	LTR	0.41	7.5	B
	SB	L	0.40	7.5	B	L	0.29	6.9	B
		LT	0.51	2.3	A	LT	0.33	1.6	A
East Barclay Street	EB	LTR	0.30	20.2	C	LTR	0.37	20.5	C
Woodbury Road	WB	LT	0.68	21.3	C	LT	0.89	33.7	D
		R	0.14	16.0	C	R	0.95	44.2	E
Overall Intersection		-	**0.48**	**8.9**	**B**	-	**0.54**	**17.1**	**C**

Table L - 3
2020 NO BUILD LIRR STATION AREA LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
BAYSIDE									
15 Northern Boulevard (NYS Rt. 25A) & Bell Boulevard									
Bell Boulevard	NB	LTR	1.25	193.1	F	LTR	1.03	73.7	F
	SB	LTR	0.67	27.6	D	LTR	0.95	40.9	E
Northern Boulevard (NYS Rt. 25A)	EB	DfL	1.01	107.2	F	DfL	1.43	426.3	F*
		T	0.71	6.5	B	T	0.88	9.6	B
		R	0.21	3.8	A	R	0.28	4.0	A
	WB	L	0.93	48.2	E	L	1.13	169.9	F*
		T	0.92	11.5	B	T	0.55	5.2	B
		R	0.18	3.7	A	R	0.20	3.8	A
Overall Intersection		-	**0.90**	**33.3**	**D**	-	**1.27**	**35.4**	**D**
16 Bell Boulevard & 41st Avenue									
Bell Boulevard	NB	LTR	1.28	193.4	F	LTR	1.26	169.9	F
	SB	LTR	0.73	10.4	B	LTR	0.90	18.3	C
41st Avenue	EB	LTR	0.59	13.3	B	LTR	0.61	13.8	B
	WB	LTR	0.36	10.8	B	LTR	0.73	18.1	C
Overall Intersection		-	**1.00**	**91.8**	**F**	-	**1.04**	**78.4**	**F**
DEER PARK									
30 Executive Drive & Long Island Avenue									
Executive Drive	NB	L	0.63	11.4	B	L	0.72	16.8	C
		TR	0.85	16.3	C	TR	0.29	8.8	B
	SB	L	0.01	19.7	C	L	0.01	19.7	C
		T	0.29	21.1	C	T	1.14	111.9	F
		R	0.12	20.2	C	R	0.49	10.4	B
Long Island Avenue	EB	L	0.37	19.4	C	L	0.47	21.0	C
		T	0.25	18.5	C	T	0.10	17.7	C
		R	0.69	24.9	C	R	0.89	37.7	D
	WB	L	0.44	15.5	C	L	1.30	216.4	F*
		T	0.07	11.2	B	T	0.19	11.8	B
		R	0.02	11.0	B	R	0.01	10.9	B
Overall Intersection		-	**0.73**	**16.6**	**C**	-	**1.10**	**76.5**	**F**
31 Executive Drive & Pine Aire Drive									
Executive Drive	SB	L	1.02	62.4	F	L	1.14	108.3	F
		LR	0.21	18.3	C	LR	1.14	108.2	F
Pine Aire Drive	EB	L	0.55	14.3	B	L	0.25	11.1	B
		T	0.35	4.7	A	T	0.90	19.6	C
	WB	LT	0.85	23.3	C	LT	1.19	148.2	F
		R	1.51	567.0	F*	R	0.66	11.9	B
Overall Intersection		-	**0.86**	**269.7**	**F***	-	**0.98**	**67.7**	**F**

Table L - 3
2020 NO BUILD LIRR STATION AREA LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
RONKONKOMA									
36 Hawkins Avenue & Union Avenue									
Hawkins Avenue	NB	TR	0.56	11.2	B	TR	0.96	26.5	D
	SB	L	1.23	157.8	F*	L	1.26	208.1	F
		T	0.55	4.1	A	T	0.28	2.4	A
Union Avenue	WB	L	0.40	17.5	C	L	0.31	20.5	C
		R	0.53	10.1	B	R	0.79	21.9	C
Overall Intersection		-	**1.23**	**50.1**	**E**	-	**1.57**	**51.7**	**E**
37 Hawkins Avenue & LIE North Service Road									
Hawkins Avenue	NB	L	0.99	72.3	F	L	0.58	33.9	D
		T	0.45	20.8	C	T	0.45	16.6	C
	SB	TR	1.03	65.6	F	TR	0.75	28.4	D
L.I.E. North Service Road	WB	LTR	1.27	175.3	F*	LTR	0.48	14.7	B
Overall Intersection		-	**1.18**	**142.8**	**F***	-	**0.66**	**20.2**	**C**
38 Hawkins Avenue & LIE South Service Road									
Hawkins Avenue	NB	TR	0.70	25.0	C	TR	1.29	211.5	F
	SB	L	1.40	348.1	F*	L	0.72	30.5	D
		T	0.69	20.5	C	T	0.28	14.5	B
L.I.E. South Service Road	EB	LT	0.36	11.8	B	LT	1.19	123.1	F
Overall Intersection		-	**0.70**	**49.1**	**E**	-	**1.10**	**125.7**	**F**
39 Ronkonkoma Avenue Ramp/LIRR Parking Lot & Railroad Avenue									
LIRR Parking Lot	NB	L	0.03	12.2	B	L	0.09	12.4	B
		TR	0.01	12.2	B	TR	0.25	12.9	B
Ronkonkoma Avenue Ramp	SB	L	0.27	13.0	B	L	0.33	13.3	B
		TR	0.04	12.3	B	TR	0.06	12.3	B
Railroad Avenue	EB	L	0.13	2.0	A	L	0.10	2.0	A
		T	0.29	2.3	A	T	0.52	3.2	A
		R	0.01	1.9	A	R	0.01	1.9	A
	WB	L	0.01	1.8	A	L	0.01	1.8	A
		TR	0.75	5.8	B	TR	0.44	2.8	A
Overall Intersection		-	**0.64**	**5.5**	**B**	-	**0.48**	**4.6**	**A**

Notes

(1) Delay is measured in seconds per vehicle.

(2) Level of service for signalized intersections is based upon average stopped delay per vehicle (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(3) Level of Service for unsignalized intersections is based upon average total delay (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(4) Asterick (*) indicates that Delay and Levels of Service are not meaningful when v/c is greater than 1.2 or 1/PHF. Also it is beyond the scope of HCM to assess delay for an approach which operates at oversaturated conditions.

TABLE L-4

2010 BUILD
LIRR STATIONS TRAFFIC
LEVELS OF SERVICE

Table L - 4

2010 BUILD LIRR STATION AREA TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
GREAT NECK									
1 Middle Neck Road & North Station Plaza									
Middle Neck Road	NB	L	1.08	*	F*	L	0.69	23.8	C
		TR	0.44	8.4	B	TR	0.46	8.6	B
	SB	LTR	0.87	21.2	C	LTR	0.91	25.0	C
North Station Plaza	EB	L	0.29	12.0	B	L	0.30	12.0	B
		TR	0.52	13.7	B	TR	0.65	15.6	C
	WB	L	0.81	32.4	D	L	1.50	*	F*
		TR	0.27	11.8	B	TR	0.24	11.5	B
Overall Intersection		-	*	*	F*	-	*	*	F*
2 Middle Neck Road & South Station Plaza									
Middle Neck Road	NB	L	1.24	*	F*	L	0.90	45.4	E
		TR	0.50	7.8	B	TR	0.38	7.0	B
	SB	L	0.84	33.1	D	L	0.22	6.3	B
		TR	0.46	7.5	B	TR	0.50	7.8	B
South Station Plaza	EB	DfL	0.91	42.1	E	LTR	0.99	42.1	E
		TR	0.53	15.3	C	-	-	-	-
	WB	L	0.31	13.4	B	L	0.85	47.0	E
		TR	0.52	15.1	C	TR	0.48	14.6	B
Overall Intersection		-	*	*	F*	-	**0.94**	**19.4**	**C**
HEMPSTEAD									
3 Main Street & West Columbia Street									
Main Street	NB	LT	0.31	4.4	A	LT	0.25	4.2	A
		R	0.10	3.7	A	R	0.11	3.7	A
	SB	LTR	0.43	5.2	B	LTR	0.72	9.1	B
West Columbia Street	EB	LTR	0.35	18.5	C	LTR	0.55	20.4	C
	WB	LTR	0.85	34.1	D	LTR	0.86	36.4	D
Overall Intersection		-	**0.55**	**13.8**	**B**	-	**0.76**	**14.8**	**B**
4 Main Street & Fulton Street (NYS Rt. 24)									
Main Street	NB	TR	0.59	18.1	C	TR	0.48	17.1	C
	SB	TR	0.56	18.5	C	TR	1.02	58.5	E
Fulton Street (NYS Rt.24)	EB	TR	0.57	4.2	A	TR	0.62	4.4	A
	WB	TR	0.43	3.5	A	TR	0.57	4.1	A
Overall Intersection		-	**0.58**	**8.3**	**B**	-	**0.76**	**13.3**	**B**
5 Fulton Street (NYS Rt. 24) & Washington Ave.									
Washington Avenue	NB	L	0.08	11.5	B	L	0.09	13.2	B
		TR	0.94	26.8	D	TR	0.54	14.4	B
	SB	L	0.50	19.4	C	L	0.74	23.4	C
		TR	0.68	16.1	C	TR	0.75	17.4	C
Fulton Street (NYS Rt. 24)	EB	LTR	1.04	41.3	E	LTR	0.98	28.7	D
	WB	LT	1.13	*	F*	LT	1.17	*	F*
		R	0.60	11.7	B	R	0.28	9.1	B
Overall Intersection		-	*	*	F*	-	*	*	F*
HICKSVILLE									
6 Newbridge Road (NYS Rt. 106) & West John Street									
Newbridge Road (NYS Rt. 106)	NB	L	0.96	57.3	E	L	0.82	33.3	D
		T	0.41	9.9	B	T	0.51	10.7	B
		R	0.08	7.9	B	R	0.06	7.8	B
	SB	L	0.13	13.2	B	L	0.82	47.0	E
		T	0.85	23.1	C	T	0.80	21.1	C
		R	0.49	16.3	C	R	0.25	14.0	B
West John Street	EB	L	0.80	30.3	D	L	1.05	*	F*
		T	0.40	23.9	C	T	0.90	38.0	D
		R	0.43	24.4	C	R	0.55	27.0	D
	WB	L	0.70	21.2	C	L	0.64	21.3	C
		TR	0.85	32.7	D	TR	0.59	26.8	D
Overall Intersection		-	**0.87**	**23.7**	**C**	-	*	*	F*

Table L - 4 (continued)

2010 BUILD LIRR STATION AREA TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
14a Edwards Boulevard & West Park Avenue									
Edwards Boulevard	NB	TR	0.14	14.6	B	TR	0.11	14.5	B
	SB	DfL	0.03	14.1	B	DfL	0.03	14.1	B
		T	0.02	14.0	B	T	0.02	14.0	B
West Park Avenue	EB	LTR	0.51	7.0	B	LTR	0.59	7.7	B
Overall Intersection		-	**0.38**	**7.8**	**B**	-	**0.42**	**8.1**	**B**
14b Edwards Boulevard & West Park Avenue									
Edwards Boulevard	NB	L	0.11	14.5	B	L	0.03	14.1	B
West Park Avenue	WB	LT	0.48	6.9	B	LT	0.55	7.4	B
Overall Intersection		-	**0.35**	**7.8**	**B**	-	**0.37**	**7.5**	**B**
BAYSIDE									
15 Northern Boulevard (NYS Rt. 25A) & Bell Boulevard									
Bell Boulevard	NB	LTR	1.10	*	F*	LTR	0.97	57.3	E
	SB	LTR	0.62	26.7	D	LTR	0.89	35.0	D
Northern Boulevard (NYS Rt. 25A)	EB	DfL	0.79	36.9	D	-	-	-	-
		T	0.65	5.8	B	LT	0.95	13.5	B
		R	0.19	3.7	A	R	0.25	3.9	A
	WB	L	0.79	22.6	C	L	0.61	10.2	B
		T	0.83	8.3	B	T	0.50	4.9	A
		R	0.17	3.7	A	R	0.18	3.7	A
Overall Intersection		-	*	*	**F***	-	**0.93**	**18.5**	**C**
16 Bell Boulevard & 41st Avenue									
Bell Boulevard	NB	LTR	1.17	*	F*	LTR	1.13	*	F*
	SB	LTR	0.68	9.3	B	LTR	0.81	12.9	B
41st Avenue	EB	LTR	0.55	12.6	B	LTR	0.60	13.6	B
	WB	LTR	0.37	10.9	B	LTR	0.79	21.9	C
Overall Intersection		-	*	*	**F***	-	*	*	**F***
MINEOLA									
17 Mineola Boulevard & Old Country Boulevard									
Mineola Boulevard	NB	L	0.98	51.2	E	L	0.76	19.5	C
		TR	1.04	52.7	E	TR	1.07	*	F*
	SB	L	0.94	42.4	E	L	0.91	37.3	D
		TR	0.70	18.8	C	TR	0.85	23.1	C
Old Country Road	EB	L	0.70	16.6	C	L	0.71	17.1	C
		TR	1.06	57.4	E	TR	0.91	27.4	D
	WB	L	0.90	36.1	D	L	0.97	50.1	E
		T	0.75	19.8	C	T	0.73	19.4	C
		R	0.55	17.4	C	R	0.74	21.9	C
Overall Intersection		-	**1.00**	**38.9**	**D**	-	*	*	**F***
18 Mineola Boulevard & 2nd Street									
Mineola Boulevard	NB	L	1.09	*	F*	L	0.60	14.1	B
		TR	0.36	4.7	A	TR	0.48	5.9	B
	SB	L	0.14	4.0	A	L	0.92	59.4	E
		TR	0.95	22.1	C	TR	1.06	*	F*
2nd Street	EB	L	0.12	11.0	B	L	0.16	14.7	B
		TR	0.69	16.2	C	TR	0.86	28.9	D
	WB	LTR	1.22	*	F*	LTR	1.06	*	F*
Overall Intersection		-	*	*	**F***	-	*	*	*

Table L - 4 (continued)

2010 BUILD LIRR STATION AREA TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
PORT WASHINGTON									
19 Main Street & LIRR Parking Entrance[3]									
Main Street	WB	L		11.1	C	L		6.4	B
Overall Intersection		-		**0.9**	**A**	-		**0.4**	**A**
20 Main Street & Port Washington Boulevard (NYS Rte. 101)									
Port Washington Boulevard (NYS Rt. 101)	NB	L	1.31	*	*	L	0.99	33.5	D
		TR	0.40	2.7	A	TR	0.36	3.9	A
	SB	L	0.33	9.0	B	L	0.22	10.3	B
		TR	0.54	10.1	B	TR	0.39	10.9	B
Main Street	EB	LT	1.24	*	F*	LT	1.03	76.9	F
		R	0.45	19.0	C	R	0.50	18.2	C
	WB	LTR	0.64	31.9	D	LTR	1.03	78.0	F
Overall Intersection		-	*	*	**F***	-	**0.99**	**25.3**	**D**
VALLEY STREAM									
21 South Franklin Avenue & Merrick Road									
South Franklin Avenue	NB	LTR	0.49	15.3	C	LTR	0.73	21.0	C
	SB	LTR	0.26	13.3	B	LTR	0.27	13.4	B
Merrick Road	EB	TR	0.42	5.3	B	TR	0.53	5.9	B
	WB	LT	0.61	6.8	B	LT	0.98	26.0	D
Overall Intersection		-	**0.57**	**7.7**	**B**	-	**0.90**	**16.0**	**C**
22 South Franklin Avenue & West Hawthorne Avenue									
South Franklin Avenue	NB	LT	0.20	7.2	B	LT	0.30	7.6	B
	SB	TR	0.15	7.0	B	TR	0.25	7.4	B
West Hawthorne Avenue	EB	LR	0.18	10.1	B	LR	0.38	11.3	B
	WB	LTR	0.18	10.1	B	D/L	0.17	10.1	B
						TR	0.17	10.1	B
Overall Intersection		-	**0.19**	**8.2**	**B**	-	**0.34**	**8.6**	**B**
23 South Franklin Avenue & Sunrise Highway (NYS Rt.27)									
South Franklin Avenue	NB	LTR	0.46	32.7	D	LTR	0.53	33.6	D
	SB	L	0.81	54.4	E	L	1.00	82.4	F
		R	0.23	30.8	D	R	0.31	31.5	D
Sunrise Highway (NYS Rt. 27)	EB	L	0.29	4.6	A	L	0.49	7.6	B
		T	0.38	4.6	A	T	0.60	6.1	B
	WB	T	0.46	5.1	B	T	0.45	5.0	A
		R	0.08	3.5	A	R	0.08	3.5	A
Overall Intersection		-	**0.54**	**9.4**	**B**	-	**0.69**	**12.1**	**B**
MERRICK									
24 Merrick Avenue & Broadcast Plaza[3]									
Merrick Avenue	NB	L		4.6	A	L		4.6	A
Broadcast Plaza	EB	LR		7.6	B	LR		18.6	C
Overall Intersection		-		**0.9**	**A**	-		**2.0**	**A**
25 Merrick Avenue & Smith Street									
Merrick Avenue	NB	L	0.61	22.9	C	L	0.46	16.8	C
		TR	0.86	25.4	D	TR	1.04	*	F*
	SB	L	0.22	9.5	B	L	0.36	10.8	B
		TR	1.01	44.5	E	TR	0.94	29.3	D
Smith Street	EB	L	0.52	11.2	B	L	0.44	9.2	B
		TR	0.34	13.8	B	TR	0.73	19.3	C
	WB	L	0.18	8.0	B	L	0.27	9.1	B
		TR	0.86	26.8	D	TR	0.45	14.7	B
Overall Intersection		-	**0.93**	**28.6**	**D**	-	*	*	**F***

Table L - 4 (continued)

2010 BUILD LIRR STATION AREA TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
26 Merrick Avenue & Sunrise Highway (NYS Rt. 27)									
Merrick Avenue	NB	L	0.45	31.1	D	L	0.48	29.9	D
		TR	0.65	34.0	D	TR	0.70	32.1	D
	SB	L	0.52	24.2	C	L	1.01	73.0	F
		T	0.34	22.6	C	T	0.62	23.3	C
		R	0.32	22.4	C	R	0.26	18.9	C
Sunrise Highway (NYS Rt. 27)	EB	L	0.56	37.5	D	L	0.53	33.3	D
		T	0.89	27.0	D	T	0.75	22.7	C
		R	0.03	14.2	B	R	0.09	15.7	C
	WB	L	0.25	33.5	D	L	0.73	39.1	D
		T	1.11	*	F*	T	0.84	25.0	C
		R	0.10	14.7	B	R	0.20	16.4	C
Overall Intersection		-	*	*	F*	-	**0.90**	**27.1**	**D**
BABYLON									
27 Deer Park Avenue & Railroad Avenue[3]									
Deer Park Avenue	NB	L		6.9	B	L		5.7	B
Railroad Avenue	EB	L		60.8	F	L		245.5	F
		R		6.7	B	R		6.2	B
Overall Intersection		-		**8.6**	**B**	-		**42.5**	**E**
28 Deer Park Avenue & Park Avenue									
Deer Park Avenue	NB	LT	0.43	5.5	B	LT	0.73	8.7	B
	SB	TR	1.12	*	F*	TR	1.04	46.4	E
Park Avenue	EB	LR	0.82	17.6	C	LR	0.93	27.7	D
Overall Intersection		-	*	*	F*	-	**1.00**	**28.1**	**D**
29 Deer Park Avenue/Fire Island Avenue & West Main Street/East Main Street									
Fire Island Avenue	NB	LTR	0.69	29.0	D	LTR	1.21	*	F*
Deer Park Avenue	SB	DfL	0.74	35.5	D	LTR	1.09	91.5	F
		TR	0.56	25.4	D	-	-	-	-
West Main Street	EB	L	0.54	16.0	C	L	0.81	36.6	D
		TR	0.65	6.5	B	TR	0.78	9.1	B
East Main Street	WB	L	0.15	5.8	B	L	0.25	6.5	B
		TR	0.90	19.3	C	TR	0.88	17.4	C
Overall Intersection		-	**0.86**	**17.2**	**C**	-	*	*	**F***
DEER PARK									
30 Executive Drive & Long Island Avenue									
Executive Drive	NB	L	0.54	10.3	B	L	0.60	13.1	B
		TR	0.70	12.5	B	TR	0.23	8.5	B
	SB	L	0.01	19.7	C	L	0.01	19.7	C
		T	0.24	20.8	C	T	0.93	45.0	E
		R	0.10	20.1	C	R	0.41	9.6	B
Long Island Avenue	EB	L	0.29	18.8	C	L	0.34	19.3	C
		T	0.20	18.2	C	T	0.08	17.6	C
		R	0.58	22.2	C	R	0.81	30.1	D
	WB	L	0.34	13.8	B	L	1.04	57.5	E
		T	0.06	11.2	B	T	0.15	11.6	B
		R	0.02	11.0	B	R	0.01	10.9	B
Overall Intersection		-	**0.57**	**14.1**	**B**	-	**0.91**	**28.7**	**D**
31 Executive Drive & Pine Aire Drive									
Executive Drive	SB	L	0.51	20.8	C	L	0.95	43.8	E
		LR	0.51	20.9	C	LR	0.95	43.7	E
Pine Aire Drive	EB	L	0.46	10.8	B	L	0.20	10.3	B
		T	0.29	4.4	A	T	0.74	12.0	B
	WB	LT	0.70	17.3	C	LT	0.98	54.8	E
		R	1.25	*	F*	R	0.54	9.9	B
Overall Intersection		-	*	*	F*	-	**0.81**	**29.1**	**D**

Table L - 4 (continued)

2010 BUILD LIRR STATION AREA TRAFFIC LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
HUNTINGTON									
32 New York Avenue (NYS Rt. 110) & Railroad Street/Broadway									
New York Avenue (NYS Rt. 110)	NB	L	0.46	9.8	B	L	0.50	16.7	C
		T	0.54	17.3	C	T	0.67	19.1	C
		R	0.31	15.0	B	R	0.26	14.6	B
	SB	L	0.69	15.9	C	L	1.12	*	F*
		T	0.45	16.3	C	T	0.83	23.4	C
		R	0.18	14.0	B	R	0.22	14.3	B
Railroad Street	EB	L	0.82	62.3	F	L	0.68	35.0	D
		TR	0.85	41.6	E	TR	1.20	*	F*
Broadway	WB	L	0.89	36.7	D	L	0.79	29.0	D
		T	0.76	26.1	D	T	0.41	19.8	C
		R	0.45	20.4	C	R	0.52	21.3	C
Overall Intersection		-	**0.74**	**22.2**	**C**	-	*	*	**F***
33 Park Avenue & Broadway									
Park Avenue	NB	L	1.26	*	F*	L	0.90	35.0	D
		T	0.39	2.5	A	T	0.34	2.4	A
	SB	T	0.53	10.7	B	T	0.54	10.7	B
Broadway	EB	L	0.38	20.0	C	L	1.05	*	F*
Overall Intersection		-	*	*	**F***	-	*	*	**F***
PORT JEFFERSON									
34 Main Street (NYS Rt. 25A) & LIRR Parking Entrance[3]									
Main Street	NB	L		6.5	B	L		245.8	F
	SB	L		10.4	C	L		21.2	D
Overall Intersection		-		**0.3**	**A**	-		**7.5**	**B**
35 Main Street (NYS Rt. 25A) & North Country Road									
Main Street (NYS Rt. 25A)	NB	LTR	1.37	*	F*	LTR	2.71	*	F*
	SB	L	0.45	8.8	B	L	1.61	*	F*
		TR	0.38	6.7	B	TR	0.87	20.2	C
Sheep Pasture Road	EB	LTR	0.38	24.2	C	LTR	0.96	49.1	E
North Country Road	WB	L	1.31	*	F*	L	1.66	*	F*
		TR	0.52	19.8	C	TR	0.32	16.5	C
Overall Intersection		-	*	*	**F***	-	*	*	**F***
RONKONKOMA									
36 Hawkins Avenue & Union Avenue									
Hawkins Avenue	NB	TR	0.47	10.3	B	TR	0.88	17.5	C
	SB	L	0.94	24.8	C	L	1.03	64.7	F
		T	0.52	4.0	A	T	0.23	2.3	A
Union Avenue	WB	L	0.36	17.1	C	L	0.26	20.2	C
		R	0.42	9.1	B	R	0.63	17.1	C
Overall Intersection		-	**0.75**	**12.2**	**B**	-	**0.93**	**22.6**	**C**
37 Hawkins Avenue & LIE North Service Road									
Hawkins Avenue	NB	L	0.82	42.6	E	L	0.46	30.0	D
		T	0.37	20.2	C	T	0.39	16.0	C
	SB	TR	0.90	40.2	E	TR	0.61	25.8	D
L.I.E. North Service Road	WB	LTR	1.05	39.5	D	LTR	0.40	13.9	B
Overall Intersection		-	**1.00**	**38.0**	**D**	-	**0.59**	**18.7**	**C**
38 Hawkins Avenue & LIE South Service Road									
Hawkins Avenue	NB	TR	0.58	23.0	C	TR	1.13	*	F*
	SB	L	1.07	106.2	F	L	0.59	27.1	D
		T	0.62	19.4	C	T	0.23	14.2	B
L.I.E. South Service Road	EB	LT	0.30	11.3	B	LT	0.98	28.0	D
Overall Intersection		-	**0.62**	**25.7**	**D**	-	*	*	**F***
39 Ronkonkoma Avenue Ramp/LIRR Parking Lot & Railroad Avenue									
LIRR Parking Lot	NB	L	0.03	12.2	B	L	0.09	12.4	B
		TR	0.01	12.2	B	TR	0.25	12.9	B
Ronkonkoma Avenue Ramp	SB	L	0.23	12.8	B	L	0.27	13.0	B
		TR	0.04	12.3	B	TR	0.05	12.3	B
Railroad Avenue	EB	L	0.10	2.0	A	L	0.07	1.9	A
		T	0.25	2.3	A	T	0.44	2.8	A
		R	0.02	1.9	A	R	0.01	1.9	A
	WB	L	0.03	1.9	A	L	0.00	1.8	A
		TR	0.64	4.2	A	TR	0.37	2.6	A
Overall Intersection		-	**0.54**	**4.3**	**A**	-	**0.40**	**4.5**	**A**

Notes

(1) Delay is measured in seconds per vehicle.

(2) Level of service for signalized intersections is based upon average stopped delay per vehicle (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(3) Level of Service for unsignalized intersections is based upon average total delay (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(4) Asterick (*) indicates that Delay and Levels of Service are not meaningful when v/c is greater than 1.2 or 1/PHF.

TABLE L-5

2020 BUILD
LIRR STATIONS TRAFFIC
LEVELS OF SERVICE

Table L - 5
2020 BUILD LIRR STATION AREA LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
GREAT NECK									
1 Middle Neck Road & North Station Plaza									
Middle Neck Road	NB	L	1.26	200.1	F*	L	0.79	31.9	D
		TR	0.47	8.7	B	TR	0.50	8.8	B
	SB	LTR	0.98	36.1	D	LTR	1.00	39.9	D
North Station Plaza	EB	L	0.34	12.4	B	L	0.33	12.3	B
		TR	0.56	14.2	B	TR	0.70	16.6	C
	WB	L	1.00	74.6	F	L	1.68	810.4	F*
		TR	0.29	11.9	B	TR	0.25	11.6	B
Overall Intersection		-	**1.04**	**40.7**	**E**	-	**1.27**	**59.1**	**E**
2 Middle Neck Road & South Station Plaza									
Middle Neck Road	NB	L	1.62	701.1	F*	L	1.21	195.9	F*
		TR	0.53	8.1	B	TR	0.41	7.2	B
	SB	L	1.07	99.7	F	L	0.27	6.6	B
		TR	0.50	7.8	B	TR	0.53	8.0	B
South Station Plaza	EB	DfL	1.07	87.2	F	LTR	1.10	76.1	F
		TR	0.57	15.9	C	-	-	-	-
	WB	L	0.37	14.0	B	L	1.08	126.4	F*
		TR	0.56	15.6	C	TR	0.51	15.0	B
Overall Intersection		-	**1.40**	**64.2**	**F**	-	**1.17**	**36.4**	**D**
HICKSVILLE									
6 Newbridge Road (NYS Rt. 106) & West John Street									
Newbridge Road (NYS Rt. 106)	NB	L	1.05	82.1	F	L	0.88	42.5	E
		T	0.44	10.1	B	T	0.55	11.2	B
		R	0.08	7.9	B	R	0.07	7.9	B
	SB	L	0.15	13.4	B	L	0.96	81.4	F
		T	0.92	27.2	D	T	0.86	23.4	C
		R	0.53	16.8	C	R	0.26	14.1	B
West John Street	EB	L	0.87	38.1	D	L	1.19	160.2	F*
		T	0.43	24.2	C	T	0.98	48.0	E
		R	0.46	24.8	C	R	0.59	27.9	D
	WB	L	0.78	25.3	D	L	0.69	23.1	C
		TR	0.92	37.7	D	TR	0.64	27.5	D
		-	**1.06**	**27.6**	**D**	-	**1.22**	**35.0**	**D**
7 Newbridge Road (NYS Rt. 106) & Duffy Avenue									
Newbridge Road (NYS Rt. 106)	NB	L	0.98	58.7	E	L	0.24	15.0	B
		T	0.61	18.5	C	T	0.73	19.8	C
		R	0.07	14.0	B	R	0.09	13.5	B
	SB	L	0.22	9.9	B	L	0.52	14.4	B
		T	0.80	22.3	C	T	1.18	124.1	F*
		R	1.09	82.1	F	R	0.40	15.8	C
Duffy Avenue	EB	L	0.44	17.2	C	L	1.16	127.5	F*
		T	0.12	14.0	B	T	0.63	18.1	C
		R	0.14	14.1	B	R	0.36	14.6	B
	WB	LTR	1.07	86.5	F	LTR	1.16	143.5	F
		-	**1.05**	**40.8**	**E**	-	**1.16**	**75.4**	**F**
8 Broadway (NYS Rt 107) & East John Street									
Broadway (NYS Rt 107)	NB	L	0.89	55.6	E	L	0.71	39.4	D
		TR	0.53	8.3	B	TR	0.56	9.5	B
	SB	L	0.35	13.5	B	L	0.65	29.8	D
		TR	0.37	12.9	B	TR	0.79	21.3	C
East John Street	EB	L	0.39	25.3	D	L	0.29	21.0	C
		T	0.28	29.1	D	T	0.59	30.1	D
		R	0.39	25.7	D	R	0.70	28.4	D
	WB	LTR	0.82	38.7	D	LTR	0.71	32.7	D
		-	**0.60**	**22.3**	**C**	-	**0.75**	**22.2**	**C**
9 Bay Avenue & East Barclay Street/Woodbury Road									
Bay Avenue	NB	LTR	0.26	6.8	B	LTR	0.42	7.6	B
	SB	L	0.41	7.5	B	L	0.29	6.9	B
		LT	0.51	2.3	A	LT	0.33	1.6	A
East Barclay Street	EB	LTR	0.30	20.2	C	LTR	0.37	20.5	C
Woodbury Road	WB	LT	0.68	21.3	C	LT	0.89	34.0	D
		R	0.14	16.0	C	R	0.95	44.2	E
Overall Intersection		-	**0.48**	**8.9**	**B**	-	**0.55**	**17.1**	**C**

Table L - 5
2020 BUILD LIRR STATION AREA LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
BAYSIDE									
15 Northern Boulevard (NYS Rt. 25A) & Bell Boulevard									
Bell Boulevard	NB	LTR	1.34	267.8	F*	LTR	1.05	80.7	F
	SB	LTR	0.70	28.1	D	LTR	1.00	49.0	E
Northern Boulevard (NYS Rt. 25A)	EB	DfL	1.13	172.2	F*	-	1.45	465.9	F*
		T	0.71	6.5	B	LT	0.88	9.6	B
		R	0.21	3.8	A	R	0.28	4.0	A
	WB	L	0.93	48.2	E	L	1.13	169.9	F*
		T	0.92	11.5	B	T	0.55	5.2	B
		R	0.19	3.7	A	R	0.20	3.8	A
Overall Intersection		-	**0.98**	**43.6**	**E**	-	**1.30**	**39.2**	**D**
16 Bell Boulevard & 41st Avenue									
Bell Boulevard	NB	LTR	1.43	336.5	F*	LTR	1.31	215.2	F*
	SB	LTR	0.76	11.3	B	LTR	0.92	20.4	C
41st Avenue	EB	LTR	0.62	13.9	B	LTR	0.68	15.6	C
	WB	LTR	0.44	11.5	B	LTR	0.94	41.8	E
Overall Intersection		-	**1.10**	**156.5**	**F***	-	**1.16**	**99.4**	**F***
DEER PARK									
30 Executive Drive & Long Island Avenue									
Executive Drive	NB	L	0.67	12.2	B	L	0.73	17.2	C
		TR	0.85	16.3	C	TR	0.29	8.8	B
	SB	L	0.01	19.7	C	L	0.01	19.7	C
		T	0.29	21.1	C	T	1.14	111.9	F
		R	0.12	20.2	C	R	0.49	10.4	B
Long Island Avenue	EB	L	0.37	19.4	C	L	0.47	21.0	C
		T	0.25	18.5	C	T	0.10	17.7	C
		R	0.71	25.5	D	R	0.97	51.9	E
	WB	L	0.44	15.5	C	L	1.30	216.4	F*
		T	0.07	11.2	B	T	0.18	11.8	B
		R	0.02	11.0	B	R	0.01	10.9	B
Overall Intersection		-	**0.73**	**16.7**	**C**	-	**1.12**	**77.6**	**F**
31 Executive Drive & Pine Aire Drive									
Executive Drive	SB	L	1.03	65.8	F	L	1.16	122.2	F*
		LR	0.22	18.3	C	LR	1.16	121.9	F*
Pine Aire Drive	EB	L	0.56	14.5	B	L	0.25	11.1	B
		T	0.35	4.7	A	T	0.90	19.6	C
	WB	LT	0.85	23.3	C	LT	1.19	148.2	F*
		R	1.54	830.9	F*	R	0.67	12.0	B
Overall Intersection		-	**0.86**	**391.3**	**F***	-	**0.99**	**73.3**	**F**

Table L - 5
2020 BUILD LIRR STATION AREA LEVELS OF SERVICE

INTERSECTION & APPROACH		A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS
RONKONKOMA									
36 Hawkins Avenue & Union Avenue									
Hawkins Avenue	NB	TR	0.57	11.4	B	TR	1.07	54.3	E
	SB	L	1.26	184.5	F*	L	1.26	208.1	F*
		T	0.63	4.8	A	T	0.28	2.4	A
Union Avenue	WB	L	0.43	17.7	C	L	0.32	20.5	C
		R	0.53	10.1	B	R	0.79	21.9	C
Overall Intersection		**-**	**1.31**	**57.8**	**E**	**-**	**1.59**	**62.5**	**F**
37 Hawkins Avenue & LIE North Service Road									
Hawkins Avenue	NB	L	0.99	72.3	F	L	0.58	34.0	D
		T	0.45	20.8	C	T	0.47	16.8	C
	SB	TR	1.10	92.8	F*	TR	0.75	28.6	D
L.I.E. North Service Road	WB	LTR	1.28	186.7	F*	LTR	0.49	14.8	B
Overall Intersection		**-**	**1.21**	**154.3**	**F***	**-**	**0.66**	**20.3**	**C**
38 Hawkins Avenue & LIE South Service Road									
Hawkins Avenue	NB	TR	0.71	25.1	D	TR	1.39	304.7	F*
	SB	L	1.40	348.1	F*	L	0.72	30.5	D
		T	0.75	21.8	C	T	0.28	14.5	B
L.I.E. South Service Road	EB	LT	0.36	11.8	B	LT	1.20	125.1	F*
Overall Intersection		**-**	**0.70**	**49.1**	**E**	**-**	**1.13**	**148.0**	**F***
39 Ronkonkoma Avenue Ramp/LIRR Parking Lot & Railroad Avenue									
LIRR Parking Lot	NB	L	0.03	12.2	B	L	0.11	12.4	B
		TR	0.01	12.2	B	TR	0.29	13.1	B
Ronkonkoma Avenue Ramp	SB	L	0.28	13.0	B	L	0.34	13.4	B
		TR	0.06	12.3	B	TR	0.06	12.3	B
Railroad Avenue	EB	L	0.13	2.0	A	L	0.12	2.0	A
		T	0.30	2.4	A	T	0.54	3.3	A
		R	0.02	1.9	A	R	0.01	1.9	A
	WB	L	0.04	1.9	A	L	0.01	1.9	A
		TR	0.77	6.4	B	TR	0.45	2.9	A
Overall Intersection		**-**	**0.66**	**5.8**	**B**	**-**	**0.49**	**4.8**	**A**

Notes

(1) Delay is measured in seconds per vehicle.

(2) Level of service for signalized intersections is based upon average stopped delay per vehicle (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(3) Level of Service for unsignalized intersections is based upon average total delay (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(4) Asterick (*) indicates that Delay and Levels of Service are not meaningful when v/c is greater than 1.2 or 1/PHF. Also it is beyond the scope of HCM to assess delay for an approach which operates at oversaturated conditions.

TABLE L-6

2010 MITIGATED BUILD LIRR STATIONS TRAFFIC AM LEVELS OF SERVICE

TABLE L - 6
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (AM PEAK HOUR)

INTERSECTION & APPROACH		2010 AM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
GREAT NECK														
1 Middle Neck Road & North Station Plaza														
Middle Neck Road	NB	L	1.03	*	F*	L				L	1.03	68.6	F	- Modify signal timing (shift 1 sec. green time from NB/SB phase to exclusive NB phase)
		TR	0.44	8.4	B	TR	0.44	8.4	B	TR	0.44	8.4	B	
	SB	LTR	0.74	15.4	C	LTR	0.87	21.2	C	LTR	0.89	23.7	C	
North Station Plaza	EB	L	0.26	11.8	B	L	0.29	12.0	B	L	0.29	12.0	B	- Restripe WB approach from one 11 ft. left lane and one 16 ft. thru lane to one 14 ft. left lane and one 13 ft. thru lane
		TR	0.50	13.5	B	TR	0.52	13.7	B	TR	0.52	13.7	B	
	WB	L	0.69	21.5	C	L				L	0.74	24.3	C	
		TR	0.25	11.6	B	TR	0.27	11.8	B	TR	0.30	11.9	B	
Overall Intersection		-	*	*	F*	-	*	*	F*	-	**0.89**	**20.9**	**C**	
2 Middle Neck Road & South Station Plaza														
Middle Neck Road	NB	L	1.19	*	F*	L				L	1.20	168.6	F	- Restripe NB approach from one 10 ft. left lane and one 12 ft. thru lane to two 11 ft. lanes
		TR	0.49	7.7	B	TR	0.50	7.8	B	TR	0.51	7.9	B	
	SB	L	0.83	31.4	D	L	0.84	33.1	D	L	0.84	33.1	D	
		TR	0.45	7.5	B	TR	0.46	7.5	B	TR	0.46	7.5	B	
South Station Plaza	EB	DfL	0.91	41.4	E	DfL	0.91	42.1	E	DfL	0.91	42.1	E	
		TR	0.52	15.1	C	TR	0.53	15.3	C	TR	0.53	15.3	C	
	WB	L	0.27	13.1	B	L	0.31	13.4	B	L	0.31	13.4	B	
		TR	0.52	15.1	C	TR	0.52	15.1	C	TR	0.52	15.1	C	
Overall Intersection		-	*	*	F*	-	*	*	F*	-	**1.08**	**23.1**	**C**	
HEMPSTEAD														
3 Main Street & West Columbia Street														
Main Street	NB	LT	0.31	4.4	A	LT	0.31	4.4	A					- Mitigation not required
		R	0.10	3.7	A	R	0.10	3.7	A					
	SB	LTR	0.43	5.1	B	LTR	0.43	5.2	B					
West Columbia Street	EB	LTR	0.35	18.5	C	LTR	0.35	18.5	C					
	WB	LTR	0.85	34.1	D	LTR	0.85	34.1	D					
Overall Intersection		-	**0.55**	**13.8**	**B**	-	**0.55**	**13.8**	**B**					
4 Main Street & Fulton Street (NYS Rt. 24)														
Main Street	NB	TR	0.59	18.1	C	TR	0.59	18.1	C					- Mitigation not required
	SB	TR	0.56	18.5	C	TR	0.56	18.5	C					
Fulton Street (NYS Rt.24)	EB	TR	0.57	4.2	A	TR	0.57	4.2	A					
	WB	TR	0.43	3.5	A	TR	0.43	3.5	A					
Overall Intersection		-	**0.58**	**8.3**	**B**	-	**0.58**	**8.3**	**B**					

TABLE L - 6 (continued)
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (AM PEAK HOUR)

INTERSECTION & APPROACH		2010 AM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
5 Fulton Street (NYS Rt. 24) & Washington Ave.														
Washington Avenue	NB	L	0.08	11.5	B	L	0.08	11.5	B					- Mitigation not required
		TR	0.94	26.1	D	TR	0.94	26.8	D					
	SB	L	0.50	19.3	C	L	0.50	19.4	C					
		TR	0.68	16.1	C	TR	0.68	16.1	C					
Fulton Street (NYS Rt. 24)	EB	LTR	1.04	41.3	E	LTR	1.04	41.3	E					
	WB	LT	1.13	*	F*	LT	1.13	*	F*					
		R	0.59	11.5	B	R	0.60	11.7	B					
Overall Intersection		-	*	*	F*	-	*	*	F*					
HICKSVILLE														
6 Newbridge Road (NYS Rt. 106) & West John Street														
Newbridge Road (NYS Rt. 106)	NB	L	0.96	57.2	E	L	0.96	57.3	E					- Mitigation not required
		T	0.41	9.9	B	T	0.41	9.9	B					
		R	0.08	7.9	B	R	0.08	7.9	B					
	SB	L	0.13	13.2	B	L	0.13	13.2	B					
		T	0.84	22.8	C	T	0.85	23.1	C					
		R	0.49	16.3	C	R	0.49	16.3	C					
West John Street	EB	L	0.80	30.3	D	L	0.80	30.3	D					
		T	0.40	23.9	C	T	0.40	23.9	C					
		R	0.43	24.4	C	R	0.43	24.4	C					
	WB	L	0.69	21.0	C	L	0.70	21.2	C					
		TR	0.85	32.7	D	TR	0.85	32.7	D					
Overall Intersection		-	**0.87**	**23.6**	**C**	-	**0.87**	**23.7**	**C**					
7 Newbridge Road (NYS Rt. 106) & Duffy Avenue														
Newbridge Road (NYS Rt. 106)	NB	L	0.87	37.1	D	L	[redacted]			L	0.87	36.8	D	- Modify signal timing (shift 1 sec. green time from existing actuated NB/SB phase to existing actuated NB/SB left turn phase)
		T	0.56	18.0	C	T	0.57	18.0	C	T	0.58	18.5	C	
		R	0.06	13.9	B	R	0.06	14.0	B	R	0.06	14.4	B	
	SB	L	0.19	9.5	B	L	0.19	9.5	B	L	0.18	9.5	B	
		T	0.73	20.6	C	T	0.74	20.8	C	T	0.76	21.6	C	
		R	1.00	50.5	E	R	1.00	52.7	E	R	1.03	59.5	E	
Duffy Avenue	EB	L	0.39	16.5	C	L	0.40	16.6	C	L	0.40	16.6	C	
		T	0.11	13.9	B	T	0.12	13.9	B	T	0.12	13.9	B	
		R	0.13	14.0	B	R	0.13	14.0	B	R	0.13	14.0	B	
	WB	LTR	0.94	46.7	E	LTR	0.98	54.2	E	LTR	0.98	54.2	E	
Overall Intersection		-	**0.96**	**28.5**	**D**	-	**0.98**	**30.4**	**D**	-	**0.99**	**31.4**	**D**	

TABLE L - 6 (continued)
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (AM PEAK HOUR)

INTERSECTION & APPROACH		2010 AM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
8 Broadway (NYS Rt 107) & East John Street														
Broadway (NYS Rt 107)	NB	L	0.83	49.2	E	L	0.83	49.2	E					- Mitigation not required
		TR	0.49	7.9	B	TR	0.49	7.9	B					
	SB	L	0.31	12.9	B	L	0.31	12.9	B					
		TR	0.35	12.6	B	TR	0.35	12.6	B					
East John Street	EB	L	0.35	24.8	C	L	0.35	24.8	C					
		T	0.26	29.0	D	T	0.26	29.0	D					
		R	0.36	25.4	D	R	0.36	25.4	D					
	WB	LTR	0.76	36.0	D	LTR	0.76	36.1	D					
Overall Intersection		-	**0.56**	**20.9**	**C**	-	**0.56**	**20.9**	**C**					
9 Bay Avenue & East Barclay Street/Woodbury Road														
Bay Avenue	NB	LTR	0.28	20.1	C	LTR	0.28	20.1	C					- Mitigation not required
	SB	L	0.37	17.2	C	L	0.37	17.2	C					
		LT	0.41	17.5	C	LT	0.41	17.5	C					
East Barclay Street	EB	LTR	0.23	6.7	B	LTR	0.24	6.7	B					
Woodbury Road	WB	LT	0.37	7.3	B	LT	0.37	7.3	B					
		R	0.47	2.1	A	R	0.47	2.1	A					
Overall Intersection		-	**0.44**	**8.3**	**B**	-	**0.44**	**8.3**	**B**					
MALVERNE														
10 Hempstead Avenue & Nassau Avenue/Francis Street – LIRR Entrance														
Hempstead Avenue	NB	LTR	0.94	25.0	C	LTR	0.95	25.2	D					- Mitigation not required
	SB	LTR	0.53	7.3	B	LTR	0.54	7.4	B					
Nassau Avenue	EB	LTR	0.18	10.1	B	LTR	0.18	10.1	B					
Francis Street - LIRR Entrance	WB	LTR	0.20	10.2	B	LTR	0.20	10.2	B					
Overall Intersection		-	**0.65**	**17.1**	**C**	-	**0.65**	**17.2**	**C**					
11 Hempstead Avenue & Utterby Road														
Hempstead Avenue	NB	TR	0.90	25.8	D	TR	0.90	25.8	D					- Mitigation not required
	SB	LT	0.57	6.7	B	LT	0.57	6.7	B					
Utterby Road	WB	L	0.20	20.2	C	L	0.20	20.2	C					
		R	0.77	33.0	D	R	0.77	33.0	D					
Overall Intersection		-	**0.50**	**18.0**	**C**	-	**0.50**	**18.0**	**C**					
LONG BEACH														
12a LIRR Parking Lot Exit & West Park Avenue														
LIRR Parking Lot Exit	SB	L	0.12	14.5	B	L	0.12	14.5	B					- Mitigation not required
West Park Avenue	EB	T	0.43	6.5	B	T	0.43	6.5	B					
Overall Intersection		-	**0.32**	**7.2**	**B**	-	**0.32**	**7.2**	**B**					

TABLE L - 6 (continued)
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (AM PEAK HOUR)

INTERSECTION & APPROACH		2010 AM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
12b LIRR Parking Lot Exit & West Park Avenue														
LIRR Parking Lot Exit	SB	TR	0.17	14.8	B	TR	0.17	14.8	B					- Mitigation not required
West Park Avenue	WB	LT	0.45	6.6	B	LT	0.45	6.6	B					
Overall Intersection		-	**0.35**	**7.6**	**B**	-	**0.35**	**7.6**	**B**					
13 Center Street & West Park Avenue														
Center Street	NB	LT	0.09	14.4	B	LT	0.09	14.4	B					- Mitigation not required
West Park Avenue	WB	TR	0.43	6.5	B	TR	0.43	6.5	B					
Overall Intersection		-	**0.31**	**7.1**	**B**	-	**0.31**	**7.1**	**B**					
14a Edwards Boulevard & West Park Avenue														
Edwards Boulevard	NB	TR	0.14	14.6	B	TR	0.14	14.6	B					- Mitigation not required
	SB	DfL	0.03	14.1	B	DfL	0.03	14.1	B					
		T	0.02	14.0	B	T	0.02	14.0	B					
West Park Avenue	EB	LTR	0.51	7.0	B	LTR	0.51	7.0	B					
Overall Intersection		-	**0.38**	**7.8**	**B**	-	**0.38**	**7.8**	**B**					
14b Edwards Boulevard & West Park Avenue														
Edwards Boulevard	NB	L	0.11	14.5	B	L	0.11	14.5	B					- Mitigation not required
West Park Avenue	WB	LT	0.48	6.9	B	LT	0.48	6.9	B					
Overall Intersection		-	**0.35**	**7.8**	**B**	-	**0.35**	**7.8**	**B**					
BAYSIDE														
15 Northern Boulevard (NYS Rt. 25A) & Bell Boulevard														
Bell Boulevard	NB	LTR	1.06	*	F*	LTR				LTR	1.03	68.5	F	- Prohibit parking on the NB approach
	SB	LTR	0.60	26.4	D	LTR	0.62	26.7	D	LTR	0.64	27.5	D	- Restripe the EB approach from three
Northern Boulevard (NYS Rt. 25A)	EB	DfL	0.70	25.2	D	DfL				DfL	0.74	29.3	D	through lanes with a shared left turn plus
		T	0.65	5.8	B	T	0.65	5.8	B	T	0.64	5.3	B	one right turn lane, to one left turn only lane,
		R	0.19	3.7	A	R	0.19	3.7	A	R	0.19	3.4	A	two through lanes, and one right turn lane
	WB	L	0.79	22.6	C	L	0.79	22.6	C	L	0.76	19.1	C	- Modify signal timing (take 2 sec. green
		T	0.83	8.3	B	T	0.83	8.3	B	T	0.82	7.6	B	from SB only phase and give 1 sec.
		R	0.16	3.6	A	R	0.17	3.7	A	R	0.16	3.3	A	green time to EB/WB phase and 1 sec.
														green time to NB/SB phase)
Overall Intersection		-	*	*	F*	-	*	*	F*	-	**0.76**	**16.5**	**C**	

TABLE L - 6 (continued)
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (AM PEAK HOUR)

INTERSECTION & APPROACH		2010 AM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
16 Bell Boulevard & 41st Avenue														
Bell Boulevard	NB	LTR	1.08	63.7	F	LTR				L	0.40	5.4	B	- Modify signal timing (shift 4 sec. green time from EB/WB phase to NB/SB phase)
		LTR	0.65	8.8	B					TR	0.77	9.8	B	
	SB	LTR	0.53	12.4	B	LTR	0.68	9.3	B	LTR	0.60	6.4	B	
41st Avenue	EB	LTR	0.31	10.5	B	LTR	0.55	12.6	B	LTR	0.67	17.6	C	- Restripe NB approach from one 20' lane to one 11' exclusive left turn lane and one 11' through/right lane by shifting the centerline 2' to the west
	WB					LTR	0.37	10.9	B	LTR	0.48	14.2	B	
Overall Intersection		-	**0.86**	**33.7**	**D**	-				-	**0.74**	**9.7**	**B**	
MINEOLA														
17 Mineola Boulevard & Old Country Boulevard														
Mineola Boulevard	NB	L	0.98	50.2	E	L	0.98	51.2	E					- Mitigation not required
		TR	1.04	52.4	E	TR	1.04	52.7	E					
	SB	L	0.93	41.6	E	L	0.94	42.4	E					
		TR	0.70	18.8	C	TR	0.70	18.8	C					
Old Country Road	EB	L	0.70	16.5	C	L	0.70	16.6	C					
		TR	1.06	57.4	E	TR	1.06	57.4	E					
	WB	L	0.90	36.1	D	L	0.90	36.1	D					
		T	0.74	19.7	C	T	0.75	19.8	C					
		R	0.54	17.4	C	R	0.55	17.4	C					
Overall Intersection		-	**1.00**	**38.7**	**D**	-	**1.00**	**38.9**	**D**					
18 Mineola Boulevard & 2nd Street														
Mineola Boulevard	NB	L	1.08	*	F*	L	1.09	*	F*					- Mitigation not required
		TR	0.36	4.7	A	TR	0.36	4.7	A					
	SB	L	0.14	4.0	A	L	0.14	4.0	A					
		TR	0.95	21.4	C	TR	0.95	22.1	C					
2nd Street	EB	L	0.12	11.0	B	L	0.12	11.0	B					
		TR	0.68	16.1	C	TR	0.69	16.2	C					
	WB	LTR	1.21	*	F*	LTR	1.22	*	F*					
Overall Intersection		-	*	*	**F***	-	*	*	**F***					
PORT WASHINGTON														
19 Main Street & LIRR Parking Entrance[3]														
Main Street	WB	L		9.2	B	L		11.1	C					- Mitigation not required
Overall Intersection		-		**0.6**	**A**	-		**0.9**	**A**					

TABLE L - 6 (continued)
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (AM PEAK HOUR)

INTERSECTION & APPROACH		2010 AM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
20 Main Street & Port Washington Boulevard (NYS Rte. 101)														
Port Washington Boulevard (NYS Rt. 101)	NB	L	1.23	*	F*	L	[redacted]			L	1.23	176.3	F	- Modify signal timing (shift 1 sec. green time from pretimed NB/SB phase to existing acuated EB/WB phase; shift 2 sec. green time from NB/SB phase to existing actuated NB only phase)
		TR	0.40	2.7	A	TR	0.40	2.7	A	TR	0.40	3.0	A	
	SB	L	0.33	9.0	B	L	0.33	9.0	B	L	0.35	10.6	B	
		TR	0.53	10.0	B	TR	0.54	10.1	B	TR	0.57	11.9	B	
Main Street	EB	LT	1.20	*	F*	LT	[redacted]			LT	1.19	162.9	F	
		R	0.45	18.9	C	R	0.45	19.0	C	R	0.43	17.3	C	
	WB	LTR	0.62	31.2	D	LTR	0.64	31.9	D	LTR	0.61	30.3	D	
Overall Intersection		-	*	*	F*	-	*	*	F*	-	**1.47**	**46.0**	**E**	
VALLEY STREAM														
21 South Franklin Avenue & Merrick Road														
South Franklin Avenue	NB	LR	0.49	15.3	C	LTR	0.49	15.3	C					- Mitigation not required
	SB	LTR	0.26	13.3	B	LTR	0.26	13.3	B					
Merrick Road	EB	TR	0.42	5.3	B	TR	0.42	5.3	B					
	WB	LT	0.61	6.7	B	LT	0.61	6.8	B					
Overall Intersection		-	**0.57**	**7.7**	**B**	-	**0.57**	**7.7**	**B**					
22 South Franklin Avenue & West Hawthorne Avenue														
South Franklin Avenue	NB	LT	0.19	7.2	B	LT	0.20	7.2	B					- Mitigation not required
	SB	TR	0.15	7.0	B	TR	0.15	7.0	B					
West Hawthorne Avenue	EB	LR	0.18	10.1	B	LR	0.18	10.1	B					
	WB	LTR	0.17	10.1	B	LTR	0.18	10.1	B					
Overall Intersection		-	**0.19**	**8.2**	**B**	-	**0.19**	**8.2**	**B**					
23 South Franklin Avenue & Sunrise Highway (NYS Rt.27)														
South Franklin Avenue	NB	LTR	0.45	32.7	D	LTR	0.46	32.7	D					- Mitigation not required
	SB	L	0.78	51.6	E	L	0.81	54.4	E					
		R	0.23	30.8	D	R	0.23	30.8	D					
Sunrise Highway (NYS Rt. 27)	EB	L	0.28	4.5	A	L	0.29	4.6	A					
		T	0.38	4.6	A	T	0.38	4.6	A					
	WB	T	0.46	5.1	B	T	0.46	5.1	B					
		R	0.08	3.5	A	R	0.08	3.5	A					
Overall Intersection		-	**0.53**	**9.3**	**B**	-	**0.54**	**9.4**	**B**					
MERRICK														
24 Merrick Avenue & Broadcast Plaza[3]														
Merrick Avenue	NB	L		4.6	A	L		4.6	A					- Mitigation not required
Broadcast Plaza	EB	LR		7.5	B	LR		7.6	B					
Overall Intersection		-		**0.9**	**A**	-		**0.9**	**A**					

TABLE L - 6 (continued)
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (AM PEAK HOUR)

INTERSECTION & APPROACH		2010 AM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
25 Merrick Avenue & Smith Street														
Merrick Avenue	NB	L	0.61	22.9	C	L	0.61	22.9	C					- Mitigation not required
		TR	0.85	25.2	D	TR	0.86	25.4	D					
	SB	L	0.22	9.5	B	L	0.22	9.5	B					
		TR	1.00	41.7	E	TR	1.01	44.5	E					
Smith Street	EB	L	0.52	11.2	B	L	0.52	11.2	B					
		TR	0.34	13.8	B	TR	0.34	13.8	B					
	WB	L	0.18	8.0	B	L	0.18	8.0	B					
		TR	0.86	26.8	D	TR	0.86	26.8	D					
Overall Intersection		-	**0.93**	**27.7**	**D**	-	**0.93**	**28.6**	**D**					
26 Merrick Avenue & Sunrise Highway (NYS Rt. 27)														
Merrick Avenue	NB	L	0.45	31.0	D	L	0.45	31.1	D					- Mitigation not required
		TR	0.63	33.6	D	TR	0.65	34.0	D					
	SB	L	0.50	24.0	C	L	0.52	24.2	C					
		T	0.34	22.6	C	T	0.34	22.6	C					
		R	0.31	22.4	C	R	0.32	22.4	C					
Sunrise Highway (NYS Rt. 27)	EB	L	0.56	37.5	D	L	0.56	37.5	D					
		T	0.89	27.0	D	T	0.89	27.0	D					
		R	0.03	14.2	B	R	0.03	14.2	B					
	WB	L	0.25	33.5	D	L	0.25	33.5	D					
		T	1.11	*	F*	T	1.11	*	F*					
		R	0.10	14.7	B	R	0.10	14.7	B					
Overall Intersection		-	*	*	**F***	-	*	*	**F***					
BABYLON														
27 Deer Park Avenue & Railroad Avenue[3]														
Deer Park Avenue	NB	L		6.6	B	L		6.9	B	LT	0.50	4.5	A	- Install a traffic signal
	SB	L		47.3	E					TR	0.74	10.9	B	
Railroad Avenue	EB	R		6.6	B	L		[redacted]		L	0.46	19.5	C	
						R		6.7	B	R	0.50	20.1	C	
Overall Intersection		-		**6.9**	**B**	-		**8.6**	**B**	-	**0.50**	**11.1**	**B**	
28 Deer Park Avenue & Park Avenue														
Deer Park Avenue	NB	LT	0.41	5.4	B	LT	0.43	5.5	B	LT	0.36	5.2	B	- Eliminate four 15 minute parking spaces
	SB	TR	1.08	*	F*	TR	[redacted]			T	0.53	6.2	B	on the SB approach and restripe SB
Park Avenue		LR	0.82	17.5	C					R	0.50	6.1	B	approach from one 13 ft. lane to two
	EB					LR	0.82	17.6	C	LTR	0.82	17.6	C	10 ft. lanes
		-	*	*	**F***									
Overall Intersection						-	[redacted]			-	**0.65**	**9.0**	**B**	

TABLE L - 6 (continued)
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (AM PEAK HOUR)

INTERSECTION & APPROACH		2010 AM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
29 Deer Park Avenue/Fire Island Avenue & West Main Street/East Main Street														
Fire Island Avenue	NB	LTR	0.68	28.6	D	LTR	0.69	29.0	D					- Mitigation not required
Deer Park Avenue	SB	DfL	0.72	33.7	D	DfL	0.74	35.5	D					
		TR	0.55	25.4	D	TR	0.56	25.4	D					
West Main Street	EB	L	0.54	15.8	C	L	0.54	16.0	C					
		TR	0.65	6.5	B	TR	0.65	6.5	B					
East Main Street	WB	L	0.15	5.8	B	L	0.15	5.8	B					
		TR	0.89	18.5	C	TR	0.90	19.3	C					
Overall Intersection		-	**0.85**	**16.7**	**C**	-	**0.86**	**17.2**	**C**					
DEER PARK														
30 Executive Drive & Long Island Avenue														
Executive Drive	NB	L	0.50	10.0	B	L	0.54	10.3	B					- Mitigation not required
		TR	0.70	12.5	B	TR	0.70	12.5	B					
	SB	L	0.01	19.7	C	L	0.01	19.7	C					
		T	0.24	20.8	C	T	0.24	20.8	C					
		R	0.10	20.1	C	R	0.10	20.1	C					
Long Island Avenue	EB	L	0.29	18.8	C	L	0.29	18.8	C					
		T	0.20	18.2	C	T	0.20	18.2	C					
		R	0.57	21.9	C	R	0.58	22.2	C					
	WB	L	0.34	13.8	B	L	0.34	13.8	B					
		T	0.06	11.2	B	T	0.06	11.2	B					
		R	0.02	11.0	B	R	0.02	11.0	B					
Overall Intersection		-	**0.57**	**14.1**	**B**	-	**0.57**	**14.1**	**B**					
31 Executive Drive & Pine Aire Drive														
Executive Drive	SB	L	0.50	20.7	C	L	0.51	20.8	C	L	0.36	17.1	C	- Modify signal timing (shift 5 sec. green time from existing actuated EB only phase to existing actuated SB/WB right turn phase)
		LR	0.51	20.8	C	LR	0.51	20.9	C	LR	0.51	18.5	C	
Pine Aire Drive	EB	L	0.45	10.4	B	L	0.46	10.8	B	L	0.56	13.5	B	
		T	0.29	4.4	A	T	0.29	4.4	A	T	0.31	5.8	B	
	WB	LT	0.70	17.3	C	LT	0.70	17.3	C	LT	0.70	17.3	C	
		R	1.23	*	F*	R				R	1.16	106.1	F	
Overall Intersection		-	*	*	**F***	-				-	**0.63**	**55.7**	**E**	

TABLE L - 6 (continued)
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (AM PEAK HOUR)

INTERSECTION & APPROACH		2010 AM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
HUNTINGTON														
32 New York Avenue (NYS Rt. 110) & Railroad Street/Broadway														
New York Avenue (NYS Rt. 110)	NB	L	0.46	9.8	B	L	0.46	9.8	B					- Mitigation not required
		T	0.54	17.3	C	T	0.54	17.3	C					
		R	0.30	15.0	B	R	0.31	15.0	B					
	SB	L	0.66	14.6	B	L	0.69	15.9	C					
		T	0.45	16.3	C	T	0.45	16.3	C					
		R	0.17	14.0	B	R	0.18	14.0	B					
Railroad Street	EB	L	0.82	62.3	F	L	0.82	62.3	F					
		TR	0.84	40.9	E	TR	0.85	41.6	E					
Broadway	WB	L	0.88	35.8	D	L	0.89	36.7	D					
		T	0.76	26.1	D	T	0.76	26.1	D					
		R	0.45	20.4	C	R	0.45	20.4	C					
Overall Intersection		-	**0.74**	**22.0**	**C**	-	**0.74**	**22.2**	**C**					
33 Park Avenue & Broadway														
Park Avenue	NB	L	1.23	*	F*	L				L	0.97	41.0	E	- Modify signal timing (shift 5 sec. green
		T	0.39	2.5	A	T	0.39	2.5	A	T	0.39	2.5	A	time from NB/SB phase to exclusive
	SB	T	0.53	10.6	B	T	0.53	10.7	B	T	0.65	14.1	B	NB phase)
Broadway	EB	L	0.38	19.9	C	L	0.38	20.0	C	L	0.39	20.0	C	
Overall Intersection		-	*	*	**F***	-	*	*	**F***	-	**0.71**	**15.5**	**C**	
PORT JEFFERSON														
34 Main Street (NYS Rt. 25A) & LIRR Parking Entrance[3]														
Main Street	NB	L		6.5	B	L		6.5	B					- Mitigation not required
	SB	L		10.4	C	L		10.4	C					
Overall Intersection		-		**0.3**	**A**	-		**0.3**	**A**					
35 Main Street (NYS Rt. 25A) & North Country Road														
Main Street (NYS Rt. 25A)	NB	LTR	1.37	*	F*	LTR	1.37	*	F*					- Mitigation not required
	SB	L	0.45	8.8	B	L	0.45	8.8	B					
		TR	0.38	6.7	B	TR	0.38	6.7	B					
Sheep Pasture Road	EB	LTR	0.38	24.2	C	LTR	0.38	24.2	C					
North Country Road	WB	L	1.31	*	F*	L	1.31	*	F*					
		TR	0.52	19.8	C	TR	0.52	19.8	C					
Overall Intersection		-	*	*	**F***	-	*	*	**F***					

TABLE L - 6 (continued)
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (AM PEAK HOUR)

INTERSECTION & APPROACH		2010 AM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 AM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
RONKONKOMA														
36 Hawkins Avenue & Union Avenue														
Hawkins Avenue	NB	TR	0.45	10.2	B	TR	0.47	10.3	B					- Mitigation not required
	SB	L	0.92	22.1	C	L	0.94	24.8	C					
		T	0.45	3.6	A	T	0.52	4.0	A					
Union Avenue	WB	L	0.33	17.0	C	L	0.36	17.1	C					
		R	0.42	9.1	B	R	0.42	9.1	B					
Overall Intersection		-	**0.73**	**11.7**	**B**	-	**0.75**	**12.2**	**B**					
37 Hawkins Avenue & LIE North Service Road														
Hawkins Avenue	NB	L	0.82	42.4	E	L	0.82	42.6	E	L	0.87	49.7	E	- Modify signal timing (shift 1 sec.
		T	0.37	20.1	C	T	0.37	20.2	C	T	0.37	20.2	C	green time from NB only phase to
	SB	TR	0.84	35.3	D	TR	[illegible]	[illegible]	[illegible]	TR	0.86	35.9	D	NB/SB phase)
L.I.E. North Service Road	WB	LTR	1.04	35.4	D	LTR	1.05	39.5	D	LTR	1.05	39.5	D	
Overall Intersection		-	**0.99**	**34.3**	**D**	-	**1.00**	**38.0**	**D**	-	**1.01**	**37.8**	**D**	
38 Hawkins Avenue & LIE South Service Road														
Hawkins Avenue	NB	TR	0.58	22.8	C	TR	0.58	23.0	C					- Mitigation not required
	SB	L	1.06	99.9	F	L	1.07	106.2	F					
		T	0.56	18.6	C	T	0.62	19.4	C					
L.I.E. South Service Road	EB	LT	0.30	11.3	B	LT	0.30	11.3	B					
Overall Intersection		-	**0.62**	**25.1**	**D**	-	**0.62**	**25.7**	**D**					
39 Ronkonkoma Avenue Ramp/LIRR Parking Lot & Railroad Avenue														
LIRR Parking Lot	NB	L	0.03	12.2	B	L	0.03	12.2	B					- Mitigation not required
		TR	0.01	12.2	B	TR	0.01	12.2	B					
Ronkonkoma Avenue Ramp	SB	L	0.22	12.8	B	L	0.23	12.8	B					
		TR	0.04	12.2	B	TR	0.04	12.3	B					
Railroad Avenue	EB	L	0.09	2.0	A	L	0.10	2.0	A					
		T	0.24	2.2	A	T	0.25	2.3	A					
		R	0.01	1.9	A	R	0.02	1.9	A					
	WB	L	0.01	1.8	A	L	0.03	1.9	A					
		TR	0.62	3.9	A	TR	0.64	4.2	A					
Overall Intersection		-	**0.52**	**4.2**	**A**	-	**0.54**	**4.3**	**A**					

Notes

(1) Delay is measured in seconds per vehicle.

(2) Level of service for signalized intersections is based upon average stopped delay per vehicle (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(3) Level of Service for unsignalized intersections is based upon average total delay (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

TABLE L-7

2020 MITIGATED BUILD LIRR STATIONS TRAFFIC AM LEVELS OF SERVICE

Table L - 7
2020 MITIGATION LIRR STATION AREA LEVELS OF SERVICE (AM PEAK HOUR)

INTERSECTION & APPROACH		2020 No Build A.M. Peak Hour				2020 Build A.M. Peak Hour				2020 Mitigation A.M. Peak Hour				2020 Mitigation Measure
		Mvt.	V/C	Avg. Stopped Delay	LOS	Mvt.	V/C	Avg. Stopped Delay	LOS	Mvt.	V/C	Avg. Stopped Delay	LOS	
GREAT NECK														
1 Middle Neck Road & North Station Plaza														
Middle Neck Road	NB	L	1.20	159.1	F	L	1.26	200.1	F*	L	1.17	136.5	F	- Modify signal timing (shift 3 sec. green time from NB/SB phase to EB/WB phase).
		TR	0.47	8.7	B	TR	0.47	8.7	B	T	0.38	9.1	B	
		-	-	-	-	-	-	-	-	R	0.21	8.2	B	
	SB	LTR	0.84	19.0	C	LTR	0.98	36.1	D	LT	0.79	18.2	C	- Prohibit parking for the NB approach and add a 9 ft. right turn lane.
		-	-	-	-	-	-	-	-	R	0.15	10.4	B	
North Station Plaza	EB	L	0.31	12.1	B	L	0.34	12.4	B	L	0.31	10.9	B	- Prohibit parking for the SB approach and add a 9 ft. right turn lane.
		TR	0.54	13.9	B	TR	0.56	14.2	B	TR	0.51	12.5	B	
	WB	L	0.83	35.9	D	L	1.00	74.6	F	L	0.78	26.5	D	- Restripe WB approach from one 11 ft. left lane and one 16 ft. thru lane to one 14 ft. left lane and one 13 ft. thru lane.
		TR	0.27	11.7	B	TR	0.29	11.9	B	TR	0.30	10.7	B	
Overall Intersection		-	**0.96**	**39.3**	**D**	-	**1.04**	**48.7**	**E**	-	**0.93**	**26.1**	**D**	
2 Middle Neck Road & South Station Plaza														
Middle Neck Road	NB	L	1.55	570.1	F*	L	1.62	701.1	F*	L	1.56	517.1	F	- Restripe NB approach from one 10 ft. left lane and one 12 ft. thru lane to two 11 ft. lanes.
		TR	0.53	8.0	B	TR	0.53	8.1	B	TR	0.55	8.2	B	
	SB	L	1.06	95.4	F	L	1.07	99.7	F	L	1.07	99.7	F	
		TR	0.49	7.7	B	TR	0.50	7.8	B	TR	0.50	7.8	B	
South Station Plaza	EB	D/L	1.06	85.4	F	D/L	1.07	87.2	F	D/L	1.07	87.2	F	
		TR	0.56	15.6	C	TR	0.57	15.9	C	TR	0.57	15.9	C	
	WB	L	0.31	13.5	B	L	0.37	14.0	B	L	0.37	14.0	B	
		TR	0.55	15.6	C	TR	0.56	15.6	C	TR	0.56	15.6	C	
Overall Intersection		-	**1.36**	**55.9**	**E**	-	**1.40**	**64.2**	**F**	-	**1.37**	**52.3**	**E**	
HICKSVILLE														
6 Newbridge Road (NYS Rt. 106) & West John Street														
Newbridge Road (NYS Rt. 106)	NB	L	1.05	82.1	F	L	1.05	82.1	F	L	1.05	82.4	F	- Modify signal timing (shift 1 sec. green time from NB/SB phase to EB/WB left turn phase)
		T	0.44	10.1	B	T	0.44	10.1	B	T	0.45	10.5	B	
		R	0.08	7.9	B	R	0.08	7.9	B	R	0.09	8.2	B	
	SB	L	0.15	13.4	B	L	0.15	13.4	B	L	0.15	13.8	B	
		T	0.91	26.4	D	T	0.92	27.2	D	T	0.93	29.4	D	
		R	0.53	16.8	C	R	0.53	16.8	C	R	0.54	17.4	C	
West John Street	EB	L	0.86	36.9	D	L	0.87	38.1	D	L	0.82	32.1	D	
		T	0.43	24.2	C	T	0.43	24.2	C	T	0.43	24.2	C	
		R	0.46	24.8	C	R	0.46	24.8	C	R	0.46	24.8	C	
	WB	L	0.77	24.7	C	L	0.78	24.3	C	L	0.75	22.8	C	
		TR	0.92	37.7	D	TR	0.92	37.7	D	TR	0.92	37.7	D	
Overall Intersection		-	**1.06**	**27.4**	**D**	-	**1.06**	**27.6**	**D**	-	**1.06**	**28.1**	**D**	
7 Newbridge Road (NYS Rt. 106) & Duffy Avenue														
Newbridge Road (NYS Rt. 106)	NB	L	0.93	48.5	E	L	0.98	58.7	E	L	0.93	46.6	E	- Modify signal timing (shift 1 sec. green time from existing actuated EB phase to existing actuated EB/WB phase, shift 1 sec green time from existing actuated EB phase to existing actuated NB/SB turn phase).
		T	0.61	18.5	C	T	0.61	18.5	C	T	0.61	18.5	C	
		R	0.06	14.0	B	R	0.07	14.0	B	R	0.07	14.0	B	
	SB	L	0.22	9.9	B	L	0.22	9.9	B	L	0.20	9.6	B	
		T	0.79	22.1	C	T	0.80	22.3	C	T	0.80	22.3	C	
		R	1.08	77.7	F	R	1.09	82.1	F	R	1.09	82.1	F	
Duffy Avenue	EB	L	0.44	17.1	C	L	0.44	17.2	C	L	0.49	18.1	C	
		T	0.12	14.0	B	T	0.12	14.0	B	T	0.13	14.4	B	
		R	0.14	14.1	B	R	0.14	14.1	B	R	0.15	14.5	B	
	WB	LTR	1.02	66.1	F	LTR	1.07	69.5	F	LTR	1.04	69.5	F	
Overall Intersection		-	**1.03**	**36.7**	**D**	-	**1.05**	**40.8**	**E**	-	**1.05**	**37.9**	**D**	

Table L - 7
2020 MITIGATION LIRR STATION AREA LEVELS OF SERVICE (AM PEAK HOUR)

	INTERSECTION & APPROACH		2020 No Build A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	2020 Build A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	2020 Mitigation A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	2020 Mitigation Measure
8	**Broadway (NYS Rt 107) & East John Street**														
	Broadway (NYS Rt 107)	NB	L	0.89	55.6	E	L	0.89	55.6	E					- Mitigation not required.
			TR	0.53	8.3	B	TR	0.53	8.3	B					
		SB	L	0.35	13.5	B	L	0.35	13.5	B					
			TR	0.37	12.8	B	TR	0.37	12.9	B					
	East John Street	EB	L	0.39	25.3	D	L	0.39	25.3	D					
			T	0.28	29.1	D	T	0.28	29.1	D					
			R	0.39	25.7	D	R	0.39	25.7	D					
		WB	LTR	0.82	38.6	D	LTR	0.82	38.7	D					
	Overall Intersection		-	**0.60**	**22.3**	**C**		**0.60**	**22.3**	**C**					
9	**Bay Avenue & East Barclay Street/Woodbury Road**														
	Bay Avenue	NB	LTR	0.25	6.7	B	LTR	0.26	6.8	B					- Mitigation not required.
		SB	L	0.40	7.5	B	L	0.41	7.5	B					
			LT	0.51	2.3	A	LT	0.51	2.3	A					
	East Barclay Street	EB	LTR	0.30	20.2	C	LTR	0.30	20.2	C					
	Woodbury Road	WB	LT	0.68	21.3	C	LT	0.68	21.3	C					
			R	0.14	16.0	C	R	0.14	16.0	C					
	Overall Intersection		-	**0.48**	**8.9**	**B**		**0.48**	**8.9**	**B**					
BAYSIDE															
15	**Northern Boulevard (NYS Rt. 25A) & Bell Boulevard**														
	Bell Boulevard	NB	LTR	1.25	193.1	F	LTR	1.34	267.8	F*	LTR	1.21	160.7	F	- Prohibit parking on the NB approach.
		SB	LTR	0.67	27.6	D	LTR	0.70	28.1	D	LTR	0.70	28.1	D	- Restripe EB approach from three through
	Northern Boulevard (NYS Rt. 25A)	EB	DIL	1.01	107.2	F	DIL	1.13	172.3	F*	L	0.74	34.5	D	lanes with a shared left turn plus one right
			T	0.71	6.5	B	T	0.71	6.5	B	T	0.77	10.4	B	turn lane, to one left turn only lane, two
			R	0.21	3.8	A	R	0.21	3.8	A	R	0.22	6.0	B	through lanes, and one right turn lane.
		WB	L	0.93	48.2	E	L	0.93	48.2	E	L	0.80	22.2	C	- Modify signal timing (shift 2 sec. green
			T	0.92	11.5	B	T	0.92	11.5	B	T	1.00	24.7	C	time from SB only phase to NB/SB phase,
			R	0.18	3.7	A	R	0.19	3.7	A	R	0.20	5.9	B	shift 6 sec. green time from EB/WB
															phase to new EB/WB left turn phase).
	Overall Intersection		-	**0.90**	**33.3**	**D**	-	**0.98**	**43.6**	**E**	-	**0.89**	**35.3**	**D**	
16	**Bell Boulevard & 41st Avenue**														
	Bell Boulevard	NB	LTR	1.28	193.4	F	LTR	1.43	356.5	F*	L	0.56	8.2	B	- Modify signal timing (shift 4 sec. green
			-	-	-	-	-	-	-	-	TR	0.85	13.0	B	time from EB phase to NB/SB phase)
		SB	LTR	0.73	10.4	B	LTR	0.76	11.3	B	LTR	0.67	7.3	B	- Restripe NB approach from one 20 ft.
	41st Avenue	EB	LTR	0.59	13.3	B	LTR	0.62	13.9	B	LTR	0.76	21.3	C	left lane to one 11 ft. exclusive left turn
		WB	LTR	0.36	10.8	B	LTR	0.44	11.5	B	LTR	0.57	16.0	C	lane and one 11 ft through / right lane by
															by shifting the center line 2 ft. to the west.
	Overall Intersection		-	**1.00**	**91.8**	**F**	-	**1.10**	**156.5**	**F***	-	**0.82**	**12.0**	**B**	
DEER PARK															
30	**Executive Drive & Long Island Avenue**														
	Executive Drive	NB	L	0.63	11.4	B	L	0.67	12.2	B	L	0.67	12.2	B	- Modify signal timing (shift 1 sec. green
			TR	0.85	16.3	C	TR	0.85	16.3	C	TR	0.85	16.3	C	time from WB phase to EB/WB phase)
		SB	L	0.01	19.7	C	L	0.01	19.7	C	L	0.01	19.7	C	
			T	0.29	21.1	C	T	0.29	21.1	C	T	0.29	21.1	C	
			R	0.12	20.2	C	R	0.12	20.2	C	R	0.12	20.2	C	
	Long Island Avenue	EB	L	0.37	19.4	C	L	0.37	19.4	C	L	0.36	18.9	C	
			T	0.25	18.5	C	T	0.25	18.5	C	T	0.24	18.0	C	
			R	0.69	24.9	C	R	0.71	25.5	D	R	0.68	24.1	C	
		WB	L	0.44	15.5	C	L	0.44	15.5	C	L	0.45	15.5	C	
			T	0.07	11.2	B	T	0.07	11.2	B	T	0.07	11.2	B	
			R	0.02	11.0	B	R	0.02	11.0	B	R	0.02	11.0	B	
	Overall Intersection		-	**0.73**	**16.6**	**C**	-	**0.73**	**16.7**	**C**	-	**0.73**	**16.5**	**C**	

Table L - 7
2020 MITIGATION LIRR STATION AREA LEVELS OF SERVICE (AM PEAK HOUR)

	INTERSECTION & APPROACH		2020 No Build A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	2020 Build A.M. Peak Hour Mvt	V/C	Avg. Stopped Delay	LOS	2020 Mitigation A.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	2020 Mitigation Measure
31	**Executive Drive & Pine Aire Drive**														
	Executive Drive	SB	L	1.02	62.4	F	L	1.03	65.8	F	L	0.44	17.7	C	- Modify signal timing (shift 5 sec. green time from existing actuated EB only phase to existing actuated SB/WB right turn phase, shift 2 sec. green time from existing actuated EB only phase to existing actuated EB/WB phase).
			LR	0.21	18.3	C	LR	0.22	18.3	C	LR	0.62	20.2	C	
	Pine Aire Drive	EB	L	0.55	14.3	B	L	0.56	14.5	B	L	0.76	23.3	C	
			T	0.35	4.7	A	T	0.35	4.7	A	T	0.38	6.2	B	
		WB	LT	0.85	23.3	C	LT	0.85	23.3	C	LT	0.81	20.2	C	
			R	1.51	567.0	F*	R	1.54	830.9	F*	R	1.39	513.4	F	
	Overall Intersection		-	**0.86**	**269.7**	**F***	-	**0.86**	**391.3**	**F***	-	**0.77**	**241.5**	**F***	
RONKONKOMA															
36	**Hawkins Avenue & Union Avenue**														
	Hawkins Avenue	NB	TR	0.56	11.2	B	TR	0.57	11.4	B	TR	0.56	11.1	B	- Modify signal timing (shift 2 sec. green time from WB phase to SB phase)
		SB	L	1.23	157.8	F*	L	1.26	184.5	F*	L	1.17	108.1	F	- Restripe the NB approach from one 12 ft. lane to one 13 ft. lane.
			T	0.55	4.1	A	T	0.63	4.8	A	T	0.61	4.0	A	
	Union Avenue	WB	L	0.40	17.5	C	L	0.43	17.7	C	L	0.48	19.2	C	
			R	0.53	10.1	B	R	0.53	10.1	B	R	0.53	10.1	B	
	Overall Intersection		-	**1.23**	**50.1**	**E**	-	**1.31**	**57.8**	**E**	-	**1.20**	**34.7**	**D**	
37	**Hawkins Avenue & LIE North Service Road**														
	Hawkins Avenue	NB	L	0.99	72.3	F	L	0.99	72.3	F	L	0.63	37.4	D	- Restripe the NB approach from one left turn lane and two through lanes to one left turn lane, one shared left/through lane, and one through lane.
			T	0.45	20.8	C	T	0.45	20.8	C	LT	0.63	24.8	C	
		SB	TR	1.03	65.6	F	TR	1.10	92.8	F*	TR	1.01	60.7	F	
	L.I.E. North Service Road	WB	LTR	1.27	175.3	F*	LTR	1.28	186.7	F*	LTR	1.28	192.9	F	- Modify signal timing (increase cycle length 10 sec. and give 6 sec. green time to WB phase and 4 sec. green time to NB/SB phase).
				0.00											
	Overall Intersection		-	**1.18**	**142.8**	**F***	-	**1.21**	**154.3**	**F***	-	**1.12**	**152.9**	**F**	
38	**Hawkins Avenue & LIE South Service Road**														
	Hawkins Avenue	NB	TR	0.70	25.0	C	TR	0.71	25.1	D	TR	0.66	22.6	C	- Modify signal timing (shift 3 sec. green time from EB phase to NB/SB phase).
		SB	L	1.40	348.1	F*	L	1.40	348.1	F*	L	1.40	340.2	F	
			T	0.69	20.5	C	T	0.75	21.8	C	T	0.70	19.4	C	
	L.I.E. South Service Road	EB	LT	0.36	11.8	B	LT	0.36	11.8	B	LT	0.38	13.2	B	
	Overall Intersection		-	**0.70**	**49.1**	**E**	-	**0.70**	**49.1**	**E**	-	**0.73**	**46.9**	**E**	
RONKONKOMA															
39	**Ronkonkoma Avenue Ramp/LIRR Parking Lot & Railroad Avenue**														
	LIRR Parking Lot	NB	L	0.03	12.2	B	L	0.03	12.2	B					- Mitigation not required.
			TR	0.01	12.2	B	TR	0.01	12.2	B					
	Ronkonkoma Avenue Ramp	SB	L	0.27	13.0	B	L	0.28	13.0	B					
			TR	0.04	12.3	B	TR	0.06	12.3	B					
	Railroad Avenue	EB	L	0.13	2.0	A	L	0.13	2.0	A					
			T	0.29	2.3	A	T	0.30	2.4	A					
			R	0.01	1.9	A	R	0.02	1.9	A					
		WB	L	0.01	1.8	A	L	0.04	1.9	A					
			TR	0.75	5.8	B	TR	0.77	6.4	B					
	Overall Intersection		-	**0.64**	**5.5**	**B**	-	**0.66**	**5.8**	**B**					

Notes

(1) Delay is measured in seconds per vehicle.

(2) Level of service for signalized intersections is based upon average stopped delay per vehicle (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(3) Level of Service for unsignalized intersections is based upon average total delay (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(4) Asterick (*) indicates that Delay and Levels of Service are not meaningful when v/c is greater than 1.2 or 1/PHF. Also it is beyond the scope of HCM to assess delay for an approach which operates at oversaturated conditions.

TABLE L-8

2010 MITIGATED BUILD LIRR STATIONS TRAFFIC PM LEVELS OF SERVICE

TABLE L - 8
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (PM PEAK HOUR)

INTERSECTION & APPROACH		2010 PM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
GREAT NECK														
1 Middle Neck Road & North Station Plaza														
Middle Neck Road	NB	L	0.67	22.2	C	L	0.69	23.8	C	L	0.69	23.8	C	- Modify signal timing (shift 6 sec. green time from existing actuated EB/WB phase to new exclusive lead actuated WB phase)
		TR	0.46	8.6	B	TR	0.46	8.6	B	TR	0.46	8.6	B	
	SB	LTR	0.83	18.6	C	LTR	0.91	25.0	C	LTR	0.91	25.0	C	
North Station Plaza	EB	L	0.27	11.8	B	L	0.30	12.0	B	L	0.31	14.1	B	
		TR	0.64	15.4	C	TR	0.65	15.6	C	TR	0.76	20.4	C	- Restripe WB approach from one 11 ft. left lane and one 16 ft. thru lane to one 14 ft. left lane and one 13 ft. thru lane
	WB	L	1.32	*	F*	L				L	0.92	57.8	E	
		TR	0.21	11.4	B	TR	0.24	11.5	B	TR	0.26	11.7	B	
Overall Intersection		-	**1.09**	**26.2**	**D**	-	*	*	**F***	-	**0.91**	**19.1**	**C**	
2 Middle Neck Road & South Station Plaza														
Middle Neck Road	NB	L	0.87	38.2	D	L				L	0.55	12.9	B	- Modify signal timing (shift 8 sec. green time from NB/SB phase to existing actuated EB/WB phase; shift 10 sec. green time from NB/SB phase to new actuated left turn phse for NB/SB left turns)
		TR	0.38	7.0	B	TR	0.38	7.0	B	TR	0.61	15.6	C	
	SB	L	0.22	6.3	B	L	0.22	6.3	B	L	0.24	9.2	B	
		TR	0.49	7.7	B	TR	0.50	7.8	B	TR	0.76	18.2	C	
South Station Plaza	EB	LTR	0.98	39.0	D	LTR				LTR	0.82	18.0	C	
		-			-	-	-	-	-	-			-	
	WB	L	0.76	33.8	D	L				L	0.80	35.4	D	- Restripe NB approach from one 10 ft. left lane and one 12 ft. thru lane to two 11 ft. lanes
		TR	0.47	14.5	B	TR	0.48	14.6	B	TR	0.38	10.6	B	
Overall Intersection		-	**0.91**	**17.9**	**C**	-	**0.94**	**19.4**	**C**	-	**0.80**	**17.0**	**C**	
HEMPSTEAD														
3 Main Street & West Columbia Street														
Main Street	NB	LT	0.25	4.2	A	LT	0.25	4.2	A					- Mitigation not required
		R	0.11	3.7	A	R	0.11	3.7	A					
	SB	LTR	0.72	9.0	B	LTR	0.72	9.1	B					
West Columbia Street	EB	LTR	0.55	20.4	C	LTR	0.55	20.4	C					
	WB	LTR	0.86	36.4	D	LTR	0.86	36.4	D					
Overall Intersection		-	**0.76**	**14.8**	**B**	-	**0.76**	**14.8**	**B**					
4 Main Street & Fulton Street (NYS Rt. 24)														
Main Street	NB	TR	0.48	17.1	C	TR	0.48	17.1	C					- Mitigation not required
	SB	TR	1.02	58.5	E	TR	1.02	58.5	E					
Fulton Street (NYS Rt.24)	EB	TR	0.62	4.4	A	TR	0.62	4.4	A					
	WB	TR	0.57	4.1	A	TR	0.57	4.1	A					
Overall Intersection		-	**0.76**	**13.3**	**B**	-	**0.76**	**13.3**	**B**					

TABLE L - 8 (continued)
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (PM PEAK HOUR)

INTERSECTION & APPROACH		2010 PM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
5 Fulton Street (NYS Rt. 24) & Washington Ave.														
Washington Avenue	NB	L	0.09	13.2	B	L	0.09	13.2	B					- Mitigation not required
		TR	0.53	14.4	B	TR	0.54	14.4	B					
	SB	L	0.74	23.2	C	L	0.74	23.4	C					
		TR	0.75	17.3	C	TR	0.75	17.4	C					
Fulton Street (NYS Rt. 24)	EB	LTR	0.98	28.7	D	LTR	0.98	28.7	D					
	WB	LT	1.17	*	F*	LT	1.17	*	F*					
		R	0.27	9.1	B	R	0.28	9.1	B					
Overall Intersection		-	*	*	F*	-	*	*	F*					
HICKSVILLE														
6 Newbridge Road (NYS Rt. 106) & West John Street														
Newbridge Road (NYS Rt. 106)	NB	L	0.82	33.3	D	L	0.82	33.3	D					- Mitigation not required
		T	0.51	10.7	B	T	0.51	10.7	B					
		R	0.06	7.8	B	R	0.06	7.8	B					
	SB	L	0.81	46.1	E	L	0.82	47.0	E					
		T	0.80	21.1	C	T	0.80	21.1	C					
		R	0.25	14.0	B	R	0.25	14.0	B					
West John Street	EB	L	1.04	*	F*	L	1.05	*	F*					
		T	0.90	37.9	D	T	0.90	38.0	D					
		R	0.55	27.0	D	R	0.55	27.0	D					
	WB	L	0.64	21.3	C	L	0.64	21.3	C					
		TR	0.59	26.8	D	TR	0.59	26.8	D					
Overall Intersection		-	*	*	F*	-	*	*	F*					
7 Newbridge Road (NYS Rt. 106) & Duffy Avenue														
Newbridge Road (NYS Rt. 106)	NB	L	0.21	14.9	B	L	0.22	14.9	B	L	0.25	15.6	C	- Modify signal timing (shift 2 sec.
		T	0.68	18.8	C	T	0.68	18.8	C	T	0.68	18.8	C	green time from existing actuated NB/SB
		R	0.08	13.4	B	R	0.08	13.4	B	R	0.08	13.4	B	left turn phase to existing actuated
	SB	L	0.48	13.3	B	L	0.48	13.3	B	L	0.56	15.5	C	EB/WB phase)
		T	1.09	*	F*	T	1.10	*	F*	T	1.10	77.3	F	
		R	0.37	15.5	C	R	0.37	15.5	C	R	0.37	15.5	C	
Duffy Avenue	EB	L	1.01	58.1	E	L	[illegible]	[illegible]	[illegible]	L	1.01	54.3	E	
		TR	0.57	17.0	C	TR	0.59	17.3	C	TR	0.57	16.1	C	
		R	0.33	14.4	B	R	0.33	14.4	B	R	0.32	13.5	B	
	WB	LTR	0.86	43.8	E	LTR	[illegible]	[illegible]	[illegible]	LTR	0.89	46.8	E	
Overall Intersection		-	*	*	F*	-	*	*	F*	-	**1.03**	**45.1**	**E**	

TABLE L - 8 (continued)
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (PM PEAK HOUR)

INTERSECTION & APPROACH		2010 PM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
8 Broadway (NYS Rt 107) & East John Street														
Broadway (NYS Rt 107)	NB	L	0.65	38.0	D	L	0.65	38.0	D					- Mitigation not required
		TR	0.51	9.1	B	TR	0.52	9.1	B					
	SB	L	0.56	22.9	C	L	0.56	22.9	C					
		TR	0.73	19.8	C	TR	0.73	19.8	C					
East John Street	EB	L	0.25	20.8	C	L	0.25	20.8	C					
		T	0.55	29.5	D	T	0.55	29.5	D					
		R	0.65	27.0	D	R	0.65	27.0	D					
	WB	LTR	0.62	30.7	D	LTR	0.62	30.8	D					
Overall Intersection		-	**0.69**	**21.0**	**C**	-	**0.69**	**21.1**	**C**					
9 Bay Avenue & East Barclay Street/Woodbury Road														
Bay Avenue	NB	LTR	0.34	20.3	C	LTR	0.34	20.3	C					- Mitigation not required
	SB	L	0.83	27.9	D	L	0.83	27.9	D					
		LT	0.88	33.5	D	LT	0.88	33.8	D					
East Barclay Street	EB	LTR	0.38	7.3	B	LTR	0.39	7.4	B					
Woodbury Road	WB	LT	0.26	6.8	B	LT	0.27	6.8	B					
		R	0.31	1.6	A	R	0.31	1.6	A					
Overall Intersection		-	**0.50**	**14.5**	**B**	-	**0.50**	**14.5**	**B**					
MALVERNE														
10 Hempstead Avenue & Nassau Avenue/Francis Street – LIRR Entrance														
Hempstead Avenue	NB	LTR	0.85	15.7	C	LTR	0.85	15.7	C					- Mitigation not required
	SB	LTR	0.91	20.3	C	LTR	0.91	20.3	C					
Nassau Avenue	EB	LTR	0.20	10.2	B	LTR	0.20	10.2	B					
Francis Street - LIRR Entrance	WB	LTR	0.38	11.2	B	LTR	0.38	11.2	B					
Overall Intersection		-	**0.70**	**17.1**	**C**	-	**0.70**	**17.1**	**C**					
11 Hempstead Avenue & Utterby Road														
Hempstead Avenue	NB	TR	0.77	17.4	C	TR	0.77	17.4	C					- Mitigation not required
	SB	LT	0.63	7.2	B	LT	0.63	7.2	B					
Utterby Road	WB	L	0.26	20.4	C	L	0.26	20.4	C					
		R	0.62	25.6	D	R	0.62	25.6	D					
Overall Intersection		-	**0.52**	**13.1**	**B**	-	**0.52**	**13.1**	**B**					
LONG BEACH														
12a LIRR Parking Lot Exit & West Park Avenue														
LIRR Parking Lot Exit	SB	L	0.17	14.8	B	L	0.18	14.8	B					- Mitigation not required
West Park Avenue	EB	T	0.51	7.1	B	T	0.51	7.1	B					
Overall Intersection		-	**0.39**	**7.8**	**B**	-	**0.39**	**7.8**	**B**					

TABLE L - 8 (continued)
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (PM PEAK HOUR)

INTERSECTION & APPROACH		2010 PM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
12b LIRR Parking Lot Exit & West Park Avenue														
LIRR Parking Lot Exit	SB	TR	0.17	14.8	B	TR	0.18	14.8	B					- Mitigation not required
West Park Avenue	WB	LT	0.51	7.0	B	LT	0.51	7.0	B					
Overall Intersection		-	**0.39**	**7.9**	**B**	-	**0.39**	**7.9**	**B**					
13 Center Street & West Park Avenue														
Center Street	NB	LT	0.04	14.2	B	LT	0.04	14.2	B					- Mitigation not required
West Park Avenue	WB	TR	0.50	7.0	B	TR	0.50	7.0	B					
Overall Intersection		-	**0.34**	**7.2**	**B**	-	**0.34**	**7.2**	**B**					
14a Edwards Boulevard & West Park Avenue														
Edwards Boulevard	NB	TR	0.11	14.5	B	TR	0.11	14.5	B					- Mitigation not required
	SB	DfL	0.03	14.1	B	DfL	0.03	14.1	B					
		T	0.02	14.0	B	T	0.02	14.0	B					
West Park Avenue	EB	LTR	0.59	7.7	B	LTR	0.59	7.7	B					
Overall Intersection		-	**0.42**	**8.1**	**B**	-	**0.42**	**8.1**	**B**					
14b Edwards Boulevard & West Park Avenue														
Edwards Boulevard	NB	L	0.03	14.1	B	L	0.03	14.1	B					- Mitigation not required
West Park Avenue	WB	LT	0.55	7.4	B	LT	0.55	7.4	B					
Overall Intersection		-	**0.37**	**7.5**	**B**	-	**0.37**	**7.5**	**B**					
BAYSIDE														
15 Northern Boulevard (NYS Rt. 25A) & Bell Boulevard														
Bell Boulevard	NB	LTR	0.95	53.9	E	LTR	0.97	57.3	E	LTR	0.97	57.3	E	- As a result of mitigation required for AM,
	SB	LTR	0.85	32.7	D	LTR	0.89	35.0	D	LTR	0.89	35.0	D	restripe the EB approach from three
Northern Boulevard (NYS Rt. 25A)	EB	-	-	-	-	-	-	-	-	L	0.77	21.5	C	through lanes with a shared left turn plus
		LT	0.94	13.3	B	LT	0.95	13.5	B	T	0.93	19.0	C	one right turn lane, to one left turn only lane,
		R	0.25	3.9	A	R	0.25	3.9	A	R	0.30	8.4	B	two through lanes, and one right turn lane
	WB	L	0.61	10.2	B	L	0.61	10.2	B	L	0.40	9.0	B	- Modify signal timing (shift 11 sec. green
		T	0.50	4.9	A	T	0.50	4.9	A	T	0.59	10.6	B	time from EB/WB phase to a new EB/WB
		R	0.18	3.7	A	R	0.18	3.7	A	R	0.21	8.0	B	left turn only phase)
Overall Intersection		-	**0.91**	**17.5**	**C**	-	**0.93**	**18.5**	**C**	-	**0.92**	**22.5**	**C**	

TABLE L - 8 (continued)
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (PM PEAK HOUR)

INTERSECTION & APPROACH		2010 PM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
16 Bell Boulevard & 41st Avenue														
Bell Boulevard	NB	LTR	1.07	59.5	E	LTR	[redacted]			L	0.41	7.4	B	- Restripe NB approach from one 20' lane
										TR	0.87	16.4	C	to one 11' exclusive left turn lane and one
	SB	LTR	0.78	11.8	B	LTR	0.81	12.9	B	LTR	0.83	14.2	B	11' through/right lane by shifting the
41st Avenue	EB	LTR	0.54	12.6	B	LTR	0.60	13.6	B	LTR	0.60	13.6	B	centerline 2' to the west
	WB	LTR	0.62	14.2	B	LTR	0.79	21.9	C	LTR	0.79	21.9	C	
Overall Intersection		-	**0.89**	**31.3**	**D**	-	[redacted]			-	**0.84**	**15.7**	**C**	
MINEOLA														
17 Mineola Boulevard & Old Country Boulevard														
Mineola Boulevard	NB	L	0.76	19.5	C	L	0.76	19.5	C					- Mitigation not required
		TR	1.07	*	F*	TR	1.07	*	F*					
	SB	L	0.91	36.7	D	L	0.91	37.3	D					
		TR	0.85	23.0	C	TR	0.85	23.1	C					
Old Country Road	EB	L	0.71	17.1	C	L	0.71	17.1	C					
		TR	0.91	27.4	D	TR	0.91	27.4	D					
	WB	L	0.97	50.1	E	L	0.97	50.1	E					
		T	0.73	19.4	C	T	0.73	19.4	C					
		R	0.74	21.8	C	R	0.74	21.9	C					
Overall Intersection		-	*	*	**F***	-	*	*	**F***					
18 Mineola Boulevard & 2nd Street														
Mineola Boulevard	NB	L	0.60	14.0	B	TR	0.60	14.1	B					- Mitigation not required
		TR	0.48	5.9	B	L	0.48	5.9	B					
	SB	L	0.92	59.4	E	TR	0.92	59.4	E					
		TR	1.06	*	F*	L	1.06	*	F*					
2nd Street	EB	L	0.16	14.7	B	TR	0.16	14.7	B					
		TR	0.85	28.8	D	LTR	0.86	28.9	D					
	WB	LTR	1.06	*	F*	0.00	1.06	*	F*					
Overall Intersection		-	*	*	**F***	-	*	*	**F***					
PORT WASHINGTON														
19 Main Street & LIRR Parking Entrance[3]														
Main Street	WB	L		6.0	B	L		6.4	B					- Mitigation not required
Overall Intersection		-		**0.3**	**A**	-		**0.4**	**A**					

TABLE L - 8 (continued)
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (PM PEAK HOUR)

INTERSECTION & APPROACH		2010 PM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
20 Main Street & Port Washington Boulevard (NYS Rte. 101)														
Port Washington Boulevard (NYS Rt. 101)	NB	L	0.96	27.0	D	L	0.99	33.5	D	L	0.98	31.6	D	- Modify signal timing (shift 1 sec. green time from pretimed NB/SB phase to existing actuated EB/WB phase)
		TR	0.36	3.9	A	TR	0.36	3.9	A	TR	0.36	4.3	A	
	SB	L	0.22	9.9	B	L	0.27	10.3	B	L	0.28	10.8	B	
		TR	0.38	10.9	B	TR	0.38	10.9	B	TR	0.39	11.4	B	
Main Street	EB	LT	0.99	67.5	F	LT	1.03	76.9	F	LT	1.00	68.4	F	
		R	0.50	18.2	C	R	0.50	18.2	C	R	0.49	17.6	C	
	WB	LTR	0.99	67.8	F	LTR	[illegible]	[illegible]	[illegible]	LTR	0.98	64.5	F	
Overall Intersection		-	**0.95**	**22.5**	**C**	-	**0.99**	**25.3**	**D**	-	**0.98**	**23.2**	**C**	
VALLEY STREAM														
21 South Franklin Avenue & Merrick Road														
South Franklin Avenue	NB	LR	0.72	20.7	C	LTR	0.73	21.0	C	LTR	0.77	23.6	C	- Modify signal timing (shift 1 sec. green time from existing actuated NB/SB phase to existing actuated EB/WB phase)
	SB	LTR	0.27	13.3	B	LTR	0.27	13.4	B	LTR	0.28	13.8	B	
Merrick Road	EB	TR	0.53	5.9	B	TR	0.53	5.9	B	TR	0.52	5.6	B	
	WB	LT	0.98	24.7	C	LT	[illegible]	[illegible]	[illegible]	LT	0.96	21.8	C	
Overall Intersection		-	**0.89**	**15.4**	**C**	-	**0.90**	**16.0**	**C**	-	**0.90**	**14.4**	**B**	
22 South Franklin Avenue & West Hawthorne Avenue														
South Franklin Avenue	NB	LT	0.29	7.6	B	LT	0.30	7.6	B					- Mitigation not required
	SB	TR	0.25	7.4	B	TR	0.25	7.4	B					
West Hawthorne Avenue	EB	LR	0.38	11.3	B	LR	0.38	11.3	B					
	WB	DfL	0.17	10.1	B	DfL	0.17	10.1	B					
		TR	0.17	10.1	B	TR	0.17	10.1	B					
Overall Intersection		-	**0.33**	**8.6**	**B**	-	**0.34**	**8.6**	**B**					
23 South Franklin Avenue & Sunrise Highway (NYS Rt.27)														
South Franklin Avenue	NB	LTR	0.53	33.6	D	L	0.53	33.6	D					- Mitigation not required
	SB	L	0.99	79.9	F	R	1.00	82.4	F					
		R	0.31	31.4	D	L	0.31	31.5	D					
Sunrise Highway (NYS Rt. 27)	EB	L	0.49	7.6	B	T	0.49	7.6	B					
		T	0.60	6.1	B	T	0.60	6.1	B					
	WB	T	0.45	5.0	A	R	0.45	5.0	A					
		R	0.07	3.5	A	0.00	0.08	3.5	A					
Overall Intersection		-	**0.69**	**12.0**	**B**	-	**0.69**	**12.1**	**B**					
MERRICK														
24 Merrick Avenue & Broadcast Plaza[3]														
Merrick Avenue	NB	L		4.6	A	L		4.6	A					- Mitigation not required
Broadcast Plaza	EB	LR		17.6	C	LR		18.6	C					
Overall Intersection		-		**1.9**	**A**	-		**2.0**	**A**					

TABLE L - 8 (continued)
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (PM PEAK HOUR)

INTERSECTION & APPROACH		2010 PM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
25 Merrick Avenue & Smith Street														
Merrick Avenue	NB	L	0.46	16.8	C	L	0.46	16.8	C	L	0.46	16.3	C	- Modify signal timing (shift 1 sec. green time from existing actuated EB/WB phase to existing actuated NB/SB phase)
		TR	1.03	*	F*	TR				TR	1.00	45.6	E	
	SB	L	0.36	10.8	B	L	0.36	10.8	B	L	0.36	10.6	B	
		TR	0.94	28.8	D	TR	0.94	29.3	D	TR	0.92	25.2	D	
Smith Street	EB	L	0.44	9.2	B	L	0.44	9.2	B	L	0.45	9.7	B	
		TR	0.73	19.3	C	TR	0.73	19.3	C	TR	0.76	21.0	C	
	WB	L	0.27	9.1	B	L	0.27	9.1	B	L	0.27	9.5	B	
		TR	0.45	14.7	B	TR	0.45	14.7	B	TR	0.47	15.3	C	
Overall Intersection		-	*	*	F*	-	*	*	F*	-	**0.87**	**26.5**	**D**	
26 Merrick Avenue & Sunrise Highway (NYS Rt. 27)														
Merrick Avenue	NB	L	0.47	29.3	D	L	0.48	29.9	D					- Mitigation not required
		TR	0.70	31.9	D	TR	0.70	32.1	D					
	SB	L	1.01	71.5	F	L	1.01	73.0	F					
		T	0.61	23.2	C	T	0.62	23.3	C					
		R	0.25	18.9	C	R	0.26	18.9	C					
Sunrise Highway (NYS Rt. 27)	EB	L	0.53	33.3	D	L	0.53	33.3	D					
		T	0.75	22.7	C	T	0.75	22.7	C					
		R	0.09	15.7	C	R	0.09	15.7	C					
	WB	L	0.72	38.8	D	L	0.73	39.1	D					
		T	0.84	25.0	C	T	0.84	25.0	C					
		R	0.20	16.4	C	R	0.20	16.4	C					
Overall Intersection		-	**0.89**	**27.0**	**D**	-	**0.90**	**27.1**	**D**					
BABYLON														
27 Deer Park Avenue & Railroad Avenue[3]														
Deer Park Avenue	NB	L		5.6	B	L		5.7	B	LT	0.44	4.1	A	- Install a traffic signal
	SB	L		197.8	F					TR	0.69	9.8	B	
Railroad Avenue	EB	R		6.1	B	L				L	0.67	23.1	C	
						R		6.2	B	R	0.40	19.0	C	
Overall Intersection		-		**32.8**	**D**	-				-	**0.5**	**11.2**	**B**	
28 Deer Park Avenue & Park Avenue														
Deer Park Avenue	NB	LT	0.71	8.3	B	LT	0.73	8.7	B	LT	0.66	7.7	B	- Eliminate parking on the SB approach and restripe SB approach from one 13 ft. lane to two 10 ft. lanes
	SB	TR	1.03	43.1	E	TR	1.04	46.4	E	T	0.59	7.1	B	
		LR	0.91	24.5	C					R	0.38	5.7	B	
Park Avenue	EB					LR				LR	0.89	22.0	C	- Modify signal timing (shift 1 sec. green time from NB/SB phase to actuated EB phase)
Overall Intersection		-	**0.98**	**26.0**	**D**	-	**1.00**	**28.1**	**D**	-	**0.76**	**11.2**	**B**	

TABLE L - 8 (continued)
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (PM PEAK HOUR)

INTERSECTION & APPROACH		2010 PM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
29 Deer Park Avenue/Fire Island Avenue & West Main Street/East Main Street														
Fire Island Avenue	NB	LTR	1.18	*	F*	LTR	[redacted]			LTR	1.13	127.3	F	- Modify signal timing (shift 1 sec. green time from pretimed EB/WB phase to existing actuated NB/SB phase)
Deer Park Avenue	SB	LTR	1.06	79.8	F	LTR	[redacted]			LTR	1.04	70.7	F	
		-	-	-	-	-	-	-	-	-			-	
West Main Street	EB	L	0.81	36.6	D	L	0.81	36.6	D	L	0.81	36.6	D	
		TR	0.78	9.1	B	TR	0.78	9.1	B	TR	0.79	9.7	B	
East Main Street	WB	L	0.25	6.5	B	L	0.25	6.5	B	L	0.26	6.9	B	
		TR	0.88	17.2	C	TR	0.88	17.4	C	TR	0.90	18.8	C	
Overall Intersection		-	*	*	F*	-	[redacted]			-	**0.97**	**34.0**	**D**	
DEER PARK														
30 Executive Drive & Long Island Avenue														
Executive Drive	NB	L	0.59	12.7	B	L	0.60	13.1	B					- Mitigation not required
		TR	0.23	8.5	B	TR	0.23	8.5	B					
	SB	L	0.01	19.7	C	L	0.01	19.7	C					
		T	0.93	45.0	E	T	0.93	45.0	E					
		R	0.41	9.6	B	R	0.41	9.6	B					
Long Island Avenue	EB	L	0.34	19.3	C	L	0.34	19.3	C					
		T	0.08	17.6	C	T	0.08	17.6	C					
		R	0.73	26.2	D	R	0.81	30.1	D					
	WB	L	1.04	57.5	E	L	1.04	57.5	E					
		T	0.15	11.6	B	T	0.15	11.6	B					
		R	0.01	10.9	B	R	0.01	10.9	B					
Overall Intersection		-	**0.90**	**28.3**	**D**	-	**0.91**	**28.7**	**D**					
31 Executive Drive & Pine Aire Drive														
Executive Drive	SB	L	0.92	40.2	E	L	0.95	43.8	E					- Mitigation not required
		LR	0.92	40.1	E	LR	0.95	43.7	E					
Pine Aire Drive	EB	L	0.19	10.3	B	L	0.20	10.3	B					
		T	0.74	12.0	B	T	0.74	12.0	B					
	WB	LT	0.98	54.8	E	LT	0.98	54.8	E					
		R	0.54	9.9	B	R	0.54	9.9	B					
Overall Intersection		-	**0.80**	**27.6**	D	-	**0.81**	**29.1**	**D**					

TABLE L - 8 (continued)
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (PM PEAK HOUR)

INTERSECTION & APPROACH		2010 PM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
HUNTINGTON														
32 New York Avenue (NYS Rt. 110) & Railroad Street/Broadway														
New York Avenue (NYS Rt. 110)	NB	L	0.50	16.7	C	L	0.50	16.7	C					- Mitigation not required
		T	0.67	19.1	C	T	0.67	19.1	C					
		R	0.26	14.6	B	R	0.26	14.6	B					
	SB	L	1.12	*	F*	L	1.12	*	F*					
		T	0.83	23.4	C	T	0.83	23.4	C					
		R	0.22	14.3	B	R	0.22	14.3	B					
Railroad Street	EB	L	0.66	34.3	D	L	0.68	35.0	D					
		TR	1.20	*	F*	TR	1.20	*	F*					
Broadway	WB	L	0.78	28.2	D	L	0.79	29.0	D					
		T	0.40	19.8	C	T	0.41	19.8	C					
		R	0.50	21.1	C	R	0.52	21.3	C					
Overall Intersection		-	*	*	F*	-	*	*	F*					
33 Park Avenue & Broadway														
Park Avenue	NB	L	0.90	34.7	D	L	0.90	35.0	D	L	0.90	35.0	D	- Modify signal timing (shift 1 sec. green time from NB/SB phase to EB phase)
		T	0.34	2.4	A	T	0.34	2.4	A	T	0.35	2.7	A	
	SB	T	0.54	10.7	B	T	0.54	10.7	B	T	0.56	11.3	B	
Broadway	EB	L	1.01	63.1	F	L				L	0.97	50.8	E	
Overall Intersection		-	**0.73**	**18.3**	**C**	-	*	*	F*	-	**0.74**	**17.2**	**C**	
PORT JEFFERSON														
34 Main Street (NYS Rt. 25A) & LIRR Parking Entrance[3]														
Main Street	NB	L		245.8	F	L		245.8	F					- Mitigation not required
	SB	L		21.2	D	L		21.2	D					
Overall Intersection		-		**7.5**	**B**	-		**7.5**	**B**					
35 Main Street (NYS Rt. 25A) & North Country Road														
Main Street (NYS Rt. 25A)	NB	LTR	2.71	*	F*	LTR	2.71	*	F*					- Mitigation not required
	SB	L	1.61	*	F*	L	1.61	*	F*					
		TR	0.87	20.2	C	TR	0.87	20.2	C					
Sheep Pasture Road	EB	LTR	0.96	49.1	E	LTR	0.96	49.1	E					
North Country Road	WB	L	1.66	*	F*	L	1.66	*	F*					
		TR	0.32	16.5	C	TR	0.32	16.5	C					
Overall Intersection		-	*	*	F*	-	*	*	F*					

TABLE L - 8 (continued)
2010 MITIGATED BUILD LIRR STATION AREA
TRAFFIC LEVELS OF SERVICE (PM PEAK HOUR)

INTERSECTION & APPROACH		2010 PM No Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Build Mvt.	V/C	Avg. Stopped Delay	LOS	2010 PM Mitigated Build Mvt.	V/C	Avg. Stopped Delay	LOS	Mitigation Measures
RONKONKOMA														
36 Hawkins Avenue & Union Avenue														
Hawkins Avenue	NB	TR	0.79	12.6	B	TR	0.88	17.5	C	TR	0.88	17.5	C	- Modify signal timing (shift 1 sec. green time from acuated WB phase to exclusive actuated SB phase)
	SB	L	1.01	59.9	E	L				L	0.97	47.2	E	
		T	0.23	2.3	A	T	0.23	2.3	A	T	0.23	2.1	A	
Union Avenue	WB	L	0.26	20.2	C	L	0.26	20.2	C	L	0.28	20.8	C	
		R	0.63	17.1	C	R	0.63	17.1	C	R	0.63	17.1	C	
Overall Intersection		-	**0.90**	**20.1**	**C**	-	**0.93**	**22.6**	**C**	-	**0.78**	**19.8**	**C**	
37 Hawkins Avenue & LIE North Service Road														
Hawkins Avenue	NB	L	0.46	29.8	D	L	0.46	30.0	D	L	0.47	29.6	D	- Signal timing modified to coordinate with intersection of Hawkins Avenue with LIE South Service Road
		T	0.37	15.8	C	T	0.39	16.0	C	T	0.38	15.5	C	
	SB	TR	0.61	25.7	D	TR	0.61	25.8	D	TR	0.58	24.3	C	
L.I.E. North Service Road	WB	LTR	0.39	13.9	B	LTR	0.40	13.9	B	LTR	0.40	14.4	B	
Overall Intersection		-	**0.59**	**18.6**	**C**	-	**0.59**	**18.7**	**C**	-	**0.60**	**18.3**	**C**	
38 Hawkins Avenue & LIE South Service Road														
Hawkins Avenue	NB	TR	1.05	67.9	F	TR				TR	1.04	63.1	F	- Modify signal timing (shift 1 sec. green time from EB phase to NB/SB phase; shift 1 sec. green time from exclusive SB phase to NB/SB phase)
	SB	L	0.59	27.1	D	L	0.59	27.1	D	L	0.62	28.2	D	
		T	0.23	14.2	B	T	0.23	14.2	B	T	0.23	13.7	B	
L.I.E. South Service Road	EB	LT	0.98	27.5	D	LT	0.98	28.0	D	LT	1.00	32.4	D	
Overall Intersection		-	**0.90**	**34.4**	**D**	-				-	**0.92**	**37.0**	**D**	
39 Ronkonkoma Avenue Ramp/LIRR Parking Lot & Railroad Avenue														
LIRR Parking Lot	NB	L	0.07	12.3	B	L	0.09	12.4	B					- Mitigation not required
		TR	0.20	12.7	B	TR	0.25	12.9	B					
Ronkonkoma Avenue Ramp	SB	L	0.26	13.0	B	L	0.27	13.0	B					
		TR	0.05	12.3	B	TR	0.05	12.3	B					
Railroad Avenue	EB	L	0.06	1.9	A	L	0.07	1.9	A					
		T	0.43	2.8	A	T	0.44	2.8	A					
		R	0.01	1.9	A	R	0.01	1.9	A					
	WB	L	0.01	1.8	A	L	0.00	1.8	A					
		TR	0.36	2.6	A	TR	0.37	2.6	A					
Overall Intersection		-	**0.39**	**4.3**	**A**	-	**0.40**	**4.5**	**A**					

Notes

(1) Delay is measured in seconds per vehicle.

(2) Level of service for signalized intersections is based upon average stopped delay per vehicle (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(3) Level of Service for unsignalized intersections is based upon average total delay (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

TABLE L-9

2020 MITIGATED BUILD LIRR STATIONS TRAFFIC PM LEVELS OF SERVICE

Table L - 9
2020 MITIGATION LIRR STATION AREA LEVELS OF SERVICE (PM PEAK HOUR)

INTERSECTION & APPROACH		2020 No Build P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	2020 Build P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	2020 Mitigation P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	2020 Mitigation Measure
GREAT NECK														
1 Middle Neck Road & North Station Plaza														
Middle Neck Road	NB	L	0.78	30.3	D	L	0.79	31.9	D	L	0.79	31.9	D	- Modify signal timing (shift 5 sec.
		TR	0.50	8.8	B	TR	0.50	8.8	B	TR	0.50	8.8	B	green time from existing actuated EB/WB
	SB	LTR	0.93	26.2	D	LTR	1.00	39.9	D	LTR	1.00	39.9	D	phase to new exclusive lead actuated WB
North Station Plaza	EB	L	0.31	12.0	B	L	0.33	12.3	B	L	0.35	14.4	B	phase).
		TR	0.69	16.4	C	TR	0.70	16.6	C	TR	0.82	23.0	C	- Restripe WB approach from one 11 ft.
	WB	L	1.50	508.9	F	L	1.68	810.4	F*	L	1.04	93.5	F	left lane and one 16 ft. thru lane to one
		TR	0.22	11.5	B	TR	0.25	11.6	B	TR	0.28	11.8	B	14 ft. left lane and one 13 ft. thru lane.
Overall Intersection		-	**1.18**	**38.6**	**D**	-	**1.27**	**59.1**	**E**	-	**0.99**	**26.2**	**D**	
2 Middle Neck Road & South Station Plaza														
Middle Neck Road	NB	L	1.15	150.6	F	L	1.21	195.9	F*	L	0.59	15.0	B	- Modify signal timing (shift 10 sec.
		TR	0.41	7.2	B	TR	0.41	7.2	B	TR	0.69	17.7	C	green time from NB/SB phase to existing
	SB	L	0.26	6.6	B	L	0.27	6.6	B	L	0.27	10.2	B	actuated EB/WB phase, shift 10 sec. green
		TR	0.53	8.0	B	TR	0.53	8.0	B	TR	0.88	23.3	C	time from NB/SB phase to new actuated
South Station Plaza	EB	LTR	1.08	71.1	F	LTR	1.10	76.1	F	LTR	0.86	19.1	C	left turn phase for NB/SB left turns).
	WB	L	0.96	77.4	F	L	1.08	126.4	F*	L	0.95	66.4	F	- Restripe NB approach from one 10 ft.
		TR	0.50	14.9	B	TR	0.51	15.0	B	TR	0.39	9.9	B	left lane and one 12 ft. thru lane to two
														11 ft. lanes.
Overall Intersection		-	**1.12**	**31.8**	**D**	-	**1.17**	**36.4**	**D**	-	**0.92**	**20.5**	**C**	
HICKSVILLE														
6 Newbridge Road (NYS Rt. 106) & West John Street														
Newbridge Road (NYS Rt. 106)	NB	L	0.88	42.5	E	L	0.88	42.5	E					- Mitigation not required.
		T	0.55	11.1	B	T	0.55	11.2	B					
		R	0.07	7.9	B	R	0.07	7.9	B					
	SB	L	0.95	79.6	F	L	0.96	81.4	F					
		T	0.86	23.4	C	T	0.86	23.4	C					
		R	0.26	14.1	B	R	0.26	14.1	B					
West John Street	EB	L	1.19	155.7	F	L	1.19	160.2	F					
		T	0.98	47.8	E	T	0.98	48.0	E					
		R	0.59	27.9	D	R	0.59	27.9	D					
	WB	L	0.69	23.1	C	L	0.69	23.1	C					
		TR	0.64	27.5	D	TR	0.64	27.5	D					
Overall Intersection		-	**1.21**	**34.7**	**D**	-	**1.22**	**35.0**	**D**					
7 Newbridge Road (NYS Rt. 106) & Duffy Avenue														
Newbridge Road (NYS Rt. 106)	NB	L	0.23	15.0	B	L	0.24	15.0	B	L	0.30	16.1	C	- Modify signal timing (shift 3 sec.
		T	0.73	19.8	C	T	0.73	19.8	C	T	0.73	19.8	C	green time from existing actuated NB/SB
		R	0.09	13.5	B	R	0.09	13.5	B	R	0.09	13.5	B	left turn phase to existing actuated EB/WB
	SB	L	0.52	14.4	B	L	0.52	14.4	B	L	0.66	19.8	C	phase).
		T	1.18	123.4	F	T	1.18	124.1	F	T	1.18	124.1	F*	
		R	0.40	15.8	C	R	0.40	15.8	C	R	0.40	15.8	C	
Duffy Avenue	EB	L	1.12	107.2	F	L	1.16	127.5	F*	L	1.09	91.2	F*	
		T	0.62	17.7	C	T	0.63	18.1	C	T	0.60	16.2	C	
		R	0.36	14.6	B	R	0.36	14.6	B	R	0.34	13.3	B	
	WB	LTR	1.04	88.5	F	LTR	1.16	144.5	F*	LTR	1.04	84.6	F	
Overall Intersection		-	**1.14**	**70.3**	**F**	-	**1.16**	**75.4**	**F**	-	**1.14**	**68.7**	**F**	

Table L - 9
2020 MITIGATION LIRR STATION AREA LEVELS OF SERVICE (PM PEAK HOUR)

	INTERSECTION & APPROACH		2020 No Build P.M. Peak Hour				2020 Build P.M. Peak Hour				2020 Mitigation P.M. Peak Hour				2020 Mitigation Measure
			Mvt.	V/C	Avg. Stopped Delay	LOS	Mvt.	V/C	Avg. Stopped Delay	LOS	Mvt.	V/C	Avg. Stopped Delay	LOS	
8	**Broadway (NYS Rt 107) & East John Street**														
	Broadway (NYS Rt 107)	NB	L	0.71	39.4	D	L	0.71	39.4	D					- Mitigation not required.
			TR	0.55	9.5	B	TR	0.56	9.5	B					
		SB	L	0.65	29.7	D	L	0.65	29.8	D					
			TR	0.79	21.3	C	TR	0.79	21.3	C					
	East John Street	EB	L	0.29	21.0	C	L	0.29	21.0	C					
			T	0.59	30.0	D	T	0.59	30.1	D					
			R	0.70	28.4	D	R	0.70	28.4	D					
		WB	LTR	0.70	32.7	D	LTR	0.71	32.7	D					
	Overall Intersection		-	**0.75**	**22.2**	**C**	-	**0.75**	**22.2**	**C**					
9	**Bay Avenue & East Barclay Street/Woodbury Road**														
	Bay Avenue	NB	LTR	0.41	7.5	B	LTR	0.42	7.6	B					- Mitigation not required.
		SB	L	0.29	6.9	B	L	0.29	6.9	B					
			LT	0.33	1.6	A	LT	0.33	1.6	A					
	East Barclay Street	EB	LTR	0.37	20.5	C	LTR	0.37	20.5	C					
	Woodbury Road	WB	LT	0.89	33.7	D	LT	0.89	34.0	D					
			R	0.95	44.2	E	R	0.95	44.2	E					
	Overall Intersection		-	**0.54**	**17.1**	**C**	-	**0.55**	**17.1**	**C**					
BAYSIDE															
15	**Northern Boulevard (NYS Rt. 25A) & Bell Boulevard**														
	Bell Boulevard	NB	LTR	1.03	73.7	F	LTR	1.05	80.7	F	LTR	1.05	80.7	F	- Restripe the EB approach from three through lanes with a shared left turn plus one right turn lane, to one left only lane, two through, and one right turn lane.
		SB	LTR	0.95	40.9	E	LTR	1.00	49.0	E	LTR	1.00	49.0	E	
	Northern Boulevard (NYS Rt. 25A)	EB	DfL	1.43	426.3	F*	DfL	1.45	465.9	F*	DfL	1.06	94.5	F	
			T	0.88	9.6	B	T	0.88	9.6	B	T	0.98	23.0	C	
			R	0.28	4.0	A	R	0.28	4.0	A	R	0.31	7.2	B	- Modify signal timing (shift 8 sec. green time from EB/WB to a new EB/WB left turn only phase.)
		WB	L	1.13	169.9	F*	L	1.13	169.9	F*	L	0.59	13.9	B	
			T	0.55	5.2	B	T	0.55	5.2	B	T	0.62	9.4	B	
			R	0.20	3.8	A	R	0.20	3.8	A	R	0.23	6.8	B	
	Overall Intersection		-	**1.27**	**35.4**	**D**	-	**1.30**	**39.2**	**D**	-	**1.07**	**30.8**	**D**	
16	**Bell Boulevard & 41st Avenue**														
	Bell Boulevard	NB	LTR	1.26	169.9	F*	LTR	1.31	213.2	F*	L	0.53	10.1	B	- Prohibit parking for the WB approach and restripe the WB approach from one 11 ft. shared through lane to one 9 ft. left turn lane and one 11 ft. shared through/ right lane.
											TR	0.96	26.5	D	
		SB	LTR	0.90	18.3	C	LTR	0.92	20.4	C	LTR	0.93	21.8	C	
	41st Avenue	EB	LTR	0.61	13.8	B	LTR	0.68	15.6	C	LTR	0.62	13.8	B	
		WB	LTR	0.73	18.1	C	LTR	0.94	41.8	E	L	0.55	13.0	B	
											TR	0.17	9.7	B	- Restripe NB approach from one 20 ft. left lane to one 11 ft. exclusive left turn lane and one 11 ft through / right lane by by shifting the center line 2 ft. to the west.
	Overall Intersection		-	**1.04**	**78.4**	**F**	-	**1.16**	**99.4**	**F***	-	**0.82**	**20.9**	**C**	
DEER PARK															
30	**Executive Drive & Long Island Avenue**														
	Executive Drive	NB	L	0.72	16.8	C	L	0.73	17.2	C	L	0.78	19.8	C	- Modify signal timing (shift 2 sec. green time from NB lead phase to EB/WB phase)
			TR	0.29	8.8	B	TR	0.29	8.8	B	TR	0.30	9.5	B	
		SB	L	0.01	19.7	C	L	0.01	19.7	C	L	0.01	19.7	C	
			T	1.14	111.9	F	T	1.14	111.9	F	T	1.14	111.9	F	
			R	0.49	10.4	B	R	0.49	10.4	B	R	0.47	9.5	B	
	Long Island Avenue	EB	L	0.47	21.0	C	L	0.47	21.0	C	L	0.43	19.5	C	
			T	0.10	17.7	C	T	0.10	17.7	C	T	0.09	16.7	C	
			R	0.89	37.7	D	R	0.97	51.9	E	R	0.90	38.3	D	
		WB	L	1.30	216.4	F*	L	1.30	216.4	F*	L	1.24	172.4	F	
			T	0.19	11.8	B	T	0.18	11.8	B	T	0.18	11.0	B	
			R	0.01	10.9	B	R	0.01	10.9	B	R	0.01	10.2	B	
	Overall Intersection		-	**1.10**	**76.5**	**F**	-	**1.12**	**77.6**	**F**	-	**1.11**	**66.1**	**F**	

Table L - 9
2020 MITIGATION LIRR STATION AREA LEVELS OF SERVICE (PM PEAK HOUR)

	INTERSECTION & APPROACH		2020 No Build P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	2020 Build P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	2020 Mitigation P.M. Peak Hour Mvt.	V/C	Avg. Stopped Delay	LOS	2020 Mitigation Measure
31	**Executive Drive & Pine Aire Drive**														
	Executive Drive	SB	L	1.14	108.3	F	L	1.16	122.2	F*	L	1.09	85.8	F	- Modify signal timing (shift 2 sec. green time from EB lead phase to SB phase).
			LR	1.14	108.2	F	LR	1.16	121.9	F*	LR	1.09	85.8	F	
	Pine Aire Drive	EB	L	0.25	11.1	B	L	0.25	11.1	B	L	0.27	12.0	B	
			T	0.90	19.6	C	T	0.90	19.6	C	T	0.93	23.7	C	
		WB	LT	1.19	148.2	F	LT	1.19	148.2	F*	LT	1.19	148.2	F	
			R	0.66	11.9	B	R	0.67	12.0	B	R	0.64	10.7	B	
	Overall Intersection		-	**0.98**	**67.7**	**F**	-	**0.99**	**73.3**	**F**	-	**0.99**	**60.4**	**F**	
RONKONKOMA															
36	**Hawkins Avenue & Union Avenue**														
	Hawkins Avenue	NB	TR	0.96	26.5	D	TR	1.07	54.3	E	TR	1.01	36.5	D	- Restripe the NB approach from one 12 ft. lane to one 13 ft. lane.
		SB	L	1.26	208.1	F	L	1.26	208.1	F*	L	1.26	215.2	F	
			T	0.28	2.4	A	T	0.28	2.4	A	T	0.28	2.2	A	- Modify signal timing (increase cycle length by 10 sec. and add time to NB/SB phase, shift 5 sec. green time from actuated SB phase to NB/SB phase, and shift 2 sec. green time from actuated WB phase to NB/SB phase).
	Union Avenue	WB	L	0.31	20.5	C	L	0.32	20.5	C	L	0.34	21.2	C	
			R	0.79	21.9	C	R	0.79	21.9	C	R	0.82	23.8	C	
	Overall Intersection		-	**1.57**	**51.7**	**E**	-	**1.59**	**62.5**	**F**	-	**1.59**	**56.2**	**E**	
37	**Hawkins Avenue & LIE North Service Road**														
	Hawkins Avenue	NB	L	0.58	33.9	D	L	0.58	34.0	D	L	0.58	34.0	D	- As a result of mitigation required for AM, restripe the NB approach from one left turn lane and two to one left turn lane, one shared left/through lane, and one through lane.
			T	0.45	16.6	C	T	0.47	16.8	C	LT	0.47	16.8	C	
		SB	TR	0.75	28.4	D	TR	0.75	28.6	D	TR	0.75	28.6	D	
	L.I.E. North Service Road	WB	LTR	0.48	14.7	B	LTR	0.49	14.8	B	LTR	0.49	14.8	B	
	Overall Intersection		-	**0.66**	**20.2**	**C**	-	**0.66**	**20.3**	**C**	-	**0.66**	**20.3**	**C**	
38	**Hawkins Avenue & LIE South Service Road**					*									
	Hawkins Avenue	NB	TR	1.29	211.5	F*	TR	1.39	304.7	F*	TR	1.27	196.1	F	- Modify signal timing (shift 2 sec. green time from exclusive SB phase to NB/SB phase).
		SB	L	0.72	30.5	D	L	0.72	30.5	D	L	0.79	35.0	D	
			T	0.28	14.5	B	T	0.28	14.5	B	T	0.28	14.5	B	
	L.I.E. South Service Road	EB	LT	1.19	123.1	F	LT	1.20	125.1	F*	LT	1.20	125.1	F	
	Overall Intersection		-	**1.10**	**125.7**	**F**	-	**1.13**	**148.0**	**F***	-	**1.13**	**125.1**	**F**	
39	**Ronkonkoma Avenue Ramp/LIRR Parking Lot & Railroad Avenue**														
	LIRR Parking Lot	NB	L	0.09	12.4	B	L	0.11	12.4	B					- Mitigation not required.
			TR	0.25	12.9	B	TR	0.29	13.1	B					
	Ronkonkoma Avenue Ramp	SB	L	0.33	13.3	B	L	0.34	13.4	B					
			TR	0.06	12.3	B	TR	0.06	12.3	B					
	Railroad Avenue	EB	L	0.10	2.0	A	L	0.12	2.0	A					
			T	0.52	3.2	A	T	0.54	3.3	A					
			R	0.01	1.9	A	R	0.01	1.9	A					
		WB	L	0.01	1.8	A	L	0.01	1.9	A					
			TR	0.44	2.8	B	TR	0.45	2.9	A					
	Overall Intersection		-	**0.48**	**4.6**	**B**	-	**0.49**	**4.8**	**A**					

Notes

(1) Delay is measured in seconds per vehicle.

(2) Level of service for signalized intersections is based upon average stopped delay per vehicle (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(3) Level of Service for unsignalized intersections is based upon average total delay (sec/veh) for each lane group as listed in the 1994 Highway Capacity Manual -- TRB Special Report 209.

(4) Asterick (*) indicates that Delay and Levels of Service are not meaningful when v/c is greater than 1.2 or 1/PHF. Also it is beyond the scope of HCM to assess delay for an approach which operates at oversaturated conditions.