PARTNERS
John M. Tozzi, P.E.
Edward V. Woods, P.E.
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Creighton Manning

May 18, 2011

Mr. John Joseph
Southern Realty & Development
47 Southern Lane
PO Box 962
Warwick, NY 10990

RE: Traffic Impact Study, Dover Village, NY Route 22, Town of Dover, Dutchess County, New York: CME Project 110-239d

Dear Mr. Joseph:

This letter summarizes the traffic impact assessment for the proposed *Dover Village Shopping Center* in the Town of Dover. The project site is located on the east side of NY Route 22 opposite the Seven Wells Brook Road intersection. This evaluation is based on the site plan entitled "Dover Village Shopping Center," prepared by Rennia Engineering Design, PLLC, dated April 13, 2011. The site plan is included in Appendix A. The purpose of this evaluation is to determine the potential traffic impacts of the project and recommended traffic mitigation, as a result of the project.

ENGINEERS
PLANNERS
SURVEYORS

A. Proposed Project

The proposed project consists of the construction of a 35,812 square foot (SF) supermarket adjacent to the existing Dover Village plaza which contains a Post Office, Dunkin Donuts, Salisbury Bank, a gift shop, offices and specialty retail. Access to the site is proposed via reconfiguring the existing Dover Village full access driveway located on Route 22 into a right in/right out only driveway and a new full access driveway to be located south of the existing driveway. Figure 1 shows the project site and the study area intersections. The site is expected to be completed in 2012.

B. Existing Conditions

NY Route 22 provides north-south travel through the Town of Dover and is classified as a Rural Principal Arterial Other. Data published by the New York State Department of Transportation (NYSDOT) in the *2009 Pavement Data Report* indicates that the pavement on Route 22 is in good condition near the project site. NY Route 22 provides one 12-foot travel lane in each direction and 8 foot paved shoulders. The speed limit is posted at 35-mph on Route 22 near the project site. Nearby land uses include the CVS plaza and a McDonald's to the north.

The study area intersections include the existing site driveway and the first intersection north and south of the site, as described below:

2 Winners Circle
Albany, NY 12205
518.446.0396 (p)
518.446.0397 (f)
www.cmellp.com

Intersection Descriptions:

NY Route 22/ Dover Village Plaza Driveway - This intersection is a three-way intersection with stop sign control on the westbound Dover Village Plaza approach. All three approaches to this intersection consist of a single lane for shared travel movements. There are no sidewalks and no pedestrian accommodations at this intersection.

NY Route 22/CVS Plaza Main Driveway - This intersection is a three-way intersection with no traffic control. All three approaches to this intersection consist of a single lane for shared travel movements. There are no sidewalks and no pedestrian accommodations at this intersection.

NY Route 22/Seven Wells Brook Road - This intersection is a three-way intersection with stop sign control on the eastbound Seven Wells Brook Road approach. The eastbound approach consists of a single travel lane for shared travel movements. The northbound Route 22 approach consists of a left-turn only lane and a separate through lane. The southbound Route 22 approach consists of a single lane for shared travel movements. There are no sidewalks or pedestrian accommodations at this intersection.

Traffic Volumes

An automatic traffic recorder was installed on Route 22 adjacent to the site for a period of several days. The data is included in Appendix B and shows that the Average Daily Traffic (ADT) volume on Route 22 is approximately 8100 vehicles per day. The data also shows that the weekday PM peak hour is the highest traffic volume time period averaging 672 vehicles per hour (vph). Traffic volumes are lower on Saturday (609 vph), and on Sunday (501 vph).

Intersection turning movement counts were conducted at the study area intersections on Tuesday, November 30, 2010 during the weekday afternoon peak commuter period from 4:00 to 6:00 p.m. The raw turning movement count data are included in Appendix B. The existing traffic volumes for the PM peak hour are summarized on Figure 2 and form the basis for all traffic forecasts.

C. Traffic Forecasts

Background Traffic

The 2012 No-Build traffic volumes are based on an analysis of existing traffic growth trends and other developments in the project area. Historical traffic volume data found in the *2009 Traffic Data Report*, published by the New York State Department of Transportation (NYSDOT), indicates that traffic volumes in the vicinity of the site have been increasing by approximately 1.0 percent per year over the last several years. Therefore, a growth rate of 1.0 percent per year was applied for two years to the 2010 existing traffic volumes to estimate the 2012 normal background traffic volumes.

In addition, the future traffic from two “other development” projects was accounted for in the 2012 No-Build traffic volumes. Vehicle trips generated by the Stony Brook Estates project – an approved 28 unit condominium project located north of the Dover Village Shopping Center with access to Route 22 – were added to the 2012 normal background traffic volumes. Vehicle trips generated by the Country Squire Apartments project – a proposed development consisting of 17 apartment units on North Nellie Hill Road – were accounted for in the background growth rate of 1.0 percent per year.

The 2012 No-Build traffic volumes are shown on Figure 3. The No-Build volumes represent the future traffic conditions expected at the study area intersections before development of the proposed *Dover Village Shopping Center.*

Trip Generation

Trip generation determines the quantity of traffic expected to travel to/from the site. The Institute of Transportation Engineers (ITE) *Trip Generation, 8th edition*, provides trip generation data for various land uses based on studies of similar existing developments located across the country. Trip generation for this project was estimated using ITE land use code (LUC) 850 – Supermarket.

A portion of the trip generation is attributed to traffic that is already at the existing plaza (multi-use trips), or passing the site on Route 22 (pass-by trips). "Multi-use" trips are assumed to represent 10 percent of the total site generated traffic based on ITE methodologies. Based upon the ITE data, a 36 percent pass-by rate is noted for a supermarket; however, a conservative estimate of 25 percent pass-by trips was applied. The remaining trips are new trips to the area. The peak hour trip generation is summarized in Table 1 and shows that the project is expected to generate approximately 312 new vehicle trips during the PM peak hour (160 trips entering and 152 trips exiting)

Table 1 – Trip Generation Summary

Land Use	ITE LUC	Size (SF)	PM Peak Hour		
			Enter	Exit	Total
Supermarket	850	36,000	236	226	462
-10% Multi-use			-24	-22	-46
Subtotal			212	204	416
-25% Pass By			-52	-52	-104
Total Primary Trips			**160**	**152**	**312**

Future Volumes

Traffic generated by the proposed project was distributed based on the existing travel patterns and probable travel routes of customers of the project site. The resulting primary and pass-by trip distributions are shown on Figures 4 and 5. Site generated traffic is shown on Figures 6 and 7. The results of the site generated traffic assignment were added to the 2012 No-Build traffic volumes to develop the 2012 Build traffic volumes. The 2012 Build traffic volumes are shown on Figure 8 and represent future traffic conditions after the completion of the project.

D. Intersection Operations

Intersection Level of Service (LOS) and capacity analysis relate traffic volumes to the physical characteristics of an intersection. Intersection evaluations were made using the highway capacity software (HCS+, version 5.4) which automates the procedures contained in the 2000 Highway Capacity Manual (HCM). Levels of service range from A to F with LOS A conditions considered excellent with very little vehicle delay while LOS F represents poor conditions with very long vehicle delays. Appendix C contains detailed descriptions of LOS criteria for unsignalized intersections and the detailed HCM Level of Service reports. Table 2 shows the results of the Level

of Service analysis. The relative impact of the proposed project can be determined by comparing the level of service during the 2012 design year for the "No-Build" and "Build" traffic volume conditions.

Table 2 – Level of Service Summary

Intersection Approach	Control	PM Peak Hour			
		2010 Existing	2012 No-Build	2012 Build	2012 Build with Improvements*
NY Route 22/CVS Driveway	TW				
Route 22 NB	LT	A (8.2)	A (8.2)	A (8.6)	--
CVS Driveway EB	LR	C (22.5)	C (23.3)	E (39.6)	--
NY Route 22/Existing Site Driveway [Right In/Right Out Only]	TW				
Route 22 SB	L	A (8.2)	A (8.2)	--	
Dover Village Drwy WB	LR [R]	B (14.2)	B (14.5)	[B (12.0)]	
NY Route 22/Full Access Drwy	TW				
Route 22 SB	L	--	--	A (9.0)	A (9.0)
Full Access Drwy WB	LR			F (95.4)	E (42.5)
NY Route 22/Seven Wells Brook Rd	TW				
Route 22 NB	L	A (8.3)	A (8.3)	A (8.2)	--
Seven Wells Brook Rd EB	LR	B (12.9)	B (13.1)	B (14.4)	--

Key: X (Y.Y) = Level of Service (Delay, seconds per vehicle).
TW = Unsignalized Intersection.
NB, SB, WB, EB = Northbound, Southbound, Westbound, Eastbound intersection approaches.
LTR = Left-turn, through, and/or right-turn movements.
--- = Not Applicable

*Improvements include two exit lanes on the site driveway, plus a southbound left turn lane on Route 22

The following conclusions are evident from this analysis

- NY Route 22/CVS Driveway – Vehicle delays will increase on the eastbound driveway approach. Resulting levels of service will degrade from LOS C during the No-build condition to LOS E during the build condition. It should be noted that these long delays will be limited to the peak hours. Delays at other times will be less.

- NY Route 22/Existing Site Driveway – This intersection will operate acceptably at LOS B during the 2012 Build condition. It is recommended that the intersection operate under stop sign control on the westbound right out approach.

- NY Route 22/Full Access Driveway – The level of service analysis indicates that the westbound driveway approach will operate at LOS F during the build conditions. Constructing an exclusive southbound left turn lane on Route 22 and providing separate westbound left and right turn lanes on the driveway will improve the unsignalized LOS.

- NY Route 22/Seven Wells Brook Road – There will be no change in level of service as a result of the project. This intersection will operate with very little delay at LOS A/B with or without the project.

E. Sensitivity Analyses

It is noted that the project involves a subdivision that will leave some adjacent developable land on the existing Dover Plaza site. Development of the adjacent land is not part of the current supermarket proposal, however a sensitivity analysis was conducted to account for the potential build-out of that property. For the purposes of the sensitivity analysis, it is assumed that the remaining land could accommodate an 8,000 SF office building, and a 12,000 SF retail development, which would generate 45 additional PM peak hour trips. These additional trips were assigned to the traffic network and analyzed according to the Highway Capacity Manual methodologies as summarized in the following table.

Table 3 –2012 Level of Service Sensitivity Analysis

Intersection Approach	Control	PM Peak Hour		
		2012 Build	2012 Build Sensitivity Analysis	2012 Build SA with Improvements*
NY Route 22/CVS Driveway	TW			
Route 22 NB	LT	A (8.6)	A (8.7)	--
CVS Driveway EB	LR	E (39.6)	E (43.9)	--
NY Route 22/Existing Site Driveway [Right In/Right Out Only]	TW			
Route 22 SB	L	--	--	--
Dover Village Drwy WB	TR [R]	[B (12.0)]	[B (12.3)]	--
NY Route 22/Full Access Drwy	TW			
Route 22 SB	L	A (9.0)	A (9.1)	A (9.1)
Full Access Drwy WB	LR	F (95.4)	F (140.0)	F(60.8)
NY Route 22/Seven Wells Brook Rd	TW			
Route 22 NB	L	A (8.2)	A (8.3)	--
Seven Wells Brook Rd EB	LR	B (14.4)	B (14.6)	--

Key: X (Y.Y) = Level of Service (Delay, seconds per vehicle).
TW = Unsignalized Intersection.
NB, SB, WB, EB = Northbound, Southbound, Westbound, Eastbound intersection approaches.
LTR = Left-turn, through, and/or right-turn movements.
--- = Not Applicable
*Improvements include two exit lanes on the site driveway, plus a southbound left turn lane on Route 22

The table shows that even with the turn lane improvements at the site driveway the westbound approach will operate at LOS F with the additional traffic from this hypothetical development, however, sufficient capacity will exist.

A sensitivity analysis was also conducted at the proposed site driveway for horizon year 2017 conditions. This time period reflects expected traffic conditions five (5) years after the completion of the project, known as ETC+5 (Estimated Time of Completion + 5 Years). The ETC+5 analysis includes the additional 20,000 SF of development discussed above, background growth of 1.0 percent per year, plus traffic generated by phase 1 of the proposed Dover Knolls development located approximately 7.5 miles south of the *Dover Village Shopping Center* in the Town of Dover. The ETC+5 analysis also accounts for the potential that the Dover Knolls project could influence the distribution of trips to and from the proposed Dover Village project. Based on a review of the traffic

forecasts for Dover Knolls, it is estimated that this "other development" could shift 10 percent of the site traffic to the south, resulting in an overall site distribution of 55% to/from the north and 45% to/from the south.

Intersection level of service analysis was conducted for the ETC+5 conditions as summarized in the following table.

Table 4 –2017 (ETC+5) Level of Service Sensitivity Analysis

Intersection Approach	Control	PM Peak Hour		
		2017 Build Unsignalized	2017 Build Signalized	2017 Build Signalized with NB right turn lane
NY Route 22/Full Access Drwy	TW			
Route 22 SB	L	A (9.4)	--	--
Full Access Drwy WB	LR	F (141.4)	--	--
NY Route 22/Full Access Drwy	S			
Full Access Drwy WB	L	--	B (19.5)	B (19.5)
	R	--	B (18.6)	B (18.6)
Route 22 NB	[T]R	--	A (8.3)	[A (7.2)]
	[R]	--	--	[A (5.7)]
Route 22 SB	L	--	A (8.9)	A (7.7)
	T	--	A (7.2)	A (7.2)
	Overall	--	B (10.1)	A (9.5)

Key: X (Y.Y) = Level of Service (Delay, seconds per vehicle).
TW = Unsignalized Intersection.
NB, SB, WB, EB = Northbound, Southbound, Westbound, Eastbound intersection approaches.
LTR = Left-turn, through, and/or right-turn movements.
--- = Not Applicable

The table shows that long delays will prevail if the site driveway remains unsignalized. The westbound site driveway approach will operate at LOS A/F with approximately 141 seconds of delay during the 2017 build condition, and there will be insufficient capacity on the site driveway. Installation of a traffic signal will mitigate the long traffic delays. As requested by the NYSDOT, the need for a northbound right turn was also evaluated. As shown in the table, the addition of a northbound right-turn lane at this intersection would slightly improve the overall LOS and serve to reduce the length of the northbound thru-lane queue.

F. Signal Warrants Analysis

Delays will exist for motorists turning left out of the site onto Route 22 during the peak hours. Accordingly, the need for a traffic signal was evaluated. A signal should not be installed unless one or more of the signal warrants contained in the Manual on Uniform Traffic Control Devices (MUTCD) is met. Satisfaction of a warrant in-itself is not justification for a traffic signal.

The warrants analysis shows that the 2012 Build traffic volumes are expected to satisfy several traffic signal warrants including the Warrant 1 parts A and B, the four hour warrant, and the peak hour warrant. However, the analysis in this report demonstrates that the driveway will initially operate with sufficient capacity under stop sign control. Accordingly, a stop sign is recommended initially.

It is also recommended that the applicant monitor the actual traffic volumes at the site approximately three months after opening, and conduct a signal warrants analysis of actual traffic volumes. The signal warrant analysis will be submitted to the NYSDOT who will determine if a traffic signal is justified. If the NYSDOT requires a signal at that time, then it shall be installed by the applicant at the applicant's expense.

G. Queuing Analysis

A queuing analysis was conducted at the proposed full access driveway for the westbound right and left-turn lanes, the southbound left-turn lane and the northbound thru-lane. The 95th percentile queues are shown for the 2012 Build-Sensitivity Analysis and 2017 Build-Sensitivity Analysis conditions to illustrate the "worst case" scenarios and to show how the installation of a traffic signal will affect vehicle queues at this intersection. Table 5 provides a summary of the queuing information.

Table 5 – 95th Percentile Queuing Summary

Turn Lane	2012 Unsignalized	Signalized		
		2012	2017 (ETC+5)	2017 (ETC+5) with NB Right Turn Lane
WB Left-Turn Lane	6.43 (150)	4.2 (100)	5.5 (150)	5.5 (150)
WB Right-Turn Lane	0.81 (25)	4.0 (100)	3.4 (75)	3.4 (75)
SB Left-Turn Lane	0.80 (25)	5.3 (125)	5.1 (125)	4.7 (125)
NB Thru-Lane	Not Applicable	9.0 (225)	12.4 (300)	9.2 (225)

Key: X.X (Y) = 95% Queue Length in vehicles (95th queue length in ft. – rounded to nearest vehicle)

The queuing summary shows that the southbound left-turn lane should provide 125-feet of storage. The northbound thru-lane queue would extend approximately 300 feet during the ETC+5 condition. The addition of a separate northbound right-turn lane at this intersection would shorten the northbound thru-lane queue to approximately 225 feet, thus no longer extending past the Seven Wells Brook Rd intersection.

H. Sight Distance Analysis

The available intersection sight distance was measured from the perspective of a driver exiting the site driveways looking in both directions along Route 22. The intersection sight distance for vehicles traveling on Route 22 looking straight ahead to turn left into the site was also measured. The posted speed limit on Route 22 near the project site is 35-mph. However, based on speed data collected as part of the project, the 85th percentile speeds were measured to be approximately 43-mph. The sight distances at the proposed site access roadways were measured and compared to the guidelines presented in the American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets*, 2004. The sight distance analysis assumes a 45-mph operating speed along Route 22.

Stopping sight distance was also measured along Route 22 approaching the site access roadways. Stopping sight distance is the length of the roadway ahead that is visible to the driver. The available stopping sight distance on a roadway should be of sufficient length to enable a vehicle traveling at or

near the operating speed to stop before reaching a stationary object in its path. Diagram 1 illustrates the intersection and stopping sight distance lines of sight.

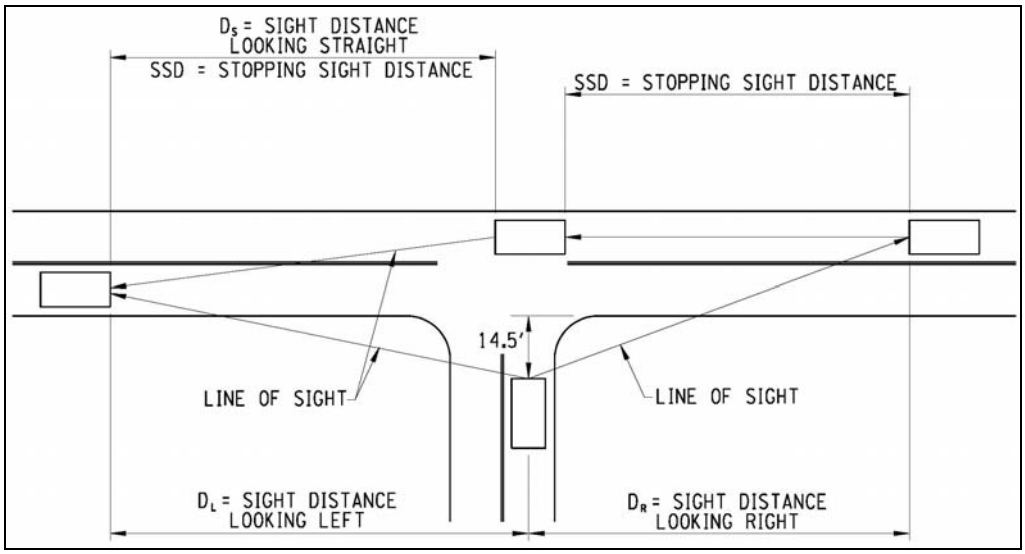

Diagram 1 – Intersection Sight Distance Measurements

The sight distance evaluation is summarized in Table 6, and photographs 1 through 4.

Table 6 – Intersection Sight Distance Summary

Intersection		Intersection Sight Distance (feet)[1]				Stopping Sight Distance[2]	
		Right-Turn from Site Access (D_L)	Left-Turn from Site Access: Looking Left (D_L)	Left-Turn from Site Access: Looking Right (D_R)	Left-Turn from Mainline (D_S)	SSD_{NB}	SSD_{SB}
Route 22 /Existing Dover Village Drwy (Right in/Right out)	Available[3]	1000	NA	NA	NA	1000	NA
	Recommended	430	NA	NA	NA	360	NA
Route 22/ Proposed Drwy(Full Access)	Available[3]	1000	1000	767	1000	1000	895
	Recommended	430	500	500	365	360	360

[1] Intersection sight distance is measured at 14.5 feet back from the travel way at an eye height and object height of 3.5 feet.
[2] Stopping sight distance is measured for a 2 foot object located in the path of northbound and southbound vehicles on Route 22.
[3] Available sight distances are compared to the AASHTO recommended distances for a 45-mph operating speed on NY Route 22.

<u>Route 22/Existing Dover Village Driveway</u> – The sight distances at this intersection meet the AASHTO guidelines for the 45-mph operating speed. Photographs 1 and 2 show the available sight lines looking left and right, respectively, from the site driveway location.

Route 22/Proposed Full Access Driveway– The sight distances at this intersection meet the AASHTO guidelines for the 45-mph operating speed. Photographs 3 and 4 show the available sight lines looking left and right, respectively, from the site driveway location.

Photograph 1 – Looking Left - D_L

Photograph 2 – Looking Right – D_R

Photograph 3 – Looking Left - D_L

Photograph 4 – Looking Right – D_R

I. Conclusions and Recommendations

The proposed project consists of a 35,812 square foot supermarket located at the existing Dover Plaza site that will generate 312 new PM peak hour trips to the area. The project proposes to reconfigure the existing full access driveway at the Dover Plaza into a Right In/Right Out only driveway, and will also provide a new full access driveway approximately 300 feet south of the existing driveway.

The following improvements should be considered:

- Providing two exit lanes on the proposed site driveway – separate left and right turning lanes.
- Constructing a southbound left turn lane on Route 22 for traffic entering the site.
- Operating both site driveways under stop sign control.
- Monitoring traffic volumes 3 months after development to determine the need for a traffic signal and installation of a traffic signal if required by the NYSDOT at the three month time.
- If a traffic signal is installed, then a northbound right-turn lane should be considered so queuing at the signal will not block the Seven Wells Brook Road intersection.

Site access improvements will require a Highway Work Permit and approval by the NYSDOT. Please contact us if there are any questions about this assessment.

Respectfully submitted,
Creighton Manning Engineering, LLP

Mark A. Sargent, P.E.
Associate

Daniel P. Reynolds
Project Engineer

Attachments

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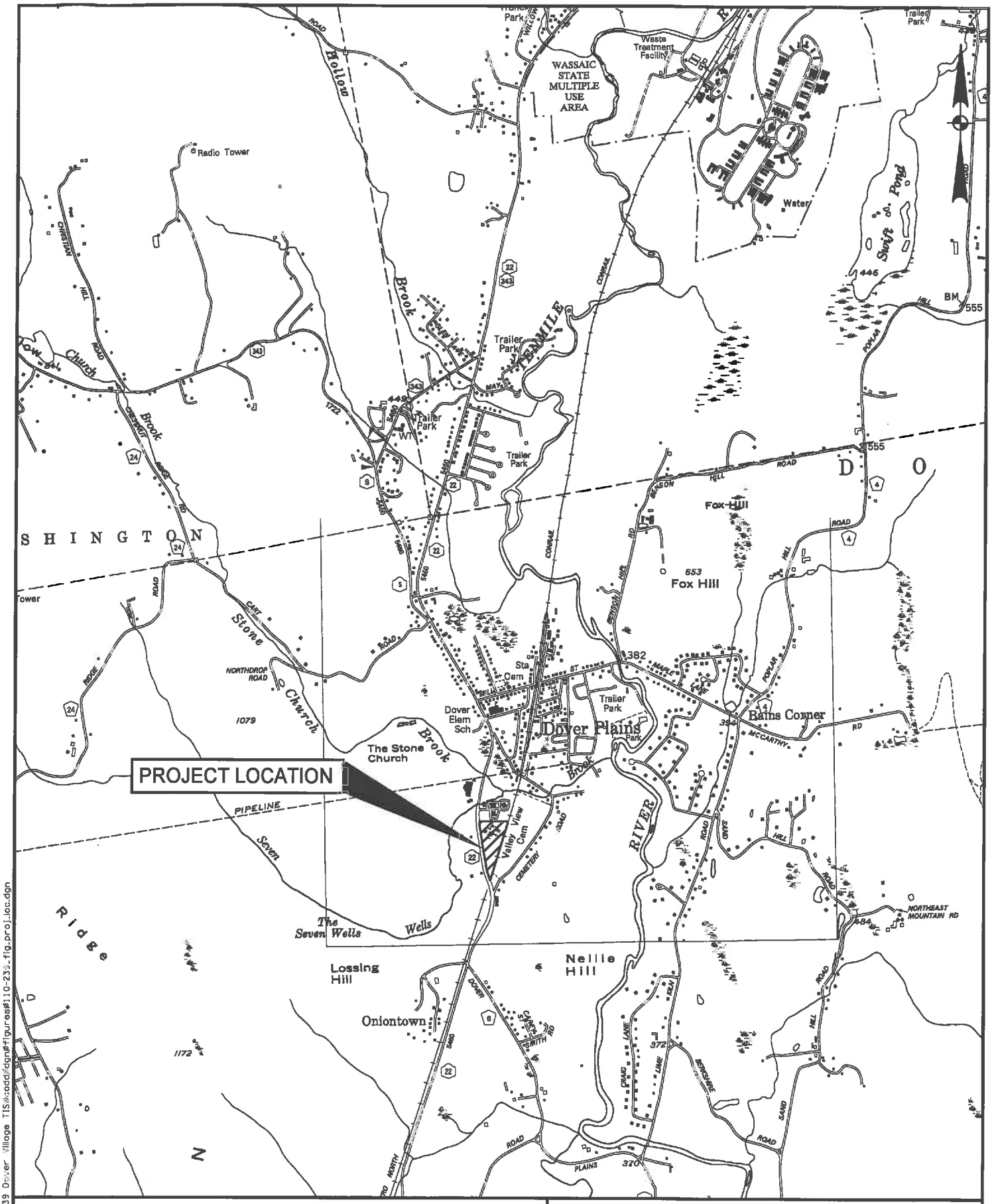

PROJECT LOCATION

DOVER VILLAGE SHOPPING CENTER
TOWN OF DOVER, NEW YORK

Creighton Manning

PROJECT: 110-239	DATE: 12/2010	FIGURE: 1

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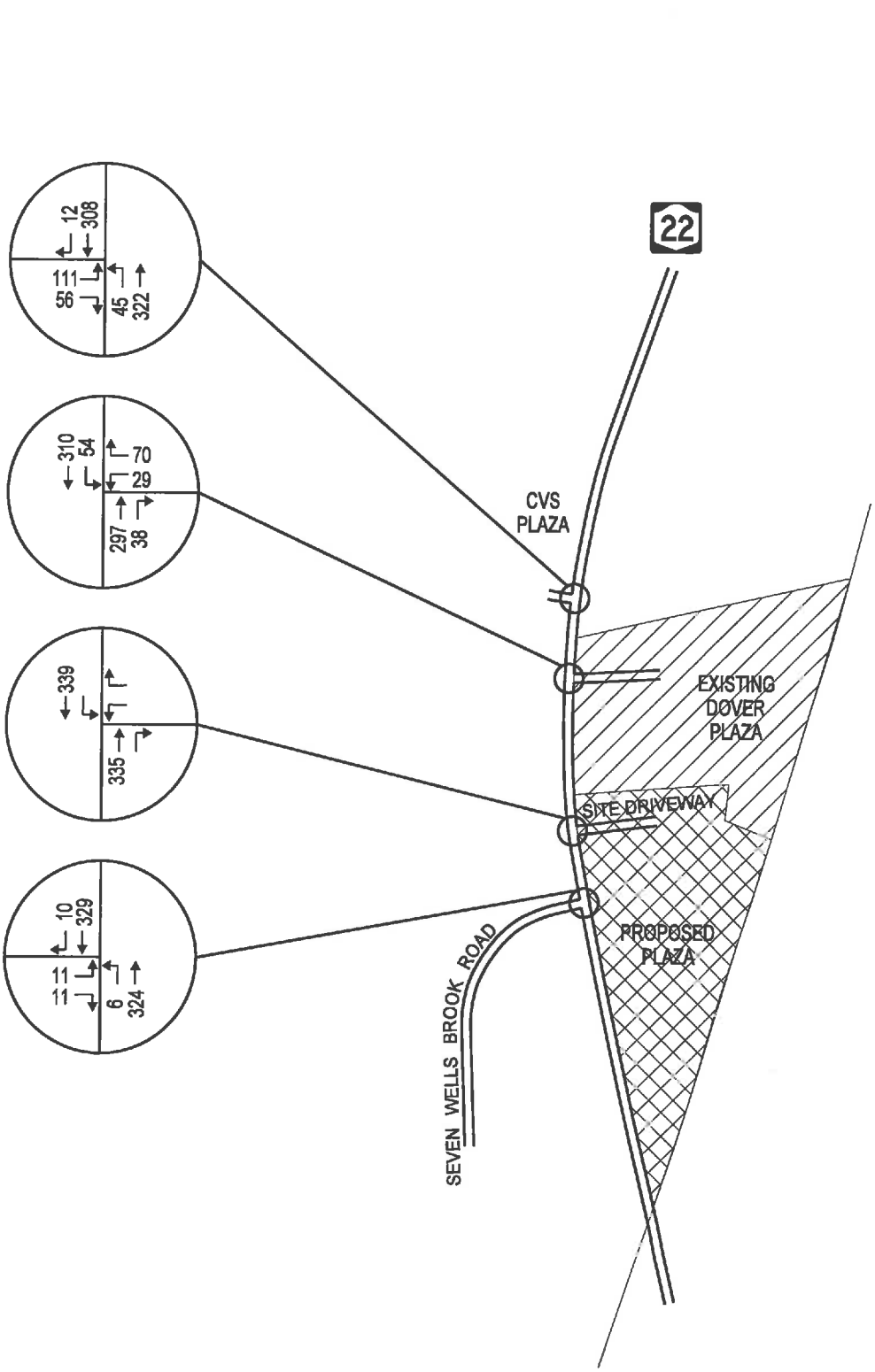
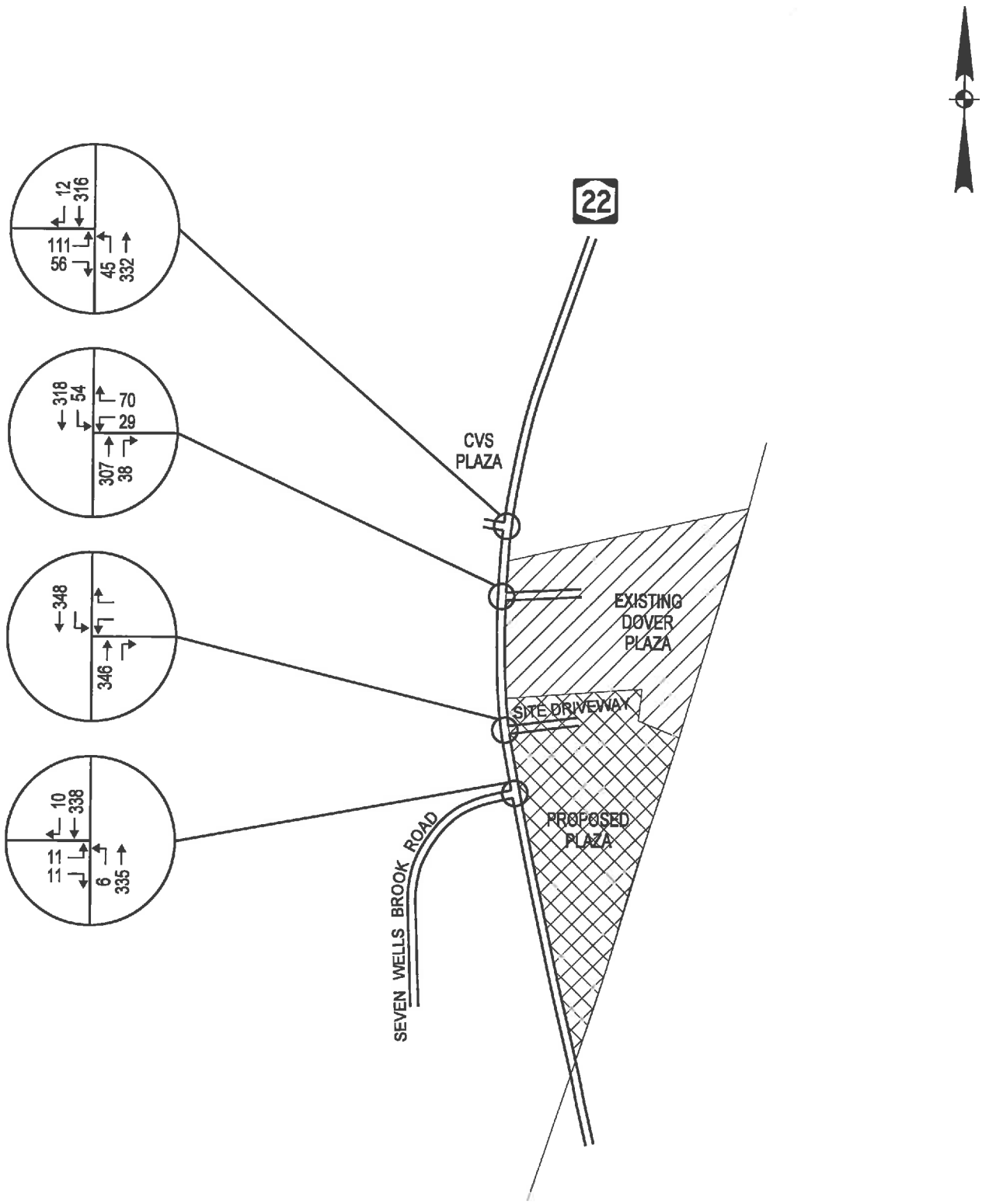


2010 EXISTING TRAFFIC VOLUMES
PM PEAK HOUR

DOVER VILLAGE SHOPPING CENTER
TOWN OF DOVER, NEW YORK

Creighton Manning

PROJECT: 110-239	DATE: 3/2011	FIGURE: 2



2012 NO-BUILD TRAFFIC VOLUMES
PM PEAK HOUR

DOVER VILLAGE SHOPPING CENTER
TOWN OF DOVER, NEW YORK

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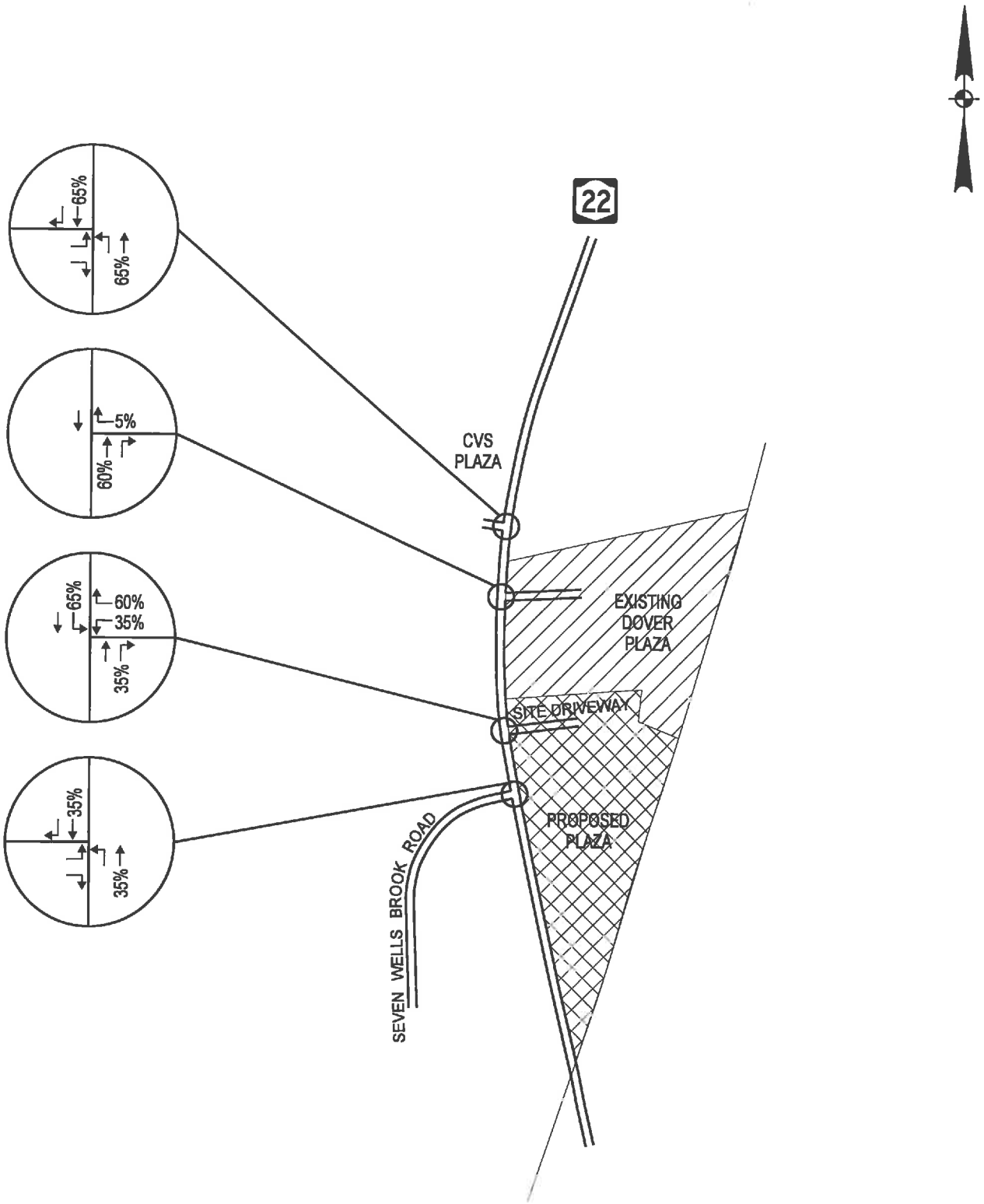
PROJECT: 110-239	DATE: 3/2011	FIGURE: 3

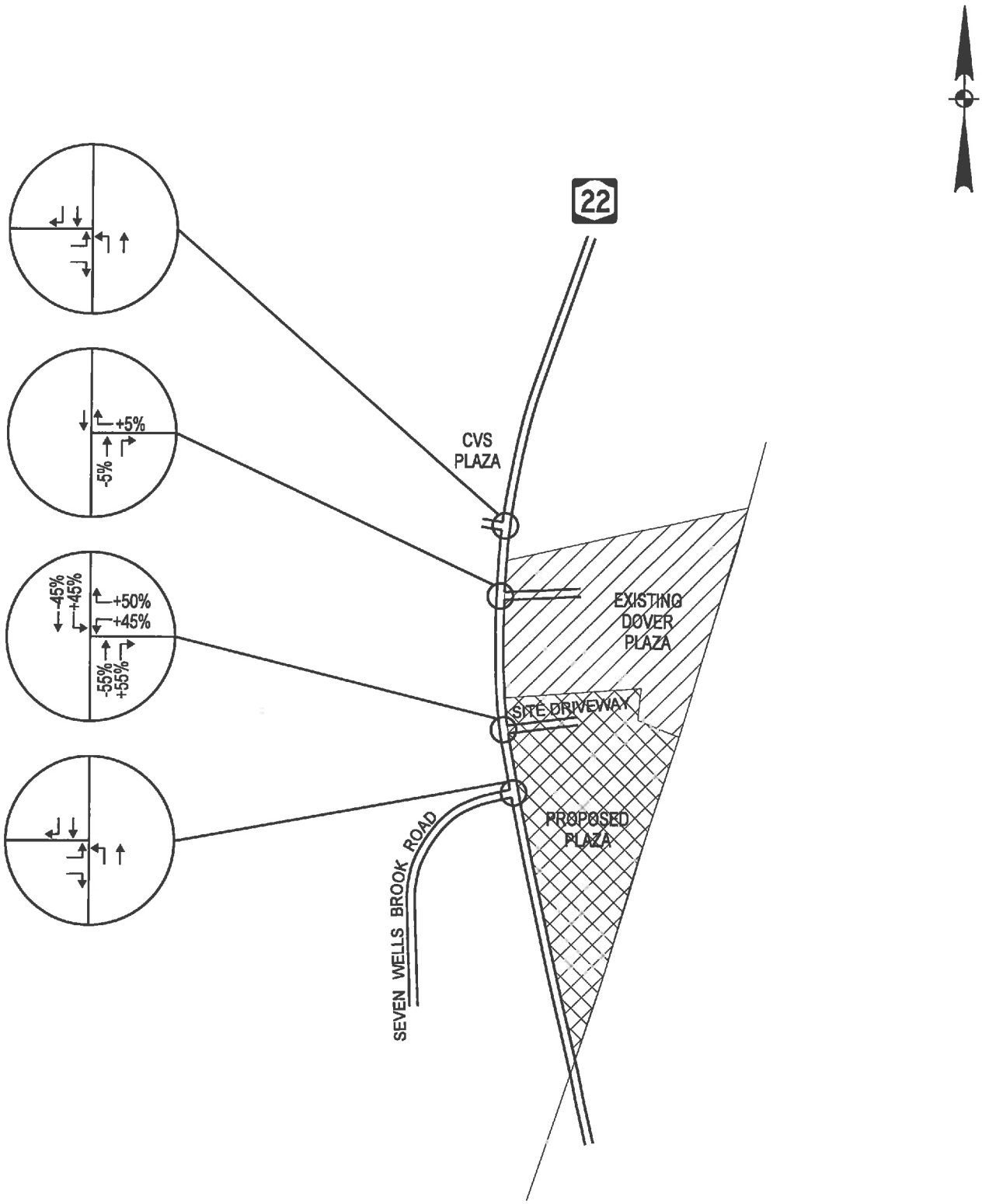


TRIP DISTRIBUTION - PRIMARY TRIPS
PM PEAK HOUR

DOVER VILLAGE SHOPPING CENTER
TOWN OF DOVER, NEW YORK

Creighton Manning

PROJECT: 110-239	DATE: 3/2011	FIGURE: 4

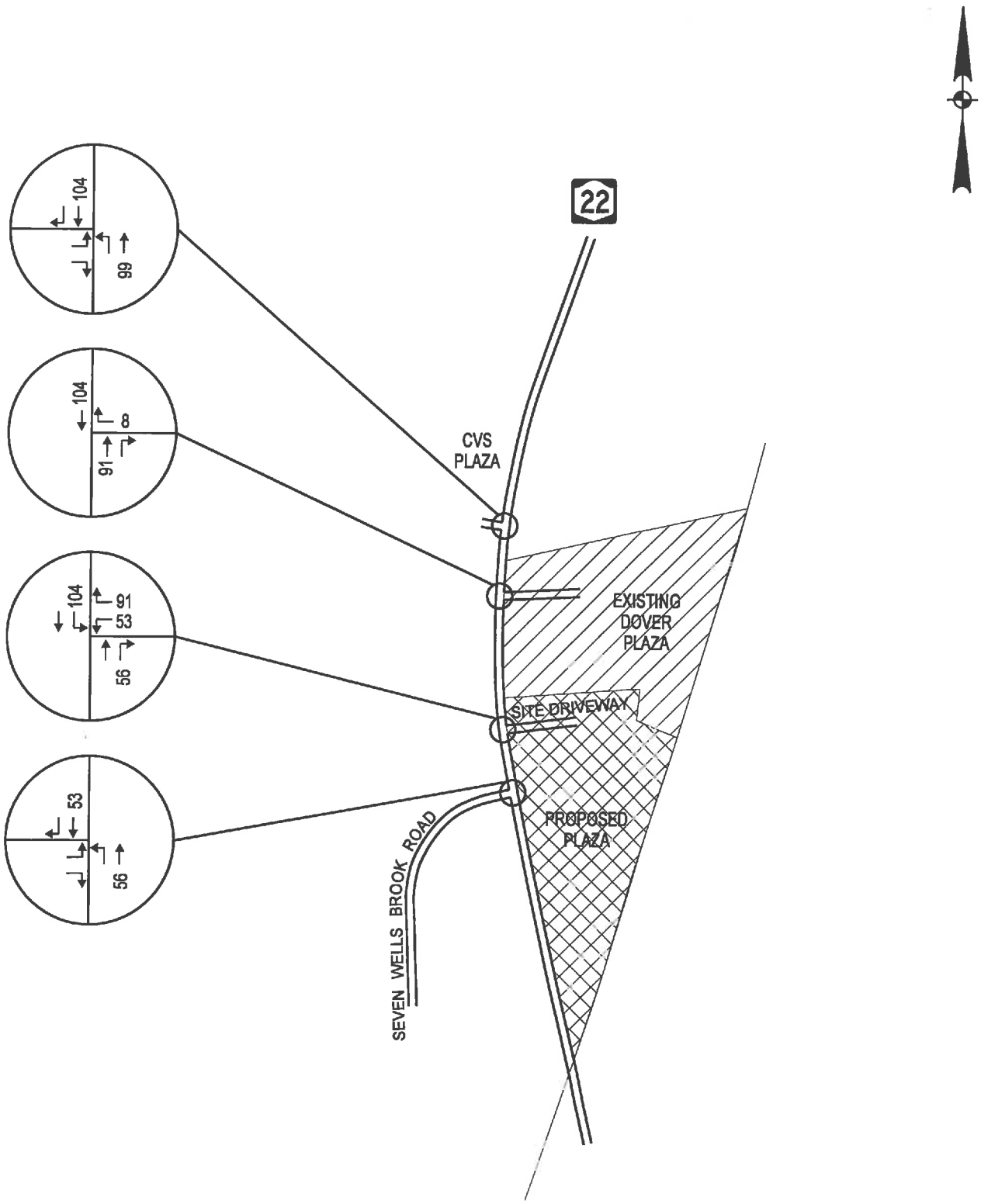


TRIP DISTRIBUTION - PASS-BY TRIPS
PM PEAK HOUR

DOVER VILLAGE SHOPPING CENTER
TOWN OF DOVER, NEW YORK

Creighton Manning

PROJECT: 110-239	DATE: 3/2011	FIGURE: 5

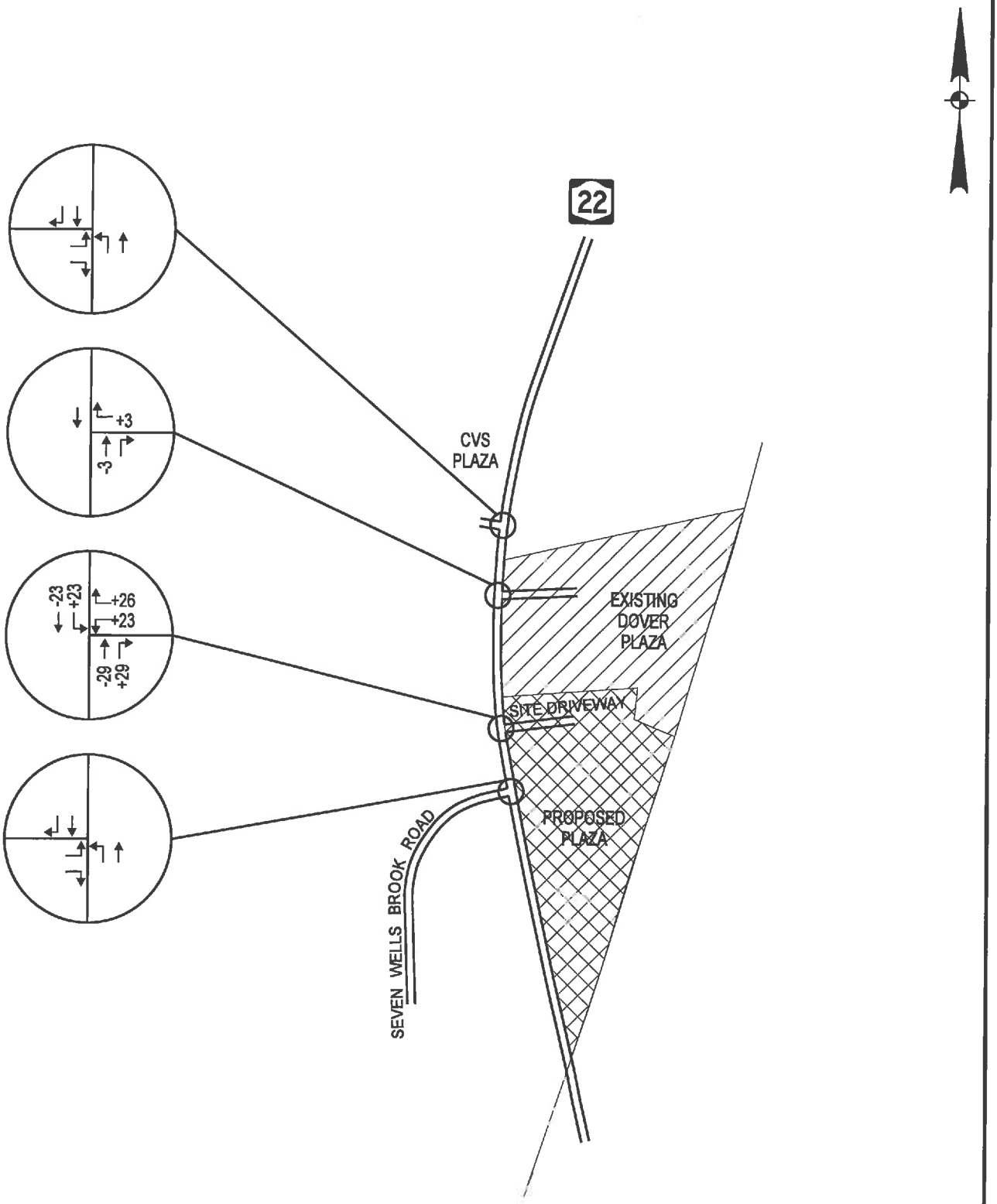


TRIP ASSIGNMENT - PRIMARY TRIPS
PM PEAK HOUR

DOVER VILLAGE SHOPPING CENTER
TOWN OF DOVER, NEW YORK

Creighton Manning

PROJECT: 110-239	DATE: 3/2011	FIGURE: 6

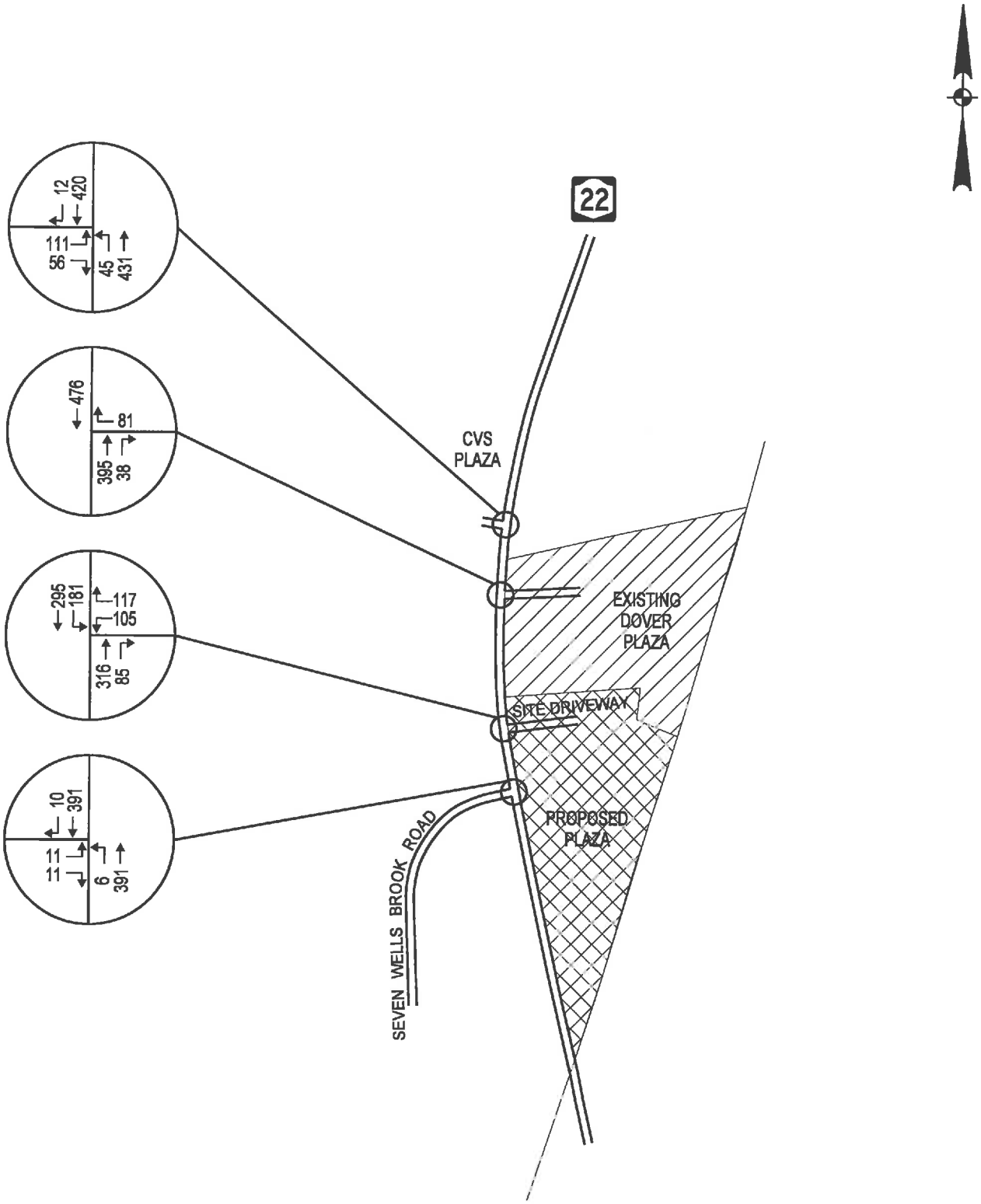


TRIP ASSIGNMENT - PASS-BY TRIPS
PM PEAK HOUR

DOVER VILLAGE SHOPPING CENTER
TOWN OF DOVER, NEW YORK

Creighton Manning

PROJECT: 110-239	DATE: 3/2011	FIGURE: 7



2012 BUILD VOLUMES
PM PEAK HOUR

DOVER VILLAGE SHOPPING CENTER
TOWN OF DOVER, NEW YORK

Creighton Manning

PROJECT: 110-239	DATE: 3/2011	FIGURE: 8

Appendix A – Concept Plan

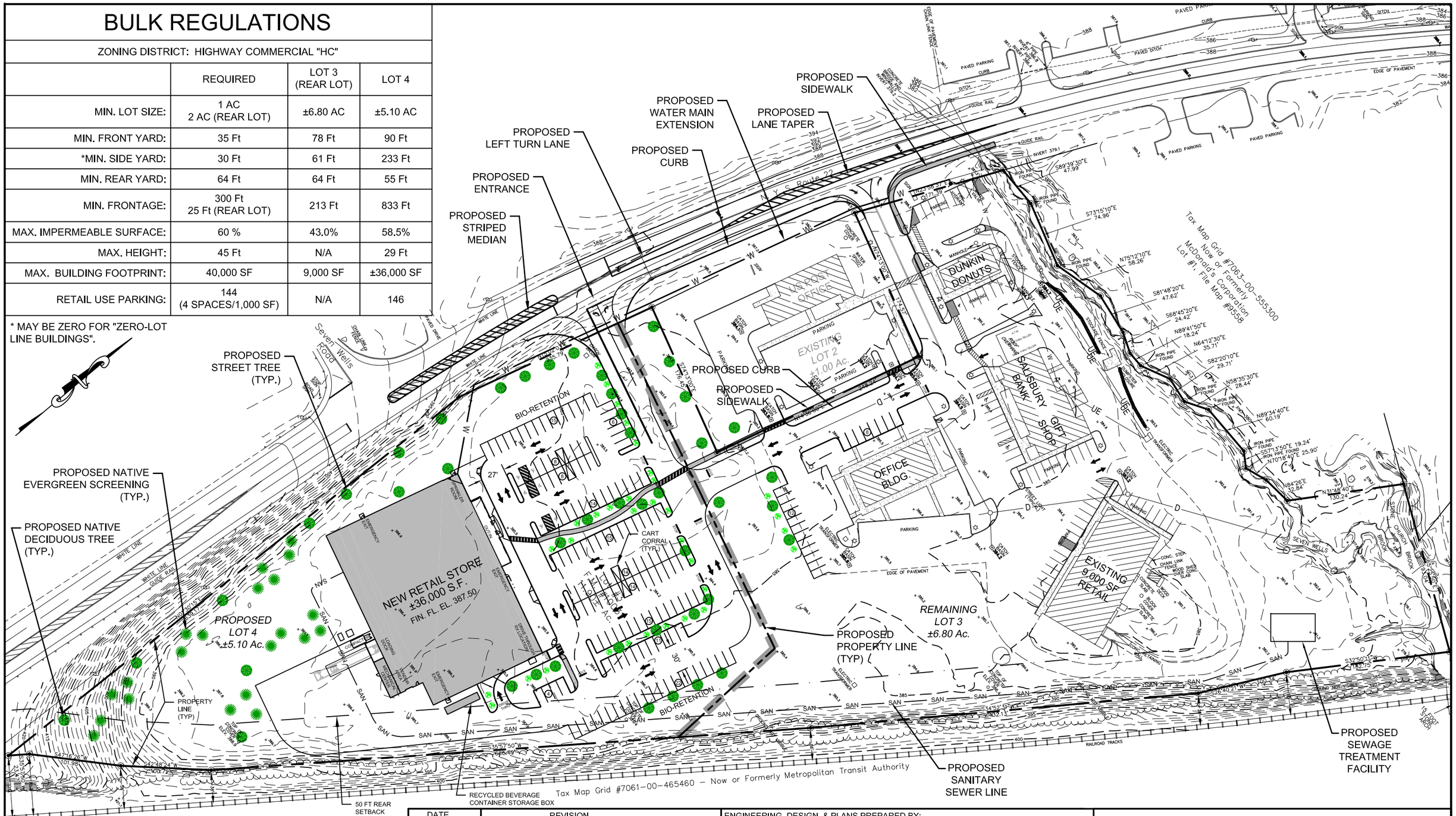
Traffic Evaluation Impact Study
Dover Village Shopping Center
Town of Dover, New York

BULK REGULATIONS

ZONING DISTRICT: HIGHWAY COMMERCIAL "HC"

	REQUIRED	LOT 3 (REAR LOT)	LOT 4
MIN. LOT SIZE:	1 AC 2 AC (REAR LOT)	±6.80 AC	±5.10 AC
MIN. FRONT YARD:	35 Ft	78 Ft	90 Ft
*MIN. SIDE YARD:	30 Ft	61 Ft	233 Ft
MIN. REAR YARD:	64 Ft	64 Ft	55 Ft
MIN. FRONTAGE:	300 Ft 25 Ft (REAR LOT)	213 Ft	833 Ft
MAX. IMPERMEABLE SURFACE:	60 %	43.0%	58.5%
MAX. HEIGHT:	45 Ft	N/A	29 Ft
MAX. BUILDING FOOTPRINT:	40,000 SF	9,000 SF	±36,000 SF
RETAIL USE PARKING:	144 (4 SPACES/1,000 SF)	N/A	146

* MAY BE ZERO FOR "ZERO-LOT LINE BUILDINGS".



MAP NOTES:

1. PROPERTY AND TOPOGRAPHIC SURVEY DATA BASED UPON AN ACTUAL FIELD SURVEY COMPLETED IN DECEMBER OF 2010 BY SPENCER S. HALL, NYS L.S. NO. 49138.
2. NO REGULATORY WETLANDS ARE PRESENT ON OR WITHIN PROJECT SITE.

DATE	REVISION

ENGINEERING, DESIGN, & PLANS PREPARED BY:

RENNIA ENGINEERING DESIGN, PLLC

CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522

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DOVER VILLAGE SHOPPING CENTER

TOWN OF DOVER — DUTCHESS COUNTY, NY

CONCEPT "C" SITE PLAN EXPANSION & COMMERCIAL SUBDIVISION PLAN

DATE	SCALE	DESIGNED BY:	DRAWN BY:	CHECKED BY:	JOB NO.	SHEET NO.
4/13/11	1"=100'	RAR	RAR/JJE	RAR	08-001	1 of 1

Appendix B – Traffic Counts

Traffic Evaluation Impact Study
Dover Village Shopping Center
Town of Dover, New York

Project: 110-239
Counted By: DDD
Location: Dover, NY
Other:

File Name : tm10239p1
Site Code : 10-239-1
Start Date : 11/30/2010
Page No : 1

North CVS Drwy. Right

Groups Printed- Passengers Vehicles - Heavy Veh - School Bus

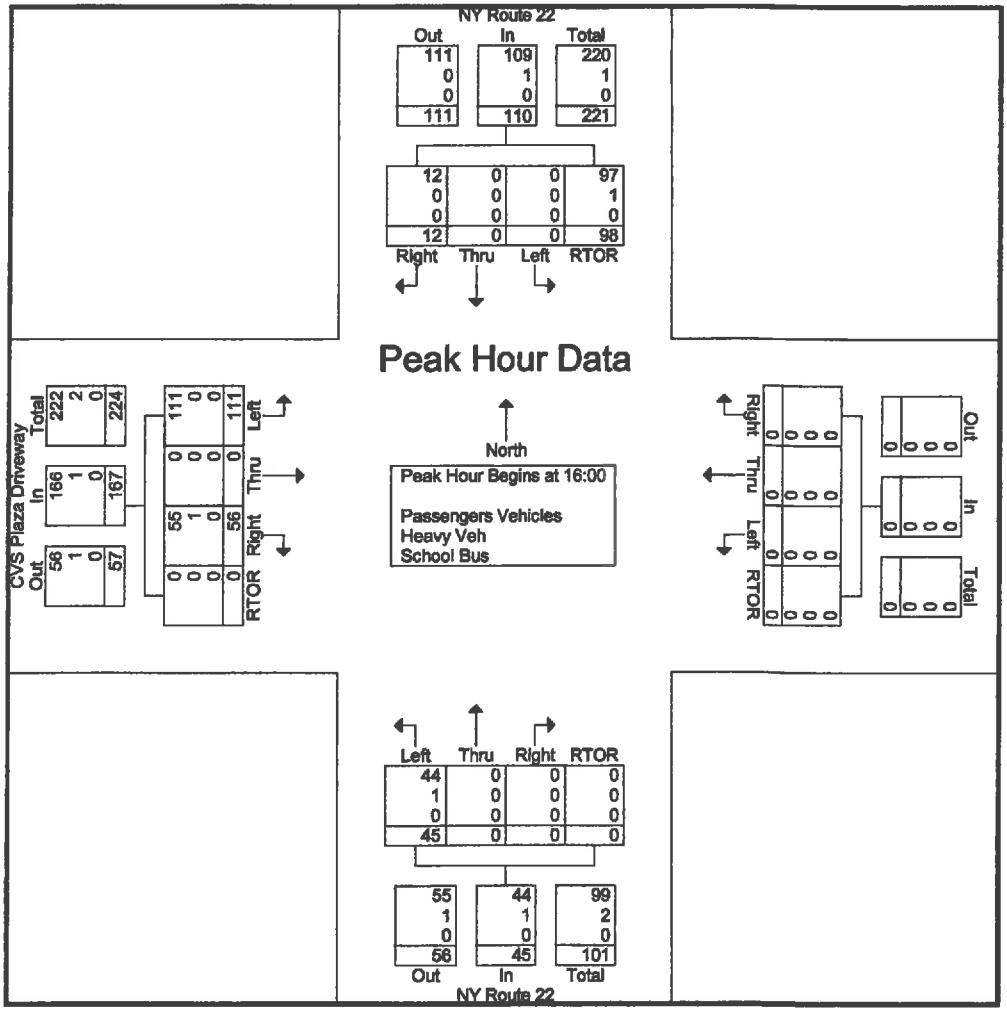
	CVS Plaza Driveway Eastbound					Westbound					NY Route 22 Northbound					NY Route 22 Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
16:00	25	0	12	0	37	0	0	0	0	0	8	0	0	0	8	0	0	3	31	34	79
16:15	26	0	14	0	40	0	0	0	0	0	13	0	0	0	13	0	0	3	23	26	79
16:30	29	0	16	0	45	0	0	0	0	0	12	0	0	0	12	0	0	3	22	25	82
16:45	31	0	14	0	45	0	0	0	0	0	12	0	0	0	12	0	0	3	22	25	82
Total	111	0	56	0	167	0	0	0	0	0	45	0	0	0	45	0	0	12	98	110	322
17:00	27	0	12	0	39	0	0	0	0	0	9	0	0	0	9	0	0	2	12	14	62
17:15	22	0	10	0	32	0	0	0	0	0	9	0	0	0	9	0	0	0	15	15	56
17:30	16	0	7	0	23	0	0	0	3	3	7	0	0	0	7	2	0	3	16	21	54
17:45	8	0	0	0	8	0	0	0	12	12	0	0	0	0	0	19	0	6	0	25	45
Total	73	0	29	0	102	0	0	0	15	15	25	0	0	0	25	21	0	11	43	75	217
Grand Total	184	0	85	0	269	0	0	0	15	15	70	0	0	0	70	21	0	23	141	185	539
Apprch %	68.4	0	31.6	0		0	0	0	100		100	0	0	0		11.4	0	12.4	76.2		
Total %	34.1	0	15.8	0	49.9	0	0	0	2.8	2.8	13	0	0	0	13	3.9	0	4.3	26.2	34.3	
Passengers Vehicles	182	0	84	0	266	0	0	0	15	15	69	0	0	0	69	20	0	23	138	181	531
% Passengers Vehicles	98.9	0	98.8	0	98.9	0	0	0	100	100	98.6	0	0	0	98.6	95.2	0	100	97.9	97.8	98.5
Heavy Veh	2	0	1	0	3	0	0	0	0	0	1	0	0	0	1	1	0	0	3	4	8
% Heavy Veh	1.1	0	1.2	0	1.1	0	0	0	0	0	1.4	0	0	0	1.4	4.8	0	0	2.1	2.2	1.5
School Bus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% School Bus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Project: 110-239
Counted By: DDD
Location: Dover, NY
Other:

File Name : tm10239p1
Site Code : 10-239-1
Start Date : 11/30/2010
Page No : 2

North (USD Right)

	CVS Plaza Driveway Eastbound					Westbound					NY Route 22 Northbound					NY Route 22 Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 4:00:00 PM																					
4:00:00 PM	25	0	12	0	37	0	0	0	0	0	8	0	0	0	8	0	0	3	31	34	79
4:15:00 PM	26	0	14	0	40	0	0	0	0	0	13	0	0	0	13	0	0	3	23	26	79
4:30:00 PM	29	0	16	0	45	0	0	0	0	0	12	0	0	0	12	0	0	3	22	25	82
4:45:00 PM	31	0	14	0	45	0	0	0	0	0	12	0	0	0	12	0	0	3	22	25	82
Total Volume	111	0	56	0	167	0	0	0	0	0	45	0	0	0	45	0	0	12	98	110	322
% App. Total	66.5	0	33.5	0		0	0	0	0		100	0	0	0		0	0	10.9	89.1		
PHF	.895	.000	.875	.000	.928	.000	.000	.000	.000	.000	.865	.000	.000	.000	.865	.000	.000	1.000	.790	.809	.982
Passengers Vehicles	111	0	55	0	166	0	0	0	0	0	44	0	0	0	44	0	0	12	97	109	319
% Passengers Vehicles	100	0	98.2	0	99.4	0	0	0	0	0	97.8	0	0	0	97.8	0	0	100	99.0	99.1	99.1
Heavy Veh	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	1	1	3
% Heavy Veh	0	0	1.8	0	0.6	0	0	0	0	0	2.2	0	0	0	2.2	0	0	0	1.0	0.9	0.9
School Bus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% School Bus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project: 110-239
Counted By: DPR
Location: Dover, NY
Other:

File Name : tm10239p2
Site Code : 10-239-2
Start Date : 11/30/2010
Page No : 1

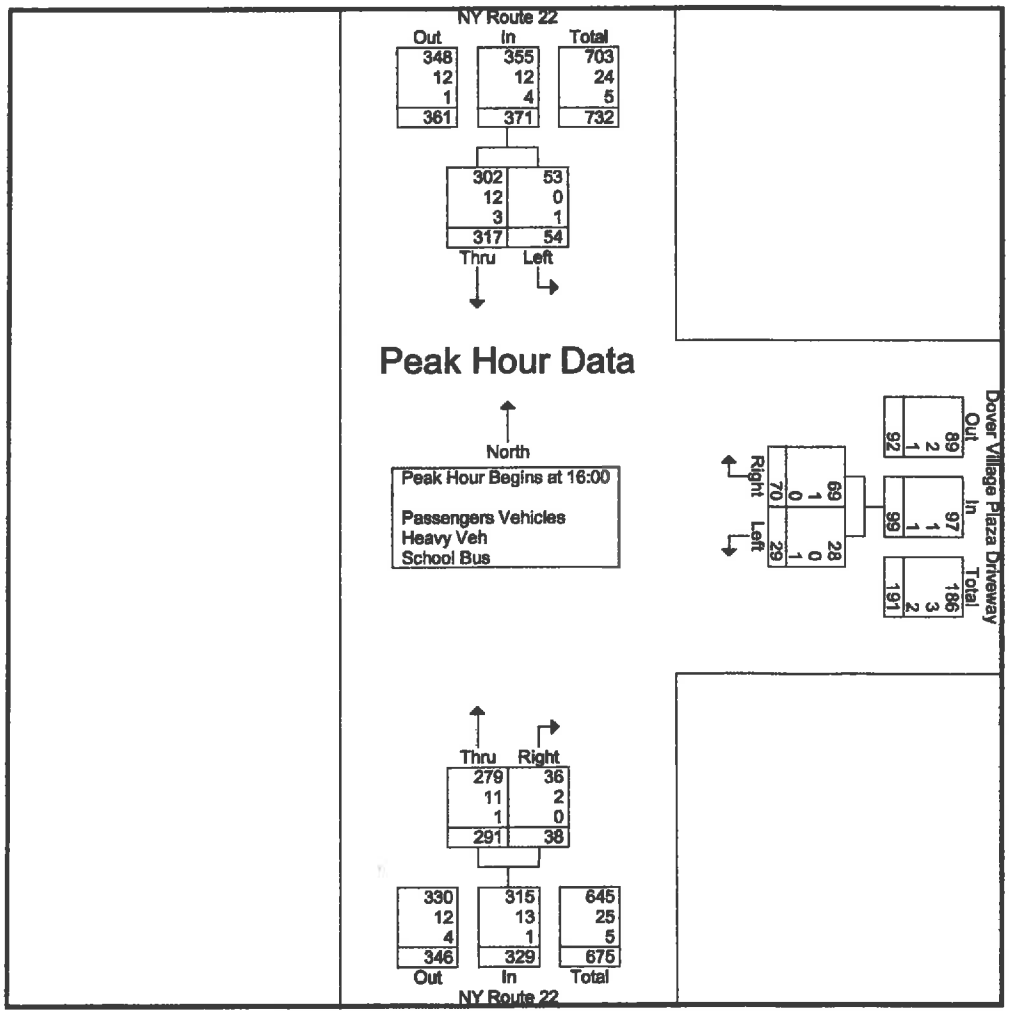
Groups Printed- Passengers Vehicles - Heavy Veh - School Bus

	Dover Village Plaza Driveway Westbound			NY Route 22 Northbound			NY Route 22 Southbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Factor	1.0	1.0		1.0	1.0		1.0	1.0		
16:00	4	26	30	64	12	76	14	100	114	220
16:15	11	9	20	80	8	88	16	69	85	193
16:30	8	20	28	79	12	91	14	81	95	214
16:45	6	15	21	68	6	74	10	67	77	172
Total	29	70	99	291	38	329	54	317	371	799
17:00	3	6	9	79	5	84	7	59	66	159
17:15	3	13	16	75	3	78	8	79	87	181
17:30	5	8	13	75	1	76	3	59	62	151
17:45	2	5	7	61	2	63	5	45	50	120
Total	13	32	45	290	11	301	23	242	265	611
Grand Total	42	102	144	581	49	630	77	559	636	1410
Apprch %	29.2	70.8		92.2	7.8		12.1	87.9		
Total %	3	7.2	10.2	41.2	3.5	44.7	5.5	39.6	45.1	
Passengers Vehicles	41	100	141	565	46	611	76	535	611	1363
% Passengers Vehicles	97.6	98	97.9	97.2	93.9	97	98.7	95.7	96.1	96.7
Heavy Veh	0	2	2	15	3	18	0	20	20	40
% Heavy Veh	0	2	1.4	2.6	6.1	2.9	0	3.6	3.1	2.8
School Bus	1	0	1	1	0	1	1	4	5	7
% School Bus	2.4	0	0.7	0.2	0	0.2	1.3	0.7	0.8	0.5

Project: 110-239
Counted By: DPR
Location: Dover, NY
Other:

File Name : tm10239p2
Site Code : 10-239-2
Start Date : 11/30/2010
Page No : 2

	Dover Village Plaza Driveway Westbound			NY Route 22 Northbound			NY Route 22 Southbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 4:00:00 PM										
4:00:00 PM	4	26	30	64	12	76	14	100	114	220
4:15:00 PM	11	9	20	80	8	88	16	69	85	193
4:30:00 PM	8	20	28	79	12	91	14	81	95	214
4:45:00 PM	6	15	21	68	6	74	10	67	77	172
Total Volume	29	70	99	291	38	329	54	317	371	799
% App. Total	29.3	70.7		88.4	11.6		14.6	85.4		
PHF	.659	.673	.825	.909	.792	.904	.844	.793	.814	.908
Passengers Vehicles	28	69	97	279	36	315	53	302	355	767
% Passengers Vehicles	96.6	98.6	98.0	95.9	94.7	95.7	98.1	95.3	95.7	96.0
Heavy Veh	0	1	1	11	2	13	0	12	12	26
% Heavy Veh	0	1.4	1.0	3.8	5.3	4.0	0	3.8	3.2	3.3
School Bus	1	0	1	1	0	1	1	3	4	6
% School Bus	3.4	0	1.0	0.3	0	0.3	1.9	0.9	1.1	0.8



Project: 110-239
Counted By: KD
Location: Dover, NY
Other:

File Name : tm10239p3
Site Code : 10-239-3
Start Date : 11/30/2010
Page No : 1

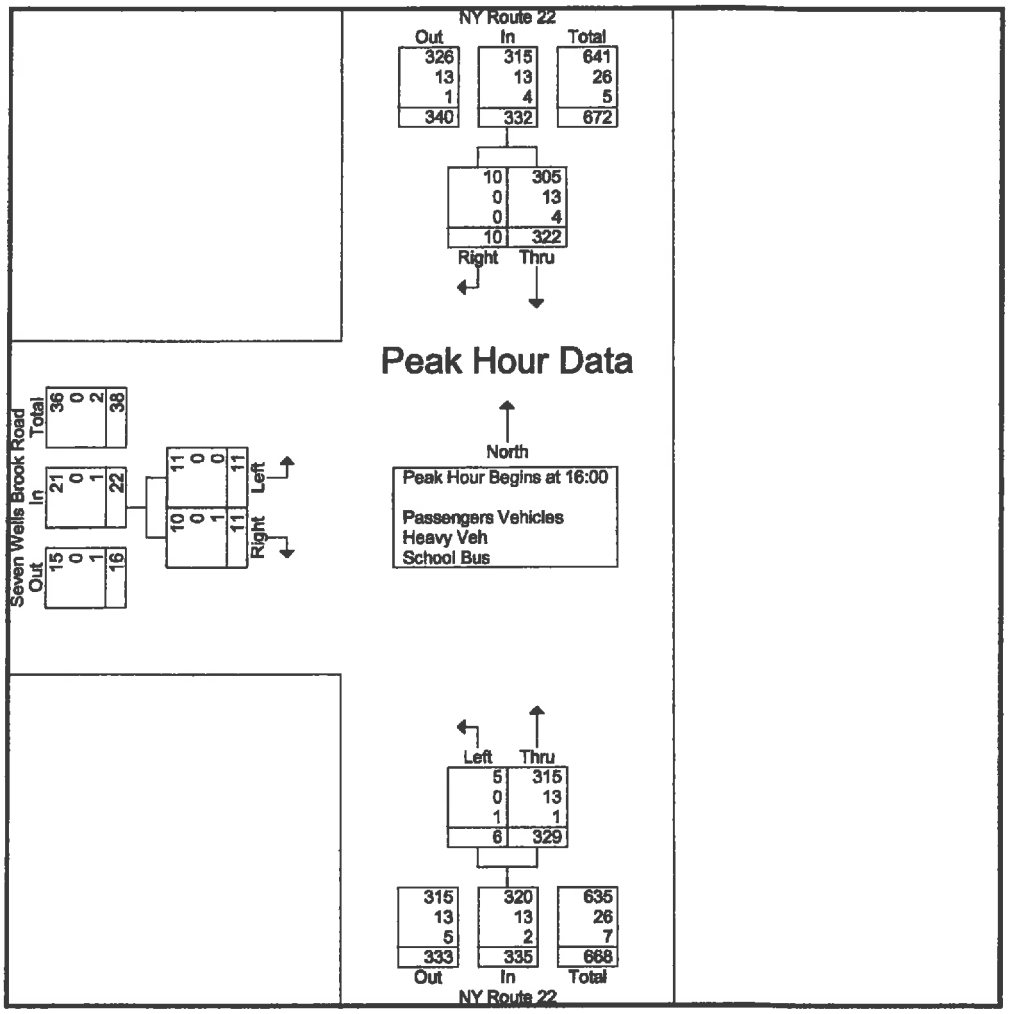
Groups Printed- Passengers Vehicles - Heavy Veh - School Bus

	Seven Wells Brook Road Eastbound			NY Route 22 Northbound			NY Route 22 Southbound			
Start Time	Left	Right	App. Total	Left	Thru	App. Total	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0		1.0	1.0		1.0	1.0		
16:00	0	4	4	2	75	77	90	3	93	174
16:15	4	3	7	2	93	95	82	3	85	187
16:30	5	0	5	2	85	87	74	4	78	170
16:45	2	4	6	0	76	76	76	0	76	158
Total	11	11	22	6	329	335	322	10	332	689
17:00	2	0	2	1	71	72	64	2	66	140
17:15	1	1	2	0	76	76	85	0	85	163
17:30	1	0	1	1	65	66	55	0	55	122
17:45	0	0	0	2	63	65	51	1	52	117
Total	4	1	5	4	275	279	255	3	258	542
Grand Total	15	12	27	10	604	614	577	13	590	1231
Apprch %	55.6	44.4		1.6	98.4		97.8	2.2		
Total %	1.2	1	2.2	0.8	49.1	49.9	46.9	1.1	47.9	
Passengers Vehicles	15	11	26	9	584	593	549	13	562	1181
% Passengers Vehicles	100	91.7	96.3	90	96.7	96.6	95.1	100	95.3	95.9
Heavy Veh	0	0	0	0	19	19	23	0	23	42
% Heavy Veh	0	0	0	0	3.1	3.1	4	0	3.9	3.4
School Bus	0	1	1	1	1	2	5	0	5	8
% School Bus	0	8.3	3.7	10	0.2	0.3	0.9	0	0.8	0.6

Project: 110-239
Counted By: KD
Location: Dover, NY
Other:

File Name : tm10239p3
Site Code : 10-239-3
Start Date : 11/30/2010
Page No : 2

	Seven Wells Brook Road Eastbound			NY Route 22 Northbound			NY Route 22 Southbound			
Start Time	Left	Right	App. Total	Left	Thru	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 4:00:00 PM										
4:00:00 PM	0	4	4	2	75	77	90	3	93	174
4:15:00 PM	4	3	7	2	93	95	82	3	85	187
4:30:00 PM	5	0	5	2	85	87	74	4	78	170
4:45:00 PM	2	4	6	0	76	76	76	0	76	158
Total Volume	11	11	22	6	329	335	322	10	332	689
% App. Total	50	50		1.8	98.2		97	3		
PHF	.550	.688	.786	.750	.884	.882	.894	.625	.892	.921
Passengers Vehicles	11	10	21	5	315	320	305	10	315	656
% Passengers Vehicles	100	90.9	95.5	83.3	95.7	95.5	94.7	100	94.9	95.2
Heavy Veh	0	0	0	0	13	13	13	0	13	26
% Heavy Veh	0	0	0	0	4.0	3.9	4.0	0	3.9	3.8
School Bus	0	1	1	1	1	2	4	0	4	7
% School Bus	0	9.1	4.5	16.7	0.3	0.6	1.2	0	1.2	1.0



MetroCount Traffic Executive
Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-305 -- English (ENU)

Datasets:

Site:	**[110-239] NY Route 22 near proposed site**
Direction:	7 - North bound A>B, South bound B>A., **Lane:** 0
Survey Duration:	8:00 Tuesday, November 30, 2010 => 14:33 Tuesday, December 07, 2010
File:	C:\Documents and Settings\dreynolds\Desktop\ATR Unload\110-23907Dec2010Route22.EC0
(Plus)	
Identifier:	BG78EVVB MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default
Data type:	Axle sensors - Paired (Class, Speed, Count)

Profile:

Filter time:	**12:00 Tuesday, November 30, 2010 => 22:00 Sunday, December 05, 2010**
Included classes:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range:	0 - 100 mph.
Direction:	North, South (bound)
Separation:	All - (Gap)
Name:	Factory default profile
Scheme:	Vehicle classification (Scheme F)
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Vehicles = 42596 / 43131 (98.76%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-305
Site: 110-239.0SN
Description: **NY Route 22 near proposed site**
Filter time: **12:00 Tuesday, November 30, 2010 => 22:00 Sunday, December 05, 2010**
Scheme: Vehicle classification (Scheme F)
Filter: Cls(1 2 3 4 5 6 7 8 9 10 11 12 13) Dir(NS) Sp(0,100) Sep(>0)

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages 1 - 5	Averages 1 - 7
Hour									
0000-0100	*	*	31.0	36.0	55.0	64.0	74.0	40.7	52.0
0100-0200	*	*	20.0	19.0	32.0	32.0	37.0	23.7	28.0
0200-0300	*	*	17.0	18.0	25.0	33.0	27.0	20.0	24.0
0300-0400	*	*	28.0	26.0	31.0	13.0	15.0	28.3	22.6
0400-0500	*	*	64.0	68.0	55.0	60.0	36.0	62.3	56.6
0500-0600	*	*	179.0	207.0	188.0	90.0	75.0	191.3	147.8
0600-0700	*	*	378.0	381.0	384.0	135.0	75.0	381.0	270.6
0700-0800	*	*	**525.0<**	**588.0<**	**598.0<**	227.0	126.0	**570.3<**	412.8
0800-0900	*	*	497.0	542.0	514.0	398.0	242.0	517.7	438.6
0900-1000	*	*	410.0	471.0	426.0	461.0	342.0	435.7	422.0
1000-1100	*	*	388.0	481.0	484.0	563.0	451.0	451.0	473.4
1100-1200	*	*	392.0	456.0	501.0	**609.0<**	**501.0<**	449.7	**491.8<**
1200-1300	*	527.0	451.0	503.0	552.0	**606.0<**	537.0	508.3	529.3
1300-1400	*	478.0	534.0	513.0	590.0	592.0	525.0	528.8	538.7
1400-1500	*	556.0	**662.0<**	638.0	660.0	538.0	621.0	629.0	612.5
1500-1600	*	**679.0<**	590.0	**669.0<**	751.0	506.0	603.0	**672.3<**	**633.0<**
1600-1700	*	674.0	513.0	626.0	**756.0<**	522.0	554.0	642.3	607.5
1700-1800	*	543.0	425.0	636.0	664.0	520.0	530.0	567.0	553.0
1800-1900	*	324.0	341.0	454.0	497.0	410.0	362.0	404.0	398.0
1900-2000	*	276.0	213.0	268.0	342.0	292.0	279.0	274.8	278.3
2000-2100	*	183.0	165.0	195.0	326.0	227.0	201.0	217.3	216.2
2100-2200	*	122.0	143.0	186.0	281.0	164.0	138.0	183.0	172.3
2200-2300	*	87.0	98.0	127.0	201.0	155.0	*	128.3	133.6
2300-2400	*	79.0	86.0	90.0	119.0	120.0	*	93.5	98.8
Totals									
0700-1900	*	*	5728.0	6577.0	6993.0	5952.0	5394.0	6375.8	6110.6
0600-2200	*	*	6627.0	7607.0	8326.0	6770.0	6087.0	7431.8	7048.0
0600-0000	*	*	6811.0	7824.0	8646.0	7045.0	*	7653.6	7280.4
0000-0000	*	*	7150.0	8198.0	9032.0	7337.0	*	8019.9	7611.4
AM Peak	*	*	0700	0700	0700	1100	1100		
	*	*	525.0	588.0	598.0	609.0	501.0		
PM Peak	*	1500	1400	1500	1600	1200	*		
	*	679.0	662.0	669.0	756.0	606.0	*		

*** - No data.**

MetroCount Traffic Executive
Speed Statistics

SpeedStat-330 -- English (ENU)

Datasets:

Site:	**[110-239] Route 22 - Accross Culvert**
Direction:	7 - North bound A>B, South bound B>A., **Lane:** 0
Survey Duration:	8:34 Friday, March 25, 2011 => 15:06 Friday, March 25, 2011
File:	C:\Documents and Settings\dreynolds\Desktop\ATR Unload\110-23925Mar2011RT22.EC0
(Plus)	
Identifier:	R7190MC2 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default
Data type:	Axle sensors - Paired (Class, Speed, Count)

Profile:

Filter time:	**8:34 Friday, March 25, 2011 => 15:06 Friday, March 25, 2011**
Included classes:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range:	0 - 100 mph.
Direction:	North, South (bound)
Separation:	All - (Gap)
Name:	Factory default profile
Scheme:	Vehicle classification (Scheme F)
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Vehicles = 1447 / 1447 (100.00%)

Speed Statistics

SpeedStat-330
Site: 110-239.0SN
Description: **Route 22 - Accross Culvert**
Filter time: **8:34 Friday, March 25, 2011 => 15:06 Friday, March 25, 2011**
Scheme: Vehicle classification (Scheme F)
Filter: Cls(1 2 3 4 5 6 7 8 9 10 11 12 13) Dir(NS) Sp(0,100) Sep(>0)

Vehicles = 1447
Posted speed limit= 35 mph, Exceeding = 508 (35.11%), Mean Exceeding = 40.26 mph
Maximum = 57.9 mph, **Minimum** = 5.8 mph, **Mean** = 29.9 mph
85% Speed = 40.3 mph, **95% Speed** = 44.5 mph, **Median** = 30.0 mph
10 mph Pace = 17 - 27, **Number in Pace** = 538 (37.18%)
Variance = 86.66, **Standard Deviation** = 9.31 mph

Speed Bins (Partial days)

Speed	Bin		Below		Above		Energy	vMult	n * vMult
0 - 5	0	0.0%	0	0.0%	1447	100.0%	0.00	0.00	0.00
5 - 10	3	0.2%	3	0.2%	1444	99.8%	0.00	0.00	0.00
10 - 15	46	3.2%	49	3.4%	1398	96.6%	0.00	0.00	0.00
15 - 20	207	14.3%	256	17.7%	1191	82.3%	0.00	0.00	0.00
20 - 25	287	19.8%	543	37.5%	904	62.5%	0.00	0.00	0.00
25 - 30	174	12.0%	717	49.6%	730	50.4%	0.00	0.00	0.00
30 - 35	222	15.3%	939	64.9%	508	35.1%	0.00	0.00	0.00
35 - 40	268	18.5%	1207	83.4%	240	16.6%	0.00	0.00	0.00
40 - 45	176	12.2%	1383	95.6%	64	4.4%	0.00	0.00	0.00
45 - 50	57	3.9%	1440	99.5%	7	0.5%	0.00	0.00	0.00
50 - 55	6	0.4%	1446	99.9%	1	0.1%	0.00	0.00	0.00
55 - 60	1	0.1%	1447	100.0%	0	0.0%	0.00	0.00	0.00
60 - 65	0	0.0%	1447	100.0%	0	0.0%	0.00	0.00	0.00
65 - 70	0	0.0%	1447	100.0%	0	0.0%	0.00	0.00	0.00
70 - 75	0	0.0%	1447	100.0%	0	0.0%	0.00	0.00	0.00
75 - 80	0	0.0%	1447	100.0%	0	0.0%	0.00	0.00	0.00
80 - 85	0	0.0%	1447	100.0%	0	0.0%	0.00	0.00	0.00
85 - 90	0	0.0%	1447	100.0%	0	0.0%	0.00	0.00	0.00
90 - 95	0	0.0%	1447	100.0%	0	0.0%	0.00	0.00	0.00
95 - 100	0	0.0%	1447	100.0%	0	0.0%	0.00	0.00	0.00

Remov

Total Speed Rating = 0.00
Total Moving Energy (Estimated) = 0.00

Speed limit fields (Partial days)

	Limit	Below		Above	
0	35 (PSL)	939	64.9%	508	35.1%

Because ATR was placed between two driveways and data does not resemble normal bell curve, remove lower speeds from data and recalculate 85th.

MAS 3/28/11

MetroCount Traffic Executive
Speed Statistics

SpeedStat-332 -- English (ENU)

Datasets:

Site:	**[110-239] Route 22 - Accross Culvert**
Direction:	7 - North bound A>B, South bound B>A., **Lane:** 0
Survey Duration:	8:34 Friday, March 25, 2011 => 15:06 Friday, March 25, 2011
File:	C:\Documents and Settings\dreynolds\Desktop\ATR Unload\110-23925Mar2011RT22.EC0
(Plus)	
Identifier:	R7190MC2 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm:	Factory default
Data type:	Axle sensors - Paired (Class, Speed, Count)

Profile:

Filter time:	**8:34 Friday, March 25, 2011 => 15:06 Friday, March 25, 2011**
Included classes:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range:	25 - 100 mph.
Direction:	North, South (bound)
Separation:	All - (Gap)
Name:	Factory default profile
Scheme:	Vehicle classification (Scheme F)
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Vehicles = 904 / 1447 (62.47%)

Speed Statistics

SpeedStat-332
Site: 110-239.0SN
Description: **Route 22 - Accross Culvert**
Filter time: **8:34 Friday, March 25, 2011 => 15:06 Friday, March 25, 2011**
Scheme: Vehicle classification (Scheme F)
Filter: Cls(1 2 3 4 5 6 7 8 9 10 11 12 13) Dir(NS) Sp(25,100) Sep(>0)

Vehicles = 904
Posted speed limit= 35 mph, Exceeding = 508 (56.19%), Mean Exceeding = 40.26 mph
Maximum = 57.9 mph, **Minimum** = 25.0 mph, **Mean** = 35.9 mph
85% Speed = 42.7 mph, **95% Speed** = 45.4 mph, **Median** = 35.6 mph
10 mph Pace = 32 - 42, **Number in Pace** = 508 (56.19%)
Variance = 36.19, **Standard Deviation** = 6.02 mph

Speed Bins (Partial days)

Speed	Bin		Below		Above		Energy	vMult	n * vMult
0 - 5	0	0.0%	0	0.0%	904	100.0%	0.00	0.00	0.00
5 - 10	0	0.0%	0	0.0%	904	100.0%	0.00	0.00	0.00
10 - 15	0	0.0%	0	0.0%	904	100.0%	0.00	0.00	0.00
15 - 20	0	0.0%	0	0.0%	904	100.0%	0.00	0.00	0.00
20 - 25	0	0.0%	0	0.0%	904	100.0%	0.00	0.00	0.00
25 - 30	174	19.2%	174	19.2%	730	80.8%	0.00	0.00	0.00
30 - 35	222	24.6%	396	43.8%	508	56.2%	0.00	0.00	0.00
35 - 40	268	29.6%	664	73.5%	240	26.5%	0.00	0.00	0.00
40 - 45	176	19.5%	840	92.9%	64	7.1%	0.00	0.00	0.00
45 - 50	57	6.3%	897	99.2%	7	0.8%	0.00	0.00	0.00
50 - 55	6	0.7%	903	99.9%	1	0.1%	0.00	0.00	0.00
55 - 60	1	0.1%	904	100.0%	0	0.0%	0.00	0.00	0.00
60 - 65	0	0.0%	904	100.0%	0	0.0%	0.00	0.00	0.00
65 - 70	0	0.0%	904	100.0%	0	0.0%	0.00	0.00	0.00
70 - 75	0	0.0%	904	100.0%	0	0.0%	0.00	0.00	0.00
75 - 80	0	0.0%	904	100.0%	0	0.0%	0.00	0.00	0.00
80 - 85	0	0.0%	904	100.0%	0	0.0%	0.00	0.00	0.00
85 - 90	0	0.0%	904	100.0%	0	0.0%	0.00	0.00	0.00
90 - 95	0	0.0%	904	100.0%	0	0.0%	0.00	0.00	0.00
95 - 100	0	0.0%	904	100.0%	0	0.0%	0.00	0.00	0.00

*

Total Speed Rating = 0.00
Total Moving Energy (Estimated) = 0.00

Speed limit fields (Partial days)

	Limit	Below		Above	
0	35 (PSL)	396	43.8%	508	56.2%

Note: lower speeds removed from data because nearby driveways ~~[illegible]~~ influenced free flow speeds in this area. ∴ 85th percentile speed estimated at 43 mph which does not include the turning traffic.

MAS 3/28/11

Appendix C – Level of Service Analysis

Traffic Evaluation Impact Study
Dover Village Shopping Center
Town of Dover, New York

Level of Service Criteria for Unsignalized Intersections

Four measures are used to describe the performance of two-way stop controlled intersections: control delay, delay to major street through vehicles, queue length, and v/c ratio. The primary measure that is used to provide an estimate of LOS is control delay. This measure can be estimated for any movement on the minor (i.e., stop-controlled) street. By summing delay estimates for individual movements, a delay estimate for each minor street movement and minor street approach can be achieved. The level of service criteria is given in Exhibit 17-2/22.

For all-way stop controlled (AWSC) intersections, the average control delay (in seconds per vehicle) is used as the primary measure of performance. Control delay is the increased time of travel for a vehicle approaching and passing through an AWSC intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection.

Exhibit 17-2/22: Level-of-Service Criteria for Stop Controlled Intersections

Level of Service	Control Delay (sec/veh)
A	$\leq$ 10.0
B	>10.0 and $\leq$ 15.0
C	>15.0 and $\leq$ 25.0
D	>25.0 and $\leq$ 35.0
E	>35.0 and $\leq$ 50.0
F	>50.0

LOS Definitions

The following is an excerpt from the 2000 Highway Capacity Manual (HCM).

Level of Service for Signalized Intersections

Level of service for a signalized intersection is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions: in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle, typically for a 15-minute analysis period. Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group. Levels of service are defined to represent reasonable ranges in control delay.

> ***LOS A*** describes operations with low control delay, up to 10 s/veh. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay.
>
> ***LOS B*** describes operations with control delay greater than 10 and up to 20 s/veh. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.
>
> ***LOS C*** describes operations with control delay greater than 20 and up to 35 s/veh. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
>
> ***LOS D*** describes operations with control delay greater than 35 and up to 55 s/veh. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
>
> ***LOS E*** describes operations with control delay greater than 55 and up to 80 s/veh. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.
>
> ***LOS F*** describes operations with control delay in excess of 80 s/veh. This level, considered unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also be contribute significantly to high delay levels.

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DPR	Intersection	NY RT 22/CVS Full Access Drive
Agency/Co.	CME, RT22CVSDRWYexpm	Jurisdiction	Town of Dover
Date Performed		Analysis Year	2010 Existing
Analysis Time Period	PM PH		

Project Description	110-239 - Dover Village Shopping Center TIS
East/West Street: CVS Full Access Drwy	North/South Street: NY Route 22
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	45	322			308	12
Peak-Hour Factor, PHF	0.87	0.87	1.00	1.00	0.81	0.81
Hourly Flow Rate, HFR (veh/h)	51	370	0	0	380	14
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	111		56			
Peak-Hour Factor, PHF	0.93	1.00	0.93	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	119	0	60	0	0	0
Percent Heavy Vehicles	0	0	2	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	51						179	
C (m) (veh/h)	1163						381	
v/c	0.04						0.47	
95% queue length	0.14						2.43	
Control Delay (s/veh)	8.2						22.5	
LOS	A						C	
Approach Delay (s/veh)	--	--				22.5		
Approach LOS	--	--				C		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DPR	Intersection	NY Route 22/Dover Village Drwy
Agency/Co.	CME, RT22PLZDRWYexpm	Jurisdiction	Town of Dover
Date Performed		Analysis Year	2010 Existing
Analysis Time Period	PM PH		

Project Description	110-239 - Dover Village Shopping Center TIS
East/West Street: Dover Village Plaza Drwy	North/South Street: NY Route 22
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		297	38	54	310	
Peak-Hour Factor, PHF	1.00	0.90	0.90	0.81	0.81	1.00
Hourly Flow Rate, HFR (veh/h)	0	330	42	66	382	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				29		70
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.83	1.00	0.83
Hourly Flow Rate, HFR (veh/h)	0	0	0	34	0	84
Percent Heavy Vehicles	0	0	0	3	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		66		118				
C (m) (veh/h)		1186		508				
v/c		0.06		0.23				
95% queue length		0.18		0.89				
Control Delay (s/veh)		8.2		14.2				
LOS		A		B				
Approach Delay (s/veh)	--	--	14.2					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*DPR*	Intersection	*NY RT 22/SWBRd*
Agency/Co.	*CME, RT22SWBRexpm*	Jurisdiction	*Town of Dover*
Date Performed	*12/9/2010*	Analysis Year	*2010 Existing*
Analysis Time Period			

Project Description	*110-239 - Dover Village Shopping Center TIS*
East/West Street: *Seven Wells Brook Road*	North/South Street: *NY Route 22*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*6*	*324*			*329*	*10*
Peak-Hour Factor, PHF	*0.88*	*0.88*	*1.00*	*1.00*	*0.89*	*0.89*
Hourly Flow Rate, HFR (veh/h)	*6*	*368*	*0*	*0*	*369*	*11*
Percent Heavy Vehicles	*17*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*0*	*1*	*0*
Configuration	*L*	*T*				*TR*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*11*		*11*			
Peak-Hour Factor, PHF	*0.79*	*1.00*	*0.79*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*13*	*0*	*13*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*9*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*						*LR*	
v (veh/h)	*6*						*26*	
C (m) (veh/h)	*1099*						*479*	
v/c	*0.01*						*0.05*	
95% queue length	*0.02*						*0.17*	
Control Delay (s/veh)	*8.3*						*12.9*	
LOS	*A*						*B*	
Approach Delay (s/veh)	--	--				*12.9*		
Approach LOS	--	--				*B*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DPR	Intersection	NY RT 22/CVS Full Access Drive
Agency/Co.	CME, RT22CVSDRWYnbpm	Jurisdiction	Town of Dover
Date Performed	12/28/10	Analysis Year	2012 No-Build
Analysis Time Period	PM PH		

Project Description	110-239 - Dover Village Shopping Center TIS
East/West Street: CVS Full Access Drwy	North/South Street: NY Route 22
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	45	332			316	12
Peak-Hour Factor, PHF	0.87	0.87	1.00	1.00	0.81	0.81
Hourly Flow Rate, HFR (veh/h)	51	381	0	0	390	14
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	111		56			
Peak-Hour Factor, PHF	0.93	1.00	0.93	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	119	0	60	0	0	0
Percent Heavy Vehicles	0	0	2	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	51						179	
C (m) (veh/h)	1164						372	
v/c	0.04						0.48	
95% queue length	0.14						2.52	
Control Delay (s/veh)	8.2						23.3	
LOS	A						C	
Approach Delay (s/veh)	--	--				23.3		
Approach LOS	--	--				C		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DPR	Intersection	NY Route 22/Dover Village Drwy
Agency/Co.	CME, RT22PLZDRWYnbpm	Jurisdiction	Town of Dover
Date Performed	12/28/10	Analysis Year	2012 No-Build
Analysis Time Period	PM PH		

Project Description	110-239 - Dover Village Shopping Center TIS
East/West Street: Dover Village Plaza Drwy	North/South Street: NY Route 22
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		307	38	54	318	
Peak-Hour Factor, PHF	1.00	0.90	0.90	0.81	0.81	1.00
Hourly Flow Rate, HFR (veh/h)	0	341	42	66	392	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				29		70
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.83	1.00	0.83
Hourly Flow Rate, HFR (veh/h)	0	0	0	34	0	84
Percent Heavy Vehicles	0	0	0	3	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		66		118				
C (m) (veh/h)		1187		498				
v/c		0.06		0.24				
95% queue length		0.18		0.91				
Control Delay (s/veh)		8.2		14.5				
LOS		A		B				
Approach Delay (s/veh)	--	--	14.5					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*DPR*	Intersection	*NY RT 22/SWBRd*
Agency/Co.	*CME, RT22SWBRnbpm*	Jurisdiction	*Town of Dover*
Date Performed	*12/9/2010*	Analysis Year	*2012 No-Build*
Analysis Time Period	*PM PH*		

Project Description	*110-239 - Dover Village Shopping Center TIS*
East/West Street: *Seven Wells Brook Road*	North/South Street: *NY Route 22*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*6*	*335*			*338*	*10*
Peak-Hour Factor, PHF	*0.88*	*0.88*	*1.00*	*1.00*	*0.89*	*0.89*
Hourly Flow Rate, HFR (veh/h)	*6*	*380*	*0*	*0*	*379*	*11*
Percent Heavy Vehicles	*17*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*0*	*1*	*0*
Configuration	*L*	*T*				*TR*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*11*		*11*			
Peak-Hour Factor, PHF	*0.79*	*1.00*	*0.79*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*13*	*0*	*13*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*9*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*						*LR*	
v (veh/h)	*6*						*26*	
C (m) (veh/h)	*1089*						*468*	
v/c	*0.01*						*0.06*	
95% queue length	*0.02*						*0.18*	
Control Delay (s/veh)	*8.3*						*13.1*	
LOS	*A*						*B*	
Approach Delay (s/veh)	--	--				*13.1*		
Approach LOS	--	--				*B*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DPR	Intersection	NY RT 22/CVS Full Access Drive
Agency/Co.	CME, RT22CVSDRWYbupm	Jurisdiction	Town of Dover
Date Performed	12/28/10	Analysis Year	2012 Build
Analysis Time Period	PM PH		

Project Description	110-239 - Dover Village Shopping Center TIS
East/West Street: CVS Full Access Drwy	North/South Street: NY Route 22
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	45	431			420	12
Peak-Hour Factor, PHF	0.87	0.87	1.00	1.00	0.81	0.81
Hourly Flow Rate, HFR (veh/h)	51	495	0	0	518	14
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	111		56			
Peak-Hour Factor, PHF	0.93	1.00	0.93	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	119	0	60	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	51						179	
C (m) (veh/h)	1044						275	
v/c	0.05						0.65	
95% queue length	0.15						4.16	
Control Delay (s/veh)	8.6						39.6	
LOS	A						E	
Approach Delay (s/veh)	--	--				39.6		
Approach LOS	--	--				E		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DPR	Intersection	RT 22/Rin/Rout Driveway
Agency/Co.	CMERT22RINROUTDRWYbupm	Jurisdiction	Town Of Dover
Date Performed	3/28/11	Analysis Year	2012 Build
Analysis Time Period	PM PH		

Project Description	110-239 Dover Village Shopping Center TIS - update
East/West Street: Right In/Right Out Drwy	North/South Street: NY Route 22
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		395	38		476	
Peak-Hour Factor, PHF	1.00	0.90	0.90	1.00	0.81	1.00
Hourly Flow Rate, HFR (veh/h)	0	438	42	0	587	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR		T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						81
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	0.90
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	90
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	1
Configuration						R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration					R			
v (veh/h)					90			
C (m) (veh/h)					606			
v/c					0.15			
95% queue length					0.52			
Control Delay (s/veh)					12.0			
LOS					B			
Approach Delay (s/veh)	--	--	12.0					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DPR	Intersection	NY Route 22/Dover Village Drwy
Agency/Co.	CME, RT22PLZDRWYbupm	Jurisdiction	Town of Dover
Date Performed	3/28/11	Analysis Year	2012 Build
Analysis Time Period	PM PH		

Project Description	110-239 - Dover Village Shopping Center TIS - update
East/West Street: Dover Village Plaza Drwy	North/South Street: NY Route 22
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		316	85	181	295	
Peak-Hour Factor, PHF	1.00	0.90	0.90	0.81	0.81	1.00
Hourly Flow Rate, HFR (veh/h)	0	351	94	223	364	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				105		117
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.83	1.00	0.83
Hourly Flow Rate, HFR (veh/h)	0	0	0	126	0	140
Percent Heavy Vehicles	0	0	0	3	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		223		266				
C (m) (veh/h)		1126		267				
v/c		0.20		1.00				
95% queue length		0.74		9.93				
Control Delay (s/veh)		9.0		95.4				
LOS		A		F				
Approach Delay (s/veh)	--	--	95.4					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DPR	Intersection	NY RT 22/SWBRd
Agency/Co.	CME, RT22SWBRbupm	Jurisdiction	Town of Dover
Date Performed	12/9/2010	Analysis Year	2012 Build
Analysis Time Period	PM PH		

Project Description	110-239 - Dover Village Shopping Center TIS
East/West Street: Seven Wells Brook Road	North/South Street: NY Route 22
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	6	391			391	10
Peak-Hour Factor, PHF	0.88	0.88	1.00	1.00	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	6	444	0	0	439	11
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	0	1	0
Configuration	L	T				TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	11		11			
Peak-Hour Factor, PHF	0.79	1.00	0.79	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	13	0	13	0	0	0
Percent Heavy Vehicles	0	0	9	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LR	
v (veh/h)	6						26	
C (m) (veh/h)	1119						407	
v/c	0.01						0.06	
95% queue length	0.02						0.20	
Control Delay (s/veh)	8.2						14.4	
LOS	A						B	
Approach Delay (s/veh)	--	--	14.4					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DPR	Intersection	NY Route 22/Dover Village Drwy
Agency/Co.	CME, RT22PLZDRWYbupm - imp	Jurisdiction	Town of Dover
Date Performed	3/28/11	Analysis Year	2012 Build w/imp
Analysis Time Period	PM PH		

Project Description	110-239 - Dover Village Shopping Center TIS - update
East/West Street: Dover Village Plaza Drwy	North/South Street: NY Route 22
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		316	85	181	295	
Peak-Hour Factor, PHF	1.00	0.90	0.90	0.81	0.81	1.00
Hourly Flow Rate, HFR (veh/h)	0	351	94	223	364	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration			TR	L	T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				105		117
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.83	1.00	0.83
Hourly Flow Rate, HFR (veh/h)	0	0	0	126	0	140
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (veh/h)		223	126		140			
C (m) (veh/h)		1126	164		656			
v/c		0.20	0.77		0.21			
95% queue length		0.74	4.90		0.80			
Control Delay (s/veh)		9.0	76.3		12.0			
LOS		A	F		B			
Approach Delay (s/veh)	--	--	42.5					
Approach LOS	--	--	E					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DPR	Intersection	NY RT 22/CVS Full Access Drive
Agency/Co.	CME, RT22CVSDRWYbupmsa	Jurisdiction	Town of Dover
Date Performed	12/28/10	Analysis Year	2012 Build - Sens. Analysis
Analysis Time Period	PM PH		

Project Description	110-239 - Dover Village Shopping Center TIS
East/West Street: CVS Full Access Drwy	North/South Street: NY Route 22
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	45	449			431	12
Peak-Hour Factor, PHF	0.87	0.87	1.00	1.00	0.81	0.81
Hourly Flow Rate, HFR (veh/h)	51	516	0	0	532	14
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	111		56			
Peak-Hour Factor, PHF	0.93	1.00	0.93	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	119	0	60	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	51						179	
C (m) (veh/h)	1032						262	
v/c	0.05						0.68	
95% queue length	0.16						4.51	
Control Delay (s/veh)	8.7						43.9	
LOS	A						E	
Approach Delay (s/veh)	--	--				43.9		
Approach LOS	--	--				E		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DPR	Intersection	RT 22/Rin/Rout Driveway
Agency/Co.	CMERT22RINROUTDRWYbupmsa	Jurisdiction	Town Of Dover
Date Performed	3/28/11	Analysis Year	2012 Build - Sens. Analysis
Analysis Time Period	PM PH		

Project Description	110-239 Dover Village Shopping Center TIS - update
East/West Street: Right In/Right Out Drwy	North/South Street: NY Route 22
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		395	44		487	
Peak-Hour Factor, PHF	1.00	0.90	0.90	1.00	0.81	1.00
Hourly Flow Rate, HFR (veh/h)	0	438	48	0	601	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR		T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						99
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	0.90
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	110
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	1
Configuration						R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration					R			
v (veh/h)					110			
C (m) (veh/h)					604			
v/c					0.18			
95% queue length					0.66			
Control Delay (s/veh)					12.3			
LOS					B			
Approach Delay (s/veh)	--	--	12.3					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DPR	Intersection	NY Route 22/Dover Village Drwy
Agency/Co.	CME, RT22PLZDRWYbupmsa	Jurisdiction	Town of Dover
Date Performed	3/28/11	Analysis Year	2012 Build - Sens. Analysis
Analysis Time Period	PM PH		

Project Description	110-239 - Dover Village Shopping Center TIS - update
East/West Street: Dover Village Plaza Drwy	North/South Street: NY Route 22
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		322	85	192	295	
Peak-Hour Factor, PHF	1.00	0.90	0.90	0.81	0.81	1.00
Hourly Flow Rate, HFR (veh/h)	0	357	94	237	364	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				115		117
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.83	1.00	0.83
Hourly Flow Rate, HFR (veh/h)	0	0	0	138	0	140
Percent Heavy Vehicles	0	0	0	3	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		237		278				
C (m) (veh/h)		1120		246				
v/c		0.21		1.13				
95% queue length		0.80		12.40				
Control Delay (s/veh)		9.1		140.0				
LOS		A		F				
Approach Delay (s/veh)	--	--	140.0					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DPR	Intersection	NY RT 22/SWBRd
Agency/Co.	CME, RT22SWBRbupmsa	Jurisdiction	Town of Dover
Date Performed	12/9/2010	Analysis Year	2012 Build - Sens. Analysis
Analysis Time Period	PM PH		

Project Description	110-239 - Dover Village Shopping Center TIS
East/West Street: Seven Wells Brook Road	North/South Street: NY Route 22
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	6	397			401	10
Peak-Hour Factor, PHF	0.88	0.88	1.00	1.00	0.89	0.89
Hourly Flow Rate, HFR (veh/h)	6	451	0	0	450	11
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	0	1	0
Configuration	L	T				TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	11		11			
Peak-Hour Factor, PHF	0.79	1.00	0.79	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	13	0	13	0	0	0
Percent Heavy Vehicles	0	0	9	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LR	
v (veh/h)	6						26	
C (m) (veh/h)	1109						400	
v/c	0.01						0.06	
95% queue length	0.02						0.21	
Control Delay (s/veh)	8.3						14.6	
LOS	A						B	
Approach Delay (s/veh)	--	--				14.6		
Approach LOS	--	--				B		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DPR	Intersection	NY Route 22/Dover Village Drwy
Agency/Co.	CME, RT22PLZDRWYbupmsa - imp	Jurisdiction	Town of Dover
Date Performed	3/28/11	Analysis Year	2012 Build w/imp - Sens Analys
Analysis Time Period	PM PH		

Project Description	110-239 - Dover Village Shopping Center TIS - update		
East/West Street:	Dover Village Plaza Drwy	North/South Street:	NY Route 22
Intersection Orientation:	North-South	Study Period (hrs):	0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		322	85	192	295	
Peak-Hour Factor, PHF	1.00	0.90	0.90	0.81	0.81	1.00
Hourly Flow Rate, HFR (veh/h)	0	357	94	237	364	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration			TR	L	T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				115		117
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.83	1.00	0.83
Hourly Flow Rate, HFR (veh/h)	0	0	0	138	0	140
Percent Heavy Vehicles	0	0	0	3	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (veh/h)		237	138		140			
C (m) (veh/h)		1120	151		651			
v/c		0.21	0.91		0.22			
95% queue length		0.80	6.43		0.81			
Control Delay (s/veh)		9.1	110.4		12.0			
LOS		A	F		B			
Approach Delay (s/veh)	--	--	60.8					
Approach LOS	--	--	F					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DPR	Intersection	NY Route 22/Dover Village Drwy
Agency/Co.	CME, RT22PLZDRWYbupm - imp	Jurisdiction	Town of Dover
Date Performed	4/20/11	Analysis Year	2017 Build w/imp - DK
Analysis Time Period	PM PH		

Project Description	110-239 - Dover Village Shopping Center TIS - update - DK
East/West Street: Dover Village Plaza Drwy	North/South Street: NY Route 22
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		408	101	165	368	
Peak-Hour Factor, PHF	1.00	0.90	0.90	0.81	0.81	1.00
Hourly Flow Rate, HFR (veh/h)	0	453	112	203	454	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration			TR	L	T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				138		102
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.83	1.00	0.83
Hourly Flow Rate, HFR (veh/h)	0	0	0	166	0	122
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (veh/h)		203	166		122			
C (m) (veh/h)		1017	130		568			
v/c		0.20	1.28		0.21			
95% queue length		0.74	10.45		0.81			
Control Delay (s/veh)		9.4	235.7		13.1			
LOS		A	F		B			
Approach Delay (s/veh)	--	--	141.4					
Approach LOS	--	--	F					

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SHORT REPORT

General Information		Site Information	
Analyst	DPR	Intersection	NY Route 22/Dover Village Drwy
Agency or Co.	CMERT22PLZDRWYbupmsa - imp	Area Type	All other areas
Date Performed	3/28/11	Jurisdiction	Town of Dover
Time Period	PM PH	Analysis Year	2012 Build Sens. Analysi w/imp

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes				1		1		1	0	1	1	
Lane Group				L		R		TR		L	T	
Volume (vph)				115		117		322	85	192	295	
% Heavy Vehicles				3		1		4	5	2	5	
PHF				0.83		0.83		0.90	0.90	0.81	0.81	
Pretimed/Actuated (P/A)				A		A		A	A	A	A	
Startup Lost Time				2.0		2.0		2.0		2.0	2.0	
Extension of Effective Green				2.0		2.0		2.0		2.0	2.0	
Arrival Type				3		3		3		3	3	
Unit Extension				3.0		3.0		3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0		0	0	8	0	0	4	0	0	
Lane Width				11.0		11.0		12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour				0		0		0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	WB Only	02	03	04	NS Perm	06	07	08
Timing	G = 15.0	G =	G =	G =	G = 35.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 60.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate				139		131		448		237	364	
Lane Group Capacity				424		387		1035		484	1056	
v/c Ratio				0.33		0.34		0.43		0.49	0.34	
Green Ratio				0.25		0.25		0.58		0.58	0.58	
Uniform Delay d_1				18.4		18.4		7.0		7.3	6.5	
Delay Factor k				0.11		0.11		0.11		0.11	0.11	
Incremental Delay d_2				0.5		0.5		0.3		0.8	0.2	
PF Factor				1.000		1.000		1.000		1.000	1.000	
Control Delay				18.8		19.0		7.3		8.1	6.7	
Lane Group LOS				B		B		A		A	A	
Approach Delay				18.9			7.3			7.3		
Approach LOS				B			A			A		
Intersection Delay	9.6			Intersection LOS						A		

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BACK-OF-QUEUE WORKSHEET

General Information

Project Description *110-239 Dover Village Shopping Center TIS - update*

Average Back of Queue

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Lane Group				*L*		*R*		*TR*		*L*	*T*	
Initial Queue/Lane				*0.0*		*0.0*		*0.0*		*0.0*	*0.0*	
Flow Rate/Lane Group				*139*		*131*		*448*		*237*	*364*	
Satflow/Lane				*1694*		*1546*		*1774*		*830*	*1810*	
Capacity/Lane Group				*424*		*387*		*1035*		*484*	*1056*	
Flow Ratio				*0.1*		*0.1*		*0.3*		*0.3*	0.2	
v/c Ratio				*0.33*		*0.34*		*0.43*		*0.49*	*0.34*	
I Factor				*1.000*		*1.000*		*1.000*		*1.000*	*1.000*	
Arrival Type				*3*		*3*		*3*		*3*	*3*	
Platoon Ratio				*1.00*		*1.00*		*1.00*		*1.00*	*1.00*	
PF Factor				*1.00*		*1.00*		*1.00*		*1.00*	*1.00*	
Q_1				*1.9*		*1.8*		*4.2*		*2.3*	*3.2*	
k_B				*0.3*		*0.3*		*0.6*		*0.4*	*0.6*	
Q_2				*0.2*		*0.2*		*0.4*		*0.3*	*0.3*	
Q Average				*2.0*		*1.9*		*4.6*		*2.6*	*3.5*	

Percentile Back of Queue (95th percentile)

$f_{B\%}$				*2.0*		*2.0*		*2.0*		*2.0*	*2.0*	
Back of Queue				*4.2*		*4.0*		*9.0*		*5.3*	*6.9*	

Queue Storage Ratio

Queue Spacing				*25.0*		*25.0*		*25.0*		*25.0*	*25.0*	
Queue Storage				*0*		*0*		*0*		*0*	*0*	
Average Queue Storage Ratio												
95% Queue Storage Ratio												

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SHORT REPORT

General Information		Site Information	
Analyst	DPR	Intersection	NY Route 22/Dover Village Drwy
Agency or Co.	CMERT22PLZDRWYbupmsa - imp	Area Type	All other areas
Date Performed	4/20/11	Jurisdiction	Town of Dover
Time Period	PM PH	Analysis Year	2017 Build Sens. Analysi w/imp

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes				1		1		1	0	1	1	
Lane Group				L		R		TR		L	T	
Volume (vph)				148		102		414	101	176	368	
% Heavy Vehicles				3		1		4	5	2	5	
PHF				0.83		0.83		0.90	0.90	0.81	0.81	
Pretimed/Actuated (P/A)				A		A		A	A	A	A	
Startup Lost Time				2.0		2.0		2.0		2.0	2.0	
Extension of Effective Green				2.0		2.0		2.0		2.0	2.0	
Arrival Type				3		3		3		3	3	
Unit Extension				3.0		3.0		3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0	0		0	0	8	0	0	4	0	0	
Lane Width				11.0		11.0		12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour				0		0		0		0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	WB Only	02	03	04	NS Perm	06	07	08
Timing	G = 15.0	G =	G =	G =	G = 35.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 60.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate				178		113		568		217	454	
Lane Group Capacity				424		387		1037		408	1056	
v/c Ratio				0.42		0.29		0.55		0.53	0.43	
Green Ratio				0.25		0.25		0.58		0.58	0.58	
Uniform Delay d_1				18.9		18.2		7.7		7.6	7.0	
Delay Factor k				0.11		0.11		0.15		0.13	0.11	
Incremental Delay d_2				0.7		0.4		0.6		1.3	0.3	
PF Factor				1.000		1.000		1.000		1.000	1.000	
Control Delay				19.5		18.6		8.3		8.9	7.2	
Lane Group LOS				B		B		A		A	A	
Approach Delay				19.2			8.3			7.8		
Approach LOS				B			A			A		
Intersection Delay	10.1			Intersection LOS						B		

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BACK-OF-QUEUE WORKSHEET

General Information

Project Description *110-239 Dover Village Shopping Center TIS - update - DK*

Average Back of Queue

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Lane Group				*L*		*R*		*TR*		*L*	*T*	
Initial Queue/Lane				*0.0*		*0.0*		*0.0*		*0.0*	*0.0*	
Flow Rate/Lane Group				*178*		*113*		*568*		*217*	*454*	
Satflow/Lane				*1694*		*1546*		*1777*		*700*	*1810*	
Capacity/Lane Group				*424*		*387*		*1037*		*408*	*1056*	
Flow Ratio				*0.1*		*0.1*		*0.3*		*0.3*	0.3	
v/c Ratio				*0.42*		*0.29*		*0.55*		*0.53*	*0.43*	
I Factor				*1.000*		*1.000*		*1.000*		*1.000*	*1.000*	
Arrival Type				*3*		*3*		*3*		*3*	*3*	
Platoon Ratio				*1.00*		*1.00*		*1.00*		*1.00*	*1.00*	
PF Factor				*1.00*		*1.00*		*1.00*		*1.00*	*1.00*	
Q_1				*2.5*		*1.5*		*5.8*		*2.2*	*4.2*	
k_B				*0.3*		*0.3*		*0.6*		*0.3*	*0.6*	
Q_2				*0.2*		*0.1*		*0.7*		*0.4*	*0.4*	
Q Average				*2.7*		*1.6*		*6.5*		*2.5*	*4.6*	

Percentile Back of Queue (95th percentile)

$f_{B\%}$				*2.0*		*2.0*		*1.9*		*2.0*	*2.0*	
Back of Queue				*5.5*		*3.4*		*12.4*		*5.1*	*9.1*	

Queue Storage Ratio

Queue Spacing				*25.0*		*25.0*		*25.0*		*25.0*	*25.0*	
Queue Storage				*0*		*0*		*0*		*0*	*0*	
Average Queue Storage Ratio												
95% Queue Storage Ratio												

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SHORT REPORT

General Information		Site Information	
Analyst	DPR	Intersection	NY Route 22/Dover Village Drwy
Agency or Co.	CMERT22PLZDRWYbupmsa - imp	Area Type	All other areas
Date Performed	4/20/11	Jurisdiction	Town of Dover
Time Period	PM PH	Analysis Year	2017 Build Sens. Analysi w/imp

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes				1		1		1	1	1	1	
Lane Group				L		R		T	R	L	T	
Volume (vph)				148		102		414	101	176	368	
% Heavy Vehicles				3		1		4	5	2	5	
PHF				0.83		0.83		0.90	0.90	0.81	0.81	
Pretimed/Actuated (P/A)				A		A		A	A	A	A	
Startup Lost Time				2.0		2.0		2.0	2.0	2.0	2.0	
Extension of Effective Green				2.0		2.0		2.0	2.0	2.0	2.0	
Arrival Type				3		3		3	3	3	3	
Unit Extension				3.0		3.0		3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0	0		0	0	8	0	0	4	0	0	
Lane Width				11.0		11.0		12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour				0		0		0	0	0	0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	WB Only	02	03	04	NS Perm	06	07	08
Timing	G = 15.0	G =	G =	G =	G = 35.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 60.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate				178		113		460	108	217	454	
Lane Group Capacity				424		387		1066	897	486	1056	
v/c Ratio				0.42		0.29		0.43	0.12	0.45	0.43	
Green Ratio				0.25		0.25		0.58	0.58	0.58	0.58	
Uniform Delay d_1				18.9		18.2		7.0	5.6	7.0	7.0	
Delay Factor k				0.11		0.11		0.11	0.11	0.11	0.11	
Incremental Delay d_2				0.7		0.4		0.3	0.1	0.7	0.3	
PF Factor				1.000		1.000		1.000	1.000	1.000	1.000	
Control Delay				19.5		18.6		7.2	5.7	7.7	7.2	
Lane Group LOS				B		B		A	A	A	A	
Approach Delay				19.2			6.9			7.4		
Approach LOS				B			A			A		
Intersection Delay	9.5			Intersection LOS						A		

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BACK-OF-QUEUE WORKSHEET

General Information

Project Description *110-239 Dover Village Shopping Center TIS - update - DK -RT*

Average Back of Queue

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Lane Group				*L*		*R*		*T*	*R*	*L*	*T*	
Initial Queue/Lane				*0.0*		*0.0*		*0.0*	*0.0*	*0.0*	*0.0*	
Flow Rate/Lane Group				*178*		*113*		*460*	*108*	*217*	*454*	
Satflow/Lane				*1694*		*1546*		*1827*	*1538*	*833*	*1810*	
Capacity/Lane Group				*424*		*387*		*1066*	*897*	*486*	*1056*	
Flow Ratio				*0.1*		*0.1*		*0.3*	*0.1*	*0.3*	*0.3*	
v/c Ratio				*0.42*		*0.29*		*0.43*	*0.12*	*0.45*	*0.43*	
I Factor				*1.000*		*1.000*		*1.000*	*1.000*	*1.000*	*1.000*	
Arrival Type				*3*		*3*		*3*	*3*	*3*	*3*	
Platoon Ratio				*1.00*		*1.00*		*1.00*	*1.00*	*1.00*	*1.00*	
PF Factor				*1.00*		*1.00*		*1.00*	*1.00*	*1.00*	*1.00*	
Q_1				*2.5*		*1.5*		*4.3*	*0.8*	*2.0*	*4.2*	
k_B				*0.3*		*0.3*		*0.6*	*0.5*	*0.4*	*0.6*	
Q_2				*0.2*		*0.1*		*0.4*	*0.1*	*0.3*	*0.4*	
Q Average				*2.7*		*1.6*		*4.7*	*0.9*	*2.3*	*4.6*	

Percentile Back of Queue (95th percentile)

$f_{B\%}$				*2.0*		*2.0*		*2.0*	*2.1*	*2.0*	*2.0*	
Back of Queue				*5.5*		*3.4*		*9.2*	*1.8*	*4.7*	*9.1*	

Queue Storage Ratio

Queue Spacing				*25.0*		*25.0*		*25.0*	*25.0*	*25.0*	*25.0*	
Queue Storage				*0*		*0*		*0*	*125*	*0*	*0*	
Average Queue Storage Ratio									*0.2*			
95% Queue Storage Ratio									*0.4*			

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