



Consulting

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October 2, 2020

Environmental Design & Research
217 Montgomery Street – Suite 1000
Syracuse, NY 13202

Attn: Mr. Samuel C. Gordon

**Re: Traffic Impact Assessment - Proposed MVEDGE Mixed Use Development
County Route 34 – Town of Marcy, NY**

Dear Mr. Gordon:

I have completed my review of the traffic operations associated with the proposed MVEDGE mixed use development on the east side of County Route 34 (Marcy SUNY IT Parkway), between River Road and Technology Place in the Town of Marcy, NY. This letter summarizes the work completed in this review as well as my findings.

Project Understanding

The proposed mixed use development will be located on the east side of County Route 34 (Marcy-SUNY IT Parkway), between River Road and Technology Drive. The development is envisioned to include two buildings. One 4-story building will have 7,000 SF of retail space and 7,000 SF of parking space on the ground level, with 44 total apartments on the second through fourth floors. The second building will be a 2-story building. The ground floor is anticipated to have a 2,500 SF coffee/donut shop with drive through operations and 13,000 SF of fast casual dining set up in the food court style layout, and the second floor will have 12,000 SF of retail/commercial space.

Route 34 is a four lane roadway (two lanes in each direction) with a 12 foot wide raised grass median passing the site. Access to the development is proposed via one right in/right out only driveway to Route 34, located approximately 1,400 feet to the north of River Road. If additional property is acquired in the future, there could be access to either River Road to the south or Technology Place to the north, however these options are not available at this time.

Given the extensive studies that have been completed associated with the nanocenter and Farmer properties, the study for this development is limited to the proposed access driveway only. Therefore, the adjacent intersections of Route 34 with River Road (signal) and Route 34 with Technology Drive (roundabout), which are constructed to accommodate full build out of the nanocenter and Farmer properties, are not included in the study.

A conceptual master plan developed by EDR, dated September 3rd, 2020 has been attached.

**Re: Traffic Impact Assessment - Proposed MVEDGE Mixed Use Development
County Route 34 – Town of Marcy, NY**

Data Collection

Site visits were conducted on Thursday – September 17th, 2020 to collect the following:

- Existing Traffic Volume Counts – Traffic counts were collected on Route 34 passing the site during the weekday morning (7-9am) and evening (4-6pm) peak travel periods to ensure that actual peak hours of the adjacent street were captured. Turning movement counts were also collected at the River Road/Cavo Road intersection during the count periods for informational purposes. Cavo Road is a potential future access location if additional property is acquired behind the currently proposed development. The traffic counts included separate heavy vehicle counts per direction and pedestrians.
- Route 34 & River Road Gap Data – Gap data was collected to assess the ability for vehicles to turn in and out of the proposed site driveway on Route 34 and potentially Cavo Road on River Road in the future. In order for a vehicle to turn right out of the site, the vehicle only requires a gap in the northbound direction on Route 34. The gap data collected on River Road reviews vehicles potentially turning right off Cavo Road, requiring a westbound gap on River Road, or turning left off Cavo Road, requiring a simultaneous gap in both directions. These gaps in traffic were observed and timed on Route 34 and River Road at the locations of the proposed access driveway and Cavo Road during the weekday morning and weekday evening traffic count periods. The gaps were then converted to a number of vehicles that could turn right out of the proposed site driveway or left/right off Cavo Road in the future during each gap and then totaled for the peak hour. For example, one vehicle can turn from the driveway with a 6-9 second gap in traffic, two can turn with a 10-13 second gap, 3 with a 14-17 second gap, 4 with an 18-19 second gap, etc.
- Spot Speed Measurements – 50 speed measurements were collected in each direction on Route 34 passing the site and on River Road passing Cavo Road to identify average and 85th percentile operating speeds in the area passing the site driveway or future potential access. The data was collected for free flow traffic during off-peak times. The weather was sunny and the roadway was dry.
- Sight Distance Measurements – Sight lines looking north/south along Route 34 from the proposed driveway and east/west along River Road from Cavo Road were collected for comparison to design standards in order to confirm that adequate sight lines are available for safe ingress and egress from the site.
- Operational Data - Other data needed to evaluate traffic operations, such as intersection geometry, control, and speeds limits were also collected.

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County Route 34 – Town of Marcy, NY**

Existing Operations

Route 34 has two lanes in each direction passing the site with a 12 foot wide raised grass median. The posted speed limit on Route 34 is 40 mph. The intersection with Technology Place to the north of the site is controlled by a two lane roundabout while the intersection with River Road to the south of the site is controlled by a traffic signal. With the existing raised median, the only available access to the site would be a right in/right out only driveway.

River Road has one lane in each direction and a two way center left turn lane passing Cavo Road. Cavo Road is a narrow stub road providing access to Kaman Industrial Technologies on the east side of the roadway. Cavo Road could potentially provide future access to the site if additional property is acquired.

Based on the traffic counts collected, the peak hours were identified as follows:

Morning Peak Hour – 7:30am to 8:30am
Evening Peak Hour – 4:45pm to 5:45pm

The 2020 existing traffic volumes collected on September 17th, 2020 are shown in the attached Figure 1 for the morning and evening peak hours. The traffic count data has been attached.

The existing peak hour traffic volumes were compared to 2018 NYSDOT AADT counts on both Route 34 and River Road in order to identify necessary adjustments to account for impacts on traffic associated with the Covid-19 pandemic. The comparison showed that the historical traffic counts on Route 34 were higher in both directions during the morning peak hour, higher in the northbound direction during the evening peak hour and lower in the southbound direction during the evening peak hour. With overall traffic volumes being less than 150 vehicles in each direction, no adjustment was made to the volumes on Route 34 since the back ground growth associated with area developments would increase the volumes by a factor of 10. The River Road historical counts, to the east of the Route 34 intersection, were all lower than the 2020 traffic counts, therefore no adjustments were made.

Route 34 is classified as a collector roadway in the area. The roadway carries approximately 80 vehicles northbound/20 vehicles southbound passing the site during the morning peak hour, and 50 vehicles northbound/150 vehicles southbound passing the site during the evening peak hour. River Road is classified as a minor urban arterial roadway in the area. The roadway carries approximately 190 vehicles eastbound/300 vehicles westbound passing the site during the morning peak hour, and 360 vehicles eastbound/380 vehicles westbound passing the site during the evening peak hour.

Based on the gap data collected, there were sufficient gaps in traffic to accommodate approximately 683 vehicles turning right onto Route 34 from the site access during the morning peak hour and 725 vehicles turning right during the evening peak hour. On River Road, there are sufficient gaps to

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County Route 34 – Town of Marcy, NY**

accommodate 530 vehicles turning right from Cavo Road during the morning peak hour and 464 vehicles turning right during the evening peak hour. These gaps would also be available for vehicles turning left into the site from Route 34 or left into Cavo Road from River Road. On River Road, there were sufficient gaps for 404 vehicles turning left out of Cavo Road during the morning peak hour and 313 vehicles turning left out of Cavo Road during the evening peak hour. The existing gaps observed can easily accommodate the volume of traffic that is projected to be accessing the site during the peak hours. It is noted that the baseline traffic volumes on both roadways is projected to increase significantly with approved background developments, however, the traffic signal at the River Road intersection would continue to provide gaps in traffic northbound on Route 34. The gap data is attached.

The posted speed limits are 40 mph on both roadways. The speed data collected indicates that the average speeds passing the site on Route 34 are 47 mph in the northbound direction and 40 mph in the southbound direction. The 85th percentile speeds based on the data collected are 51 mph northbound and 44 mph southbound on Route 34. The average speeds passing Cavo Road on River Road are 43 mph in the eastbound direction and 38 mph in the westbound direction. The 85th percentile speeds based on the data collected are 47.5 mph eastbound and 42 mph westbound on River Road. The 85th percentile speeds are considered the operating speeds and are typically used for design and analysis. The speed data has been attached.

The following table provides a summary of the recommended sight distances along Route 34 and River Road from the AASHTO A Policy on Design of Highways and Streets as well as the available sight distances based on field measurements. The speed limit in the area is 40 mph on both roadways, however the speed data collected indicates that the operating speed is closer to 50 mph on both roadways. Therefore 50 mph was used for the sight distance review.

Sight Distance Summary				
Location	Operating Speed	Direction	AASHTO Recommended Sight Distance	Available Sight Distance
Route 34 @ Site Drive – Turning Right	50 mph	Looking Left	480 feet	900 feet
River Road @ Cavo Road – Turning Left	50 mph	Looking Left Looking Right	555 feet 555 feet	1,000+ feet 1,000+ feet
River Road @ Cavo Road – Turning Right	50 mph	Looking Left	480 feet	1,000+ feet

There are adequate sight distances available in both directions on both roadways. There are no concerns with sight distances and safety for ingress and egress from the proposed site driveway or any future potential connection to Cavo Road.

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County Route 34 – Town of Marcy, NY**

There are no concerns with existing traffic operations on Route 34 or River Road in the vicinity of the project site as there are relatively low traffic volumes, ample gaps in traffic and clear sight lines in both directions. These findings are consistent with observations made during the data collection.

2025 Background Conditions

The proposed MVEDGE mixed use development is assumed to be completed 2025, therefore 2025 was used as the design year for this study. In order to fully understand the impacts of the development on the adjacent roadway system, analysis of the operations in the design year without the project must first be completed. The existing traffic volumes were first adjusted by a growth rate to account for any unknown development that may occur prior to completion of the project.

Historical traffic volumes along Route 34 between River Road and Hazard Road, and along River Road between Route 34 and the Utica city line, were taken from the NYSDOT 2018 Traffic Volume Report and reviewed in order to identify an appropriate background growth rate. Long term growth rates in the area have been +3.9% per year on Route 34 between 2003 and 2018, and +0.2% per year on River Road between 2008 and 2018. The higher growth on Route 34 is skewed by the low existing traffic volumes. A positive 1.0% per year growth rate was chosen and used to grow the 2020 existing traffic volumes to the 2025 background condition, as shown in Figure 2. The background growth calculations have been attached.

The two significant approved developments in the area are the Marcy Nanocenter and the Farmer Property manufacturing sites, both located to the north of the study area on Route 34.

Based on data from the November 2009 traffic impact study for the nanocenter, prepared by Bergmann Associates, the trips generated were divided into manufacturing trips and administrative trips. The manufacturing trips are expected to occur before and after the existing peak hours on Route 34 with 1026 trips entering/925 trips exiting between 6-7am and 916 trips entering/1009 trips exiting between 6-7pm. The administrative trips are expected to overlap with the existing peak hours on Route 34 with 485 trips entering/85 trips exiting during the morning peak hour and 112 trips entering/388 trips exiting during the evening peak hour. In order to provide a worst case evaluation of the proposed development impacts, the higher trip generation associated with the manufacturing trips was incorporated into the background traffic volumes for this study. These trips are shown in Figure 3.

Based on data from the January 2013 traffic impact study for the Farmer property, prepared by Lochner, the Farmer manufacturing development is expected to generate 400 trips entering/30 trips exiting during the morning peak hour and 190 trips entering/235 trips exiting during the evening peak hour. Using the same distribution as was used for the nanocenter trips, the Farmer property trips were distributed through the study area as shown in Figure 4.

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County Route 34 – Town of Marcy, NY**

The trips generated by the nanocenter using the worst case manufacturing trips, and the Farmer property, were added to the 5% grown traffic volumes for the resultant 2025 background traffic volumes expected prior to the opening of the proposed MVEDGE mixed use development, shown in Figure 5.

Trip Generation Estimate and Distribution

The proposed MVEDGE mixed use development includes 44 apartments, a 2,500 SF coffee/donut shop with drive through operations, 13,000 SF of fast casual dining, and 19,000 SF of commercial/retail space. Trips generated by the proposed development were estimated using the ITE Trip Generation, 10th Edition, which is the industry accepted standard for estimating traffic generated by new developments. Land Use 221 – Multi-Family Housing (Mid-Rise), Land Use 937 – Coffee/Donut Shop with Drive Through Window, Land Use 930 – Fast Casual Dining, and Land Use 820 – Shopping Center were used for the trip generation estimates.

Given the mix of residential, retail and dining proposed on the site, a 10% multi-use credit was applied to the total trip generation estimate to account for multiple uses by one visitor to the site. For example, a person that lives in the apartments may shop or eat on-site without generating a vehicular trip.

A significant portion of the traffic generated by the development will be drawn from traffic already passing the site on Route 34 and is referred to as pass-by trips. Pass-by trips are vehicles that are already traveling through the study area but will now stop at the development on their way to another destination, such as stopping on their way to or from work. Based on data from the ITE Trip Generation, the average pass-by trip percentage for Land Use 937 is between 50% for a fast food restaurant and 89% for an espresso stand. Therefore a 60% pass-by credit was assumed during the morning peak hour and a 50% pass-by credit was assumed during the evening peak hour. The average pass-by rates for fast casual restaurants is between 43% and 50% while the average pass-by percentage for retail uses is 34% during the evening peak hour. A 10% pass-by rate was assumed for the fast casual dining/retail uses during the morning peak hour and a 35% pass-by rate was assumed during the evening peak hour. All pass-by credits were taken after the multi-use credit was applied to avoid compounding credits. All trips associated with the apartments are considered new trips to/from the site.

The following table summarizes the trip generation estimate for the proposed MVEDGE mixed use development.

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County Route 34 – Town of Marcy, NY**

	Trip Generation Summary			
	Morning		Evening	
	Peak Hour		Peak Hour	
	Entering	Exiting	Entering	Exiting
Apartments – 44 Units	12	32	11	8
Coffee/Donut Shop – 2,500 SF	113	109	54	54
Fast Casual Dining – 13,000 SF	18	9	101	83
Retail – 19,000 SF	<u>11</u>	<u>7</u>	<u>35</u>	<u>37</u>
Total Individual Trips Generated	155	157	201	181
<i>Multi-Use Credit – 10%</i>	<i><u>-16</u></i>	<i><u>-16</u></i>	<i><u>-20</u></i>	<i><u>-18</u></i>
Total Trips Generated	139	141	181	164
<i>Retail/Fast Casual Pass-by – AM10%, PM35%</i>	<i>-2</i>	<i>-2</i>	<i>-40</i>	<i>-40</i>
<i>Coffee/Donut Pass-by – AM60%, PM 50%</i>	<i><u>-60</u></i>	<i><u>-60</u></i>	<i><u>-24</u></i>	<i><u>-24</u></i>
Total Pass-by Trips	<u>-62</u>	<u>-62</u>	<u>-64</u>	<u>-64</u>
Total New Trips Generated	77	79	117	100

The detailed trip generation calculations have been attached.

Overall, the MVEDGE mixed use development is expected to generate approximately 140 total trips both entering and exiting the site during the morning peak hour and 160-180 total trips both entering and exiting the site during the evening peak hour. With a large portion of these trips expected to be drawn from traffic already traveling through the area on Route 34, the site is only expected to generate approximately 80 new trips entering and exiting the overall study area during morning peak and 100-120 new trips entering/exiting the study area during the evening peak.

Based on future traffic patterns and population/employment centers in the area, 60% of the new trips generated are expected to travel to/from the south on Route 34 (13% to/from the east on River Road, 30% to/from the south on Route 34 and 17% to/from the west on River Road) and 40% is expected to travel to/from the north on Route 34. Separate pass-by trip distributions were developed for each peak hour based on specific traffic patterns passing the site on Route 34. It is noted that southbound traffic on Route 34 entering the site will need to travel to the River Road intersection and then turn around somewhere to approach the site driveway northbound on Route 34. Likewise, traffic exiting to the south will have to travel north on Route 34 to use the roundabout to return southbound. The anticipated arrival/departure distributions for the morning and evening peak hours are shown in Figures 6 and 7 respectively. The trips generated during each peak hour are shown in Figures 8 and 9, and the resultant 2025 full build traffic volumes expected when the development is complete are shown in Figure 10.

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Build Operations

Capacity analysis of the existing traffic operations was completed using Synchro10, an industry accepted standard for the analysis of both signalized and unsignalized intersections that is based on methodologies developed in the Highway Capacity Manual. Intersection and individual movement operations are graded in terms of Level of Service ranging from A to F, as described in the HCM. For example, an unsignalized intersection movement with an average delay of 5 seconds per vehicle is considered a Level of Service A while an average delay per vehicle of 20 seconds is considered a C. A Level of Service D or better is generally considered acceptable for a signalized intersection while a Level of Service E or better is generally considered acceptable for an unsignalized intersection.

Capacity analysis of the build condition with the proposed MVEDGE mixed use development indicates that the right out only driveway will operate at Level of Service C (21 seconds average delay) during both the morning and evening peak hours. The capacity analysis printouts have been attached.

While traffic exiting to the south has the roundabout at Technology Place to easily turn around on Route 34, there is concern with where traffic arriving from the north will turn around at River Road to access the right in only driveway. It is recommended that a 200 foot southbound left turn lane be constructed on the Route 34 median at the site access to allow left turns entering the development. This would eliminate the concerns with traffic turning around at River Road while providing a safe storage area for left turns entering the site without impacting the through flow of traffic in each direction. Left turns exiting the site are not recommended given the lack of width in the median to safely accommodate a two-step exiting left turn movement.

A supplemental analysis was completed to evaluate traffic operations at the site driveway with a southbound left turn movement on Route 34. The trips generated during each peak hour were first modified with the recommended left turn lane, as shown in Figures 11 and 12. They were then added to the 2025 base traffic volumes for the resultant 2025 build traffic volumes with a southbound left turn lane, shown in Figure 13.

Capacity analysis of site driveway with a southbound left turn lane indicates that the right turn exiting movement would continue to operate at a Level of Service C during both peak hour with 21 seconds of average delay. The southbound left turn movement entering the site would operate at a Level of Service B during both peak hours with 14 seconds average delay per vehicle.

The capacity analysis printouts have been attached.



Mr. Gordon
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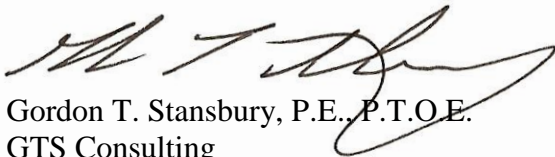
**Re: Traffic Impact Assessment - Proposed MVEDGE Mixed Use Development
County Route 34 – Town of Marcy, NY**

Conclusions

The additional traffic generated by the proposed MVEDGE mixed use development will have no notable or significant impact on traffic operations on Route 34 or River Road. With right in/right out only access on Route 34, there are concerns with where traffic arriving from the north will turn around at River Road to approach the site in the northbound direction. A 200 foot southbound left turn lane is recommended in the Route 34 median to allow the left turn movement entering the site. There are good sight lines looking south on Route 34 to accommodate both the left turn movement entering the site and the right turn movement exiting the site. There are no other mitigation measures recommended.

If you have any questions or need additional information, please call.

Sincerely,

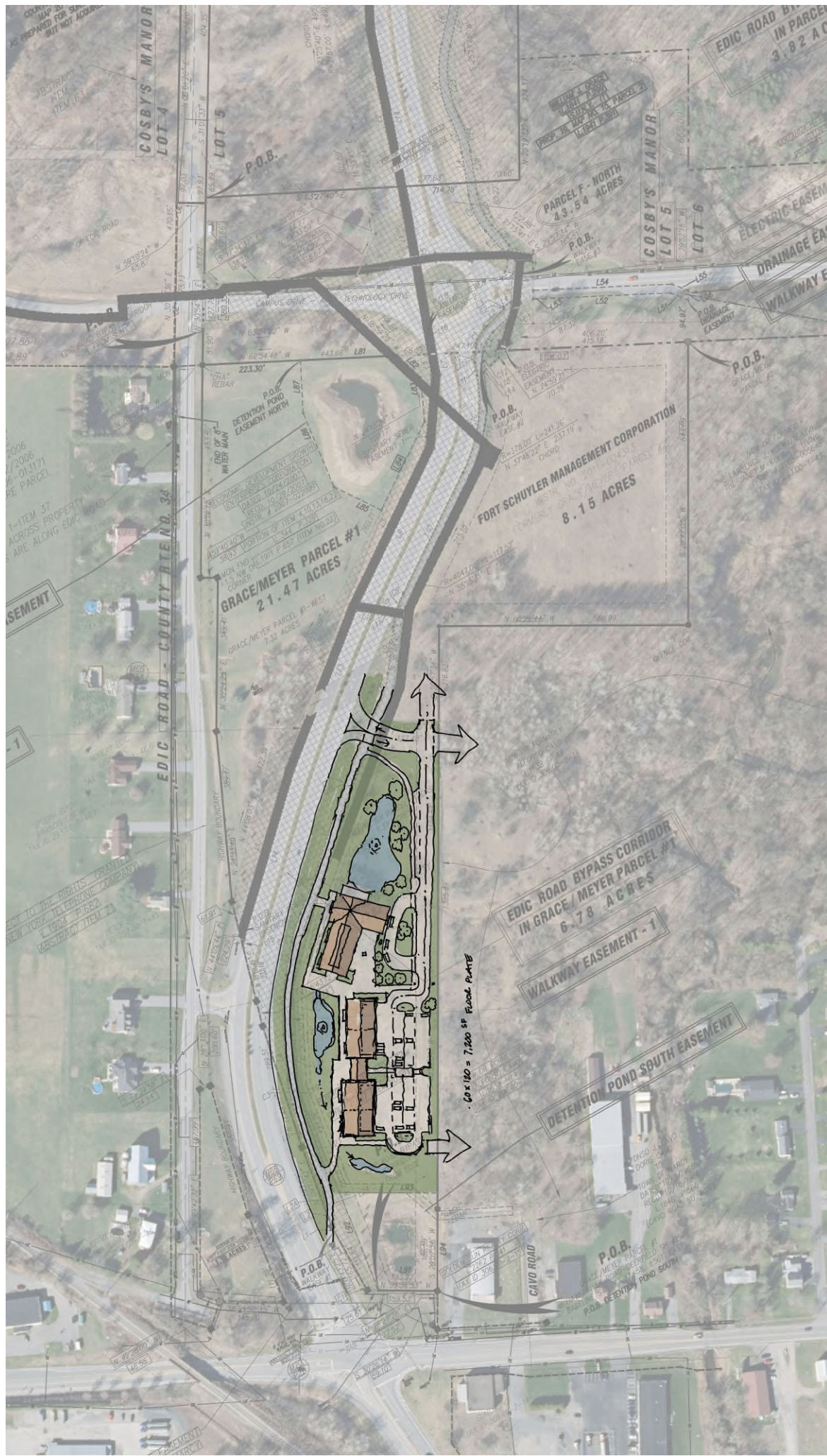


Gordon T. Stansbury, P.E., P.T.O.E.
GTS Consulting

Attachments –

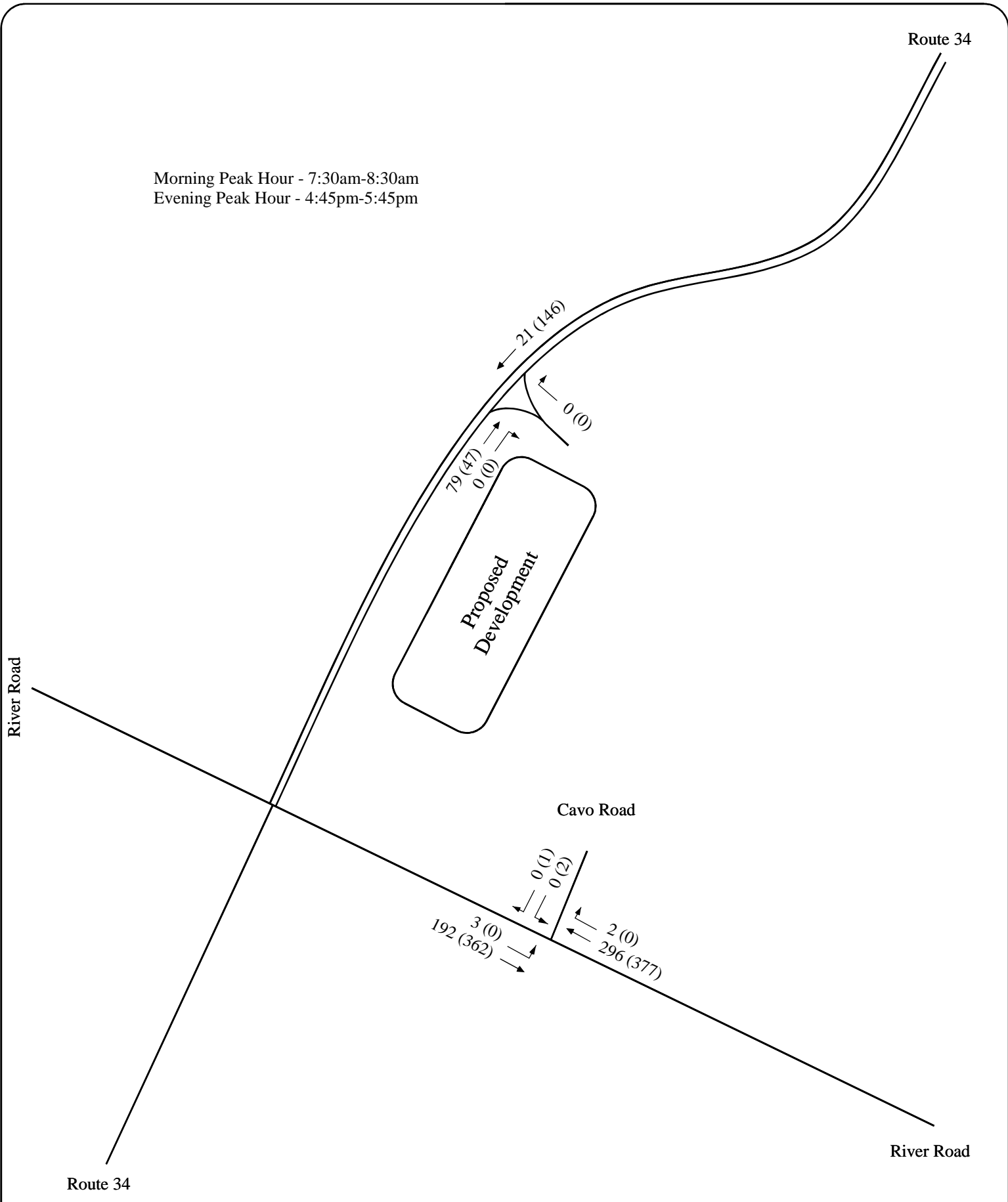
Master Plan
Gap Calculations
Background Growth Calculations
Count Data

Traffic Volume Figures 1-13
Spot Speed Data
Trip Generation Estimate
Capacity Analysis Printouts



Marcy Nanocenter Parkway Master Plan
 Mohawk Valley Edge
 September 3rd, 2020

Conceptual Master Plan: Proposed Conditions



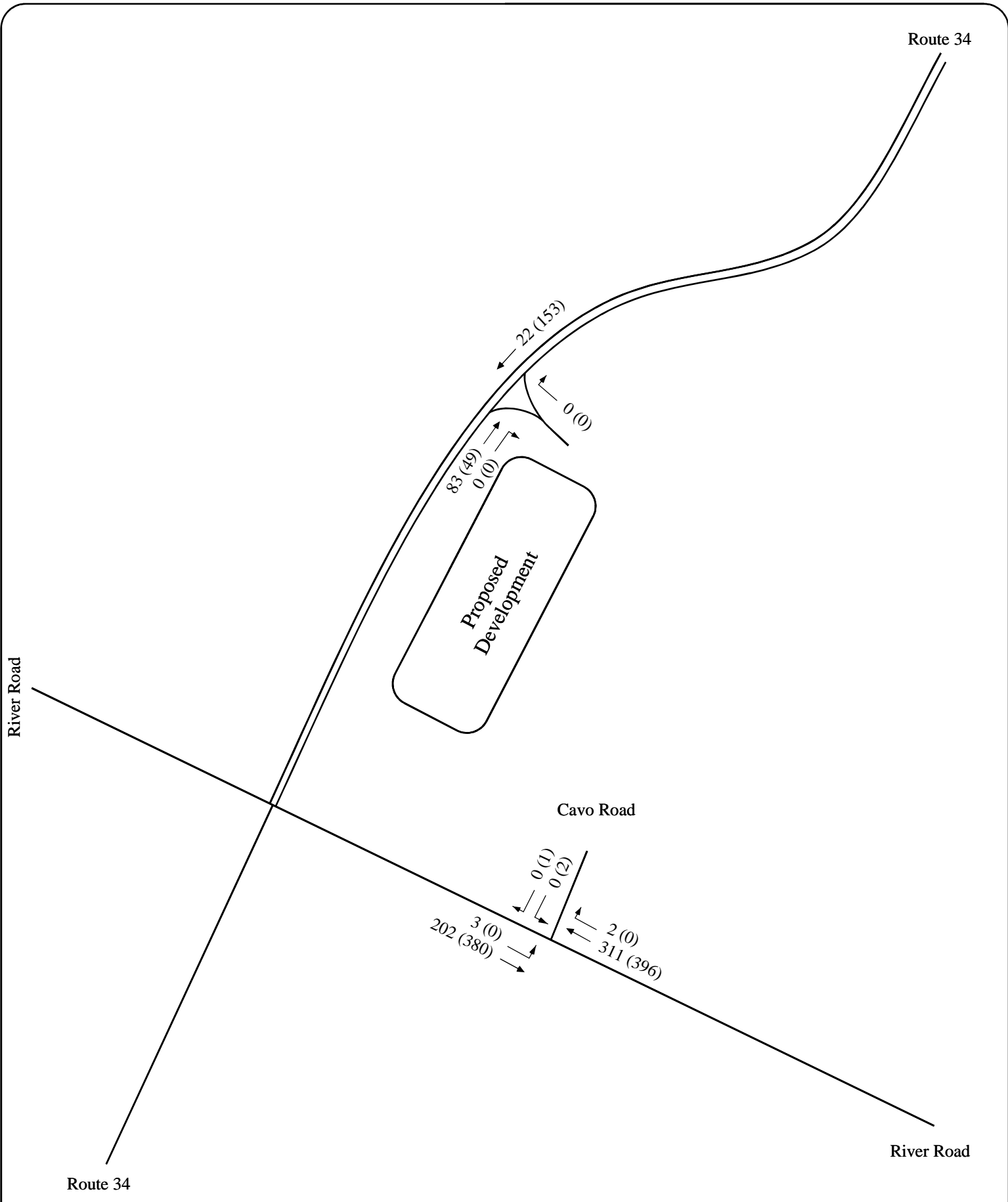
Proposed MVEDGE Mixed Use Development - Route 34 - Marcy, NY

2020 Existing Traffic Volumes - Collected September 17th, 2020

Morning (Evening) Peak Hour

Figure 1

Not To Scale



Proposed MVEDGE Mixed Use Development - Route 34 - Marcy, NY

2025 Base Traffic Volumes - With 1% Growth per Year

Morning (Evening) Peak Hour

Figure 2

Not To Scale



Nanocenter administrative trips overlap with adjacent street peak hours,
primary manufacturing trips occur before/after peak hours.

Use primary manufacturing trips for worst case analysis

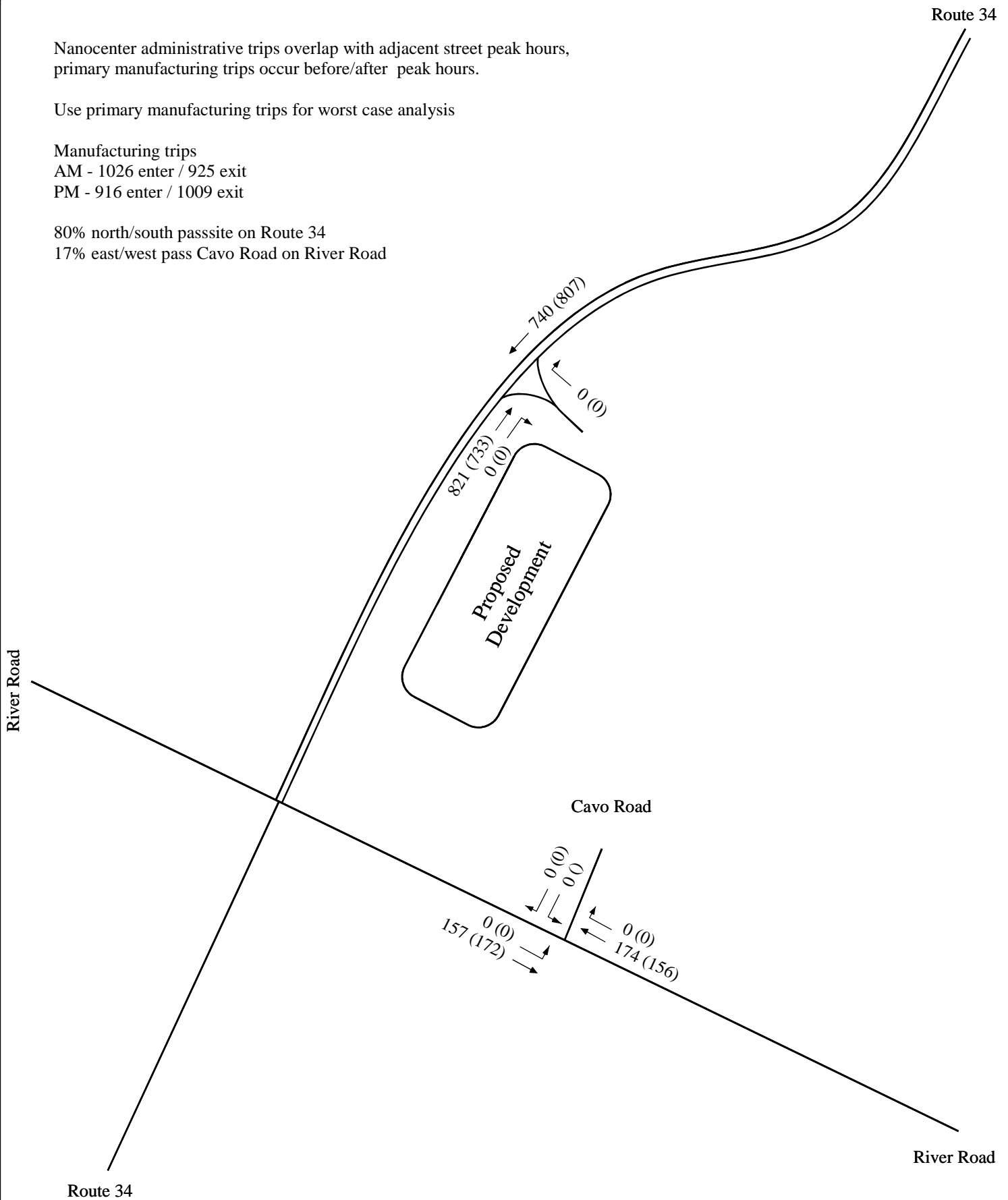
Manufacturing trips

AM - 1026 enter / 925 exit

PM - 916 enter / 1009 exit

80% north/south passsite on Route 34

17% east/west pass Cavo Road on River Road



Proposed MVEDGE Mixed Use Development - Route 34 - Marcy, NY

Approved Development Trips - Nanocenter - Manufacturing Trips

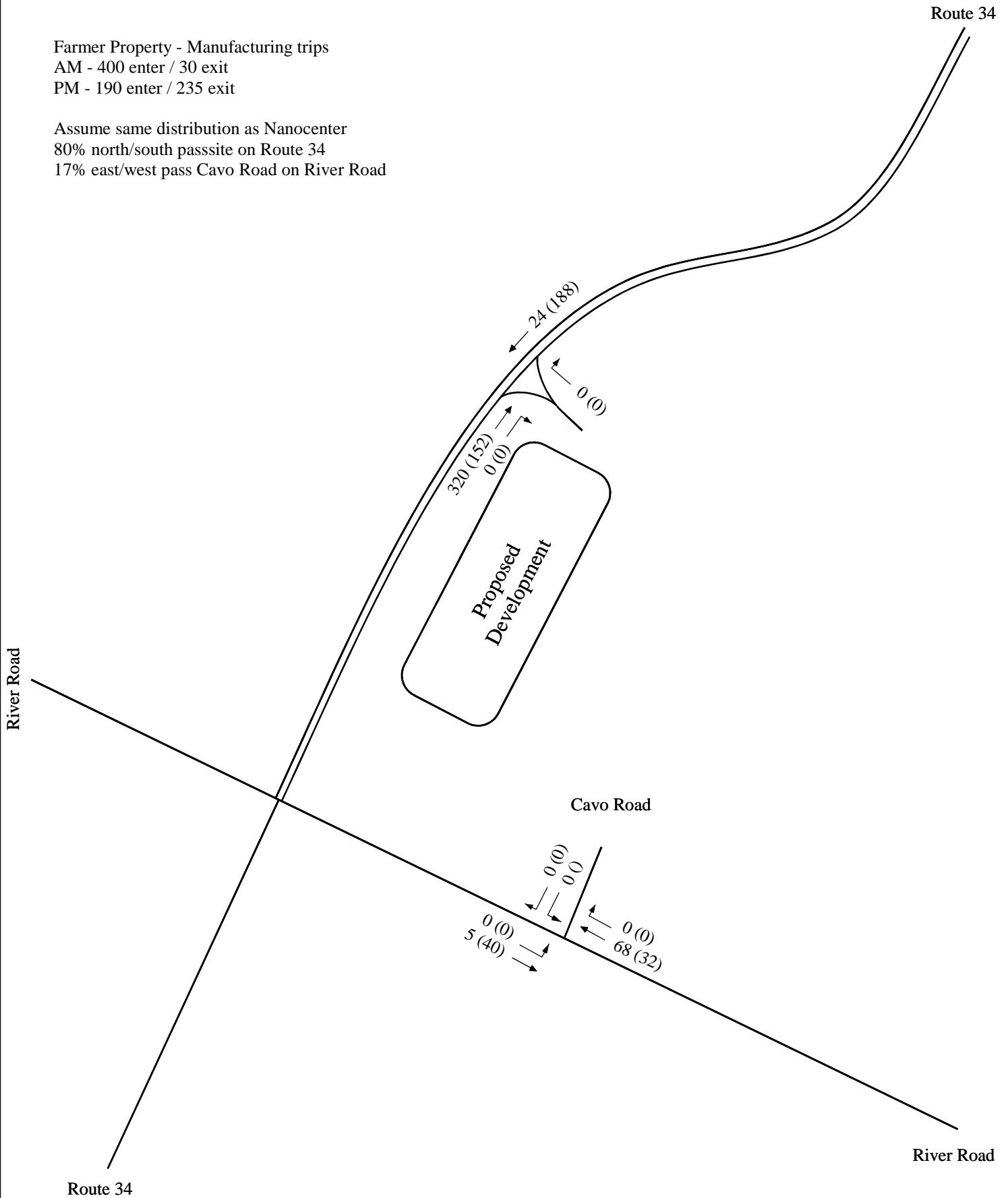
Morning (Evening) Peak Hour

Figure 3

Not To Scale

Farmer Property - Manufacturing trips
 AM - 400 enter / 30 exit
 PM - 190 enter / 235 exit

Assume same distribution as Nanocenter
 80% north/south passsite on Route 34
 17% east/west pass Cavo Road on River Road

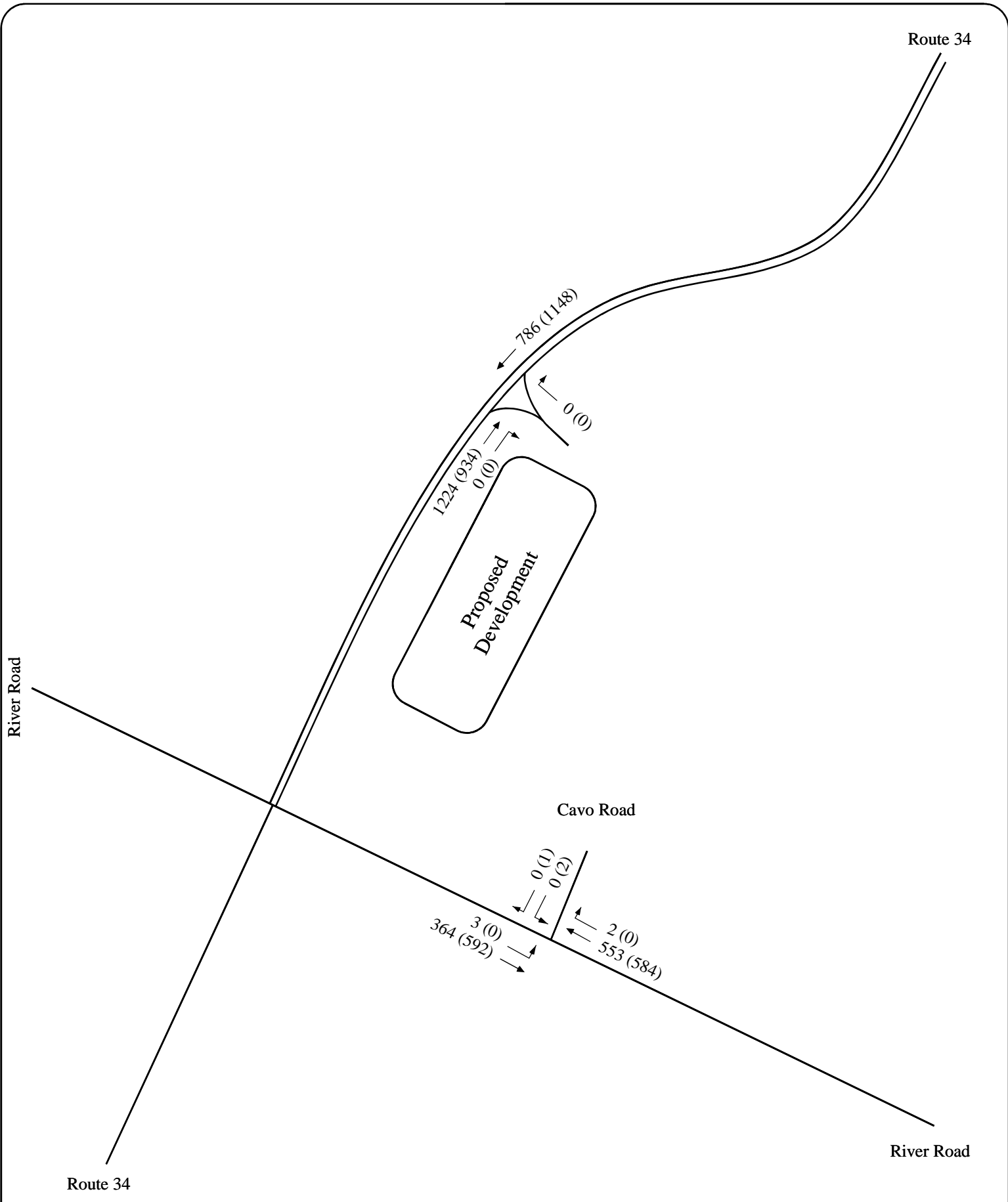


Proposed MVEDGE Mixed Use Development - Route 34 - Marcy, NY

Approved Development Trips - Farmer Property
 Morning (Evening) Peak Hour

Figure 4

Not To Scale



Proposed MVEDGE Mixed Use Development - Route 34 - Marcy, NY

2025 Background Traffic Volumes - With Growth & Approved Development

Morning (Evening) Peak Hour

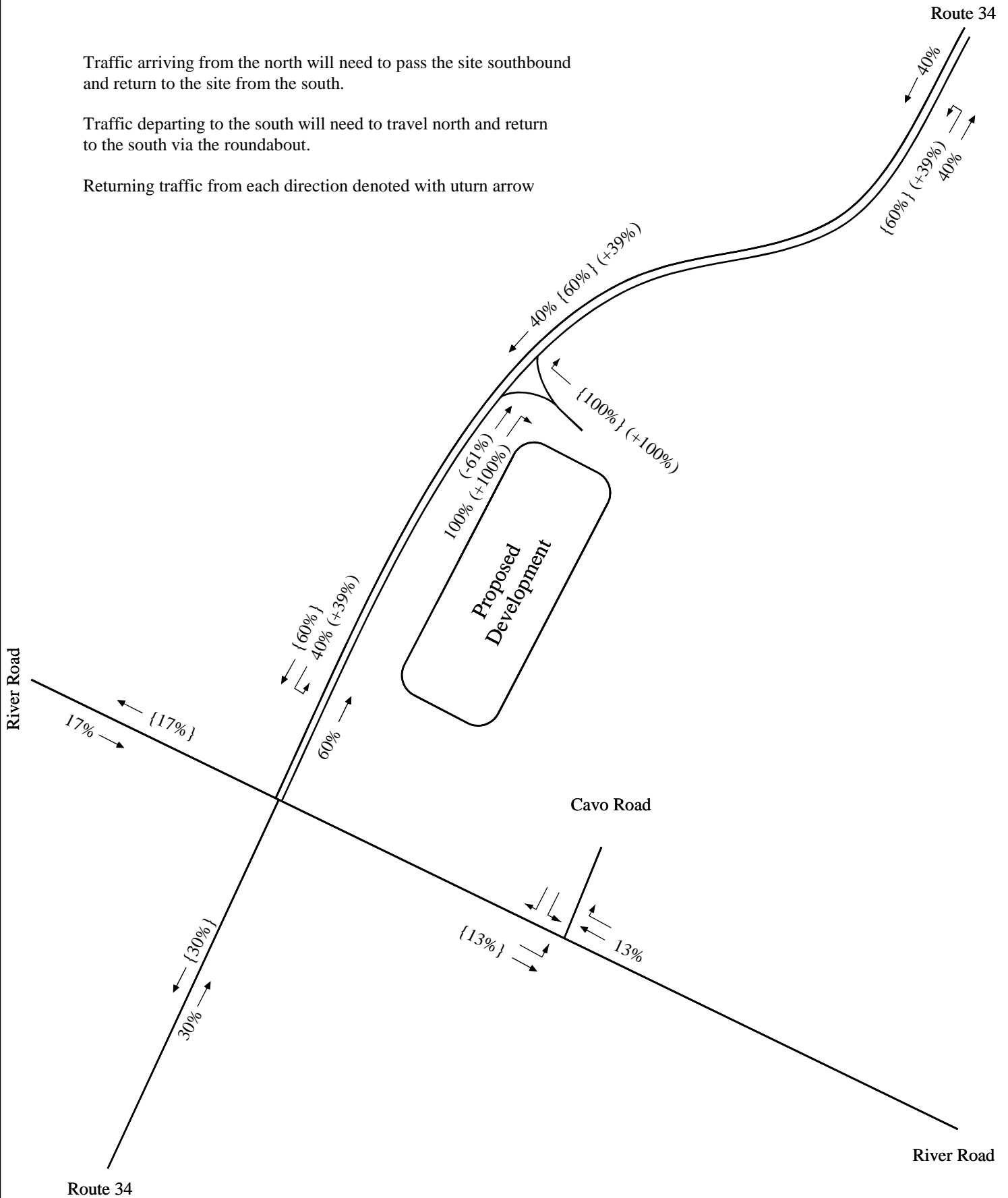
Figure 5

Not To Scale

Traffic arriving from the north will need to pass the site southbound and return to the site from the south.

Traffic departing to the south will need to travel north and return to the south via the roundabout.

Returning traffic from each direction denoted with uturn arrow



Proposed MVEDGE Mixed Use Development - Route 34 - Marcy, NY

Arrival / Departure Trip Distribution - Morning Peak Hour

New Entering {New Exiting} (Pass-by) Trip Percentage

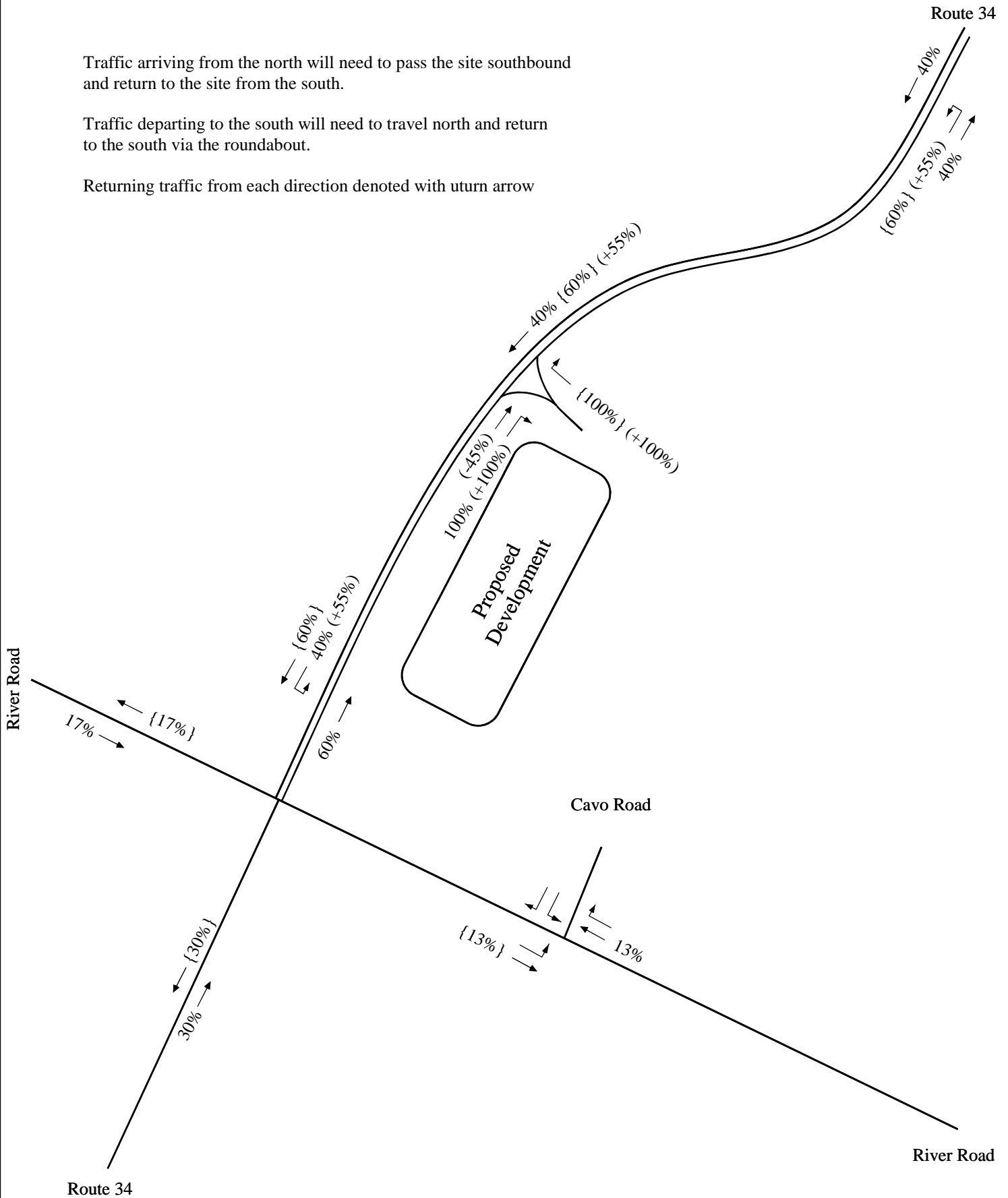
Figure 6

Not To Scale

Traffic arriving from the north will need to pass the site southbound and return to the site from the south.

Traffic departing to the south will need to travel north and return to the south via the roundabout.

Returning traffic from each direction denoted with uturn arrow



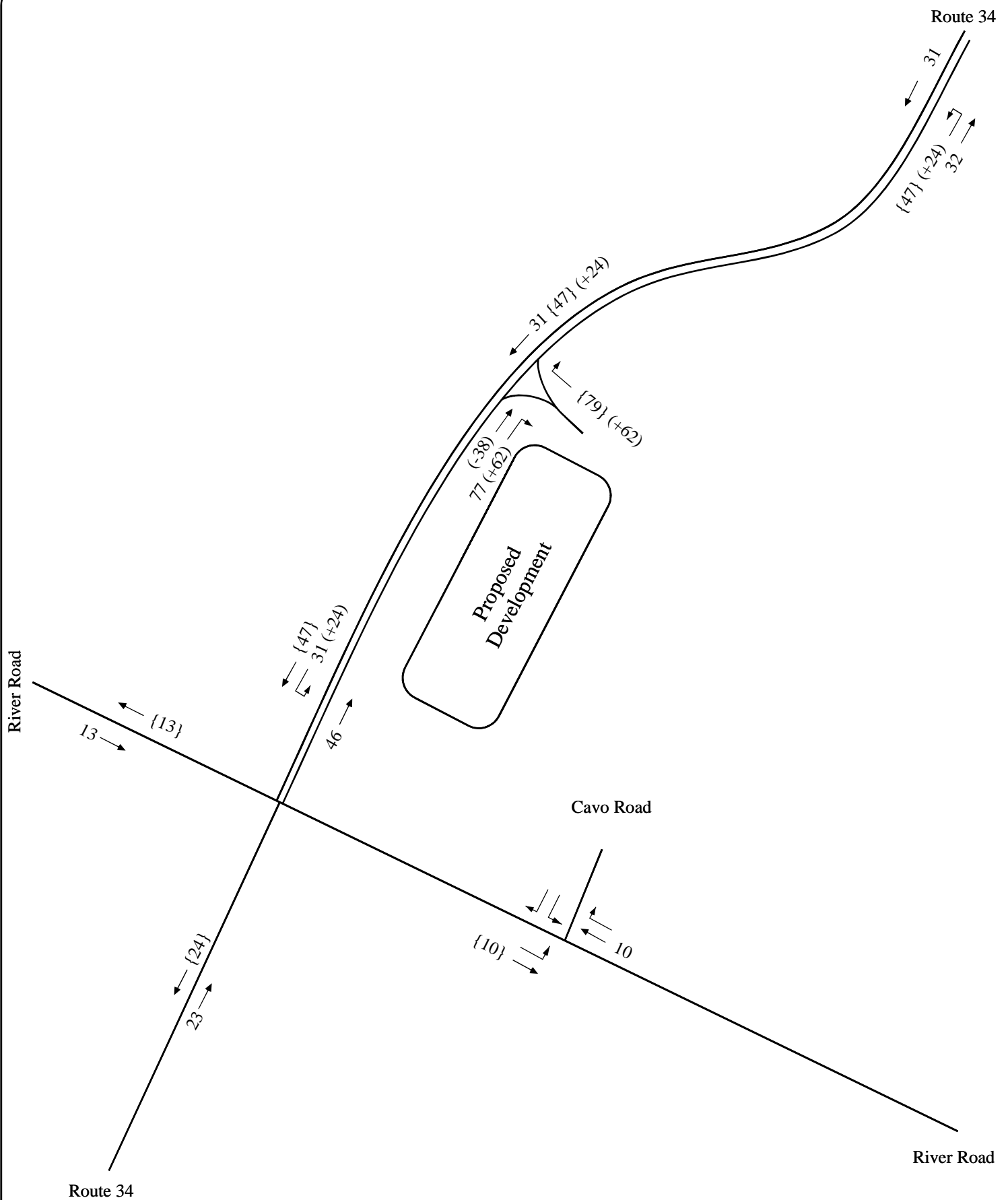
Proposed MVEDGE Mixed Use Development - Route 34 - Marcy, NY

Arrival / Departure Trip Distribution - Evening Peak Hour

New Entering {New Exiting} (Pass-by) Trip Percentage

Figure 7

Not To Scale



Proposed MVEDGE Mixed Use Development - Route 34 - Marcy, NY

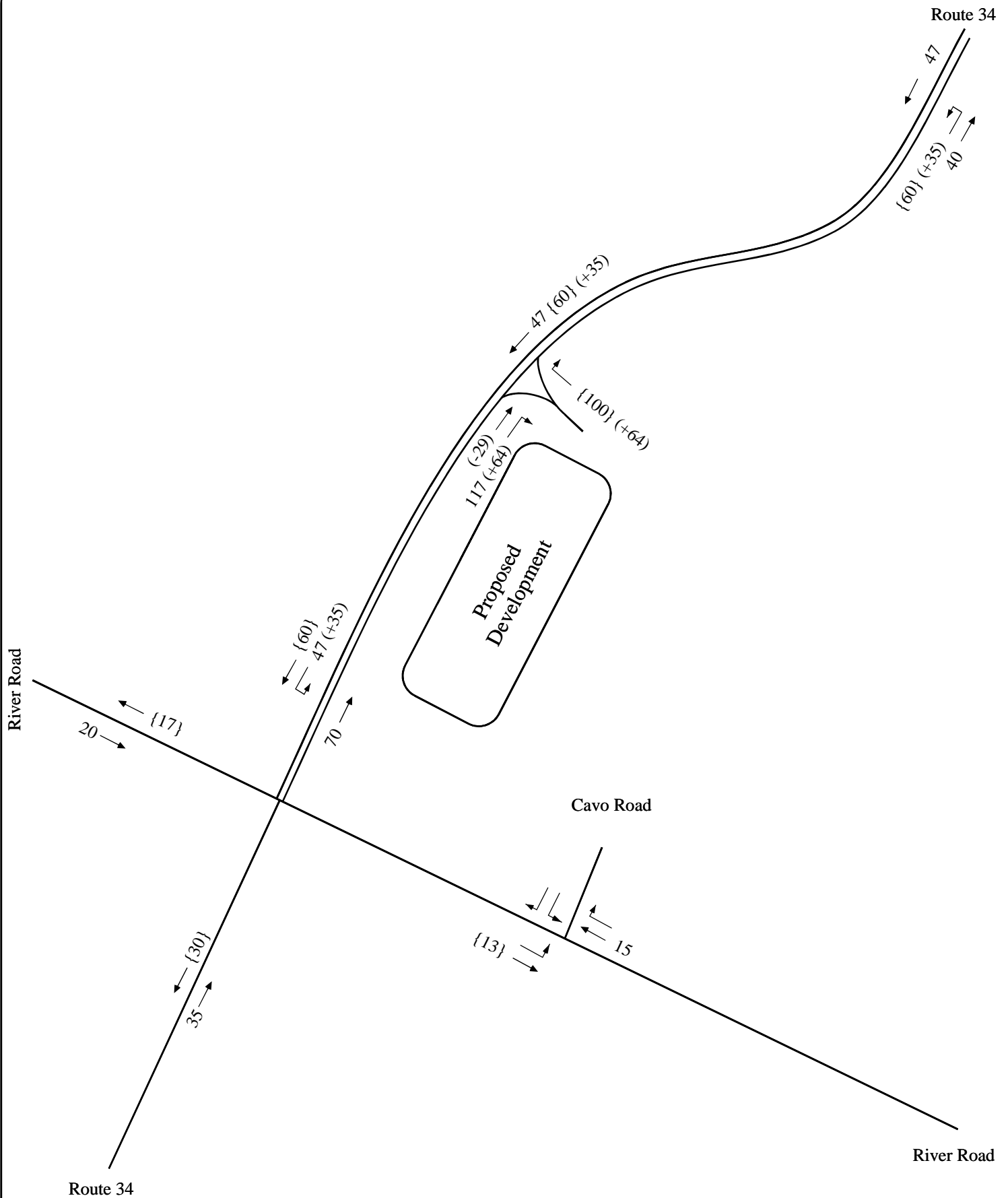
Trips Generated - Morning Peak Hour

New Entering {New Exiting) (Pass-by) Trips

Figure 8

Not To Scale





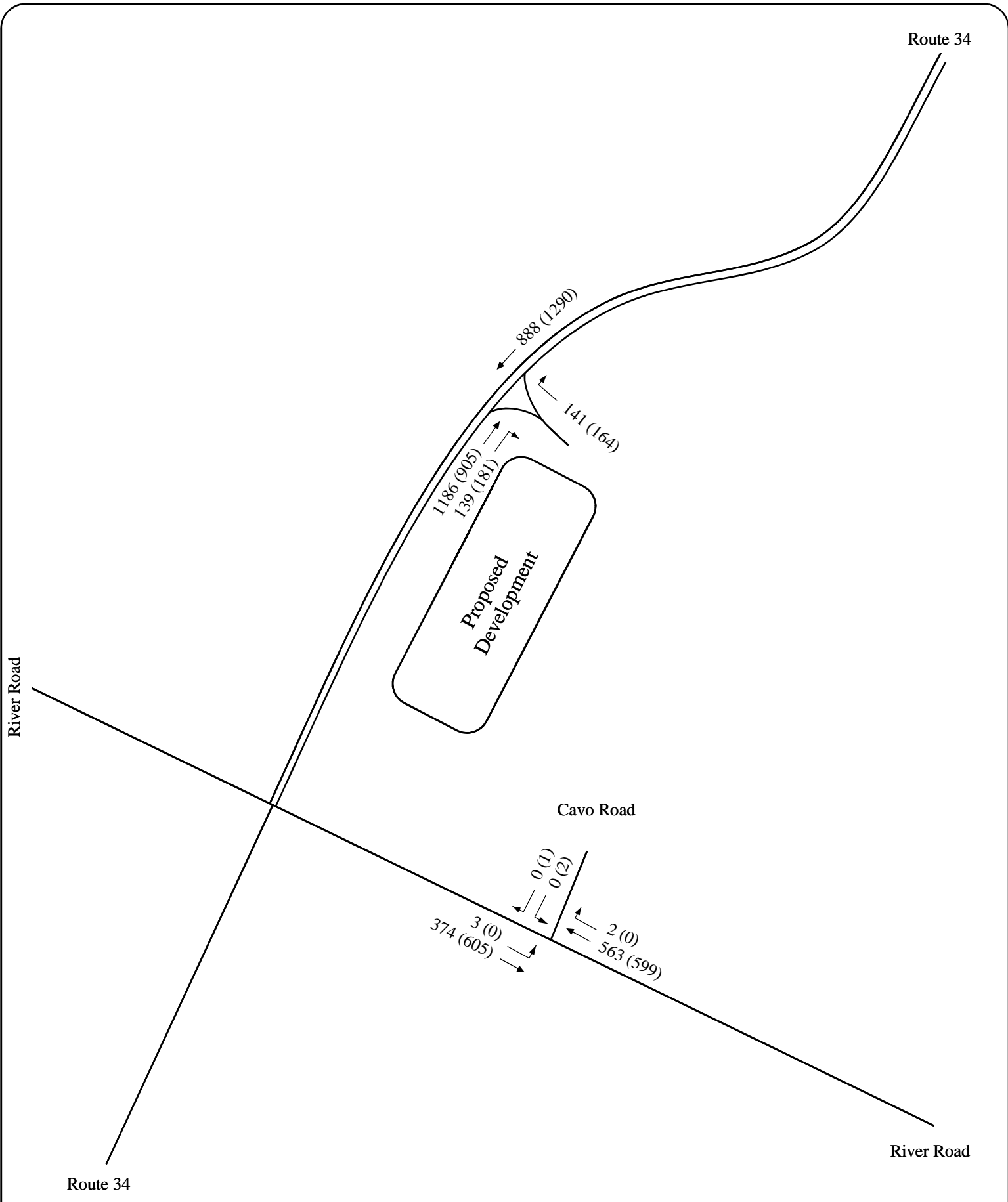
Proposed MVEDGE Mixed Use Development - Route 34 - Marcy, NY

Trips Generated - Evening Peak Hour

New Entering {New Exiting} (Pass-by) Trips

Figure 9

Not To Scale



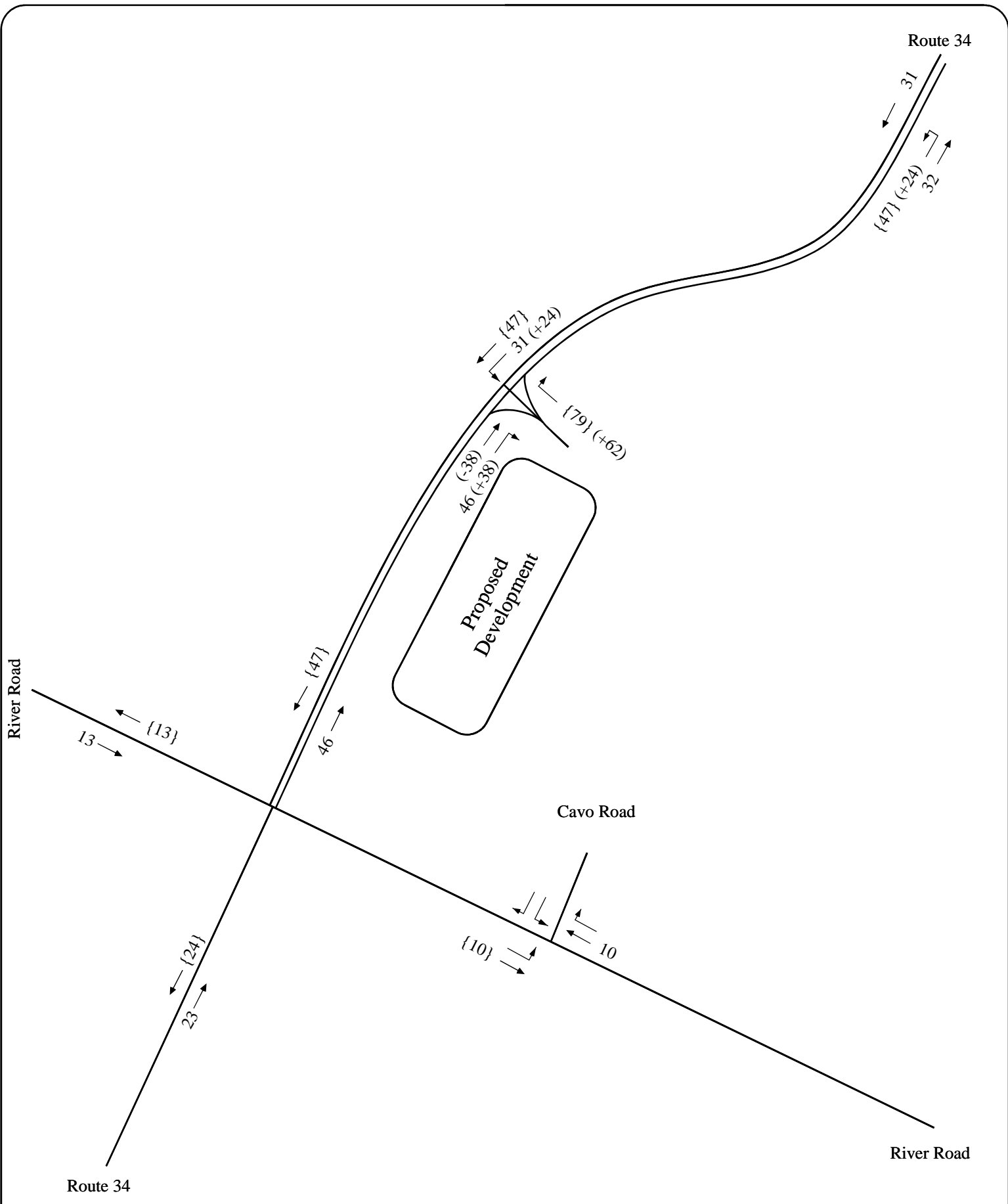
Proposed MVEDGE Mixed Use Development - Route 34 - Marcy, NY

2025 Build Traffic Volumes
Morning (Evening) Peak Hour

Figure 10

Not To Scale

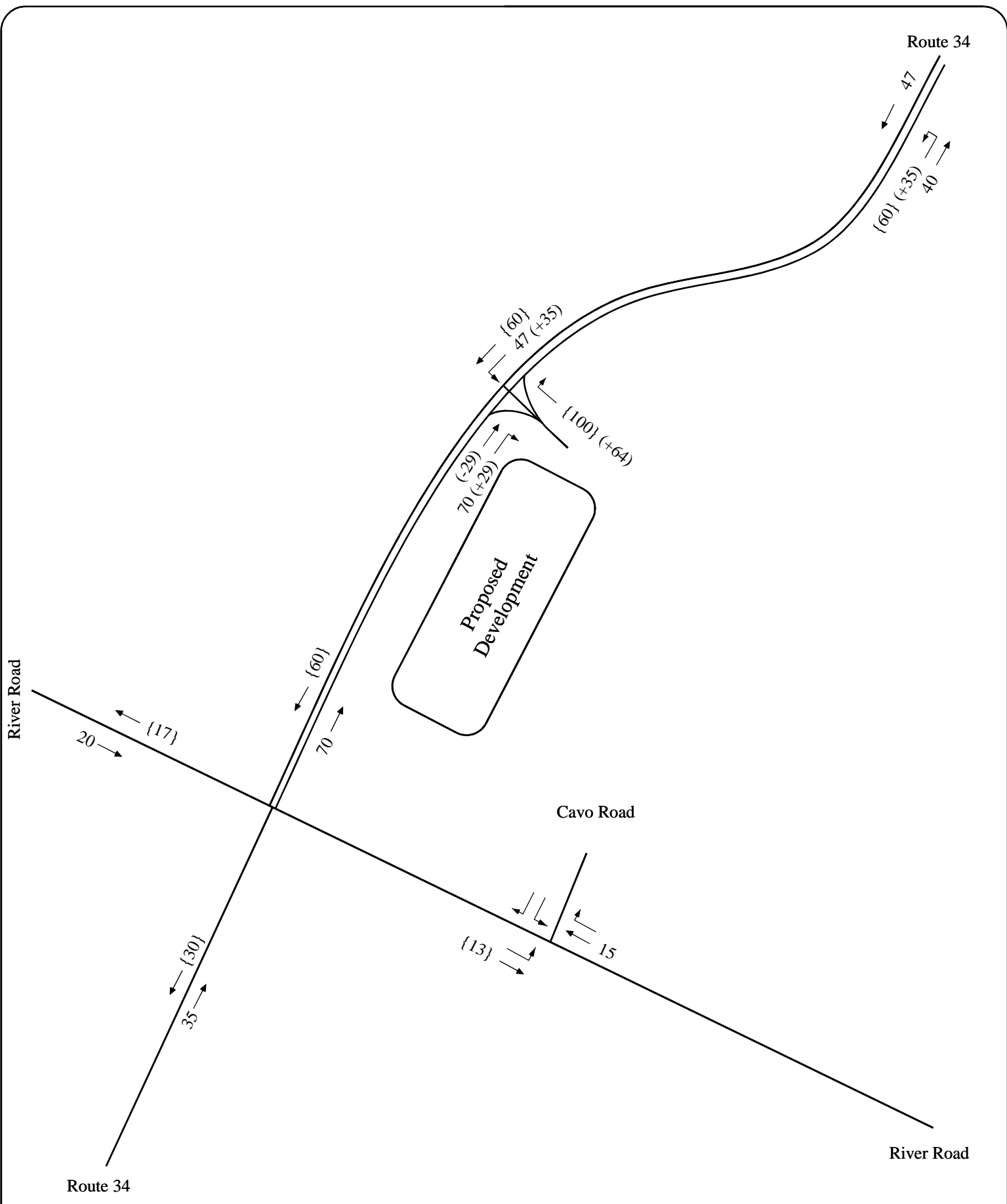




Proposed MVEDGE Mixed Use Development - Route 34 - Marcy, NY
 Trips Generated - Morning Peak Hour - With Southbound Left Turn Lane on Route 34
 New Entering {New Exiting} (Pass-by) Trips

Figure 11

Not To Scale



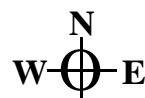
Proposed MVEDGE Mixed Use Development - Route 34 - Marcy, NY

Trips Generated - Evening Peak Hour - With Southbound Left Turn Lane on Route 34

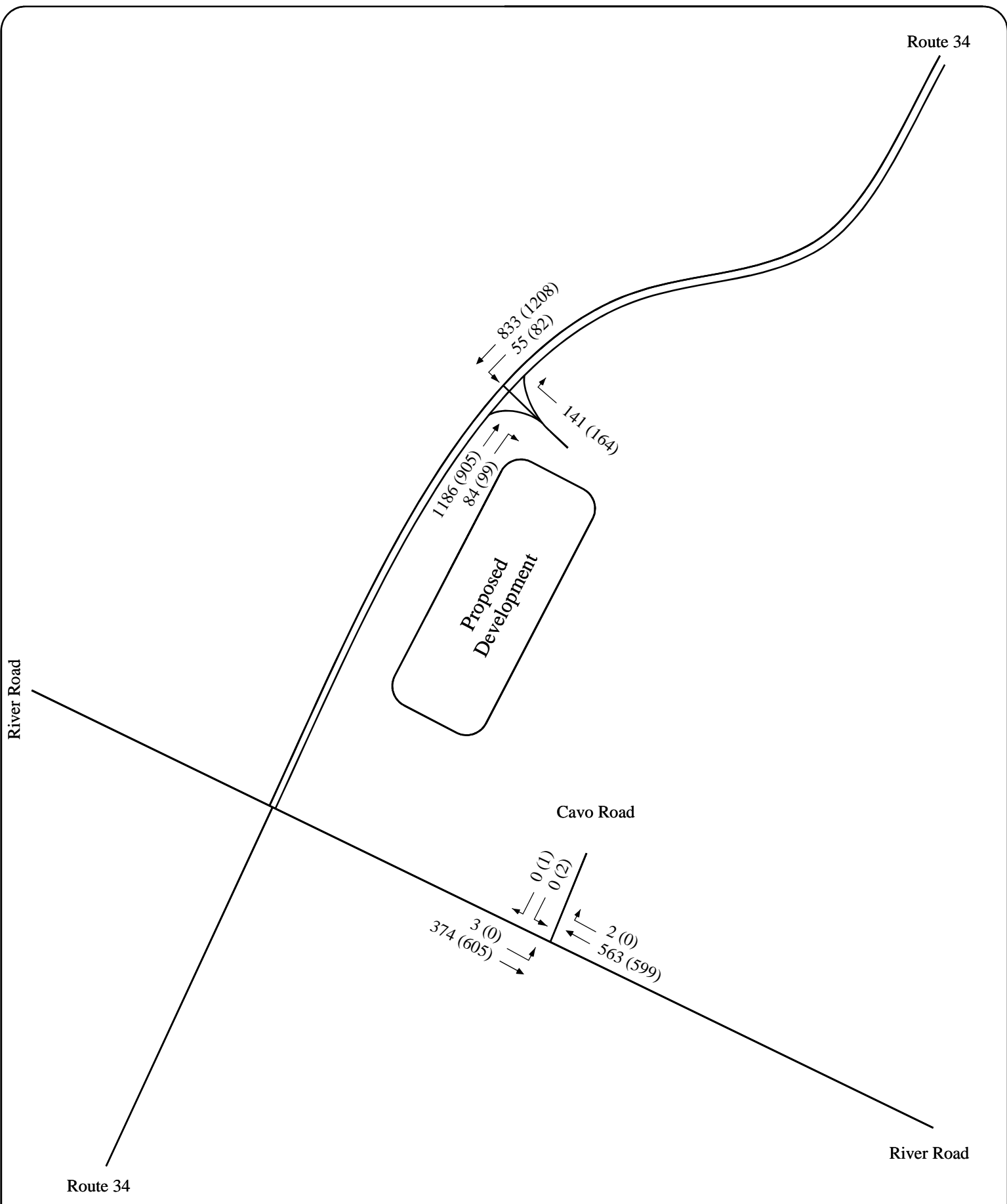
New Entering {New Exiting} (Pass-by) Trips

Figure 12

Not To Scale



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Proposed MVEDGE Mixed Use Development - Route 34 - Marcy, NY

2025 Build Traffic Volumes - With Southbound Left Turn Lane on Route 34

Morning (Evening) Peak Hour

Figure 13

Not To Scale

Intersection Gap Study

Project: Proposed MVEDGE Mixed Use Development - Route 34 - Town of Marcy

Date: 9/17/2020



Intersection: Proposed Site Access @ Route 34

Movement: Right Turns Exiting / Left Turns Entering

Time Interval	6-9 sec x 1	10-13 sec x 2	14-17 sec x 3	18-19 sec x 4	20-23 sec x 5	24-25 sec x 6	26-29 sec x 7	>29 sec x 8	Interval Total	Hour Total
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Morning Peak Hour

7:30-7:45am	# of Gaps	3	1	1	2	3	0	1	19		
	# of Vehicles	2	2	3	8	15	0	7	152	189	
7:45-8:00am	# of Gaps	4	3	3	1	0	0	3	15		
	# of Vehicles	3	6	9	4	0	0	21	120	163	
8:00-8:15am	# of Gaps	2	3	0	4	6	0	1	12		
	# of Vehicles	3	6	0	16	30	0	7	96	158	
8:15-8:30am	# of Gaps	2	4	4	0	3	3	2	13		
	# of Vehicles	2	8	12	0	15	18	14	104	173	683

Evening Peak Hour

4:45-5:00pm	# of Gaps	4	2	2	0	1	0	1	20		
	# of Vehicles	4	4	6	0	5	0	7	160	186	
5:00-5:15pm	# of Gaps	1	0	2	0	1	0	3	17		
	# of Vehicles	1	0	6	0	5	0	21	136	169	
5:15-5:30pm	# of Gaps	2	0	1	0	1	0	2	21		
	# of Vehicles	2	0	3	0	5	0	14	168	192	
5:30-5:45pm	# of Gaps	2	3	1	1	0	0	5	16		
	# of Vehicles	2	6	3	4	0	0	35	128	178	725

Intersection Gap Study

Project: Proposed MVEDGE Mixed Use Development - Route 34 - Town of Marcy

Date: 9/17/2020



Intersection: Proposed Site Access @ Route 34

Movement: Left Turns Exiting

Time Interval	6-9 sec x 1	10-13 sec x 2	14-17 sec x 3	18-19 sec x 4	20-23 sec x 5	24-25 sec x 6	26-29 sec x 7	>29 sec x 8	Interval Total	Hour Total
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Morning Peak Hour

7:30-7:45am	# of Gaps	4	2	1	3	4	1	3	12		
	# of Vehicles	2	4	3	12	20	6	21	96	164	
7:45-8:00am	# of Gaps	5	3	3	1	1	1	3	12		
	# of Vehicles	3	6	9	4	5	6	21	96	150	
8:00-8:15am	# of Gaps	3	4	1	5	5	1	2	11		
	# of Vehicles	3	8	3	20	25	6	14	88	167	
8:15-8:30am	# of Gaps	4	5	5	0	3	3	2	10		
	# of Vehicles	4	10	15	0	15	18	14	80	156	637

Evening Peak Hour

4:45-5:00pm	# of Gaps	8	4	2	1	2	1	1	13		
	# of Vehicles	8	8	6	4	10	6	7	104	153	
5:00-5:15pm	# of Gaps	3	4	3	0	2	3	3	10		
	# of Vehicles	3	8	9	0	10	18	21	80	149	
5:15-5:30pm	# of Gaps	8	6	7	1	1	1	2	9		
	# of Vehicles	8	12	21	4	5	6	14	72	142	
5:30-5:45pm	# of Gaps	19	15	3	3	2	1	4	4		
	# of Vehicles	19	30	9	12	10	6	28	32	146	590

Intersection Gap Study

Project: Proposed MVEDGE Mixed Use Development - Route 34 - Town of Marcy

Date: 9/17/2020



Intersection: Cavo Road @ River Road

Movement: Right Turns Exiting / Left Turns Entering

Time Interval	6-9 sec x 1	10-13 sec x 2	14-17 sec x 3	18-19 sec x 4	20-23 sec x 5	24-25 sec x 6	26-29 sec x 7	>29 sec x 8	Interval Total	Hour Total
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Morning Peak Hour

7:30-7:45am	# of Gaps	9	7	2	1	1	2	4	7		
	# of Vehicles	2	14	6	4	5	12	28	56	127	
7:45-8:00am	# of Gaps	13	6	4	3	3	2	2	6		
	# of Vehicles	3	12	12	12	15	12	14	48	128	
8:00-8:15am	# of Gaps	11	5	5	3	4	1	2	6		
	# of Vehicles	3	10	15	12	20	6	14	48	128	
8:15-8:30am	# of Gaps	5	4	3	1	4	0	3	10		
	# of Vehicles	5	8	9	4	20	0	21	80	147	530

Evening Peak Hour

4:45-5:00pm	# of Gaps	15	8	7	1	5	2	0	3		
	# of Vehicles	15	16	21	4	25	12	0	24	117	
5:00-5:15pm	# of Gaps	23	4	5	3	2	0	3	2		
	# of Vehicles	23	8	15	12	10	0	21	16	105	
5:15-5:30pm	# of Gaps	20	7	6	1	1	1	2	6		
	# of Vehicles	20	14	18	4	5	6	14	48	129	
5:30-5:45pm	# of Gaps	13	2	7	2	3	1	2	4		
	# of Vehicles	13	4	21	8	15	6	14	32	113	464

Intersection Gap Study

Project: Proposed MVEDGE Mixed Use Development - Route 34 - Town of Marcy

Date: 9/17/2020



Intersection: Cavo Road @ River Road

Movement: Left Turns Exiting

Time Interval	6-9 sec x 1	10-13 sec x 2	14-17 sec x 3	18-19 sec x 4	20-23 sec x 5	24-25 sec x 6	26-29 sec x 7	>29 sec x 8	Interval Total	Hour Total
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Morning Peak Hour

7:30-7:45am	# of Gaps	12	12	2	0	3	2	2	3		
	# of Vehicles	2	24	6	0	15	12	14	24	97	
7:45-8:00am	# of Gaps	14	10	4	3	3	0	3	2		
	# of Vehicles	3	20	12	12	15	0	21	16	99	
8:00-8:15am	# of Gaps	12	10	8	3	2	1	1	2		
	# of Vehicles	3	20	24	12	10	6	7	16	98	
8:15-8:30am	# of Gaps	11	8	5	1	4	0	4	2		
	# of Vehicles	11	16	15	4	20	0	28	16	110	404

Evening Peak Hour

4:45-5:00pm	# of Gaps	18	8	5	0	3	0	1	0		
	# of Vehicles	18	16	15	0	15	0	7	0	71	
5:00-5:15pm	# of Gaps	12	9	3	3	0	0	1	1		
	# of Vehicles	12	18	9	12	0	0	7	8	66	
5:15-5:30pm	# of Gaps	22	12	6	0	3	0	1	1		
	# of Vehicles	22	24	18	0	15	0	7	8	94	
5:30-5:45pm	# of Gaps	23	3	5	1	1	1	1	2		
	# of Vehicles	23	6	15	4	5	6	7	16	82	313

Proposed MVEDGE Mixed Use Development - Route 34 - Town of Marcy

Speed Study Measurements - Route 34 Passing Site

9/17/2020

Distance Travelled (ft) = 160

50 Speed Measurements per Direction

Speed Limit 40 mph

NB Time Seconds	Calculated Speed	NB Time Seconds	Calculated Speed	SB Time Seconds	Calculated Speed	SB Time Seconds	Calculated Speed
2.73	40	2.29	48	3.4	32	2.72	40
2.72	40	2.29	48	3.37	32	2.7	40
2.69	41	2.28	48	3.33	33	2.68	41
2.65	41	2.27	48	3.28	33	2.68	41
2.62	42	2.27	48	3.24	34	2.67	41
2.61	42	2.25	48	3.18	34	2.66	41
2.58	42	2.24	49	3.15	35	2.65	41
2.51	43	2.23	49	3.08	35	2.6	42
2.51	43	2.22	49	3.08	35	2.59	42
2.5	44	2.21	49	3.03	36	2.59	42
2.47	44	2.21	49	3.02	36	2.58	42
2.45	45	2.21	49	3	36	2.58	42
2.45	45	2.2	50	3	36	2.56	43
2.44	45	2.2	50	3	36	2.56	43
2.42	45	2.19	50	2.97	37	2.56	43
2.38	46	2.18	50	2.93	37	2.53	43
2.38	46	2.16	51	2.89	38	2.5	44
2.38	46	2.15	51	2.89	38	2.47	44
2.36	46	2.11	52	2.88	38	2.41	45
2.36	46	2.11	52	2.86	38	2.39	46
2.35	46	2.02	54	2.85	38	2.37	46
2.33	47	2.01	54	2.85	38	2.36	46
2.32	47	2	55	2.83	39	2.34	47
2.32	47	1.99	55	2.83	39	1.99	55
2.29	48	1.94	56	2.75	40	1.98	55

Northbound

Average Speed =

85th Percentile Speed =

47 mph

51 mph

Southbound

Average Speed =

85th Percentile Speed =

40 mph

44 mph

Proposed MVEDGE Mixed Use Development - Route 34 - Town of Marcy

Speed Study Measurements - River Road Passing Cavo Road

9/17/2020

Distance Travelled (ft) = 175

50 Speed Measurements per Direction

Speed Limit 40 mph

EB Time Seconds	Calculated Speed	EB Time Seconds	Calculated Speed	WB Time Seconds	Calculated Speed	WB Time Seconds	Calculated Speed
3.34	36	2.81	42	4.03	30	3.19	37
3.34	36	2.79	43	3.79	31	3.16	38
3.31	36	2.78	43	3.69	32	3.16	38
3.28	36	2.78	43	3.66	33	3.16	38
3.09	39	2.78	43	3.59	33	3.14	38
3.03	39	2.76	43	3.53	34	3.12	38
3.03	39	2.75	43	3.53	34	3.1	38
3	40	2.75	43	3.5	34	3.10	38
3	40	2.67	45	3.47	34	3.06	39
3	40	2.67	45	3.43	35	2.97	40
2.97	40	2.66	45	3.43	35	2.97	40
2.97	40	2.62	46	3.4	35	2.94	41
2.94	41	2.62	46	3.38	35	2.93	41
2.94	41	2.6	46	3.37	35	2.91	41
2.94	41	2.56	47	3.34	36	2.9	41
2.94	41	2.56	47	3.28	36	2.87	42
2.93	41	2.56	47	3.25	37	2.87	42
2.93	41	2.5	48	3.25	37	2.87	42
2.91	41	2.5	48	3.25	37	2.75	43
2.9	41	2.47	48	3.22	37	2.72	44
2.89	41	2.39	50	3.22	37	2.72	44
2.88	41	2.35	51	3.21	37	2.66	45
2.88	41	2.29	52	3.21	37	2.66	45
2.87	42	2.28	52	3.21	37	2.56	47
2.85	42	2.24	53	3.2	37	2.54	47

Eastbound

Average Speed =

85th Percentile Speed =

43 mph

47.5 mph

Westbound

Average Speed =

85th Percentile Speed =

38 mph

42 mph

Background Traffic Growth Calculations

Proposed MVEDGE Mixed Use Development, Route 34, Town of Marcy, NY

Historical Traffic Counts Taken from the NYSDOT 2018 Traffic Volume Report

Route 34 - Between River Road and Hazard Road

2018 (Est)	2015	2009	2003
910 veh	572 veh	372 veh	576 veh
+19.6% per year		+8.9% per year	-5.9% per year
+16.0% per year			
+3.9% per year			

River Road - Between County Route 34 and Utica City Line

2018	2014	2011	2008
7,730 veh	7,808 veh	7,843 veh	7,583 veh
-0.2% per year		-0.1% per year	+1.1% per year
-0.2% per year			
+0.2% per year			

High Growth on Route 34 skewed by very low overall traffic volumes

Use +1.0% annual growth for conservative traffic projections

Proposed MVEDGE Mixed Use Development - Route 34 - Town of Marcy

Trip Generation Estimate

Proposed Development

4-Story Building	First Floor	7,000 SF - Retail
	Second - Fourth Floors	44 Apartments
2-Story Building	First Floor	2,500 SF - Coffee/Donut Shop with Drive Through
		13,000 SF - Fast Casual Dining (Food Court)
	Second Floor	12,000 SF - Retail

ITE Trip Generation - 10th Edition

Land Use 221 - Multifamily Housing (Mid-Rise)

AM Peak Hour	0.36 Trips/Unit	26% Enter	74% Exit
PM Peak Hour	0.44 Trips/Unit	61% Enter	39% Exit

Land Use 937 - Coffee/Donut Shop with Drive Through Window

AM Peak Hour	88.99 Trips/1,000 SF	51% Enter	49% Exit
PM Peak Hour	43.38 Trips/1,000 SF	50% Enter	50% Exit

Land Use 930 - Fast Casual Restaurant

AM Peak Hour	2.07 Trips/1,000 SF	67% Enter	33% Exit
PM Peak Hour	14.13 Trips/1,000 SF	55% Enter	45% Exit

Land Use 820 - Shopping Center - Retail

AM Peak Hour	0.94 Trips/1,000 SF	62% Enter	38% Exit
PM Peak Hour	3.81 Trips/1,000 SF	48% Enter	52% Exit

Assume 10% Multi-Use Credit

Average Pass-by Percentages

Land Use 937 - Coffee/Donut Shop with Drive Through Window - Fast Food - AM - 49%, PM - 50%, Coffee/Expresso Stand - AM - 89%
 Land Use 930 - Fast Casual Restaurant - High-Turnover - PM - 43%, Fast Food - AM - 49%, PM - 50%
 Land Use 820 - Retail - PM Peak Hour - 34%, Assume 10% AM

Assume 10% Morning Pass-by, 35% Evening Pass-by - Retail/Fast Casual Restaurant - Applied after multi-use credit

Assume 60% Morning Pass-by, 50% Evening Pass-by - Coffee/Donut Shop - Applied after multi-use credit

Apartment Trips are all new trips

Trip Generation Estimate - Proposed MVEDGE Mixed Use Development

Development	Size	Morning Peak Hour			Evening Peak Hour		
		Total Trips	Entering	Exiting	Total Trips	Entering	Exiting
Apartments	44 Units	44	12	32	19	11	8
Coffee/Donut Shop	2,500	222	113	109	108	54	54
Fast Casual Dining	13,000 SF	27	18	9	184	101	83
Retail	19,000 SF	18	11	7	72	35	37
Individual Trips Generated		312	155	157	385	201	181
<i>Multi-Use Credit - 10%</i>		<u>-32</u>	<u>-16</u>	<u>-16</u>	<u>-38</u>	<u>-20</u>	<u>-18</u>
Total Trips Generated		280	139	141	346	181	164
<i>Retail/Fast Cas Pass-by Trips - AM - 10%, PM - 35%</i>		-4	-2	-2	-80	-40	-40
<i>Coffee/Donut Pass-by Trips - AM - 60%, PM - 50%</i>		<u>-120</u>	<u>-60</u>	<u>-60</u>	<u>-48</u>	<u>-24</u>	<u>-24</u>
Total Pass-by Trips		<u>-124</u>	<u>-62</u>	<u>-62</u>	<u>-128</u>	<u>-64</u>	<u>-64</u>
Total New Trips Generated		156	77	79	218	117	100

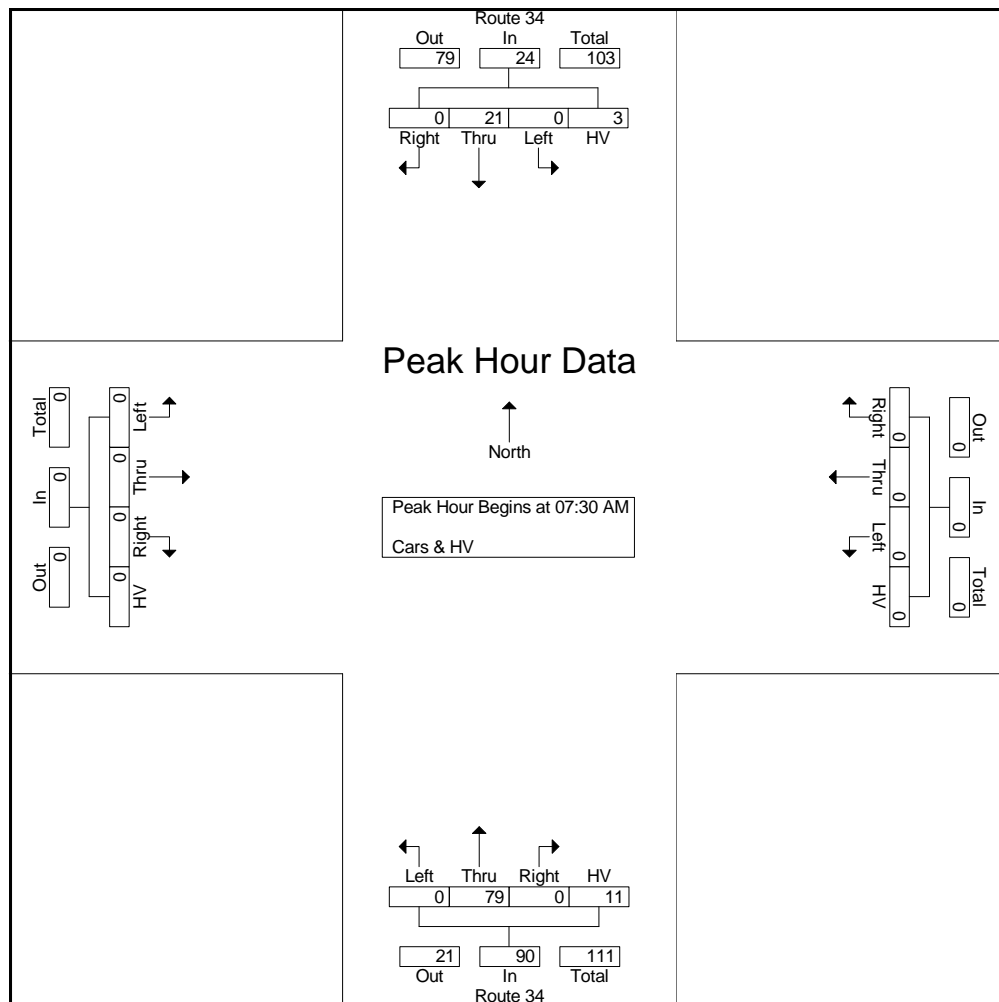
File Name : Route 34 Passing Site
 Site Code : 00000001
 Start Date : 9/17/2020
 Page No : 1

Groups Printed- Cars & HV

	Route 34 Southbound				Westbound				Route 34 Northbound				Eastbound				Int. Total
Start Time	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	
07:00 AM	0	3	0	0	0	0	0	0	0	16	0	0	0	0	0	0	19
07:15 AM	0	3	0	0	0	0	0	0	0	17	0	1	0	0	0	0	21
07:30 AM	0	5	0	1	0	0	0	0	0	20	0	1	0	0	0	0	27
07:45 AM	0	4	0	2	0	0	0	0	0	22	0	2	0	0	0	0	30
Total	0	15	0	3	0	0	0	0	0	75	0	4	0	0	0	0	97
08:00 AM	0	5	0	0	0	0	0	0	0	15	0	3	0	0	0	0	23
08:15 AM	0	7	0	0	0	0	0	0	0	22	0	5	0	0	0	0	34
08:30 AM	0	5	0	2	0	0	0	0	0	15	0	2	0	0	0	0	24
08:45 AM	0	3	0	2	0	0	0	0	0	15	0	1	0	0	0	0	21
Total	0	20	0	4	0	0	0	0	0	67	0	11	0	0	0	0	102
04:00 PM	0	24	0	1	0	0	0	0	0	14	0	1	0	0	0	0	40
04:15 PM	0	20	0	2	0	0	0	0	0	16	0	0	0	0	0	0	38
04:30 PM	0	18	0	0	0	0	0	0	0	14	0	0	0	0	0	0	32
04:45 PM	0	12	0	0	0	0	0	0	0	15	0	0	0	0	0	0	27
Total	0	74	0	3	0	0	0	0	0	59	0	1	0	0	0	0	137
05:00 PM	0	17	0	2	0	0	0	0	0	11	0	0	0	0	0	0	30
05:15 PM	0	57	0	0	0	0	0	0	0	4	0	0	0	0	0	0	61
05:30 PM	0	60	0	0	0	0	0	0	0	17	0	0	0	0	0	0	77
05:45 PM	0	10	0	0	0	0	0	0	0	16	0	0	0	0	0	0	26
Total	0	144	0	2	0	0	0	0	0	48	0	0	0	0	0	0	194
Grand Total	0	253	0	12	0	0	0	0	0	249	0	16	0	0	0	0	530
Apprch %	0	95.5	0	4.5	0	0	0	0	0	94	0	6	0	0	0	0	
Total %	0	47.7	0	2.3	0	0	0	0	0	47	0	3	0	0	0	0	

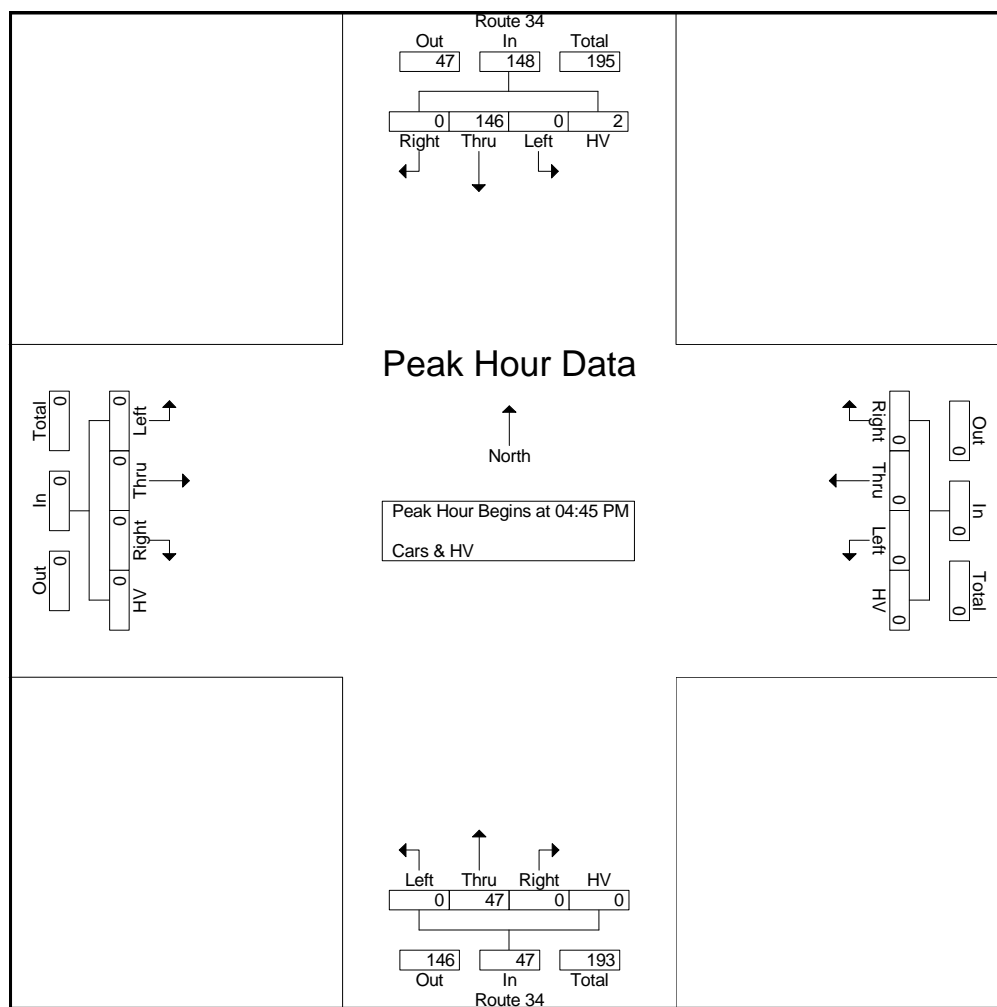
File Name : Route 34 Passing Site
 Site Code : 00000001
 Start Date : 9/17/2020
 Page No : 2

	Route 34 Southbound					Westbound					Route 34 Northbound					Eastbound					
Start Time	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	5	0	1	6	0	0	0	0	0	0	20	0	1	21	0	0	0	0	0	27
07:45 AM	0	4	0	2	6	0	0	0	0	0	0	22	0	2	24	0	0	0	0	0	30
08:00 AM	0	5	0	0	5	0	0	0	0	0	0	15	0	3	18	0	0	0	0	0	23
08:15 AM	0	7	0	0	7	0	0	0	0	0	0	22	0	5	27	0	0	0	0	0	34
Total Volume	0	21	0	3	24	0	0	0	0	0	0	79	0	11	90	0	0	0	0	0	114
% App. Total	0	87.5	0	12.5		0	0	0	0	0	0	87.8	0	12.2		0	0	0	0		
PHF	.000	.750	.000	.375	.857	.000	.000	.000	.000	.000	.000	.898	.000	.550	.833	.000	.000	.000	.000	.000	.838



File Name : Route 34 Passing Site
 Site Code : 00000001
 Start Date : 9/17/2020
 Page No : 3

	Route 34 Southbound					Westbound					Route 34 Northbound					Eastbound					
Start Time	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	12	0	0	12	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	27
05:00 PM	0	17	0	2	19	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	30
05:15 PM	0	57	0	0	57	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	61
05:30 PM	0	60	0	0	60	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	77
Total Volume	0	146	0	2	148	0	0	0	0	0	0	47	0	0	47	0	0	0	0	0	195
% App. Total	0	98.6	0	1.4		0	0	0	0	0	0	100	0	0		0	0	0	0	0	
PHF	.000	.608	.000	.250	.617	.000	.000	.000	.000	.000	.000	.691	.000	.000	.691	.000	.000	.000	.000	.000	.633



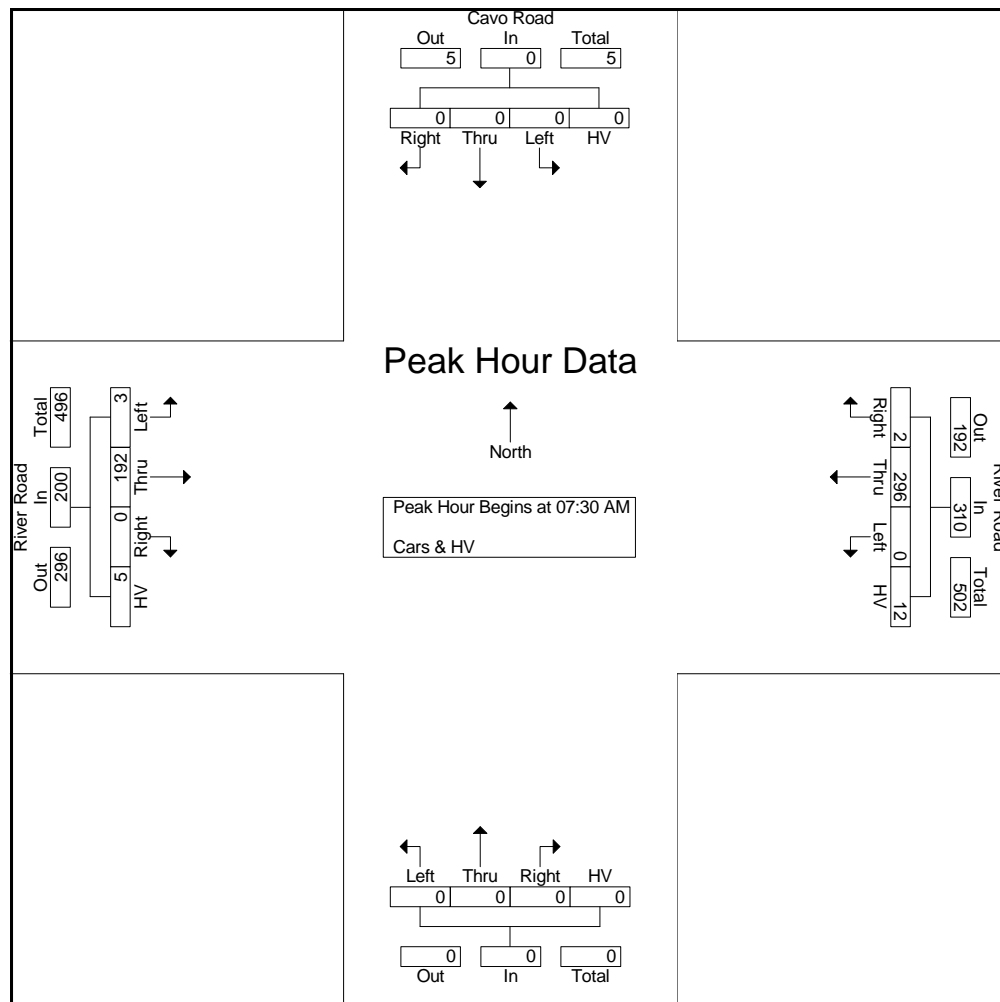
File Name : River Road @ Cavo Road
 Site Code : 00000001
 Start Date : 9/17/2020
 Page No : 1

Groups Printed- Cars & HV

	Cavo Road Southbound				River Road Westbound				Northbound				River Road Eastbound				Int. Total
Start Time	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	
07:00 AM	0	0	0	0	0	55	0	2	0	0	0	0	0	27	0	1	85
07:15 AM	0	0	0	0	0	67	0	2	0	0	0	0	0	36	0	4	109
07:30 AM	0	0	0	0	0	69	0	4	0	0	0	0	0	43	1	2	119
07:45 AM	0	0	0	0	2	85	0	2	0	0	0	0	0	45	1	1	136
Total	0	0	0	0	2	276	0	10	0	0	0	0	0	151	2	8	449
08:00 AM	0	0	0	0	0	75	0	4	0	0	0	0	0	59	0	2	140
08:15 AM	0	0	0	0	0	67	0	2	0	0	0	0	0	45	1	0	115
08:30 AM	2	0	0	0	0	49	0	2	0	0	0	0	0	43	0	2	98
08:45 AM	0	0	0	0	0	59	0	5	0	0	0	0	0	49	0	1	114
Total	2	0	0	0	0	250	0	13	0	0	0	0	0	196	1	5	467
04:00 PM	0	0	0	0	0	81	0	2	0	0	0	0	0	93	0	2	178
04:15 PM	0	0	0	0	0	113	0	5	0	0	0	0	0	88	0	1	207
04:30 PM	0	0	0	0	0	90	0	1	0	0	0	0	0	90	0	1	182
04:45 PM	0	0	0	0	0	90	0	2	0	0	0	0	0	86	0	2	180
Total	0	0	0	0	0	374	0	10	0	0	0	0	0	357	0	6	747
05:00 PM	1	0	2	0	0	84	0	2	0	0	0	0	0	98	0	0	187
05:15 PM	0	0	0	0	0	83	0	6	0	0	0	0	0	70	0	0	159
05:30 PM	1	0	0	0	0	71	0	1	0	0	0	0	0	78	1	1	153
05:45 PM	0	0	0	0	0	75	0	1	0	0	0	0	0	54	0	3	133
Total	2	0	2	0	0	313	0	10	0	0	0	0	0	300	1	4	632
Grand Total	4	0	2	0	2	1213	0	43	0	0	0	0	0	1004	4	23	2295
Apprch %	66.7	0	33.3	0	0.2	96.4	0	3.4	0	0	0	0	0	97.4	0.4	2.2	
Total %	0.2	0	0.1	0	0.1	52.9	0	1.9	0	0	0	0	0	43.7	0.2	1	

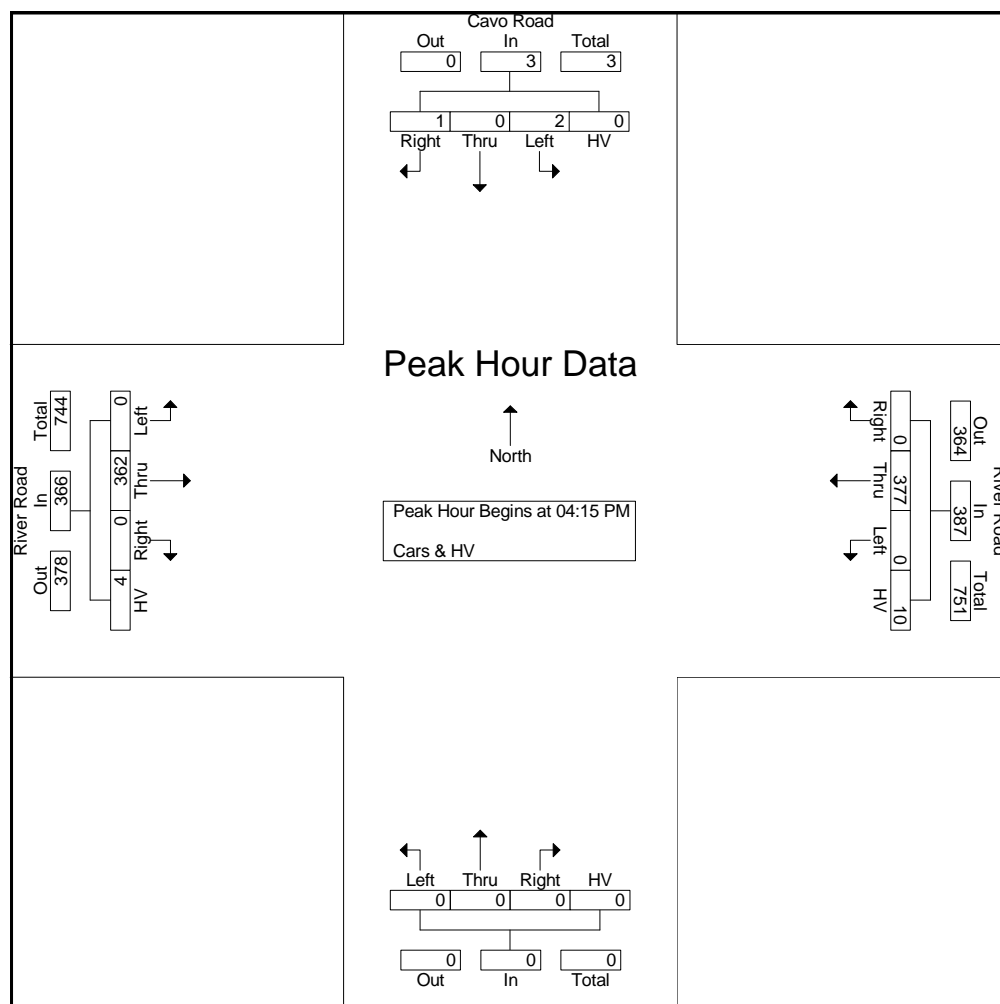
File Name : River Road @ Cavo Road
 Site Code : 00000001
 Start Date : 9/17/2020
 Page No : 2

	Cavo Road Southbound					River Road Westbound					Northbound					River Road Eastbound					
Start Time	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	69	0	4	73	0	0	0	0	0	0	43	1	2	46	119
07:45 AM	0	0	0	0	0	2	85	0	2	89	0	0	0	0	0	0	45	1	1	47	136
08:00 AM	0	0	0	0	0	0	75	0	4	79	0	0	0	0	0	0	59	0	2	61	140
08:15 AM	0	0	0	0	0	0	67	0	2	69	0	0	0	0	0	0	45	1	0	46	115
Total Volume	0	0	0	0	0	2	296	0	12	310	0	0	0	0	0	0	192	3	5	200	510
% App. Total	0	0	0	0	0	0.6	95.5	0	3.9		0	0	0	0	0	0	96	1.5	2.5		
PHF	.000	.000	.000	.000	.000	.250	.871	.000	.750	.871	.000	.000	.000	.000	.000	.000	.814	.750	.625	.820	.911



File Name : River Road @ Cavo Road
 Site Code : 00000001
 Start Date : 9/17/2020
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	Cavo Road Southbound					River Road Westbound					Northbound					River Road Eastbound					
Start Time	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	0	0	0	113	0	5	118	0	0	0	0	0	0	88	0	1	89	207
04:30 PM	0	0	0	0	0	0	90	0	1	91	0	0	0	0	0	0	90	0	1	91	182
04:45 PM	0	0	0	0	0	0	90	0	2	92	0	0	0	0	0	0	86	0	2	88	180
05:00 PM	1	0	2	0	3	0	84	0	2	86	0	0	0	0	0	0	98	0	0	98	187
Total Volume	1	0	2	0	3	0	377	0	10	387	0	0	0	0	0	0	362	0	4	366	756
% App. Total	33.3	0	66.7	0		0	97.4	0	2.6		0	0	0	0		0	98.9	0	1.1		
PHF	.250	.000	.250	.000	.250	.000	.834	.000	.500	.820	.000	.000	.000	.000	.000	.000	.923	.000	.500	.934	.913



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[illegible]

HCM 6th TWSC

3: Route 34 & Site Access

10/01/2020

Intersection

Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	141	1186	139	0	888
Future Vol, veh/h	0	141	1186	139	0	888
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	83	83	86	86
Heavy Vehicles, %	1	1	2	1	1	2
Mvmt Flow	0	157	1429	167	0	1033

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	715	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.92	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.31	-
Pot Cap-1 Maneuver	0	375	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	375	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.3	0	0
HCM LOS	C		




Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 375	-
HCM Lane V/C Ratio	- 0.418	-
HCM Control Delay (s)	- 21.3	-
HCM Lane LOS	- C	-
HCM 95th %tile Q(veh)	- 2	-

HCM 6th TWSC

3: Route 34 & Site Access

10/01/2020

Intersection

Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	164	905	181	0	1290
Future Vol, veh/h	0	164	905	181	0	1290
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	69	69	62	62
Heavy Vehicles, %	1	1	2	1	1	2
Mvmt Flow	0	182	1312	262	0	2081

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	656	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.92	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.31	-
Pot Cap-1 Maneuver	0	410	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	410	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 410	-
HCM Lane V/C Ratio	- 0.444	-
HCM Control Delay (s)	- 20.6	-
HCM Lane LOS	- C	-
HCM 95th %tile Q(veh)	- 2.2	-





HCM 6th TWSC

3: Route 34 & Site Access

10/01/2020

Intersection

Int Delay, s/veh 1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	141	1186	84	55	833
Future Vol, veh/h	0	141	1186	84	55	833
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	83	83	86	86
Heavy Vehicles, %	1	1	2	1	1	2
Mvmt Flow	0	157	1429	101	64	969

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	715	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.92	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.31	-
Pot Cap-1 Maneuver	0	375	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	375	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.3	0	0.8
HCM LOS	C		





Minor Lane/Major Mvmt	NBTWBLn1	SBL	SBT
Capacity (veh/h)	-	375	477
HCM Lane V/C Ratio	-	0.418	0.134
HCM Control Delay (s)	-	21.3	13.7
HCM Lane LOS	-	C	B
HCM 95th %tile Q(veh)	-	2	0.5

HCM 6th TWSC

3: Route 34 & Site Access

10/01/2020

Intersection

Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	164	905	99	82	1208
Future Vol, veh/h	0	164	905	99	82	1208
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	69	69	62	62
Heavy Vehicles, %	1	1	2	1	1	2
Mvmt Flow	0	182	1312	143	132	1948

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	656	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.92	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.31	-
Pot Cap-1 Maneuver	0	410	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	410	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.6	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBTWBLn1	SBL	SBT
Capacity (veh/h)	- 410	528	-
HCM Lane V/C Ratio	- 0.444	0.25	-
HCM Control Delay (s)	- 20.6	14.1	-
HCM Lane LOS	- C	B	-
HCM 95th %tile Q(veh)	- 2.2	1	-