

SIGHT DISTANCE REPORT

Comment No. 18: *Please provide the date(s) of the traffic counts used. Since they are from a 2020 report, if the counts themselves were taken that year, clarify whether the volume measurements were taken prior to or during the pandemic. If during the pandemic, please explain if any adjustments were made to establish base traffic conditions.*

Response: The counts were obtained from the 2020 Traffic Monitoring Program report prepared by VHB. The date of the report was December 16, 2021. The Barnum road counts were conducted on April 27 and April 28, 2021. The Saratoga Boulevard counts were conducted on May 4 and May 5, 2021. As indicated in the report, ‘*In Spring 2020, traffic conditions were influenced significantly by the outbreak of the COVID-19 virus and resulting pandemic. MassDevelopment, working with other state agencies, agreed to postpone the traffic counting efforts associated with the 2020 monitoring efforts until 2021 when traffic volumes would hopefully return to more traditional levels. The data collected and presented in this report reflect actual traffic counts conducted in late April and early May 2021 and a one-time 10-percent growth factor to reflect the reduced volumes around and within the Devens area. The 10-percent growth number was developed through review of 2019, 2020, and 2021 permanent count station data and an interim study prepared for MassDevelopment in September 2020 which indicated that traffic volumes were not fully back to ‘normal’ following the pandemic.*’ Hence, the recorded volumes were increased by 10% to account for COVID.

Supplemental daily automatic traffic recorder counts were done on May 18, 2022 and May 19, 2022, automatic traffic recorder counts were performed to determine the speed of vehicles on Barnum Road and Saratoga Boulevard. The Barnum Road ATR was placed west of Saratoga Boulevard (which is east of the proposed Barnum Road site driveway). The data shows that the two-day average daily traffic volume on Barnum Road was 3,019 vehicles per day (vpd).

The Saratoga Boulevard ATR was placed west of the driveway to 35 Saratoga Boulevard (which is west of the 35 Saratoga Boulevard site driveway). The data shows that the two-day average daily traffic volume on Saratoga Boulevard was 2,963 vpd.

The ATR data is attached.

Comment No. 19: *Did the traffic counts include speed data? If so, please provide 50th and 85th percentile speeds on both study roadways.*

Response: The 2020 Traffic Monitoring Program report did not collect speed data.

Comment No. 20: *The report states the sight distance calculations are attached, but they appear to be missing. Please provide any relevant sight distance calculations.*

Response: The sight distance worksheets are attached.

Comment No. 21: For the required minimum sight distances in Table 1, please use the Design values from the AASHTO Green Book (2018) Tables 3-1 and 9-7 (rounded-up values, as are standard), or as adjusted for grade. Please ensure the value for SSD for Saratoga Boulevard approaching from the south at 30 MPH is corrected, as well.

Response: Summarized in Table 1 are the sight distances using the Design values from the AASHTO A Policy on Geometric Design of Highways and Streets¹.

TABLE 1
SIGHT DISTANCE SUMMARY

	Required Minimum 30 MPH (Feet) ^a	Required Minimum 35 MPH (Feet) ^b	Required Minimum 40 MPH (Feet) ^c	Measured (Feet)
Saratoga Boulevard and Site Driveway				
Stopping Sight Distance:				
Saratoga Boulevard approaching from the north	200	250	305	500+
Saratoga Boulevard approaching from the south	200	250	305	500+
Intersection Sight Distance:				
Driveway looking to the north	287 ^d /331 ^e	334 ^d /386 ^e	382 ^d /441 ^e	500+
Driveway looking to the south	287 ^d /331 ^e	334 ^d /386 ^e	382 ^d /441 ^e	500+
Barnum Road and Site Driveway				
Stopping Sight Distance:				
Barnum Road approaching from the east ^f	--	234	285	400
Barnum Road approaching from the west ^f	--	234	285	500+
Intersection Sight Distance:				
Driveway looking to the east	--	334 ^d /386 ^e	382 ^d /441 ^e	400+
Driveway looking to the west	--	334 ^d /386 ^e	382 ^d /441 ^e	500+

^aRecommended minimum values obtained from A Policy on Geometric Design of Highways and Streets; American Association of State Highway and Transportation Officials (AASHTO); 2010, and based on a 30 mph speed (Posted Speed Limit) on Saratoga Boulevard.

^bRecommended minimum values obtained from A Policy on Geometric Design of Highways and Streets; American Association of State Highway and Transportation Officials (AASHTO); 2010, and based on a 35 mph speed on Saratoga Boulevard.

^cRecommended minimum values obtained from A Policy on Geometric Design of Highways and Streets; American Association of State Highway and Transportation Officials (AASHTO); 2010, and based on a 40 mph speed on Saratoga Boulevard.

^dRecommended minimum value for vehicles turning right exiting a roadway under STOP-sign control.

^eRecommended minimum value for vehicles turning left exiting a roadway under STOP-sign control.

^fRecommended minimum values obtained from A Policy on Geometric Design of Highways and Streets; American Association of State Highway and Transportation Officials (AASHTO); 2010, and based on a 35 or 40 mph speed on Barnum Road, adjusted for 4% grade.

On May 18, 2022 and May 19, 2022, automatic traffic recorder counts were performed to determine the speed of vehicles on Barnum Road and Saratoga Boulevard. The Barnum Road ATR was placed west of Saratoga Boulevard (which is east of the proposed Barnum Road site driveway). The 85th percentile speed was found to be 38

¹ A Policy on Geometric Design of Highways and Streets; American Association of State Highway and Transportation Officials; Washington, D.C.; 2018.

mph on May 18, 2022 and 39 mph on May 19, 2022 in the westbound direction. This indicates using a 40 mph speed for assessing the sight distances at the Barnum Road driveway would be appropriate.

The Saratoga Boulevard ATR was placed west of the driveway to 35 Saratoga Boulevard (which is west of the 35 Saratoga Boulevard site driveway). The 85th percentile speed was found to be 36 mph on May 18, 2022 and 35 mph on May 19, 2022 in the eastbound direction. This indicates using a 35 mph speed for assessing the sight distances at the Saratoga Boulevard driveway would be appropriate.

The ATR data is attached.

In the comments from Mass Development, they recommended using the design speed of 45 mph as the posted speed limit on Barnum Road is 35 mph. However, as there is now actual speed data, collected over a two-day period, for Barnum Road, the sight distances were evaluated based on a 40 mph speed, adjusting for grade as appropriate.

Comment No. 22: *If either of these roadways has a grade affecting the sight distance (3% or greater), please describe it in the Sight Distance Assessment section and ensure that any calculations provided reflect those grades.*

Response: Based on available grading data from the site plans, Barnum Road rises a four (4) percent grade approaching the proposed Barnum Road site driveway from both directions. These four (4) percent grades are reflected in the calculations shown above in Table 1.

Comment No. 23: *In Figures 1 and 2, what is the visual obstruction between driver and object used to determine the sight line?*

Response: The stopping sight distance (SSD) was measured from the height of the truck driver's eye (7.75 feet average) to a two (2) foot tall object at the edge of the travelled way (Barnum Road). Additional sight lines were prepared using automobiles exiting the proposed Barnum Road site driveway. These are shown on Figures 3 and 4, attached.

As noted on Figure 3, with a lower profile and lower eye height, automobiles will have less stopping sight distance. It is recommended that an Intersection Ahead (W2-2) sign be installed on Barnum Road westbound. This sign can be supplemented with a W10-11 (Truck) sign.

Comment No. 24: *In the last paragraph on page 2, it is stated that the Barnum Road and site driveway intersection will be used for trucks only, but it looks like Barnum Road itself serves other properties and connections so that will have a mix of traffic, and only the site driveway is limited to trucks. Please clarify, and if the roadway will also have passenger cars, in Figure 1, use a driver eye height of 3.5 feet for a passenger car instead of the truck driver eye height.*

Response: The Barnum Road driveway is intended to be used by trucks only. The proposed project is not proposing any restrictions on traffic on Barnum Road. Shown on Figure 3 is the sight line for an automobile approaching the Barnum Road site driveway from the east.

Comment No. 25: *In Figure 2, what distance back from the edge line is used? If using a distance other than the standard 14.5 feet, please explain.*

Response: The drivers eve location, exiting the Barnum Road site driveway to Barnum Road is 14.5 feet from the edge of travelled way.

Comment No. 26: *Describe whether these measurements all done in CAD, or if there were any field measurements. Please provide figures showing all SSD and ISD measurements done in CAD. For any field measurements, provide the date(s) taken. Also, describe any considerations for change in foliage/vegetation levels for different times of year, especially if taken when there was little or no foliage/vegetation.*

Response: The measurements were done in CAD for Figures 1 and 2. Field observations were made for both the Saratoga Boulevard and Barnum Road driveways. The site visits were performed on March 3, 2022 and March 8, 2022. Looking to the east out of the proposed Barnum Road site driveway, the area is sloped and grassed only. There are no trees, shrubs, or signage that would impede sight lines (relative to foliage and vegetation) as seen in the photo to the right.



Looking to the west out of the proposed Barnum Road site driveway, the area is also sloped and grassed only. The tree line to the west is closer to Barnum Road. The photograph to the right shows the view measured 14.5 from the edge of travelled way. While it is the end of winter, the leaves from the previous Fall are still on the tree and do not block sight lines.



Comment No. 27: *It is unclear from Table 1 if the ISD for Barnum Road and Site Driveway looking east meets the criteria for 40 MPH for vehicles turning left (minimum 441 feet, measured 400+ feet). Please provide a more specific measurement, and if it is less than the minimum, please explain.*

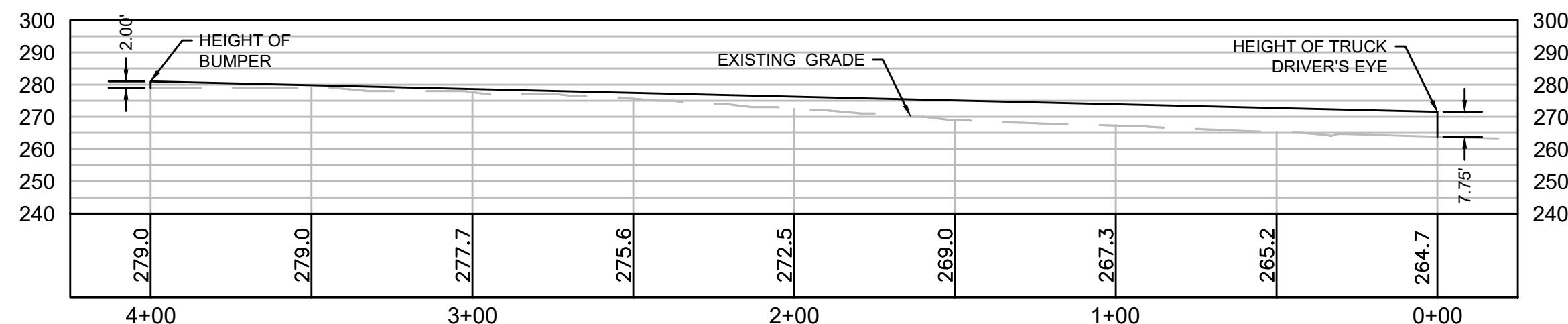
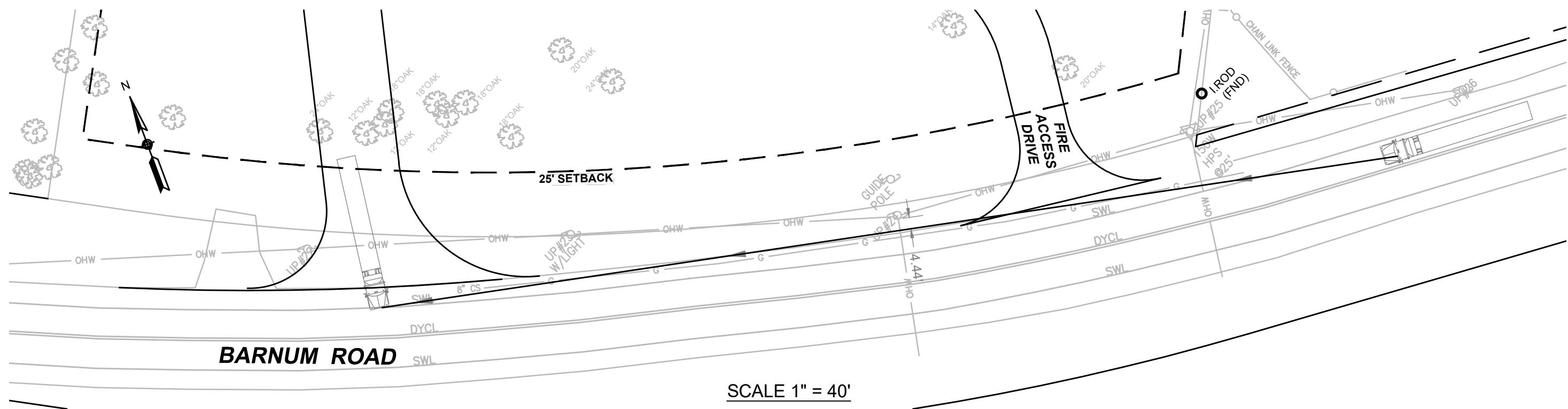
Response: In accordance with the AASHTO manual, “*If the available sight distance for an entering or crossing vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions. However, in some cases, this may require a major-road vehicle to stop or slow to accommodate the maneuver by a minor-road vehicle. To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road.*” Accordingly, the ISD should be at least equal to the SSD, which would allow a driver approaching the minor road to safely stop. In this case, the stopping sight distance is the controlling distance.

Comment No. 28: *At the bottom of page 3, it is stated that “ISD should be at least equal to the SSD.” Please clarify if that is the required minimum SSD or the measured SSD.*

Response: It is the required minimum SSD.

Comment No. 29: *On page 6, it says the measured ISD at the proposed site driveway is 550+feet. Please clarify whether this referring to one (1) of the driveways or both. Either way, the measured ISDs in Table 1 do not match. Please correct the table and/or the narrative.*

Response: The statement was to refer to the SSD, not the ISD. The SSD for the proposed driveways exceeds the minimum AASHTO requirements.



Note: Existing grade taken from site plans prepared by
Eugene T. Sullivan Inc.

HORIZONTAL SCALE 1" = 40'
VERTICAL SCALE 1' = 1'

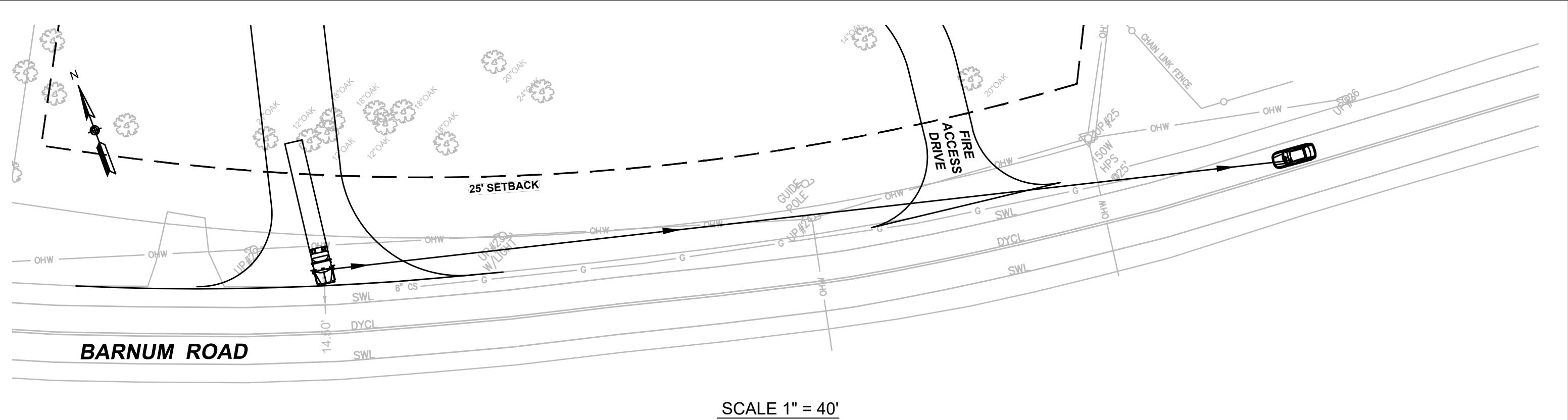


600 Unicorn Park Drive ▲ Woburn, MA 01801
Phone: 781.932.3201 ▲ Fax: 781.932.3413

www.baysideengineering.com

Proposed Warehouse
35 Saratoga Boulevard
Devens, MA

Figure 1
Stopping Sight Distance
Approaching from The East



Note: Existing grade taken from site plans prepared by
Eugene T. Sullivan Inc.

HORIZONTAL SCALE 1" = 40'
VERTICAL SCALE 1' = 1'

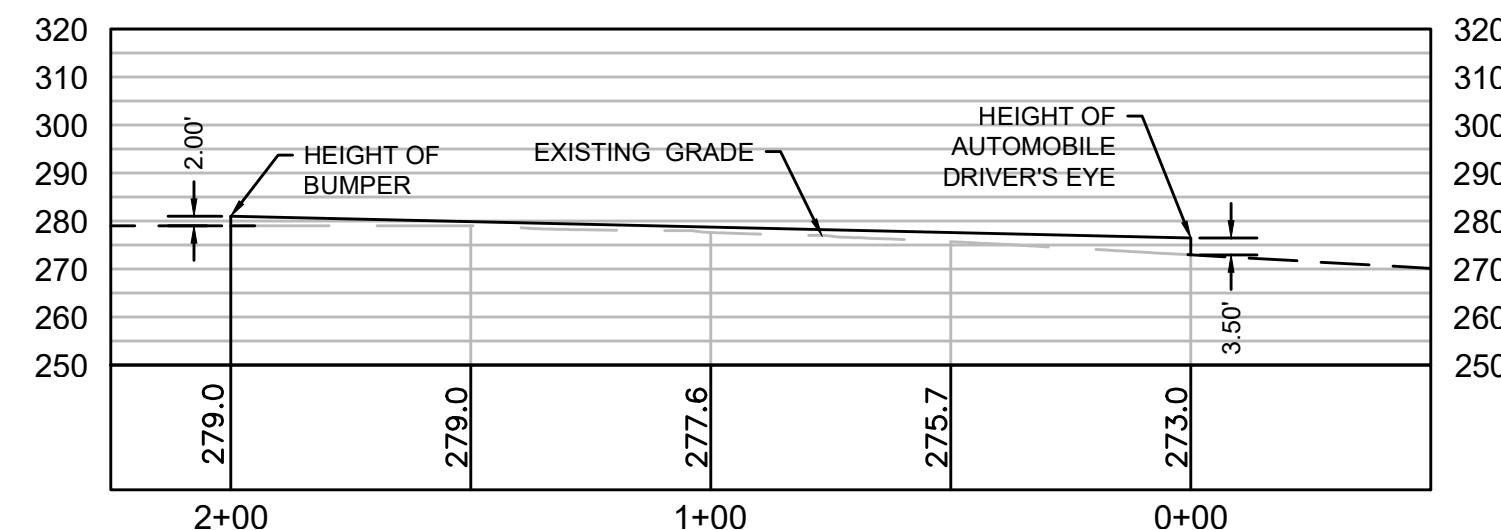
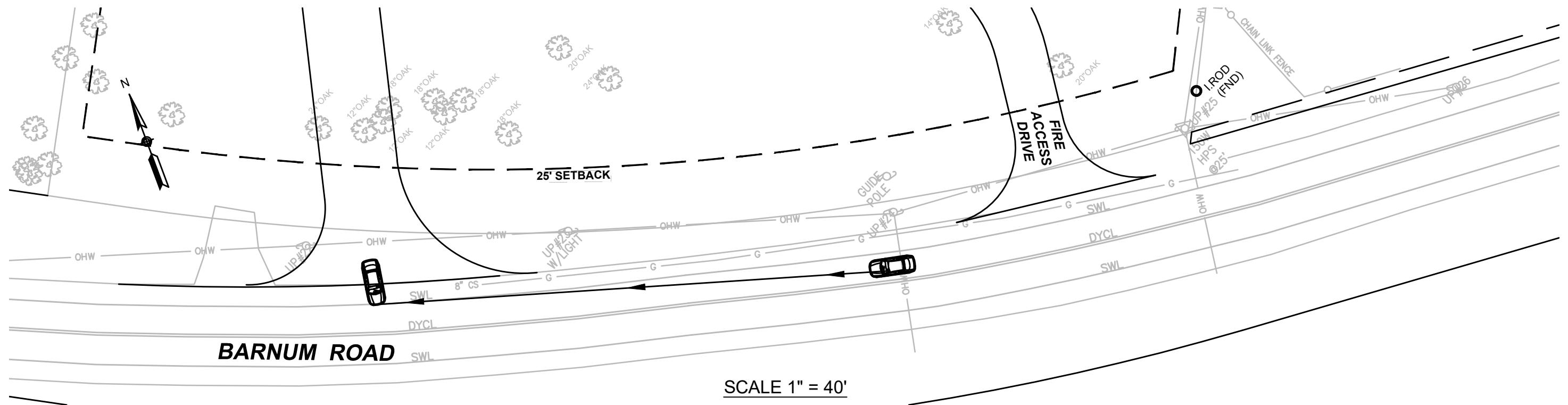


600 Unicorn Park Drive ▲ Woburn, MA 01801
Phone: 781.932.3201 ▲ Fax: 781.932.3413

www.baysideengineering.com

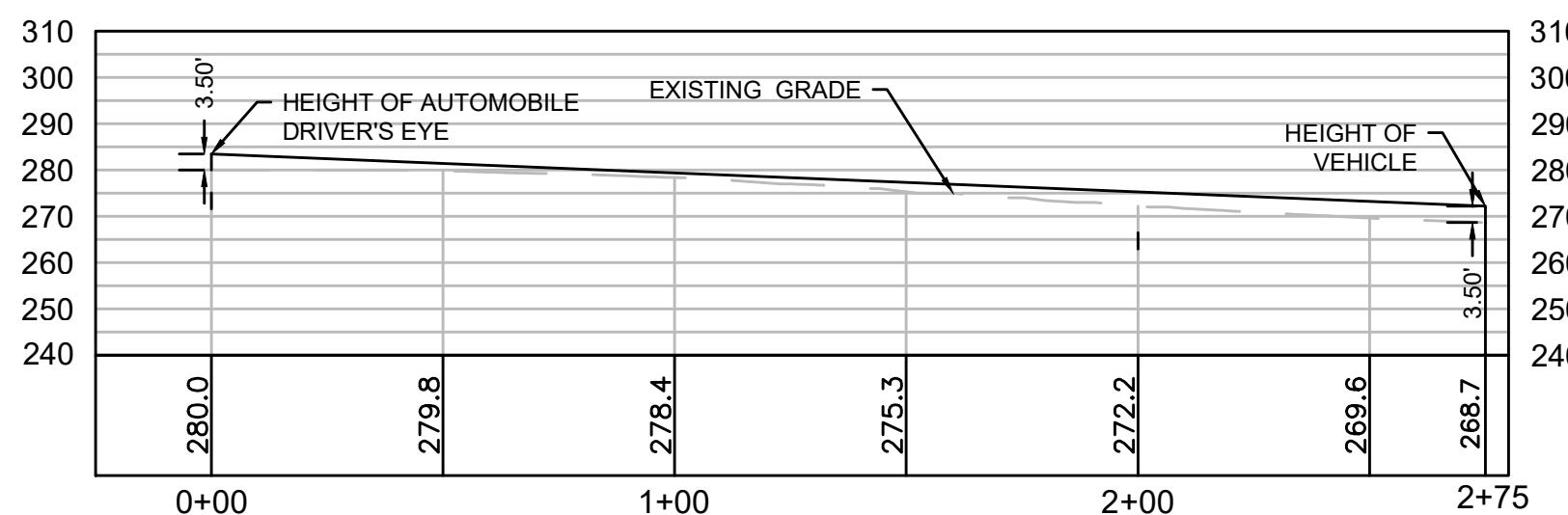
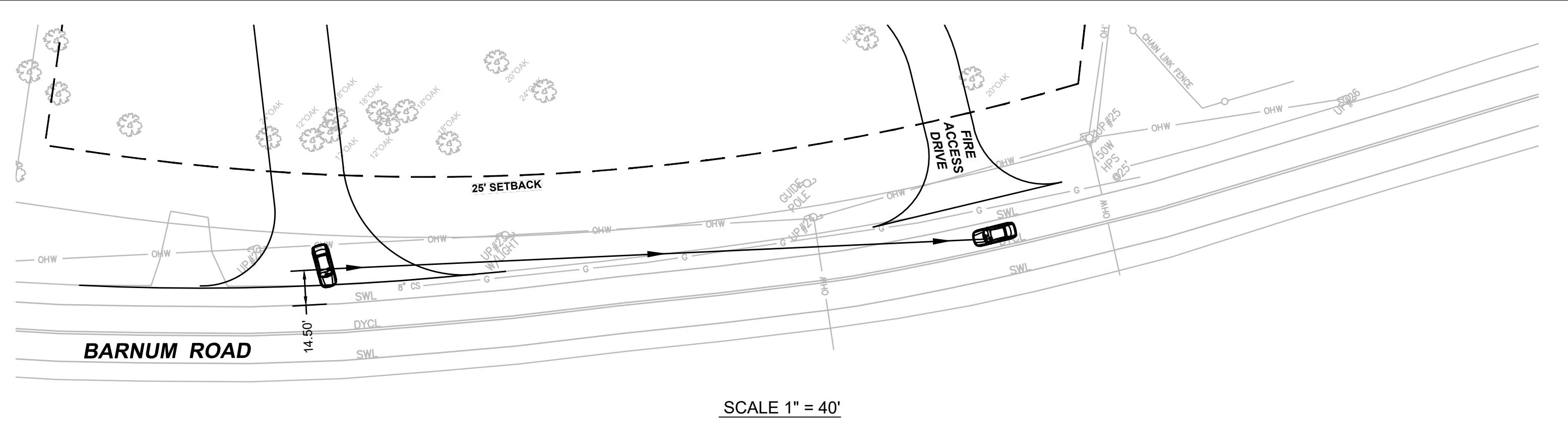
Proposed Warehouse
35 Saratoga Boulevard
Devens, MA

Figure 2
Truck Intersection Sight Distance
Driveway Looking East



Note: Existing grade taken from site plans prepared by
Eugene T. Sullivan Inc.

HORIZONTAL SCALE 1" = 40'
VERTICAL SCALE 1' = 1'



*Note: Existing grade taken from site plans prepared by
Eugene T. Sullivan Inc.*

HORIZONTAL SCALE 1" = 40'
VERTICAL SCALE 1' = 1"



600 Unicorn Park Drive ▲ Woburn, MA 01801
Phone: 781.932.3201 ▲ Fax: 781.932.3413

www.baysideengineering.com

*Proposed Warehouse
35 Saratoga Boulevard
Devens, MA*

Figure 4

*Automobile Intersection Sight Distance
Driveway Looking East*

Accurate Counts

1

Location : Barnum Road
 Location : West of Saratoga Boulevard
 City/State: Devens, MA
 Direction: WB,

23156001

5/18/2022 Time	0 to 8' 0 - 95.9 in.	>8 to 20' > 95.9 - 239.9 in.	>20 to 40' > 239.9 - 479.9 in.	>40 to 70' > 479.9 - 839.9 in.	>70' > 839.9 in.	Total
12:00 AM	0	7	0	0	0	7
1:00	0	2	0	0	0	2
2:00	0	3	0	0	0	3
3:00	0	3	1	0	0	4
4:00	0	4	0	1	0	5
5:00	0	11	0	0	0	11
6:00	0	57	2	0	0	59
7:00	0	73	2	1	0	76
8:00	2	115	5	0	0	122
9:00	0	59	6	2	0	67
10:00	0	60	5	4	0	69
11:00	0	71	9	3	0	83
12:00 PM	2	115	10	3	0	130
1:00	1	70	6	3	0	80
2:00	0	81	10	5	0	96
3:00	0	127	6	3	0	136
4:00	1	141	4	1	0	147
5:00	1	87	5	2	0	95
6:00	0	53	2	1	0	56
7:00	0	27	1	0	0	28
8:00	0	27	1	0	0	28
9:00	0	12	0	0	0	12
10:00	0	6	1	2	0	9
11:00	0	10	0	0	0	10
Total	7	1221	76	31	0	1335
Percent	0.5%	91.5%	5.7%	2.3%	0.0%	
AM Peak	8:00 2	8:00 115	11:00 9	10:00 4	*	8:00 122
PM Peak	12:00 PM 2	4:00 141	12:00 PM 10	2:00 5	*	4:00 147

Accurate Counts

2

Location : Barnum Road
 Location : West of Saratoga Boulevard
 City/State: Devens, MA
 Direction: WB,

23156001

5/19/2022 Time	0 to 8' 0 - 95.9 in.	>8 to 20' > 95.9 - 239.9 in.	>20 to 40' > 239.9 - 479.9 in.	>40 to 70' > 479.9 - 839.9 in.	>70' > 839.9 in.	Total
12:00 AM	0	7	0	0	0	7
1:00	0	1	0	0	0	1
2:00	0	4	0	0	0	4
3:00	0	2	1	0	0	3
4:00	0	10	0	0	0	10
5:00	0	15	0	0	0	15
6:00	2	61	2	2	0	67
7:00	0	68	4	2	0	74
8:00	0	97	6	2	0	105
9:00	0	66	4	4	0	74
10:00	0	55	6	8	0	69
11:00	0	93	14	5	0	112
12:00 PM	0	120	8	4	0	132
1:00	0	74	10	7	0	91
2:00	0	76	12	5	0	93
3:00	0	129	12	2	0	143
4:00	1	156	6	3	0	166
5:00	0	165	6	3	0	174
6:00	1	69	0	1	0	71
7:00	1	29	1	3	0	34
8:00	1	35	8	1	0	45
9:00	0	16	1	0	0	17
10:00	0	10	0	0	0	10
11:00	0	4	0	0	0	4
Total	6	1362	101	52	0	1521
Percent	0.4%	89.5%	6.6%	3.4%	0.0%	
AM Peak	6:00	8:00	11:00	10:00		11:00
	2	97	14	8	*	112
PM Peak	4:00	5:00	2:00	1:00		5:00
	1	165	12	7	*	174
Grand Total	13	2583	177	83	0	2856
Percent	0.5%	90.4%	6.2%	2.9%	0.0%	

Accurate Counts

3

Location : Barnum Road
 Location : West of Saratoga Boulevard
 City/State: Devens, MA
 Direction: EB,

23156001

5/18/2022 Time	0 to 8' 0 - 95.9 in.	>8 to 20' > 95.9 - 239.9 in.	>20 to 40' > 239.9 - 479.9 in.	>40 to 70' > 479.9 - 839.9 in.	>70' > 839.9 in.	Total
12:00 AM	0	8	1	1	0	10
1:00	0	1	0	0	0	1
2:00	0	1	0	0	0	1
3:00	0	1	0	0	0	1
4:00	0	10	2	0	0	12
5:00	0	40	1	0	0	41
6:00	1	75	5	0	0	81
7:00	1	119	3	2	0	125
8:00	0	110	12	0	0	122
9:00	0	71	6	3	1	81
10:00	0	85	14	5	0	104
11:00	0	90	7	4	0	101
12:00 PM	1	120	8	3	0	132
1:00	1	119	11	4	2	137
2:00	0	103	9	4	0	116
3:00	3	139	4	3	1	150
4:00	1	95	1	3	0	100
5:00	1	74	1	2	1	79
6:00	1	55	1	4	0	61
7:00	0	40	0	0	0	40
8:00	0	26	0	1	0	27
9:00	0	17	0	1	0	18
10:00	0	9	0	0	0	9
11:00	0	7	0	0	1	8
Total	10	1415	86	40	6	1557
Percent	0.6%	90.9%	5.5%	2.6%	0.4%	
AM Peak	6:00	7:00	10:00	10:00	9:00	7:00
	1	119	14	5	1	125
PM Peak	3:00	3:00	1:00	1:00	1:00	3:00
	3	139	11	4	2	150

Accurate Counts

4

Location : Barnum Road
 Location : West of Saratoga Boulevard
 City/State: Devens, MA
 Direction: EB,

23156001

5/19/2022 Time	0 to 8' 0 - 95.9 in.	>8 to 20' > 95.9 - 239.9 in.	>20 to 40' > 239.9 - 479.9 in.	>40 to 70' > 479.9 - 839.9 in.	>70' > 839.9 in.	Total
12:00 AM	0	10	2	0	0	12
1:00	0	3	1	0	0	4
2:00	1	3	0	0	0	4
3:00	0	0	0	0	0	0
4:00	0	14	0	0	0	14
5:00	1	35	0	0	0	36
6:00	1	89	5	0	0	95
7:00	2	108	9	4	0	123
8:00	1	166	3	2	0	172
9:00	0	53	4	1	2	60
10:00	1	69	13	0	0	83
11:00	1	97	17	5	2	122
12:00 PM	0	140	22	8	0	170
1:00	1	87	5	3	0	96
2:00	2	61	5	2	0	70
3:00	1	142	2	3	0	148
4:00	0	108	3	1	0	112
5:00	1	89	6	1	0	97
6:00	0	112	3	1	0	116
7:00	2	22	5	1	0	30
8:00	0	17	3	0	0	20
9:00	0	17	2	0	0	19
10:00	1	11	0	1	0	13
11:00	0	8	1	0	0	9
Total	16	1461	111	33	4	1625
Percent	1.0%	89.9%	6.8%	2.0%	0.2%	
AM Peak	7:00	8:00	11:00	11:00	9:00	8:00
	2	166	17	5	2	172
PM Peak	2:00	3:00	12:00 PM	12:00 PM	*	12:00 PM
	2	142	22	8		170
Grand Total	26	2876	197	73	10	3182
Percent	0.8%	90.4%	6.2%	2.3%	0.3%	

Accurate Counts

5

Location : Barnum Road
 Location : West of Saratoga Boulevard
 City/State: Devens, MA
 Direction: Combined

23156001

5/18/2022 Time	0 to 8' 0 - 95.9 in.	>8 to 20' > 95.9 - 239.9 in.	>20 to 40' > 239.9 - 479.9 in.	>40 to 70' > 479.9 - 839.9 in.	>70' > 839.9 in.	Total
12:00 AM	0	15	1	1	0	17
1:00	0	3	0	0	0	3
2:00	0	4	0	0	0	4
3:00	0	4	1	0	0	5
4:00	0	14	2	1	0	17
5:00	0	51	1	0	0	52
6:00	1	132	7	0	0	140
7:00	1	192	5	3	0	201
8:00	2	225	17	0	0	244
9:00	0	130	12	5	1	148
10:00	0	145	19	9	0	173
11:00	0	161	16	7	0	184
12:00 PM	3	235	18	6	0	262
1:00	2	189	17	7	2	217
2:00	0	184	19	9	0	212
3:00	3	266	10	6	1	286
4:00	2	236	5	4	0	247
5:00	2	161	6	4	1	174
6:00	1	108	3	5	0	117
7:00	0	67	1	0	0	68
8:00	0	53	1	1	0	55
9:00	0	29	0	1	0	30
10:00	0	15	1	2	0	18
11:00	0	17	0	0	1	18
Total	17	2636	162	71	6	2892
Percent	0.6%	91.1%	5.6%	2.5%	0.2%	
AM Peak	8:00	8:00	10:00	10:00	9:00	8:00
	2	225	19	9	1	244
PM Peak	12:00 PM	3:00	2:00	2:00	1:00	3:00
	3	266	19	9	2	286

Accurate Counts

6

Location : Barnum Road

23156001

Location : West of Saratoga Boulevard

City/State: Devens, MA

Direction: Combined

5/19/2022 Time	0 to 8' 0 - 95.9 in.	>8 to 20' > 95.9 - 239.9 in.	>20 to 40' > 239.9 - 479.9 in.	>40 to 70' > 479.9 - 839.9 in.	>70' > 839.9 in.	Total
12:00 AM	0	17	2	0	0	19
1:00	0	4	1	0	0	5
2:00	1	7	0	0	0	8
3:00	0	2	1	0	0	3
4:00	0	24	0	0	0	24
5:00	1	50	0	0	0	51
6:00	3	150	7	2	0	162
7:00	2	176	13	6	0	197
8:00	1	263	9	4	0	277
9:00	0	119	8	5	2	134
10:00	1	124	19	8	0	152
11:00	1	190	31	10	2	234
12:00 PM	0	260	30	12	0	302
1:00	1	161	15	10	0	187
2:00	2	137	17	7	0	163
3:00	1	271	14	5	0	291
4:00	1	264	9	4	0	278
5:00	1	254	12	4	0	271
6:00	1	181	3	2	0	187
7:00	3	51	6	4	0	64
8:00	1	52	11	1	0	65
9:00	0	33	3	0	0	36
10:00	1	21	0	1	0	23
11:00	0	12	1	0	0	13
Total	22	2823	212	85	4	3146
Percent	0.7%	89.7%	6.7%	2.7%	0.1%	
AM Peak	6:00 3	8:00 263	11:00 31	11:00 10	9:00 2	8:00 277
PM Peak	7:00 3	3:00 271	12:00 PM 30	12:00 PM 12	*	12:00 PM 302
Grand Total	39	5459	374	156	10	6038
Percent	0.6%	90.4%	6.2%	2.6%	0.2%	

Location : Barnum Road
Location : West of Saratoga Boulevard
City/State: Devens, MA
Direction: WB,

23156001

5/18/2022	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 - 75 MPH	Total
Time														
12:00 AM	0	0	1	2	2	1	1	0	0	0	0	0	0	7
1:00	0	0	0	1	1	0	0	0	0	0	0	0	0	2
2:00	0	0	1	1	0	0	0	1	0	0	0	0	0	3
3:00	0	0	3	0	1	0	0	0	0	0	0	0	0	4
4:00	0	2	0	2	1	0	0	0	0	0	0	0	0	5
5:00	0	0	1	2	3	4	0	1	0	0	0	0	0	11
6:00	0	0	6	10	19	20	4	0	0	0	0	0	0	59
7:00	0	1	12	18	21	19	3	2	0	0	0	0	0	76
8:00	0	1	22	17	41	32	8	1	0	0	0	0	0	122
9:00	0	1	10	18	18	13	6	1	0	0	0	0	0	67
10:00	0	2	6	11	24	18	7	1	0	0	0	0	0	69
11:00	0	3	8	22	24	17	9	0	0	0	0	0	0	83
12:00 PM	0	0	8	31	54	25	10	2	0	0	0	0	0	130
1:00	0	0	7	15	29	22	7	0	0	0	0	0	0	80
2:00	0	2	4	28	30	23	7	2	0	0	0	0	0	96
3:00	0	0	14	27	42	34	8	11	0	0	0	0	0	136
4:00	0	1	4	24	53	50	13	2	0	0	0	0	0	147
5:00	0	1	5	18	34	23	13	1	0	0	0	0	0	95
6:00	0	0	3	10	26	10	4	2	1	0	0	0	0	56
7:00	0	2	8	8	5	4	1	0	0	0	0	0	0	28
8:00	0	1	6	6	9	5	1	0	0	0	0	0	0	28
9:00	0	1	1	2	6	1	1	0	0	0	0	0	0	12
10:00	0	1	3	2	2	1	0	0	0	0	0	0	0	9
11:00	0	0	3	1	3	1	1	1	0	0	0	0	0	10
Total	0	19	136	276	448	323	104	28	1	0	0	0	0	1335

	Percentile	15th	50th	85th	95th
Speed	26	33	38	42	
Mean Speed (Average)	32.6				
10 MPH Pace Speed	30-39				
Number in Pace	770				
Percent in Pace	57.7%				
Number > 35 MPH	456				
Percent > 35 MPH	34.2%				

Location : Barnum Road
Location : West of Saratoga Boulevard
City/State: Devens, MA
Direction: WB,

23156001

5/19/2022	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
Time														
12:00 AM	0	0	2	2	2	0	1	0	0	0	0	0	0	7
1:00	0	0	0	0	0	1	0	0	0	0	0	0	0	1
2:00	0	1	0	0	1	1	0	1	0	0	0	0	0	4
3:00	0	0	1	2	0	0	0	0	0	0	0	0	0	3
4:00	0	0	2	2	6	0	0	0	0	0	0	0	0	10
5:00	1	2	2	5	3	1	1	0	0	0	0	0	0	15
6:00	2	0	7	17	18	15	7	1	0	0	0	0	0	67
7:00	0	5	4	13	19	15	11	5	0	1	1	0	0	74
8:00	1	2	8	19	34	33	8	0	0	0	0	0	0	105
9:00	0	5	9	13	21	19	5	2	0	0	0	0	0	74
10:00	0	5	17	11	17	8	9	2	0	0	0	0	0	69
11:00	4	8	14	24	33	17	7	4	1	0	0	0	0	112
12:00 PM	0	4	12	26	37	42	10	1	0	0	0	0	0	132
1:00	0	1	22	21	25	11	8	2	1	0	0	0	0	91
2:00	0	8	12	19	20	25	6	2	1	0	0	0	0	93
3:00	0	3	23	42	31	35	4	4	1	0	0	0	0	143
4:00	0	1	16	33	51	42	17	6	0	0	0	0	0	166
5:00	0	3	12	31	39	57	27	5	0	0	0	0	0	174
6:00	0	3	10	4	14	29	9	1	1	0	0	0	0	71
7:00	0	1	7	4	8	10	3	1	0	0	0	0	0	34
8:00	0	0	14	9	16	2	4	0	0	0	0	0	0	45
9:00	0	1	6	3	3	4	0	0	0	0	0	0	0	17
10:00	0	0	4	3	3	0	0	0	0	0	0	0	0	10
11:00	0	0	0	2	1	0	1	0	0	0	0	0	0	4
Total	8	53	204	305	402	367	138	37	5	1	1	0	0	1521

	Percentile	15th	50th	85th	95th
Speed	25		32	39	43
Mean Speed (Average)	32.1				
10 MPH Pace Speed	30-39				
Number in Pace	768				
Percent in Pace	50.5%				
Number > 35 MPH	549				
Percent > 35 MPH	36.1%				
Slowest 75%	26.0	26.1	26.2	26.3	26.4

Location : Barnum Road
Location : West of Saratoga Boulevard
City/State: Devens, MA
Direction: EB,

23156001

Location : Barnum Road
Location : West of Saratoga Boulevard
City/State: Devens, MA
Direction: EB.

23156001

5/19/2022	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
Time														
12:00 AM	0	0	0	0	5	3	1	3	0	0	0	0	0	12
1:00	0	0	0	0	2	2	0	0	0	0	0	0	0	4
2:00	0	0	0	0	0	2	2	0	0	0	0	0	0	4
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	1	7	4	2	0	0	0	0	0	0	14
5:00	0	0	0	1	6	17	10	1	1	0	0	0	0	36
6:00	0	0	0	4	22	43	23	2	1	0	0	0	0	95
7:00	0	0	1	2	23	60	30	7	0	0	0	0	0	123
8:00	0	0	0	6	46	77	36	5	1	0	0	1	0	172
9:00	0	0	0	1	19	25	12	3	0	0	0	0	0	60
10:00	0	1	0	14	24	24	19	1	0	0	0	0	0	83
11:00	1	1	5	21	49	32	13	0	0	0	0	0	0	122
12:00 PM	0	0	3	13	67	58	21	5	3	0	0	0	0	170
1:00	0	1	2	2	22	45	21	3	0	0	0	0	0	96
2:00	1	0	0	3	23	26	13	3	1	0	0	0	0	70
3:00	0	0	0	2	33	69	36	8	0	0	0	0	0	148
4:00	0	0	0	2	19	61	22	5	2	1	0	0	0	112
5:00	0	0	1	1	28	39	22	5	1	0	0	0	0	97
6:00	0	0	1	1	21	46	25	20	2	0	0	0	0	116
7:00	0	0	0	2	8	16	3	1	0	0	0	0	0	30
8:00	0	0	0	1	11	4	4	0	0	0	0	0	0	20
9:00	0	0	0	2	7	7	3	0	0	0	0	0	0	19
10:00	0	0	0	2	4	4	2	1	0	0	0	0	0	13
11:00	0	0	0	2	2	1	3	1	0	0	0	0	0	9
Total	2	3	13	83	448	665	323	74	12	1	0	1	0	1625

Percentile	15th	50th	85th	95th
Speed	32	37	42	45

Mean Speed (Average)

10 MPH Pace Speed

Number in Pace 1101

Percent in Pace

Number > 35 MPH

Percent > 35 MPH

6 26

Percentile

	Percent > 35 MPH	66.2%
Grand Total	2	6
Stats	Percentile	15th
	Speed	32
Mean Speed (Average)	37.2	37
10 MPH Pace Speed	30-39	42
Number in Pace	2148	45
Percent in Pace	67.5%	
Number > 35 MPH	2142	
Percent > 35 MPH	67.3%	

Location : Barnum Road
Location : West of Saratoga Boulevard
City/State: Devens, MA
Direction: Combined

23156001

5/18/2022		0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
Time															
12:00 AM		0	0	1	2	5	2	5	1	0	1	0	0	0	17
1:00		0	0	0	1	1	1	0	0	0	0	0	0	0	3
2:00		0	0	1	1	0	0	0	1	1	0	0	0	0	4
3:00		0	0	3	1	1	0	0	0	0	0	0	0	0	5
4:00		0	2	0	2	1	8	3	1	0	0	0	0	0	17
5:00		0	0	1	3	9	29	5	4	1	0	0	0	0	52
6:00		0	0	6	11	42	44	32	4	1	0	0	0	0	140
7:00		0	1	12	19	44	85	31	9	0	0	0	0	0	201
8:00		0	3	24	25	72	83	32	4	1	0	0	0	0	244
9:00		0	1	10	28	47	40	20	2	0	0	0	0	0	148
10:00		0	2	8	18	65	56	20	4	0	0	0	0	0	173
11:00		0	3	11	25	53	61	28	3	0	0	0	0	0	184
12:00 PM		0	0	13	36	79	98	32	4	0	0	0	0	0	262
1:00		0	0	7	27	74	81	26	2	0	0	0	0	0	217
2:00		0	2	4	28	65	64	35	10	3	0	1	0	0	212
3:00		0	0	14	32	73	96	45	21	5	0	0	0	0	286
4:00		0	1	5	29	71	94	40	6	1	0	0	0	0	247
5:00		0	1	5	21	51	51	42	2	1	0	0	0	0	174
6:00		0	0	3	13	48	32	13	7	1	0	0	0	0	117
7:00		0	2	8	9	14	23	8	4	0	0	0	0	0	68
8:00		0	1	6	7	18	17	5	1	0	0	0	0	0	55
9:00		0	2	1	3	12	6	5	1	0	0	0	0	0	30
10:00		0	1	3	2	2	5	4	0	0	1	0	0	0	18
11:00		0	0	3	4	5	1	3	2	0	0	0	0	0	18
Total		0	22	149	347	852	977	434	93	15	2	1	0	0	2892
		Percentile Speed		15th 29	50th 35	85th 41	95th 44								
		Mean Speed (Average) 35.1													
		10 MPH Pace Speed 30-39													
		Number in Pace 1816													
		Percent in Pace 62.8%													
		Number > 35 MPH 1522													
		Percent > 35 MPH 52.6%													

Location : Barnum Road
Location : West of Saratoga Boulevard
City/State: Devens, MA
Direction: Combined

23156001

5/19/2022	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
Time														
12:00 AM	0	0	2	2	7	3	2	3	0	0	0	0	0	19
1:00	0	0	0	0	2	3	0	0	0	0	0	0	0	5
2:00	0	1	0	0	1	3	2	1	0	0	0	0	0	8
3:00	0	0	1	2	0	0	0	0	0	0	0	0	0	3
4:00	0	0	2	3	13	4	2	0	0	0	0	0	0	24
5:00	1	2	2	6	9	18	11	1	1	0	0	0	0	51
6:00	2	0	7	21	40	58	30	3	1	0	0	0	0	162
7:00	0	5	5	15	42	75	41	12	0	1	1	0	0	197
8:00	1	2	8	25	80	110	44	5	1	0	0	1	0	277
9:00	0	5	9	14	40	44	17	5	0	0	0	0	0	134
10:00	0	6	17	25	41	32	28	3	0	0	0	0	0	152
11:00	5	9	19	45	82	49	20	4	1	0	0	0	0	234
12:00 PM	0	4	15	39	104	100	31	6	3	0	0	0	0	302
1:00	0	2	24	23	47	56	29	5	1	0	0	0	0	187
2:00	1	8	12	22	43	51	19	5	2	0	0	0	0	163
3:00	0	3	23	44	64	104	40	12	1	0	0	0	0	291
4:00	0	1	16	35	70	103	39	11	2	1	0	0	0	278
5:00	0	3	13	32	67	96	49	10	1	0	0	0	0	271
6:00	0	3	11	5	35	75	34	21	3	0	0	0	0	187
7:00	0	1	7	6	16	26	6	2	0	0	0	0	0	64
8:00	0	0	14	10	27	6	8	0	0	0	0	0	0	65
9:00	0	1	6	5	10	11	3	0	0	0	0	0	0	36
10:00	0	0	4	5	7	4	2	1	0	0	0	0	0	23
11:00	0	0	0	4	3	1	4	1	0	0	0	0	0	13
Total	10	56	217	388	850	1032	461	111	17	2	1	1	0	3146

Percentile	15th	50th	85th	95th
Speed	28	35	41	44
Mean Speed (Average)	34.7			

Mean Speed (Average) 34.7
(3 MPH) S. 20.00

10 MPH Pace Speed 30-39

Number in Pace 1869

Percent in Pace 59.4%

Number > 35 MPH 1625

Percent > 35 MPH 51.7%

Accurate Counts

1

Location : Barnum Road
 Location : West of Saratoga Boulevard
 City/State: Devens, MA

23156001

5/18/2022	WB,		Hour Totals		EB,		Hour Totals		Combined Totals		
	Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		6	41			6	30				
12:15		0	26			1	47				
12:30		1	25			3	26				
12:45		0	38	7	130	0	29	10	132	17	262
1:00		1	23			0	32				
1:15		1	36			1	29				
1:30		0	9			0	51				
1:45		0	12	2	80	0	25	1	137	3	217
2:00		0	30			0	18				
2:15		1	19			1	24				
2:30		2	17			0	28				
2:45		0	30	3	96	0	46	1	116	4	212
3:00		0	27			1	38				
3:15		2	20			0	27				
3:30		0	41			0	54				
3:45		2	48	4	136	0	31	1	150	5	286
4:00		3	58			1	33				
4:15		0	34			2	24				
4:30		1	32			4	19				
4:45		1	23	5	147	5	24	12	100	17	247
5:00		1	34			6	26				
5:15		1	21			11	17				
5:30		4	23			12	12				
5:45		5	17	11	95	12	24	41	79	52	174
6:00		10	13			6	20				
6:15		10	20			18	12				
6:30		21	14			29	13				
6:45		18	9	59	56	28	16	81	61	140	117
7:00		18	9			24	13				
7:15		16	5			32	6				
7:30		17	7			33	12				
7:45		25	7	76	28	36	9	125	40	201	68
8:00		31	12			29	14				
8:15		35	6			34	6				
8:30		31	7			32	3				
8:45		25	3	122	28	27	4	122	27	244	55
9:00		19	2			23	3				
9:15		13	2			16	6				
9:30		18	5			23	0				
9:45		17	3	67	12	19	9	81	18	148	30
10:00		19	3			21	1				
10:15		15	2			26	3				
10:30		16	3			22	0				
10:45		19	1	69	9	35	5	104	9	173	18
11:00		24	4			33	5				
11:15		8	0			20	0				
11:30		22	1			22	1				
11:45		29	5	83	10	26	2	101	8	184	18
Total		508	827			680	877			1188	1704
Percent		38.1%	61.9%			43.7%	56.3%			41.1%	58.9%

Accurate Counts

2

Location : Barnum Road
 Location : West of Saratoga Boulevard
 City/State: Devens, MA

23156001

5/19/2022	WB,		Hour Totals		EB,		Hour Totals		Combined Totals		
	Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		5	61			8	35				
12:15		0	17			1	46				
12:30		2	30			3	47				
12:45		0	24	7	132	0	42	12	170	19	302
1:00		0	24			0	26				
1:15		0	32			2	31				
1:30		0	19			0	17				
1:45		1	16	1	91	2	22	4	96	5	187
2:00		0	22			0	12				
2:15		1	31			1	16				
2:30		2	19			2	29				
2:45		1	21	4	93	1	13	4	70	8	163
3:00		0	38			0	24				
3:15		2	30			0	29				
3:30		1	51			0	70				
3:45		0	24	3	143	0	25	0	148	3	291
4:00		4	34			2	39				
4:15		1	40			4	31				
4:30		3	53			4	21				
4:45		2	39	10	166	4	21	14	112	24	278
5:00		4	37			11	11				
5:15		2	21			10	19				
5:30		3	32			5	30				
5:45		6	84	15	174	10	37	36	97	51	271
6:00		16	43			16	50				
6:15		9	7			15	34				
6:30		17	13			37	18				
6:45		25	8	67	71	27	14	95	116	162	187
7:00		18	11			27	5				
7:15		16	12			17	10				
7:30		22	8			34	8				
7:45		18	3	74	34	45	7	123	30	197	64
8:00		25	13			41	6				
8:15		33	10			41	5				
8:30		25	15			49	4				
8:45		22	7	105	45	41	5	172	20	277	65
9:00		24	4			18	5				
9:15		21	3			16	4				
9:30		12	6			13	4				
9:45		17	4	74	17	13	6	60	19	134	36
10:00		25	2			17	5				
10:15		13	5			18	2				
10:30		14	2			20	2				
10:45		17	1	69	10	28	4	83	13	152	23
11:00		17	2			28	5				
11:15		29	0			39	2				
11:30		25	1			35	0				
11:45		41	1	112	4	20	2	122	9	234	13
Total		541	980			725	900			1266	1880
Percent		35.6%	64.4%			44.6%	55.4%			40.2%	59.8%
Grand Total		1049	1807			1405	1777			2454	3584
Percent		36.7%	63.3%			44.2%	55.8%			40.6%	59.4%

ADT

ADT: 3,019

AADT: 3,019

Location : Barnum Road
Location : West of Saratoga Boulevard
City/State: Devens, MA

23156001

Accurate Counts

1

Location : Saratoga Boulevard
 Location : Just East of Site Driveway
 City/State: Devens, MA
 Direction: EB,

23156002

5/18/2022 Time	0 to 8' 0 - 95.9 in.	>8 to 20' > 95.9 - 239.9 in.	>20 to 40' > 239.9 - 479.9 in.	>40 to 70' > 479.9 - 839.9 in.	>70' > 839.9 in.	Total
12:00 AM	0	14	1	1	0	16
1:00	0	2	2	0	0	4
2:00	0	3	1	3	0	7
3:00	0	4	0	2	0	6
4:00	0	4	3	5	0	12
5:00	0	15	3	2	0	20
6:00	0	27	9	9	4	49
7:00	1	23	19	8	4	55
8:00	0	74	27	7	0	108
9:00	0	26	20	17	1	64
10:00	0	34	31	16	2	83
11:00	1	42	29	18	2	92
12:00 PM	0	55	33	20	3	111
1:00	0	67	32	20	0	119
2:00	0	56	24	17	6	103
3:00	1	145	35	17	3	201
4:00	1	110	19	11	0	141
5:00	2	102	11	10	0	125
6:00	0	39	5	7	0	51
7:00	1	33	6	8	2	50
8:00	0	42	5	2	1	50
9:00	0	14	0	2	1	17
10:00	0	6	0	10	0	16
11:00	0	6	1	1	1	9
Total	7	943	316	213	30	1509
Percent	0.5%	62.5%	20.9%	14.1%	2.0%	
AM Peak	7:00	8:00	10:00	11:00	6:00	8:00
PM Peak	5:00	3:00	3:00	12:00 PM	2:00	3:00
	2	145	35	20	6	201

Accurate Counts

2

Location : Saratoga Boulevard
 Location : Just East of Site Driveway
 City/State: Devens, MA
 Direction: EB,

23156002

5/19/2022 Time	0 to 8' 0 - 95.9 in.	>8 to 20' > 95.9 - 239.9 in.	>20 to 40' > 239.9 - 479.9 in.	>40 to 70' > 479.9 - 839.9 in.	>70' > 839.9 in.	Total
12:00 AM	0	12	1	0	0	13
1:00	0	5	0	0	0	5
2:00	0	4	0	4	0	8
3:00	0	2	1	4	0	7
4:00	0	3	4	5	0	12
5:00	0	19	2	1	0	22
6:00	0	29	12	6	3	50
7:00	0	41	24	16	0	81
8:00	0	74	26	8	2	110
9:00	0	26	27	14	4	71
10:00	0	29	25	19	3	76
11:00	0	34	31	18	1	84
12:00 PM	0	53	31	20	1	105
1:00	0	41	25	22	1	89
2:00	0	53	28	20	3	104
3:00	0	163	25	15	2	205
4:00	0	104	24	12	1	141
5:00	1	98	9	11	0	119
6:00	0	34	3	3	1	41
7:00	0	24	2	11	1	38
8:00	0	26	4	5	0	35
9:00	0	6	3	6	0	15
10:00	0	10	0	6	0	16
11:00	0	5	0	1	0	6
Total	1	895	307	227	23	1453
Percent	0.1%	61.6%	21.1%	15.6%	1.6%	
AM Peak	*	8:00	11:00	10:00	9:00	8:00
PM Peak	5:00	74	31	19	4	110
	1	3:00	12:00 PM	1:00	2:00	3:00
		163	31	22	3	205
Grand Total	8	1838	623	440	53	2962
Percent	0.3%	62.1%	21.0%	14.9%	1.8%	

Location : Saratoga Boulevard
 Location : Just East of Site Driveway
 City/State: Devens, MA
 Direction: WB,

23156002

5/18/2022 Time	0 to 8' 0 - 95.9 in.	>8 to 20' > 95.9 - 239.9 in.	>20 to 40' > 239.9 - 479.9 in.	>40 to 70' > 479.9 - 839.9 in.	>70' > 839.9 in.	Total
12:00 AM	0	6	1	2	0	9
1:00	0	3	1	1	1	6
2:00	0	6	0	1	0	7
3:00	0	4	0	2	2	8
4:00	0	35	1	3	3	42
5:00	0	57	2	5	3	67
6:00	0	97	20	9	1	127
7:00	0	104	26	12	5	147
8:00	0	116	28	16	3	163
9:00	0	29	12	32	3	76
10:00	0	33	31	31	4	99
11:00	1	22	25	20	2	70
12:00 PM	0	50	37	23	4	114
1:00	0	65	28	27	2	122
2:00	0	36	28	21	4	89
3:00	1	44	24	19	2	90
4:00	0	38	19	12	2	71
5:00	0	43	12	8	0	63
6:00	0	26	2	7	6	41
7:00	0	35	5	4	1	45
8:00	0	10	3	3	0	16
9:00	0	12	4	6	3	25
10:00	0	6	2	2	0	10
11:00	0	2	1	2	0	5
Total	2	879	312	268	51	1512
Percent	0.1%	58.1%	20.6%	17.7%	3.4%	
AM Peak	11:00	8:00	10:00	9:00	7:00	8:00
	1	116	31	32	5	163
PM Peak	3:00	1:00	12:00 PM	1:00	6:00	1:00
	1	65	37	27	6	122

Accurate Counts

4

Location : Saratoga Boulevard
 Location : Just East of Site Driveway
 City/State: Devens, MA
 Direction: WB,

23156002

5/19/2022 Time	0 to 8' 0 - 95.9 in.	>8 to 20' > 95.9 - 239.9 in.	>20 to 40' > 239.9 - 479.9 in.	>40 to 70' > 479.9 - 839.9 in.	>70' > 839.9 in.	Total
12:00 AM	0	3	2	0	0	5
1:00	0	1	0	1	0	2
2:00	0	7	0	3	1	11
3:00	0	6	0	3	0	9
4:00	0	29	1	3	0	33
5:00	0	58	3	8	2	71
6:00	0	96	14	19	2	131
7:00	0	127	27	12	5	171
8:00	0	104	25	12	2	143
9:00	0	23	25	23	3	74
10:00	0	27	24	24	3	78
11:00	0	29	30	25	7	91
12:00 PM	0	54	27	23	3	107
1:00	1	37	20	33	4	95
2:00	0	34	24	22	2	82
3:00	0	47	25	14	3	89
4:00	0	39	22	15	2	78
5:00	1	37	6	9	0	53
6:00	0	33	7	5	3	48
7:00	0	38	1	2	1	42
8:00	0	10	0	5	0	15
9:00	0	6	0	2	0	8
10:00	0	3	2	4	1	10
11:00	0	6	0	1	1	8
Total	2	854	285	268	45	1454
Percent	0.1%	58.7%	19.6%	18.4%	3.1%	
AM Peak	*	7:00	11:00	11:00	11:00	7:00
PM Peak	1:00	127	30	25	7	171
	1	12:00 PM	12:00 PM	1:00	1:00	12:00 PM
Grand Total	4	1733	597	536	96	2966
Percent	0.1%	58.4%	20.1%	18.1%	3.2%	

Location : Saratoga Boulevard
 Location : Just East of Site Driveway
 City/State: Devens, MA
 Direction: Combined

23156002

5/18/2022 Time	0 to 8' 0 - 95.9 in.	>8 to 20' > 95.9 - 239.9 in.	>20 to 40' > 239.9 - 479.9 in.	>40 to 70' > 479.9 - 839.9 in.	>70' > 839.9 in.	Total
12:00 AM	0	20	2	3	0	25
1:00	0	5	3	1	1	10
2:00	0	9	1	4	0	14
3:00	0	8	0	4	2	14
4:00	0	39	4	8	3	54
5:00	0	72	5	7	3	87
6:00	0	124	29	18	5	176
7:00	1	127	45	20	9	202
8:00	0	190	55	23	3	271
9:00	0	55	32	49	4	140
10:00	0	67	62	47	6	182
11:00	2	64	54	38	4	162
12:00 PM	0	105	70	43	7	225
1:00	0	132	60	47	2	241
2:00	0	92	52	38	10	192
3:00	2	189	59	36	5	291
4:00	1	148	38	23	2	212
5:00	2	145	23	18	0	188
6:00	0	65	7	14	6	92
7:00	1	68	11	12	3	95
8:00	0	52	8	5	1	66
9:00	0	26	4	8	4	42
10:00	0	12	2	12	0	26
11:00	0	8	2	3	1	14
Total	9	1822	628	481	81	3021
Percent	0.3%	60.3%	20.8%	15.9%	2.7%	
AM Peak	11:00	8:00	10:00	9:00	7:00	8:00
	2	190	62	49	9	271
PM Peak	3:00	3:00	12:00 PM	1:00	2:00	3:00
	2	189	70	47	10	291

Accurate Counts

6

Location : Saratoga Boulevard
 Location : Just East of Site Driveway
 City/State: Devens, MA
 Direction: Combined

23156002

5/19/2022 Time	0 to 8' 0 - 95.9 in.	>8 to 20' > 95.9 - 239.9 in.	>20 to 40' > 239.9 - 479.9 in.	>40 to 70' > 479.9 - 839.9 in.	>70' > 839.9 in.	Total
12:00 AM	0	15	3	0	0	18
1:00	0	6	0	1	0	7
2:00	0	11	0	7	1	19
3:00	0	8	1	7	0	16
4:00	0	32	5	8	0	45
5:00	0	77	5	9	2	93
6:00	0	125	26	25	5	181
7:00	0	168	51	28	5	252
8:00	0	178	51	20	4	253
9:00	0	49	52	37	7	145
10:00	0	56	49	43	6	154
11:00	0	63	61	43	8	175
12:00 PM	0	107	58	43	4	212
1:00	1	78	45	55	5	184
2:00	0	87	52	42	5	186
3:00	0	210	50	29	5	294
4:00	0	143	46	27	3	219
5:00	2	135	15	20	0	172
6:00	0	67	10	8	4	89
7:00	0	62	3	13	2	80
8:00	0	36	4	10	0	50
9:00	0	12	3	8	0	23
10:00	0	13	2	10	1	26
11:00	0	11	0	2	1	14
Total	3	1749	592	495	68	2907
Percent	0.1%	60.2%	20.4%	17.0%	2.3%	
AM Peak	*	8:00	11:00	10:00	11:00	8:00
PM Peak	5:00	178	61	43	8	253
	2	3:00	12:00 PM	1:00	1:00	3:00
Grand Total	12	3571	1220	976	149	5928
Percent	0.2%	60.2%	20.6%	16.5%	2.5%	

Location : Saratoga Boulevard
Location : Just East of Site Driveway
City/State: Devens, MA
Direction: EB,

23156002

5/18/2022	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 - 75 MPH	Total
Time														
12:00 AM	0	0	4	5	5	1	1	0	0	0	0	0	0	16
1:00	0	0	1	2	1	0	0	0	0	0	0	0	0	4
2:00	0	1	0	3	2	1	0	0	0	0	0	0	0	7
3:00	0	0	1	2	1	2	0	0	0	0	0	0	0	6
4:00	0	0	1	3	7	1	0	0	0	0	0	0	0	12
5:00	0	0	2	9	6	2	1	0	0	0	0	0	0	20
6:00	1	0	5	15	16	9	2	1	0	0	0	0	0	49
7:00	0	0	4	17	17	11	5	1	0	0	0	0	0	55
8:00	0	1	7	36	48	14	2	0	0	0	0	0	0	108
9:00	0	1	5	31	13	13	1	0	0	0	0	0	0	64
10:00	0	3	10	34	24	8	4	0	0	0	0	0	0	83
11:00	1	1	11	35	35	8	0	0	0	1	0	0	0	92
12:00 PM	0	1	17	38	36	16	3	0	0	0	0	0	0	111
1:00	0	0	7	51	34	22	2	1	1	0	0	0	1	119
2:00	0	1	9	34	35	22	0	0	0	0	0	1	1	103
3:00	0	0	23	63	70	33	10	1	0	0	0	0	1	201
4:00	0	1	12	53	44	26	3	0	0	1	0	1	0	141
5:00	0	0	6	41	50	24	4	0	0	0	0	0	0	125
6:00	0	1	3	22	18	6	1	0	0	0	0	0	0	51
7:00	0	0	3	16	16	11	3	1	0	0	0	0	0	50
8:00	0	1	3	18	19	7	2	0	0	0	0	0	0	50
9:00	0	1	2	8	6	0	0	0	0	0	0	0	0	17
10:00	0	0	5	5	5	1	0	0	0	0	0	0	0	16
11:00	0	0	1	4	2	2	0	0	0	0	0	0	0	9
Total	2	13	142	545	510	240	44	5	1	2	0	2	3	1509

	Percentile	15th	50th	85th	95th
Speed	26	30	36	39	
Mean Speed (Average)	31.1				
10 MPH Pace Speed	25-34				
Number in Pace	1048				
Percent in Pace	69.4%				
Number > 35 MPH	297				
Percent > 35 MPH	19.7%				

Location : Saratoga Boulevard
Location : Just East of Site Driveway
City/State: Devens, MA
Direction: EB,

23156002

5/19/2022	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
Time														
12:00 AM	0	1	1	4	4	2	1	0	0	0	0	0	0	13
1:00	0	0	0	4	0	1	0	0	0	0	0	0	0	5
2:00	0	0	2	1	4	1	0	0	0	0	0	0	0	8
3:00	0	0	1	2	3	1	0	0	0	0	0	0	0	7
4:00	0	0	1	5	5	1	0	0	0	0	0	0	0	12
5:00	0	1	1	9	8	0	3	0	0	0	0	0	0	22
6:00	0	0	4	17	18	7	2	2	0	0	0	0	0	50
7:00	0	1	9	29	30	10	2	0	0	0	0	0	0	81
8:00	0	4	15	37	35	17	1	0	0	1	0	0	0	110
9:00	0	3	12	25	22	7	1	0	0	0	1	0	0	71
10:00	0	2	9	25	28	10	1	0	0	0	0	0	0	76
11:00	0	0	5	47	27	3	0	2	0	0	0	0	0	84
12:00 PM	0	1	22	35	33	11	1	0	0	0	0	2	0	105
1:00	0	2	15	32	28	9	2	0	0	1	0	0	0	89
2:00	0	1	14	43	26	17	2	0	0	0	0	1	0	104
3:00	0	2	16	72	75	28	9	2	1	0	0	0	0	205
4:00	0	1	9	36	53	34	6	0	0	0	1	1	0	141
5:00	0	0	8	48	46	14	2	1	0	0	0	0	0	119
6:00	0	1	2	15	19	3	0	1	0	0	0	0	0	41
7:00	0	0	3	17	11	6	1	0	0	0	0	0	0	38
8:00	0	0	3	18	10	4	0	0	0	0	0	0	0	35
9:00	1	1	1	6	3	0	1	0	2	0	0	0	0	15
10:00	0	0	2	11	3	0	0	0	0	0	0	0	0	16
11:00	0	0	3	1	2	0	0	0	0	0	0	0	0	6
Total	1	21	158	539	493	186	35	8	3	2	2	4	1	1453

Percentile	15th	50th	85th	95th
Speed	25	30	35	39

Mean Speed (Average) 30.6

10 MPH Pace Speed 25-34

Number in Pace 1025

Percent in Pace 70.5%

Number > 35 MPH 241

Percent > 35 MPH 16.6%

Location : Saratoga Boulevard
Location : Just East of Site Driveway
City/State: Devens, MA
Direction: WB,

23156002

Location : Saratoga Boulevard
Location : Just East of Site Driveway
City/State: Devens, MA
Direction: Combined

23156002

Location : Saratoga Boulevard
Location : Just East of Site Driveway
City/State: Devens, MA
Direction: Combined

23156002

5/19/2022		0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
Time															
12:00 AM		0	2	1	5	5	4	1	0	0	0	0	0	0	18
1:00		0	0	0	4	2	1	0	0	0	0	0	0	0	7
2:00		0	0	3	3	9	4	0	0	0	0	0	0	0	19
3:00		0	0	1	2	9	2	2	0	0	0	0	0	0	16
4:00		0	0	1	7	15	15	5	2	0	0	0	0	0	45
5:00		0	2	1	21	34	31	4	0	0	0	0	0	0	93
6:00		0	0	11	35	75	44	13	3	0	0	0	0	0	181
7:00		0	6	19	68	83	55	19	1	1	0	0	0	0	252
8:00		0	4	26	66	91	54	10	1	0	1	0	0	0	253
9:00		0	3	19	42	51	23	6	0	0	0	1	0	0	145
10:00		1	3	14	53	51	25	4	2	0	0	0	0	0	154
11:00		0	1	16	76	59	18	2	2	1	0	0	0	0	175
12:00 PM		0	1	32	62	70	35	9	1	0	0	0	2	0	212
1:00		0	4	21	57	69	28	4	0	0	1	0	0	0	184
2:00		0	1	15	70	59	32	6	2	0	0	0	1	0	186
3:00		0	2	20	88	116	49	14	3	2	0	0	0	0	294
4:00		0	1	10	53	90	51	9	0	2	1	1	1	0	219
5:00		0	0	12	60	66	26	6	2	0	0	0	0	0	172
6:00		0	1	8	24	33	15	5	3	0	0	0	0	0	89
7:00		0	0	3	21	26	24	6	0	0	0	0	0	0	80
8:00		0	0	4	23	14	8	1	0	0	0	0	0	0	50
9:00		1	1	3	7	7	1	1	0	2	0	0	0	0	23
10:00		0	2	4	12	6	2	0	0	0	0	0	0	0	26
11:00		0	0	3	3	3	3	2	0	0	0	0	0	0	14
Total		2	34	247	862	1043	550	129	22	8	3	2	4	1	2907

Percentile	15th	50th	85th	95th
Speed	27	31	37	41

Mean Speed (Average)

10 MPH Pace Speed

Number in Pace 188

Percent in Pace

Number > 35 MPH

Percent > 35 MPH

Accurate Counts

1

Location : Saratoga Boulevard
 Location : Just East of Site Driveway
 City/State: Devens, MA

23156002

5/18/2022	EB,		Hour Totals		WB,		Hour Totals		Combined Totals		
	Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		14	34			6	19				
12:15		2	26			0	35				
12:30		0	32			1	21				
12:45		0	19	16	111	2	39	9	114	25	225
1:00		0	23			1	30				
1:15		1	24			0	39				
1:30		2	48			1	31				
1:45		1	24	4	119	4	22	6	122	10	241
2:00		3	25			0	21				
2:15		1	21			0	20				
2:30		1	31			6	25				
2:45		2	26	7	103	1	23	7	89	14	192
3:00		1	38			1	20				
3:15		3	46			0	19				
3:30		1	75			3	31				
3:45		1	42	6	201	4	20	8	90	14	291
4:00		3	50			5	19				
4:15		0	29			6	17				
4:30		4	31			16	16				
4:45		5	31	12	141	15	19	42	71	54	212
5:00		6	53			9	20				
5:15		5	34			6	14				
5:30		4	22			20	12				
5:45		5	16	20	125	32	17	67	63	87	188
6:00		12	27			13	9				
6:15		16	10			20	15				
6:30		12	11			42	10				
6:45		9	3	49	51	52	7	127	41	176	92
7:00		15	16			41	10				
7:15		17	13			26	8				
7:30		14	7			34	16				
7:45		9	14	55	50	46	11	147	45	202	95
8:00		35	31			57	7				
8:15		36	7			44	4				
8:30		25	11			35	2				
8:45		12	1	108	50	27	3	163	16	271	66
9:00		17	2			19	5				
9:15		19	5			23	4				
9:30		16	9			15	4				
9:45		12	1	64	17	19	12	76	25	140	42
10:00		15	4			20	2				
10:15		19	3			30	4				
10:30		28	8			22	2				
10:45		21	1	83	16	27	2	99	10	182	26
11:00		32	1			20	0				
11:15		17	2			16	1				
11:30		26	5			20	2				
11:45		17	1	92	9	14	2	70	5	162	14
Total		516	993			821	691			1337	1684
Percent		34.2%	65.8%			54.3%	45.7%			44.3%	55.7%

Accurate Counts

2

Location : Saratoga Boulevard
 Location : Just East of Site Driveway
 City/State: Devens, MA

23156002

5/19/2022	EB,		Hour Totals		WB,		Hour Totals		Combined Totals	
	Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning
12:00		11	26			4	27			
12:15		0	23			0	23			
12:30		1	29			0	23			
12:45		1	27	13	105	1	34	5	107	18 212
1:00		1	22			0	27			
1:15		1	21			0	29			
1:30		2	24			0	20			
1:45		1	22	5	89	2	19	2	95	7 184
2:00		3	31			2	19			
2:15		1	21			2	19			
2:30		2	22			6	22			
2:45		2	30	8	104	1	22	11	82	19 186
3:00		2	35			1	18			
3:15		0	35			3	35			
3:30		3	98			3	18			
3:45		2	37	7	205	2	18	9	89	16 294
4:00		2	37			5	36			
4:15		2	31			5	15			
4:30		1	44			14	13			
4:45		7	29	12	141	9	14	33	78	45 219
5:00		12	36			18	20			
5:15		2	37			6	13			
5:30		7	33			17	6			
5:45		1	13	22	119	30	14	71	53	93 172
6:00		15	18			24	13			
6:15		14	8			13	10			
6:30		11	7			49	19			
6:45		10	8	50	41	45	6	131	48	181 89
7:00		22	12			40	6			
7:15		20	13			42	14			
7:30		22	7			34	13			
7:45		17	6	81	38	55	9	171	42	252 80
8:00		41	21			47	5			
8:15		25	8			43	4			
8:30		31	4			25	3			
8:45		13	2	110	35	28	3	143	15	253 50
9:00		23	1			20	1			
9:15		16	4			25	1			
9:30		16	4			18	4			
9:45		16	6	71	15	11	2	74	8	145 23
10:00		17	2			20	6			
10:15		19	2			11	2			
10:30		20	8			17	2			
10:45		20	4	76	16	30	0	78	10	154 26
11:00		17	2			16	1			
11:15		12	0			18	3			
11:30		29	4			24	0			
11:45		26	0	84	6	33	4	91	8	175 14
Total		539	914			819	635			1358 1549
Percent		37.1%	62.9%			56.3%	43.7%			46.7% 53.3%
Grand Total		1055	1907			1640	1326			2695 3233
Percent		35.6%	64.4%			55.3%	44.7%			45.5% 54.5%

ADT

ADT: 3,021

AADT: 3,021

Location : Saratoga Boulevard
 Location : Just East of Site Driveway
 City/State: Devens, MA

23156002

5/16/2022		Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
Time		EB,	WB,	EB,	WB,	EB,	WB,	EB,	WB,	EB,	WB,	EB,	WB,	EB,	WB,	EB,	WB,
12:00 AM	*	*	*	*	*	16	9	13	5	*	*	*	*	*	*	14	7
1:00	*	*	*	*	*	4	6	5	2	*	*	*	*	*	*	4	4
2:00	*	*	*	*	*	7	7	8	11	*	*	*	*	*	*	8	9
3:00	*	*	*	*	*	6	8	7	9	*	*	*	*	*	*	6	8
4:00	*	*	*	*	*	12	42	12	33	*	*	*	*	*	*	12	38
5:00	*	*	*	*	*	20	67	22	71	*	*	*	*	*	*	21	69
6:00	*	*	*	*	*	49	127	50	131	*	*	*	*	*	*	50	129
7:00	*	*	*	*	*	55	147	81	171	*	*	*	*	*	*	68	159
8:00	*	*	*	*	*	108	163	110	143	*	*	*	*	*	*	109	153
9:00	*	*	*	*	*	64	76	71	74	*	*	*	*	*	*	68	75
10:00	*	*	*	*	*	83	99	76	78	*	*	*	*	*	*	80	88
11:00	*	*	*	*	*	92	70	84	91	*	*	*	*	*	*	88	80
12:00 PM	*	*	*	*	*	111	114	105	107	*	*	*	*	*	*	108	110
1:00	*	*	*	*	*	119	122	89	95	*	*	*	*	*	*	104	108
2:00	*	*	*	*	*	103	89	104	82	*	*	*	*	*	*	104	86
3:00	*	*	*	*	*	201	90	205	89	*	*	*	*	*	*	203	90
4:00	*	*	*	*	*	141	71	141	78	*	*	*	*	*	*	141	74
5:00	*	*	*	*	*	125	63	119	53	*	*	*	*	*	*	122	58
6:00	*	*	*	*	*	51	41	41	48	*	*	*	*	*	*	46	44
7:00	*	*	*	*	*	50	45	38	42	*	*	*	*	*	*	44	44
8:00	*	*	*	*	*	50	16	35	15	*	*	*	*	*	*	42	16
9:00	*	*	*	*	*	17	25	15	8	*	*	*	*	*	*	16	16
10:00	*	*	*	*	*	16	10	16	10	*	*	*	*	*	*	16	10
11:00	*	*	*	*	*	9	5	6	8	*	*	*	*	*	*	8	6
Total Day	0	0	0	0	1509	1512	1453	1454	0	0	0	0	0	0	0	1482	1481
AM Peak Volume					8:00 108	8:00 163	8:00 110	7:00 171								8:00 109	7:00 159
PM Peak Volume					3:00 201	1:00 122	3:00 205	12:00 PM 107								3:00 203	12:00 PM 110
Comb Total ADT	0	0	3021	AADT: 3,021	3021		2907		0		0		0		0	2963	