SHELBURNE-HINESBURG ROAD SAFETY STUDY

TCE# 2012005-1
SHELBURNE, VERMONT

Date:
January 9, 2013

Prepared For:
Town of Shelburne

Prepared By:

TRUDELL CONSULTING ENGINEERS tce

478 BLAIR PARK ROAD, WILLISTON, VT 05495 | 802 879 6331 | WWW.TCEVT.COM

Purpose and Need Statement

The purpose of this study is to provide the Town of Shelburne with an inventory of existing roadway conditions, safety issues, and to provide a list of suggested roadway improvements for both short and long range planning along with approximate costs for budgeting purposes. Shelburne-Hinesburg Road has a history of crashes due to instances of excessive speeds and limited visibility on curves. Champlain Valley Union High School and Vermont Route 116 is located approximately 3 miles to the west of the Shelburne Town Line in Hinesburg, which makes this a popular route for school traffic and inexperienced drivers as well as a popular east-west commuter route.

1.0 Introduction

The overall study area encompasses an approximately 3.8 mile stretch of roadway known as Shelburne-Hinesburg Road within the limits of the Town of Shelburne (0.9 miles), and Shelburne Falls Road within the limits of Hinesburg (2.9 miles). This report will focus on the 0.9 mile road section located in Shelburne. A topographic survey as well as a safety audit was conducted to identify the locations and type of potential hazards. Immediate action items are recommended, including striped intersection realignment, improved signage and tree clearing, as well as longer term solutions such as guardrail and bank re-grading.

2.0 Existing Conditions

Shelburne-Hinesburg Road is considered a Class 2 Town Highway. The Agency of Transportation (VTrans) identifies the road as having an Urban Minor Arterial functional classification, federal aid number FAU 5715.

According to VTrans automatic traffic recorder (ATR) station S6D33 located 0.5 mi west of Boutin Road in Hinesburg, annual average daily traffic (AADT) on this stretch of roadway was approximately 2400 vehicles per day (vpd) in 2011. Overall, traffic has not increased significantly on this section of roadway over the past 10 years.

Year	AADT		
2003	2600 vpd	2009	2200 vpd
2005	2300 vpd	2011	2400 vpd
2007	2700 vpd		

A. Route Survey

A 3.8 mile centerline survey was conducted in May of 2012, beginning on the west end of the road in Shelburne at the intersection with Dorset Street (Station 0+00) and ending in Hinesburg to the east of the Pleasant View Lane intersection near VT 116 (Sta. 200+00) to determine roadway geometry. A visual safety inventory was conducted in September of 2012 to observe potential hazards and areas for improvement.

B. Speed Data

A sign inventory of Shelburne-Hinesburg Road within the study area does not indicate a posted speed limit in the eastbound direction from Dorset Street to the Hinesburg Town Line, and in the westbound direction from the Hinesburg Town Line to the Dorset Street Extension curve, indicating that the default speed limit is 50 mph, per state statute. There is a speed limit of 45 miles per hour (mph) posted in Hinesburg in both the eastbound and westbound direction. In November 2012, the Shelburne Police

Department conducted a speed study on Shelburne-Hinesburg Road. According to the data collected, the 85th percentile speed is 50.4 miles per hour (mph) along this stretch of roadway where the study was conducted. Dorset Street to the north is posted at 35 miles per hour, and a majority of other Class 2 roads in Shelburne are posted at 35 mph, as shown in the attached Speed Limit Map. The Dorset Street Curve at Shelburne-Hinesburg Road is posted 25 mph.

Taking into account the existing operating speeds, posted speed limit on adjacent roadways, existing safety issues, presence of inexperienced drivers (school route) and the posted speed limits of similarly classed Town highways; it is recommended that the speed limit be posted at 45 mph on this section of roadway, with the exception of the curve at Summerfield Road noted above.

C. Crash Data

The most recent General Yearly Summaries from the AOT Highway Research Department were reviewed to determine crash frequency on Shelburne-Hinesburg Road. Per the AOT Route Log, mile mark 0.0 is at the Shelburne-Hinesburg Town Line and mile mark 0.91 is the Dorset St. Extension. The crash rate was calculated as 1.571 crashes per million vehicle miles for the 0.91 mile stretch of roadway. The Statewide average crash rate for roads in the same classification is 3.4 crashes per million vehicle miles. Crashes are concentrated near the curve at the Dorset St. Extension and the curve near the Summerfield Road intersection.

Date	***Location***	***Circumstance***	***Direction of Crash***
08/04/2009	mm 0.91	No improper driving	Single Vehicle Crash
11/29/2009	mm 0.91	Failed to yield ROW	Single Vehicle Crash
12/09/2009	mm 0.2	Driving too fast for conditions	Opposite Direction Sideswipe
12/24/2011	mm 0.29	Driving too fast for conditions/ Under the influence	no information given
09/24/2011	mm 0.29	Visibility obstructed	no information given
05/06/2012	mm 0.2	no information given	Single Vehicle Crash

3.0 Recommended Improvements: Specific Areas

A. Dorset Street/Shelburne-Hinesburg Road intersection – mile mark 0.91

Problem: As shown in the photographs below, this intersection is a large expanse of pavement and relatively undefined. This can cause driver confusion, especially for vehicles entering or exiting Dorset Street to the south.

Figure 1: *Shelburne-Hinesburg Road toward North (Dorset St)*

Figure 2: *Shelburne-Hinesburg Road toward South/East*

Figure 3: *Toward Dorset Street (South)*

Immediate Actions: A realignment pilot project is recommended as an immediate action that can be taken to improve the safety and operation of the intersection. The intersection should be re-configured as a T intersection, with the southern Dorset Street approach being as close to 90 degrees as possible with the beginning of Shelburne-Hinesburg Road and Dorset Street (north). Stop control would be on the southern approach of Dorset Street. The curve is currently posted at 25mph. A speed limit sign should be installed with a posted speed of 45 mph in the eastbound direction to the east of the curve. Also, pavement striping (fog lines) and reflective safety posts should be installed to better demarcate the roadway alignment. See attached preliminary design.

Short to Mid-Term: Should the realignment pilot project above be deemed a success after one year of operation, pavement removal is recommended for further permanent definition of the intersection. Remove pavement that is unnecessary for

vehicular travel and plant with grasses and other native vegetation. These areas should be maintained periodically by mowing to maintain sight distances.

B. Horizontal Curve near Summerfield Road – mile mark 0.29

Problem: Poor sight distance coupled with excessive speeds around the curve create an unsafe condition at Summerfield Road.

A Safe Curve Speed Study was conducted on the curve near the intersection of Shelburne-Hinesburg Road and Summerfield Road in August of 2009. According to the *Manual on Uniform Traffic Studies, Chapter 11 Safe Curve Speed Study* the speed limit of 50 mph is too great for this curve. At a speed of even 45mph the inclinometer climbed to 20 degrees, which is twice as much as the recommended safe value. The recommended speed for the curve is 35 mph. A field report from this study is attached.

Figure 4: *From Summerfield Road toward East*

Figure 5: *From Summerfield Road toward West*

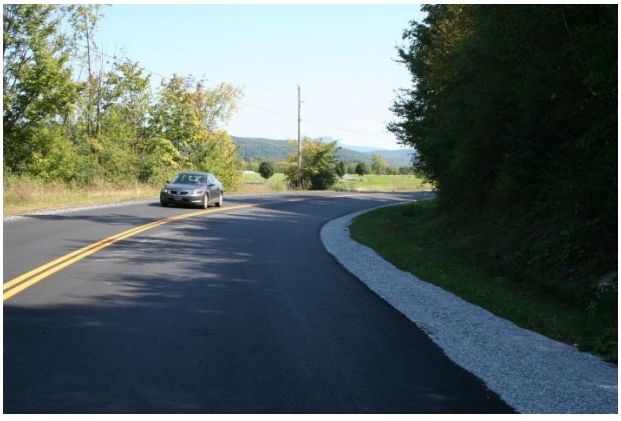


Figure 6: *View toward East from Left-Turn onto Summerfield Rd*

Immediate Action: Place advisory speed plaque – 35 mph- on the existing curve signs at both the eastbound and westbound approach to the curve. Add flashing beacon on curve signs. Maintain tree branches yearly by trimming.

Short-Term Action: Place radar speed indicator on advisory speed plaque if observation does not indicate that flashing beacon and advisory speed plaque is ineffective.

Mid to Long Term: Grade slope along south side of road to improve sight distance around the curve. This would involve removing ledge. A preliminary plan is attached showing the limits of grading that would be required to provide adequate horizontal sight distance around the curve.

Other Design Considerations: These recommendations will improve sight distance for the horizontal curve as well as intersection sight distances between Summerfield Road and Shelburne-Hinesburg Road vehicles. Other considerations for site modifications were considered and analyzed for feasibility. These include design criteria for *Traveled Way Widening, Derived Pavement Widths for Turning Roadways, Superelevation, and Decision Sight Distance* and were excluded because the recommendations would be cost prohibitive.

C. Guardrail, beginning mile mark 0.15

Problem: Steep side slopes are present at various intervals along Shelburne-Hinesburg Road. These areas include the north side of the road from mile mark 0.16-0.26 and again from mile mark 0.31-0.37. The area along the south side of the road identified for guard rail is from mile mark 0.15-0.16.

Immediate Action: No immediate action recommended.

Short to Mid Term: Install a total of 875 linear feet of guardrail on the north side of the road and 93 linear feet on the south side of the road in the areas noted above.

4.0 Recommended Improvements: Entire Corridor

The Federal Highway Administration issued a *Guidance Memorandum on Promoting the Implementation of Proven Safety Countermeasures* in January of 2012. This guidance takes into consideration the latest research on measures intended to improve safety. The *Guidance Memorandum* lists nine different safety countermeasures, two of which could be applied on Shelburne-Hinesburg Road, including the following:

A. Longitudinal Rumble Strips and Stripes on Two-Lane Roads

Rumble strips are grooved patterns on the roadway, sometimes incorporated into the striping, that provide both an audible warning and a physical vibration to alert drivers

that their vehicle is leaving its lane. They can be incorporated into centerline and/or edge line striping to increase nighttime visibility of the pavement marking. Shoulder or edge line rumble strips significantly reduce run-off-road (ROR) crashes. Centerline rumble strips reduce cross center line crashes such as head-on collisions. Similarly, maintaining the fog line (edge line) striping on rural roadways has been shown to help drivers confine their traveling path, especially at night, but has little or no effect on operating speeds.

Figure 7: *Centerline Rumble Strip*

Problem: Inattentive and inexperienced drivers frequently use this corridor, which can lead to vehicles inadvertently crossing the center line and lead to serious head on collisions.

Immediate Action: No immediate action recommended.

Short to Mid Term: Install continuous, milled center line rumble stripes are recommended for the length of Shelburne-Hinesburg Road. Instances of noise complaints by adjacent property owners have been documented, so public input is essential prior to this form of installment.

B. Fog Lines and Safey Edges$_{SM}$

Fog lines are the traditional single continuous white line to demaracate the edge of a travelled way. Safety Edge is a technology that shapes the edge of a newly paved roadway at approximately 30 degrees from the horizontal surface. Providing an edge treatment at this angle eliminates tire scrubbing when a vehicle leaves the roadway, which can cause loss of vehicle control. A vertical pavement edge can contribute to an increased frequency of roll-over, and research shows that crashes involving edge drop-offs are more likely to cause fatality.

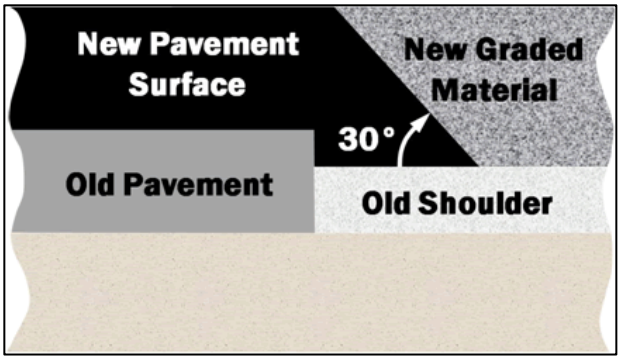


Figure 8: *Safety Edge Illustration*

Problem: Inattentive and inexperienced drivers frequently use this corridor, which can lead to vehicles inadvertently drifting into the shoulder and losing control of the vehicle leading to serious collisions with fixed obstacles within the right of way.

Immediate Action: Install fog lines on the edges of Shelburne Hinesburg Road, Maintain at least a 10' travel lane width from centerline.

Short to Mid Term: It is recommended that this edge treatment be provided for future re-paving on Shelburne-Hinesburg Road (and other local roads). This is a treatment that the Agency of Transportation is now requiring on their paving projects.

5.0 Conclusion

Shelburne-Hinesburg Road has a history crashes due to excessive speeds and limited visibility on curves. Due to the presence of Chittenden Valley Union High School in Hinesburg, this route is frequently used by inexperienced student drivers. An audit of roadway conditions has identified a number of specific and corridor wide areas where implementation safety measures could improve traffic safety and help to minimize crashes. These measures involve improved advanced warning signage and flashing beacons at curve locations, posting speed limits, installation of guardrail where warranted, implementing shoulder and centerline treatments, and maintaining or improving pavement striping and intersection alignments. **Table 1** below is an **Improvement Matrix** summarizing the safety issue identified, short and long term recommendations for improvement, as well as preliminary cost figures for each item. The Selectboard should review and evaluate whether these improvements can be budgeted and implemented in future years.

Table 1: Improvement Matrix

9-Dec-14

Location	Identified Issue	Immed./Short Term Recommendation	Estimated I/S Cost	Mid/Long Term Reccomendation	Estimated M/L Cost	Total Estimated Cost
Dorset Street/Falls Road (mm 0.91)	Undefined Intersection	Pavement Striping Pilot with Delineator Posts	$ 7,250	Pavement Removal/Definition	$ 25,000	$ 32,250
Summerfield Road Intersection (mm 0.29)	Horizontal Curve/Sight Distance	Add Reduced Speed Plaque (35 mph) to curve signs x2	$ 400	Remove ledge outcrop to improve sight distance, +/- 100 cubic yards, in place	$ 30,000	$ 30,400
Summerfield Road Intersection (mm 0.29)	Horizontal Curve/Sight Distance	Add Flashing Beacons x2	$ 10,000	Add Radar Speed Sign	$ 20,000	$ 30,000
Station 29+50 to 33+00 (north side) (0.37-0.31)	Steep side slopes	n/a	$ -	Add guardrail, 350 lf	$ 6,000	$ 6,000
Station 36+50 to 41+75 (north side) (0.26-0.16)	Steep side slopes	n/a	$ -	Add guardrail, 525 lf	$ 10,000	$ 10,000
Station 40+40 to 41+33 (south side)(0.16-0.15)	Steep side slopes	n/a	$ -	Add guardrail, 100 lf	$ 1,600	$ 1,600
Entire Road in Shelburne, both sides	Runoff/inattention	Add Fog Lines	$ 1,000	Centerline Milling / Smart Edges	$ 5,000	$ 6,000
			$ 18,650		$ 97,600	$ 116,250

Notes

1. Unit costs from VTRANS 2-year Averaged Price List July 2011- May 2013.
   a. Painted Island: $1/sf
   b. 36” x 36” sign ($12/sf) + post 10’ post ($8/lf) = $188, say $200
   c. Steel beam guard rail w/8’ posts: $17.16/lf
   d. Rumble Strips Milled: $0.19/lf
   e. Remove and dispose pavements ($28.26/cy), topsoil ($25/cy), seed, mulch, traffic control, contingency, est.
   f. Remove and dispose pavements, gravel base ($34.12/cy), paving ($90/t), line striping, traffic control, contingency, est.
   g. Solid Rock excavation ($30/cy), traffic control, topsoil, seed, mulch, contingency, est.
   h. Costs are based on average prices and preliminary quantities for budgeting purposes only. Actual costs may be higher or lower based on such factors as combining projects to reduce mobilization/demobilization costs, bidding climate, changes in material costs, and inflation.
   i. Radar and flashing beacons based on vendor quote.

TRUDELL CONSULTING ENGINEERS
802.470.6331 www.tcevt.com

Project Location

Legend

SPEEDLIMIT

- No Posted Speed Limit
- 25
- 30
- 35
- 40
- 45

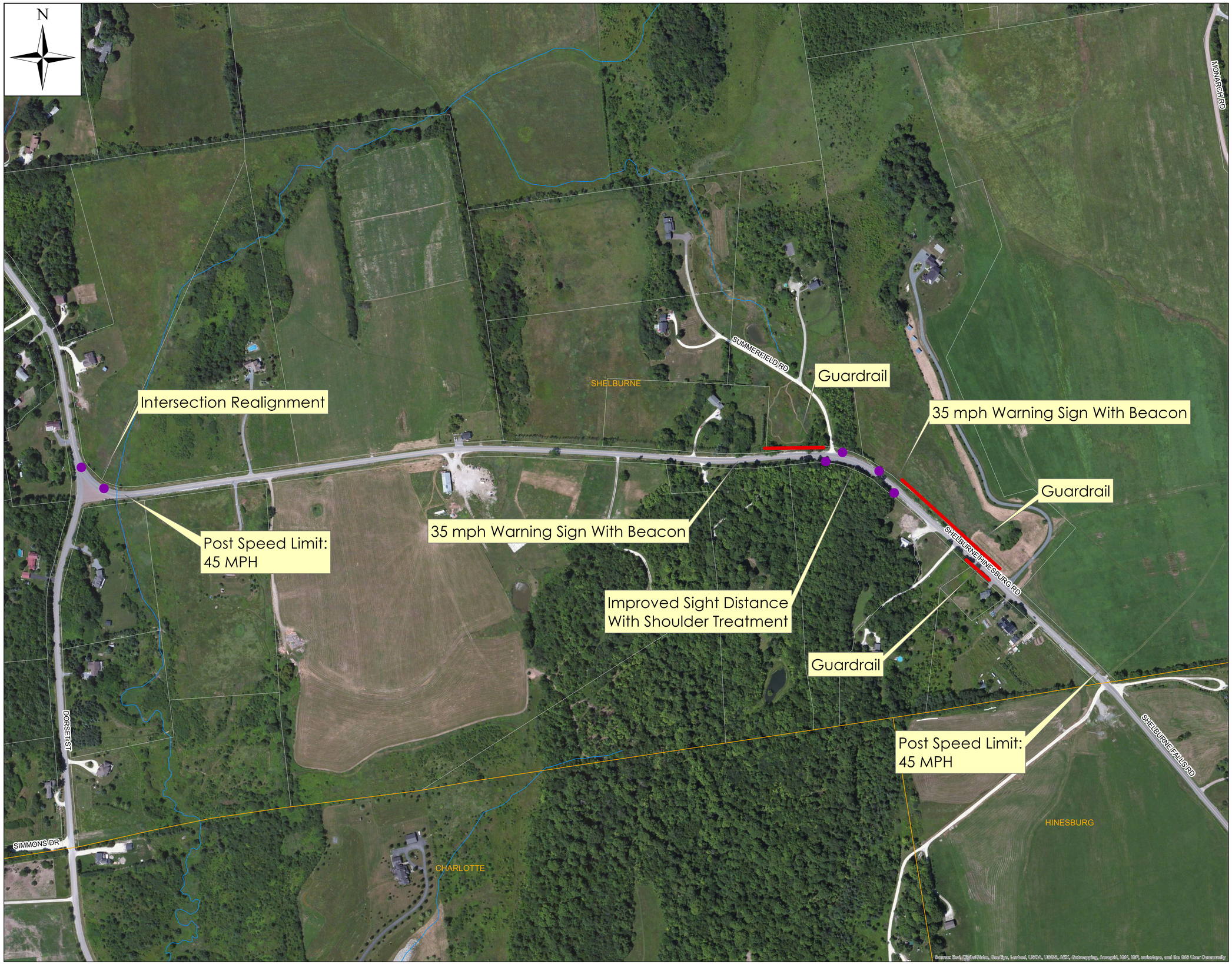
Notes

Sources: Bing aerial photography (2012); VT E911 Roads (2011); Average Annual Daily Traffic by VTrans (2010); Speed Limit Data by TCE (2013).

Disclaimer: The accuracy of information presented is determined by its sources.TCE is not responsible for any errors or omissions that may exist. Questions of on-the-ground location can be resolved by site inspections and/or surveys by a registered surveyor. This map is not a replacement for surveyed information or engineering studies.

Shelburne, VT
Speed Limit Map

Project: 2012005
Prepared By: LMJ
Scale: 1 inch = 3500 Feet
12/20/13



TRUDELL CONSULTING ENGINEERS
802.879.6331 www.tcevt.com

Project Location

Legend

- Crash Location
- Guardrail
- VTPARCELS_Shelburne2011
- Stream

Notes

Sources: Bing aerial photography (2012); VT E911 Roads (2011); Streams by ANR (2012); Guardrail by TCE (2014); Crash Locations by TCE (2014); Shelburne Parcel Data by Town (2011).

Disclaimer: The accuracy of information presented is determined by its sources.TCE is not responsible for any errors or omissions that may exist. Questions of on-the-ground location can be resolved by site inspections and/or surveys by a registered surveyor. This map is not a replacement for surveyed information or engineering studies.

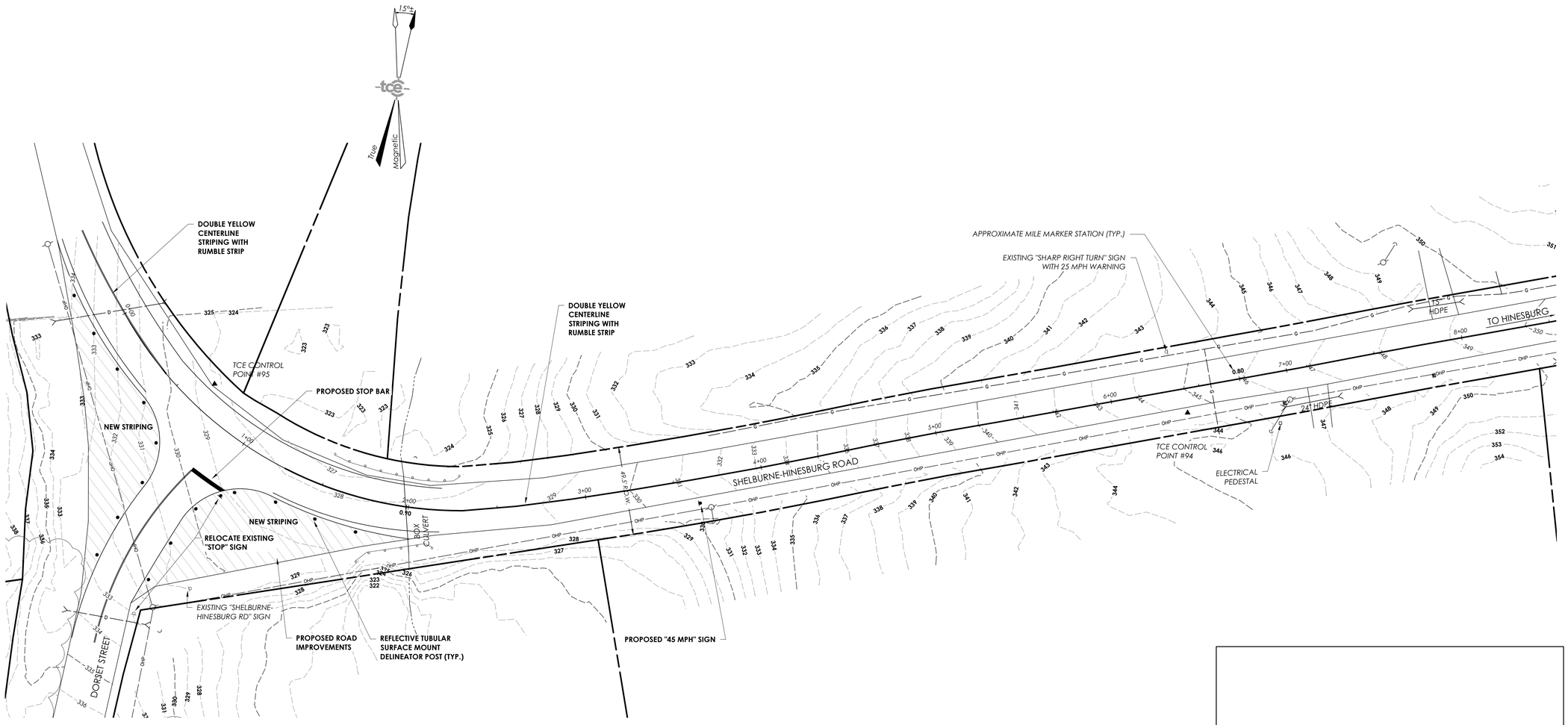
Shelburne-Hinesburg Road
Shelburne, VT

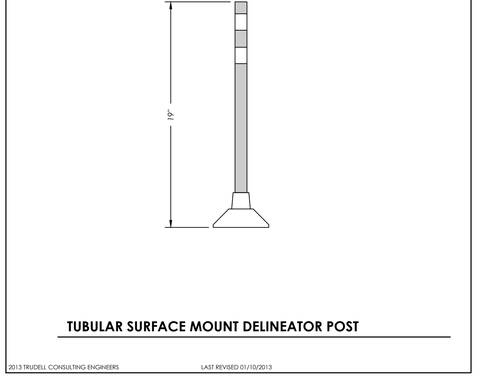
Safety Audit Recommendations

Project: 2012005
Prepared By: LMJ
1/8/14
1 inch = 400 feet

DRAFT

DRAFT





TUBULAR SURFACE MOUNT DELINEATOR POST

 LAST REVISED 01/10/2013

Graphic Scale

10 0 10 20 30 40 **Feet**

DRAFT

DRAFT

TRUDELL CONSULTING ENGINEERS
478 BLAIR PARK ROAD | WILLISTON, VERMONT 05495
802 879 6331 | WWW.TCEVT.COM

Revisions

No.	Description	Date	By

Use of These Drawings

1. Unless otherwise noted, these Drawings are intended for preliminary planning, coordination with other disciplines or utilities, and/or approval from the regulatory authorities. They are not intended as construction drawings unless noted as such.

2. Only drawings specifically marked "For Construction" are intended to be used in conjunction with contract documents, specifications, owner/contractor agreements and to be fully coordinated with other disciplines, including but not limited to, the Architect. If applicable, These Drawings shall not be used for construction layout. Contact TCE for any construction surveying services or to obtain electronic data suitable for construction layout.

3. These Drawings are specific to the Project and are not transferable. As instruments of service, these drawings, and copies thereof, furnished by TCE are its exclusive property. Changes to the drawings may only be made by TCE. If errors or omissions are discovered, they shall be brought to the attention of TCE immediately.

4. By use of these drawings for construction of the Project, the Owner represents that they have reviewed, approved, and accepted the drawings and have met with all applicable parties/disciplines to insure these plans are properly coordinated with other aspects of the Project. The Owner and Architect, are responsible for any buildings shown, including an area measured a minimum five (5) feet around any building.

5. It is the User's responsibility to ensure this copy contains the most current revisions.

DRAFT
STATE OF VERMONT
JEREMY M. MATOCK
No. 7637
CIVIL
LICENSED PROFESSIONAL ENGINEER

Project Title

Shelburne-Hinesburg Road Improvements

Sheet Title

Sta. 0+00 to Sta. 8+75

Date:	01/06/14
Scale:	1" = 30'
Project Number:	2012005
Drawn By:	NPC
Project Engineer:	JMM
Approved By:	

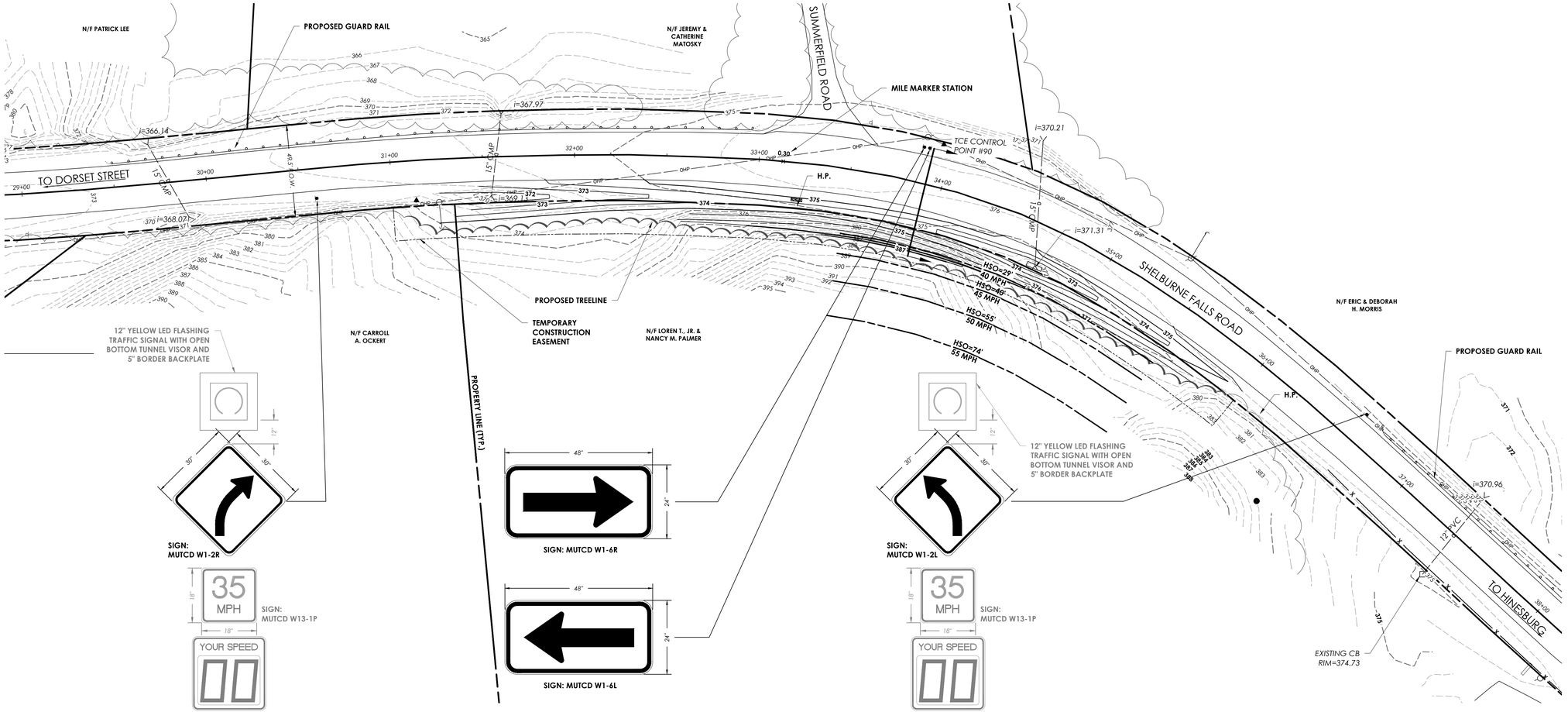
C2-01

DRAFT

DRAFT

Field Book:

Project Reference:



*NOTE - OPTIONAL SIGNS SHOWN FADED

IMPROVEMENT HIGHLIGHTS:

1) SIGNS
   - A) MUTCD W1-6R/L
   - B) MUTCD W1-2R/L
     MUTCD W13-1P
2) GUARD RAILS
3) RUMBLE STRIPS
4) SAFETY EDGE
5) RE-GRADING OF SHOULDER (SHOULDER TREATMENT)

VERTICAL CUT TABLE

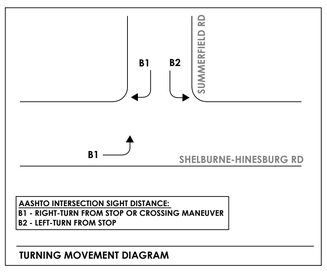
SPEED (MPH)	HSO (FT)	MAX. VERT. CUT (FT)	CUT VOLUME (C.Y.)
40	29	9.2	56
45	40	9.6	93
50	55	9.6	----
55	74	9.6	----

Design Speed	Relevant Sight Distance Table in Linear Feet for Eastbound Traffic					
	Existing Conditions		AASHTO Standards		Proposed Conditions	
40 mph	HC	Intersection	HC	Intersection (B2)	HC	Intersection
Station						
32+00	295.67	334.06	305	385	348	385
32+50	277.14	317.8	305	385	332	385
33+00	276.25	321.92	305	385	327	385

Design Speed	Relevant Sight Distance Table in Linear Feet for Westbound Traffic		
	Existing Conditions	AASHTO Standards	Proposed Conditions
40 mph	HC	HC	HC
Station			
36+00	458.11	305	Increase*
35+50	374.76	305	Increase
35+00	355.64	305	Increase

Design Speed	Relevant Sight Distance Table in Linear Feet for Summerfield Rd. Traffic					
	Existing Conditions		AASHTO Standards		Proposed Conditions	
40 mph	Intersection(B1)	Intersection(B2)	Intersection(B1)	Intersection(B2)	Intersection(B1)	Intersection(B2)
Location						
15' from EOR @3.5' h	612.08	353.29	445	385	Increase*	

* PROPOSED SIGHT DISTANCE PROVIDES SIGHT DISTANCE IN EXCESS OF STANDARDS. PROPOSED CONDITIONS NOT MEASURED DUE TO REDUNDANCY.



TURNING MOVEMENT DIAGRAM

Graphic Scale

30 0 30 60 90 120 Feet

DRAFT

DRAFT

TRUDELL CONSULTING ENGINEERS
478 BLAIR PARK ROAD | WILLISTON, VERMONT 05495
802 879 6331 |
WWW.TCEVT.COM

Revisions

No.	Description	Date	By

Use of These Drawings

1. Unless otherwise noted, these Drawings are intended for preliminary planning, coordination with other disciplines or utilities, and/or approval from the regulatory authorities. They are not intended as construction drawings unless noted as such.

2. Only drawings specifically marked "For Construction" are intended to be used in conjunction with contract documents, specifications, owner/contractor agreements and to be fully coordinated with other disciplines, including but not limited to, the Architect, if applicable. These Drawings shall not be used for construction layout. Contact TCE for any construction surveying services or to obtain electronic data suitable for construction layout.

3. These Drawings are specific to the Project and are not transferable. As instruments of service, these drawings, and copies thereof, furnished by TCE are its exclusive property. Changes to the drawings may only be made by TCE. If errors or omissions are discovered, they shall be brought to the attention of TCE immediately.

4. By use of these drawings for construction of the Project, the Owner represents that they have reviewed, approved, and accepted the drawings and have met with all applicable parties/disciplines to insure these plans are properly coordinated with other aspects of the Project. The Owner and Architect, are responsible for any buildings shown, including an area measured a minimum five (5) feet around any building.

5. It is the User's responsibility to ensure this copy contains the most current revisions.

DRAFT

STATE OF VERMONT
JEREMY M. MATOSKY
No. 7637
CIVIL
LICENSED PROFESSIONAL ENGINEER

Project Title

Shelburne-Hinesburg Road Improvements

Shelburne Falls Road, Shelburne, VT

Sheet Title

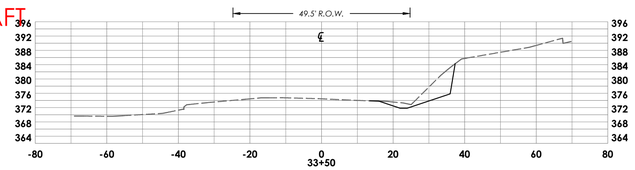
STA. 29+00 to 38+00

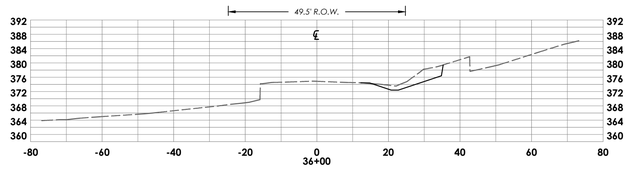
Date:	12/12/13
Scale:	1" = 30'
Project Number:	2012005
Drawn By:	NPC
Project Engineer:	JMM
Approved By:	

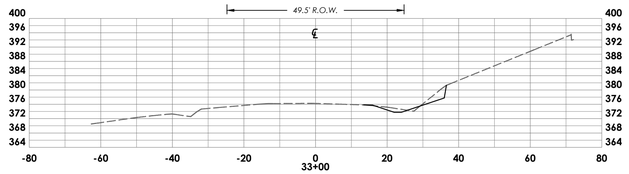
C2-02

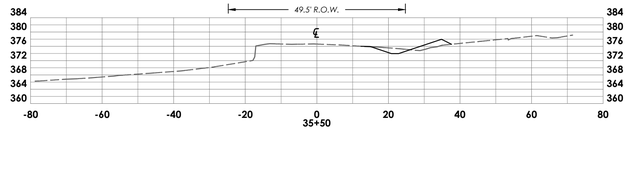
DRAFT

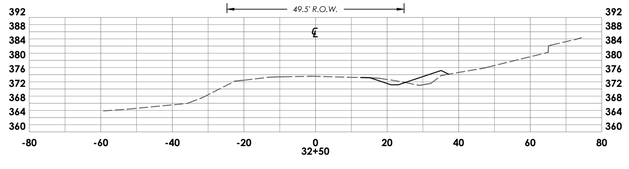
Field Book:

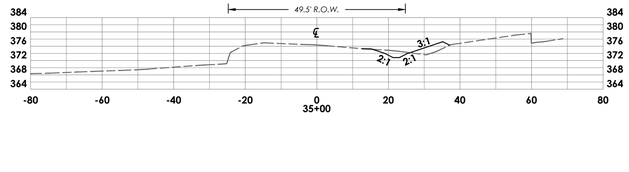




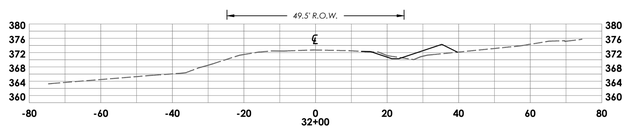


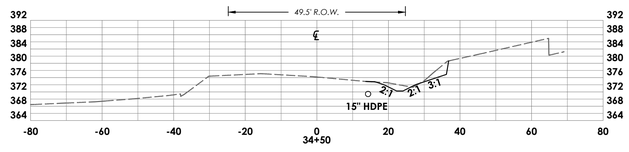


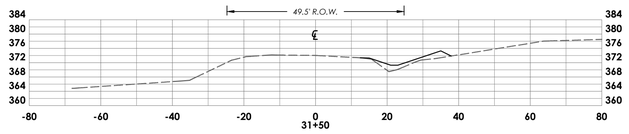


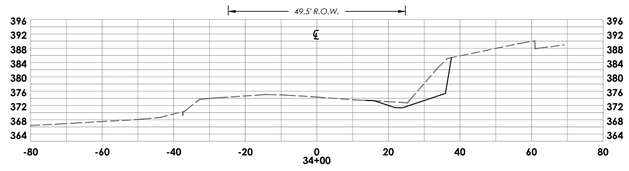


Project Reference:

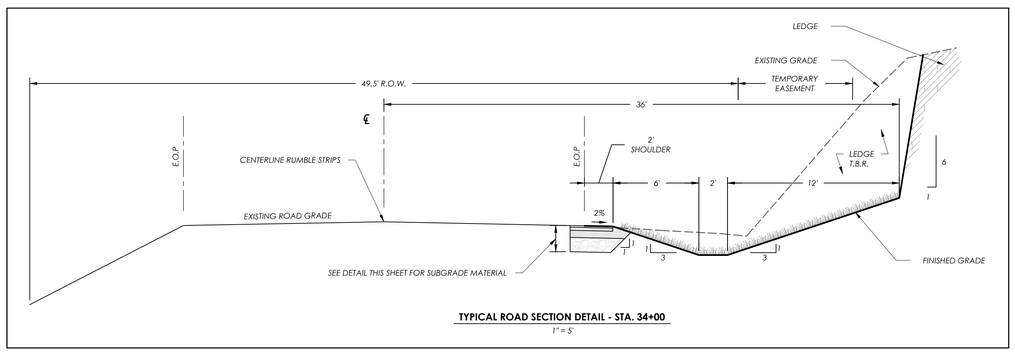








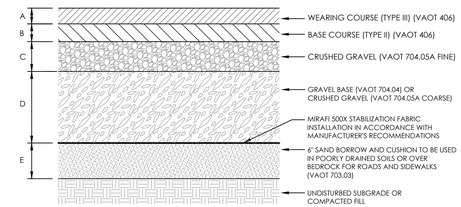
ROAD CROSS SECTIONS
1" = 20'



TYPICAL ROAD SECTION DETAIL - STA. 34+00
1" = 5'

DRAFT

DRAFT



SECTION

	THICKNESS (INCHES)				
	ROADS		PARKING LOTS		PRIVATE
	RESIDENTIAL	COMMERCIAL	RESIDENTIAL	COMMERCIAL	DRIVEWAYS
A	1-1/2	2	1	1 1/2	2
B	2-1/2	3	2	2 1/2	N/A
C	6	6	6	6	4
D	12	18	12	18	12
E	6	6	6	6	6

NOTES:
1. SUBBASE, SAND CUSHION AND SUBGRADE SHOULD BE CONSTRUCTED AND COMPACTED TO THE DIMENSIONS SHOWN IN ACCORDANCE WITH VERMONT AGENCY OF TRANSPORTATION SPECIFICATIONS, STANDARD A-76, WHERE MORE STRINGENT LOCAL ORDINANCES HAVE BEEN ADOPTED RELATIVE TO ROAD DIMENSIONS AND CONSTRUCTION, THEY SHOULD GOVERN.

2. COMPACT ALL SUBBASE MATERIALS TO 95% MAXIMUM DENSITY (STANDARD PROCTOR).

3. IF GROUNDWATER OR SOFT SPOTS ARE ENCOUNTERED CONTACT THE ENGINEER TO DISCUSS ADDED MEASURES SUCH AS UNDERDRAIN. SLOPE SUBBASE TO UNDERDRAIN LOW POINTS.

TYPICAL BITUMINOUS PAVEMENT 1"=1'

LAST REVISED xx/xx/2013
SD-001

DRAFT

TRUDELL CONSULTING ENGINEERS
478 BLAIR PARK ROAD | WILLISTON, VERMONT 05495
802 879 6331 |
WWW.TCEVT.COM

Revisions

No.	Description	Date	By

Use of These Drawings
1. Unless otherwise noted, these Drawings are intended for preliminary planning, coordination with other disciplines or utilities, and/or approval from the regulatory authorities. They are not intended as construction drawings unless noted as such.

2. Only drawings specifically marked "For Construction" are intended to be used in conjunction with contract documents, specifications, owner/contractor agreements and to be fully coordinated with other disciplines, including but not limited to, the Architect, if applicable. These Drawings shall not be used for construction layout. Contact TCE for any construction surveying services or to obtain electronic data suitable for construction layout.

3. These Drawings are specific to the Project and are not transferable. As instruments of service, these drawings, and copies thereof, furnished by TCE are its exclusive property. Changes to the drawings may only be made by TCE. If errors or omissions are discovered, they shall be brought to the attention of TCE immediately.

4. By use of these drawings for construction of the Project, the Owner represents that they have reviewed, approved, and accepted the drawings and have met with all applicable parties/disciplines to insure these plans are properly coordinated with other aspects of the Project. The Owner and Architect, are responsible for any buildings shown, including an area measured a minimum five (5) feet around any building.

5. It is the User's responsibility to ensure this copy contains the most current revisions.

DRAFT
STATE OF VERMONT · JEREMY M. MALOFY · No. 7637 CIVIL · LICENSED PROFESSIONAL ENGINEER

Project Title

Shelburne-Hinesburg Road Improvements

Shelburne Falls Road, Shelburne, VT

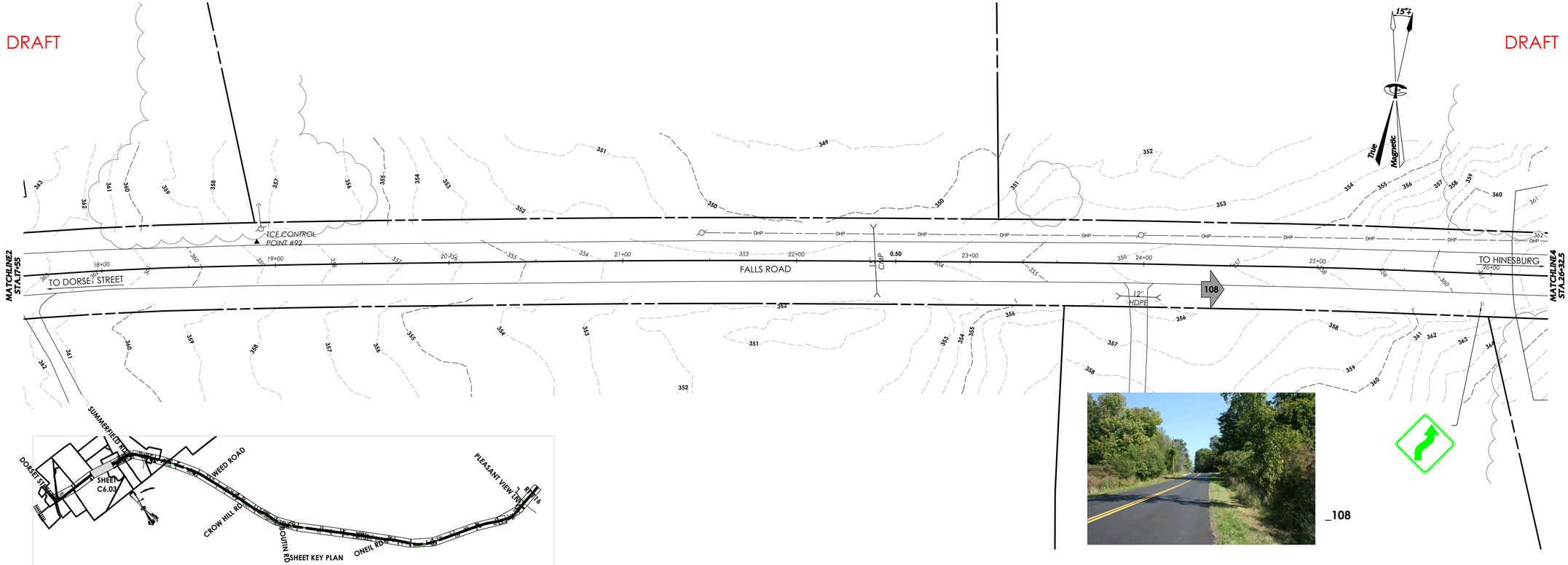
Sheet Title

Road Sections STA. 30+00 to 38+00

Date:	12/12/13
Scale:	SHOWN
Project Number:	2012005
Drawn By:	NPC
Project Engineer:	JMM
Approved By:	

C2-03

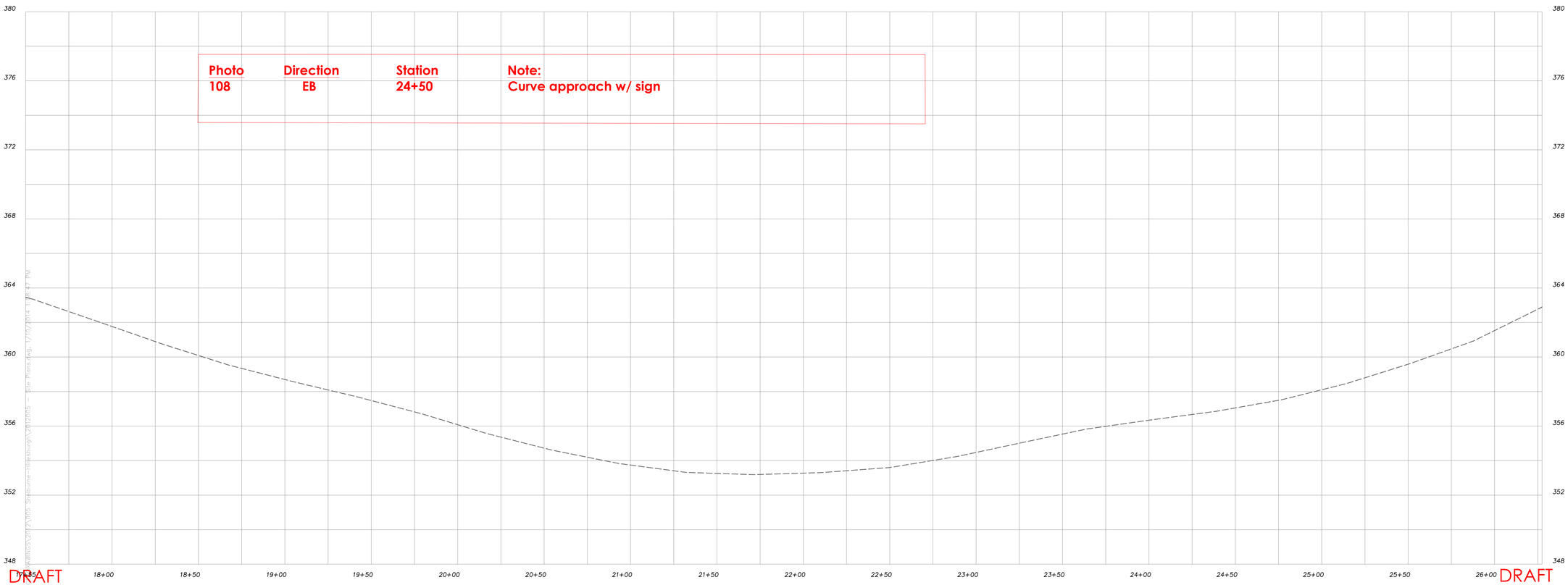
DRAFT



_108

DRAFT

Photo	Direction	Station	Note:
108	EB	24+50	Curve approach w/ sign



DRAFT DRAFT

TRUDELL CONSULTING ENGINEERS
478 BLAIR PARK ROAD | WILLISTON, VERMONT 05495
802 879 6331 | WWW.TCEVT.COM

Revisions

No.	Description	Date	By

Use of These Drawings

1. Unless otherwise noted, these Drawings are intended for preliminary planning, coordination with other disciplines or utilities, and/or approval from the regulatory authorities. They are not intended as construction drawings unless noted as such.

2. Only drawings specifically marked "For Construction" are intended to be used in conjunction with contract documents, specifications, owner/contractor agreements and to be fully coordinated with other disciplines, including but not limited to, the Architect. If applicable, These Drawings shall not be used for construction layout. Contact TCE for any construction surveying services or to obtain electronic data suitable for construction layout.

3. These Drawings are specific to the Project and are not transferable. As instruments of service, these drawings, and copies thereof, furnished by TCE are its exclusive property. Changes to the drawings may only be made by TCE. If errors or omissions are discovered, they shall be brought to the attention of TCE immediately.

4. By use of these drawings for construction of the Project, the Owner represents that they have reviewed, approved, and accepted the drawings and have met with all applicable parties/disciplines to insure these plans are properly coordinated with other aspects of the Project. The Owner and Architect, are responsible for any buildings shown, including an area measured a minimum five (5) feet around any building.

5. It is the User's responsibility to ensure this copy contains the most current revisions.

DRAFT

STATE OF VERMONT
JEREMY M. MAYO
No. 7637
CIVIL
LICENSED PROFESSIONAL ENGINEER

Project Title

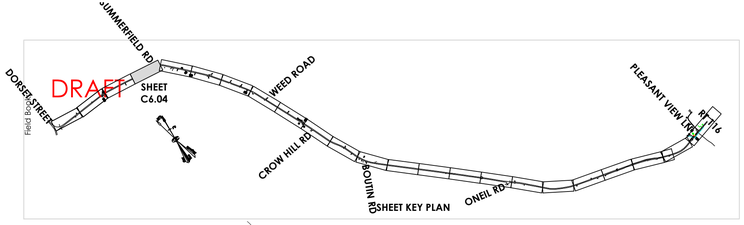
Shelburne-Hinesburg Road Improvements

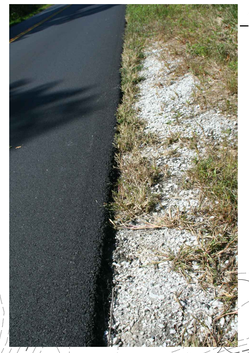
Sheet Title

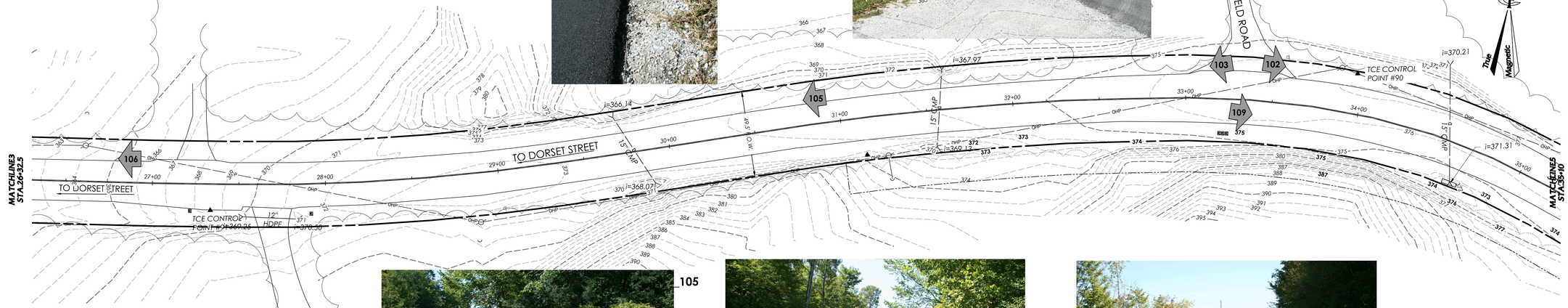
STA.17+55--STA.26+32.5

Date:	6/29/2012
Scale:	1" = 30' HORIZ. 1" = 3' VERT.
Project Number:	2012005
Drawn By:	NPC
Project Engineer:	JMM
Approved By:	

C6.03







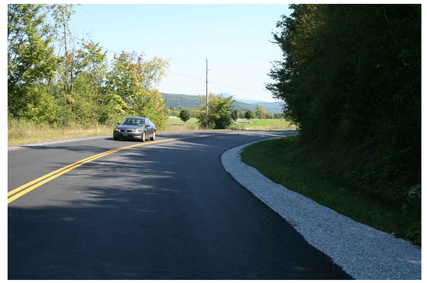
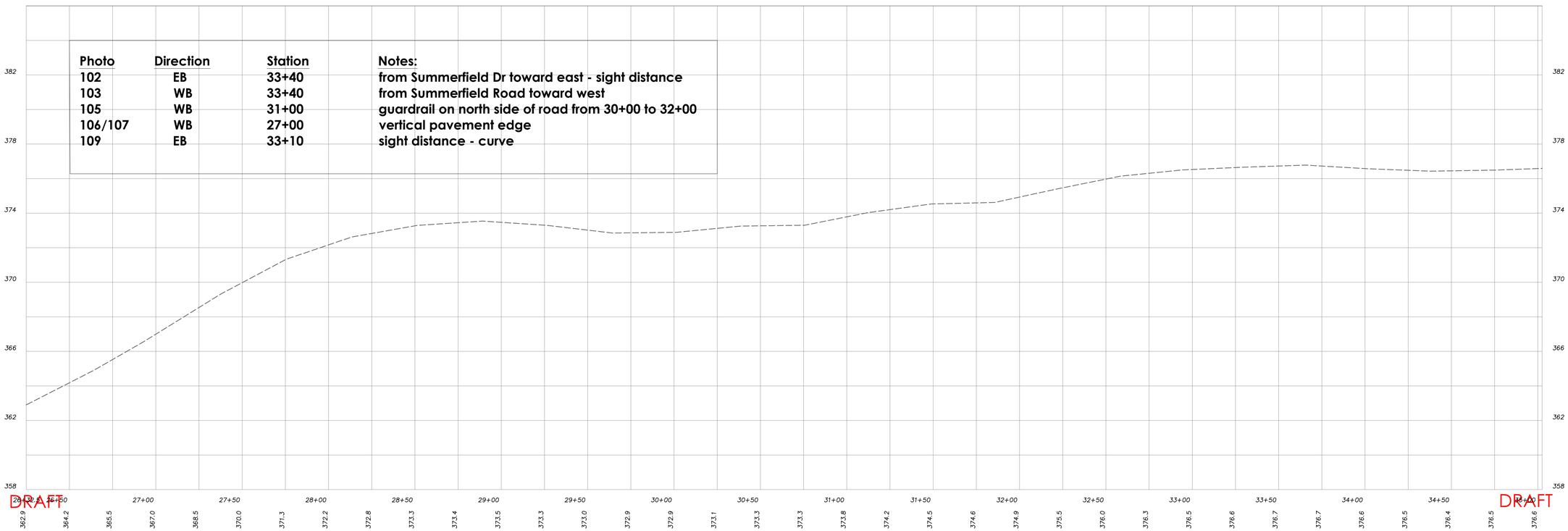


Photo	Direction	Station	Notes:
102	EB	33+40	from Summerfield Dr toward east - sight distance
103	WB	33+40	from Summerfield Road toward west
105	WB	31+00	guardrail on north side of road from 30+00 to 32+00
106/107	WB	27+00	vertical pavement edge
109	EB	33+10	sight distance - curve



TRUDELL CONSULTING ENGINEERS
478 BLAIR PARK ROAD | WILLISTON, VERMONT 05495
802 879 6331 | WWW.TCEVT.COM

Revisions

No.	Description	Date	By

Use of These Drawings

1. Unless otherwise noted, these Drawings are intended for preliminary planning, coordination with other disciplines or utilities, and/or approval from the regulatory authorities. They are not intended as construction drawings unless noted as such.

2. Only drawings specifically marked "For Construction" are intended to be used in conjunction with contract documents, specifications, owner/contractor agreements and to be fully coordinated with other disciplines, including but not limited to, the Architect, if applicable. These Drawings shall not be used for construction layout. Contact TCE for any construction surveying services or to obtain electronic data suitable for construction layout.

3. These Drawings are specific to the Project and are not transferable. As instruments of service, these drawings, and copies thereof, furnished by TCE are its exclusive property. Changes to the drawings may only be made by TCE. If errors or omissions are discovered, they shall be brought to the attention of TCE immediately.

4. By use of these drawings for construction of the Project, the Owner represents that they have reviewed, approved, and accepted the drawings and have met with all applicable parties/disciplines to insure these plans are properly coordinated with other aspects of the Project. The Owner and Architect, are responsible for any buildings shown, including an area measured a minimum five (5) feet around any building.

5. It is the User's responsibility to ensure this copy contains the most current revisions.

DRAFT
STATE OF VERMONT
JEREMY M. HATCH
No. 7637
CIVIL
LICENSED
PROFESSIONAL ENGINEER

Project Title

Shelburne-Hinesburg Road Improvements

Sheet Title

STA.26+32.5--STA.35+10

Date:	6/29/2012
Scale:	1" = 30' HORIZ. 1" = 3' VERT.
Project Number:	2012005
Drawn By:	NPC
Project Engineer:	JMM
Approved By:	

C6.04

Project Reference:

S:_TCE DRAWINGS\2012\005 Shelburne-Hinesburgh\2012005 - Site Plans.dwg, 1/10/2014 1:19:17 PM

DRAFT

_101

_98

_97

_99

DRAFT

404

Project Reference:

400

396

392

388

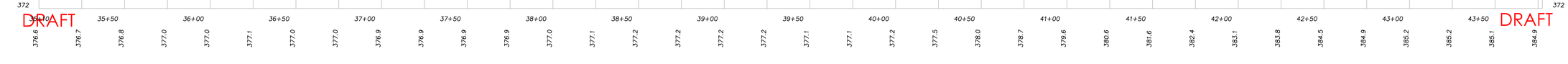
384

380

376

372

Photo	Direction	Station	Note:
97	WB	42+00	Summerfield approach - curve sign obscured by vegetation
98	WB	40+50	Needs guardrail on north side of road sta. 38+75 to 41+60
99	EB	40+50	Needs guardrail on south side of road sta. 40+30 to 41+50
101	WB	38+60	Note curve/trees/bank on south side of road



DRAFT

Field Book:

S:_TCE DRAWINGS\2012\005 Shelburne-Hinesburgh\2012005 - Site Plans.dwg, 1/10/2014 11:18:38 PM

TRUDELL CONSULTING ENGINEERS
478 BLAIR PARK ROAD | WILLISTON, VERMONT 05495
802 879 6331 | WWW.TCEVT.COM

Revisions

No.	Description	Date	By

DRAFT
STATE OF VERMONT
JEREMY M. MATOSY
No. 7637
CIVIL
LICENSED
PROFESSIONAL ENGINEER

Project Title

Shelburne-Hinesburg Road Improvements

Sheet Title

STA.35+10--STA.43+87.5

Date:	6/29/2012
Scale:	1" = 30' HORIZ. 1" = 3' VERT.
Project Number:	2012005
Drawn By:	NPC
Project Engineer:	JMM
Approved By:	

C6.05

DRAFT

DRAFT

LEGAL LOAD LIMIT 55000 POUNDS

SHELBURNE FIREARMS ORDINANCE SIGN

WELCOME TO SHELBURNE

SHELBURNE

HINESBURG

MATCHLINE5 STA.43+87.5

TO DORSET STREET

TEE CONTROL ZONE #87

TO HINESBURG

MATCHLINE7 STA.52+65

WELCOME TO HINESBURG

SCHOOL BUS TURN AROUND

SPEED LIMIT 45

LEGAL LOAD LIMIT 55000 POUNDS

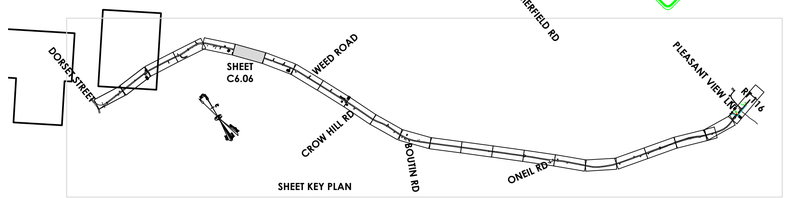
SPEED LIMIT 45

_96

_93

_94

_95



Graphic Scale

30 0 30 60 90 120 Feet

Field Book:

Project Reference:

Photo	Direction	Station	Note:
93	WB	50+00	View from driveway on north side - clear sight distance
94	WB	49+00	View toward west from driveway on south side
95	EB	49+00	View toward east from driveway on south side
96	WB	48+50	begin gravel shoulder on north and south side of road

410 406 402 398 394 390 386 382 378

44+00 44+50 45+00 45+50 46+00 46+50 47+00 47+50 48+00 48+50 49+00 49+50 50+00 50+50 51+00 51+50 52+00 52+50

384.9 384.7 384.6 384.5 384.3 384.2 383.8 383.5 383.1 382.9 382.7 382.7 382.9 383.2 383.5 383.9 384.4 385.0 385.7 386.2 386.4 386.5 386.5 386.4 386.2 386.0 385.8 385.5 385.2 384.9 384.8 384.6 384.6 384.5 384.5 384.6

DRAFT DRAFT

S:_TCE DRAWINGS\2012\005 Shelburne-Hinesburgh\2012005 - Site Plans.dwg, 1/10/2014 11:17:56 PM

TRUDELL CONSULTING ENGINEERS
478 BLAIR PARK ROAD | WILLISTON, VERMONT 05495
802 879 6331 | WWW.TCEVT.COM

Revisions

No.	Description	Date	By

DRAFT

STATE OF VERMONT
JEREMY M. HATOSY
No. 7637
CIVIL
LICENSED PROFESSIONAL ENGINEER

Project Title

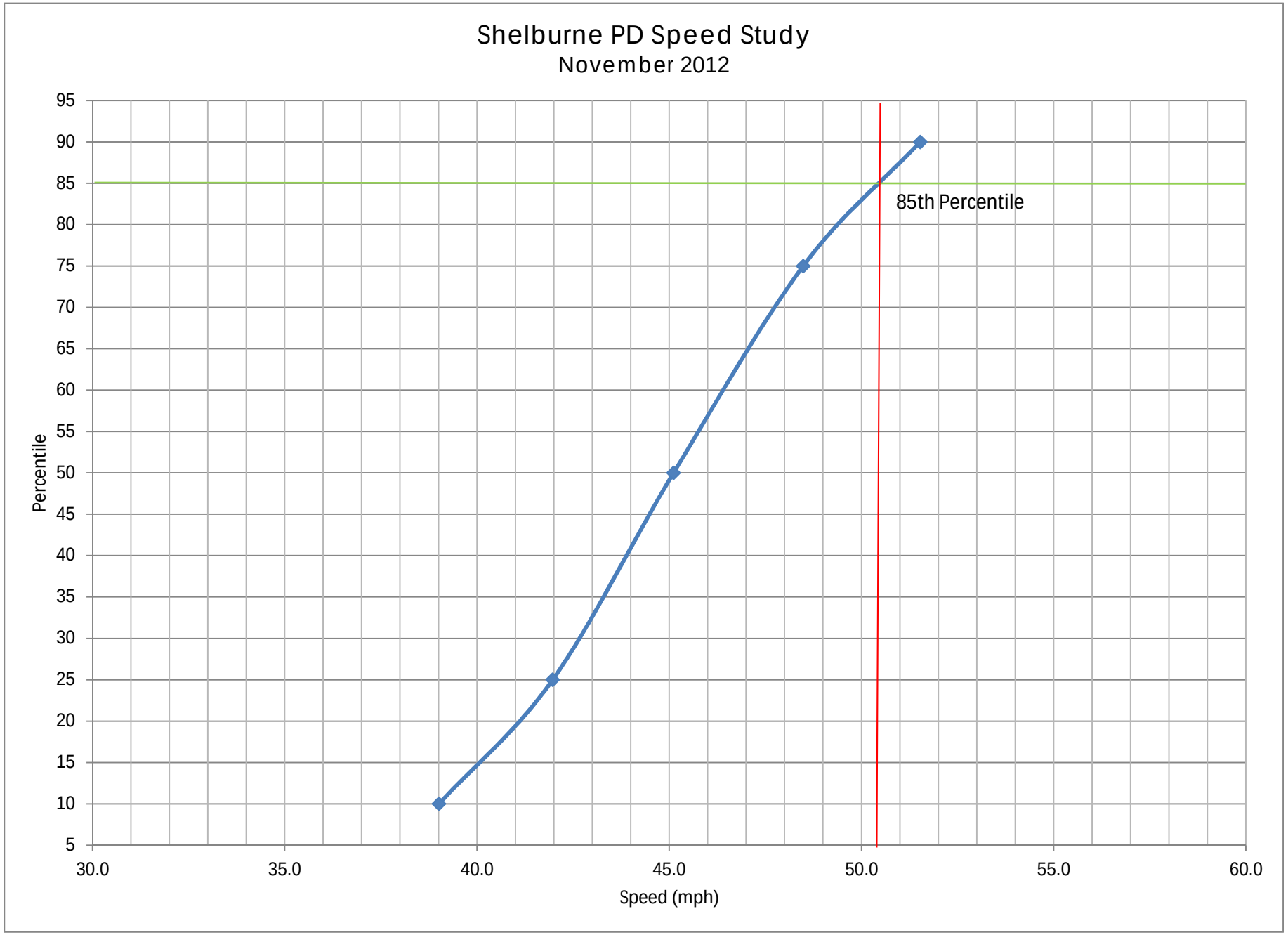
Shelburne-Hinesburg Road Improvements

Sheet Title

STA.43+87.5--STA.52+65

Date:	6/29/2012
Scale:	1" = 30' HORIZ. 1" = 3' VERT.
Project Number:	2012005
Drawn By:	NPC
Project Engineer:	JMM
Approved By:	

C6.06


Shelburne PD Speed Study
November 2012
Percentile
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
85th Percentile
30.0
35.0
40.0
45.0
50.0
55.0
60.0
Speed (mph)

Shelburne Police Department
5420 Shelburne Rd, PO Box 58
Shelburne, VT 05482

Shelburne Police : PO Box 58
Shelburne, VT 05: (802) 985-8051

Site: Shelb_Hines_Rd_11-08-12
Date: 11/8/2012
Thursday

Daily Volume

Interval Begin	Westbound	Eastbound	Combined
12:00 AM	-	-	-
1:00 AM	-	-	-
2:00 AM	-	-	-
3:00 AM	-	-	-
4:00 AM	-	-	-
5:00 AM	-	-	-
6:00 AM	-	-	-
7:00 AM	-	-	-
8:00 AM	-	-	-
9:00 AM	-	-	-
10:00 AM	-	-	-
11:00 AM	-	-	-
12:00 PM	-	-	-
1:00 PM	-	-	-
2:00 PM	-	-	-
3:00 PM	-	-	-
4:00 PM	-	-	-
5:00 PM	-	-	-
6:00 PM	-	-	-
7:00 PM	-	-	-
8:00 PM	-	-	-
9:00 PM	-	-	-
10:00 PM	-	-	-
11:00 PM	3	12	15
Totals	3	12	15
	20.0 %	80.0 %	

Peak Hours

12:00 AM - 12:00 PM	-	-	-
Volume	-	-	-
12:00 PM - 12:00 AM	11:00 PM	11:00 PM	11:00 PM
Volume	3	12	15

Shelburne Police Department
5420 Shelburne Rd, PO Box 58
Shelburne, VT 05482

Shelburne Police : PO Box 58
Shelburne, VT 05: (802) 985-8051

Site: Shelb_Hines_Rd_11-08-12
Date: 11/9/2012
Friday

Daily Volume

Interval Begin	Westbound	Eastbound	Combined
12:00 AM	1	4	5
1:00 AM	1	2	3
2:00 AM	1	0	1
3:00 AM	0	2	2
4:00 AM	5	1	6
5:00 AM	23	3	26
6:00 AM	92	14	106
7:00 AM	197	159	356
8:00 AM	216	104	320
9:00 AM	83	59	142
10:00 AM	73	56	129
11:00 AM	81	66	147
12:00 PM	57	70	127
1:00 PM	61	77	138
2:00 PM	87	121	208
3:00 PM	150	152	302
4:00 PM	79	149	228
5:00 PM	89	179	268
6:00 PM	82	114	196
7:00 PM	27	51	78
8:00 PM	19	36	55
9:00 PM	21	52	73
10:00 PM	36	31	67
11:00 PM	5	12	17
Totals	1486	1514	3000
	49.5 %	50.5 %	

Peak Hours

12:00 AM - 12:00 PM	8:00 AM	7:00 AM	7:00 AM
Volume	216	159	356
12:00 PM - 12:00 AM	3:00 PM	5:00 PM	3:00 PM
Volume	150	179	302

Shelburne Police Department
5420 Shelburne Rd, PO Box 58
Shelburne, VT 05482

Shelburne Police : PO Box 58
Shelburne, VT 05: (802) 985-8051

Site: Shelb_Hines_Rd_11-08-12
Date: 11/10/2012
Saturday

Daily Volume

Interval Begin	Westbound	Eastbound	Combined
12:00 AM	2	2	4
1:00 AM	1	6	7
2:00 AM	0	4	4
3:00 AM	1	3	4
4:00 AM	5	5	10
5:00 AM	9	16	25
6:00 AM	18	4	22
7:00 AM	35	16	51
8:00 AM	76	42	118
9:00 AM	89	39	128
10:00 AM	89	46	135
11:00 AM	84	59	143
12:00 PM	75	62	137
1:00 PM	78	93	171
2:00 PM	76	87	163
3:00 PM	101	78	179
4:00 PM	60	100	160
5:00 PM	66	83	149
6:00 PM	48	60	108
7:00 PM	31	41	72
8:00 PM	12	24	36
9:00 PM	20	30	50
10:00 PM	14	22	36
11:00 PM	10	21	31
Totals	1000	943	1943
	51.5 %	48.5 %	

Peak Hours

12:00 AM - 12:00 PM	9:00 AM	11:00 AM	11:00 AM
Volume	89	59	143
12:00 PM - 12:00 AM	3:00 PM	4:00 PM	3:00 PM
Volume	101	100	179

Shelburne Police Department
5420 Shelburne Rd, PO Box 58
Shelburne, VT 05482

Shelburne Police : PO Box 58
Shelburne, VT 05: (802) 985-8051

Site: Shelb_Hines_Rd_11-08-12
Date: 11/11/2012
Sunday

Daily Volume

Interval Begin	Westbound	Eastbound	Combined
12:00 AM	3	8	11
1:00 AM	1	6	7
2:00 AM	2	4	6
3:00 AM	0	4	4
4:00 AM	5	3	8
5:00 AM	7	5	12
6:00 AM	17	11	28
7:00 AM	21	11	32
8:00 AM	44	25	69
9:00 AM	58	30	88
10:00 AM	74	46	120
11:00 AM	64	65	129
12:00 PM	70	79	149
1:00 PM	81	79	160
2:00 PM	73	76	149
3:00 PM	64	81	145
4:00 PM	68	71	139
5:00 PM	55	58	113
6:00 PM	24	38	62
7:00 PM	15	32	47
8:00 PM	15	20	35
9:00 PM	10	14	24
10:00 PM	3	8	11
11:00 PM	3	6	9
Totals	777	780	1557
	49.9 %	50.1 %	

Peak Hours

12:00 AM - 12:00 PM	10:00 AM	11:00 AM	11:00 AM
Volume	74	65	129
12:00 PM - 12:00 AM	1:00 PM	3:00 PM	1:00 PM
Volume	81	81	160

Shelburne Police Department
5420 Shelburne Rd, PO Box 58
Shelburne, VT 05482

Shelburne Police : PO Box 58
Shelburne, VT 05: (802) 985-8051

Site: Shelb_Hines_Rd_11-08-12
Date: 11/12/2012
Monday

Daily Volume

Interval Begin	Westbound	Eastbound	Combined
12:00 AM	4	3	7
1:00 AM	0	0	0
2:00 AM	0	3	3
3:00 AM	0	3	3
4:00 AM	16	13	29
5:00 AM	25	1	26
6:00 AM	68	19	87
7:00 AM	159	153	312
8:00 AM	204	93	297
9:00 AM	91	54	145
10:00 AM	84	55	139
11:00 AM	82	56	138
12:00 PM	61	66	127
1:00 PM	68	96	164
2:00 PM	88	98	186
3:00 PM	150	125	275
4:00 PM	97	156	253
5:00 PM	87	180	267
6:00 PM	42	91	133
7:00 PM	28	43	71
8:00 PM	33	26	59
9:00 PM	16	45	61
10:00 PM	10	14	24
11:00 PM	4	6	10
Totals	1417	1399	2816
	50.3 %	49.7 %	

Peak Hours

12:00 AM - 12:00 PM	8:00 AM	7:00 AM	7:00 AM
Volume	204	153	312
12:00 PM - 12:00 AM	3:00 PM	5:00 PM	3:00 PM
Volume	150	180	275

Shelburne Police Department
5420 Shelburne Rd, PO Box 58
Shelburne, VT 05482

Shelburne Police : PO Box 58
Shelburne, VT 05: (802) 985-8051

Site: Shelb_Hines_Rd_11-08-12
Date: 11/13/2012
Tuesday

Daily Volume

Interval Begin	Westbound	Eastbound	Combined
12:00 AM	0	5	5
1:00 AM	0	1	1
2:00 AM	1	2	3
3:00 AM	1	2	3
4:00 AM	5	2	7
5:00 AM	24	4	28
6:00 AM	90	15	105
7:00 AM	179	158	337
8:00 AM	222	86	308
9:00 AM	73	47	120
10:00 AM	79	48	127
11:00 AM	55	63	118
12:00 PM	50	62	112
1:00 PM	67	79	146
2:00 PM	58	100	158
3:00 PM	154	135	289
4:00 PM	73	175	248
5:00 PM	86	199	285
6:00 PM	52	106	158
7:00 PM	34	65	99
8:00 PM	44	43	87
9:00 PM	11	36	47
10:00 PM	5	20	25
11:00 PM	2	9	11
Totals	1365	1462	2827
	48.3 %	51.7 %	

Peak Hours

12:00 AM - 12:00 PM	8:00 AM	7:00 AM	7:00 AM
Volume	222	158	337
12:00 PM - 12:00 AM	3:00 PM	5:00 PM	3:00 PM
Volume	154	199	289

Shelburne Police Department
5420 Shelburne Rd, PO Box 58
Shelburne, VT 05482

Shelburne Police : PO Box 58
Shelburne, VT 05: (802) 985-8051

Site: Shelb_Hines_Rd_11-08-12
Date: 11/14/2012
Wednesday

Daily Volume

Interval Begin	Westbound	Eastbound	Combined
12:00 AM	2	3	5
1:00 AM	0	1	1
2:00 AM	1	2	3
3:00 AM	1	1	2
4:00 AM	7	3	10
5:00 AM	28	3	31
6:00 AM	94	24	118
7:00 AM	212	160	372
8:00 AM	207	98	305
9:00 AM	85	43	128
10:00 AM	75	51	126
11:00 AM	75	74	149
12:00 PM	75	53	128
1:00 PM	56	70	126
2:00 PM	77	111	188
3:00 PM	144	162	306
4:00 PM	95	151	246
5:00 PM	97	216	313
6:00 PM	50	122	172
7:00 PM	34	64	98
8:00 PM	31	51	82
9:00 PM	34	46	80
10:00 PM	7	17	24
11:00 PM	3	13	16
Totals	1490	1539	3029
	49.2 %	50.8 %	

Peak Hours

12:00 AM - 12:00 PM	7:00 AM	7:00 AM	7:00 AM
Volume	212	160	372
12:00 PM - 12:00 AM	3:00 PM	5:00 PM	5:00 PM
Volume	144	216	313

Shelburne Police Department
5420 Shelburne Rd, PO Box 58
Shelburne, VT 05482

Shelburne Police : PO Box 58
Shelburne, VT 05: (802) 985-8051

Site: Shelb_Hines_Rd_11-08-12
Date: 11/15/2012
Thursday

Daily Volume

Interval Begin	Westbound	Eastbound	Combined
12:00 AM	3	6	9
1:00 AM	2	1	3
2:00 AM	2	2	4
3:00 AM	0	2	2
4:00 AM	2	1	3
Totals	9	12	21
	42.9 %	57.1 %	

Peak Hours

12:00 AM - 12:00 PM	12:00 AM	12:00 AM	12:00 AM
Volume	3	6	9
12:00 PM - 12:00 AM	-	-	-
Volume	-	-	-

Shelburne Police Department
5420 Shelburne Rd, PO Box 58
Shelburne, VT 05482

Shelburne Polic: PO Box 58
Shelburne, VT : (802) 985-8051

Site: Shelb_Hines_Rd_11-08-1
Date: 11/8/2012
Thursday

Daily Speed
Combined Channels

mph	Total	5 - < 10	10 - < 15	15 - < 20	20 - < 25	25 - < 30	30 - < 35	35 - < 40	40 - < 45	45 - < 50	50 - < 55	55 - < 60	60 - < 65	65 - < 70	70 - < 75	75 - < 99	Avg
12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 AM	15	2	0	1	1	0	3	1	1	1	4	0	0	0	0	1	37.4
5:00 AM	27	0	0	0	0	0	0	4	7	8	6	0	1	1	0	0	47.1
6:00 AM	112	0	0	0	0	1	0	12	28	47	22	1	0	1	0	0	46.3
7:00 AM	339	1	0	0	1	0	7	26	103	142	56	2	1	0	0	0	45.5
8:00 AM	298	1	0	0	0	0	4	21	96	126	37	11	1	1	0	0	46.0
9:00 AM	150	0	0	3	0	0	0	13	33	72	28	1	0	0	0	0	45.7
10:00 AM	120	0	0	1	0	0	0	22	22	47	24	2	2	0	0	0	45.8
11:00 AM	141	0	1	0	3	0	1	17	35	57	25	2	0	0	0	0	45.2
12:00 PM	125	0	0	0	0	0	2	15	28	53	22	3	2	0	0	0	46.2
1:00 PM	125	0	0	0	0	0	1	16	35	48	22	2	1	0	0	0	45.9
2:00 PM	170	0	0	0	1	1	7	17	69	53	19	3	0	0	0	0	44.2
3:00 PM	305	0	1	0	0	5	20	26	84	108	58	2	1	0	0	0	44.8
4:00 PM	245	0	0	0	0	0	1	19	96	88	38	1	1	1	0	0	45.4
5:00 PM	297	0	0	0	0	1	6	39	107	118	23	0	2	0	1	0	44.4
6:00 PM	145	0	0	0	0	0	2	13	45	52	31	2	0	0	0	0	46.0
7:00 PM	136	0	0	1	0	0	2	13	39	51	27	3	0	0	0	0	45.5
8:00 PM	61	0	0	0	0	0	0	3	18	29	10	1	0	0	0	0	46.2
9:00 PM	40	0	0	1	0	0	0	4	11	16	6	1	1	0	0	0	45.3
10:00 PM	26	0	0	0	0	0	1	2	8	10	4	0	1	0	0	0	45.6
11:00 PM	15	0	0	0	0	0	1	1	4	6	3	0	0	0	0	0	45.8
Total	2892	4	2	7	6	8	58	284	869	1132	465	37	14	4	1	1	45.4
%		0.1	0.1	0.2	0.2	0.3	2.0	9.8	30.0	39.1	16.1	1.3	0.5	0.1	0.0	0.0	

Percentile Speeds	10 %	25 %	50 %	75 %	90 %
(mph)	39.6	42.3	45.4	49.0	51.7

10 mph Pace Speed 40.5 - 50.5
Number in Pace 2185 (75.6 %)

Average 45.4 mph
Minimum 5.0 mph
Maximum 77.6 mph

Speeds Exceeded	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	65 mph
	99.3 %	99.1 %	97.1 %	87.2 %	57.2 %	18.0 %	2.0 %	0.2 %
Count	2873	2865	2807	2523	1654	522	57	6

Shelburne Police Department
5420 Shelburne Rd, PO Box 58
Shelburne, VT 05482

Shelburne Polic: PO Box 58
Shelburne, VT : (802) 985-8051

Site: Shelb_Hines_Rd_11-08-1
Date: 11/9/2012
Friday

Daily Speed
Combined Channels

mph	Total	5 - < 10	10 - < 15	15 - < 20	20 - < 25	25 - < 30	30 - < 35	35 - < 40	40 - < 45	45 - < 50	50 - < 55	55 - < 60	60 - < 65	65 - < 70	70 - < 75	75 - < 99	Avg
12:00 AM	5	0	0	0	0	0	0	0	3	1	1	0	0	0	0	0	45.8
1:00 AM	3	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	45.9
2:00 AM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	58.2
3:00 AM	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	48.0
4:00 AM	6	0	0	0	0	0	0	1	2	3	0	0	0	0	0	0	44.2
5:00 AM	26	0	0	0	0	0	0	2	8	4	7	3	1	1	0	0	49.0
6:00 AM	106	0	0	0	0	1	1	5	31	37	27	4	0	0	0	0	47.1
7:00 AM	356	0	0	0	0	0	2	17	107	159	65	4	0	0	1	1	46.5
8:00 AM	320	6	0	1	0	0	0	12	91	147	58	4	1	0	0	0	45.8
9:00 AM	142	0	0	0	0	0	2	9	38	50	34	7	1	1	0	0	47.0
10:00 AM	129	0	1	0	0	0	3	4	26	54	33	5	2	1	0	0	47.4
11:00 AM	147	0	0	1	0	2	1	11	33	63	31	3	1	1	0	0	46.4
12:00 PM	127	0	0	1	0	0	0	4	29	64	26	2	1	0	0	0	46.8
1:00 PM	138	0	0	0	0	3	4	19	31	43	34	3	1	0	0	0	45.7
2:00 PM	208	0	0	0	1	0	2	21	64	82	32	5	0	1	0	0	45.6
3:00 PM	302	2	0	2	7	3	2	27	102	100	51	5	1	0	0	0	44.5
4:00 PM	228	0	0	1	0	1	9	28	99	61	26	3	0	0	0	0	43.8
5:00 PM	268	0	0	0	0	1	2	12	119	104	28	2	0	0	0	0	45.2
6:00 PM	196	0	0	0	2	0	3	16	73	78	23	1	0	0	0	0	44.8
7:00 PM	78	0	0	0	0	0	0	10	27	22	18	1	0	0	0	0	45.6
8:00 PM	55	0	0	0	0	0	0	2	18	19	13	3	0	0	0	0	47.1
9:00 PM	73	0	0	0	0	0	0	12	19	32	9	1	0	0	0	0	45.2
10:00 PM	67	0	0	0	0	0	0	3	27	29	6	2	0	0	0	0	45.8
11:00 PM	17	0	0	0	0	0	0	1	7	7	1	1	0	0	0	0	44.9
Total	3000	8	1	6	10	11	31	216	956	1161	524	60	9	5	1	1	45.7
%		0.3	0.0	0.2	0.3	0.4	1.0	7.2	31.9	38.7	17.5	2.0	0.3	0.2	0.0	0.0	

Percentile Speeds	10 %	25 %	50 %	75 %	90 %
(mph)	40.5	43.3	45.4	49.0	51.7

10 mph Pace Speed 40.5 - 50.5
Number in Pace 2324 (77.5 %)

Average 45.7 mph
Minimum 5.0 mph
Maximum 77.6 mph

Speeds Exceeded	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	65 mph
	99.2 %	98.8 %	97.8 %	90.6 %	58.7 %	20.0 %	2.5 %	0.2 %
Count	2975	2964	2933	2717	1761	600	76	7

Shelburne Police Department
5420 Shelburne Rd, PO Box 58
Shelburne, VT 05482

Shelburne Polic: PO Box 58
Shelburne, VT : (802) 985-8051

Site: Shelb_Hines_Rd_11-08-1
Date: 11/10/2012
Saturday

Daily Speed
Combined Channels

mph	Total	5 - < 10	10 - < 15	15 - < 20	20 - < 25	25 - < 30	30 - < 35	35 - < 40	40 - < 45	45 - < 50	50 - < 55	55 - < 60	60 - < 65	65 - < 70	70 - < 75	75 - < 99	Avg
12:00 AM	4	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	47.2
1:00 AM	7	0	0	0	0	0	0	0	4	1	1	1	0	0	0	0	47.4
2:00 AM	4	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	49.4
3:00 AM	4	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	42.9
4:00 AM	10	0	0	0	0	0	0	0	2	6	2	0	0	0	0	0	46.8
5:00 AM	25	0	0	0	0	0	0	1	6	7	9	1	1	0	0	0	48.7
6:00 AM	22	0	0	0	0	2	0	1	6	5	7	0	1	0	0	0	46.4
7:00 AM	51	0	0	0	0	2	1	7	12	23	6	0	0	0	0	0	44.5
8:00 AM	118	0	0	0	0	1	1	8	23	50	29	6	0	0	0	0	47.0
9:00 AM	128	0	0	0	2	0	0	7	25	54	31	5	4	0	0	0	47.3
10:00 AM	135	0	0	0	0	2	0	9	45	53	22	3	1	0	0	0	46.1
11:00 AM	143	0	1	1	0	1	1	9	38	49	40	3	0	0	0	0	46.2
12:00 PM	137	0	0	0	0	0	1	5	37	43	45	5	1	0	0	0	47.5
1:00 PM	171	1	0	1	4	0	2	18	55	53	34	1	2	0	0	0	44.8
2:00 PM	163	0	0	0	0	3	3	6	44	61	42	4	0	0	0	0	46.6
3:00 PM	179	0	0	0	0	1	0	13	59	82	22	2	0	0	0	0	45.9
4:00 PM	160	0	1	0	0	1	2	18	75	46	12	2	2	0	0	1	44.3
5:00 PM	149	0	0	0	0	1	2	18	58	49	17	4	0	0	0	0	44.7
6:00 PM	108	0	0	0	0	1	1	8	36	43	15	1	3	0	0	0	45.9
7:00 PM	72	0	0	0	1	0	1	5	22	29	13	0	1	0	0	0	45.5
8:00 PM	36	0	0	0	0	0	0	4	12	15	3	0	1	0	1	0	46.0
9:00 PM	50	0	0	0	0	0	0	1	14	19	14	2	0	0	0	0	47.2
10:00 PM	36	0	0	0	0	0	0	2	12	15	7	0	0	0	0	0	46.4
11:00 PM	31	0	0	0	0	0	0	3	8	16	4	0	0	0	0	0	45.6
Total	1943	1	2	2	7	15	16	143	595	724	379	40	17	0	1	1	46.0
%		0.1	0.1	0.1	0.4	0.8	0.8	7.4	30.6	37.3	19.5	2.1	0.9	0.0	0.1	0.1	

Percentile Speeds	10 %	25 %	50 %	75 %	90 %
(mph)	40.5	43.3	46.5	49.0	51.7

10 mph Pace Speed 40.5 - 50.5
Number in Pace 1469 (75.6 %)

Average 46.0 mph
Minimum 7.3 mph
Maximum 77.6 mph

Speeds Exceeded	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	65 mph
	99.4 %	98.6 %	97.8 %	90.4 %	59.8 %	22.5 %	3.0 %	0.1 %
Count	1931	1916	1900	1757	1162	438	59	2

Shelburne Police Department
5420 Shelburne Rd, PO Box 58
Shelburne, VT 05482

Shelburne Polic: PO Box 58
Shelburne, VT : (802) 985-8051

Site: Shelb_Hines_Rd_11-08-1
Date: 11/11/2012
Sunday

Daily Speed
Combined Channels

mph	Total	5 - < 10	10 - < 15	15 - < 20	20 - < 25	25 - < 30	30 - < 35	35 - < 40	40 - < 45	45 - < 50	50 - < 55	55 - < 60	60 - < 65	65 - < 70	70 - < 75	75 - < 99	Avg
12:00 AM	11	0	0	0	0	0	1	0	5	2	2	1	0	0	0	0	45.5
1:00 AM	7	0	0	0	0	0	0	0	2	5	0	0	0	0	0	0	46.1
2:00 AM	6	0	0	0	0	0	0	0	2	3	0	0	1	0	0	0	48.3
3:00 AM	4	0	0	0	0	0	0	2	1	0	1	0	0	0	0	0	41.3
4:00 AM	8	0	0	0	0	0	0	1	1	6	0	0	0	0	0	0	45.7
5:00 AM	12	0	0	0	0	0	0	1	2	4	4	1	0	0	0	0	48.0
6:00 AM	28	0	0	0	0	1	2	1	9	13	1	1	0	0	0	0	43.8
7:00 AM	32	0	0	0	0	1	0	3	10	10	8	0	0	0	0	0	45.4
8:00 AM	69	0	0	0	0	0	1	7	16	29	15	1	0	0	0	0	46.0
9:00 AM	88	0	0	0	0	0	0	12	21	30	15	8	2	0	0	0	46.9
10:00 AM	120	0	0	0	0	0	0	11	37	43	26	2	1	0	0	0	46.2
11:00 AM	129	0	0	0	0	0	3	17	34	44	30	1	0	0	0	0	45.7
12:00 PM	149	0	0	1	0	1	3	7	53	57	25	0	2	0	0	0	45.6
1:00 PM	160	0	0	0	0	0	1	19	43	51	40	2	4	0	0	0	46.5
2:00 PM	149	1	0	2	1	0	3	13	48	42	31	5	1	2	0	0	45.6
3:00 PM	145	0	0	0	0	0	5	23	49	32	31	5	0	0	0	0	45.0
4:00 PM	139	0	0	0	0	0	1	9	52	58	16	3	0	0	0	0	45.5
5:00 PM	113	0	0	0	0	0	2	19	35	36	19	2	0	0	0	0	45.0
6:00 PM	62	0	0	0	1	1	1	8	9	30	11	0	1	0	0	0	45.7
7:00 PM	47	0	0	0	0	0	0	9	16	17	4	1	0	0	0	0	44.8
8:00 PM	35	0	0	0	0	0	1	0	16	5	10	2	0	0	1	0	47.2
9:00 PM	24	0	0	0	0	1	1	3	8	7	3	1	0	0	0	0	44.3
10:00 PM	11	0	0	0	0	0	0	0	2	5	2	1	0	1	0	0	49.1
11:00 PM	9	0	0	0	0	0	0	2	2	2	2	0	1	0	0	0	47.5
Total	1557	1	0	3	2	5	25	167	473	531	296	37	13	3	1	0	45.7
%		0.1	0.0	0.2	0.1	0.3	1.6	10.7	30.4	34.1	19.0	2.4	0.8	0.2	0.1	0.0	

Percentile Speeds	10 %	25 %	50 %	75 %	90 %
(mph)	38.8	42.3	45.4	49.0	53.2

10 mph Pace Speed 40.5 - 50.5
Number in Pace 1097 (70.5 %)

Average 45.7 mph
Minimum 9.0 mph
Maximum 71.6 mph

Speeds Exceeded	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	65 mph
	99.6 %	99.3 %	97.7 %	87.0 %	56.6 %	22.5 %	3.5 %	0.3 %
Count	1551	1546	1521	1354	881	350	54	4

Shelburne Police Department
5420 Shelburne Rd, PO Box 58
Shelburne, VT 05482

Shelburne Polic: PO Box 58
Shelburne, VT : (802) 985-8051

Site: Shelb_Hines_Rd_11-08-1
Date: 11/12/2012
Monday

Daily Speed
Combined Channels

mph	Total	5 - < 10	10 - < 15	15 - < 20	20 - < 25	25 - < 30	30 - < 35	35 - < 40	40 - < 45	45 - < 50	50 - < 55	55 - < 60	60 - < 65	65 - < 70	70 - < 75	75 - < 99	Avg
12:00 AM	7	0	0	0	0	0	0	0	3	4	0	0	0	0	0	0	45.9
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
2:00 AM	3	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	47.7
3:00 AM	3	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	39.6
4:00 AM	29	0	0	0	0	0	1	0	5	11	10	2	0	0	0	0	48.3
5:00 AM	26	0	0	0	0	0	0	2	5	9	9	0	0	0	1	0	48.6
6:00 AM	87	0	0	0	1	0	1	3	23	37	18	1	3	0	0	0	46.9
7:00 AM	312	2	1	0	2	2	4	28	92	122	57	2	0	0	0	0	45.0
8:00 AM	297	1	0	1	1	0	2	28	75	109	73	5	1	1	0	0	46.3
9:00 AM	145	0	0	0	0	0	1	15	37	54	33	2	3	0	0	0	46.5
10:00 AM	139	1	1	1	1	0	0	13	35	51	29	6	1	0	0	0	45.7
11:00 AM	138	0	0	1	0	0	0	15	41	45	31	4	1	0	0	0	46.3
12:00 PM	127	2	0	0	0	0	0	8	33	47	35	2	0	0	0	0	46.4
1:00 PM	164	0	1	1	0	1	5	12	52	54	34	2	2	0	0	0	45.5
2:00 PM	186	0	0	3	0	1	1	15	56	70	34	5	1	0	0	0	45.7
3:00 PM	275	2	0	0	0	0	2	29	92	99	44	2	4	0	0	1	45.5
4:00 PM	253	2	0	1	0	0	3	36	97	78	29	3	3	1	0	0	44.4
5:00 PM	267	2	0	1	0	0	2	31	117	82	31	1	0	0	0	0	44.3
6:00 PM	133	0	0	0	1	1	2	9	43	51	24	0	2	0	0	0	45.8
7:00 PM	71	0	0	0	0	0	0	4	16	33	16	2	0	0	0	0	46.9
8:00 PM	59	0	0	0	0	0	0	8	22	17	11	0	1	0	0	0	45.7
9:00 PM	61	0	0	0	0	1	0	2	28	20	6	3	1	0	0	0	45.7
10:00 PM	24	0	0	0	0	0	1	2	5	10	4	0	2	0	0	0	46.7
11:00 PM	10	0	0	0	0	0	0	1	4	3	1	1	0	0	0	0	46.5
Total	2816	12	3	9	6	6	25	263	883	1007	529	44	25	2	1	1	45.6
%		0.4	0.1	0.3	0.2	0.2	0.9	9.3	31.4	35.8	18.8	1.6	0.9	0.1	0.0	0.0	

Percentile Speeds	10 %	25 %	50 %	75 %	90 %
(mph)	39.6	42.3	45.4	49.0	51.7

10 mph Pace Speed 40.5 - 50.5
Number in Pace 2088 (74.1 %)

Average 45.6 mph
Minimum 5.5 mph
Maximum 93.1 mph

Speeds Exceeded	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	65 mph
	98.9 %	98.7 %	97.8 %	88.5 %	57.1 %	21.4 %	2.6 %	0.1 %
Count	2786	2780	2755	2492	1609	602	73	4

Shelburne Police Department
5420 Shelburne Rd, PO Box 58
Shelburne, VT 05482

Shelburne Polic: PO Box 58
Shelburne, VT : (802) 985-8051

Site: Shelb_Hines_Rd_11-08-1
Date: 11/13/2012
Tuesday

Daily Speed
Combined Channels

mph	Total	5 - < 10	10 - < 15	15 - < 20	20 - < 25	25 - < 30	30 - < 35	35 - < 40	40 - < 45	45 - < 50	50 - < 55	55 - < 60	60 - < 65	65 - < 70	70 - < 75	75 - < 99	Avg
12:00 AM	5	0	0	0	0	0	0	0	1	2	1	1	0	0	0	0	48.4
1:00 AM	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	44.3
2:00 AM	3	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	47.0
3:00 AM	3	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	43.4
4:00 AM	7	0	0	0	0	0	0	3	1	2	1	0	0	0	0	0	43.4
5:00 AM	28	0	0	0	0	0	1	7	8	6	6	0	0	0	0	0	44.2
6:00 AM	105	0	0	0	0	0	3	12	31	42	14	2	0	0	1	0	45.5
7:00 AM	337	0	0	0	0	3	9	27	158	116	23	0	1	0	0	0	44.0
8:00 AM	308	0	0	0	3	1	8	32	101	115	46	2	0	0	0	0	44.8
9:00 AM	120	0	0	0	0	0	4	22	34	34	22	4	0	0	0	0	45.1
10:00 AM	127	0	0	0	0	0	0	18	50	34	21	3	1	0	0	0	45.3
11:00 AM	118	0	1	0	0	0	2	22	32	33	25	3	0	0	0	0	45.0
12:00 PM	112	0	0	0	0	1	1	8	52	30	16	4	0	0	0	0	45.2
1:00 PM	146	0	0	1	0	1	18	42	56	22	5	1	0	0	0	0	40.6
2:00 PM	158	0	0	0	2	6	28	66	35	14	5	2	0	0	0	0	38.9
3:00 PM	289	6	1	14	12	17	39	108	70	19	2	0	0	1	0	0	36.1
4:00 PM	248	1	0	1	1	0	32	100	88	18	7	0	0	0	0	0	39.4
5:00 PM	285	0	2	2	3	5	52	111	74	29	7	0	0	0	0	0	38.7
6:00 PM	158	0	0	0	0	3	28	59	46	18	2	0	2	0	0	0	39.3
7:00 PM	99	1	0	0	0	2	9	21	26	28	11	0	1	0	0	0	42.2
8:00 PM	87	0	0	1	0	0	1	14	29	30	11	0	0	1	0	0	44.6
9:00 PM	47	0	0	0	0	0	0	1	23	10	11	1	1	0	0	0	46.5
10:00 PM	25	0	0	0	0	0	0	3	11	7	3	1	0	0	0	0	45.0
11:00 PM	11	0	0	0	0	0	1	3	2	3	1	1	0	0	0	0	44.0
Total	2827	8	4	19	21	39	236	680	931	614	241	25	6	2	1	0	41.9
%		0.3	0.1	0.7	0.7	1.4	8.3	24.1	32.9	21.7	8.5	0.9	0.2	0.1	0.0	0.0	

Percentile Speeds	10 %	25 %	50 %	75 %	90 %
(mph)	34.5	38.0	42.3	45.4	49.0

10 mph Pace Speed 38.0 - 48.0
Number in Pace 1816 (64.2 %)

Average 41.9 mph
Minimum 5.0 mph
Maximum 74.5 mph

Speeds Exceeded	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	65 mph
	98.2 %	96.8 %	88.4 %	64.4 %	31.4 %	9.7 %	1.2 %	0.1 %
Count	2775	2736	2500	1820	889	275	34	3

Shelburne Police Department
5420 Shelburne Rd, PO Box 58
Shelburne, VT 05482

Shelburne Polic: PO Box 58
Shelburne, VT : (802) 985-8051

Site: Shelb_Hines_Rd_11-08-1
Date: 11/14/2012
Wednesday

Daily Speed
Combined Channels

mph	Total	5 - < 10	10 - < 15	15 - < 20	20 - < 25	25 - < 30	30 - < 35	35 - < 40	40 - < 45	45 - < 50	50 - < 55	55 - < 60	60 - < 65	65 - < 70	70 - < 75	75 - < 99	Avg
12:00 AM	5	0	0	0	0	0	0	1	0	3	1	0	0	0	0	0	46.7
1:00 AM	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	42.3
2:00 AM	3	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	48.8
3:00 AM	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	50.7
4:00 AM	10	0	1	0	0	1	0	2	2	4	0	0	0	0	0	0	38.8
5:00 AM	31	0	0	0	0	0	0	2	5	9	13	0	2	0	0	0	48.9
6:00 AM	118	0	0	0	0	1	2	6	33	51	22	3	0	0	0	0	46.2
7:00 AM	372	1	0	0	0	2	8	33	117	141	65	5	0	0	0	0	45.4
8:00 AM	305	3	0	0	0	0	3	23	60	141	71	3	1	0	0	0	46.3
9:00 AM	128	0	0	1	0	0	0	4	33	53	34	2	1	0	0	0	47.1
10:00 AM	126	0	0	0	2	0	2	7	39	42	28	4	1	0	1	0	46.4
11:00 AM	149	0	0	2	1	0	4	13	35	58	33	2	1	0	0	0	45.8
12:00 PM	128	0	0	0	0	0	1	16	34	42	29	5	1	0	0	0	46.1
1:00 PM	126	0	0	0	0	1	1	10	35	47	31	1	0	0	0	0	46.3
2:00 PM	188	0	0	0	0	0	1	16	58	70	34	7	2	0	0	0	46.5
3:00 PM	306	0	0	0	0	1	0	20	104	128	48	4	1	0	0	0	46.0
4:00 PM	246	0	1	0	0	0	2	32	88	88	31	2	2	0	0	0	44.7
5:00 PM	313	0	0	0	0	0	5	41	137	103	26	0	0	0	0	1	44.2
6:00 PM	172	0	0	0	0	0	0	15	67	60	29	1	0	0	0	0	45.4
7:00 PM	98	0	0	0	0	0	0	10	29	38	19	2	0	0	0	0	46.2
8:00 PM	82	0	0	0	0	0	1	7	28	29	15	2	0	0	0	0	45.7
9:00 PM	80	0	0	0	0	0	3	11	27	28	8	2	1	0	0	0	44.9
10:00 PM	24	0	0	0	0	0	0	2	9	9	3	1	0	0	0	0	45.8
11:00 PM	16	0	0	0	0	1	0	3	5	3	2	1	1	0	0	0	45.5
Total	3029	4	2	3	3	7	33	274	947	1149	543	48	14	0	1	1	45.7
%		0.1	0.1	0.1	0.1	0.2	1.1	9.0	31.3	37.9	17.9	1.6	0.5	0.0	0.0	0.0	

Percentile Speeds	10 %	25 %	50 %	75 %	90 %
(mph)	39.6	42.3	45.4	49.0	51.7

10 mph Pace Speed 40.5 - 50.5
Number in Pace 2310 (76.3 %)

Average 45.7 mph
Minimum 5.9 mph
Maximum 84.6 mph

Speeds Exceeded	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	65 mph
	99.6 %	99.4 %	98.3 %	89.2 %	58.0 %	20.0 %	2.1 %	0.1 %
Count	3017	3010	2977	2703	1756	607	64	2

Shelburne Police Department
5420 Shelburne Rd, PO Box 58
Shelburne, VT 05482

Shelburne Polic: PO Box 58
Shelburne, VT : (802) 985-8051

Site: Shelb_Hines_Rd_11-08-1
Date: 11/15/2012
Thursday

Daily Speed
Combined Channels

mph	Total	5 - < 10	10 - < 15	15 - < 20	20 - < 25	25 - < 30	30 - < 35	35 - < 40	40 - < 45	45 - < 50	50 - < 55	55 - < 60	60 - < 65	65 - < 70	70 - < 75	75 - < 99	Avg
12:00 AM	9	0	0	0	0	0	0	2	3	0	4	0	0	0	0	0	45.4
1:00 AM	3	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	52.0
2:00 AM	4	0	0	0	0	0	1	0	0	2	0	1	0	0	0	0	46.5
3:00 AM	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	44.9
4:00 AM	3	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	49.4
5:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	21	0	0	0	0	0	1	2	4	6	6	2	0	0	0	0	47.1
%		0.0	0.0	0.0	0.0	0.0	4.8	9.5	19.0	28.6	28.6	9.5	0.0	0.0	0.0	0.0	

Percentile Speeds	10 %	25 %	50 %	75 %	90 %
(mph)	35.1	42.3	47.7	50.3	53.2

10 mph Pace Speed 44.3 - 54.3
Number in Pace 14 (66.7 %)

Average 47.1 mph
Minimum 31.0 mph
Maximum 58.2 mph

Speeds Exceeded	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	65 mph
	100.0 %	100.0 %	95.2 %	85.7 %	66.7 %	38.1 %	9.5 %	0.0 %
Count	21	21	20	18	14	8	2	0

TRUDELL CONSULTING ENGINEERS
(TCE)
P.O. Box 308, 478 Blair Park Road Williston, VT 05495
Tel. (802) 879-6331 Fax. (802) 879-0060

TO: JMM

DATE	JOB NO.
8/28/09	NA

PROJECT
Shelburne Falls Rd

LOCATION
Hinesburg

WEATHER:
Sunny 60

PRESENT AT SITE

AAL/ AEA

THE FOLLOWING WAS NOTED:

- We arrived on site at 9:30am
- In the northbound direction, there is a speed limit sign posted at 45 mph near the Shelburne/Hinesburg border. In the southbound direction, there is a 35 mph speed limit sign posted just south of the Dorset Street/Pond Road intersection.
- At the 90 degree curve where Dorset Street splits into Shelburne-Hinesburg Road (north/west of the site), there is a warning sign posted with a recommended speed of 25 mph for the curve in both the north and southbound directions.
- There is a warning "S" curve sign on both the Northbound and Southbound sides of the curve
- The attached map illustrates the speed limit signs and "S" curve sign locations.
- We drove through the curve on Shelburne-Hinesburg Road near Summerfield Road once to get a feel of the road – see attached map for curve location.
- A Rieker Ball Bank Inclinometer Model 1023W1 was mounted to the dashboard, and readings were taken at varying speeds while driving through the curve in both the northbound and southbound directions.
- The test was started at 30 mph and was increased in 5 mph increments through the curve for each pass up to 45 mph (the posted northbound speed limit). The speed was then reduced by 5 mph to get secondary readings until a speed of 30 mph was met.
- According to *The Manual on Uniform Traffic Studies, Chapter 11: Safe Curve Speed Study,* "…..10 degrees for speeds of 35 mph through 50 mph are the usually accepted limits beyond which riding discomfort will be excessive and loss of vehicle control may occur." (11-2)
- The first part of the Southbound "S" curve was insignificant compared to second part of the Southbound "S" curve (Northbound first part).
- The curve just north of the study between Dorset Street and Shelburne-Hinesburg Rd, has a recommended speed of 25mph which gave a degree reading of 13 for northbound and 10 for southbound.

FIELD REPORT

COPIES TO: file

SIGNED: AEA

PROJECT MEMO

To: JMM

From: AEA

Date: 8/28/09

Re: Shelburne Falls Rd

Project #: JMM

According to the *Manual on Uniform Traffic Studies, Chapter 11 Safe Curve Speed Study* the speed limit of 45mph is too great for this curve. At a speed of 45mph the inclinometer climbed to 20 degrees, which is twice as much as the recommended safe value. The curve connecting Dorset Street and Shelburne-Hinesburg Rd is 25mph the inclinometer climbed to 13 degrees going Northbound and 10 degrees going Southbound. Using the previous values as a base, the recommended speed for the curve that was studied should be 35mph.

TRUDELL CONSULTING ENGINEERS (TCE)
P.O. Box 308 478 Blair Road Williston, VT 05495
802-879-6331 fax: 802-879-0060