

Scoping Study Report

HYDE PARK CONNECTIVITY PROJECT

STP BP14(12)

HYDE PARK, VERMONT

April 11, 2016



Submitted to:
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Town of Hyde Park
P.O. Box 98
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I. Summary

Hyde Park has been aware of the need for improved pedestrian and bicycle facilities in their community and region for several years and has been laying the groundwork to complete these improvements. The Town and Village have identified the need for bicycle and pedestrian improvements in the Town and Village plan and have several projects that have been recently completed or are in progress such as the Depot Street Sidewalk, Johnson Street Extension sidewalk, and Lamoille Valley Rail Trail parking area.

To continue their efforts to improve bicycle and pedestrian facilities in the area, the Town applied for and received funding from the Vermont Agency of Transportation (VTTrans) Bicycle and Pedestrian Grant Program. This grant provided funds to complete this scoping study to identify and prioritize areas in the Town and Village in need of bicycle and pedestrian improvements.

The objective of this project is to develop a safe network of bicycle and pedestrian facilities to enhance Hyde Park, to bring bicycle and pedestrian traffic from the Lamoille Valley Rail Trail into Town, and to connect the Village to the northern side of VT Route 15.

Characteristics of the project area were reviewed including right-of-way width, roadway features, traffic data, historic/archeological features, natural resources and other environmental parameters.

There are several potential Class II and Class III wetland areas along the project route. Only one wetland currently mapped on the Vermont Significant Wetlands Inventory (VSWI) is identified within the project area on Cricket Hill Road. If the selected alternative will disturb areas near these wetland areas, a site visit with a wetlands scientist from the State is recommended to determine wetland permitting requirements.

An Archaeological Resource and Historical Preservation Assessment was completed for the project area. Two potential archaeologically sensitive sites were identified as a result of the assessment. One site is along East Main Street starting at Eden Street and extending to just past Centerville Road. The second is along West Main Street starting on the south side at 12 Main Street, then expanding to both sides beginning at Johnson Street Extension until the end of the asphalt surface. Should disturbance occur in either area, a Phase 1 Site Identification Survey should be completed. The Historic Preservation Assessment determined that, as long as no existing structures are disturbed and the improvements remain within the road right-of-way, no additional assessment is necessary.

A Local Concerns Meeting was conducted on July 9, 2015 to obtain input from the public on preferences, anticipated user groups and the purpose and need for the project. Based on this meeting, improvement priorities and a draft Purpose and Need Statement were developed. To solicit additional input, a questionnaire was sent in the Hyde Park Light

Department electric bills on August 31, 2015. As a result of that mailing and other solicitations for comments, 14 public comments were received.

After the Local Concerns meeting, alternatives were developed based on design criteria and local input. Several alternatives were developed to improve existing facilities and provide new bicycle and pedestrian facilities on the streets identified for improvements in the Local Concerns Meeting. An Alternatives Presentation Meeting was held on November 12, 2015. The Purpose and Need Statement was developed based on the Local Concerns Meeting and several alternatives were presented. The Purpose and Need Statement was approved and public comment forms were distributed to allow for the selection of the preferred alternative.

There was limited public comment as a result of the Alternatives Presentation Meeting. The Town repeatedly solicited the public for comments to try and prioritize improvements but in all, only four people submitted written comments and they indicated different preferences. Therefore, prioritization and identification of a preferred alternative was difficult. The general guidance from the Town was to look at crossing VT Route 15 as the highest priority improvement. For the purposes of this report the at-grade crossing near Lamoille Union High School was examined as it is the least expensive alternative that would provide a crossing of Vermont Route 15. In addition, should funding for a bridge come available at a future date, the improvements on either end of the crossing would already be in place.

The at-grade crossing of VT Route 15 is proposed to include an 8-foot wide paved pathway to connect the Lamoille Valley Rail Trail to Black Farm Road, a marked crossing with pedestrian activated rectangular rapid flashing beacons, an in-street sign and an 8-foot wide paved pathway between Cricket Hill Road and the Lamoille Union High School. One of the most critical elements to meet VTrans crossing requirements, the speed limit in this area must be reduced to 40 miles per hour. This request must be submitted to VTrans for consideration and can be requested by a motion from the Town Selectboard and a letter to VTrans. The Selectboard voted on January 14, 2016 to request that VTrans perform a speed study on Route 15 between the Hyde Park roundabout east to the Morrystown town line. Town officials may also request an expansion of the study area from the roundabout west to Cricket Hill Road after public review of this report. These improvements are estimated at a total project cost of \$518,000. However, it is recommended that additional public comment be received prior to moving forward with the project.

II. Purpose and Need

Developing a Purpose and Need statement requires obtaining input from local citizens, and meeting with community representatives. This task also includes reviewing characteristics of the area and reviewing local/regional plans to identify the relationships of the planned improvements to these plans. The following Purpose and Need Statement was developed for the Hyde Park project after the Local Concerns Meeting was held on July 9, 2015:

Hyde Park Connectivity Project

The purpose of the project is to develop a safe network of bicycle and pedestrian facilities to provide better connectivity in Hyde Park and to bring bicycle and pedestrian traffic from the Lamoille Valley Rail Trail into Hyde Park to patronize local businesses.

The project is needed because existing pedestrian facilities are disconnected and lack safe access to the Lamoille Valley Rail Trail and the north side of Vermont Route 15.

III. Project Area and Existing Conditions

Project Area

The project area includes the Village of Hyde Park and adjacent areas within the Town of Hyde Park as shown in Figure 3-1. Specific areas include:

- Vermont Route 15
- Church Street
- East Main Street
- West Main Street



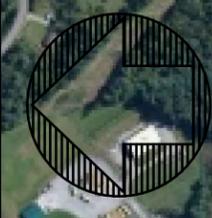
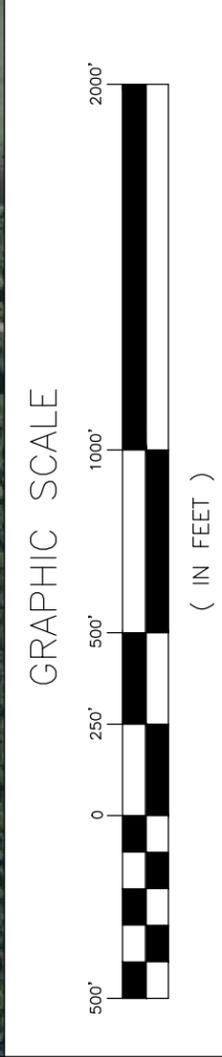
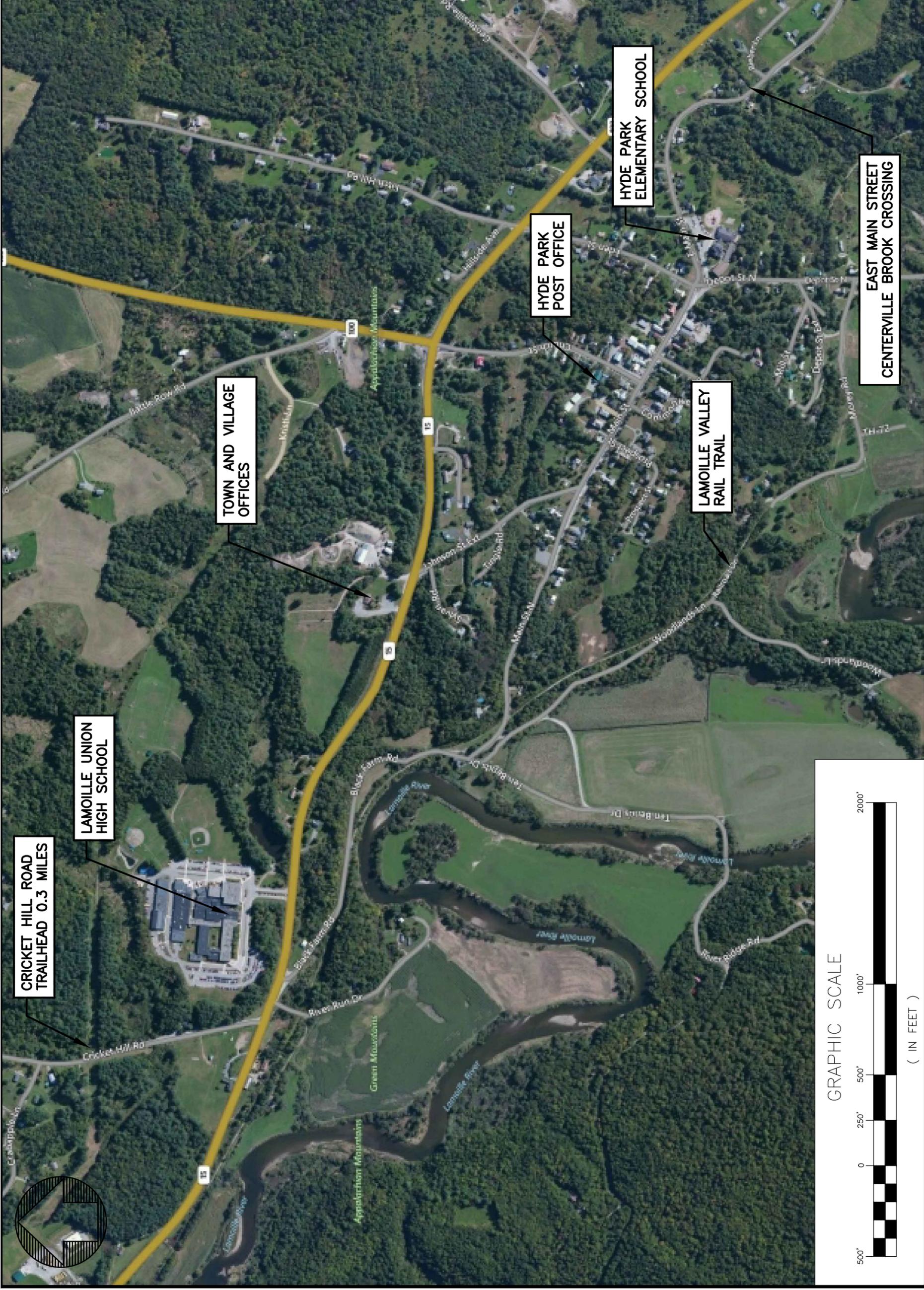
Image 3-1: Church Street

Public comment received as part of the study focused on the following priorities:

- Crossing Vermont Route 15
- Improving the existing sidewalk network in the Village
- Improving bicycle facilities
- Connecting to the Lamoille Valley Rail Trail on the west end of the Village

Existing Conditions

Based on the right-of-way work completed by Truline Land Surveyors, the roads along the route generally have three rod (49.5 foot) right-of-way widths. Many of the streets lack record layouts and an assumed width of three rods is shown on various record surveys. Main Street has an assumed width of three rods shown on various record surveys; however, a reference to the “Common” being four rods (66 feet) wide was found in the layout of Johnson Street Extension. Additional information on the existing rights-of-way is included in Section 3. A summary of the existing pedestrian/bicycle facilities and speed limits is included in Table 3-1.



CRICKET HILL ROAD
TRAILHEAD 0.3 MILES

LAMOILLE UNION
HIGH SCHOOL

TOWN AND VILLAGE
OFFICES

HYDE PARK
POST OFFICE

HYDE PARK
ELEMENTARY SCHOOL

LAMOILLE VALLEY
RAIL TRAIL

EAST MAIN STREET
CROSSING

DG
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Checked by	R.E. DUFRESNE
Date	JAN. 2016
Scale	AS SHOWN
Approved by	APPROVED BY

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HYDE PARK CONNECTIVITY STUDY
FIGURE 3-1
PROJECT AREA MAP
HYDE PARK, VERMONT

FIG 3-1

DWG. NO. alternative routes.dwg
SHEET 1 OF 1

TABLE 3-1
EXISTING ROADWAY CHARACTERISTICS
HYDE PARK STP BP 14(12)
HYDE PARK, VERMONT
April 4, 2016

Street	Approximate Lane/Shoulder Width	Sidewalks	Roadway	Speed limit (mph)	Approximate Existing Roadway Width (ft)
VT Route 15	12'6'	None	2 lane	40 mph from east of Eden Street and east of Johnson St. Ext. 50 mph elsewhere	38' +/-
Church Street	10'2'	600' North Starting at Main Street	2 lane	25	24'-52'
E. Main Street	10'2.5'	None	2 lane	25	25' +/-
W. Main Street	10'2'	450' West Starting at Main Street	2 lane	25	20'-24'
Main Street	10'11'	Both sides	2 lane	25	40' +/-

All of these roads are paved with the exception of W. Main Street, which is paved for the first 650 feet then has a gravel surface.

Vermont Route 15:

- Vermont Route 15 is classified as a minor arterial by VTrans.
- In 2012, VTrans measured 10,100 average annual daily trips (AADT) between VT Route 100 and Centerville Road.
- Speed limits along VT Route 15 in Hyde Park range from 40 to 50 miles per hour. With the AADT measured on VT Route 15 the following standards must be met to allow a crosswalk across VT Route 15 according to the *VTrans Guidelines for Pedestrian Crossing Treatments, January 2015 Update*:
 - The speed limit in the area of crossing must be 40 mph or less.
 - Adequate sight distance from all vehicular approaches to both ends of the crossing must exist.
 - An in-street sign must be provided.
 - Rectangular Rapid Flashing Beacons must be provided.



Image 3-2:
Rectangular Rapid Flashing Beacon

Hyde Park Connectivity Project

Church Street:

- Church Street connects the center of the Village to the VT Route 15/VT Route 100 roundabout.
- The existing pedestrian accommodations consist of a paved sidewalk separated from the street beginning in the Village but ending approximately 900 feet before the roundabout.
- The existing sidewalks are in fair to poor condition.
- Near the roundabout, Church Street has a steep bank on the west side, storm drainage, and a garage very close to the road as shown in Image 3-1 on the east side that may present challenges to the extension of a sidewalk to the roundabout.



Image 3-3: Existing sidewalk on Church Street

East Main Street:

- East Main Street connects the Village core and Elementary School to VT Route 15 on the east end of Town.
- There are no existing pedestrian accommodations on East Main Street.
- At the crossing of Centerville Brook, between the existing guardrails, the road is approximately 27 feet wide. The width limitation requires some modifications such as a retaining wall to the crossing to allow for pedestrian and bicycle facilities.
- Property owned by the school may provide an alternate route for pedestrian and bicycle traffic traveling to the East Main Street area. However, residents report that the property is quite wet in areas, which indicates there may be wetlands.
- The density of houses decreases as East Main Street extends from the village center.

West Main Street:

- West Main Street extends from the intersection of Main Street and Johnson Street Extension to the West and ties into Black Farm Road, which connects to VT Route 15.
- The street is paved for the first 650 feet and is then a gravel surface.
- There are existing asphalt sidewalks on both sides of the street along the paved portion; however, they are in poor condition and not clearly delineated as they cross in parking areas.
- The density of houses is dramatically reduced along the gravel portion of the roadway.

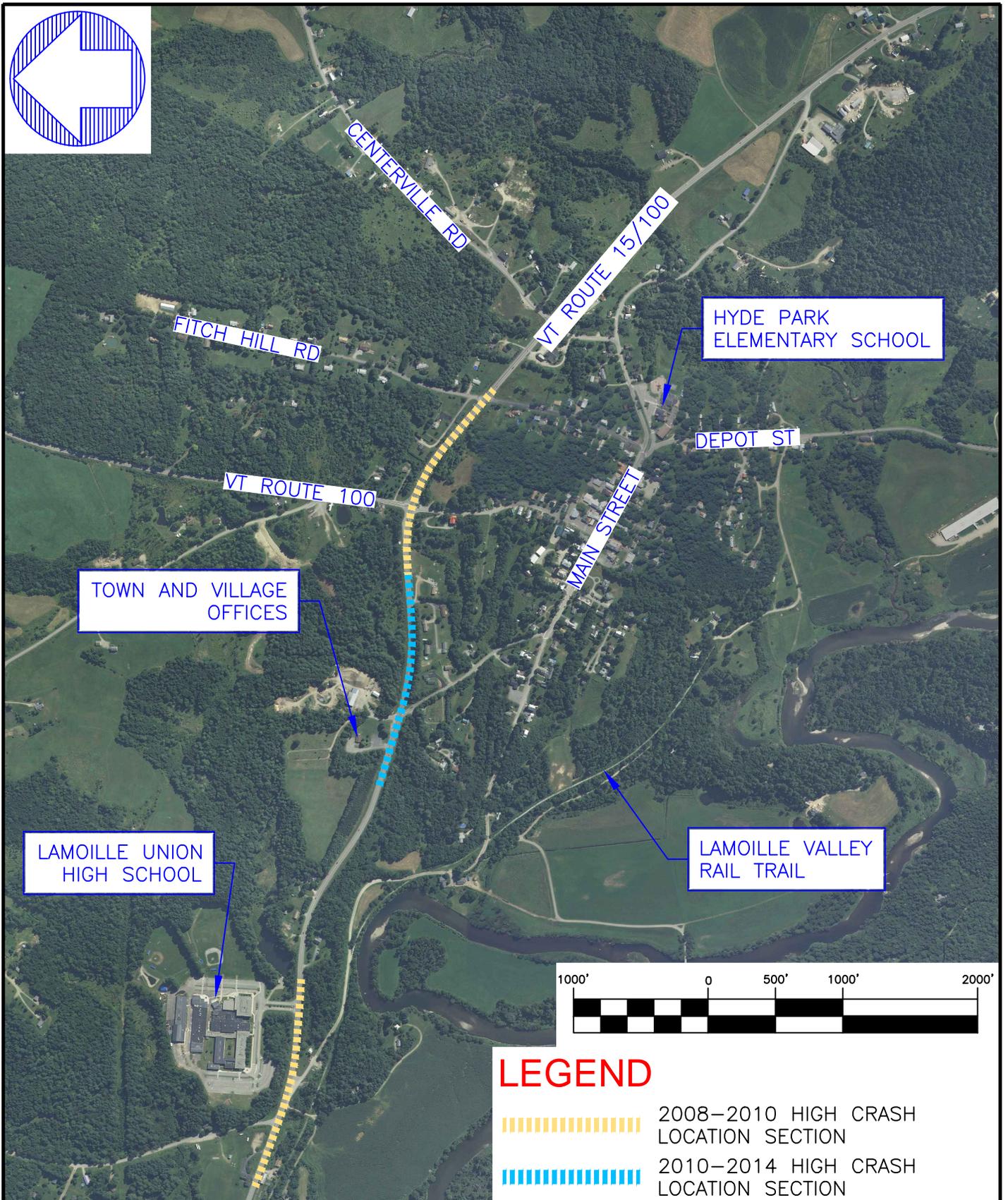
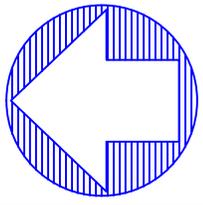
Hyde Park Connectivity Project

- West Main Street crosses the Lamoille Valley Rail Trail approximately 1,625 feet from Johnson Street Extension and is reported by residents to be part of a walking loop used by residents.

Main Street:

- Existing concrete sidewalks, curb and parking on both sides.
- No bicycle facilities.
- The addition of bicycle lanes is a challenge due to space constraints and existing parallel parking which may pose a hazard to bicyclists.

We obtained VTrans data for high crash locations, compiled for the 2008-2012 and 2010-2014 periods. Two sections along VT Route 15 in the project were identified as high crash locations in the 2008-2010 report and one section was identified in the 2010-2014 report, as shown in Figure 3-2.



LEGEND

- 2008-2010 HIGH CRASH LOCATION SECTION
- 2010-2014 HIGH CRASH LOCATION SECTION



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FIGURE 3-2
HYDE PARK CONNECTIVITY STUDY
HIGH CRASH LOCATIONS

HYDE PARK, VERMONT

PROJECT NO. 7150019
 PROJECT MJR. AJD
 SCALE AS SHOWN
 DATE DEC. 2015
 DRAWING NO. CRASH ZONES.dwg

Proposed Location of Facilities

The objective of this project is to develop a safe network of bicycle and pedestrian facilities to enhance Hyde Park, to bring bicycle and pedestrian traffic from the Lamoille Valley Rail Trail into Town, and to connect the Village to the northern side of VT Route 15. As a result of public comments received, the study focused on crossing VT Route 15, and improving and adding facilities on Church Street, East Main Street, and West Main Street with alternatives presented for each section in Tables 3-2 through 3-5. A cross section of the VT Route 15 shared use pathway alternatives is shown in Figure 3-3.

TABLE 3-2
VT ROUTE 15 CROSSING ALTERNATIVES
HYDE PARK STP BP 14(12)
HYDE PARK, VERMONT
April 4, 2016

VT Route 15 Crossing		
Alternative	Description	Characteristics
Alternative 1	Crosswalk with pedestrian activated rectangular rapid flashing beacons near Black Farm Road with an 8 foot wide paved pathway on the north side of VT Route 15 from Cricket Hill Road to Lamoille Union High School (LUHS).	<ul style="list-style-type: none"> • Less costly than other alternatives • Does not provide separation from VT Route 15 traffic • Easement necessary to connect LVRT to Black Farm Road • Requires reduction in speed to 40MPH in area of crossing
Alternative 2	Bridge crossing VT Route 15 near Black Farm Road with an 8 foot wide paved pathway on the north side of VT Route 15 from Cricket Hill Road to LUHS	<ul style="list-style-type: none"> • High expense • Provides separation from VT Route 15 traffic • Easement necessary to connect LVRT to Black Farm Road • Maintenance
Alternative 3	Tunnel crossing between Black Farm Road and LUHS	<ul style="list-style-type: none"> • High expense • Possible wetland impacts • Maintenance
Alternative 4	Crosswalk with pedestrian activated rectangular rapid flashing beacons near Johnson Street Extension with an 8 foot wide paved pathway from Johnson Street Extension to LUHS on the north side of VT Route 15.	<ul style="list-style-type: none"> • High expense • Does not provide separation from VT 15 traffic at crossing
Alternative 5	Improve roundabout at VT Route 15/VT Route 100 to provide pedestrian facilities, install an 8 foot wide paved pathway from the roundabout to LUHS on the north side of VT Route 15.	<ul style="list-style-type: none"> • High expense • Requires improvements on Church Street to connect to Village • May require amendment to existing stormwater permit

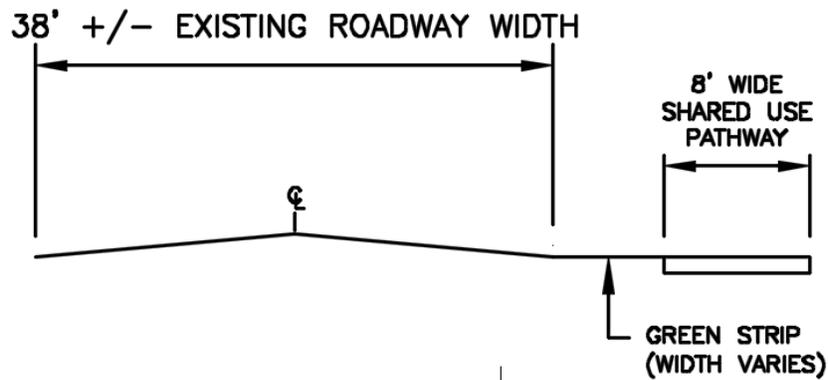
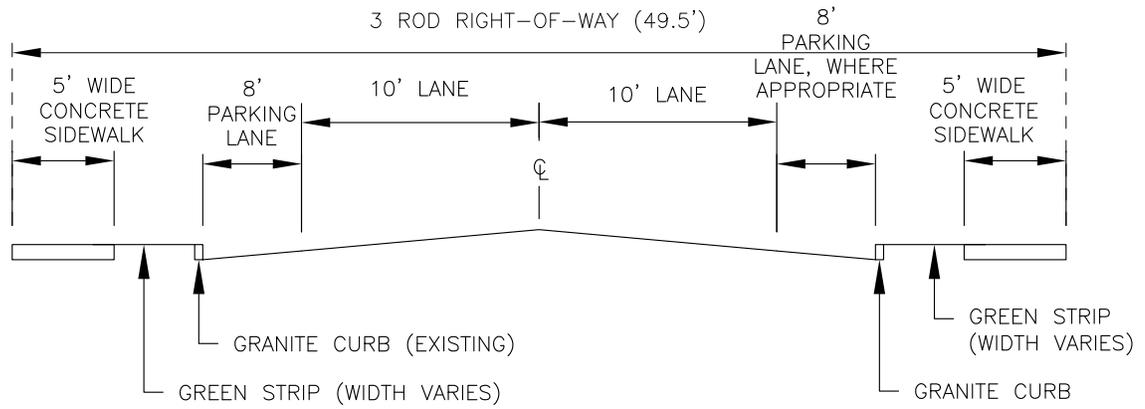


FIGURE 3-3: VERMONT ROUTE 15 PATHWAY CROSS SECTION

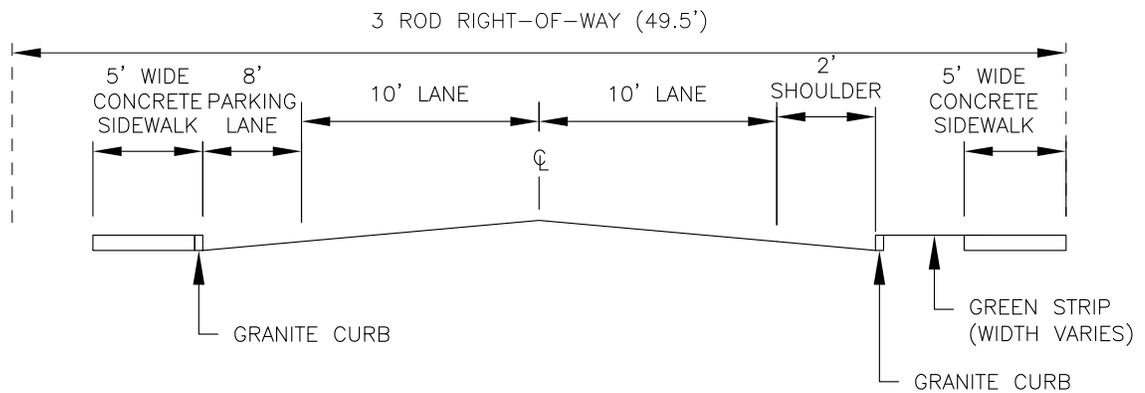
TABLE 3-3
CHURCH STREET ALTERNATIVES
HYDE PARK STP BP 14(12)
HYDE PARK, VERMONT
January 18, 2016

Church Street		
Alternative	Description	Characteristics
Alternative 1	5 foot wide concrete sidewalk with granite curb on both sides from Main Street to approximately 186 Church Street then extend the sidewalk to the roundabout on the east side only.	<ul style="list-style-type: none"> • Potential conflict with existing parking • Utility conflicts
Alternative 2	Replace existing sidewalks with 5 foot wide concrete sidewalk, add granite curb along existing sidewalk after Post Office and extend the sidewalk to the roundabout on the east side only.	<ul style="list-style-type: none"> • Potential conflict with one existing structure • Utility conflicts
Alternative 3	5 foot wide concrete sidewalk and granite curb on both sides of Church Street from Main Street to the roundabout.	<ul style="list-style-type: none"> • Potential conflict with two existing structures • Steep bank near VT Route 15 will likely require a retaining wall • Utility conflicts

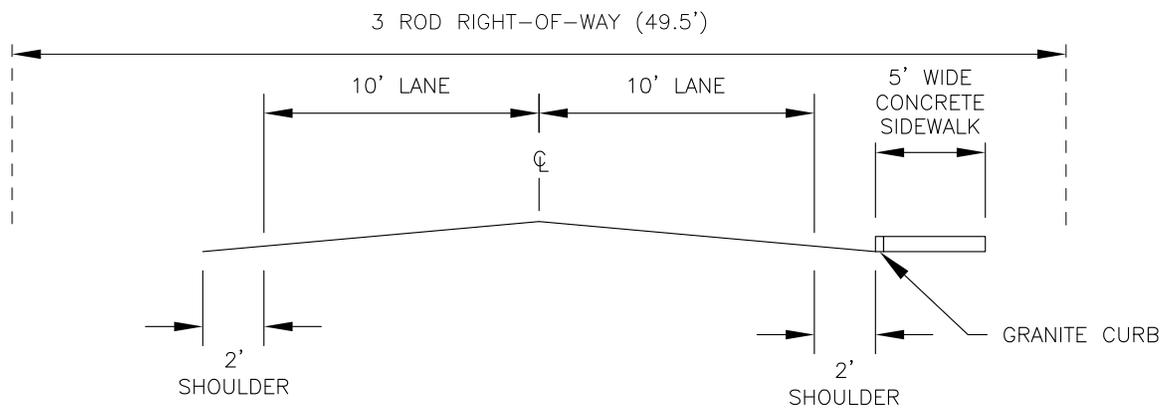
Cross sections of each of the Church Street alternatives are shown in Figures 3-4 to 3-6.



MAIN STREET TO POST OFFICE



POST OFFICE TO 186 CHURCH STREET



186 CHURCH STREET TO ROUNDABOUT



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FIGURE 3-4

CHURCH STREET
CROSS SECTIONS
ALTERNATIVE 1

HYDE PARK, VERMONT

PROJECT NO. 7150019

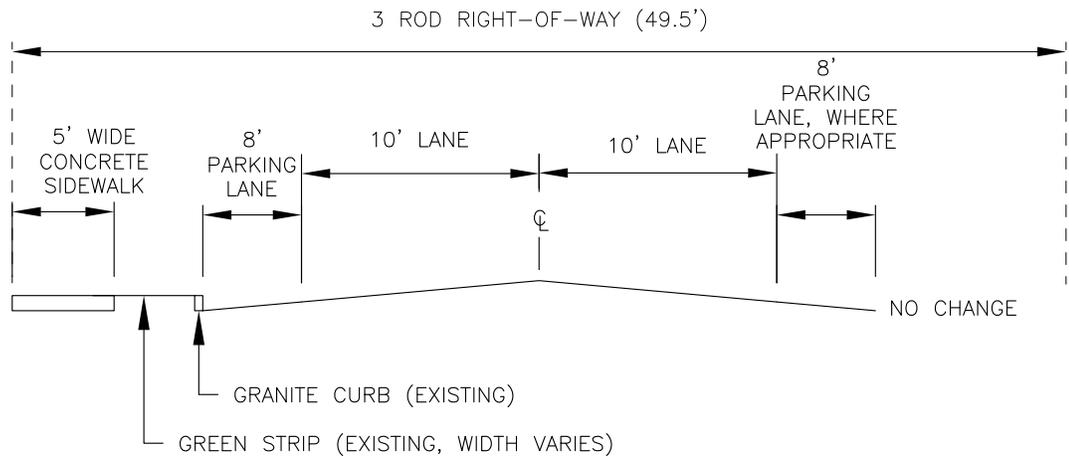
PROJECT MJR. AJD

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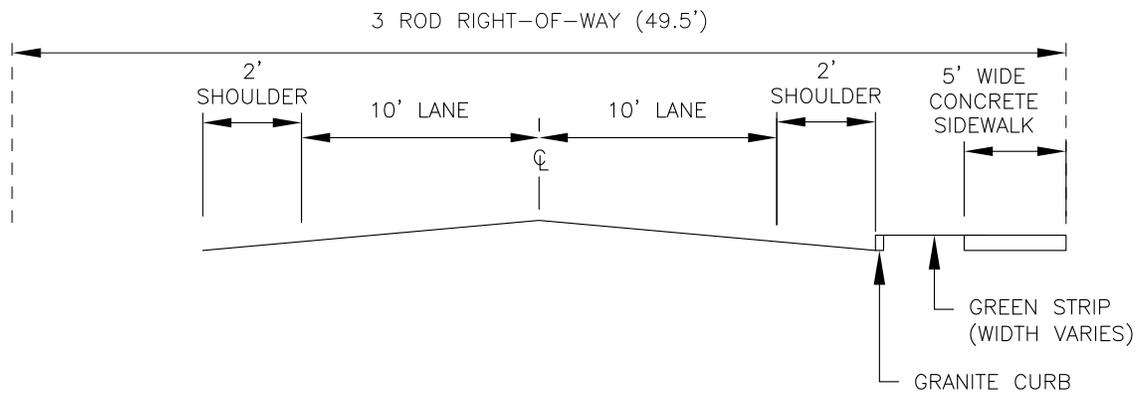
DATE OCT 2015

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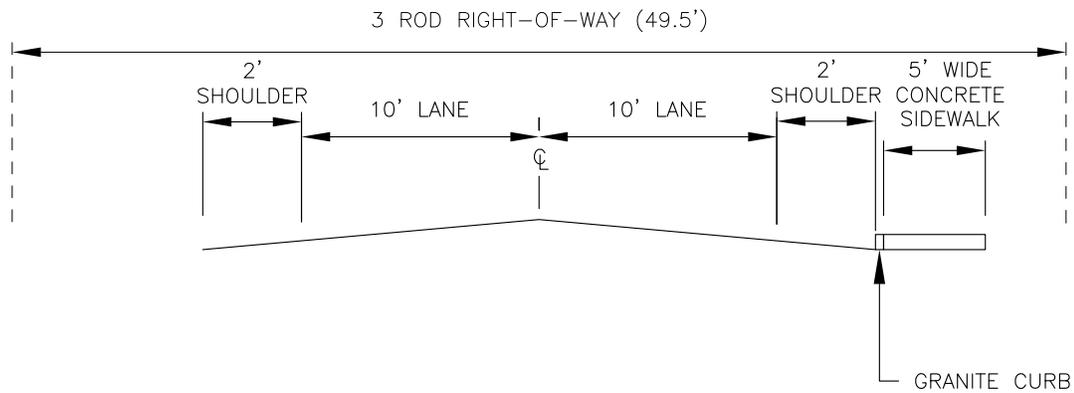
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MAIN STREET TO POST OFFICE



POST OFFICE TO 186 CHURCH STREET



186 CHURCH STREET TO ROUNDABOUT



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**FIGURE 3-5
CHURCH STREET
CROSS SECTIONS
ALTERNATIVE 2**

HYDE PARK, VERMONT

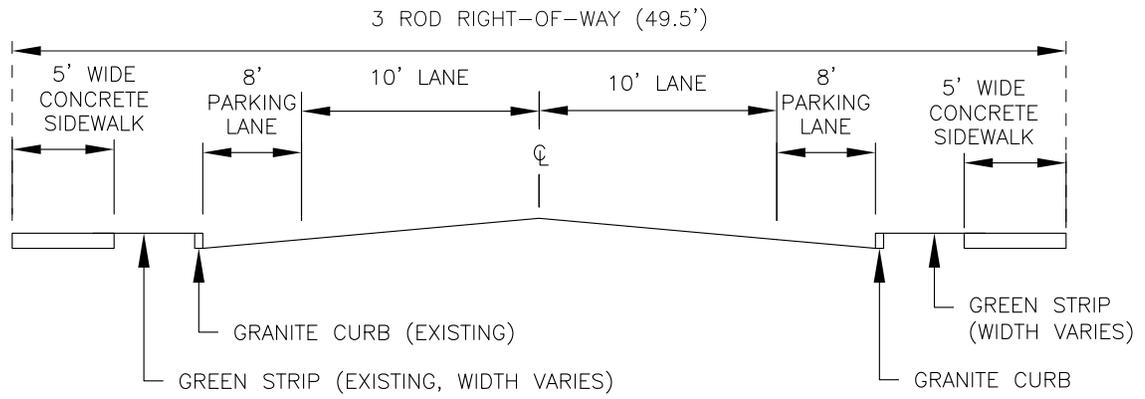
PROJECT NO. 7150019

PROJECT MJR. AJD

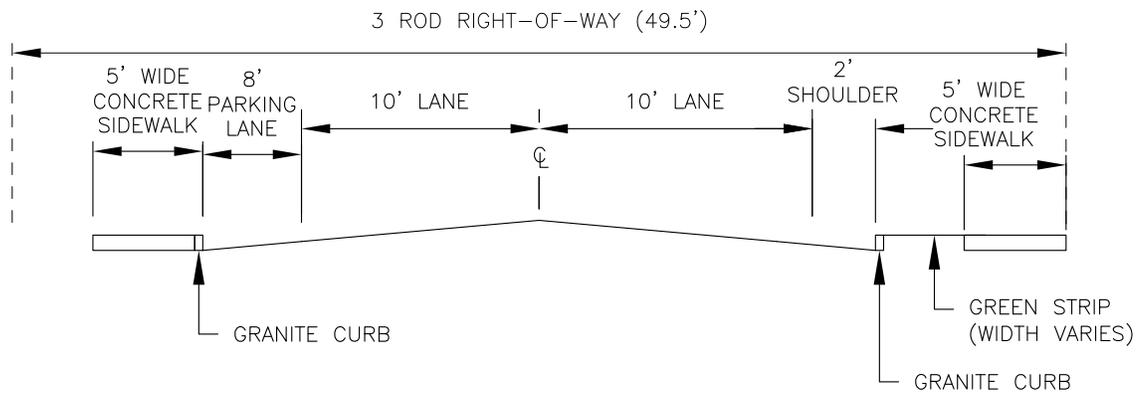
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DATE OCT 2015

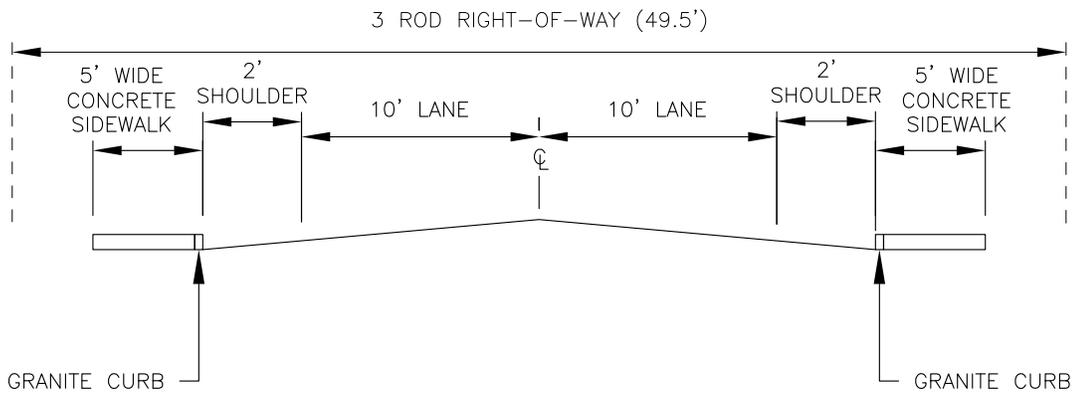
DRAWING NO. Alternatives.dwg



MAIN STREET TO POST OFFICE



POST OFFICE TO 186 CHURCH STREET



186 CHURCH STREET TO ROUNDABOUT



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FIGURE 3-6

**CHURCH STREET
CROSS SECTIONS
ALTERNATIVE 3**

HYDE PARK, VERMONT

PROJECT NO. 7150019

PROJECT MJR. AJD

SCALE NTS

DATE OCT 2015

DRAWING NO. Alternatives.dwg

TABLE 3-4
EAST MAIN STREET ALTERNATIVES
HYDE PARK STP BP 14(12)
HYDE PARK, VERMONT
April 4, 2016

East Main Street		
Alternative	Description	Characteristics
Alternative 1a	5 foot wide concrete sidewalk with green strip on North Side of road from Eden Street to Centerville Road. Add a crosswalk and sidewalk to link to existing sidewalks at the elementary school.	<ul style="list-style-type: none"> • Extends pedestrian facilities to Centerville Road • Provides marked crossing to elementary school • Utility conflicts
Alternative 1b	5 foot wide concrete sidewalk with curb adjacent to the road on the North side of the road from Centerville Road to VT Route 15.	<ul style="list-style-type: none"> • Archaeological Phase 1 Assessment required • Utility conflicts • Centerville Brook crossing will likely require a retaining wall
Alternative 2	8 foot wide paved shared use pathway with green strip on the north side from Eden Street to VT Route 15. Add a crosswalk and sidewalk to link existing sidewalks at the Elementary School.	<ul style="list-style-type: none"> • Archaeological Phase 1 Assessment required • Utility conflicts • Centerville Brook crossing will likely require a retaining wall
Alternative 3	8 foot wide paved shared use pathway with curb adjacent to the road on the north side from Eden Street to VT Route 15. Add a crosswalk and sidewalk to link existing sidewalks at the Elementary School.	<ul style="list-style-type: none"> • Archaeological Phase 1 Assessment required • Utility conflicts • Centerville Brook crossing will likely require a retaining wall

Cross sections of each of the East Main Street alternatives are shown in Figure 3-7.

A new development at the eastern end of East Main Street recently applied for a Land Use permit, the Town Selectboard included a recommendation in their comments to provide a pedestrian connection to East Main Street as part of the site development, see Appendix C for the letter from the Selectboard and a map of the suggested route.

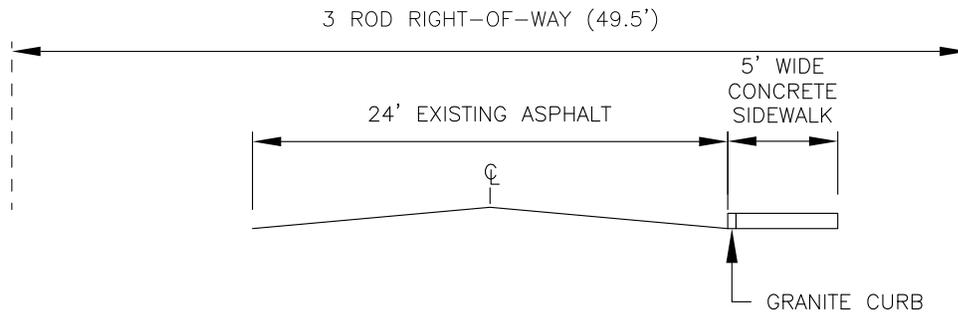


Image 3-4: East Main Street at Centerville Brook Crossing

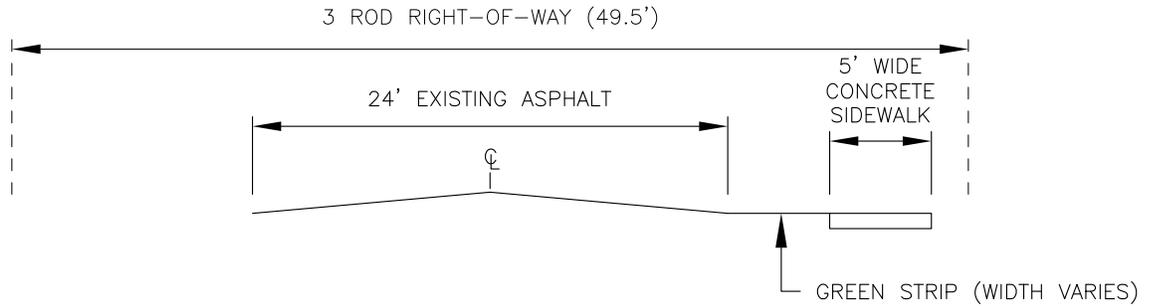


Image 3-5: East Main Street Looking West

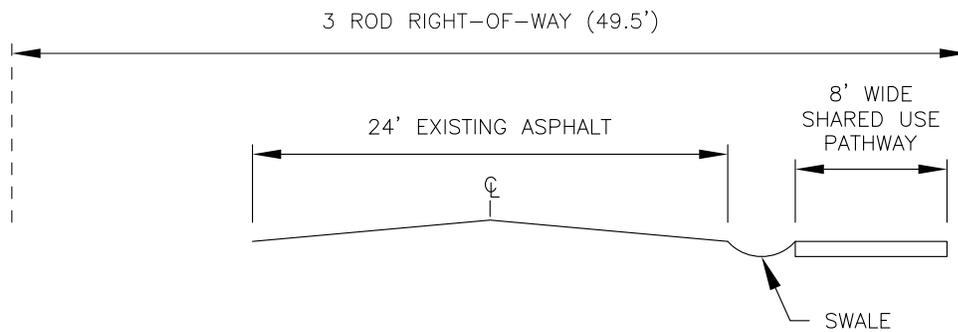
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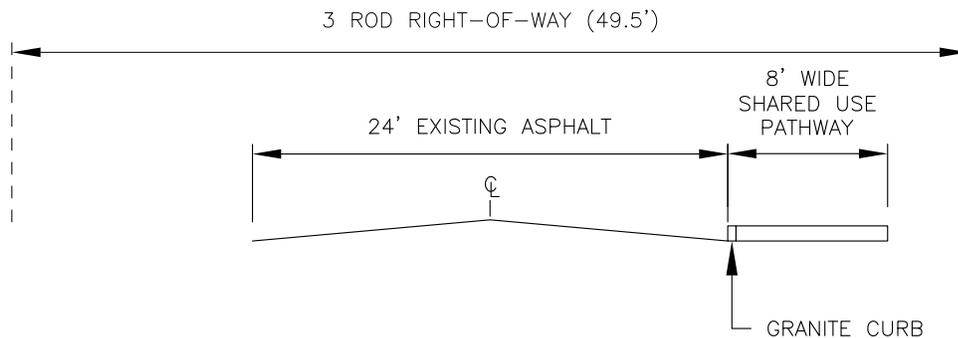
ALTERNATIVE 1: CENTERVILLE ROAD TO VT 15



ALTERNATIVE 1: EDEN STREET TO CENTERVILLE ROAD



ALTERNATIVE 2: EDEN STREET TO VT ROUTE 15



ALTERNATIVE 3: EDEN STREET TO VT ROUTE 15



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FIGURE 3-7

**EAST MAIN STREET
CROSS SECTIONS**

HYDE PARK, VERMONT

PROJECT NO. 7150019

PROJECT MJR. AJD

SCALE NTS

DATE OCT 2015

DRAWING NO. Alternatives.dwg

TABLE 3-5
WEST MAIN STREET ALTERNATIVE
HYDE PARK STP BP 14(12)
HYDE PARK, VERMONT
January 18, 2016

West Main Street		
Alternative	Description	Characteristics
Alternative 1a	Concrete sidewalk with granite curb on both sides of the roadway from Johnson Street Extension to the end of asphalt.	<ul style="list-style-type: none"> Archaeological Phase 1 assessment required Utility conflicts
Alternative 1b	Aggregate sidewalk with stone lined swale on the north side of the roadway from the end of asphalt to LVRT.	<ul style="list-style-type: none"> Potentially significant grading required in some areas Utility conflicts

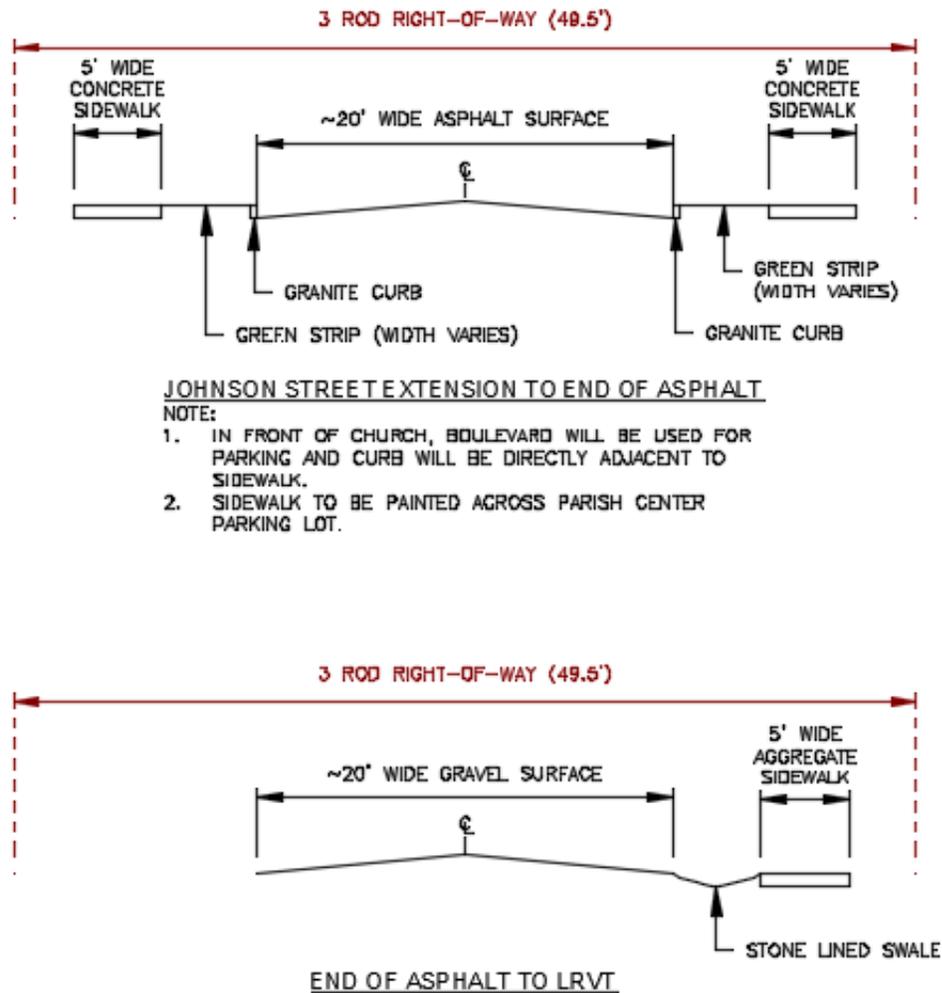


FIGURE 3-8: WEST MAIN STREET CROSS SECTIONS

The proposed routes for each of the alternatives are shown in Figures 3-9 to 3-20. An evaluation matrix of all the alternatives is attached in Table 3-6.

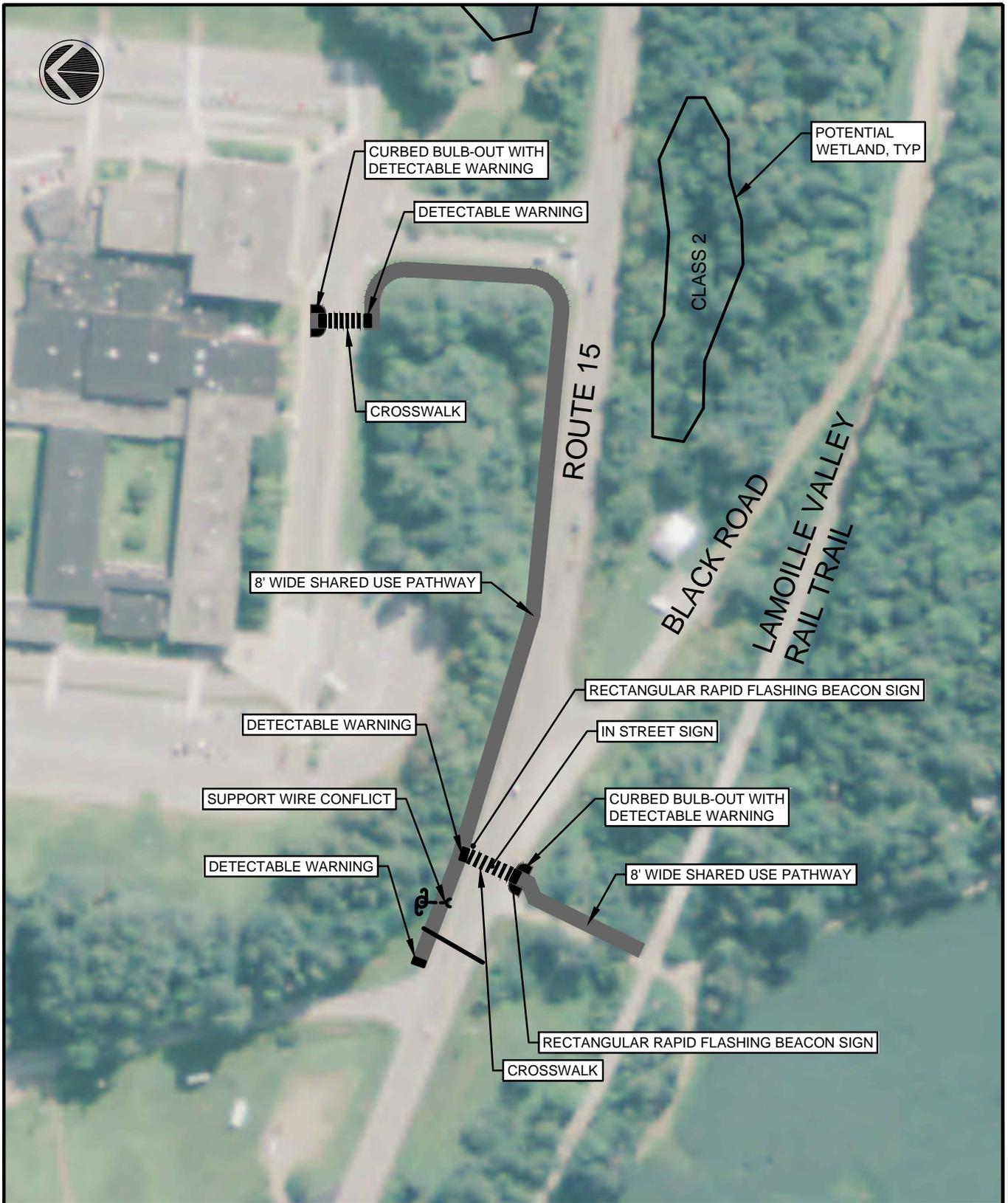


	FIGURE 3-9 VT-15 CROSSING ALTERNATIVE 1	PROJECT NO. <u>7150019</u> PROJECT MJR. <u>AJD</u> SCALE <u>NTS</u> DATE <u>OCT 2015</u> DRAWING NO. <u>Alternatives.dwg</u>
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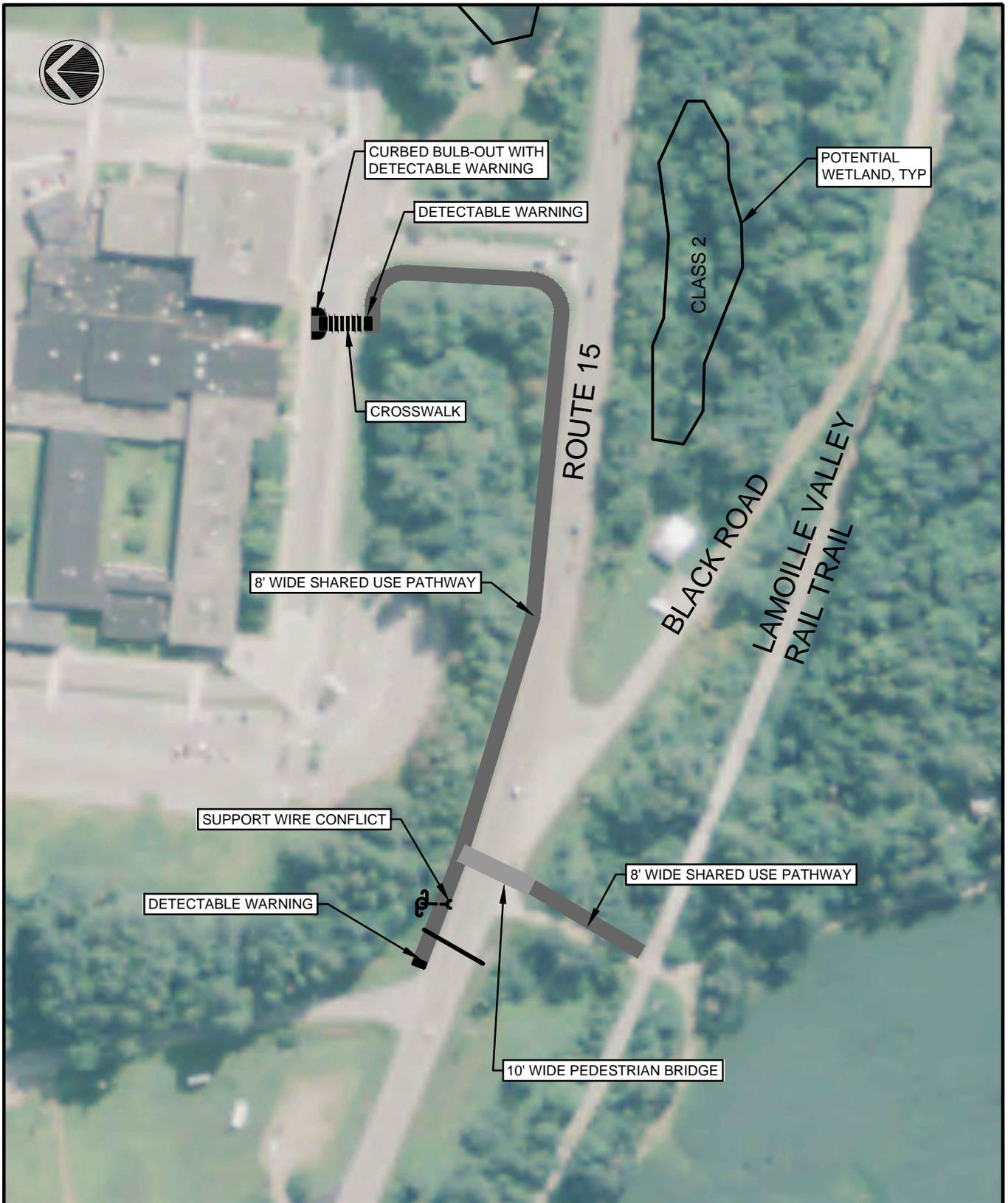
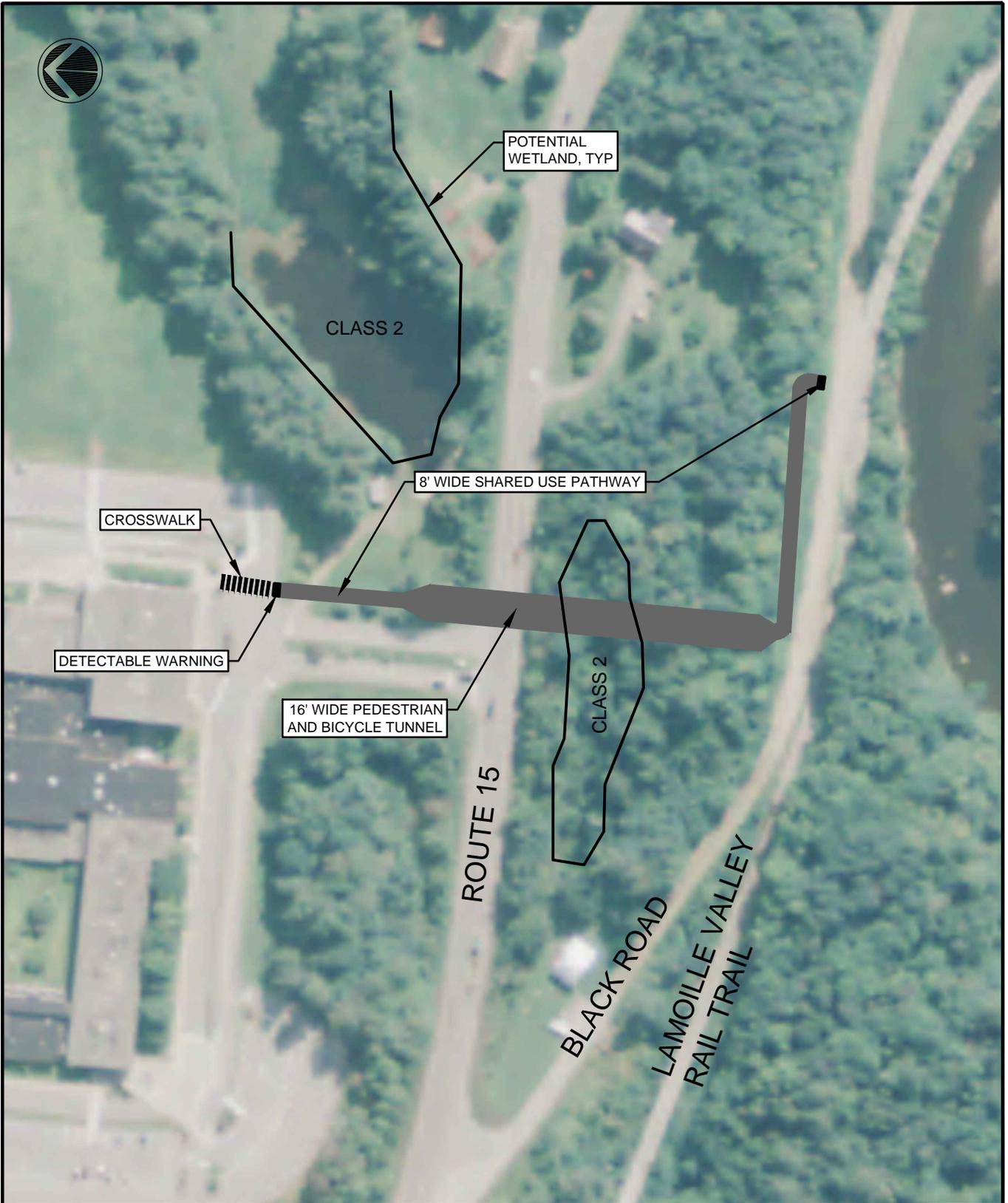


	FIGURE 3-10 VT-15 CROSSING ALTERNATIVE 2	PROJECT NO. <u>7150019</u>
	HYDE PARK, VERMONT	PROJECT MJR. <u>AJD</u> SCALE <u>NTS</u> DATE <u>OCT 2015</u> DRAWING NO. <u>Alternatives.dwg</u>
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	<p>HYDE PARK, VERMONT</p>	



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VT ROUTE 15 CROSSING
 ALTERNATIVE 4
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FIG 3-12
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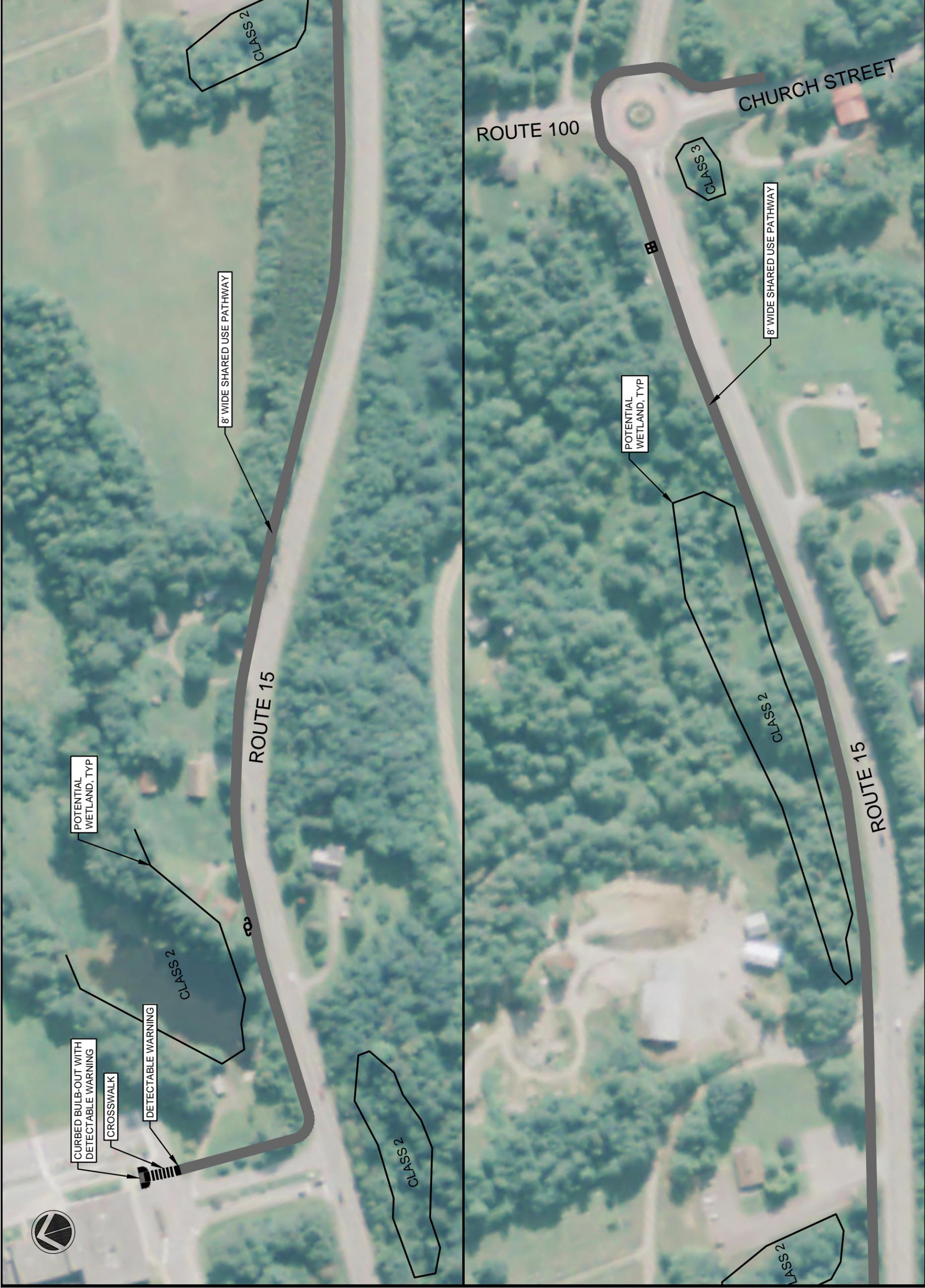
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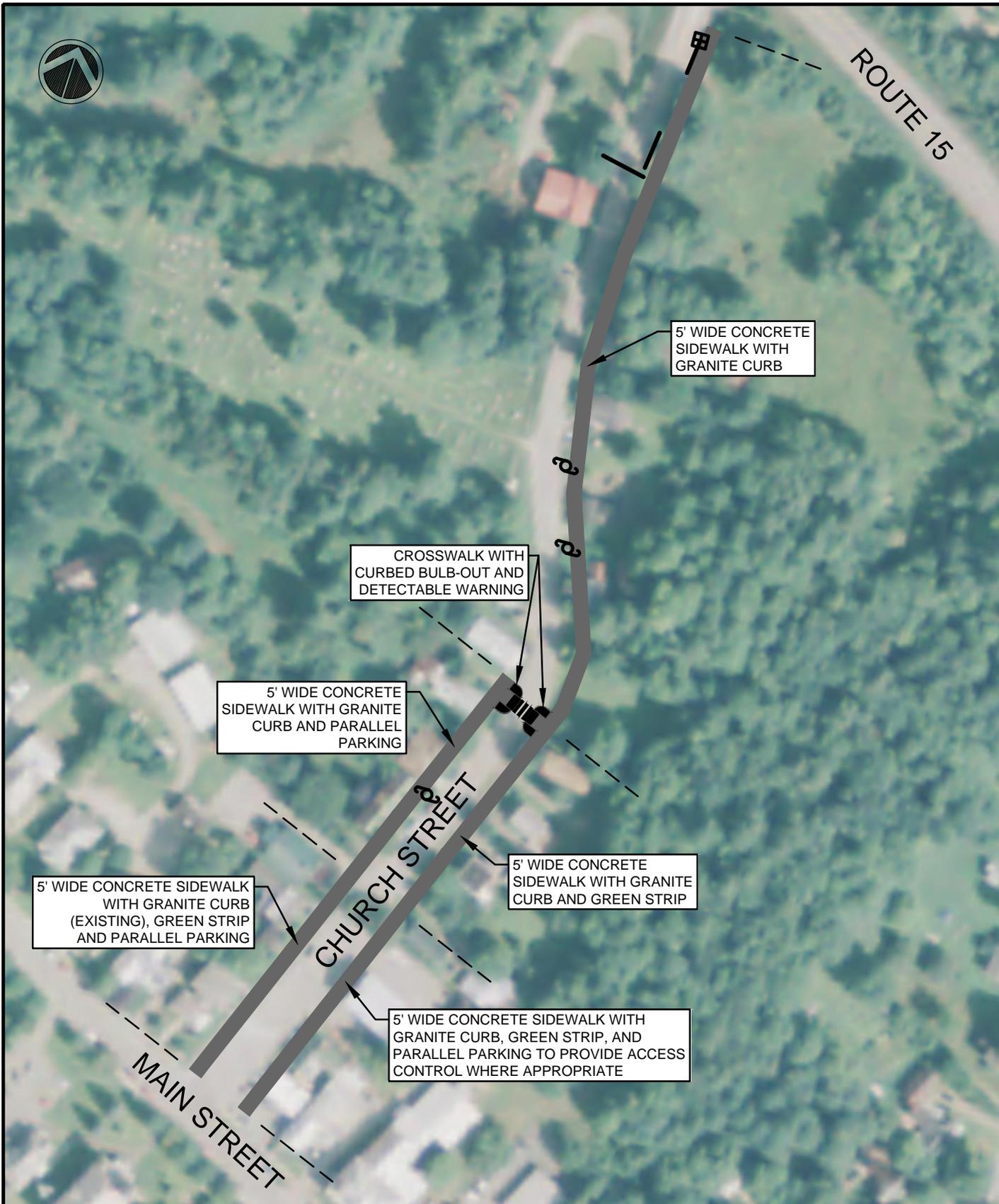
VT ROUTE 15 CROSSING
 ALTERNATIVE 5
 HYDE PARK, VERMONT

FIG 3-13

DWG. NO. Alternatives.dwg
 SHEET 1 OF 1



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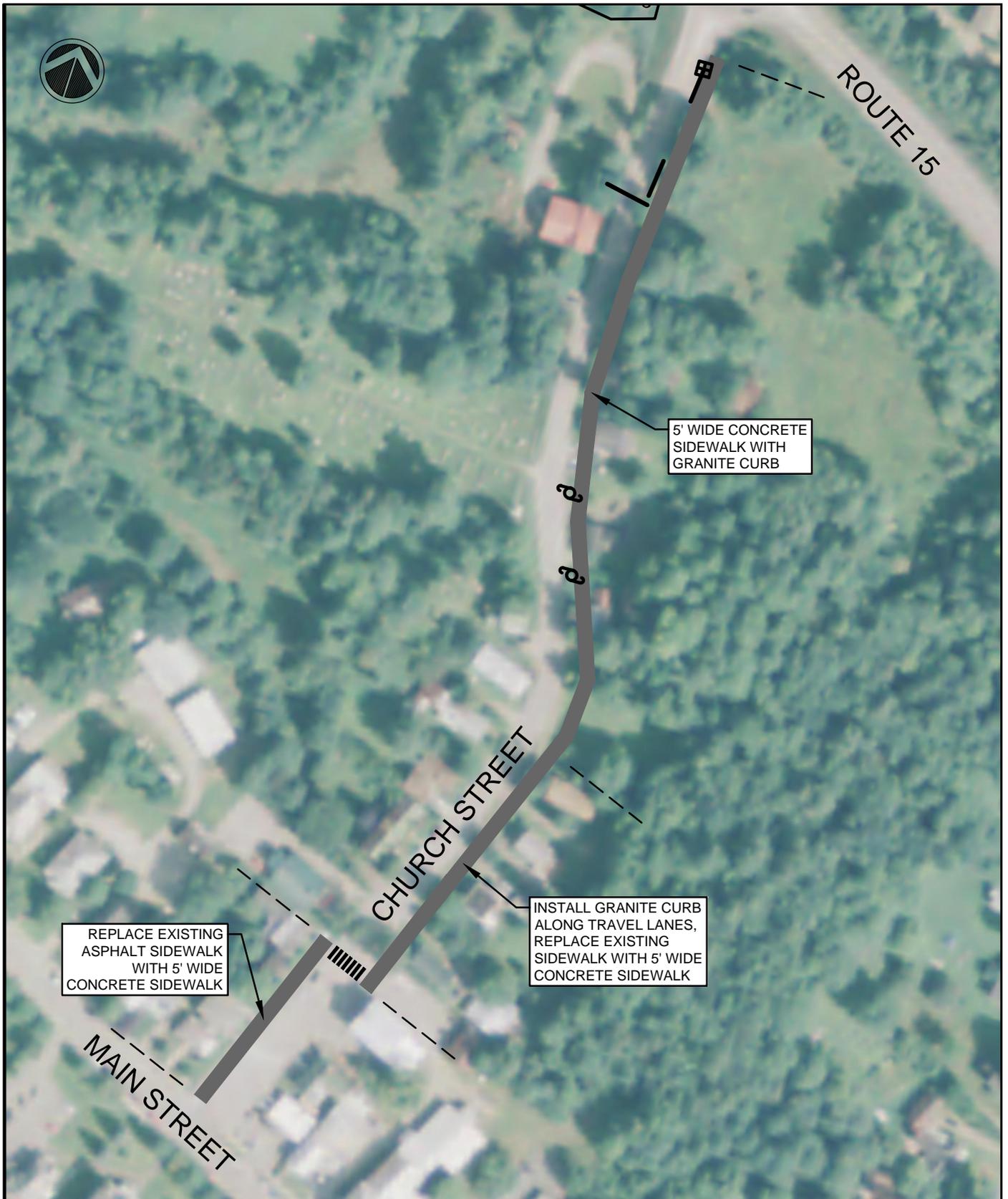


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FIGURE 3-14
CHURCH STREET
ALTERNATIVE 1

HYDE PARK, VERMONT

PROJECT NO. 7150019
 PROJECT MJR. AJD
 SCALE NTS
 DATE OCT 2015
 DRAWING NO. Alternatives.dwg



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FIGURE 3-15

CHURCH STREET
ALTERNATIVE 2

HYDE PARK, VERMONT

PROJECT NO. 7150019

PROJECT MJR. AJD

SCALE NTS

DATE OCT 2015

DRAWING NO. Alternatives.dwg

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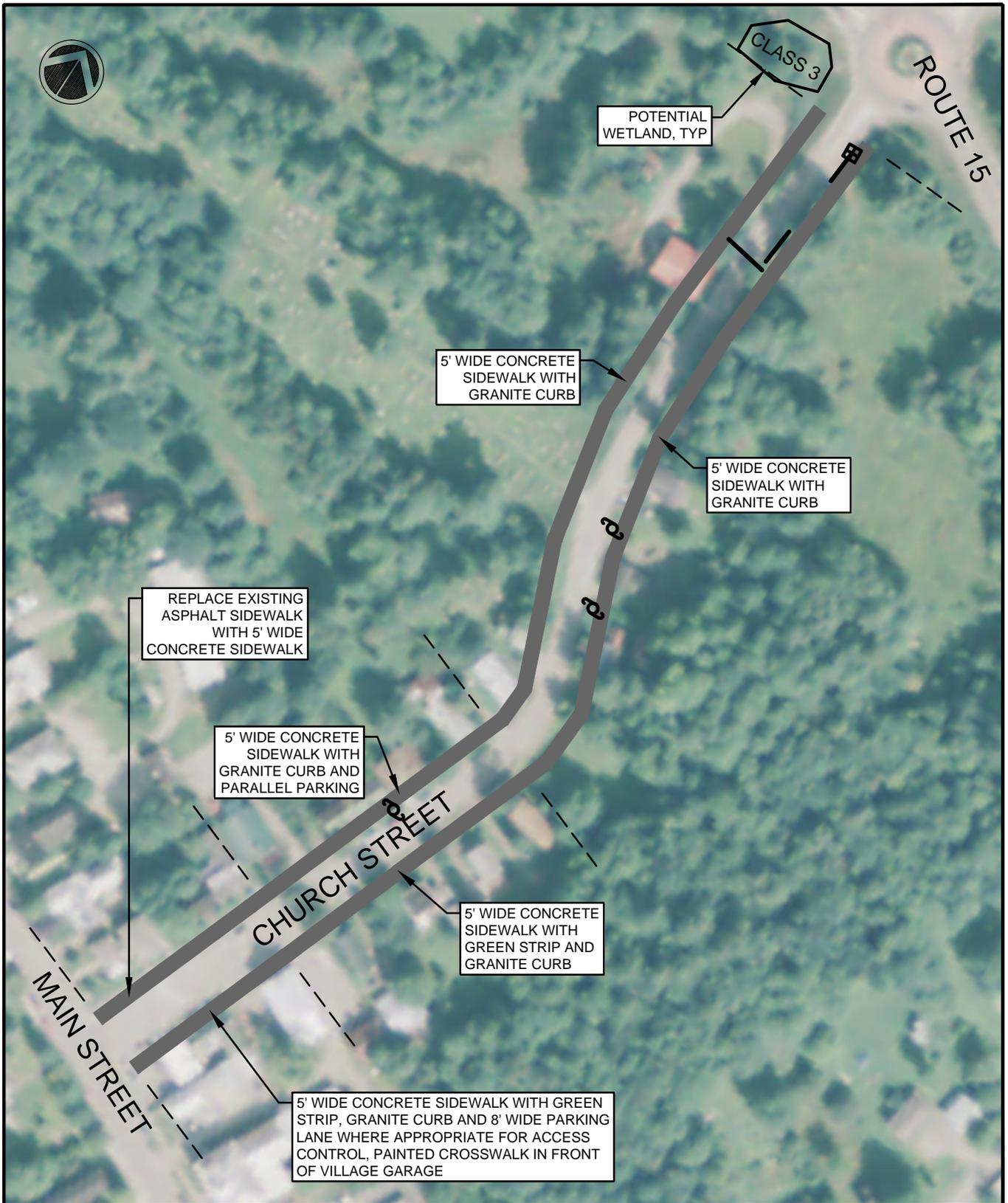


	FIGURE 3-16 CHURCH STREET ALTERNATIVE 3	PROJECT NO. <u>7150019</u> PROJECT MJR. <u>AJD</u> SCALE <u>NTS</u> DATE <u>OCT 2015</u> DRAWING NO. <u>Alternatives.dwg</u>
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EDEN STREET

CENTERVILLE ROAD

EAST MAIN STREET

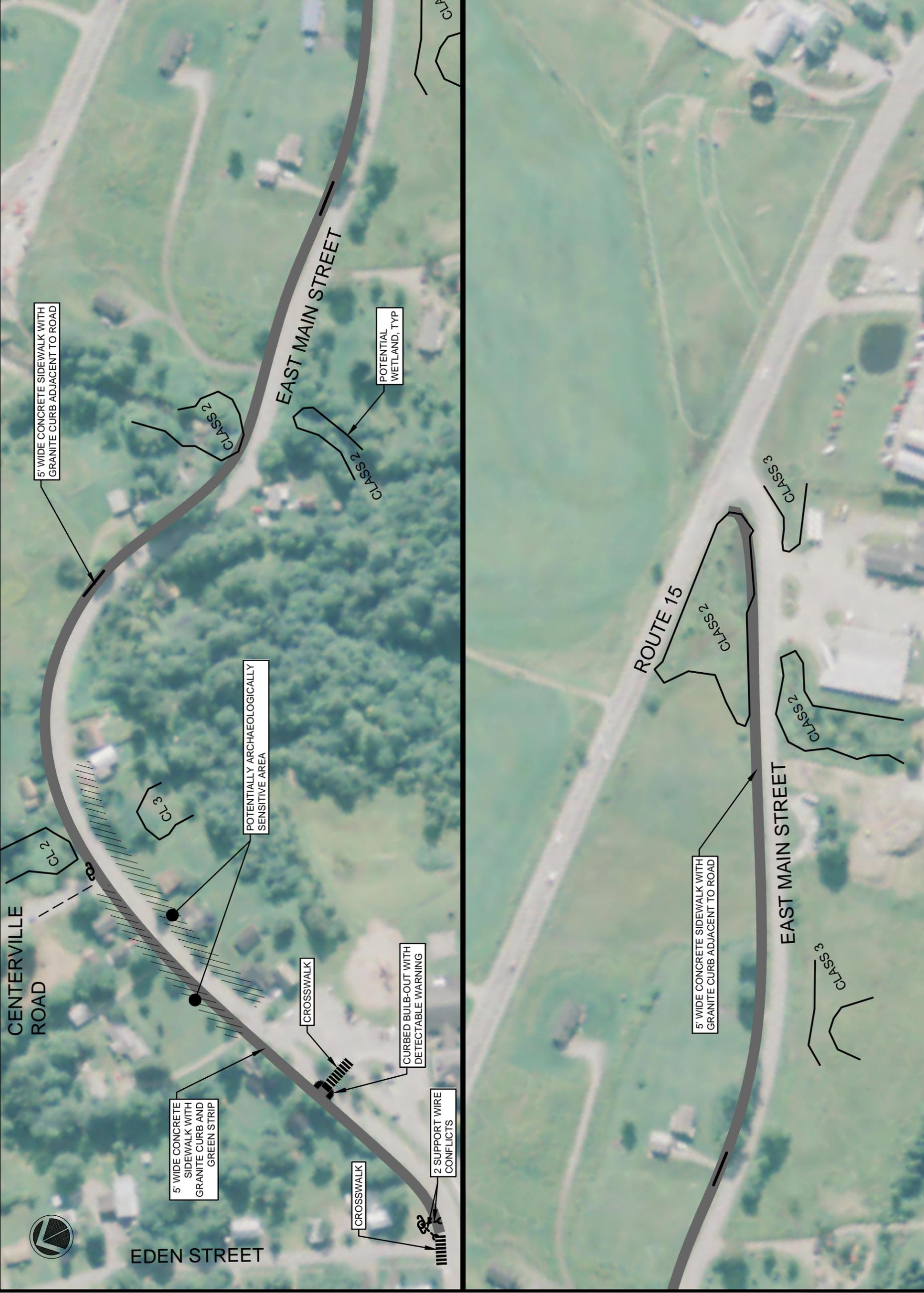
ROUTE 15

EAST MAIN STREET

FIG 3-17

DWG. NO. Alternatives.dwg
SHEET 1 OF 1

EAST MAIN STREET
ALTERNATIVE 1
HYDE PARK, VERMONT



5' WIDE CONCRETE SIDEWALK WITH GRANITE CURB ADJACENT TO ROAD

5' WIDE CONCRETE SIDEWALK WITH GRANITE CURB AND GREEN STRIP

POTENTIALLY ARCHAEOLOGICALLY SENSITIVE AREA

CROSSWALK

CURBED BULB-OUT WITH DETECTABLE WARNING

2 SUPPORT WIRE CONFLICTS

POTENTIAL WETLAND, TYP

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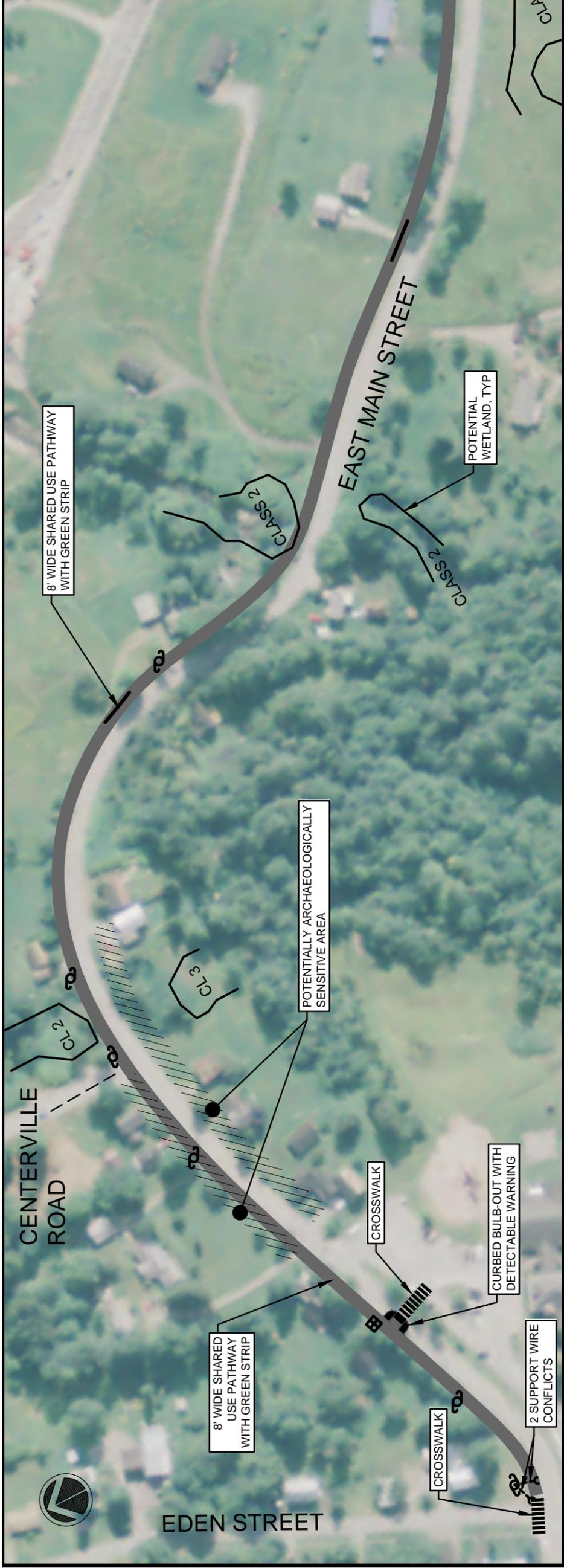
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**EAST MAIN STREET
 ALTERNATIVE 2**

HYDE PARK, VERMONT

FIG 3-18

DWG. NO. Alternatives.dwg
 SHEET 1 OF 1





EDEN STREET

CENTERVILLE ROAD

EAST MAIN STREET

8' WIDE SHARED USE PATHWAY WITH CURB ADJACENT TO ROADWAY

8' WIDE SHARED USE PATHWAY WITH GRANITE CURB ADJACENT TO ROADWAY

POTENTIALLY ARCHAEOLOGICALLY SENSITIVE AREA

CROSSWALK

CURBED BULB-OUT WITH DETECTABLE WARNING

2 SUPPORT WIRE CONFLICTS

POTENTIAL WETLAND, TYP

CLASS 2

CLASS 2

CL 3

CL 2

ROUTE 15

CLASS 3

8' WIDE SHARED USED PATHWAY WITH CURB ADJACENT TO ROADWAY

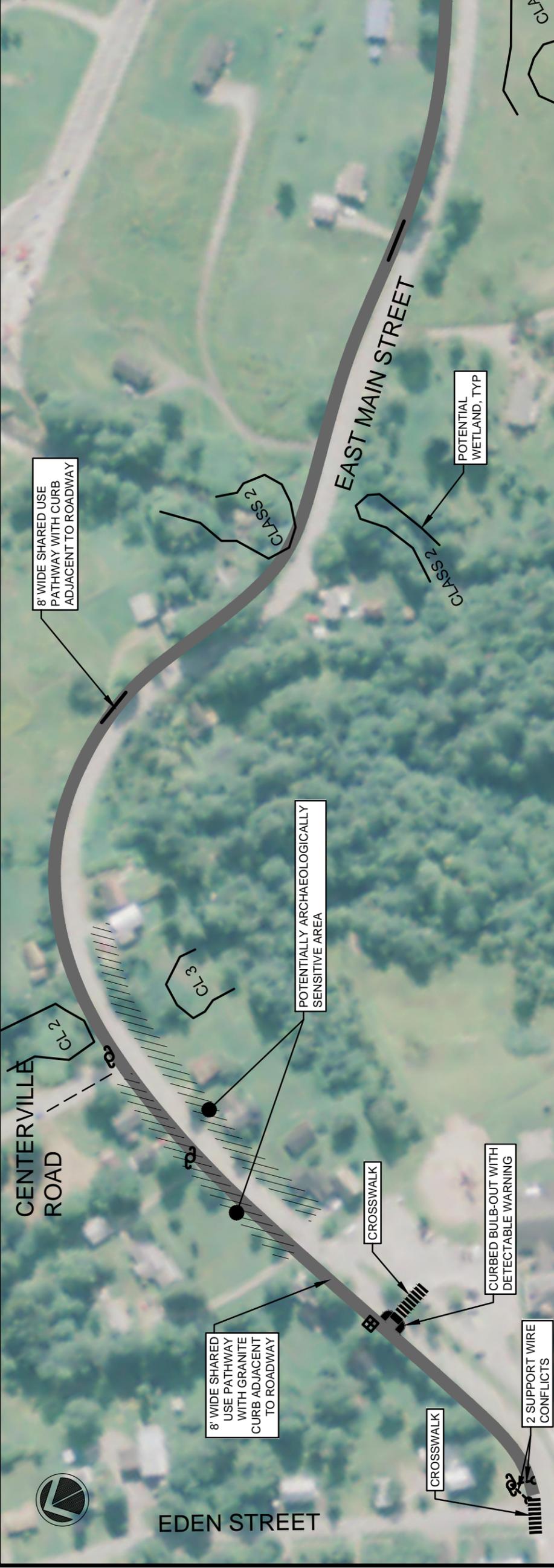
EAST MAIN STREET

CLASS 3

CLASS 2

CLASS 2

CLASS 2



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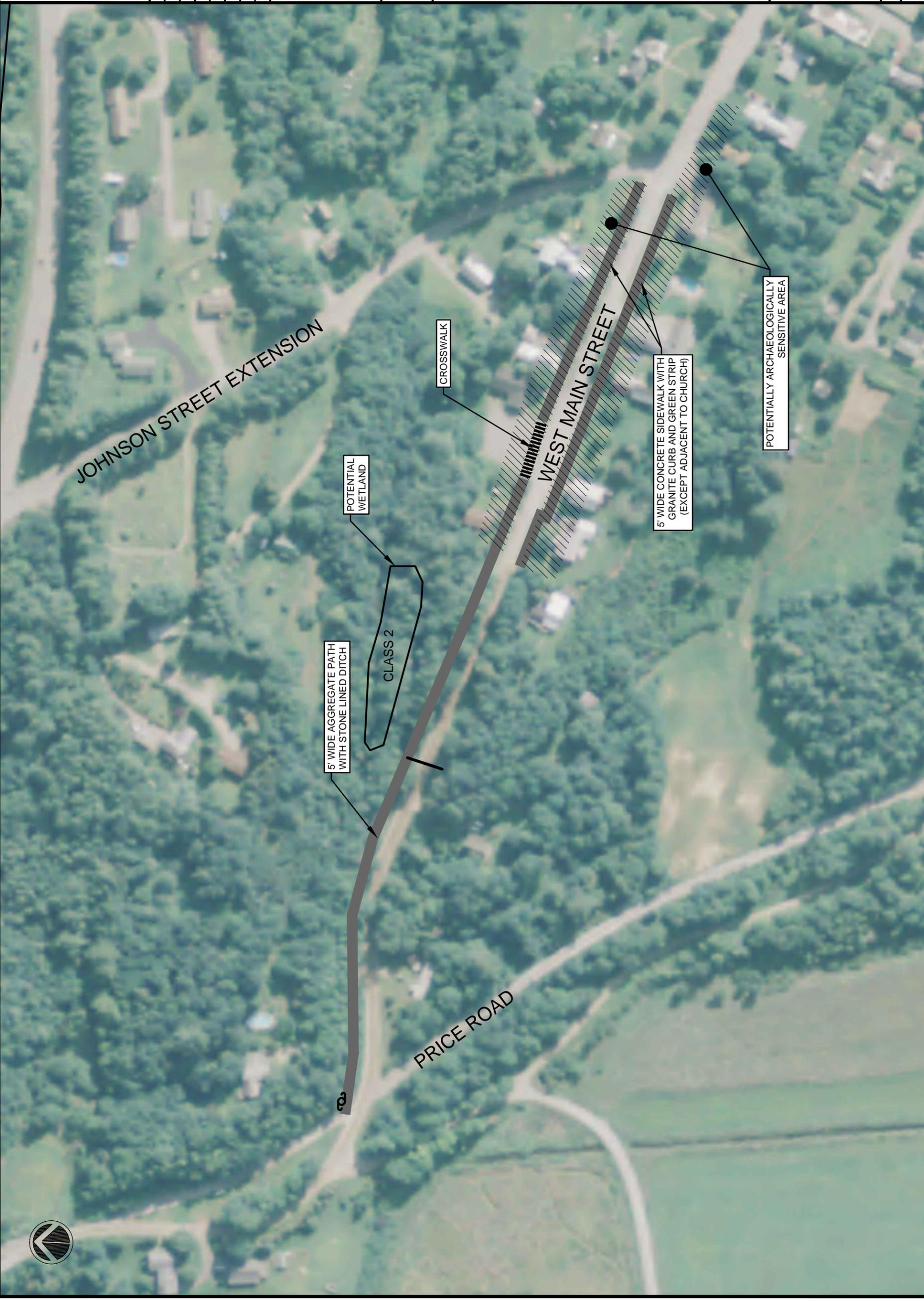
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EAST MAIN STREET
 ALTERNATIVE 3
 HYDE PARK, VERMONT

FIG 3-19

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WEST MAIN STREET ALTERNATIVE
 HYDE PARK, VERMONT

FIG 3-20

DWG. NO. Alternatives.dwg
 SHEET 1 OF 1

Table 3-6
PRELIMINARY EVALUATION MATRIX
SHARED PATHWAY AND SIDEWALK IMPROVEMENTS
Hyde Park, Vermont
January 18, 2016

Category		VT 15 Crossing				
		Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Description		Crosswalk near Black Farm Road with 8' wide paved path to school	Bridge Crossing near Black Farm Road with 8' wide paved path to school	Tunnel Crossing near Black Farm Road with 8' wide paved path to school	Crossing at Johnson Street Extension with 8' wide paved path to school	Crossing at Roundabout with 8' wide paved path to school
Construction Characteristics	Length (ft)	1050	1050	1050	2600	4100
	Width (ft)	8	8	8	8	8
	Surface	Asphalt	Asphalt	Asphalt	Asphalt	Asphalt
Impacts	New Impervious (sf)	8,400	8,400	8,400	20,800	32,800
	Ag. Lands	None	None	None	None	None
	Archaeological	None	None	None	None	None
	Historical	None	None	None	None	None
	Hazardous materials	None	None	None	None	None
	Floodplains	None	None	None	None	None
	Fish & Wildlife	None	None	None	None	None
	Rare, Threatened & Endangered Species	None	None	None	None	None
	Public Lands - Sect. 4(f)	None	None	None	None	None
	LWCP - Sect. 6(f)	None	None	None	None	None
Local & Regional Issues	Noise	None	None	Potential	Potential	Potential
	Wetlands	None	None	None	None	None
	Utilities - aerial	1 utility support wire relocation	1 utility support wire relocation	None	1 utility pole relocation	1 utility pole relocation
	Utilities - underground	Existing culvert	Existing culvert	Potential conflicts	None	None
	Concerns	Existing culvert	Crossing safety	None	None	None
	Aesthetics	Unchanged	Unchanged	Improved	Improved	Improved
	Community Character	Unchanged	Improved	Improved	Improved	Improved
	Economic Impacts	Negative due to lack of connection with LVRT	Positive	Positive	Positive	Positive
	Conformance to Town Plan	No	Yes	Yes	Yes	Yes
	Satisfies Purpose & Need	No	Yes	Yes	Yes	Yes
Permits	ACT 250	No	No	No	No	No
	401 Water Quality	No	No	No	No	No
	404 COE permit (<3,000 SF - Self Verification)	No	No	No	No	No
	Stream Alteration	No	No	No	No	No
	Conditional Use Determination	No	No	No	No	No
	Storm Water Discharge	No	No	No	No	No
	Lakes & Ponds	No	No	No	No	No
	T & E Species	No	No	No	No	No
	SHPO	TBD	TBD	TBD	TBD	TBD
	Number of Driveway Crossings	0	0	0	5	5
Safety	Number of Roadway Crossings	1	0	0	1	1
	Construction Cost Estimate	\$289,100.00	\$478,800.00	\$996,600.00	\$648,700.00	\$919,400.00
Contingency	25% of Construction Cost	\$73,900.00	\$120,900.00	\$250,900.00	\$163,900.00	\$230,900.00
	Total Construction Cost	\$363,000.00	\$599,700.00	\$1,247,500.00	\$812,600.00	\$1,150,300.00
Engineering - Final Design	15% of Total Construction cost	\$54,000.00	\$90,000.00	\$187,000.00	\$122,000.00	\$173,000.00
	Design and 15% Construction	\$	\$	\$	\$	\$
Engineering - Construction	15% of Total Construction cost	\$54,000.00	\$90,000.00	\$187,000.00	\$122,000.00	\$173,000.00
	Estimated at 10% of Total	\$	\$	\$	\$	\$
LPM, Legal & Fiscal	Construction Cost	\$36,000.00	\$60,000.00	\$125,000.00	\$81,000.00	\$115,000.00
	Estimated at 3% of Total	\$	\$	\$	\$	\$
Legal & Fiscal	Construction Cost	\$11,000.00	\$18,000.00	\$38,000.00	\$25,000.00	\$35,000.00
	Estimated at 3% of Total	\$	\$	\$	\$	\$
Estimated Total Project Cost		\$518,000.00	\$857,700.00	\$1,784,500.00	\$1,162,600.00	\$1,646,300.00

Cost information was taken from Vtrans Report on Shared-Use Path and Sidewalk Unit Costs, Updated August 2014, Costs for Pedestrian and Bicyclist Infrastructure Improvements, UNC Highway Safety Research Center, October 2013 and Vtrans 2 Year Averaged Price List for January 2013-December 2014
Preliminary construction costs include utility improvements, and are intended for planning purposes only

Table 3-6 (Continued)
 PRELIMINARY EVALUATION MATRIX
 SHARED PATHWAY AND SIDEWALK IMPROVEMENTS
 Hyde Park, Vermont
 January 18, 2016

Category	Description	Do Nothing	Church Street		
			Alternative 1	Alternative 2	Alternative 3
Construction Characteristics	Length (ft)	0	1850	1400	2800
	Width (ft)	0	5	5	5
	Surface	0	Concrete	Concrete	Concrete
	New Impervious (sf)	0	5,250	5,250	7,025
	Ag. Lands	None	None	None	None
	Archaeological	None	None	None	None
	Historical	None	None	None	None
	Hazardous materials	None	None	None	None
	Floodplains	None	None	None	None
	Fish & Wildlife	None	None	None	None
Impacts	Rare, Threatened & Endangered Species	None	None	None	None
	Public Lands - Sect. 4(f)	None	None	None	None
	LWCP - Sect. 6(f)	None	None	None	None
	Noise	None	None	None	None
	Wetlands	None	None	None	Potential
	Utilities - aerial	None	3 Utility pole conflicts	3 Utility pole conflicts	4 Utility pole conflicts
	Utilities - underground	None	2 storm drain adjustments	2 storm drain adjustments	2 storm drain adjustments
	Concerns	Pedestrian Safety	Bicycle safety, Conflict with existing garage	Bicycle safety, Conflict with existing garage	Bicycle safety, Conflict with 2 existing garages, retaining wall necessary
	Aesthetics	Unchanged	Improved	Improved	Improved
	Community Character	Unchanged	Improved	Improved	Improved
Local & Regional Issues	Economic Impacts	Negative due to lack of connection with LVRT	Positive	Positive	Positive
	Conformance to Town Plan	No	Yes	Yes	Yes
	Satisfies Purpose & Need	No	Yes	Yes	Yes
	ACT 250	No	No	No	No
	401 Water Quality	No	No	No	No
	404 COE permit (<3,000 SF - Self Verification)	No	No	No	No
	Stream Alteration	No	No	No	No
	Conditional Use Determination	No	No	No	No
	Storm Water Discharge	No	No	No	No
	Lakes & Ponds	No	No	No	No
Permits	T & E Species	No	No	No	No
	SHPO	No	TBD	TBD	TBD
	Number of Driveway Crossings	N/A	19	13	23
	Number of Roadway Crossings	N/A	0	0	0
	Construction Cost Estimate	\$ -	\$446,800.00	\$315,800.00	\$765,900.00
	Contingency	\$ -	\$112,900.00	\$79,900.00	\$192,900.00
	Total Construction Cost		\$559,700.00	\$395,700.00	\$958,800.00
	Engineering - Final Design	\$ -	\$84,000.00	\$59,000.00	\$144,000.00
	Engineering - Construction	\$ -	\$84,000.00	\$59,000.00	\$144,000.00
	LPM, Legal&Fiscal	\$ -	\$56,000.00	\$40,000.00	\$96,000.00
Legal&Fiscal	\$ -	\$17,000.00	\$12,000.00	\$29,000.00	
Estimated Total Project Cost	\$ -	\$800,700.00	\$565,700.00	\$1,371,800.00	

Cost information was taken from Vtrans Report on Shared-Use Path and Sidewalk Unit Costs, Updated August 2014, Costs for Pedestrian and Bicyclist Infrastructure Improvements, UNC Highway Safety Research Center, October 2013 and Vtrans 2 Year Averaged Price List for January 2013-December 2014
 Preliminary construction costs include utility improvements, are rounded to the nearest hundred, and are intended for planning purposes only

Table 3-6 (Continued)
 PRELIMINARY EVALUATION MATRIX
 SHARED PATHWAY AND SIDEWALK IMPROVEMENTS
 Hyde Park, Vermont
 January 18, 2016

Category	Description	Do Nothing	East Main Street		
			Alternative 1a	Alternative 1b	Alternative 3
Construction Characteristics	Length (ft)	0	820	2400	3220
	Width (ft)	0	5	5	8
Construction Characteristics	Surface	0	Concrete	Concrete	Asphalt
	New Impervious (sf)	0	4,100	12,000	25,760
Impacts	Ag. Lands	None	None	None	None
	Archaeological	None	None	None	None
Impacts	Historical	None	Potential - Phase 1 Site Identification Survey recommended	Potential - Phase 1 Site Identification Survey recommended	Potential - Phase 1 Site Identification Survey recommended
	Hazardous materials	None	None	None	None
Impacts	Floodplains	None	None	None	None
	Fish & Wildlife	None	None	None	None
Impacts	Rare, Threatened & Endangered Species	None	None	None	None
	Public Lands - Sect. 4(f)	None	None	None	None
Impacts	LWCP - Sect. 6(f)	None	None	None	None
	Noise	None	None	None	None
Impacts	Wetlands	None	Potential	Potential	Potential
	Utilities - aerial	None	1 Utility pole conflict, 2 guy wire conflicts	5 Utility Pole Conflicts, 2 guy wire conflicts	2 Utility pole conflicts
Impacts	Utilities - underground	None	1 catch basin adjustment, 1 new catch basin	1 catch basin adjustment, 2 new catch basins	2 catch basin adjustments, 3 new catch basins
	Concerns	None	Pedestrian Safety	Bicycle Safety	None
Local & Regional Issues	Aesthetics	Unchanged	Improved	Improved	Improved
	Community Character	Unchanged	Improved	Improved	Improved
Local & Regional Issues	Economic Impacts	Negative due to lack of connection with LVRT	Positive	Positive	Positive
	Conformance to Town Plan Satisfies Purpose & Need	No	Yes	Yes	Yes
Permits	ACT 250	No	No	No	No
	401 Water Quality Verification)	No	No	No	No
Permits	Stream Alteration	No	No	No	No
	Conditional Use Determination	No	No	No	No
Permits	Storm Water Discharge	No	No	No	No
	Lakes & Ponds	No	No	No	No
Permits	T & E Species	No	No	No	No
	SHPO	No	TBD	TBD	TBD
Safety	Number of Driveway Crossings	N/A	5	7	12
	Number of Roadway Crossings	N/A	1	1	2
Construction Cost Estimate	Preliminary Construction Costs**	\$ -	\$208,000.00	\$592,800.00	\$689,600.00
	25% of Construction Cost	\$ -	\$52,900.00	\$149,900.00	\$173,900.00
Total Construction Cost			\$260,900.00	\$742,700.00	\$863,500.00
	15% of Total Construction cost		\$39,000.00	\$111,000.00	\$130,000.00
Engineering - Final Design	15% of Total Construction cost		\$39,000.00	\$111,000.00	\$130,000.00
	Estimated at 10% of Total Construction Cost		\$26,000.00	\$74,000.00	\$86,000.00
LPM, Legal&Fiscal	Estimated at 3% of Total Construction Cost		\$8,000.00	\$23,000.00	\$26,000.00
	Estimated Total Project Cost		\$372,900.00	\$1,087,700.00	\$1,235,500.00

Cost information was taken from Virans Report on Shared-Use Path and Sidewalk Unit Costs, Updated August 2014, Costs for Pedestrian and Bicyclist Infrastructure Improvements, UNC Highway Safety Research Center, October 2013 and Virans 2 Year Averaged Price List for January 2013-December 2014
 Preliminary construction costs include utility improvements, are rounded to the nearest hundred, and are intended for planning purposes only

Table 3-6 (Continued)
PRELIMINARY EVALUATION MATRIX
SHARED PATHWAY AND SIDEWALK IMPROVEMENTS
Hyde Park, Vermont
January 18, 2016

Category		Do Nothing	Main Street - West	
			Alternative 1a	Alternative 1b
Description			Johnson Street Extension to end of asphalt, concrete sidewalk with granite curb	End of asphalt to LVRT, aggregate sidewalk on North side with stone lined swale
Construction Characteristics	Length (ft)	0	1210	960
	Width (ft)	0	5	5
	Surface	0	Concrete	Gravel
	New Impervious (sf)	0	6050	4800
Impacts	Ag. Lands	None	None	None
	Archaeological	None	None	None
	Historical	None	Potential - Phase 1 Site Identification Survey recommended	Potential - Phase 1 Site Identification Survey recommended
	Hazardous materials	None	None	None
	Floodplains	None	None	None
	Fish & Wildlife	None	None	None
	Rare, Threatened & Endangered Species	None	None	None
	Public Lands - Sect. 4(f)	None	None	None
	LWCP - Sect. 6(f)	None	None	None
	Noise	None		
	Wetlands	None	None	None
	Utilities - aerial	None	None	1 utility pole conflict
	Utilities - underground	None	None	1 culvert extension
Local & Regional Issues	Concerns	Pedestrian Safety	None	Bicycle Safety
	Aesthetics	Unchanged	Improved	Improved
	Community Character	Unchanged	Improved	Improved
	Economic Impacts	Negative due to lack of connection with LVRT	Positive	Positive
	Conformance to Town Plan	No	Yes	Yes
	Satisfies Purpose & Need	No	Yes	Yes
Permits	ACT 250	No	No	No
	401 Water Quality	No	No	No
	404 COE permit (<3,000 SF - Self Verification)	No	No	No
	Stream Alteration	No	No	No
	Conditional Use Determination	No	No	No
	Storm Water Discharge	No	No	No
	Lakes & Ponds	No	No	No
	T & E Species	No	No	No
Safety	SHPO	No	TBD	TBD
	Number of Driveway Crossings	N/A	6	6
	Number of Roadway Crossings	N/A	0	0
Construction Cost Estimate	Preliminary Construction Costs**	\$ -	\$291,600.00	\$60,900.00
Contingency	25% of Construction Cost	\$ -	\$73,900.00	\$16,900.00
Total Construction Cost			\$365,500.00	\$77,800.00
Engineering - Final Design	15% of Total Construction cost Final Design and 15% Construction	\$ -	\$55,000.00	\$12,000.00
Engineering - Construction	15% of Total Construction cost	\$ -	\$55,000.00	\$12,000.00
LPM, Legal&Fiscal	Estimated at 10% of Total Construction Cost	\$ -	\$37,000.00	\$8,000.00
Legal&Fiscal	Estimated at 3% of Total Construction Cost		\$11,000.00	\$3,000.00
Estimated Total Project Cost		\$ -	\$523,500.00	\$112,800.00

Cost information was taken from Vtrans Report on Shared-Use Path and Sidewalk Unit Costs, Updated August 2014, Costs for Pedestrian and Bicyclist Infrastructure Improvements, UNC Highway Safety Research Center, October 2013 and Vtrans 2 Year Averaged Price List for January 2013-December 2014. Preliminary construction costs include utility improvements, are rounded to the nearest hundred, and are intended for planning purposes only.

Following the receipt of public comments, alternatives were prioritized as presented in Table 3-7. Because of the limited public input during this study, which is described in Section IX and the lack of a strong consensus supporting a single Route 15 crossing project, additional public input should be solicited prior to moving to final design to confirm and finalize the preferred alternatives for the VT Route 15 Crossings. Generally the Town officials recognize crossing VT Route 15 as the highest priority project and believe the most feasible alternative is to provide an at-grade crossing as proposed in Alternative 1.

In addition to these alterations, the concept of making some of the roads one way, particularly Church Street, was discussed at the public meetings. Additional study and analysis of traffic movements to and from the Village of Hyde Park is recommended to further evaluate whether making some of the roads in the Village such as Eden Street, Centerville Road, and Church Street one-way is viable and would meet the Purpose and Need Statement.

TABLE 3-7
PRIORITIZED ALTERNATIVES
HYDE PARK STP BP 14(12)
HYDE PARK, VERMONT
February 3, 2016

VT Route 15 Crossing - Overall Priority: 1		
Alternative Priority		
2	Alternative 1	Crosswalk with pedestrian activated rectangular rapid flashing beacons near Black Farm Road with an 8 foot wide paved pathway from Cricket Hill Road to Lamoille Union High School (LUHS).
1	Alternative 2	Bridge crossing VT 15 near Black Farm Road with an 8 foot wide paved pathway on the north side of VT Route 15 from Cricket Hill Road to LUHS.
4	Alternative 3	Tunnel crossing between Black Farm Road and LUHS.
3	Alternative 4	Crosswalk with pedestrian activated rectangular rapid flashing beacons near Johnson Street Extension with an 8 foot wide paved pathway from Johnson Street Extension to LUHS on the north side of VT Route 15.
5	Alternative 5	Improve roundabout at VT 15/VT100 to provide pedestrian facilities, install and 8 foot wide paved pathway from roundabout to LUHS.
Church Street – Overall Priority: 2		
Alternative 1		5 foot wide concrete sidewalk with granite curb on both sides from Main Street to approximately 186 Church Street, then extend the sidewalk to the roundabout on the east side only.
Alternative 2		Replace existing sidewalks with 5 foot wide concrete sidewalk, add granite curb along the existing sidewalk after the Post Office and extend the sidewalk to the roundabout on the east side only.
Alternative 3		5 foot wide concrete sidewalk and granite curb on both sides of Church Street from Main Street to the roundabout.
East Main Street- Overall Priority: 3		
Alternative 1a		5 foot wide concrete sidewalk with green strip on north side of road from Eden Street to Centerville Road. Add a crosswalk and sidewalk to link to existing sidewalks at the elementary school.
Alternative 1b		5 foot wide concrete sidewalk with curb adjacent to the road on the north side of the road from Centerville Road to VT Route 15.
Alternative 2		8 foot wide paved shared use pathway with green strip on the north side from Eden Street to VT Route 15. Add a crosswalk and sidewalk to link to the existing sidewalks at the elementary school.
Alternative 3		8' wide paved shared use pathway with curb adjacent to the road on the North side from Eden Street to VT Route 15. Add a crosswalk and sidewalk to link to existing sidewalks at the elementary school.
West Main Street - Overall Priority: 4		
Alternative 1a		Concrete sidewalk with granite curb on both sides of the roadway from Johnson Street Extension to the end of asphalt.
Alternative 1b		Aggregate sidewalk with stone lined swale on the north side of the roadway from the end of asphalt to LVRT.

IV. Right-of-way

The public road right-of-way widths were researched by Shane Clark, PLS of Truline Land Surveyors, Inc. and are summarized in Table 4-1, presented below. The routes are generally within the public right-of-way. The only permanent easement that may be necessary will be to connect the LVRT to the crossing at Black Farm Road. The extent of this easement will need to be determined during the final design phase of the project. Temporary construction easements may be necessary and should be obtained during the design phase of the project once limits of disturbance have been identified. See Figure 4-1 for parcel information.

TABLE 4-1
EXISTING RIGHTS-OF-WAY
HYDE PARK STP BP 14(12)
HYDE PARK, VERMONT
January 18, 2016

Street	ROW Information
VT Route 15	No record layout was observed. Various widths are shown on VT Highway ROW Plans for Project F133(4) and Project F39(2) see BK. 35, PG. 477-478.
Main Street (TH 4)	No record layout was observed. An assumed width of 3 rods (49.5 ft) is shown on various record surveys. Note: Through the Village some sidewalks are shown at 55± feet wide between edges. A reference to the “Common” being 4 rods (66 ft) wide was found in the layout of Johnson St. Ext. See Rec. of Roads, page 137.
West Main Street (TH 64), East Main Street (TH 4), Church Street (TH 5), Eden Street (TH 60), Centerville Road (TH 1)	No record layout was observed. An assumed width of 3 rods (49.5 ft) is shown on various record surveys.
Cricket Hill Road (TH 58)	No record layout was observed. No record surveys observed.



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Project Mgr.	AJD
Design	AJD
Drawn	EAE
Checked by	R.E. DUFRESNE
Date	DEC. 2015
Scale	AS SHOWN
Approved by	AJD

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HYDE PARK CONNECTIVITY STUDY

**FIGURE 4-1
PARCEL MAPPING**

HYDE PARK, VERMONT

FIG 4-1

DWG. NO. parcels.dwg

SHEET 1 OF 1

V. Utility Impacts

Overhead and underground utilities exist in the project area. Specific utility conflicts are identified previously in Figures 3-9 to 3-20 showing the proposed routes for the preferred alternatives. The existing utilities include the following:

1. The municipal sewer collection system serves the majority of the study area.
2. The municipal water distribution system serves the majority of the study area.
3. Numerous overhead electrical, cable TV, and communication lines exist throughout the project area.
4. Several storm drainage structures and culverts are located in the study area.

VI. Natural and Cultural Resources

We compiled Geographic Information System (GIS) data available from the Agency of Natural Resources, and VT Center for Geographic Information including:

Natural Resources

1. Wetlands
2. Lakes/Ponds/Streams/Rivers (stormwater discharge and erosion/sediment control implications)
3. Floodplains
4. Endangered Species
5. Flora/Fauna
6. Stormwater
7. Hazardous Wastes
8. Forest Land

Cultural Resources

1. Historic
2. Archaeological
3. Architectural
4. Public Lands
5. Agricultural Lands

The features of interest within the study area include:

1. Wetlands
2. Hazardous Wastes
3. Archaeological resources

There are several potential Class II and Class III wetland areas along the project route, based on GIS mapping and a site visit by wetland scientist Brad Wheeler of Wheeler Environmental Services. These potential wetland areas were shown previously on the proposed routes in Figures 3-9 to 3-20. Only one wetland within the project area on Cricket Hill Road is currently mapped on the Vermont Significant Wetlands Inventory

(VSWI). No alternatives were proposed as part of this study for Cricket Hill Road as it was identified early on as a much lower priority route than the other areas. Therefore this wetland is not anticipated to be impacted at this time. If the selected alternative will disturb areas near these wetland areas, a site visit with a wetlands scientist from the State is recommended to determine wetland permitting requirements.

Within the study area, there are two hazardous waste sites on properties adjacent to the proposed pathway routes, as shown in Figure 6-1. The site at the Lamoille Union High School formerly held a leaking underground storage tank, which has been removed and replaced with two tanks, one 10,000 gallon and one 2,500 gallon fuel storage tank. This site is still undergoing monitoring for contamination. The second site is at the Hyde Park Town Garage, which formerly held two tanks that have since been removed and replaced with one 10,000 gallon diesel tank. The Hyde Park Town Garage site has been identified as "Site Management Activities Completed" by the State of Vermont. The excavation depths for constructing pathways in these areas will be limited to approximately two feet and due to the distance from the tank sites it is not expected that contamination will be encountered during construction. Provisions for working in and around contaminated soils should be included in contract documents developed during final design in the event that unanticipated contaminated soils are encountered.

An Archaeological Resource and Historical Preservation Assessment was completed for the project area in October and December 2015 by the UVM Consulting Archaeology Program. Two potentially archaeologically sensitive sites were identified as a result of the assessment. One site is along East Main Street starting at Eden Street and extending to just past Centerville Road. The second is along West Main Street starting on the south side at 12 Main Street, then expanding to both sides beginning at Johnson Street Extension until the end of the asphalt surface. The UVM report recommended that, should disturbance occur in either area, a Phase 1 Site Identification Survey be completed. The Historic Preservation Assessment determined that, as long as no existing structures are disturbed and the improvements remain within the road right-of-way, no additional assessment is necessary. The complete reports are included in Appendix A.

VII. Preliminary Project Cost Estimates

As presented in Section 3, the highest priority project is a crossing of VT Route 15 to connect the Lamoille Valley Rail Trail and the Village of Hyde Park to the northern side of VT Route 15, specifically the Lamoille Union High School. However, the residents did not come to agreement on the best method for this crossing as demonstrated in the comments from the alternatives presentation meeting, summarized in Table 9-2 of Section IX.

A preliminary project cost estimate for Alternative 1 for VT Route 15, an at-grade crossing is shown in Table 7-1. Although the preferred method of crossing was not clearly identified by Hyde Park, the at-grade crossing could serve as the first phase of developing a bridge crossing. A bridge crossing was identified in the comments from the local concerns meeting as the preferred alternative but has not been endorsed by

Hyde Park Connectivity Project

the Selectboard or Village Trustees and was not supported at the alternatives meeting. The total project cost for an at-grade crossing is estimated at \$518,000 including construction, contingency, final design engineering, construction phase engineering, local project management and legal and fiscal expenses for construction of the recommended improvements. The cost estimate was developed using the *VTrans Report on Shared-Use Path and Sidewalk Unit Costs, Updated August 2014, Costs for Pedestrian and Bicyclist Infrastructure Improvements* prepared by the UNC Highway Safety Research Center dated October, 2013, and the VTrans 2-Year Averaged Price List from January 2013 - December 2014.

TABLE 7-1
PRELIMINARY CONSTRUCTION COST ESTIMATE
VERMONT ROUTE 15 AT-GRADE CROSSING
HYDE PARK STP BP 14(12)
HYDE PARK, VERMONT
January 18, 2016

DESCRIPTION	ESTIMATED QUANTITY	UNITS	UNIT PRICE	TOTAL COST
8 Foot Wide Asphalt Pathway	1225	LF	\$170.00	\$208,250.00
Curbed Bulb Outs	2	EA	\$13,000.00	\$26,000.00
In Street Pedestrian Sign	1	EA	\$240.00	\$ 240.00
Rectangular Rapid Flashing Beacon	2	EA	\$22,250.00	\$44,500.00
Storm Drainage Structures	1	EA	\$3,560.00	\$3,560.00
Storm Drainage Pipe	15	LF	\$65.00	\$975.00
Stone lined swale - Stone Fill Type I	15.00	CY	\$43.00	\$645.00
Crosswalks	1	EA	\$770.00	\$770.00
Crosswalk - high vis	1	EA	\$2,540.00	\$2,540.00
ADA ramp	2	EA	\$810.00	\$1,620.00
Subtotal Construction Cost				\$ 289,100.00
Contingency 25%				\$ 73,900.00
Total Construction Cost				\$ 363,000.00
Engineering:				
Design Phase Engineering (15% of Total Construction Cost)				\$ 54,000
Construction Phase Engineering (15% of Total Construction Cost)				\$ 54,000
Local Project Management (10% of Total Construction Cost)				\$ 36,000
Legal and Fiscal (3% of Total Construction Cost)				\$ 11,000
Total Project Cost				\$ 518,000

Notes:

1. Construction costs are preliminary and are not based on detailed plans and specifications. Actual cost may vary substantially from these estimates. Contingencies are based on approximately 25% of the construction cost at the preliminary planning stage.

It is important to note that the construction cost and total project cost estimates are developed based on the project being funded by a State or federally funded program. These programs typically have requirements that increase the total project cost.

At this time, we anticipate the following permits may be required for the project:

- Stormwater General Permit to Construct
- Stormwater General Discharge Permit
- NEPA Categorical Exclusion
- Section §1111 Permit

A reduction in the speed limit in the area of the crossing from 50 MPH to 40 MPH must also be approved to allow for the project. As noted in Section III, the VTrans guidelines require a maximum speed limit of 40 mph where crosswalks exist.

If Federal funding is utilized, an environmental analysis will be required in accordance with the National Environmental Policy Act (NEPA). It is likely that the project would qualify for a Categorical Exclusion as it is not anticipated to have a significant effect upon natural and cultural resources, nor a significant environmental impact.

VIII. Material Useful Life and Maintenance

Useful Life

The materials selected for the preferred alternatives are asphalt for the portion of shared use pathway, concrete for sidewalks, and granite for curbs. The VTrans Pedestrian and Bicycle Facility Design Manual notes that granite is the preferred curb material in Vermont. The estimated useful life from different guidance documents is outlined below:

TABLE 8-1
SIDEWALK USEFUL LIFE ESTIMATES
HYDE PARK STP BP 14(12)
HYDE PARK, VERMONT
January 18, 2016

Sidewalk Material	US DOT, Federal Highways Administration	Onondaga County Sustainable Streets Project (2014)	Fannie Mae Useful Life Tables (2014)
Concrete	Approximately 80 years	Average 34 years	50 years
Asphalt	Approximately 40 years	Average 11 years	25 years

TABLE 8-2
CURB USEFUL LIFE ESTIMATES HYDE PARK STP BP 14(12)
HYDE PARK, VERMONT
January 18, 2016

Curb Material	Life Cycle Cost Comparison UMass Amherst (11/2006)	NYDOT (1998)
Concrete	10-20 years	20 years
Granite	Indefinite	60 years

The useful life of these materials depends heavily on several factors:

- Base soils and sub-base preparation
- Tree roots
- Heavy vehicle loading
- Material thickness

Granite curb also has the benefit that it can be removed and reused, which is why the UMass Amherst report indicated an “indefinite” life cycle.

To maximize the useful life of any surface:

- Adequate sub-base soils that provide stability and good drainage should be provided.
- Trees adjacent to the sidewalk should be carefully selected and an adequate soil volume for the trees should be provided.
- The sidewalks should be designed for anticipated vehicle loading.
- Adequate concrete and asphalt thicknesses should be provided for the anticipated vehicle loading and frost conditions.

For the areas within the Village that are recommended to have sidewalk and curb improvements granite curb and concrete sidewalk are recommended due to longevity and also to better match with the historic image of the Village. For areas along Vermont Route 15, due to the location and extent of improvements, an asphalt shared use pathway is recommended. Although the asphalt pathway may not have the longevity of a concrete pathway, the construction costs due to the width and length of the pathway would increase substantially with the use of concrete. In addition, the area along Vermont Route 15 has much less dense residential development than within the Village so that area may not have as much of an aesthetic concern as improvements within the Village.

Maintenance

The Village of Hyde Park currently plows the existing sidewalks. The Village would also plow any additional sidewalks. In addition, the Town has a sidewalk fund that could pay for periodic repairs to pedestrian facilities.

The local VTtrans maintenance district, district 8, commented that they do not support the bridge or tunnel alternatives due to maintenance concerns.

IX. Public Involvement

A Local Concerns Meeting was conducted on July 9, 2015 to obtain input from the public on preferences, anticipated user groups and the purpose and need for the project. Based on this meeting improvement priorities and a draft Purpose and Need Statement were developed. To solicit additional input, a questionnaire was sent in the Hyde Park Light Department electric bills on August 31, 2015. As a result of that mailing and other solicitations for comments, 14 public comments were received. A summary of the comments is presented below in Table 9-1. Meeting minutes and public comment received are attached in Appendix B.

TABLE 9-1
LOCAL CONCERNS MEETING
PUBLIC COMMENT SUMMARY
HYDE PARK STP BP 14(12)
HYDE PARK, VERMONT
January 18, 2016

Quantity of Comments	Comment
6	Bridge over VT Route 15 to connect to LUHS
4	Improve existing sidewalks
3	Crossing VT Route 15 at Black Farm Road
3	Separate bike path
3	Crosswalk improvements with painting and signs
2	Clearly marked bike lanes
2	Connection from west end of Village to LVRT
2	Tunnel to connect LUHS and LVRT
2	Safe crossing of VT Route 15
2	Reduced speed limits in the Village, better enforcement, blinking sign
1	Add a bike lane on Main Street
1	Path or bike lane along VT Route 15
1	Sidewalk along one side of VT Route 15 to connect LUHS with Johnson Street Extension
1	Sidewalk down East Main Street
1	Street lights
1	Bike Racks
1	Traffic light for crossing VT Route 15
1	Similar surface as LVRT in Danville for trails
1	One-way traffic

An Alternatives Presentation Meeting was held on November 12, 2015. The Purpose and Need Statement developed based on the Local Concerns Meeting and several alternatives were presented. The Purpose and Need Statement was approved and public comment forms were distributed to allow for the selection of the preferred alternative. A summary of the public comment from the Local Concerns Meeting is included in Table 9-2. A copy of the meeting minutes and written public comments are included in Appendix B.

TABLE 9-2
ALTERNATIVES PRESENTATION MEETING
PUBLIC COMMENT SUMMARY
HYDE PARK STP BP 14(12)
HYDE PARK, VERMONT
January 18, 2016

A crossing at Johnson Street Extension is dangerous.
A tunnel from Black Farm Road is the best option.
Pedestrian crossings should be installed at Centerville Road, Eden Street, Church Street, Johnson Street Extension and Black Farm Roads.
Every other street in and out of the Village should be one-way.
I am in favor of a crosswalk at Johnson Street Extension.
Making Church Street one-way would enhance safety.
A crosswalk at Black Farm Road with appropriate reduction in speed and signalization would be the most practical and economical solution.

As can be seen in Table 9-2, there was limited public comment as a result of the Alternatives Presentation Meeting. The Town repeatedly solicited the public for comments but in all, only four people submitted written comments and they indicated different preferences. Therefore, identification of a preferred alternative was difficult. For the purposes of this report the at-grade crossing was examined as it is the least expensive alternative that would provide a crossing of Vermont Route 15. In addition, should funding for a bridge come available at a future date, the improvements on either end of the crossing would already be in place.

As is indicated above, the biggest challenge encountered during the public process was obtaining constructive public comments. In addition, the Village Trustees expressed a strong desire to be involved in the project as part of a committee; however, a formal committee for this project was never developed. Both Village and Town residents provided written comments; however, no written comments were received from the Village Trustees or the Town Selectboard.

X. Compatibility with Planning Efforts

The Town and Village of Hyde Park are very cognizant of the need to provide pedestrian and bicycle facilities for the use of residents and visitors alike. That need is identified in multiple places in the *Town & Village of Hyde Park Comprehensive Development Plan (2012-17)*. The plan states:

To promote greater pedestrian access and safety, the Selectboard, Village Trustees and Planning Commission support efforts to expand sidewalks within Hyde Park Village and the North Village. Going forward, the Selectboard and Village Trustees should continue to monitor potential funding opportunities to construct additional sidewalks and implement the goals of the SRTS program.

The following Goals, Policies and Recommendations related to bicycle and pedestrian facilities are identified in the *Town & Village of Hyde Park: Comprehensive Development Plan (2012-17)*:

Goals

- To provide a safe, efficient, and diverse transportation network for the benefit of the community.
- To expand opportunities for residents to access alternative modes of transportation, whether by carpool, public transit, walking, or bicycling.
- To maintain a safe, pedestrian-oriented village that will support a vibrant local economy.

Policies

- The Town and Village of Hyde Park support the construction and use of the Lamoille Valley Rail Trail (LVRT).

Recommendations

- The Planning Commission should work with the Lamoille County Planning Commission (LCPC) to collect traffic counts on streets within the Village center to help assess where traffic calming measures would be most effective.
- The Selectboard and Village Trustees should work together to fund and construct a trailhead facility for future LVRT users.
- The Selectboard and Village Trustees should continue to appoint representatives to the Lamoille County Transportation Advisory Committee (LCTAC), to coordinate transportation planning, road maintenance and improvements with adjoining towns. Participation in the LCTAC will also help ensure that the interests of Hyde Park are adequately addressed by the region and State.

The Lamoille County Planning Commission has identified the following policies in the Lamoille County Regional Plan:

- Acknowledge bicycling and walking as legitimate forms of transportation.
- Refer to the State Bicycle and Pedestrian Facility Planning and Design Manual for all bicycle and pedestrian design specifications and provide this guidance to municipalities as necessary.

- Advocate for continued and increased funding of all programs providing resources for bicycle and pedestrian projects, such as the Transportation Enhancement and Bicycle & Pedestrian grant programs administered by VTrans.
- Promote the removal of hazards to bicycle travel on highways during routine maintenance. Remove such hazards as scattered gravel, especially in the springtime after winter sanding and salting.
- Promote and practice bicycle and pedestrian-friendly highway design at the municipal and State levels.
- Plan for the integration of bicycles with other modes through techniques such as include bike racks on transit vehicles, providing bike parking at places of employment and commerce, and at community centers, improvement of shoulders on highways, and construction of bike paths.
- Encourage local and State highway transportation projects to implement shoulder widths that are appropriate for the existing traffic conditions.
- Assist in the design and implementation of traffic calming measures in village centers and other densely developed settlements where pedestrian travel is viable.
- Encourage municipalities to require consideration of bicycle and pedestrian transportation in development plans through local ordinances and project review processes.
- Assist municipalities in planning for the improvement of existing and future sidewalk networks including the development of pedestrian gathering places including attractive benches, lighting, and information kiosks.
- Facilitate the implementation of the Lamoille Valley Rail Trail as an interim use of the rail corridor.
- Pursue the implementation of the Lamoille Valley Rail Trail and municipal connections to the trail, as well as other direct pathway connections between municipalities.
- Encourage the planning, design, and implementation of the extension of the Stowe Recreation Path to the Stowe Mountain Resort.

Both the Regional Transportation and Town and Village Plan support the project.

XI. Project Time Line

Prior to development of any of the presented alternatives, additional coordination between the Town, Village and general public needs to occur. Assuming that all parties can agree upon the at-grade crossing of Vermont Route 15 near Black Farm Road a preliminary schedule is presented in Table 11-1. The proposed project schedule is based on several criteria including the following factors:

- The need for the improvements as defined by local officials.
- The cost of the project to property owners and local approval of the project.
- Securing easements to connect the LVRT at Black Mountain Road to the crossing.
- Funding requirements.
- Permitting requirements.

- Approval of the reduction in speed to 40 MPH in the area of crossing.

TABLE 11-1
PROJECT SCHEDULE
HYDE PARK STP BP 14(12)
HYDE PARK, VERMONT
January 18, 2016

PROJECT TASK	DATE
Receive Study Approval	March 2016
Submit Funding Application for Final Design Funds	June 2016
Receive Approval of Funding Application	August 2016
Grant Agreement Executed	October 2016
Procurement for Design Services	January 2017
Complete Topographic Survey of Project Areas	May 2017
Final Design Plans and Specifications Advertised for Bid	April 2019

Notes:

1. The project schedule is based on several items beyond the control of the Dufresne Group or the Town of Hyde Park, including the availability of funding, securing easements, the time necessary to obtain permits, the time the regulatory and funding agencies need to review plans and specifications and the success or failure of local bond votes. The schedule may change based on the actual time needed to complete these tasks.

XII. Viability

Identification of an alternative clearly preferred by the public was not reached as a result of this study; however, the highest priority area in need of improvements was identified as the crossing of Vermont Route 15 with all but one of the presented alternatives receiving positive public comment. Only the improvements at the roundabout did not receive specific positive comments. Vermont Route 15 is a barrier between the Village and northern portion of Hyde Park. The connection of the Village, which is on the south side of Vermont Route 15, to Lamoille Union High School, which is on the north side of Vermont Route 15, is a priority for many residents. In addition the Elementary School is on the south side of Vermont Route 15 so no safe crossing exists for Elementary School students to access the high school by bicycle or walking.

For the purposes of cost estimating and providing a preliminary schedule, the at-grade crossing is presented in this study as the highest priority alternative. Of the other two alternatives that received positive public comment, the bridge and tunnel, the bridge appeared to be preferred over a tunnel; however, the cost of a bridge crossing is substantially more than an at-grade crossing. In addition, an at-grade crossing and the associated improvements could be installed as the first phase of the crossing while funds are being raised for the bridge crossing.

Although no clearly defined alternative came out as preferred for crossing Vermont Route 15, providing a safe crossing was clearly a priority for most residents. Additional work with the Village and Town is necessary to determine the best means to provide this crossing. Due to the location of the High School, a crossing of Vermont Route 15

for pedestrian and bicycle traffic would be an extremely beneficial addition to the Town and Village of Hyde Park.

Funding Alternatives

The Town and Village of Hyde Park do not have the funds to finance the entire improvement project locally as a single project. The options for funding include grants, long-term debt or phasing. The VTrans Bicycle and Pedestrian Program, administered by the VTrans Local Projects section provided funding for this report and is the most likely funding source for design and construction if the Town chooses to pursue grant funding.

The proposed project is an eligible project under the Bicycle and Pedestrian Program. The funding shares are 80% Federal/State and 20% local. However, if a project that has proceeded beyond the scoping study phase is funded under this program and does not proceed to construction, any funds provided for the preliminary and design phases are subject to being paid back by the municipality. Grant applications are accepted annually and are generally due by the last week of July. Based on funding under the Bicycle and Pedestrian Program, the local share of the total project cost to complete the at-grade crossing of Vermont Route 15 is \$103,600, if the improvements were constructed as a single project.

The Transportation Alternatives Program, also administered by the Local Projects section, is an option for funding design. As the maximum Federal award under the Transportation Alternatives Program is limited to \$300,000, this is not an option for funding the construction phase for the entire route. The Transportation Alternatives Program has an award range of \$20,000 to \$300,000 and the local match is 20%. A minimum of 50% of the local match must be a cash expenditure, with the remainder of the local match as “in-kind” services; however, an in-kind match is not required and the entire local match may be a cash expenditure.