Memorandum

To: Jason Charest, CCRPC
Ravi Venkataraman, Town of Richmond

Date: August 4, 2021

Project #: 58538.00

From: Karen Sentoff
Jenn Conley

Re: Richmond Bridge Street Complete Streets Corridor Study
Technical Memorandum

Introduction

In collaboration with the Chittenden County Regional Planning Commission, the Town of Richmond, and the Richmond community, the Bridge Street Complete Streets Corridor Study was conducted to identify and prioritize multimodal improvements along the Bridge Street corridor. The study aimed to garner community support for a preferred alternative through a public process evaluating options for improved bicycle and pedestrian infrastructure while supporting local businesses and continuing to serve vehicular traffic. This memorandum outlines the process through which the alternatives were developed, evaluated, vetted through public forums, supported, and designed. Attached to this memorandum is a draft set of preliminary plans that detail the preferred alternative.

Existing Conditions

The Bridge Street corridor serves approximately 5,400 vehicles per day connecting the Town of Richmond on both sides of the Winooski River. The corridor runs from the north at the intersection with US 2 Main Street and the center of village activity across the Winooski River bridge to the intersection with Huntington Road / Cochran Road / Thompson Road. The parcels adjacent to the Bridge Street corridor are the hub of Richmond activity. New development at the Creamery parcel is indicative of continued growth and demand for multimodal accommodations.

In the existing condition, there are critical gaps in the pedestrian infrastructure. Although pedestrians on the west side of Bridge Street are accommodated by a sidewalk, there are no formal pedestrian accommodations on the east side aside from a sidewalk that runs half of a block to the midblock crossing in front of the commercial block. The sidewalk on the west side changes from concrete sidewalk to asphalt sidewalk to a 180' crosswalk marking and continues along the length of Bridge Street in similar fashion with different treatments. It is noted that a separate project is planned for construction in 2021 to upgrade the asphalt sidewalk section between the legs of Depot Street to concrete sidewalk with curb. In addition, there are no formal bike accommodations along the route.

Previous studies of the corridor have identified areas that are critical to the pedestrian network and the ability for those not in a car to navigate the corridor, including the 2010 Bridge Street Bicycle and Pedestrian Feasibility Study. The high priority gaps in the infrastructure from that study include sidewalk connections on the east side of Bridge Street and improved accommodations at the intersection with Huntington Road / Cochran Road / Thompson Road.

A brief review of the safety data available for the corridor was conducted. The segment of Bridge Street between Depot Street / Pleasant Street and the south side of the bridge over the Winooski was designated a High Crash Location according to the VTrans 2012-2016 High Crash Location Report. Based on the data gathered for the report, there were 3 injury crashes and 9 property damage only crashes reported for the segment. It is noted that the intersection of Bridge Street with US 2 Main Street is also identified as a High Crash Location intersection, but is peripheral to the study area. A more recent query of the VTrans Crash Query Tool from 2015 through 2019 revealed

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18 crashes along the Bridge Street corridor between the intersection with US 2 Main Street and the intersection with Huntington Road. Of these crashes, there were two involving pedestrians. Both were listed to have occurred at night with one resulting in injury near the intersection with Railroad Street and one resulting in fatality near the intersection with Church Street. There were also six crashes identified at the intersection of Bridge Street with Huntington Road / Cochran Road / Thompson Road. All of the crashes at the intersection were listed as property damage only.

Purpose & Need Statement

The purpose and need statement was developed for the study based on review of previous studies, existing conditions, and feedback from the community. The statement helped to guide the study process and decision making.

Purpose

The purpose of the Bridge Street Complete Streets Corridor Study is to identify and prioritize improvements to create a multimodal corridor through the Richmond Village Center. The study will evaluate, select, and develop improvements to better accommodate pedestrians and bicyclists where critical infrastructure gaps exist while continuing to serve vehicular traffic, specifically:

- Along the east side of Bridge Street from Route 2 to Jolina Court;
- At the intersection of Jolina Court and Railroad Street; and,
- At the intersection of Cochran Road and Huntington Road.

Needs

Enhance mobility for pedestrians and bicyclists: There are critical gaps in the existing pedestrian network and a lack of defined space for bicyclists.

Improve safety for pedestrians and bicyclists: With the lack of delineated pedestrian and bicyclist accommodations, vulnerable users have to share space with vehicular traffic. The existing roadway environment, including a high crash location, enables vehicle operation and speeds unsuitable for a multimodal Village Center.

Maintain parking in support of businesses: Access to convenient parking options is linked to the vitality of businesses in the Village Center, requiring maintenance of well-located, on-street parking.

Public Engagement

On December 10, 2020, a Local Concerns Meeting was held via Zoom with the primary purpose of understanding what the issues and opportunities along Bridge Street are from the community perspective. A brief overview of the recommendations from previous studies of the corridor was presented and a draft purpose and need based on the information gathered to date was shared. The remainder of the time was focused on gathering input from the community at focus areas along the Bridge Street corridor, particularly between US 2 Main Street and Railroad Street, at the intersection of Railroad Street / Jolina Court, and at the intersection of Huntington Road / Cochran Road /

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Thompson Road. The stakeholders at this meeting included Transportation Committee members, residents, and business owners, gathering a broad range of perspectives. Through this engagement, it became clear that not only are there critical gaps in the sidewalk infrastructure and a desire to better accommodate pedestrians and cyclists safely but maintaining parking in support of the area businesses is an utmost priority.

The project team refined the purpose and need based on the feedback from the Local Concerns Meeting and began to develop alternatives for Bridge Street. An interim meeting with the project team on the various alternatives narrowed the focus to three alternatives for the Bridge Street corridor focused on the area between US 2 Main Street and Railroad Street / Jolina Court and three alternatives for the intersection of Bridge Street with Huntington Road / Cochran Road / Thompson Road.

A presentation of the alternatives was developed for the focal areas and the public meeting was scheduled for April 8, 2021. The meeting was intended to gage community support for a preferred alternative for each of the focal areas. Discussion of the alternatives and the evaluation and tradeoffs associated with each revealed the preferences of the community for alternatives to carry forward for further refinement. These alternatives and their assessments are discussed in more detail below.

The project team presented the preferred alternative preliminary plans to the Town of Richmond Selectboard on June 21, 2021. The Selectboard reviewed the plan set and the technical memorandum prior to the meeting. At the meeting, a brief presentation on the project process and overview of the preferred alternatives were shared with a discussion of the preliminary design followed. The Selectboard members voted unanimously in support the study findings and the preferred alternative preliminary plans.

Alternatives Development and Evaluation

Based on previous studies, existing conditions assessments, and community input, three alternatives were developed for two focal areas: the Bridge Street corridor between US 2 Main Street and Railroad Street / Jolina Court and the intersection of Bridge Street with Huntington Road / Cochran Road / Thompson Road. The alternatives and their evaluation are discussed herein.

Bridge Street Corridor between US 2 Main Street and Railroad Street / Jolina Court

Alternatives for consideration in the first focal area aimed to improve the sidewalk connections and bike accommodations along the corridor, while maintaining as much parking as feasible, particularly along the commercial block. Each alternative connected sidewalk on the east side and formalized sidewalk on the west side where there is a crosswalk marked in the existing condition. Alternative 1 evaluates installation of sidewalks on the east and west sides and shared travel lanes while minimizing impacts beyond the current edge of pavement. Alternative 2 evaluates installation of sidewalks on the east and west sides and a northbound bike lane to facilitate uphill cyclists. Alternative 3 evaluates a sidewalk on the west side and a shared use path on the east side.

Alternative 1, as depicted in Figure 1, provides a 5’ sidewalk on the west side along the Richmond Market frontage between Railroad Street and the southern connection of Depot Street. This segment of sidewalk would replace the

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existing crosswalk pavement marking that extends approximately 180' in the current condition. This sidewalk segment would be primarily in the existing right-of-way, with the exception of a small sliver to connect to the existing sidewalk in front of Richmond Market. The crossing of the railroad in this location would require ramps down to the rail grade and detectable warning surfaces on either side of the crossing. Coordination with New England Central Railroad will be crucial to the success of the project. Because it is an active rail line, construction will require adherence to Federal Railroad Administration requirements for safety and railroad flagger agreements will need to be coordinated through the single office which administers such agreements and takes ample time to coordinate.

The sidewalk on the east side will similarly require coordination with the railroad to establish the appropriate crossing treatments. For this alternative, the east side sidewalk is generally accommodated within the existing roadway cross section with minimal impact to adjacent properties. Along the segment just north of the intersection with Pleasant Street, the short retaining wall at the TD Bank property will need to be replaced to accommodate the 5' sidewalk through this section. With the curb line moving in towards the center of the roadway, it is anticipated that some drainage structures will need to be relocated.

Given that Alternative 1 attempts to minimize the impacts beyond the existing edge of pavement, the current pavement width is reconfigured to accommodate a sidewalk and two travel lanes with offsets to the curb. It is therefore envisioned that this alternative would have shared lane markings on the travel lanes to indicate the presence of bicyclists.

Pedestrian crossings would be formalized at the intersection of Railroad Street / Jolina Court, where safe pedestrian landings with ramps and detectable surfaces would be installed. Although not specific to this alternative, a new crossing is depicted along with this alternative on the south leg of the Pleasant Street / Depot Street intersection. The proposed location of this crossing would retain the current midblock crossing at the commercial block but would additionally facilitate those pedestrians currently utilizing Pleasant Street and Depot Street.

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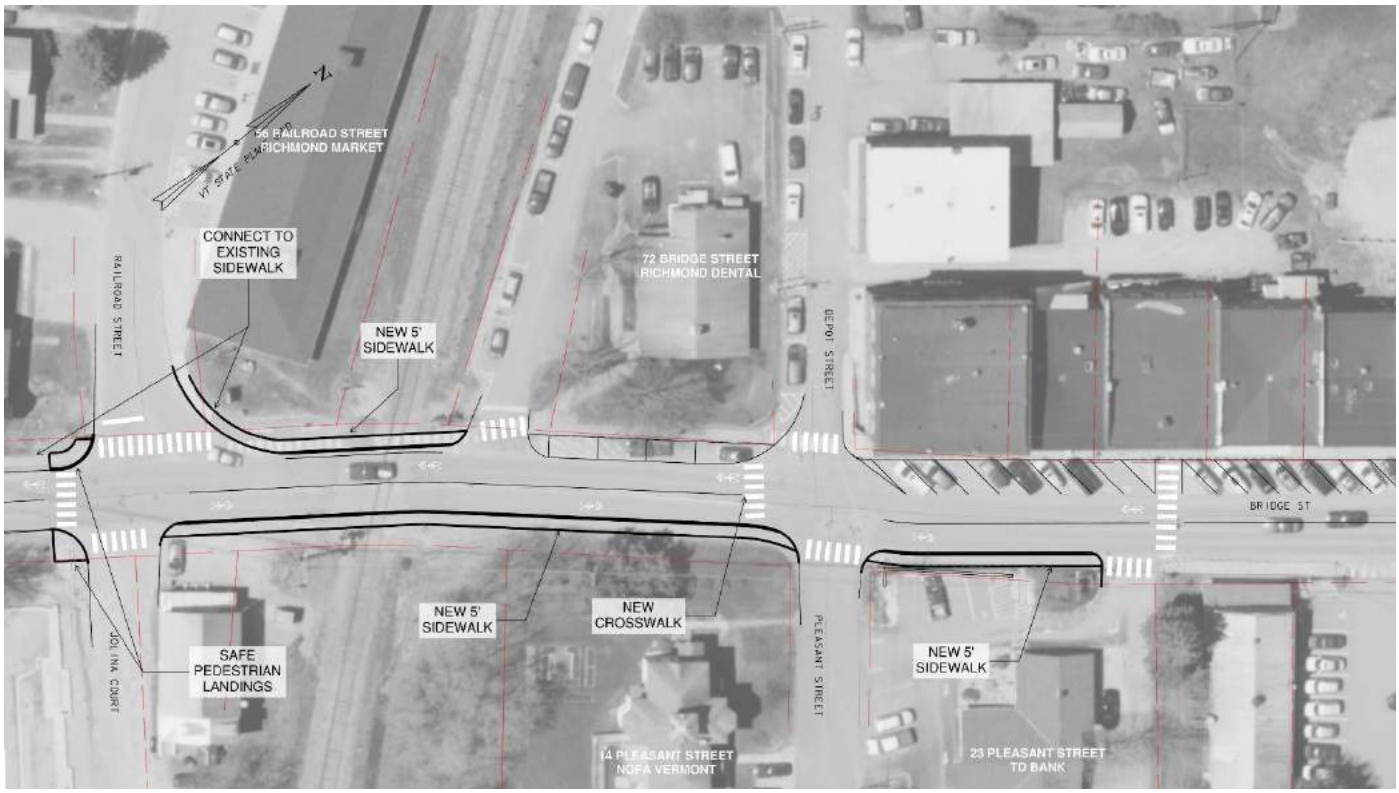
Figure 1. Alternative 1 – Sidewalk and Shared Lanes

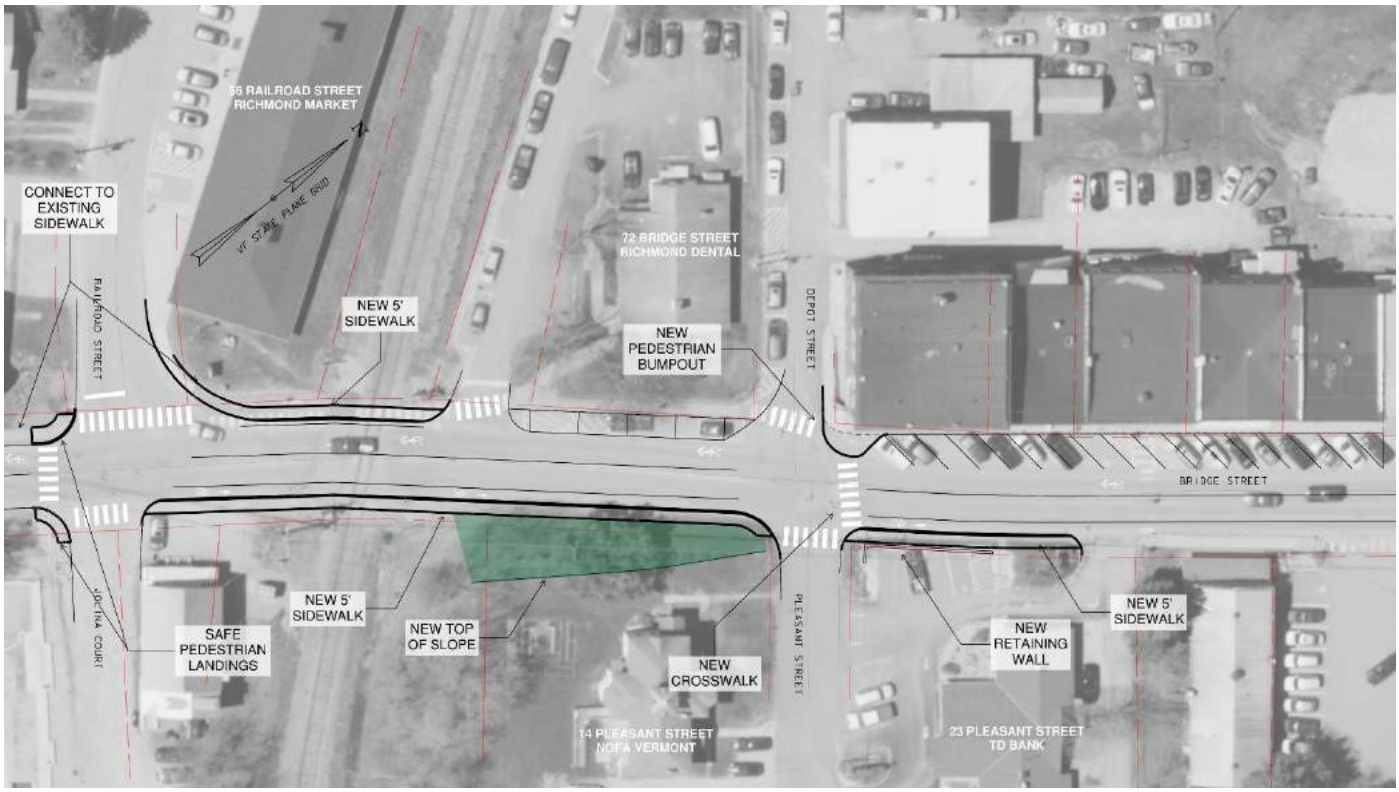


Similar to Alternative 1, Alternative 2 provides a sidewalk on the west side in front of Richmond Market with the same impacts. On the east side, this alternative pushes the infrastructure beyond the edge of pavement, but well within the right-of-way, to accommodate a 5' sidewalk and 5' uphill bike lane with a downhill shared lane condition. This reconfiguration will require approximately 4' of width beyond the existing edge of pavement and have grading impacts at the 14 Pleasant Street property to establish an appropriate 2:1 slope. A preliminary estimate of the slope impacts was depicted in green on the concept in Figure 2. Along the TD Bank frontage, a new retaining wall would be required to accommodate the sidewalk and bike lane. Drainage in this alternative may require some relocation, but given the location of new curb in close proximity to the existing edge of pavement, the effort is not likely to be as significant as with Alternative 1. As with Alternative 1, coordination with the railroad early in the project will be crucial.

Although not necessarily tied to this alternative, a new crossing of Bridge Street on the north leg of the intersection with Pleasant Street / Depot Street is depicted in Figure 2. The new crossing is envisioned to replace the midblock crossing in front of the commercial block. A new pedestrian bulbout would provide a place for pedestrians waiting to

cross that is more visible to drivers. The bulbout is likely to provide some additional traffic calming benefit as drivers will feel pinched as they approach the intersection.

Figure 2. Alternative 2 – Sidewalk and Uphill Bike Lane



Much like Alternatives 1 and 2, the west side in Alternative 3 will have a 5' sidewalk replacing the crosswalk markings. In Alternative 3, although not exclusive to this alternative, a new mountable curb extension was envisioned for the corner of Railroad Street. The purpose of this feature is twofold. The mountable curb area provides a visual cue and physical guide for drivers of smaller vehicles, like passenger cars, to turn at the tighter radius while accommodating larger vehicles by allowing them to pass over the mountable area. The tighter turning radius will have a traffic calming effect for drivers making the right-hand turn, where they will need to make the movement at a slower speed. This, in turn, will benefit the pedestrians at the intersection with vehicles operating at a slower speeds. Additionally, the curb extension effectively shortens the distance over which pedestrians are exposed to vehicle movements through the crossing. Although the detectable warning surface and safe place for pedestrians to wait will still be at the ramp at the edge of the sidewalk, the mountable area provides some additional protection for pedestrians when crossing Railroad Street.

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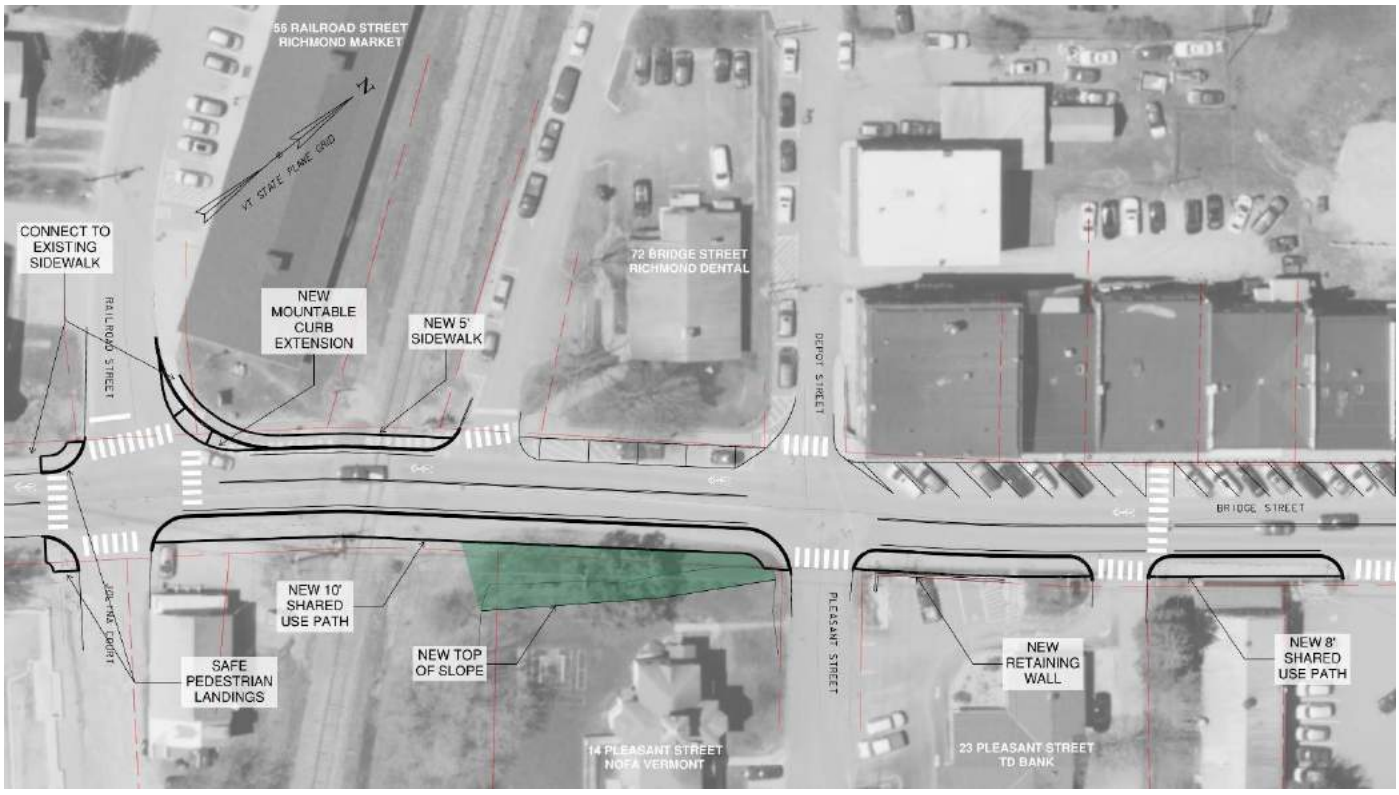
On the east side, Alternative 3 includes a shared use path. The segment from Jolina Court to Pleasant Street allows for a 10' shared use path width. The segment from Pleasant Street to US 2 Main Street would narrow to 8' to retain the width required for angled parking in front of the commercial block and two travel lanes. This 8' shared use path would extend to Main Street and tie into the existing sidewalk and crossings at the intersection. Although pedestrians and bicyclists will both likely utilize the shared use path and are able to in both the uphill and downhill direction, on-road shared lane markings in the downhill direction are recommended with this alternative to allow for those more confident cyclists to share the lane while cruising downhill at higher rates of speed. Similar to Alternative 2, the impacts of this alternative are anticipated to put the back of the shared use path at about 4' beyond the existing edge of pavement. The grading impacts at 14 Pleasant Street are estimated to be similar to those in Alternative 2 and are depicted in Figure 3 in green.

In this alternative, an additional crosswalk is marked on the north leg of the Railroad Street / Jolina Court intersection. It is envisioned that this crossing connects the west side sidewalk in front of the Richmond Market through the mountable curb extension area to the shared use path on the east side.

Figure 3. Alternative 3 – Shared Use Path



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A side-by-side comparison of the three alternatives for the corridor is summarized in Table 1. The comparisons were drawn based on conceptual cost estimates, pedestrian and bicyclist mobility and safety, right-of-way and utilities impacts, drainage considerations, and satisfying the purpose and need.

Table 1. Evaluation Matrix for Alternatives along Bridge Street between US 2 Main Street and Railroad Street

Alternative	Alternative 1 Sidewalks and Shared Lanes	Alternative 2 Sidewalks and Uphill Bike Lane	Alternative 3 Shared Use Path
Cost	$170,000	$200,000	$210,000
Pedestrian Mobility	Improved Sidewalk Network	Improved Sidewalk Network	Improved Network Connections
Pedestrian Safety	Designated Pedestrian Sidewalk	Designated Pedestrian Sidewalk	Separated from Vehicles Mixed with Bikes
Bike Mobility	No Change	Uphill Bike Lane	Choice of Shared Path or Shared Street Connections
Bike Safety	Shared Lane Markings and Signage	Designated Uphill Bike Lane for Slower Operation; Shared Lane Markings Downhill	Separated from Vehicles; Mixed with Pedestrians; Shared Lane Markings
ROW Impact	Minimal	More significant; Sidewalk within ROW with Slope Impacts	More significant; Path within ROW with Slope Impacts
Utilities Impact	Minimal	Moderate; Gas Line and Overhead Electric on Slope	Moderate; Gas Line and Overhead Electric on Slope
Drainage	More significant	Moderate	More significant
Satisfies Purpose & Need	No	Yes	Yes

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Intersection of Bridge Street with Huntington Road / Cochran Road / Thompson Road

The intersection of Bridge Street with Huntington Road / Cochran Road / Thompson Road had three alternatives that were developed and refined based on input from the project team and presented to the public at the Alternatives Presentation. The three alternatives included Alternative 1 – All-Way Stop, Alternative 2 – Typical Two-Way Stop, and Alternative 3 – Mini-Roundabout. The three alternatives all create a more typical four-way intersection to better facilitate pedestrian crossings on all four legs.

Alternative 1 would implement an all-way stop condition, adding stop signs and stop bars to the Bridge Street and Huntington Road approaches. In addition, the radius on the corner between Bridge Street and Huntington Road would be tightened. Sidewalks with ramps, level landings, and detectable warning surfaces would be added to each corner of the intersection to provide appropriate pedestrian crossing locations. The opportunity to connect to future sidewalk segments would exist along each leg of the intersection if desired by the community. From an operational standpoint, the all-way stop condition would serve all legs of the intersection during peak hours with less than 15 seconds delay at a level of service of LOS B or better. Based on simulations of the all-way stop condition, the most significant queuing would be expected for the Huntington Road approach in the AM peak hour at approximately 100' (95th percentile queue) and for the Bridge Street approach in the PM peak hour at approximately 120' (95th percentile queue). A comparison of simulated queues for the alternatives and the no build condition are detailed in the appendices.

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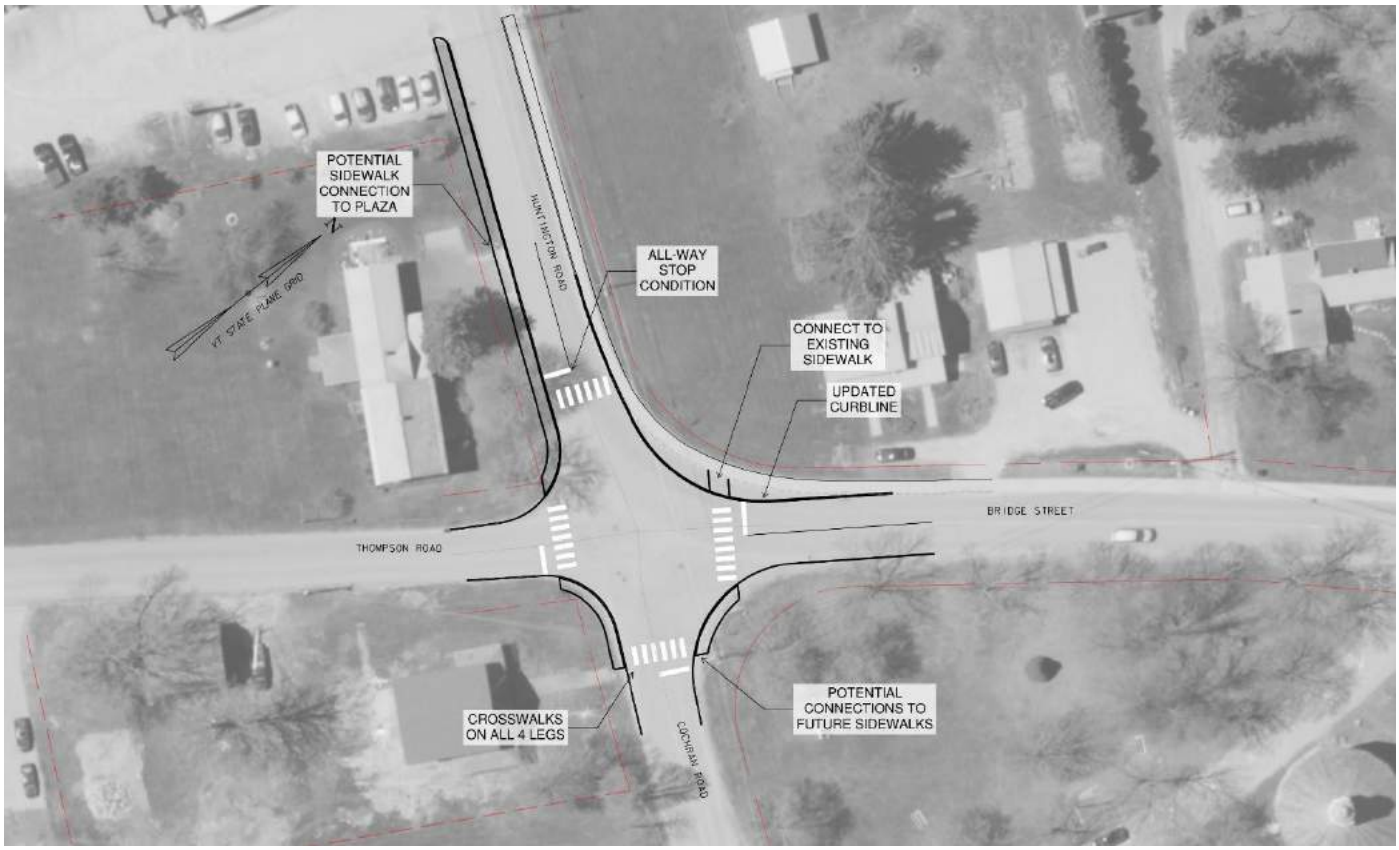
Figure 4. Alternative 1 – All-Way Stop



Alternative 2 would reconfigure the intersection to be a typical two-way stop-controlled intersection, with stop control on the Bridge Street and Thompson Road approaches. This would effectively make the through movement the Huntington Road to Cochran Road movement. Similar to Alternative 1, the radius on the corner between Bridge Street and Huntington Road would be tightened. Again, sidewalks with ramps, level landings, and detectable warning surfaces would be added to each corner of the intersection to provide appropriate pedestrian crossing locations. From an operational standpoint, the two-way stop condition would stop-control the approaches of Thompson Road with LOS D/C (AM/PM) and Bridge Street with LOS C (AM and PM). Based on simulations of the two-way stop condition, the most significant queuing would be expected for the Bridge Street approach at 80' in the AM peak hour and 145' in the PM peak hour (95th percentile queues). A comparison of simulated queues for the alternatives and the no build condition are detailed in the appendices.

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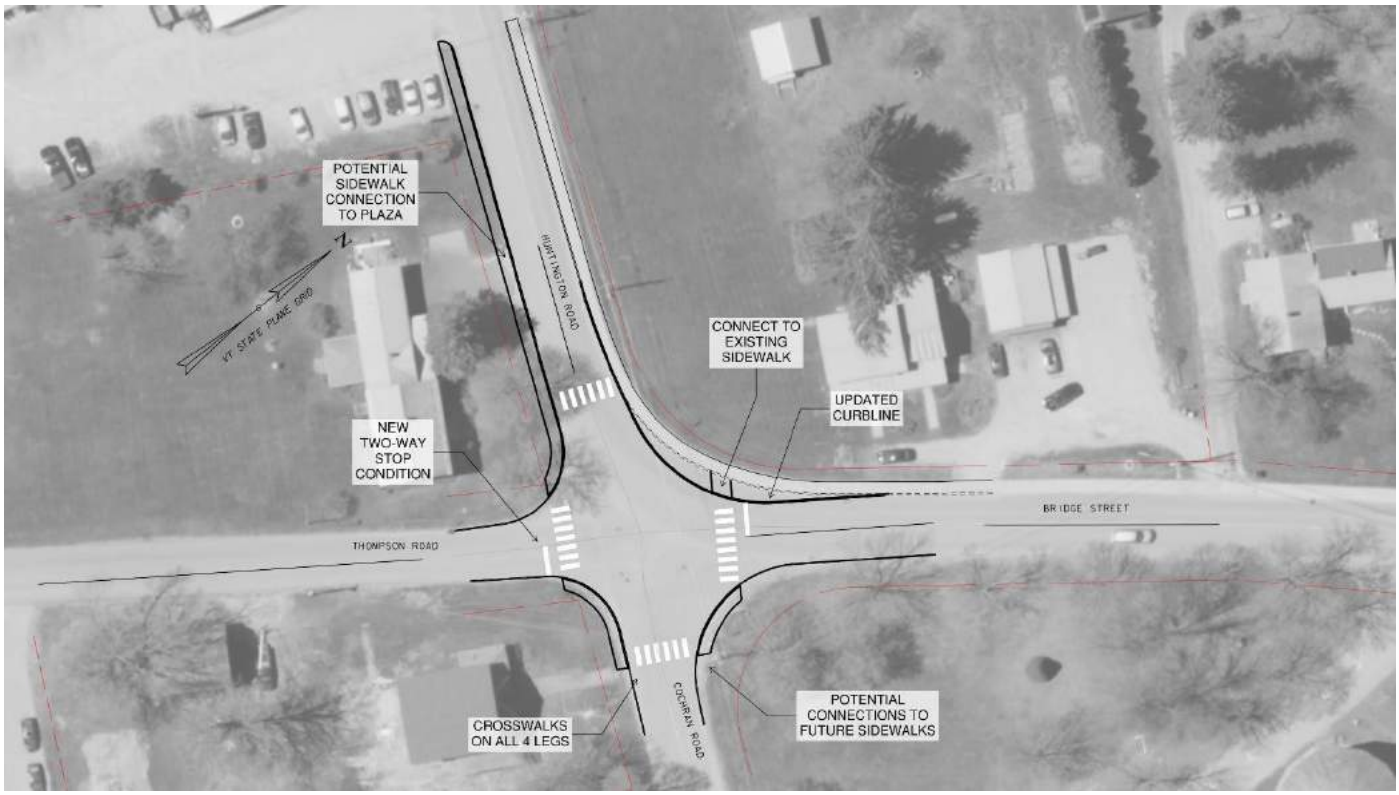
Figure 5. Alternative 2 – Typical Two-Way Stop



The third alternative was a mini-roundabout. The circulating roadway would have an inscribed diameter of 90' and at this size would be able to accommodate large trucks on the major movements. The center island would be fully mountable to allow for those truck movements through the intersection. Splitter islands would channelize traffic on the Bridge Street, Huntington Road, and Cochran Road approaches to the intersection. These splitter islands would provide pedestrian refuge allowing for pedestrians to cross one lane of traffic at a time. Again, sidewalks connecting the crossings would be installed on all four corners of the intersection to provide appropriate crossing locations, with the option to connect to future sidewalk segments. Operationally, the mini-roundabout is anticipated to keep traffic flowing with standard yield conditions for all approaches entering the circulatory roadway, serving all approaches at LOS A, with delays of less than 10 seconds.

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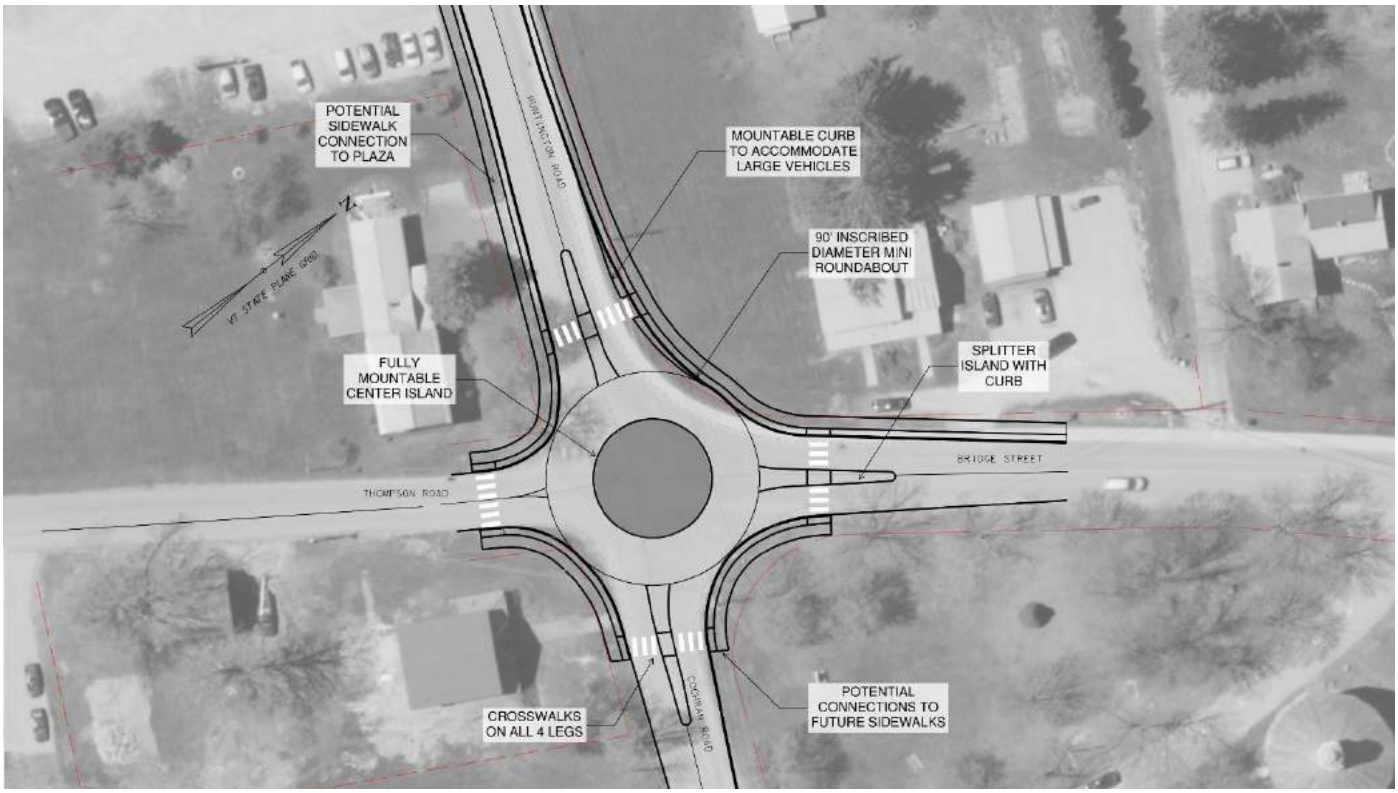
Figure 6. Alternative 3 – Mini-Roundabout



A side-by-side comparison of the three alternatives for the intersection is summarized in Table 1. These comparisons were drawn based on conceptual cost estimates, pedestrian and bicyclist mobility and safety, right-of-way and utilities impacts, drainage considerations, and satisfying the purpose and need.

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Table 2. Evaluation Matrix for Alternatives at the Intersection of Bridge Street / Huntington Road / Cochran Road / Thompson Road

Alternative	Alternative 1 All-Way Stop	Alternative 2 Two-way Stop	Alternative 3 Mini Roundabout
Cost	$100,000	$100,000	$850,000
Pedestrian Mobility	Improved Connections to Crossings of Low Volume Roadways	Improved Connections to Crossings of Low Volume Roadways	Improved Connections to Crossings of Low Volume Roadways
Pedestrian Safety	Stop Condition for All Crossings	Stop Condition for 2 Crossings	Median Refuge on 3 Crossings
Bike Mobility	Potential for bike lanes or shared lane markings	Potential for bike lanes or shared lane markings	Potential for shared lane markings
Bike Safety	All vehicles stop. lower traffic speeds for better bike travel with vehicles thru intersection	Some lower traffic speeds for better bike travel with vehicles thru intersection	Slower vehicle speeds thru roundabout better bike travel with vehicles
ROW Impact	Minimal	Minimal	Moderate
Utilities Impact	Minimal	Minimal	Moderate
Drainage	Minimal	Minimal	Moderate
Satisfies Purpose & Need	Yes	Yes	Yes

Preferred Alternative Refinement and Design

Through the Alternatives Presentation and Public Meeting, as well as outreach efforts prior to and following the meeting, there was clear support for Alternative 2 for the Bridge Street corridor between US 2 Main Street and Railroad Street / Jolina Court, which proposes the installation of a sidewalk and uphill bike lane. In addition to Alternative 2, the mountable curb area on the Railroad Street corner, the pedestrian bulbout and crosswalk on the north leg of the Pleasant Street / Depot Street intersection, and additional crossing on the north leg of the Railroad Street / Jolina Court intersection garnered support from the community and Transportation Committee.

For the intersection of Bridge Street with Huntington Road / Cochran Road / Thompson Road, support for a more typical four way intersection was heard, but consensus on a particular alternative was lacking. Alternative 3 – Mini-Roundabout was supported by some, but the price tag was a significant deterrent. Alternative 1 – All-Way Stop was discussed in detail, but hesitation to stop the "through" movements between Bridge Street and Huntington Road was

insurmountable. Through much deliberation, the Transportation Committee ultimately supported the No Build condition here with low-cost enhancements and pedestrian accommodations.

In the design phase, details on some design features and the tradeoffs they entail were investigated more rigorously. Highlights of these refinements are included below.

- The existing and proposed crossings of Bridge Street were deliberated with the Transportation Committee and project team extensively. A crossing at the intersection of Bridge Street with Pleasant Street and Depot Street was prioritized as shown in Alternative 2. Placing the crosswalk on the north side of the intersection would facilitate pedestrians crossing to access the commercial block. This crossing was originally conceived to replace the existing midblock crossing and RRFB while maximizing parking in front of the commercial block. Pedestrians would be corralled towards the proposed bulbout to safely cross at Depot Street / Pleasant Street. The Transportation Committee and feedback from the outreach efforts revealed a preference to implement the new bulbout and crossing at Depot Street / Pleasant Street as well as retain the midblock crossing and RRFB in the center of the commercial block.
- The opportunity to implement a retaining wall as a means of limiting slope impacts and creating a streetscape feature along the east side sidewalk between Pleasant Street and the railroad was met with support. This feature was included in the preferred alternative design plans at a cost of about $40,000. It is important to note that compared to a 2:1 slope implemented in this location, the construction impacts for the retaining wall would be more significant as the cut necessary to build the retaining wall would be greater than the cut necessary to regrade the slope. In the final condition, the retaining wall would have modest benefits in limiting the impact to the yard space of the 14 Pleasant Street property. The anticipated top of slope for the retaining wall feature would be approximately 2 feet further west than the anticipated top of slope for the regrading at a 2:1 slope.
- The curb-to-curb width on Bridge Street between Railroad Street / Jolina Court and the southern connection of Depot Street was maintained at 31'. In the proposed design, this width accommodates a 6' uphill bike lane on the east side, two 11' travel lanes, and a 3' shoulder on the west side. Maintaining the 31' curb-to-curb width could also be reconfigured to accommodate two 5' bike lanes and two 10.5' travel lanes in the future. Given the desire to incorporate more pedestrian and bicyclist friendly infrastructure along other sections of Bridge Street, maintaining the potential for bike lanes in both directions through this short segment in future configurations was prudent. In particular, this design detail allows flexibility in meeting the future cross-sections of the segment of Bridge Street south of this area which, based on other planning studies, is likely to be reconfigured.
- The mountable curb extension at the corner of Bridge Street and Railroad Street that was illustrated as part of Alternative 3 was retained as a modification to the preferred alternative for the Bridge Street segment. As depicted in Figure 7 below, the mountable curb extension allows for the effective corner radius to be tightened for smaller vehicles while still allowing large vehicles (i.e. WB-67 design vehicle) to have access to

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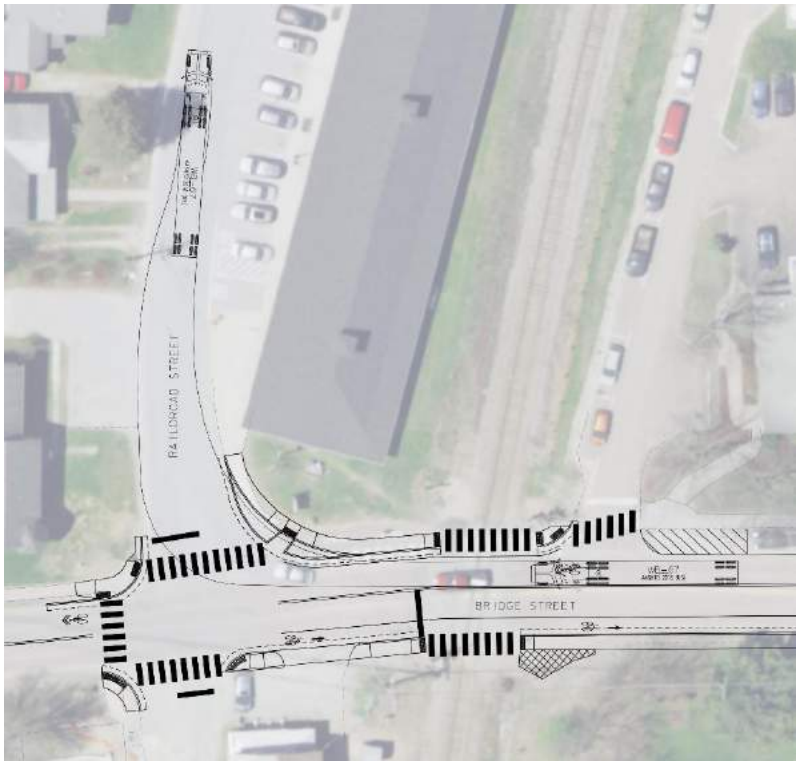
Railroad Street. The tighter turning radius will compel drivers to take the turn at slower speeds, creating a safer and more welcoming environment for the pedestrians attempting to navigate the intersection.

Figure 7. Mountable Curb Extension with Design Vehicle Turning Movement



- The desire to retain driveway access from Bridge Street and parking in front of Richmond Community Kitchen was heard through outreach efforts. With limited area to provide parking, sidewalk, and safe refuge for crossing pedestrians, the tradeoffs associated with this design detail were weighed carefully. Creating a safe pedestrian crossing of Jolina Court remained a top priority. In order to have an appropriate ramp, level landing, and detectable surface for this crossing, the width of the driveway to Richmond Community Kitchen from Bridge Street was limited to the 24' minimum for a commercial driveway. With the proposed driveway and sidewalk configuration, at least two parking spots in front of Richmond Community Kitchen can likely be retained on the parcel property. The current gravel area and parking configuration along the Bridge Street frontage overlaps the railroad right-of-way. In the proposed condition, an additional parking spot may be possible with the continued use of the railroad right-of-way. It is important to note that with the driveway

curb cut on Bridge Street, there was not an appropriate landing for the additional pedestrian crossing on the north leg of the intersection.

- At the intersection of Bridge Street with Huntington Road / Cochran Road / Thompson Road, even in the no build condition, the desire for pedestrian access and safe crossings remains. Therefore, provision of pedestrian landings and crosswalks on all four legs of the intersection was the priority. Support for a Rectangular Rapid Flashing Beacon (RRFB) was heard from the community. With the volumes, speeds, and context for the crossing of Huntington Road, an RRFB is not advisable. Other enhancements, like raised median treatments, can be effective in slowing traffic and providing visual cues for drivers. A mountable median on the Huntington Road leg was designed as a possible enhancement to the intersection. In addition, given the pedestrian accommodations and enhancements proposed, the design team raised concerns with the ability to bring these elements through to final design without some additional traffic control at the intersection. The primary concern was with the lack of clear yielding behavior at the intersection given the atypical through movement between two adjacent legs of the intersection (i.e. Bridge Street to Huntington Road and vice versa). As shown in the plan set, it was proposed that Bridge Street approach be yield controlled, unless the community is amenable to one of the other alternatives proposed (i.e. all-way stop or typical two-way stop).

These design features and the other design details for the preferred alternatives are detailed in the attached draft preliminary plan set.

Technical Appendix

- Preferred Alternatives Revised Preliminary Plans
  - Preliminary Plan Set
  - Preliminary Construction Cost Estimates
- Meeting Materials
  - Local Concerns Meeting | December 10, 2020
    - Presentation & Notes
  - Alternatives Presentation & Public Meeting | April 8, 2021
    - Agenda, Presentation, & Notes
  - Transportation Committee Meetings
    - May 11, 2021 Meeting Minutes
    - June 8, 2021 Meeting Minutes
  - Selectboard Meeting | June 21, 2021
    - Agenda, Presentation, & Notes
- Crash Data
- Conceptual Cost Estimates for Alternatives
- Intersection Operational Analyses for Alternatives
  - Summary Tables
  - HCM Synchro Reports
  - Simulation Queue Reports

Preferred Alternatives
Preliminary Plan Set

INDEX OF SHEETS

VAOT STANDARDS

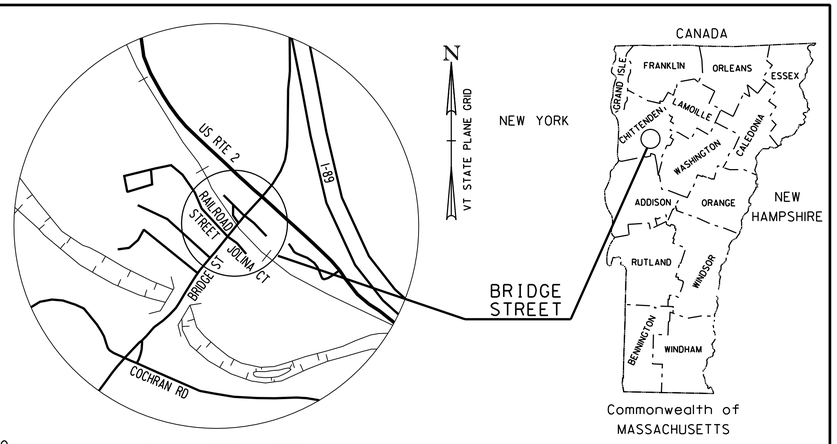
C-2B	PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCES WITH SIDEWALK AND GREEN STRIP	10-14-2005
C-3A	SIDEWALK RAMPS	04-07-2020
C-3B	SIDEWALK RAMPS AND MEDIAN ISLANDS	04-07-2020
C-10	CURBING	02-11-2008
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08-08-1995
E-191	PAVEMENT MARKING DETAILS	02-01-1999
E-192	PAVEMENT MARKING DETAILS	10-12-2000
E-193	PAVEMENT MARKING DETAILS	08-18-1995
T-1	TRAFFIC CONTROL GENERAL NOTES	04-25-2016
T-2	TRAFFIC SIGN GENERAL NOTES	04-25-2016
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08-06-2012
T-28	CONSTRUCTION SIGN DETAILS	08-06-2012
T-30	CONSTRUCTION SIGN DETAILS	08-06-2012
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01-02-2013
T-56	STANDARD SIGN PLACEMENT	10-26-2015

TOWN OF RICHMOND

COUNTY OF CHITTENDEN

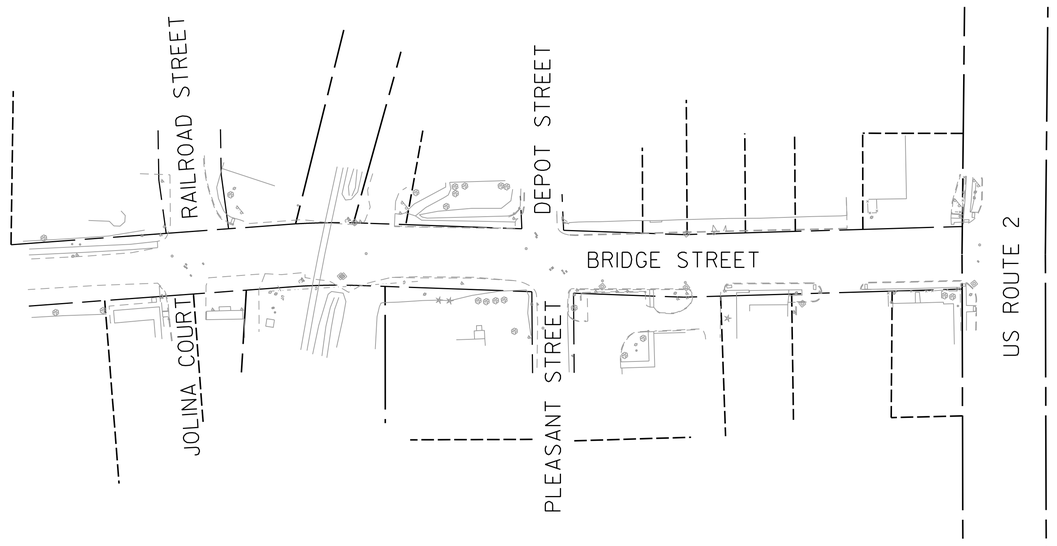
PROPOSED IMPROVEMENTS

BRIDGE STREET
IMPROVEMENT PROJECT



PROJECT LOCATION: THE PROJECT IS LOCATED ON BRIDGE STREET IN RICHMOND, VT FROM ITS INTERSECTION WITH US ROUTE 2 TO RAILROAD STREET.

PROJECT DESCRIPTION: WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES NEW SIDEWALKS, NEW CROSSWALKS, A NEW RETAINING WALL, NEW PAVEMENT MARKINGS AND SIGNAGE, AND OTHER INCIDENTAL ITEMS.



CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2018, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON APRIL 13, 2018 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

SURVEYED BY : VHB
SURVEYED DATE : 2021

DATUM
VERTICAL: NAVD 1988
HORIZONTAL: NAD 1983

REVISED PRELIMINARY PLANS JULY 2021

NOTE THAT THIS PROJECT ASSUMES THAT THE STORMWATER INFRASTRUCTURE IMPROVEMENTS AND RELOCATIONS WILL OCCUR IN CONCURRENCE WITH OR BEFORE THIS PROJECT. THE STORMWATER INFRASTRUCTURE IMPROVEMENTS ARE NOT INCLUDED IN THIS PLAN PACKAGE AND ARE PART OF A SEPARATE CONTRACT.

vhb

PROJECT MANAGER : J.A. CONLEY

PROJECT NAME : BRIDGE STREET
PROJECT NUMBER : 58538.00

SHEET 1 OF 23 SHEETS

GENERAL INFORMATION

SYMBOLOGY LEGEND NOTE

THE SYMBOLOGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLOGY. THE SYMBOLOGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLOGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

R.O.W. ABBREVIATIONS (CODES) & SYMBOLS

POINT	CODE	DESCRIPTION
	CH	CHANNEL EASEMENT
	CONST	CONSTRUCTION EASEMENT
	CUL	CULVERT EASEMENT
	D&C	DISCONNECT & CONNECT
	DIT	DITCH EASEMENT
	DR	DRAINAGE EASEMENT
	DRIVE	DRIVEWAY EASEMENT
	EC	EROSION CONTROL
	HWY	HIGHWAY EASEMENT
	I&M	INSTALL & MAINTAIN EASEMENT
	LAND	LANDSCAPE EASEMENT
	R&RES	REMOVE & RESET
	R&REP	REMOVE & REPLACE
	SR	SLOPE RIGHT
	UE	UTILITY EASEMENT
	(P)	PERMANENT EASEMENT
	(T)	TEMPORARY EASEMENT
■	BNDNS	BOUND SET
⧈	BNDNS	BOUND TO BE SET
◎	IPNF	IRON PIN FOUND
●	IPNS	IRON PIN TO BE SET
⊠	CALC	EXISTING ROW POINT
○	PROW	PROPOSED ROW POINT
[LENGTH]		LENGTH CARRIED ON NEXT SHEET

COMMON TOPOGRAPHIC POINT SYMBOLS

POINT	CODE	DESCRIPTION
	APL	BOUND APPARENT LOCATION
	BM	BENCHMARK
	BND	BOUND
	CB	CATCH BASIN
	COMB	COMBINATION POLE
	DITHR	DROP INLET THROATED DNC
	EL	ELECTRIC POWER POLE
	FPOLE	FLAGPOLE
	GASFIL	GAS FILLER
	GP	GUIDE POST
	GSO	GAS SHUT OFF
	GUY	GUY POLE
	GUYW	GUY WIRE
	GV	GATE VALVE
	H	TREE HARDWOOD
	HCTRL	CONTROL HORIZONTAL
	HVCTRL	CONTROL HORIZ. & VERTICAL
	HYD	HYDRANT
	IP	IRON PIN
	IPIPE	IRON PIPE
	LI	LIGHT - STREET OR YARD
	MB	MAILBOX
	MH	MANHOLE (MH)
	MM	MILE MARKER
	PM	PARKING METER
	PMK	PROJECT MARKER
	POST	POST STONE/WOOD
	RRSIG	RAILROAD SIGNAL
	RRSL	RAILROAD SWITCH LEVER
	S	TREE SOFTWOOD
	SAT	SATELLITE DISH
	SHRUB	SHRUB
	SIGN	SIGN
	STUMP	STUMP
	TEL	TELEPHONE POLE
	TIE	TIE
	TSIGN	SIGN W/DOUBLE POST
	VCTRL	CONTROL VERTICAL
	WELL	WELL
	WSO	WATER SHUT OFF

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

PROPOSED GEOMETRY CODES

CODE	DESCRIPTION
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
CC	CENTER OF CURVE
PT	POINT OF TANGENCY
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
STA	STATION PREFIX
AH	AHEAD STATION SUFFIX
BK	BACK STATION SUFFIX
D	CURVE DEGREE OF (100FT)
R	CURVE RADUIS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE

UTILITY SYMBOLOGY

UNDERGROUND UTILITIES

- UGU — UTILITY (GENERIC-UNKNOWN)
- UT — TELEPHONE
- UE — ELECTRIC
- UC — CABLE (TV)
- UEC — ELECTRIC+CABLE
- UET — ELECTRIC+TELEPHONE
- UCT — CABLE+TELEPHONE
- UECT — ELECTRIC+CABLE+TELEP.
- G — GAS LINE
- W — WATER LINE
- S — SANITARY SEWER (SEPTIC)

ABOVE GROUND UTILITIES (AERIAL)

- AGU — UTILITY (GENERIC-UNKNOWN)
- T — TELEPHONE
- E — ELECTRIC
- C — CABLE (TV)
- EC — ELECTRIC+CABLE
- ET — ELECTRIC+TELEPHONE
- AER E&T — ELECTRIC+TELEPHONE
- CT — CABLE+TELEPHONE
- ECT — ELECTRIC+CABLE+TELEP.
- UTILITY POLE GUY WIRE

PROJECT CONSTRUCTION SYMBOLOGY

PROJECT DESIGN & LAYOUT SYMBOLOGY

- CZ — CLEAR ZONE
- PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

- TOP OF CUT SLOPE
- TOE OF FILL SLOPE
- STONE FILL
- BOTTOM OF DITCH ℄
- CULVERT PROPOSED
- STRUCTURE SUBSURFACE
- PDF — PROJECT DEMARCATION FENCE
- BF — BARRIER FENCE
- TREE PROTECTION ZONE (TPZ)
- STRIPING LINE REMOVAL
- SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLOGY

BOUNDARY LINES

- TOWN LINE — TOWN BOUNDARY LINE
- COUNTY LINE — COUNTY BOUNDARY LINE
- STATE LINE — STATE BOUNDARY LINE
- PROPOSED STATE R.O.W. (LIMITED ACCESS)
- PROPOSED STATE R.O.W.
- STATE ROW (LIMITED ACCESS)
- STATE ROW
- TOWN ROW
- PERMANENT EASEMENT LINE (P)
- TEMPORARY EASEMENT LINE (T)
- SURVEY LINE
- P/L — PROPERTY LINE (P/L)
- SR SR SR — SLOPE RIGHTS
- 6F — 6F PROPERTY BOUNDARY
- 4F — 4F PROPERTY BOUNDARY
- HAZ — HAZ — HAZ — HAZARDOUS WASTE

EPSC LAYOUT PLAN SYMBOLOGY

EPSC MEASURES

- FILTER CURTAIN
- SILT FENCE
- SILT FENCE WOVEN WIRE
- CHECK DAM
- DISTURBED AREAS REQUIRING RE-VEGETATION
- EROSION MATTING

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLOGY

ENVIRONMENTAL RESOURCES

- WETLAND BOUNDARY
- RIPARIAN BUFFER ZONE
- WETLAND BUFFER ZONE
- SOIL TYPE BOUNDARY
- T&E — THREATENED & ENDANGERED SPECIES
- HAZ — HAZ — HAZARDOUS WASTE AREA
- AG — AGRICULTURAL LAND
- HABITAT — FISH & WILDLIFE HABITAT
- FLOOD PLAIN — FLOOD PLAIN
- OHW — ORDINARY HIGH WATER (OHW)
- STORM WATER
- USDA FOREST SERVICE LANDS
- WILDLIFE HABITAT SUIT/CONN

ARCHEOLOGICAL & HISTORIC

- ARCH — ARCHEOLOGICAL BOUNDARY
- HISTORIC DIST — HISTORIC DISTRICT BOUNDARY
- HISTORIC — HISTORIC AREA
- Ⓗ HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

EXISTING FEATURES

- ROAD EDGE PAVEMENT
- ROAD EDGE GRAVEL
- DRIVEWAY EDGE
- DITCH
- FOUNDATION
- FENCE (EXISTING)
- FENCE WOOD POST
- FENCE STEEL POST
- GARDEN
- ROAD GUARDRAIL
- RAILROAD TRACKS
- CULVERT (EXISTING)
- STONE WALL
- WALL
- WOOD LINE
- BRUSH LINE
- HEDGE
- BODY OF WATER EDGE
- LEDGE EXPOSED

vhb

PROJECT NAME:	BRIDGE STREET
PROJECT NUMBER:	58538.00
FILE NAME: z58538legend.dgn	PLOT DATE: 7/28/2021
PROJECT LEADER: J.A.CONLEY	DRAWN BY: VTRANS
DESIGNED BY: VTRANS	CHECKED BY: K.M.SENTOFF
CONVENTIONAL SYMBOLOGY LEGEND SHEET	SHEET 2 OF 23

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2018, AND ITS LATEST REVISIONS, AND SUCH SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THE FINAL CONTRACT DOCUMENTS.
2. PER ADA GUIDELINES, SIDEWALK CROSS SLOPES SHALL NOT EXCEED 2%.
3. ANY WASTE MATERIAL SHALL BE REMOVED AND HAULED TO A FACILITY PREVIOUSLY APPROVED BY THE VT DEC.

CONSTRUCTION NOTES

1. SAW CUTTING OF PAVEMENT AND SIDEWALK SHALL BE INCIDENTAL TO RELATED ITEM AND NO SEPARATE PAYMENT WILL BE MADE.
2. REMOVAL OF EXISTING CONCRETE SIDEWALK WILL BE PAID AS ITEM 203.16 - SOLID ROCK EXCAVATION.
3. IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECTED MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE RESIDENT ENGINEER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
4. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION AS PER THE ANR LOW RISK HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.
5. CONTRACTOR IS RESPONSIBLE FOR DEVELOPING A DETAILED TRAFFIC CONTROL PLAN AND MAINTAINING VEHICULAR AND PEDESTRIAN TRAFFIC IN ACCORDANCE WITH THE TRAFFIC CONTROL NOTES, SECTION 641.11 - TRAFFIC CONTROL, ALL INCLUSIVE IN THE VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION BOOK, DATED 2018, THE VTRANS WORK ZONE SAFETY AND MOBILITY GUIDANCE DOCUMENT, AND THE LATEST VERSION OF THE MUTCD.
6. ALL PROPOSED SIGNS AND PAVEMENT MARKINGS SHOWN IN THESE PLANS SHALL BE COMPLIANT WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 2009 EDITION AND SUPPLEMENTAL RESOURCES CITED WITHIN.
7. CONTRACTOR SHALL MAINTAIN FULL ACCESS TO ALL DRIVEWAYS TO THE EXTENT POSSIBLE. IF FULL ACCESS CANNOT BE MAINTAINED, CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER AND PROPERTY OWNER AT LEAST 48 HOURS IN ADVANCE OF THE TEMPORARY CLOSURE. CLOSURE TIMES SHALL BE MINIMIZED TO THE GREATEST EXTENT POSSIBLE.
8. REMOVING AND RESETTING THE REDI-ROCK RETAINING WALL BETWEEN STATION 104+40 AND 104+91, RT SHALL BE PAID FOR UNDER ITEM 900.670, "SPECIAL PROVISION (REMOVE AND RESET REDI-ROCK RETAINING WALL)". ANY NEW BLOCKS ADDED TO THE WALL TO MAINTAIN THE ELEVATION OF THE EXISTING TOP OF WALL SHALL BE PAID FOR UNDER ITEM 900.670, "SPECIAL PROVISION (REDI-ROCK RETAINING WALL)". NEW BLOCKS SHALL MATCH SIZE AND COLOR OF EXISTING BLOCKS.
9. CONTACT INFORMATION FOR TOWN OF RICHMOND IS AS FOLLOWS:
   RAVI VENKATARAMAN, TOWN PLANNER
   203 BRIDGE STREET
   RICHMOND, VERMONT 05477
   (802) 434-2430
   http://www.richmondvt.gov/

UTILITY NOTES

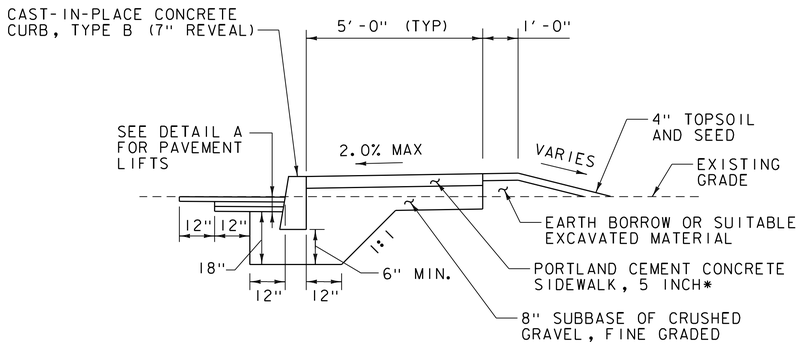
1. ALL LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR DESIGN ENGINEER HAVE NOT INDEPENDENTLY VERIFIED ALL OF THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES, AND SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY.
2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED AND THE INFORMATION FURNISHED IN WRITING TO THE RESIDENT ENGINEER FOR THE RESOLUTION OF THE CONFLICT.
3. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND ADJUSTING ALL CURB STOPS, WATER VALVES, MANHOLES, AND DRAINAGE STRUCTURES WITHIN THE PROJECT LIMITS TO FINAL GRADE ELEVATION.
4. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL BURIED AND AERIAL UTILITIES AND POLES PRIOR TO STARTING WORK. THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY OWNERS TO CONFIRM ACTUAL LOCATIONS PRIOR TO CONSTRUCTION.
5. ACT NO. 86 OF 1987 (30 VSA CHAPTER 86) ("DIG SAFE") REQUIRES THAT NOTICE BE GIVEN PRIOR TO MAKING ANY EXCAVATION. THE CONTRACTOR SHALL CALL DIG-SAFE AT 1-888-344-7233 AT LEAST 48 HOURS BEFORE, AND NOT MORE THAN 30 DAYS BEFORE, BEGINNING ANY EXCAVATION AT ANY LOCATION. NOTE THAT THE TOWN OF RICHMOND WILL NOT BE NOTIFIED BY DIG SAFE AND MUST BE CONTACTED SEPARATELY.
6. THE STORMWATER INFRASTRUCTURE IN THE PROJECT AREA WILL BE RELOCATED TO CORRESPOND WITH THE PROPOSED IMPROVEMENTS OUTLINED IN THESE PLANS. THIS PROJECT ASSUMES THAT THE STORMWATER INFRASTRUCTURE WORK WILL OCCUR IN CONCURRENCE WITH OR BEFORE THIS PROJECT.
7. CONTRACTOR TO FIELD VERIFY GAS LINE LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION.

DRY STACKED STONE RETAINING WALL NOTES

1. THE CONTRACTOR SHALL DESIGN AND FURNISH A DRY STACKED, FLAT FLAGSTONE RETAINING WALL IN ACCORDANCE WITH THESE PLANS. SHOP DRAWINGS OF THE RETAINING WALL SHALL BE SUBMITTED TO THE RESIDENT ENGINEER FOR REVIEW AND APPROVAL. PLAN AND DETAILS ARE SHOWN FOR ESTIMATING PURPOSES ONLY.
2. END OF COPING NOT SHOWN ON PLAN AND ELEVATION VIEWS.
3. ACTUAL WALL ALIGNMENT AND LIMITS TO BE DETERMINED IN THE FIELD.
4. UTILITY POLES AND/OR OTHER FACILITIES REQUIRED WITHIN THE WALL LIMITS SHALL NOT BE DRIVEN OR AUGERED THROUGH GEOSYNTHETIC REINFORCEMENT. THE IMPACT OF UTILITY POLES AND/OR OTHER FACILITIES ON WALL REINFORCEMENT SHALL BE ADDRESSED IN THE WALL DESIGN.

vhb

PROJECT NAME:	BRIDGE STREET
PROJECT NUMBER:	58538.00
FILE NAME: z58538notes.dgn	PLOT DATE: 7/28/2021
PROJECT LEADER: J.A.CONLEY	DRAWN BY: C.K.FORD
DESIGNED BY: C.K.FORD	CHECKED BY: K.M.SENTOFF
PROJECT NOTES	SHEET 3 OF 23

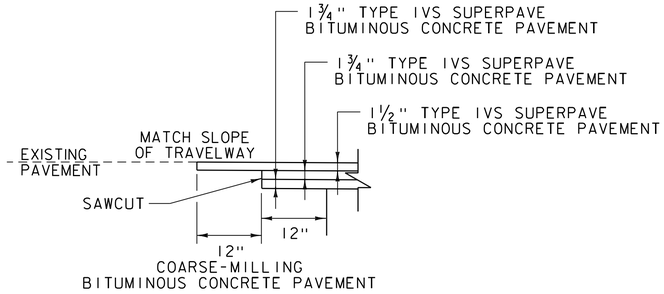


CONCRETE SIDEWALK TYPICAL SECTION

N.T.S.

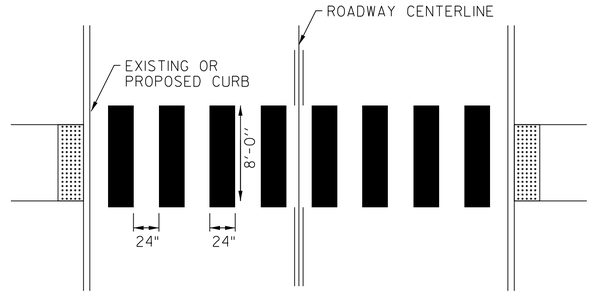
* PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH FOR COMMERCIAL DRIVES

NOTE: CONTRACTOR RECOMMENDED PAVING COURSES MAY BE SUBSTITUTED FOR THOSE SHOWN IN DETAILS WITH PRIOR ENGINEER APPROVAL.



DETAIL A

N.T.S.



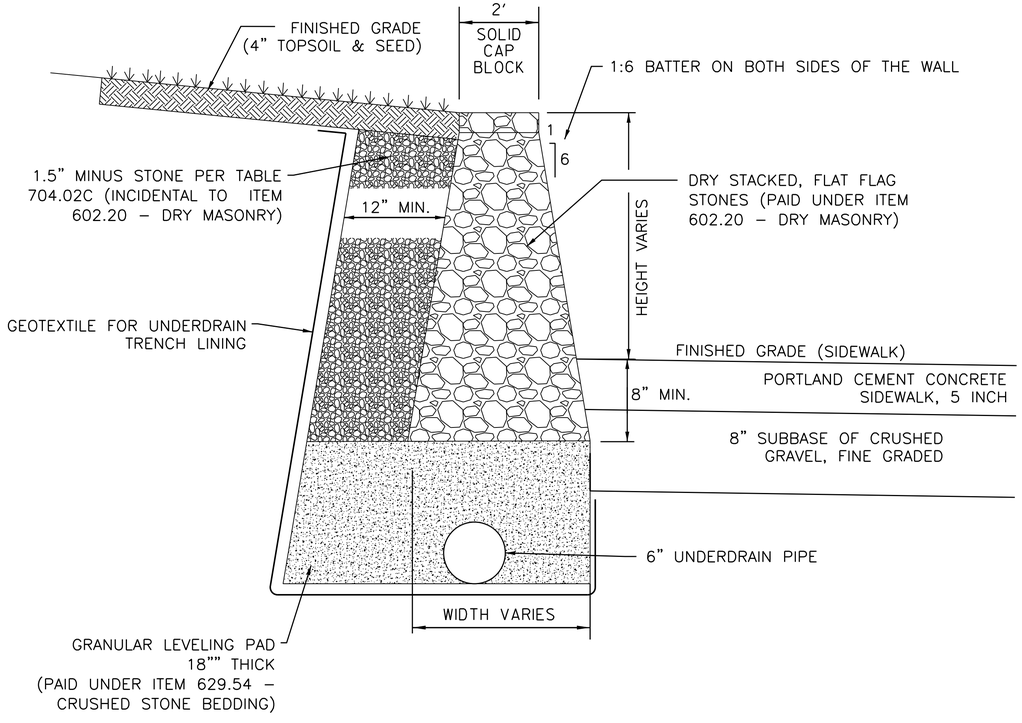
CROSSWALK MARKING DETAIL

NOT TO SCALE

ADJUST SPACING (12" TO 24") TO AVOID WHEEL PATHS.

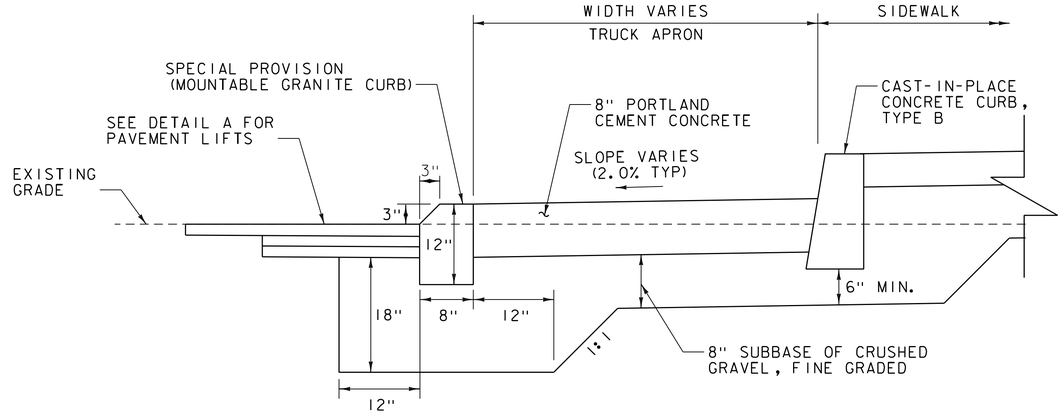
BLOCKS SHOULD BE INSTALLED PARALLEL TO TRAFFIC FLOW. FOR SKEWED CROSSINGS, OFFSET BLOCKS LATERALLY AS NEEDED.

CROSSWALK MARKINGS SHALL CONFORM TO SECTION 646.06 OF THE VTRANS STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2018.



DRY STACKED STONE RETAINING WALL

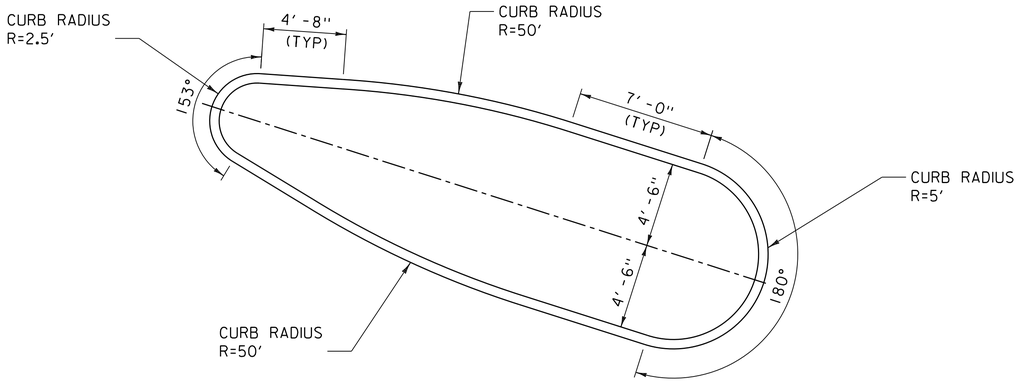
N.T.S.



MOUNTABLE GRANITE CURB DETAIL

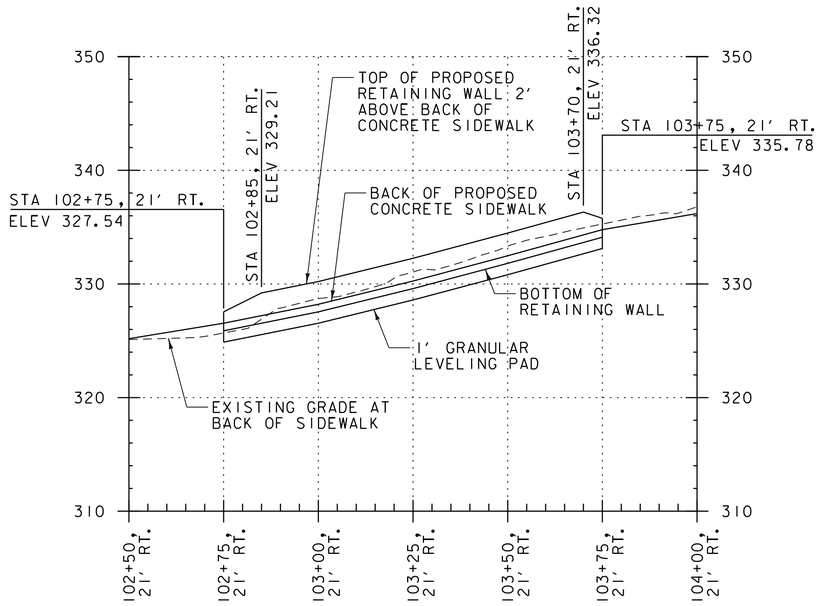
N.T.S.

PROJECT NAME:	BRIDGE STREET
PROJECT NUMBER:	58538.00
FILE NAME: z58538typ.dgn	PLOT DATE: 7/28/2021
PROJECT LEADER: J.A.CONLEY	DRAWN BY: C.K.FORD
DESIGNED BY: C.K.FORD	CHECKED BY: K.M.SENTOFF
TYPICAL SECTIONS	SHEET 4 OF 23



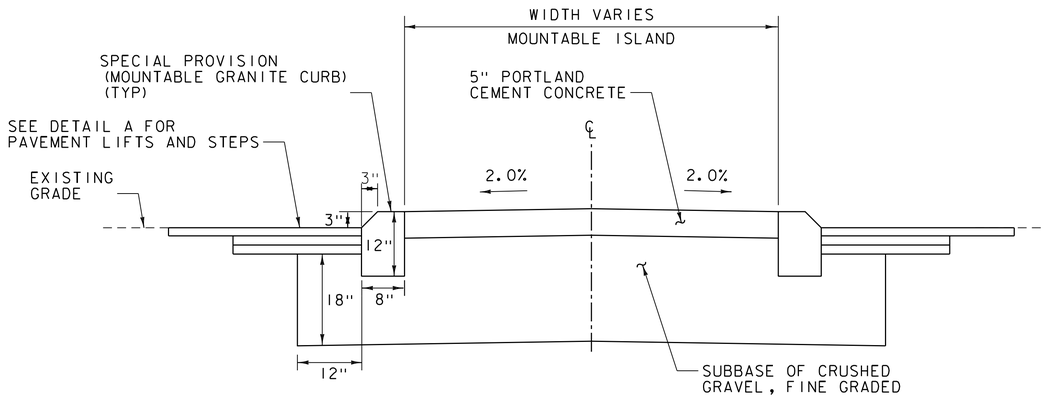
MOUNTABLE ISLAND PLAN

N.T.S.



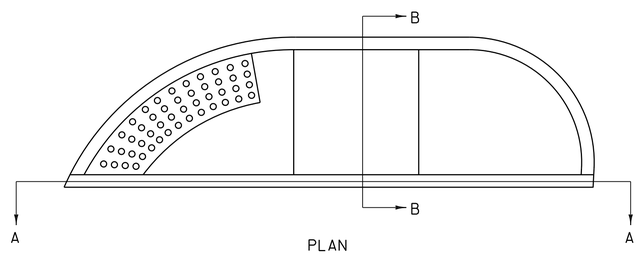
DRY STACKED STONE RETAINING WALL
ELEVATION VIEW

N.T.S.

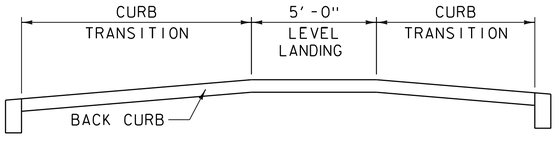


MOUNTABLE ISLAND SECTION

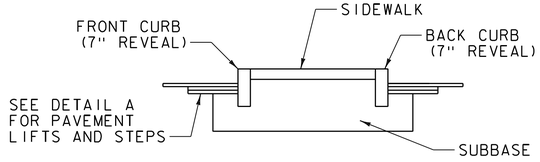
N.T.S.



PLAN



SECTION A-A



SECTION B-B

BACK CURB DETAIL

N.T.S.

STA 101+39 - 101+62, RT

NOTE: SEE CONCRETE SIDEWALK TYPICAL SECTION FOR MORE INFORMATION

PROJECT NAME:	BRIDGE STREET
PROJECT NUMBER:	58538.00
FILE NAME: z58538det.dgn	PLOT DATE: 7/28/2021
PROJECT LEADER: J.A.CONLEY	DRAWN BY: C.K.FORD
DESIGNED BY: C.K.FORD	CHECKED BY: K.M.SENTOFF
DETAILS SHEET	SHEET 5 OF 23

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES		TOTALS		DESCRIPTIONS			
Bridge St	Intersection	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND
1		1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10	
2		2		EACH	REMOVING MEDIUM TREES	201.15	
355	100	455		CY	COMMON EXCAVATION	203.15	
10	5	15		CY	SOLID ROCK EXCAVATION	203.16	
3	7	10		CY	EXCAVATION OF SURFACES AND PAVEMENTS	203.28	
10		10		CY	EARTH BORROW	203.30	
60	1	61		CY	TRENCH EXCAVATION OF EARTH	204.20	
1		1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22	
100		100		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30	
70	40	110		SY	COARSE-MILLING, BITUMINOUS PAVEMENT	210.10	
200	90	290		CY	SUBBASE OF CRUSHED GRAVEL, FINE GRADED	301.26	
1.2	0.8	2		CWT	EMULSIFIED ASPHALT	404.65	
9		9		SY	HAND-PLACED BITUMINOUS CONCRETE MATERIAL, DRIVES	406.38	
25		25		CY	DRY MASONRY	602.20	
100		100		LF	UNDERDRAIN PIPE, 6 INCHES	605.10	
120	70	190		MGAL	DUST CONTROL WITH WATER	609.10	
610	265	875		LF	CAST-IN-PLACE CONCRETE CURB, TYPE B	616.28	
300	120	420		SY	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	618.10	
35		35		SY	PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH	618.11	
178	80	258		SF	DETECTABLE WARNING SURFACE	618.30	
3	1	4		EACH	ADJUST ELEVATION OF VALVE BOX	629.20	
	1	1		EACH	RELOCATE HYDRANT	629.29	
25		25		TON	CRUSHED STONE BEDDING	629.54	
300	100	400		HR	FLAGGERS	630.15	
4000		4000		DL	RAILROAD FLAGGERS (N.A.B.I.)	632.10	
1	1	2		LS	MOBILIZATION/DEMOBILIZATION	635.11	
1	1	2		LS	TRAFFIC CONTROL, ALL-INCLUSIVE	641.11	
1170		1170		LF	4 INCH WHITE LINE, WATERBORNE PAINT	646.201	
1250		1250		LF	4 INCH YELLOW LINE, WATERBORNE PAINT	646.2111	
77	23	100		LF	24 INCH STOP BAR, WATERBORNE PAINT	646.261	
13	5	18		EACH	LETTER OR SYMBOL, WATERBORNE PAINT	646.301	
296	96	392		LF	CROSSWALK MARKING, WATERBORNE PAINT	646.311	
320	192	512		SF	REMOVAL OF EXISTING PAVEMENT MARKINGS	646.85	
120		120		SY	GEOTEXTILE FOR UNDERDRAIN TRENCH LINING	649.41	
18	7	25		LB	SEED	651.15	
65	25	90		LB	FERTILIZER	651.18	
0.3	0.2	0.5		TON	AGRICULTURAL LIMESTONE	651.20	
33	12	45		CY	TOPSOIL	651.35	
0.3	0.2	0.5		TON	HAY MULCH	653.10	
200		200		SY	ROLLED EROSION CONTROL PRODUCT, TYPE I	653.20	

DETAILED SUMMARY OF QUANTITIES		
QUANTITIES	UNIT	ITEMS

vhb

PROJECT NAME: BRIDGE STREET
PROJECT NUMBER: 58538.00

FILE NAME: z58538qss.dgn
PROJECT LEADER: J.A.CONLEY
DESIGNED BY: C.K.FORD
QUANTITY SUMMARY SHEET (1 OF 2)

PLOT DATE: 7/28/2021
DRAWN BY: C.K.FORD
CHECKED BY: K.M.SENTOFF

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

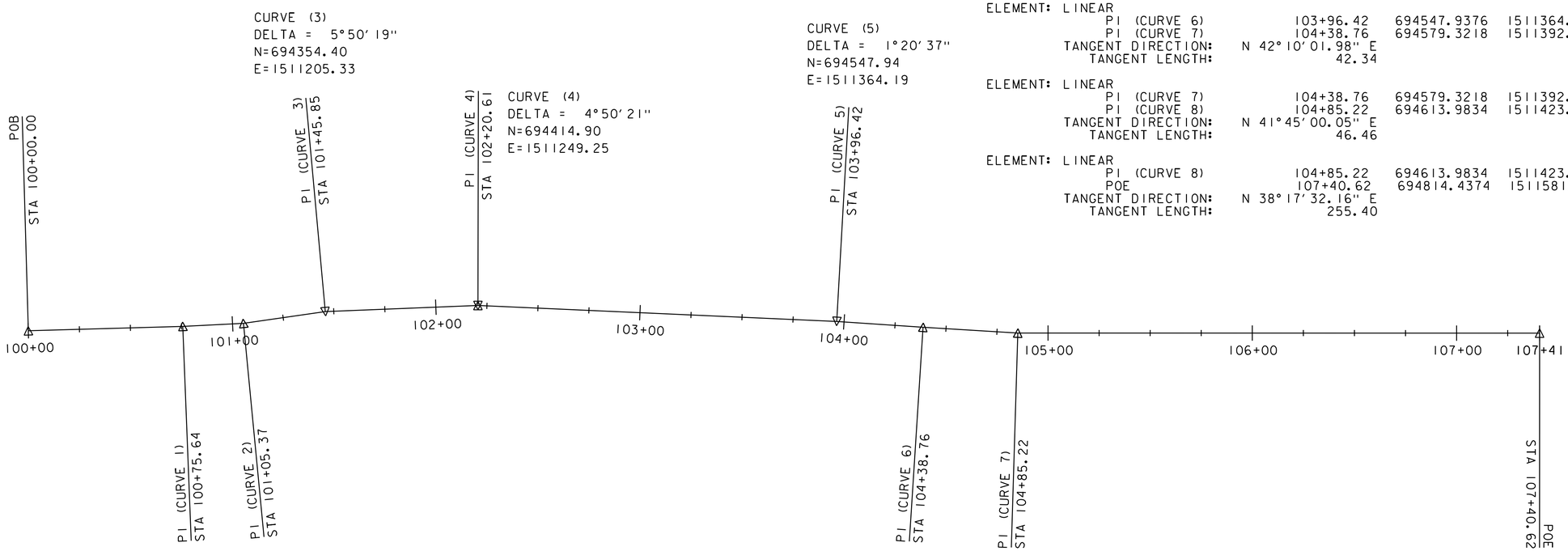
SUMMARY OF ESTIMATED QUANTITIES		TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
Bridge St	Intersection	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
5		5		EACH	INLET PROTECTION DEVICE, TYPE II	653.41				
44	24.5	68.5		SF	TRAFFIC SIGN, TYPE A	675.20				
30	15	45		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
9	13	22		EACH	REMOVING SIGNS	675.50				
7	9	16		EACH	RESETTING SIGNS	675.60				
75	75	150		LF	SPECIAL PROVISION (MOUNTABLE GRANITE CURB)	900.640				
50		50		SF	SPECIAL PROVISION (MODULAR BLOCK RETAINING WALL)	900.670				
100		100		SF	SPECIAL PROVISION (REMOVE AND RESET MODULAR BLOCK RETAINING WALL)	900.670				
45	25	70		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				

PROJECT NAME: BRIDGE STREET
PROJECT NUMBER: 58538.00

FILE NAME: z58538qss.dgn
PROJECT LEADER: J.A.CONLEY
DESIGNED BY: C.K.FORD
QUANTITY SUMMARY SHEET (2 OF 2)

PLOT DATE: 7/28/2021
DRAWN BY: C.K.FORD
CHECKED BY: K.M.SENTOFF
SHEET 7 OF 23

		STATION	NORTHING	EASTING
ELEMENT:	LINEAR			
	POB	100+00.00	694234.4856	1511122.6202
	PI (CURVE 1)	100+75.64	694295.1711	1511167.7747
TANGENT DIRECTION:		N 36°39'07.07" E		
TANGENT LENGTH:		75.64		
ELEMENT:	LINEAR			
	PI (CURVE 2)	100+75.64	694295.1711	1511167.7747
	PI (CURVE 3)	101+05.37	694319.3971	1511184.9967
TANGENT DIRECTION:		N 35°24'30.87" E		
TANGENT LENGTH:		29.72		
ELEMENT:	LINEAR			
	PI (CURVE 3)	101+05.37	694319.3971	1511184.9967
	PI (CURVE 4)	101+45.85	694354.4021	1511205.3257
TANGENT DIRECTION:		N 30°08'44.56" E		
TANGENT LENGTH:		40.48		
ELEMENT:	LINEAR			
	PI (CURVE 4)	101+45.85	694354.4021	1511205.3257
	PI (CURVE 5)	102+20.61	694414.9001	1511249.2548
TANGENT DIRECTION:		N 35°59'03.73" E		
TANGENT LENGTH:		74.76		
ELEMENT:	LINEAR			
	PI (CURVE 5)	102+20.61	694414.9001	1511249.2548
	PI (CURVE 6)	103+96.42	694547.9376	1511364.1856
TANGENT DIRECTION:		N 40°49'25.12" E		
TANGENT LENGTH:		175.81		
ELEMENT:	LINEAR			
	PI (CURVE 6)	103+96.42	694547.9376	1511364.1856
	PI (CURVE 7)	104+38.76	694579.3218	1511392.6104
TANGENT DIRECTION:		N 42°10'01.98" E		
TANGENT LENGTH:		42.34		
ELEMENT:	LINEAR			
	PI (CURVE 7)	104+38.76	694579.3218	1511392.6104
	PI (CURVE 8)	104+85.22	694613.9834	1511423.5470
TANGENT DIRECTION:		N 41°45'00.05" E		
TANGENT LENGTH:		46.46		
ELEMENT:	LINEAR			
	PI (CURVE 8)	104+85.22	694613.9834	1511423.5470
	POE	107+40.62	694814.4374	1511581.8121
TANGENT DIRECTION:		N 38°17'32.16" E		
TANGENT LENGTH:		255.40		



CURVE (1)
DELTA = 1°14'36"
N=694295.17
E=1511167.77

CURVE (2)
DELTA = 5°15'46"
N=694319.40
E=1511185.00

CURVE (3)
DELTA = 5°50'19"
N=694354.40
E=1511205.33

CURVE (4)
DELTA = 4°50'21"
N=694414.90
E=1511249.25

CURVE (5)
DELTA = 1°20'37"
N=694547.94
E=1511364.19

CURVE (6)
DELTA = 0°25'02"
N=694579.32
E=1511392.61

CURVE (7)
DELTA = 3°27'28"
N=694613.98
E=1511423.55

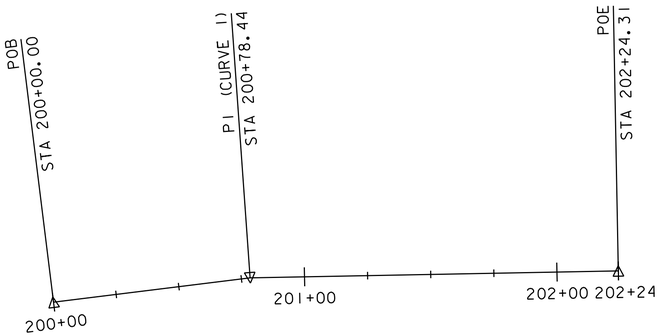
vhb

PROJECT NAME:	BRIDGE STREET
PROJECT NUMBER:	58538.00

FILE NAME: z58538_bdr_ali.dgn	PLOT DATE: 7/28/2021
PROJECT LEADER: J.A.CONLEY	DRAWN BY: C.K.FORD
DESIGNED BY: C.K.FORD	CHECKED BY: K.M.SENTOFF
ALIGNMENT DATA SHEET (1 OF 2)	SHEET 8 OF 23

			STATION	NORTHING	EASTING
ELEMENT:	LINEAR				
	POB		200+00.00	692423.9844	1509717.4787
	PI (CURVE 1)		200+78.44	692491.0631	1509758.1384
	TANGENT DIRECTION:	N 31° 13′ 19.55" E			
	TANGENT LENGTH:	78.44			
ELEMENT:	LINEAR				
	PI (CURVE 1)		200+78.44	692491.0631	1509758.1384
	POE		202+24.31	692607.2423	1509846.3450
	TANGENT DIRECTION:	N 37° 12′ 24.59" E			
	TANGENT LENGTH:	145.87			

CURVE (1)
DELTA = 5°59′05"
692491.06
1509758.14



PROJECT NAME:	BRIDGE STREET
PROJECT NUMBER:	58538.00

FILE NAME: z58538_bdr_ali.dgn	PLOT DATE: 7/28/2021
PROJECT LEADER: J.A.CONLEY	DRAWN BY: C.K.FORD
DESIGNED BY: C.K.FORD	CHECKED BY: K.M.SENTOFF
ALIGNMENT DATA SHEET (2 OF 2)	SHEET 9 OF 23

DETECTABLE WARNING SURFACE
STA 101+02, RT (2' X10')
STA 101+03, LT (2' X5')
STA 101+15, LT (2' X5')
STA 101+44, RT (2' X8')
STA 101+69, LT (2' X5')
STA 102+12, RT (2' X5')
STA 102+20, LT (2' X5')
STA 102+49, RT (2' X5')
STA 102+56, LT (2' X4')
STA 102+62, LT (2' X5')

PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
STA 100+91 - 101+18, LT
STA 100+97 - 101+07, RT
STA 101+39 - 101+62, RT
STA 101+87 - 102+13, RT
STA 101+48 - 102+21, LT
STA 102+48 - 102+90, RT
STA 102+55 - 102+68, LT

ADJUST ELEVATION OF VALVE BOX
STA 101+03, RT
STA 101+05, RT (2)

CAST-IN-PLACE CONCRETE CURB, TYPE B
STA 100+80 - 101+19, LT
STA 100+97 - 101+07, RT
STA 101+39 - 102+13, RT
STA 101+39 - 101+59, RT (BACK CURB)
STA 101+48 - 102+21, LT
STA 102+48 - 102+90, RT
STA 102+55 - 102+68, LT

PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH
STA 101+48 - 101+65, LT (TRUCK APRON)
STA 101+62 - 101+87, RT (DRIVE)
STA 101+67 - 101+89, LT (TRUCK APRON)

HAND-PLACED BITUMINOUS CONCRETE MATERIAL, DRIVES
STA 101+55 - 101+88, RT

SPECIAL PROVISION (MOUNTABLE GRANITE CURB)
STA 101+49 - 101+97, LT

N
VT STATE PLANE GRID

RAILROAD STREET
APPROX. EXISTING RAILROAD ROW
APPROX. EXISTING RAILROAD ROW
MATCH EXISTING SIDEWALK WIDTH
MATCH EXISTING CURB +48, LT. 55'
LEVEL LANDING
SIDEWALK RAMP
+19, LT. 32.5'
SAWCUT LINE (TYP)
LEVEL LANDING
APPROX. EXISTING TOWN ROW
MATCH EXISTING SIDEWALK +91, LT. 19.5'
MOUNTABLE GRANITE CURB RADIUS R=30'
CURB RADIUS R=50'
5'-0"
15'-6"
15'-6"
+21
+97
102+00
+13
+55
+68, LT. 25'
LEVEL LANDING
15'-6"
CURB RADIUS R=15'
CURB RADIUS R=15'
12'-6"
12'-6"
+80
+01
+51
STA. 100+00.00 BEGIN PROJECT
100+00
BRIDGE ST
+97
101+00
12'-10"
15'-6"
LEVEL LANDING
CURB RADIUS R=10'
CURB RADIUS R=15'
24'-0"
5'-0"
15'-6"
+48
5'-0"
BEGIN CURB +39, RT. 21'
BACK CURB
LEVEL LANDING
SIDEWALK RAMP
SIDEWALK RAMP
APPROX. EXISTING TOWN ROW
BEGIN CURB +07, RT. 28'
ADJUST ELEVATION OF VALVE BOX
JOLINA COURT
APPROX. EXISTING RAILROAD ROW
REMOVE PAVEMENT. TOPSOIL AND SEED. REMOVAL OF PAVEMENT PAID FOR UNDER ITEM 203.28, "EXCAVATION OF SURFACES AND PAVEMENTS".
BEGIN DRY STACKED STONE RETAINING WALL +75
APPROX. EXISTING RAILROAD ROW
MATCH STATION 102+90
DRAINAGE INFRASTRUCTURE RELOCATIONS AND IMPROVEMENTS UNDER SEPARATE CONTRACT (TYP)

0 10 20
SCALE IN FEET

vhb

PROJECT NAME:	BRIDGE STREET
PROJECT NUMBER:	58538.00
FILE NAME: z58538_bdr_nul.dgn	PLOT DATE: 7/28/2021
PROJECT LEADER: J.A.CONLEY	DRAWN BY: C.K.FORD
DESIGNED BY: C.K.FORD	CHECKED BY: K.M.SENTOFF
GENERAL LAYOUT (SHEET 1OF 4)	SHEET 10 OF 23

DETECTABLE WARNING SURFACE
STA 104+01, RT (2'X8')
STA 104+23, LT (2'X5')
STA 104+33, LT (2'X5')
STA 104+36, RT (2'X9')
STA 105+21, RT (2'X5')

CAST-IN-PLACE CONCRETE CURB, TYPE B
STA 102+90 - 104+06, RT
STA 104+20 - 104+49, LT
STA 104+31 - 105+27, RT

PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
STA 102+90 - 104+03, RT
STA 104+20 - 104+51, LT
STA 104+32 - 105+27, RT

SPECIAL PROVISION (REMOVE AND RESET MODULAR BLOCK RETAINING WALL)
STA 104+40 - 104+91, RT

N
VT STATE PLANE GRID

MATCH STATION 102+90

APPROX. EXISTING TOWN ROW

BRIDGE ST

DEPOT STREET

103+00

+90

104+00

15'-6"

+20, LT. 27'

R=10'

10'-0"

R=12'

20'-1"

17'-3"

19'-2⅝"

9'-0½"

+32

+34

+51

+20

12'-3¼"

+41

+43

+41

20'-0"

105+00

+22

20'-0"

MATCH STATION 105+50

5'-0"

CURB RADIUS R=15'

CURB RADIUS R=10'

SAWCUT LINE (TYP)

5'-0"

CURB RADIUS R=5'

+31, RT. 30'

+06, RT. 32.5'

+27, RT. 27'

APPROX. EXISTING TOWN ROW

TREES TO BE REMOVED

END DRY STACKED STONE RETAINING WALL +75

UTILTY POLE TO BE RELOCATED

GAS LINE TO BE RELOCATED IF NECESSARY

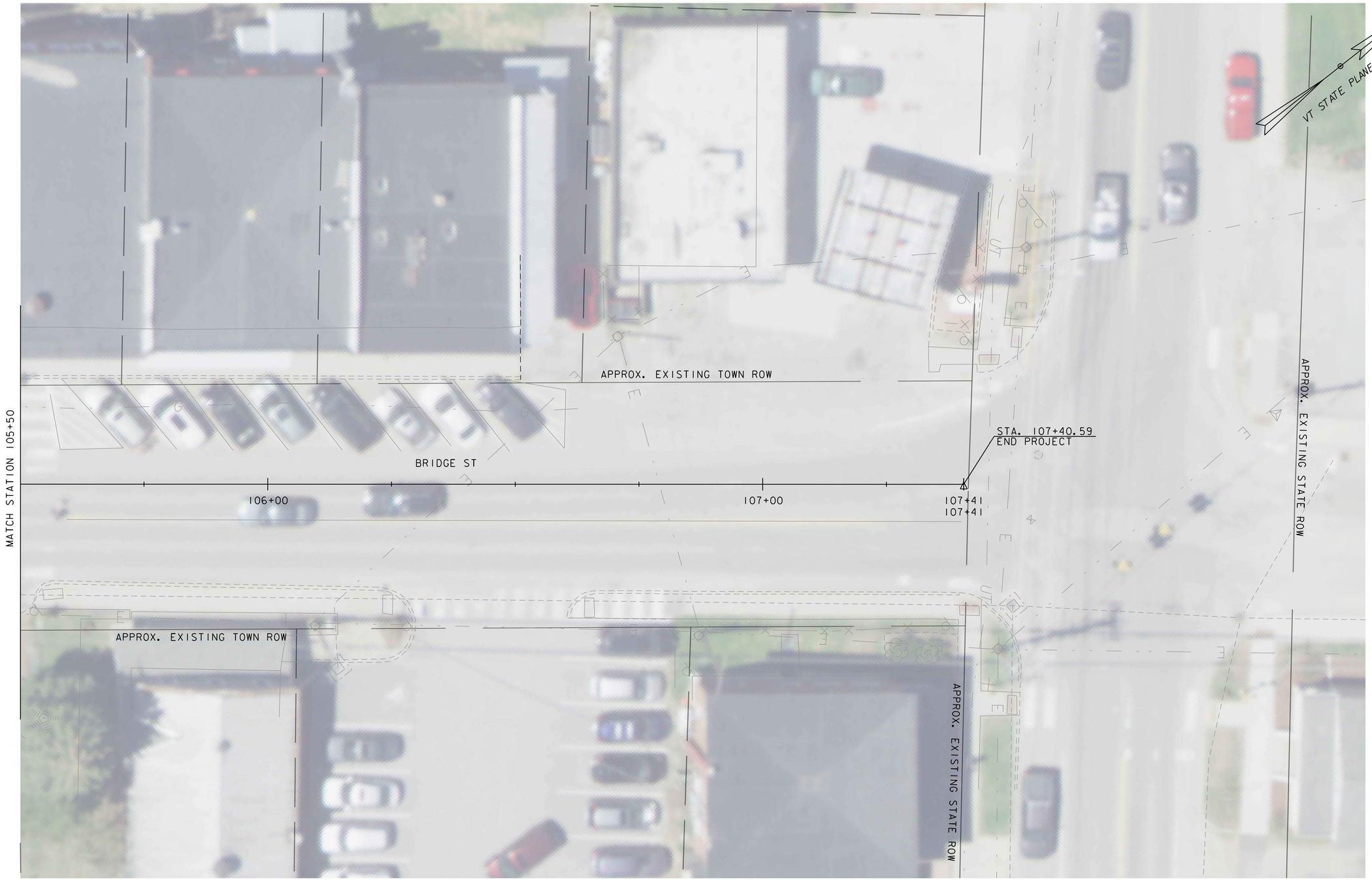
PLEASANT STREET

REMOVE AND RESET MODULAR BLOCK RETAINING WALL. ADD ROW OF BLOCKS WHERE NECESSARY TO MAINTAIN ELEVATION OF EXISTING TOP OF WALL.

0 10 20
SCALE IN FEET

vhb

PROJECT NAME:	BRIDGE STREET
PROJECT NUMBER:	58538.00
FILE NAME: z58538_bdr_nul.dgn	PLOT DATE: 7/28/2021
PROJECT LEADER: J.A.CONLEY	DRAWN BY: C.K.FORD
DESIGNED BY: C.K.FORD	CHECKED BY: K.M.SENTOFF
GENERAL LAYOUT (SHEET 2 OF 4)	SHEET 11 OF 23



0 10 20
SCALE IN FEET

vhb

PROJECT NAME:	BRIDGE STREET
PROJECT NUMBER:	58538.00

FILE NAME: z58538_bdr_nul.dgn	PLOT DATE: 7/28/2021
PROJECT LEADER: J.A.CONLEY	DRAWN BY: C.K.FORD
DESIGNED BY: C.K.FORD	CHECKED BY: K.M.SENTOFF
GENERAL LAYOUT (SHEET 3 OF 4)	SHEET 12 OF 23

DETECTABLE WARNING SURFACE
STA 200+45, LT (2'X5')
STA 200+47, RT (2'X5')
STA 200+49, LT (2'X5')
STA 200+64, RT (2'X5')
STA 200+78, LT (2'X5')
STA 200+99, RT (2'X5')
STA 201+21, RT (2'X5')
STA 201+21, LT (2'X5')

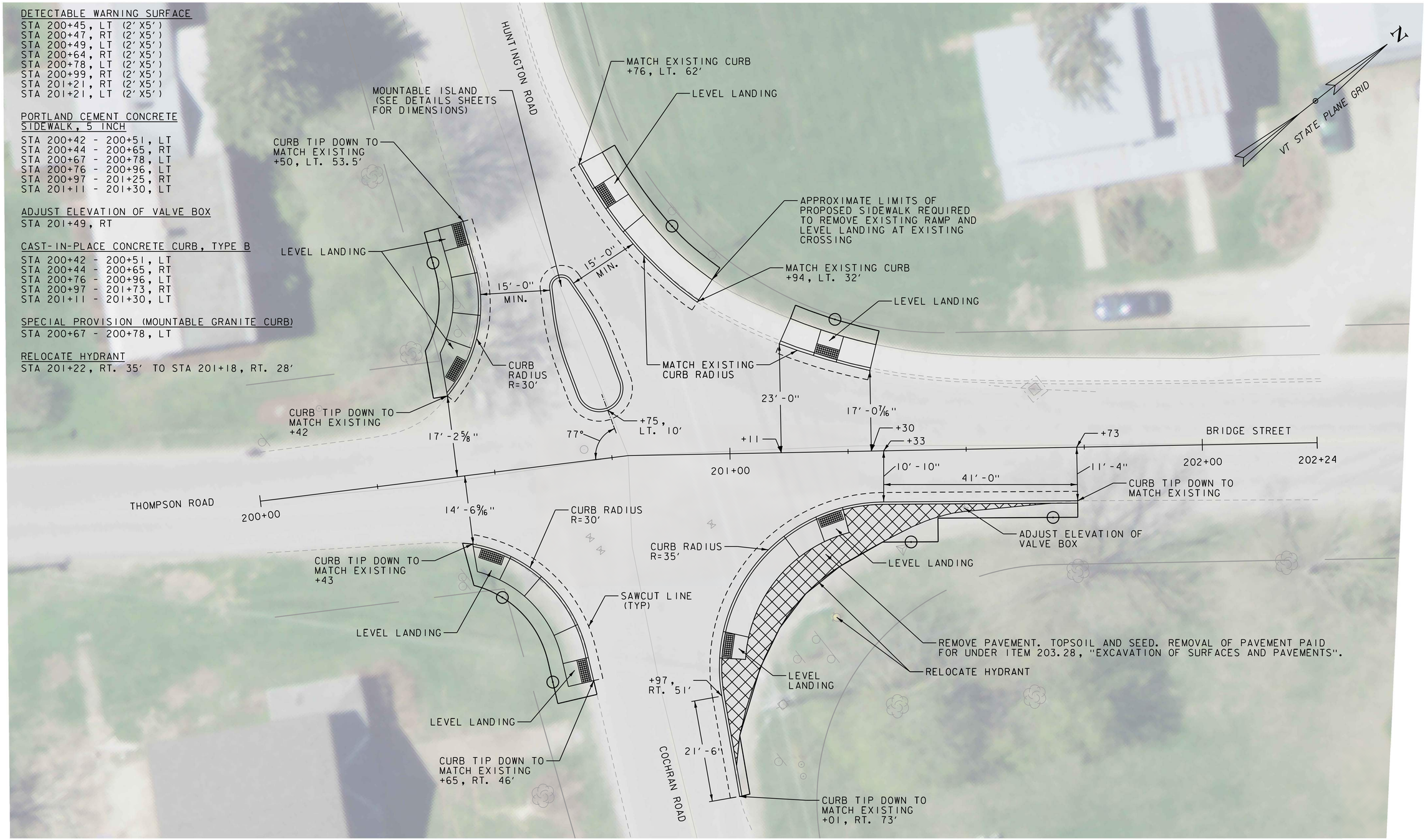
PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
STA 200+42 - 200+51, LT
STA 200+44 - 200+65, RT
STA 200+67 - 200+78, LT
STA 200+76 - 200+96, LT
STA 200+97 - 201+25, RT
STA 201+11 - 201+30, LT

ADJUST ELEVATION OF VALVE BOX
STA 201+49, RT

CAST-IN-PLACE CONCRETE CURB, TYPE B
STA 200+42 - 200+51, LT
STA 200+44 - 200+65, RT
STA 200+76 - 200+96, LT
STA 200+97 - 201+73, RT
STA 201+11 - 201+30, LT

SPECIAL PROVISION (MOUNTABLE GRANITE CURB)
STA 200+67 - 200+78, LT

RELOCATE HYDRANT
STA 201+22, RT. 35' TO STA 201+18, RT. 28'



0 10 20
SCALE IN FEET

PROJECT NAME:	BRIDGE STREET
PROJECT NUMBER:	58538.00
FILE NAME: z58538_bdr_nul.dgn	PLOT DATE: 7/28/2021
PROJECT LEADER: J.A.CONLEY	DRAWN BY: C.K.FORD
DESIGNED BY: C.K.FORD	CHECKED BY: K.M.SENTOFF
GENERAL LAYOUT (SHEET 4 OF 4)	SHEET 13 OF 23

4 INCH WHITE LINE, WATERBORNE PAINT
STA 101+62 - 102+90, RT (BIKE LANE)
STA 101+66 - 102+63, LT (SHOULDER)

4 INCH YELLOW LINE, WATERBORNE PAINT
STA 100+00 - 100+95, BL
STA 101+62 - 102+90, LT

REMOVAL OF EXISTING PAVEMENT MARKINGS
STA 101+15 - 102+90, LT (CROSSWALK)
STA 102+37 - 102+90, RT (CENTERLINE)

LETTER OR SYMBOL, WATERBORNE PAINT
STA 100+90, LT (SHARROW) (1)
STA 101+71, RT (BIKE LANE) (2)
STA 102+66, LT (SHARROW) (1)
STA 102+77, RT (BIKE LANE) (2)

24 INCH STOP BAR, WATERBORNE PAINT
STA 101+21 - 101+34, RT
STA 101+22 - 101+40, LT
STA 102+12, RT
STA 102+55, LT
STA 102+74 - 102+90, LT

CROSSWALK MARKING, WATERBORNE PAINT
STA 101+03, LT/RT
STA 101+08 - 101+38, RT
STA 101+19 - 101+59, LT
STA 102+14 - 102+46, RT
STA 102+22 - 102+53, LT
STA 102+68 - 102+90, LT

REMOVING SIGNS
STA 100+94, RT (2)
STA 101+10, LT (2)
STA 102+64, LT (2)

RESETTING SIGNS
STA 100+94, RT (2)
STA 101+10, LT (2)
STA 102+64, LT (2)

STA 101+10, LT
B-B
W11-2 R&R
W16-7P R&R
R&R

STA 102+64, LT
SPEED LIMIT 25 R2-1 R&R
STOP R1-1 R&R
R&R

RAILROAD STREET
APPROX. EXISTING RAILROAD ROW
APPROX. EXISTING RAILROAD ROW
VT STATE PLANE GRID
N

APPROX. EXISTING TOWN ROW
SWL
3'-0"
11'-0"
REMOVE EXISTING CROSSWALK MARKINGS
+62
1'-6 3/8" DYL
11'-0"
102+00
SWL
6'-0"
STA. 100+00.00
BEGIN PROJECT
BRIDGE ST
DYL
100+00
+95
101+00
MATCH STATION 102+90

APPROX. EXISTING TOWN ROW
STA 100+94, RT
B-B
W11-2 RET
W16-7P RET
RET
JOLINA COURT
APPROX. EXISTING RAILROAD ROW
APPROX. EXISTING RAILROAD ROW

SIGN LEGEND
R&R = REMOVE AND RESET
RET = RETAIN
N = NEW

PAVEMENT MARKING LEGEND
SWL = SINGLE WHITE LINE
SDWL = SINGLE DASHED WHITE LINE
DYL = DOUBLE YELLOW LINE
SDYL = SINGLE DASHED YELLOW LINE

0 10 20
SCALE IN FEET

vhb

PROJECT NAME:	BRIDGE STREET
PROJECT NUMBER:	58538.00
FILE NAME: z58538_bdr_spm.dgn	PLOT DATE: 7/28/2021
PROJECT LEADER: J.A.CONLEY	DRAWN BY: C.K.FORD
DESIGNED BY: C.K.FORD	CHECKED BY: K.M.SENTOFF
SIGNS & PAVEMENT MARKINGS SHEET (1 OF 4)	SHEET 14 OF 23

4 INCH YELLOW LINE, WATERBORNE PAINT
STA 102+90 - 103+90, LT
STA 104+39 - 105+50, RT

4 INCH WHITE LINE, WATERBORNE PAINT
STA 102+90 - 103+90, RT (BIKE LANE)
STA 102+92 - 103+30, LT (HATCHING)
STA 103+30 - 103+90, LT (PARKING)
STA 102+89 - 103+03, LT (HATCHING)
STA 104+39 - 105+50, RT (BIKE LANE)
STA 104+55 - 104+86, RT (PARKING)

CROSSWALK MARKING, WATERBORNE PAINT
STA 103+90 - 104+14, LT
STA 104+06 - 104+29, RT
STA 104+33, LT/RT

LETTER OR SYMBOL, WATERBORNE PAINT
STA 103+75, LT (SHARROW) (1)
STA 104+46, RT (BIKE LANE) (2)
STA 105+41, LT (SHARROW) (1)

24 INCH STOP BAR, WATERBORNE PAINT
STA 102+90 - 102+91, LT
STA 104+18 - 104+30, RT

REMOVAL OF EXISTING PAVEMENT MARKINGS
STA 102+90 - 103+94, RT (CENTERLINE)
STA 102+98 - 103+88, LT (PARKING)
STA 103+89 - 104+17, LT (CROSSWALK)
STA 104+38 - 105+48, RT (CENTERLINE)
STA 104+41 - 104+50, LT (PARKING)

RESETTING SIGNS
STA 103+46, RT
BANK PROPERTY (3)

REMOVING SIGNS
STA 103+46, RT
STA 104+37, RT (2)
STA 104+52, RT
STA 104+69, RT
STA 104+77, RT

N
VT STATE PLANE GRID

MATCH STATION 102+90

REMOVE EXISTING PAVEMENT MARKINGS

APPROX. EXISTING TOWN ROW

9'-0"
20'-0"
SWL
SWL
11'-0"
DYL
BRIDGE ST
103+00
1'-6 3/8"
+90
104+00
11'-0"
SWL
6'-0"

DEPOT STREET
SWL

REMOVE EXISTING CROSSWALK MARKINGS

STA 104+40, LT
B-B
W11-2
N
W16-7P
N
N

STA 105+45, LT
B-B
W11-2
RET
W16-7P
RET
RET

REMOVE EXISTING PAVEMENT MARKINGS

+39
4'-0"
DYL
105+00
11'-0"
SWL
5'-0"

MATCH STATION 105+50

APPROX. EXISTING TOWN ROW

STA 103+46, RT
W10-1
R&R
R&R

STA 104+36, RT
B-B
W11-2
N
W16-7P
N
N

PLEASANT STREET

SWL

STA 104+37, RT
R
NO PARKING TOW-AWAY ZONE
R
R

REMOVE SIGNS AND RELOCATE TO BANK PROPERTY

SIGN LEGEND
R&R = REMOVE AND RESET
RET = RETAIN
N = NEW

PAVEMENT MARKING LEGEND
SWL = SINGLE WHITE LINE
SDWL= SINGLE DASHED WHITE LINE
DYL = DOUBLE YELLOW LINE
SDYL= SINGLE DASHED YELLOW LINE

0 10 20
SCALE IN FEET

vhb

PROJECT NAME: BRIDGE STREET
PROJECT NUMBER: 58538.00

FILE NAME: z58538_bdr_spm.dgn
PROJECT LEADER: J.A.CONLEY
DESIGNED BY: C.K.FORD
PLOT DATE: 7/28/2021
DRAWN BY: C.K.FORD
CHECKED BY: K.M.SENTOFF

LETTER OR SYMBOL, WATERBORNE PAINT
STA 106+75 RT (BIKE LANE) (2)
STA 107+14, LT (SHARROW) (1)

REMOVAL OF EXISTING PAVEMENT MARKINGS
STA 105+50 - 107+41, RT (CENTERLINE)

4 INCH YELLOW LINE, WATERBORNE PAINT
STA 105+50 - 107+41, RT

4 INCH WHITE LINE, WATERBORNE PAINT
STA 105+50 - 107+41, RT (BIKE LANE)
STA 106+37 - 106+49, LT (PARKING HATCH)
STA 106+77 - 107+41, LT (SHOULDER)

CROSSWALK MARKING, WATERBORNE PAINT
105+53, LT/RT

N

VT STATE PLANE GRID

APPROX. EXISTING TOWN ROW

REMOVE EXISTING PAVEMENT MARKINGS

RESTRIPE EXISTING MIDBLOCK CROSSING

MATCH STATION 105+50

SWL

+77

SWL

STA. 107+40.59
END PROJECT

US ROUTE 2

APPROX. EXISTING STATE ROW

BRIDGE ST

11'-0"

4'-0"

106+00

DYL

107+00

107+41

107+41

11'-0"

12'-7 1/16"

SWL

5'-0"

5'-0"

APPROX. EXISTING TOWN ROW

APPROX. EXISTING STATE ROW

STA 105+53, RT

B-B

W11-2
RET

W16-7P
RET

RET

SIGN LEGEND
R&R = REMOVE AND RESET
RET = RETAIN
N = NEW

PAVEMENT MARKING LEGEND
SWL = SINGLE WHITE LINE
SDWL= SINGLE DASHED WHITE LINE
DYL = DOUBLE YELLOW LINE
SDYL= SINGLE DASHED YELLOW LINE

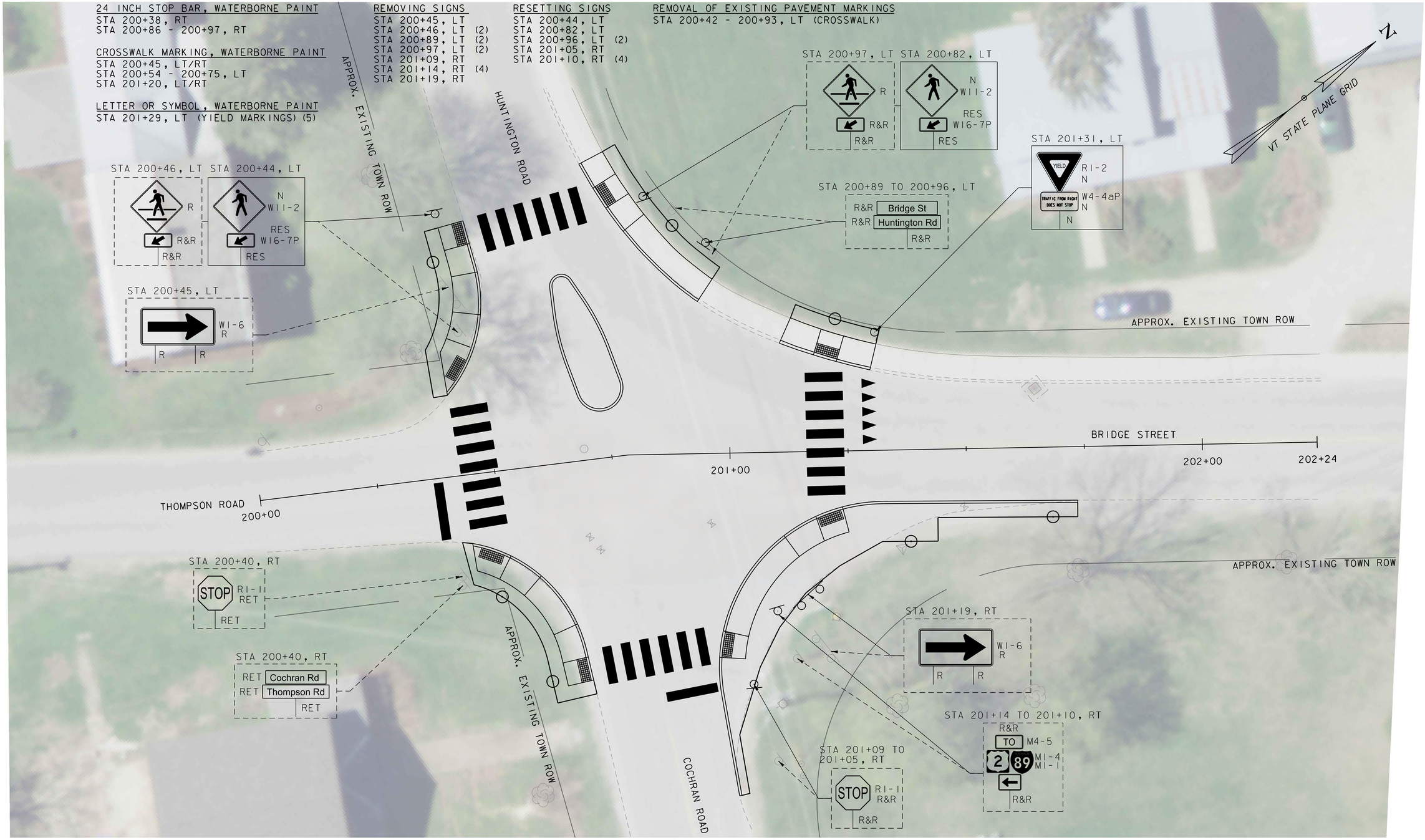
0 10 20
SCALE IN FEET

vhb

PROJECT NAME: BRIDGE STREET
PROJECT NUMBER: 58538.00

FILE NAME: z58538_bdr_spm.dgn
PROJECT LEADER: J.A.CONLEY
DESIGNED BY: C.K.FORD
PLOT DATE: 7/28/2021
DRAWN BY: C.K.FORD
CHECKED BY: K.M.SENTOFF

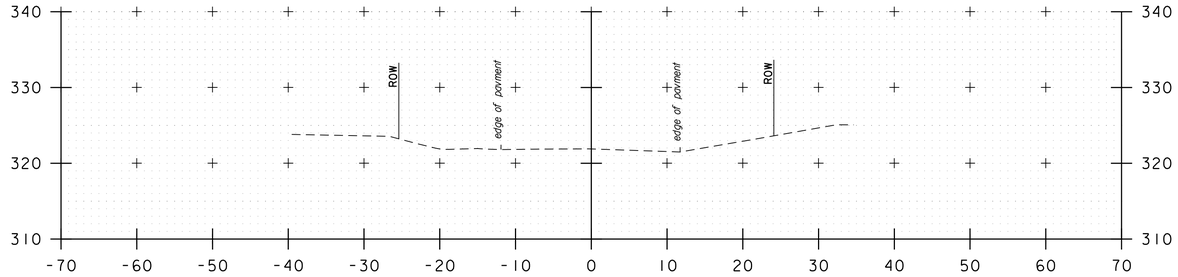
SIGNS & PAVEMENT MARKINGS SHEET (3 OF 4)

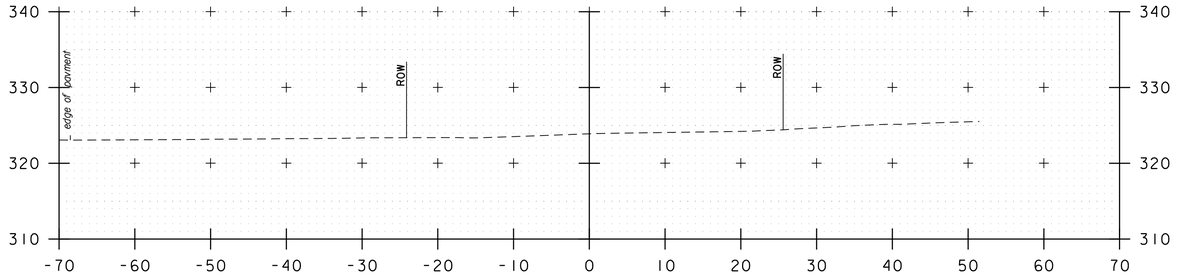


SIGN LEGEND
R&R = REMOVE AND RESET
RET = RETAIN
N = NEW

0 10 20
SCALE IN FEET

PROJECT NAME:	BRIDGE STREET
PROJECT NUMBER:	58538.00
FILE NAME: z58538_bdr_spm.dgn	PLOT DATE: 7/28/2021
PROJECT LEADER: J.A.CONLEY	DRAWN BY: C.K.FORD
DESIGNED BY: C.K.FORD	CHECKED BY: K.M.SENTOFF
SIGNS & PAVEMENT MARKINGS SHEET (4 OF 4)	SHEET 17 OF 23





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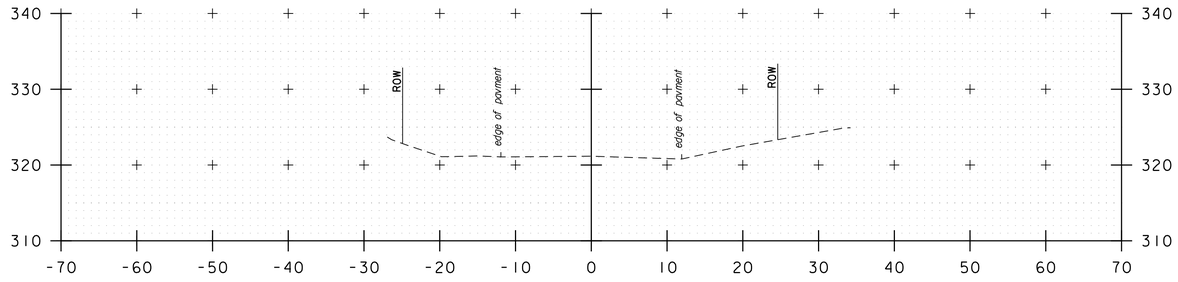

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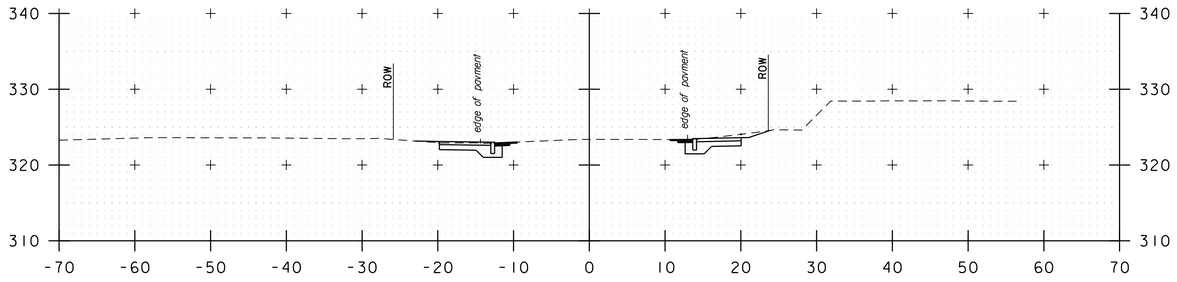

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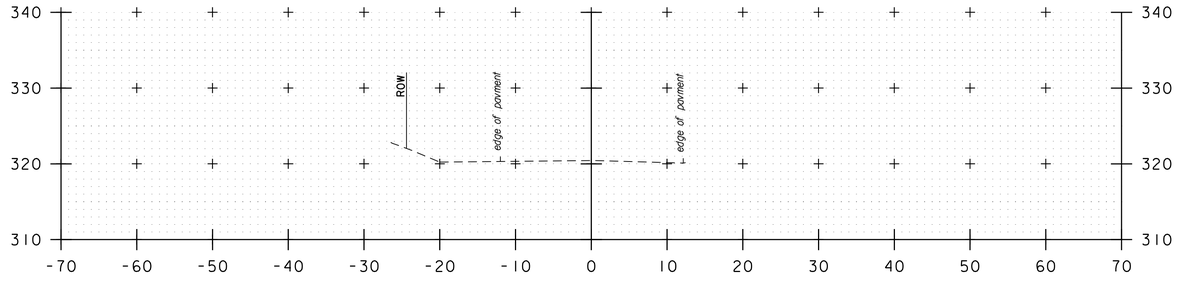
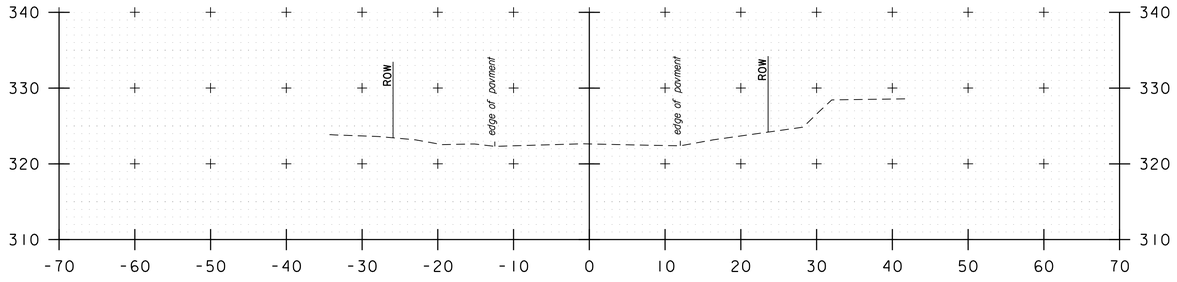
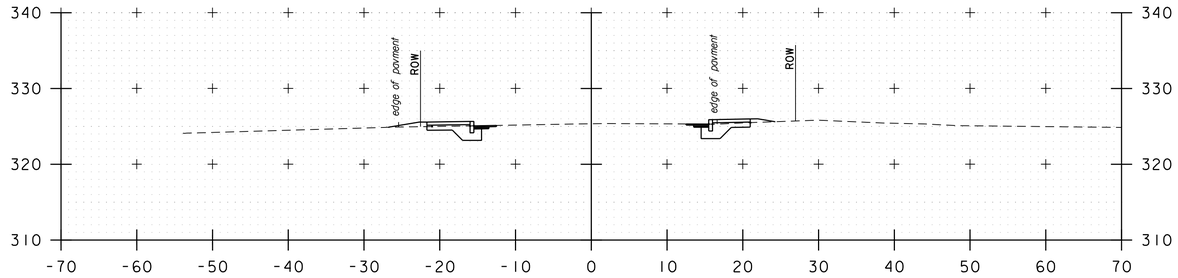


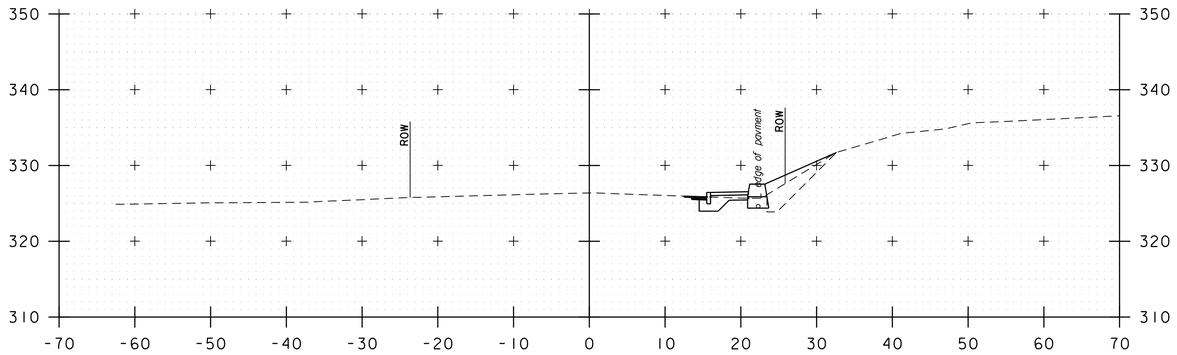


100+00

100+75

PROJECT NAME:	BRIDGE STREET
PROJECT NUMBER:	58538.00
FILE NAME: z58538xs.dgn	PLOT DATE: 7/28/2021
PROJECT LEADER: J.A.CONLEY	DRAWN BY: C.K.FORD
DESIGNED BY: C.K.FORD	CHECKED BY: K.M.SENTOFF
CROSS SECTIONS (SHEET 1OF 5)	SHEET 18 OF 23





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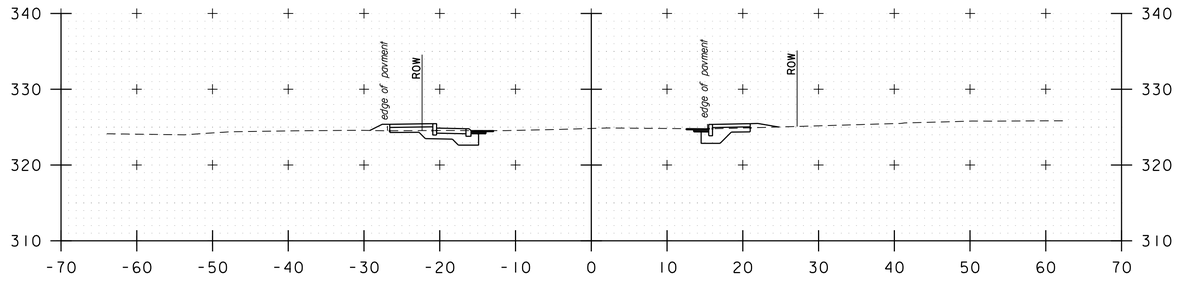

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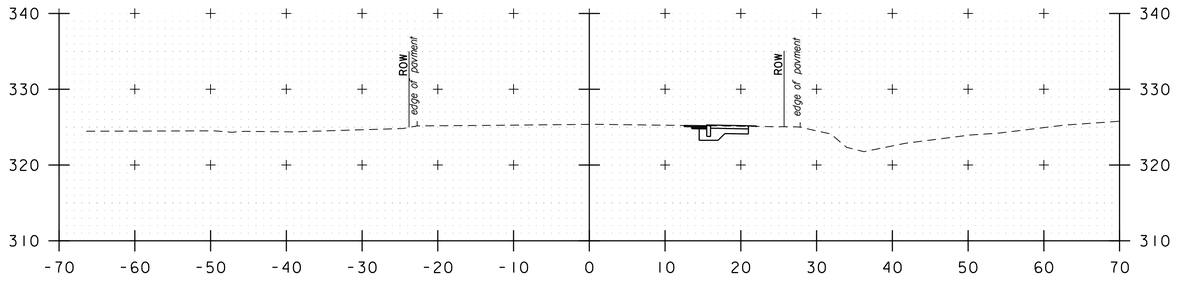

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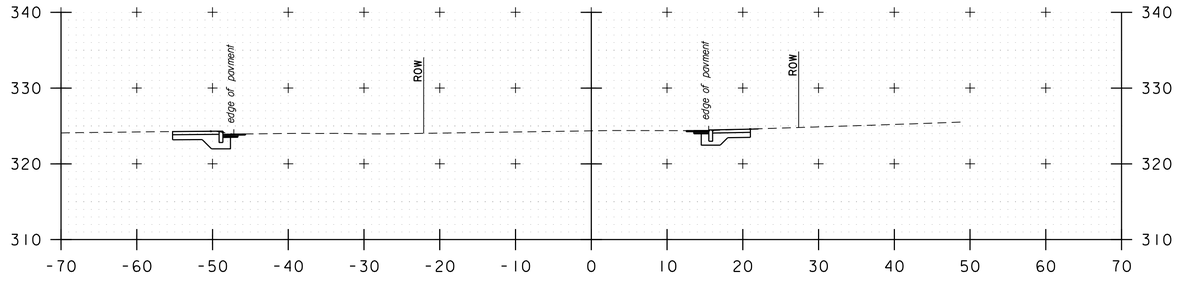

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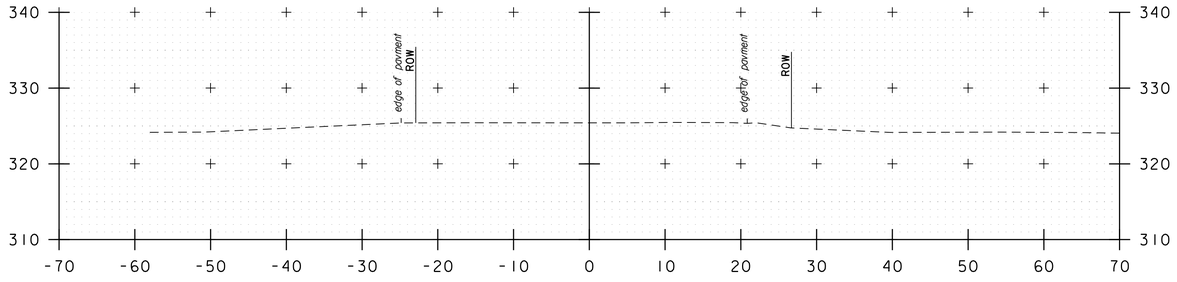
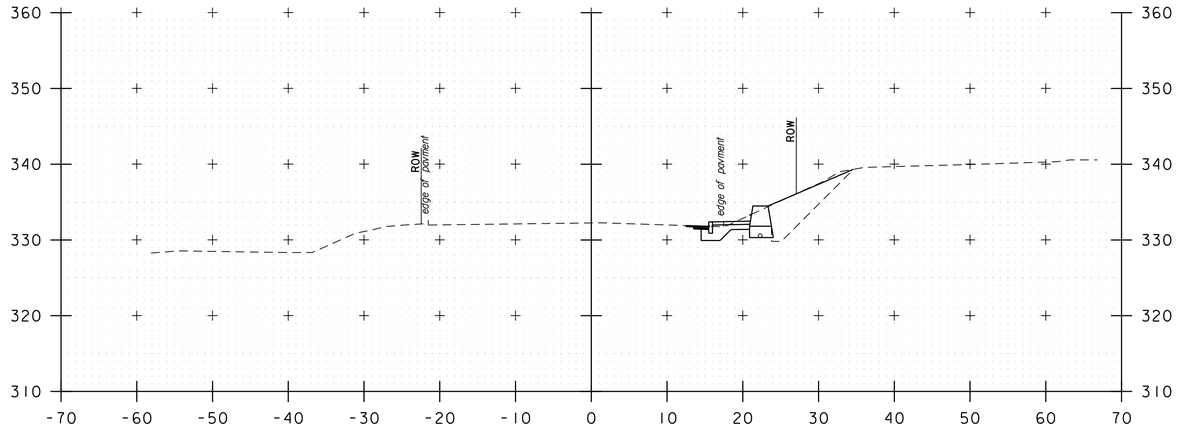


101+50

102+25

PROJECT NAME:	BRIDGE STREET
PROJECT NUMBER:	58538.00
FILE NAME: z58538xs.dgn	PLOT DATE: 7/28/2021
PROJECT LEADER: J.A.CONLEY	DRAWN BY: C.K.FORD
DESIGNED BY: C.K.FORD	CHECKED BY: K.M.SENTOFF
CROSS SECTIONS (SHEET 2 OF 5)	SHEET 19 OF 23



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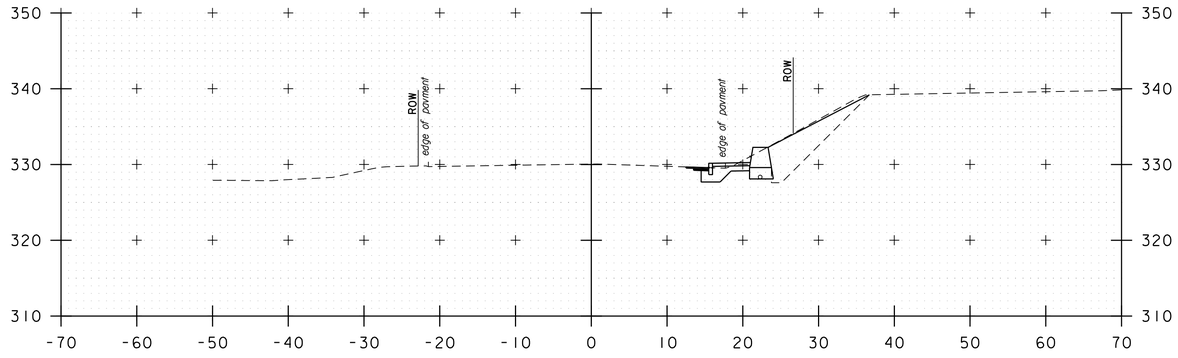

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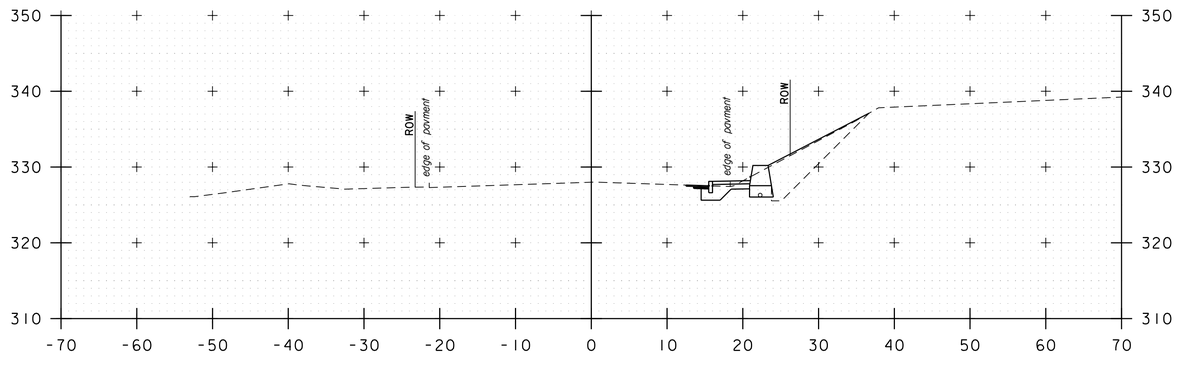

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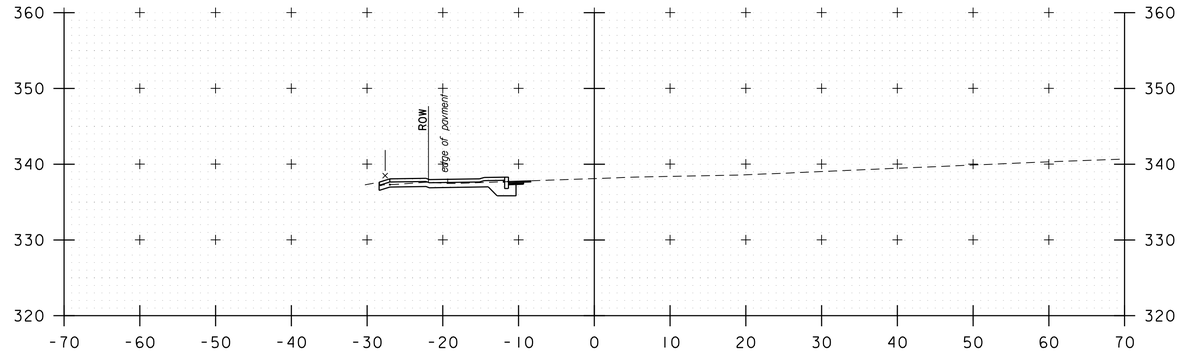

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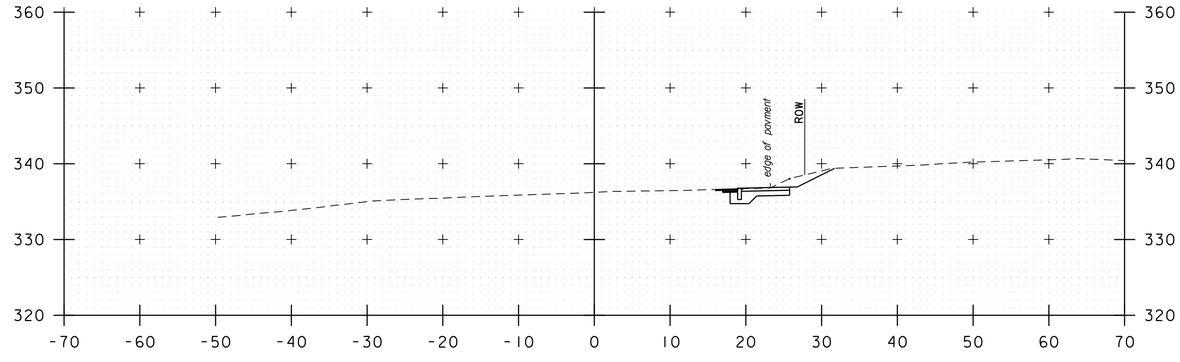

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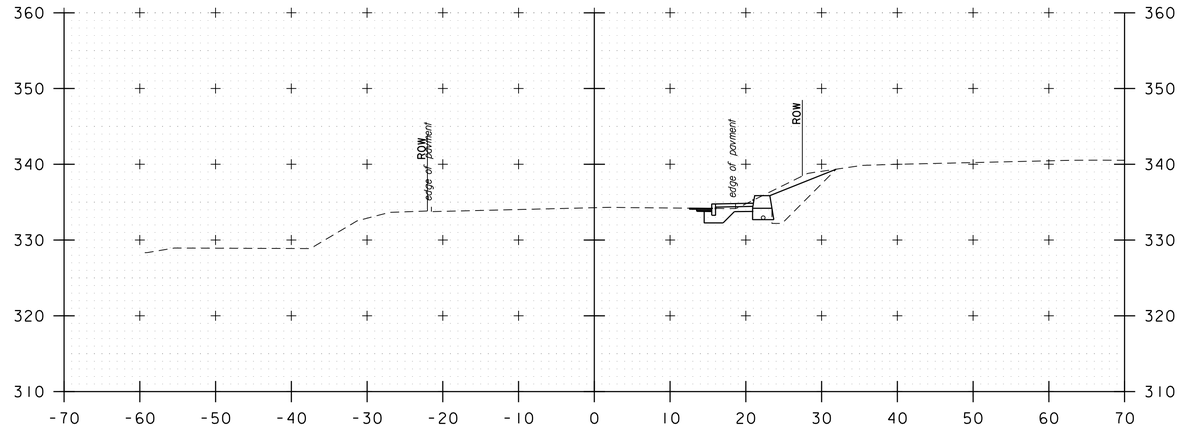

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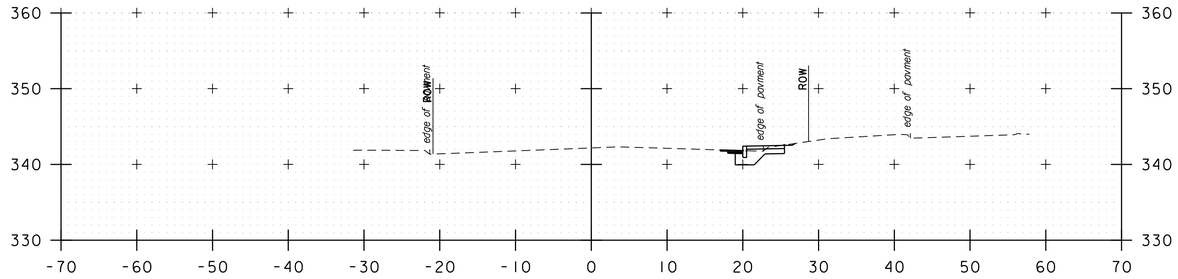
PROJECT NAME:	BRIDGE STREET
PROJECT NUMBER:	58538.00
FILE NAME: z58538xs.dgn	PLOT DATE: 7/28/2021
PROJECT LEADER: J.A.CONLEY	DRAWN BY: C.K.FORD
DESIGNED BY: C.K.FORD	CHECKED BY: K.M.SENTOFF
CROSS SECTIONS (SHEET 3 OF 5)	SHEET 20 OF 23



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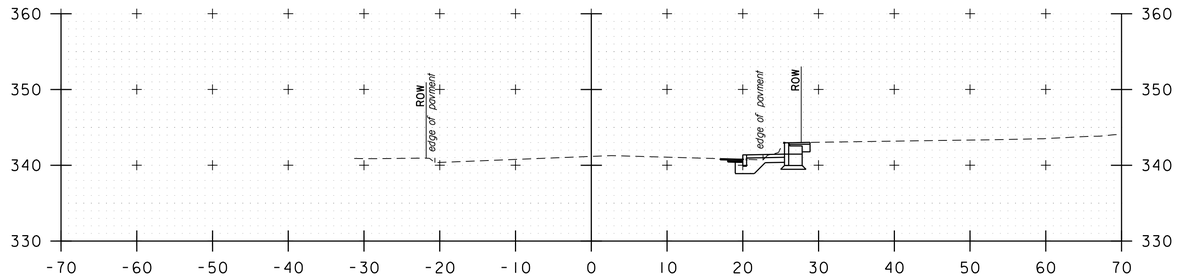

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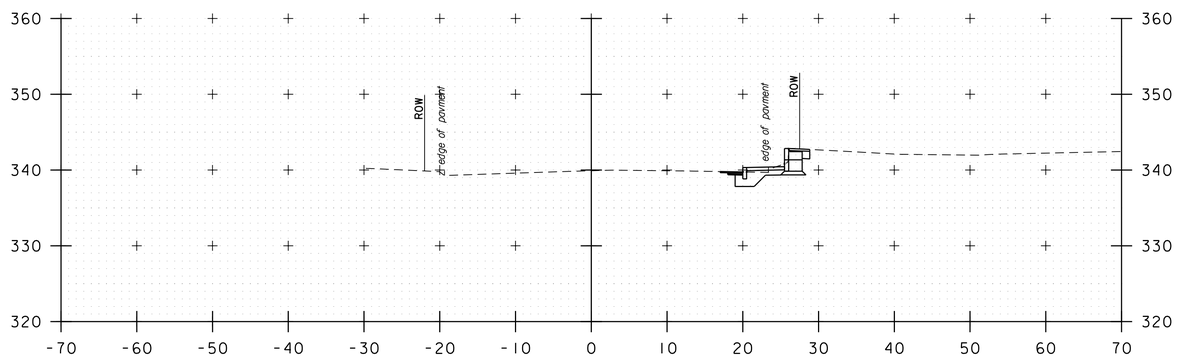

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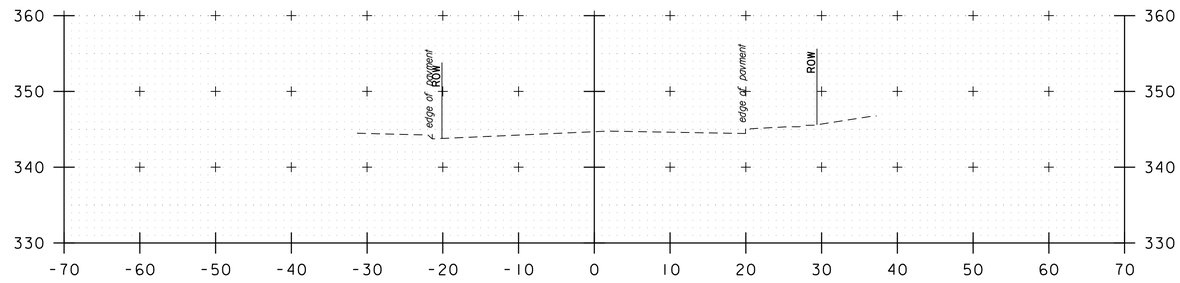

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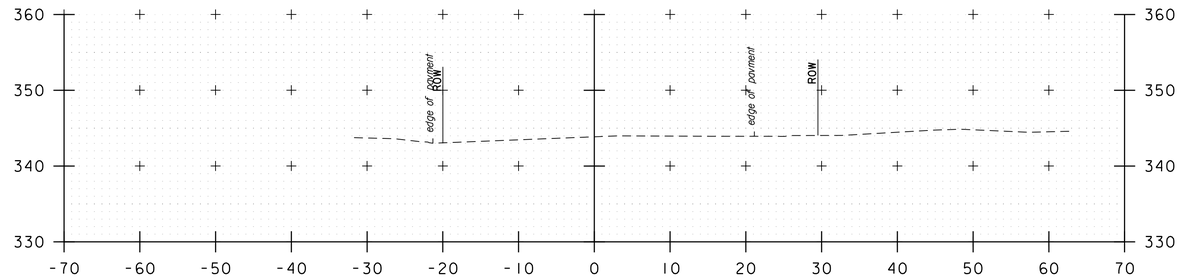

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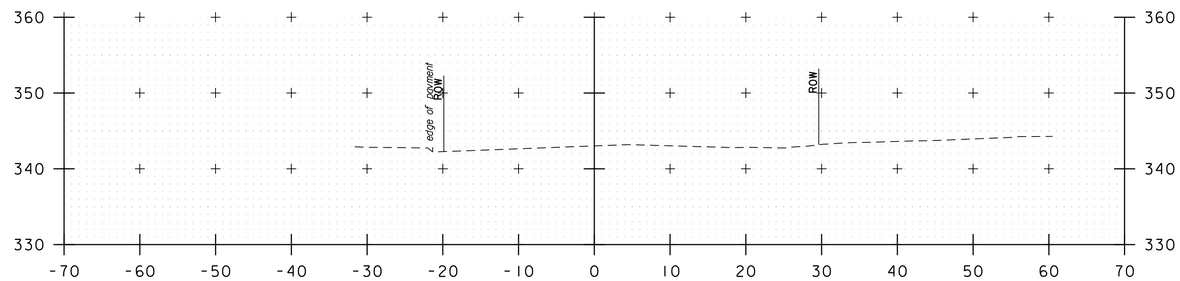

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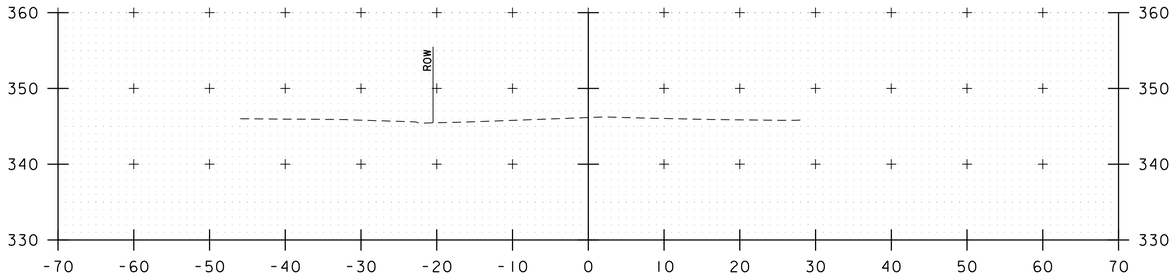
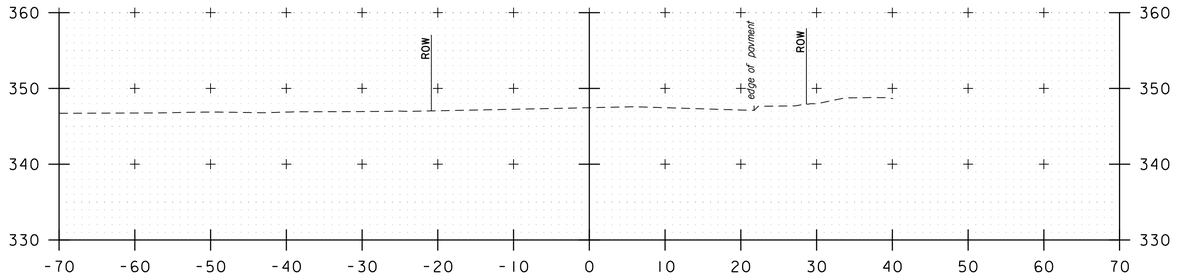
PROJECT NAME:	BRIDGE STREET
PROJECT NUMBER:	58538.00

FILE NAME: z58538xs.dgn	PLOT DATE: 7/28/2021
PROJECT LEADER: J.A.CONLEY	DRAWN BY: C.K.FORD
DESIGNED BY: C.K.FORD	CHECKED BY: K.M.SENTOFF
CROSS SECTIONS (SHEET 4 OF 5)	SHEET 21 OF 23





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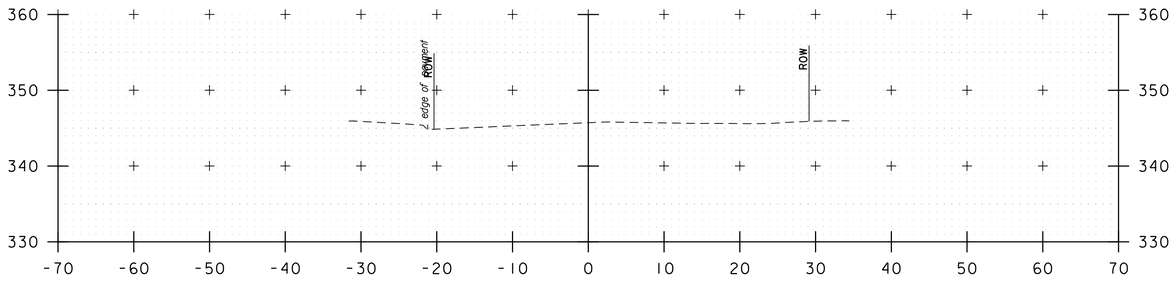

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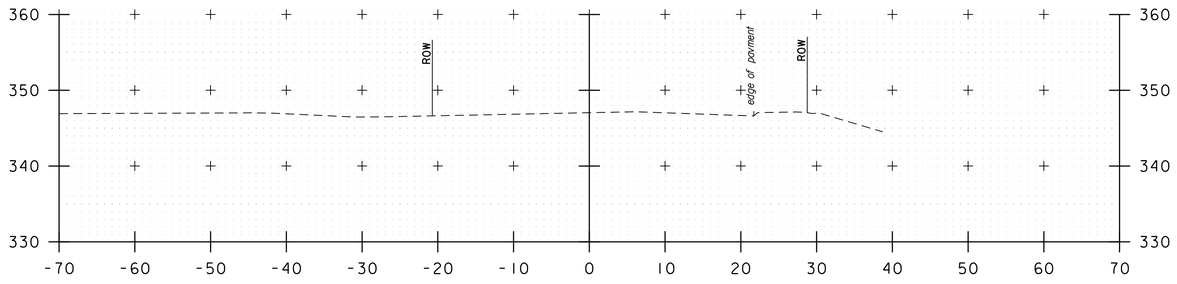

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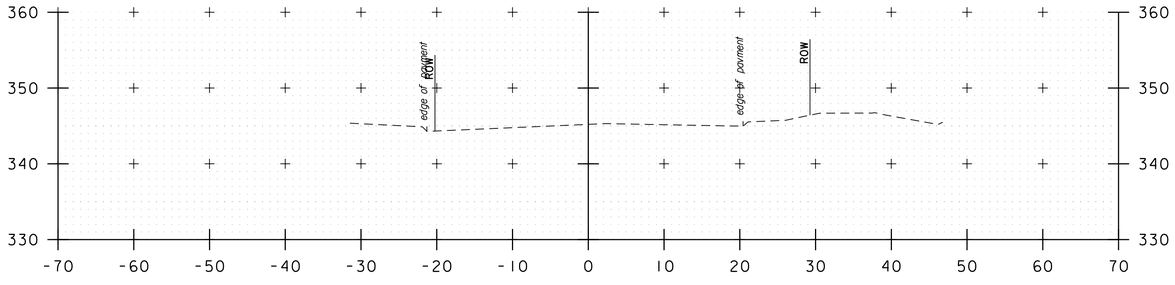
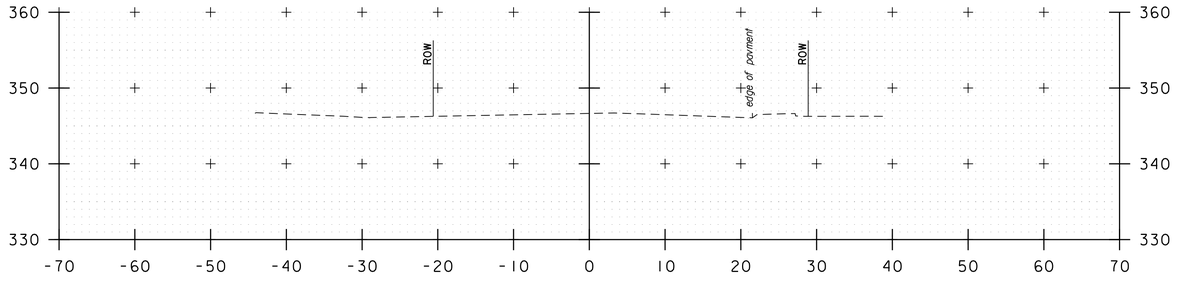
107+00





106+00

106+75

PROJECT NAME: BRIDGE STREET
PROJECT NUMBER: 58538.00

FILE NAME: z58538xs.dgn
PROJECT LEADER: J.A.CONLEY
DESIGNED BY: C.K.FORD
CROSS SECTIONS (SHEET 5 OF 5)

PLOT DATE: 7/28/2021
DRAWN BY: C.K.FORD
CHECKED BY: K.M.SENTOFF
SHEET 22 OF 23

TRAFFIC CONTROL NOTES

1. THE FOLLOWING TRAFFIC CONTROL INFORMATION IS INTENDED TO BE A CONCEPTUAL NARRATIVE FOR HOW THE WORK MAY PROCEED. THE CONTRACTOR SHALL SUBMIT A DETAILED TRAFFIC CONTROL PLAN TO THE RESIDENT ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL ALLOW AT LEAST TWO (2) WEEKS FOR REVIEW AND APPROVAL. ALL CHANGES TO THE TRAFFIC CONTROL PLAN MUST BE APPROVED BY THE RESIDENT ENGINEER. MODIFICATIONS TO THE APPROVED TRAFFIC CONTROL PLAN FOR VEHICLES OR PEDESTRIANS SHALL BE SUBMITTED TO THE RESIDENT ENGINEER AT LEAST TWO (2) WEEKS PRIOR TO THE IMPLEMENTATION OF THE CHANGE.

2. THE CONTRACTOR'S TRAFFIC CONTROL PLAN SHALL BE DEVELOPED IN ACCORDANCE WITH THE 2018 EDITION OF VTRANS STANDARD SPECIFICATIONS SECTION 641 - TRAFFIC CONTROL AND IN SUBSTANTIAL CONFORMANCE WITH THE 2009 EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) WITH LATEST INTERIMS. THE PLAN SHALL ACCOMMODATE VEHICLE TRAFFIC, PEDESTRIAN TRAFFIC, BICYCLE TRAFFIC, AND EMERGENCY SERVICES. THE TRAFFIC CONTROL PLAN SHALL INCLUDE ALL TEMPORARY SIGNS, PAVEMENT MARKINGS, CHANNELIZING DEVICES, PORTABLE MESSAGE BOARDS, ARROW PANELS, AND OTHER DEVICES REQUIRED TO PROVIDE COMPLETE MANAGEMENT OF TRAFFIC. ANY SIGNS NOT INCLUDED IN THE FHWA STANDARD HIGHWAY SIGNS BOOK SHALL INCLUDE SIGN FACE DIMENSIONS AND LAYOUT.

3. ALL CONSTRUCTION SHALL BE PERFORMED WHILE MAINTAINING AT LEAST ONE LANE OF TRAFFIC WITHIN THE WORK ZONE IN ACCORDANCE WITH MUTCD CHAPTER 6. RECOMMENDED TRAFFIC CONTROL SCHEMES ARE THOSE FOUND IN MUTCD TYPICAL APPLICATIONS TA-6, TA-10, AND TA-11.

4. TRAFFIC CONTROL PLANS SHALL BE ESTABLISHED TO MAINTAIN THE CONTINUITY OF VEHICLE, BICYCLE, AND PEDESTRIAN TRAFFIC CONTROL THROUGH THE CORRIDOR. SIGNING, AND OTHER SUPPORTING TRAFFIC CONTROL DEVICES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. INSTALLING, MAINTAINING, ADJUSTING, MODIFYING, AND REMOVING THE TRAFFIC CONTROL DEVICES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 641.11 TRAFFIC CONTROL, ALL-INCLUSIVE.

5. REFLECTORIZED DRUMS SHALL BE USED TO DELINEATE THE WORK ZONE FROM THE TRAVELED WAY FOR VERTICAL DROP OFFS OF NOT MORE THAN THREE INCHES.

6. EXISTING SIGNS SHALL REMAIN UNTIL THEY ARE NO LONGER REQUIRED. EXISTING SIGNS WHICH CONFLICT WITH TEMPORARY TRAFFIC CONTROLS SHALL BE COMPLETELY COVERED WITH SOLID COVERS PAINTED BLACK OR REMOVED/RELOCATED AS NEEDED. TEMPORARY SIGNS SHALL BE INSTALLED AS SHOWN IN THE CONTRACTOR'S APPROVED TRAFFIC CONTROL PLANS. NEW SIGNING SHALL BE INSTALLED AS IT BECOMES APPLICABLE, AND REPLACED AS SPECIFIED ON THE CONSTRUCTION PLANS. ALL TEMPORARY CONSTRUCTION SIGNING SHALL BE REMOVED OR COVERED AS SPECIFIED ABOVE AT THE COMPLETION OF EACH WORK DAY.

7. ACCESS TO PROPERTIES MAY BE RESTRICTED FOR LIMITED DURATIONS WITH PRIOR NOTIFICATION OF THE PROPERTY OWNER. CONTRACTOR SHALL COORDINATE ACCESS RESTRICTIONS WITH THE PROPERTY OWNERS AT LEAST 48 HOURS PRIOR TO STARTING THE WORK IN THE AREA.

8. SPECIAL CARE MUST BE TAKEN TO PROVIDE ACCESS THROUGH THE WORK ZONES FOR EMERGENCY VEHICLES. THE CONTRACTOR SHALL COORDINATE WITH BOTH POLICE AND FIRE DEPARTMENTS TO DETERMINE THEIR MINIMUM ACCESS REQUIREMENTS BEFORE PROCEEDING TO THE NEXT PHASE OF CONSTRUCTION. CONTRACTOR SHALL ENSURE THAT ACCESS IS AVAILABLE TO ALL PROPERTIES AT ALL TIMES FOR EMERGENCY VEHICLES.

9. ADDITIONAL SIGNS WILL BE REQUIRED FOR THE CONSTRUCTION APPROACH FOR THE USE OF FLAGGERS. A FLAGGER SYMBOL IS REQUIRED 500 FT IN ADVANCE OF THE FLAGGER STATION.

10. ACCOMMODATIONS FOR POSTAL DELIVERIES, NEWSPAPER ROUTES, TRASH SERVICES AND/OR OTHER DELIVERY SERVICES INTERRUPTED BY THE PROJECT OR DETOUR SHOULD BE COMMUNICATED WITH THE PROPER CONTACTS.

11. BICYCLISTS MAY BE PROMINENT IN MANY OF THE WORK AREAS FOR THIS PROJECT. ACCOMMODATION SHOULD BE TAKEN TO ENSURE THAT OBSTACLES, EQUIPMENT, CONSTRUCTION MATERIALS, TRAFFIC CONTROL DEVICES, ETC. DO NOT ENCROACH INTO THE BICYCLE PATH OF TRAVEL. IT IS IMPORTANT THAT CYCLIST'S ROUTES ARE FREE OF RUTS, SAND AND MUD TO PREVENT CYCLIST'S CRASHES.

12. IF NARROWING OF LANES TO 10 FT IS NECESSARY, IT IS RECOMMENDED THAT FLAGGER PERSONNEL HOLD BICYCLE RIDERS TO THE END OF THE QUEUE SO THEY ARE NOT COMPETING FOR LANE SPACE TO ENSURE THEIR SAFETY.

PEDESTRIAN TEMPORARY TRAFFIC CONTROL NOTES

1. PEDESTRIAN ACCOMMODATIONS FOR PEDESTRIAN INTERACTIONS WITH THE WORK ZONE SHALL BE PROVIDED.

2. THE CONTRACTOR SHALL PROVIDE A TEMPORARY PEDESTRIAN TRAFFIC CONTROL PLAN FOR REVIEW AND WRITTEN APPROVAL A MINIMUM OF TWO (2) WEEKS BEFORE SUCH PLAN IS IMPLEMENTED. IF SIDEWALKS ARE CLOSED, A TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) SHALL BE PROVIDED ON THE SAME SIDE OF THE ROAD AS THE CLOSED SIDEWALK. THIS PLAN SHALL DETAIL THE CONSTRUCTION PHASING AND SCHEDULE AND THE SPECIFIC METHODS OF MAINTAINING SAFE PEDESTRIAN ACCESS THROUGHOUT THE CONSTRUCTION AREA. THIS PLAN SHALL PROVIDE THE LOCATION AND DETAILS OF TEMPORARY CONSTRUCTION SIGNING, MARKINGS, BARRICADES, CHANNELIZING DEVICES, TPARs AND METHODS TO MAINTAIN ACCESS TO ADJACENT PROPERTIES, BUSINESSES, RESIDENCES, ETC.

3. IF THE TPAR IS ADJACENT TO MOVING TRAFFIC, CONSTRUCTION OPERATIONS/EQUIPMENT, OR DROP-OFFS, THEN CRASH WORTHY CHANNELIZING DEVICES THAT MEET THE REQUIREMENTS OF THE MUTCD SHALL BE USED.

4. THE CONTRACTOR SHALL NOT STORE OR PLACE ANY CONSTRUCTION MATERIALS, EQUIPMENT OR SIGNS IN THE PEDESTRIAN PATH OF TRAVEL.

5. THE CONTRACTOR'S OPERATIONS SHALL NOT OCCUPY SIDEWALKS EXCEPT WHERE PROPER PROTECTION AND A TPAR HAVE BEEN PROVIDED.

6. MAINTENANCE OF PEDESTRIAN TRAFFIC CONTROL IS INCIDENTAL TO ITEM 641.11 TRAFFIC CONTROL, ALL INCLUSIVE.

vhb

PROJECT NAME: BRIDGE STREET
PROJECT NUMBER: 58538.00

FILE NAME: z58538tcp_nar.dgn
PROJECT LEADER: J.A.CONLEY
DESIGNED BY: C.K.FORD
TRAFFIC CONTROL NARRATIVE

PLOT DATE: 7/28/2021
DRAWN BY: C.K.FORD
CHECKED BY: K.M.SENTOFF
SHEET 23 OF 23

Estimate 58538.00

Estimated Cost:$254,092.44

Contingency: 15.00%

Estimated Total: $292,206.31

WORK INCLUDES NEW SIDEWALKS, NEW CROSSWALKS, A NEW RETAINING WALL, PAVEMENT MARKINGS, AND OTHER INCIDENTAL ITEMS.

Base Date: 07/28/21

Spec Year: 18

Unit System: E

Work Type: CURB & SIDEWALK

Highway Type: MINOR ARTERIAL

Urban/Rural Type: URBAN

Season: CONSTRUCTION (APRIL 15th - OCTOBER 15th)

County: RICHMOND

Latitude of Midpoint: 442416

Longitude of Midpoint: 725937

District: NW

Federal Project Number:

State Project Number:

Estimate Type: REVISED PRELIMINARY

Prepared by C.K.FORD on 07/28/21
Checked by K.M.SENTOFF on 07/28/21

Group 1: Bridge Street
Estimated Cost: $190,877.24
Contingency: 15.00%
Estimated Total: **$219,508.83**

Group 2: Intersection
Estimated Cost: $63,215.20
Contingency: 15.00%
Estimated Total: **$72,697.48**

Line #	Item Number	Quantity	Units	Unit Price	Extension
	Description				
	Supplemental Description				

Group 0001: Bridge St

0005	201.10	1.000	LS	$5,000.00000	$5,000.00
	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS				
0006	201.15	2.000	EACH	$710.72000	$1,421.44
	REMOVING MEDIUM TREES				
0007	203.15	355.000	CY	$23.95155	$8,502.80
	COMMON EXCAVATION				
0008	203.16	10.000	CY	$199.14483	$1,991.45
	SOLID ROCK EXCAVATION				
0009	203.28	3.000	CY	$54.10067	$162.30
	EXCAVATION OF SURFACES AND PAVEMENTS				
0010	203.30	10.000	CY	$40.02550	$400.26
	EARTH BORROW				
0011	204.20	60.000	CY	$62.64680	$3,758.81
	TRENCH EXCAVATION OF EARTH				
0012	204.22	1.000	CY	$75.00000	$75.00
	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)				
0014	204.30	100.000	CY	$69.20571	$6,920.57
	GRANULAR BACKFILL FOR STRUCTURES				
0015	210.10	70.000	SY	$29.51596	$2,066.12
	COARSE-MILLING, BITUMINOUS PAVEMENT				
0016	301.26	200.000	CY	$54.35758	$10,871.52
	SUBBASE OF CRUSHED GRAVEL, FINE GRADED				
0017	404.65	1.200	CWT	$187.87442	$225.45
	EMULSIFIED ASPHALT				
0018	406.38	9.000	SY	$24.45000	$220.05
	HAND-PLACED BITUMINOUS CONCRETE MATERIAL, DRIVES				
0019	602.20	25.000	CY	$666.29310	$16,657.33
	DRY MASONRY				
0021	605.10	100.000	LF	$22.90381	$2,290.38
	UNDERDRAIN PIPE, 6 INCHES				
0022	609.10	120.000	MGAL	$50.72075	$6,086.49
	DUST CONTROL WITH WATER				
0023	616.28	610.000	LF	$30.00000	$18,300.00
	CAST-IN-PLACE CONCRETE CURB, TYPE B				
0024	618.10	300.000	SY	$65.70690	$19,712.07
	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH				
0025	618.11	35.000	SY	$83.02128	$2,905.74
	PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH				
0026	618.30	178.000	SF	$38.37909	$6,831.48
	DETECTABLE WARNING SURFACE				
0027	629.20	3.000	EACH	$232.40094	$697.20
	ADJUST ELEVATION OF VALVE BOX				

Line #	Item Number Description *Supplemental Description*	Quantity	Units	Unit Price	Extension
0028	629.54 CRUSHED STONE BEDDING	25.000	TON	$53.96878	$1,349.22
0029	630.15 FLAGGERS	300.000	HR	$37.38949	$11,216.85
0032	632.10 RAILROAD FLAGGERS (N.A.B.I.)	4,000.000	DL	$1.00000	$4,000.00
0033	635.11 MOBILIZATION/DEMOBILIZATION	1.000	LS	$15,000.00000	$15,000.00
0034	641.11 TRAFFIC CONTROL, ALL-INCLUSIVE	1.000	LS	$10,000.00000	$10,000.00
0035	646.201 4 INCH WHITE LINE, WATERBORNE PAINT	1,170.000	LF	$0.43547	$509.50
0036	646.2111 4 INCH YELLOW LINE, WATERBORNE PAINT	1,250.000	LF	$0.61759	$771.99
0037	646.261 24 INCH STOP BAR, WATERBORNE PAINT	77.000	LF	$5.78635	$445.55
0038	646.301 LETTER OR SYMBOL, WATERBORNE PAINT	13.000	EACH	$39.93750	$519.19
0039	646.311 CROSSWALK MARKING, WATERBORNE PAINT	296.000	LF	$6.50046	$1,924.14
0040	646.85 REMOVAL OF EXISTING PAVEMENT MARKINGS	320.000	SF	$5.45721	$1,746.31
0041	649.41 GEOTEXTILE FOR UNDERDRAIN TRENCH LINING	120.000	SY	$5.52912	$663.49
0042	651.15 SEED	18.000	LB	$12.15347	$218.76
0043	651.18 FERTILIZER	65.000	LB	$6.73486	$437.77
0044	651.20 AGRICULTURAL LIMESTONE	0.300	TON	$748.00000	$224.40
0045	651.35 TOPSOIL	33.000	CY	$85.40552	$2,818.38
0046	653.10 HAY MULCH	0.300	TON	$857.35000	$257.21
0047	653.20 ROLLED EROSION CONTROL PRODUCT, TYPE I	200.000	SY	$4.13959	$827.92
0049	653.41 INLET PROTECTION DEVICE, TYPE II	5.000	EACH	$157.33295	$786.66
0050	675.20 TRAFFIC SIGN, TYPE A	44.000	SF	$18.28435	$804.51
0051	675.341 SQUARE TUBE SIGN POST AND ANCHOR	30.000	LF	$17.86250	$535.88

Line #	Item Number / Description / *Supplemental Description*	Quantity	Units	Unit Price	Extension
0052	675.50 REMOVING SIGNS	9.000	EACH	$13.25855	$119.33
0053	675.60 RESETTING SIGNS	7.000	EACH	$21.95931	$153.72
0054	900.640 SPECIAL PROVISION (MOUNTABLE GRANITE CURB)	75.000	LF	$75.00000	$5,625.00
0055	900.670 SPECIAL PROVISION (REMOVE AND RESET MODULAR BLOCK RETAINING WALL)	100.000	SF	$60.00000	$6,000.00
0056	900.670 SPECIAL PROVISION (MODULAR BLOCK RETAINING WALL)	50.000	SF	$100.00000	$5,000.00
0057	900.680 SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	45.000	TON	$85.00000	$3,825.00

Total for Group 0001:$190,877.24

Group 0002: Intersection

Line #	Item Number / Description	Quantity	Units	Unit Price	Extension
0058	203.15 COMMON EXCAVATION	100.000	CY	$23.95155	$2,395.16
0059	203.16 SOLID ROCK EXCAVATION	5.000	CY	$199.14483	$995.72
0060	203.28 EXCAVATION OF SURFACES AND PAVEMENTS	7.000	CY	$54.10067	$378.70
0061	204.20 TRENCH EXCAVATION OF EARTH	1.000	CY	$62.64680	$62.65
0062	210.10 COARSE-MILLING, BITUMINOUS PAVEMENT	40.000	SY	$29.51596	$1,180.64
0063	301.26 SUBBASE OF CRUSHED GRAVEL, FINE GRADED	90.000	CY	$54.35758	$4,892.18
0064	404.65 EMULSIFIED ASPHALT	0.800	CWT	$187.87442	$150.30
0066	609.10 DUST CONTROL WITH WATER	70.000	MGAL	$50.72075	$3,550.45
0067	616.28 CAST-IN-PLACE CONCRETE CURB, TYPE B	265.000	LF	$15.70303	$4,161.30
0068	618.10 PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	120.000	SY	$65.70690	$7,884.83
0069	618.30 DETECTABLE WARNING SURFACE	80.000	SF	$38.37909	$3,070.33
0070	629.20 ADJUST ELEVATION OF VALVE BOX	1.000	EACH	$232.40094	$232.40
0071	629.29 RELOCATE HYDRANT	1.000	EACH	$3,081.70833	$3,081.71
0072	630.15 FLAGGERS	100.000	HR	$37.38949	$3,738.95

Line #	Item Number / Description / *Supplemental Description*	Quantity	Units	Unit Price	Extension
0073	635.11 MOBILIZATION/DEMOBILIZATION	1.000	LS	$5,000.00000	$5,000.00
0074	641.11 TRAFFIC CONTROL, ALL-INCLUSIVE	1.000	LS	$10,000.00000	$10,000.00
0075	646.261 24 INCH STOP BAR, WATERBORNE PAINT	23.000	LF	$5.78635	$133.09
0076	646.301 LETTER OR SYMBOL, WATERBORNE PAINT	5.000	EACH	$39.93750	$199.69
0077	646.311 CROSSWALK MARKING, WATERBORNE PAINT	96.000	LF	$6.50046	$624.04
0078	646.85 REMOVAL OF EXISTING PAVEMENT MARKINGS	192.000	SF	$5.45721	$1,047.78
0079	651.15 SEED	7.000	LB	$12.15347	$85.07
0080	651.18 FERTILIZER	25.000	LB	$6.73486	$168.37
0081	651.20 AGRICULTURAL LIMESTONE	0.200	TON	$748.00000	$149.60
0082	651.35 TOPSOIL	12.000	CY	$85.40552	$1,024.87
0083	653.10 HAY MULCH	0.200	TON	$857.35000	$171.47
0084	675.20 TRAFFIC SIGN, TYPE A	24.500	SF	$18.28435	$447.97
0085	675.341 SQUARE TUBE SIGN POST AND ANCHOR	15.000	LF	$17.86250	$267.94
0086	675.50 REMOVING SIGNS	13.000	EACH	$13.25855	$172.36
0087	675.60 RESETTING SIGNS	9.000	EACH	$21.95931	$197.63
0089	900.640 SPECIAL PROVISION (MOUNTABLE GRANITE CURB)	75.000	LF	$75.00000	$5,625.00
0090	900.680 SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	25.000	TON	$85.00000	$2,125.00

Total for Group 0002:$63,215.20

Meeting Materials

Bridge Street Complete Streets Corridor Study

Public Meeting

December 10th, 2020

Chittenden County RPC
Communities Planning Together

Town of Richmond Vermont

vhb

Agenda

- Introductions
- Review Previous Studies
- Review Draft Purpose & Needs
- Study Area
- Discuss Issues & Opportunities
- Next Steps

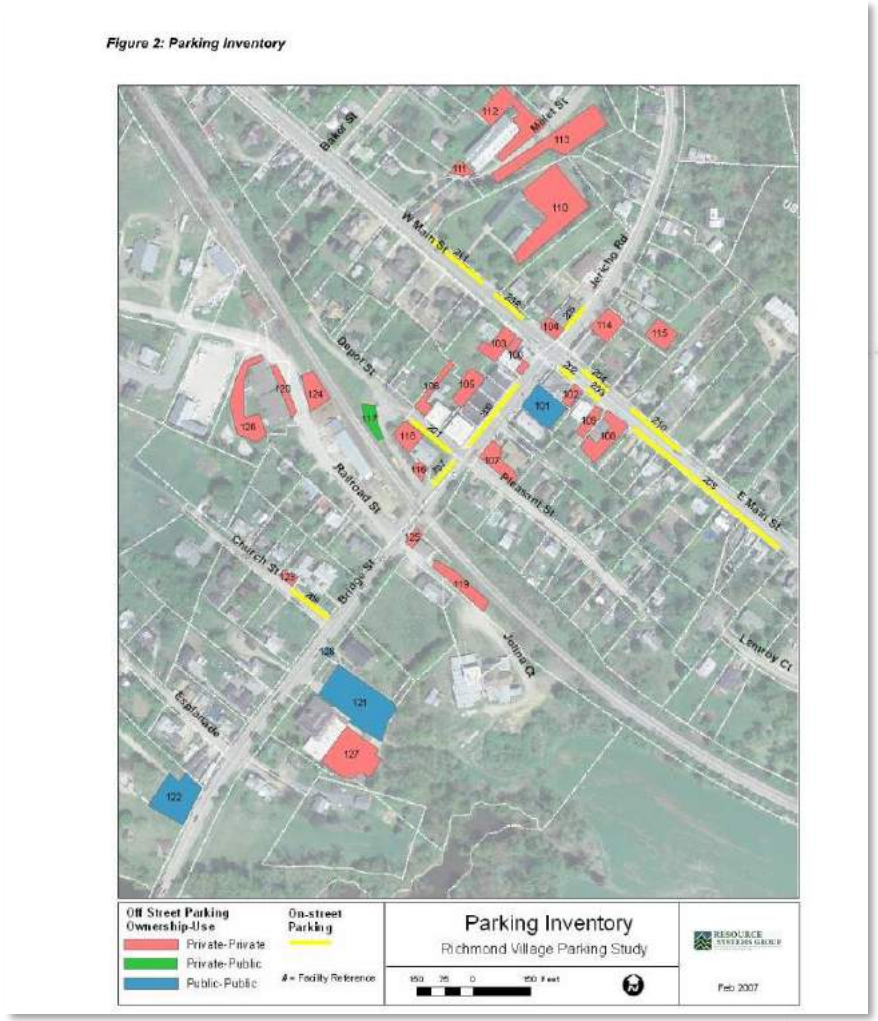
Introductions

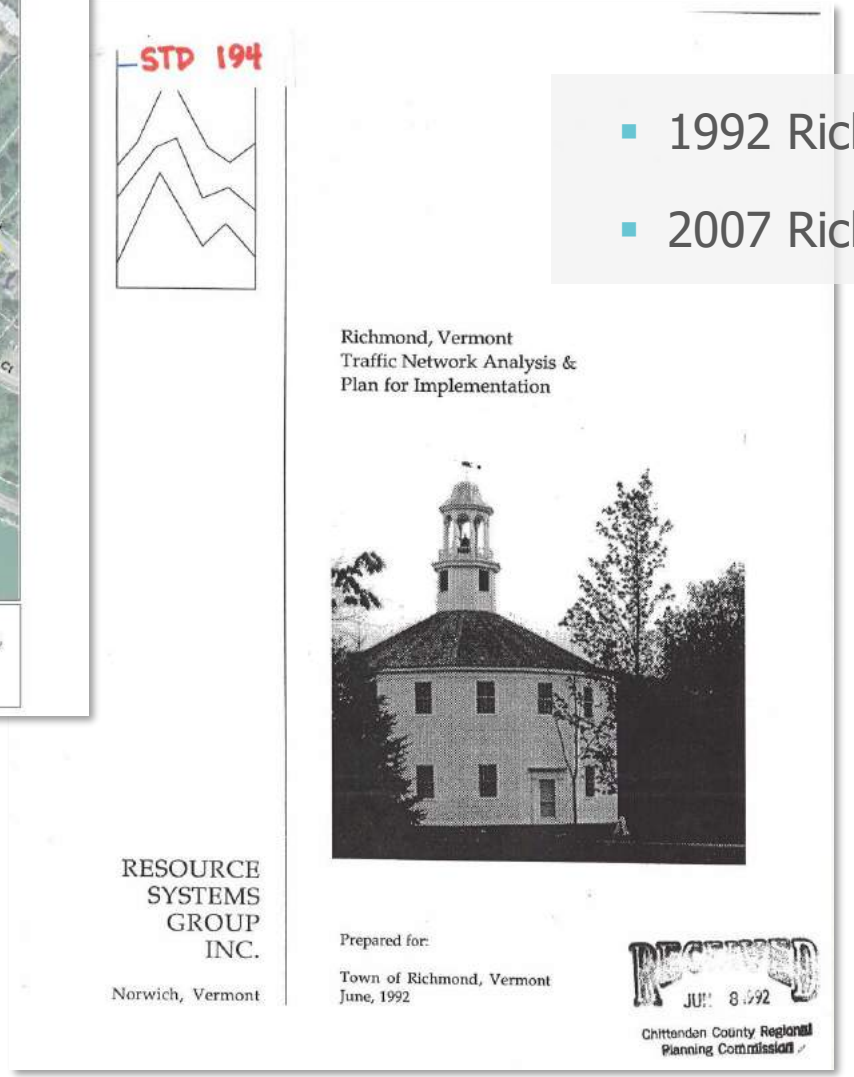
Project Team

- **CCRPC** | Jason Charest, Sai Sarepalli, Bryan Davis
- **Town of Richmond** | Ravi Venkataraman & Transportation Committee Members
- **VHB** | Jenn Conley & Karen Sentoff

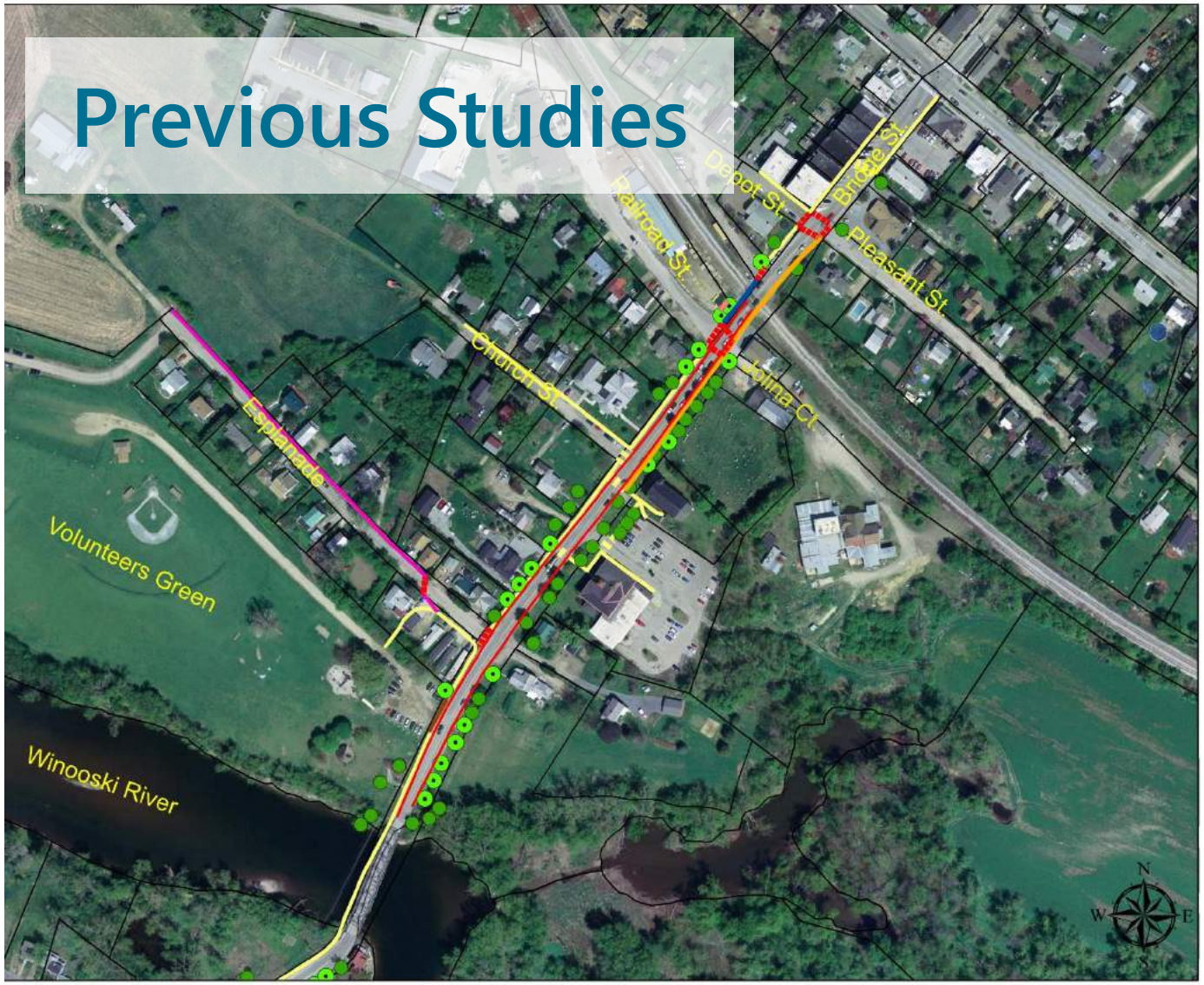
Previous Studies

- 1992 Richmond Traffic Network Analysis
- 2007 Richmond Village Parking Study





Previous Studies



Bridge Street Bicycle & Pedestrian Feasibility Study

Richmond, Vermont

Recommendations North Section

Map 3a

Legend

- New Crosswalks
- Recommendation #1
- Recommendation #2
- Recommendation #3
- Recommendation #4
- Recommendation #5
- Recommendation #6
- New Street Trees
- Existing Crosswalks
- Existing Street Trees
- Existing Sidewalks
- Property Lines

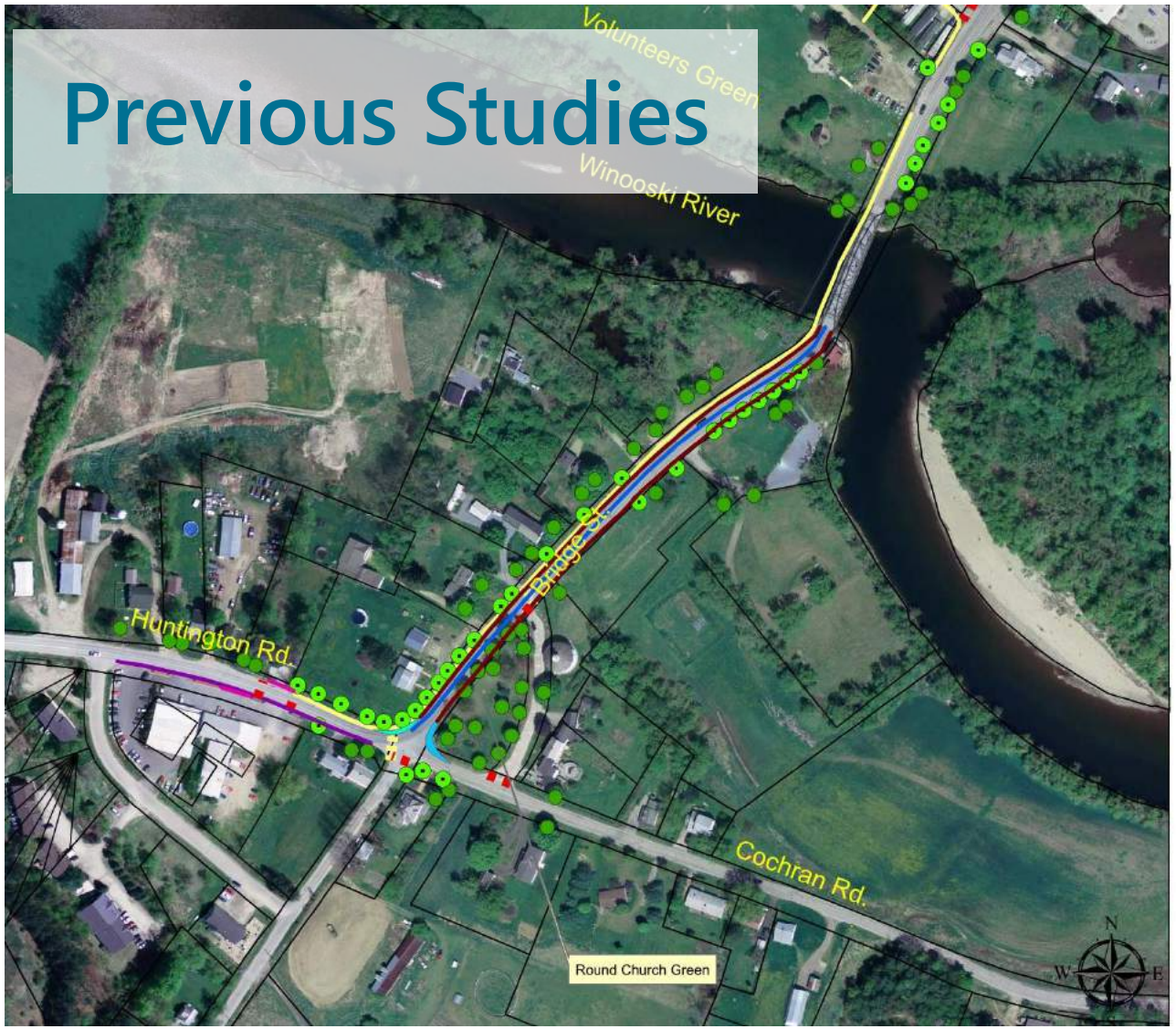
BROADREACH
Planning & Design
PO Box 321
Charlotte, Vermont 05445
802 425 5061

Lamoureux & Dickinson
Heritage Landscapes LLC
Consulting Archeological Program

Recommendations

- Bridge to Railroad (1)
  - Restripe 10' travel lane & 2' paved shoulder
- Town Offices to Pleasant Street (2)
  - New 10' travel lane and 3’ paved shoulder with new east side sidewalk
- Market to Dental Office (3)
  - Curb & 7' sidewalk
- Market Frontage (4)
  - Mini Park
- Volunteers Green (6)
  - Raised sidewalk

Previous Studies



Bridge Street Bicycle & Pedestrian Feasibility Study

Richmond, Vermont

Recommendations South Section

Map 3b

Legend

- New Crosswalks
- Recommendation #7
- Recommendation #8
- Recommendation #11
- Recommendation #12
- Recommendation #13
- Recommendation #14
- New Street Trees
- Existing Crosswalks
- Existing Sidewalks
- Existing Street Trees
- Property Lines

BROADREACH
Planning & Design
PO Box 321
Charlotte, Vermont 05445
802-425-5061
Lamoureux & Dickinson
Heritage Landscapes LLC

Recommendations

- Bridge to Huntington Road (7)
  - Restripe existing to 10' travel lane and 4’ paved shoulders
- Bridge to Huntington Road (8/9)
  - New 10' travel lane and 3' paved shoulders with 2’-4' green space on west side
- Reduce Turning Radii (11/12)
  - Cochran Road / Huntington Road Intersection
- Huntington Road (13/14)
  - Restripe existing to 10' travel lane and 2' paved shoulder with sidewalk extension
  - New 10' travel lanes, 3' paved shoulders with 5’ sidewalk and curb on south side

DRAFT Project Purpose

- The purpose of the **Bridge Street Complete Streets Corridor Study** is to identify and prioritize improvements that enhance multimodal mobility and safety through the Richmond Village Center. The study will evaluate, select, and develop improvements to better accommodate pedestrians and bicyclists, specifically:
  - Along the east side of Bridge Street from US Route 2 to Jolina Court;
  - At the intersection of Jolina Court and Railroad Street; and,
  - At the intersection of Cochran Road and Huntington Road.

vhb

TOWN OF RICHMOND VERMONT

CHITTENDEN COUNTY RPC
Communities Planning Together

DRAFT Project Needs

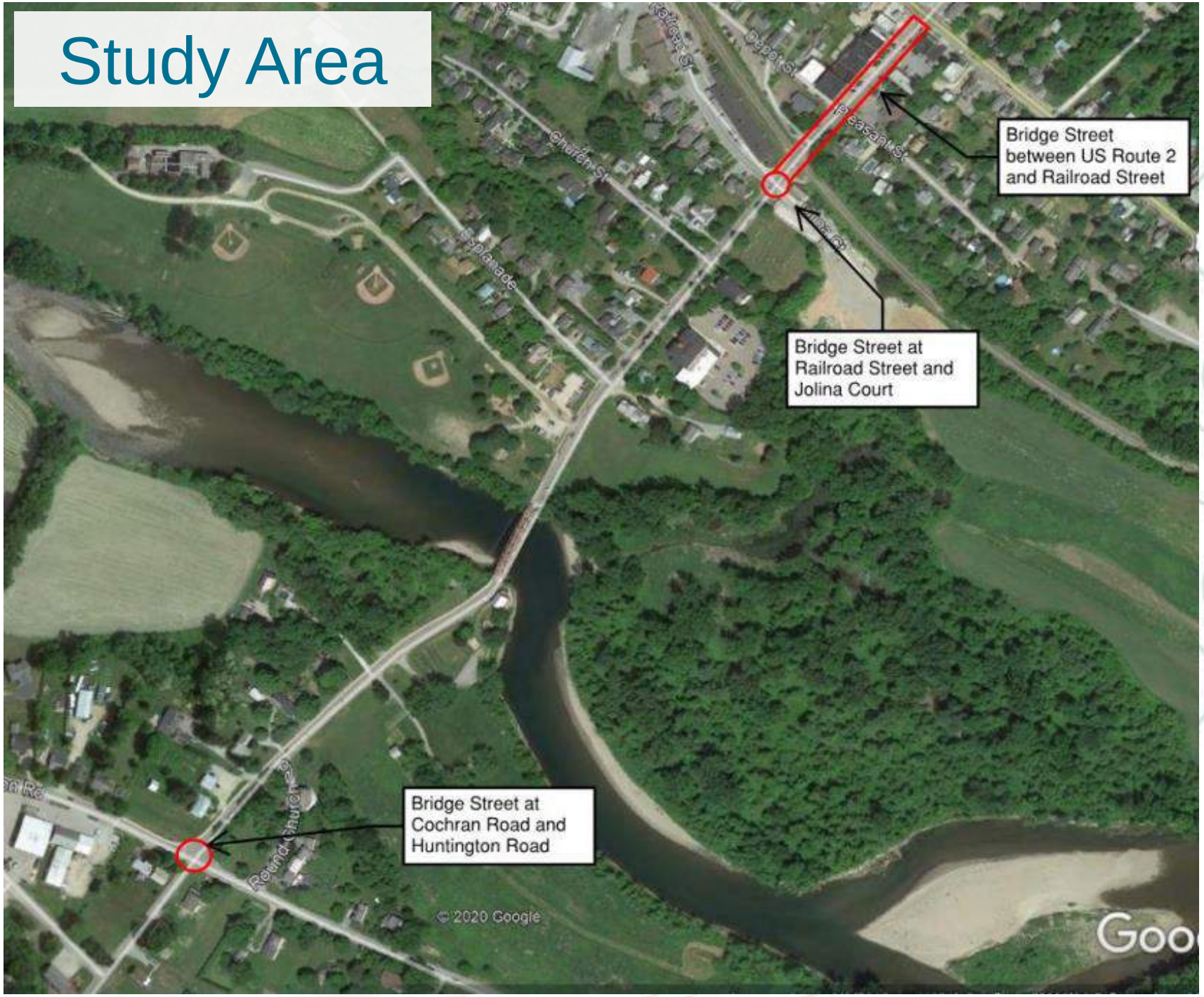
- **Enhance mobility for pedestrians and bicyclists**
  - Critical gaps in existing infrastructure
- **Improve safety for all modes**
  - High Crash Location (HCL) segment and intersection within study area

vhb

TOWN OF RICHMOND VERMONT

CHITTENDEN COUNTY RPC
Communities Planning Together

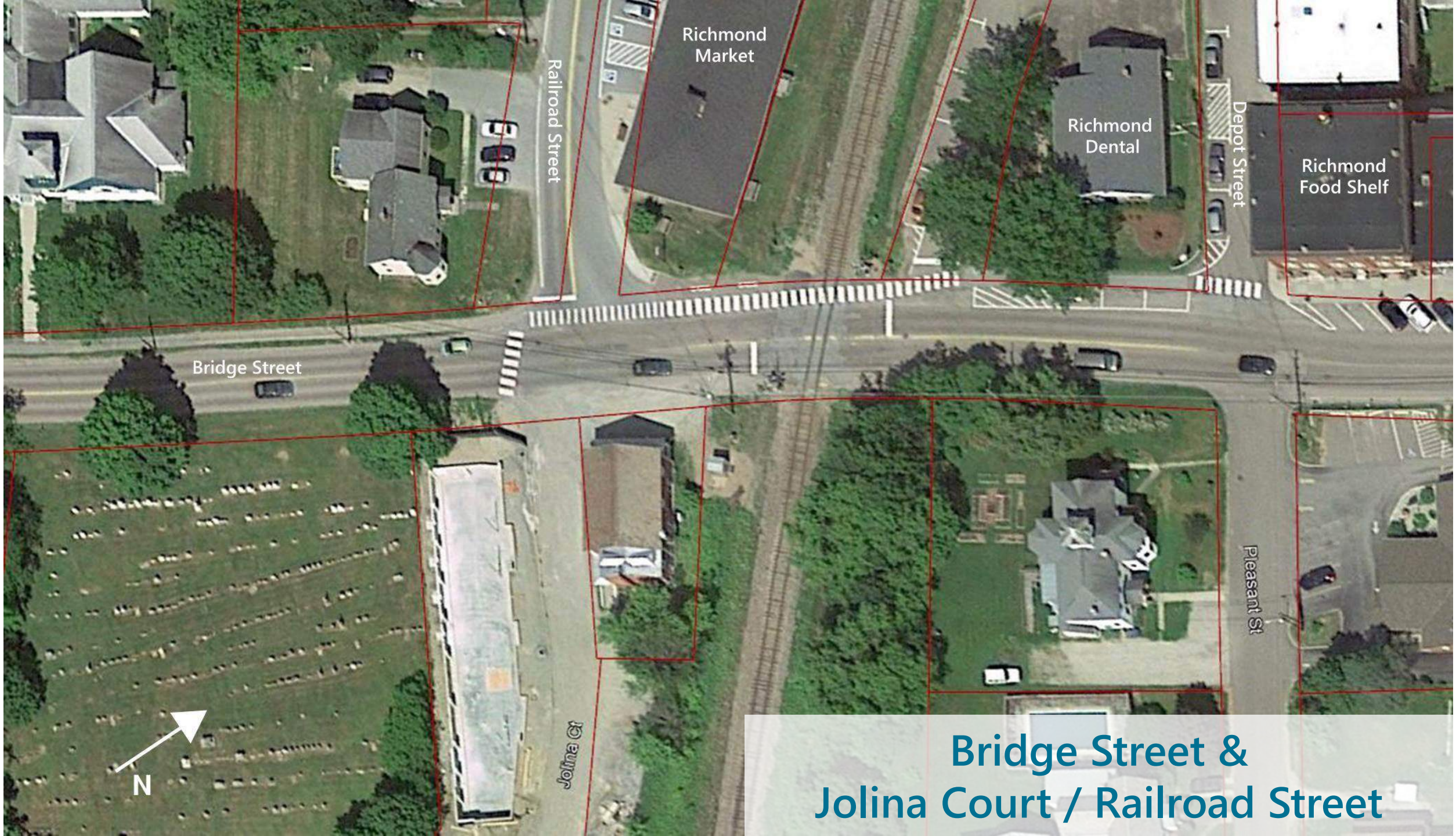
Study Area


Bridge Street between US Route 2 and Railroad Street
Bridge Street at Railroad Street and Jolina Court
Bridge Street at Cochran Road and Huntington Road
Church St
Esplanade
Pleasant St
Depot St
Round Church St
© 2020 Google

Public Input

Issues & Opportunities

Bridge Street between US 2 and Depot Street



Bridge Street & Jolina Court / Railroad Street

Bridge Street &
Cochran Road / Huntington Road

Next Steps

- Develop Alternatives
  - Draft Alternatives Presentation tentatively scheduled for March 2021

Stay Connected with the Bridge Street Complete Streets Corridor Study!

Contact Info:

Jason Charest, CCRPC
jcharest@ccrpcvt.org

Project Website:

[Bridge Street Complete Streets Corridor Study - CCRPC]

Supplemental Slides


Bridge Street between
US 2 and Railroad Street
Richmond
Market
Richmond
Dental
Depot St
Richmond
Food Shelf
Sweet
Simone's
Village
Bicycle
2
Railroad St
Bridge Street
Jericho Rd
Greensea
Systems
TD Bank
Pleasant St
Johna Ct
U.S. Rte 2
N
163 ft
© 2020 Google
Google Earth

Meeting Notes

Place: Zoom Meeting

Date: December 10, 2020 | Notes Taken by: Elizabeth Chambers

Project #: 58538.00 | Re: Richmond Bridge Street Local Concerns Public Meeting

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Meeting Participants

Panelists/Project Team

- Ravi Venkataraman (Richmond)
- Jason Charest (CCRPC)
- Bryan Davis (CCRPC)
- Sai Sarepalli (CCRPC)
- Jenn Conley (VHB)
- Karen Sentoff (VHB)
- Elizabeth Chambers (VHB)

Richmond Transportation Committee

- Cathleen Gent
- Jon Kart
- Allen Knowles

Community Members including residents and business owners

Meeting Notes

Introduction to Study

- Jenn provided a brief overview of the meeting agenda and how the meeting will proceed on Zoom. Brief introductions of the project team and overview of previous studies were provided (see presentation slides). Jenn introduced a draft project purpose and need statement.
- Regarding the draft project purpose, one resident noted there are many young people in the community, and then pointed to a lack of green space/lack of a greenbelt between the sidewalk and the road. They expressed concern about the lack of space between vehicles and children using the sidewalk.
- Another resident stated that they agree with the purpose, and said they support looking at the east side of bridge for bike/ped connectivity.
- One resident on the transportation committee made a comment on the striped walk on the west side of Bridge Street between Richmond Dental and Richmond Market (i.e. "world's longest pedestrian crossing"). They commented that they had driven south on Bridge Street and attempted to turn right on Railroad Street, and when they stopped for pedestrians in the crosswalk it created confusion. They recommended a pedestrian refuge in order to break up the long crosswalk, and to set the crosswalk back further from the road.
- Regarding the draft project needs, there are two focus areas: enhancing mobility for pedestrians and bicyclists and safety as this area includes a high crash location segment (Bridge Street between Pleasant Street and the south side of the Bridge).

Meeting Notes

Public Input

- Karen provided an overview of the study area, including the three focus areas. Starting with Bridge Street between Main Street US 2 and Pleasant Street/Depot Street, input from the community was welcomed.

Bridge Street between Main Street US 2 and Pleasant Street/Depot Street

- One resident, who identified as a cyclist and pedestrian, said that when walking on the east side of Bridge Street, the lack of sidewalk after the crosswalk by Sweet Simone's is an issue. They also said that when people travel on foot from TD Bank to Pleasant Street or further south on Bridge Street, they have to either walk through the drive thru or go onto the street. They then said that traffic should be calmed on the street, citing times when they have been in the crosswalk and had cars still drive past, and suggested speed bumps and a reduced speed limit.
- A resident noted that there used to be a railroad stop on Bridge Street and mentioned that they had heard of a stop being developed but acknowledged that there was no train currently making the stop.
- Another resident agreed that this segment of road is difficult to cycle through and supported extending the sidewalk on the east side of Bridge Street and then further south to Jolina Court. They also acknowledged that traffic hadn't been a problem during COVID but in the past the northbound direction has been congested by school traffic (parents dropping off, etc.).
- One resident said that they live on West Main St and that their children often bike down to the park which they don't feel safe with them doing on the road. They said their children ride on an unmarked path that goes between houses from W. Main Street to Depot Street in order to avoid Bridge Street. While acknowledging that it is private land, they said they chose to bike there instead of on sidewalks or behind cars which they find to be frightening. They supported some type of cycling infrastructure on the shoulder and expressed distaste for reverse-in parking in order to accomplish this. They also inquired about bump-outs based on a previous idea for the street.
- One of the panelists asked where those bump-outs would have been placed, to which the resident responded that they believed it would have been across from TD Bank, and something like large barrels or planters (such as those in the quick-build guide for Burlington) and also discussed street trees and/or stormwater infiltration systems.
- A resident noted that there were few places available for bicycle parking, and said that there is one spot, but requested more in the future.
- One resident interjected, noting that the earlier study done on bump outs was conducted with Local Motion. They then went on to say that the section of the sidewalk in front of Cumberland Farms is not a delineated sidewalk which makes it a dangerous segment, as there is a lot of vehicle traffic.
- One panelist asked how residents feel about mid-street crossing along this stretch of Bridge Street.
- A resident said that when coming from Pleasant Street there is no way to cross or sidewalks to take in order to get to a crossing unless one walks through the TD Bank parking lot.
- Another resident agreed, adding that the south end of the Bridge Street block, at the intersection of Pleasant and Depot Street, is the place they most see people crossing outside of the crosswalks, and after that it would be from the Greensea parking lot to the bike shop and Sweet Simone's.

Meeting Notes

- Another resident said they don't think one crosswalk is enough, but that there can be too many.
- A panelist asked if the current location of the crosswalk is in the right spot.
- A resident disagreed, saying that they don't think there's a place to go from there and that sidewalks are needed on the east side regardless of where the crossing is. The resident then remarked that the informal path between Depot and W. Main Street is fine to use for residents, as the owners of the property has permitted its use.
- A panelist asked if there was a reason why the crossing was placed there and inquired as to whom it may serve.
- One resident said the crossing was placed there simply because that is the end of the sidewalk on the east side of the road.
- Another resident chimed in, saying that they think the crossing needs to be further down on Bridge Street but prior to the bank redeveloping their parking lot there were steps that lead to the old crosswalk.
- A business owner said they would be interested in the on-street parking spots in front of the shops being 90 degree parking instead of angled parking so people could access from both sides. They cited the angled parking as a deterrent for people driving northbound to park at their business, and that an increase in parking would be welcomed.
- A resident said that they were not sure exactly where a mid-street crossing would be best, and would like to have additional parking developed in the lot behind what is now Spruce (a restaurant) or behind 27 Bridge St.
- A business owner advocated for bike parking so cyclists would not lean their bikes up against windows. They also advocated for additional outdoor dining space, especially with the current dining restrictions. They cited videos of cities with on-street parking being blocked off in order to create an outdoor dining space. The owner then talked about agreement with employees to not park in front of businesses and use the Depot Street parking lot instead.
- One resident questioned if the business owner would like to see parallel parking on the east side of Bridge Street.
- The owner responded that they wouldn't change the number of spots currently on the west side but spots similar to those in front of Richmond dental would be good on the east side of the street.
- The resident responded that there is probably not room in order to accommodate parking on both sides and asked if having the spots as they currently are on the west side was an acceptable tradeoff for having spots on the east side.
- The owner answered that they would rather keep more spots, even if it has to be on one side.
- A panelist asked if there were any agreements with businesses to use parking spots after hours.
- The business owner answered that parking behind Greensea is public but was unsure if there's an agreement with TD Bank. They cited that it was used after hours anyway. Between business owners there are agreements to ask employees to park elsewhere.

Bridge Street Intersection with Jolina Court / Railroad Street

- One Resident noted that from Richmond Dental to Richmond Market, the only pedestrian infrastructure is the striped walk, which can get worn or become obsolete under snow. They also said that the crosswalk is not well

Meeting Notes

lit, poorly delineated, and rather 'wiggly,' citing the entire intersection as confusing for both drivers and pedestrians to determine who has the right of way and when the pedestrian should begin to cross. The resident noted the lack of adequate signage, such as an RRFB (a pedestrian crossing sign which uses flashing lights to signal drivers).

- Another resident agreed with the lack of delineated space, asking if the sidewalk could be extended up to the railroad gates and signals, which would help add more dedicated space for pedestrians and bring the crosswalk closer to the market.
- A resident on the transportation committee specified that the crosswalk was not intended to be a sidewalk but given the constraints at the time of its installation, it is the sidewalk. The resident then noted the increase in trips to and from Jolina Court as it becomes more developed, and requested a sidewalk along the east side of Bridge Street to facilitate those residents.
- One resident asked why there are no stop signs at this intersection.
- Another resident noted the added complexity of the railroad tracks being in this location.
- A resident noted that businesses in this area (i.e. Richmond Home Supply) have large truck deliveries and checking with the owner may be prudent to better understand the vehicles needing to access Railroad Street at this intersection.
- One resident expressed support for a pedestrian refuge and pointed to the right-of-way in the presentation to note that there was limited space to the west to implement the changes being discussed in the meeting. The resident also remarked on the difficulty of making a left onto Railroad Street when travelling northbound on a bike.
- Another resident agreed with the previous comment about the turning while cycling, citing their experience from the north was also challenging due to the railroad tracks and speeding cars.

Bridge Street Intersection with Huntington Road / Cochran Road / Thompson Road

- One resident of Thompson Road spoke of a lack of sight lines for cars and that as a pedestrian there is a fair chance a car will not stop for them. They also pointed to a lack of sidewalks on the south side of Huntington Road. They acknowledged that they occasionally use the road in front of the Round Church order to cut through that area safely.
- Another resident agreed with the above statement, saying that they live on Cochran Road. They noted an increase in cars travelling straight from Huntington Road to Cochran Road, where before the traffic turned to Bridge Street, due to the year-round ski mountain attractions. They expressed their support of a 4-way stop at this intersection with crosswalks on each approach.
- A resident pointed to the width of the intersection, specifically the danger of the right turn from Bridge Street to Huntington Road.
- One resident asked about a roundabout at this location, but upon further reflection thought that the existing right-of-way might not be enough.
- A resident noted a trail head further down on Huntington Road which increases bicycle and pedestrian traffic to and from that location.

Meeting Notes

- Another resident agreed, saying that if cyclists come off of the trail they would be on a blind curve, but was unsure if this was part of the study for this meeting.
- One resident said that rather than extend the existing sidewalk to the north to reach the trail, they would rather prioritize a sidewalk on the south side of Huntington Road, saying that they go to the Stone Corral.
- A resident said that there are condominiums on Farr Road and residents of Thompson Road that would be capable of walking between Huntington Road and their homes, but from their perspective improvements to intersection should be the priority.
- One resident noted a steady stream of traffic on Huntington Road, especially when school is starting in the morning, and a general lack of traffic on Thompson Road with the exception of the Town Highway Garage. They said Cochran Road traffic is variable, especially since COVID, as the number of cyclists have increased on that road.
- Another resident agreed, saying that bicyclists heading down Cochran Road go through the Round Church and tend to avoid the intersection. When approaching from Huntington Road, the resident said the bikers typically shoot across the intersection.
- Another resident agreed with the previous comment about using Round Church Rd and said they use the crosswalk on Bridge Street just north of the intersection to cut through.
- A resident felt that Bridge St wasn't wide enough for bicyclist which meant that some bicyclist chose to ride on the sidewalk, making it difficult for pedestrians who try to get out of their way only to be obstructed by a stone wall. Cyclists who chose to ride on the road fear for their safety and then look over their shoulder while they ride.

Next Steps

- The panelists wrapped up the meeting by listing the next steps for the project. They stated that the project team is targeting March 2021 for draft alternatives to bring back to the community for discussion.

Chat Comments

Key: Underlined notes below were copied and pasted from the Zoom chat. Names were removed.

From [panelist] to Everyone: 07:17 PM
You can use the chat feature here as well!
From [resident] to Everyone: 07:21 PM
I can't stay for whole meeting but I wonder about preparing for Richmond to be a light rail stop.
From [resident] to Everyone: 07:45 PM
I think the mid-block crossing in front of the bakery is well placed for "mid-block" as it serves all of the Bridge Street Businesses from a central point and helps south-bound pedestrians from Main to avoid Cumbies. Considering an additional crossing on the south side of Pleasant to Depot would be good for north-bound pedestrians to Bridge

Meeting Notes

Street businesses as well as south-bound to the market, library, etc.
I support Lisa's point re: parking. Solutions that eliminate downtown parking should be avoided if possible.
From [resident] to Everyone: 07:54 PM
We're walking :)
Losing spots in the West side would be challenging, especially for Bridge Street Hair and Food Bank customers.
From [resident] to Everyone: 08:31 PM
Thank you
From [panelist] to Everyone: 08:31 PM
project webpage: https://www.ccrpcvt.org/our-work/transportation/current-projects/corridors-circulation/bridge-street-complete-streets-corridor-study/

Bridge Street Corridor Study

Alternatives Presentation & Public Meeting

Thursday, April 8, 2021

7:00 – 8:30 PM

Join the Public Meeting via Zoom:

https://vhb.zoom.us/j/91452233901?pwd=bm9tMWhCM1hwM2ZYRnNSY1FVRE5Qdz09

Webinar ID: *914 5223 3901*
Passcode: 910031
Phone: (301) 715-8592

Public Meeting Agenda

- Public Comment Period
- Reintroductions of Project Team
- Review Study Area and Purpose & Need Statement
- Review and Discuss Alternatives
  - Bridge Street Alternatives from Main Street to Railroad Street
  - Bridge Street at Huntington Road Intersection Alternatives
- Discussion and Next Steps

Project Website: https://bit.ly/RichmondBridgeStreet

Project Contact: Jason Charest, CCRPC jcharest@ccrpcvt.org

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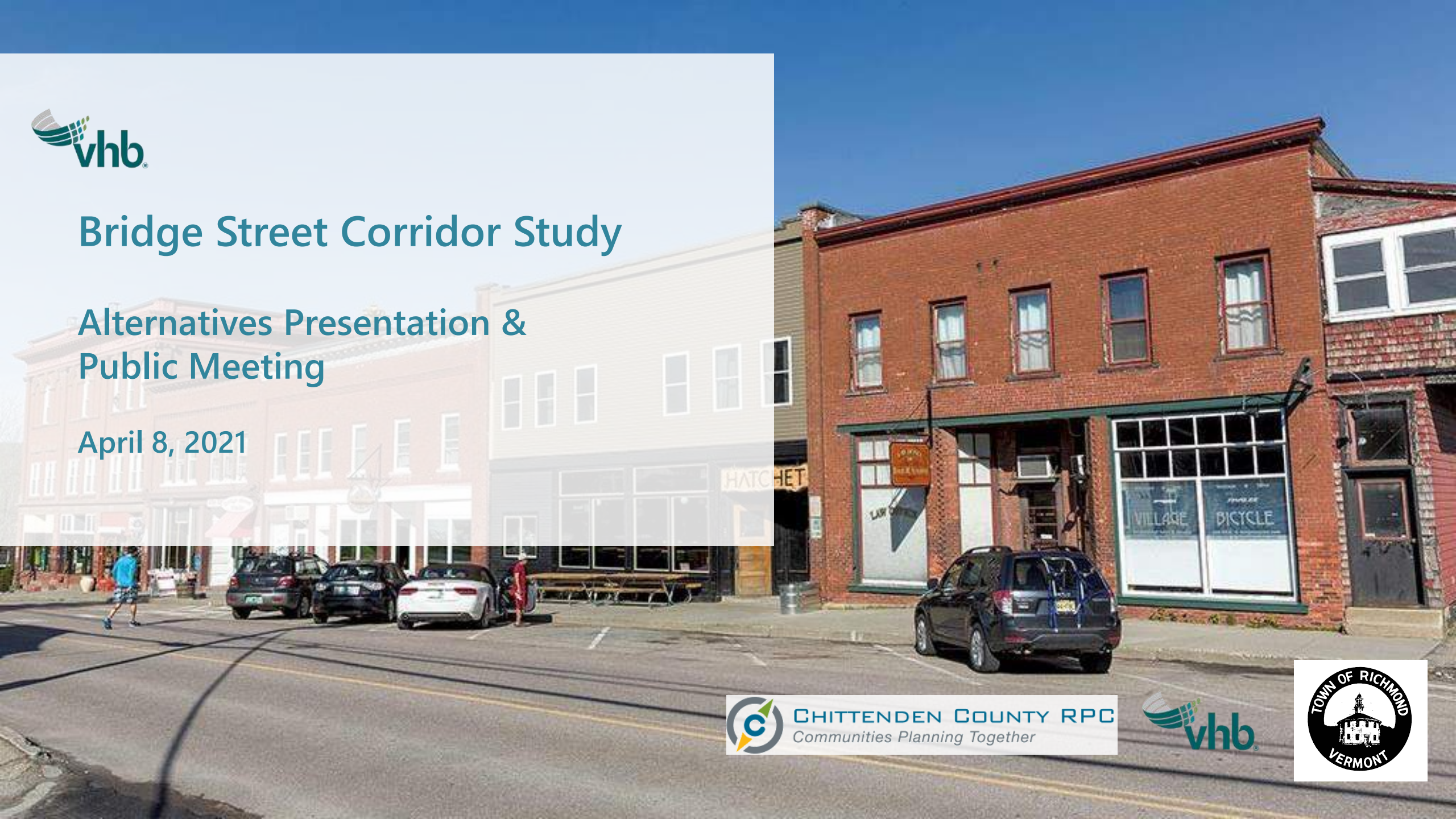
Bridge Street Corridor Study

Alternatives Presentation & Public Meeting

April 8, 2021



CHITTENDEN COUNTY RPC
Communities Planning Together

TOWN OF RICHMOND VERMONT

Agenda

(Re)Introductions

Review Study Area

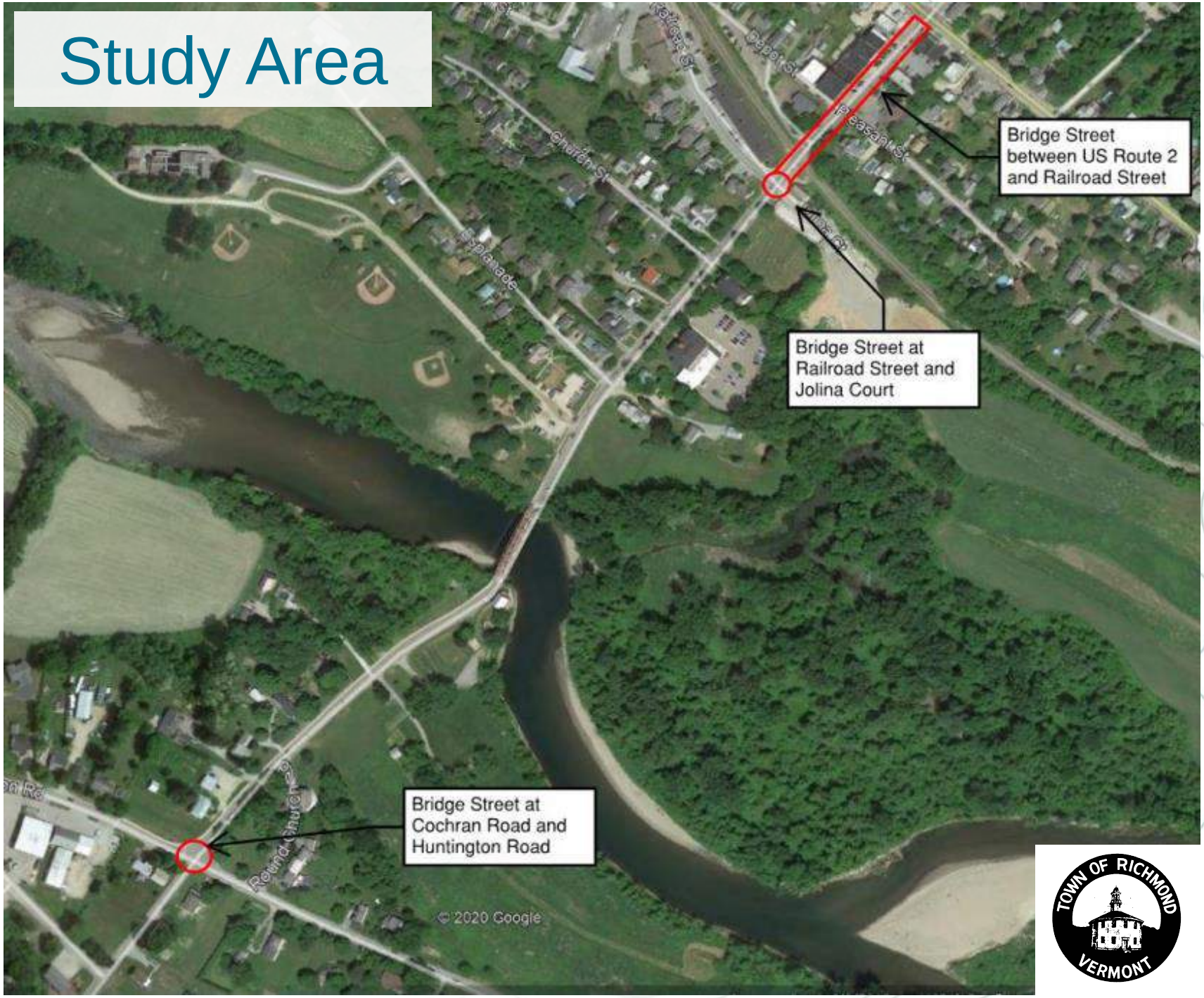
Purpose & Need Statement

Bridge Street Alternatives Main Street to Railroad Street

Bridge Street / Huntington Road Intersection Alternatives

Discussion & Next Steps

Study Area



TOWN OF RICHMOND VERMONT

Project Purpose and Need Statement

Excerpt from Project Purpose

- To **identify** and **prioritize improvements** to create a **multimodal corridor** through the Richmond Village Center that **better accommodates pedestrians and bicyclists where critical infrastructure gaps exist**.

Project Needs

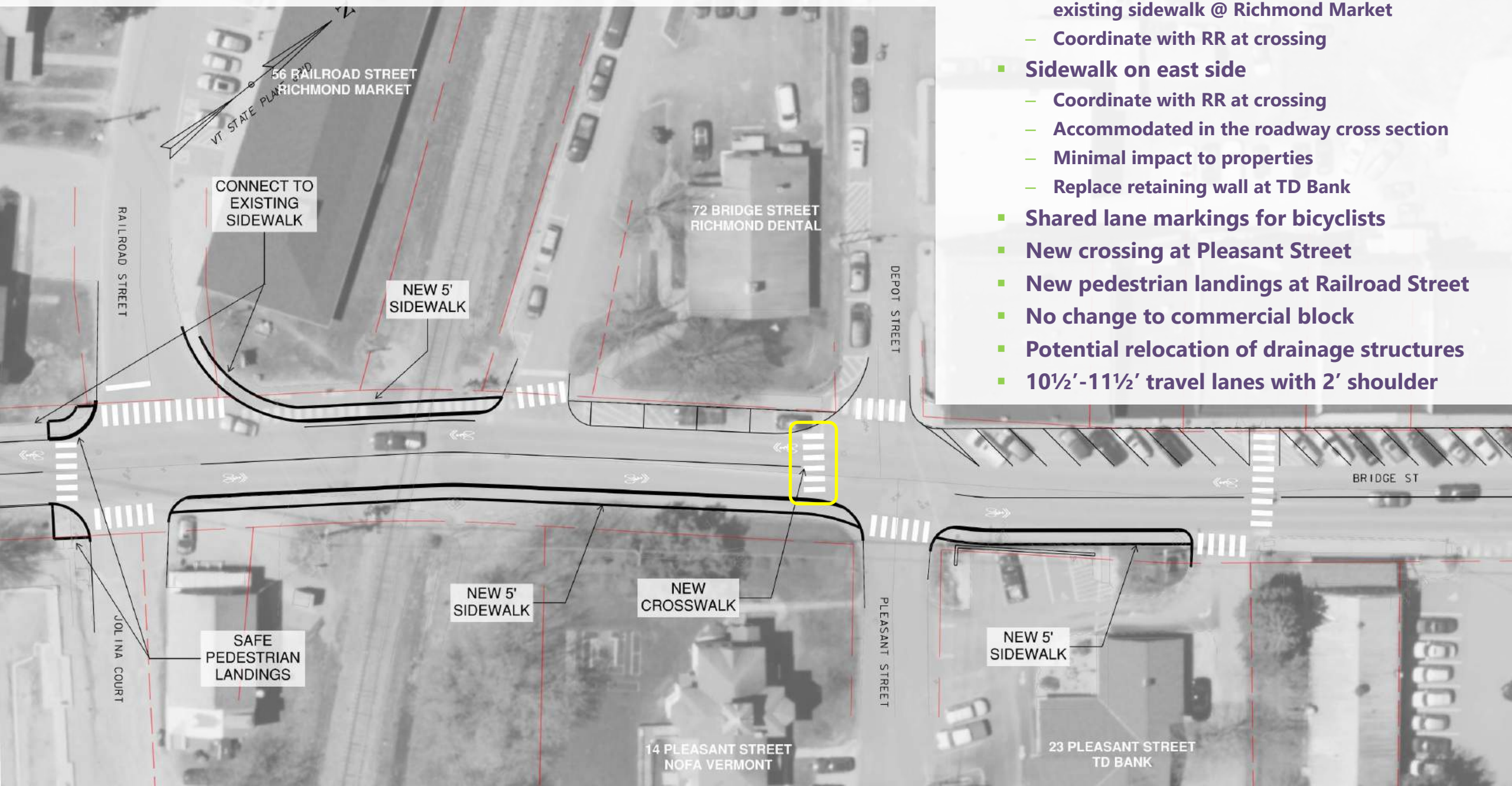
- **Enhance mobility for pedestrians and bicyclists**
  - Critical gaps in existing infrastructure
- **Improve safety for pedestrians and bicyclists**
  - Lack of delineated space for pedestrians and bicyclists requiring shared space with vehicle traffic
- **Maintain parking in support of businesses**
  - Convenient, on-street parking linked to vitality of businesses

vhb

TOWN OF RICHMOND VERMONT

CHITTENDEN COUNTY RPC
Communities Planning Together

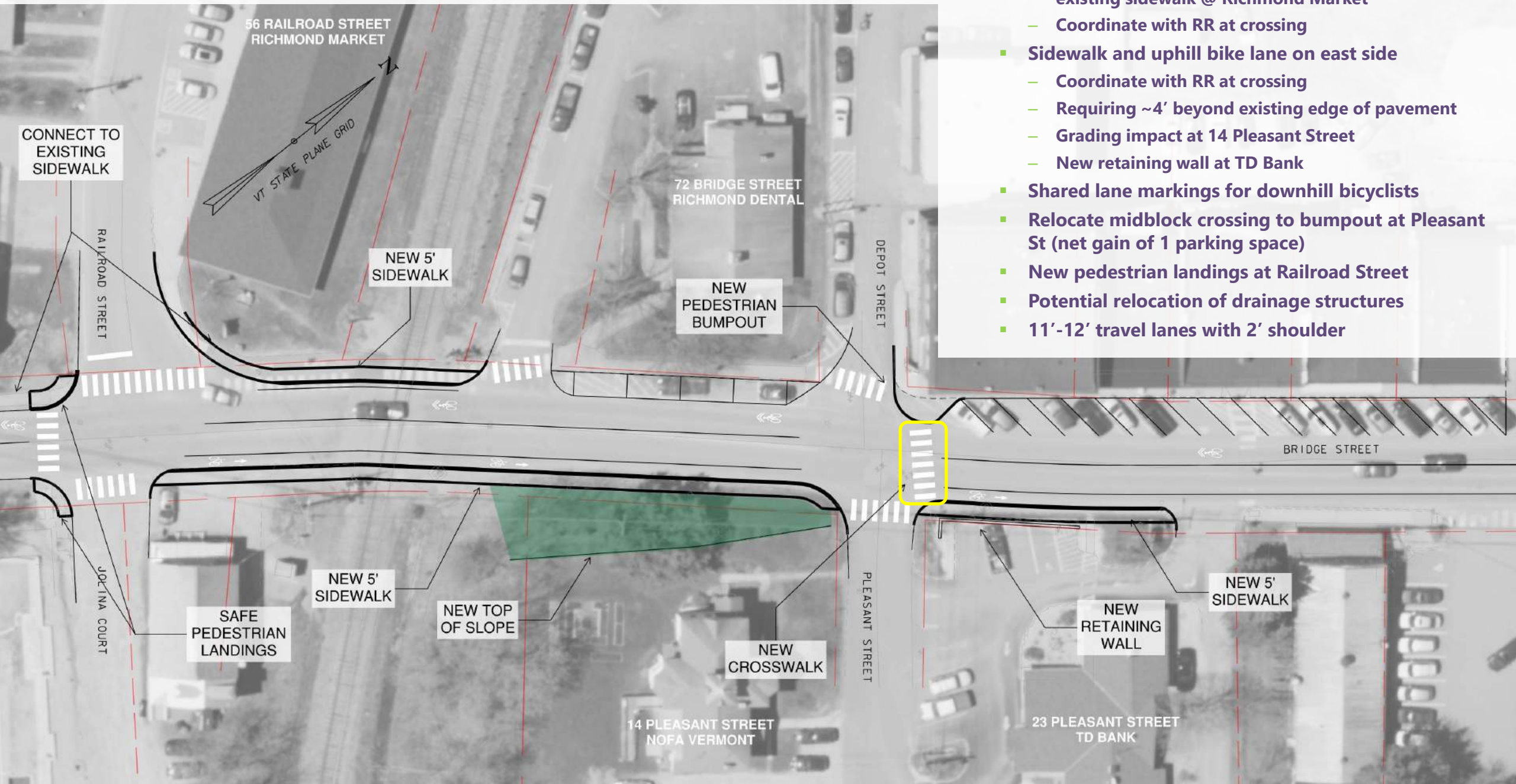
Alternative 1 | Sidewalks & Shared Lanes



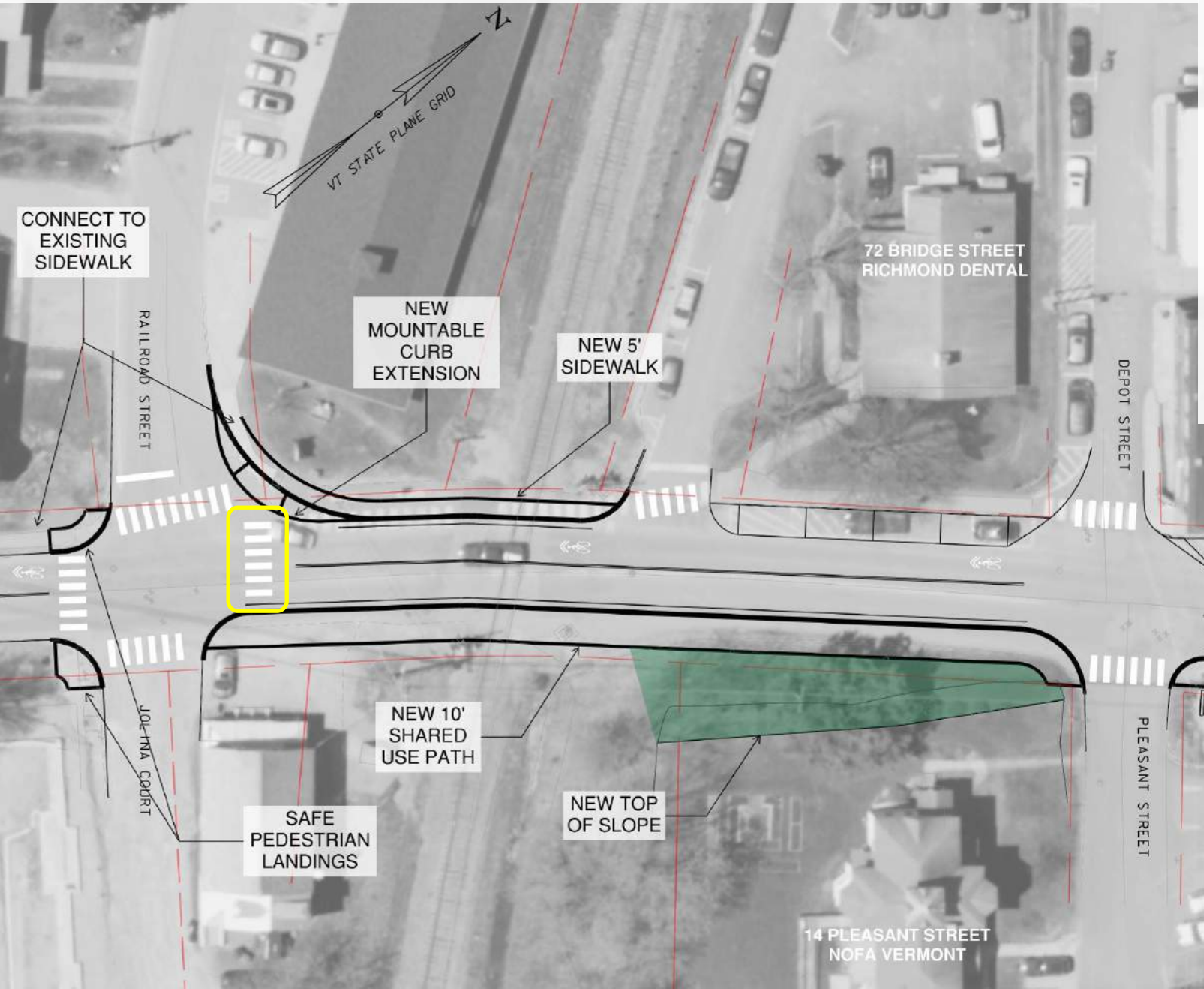
- Sidewalk on west side
  - Primarily within ROW – impact at connection to existing sidewalk @ Richmond Market
  - Coordinate with RR at crossing
- Sidewalk on east side
  - Coordinate with RR at crossing
  - Accommodated in the roadway cross section
  - Minimal impact to properties
  - Replace retaining wall at TD Bank
- Shared lane markings for bicyclists
- New crossing at Pleasant Street
- New pedestrian landings at Railroad Street
- No change to commercial block
- Potential relocation of drainage structures
- 10½'-11½' travel lanes with 2' shoulder

Alternative 2 | Sidewalks & Uphill Bike Lane

- Sidewalk on west side
  - Primarily within ROW – impact at connection to existing sidewalk @ Richmond Market
  - Coordinate with RR at crossing
- Sidewalk and uphill bike lane on east side
  - Coordinate with RR at crossing
  - Requiring ~4′ beyond existing edge of pavement
  - Grading impact at 14 Pleasant Street
  - New retaining wall at TD Bank
- Shared lane markings for downhill bicyclists
- Relocate midblock crossing to bumpout at Pleasant St (net gain of 1 parking space)
- New pedestrian landings at Railroad Street
- Potential relocation of drainage structures
- 11′-12′ travel lanes with 2′ shoulder



Alternative 3 | Shared Use Path



- Sidewalk on west side
  - Primarily within ROW – impact at connection to existing sidewalk in front of Richmond Market
  - Coordinate with RR at crossing
- 10′ and 8′ shared use path on east side
  - Requiring ~4′ beyond existing edge of pavement
  - Grading impact at 14 Pleasant Street
  - New retaining wall at TD Bank
- Shared lane markings for downhill bicyclists
- New pedestrian landings at Railroad Street
- Mountable curb extension at Railroad Street
- Potential relocation of drainage structures
- 10½′-11′ travel lanes with 2′ shoulder

56 RAILROAD STREET
RICHMOND MARKET

VT STATE PLANE GRID

CONNECT TO EXISTING SIDEWALK

RAILROAD STREET

NEW MOUNTABLE CURB EXTENSION

NEW 5' SIDEWALK

NEW 10' SHARED USE PATH

JOLINA COURT

SAFE PEDESTRIAN LANDINGS

NEW TOP OF SLOPE

Bridge Street Alternatives Comparison

Alternative	Alternative 1 Sidewalks and Shared Lanes	Alternative 2 Sidewalks and Uphill Bike Lane	Alternative 3 Shared Use Path
Cost	$170,000	$200,000	$210,000
Pedestrian Mobility	Improved Sidewalk Network	Improved Sidewalk Network	Improved Network Connections
Pedestrian Safety	Designated Pedestrian Sidewalk	Designated Pedestrian Sidewalk	Separated from Vehicles Mixed with Bikes
Bike Mobility	No Change	Uphill Bike Lane	Choice of Shared Path or Shared Street Connections
Bike Safety	Shared Lane Markings and Signage	Designated Uphill Bike Lane for Slower Operation; Shared Lane Markings Downhill	Separated from Vehicles; Mixed with Pedestrians; Shared Lane Markings
ROW Impact	Minimal	More significant; Sidewalk within ROW with Slope Impacts	More significant; Path within ROW with Slope Impacts
Utilities Impact	Minimal	Moderate; Gas Line and Overhead Electric on Slope	Moderate; Gas Line and Overhead Electric on Slope
Drainage	More significant	Moderate	More significant
Satisfies Purpose & Need	No	Yes	Yes

Bridge Street
Between Railroad Street and Main Street

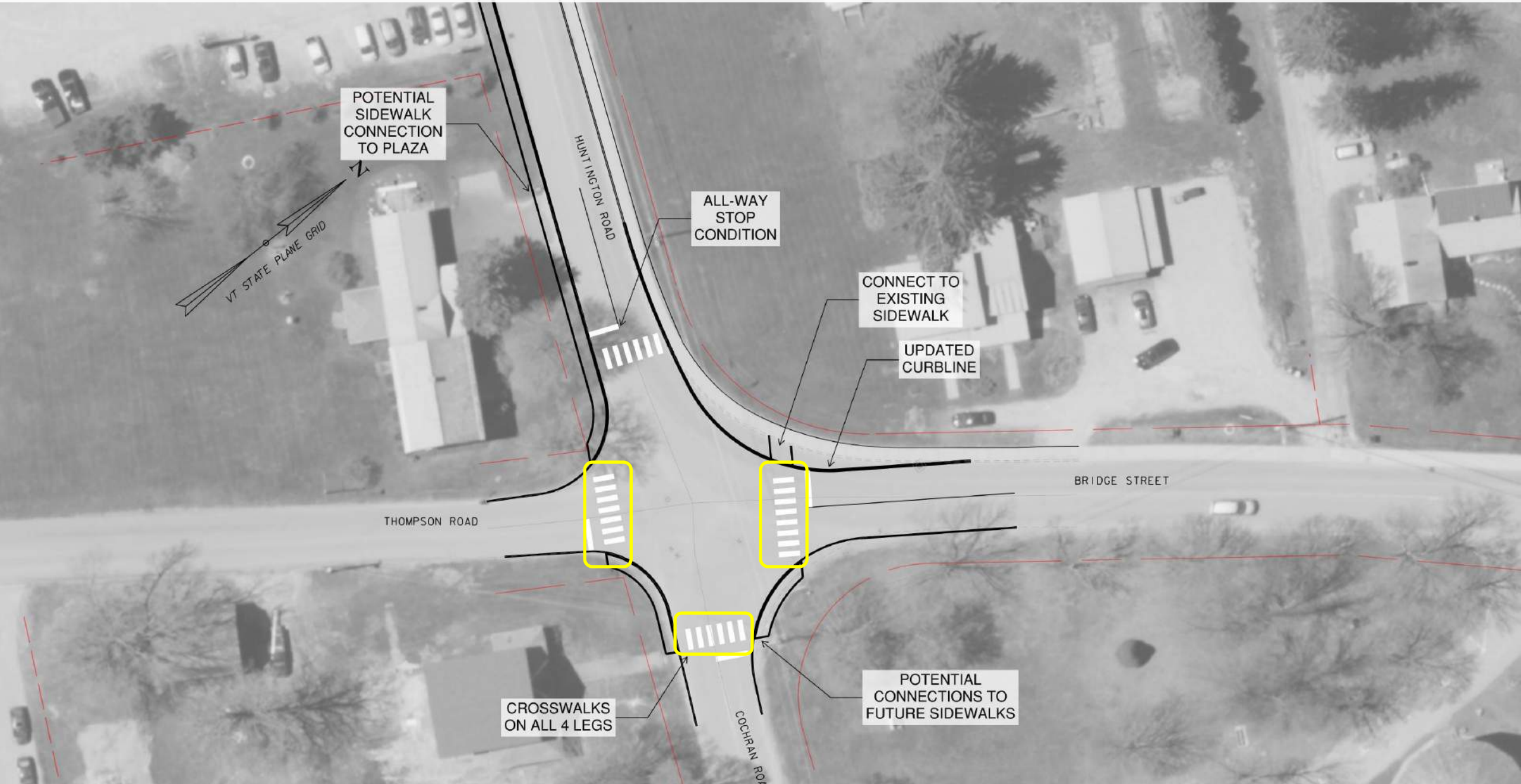
Alternative Poll

vhb

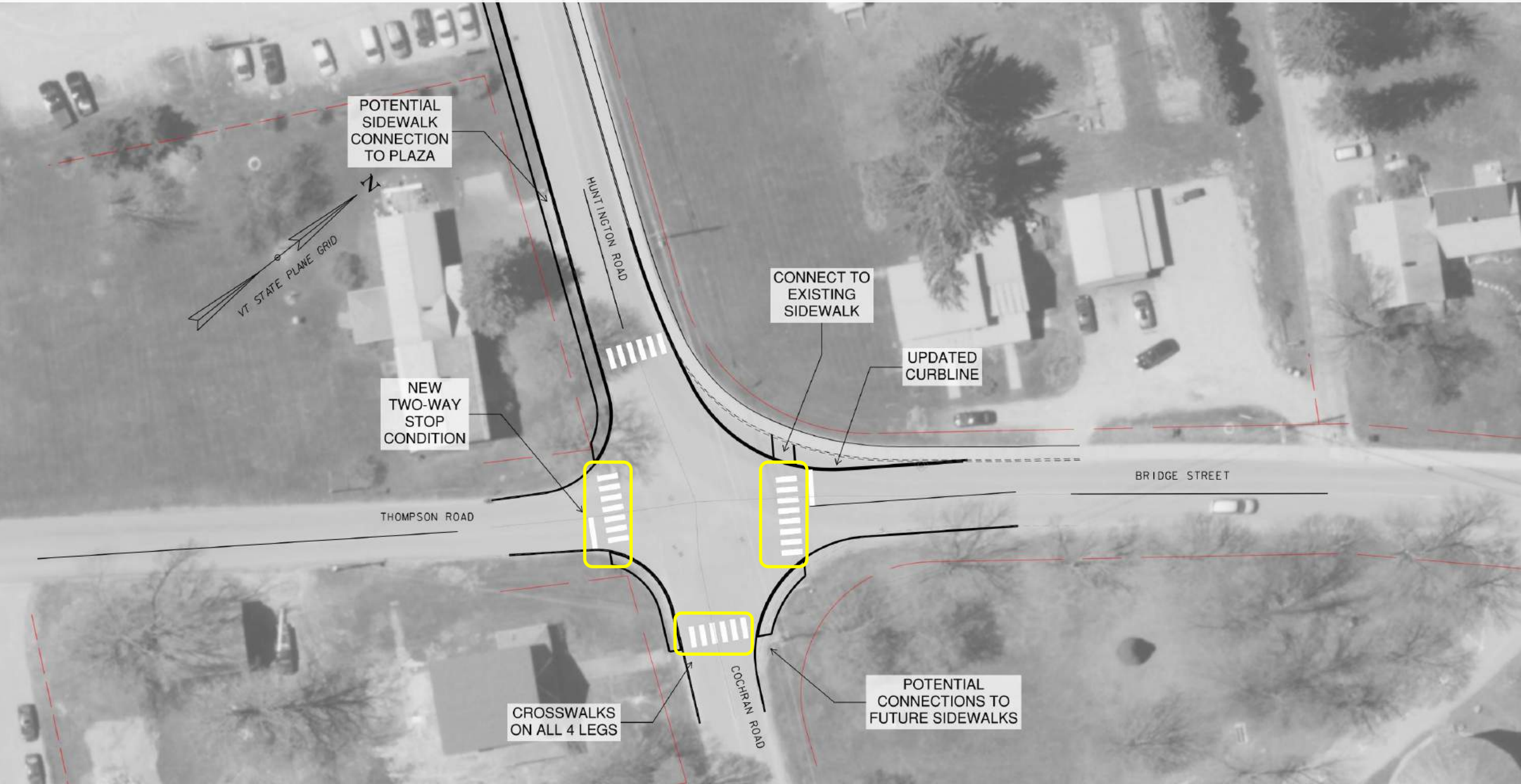
TOWN OF RICHMOND VERMONT

CHITTENDEN COUNTY RPC
Communities Planning Together

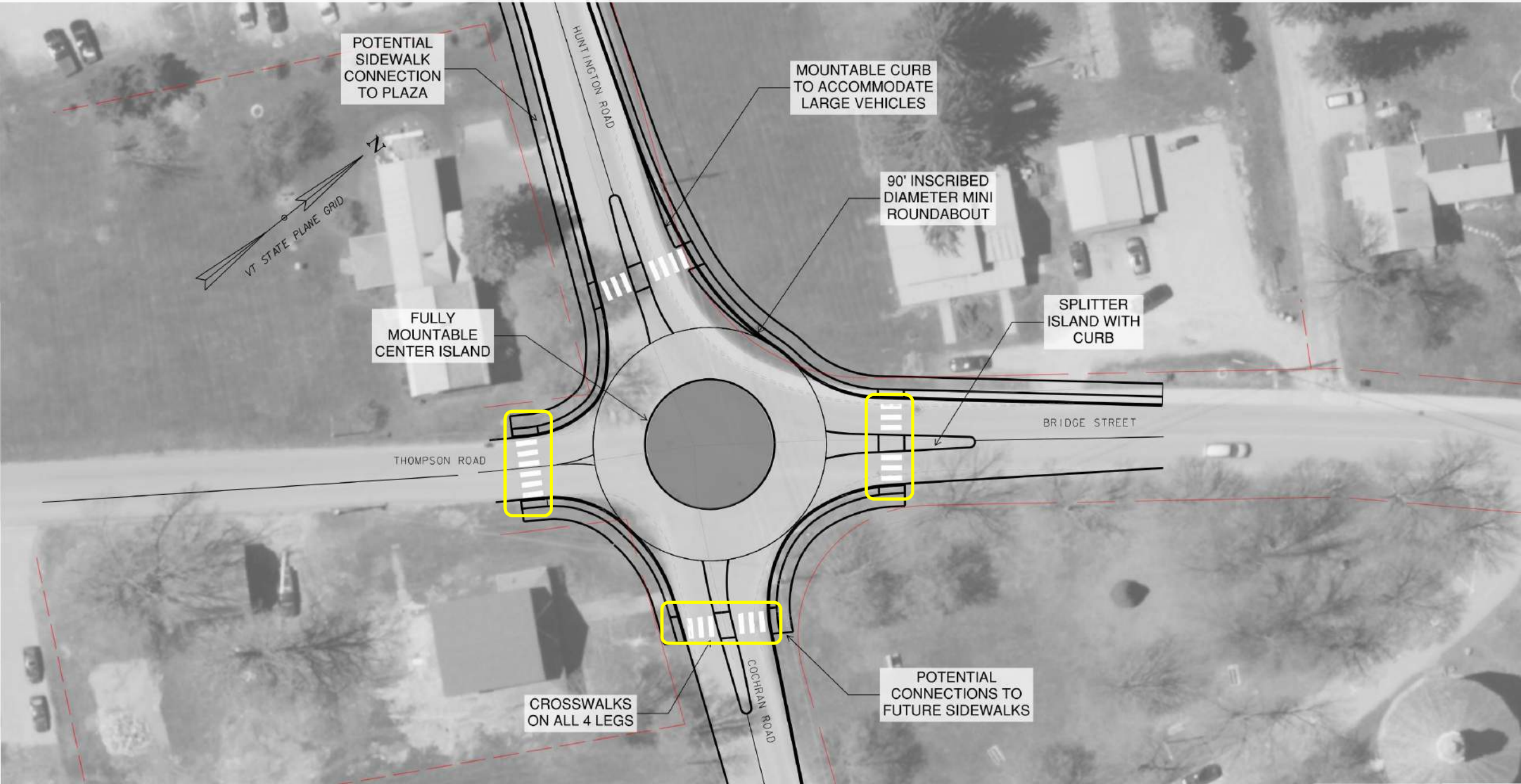
Intersection Alternative 1 | All-Way Stop



Intersection Alternative 2 | Two-Way Stop



Intersection Alternative 3 | Mini Roundabout



Intersection Alternative 3 | Mini Roundabout

Intersection Alternatives Comparison

Alternative	Alternative 1 All-Way Stop	Alternative 2 Two-way Stop	Alternative 3 Mini Roundabout
Cost	$100,000	$100,000	$850,000
Pedestrian Mobility	Improved Connections to Crossings of Low Volume Roadways	Improved Connections to Crossings of Low Volume Roadways	Improved Connections to Crossings of Low Volume Roadways
Pedestrian Safety	Stop Condition for All Crossings	Stop Condition for 2 Crossings	Median Refuge on 3 Crossings
Bike Mobility	Potential for bike lanes or shared lane markings	Potential for bike lanes or shared lane markings	Potential for shared lane markings
Bike Safety	All vehicles stop. lower traffic speeds for better bike travel with vehicles thru intersection	Some lower traffic speeds for better bike travel with vehicles thru intersection	Slower vehicle speeds thru roundabout better bike travel with vehicles
ROW Impact	Minimal	Minimal	Moderate
Utilities Impact	Minimal	Minimal	Moderate
Drainage	Minimal	Minimal	Moderate
Satisfies Purpose & Need	Yes	Yes	Yes

Bridge Street at Huntington Road, Cochran Road, and Thompson Road

Alternative Poll

vhb

TOWN OF RICHMOND VERMONT

CHITTENDEN COUNTY RPC
Communities Planning Together

Please Share Your Thoughts with Us

Chittenden County RPC
Communities Planning Together

Jason Charest
Senior Transportation Planning Engineer

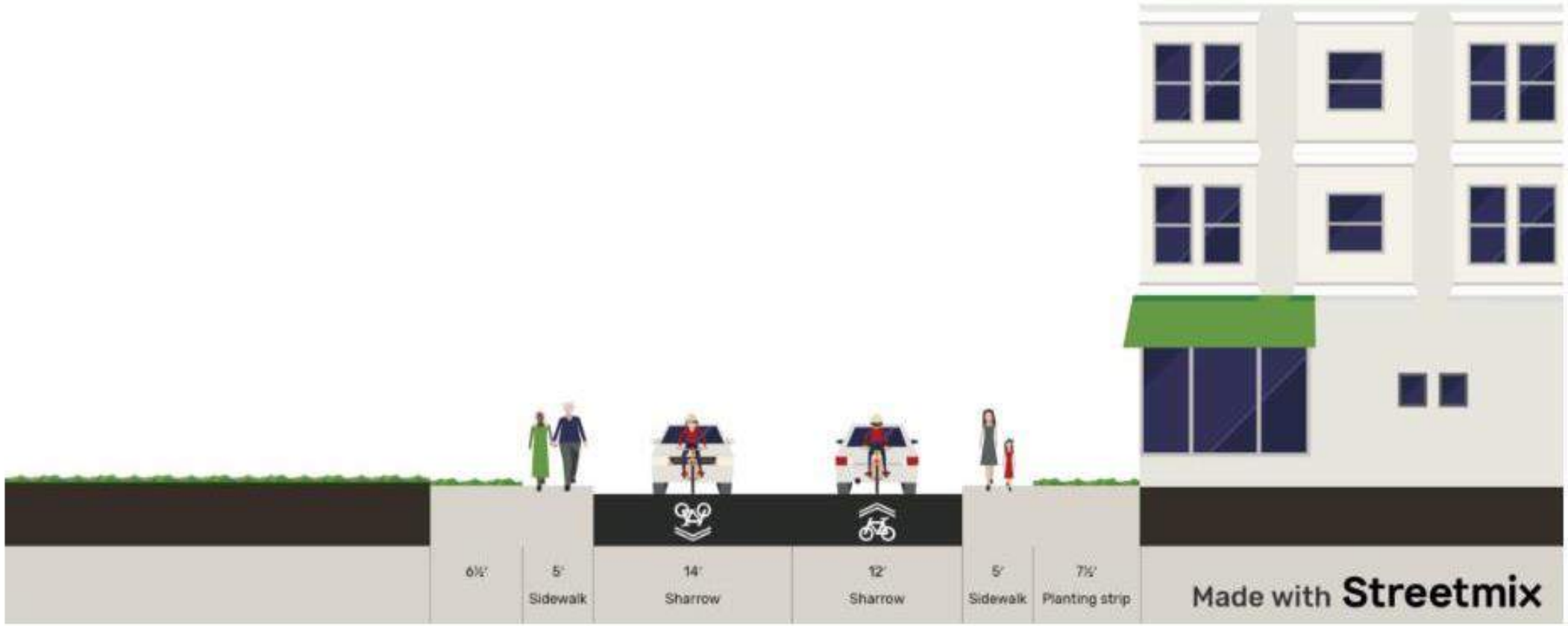
jcharest@ccrpcvt.org

Ravi Venkataraman
Town Planner

802-434-2430
rvenkataraman@richmondvt.gov

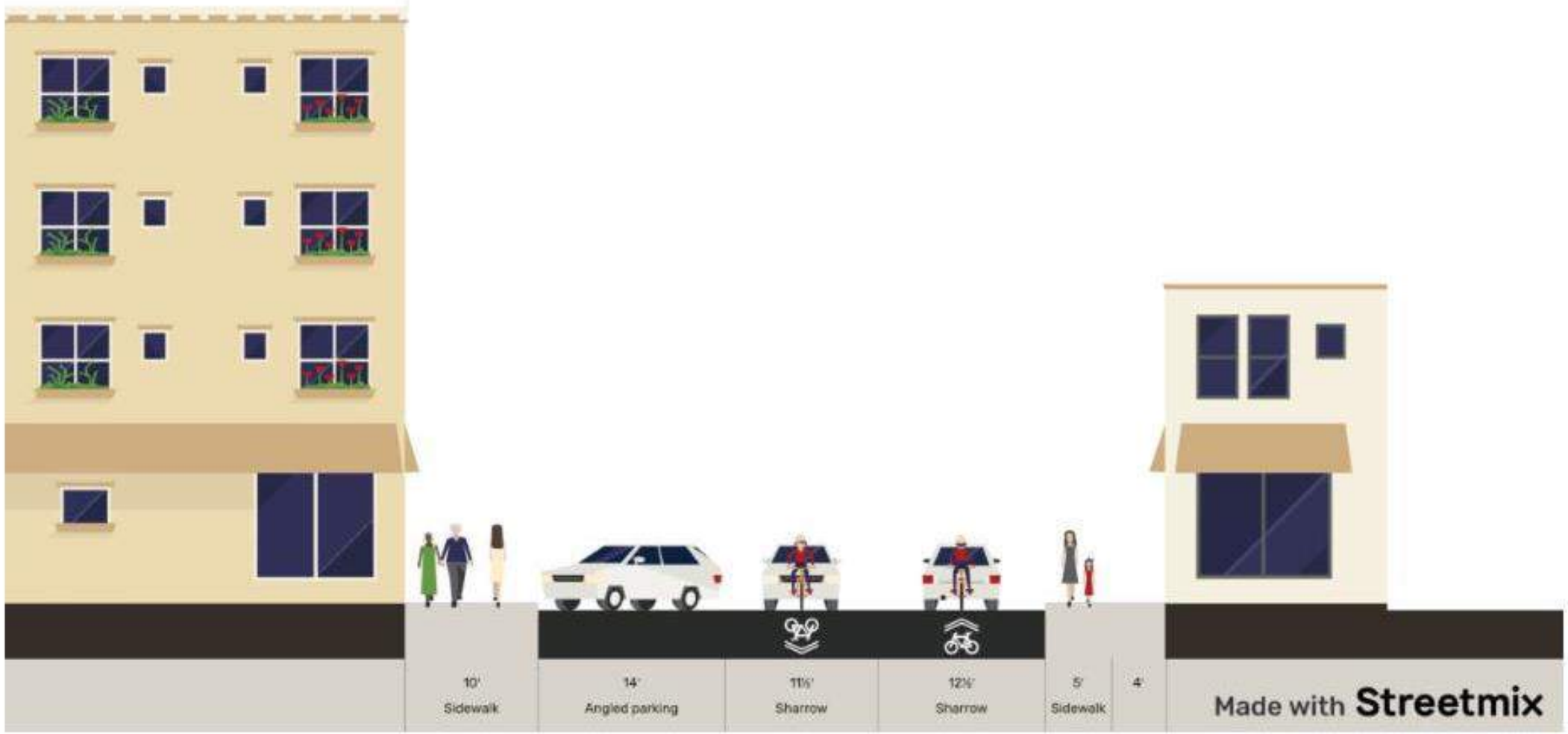
Supplemental Materials

Alternative 1 | Jolina Court to RR Crossing

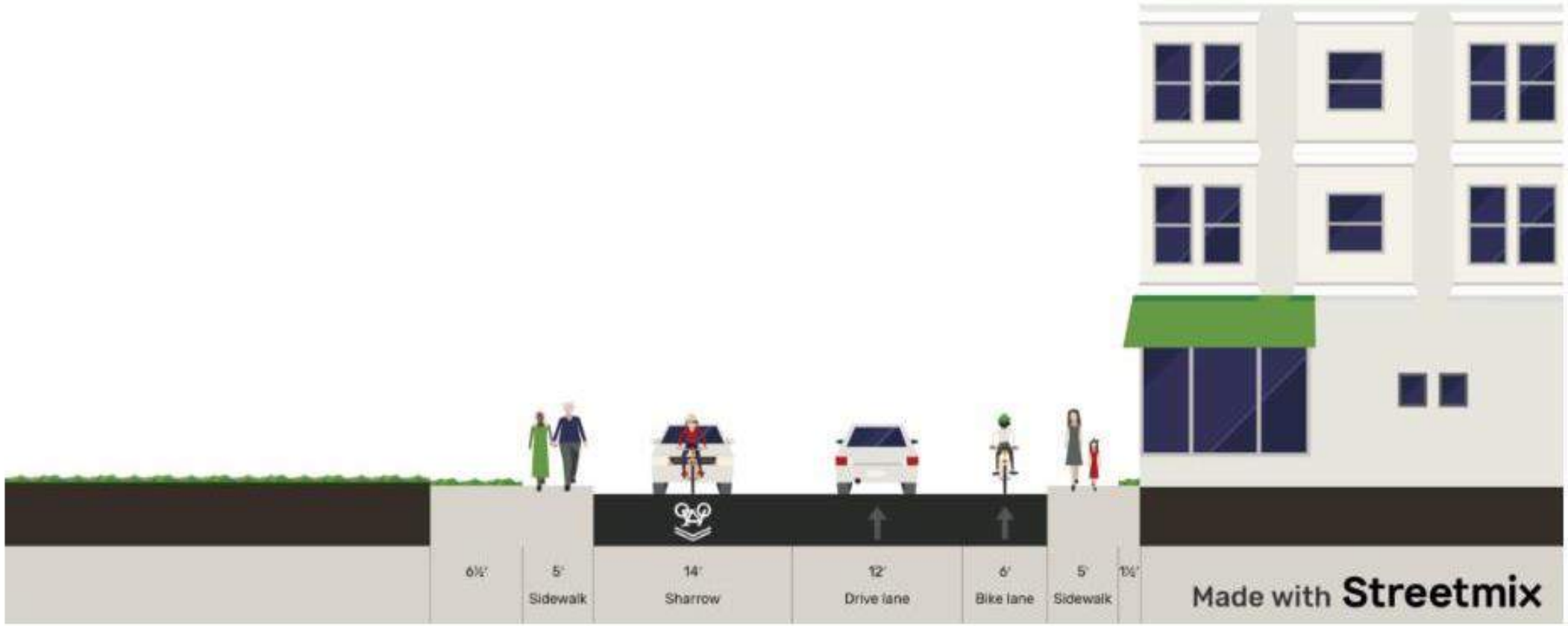


Alternative 1 | RR Crossing to Pleasant Street

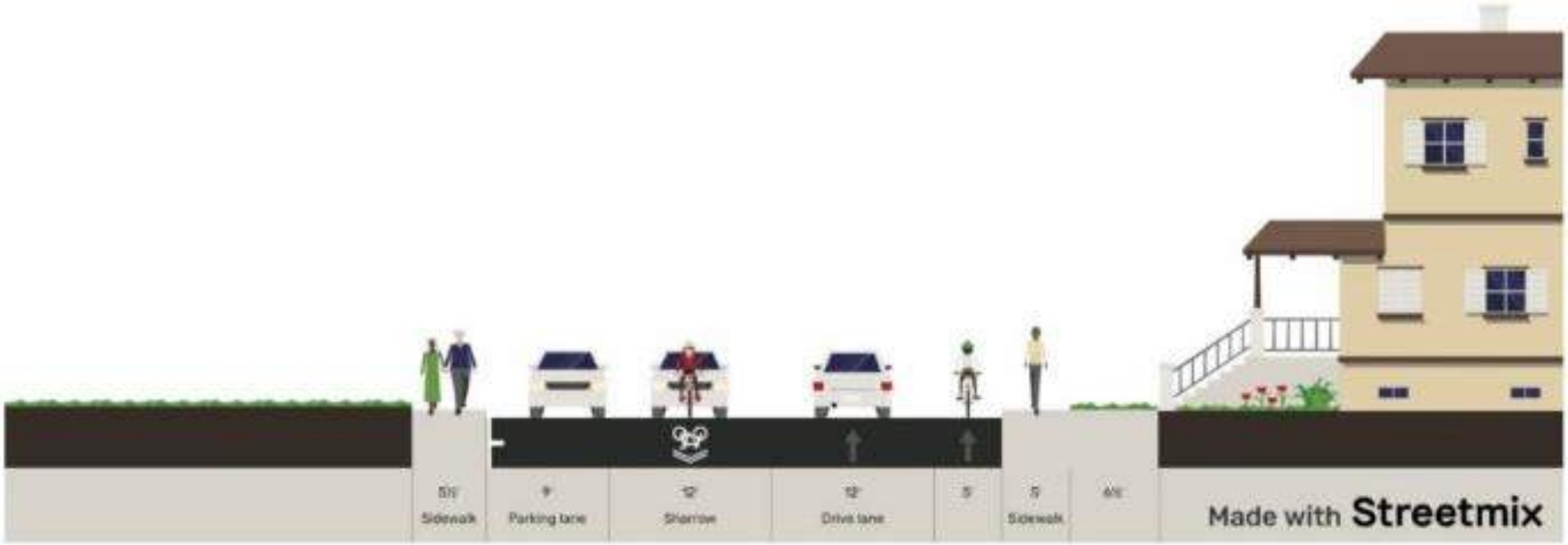
Alternative 1 | Pleasant Street to Main Street



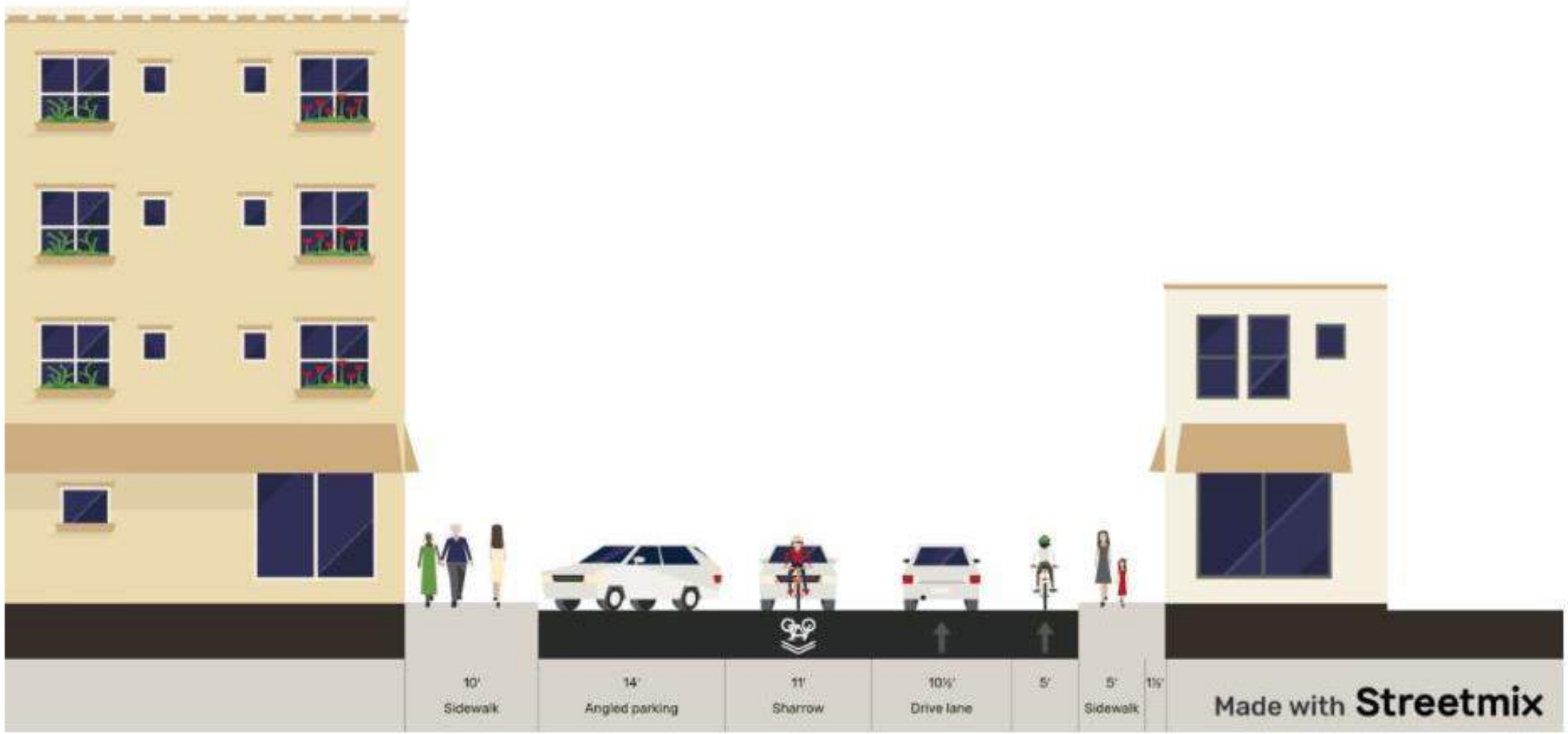
Alternative 2 | Jolina Court to RR Crossing



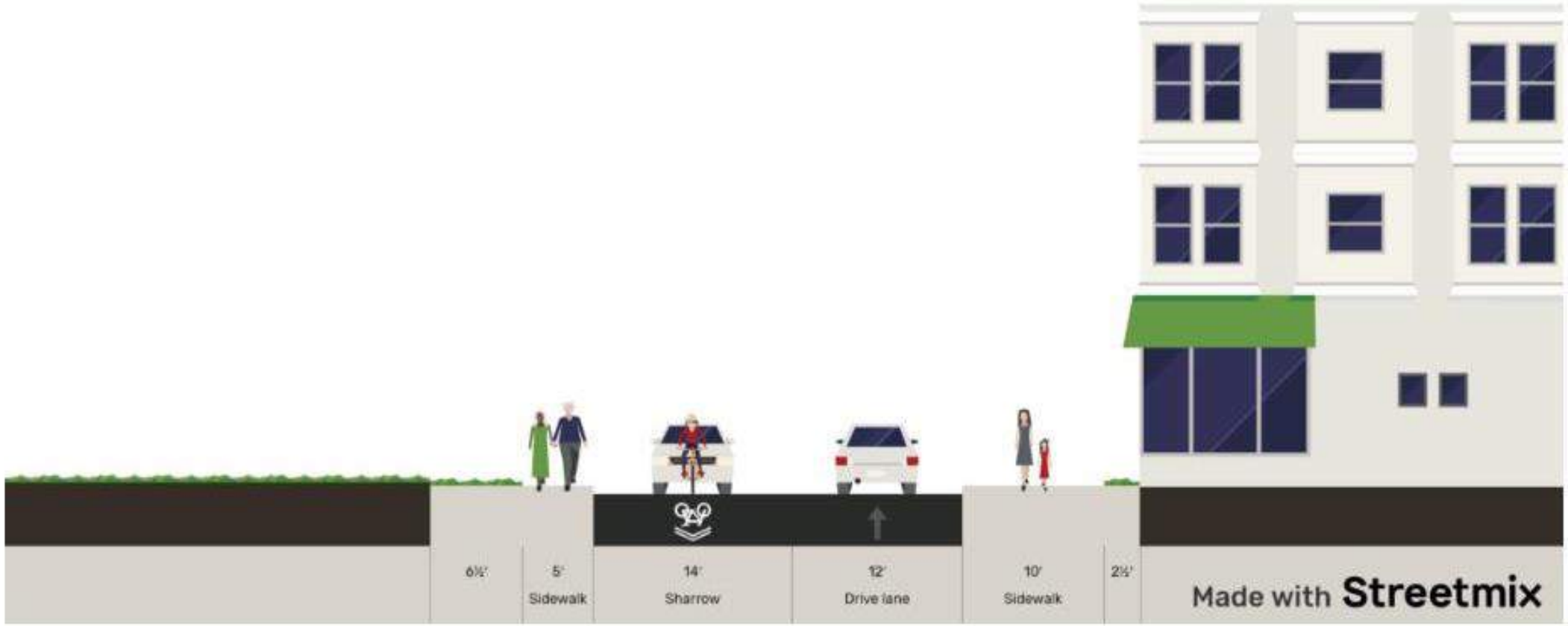
Alternative 2 | RR Crossing to Pleasant Street



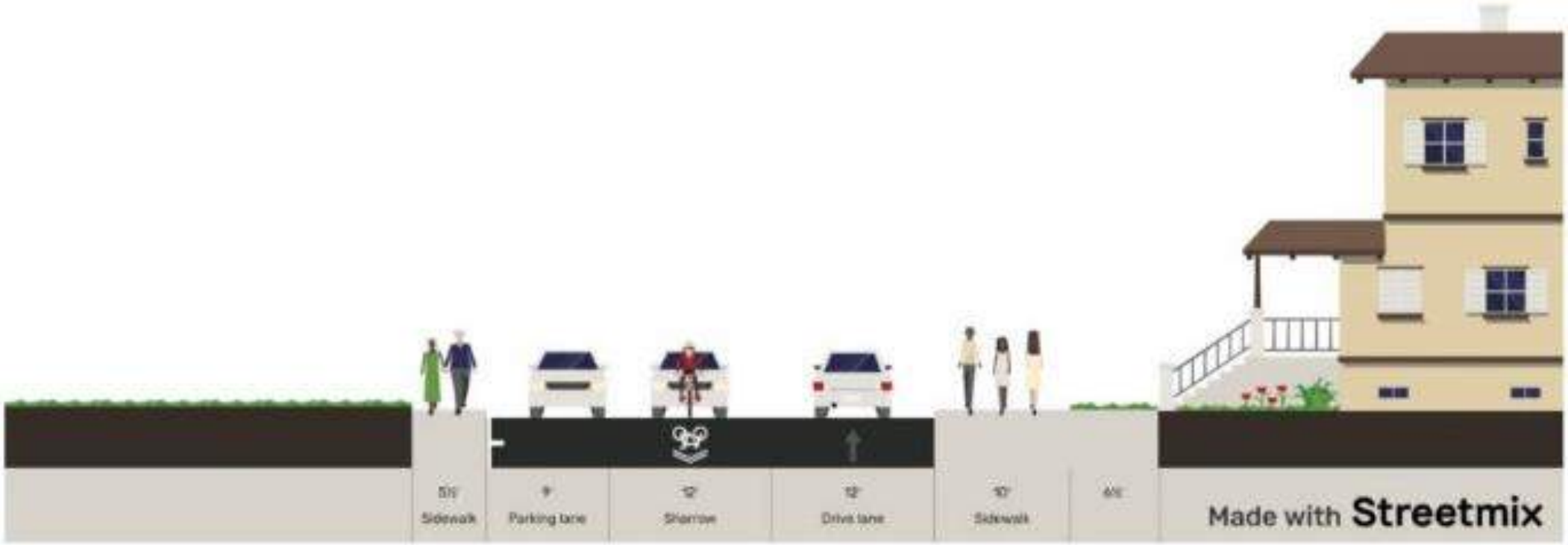
Alternative 2 | Pleasant Street to Main Street



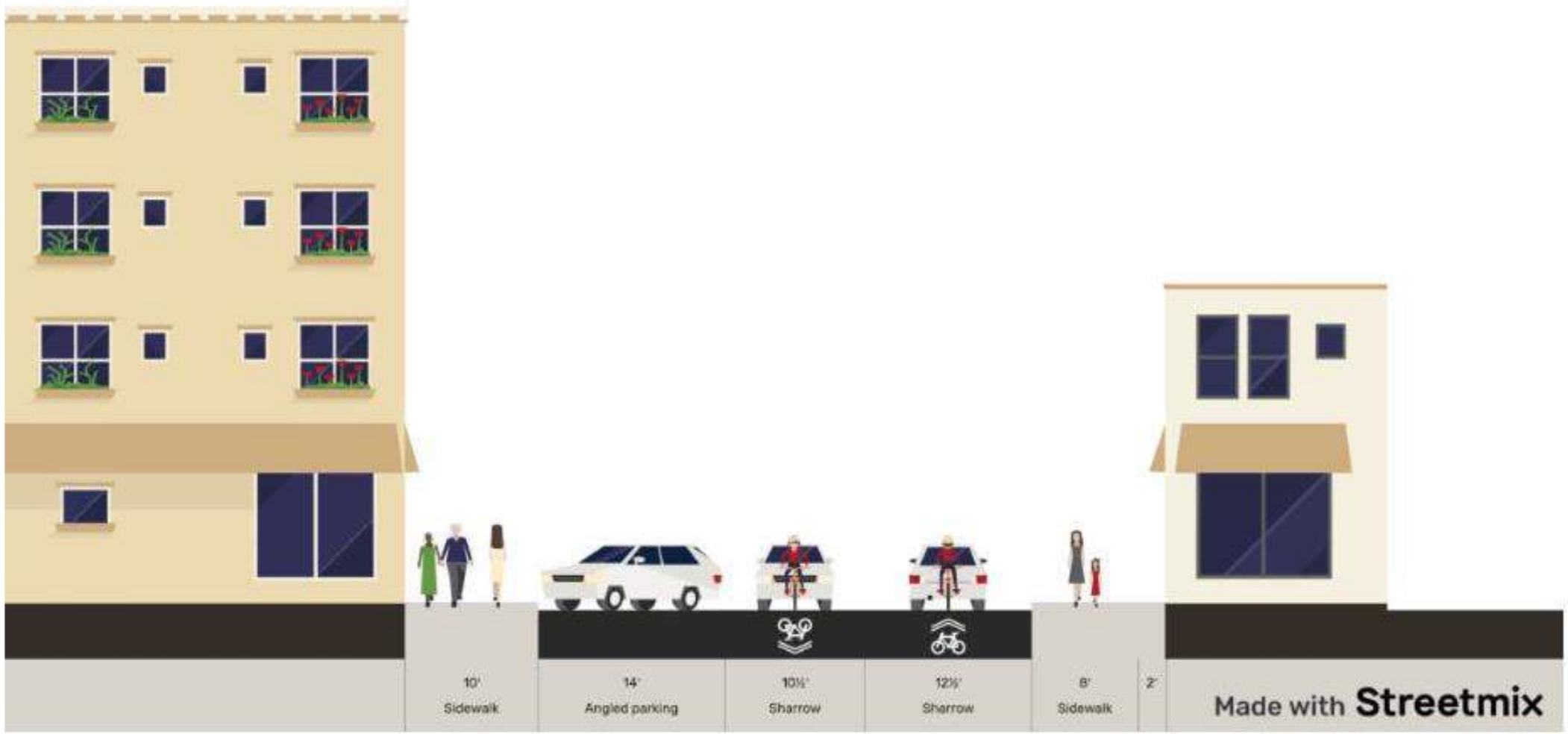
Alternative 3 | Jolina Court to RR Crossing



Alternative 3 | RR Crossing to Pleasant Street



Alternative 3 | Pleasant Street to Main Street



Meeting Notes

Place: Zoom Meeting

Date: April 8, 2021

Notes Taken by: Karen Sentoff

Project #: 58538.00

Re: Richmond Bridge Street Alternatives Presentation and Public Meeting

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ATTENDEES

Jason Charest – CCRPC
Ravi Venkataraman – Richmond Town Planner
Cathleen Gent – Transportation Committee
Fran Huntoon – Resident
Sai Sarepalli – CCRPC
Allen Knowles – Transportation Committee
Ian Stokes – Bike Pedestrian Trails Study Committee
Jon Kart – Transportation Committee
Gary Bressor – Resident
Jenn Conley – VHB
Karen Sentoff – VHB
Chris Granda – Resident

Jason provided a brief introduction and public comment period. Introductions were made. Jenn provided a brief overview of the study focal areas and the purpose and need. Karen introduced the alternatives developed for the first segment of the corridor, focusing on Bridge Street between Railroad Street and Main Street.

Alternative 1 was presented, which includes new segment of sidewalk on the west side in front of Richmond Market, new sidewalk on the east side between Jolina Court and the end of the existing sidewalk, and shared lanes on Bridge Street. This option limits impact beyond the existing edge of pavement. This option also included a new crosswalk on the south side of the intersection with Pleasant Street / Depot Street and retains the midblock crossing at the commercial block.

Alternative 2 was presented, which includes new segment of sidewalk on the west side in front of Richmond Market, new sidewalk on the east side between Jolina Court and the end of the existing sidewalk, and a new uphill bike lane on the east side. This option also included a new pedestrian bumpout and crossing on the north side of the intersection with Pleasant Street / Depot Street with the intention of replacing the midblock crossing at the commercial block.

Allen asked if we move the midblock crossing to the corner of Pleasant Street, is the equipment (RRFB) moving with it? Could we add a speed hump or some other traffic calming to that block? Challenge to address the drivers as they turn on to Bridge Street given the current use of the parcels right at the intersection with Main Street. Drivers do enter a very narrow section where the parking is, and perhaps even more narrow with the new alternative which may provide some calming effect.

Meeting Notes

Cathleen asked for clarification on the slope impact between Alternatives 1 and 2. Alternative 1 holds close to the existing edge of pavement, and therefore does not have a slope impact. Alternative 2 has a slope impact anticipated to be as shown in the figure. To minimize this impact, a short retaining wall could be used to reduce the impact along this slope. Cathleen asked if the sidewalk as proposed would be curbed. Yes, this sidewalk would be raised from the roadway and curbed with ADA ramps as appropriate.

Alternative 3 was presented, which includes new segment of sidewalk on the west side in front of Richmond Market, new shared use on the east side between Jolina Court and Main Street. This could be a 10' path between Jolina Court and Pleasant Street, but would have to narrow to an 8' path between Pleasant Street and Main Street. This option also included a mountable curb extension on the corner of Railroad Street and a crossing on the north side of the intersection with Railroad Street.

Fran asked for a clarification on the shared use path. Is the intention for the shared use path to be vertically separated from the roadway? Yes, there would be a vertical curb between the road surface and the path. I would be possible to change the surface treatment to make it clear that both bikes and pedestrians are welcome to use the shared use path.

Ian supports the full use of the ROW, particularly on the east side. He also offered that the Railroad Street intersection is uncomfortable for pedestrian and supports the crossing on the north side to help calm the intersection.

Chris had concerns about the mixed uphill and downhill bicyclists on the shared use path.

Gary voiced support for the uphill bike lane with pedestrian improvements in Alternative 2. He also likes the midblock crossing. He offered that a retaining wall instead of a slope in front of NOFA could be a really attractive feature. He envisions this wall as a being the right height to sit on.

Allen asked if there could be a mix and match of crossings that are proposed and already exist. The discussion of potentially replacing the midblock crossing with the crossing on the north side of the Pleasant Street intersection ensued.

Jon supports dedicating space for bikes uphill. He likes that moving the midblock crossing has the potential to add a parking space, but asked how many people would actually walk to the end of the block to cross. He is concerned with folks crossing the middle of the block anyway given the uses on each side. He expressed his support for the east side sidewalk.

An example of the mountable curb extension was provided.

Jason asked if the crosswalk in Alternative 3 is only enabled by the tightened curb and mountable curb extension. This crossing could be implemented in either case, but there are traffic calming and crossing benefits with the mountable curb.

Meeting Notes

Cathleen expressed support for the curb extension idea. She likes that it still accommodates the trucks while slowing other folks down. She asked for a clarification on the cost – was the retaining wall considered in the cost for this? No, the cost that is in the matrix is an estimate based on the slope, not the retaining wall concept.

An evaluation matrix of the three alternatives for the Bridge Street corridor between Railroad Street and Main Street was presented.

Jason asked a clarifying question about drainage. The curb line is brought in further than the existing edge of pavement in Alternatives 1 and 3, likely requiring relocation of drainage structures. In Alternative 2, the curb line is further out and may not require as significant of a relocation effort.

Cathleen asked about whether the retaining wall was included in the cost for Alternatives 2 and 3?

Ian was not in favor of the shared use path option.

Sai asked what was included in the costs. The cost estimates in the evaluation matrix included construction costs, engineering and design, contingencies, etc., but do not include any ROW acquisition.

A poll question was raised regarding which alternative the attendees supported. There was unanimous support for Alternative 2 with the west side sidewalk segment, east side sidewalk between Jolina Court and the existing sidewalk, and an uphill bike lane.

Jenn asked if there were components of other alternatives that folks would like to see incorporated into Alternative 2.

Cathleen offered that she would like to see the curb extension Railroad Street added to Alternative 2.

Chris agreed.

The question of whether the fourth crosswalk at the intersection with Railroad Street should be added to the curb extension in the preferred alternative.

Allen agreed.

Fran offered that her concerns with the crossings at Railroad Street are around whether drivers will have trouble recognizing two different crossings as they come through the intersection.

The question was raised as to whether the crosswalk at Pleasant Street would be sufficient for the crossing at the commercial block.

Fran mentioned that the creemee window is a big attraction at the Northern Spruce and could add to the crossing pedestrian traffic along the commercial block.

A poll of the preferred crossing locations was administered. The Railroad Street and Pleasant Street crossings are the most supported.

Meeting Notes

The discussion turned to the intersection alternatives at the Bridge Street / Huntington Road / Cochran Road / Thompson Road intersection. Karen presented the three intersection alternatives, which included Alternative 1 with an all-way stop condition for the intersection, Alternative 2 with a new two-way stop configuration for the Thompson Road and Bridge Street approaches, and Alternative 3 with a new 90' mini-roundabout at the intersection.

Cathleen asked if 90' is large enough diameter for a roundabout here? Yes, the mini-roundabout would still accommodate large vehicles making the through movements today, but by design they would have to mount the mountable center island and the curb extensions.

Ian expressed concerns about the stop line position on the Huntington Road leg in Alternatives 1 & 2.

Gary supports roundabouts. Concerned with the roundabout in Williston since drivers can drive straight through without having to slow down.

Discussion of the features of the roundabout including

Allen asked about the design speed of the roundabout as it is laid out. The Middlebury roundabout slows traffic sufficiently. He shared that his experience with roundabouts is with the ones in Olney, NY, which you could navigate at 15 mph. He expressed that the ones there felt unsafe for pedestrians. If we can't slow the traffic sufficiently with the roundabout, then he would support the 4-way stop.

Jon asked about winter maintenance of the mountable center island.

Fran likes the Manchester roundabout that was shared as an example. Feels like you have to slow down to navigate. It is nice to have pedestrian crossings set back too.

An evaluation matrix of the alternatives for the intersection was discussed.

Ian has concerns with the stop bar position on Huntington Road are mainly as a cyclist. With the set back as shown, getting up to speed to make the movement through the intersection may be problematic. He also suggested that the two-way stop pattern would be confusing given the current traffic pattern.

Gary's observation is that folks coming from Cochran Road stop well beyond the stop line if they stop at all. Wondering if there is a way to tighten that corner between Cochran and Bridge Street more than shown. He also asked if there was a cost difference between the 2-way and 4-way stop. If not, his preference is a 4-way stop.

Allen offered that the concern with the set back of the stop bar on Huntington Road could be alleviated with a green box.

Jon has observed this intersection. Say there are 40-50 cars every bike that is processed through the intersection. Concerned that the 4-way stop may be met with some opposition. A discussion of tightening up the intersection and making it feel more like a typical intersection ensued.

Meeting Notes

Gary is concerned that there is confusion of who has the right of way in the existing condition because of the odd configuration.

Allen suggested that we look elsewhere, like Amsterdam, for inspiration. They have made the decision to prioritize bikes and pedestrians. He suggested that folks need to be able to get around without a car.

A poll question was presented to the group regarding their preference for each of the intersection alternatives. The vote was split with 67% supporting the Alternative 1 with the all-way stop condition and 33% supporting the mini-roundabout.

Cathleen offered that she likes the roundabout and acknowledged the public resistance and high price tag that come with that option. She suggested that if this was the best alternative, the town could likely find the funding to make it happen. She said that making this intersection feel more like a four-way intersection would be an improvement.

Jason offered that public acceptance of the roundabout comes with familiarity. He noted that when folks are polled before and after a roundabout is installed in their area, they tend to increase their acceptance with higher ratings post installation.

Cathleen likes the idea of making this more of a 4-way intersection in feel, regardless of whether that is with an all-way stop or roundabout, the two alternatives that do that are a positive change.

Jenn wrapped up the conversation and provided contact information for Jason and Ravi if there are other thoughts to share. She noted that we will be advancing preliminary plans for the preferred alternatives for the town to use to pursue the projects further.

Richmond Transportation Committee

Meeting Minutes – May 11, 2021

All participants attended the meeting remotely.
Committee members: Cathleen Gent (chair), Chris Cole (vice-chair), Mark Damico, Erik Filkorn, James Floyd, Jon Kart

Absent: Allen Knowles

Others present: Ravi Venkataraman (Town Planner), Jason Charest (CCRPC), Dan Noyes

Cathleen Gent opened the meeting at 5:34 PM.

Meeting Minutes: April 15, 2021 moved by Damico, seconded by Floyd. Approved unanimously.

Route 2 Repaving Project Updates - Ravi Venkataraman provided a status report on what has transpired since the last meeting. He noted that, at the last meeting, he had conveyed there were plans for re-building the sidewalks on East Main Street this year, which is not the case. Venkataraman discussed a letter sent by the Richmond Selectboard to the VTrans Secretary last week (included in committee packet) and indicated that a meeting with Secretary Joe Flynn is expected. There is a long history with this project, with many moving parts with this project, a long history. Three main scenarios pertain to the sidewalks, streetscape and water/sewer infrastructure portion of the project. Scenario 1: VTrans will complete the sidewalks as part of their Route 2 project. There are differing views as to whether VTrans committed to the sidewalk component. The meeting with Secretary Flynn may help clarify this point. Scenario 2: Town applies for grants to construct the sidewalks. Local matches are required and staff are investigating utilizing a bond for the required local match. Scenario 3: The bond approved by voters in 2016 may be tapped for the sidewalk construction. Staff are investigating whether the bond vote may apply today for project funding.

The VTrans grants are due by June 4th. Because there will likely not be an answer ahead of that deadline about whether VTrans is including sidewalks in the Route 2 scope of work, Ravi Venkataraman will prepare draft grant applications and send the draft to a committee sub-group for review: Mark Damico, James Floyd and Jon Kart. The draft grant will be provided to the Transportation Committee at our next meeting.

Discussion followed. In response to a question, Ravi Venkataraman said that Waterbury was not required to pay for sidewalk improvements as the project was "grandfathered".

Motion by Jon Kart, seconded by Mark Damico, that the Transportation Committee endorses the Selectboard letter to VTrans, dated May 3, 2021. Voting in favor: unanimous. If additional support from the Transportation Committee is needed, such as contacting public officials, staff will bring those requests forward. Staff will update the Transportation Committee about the Route 2 project at the next meeting. (Chris Cole joined at 6:10 PM.)

UPWP – Bridge Street Project - Ravi Venkataraman and Jason Charest re-capped the three alternatives for the upper portion of Bridge Street presented at the public input session on April 8th. The Trails Committee is recommending Alternative 3 and the project leads would like to hear from the Transportation Committee.

The Transportation Committee first discussed the area near Jolina Court north to the main business block. There was unanimous support for part of Alternative 2, namely for a sidewalk on the east side of

Bridge Street – to connect to the sidewalk in front of the former bank and The Big Spruce restaurant. Committee members did not think a shared use path is desired for that area, as it could add to confusion and pedestrians/bicycling may move across the vehicle travel lanes. Several committee members said the at-grade striping with no raised sidewalk raises safety concerns for pedestrians. Dan Noyes expressed concern about making any changes to the current arrangement in front of the Richmond Market and would like to keep the striping in front of the market instead of placing a sidewalk there. He said that the set-up is working well for large trucks and noted that he owns quite a bit of the area being considered for improvements. Committee members agreed the town should work with Dan Noyes as an active partner for the project. Jason Charest will follow up with the railroad to assess the required distance from the railroad tracks for a sidewalk.

With respect to crosswalks in the upper block, the committee discussed alternative 2 and alternative 3. Discussion ensued about having two crosswalks – one in the current location and one at the Pleasant Street/Depot Street intersection. Bump outs at each would add safety. However, having two crosswalks would result in the loss of an additional parking space. Five members supported having two crosswalks and one member preferred the Pleasant Street/Depot Street location only. Dan Noyes and Jason Charest discussed the width for parallel parking, which is 8 feet. Jason will follow up with Dan to discuss parallel parking in that block.

Dan Noyes left the meeting at that time. Jason Charest and Ravi Venkataraman reviewed the alternatives for the Bridge Street/Huntington Road/Thompson Road/Cochran Road intersection. Venkataraman noted that the Trails Committee preferred alternative 3, for a mini round-about. There was general committee agreement that the mini round-about is ideal, but the project length of time and cost are problematic. Chris Cole said it would be unlikely that federal funds would be available, due to lower crash incidents. None of the alternatives seemed ideal and the Committee asked Jason Charest to work with the consultant team to come up with a revised alterative based on alternative 2 that would slow traffic and add safety for pedestrians (e.g., flashing crosswalk signs).

Northern Bike Ped Master Plan – A steering committee meeting will take place during the week of May 24th, date to be determined. Ravi Venkataraman will send date to Transportation committee members and will post the meeting via public outlets for members of the public. There was not enough meeting time to review the draft section of the plan for Route 2. Committee members will bring comments to the steering committee meeting. Jason Charest left the meeting at this time.

Future of Rural Transit Pilot Project – Cathleen Gent reported that the MMUUSD pilot project proposal was approved and that a kick off meeting will take place in mid-May. A transportation committee from Jericho, Underhill, and Cambridge is advocating a bus system similar to the one advocated for Route 2 and that pilot project will assess both options. The consensus of the Transportation Committee is to not take an active role in this project. Cathleen Gent and Mark Damico may attend the kick off meeting to learn more.

Old and New Business – Cathleen Gent noted the next Committee meeting is on May 25th and that both she and Venkataraman will be out of town for the June 8th meeting, although Venkataraman plans to participate. Mark Damico asked when in-person meetings may resume. Venkataraman said Josh Arneson and the Selectboard are working on a new set up for hybrid meetings.

At 7:30 PM, motion to adjourn by Filkorn, Seconded by Cole. Approved unanimously.

-Cathleen Gent

Richmond Transportation Committee

Meeting Minutes – June 8, 2021

All participants attended the meeting remotely.
Committee members: Erik Filkorn, Allen Knowles, Jon Kart, Mark Damico,

Absent: Cathleen Gent (chair), Chris Cole

Others present: Ravi Venkataraman, Jason Charest, Bryan Davis, Marshall Distel, Chittenden Regional Planning Commission: Sarah Volinsky, Sam Fox, Gary Bressor

John Kart opened the meeting at 5:38 PM.

Meeting Minutes: May 25 minutes moved by Filkorn, seconded by Damico, approved unanimously.

Revisions to Agenda

Allen Knowles would like to take note of 419ppm threshold has been passed.

Route 2 Repaving Project Update

VTrans meeting has not yet been scheduled.

Grant Opportunities

CCRPC is getting ready to send out UPWP grant notices. Richmond's projects were approved – sidewalk scoping and Jericho Road north of School Street. Also south of the Winooski master plan.

Organizational Session - Election of Chair, Clerk, Vice-Chair - Open meeting law

Knowles nominates Cathleen Gent as Chair, Second by Damico. Approved unanimously. Filkorn nominates Cole as Vice Chair, Seconded by Knowles. Approved unanimously. Knowles nominated Filkorn as clerk, seconded by Damico. Approved unanimously.

UPWP Grant – Project Reports

- Bridge Street Project

Several citizens joined for the discussion with a focus on the Bridge Street/Thompson Road/Cochran Road intersection. Jason Charest reviewed some of the previous proposals and why they were not preferred alternatives from the Town's perspective. He noted that the idea of closing Thompson Road did not go over particularly well. Knowles still favors a 4-way stop. Sam Fox does not favor the 4-way. Likens it to the 4-way at the Corner Qwik Stop in Williston. Favors narrowing the road. Charest explained the new proposal that includes a traffic calming island and a 3-way stop. There would not be any significant taking associated with the sidewalk construction. Volinsky spoke out in opposition of a 4-way as well. There was some conversation about what would occur if Thompson Road. The Road Foreman did not support that approach. Kart offered the idea of making Thompson one-way. Volinski asked if speed bumps had been considered. Knowles spoke out in support of speed bumps/tables. Bressor asked if flashing lights were considered. Charest said that they were not appropriate for the existing crosswalk but may be appropriate for the new configuration. Charest reminded us that speed bumps and tables are not silent. Volinsky and Fox still favor bumps and tables over full stops. Charest reminded us that

study and the fiscal year are nearly over. Filkorn noted that the safest option presented was the mini roundabout but instead we are looking to cobble. Charest then showed the roundabout option again. Bressor noted that the land consumed would reduce his buildable units on his land. Knowles moved that we present the current 3-way option as recommended by VHB, seconded by Damico. Neighbors remain interested in exploring speed bumps as part of the final package. Volinski specifically asked that the committee recommend to the Selectboard that traffic calming devices be tried before installing the Bridge Street stop sign. Damico proposed an amendment to substitute a yield sign for the Stop sign on Bridge Street. Seconded by Knowles. All in favor but for Filkorn who felt that the package was not sufficiently complete.

Charest then presented some examples of good and bad deployments of truck aprons. Showed new configuration of crosswalks near the Market/railroad tracks. Motion by Filkorn to support changes to most recent draft. Seconded by Damico. Approved unanimously.

- Northern Bike/Ped Master Plan

Bryan Davis presented the draft report. Committee did not have much time to review the plan in advance so Davis took us through it. More elements including cost estimates still need to be added. Acknowledged committees disappointment with work to date. Pointed out we still have a ways to go on the whole project. Kart offered positive comments about elements of the current draft. Knowles said it looked a lot like what was presented at the last steering committee meeting. Route 2 is the spine and the 3-rod right of way is a major limiting factor. Davis emphasized that we need to get as much as we can out of the VTrans project. Knowles was curious about how narrow bridges would be accounted for on the Rt. 2 sections. Knowles (with support from others present) emphasized the need for interim action on several high-risk points on Rt. 2 including the Slip Lane and the guardrail near the cemetery. Plan is due to go before the Selectboard on 6/21. Comments should be in to Bryan by Friday.

Motion to adjourn by Knowles , Seconded by Damico. Approved unanimously. No abstentions.

-Erik Filkorn

Town of Richmond Selectboard June 21, 2021

Richmond Town Center Meeting Room, 3rd Floor – 203 Bridge Street, Richmond, VT

Meeting may also be joined online or by phone

Join Zoom Meeting Online:
https://us02web.zoom.us/j/88673891764?pwd=MC8ydWRHZk1oMkJqQjNmanRmdlZhUT09

Join by Phone: +1 929 205 6099 **Meeting ID:** 886 7389 1764 **Passcode:** 704397

7:00 PM **Welcome and Public Comment**
7:03 PM **I. Additions or Deletions to Agenda**
7:05 PM **II. Items for Presentation or Discussion with those present**

a) Consideration of appointment of Water and Sewer Commissioners*[1] (10 min)
b) Consideration of restructuring the Richmond Recreation Committee*[1] (10 min)
c) Consideration of approving a road name for a new road at Parcel ID EH-180 on East Hill Rd.*[1] (5 min)
d) Consideration of approving an Operations and Maintenance Plan with the Vermont Department of Environmental Conservation for repairs on Johnnie Brook Rd.*[1] (5 min)
e) Consideration of approving an Operations and Maintenance Plan with the Vermont Department of Environmental Conservation for Volunteers' Green Boat Launch*[1] (5 min)
f) Consideration of appointing an authorized representatives for the American Rescue Plan Act of 2021* (5 min)
g) Consideration of setting the FY22 tax rate*[1] (5 min)
h) Consideration of approval of access permit application 21-10 for parcel ID JR-1783*[1] (5 min)
i) Consideration of approving the scope of services for the FY21 audit*[1] (10 min)
j) Consideration of approving a Memorandum of Understanding with UMIAK*[1] (15 min)
k) Presentation of report from Civic Wellbeing Partners and consideration of approval of applying for a grant*[1] (20 min)
l) Presentation of Unified Planning Work Program: Bridge St. Complete Streets Corridor Study*[1] (20 min)
m) Presentation of Unified Planning Work Program: Richmond Bike, Walk and Trails Plan Phase 1[1] (20 min)
n) Acknowledgement and discussion of receiving a petition requesting a hearing to consider the discontinuation Williams Hill Rd. from 1360 Williams Hill Rd. southward to the point where it intersects with Palmer Road and Beatty Lane[1] (20 min)
o) Presentation by Hunter Wasser on research project related to Policing in Richmond[1] (15 min)
p) Review of potential locations to include in a survey regarding placement of illuminated crosswalks[1] (10 min)
q) Update on status of purchasing a police cruiser (5 min)
r) Update on return to in-person meetings and public access to the Town Center and Library (10 min)

10:20 PM **III. Approval of Minutes, Warrants and Purchase Orders***

a) Minutes of 6/7/21[1]

10:30 PM **IV. Discuss Items for Next Agenda**
10:40 PM **V. Executive Session: Personnel Issue**
10:50 PM **VI. Adjourn**

Time is available at each meeting for public comment. Documents related to this meeting are available at http://www.richmondvt.gov/documents/selectboard-meeting-documents/ If you would like to schedule a time with the Board or need assistance to participate in the meeting, please call Josh Arneson, Richmond Town Manager at 434-5170 or email jarneson@richmondvt.gov. Links to videos of Selectboard meetings can be found at http://mtmansfieldctv.org/
*Denotes Action Item [1]Indicates documents in the packet

Bridge Street Corridor Study

Selectboard Meeting

June 21, 2021

CHITTENDEN COUNTY RPC
Communities Planning Together

TOWN OF RICHMOND
VERMONT

Agenda

Review Study Area

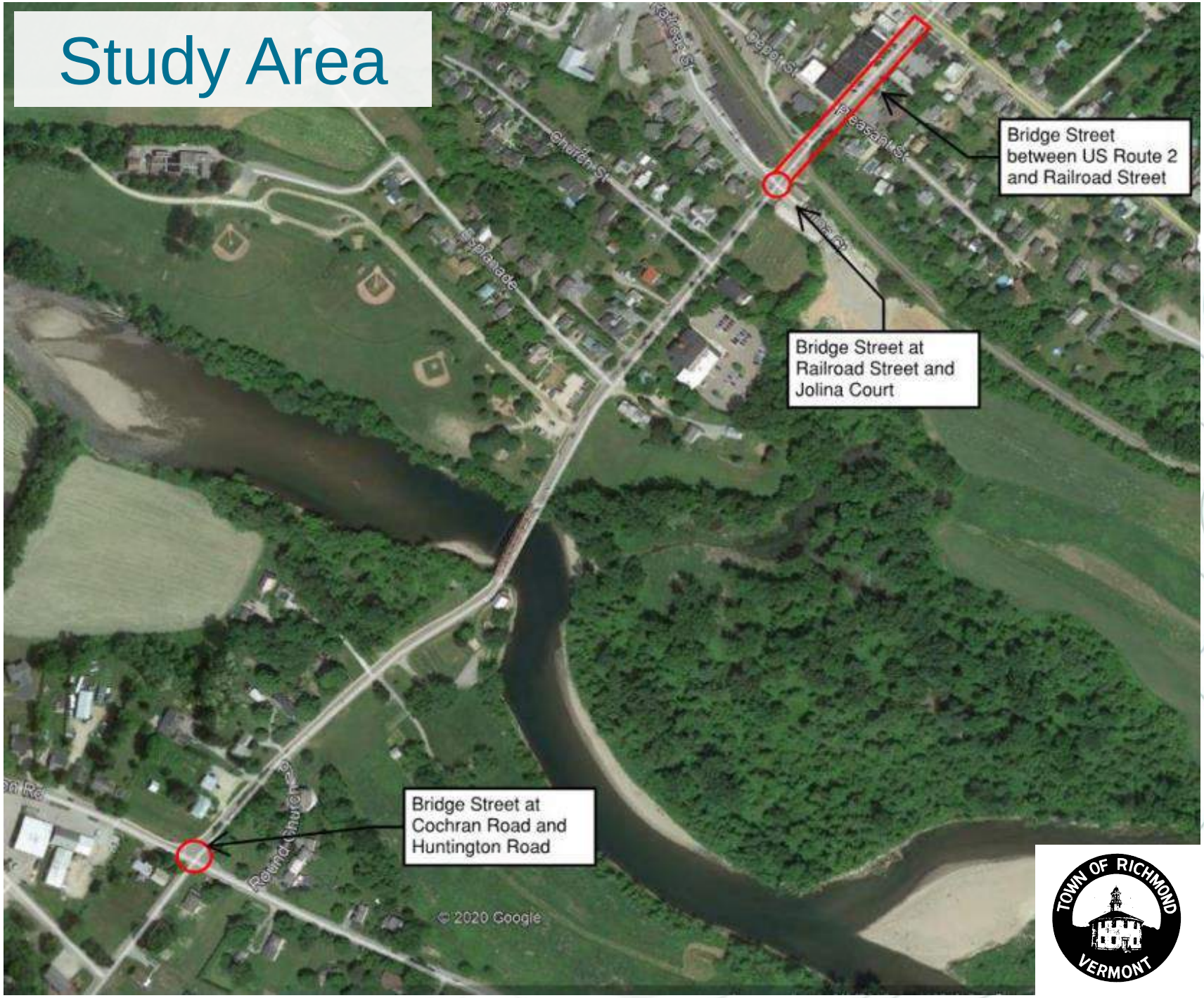
Purpose & Need Statement

Project Process

Preferred Alternatives

Next Steps

Study Area



TOWN OF RICHMOND VERMONT

Project Purpose and Need Statement

Excerpt from Project Purpose

- To **identify** and **prioritize improvements** to create a **multimodal corridor** through the Richmond Village Center that **better accommodates pedestrians and bicyclists where critical infrastructure gaps exist**.

Project Needs

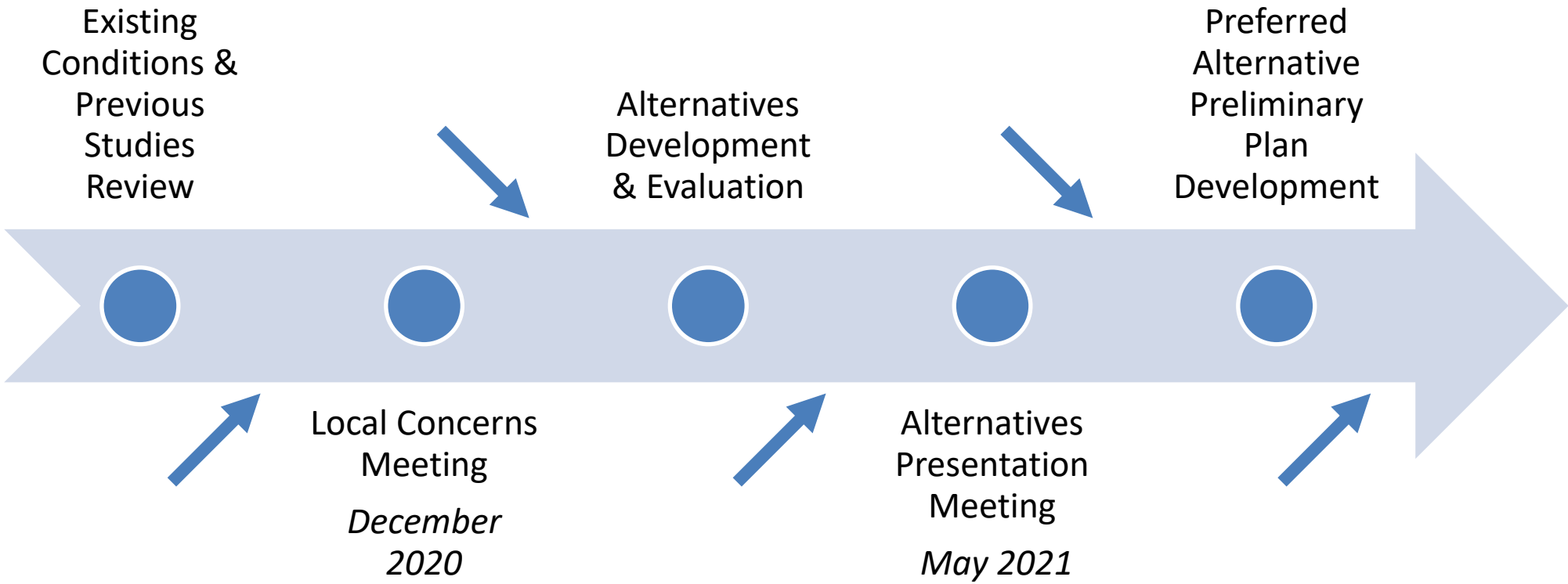
- **Enhance mobility for pedestrians and bicyclists**
  - Critical gaps in existing infrastructure
- **Improve safety for pedestrians and bicyclists**
  - Lack of delineated space for pedestrians and bicyclists requiring shared space with vehicle traffic
- **Maintain parking in support of businesses**
  - Convenient, on-street parking linked to vitality of businesses

vhb

TOWN OF RICHMOND VERMONT

CHITTENDEN COUNTY RPC
Communities Planning Together

Project Process



Transportation Committee & Project Team Input

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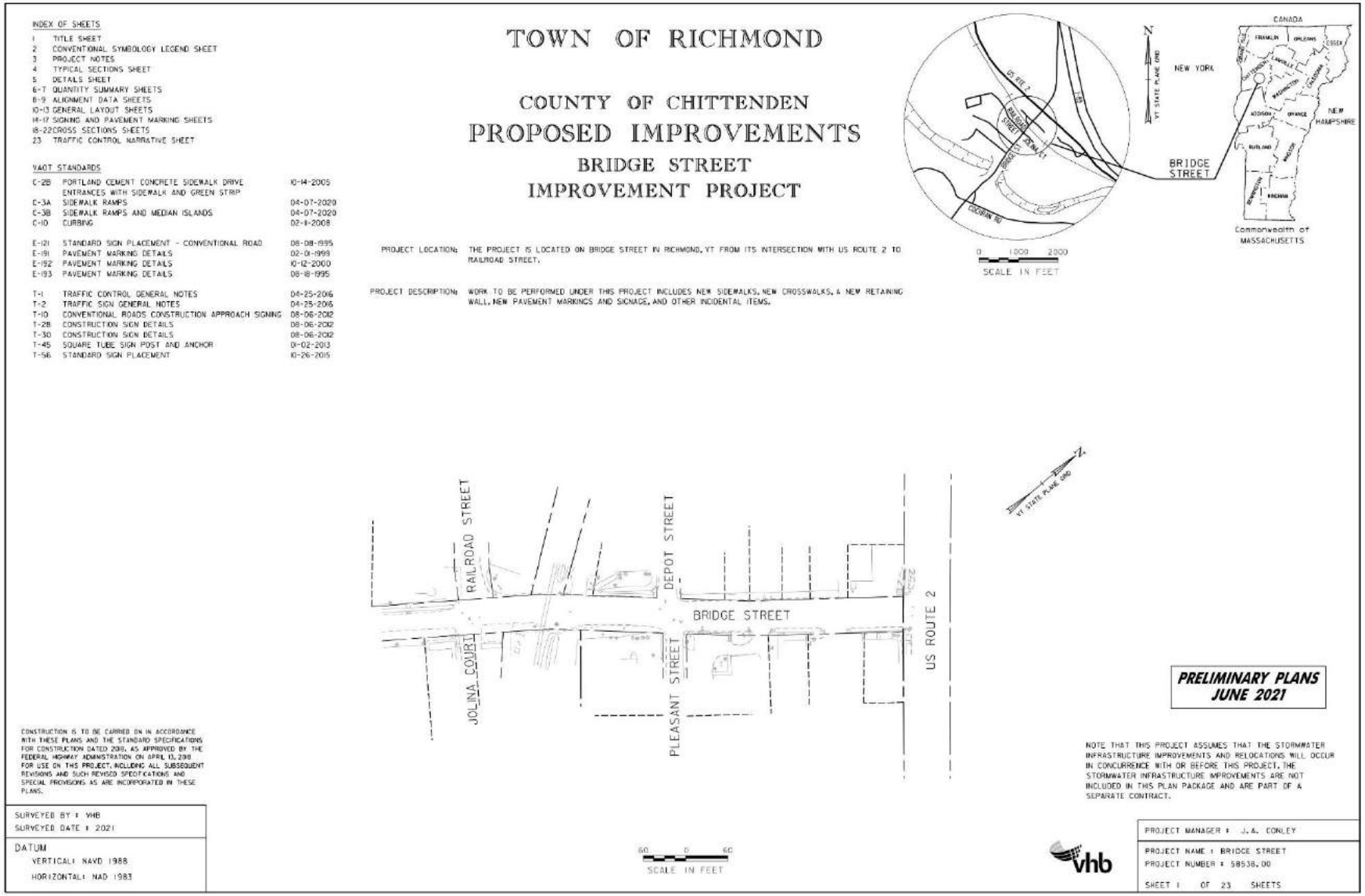
TOWN OF RICHMOND VERMONT

CHITTENDEN COUNTY RPC
Communities Planning Together

Draft Preliminary Plans of Preferred Alternatives



INDEX OF SHEETS

1	TITLE SHEET
2	CONVENTIONAL SYMBOLOGY LEGEND SHEET
3	PROJECT NOTES
4	TYPICAL SECTIONS SHEET
5	DETAILS SHEET
6-7	QUANTITY SUMMARY SHEETS
8-9	ALIGNMENT DATA SHEETS
10-13	GENERAL LAYOUT SHEETS
14-17	SIGNING AND PAVEMENT MARKING SHEETS
18-22	CROSS SECTIONS SHEETS
23	TRAFFIC CONTROL NARRATIVE SHEET

VAOT STANDARDS

C-2B	PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCES WITH SIDEWALK AND GREEN STRIP	10-14-2005
C-3A	SIDEWALK RAMPS	04-07-2020
C-3B	SIDEWALK RAMPS AND MEDIAN ISLANDS	04-07-2020
C-10	CURBING	02-11-2008
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08-08-1995
E-191	PAVEMENT MARKING DETAILS	02-01-1999
E-192	PAVEMENT MARKING DETAILS	10-12-2000
E-193	PAVEMENT MARKING DETAILS	08-18-1995
T-1	TRAFFIC CONTROL GENERAL NOTES	04-25-2006
T-2	TRAFFIC SIGN GENERAL NOTES	04-25-2006
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08-06-2012
T-28	CONSTRUCTION SIGN DETAILS	08-06-2012
T-30	CONSTRUCTION SIGN DETAILS	08-06-2012
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01-02-2013
T-56	STANDARD SIGN PLACEMENT	10-26-2015

TOWN OF RICHMOND

COUNTY OF CHITTENDEN

PROPOSED IMPROVEMENTS

BRIDGE STREET

IMPROVEMENT PROJECT

PROJECT LOCATION: THE PROJECT IS LOCATED ON BRIDGE STREET IN RICHMOND, VT FROM ITS INTERSECTION WITH US ROUTE 2 TO RAILROAD STREET.

PROJECT DESCRIPTION: WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES NEW SIDEWALKS, NEW CROSSWALKS, A NEW RETAINING WALL, NEW PAVEMENT MARKINGS AND SIGNAGE, AND OTHER INCIDENTAL ITEMS.

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2018, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON APRIL 13, 2018 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

SURVEYED BY : VHB
SURVEYED DATE : 2021

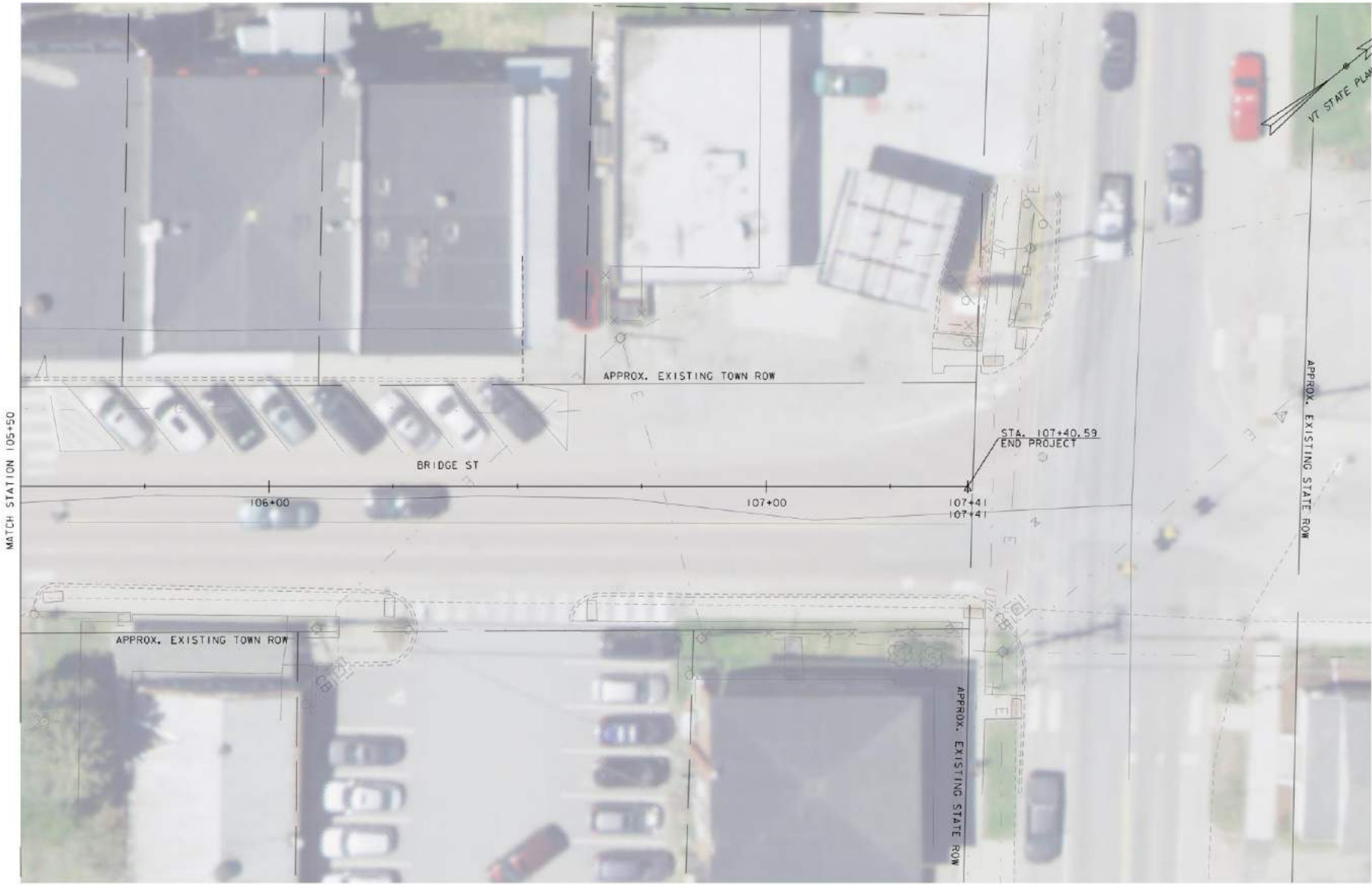
DATUM
VERTICAL: NAVD 1988
HORIZONTAL: NAD 1983

PRELIMINARY PLANS JUNE 2021

NOTE THAT THIS PROJECT ASSUMES THAT THE STORMWATER INFRASTRUCTURE IMPROVEMENTS AND RELOCATIONS WILL OCCUR IN CONCURRENCE WITH OR BEFORE THIS PROJECT. THE STORMWATER INFRASTRUCTURE IMPROVEMENTS ARE NOT INCLUDED IN THIS PLAN PACKAGE AND ARE PART OF A SEPARATE CONTRACT.

vhb

PROJECT MANAGER : J.A. CONLEY
PROJECT NAME : BRIDGE STREET
PROJECT NUMBER : 58538.00
SHEET 1 OF 23 SHEETS



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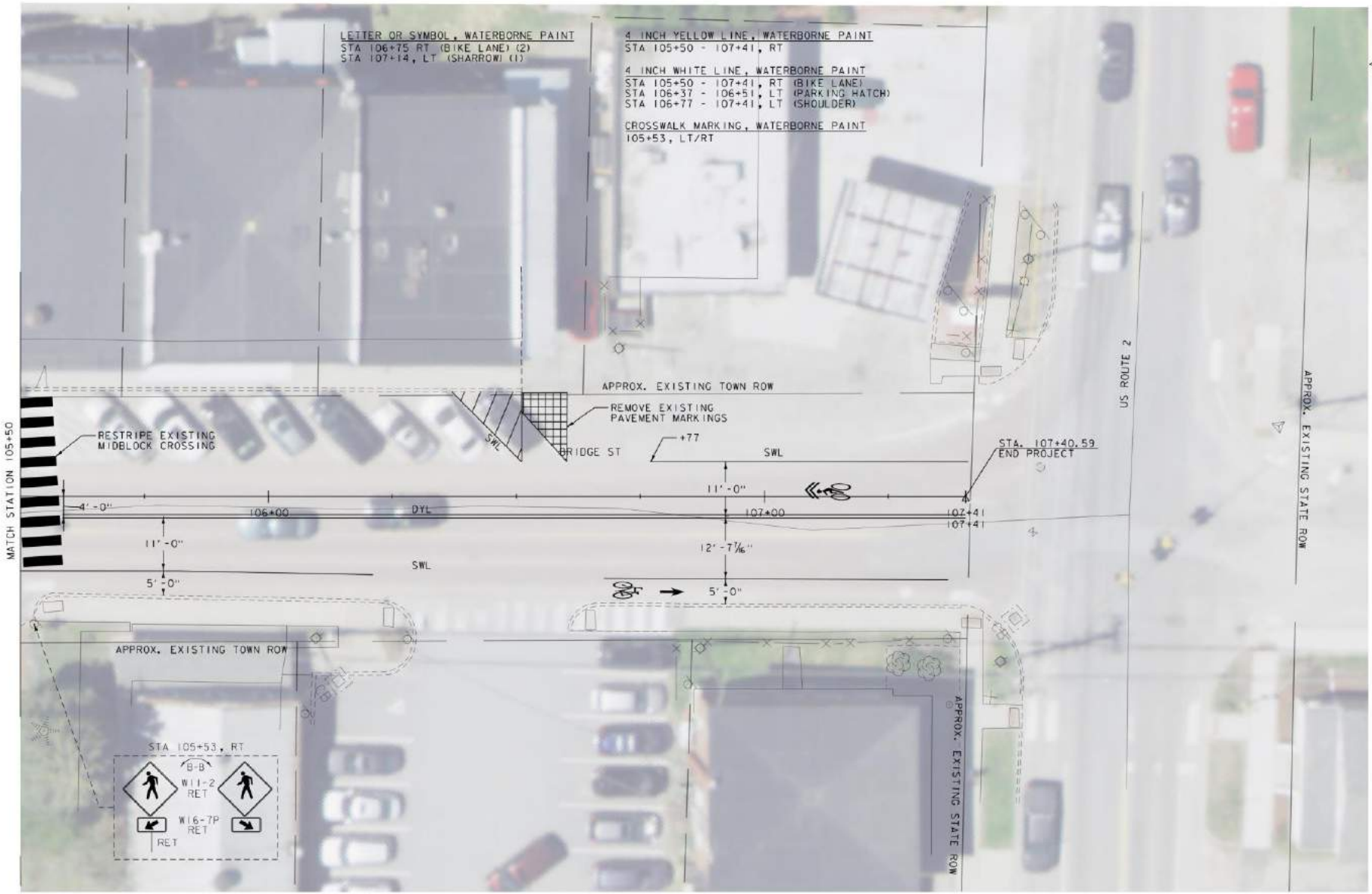
SCALE IN FEET

vhb

PROJECT NAME: BRIDGE STREET	
PROJECT NUMBER: 58538.00	
FILE NAME: z58538_bdr_nul.dgn	PLOT DATE: 6/17/2021
PROJECT LEADER: J.A.CONLEY	DRAWN BY: C.K.FORD
DESIGNED BY: C.K.FORD	CHECKED BY: K.M.SENTOFF
GENERAL LAYOUT (SHEET 3 OF 4)	SHEET 12 OF 23



SIGN LEGEND
R&R = REMOVE AND RESET
RET = RETAIN
N = NEW

PAVEMENT MARKING LEGEND
SWL = SINGLE WHITE LINE
SDWL = SINGLE DASHED WHITE LINE
DYL = DOUBLE YELLOW LINE
SDYL = SINGLE DASHED YELLOW LINE

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SCALE IN FEET

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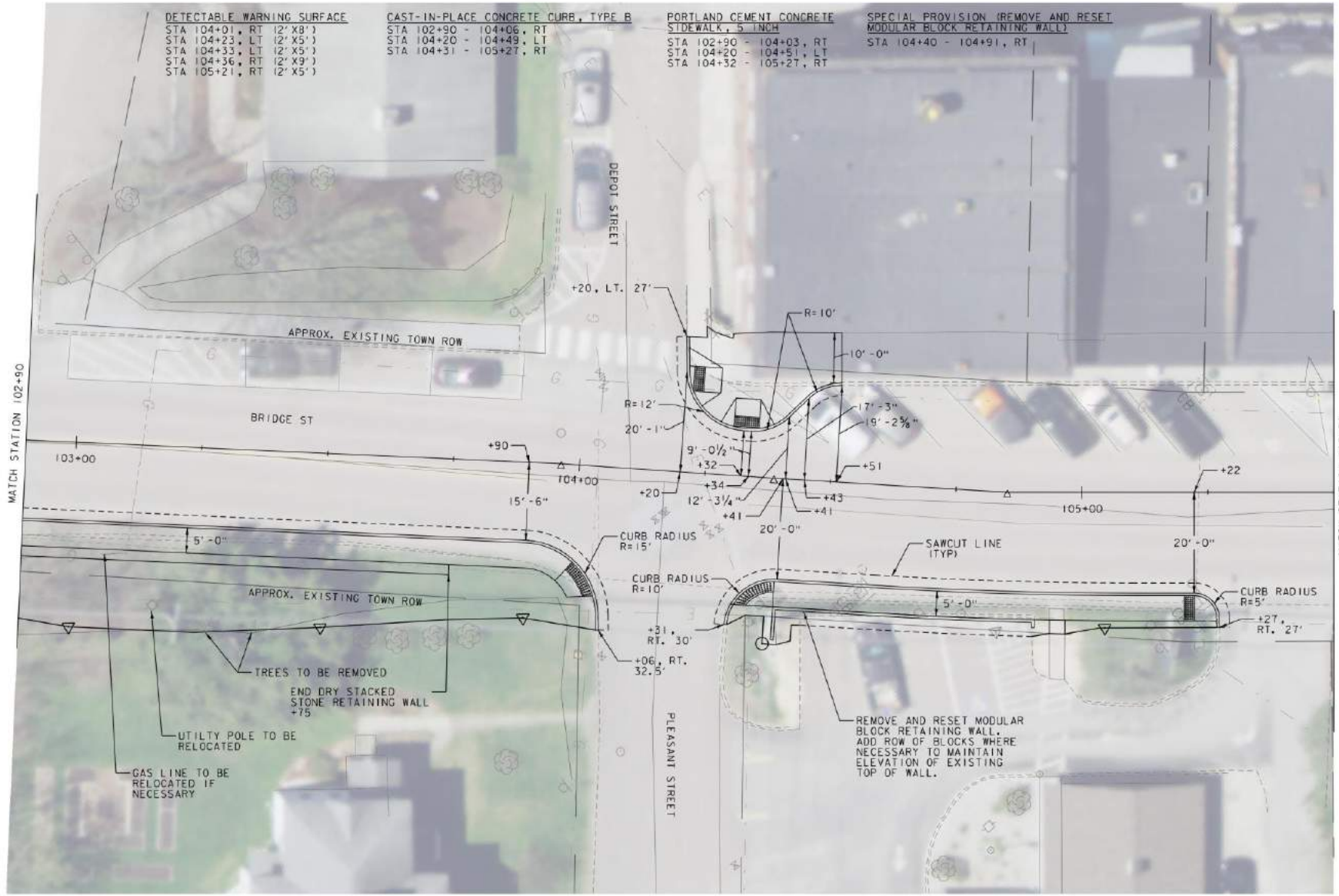
DRAWN BY: C.K.FORD
CHECKED BY: K.M.SENTOFF

SIGNS & PAVEMENT MARKINGS SHEET 13 OF 41
SHEET 16 OF 23



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PROJECT NUMBER:	58538.00
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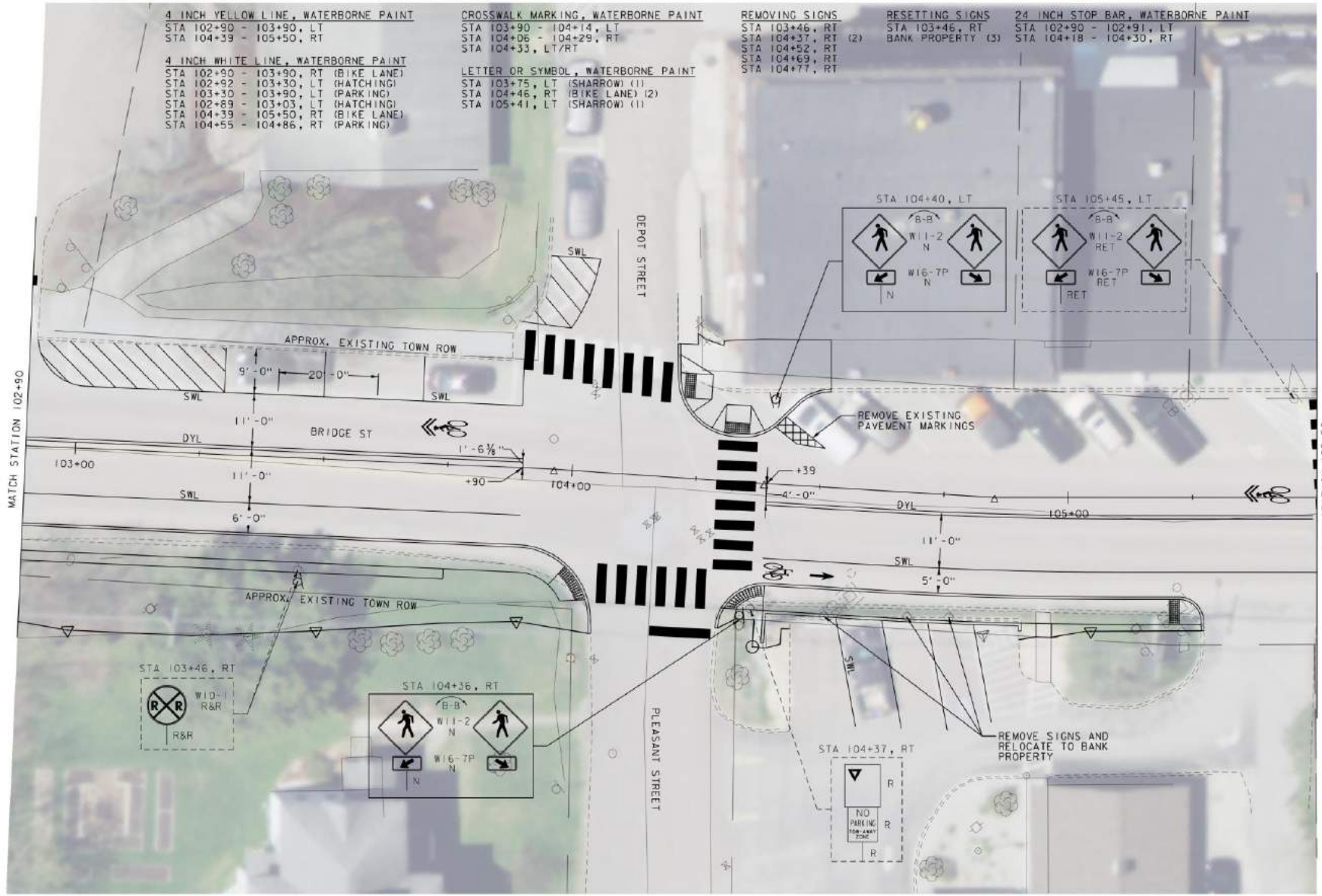
PROJECT LEADER: J.A.CONLEY	DRAWN BY: C.K.FORD
DESIGNED BY: C.K.FORD	CHECKED BY: K.M.SENTOFF
GENERAL LAYOUT (SHEET 2 OF 4)	SHEET 11 OF 23



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DRAWN BY: C.K.FORD
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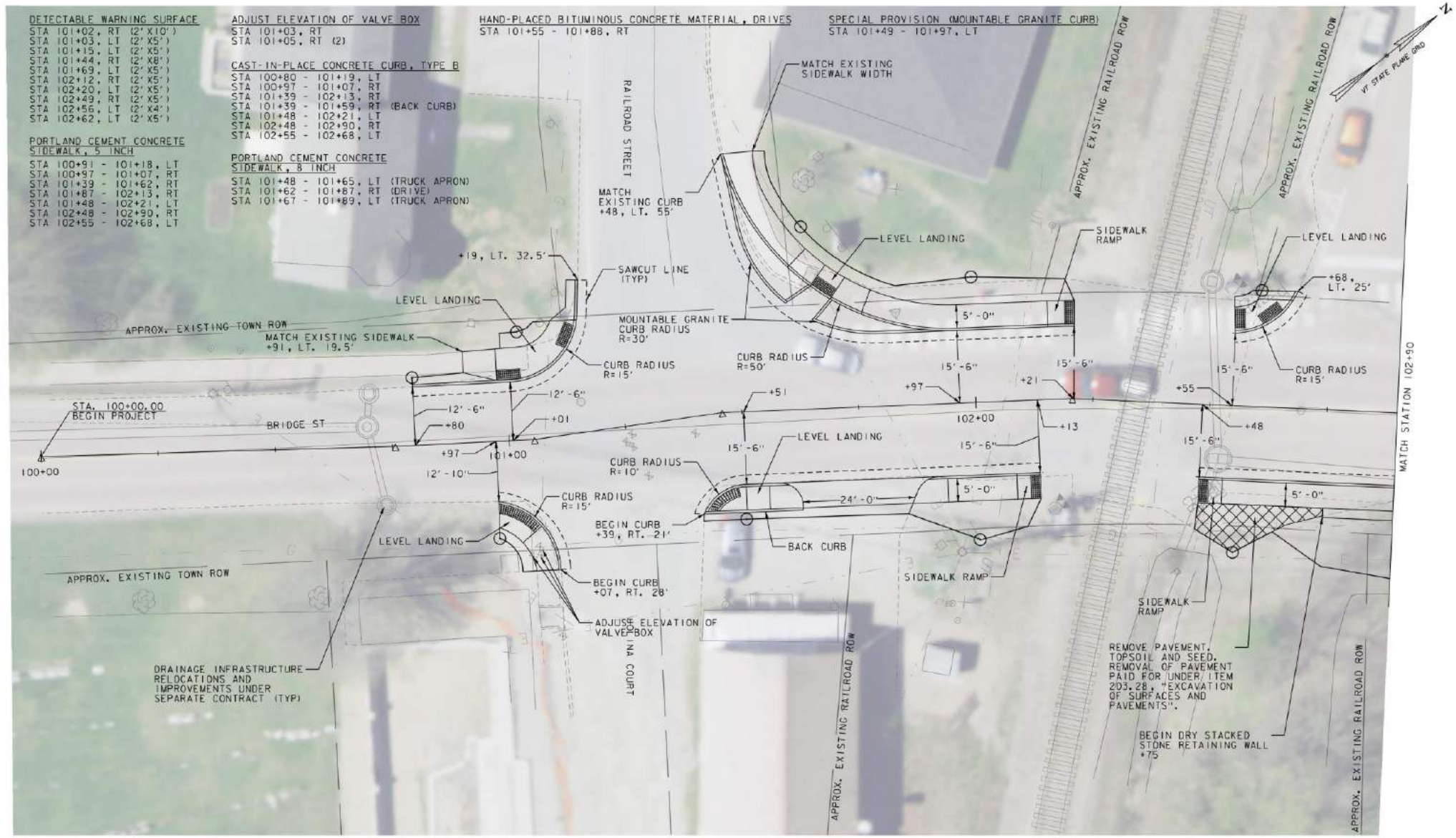
SIGNS & PAVEMENT MARKINGS SHEET 12 OF 41SHEET 15 OF 23



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DESIGNED BY: C.K.FORD	CHECKED BY: K.M.SENTOFF
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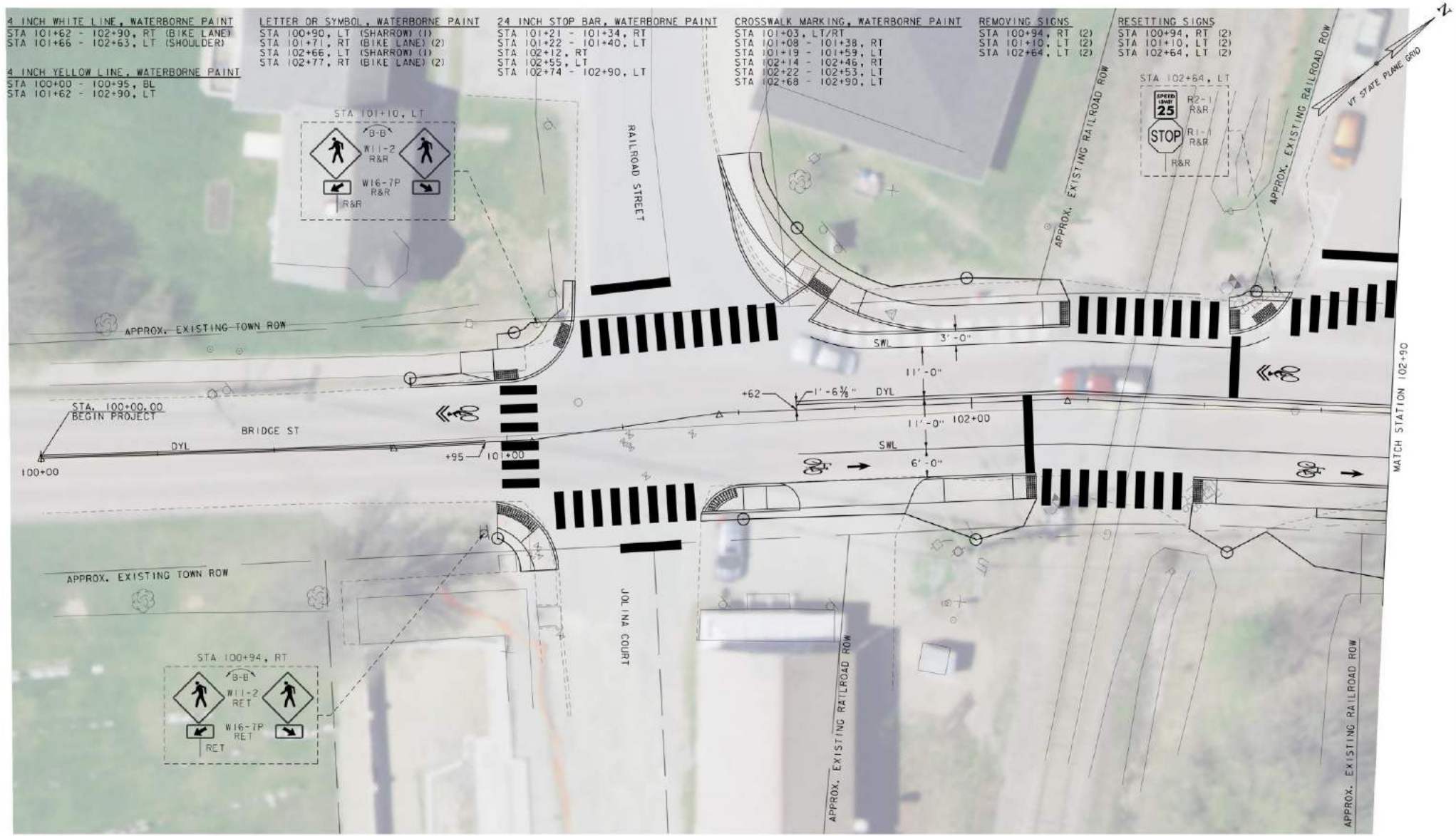

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DESIGNED BY: C.K.FORD
PLOT DATE: 6/17/2021
DRAWN BY: C.K.FORD
CHECKED BY: K.M.SENTOFF
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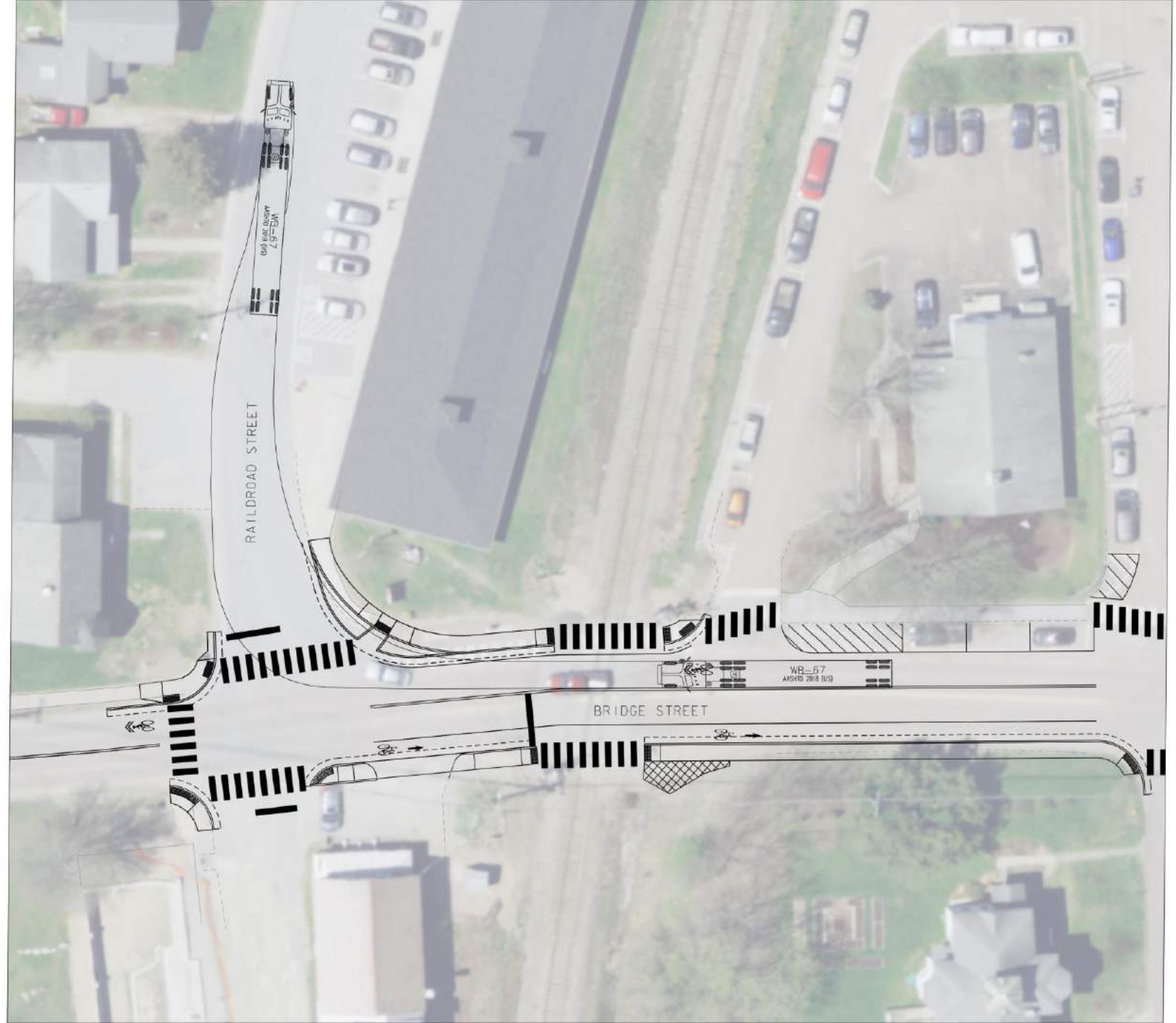
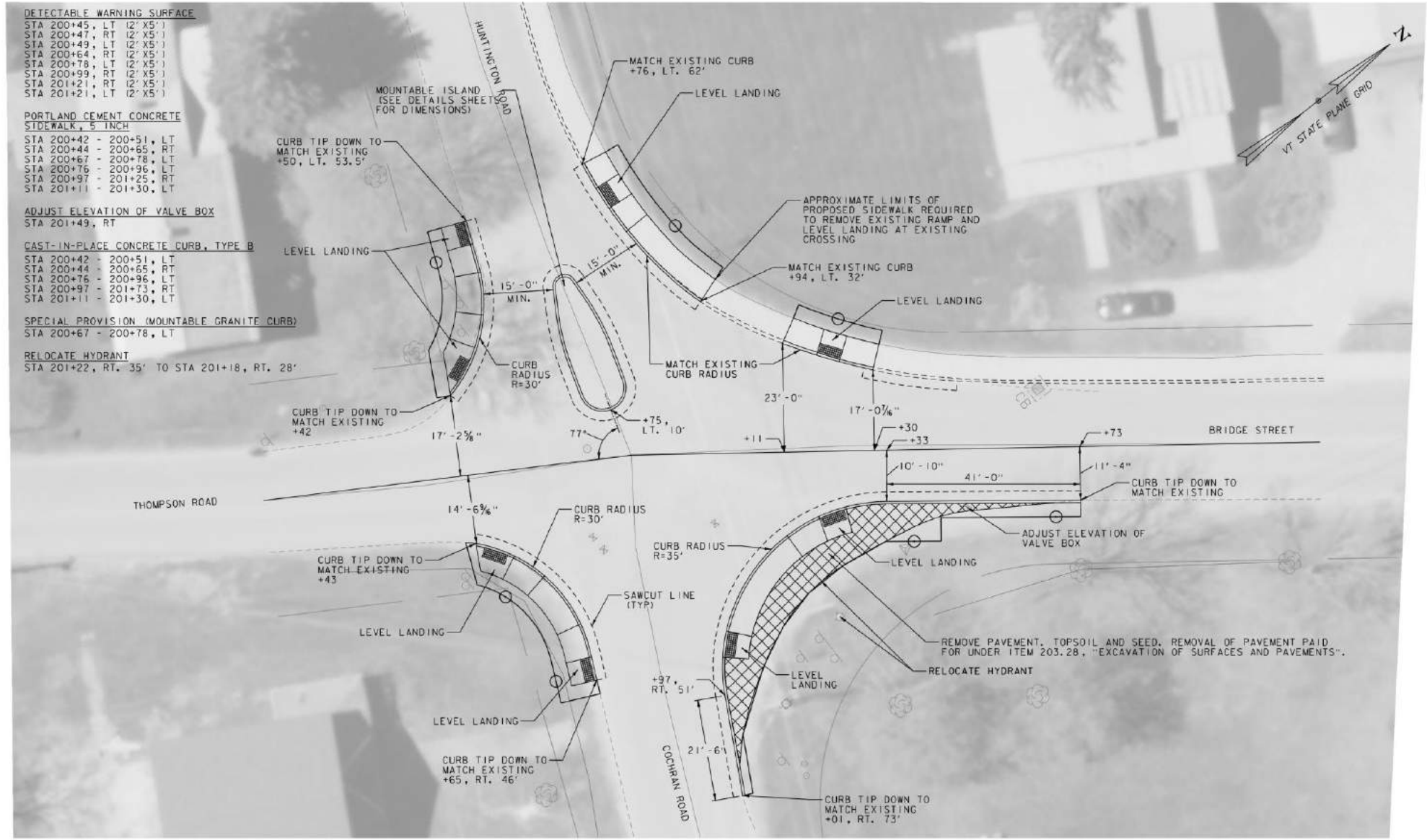

RAILROAD STREET
BRIDGE STREET
WB-67
AASHTO 2018 (US)



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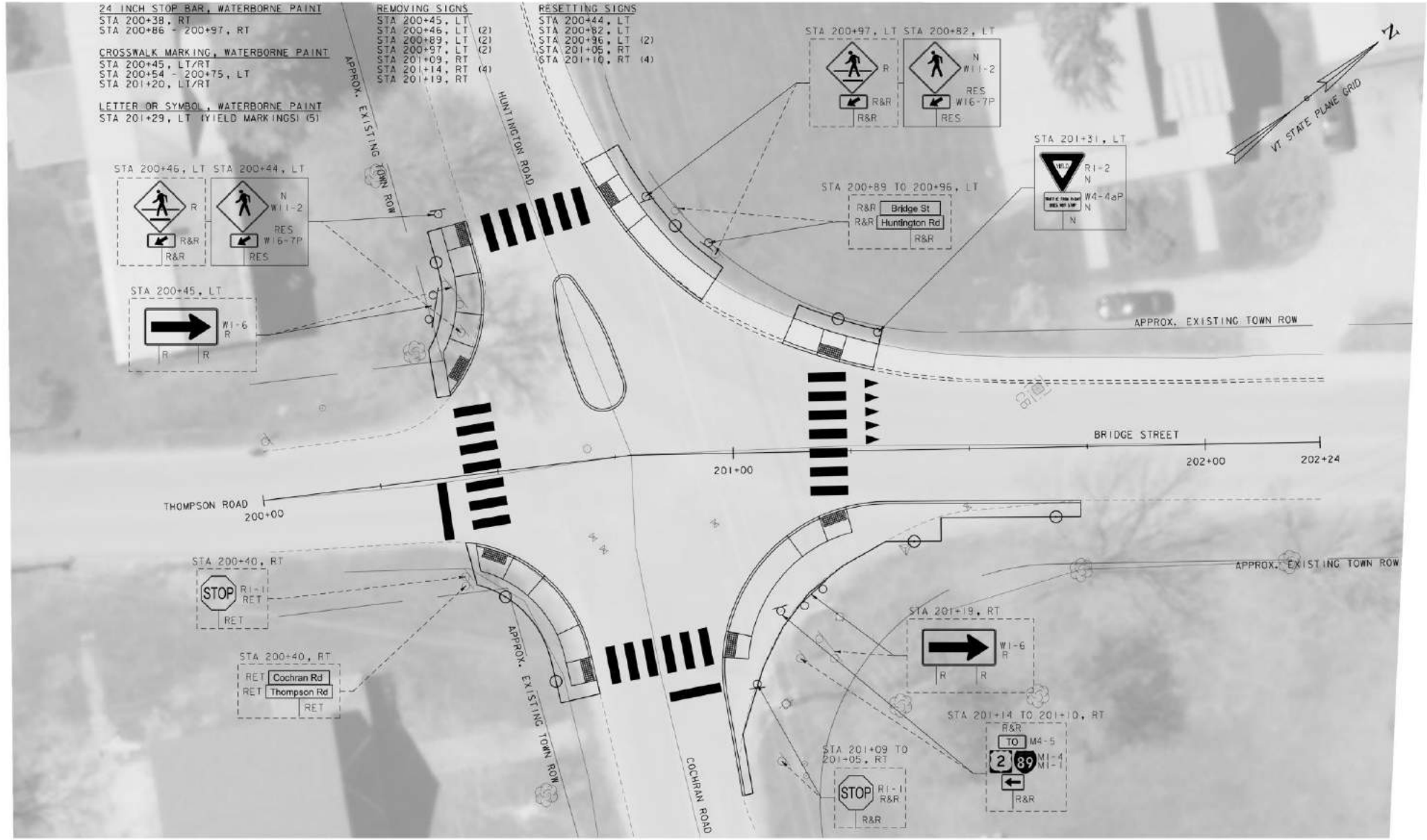
GENERAL LAYOUT (SHEET 4 OF 4)	SHEET 13 OF 23



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SIGNS & PAVEMENT MARKINGS SHEET 14 OF 41	SHEET 17 OF 23

Please Share Your Thoughts with Us

Chittenden County RPC
Communities Planning Together

Town of Richmond Vermont

Jason Charest
Senior Transportation Planning Engineer

jcharest@ccrpcvt.org

Ravi Venkataraman
Town Planner

802-434-2430
rvenkataraman@richmondvt.gov

vhb

Selectboard Minutes
6/21/2021

Members Present in person: Christine Werneke, Bard Hill,
Members by Zoom: David Sander, Cody Quattrocci, June Heston
Absent:

Staff Present in person: Josh Arneson, Town Manager;
Staff Present by Zoom: Kathy Daub-Stearns, Admin. Assist.; Ravi Venkataraman, Planner;
Kendall Chamberlain, Water/Sewer Superintendent; Kyle Kapitansky, Police Chief;

Others Present in person: Ian Bender, Stefani Hartsfield, Jean Bressor, Willie Lee, James Cochran, Tyler Merritt, Jack Linn
Others Present by Zoom: Lauck Parke, Pennie, Diane Mariano, Justin Geibel (Water Quality Project), Jon Kart, Julie Rusk & Catalina Landen of Civic Wellbeing Partners, Martha Nye, Elizabeth Parke, Erik Filkorn, Otie Filkorn, Jean Bressor, Fran Huntoon, Allen Knowles, Cody Quattrocci, s.fox, Adam Burnett, Chinta, Justin Graham (Rise VT), Kate Kreider, Elizabeth Parke, Hunter Wasser, Veronique Biettel, Denise Noble, Kristen Lohse, Cathleen Gent, Karen Sentoff, Andy Solomon, Jason Charest (CCPRC), the meeting was recorded for MMCTV Channel 15

PLEASE NOTE: The CHAT dialog is attached at the end of the minutes.

Called to Order: 7:06 PM

Welcome by Christine with a reminder of the meeting rules with hybrid approach, some in person and some by zoom. Reminder full agenda and will do best to keep it on track, members of audience in public please state name to keep minutes accurately.

Comments from the public:
Ian Bender was curious about the "Black Lives Matter" sign and flag being back up asking if there was a meeting last Friday night and if the Selectboard members had discussed them prior to the meeting. Christine explained that no previous decision about future years had been made for last year's Resolution add that there had been a request for the resolution to be updated and because June 19th was meaningful it was decided to have special meeting. Ian thought that in fairness to public there should have been more discussion on such a sensitive issue.

I. Additions or Deletions to Agenda – none

II. Items for Presentation or Discussion with those present

a) Consideration of appointment of Water and Sewer Commissioners

Christine reported:

- that by Charter and Statute we have a Water/ Sewer Commission that has five (5) members, with two (2) members being residents and three (3) from the Selectboard.
- that we have one (1) customer, Fran Huntoon, who has requested to be reappointed to the commission and the Selectboard will need to fill the vacant resident seat but before doing so asked the public if anyone had interest in being on the Commission, there was no reply.
- that Bard said we need to appoint four (4) Selectboard members until a customer can be found willing to serve

David moved to approve Fran Huntoon and Selectboard members Bard Hill, David Sanders, and June Heston to one (1) year terms on the Water and Sewer Commission; should another customer be found to serve June Heston will relinquish her seat; Bard seconded. Roll call vote: Bard, June, Cody, David, and Christine voted affirmatively. Motion passed.

b) Consideration of restructuring the Richmond Recreation Committee

Christine reported:
- that this is a change that happens when volunteers comprise the committee seats

David moved to approve restructuring the Richmond Recreation Committee to consist of six (6) Richmond residents, one (1) Bolton resident, one (1) Huntington resident, and no alternate seats; June seconded. Roll call vote: Bard, June, Cody, David, and Christine voted affirmatively. Motion passed.

c) Consideration of approving a road name for a new road at Parcel ID EH-180 on East Hill Rd.

Christine reported:
- that the access permit was just approved
- that E911 has approved the name

June moved to approve the name Randal Farm Rd. for the new road at Parcel ID EH-180; Bard seconded. Roll call vote: Bard, June, Cody, David, and Christine voted affirmatively. Motion passed.

d) Consideration of approving an Operations and Maintenance Plan with the Vermont Department of Environmental Conservation for repairs on Johnnie Brook Rd.

Christine reported:
- that the plan came through the Youth Conservation Corp through the Dept of Environmental Conservation
- that this will complete that work

Discussion included:
- that Bard asked if this was a standard agreement, Josh said yes.

June moved to approve the Operations and Maintenance Plan with the Vermont Department of Environmental Conservation related to the repairs on Johnnie Brook Rd.; Bard seconded. Roll call vote: Bard, June, Cody, David, and Christine voted affirmatively. Motion passed.

e) Consideration of approving an Operations and Maintenance Plan with the Vermont Department of Environmental Conservation for Volunteers' Green Boat Launch

Christine reported:
- that this is the same as the previous item
- that this work and agreement has been reviewed by Pete Gosselin who confirmed their ability to do the work

David moved to approve the Operations and Maintenance Plan with the Vermont Department of

Environmental Conservation related to the construction of the boat launch at Volunteer's Green; Bard seconded. Roll call vote: Bard, June, Cody, David, and Christine voted affirmatively. Motion passed.

f) Consideration of appointing an authorized representatives for the American Rescue Plan Act of 2021

Christine reported:

- that the Act provides money directly to the municipality
- that Josh Arneson (Town Manager) and Connie Bona (Financial Director) are collecting information about how the funds can be spent
- that it is anticipated that Richmond would receive $215,605 in June of 2021 and again in 2022.
- that use of the funds will be discussed at future meetings once guidelines are available

Discussion included:

- that the Selectboard was asked if residents would be involved in how funds would be spent, Josh said there was no rush, and the community will be included in the discussion. Stephanie Hartsfield asked about the rules, Josh said VLCT has been providing good information.
- that June asked about when the money would be received by the town, Josh said soon, but the advice is not to spend it until the guidelines were set

June moved to appoint Connie Bona (Finance Director) as primary authorized representative and Josh Arneson (Town Manager) as secondary authorized representative from Richmond for the American Rescue Plan Act; David seconded. Roll call vote: Bard, June, Cody, David, and Christine voted affirmatively. Motion passed.

g) Consideration of setting the FY22 tax rate

Christine reported:

- that this process began months ago with the budget and grand list value was needed before the rate could be set
- that the increase is 2.6% over the previous year
- that the rate will be 0.7486 an increase of .0189

Discussion included:

- that Josh explained the veteran, homestead, and non-homestead exemptions
- that Stephanie Hartsfield asked if it was a benefit to having affordable housing or did it cost the taxpayers money, Josh replied that the town voted for the veteran exemption, but the state does not recognize what the Town has decided to exempt, so taxpayers do pay a little more to make up the difference.

June moved to set the FY22 Municipal Tax Rate at $0.7486; Bard seconded. Roll call vote: Bard, June, Cody, David, and Christine voted affirmatively. Motion passed.

Discussion continued:

- that someone asked what was this year's increase over last year, Christine said 2.6% is the combined
- that given the cost of living rate increase, taxes went down, Christine added that $90,000 was spent to lower the tax rate this year

h) Consideration of approval of access permit application 21-10 for parcel ID JR-1783

Christine reported:
- there was one small change in the location of the access
- that this was a temporary access
- that it would be removed when logging was completed

David moved to approve access permit application 21-10 for parcel JR 1783; Bard seconded. Roll call vote: Bard, June, Cody, David, and Christine voted affirmatively. Motion passed.

i) Consideration of approving the scope of services for the FY21 audit

Christine reported:
- that Sullivan & Powers provides the services
- that this is the third and final year of the bid from the previous RFP so this will go out to bid again next year

Discussion included:
- that June wanted to have a discussion with Sullivan & Powers prior to doing the audit
- that Josh said they are expected to do the audit in September so there is time to have them come in to have a discussion with the board before that
- that Christine asked if results could be gotten sooner for budgeting, Josh said that certain numbers have been received in the past and should be no problem this year

June moved to approve the scope of services submitted by Sullivan and Powers for the FY21 audit; Bard seconded. Roll call vote: Bard, June, Cody, David, and Christine voted affirmatively. Motion passed.

j) Consideration of approving a Memorandum of Understanding with UMIAK

Christine reported:
- that she apologized that some people thought a decision was being made at the last meeting and since then work had been done with UMIAK on the MOU

Discussion included:
- that UMIAK was no longer interested in utilizing Volunteer's Green, Overocker Park will be used as suggested
- that the MOU needed to be revised to reflect the change in location
- that Bard said that there had been concern about reserved parking spaces and that was not the case, and that the MOU does not afford UMIAK any benefits not allowed other businesses
- that June said that Overocker Park was a good choice and was happy with UMIAK's decision
- that Rod West said that Overocker Park was an unofficial park, and he hoped the Selectboard would add it to the Park Use Ordinance. He expected UMIAK would be putting up signs at Overocker Park and thought the Selectboard should make that part of the MOU since commercial activity and signs need approval. Christine said that there was a way to move forward and would have the subject back on the agenda
- that Jon Kart liked UMIAK being at Overocker Park saying that Thursday evening the Trails and Parking Committee would be meeting there to look at access points. saying

there were some places that were better to access the river to help prevent erosion than others
- that Diane Mariano was concerned that the access points have an impact on communities, she said the Bombardier Field is already at overflow and having UMIAK bringing people would increase the numbers, she did not want more advertising, she wanted to know why do more, asking how would it be decided if the MOU with UMIAK is working and felt it was a problem having a commercial entity bringing more activity to a temporary parking situation.
- that Cody asked if UMIAK was directing people to park at Bombardier field, Diane Mariano said it would be natural that there would be more people looking to park there because of UMIAK's presence. Christine said that we have a business in town that is renting recreational devices and have wonderful job managing it. She said that UMIAK has been good about listening to issues and their plan is underway, that we are trying to manage this as well as can be without directing UMIAK's business. This will be brought back for the discussion to continue.
- that Diane Mariano asked if they were going into Bombardier to drop people off, Christine said that she did not know, June said that Overocker Park was a better spot, and he did hear that at the last meeting. Diane Mariano said that if they pull up on the side of the road, then we would be back to having a hazard. Stephanie Hartsfield asked that the Rec Committee be included in these discussions, Christine agreed.
- that Pennie said UMIAK may want to assist in being involved in the parking solution by being clear with their customers about what is expected

k) Presentation of report from Civic Wellbeing Partners and consideration of approval of applying for a grant

Christine reported:
- that this is related to the DASH grant work
- that this would build resiliency and wellbeing in our community
- that there is a mental health crisis in our state
- that this work would help Richmond community members

Julie Rusk & Catalina Landen presented on behalf of Civic Wellbeing:
Catalina Langen reported:
- that their organization brings tools on action planning for communities
- that they are committed to racial equity and diverse perspectives

Julie Rusk reported:
- that the current work involved visioning and planning for initial implementation
- that going forward implementation would be the goal
- that they would be working to make the whole greater than its individual parts
- that they would be providing a gap analysis
- that wellbeing encompasses a lot of layers of experiences
- that Richmond has many regional partners
- that Civic Wellbeing brings framework for implementation
- that the DASH grant will be released for applications in Aug/ Sept 2021
- that there is a United Way grant for prevention of drug and alcohol abuse that can be applied for now
- that this initiative brings opportunities for overall wellbeing
- that the recommended actions being asked for would be for the Selectboard to approve the concept of a collaborative effort and apply for the funding opportunity, to submit

the grant application, and acknowledge the need for a community wellbeing coordinator which would be for a new town position.

Discussion included:

- that Bard said he grappled with what the town's capacity is and what should be done and by whom, that creating a job description and position when the Howard Center does this type of work, he did not see the need for duplicating the effort adding that to do all this in ten (10) days would probably not happen. Christine said that the deadline is for the grant application, which is already near completion, that this is for the grant. Bard said that that if it is about a position, Christine said the grant is not for the position, Julie Rusk said that the grant is mostly written for funding that will continue the discussion and to do some activities that would not otherwise be available to the community this summer and would continue the funding possibilities. June asked who would manage the grant if there was not a position made, Julie Rusk replied that the money would be awarded to the Town who would have oversight of the contract. June asked if the second DASH grant would be the source of funding for a position, Julie said that it could be one of avenues, that there were other funding opportunities and that this could position the town to receive them.
- that Stephanie Hartsfield said she has been before the Selectboard for 5-6 years about this type of thing and that there is a way to do this at the town level. She thought Richmond could get ahead of the curve on alcohol and drug education and prevention. She said that there are parts of VT that are missing resources for mental health and drug and alcohol prevention, and that United Way approached them about applying for the grant. That having a sustainable position, like the conservation committee has funding from the taxpayers, was her goal. Her opinion was that the Chittenden Prevention Program cannot work for the entirety of Chittenden County. Her suggestion was that the grant be applied for and the details of how a position could go forward be worked out later. That the grant is not ready to be applied for, but close because the budget was not yet been determined.
- that Justin Graham (Rise VT) said United Way knew the timing was not great so they reached out to see who would be able to do something on short notice. He said that the job description was a reach, that the goal was to continue the work being done and determine how to expand the work being done at Camels Hump and MMUHS.
- that Christine said that the job description is not what is on the table right now. She said there was a number of activities happening in our town and neighboring towns and finding out who and what was being done would be important. That the Howard Center, Restorative Justice, and other programs function in our town including OCCC that supports kids going to camp. She said we are not supporting them in a coordinated effort and would like to know how that can be done, to utilize the programs we have best, she said that was her take on this adding we are investing in resources now. Bard said it is not just the position but how would it be successful as an individual position as opposed to the resources available at Howard Center. June said we have no obligation beyond figuring it out over the next 3 months. Bard asked how much the grant was for, $10-$15,000 was the answer. Bard said that UVM takes 30% to administer grants, Julie Rusk said it could be looked into. Denise Noble said this money is to see how to coordinate to be more effective making people healthier and strengthened. Christine said it is a planning opportunity.
- Christine asked if we wait until July 6th would we miss the money. Justin Graham said the group would probably look for another sponsor for the grant. He added that an admin fee can be taken up to the max of10%.

- Christine asked if the board wanted to proceed with the grant using the information from this meeting

Christine moved to approve applying for the ADAP grant thru United Way pending review of the grant and naming Josh Arneson as the Grant Manager; Bard seconded. Roll call vote: Bard, June, Cody, David, and Christine voted affirmatively. Motion passed.

l) Presentation of Unified Planning Work Program: Bridge St. Complete Streets Corridor Study

Ravi reported:
- that the goal was to wrap up the Bridge St. study
- that he described the study area and what project needs were identified during the public meetings
- that the project process was outlined
- that draft plans were contained in the meeting documents and the proposed changes described
- that anyone could send him questions or concerns

Discussion included:
- that Bard asked about a sidewalk on the side of the old TD Bank ; Ravi said that ideally there would be sidewalks on each side of the street from Volunteers Green up to where TD Bank had been located
- that the cost of construction of sidewalks is $277/ft concrete with granite curbs
- that the plan proposed changes to the flow of traffic through town at the Cochran and Huntington Rd intersection using additional yield and stop signs for pedestrian and bicycle traffic.
- that June thought it was a high accident area, Bard said it was not, Jason Charest (CCRPC) said it was not. Karen Sentoff said the high accident area was in town near the railroad crossing. Bard said there has been a request for a lighted crosswalk there.
- that highway has not reviewed the proposed changes
- that Jon Kart said that while the area was not a high accident area the Transportation Committee had gotten feedback that residents did not want to cross there. Allen Knowles said this was the best attempt to satisfy concerns without having a full stop.
- Tyler Merritt said that he liked the idea of slowing people down through that intersection and it seems this would alleviate some confusion for drivers

June moved to accept the Bridge Street Complete Streets Corridor Study presented; Bard seconded. Roll call vote: Bard, June, Cody, David, and Christine voted affirmatively. Motion passed.

m) Presentation of Unified Planning Work Program: Richmond Bike, Walk and Trails Plan Phase 1

Ravi reported:
- that this is another CCPRC plan
- that the study was split into two (2) sections for budgeting and planning purposes
- that the community was involved through the Transportation Committee, the Bike/Pedestrian Master Plan Project Steering Committee, Online WikiMap, two (2) community meetings and direct emails from residents
- that a summary of the public engagement findings was provided

- that an overview of the facility toolkit section of the study was provided
- that the short-term recommendations were reviewed
- that next steps, phase 2, would build on this work by selecting priorities

Discussion included:
- that June said the amount of work done was amazing, Bard said that these types of activities are foundational to getting state and federal funding, Cody thanked Ravi and looked forward to seeing some of this down the road.
- that Diane Mariano, thought we could do better as it related to accessibility for those who have mobility issues or use strollers, walkers, or canes.

Christine thanked Ravi for both reports and the work involved in them.

n) Acknowledgement and discussion of receiving a petition requesting a hearing to consider the discontinuation Williams Hill Rd. from 1360 Williams Hill Rd. southward to the point where it intersects with Palmer Road and Beatty Lane

Christine reported:
- that she acknowledged that items were posted in the packet but there was no action being taken on this tonight
- that there has been a lot of discussions that had taken place over the last two weeks
- that a hearing date needed to be set promptly and declassifying a class 4 road was not something done often
- that the Selectboard had been trying to catch up on the history
- that the Trail Committee is also requesting building a trail and knowing the location of the road was also a concern

Josh reported on the procedures related to next steps for the petition:
- that the Selectboard had the petition to declassify the road and would set an hearing date
- that there were a number of notices that would have to go out 30 days before the hearing
- that there would need to be a site visit
- that the location of the road needed to be determined
- then a hearing for the petitioners to speak
- then a hearing for anyone else the Selectboard would like to hear from as well as community members to speak
- then 60 days is given to make the decision
- then there is a 30 day appeal period for anyone opposed to the decision

Christine stated that was what had been learned about the process and the Selectboard was still informing themselves about the rules and how to approach this.

Discussion included:
- that there was a question about what is trying to be accomplished so the intent was clear to everyone
- that everyone was asked to try and understand someone else's position before responding as the discussion continued
- that the hearing date will be set at the July 6th Selectboard meeting

- that June said there would be a site visit and flagging done, then asked if that replaced a survey. Josh said a survey is not necessarily needed, that GPS points could be laid out or a survey done with notice to people that it would be taking place.
- that Pennie understood the process and asked what the status was of the Trail Committee's proposal for a trail there. Christine replied that the proposal was received, it was presented June 7th and no decision was made based on questions raised about the right-of-way, existence of the class 4 road, its location, and how it would be used. Since that meeting the signed petition was received. The Selectboard has paused on proceeding on the trail request until answers can be gotten. Pennie said it is being considered, and facts are being gathered and not just opinions. She wanted clarification about what the Town was doing to get facts before opinions are given or sought out. Christine said that the Selectboard was working to get the facts with a number of different things at play and following the rules. June asked if flagging was fact, Bard said, if there is a road, and where it is, do we discontinue or abandon the road. Josh said that VTRANS said that the road has been reported since 1931 and on other maps for some time. Bard said that the Selectboard believes there is a road based on the information available.
- that Christine said that at the hearing, when the Selectboard makes its decision, that meeting would not be open to the public
- that Allen Knowles, Transportation Committee, said that if the road is discontinued it should be designated a trail for non-motorized transportation
- that John Linn asked which maps are going to be used to locate the road, saying that there is a disclaimer on some maps. Josh said that issue was discussed and more investigating needs to be done and a surveyor may need to be hired.
- that Willie Lee, Trails Committee, said that the Town Plan supports trails, and the Trails Committee supports non-motorized travel. June said motorized vehicles are allowed on class 4 roads and it would be perfectly legal for it to occur at this time
- that Christine suggested that people continue to provide opinions and information on this topic. Pennie asked for a sense of the timing to know that the Selectboard is getting what they need. Christine said at the next meeting the hearing date will be set with more information available next week. June said that a good goal would be to come out of this with a decision, and that having the survey before the hearing would be important.
- that Christine asked Willie Lee about the Trails Committee request, he responded that the request is to clear a foot path within the current Town right-of-way. Christine said that the trails request could not be answered before the decision about declassifying the road
- that there would be a decision on the declassification and another on the Trails Committee request
- that Lauck Parke said that maps of class four and ancient roads are in the Town vault and the Town would have had to have obtained a legal right-of-way at the time of the recording. Christine asked if he was saying that the Town had to own the right-of-way. Lauck Parke said that courts have ruled in the past that the towns who thought they had a right-of-way but did not. He thought that the land records needed to be searched and not rely on maps and assumptions made. Bard said that this was a time when consulting the town attorney would be appropriate. Josh said that he did have some feedback, that there is no requirement to do the research but if the board decided there was not enough information to decide there is a road and removed it that anyone opposed could bring a lawsuit
- that Tyler Merritt thought a visit to Snipe Ireland to see a class 4 trail could be beneficial.

- that when the site visit takes place it will be advertised and noticed to neighbors

o) Presentation by Hunter Wasser on research project related to Policing in Richmond

Hunter Wasser reported:
- that this is a public safety project
- that he described his project related to the Richmond Police Dept.
- that the project involves surveying the public and collecting data from police reports and reporting on his findings
- that his goal was to promote community understanding about the Richmond Police Dept., our own knowledge of how the department works and what people are looking for related to public safety

Discussion included:
- that Bard liked the presentation and said that by bringing the project to the Selectboard it could help bring public attention to the project. Hunter Wasser agreed saying that the survey would be advertised on Front Porch Forum and would possibly be at the Farmer's Market as a way of reaching people. He asked what resources were available through the Town. Christine said that working with Richmond Racial Equity and this survey you will get bias based on what they think your perspective is. That having other perspectives should be a goal, getting people to respond to the survey with differing opinions. Hunter Wasser said he had tried to take an information gathering perspective so he hopes that will help.
- that Kyle Kapitansky said Hunter had been in contact with Josh and himself and that he was pleased with the questions and solicitation of feedback Hunter had looked for so far. He said that having context to questions was important and Hunter had done a great job.
- that June asked that some demographic questions, age, income, participation of town committees, and get a sense of who is filling out the survey then figuring out how to get the other's opinions be added to the survey. Hunter said there was a demographic section but having a civic question would be interesting.
- that the survey would be published Thursday and would be emailed the to the Selectboard members, Josh, and Chief Kyle Kapitansky.
- that Justin Graham said that the Rec Committee (via Rise VT) was sending out their survey this week and could put a link for this survey on it adding that it would go out to 1400 households. He and Hunter will connect tomorrow to discuss it further.

p) Review of potential locations to include in a survey regarding placement of illuminated crosswalks

Christine noted that there was not a decision being made tonight on this subject.

Josh reported:
- that there were five (5) potential locations for lighted crosswalks
- that Ravi had put together a survey that showed the crosswalks with ranking to provide information on what people think priorities should be

Discussion included:
- that the number of accidents should also inform priority
- that business owners should also be consulted about where their employees are parking

- that David said he would be cautious about having a lighted crosswalk at Cochran Rd creating a false sense of security based on the earlier presentation

q) Update on status of purchasing a police cruiser

Josh reported:

- that for various reasons the Town was not going to be able to purchase the budgeted cruiser in FY21
- that Chief Kapitansky will be coming to the Selectboard at a later meeting about a Tessler
- that we will underspend the budget in FY 21 and overspend in FY22

Discussion:

- that in a few weeks Kyle said he would be ready to come before the board about the purchase of the new cruiser

r) Update on return to in-person meetings and public access to the Town Center and Library

Christine reported:

- that the Selectboard meeting was taking place in-person and zoom

Discussion included:

- that Josh thanked Angelike, from MMCTV, for moving so quickly to get things set up
- that the Library was still requiring masks because there are so many children that visit
- that Christine asked Selectboard members as much as possible to be in person

III. Approval of Minutes, Warrants and Purchase Orders

David moved to approve the Minutes of 6/7/2021; Bard seconded. Roll Call Vote: Bard, David, June, Cody, Christine voted affirmatively. Motion passed.

Invoices and warrants:

Discussion included:

- that June asked who got the gaming laptop, Josh said the meeting was being run on it. June asked that a note for its use be noted.

David moved to approve the warrants as presented; Bard seconded. Roll Call Vote: Bard, June, Cody, David, and Christine voted affirmatively. Motion passed.

Josh would send the warrant out to members appearing remotely to get their signatures using DocuSign.

Purchase Orders:

Discussion included:

- that June thought it was surprising that the auditors agreed to “Various Vendors” on a Purchase Order

Bard moved to approve PO 4010 to Various Vendors for gravel and aggregates in an amount not to exceed $150,000.; David seconded. Roll Call Vote: Bard, June, Cody, David, and Christine voted affirmatively. Motion passed.

Bard moved to approve PO 4011 to Various Vendors for calcium chloride in an amount not to exceed $15,000.; David seconded. Roll Call Vote: Bard, June, Cody, David, and Christine voted affirmatively. Motion passed.

Bard moved to approve PO 4012 to Hinesburg Sand & Gravel for winter sand for dirt roads in an amount not to exceed $39,996.; David seconded. Roll Call Vote: Bard, June, Cody, David, and Christine voted affirmatively. Motion passed.

Bard moved to approve PO 4014 to O'Casey Trucking for equipment rental trucking for winter sand in an amount not to exceed $14,365.; David seconded. Roll Call Vote: Bard, June, Cody, David, and Christine voted affirmatively. Motion passed.

Bard moved to approve PO 4016 to Hinesburg Sand & Gravel for winter sand for gravel roads in an amount not to exceed $33,194.70.; David seconded. Roll Call Vote: Bard, June, Cody, David, and Christine voted affirmatively. Motion passed.

IV. Discuss Items for Next Agenda

park ordinance
hearing date
police cruiser
UMIAK MOU
Library MOU
Social Media policy -do we need one
Financial policy reviews

V. Executive Session: Personnel Issue

David moved to find that premature general public knowledge about a personnel issue would clearly place the Town at a substantial disadvantage; Bard seconded. Roll call vote: Bard, June, Cody, David, and Christine voted affirmatively. Motion passed.

David moved to enter into executive session to discuss a personnel issue under the provisions of 1 VSA 313(a)(3) of the Vermont State Statutes and to invite the Town Manager, Josh Arneson, into the executive session; Bard seconded. Roll call vote: Bard, June, Cody, and Christine voted affirmatively, David had moved to the other room already. Motion passed.

Executive session began at 11:21PM

June moved to exit executive session; Bard seconded. Roll call vote: Bard, Katie, David, and Christine voted affirmatively. Motion passed.

Executive session ended at 11:32PM and the meeting resumed.

VI. Adjourn

Bard moved to adjourn; June seconded. Roll call vote: David, June, Cody, Bard and Christine voted affirmatively. Motion passed.

The meeting ended at 11:35PM

CHAT

02:12:24 Denise Noble (she/her): yay!!!
02:37:41 s.fox: Thanks Ravi!
02:52:10 Kristen Lohse (Toole Design): Thank you!
03:56:22 Justin he/him: Justin.graham@uvmhealth.org
03:56:48 Hunter Wasser (he/him): Thanks everyone!
03:57:03 Denise Noble (she/her): can the town of the survey link on website
03:57:16 Denise Noble (she/her): put
04:03:39 Denise Noble (she/her): has a rotary ever been considered there?
04:09:01 Justin he/him: perhaps the town website could have a banner on the welcome page that would guide you to a landing page with current "community input/surveys". Community members could check it regularly and would be one landing space
04:09:41 Denise Noble (she/her): why not a four way stop at that awful intersection?
04:24:38 Denise Noble (she/her): you guys make me laugh. thanks
04:28:23 Denise Noble (she/her): thank you all for everything!!! g'nite

Crash Data

ID	Crash Date	Address	AOT Route	Crash Type	Collision Direction	Weather	Animal	Time of Day	Impairment	Involving	Road Characteristics	Road Condition	Surface Condition
21	February 2, 2015, 7:51 AM	FAS-209 (401 Bridge St)	BRIDGE ST	Property Damage Only	Opp Direction Sideswipe	Freezing Precipitation	None/Other	Day	None	None	Other - Explain in Narrative	Road Surface Condition(wet, icy, snow, slush, etc)	Snow
69	June 17, 2015, 7:53 PM	286 Bridge St	BRIDGE ST	Property Damage Only	Single Vehicle Crash	Clear	None/Other	Night	None	None	Not at a Junction	None	Dry
389	March 8, 2018, 7:41 AM	Bridge St	BRIDGE ST	Property Damage Only	Single Vehicle Crash	Freezing Precipitation	None/Other	Day	None	Heavy Truck	Not at a Junction	None	Wet
47	March 3, 2015, 8:29 AM	39 Esplanade St	TOWN ROAD 0050	Property Damage Only	Rear End	Clear	None/Other	Day	None	None	Driveway	None	Snow
540	June 3, 2019, 11:11 AM	FAS-209 203 Bridge St.	BRIDGE ST					Day					
571	September 4, 2019, 4:19 PM	205 Bridge St.	BRIDGE ST					Day					
8	January 16, 2015, 1:15 PM	203 Bridge St	BRIDGE ST	Property Damage Only	Rear-to-rear	Cloudy	None/Other	Day	None	None	Parking Lot	None	Dry
577	October 3, 2019, 7:24 PM	201 Bridge Street	BRIDGE ST	Fatal	Single Vehicle Crash	Rain	None/Other	Night	None	Pedestrian	Not at a Junction	None	Wet
110	November 9, 2015, 6:47 PM	Bridge St	BRIDGE ST	Injury	Left Turn and Thru, Same Direction Sideswipe/Angle Crash vv--	Clear	None/Other	Night	None	Pedestrian	T - Intersection	None	Dry
562	August 19, 2019, 1:03 PM	125 BRIDGE STREET	BRIDGE ST	Property Damage Only			None/Other	Day	None	None			
84	July 31, 2015, 5:22 PM	TH-64 Railroad St	TOWN ROAD 0064	Property Damage Only	Other - Explain in Narrative	Clear	None/Other	Day	None	None	Not at a Junction	None	Dry
212	October 25, 2016, 3:05 PM	68 Railroad St	TOWN ROAD 0064	Property Damage Only	Same Direction Sideswipe	Cloudy	None/Other	Day	None	None	Parking Lot	None	Wet
343	November 7, 2017, 6:28 AM	Bridge St	BRIDGE ST	Injury	Rear End	Clear	None/Other	Day	None	Heavy Truck	Not at a Junction	None	Dry
158	March 31, 2016, 1:00 PM	76 Depot St	DEPOT ST	Property Damage Only	Other - Explain in Narrative		None/Other	Day	None	None	Not at a Junction	None	Unknown
118	December 10, 2015, 8:00 AM	FAS-209 (54 Bridge Street)	BRIDGE ST	Property Damage Only	Other - Explain in Narrative	Unknown	None/Other	Day	None	None	Other - Explain in Narrative	None	Unknown
328	September 14, 2017, 3:30 PM	56 Bridge St	BRIDGE ST	Property Damage Only	Other - Explain in Narrative	Cloudy	None/Other	Day	None	None	Not at a Junction	None	Dry
60	May 5, 2015, 3:05 PM	FAS-209(30 Bridge St)	BRIDGE ST	Property Damage Only	Rear End	Clear	None/Other	Day	None	None	Not at a Junction	None	Dry
291	April 7, 2017, 11:23 AM	Bridge St	BRIDGE ST	Property Damage Only	Left Turn and Thru, Angle Broadside -->v--		None/Other	Day	None	None	Four-way Intersection	None	Dry

ID	Crash Date	Address	AOT Route	Crash Type	Collision Direction	Weather	Animal	Time of Day	Impairmen	Involving	Road Characteristics	Road Condition	Surface Condition
528	April 11, 2019, 7:39 AM	29 COCHRAN ROAD	COCHRAN RD	Property Damage Only			None/Othe	Day	None	Heavy Truck		None	
246	January 5, 2017, 9:01 PM	83 Huntington Rd	HUNTINGTON RD	Property Damage Only	Other - Explain in Narrative	Cloudy	None/Othe	Night	None	None	Parking Lot	None	Dry
451	November 16, 2018, 5:12 PM	4 Cochran Rd	COCHRAN RD	Property Damage Only	Rear End	Freezing Precipitation	None/Othe	Night	None	None	T - Intersection	Road Surface Condition(wet, icy, snow, slush, etc)	Snow
333	October 2, 2017, 7:00 PM	Cochran Road	COCHRAN RD	Property Damage Only	Single Vehicle Crash	Clear	Deer	Night	None	None	Not at a Junction	None	Dry
206	September 30, 2016, 5:27 PM	Bridge St	BRIDGE ST	Property Damage Only	Opp Direction Sideswipe	Cloudy	None/Othe	Day	None	None	Not at a Junction	None	Dry
585	November 7, 2019, 2:17 PM	Bridge St.	BRIDGE ST					Day					

Conceptual Cost Estimates for Alternatives

Computations

Project:	**Richmond Bridge Street**	**Project #:**	**58538.00**
Location:	**Richmond, VT**	**Sheet:**	
Calculated by:	**KMS**	**Date:**	**3/18/21**
Checked by:		**Date:**	
Title:	**Conceptual Cost Estimate Calculations**		

Conceptual Cost Estimates - Richmond Bridge Street

Alternative 1 -
Corridor Improvements

Design Element	Unit Cost	Unit	Quantity	Total Cost
Common Excavation	$13	CY	100	$1,308
5' Concrete Sidewalk with Concrete Curb	$95	LF	550	$52,250
Precast Reinforced Concrete Drop Inlet	$4,820	EACH	4	$19,280
Retaining Wall	$50	SF	70	$3,500
SUBTOTAL				$76,338
10% Signing and Striping				$7,634
25% Contingency				$19,085
25% Mobilization and Traffic Control				$19,085
30% Engineering and Design				$22,901
20% Resident Engineer				$15,268
			SUBTOTAL	$160,310
			Rounding	$9,690
			TOTAL	**$170,000**

Alternative 2 -
Corridor Improvements

Design Element	Unit Cost	Unit	Quantity	Total Cost
Common Excavation	$13	CY	375	$4,905
5' Concrete Sidewalk with Concrete Curb	$95	LF	530	$50,350
Precast Reinforced Concrete Drop Inlet	$4,820	EACH	4	$19,280
Retaining Wall	$50	SF	70	$3,500
Curbed Median Island	$60	SF	180	$10,800
Bike Lane Striping	$7	LF	600	$3,909
SUBTOTAL				$92,744
10% Signing and Striping				$9,274
25% Contingency				$23,186
25% Mobilization and Traffic Control				$23,186
30% Engineering and Design				$27,823
20% Resident Engineer				$18,549
			SUBTOTAL	$194,763
			Rounding	$5,237
			TOTAL	**$200,000**

Computations

Project:	**Richmond Bridge Street**	**Project #:**	**58538.00**
Location:	**Richmond, VT**	**Sheet:**	
Calculated by:	**KMS**	**Date:**	**3/18/21**
Checked by:		**Date:**	
Title:	**Conceptual Cost Estimate Calculations**		

Alternative 3 -
Corridor Improvements

Design Element	Unit Cost	Unit	Quantity	Total Cost
Common Excavation	$13	CY	375	$4,905
Precast Reinforced Concrete Drop Inlet	$4,820	EACH	4	$19,280
Retaining Wall	$50	SF	70	$3,500
New 5' Concrete Sidewalk with Curb	$95	LF	160	$15,200
10' Shared Use Path	$82	LF	260	$21,320
8' Shared Use Path	$71	LF	240	$17,040
Cast in Place Concrete Curb	$35	LF	500	$17,500
SUBTOTAL				$98,745
10% Signing and Striping				$9,875
25% Contingency				$24,686
25% Mobilization and Traffic Control				$24,686
30% Engineering and Design				$29,624
20% Resident Engineer				$19,749
			SUBTOTAL	$207,365
			Rounding	$2,636
			TOTAL	**$210,000**

Alternative 1 -
Itersection Improvements

Design Element	Unit Cost	Unit	Quantity	Total Cost
New 5' Concrete Sidewalk with Curb	$95	LF	260	$24,700
Excavation of Surfaces and Pavements	$27	CY	20	$540
Cast in Place Concrete Curb	$35	LF	130	$4,550
SUBTOTAL				$29,790
10% Signing and Striping				$2,979
25% Contingency				$7,448
25% Mobilization and Traffic Control				$7,448
30% Engineering and Design				$8,937
20% Resident Engineer				$5,958
			SUBTOTAL	$62,559
			Rounding	$37,441
			TOTAL	**$100,000**

Computations

Project:	**Richmond Bridge Street**	**Project #:**	**58538.00**
Location:	**Richmond, VT**	**Sheet:**	
Calculated by:	**KMS**	**Date:**	**3/18/21**
Checked by:		**Date:**	
Title:	**Conceptual Cost Estimate Calculations**		

Alternative 2 -
Itersection Improvements

Design Element	Unit Cost	Unit	Quantity	Total Cost
New 5' Concrete Sidewalk with Curb	$95	LF	260	$24,700
Excavation of Surfaces and Pavements	$27	CY	20	$540
Cast in Place Concrete Curb	$35	LF	130	$4,550
SUBTOTAL				$29,790
10% Signing and Striping				$2,979
25% Contingency				$7,448
25% Mobilization and Traffic Control				$7,448
30% Engineering and Design				$8,937
20% Resident Engineer				$5,958
			SUBTOTAL	$62,559
			Rounding	$37,441
			TOTAL	**$100,000**

Alternative 3 - check
Itersection Improvements

Design Element	Unit Cost	Unit	Quantity	Total Cost
Curbed Median Island	$60	SF	3150	$189,000
New Sidewalk with No Curb	$63	LF	720	$45,360
Cast in Place Concrete Curb	$35	LF	680	$23,800
Road Widening	$9	SF	8000	$72,000
Mill and Fill	$3	SF	22000	$60,500
SUBTOTAL				$390,660
10% Signing and Striping				$39,066
25% Contingency				$97,665
25% Mobilization and Traffic Control				$97,665
30% Engineering and Design				$117,198
20% Resident Engineer				$78,132
			SUBTOTAL	$820,386
			Rounding	$29,614
			TOTAL	**$850,000**

Intersection Operational Analyses for Alternatives

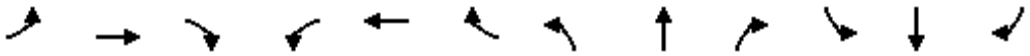
HCM Intersection Capacity Analysis											
		No Build		**All-Way Stop**		**Two-Way Stop**		**Mini-Roundabout**		**Preferred Alternative**	
	Approach	Delay*	LOS**	Delay*	LOS**	Delay*	LOS**	Delay*	LOS**	Delay*	LOS**
AM	Huntington Road EB	N/A		14.1	B	8	A	7.9	A	N/A	
	Cochran Road WB			8.4	A	0.6	A	6.6	A		
	Thompson Road NB			8.9	A	28.6	D	5.8	A		
	Bridge Street SB			9.7	A	20.4	C	5.1	A		
PM	Huntington Road EB	N/A		12.2	B	6.9	A	6.2	A	N/A	
	Cochran Road WB			9.4	A	0.8	A	5.5	A		
	Thompson Road NB			9.2	A	21.9	C	5.2	A		
	Bridge Street SB			14.6	B	19.7	C	8.6	A		

** delay in seconds per vehicle*

*** Level-of-Service*

Simulated 95th Percentile Queue+						
	Approach	**No Build**	**All-Way Stop**	**Two-Way Stop**	**Mini-Roundabout**	**Preferred Alternative**
AM	Huntington Road EB	32	101	66	66	5
	Cochran Road WB	60	52	9	49	59
	Thompson Road NB	42	40	41	30	42
	Bridge Street SB	30	66	78	24	67
PM	Huntington Road EB	34	73	50	46	4
	Cochran Road WB	57	51	10	40	55
	Thompson Road NB	48	46	45	30	47
	Bridge Street SB	52	119	144	56	120

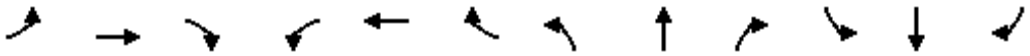
+ queue in feet based on average of 5 one-hour simulations



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	372	14	4	7	27	55	2	35	1	29	25	124
Future Volume (vph)	372	14	4	7	27	55	2	35	1	29	25	124
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	404	15	4	8	29	60	2	38	1	32	27	135

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	423	97	41	194
Volume Left (vph)	404	8	2	32
Volume Right (vph)	4	60	1	135
Hadj (s)	0.22	-0.32	0.03	-0.35
Departure Headway (s)	4.9	4.7	5.5	4.9
Degree Utilization, x	0.57	0.13	0.06	0.26
Capacity (veh/h)	713	695	564	666
Control Delay (s)	14.1	8.4	8.9	9.7
Approach Delay (s)	14.1	8.4	8.9	9.7
Approach LOS	B	A	A	A

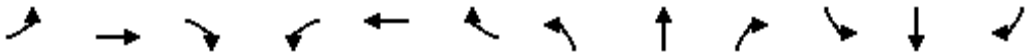
Intersection Summary				
Delay	12.0			
Level of Service	B			
Intersection Capacity Utilization	52.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	203	29	2	10	32	52	10	38	4	61	35	343
Future Volume (vph)	203	29	2	10	32	52	10	38	4	61	35	343
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	221	32	2	11	35	57	11	41	4	66	38	373

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	255	103	56	477
Volume Left (vph)	221	11	11	66
Volume Right (vph)	2	57	4	373
Hadj (s)	0.20	-0.28	0.03	-0.41
Departure Headway (s)	5.6	5.4	5.6	4.6
Degree Utilization, x	0.40	0.15	0.09	0.61
Capacity (veh/h)	598	588	556	749
Control Delay (s)	12.2	9.4	9.2	14.6
Approach Delay (s)	12.2	9.4	9.2	14.6
Approach LOS	B	A	A	B

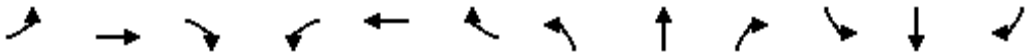
Intersection Summary				
Delay	13.0			
Level of Service	B			
Intersection Capacity Utilization	58.5%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	372	14	4	7	27	55	2	35	1	29	25	124
Future Volume (Veh/h)	372	14	4	7	27	55	2	35	1	29	25	124
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	404	15	4	8	29	60	2	38	1	32	27	135
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	89			19			1048	930	17	920	902	59
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	89			19			1048	930	17	920	902	59
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	73			99			98	80	100	81	87	87
cM capacity (veh/h)	1506			1597			127	195	1062	170	202	1007

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	423	97	41	194
Volume Left	404	8	2	32
Volume Right	4	60	1	135
cSH	1506	1597	193	425
Volume to Capacity	0.27	0.01	0.21	0.46
Queue Length 95th (ft)	27	0	19	58
Control Delay (s)	8.0	0.6	28.6	20.4
Lane LOS	A	A	D	C
Approach Delay (s)	8.0	0.6	28.6	20.4
Approach LOS			D	C

Intersection Summary				
Average Delay	11.3			
Intersection Capacity Utilization	52.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	29	2	10	32	52	10	38	4	61	35	343
Future Volume (Veh/h)	203	29	2	10	32	52	10	38	4	61	35	343
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	221	32	2	11	35	57	11	41	4	66	38	373
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	92			34			952	589	33	585	562	64
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	92			34			952	589	33	585	562	64
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	85			99			91	88	100	81	90	63
cM capacity (veh/h)	1503			1578			122	356	1041	339	369	1001

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	255	103	56	477
Volume Left	221	11	11	66
Volume Right	2	57	4	373
cSH	1503	1578	268	712
Volume to Capacity	0.15	0.01	0.21	0.67
Queue Length 95th (ft)	13	1	19	129
Control Delay (s)	6.9	0.8	21.9	19.7
Lane LOS	A	A	C	C
Approach Delay (s)	6.9	0.8	21.9	19.7
Approach LOS			C	C

Intersection Summary				
Average Delay	14.0			
Intersection Capacity Utilization	58.5%	ICU Level of Service		B
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	6.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	423	97	41	194
Demand Flow Rate, veh/h	431	99	42	199
Vehicles Circulating, veh/h	69	453	460	40
Vehicles Exiting, veh/h	170	49	40	512
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.9	6.6	5.8	5.1
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	431	99	42	199
Cap Entry Lane, veh/h	1055	718	713	1086
Entry HV Adj Factor	0.981	0.984	0.982	0.977
Flow Entry, veh/h	423	97	41	194
Cap Entry, veh/h	1034	707	700	1061
V/C Ratio	0.409	0.138	0.059	0.183
Control Delay, s/veh	7.9	6.6	5.8	5.1
LOS	A	A	A	A
95th %tile Queue, veh	2	0	0	1

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	255	103	56	477
Demand Flow Rate, veh/h	260	105	57	486
Vehicles Circulating, veh/h	117	278	325	58
Vehicles Exiting, veh/h	427	104	52	325
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.2	5.5	5.2	8.6
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	260	105	57	486
Cap Entry Lane, veh/h	1005	856	816	1066
Entry HV Adj Factor	0.982	0.984	0.986	0.982
Flow Entry, veh/h	255	103	56	477
Cap Entry, veh/h	987	842	805	1047
V/C Ratio	0.259	0.123	0.070	0.456
Control Delay, s/veh	6.2	5.5	5.2	8.6
LOS	A	A	A	A
95th %tile Queue, veh	1	0	0	2

Intersection: 3: Thompson Rd/Bridge St & Huntington Rd/Cochran Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	54	83	56	47
Average Queue (ft)	8	34	19	7
95th Queue (ft)	32	60	42	30
Link Distance (ft)	516	376	320	312
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Thompson Rd/Bridge St & Huntington Rd/Cochran Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	60	68	58	92
Average Queue (ft)	9	33	23	12
95th Queue (ft)	34	57	48	52
Link Distance (ft)	516	376	320	312
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Thompson Rd/Bridge St & Huntington Rd/Cochran Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	130	70	48	86
Average Queue (ft)	64	31	18	38
95th Queue (ft)	101	52	40	66
Link Distance (ft)	516	376	320	312
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Thompson Rd/Bridge St & Huntington Rd/Cochran Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	84	57	59	164
Average Queue (ft)	47	31	23	73
95th Queue (ft)	73	51	46	119
Link Distance (ft)	516	376	320	312
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Thompson Rd/Bridge St & Huntington Rd/Cochran Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	85	19	52	97
Average Queue (ft)	27	1	19	45
95th Queue (ft)	66	9	41	78
Link Distance (ft)	516	376	320	312
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Thompson Rd/Bridge St & Huntington Rd/Cochran Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	72	29	58	181
Average Queue (ft)	17	1	22	83
95th Queue (ft)	50	10	45	144
Link Distance (ft)	516	376	320	312
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Thompson Rd/Bridge St & Huntington Rd/Cochran Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	84	70	50	45
Average Queue (ft)	24	18	7	4
95th Queue (ft)	66	49	30	24
Link Distance (ft)	492	351	296	288
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Thompson Rd/Bridge St & Huntington Rd/Cochran Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	59	47	41	80
Average Queue (ft)	14	13	7	14
95th Queue (ft)	46	40	30	56
Link Distance (ft)	492	351	296	288
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Thompson Rd/Bridge St & Huntington Rd/Cochran Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	11	80	57	84
Average Queue (ft)	0	33	19	27
95th Queue (ft)	5	59	42	67
Link Distance (ft)	516	376	318	312
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Thompson Rd/Bridge St & Huntington Rd/Cochran Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	8	62	58	182
Average Queue (ft)	0	32	23	45
95th Queue (ft)	4	55	47	120
Link Distance (ft)	516	376	318	312
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0