

No Historic Properties Affected

VTrans Project Name: Lyndon I-91 Bridge No.96-3N and 96-3S

VTrans Project Number: Lyndon IM 091-3(53)

Date: June 14, 2023

Location: The project is located in the Town of Lyndon, Caledonia County, on I-91 at Culvert Nos. 96-3N and 96-3S over an unnamed tributary to the Passumpsic River, approximately 1.1 miles north of Exit 24 and 1.4 miles south of the Lyndon/Wheelock town line.

Description: This project description is based on Base Technical Concept plan set dated March 2023, titled Lyndon IM 091-3(53), developed by VHB for VTrans. Work to be performed includes the removal and replacement of the existing culverts with associated roadway and channel work. Culvert No. 96-3N will span 24.29' as measured along the centerline of roadway and Culvert No. 96-3S will span 22.10' as measured along the centerline of roadway. The total length of project is 725 feet. Access will be from the interstate right-of-way (ROW) and the access roads will remain to allow for future maintenance. Crossovers will be constructed within the interstate travel lanes and medians north and south of the culvert replacement site. With the culvert replacement site and the crossovers to the north and south, there are three project areas (further discussed in the APE, below). See Figures 1-6 for select plan sheets.

In defining the project Area of Potential Effect (APE) and determining appropriate identification efforts, VTrans considered the potential direct, indirect, and cumulative effects of the project, including the possible effects to known or potential historic and/or archaeologically sensitive properties and their aspects of integrity both within and beyond the project limits based on the scope, scale, nature, setting, topography, and other environmental factors associated with the project, such as views from and towards the project area and the potential for long-term effects.

The direct APE for the undertaking includes the project footprint, which is in the interstate ROW. There are three project segments in the APE (see APE Maps 1-3), for the two crossover areas and for the project site. The indirect APE is limited due to the nature of the project and the lack of standing structures. The adjacent parcel 2320 Gilman Road is included in the indirect APE because the project area can be seen from this parcel. Note that the parcel on the opposite side of the interstate does not have any structures (see APE Map 2). The northern and southern sections of the project (APE Maps 1 and 3) do not have an indirect APE because the work involves crossover approaches and exits, occurring entirely within the interstate travel lanes and medians. Therefore, the indirect APE is only

The Vermont Agency of Transportation (VTrans) has reviewed this project according to the standards and procedures detailed in the *Programmatic Agreement Among the Federal Highway Administration, the Vermont State Historic Preservation Officer, the Advisory Council on Historic Preservation, and the Vermont Agency of Transportation Regarding the Federal-Aid Highway Program in Vermont* executed in 2021 (2021 PA). Completion of this form in accordance with the 2021 PA demonstrates that FHWA has satisfied its Section 106 responsibilities for this project.

Archaeology:

- ☐ Project does not involve any ground disturbance.
- ☒ There are no known or expected archaeological sites in the Area of Potential Effect. See attached supporting documentation or further explanation and justification on reverse.
- ☐ There are known or expected archaeological sites in the Area of Potential Effect, but the project will have no effect, positive or negative, on them. See attached supporting documentation or further explanation and justification on reverse.

Archaeology

Above Ground Historic Resources:

- ☐ There are no buildings or structures in the APE.
- ☐ There are no historic buildings, structures, or landscapes in the Area of Potential Effect. See further explanation and justification below.
- ☒ There are historic buildings, structures, or landscapes in the Area of Potential Effect, but the project will have no effect, positive or negative, on them. See further explanation and justification below.

Historic Preservation

Further Explanation:

The work inside the interstate ROW is considered exempt from Section 106 review per “Section 106 Exemption Regarding Effects to the Interstate Highway System,” which was approved in the Federal Register in 2005. It states, “This exemption concerns solely the effects of Federal undertakings on the Interstate Highway System. Each Federal agency remains responsible for considering the effects of its undertakings on other historic properties that are not components of the Interstate Highway System (e.g., adjacent historic properties or archaeological sites that may lie within undisturbed areas of the right of way) in accordance with subpart B of the Section 106 regulations or according to an applicable program alternative executed pursuant to 36 CFR 800.14.”

Accordingly, the work to the interstate elements is exempt, but not the potential effects to adjacent properties.

On behalf of VHB for VTrans, UVM CAP completed a Phase 1 Site Identification Survey in May 2023 of the archaeologically sensitive areas identified in the July 2022 Archaeological Resource Assessment (ARA). As a result of the Phase 1 Survey, no precontact or historic artifacts were recovered. UVM CAP recommended that no further archaeological study is necessary prior to project construction. The ARA and Phase 1 Survey reports are attached to this review form.

On behalf of VTrans, VHB conducted a Historic Resource Identification Report (August 2022), which evaluated the three project segments along I-91. One section was centered around the culvert replacements and the other two were candidates for lane crossovers and staging. Since that time the project area has been reduced from 114 acres to 15 acres. The Resource ID identified 24 properties in the larger study area, with three (3) recommended as eligible for listing in the National Register. Of the three (3), only one (1) remained in the reduced project area. This property sits outside the interstate ROW, but adjacent to the project construction site. The property is 2320 Gilman Road, Lyndon, a ca. 1930 farmstead, recommended as eligible for listing in the National Register under Criterion A in Agriculture as an intact Vermont farmstead. As detailed in the Historic Resource Identification Report, it meets the standards of the Vermont Multiple Property Documentation Form (MPDF): *Agricultural Resources of Vermont*. See Photographs 1-3, below.

Because the project involves replacing existing transportation infrastructure (existing culverts for new culverts on a very similar alignment) and the viewshed to/from the farmstead (2320 Gilman Rd) will not change, the historic resource will remain unaffected. The project is not being accessed from the farmstead. The property will not be affected by the undertaking. See Photographs 1-4, below.

Attachments:

- ☒ Photos – see below
- ☒ Map – Area of Potential Effect (attached)
- ☒ Report(s) Historic Resource Identification (VHB, 2022) and Archaeological Resources Assessment (UVM CAP, 2023) (attached)
- ☒ Other: Select Plan Sheets – see below, after photographs



Photograph 1: 2320 Gilman Road, Lyndon. VHB, July 2022.



Photograph 2: 2320 Gilman Road, Lyndon. VHB, July 2022.



Photograph 3: 2320 Gilman Road. The interstate can be seen in the background (yellow circle).



Photograph 4: View from I-91 S of 2320 Gilman Road. Google Street View, September 2022.

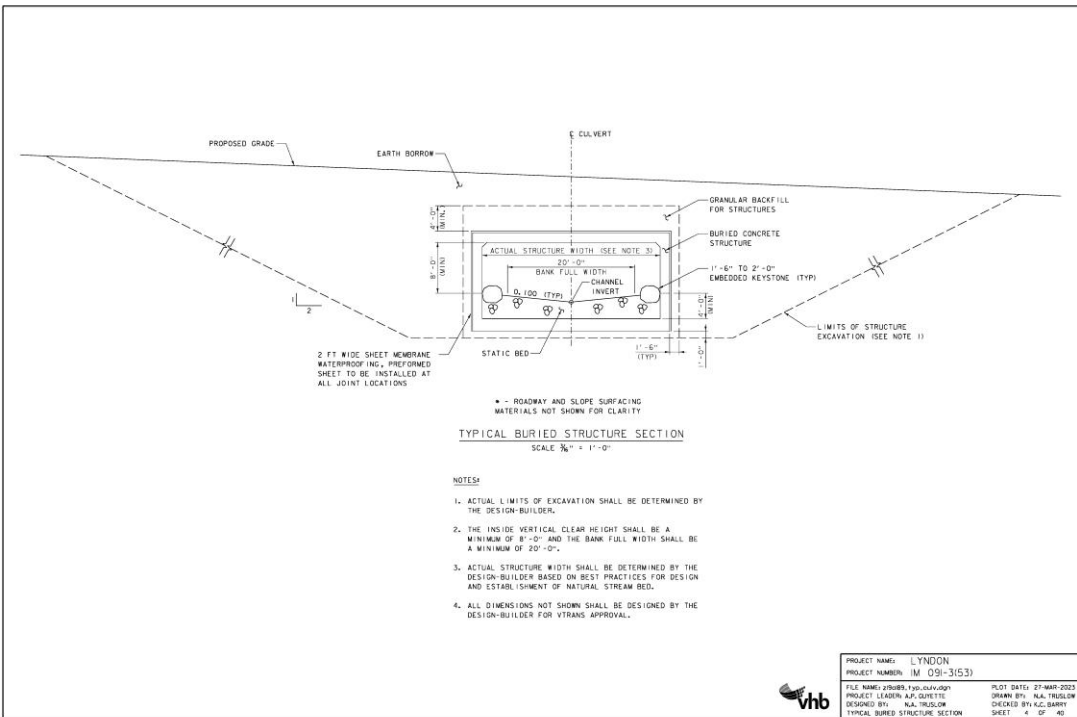
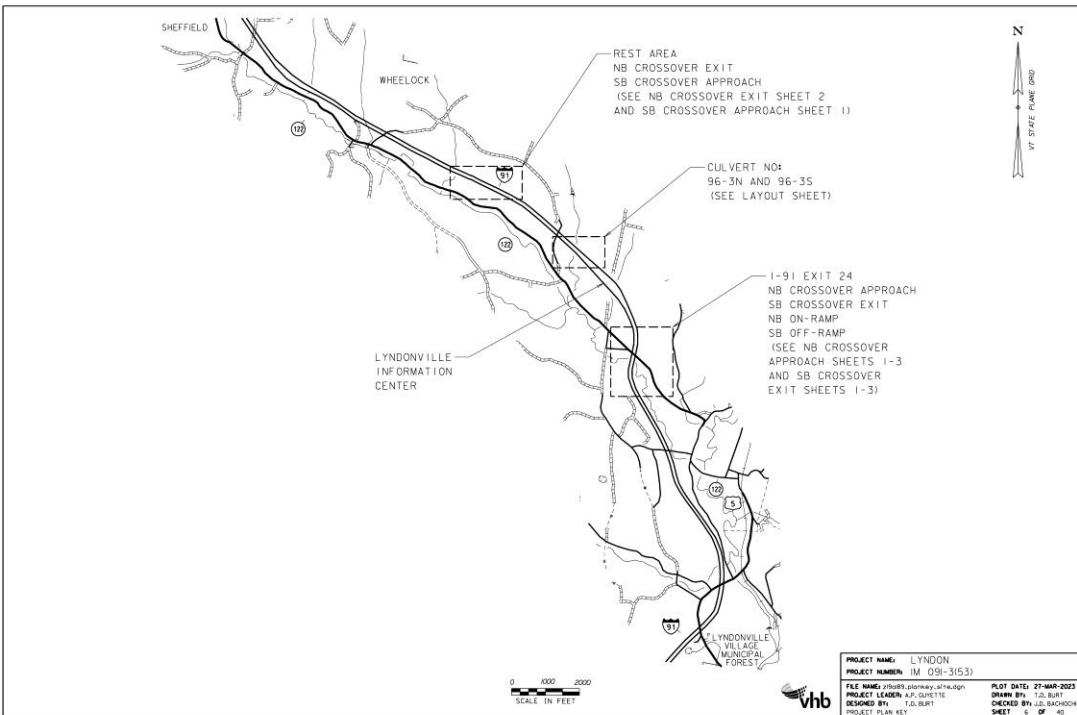


Figure 3: Typical Buried Structure Section, Sheet 4 of 40, March 2023.



Sheet 4: Project Plan Key, Sheet 6 of 40, March 2023.

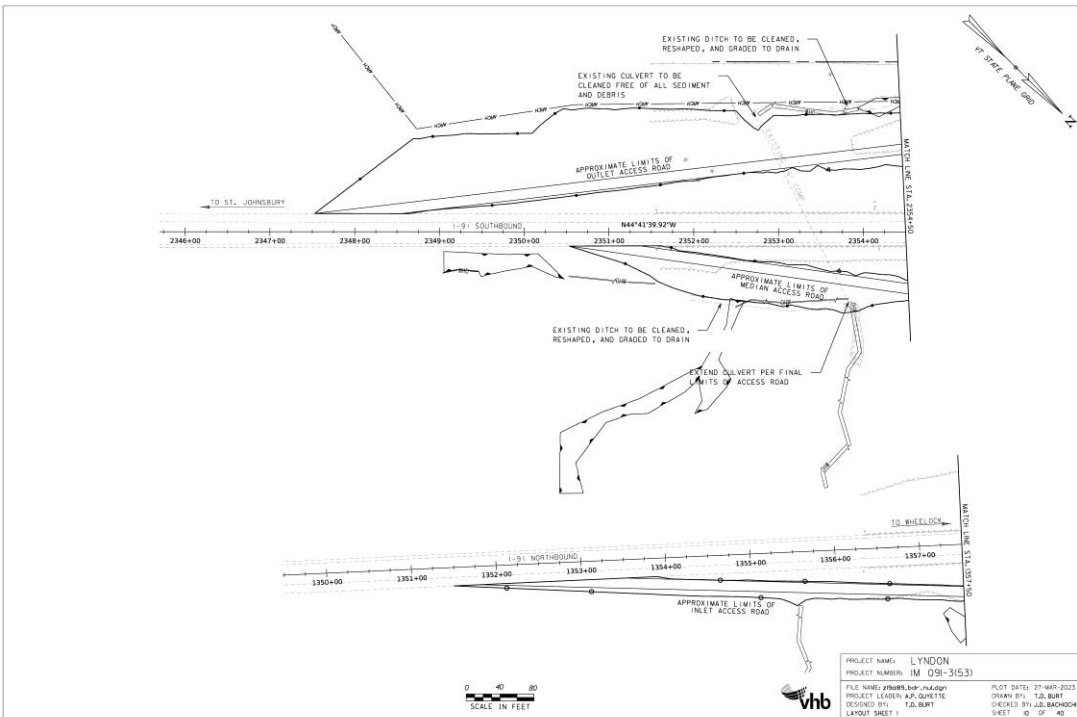


Figure 5: Layout Sheet 1, Sheet 10 of 40, March 2023.

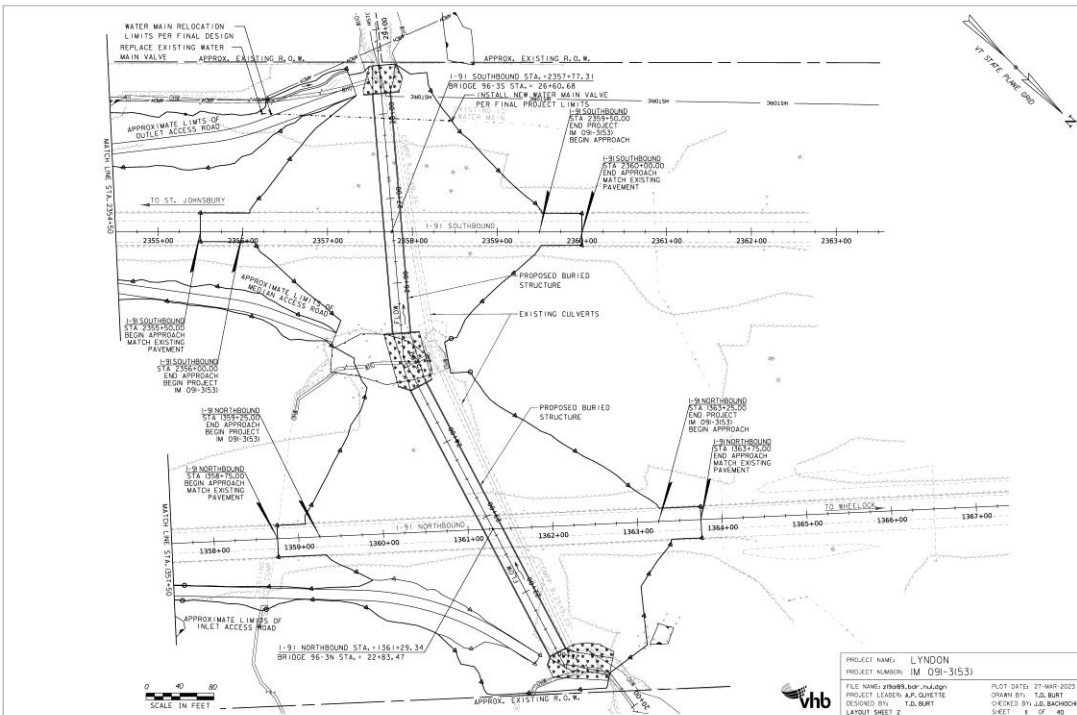


Figure 6: Layout Sheet 2, Sheet 11 of 40, March 2023.

Historic Resources Map Series - Sheet 1 of 3

Lyndon IM 091-3(53) | Lyndon, Vermont



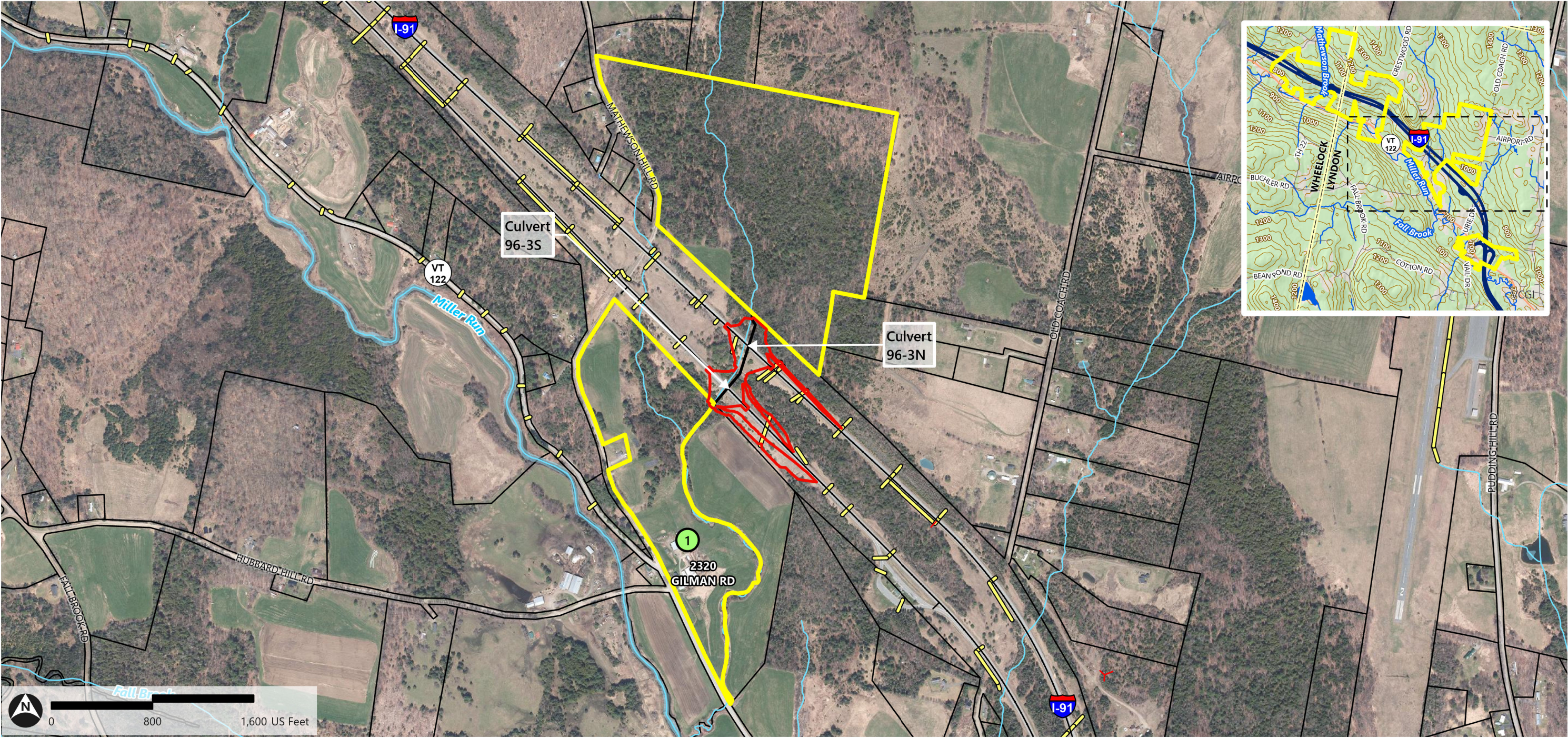
DRAFT April 12, 2023



- | | | |
|--|------------------------|-------------------------|
| Direct Area of Potential Effect (APE, VHB) | Town Boundary (VCGI) | Surveyed Property (VHB) |
| Indirect Area of Potential Effect (APE, VHB) | Parcel Boundary (VCGI) | Eligible |
| VHD Stream (VCGI) | Railroad (VTrans) | |
| VHD Waterbody (VCGI) | Culvert (VTrans) | |

Historic Resources Map Series - Sheet 2 of 3

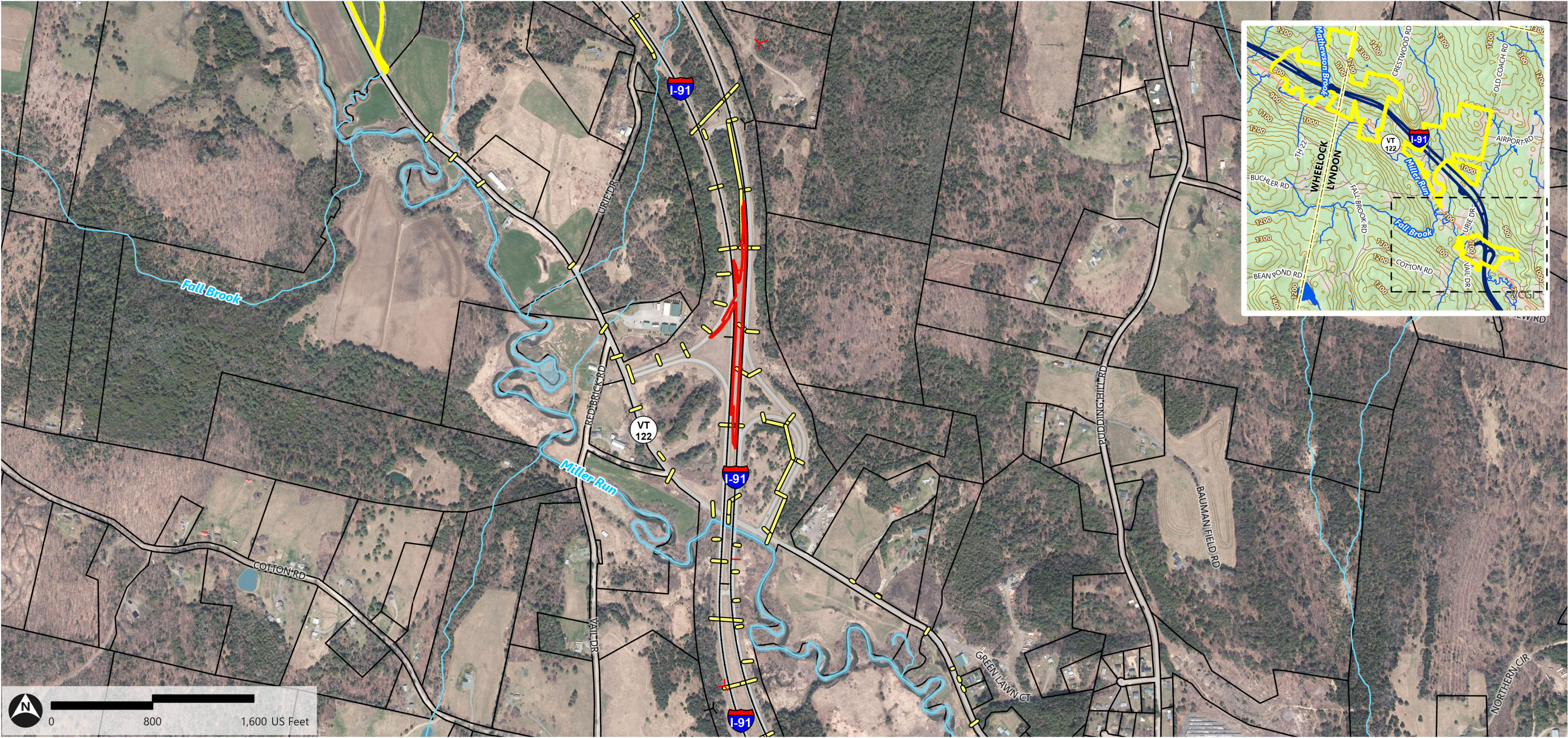
Lyndon IM 091-3(53) | Lyndon, Vermont



- | | | |
|--|------------------------|-------------------------|
| Direct Area of Potential Effect (APE, VHB) | Town Boundary (VCGI) | Surveyed Property (VHB) |
| Indirect Area of Potential Effect (APE, VHB) | Parcel Boundary (VCGI) | Eligible |
| VHD Stream (VCGI) | Railroad (VTrans) | |
| VHD Waterbody (VCGI) | Culvert (VTrans) | |

Historic Resources Map Series - Sheet 3 of 3

Lyndon IM 091-3(53) | Lyndon, Vermont



- | | | |
|--|------------------------|-------------------------|
| Direct Area of Potential Effect (APE, VHB) | Town Boundary (VCGI) | Surveyed Property (VHB) |
| Indirect Area of Potential Effect (APE, VHB) | Parcel Boundary (VCGI) | Eligible |
| VHD Stream (VCGI) | Railroad (VTrans) | |
| VHD Waterbody (VCGI) | Culvert (VTrans) | |

Lyndon IM 091-3(53)

Interstate 91, Lyndon and Wheelock, VT

PREPARED FOR



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August 5, 2022

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- Appendix A – Historic Resources Survey Map
- Appendix B – Photographs
- Appendix C – Historic Maps & Photographs



1

Introduction

On behalf of the Vermont Agency of Transportation ("VTrans"), VHB has prepared this Historic Resources Identification Report for Lyndon IM 091-3(53) ("Project"), which proposes to replace culverts 96-3N and 96-3S on Interstate 91 ("I-91") in Lyndon, Caledonia County, VT. The culverts are Corrugated Galvanized Metal Plate Pipe ("CGMPP") culverts that were installed in 1973 when I-91 was built through this area of Caledonia County. The culverts are at I-91 mile marker 141.3 with one underneath the northbound lanes and the second underneath the southbound lanes. The Project includes three segments along I-91 (see Appendix A, Historic Resources Survey map for the location of the Project). The central segment is centered on the location of the culverts, and includes the locations that may be disturbed for the culvert replacement, including areas of potential temporary construction access and staging at the property south of the culverts (2320 Gilman Road). The southern and northern segments represent candidate locations for lane crossovers to allow for two-way traffic to alternately share the the northbound and southbound lanes while the culverts are being replaced one at a time. The southern segment is centered on Exit 24 northwest of Lyndonville. The northern segment includes an approximately one mile stretch of I-91 that is approximately one mile northwest of the two culverts proposed to be replaced and stretches into the town of Wheelock.

The Project was initiated following a 2019 bridge inspection of these two culverts, which found each of them in fair condition due to holes in the outlet ends varying in size up to 6" and areas of bolt line cracking with heavy rusting due to water leaking through the cracks. VTrans has contracted with VHB for the scoping process and advancement of Project design. VHB has prepared this Historic Resource Identification Report ("Historic Resource ID" or "report") to define the Study Area, identify resources, and to evaluate their integrity and eligibility for listing in the National Register of Historic Places ("National Register"). This

report will be used to support the Project planning efforts, and acts as the first step in identifying resources protected under Section 106 of the National Historic Preservation Act ("Section 106" and "NHPA", 16 U.S.C. 470) and Section 4(f) of the Department of Transportation Act ["Section 4(f)"].

The report includes a discussion of methodology, identification of the Study Area, a brief historic context, brief descriptions of properties, discussion of integrity, and recommendations of National Register eligibility of historic properties and any potential historic district(s).



2

Methodology

The work required to complete this report was undertaken by Britta Tonn and Matthew Shoen, Preservation Planners with VHB. Prior to fieldwork, VHB reviewed existing survey and other files available through the Vermont Division for Historic Preservation's ("DHP") Online Resource Center.¹ The reports and files reviewed for this report include the Vermont Historic Sites & Structures Survey ("VHSSS"), the listings in the National Register and Vermont State Register of Historic Places ("State Register"), and the Royalton town files. The purpose of reviewing this literature was to identify previously inventoried historic resources within the Study Area and to establish which sites had not been surveyed. In addition, historic maps and aerial photographs such as United States Geological Survey ("USGS") Topographic Maps, the 1858 Wallings Map, the 1875 F.W. Beers & Co. Map, and 1962 statewide aerial imagery, all available via various online repositories, were reviewed in order to determine which buildings were over 50 years old and therefore potentially historic.²

Following the literature and historic map review, Britta Tonn visited the Study Area on July 19, 2022 to survey for historic resources. Fieldwork included photography for each property located within the Study Area. After conducting research and fieldwork, each of the properties within the Study Area was evaluated for its historic integrity and eligibility for listing in the National Register.

Three properties in the Study Area were inaccessible, as they were set back down long driveways with "No Trespassing" signs posted: 514 Sutton Road (Wheelock), 170 Ozzies Lane (Lyndon), and 345 Mathewson Hill Road (Lyndon). Information about these properties was

¹ www.orc.vermont.gov

² www.historicaerials.com; www.old-maps.com

garnered from aerial photographs and map research, where possible. For information about the two culverts in the Study Area (Culverts 96-3N and 96-3S), VHB relied on the Inspection Reports and photographs as needed for these structures available online via the VTrans Bridge Inspection Map.³

All properties are given a brief description in the Table of Surveyed Properties, Table 1. Approximate dates of construction were assigned where possible, based on architectural style and historic map research. Properties are recommended as Eligible or Ineligible for listing in the National Register. Accompanying the report and Historic Resources Survey map, VHB prepared a .dgn file so the mapped resources can be incorporated into Project plans.

³ <https://vtrans.maps.arcgis.com/apps/webappviewer/index.html?id=968633edde4d40f6b5150d4393b9b1ff>.



3

Study Area

The Study Area has been determined in order to accommodate the range of alternatives as part of the scoping component of the Project. The Study Area includes properties that abut I-91 in the three segments that are part of the Project, as well as two bridges and two culverts along I-91. These properties are located on VT Route 122 and Sutton Road in Wheelock; and on Gilman Road, Mathewson Hill Road, Ozzies Lane, Old Coach Road, and Red Brick Road in Lyndon. See Appendix A, Historic Resources Survey map.

Although the Project plans are not yet fully developed and thus an Area of Potential Effect ("APE") cannot be determined, the Study Area is based on the criteria that are used to otherwise determine the APE. The Area of Potential Effect ("APE"), as defined by 36 CFR 800.16(d), revised August 5, 2004, is: *"the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if such properties exist. The area of potential effects is influenced by the scale and undertaking and may be different for different kinds of effects caused by the undertaking."*

VHB determined the Study Area based on the scope-of-work provided by VTTrans, a site visit to narrow the potential locations for crossover lanes, the APE definition above, and the following assumptions:

- The direct APE for the Project includes the footprint of all physical improvements required, which includes Culverts 96-3N and 96-3S and a portion of the property at 2320 Gilman Road required for access and staging.
- The indirect APE includes all areas where alterations to a resource's setting and feeling could occur and would thus include the limits of disturbance plus properties bordering the Project area on the roads described above.

Therefore, the APE for direct effects for the Project would include the footprint for physical work on I-91 and where work will occur outside the right-of-way. The APE for indirect effects for the Project would include all areas where alterations to a resource's setting and feeling could occur and therefore includes properties bordering the Project along VT Route 122, Gilman Road, Mathewson Hill Road, Ozzie's Lane, Old Coach Road, and Red Brick Road. The Study Area reflects this definition of the APE.



4

Above-Ground Historic Resource Identification

Section 106 requires all federal agencies to consider the effects of federal undertakings on historic properties and to afford the Advisory Council on Historic Preservation ("ACHP") an opportunity to comment on such projects prior to the expenditure of any federal funds. A federal undertaking is defined as a project, activity, or program either funded, permitted, licensed, or approved by a federal agency. Undertakings may take place either on or off federally controlled property and include new and continuing projects, activities, or programs and any of their elements, whether or not they have been previously considered under Section 106.

A historic property is any property that is listed in or eligible for listing in the National Register. These properties can be buildings, structures, sites, objects, or districts and include above ground and below ground (*i.e.*, archaeological) resources. If a property has not been previously determined eligible or ineligible for the National Register, then, as part of the Section 106 process, it should be evaluated by the federal agency in consultation with the State Historic Preservation Officer ("SHPO") in order to determine if it meets eligibility.

Based on the Methodology of Chapter 2 and the Study Area discussed in Chapter 3, and an understanding of Section 106 regulations, VHB surveyed 24 properties on I-91, VT Route 122, Gilman Road, Mathewson Hill Road, Old Coach Road, and Red Brick Road.

This chapter provides a brief historic context in **Section 4.1**. Information about previous surveys and listings on the National Register and State Register is included in **Section 4.2**. **Section 4.3** includes the following for each property: photographs, descriptions, discussion of integrity, and recommendation of eligibility. The information on the surveyed properties is summarized in **Table 1. Surveyed Properties** in **Section 4.3** and the additional eligibility discussion in **Section 4.4**. Note that the Map ID numbers for each property correspond to the map in Appendix A – Historic Resources Survey map. The information in Table 1 is identical to the information provided in the attribute table for the provided.dgn file. Photographs of the surveyed properties are included in Appendix B. Historic maps and historic photographs are included in Appendix C.

4.1 Historic Overview

The Town of Lyndon, Vermont was chartered June 27, 1781 by the Independent Republic of Vermont. Four years later, on June 14, 1785 the Vermont Legislature chartered the Town of Wheelock, which sits on the western border of Lyndon (Vermont did not become a state of the United States until 1791). Both towns are roughly six miles square and are located in the Passumpsic River Valley. Despite their geographic proximity the towns of Lyndon and Wheelock had significantly divergent histories.

The Town of Wheelock was named for Eleazer Wheelock the first president of Dartmouth College and the town itself was granted to the college along with 23,000 acres of land in the Northeast Kingdom. Sales of land and timber in Wheelock enabled Dartmouth College to financially support itself during the early nineteenth century and in return residents of Wheelock were and continue to be granted full scholarships to the college. Like many Vermont towns, Wheelock struggled to attract and retain settlers. During the nineteenth century the town's population peaked in 1810 with 964 residents, the majority of whom were engaged with farming or timber extraction. Additionally, mill sites and tanneries were developed along the Passumpsic River to take advantage of the abundant power offered by the river.

Despite the natural advantages provided by settling in Wheelock, the community still faced significant challenges due to its overall isolation and as a result the population fell in almost every census from 1820-1970 such that by 1970 the town had a total of 238 residents. In 1973, I-91 was built through Wheelock and the town's population began to rise and steadily increased over the next forty-nine years. The presence of the highway, coupled with the greater mobility provided by automobiles made it possible for Wheelock to become a destination for people who wanted a rural lifestyle while still retaining the ability to commute to work.

East of Wheelock, the Town of Lyndon grew rapidly as settlers took advantage of the town's highly fertile soil. Farms dotted the Passumpsic River Valley and town's hillsides were cleared for hill farms during the early nineteenth century. Cereal grains such as wheat, rye, barley, and oats were grown in great quantities and exported from Lyndon or used as fodder for sheep and horses, which were also raised in great numbers. In 1867, the Passumpsic and Connecticut Rivers Railroad built its line through Lyndonville, one of the main settlements in the Town of Lyndon. The arrival of the railroad further incentivized growth in the town as it

provided a ready outlet for farm products and manufactured goods such as wood pulp and finished lumber. That same year the Lyndon Institute formed; in 1911 this school would be renamed Lyndon State College and became a one year Normal School.⁴ The opportunities provided by the railroad led to the relocation of the town's center to the newly developed community of Lyndonville, which grew up on the eastern bank of the Passumpsic River near the settlement of Lyndon Center. Sanborn maps from 1922 show Lyndonville with a large collection of industrial buildings, the most significant of which were the repair shops for the Boston and Maine Railroad, the village's single largest employer.

Due to its excellent farmland, railroad access, and industrial and education opportunities the Town of Lyndon grew steadily throughout the nineteenth and twentieth century such that Lyndon is presently the second largest community in Caledonia County. Like nearby Wheelock, the Town of Lyndon benefitted from the arrival of I-91 which encouraged greater attendance at Lyndon State College by making the college more accessible for students.

The Study Area sits on a rural stretch of I-91 between Wheelock and Lyndon and consists of three project segments. Historic maps indicate that this area was primarily used for agriculture with only a small number of properties recorded on the 1858 Wallings map and the 1875 F. W. Beers Map. Construction of I-91 followed the course of the Passumpsic River Valley between Wheelock and Lyndon. Its development during the 1970s was partly spurred by the upcoming 1976 Montréal Summer Olympics, which Vermont leaders believed would drive a significant amount of traffic across the state.

4.2 Previous Surveys, State Register Listings, National Register Listings

There are no properties in the Study Area have been surveyed or listed in the National Register or State Register. Survey reports have however been undertaken on the bridges and culverts within the APE. These resources have been detailed in the *Historic Bridge MPDF*.

Bridge 0096N has not been individually surveyed; however, its type, a steel multi-beam bridge has been addressed in the *Historic Bridges MPDF*, which categorizes steel multi-beam bridges as Type 302. Bridge 0096N does not meet the registration criteria in order to be individually eligible. It does not have character defining features such as welded or riveted connections, an associated railing, and is not an exceptionally long span or unique design, nor of recognized aesthetic importance. Bridge 0096N was built in 1972. During the twentieth century, steel multi-beam bridges were one of the most commonly built bridges in the state with a total of 609 erected between 1940 and 1978.

Bridge 0096S has not been individually surveyed; however, its type, a steel multi-beam bridge has been addressed in the *Historic Bridges MPDF*, which categorizes steel multi-beam bridges as Type 302. Bridge 0096S carries southbound traffic on I-91 over VT-122. It is immediately east of Bridge 0096N and the two bridge are identical. Like Bridge 0096N, Bridge 0096S does not meet the registration criteria in order to be individually eligible.

⁴ Normal Schools were teacher colleges.

Culvert 96-3S and Culvert 96-3N are metal culverts which were installed in 1973. Both culverts sit in a concrete crib. Stone culverts were evaluated in the MPDF *Stone Highway Culverts in Vermont, 1750 to 1930*, however this document did not articulate design standards or areas of significance for metal culverts. Culverts that were labeled as metal, CPMP, or HDPE were not considered further, as these will not be historically significant or eligible for listing in the National Register.

4.3 Surveyed Properties in the Study Area

The Study Area consists of three large segments and is set in a rural area with primarily residential buildings. The survey area follows the course of I-91 as it passes between the towns of Wheelock and Lyndon in rural Caledonia county. The northern segment is located between Sutton Road and Mathewson Hill Road, the central segment is located southeast of Mathewson Hill Road and is centered on Squabble Hollow Creek, finally, the southernmost segment is in the area between Urie Drive and Gilman Road (VT Route 122) including the exit ramps for I-91.

For this report, a total of 24 properties were surveyed; note that only those parcels with structures are included in this survey. Of the 24 properties, three (3) are recommended as eligible for listing in the National Register. Twenty-one (21) of the properties are recommended as ineligible for listing in the National Register, mostly due to age, and some due to alterations or lack of architectural significance. Eligible properties are indicated by green shading in Table 1 and green symbols on the Historic Resources Survey map (Appendix A).

Table 1 includes the following information about each surveyed property:

- Map ID (keyed to Appendix A, Historic Resources Survey Map);
- Photograph No. (keyed to Appendix B, Photographs);
- E-911 Address;
- Date of Construction (supported by map and aerial photograph research, found in Appendix C, Historic Maps and Photographs);
- Brief Architectural Description;
- Discussion of Integrity; and
- Eligibility Recommendation.

Table 1: Surveyed Properties

Map ID	Photo #	Address	Town	Date of Construction	Brief Description	Integrity	Eligibility
1	N/A	698 VT Route 122	Wheelock	c. 1985	1.5 story 4x3 bay commercial warehouse building. Concrete foundation, corrugated metal siding, widely pitched gabled metal roof. Two automatic garage doors on the façade, small entry addition with unevenly pitched gabled roof on façade.	N/A	Ineligible due to age.
2	1	694-698 VT Route 122	Wheelock	C. 2005	Property not visible from the right of way	N/A	Ineligible due to age.
3	2	374 VT Route 122	Wheelock	c. 1875	1.5 story, 3x2 bay wood frame, standing seam metal gabled roof with a shed roof dormer, and interior center chimneys. There is a recessed 1.5 story wing attached to the north elevation, and a large rear ell facing west. The ell is used for a barn. A two bay porch fronts the wing. Center bay primary entrance with sidelights. Fascia beneath eaves.	Retains integrity of setting, location, materials, and workmanship. Design has been altered through replacement of windows/later additions such as the northern wing. As a result integrity of feeling and association are diminished.	Although it retains some integrity, it is ineligible for listing in the NR due to lack of architectural significance, does not rise to level of individual significance.

Map ID	Photo #	Address	Town	Date of Construction	Brief Description	Integrity	Eligibility
4	3,4	122 VT Route 122	Wheelock	c. 1890	1.5 story, 3x2 bay, front gabled wood frame farmhouse with a 3x1 bay east facing ell. Asphalt shingle roof, replacement 1/1 windows, bay windows with scrolling brackets, shed roof dormer on the front gabled block and gabled dormer on the ell. The eastmost bay of the ell is a one bay garage. East of the house is a 1.5 story gambrel standing seam metal roofed barn.	Retains, location, workmanship, materials. Aerial imagery shows a now demolished barn the loss of which negatively impacts integrity of setting, design, feeling, and association.	Although it retains some integrity, it is ineligible for listing in the NR due to lack of architectural significance, does not rise to level of individual significance.
5	5	3740 Gilman Rd	Lyndon	c. 1975	2 story, 4x2 bay woodframe residence. Gambrel asphalt shingle roof, wood shake siding, central brick chimney, sliding glass aluminium windows. 1-story two bay garage with shake siding automatic garage doors, gabled asphalt shingle roof.	N/A	Ineligible for listing in the National Register due to age.

Map ID	Photo #	Address	Town	Date of Construction	Brief Description	Integrity	Eligibility
6	6	3558 Gilman Rd	Lyndon	Ca. 1990	1.5 story, 3x2 bay, wood frame, asphalt shingle gable roof residence. Exterior brick chimney on east elevation, one bay addition on west elevation. Two gabled dormers on façade. Center bay entry with sidelights. Four bay garage south of residence near Gilman Road. Asphalt shingle gabled roof, automatic garage doors, wood siding, concrete slab foundation.	N/A	Ineligible for listing in the National Register due to age.
7	7,8	3468 Gilman Rd	Lyndon	c. 1840	1-story, 5x2 bay wood frame, gable roof, classic cottage with later east facing addition. Concrete foundation, vinyl siding, and standing seam metal roof, 2/2 windows, brick chimneys on original mass and addition. Enclosed porch with 1/1 windows in addition. Witch window. Property also has a two car garage with gabled standing seam metal roof, roll up wood garage doors. A tall one story gable roofed barn with a multibay addition to the east. Barn has wood siding, concrete foundation, standing seam metal roof.	Property retains integrity of Setting, Location, Workmanship Design, Feeling and Association. Integrity of materials has been compromised by replacement of siding on the main house and overall deterioration of the barn.	Eligible for the National Register under Criterion A in Agriculture as an intact Vermont farmstead. Property meets the standards of the Vermont MDPF: <i>Agricultural Resources of Vermont.</i>

Map ID	Photo #	Address	Town	Date of Construction	Brief Description	Integrity	Eligibility
8	9	440 Sutton Rd	Wheelock	c. 1960	2-story 3x4 bay wood frame standing seam metal gable roofed residence. Painted plywood siding on first floor wood novelty siding on the second floor 1/1 windows, concrete block chimney. Garage at roadside with one open air shelter and an enclosed garage with roll up garage door. Plywood on the first floor novelty siding on upper half story. Saltbox roof with standing seam metal covering.	Retains integrity of location, setting, design, materials, workmanship, feeling, and association.	Although it retains integrity, it is ineligible for listing in the NR due to lack of architectural significance, does not rise to level of individual significance.
9	10	514 Sutton Rd	Wheelock	Ca. 1985	1-story 3x2 bay, wood frame residence rising from concrete block foundation, standing seam metal gabled roof. Vinyl siding, 1/1 vinyl windows, brick chimney. Garage northeast of house. Garage is 1.5-stories, two bay gambrel roof with standing seam metal. Two automatic garage doors, vinyl siding.	N/A	Ineligible for listing in the National Register due to age.

Map ID	Photo #	Address	Town	Date of Construction	Brief Description	Integrity	Eligibility
10	11,12	2091 Mathewson Hill Rd	Wheelock	c. 1840 Potentially the H. Hoffman House on the 1858 Wallings Map	1.5 story 4x2 bay Classic Cottage. Side gabled standing seam metal roof, center bay entry, replacement 1/1 vinyl windows, clapboard siding. Four bay addition off the west elevation. Brick chimney off the east elevation. Addition has a mix of wood and shiplap siding and side gabled standing seam metal roof. By the roadside is a two story gable roofed barn with vertical wood siding, a standing seam metal roof, and concrete block foundation.	Retains integrity of location, setting, design, materials, workmanship, feeling, and association.	Eligible for the National Register under Criterion A in Agriculture as an intact Vermont farmstead. Property meets the standards of the Vermont MDPF: <i>Agricultural Resources of Vermont.</i>
11	13	2005 Mathewson Hill Rd	Lyndon	c. 1985	1.5 story, 5x3 bay side gabled residence with a 3x2 bay garage attached to its east elevation. Building has a concrete foundation, clapboard siding, vinyl 6/6 windows, center bay entry, central chimney, and standing seam metal roof. West of house is a barn with a standing seam monitor roof, vertical plank siding, and corrugated metal skirting around the foundation.	N/A	Ineligible for listing in the National Register due to age.

Map ID	Photo #	Address	Town	Date of Construction	Brief Description	Integrity	Eligibility
12	14	1791 Mathewson Hill Rd	Lyndon	Ca. 1990	1.5 story 3x2 bay faux log cabin with front gabled asphalt shingle roof, 1/1 windows, exterior stone chimney on the south elevation. Gabled outbuildings with asphalt shingle and standing seam metal roofs also on property. Property was not easily viewed from the public right of way.	N/A	Ineligible for listing in the National Register due to age.
13	N/A	170 Ozzies Lane	Lyndon	c. 2015	Property was not visible from the public right of way.	N/A	Ineligible due to age.

Map ID	Photo #	Address	Town	Date of Construction	Brief Description	Integrity	Eligibility
14	15,16, 17,18	2320 Gilman Rd	Lyndon	c. 1930	1.5 story 5x3 bay gambrel roof residence. Concrete foundation, vinyl siding replacement 1/1 vinyl windows, center bay entry, standing seam metal roof with a brick chimney. Enclosed porch on south elevation. Multiple barns and garages on the property ranging in age from late 19th to late 20th century. Barn 1. South of the farmhouse, concrete foundation vertical wood siding, saltbox standing seam metal roof, rear gabled addition. Barn 2. North of farmhouse. Widely pitched gambrel roof. Concrete foundation, vertical wood siding, standing seam metal roof, large gambrel roofed ell near center of the barn. Barn 3. Late twentieth century barn west of the farmhouse. Concrete foundation, corrugated metal siding, standing seam metal roof. Interior framing consists of steel beams. Garage 1. Directly behind the farmhouse, three bay garage with concrete foundation, wood siding, and gabled standing seam metal roof. Garage doors are automatic rollup doors.	Retains integrity of location, setting, design, materials, workmanship, feeling, and association.	Eligible for the National Register of Historic Places under Criterion A in Agriculture as an intact Vermont farmstead. Property meets the standards of the Vermont MDPF: <i>Agricultural Resources of Vermont.</i>

Map ID	Photo #	Address	Town	Date of Construction	Brief Description	Integrity	Eligibility
15	N/A	345 Mathewson Hill Rd	Lyndon	c. 1970	House could not be seen down private driveway. House appears to be rectangular gable building with standing seam metal roof.	N/A	N/A
16	19	611 Mathewson Hill Rd	Lyndon	c. 2020	1.5 story, 3x2 bay building that is currently unfinished. Building has a gabled standing seam metal roof, vinyl windows, plywood and Tygar siding.	N/A	Ineligible due to age.
17	20	1808 Old Coach Rd	Lyndon	c. 1850	1.5 story 5x3 bay wood frame, side gabled, modified Classic Cottage residence. Building has centerbay entry flanked by sidelights and topped by a simple entablature. Paired 2/2 wood windows flank the entry. There is also a wide frieze band. Gabled roof has three gabled dormers with 2/2 wood windows. Asphalt shingle roof and gable end returns on the side elevations. Multiple outbuildings on property including a c. 2005 round barn which has a standing seam metal roof, 6/6 windows, an automatic garage door, and a round cupola.	Retains integrity of Location, materials, workmanship. Integrity of design has been compromised by changes to the cottage, while the addition of the round barn alters the setting, feeling, and association of the house.	Though the farmhouse retains some integrity, alterations to the overall farmstead within the last fifty years make this property ineligible for the National Register.

Map ID	Photo #	Address	Town	Date of Construction	Brief Description	Integrity	Eligibility
18	21	Culvert 96-3N	Lyndon	1973	This culvert consists of a large diameter corrugated metal pipe set in a concrete crib that travels beneath the northbound exit ramp of I-91.	Retains all aspects of integrity.	Culverts were evaluated in the MPDF <i>Stone Highway Culverts in Vermont, 1750 to 1930</i> , however this document did not articulate design standards or areas of significance for metal culverts. Culverts that were labeled as metal, CPMP, or HDPE were not considered further, and are not considered historically significant or eligible for listing in the National Register.

Map ID	Photo #	Address	Town	Date of Construction	Brief Description	Integrity	Eligibility
19	22	Culvert 96-3S	Lyndon	1973	This culvert consists of a large diameter corrugated metal pipe set in a concrete crib that travels beneath the southbound exit ramp of I-91.	Retains all aspects of integrity.	Culverts were evaluated in the MPDF Stone Highway Culverts in Vermont, 1750 to 1930, however this document did not articulate design standards or areas of significance for metal culverts. Culverts that were labeled as metal, CPMP, or HDPE were not considered further, and are not considered historically significant or eligible for listing in the National Register.
20	N/A	1630 Gilman Rd (VTrans Facility)	Lyndon	c. 1980	Complex of eight buildings used by VTrans for roadway maintenance. Buildings are garages or open air sheds and generally consist of wood frame buildings with corrugated metal or wood siding, standing seam gabled metal roofs. Garages have automatic doors	N/A	Ineligible due to age.

Map ID	Photo #	Address	Town	Date of Construction	Brief Description	Integrity	Eligibility
21	23,24	1138 Gilman Rd	Lyndon	c. 1870	1.5 story 3x2 bay Classic Cottage with 1x2 bay eastern addition. Concrete foundation, vinyl siding, 1/1 vinyl replacement windows, side gabled standing seam metal roof. Center bay entry with sidelights and an entablature. Gabled dormer on the addition which has secondary entry sheltered beneath a porch and flanked by 1/1 windows. To the rear of the house there is a doublewide mobile home with vinyl siding, 6/6 vinyl windows, gabled asphalt shingle roof, and large exterior ramp and porch. To the rear of the mobile home there is a garage with corrugated metal siding a gabled standing seam metal roof. Two additional mobile homes are directly north of the garage. They have similar materials and appearances to the first mobile home.	Retains integrity of location, and workmanship. However integrity of setting, feeling, and association have been compromised through the addition of mobile homes and the garage. Additionally, alterations to the residence have compromised the integrity of design and materials.	Ineligible due to alterations.

Map ID	Photo #	Address	Town	Date of Construction	Brief Description	Integrity	Eligibility
22	25,26	150 Red Brick Rd	Lyndon	1979	1.5 story 5x2 bay residential building with stone veneer siding, a concrete foundation, and side gabled asphalt shingle roof. Center bay entry with sidelights, 1/1 vinyl windows. East facing addition with a narrow wing leading to a front gabled garage with an automatic roll up garage door topped by a stone lintel. A two story gable roofed bank barn sits east of the property. The barn has wood siding wood windows, and a standing seam metal roof. There are two smaller 1.5 story gable roof barns with identical materials to the bank barn on the property. The first sits just west of the bank barn while the second is east of the barn.	N/A	Ineligible due to age. Though the barns retain integrity and are old enough to be eligible for the National Register, the loss of their associated farmhouse makes them ineligible under Criterion A in Agriculture or Criterion C in Architecture.
23	27	249 Red Brick Rd	Lyndon	c. 1890	1.5 story 3x2 bay barn with a standing seam metal roof, vinyl siding, and multiple garage bay door openings on its façade. Barn is topped by a small hexagonal cupola.	Retains integrity of location however setting, feeling, and association have been compromised by the loss of the original farmhouse. Additionally, the building's design and materials have been changed and as a result the barn has lost integrity.	Ineligible due to alterations.

Map ID	Photo #	Address	Town	Date of Construction	Brief Description	Integrity	Eligibility
24	28	0096N Bridge	Lyndon	1972	Bridge 0096N is a 4 span steel rolled beam bridge that carries I-91 across VT 122. The bridge sits on concrete piers, has a concrete and bitimous asfalt deck, and concrete and metal guardrails.	All aspects of Integrity are retained.	Bridge 0096N does not meet the registration criteria in order to be individually eligible according to the <i>Historic Bridges MPDF</i> .
25	29	0096S Bridge	Lyndon	1972	Bridge 0096S is a 4 span steel rolled beam bridge that carries I-91 across VT 122. The bridge sits on concrete piers, has a concrete and bitimous asfalt deck, and concrete and metal guardrails.	All aspects of Integrity are retained.	Bridge 0096S does not meet the registration criteria in order to be individually eligible according to the <i>Historic Bridges MPDF</i> .

4.4 Summary of Recommended Historic Resources

In summary, the three properties recommended as eligible for listing in the National Register include:

- Map ID 7 - 3468 Gilman Rd
- Map ID 10 - 2091 Mathewson Hill Rd
- Map ID 14 - 2320 Gilman Rd

4.5 History and Evaluation of 2320 Gilman Road, Lyndon

The property at 2320 Gilman Road, where the staging and access for the Project may occur, is an approximately 209-acre farmstead that is located on both sides of Gilman Road and borders the I-91 right-of-way at its northeastern boundary. Because the Project may have direct impacts on the agricultural fields of the north portion of this property, a more detailed discussion of its National Register eligibility is included in this section.

The property at 2320 Gilman Road is currently known as Happy Days Farm and consists of a collection of buildings that include a single farmhouse, a garage, and four barns as well as agricultural fields on the north and south side of Gilman Road. The farmhouse was built c. 1930 though the some of the barns likely predate the farmhouse. The farmhouse is a 1.5 story 5x3 bay building with an eavesfront gambrel standing seam metal roof. The building rises off a concrete foundation and is clad in vinyl siding, with 1/1 vinyl replacement windows with lattice shutters, a center bay entry with a porch covering with ornamental metal columns supporting the porch roof. On the upper half story the house has a shed roof

dormer while a brick chimney splits the ridgeline. On its south elevation the house has an enclosed porch with a bank of 1/1 windows and a secondary entrance accessed by a short flight of concrete steps.

The first barn on the property sits south of the farmhouse. It is a 2x3 bay wood frame building that rises from a concrete foundation, is clad in vertical wood siding, and covered by a saltbox standing seam metal roof. An addition springs off the rear of this building, which appears to be a dairy barn. To the rear of the farm house sits the garage and a large barn complex which consists of a south facing barn with a wide gambrel roof. This barn has a gambrel roof ell that faces west. Both the original mass and the ell are clad in vertical wood boards and covered by a standing seam metal roof. This large barn complex appears to be a dairy barn. West of the barn complex is another barn. This building is a late twentieth century pole barn with corrugated metal siding, a gabled metal roof, and a metal skeletal frame.

In the 1875 F.W. Beers Map, the Happy Days Farm appears to be owned by C. L. Welch, a farmer and Civil War veteran who lived in Lyndon most of his life.⁵ Welch eventually sold the farm to fellow farmer Nathan Simpson. The Happy Days Farm has been owned by the Day family since at least 1970. Under their ownership the property has been a regionally significant dairy farm though the family has also expanded their offerings into farm stands and vegetable produce.

The Happy Days Farm is an example of a Vermont farmstead, a building type described in the MPDF *Agricultural Resources of Vermont*. This document outlined the registration requirements for a farmstead, stating that a Vermont farmstead:

usually includes a farmhouse, main barn, a series of outbuildings, well or spring house/box, barn and farm yards, orchard, vegetable garden, farm dump, paths and roads, pond or other natural source of water, and outlying meadows, pastures and woodlots bounded by fencing and hedgerows. Vermont farmsteads are generally not deeply set back, but are sited close to the road.⁶

The MPDF further outlines the registration requirements for a Vermont Farmstead, stating that a farmstead should retain the majority of its key buildings and resources (farmhouse, barns, agricultural fields) and should clearly articulate a historic context. In the case of the Happy Days Farm, which remains an active dairy, the major component buildings are all intact and the property retains major agricultural fields. Given the property meets the registration requirements outlined in the MPDF, it is recommended eligible for the National Register.

⁵ "Death of C. L. Welch," *Vermont Union-Journal*, February 8, 1911, 1.

⁶ Suzanne Jamele, and Elsa Gilbertson, "Agricultural Resources of Vermont," National Register of Historic Places Multiple Property Documentation Form, 1991, Section F, Page 2.

5

References and Resources

Bedford, Steven; Camilla Deiber, and Lauren Hoppes. *Metal Truss, Masonry and Concrete Bridges of Vermont, 1820-1978*. National Register of Historic Places Multiple Property Documentation Form, 2018. [Revised from 1990 form prepared by Heather Rudge.]

"Death of C. L. Welch." *Vermont Union-Journal*. February 8, 1911, 1.

Hemmingway, Abby Maria. *Caledonia County*. Ludlow: Abby Maria Hemmingway, 1862.

Jamele, Suzanne and Elsa Gilbertson. "Agricultural Resources of Vermont." National Register of Historic Places Multiple Property Documentation Form, 1991.

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<https://vcgi.vermont.gov/data-release/1962-aerial-imagery-now-available-statewide-non-georeferenced> (accessed August 25, 2021).

Walling, Henry Francis. *Map of Caledonia County, Vermont*. New York: Baker & Tilden, 1858. Map. <https://www.loc.gov/item/2005625342/>.

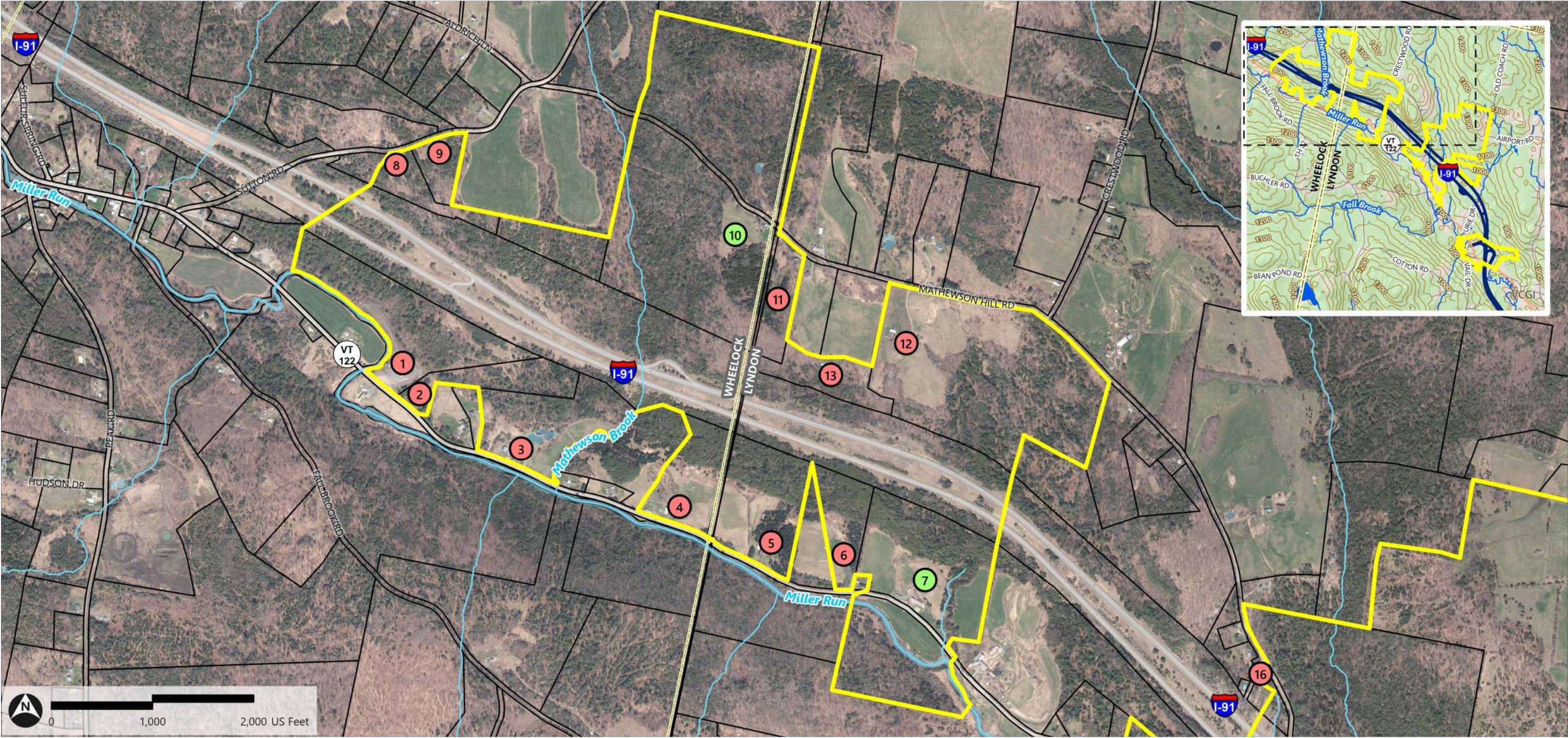
APPENDIX A

Historic Resources Map Series - Sheet 1 of 3

Lyndon IM 091-3(53) | Lyndon, Vermont



August 05, 2022



- Study Area (VHB)

VHD Stream (VCGI)

VHD Waterbody (VCGI)
- Town Boundary (VCGI)

Parcel Boundary (VCGI)

Railroad (VTrans)
- Surveyed Property (VHB)

Eligible

Ineligible

Sources: Background imagery by VCGI (Collected in 2021); VCGI (Vermont Center for Geographic Information - Various Dates); VTrans (Vermont Agency of Transportation - Hosted Feature Service); VHB - 2022

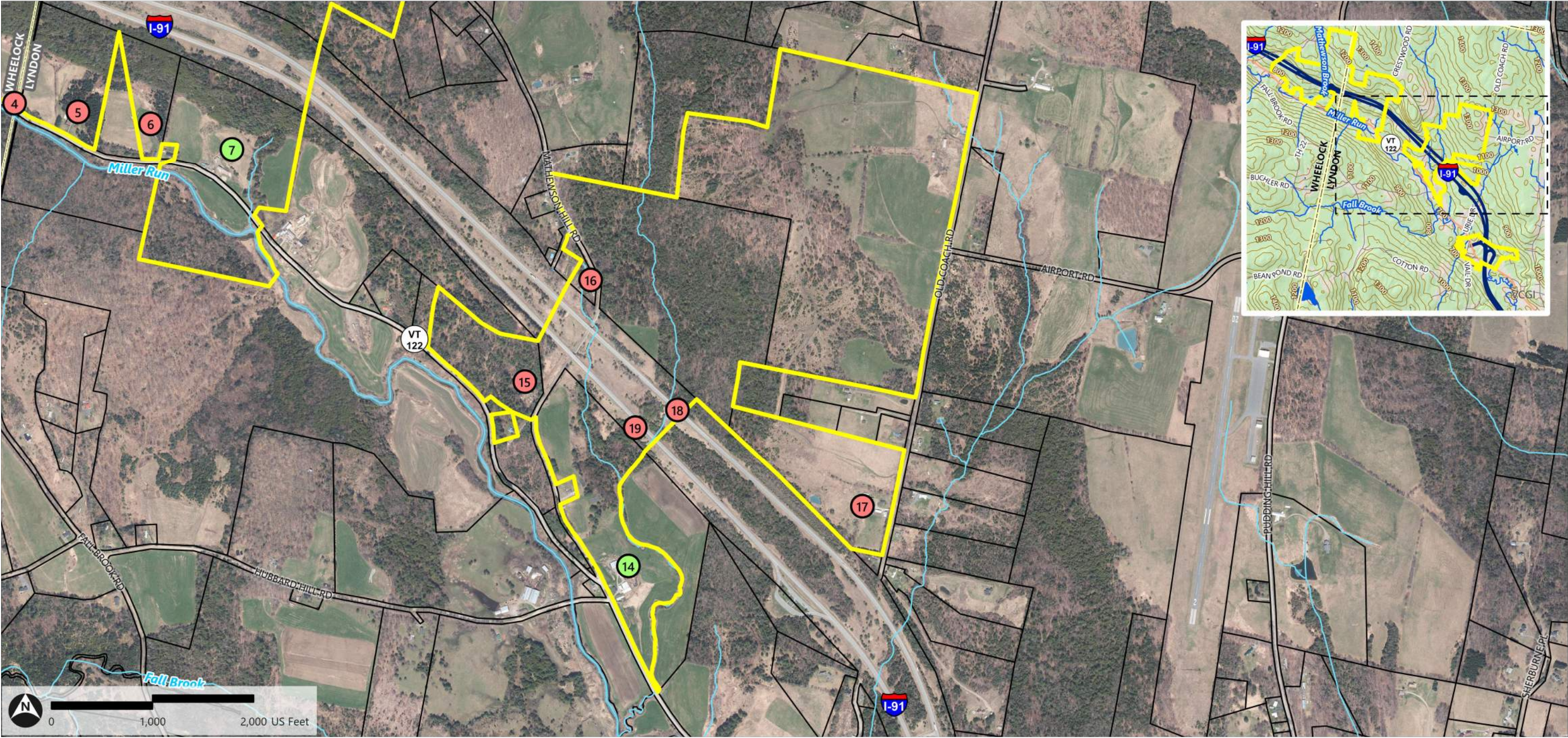
Path: \\vhb.com\gis\proj\SBurlington\58752.00 Lyndon Design-Build\Lyndon_Design_Build.aprx (User: jtherrien, Date: 8/5/2022)

Historic Resources Map Series - Sheet 2 of 3

Lyndon IM 091-3(53) | Lyndon, Vermont



August 05, 2022



- Study Area (VHB)

VHD Stream (VCGI)

VHD Waterbody (VCGI)
- Town Boundary (VCGI)

Parcel Boundary (VCGI)

Railroad (VTrans)
- Surveyed Property (VHB)

Eligible

Ineligible

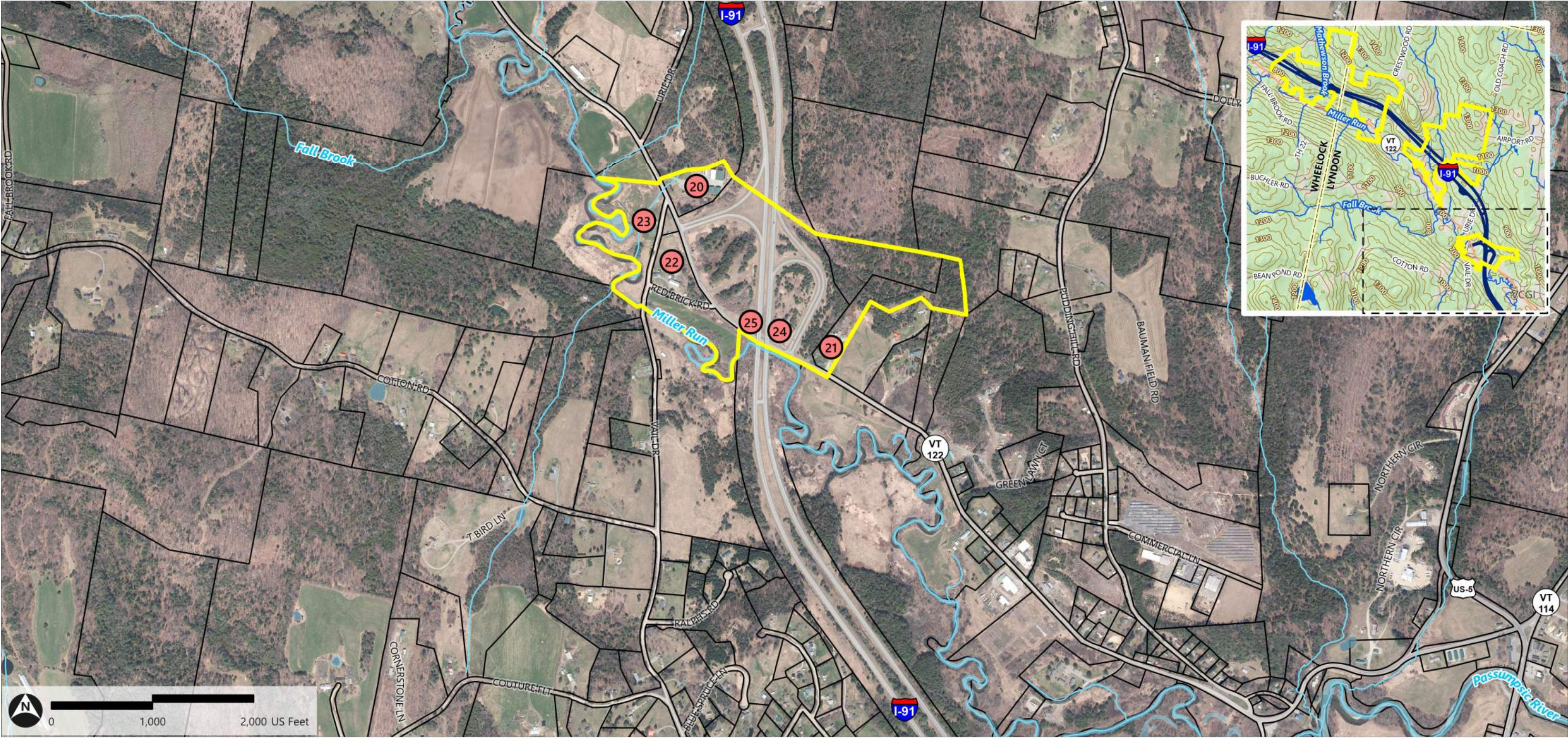
Sources: Background imagery by VCGI (Collected in 2021); VCGI (Vermont Center for Geographic Information - Various Dates); VTrans (Vermont Agency of Transportation - Hosted Feature Service); VHB - 2022

Historic Resources Map Series - Sheet 3 of 3

Lyndon IM 091-3(53) | Lyndon, Vermont



August 05, 2022



- | | | |
|----------------------|------------------------|------------|
| Study Area (VHB) | Town Boundary (VCGI) | Eligible |
| VHD Stream (VCGI) | Parcel Boundary (VCGI) | Ineligible |
| VHD Waterbody (VCGI) | Railroad (VTrans) | |

Sources: Background imagery by VCGI (Collected in 2021); VCGI (Vermont Center for Geographic Information - Various Dates); VTrans (Vermont Agency of Transportation - Hosted Feature Service); VHB - 2022

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APPENDIX B



Photograph 1: 694 VT Route 122 Map ID 2.



Photograph 2: 374 VT Route 122 Map ID 3.



Photograph 3: 122 VT Route 122 Map ID 4



Photograph 4: 122 VT Route 122 Map ID 4



Photograph 5: 3740 Gilman Road Map ID 5



Photograph 6: 3558 Gilman Road Map ID 6

*Lyndon IM 091-3(53) Historic Resources Identification
Appendix B - Photographs*



Photograph 7: 3468 Gilman Road Map ID 7



Photograph 8: 3468 Gilman Road Map ID 7



Photograph 9: 440 Sutton Road Map ID 8



Photograph 10: 514 Sutton Road Map ID 9



Photograph 11: 2091 Mathewson Hill Road Map ID 10



Photograph 12: 2091 Mathewson Hill Road Map ID 10



Photograph 13: 2005 Mathewson Hill Road Map ID 11



Photograph 14: 1791 Mathewson Hill Road Map ID 12



Photograph 15: 2320 Gilman Road Map ID 14



Photograph 16: 2320 Gilman Road Map ID 14



Photograph 17: 2320 Gilman Road Map ID 14



Photograph 18: 2320 Gilman Road Map ID 14



Photograph 19: 611 Mathewson Hill Rd Map ID 16



Photograph 20: 1808 Old Coach Road Map ID 17



Photograph 21: Culvert 96-3N Map ID 18



Photograph 22: Culvert 96-3S Map ID 19



Photograph 23: 1138 Gilman Road Map ID 21



Photograph 24: 1138 Gilman Road Map ID 21



Photograph 25: 150 Red Brick Road Map ID 22



Photograph 26: 150 Red Brick Road Map ID 22



Photograph 27: 249 Red Brick Road Map ID 23



Photograph 28: Bridge 0096N. Map ID 24. Photograph taken by VTrans June 4, 2020.



Photograph 29: Bridge 0096S. Map ID 25. Photograph taken by VTrans June 4, 2020.

APPENDIX C

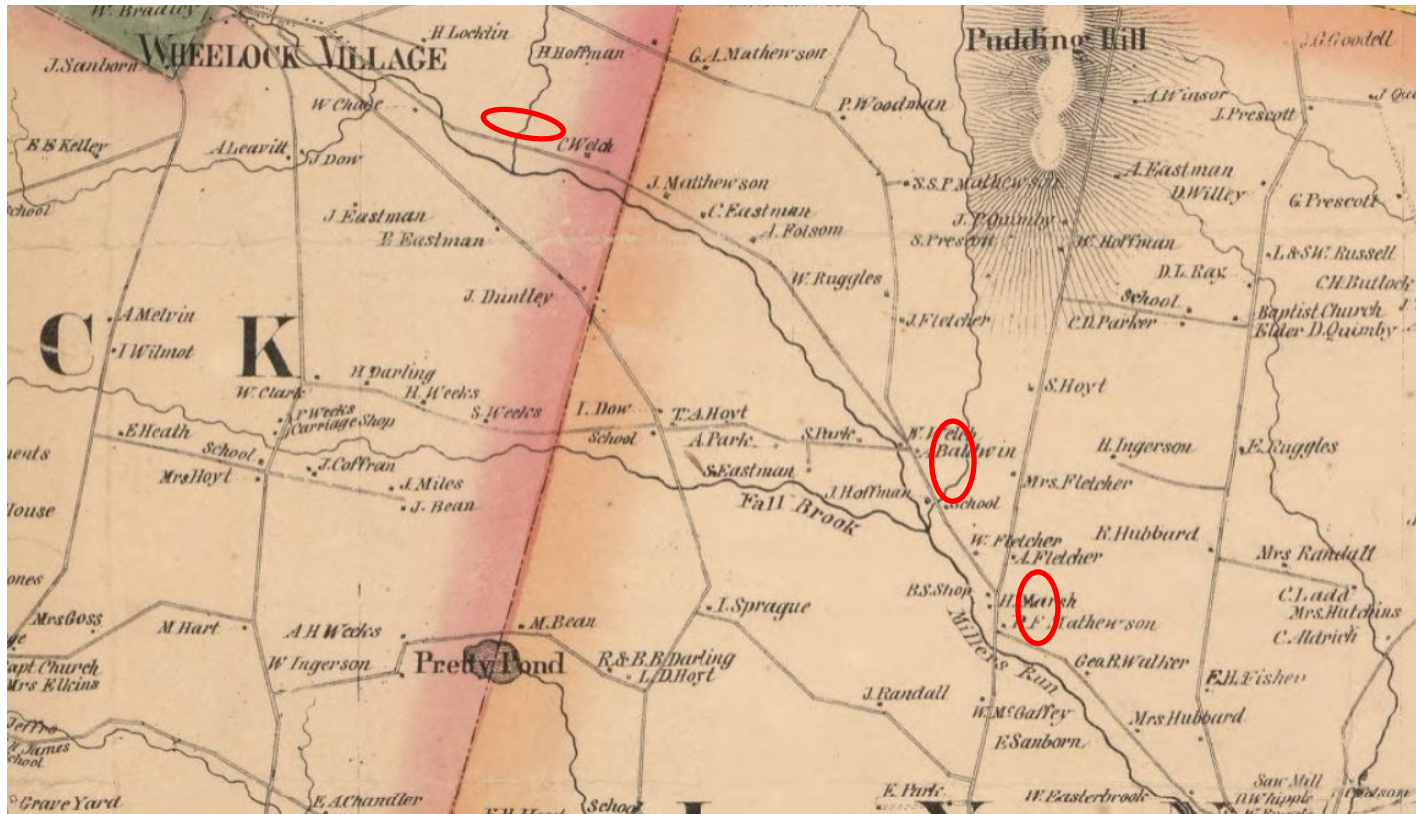


Figure 1: Henry Francis Walling Map from 1858 showing rural Wheelock and Lyndon and the future I-91 corridor between the towns. The general location of the three project Study Areas are denoted with red circles. Each is located slightly north of VT 122 on land that would later be used for the highway's construction. *Map of Caledonia County, Vermont*. New York: Baker & Tilden, 1858. Map.

<https://www.loc.gov/item/2005625342/>.

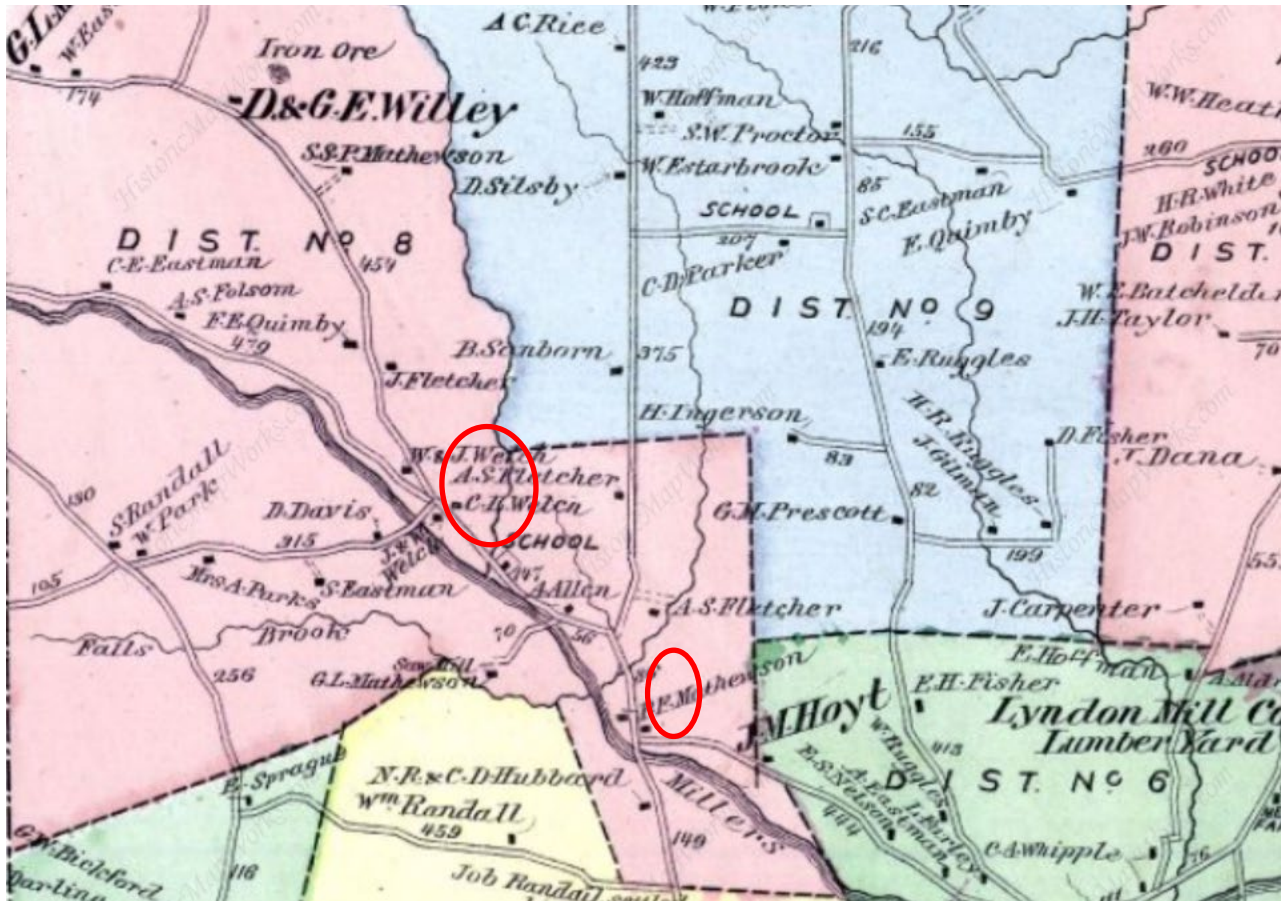


Figure 2: Excerpt from the 1875 F. W. Beers Map showing rural Lyndon and the Central and Southern Study Areas, which are highlighted with red circles. The future Happy Days Farm is denoted here as the C. L. Welch property.

<http://www.historicmapworks.com/Map/US/4700/Lyndon/Caledonia+County+1875/Vermont/>

Figure 3: Excerpt from the 1875 F. W. Beers Map. The Northern Study area is shown in the red circle.
<http://www.historicmapworks.com/Map/US/4720/Wheelock++Wheelock+Part/Caledonia+County+1875/Vermont/>.



Figure 4: 1962 aerial photograph. The Central and Southern Study Areas are shown in red. Aerial photograph courtesy of Vermont Center for Geographic Information, https://maps.vcgi.vermont.gov/gisdata/vcgi/imagery/HISTORIC/1960s/1962/62H/NONGEOREFERENCED/62H_1962_53-158_nongeoref.jpg. (Accessed August 4, 2022).

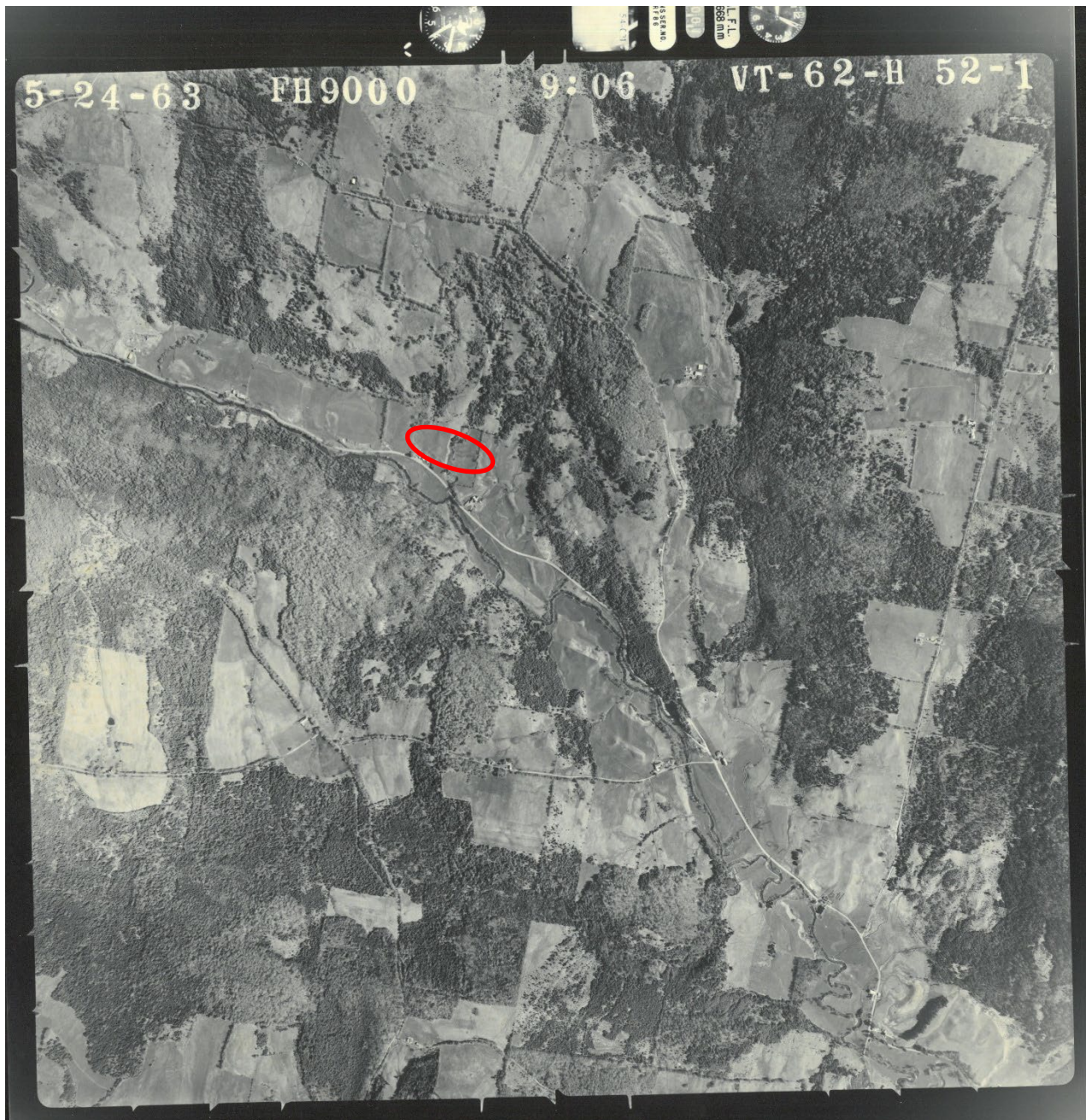


Figure 5: 1962 aerial photograph. The Northern Study Area is shown in red. Aerial photograph courtesy of Vermont Center for Geographic Information, https://maps.vcgi.vermont.gov/gisdata/vcgi/imagery/HISTORIC/1960s/1962/62H/NONGEOREFERENCED/62H_1962_52-001_nongeoref.jpg. (Accessed August 4, 2022).



Figure: 374 VT Route 122. The barn to the right of the house is no longer extant but the house remains today. Vintage Aerial Photograph 4-QCA-7.

<https://vintageaerial.com/photos/vermont/caledonia/1966/QCA/4/7> (Accessed 8/4/2022).

**ARCHAEOLOGICAL RESOURCES ASSESSMENT FOR THE VTRANS LYNDON IM
091-3(53) PROJECT, LYNDON, CALEDONIA COUNTY, VERMONT**



**University of Vermont
Consulting Archaeology Program
180 Colchester Avenue
111 Delehanty Hall
Burlington, VT 05405
Report No. 1438**

April 04, 2023

**ARCHAEOLOGICAL RESOURCES ASSESSMENT FOR THE VTRANS LYNDON IM
091-3(53) PROJECT, LYNDON, CALEDONIA COUNTY, VERMONT**

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April 04, 2023

PROJECT DESCRIPTION

The proposed VTrans Lyndon IM 091-3(53) project is located along a section of Interstate 91 (I-91) in the town of Lyndon, Caledonia County, Vermont (Figure 1). The project Area of Potential Effects (APE) includes three segments along I-91 that are also parallel to Miller Run, a major tributary of the Passumpsic River. After completion of this Archaeological Resources Assessment (ARA), the preliminary project plans were redesigned to exclude previously selected access and staging areas that will no longer be needed, as access to construction zones will be made via the existing embankments and current roads. The changes in the project footprint and redesign of plans were aimed to avoid adverse effects on archaeologically sensitive segments identified in the project area and to reduce the dimensions of the APE.

The northern APE segment is located between Sutton Road and Mathewson Hill Rd and originally covered an area of 43 acres (Figure 2) that was reduced to an area of approximately 3 acres after the revision of project plans. The unrevised central segment of the APE was originally located southeast of Mathewson Hill Road, directly east of Squabble Hollow creek, and covered an area of approximately 51 acres (Figure 3). The central segment of the APE was reduced to an area of approximately 9 acres within the central segment to avoid the archaeologically sensitive areas identified within the original project boundaries. The southernmost APE segment is in the area between Urie Drive and Gilman Road including the exit ramps for I-91, and originally measured 800 m (2624 ft.) north to south by 116 m (380 ft.) east to west in an area covering 20 acres (Figure 4). The southern APE segment was reduced to an area of approximately 3 acres in the updated project plans. Project elements include a combination of culvert and other water drainage management along the selected sections of the I-91 highway (Figure 5). For project planning purposes, the project's APE was defined by maps provided on behalf of VTrans. The ARA for the VTrans Lyndon IM 091-3(53) project was undertaken to comply with State and Federal regulations including Section 106 of the National Historic Preservation Act of 1966, as amended.

STUDY GOAL

The goal of an Archaeological Resources Assessment (ARA) (or "review") is to identify portions of a specific project's APE that have the potential to contain precontact era Native American and/or historic era archaeological sites. An ARA is to be accomplished through documentary research and a field inspection of the proposed project's APE. For this ARA, reference materials were reviewed following established guidelines (VDHP 2017). Resources examined include the National Register of Historic Places (NRHP) files; the Historic Sites and Structures Survey; and the United States Geological Survey (USGS) master archaeological database maps and reports that accompany the Vermont Archaeological Inventory (VAI). Relevant town histories, newspaper articles, nineteenth and twentieth-century maps, and online websites and mapping programs were consulted. Based on this background research, general contexts were derived regarding potential archaeological resources in the study area.

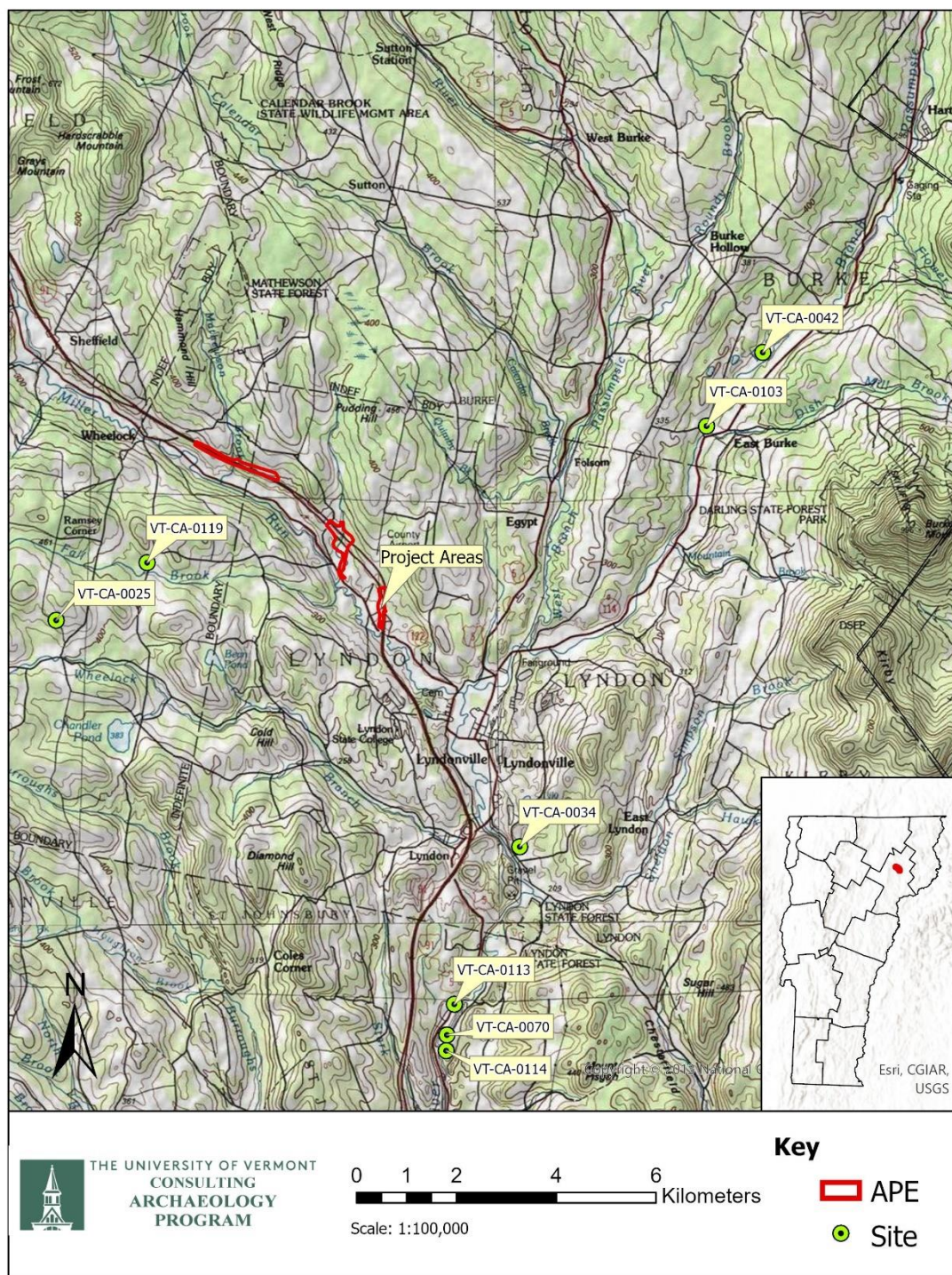
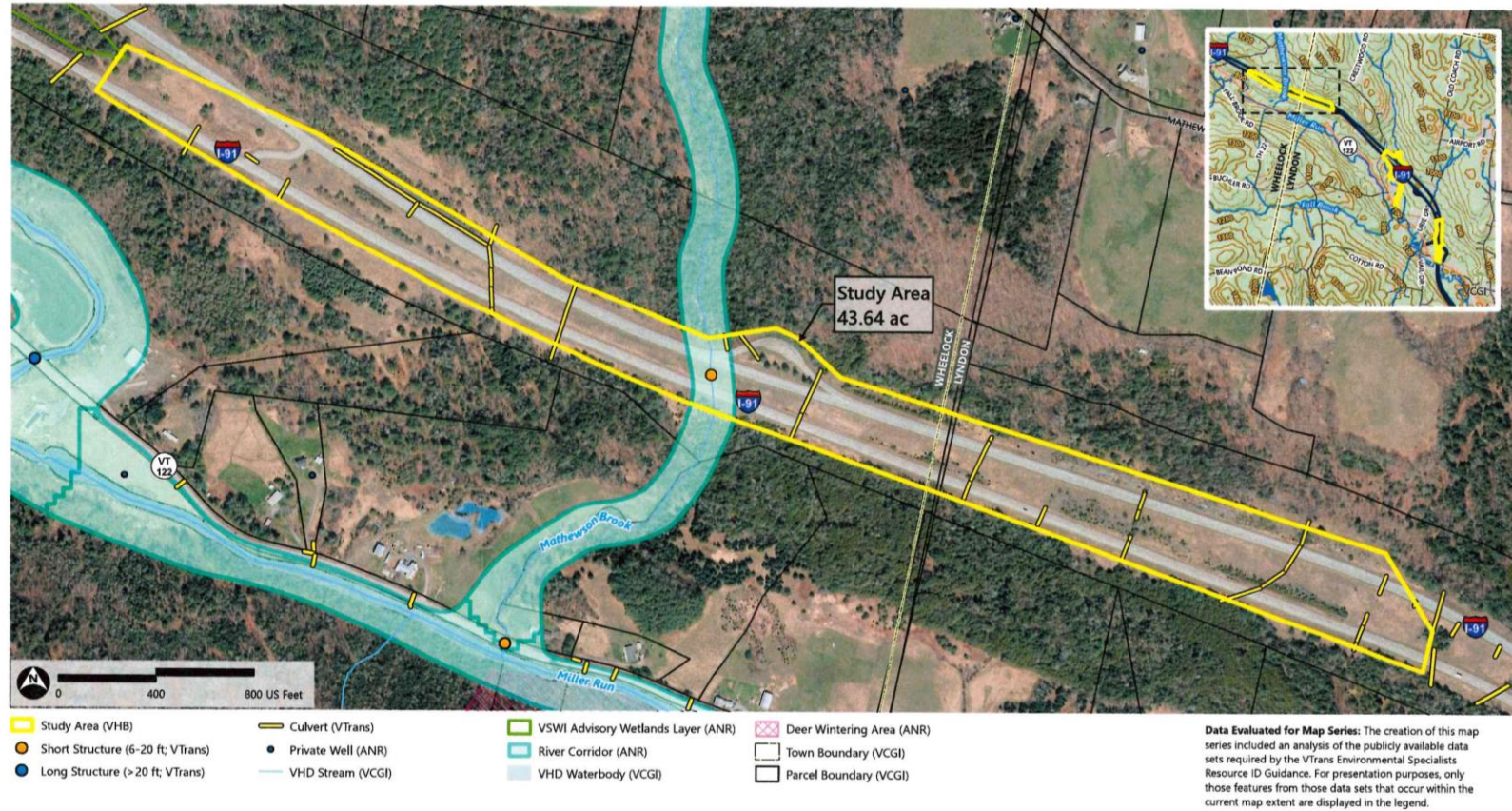


Figure 1. USGS topographic map showing the location of the proposed VTrans Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont. Also depicted are the locations of previously recorded archaeological sites near the project area.



Sources: background imagery, by VCGI (collected in 2020); ANR (Vermont Agency of Natural Resources); Various Public; VCGI (Vermont Center for Geographic Information); Various Datasets; VTrans (Vermont Agency of Transportation); Historic Feature Service; VHB - 2022

Figure 2. Aerial photo showing the unrevised project plan for the northern APE segment for the proposed VTrans Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont.

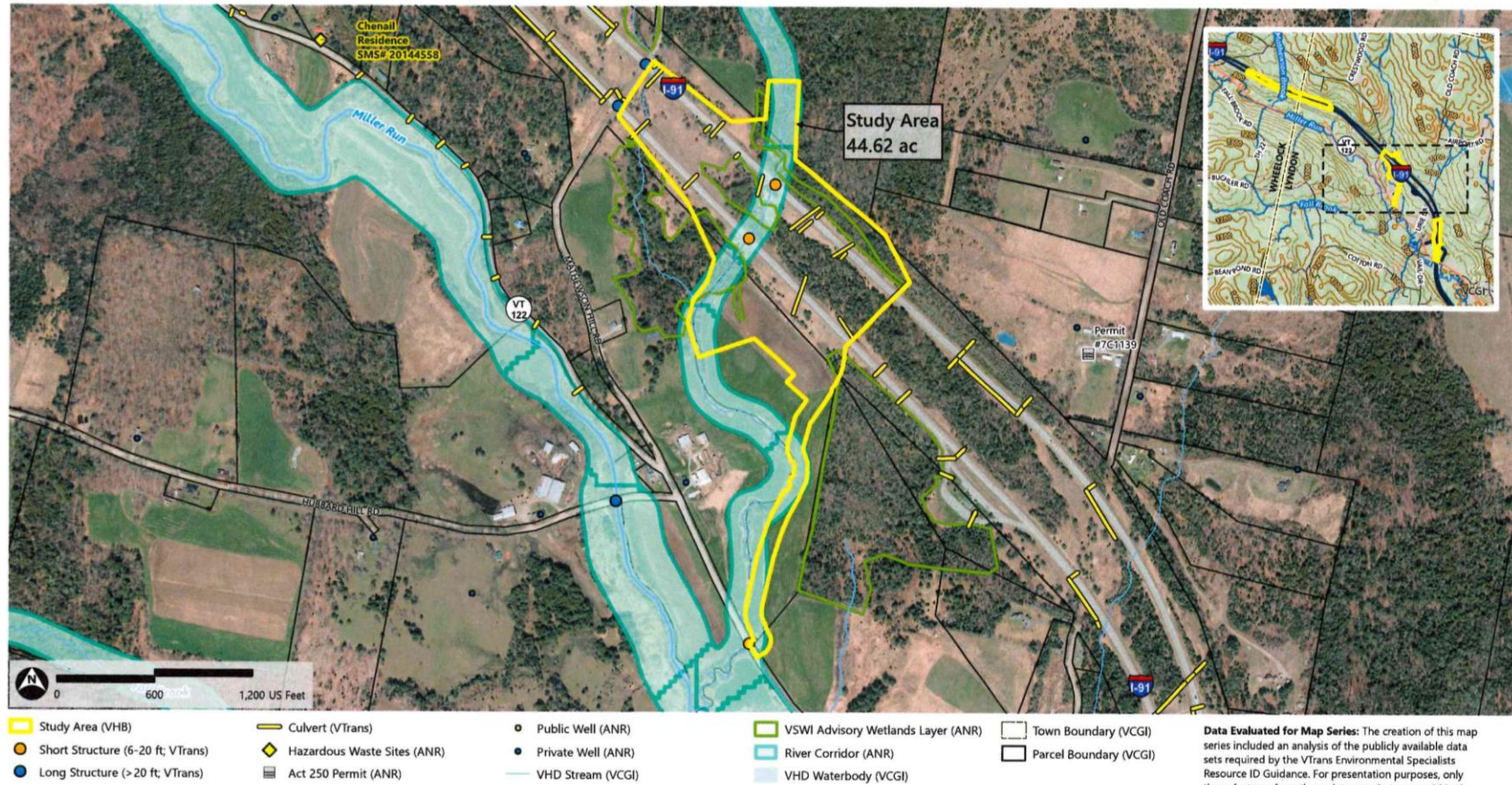


Figure 3. Aerial photo showing the unrevised project plan for the central APE segment for the proposed VTrans Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont.

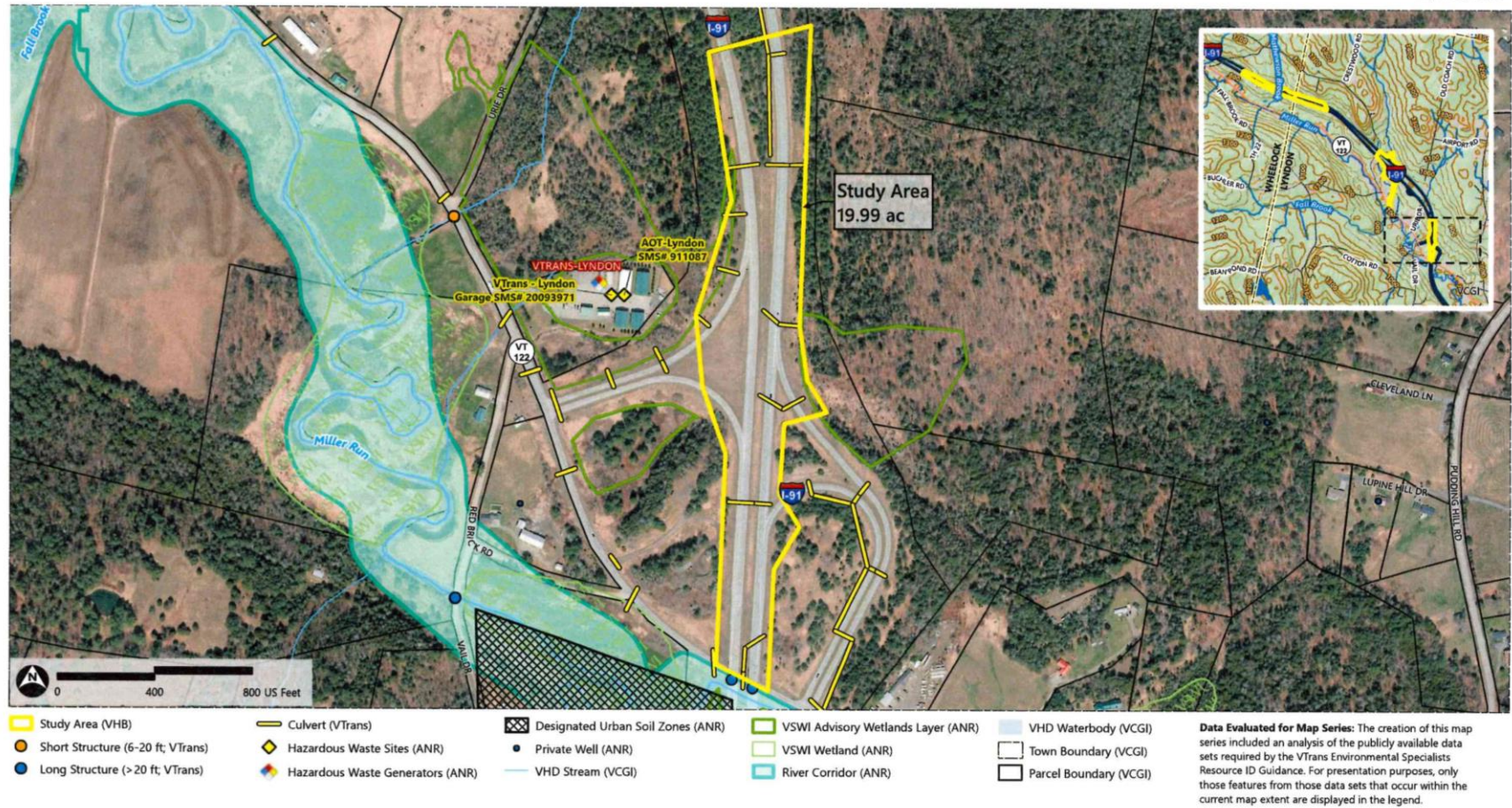


Figure 4. Aerial photo showing the unrevised project plan for the southern APE segment for the proposed VTrans Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont.

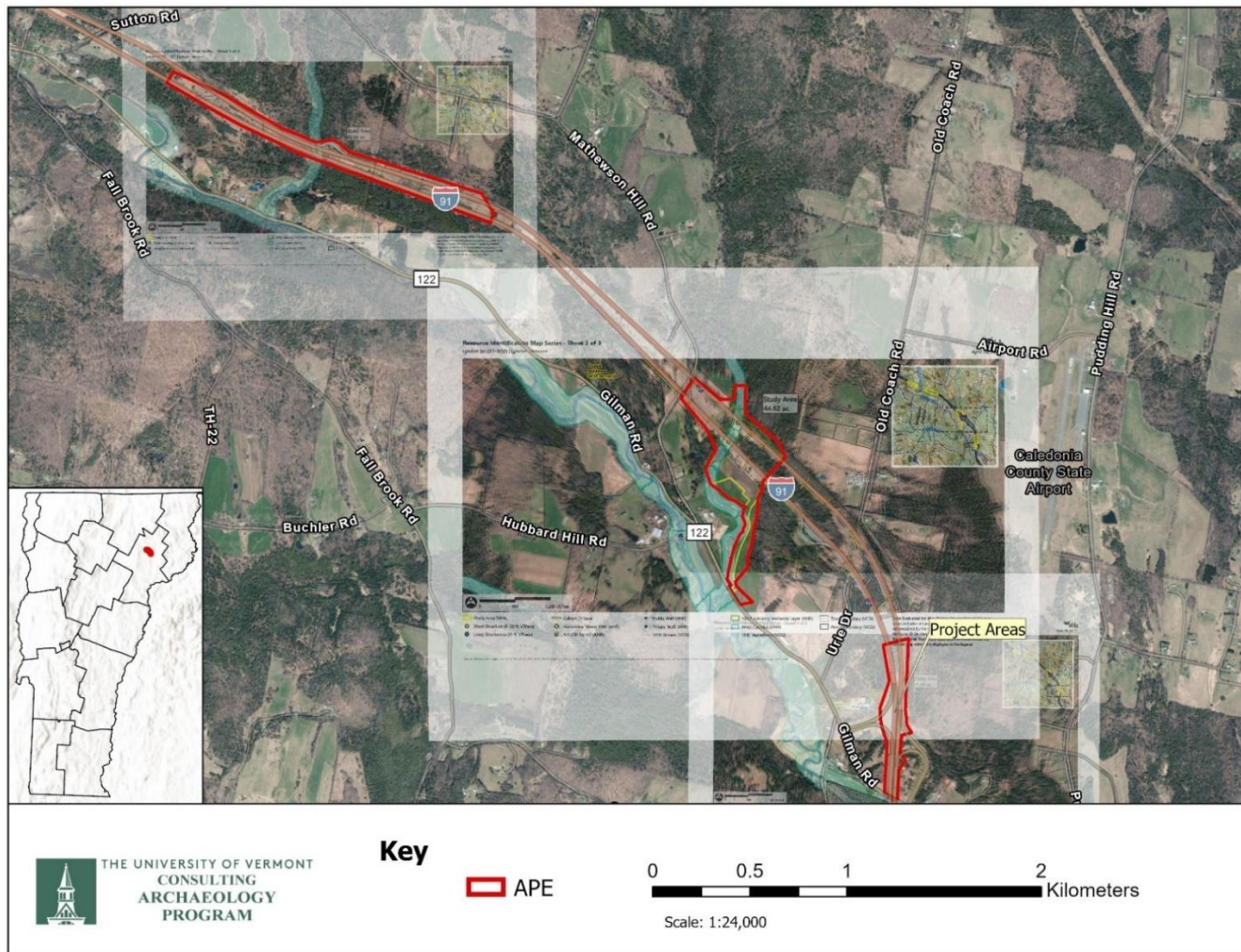


Figure 5. Aerial photo with an overlay of the proposed VTrans Lyndon IM 091-3(53) unrevised project plan, Lyndon, Caledonia County, Vermont.

ENVIRONMENTAL CONTEXT

The proposed VTrans Lyndon IM 091-3(53) project is located within the Miller Run watershed which covers an area of approximately 29,560 acres in Caledonia County. Miller Run is a 48.5 mile long main tributary of the Passumpsic River, with headwaters originating in Sheffield, and ending near the town of Lyndon (see Figure 1). The name of the river originated from the high number of early sawmills on its banks. Currently the waterway is flanked by Route 122 and has been extensively influenced by the construction and use of I-91 (Caledonia County Natural Resources Conservation District <https://caledoniadistrict.org/about-us/> accessed July 2022).

The northern segment of the APE is at an elevation of 900 ft. above mean sea level (a.m.s.l.) within an extensively modified area that has been land leveled and mostly asphalted during the development of I-91 and associated rest area along the highway. At the time of the survey, the non-asphalted areas within the northern segment of the APE were covered with short grass (see Figure 2). This segment of the project area has well-drained soils classified as Vershire-Lombard very stony complex found on back slopes and side slopes that formed in Loamy Till and have a surface area covered with cobbles, stones, or boulders with a topography ranging between 15 to 60% slopes (USDA, NRCS 2022).

The central segment of the APE is adjacent to Squabble Hollow Creek a tributary of Miller Run, including areas along the western APE boundary that range in elevation between 900 ft. at the northern limit to 700 ft. (a.m.s.l.) at the southern boundary (see Figure 3). This segment of the unrevised APE consists of asphalted and extensively modified areas in the northern limit associated with I-91, as well as a cultivated field just south of the highway within the unrevised APE, and a less disturbed grass-covered area at the lower elevation zones within the central and southern limits of the project area (Figure 6 and 7). After the revision of project plans it was stipulated that the cultivated field and the grass-covered areas on the central segment will no longer be affected by access to the construction zones and will not be disturbed. Soils in the central segment of the APE are categorized as: Cabot silt loam very stony in 8 to 15% slopes in the northern portion that formed from loamy lodgment till derived from mica schist and/or loamy lodgment till derived from limestone; Vershire-Lombard complex in 15 to 25% slopes in the middle section of the segment that is well drained and formed from loamy till; and Charles silt loam in 0 to 2% slopes poorly drained formed from Coarse-silty alluvium derived from metasedimentary rock at the southern areas of the APE segment. (USDA, NRCS 2022).

The southern segment of the APE ranges in elevation between 800 ft in the northern areas of the segment to 700 ft. (a.m.s.l.) at the southern limit (see Figure 4). The soils in this segment are categorized as Charles silt loam in 0 to 2% slopes in the northern part of the segment, that formed from Coarse-silty alluvium derived from metasedimentary rock that are in frequently flooded lowlands; as well as Colton-Duxbury complex in 3 to 8% slopes at the southern part of the segment, derived from sandy and gravelly glaciofluvial deposits that are excessively drained (USDA, NRCS 2022).



Figure 6. View northwest of the central APE segment showing the location for the proposed VTrans Lyndon IM 091-3(53) Project, Lyndon, Caledonia County, Vermont.



Figure 7. View south of the central APE segment showing the location for the proposed VTrans Lyndon IM 091-3(53) Project, Lyndon, Caledonia County, Vermont.

CULTURAL CONTEXT

Project Area Precontact Era Native American Sites

As part of the overall investigation for the proposed ARA, state records and archaeological reports were referenced to identify any known prehistoric Native American sites existing within or near the limits of the project area. The Vermont Division of Historic Preservation's (VDHP) predictive model for identifying precontact Native American archaeological sites and a review of the Vermont Division for Historic Preservation's Vermont Archaeological Inventory (VAI) indicate that there are no known precontact era Native American archaeological sites within the project area or the Miller Run watershed (see Figure 1).

Current Vermont Archaeological Inventory (VAI) mapping data shows that the closest recorded precontact sites to the APE are three archaeological sites clustered along the banks of the Passumpsic River, 8 km (5 mi) south of the APE, designated VT-CA-0070, 0113, and 0114 (see Figure 1). The Pierce Mill Meadow Site (VT-CA-0113) was identified during the Benedict Curve RS-0113 (14) Highway Survey conducted by the University of Vermont's Consulting Archaeology Program (CAP) in 1979 (Thomas 1979). The site was identified as Late Archaic and may also be the same as the site referenced by Edward Fairbanks in 1912, previously identified as site FS-CA-0002. The River Bend Site (VT-CA-0114) was also identified during the 1979 CAP survey for the Benedicts Curve RS-0113 (14) Highway Survey consisting of materials dating to the Late Archaic (Thomas 1979). Site VT-CA-70, was identified during the Lydall/Westex Development Project survey conducted in 1999 by CAP (Thomas and Florentin 1999). The site is described as a small, short-term camp with evidence of limited tool making, and Fox Creek like projectile points indicating a Middle Woodland occupation that it is located on a terrace approximately 20 miles from the Passumpsic River (see Figure 1). An earlier archaeological survey in the proposed route of I-91 in the segment between St. Johnsbury to Lyndonville, conducted before construction, indicates that there are no archaeological sites along this stretch of the highway or within the proposed APE for the current project (Vogelman and Haviland 1973: 27). The lack of sites on this segment of the highway is attributed to the unfavorable terrain and farther distance to the Passumpsic River (Vogelman and Haviland 1973: 19). This early survey did not include intensive sampling, however.

The VDHP Environmental Predictive Model that highlights habitability factors that could correlate with the location of precontact era Native American sites indicates that the north and south segments of the APE are not sensitive for archaeological sites (Figure 8). In these maps, archaeological sensitivity is depicted by the presence of one or more overlapping factors, or types of archaeological sensitivity (i.e. proximity to water, etc.). The lack of integrity of the local soils as a result of the construction of the highway and roads in these areas, in combination with the low number of habitability factors shown in the predictive model, is indicative of the low potential for the presence of Native American archaeological sites or undisturbed contexts in the north and south APE segments (see Figures 2, 4, and 8). In contrast to the north and south segments, the unrevised central APE segment is highlighted in the predictive model with multiple habitability factors indicative of the highly sensitivity for precontact archaeological sites given its proximity to Miller Run and associated wetlands, its location adjacent to Squabble Hollow Creek, head of draw proximity, and level terrain. The archaeologically sensitive areas

on the central portion of the APE are concentrated in the less disturbed parts of the segment located south of I-91 (Figure 9). After the revision of project plans the archaeologically sensitive areas within the central APE segment were excluded from the project and will no longer be disturbed by the planned construction elements. Using the Vermont Division for Historic Preservation paper-based model, it was determined that the entire project area scores “44” in terms of habitability factors, well above the threshold score of “31” for archaeological sensitivity. These factors include proximity to Miller Run and Squabble Hollow Creek (12), the confluence of rivers or streams (12), Head of draw proximity (8) and distance to wetlands (12).

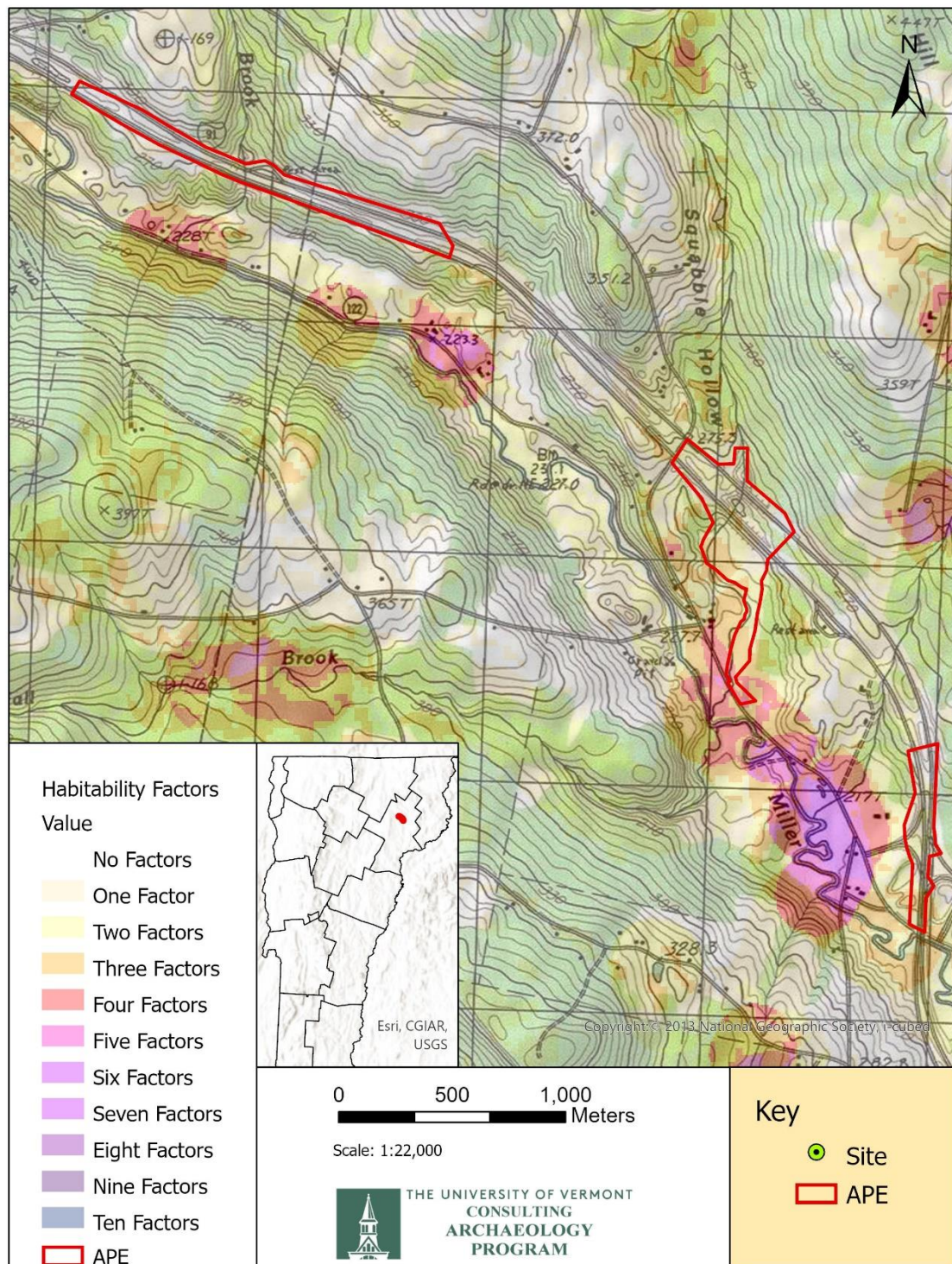


Figure 8. Map showing the original project location with an overlay of the VDHP predictive model showing habitability factors that correlate with the location of Native American archaeological sites.

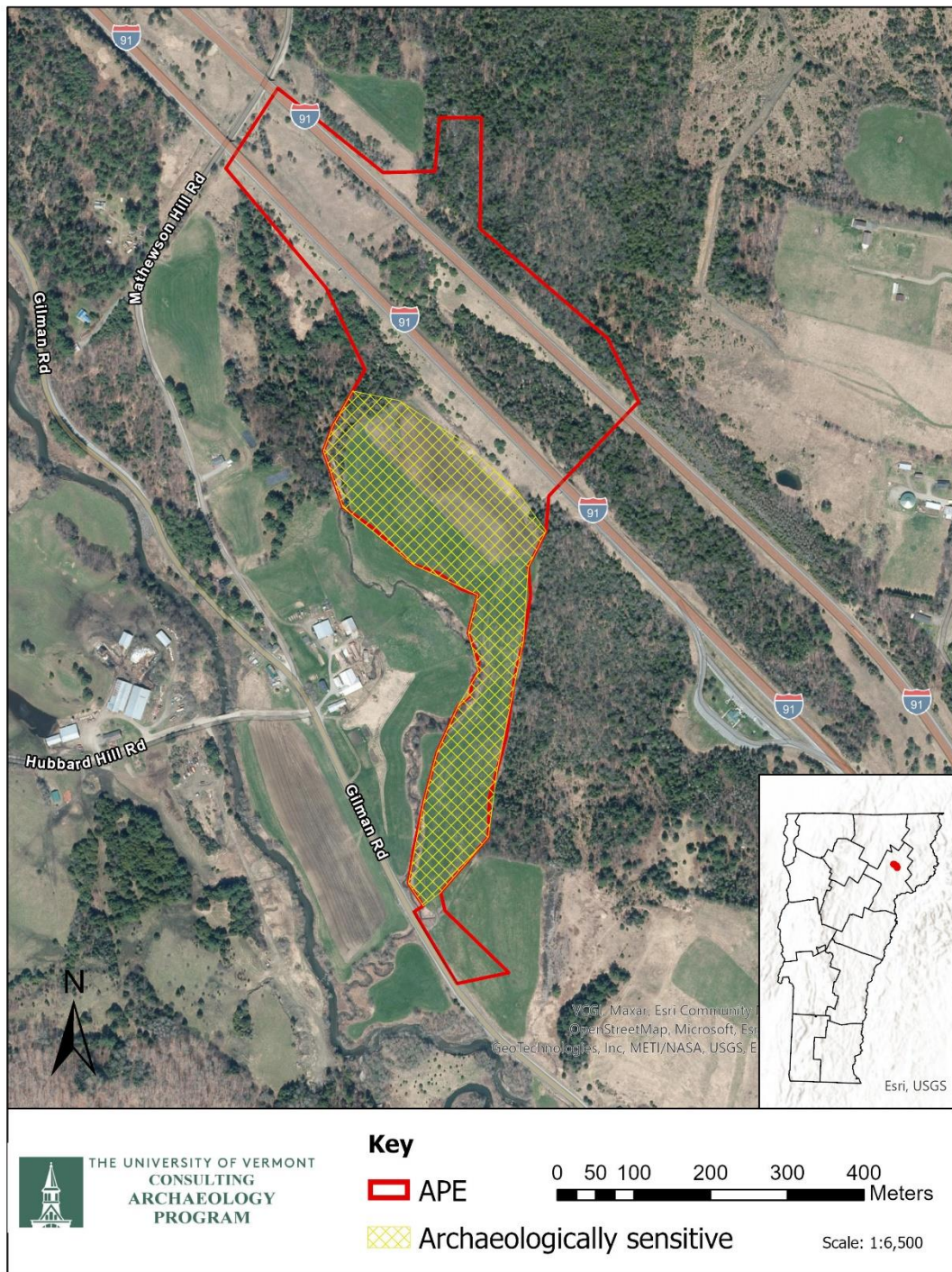


Figure 9. Aerial photo showing the unrevised project plan and archaeologically sensitive area for the central APE segment for the proposed VTrans Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont.

Project Area Historic Era Sites

Current Vermont Archaeological Inventory (VAI) mapping data shows that the closest recorded historic site to the APE is the Fifield Tavern site located 4 km (2.5 mi) west of the APE, designated VT-CA-0119 (see Figure 1). The site was recorded by Andy Beaupre based on the descriptions of a local informant who stated the site was heavily compromised by excavations with heavy machinery and looting. The Fifield Tavern was founded by Edward Fifield around 1806 when he was conveyed land by his father-in-law. Edward was a Lieutenant Colonel in the War of 1812 and moved to Ohio in 1815 as indicated in the site's catalog card in the VAI.

Historic maps of the project area indicate that there are no known historic era structures within the proposed project limits at the north and south APE segments. The Wailings (1858) map of Caledonia County indicates that three historic residences were once located nearby the north APE segment, approximately 300 m (984 ft.) south of the project limits. The first of these structures on the north was under the ownership of C. Welch, the central structure appears under J. Matthewson and the south or third structure were owned by C. Eastman (Figure 10). Two of these structures including the C. Welch and C. Eastman houses also appear in the Beers (1875) map of Caledonia County, while the structure owned by J. Matthewson does not appear in this later map suggesting that this residence was no longer present by 1875 (Figure 11). No other structure symbols appear within or in the vicinity of the north or south APE segments in any later historic maps, or aerial photos of the project area consulted for this ARA.

The historic maps of the central APE segment show the Squabble Hollow school in the southwest corner of the project area (Wailings 1858), which also appears in the Beers maps of Caledonia County (1875). These maps indicate this portion of the original APE is sensitive for historic archaeological sites and will be avoided after the redesign of project plans (see Figures 10 and 11). The school structure symbol continues to appear in later historic maps including the 1935, 1939, and 1951 USGS topographic 15' quadrangle maps of Lyndonville, but no longer appears in the 1968 USGS topographic 7.5' quadrangle maps of Lyndonville. The school doesn't appear on any of the later maps or aerial imagery consulted for this project either, indicating the structure was no longer present by 1968.

The present-day area along the three segments of highway I-91 consists of asphalted areas, large culverts with associated water drainage management areas, as well as grass-covered areas and an agricultural field on the central APE segment (see Figure 5). The north and south segments of the APE are not considered archaeologically significant for historic sites due to the lack of known historic structures or materials at these locations which correlate with the low number of habitability factors in these two areas.

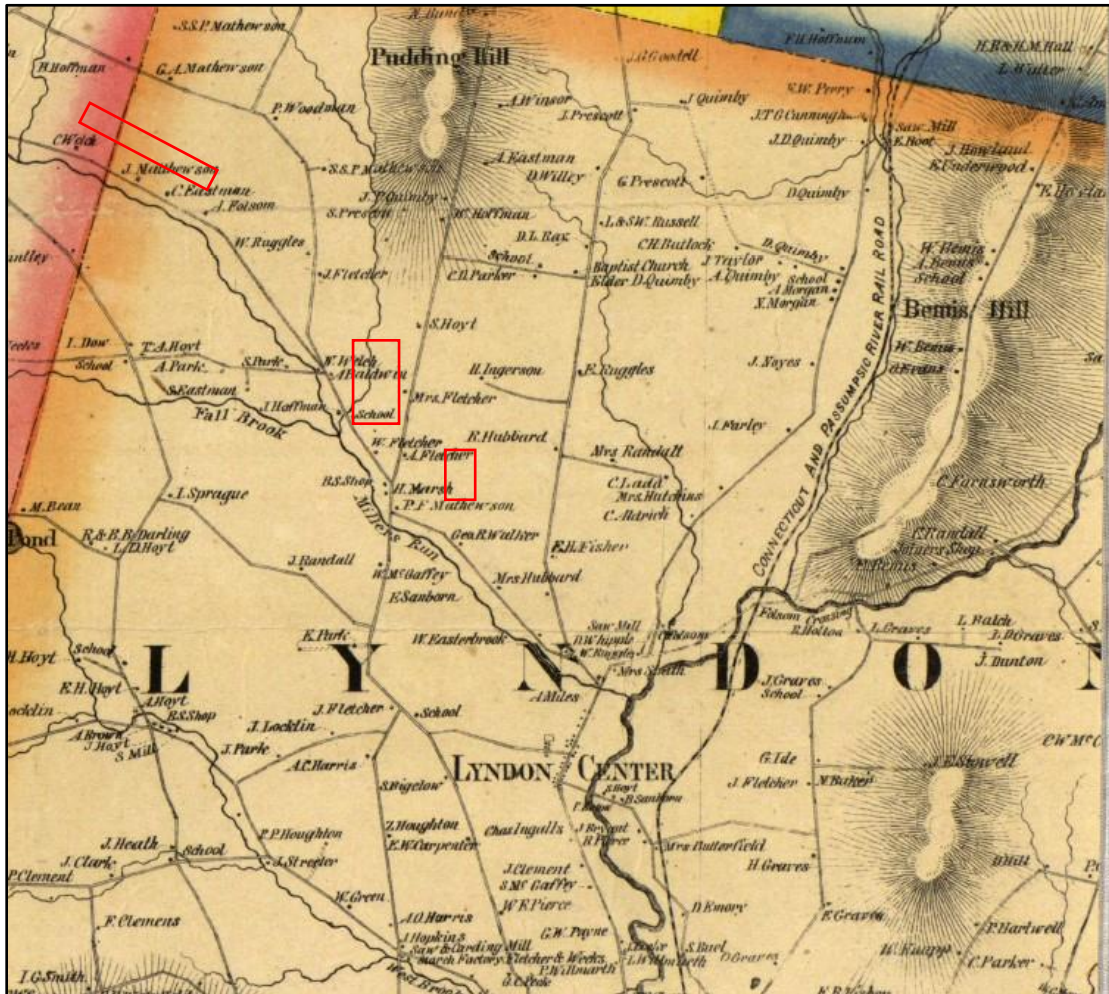


Figure 10. 1858 Walling map showing the location of the project area, Lyndon, Caledonia County, Vermont.

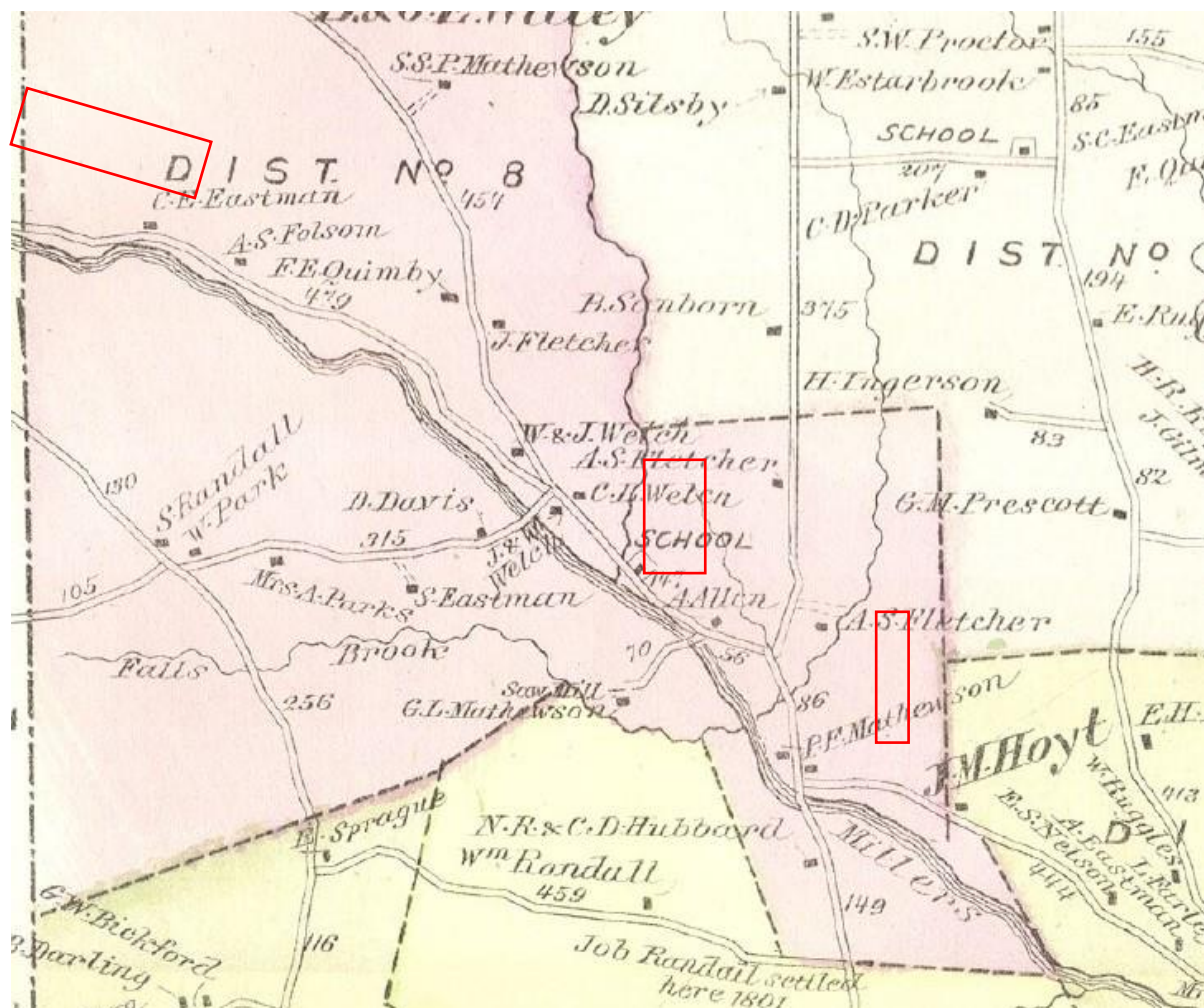


Figure 11. 1879 Beers map showing the location of the project area, Lyndon, Caledonia County, Vermont.

Topographic maps and LiDAR imagery of the north and south APE segments show the landform having been extensively altered and leveled at locations corresponding to the existing roads, staging areas, and areas used for the extraction of sand and other materials used in the construction of the highway (Figure 12). The LiDAR imagery also shows naturally elevated areas in the central APE segment south of the agricultural field as well as less disturbed areas along the creek and the southern limits of this part of the original APE (see Figure 12). The LiDAR imagery and images from The Google oblique satellite from 2020 of the APE show the prepared/leveled areas on the north and south segments of the APE, while the central APE segment shows that the terrain is less uniform and includes the presence of natural terraces, that are likely sensitive for archaeological sites (see Figure 12). After consideration of the historic background of the APE, the evaluation of historic maps, and the VDHP Online Research Center (ORC), no historic archaeological sites are expected to be affected by the proposed project in the north and south segments. In the case of the central APE segment, the historic review indicates this area is sensitive for historic sites given its association with the Squabble Hollow school structure and the high number of habitability factors correlating with precontact Native American sites as shown by the predictive model of this area. Given the high sensitivity for archaeological sites on the original central APE segment, undisturbed areas that have not been affected by the construction of the highway will be avoided on this segment of the APE.

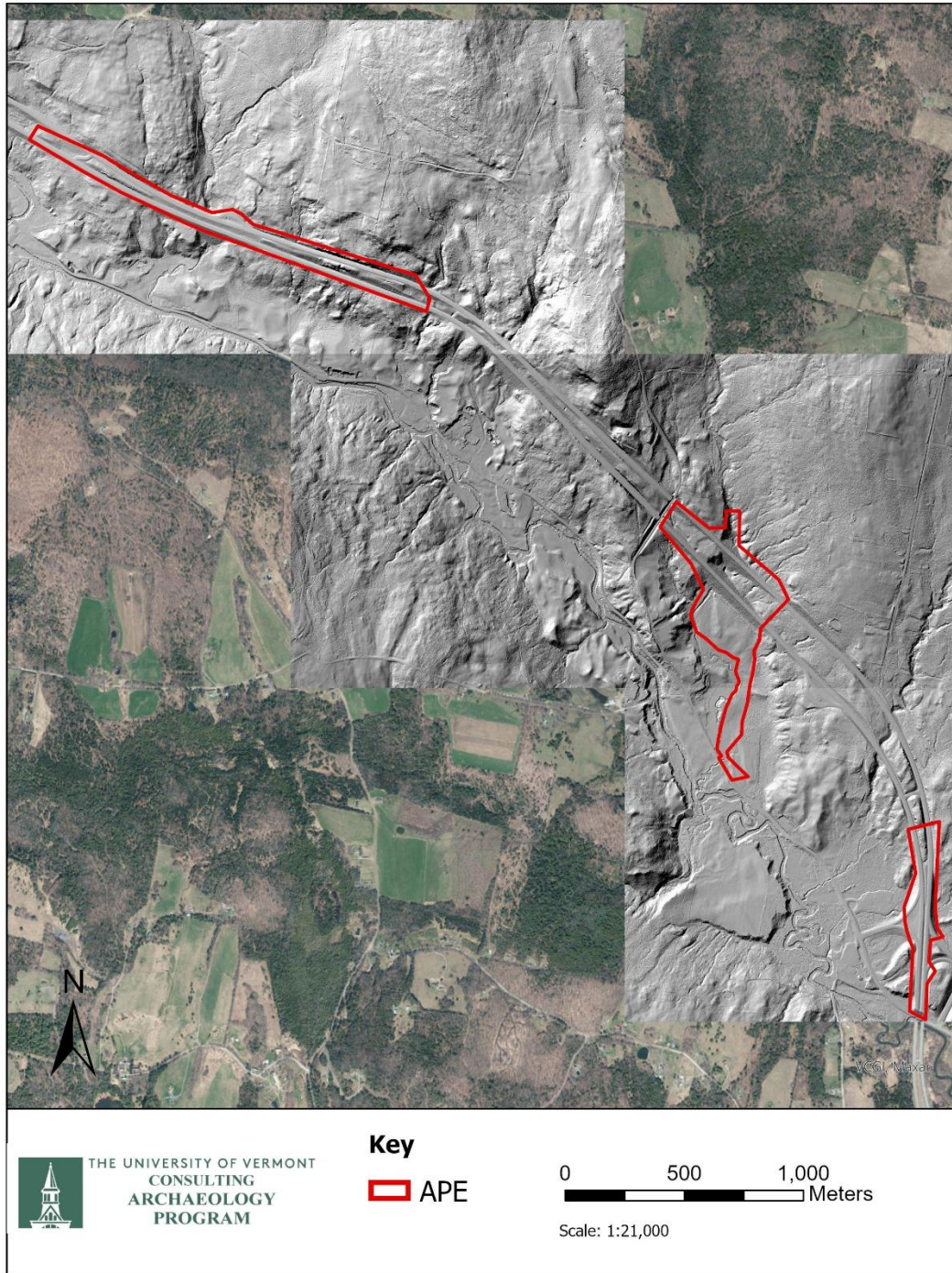


Figure 12. Aerial photo with overlay of the LiDAR topographic imagery showing the unrevised APE of the proposed VTrans Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont.

SITE INSPECTION

The site inspection for the project area was conducted by UVM CAP archaeologist Jorge L. Garcia Ph.D. on June 27, 2022. At the time of the inspection weather conditions were cloudy with sporadic rains and high humidity. All elements of the proposed project and its immediate surroundings were visually inspected and recorded in digital camera color format during the field visit. Given that the locations of the north and south segments of the APE are within the developed areas along I-91, with a low sensitivity for precontact Native American or historic sites as shown in the habitability model, and the background research, the site inspection was focused on the archaeologically sensitive areas within the central segment of the APE (see Figure 9).

The lack of archaeological sensitivity of the north and south APE segments was verified during the site visit and through the review of Google map street view images of the APE. After the site visit it was determined that the entirety of the original north and south APE segments are within the developed areas of the highway and rest areas, where the disturbance of the local soils and recent modifications are extensive, and most likely destroyed any archaeological sites if any were present within these segments of the APE before the construction of the highway (Figures 13 and 14).

The original central APE segment is comprised of the asphalted and modified areas of the I-91 highway in the north of the project adjacent to an agricultural field currently under corn cultivation on a plowed and leveled area towards the center of the APE (see Figure 6). South of the agricultural field, north and east of Squabble Hollow Creek, the remaining area of the APE segment was covered in short grass including four lower-level terraces with gentle, south-facing slopes descending towards the level plain (see Figure 7). The archaeological sensitive areas in this segment extend approximately 300 m to the east of Squabble Hollow Creek and 600 m south from the I-91 shoulders in an area covering 17 acres. After changes to the project design, areas that were deemed sensitive within the original APE will be avoided during project construction which will affect only areas already disturbed by the construction of the current road (see Figure 9). Hand soil cores were taken at small intervals within the agricultural field as well as in the central areas of the lower terraces just north of the creek, which indicates a soil sequence of a dark brown silt loam plowzone that is 10-15 cm (4-6 in) thick, underlain by yellowish brown silt loam subsoil (Figure 15). The areas of the APE segment east of the creek on the southern areas of the APE show a soil profile consisting of a very dark brown to gray plow zone 8-15 cm (3-6 in) thick, underlain by a very fine light gray sandy loam 15-30 cm (6-8 in) followed by the local bedrock with a dark grey coloration (Figure 16 and 17).

Given the depositional nature of the local soils, it is expected that if any cultural materials are found have the potential to be buried deeper than the disturbed plowzone. The research shows that the construction of the existing highway, has caused an extensive disturbance in the north and south APE segments and if any sites once existed within these areas, it is very likely they have been destroyed or extensively compromised. In contrast the original central segment has only been partially affected by the construction of the highway in the north of the APE, but hand cores collected in the agricultural field and the lower terraces indicate the presence of uncompromised soils below the plowzone that have a high potential for archaeological sites.



Figure 13. South view of the rest stop at the north APE segment showing one location within the proposed VTrans Lyndon IM 091-3(53) Project, Lyndon, Caledonia County, Vermont.



Figure 14. North view of the south APE segment showing one the location within the proposed VTrans Lyndon IM 091-3(53) Project, Lyndon, Caledonia County, Vermont.



Figure 15. View of hand soil core taken in the central area of the lower terraces just north of the creek on the central APE segment of the proposed VTrans Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont.



Figure 16. View of hand soil core taken east of the creek on the southern area of the central APE segment of the proposed VTrans Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont.



Figure 17. View of hand soil core taken east of the creek on the southern area of the central APE segment of the proposed VTrans Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont.

CONCLUSIONS AND RECOMMENDATIONS

The University of Vermont Consulting Archaeology Program conducted an Archaeological Resources Assessment (ARA) of the proposed VTrans Lyndon IM 091-3(53) project located in the town of Lyndon, Caledonia County, Vermont (see Figure 1). As a result of this ARA, it was possible to identify heavily disturbed areas following the construction of I-91 on the north and south segments of the APE (see Figure 12). The evaluation of the unrevised central segment of the APE resulted in the identification of archaeologically sensitive areas associated with its proximity to Squabble Hollow Creek, a tributary of Miller Run, and due to the presence of registered archaeological sites in the vicinity of the project. The sensitivity of these areas is based upon a desk review, historic background research, and the site inspection including soil cores that indicate no ground disturbance beyond historic-era plowing.

After consideration of the results of this ARA, project plans were revised to avoid adverse effects on the archaeologically sensitive areas identified within the preliminary central segment of the APE (see Figure 9). The entire project footprint was reduced from a total area measuring approximately 114 acres to 15 acres (Figure 18). The central segment of the APE was reduced to an area of approximately 9 acres to avoid the archaeologically sensitive zone identified within the original project boundaries (Figure 19). The reduced APE excludes previously selected access and staging areas that will no longer be needed, as access to construction zones will be made via the existing embankments and the current roads.

Based on the results of the ARA and the revision of project plans, the UVM CAP recommends that no further archaeological research is needed within the updated APE (see Figure 18). The locations selected for construction in the revised APE fall outside the archaeologically sensitive areas and within an extensively modified section of the road following the construction of I-91. As a result of the changes applied to the APE, there are no expected adverse effects within the updated version of the project area.

If any work resulting in ground disturbance is to take place within the archaeologically sensitive areas identified within the unrevised APE, it is recommended that a Phase I Site Identification Survey be conducted at these sensitive locations (see Figure 9). The Phase I survey can be completed using a combination of subsurface testing of the lower terraces and a surface survey of the recently cultivated areas after these have been plowed, harrowed, and rained upon. This work will be done to determine the presence/absence of precontact era Native American and or historic sites prior to project construction. In addition, if any subsurface work is expected on the southwest corner of the unrevised central APE it is also recommended that subsurface testing is undertaken in this area to determine the presence/absence of historic sites or materials associated with the Squabble Hollow School identified on the consulted historic maps.

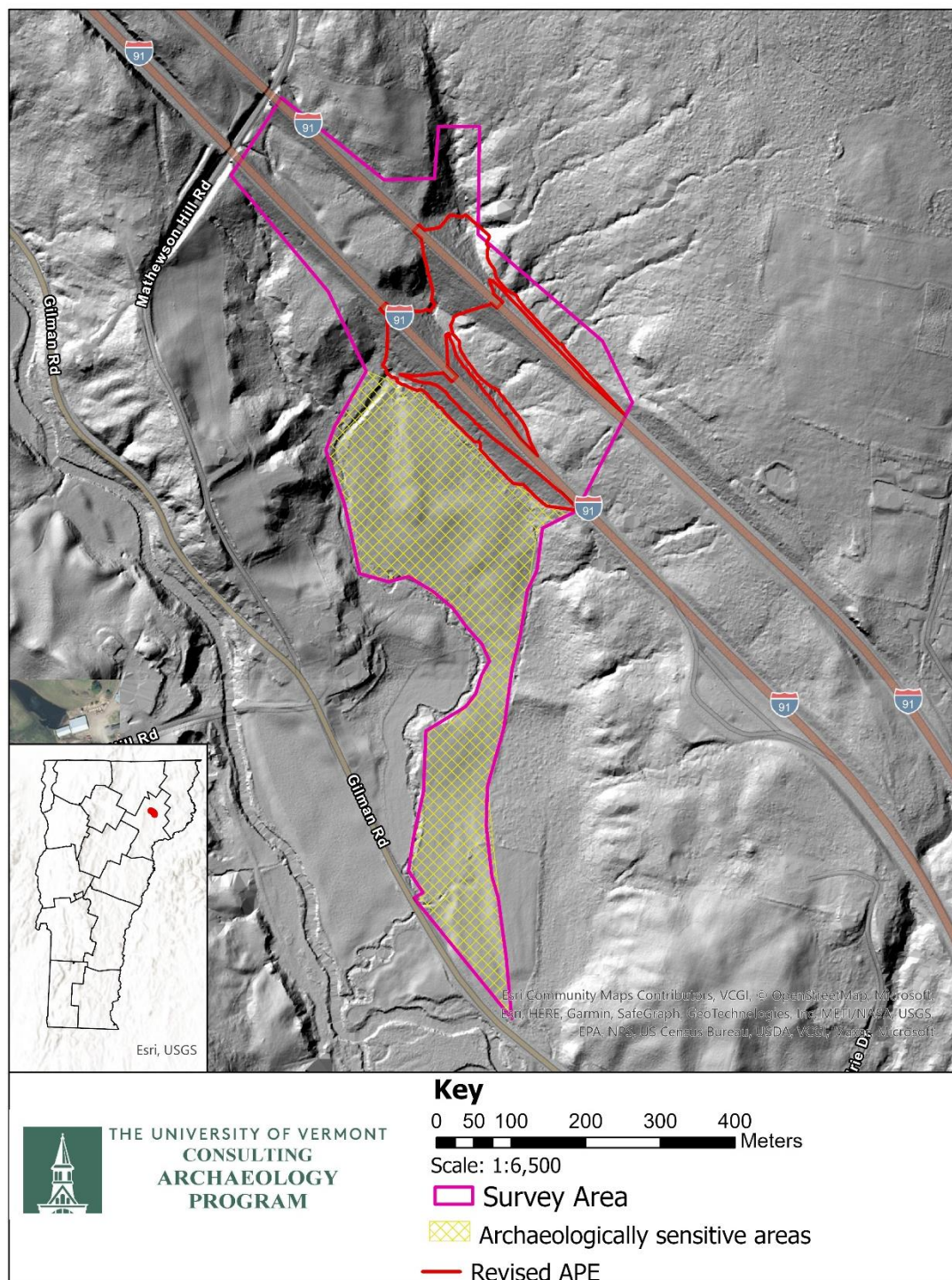


Figure 19. Aerial photo with overlay of the LiDAR topographic imagery showing the revised central APE segment of the proposed VTrans Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont.

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**END OF FIELD REPORT FOR AN ARCHAEOLOGICAL PHASE I SITE
IDENTIFICATION SURVEY FOR THE PROPOSED VTRANS LYNDON IM 091-3(53)
PROJECT, LYNDON, CALEDONIA COUNTY, VERMONT**



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Report No. 1510**

June 12, 2023

**END OF FIELD REPORT FOR AN ARCHAEOLOGICAL PHASE I SITE
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PROJECT, LYNDON, CALEDONIA COUNTY, VERMONT**

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June 12, 2023

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INTRODUCTION

The Vermont Agency of Transportation (VTrans) proposes the improvement of drainage along sections of Interstate 91 (I-91) for the Lyndon IM 091-3(53) project located in the town of Lyndon, Caledonia County, Vermont (Figure 1). The project's Area of Potential Effects (APE) includes three segments along I-91 that are parallel to Miller Run, a major tributary of the Passumpsic River. These segments, herein referred to as the northern, central, and southern APE, are located adjacent to Mathewson Hill Road and Gilman Road, respectively (Figure 2). Project elements include a combination of culvert and other water drainage management along the selected sections of the I-91 highway.

Preliminary project design plans were utilized by the University of Vermont Consulting Archaeology Program (UVM CAP) to conduct an Archaeological Resources Assessment (ARA) in July of 2022. This investigation determined the central segment to be sensitive for precontact Native American sites given its level terrain, gentle south-facing slopes, and proximity to Squabble Hollow Creek, a tributary of Miller Run (Garcia 2023a). In addition, the central APE was found to be sensitive for historic archaeological sites due to the presence of a historic structure, the Squabble Hollow school, symbolized in historic maps (Beers 1875; Walling 1858). At this time, research indicated that the northern and southern segments were extensively altered during the construction of the highway, and thus were not sensitive for archeological sites (Garcia 2023a).

In April of 2023, project plans were revised to exclude areas originally proposed for access and staging that are no longer needed, as construction zones will use existing embankments and current roads. The entire project footprint was reduced from an area measuring approximately 114 acres to 15 acres (Figure 3). The northern and southern APE were reduced to an area of 3 acres each (Garcia 2023b). The central APE was reduced to an area of 9 acres to minimize effects to the archaeologically sensitive areas identified within the ARA (Garcia 2023b). Given the potential for archaeological sites within and near the smaller, revised project area (Figure 4), an archaeological Phase I Site Identification Survey was recommended to determine the presence/absence of archaeological resources within this updated segment of the project.

The UVM CAP completed the Phase I Survey of the IM 091-3(53) project from May 15th-16th, 2023. As a result of the survey, no precontact Native American or historic sites were identified. This work was designed to assist the VTrans Lyndon IM 091-3(53) project with State and Federal regulations including Section 106 of the National Historic Preservation Act of 1966, as amended.

ENVIRONMENTAL CONTEXT

The central segment of the project's APE includes a 9 acre parcel located within the Miller Run watershed, which covers an area of approximately 29,560 acres in Caledonia County, Vermont. Miller Run is a 48.5 mile long main tributary of the Passumpsic River, with headwaters originating in Sheffield, and ending near the town of Lyndon (see Figure 1).

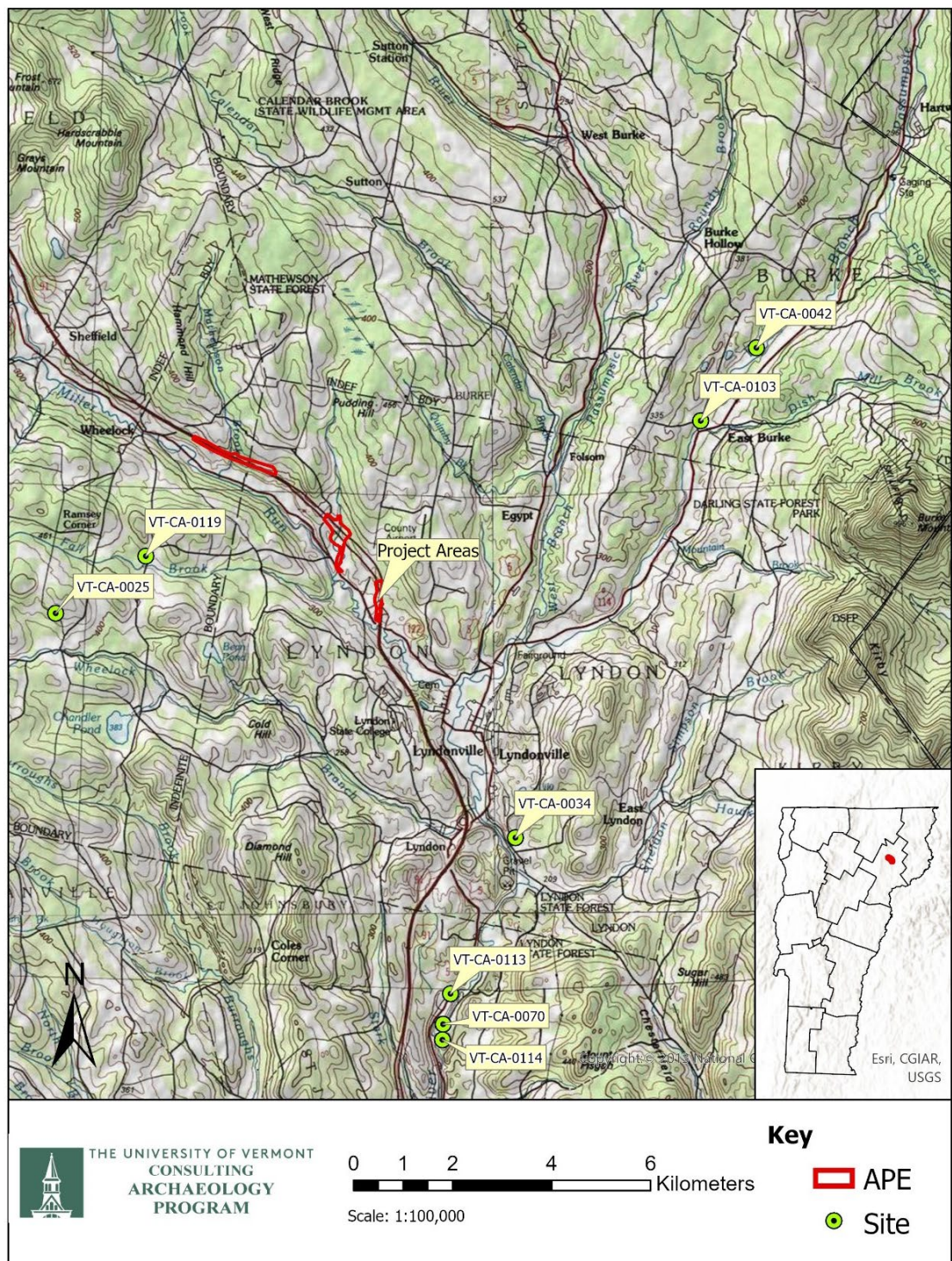


Figure 1. USGS topographic map showing the location of the three unrevised segments within the proposed VTrans Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont. Also depicted are the locations of previously recorded archaeological sites near the project area.

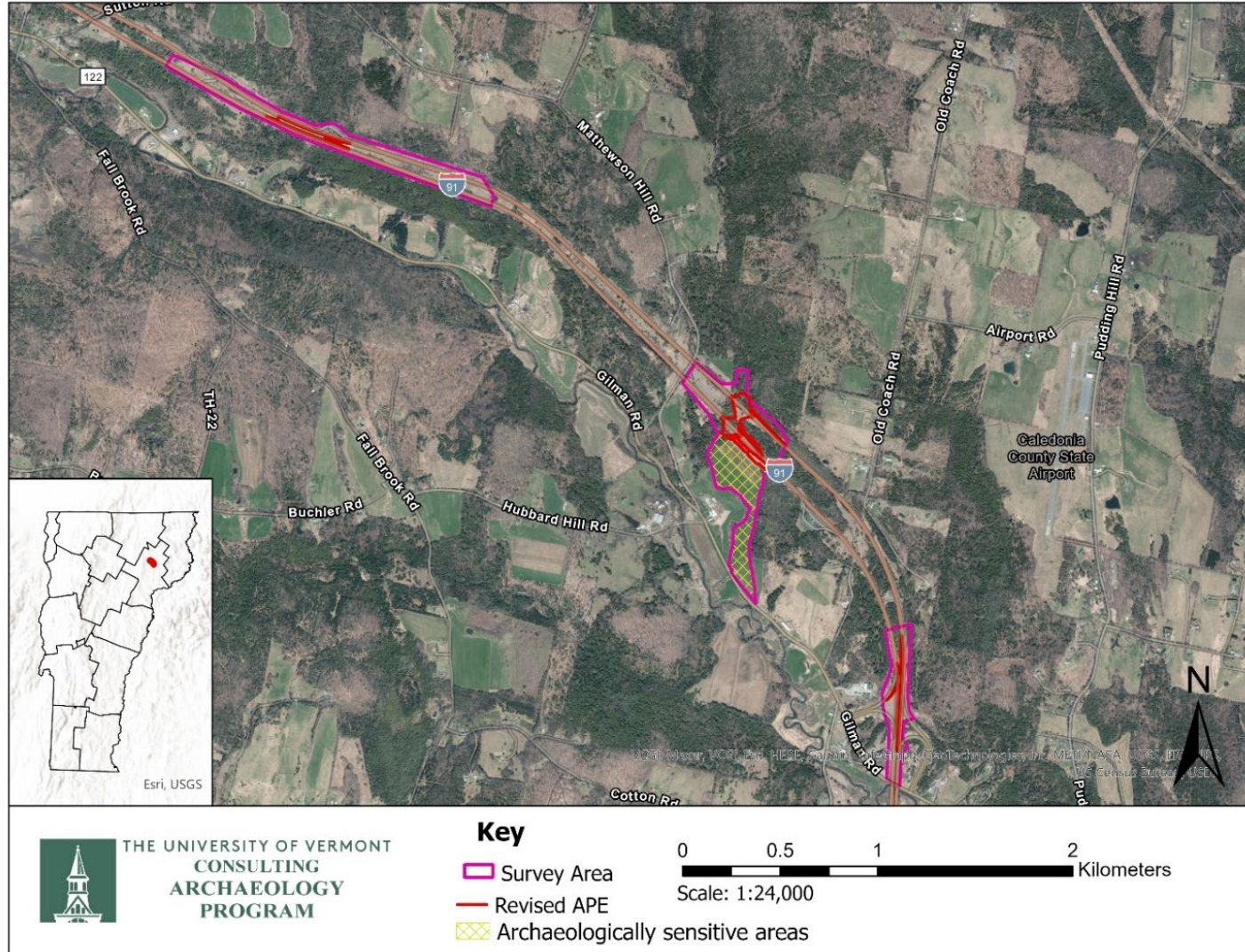


Figure 3. Aerial view map depicting the unrevised APE segments, investigated during the initial ARA, with an overlay of the project APE and archaeologically sensitive central segment for the VTrans Lyndon IM 091-3(53), Lyndon, Caledonia County, Vermont

Currently the waterway is flanked by Route 122 and has been extensively influenced by the construction and use of I-91 (CCNRCD 2022). Squabble Hollow Creek, a tributary of Miller Run, is situated just to the west of the proposed project area.

Specifically, the project APE lies approximately 350 m (.22 mi) northeast of Mathewson Hill Road, 37 m (121 ft) south of I-91, and about 320 m (.2 mi) southwest of the Lyndon Rest Area. The unrevised central segment APE initially included a cultivated field just south of the highway and grass covered areas leading to Mathewson Hill Road. The updated segment ranges in elevation from approximately 234-249 m (770-818 ft) above mean sea level (a. m. s. l.), though extensive amounts of modern fill deposition have occurred along the northern boundary of the APE to build up I-91.

Sediments within the central APE are categorized as Cabot silt loam, 8-15% slopes, very stony in the northwestern portion and Vershire-Lombard complex, 15-25% slopes, rocky in the southeastern section (NRCS USDA 2023). Cabot silt loam and Vershire-Lombard complex both derive from loamy till and are typically found on hills and mountains (NRCS USDA 2023). A typical profile in this soil consists of an upper dark grayish brown sandy loam (Ap) horizon that is underlain by a dark olive gray sandy loam (B) (NRCS USDA 2023).

ARCHAEOLOGICAL CONTEXT

Precontact Era Sites

A review of the VAI indicates that there are no known precontact Native American sites within the immediate vicinity of the project area or the Miller Run watershed. Current VAI mapping data shows that there are three recorded archaeological sites clustered along the banks of the Passumpsic River, 8 km (5 mi) south of the central APE, designated VT-CA-0070, 0113, and 0114 (see Figure 1). Sites VT-CA-0113 and VT-CA-0114 were both identified during a 1979 highway survey conducted by UVM CAP and contained evidence of Late Archaic occupation, ca. 6,000 – 3,000 cal yr B. P. (Thomas 1979). Site VT-CA-0070 is described as a small, short-term camp with evidence of limited tool making, and Fox Creek like projectile points attributable to the Middle Woodland period ca. 2,100-1,000 cal yr B. P. (VDHP 2021). An earlier archaeological survey in the proposed route of I-91, between St. Johnsbury to Lyndonville, indicates that there are no archaeological sites along this stretch of the highway or within the proposed APE for the current project (Vogelman and Haviland 1973: 27). The lack of sites on this segment of the highway is attributed to the unfavorable terrain and farther distance to the Passumpsic River (Vogelman and Haviland 1973: 19). This early survey did not include intensive sampling, however.

The Vermont Division for Historic Preservation's (VDHP) *Environmental Predictive Model for Locating Archaeological Sites* highlights habitability factors that could correlate with the location of precontact era Native American sites. An application of this model within the proposed central APE indicates that the entire project area scores "44" in terms of habitability factors, well above the threshold score of "31" for archaeological sensitivity (Figure 5). These factors include proximity to Miller Run and Squabble Hollow Creek (12), the confluence of rivers or streams (12), head of draw proximity (8) and distance to wetlands (12) (Garcia 2023a).

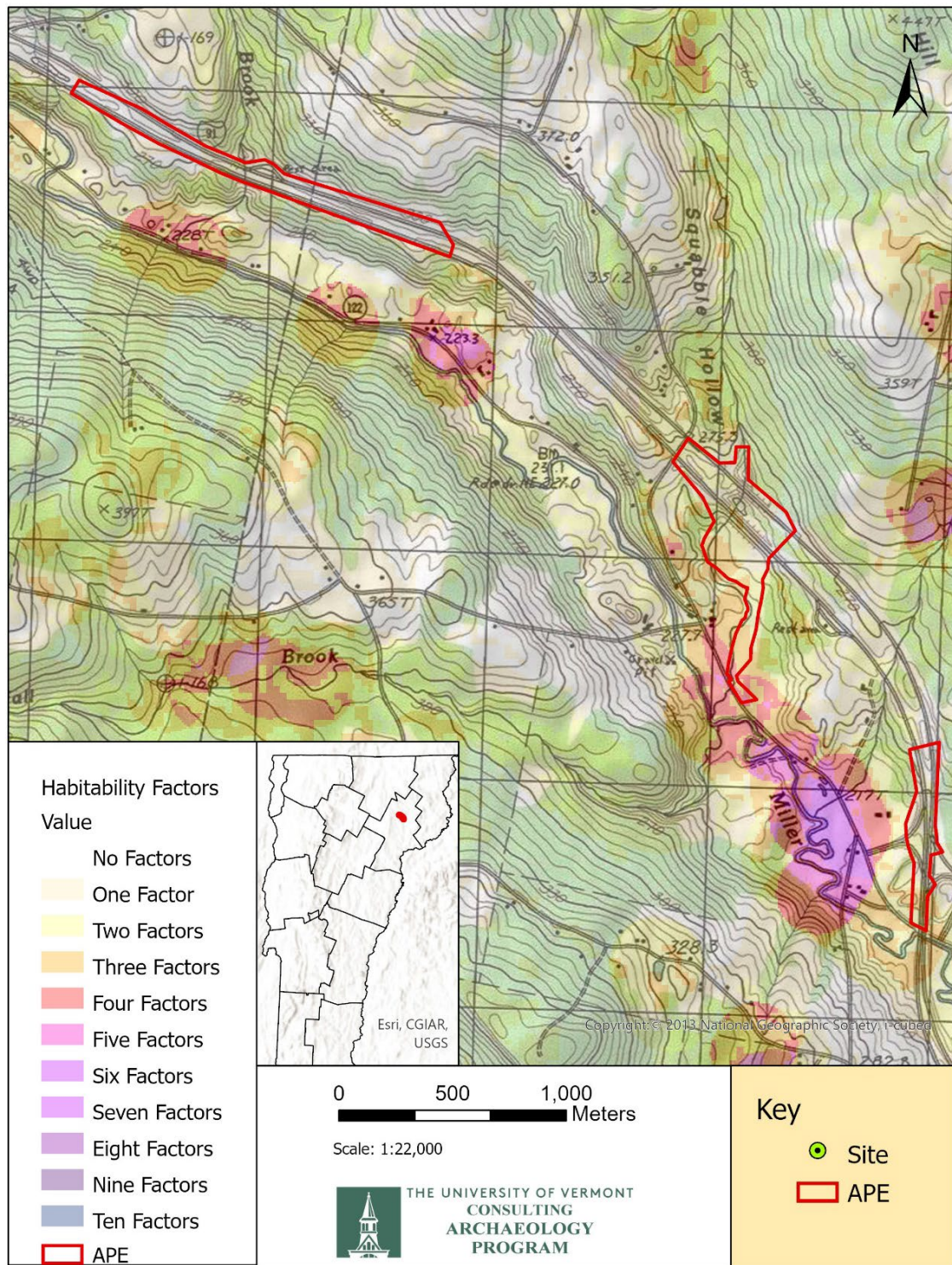


Figure 5. Map showing the project location with an overlay of the VDHP predictive model showing habitability factors that correlate with the location of Native American archaeological sites.

Historic Era Sites

Current VAI mapping data shows that the closest recorded historic site to the APE is the Fifield Tavern site located 4 km (2.5 mi) west of the APE, designated VT-CA-0119 (see Figure 1). The site was recorded by Andy Beaupre based on the descriptions of a local informant who stated the site was heavily compromised by excavations with heavy machinery and looting. The Fifield Tavern was founded by Edward Fifield around 1806 when he was conveyed land by his father-in-law. Edward was a Lieutenant Colonel in the War of 1812 and moved to Ohio in 1815 as indicated in the site's catalog card in the VAI (VDHP 2021).

The historic maps of the unrevised central APE segment show the Squabble Hollow school in the southwest corner of the original project area (Figure 6; Walling 1858), which also appears in the Beers maps of Caledonia County (1875). The school structure symbol continues to appear in later historic maps including the 1935, 1939, and 1951 USGS topographic 15' quadrangle maps of Lyndonville, but no longer appears in the 1968 USGS topographic 7.5' quadrangle maps of Lyndonville. The school doesn't appear on any of the later maps or aerial imagery consulted for this project either, indicating the structure was no longer present by 1968. Following the redesign of project plans, the historic archaeological site will be avoided (see Figures 2 and 3).

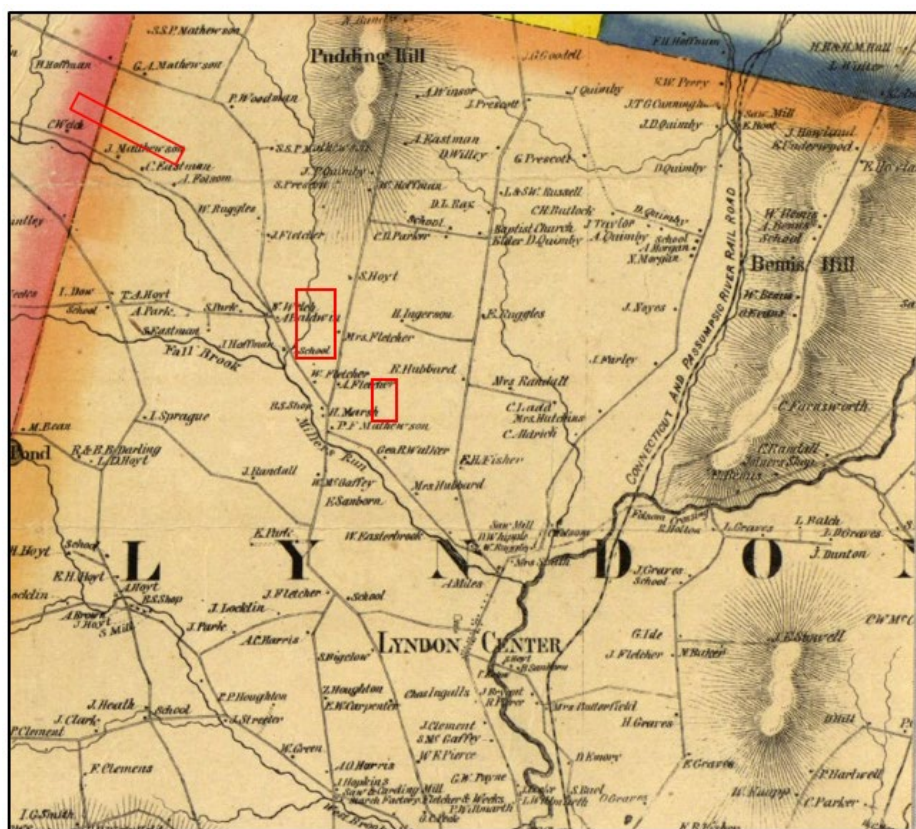


Figure 6. 1858 Walling map showing the location of the project area, Lyndon, Caledonia County, Vermont.

PHASE I FIELD METHODS AND RESULTS

The goals of the Phase I Site Identification Survey of the proposed Lyndon IM 091-3(53) project, based on the *Guidelines for Conducting Archaeology in Vermont* (2017) produced by the VDHP, were to: 1) determine the existence and location of any precontact Native American sites within the previously undisturbed archaeologically sensitive portions of the project area, if any; and 2) present preliminary information that could form the basis and framework for a more intensive archaeological evaluation should one or more sites be identified.

The Phase I Survey of the project area included the excavation of 50 x 50 cm (20 x 20 in) subsurface test pits at the southern boundary, and just outside of the central APE. The soils throughout the project area were excavated in systematic 10 cm (4 in) vertical levels with respect to the local soil stratigraphy and sieved through 0.64 cm (1/4 in) mesh screens. A representative stratigraphic profile of each test pit was schematically drawn and select test pit walls were photographed in digital color format. The location of each test pit was recorded with an EOS Arrow Global Positioning System (GPS) in order to ensure its accurate placement within appropriate project design plans and figures. All project data including test pit forms, provenience sheets, field sketch maps, and mapping forms will be curated at the UVM CAP laboratory.

In total, 19 50 x 50 cm (20 x 20 in) test pits were excavated along five linear transects (Figure 7). These transects sampled a narrow, level landform located between the toe of the fill slope below I-91 and an agricultural field (Figure 8). Testing therefore focused on a small, archaeologically sensitive area to the south of the APE boundary to provide additional work space, if necessary. No precontact Native American or historic archaeological sites were identified.

Testing began in the southeast extent of the project area with Transect 1. The transect was oriented roughly north-south and contained four test pits spaced at 10 m (32 ft) intervals (see Figure 7). Each of these test pits displayed a sequence of one or two plowzone/fill horizons underlain by a buried plowzone stratum which extended to depths ranging from 30-55 cm below ground surface (11-22 in). Beneath the buried plowzone, intact subsoil (BC), comprised of a olive gray very fine sandy loam, was excavated to a depth of 50-68 cmbs (19-26 in). Transect 1 Test Pit 2, for example, showed a 18 cm (7 in) deep plowzone/fill stratum followed by a second fill prism which extended to 40 cmbs (15 in) (Figure 9). A buried plowzone (Ab), containing a dark grayish brown silt loam with patches of subsoil, was present underneath the fill to a depth of 54 cmbs (21 in). Subsequently, BC soil was observed to 68 cm (26 in) below ground surface (see Figure 9). Hand soil coring employed at the base of the test pit reached a depth of 90 cm (35 in) below ground surface and revealed a sandier subsoil horizon. The Ab stratum observed may represent the historic ground surface, prior to construction of I-91, or could indicate an older paleosol related to an organic-rich wetland setting. Although, the patches of subsoil likely indicate the former. No cultural materials were observed in tandem with this organic lens.

Transect 2, located approximately 10 m (32 ft) southwest of Transect 1, contained four test pits spaced at 10 m (32 ft) intervals (see Figure 7). Transect 2 was oriented north-south and paralleled Right of Way (ROW) fencing and the northern boundary of the agricultural field.

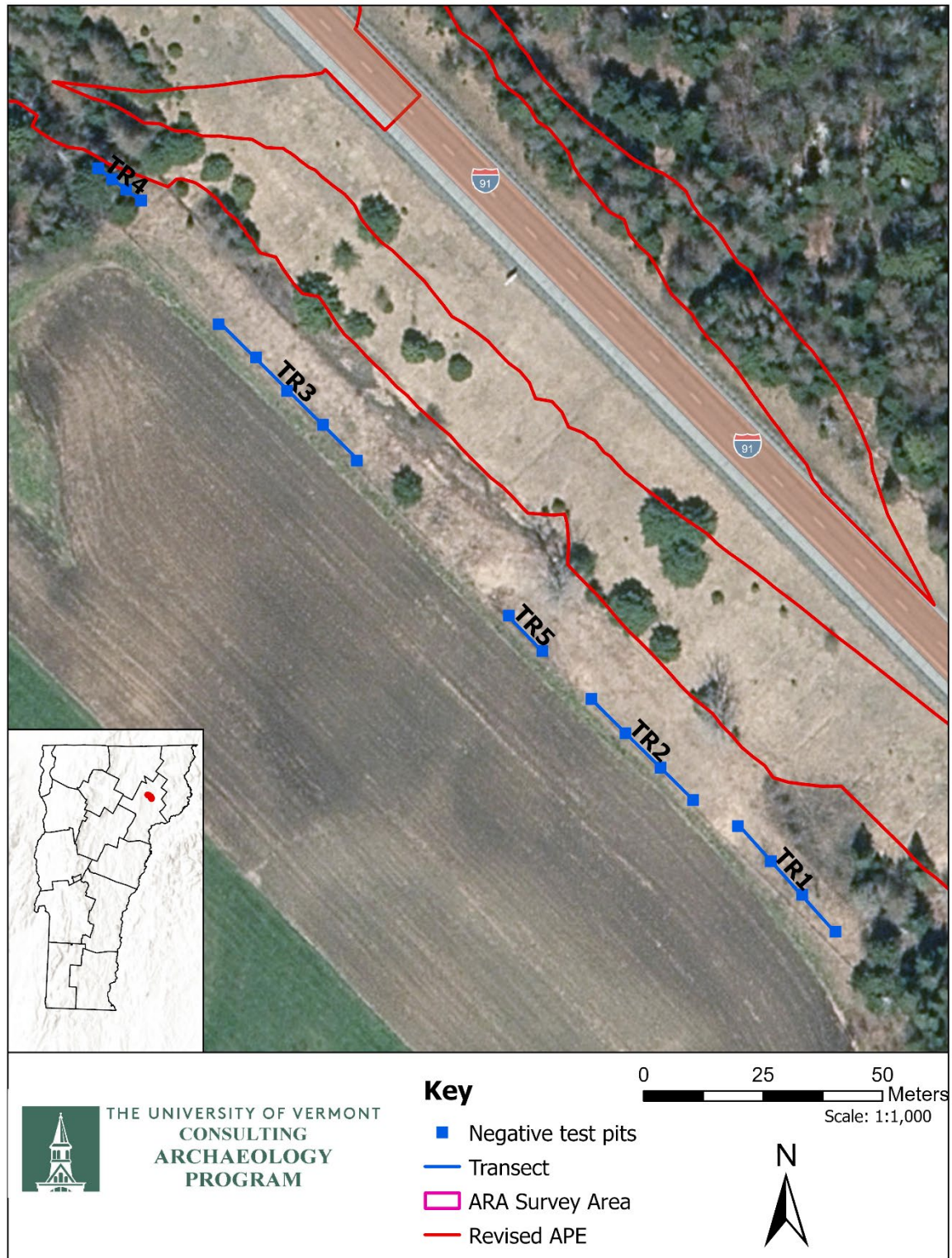


Figure 7. Aerial map view showing the locations of the Phase I transects and test pits excavated within the central APE of the proposed Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont.



Figure 8. Image (view northwest) of the central APE project area including the location of Phase I test pits in relation to the toe of the fill slope and agricultural field for the proposed Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont.



Figure 9. Image of north wall soil profile of Transect 1 Test Pit 2 for the proposed Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont.

Nearly all the test pits excavated on this transect contained similar stratigraphy to that found on Transect 1. Transect 2 Test Pit 1, however, differed slightly and exhibited three successive fill episodes with varying sizes of gravel, followed by two buried plowzone (Ab) horizons extending to a depth of 61 cmbs (24 in) (Figure 10). The Ab stratum was underlain by a light olive to gray brown very fine sand and silt subsoil, which was excavated to 71 cm (28 in) below ground surface (see Figure 10). As with Transect 1, no cultural materials were observed in tandem with the buried plowzone.



Figure 10. Image of east wall soil profile of Transect 2 Test Pit 1 for the proposed Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont.

The northwest portion of the central APE was tested utilizing Transect 3 and Transect 4. Transect 3 was excavated approximately 60 m (196 ft) northwest of Transect 2 (Figure 11; see Figure 7). The level, testable landform in this portion of the APE was narrower than in the southeast and thus was located in closer proximity to the toe of the fill slope (see Figure 11). Transect 3 was located to the east of small copse of trees and oriented roughly north-south. The transect was comprised of five test pits spaced at 10 m (32 ft) intervals (see Figure 7). The soil profiles recorded for Transect 3, Test Pits 1 and 2 included one or two plowzone/fill layers to 25-34 cmbs (9-13 in), followed by a buried plowzone to 40-50 cmbs (15-19 in), subsequently underlain by subsoil (Bs/B/BC) excavated to 52-76 cmbs (20-30 in). Transect 3 Test Pits 3-5, however, did not contain a buried plowzone horizon. Each of these test pits contained one to four fill episodes which extended to 31-48 cmbs (12-18 in), underlain by intact subsoil or large rocks (Figure 12).



Figure 11. Image (view southeast) of UVM CAP archaeologists excavating test pits along Transect 3 during the Phase I study for the proposed Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont.



Figure 12. Image of north wall soil profile of Transect 3 Test Pit 3 for the proposed Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont.



Figure 13. Image (view east) of UVM CAP archaeologists excavating test pits along Transect 4 during the Phase I study for the proposed Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont. Note the monitor well in the foreground, along with the fill mound and modified drainage present to the north.

Transect 4 was emplaced in the northwestern limits of the central APE in the tree line leading to Squabble Hollow (Figure 13; see Figure 7). Multiple small fill mounds were observed in this portion of the project area, along with a modified drainage channel and a monitor well. In particular, the area leading to Squabble Hollow appeared to be disturbed during the build up to I-91. Fill mounds and undulating ground surface were observed to the north and west of Transect 4 and extended to the creek's southeastern bank. Transect 4 was laid in on the level ground surface about 3 m (9 ft) south of this fill and was oriented north-south. Due to the presence of fill, exposed ledge rock, and trees, the four test pits were spaced at varying intervals. Transect 4 Test Pits 1 and 2 were spaced 5 m (16 ft) apart, Test Pits 2 and 3 were 3 m (9 ft) apart, and Test Pits 3 and 4 were 4 m (13 ft) apart (see Figure 7). All test pits on this transect contained two to three fill prisms which extended to depths ranging from 24-55 cmbs (9-21 in). Transect 4 Test Pit 2 was the only test pit that contained a buried plowzone (Figure 14). This stratum was comprised of a dark gray brown very fine sandy loam and extended to a depth of 65 cmbs (25 in). Underneath the buried horizon was a light olive brown sandy loam subsoil which was excavated to 75 cmbs (29 in) (see Figure 14).

Lastly, an additional transect, Transect 5, was emplaced in the central portion of the APE (see Figure 7). This transect was oriented north-south and contained two test pits spaced at 10 m (32 ft) intervals. The transect was laid in at a slightly broader portion of the level, testable landform and attempted to sample a greater distance away from the toe of the fill slope. Both test pits contained a shallower, uppermost fill stratum to 15-25 cmbs (6-9 in) followed by a buried

plowzone which reached a depth range of 40-45 cmbs (15-17 in). A subsequent subsoil horizon (B/Bs) was recorded and excavated to 53-55 cmbs (20-21 in). Again, no cultural materials were observed in tandem with the buried plowzone.



Figure 14. Image of north wall soil profile of Transect 4 Test Pit 2 for the proposed Lyndon IM 091-3(53) project, Lyndon, Caledonia County, Vermont.

CONCLUSIONS AND RECOMMENDATIONS

The University of Vermont Consulting Archaeology Program conducted an archaeological Phase I Site Identification Survey of the archaeologically sensitive area within the proposed Lyndon IM 091-3(53) project located in Lyndon, Caledonia County, Vermont. As a result of this work, no precontact Native American or historic era archaeological sites were identified. In the process, the Phase I Survey led to a deeper understanding of the soil stratigraphy within the project area. The test pits excavated throughout the project's APE contained evidence of multiple modern fill episodes, likely associated with the construction of I-91. Hand soil coring employed within the fill mounds present in the northern boundary of the APE, leading to I-91, displayed similar soil color and texture as the fill deposits observed in the test pit soil profiles. It is possible that soil from a local or foreign source was deposited and/or moved throughout the project APE during the time of initial construction. Excavations throughout the project area also showed evidence of a buried surface (Ab), or organic-rich horizon, underneath these fill deposits between 30-65 cm (11-25 in) below ground surface. However, no cultural materials were observed in association with this horizon.

As a result of the Phase I Survey, no precontact Native American or historic artifacts were recovered. The UVM CAP therefore recommends a determination of No Historic Properties Affected for the proposed project, and that no further archaeology is necessary prior to project construction.

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Project: LYNDON INT	Supervisor: MEE	Test Pit: TB, TPI
Site: —	Excavators: GAN MEB	Feat #: Mesh: 1/4"
Area and/or Locus: —	PN Block: 100-199	Date: 5/15/23

0 cmbs	Ground Surface	PN # 101	Artifacts	Soil Descriptions
10	Ap/Fill		NAR	Ap/Fill v dk Ban
20	-----			(10 yr 2/2) with pockets
30	ApL 30			of it with ban (10 yr 6/3)
40	Bc			Soil 102m end vts
50				
60	50			Ap v dk Ban (10 yr 2/2)
70				Soil 102m
80				
90				Bc dk Gray (2.54 4/1)
100				to gray (2.54 5/1)
110				vts 2nd soil
120				
130				
140				
150				

Wall: N

Architectural Debris	ARCT	Lithic Débitage	LDEB	Miscellaneous	MISC
Bone	BONE	Lithic FCR	LFCR	Manufacturing Scrap	MSHB
Ceramic European	CERM	Lithic Tool Flaked	LTFL	Other	OTHR
Feature Soil	FEAS	Lithic Tool Ground	LTGR	Native American Pottery	PTRY
Floral Remains	FLOR	Lithic Unmodified	LUNM	Shell	SHEL
Glass	GLAS	Metal	METL	Other Soil	SOIL

Provide comments on (1) Artifacts (2) Soil inclusions, staining, and mottling (3) Disturbances and context (4) Test Pit Location

Comments: Test Pit located on level 120 to form 50 cm west of steep toe of slope / Drainage channel. Tree line 10 m to west. Fill is relatively fine but includes patches of it olive ban vts, soil. ApL potentially intact.

Project: LYNDON IM 091-3(53) I	Supervisor: MEE	Test Pit: TR 1 TP 2
Site: -	Excavators: LAY KUNNE	Feat #: - Mesh: 1/4
Area and/or Locus: -	PN Block: 200	Date: 5/15/23

0 cmbs	Ground Surface	PN #	Artifacts	Soil Descriptions
10	Fill / Ap	200	NCR	0-15 cmbs Fill (work) in to A soil Ap like horizon: 10YR 2/2 v. dk brn loam.
20	15			
30	more 54/6 soil			18-40 cmbs Fill mixed soil the darker stuff is same as "Ap" above.
40	more Ap like			The lighter stuff is the BC see below.
50	15 cmbs Apb			
60	54			40-54 cmbs Apb 10YR 2/2 to 2/1 v. dk brn to black sil.
70	CS			
80				There might be traces of B in profile 2.5Y 4/3 to 3/3 olive to dk olive brn sil. - not extending across pit.
90	more silt			
100	olive gray silty loam			54-69 cmbs BC 5Y 4/2 to 5/2 olive gray loam.
110				fine sand, notable in msp. some down ground contact
120				
130				
140				
150				

Wall: N

Architectural Debris	ARCT	Lithic Débitage	LDEB	Miscellaneous	MISC
Bone	BONE	Lithic FCR	LFCR	Manufacturing Scrap	MSHB
Ceramic European	CERM	Lithic Tool Flaked	LTFL	Other	OTHR
Feature Soil	FEAS	Lithic Tool Ground	LTGR	Native American Pottery	PTRY
Floral Remains	FLOR	Lithic Unmodified	LUNM	Shell	SHEL
Glass	GLAS	Metal	METL	Other Soil	SOIL

Provide comments on (1) Artifacts (2) Soil inclusions, staining, and mottling (3) Disturbances and context (4) Test Pit Location

Comments: TP located 1.90 m west of a 1.1m high
slope and abt 3m east of Highway fence and abt 15m N of a area of woods /
trees. TP in open grassy area

Lyndon IM

Project: 091-3(S3)I		Supervisor: MEE		Test Pit: TR 1 TP 3	
Site: -		Excavators: MEB, GAM		Feat #: Mesh: 1/4	
Area and/or Locus: -		PN Block: 1005		Date: 5/15/23	

0 cmbs	Ground Surface	PN #	Artifacts	Soil Descriptions
10	16 Ap/Fill	100	NAR.	Ap/Fill) 0-16 cmbs Si Lo
20				10yr 2/2 vry DK Brn
30	29 Fill			Fill) 16-29 cmbs Si Sa
40				10yr 3/4 DK yell Brn
50	50 ApB			ApB) 29-50 cmbs Si SaLo
60	60 B/Bc			10yr 2/2 vry DK Brn
70	/ / / / /			B/Bc) 50-60 cmbs Si Clay
80				10yr 3/7 vry DK gry Brn
90				
100				
110				
120				
130				
140				
150				

Wall: S

Architectural Debris	ARCT	Lithic Debitage	LDEB	Miscellaneous	MISC
Bone	BONE	Lithic FCR	LFCR	Manufacturing Scrap	MSHB
Ceramic European	CERM	Lithic Tool Flaked	LTFL	Other	OTHR
Feature Soil	FEAS	Lithic Tool Ground	LTGR	Native American Pottery	PTRY
Floral Remains	FLOR	Lithic Unmodified	LUNM	Shell	SHEL
Glass	GLAS	Metal	METL	Other Soil	SOIL

Provide comments on (1) Artifacts (2) Soil inclusions, staining, and mottling (3) Disturbances and context (4) Test Pit Location

Comments: Pit is located approx 5m E of farm fence, 20m W of base of hill. NAR

Project: Lyndon IM 091-3 (53) I		Supervisor: MEE	Test Pit: TR 1 TP 4	
Site: —		Excavators: LAY Kunc	Feat #:	Mesh: 1/4
Area and/or Locus: —		PN Block: 200-299	Date: 5/16/23	
0 cmbs	Ground Surface	PN #	Artifacts	Soil Descriptions
10	14 Fill ₁ /AP For Vegetation	202	NCR	0-14cmbs Fill ₁ /AP 10YR 4/2 to 3/2 dk grayish bn to J. dk grayish bn JFS1
20	Fill ₂ For Landscaping			14-37cmbs Fill ₂ 2.5Y 5/3 1 to 0/bn loamy JFS
30	37			
40				
50	55 Agb BC soil			37-55cmbs Agb. 10YR 5/2 J. dk grayish bn loam.
60	65 DC			w/ Large Patches of BC soil.
70				55-65cmbs DC 5Y 4/2 olive gray loam JFS JFS1 mainly
80				
90				
100				
110				
120				
130				
140				
150				

Wall: E

Architectural Debris	ARCT	Lithic Debitage	LDEB	Miscellaneous	MISC
Bone	BONE	Lithic FCR	LFCR	Manufacturing Scrap	MSHB
Ceramic European	CERM	Lithic Tool Flaked	LTFL	Other	OTHR
Feature Soil	FEAS	Lithic Tool Ground	LTGR	Native American Pottery	PTRY
Floral Remains	FLOR	Lithic Unmodified	LUNM	Shell	SHEL
Glass	GLAS	Metal	METL	Other Soil	SOIL

Provide comments on (1) Artifacts (2) Soil inclusions, staining, and mottling (3) Disturbances and context (4) Test Pit Location

Comments: TP located About 3m east of highway fence and 2.5 m west of Low Brown Feature and abt 35-40 m NW woods area on slight Rise in dick infested open grass.

Wall: 1

[illegible]

Project: Lyndon IMI	Supervisor: mee	Test Pit: TR 2 TP2
Site: -	Excavators: meb, gam	Feat #: Mesh: 1/4
Area and/or Locus: -	PN Block: 1005	Date: 5/15/23

0 cmbs	Ground Surface	PN #	Artifacts	Soil Descriptions
10	Ap/ Fill 34 45 B / / / / / / / /	102	NAR	Ap/Fill 0-34 cmbs
20				Sil Loam
30				10yr 3/2 vry dk gny Brn
40				
50				B) 34-45 cmbs
60				Sa Sil
70				2.5y 4/4 olv Brn
80				
90				
100				
110				
120				
130				
140				
150				

Wall: W

Architectural Debris	ARCT	Lithic Debitage	LDEB	Miscellaneous	MISC
Bone	BONE	Lithic FCR	LFCR	Manufacturing Scrap	MSHB
Ceramic European	CERM	Lithic Tool Flaked	LTFL	Other	OTHR
Feature Soil	FEAS	Lithic Tool Ground	LTGR	Native American Pottery	PTRY
Floral Remains	FLOR	Lithic Unmodified	LUNM	Shell	SHEL
Glass	GLAS	Metal	METL	Other Soil	SOIL

Provide comments on (1) Artifacts (2) Soil inclusions, staining, and mottling (3) Disturbances and context (4) Test Pit Location

Comments: Pit is located 0.5m E of farm fence, approx 20m W of base of hill

Project: LYNDON IM I		Supervisor: MEE	Test Pit: TR2TP3	
Site:		Excavators: GAMMERB	Feat #:	Mesh: 1/4
Area and/or Locus:		PN Block: 100-199	Date: 5/15/23	
0 cmbs	Ground Surface	PN #	Artifacts	Soil Descriptions
10	Ap/Fill	103	NAR	Ap/Fill VDE BAN (10 YL ² /h)
20				Soil 102m with lt
30	Apb 23			Gravels
40	35			Apb V DK BAN
50	B			(10 YL ² /h) Soil 102m
60	53			
70				B OLIVE BAN
80				(2.5x4/4) Soil w/ lt
90				vfs
100				
110				
120				
130				
140				
150				

Wall: E

Architectural Debris	ARCT	Lithic Debitage	LDEB	Miscellaneous	MISC
Bone	BONE	Lithic FCR	LFCR	Manufacturing Scrap	MSHB
Ceramic European	CERM	Lithic Tool Flaked	LTFL	Other	OTHR
Feature Soil	FEAS	Lithic Tool Ground	LTGR	Native American Pottery	PTRY
Floral Remains	FLOR	Lithic Unmodified	LUNM	Shell	SHEL
Glass	GLAS	Metal	METL	Other Soil	SOIL

Provide comments on (1) Artifacts (2) Soil inclusions, staining, and mottling (3) Disturbances and context (4) Test Pit Location

Comments: Test Pit located on level terrace 75cm East of VTRANS ROW FENCE.

Wall: N

Provide comments on (1) Artifacts (2) Soil inclusions, staining, and mottling (3) Disturbances and context (4) Test Pit Location

Comments: Pit is located approx 0.5m E of farm fence and 20m W of base of hill. NAR

Wall: ~

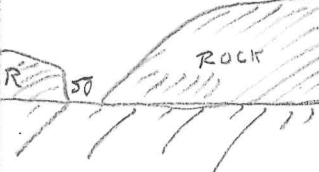
Provide comments on (1) Artifacts (2) Soil inclusions, staining, and mottling (3) Disturbances and context (4) Test Pit Location

Comments: TR3 TP1 is located in field. 80 meters south of tree line at 5 meters east of plowed farm field. excavated pit to 52 cmbs at core to 65 cmbs. All soils below Ap/Ell seem to appear intact. No artifacts recovered.

Wall: N

Provide comments on (1) Artifacts (2) Soil inclusions, staining, and mottling (3) Disturbances and context (4) Test Pit Location

Comments: PIT had NAR, disturbance on west wall/floor.
little mottling between strata. PIT located 70 meters
south of tie line.

0 cmbs	Ground Surface	PN # 105	Artifacts	Soil Descriptions
10	Ap/F11/2		NAR	Ap/F11/2 V DK BAN
20	F11/2 15			(10 yr 3/2) vfs/w 9-2000
30	F11/2 21			F11/2 + OLIVE BAN
40	F11/3 31			(2.5 y 5/4) fms
50				
60				F11/3 DK Grayish ben
70				(2.5 y 4/2) vfs, silt
80				
90				Ap6? V DK Grayish ben
100				(10 yr 3/2) silt, vf. fs
110				and large rocks
120				
130				
140				
150				

Architectural Debris	ARCT	Lithic Debitage	LDEB	Miscellaneous	MISC
Bone	BONE	Lithic FCR	LFCR	Manufacturing Scrap	MSHB
Ceramic European	CERM	Lithic Tool Flaked	LTFL	Other	OTHR
Feature Soil	FEAS	Lithic Tool Ground	LTGR	Native American Pottery	PTRY
Floral Remains	FLOR	Lithic Unmodified	LUNM	Shell	SHEL
Glass	GLAS	Metal	METL	Other Soil	SOIL

Comments: That pit looked SSW. East of VTRANS ROW Fence; 4m N East of I-91 channelized drainage. (Unknown if pit? is a fill or original buried plume zone. Large Rocks present in this stratum. No HOT PARTICLES.

Project: Lyndon IM 091-3 (53)		Supervisor: MEE		Test Pit: TR3 TP3	
Site: — I		Excavators: LAY KMK		Feat #:	Mesh: 1/4"
Area and/or Locus: —		PN Block: 2005		Date: 5/16/2023	
0 cmbs	Ground Surface	PN #	Artifacts	Soil Descriptions	
10	Ap/Fill 1 16	204	NAR	Ap/Fill 1 0-16 cmbs 10YR 3/2 V DK GRAY si lo + some pebbles	
20	Ap/Fill 2 28			Ap/Fill 2 16-28 cmbs 10YR 4/1 DK GRAY (mottled) si sa lo + pebbles	
30	Ap/Fill 3 44			Ap/Fill 3 28-44 cmbs 10YR 4/2 DK GRAY BRN si lo + pebbles	
40	Ap/Fill 4 48			Ap/Fill 4 44-48 cmbs 10YR 3/2 V DK GRAY si sa lo + crushed rock	
50	B1 65			fill { B1 48-65 cmbs 7.5YR 2.5/2 V DK BRN FS + silt + rounded pebbles + cobbles	
60	B2 72				
70	/ / / / /			B2 65-72 cmbs 7.5YR 3/2 DK BRN F-med. sand + ledge type rock + rounded pebbles	
80					
90					
100					
110					
120					
130					
140					
150					

Wall: N

Architectural Debris	ARCT	Lithic Debitage	LDEB	Miscellaneous	MISC
Bone	BONE	Lithic FCR	LFCR	Manufacturing Scrap	MSHB
Ceramic European	CERM	Lithic Tool Flaked	LTFL	Other	OTHR
Feature Soil	FEAS	Lithic Tool Ground	LTGR	Native American Pottery	PTRY
Floral Remains	FLOR	Lithic Unmodified	LUNM	Shell	SHEL
Glass	GLAS	Metal	METL	Other Soil	SOIL

Provide comments on (1) Artifacts (2) Soil inclusions, staining, and mottling (3) Disturbances and context (4) Test Pit Location

Comments: test pit located in grass/brush area <1m E of metal fence and 50m south of treeline. multiple fills present atop what is seemingly glacial till, NAR.

Wall:

Provide comments on (1) Artifacts (2) Soil inclusions, staining, and mottling (3) Disturbances and context (4) Test Pit Location

Comments: TR3 TPS is last TP on transect S, located 0.5 m E of farm fence, approx 2.0 m W of base of hill below highway. NAR hit natural bedrock / large slate material

Project: LYNDON IM I		Supervisor: MEE		Test Pit: TR4TPI	
Site: —		Excavators: GAM, MEE, WTA		Feat #:	Mesh: 1/4
Area and/or Locus: —		PN Block: 100-199		Date: 5/16/23	
0 cmbs	Ground Surface	PN # 107	Artifacts	Soil Descriptions	
10	Fill 1		N/A	Fill 1 V DK gray brn	
20				(10 yr 3/2) vfr	
30	Fill 2				
40	Fill 3			Fill 2 mixed gray	
50				(2.5 yr 1/2) fs 2nd dk	
60	55 e			gray brn (2.5 yr 1/2) silt	
70	65				
80				Fill 3 gray brn (2.5 yr 1/2)	
90				fs 2nd dk gray brn	
100				(2.5 yr 1/2) silt	
110					
120				c gray (10 yr 1/2) vfr silt	
130					
140				Bs dk gray brn	
150				(10 yr 1/2) vfr silt	

Wall: IV

Architectural Debris	ARCT	Lithic Debitage	LDEB	Miscellaneous	MISC
Bone	BONE	Lithic FCR	LFCR	Manufacturing Scrap	MSHB
Ceramic European	CERM	Lithic Tool Flaked	LTFL	Other	OTHR
Feature Soil	FEAS	Lithic Tool Ground	LTGR	Native American Pottery	PTRY
Floral Remains	FLOR	Lithic Unmodified	LUNM	Shell	SHEL
Glass	GLAS	Metal	METL	Other Soil	SOIL

Provide comments on (1) Artifacts (2) Soil inclusions, staining, and mottling (3) Disturbances and context (4) Test Pit Location

Comments: Test Pit Located at Northern end of Apt 24 600' / Trench; 3-4m Early WTRANS R-O-W Run; 1.5m North of Trench 1/2 way I-91 Drainage Channel. TP approx 20m South of SGRABAL Hollow Brook. Fill to 48cmbs. No App present - likely removed during I-91 construction.

Wall: N

Provide comments on (1) Artifacts (2) Soil inclusions, staining, and mottling (3) Disturbances and context (4) Test Pit Location

Comments: Pit TR4TP2 Located approx 5-10 meters North of Treeline in evergreen woods approx 5 meters East of VTRANS Fence Line

- No Artifacts Recovered
- No Cultural Materials Observed

Wall: N

Provide comments on (1) Artifacts (2) Soil inclusions, staining, and mottling (3) Disturbances and context (4) Test Pit Location

Comments: PIT Had NAR, Sible gradient at bottom of excavation
Many Roots, located 5m North of Field. Fills 2+3 had
mottled darker + lighter inclusions.

Project: Lyndon Tr 091-3 (53)		Supervisor: MEE	Test Pit: TR 4 TP 4	
Site: —		Excavators: LAY Kunk	Feat #: —	Mesh: 1/4
Area and/or Locus: —		PN Block: 200	Date: 5/16/23	
0 cmbs	Ground Surface	PN #	Artifacts	Soil Descriptions
10	11 Fill 1/1 Abrupt	205	NCR	0-11 cmbs Fill, 10YR 3/2 to 2/2 v. dk greyish bn to v. dk bn
20	24 Fill 2 Abrupt			10 cm. (v. B noted) - looks like Al but has Abrupt Boundary
30				11-24 cmbs Fill 2. 2.5Y 4/2 to 5/2 dk greyish bn to grey
40	41 Bs			bn v. fl.
50	B			24-41 cmbs BS 10Y 2.3/4 dk yellowish bn v. fl.
60				increase in Rock
70	BC 2			41-80 cmbs BC 2.5Y 3/6 to 4/6
80				dk ol bn to olive bn v. fl. w/ lots Rock
90				And rubble - gravel
100				Base is Reddish bn fill
110				that Linsky had
120				
130				
140				
150				

Wall: 5

Architectural Debris	ARCT	Lithic Debitage	LDEB	Miscellaneous	MISC
Bone	BONE	Lithic FCR	LFCR	Manufacturing Scrap	MSHB
Ceramic European	CERM	Lithic Tool Flaked	LTFL	Other	OTHR
Feature Soil	FEAS	Lithic Tool Ground	LTGR	Native American Pottery	PTRY
Floral Remains	FLOR	Lithic Unmodified	LUNM	Shell	SHEL
Glass	GLAS	Metal	METL	Other Soil	SOIL

Provide comments on (1) Artifacts (2) Soil inclusions, staining, and mottling (3) Disturbances and context (4) Test Pit Location

Comments: JP at W end on line Near monitor Pipe on Park / Fill area

Project: NODCO IM 091-3(53) I	Supervisor: MEE	Test Pit: TR5TP2
Site:	Excavators: MEE LAY MEB	Feat #: Mesh: 1/4"
Area and/or Locus:	PN Block: 300-399	Date: 5/16/2023

0 cmbs	Ground Surface	PN #	Artifacts	Soil Descriptions
10	Fill 15	303	NAR	Fill 0-15cmbs 10NR4/3 BRN F-M SAND
20				Apb 15-45cmbs 10NR5/3 BRN S.M. SAND
30	Apb 45			B 45-55cmbs 7.5/4/4 BRN S.M.
40				
50	B 55			
60	111111 NOT EXCAV			
70				
80				
90				
100				
110				
120				
130				
140				
150				

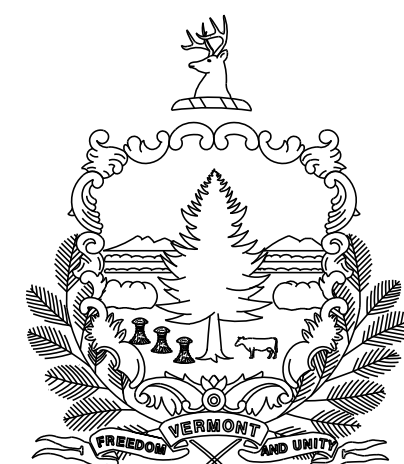
Wall: E

Architectural Debris	ARCT	Lithic Débitage	LDEB	Miscellaneous	MISC
Bone	BONE	Lithic FCR	LFCR	Manufacturing Scrap	MSHB
Ceramic European	CERM	Lithic Tool Flaked	LTFL	Other	OTHR
Feature Soil	FEAS	Lithic Tool Ground	LTGR	Native American Pottery	PTRY
Floral Remains	FLOR	Lithic Unmodified	LUNM	Shell	SHEL
Glass	GLAS	Metal	METL	Other Soil	SOIL

Provide comments on (1) Artifacts (2) Soil inclusions, staining, and mottling (3) Disturbances and context (4) Test Pit Location

Comments: TR5TP2 located in tall grass area approximately 2m east of raw fencing and 6-8m west of base of fill mound. Till was fine-med sand and seemed to differ from fill episodes exhibited in transects to south. NAR no release of shift material. Pit excavated to 55cmbs.

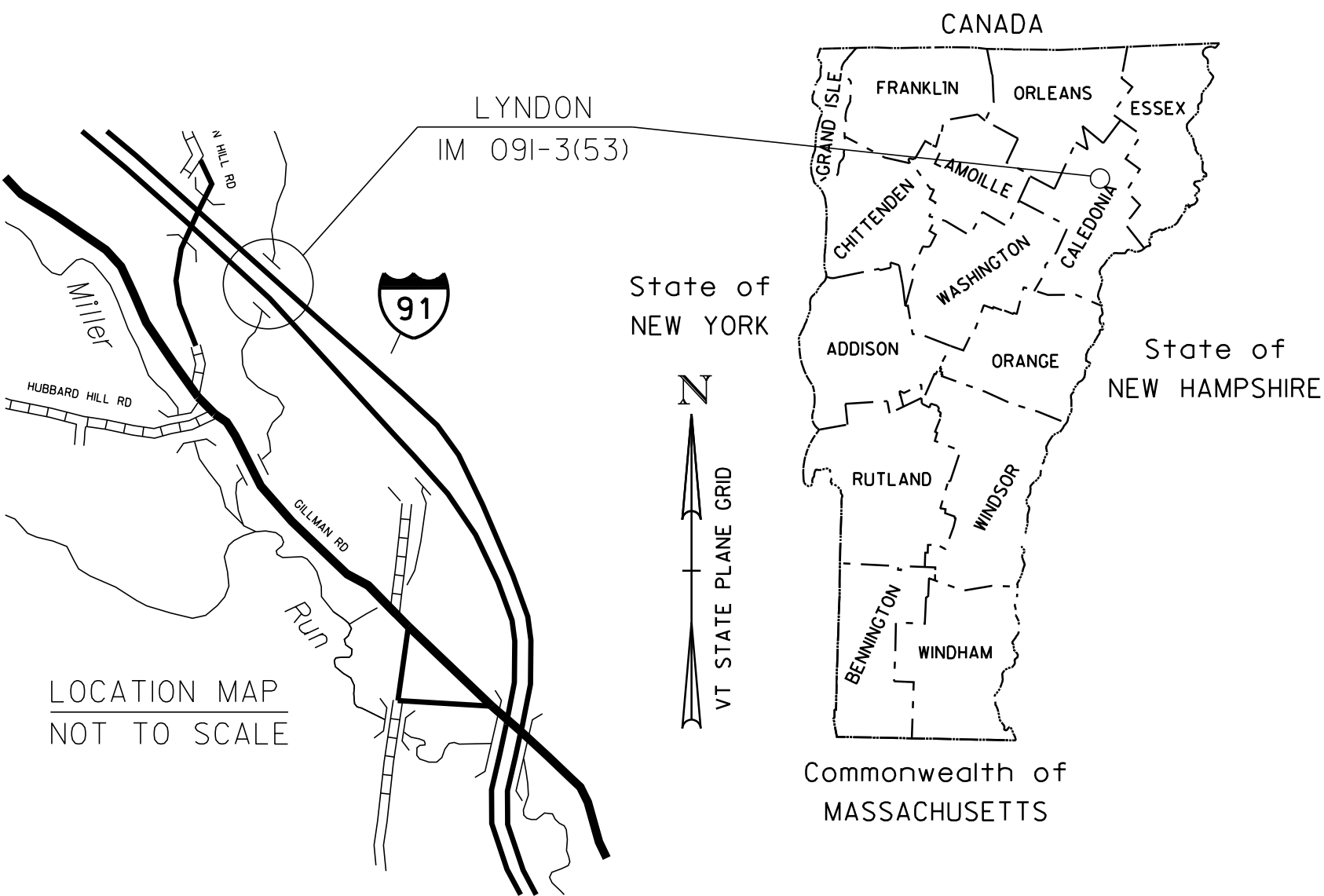
STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF LYNDON
COUNTY OF CALEDONIA

ROUTE: I-91 (PRINCIPAL ARTERIAL)
BRIDGE NOS: 96-3N AND 96-3S



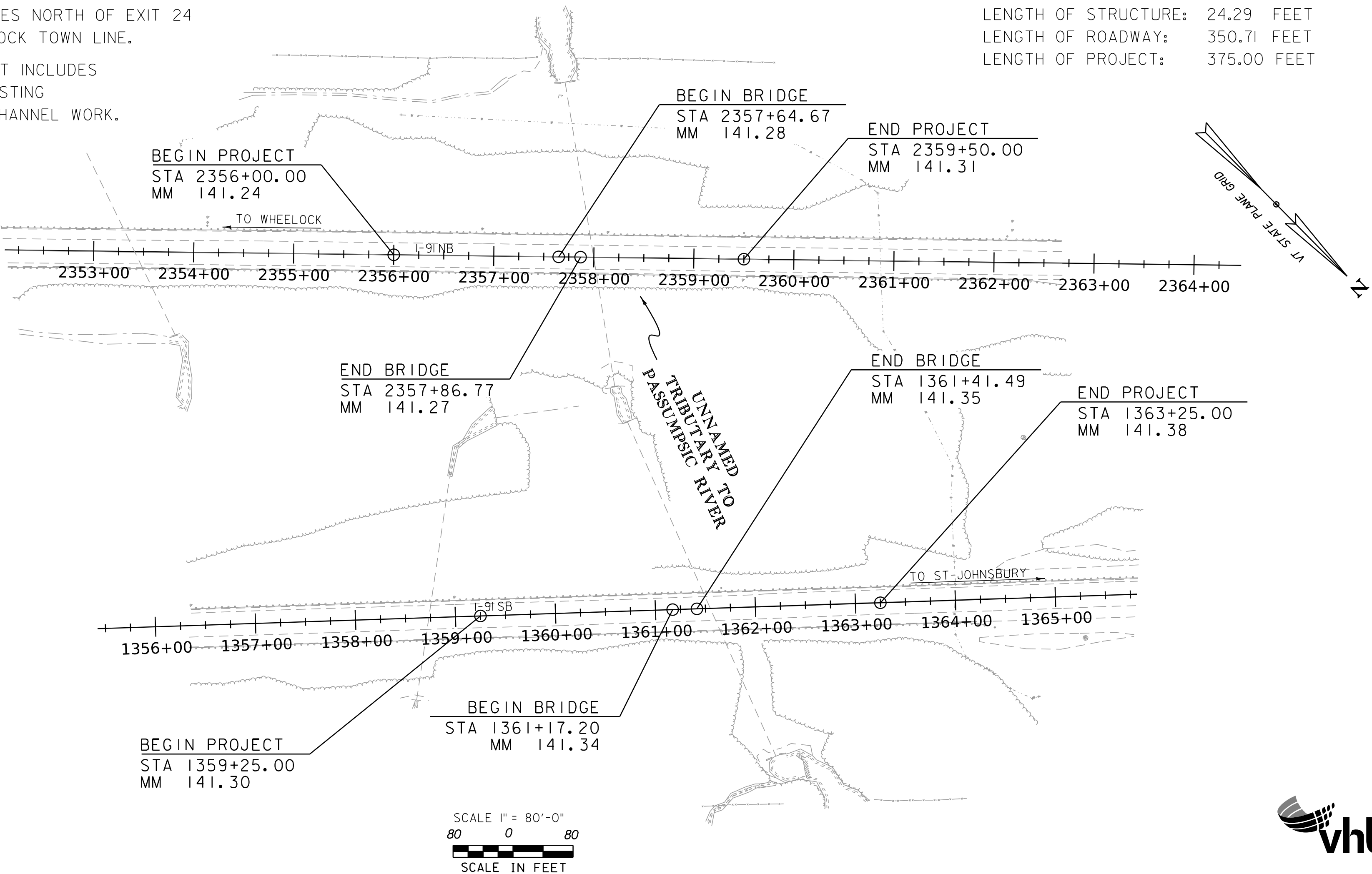
PROJECT LOCATION: LOCATED IN THE COUNTY OF CALEDONIA, TOWN OF LYNDON, ON I-91;
CULVERT NOS. 96-3N AND 96-3S OVER AN UNNAMED TRIBUTARY TO
THE PASSUMPSIC RIVER, APPROXIMATELY 1.1 MILES NORTH OF EXIT 24
AND 1.4 MILES SOUTH OF THE LYNDON/WHEELOCK TOWN LINE.

PROJECT DESCRIPTION: WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES
THE REMOVAL AND REPLACEMENT OF THE EXISTING
CULVERTS WITH ASSOCIATED ROADWAY AND CHANNEL WORK.

96-3N: LENGTH OF STRUCTURE: 24.29 FEET
LENGTH OF ROADWAY: 350.71 FEET
LENGTH OF PROJECT: 375.00 FEET

96-3S: LENGTH OF STRUCTURE: 22.10 FEET
LENGTH OF ROADWAY: 302.9 FEET
LENGTH OF PROJECT: 325.0 FEET

TOTAL LENGTH OF PROJECT: 725 FEET



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.

QUALITY ASSURANCE PROGRAM : LEVEL I

SURVEYED BY : VTRANS
SURVEYED DATE : 09/30/2022

DATUM
VERTICAL NAVD88
HORIZONTAL NAD83 (2011)

BASE TECHNICAL CONCEPT
MARCH 2023

PROJECT MANAGER : MAHENDRA THILLIYAR, P.E.
PROJECT NAME : LYNDON
PROJECT NUMBER : IM 091-3 (53)
SHEET 1 OF 40 SHEETS

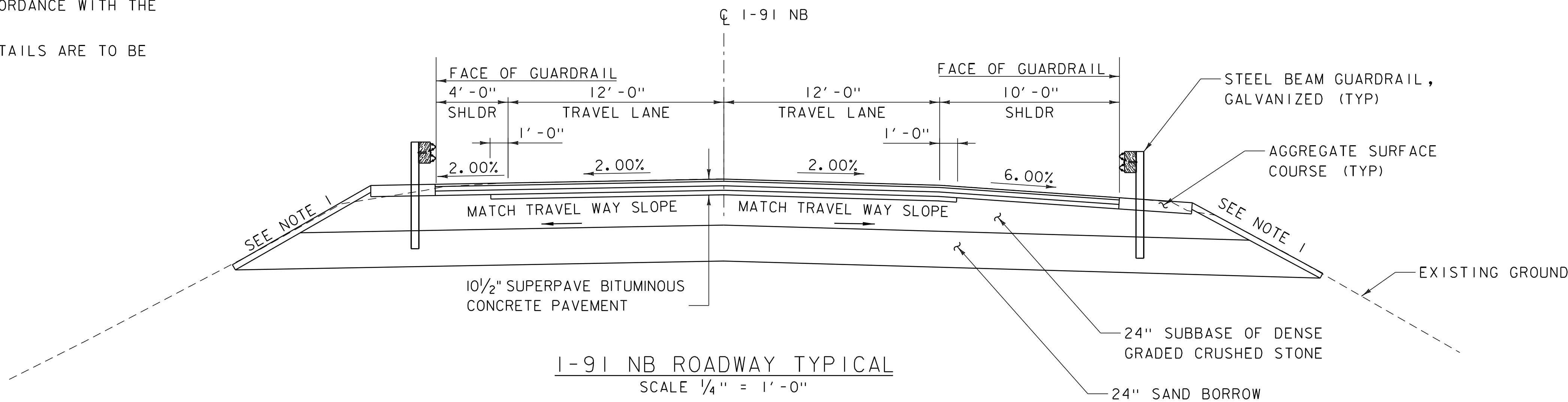


TYPICAL SECTIONS

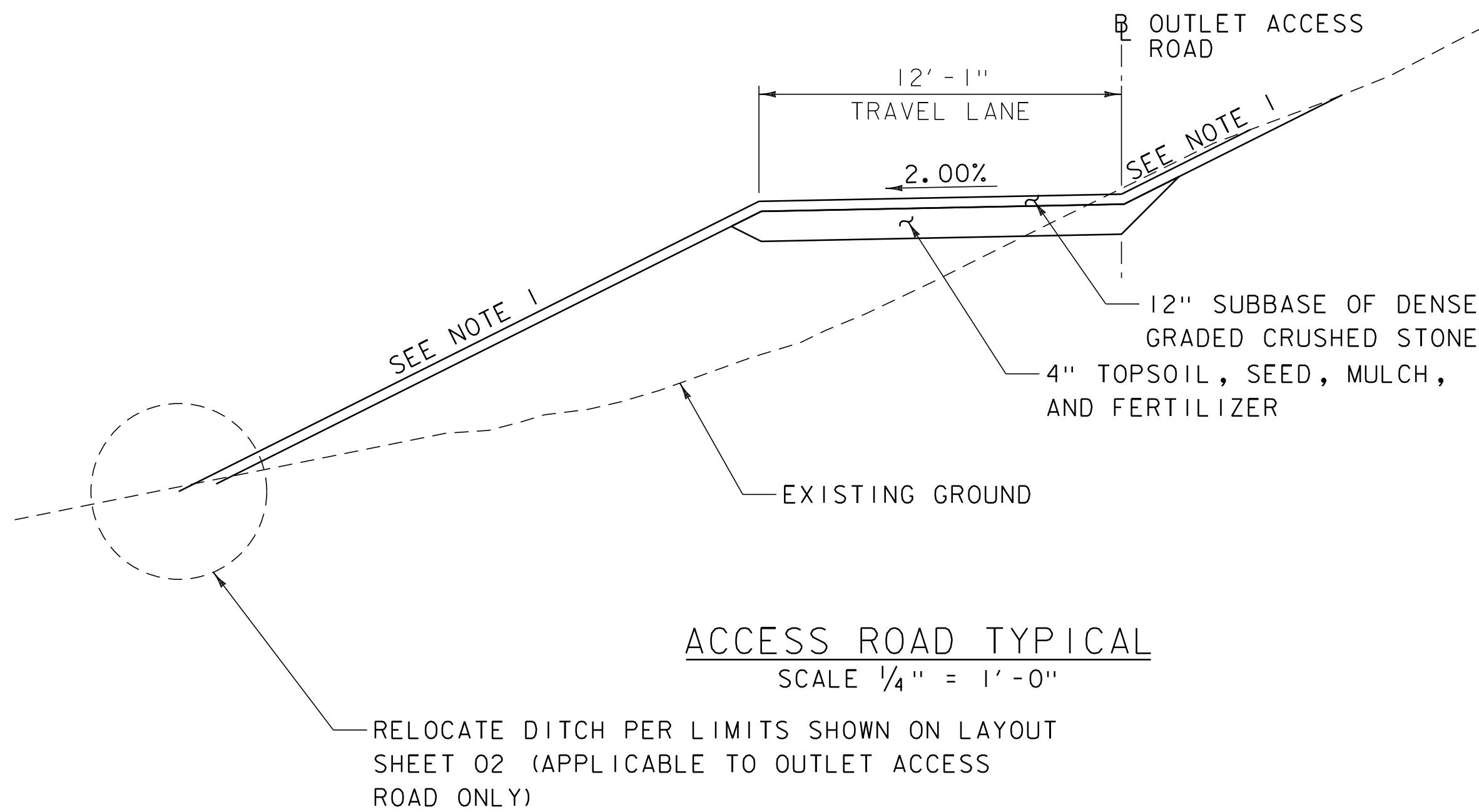
1-91: * 1 1/2" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT - TYPE IVS
3" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT - TYPE IIS
3" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT - TYPE IIS
3" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT - TYPE IIS

NOTES:

1. ALL SLOPES SHALL BE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE RFP.
2. THE LATEST HIGHWAY SAFETY DESIGN DETAILS ARE TO BE USED AS APPROPRIATE IN THE DESIGN.



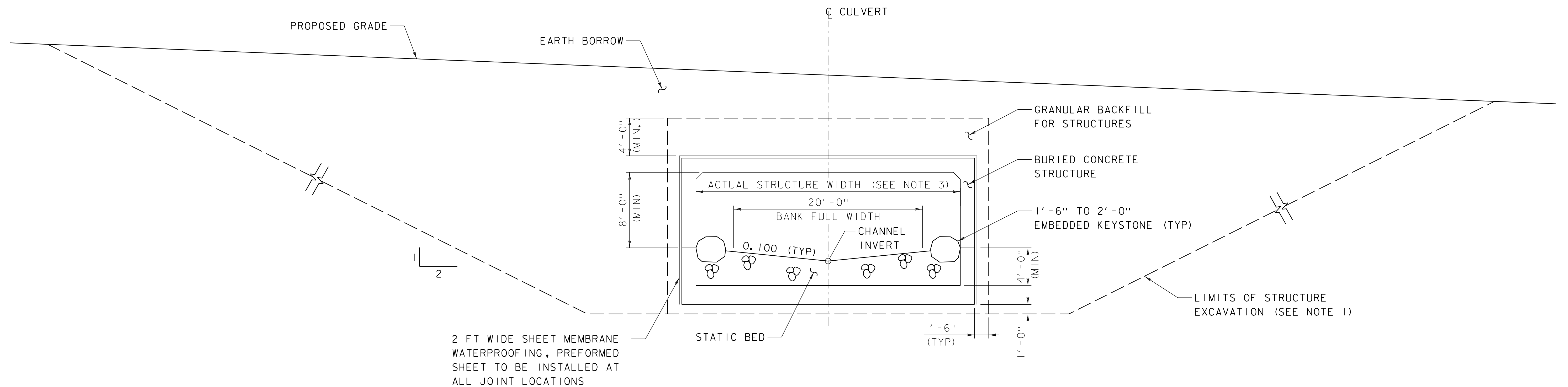
OUTLET ACCESS ROAD TYPICAL SHOWN
MEDIAN AND INLET ACCESS ROAD TYPICAL
SIMILAR AND OPPOSITE HAND



PROJECT NAME: LYNDON
PROJECT NUMBER: IM 091-3(53)

FILE NAME: z19a189.typ.dgn
PROJECT LEADER: A.P. GUYETTE
DESIGNED BY: T.D. BURT
ROADWAY TYPICAL SECTION

PLOT DATE: 27-MAR-2023
DRAWN BY: T.D. BURT
CHECKED BY: J.D. BACHIOCHI
SHEET 3 OF 40



* - ROADWAY AND SLOPE SURFACING
MATERIALS NOT SHOWN FOR CLARITY

TYPICAL BURIED STRUCTURE SECTION

SCALE $\frac{3}{16}$ " = 1'-0"

NOTES:

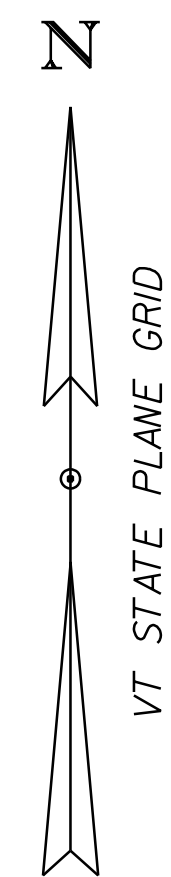
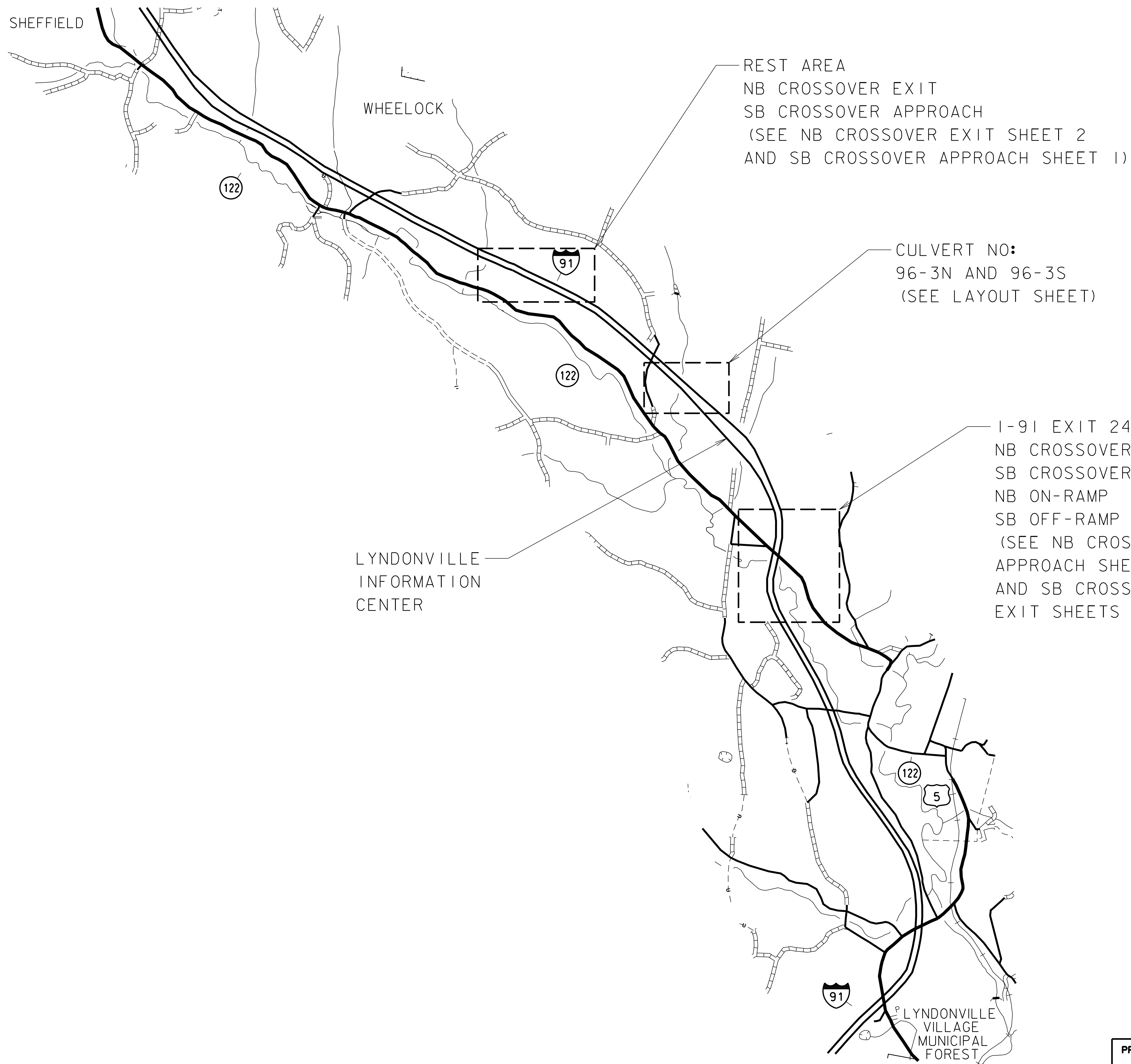
1. ACTUAL LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE DESIGN-BUILDER.
2. THE INSIDE VERTICAL CLEAR HEIGHT SHALL BE A MINIMUM OF 8'-0" AND THE BANK FULL WIDTH SHALL BE A MINIMUM OF 20'-0".
3. ACTUAL STRUCTURE WIDTH SHALL BE DETERMINED BY THE DESIGN-BUILDER BASED ON BEST PRACTICES FOR DESIGN AND ESTABLISHMENT OF NATURAL STREAM BED.
4. ALL DIMENSIONS NOT SHOWN SHALL BE DESIGNED BY THE DESIGN-BUILDER FOR VTRANS APPROVAL.

PROJECT NAME: LYNDON
PROJECT NUMBER: IM 091-3(53)

FILE NAME: z19a189.typ.culv.dgn
PROJECT LEADER: A.P. GUYETTE
DESIGNED BY: N.A. TRUSLOW
TYPICAL BURIED STRUCTURE SECTION

PLOT DATE: 27-MAR-2023
DRAWN BY: N.A. TRUSLOW
CHECKED BY: K.C. BARRY
SHEET 4 OF 40



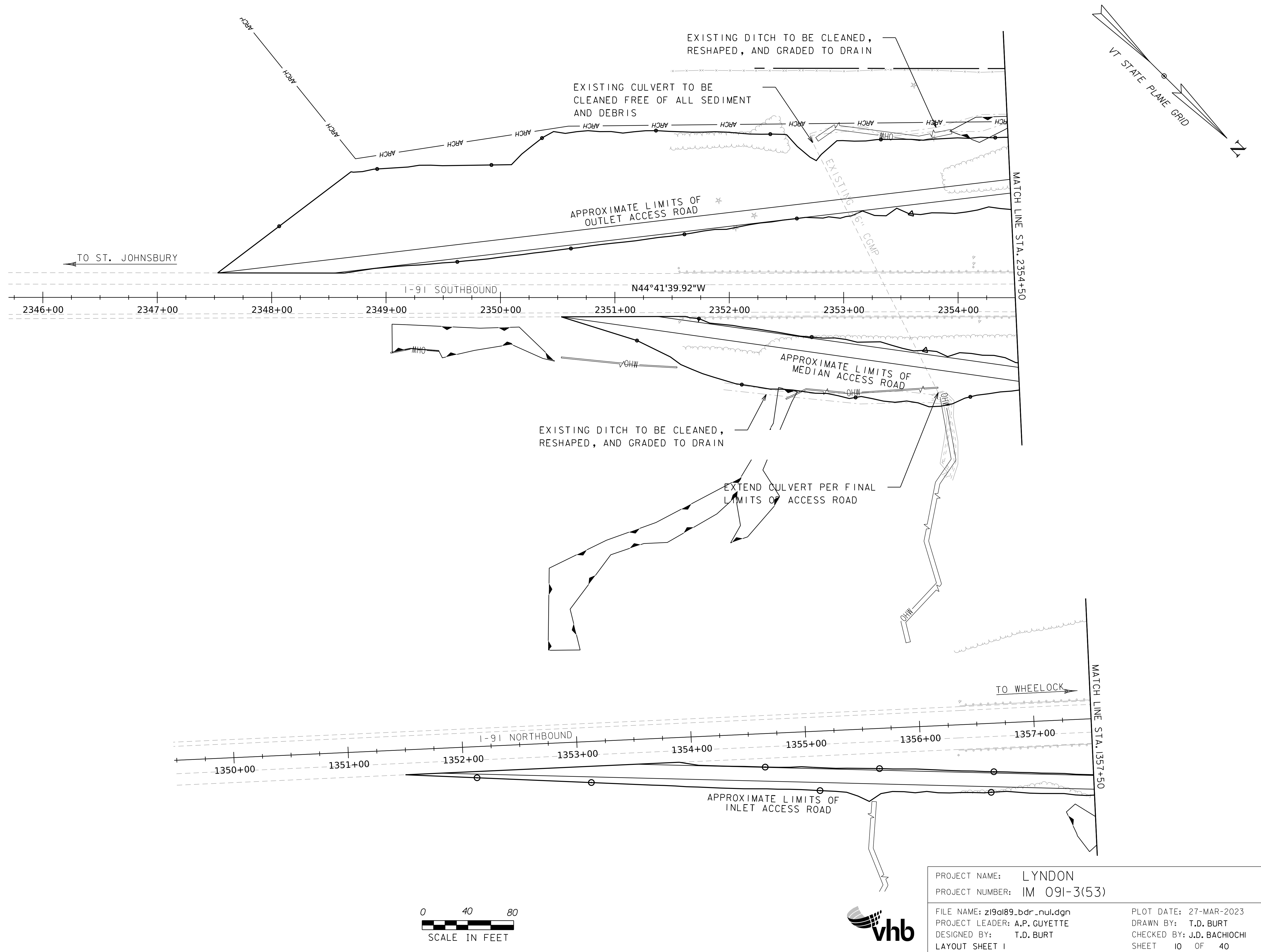


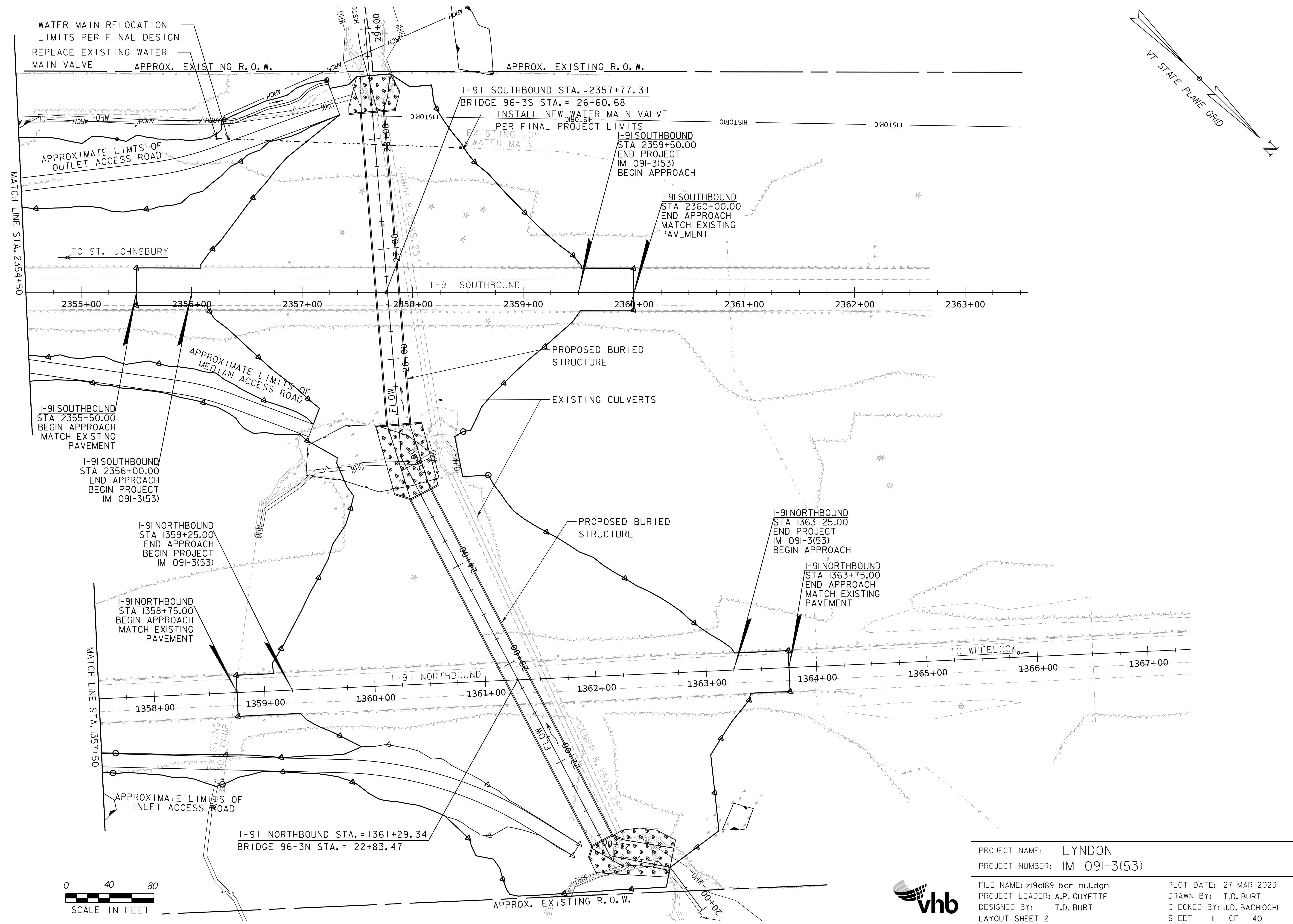
PROJECT NAME: LYNDON
PROJECT NUMBER: IM 091-3(53)

FILE NAME: z19a189_plankey_site.dgn
PROJECT LEADER: A.P. GUYETTE
DESIGNED BY: T.D. BURT
PROJECT PLAN KEY

PLOT DATE: 27-MAR-2023
DRAWN BY: T.D. BURT
CHECKED BY: J.D. BACHIOCHI
SHEET 6 OF 40







PROJECT NAME:	LYNDON	FILE NAME:	z19a189_bdr_nul.dgn	PLOT DATE:	27-MAR-2023
PROJECT NUMBER:	IM 09I-3(53)	PROJECT LEADER:	A.P. GUYETTE	DRAWN BY:	T.D. BURT
		DESIGNED BY:	T.D. BURT	CHECKED BY:	J.D. BACHIOCHI
		LAYOUT SHEET 2		SHEET	II OF 40