STATE OF VERMONT
AGENCY OF TRANSPORTATION

Scoping Report

FOR

Lincoln BO TRUS(7)

Town Highway 6, Bridge 46 over New Haven River

June 5, 2025

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I. Site Information

Bridge 46 is a locally owned bridge located on York Hill Rd (Town Highway 6) over the New Haven River at the intersection with West River Road (Town Highway 1). The existing conditions were gathered from a combination of a Site Visit, the Inspection Report, the Route Log, and the existing Survey. See correspondence in the Appendix for more detailed information.

Roadway Classification	Rural Local Road (Class 3)
Bridge Type	Parker Pony Truss
Bridge Length	85 feet
Year Built	1919, reconstructed in 1970
Ownership	Town of Lincoln

Need

Bridge 46 carries York Hill Rd across the New Haven River. The following is a list of deficiencies of Bridge 46 and York Hill Rd:

1. The bridge has been getting spot repairs for a decade and the existing steel is showing deterioration. The guardrail is damaged and substandard. The deck is in need of a new layer of asphalt, preferably with a protective sealant underneath.

2. The shoulder width on Bridge 46 and Town Highway 6 is substandard.

3. Bridge 46 has substandard freeboard and the bridge was partially submerged in the 1976, 1998, 2011, & 2023 flood events. The bottom chords should also be washed to remove debris from the flood events.

Traffic

A traffic study of this site was performed by the Vermont Agency of Transportation. The traffic volumes are projected for the years 2029 and 2049.

TRAFFIC DATA	2029	2049
AADT	130	140
DHV	21	22
ADTT	7	9
%T	4.7	6.0
%D	50	50

Design Criteria

The design standards for this bridge project are the Vermont State Standards, dated October 22, 1997. Minimum standards are based on an ADT of 140 and a design speed of 35 mph for a Local Road.

Design Criteria	Source	Existing Condition	Minimum Standard	Comment
Approach Lane and Shoulder Widths	VSS Table 6.3	8'/0' (16')	9'/2' (22')	Substandard
Bridge Lane and Shoulder Widths	VSS Section 6.6	1'-9'-9'-1' (20' curb-to-curb)	9'/2' (22')	Substandard
Clear Zone Distance	VSS Table 6.5	No Issues Noted	7' fill / 7' cut	
Banking	VSS Section 6.12	NC over bridge	6% (max)	Non-paved rural local road
Speed		35 mph (assumed)	35 mph (design)	
Horizontal Alignment	AASHTO Green Book Table 3-10b	$R = \infty$	R_{min} = 3,240' (NC)	
Vertical Grade	VSS Table 6.6	12.3% max	10% for rolling terrain	Substandard
K Values for Vertical Curves	VSS Table 6.1	K_{sag} = 54	30 crest / 40 sag	
Vertical Clearance	VSS Section 6.7	No Issues Noted	N/A	
Headlight Sight Distance	VSS Table 6.1	269 ft	225 ft	
Bicycle/Pedestrian Criteria	VSS Table 6.7	1' shoulder provided on original truss	1' shoulder +1' on bridges	Substandard
Bridge Railing	Structures Design Manual Section 13	W-beam railing mounted to truss	TL-2	Substandard, mounted W-beam railing not crash tested
Hydraulics	VTrans Hydraulics Section	• Inundated at 4% AEP (-1.5 feet) • Inundated at 1% AEP (-4.2 feet)	• Pass 4% AEP with 1.0' of freeboard	Substandard freeboard, overtopping at 4% AEP
Structural Capacity	VSS Table 6.4	Structurally Deficient	Design Live Load: H-15	Substandard

Inspection Report Summary

Deck Rating	6 Satisfactory
Superstructure Rating	5 Fair
Substructure Rating	6 Satisfactory
Channel Rating	6 Satisfactory

08/29/2022 – Deck: The surface has been patched with concrete. Soffit has some cracking and efflorescence staining. Superstructure: Steel plates in the verticals/diagonals have been welded to the vertical members years ago to help with section loss, vertical 2 upstream has some small holes. The top chords have some small holes at abutment 2 side just above the concrete deck, from roadway material sitting against the steel. The bottom chords have some rusting at the splice plates with some section loss along the bolts and nuts. There is a hole in the gusset plate at floor beam 5 downstream side on the inside plate. The outside plate has an added steel plate along the top of the bottom cord. Other gusset plates have added steel because of section loss. The lateral bracing is disconnected at abutment 1 and the plates near abutment 2 have heavy section loss affecting the connection strength. Floor beam 0 at abutment 1 has holes along the bottom of the web near stringer 4 and 5. Also a hole at the top at stringer 1. The bottom flange is thin at both fascia stringers. Other floor beams have section loss along the ends. Stringer 4 at both abutments have holes . The flange at abutment 1 is thinning. Substructure: The abutment stems have some minor scaling and the abutment back walls have some wide cracking near the center of the back wall.

08/25/2020 - Steel is rusting throughout, bridge needs a rehab or replacement in 10 years, the deterioration rate of the truss members will cause the bridge to be poor in next few years. JS/JO

08/21/2018 - Bridge has had many repairs made over the years. Consider some spot cleaning and painting to slow corrosion in certain areas. The damaged rail system could use improvement. ~ MJ/MK

12/2/2016 Update - Town has fixed fascia stringer by jacking beam up and drilled holes and installed bolts. MJK JS

08/05/2016 - Structure was re-inspected to get back on cycle with rest of town bridges. Deck surface needs to be recon [sic.], steel superstructure has rusting and impact damage, stringer 6 at floor beam 6 has sheared off angle connection and has dropped approx. 1 3/4" and needs repairs. Numerous areas of bending along vertical & diagonals some done during recon and other vehicle impact. Abutment 1 rail end post both sides are sheared off and tore truss plating at bridge end legs. Structure will once again need extensive repair or preferred replacement in 10 +/- years. MJK JS

07/27/2016 - Structure will need rehab in the near future. End post on abutment #1 side up and downstream should be repaired. Town should consider washing off the bottom chord to remove gravel buildup. Stringer #6 on the downstream side at abutment #2 should be repaired. Bridge could use complete painting. ~FRE/JAS

Hydraulics

TH-6 is a Local Road therefore the design storm flow is 4% AEP (Q25).

The following was analyzed:

Existing Conditions: Thru Truss Bridge

- 54.8 feet +/- hydraulic clear span with an approximate low chord elevation of 888.4 feet
- There is no freeboard at the 4% AEP (-1.5 ft.) and 1% AEP (-4.2 ft.)
- West River Road near the bridge may overtop during the 2% AEP
- The existing structure does not meet the current standards of the VTrans Hydraulic Manual

This project is within the FEMA Special Flood Hazard Area with Base Flood Elevations (Zone A5-A8). Any replacement structure or rehabilitation option that encroaches the existing floodplain will trigger the Flood Hazard Area & River Corridor Rule (FHA&RC) General Permit at a minimum and further coordination with hydraulics may be needed. This analysis did not include any temporary impacts associated with construction fill and/or a temporary bridge.

The abutment at river right appears to be pinned on bedrock based on bridge inspection photos. If the existing abutments are being considered for replacement, a final scour depth can be calculated at Final Plans utilizing boring information.

Utilities

The existing utilities are shown on the Existing Conditions Layout Sheet, and are as follows:

Aerial:

- Green Mountain Power
- Comcast
- Waitsfield Champlain Valley Telecom

Underground:

- None

There are aerial utilities in the project that are at least 65' away from the bridge.

Right-Of-Way

A 3-rod Right-of-Way has been assumed for all town highways in the project area, also a utility easement for the overhead utilities has been plotted. All parts of the structure are located within the existing Right-of-Way. The acquisition of additional Right-of-Way may be needed depending on the proposed design and temporary space needed for construction.

Resources

The environmental resources present at this project are shown on the Existing Conditions Layout Sheet, and are as follows:

Biological:

Wetlands/Watercourses

Through investigations of existing VSWI, Advisory Wetland Mapping and USFWS Wetland Mapper prior to field work and no wetlands were mapped in the vicinity. NRCS soils mapping lists the South and North of the project area as Stetson gravelly fine sandy loam, 0 to 5 percent slopes

A site visit was performed in October 2023 to evaluate the site for the potential presence of wetlands. Wetlands were not identified along the rip rap slopes but there were wetland species growing.

Wildlife Habitat

Through queries of the VT Fish and Wildlife Biofinder, and the project site is within high priority habitat blocks. Due to the surrounding dense forest areas and the openness of the bridge, the project area is likely to facilitate terrestrial wildlife movement. The armored banks of the river along the roadway section of this project area would make crossing for larger ungulate species next to impossible to cross at this location.

This structure is over the New Haven River, which is a cold-water fishery according to the VT Water Quality Standards. Time of year restrictions for work within the waterway will likely be required as will containment of any debris from project activities.

Rare, Threatened and Endangered Species (R/T/E)

Through queries of the ANR Natural Resource database for RTE species and significant natural communities. None were present.
The USFWS IPac mapping database lists:
Myotis septentrionalis, northern long-eared bat (E)
Danaus plexippus, Monarch Butterfly (candidate species for listing)

There is potentially suitable habitat within this project area for the northern long-eared bat. Including the bridge, stone bridge abutments, and trees within the project area.

During NEPA further evaluation will be conducted to determine if any surveys for RTE species will be required.

Invasive Species

Japanese Knot Weed is located along the banks of the New Haven River upstream and downstream of the project area.

Agricultural Soils

Prime soils, Paxton fine sandy loam, 2 to 8 percent slopes, were mapped in the northeast and southwest quadrants of the project

Hazardous Materials:

According to the Vermont Agency of Natural Resources (VANR) Vermont Hazardous Sites List, the bridge is not located near any hazardous sites or within any areas of concern.

Historic:

On behalf of VTrans, WSP completed a historic architectural resource identification survey and assessment for bridge 46. WSP identified that the Area of Potential Effect (APE) contains five architectural resources: the State Register of Historic Places (SRHP) listed Lincoln Bridge No. 46, the SRHP-listed West Lincoln Historic District (WLHD), one contributing resource to the WLHD, and two previously unsurveyed architectural resources. WSP did not identify any Section 4(f) resources in or adjacent to the APE.

It is WSP's opinion that the WLHD and its contributing resource should remain listed in the SRHP and are therefore eligible for the National Register of Historic Places (NRHP). It is also WSP's opinion that Lincoln Bridge No. 46 over New Haven River is eligible for listing in the SR/NRHP as it meets the Criterion C registration requirements outlined in the Multiple Property Documentation Form (MPD) Metal Truss, Masonry and Concrete Bridges of Vermont, 1820-1978 as an early, well-preserved example of a Parker pony truss bridge, which is rarely found in Vermont. Although the bridge has been moved, the structure still retains sufficient integrity of design, workmanship, materials, and feeling to be eligible for listing under Criterion C. Finally, it is WSP's opinion that the two previously unsurveyed resources are not eligible for listing in the SR/NRHP. There are no Section 4(f) property types other than historic resources in the project area.

This bridge falls under Appendix B of the Historic Metal Truss Bridge Preservation Plan which states that truss bridges should be relocated and preserved for limited highway use or for alternative transportation use.

Archaeological:

No areas of either pre-contact or historic archaeological sensitivity have been identified within or near the project.

Stormwater:

There are no existing stormwater permits in the project area. The existing bridge carries TH6 (York Hill Road) over the New Haven River, which is not identified as being an impaired (303(d) list) or stressed water. York Hill Road in the project area is considered a hydrologically connected road

segment and is categorized as being in full compliance with the Town of Lincoln's Municipal Roads General Permit.

II. Safety

There have been two recorded crashes on TH-6 in the five-year period from 2018 to 2022, and three on TH-1 for the same period. None were reported at or close to the bridge/intersection.

III. Local Concerns

A questionnaire was sent to the town and two responses were sent back. The responses are in Appendix L. Issues that seemed to be of interest were the width of the existing structure, the poor condition of the existing structure, the contribution of the existing structure to the aesthetics of the surrounding area, and the condition of the roads that would be used in a potential detour.

IV. Maintenance of Traffic

The Vermont Agency of Transportation reviews each new project to determine suitability for the Accelerated Bridge Program, which focuses on faster delivery of construction plans, permitting, and Right of Way, as well as faster construction of projects in the field. One practice that will help in this endeavor is closing bridges for portions of the construction period, rather than providing temporary bridges. In addition to saving money, the intention is to minimize the closure period with faster construction techniques and incentives to contractors to complete projects sooner. The Agency will consider the closure option on most projects where rapid reconstruction or rehabilitation is feasible. The use of prefabricated elements in new bridges will also expedite construction schedules. This can apply to decks, superstructures, and substructures. Accelerated Construction should provide enhanced safety for the workers and the travelling public while maintaining project quality. The following options have been considered:

Option 1: Off-Site Detour

This option would close the bridge and reroute traffic onto an offsite detour. Since the bridge is located on a class 3 Town Highway, it would be the responsibility of the Town of Lincoln to choose the preferred detour route, and to sign it according to the MUTCD. If the preferred detour route goes through an adjacent town, it will be the responsibility of the Town of Lincoln to coordinate with that town.

The most likely detour route that the Town of Lincoln may want to choose has an end-to-end distance of 4.8 miles and adds 1.0 miles to the route. This route is as follows:

1. From the intersection of York Hill Rd (TH-6) & West River Rd. (TH-1), head east on West River Rd, turn left onto Gove Hill Rd (TH-9), and then turn left onto York Hill Rd. (4.8 miles end-to-end)

Communication with the residents affected by the bridge closure will be required. Accommodations for postal delivers, newspaper routes, trash services and/or other delivery services interrupted by the project or detour should be communicated with the proper contacts.

Advantages: By closing the road to traffic during construction, the local share is reduced by 50%. This option would eliminate the need for a temporary bridge, which would significantly decrease cost and time of construction. This option would not require the need to obtain rights from adjacent

property owners for a temporary bridge. Also, this option would have minimal impacts to natural resources located around the project area. This option reduces the time and cost of the project both at the development stage and construction. This is the safest traffic control option since the traveling public is removed from the construction site.

Disadvantages: Traffic flow would not be maintained through the project site during construction.

Option 2: Phased Construction

Phased construction is the maintenance of one-way alternating traffic on the existing bridge while building one lane at a time of the proposed structure. This allows keeping the road open during construction, while having minimal impacts to adjacent property owners and environmental resources.

Due to this structure being a non-redundant bridge type, this option is not being considered.

Option 3: Temporary Bridge

A temporary bridge could be placed either on the upstream side or downstream side of the existing bridge from a constructability standpoint. A temporary bridge placed on the upstream or downstream sides could be placed next to the existing structure. A temporary bridge on the ether side would need to be placed off alignment due to the configuration of the stream to the bridge and road. Either an upstream or downstream temporary bridge would require additional Right-of-Way to be placed.

Significant additional costs would be incurred to use a temporary bridge, including the cost of the bridge itself, traffic signals, installation and removal, restoration of the disturbed area, and the time and money associated with the temporary Right-of -Way.

A one-way temporary bridge would be sufficient based on the daily traffic volumes. Since any temporary bridge will create a new intersection with West River Rd (TH-1), a signalized intersection, with the temporary bridge between the signals, would be required. A layout of proposed temporary bridges can be seen in the scoping plan set in Appendix O.

Advantages: A temporary bridge will maintain traffic flow through the project corridor during construction.

Disadvantages: The costs to construct and signalize a temporary bridge would be high, including the need for purchasing temporary land rights, as well as time consuming. A temporary bridge could have impacts to potential bat roosting habitat.

V. Alternatives Discussion

No Action
This alternative is not recommended. The bridge needs repair and downgrading of the structure will occur if no action is taken. In the interest of safety to the traveling public, the No Action alternative is not recommended. No cost estimate has been provided for this alternative since there are no immediate costs.

Alternative 1: Truss Rehabilitation
A truss rehabilitation would include repairs to the pony truss and abutments and replacement of the deck and floor system. The project would consist of the following:

- Removing the existing pony truss for cleaning, repair or replacement of deteriorated members, strengthening of members, and repainting. Containment of lead paint and environment protection would be required.

- Replacing the existing bridge seats and backwalls and placing the rehabbed truss on new bearings is recommended. Extensive concrete repair or replacement of the abutments should be evaluated in design. If the abutments are fully reconstructed, the removal of the previous bridges remaining abutments will provide additional hydraulic clearspan.

- Constructing a new floor system (floor beams, stringers, and lateral bracing), and deck.

The existing lane width on the original bridge is 9 feet with 1 foot shoulders, with a total width of 20 foot rail-to-rail. The rehabilitated pony truss would maintain the existing width to have two 9 foot travel lanes with 1 foot shoulders for a 20 foot wide rail-to-rail bridge width. This does not meet the minimum standard of 22-feet as set forth by the Vermont State Standards.

The existing substructures are in Satisfactory condition, and it is reasonable to assume that with a new deck and floor beams, along with needed truss repairs, the structure can safely carry anticipated traffic loads for an additional 40 years.

Advantages: This alternative would address the structural deficiencies of the existing bridge and extend the life of the existing structure an additional 40 years. The effects on adjacent properties, historic and archeological resources would be minimal.

Disadvantages: This option would not meet the minimum width requirements and would have a reduced loading capacity compared to a full bridge replacement.

Maintenance of Traffic: Either a temporary bridge, or an offsite detour could be utilized for traffic control for this alternative.

Alternative 2: Full Bridge Replacement with a New Parker Pony Truss

This alternative would replace the existing bridge with a new truss as well as a new substructure. The various considerations under this option include: the alignment, the bridge width and length, skew, superstructure type and substructure type.

a. Alignment

i. On-Alignment

The existing horizontal alignment of York Hill Rd crosses the New Haven River at an angle of approximately 15 degrees from perpendicular. Keeping the alignment the same with a new bridge constructed will reduce the need for additional Right-of-Way, reduce the impacts to the travelling public on West River Rd (TH-1), and have the least impact to existing natural resources.

ii. Off-Alignment

The existing horizontal alignment of York Hill Rd crosses the New Haven River at an angle of approximately 15 degrees from perpendicular. The off-alignment option shown in the scoping plans straightens out the curves in York Hill Rd and brings the alignment to intersect West River Rd at a more desirable angle. If an off-alignment option is preferred, the final alignment will be determined in the design phase.

This is habitat that is a preferred roosting area for certain local endangered bat species, and any work to the bridge may have impacts to this habitat. An off-alignment bridge would have more expensive roadway costs, as the project would relocate a section of the roadway, requiring more impacts, and the acquisition of property. The historic nature of this bridge is integral to the style of bridge structure itself, not the location, so altering the alignment will not alter the historic bridge.

The distance between the existing bridge and the proposed off-alignment bridge is sufficient that the existing bridge can remain in service while the new bridge is constructed.

b. Bridge Width

The current rail-to-rail width of the original pony truss structure is 20'-0". This does not meet the minimum standard of 22-feet. Since a new 75+ year bridge is being proposed, the bridge geometry should meet the minimum State standards, Town needs, and match the corridor width. A minimum 22-foot width (rail-to-rail) bridge will be proposed.

c. Bridge Length and Skew

The existing bridge has a span of 80 feet, a distance between the abutments of 58 feet, with the abutments having a skew of approximately 5 degrees. This results in a hydraulic clearspan of 54.8 feet. The preliminary hydraulics report states that the minimum bank full width of the New Haven River at this location is 55 feet. By increasing the distance between the abutments, the water surface elevations at the 4% annual event are improved. As such, it is proposed that any new pony truss have a span of approximately 80 feet, and the previous abutments be reconstructed to provide an approximate minimum clearspan of 75 feet, with a skew appropriate to retain River Rd (TH-1). This will improve hydraulics and meet the minimum bank full width standards.

d. Superstructure Type

This option would provide a new parker pony truss, similar to the existing truss to mitigate any adverse effect to the historic resource. The truss should be constructed with galvanized steel for long term durability, and follow the stipulations set forth by the Division for Historic Preservation. The truss would have higher upfront costs compared to a conventional steel beam bridge and would require periodic maintenance for the cleaning and painting of steel members.

e. Substructure Type

No record plans were available; however, the existing substructures appear to be shallow spread footing abutments placed on abutments for a previous bridge. The earlier abutments are gravity walls placed on exposed bedrock. Any new bridge would likely have spread footing abutments placed on bedrock. Additional borings and bedrock probes should be taken early in the design phase to verify the in-situ conditions and choose the most appropriate substructure type. The preliminary geotechnical report can be found in Appendix F.

f. Maintenance of Traffic:

Either a temporary bridge or an offsite detour could be utilized for traffic control. Additionally, off-alignment construction could be utilized to keep the existing bridge in service during construction.

Alternative 3: Full Bridge Replacement with a Conventional Steel Beam Bridge
This alternative would replace the existing bridge with a new superstructure as well as a new substructure at the existing location. This option would require Right-of-Way acquisition. The various considerations under this option include: the alignment, the bridge width and length, skew, superstructure type and substructure type.

a. Alignment

i. On-Alignment

The existing horizontal alignment of York Hill Rd crosses the New Haven River at an angle of approximately 15 degrees from perpendicular. Keeping the alignment the same with a new bridge constructed will reduce the need for additional Right-of-Way, reduce the impacts to the travelling public on West River Rd (TH-1), and have the least impact to existing natural resources.

ii. Off-Alignment

The existing horizontal alignment of York Hill Rd crosses the New Haven River at an angle of approximately 15 degrees from perpendicular. The off-alignment option shown in the scoping plans straightens out the curves in York Hill Rd and brings the alignment to intersect West River Rd at a more desirable angle. If an off-alignment option is preferred, the final alignment will be determined in the design phase.

This is habitat that is a preferred roosting area for certain local endangered bat species, and any work to the bridge may have impacts to this habitat. An off-alignment bridge would have more expensive roadway costs, as the project would relocate a section of the roadway, requiring more impacts, and the acquisition of property.

The distance between the existing bridge and the proposed off-alignment bridge is sufficient that the existing bridge can remain in service while the new bridge is constructed.

b. Bridge Width

The current rail-to-rail width of the original pony truss structure is 20’-0”. This does not meet the minimum standard of 22 feet. Since a new 75+ year bridge is being proposed, the bridge geometry should meet the minimum State standards, Town needs, and match the corridor width. A minimum 22 foot width (rail-to-rail) bridge will be proposed.

c. Bridge Length and Skew

The existing bridge has a span of 80 feet and no skew respective to the newer abutments. It does have an approximate 15 degree skew respective to the river and the older abutments. The preliminary hydraulics report states that the minimum bank full width of the New Haven River at this location is 55 feet. As such, it is proposed that any new bridge have a span of approximately 85 feet and be skewed to match the current river topography with the chosen alignment.

d. Superstructure Type

The most economical 85' span length bridge types that are most used in Vermont are a composite steel with a concrete deck superstructure (either cast-in-place or precast PBU's) or precast deck panels. These types of superstructures would require very little long-term maintenance. A cast-in-place superstructure would have lower construction costs than a precast structure.

e. Substructure Type

No record plans were available; however, the existing substructures appear to be shallow spread footing abutments placed on abutments for a previous bridge. The earlier abutments are gravity walls placed on exposed bedrock. Any new bridge would likely have spread footing abutments placed on bedrock. Additional borings and bedrock probes should be taken early in the design phase to verify the in-situ conditions and choose the most appropriate substructure type. The preliminary geotechnical report can be found in Appendix F.

f. Maintenance of Traffic:

Either a temporary bridge or an offsite detour could be utilized for traffic control. Additionally, off-alignment construction could be utilized to keep the existing bridge in service during construction.

VI. Alternatives Summary

Based on the existing site conditions, bridge condition, and recommendations from hydraulics, there are several viable alternatives:

Alternative 1a: Truss Rehabilitation with Traffic Maintained on an Offsite Detour
Alternative 1b: Truss Rehabilitation with Traffic Maintained on a Temporary Bridge
Alternative 2a: Full Bridge Replacement On-Alignment with New Parker Pony Truss and Traffic Maintained on an Offsite Detour (22' typical)
Alternative 2b: Full Bridge Replacement On-Alignment with New Parker Pony Truss and Traffic Maintained on a Temporary Bridge
Alternative 2c: Full Bridge Replacement Off-Alignment with New Parker Pony Truss and Traffic Maintained on the Existing Bridge
Alternative 3a: Full Bridge Replacement On-Alignment with New Steel Beam Bridge and Traffic Maintained on an Offsite Detour (22' typical)
Alternative 3b: Full Bridge Replacement On-Alignment with New Steel Beam Bridge and Traffic Maintained on a Temporary Bridge
Alternative 3c: Full Bridge Replacement Off-Alignment with New Steel Beam Bridge and Traffic Maintained on the Existing Bridge

VII. Cost Matrix[1]

Lincoln BO 1448(46)		Do Nothing	Alternative 1		Alternative 2			Alternative 3		
			Truss Rehabilitation		Full Bridge Replacement with New Parker Pony Truss			Full Bridge Replacement with New Steel Beam Bridge		
			On-Alignment		On-Alignment		Off-Alignment	On-Alignment		Off-Alignment
			a. Off-site Detour	b. Temporary Bridge	a. Off-site Detour	b. Temporary Bridge	c. Existing Bridge in Use	a. Off-site Detour	b. Temporary Bridge	c. Existing Bridge in Use
COST	Bridge Cost	$0	$577,500	$577,500	$1,958,300	$1,958,300	$1,943,200	$1,464,600	$1,418,200	$1,423,500
	Removal of Structure	$0	$0	$0	$258,960	$258,960	$258,960	$258,960	$258,960	$258,960
	Roadway	$0	$105,000	$105,000	$204,000	$204,000	$417,000	$159,000	$155,000	$339,000
	Maintenance of Traffic	$0	$19,100	$241,425	$246,225	$231,165	$4,040	$19,100	$231,165	$4,040
	Construction Costs	$0	$701,600	$923,925	$2,667,485	$2,652,425	$2,623,200	$1,901,660	$2,063,325	$2,025,500
	Construction Engineering & Contingencies	$0	$210,480	$277,178	$613,522	$663,106	$655,800	$437,382	$515,831	$506,375
	Accelerated Premium	$0	$49,112	$0	$186,724	$0	$0	$133,116	$0	$0
	Total Construction Costs w CEC	$0	$961,192	$1,201,103	$3,467,731	$3,315,531	$3,279,000	$2,472,158	$2,579,156	$2,531,875
	Preliminary Engineering	$0	$210,480	$277,178	$400,123	$530,485	$524,640	$285,249	$412,665	$405,100
	Right of Way	$0	$0	$30,000	$0	$30,000	$75,000	$0	$30,000	$75,000
	Total Project Costs	$0	$1,171,672	$1,508,280	$3,867,853	$3,876,016	$3,878,640	$2,757,407	$3,021,821	$3,011,975
	Annualized Costs	$0	$29,292	$37,707	$51,571	$51,680	$51,715	$36,765	$40,290	$40,160
TOWN SHARE		N/A	$5,260	$15,360	$20,000	$56,050	$29.980	$14,265	$44,265	$24,005
TOWN %		N/A	2.5%	5%	5%	10%	5%	5%	10%	5%
SCHEDULEING	Project Development Duration	N/A	4 years	4 years	4 years	4 years	4 years	4 years	4 years	4 years
	Construction Duration	N/A	6 months	8 months	6 months	8 months	6 months	6 months	8 months	6 months
	Closure Duration (If Applicable)	N/A	4 months	N/A	6 months	N/A	N/A	6 months	N/A	N/A
ENGINEERING	Typical Section - Roadway (feet)	16	16	16	22	22	22	22	22	22
	Typical Section - Bridge (feet)	20	20	20	22	22	22	22	22	22
	Geometric Design Criteria	Substandard Width	Substandard Width		Meets Minimum Standard			Meets Minimum Standard		
	Traffic Safety	No Change	No Change	No Change	Improved	Improved	Improved	Improved	Improved	Improved
	Alignment Change	No Change	No Change	No Change	No Change		Change	No Change		Change
	Bicycle Access	No Change	No Change	No Change	Improved	Improved	Improved	Improved	Improved	Improved
	Pedestrian Access	No Change	No Change	No Change	Improved	Improved	Improved	Improved	Improved	Improved
	Hydraulics	Meets Minimum Standard	Meets Minimum Standard		Meets Minimum Standard		Meets Minimum Standard	Meets Minimum Standard		Meets Minimum Standard
	Utilities	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change
OTHER	ROW Acquisition	No Change	No	Yes	No	Yes	Yes	No	Yes	Yes
	Road Closure	No Change	Yes	No	Yes	No	No	Yes	No	No
	Design Life (years)	<10	40	40	75	75	75	75	75	75

[1] Costs are estimates only, used for comparison purposes.

VIII. Conclusion

We recommend **Alternative 2a**; construction of a new parker pony truss while maintaining traffic on an offsite detour during construction.

Structure:
The existing bridge is over 100 years old and in poor condition with advanced steel deterioration. Additionally, the existing pony truss is narrow for the traffic volumes present and does not meet the minimum hydraulic standards.

The existing substructures are in satisfactory condition; however, they are over 60 years old and are currently protected by old abutments that were left in place following the last project. Bridge 46 was partially submerged in the 1976, 1998, 2011, & 2023 flood events and there is a need to reduce water surface elevations during flood events. It is recommended that the abutments are removed and replaced in order to improve the hydraulic capacity as well as extend the design life of the structure. By replacing the abutments, the bridge alignment could be slightly shifted for improved sight distance at the intersection of York Hill Road and West River Road.

By replacing the entire bridge, a wider structure can be constructed. The current rail-to-rail width of Bridge 46 is 20 feet. This does not meet the minimum standard of 22 feet. The Town has expressed interest in additional widening beyond the standard 22 feet in order to make the bridge safer for shared use.

The new pony truss will result in a brand new 75-year bridge, with minimal future maintenance requirements. While the new conventional bridge costs have a lower cost compared to a new pony truss, it would be more difficult to obtain the necessary Section 4(f) and Section 106 historic permitting requirements for this alternative. This alternative will require maintenance such as periodic cleaning and painting.

Traffic Maintenance:

The recommended method of traffic control is to close the bridge for a construction season and maintain traffic on an offsite detour. The detour for this project location would add approximately 1.0 miles to the through route and has an end-to-end distance of 4.8 miles. The AADT on TH 6 is 140 vehicles per day, which is considered relatively low, and the unimproved status of the road typically brings about low bicycle and pedestrian traffic. The option to close the road is the least expensive and has the least impacts to surrounding properties. Additionally, by closing the road to traffic during construction, the local share is reduced by 50%.

IX. Appendices

Appendix A: Site Pictures
Appendix B: Town Map
Appendix C: Bridge Inspection Report
Appendix D: Traffic Memo
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Appendix O: Plans

Appendix A: Site Pictures

Looking west over Bridge 46

Wearing surface

Looking Downstream

Looking Upstream

Abutment 1

Abutment 2

Guardrail damage

Girder Section Loss

Girder Section Loss

Purlin Section Loss

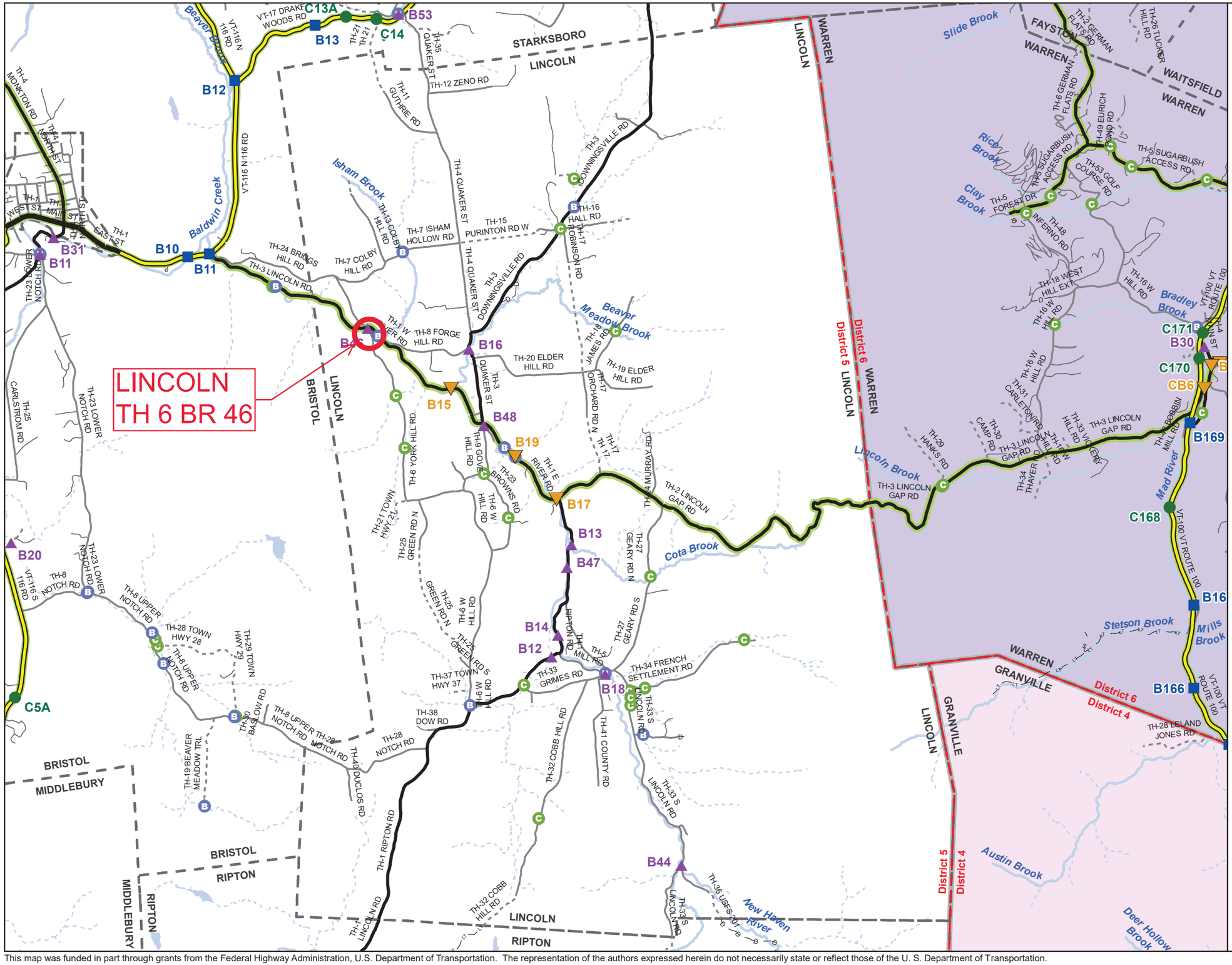
Section Loss

Section Loss / Separation

Gusset Plate et al. Section Loss / Separation

Section Loss

Appendix B: Town Map



This map was funded in part through grants from the Federal Highway Administration, U.S. Department of Transportation. The representation of the authors expressed herein do not necessarily state or reflect those of the U. S. Department of Transportation.

Appendix C: Bridge Inspection Report

STRUCTURE INSPECTION, INVENTORY and APPRAISAL SHEET

Vermont Agency of Transportation ~ Structures Section ~ Bridge Management and Inspection Unit

Inspection Report for : LINCOLN **Bridge No.:** 00046 **District:** 5
Located on: C3006 **over** NEW HAVEN RIVER **approximately** @ JCT W CL2 TH1 **Owner:** TOWN-OWNED

CONDITION

Deck Rating: 6 SATISFACTORY
Superstructure Rating: 5 FAIR
Substructure Rating: 6 SATISFACTORY
Channel Rating: 6 SATISFACTORY
Culvert Rating: N NOT APPLICABLE
Federal Str. Number: 100110004601101
Federal Sufficiency Rating: 28.9
Deficiency Status of Structure: ND

AGE and SERVICE

Year Built: 1919 **Year Reconstructed:** 1970
Service On: 1 HIGHWAY
Service Under: 5 WATERWAY
Lanes On the Structure: 02
Lanes Under the Structure: 00
Bypass, Detour Length (miles): 05
ADT: 000200 **% Truck ADT:** 01
Year of ADT: 2019

GEOMETRIC DATA

Length of Maximum Span (ft): 0080
Structure Length (ft): 000085
Lt Curb/Sidewalk Width (ft): 0
Rt Curb/Sidewalk Width (ft): 0
Bridge Rdwy Width Curb-to-Curb (ft): 20.5
Deck Width Out-to-Out (ft): 21
Appr. Roadway Width (ft): 020
Skew: 05
Bridge Median: 0 NO MEDIAN
Min Vertical Clr Over (ft): 99 FT 99 IN
Feature Under: FEATURE NOT A HIGHWAY OR RAILROAD
Min Vertical Underclr (ft): 00 FT 00 IN

STRUCTURE TYPE and MATERIALS

Bridge Type: STEEL PONY TRUSS
Number of Approach Spans: 0000 **Number of Main Spans:** 001
Kind of Material and/or Design: 3 STEEL
Deck Structure Type: 1 CONCRETE CIP
Type of Wearing Surface: 0 NOT APPLICABLE
Type of Membrane: 0 NONE
Deck Protection: 0 NONE

APPRAISAL *AS COMPARED TO FEDERAL STANDARDS

Bridge Railings: 0 DOES NOT MEET CURRENT STANDARD
Transitions: 1 MEETS CURRENT STANDARD
Approach Guardrail: 1 MEETS CURRENT STANDARD
Approach Guardrail Ends: 1 MEETS CURRENT STANDARD
Structural Evaluation: 2 INTOLERABLE REPLACEMENT NEEDED
Deck Geometry: 4 MEETS MINIMUM TOLERABLE CRITERIA
Underclearances Vertical and Horizontal: N NOT APPLICABLE
Waterway Adequacy: 6 OCCASIONAL OVERTOPPING OF ROADWAY WITH INSIGNIFICANT TRAFFIC DELAYS
Approach Roadway Alignment: 8 EQUAL TO DESIRABLE CRITERIA
Scour Critical Bridges: 7 CORRECTIVE COUNTERMEASURES IN PLACE

DESIGN VEHICLE, RATING and POSTING

Load Rating Method (Inv): 2 ALLOWABLE STRESS(AS)
Posting Status: P POSTED FOR LOAD
Bridge Posting: 5 NO POSTING REQUIRED
Load Posting: 02 BRIDGE IS LEGALLY LOAD POSTED AT BOTH ENDS
Posted Vehicle: 6 GROSS LOAD ONLY
Posted Weight (tons): 12
Design Load: 5 HS 20

INSPECTION

Insp. Date: 082020 **Insp. Freq. (months):** 24 **X-Ref. Route:** **X-Ref. BrNum:**

INSPECTION SUMMARY and NEEDS

Click to view the Glossary

08/25/2020 - Steel is rusting throughout, bridge needs a rehab or replacement in 10 years, the deterioration rate of the truss members will cause the bridge to be poor in next few years. JS/JO

08/21/2018 - Bridge has had many repairs made over the years. Consider some spot cleaning and painting to slow corrosion in certain areas. The damaged rail system could use improvement. ~ MJ/MK

12/2/2016 Update. Town has fixed fascia stringer by jacking beam up and drilled holes and installed bolts. MJK JS

08/05/16 Structure was re-inspected to get back on cycle with rest of town bridges. Deck surface needs to be recon, steel superstructure has rusting and impact damage, stringer 6 at floorbeam 6 has sheared off angle connection and has dropped approx. 1 3/4" and needs repairs. Numerous areas of bending along vertical & diagonals some done during recon and other vehicle impact. Abutment 1 rail end post both side are sheared off and tore truss plating at bridge end legs. Structure will once again need extensive repair or preferred replacement in 10 +/- years. MJK JS

7/27/2016 Structure will need rehab in the near future. End post on abutment #1 side up and downstream should be repaired. Town should consider washing off the bottom chord to remove gravel buildup. Stringer #6 on the downstream side at abutment #2 should be repaired. Bridge could use complete painting. ~FRE/JAS

7/11/2014 Delams on the deck with exposed rebar need to be patched with concrete after bad concrete has been removed. Structure should be cleaned and painted soon. Bearing areas need to be cleaned off of all debris. Bottom chord needs to be washed off. Top plate on abutment#1up and downstream side needs to be repaired. ~FRE/TJB

7/27/2012 Deck and sub are in good condition. However due to the impact damage on the approach end at abutment#1 superstructure remains in fair condition. Repairs to the plates under the posts on both sides should be made in the near future. Guard rail on that same end should be repaired. ~FRE/JAS

6/21/2010 The truss has some deep pitting in the verticals and the floor beams in places. The patches in the gusset plates and the ends of the verticals are a Band-Aid patch at best. The deck wearing surface needs to be cleaned out of all delams and then patched. The old abutments in front of the newer concrete abutments continue to deteriorate. DCP & JWW

Appendix D: Traffic Data

AGENCY OF TRANSPORTATION **OFFICE MEMORANDUM**

OPERATIONS & SAFETY BUREAU DATA MANAGEMENT UNIT

TO: Daniel Beard

FROM: Becca Mitchell, AOT Data Analyst

DATE: November 28, 2023

RE: LINCOLN BO TRUS(7) 22J410
BR0046 over New Haven River

Please find below the requested traffic data for the above referenced 2029 project. The data consists of the AADTs and DHVs for 2029 and 2049, as well as the 20-year (2029 ~ 2049) and 40-year (2029 ~ 2069) flexible ESALs.

If you have any questions, please call me at (802) 279-0502 or email me at becca.mitchell@vermont.gov.

AADT = Annual Average Daily Traffic
DHV = Design Hour Volume
%T = Percentage of Trucks during Peak Hour
%D = Highest Directional Percentage during Peak Hour
ADTT = Average Daily Truck Traffic
ESALs = (Flexible) Equivalent Single Axle Loads

CC: Data Analysis Files

Section	AADT		DHV		%T		%D		ADTT		ESALs	
	2029	2049	2029	2049	2029	2049	2029	2049	2029	2049	(2029~2049)	(2029~2069)
1	130	140	21	22	4.7%	6.0%	50%	50%	7	9	16400	33300

Appendix E: Preliminary Hydraulics Memo

VERMONT

State of Vermont
Structures and Hydraulics Section
Barre City Place
219 North Main Street, Barre, VT 05641
vtrans.vermont.gov

Agency of Transportation

[phone] 802-371-7326

TO: Laura Stone, P.E., Structures Scoping Project Manager

CC: Patrick Ross, Hydraulics Engineer

FROM: Keith Friedland, Hydraulics Technician

DATE: February 8, 2024

SUBJECT: Lincoln BO TRUS(7) 22J410
Site location: Lincoln, TH-6, York Hill Road, Br46, over New Haven River
Coordinates: 44.118919, -73.019557

We have completed our hydraulic study for the above referenced site, and offer the following for your use:

Since this is a rehab project, we did not meet onsite with ANR.

TH-6 is a Local Road therefore the design storm flow is 4% AEP (Q25).

The following was analyzed:

Existing Conditions: Thru Truss Bridge

- 54.8 feet +/- hydraulic clear span with an approximate low chord elevation of 888.4 feet
- There is no freeboard at the 4% AEP (-1.5 ft.) and 1% AEP (-4.2 ft.)
- West River Road near the bridge may overtop during the 2% AEP
- The existing structure does not meet the current standards of the VTrans Hydraulic Manual

This project is within the FEMA Special Flood Hazard Area with Base Flood Elevations (Zone A5-A8). Any replacement structure or rehabilitation option that encroaches the existing floodplain will trigger the Flood Hazard Area & River Corridor Rule (FHA&RC) General Permit at a minimum and further coordination with hydraulics may be needed. This analysis did not include any temporary impacts associated with construction fill and/or a temporary bridge.

The abutment at river right appears to be pinned on bedrock based on bridge inspection photos. If the existing abutments are being considered for replacement, a final scour depth can be calculated at Final Plans utilizing boring information.

Stone Fill, Type IV should be used to protect any disturbed channel banks or roadway slopes.

Please contact us with any questions.

Appendix F: Preliminary Geotechnical Memo

Geotechnical Scoping Report Data Form

General Project Information

Project Name:	LINCOLN BO TRUS(7)				
Project Pin:	22J410				
Requestor Name:	Laura Stone, P.E., Scoping Engineer				
Prepared By:	E. Thomas, AOT Geologist				
Date:	2/16/2024				
Structure Information:	**Town**: Lincoln	**Route**: TH 3006 (York Hill Rd.)		**Mile Marker**: N/A	
Structure Type:	Bridge	**Structure ID #:**	BR #46	**Conceptual Treatment Type:**	Replace
Existing Structure Description:	The existing bridge consists of steel truss that crosses the New Haven River in the Town of Lincoln, VT. The bridge is approximately 85 ft long. The proposed treatment is to rehab the existing truss and replace the existing abutments.				

Geological Information

Surficial Map Description:	Bedrock Exposure			
Bedrock Map Formation Name:	Fairfield Pond Fm.			
Bedrock Map Member Name:	N/A			
Bedrock Map General Rock Type:	**Rock Type 1:**	Phyllite	**Rock Type 2:**	N/A
Bedrock Map Detailed Rock Description:	Light-gray to light-green, quartz-sericite-chlorite (+/- magnetite +/- biotite) phyllite			

Record Plan Information

Are there Record Plans?	Yes ☐ No ☒
Record Plans ID #:	N/A
Record Plan Notes:	Although there are no record plans, a review of bridge inspection reports states that the bridge was constructed in 1919 and was reconstructed in 1970.

Subsurface Information

Are there Historical Borings?	Yes ☐ No ☒

Historical Boring Information:

Project Name	Distance from Project (ft)	# of Borings	Depth of Bedrock (ft)	Top of Bedrock Elevation (ft)	Rock Type
N/A	N/A	N/A	N/A	N/A	N/A

Link to Historical Boring Information:	N/A
Is there Well Data available near the project limits?	Yes ☒ No ☐

Well Data Information:

Well Report #	Bedrock Depth (ft)	Distance from Project (ft)
42986	0	370
19794	11	575
172	3	690

Are Bedrock Outcrops Present at the Site?	Yes ☒ No ☐
Bedrock Depth General Comments:	A review of site photos suggests that bedrock outcrops are present in the river upstream of the bridge and that the bridge abutments are partially on bedrock. Bedrock depths are expected to be shallow.

General Site Conditions

Site Visit Conducted?	Yes ☐ No ☒

Date of Site Visit:	N/A
Are there Overhead Utilities at the Site?	Yes ☒ No ☐
Are Environmental Hazards Present at the Site?	Yes ☐ No ☒
Information regarding found Environmental Hazards:	N/A
Site Condition Notes:	
Utilities in the form of power lines are located approximately 80 ft to the west of the bridge location, as measured from google earth. However, these lines cross parallel with the bridge and are not expected to impact a subsurface investigation. No environmental hazard sites are listed in the project limits. Guardrail is present in the project limits.	

Note that representative site photos are provided in Appendix A.

Recommendations

Are Borings Needed in the Scoping Phase?	Yes ☐ No ☒
Subsurface Investigation Recommendations:	
Due to the lack of historical information, it is anticipated that borings will be needed to assist in the characterization of the subsurface materials. It is expected that bedrock will be shallow on the upstream end of the bridge and likely on the downstream end. Bedrock probes may be necessary if the bedrock surface is found to be irregular based on future borings. Due to the limited width of the bridge, borings may require a temporary road closure to complete.	
Foundation & Structure Type Recommendations:	
If bedrock is indeed shallow, spread footings on rock would be a viable option for the foundations.	

The information provided is utilized from the databases and references noted in the Reference Section below. This form has been completed to the best of staff and reviewer knowledge.

Please reach out to us if you have any questions or concerns.

Staff Name & Title: EJT

Ethan Thomas, AOT Geologist	Ethan.Thomas@vermont.gov (802) 595-6752

Reviewer Name & Title: SPM

Stephen Madden, Geotechnical Engineer	Stephen.Madden@vermont.gov (802) 595-4916

References:

Doll, C. G., 1970, Surficial Geologic Map of Vermont, Vermont Geological Survey, Montpelier, VT.

Ratcliffe, N. M., Stanley, R. S., Gale, M. H., Thompson, P. J., Walsh, G. J., 2011, Bedrock Geologic Map of Vermont, Vermont Geological Survey, Montpelier, VT

Vermont Agency of Natural Resources Department of Environmental Conservation, Natural Resources Atlas, www.anr.vermont.gov/maps/nr-atlas%20

APPENDIX A

***Figure A1**: Approach of BR #46 toward TH3006 (York Hill Rd.) Note limited access for drill rig.*

***Figure A2:** View of upstream river channel. Bedrock outcrops present.*

Figure A3: *View downstream of river channel. Note lack of bedrock outcrops.*

Figure A4: *Bedrock exposed under Abutment 2.*

Figure A5: *View of Abutment 1 and bedrock exposed running under abutment.*

Appendix G: Resource ID Completion Memo

OFFICE MEMORANDUM

AOT - PDB - ENVIRONMENTAL SECTION

RESOURCE IDENTIFICATION COMPLETION MEMO

TO: Laura Stone, Project Manager
FROM: Julie Ann Held, Environmental Specialist
DATE: June 4, 2024
Project: **Lincoln BO TRUS(7) 22J410**

ENVIRONMENTAL RESOURCES:

Archaeological Resources:	___ Yes	_X_ No	See Archaeological Resource ID Memo
Historic Resources:	_X_ Yes	___ No	See Historic Resource ID Memo
Wetlands:	___ Yes	_X_ No	See Natural Resource ID Memo
Aquatic Organism Passage:	_X_ Yes	___ No	See Natural Resource ID Memo
Agricultural Soils:	_X_ Yes	___ No	See Natural Resource ID Memo
Wildlife Habitat:	_X_ Yes	___ No	See Natural Resource ID Memo
Endangered Species:	_X_ Yes	___ No	See Natural Resource ID Memo
Stormwater Considerations:	___ Yes	_X_ No	See Stormwater Resource ID Memo
Landscape Considerations:	_X_ Yes	___ No	See Landscape Resource ID Memo
6(f) Properties:	_X_ Yes	___ No	See Environmental Specialist Resource ID Memo
Hazardous Waste:	___ Yes	_X_ No	See Environmental Specialist Resource ID Memo
Contaminated Soils:	___ Yes	_X_ No	See Environmental Specialist Resource ID Memo
Wild Scenic Rivers:	___ Yes	_X_ No	See Environmental Specialist Resource ID Memo
Act 250 Permits:	___ Yes	_X_ No	See Environmental Specialist Resource ID Memo
FEMA Floodplains:	_X_ Yes	___ No	See Environmental Specialist Resource ID Memo
Flood Hazard Area:	_X_ Yes	___ No	See Environmental Specialist Resource ID Memo
River Corridor:	_X_ Yes	___ No	See Environmental Specialist Resource ID Memo
Protected Lands:	___ Yes	_X_ No	See Environmental Specialist Resource ID Memo
US Coast Guard:	___ Yes	_X_ No	See Environmental Specialist Resource ID Memo
Lakes and Ponds:	___ Yes	_X_ No	See Environmental Specialist Resource ID Memo
Scenic Highway/ Byway:	___ Yes	_X_ No	See Environmental Specialist Resource ID Memo
Environmental Justice:	___ Yes	_X_ No	See Environmental Specialist Resource ID Memo
Other:	___ Yes	_X_ No	See Environmental Specialist Resource ID Memo

cc:
Project File

Appendix H: Natural Resources ID

VERMONT

Glenn Gingras
VTrans Biologist
State of Vermont
Environmental Section
Barre City Place
219 Main St.
Barre City, VT 05641
https://vtrans.vermont.gov/

Agency of Transportation

To: File
From: Glenn Gingras
Date: 12/08/2023
Subject: Lincoln BO Trus (7) 22J410– Natural Resource ID

I have completed my natural resource identification for the above referenced project (Fig. 1). This project is located on York Hill Rd (TH6) at Bridge 46 over the New Haven River. My evaluation has included wetlands, wildlife habitat, agricultural soils, and rare, threatened, and endangered species. I have reviewed existing mapped information, and I performed a field visit on October 19, 2023.

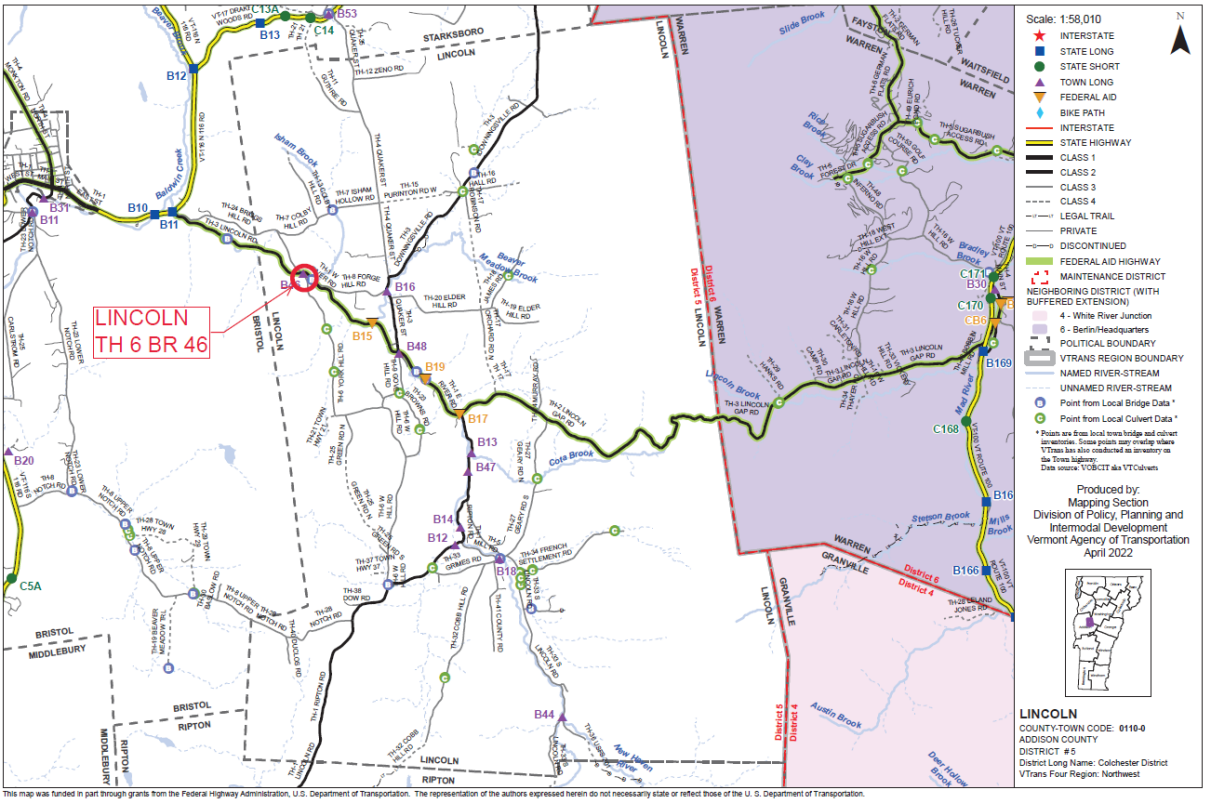


Figure 1. Project location on York Hill Rd, Lincoln VT.

Wetlands/Watercourses

I reviewed existing VSWI, Advisory Wetland Mapping and USFWS Wetland Mapper prior to field work and no wetlands were mapped in the vicinity. NRCS soils mapping lists the South and North of the project area as Stetson gravelly fine sandy loam, 0 to 5 percent slopes (Fig. 2).

I performed a site visit in October 2023 to evaluate the site for the potential presence of wetlands. Wetlands were not identified along the rip rap slopes but there were wetland species growing.

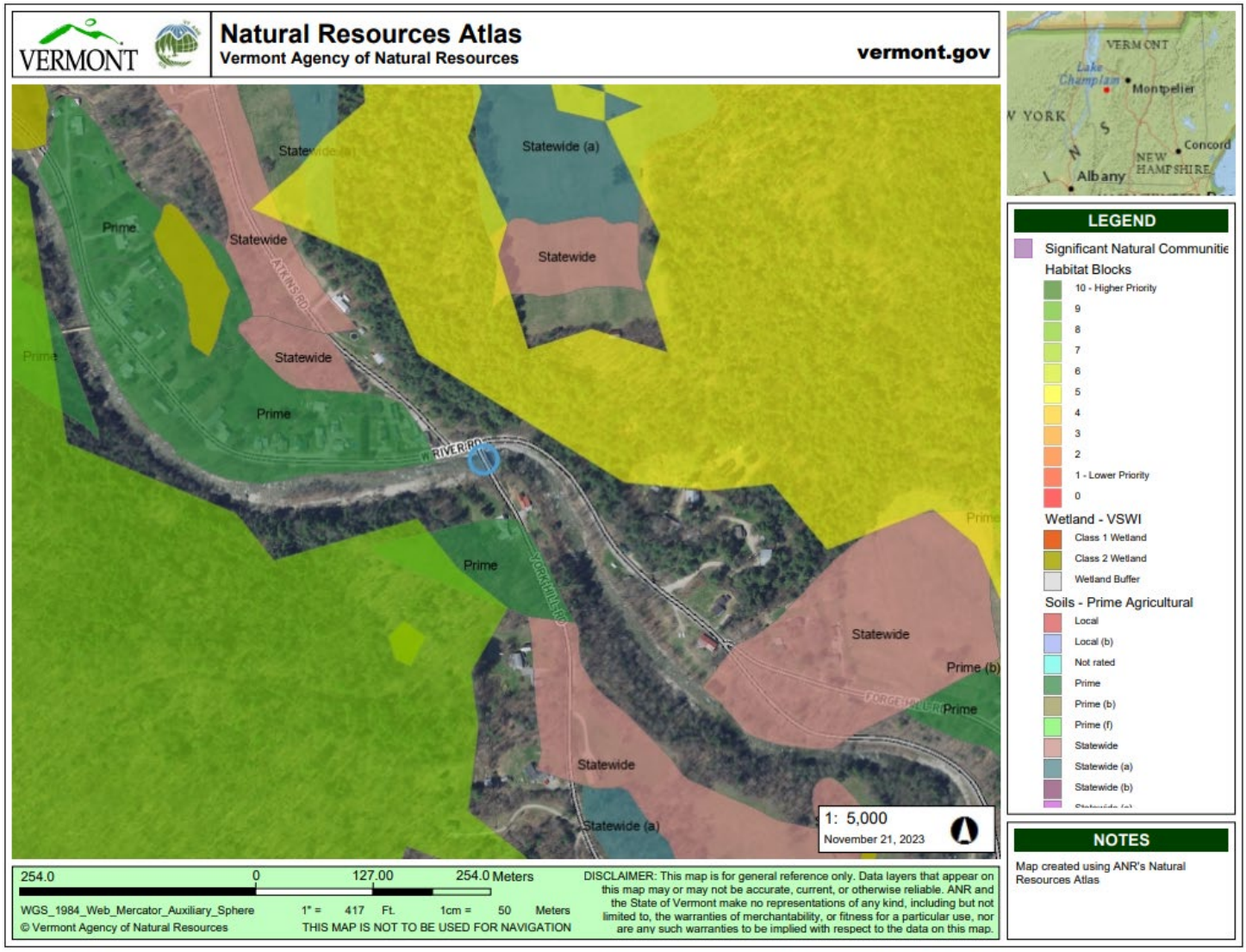


Figure 2. Mapped agricultural soils and wetlands surrounding project area. No wetlands mapped near project location

Wildlife Habitat

I have queried the VT Fish and Wildlife Biofinder, and the project site is within high priority habitat blocks. Due to the surrounding dense forest areas and the openness of the bridge, the project area is likely to facilitate terrestrial wildlife movement (Fig. 2). The armored banks of the river along the roadway section of this project area would make crossing for larger ungulate species next to impossible to cross at this location.

This structure is over the New Haven River, which is a cold-water fishery according to the VT Water Quality Standards. Time of year restrictions for work within the waterway will likely be required as will containment of any debris from project activities.

Rare, Threatened and Endangered Species (RTE)

I have queried the ANR Natural Resource database for RTE species and significant natural communities and none were present.

The USFWS IPac mapping database lists:

Myotis septentrionalis, northern long-eared bat (E)
Danaus plexippus, Monarch Butterfly (candidate species for listing)

There is potentially suitable habitat within this project area for the northern long-eared bat. Including the bridge, stone bridge abutments, and trees within the project area.

Additionally, the USFWS has indicated the following bird species have a higher likelihood of presence during the summer months:

Haliaeetus leucocephalus, Bald Eagle
Aquila chrysaetos, Golden Eagle
Cardellina canadensis, Canada warbler
Hylocichla mustelina, Wood thrush
Coccothraustes vespertinus, Evening Grosbeak
Coccyzus erythropthalmus, Black-billed Cuckoo
Dolichonyx oryzivorus, Bobolink
Setophaga tigrina, Cape May Warbler
Chaetura pelagica, Chimney Swift
Tringa flavipes, Lesser Yellowlegs
Contopus cooperi, Olive-sided Flycatcher
Dendroica discolor, Prairie Warbler
Antrostomus vociferus, Eastern Whip-poor-will

During NEPA further evaluation will be conducted to determine if any surveys for RTE species will be required.

Agricultural Soils:

Prime soils, Paxton fine sandy loam, 2 to 8 percent slopes, were mapped in the northeast and southwest quadrants of the project (Fig. 2).

Invasive Species

Japanese Knot Weed is located along the banks of the New Haven River upstream and downstream of the project area.

Photo Log:

Photo 1

Photo 2

VERMONT

State of Vermont
Highways-PDB-Environmental
219 N. Main Street
www.aot.state.vt.us

Agency of Transportation

Date: June 4, 2024
Environmental Specialist: Julie Ann Held (Drafted by mike Keedy)
Project: Lincoln BO TRUS(7) 22J410

6(f) Properties:
There is an adjacent 6(f) Property and mitigation may be required if impacted. The Green Mountain National Forest, a Land and Water Conservation Fund listed property is adjacent to the project area.

Hazardous Waste:
There aren't any Hazardous Wastes Sites identified within the project area.

Contaminated Soils:
There aren't any Contaminated Soils within the project area.

Wild Scenic Rivers:
There aren't any designated Wild Scenic Rivers within the project area.

Act 250 Permits:
There aren't any Act 250 Permits within the project area.

FEMA Floodplains:
There is a FEMA Floodplain mapped within the project area and a Flood Hazard Area/ River Corridor Permit may be required if there are impacts. There is FEMA flood hazard area zone “A” with base flood elevations within the project area.

River Corridor:
There is a River Corridor (New Haven River) mapped within the project area. Depending on the scope of the project, a River Management Engineer consultation may be required as well as a Flood Hazard Area/ River Corridor Permit if there are impacts.

Protected Lands:
There aren't any Protected Lands within the project area.

US Coast Guard:
There aren't any US Coast Guard navigable waterways within the project area.

Lakes and Ponds:
There aren't any lakes or ponds within the project area.

Scenic Highway/ Byway:
There aren't any Scenic Highway/ Byways within the project area.

Environmental Justice:
There aren't any EJ populations present within the study area, therefore there isn't any potential to have a disproportionately high and adverse effect.

Other:
There aren't any other resources within the project area.

VERMONT
AGENCY OF TRANSPORTATION

State of Vermont | Agency of Transportation
Environmental Section
219 North Main
Barre, VT 05641
Vtrans.vermont.gov

To: Project File
From: Bonnie Kirn Donahue, *VTrans Landscape Architect*
Date: May 26, 2024
Project: **Lincoln BO TRUS(7) 22J410**
Subject: Landscape (LA) Clearance for Resource ID

I have reviewed the proposed area for **Lincoln BO TRUS(7) 22J410**, and found the following:

SITE DESCRIPTION
The single lane truss bridge is located in a rural area on a Town dirt road.

EXISTING CONDITIONS
The following items/conditions were found on site that could influence design decisions:

1. Context/setting:
    a. This project is located in a rural area

2. Presence of utilities:
    a. Desktop review. No utilities were identified.

3. Riparian buffer:
    a. This project includes work within a riparian area and may benefit from a planting plan.

4. Trees to protect:
    a. No trees to protect were identified in the project area.

5. Presence of hazard trees
    a. Desktop review. No hazard trees were identified.

6. Special site features:
    a. No special sites were identified in the project area.

7. Plants observed: (this is not a complete list of species on site)
    a. Desktop review. No species were identified. See natural resources clearance.

8. Invasive species observed: (this is not a complete list of species on site)

a. Desktop review. No species were identified. See natural resources clearance.

9. Accessibility & Active Transportation:
    a. Pedestrian infrastructure, such as accessible sidewalks, crosswalks, and bicycle facilities are not a concern on this project.

RECOMMENDATIONS

1. Landscape/vegetation:
    a. Minimize tree clearing in this area.
    b. Minimize disturbance in the riparian buffer.
    c. Develop a riparian planting plan for any disturbed riparian areas on this project.
    d. Develop a plan for managing invasive species in the project area.

2. Community Engagement/vision:
    a. Involve the town/village government and community members in the vision & goals for the project.
    b. Consider the community's vision and goals for Pedestrian and Bicycle Transportation and incorporate into the project design.

3. Character/place:
    a. The existing bridge truss contributes to the character of the place. If replacement is needed, the new bridge design should match the character and vision of the Town.

NOTES

1. I am available to assist with landscape architectural design, including planting plans, plant lists, hardscape/pedestrian access plans, etc. (bonnie.donahue@vermont.gov).

State of Vermont
Environmental Section
219 North Main Street
Barre, Vermont 05641
Vtrans.vermont.gov

Agency of Transportation

[phone] 802-498-5787

To: Project file
From: Heather Voisin, VTrans Green Infrastructure Engineer
Date: May 10, 2024
Subject: Lincoln BO TRUS(7) - Stormwater Resource ID Review

Project Description: I have reviewed the project area for Lincoln BO TRUS(7) for stormwater related regulatory and water quality concerns. The project scope has not yet been determined so this review is based on available mapping (ANR Natural Resource Atlas) to capture existing stormwater features in the project vicinity.

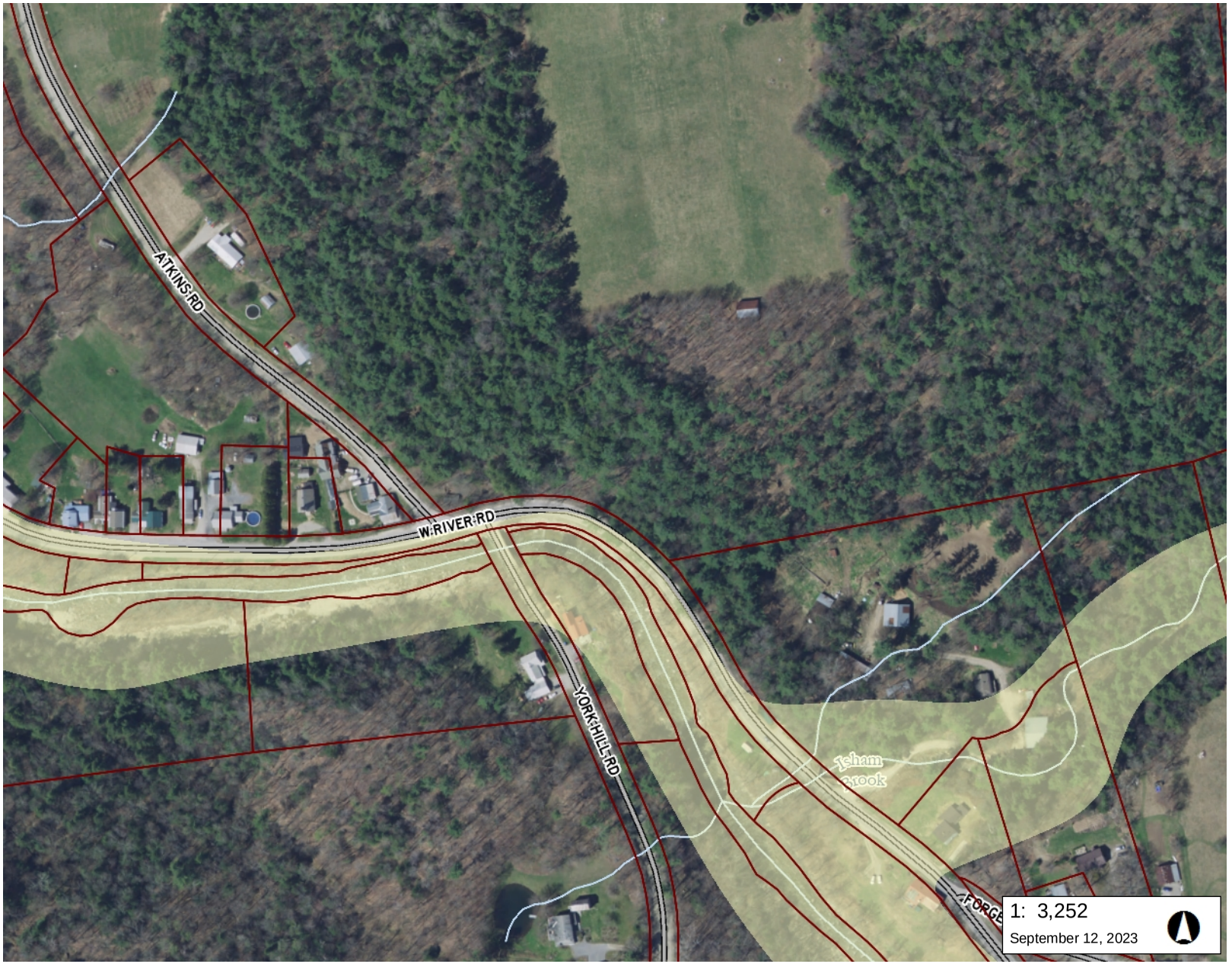
Regulatory Considerations
There are no existing stormwater permits in the project area. The existing bridge carries TH6 (York Hill Road) over the New Haven River, which is not identified as being an impaired (303(d) list) or stressed water. York Hill Road in the project area is considered a hydrologically connected road segment and is categorized as being in full compliance with the Town of Lincoln's Municipal Roads General Permit.

Existing Drainage
The roadway within the project area is relatively flat and there is no curbing, with runoff flowing from the roadway overland.

Floodplains Rivers Map

Vermont Agency of Natural Resources

vermont.gov



LEGEND

- DFIRM X-Sections
- DFIRM - Letter of Map Revisio
- DFIRM Panels
- DFIRM Floodways
- Flood Hazard Areas (Only FEM
  - AE (1-percent annual chance floodp
  - A (1-percent annual chance floodpl
  - AO (1-percent annual chance zone feet)
  - 0.2-percent annual chance flood ha
- River Corridors (Aug 27, 2019)
- .5 - 2 sqmi.
- .25-.5 sqmi.
- Parcels (standardized)
- Stream
  - Stream
  - Intermittent Stream
- Roads
  - Interstate
  - US Highway; 1
  - State Highway
  - Town Highway (Class 1)
  - Town Highway (Class 2,3)
  - Town Highway (Class 4)
  - State Forest Trail
  - National Forest Trail
  - Legal Trail
  - Private Road/Driveway

NOTES

Map created using ANR's Natural Resources Atlas

165.0 0 82.00 165.0 Meters

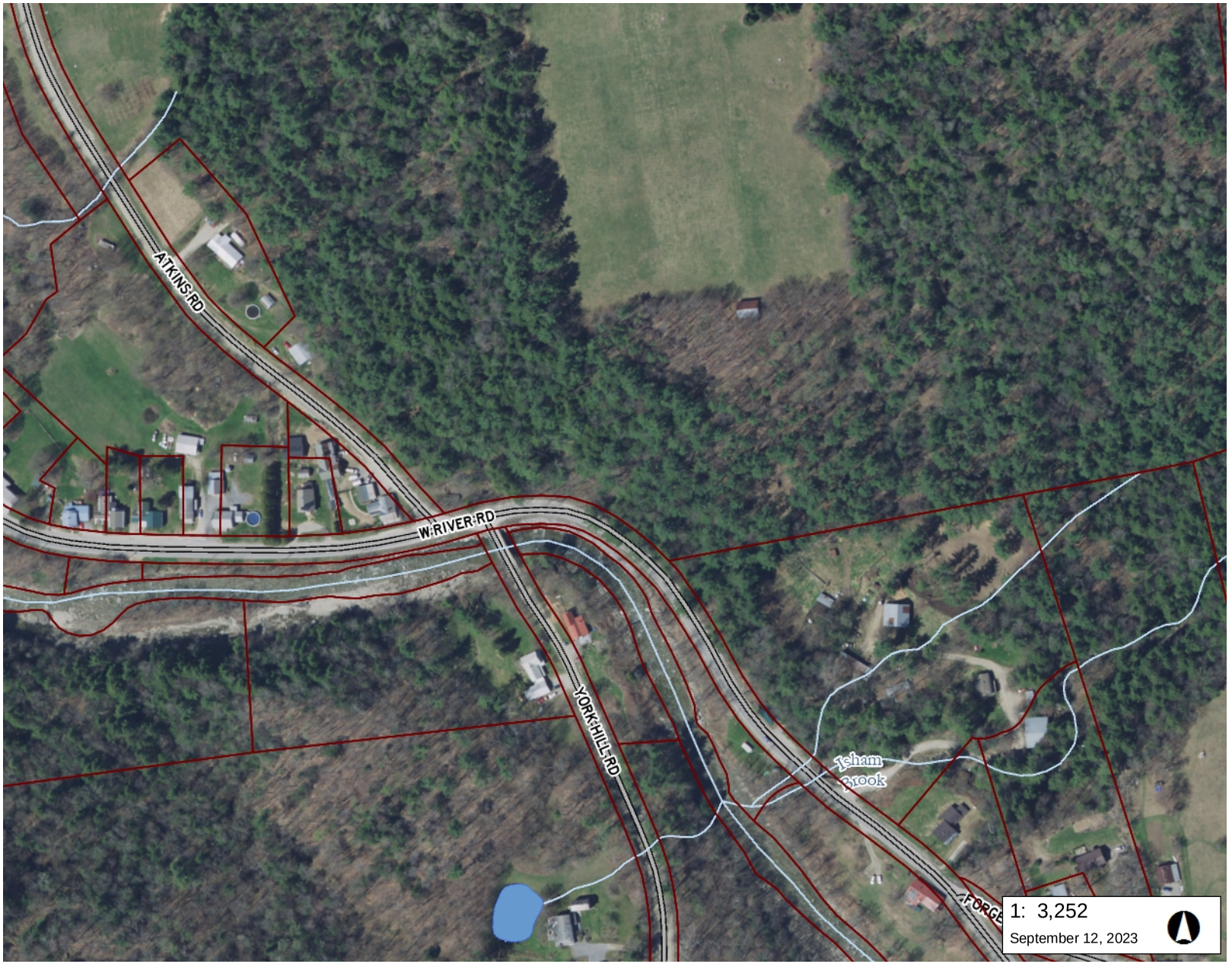
WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 271 Ft. 1cm = 33 Meters

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Other Resources Map

Vermont Agency of Natural Resources

vermont.gov



LEGEND

- DFIRM X-Sections
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  - 0.2-percent annual chance flood ha
- Parcels (standardized)
- Waterbody
- Stream
  - Stream
  - Intermittent Stream
- ACT250 Permits
- Roads
  - Interstate
  - US Highway; 1
  - State Highway
  - Town Highway (Class 1)
  - Town Highway (Class 2,3)
  - Town Highway (Class 4)
  - State Forest Trail
  - National Forest Trail
  - Legal Trail
  - Private Road/Driveway
  - Proposed Roads

NOTES

Map created using ANR's Natural Resources Atlas

1: 3,252

September 12, 2023

165.0 0 82.00 165.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 271 Ft. 1cm = 33 Meters

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Appendix I: Archeology Memo

VERMONT

Jeannine Russell
VTrans Archaeology Officer
State of Vermont
Environmental Section
Barre City Place
219 Main St.
Barre City, VT 05641
802-477-3460 phone
Jeannine.russell@vermont.gov

Agency of Transportation

To: Mike Keedy, Environmental Specialist

From: Jeannine Russell, VTrans Archaeology Officer

Date: October 19, 2023

Subject: Lincoln BO TRUS(7) – Archaeological Resource ID

The scope of this project is not yet defined but VTrans environmental has been asked to assess resource potential around the location of Br 46 on TH 6 at the intersection of York Hill Road and West River Road in Lincoln, VT.

The project is set along the western edge of the Green Mountains within a very steep, narrow valley. Br 46 crosses over the New Haven River. The closest known site is VT-AD-1658 which is an historic forge located approximately 800 feet upriver to the south of the project. No other known sites are recorded in the vicinity. Environmental factors contributing to archaeological sensitivity are the proximity to a major river and natural travel corridor. However, the immediate project area is situated within a steep, narrow area. The terrace levels out just north and west of the bridge location on the north side of West River Road, however, this is outside the area likely to be impacted by the project and is fairly densely developed along the roadway edge.

The northern quadrants of the bridge intersect with West River Rd. The road slopes consist of a large riprap constructed bank. The area is heavily wooded other than what has been cleared and leveled for residential construction in the southern quadrants. Both southern quadrants consist of small, high terraces overlooking the river. However, given that the area is naturally heavily wooded, both quadrants containing structures would have been cleared of trees, stumps, etc. and leveled to create lawn spaces removing any archaeological potential from the upper soil layers. Drainage has also been incorporated into the landscaping.

Historic maps show several structures in the nearby vicinity but Beers map shows only one structure within the project APE in the southeast quadrant and is unlabeled. One house currently stands in that quadrant. There is no evidence of any other structures in that or any other quadrant close to the river and no signs of mill remains although mill remains exist further north closer to the intersection with VT 116.

In conclusion, no areas of either pre-contact or historic archaeological sensitivity have been identified within or near the project.

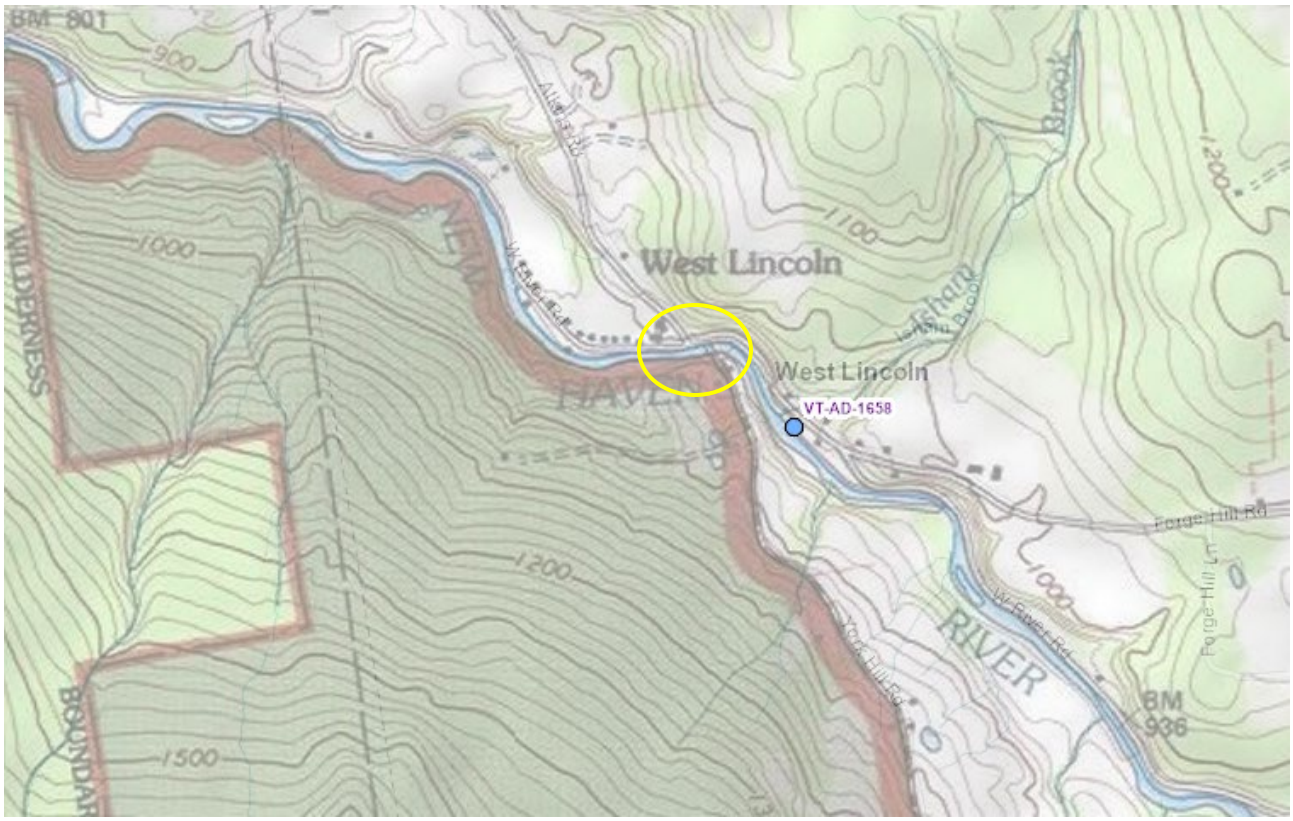
Please let me know if you have any questions.

Jeannine Russell

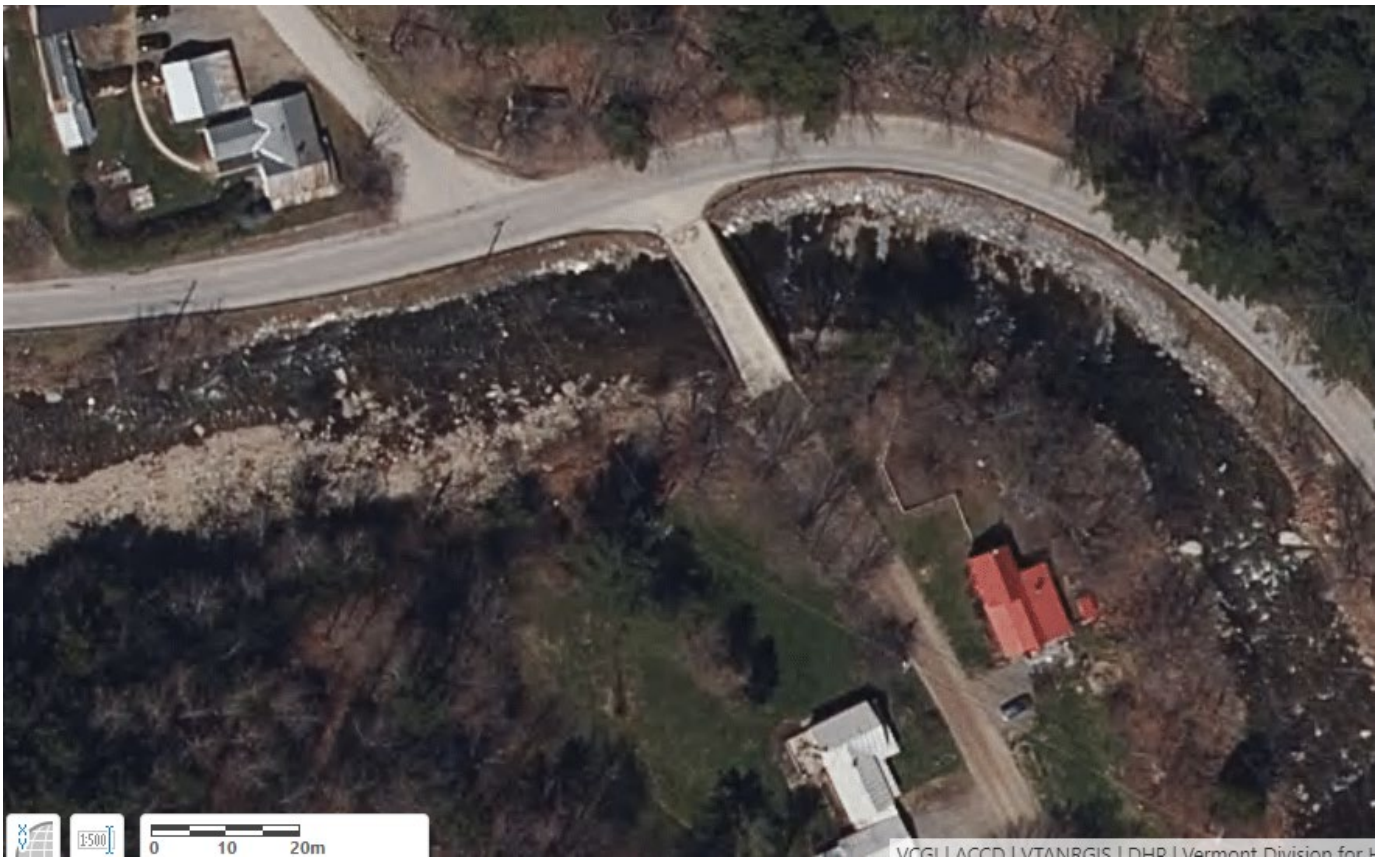
Thank you,
Jen Russell
VTrans Archaeology Officer

VTrans Working to Get You There
Vermont Agency of Transportation

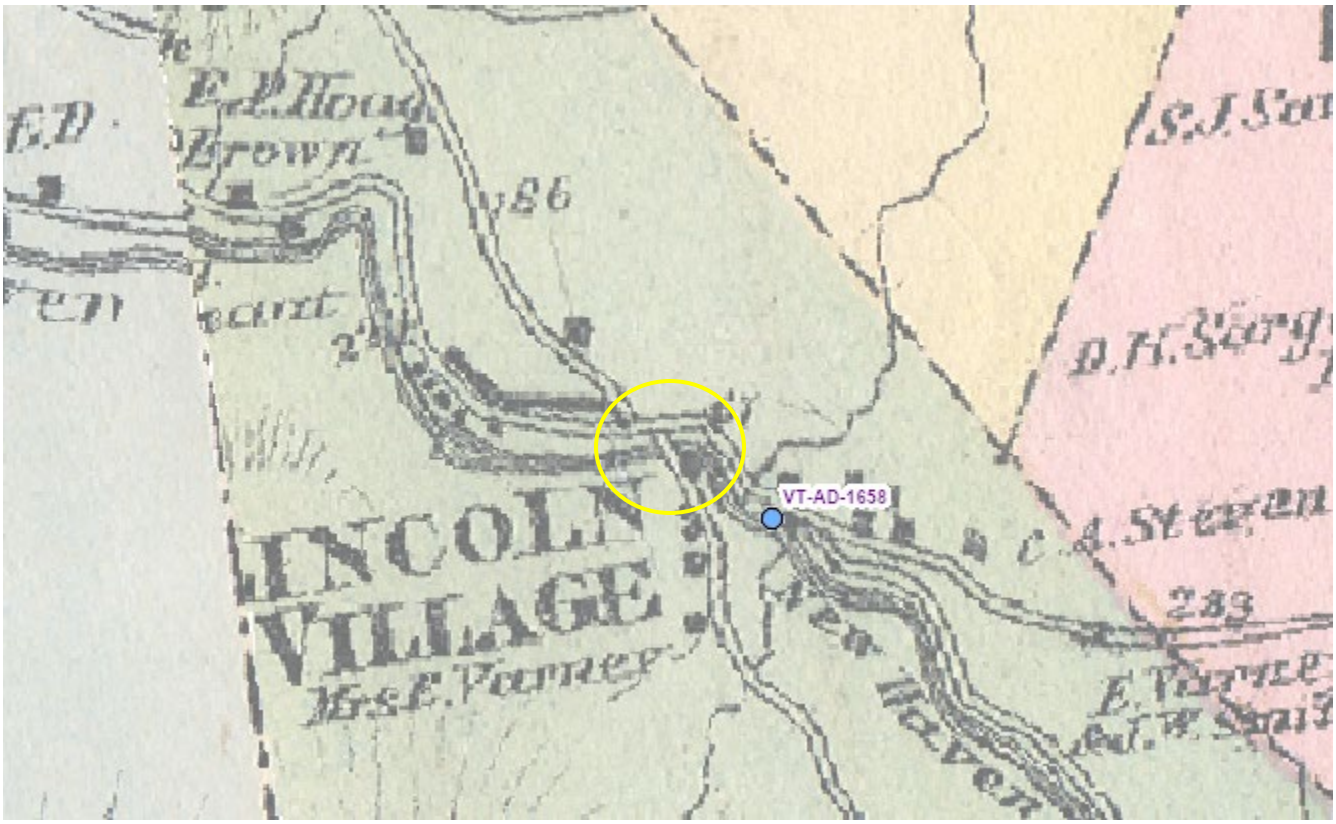
Project location circled in yellow



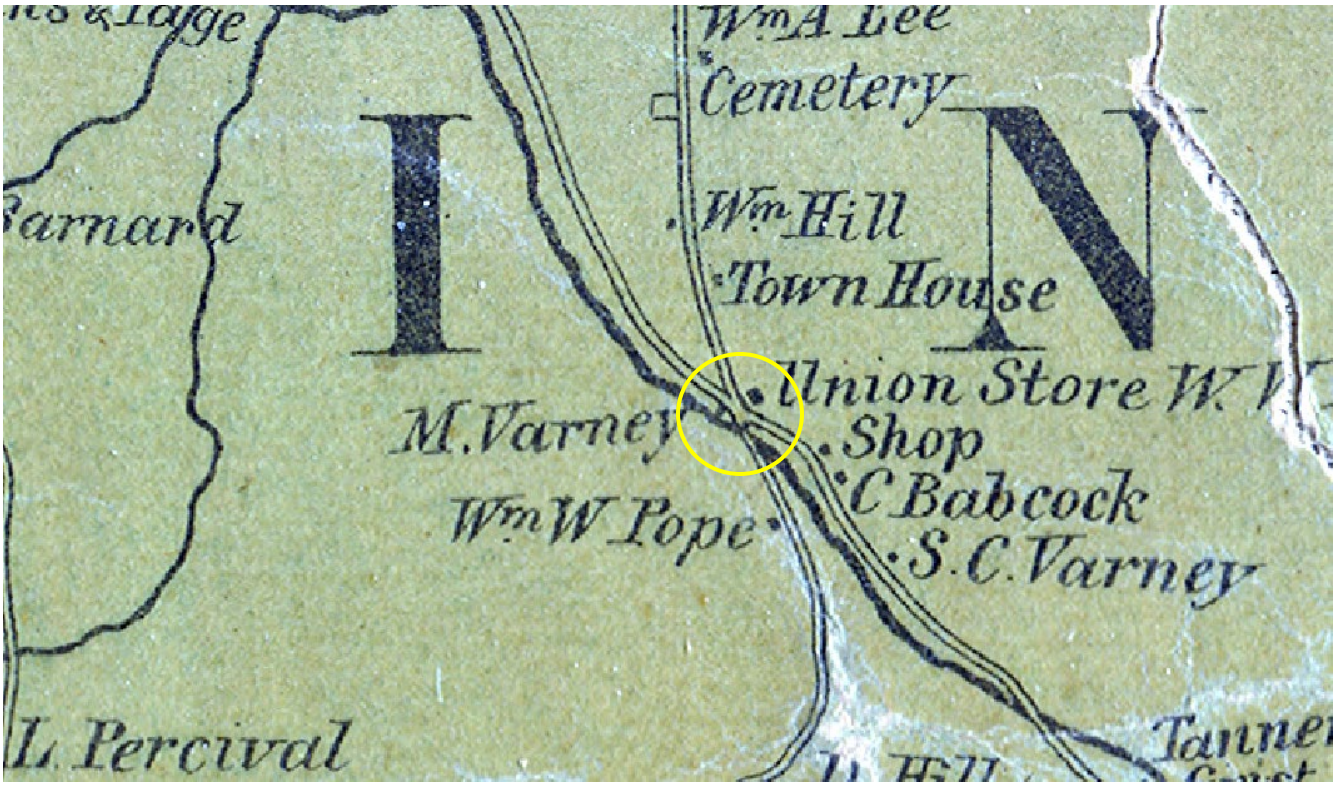
USGS from the ORC showing project location and closest site (VT-AD-1658)



Aerial image of project location closeup



Beers map of project location with location of known site



Wallings map showing project location

Image from West River Rd, facing south toward York Hill Road.
Residence can be seen in SE quadrant.

Image from West River Rd facing SE (upstream)

View from York Hill Road facing NW toward W. River Rd.
downstream view of project

View from York Hill Road toward SW quadrant.

View of bridge and SW quadrant. Land rises steeply from the small, cleared terrace.

Appendix J: Historic Memo

VERMONT

Vermont Agency of Transportation
Project Delivery Bureau - Environmental Section
Barre City Place
Tel: 802.595-3744

To: JulieAnn Held

From: Judith Williams Ehrlich, VTrans Historic Preservation Officer

Date: June 4, 2024

Subject: Historic Resource Identification for Lincoln BO TRUS(7) 22J410

I have completed a resource identification (ID) for Lincoln BO TRUS(7) 22J410. At this time, the project is anticipated to include repair or replacement of Bridge No. 46 in Lincoln, Vermont.

This Resource Identification effort is being undertaken to provide information to the VTrans designers working on a proposed improvement project. Toward that end, VTrans Cultural Resources staff have identified potential resources within a broad preliminary Area of Potential Effect to ensure the designers are aware of all cultural resources that could possibly be affected by a project. Once the project is defined at the Conceptual Design phase, Cultural Resources staff will be able to determine a formal Area of Potential Effect for purposes of Section 106 and 22 VSA § 14.

WSP completed a report that discusses historic resources in the area of Bridge No. 46 at VTrans' request. That report is titled, "Historic Resources Identification Survey, Bridge No. 46 Over New Haven River, TH 6, Lincoln BO TRUS(7), Lincoln, Addison County, Vermont" (WSP report). Per the report, "The architectural APE for the historic resources identification survey extends 40.292 meters (165 feet) around either end of Lincoln Bridge No. 46, including all four quadrants." (Page i)

The WSP report continues:

> *The APE contains five architectural resources: the SRHP-listed Lincoln Bridge No. 46, the SRHP-listed West Lincoln Historic District (WLHD), one contributing resource to the WLHD, and two previously unsurveyed architectural resources. WSP did not identify any Section 4(f) resources in or adjacent to the APE.*
>
> *It is WSP's opinion that the WLHD and its contributing resource should remain listed in the SRHP and are therefore eligible for NRHP. It is also WSP's opinion that Lincoln Bridge No. 46 over New Haven River is eligible for listing in the SR/NRHP as it meets the Criterion C registration requirements outlined in the Multiple Property Documentation Form (MPD) Metal Truss, Masonry and Concrete Bridges of Vermont, 1820-1978 as an early, well-preserved example of a Parker pony truss bridge, which is rarely found in Vermont. Although the bridge has been moved, the structure still retains sufficient integrity of design, workmanship, materials, and feeling to be eligible for listing under Criterion C. Finally, it is WSP's opinion that the two previously unsurveyed resources are not eligible for listing in the SR/NRHP.* (Page i)

VTrans concurs with WSP's recommendations regarding historic significance. Please see below for further details.

VTrans also concurs with WSP's conclusion that there are no Section 4(f) property types other than historic resources in the project area.

WSP created both dgn's and shp files for the historic resources identified in the WSP report. Those have been saved in the project's Resource ID/Final Memos folder.

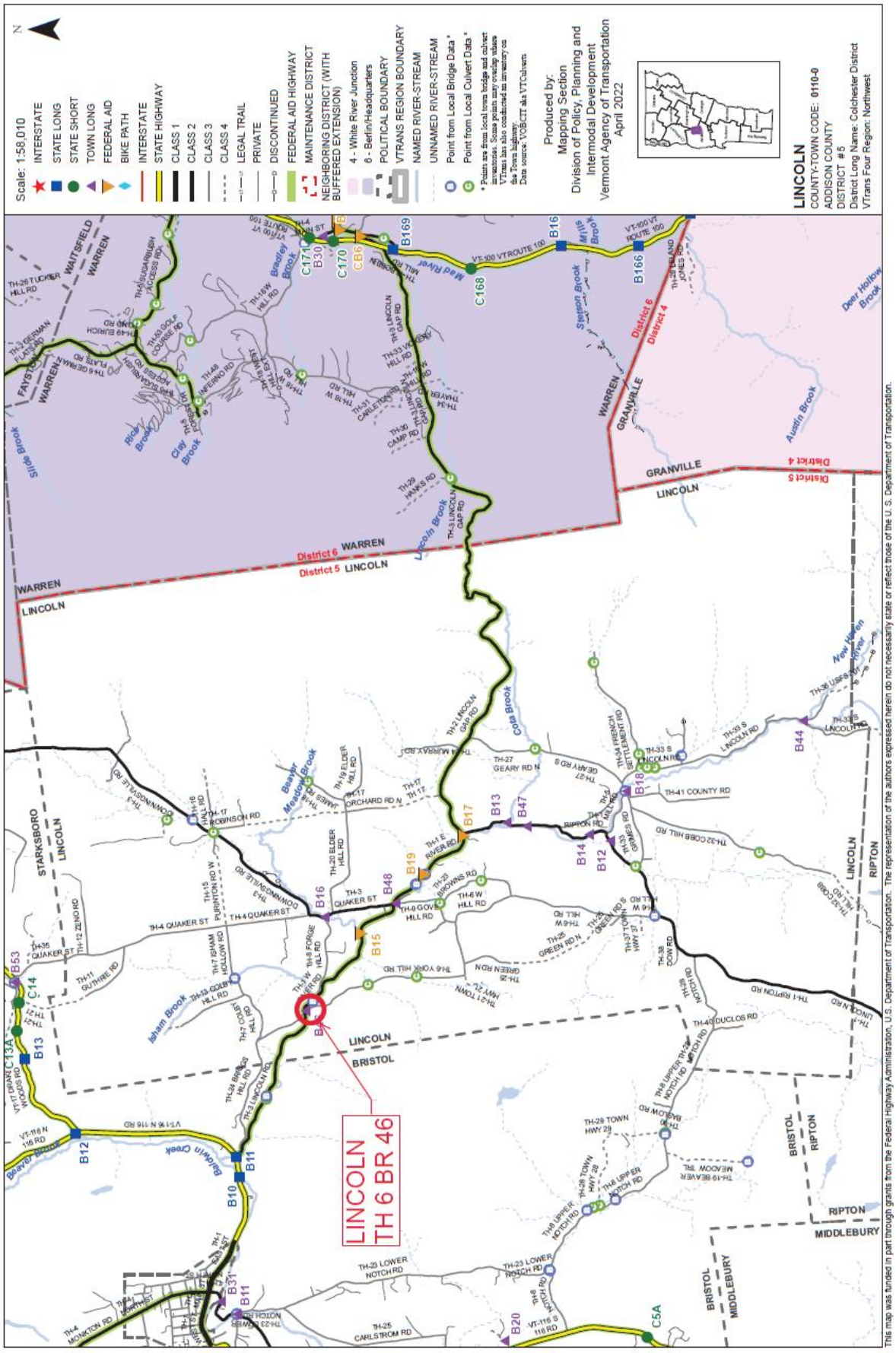
Please do not hesitate to contact me should you require additional information.

Attachments

NRHP ELIGIBILITY RECOMMENDATIONS FOR PREVIOUSLY AND NEWLY IDENTIFIED HISTORIC ARCHITECTURAL AND SECTION 4(F) RESOURCES IN APE

MAP ID (Lincoln-)	RESOURCE NAME	LOCATION	PREVIOUS ELIGIBILITY	WSP ELIGIBILITY OPINION	PHOTOGRAPH
1	Lincoln Bridge No. 46	TH 6, Lincoln	Listed, SRHP	Listed, SRHP; Eligible, NRHP	
2	House	45 York Hill Road, Lincoln	Not evaluated	Not Eligible	
3	House	54 York Hill Road, Lincoln	Not evaluated	Not Eligible	
4	West Lincoln Historic District (WLHD)	Multiple, Lincoln	Listed, SRHP	Listed, SRHP; Eligible, NRHP	
5	House	37 Atkins Road, Lincoln	Contributing, SRHP-listed WLHD	Contributing, SRHP-listed WLHD	

Details regarding historic resources in the project area. The three properties highlighted in yellow are considered historic and eligible for listing in the National Register of Historic Places.



Map noting location of Lincoln Bridge No. 46.

Historic Resources Identification Survey
Bridge No. 46 over New Haven River, TH 6
Lincoln BO TRUS(7)

Lincoln, Addison County, Vermont

Prepared for:

Vermont Agency of Transportation
219 North Main Street
Barre, Vermont 05641

Prepared by:

WSP USA Inc.
433 River Street, 7th Floor
Troy, New York 12180

January 18, 2024

Historic Resources Identification Survey
Bridge No. 46 over New Haven River, TH 6
Lincoln BO TRUS(7)

Lincoln
Addison County, Vermont

Prepared for:

Vermont Agency of Transportation
219 North Main Street
Barre, Vermont 05641

Prepared by:

Amber Courselle, Austin White, and Camilla McDonald

WSP USA Inc.
433 River Street, 7th Floor
Troy, New York 12180

January 18, 2024

Abstract

On behalf of the Vermont Agency of Transportation (VTrans), Montpelier, WSP USA Inc. (WSP) of Troy, New York, completed a historic resources identification survey (ID Report) involving the anticipated future repair and/or replacement of 27 bridges throughout the state. This particular report addresses Lincoln Bridge No. 46 over New Haven River, Addison County. The scope of work for these proposed projects included Historic Resource Identification Surveys to identify and evaluate all structures and buildings in the architectural area of potential effect (APE), including the bridge, that may be directly, indirectly (including views of the project from the APE), and/or cumulatively impacted by the potential project. As the forthcoming bridge projects have no concrete plans, each bridge and their proximal historic resources will be documented in ID Reports to inform the project designers regarding historic and Section 4(f) resources and for the eligibility determinations in the Section 106 review. WSP performed no archaeological investigations for these ID Reports.

The architectural APE for the historic resources identification survey extends 50.292 meters (165 feet) around either end of Lincoln Bridge No. 46, including all four quadrants.

The goal of the survey was to identify (1) historic architectural properties in the APE previously listed in the Vermont State Register of Historic Places/National Register of Historic Places (SR/NRHP) (the criteria for both are identical), and (2) previously unsurveyed historic architectural resources in the APE that may be eligible for listing in the SR/NRHP. As the project is still in the planning stages and may take several years to be implemented, WSP identified properties that meet the 45-year mark for NRHP evaluation.

The survey included background research and fieldwork, which was conducted December 5, 2023. All surveys were undertaken in accordance with Act 250 (Title 10 of Vermont Statutes Annotated [VSA], Chapter 151); and Title 30 VSA Chapter 5, Section 248 (Public Service Board's Certificate of Public Good). Determinations of eligibility for the NRHP followed the guidelines and criteria established by the National Park Service (NPS) and in 36 Code of Federal Regulations (CFR) 60.4.

The APE contains five architectural resources: the SRHP-listed Lincoln Bridge No. 46, the SRHP-listed the West Lincoln Historic District (WLHD), one contributing resource to the WLHD, and two previously unsurveyed architectural resources. WSP did not identify any Section 4(f) resources in or adjacent to the APE.

It is WSP's opinion that the WLHD and its contributing resource should remain listed in the SRHP and are therefore eligible for the NRHP. It is also WSP's opinion that Lincoln Bridge No. 46 over New Haven River is eligible for listing in the SR/NRHP as it meets the Criterion C registration requirements outlined in the Multiple Property Documentation Form (MPD) *Metal Truss, Masonry and Concrete Bridges of Vermont, 1820–1978* as an early, well-preserved example of a Parker pony truss bridge, which is rarely found in Vermont. Although the bridge has been moved, the structure still retains sufficient integrity of design, workmanship, materials, and feeling to be eligible for listing under Criterion C. Finally, it is WSP's opinion that the two previously unsurveyed resources are not eligible for listing in the SR/NRHP.

NRHP ELIGIBILITY RECOMMENDATIONS FOR PREVIOUSLY AND NEWLY IDENTIFIED HISTORIC ARCHITECTURAL AND SECTION 4(F) RESOURCES IN APE

MAP ID (Lincoln-)	RESOURCE NAME	LOCATION	PREVIOUS ELIGIBILITY	WSP ELIGIBILITY OPINION	PHOTOGRAPH
1	Lincoln Bridge No. 46	TH 6, Lincoln	Listed, SRHP	Listed, SRHP; Eligible, NRHP	
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I. Introduction

A. Project Description

On behalf of the Vermont Agency of Transportation (VTrans), Montpelier, WSP USA Inc. (WSP) of Troy, New York, completed a historic resources identification survey (ID Report) involving the anticipated future repair and/or replacement of 27 bridges throughout the state. This particular report addresses Lincoln Bridge No. 46 over New Haven River, Addison County. The scope of work for these proposed projects included Historic Resource Identification Surveys to identify and evaluate all structures and buildings in the architectural area of potential effect (APE), including the bridge, that may be directly, indirectly (including views of the project from the APE), and/or cumulatively impacted by the potential project.

The project is located along York Hill Road in the Town of Lincoln, Addison County (Figure 1). The architectural APE for the historic resources identification survey extends 50.292 meters (165 feet) around either end of Lincoln Bridge No. 46, including all four quadrants (Figure 2).

B. Objectives

The goal of the survey was to identify (1) historic architectural resources (properties) in the APE previously listed in the Vermont State Register of Historic Places/National Register of Historic Places (SR/NRHP) (the criteria for both are identical), and (2) previously unsurveyed historic architectural resources in the APE that may be eligible for listing in the SR/NRHP. The survey also evaluated the potential effects of the project on viewsheds associated with any SRHP/NRHP-listed and -eligible historic resources. The investigation included background research and fieldwork. Fieldwork was conducted on December 5, 2023.

Determinations of eligibility for the NRHP followed the guidelines and criteria established by the National Park Service (NPS) (NPS 2002) and in 36 Code of Federal Regulations (CFR) 60.4. In 2001 the Vermont Division for Historic Preservation (VDHP) changed the Vermont SRHP criteria to make them identical to the NRHP criteria, and all resources then listed in the Vermont SRHP were deemed eligible for the NRHP, creating a single class of historic properties and thereby streamlining the historic preservation permitting process in Vermont. As the project is still in the planning stages and may take several years to be implemented, WSP identified properties that meet the 45-year mark for evaluation for the NRHP. The historic architectural investigations were undertaken in accordance with Act 250 (Title 10 of Vermont Statutes Annotated [VSA], Chapter 151); and Title 30 VSA Chapter 5, Section 248 (Public Service Board's Certificate of Public Good).

This report contains six chapters. Following the introduction in Chapter I, Chapter II describes the survey's methodology. Chapter III provides the historic context for the project vicinity. Chapter IV describes the survey results, and the conclusions and recommendations appear in Chapter V. Chapter VI contains the references cited.

This investigation was conducted under the direction and supervision of WSP Contract Manager Jospeh Tomberlin. Senior Architectural Historian Camilla McDonald supervised the QA/QC process. Architectural Historian Austin White conducted fieldwork and Architectural Historian Amber Courselle conducted research and report writing with assistance from Mr. White. Principal Draftsperson Jacqueline L. Horsford prepared the graphics. Technical Editor Evelyn Dsouza edited the report.

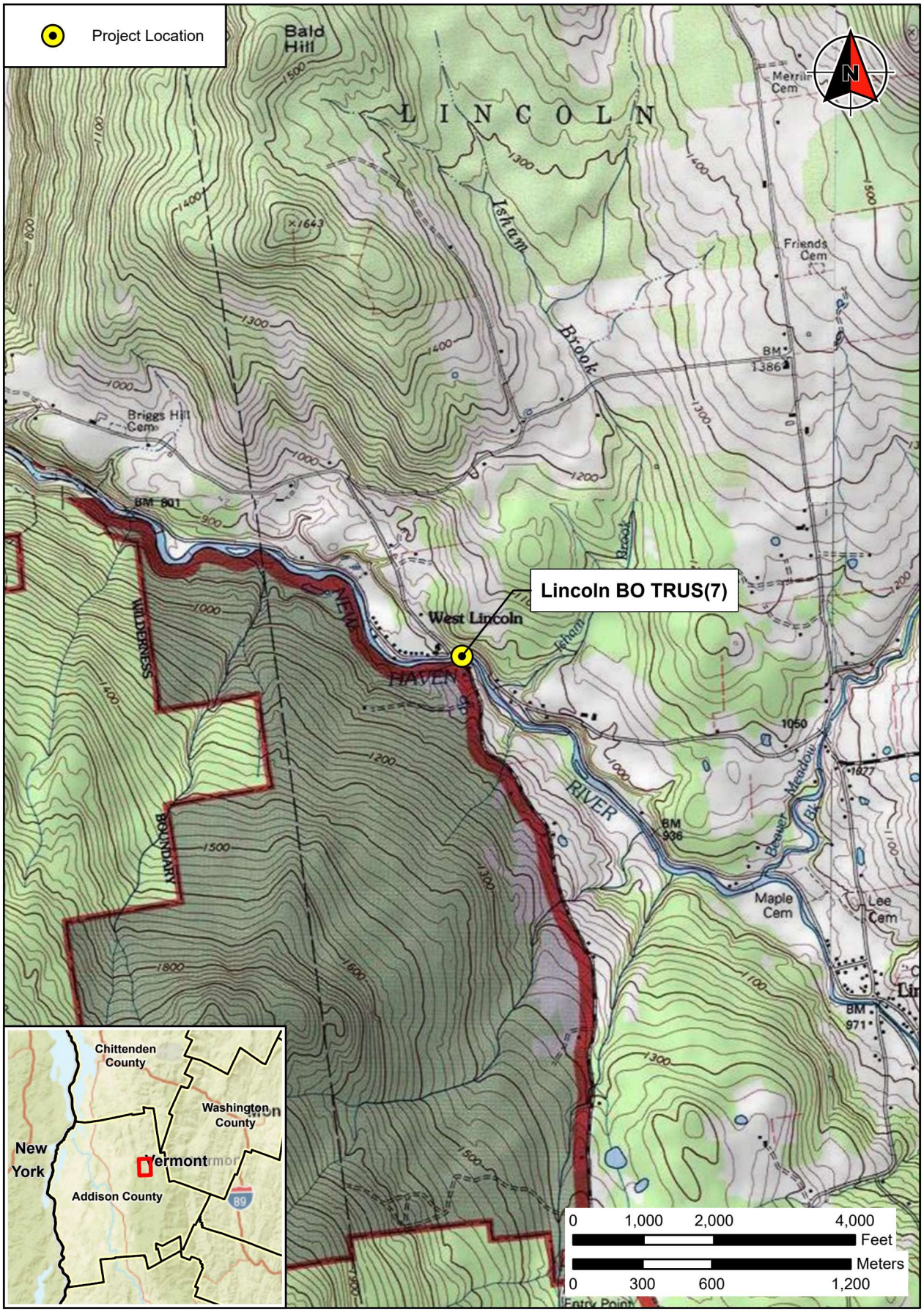

FIGURE 1: Location of Project (ESRI USA Topo Maps 2019 [USGS South Mountain])

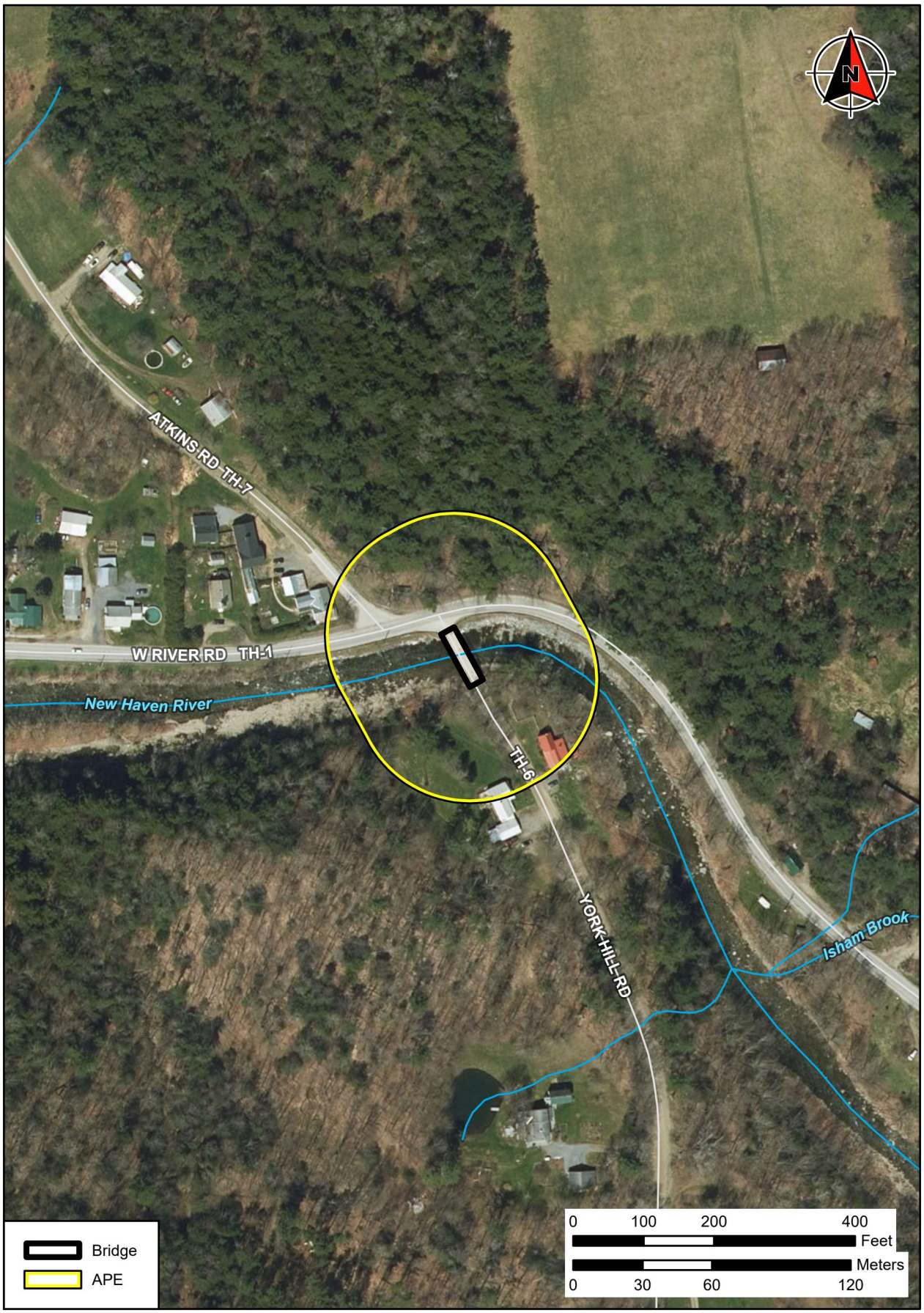

FIGURE 2: Project APE (ESRI World Imagery 2022)

II. Methodology

WSP's primary task for this survey was to identify historic properties in the APE listed in or eligible for listing in the NRHP. WSP reviewed site files at VDHP, identifying documented resources in the APE that are already either listed in or eligible for listing in the NRHP. Location information on the identified properties was mapped, and nomination forms and eligibility determination data were copied for comparison against current conditions during the field survey. Available historic context data on the development of the community in the APE were gathered from VDHP files to assist in the evaluation of additional historical resources identified during the field survey.

The field survey checked the continued existence of the historic properties identified during the site file check and collected information on each property's architectural and historical integrity and eligibility for listing in the NRHP. Each resource in the APE was documented through digital photographs and narrative field notes. Some properties were not visible from the right-of-way, and those properties were examined through historical and current aerial photographs to determine their age.

WSP followed the NRHP criteria in evaluating each resource. According to the NRHP criteria for evaluation, properties may be eligible for the NRHP if:

A. they are associated with events that have made a significant contribution to the broad patterns of our history; or
B. they are associated with the lives of significant persons in our past; or
C. they embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
D. they have yielded or may be likely to yield, information important in history or prehistory [NPS 2002:7].

WSP's assessments of eligibility were further guided by the Multiple Property Documentation (MPD) form *Multiple Property Documentation for Agricultural Resources in Vermont* (VDHP 1991), which establishes standards of integrity for listing agricultural resources in Vermont in the SR/NRHP.

Results of the background research and field survey were analyzed under the established criteria to determine the NRHP eligibility of each architectural resource, whether previously recorded or newly identified.

III. Historic Context

[This chapter is taken from Architectural Resource Identification Survey Vermont Route 22, Towns of Fair Haven, West Have, Benson, and Orwell, Rutland and Addison Counties, Vermont, (Louis Berger 2017).]

The early Euro-American activity in what would become Addison County consisted primarily of French and British explorations and military operations, which began in the early seventeenth century and lasted through the mid-eighteenth century. These undertakings were focused along the Lake Champlain shore and Otter Creek. The French claimed much of this area for New France and established a small stockade at present-day Chimney Point. This area was the settled through land grants beginning in 1732, where settlers constructed their dwellings. After the British took Fort Carillion, the settlement at Chimney Point was abandoned and French troops burned the fortifications. The Mohawk Indians burned the remaining houses, leaving only the chimneys standing, which resulted in the namesake for this area (Johnson and Gilbertson 1992).

After the French and Indian War, New Hampshire began making grants for town charters in 1761. By 1775 settlement had begun in the lakeshore towns. The Revolutionary War brought military activity to the county from both the Americans and British, including the fortifications at Mount Independence in 1776. In July 1777 the British arrived and the Americans abandoned the fortifications. After the American victory at Saratoga in 1777, the fort was burned. After Mount Independence fell to the British, the nearest American fort was Pittsford, much farther south in Rutland County. Many people left the county and traveled to Bennington, Rutland, or other parts of the colonies for protection. Those that remained in the county experienced continuous British raids through November 1778 (Johnson and Gilbertson 1992).

At the close of the Revolutionary War, population of the county resumed. Wheat became the first profitable agricultural crop. Maple sugar was also an important agricultural product, in addition to corn, rye, peas, and apples. The production of apples and rye led to the establishment of local distilleries in Middlebury and Salisbury. The reliance on wheat began to deplete soil nutrients and spurred farmers to practice better agricultural methods. An agricultural society was formed for the county in 1818. The use of manure as fertilizer was also important to replenishing the soil (previously manure was regarded primarily as waste). Barns were constructed in areas that made it easy to collect manure. This also increased the number of farms that had livestock. Potash was also an important agricultural byproduct (Johnson and Gilbertson 1992).

Sheep were raised for wool, and flax seed was grown for linen. Cloth production reached an industrial scale around the War of 1812. Middlebury contained two cotton mills. Marble was discovered in Middlebury in 1802, and a marble mill was constructed in 1805. At the turn of the nineteenth century, villages were populated around these new industries (Johnson and Gilbertson 1992).

After the War of 1812 ended, the county slipped into a depression. Population growth decreased significantly as many migrated westward for better opportunities. Furthermore, the prices of goods dropped after the military no longer needed iron and glass from local businesses. The time and expense of transporting goods out of the county greatly contributed to the slumping economy. The Lake Champlain Steamboat Company helped buoy the local economy somewhat with the production of steamboats. Sawmills provided the needed lumber for shipbuilding. The steamboats not only helped local industry with requests for goods but also made travel on Lake Champlain much faster and connected to various stage routes along the way. The completion of the Champlain Canal in 1823 further assisted in connecting western Vermont to New York and larger markets (Johnson and Gilbertson 1992).

Wool was an important agricultural product through the mid-nineteenth century. By 1840 the importance of cattle for beef and milk was on the rise. The railroad also arrived in the mid-nineteenth century in Addison

County. This increased the accessibility of county agricultural products, as perishable goods could be transported faster and farther. With the arrival of the railroad, cattle stock and subsequently beef and butter production soared (Johnson and Gilbertson 1992).

The Civil War continued to provide an economic boost for Addison County as beef and cheese were part of the rations for troops. In addition, wool form the North replaced cotton from the South. In 1871 the Addison Branch of the Rutland Railroad opened, which directly linked Addison County to New York State. A drawbridge was constructed across Lake Champlain, connecting the branch to Ticonderoga. The railroad not only enabled farmers to reach even more distant markets but also enabled cheaper access to goods imported from other states. After the Civil War dairying became more profitable than beef. In 1870 Addison County produced the third highest amount of dairy products in the state. The 1870s brought a decline in the sheep business, but it revived at the end of the 1870s (Johnson and Gilbertson 1992).

During the later nineteenth century natural resources, such as kaolin clay, ochre, marble, and wood, were the steady products of Addison County. Not only were natural resources important for production and manufacturing. Another boost to the local economy came in the form of tourism, which included the construction of summer homes and hotels (Johnson and Gilbertson 1992).

Population growth remained a problem for Addison County. From 1900 to 1940, the population decreased from 21,912 to 17,944. The number of farms also decreased during the same time period, from 2,714 in 1900 to 1,951 in 1940, although the size of farms increased along with their value. In 1910, the cash value of farms in the county was the highest in the state. Dairying remained an important industry throughout the county and milk production spiked at the turn of the twentieth century. Addison County was an important supplier of milk to the Boston area, aided by the invention of refrigerated rail cars in 1904 (Johnson and Gilbertson 1992).

As truck and automobile traffic increased in the 1920s and 1930s, shifting transportation away from railroads. The increased traffic on the roads required better routes, including a bridge over Lake Champlain. Construction of the bridge between Chimney Point in Vermont and Crown Point in New York was completed in 1929 at a cost of $1 million. The automobile also increased the number out-of-state vacationers, which further bolstered the tourism economy (Johnson and Gilbertson 1992).

In 1927 a great flood washed out numerous bridges and dams in Addison County. The Great Depression in the following years only added to the economic hardships. In 1930 the county population was 17,952, the lowest it had been since before 1810. Over two-thirds of the work force were employed in agricultural occupations producing milk, butter, hay, honey, maple syrup, sugar, and apples. Lumbering and other woods products also remained vital. Only with the United States involvement in World War II, Addison County began to emerge from the Depression (Johnson and Gilbertson 1992).

IV. Survey Results

The architectural APE extends 30.5 meters (100 feet) around either side of Lincoln Bridge No. 46 over New Haven River, on Lincoln Hill Road. The APE consists of a rural setting with few residences.

WSP identified one previously surveyed architectural property that is 45 years old or older in or adjacent to the APE (Figure 3; Table 1). This is Lincoln Bridge No. 46.

WSP also identified two previously unsurveyed architectural resources in or adjacent to the APE (see Figure 3 and Table 1).

WSP did not identify any Section 4(f) resources in or adjacent to the APE.

TABLE 1: PREVIOUSLY AND NEWLY IDENTIFIED HISTORIC ARCHITECTURAL AND SECTION 4(F) RESOURCES IN APE

MAP ID (Lincoln-)	SR/NRHP ELIGIBILITY	NAME	ADDRESS
1	Listed, SRHP	Lincoln Bridge No. 46 over New Haven River	TH 6, Lincoln
2	Not evaluated	House	45 York Hill Road, Lincoln
3	Not evaluated	House	54 York Hill Road, Lincoln
4	Listed, SRHP	West Lincoln Historic District	Multiple, Lincoln
5	Not evaluated	House	37 Atkins Road, Lincoln

A. Vermont SR/NRHP-Listed Properties

1. Lincoln Bridge No. 46 (Lincoln-1)

Resource Name	Lincoln Bridge No. 46
VTrans ID No.	BO TRUS(7)
Location	TH 6, Lincoln
Parcel ID	N/A
Date(s) of Construction	1919; 1970
NRHP Recommendation	Remain Listed, SRHP; Eligible, NRHP

This single-span, riveted Parker pony truss bridge is 85 feet long with an approximately 21-foot-wide concrete deck carrying one lane of York Hill Road over New Haven River. The bridge is composed of seven top polygonal chords braced with five vertical beams with alternating, latticed bracing. The vertical beams have steel guardrails running their entire lengths. The concrete substructure is supported by longitudinal I-beam girders with lateral and diagonal bracing. The latter bracing mimics the vertical members of the polygonal sections. The approaches are anchored into concrete and fieldstone abutments.

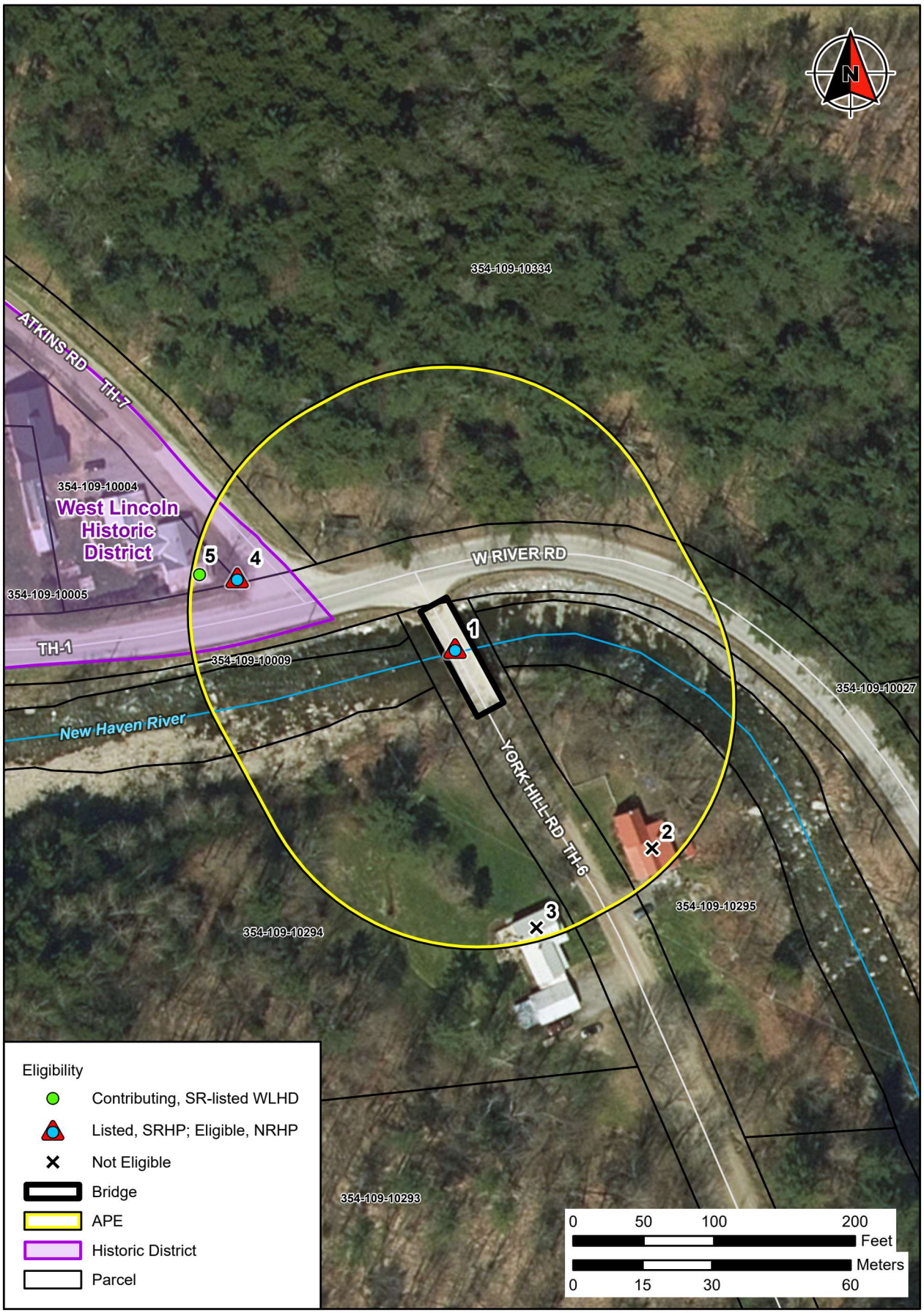

FIGURE 3: Location of Surveyed Architectural Resources in APE (ESRI World Imagery 2022)

According to historic sites and structures survey form, the bridge was likely moved to the current site in 1963, replacing the former bridge (VDHP 1990). The bridge is in generally poor condition aside from the deck which exhibits minor scaling, patching, cracking, and efflorescence staining. The superstructure, particularly the lateral bracing, floor beams, and stringers feature extensive section loss, thinning, holes, and disconnection. The abutments and end walls show signs of wide cracking with minor scaling on the pedestals.

Lincoln Bridge No. 46 over New Haven River is listed in the SRHP as a "relatively rare truss type in Vermont" (Goat 1983). The bridge meets NRHP Criterion C registration requirements outlined in the MPD *Metal Truss, Masonry and Concrete Bridges of Vermont, 1820–1978* (Louis Berger 2018:F59–F61) as an early, well-preserved example of a Parker pony truss bridge, which is rarely found in Vermont. Although the bridge has been moved, the structure still retains sufficient integrity of design, workmanship, materials, and feeling to be eligible under Criterion C. It is WSP's opinion that Lincoln Bridge No. 46 over New Haven River should remain listed in the SRHP and is eligible for listing in the NRHP.

2. West Lincoln Historic District, Lincoln (Lincoln-4)

The West Lincoln Historic District (WLHD) is a rural residential district listed in the SRHP in 1992 (Figure 4). The district contains 35 buildings, 29 of which are contributing and five of which are non-contributing. The village developed between about 1820 and 1850 following the establishment of mills and iron forges which facilitated West Lincoln's role as the town's commercial and civic nexus (VDHP 1992). The form lacks a statement of significance that uses NRHP evaluation criteria, but the district may have been listed for the settlement patterns, community development, and associations with West Lincoln's industrial and commercial development (Criterion A) and for its representation of vermiculture architecture within an intact, cohesive, early to mid-nineteenth-century village.

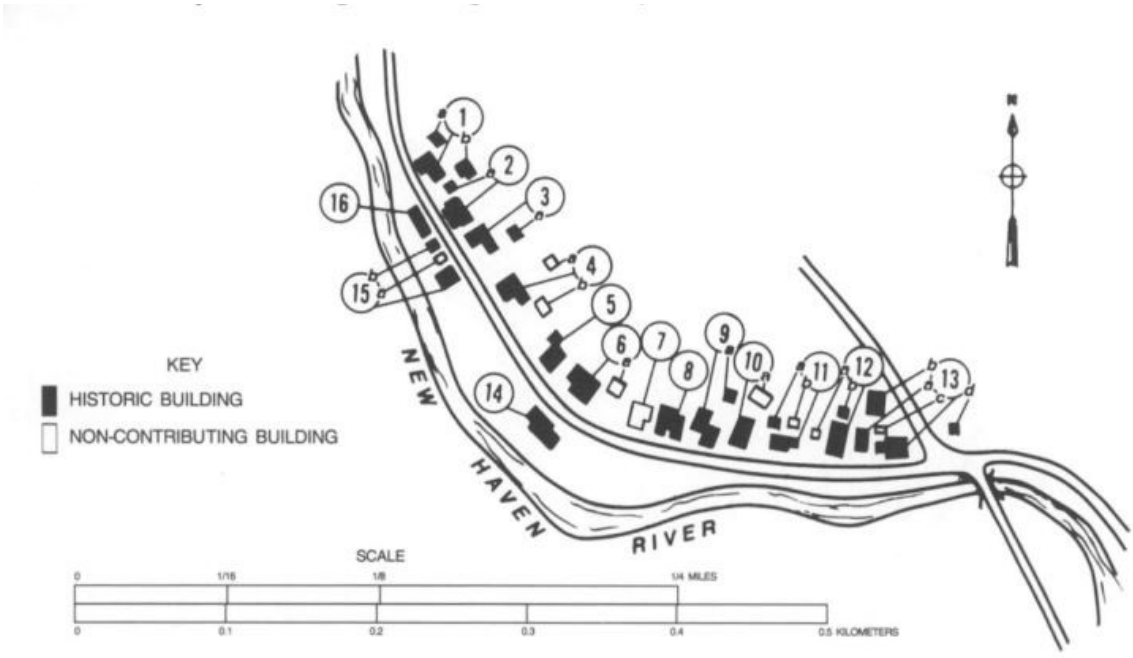

FIGURE 4: West Lincoln Historic District (VDHP 1992)

3. House, 37 Atkins Road (Lincoln-5)

Resource Name	House
VTrans ID No.	N/A
Location	37 Atkins Road, Lincoln
Parcel ID	01030152.000
Date(s) of Construction	ca. 1845
NRHP Recommendation	Remain Contributing, SR-listed WLHD

This resource is a four-bay, frame, one-and-three-quarter-story New England Classic Cottage. The house has a gabled standing seam metal roof. The clapboarded exterior features one-over-one vinyl windows. The former central entrance, now infilled, has a metal stove pipe running from the sill plate up through the porch roof and eaves. The wraparound porch has a hipped metal roof and surmounts Folk Victorian posts with brackets. A one-story rear ell on the south elevation has a gabled roof punctured by an internal brick chimney on the east slope. A gabled, one-story wing extends from the east elevation of the ell near the junction with the primary unit. Located behind the property is a two-story frame garage and three-gable barn capped with a central ridgeline copula. The barn consists of the original English barn (with cupola) and a front-gable, or Yankee, barn serving as the projecting ell.

Despite the removal of the front entry and the addition of modern windows, the house retains much of its Greek Revival and historic Folk Victorian modifications and remains overall representative of a mid-nineteenth-century New England Classic Cottage. Therefore, it is WSP's opinion that the house should remain listed as contributing to the WLHD.

B. Newly Surveyed Resources

1. House, 45 York Hill Road (Lincoln-2)

Resource Name	House
VTrans ID No.	N/A
Location	45 York Hill Road, Lincoln
Parcel ID	06060106.000
Date(s) of Construction	ca. 1840
NRHP Recommendation	Not Eligible

This resource is a three-bay, frame, one-and-three-quarter-story New England Classic Cottage. The house has a gable standing seam metal roof pierced by an internal cinderblock chimney on the rear (east) slope. The exterior is clad in wood shingles and features one-over-one aluminum windows. The central entrance is a half glass wood door sheltered by a gabled hood on triangular brackets. A one-and-one-half-story ell on the south elevation has materials and fenestration which match the primary unit except for a horizontal slider on the gable end. The façade has an open shed roof porch on turned posts with scrolled brackets and a shingled skirt. An open frame porch is present on the rear elevation. The ell's form appears to be that of three-quarter cape, indicating that the taller unit was an addition which in turn repurposed this portion to its current function.

The house's fabric has been heavily modified by replacement cladding, windows, and doors, and is not known to be associated with significant events or people. As such, it is WSP's opinion that the house is not eligible for listing in the SR/NRHP.

2. House, 54 York Hill Road (Lincoln-3)

Resource Name	House
VTrans ID No.	N/A
Location	54 York Hill Road, Lincoln
Parcel ID	06060105.000
Date(s) of Construction	ca. 1840
NRHP Recommendation	Not Eligible

This resource is a three-bay, frame, one-and-one-half-story upright and wing house. The intersecting roof is covered by standing seam metal and is punctured by a brick ridgeline chimney on the ell. The clapboarded exterior features a mix of one-over-one and two-over-two double-hung sashes, including a smaller, paired example on the ell. The façade is protected by a shed roof wraparound porch on wood posts with lattice skirting. The primary entrance is a modern, paneled, multilight door just left of the upright and ell junction. A modern garage is connected to the north elevation of the house by a combination hyphen/recessed porch. This addition is clad in board-and-batten siding.

The house has been altered by modern windows, doors, and a garage addition. Furthermore, the house does not exhibit outstanding architectural characteristics and is a typical example of a mid-nineteenth-century upright and wing commonly found throughout Vermont. The house was not found to be associated with any significant events or people. Therefore, it is WSP's opinion that the house is not eligible for listing in the SR/NRHP.

V. Conclusions and Recommendations

On behalf of VTrans, WSP completed an ID Report involving the anticipated future repair and/or replacement of 27 bridges throughout the state. This particular report addresses Lincoln Bridge No. 46 over New Haven River, Addison County. The survey's purpose was to identify and evaluate all structures and buildings in the architectural area of potential effect (APE), including the bridge, that may be directly, indirectly, and/or cumulatively impacted by the potential project.

WSP identified five resources in the APE: the SRHP-listed Lincoln Bridge No. 46, the SRHP-listed WLHD, one contributing resource to the WLHD, and two previously unsurveyed architectural resources. It is WSP's opinion that the WLHD and its contributing resource should remain listed in the SRHP and are therefore eligible for listing in the NRHP. It is also WSP's opinion that Lincoln Bridge No. 46 should remain eligible for listing in the SRHP and is eligible for listing in the NRHP as it meets the Criterion C registration requirements outlined in the MPD *Metal Truss, Masonry and Concrete Bridges of Vermont, 1820–1978* as an early, well-preserved example of a Parker pony truss bridge, which is rarely found in Vermont. Although the bridge has been moved, the structure still retains sufficient integrity of design, workmanship, materials, and feeling to be eligible for listing under Criterion C. Finally, it is WSP's opinion that the two previously unsurveyed resources are not eligible for listing in the SR/NRHP. WSP did not identify any Section 4(f) resources in or adjacent to the APE.

TABLE 2: NRHP ELIGIBILITY RECOMMENDATIONS FOR PREVIOUSLY AND NEWLY IDENTIFIED HISTORIC ARCHITECTURAL AND SECTION 4(F) RESOURCES IN APE

MAP ID (Lincoln-)	RESOURCE NAME	LOCATION	PREVIOUS ELIGIBILITY	WSP ELIGIBILITY OPINION	PHOTOGRAPH
1	Lincoln Bridge No. 46	TH 6, Lincoln	Listed, SRHP	Listed, SRHP; Eligible, NRHP	
2	House	45 York Hill Road, Lincoln	Not evaluated	Not Eligible	
3	House	54 York Hill Road, Lincoln	Not evaluated	Not Eligible	

MAP ID (Lincoln-)	RESOURCE NAME	LOCATION	PREVIOUS ELIGIBILITY	WSP ELIGIBILITY OPINION	PHOTOGRAPH
4	West Lincoln Historic District (WLHD)	Multiple, Lincoln	Listed, SRHP	Listed, SRHP; Eligible, NRHP	
5	House	37 Atkins Road, Lincoln	Contributing, SRHP-listed WLHD	Contributing, SRHP-listed WLHD	

Since Lincoln Bridge No. 46 is considered NRHP-eligible, replacement of the bridge would result in an adverse effect. If the bridge will be rehabilitated, work should follow Secretary of the Interior Standards to preserve the character-defining features and avoid an adverse effect. The bridge is also small enough to be moved to a nearby park or other property; but this move would likely constitute an adverse effect.

VI. References Cited

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2018 *Metal Truss, Masonry and Concrete Bridges of Vermont, 1820–1978.* National Register of Historic Places Multiple Property Documentation Form. On file, Vermont Agency of Transportation, Montpelier.

National Park Service [NPS]
2002 *How to Apply the National Register Criteria for Evaluation*. Final version completed by Patrick W. Andrew, edited by Rebecca H. Shrimpton. Bulletin 15. National Register Publication, United States Department of the Interior, NPS, Washington, DC, https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf. Originally published 1991.

Vermont Division for Historic Preservation [VDHP]
1990 *Town of Lincoln Historic Sites and Structures Survey*. VDHP, Montpelier, http://accdservices.vermont.gov/ORCDocs/Lincoln_StateRegister__NominationForm_00000001.pdf.

1991 *Multiple Property Documentation for Agricultural Resources in Vermont*. VDHP, Montpelier.

1992 *The Historic Architecture of Addison County, Lincoln Historic Sites*. VDHP, Montpelier, http://accdservices.vermont.gov/ORCDocs/Lincoln_StateRegister__NominationForm_00000001.pdf.

Appendix K: Hazardous Waste Map

Hazardous Waste Urban Soils Map

Vermont Agency of Natural Resources

vermont.gov

LEGEND

- Landfills
  - OPERATING
  - CLOSED
- Land Use Restrictions
  - Class IV GW Reclass
  - Class VI GW Reclass
  - Deed Restriction
  - Easement
  - Land Record Notice
  - Other
- Hazardous Site
- Hazardous Waste Generators
- Brownfields
- Salvage Yard
- Aboveground Storage Tank
- Underground Storage Tank (w
- Dry Cleaner
- Urban Soil Background Areas
- Parcels (standardized)
- Waterbody
- Stream
  - Stream
  - Intermittent Stream
- ACT250 Permits
- Roads
  - Interstate
  - US Highway; 1

NOTES

Map created using ANR's Natural Resources Atlas

165.0 0 82.00 165.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 271 Ft. 1cm = 33 Meters

THIS MAP IS NOT TO BE USED FOR NAVIGATION

DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular use, nor are any such warranties to be implied with respect to the data on this map.

Appendix L: Local Questionnaire Survey (Multiple Responses Received)

Local & Regional Input Questionnaire

Project Summary

This project, BO TRUS(7), focuses on truss bridge 46 on town highway 6 (York Hill Rd.) in Lincoln, Vermont. The truss bridge is deteriorating and needs either a major maintenance action or replacement. Potential options being considered for this project include targeted repairs, replacement of certain girders, replacement with a new truss bridge, and replacement with a new non-truss bridge. It is possible that VTrans will recommend a road closure and detour traffic away from the project site for the duration of the work.

Community Considerations

1. Are there regularly scheduled public events in the community that will generate increased traffic (e.g. vehicular, bicycles and/or pedestrians), or may be difficult to stage if the bridge is closed during construction? Examples include annual bike races, festivals, parades, cultural events, weekly farmers market, concerts, etc. that could be impacted? If yes, please provide approximate date, location and event organizers' contact info.

I am not aware of regularly scheduled events that would be affected by work on York Hill Rd. However, if the project impacts traffic on River Rd. that would be disruptive to community events.

2. Is there a "slow season" or period of time from May through October where traffic is less or no events are scheduled?

I am not aware of variations in seasonal use of York Hill Rd.. I would anticipate fall foliage might lead to slightly more usage of this road.

3. Please describe the location of the Town garage, emergency responders (fire, police, ambulance) and emergency response routes that might be affected by the closure of the bridge, one-way traffic, or lane closures and provide contact information (names, address, email addresses, and phone numbers.

Town garage - 281 South Lincoln Road - Dave Cavaretto 802-453-3703
Lincoln VFD - 34 Gove Hill Rd. 802-453-3267
Policing services would be covered by Vermont State Police, New Haven barracks or Bristol Town Police.

4. Are there businesses (including agricultural operations and industrial parks) or delivery services (fuel or goods) that would be adversely impacted either by a detour or due to work zone proximity?

The only business I'm aware of that might be affected is a Pottery Studio at 166 York Hill Rd. 802-453-3400. However, if the project impacts traffic on River Rd. that would be disruptive of additional businesses.

5. Are there important public buildings (town hall, community center, senior center, library) or community facilities (recreational fields, town green, etc.) close to the project?

Public buildings are approximately 1.5 miles east of the project area and would not be substantially affected by a project on York Hill Rd. However, if the project impacts traffic on River Rd. that could be disruptive of town services.

6. What other municipal operations could be adversely affected by a road/bridge closure or detour?

none that I'm aware of

7. Are there any town highways that might be adversely impacted by traffic bypassing the construction on other local roads? Please indicate which roads may be affected and their condition (paved/unpaved, narrow, weight-limited bridges, etc), including those that may be or go into other towns.
Gove Hill Rd. and West Hill Rd. would see additional traffic as residents of York Hill Rd. would need to use these routes if cut off from access to River Rd. Both are low volume gravel roads.

8. Is there a local business association, chamber of commerce, regional development corporation, or another downtown group that we should be working with? If known, please provide name, organization, email, and phone number.
Not that I am aware of

9. Are there any public transit services or stops that use the bridge or transit routes in the vicinity that may be affected if they become the detour route?
There is no public transit in Lincoln

Schools

1. Where are the schools in your community and what are their yearly schedules (example: first week in September to third week in June)?

The Lincoln Community School is located at 795 E. River Rd. (802-453-2119). As of July 1, 2023, the Lincoln School District functions as an independent school district. Grade K-6 students attend Lincoln Community School, and grade 7-12 students enroll at area schools by an official school choice process.

2. Is this project on specific routes that school buses or students use to walk to and from school?

The project is not on a walking route to schools. I do not know what the bus routes are.

3. Are there recreational facilities associated with the schools nearby (other than at the school)?

None that I am aware of

Pedestrians and Bicyclists

1. What is the current level of bicycle and pedestrian use on the bridge?

Very low

2. Are the current lane and shoulder widths adequate for pedestrian and bicycle use?

The current bridge is adequate for pedestrian and bicycle use.

3. Does the community feel there is a need for a sidewalk or bike lane on the bridge?

No

4. Is pedestrian and bicycle traffic heavy enough that it should be accommodated during construction?

No

5. Does the Town have plans to construct either pedestrian or bicycle facilities leading up to the bridge? Please provide any planning documents demonstrating this (scoping study, master plan, corridor study, town or regional plan).

No

6. In the vicinity of the bridge, is there a land use pattern, existing generators of pedestrian and/or bicycle traffic, or zoning that will support development that is likely to lead to significant levels of walking and bicycling?

No

Design Considerations

1. Are there any concerns with the alignment of the existing bridge? For example, if the bridge is located on a curve, has this created any problems that we should be aware of?

No particular problems I am aware of with alignment

2. Are there any concerns with the width of the existing bridge?

To the best of my knowledge, the width of the existing bridge is adequate

3. Are there any special aesthetic considerations we should be aware of?

No

4. Does the location have a history of flooding? If yes, please explain.

Yes, the New Haven River floods regularly. It is an area of active fluvial erosion.

5. Are there any known Hazardous Material Sites near the project site?

None that I am aware of

6. Are there any known historic, archeological and/or other environmental resource issues near the project site?
None that I am aware of

7. Are there any utilities (water, sewer, communications, power) attached to the existing bridge? Please provide any available documentation.
None that I am aware of

8. Are there any existing, pending, or planned municipal utility projects (communications, lighting, drainage, water, wastewater, etc.) near the project that should be considered?
None that I am aware of

9. Are there any other issues that are important for us to understand and consider?
None that I am aware of

Land Use & Zoning

1. Please provide a copy of your existing and future land use map or zoning map, if applicable.

Lincoln Town Plan 2018. Land use planning areas are on page 15.

2. Are there any existing, pending or planned development proposal that would impact future transportation patterns near the bridge? If so, please explain.

None that I am aware of

3. Is there any planned expansion of public transit or intercity transit service in the project area? Please provide the name and contact information for the relevant public transit provider.

No

Communications

1. Please identify any local communication outlets that are available for us to use in communicating with the local population. Include weekly or daily newspapers, blogs, radio, public access TV, Facebook, Front Page Forum, etc. Also include any unconventional means such as local low-power FM.

The Addison Independent is the local newspaper

2. Other than people/organizations already referenced in this questionnaire, are there any others who should be kept in the loop as the project moves forward?

The municipal representatives of the Town of Lincoln

Local & Regional Input Questionnaire

Project Summary

This project, BO TRUS(7), focuses on truss bridge 46 on town highway 6 (York Hill Rd.) in Lincoln, Vermont. The truss bridge is deteriorating and needs either a major maintenance action or replacement. Potential options being considered for this project include targeted repairs, replacement of certain girders, replacement with a new truss bridge, and replacement with a new non-truss bridge. It is possible that VTrans will recommend a road closure and detour traffic away from the project site for the duration of the work.

Community Considerations

1. Are there regularly scheduled public events in the community that will generate increased traffic (e.g. vehicular, bicycles and/or pedestrians), or may be difficult to stage if the bridge is closed during construction? Examples include annual bike races, festivals, parades, cultural events, weekly farmers market, concerts, etc. that could be impacted? If yes, please provide approximate date, location and event organizers' contact info.

   Probably little or no impact on publicly scheduled events.

2. Is there a "slow season" or period of time from May through October where traffic is less or no events are scheduled?

   Summer when school is not in session (no schoolbuses) or heatingfuel deliveries required

3. Please describe the location of the Town garage, emergency responders (fire, police, ambulance) and emergency response routes that might be affected by the closure of the bridge, one-way traffic, or lane closures and provide contact information (names, address, email addresses, and phone numbers

   All emergency responders are located several miles from this bridge. Primary impact would be on those residences that are closest to the bridge. The bridge intersects with TH 1 which is the town's main artery.

   Lincoln Vol. FD – Dan Ober, Chief – 802-349-3594
   Bristol Rescue – 802-453-2513
   First Constable -Matt Collins - 802-777-2138
   Vermont State Police – 802-388-4919
   Lincoln Highway Dept. – Dave Cavoretto – highway@lincolnvermont.org 802-453-3703

4. Are there businesses (including agricultural operations and industrial parks) or delivery services (fuel or goods) that would be adversely impacted either by a detour or due to work zone proximity?

   Fuel deliveries, seasonal agriculture

5. Are there important public buildings (town hall, community center, senior center, library) or community facilities (recreational fields, town green, etc.) close to the project?

   NO

6. What other municipal operations could be adversely affected by a road/bridge closure or detour?

   Winter road maintenance and snow removal. Bridge is located at the base of a steep hill

7. Are there any town highways that might be adversely impacted by traffic bypassing the construction on other local roads? Please indicate which roads may be affected and their condition (paved/unpaved, narrow, weight-limited bridges, etc), including those that may be or go into other towns.

   All affected traffic would be diverted to West River Road TH-1

8. Is there a local business association, chamber of commerce, regional development corporation, or another downtown group that we should be working with? If known, please provide name, organization, email, and phone number.

   None

9. Are there any public transit services or stops that use the bridge or transit routes in the vicinity that may be affected if they become the detour route?

Schools

1. Where are the schools in your community and what are their yearly schedules (example: first week in September to third week in June)?

   Lincoln Community School is located on East River Road (TH-1) approximately 3 miles from the project

2. Is this project on specific routes that school buses or students use to walk to and from school?

   Yes – school bus

3. Are there recreational facilities associated with the schools nearby (other than at the school)?

   NO

Pedestrians and Bicyclists

1. What is the current level of bicycle and pedestrian use on the bridge?

   Very limited

2. Are the current lane and shoulder widths adequate for pedestrian and bicycle use?

   NO

3. Does the community feel there is a need for a sidewalk or bike lane on the bridge?

   YES

4. Is pedestrian and bicycle traffic heavy enough that it should be accommodated during construction?

   Probably Not

5. Does the Town have plans to construct either pedestrian or bicycle facilities leading up to the bridge? Please provide any planning documents demonstrating this (scoping study, master plan, corridor study, town or regional plan).

   No Plans

6. In the vicinity of the bridge, is there a land use pattern, existing generators of pedestrian and/or bicycle traffic, or zoning that will support development that is likely to lead to significant levels of walking and bicycling?

   NO

Design Considerations

1. Are there any concerns with the alignment of the existing bridge? For example, if the bridge is located on a curve, has this created any problems that we should be aware of?

   Visibility east

2. Are there any concerns with the width of the existing bridge?

   Too narrow

3. Are there any special aesthetic considerations we should be aware of?

   Historic Truss bridge that contributes to the aesthetics of West Lincoln

4. Does the location have a history of flooding? If yes, please explain.

   Recent floods in 1976, 1998, 2011 & 2023 flood waters touched bottom chords of the bridge.

5. Are there any known Hazardous Material Sites near the project site?

   NO

6. Are there any known historic, archeological and/or other environmental resource issues near the project site?

   NO

7. Are there any utilities (water, sewer, communications, power) attached to the existing bridge? Please provide any available documentation.

   None known

8. Are there any existing, pending, or planned municipal utility projects (communications, lighting, drainage, water, wastewater, etc.) near the project that should be considered?

   NO

9. Are there any other issues that are important for us to understand and consider?

   This bridge has been in very poor condition for many years. Stop gap repairs barely hold it together. Replacement needs to be expedited

Land Use & Zoning

1. Please provide a copy of your existing and future land use map or zoning map, if applicable.

2. Are there any existing, pending or planned development proposal that would impact future transportation patterns near the bridge? If so, please explain.

   NO

3. Is there any planned expansion of public transit or intercity transit service in the project area? Please provide the name and contact information for the relevant public transit provider.

   None known

Communications

1. Please identify any local communication outlets that are available for us to use in communicating with the local population. Include weekly or daily newspapers, blogs, radio, public access TV, Facebook, Front Page Forum, etc. Also include any unconventional means such as local low-power FM.

   Addison Independent
   Front Porch Forum
   Town web page
   WCAX – WPTZ
   Lincoln General Store

2. Other than people/organizations already referenced in this questionnaire, are there any others who should be kept in the loop as the project moves forward?

   Lincoln Town Clerk
   Lincoln Selectboard
   Lincoln General Store

Appendix M: Crash Data

ObjectID	Crash Date	City/Town	Address	AOT Route	Crash Type	Collision Direction	Weather	Report Number	Milepoint	Animal	Time of Day	Intersection With	Impairment	Involving	Road Characteristics	Road Condition	Surface Condition
3856465	March 22, 2019 at 8:26 AM	Lincoln	159 W Hill Rd	TOWN ROAD 0006	Property Damage Only	Opp Direction Sideswipe	Freezing Precipitation	19B500661	999.99	None/Other	Day	Varney Rd	None	None	Not at a Junction	Road Surface Condition(wet, icy, snow, slush, etc)	Snow
5920397	November 3, 2020 at 9:39 AM	Lincoln	296 W Hill Rd	TOWN ROAD 0006	Property Damage Only	Single Vehicle Crash	Freezing Precipitation	20B502864	999.99	None/Other	Day	York Hill Rd	None	None	Not at a Junction	Road Surface Condition(wet, icy, snow, slush, etc)	Snow

Appendix N: Detour Route(s)

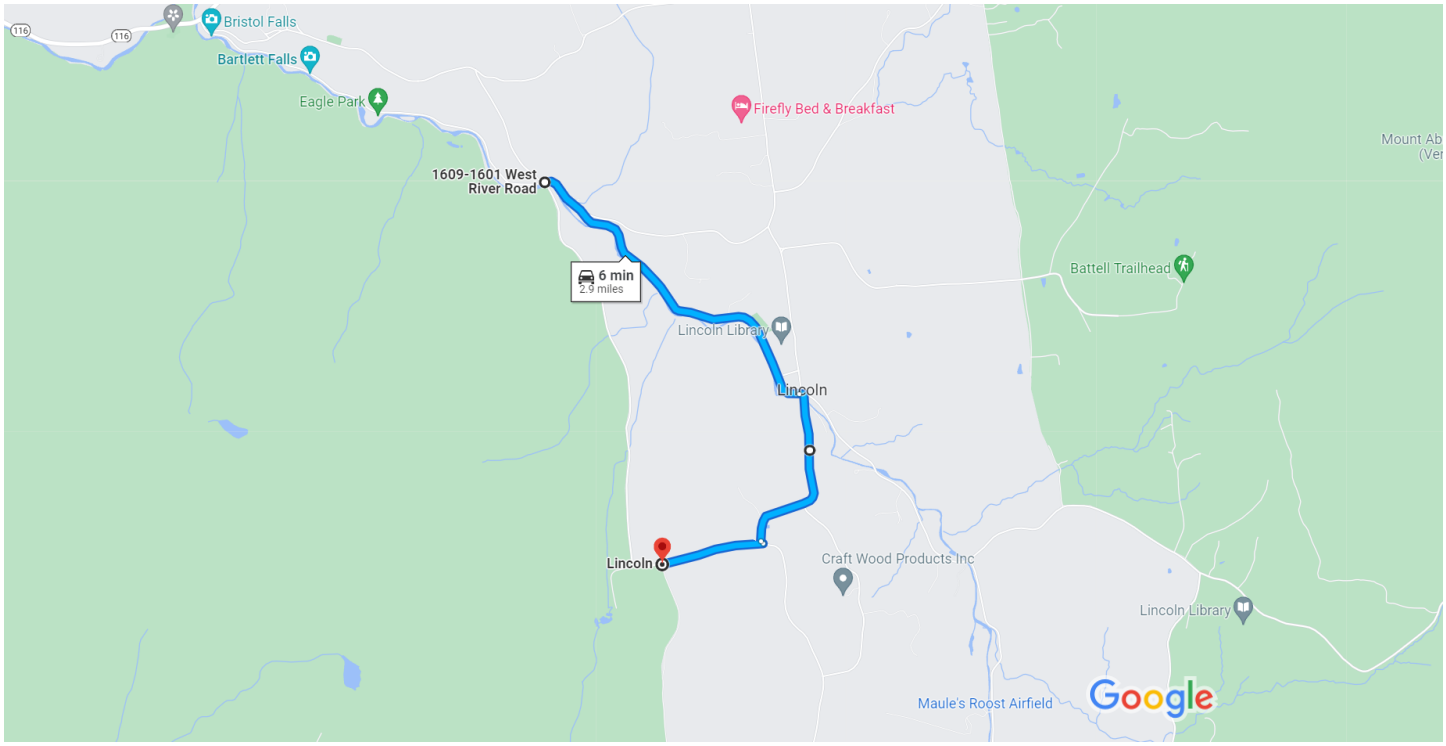
Detour Route: From the intersection of West Hill Road and York Hill Road. Take Gove Hill Road, to West River Road, and back to the intersection of West River Road and West Hill Road.

End-to-End Distance: 4.8 miles
Through Distance: 1.9 miles
Detour Distance: 2.9 miles
Added Distance: 1.0 miles

Google Maps

1609-1601 W River Rd, Lincoln, VT 05443 to Lincoln, Vermont 05443

Drive 2.9 miles, 6 min



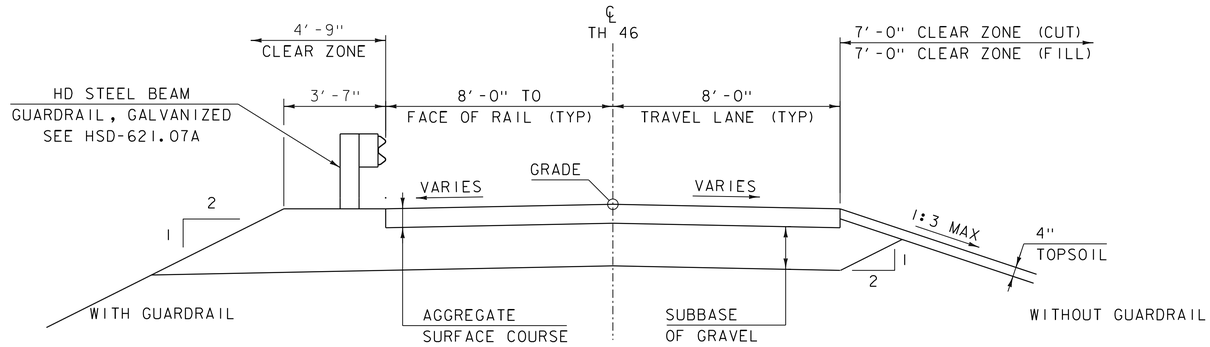
Map data ©2023 Google 2000 ft

1609-1601 W River Rd
Lincoln, VT 05443

1. Head east on W River Rd toward York Hill Rd — 1.6 mi
2. Turn right onto Gove Hill Rd — 0.8 mi
3. Slight left onto W Hill Rd — 75 ft
4. Sharp right onto York Hill Rd — 0.5 mi

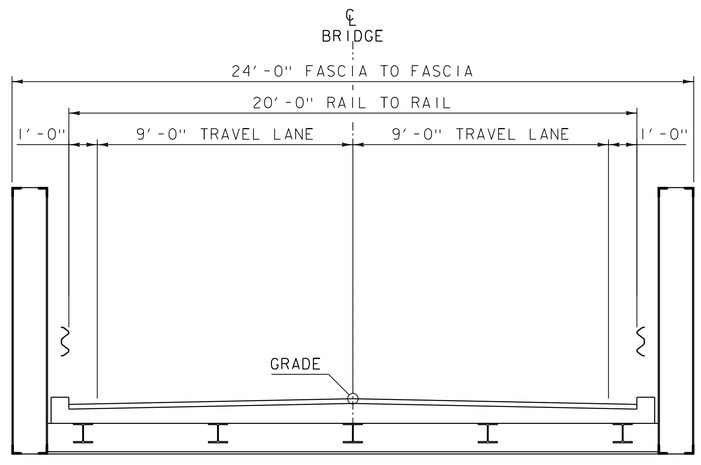
Lincoln
Vermont 05443

Appendix O: Plans



EXISTING TH 46 TYPICAL SECTION

SCALE 3/8" = 1'-0"



FLOW

EXISTING BRIDGE TYPICAL SECTION

SCALE 3/8" = 1'-0"

MATERIAL TOLERANCES (IF USED ON PROJECT)	
SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"

PROJECT NAME: LINCOLN
PROJECT NUMBER: BO TRUS(7)

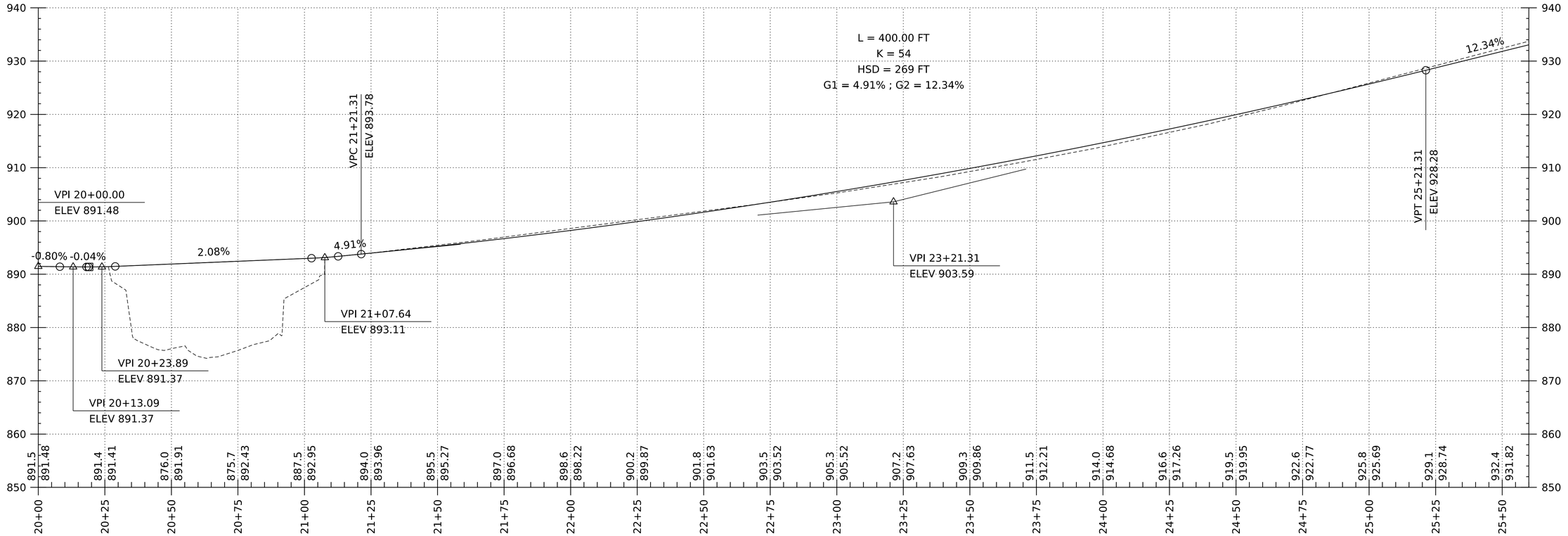
FILE NAME: 22J410\s22j410typical.dgn
PROJECT LEADER: L.J.STONE
DESIGNED BY: ----------
EXISTING BRIDGE TYPICAL SECTIONS

PLOT DATE: 23-AUG-2024
DRAWN BY: D.D.BEARD
CHECKED BY: ------
SHEET 1 OF 13


L = 274.05'
E = 60.53'
N
VT STATE PLANE GRID
Deer Wintering Area
APPROX. EXISTING TOWN R.O.W.
TH-1
(W RIVER RD)
N/F
ROLEAU,
WILLIAM J. &
BONNIE J.
N23°13'54.28"W
51+00
52+00
53+00
STA 20+66.00=
CHAN 54+06+50
Δ = 104°31'08" RT
POB 20+00.00
HVCTRL
101
PC 21+09.18
PRC 21+88.13
PI 22+67.42
SEPTIC
(APPROXIMATE
FROM OWNER)
WOVEN WIRE
FENCE
WOOD
FENCE
N/F
LEE, ROBERT E. &
WHITE, MICHELLE
D = 07°38'22"
R = 750.00'
T = 74.28'
L = 148.09'
E = 3.67'
GUY
WIRE
WELL
N/F
STEPHEN J. HALNON -
LIFE ESTATE
HABITAT
GRAVEL
DRIVE
MAILBOX
45/54
S28°16'23.84"E
20+00
21+00
22+00
23+00
TH-6
(YORK HILL RD)
HISTORIC
HVCTRL
7
COMB
55.5
105
ECT
BENCHMARK
RAILROAD SPIKE
IN POLE
ELEV.=903.06
PI 21+48.70
PT 21+88.13
PT 23+36.22
CURVE
DELTA = 06°01'53"
D = 07°38'22"
R = 750.00'
T = 39.51'
L = 78.95'
E = 1.04'
SEPTIC
RISER
EXISTING EASEMENT BENEFITTING
GMP AND WAITSFIELD-FAYSTON TELEPHONE
CO. D/B/A WAITSFIELD AND CHAMPLAIN
VALLEY TELECOM
BK 78/ PG 432
N/F
LEE, DAVID A. &
TERRI LEE
18" CCMP
FLOW
15" CCMP
HISTORIC DIST
MAILBOX
37
COMB
102
53
HVCTRL
8
TH-7
(ATKINS RD)
GRAVEL
DRIVE
55+00
S76°14'44.34"E
N/F
MARTELL,
LAWRENCE
N/F
JODY R. ATKINS AND
LORI A. ATKINS, TRUSTEES
OF THE ATKINS FAMILY 2019
TRUST
NEW HAVEN RIVER
FLOW
GUY
WIRE
GUY
POLE
EXISTING LAYOUT
SCALE 1" = 20'-0"
20 0 20

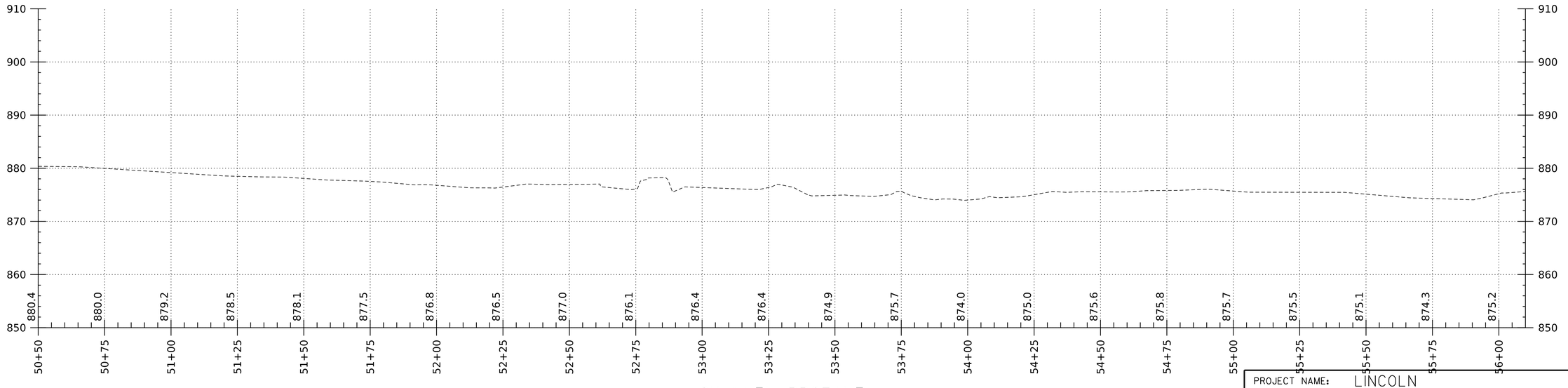
PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BO TRUS(7)

FILE NAME:	s22j410BDR_Existing.dgn	PLOT DATE:	23-AUG-2024
PROJECT LEADER:	L.J.STONE	DRAWN BY:	D.D.BEARD
DESIGNED BY:	------	CHECKED BY:	------
EXISTING CONDITIONS LAYOUT		SHEET 2 OF 13	



TOWN HIGHWAY 6 (YORK HILL RD) PROFILE

SCALE: HORIZONTAL 1"=20'-0"
VERTICAL 1"=10'-0"



CHANNEL PROFILE

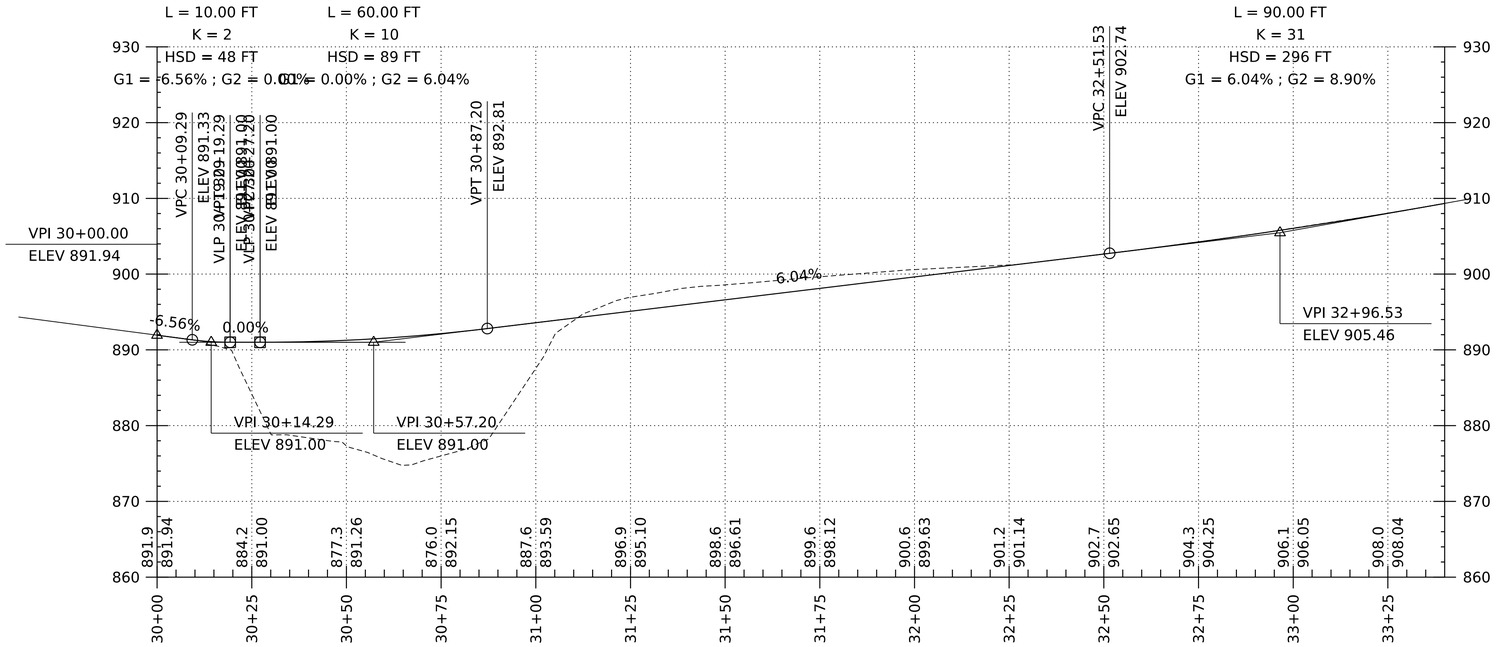
SCALE: HORIZONTAL 1"=20'-0"
VERTICAL 1"=10'-0"

NOTE:
GRADES SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG ℄
GRADES SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE ALONG ℄

PROJECT NAME: LINCOLN
PROJECT NUMBER: BO TRUS(7)

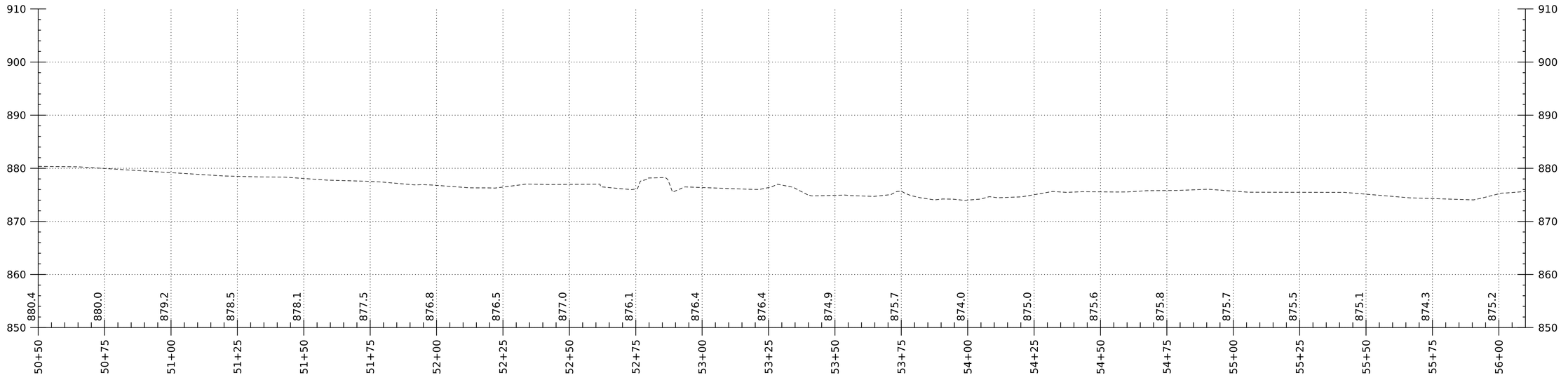
FILE NAME: s22j410profile.dgn
PROJECT LEADER: L.J.STONE
DESIGNED BY: ------
PROFILE SHEET

PLOT DATE: 23-AUG-2024
DRAWN BY: D.D.BEARD
CHECKED BY: ------
SHEET 3 OF 13



OFF ALIGNMENT ALTERNATIVE TOWN HIGHWAY 6 (YORK HILL RD) PROFILE

SCALE: HORIZONTAL 1"=20'-0"
VERTICAL 1"=10'-0"



CHANNEL PROFILE

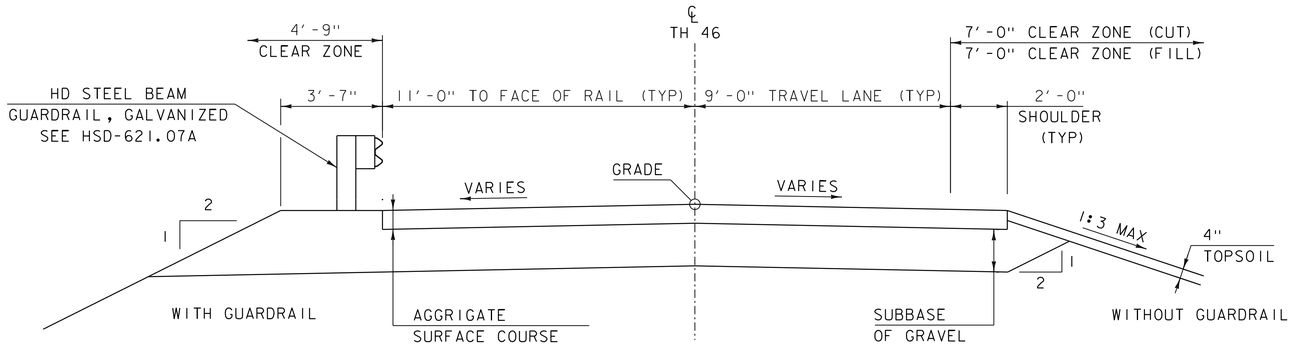
SCALE: HORIZONTAL 1"=20'-0"
VERTICAL 1"=10'-0"

NOTE:
GRADES SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG L
GRADES SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE ALONG L

PROJECT NAME: LINCOLN
PROJECT NUMBER: BO TRUS(7)

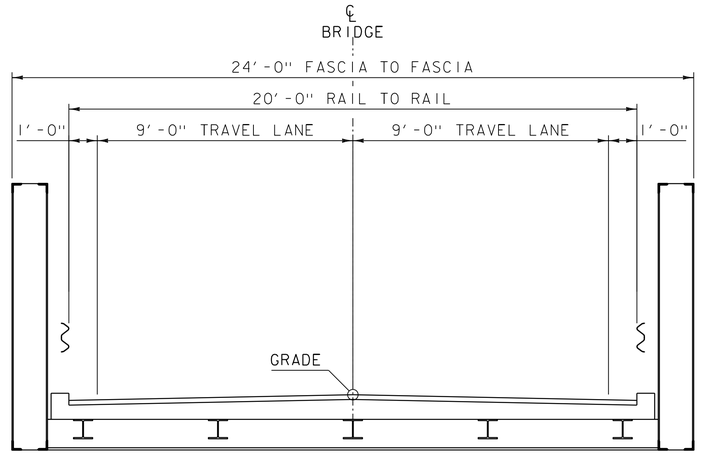
FILE NAME: s22j410profile.dgn
PROJECT LEADER: L.J.STONE
DESIGNED BY: ------
OFF-ALIGNMENT PROFILE SHEET

PLOT DATE: 23-AUG-2024
DRAWN BY: D.D.BEARD
CHECKED BY: ------
SHEET 4 OF 13



PROPOSED TH 46 TYPICAL SECTION

SCALE 3/8" = 1'-0"



FLOW

PROPOSED BRIDGE REHABILITATION TYPICAL SECTION

SCALE 3/8" = 1'-0"

MATERIAL TOLERANCES

(IF USED ON PROJECT)

SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"

PROJECT NAME: LINCOLN
PROJECT NUMBER: BO TRUS(7)

FILE NAME: 22J410\s22j410typical.dgn
PROJECT LEADER: L.J.STONE
DESIGNED BY: ----------
BRIDGE REHABILITATION TYPICAL SECTIONS

PLOT DATE: 23-AUG-2024
DRAWN BY: D.D.BEARD
CHECKED BY: ------

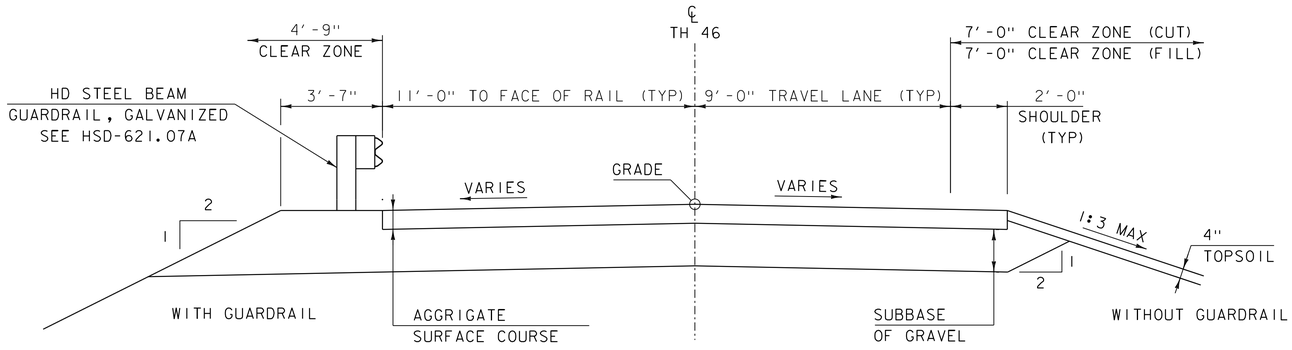
REHABILITATION LAYOUT

SCALE 1" = 20'-0"

20 0 20

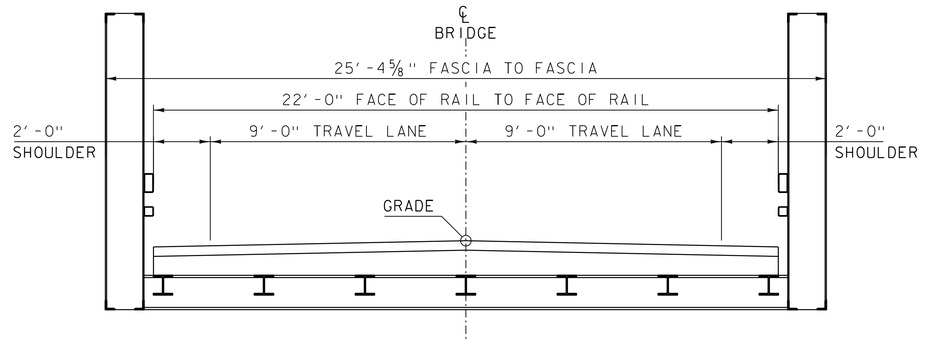
PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BO TRUS(7)

FILE NAME:	s22j410BDR_Truss Rehab.dgn	PLOT DATE:	23-AUG-2024
PROJECT LEADER:	L.J.STONE	DRAWN BY:	D.D.BEARD
DESIGNED BY:	------	CHECKED BY:	------
TRUSS REHABILITATION LAYOUT		SHEET 6 OF 13	



PROPOSED TH 46 TYPICAL SECTION

SCALE 3/8" = 1'-0"



NEW TRUSS BRIDGE TYPICAL SECTION

SCALE 3/8" = 1'-0"

MATERIAL TOLERANCES

(IF USED ON PROJECT)

SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"

PROJECT NAME: LINCOLN
PROJECT NUMBER: BO TRUS(7)

FILE NAME: 22J410\s22j410typical.dgn
PROJECT LEADER: L.J.STONE
DESIGNED BY: ----------
NEW TRUSS BRIDGE TYPICAL SECTIONS

PLOT DATE: 23-AUG-2024
DRAWN BY: D.D.BEARD
CHECKED BY: ------

N
VT STATE PLANE GRID
L = 274.05'
E = 60.53'
TH-1
(W RIVER RD)
APPROX. EXISTING TOWN R.O.W.
Deer Wintering Area
18" CCMP
FLOW
HVCTRL
102
N23°13'54.28"W
51+00
52+00
53+00
STA 20+66.00=
CHAN 54+06+50
Δ = 104°31'08" RT
POB 20+00.00
HVCTRL
101
PC 21+09.18
PRC 21+88.13
SEPTIC
(APPROXIMATE
FROM OWNER)
WOVEN WIRE
FENCE
WOOD
FENCE
PI 22+67.42
PC 51+20.73
CURVE (x)
DELTA = 11°18'47"
D = 07°38'22"
R = 750.00'
T = 74.28'
L = 148.09'
E = 3.67'
GUY
WIRE
WELL
ECT
HABITAT
GRAVEL
DRIVE
MAILBOX
45/54
S28°16'23.84"E
20+00
21+00
22+00
23+00
PT 21+94.78
HVCTRL
7
TH-6
(YORK HILL RD)
COMB
55.5
105
GRAVEL
DRIVE
BENCHMARK
RAILROAD SPIKE
IN POLE
ELEV.=903.06
PT 23+36.22
SEPTIC
RISER
CURVE (x)
DELTA = 06°01'53"
D = 07°38'22"
R = 750.00'
T = 39.51'
L = 78.95'
E = 1.04'
PI 21+48.70
PT 21+88.13
COMB
104
55
300F
15" CCMP
FLOW
MAILBOX
37
HISTORIC DIST
COMB
102
53
HVCTRL
8
TH-7
(ATKINS RD)
GRAVEL
DRIVE
55+00
S76°14'44.34"W
NEW HAVEN RIVER
FLOW
TH-1
(W RIVER RD)
GUY
WIRE
GUY
POLE

NEW TRUSS LAYOUT

SCALE 1" = 20'-0"

20 0 20

PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BO TRUS(7)

FILE NAME:	s22j410BDR_New Truss On.dgn	PLOT DATE:	23-AUG-2024
PROJECT LEADER:	L.J.STONE	DRAWN BY:	D.D.BEARD
DESIGNED BY:	------	CHECKED BY:	------
NEW TRUSS LAYOUT		SHEET	8 OF 13

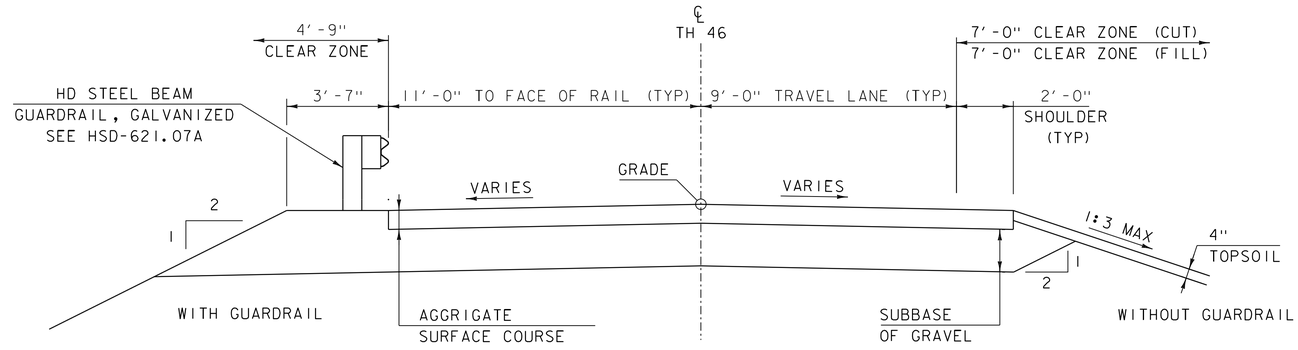
L = 274.05'
E = 60.53'
VT STATE PLANE GRID
N
Deer Wintering Area
APPROX. EXISTING TOWN R.O.W.
TH-1
(W RIVER RD)
POB 30+00.00
30+00
S09°24'14"E
52+00
51+00
53+00
N23°13'54.28"W
PC 31+06.12
PT 31+56.87
PC 31+20.73
POE 33+89.99
SEPTIC
(APPROXIMATE FROM OWNER)
WOVEN WIRE FENCE
WOOD FENCE
WELL
GRAVEL DRIVE
MAILBOX 45/54
S22°59'30"E
32+00
33+00
TH-6
(YORK HILL RD)
HABITAT
HISTORIC
HVCTRL 7
COMB 55.5 105
BENCHMARK
RAILROAD SPIKE
IN POLE
ELEV.=903.06
CURVE (x)
DELTA = 13°35'16"
D = 26°46'25"
R = 214.00'
T = 25.49'
L = 50.75'
E = 1.51'
SEPTIC RISER
ECT
COMB 104 55 300F
GUY WIRE
55+00
S76°14'34"W
NEW HAVEN RIVER
FLOW
18" CGMP FLOW
15" CGMP FLOW
MAILBOX 37
HISTORIC DIST
COMB 102 53
HVCTRL 8
TH-7
(ATKINS RD)
GRAVEL DRIVE
TH-1
(W RIVER RD)
GUY POLE

NEW TRUSS OFF ALIGNMENT LAYOUT

SCALE 1" = 20'-0"

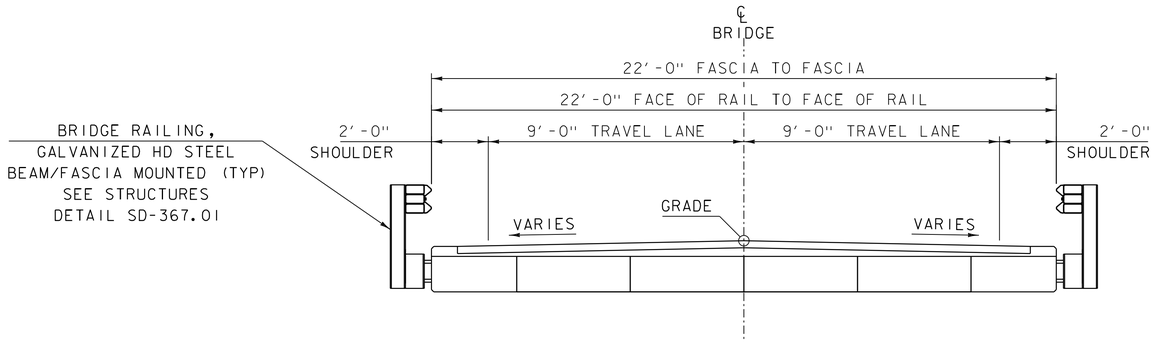
20 0 20

PROJECT NAME:	LINCOLN		
PROJECT NUMBER:	BO TRUS(7)		
FILE NAME:	s22j410BDR_New Truss Off.dgn	PLOT DATE:	23-AUG-2024
PROJECT LEADER:	L.J.STONE	DRAWN BY:	D.D.BEARD
DESIGNED BY:	------	CHECKED BY:	------
NEW TRUSS OFF ALIGNMENT LAYOUT		SHEET	9 OF 13



PROPOSED TH 46 TYPICAL SECTION

SCALE 3/8" = 1'-0"



PROPOSED BRIDGE TYPICAL SECTION

SCALE 3/8" = 1'-0"

MATERIAL TOLERANCES (IF USED ON PROJECT)	
SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"

PROJECT NAME: LINCOLN
PROJECT NUMBER: BO TRUS(7)

FILE NAME: 22J410\s22j410typical.dgn
PROJECT LEADER: L.J.STONE
DESIGNED BY: ----------
NEW BRIDGE TYPICAL SECTIONS

PLOT DATE: 23-AUG-2024
DRAWN BY: D.D.BEARD
CHECKED BY: ------

L = 274.05'
E = 60.53'
N
VT STATE PLANE GRID
Deer Wintering Area
TH-1 (W RIVER RD)
APPROX. EXISTING TOWN R.O.W.
N23°13'54.28"W
51+00
52+00
53+00
STA 20+66.00=
CHAN 54+06+50
Δ = 104°31'08" RT
POB 20+00.00
PC 21+09.18
PRC 21+88.13
PI 22+67.42
PI 21+48.70
PT 23+36.22
CURVE (x)
DELTA = 11°18'47"
D = 07°38'22"
R = 750.00'
T = 74.28'
L = 148.09'
E = 3.67'
CURVE (x)
DELTA = 06°01'53"
D = 07°38'22"
R = 750.00'
T = 39.51'
L = 78.95'
E = 1.04'
S28°16'23.84"E
20+00
21+00
22+00
23+00
PT 21+94.79
TH-6 (YORK HILL RD)
TH-7 (ATKINS RD)
WOVEN WIRE FENCE
WOOD FENCE
SEPTIC (APPROXIMATE FROM OWNER)
SEPTIC RISER
WELL
GRAVEL DRIVE
MAILBOX 45/54
MAILBOX 37
BENCHMARK
RAILROAD SPIKE
IN POLE
ELEV.=903.06
HVCTRL 101
HVCTRL 7
HVCTRL 8
COMB 12A
COMB 55.5
COMB 102 53
COMB 104 55 300F
GUY WIRE
GUY POLE
18" CCMP FLOW
15" CCMP FLOW
HISTORIC DIST
HABITAT
ECT
55+00
S76°14'4.34"W
NEW HAVEN RIVER
FLOW
NEW BRIDGE LAYOUT
SCALE 1" = 20'-0"
20 0 20

PROJECT NAME:	LINCOLN		
PROJECT NUMBER:	BO TRUS(7)		
FILE NAME:	s22j410BDR_New Bridge On.dgn	PLOT DATE:	23-AUG-2024
PROJECT LEADER:	L.J.STONE	DRAWN BY:	D.D.BEARD
DESIGNED BY:	------	CHECKED BY:	------
NEW BRIDGE LAYOUT		SHEET 11 OF 13	

L = 274.05'
E = 60.53'
N
VT STATE PLANE GRID
Deer Wintering Area
TH-1
(W RIVER RD)
APPROX. EXISTING TOWN R.O.W.
POB 30+00.00
30+00
S09°24'14"E
52+00
51+00
53+00
N23°13'54.28"W
PC 31+06.12
PT 31+56.87
SEPTIC
(APPROXIMATE
FROM OWNER)
WOVEN WIRE
FENCE
WOOD
FENCE
WELL
GRAVEL
DRIVE
MAILBOX
45/54
POE 33+89.99
S22°59'30"E
32+00
33+00
TH-6
(YORK HILL RD)
HABITAT
HISTORIC
HVCTRL
COMB
ECT
CURVE (x)
DELTA = 13°35'16"
D = 26°46'25"
R = 214.00'
T = 25.49'
L = 50.75'
E = 1.51'
SEPTIC
RISER
BENCHMARK
RAILROAD SPIKE
IN POLE
ELEV.=903.06
18" CCMP
FLOW
15" CCMP
GUY
WIRE
MAILBOX
37
HISTORIC DIST
TH-7
(ATKINS RD)
GRAVEL
DRIVE
55+00
S76°14'34"W
NEW HAVEN RIVER
FLOW
GUY
POLE
NEW BRIDGE OFF ALIGNMENT LAYOUT
SCALE 1" = 20'-0"
20 0 20
PROJECT NAME: LINCOLN
PROJECT NUMBER: BO TRUS(7)
FILE NAME: s22j410BDR_New Bridge Off.dgn
PLOT DATE: 23-AUG-2024
PROJECT LEADER: L.J.STONE
DRAWN BY: D.D.BEARD
DESIGNED BY: ------
CHECKED BY: ------
NEW BRIDGE OFF ALIGNMENT LAYOUT
SHEET 12 OF 13

N
VT STATE PLANE GRID
L = 274.05'
E = 60.53'
TH-1
(W RIVER RD)
APPROX. EXISTING TOWN R.O.W.
Deer Wintering Area
52+00
51+00
N23°13'54.28"W
53+00
HVCTRL
101
POB 20+00.00
PC 21+09.18
PRC 21+88.13
PI 22+67.42
CURVE (x)
DELTA = 11°18'47"
D = 07°38'22"
R = 750.00'
T = 74.28'
L = 148.09'
E = 3.67'
WOVEN WIRE FENCE
SEPTIC (APPROXIMATE FROM OWNER)
WOOD FENCE
WELL
GRAVEL DRIVE
MAILBOX 45/54
S28°16'23.84"E
20+00
21+00
22+00
23+00
TH-6
(YORK HILL RD)
HABITAT
HVCTRL
7
COMB
55.5
105
GRAVEL DRIVE
BENCHMARK
RAILROAD SPIKE
IN POLE
ELEV.=903.06
PT 23+36.22
PI 21+48.70
CURVE (x)
DELTA = 06°01'53"
D = 07°38'22"
R = 750.00'
T = 39.51'
L = 78.95'
E = 1.04'
SEPTIC RISER
COMB
104
55
300F
GUY WIRE
ECT
HISTORIC DIST
18" CCMP FLOW
15" CCMP FLOW
MAILBOX
37
COMB
102
53
HVCTRL
8
TH-7
(ATKINS RD)
GRAVEL DRIVE
55+00
S76°14'34"W
NEW HAVEN RIVER
FLOW
TH-1
(W RIVER RD)
GUY WIRE
GUY POLE

TEMPORARY BRIDGE LAYOUT

SCALE 1" = 20'-0"

20 0 20

PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BO TRUS(7)

FILE NAME:	s22j410BDR_Temp Bridge.dgn	PLOT DATE:	23-AUG-2024
PROJECT LEADER:	L.J.STONE	DRAWN BY:	D.D.BEARD
DESIGNED BY:	------	CHECKED BY:	------
TEMPORARY BRIDGE LAYOUT		SHEET	13 OF 13