STATE OF VERMONT
AGENCY OF TRANSPORTATION

Scoping Report

FOR

Wallingford BF 0133(18)

VT-155, Bridge 15 over The Mill River

November 20, 2025

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I. Site Information

Bridge 15 is a State-owned steel multi beam bridge located on Village Street (VT-155) over the Mill River, approximately 0.05 miles from the intersection with VT-103 and 0.2 miles from the intersection with VT-140. The existing conditions were gathered from a combination of the Inspection Report and the existing Survey. See appendices for more detailed information.

Roadway Classification	Rural Major Collector
Bridge Type	2 Span Rolled Beam Bridge
Bridge Length	180 feet
Year Built	1940
Ownership	State of Vermont

Need

Bridge 15 carries Village Street across Mill River. The following is a list of deficiencies of Bridge 15 and Village St:

1. The bridge was closed to vehicle traffic on January 9th of 2023 due to deck failure.
    a. The deck is in overall poor condition. A 3.5' x 2.5' hole has formed in span 2 along bay 1. Deteriorated concrete is possible for further full depth holes in the future. The condition along the curb line is poor with heavy breakup and past patching repairs. The deck curb and drain both have heavy spalling and exposed rebar.
    b. The bridge joint compression seal and still armor have a couple of areas where steel has broken out.
    c. The stringers have section loss at exterior beam ends and at the pier.
    d. The substructure is in poor condition. Abutment 1 has cracking and leakage with heavy deterioration and exposed rebar along the southwest corner. Abutment 2 also has cracking and staining, as well as heavy end deterioration along the northwest corner. Beam 5 seating area has been repaired multiple times and keeps popping off. The bearing area is undermined 50%.
2. The bridge does not meet hydraulic standards. It does not maintain 1' of freeboard during 2% AEP events, and is overtopped during 1% AEP events.
3. The bridge is very narrow and does not provide bike or pedestrian access. The bridge width does not meet the minimum standard or match the approach width.
4. Vertical curvature of the eastern approach is substandard.

Traffic

A traffic study of this site was performed by the Vermont Agency of Transportation. The traffic volumes are projected for the years 2028 and 2048.

TRAFFIC DATA	2028	2048
AADT	1301	1427
DHV	178	195
ADTT	103	150
%T	9.1%	10.9%

%D	60%	60%

Design Criteria

The design standards for this bridge project are the Vermont State Standards, dated October 22, 1997 (VSS), the VTrans Structures Design Manual 5th edition, dated 2010, and AASHTO's A Policy on Geometric Design of Highways and Streets 7th edition, dated 2018 (AASHTO Green Book). Minimum standards are based on an ADT of 1427 and a design speed of 30 mph for a Rural Major Collector.

Design Criteria	Source	Existing Condition	Minimum Standard	Comment
Approach Lane and Shoulder Widths	VSS Table 5.3	11'/2' (26')	9'/2' (22')	
Bridge Lane and Shoulder Widths	VSS Section 5.7	9'/1' (20')	9'/2' (22')	Does not match corridor or meet minimum standard
Clear Zone Distance	VSS Section 5.9	No Issues Noted	12 feet (fill)/10 feet (cut)	
Banking	VSS Section 5.13	NC over bridge, 8% on approach	8% (max)	
Speed	VSS Section 5.3	30 mph (posted)	30 mph (design)	
Horizontal Alignment	AASHTO Green Book Table 3-10	R = 233 ft	R_{min} = 214' @ 8%	
Vertical Grade	VSS Table 5.6	2.75% grade (max)	9% for rolling terrain	
K Values for Vertical Curves	VSS Table 5.1	K_{sag} = 21.6 (northern approach)	30 crest / 40 sag	Substandard
Vertical Clearance	VSS Section 5.8	Open	14'-3"	
Headlight Sight Distance	VSS Table 5.1	459 ft	200 feet	
Bicycle/Pedestrian Criteria	VSS Table 5.8	1' shoulder	3' paved shoulder	Substandard
Bridge Railing	Structures Design Manual Section 13	Galvanized W beams and concrete post	TL-2	Not a crash tested system
Hydraulics	VTrans Hydraulics Section	• No freeboard during 2% AEP • 162' Hydraulic Span	• Pass 2% AEP with 1.0' of freeboard • Span the 85' BFW	Substandard
Structural Capacity	VSS Section 5.7	Closed	HL-93	Substandard

Inspection Report Summary

Deck Rating	4 Poor
Superstructure Rating	5 Fair
Substructure Rating	4 Poor
Channel Rating	5 Fair

04/15/2024 - Since last inspection pier looks to have settled and most likely done during July 2023 flooding event. Structure is in poor condition due to deck failure and is closed. Heavy deterioration along curb line, deck has been patched numerous times and heavy debris from past patching material along curb line. Heavy scaling along abutment ends and bearing at beam 5 along pier upstream is undermined approx. 50% and should be fixed again. Structure needs extensive recon or replacement. (MK)

04/10/2023 - Structure is in poor condition due to deck failure and is closed. Heavy deterioration along curb line, deck has been patched numerous times and heavy debris from past patching material along curb line. Heavy scaling along abutment ends and bearing at beam 5 along pier upstream is undermined approx. 50% and should be fixed again. Structure needs extensive recon or replacement. (MK)

06/15/2021 – Structure is in fair condition. Heavy deterioration along curb line, deck has been patched numerous times and heavy debris from past patching material along curb line. Heavy scaling along abutment ends and bearing at beam 5 along pier upstream is undermined approx. 50% and should be fixed again. Structure needs extensive recon or replacement. (MK)

06/28/2017 - Bridge is in fair condition with chronic distress along the pier, been repaired multiple times, poor in roadway geometry and needs replacement. ~ MJ/MK

07/31/2013 – Structure continues to deteriorate along deck soffit, beams & substructure, undermining of bearing at pier sp 1 upstream needs to be patched. Since last inspection south approach had a sink hole and was filled in & has settled. Approaches need shimming. Structure needs extensive recon or full replacement. (MJK SP)

10/17/2011 – Satisfactory shape, fascias continue to deteriorate and need patching as full depth holes are spreading toward raveled portion, steel beams continue to slowly progressing deterioration along fascia beams. About 1 has moderate to heavier spalling and should be cleaned and patched, undermining of beam 5 at pier sp 1 needs repairs again as previous patching has broken away. Approaches need shimming. (MK JM)

Hydraulics

VT-155 is a Rural Major Collector Road therefore the Design Storm Flow is 2% AEP (Q50), and the Design Scour Event is 1% AEP (Q100).

The hydraulics section has returned an averaged bankfull width of 85 ft at this location.

The existing bridge has a hydraulic clear span of 162 ft, however there is no freeboard at either the 2% or 1% AEP. The existing structure does not meet current standards of the VTrans Hydraulic Manual.

This project is within the FEMA Special Flood Hazard Area with Base Flood Elevations (Zone AE). Any replacement structure 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 the hydraulics unit may be needed. This analysis did not include any temporary impacts associated with construction fill and/or a temporary bridge.

If the existing bridge is to be converted into a pedestrian structure on the existing abutments, the existing low chord elevation should be maintained.

If a new replacement structure is proposed, the Hydraulics unit recommends that the existing span and low chord elevation should be maintained to limit floodway encroachment. If the new structure requires a center pier, please coordinate with the Hydraulics unit to determine if the low chord elevation needs to be revised.

If the scope becomes more defined and it is determined that a full bridge replacement is warranted, then an updated analysis will need to be preformed.

For additional information, see the Preliminary Hydraulics Memo in Appendix E.

Geotechnical

The two closest wells with soil information are located approximately 218 ft and 528 ft from the project site, and reported bedrock at a depth of 85 ft and 87 ft, respectively.

Historic record plans of the reconstruction of the existing bridge, dated April 1974, show one boring was advanced in the area of the pier to a depth of 25.5 feet. No bedrock was encountered or detailed on the boring. The plans indicate that the abutments and piers are supported on spread footings.

If bridge rehabilitation is selected as the preferred alternative, a detailed geotechnical assessment of the substructures and foundations may be required to assess their capacity to support any proposed increase in loading. Repairs will be needed to meet the design life of any rehabilitation efforts. The geotechnical unit also recommends that scour protection be designed and added around the pier.

If a full bridge replacement option is chosen as the preferred alternative possible foundation options include the following:

- Reinforced concrete abutments and piers on piles or on spread footings on bedrock
- Integral abutments supported on a single row of H-piles

If a full replacement of the bridge is chosen as the preferred alternative, then additional borings are recommended. A minimum of one boring should be advanced at opposite corners of each abutment and one at the pier to assess the subsurface conditions more fully at the site. If bedrock is encountered during drilling operations, additional borings will likely be required to profile the bedrock elevation across the footprint of the proposed structure.

For additional information, see the Preliminary Geotechnical Report in Appendix F.

Utilities

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

Aerial:
- Green Mountain Power.
- Consolidated Communications
- Comcast
- Vermont Telephone Company, Inc.

Underground:
- Vermont Telephone Company

Municipal:

- None

Adjustments may need to be made to the existing utilities depending on the project scope of work.

For additional information, see the Existing Utilities Report in Appendix G.

Right-Of-Way

A 3-rod Right-of-Way (ROW) has been assumed for VT-155 in the project area. VT-155 has a nonconstant ROW width over the bridge itself but is larger than the 3-rod ROW. The ROW has been plotted, and can be seen in the Existing Conditions Layout in Appendix T. The bridge is located within the existing ROW. 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 in Appendix T, and are as follows:

Biological:

Wetlands/Watercourses

A stream that falls under the federal jurisdiction of the US Army Corps of Engineers runs through under Bridge 15.

Agricultural Soils

Castile gravelly fine sandy loam, 0 to 3 percent slopes is found at the project location and is a prime agricultural soil.

Wildlife Habitat & Aquatic Organism Passage

The bridge location is adjacent to a large, unfragmented, habitat block. This should not be impacted by the construction of the new bridge. The bridge at the intersection of VT Routes 115 and 103 overlies the Mill River, and has the capacity for aquatic organism passage.

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

According to the USFWS IPaC, the project is within the range of both the Northern long eared bat *(Myotis septentrionalis),* which is federally and state listed as endangered and the monarch butterfly *(Danaus plexiplus)*, which is a candidate species for listing on the endangered species list, but is not protected at this point.

There is no critical habitat at the project location. Running the IPaC FHWA determination key for the Northern long-eared bat yielded a result of no effect. A site visit was conducted on April 20th, 2023 and there were no visible signs that bats were using the bridge.

Invasive Species

None noted.

For additional information, see the Natural Resources ID in Appendix I.

Landscape Architecture

The recommendations from the VTrans Landscape Architect are as follows:

Minimize tree clearing in this area, and protect the existing canopy trees during construction. Minimize disturbance in the riparian buffer and develop a riparian planting plan for any disturbed riparian areas on this project. Consider including additional pedestrian facilities to connect with larger Town walkability and accessibility goals. Develop a plan to manage invasive species in the project area.

For additional information, see the Landscape Resources ID in Appendix J.

Hazardous Waste:

Multiple hazardous waste sites are identified within the proposed project area; Hazardous Site 20124273, for gasoline and Hazardous Site 20073630 for diesel, both sources originating from UST's. However, due to project scope, impacts to these sites are not anticipated. Coordination with the Project Contamination Engineer (PCE) is recommended. Both Hazardous waste sites 20073630 & 20124273 have Site Management Activities Completed (SMAC) designation.

Sections of the proposed project are located within Urban Background Soils areas as mapped on the ANR Atlas. Proposed project limits will determine if impacts are anticipated, and if coordination with the PCE is required. Disturbed soils within this project should be expected to be kept on site or follow VTrans guidance.

For additional information, see the Hazardous Waste Locations in Appendix K.

Historic:

Bridge 15 is not SR/NRHP eligible. There are no historic resources in the project area.

For additional information, see the Historic Resource ID in Appendix L.

Archaeological:

Wallingford contains archaeologically sensitive landforms along Village Street.

For additional information, see the Archaeological Resource ID in Appendix M.

Stormwater:

Depending on the amount of impervious area involved in the project, an Operational Stormwater permit may be required for this project. If a permit is needed, the project would qualify for using Chapter 6 of the 2017 Vermont Stormwater Management Manual as a Public Linear Transportation Project. There do not appear to be any existing stormwater permits near the site area.

This project site is not within a designated public water supply source protection area.

The project site does not include an impaired (303(d) list) or stressed waters.

It is strongly encouraged that drainage work associated with this project be aligned with the VTrans Phosphorus Control Highway Drainage Management Standards, as this may allow future credit toward achieving phosphorus reduction goals required by the Agency's TS4 permit.

For additional information, see the Stormwater Resource ID in Appendix N.

II. Safety

Crash Data:

During the five-year period prior to the bridge closing from 2018 to 2023, there were no recorded crashes on VT-155 near the project area.

Adjacent Projects:

There are no anticipated projects in the vicinity of the project area at this time.

III. Local Concerns

VTrans and the Town of Wallingford hosted a local concerns meeting in April 2023, during which the public voiced concern about detouring traffic to the VT-103/VT-140 intersection, as the intersection was sharp and did not provide enough room for trucks to safely turn. The intersection has since been improved to enable safe turning movements.

Additional concerns include VT-103 being too narrow to support traffic volumes, visibility at the VT-103/VT-140 intersection, motorists traveling at unsafe speeds along VT-103, the sharpness of the VT-103/VT-155 intersection causing vehicles to leave the pavement, and VT-155 being too narrow and not designed to handle heavy vehicle traffic.

The two residents on the stretch of VT-103 between VT-140 and VT-155 had concerns about an increase in traffic if the bridge were to be closed. Similarly, the residents of Village St had concerns about an increase in traffic if the bridge were to be reopened.

For additional information see the Local Concerns Meeting Summary Email in Appendix R.

IV. Maintenance of Traffic

Typically, the Vermont Agency of Transportation looks at three methods of maintaining traffic during construction of bridge projects: Off-Site Detour, Temporary Bridge, and Phased Construction. Since Bridge 15 is currently closed to vehicular traffic, keeping it closed is the only method being considered.

V. Alternatives Discussion

Bridge 15 is structurally deficient and is closed to traffic due to a deck failure. Traffic is currently detoured to the intersection of VT-103 and VT-140, which underwent improvements in 2023 to make the intersection more easily traversable for trucks and other large vehicles. See Appendix S for detour information.

No Action

The bridge is currently closed to vehicular traffic. As the bridge continues to deteriorate it will at a minimum need to be removed in its entirety to avoid becoming a safety and environmental hazard. The No Action alternative is not being considered.

Rehabilitation

The current deck and superstructure are rated at a 4 (poor) and 5 (fair) respectively. The substructure is rated as a 4 (poor). Extensive repairs would be needed to rehabilitate the bridge, and these repairs would not extend the structure's life sufficiently to make these repairs cost effective. These repairs would not improve the bridge's substandard geometry or meet hydraulic standards. The Rehabilitation alternative is not being considered.

Strategic Disinvestment – Permanent Bridge Closure

This alternative would close the bridge to traffic permanently. The intersection of VT-103 and VT-140 has been improved to allow for all traffic to use the intersection. This route serves as a short detour, adding 0.4 miles to the distance between the VT-155/VT-103 intersection and the VT-155/VT-140 intersection.

The work recommended for a permanent closure would be as follows:

- Work would need to be performed to prevent the existing structure from falling into the river; the existing deck and superstructure would be removed.
- The end of Village Street would be expanded to allow for a turnaround for maintenance trucks and other vehicles since the road would become a dead end. The turnaround would likely require permanent Right-of-Way to be acquired from adjacent landowners.
- Railing or fencing would be set along the existing abutments to eliminate a fall hazard.

Advantages: This alternative would have the lowest upfront and long-term maintenance costs. It would also reduce traffic along Village St.

Disadvantages: This alternative would eliminate access for pedestrians and bikes, in addition to vehicular traffic. It would also likely require the acquisition of permanent Right-Of-Way to build the turnaround. It would impact archaeologically sensitive areas.

New Pedestrian Bridge

This alternative would replace the existing bridge with a new pedestrian bridge. The new bridge would be closed to vehicular traffic, but would allow cyclists and pedestrians to use the crossing. The current substructure is rated as 4 (poor) but could likely remain in place with only minor repairs due to the decrease in structural capacity required for pedestrian loads. Additionally, though the abutments have areas of heavy deterioration, these areas seem to be centered on the abutment ends, leaving sufficient undamaged abutment to support a narrower pedestrian bridge.

The work recommended for a new pedestrian bridge would be as follows:

- Removal of current deck and superstructure.
- Repairs to existing abutments and pier.
- Building of the new deck and superstructure.

- The end of Village Street could be expanded to allow for a turnaround for maintenance trucks and other vehicles since the road would become a dead end. The turnaround would likely require permanent Right-of-Way to be acquired from adjacent landowners.

The current substructure is rated poor, but with repairs and with the pedestrian bridge only using part of the substructure, it is anticipated to last another 50 years.

Since the new pedestrian bridge would use the existing substructure, the new bridge would maintain the same length and alignment as the current bridge. The new pedestrian bridge would be narrower, with a width of 8'. This exceeds ADA standards and ensures bikers and pedestrians have enough space to comfortably pass, while being narrow enough to discourage cars from attempting to use the bridge. The new bridge would also use shallower beams, which will allow the bridge to pass the 2% AEP with 1' freeboard and meet hydraulic standards.

Advantages: This alternative would improve bike and pedestrian access to the structure. The new pedestrian bridge would have an anticipated lifespan of 50 years. It would also reduce traffic along Village St.

Disadvantages: This alternative would not allow for vehicular traffic. It would also likely require the acquisition of permanent Right-Of-Way to build a turnaround if deemed necessary. It would impact archaeologically sensitive areas.

Full Bridge Replacement

A full bridge replacement would entail removing the old bridge and placing a new bridge. Considerations for the new bridge include alignment, bridge width, bridge length and skew, superstructure type, and substructure type.

a. Alignment

The new bridge would match the existing alignment. The horizontal alignment on the southern approach is only just sufficient, but given the constraints of the river and surrounding buildings, this is likely the best alignment. Similarly, the vertical curvature on the northern approach is substandard; however, given how close the VT-155/VT-103 intersection is to the beginning of the bridge, there is likely no better alternate alignment.

b. Bridge Width

The existing width of the original bridge has 9 foot lanes with roughly 1 foot shoulders, with a total width of 20 feet rail-to-rail. Though this width just matches minimum bridge width requirements, it does not match the corridor width. It also does not meet bike access requirements or provide pedestrian access. If a new bridge is constructed, it should be widened to a 28 ft rail-to-rail width in order to match the approach roadway's 11' travel lane width and provide the 3' shoulders required to accommodate bicyclists.

c. Bridge Length and Skew

The existing bridge has a length of 180 feet, with a skew of 45 degrees. This gives an existing hydraulic clear span of approximately 162 feet, which meets hydraulic standards. The existing bridge does not pass the 2% AEP event with the required 1' of freeboard. Maintaining the current span would limit floodway encroachment, so the bridge's low chord should be raised by adjusting the grade or using shallower beams. Given the constraints of the alignments of Mill river, VT-155, and VT-103, the current bridge length and skew would be maintained.

d. Superstructure Type

The most economical bridge type used in Vermont is a composite steel with a concrete deck superstructure, typically cast-in-place given the 45 degree skew. These types of superstructures would require very little long-term maintenance. Additionally, this type of superstructure could span the required length, removing the need for a pier that would encroach on the floodway.

e. Substructure Type

Record plans show that the current abutments and piers are supported on spread footings.

Geotechnical recommends either reinforced concrete abutments and piers on spread footings or piles, or integral abutments supported on a single row of H-piles. A minimum of one boring would be advanced at opposite corners of each abutment and one at the pier to assess the subsurface conditions more fully at the site.

Advantages: This alternative would address the structural deficiencies of the existing bridge. The new bridge would have an anticipated lifespan of 75 years.

Disadvantages: This alternative would be the most expensive alternative. The alignment would not be improved, so the bridge would still have substandard vertical curvature on the northern approach.

VI. Alternatives Summary

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

Alternative 1: Strategic Disinvestment – Permanent Bridge Closure
Alternative 2: Strategic Disinvestment with Addition of a New Pedestrian Bridge
Alternative 3: Full Bridge Replacement

VII. Cost Matrix[1]

Wallingford BF 0133(18)		Alternative 0	Alternative 1	Alternative 2	Alternative 3
		Do Nothing	Strategic Disinvestment	Strategic Disinvestment with Addition of a New Pedestrian Bridge	Full Bridge Replacement
			Off-Site Detour		
COST	Bridge Cost	$0	$0	$1,048,000	$3,899,800
	Removal of Structure	$0	$514,280	$395,600	$514,280
	Roadway	$0	$146,000	$185,000	$337,000
	Maintenance of Traffic	$0	$0	$0	$0
	Construction Costs	$0	$660,280	$1,628,600	$4,751,080
	Construction Engineering & Contingencies	$0	$198,084	$244,290	$807,684
	Accelerated Premium	$0	$0	$0	$0
	Total Construction Costs w CEC	$0	$858,364	$1,872,890	$5,558,764
	Preliminary Engineering	$0	$198,084	$325,720	$712,662
	Right of Way	$0	$10,000	$10,000	$0
	Total Project Costs	$0	$1,066,448	$2,208,610	$6,271,426
	Annualized Costs	$0	N/A	$44,172	$83,619
SCHEDULEING	Project Development Duration	N/A	4 years	4 years	5 years
	Construction Duration	N/A	3 months	6 months	6 months
	Closure Duration	∞	∞	N/A	N/A
ENGINEERING	Typical Section - Roadway (feet)	2’-11’-11’-2’ (26’)	2’-11’-11’-2’ (26’)	2’-11’-11’-2’ (26’)	2’-11’-11’-2’ (26’)
	Typical Section - Bridge (feet)	1’-9’-9’-1’ (20’)	N/A	8’	3’-11’-11’-3’ (28’)
	Geometric Design Criteria	Substandard	N/A	Meets Minimum Standard	Meets Minimum Standard
	Traffic Safety	No Change	Improved	Improved	Improved
	Alignment Change	No Change	N/A	No Change	No Change
	Bicycle Access	No Change	No Change	Improved	Improved
	Pedestrian Access	No Change	No Change	Improved	No Change
	Hydraulics	Substandard	Improved	Meets Minimum Standard	Meets Minimum Standard
	Utilities	No Change	No Change	No Change	No Change
OTHER	ROW Acquisition	No	Yes	Yes	No
	Road Closure	Yes	Yes	Yes	Yes
	Design Life (years)	0	∞	50	75

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

VIII. Conclusion

VTrans recommends **Strategic Disinvestment** as the most cost-effective and practical solution for Bridge 15, with the option of constructing a new pedestrian bridge should the Town of Wallingford wish to maintain a connection between Village Street and VT-103.

Bridge 15 is in severely deteriorated condition, creating significant safety and structural concerns, and has been closed to traffic since the winter of 2023. At a minimum, the bridge must be removed. Strategic Disinvestment will include the removal of the existing structure, installation of guardrail, and construction of a turnaround at the new end of Village Street if deemed necessary by the Town.

If the Town desires a pedestrian connection, this option would also entail removing the superstructure of the existing bridge, repairing the substructure, and constructing a new pedestrian bridge. The construction of the pedestrian bridge would be funded through the State Highway Program with no local match; however, once built, the Town would assume ownership and long-term responsibility for maintenance. Village Street (the portion of VT Route 155 between VT Route 140 and Bridge 15) will be reclassified as a Class 2 Town Highway. This change will increase the Town's eligibility for supplemental state aid while also granting the Town authority over any future roadway decisions.

Vehicular traffic will not be maintained in either alternative, but the existing closure, combined with the short detour utilizing the VT-140/VT-103 intersection, makes this approach both practical and cost-effective. A new pedestrian bridge would remain open to both bicycle and pedestrian traffic. The roadway closure and detour, in place since 2023, have been functioning successfully and will continue permanently. To support long-term traffic management, VTrans will conduct traffic counts at the VT-103/VT-140 intersection and evaluate whether further improvements are warranted at that location or along VT-103. This recommendation balances safety, cost, and practicality, while leaving flexibility for the Town to determine whether a pedestrian connection is desired.

IX. Appendices

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Appendix A: Site Pictures

Looking south from 103 intersection

Looking north toward 103 intersection

Joint over pier and deck span 2


Deck over span 2

Upstream fascia

Downstream fascia

Span 1

Abutment 1

Upstream side of pier

Upstream side of pier

Loss of bearing area beam 5 abutment 1

Appendix B: Town Map

WALLINGFORD - MT. HOLLY VT 155 - BR 15

WALLINGFORD - MT. HOLLY INTERSECTION OF VT 140 & VT 103

Scale: 1:45,860

N

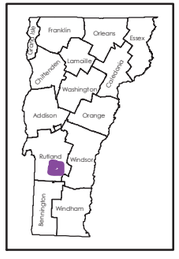
- INTERSTATE
- STATE LONG
- STATE SHORT
- TOWN LONG
- FEDERAL AID
- BIKE PATH
- INTERSTATE
- STATE HIGHWAY
- CLASS 1
- CLASS 2
- CLASS 3
- CLASS 4
- LEGAL TRAIL
- PRIVATE
- DISCONTINUED
- FEDERAL AID HIGHWAY
- MAINTENANCE DISTRICT

NEIGHBORING DISTRICT (WITH BUFFERED EXTENSION)

- 1 - Bennington
- POLITICAL BOUNDARY
- VTRANS REGION BOUNDARY
- NAMED RIVER-STREAM
- UNNAMED RIVER-STREAM
- Point from Local Bridge Data *
- Point from Local Culvert Data *

* Points are from local town bridge and culvert inventories. Some points may overlap where VTrans has also conducted an inventory on the Town highway.
Data source: VOBCIT aka VTCulverts

Produced by:
Mapping Section
Division of Policy, Planning and Intermodal Development
Vermont Agency of Transportation
April 2022



WALLINGFORD

COUNTY-TOWN CODE: **1125-0**
RUTLAND COUNTY
DISTRICT #3
District Long Name: Mendon District
VTrans Four Region: Southwest

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: Traffic Data

AGENCY OF TRANSPORTATION **OFFICE MEMORANDUM**

OPERATIONS & SAFETY BUREAU DATA MANAGEMENT UNIT

TO: Daniel Beard and Laura Stone

FROM: Scott Reigel, AOT Data Analyst

DATE: June 12, 2023

RE: WALLINGFORD BF 0133(18) 23B009
VT-155 (VT-103 to VT-140)
VT-140 (VT-155 to VT-103)
VT-103 (VT-155 to VT-140)
Length: 0.99
Length: 0.396 Begin Mile Marker: 0.235 End Mile Marker: 7.522
Length: 0.269 Begin Mile Marker: 0.143 End Mile Marker: 0.412
Length: 0.086 Begin Mile Marker: 6.173 End Mile Marker: 6.259
Length: 0.236 Begin Mile Marker: 6.259 End Mile Marker: 0.152

Please find below the requested traffic data for the above referenced 2028 project. The data consists of the AADTs and DHVs for 2028 and 2048, as well as the 20-year (2028 ~ 2048) and 40-year (2028 ~ 2068) flexible ESALs. Additionally, DHV diagrams for 2028 and 2048 are attached.

If you have any questions, please call me at (802) 595 2006 or email me at scott.reigel@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 1. **VT 103, VT 155 MM 0.235 (Wallingford) to VT 140 MM 7.522 (Mt Holly)**
Section 2. **VT 155, VT 140 MM 0.143 to VT 103 MM 0.412**
Section 3. **VT 140, VT 155 MM 6.173 to VT 155 6.259**
Section 4. **VT 140, VT 155 6.259 (Wallingford) to VT 103 0.152 (Mt Holly)**

Section	AADT		DHV		%T		%D		ADTT		ESALs	
	2028	2048	2028	2048	2028	2048	2028	2048	2028	2048	(2028~2048)	(2028~2068)
1	3535	3878	410	460	8.0%	9.5%	58%	58%	327	521	2224000	4927000
2	1301	1427	178	195	9.1%	10.9%	60%	60%	103	150	868,000	1851000
3	1414	1551	291	319	5.9%	8.6%	53%	53%	121	196	442000	1005000
4	641	703	100	110	3.1%	4.0%	62%	62%	62	95	418000	946000

Intersection 1. VT 155/VT 103
Section 5. **North Approach**
Section 6. **South Approach**
Section 7. **West Approach**

Intersection 2. VT 140/VT 103
Section 8. **North Approach**
Section 9. **East Approach**
Section 10. **South Approach**
Section 11. **West Approach**

Intersection	Section	AADT		DHV		%T		%D		ADTT	
		2028	2048	2028	2048	2028	2048	2028	2048	2028	2048
1	5	4445	4877	528	593	9.1%	11.2%	54%	54%	486	707
	6	3535	3878	410	460	8.0%	9.5%	58%	58%	327	521
	7	941	1033	124	139	9.1%	11.2%	60%	60%	103	150
2	8	3535	3878	410	460	8.0%	9.5%	58%	58%	327	521
	9	22	24	0	0	9.1%	11.2%	75%	75%	2	3
	10	3990	4377	456	511	9.1%	11.2%	56%	56%	436	634
	11	585	641	62	69	9.1%	11.2%	72%	72%	64	93

Appendix D: Bridge Inspection Report

VERMONT
AGENCY OF TRANSPORTATION

Route VT155 /
Structure #00015 / (Routine)
VT 00155 ML over MILL RIVER
Team Lead: Martin Kelley, **Inspection Date:** 04/15/2024

Town: 237 - WALLINGFORD

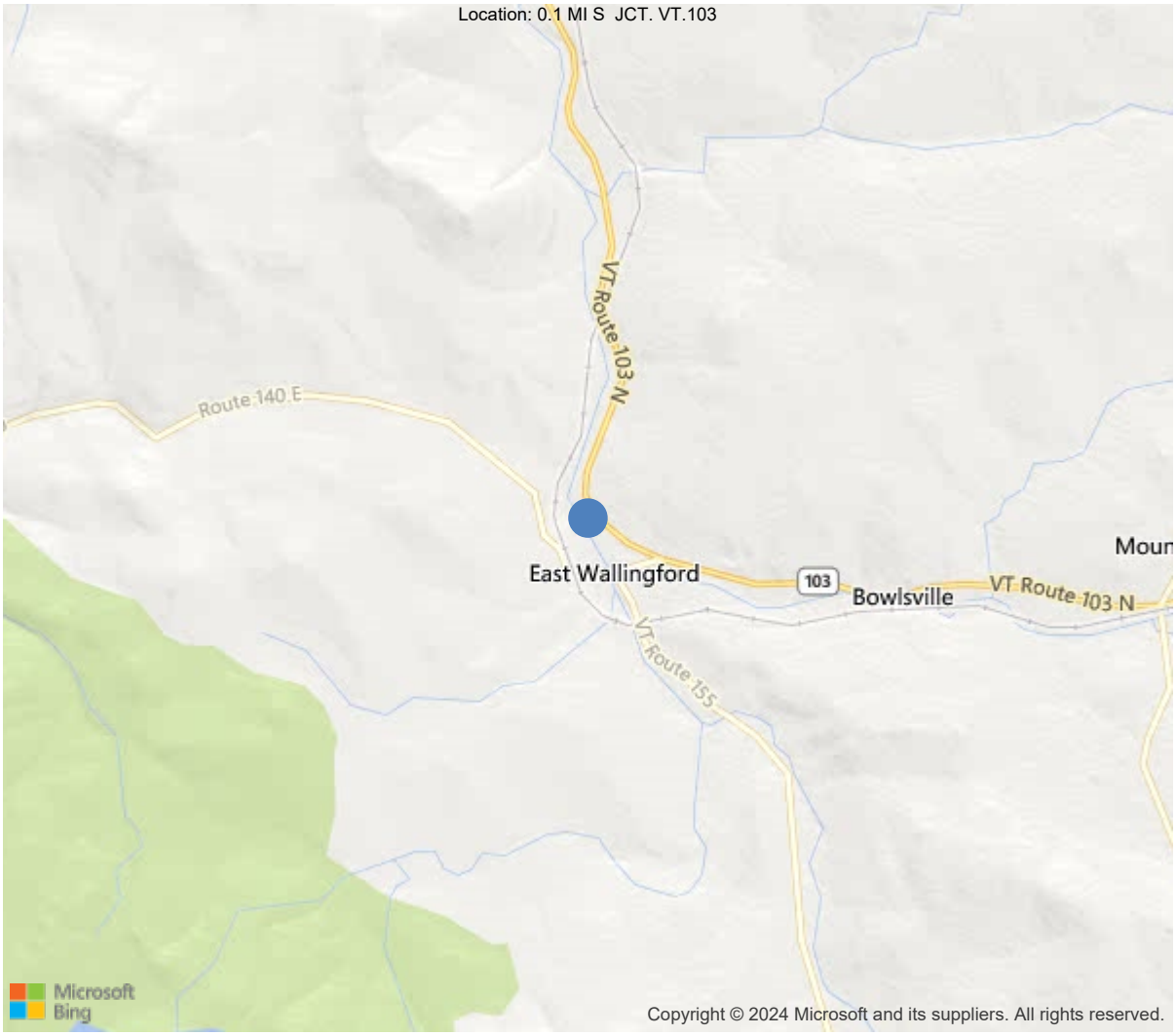
District 3, 21 - RUTLAND County

Owner: 1 - State Highway Agency

Maintenance Responsibility: 1 - State Highway Agency

VERMONT
AGENCY OF TRANSPORTATION

Route VT155 /
Structure #00015 / (Routine)
VT 00155 ML over MILL RIVER
Team Lead: Martin Kelley, **Inspection Date:** 04/15/2024



43.45299, -72.87599

VERMONT
AGENCY OF TRANSPORTATION

Route VT155 /
Structure #00015 / (Routine)
VT 00155 ML over MILL RIVER

Team Lead: Martin Kelley, **Inspection Date:** 04/15/2024

IDENTIFICATION	
(1) State Names	50 - Vermont
(8) Structure Number	200133001511252
(5) Inventory Route	1
(2) Highway Agency District	3 - District 3
(3) County Code	21 - RUTLAND
(4) Place Code	75925
(6) Features Intersected	MILL RIVER
(7) Facility Carried	VT 00155 ML
(9) Location	0.1 MI S JCT. VT.103
(11) Mile Point	0 mi
(12) Base Highway Network	No
(13) LRS Inventory Rte & Subrte	
(16) Latitude	43.4529888888889
(17) Longitude	-72.8759888888889
(98) Border Bridge State Code	
(99) Border Bridge Structure No.	
STRUCTURE TYPE AND MATERIAL	
(43) Main Structure Type	32
Material	3 - Steel
Type	2 - Stringer/Multi-beam or girder
(44) Approach Structure Type	00
Material	0 - Other
Type	0 - Other
(45) No. of Spans in Main Unit	2
(46) No. of Approach Spans	0
(107) Deck Structure Type	1 - Concrete Cast-in-Place
(108) Wearing Surface/Protective System	
Type of Wearing Surface	6 - Bituminous
Type of Membrane	0 - None
Type of Deck Protection	0 - None
AGE AND SERVICE	
(27) Year Built	1940
(106) Year Reconstructed	0
(42) Type of Service	15
On	1 - Highway
Under	5 - Waterway
(28) Lane	
On	2
Under	0
(29) Average Daily Traffic	1000
(30) Year of ADT	2018
(109) Truck ADT	6 %
(19) Bypass, Detour Length	1 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	86 ft
(49) Structure Length	180 ft
(50) Curb or Sidewalk Width	
Left	0 ft
Right	0 ft
(51) Bridge Roadway Width Curb to Curb	20.2 ft
(52) Deck Width Out to Out	23.3 ft
(32) Approach Roadway Width (W/Shoulders)	23 ft
(33) Bridge Median	0 - No median
(34) Skew	45 Deg
(35) Structure Flared	0 - No flare
(10) Inventory Route Min Vert Clear	99.99 ft
(47) Inventory Route Total Horiz Clear	20.2 ft
(53) Min Vert Clear Over Bridge Rdwy	99.99 ft
(54) Min Vert Underclear	0 ft
Ref:	
(55) Min Lat Underclear RT	0 ft
Ref:	
(56) Min Lat Underclear LT	0 ft
NAVIGATION DATA	
(38) Navigation Control	0 - No navigation control on w
(111) Pier Protection	
(39) Navigation Vertical Clearance	0 ft
(116) Vert-Lift Bridge Nav Min Vert Clear	0 ft
(40) Navigation Horizontal Clearance	0 ft

CLASSIFICATION	
(112) NBIS Bridge Length	Y
(104) Highway System	0
(26) Functional Class	7 - Rural Major Collector
(100) Defense Highway	0 - The inventory route is not
(101) Parallel Structure	N - No parallel structure exis
(102) Direction of Traffic	2 - way traffic
(103) Temporary Structure	
(105) Federal Lands Highways	0 - N/A
(110) Designated National Network	0 - The inventory route is not
(20) Toll	3 - On free road. The structu
(21) Maintain	1 - State Highway Agency
(22) Owner	1 - State Highway Agency
(37) Historical Significance	5 - Bridge is not eligible for
CONDITION	
(58) Deck	4
(59) Superstructure	5
(60) Substructure	4
(61) Channel & Channel Protection	5
(62) Culverts	N
LOAD RATING AND POSTING	
(31) Design Load	5 - MS 18 / HS 20
(63) Operating Rating Method	2
(64) Operating Rating	
Type	2 - Allowable Stress(AS)
Rating	0
(65) Inventory Rating Method	2 - Allowable Stress(AS)
(66) Inventory Rating	
Type	
Rating	0
(70) Bridge Posting	0 - > 39.9% below
(41) Structure Open/Posted/Closed	K - Bridge closed to all traff
APPRAISAL	
(67) Structural Evaluation	0
(68) Deck Geometry	0
(69) Clearances, Vertical/Horizontal	N
(71) Waterway Adequacy	6
(72) Approach Roadway Alignment	5
(36A) Bridge Railings	1 - Inspected feature meets current
(36B) Transitions	1 - Inspected feature meets current
(36C) Approach Guardrail	1 - Inspected feature meets current
(36D) Approach Guardrail Ends	1 - Inspected feature meets current
(113) Scour Critical Bridges	8 - Bridge foundations determined t
PROPOSED IMPROVEMENTS	
(75) Type of Work	35 - Bridge rehabilitation bec
(76) Length of Structure Improvement	180 ft
(94) Bridge Improvement Cost (Multiply value by 1000)	$ 1468
(95) Roadway Improvement Cost (Multiply value by 1000)	$ 50
(96) Total Project Cost (Multiply value by 1000)	$ 1518
(97) Year of Improvement Cost Estimate	2020
(114) Future ADT	1050
(115) Year of Future ADT	2028

INSPECTIONS *			
(90) Inspection Date			04/15/2024
(91) Frequency			12
(92) Critical Feature Inspection	Done	Freq. (Mon)	Date
A: Fracture Critical Detail	No		
B: Underwater Inspection	No		
C: Other Special Inspection			

* The inspection date and frequency information in this box contains the current NBI date and frequency information. Please refer to the report header for the date this inspection was conducted.

VERMONT
AGENCY OF TRANSPORTATION

Route VT155 /
Structure #00015 / (Routine)
VT 00155 ML over MILL RIVER
Team Lead: Martin Kelley, **Inspection Date:** 04/15/2024

Deck

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	4196	0	2098	2087	11
1080	Delamination/Spall/Patched Area	SF	11	0	0	0	11
1085	Delamination	SF	4185	0	2098	2087	0
304	Open Expansion Joint	LF	23	0	0	23	0
7000	Damage	LF	23	0	0	23	0
333	Other Bridge Railing	LF	360	0	180	180	0
1080	Delamination/Spall/Patched Area	LF	360	0	180	180	0
804	Concrete Fascia	LF	360	0	0	360	0
1080	Delamination/Spall/Patched Area	LF	360	0	0	360	0

58 - Deck (4 - POOR CONDITION - advanced section loss, deterioration, spalling or scour)
Since 01/2023 special inspection district forces has peel back pavement and exposed more of the rusted rebar. 1/9/2023 Bridge deck has formed a hole in span 2 along bay 1 Hole is approximately 3.5 x 2.5 feet with soft concrete around the hole. deteriorated concrete is possible for further full depth holes in the future, soft concrete along the curbs have worked into the driving lane with patched asphalt.

Soffit has cracking, leakage with rust staining. Bays 1 and 4 has most notable due to curb line leakage.

200 - Existing Wearing Surface Depth (2" approx)

A21 - Deck Wearing Surface Condition (Poor)
Poor condition along curb line with heavy breakup and past patching repairs. Patched areas along travel lanes and heavy patched material that has broken up over the years along curb line.

A24 - Deck Curb Condition (Poor)
Heavy spalling with exposed rebar and has been in deterioration condition for numerous years now.

A38 - Deck Drain Condition (Poor)
Heavy spalling and exposed rebar.

A39 - Deck Fascia Condition (Poor)
Heavy deterioration.

B.C.05 Bridge Railing Condition Rating (SATISFACTORY - Widespread minor or isolated moderate defects.)
Galvanized W beams and concrete post which have cracking and chips taking out and heavy deterioration along abutment 2 end downstream side

B.C.08 Bridge Joints Condition Rating (POOR - Widespread moderate or isolated major defects.)
Compression seal and still armor has couple of areas steel has broken out.

APPROACH

72 - Approach Roadway Alignment (5 - Somewhat better than minimum adequacy to tolerate being left in place as is)

A13 - Approach Rail Condition (Satisfactory)
Areas of bending and flattening of rail

A16 - Approach Post Condition (Good)

VERMONT
AGENCY OF TRANSPORTATION

Route VT155 /
Structure #00015 / (Routine)
VT 00155 ML over MILL RIVER
Team Lead: Martin Kelley, **Inspection Date:** 04/15/2024

B.C.06 Bridge Railing Transitions Condition Rating (SATISFACTORY - Widespread minor or isolated moderate defects.)

VERMONT
AGENCY OF TRANSPORTATION

Route VT155 /
Structure #00015 / (Routine)
VT 00155 ML over MILL RIVER
Team Lead: Martin Kelley, **Inspection Date:** 04/15/2024

Superstructure

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
107	Steel Open Girder/Beam	LF	895	745	100	50	0
1000	Corrosion	LF	150	0	100	50	0
515	Steel Protective Coating	SF	5134	4621	0	0	513
3440	Effectiveness (Steel Protective Coatings)	LF	513	0	0	0	513
311	Movable Bearing	EA	10	0	0	10	0
1000	Corrosion	EA	10	0	0	10	0
313	Fixed Bearing	EA	10	0	0	9	1
1000	Corrosion	EA	9	0	0	9	0
2240	Loss of Bearing Area	EA	1	0	0	0	1

59 - Superstructure (5 - FAIR CONDITION - all primary structural elements are sound but may have minor section loss, cracking, spalling or scour.)

A55 - Lateral Bracing Condition (Satisfactory)
Concrete diaphragm at pier and channel diaphragm.

A58 - Stringer Condition (Fair)
5 beams with section loss at exterior beam end and more notable at pier. Moderate to heavier rust scaling fascia beams deuce to curb slot leakage and leakage getting through deck.

A66 - Impact Damage ((Inactive) (Inactive) 2 - None)

B.C.07 Bridge Bearings Condition Rating (FAIR - Some moderate defects; strength and performance of the component are not affected.)
Bronze bearing with rust and pitting mainly exterior.

B.C.14 NSTM Inspection Condition (NOT APPLICABLE - Component does not exist.)

VERMONT
AGENCY OF TRANSPORTATION

Route VT155 /
Structure #00015 / (Routine)
VT 00155 ML over MILL RIVER
Team Lead: Martin Kelley, **Inspection Date:** 04/15/2024

Substructure

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
205	Reinforced Concrete Column	EA	6	6	0	0	0
210	Reinforced Concrete Pier Wall	LF	33	0	0	33	0
1080	Delamination/Spall/Patched Area	LF	33	0	0	33	0
234	Reinforced Concrete Pier Cap	LF	123	0	117	6	0
1080	Delamination/Spall/Patched Area	LF	6	0	0	6	0
1120	Efflorescence/Rust Staining	LF	117	0	117	0	0
800	Reinforced Concrete Wing/Retaining Wall	EA	4	0	0	3	1
1080	Delamination/Spall/Patched Area	EA	4	0	0	3	1

60 - Substructure (4 - POOR CONDITION - advanced section loss, deterioration, spalling or scour.)
Abutment 1: Cracking and leakage with heavy deterioration along southwest corner seating/stem interface with exposed rebar. Deterioration also along southeast end but not as notable

Abutment 2: Heavy end deterioration along northwest corner. Otherwise cracking and staining.
Pier looks to have settled some along upstream end

A71 - Abutment End Walls Condition (Fair)
Heavy deterioration along outer ends.

A77 - Retaining/Wingwall Condition (Poor)
Heavy scaling and cracking downstream most notable. Since last inspection spalling and deterioration has progress.

A81 - Pier Seat/Cap Condition (Fair)
Moderate to heavy cracking and past repairs done. Beam 5 seating area has been fixed a number of times now and keeps popping off. Bearing is presently undermined approx. 50%.

A83 - Pier Shaft Condition (Fair)
Cracking and past patch repairs.

A86 - Pier Footings Condition
Pier is on spread footing and pier looks to have settled along upstream end

CHANNEL

61 - Channel Condition (5 - Bank protection is being eroded. River control devices and/or embankment have major damage. Trees and brush restrict the channel.)
Some moderate scouring at pier. Channel has large amount of tree debris present along the upstream nose causing further restriction to channel and scouring at pier. Both abutments have large stone riprap in front for protection. Abutment #2 protection has fairly good grubbing material while abutment #1 has some areas where riprap has moved with very little grubbing material present.

B.C.10 Channel Protection Condition Rating (FAIR - Some moderate defects; performance of the channel protection is not affected.)
Stone along front of abutments and some material loss over the years and moderate to heavier loss away from structure

B.C.11 Scour Condition Rating
Minor to moderate localized scour is present along the upstream nose of pier due to restricted channel with tree debris present. Scour has filled in some and pier looks to have settled along upstream end

VERMONT
AGENCY OF TRANSPORTATION

Route VT155 /
Structure #00015 / (Routine)
VT 00155 ML over MILL RIVER
Team Lead: Martin Kelley, **Inspection Date:** 04/15/2024

GENERAL OBSERVATION

Since last inspection pier looks to have settled and most likely done during July 2023 flooding event

Structure is in poor condition due to deck failure and is closed. Heavy deterioration along curb line, deck has been patched numerous times and heavy debris from past patching material along curb line. Heavy scaling along abutment ends and bearing at beam 5 along pier upstream is undermined approx. 50% and should be fixed again. Structure need extensive recon or replacement.

VERMONT
AGENCY OF TRANSPORTATION

Asset **#200133001511252**(Routine)
District: 3, **County:** 21
Team Lead: Martin Kelley, **Inspection Date:** 04/15/2024

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	4196	0	2098	2087	11
1080	Delamination/Spall/Patched Area	SF	11	0	0	0	11
1085	Delamination	SF	4185	0	2098	2087	0
107	Steel Open Girder/Beam	LF	895	745	100	50	0
1000	Corrosion	LF	150	0	100	50	0
515	Steel Protective Coating	SF	5134	4621	0	0	513
3440	Effectiveness (Steel Protective Coatings)	LF	513	0	0	0	513
205	Reinforced Concrete Column	EA	6	6	0	0	0
210	Reinforced Concrete Pier Wall	LF	33	0	0	33	0
1080	Delamination/Spall/Patched Area	LF	33	0	0	33	0
234	Reinforced Concrete Pier Cap	LF	123	0	117	6	0
1080	Delamination/Spall/Patched Area	LF	6	0	0	6	0
1120	Efflorescence/Rust Staining	LF	117	0	117	0	0
304	Open Expansion Joint	LF	23	0	0	23	0
7000	Damage	LF	23	0	0	23	0
311	Movable Bearing	EA	10	0	0	10	0
1000	Corrosion	EA	10	0	0	10	0
313	Fixed Bearing	EA	10	0	0	9	1
1000	Corrosion	EA	9	0	0	9	0
2240	Loss of Bearing Area	EA	1	0	0	0	1
333	Other Bridge Railing	LF	360	0	180	180	0
1080	Delamination/Spall/Patched Area	LF	360	0	180	180	0
800	Reinforced Concrete Wing/Retaining Wall	EA	4	0	0	3	1
1080	Delamination/Spall/Patched Area	EA	4	0	0	3	1
804	Concrete Fascia	LF	360	0	0	360	0
1080	Delamination/Spall/Patched Area	LF	360	0	0	360	0

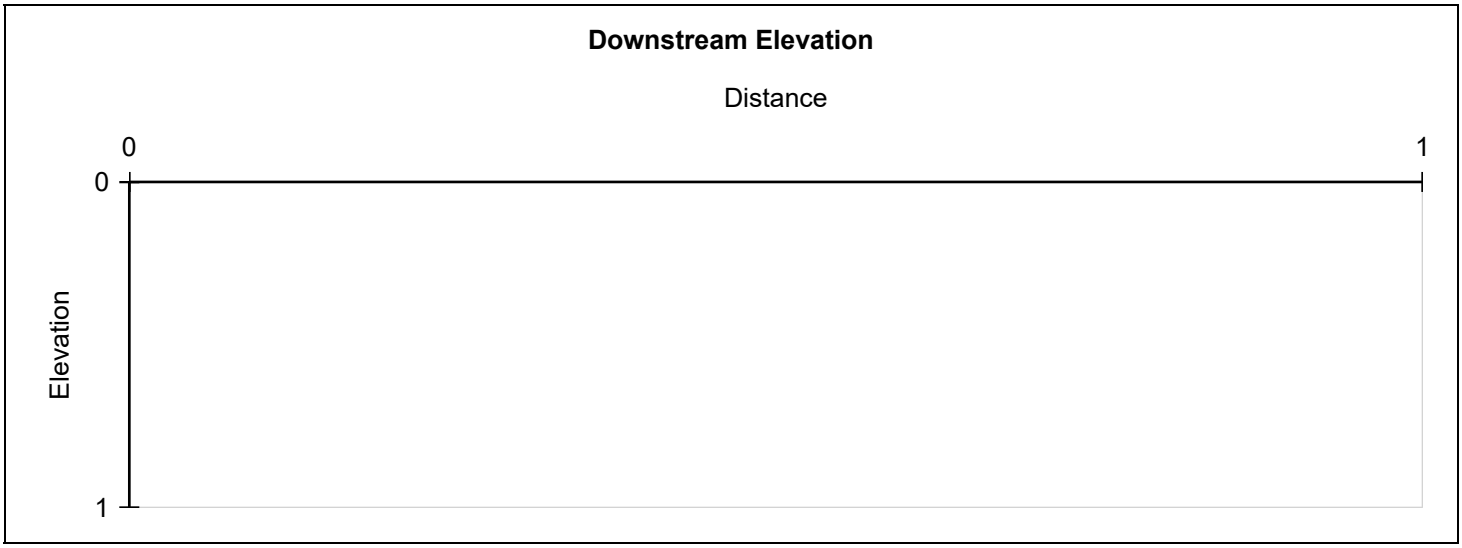
VERMONT
AGENCY OF TRANSPORTATION

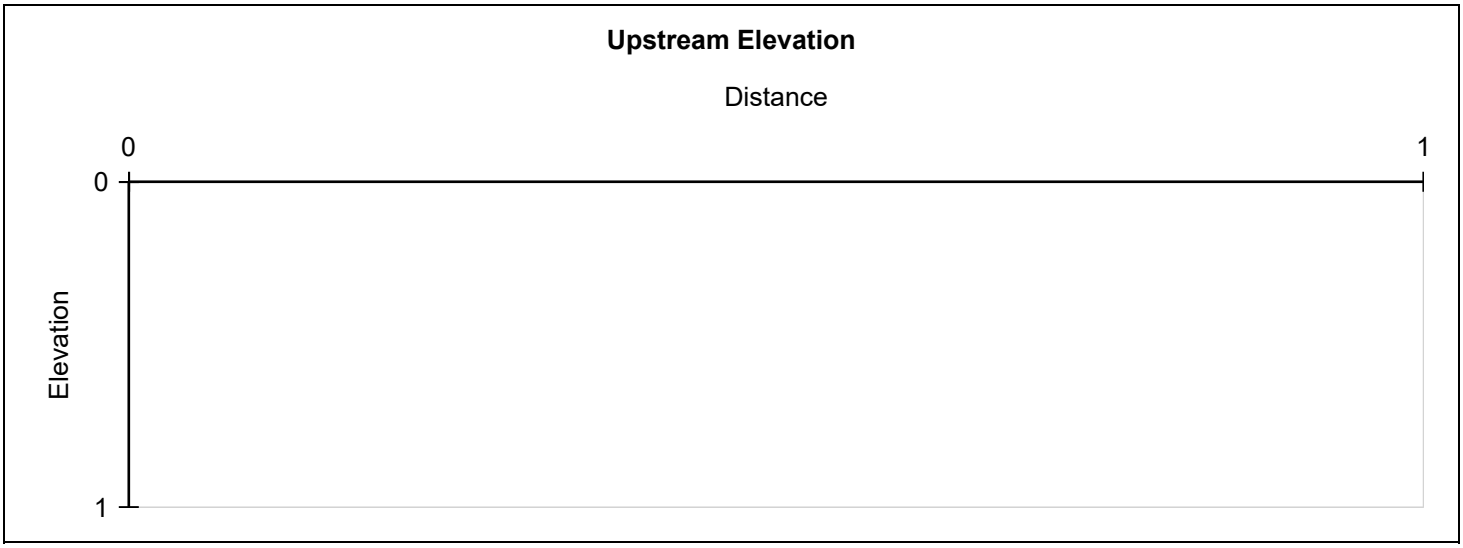
Route VT155 /
Structure #00015 / (Routine)
VT 00155 ML over MILL RIVER
Team Lead: Martin Kelley, **Inspection Date:** 04/15/2024

Channel Profile

Waterway Flow:	Top of Water:
Origin:	Bottom of Beam:

Station	Distance	Downstream	Upstream





VERMONT
AGENCY OF TRANSPORTATION

Route VT155 /
Structure #00015 / (Routine)
VT 00155 ML over MILL RIVER
Team Lead: Martin Kelley, **Inspection Date:** 04/15/2024

Abutment 1 approach

Abutment 2 approach

Bridge closed

Upstream rail

VERMONT
AGENCY OF TRANSPORTATION

Route VT155 /
Structure #00015 / (Routine)
VT 00155 ML over MILL RIVER
Team Lead: Martin Kelley, **Inspection Date:** 04/15/2024

Wearing surface and deck

Deck over span 2

Joint over pier and deck span 2

Upstream rail

VERMONT
AGENCY OF TRANSPORTATION

Route VT155 /
Structure #00015 / (Routine)
VT 00155 ML over MILL RIVER
Team Lead: Martin Kelley, **Inspection Date:** 04/15/2024

Down stream rail

Upstream fascia

Down stream fascia

Span 1

VERMONT
AGENCY OF TRANSPORTATION

Route VT155 /
Structure #00015 / (Routine)
VT 00155 ML over MILL RIVER
Team Lead: Martin Kelley, **Inspection Date:** 04/15/2024

Span 2

Abutment 1

Abutment 2

Pier from abutment 2

VERMONT
AGENCY OF TRANSPORTATION

Route VT155 /
Structure #00015 / (Routine)
VT 00155 ML over MILL RIVER
Team Lead: Martin Kelley, **Inspection Date:** 04/15/2024

Upstream side of pier

Upstream side of pier

West side of pier

Loss of bearing area beam 5 abutment 1

Loss of bearing area beam 1 abutment 1

VERMONT
AGENCY OF TRANSPORTATION

Route VT155 /
Structure #00015 / (Routine)
VT 00155 ML over MILL RIVER
Team Lead: Martin Kelley, **Inspection Date:** 04/15/2024

Maintenance Needs

Date Reported: 01/19/2022

Priority:	4 - Maintenance Finding - Next Inspection Cycle	**Status:**	Open
Type of Work:	3 - General - Replacement project	**Component:**	General

Deficiency Description

Structure is in fair condition. Heavy deterioration along curb line, deck has been patched numerous times and heavy debris from past patching material along curb line. Heavy scaling along abutment ends and bearing at beam 5 along pier upstream is undermined approx. 50% and should be fixed again. Structure need extensive recon or replacement.

Remarks

VERMONT
AGENCY OF TRANSPORTATION

Route VT155 /
Structure #00015 / (Routine)
VT 00155 ML over MILL RIVER
Team Lead: Martin Kelley, **Inspection Date:** 04/15/2024

Maintenance Needs

Date Reported: 01/09/2023

Priority:	4 - Maintenance Finding - Next Inspection Cycle	**Status:**	Open
Type of Work:	9 - Deck - Deck patching	**Component:**	Deck

Deficiency Description

Hole in the bridge deck in span 2 bay 1. Bridge closed as of 1/9/23

Remarks

VERMONT
AGENCY OF TRANSPORTATION

Route VT155 /
Structure #00015 / (Routine)
VT 00155 ML over MILL RIVER
Team Lead: Martin Kelley, **Inspection Date:** 04/15/2024

Maintenance Needs

Date Reported: 07/12/2023

Priority:	Flood Event	**Status:**	Open
Type of Work:	37 - Channel - Debris/Aggradation removal	**Component:**	Channel

Deficiency Description

July 2023 Flooding: Structure has large amount of large tree debris caught along the upstream side of pier #1 causing restriction in channel and should be removed.

Remarks

debris caught along the pier.

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] 802-595-6493

TO: Laura Stone, Structures Scoping Project Manager

CC: Patrick Ross, Hydraulics Engineer

FROM: Madeline Glow, Hydraulics Project Engineer

DATE: February 22, 2024

SUBJECT: Wallingford BF 0133(18), pin#23b009
Site location: Wallingford, VT-155 (Village Street), BR 15 over the Mill River
Coordinates: 43.453000, -72.876000

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

The Vermont Bankfull Width Regression Equation suggests a span of approximately 66 feet for a drainage area of this size. An averaged bankfull width of 85 feet was calculated based off of cross-sections cut both up and downstream of the bridge using LiDAR contours. A field visit with ANR was not performed due to the July 2023 Flood event. The existing bridge appears to span from top of bank to top of bank.

VT-155 is a Rural Major Collector road therefore the Design Storm Flow is 2% AEP (Q50) and the Design Scour Event is 1% AEP (Q100).

The following was analyzed:

Existing Conditions: Steel Beam Bridge

- 162 feet +/- hydraulic clear span with a low chord elevation of 1173.35 feet.
- There is no freeboard at either the 2% or 1% AEP's, respectively.
- The existing structure does not meet current standards of the VTrans Hydraulic Manual. Overtopping of Village Street occurs after the 1% AEP.
- The design scour elevation is 1448.54 feet at the 1% AEP.

This project is within the FEMA Special Flood Hazard Area with Base Flood Elevations (Zone AE). Any replacement structure 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 the hydraulics unit may be needed. This analysis did not include any temporary impacts associated with construction fill and/or a temporary bridge.

The scope of this project is still being determined and is between either rehabilitating the existing bridge into a pedestrian structure or a full bridge replacement. If the existing bridge is to be converted into a pedestrian structure on the existing abutments, the existing low chord elevation should be maintained. If a new replacement structure is proposed, the Hydraulics unit recommends that the existing span and low chord elevation should be maintained

to limit floodway encroachment. If the new structure requires a center pier, please coordinate with the Hydraulics unit to determine if the low chord elevation needs to be revised. Additionally, the existing conditions scour depths are to be used for estimating purposes only.

If the scope becomes more defined and it is determined that a full bridge replacement is warranted, please notify the Hydraulics section as we will need to perform an updated analysis. Please contact us with any questions.

Appendix F: Preliminary Geotechnical Memo

AGENCY OF TRANSPORTATION **OFFICE MEMORANDUM**

To: Laura Stone, P.E., Scoping Engineer

END

From: Eric Denardo, P.E., Geotechnical Engineer

Date: May 17, 2023

Subject: Wallingford BF 0113(18) Preliminary Geotechnical Information

1.0 INTRODUCTION

As requested, we have completed our preliminary geotechnical investigation of Bridge 15 on VT Route 155 over the Mill River in the Town of Wallingford, VT. Bridge 15 is located just south of the intersection of VT Route 103 and VT Route 155. The project consists of rehabilitation or replacement of the current two span, steel girder cast in place concrete deck bridge. This review included the examination of as-built record plans, water well logs and hazardous site information on file at the Vermont Agency of Natural Resources (ANR), as well as published surficial and bedrock geologic maps, and information we gained from in-house bridge inspection reports and photos. This project is currently in the scoping phase.

2.0 SUBSURFACE INFORMATION

2.1 Published Geologic Data

Mapping conducted in 1970 for the Surficial Geologic Map of Vermont, conducted in 1970, shows that the project site consists of postglacial fluvial deposits consisting primarily of alluvium (Doll, 1970).

According to the 2011 Bedrock Map of Vermont, published by the State of Vermont and USGS, the site is underlain with granodiorite Gneiss of the Proctor Hill Formation (Ratliffe, et. al, 2011).

The Geotechnical Engineering section maintains a GIS database of historical boring logs throughout the state, which contains electronic records of the majority of investigations completed in the past 10 years. During the research into this project, the database revealed no nearby projects within a 0.5-mile radius of the site.

2.2 Water Well Logs

The Vermont (ANR) documents and publishes a database of all public and private wells that have been drilled in the state. Published online, these logs may provide general characteristics of the soil strata and depth to bedrock in the area. The two closest wells with soil information, TAG 22 and WRN 16, are located approximately 218 ft and 528 ft from the project site, respectively, and reported bedrock at a depth of 85 ft and 87 ft, respectively.

2.3 Hazardous Materials and Underground Storage Tanks

The ANR Natural Resource Atlas also maintains records of any hazardous material sites and underground storage tanks. Their records show the location of the project is not on the Hazardous Site List. There is one hazardous site/waste generator within a 0.5-mile radius of the project site. The property north of the site is a gas station. According to the hazardous site report, contamination was encountered during the removal of the underground storage tank. This site is not anticipated to impact the project.

2.4 Record Plans

Historic record plans of the reconstruction of the existing bridge, dated April 1974, were reviewed as part of this investigation. The plans show one boring was advanced in the area of the pier to a depth of 25.5 feet. Based on the provided elevations, the boring shows a mixture of gravelly silt and silty sand to an approximate elevation of 459 feet. No bedrock was encountered or detailed on the boring. The plans indicate that the abutments and piers are supported on spread footings.

3.0 FIELD OBSERVATIONS

A site investigation was not conducted by Geotechnical Section staff however photos from bridge inspection reports and satellite imagery were reviewed to evaluate the feasibility of boring operations and assess general site conditions as they relate to the proposed project. Overhead utilities were visible crossing over VT 155 north and south of the bridge and along the west side of the bridge. Utilities can be seen in Figure 3.1. The utilities are likely far enough from the locations of the abutments and pier that they will not prevent borings from being advanced. If additional subsurface information is needed in the areas of the overhead utilities, geophysical techniques can be utilized. From the inspection photos there was no indication of bedrock outcroppings at the project site; however, there were cobbles and boulders present in the riverbed. This can be seen in Figure 3.2. Based on photos and the plans there is also riprap present at both abutments.

Figure 3.1: *Facing South on VT Route 115; overhead utilities parallel bridge and crossing south of abutment. [Inspection photo dated 2019]*

Figure 3.2: *Facing South; note boulders and cobbles in riverbed. [Inspection photo dated 2019]*

4.0 RECOMMENDATIONS

4.1 Bridge Rehabilitation Option

If bridge rehabilitation is selected as the preferred alternative, a detailed geotechnical assessment of the substructures and foundations may be required to assess their capacity to support any proposed increase in loading. From the inspection report, dated June 2021, the substructures are in fair condition but have significant spauling and cracking. Repairs will be needed to meet the design life of any rehabilitation efforts. We also recommend that scour protection meeting current agency requirements be designed and added around the pier.

4.2 Bridge Replacement Option

4.2.1 Preliminary Foundation Alternatives

Based on the information reviewed during this investigation, if a full bridge replacement option is chosen as the preferred alternative possible foundation options for the replacement structure include the following:

- Reinforced concrete abutments and piers on spread footings or piles
- Integral abutments supported on a single row of H-piles

4.2.2 Proposed Subsurface Investigation

If a full replacement of the bridge is chosen as the preferred alternative, we recommend a minimum of one boring be advanced at opposite corners of each abutment and one at the pier to assess the subsurface conditions more fully at the site including, but not limited to, the soil properties, depth to and characteristics of bedrock, and groundwater conditions. If bedrock is encountered during drilling operations, additional borings will likely be required to profile the bedrock elevation across the footprint of the proposed structure.

5.0 CLOSING

If a rehabilitation is selected as the preferred alternative, the Geotechnical Section can provide a detailed geotechnical assessment to evaluate the capacity of the abutments to support increased loading and check for any potential stability issues if required. If a bridge replacement is selected as the preferred alternative, the Geotechnical Engineering Section can assist in designing a subsurface investigation that efficiently gathers adequate information for the alternative chosen.

If you have any questions or would like to discuss this report, please contact the Geotechnical Section by email.

6.0 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, accessed 5/17/2023.

Review by: Callie Ewald, Geotechnical Engineering Manager CEE

cc: Electronic Read File/MG
Project File/CEE
END

Z:\Highways\CMB\GeotechEngineering\Projects\Wallingford BF 0113(18)\REPORTS\Wallingford BF 0113(18) Preliminary Geotechnical Report

Appendix G: Existing Utility Investigation

Wallingford BF 0133(18)

Existing Utilities within Project Limits Report

Wallingford VT Route 155 MM .367

AERIAL

-Green Mountain Power

-Consolidated Communications

-Comcast

-Vermont Telephone Company Inc.

UNDERGROUND

-Vermont Telephone Company

MUNICIPAL

-No Municipal Facilities

Adjustments may need to be made to the existing utilities depending on the project scope of work.

Appendix H: Resource ID Completion Memo

OFFICE MEMORANDUM

AOT - PDB - ENVIRONMENTAL SECTION

RESOURCE IDENTIFICATION COMPLETION MEMO

TO: Laura Stone, Project Manager
FROM: Mike Keedy, Environmental Specialist
DATE: August 9, 2023
Project: **Wallingford BF 0133(18) 23B009 (BR15 on VT155)**

ENVIRONMENTAL RESOURCES:

Archaeological Resources:	X		See Archaeological Resource ID Memo
Historic Resources:	X		See Historic Resource ID Memo
Wetlands:	X		See Natural Resource ID Memo
Aquatic Organism Passage:	X		See Natural Resource ID Memo
Agricultural Soils:	X		See Natural Resource ID Memo
Wildlife Habitat:		X	See Natural Resource ID Memo
Endangered Species:	X		See Natural Resource ID Memo
Stormwater Considerations:	X		See Stormwater Resource ID Memo
Landscape Considerations:	X		See Landscape Resource ID Memo
6(f) Properties:		X	See Environmental Specialist Resource ID Memo
Hazardous Waste:	X		See Environmental Specialist Resource ID Memo
Contaminated Soils:	X		See Environmental Specialist Resource ID Memo
Wild Scenic Rivers:		X	See Environmental Specialist Resource ID Memo
Act 250 Permits:		X	See Environmental Specialist Resource ID Memo
FEMA Floodplains:	X		See Environmental Specialist Resource ID Memo
Flood Hazard Area:	X		See Environmental Specialist Resource ID Memo
River Corridor:	X		See Environmental Specialist Resource ID Memo
Protected Lands:		X	See Environmental Specialist Resource ID Memo
US Coast Guard:		X	See Environmental Specialist Resource ID Memo
Lakes and Ponds:		X	See Environmental Specialist Resource ID Memo
Scenic Highway/ Byway:		X	See Environmental Specialist Resource ID Memo
Environmental Justice:		X	See Environmental Specialist Resource ID Memo
Other:		X	See Environmental Specialist Resource ID Memo

cc:
Project File

VERMONT

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

Agency of Transportation

Date: August 9, 2023
Project: **Wallingford BF 0133(18) 23B009 (BR15 on VT155)**

6(f) Properties:
There aren't any 6(f) Properties within the project area.

Hazardous Waste:
Multiple hazardous waste sites are identified within the proposed project area; Hazardous Site 20124273, for gasoline and Hazardous Site 20073630 for diesel, both sources originating from UST's. However, due to project scope, impacts to these sites are not anticipated. Coordination with the Hazard Waste Coordinator is recommended. Both Hazardous waste sites 20073630 & 20124273 have Site Management Activities Completed (SMAC) designation (See ANR documents in the folder).

Contaminated Soils:
Sections of the proposed project are located within Urban Background Soils areas as mapped on the ANR Atlas. Proposed project limits will determine if impacts are anticipated, and if coordination with the Hazard Waste Coordinator is required. Disturbed soils within this project should be expected to be kept on site or follow VTrans guidance.

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 are FEMA Floodplains mapped within the project area and a Flood Hazard Area/ River Corridor Permit may be required if there are impacts. An AE flood zone is located along the Mill River.

River Corridor:
There are River Corridors (Mill River and an unnamed perennial stream) mapped within the project area and a River Management Engineer consultation and Flood Hazard Area/ River Corridor Permit may be required 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 are no EJ populations present within the study area, therefore there is no potential to have a disproportionately high and adverse effect. No minority or low-income populations have been identified that would be adversely impacted by the proposed project as determined above. Therefore, in accordance with the provisions of E.O. 12898 and FHWA Order 6640.23A, no further EJ analysis is required.

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

Appendix I: Natural Resources ID

VERMONT

Jessie Johnson
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: Jessie Johnson, VTrans Biologist
Date: 4/29/2023
Subject: Wallingford BF 0133(18) 23B009 – Natural Resource ID

I have completed the natural resource ID for Wallingford BF 0133(18). This project has two distinct locations. The first location is the area around VT Route 115, Bridge 15 which includes the intersection of VT Routes 115 and 103. The second is located at the intersection of VT routes 140 and 103 in the town of Mt. Holly. My evaluation includes wetlands, wildlife habitat, agricultural soils, and rare, threatened, and endangered species.

Wetlands and Watercourses
A stream that falls under the federal jurisdiction of the US Army Corps of Engineers runs through under bridge number 15. There is an adjacent wetland advisory layer next to the intersection of VT Route 140 and VT Route 103. A site visit should be conducted to verify the boundaries of these wetlands.

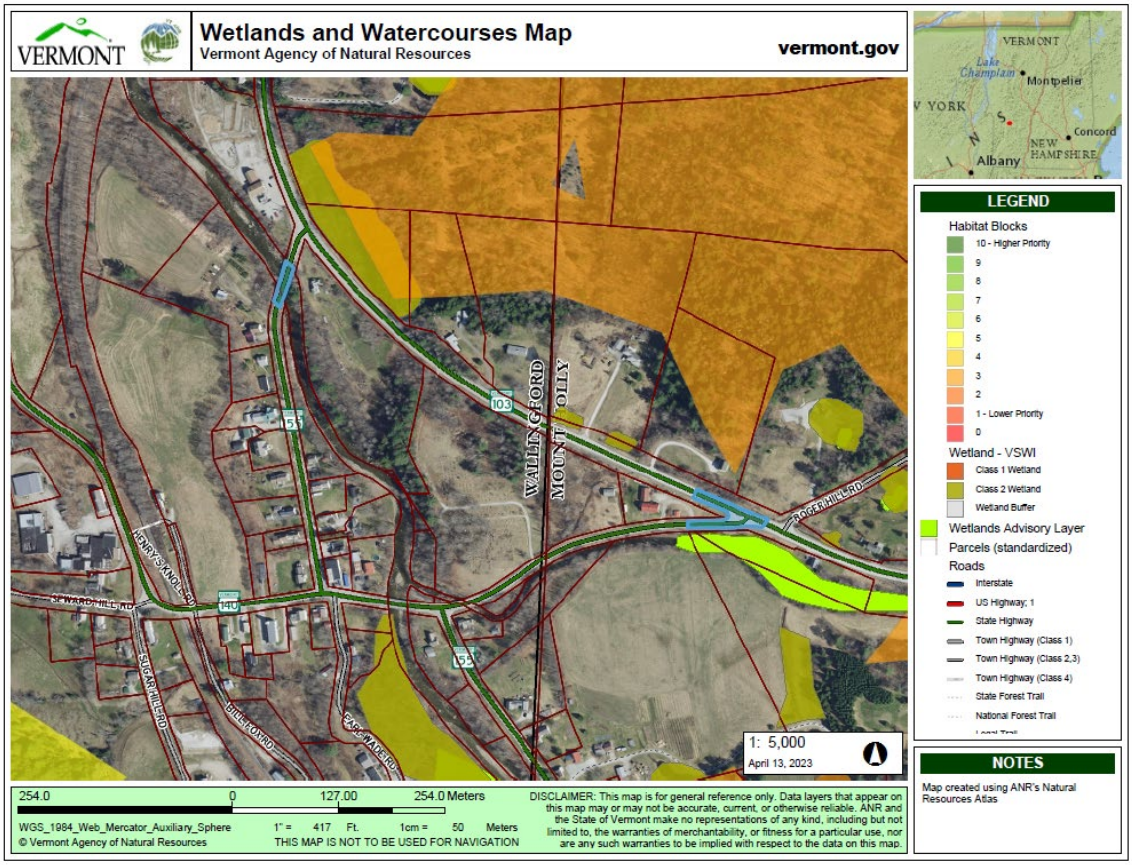


Figure 1: A map of the habitat block and wetland layers near the project locations.

Wildlife Habitat
The bridge location is adjacent to a large, unfragmented, habitat block. This should not be impacted by the construction of the new bridge. The bridge at the intersection of VT Routes 115 and 103 overlies the Mill River, and has the capacity for aquatic organism passage.

Agricultural Soils
Castile gravelly fine sandy loam, 0 to 3 percent slopes is found at both project locations and is a prime agricultural soil.

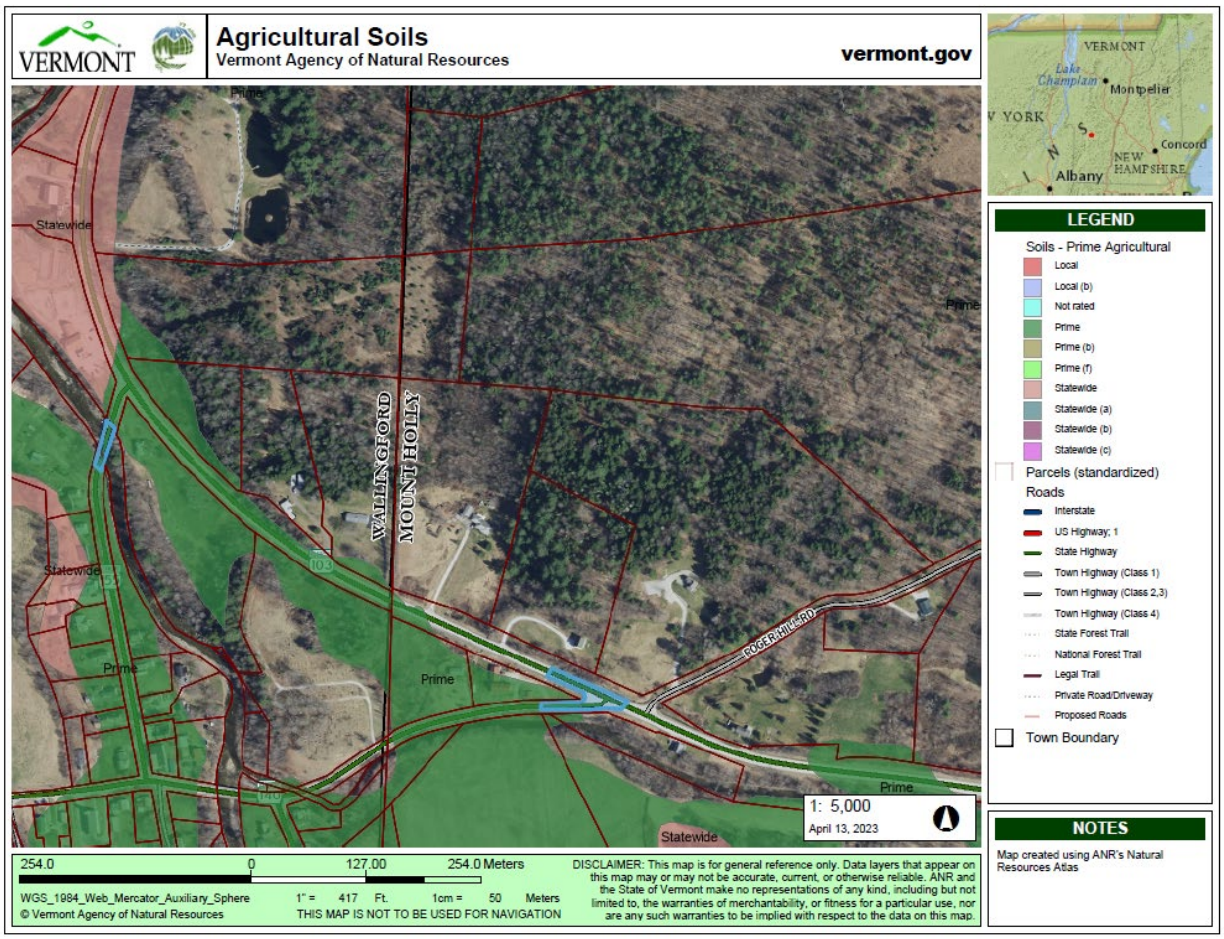


Figure 2: A map of the agricultural soils near the project site.

Rare, Threatened, and Endangered Species

I quiried the USFWS IPaC webtool and the Vermont ANR atlas for RTE mapping. According to the USFWS IPaC, the project is within the range of both the Northern long eared bat *(Myotis septentrionalis),* which is federally and state listed as endangered and the monarch butterfly *(Danaus plexiplus)*, which is a candidate species for listing on the endangered species list, but is not protected at this point. There is no critical habitat at the project location. I ran the IPaC FHWA determination key for the Northern long-eared bat and it yielded a result of no effect. A site visit was conducted on April 20th, 2023 and there were no visible signs that bats were using the bridge.

Photos from the April 20th, 2023 Site Visit:

Figure 1: Picture from the top of the bridge facing east

Figure 2: Picture from the side of the bridge, facing west

Figure 3: Picture under the bridge, facing north

Figure 4: Picture of the northeast side of the bridge

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: July 20, 2023
Project: **Wallingford BF 0133(18) 23B009**
Subject: Landscape (LA) Clearance for Resource ID

I have completed a desktop review of the proposed area for **Wallingford BF 0133(18) 23B009**, and found the following:

SITE DESCRIPTION
The bridge in Wallingford is flanked by a riparian buffer with mature deciduous trees and shrubs. The setting is residential, with single family homes close to both sides of the bridge. The bridge appears to be the start of the town's village setting.

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

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

2. Trees to protect:
    a. This project includes trees that should be protected, including:
        i. Trees and shrubs intentionally planted in front of residences.

3. Special site features:
    a. This project includes special site features that should be protected.
        i. The proximity of the bridge to a village setting.

4. Plants observed: (this is not a complete list of species on site)
    a. No plants were observed at this time. Please see Natural Resources clearance for more information.

5. Invasive species observed: (this is not a complete list of species on site)
    a. No species were observed at this time. Please see Natural Resources clearance for more information.

6. Accessibility & Pedestrian Realm:
    a. This project may benefit from the addition of accessible sidewalks and crosswalks.

COMMUNITY RESOURCES

Per the 2018 Wallingford Town Plan, the town intends to prioritize the development of new pedestrian facilities:

1. "The Planning Commission will work with the Prudential Committee and the Select Board to determine where new walking paths and new sidewalks could go. When: 2022." (Page 33).

RECOMMENDATIONS

1. Minimize tree clearing in this area.
2. Minimize disturbance in the riparian buffer.
3. Develop a riparian planting plan for any disturbed riparian areas on this project.
4. Tree protection shall be used for any trees with canopies within the area of construction, including:
    a. Intentionally planted trees on residential properties adjacent to the bridge.
5. Protect, maintain, and improve the accessibility, function, and safety of pedestrian infrastructure.
    a. Consider including additional pedestrian facilities on the bridge to connect with larger Town walkability and accessibility goals.
6. Develop a plan for managing invasive species in the project area.

NOTES

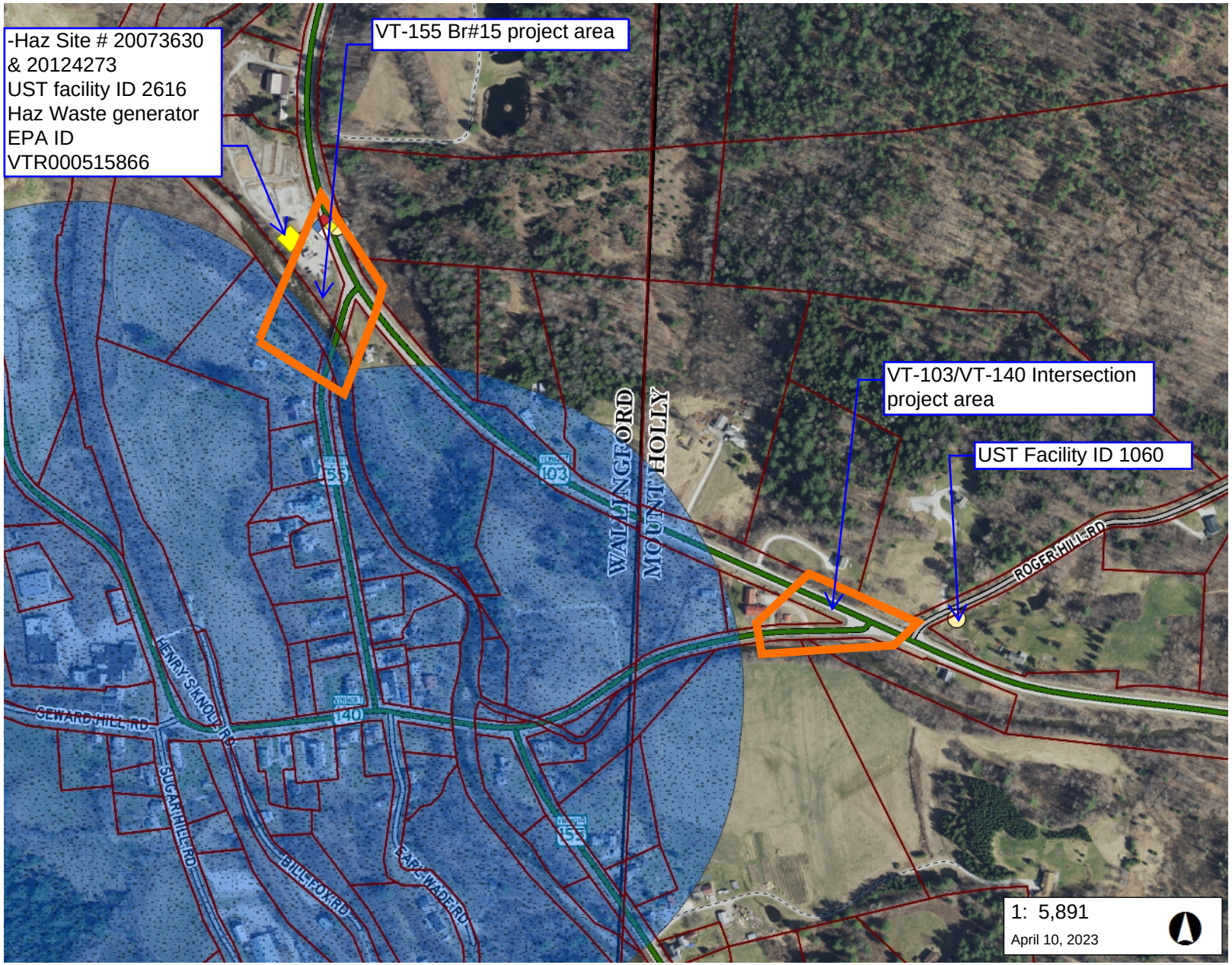
1. I am available to assist with landscape architectural design, including planting plans, plant lists, hardscape/pedestrian access plans, etc. (bonnie.donahue@vermont.gov).

Appendix J: Hazardous Waste Locations

Hazardous Waste Urban Soils Map

Vermont Agency of Natural Resources

vermont.gov



LEGEND

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)

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

299.0 0 150.00 299.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 491 Ft. 1cm = 59 Meters

THIS MAP IS NOT TO BE USED FOR NAVIGATION

VERMONT

State of Vermont

AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation
Waste Management Division
103 South Main Street/West Building
Waterbury, VT 05671-0404
(802) 241-3888
FAX (802) 241-3296
Chuck.Schwer@state.vt.us

October 16, 2009

Dan Poalino, Sr. Vice President
Sherman V. Allen Real Estate
126 Post St.
PO Box 865
Rutland, VT 05701

RE: Site Management Activities Completed
Site: Mac's Market, VT Route 103, Wallingford, VT (SMS Site #2007-3630)

Dear Mr. Poalino:

The Sites Management Section (SMS) has received the notification of well closure for the above referenced site, which was submitted by Lincoln Applied Geology (LAG) and dated August 27, 2009. Contamination was discovered at this property during the removal of a diesel UST. Based on the information we have received, the following conclusions have been made:

- In October of 2006, a leak was discovered at the site originating from the onsite diesel pump. The leak was found to have impacted soils beneath the pump island. LAG was contacted to conduct a subsurface investigation to evaluate to severity of the release.

- On November 6, 2006, LAG oversaw the installation of five soil borings (SB-1 through SB-5), two of which were developed into groundwater monitoring wells (MW-1 and MW-2). During this process, soils screened for volatile compounds using a photoionization detector (PID) had readings up to 100 parts per million (ppm). The highest PID readings were recorded in the soil boring immediately downgradient of the source area. Groundwater depths at the site ranged from approximately 6 to 10 feet below grade. Bedrock was not encountered during the investigation activity. Groundwater samples were collected from the two onsite monitoring wells and analyzed for volatile organic compounds (VOCs). MW-1, the well downgradient of the source area, had several petroleum compound concentrations exceeding the Vermont Groundwater Enforcement Standards (VGES). There was speculation the samples were mislabeled during the initial sampling event, but subsequent monitoring events suggest that it was MW-1, not the source area well (MW-2), that exhibited the highest levels of contamination during this monitoring event.

- On April 24, 2007, groundwater samples were collected from the two onsite monitoring wells and the onsite drinking water supply and analyzed for VOCs. MW-1 had petroleum compound concentrations similar to those recorded in December, 2006. No significant VOCs were detected in MW-2.

- The two monitoring wells were sampled again on March 28, 2008. The results showed elevated levels of several petroleum constituents in MW-1. Naphthalene concentrations exceeded the VGES. No significant contamination was detected in MW-2. Contaminant concentrations were significantly

OVER→

lower than the previous sampling event, while groundwater elevations were roughly the same.

- On April 13, 2009, groundwater samples were collected from the two onsite monitoring wells (MW-1 and MW-2) and analyzed for VOCs. Several petroleum compounds were detected in MW-1, though none exceeded the VGES. No VOCs were detected above the minimum laboratory enforcement standards in MW-2 for the second consecutive monitoring event.

- LAG conducted a survey of sensitive receptors as part of this investigation. Potential receptors identified at this property include groundwater, soils, the nearby Mill River and drinking water. No petroleum compounds were detected in a sample taken from the onsite drinking water supply well. No visual evidence of petroleum contamination was observed on the banks of the Mill River. Groundwater and soil impacts appear to be confined to the area immediately surrounding the diesel pump.

- LAG confirmed the monitoring wells at the site were properly closed at the site on August 11, 2009.

- No unacceptable risk to human health or the environment is believed to be present due to any residual contamination remaining at the site from diesel pump.

Based on the above, the SMS is assigning this property a Site Management Activity Completed (SMAC) designation. The SMAC designation will not release the owner(s) of the property from any past or future liability associated with the petroleum contamination at the site. It does, however, mean that the SMS is not requesting any additional work in response to the contamination discovered next to the diesel pump in 2006.

Please feel free to call myself or Ashley Desmond of the SMS at (802) 241-3888 if you have any questions.

Sincerely,

Chuck Schwer, Section Chief
Sites Management Section

c: Dagan Murray, LAG (submitted via e-mail)
DEC Regional Office – Rutland (submitted via e-mail)
Wallingford Selectboard
Wallingford Health Officer

VERMONT

AGENCY OF NATURAL RESOURCES

State of Vermont
Department of Environmental Conservation
Waste Management & Prevention Division
1 National Life Drive – Davis 1
Montpelier, VT 05620-3704
chuck.schwer@state.vt.us

May 23, 2013

Dan Poalino
SV Allen, Inc.
PO Box 865
Rutland, VT 05702-0865

RE: Site Management Activity Completed, Mac's Market, VT Route 103, East Wallingford, VT (SMS Site #2012-4273)

Dear Mr. Poalino,

The Sites Management Section (SMS) has received confirmation of monitoring well closure for the above referenced property. Subsurface contamination was encountered at this site during the removal of a gasoline underground storage tank (UST). Based on the information presented in the report, we have made the following conclusions:

- On July 15, 2011, Wheeler Environmental Services conducted subsurface investigation during the removal of a 10,000-gallon gasoline UST. The UST and associated piping were said to be in fair condition. Soils surrounding the former tank and canopy for the fuel dispensers that were screened for petroleum vapors using a photoionization detector (PID) had readings up to 510 parts per million (ppm). A confirmatory groundwater sample was collected from beneath the tank and was found to have detectable concentrations of several volatile organic compounds (VOCs). Benzene levels were in excess of the Vermont Groundwater Enforcement Standards (VGES). The full extent of contamination was not determined. It was noted that soil contamination extended to depths below the shallow groundwater interface.

- Site investigation activities conducted on July 12, 2012 involved the installation of 3 soil borings/ groundwater monitoring wells (MW-1 through MW-3). During the installation process, soils screened with a PID had no readings above 5.8 ppm. Soil samples were collected from the borings and analyzed for VOCs using EPA Method 8260 and for total petroleum hydrocarbons (TPH) using EPA Method 8015B. No VOCs were detected above the minimum laboratory detection levels. The maximum TPH concentration recorded was 9.6 ppm.

- On July 27, 2012, groundwater samples were collected from the monitoring wells and analyzed for VOCs using EPA Method 8260. Several VOCs were detected in the monitoring wells, though at concentrations below the VGES.

- A survey of sensitive receptors was conducted as part of the investigation work. Potential receptors at this site include drinking water, surface water, groundwater, indoor air and soils. A drinking water sample was collected from the onsite bedrock supply well and analyzed for VOCs using EPA Method 524.2. No contamination was recorded above the minimum laboratory detection levels in this sample. The indoor air spaces adjacent to the former tank were screened with a PID and no elevated readings were recorded. Based on the low VOC concentrations recorded during the site investigation

OVER→

work, it does not appear that there is a significant risk to surface water (the nearby Mill River) or shallow groundwater from the gasoline contamination. There do not appear to be exposure points for the residual soil and groundwater contamination.

- The monitoring wells at the property were closed on April 24, 2013.

- No unacceptable risk to human health or the environment is believed to be present due to any residual contamination remaining at the site from the former gasoline UST.

Based on the above, the SMS is assigning this property a Site Management Activity Completed (SMAC) designation. The SMAC designation will not release the owner(s) of the property from any past or future liability associated with the petroleum contamination at the site. It does, however, mean that the SMS is not requesting any additional work in response to the contamination discovered during the closure of the UST in 2011.

Please feel free to call myself or Ashley Desmond of the SMS at (802) 828-1138 if you have any questions.

Sincerely,

Chuck Schwer, Section Chief
Site Management Section

c: James Donaldson, Wilcox & Barton
DEC Regional Office – Rutland
Wallingford Selectboard
Wallingford Health Officer

Appendix K: Historic Memo

VERMONT

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

To: **Julie Ann Held, Environmental Specialist**

From: Kaitlin O'Shea, VTrans Consulting Architectural Historian / VHB Senior Preservation Planner

Date: **August 1, 2023**

Subject: Historic Resource Identification for Wallingford BF 0133(18)

I have completed a resource identification (ID) for Wallingford VF 0133(18). At this time the project is to improve the intersection of VT Route 103 / VT Route 140. This ID includes an APE surrounding Bridge No. 15, as well, for future planning purposes. Bridge 15 carries VT Route 155 (Village Street) over the Mill River in East Wallingford, VT.

This Resource ID effort is being undertaken to provide information to the VTrans team working on the proposed improvement project. Toward that end, VTrans Cultural Resources staff have identified historic resources within the two preliminary Areas of Potential Effect (APEs) to ensure the designers are aware of above-ground cultural resources that could be affected by a project. See attached APE maps, the Northern APE and the Eastern APE. Once the project is defined at the Conceptual Design phase, Cultural Resources staff will be able to determine a formal APE for purposes of Section 106 and 22 VSA § 14.

This Resource ID is organized by areas of study and addresses Bridge No. 15, the East Wallingford Historic District, VT Route 155, the properties at the Route 140 / Route 103 intersection, and the properties at the VT Route 103 / VT Route 155 intersection.

In summary, the historic resources include the properties in the State Register listed / National Register eligible East Wallingford Historic District, which is recommended for a boundary expansion including Village Street, Main Street, and side streets. Bridge No. 15 is not eligible for individual listing in the National Register nor is it recommended for inclusion within the East Wallingford HD.

The Section 4(f) resources are the historic resources. There are no Section 4(f) parks or wildlife/waterfowl refuges.

The APE map is attached. Photographs and historic maps are included throughout this memo.

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

Bridge No. 15

Bridge 15 is a 2-span steel multi-beam bridge constructed in 1940 with a cast in place concrete deck and a railing consisting of art deco concrete posts that previously supported cable railings. The cables have been removed and replaced with w-beam railing. The bridge sits on concrete abutments. Bridge No. 15 is classified as Type 302 (Steel Stringer / Multi-beam / Girder bridge) in the *Metal Truss, Masonry, and Concrete Bridges of Vermont, 1820-1978*, Multiple Property Documentation Form (MPDF). Type 302 is the most common highway bridge in Vermont, comprising 55 percent of bridges constructed between 1940 and 1978. It was the most prevalent bridge type in the United State for much of the 20th century because of its simplicity in design, fabrication, and erection and its low first-cost and life-cycle cost. A typical original railing on a Type 302 bridge includes concrete posts supporting steel cables (Rail Type 14). A 1970s photograph (see Figure 1) shows the intact railing. In 1974, a new pier cap was added to the bridge (project plot set name 74s1576). W-beam railing, frequently used beginning in the 1980s, was installed after the 1974 project (see Figure 2). The current Bridge No. 15 replaced a steel bridge, which is shown on the 1938 Sanborn Fire Insurance Map (see Figure 9).

Figure 1: Bridge No. 15, 1974, looking south on Village Street / VT Route 155 (then School Street) towards the East Wallingford Historic District. This photograph was taken prior to w-beam installation, a common treatment in the 1980s. Image courtesy of UVM Landscape Change.

Figure 2: Bridge No. 15 as seen in a VTrans inspection photo, 2017. Looking south on Village Street / VT Route 155.

Figure 3: VTrans inspection photo, 2017, shows the deteriorated curb and scuffer, as well as the installed w-beam.

Figure 4: VTrans inspection photo, 2017, shows the deterioration and exposed rebar.

Per the MPDF, in order for a steel bridge to be individually eligible under Criterion A, it must be:

(1) A large bridge establishing the first highway crossing of a major waterway at a given location.
(2) A bridge that established a new highway transportation corridor and can be shown to have been the direct cause of significant development or changes in land use.
(3) A bridge that was part of a major state highway project or bridge building initiative, which would include major post-flood bridge building programs, and possess special characteristics, associations, or integrity that distinguish it as an exceptional representative of its type.

Bridge No. 15 does not meet the above criteria. It is not the first highway crossing at this location. The bridge was constructed during an era of prolific bridge; however, VT Route 155 was not incorporated into the State Highway System until 1970 and is unlikely to be part of the larger state bridge building initiative, even though its design may be similar.

In order for a steel bridge to be individually eligible under Criterion C, it must be:

(1) A well-preserved example of its type. To be a well-preserved example it must retain character-defining features.
(2) A rare survivor of a once common type.
(3) Exceptional example of work by an important engineer, architect or firm.
(4) Innovative, specialized, or patented designs of recognized importance.
(5) Large bridge of exceptional span or length.
(6) Architecturally designed bridges of recognized aesthetic importance.

Bridge No. 15 is not a well-preserved example of its type, as many character defining features have been removed or have deteriorated (see Figures 2-4). The curb is deteriorated or missing, with extensive rebar exposed. Many of the spaces in the curb (scuffers) are no longer recognizable. The cables have been removed.

W-beams have been installed with wood blocks attached to concrete. The remaining features are the stepped / deco concrete posts. It is a survivor of a once common type, but it does not retain many of its character defining features due to its poor condition. It is not an exceptional example and is not an innovative, specialized, or patented design. It is not a large bridge of exceptional span or length. It was not architecturally designed. For these reasons, Bridge No. 15 is ineligible for individual listing in the National Register.

East Wallingford Historic District

East Wallingford grew into a flourishing manufacturing and commercial center in the years after the 1849 completion of the Bellows Falls to Rutland Railroad through the NE corner of the town. Although mills and tanneries have disappeared, the houses, stores, a church, and school, all built about 1860, remain to indicate the rapid development of the town. The Rutland to Bellows Falls Railway, constructed through the northeast corner of Wallingford in 1849, created a convenient shipping route for the lumber produced in places like Centreville. A depot located near a tannery on the Mill River was soon surrounded by the village of East Wallingford, a focal point for trade in eastern Wallingford and western Mount Holly.

The East Wallingford Historic District is listed in the Vermont State Register of Historic Places ("State Register") (1980) with 18 properties (17 contributing, 1 non-contributing). The historic district centers on the School Street (now called Village Street) / Route 140 intersection with properties to the north on School Street. School Street / Village Street is part of VT Route 155, designated as such in 1973.

The existing State Register historic district does not include properties on the northern portion of Village Street and it does not include Bridge No. 15. See Figure 5 and Figure 6, below. The State Register boundary leaves out five properties and one bridge from the historic district. Those not included in the historic district on Village Street are 240 Village Street, 187 Village Street, 175 Village Street, 147 Village Street, and 111 Village Street. While these properties appear on historic maps, their integrity has been diminished due to alterations.

The majority of these properties (111, 147 (garage), 175, 187, 240 Village Street) and Bridge No. 15 are ineligible for inclusion in the East Wallingford Historic District due to loss of historic integrity. 147 Village Street (house) is eligible for inclusion. These properties are discussed following Figures 5-6.

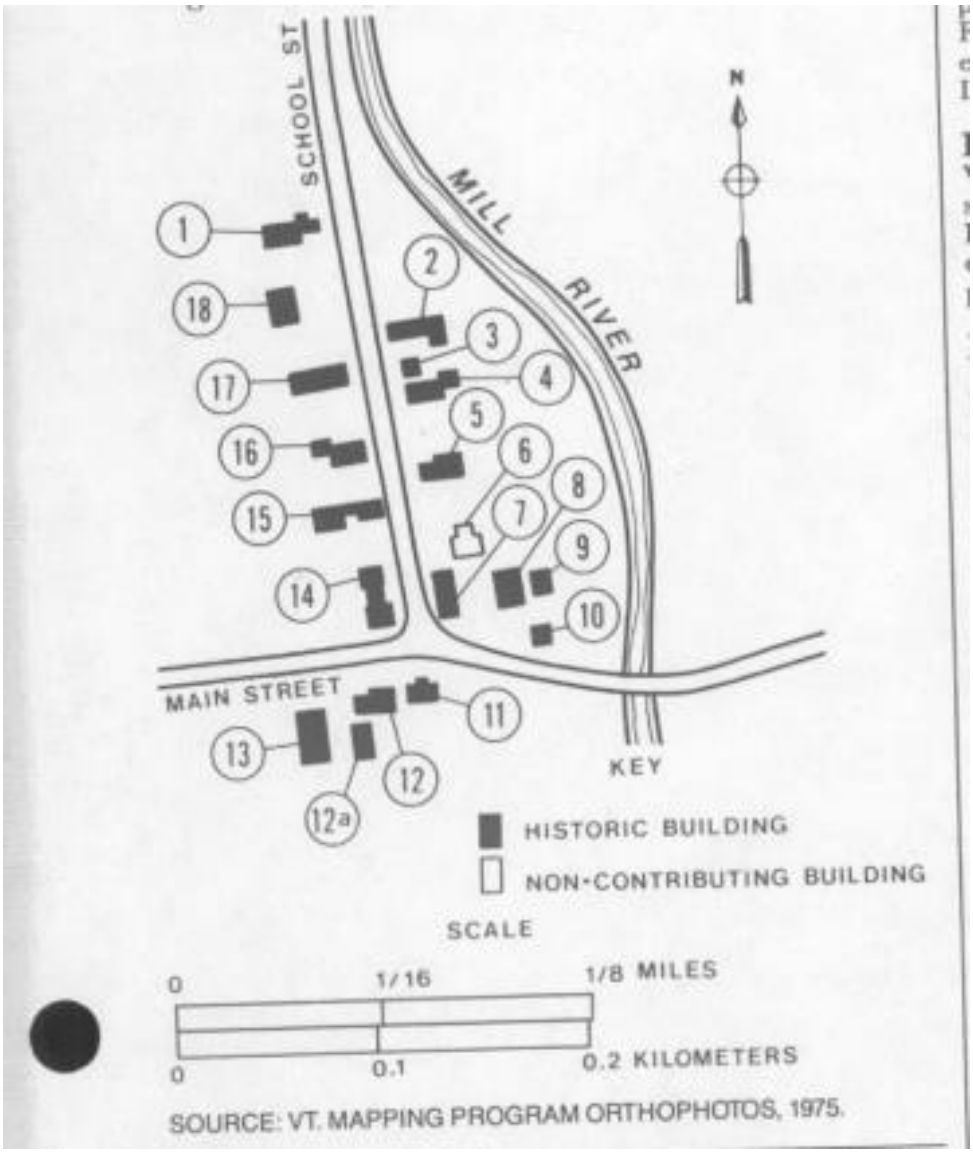


Figure 5: The East Wallingford Historic District, which is listed in the State Register. Note that #18 is the former schoolhouse (93 Village Street) and #1 is 115 Village Street.

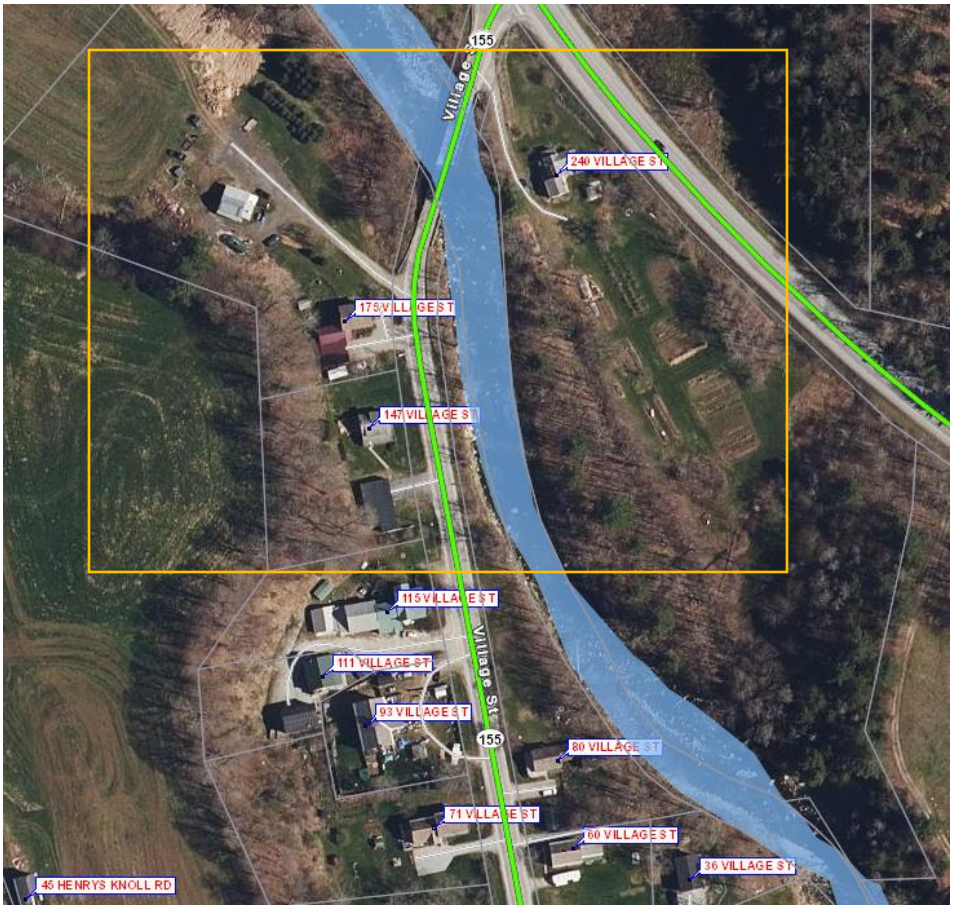


Figure 6: E-911 addresses of properties at the northern end of Village Street in East Wallingford. Image courtesy of Vermont Center for Geographic Information Interactive Map. Those in the yellow box are not included in the 1980 listed East Wallingford Historic District, likely due to loss of integrity at that time.

Village Street Properties – The following properties are evaluated as part of a potential historic district.

- **111 Village Street, East Wallingford –** a 2-story, gable roof, eaves front former carriage barn converted to a residence with an enclosed full width front porch and central entrance sheltered by a gable hood. It is set southwest of 115 Village Street, at the back of the driveway. Compared to the 1938 Sanborn map, the building is no longer a carriage barn and no longer has an auto garage ell. The building appears to have loss of integrity of materials, design, workmanship, feeling, and association. It is ineligible for listing in the National Register as part of the eligible East Wallingford HD. See Figure 7.

- **147 Village Street (house), East Wallingford –** a 1.5 story, wood-frame, 4x5 bay, vernacular gable front house with enclosed side porch and side entrance and shed roof dormer that extends from the roof ridgeline. The house is clad in vinyl siding with vinyl windows, though the windows appear to remain the same locations as the 1974 photograph (see Figures 1, 8, 9). The house retains setting, location, design, feeling, and association. It is eligible for listing in the National Register as part of the eligible East Wallingford HD.

- **147 Village Street (garage), East Wallingford –** a 1-story, flat roof, 5 bay, concrete block former automobile service station. The walls have been parged in stucco and 3 of the 4 garage bays infilled inappropriately. The garage is visible in the 1974 photograph (see Figure 1). Loss of integrity of

materials, design, workmanship, feeling, and association due to alterations. It is ineligible for listing in the National Register as part of the eligible East Wallingford HD. See Figure 10.

- **175 Village Street, East Wallingford –** a 2-story, gable front, wood-frame residence with 1.5 story connected rear wing, and 2-bay connected garage. The house retains a slate roof and return eaves, but alterations include siding and window replacements and a hooded gable entrance. Additionally, the garage has been connected to the wing, which was not how it appeared in the 1938 Sanborn map. The changes appear to have reduced the number of windows and window opening size, and details have been lost. Loss of integrity of materials, design, workmanship, feeling, and association. It is ineligible for listing in the National Register as part of the eligible East Wallingford HD. See Figure 11.

- **187 Village Street, East Wallingford –** a 1-story, wood-frame, gable roof outbuilding with shed roof wings, clad in shingle siding. The 1938 Sanborn map shows this as an outbuilding with wings on three sides of the building. Currently a small shed roof addition projects beyond the plane of the façade and fixed windows are located on the facade. Commercial vents and other paraphernalia appear on the building, as well. The building has a loss of integrity of materials, design, workmanship, feeling, and association. It is ineligible for listing in the National Register as part of the eligible East Wallingford HD. See Figure 12.

Figure 7: 111 Village Street (left, rear of property). This property is ineligible for inclusion in the East Wallingford HD.

Figure 8: 147 Village Street. This property is eligible for inclusion in the East Wallingford HD.

Figure 9: 147 Village Street. This property is eligible for inclusion in the East Wallingford HD.

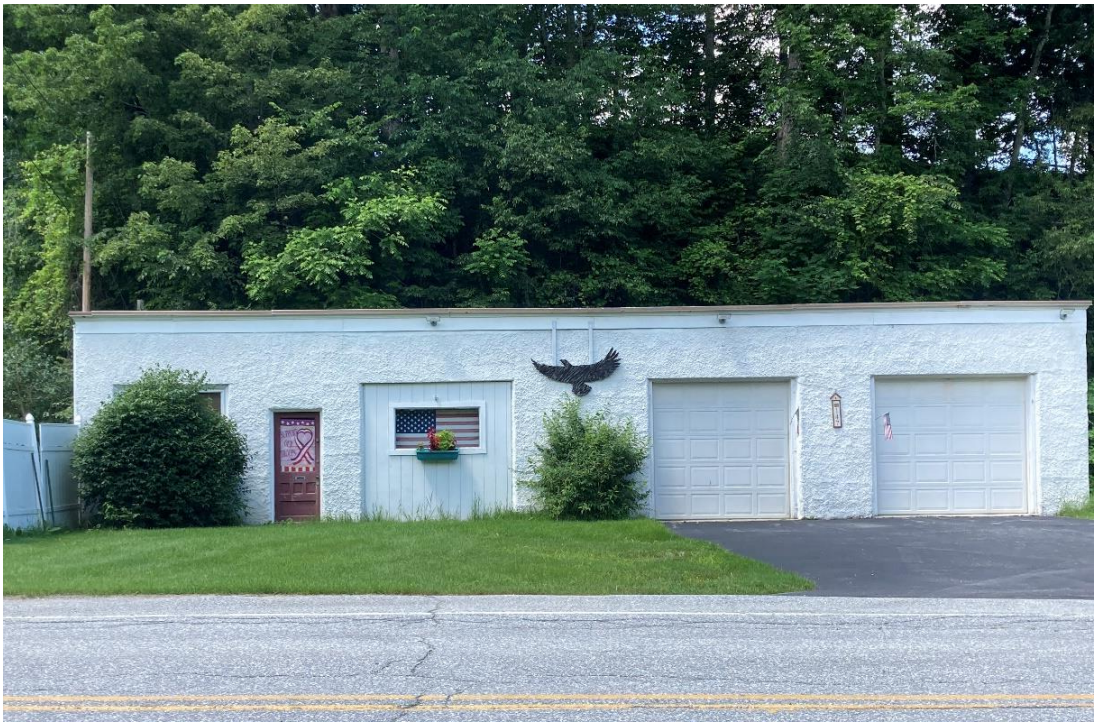


Figure 10:147 Village Street (garage). This property is ineligible for inclusion in the East Wallingford HD.

Figure 11: 187 Village Street. This property is ineligible for inclusion in the East Wallingford HD.

After reviewing historic maps, it is fair to say that the historic district should be expanded to include properties to the west and the east on Main Street (VT Route 140) and to the south on VT Route 155, although these areas are outside of the Study Area. The following paragraphs discuss these areas to support the potential expansion of the East Wallingford Historic District. For this reason, these areas were not surveyed building by building, but rather looked at holistically to support the boundary discussion.

The historic district period of significance relates to the railroad and subsequent growth. Passenger service continued into the mid-20th century and VT Route 103 bypassed the village ca. 1950. Considering that the historic district grew as a result of the railroad, the railroad itself and its adjacent properties should be included in the historic district boundary.

A cursory review reveals than many of these properties to the west are individually listed in the State Register. The 1869 Beers Map shows a concentration of properties around the railroad and beyond the bridge crossing on present day Route 140. See Figures 12-13, below. The 1938 Sanborn Fire Insurance Map shows the former road layout, but a similar concentration of buildings to today. See Figure 13, below. Additionally, the 1938 Sanborn map is a good representation of the recommended expanded historic district boundaries, with the railroad acting as the southern boundary. The 1962 aerial photograph shows a concentration of properties in the same locations, with some additions, of course. See Figure 15, below.

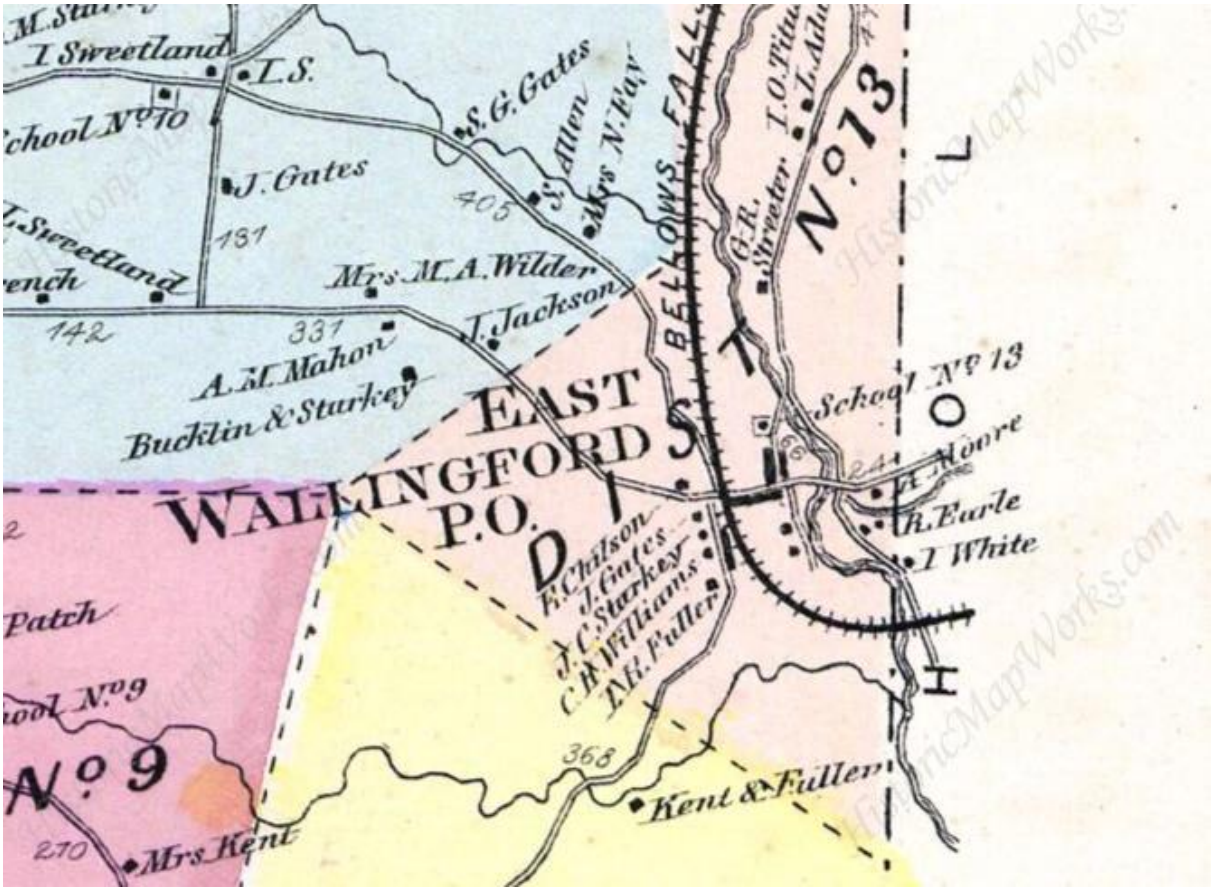


Figure 12: 1869 Beers Map.

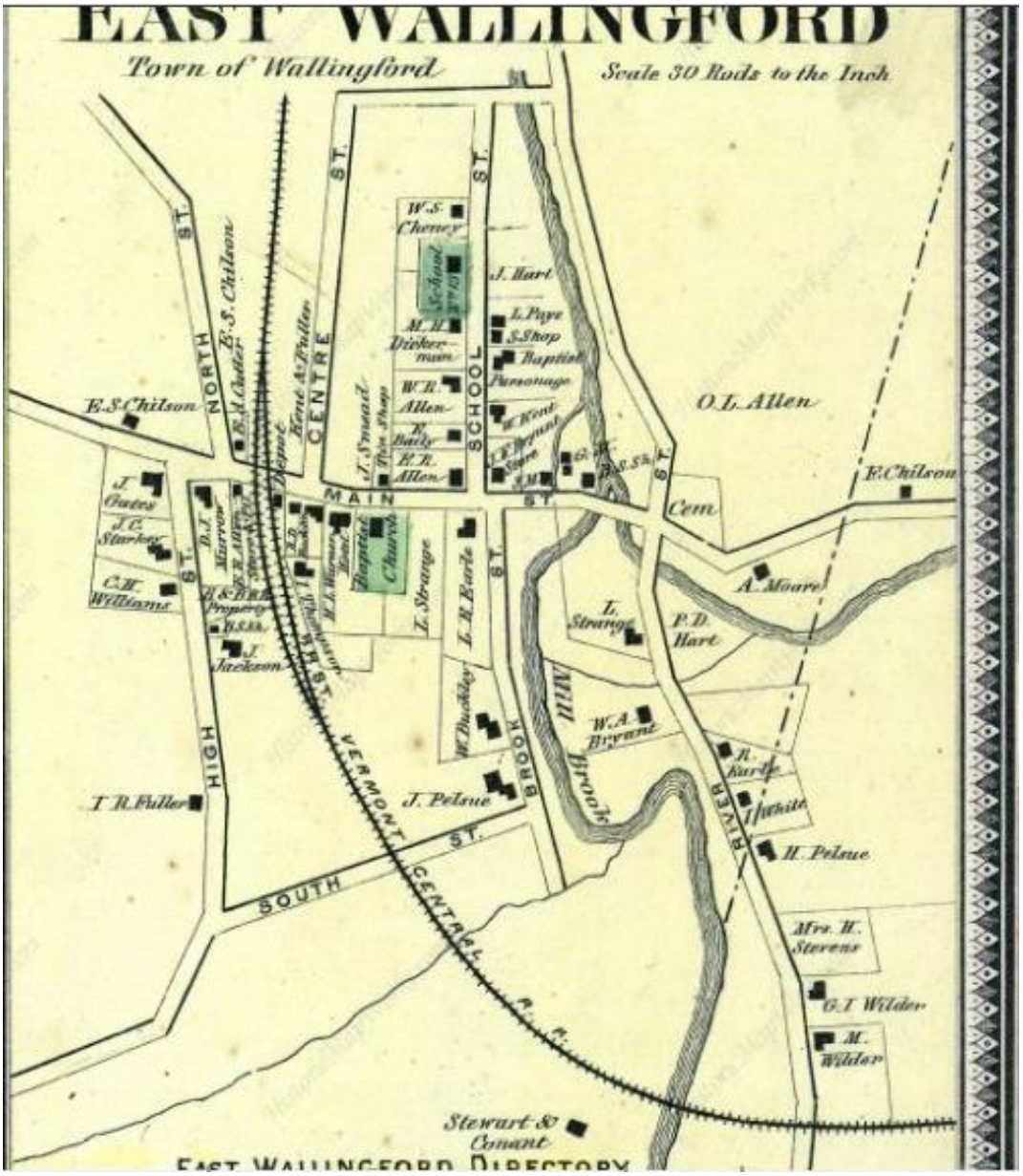


Figure 13: East Wallingford inset of 1869 Beers Map shows the cemetery. Note that River Street to the east of Mill River, north of Main Street, did not exist in later maps. Centre Street, to the east of the railroad, does not show on maps by the late 19th century, and School Street was rerouted to curve over the river.

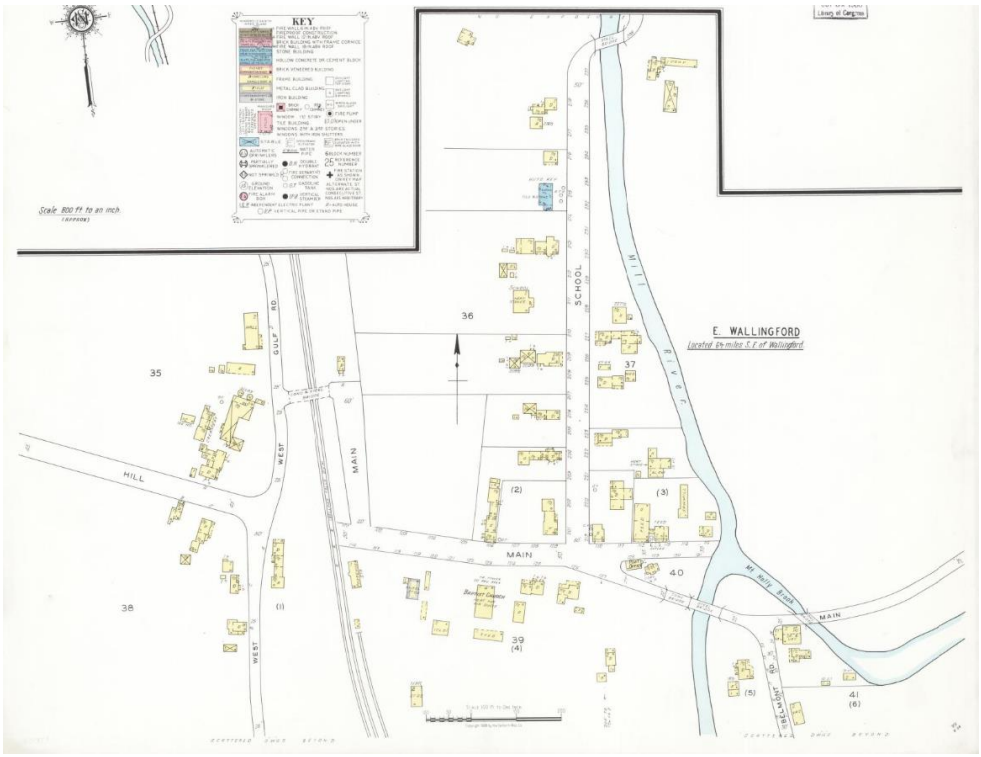


Figure 14: 1938 Beers Map. Note the "steel bridge" at the top of the image is Bridge No. 15. http://hdl.loc.gov/loc.gmd/g3754wm.g089541938. This map also gives a good approximation proposed of historic district boundaries.

Figure 15: 1962 aerial image of East Wallingford – at center of image. Courtesy of Vermont Center for Geographic Information. Vermont Route 103 is the diagonal road at the top right. 62H_1962_23-147_nongeoref.jpg (2797×2829) (vermont.gov)

Based on the above discussion and map analysis, an expanded East Wallingford HD boundary would roughly include the following:

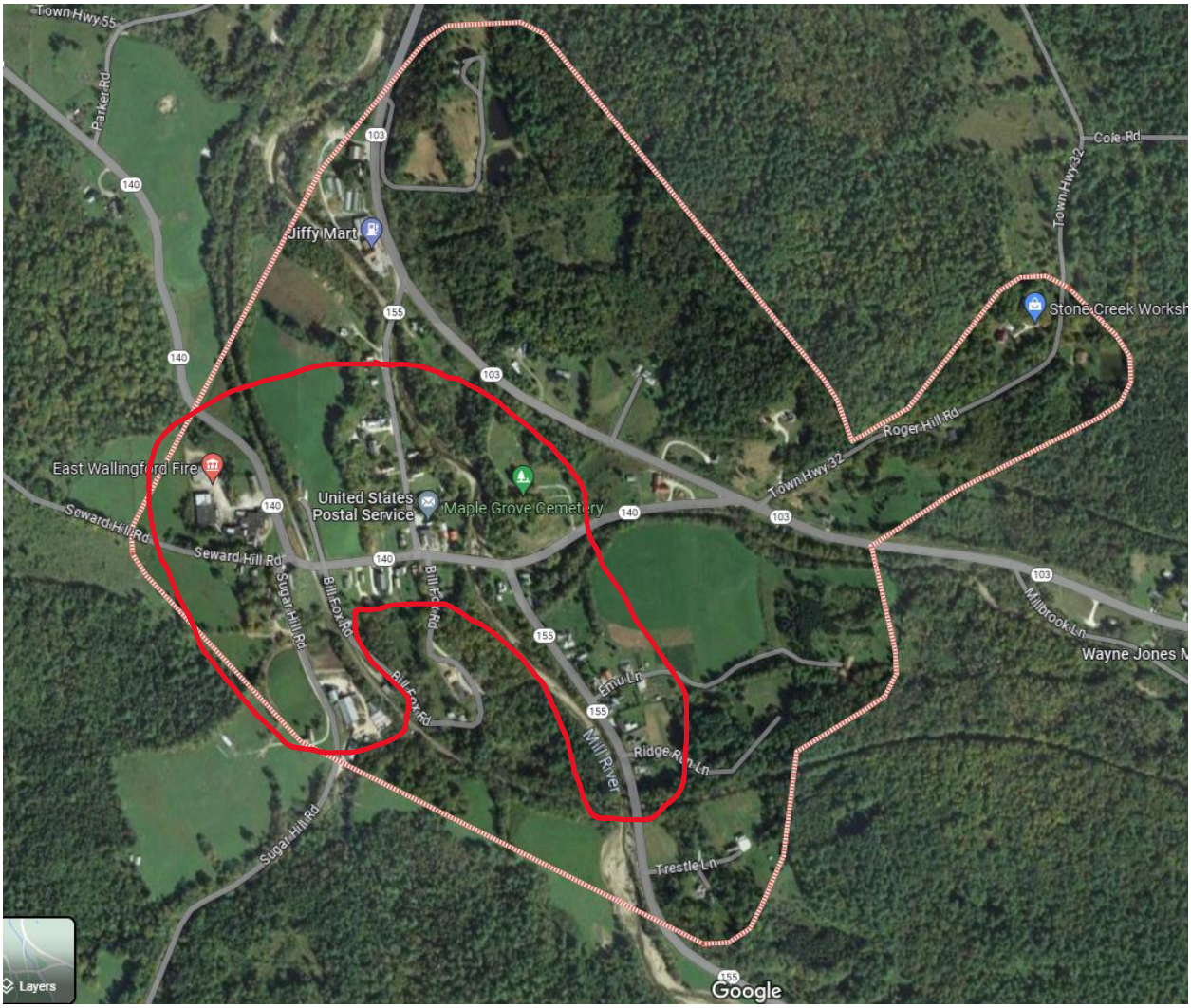


Figure 16: A rough outline of a proposed boundary for East Wallingford HD.

Village Street / Vermont Route 155

Currently this road is named Village Street (formerly School Street), and it is part of the approximately 10-mile Vermont Route 155, which was incorporated into the State system in 1970 and 1973. Prior to being Route 155, historic maps indicate that Route 103 originally traveled on Village Street. Route 103 bypassed the village between 1947 and 1954, per aerial photographs and US topo maps. The existing Bridge No. 15 was constructed before the bypass. See Figures 17-19.

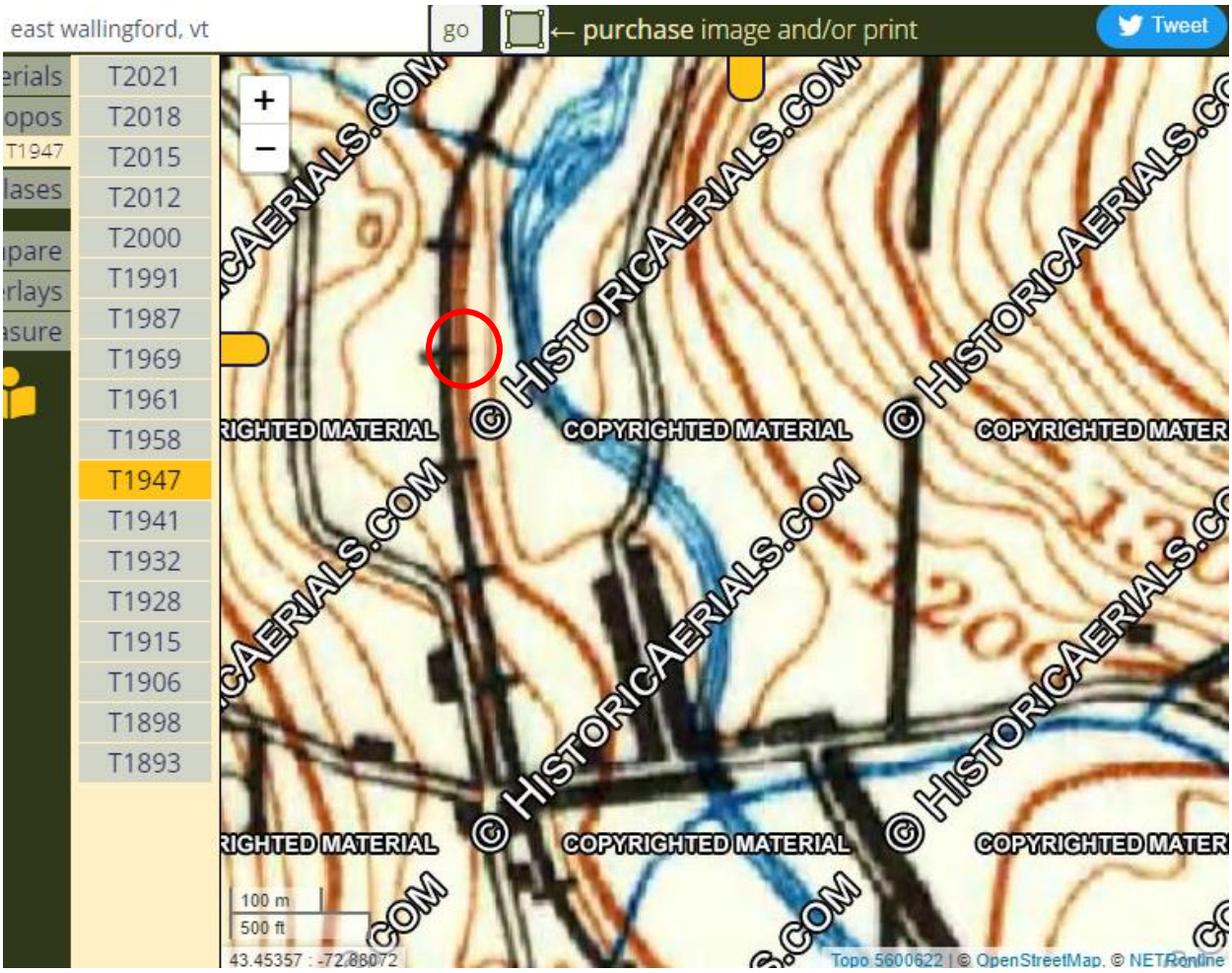


Figure 17: 1947 topo map with East Wallingford shown. Note that Route 103 has not yet been rerouted to bypass East Wallingford. Bridge No. 15 is located in the red circle.

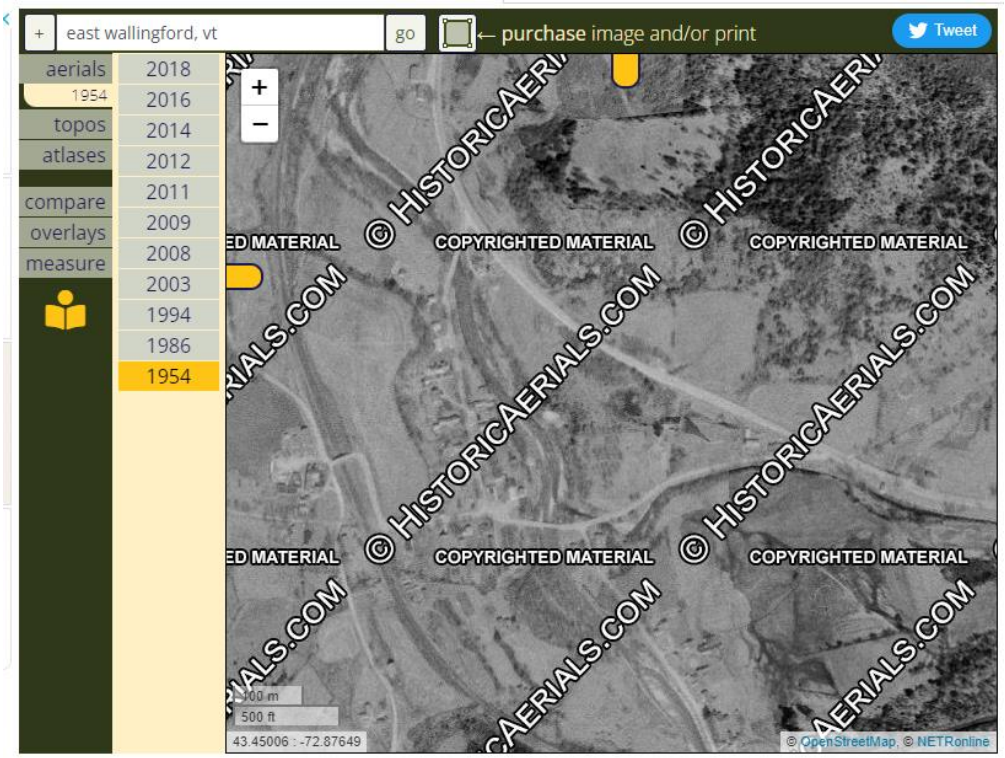


Figure 18: 1954 aerial photograph shows Route 103 bypassing the village of East Wallingford.

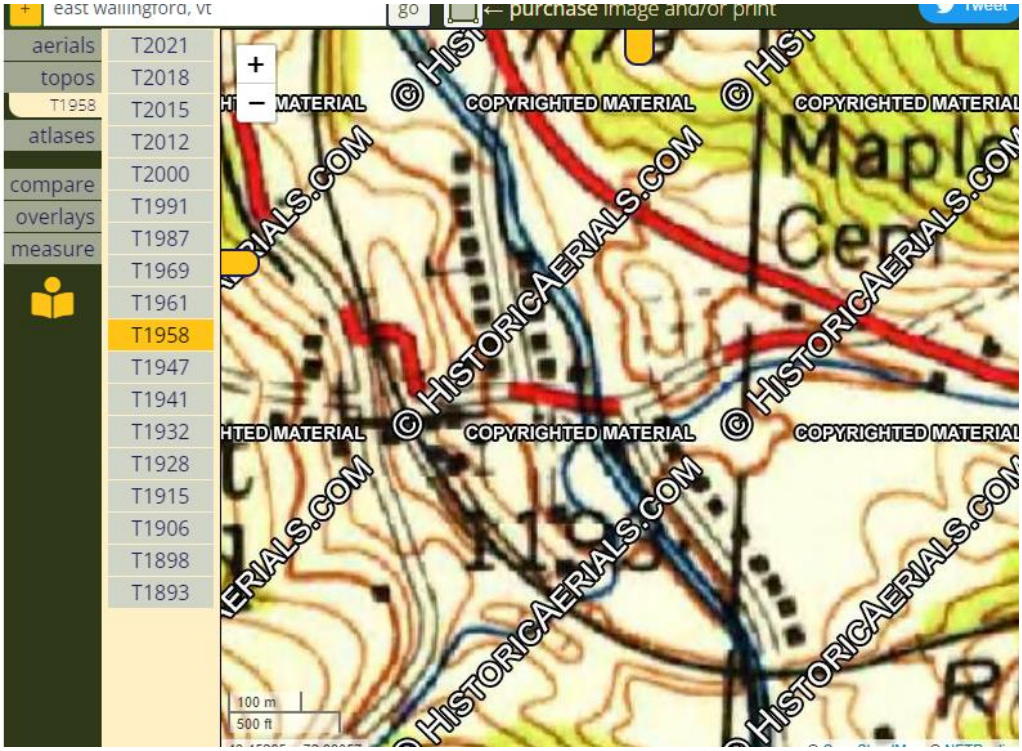


Figure 19: 1958 Topo Map shows the rerouted Route 103.

VT Route 155 / VT Route 103 intersection – Northern APE – See Map 1

In addition to the East Wallingford Historic District and Bridge No. 15 – both discussed above - the northern study area / APE includes properties at the intersection of VT Route 155 and VT Route 103 that would be outside the boundaries of an expanded historic district. The APE in this location relates to any proposed construction in conjunction with Bridge No. 15. Properties at this intersection include:

- **263 A VT Route 103, East Wallingford** – a 2-story gable front convenience store, adjacent 2-story gable roof, eaves front barn, and large gas station canopy were constructed ca. 2000, based on aerial images. The property is ineligible for listing in the National Register due to age. See Figure 20.

- **240 Village Street, East Wallingford** – a 1.5 story, gable roof, T-plan, wood-frame residence with a gable roof, an eaves front wing that projects beyond the façade and a shed roof dormer on the façade. The house is clad in vinyl siding with viny replacement windows and fenestration alteration. The 1938 Sanborn maps shows a 1-story "coop" attached to the rear of the house and a large, 1.5-story, detached automobile garage to the south. Neither of those remain. The house has lost integrity of design, materials, workmanship, feeling, and association, and is ineligible for listing in the National Register. See Figure 21.

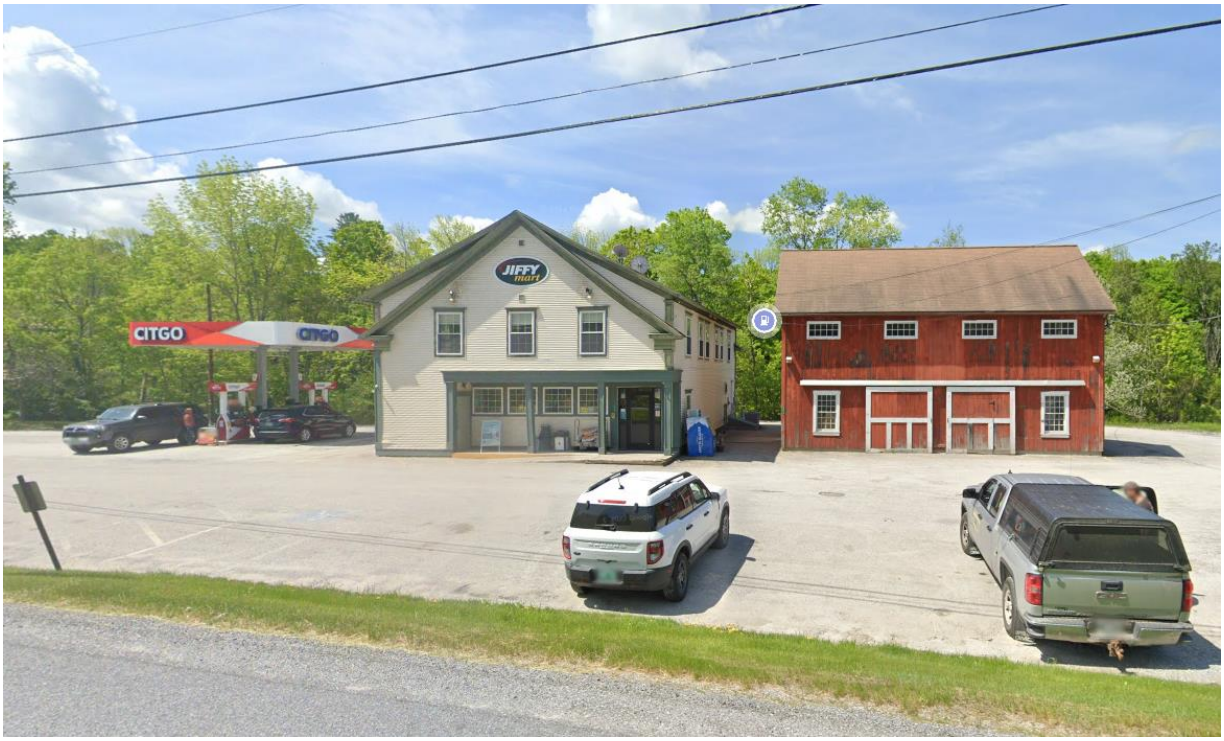


Figure 20: 263 A VT Route 103, East Wallingford. Google Street View, May 2022.

Figure 21: 240 Village Street, East Wallingford, July 2023, photo by VHB. Although somewhat obscured, this photograph shows the alterations to windows, massing, roofline, materials. This property has lost historic integrity of design, materials, workmanship, feeling, and association, and is ineligible for listing in the National Register, individually or as part of the East Wallingford Historic District.

VT Route 140 / VT Route 103 intersection – Eastern APE – See Map 2

A segment of the project involves improving the Route 140 / Route 103 intersection and has the potential to require easements or acquisitions. The properties in the APE include:

- **28 Weston Road (VT Route 155), East Wallingford** – ca. 1860, 1.5 story, gable front, sidehall plan, 3x3 bay, wood-frame residence with 1.5 story ell. Character defining features include return eaves, cornerboards, and a slate roof. Comparing available Google Street Views shows that a wrap-around porch (a later addition) with half walls and columns has been recently removed. A 1.5 story barn sits at the rear of the house. Although the house has some alterations it retains integrity of setting, location, design, workmanship, feeling, and association. It is eligible for listing in the National Register as a contributing resource to the East Wallingford HD. Listed in the Vermont State Register, #1125-43. See Figure 22.
- **33 Weston Road (VT Route 155), East Wallingford** – ca. 1880, 2-story, wood-frame, gable front L-plan house with a one-story full width covered front porch. A narrow 2-story gable roof ell projects from the rear. A comparison of the available 2012 Google Street View images to the 2023 field visit photographs shows that the house has recently been clad in vinyl, windows replaced, slate roof replaced with asphalt shingles, and the front porch shingled half wall and porch windows removed. The porch has been replaced with standard pressure treated wood. These alterations result in a loss of historic integrity

of materials, design, workmanship, feeling, and association. This property is ineligible for listing in the National Register, and should not be included in the East Wallingford HD. See Figure 23.

- **Maple Grove Cemetery** – early 19th century cemetery established by the Town of Wallingford. This property should be included in the East Wallingford HD.
- **57 VT Route 140, East Wallingford** – a ca. 1975, 2-story, gable roof, eaves front, raised ranch style house with replacement windows. The property is outside the current and potential expanded boundary of the East Wallingford HD. It does not rise to level of individual significance. It is ineligible for listing in the National Register. See Figure 24.
- **91 VT Route 140, East Wallingford** – A 2-story, gambrel roof ground former ground stable barn that has been converted to a residence. The windows and doors and entrance locations have been altered with added dormers. There is an associated outbuilding, but there are no additional outbuildings nor a farmhouse nor working agricultural fields. The barn has a loss of historic integrity of setting, materials, design, workmanship, feeling, and association. It does not rise to level of individual significance. The property is outside the current and potential expanded boundary of the East Wallingford HD. It is ineligible for listing in the National Register. See Figure 25
- **2380 VT Route 103, East Wallingford** – ca. 1970, 1-story, hipped roof, ranch style residence with setback two-bay garage with similar hipped roof. House appears to retain overhanging eaves and large brick chimney, but also appears to have altered windows, which would have been character defining features. House does not retain enough integrity to be considered individually eligible for the National Register. The property is outside the current and potential expanded boundary of the East Wallingford HD. It is ineligible for listing in the National Register. See Figure 26.
- **2328 VT Route 103, East Wallingford -** ca. 2002 – cannot see from roadway, but aerial photographs confirm date. This property is ineligible for the National Register due to age.
- **2170 VT Route 103, East Wallingford** – a 1.5-story, wood-frame, gable roof, eaves front residence with reduced 2-story wing with basement/garage level at grade. Alterations include a shed roof enclosed porch addition on the elevation, siding replacement, fenestration alteration. The house has a loss of historic integrity of design, materials, workmanship, feeling, and association. It does not convey its original architectural style. The building is ineligible due to alterations. It does not rise to level of individual significance. The property is outside the current and potential expanded boundary of the East Wallingford HD. It is ineligible for listing in the National Register. See Figure 27.
- **2205 VT Route 103, East Wallingford** – a ca. 1880, 1.5 story, wood-frame, gable front, 3x3 bay residence with center entrance and 1-story shed roof enclosed porch. The windows have been replaced and openings altered. The siding has been replaced. The building has a loss of integrity of design, materials, workmanship, feeling, and association. It does not rise to level of individual significance. The property is outside the current and potential expanded boundary of the East Wallingford HD. It is ineligible for listing in the National Register. See Figure 28.

Figure 22: 28 Weston Road (VT Route 155), East Wallingford. This property is historic and should be included in the East Wallingford HD. Photograph by VHB, July 2023.

Figure 23: 33 Weston Road (VT Route 155), East Wallingford. This property is ineligible for inclusion in the East Wallingford HD. Photograph by VHB, July 2023.

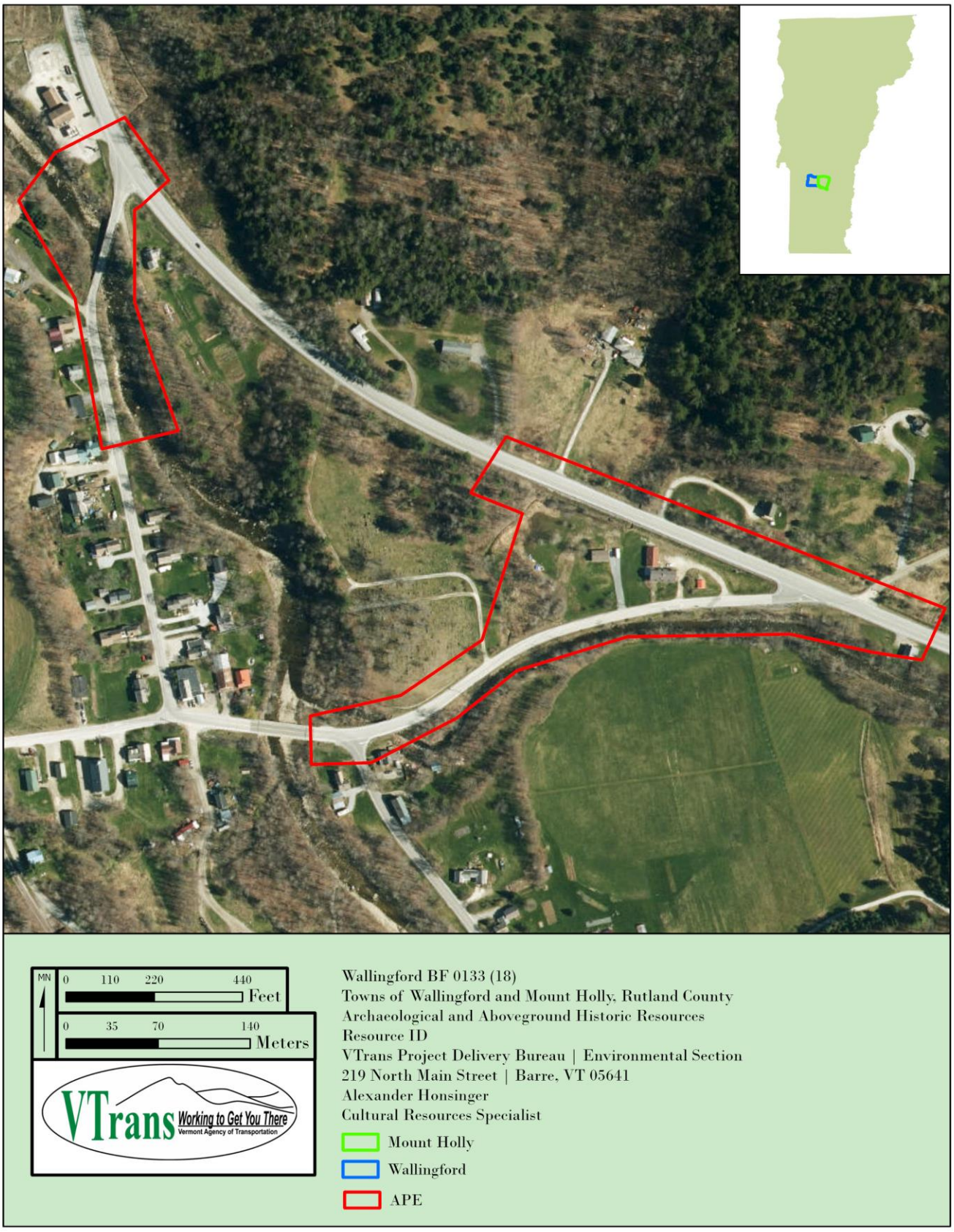
Figure 24: 57 VT Route 140, East Wallingford. This property is ineligible for listing in the National Register. Google Street View, September 2021.

Figure 25: 91 VT Route 140, East Wallingford. This property is ineligible for listing in the National Register. Google Street View, September 2021.

Figure 26: 2380 VT Route 140, East Wallingford. This property is ineligible for listing in the National Register. Google Street View, May 2022.

Figure 27: 2170 VT Route 103, East Wallingford. This property is ineligible for listing in the National Register. Google Street View, May 2022.

Figure 28: 2205 VT Route 103, East Wallingford. This property is ineligible for listing in the National Register. Google Street View, May 2022.



Area of Potential Effect Map

Appendix L: Archeological Resource ID

VERMONT

Brennan Gauthier
VTrans Senior Archaeologist
Vermont Agency of Transportation
Project Delivery Bureau
Environmental Section
tel. 802-279-1460
Brennan.Gauthier@Vermont.gov

To: Mike Keedy, VTrans Environmental Specialist

From: Brennan Gauthier, VTrans Senior Archaeologist

Date: 8/9/2023

Subject: Wallingford BF 0133(18) Archaeological Resource Identification

Dear Mike,

I have completed my background research and field inspection of Bridge 155 and Vermont Route 103/Route 140 intersection alignment in Wallingford and Mount Holley, Rutland County, Vermont. A field visit was conducted in the early part of spring in order to ascertain field conditions and potentially sensitive areas within the confines of the non-contiguous eastern and western portions of the project APE.

When combined with the field visit, a review of historic maps, existing Vermont Archaeological Inventory (VAI) sites and other resources is adequate to assess the potential for precontact and historic-period archaeological sites in the project area. Given the proximity of the project to a stream and the relative flat, even topography, I've mapped the area between VT Route 103 and VT Route 140 as archaeologically sensitive. Testing should be completed in order to ascertain if a site is present before moving forward with any work in the immediate area. Although there are no known sites within four kilometers of the intersection, this may be due to a lack of reporting vs. a lack of site presence.

Additionally, the western portion of the requested resource ID area in Wallingford contains archaeologically sensitive landforms along Village Street. I've mapped these into the archaeology geodatabase for inclusion in future plans.

Feel free to reach out with any questions or concerns that may arise.

Sincerely,

Brennan

VTrans Working to Get You There
Vermont Agency of Transportation

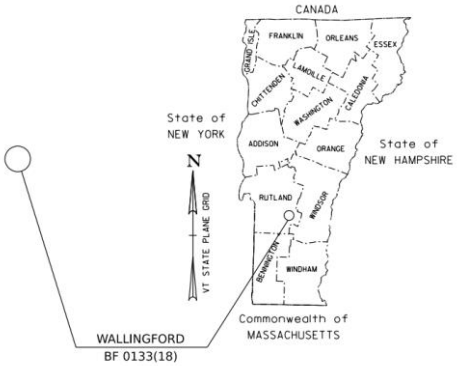


Figure 1: Wallingford/Mount Holly Location Map.

Figure 2: View of Project Intersection.

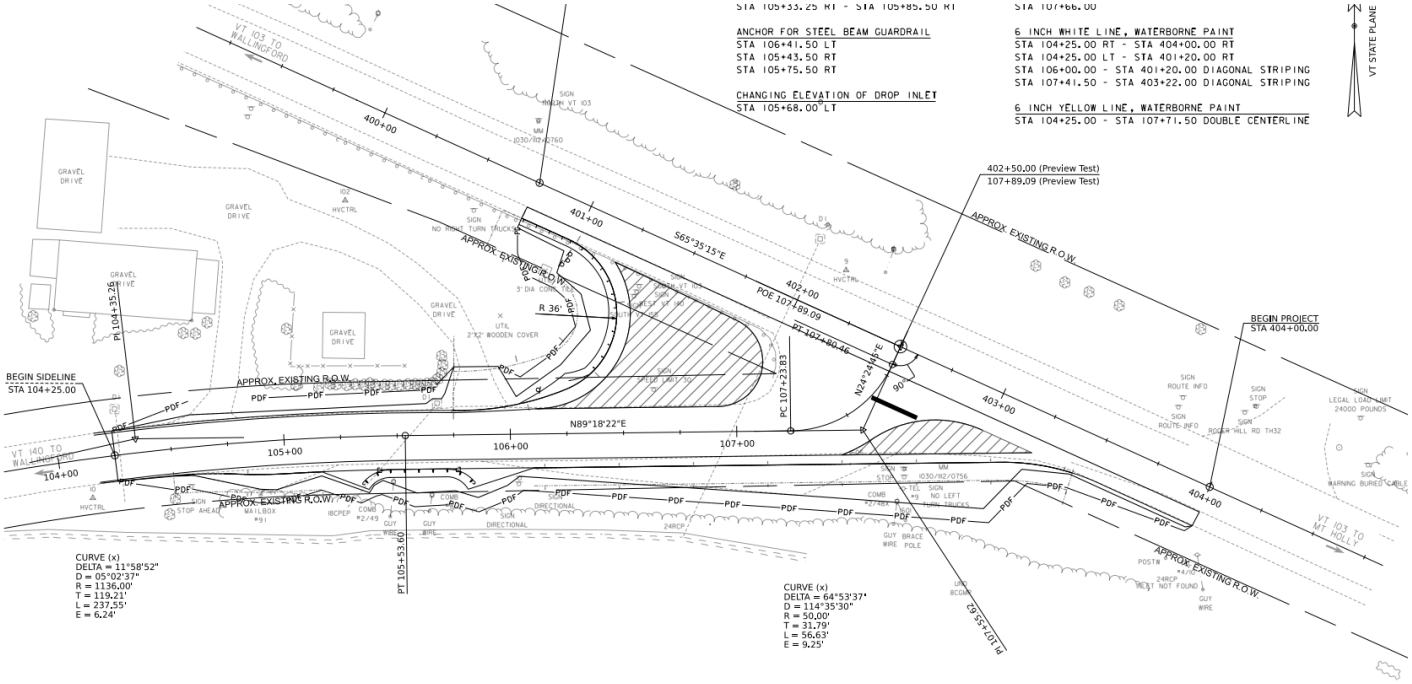


Figure 3: Plans Dated 7/11/2023.

Figure 4: Archaeologically Sensitive Lines.

Figure 5: Intersection View East From Driveway.

Figure 6: View West from Intersection.

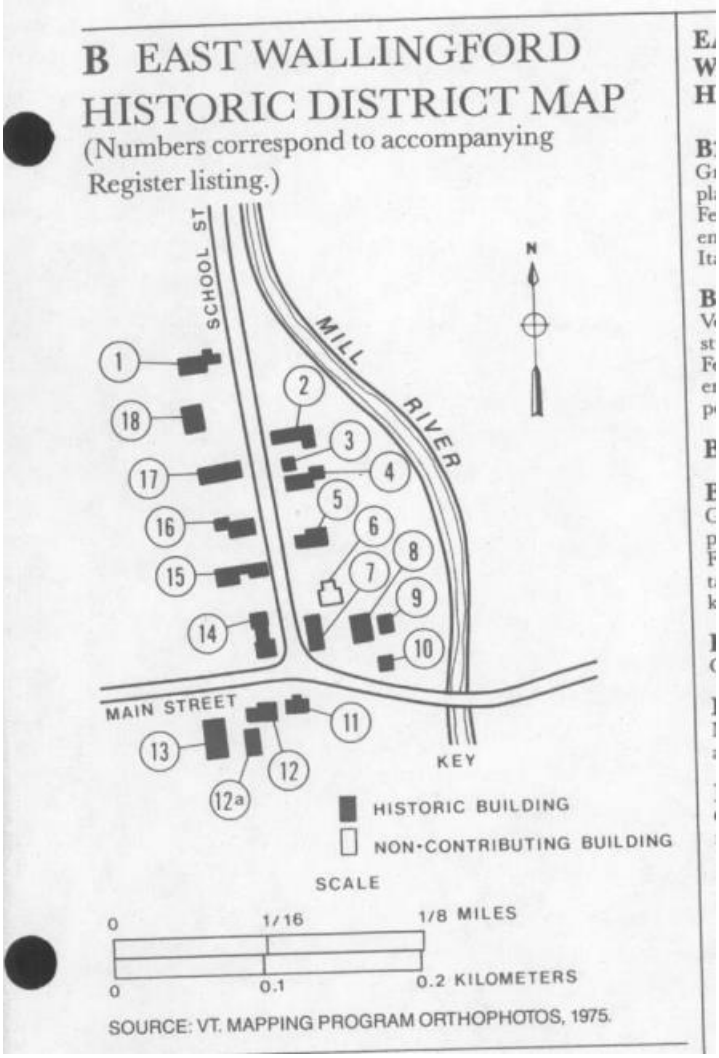


Figure 7: East Wallingford Historic District.

Figure 8: Western Portion of the Resource ID.

Figure 9: Archaeological Sensitivity.

Appendix M: Stormwater Resource ID

VERMONT

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

Agency of Transportation

[phone] 802-498-5787

To: Mike Keedy, VTrans Environmental Specialist
From: Heather Voisin, VTrans Green Infrastructure Engineer
Date: July 28, 2023
Subject: Wallingford BF 0133(18) - Stormwater Resource ID Review

Project Description: I have reviewed the project area for Wallingford BF 0133(18) for stormwater related regulatory and water quality concerns. The project is expected to involve bridge 15 near the VT 155/VT 103 intersection in the Town of Wallingford, VT, and intersection improvements to the adjacent VT 140/VT 103 intersection, which is in Mount Holly, VT. My evaluation has included the review of existing imagery and mapping (ANR Natural Resource Atlas, VTrans Operational Stormwater Permits) to capture existing stormwater features and existing drainage.

Regulatory Considerations
Depending on the amount of impervious area involved in the project, an Operational Stormwater permit may be required for this project. If a permit is needed, the project would qualify for using Chapter 6 of the 2017 Vermont Stormwater Management Manual as a Public Linear Transportation Project. There do not appear to be any existing stormwater permits near the site area.

The following are not noteworthy stormwater regulatory concerns at this time.

This project site is not within a designated public water supply source protection area.
The project site does not include an impaired (303(d) list) or stressed waters.

Existing Drainage
Based on a review of Google Street view, it appears that the roadway within the proposed limits is not curbed, with runoff flowing from the roadway overland onto adjacent properties in a distributed manner.

Design Considerations
It is strongly encouraged that drainage work associated with this project, particularly around any ditching and drainage work, be aligned with the VTrans Phosphorus Control Highway Drainage Management Standards, as this may allow future credit toward achieving phosphorus reduction goals required by the Agency's TS4 permit.

VERMONT

Natural Resources Atlas - SW Review

Vermont Agency of Natural Resources

vermont.gov

LEGEND

- Bridges
- Stormwater Permits (Issued)
  - Operational
  - Construction
  - Industrial - NOI
  - Industrial - NOX
  - Other
- Stormwater Permits (Pending)
  - Operational
  - Construction
  - Industrial - NOI
  - Industrial - NOX
  - Other
- Stormwater Impaired Watershe
- 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
- Town Boundary

NOTES

Map created using ANR's Natural Resources Atlas

395.0 0 198.00 395.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 648 Ft. 1cm = 78 Meters

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Appendix N: Crash Data

ObjectID	Crash Date	City/Town	Address	AOT Route	Crash Type	Collision D	Weather	Report Nur	AOT Actual	Animal	Time of Da	Intersectio	Road Char	Road Cond	Surface Co	AOT Route ID
3862976	January 4, :	Wallingfor	3331 Rt. 1	VT-155				19B40006	4.43		Day					1550

Appendix O: Local Community Questionnaire

Local & Regional Input Questionnaire

Project Summary

This project, BF 0113(18), focuses on VT Route 155, bridge 15 over the Mill River in Wallingford, Vermont. The bridge is deteriorating and needs either a major maintenance action or replacement. Potential options being considered for this project include repair of the existing bridge, removal of the existing bridge and replacement with a new bridge placed in the same location, or repair of the existing bridge and downgrading the bridge to pedestrian traffic only. It is possible that VTrans will recommend a road closure and detour traffic away from the project site for the duration of the work or longer. The possibility of needing to upgrade the intersection of VT Routes 140 & 103 as part of this detour is being looked into, and a separate questionnaire is being sent for that section of the project.

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.

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

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.

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?

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

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

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.

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

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)?

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

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

Pedestrians and Bicyclists

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

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

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

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

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).

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?

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?

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

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

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

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

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

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

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

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

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 proposals that would impact future transportation patterns near the bridge? If so, please explain.

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.

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.

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?

Appendix P: Operations Questionnaire

Bridge Scoping Project BF 0113(18)
Operations Input Questionnaire

The Structures Section has begun the scoping process for BF 0113(18), VT Route 155, Bridge 15, over the Mill River. This is a two span steel beam/concrete deck bridge constructed in 1940. The Structure Inspection, Inventory, and Appraisal Sheet (attached) rates the deck as 5 (fair), the superstructure as 5 (fair), and the substructures as 5 (fair). We are interested in hearing your thoughts regarding the items listed below. Leave it blank if you don't wish to comment on a particular item.

1. What are your thoughts on the general condition of this bridge and the general maintenance effort required to keep it in service?

2. What are your comments on the current geometry and alignment of the bridge (curve, sag, banking, sight distance)?

3. Do you feel that the posted speed limit is appropriate?

4. Is the current bridge and approach roadway width adequate for winter maintenance including snow plowing?

5. Are the joints salvageable or would you recommend replacement?

6. Are the railings constantly in need of repair or replacement? What type of railing works best for your district? (We are recommending more and more box beam guardrail on our bridges because of crash-worthiness and compatibility with accelerated projects).

7. Are you aware of any unpermitted driveways within close proximity to the bridge? We frequently encounter driveways that prevent us from meeting railing and safety standards.

8. Are you aware of abutting property owners that are likely to need special attention during the planning and construction phases? These could be people with disabilities, elderly, or simply folks who feel they have been unfairly treated in the past.

9. Do you find that extra effort is required to keep the slopes and river banks around the bridge in a stable condition? Is there frequent flood damage that requires repair?

10. Does this bridge seem to catch an unusual amount of debris from the waterway?

11. Are you familiar with traffic volumes in the area of this project?

12. Do you think a closure with off-site detour and accelerated construction would be appropriate? Do you have any opinion about a possible detour route, assuming that we use State route for State projects and any route for Town projects? Are there locations on a potential detour that are already congested that we should consider avoiding?

13. Please describe any larger projects that you have completed that may not be reflected on the attached Appraisal sheet, such as deck patches, paving patches, railing replacement with new type, steel coating, etc.

14. If there is a sidewalk on this bridge, how effective are the Town's efforts to keep it free of snow and ice?

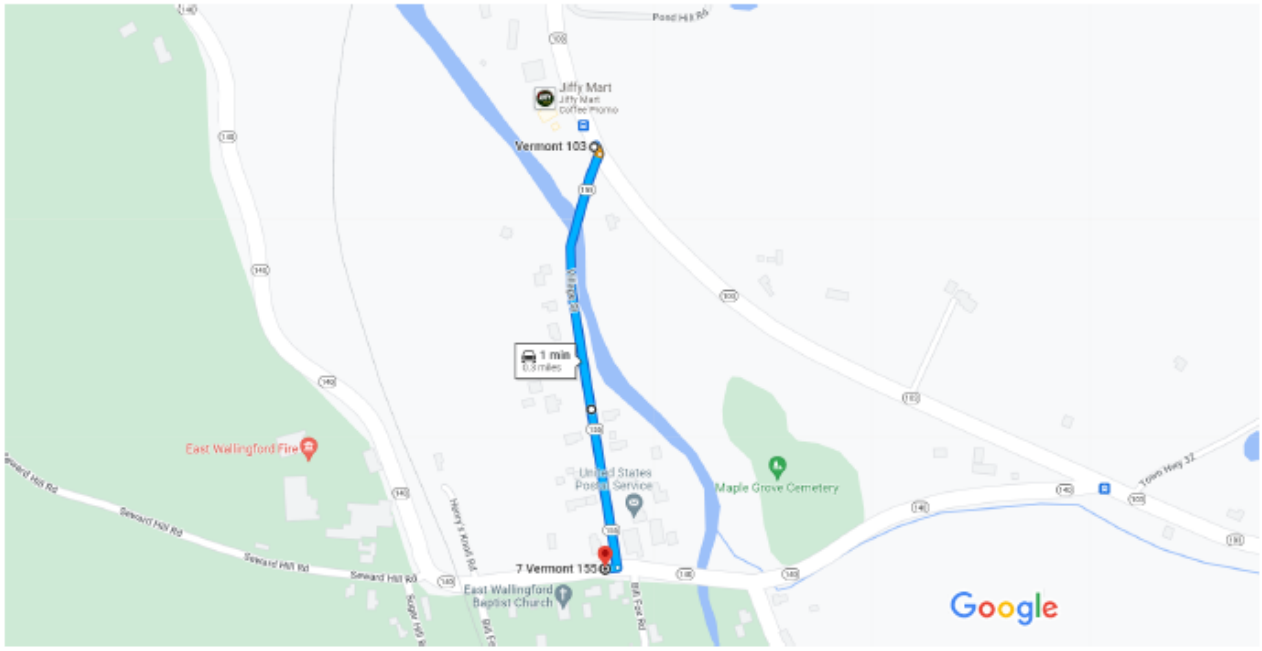
15. Are there any drainage issues that we should address with this project?

16. Are you aware of any complaints that the public has about issues that we can address on this project?

17. Is there anything else we should be aware of?

Appendix Q: Detour

Google Maps VT-103, East Wallingford, VT 05742 to 7 VT-155, East Wallingford, VT 05742 Drive 0.3 mile, 1 min



Map data ©2023 Google 200 ft

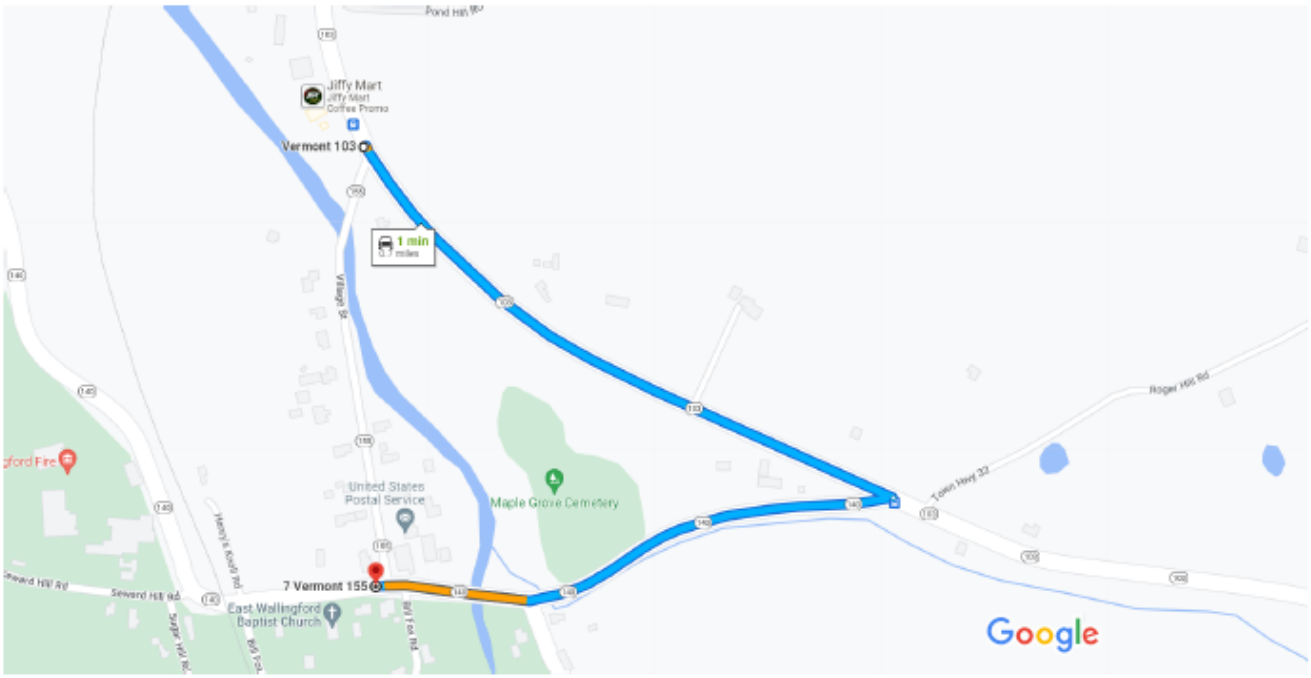
VT-103
East Wallingford, VT 05742

1. Head southeast on VT-103 S toward VT-155 S
30 ft
2. Turn right onto VT-155 S
⚠ May be closed at certain times or days
0.3 mi
3. Turn right onto VT-140 W
43 ft

7 VT-155
East Wallingford, VT 05742

Through Route: VT-103 to VT-155
Length: 0.3 miles

Google Maps VT-103, East Wallingford, VT 05742 to 7 VT-155, East Wallingford, VT 05742 Drive 0.7 mile, 1 min



Map data ©2023 Google 200 ft

VT-103
East Wallingford, VT 05742

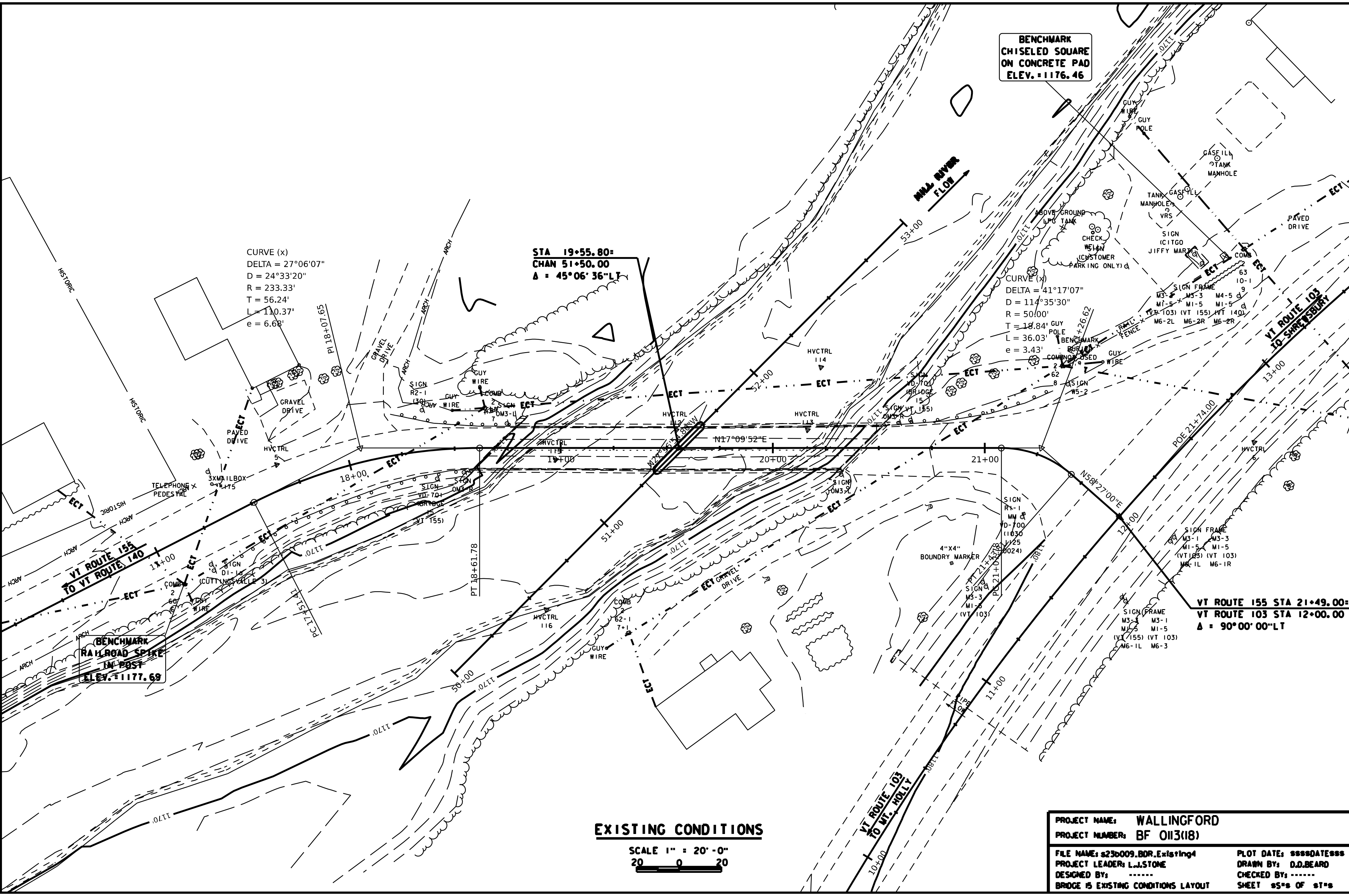
1. Head southeast on VT-103 S toward VT-155 S
0.4 mi
2. Sharp right onto VT-140 W
0.3 mi

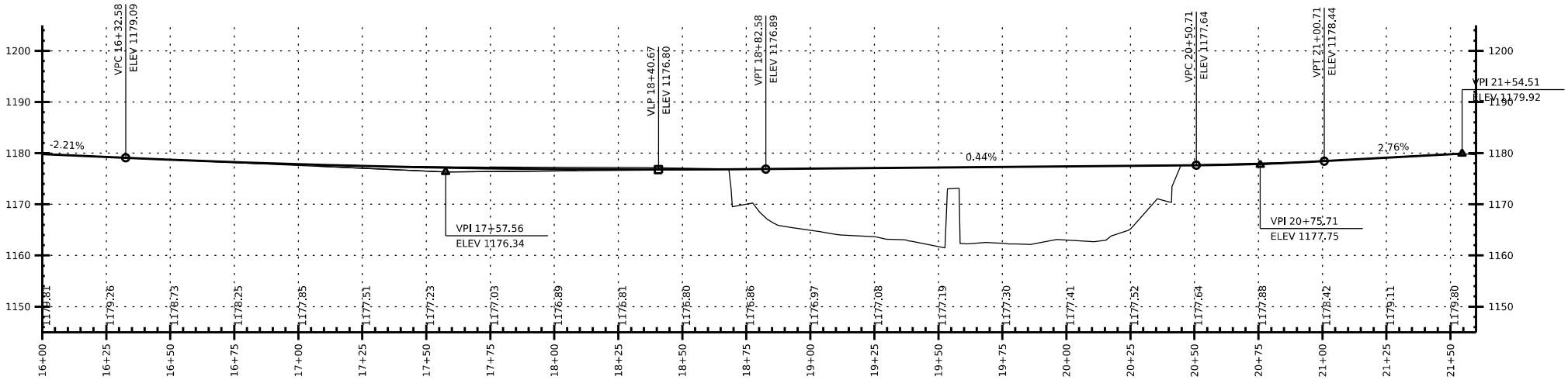
7 VT-155
East Wallingford, VT 05742

Detour Route 1: VT-103 to VT-155

Through Route Length: 0.3 miles
Detour Route Length: 0.7 miles
Added Distance: 0.4 miles
End-to-End Distance: 1.0 miles

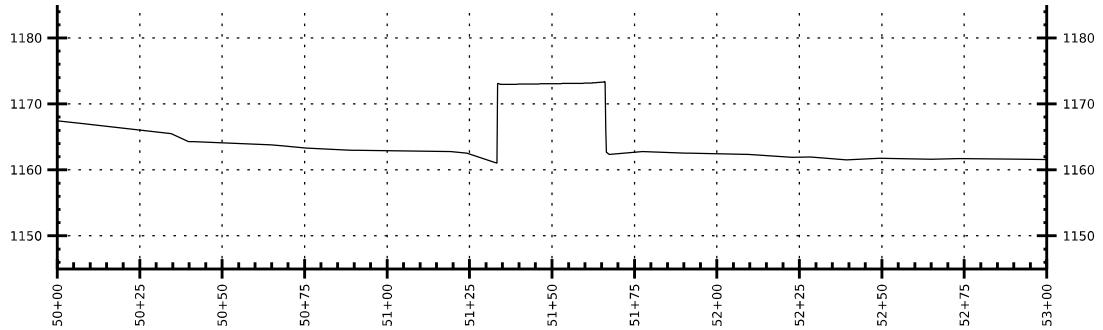
Appendix R: Plans


EXISTING CONDITIONS
SCALE 1" = 20'-0"
20 0 20
BENCHMARK
CHISELED SQUARE
ON CONCRETE PAD
ELEV.=1176.46
BENCHMARK
RAILROAD SPIKE
IN POST
ELEV.=1177.69
STA 19+55.80=
CHAN 51+50.00
Δ = 45°06'36"LT
CURVE (x)
DELTA = 27°06'07"
D = 24°33'20"
R = 233.33'
T = 56.24'
L = 110.37'
e = 6.68'
CURVE (x)
DELTA = 41°17'07"
D = 114°35'30"
R = 50.00'
T = 18.84'
L = 36.03'
e = 3.43'
VT ROUTE 155 STA 21+49.00=
VT ROUTE 103 STA 12+00.00
Δ = 90°00'00"LT
VT ROUTE 155
TO VT ROUTE 140
VT ROUTE 103
TO SHREWSBURY
VT ROUTE 103
TO MT. HOLLY
MILL RIVER
FLOW
N17°09'52"E
N58°27'00"E
PI 18+07.65
PT 18+61.78
PC 17+51.41
PC 21+04.08
PT 21+43.18
POE 21+74.00
HISTORIC
GRAVEL DRIVE
PAVED DRIVE
ABOVE GROUND LPG TANK
SIGN (CITGO JIFFY MART)
CHECK SIGN (CUSTOMER PARKING ONLY)
4"X4" BOUNDRY MARKER
TELEPHONE PEDESTAL
3XMAILBOX 175
GASFILL TANK MANHOLE
SIGN FRAME
PROJECT NAME: WALLINGFORD
PROJECT NUMBER: BF 0113(18)
FILE NAME: s23b009.BDR.Existing4
PLOT DATE: $$$$DATE$$$$
PROJECT LEADER: L.J.STONE
DRAWN BY: D.D.BEARD
DESIGNED BY: ------
CHECKED BY: ------
BRIDGE 15 EXISTING CONDITIONS LAYOUT
SHEET $$$$ OF $$$$



VT ROUTE 155 PROFILE

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

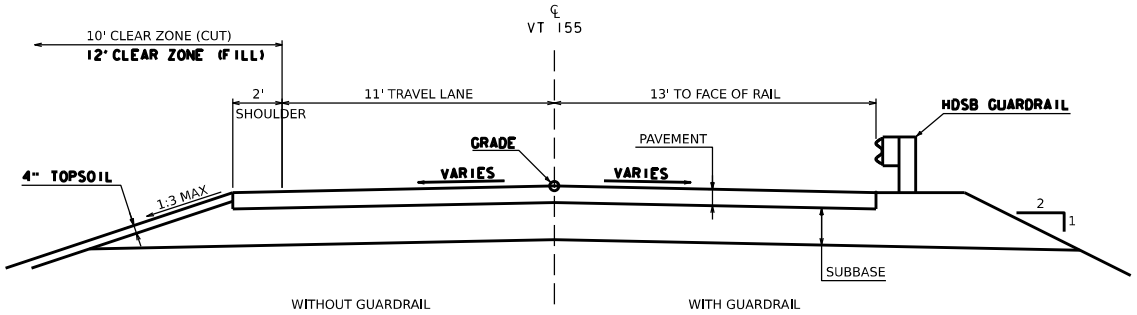


MILL STREAM CHANNEL PROFILE

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

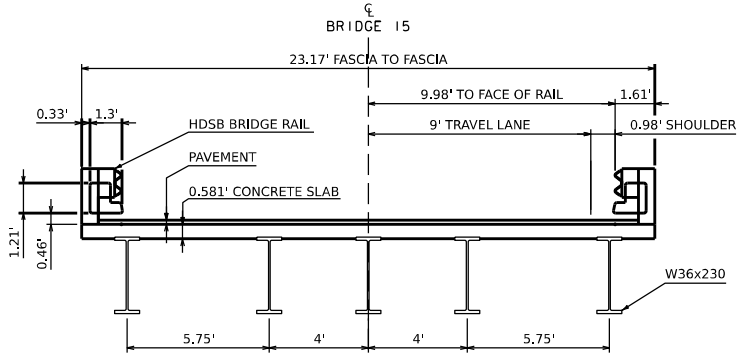
NOTE:
GRADES SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG ℄
GRADES SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE ALONG ℄

PROJECT NAME: WALLINGFORD	
PROJECT NUMBER: BF 0113(18)	
FILE NAME: s23b009profile.dgn	PLOT DATE: ssssDATEsss
PROJECT LEADER: L.J.STONE	DRAWN BY: D.D.BEARD
DESIGNED BY: ------	CHECKED BY: ------
VT ROUTE 155 PROFILE SHEET	SHEET sSNs OF sTNs



EXISTING VT 155 TYPICAL SECTION

SCALE ⅜" = 1'-0"



EXISTING BRIDGE TYPICAL SECTION

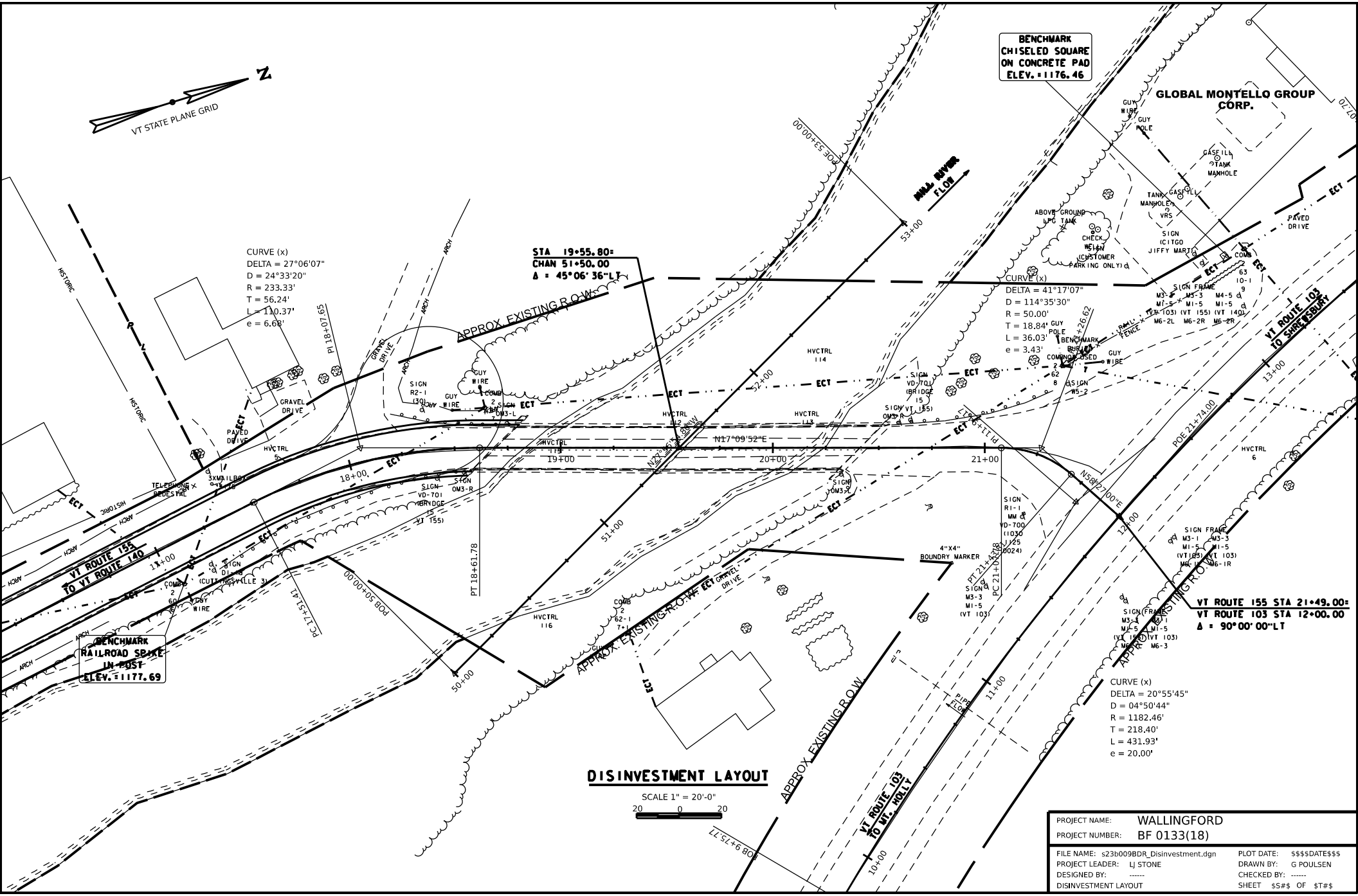
SCALE ⅜" = 1'-0"

MATERIAL TOLERANCES (IF USED ON PROJECT)	
SURFACE	
- PAVEMENT (TOTAL THICKNESS)	± ¼"
- AGGREGATE SURFACE COURSE	± ½"
SUBBASE	± 1"
SAND BORROWS	± 1"

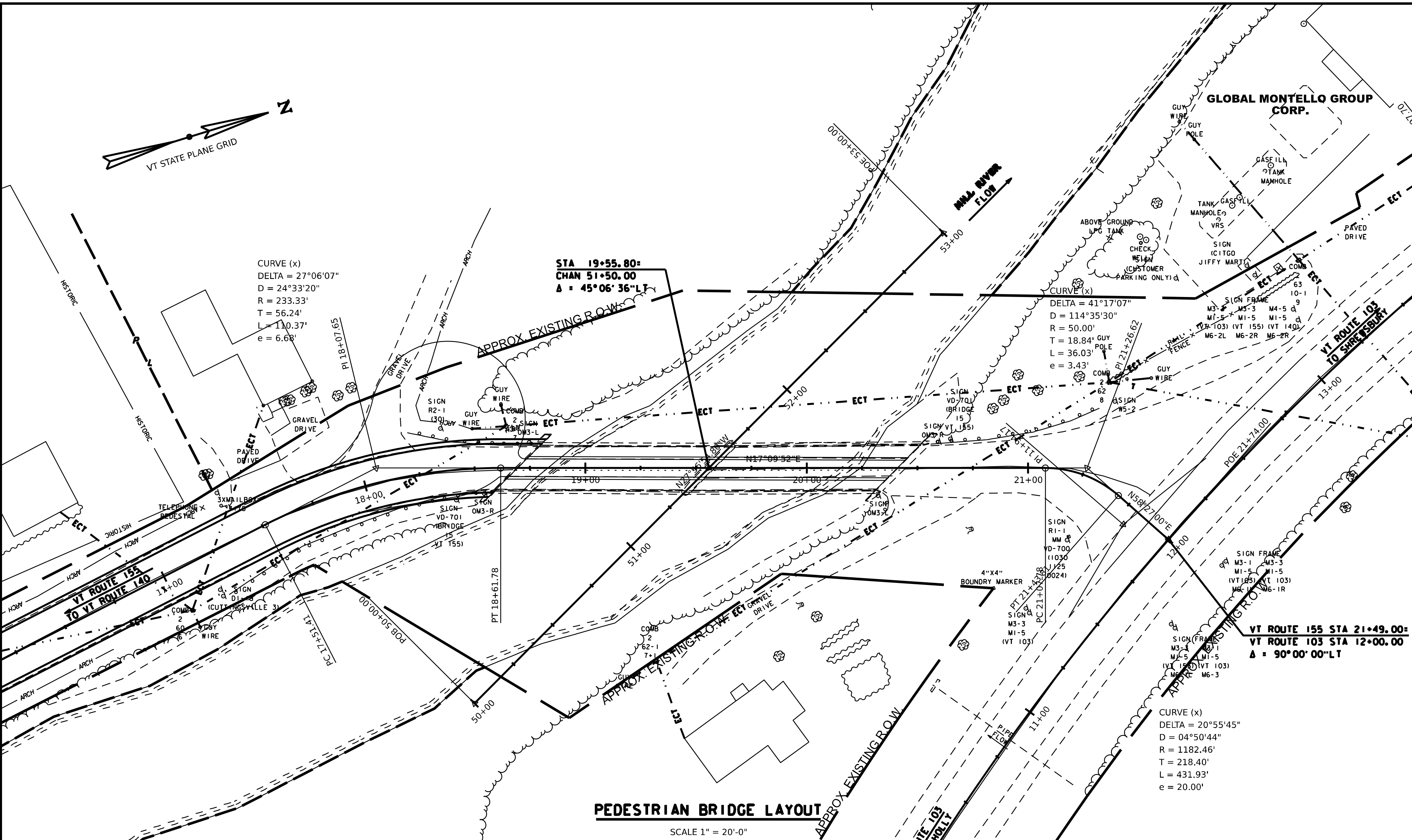
PROJECT NAME: WALLINGFORD
PROJECT NUMBER: BF 0113(18)

FILE NAME: s23b009typ.dgn
PROJECT LEADER: LJ STONE
DESIGNED BY: ------
EXISTING TYPICAL SECTIONS

PLOT DATE: $$$$DATE$$$
DRAWN BY: G POULSEN
CHECKED BY: ------
SHEET $S#$ OF $T#$



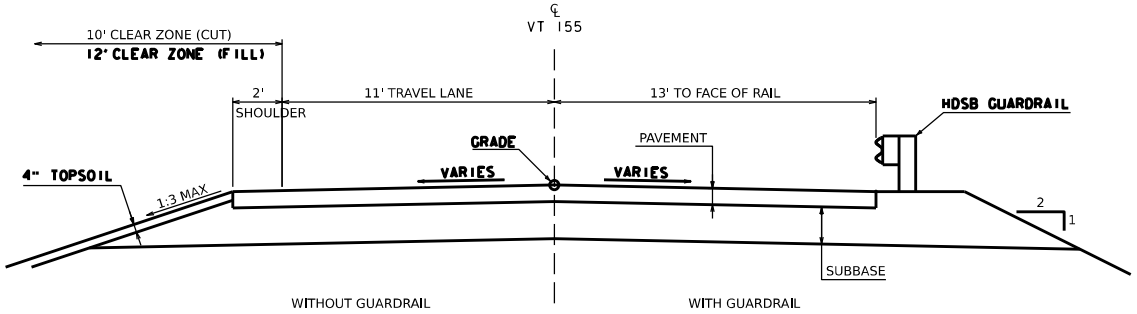
PROJECT NAME:	WALLINGFORD
PROJECT NUMBER:	BF 0133(18)
FILE NAME: s23b009BDR_Disinvestment.dgn	PLOT DATE: $$$$DATE$$$
PROJECT LEADER: LJ STONE	DRAWN BY: G POULSEN
DESIGNED BY: ------	CHECKED BY: ------
DISINVESTMENT LAYOUT	SHEET $S#$ OF $T#$



PEDESTRIAN BRIDGE LAYOUT

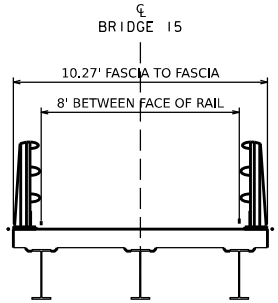
SCALE 1" = 20'-0"

PROJECT NAME:	WALLINGFORD		
PROJECT NUMBER:	BF 0133(18)		
FILE NAME:	s23b009BDR_Ped	PLOT DATE:	$$$$DATE$$$
PROJECT LEADER:	LJ STONE	DRAWN BY:	G POULSEN
DESIGNED BY:	------	CHECKED BY:	------
PEDESTRIAN BRIDGE LAYOUT		SHEET	$S#$ OF $T#$



EXISTING VT 155 TYPICAL SECTION

SCALE ⅛" = 1'-0"



PEDESTRIAN BRIDGE TYPICAL SECTION

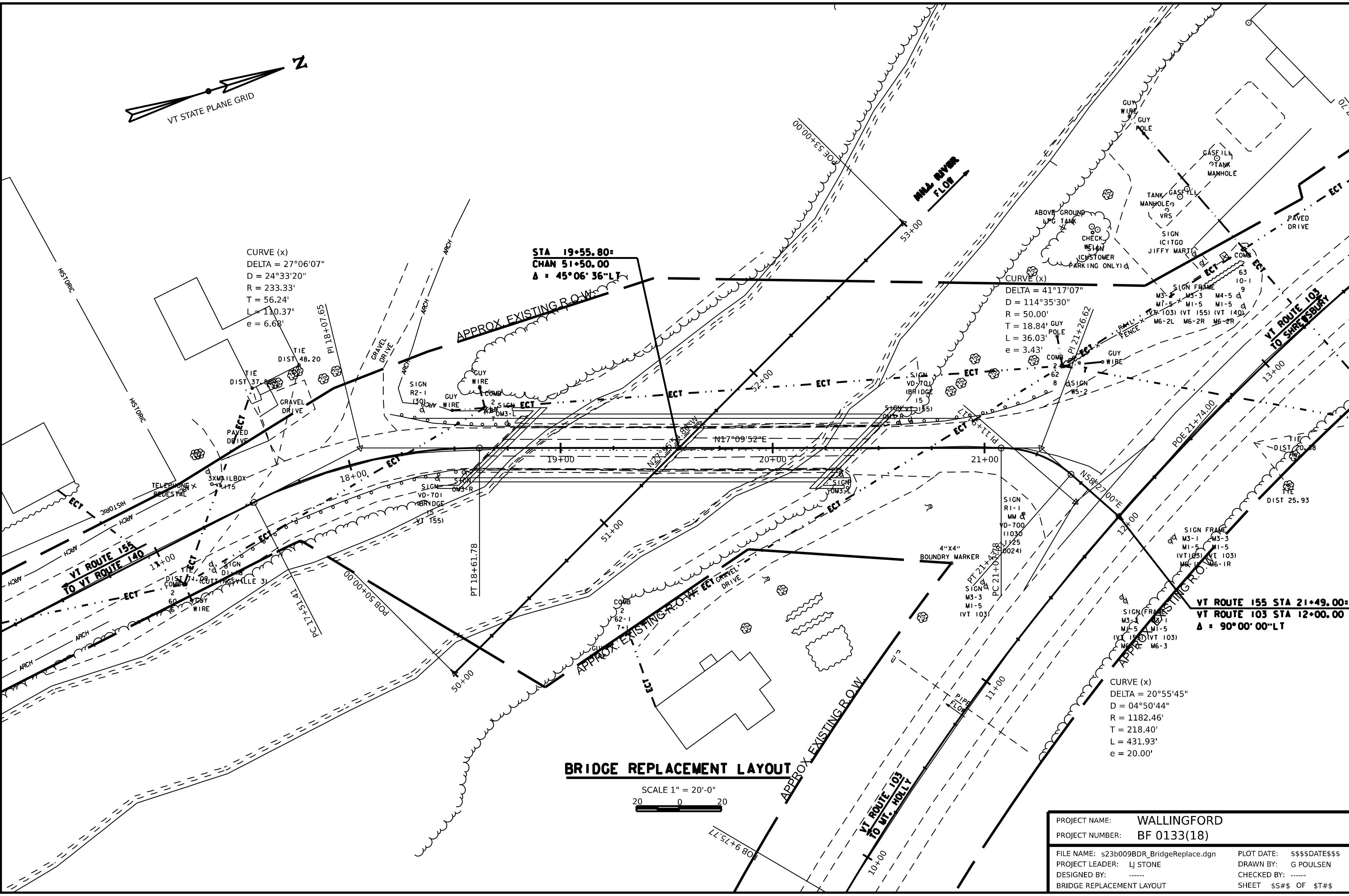
SCALE ⅛" = 1'-0"

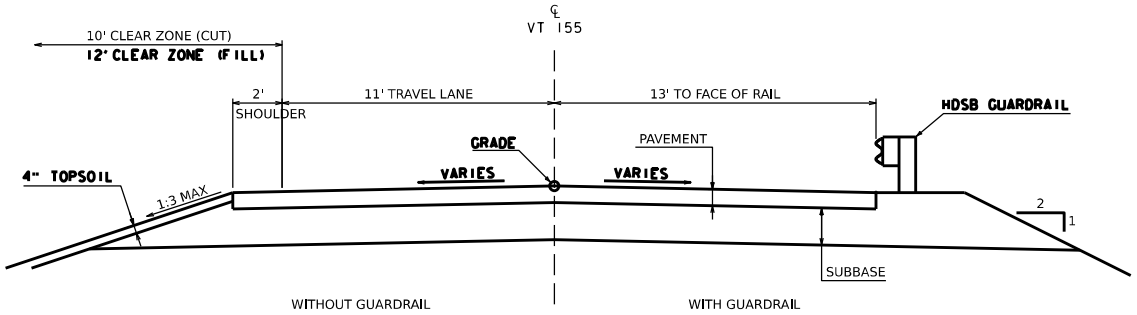
MATERIAL TOLERANCES (IF USED ON PROJECT)	
SURFACE	
- PAVEMENT (TOTAL THICKNESS)	± ¼"
- AGGREGATE SURFACE COURSE	± ½"
SUBBASE	± *1*"
SAND BORROWS	± *1*"

PROJECT NAME: WALLINGFORD
PROJECT NUMBER: BF 0113(18)

FILE NAME: s23b009typ.dgn
PROJECT LEADER: LJ STONE
DESIGNED BY: ------
PEDESTRIAN BRIDGE TYPICAL SECTION

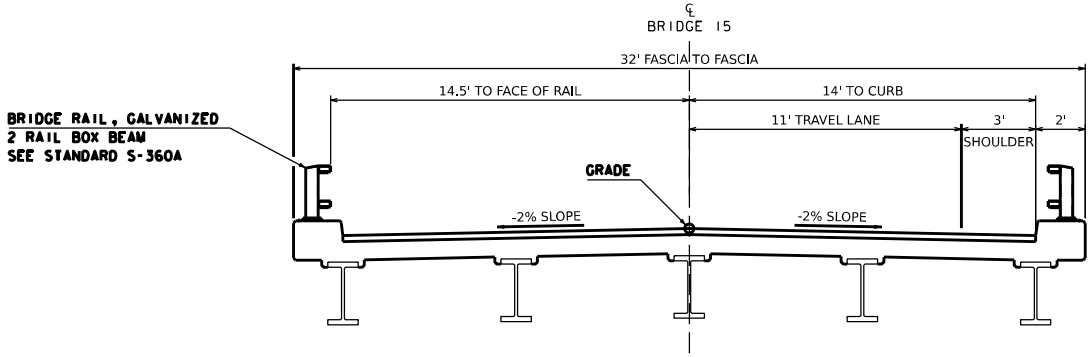
PLOT DATE: $$$$DATE$$$
DRAWN BY: G POULSEN
CHECKED BY: ------
SHEET $S#$ OF $T#$


VT STATE PLANE GRID
N
CURVE (x)
DELTA = 27°06'07"
D = 24°33'20"
R = 233.33'
T = 56.24'
L = 110.37'
e = 6.68'
STA 19+55.80=
CHAN 51+50.00
Δ = 45°06' 36" LT
CURVE (x)
DELTA = 41°17'07"
D = 114°35'30"
R = 50.00'
T = 18.84'
L = 36.03'
e = 3.43'
CURVE (x)
DELTA = 20°55'45"
D = 04°50'44"
R = 1182.46'
T = 218.40'
L = 431.93'
e = 20.00'
VT ROUTE 155 STA 21+49.00=
VT ROUTE 103 STA 12+00.00
Δ = 90°00' 00" LT
MILL RIVER FLOW
APPROX. EXISTING R.O.W.
VT ROUTE 155 TO VT ROUTE 140
VT ROUTE 103 TO SHREWSBURY
VT ROUTE 103 TO MT. HOLLY
N17°09'52"E
N58°27'00"E
POE 53+00.00
POB 50+00.00
POB 9+75.77
PI 18+07.65
PT 18+61.78
PC 17+51.41
PI 21+26.62
PC 21+04.78
PT 21+43.78
POE 21+74.00
17+00
18+00
19+00
20+00
21+00
50+00
51+00
52+00
53+00
10+00
11+00
12+00
13+00
HISTORIC
ARCH
GRAVEL DRIVE
PAVED DRIVE
TELEPHONE PEDESTAL
3XMAILBOX
TIE DIST 37.89
TIE DIST 48.20
TIE DIST 20.38
TIE DIST 25.93
4"X4" BOUNDRY MARKER
ABOVE GROUND LPG TANK
GASFILL TANK MANHOLE
TANK MANHOLE
VRS
SIGN (CITGO JIFFY MART)
CHECK WEIGH SIGN (CUSTOMER PARKING ONLY)
GUY WIRE
GUY POLE
SIGN FRAME
RAIL FENCE
PIPE FLOW
ECT
BRIDGE REPLACEMENT LAYOUT
SCALE 1" = 20'-0"
20 0 20
PROJECT NAME: WALLINGFORD
PROJECT NUMBER: BF 0133(18)
FILE NAME: s23b009BDR_BridgeReplace.dgn
PROJECT LEADER: LJ STONE
DESIGNED BY: ------
BRIDGE REPLACEMENT LAYOUT
PLOT DATE: $$$$DATE$$$
DRAWN BY: G POULSEN
CHECKED BY: ------
SHEET $S#$ OF $T#$



EXISTING VT 155 TYPICAL SECTION

SCALE ⅜" = 1'-0"



BRIDGE REPLACEMENT TYPICAL SECTION

SCALE ⅜" = 1'-0"

MATERIAL TOLERANCES (IF USED ON PROJECT)	
SURFACE	
- PAVEMENT (TOTAL THICKNESS)	± ¼"
- AGGREGATE SURFACE COURSE	± ½"
SUBBASE	± *1*"
SAND BORROWS	± *1*"

PROJECT NAME:	WALLINGFORD
PROJECT NUMBER:	BF 0113(18)

FILE NAME:	s23b009typ.dgn	PLOT DATE:	$$$DATE$$$
PROJECT LEADER:	LJ STONE	DRAWN BY:	G POULSEN
DESIGNED BY:	------	CHECKED BY:	------
BRIDGE REPLACEMENT TYPICAL SECTION		SHEET	$S#$ OF $T#$