Revised

Environmental Assessment

BRATTLEBORO, VT – HINSDALE, NH
TRANSPORTATION CORRIDOR
BRF 2000(19)SC

December, 2013

Prepared For:

VTrans Working to Get You There

New Hampshire DOT

and

U.S. Department of Transportation
Federal Highway Administration

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EIV TECHNICAL SERVICES

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ENVIRONMENTAL ASSESSMENT

For the
BRATTLEBORO, VT – HINSDALE, NH
Route 119 TRANSPORTATION CORRIDOR
BRF 2000(19)SC

Table of Contents

I. Executive Summary

Table of Contents
Continued

II. Main Subject Chapters — Page

Table of Contents
Continued

Page

III. Appendices

IV. Exhibits

Executive Summary

Table of Contents

PROJECT SUMMARY

This chapter summarizes information presented in each of the subsequent Environmental Assessment (EA) chapters. It is organized by content section to correspond to each of those chapters. Additional, more detailed information and analyses not found in the main chapters are compiled in the accompanying appendices. Separate document for Exhibits referenced in this EA has been compiled in a separate volume.

A.) INTRODUCTION

The Route 119 crossing of the Connecticut River between downtown Brattleboro, Vermont and Hinsdale, New Hampshire, is the primary transportation link between these two communities. This river crossing has been in existence for more than 160 years, and is the only transportation connection between New Hampshire and Vermont for a distance of approximately 15 miles. It is the southernmost highway crossing of the Connecticut River between New Hampshire and Vermont.

The current Route 119 Connecticut River crossing is accomplished with two metal truss bridges known as the Charles Dana Bridge and Anna Hunt Marsh Bridge; which meet on a mid-channel island. The longer western bridge carries Route 119 over the main channel of the river and the eastern bridge spans a side channel. The bridges were built in 1920 and 1926 respectively. The western bridge is jointly owned by the State of New Hampshire and the Town of Brattleboro, and is maintained by the State of New Hampshire. The eastern bridge is both owned and maintained by the State of New Hampshire.

The existing substructures are a mix of concrete and masonry materials. Vertical and horizontal clearances are inadequate by current AASHTO design standards. In 1988 structural elements were replaced. In 1993 a sidewalk was installed on the north side of both bridges. In 2003 precast concrete deck panels were installed on both bridges. Despite ongoing maintenance efforts, both bridges are considered seriously deteriorated due to river scouring at the foundations, concrete spalling in the abutments and piers, and corrosion to the structural steel framing.

Ten alternatives were considered to replace the aging bridges (See Exhibit A.1 – Project Study Area). The Preferred Alternative locates a replacement structure south of the current crossing area. It would cross the entire Connecticut River with a single multispan between NH 119 in Hinsdale and VT 142 in Brattleboro. The proposed new bridge would be a structure that provides two 12’ travel lanes, 10’ travel shoulders, a 5’ sidewalk on the upstream side, and a grade-separated railroad crossing in Vermont. The final design of this bridge has not been determined. This alternative also includes rehab of the existing historic Route 119 bridges for pedestrian and bicycle usage.

Studies, meetings, and initiatives concerning the existing Route 119 crossing of the Connecticut River have been ongoing since the bridge deficiencies were documented by the New Hampshire Department of Transportation (NHDOT) in 1977. A joint initiative, involving local and state groups, agencies in Vermont and New Hampshire, as well as area regional planning commissions and affected federal agencies, was initiated in February 1996 to identify potential project alternatives.

The project is jointly sponsored by the Vermont Agency of Transportation (VAOT) and NHDOT with financial and oversight assistance from the Federal Highway Administration (FHWA). VAOT is completing the planning and environmental documentation portions of the project, and NHDOT is responsible for the design and construction phases. The Windham Regional Commission in Vermont, the Southwest Regional Planning Commission in New Hampshire, and the Brattleboro/Hinsdale Bridge Committee have participated substantially in the planning phases of the project. NHDOT and the Bridge Committee worked to determine a bridge type that would be functional, cost effective, and aesthetically compatible with the surrounding project area.

B.) PURPOSE AND NEED

1.) PROJECT PURPOSE

The purpose of this project is to provide a safe, functionally efficient, and cost-effective Route 119 transportation corridor across the Connecticut River in the vicinity of downtown Brattleboro, Vermont and Hinsdale, New Hampshire, and to preserve the socio-economic and environmental resources associated with the transportation corridor.

2.) PROJECT NEED

There exists a need for the project to:

a). MAINTAIN A TRANSPORTATION CORRIDOR BETWEEN HINSDALE, NEW HAMPSHIRE AND DOWNTOWN BRATTLEBORO, VERMONT.

This transportation corridor has been in existence for more than 160 years and is the only transportation connection between New Hampshire and Vermont for a distance of approximately 15 miles to the south and 2 miles to the north. Route 119 is the southernmost transportation crossing of the Connecticut River between Vermont and New Hampshire.

b). CORRECT THE SAFETY, STRUCTURAL, AND FUNCTIONAL DEFICIENCIES OF THE EXISTING TRANSPORTATION CORRIDOR

Photo PS-1 Western Bridge: View from the mid-channel island towards downtown Brattleboro.

Both bridges have seriously deteriorated since their original construction in the 1920's. The concrete in the abutments, piers and backwalls is spalled and reinforcing steel is exposed. The truss members have areas of severe corrosion with section loss. The strength of floor beams and stringers is substantially reduced.

Both bridges are classified by the National Bridge Inventory (NBI) Appraisal Rating as having a status of "Structurally Deficient".

Photo PS -2 Eastern Bridge: View from New Hampshire, west towards the Mid-channel Island and Brattleboro

The traffic functionality problems associated with this transportation corridor are compounded by the at-grade railroad crossing of Route 119 between the western bridge and the Route 5/119/142 intersection. This railroad crossing results in vehicles getting backed up eastward across the western bridge, and westward through the same intersection. The blocking of route 119 by the at-grade railroad crossing significantly degrades the ability of Hinsdale and Brattleboro to share emergency services.

Photo PS -3 VT 119 At-Grade Rail Crossing: View from the western bridge, west towards downtown Brattleboro.

The sub-standard geometry and lane widths of the existing bridges and Route 119 approach roadways result in limited sight distances and also contribute to congested traffic conditions. Additionally, when crossing between Brattleboro and Hinsdale during winter months, pedestrians must use the Route 119 shoulders when traveling between the bridges on the mid-channel island since existing asphalt sidewalk behind the guard rail is not maintained during the winter. These conditions combine to create safety concerns for both vehicular traffic at the at-grade RR crossing and pedestrians on the current VT119/VT142/VT 5 intersection.

c). MAINTAIN AREA SOCIAL AND ECONOMIC RELATIONSHIPS

A functional transportation corridor between Brattleboro and Hinsdale facilitates area commerce and social activities, affects area land uses, and allows the communities to share emergency services.

d). PRESERVE THE INTEGRITY OF AREA RESOURCES TO THE EXTENT POSSIBLE

The Brattleboro/Hinsdale transportation corridor has numerous natural and cultural resources that contribute to the social, economic, environmental, and aesthetic qualities of the area.

e). CONSERVE FISCAL RESOURCES

The development and construction of the transportation corridor should, to the greatest extent practicable, conserve fiscal resources.

C.) ALTERNATIVES

1.) ALTERNATIVES IDENTIFICATION

To facilitate local and regional input, the Windham Regional Commission (WRC) organized the Brattleboro/Hinsdale Bridge Committee. The Bridge Committee members included representatives from the Brattleboro Selectboard (VT), Hinsdale Office of Selectmen (NH), Windham Regional Commission (VT), Southwest Regional Planning Commission (NH), the Town of Chesterfield (NH), local citizens, and representatives

from area social services, emergency services, and interest groups. The Bridge Committee assisted in developing the project's purpose and need, identifying area resources, conducting public informational forums, developing and refining project alternatives, and the identification of project-related area resource impacts.

A technical Working Group of design specialists was also formed from NHDOT, VAOT, WRC, and consultant engineers. The Working Group helped identify and analyze technical issues, address Bridge Committee comments, provide coordination with resource agencies, formulate project alternatives, and assist with project management. Working group meetings were open to the public and were held in both Brattleboro and Hinsdale.

The following 10 project alternatives, briefly described below, were identified for evaluation: (see Exhibit A.3 – Project Alternatives):

- **No-Action**
- **Alternative A** (Rehabilitation) – Rehabilitation of the existing Route 119 bridges.
- **Alternative B** (Replace on Existing) – Replacement of the existing Route 119 bridges on existing alignment.
- **Alternative C** (Alignment Improvement) – Replacement of the existing Route 119 bridges with minor modifications to the existing highway geometrics.
- **Alternative D** (Grade-Separated) – Replacement of the existing Route 119 bridges on existing alignment, but with a grade-separated railroad crossing in Vermont.
- **Alternative E** (Parallel Structure) – Construction of a parallel set of bridges immediately to the south of the existing bridges. The existing bridges could be rehabilitated and maintained for vehicular traffic or pedestrian/bicycle usage.
- **Alternative E-Modified** (Parallel Tangent Structure) – Construction of a parallel set of tangent type bridges immediately to the south of the existing bridges. The existing bridges could be rehabilitated and maintained for vehicular traffic, or pedestrian/bicycle usage.
- **Alternative F** (Blue Seal) – Construction of a new alignment that touches down on the Vermont side approximately 1,000 ft. south of the existing VT 119 touchdown area, and joins with Route 119 in New Hampshire slightly east of the George's Field/NH 119 intersection. The existing bridges would be rehabilitated

and maintained for pedestrian/bicyclist usage. ***This is the project's preferred alternative.***

- **Alternative G** (Georgia Pacific) – Construction on a new alignment that touches down in Vermont approximately 1 mile south of the existing VT 119 touchdown area, and joins with Route 119 in New Hampshire south of the existing NH 119 touchdown location. The existing bridges would be rehabilitated and maintained for pedestrian/bicyclist usage.

- **Alternative H** (Route 9/Main Street) – Construction on a new alignment for the western bridge, which would touch down on the Vermont side to intersect with Route 9, approximately 1,000 ft. north of the existing VT 119 touchdown area, and joins with NH 119 south of the existing NH 119 touchdown location. The existing bridges would be rehabilitated and maintained for pedestrian/bicyclist usage.

2.) PREFERRED ALTERNATIVE DESCRIPTION

While considering input from public meetings and technical support of the Working Group, the Bridge Committee studied the full range of project alternatives and the potential resource impacts of each. In April 1998, the Bridge Committee recommended Alternative F (Blue Seal) as their preferred alternative. Alternative F also received unanimous acceptance from the Brattleboro Selectboard in a letter dated July 7, 1998 and was supported by the Hinsdale Board of Selectmen in a letter dated May 15, 1998. Selection of Alternative F as the project's preferred alternative was approved by the VAOT Secretary on November 25, 1998. NHDOT concurred with the identification of Alternative F as the preferred alternative. The Bridge Committee reaffirmed the selection of Alternative F as their preferred alternative in June 2000 and again in November of 2005. Recent correspondence from the Hinsdale Office of Selectmen and the Brattleboro Selectboard, dated February 27, 2012 and March 20, 2012 respectively, document continued support for the preferred alternative from both involved communities.

Alternative F Description

Alternative F would functionally replace both existing Route 119 bridges with a single bridge, to be located approximately 1,000 ft. south of the existing Route 119 western bridge and form a T-intersection with VT 142. In New Hampshire, Alternative F would slightly realign Route 119 roadway east of the Route 119 George's Field intersection (Exhibit C.1 – Alternative F). The new bridge is to be a steel I-beam girder bridge with aesthetic enhancements and a sidewalk on the upstream side. It would also allow a grade-separated railroad crossing in Vermont. Exhibit C.3 graphically depicts the proposed new bridge. The existing Route 119 bridges would remain open during the project, maintaining two lanes of traffic at all times during construction. After

construction, the existing Route 119 bridges would be rehabilitated for pedestrian and bicycle usage and closed to motor vehicle traffic.

3.) ALTERNATIVES EVALUATION CRITERIA

An Alternative Evaluation Table was developed in consultation with the Brattleboro/Hinsdale Bridge Committee to provide a concise alternative evaluation and comparison analysis (see Page ES-9, Table ES-1 – Alternative Evaluation Table). Alternative F, highlighted in the following table, is the project's preferred alternative. Each of the ten project alternatives is analyzed in two areas:

a). PURPOSE AND NEED CRITERIA

The Alternative Evaluation Table also lists seven purpose and need criteria, which are derived from the project's purpose and need statement, and identifies the ability of each alternative to meet these criteria. The table was developed and utilized to summarize and evaluate the project's alternatives.

b). DESIGN CRITERIA

The construction section of the Alternative Evaluation Table presents ten categories involving construction, design, and cost determinations for each alternative. See notes at the bottom of the table for information on different construction and design options available for the alternatives.

D.) AFFECTED ENVIRONMENTS AND IMPACTS

1.) PROJECT ALTERNATIVES

Ten alternatives were identified and evaluated that would maintain the Route 119 transportation corridor between Brattleboro, VT and Hinsdale, NH. Since the project corridor is located along both the Vermont and New Hampshire shorelines of the Connecticut River, resources for both states were identified and evaluated.

Coordination with resource agencies, field investigations, archival research, and GIS data were used to identify and locate area resources. These resources and the 10 project alternatives were then sited onto a set of digital base maps (Exhibit A.6 – Natural Resources Map; Exhibit A.7– Historic & Archaeological Resources; and Exhibit A.8 – Hazardous Materials Map).

Alternative Evaluation Table ES-1

		ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E	ALTERNATIVE E-Modified	ALTERNATIVE F	ALTERNATIVE G	ALTERNATIVE H
	No-Action	**Rehabilitation**	**Replace on Existing**	**Alignment Improvement**	**Improvement and Grade Separated**	**Parallel Structure**	**Parallel Tangent Structure**	**Blue Seal (Preferred)**	**Georgia Pacific**	**Route 9/Main Street**
PURPOSE AND NEED CRITERIA										
Maintain Transportation Corridor	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Correct Safety Deficiencies	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Correct Structural Deficiencies	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Correct Functional Deficiencies	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maintain Social Relationships	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
Maintain Economic Relationships	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
Preserve Area Resources (11)	Yes	Yes	No	No	No	No	No	Yes	No	No
DESIGN CRITERIA										
Design Speed	N/A	25 mph (1)	35 mph (1)	35 mph	35 mph	35 mph	35 mph (1)	35 mph	35 mph	35 mph
Disposition of Existing Bridges	N/A	Used For Traffic	Removed	Removed	Removed	Options (2)	Options (2)	Options (2)	Options (2)	Options (2)
Bridge Typical Section (3)	N/A	10'-2"-10'-2"	10'-12'-12'-10'	10'-12'-12'-10'	10'-12'-12'-10'	10'-12'-12'-10'	10'-12'-12'-10'	10'-12'-12'-10'	10'-12'-12'-10'	10'-12'-12'-10'
Truss Bridge Feasibility (4)	N/A	Yes	Yes	Yes (5)	Yes (5, 6)	Yes (5)	Yes	Yes (6)	Yes (6)	Yes (5)
Grade-Separated Railroad Crossing	N/A	No	No	No	Yes	No (7)	No (7)	Yes	Yes	Yes
Cost for Coal Tar Remediation	N/A	$0	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$0 (8)	$0 (8)	$0 (8)
Cost for Truss Bridge	N/A	$0	$1,848,035	$833,700	$833,700	$1,903,615	$2,153,725	N/A (4)	$3,147,218	$2,153,725
Estimated ROW Costs	N/A	$0	Low	Low	High	Low	Low	High	Moderate	Moderate
Construction Costs (9)	N/A	$2,528,890	$12,977,930	$14,839,860	$28,526,435	$10,706,098	$10,706,098	$31,500,000	$31,444,385	$28,157,970
Traffic Maintenance During Construction	N/A	Staged Construction	Temporary Bridges	Temporary Bridges	Temporary Bridges	Existing Bridges	Existing Bridges	Existing Bridges	Existing Bridges	Existing (10) & Temporary

PURPOSE AND NEED RATINGS:
Yes - Alternative meets the purpose and need criteria.
No - Alternative does not meet the purpose and need criteria.

CONSTRUCTION NOTES:
(1) Due to design limitation, Alternatives A, B and E-Modified a design speed of 60 km/h (35 mph) is not achievable.
(2) With Alternatives E, E-Modified, F, G and H the existing bridges could be rehabilitated for pedestrians and bicyclists ($1,584,030), vehicle traffic ($1,917,510) or removed ($1,167,180).
(3) Preliminary design speeds and lane widths.
(4) Based upon the desire of the Bridge Committee to evaluate the potential of a new bridge to be a truss type bridge, which could aesthetically complement the existing Route 119 bridges. A project bridge design study is ongoing, which will consider aesthetic requirements. A trust bridge for Alternative F was removed from consideration during the bridge structure type study.
(5) For Alternatives C, D, E and H the east bridge could be a truss.
(6) For Alternative D, F and G, a portion of the bridge could be a truss.
(7) As shown, Alternative E and Alternative E-Modified do not include a grade-separated rail crossing. However, Alternative E and Alternative E-Modified could include a grade-separated rail crossing. The impacts would be similar to Alternative D, and the cost would increase by $11,380,005 over the cost shown for Alternative E and Alternative E-Modified.
(8) Alternatives F and G are south of the existing coal tar deposits, Alternative H is north of the coal tar deposits, estimated remediation costs are in 1984 dollars and would be substantially more in present day estimates.
(9) The costs for Alternative Assumes the existing Route 119 bridges are rehabilitated for vehicular traffic. The costs for Alternatives B, C, D and H assume the existing Route 119 bridges are removed. The costs for Alternatives E, E-Modified, F and G assume the existing Route 119 bridges are rehabilitated for pedestrian usage. **All construction costs are estimated in year 2008 dollars.**
(10) For Alternative H, the west bridge would be utilized for traffic during construction; construction of the east bridge would require a temporary bridge.
(11) See Resource Summary Table, pg. C-20, for individual environmental analyses for each category (see also, Appendix F).

2.) RESOURCE IMPACTS – NON-PREFERRED ALTERNATIVES

Each project alternative location was identified on GIS maps and in the field. Anticipated impacts to area resources were then identified and evaluated for each project alternative. Resource impacts associated with the non-preferred alternatives are fully identified and evaluated in Appendix F, summarized in Chapter D, and identified on Page D-45 in Table D-4 – Resource Summary Table. The Non-Preferred Alternatives are as follows:

- **No-Action Alternative**,
- **Alternative A** (Rehabilitation),
- **Alternative B** (Replace on Existing),
- **Alternative C** (Alignment Improvement),
- **Alternative D** (Grade-Separated),
- **Alternative E** (Parallel Structure),
- **Alternative E-Modified** (Parallel Tangent Structure),
- **Alternative G** (Georgia Pacific),
- **Alternative H** (Route 9/Main Street)

3.) RESOURCE IMPACTS – PREFERRED ALTERNATIVE

Potential resource impacts associated with construction and operation of the project's preferred alternative, **Alternative F**, are fully identified and evaluated in Chapter D, Table D-4, and are summarized below.

a). LAND USE/INDIRECT EFFECTS/CUMULATIVE IMPACTS

Construction of Alternative F would be consistent with area land uses, and result in minimal changes to existing land uses. The potential for indirect growth impact and project-related cumulative growth impacts is minimal. No land use/induced growth mitigation measures are required. This conclusion was reached in coordination with the appropriate Regional Planning Commissions, the town of Brattleboro, VT, and the town of Hinsdale, NH.

b). AGRICULTURAL

No agricultural lands would be impacted by construction of Alternative F. No agricultural mitigation measures are required.

c). SOCIO-ECONOMIC/ENVIRONMENTAL JUSTICE

Construction of Alternative F would have only limited impacts on the area's socio-economic environment. In NH, the reconfiguration of NH 119 would vary only slightly in alignment from the existing Route 119 alignment, and would provide continued vehicle access to the George's Field retail area. The proposed VT 119 touchdown location on Route 142 would be located approximately 1000 feet south of the existing touchdown location. This relocation would continue to provide vehicle access to the downtown Brattleboro area, as well as provide better access to the commercial and industrial areas that are found south on VT 142. Mitigation would consist of maintaining the existing Route 119 bridges for pedestrian and bicycle usage. No additional socio-economic mitigation measures are required.

No identifiable minority/low-income populations, as defined by E.O. 12898, exist within the project area and no environmental justice mitigation measures are required.

d). ACQUISITIONS

As the Vermont side of the project area is substantially more developed than the New Hampshire side, the potential for project residential/commercial acquisitions is greatest within the Vermont area. In Vermont, the following potential project-related acquisitions are identified:

- A residential structure on the west side of VT 142
- The North Country Naturals/Raymond James Metals commercial building (formerly occupied by Blue Seal) on the east side of VT 142
- Relocation of fuel storage tanks under, and adjacent to, the Alternative F alignment between the Vermont shoreline and VT 142
- Right-of-way easement over the NECR railroad line east of VT 142
- 25 parking spaces at the south end of the Marlboro College parking lot

In New Hampshire, the following acquisition is anticipated:

- Relocation of the private access road to Norm's marina and auto recycling center, south of NH 119.
- Private property on mid-channel island.

Total project acquisitions would involve approximately 3.7 acres. Mitigation would include an acquisition and relocation program that would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, as amended. Relocation assistance would be made available to all residential and business relocations without discrimination.

e). PEDESTRIAN/BICYCLE

Construction of Alternative F would improve the area's pedestrian and bicycle facilities. Pedestrian and bicycle access between downtown Brattleboro and the George's Field retail area in Hinsdale would be maintained, as the existing Route 119 bridges would be rehabilitated for pedestrian and bicycle usage. Also, the proposed new bridge would include a sidewalk on the upstream side, and shoulders. No additional pedestrian/bicycle mitigation measures are required.

f). RECREATIONAL FACILITIES

No area recreational facilities would be physically affected by construction of Alternative F. The Town of Brattleboro has identified the construction of a waterfront (Connecticut River) park as a potential future recreational area. This proposed waterfront park would be located in Vermont on the west bank of the Connecticut River, immediately adjacent to the existing Route 119 western landing. Alternative F would be south of the proposed waterfront facility, and would not impact it. Rehabilitation of the existing Route 119 bridges for pedestrian and bicycle usage would complement waterfront access and the new bridge alignment could enhance the proposed facility by routing traffic away from the proposed recreation area.

g). AIR QUALITY

Construction and operation of Alternative F would not materially alter existing area traffic flows and patterns. Project details were discussed with Vermont and New Hampshire State air quality resource agencies and a project area microscale carbon monoxide (CO) analysis was conducted. Based upon this coordination and CO testing, the project is not anticipated to result in any violations of National Ambient Air Quality Standards (NAAQS), and would not adversely impact existing ambient air quality levels. No air quality mitigation measures are required.

h). NOISE

Traffic noise is variable, and is affected by many factors. Noise level measurements were taken for existing noise levels in the project area. Future area noise levels, with and without Alternative F, were computed using the FHWA Traffic Noise Modeling (TNM) program, version 2.5.

Projected noise levels for the final condition exceeded FHWA Noise Abatement Criteria (NAC) at a single location, a private residence on the west side of VT Route 142 near the landing location. This residence will be acquired by the State and removed as part of the project's construction. Very limited project-related noise

impacts are anticipated elsewhere in the evaluated area due to the construction of Alternative F. No noise abatement measures will be required.

i). WATER QUALITY

The Connecticut River is an important water resource for municipal drinking water, fisheries, recreation and wildlife. Project water quality impacts are primarily associated with construction-related activities. New bridge piers within the Connecticut River, associated with construction of Alternative F, may result in some limited and temporary impacts to the river's water quality. Stormwater discharges from the completed Alternative F bridge into the Connecticut River will also occur. However, net stormwater discharges are anticipated to be minimal and would have only a minimal effect upon the receiving waters. Coordination with resource agencies during the project's design phase would take place to insure that stormwater runoff is collected and treated prior to discharge. This condition would improve water quality in the project area relative to existing conditions where stormwater runoff from the existing bridges flows directly into the river. No additional water quality mitigation measures are required.

j). WETLANDS

Area wetlands adjacent to the Alternative F alignment include portions of the mid-channel island, a small wetland area adjacent to the NH 119 touchdown area, an NWI wetland in Vermont between VT 142 and the railroad, and an NWI wetland in New Hampshire south of the NH 119 touchdown area.

Depending upon final bridge design, constructing Alternative F could impact the mid-channel island wetland. The bridge could either pass over the island, or locate a support pier on the southern tip of the island. If the bridge passes over the island, no wetland impacts to the island are anticipated. If a bridge pier is located on the southern tip of the island, up to 0.11 acres of the island wetland could be impacted, depending on the pier size and location. No or very minimal wetland impacts are anticipated from new bridge abutment construction on the east or west banks of the river.

Alternative F's actual wetlands impacts would be determined upon final design. The project would comply with all wetland permitting conditions and requirements. No wetland mitigation would be required.

k). WATERBODY MODIFICATIONS

Alternative F would impact the Connecticut River as a result of the placement of bridge piers within the river, but these impacts are anticipated to be limited. Any construction-related water turbidity or sediment releases resulting in impacts would

be short-term and confined largely to the areas of construction. Coordination with resource agencies and the use of BMPs would be utilized to reduce water turbidity and soil sedimentation during construction. No additional waterbody mitigation measures are required.

l). FLOODPLAINS

The proposed eastern and western Alternative F touchdown locations are both above the Connecticut River's 100-year floodplain. As such, any floodplain impacts of Alternative F would be minimal. This conclusion has been supported through consultation with the Federal Emergency Management Agency (FEMA).

Approximately six bridge piers would be located in the floodway of the Connecticut River. The pier spacing would not obstruct the river's floodway. No floodplain mitigation measures are required.

m). FISH AND WILDLIFE/THREATENED AND ENDANGERED SPECIES

The Connecticut River, and its associated shorelines, provide substantial habitat for fish and wildlife.

1). Fish and Wildlife

The Vermont touchdown location is in a developed commercial area with a bulk fuel depot found on the river's edge. The New Hampshire touchdown location has an automobile recycling area located on the upper riverbank and a marina located at the river's edge. The riparian zones, on both sides of the river, are already impacted by the existing development. As such, only limited impacts to the existing riverbank habitats are anticipated due to construction of Alternative F.

The operation of Alternative F would have only a minimal impact on existing fish habitats. Consultation with the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) has supported this conclusion.

Some temporary impacts to fish and wildlife habitats are anticipated to occur during construction activities. The Vermont Fish and Wildlife Department has requested that construction be scheduled to minimize impacts on migrating and spawning fish. Coordination with resource agencies, the use of BMPs during construction, and compliance with construction erosion and sediment control requirements would be utilized to limit impacts to area fisheries. No additional fish and wildlife mitigation measures are required.

2). Threatened and Endangered Species

a) Dwarf Wedge Mussel (*Alasmidonta heterodon*)
The Connecticut River, in the vicinity of Brattleboro, likely supported historic colonies of Dwarf Wedge mussels, a federal endangered species. In 1999 a Dwarf Wedge mussel dive survey was conducted after coordination with both state and federal wildlife resource agencies. No protected mussel species were observed. A follow-up shoreline survey for the shells of this protected species was conducted in 2009. Again, there was no evidence to suggest that this protected species had re-colonized the project area. Based on the results of these field surveys no further project coordination or requirements regarding impacts to the federally endangered Dwarf Wedge mussel are required. No Dwarf Wedge mussel mitigation measures are required.

b) Rare, Fragile, and Sensitive Species
The VT Agency of Natural Resources (VANR) Non-Game Natural Heritage Program (NNHP) and the NH Natural Heritage Bureau (NHB), requested botanical field surveys to determine the presence of and potential project impacts to several rare plant species thought to occur in the area.

Based on field investigations conducted in 2009, only impacts to the local population of *Heteranthera dubia* could be considered noteworthy. This largely depends on the final bridge design and support pier placement. This species is common throughout much of North America but is listed as Endangered in NH since it is on the edge of its natural range. Only a few individuals of this species were observed in the project area and those were off the southern side of the mid-channel island. The NH NHB has requested that they be provided with conceptual plans once they are available. Continued coordination with the NH NHB will be necessary to develop a suitable mitigation strategy if impacts to the local population of this species are unavoidable.

n). HISTORIC

The existing Route 119 bridges are eligible for inclusion in the National Register of Historic Places. The September 5, 2000, VT and NH SHPO Section 106 Letter of Effect determined that the project would have No Adverse Effect on historic properties listed on or eligible for listing on the National Register of Historic Places, provided that the existing bridges are rehabilitated and retained for recreational use. The rehabilitation is to be done in accordance with the Secretary of Interior's Standards, with VAOT and NHDOT sharing maintenance responsibilities. Also, the

Section 106 Letter of Effect states that community members from both Brattleboro and Hinsdale are to have meaningful input during the final bridge design process to ensure that the new Route 119 Bridge incorporates aesthetic elements to help it conform to the Historic character of the project area.

Project mitigation would consist of rehabilitating and maintaining the existing Route 119 bridges for recreational use, and incorporating certain aesthetic elements into the final bridge design. Overall, project impacts to area historic resources would be minimal. No additional historic mitigation measures are required.

o). ARCHAEOLOGICAL

The Connecticut River is an area of sensitivity for archaeological resources. Project archaeological investigations have determined that, although numerous Euro-American artifacts exist along the Alternative F alignment on both sides of the river, none of the artifacts are from intact archaeological deposits and these artifacts are not considered eligible for the National Register of Historic Places. No Native American artifacts were identified during these surveys. Additionally, the mid-channel island, within the Alternative F alignment area, was determined to have a low potential for intact archaeological resources.

The September 5, 2000, VT and NH SHPO Section 106 Letter of Effect determined the project would have no potential to cause effects on identified archaeological resources. No archaeological mitigation requirements are proposed.

p). HAZARDOUS MATERIALS

Alternative F would have only minimal impacts on any identified hazardous waste sites. The Vermont touchdown area would pass over an existing bulk fuel storage area, which would require either partial or complete relocation. There is an identified hazardous waste site in Brattleboro, consisting of coal tar residues near the existing Route 119 landing. Long-term monitoring of the coal tar residue has determined that the deposit is largely non-migratory and is found approximately 800 feet north of the Alternative F alignment. Construction of Alternative F would not impact these coal tar deposits.

The Alternative F touchdown area in New Hampshire would be adjacent to a marina and auto recycling center. Only the northern and northeastern portions of this area would be affected, not the center and eastern areas of the property where past auto recycling activities have occurred. As such, Alternative F is not anticipated to have any impact to hazardous waste site locations in New Hampshire.

The potential for Alternative F to impact any hazardous materials is minimal. Care will be exercised during the relocation of the Vermont bulk fuel storage tanks,

currently situated between the VT shoreline and the New England Central Railroad, and any petroleum releases associated with this relocation effort would be remediated. No additional hazardous materials mitigation requirements are proposed.

q). VISUAL

The Connecticut River corridor, in the project area, has exceptional aesthetic qualities. The visual impacts associated with Alternative F largely depend on the final design of the bridge structure, which has not yet been fully determined. The Alternative F location does not incorporate the mid-channel island as part of the crossing so it requires a long structure to cross the river, mid-span supporting piers, and an elevated travel deck to accommodate a grade-separated railroad crossing in Vermont. Both the piers and high roadway could be considered a visual impact. The roadway elevation of Alternative F, at the Vermont shoreline, is estimated to be at an elevation approximately equal to the top of the truss structure of the existing western Route 119 Bridge.

Although the proposed structure associated with Alternative F would be longer and higher than other bridges in the vicinity, design elements could be incorporated that would allow it to better fit the surrounding context. Mitigation for potential visual impacts would involve selecting bridge design elements that conform to the historic and aesthetic context of the surrounding area. Both communities have identified visual effects as an important criterion in selecting a bridge design and are to have input on its final design.

The existing Route 119 bridges would be rehabilitated in accordance with the Secretary of Interior's Standards and within parameters designed to maintain their historic character. No additional visual mitigation measures are required.

r). CONSTRUCTION

Alternative F would result in limited temporary impacts to the project area during the construction phase of the project. Temporary construction impacts are anticipated primarily for traffic, noise, air and water quality, and wildlife habitat.

No long-term rerouting of traffic would be necessary for the project, as the existing Route 119 bridges would remain open until construction of the new Alternative F Bridge is completed. The requirement to change roadway elevations on VT 142, to provide for the new Alternative F Route 119/142 intersection, may necessitate the temporary closure of VT 142 in the project area.

Air quality and noise impacts, due to construction, would be generally periodic and temporary in nature and located adjacent to construction areas. Locations along VT 142, and areas on the eastern shore of the Connecticut River in New Hampshire, may

notice a greater increase in noise and dust levels during construction due to their proximity to the project site. Noise and air quality impacts can be reduced by the use of construction scheduling, public notices, monitored equipment usage, and dust reduction practices.

While construction water quality impacts cannot be avoided, they can be minimized by utilization of best management construction practices, sedimentation and erosion controls, seasonal scheduling of work, and coordination with the governmental and business communities in Brattleboro, Vermont and Hinsdale, New Hampshire. No additional construction-related mitigation requirements are proposed.

4.) RESOURCE SUMMARY

Resources, and the impact of each alternative on these resources, are presented in the following Resource Summary Table. The column associated with Alternative F, the project's Preferred Alternative, is highlighted. Several Alternatives require temporary bridges to maintain traffic during construction, which substantially increases the project's impact area. Alternative F, the project's preferred alternative, does not require a temporary bridge and thereby minimizes the project's area of impact.

For those resources, that did not lend themselves to quantitative analysis, the Bridge Committee identified the following qualitative descriptors to assist in describing an alternative's potential impact upon identified resources:

- None
- Minimal
- Limited
- Moderate
- Substantial

Resource Summary Table

RESOURCE		ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E	ALTERNATIVE E Modified	ALTERNATIVE F	ALTERNATIVE G	ALTERNATIVE H
	No-Action	**Rehabilitation**	**Replace on Existing**	**Alignment Improvement**	**Grade-Separated**	**Parallel Structure**	**Parallel Tangent Structure**	**Blue Seal (Preferred)**	**Georgia Pacific**	**Route 9/Main Street**
Land Use/Induced Growth	None/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Substantial/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Moderate/ Minimal
Agricultural	None	None	None	None	None	None	None	None	None	None
Socio-economic/Enviro Justice	Substantial/ None	Limited/None	Limited/None	Limited/None	Substantial/ None	Limited/None	Limited/None	Limited/None	Substantial/ None	Substantial/ None
Acquisitions-Residential/ Commercial	0 / 0	0 / 0	0 / 2	0 / 2	0 / 13	0 / 1	0 / 1	1 / 1	0 / 0	0 / 4
Acquisition Area (acres)	0	0	0.35	0.49	2.05	1.46	1.4	3.21	4.23	0.94
Pedestrian/Bicycle	None	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Recreational/Section 4(f) (Alternatives A, B, C, E, and E-Modified would have no 4(f) impacts if the existing bridges are rehabilitated and maintained)	None/ None	Minimal/ Minimal	Minimal/ Substantial	Minimal/ Moderate	Minimal/ Substantial	Minimal/ Moderate	Minimal/ Moderate	Minimal/ None	Minimal/ None	Minimal/ Substantial
Air Quality	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Noise	Limited	Limited	Limited	Limited	Moderate	Limited	Limited	Limited	Limited	Moderate
Water Quality	None	Minimal	Limited	Limited	Limited	Substantial	Substantial	Limited	Limited	Limited
Wetlands (acres)	None	Minimal	1.68	1.85	2.53	1.60	1.91	0.11	0.66	2.74
Waterbody Modifications	None	None	Limited	Limited	Limited	Limited	Limited	Limited	Limited	Limited
Floodplains (acres)	None	Minimal	1.94	2.08	3.07	1.71	2.07	0.12	3.42	2.92
Fish & Wildlife/Threatened & Endangered Species (Potential impacts to two NH-listed aquatic plants)	None / None	Minimal / None	Minimal / Minimal	Limited / Minimal	Limited / Minimal	Limited / Minimal	Limited / Minimal	Limited / Minimal	Limited / None	Limited / Minimal
Historic District Impacts	None	None	Substantial	Substantial	Substantial	Moderate	Moderate	Minimal	Minimal	Substantial
Archaeological	None	None	Limited	Limited	Limited	Limited	Limited	None	Minimal	Limited
Hazardous Materials	None	None	Minimal (Substantial)	Minimal (Substantial)	Minimal (Substantial)	Substantial	Substantial	Minimal	Minimal	Minimal
Visual	None	None	Minimal	Minimal	Substantial	Moderate	Moderate	Limited	Limited	Substantial
Construction	None	Minimal	Limited	Limited	Substantial	Limited	Limited	Limited	Limited	Substantial

QUALITATIVE DESCRIPTORS (As Determined by the Bridge Committee):

- None
- Minimal
- Limited
- Moderate
- Substantial

Note: Permanent impacts only; temporary impacts are discussed in report text.

E.) COMMENTS AND COORDINATION

1.) PUBLIC PARTICIPATION

Identification of Alternative F as the project's preferred alternative was accomplished after an extensive, thorough, and lengthy public participation process.

At the initiation of the current project in December 1992, local and regional inputs were utilized to identify area transportation requirements and deficiencies to the existing Route 119 transportation corridor. To facilitate these inputs, the Windham Regional Commission (WRC) organized a Brattleboro/Hinsdale Bridge Committee (Bridge Committee). The Bridge Committee members included representatives from the Brattleboro Selectboard (VT), Hinsdale Selectmen (NH), Windham Regional Commission (VT), Southwest Regional Planning Commission (NH), the Town of Chesterfield (NH), local citizens, and representatives from area social services, emergency services and local interest groups.

The purpose of the Bridge Committee was initially to identify area transportation needs and potential solutions to these transportation needs. Subsequent Committee tasks included: assisting VAOT to conduct public informational forums, the identification and evaluation of project alternatives, the identification and evaluation of project resource impacts, and to provide input to identify a preferred project alternative.

Two public informational meetings were held by the Bridge Committee. At the second public informational meeting, an informal poll of the approximately eighty-five people present showed a strong preference for the two most southern alternatives: Alternative F (Blue Seal) and Alternative G (Georgia Pacific).

The Bridge Committee met sixteen times between February 1996 and June 2000. Bridge Committee meetings were open to the public and held in both Brattleboro and Hinsdale. In April 1998, the Bridge Committee identified Alternative F as the project's Preferred Alternative. On June 6, 2000, the Bridge Committee reaffirmed its support of Alternative F as the project's Preferred Alternative.

The Bridge Committee subsequently met several times with NHDOT between 2001 and 2002 to help evaluate potential bridge types and designs. In January 2005, the Bridge Committee reconvened to consider NHDOT's identification of a steel I-beam/concrete deck bridge as the bridge type to be constructed. During 2005, the Bridge Committee met several additional times with NHDOT to provide input on bridge design elements that would retain the functionality of the bridge, while complimenting area aesthetic qualities. In November 2005, the Bridge Committee affirmed NHDOT's identification of a steel I-beam girder bridge, with aesthetic enhancements, as the new Route 119 bridge type.

In early 2012, VAOT requested that community leaders from both Brattleboro and Hinsdale reaffirm their support of the Preferred Alternative. The project was discussed at the February meeting of Hinsdale's Board of Selectmen and continued support for the Preferred Alternative was documented in a letter from that office dated February 27, 2012. The proposed work was similarly discussed by the Brattleboro Selectboard at their March meeting, which also resulted in a letter of support for the Preferred Alternative dated March 20, 2012.

A public meeting was held August 1, 2013 in conjunction with a 30 day public comment period which began July 15. The EA document was made available to the public at several locations for its review. At the meeting the project, alternatives and preferred alternative were presented, and then comments and questions were received. This meeting was held to meet the public comment requirement under NEPA, transcripts and comments are included in Appendix E.

2.) AGENCY COORDINATION

To facilitate the early involvement of federal and state agencies, notice was mailed to federal and state resource agencies of an April 10, 1996 Agency Concerns meeting in Brattleboro, Vermont. The notice provided a brief description of the project and a request for agency comments. At the April 10, 1996 Agency Concerns meeting, the project's purpose and need along with a brief project history, were set forth and additional project comments were solicited.

A project description and area location map were sent to affected resource agencies on August 28, 1996 with a request for additional resource agency comments. On December 16, 1996 a copy of the project's purpose and need statement was mailed to federal and state agencies with a request for agency comments. On January 2, 1998 a copy of the pre-conceptual design drawings of the ten identified project alternatives, an alternative evaluation table, and a copy of the purpose and need statement were mailed to federal and state agencies with a request for comments.

In October 2005, a project status letter with project alternatives and resource impacts maps and matrices, were forwarded to the COE, VANR, and NHDES, with a request for additional project comments. Extensive project coordination has occurred with, and between, the Vermont and New Hampshire State Historic Preservation Officers (SHPO).

3.) PROJECT COMMITMENTS

Federal, state, regional, and municipal agencies, as well as public interest groups, have all been involved with the project since its inception. As a result of this public and agency communication, and extensive public involvement the following project commitments have been made (see Chapter D & E):

- A new committee of community leaders from both Hinsdale and Brattleboro will be formed to provide feedback on the final design of Alternative F's new bridge. The committee's input during the design process will consider aesthetic compatibility as a criterion when determining a final design.

- NHDOT and VAOT are to minimally rehabilitate the existing Route 119 bridges in accordance with the Secretary of Interior's Standards for pedestrians, bicycle or an alternative transportation use.

- VAOT and NHDOT are to share maintenance responsibilities for the rehabilitated Route 119 bridges.

- Right-of-Way Acquisition – Alternative F would require the acquisition of an existing residential structure and an existing commercial building on VT 142 near the VT touchdown location. Relocation assistance will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

- During any removal of fuel tanks, care will be exercised to minimize the potential for petroleum releases, and any releases will be remediated.

- Coordination will be conducted with the VT Fish and Wildlife Department, NH Fish and Game Department, and the National Marine Fisheries Service, to schedule construction activities to minimize impacts on migrating and spawning fish.

- Impacts to two NH-listed Endangered plants, known to occur in the project area, will be determined once preliminary design plans are available and communicated to the NH Natural Heritage Bureau. If impacts to the local populations are determined to be significant and unavoidable, suitable mitigation measures will be implemented as required.

- Best Management Practices, for erosion prevention and sediment control will be utilized during all phases of construction, both on-shore and in-water, to minimize project-related impacts to water quality.

- During construction, efforts will be made to continually minimize and mitigate construction-related impacts to traffic, air, noise, and water quality in the project area.

4.) FEDERAL AND STATE REQUIREMENTS

Project Permitting - Dependent upon final project design, the following federal and state permits will likely be required for the project:

- NHDES 401 Water Quality Certificate
- NHDES Dredge and Fill Permit
- NHDES Wetland Permit
- VANR Vermont Stream Alteration Permit
- COE 404 Wetlands Permit
- COE Section 9 or 10 Navigable Waterways Permit
- VT 401 Water Quality Certificate
- National Pollution Discharge Elimination System (NPDES) Permit
- VT Stormwater Discharge Permit
- Vermont Act 250 Land Use Permit

It is anticipated that all applicable permits will be obtained.

5.) OTHER PROPOSED FEDERAL AND STATE PROJECTS

In Vermont, the Brattleboro Waterfront Park project is proposed for the property immediately south of the existing Route 119 landing. This project was initiated sometime in 2012 and includes a terrace overlooking the river, landscaping, reconfigured parking, and a boat mooring area. No other federal or state projects are known to be planned for the area immediately adjacent to this project's location in either Vermont or New Hampshire.

Chapter A - Introduction

Table of Contents

A.) INTRODUCTION

1.) PROPOSED ACTION

The proposed action is to construct a new bridge over the Connecticut River along NH Route 119 between Hinsdale, New Hampshire and Brattleboro, Vermont. Route 119 is the primary transportation link between these two towns. This Connecticut River crossing has been in existence for more than 160 years, and is the only transportation connection between the States of New Hampshire and Vermont for a distance of approximately 15 miles to the south and 2 miles to the north. The current Route 119 crossing of the Connecticut River is accomplished with two steel truss bridges, which meet on an island in the Connecticut River (See Exhibit A.1 – Project Study Area Map).

Ten project alternatives were evaluated. These alternatives are described in detail in Chapter C. The Preferred Alternative (Alternative F-Blue Seal[1]) consists of a bridge on a new alignment that would cross the main channel of the Connecticut River and provide a grade-separated railroad crossing in Vermont. The bridge is to consist of two 12' travel lanes, 10' shoulders, and a 5' sidewalk on the upstream side. The existing Route 119 bridges would be rehabilitated and maintained for pedestrian and bicycle usage.

The project begins at VT 142 in Brattleboro, approximately 1,000 ft. south of the existing Route 119 landing, and terminates on NH Route 119, approximately 500 ft. southeast of the existing access road to the George's Field retail area in Hinsdale (See Exhibit C.2 - Alternative F Road Map). In Vermont, the existing Route 119 landing would be relocated to the south and form a T intersection with VT 142. VT 142 would be raised approximately 8 ft. from its existing elevation to accommodate a grade-separated rail crossing over the tracks of the New England Central Railroad. In New Hampshire, only a minor realignment of the existing NH 119 approach would be required.

2.) PREVIOUS INITIATIVES

The current initiative is not the first attempt to enhance the Connecticut River crossing of this transportation corridor. Studies, meetings and initiatives regarding this corridor have occurred since the discovery of deficiencies in the two existing Route 119 bridges by the NHDOT in 1977. Although safety and transportation problems associated with the existing Route 119 crossing have been identified, project development has been slowed by various factors such as coal tar deposits, the RR crossing on the Vermont side, and the study of ten separate project alternatives.

[1] *Alternative F is referred to as the 'Blue Seal' Alternative throughout this document for project consistency, although the building near the Vermont touchdown no longer houses a Blue Seal store. As of April 2012, two private businesses now operate out of the building- Raymond James Metals and North Country Natural.*

- March 3, 1977 – NHDOT inspects the two bridges and lowers the allowable load limits.

- July 22, 1977 – Plans for the replacement of the existing Route 119 bridges are first announced, with a preliminary cost estimate of $2.6 million.

- July 29, 1977 – The first public hearing on the transportation corridor is held in Hinsdale.

- August 14, 1981 – The two Route 119 bridges are scheduled to be replaced in 1983. The new cost estimate: $5 million.

- November 10, 1981 – The New Hampshire Executive Council approves the bridge replacement plan.

- November 17, 1981 – A formal public hearing is held in Hinsdale. Support of the Brattleboro and Hinsdale Selectboards is confirmed.

- December 2, 1983 – Construction is rescheduled to start in 1985. Coal tar residues, created by a coal gasification plant once located along the Brattleboro shoreline of the Connecticut River, are recognized and are cause for concern.

- September 24, 1984 – Replacement of the bridges is announced to be on schedule for the summer of 1985. A coal tar study concluded that the coal tar deposits would not substantially affect the construction plans.

- November 7, 1985 – The State of New Hampshire informs the Hinsdale Selectboard that the State will not allow state money to be spent on bridge replacement unless Vermont agrees to build and pay for a Route 119 railroad overpass.

- November 9, 1985 – The Hinsdale Selectboard sends a letter to the State of New Hampshire, which supports the railroad overpass, but only if Vermont does not oppose the design.

- November 25, 1985 – The State of Vermont and the Town of Brattleboro oppose the railroad overpass. Bridge replacement costs are now estimated at $7.5 million.

- April 10, 1986 – The New Hampshire Executive Council meets with the New Hampshire Governor and they decided to table further discussions of the project.

- December, 1992 – The Windham Regional Commission (WRC) issues a report of work done that year by a local committee regarding the Route 119 corridor. This report recommends the project proceed with a study of locally preferred options for a new Route 119 crossing of the Connecticut River.

In the past, traffic studies, public meetings, engineering analyses and personal intervention by the governors of both Vermont and New Hampshire have resulted in only temporary repairs to the existing bridges. Varied public opinion and interests, environmental and social constraints, along with fiscal concerns, have precluded an acceptable resolution. Recognizing the need to maintain the Route 119 corridor between Brattleboro and Hinsdale, VAOT and NHDOT initiated a joint project in 1995 to evaluate design options and formulate a long-term solution to address the deficiencies of the existing river crossing.

3.) EXISTING CONDITIONS

The existing Route 119 crossing consists of an intersection with VT 142/Route 5, an approach roadway in Brattleboro, the Anna Hunt Marsh Bridge over the western main channel of the Connecticut River, a mid-channel island, the Charles Dana Bridge over the eastern side channel of the Connecticut River, and then an approach roadway in Hinsdale. This transportation corridor provides a vehicle/pedestrian/bicycle crossing of the river between these two communities (See Exhibit C.1 - Alternative F Orthorectified Image). However, the crossing corridor is functionally obsolete with several safety deficiencies.

Bridge sufficiency ratings, or Federal sufficiency ratings, used by the Federal Highway Administration (FHWA), consist of a number between 0 and 100. This number represents a bridge's ability to meet the needs of the public who travel on the bridge. The sufficiency rating number includes a bridge's condition, roadway geometry, number of lanes, horizontal and vertical clearances, load capacity, average daily traffic, detour length if the bridge is closed, and other similar type items found on the National Bridge Inventory (NBI).

The western bridge (#041/040) carries Route 119 over the main channel of the Connecticut River. This bridge is a two-lane, single span steel Pennsylvania Through Truss bridge built in 1920, with an overall length of 339 ft. The 2012 NHDOT bridge inspection report identified this bridge as having a sufficiency rating of 49, and being classified by the NBI Appraisal Rating as having a status of "Functionally Obsolete".

The eastern bridge (#042/044) carries Route 119 over the side channel of the Connecticut River. This bridge is a two-lane, three-span Parker Truss bridge built in 1926, with an overall length of 297 ft. The 2012 NHDOT inspection report identified this bridge as having a sufficiency rating of 47, and was classified by the NBI Appraisal Rating as having a status of "Functionally Obsolete".

Both existing Route 119 bridges are considered to be seriously deteriorated due to river scouring at the footings, concrete spalling on the abutments and piers, and corrosion to the structural framing. The bridges were rehabilitated in 1988. This rehabilitation consisted of replacement of the bridge decking, stringers, floor beams and diaphragms. In 1993, both bridges had a sidewalk constructed on their north side. Both bridges were again rehabilitated in 2003. This latest rehabilitation work consisted of replacing the steel bridge planking with precast concrete deck panels. The 2003 rehabilitation is expected to have a life cycle of ten years or more with appropriate maintenance. Even with these rehabilitations, neither bridge meets current AASHTO standards for design load or geometrics. More information about the bridges can be found in Chapter B.

4.) PUBLIC PARTICIPATION

At the initiation of the current project in 1995, NHDOT and VAOT solicited local and regional input to identify area transportation requirements and evaluate existing deficiencies to the Route 119 transportation corridor. To facilitate these inputs, the WRC organized a joint Brattleboro/Hinsdale Bridge Committee.

The purpose of this Committee was initially to assist NHDOT and VAOT in identifying area transportation needs and potential solutions to these needs. Subsequent Bridge Committee contributions included sponsoring public informational forums, the review of project alternatives, the evaluation of potential resource impacts from the project, and providing input to NHDOT and VAOT regarding the preferred project alternative. The Bridge Committee members included representatives from the Brattleboro Selectboard, the Hinsdale Office of Selectmen, the WRC, New Hampshire's Southwest Regional Planning Commission, the Town of Chesterfield, local citizens, as well as representatives from area social services, emergency services, and other special interest groups.

A project Working Group was also formed with members from NHDOT, VAOT, WRC, and consultant engineers. The Working Group was created to identify and analyze technical issues, address Bridge Committee comments, provide coordination with resource agencies, formulate project alternatives, and assist in project management. Working group meetings were open to the public and held in both Brattleboro, VT and Hinsdale, NH. Marlboro College was contacted and is aware of the proposed project.

The Bridge Committee studied the full range of project alternatives and their potential resource impacts. Utilizing the technical support of the Working Group and considering input from public informational meetings, Alternative F (Blue Seal) was identified as the project's Preferred Alternative. The choice of Alternative F was supported by VAOT, NHDOT and FHWA and further endorsed by community leaders from both sides of the river with confirmation letters from the Brattleboro Selectboard and the Hinsdale Office of Selectmen.

5.) AGENCY COORDINATION

NHDOT, VAOT, and FHWA have involved state and federal agencies throughout the project development. To facilitate the early and continuous involvement of federal and state agencies, project updates were sent to interested agencies at various project stages from 1996 though 2009.

Agency comments on the project were solicited during the same time period and were considered during the project's development. Project agency coordination actions included presentations of the project at Resource Agency Meetings at both NHDOT and VAOT. Meeting attendees included representatives from:

- U.S. Army Corps of Engineers,
- VT Agency of Natural Resources (wetlands and stream alteration),
- VT Division for Historic Preservation,
- NH Fish and Game Department,
- US Fish and Wildlife Service,
- NH Wetlands Bureau,
- NH Rivers Management,
- NH Division of Historical Resources, and
- US Environmental Protection Agency.

Additionally, several mailings with a project description and request for comments were sent to state and federal agencies to solicit input. Although project comments were provided by several agency personnel, no objections to the project have been raised by any of the resource agency representatives. See Chapter D for detailed information on resources and Chapter E for agency coordination information.

VAOT, NHDOT, and FHWA have determined that the project as proposed required completion of this Environmental Assessment in accordance with the National Environmental Policy Act and the US Department of Transportation Act of 1966.

Chapter B – Purpose of and Need for Action

Table of Contents

B.) PURPOSE AND NEED FOR ACTION

The project's purpose and need statement was developed by the Bridge Committee, VAOT, and NHDOT and FHWA. A public and resource agency informational concerns meeting was held in Brattleboro, Vermont, on April 10, 1996 to solicit public and resource agency input regarding the purpose and need for the project. Public, state, and federal agency comments on the draft purpose and need statement were received and incorporated into the final project purpose and need statement.

1.) PROJECT PURPOSE

To provide a safe, functionally efficient, and cost-effective Route 119 transportation corridor across the Connecticut River in the vicinity of downtown Brattleboro, Vermont and Hinsdale, New Hampshire, and to preserve the socio-economic and environmental resources associated with this transportation corridor.

2.) PROJECT NEED

There exists a need for the project to:

- Maintain a transportation corridor between downtown Brattleboro, Vermont and Hinsdale, New Hampshire.
- Correct the safety, structural, and functional deficiencies of the existing transportation corridor.
- Maintain area social and economic relationships.
- Preserve the integrity of area resources to the extent possible.
- Conserve fiscal resources.

These needs are set forth and described more fully below.

a.) MAINTAIN A TRANSPORTATION CORRIDOR BETWEEN DOWNTOWN BRATTLEBORO, VT AND HINSDALE, NH

The Connecticut River Route 119 bridges are the primary transportation link between Brattleboro and Hinsdale. To access the next closest Connecticut River crossing from Hinsdale would require traveling an additional round-trip distance of approximately 18 miles.

Route 119 is an urban collector roadway and part of a regional transportation network including Interstate 91, US Route 5, Vermont Routes 9, 30 and 142, and New Hampshire Routes 9, 10, and 63.

b.) CORRECT THE SAFETY, STRUCTURAL, AND FUNCTIONAL DEFICIENCIES OF THE EXISTING TRANSPORTATION CORRIDOR

The existing Route 119 bridges were constructed in the 1920's and built in accordance with design standards that were current at the time. Design standards have substantially changed in the interim. Due to the sub-standard design geometry and structural capacity of this Connecticut River crossing, the Route 119 corridor here results in several significant traffic safety concerns. These concerns include narrow lane and shoulder widths, limited sight distances, congested traffic conditions, an at-grade rail crossing, and the frequent use of this corridor by emergency vehicles.

1. Existing Corridor Components:

Western Bridge (Main Channel) – The western bridge is a single span, two-lane steel through truss that carries Route 119 over the main channel of the Connecticut River. It has an overall length of 339 feet, a curb-to-curb width of 20 ft., and a center vertical clearance of 15 ft. and a side vertical clearance of 11.25 ft. There is a 6 foot wide sidewalk cantilevered from the north side of the truss. The west abutment consists of a stone masonry breast wall with a concrete seat and backwall. The east abutment is constructed entirely of concrete, as are all the wingwalls.

Photo B-1 Western Bridge: View from Brattleboro east towards the mid-channel island.

The Towns of Hinsdale and Brattleboro originally built the western bridge in 1920. The bridge is jointly owned by the State of New Hampshire and the Town of Brattleboro, and is maintained by the State of New Hampshire. The steel plank deck, stringers, floor beams, and diaphragms were replaced in 1988, and the sidewalk was added in 1993. This bridge was again rehabilitated in 2003 by replacing the asphalt-filled steel corrugated deck with precast concrete deck panels.

The 2003 rehabilitation was anticipated to have a life span of ten years or more with appropriate maintenance. The east approach alignment to this bridge remains substandard due to a 187 ft. radius in the roadway alignment at the east end of the bridge.

Eastern Bridge (Side Channel) – The eastern bridge, which carries Route 119 over the side channel of the Connecticut River, is a two-lane, three span structure with an overall length of 297 feet. It is comprised of a 200 foot steel through truss main span and two 47 foot deck plate girder approach spans. The bridge has a curb-to-curb width of 20 ft. and a vertical clearance of 14.25 ft. The eastern bridge also has a 6 foot wide sidewalk cantilevered from the northern side. The abutments and piers are concrete.

Photo B-2 Eastern Bridge: View from Route 119 in Hinsdale west towards the mid-channel island.

The eastern bridge was originally constructed in 1926 by the Town of Hinsdale. It is currently owned and maintained by the State of New Hampshire. Its stringers, floor beams, and diaphragms were replaced in 1988. Additionally, the approach span superstructures were replaced and a new asphalt-filled, galvanized bridge deck was installed on the main truss at that time. The sidewalk was added in 1993. Along with the western bridge, this structure was again rehabilitated in 2003 by replacing the asphalt-filled corrugated deck with precast concrete deck panels. The 2003 rehabilitation was anticipated to have a life span of ten years or more with appropriate maintenance.

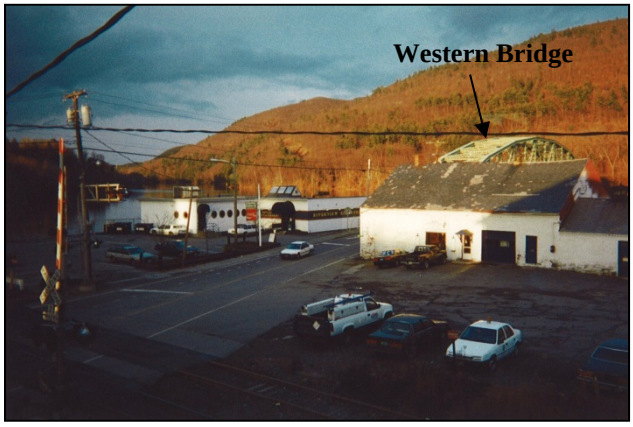


Photo B-3 VT 119: View from Union Station (downtown Brattleboro) east towards New Hampshire

On the west bound approach, a potentially dangerous condition results from the constriction of the 32 foot wide NH-119 roadway where it enters the 20 foot wide bridge (See Photo B2 above).

The VT 119 roadway (Bridge Street) is classified as an urban major collector with a posted speed of 25 mph. This roadway consists of two 11 ft. lanes with 2-ft. shoulders and a bituminous surface. The roadway widens to provide a left-turn lane on the westbound

approach to the intersection with Main Street (Route 5), Vernon Street (VT 142), and Canal Street.

A concrete sidewalk, approximately 6 foot wide with curbing, is provided on the north side of VT 119 between Main Street and the western bridge over the Connecticut River. Curbing is provided on the south side of VT 119 between Vernon Street and the at-grade railroad crossing, west of the Route 119 western bridge.

NH 119 is classified as an urban Major Collector with a posted speed of 35 mph between the Vermont State line and 600 ft. east of the George's Field retail access road, and 50 mph thereafter east towards the Village of Hinsdale. The roadway consists of two 11-ft. lanes, and shoulders which vary in width from 2 ft. to 8 ft. Approaching from the west, NH 119 widens after the NH 119 eastern bridge to provide a left-turn lane at the retail access. Both the NH 119 roadway and the 5-ft. sidewalk on the north side of the roadway consist of bituminous pavement.

Four access drives are located along Route 119 within the limits of the project. A signalized intersection at the retail access road and a shared residential/commercial drive leading to a private marina are located on the eastern bridge approach in New Hampshire. Another pair of drives, Arch Street to the north and Depot Street to the south, intersect the western bridge approach in Vermont. The fourth access road, located on the mid-channel island, is largely unimproved and provides access to a boat launch.

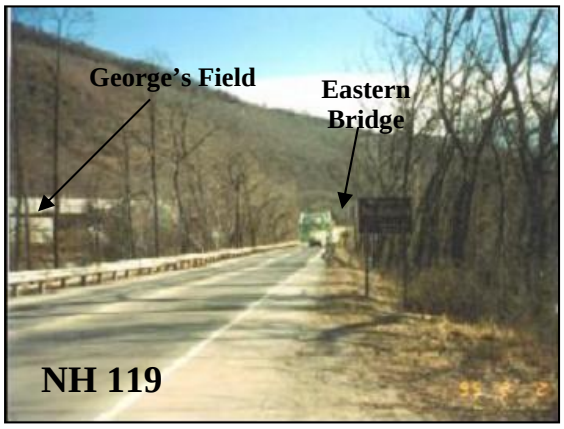


Photo B-5 NH 119: View from the mid-channel island east towards the eastern bridge.

Photo B-4 NH 119: View from the mid-channel island west towards the western bridge.

Route 142 – VT Route 142 (Vernon Street) is classified as a rural Minor collector roadway with a posted speed of 35 mph. The bituminous roadway consists of two (2) 11 foot travel lanes, and 2 foot shoulders. Approaching from the south, VT 142 widens to provide a left-turn lane at the 5/119/142 intersection. A 5 foot wide sidewalk runs along the east side of VT 142, beginning at the intersection and terminating 820 ft. to the south. The east side of VT 142 also has curbing that extends 1,180 ft. south of the same intersection. The west side of VT 142, in this area, is characterized by rock outcroppings and a stone masonry retaining wall.

PHOTO B-6 VT 142: VIEW ALONG VT 142 NORTH TO THE MARLBORO COLLEGE BUILDING, TAKEN FROM THE FORMER BLUE

2. Existing Structural and Functional Deficiencies:

Both bridges and their approaches fail to meet current design criteria as set forth by AASHTO (for New Hampshire) and by the Vermont State Design Standards. Structural repairs completed on the bridges in 1988 and 2003 improved some structural deficiencies, but these repairs were only considered interim improvements. In 2012 both bridges had a NBI appraisal rating as 'Functionally Obsolete' with federal bridge sufficiency ratings of 49 for the western bridge and 47 for the eastern bridge.

Photo B-7 Eastern Bridge: View from New Hampshire, west, towards Vermont.
(note: Bridge clearance is currently 14'-10" at the center and 11'-10" at the exterior)

The traffic functionality of the bridges is limited by vertical clearance, lane and shoulder widths, and a 187 ft. radius curve on the eastern approach to the western bridge. Simultaneous passage of two large trucks at this curve, and on the bridges, is difficult (see photo B7).

These bridges carry a consistent flow of traffic across the Connecticut River. According to the Highway Capacity Manual current peak hour traffic flow is approximately 1,285 vehicles per hour. Projected Estimated (2035) design year volumes indicate that the traffic volume will be approximately 50% of the bridges' vehicular capacity. Therefore, it was not necessary to consider multi-lane bridge, as a two lane bridge is sufficient.

Western Bridge (Main Channel - Anna Hunt Marsh Bridge) – The truss bottom chords show signs of heavy corrosion with areas of minor section loss, and substantial pack rust has developed between plates. Other truss members show minor damage, including corroded lattice members. The stringers and floor beams are moderately rusted with areas of minor section loss. The concrete abutments and piers show minor to moderate cracking and spalling, including the bridge seats. The pre-cast concrete deck panels installed in 2003 show minor transverse and longitudinal cracking.

An underwater inspection in 1997 revealed minor to moderate scouring around the substructure. Up to 10 feet of sheet piling was exposed at the east abutment, and a 2 to 4 foot deep scour hole was found below the west abutment. The load rating of the main channel truss bridge is H15. The standard design load rating is HS25. As a result, certain vehicles and loads are restricted from using the bridge.

Eastern Bridge (Side Channel – Charles Dana Bridge) – The side channel bridge structure is in similar structural and functional condition to the main channel bridge. The bridge deck that was replaced in 2003 is exhibiting minor transverse and longitudinal cracking. The timber plank sidewalk was not replaced, and now has cracked, split and curling boards with protruding nail heads. The truss bottom chords display minor corrosion, and there are also areas of section loss on the lateral bracing and gusset plates. There is some corrosion of the rivets in areas where the paint has failed. In other areas the latticework has rusted, and the concrete bridge seats are cracked and spalled. An underwater inspection performed in 1997 found moderate to severe scour occurring around both piers.

The grout bags that were placed around the south pier in 1988 are visible beneath the timber cribbing and up to 6 feet of the footing was exposed. Additionally, severe spalling was observed on the pier columns. The load rating of the side channel truss bridge is H15. The standard design load rating is HS25. Like the main bridge, certain vehicles and loads are restricted from using this bridge also.

Route 119 - The existing NH 119 horizontal alignment contains a sub-standard curve with a radius of 187 ft. on the east approach to the western bridge. For a roadway of this type with a design speed of 35mph, the minimum curve radius is approximately 410 ft. The existing curve is adequate for only a 25mph roadway. There are also two sub-standard vertical curves on Route 119. One curve, located at the Vermont rail crossing, provides a headlight sight distance of 167 ft. The other curve, east of the river in New Hampshire, provides a headlight sight distance of 250 ft. The minimum headlight sight distance for a design speed of 35 mph is 275 ft.

3. Other Deficiencies:

Route 5/119/142 Intersection – Immediately west of the at-grade railroad crossing, Route 119 becomes Bridge Street and enters the Route 5/119/142 (Canal / Main St. / Bridge St. / Vernon St.) intersection in downtown Brattleboro. The complex geometry of the roadway at this intersection of the roadways and the Brookside shopping plaza entrance creates a major congestion problem for area traffic. It was signalized in 2011 to help reduce travel delays. The previously stop-controlled approaches for Route 119 and VT 142 were over-saturated and operated at an LOS 'F' during the PM peak traffic period (See Appendix, Exhibit B.2 – Rte. 5/119/142).

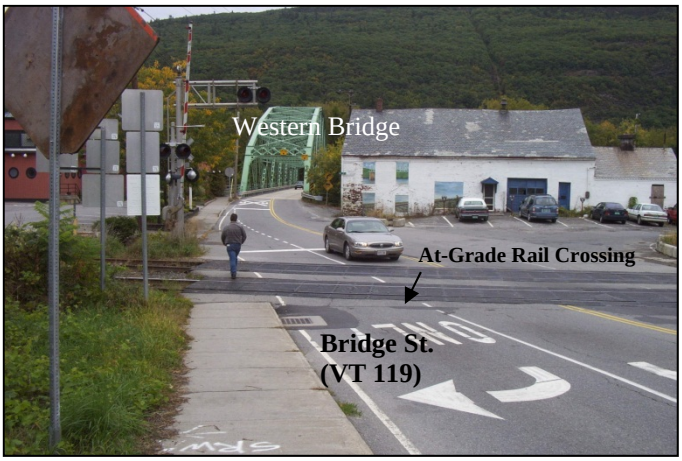


Photo B-8 VT 119 At-Grade Rail Crossing: View from VT 119 looking east at western bridge.

The 2015 Design Hour Volumes (DHV) and Annual Average Daily Traffic (AADT) volumes compiled for this intersection by Clough Harbour Associates (CHA) are set forth in Appendix B.3. New traffic travel time data for the intersection since it was signalized are not yet available. Even with the new signalization, increases in through traffic will undoubtedly limit the ability of the Route 5/119/142 intersection to operate at an acceptable LOS. It was found that according to the Highway Capacity Manual, the intersection's 20 year projected LOS would be graded at 'D' for all peak daily travel periods. A Level of service of "D" is acceptable in urban areas based AASHTO guidance.

With a deteriorating LOS at this intersection, the functional efficiency of the existing Route 119 transportation corridor will also deteriorate.

Route 119 at-grade Rail Crossing – The safety and functionality problems associated with the Route 119 river crossing are compounded by Vermont's at-grade railroad crossing between the western bridge and the Route 5/119/142 intersection (See Photo B8 Above). This active railroad crossing results in vehicles becoming backed up eastward across the western bridge and westward through the Route 5/119/142 intersection, further deteriorating the intersection's level of service (LOS) for traffic passing through on Route 119. The blocking of this transportation corridor that occurs during train passage/stoppage can last from less than one minute to in excess of fifteen minutes, with traffic delays of five or more minutes commonly occurring. These rail related traffic delays can substantially degrade response times for the shared emergency services between the towns of Brattleboro and Hinsdale.

c.) MAINTAIN AREA SOCIAL AND ECONOMIC RELATIONSHIPS

Brattleboro is the principal commercial and industrial center in southeastern Vermont, and an important commercial and employment center for southwestern New Hampshire. The Brattleboro/Hinsdale Route 119 corridor facilitates area commerce and social activities, diverse area land uses, and allows Brattleboro and Hinsdale to share emergency services.

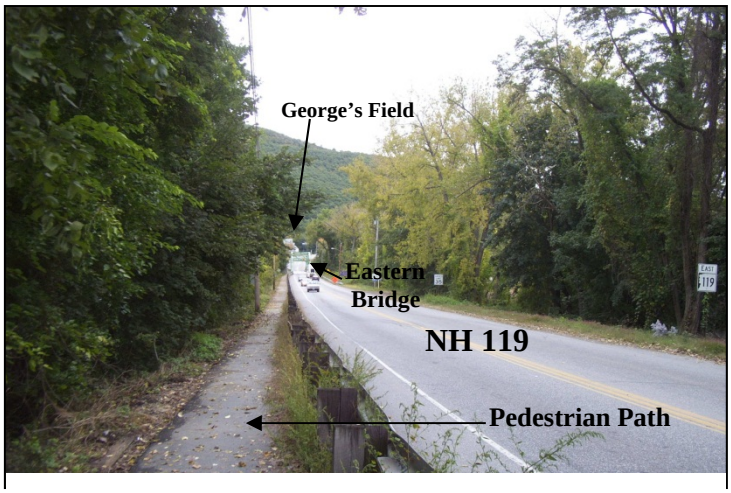


Photo B-9 Pedestrian Path on Mid-Channel Island: View from mid-channel island east towards New Hampshire and existing pedestrian path.

Vermont pedestrians and bicyclists frequently use Route 119 to access the mid-channel island for recreation and to access the nearby retail area in New Hampshire. Handicapped usage of the existing pedestrian pathway across the Route 119 bridges and the mid-channel island is difficult, particularly during the winter months when vehicles and pedestrians must share the roadway when traveling between the bridges. Functional sidewalk and shoulder improvements to the Route 119 river crossing are necessary to allow safe pedestrian and bicycle travel between the two states on this corridor.

Maintaining the corridor is consistent with the local and regional plans and necessary to maintain the area's existing social and economic relationships. Loss of this transportation corridor would result in substantial adverse impacts to the availability of medical services for Hinsdale residents since the closest area hospital is in Brattleboro. Due to the close socio-economic ties between these two towns and regions, a closing or further restriction of the Route 119 corridor would result in substantial social and economic hardships.

d.) PRESERVE THE INTEGRITY OF AREA RESOURCES TO THE EXTENT POSSIBLE

The Brattleboro/Hinsdale Route 119 transportation corridor has numerous cultural and natural resources that contribute to the aesthetic qualities of the area. Numerous historic resources exist in the area, including the Brattleboro Downtown Historic District and the two existing Route 119 bridges over the Connecticut River. All phases of the project's design and development should consider the structures which contribute to the historic district.

The Connecticut River and its associated wetlands and fisheries are important environmental, recreational, and aesthetic resources. The Wantastiquet Mountain State Forest and the Living Memorial Park in Brattleboro provide substantive area recreational opportunities. The project should avoid adverse impacts to these and other resources, and if adverse impacts cannot be avoided, these impacts should be minimized to the greatest extent possible.

e.) CONSERVE FISCAL RESOURCES

Project costs include direct costs associated with project construction and indirect socio-economic costs associated with the completed project. The design and development of the Route 119 transportation corridor must consider the need to minimize the fiscal impacts associated with the project.

Chapter C - Alternatives

Table of Contents

C.) ALTERNATIVES

1.) ALTERNATIVES DESCRIPTION

A section of the Connecticut River, centered on the existing Route 119 crossing east of downtown Brattleboro, was evaluated to determine the best location for a new structure. The initial study area for the project corridor extended from the Route 9 Connecticut River crossing north of Brattleboro to approximately one mile south of the railroad bridge river crossing south of Brattleboro (Exhibit A.1 – Project Study Area Maps).

In New Hampshire, steep slopes, the lack of an existing north-south through road within the Wantastiquet State Forest, and the proximity of the existing Route 9 crossing of the Connecticut River eliminated potential alternatives north of the Brattleboro downtown area from further evaluation.

In Vermont, the potential for viable alternatives located south of the existing railroad bridge was reduced by the presence of wetlands, floodplains, public lands, industrial enterprises, and the distance from downtown Brattleboro. Initial consideration of an alternative in this southern area raised the issue of providing new access to I-91 as part of this project. Since the proposed work has been identified as a "town highway bridge project", its scope and funding would not extend to providing new access to I-91. Adding new access to the interstate would also require the completion of an Environmental Impact Statement to satisfy the FHWA. (see Appendix E, Page E-19, VAOT letter dated January 23, 1998).

Ten construction alternatives and a no-build alternative were evaluated. These alternatives initially included an alternative which consisted of a one-way pair of western bridges with one eastern bridge. The southern bridge of the western pair of bridges was to be located south of the existing Vermont touchdown area, and the northern bridge located near the existing Route 119 location. This alternative was eliminated from further consideration due to traffic flow concerns, resource impacts, and the failure of this alternative to adequately meet the project's purpose and need.

Additionally, a Transportation Systems Management (TSM) Alternative was initially considered. This would have consisted of traffic flow and control devices, lane modifications, and intersection improvements. The goal of TSM is to create safer and more efficient transportation facilities with the help of technological tools, such as intelligent transportation systems and coordinated traffic signal networks.

While a TSM alternative could have improved safety and enhanced the progression of traffic through the corridor, it would not have addressed the existing structural and functional concerns associated with the current Route 119 bridges. As such, the TSM alternative was eliminated from further consideration.

The remaining transportation alternatives were extensively reviewed and evaluated by the project's Working Group, Bridge Committee, VAOT, NHDOT, and FHWA. Input from resource agencies and the public were also considered. Numerous minor alignment shifts and design changes were considered for each alternative in order to maximize that alternative's ability to meet the project's purpose and need and to minimize resource impacts. The following nine build alternatives were identified for further evaluation and are briefly summarized below (See Exhibit A.3 – Project Alternatives; and Exhibit A.4 – Project Alternatives Road Map). The No-Action Alternative is evaluated for comparison purposes only:

- **No-Action Alternative** – The existing Route 119 bridges would remain in use. No replacement bridges would be constructed and the existing bridges would continue to be maintained to the greatest extent possible. Other projects within the area will still be advanced.

- **Alternative A** (Rehabilitation) – Rehabilitation of the existing Route 119 bridges.

- **Alternative B** (Replace on Existing) – Replacement of the existing Route 119 bridges on existing alignment.

- **Alternative C** (Alignment Improvement) – Replacement of the existing Route 119 bridges, with minor modifications to the existing roadway geometrics.

- **Alternative D** (Grade-Separated) – Replacement of the existing Route 119 bridges with a minor alignment improvement, but with a grade-separated railroad crossing in Vermont.

- **Alternative E** (Parallel Structure) – Construction of a parallel set of bridges immediately to the south of the existing bridges. The existing bridges would be rehabilitated and maintained for pedestrian/bicycle use.

- **Alternative E-Modified** (Parallel Tangent Structure) – Construction of an eastern bridge parallel to the existing one with the replacement western bridge constructed on a tangent to the existing one. The existing bridges would be rehabilitated and maintained for pedestrian/bicycle use.

  Alternative F (Blue Seal - the project's *Preferred Alternative*) – Construction of a single new bridge on an alignment that would touch down in Vermont approximately 1000 ft. south of the existing VT 119 touchdown area. In New Hampshire, Alternative F would join with the existing NH 119 roadway slightly east of the entrance to the George's Field retail area. The existing Route 119 bridges would be rehabilitated and maintained for pedestrian/bicyclist use.

- **Alternative G** (Georgia Pacific) – Construction of a new alignment that touches down in Vermont approximately 1 mile south of the existing VT 119 touchdown area. The existing bridges would be rehabilitated and maintained for pedestrian/bicyclist use.

- **Alternative H** (Route 9/Main Street) – Construction on a new alignment for the western bridge, which would touch down in Vermont to intersect with High Street/Route 9, approximately 1000 ft. north of the existing VT 119 touchdown area. The eastern bridge would be replaced on alignment. The existing western bridge could be rehabilitated and maintained for pedestrian/bicyclist use.

Highway and Bridge Design Criteria

Design criteria that were utilized to establish the project's highway and bridge elements were extracted from the following publications:

- *A Policy on Geometric Design of Highways and Streets (2004) – AASHTO*. The State of New Hampshire uses the AASHTO policy for their design standards. This design policy was utilized for bridge design and NH 119 highway design.

- *Vermont State Design Standards (1997).* These state standards were utilized for VT 119 and VT 142 highway design.

The project's design data criteria were identified using existing traffic information and modern safety standard requirements. Design criteria for affected roadways were identified for both the currently posted speed limit and the project's design speeds. Affected project roadways would include VT 119, NH 119, and VT 142.

The project involves roadways from four separate functional classifications: Urban Major Collector, Urban Minor Collector, Rural Major Collector, and Local Streets. The design standards utilized for the project are based on the *AASHTO* functional classifications of the highway, projected traffic volumes, and operational speeds.

On NH 119, AASHTO policy was used to establish the design speeds of 50 mph for the section east of the George's Field retail access drive, and 35 mph for the section from the access drive to the Vermont state line.

NHDOT determined that 2035 design-year traffic volume projections require a minimum of 8-foot shoulders and 12-foot travel lanes for NH 119 based on AASHTO policy. However, NHDOT standard design widths provide for 10-foot shoulders to allow for an additional margin of safety associated with a broken-down vehicle on the shoulder, especially when the vehicle is adjacent to a guardrail. This is consistent with the 2004

AASHTO policy, which allows a shoulder width that is wider than used elsewhere in areas adjacent to a guardrail or other barriers.

Discussions with the Federal Railroad Administration (FRA) and New England Central Railroad, Inc. (NECR) indicated a strong rail industry preference for a grade-separated VT 119 rail crossing, which is consistent with FHWA's policy for rail crossings. A grade-separated rail crossing of VT 119 would require a minimum of 23-feet of vertical clearance, which is the Vermont State vertical rail clearance standard.

In April 1996, coordination with the Town of Brattleboro identified the Town's desire to ensure the project is compatible with, and complementary to, other downtown projects, including: The Whetstone Branch bridge rehabilitation (completed in 2003), Main Street rehabilitation, the Brattleboro Transit Center (completed in 2004), and the Union Station waterfront park (initiated 2012). Additionally, compatibility of the project with the Brattleboro Downtown Historic District is desirable to the Town.

In February 1998, the Connecticut River Joint Commission encouraged constructing a replacement bridge to maintain the economic and social connection between Brattleboro and Hinsdale. The rehabilitation and preservation of the existing Route 119 bridges for bicycle and pedestrian usage has been advocated by several local and regional officials.

Traffic Design Criteria

Traffic forecasts for various project alternatives were obtained through the use of the Vermont statewide TRANPLAN model and supplemented with VAOT design hour volume (DHV) and growth factors. The TRANPLAN model has been created for a calibrated year 2000 and forecasted year 2020. The project design year is 2035. Growth factors for different types of roadway classifications were used along with the TRANPLAN volumes to estimate the 2015 and 2035 daily traffic volumes for the project study area. The 2015 and 2035 DHVs were established using forecasted daily volumes and AADT data published by VAOT and NHDOT.

Figures 1 through 10 in Appendix B identify the 2015 daily traffic and design hour volumes for each of the bridge alternatives as set forth by the TRANPLAN model. To project design year traffic volumes, the 2020 modeled volumes were calibrated against actual traffic volumes and then extrapolated out to the year 2035. Figures 11 through 20 in Appendix B show the 2035 traffic volumes at the Route 5/119/142 intersection for each project alternative.

2.) EVALUATION CRITERIA AND ANALYSIS

An analysis of the alternatives evaluated for the project is set forth below. Each of the nine project build alternatives and the no-action alternative were considered with respect to the project's stated Purpose and Need and resource impacts. Plans, profiles, and additional purpose and need analyses for the ten identified project alternatives are located in Appendix A. Two sets of evaluation criteria were developed to consider and evaluate

the project alternatives. Based on its ability to best achieve the project's purpose and need, Alternative F was identified as the project's Preferred Alternative. This choice was agreed upon by community leaders from Brattleboro and Hinsdale, and supported by both VAOT and NHDOT. The project's non-preferred alternatives conformance with the evaluation criteria is also located in Appendix A.

Non-Preferred Alternatives

In this chapter, the project alternatives are summarized and analyzed with regard to both the stated purpose and need and to their anticipated resource impacts. This summary is to illustrate the basis for their dismissal as the project's Preferred Alternative. Detailed information and analyses, regarding the non-preferred alternatives and the reasons for their dismissal, are presented in Appendix A. Detailed information regarding the potential environmental impacts of these non-preferred alternatives can be found in Appendix F.

No-Action Alternative – This alternative would provide only for the continued maintenance of the existing bridges.

This alternative would not correct the existing safety, structural, and functional deficiencies of the corridor. Specifically, the structural integrity of the two Route 119 bridges would continue to deteriorate, the substandard roadway curve radii and sight distances would remain, and large vehicle traffic using the crossing would continue to be impeded. Also, the Route 119 at-grade rail crossing would remain an impediment to emergency vehicles and the 119/5/142/Brookside Plaza intersection would continue to operate at a low level of service.

This alternative does not meet the project's purpose and need as it fails to address project transportation, safety, structural, and functional requirements (Table C-1, Alternative Evaluation Table, pg. C-13). Therefore, the No-Action Alternative was not identified as the project's preferred alternative. It has been retained, however, for the purposes of serving as a baseline by which to analyze the Preferred Alternative's impacts.

- **Alternative A** (Rehabilitation) –This option would provide for rehabilitation of both the western and eastern Route 119 bridges, and reconstruction of the Route 119 approach roadway sections. During rehabilitation of the bridges, staged construction would be utilized to maintain one-way alternating traffic on both bridges at all times.

  Estimated at $2.5M, this alternative has the lowest upfront construction cost of the build options but would not improve the sub-standard horizontal and vertical curves that exist on the approach roadway sections. Bridge rehabilitation would not improve the load ratings of the bridges, as the load ratings are controlled by the bridge trusses, which would not be restored to their original condition. The existing sub-standard bridge clear widths and vertical clearances would also not

be improved. Route 119 traffic flows would not be improved, and the at-grade Route 119 railroad crossing would remain with this alternative.

This alternative does not meet the project's purpose and need as it fails to address project transportation, safety, structural, and functional requirements (see Table C-1, Alternative Evaluation Table). Therefore, Alternative A (Rehabilitation) was not identified as the project's preferred alternative.

- **Alternative B** (Replace on Existing Alignment) – This alternative would provide for the replacement of both the western and eastern bridges, and the reconstruction of the Route 119 approach roadway sections. Temporary bridges would be utilized during the replacement of the existing bridges to maintain two lanes of traffic across the river.

  The construction and environmental remediation costs associated with this alternative are estimated to be in excess of $16M. It would not improve the existing sub-standard horizontal and vertical curves, nor the sub-standard sight distances associated with the approach roadway sections, nor change the existing Route 119 at-grade rail crossing. Additionally, this alternative would require the construction of a temporary bridge that would impact a CERCLIS-listed coal tar hazardous waste site, located immediately south of the existing western Route 119 bridge.

  Although it would correct some of the vertical and horizontal geometry at the crossing, this alternative does not meet the project's purpose and need as it fails to address functional requirements, and results in substantial impacts to area resources (see Table C-1, Alternative Evaluation Table). Alternative B (Replace on Existing) was therefore not identified as the project's preferred alternative.

- **Alternative C** (Alignment Improvement) – This alternative would provide replacement structures for both the western and eastern Route 119 bridges, at approximately the same location as the existing bridges, and would include the reconstruction of the Route 119 approaches. Temporary bridges would be utilized during construction to maintain two lanes of traffic across the river.

  The construction, environmental remediation, and ROW acquisition costs associated with this alternative are estimated to be in excess of $15.8M. The alternative would partially improve Route 119's existing horizontal and vertical alignments, but still retain the Route 119 at-grade railroad crossing. As a result of retaining the at-grade railroad crossing, Route 119 would retain a sub-standard vertical curve with a sub-standard sight distance. This alternative would require a temporary bridge, which would impact a CERCLIS-listed coal tar hazardous waste site.

This alternative does not meet the project's purpose and need as it results in substantial impacts to area resources (see Table C-1, Alternative Evaluation Table); and Table C-2, Resource Summary Table). Therefore, Alternative C (Alignment Improvement) was not identified as the project's preferred alternative.

- **Alternative D** (Grade-Separated) – This alternative would provide replacement structures for both the western and eastern Route 119 bridges, at approximately the same location as the existing bridges. Additionally, the western bridge and Route 119 approach roadway would be grade separated over the railroad line in Vermont. Temporary bridges would be utilized during construction to maintain two lanes of traffic across the river.

  To achieve the necessary elevation over the railroad, the elevation of the Route 119 touchdown area in downtown Brattleboro would need to be raised, which would require reconstruction of the Route 5/119/142 intersection, the Whetstone Bridge, four city streets, and the acquisition of 13 commercial properties. Many of these impacted areas and properties are located within or adjacent to the downtown Brattleboro Historic District. Additionally, the construction of a temporary bridge would result in temporary impacts to a CERCLIS-listed coal tar hazardous waste site. The construction and environmental remediation costs associated with this alternative are estimated to be in excess of $30.4 M with Vermont ROW acquisition costs expected to add significant additional cost.

  This alternative does not meet the project's purpose and need as it disrupts the area's social and economic relationships and results in substantial impacts to area resources (see Table C-1, Alternative Evaluation Table, pg. C-13). Therefore, Alternative D (Grade-Separated) was not identified as the project's preferred alternative.

- **Alternative E** (Parallel Structure) – This alternative would provide for the replacement of both the western and eastern Route 119 bridges with new, parallel bridges and approach roadway sections. During construction the existing Route 119 bridges would accommodate Route 119 traffic. After construction, the existing Route 119 bridges would be rehabilitated and utilized for pedestrian/bicycle usage.

  The construction and environmental remediation costs associated with this alternative are estimated to be $13.6M. It would partially improve Route 119's existing vertical and horizontal alignments, but retain the existing at-grade railroad crossing. Due to the at-grade railroad crossing, the Route 119 western approach's vertical alignment would require a sub-standard curve with a sub-standard sight distance. This alternative's western bridge would impact a CERCLIS-listed coal tar hazardous waste site.

This alternative does not meet the project's purpose and need as it results in substantial impacts to area resources (see Table C-1, Alternative Evaluation Table, pg. C-13). Therefore, Alternative E (Parallel Structure) was not identified as the project's preferred alternative.

- **Alternative E-Modified** (Parallel Tangent Structure) – This alternative would be identical to Alternative E (Parallel Structure), except that the western bridge would be constructed on a tangent alignment. During construction, the existing Route 119 bridges would accommodate Route 119 traffic. After construction, the existing Route 119 bridges would be rehabilitated and utilized for pedestrian/bicycle usage.

  In order to provide a tangent bridge for the western span, a sub-standard curve would be required on the eastern approach. Alternative E-Modified (Parallel Tangent Structure) would retain an at-grade rail crossing, resulting in a sub-standard vertical curve and a sub-standard sight distance in the western approach. This alternative's western bridge would impact a CERCLIS-listed coal tar hazardous waste site. Construction and environmental remediation costs associated with this alternative are estimated to be $13.9M.

  This alternative does not meet the project's purpose and need as it results in substantial impacts to area resources (see Table C-1, Alternative Evaluation Table; and Table C-2, Resource Summary Table). Alternative E-Modified (Parallel Tangent Structure) was not identified as the project's preferred alternative.

- **Alternative G** (Georgia Pacific) – This alternative would provide for the construction of a single bridge across the Connecticut River, approximately 1 mile south of the existing Route 119 western bridge. During construction, the existing Route 119 bridges would accommodate Route 119 traffic. After construction, the existing Route 119 bridges would be rehabilitated and utilized for pedestrian/bicycle use.

  Extensive public input identified that the relocation of the Route 119 corridor from downtown Brattleboro to an industrial area approximately 1 mile south of the downtown Brattleboro area was not desirable. The location of this alternative would not maintain the direct Brattleboro/Hinsdale transportation connection, and would adversely affect established economic and social relationships in the area. Additionally, this alternative would result in substantial impacts to area natural resources.

  This alternative's construction costs could be as high as $34.5M. It does not meet the project's purpose and need since it fails to maintain the existing transportation corridor by shifting the crossing location away from the established Route 119 alignment. It also could adversely affect area social and economic relationships,

and result in substantial impacts to area resources (see Table C-1, Alternative Evaluation Table, and Table C-2, Resource Summary Table). Therefore, Alternative G (Georgia Pacific) was not identified as the project's preferred alternative.

- **Alternative H** (Route 9/Main Street) – This alternative would replace both existing Route 119 bridges. The eastern Route 119 bridge would be replaced on alignment, and require a temporary bridge during construction. The western bridge alignment would be shifted north in its take-off from the mid-channel island, a grade-separated rail crossing would be constructed with a touchdown location at the Route 9/Main Street intersection in downtown Brattleboro. The current western Route 119 bridge would be utilized for existing traffic during construction. After construction, the western bridge would be rehabilitated and utilized for pedestrian/bicycle usage.

  Relocation of Route 119 traffic into the center of downtown Brattleboro would adversely affect existing area social and economic relationships in downtown Brattleboro. Additionally, this alternative would result in substantial impacts to area resources, both natural and cultural. Construction and other costs associated with Alternative H are estimated to be $30.3M.

  This alternative does not meet the project's purpose and need as it fails to maintain the area's established social and economic relationships, and results in substantial impacts to area resources (see Table C-1, Alternative Evaluation Table; and Table C-2, Resource Summary Table). For these reasons, Alternative H (Route 9/Main Street) was not identified as the project's preferred alternative.

Preferred Alternative

Alternative F (Blue Seal)[1]

Alternative F is strongly supported by area citizens and local/regional officials. In April 1998, the Bridge Committee recommended Alternative F as the project's Preferred Alternative. Alternative F received unanimous acceptance and support as the Preferred Alternative from the Brattleboro Board of Selectmen in a letter dated July 7, 1998 and was also supported by the Hinsdale Board of Selectmen in a letter dated May 15, 1998.

Selection of Alternative F as the project's preferred alternative was approved by the VAOT Secretary on November 25, 1998. NHDOT has concurred with identification of

[1] The commercial building found at the VT touchdown location that formerly housed Blue Seal Feeds, and contributed the name for Alternative F, is now occupied by North Country Natural and Raymond James Metals. To maintain consistency throughout the document and planning process, Alternative F will continue to be referred to as the 'Blue Seal' alternative.

Alternative F as the project's preferred alternative. Community leaders in both Brattleboro and Hinsdale again documented their support of the chosen alternative in 2012. The Hinsdale Office of Selectmen drafted a letter of support for the Preferred Alternative and the project in general in a letter to the Commissioner of NHDOT dated February 27, 2012. The Brattleboro Selectboard discussed the project at their March 2012 meeting and also documented their support for Alternative F in a letter to the VAOT dated March 20, 2012 (see Appendix E – Public Coordination, pgs. E-49 thru E-51).

Alternative F locates the new bridge south of the current crossing location, replaces both existing Route 119 bridges with a single bridge built to modern AASHTO design standards, and provides a grade-separated railroad crossing at the VT landing. This off-alignment location will minimally improve the Route 5/142/119/Brookside Plaza intersection by removing a contributing leg and will also allow the existing bridges to maintain traffic on Route 119 during construction. The existing Route 119 bridges would be retained and rehabilitated for pedestrian and bicycle usage after construction.

Although the Alternative F $31.5M construction cost and estimated $10.3 M ROW acquisition costs are high, it best meets the project's stated purpose and need (see Table C-1, Alternative Evaluation Table) and minimizes impacts on area resources.

The remainder of this chapter describes the Preferred Alternative in detail and discusses the ability of the Preferred Alternative to meet the project's stated purpose and need. Impacts from the Preferred Alternative to area resources, as well as minimization and mitigation efforts, are described in detail in Chapter D.

3.) PREFERRED ALTERNATIVE DESCRIPTION

a.) PREFERRED ALTERNATIVE DESCRIPTION

Alternative F Alignment

Alternative F involves constructing a new bridge south of the existing Route 119 bridges. The western approach to the bridge will form a T-intersection with VT 142, while the eastern bridge approach will be slightly re-aligned in New Hampshire. The new bridge currently proposed is a steel I-beam girder bridge, approximately 1,800 ft. in total length with six supporting piers in the Connecticut River. The proposed new bridge is graphically depicted in Exhibit C.3. The bridge abutments would be located well above the river's ordinary high water mark and outside the 100-year floodplain. Depending on the final bridge design and pier location, construction of Alternative F could impact the mid-channel island. The existing Route 119 bridges would be rehabilitated in accordance with the Secretary of Interior's Standards for Historic Preservation, and maintained for pedestrian and bicycle usage.

The following pre-conceptual plans and typical roadway sections depict the Route 119 Connecticut River crossing proposed with Alternative F. They are as follows:

- Alternative F Plan – VT 119/142 Touchdown Intersection
- Alternative F Plan – VT 142 South
- Alternative F Plan – Route 119 Mid-Channel Island
- Alternative F Plan – NH 119 Touchdown Location
- VT 142/NH 119 Typical Sections
- Route 119 Bridge Typical Section

The western end of the Alternative F bridge would touch down on VT 142 approximately 1,000 ft. south of the existing Route 5/119/142 intersection in Brattleboro. The New Hampshire approach would end approximately 460 ft. east of the George's Field access in Hinsdale on NH 119 (see Appendix A, Figures A-15 through A-26). Relocating VT 119 would help reduce traffic congestion at the Route 5/119/142 intersection by eliminating through traffic from the Bridge Street leg of the intersection.

Alternative F's proposed horizontal alignment would meet design standards for a speed of 35 mph. Due to the grade-separated railroad crossing, Alternative F's vertical alignment could be designed for 25 mph in Vermont. The 25 mph design speed would allow for a shorter vertical curve and reduce potential relocation impacts to VT 142 and the surrounding properties at the "T" intersection that Route 119 would form with VT 142. With the shorter vertical curve, VT 142 would need to be raised approximately 8 ft. from its existing elevation to accommodate the grade-separated rail crossing. A schematic cross section depicting the elevation of the proposed Alternative F bridge in relation to the existing western VT 119 bridge and adjacent buildings is illustrated in Appendix A, Figure A-24.

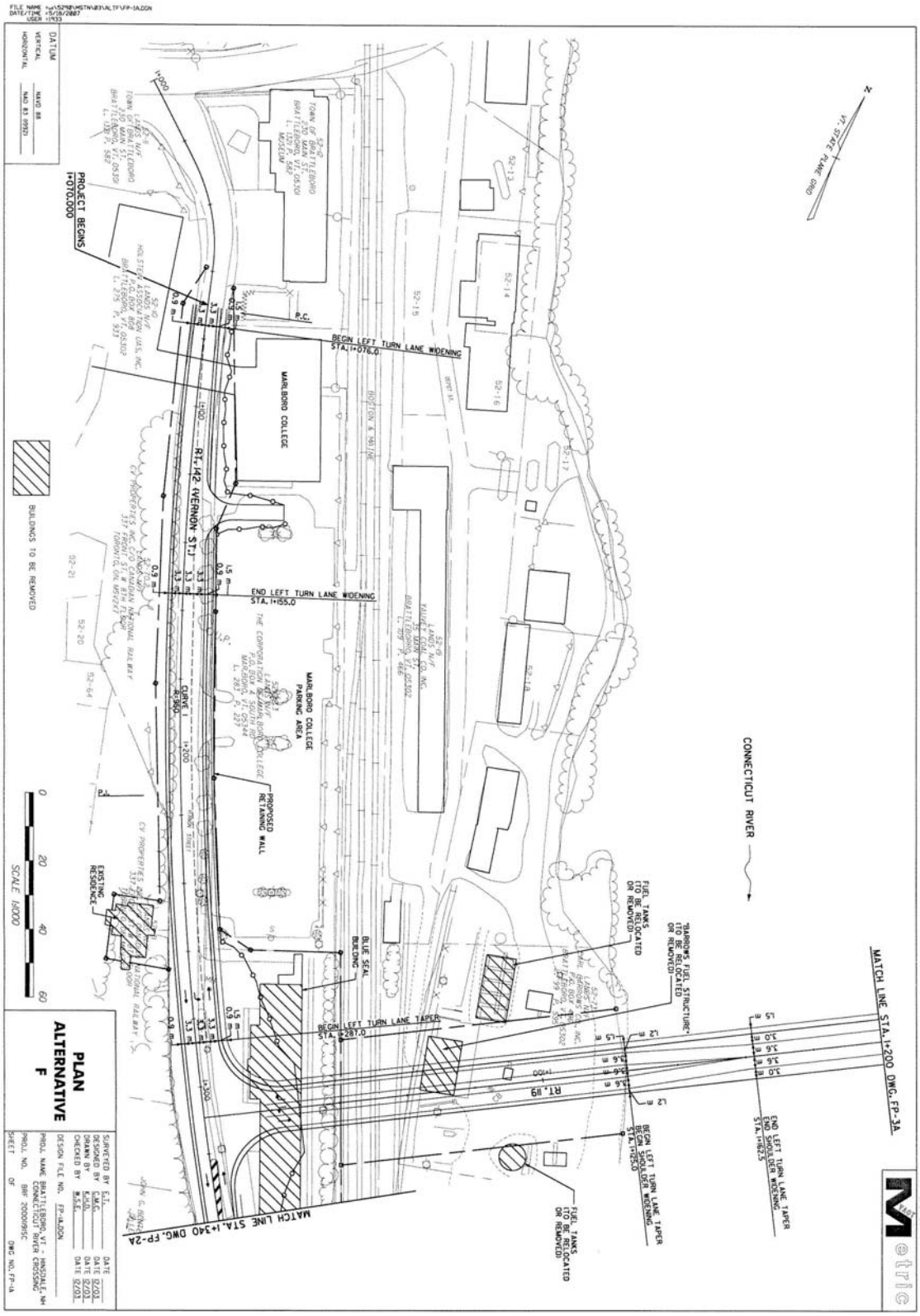
TABLE C-1: ALTERNATIVE EVALUATION TABLE

		ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E	ALTERNATIVE E-Modified	ALTERNATIVE F	ALTERNATIVE G	ALTERNATIVE H
	No-Action	**Rehabilitation**	**Replace on Existing**	**Alignment Improvement**	**Improvement and Grade Separated**	**Parallel Structure**	**Parallel Tangent Structure**	**BLUE SEAL (Preferred)**	**Georgia Pacific**	**Route 9/Main Street**
PURPOSE AND NEED CRITERIA										
Maintain Transportation Corridor	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Correct Safety Deficiencies	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Correct Structural Deficiencies	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Correct Functional Deficiencies	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maintain Social Relationships	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Maintain Economic Relationships	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Preserve Area Resources (9)	Yes	Yes	No	No	No	No	No	Yes	No	No
DESIGN CRITERIA										
Design Speed	N/A	25 mph (1)	35 mph (1)	35 mph	35 mph	35 mph	34 mph (1)	35 mph	35 mph	35 mph
Disposition of Existing Bridges	N/A	Used For Traffic	Removed	Removed	Removed	Options (2)	Options (2)	Options (2)	Options (2)	Options (2)
Bridge Typical Section (3)	1'-9'-9'-1'	1'-9'-9'-1'	10'-12'-12'-10'	10'-12'-12'-10'	10'-12'-12'-10'	10'-12'-12'-10'	10'-12'-12'-10'	10'-12'-12'-10'	10'-12'-12'-10'	10'-12'-12'-10'
Grade-Separated Railroad Crossing	No	No	No	No	Yes	No (5)	No (5)	Yes	Yes	Yes
Cost for Coal Tar Remediation	$0	$0	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$0 (6)	$0 (6)	$0 (6)
Cost for Truss Bridge (4)	$0	$0	$1,848,035	$833,700	$833,700	$1,903,615	$2,153,725	N/A (4)	$3,147,218	$2,153,725
Estimated ROW Costs	$0	$0	Low	Low	High	Low	Low	High	Moderate	Moderate
Construction Costs (7)	$0	$2,528,890	$12,977,930	$14,839,860	$28,526,435	$10,706,098	$10,706,098	$31,500,000	$31,444,385	$28,157,970
Traffic Maintenance During Construction	N/A	Staged Construction	Temporary Bridges	Temporary Bridges	Temporary Bridges	Existing Bridges	Existing Bridges	Existing Bridges	Existing Bridges	Existing (8) & Temporary

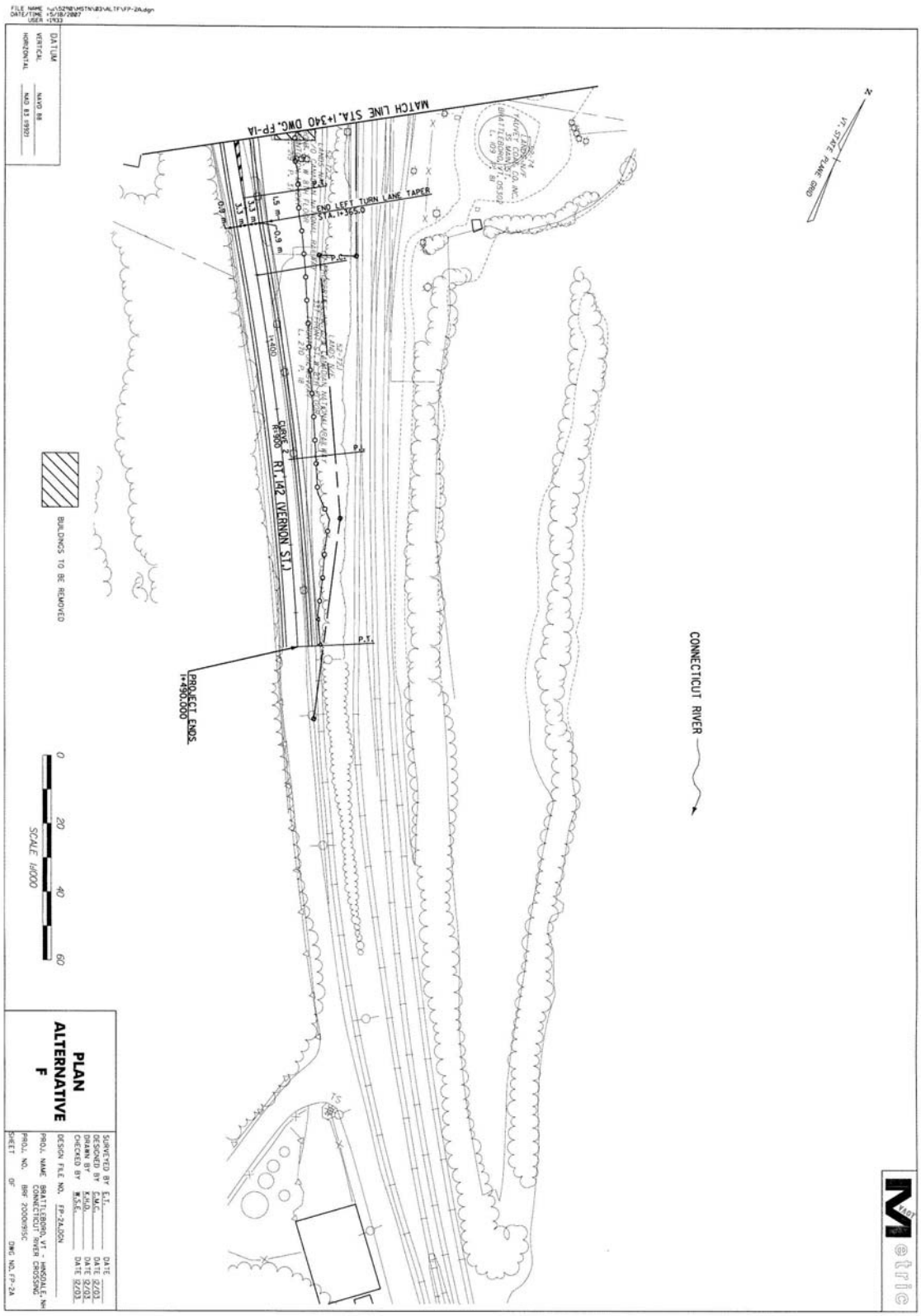
PURPOSE AND NEED RATINGS:
Yes - Alternative meets the purpose and need criteria.
No - Alternative does not meet the purpose and need criteria.

CONSTRUCTION NOTES:
(1) Due to design limitation, Alternatives A, B and E-Modified a design speed of 35 mph is not achievable.
(2) With Alternatives E, E-Modified, F, G and H the existing bridges could be rehabilitated for pedestrians and bicyclists ($1,584,030), vehicle traffic ($1,917,510) or removed ($1,167,180).
(3) Preliminary design speeds and lane widths.
(4) Based upon the desire of the Bridge committee to evaluate the potential for the new bridge to be a truss type to aesthetically complement the existing Route 119 bridges. A truss type bridge for Alternative F was removed from consideration during the bridge structure type study.
(5) As shown, Alternative E and Alternative E-Modified do not include a grade-separated rail crossing. However, Alternative E and Alternative E-Modified could include a grade-separated rail crossing. The impacts would be similar to Alternative D, and the cost would increase by $11,380,005 over the cost shown for Alternative E and Alternative E-Modified.
(6) Alternatives F and G are south of the existing coal tar deposits, Alternative H is north of the coal tar deposits, estimated remediation costs are in 1984 dollars and would be substantially more in present day estimates.
(7) The costs for Alternative A assume the existing Route 119 bridges are rehabilitated for vehicular traffic. The costs for Alternatives B, C, D and H assume the existing Route 119 bridges are removed. The costs for Alternatives E, E-Modified, F and G assume the existing Route 119 bridges are rehabilitated for pedestrian usage. All construction costs are estimated in year 2008 dollars.
(8) For Alternative H, the west bridge would be utilized for traffic during construction; construction of the east bridge would require a temporary bridge.
(9) See Resource Summary Table, pg. C-20, for individual environmental analyses for each category (see also, Appendix F).

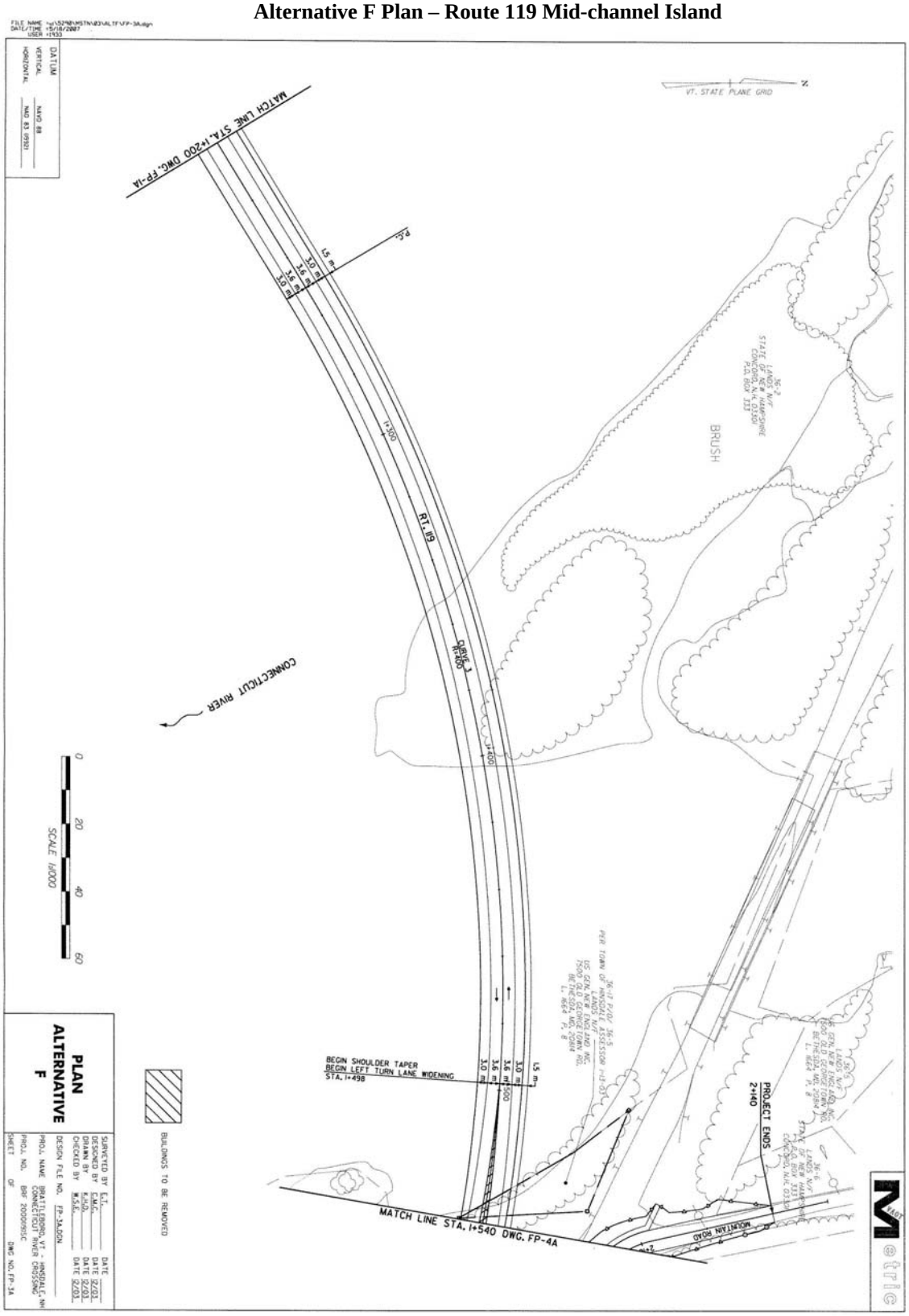
Alternative F Plan – VT 119/142 Touchdown Intersection



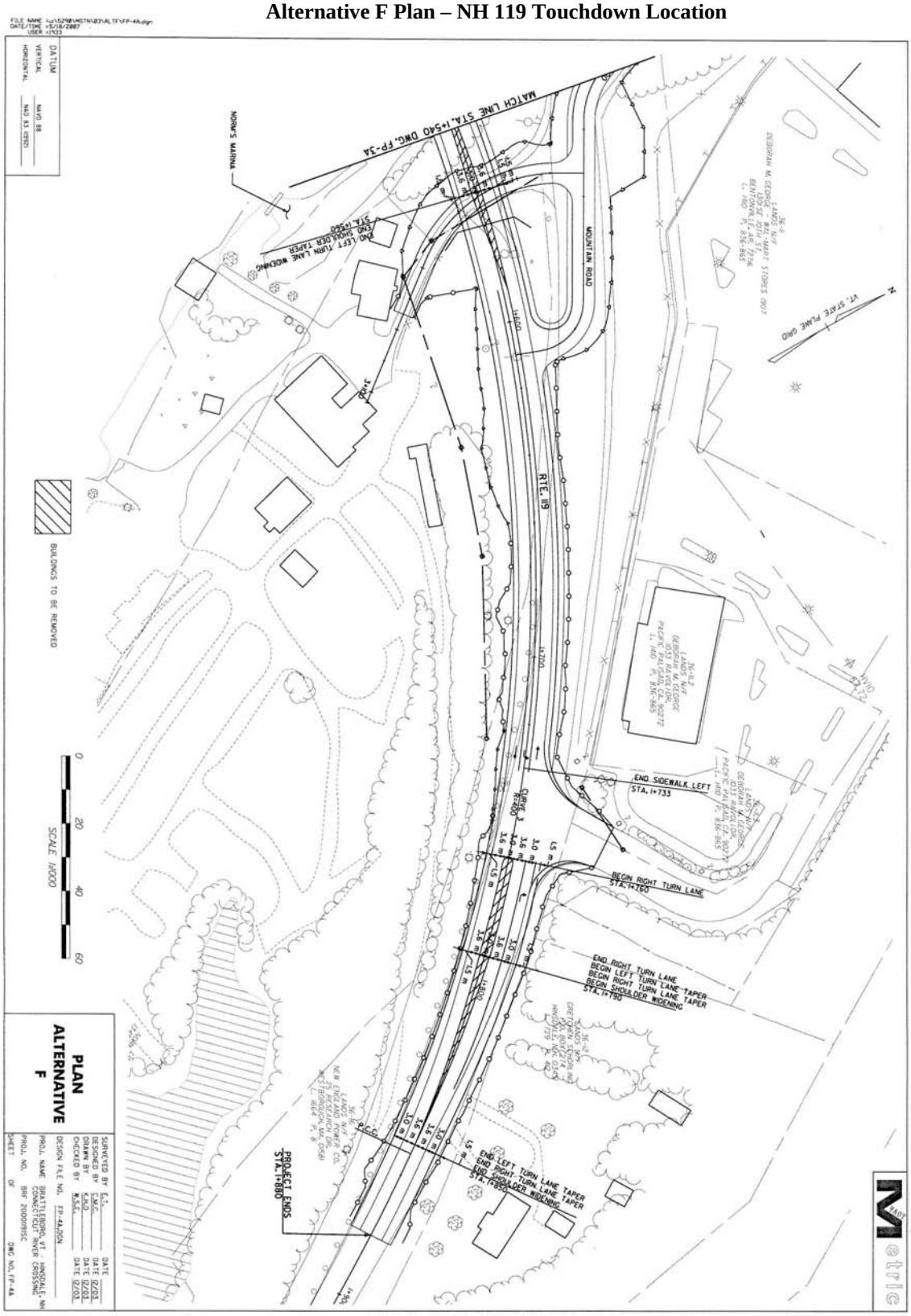
Alternative F Plan – VT 142 South



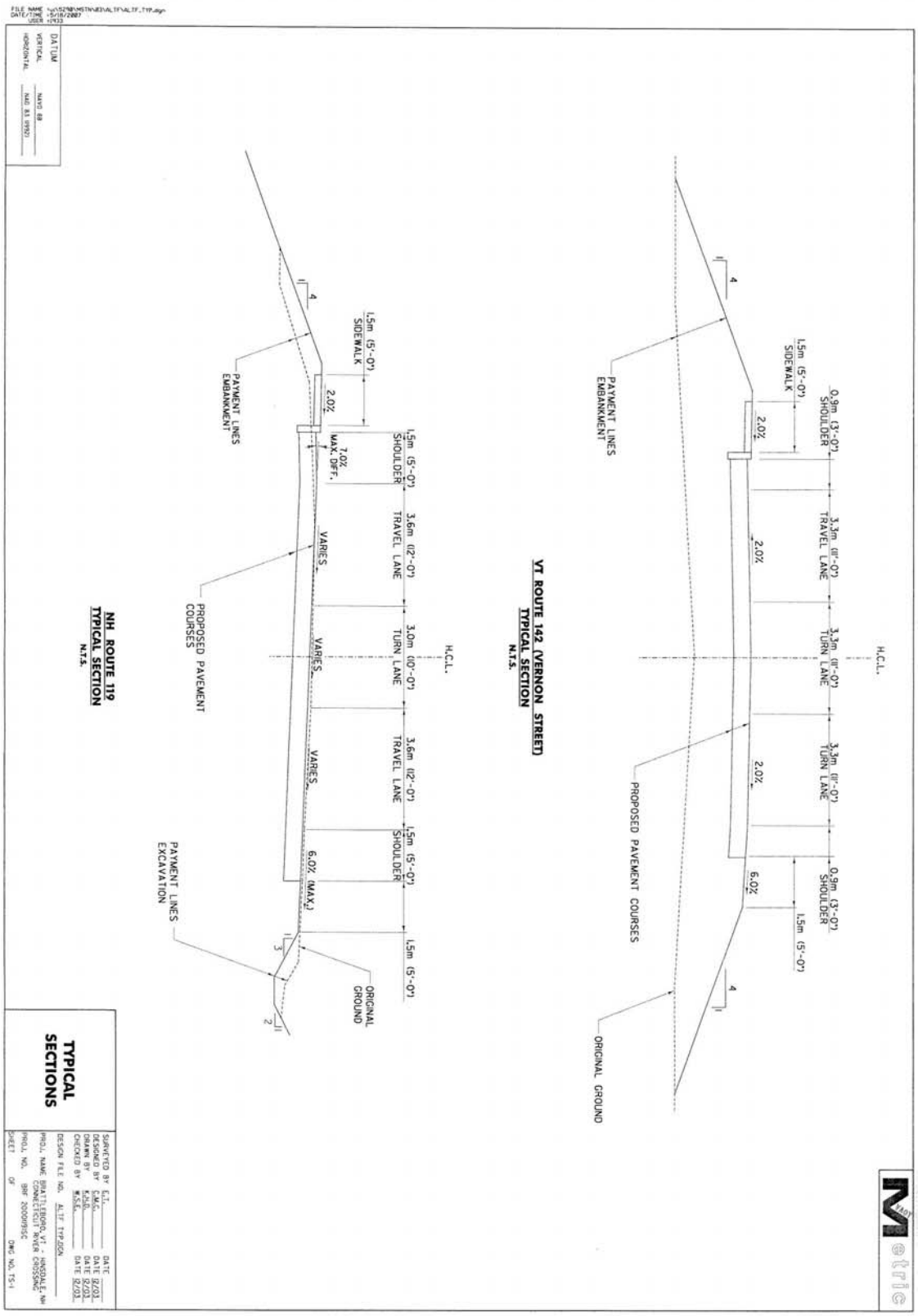
Alternative F Plan – Route 119 Mid-channel Island



Alternative F Plan – NH 119 Touchdown Location



VT 142/NH 119 Typical Sections



Route 119 Bridge Typical Section

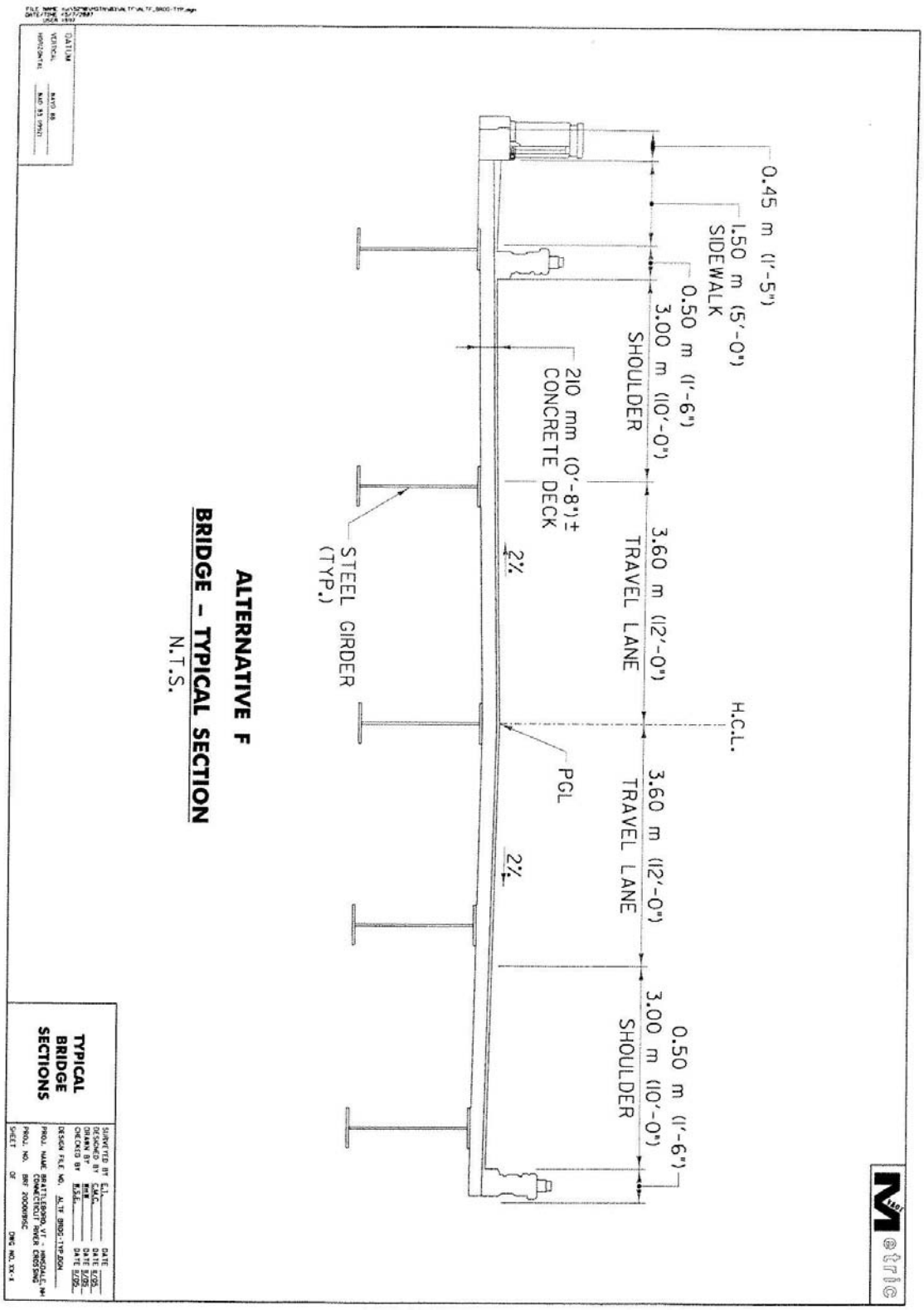


TABLE C-2: RESOURCE SUMMARY TABLE

RESOURCE		ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E	ALTERNATIVE E Modified	ALTERNATIVE F	ALTERNATIVE G	ALTERNATIVE H
	No-Action	**Rehabilitation**	**Replace on Existing**	**Alignment Improvement**	**Grade-Separated**	**Parallel Structure**	**Parallel Tangent Structure**	**Blue Seal (Preferred)**	**Georgia Pacific**	**Route 9/Main Street**
Land Use/Induced Growth	None/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Substantial/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Moderate/ Minimal
Agricultural	None	None	None	None	None	None	None	None	None	None
Socio-economic	Substantial	Limited	Limited	Limited	Substantial	Limited	Limited	Limited	Substantial	Substantial
Acquisitions-Residential/ Commercial	0 / 0	0 / 0	0 / 2	0 / 2	0 / 13	0 / 1	0 / 1	1 / 1	0 / 0	0 / 4
Acquisition Area (acres)	0	0	0.35	0.49	2.05	1.46	1.4	3.21	4.23	0.94
Pedestrian/Bicycle	None	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Recreational/Section 4(f) (Alternatives A, B, C, E, and E-Modified would have no 4(f) impacts if the existing bridges are rehabilitated or replaced)	None/ None	Minimal/ Minimal	Minimal/ Substantial	Minimal/ Moderate	Minimal/ Substantial	Minimal/ Moderate	Minimal/ Moderate	Minimal/ None	Minimal/ None	Minimal/ Substantial
Air Quality	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Noise	Limited	Limited	Limited	Limited	Moderate	Limited	Limited	Limited	Limited	Moderate
Water Quality	None	Minimal	Limited	Limited	Limited	Substantial	Substantial	Limited	Limited	Limited
Wetlands (acres)	None	Minimal	1.68	1.85	2.53	1.60	1.91	0.11	0.66	2.74
Waterbody Modifications	None	None	Limited	Limited	Limited	Limited	Limited	Limited	Limited	Limited
Floodplains (acres)	None	Minimal	1.94	2.08	3.07	1.71	2.07	0.12	3.42	2.92
Fish & Wildlife / Threatened & Endangered Species (Potential impacts to two NH-listed aquatic plants)	None / None	Minimal / None	Minimal / Minimal	Limited / Minimal	Limited / Minimal	Limited / Minimal	Limited / Minimal	Limited / Minimal	Limited / None	Limited / Minimal
Historic District Impacts	None	None	Substantial	Substantial	Substantial	Moderate	Moderate	Minimal	Minimal	Substantial
Archaeological	None	None	Limited	Limited	Limited	Limited	Limited	None	Minimal	Limited
Hazardous Materials	None	None	Minimal	Minimal	Minimal	Substantial	Substantial	Minimal	Minimal	Minimal
Visual	None	None	Minimal	Minimal	Substantial	Moderate	Moderate	Limited	Limited	Substantial
Construction	None	Minimal	Limited	Limited	Substantial	Limited	Limited	Limited	Limited	Substantial

QUALITATIVE DESCRIPTORS (As determined by the Bridge Committee):

- None
- Minimal
- Limited
- Moderate
- Substantial

Note: Permanent impacts only; temporary impacts are discussed in report text.

Proposed VT 119/142 Intersection

The relocated VT 119 would form a "T" intersection with VT 142 south of the existing Route 5/119/142 intersection. The Route 119 approach to the VT 119/142 intersection would consist of three 12-foot travel lanes, with separate westbound left-turn and right-turn lanes and 4-foot shoulders. The section of VT 142 to the north of Route 119 would consist of three 11-foot travel lanes, with a separate left-turn and a through lane in each direction, and 3-foot shoulders (see Appendix A, Page A-25 and A-26, Figures A-15 and A-16). South of this new 'T" intersection VT 142 would consist of two 11-foot travel lanes with 3-foot shoulders (see Appendix A, Pages A-25 and A-26, Figures A-15 and A-16).

According to the requirements within the Manual on Uniform Traffic Control Devices Millennium Edition (MUTCD), published by the FHWA, the proposed VT 119/142 intersection would meet the peak hour volume warrant (Warrant 3) for the installation of traffic control signals for both 2015 and 2035. Under this condition, the southbound left-turn and the westbound right-turn movements could run concurrently. Signalization of this intersection would promote the passage of heavy traffic during busy travel periods. Traffic modeling suggests that a signal at the VT 119/142 intersection would allow it to function at an overall Level of Service of 'B' for the 2015 and 2035 design years.

Existing Route 5/119/142 Intersection

Located to the north of the proposed VT 119/142 intersection is the downtown Brattleboro Route 5/119/142/Brookside Plaza intersection. The Level of Service (LOS) of this intersection has been unacceptably low during the last several decades and is known locally as 'Malfunction Junction'. A traffic signal was put into service here in late 2011 as part of a paving project on Routes 5 and 9. This signalization effort is expected to improve the LOS of this intersection during all peak travel periods to 'D' from an 'F' rating.

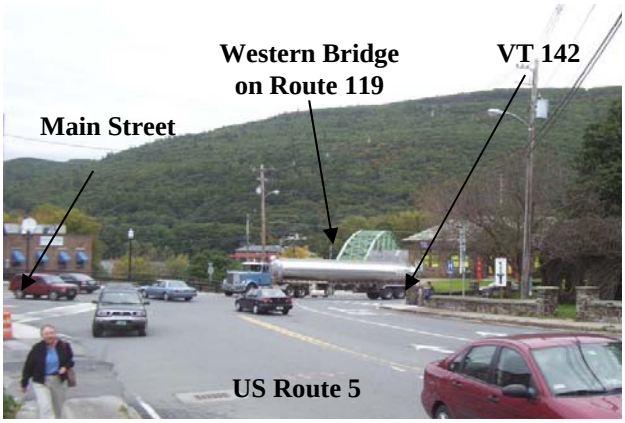


Photo C-1 Route 5/119/142 Intersection: View from Brattleboro, VT east towards New Hampshire

Constructing Alternative F would change the travel patterns on VT 142 and South Main Street. The proposed relocation of VT 119 further south would make VT 142 a more attractive route for travelers from the south using the Route 119 Connecticut River crossing. This would reduce traffic volumes through the Route 5/119/142 intersection by approximately 5%. Although Alternative F would close the VT 119 leg of the existing Route 5/119/142 intersection to traffic,

this is expected to provide only a slight additional improvement in the operation of this intersection.

Alternative F Estimated Costs

Since design plans are only at the pre-conceptual stage, construction limits and property takings have not been fully defined. Right-of-way costs are estimated to be near $10M. Actual ROW cost will be subject to substantial changes once property acquisition requirements have been determined. The cost estimate below (2008) assumes the new bridge would be constructed with sidewalk.

New Bridge Cost	$27,818,000
Rehabilitate Existing Bridges (Pedestrian)	$1,584,000
Temporary Bridge Cost	$0
Roadway Cost	$2,098,000
Right of Way Acquisitions	$10,275,000
TOTAL COST	$41,775,000

These 2008 year cost estimates have been further subdivided into Vermont and New Hampshire's cost shares for the project. Each state's share of the proposed structure's cost and portion of the rehabilitation of the existing bridges cost is based on the percent length of the structure and therefore their ownership. The percent ownership of the proposed bridge will be re-evaluated during the final design and right of way plan development.

	Vermont Share	**New Hampshire Share**	**Total**
Proposed Route 119 Bridge (17% VT, 83% NH)	$4,729,060	$23,088,940	$27,818,000
Route 119 Approach Roadway	$36,000	$1,590,000	$1,628,000
Route 142 Roadway Construction	$472,000	$0	$472,000
Rehabilitation of Existing Bridges (3.5% VT, 96.5% NH)[†]	$55,440	$1,528,560	$1,584,000
Right of Way Acquisitions	$10,000,000	$275,000	$10,275,000
Total	**$15,292,500**	**$26,482,500**	**$41,775,000**

[†]This estimate merges the rehabilitation cost for both bridges. Current percent ownership of the existing western bridge is 7% VT and 93% NH; for the eastern bridge it is 0% VT and 100% NH. Therefore for this estimate ownership costs are calculated by adding each percent and dividing by 200%.

b.) PREFERRED ALTERNATIVE EVALUATION CRITERIA

Purpose and Need Criteria

This section evaluates how Alternative F satisfies the project's purpose and need. The extent to which an alternative satisfies the project's purpose and need is a substantial factor in evaluating the effectiveness of that alternative. Purpose and Need evaluation criteria are identified and analyzed for Alternative F as follows:

- Maintain the Transportation Corridor - The farther the Vermont touchdown location is relocated from downtown Brattleboro, the less the alternative is able to meet this criterion. Alternative F, which is located approximately 1,000 ft. south of the existing Route 119 crossing, maintains the existing transportation connection between Hinsdale and downtown Brattleboro.

- Correct Safety Deficiencies – Chapter B previously discussed safety issues with the existing Route 119 corridor. These safety problems are further complicated by the at-grade railroad crossing of Route 119 between the western bridge and the Route 5/119/142 intersection. Train thru-traffic and switching activities causes vehicles on VT 119 to stop and queue on the roadway, both eastward across the western bridge and westward through the Route 5/119/142 intersection. The lengthy blocking of this corridor by a train at the rail crossing substantially degrades emergency service responses for Brattleboro and Hinsdale.

  Alternative F would replace the existing at-grade railroad crossing with a grade-separated railroad crossing and satisfies this safety criterion.

- Correct Structural Deficiencies - Both Route 119 bridges have deteriorated since their construction in the late 1920's. The concrete in the abutments, piers, and backwalls is spalled and reinforcing steel is exposed. Portions of the trusses are severely corroded and there is evidence of section loss in many members. Chapter B specifically discusses the existing structural deficiencies.

  Since Alternative F provides for the construction of a new bridge across the Connecticut River, eliminating all of the structural deficiencies associated with the existing corridor, Alternative F satisfies this structural criterion.

- Correct Functional Deficiencies - The transportation functionality of the existing Route 119 bridges is limited by bridge geometry, a 187-foot radius horizontal curve when approaching the western bridge from the east, and an at-grade rail crossing at the west end of the western bridge. Simultaneous passage of two large trucks across the western Route 119 bridge is difficult.

  Alternative F provides for a grade separated railroad crossing in VT and the construction of a new bridge designed to meet modern functional and geometric requirements. Alternative F will therefore meet the functional criterion.

- Maintain Social Relationships - The Brattleboro/Hinsdale transportation corridor facilitates area social activities and allows Brattleboro and Hinsdale to share emergency rescue, fire, and medical services. Loss of this transportation corridor would adversely affect the availability of medical services to Hinsdale residents, as the closest area hospital is located in Brattleboro. The nearest transportation crossing of the Connecticut River between Vermont and New Hampshire is approximately two miles north of the Route 119 bridge. It does not provide the straight Brattleboro-Hinsdale access that the proposed new Route 119 bridge would provide.

  The construction of a new Route 119 bridge would maintain transportation accessibility between these two communities for the foreseeable future. As such, Alternative F meets this social maintenance criterion.

- Maintain Economic Relationships - Brattleboro is the principal commercial and industrial center in southeastern Vermont, and an important commercial and employment center for southwestern New Hampshire. Due to the close economic ties, and the lack of other reasonable alternative transportation routes between Brattleboro and Hinsdale, the elimination of the Route 119 transportation corridor would result in substantial economic hardship in the project area.

  The construction of a new Route 119 bridge would provide a modern and safe transportation connection between Brattleboro and Hinsdale for the foreseeable future. As such, Alternative F would be able to maintain economic relationships and satisfies the selection criteria.

- Preserve Area Resources - The Brattleboro/Hinsdale transportation corridor has numerous resources that contribute to the environmental, social, economic, and aesthetic qualities of the area. Alternative F would rehabilitate and maintain the existing Route 119 historic bridges for pedestrian and bicycle use, avoid impacts to historic, agricultural, and archaeological resources, result in only minimal impacts to pedestrian/bicycle pathways, hazardous materials, existing land uses, wetlands, floodplains, and air quality resources. It would result in only limited and temporary impacts to socio-economic, fish and wildlife, visual, noise, water body, water quality, and recreational resources so Alternative F meets this resource preservation criterion. These impacts are discussed in detail in Chapter D.

- Conserve Fiscal Resources - The estimated cost of the Preferred Alternative is high but comparable to the other off-alignment construction alternatives that were evaluated and this alternative was found to best suit the needs of the local population. Since Alternative F avoids costs associated with a temporary bridge, disturbing the coal tar deposit, and disrupting traffic flow patterns in the business

district of Brattleboro (substantial costs all associated with some of the other evaluated alternatives), it meets this fiscal conservation criterion.

Design Criteria

This section evaluates how Alternative F satisfies the project's design requirements. The State of New Hampshire will be responsible for the final design of the project and has responsibility for a majority of the construction. The New Hampshire portion of the project extends to the ordinary low water mark of the Vermont shoreline and includes the Connecticut River. The State of Vermont has construction responsibility for that portion of the project located west of the ordinary low water mark of the Vermont shoreline. Design evaluation criteria are identified and analyzed for Alternative F as follows:

- Design Speed - The Route 119 bridge design speed is 35 mph. Alternative F has a 35 mph design speed for the New Hampshire approach and on the bridge, with a Vermont approach that has a 25 mph design speed. This lower design speed in VT is needed to accommodate the vertical curve over the grade-separated rail crossing. Per the VT State Standards, this 25 mph design speed is acceptable for Urban Collectors and appropriate given the proposed 'T' intersection of 119 and Route 142 in VT.

- Disposition of Existing Bridges - The existing Route 119 bridges are classified as historic resources. The Vermont Division for Historic Preservation and the New Hampshire Division of Historical Resources have commented that these Route 119 bridges should be preserved. Alternative F would provide for retaining and rehabilitating the existing bridges for pedestrian and bicycle usage.

- Bridge Typical Section - The NHDOT uses the AASHTO policy of 12 foot for travel lanes and 10 foot for shoulders on bridges and approaches in New Hampshire. Using AASHTO policy for this roadway classification (Urban major collector), Alternative F would be designed to provide for a 10 ft.–12 ft. –12 ft. – 10 ft. typical, resulting in an overall roadway width of 44 ft., excepting the slightly narrower approaches on VT 142 within the 25 mph design speed area.

- Truss Bridges Feasibility - To assist in evaluating the potential for the new bridge to aesthetically match the existing Route 119 structures, an analysis of each alternative to incorporate a truss type bridge was requested. While the western portion of the proposed Alternative F Bridge could be designed and constructed using a truss-type bridge, incorporating a truss bridge into Alternative F was eliminated during the bridge structure Type Study. This study was conducted when this criteria was originally identified to evaluate potential project aesthetic impacts. Consideration of bridge aesthetics was subsequently integrated into the bridge type and design studies.

- Grade-Separated Railroad Crossing - A grade-separated railroad crossing of Route 119 would be consistent with FHWA policy. It would also enhance the efficiency of traffic flow in the corridor, reduce the accident potential at the existing at-grade railroad crossing, and enhance the travel of emergency vehicles between Brattleboro and Hinsdale. Alternative F is designed to provide for a grade-separated railroad crossing. This grade-separated crossing would provide for a minimum of 23 feet of vertical clearance above the railroad, allowing the passage of double-stacked rail cars.

- Construction Costs - Construction and ROW acquisition costs for Alternative F are approximately $41.7M (year 2008), which includes rehabilitation of the existing Route 119 bridges for pedestrian and bicycle usage.

- Traffic Maintenance During Construction - Maintaining a transportation corridor between Brattleboro and Hinsdale during construction is essential to the maintenance of area economic and social relationships, and to provide shared emergency services between Brattleboro and Hinsdale. Alternative F allows the existing Route 119 bridges to maintain traffic during construction and eliminates the need for a temporary bridge. The new roadway and bridge would be opened to traffic prior to rehabilitating the existing structures for bicyclist and pedestrian use.

c.) PREFERRED ALTERNATIVE SUMMARY

FHWA, VAOT, and NHDOT have studied the full range of project alternatives and their potential impacts on area resources. This review was conducted in conjunction with the Brattleboro/Hinsdale Bridge Committee and utilized input from the public and resource agencies, as well as technical support from the Bridge Working Group, which included various technical disciplines such as bridge and roadway engineers from VAOT, NHDOT, and private consultants. In April 1998, the Bridge Committee recommended Alternative F as the project's Preferred Alternative (PA).

In summary, Alternative F was chosen as the project's PA because its construction would:

- Maintain a vital transportation corridor between downtown Brattleboro, VT and Hinsdale, NH.

- Correct the structural, functional, and safety deficiencies that exist with the current Route 119 bridges and adjacent roadway approaches.

- Provide a grade-separated crossing of the railroad, which would improve rail crossing safety, reduce traffic queuing, and eliminate emergency vehicle delay at the rail crossing.

- Allow for pedestrian and bicycle travel on the rehabilitated Route 119 truss bridges.

- Maintain the area's social and economic relationships.

- Minimize impacts to environmental and cultural resources.

- Rehabilitate and preserve the existing historic truss bridges on Route 119.

- Avoid disturbing the Connecticut River coal tar deposits.

- Provide mitigation for project-related impacts to area resources.

Alternative F received unanimous acceptance and support from the Brattleboro Selectboard in a letter dated July 7, 1998. It was also supported by the Hinsdale Board of Selectmen in a letter dated May 15, 1998. Selection of Alternative F as the project's PA was approved by the VAOT Secretary on November 25, 1998. NHDOT has concurred with identification of Alternative F as the PA. In June 2000 and in November 2005 the Bridge Committee reaffirmed its support of Alternative F as the PA.

Correspondence obtained from the Brattleboro Selectboard dated March 20, 2012 and Hinsdale's Office of Selectmen dated February 27, 2012 also document continued support of Alternative F.

4.) ALTERNATIVE EVALUATION SUMMARY

The ability of each alternative to meet the construction criteria and the purpose and need criteria is identified in the preceding Alternative Evaluation Table C-1. This table was originally developed as a concise alternative evaluation and comparison analysis. The project's PA, Alternative F, is highlighted in the table. As previously discussed, each of the ten project alternatives is analyzed in two areas:

PURPOSE AND NEED CRITERIA

The Alternative Evaluation Table lists seven purpose and need criteria, which are derived from the project's purpose and need statement and identify the ability of each alternative to meet the project's purpose and need. The table was developed and utilized to summarize and evaluate the project's alternatives.

DESIGN CRITERIA

The construction criteria section of the Alternative Evaluation Table sets forth ten categories involving design criteria. Nine table footnotes, located at the bottom of the Alternative Evaluation Table, provide information on different construction and design options available for the alternatives.

Chapter D – Affected Environment and Impacts

Table of Contents

D.) AFFECTED ENVIRONMENT AND IMPACTS

1.) PROJECT ALTERNATIVES

The project's previously evaluated alternatives are summarized as follows:

- No-Action Alternative,
- Alternative A (Rehabilitation),
- Alternative B (Replace on Existing),
- Alternative C (Alignment Improvement),
- Alternative D (Grade-Separated),
- Alternative E (Parallel Structure),
- Alternative E-Modified (Parallel Tangent Structure),
- Alternative F (Blue Seal) – ***Preferred Alternative***,
- Alternative G (Georgia Pacific), and
- Alternative H (Route 9/Main Street)

The approximately 3.5 mile section of Connecticut River corridor that was evaluated for this project extends from the current Route 9 Bridge, approximately 2 miles north of Downtown Brattleboro, to an area near the Cersosimo lumber facility, which is approximately 1.5 miles south of Brattleboro. Exhibit A.3 – Project Alternatives illustrates the alignment of each of these proposed alternatives within this study area.

Existing resource data, field investigations, and coordination with state and federal agencies were used to identify and locate resources within the project study area. Each project alternative was independently evaluated for potential impacts to these area resources. Anticipated impacts associated with the Preferred Alternative are identified and evaluated in detail below, as well as any mitigation developed. Resource impacts for the project's non-preferred alternatives are summarized within this Chapter's Table D-4 (pg. D-45) and more fully identified and evaluated in Appendix F.

2.) ALTERNATIVE F IMPACTS

Project area resources, resource impacts, and any proposed impact mitigation for the project's preferred alternative (Alternative F) are identified and discussed below. Potential impacts to the following resources were evaluated for the project area:

- Land Use
- Induced Growth
- Agricultural Resources
- Socio-Economic /Environmental Justice
- Acquisitions/Relocation
- Pedestrian/Bicycle
- Recreational/Public Parks
- Section 4(f) Properties
- Air Quality
- Noise
- Water Quality

- Wetlands
- Waterbody Modifications
- Floodplains
- Fish & Wildlife / T&E Species
- Historic &Archeological
- Hazardous Materials
- Visual
- Construction

a.) LAND USE

The western side of the study area is along the Connecticut River and within the City of Brattleboro, Vermont. The Windham Regional Plan identifies the Brattleboro area as a regional growth center. The town is typified by both commercial and residential development. Downtown Brattleboro is considered Urban and is found in the center of the study area. The southwestern section of the project study area is characterized by large commercial and industrial facilities.

A majority of the project study area on the eastern side of the river is within the Town of Hinsdale, New Hampshire. The northern limit of the study area extends into Chesterfield, New Hampshire. This northeastern section is dominated by New Hampshire's Wantastiquet Mountain State Forest, an undeveloped natural area with steep topography. Several commercial and retail facilities are found near the existing Route 119 crossing. The southeastern end of the study area has some limited commercial and residential development but is largely undeveloped.

Constructing Alternative F would only minimally impact existing land uses and is consistent with VT and NH regional plans. In Vermont, a commercial building and a private residence would be lost, Marlboro College would lose approximately 25 of their 130 parking spaces, and a bulk fuel storage facility under the proposed alignment would need to be relocated. In New Hampshire a private access road leading to a marina would need to be relocated.

These project-related acquisitions would not affect overall land use patterns in the project area. The loss of vehicular access to the private mid-channel island boat launch will limit the owner's use of the site to launching only small or hand-carried watercraft. NHDOT will further investigate this issue during right-of-way plan development. No other land use mitigation measures are required.

b.) INDIRECT EFFECTS AND CUMULATIVE IMPACTS

Growth impacts from indirect effects are those caused by an action and are delayed in time, but are reasonably foreseeable. Cumulative impacts are those that result from the incremental consequences of an action when added to past actions and reasonably foreseeable future actions.

Indirect Effects

A change in accessibility to an area, resulting from a change in a transportation system, would affect the potential for growth in that area. Construction of a transportation system alone seldom creates development, but changes in a transportation system can redirect the location of growth.

The New Hampshire touchdown area for Alternative F is located in approximately the same location as the existing Route 119 touchdown area. No identifiable change in accessibility would occur in New Hampshire from the construction of Alternative F. As such, there exists only a minimal potential for additional growth in this area due to the construction of Alternative F.

The proposed Route 119 touchdown area in Vermont is approximately 1,000 feet south of the existing Route 119 touchdown location and would create a new intersection with VT 142. The western side cut of VT 142 at this location is very steep and a nearly vertical retaining wall of granite blocking parallels the roadway. This side of the road offers no opportunity for future development. The eastern side of VT 142 is developed with a parking lot and a commercial building, which is referred to as the 'Blue Seal' building throughout this document. As of 2009, there were two businesses occupying the building – 'North Country Natural' a natural food distributor and 'Raymond James Metals', a specialty metals recycler. Behind this building there is a steep slope down to the rail line and another slope down to the bulk petroleum storage facility and the Connecticut River. Both the commercial building and petroleum storage facility are anticipated to be acquired for the project.

A small area south of this commercial building could feasibly support minimal commercial development. The new bridge is unlikely to stimulate development in this area as most traffic at the new intersection would be traveling north to reach downtown Brattleboro or to continue west on VT Route 5. The potential of Alternative F to induce additional growth in Vermont is therefore minimal as this is the same area that the existing bridge now provides access to.

Although constructing Alternative F would relocate the Route 119 crossing of the Connecticut River, it would not materially change existing transportation facilities, travel patterns, or the amount of vehicles traveling in the Brattleboro/Hinsdale area. As such, any changes in accessibility due to the construction of Alternative F would be minimal, and hence the potential for it to result in identifiable indirect effects in the Brattleboro/Hinsdale area is minimal.

Cumulative Impacts

Within the last 40 years the amount and type of development in the immediate project area has not substantially changed. Future growth in the project area is anticipated to be consistent with past development patterns, which has been minor. Brattleboro is considering a waterfront park north of the proposed project location. That project is not expected to result in growth when considered in concert with the implementation

of Alternative F. The potential for Alternative F to result in identifiable project-related cumulative impacts from growth in the Brattleboro/Hinsdale area is minimal.

Constructing Alternative F as proposed will result in only minimal cumulative and indirect growth in the project area. Impacts on area resources, as a result of this induced growth, are also anticipated to be minimal. No induced growth mitigation measures are required.

c.) AGRICULTURAL

No agricultural lands exist on either side of the river within the project area, and being urban, the project would be exempt from the FPPA of 1981. Regardless, no project-related impacts to agricultural land or agricultural operations are anticipated with the construction of Alternative F and no agricultural mitigation would be required.

d.) SOCIO-ECONOMIC/ENVIRONMENTAL JUSTICE

Socio-economic

The township of Brattleboro is adjacent to the Connecticut River and had a population of 12,046 as of the 2010 census. The Windham Regional Plan designates Brattleboro as a regional growth center. As a regional growth center, it serves as a focal point for area business, social, and recreational activities. Downtown Brattleboro is the socio-economic center of southeastern Vermont and southwestern New Hampshire. It provides a majority of the region's employment opportunities and medical services. Route 119 provides the primary transportation corridor between Brattleboro and Hinsdale and is essential for the emergency and health care services that these two communities share.

The downtown business area of Brattleboro is immediately west of the existing Route 119 crossing. It is characterized by the diverse residential, commercial, industrial, religious, and public facilities typical of mixed-use development. Currently, Route 119 traffic flows through the southern portion of this downtown area.

Hinsdale, New Hampshire is also located adjacent to the Connecticut River but on the eastern side. The town had population of 4,170 during the 2010 census, with the village being located approximately 5.9 miles southeast on Route 119 from the Connecticut River crossing. Route 119 provides Hinsdale residents access to Brattleboro's employment opportunities, social life, and medical services.

'George's Field' is located in New Hampshire off of Route 119 immediately east of the Connecticut River crossing. This area has been developed into a large retail shopping center that is easily accessible from Vermont via the existing Route 119

roadway. Any substantial relocation of the eastern terminus of the Route 119 Bridge would isolate this retail area on a dead end road.

Construction of Alternative F would not adversely impact the existing area's socio-economic structure. The NH Route 119 highway reconfiguration associated with Alternative F would result in only a minor realignment of Route 119, and would continue to provide the same vehicular access to the George's Field retail area.

In Vermont, the Route 119/142 reconfiguration associated with Alternative F would relocate the intersection to the south approximately 1000 feet from the existing touchdown location. The relocated VT 119 would continue to provide vehicular access to the downtown Brattleboro area, as well as provide access to the commercial and industrial areas located farther south on VT 142. The relocation of this intersection would reduce the number of available parking spaces in the southern end of Marlboro College's commuter lot by approximately 20% and as such would result in limited impacts to the area's existing socio-economic structure.

Keeping the existing Route 119 bridges open for pedestrian and bicycle use would maintain direct non-vehicular accessibility between the downtown Brattleboro area and the George's Field retail center. It would also provide a safe access to Brattleboro for non-motorized travelers using the Ashuelot and Fort Hill Rail Trails. No socio-economic mitigation measures would be required.

Environmental Justice

Executive Order (EO) 12898 was signed on February 11, 1994. EO 12898 states:

> *To the greatest extent practicable and permitted by law… each Federal Agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations in the United States…*

Minority/low income populations are defined, by FHWA Order 6640.23, as readily identifiable groups of minority/low-income persons that live in geographic proximity. Minorities are defined as African-American, Hispanic, Asian-American, and Native American persons. Low-income individuals are defined as persons whose household median income is at, or below, the US Department of Health and Human Services poverty guidelines.

Area Minority/Low-Income Populations

Downtown Brattleboro – The project area includes a portion of the downtown Brattleboro area. Construction of the project in Brattleboro would be limited to the area adjacent to the Connecticut River and VT 142. This is a developed area with industrial and commercial uses. The area of impact is not residential and therefore no

concentrated minority or low-income populations, as defined by E.O. 12898, exist within the VT project area.

Town of Hinsdale - Construction of the project in New Hampshire will be limited to those areas in Hinsdale along the eastern shore of the Connecticut River and are adjacent to NH 119, and potentially the southern tip of the mid-channel island. These areas are either in commercial usage or undeveloped. No identifiable minority/low-income populations, as defined by E.O. 12898, exist within the NH project area.

Project Effects

The construction of the project would require the removal of a single residential structure in Vermont but would not result in the physical division of any minority or low-income community or neighborhood. The proposed work would not result in reduced accessibility to any necessary services for minority/low-income neighborhoods.

Construction of Alternative F would not disproportionately affect any identifiable minority/low-income populations. Extensive and continuing project public participation opportunities have provided numerous opportunities for local populations to become aware of the proposed work and to provide public comment and input on the project. The project would not have a disproportionately high and adverse human health or environmental effects on any minority/low-income populations. No environmental justice mitigation measures are required.

e.) ACQUISITIONS

Residential/Commercial Properties

Within the project area, the limits of construction are currently approximate and the existing roadway right-of-way width is assumed to be three rods (49.5 feet). All anticipated acquisitions associated with Alternative F would result in approximately 3.2 acres of property being acquired for the project. As the Vermont project area is more developed and more off the existing alignment than the New Hampshire project area, project-related residential/commercial acquisition is greatest within Vermont.

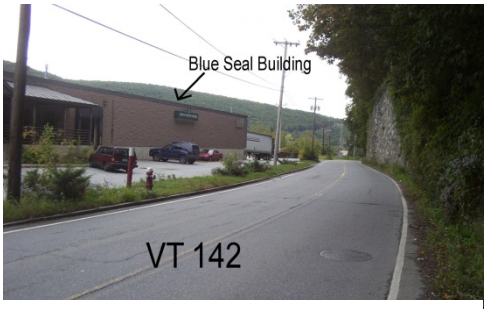


Photo D-1 Blue Seal Building: View from VT 142 looking south.

Alternative F is expected to require the following acquisitions in Vermont (see Exhibit C.1):

VT 142 Private Residence

A residential structure on VT 142, slightly northwest of the Vermont touchdown area, will be acquired. This residence is located very near the proposed VT 119/142 intersection. The orientation of Vermont-

bound traffic on the bridge and the resultant effect of increased traffic volume on VT 142 combine to impact the suitability of this location for a private residence.

Blue Seal building
The former Blue Seal Building, located at the VT touchdown location, would be acquired and demolished. There are two businesses that currently (April 2012) operate out of this building: Raymond James Metals, a specialty metals recycler and North Country Natural, a natural foods distributor

Bulk fuel storage facility
There is a bulk fuel storage facility found on the western bank of the Connecticut River on the proposed route 119 alignment. While the bridge would be elevated enough to pass over most of its infrastructure, required safety clearances will obligate the State of Vermont to acquire this facility (see Photo D-3).

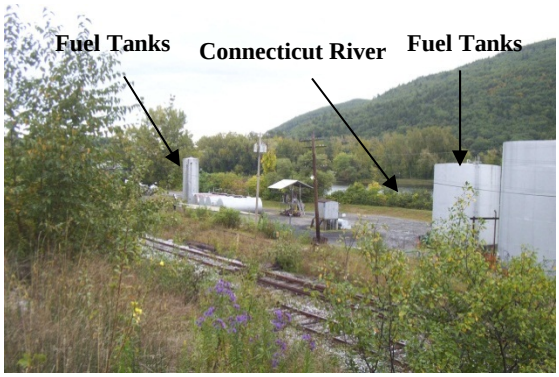


Photo D-2 Bulk Fuel Storage at Blue Seal: Fuel tanks in Vermont, view from the VT rail line east towards the Connecticut River.

Marlboro College Parking Lot
In order for the bridge to have adequate clearance over the railroad tracks, the grade of the VT 142 roadway must be elevated approximately 8-feet at the proposed intersection of Route 119. Due to the earthwork required to elevate VT 142, some parking spaces would be lost at the Marlboro College campus. There are currently 130 parking spaces in their Vernon Street lot and the College feels that number is inadequate based on their 2011 student enrolment.

A proposed retaining wall adjacent to VT 142 would reduce the number of parking spaces lost to approximately 25. Final roadway design is needed to more accurately determine how many parking spaces will be lost. In June 2001, Marlboro College was notified of the project and the potential for impacts to the existing parking lot. Coordination also occurred in 2005 at a Bridge Committee Meeting held at Marlboro College, and again in spring of 2012 when updating this document. The loss of these parking spaces will be addressed during the right-of-way acquisition process. The utilization of a portion of the existing Marlboro College parking area is not anticipated to result in any substantive impacts to the use of the Marlboro College building or its operations.

In addition there may be easements required for Alternative F to pass over tracks of Rail America's New England Central Railroad (NECR) line.

Alternative F will require the following acquisitions in New Hampshire (See Exhibit C.1):

Marina Access Road
Construction would require relocating the private access road to the marina and auto recycling center (see photo D4) located immediately south of the New Hampshire Route 119 touchdown location. This relocated access road would intersect with NH 119 approximately 500 feet east of the existing access to George's Field retail area. Although, this would result in a longer access road to the marina and auto recycling center, it would not substantially impact the access or use of either facility.

Mid-Channel Island
In the preferred alternative it is proposed to rehabilitate the two existing bridges that currently provide vehicular and pedestrian access to the mid-channel island and convert them into bicycle and pedestrian carrying structures. This change will eliminate vehicular access to the private property on the island. During the right-of-way process the owner's rights to their property and loss of access will need to be negotiated.

Photo D-3 Existing Marina Access Road: View from NH 119 southeast.

Brattleboro/Hinsdale area has sufficient housing and commercial facilities to provide suitable replacements for all of the project's acquisitions, although finding an acceptable site to relocate the bulk fuel storage depot will be challenging. The mitigation for project-related acquisitions will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended. Relocation resources will be made available to all residential and business relocates without discrimination.

<u>Utilities</u>
Both underground and overhead utilities are present in the Vermont and New Hampshire project areas.

Brattleboro has a 12" water main and a sanitary sewer line routed along VT 142. In addition, there are aerial and underground utilities belonging to Central Vermont Public Service Corporation, FairPoint Communications, and Adelphia Cable within the Vermont project area. New Hampshire also has aerial and underground utilities,

which belong to New England Power, Public Service of New Hampshire, FairPoint Communications, and Comcast.

Alternative F may impact some of these utilities. Within the Vermont project area, the existing 12" water main would require relocation. The relocation of some sanitary manholes may also be required along VT 142. The aerial utilities along VT Route 142 will require relocation within the project limits. The underground utilities may also require relocation. Both aerial and underground utilities will require relocation within the New Hampshire construction limits. The extent of impact to these utilities will be further identified during the final design phase of the project. Services will be maintained during utility relocation. Utility mitigation measures are not anticipated.

f.) PEDESTRIAN/BICYCLE

Pedestrian and bicycle trails are found throughout the Brattleboro and Hinsdale areas. Pedestrian and bicycle access between Vermont and New Hampshire is currently provided by walkways cantilevered off of the north side of the existing Route 119 bridges. Numerous individuals, particularly those without access to private transportation, use this passageway to travel between downtown Brattleboro and the George's Field retail center in New Hampshire. Additionally, these walkways provide non-motorized travelers access to recreational opportunities available on the mid-channel island such as fishing and swimming.

As long as the existing Route 119 bridges are rehabilitated for pedestrian and bicycle usage, the construction of Alternative F would not adversely impact pedestrian and bicycle access to or from Brattleboro, the mid-channel island, or Hinsdale. The proposed replacement bridge would facilitate both pedestrian and cyclist use since it is to include a sidewalk and roadway with 10 foot shoulders. Overall the project would be beneficial to area pedestrians and cyclists. No pedestrian/bicycle mitigation measures are required.

g.) RECREATIONAL/PUBLIC PARKS

Recreational Facilities

The project corridor offers numerous recreational opportunities. The Connecticut River provides excellent recreational fishing and boating. Fishing access is provided all along the river's shoreline, with local boat access to the river being available in NH from Norm's Marina and an unimproved boat ramp found on the privately owned mid-channel island. The Wantastiquet Mountain State Forest also provides hiking, biking, and wildlife viewing opportunities.

Land and Water Conservation Fund (LWCF) 6(f) property is property that has been developed or improved for recreational use with LWCF funding. There is LWCF 6(f) property located within the project corridor approximately 1.1 miles to the south of

the Alternative F alignment. This Vermont property is a 15-acre peninsula south of the identified project alternatives and located between a backwater area and the main channel of the Connecticut River. It would not be impacted by construction of Alternative F.

The project action to retain and rehabilitate the existing bridges for bicycle, pedestrian, and emergency vehicle use would be beneficial to most existing and proposed recreational facilities in the area. Once rehabilitated however, NHDOT plans to close the existing bridges to all other vehicular traffic. Although this action is not a project requirement, NHDOT is investigating enhancing an existing boat launch in the vicinity.

Public Parks

- Wantastiquet Mountain State Forest – Construction of Alternative F will not adversely affect any portion of New Hampshire's Wantastiquet Mountain State Forest. Construction activities would not restrict vehicular access to the area and its recreational use would not be impacted.

- Living Memorial Park – A small public park, the Living Memorial Park, exists on the southern edge of the Route 5/119/142 intersection in Brattleboro (see Photo D-6). Construction of Alternative F will not impact or adversely affect this park.

Photo D-4 Living Memorial Park: View east from US 5 in Vermont across the Route 5/119/142 intersection.

- Union Station Waterfront Park – The Town of Brattleboro has begun to construct a waterfront park on the Connecticut River independently of this project. The park is located on the west bank of the Connecticut River immediately south of the existing Route 119 Bridge and is designated as the 'Union Station' project. The town has identified this park as a public recreational area. The facility includes a terrace overlooking the river, reconfigured parking, landscaping and a future boat mooring facility (See Exhibit C.8). It includes pedestrian facilities, open space along the river, landscaping elements, parking, and a bus stop and turn-around loop. Alternative F would be constructed south of this park and would not physically affect the facility. The decision of NHDOT to rehabilitate the existing Route 119 bridges, after construction of the new bridge, for pedestrian and bicycle usage would undoubtedly enhance usage of the Union Station facility by non-motorized travelers. No recreational mitigation measures will be required.

- Fort Hill Rail Trail - The Fort Hill Rail Trail extends north from the terminus of the Ashuelot Rail Trail in Hinsdale NH. The Ashuelot trail is a reclaimed rail bed that connects the NH communities of Keene and Hinsdale. Both trails are used by the public for hiking, biking, horseback riding, cross-country skiing and snowmobiling. Alternative F does not adversely impact the trail. Since the proposed action includes rehabilitating the existing bridges for non-vehicular use, it would provide trail users with a safer crossing point over the Connecticut River and into downtown Brattleboro.

h.) SECTION 4(F) PROPERTIES

The project area has several Section 4(f) properties. These include historic resources, public parks, and public recreation areas. Each is discussed below.

Historic

Any historic resource listed in, or eligible for listing in the National Register of Historic Places is a Section 4(f) resource. Historic properties in the project corridor are identified and summarized in the Historic Resource Section of this Chapter and Appendix D includes a detailed list of Historic Resources. These properties include: the Brattleboro Downtown Historic District, which is an eligible historic district along Route 5 just north of the downtown Brattleboro area, numerous individual historic sites, and the existing Route 119 bridges.

Construction of Alternative F does not use land within the Brattleboro Downtown Historic District, nor adversely affect other historic structures. The September 5, 2000, SHPO Section 106 letter of Effect (see Appendix D) has opined that the Preferred Alternative (Alternative F) will have No Adverse Effect on historic properties. Two conditions of this conclusion are that the Brattleboro-Hinsdale Bridge Committee is a full partner in the aesthetic design of the new bridge, and that the existing Route 119 bridges are rehabilitated for pedestrian and bicycle usage in accordance with the Secretary of Interior's Standards.

The project does not result in a Section 4(f) use of any historic resources. There are no additional historic Section 4(f) minimization or mitigation requirements identified for the project.

Public Parks/Public Recreation Areas

- Wantastiquet Mountain State Forest – The Wantastiquet Mountain State Forest is located in New Hampshire in the northern area of the project corridor. Portions of this multi-use state forest could be identified as Section 4(f) resources, dependent upon their public recreational usage. Construction of Alternative F would not require the use of any portion of the Wantastiquet Mountain State Forest.

- Union Station Waterfront Park – This small waterfront park is found along the CT river immediately south of the existing Route 119 landing in Vermont (See Exhibit C.8). The park is open to the public and provides pedestrian facilities, open recreational space along the river, landscaping elements, parking, and a bus stop. This facility is considerd to be a Section 4(f) resource. Construction of Alternative F would not require the use of any portion of this park.

- Living Memorial Park – A small public park, the Living Memorial Park, exists on the southern edge of the Route 5/119/142 intersection in Brattleboro (See Exhibit C.9). This park is identified as a Section 4(f) resource. Construction of Alternative F does not require the use of this park.

i.) AIR QUALITY

The Clean Air Act (CAA) authorized the United States Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. These standards identify permissible levels of a given air pollutant. The six criteria pollutants regulated by the NAAQS include: carbon monoxide (CO), nitrogen dioxide, ozone, lead, particulates, and sulfur dioxide.

The Clean Air Act Amendments of 1990 (CAAA) list 188 Hazardous Air Pollutants (HAPs) and addressed the need to control toxic emissions from transportation sources. The amendments also required that air monitoring be conducted throughout multiple states in the Northeastern Region. This monitoring is performed by the Vermont Agency of Natural Resources (VANR) and the New Hampshire Department of Environmental Services (NH DES), in accordance with EPA protocols. Both agencies maintain a database of the monitoring results and reports this information to the EPA.

The EPA can designate certain geographic areas that do not meet air quality standards for a given pollutant as 'non-attainment' areas. These non-attainment areas are classified by increasing levels of severity as: marginal, moderate, serious, severe or extreme. Classifications are based on regional monitoring data and the number of annual NAAQS exceedences. Air quality monitoring sites in Brattleboro indicate that the area meets all established air quality standards for transportation related pollutants. The proposed project does not create concerns with regard to air quality since it would not substantially increase traffic volumes and is proposed in an area that already attains all established air quality standards.

Air Quality Permitting

Since the project would result in a negligible increase in air pollution compared to the No-Action Alternative, VT ANR's Air Pollution Control Division has indicated that air quality analyses of the proposed project would not be required. NHDES – Air

Resources, determined that the proposed project would have no significant air quality impacts in New Hampshire since the project would not substantially increase traffic levels and is located in an area that is "in attainment" for NAAQS. Consequently, no air quality permitting in New Hampshire would be required for the project.

Microscale Analysis of Carbon Monoxide Emissions

CO is used in transportation microscale studies to indicate roadway pollutant levels since it is a common pollutant emitted by motor vehicles and is often found in high concentrations around congested intersections. Although unnecessary for state permitting, a microscale air quality analysis was completed to more fully evaluate the project's potential impacts on air quality in accordance with NEPA.

Version 2.0 of the EPA's CAL3QHC modeling software was used in conjunction with the Mobile Source Emission Factor Model to predict CO concentrations at receptor locations near the proposed VT 119/142 intersection. This intersection was selected since it is the location where the project would have the greatest potential to affect local air quality. State standards and NAAQS criteria do not allow average ambient CO concentrations to exceed 35 parts per million (ppm) during a one-hour period, and 9 ppm during an eight-hour period. It is proposed that traffic would be signalized at this intersection and was modeled as such in the air quality analysis.

In New Hampshire, the project would only minimally change the current location of NH 119 and would not change the current configuration of its intersection with the George's Field access road. Very minimal changes in air quality, between the No-Action Alternative and Alternative F, are anticipated in New Hampshire. As such, CO monitoring and modeling was not performed for this intersection.

Existing Air Quality Conditions

An existing condition air analysis was conducted within the VT project area along VT 142 to determine existing CO concentrations. The air quality receptors were located adjacent to VT 142. The locations and results of the air quality monitoring and modeling analysis are set forth in Exhibit B.1 – Existing Air Quality Map. They show that the entire area is well below the NAAQS criteria and is projected to remain in attainment for the foreseeable future without the construction of Alternative F. The highest CO concentrations occur on the west side of VT 142, with a reading of 3.3 ppm over the one-hour period and a reading of 1.7 ppm over the eight-hour period.

Projected Air Quality Conditions

An analysis of the projected air quality impact associated with Alternative F was conducted in the vicinity of the proposed VT 119/142 intersection as well. The analysis predicted CO concentrations in the area for the year 2016. Again, the highest concentrations are expected on the west side of VT 142, across from the proposed intersection. Readings of 4.5 ppm over the one-hour period and 2.4 ppm over the eight-hour period could be expected. See Exhibit C.10 - Proposed Air Quality.

If Alternative F were constructed, these analyses predict that CO concentrations would still be well below the maximum allowable NAAQS for CO. Thus, the project is expected to be in compliance for all NAAQS concentrations. Since the project is not anticipated to result in any violations of NAAQS, and would not substantially impact existing ambient air quality levels, it conforms to both the Vermont and New Hampshire state air quality implementation plans. Overall, project air quality impacts are anticipated to be minimal. No air quality permitting would be required and no air quality mitigation measures will be required.

Mobile Source Air Toxics

Since the project has been determined to generate minimal air quality impacts for CAAA criteria pollutants and will not have a meaningful impact on traffic volumes or the vehicle mix on Route 119, it is not linked with any special mobile source air toxics (MSAT) concerns. The project would result in no meaningful potential MSAT effects beyond those that are anticipated with the no-build alternative.

j.) NOISE

Since the project consists of the physical alteration of an existing roadway involving a substantial horizontal and vertical alignment shift, it can be considered a Type I project per 23 CFR 772 and as such, requires a noise impact analysis. FHWA Noise Abatement Criteria (NAC) levels are based on land use and can be found in Table D-1. This table lists the noise levels for each land use category at which mitigation measures could be considered appropriate. Different types of noise impact can occur based on whether the predicted noise level approaches, equals or exceeds the NAC level. As set forth in both the NHDOT and VAOT Noise Analysis and Abatement Policies, a noise impact can occur in two ways; if the predicted noise level either approaches or exceeds the NAC levels, or if predicted noise is substantially higher than the ambient background noise levels. In both NH and VT, 'approaching' in this context is defined as being within 1 dBA of the Federal NAC. For both VT and NH substantially higher is defined as an increase of 15 dBA.

The methods used in this evaluation are identified in the Federal-Aid Policy Guide, Subchapter H, Part 772 (23 CFR 772), Vermont Agency of Transportation Noise Analysis and Abatement Policy (2011 update) and the NHDOT Noise Policy (2011 update). Existing activities, or land uses, that may be affected by noise from the proposed project, are identified on Exhibit B.4 – Noise Land Use Map.

Table D-1: Noise Abatement Criteria

Activity Category	L_{eq}*(h)	Description of Activity Category
A	57 dBA (Exterior)	Tracts of land which serenity and quiet are of extraordinary significance and serve an important public need, and where preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 dBA (Exterior)	Residences, motels, hotels, schools, churches, public meeting rooms, libraries, hospitals, picnic areas, recreation areas, playgrounds, active sports areas and parks.
C	72 dBA (Exterior)	Developed lands, properties or activities not included in Categories A and B above.
D	---	For undeveloped lands.
E	52 dBA (Interior)	Residences, motels, hotels, schools, churches, public meeting rooms, libraries, hospitals, and auditoriums.

*Leq is the Equivalent Continuous Noise Level. It is a steady state sound in a period of time that contains the same acoustic energy as the time-varying sound levels observed during the same time period. Leq(h) is the hourly value of Leq.

Existing Noise Levels

Existing noise level measurements were taken during May 2005 at four measurement locations. Field noise measurements were obtained with a Metrosonics Metrologger (ANSI Type II) noise level meter. Using these data a total of 15 noise receptor locations were then modeled throughout the project area using the FHWA traffic noise modeling (TNM) program, version 2.5. The 15 sites were selected to represent areas where noise levels may change as a result of this project.

To accurately measure the sound levels at each site, measurements of at least 15 minutes were taken during both the AM and PM peak traffic periods. The results of these measurements are shown in Table D-2.

Table D-2: Existing Noise Measurement Data

MEASUREMENT LOCATIONS	PRIMARY SOURCE(S) OF NOISE	TIME	DATE	Leq(h)* (dBA)
3	Route 142 & South Main Street	4:45 PM 7:40 AM	5/17/05 5/18/05	54 57
6	Route 142 & South Main Street	4:25 PM 7:20 AM	5/17/05 5/18/05	56 56
14	Route 119	5:15 PM 8:30 AM	5/17/05 5/18/05	54 52
15	Route 119	5:35 PM 8:10 AM	5/17/05 5/18/05	48 49

Projected Noise Levels

Other than the short-term noise associated with construction, any increases in project-related noise would occur as the result of traffic. Traffic noise is variable, and can be influenced by the number and type of vehicles, vehicle speed, highway surface, weather conditions, and obstructions between the roadway and receptors. The year 2035 noise levels are reported in terms of the Leq. This noise model considers:

- Traffic volumes and classifications
- Vehicle operating speeds
- Roadway surface, alignment, and grade
- Physical barriers
- Distance to receptors
- Terrain

Using the inputs of traffic volumes, distance to receptors, traffic speed, roadway alignments, physical noise barriers, and then calibrating the model with the existing noise levels, the TNM 2.5 program predicted the worst-case traffic noise levels throughout the project corridor for the existing conditions, the 2035 No-Action Alternative, and the 2035 Preferred Alternative (see Exhibit B.3 – 2005 Design Hour Traffic Volumes).

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Noise Impacts

For both NH and VT transportation agencies, a noise impact occurs if the predicted noise level exceeds or is within 1 dBA of the appropriate FHWA Noise Abatement Criteria (NAC), or if the predicted design year noise level is substantially higher than the existing noise levels. The NAC thresholds used for determining noise-impacts are 67 dBA for residential and recreational areas, and 72 dBA for commercial areas. (See Table D-1). Both the NHDOT and VAOT define 'substantially higher' as an increase of 15 dBA.

Existing background noise levels were modeled using TNM 2.5 and found to range from 39 to 64 dBA Leq at 14 of the 15 receptor sites. One of the sites, Receptor 4, had a noise level of 72 dBA, which exceeds the impact criteria for residential NAC. The residence would be considered impacted by traffic noise even without the construction of a replacement bridge. Projected traffic volumes for 2035 were then used to predict potential traffic noise impacts to the 15 noise receptors in the project area for 2035 under both the 'No Build' and 'Preferred Alternative' scenarios.

No receptors showed increases in 2035 noise levels under the Preferred Alternative that would exceed the 'substantially higher' criteria of 15dBA, and with the exception of Receptor 4 none of the 2035 Preferred Alternative Leq levels exceed the NAC listed in Table D-1. Due to required roadway modifications on VT 142, the project would result in this building becoming isolated from the roadway. Therefore no noise abatement measures were considered at the residence adjacent to Receptor 4. The

structure will be acquired as part of the project's Right of Way process and demolished so no noise mitigation measures would be necessary.

k). WATER QUALITY

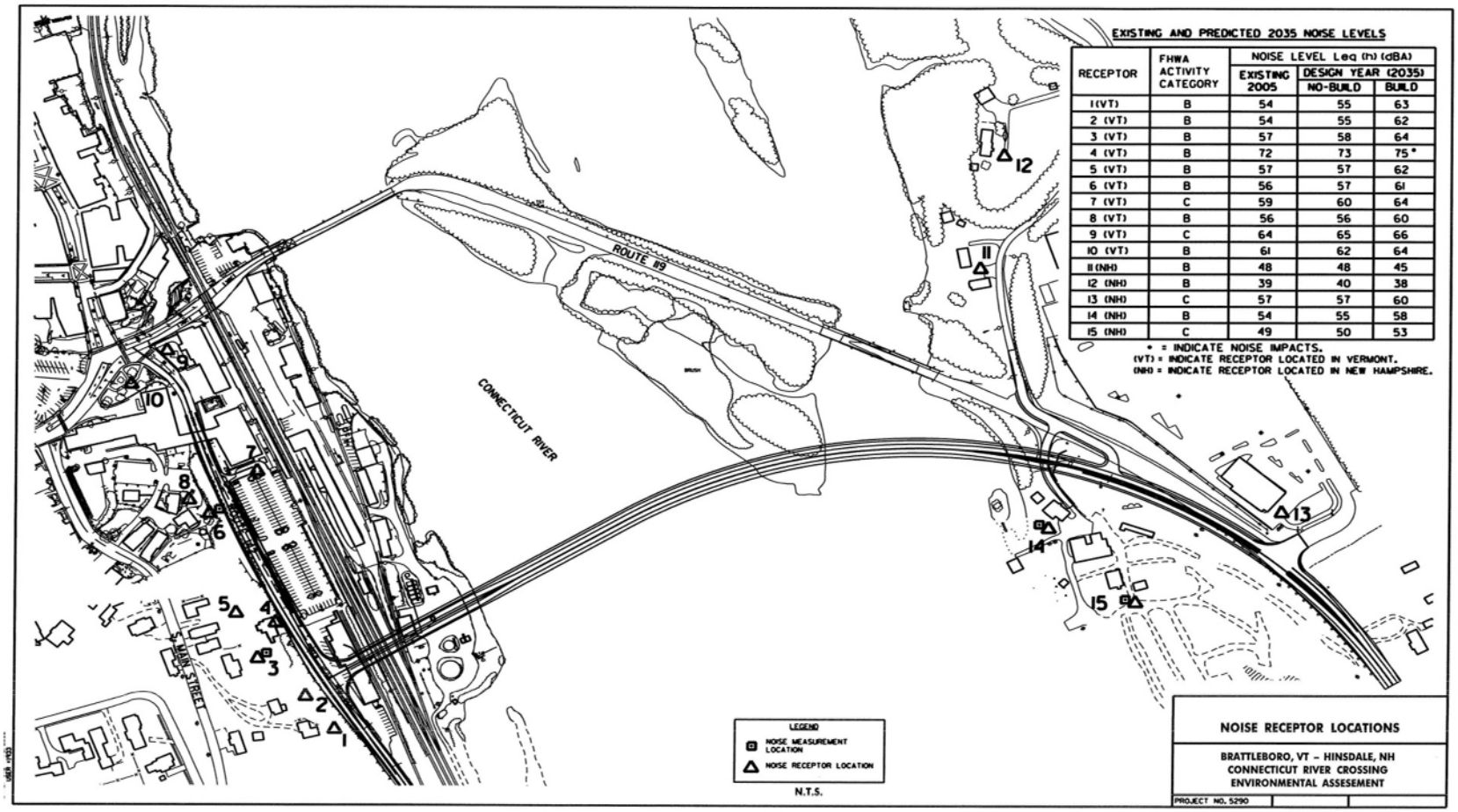
The Connecticut River is an important water resource for fisheries, recreation, wildlife, and municipal drinking water supply. The New Hampshire 2004 Section 303(b) and 303(d) Surface Water Quality Report identifies this section of the Connecticut River (Vernon Dam Impoundment) as being impaired with polychlorinated biphenyls (PCBs). The project would not result in any further PCB loadings to the river so project-related activities will not impair water quality in this section of the Connecticut River.

Since Alternative F involves building multiple bridge piers within the Connecticut River, water quality impacts from the proposed work are expected to be temporary and primarily associated with construction activities. This will undoubtedly result in some limited short-term sediment loading to the water column but would have a negligible impact on the overall water quality in the river.

The wider replacement bridge will have an increased surface area compared to the existing bridges but since vehicular traffic is to be removed from the existing Route 119 bridges and the project will result in no appreciable increase in vehicular traffic on Route 119, there should be no net increase in stormwater borne pollutants entering the river if the Preferred Alternative is constructed as proposed. Stormwater from any new bridge would likely be collected and treated on either shoreline with grass-lined swales, detention ponds or similar stormwater treatment structures before being discharged into the Connecticut River which would be an improvement over existing conditions.

A wellhead protection area exists around a public drinking water supply well 0.6 miles to the north of Alternative F (See Exhibit A.6). Alternative F would have no impact on this wellhead protection area. No additional mitigation measures would be required.

Table D-3, Noise Modeling Data



l.) WETLANDS

Executive Order 11990 and Section 404 of the Clean Water Act requires the FHWA to avoid new construction in wetlands, unless there is no practicable alternative to such construction, and that the proposed action includes all practicable measures to minimize harm to the wetlands, which may result from such use.

Wetlands Resources

Wetlands within the Alternative F project area were identified and located using both National Wetland Inventory (NWI) Maps and field investigations. These wetlands are also protected by VT and NH state law. Wetlands identified in the project area (See Exhibit A.6) include:

- Mid-Channel Island Wetland – The mid-channel island, located in the Connecticut River and part of New Hampshire, is used as a section of the existing Route 119 crossing. Much of this island is forested with cottonwood trees. The southwestern portion supports an emergent marsh dominated by cattails. Most of its land area can be classified as wetland habitat. Despite fills from the existing Route 119 roadbed, this island consists of substantial floodplain forest and marsh wetland communities.

- New Hampshire Landing Wetlands – Adjacent to the NH Route 119 landing, and on the northern side of the roadway, a 100 ft by 65 ft depression exists that supports several very small emergent marsh wetland areas. The total wetland area at this location is approximately 500 square feet. These wetlands have limited functions and values due to their small size.

- Vermont Morningside Drive Wetland – An emergent marsh wetland in Vermont, designated a Vermont Class II wetland, is located on the western shore of the river, extending from the river west to VT 142. This wetland extends north/south along the Vermont rail line for approximately 1,500 feet, with the mid-point of being just east of the VT 142/Morning Side Drive intersection. The functions and values of this community are compromised from the rail, highway and commercial development surrounding it on three sides. The area still is able to provide limited wildlife habitat, floodplain storage, and a degree of nutrient and sediment retention.

- New Hampshire Route 119 Wetland - A New Hampshire NWI listed wetland is located south of the Route 119 landing in New Hampshire, between Route 119 and the river, and is adjacent to an open water area. This wetland, due to its location, also provides wildlife habitat, floodplain storage, and nutrient and sediment retention.

- Public Boat Launch Mitigation Site Wetlands –The Vernon dam has created a large semi-permanent, open water and emergent marsh wetland complex along the eastern shoreline of the Connecticut River and west of Hinsdale village. There is an existing boat launch facility found at the edge of this wetland complex off of Prospect Street and approximately 5.6 miles south of the Alternative F alignment. This public facility would be enlarged and reconfigured as mitigation for project related impacts to the mid-channel island boat launch.

Wetland Impacts

Except for the existing Route 119 roadway, much of the mid-channel island has both hydric soils and hydrophytic vegetation and is considered jurisdictional wetland. Rehabilitation of the existing Route 119 bridges for pedestrian and bicycle passage is not anticipated to impact any of this wetland area.

Depending on final bridge design, construction of the Alternative F crossing could impact wetlands on the mid-channel island. The Alternative F bridge may require that a support pier be located on the southern tip of the island where an emergent marsh exists currently. Up to 0.11 acres of this wetland area could be impacted, depending on the size and location of the bridge pier. No wetland impacts on the island are anticipated if a pier is not required at its southern tip.

Although, the bridge's final design has not yet been determined, the bridge is anticipated to be substantially elevated prior to crossing the Connecticut River. The structure is to be elevated to provide a grade-separated crossing over the New England Central Railroad on the VT shoreline. As such, bridge abutment work, in either the New Hampshire or Vermont, is not expected to occur below the Connecticut River's ordinary high-water mark. No abutment or approach work associated with Alternative F is anticipated to impact wetland habitat in either Vermont or New Hampshire.

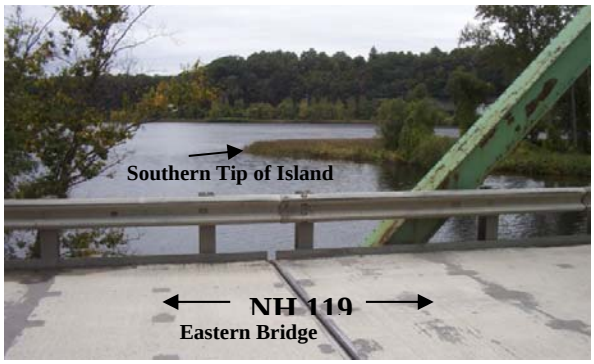


Photo D-5 Mid-Channel Island Southern Tip Wetlands: View from the eastern Route 119 bridge towards the southwest and Vermont.

As part of the project, improvements are proposed to the Prospect Street Boat Launch facility, which is found approximately 6 miles south of the Route 119 crossing location. These improvements would likely result in some fill impacts to a emergent marsh wetland found there. Conceptual plans indicate that approximately 0.02 acres of wetland area could be filled.

Alternative F's actual wetlands impacts will be determined upon completion of the project's conceptual design, but in any event would be minimal.

Wetland Permitting

During the January 1998 NHDOT Resource Agency meeting it was decided that, although the Connecticut River is jurisdictionally part of New Hampshire and a majority of the proposed work is in that territory, the Vermont Project Office of the COE would have primary jurisdiction for the project. Attendees at this meeting included representatives from the NH Fish and Game Department, USFWS, COE, NH Wetlands Bureau, NH River Management and USEPA.

The project was also presented to the COE and other resource agencies during a similar Resource Agency meeting at VAOT in 1998. No objections to the project were noted. In November 2005 the Vermont Project Office of the COE was provided updated copies of the project's purpose and need statement, an Alternatives Evaluation Table, and the Project Resource Summary Table. Minutes from the Bridge Committee and Working Group meetings were also provided to assist the COE in their review and understanding of the project. Additional coordination with the VT Project Office of the COE during August of 2009 established the COE had no additional project comments at this time.

Conceptual design plans indicate that Alternative F would not impact any NWI mapped wetlands. As the project could impact the NH shoreline, a NHDES Shoreline Permit for dredge and fill and a NH 401 Water Quality Certificate may be required for the project. Depending on whether a pier is placed on the mid-channel island and the location of any bridge piers adjacent to the riverbanks, a COE 404 permit may be required for the project. Further project coordination with the COE will be required to determine permitting requirements once preliminary design is completed for the project. The project would comply with all wetland permitting requirements. No wetland mitigation measures will be required.

Impact Avoidance and Minimization

The current Route 119 bridges over the Connecticut River are not considered functional by modern highway design standards and their current structural condition is considered deficient. This assessment identified and evaluated ten alternatives to replace the crossing. Wetlands impacts associated with these ten alternatives ranged from approximately 2.8 acres (Alternative H) to minimal (Alternative A - Rehabilitation).

With the potential to impact 0.14 acres or less of wetland habitat, from a bridge pier placement on the mid-channel island and the enhancement of the existing Prospect Street Boat Launch, the construction of Alternative F is not anticipated to have a significant impact any Vermont or New Hampshire wetlands. Alternative F includes all practicable measures to minimize harm to wetlands.

m.) WATERBODY MODIFICATIONS

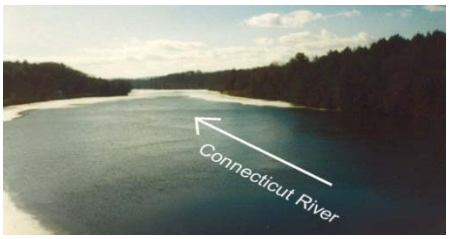


Photo D-6 Connecticut River: View from the Route 9 Bridge south.

The Connecticut River drains approximately 3930 square miles in Vermont and 3050 square miles in New Hampshire. The river and its shorelines provide a valuable natural resource for wildlife and waterfowl, drinking water supplies, recreational and agricultural activities, fisheries, forestry and plant habitats.

In the project study area, the Connecticut River, is listed by the US Department of Interior in the Nationwide River Inventory for its unique hydrology, historical significance, and botanical diversity. The river is not classified as a Wild and Scenic River but the NH Rivers Management and Protection Program designated the Connecticut River for protection due to its outstanding natural and cultural resources. The Connecticut River is New England's largest river ecosystem and one of the Nation's 14 American Heritage Rivers. This designation recognizes the Connecticut River for its scenic, historic, natural, recreational, cultural, and archaeological qualities. As an American Heritage River, all river-based structures and improvements should be constructed so as to minimize any alterations or impediments to the natural character of the river. Additionally the stretch of US Route 5 next to the Connecticut River in Brattleboro was named a National Scenic Byway by the FHWA in 2005. The project sponsors and the Bridge Committee engaged in designing a bridge structure that is aesthetically and functionally compatible with the river and the adjacent shorelines.

The existing Route 119 crossing of the river is approximately 5.9 miles upstream of the New England Power Company's Vernon dam, and about 19.8 miles downstream of their Bellows Falls dam. The Federal Energy Regulatory Commission has commented that the project would not have any impact on the safety of the New England Power Company's dams at Vernon and Bellows Falls. The project area is located within the area of flowage rights granted to New England Power Company for the operation of its Vernon power project. Construction of Alternative F would have no impact upon New England Power's flowage rights.

By letter dated January 26, 2005, the US Coast Guard (USCG) commented that the project would not require a bridge permit, but that certain stipulations must be met. Specifically, the NHDOT shall coordinate with the USCG regarding navigational lights and other signals upon completion of the design. The USCG may also provide comments relative to the maintenance and safety of boat traffic both during and after construction. From a navigational standpoint, the horizontal and vertical clearances between substructure units of the proposed bridge would not be more restrictive than those of the existing bridge.

Only limited waterbody modifications to the Connecticut River are anticipated with the construction of Alternative F. These modifications are associated with the placement of bridge piers in the river and the enhancement of an existing boat launch. Best management practices would be used to reduce sedimentation and contain water turbidity during all construction activities. No additional waterbody modification mitigation measures will be required.

n.) FLOODPLAINS

Floodplain Resources and Impacts

Throughout the project area a large portion of the east and west shorelines of the Connecticut River are classified as floodplain (See Exhibit A.6). The 100-year floodplain, near the existing Route 119 crossing is 233 feet above sea level.

The New Hampshire Office of Emergency Management has expressed concern for additional encroachments in the project area's floodplain. However, due to the high touchdown elevations required for Alternative F in both Vermont and New Hampshire, which are necessary for the grade-separated railroad crossing in Vermont and to join with Route 119 in New Hampshire, minimal encroachment into the area's floodplain is anticipated in both Vermont and New Hampshire.

Alternative F would touch down on Route 142 in Vermont approximately 1000 ft south of the existing VT 119 touchdown location, cross the Connecticut River and then connect with existing NH 119. The eastern and western Alternative F touchdown locations are both above the 100-year floodplain. Floodplain impacts associated with the shoreline touchdown locations of this alternative are anticipated to be negligible, on the order of approximately 100 square feet.

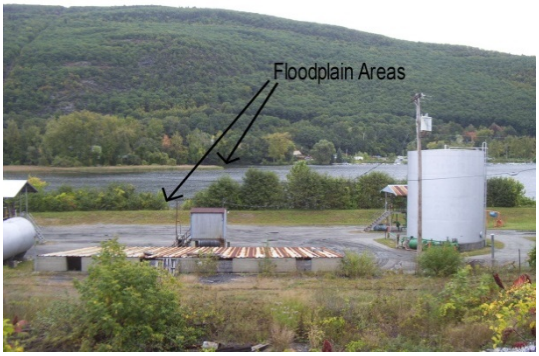


Photo D-7 Floodplains: View from Blue Seal touchdown locaiton east across the Connecticut River

Hydraulic Analysis

The project's greatest potential to impact the Connecticut River floodplain relates to the bridge's mid-channel support piers. A floodway hydraulics analysis was completed for Alternative F to evaluate those impacts. The HEC-RAS software from Haestad Methods was used to model water surface elevations at both the existing and proposed bridge crossing locations. The existing conditions utilized HEC-2 data from the Town of Brattleboro Flood Insurance Study (FIS), dated December 4, 1985.

The proposed Alternative F bridge was conservatively modeled as having seven 6.6 ft wide, mid-channel piers. The roadway deck was set at 52.8 ft wide and abutments were parallel to the river. It had an average low chord elevation of 22 ft above the local 100-year flood elevation (255 feet above sea level) and a waterway opening of 73,900 sq ft. These design specifications were based on the preliminary bridge design and field survey information completed by NHDOT.

When compared to the hydraulic conditions below the existing Route 119 bridge crossing, the worst-case bridge hydraulic impact scenario creates a negligible increase of 0.5 inches to the water surface elevation just upstream of the proposed bridge during the 100-year flood event. Final bridge design will take pier spacing into consideration to minimize impacts on flood event water elevations and ensure that floodway obstructions would be minimized. No floodplain impact mitigation will be required.

Floodplain Coordination

At the January 28, 1998 NHDOT Resource Agency meeting and at the February 4, 1998 VAOT/COE Agency coordination meeting the project was identified and explained. Potential floodplain impacts associated with Alternative F were identified at these meetings. No objections to the project, or potential floodplain impacts, were raised by VANR, NHDES, COE, USFWS, USEPA or local officials.

Additional coordination in 2005, with the NH Bureau of Emergency Management, Office of Energy and Planning, indicated that no additional coordination with the Federal Emergency Management Agency (FEMA) is required since the hydraulic analysis shows that the project would comply with Executive Order 11988.

The final design of the bridge and approach roadway sections will minimize encroachments to the floodplain and the floodway to the maximum extent practicable. Within the context of E.O. 11988 and 23 CFR 650, the construction of Alternative F would not result in any significant floodplain encroachment.

o.) FISH AND WILDLIFE/THREATENED AND ENDANGERED SPECIES

Fish and Wildlife Resources

The Connecticut River, its tributaries, and shorelines, provide substantial habitat for fish. Vermont's Department of Fish and Wildlife states that the Connecticut River supports a mixed fishery of warm, cold, and anadromous species. Warm water fish such as large and small mouth bass, walleye, yellow perch, northern pike and pickerel reside in the project area year round. Wetlands bordering the river provide critical spawning, rearing, and feeding habitat for many of these warm-water sport fish.

Cold water and anadromous fish such as brown and rainbow trout, Atlantic salmon and American shad also occur in the project area during seasonal migrations. Salmon

migrate through the proposed project area to find suitable spawning sites in Connecticut River tributaries. Shad spawn in the Connecticut River itself, including waters around the proposed project area. The spawning migration season for salmon and shad is from mid-May through early July. Juvenile salmon migrate through the project area between mid-April and mid-June on their way out to sea, while juvenile shad migrate downstream during mid-September to late October.

Since 1967, the Vermont Fish and Game Department has been cooperating with the three other Connecticut River Basin States (New Hampshire, Massachusetts, and Connecticut), the US Fish and Wildlife Service, and the National Marine Fisheries Service to restore Atlantic salmon and American shad to the Connecticut River and its tributaries. A fish ladder at New England Power Company's Vernon dam has facilitated the upstream migration of adult salmon and shad since 1981. In some years as many as 30,000 shad have migrated upstream of the Vernon dam using this ladder.

Both immediately adjacent shorelines of the Connecticut River are substantially developed in the project area. The Vermont landing location has a bulk fuel depot located on the river's edge while the New Hampshire landing has an automobile recycling area located on the upper bank and a marina at the river's edge. Wildlife tolerant of human development and activity could be found in these riverbank areas. The river channel itself provides habitat for waterfowl and other water dependent animals such as freshwater mussels.

Rare, Threatened, and Endangered Species

The resident mussel population has been the subject of numerous field investigations and surveys. The Connecticut River, in the vicinity of Brattleboro is believed to have formerly supported colonies of the Dwarf Wedge mussel, a species listed as Endangered under the federal Endangered Species Act.

In September and October 1999, a Phase I Fresh Water Mussel Survey was conducted under the proposed Alternative F alignment. This survey was initiated after coordination with the Vermont Fish and Wildlife Department (by letter dated September 16, 1999), the New Hampshire Fish and Game Department (by letter dated September 13, 1999), and the USFWS (by letter dated October 18, 1999). The surveyed area extended across the river in a 400' wide swath, including 100' feet upstream of the Alternative F alignment and 300' feet downstream. The study area is depicted in Exhibit C.5 – Dwarf Wedge Mussel Study Area Map.

The study was completed in December 1999. Two common species of mussel were encountered in the area, the Eastern elliptio (*Elliptio complanata*) and Eastern floater (*Pyganodon cataracta*). No live specimens or shells of the Dwarf Wedge mussel were discovered in the project area. No mussels of any type were found along either

the Vermont or New Hampshire shorelines or the mid-channel island during this investigation.

In correspondence dated December 13, 1999, the USFWS stated that since no evidence of the species was found within the surveyed area, no further project coordination regarding its potential impact to the Dwarf Wedge mussel was necessary. In correspondence from May 2005, the USFWS stated that the results of the 1999 survey were still valid and that no further investigations for the Dwarf Wedge mussel were required at that time. Follow up coordination in July 2009 with the VT Nongame and Natural Heritage Program and the USFWS determined that the 1999 mussel survey results were outdated. Additional field work was requested in the project area to confirm the results of the 1999 survey.

Per correspondence with the USFWS dated July 22, 2009 it was determined that another extensive dive survey of the project area was not justified at this time and that a less intensive field reconnaissance was sufficient. The field reconnaissance was to consist of two tasks and included: searching for piles of mussel shells made by predatory muskrats along the river's shorelines and evaluating the habitat substrate in the project area. If field observations suggest that the Dwarf Wedge Mussel may have re-colonized the project area in the decade since the most recent dive survey, the USFWS would request that another mussel survey of the entire impact area be conducted.

The requested field work was completed in August 2009. The investigated area was on both the east and west riverbanks where they intersect with the proposed roadway alignment, and extended ~100' upstream and ~300' downstream from the location of potential abutments. The shoreline of the mid-channel island was also searched for shells. Several hundred empty mussel shells were observed on the riverbanks in the investigated area, with the majority of these found on the NH side. Shells were cleaned and sorted in the field and a representative assortment collected. All shells small enough to potentially be from the Dwarf Wedge Mussel (less than approximately 1.75 inches long) were collected or photo documented and subsequently shown to a mussel specialist for positive identification.

Limited shoreline snorkel observations indicated that the substrate in the project area was suitable to provide mussel habitat. Extensive mussel beds were also observed along the VT shoreline, downstream of the proposed alignment, but within the investigated area. None of these observed individuals were small enough to be the Dwarf Wedge Mussel and the population appeared to be nearly exclusively the common and widespread Eastern Elliptio. After coordination with regional mussel experts, it was determined that none of the collected shells were from the endangered Dwarf Wedge Mussel (See Appendix E, pages E-27 thru E-32). Based on these observations, there is no indication that the species has recolonized the project area since the 1999 dive survey was completed.

In addition to concerns about the Endangered Dwarf Wedge Mussel, the NH Natural Heritage Bureau (NHNHB) has concerns about two state-listed Endangered plants that are known to occur in the project area, *Potamogeton nodosus*, and *Heteranthera dubia*. At the May 20, 2009 resource coordination meeting held in Concord NH, the NHNHB requested an evaluation of the project area to determine the presence of, and the project's potential impacts to these two aquatic plant species (See Appendix E, pages E-17 thru E-21). Field observations of the following species were made in the project area in August 2009:

- *Potamogeton nodosus*- This species was observed to be well established in the shallow water throughout the entire project area. More than 20 separate stands were encountered in gravelly substrate, primarily along the VT shoreline and north of the existing Route 119 alignment. Some of these stands were fairly extensive. Several were present on the south-southwestern side of the mid-channel island. The distribution of this species in North America is very large and NH is on the edge of its natural range.

- *Heteranthera dubia*- This species was much less common in the project area than the *Potamogeton*. Only 6 individuals of this species were observed in the project area and they were all clustered in the shallow water around the southern side of the mid-channel island. The distribution of this species in North America is also very large with NH being on the edge of its natural range.

Project Impacts

The project was presented to the National Marine Fisheries Service in June 2001 and in 2005 an Essential Fish Habitat (EFH) Assessment was completed regarding the project's effect on the Atlantic salmon. The EFH Assessment determined that, for the Brattleboro/Hinsdale section of the Connecticut River, any project-related adverse effects on the Atlantic salmon would be minimal.

Based on the results of the 1999 dive survey and the 2009 shoreline survey, it is not anticipated that the project will have an adverse effect on the federally protected Dwarf Wedge Mussel. Based on the abundance of the NH listed *Potamogeton nodosus* in and around the project area, impacts to this species from the project would not be substantial. Depending on final bridge

Photo D-8 Fish and Wildlife Habitat along the Connecticut River: View from the mid-channel island northeast towards Wantastiquet Mountain State Forest.

design and support pier placement, impacts to the local population of *Heteranthera dubia* could be substantial. Although common throughout much of North America, this species is listed as Endangered in NH and was only observed in the project area off the southern side of the mid-channel island. The NHNHB has requested that they be provided with conceptual plans once they are available. Continued coordination with the NHNHB will be necessary to develop a suitable mitigation strategy if impacts to these rare plants are unavoidable.

Both the Vermont and New Hampshire touchdown locations would be substantially above the existing the riverbanks so Alternative F is anticipated to have very minimal impacts to riverbank habitat.

No further fish and wildlife mitigation measures are anticipated to be required.

p.) HISTORIC

Project area historic resources that are listed on or eligible for listing in the National Register of Historic Places are fully described and identified in Appendix D (see Pritchett Report, Map 2). Historic resources found near the Alternative F location are identified below and depicted as lettered or numbered sites on Exhibit A.7 – Historic and Archaeological Resources Map.

Historic Districts

The following Historic Districts, determined to be listed or eligible for listing in the National Register of Historic Places, have been identified in the vicinity of the Alternative F project corridor:

- The Brattleboro Downtown Historic District (Site A) was listed in the National Register of Historic Places on February 17, 1983. This District includes the VT Route 119 area west of the railroad tracks, and adjacent areas to the south and north.
- The Clark Street Neighborhood Historic District (Site C) is located southwestern from the project and adjacent to VT Route 5.

Photo D-9 Brattleboro Historic Museum (Union Station): View from VT 119 west to downtown

- The Canal Street Schoolhouse Historic District #6 (Site D) is located southwestern of the project and adjacent to VT Route 5.

Historic Sites

- House, c. 1890 (Site 1), Route 119, Hinsdale, NH, located east of Route 119 in Hinsdale, New Hampshire.
- Hinsdale Bridge (eastern bridge) (Site 8), 1926, NH Route 119 over the side channel of Connecticut River.
- Brattleboro/Hinsdale Bridge (western bridge) (Site 9), 1920, NH Route 119 over the main channel of the Connecticut River.

Historic Impacts

Since the existing Route 119 bridges are eligible for listing on the National Register of Historic Places, their proposed rehabilitation would serve to preserve their historic significance. Only minimal project-related aesthetic impacts are anticipated to occur to the Downtown Brattleboro Historic District, and to other project area historic sites eligible for the National Register of Historic Places. No physical impacts to any area historic resources are anticipated with construction of the project.

The September 5, 2000, Section 106 Letter of Effect (see Appendix D) concluded the preferred alternative (Alternative F) would have "No Adverse Effect" on properties listed in, or eligible for listing in, the National Register of Historic Places. It states that the Brattleboro-Hinsdale Bridge Committee provided meaningful and important input into the design process and that coordination between both VT and NH SHPOs took place to reach this conclusion. Rehabilitation of the existing Route 119 bridges would be done in accordance with the Secretary of Interior's Standards. No additional historic mitigation measures will be required.

q.) ARCHAEOLOGICAL

The Connecticut River is an area of sensitivity for both historic and pre-historic archaeological resources, noted in Exhibit A.7.

Archaeological Resources

Several areas in the project study area have the potential to contain archeological deposits. Four archaeological investigations have been conducted in support of the project.

- January 1997 – Archaeological Sensitivity Assessment - This original assessment determined that the project study area has the potential to contain archeological deposits associated with Native American cultures.
  Several factors however, reduce the likelihood of recovering prehistoric materials in the area. There has been extensive prior disturbance from historic development, excessively steep slopes are present, and extensive erosion has occured. The earliest reported historic European settlement occurred in the southern portion of the project area. Varied commercial, industrial, residential,

and transportation developments have historically occurred throughout the corridor.

- October 1997 – Archaeological Sensitivity Assessment Addendum – This addendum to the January 1997 Sensitivity Assessment determined the potential for prehistoric archaeological resources is greatest in the areas that have not undergone extensive historic development, such as on the New Hampshire side of the river.

  That portion of the project corridor located in, or adjacent to, the main business district of Brattleboro has undergone substantial historic development. As such, much of this area has undergone extensive disturbance and is unlikely to contain intact prehistoric archaeological deposits. Portions of the project corridor south of downtown Brattleboro and along VT 142 may contain undisturbed soils and are considered archeologically sensitive to both prehistoric and historic archaeological deposits.

- November 30, 2000 – An Archeological Phase 1B Survey - This archaeological study focused on the preferred alignment (Alternative F).
  The survey included the excavation of twenty-eight test pits spaced at 5-meter intervals. Eight were dug at the Vermont landing site and twenty at the New Hampshire landing site.

  Although several historic Euro-American artifacts were recovered from the project area, none were part of any intact archeological deposits, and none were considered significant enough to warrant inclusion in the National Register of Historic Places. No Native American artifacts were identified within the project area.

  Since no Native American artifacts or significant historic Euro-American deposits were identified during the Phase IB survey, it was concluded that Alternative F would not adversely affect any archaeologically significant cultural resources.

Photo D-10 NH 119 Fill on Mid-Channel Island: View northwest across NH 119 toward New Hampshire

- December 24, 2001 – Phase 1A Archaeological Reconnaissance of the 8.4 acre Mid-Channel Island in the Connecticut River - This study evaluated the potential of the mid-channel island to contain archaeologically significant resources.

Research found that much of the island was inundated in 1909 as a result of the Vernon dam being constructed downstream. Those portions of the mid-channel island not previously inundated were severely eroded between 1927 and 1938 by a series of three large floods. Except in areas protected by riprap or other artificial structures, these floods appear to have removed nearly the entire island that remained above the level of the Vernon impoundment.

Since the 1930's, the island appears to have recovered some additional surface area through accretion at the northern and southern tips, and through the addition of artificial fill and riprap. A small area of the original island surface may be preserved somewhere beneath the fill for Route 119 at the western end of the island. Prior to the twentieth century, the western portion of the island was the highest (and presumably driest) part of the island, and successive episodes of road construction and repair may have buried and protected this original core of the island from flood erosion. Overall, however, the mid-channel island is considered non-sensitive for archaeological resources.

Two areas that contained foundation remains from late nineteenth to early twentieth-century were identified during field reconnaissance. The western masonry abutment of the last covered bridge over the side (eastern) channel was identified. This abutment appears to be typical of such structures and has been altered by repairs and improvements after the beginning of the twentieth century when poured concrete came into general use as a construction material. This area does not appear to possess significant historical associations, nor does it comprise a notable example of such structures. As such, its archaeological potential appears to be limited, and does not comprise a significant archaeological resource.

Additionally, various masonry features, believed to be elements from the foundation of the Island Park Dance Pavilion, were recorded. These possess limited integrity and little archaeological potential and do not appear to comprise evidence of a significant archeological resource.

Based upon review of documentary information, and field reconnaissance, the study concluded that the mid-channel island area has a low potential to contain intact prehistoric or early historic period archaeological deposits.

Archaeological Impacts

Project archeological investigations determined that, although numerous Euro-American artifacts exist along the Alternative F alignment on both sides of the river, none of these artifacts are from intact archeological deposits and are not considered eligible for the National Register of Historic Places. No Native American artifacts were identified during these surveys. Additionally, the mid-channel island, within the

Alternative F alignment area, was determined to have a low potential for intact archeological resources.

The September 5, 2000, Section 106 Letter of Effect (see Appendix D) determined the project (Alternative F) would have no potential to cause effects on identified archaeological resources.

r.) HAZARDOUS MATERIALS

There exist several VANR-identified petrochemical hazardous waste sites along the Vermont side of the project corridor (See Exhibit A.8 – Hazardous Materials Map). The New Hampshire side of the corridor has few identified hazardous waste sites.

Several large bulk fuel storage tanks are located on the VT shoreline adjacent to the Alternative F alignment. Alternative F would pass over some of these fuel storage tanks and its construction would require their removal.

A marina and auto recycling center is located on the NH shoreline. A Phase I Environmental Site Assessment for this property was conducted in October 2003 and resulted in the following determinations:

- The property, a marina and auto recycling center, is a 17.7-acre parcel consisting of a residence, an auto service garage, a small boat marina, a used auto sales business, and a used auto parts business. The owner has been disposing of the auto parts inventory business due to the diminishing commercial demands for used auto parts. Hazardous materials, associated with the house, used auto parts sales, and the marina businesses on the property, include gasoline and fuel.

- A historical release of gasoline was identified on the property during the course of the assessment. A 300-gallon gasoline underground storage tank was discovered to be leaking and removed from the ground in 1992 in accordance with NHDES regulations. It was recorded to have been in service between January 1976 and August 1992. A subsurface investigation completed in 1992 revealed that the amount of the release was not substantive.

- The portions of the property affected by auto recycling activities are generally restricted to the center and eastern edges of the project, and do not affect the areas along the existing highway right-of-way where the Alternative F road and bridge alignments would be located.

<u>Brattleboro Coal Tar Deposits</u>

Adjacent to the existing Route 119 landing in VT is a CERCLIS-listed hazardous waste site. The site is approximately 1.2 acres in size and is contaminated with coal tar residues. These coal tar residues are byproducts of the former Brattleboro Gas

Works coal gasification plant. The company's primary coal gasification facility, which operated from 1869 to 1949, was located immediately south of the existing VT 119 touchdown area, and adjacent to the Connecticut River shoreline. The coal gasification facility disposed of coal tar residues by dumping them into the Connecticut River and the surrounding area is contaminated with coal tar residues.

This resulting layer of coal tar residues is approximately 8 feet thick and extends from the west riverbank approximately 150 feet eastward into the river (Exhibit C.6 – Pollution / Hazardous Materials Map). The southern migration of these residues, due to the southern flow of the river, is not extensive and the deposits are relatively stable and fixed. Borings conducted in 1999 determined that this coal tar plume has not migrated into the Alternative F alignment.

Currently, the in-river coal tar residues are covered by a layer of sediment approximately 6 feet deep, which has resulted in minimal releases of coal tar residues into the environment. Several studies have been conducted to determine the extent and location of these coal tar deposits. These studies, and their findings, are summarized as follows:

- E.C Jordan, Site Contamination Audit Construction Procedures, Brattleboro-Hinsdale Bridge, August 1984.

  This study was conducted to identify the location of coal tar deposits as part of a prior project to replace the Route 119 bridges. River bottom soil borings determined that the concentration of PAH (polycyclic aromatic hydrocarbons) constituents in soil and groundwater samples is highest on the west side of the river and diminishes rapidly in an eastern direction. Samples collected from soil borings and monitoring wells on the mid-channel island did not show evidence of contamination. Samples collected west of the Brattleboro shoreline also show diminishing concentrations of coal tar contaminants, indicating that the coal tar residues are largely restricted to the western edge of the river channel and appear unlikely to migrate east of their current location.

- DuBois & King, Inc., Phase I Environmental Site Assessment, Brattleboro-Hinsdale Bridge, Vermont Landing Properties, August 1998.

  This study evaluated private properties located along the west shore of the Connecticut River from VT 119 south to the Blue Seal building area. The study determined that the coal tar wastes are confined to the waterfront properties at the northern end of Depot Street and the adjacent river bottom. No coal tar contamination on the Blue Seal or Marlboro College properties was identified during the study.

Based on the viscous nature of the wastes, as well as their specific gravity, and the tendency of accumulating alluvial sediments to shield the residues from the surface water flows, it was concluded that the downstream migration of these wastes would occur very slowly.

- DuBois & King, Inc., Identification of Coal Tar Residuals and River Bottom Contours, June 3, 1999.

  This study determined the degree and extent of coal tar residue contamination along the Alternative F alignment. Borings were conducted in the Connecticut River to determine the presence, or absence, of coal tar residues in the vicinity of the proposed work. Laboratory results indicated low levels of PAH components at only two boring locations. PAH levels were within water quality criteria. No evidence was found that coal tar residues had migrated into to the Alternative F alignment area.

- Haley and Aldrich, Inc. Summary Report, Brattleboro Manufactured Gas Plant, Brattleboro, Vermont, July 26, 1999.

  This study was conducted, in coordination with VANR and NHDES, to determine the extent of coal tar residue distribution along the western Connecticut River bank, within the river, and to assess the potential for remediation requirements. The study determined that on the Vermont side of the riverbank, coal tar or coal tar-related compounds occur in the soil approximately 9 to 12 feet below the ground surface. These compounds are largely immobile and are out of contact with the groundwater. Groundwater contamination has reached a steady state, and biodegradation of dissolved phases of benzene, toluene, and naphthalene is occurring.

  Coal tar-related sediment materials were found to be distributed sporadically on the western side of the Connecticut River, with these deposits appearing to be immobile. All of the coal tar-related materials are deposited below sediments at depths greater than 14 feet. Some isolated deposits are deeper in the southern portion of the site where water depths are greater than 30 feet. No coal tar compounds are migrating from the land portion of the site into the Connecticut River.

  Haley and Alrich, Inc. have maintained a yearly monitoring program and report that area coal tar residues levels have generally remained steady, with no discernable upward or downward trend.

Any alternative that touches down just south of the existing Vermont 119 touchdown location, or requires the construction of a temporary bridge in this location, would involve these deposits. Currently, they are located under six to ten feet of sediment

and appear to be generating only very limited releases to the environment. To preclude additional coal tar releases, construction in or immediately adjacent to this area of the coal tar residues should be avoided.

Hazardous Materials Impacts

Alternative F would have only minimal impacts on any identified hazardous materials locations. The Vermont touchdown area would pass over the existing bulk fuel storage tanks (see Exhibit C.1 and Photo D3). There is a potential for petroleum releases to occur during removal of these fuel storage tanks, but best management practices would be followed during this process and any resulting petroleum contamination will be treated and remediated.

The New Hampshire touchdown area would be in the vicinity of the marina and auto recycling center. However, the Alternative F alignment would not effect the portions of this property used in auto recycling activities and is not anticipated to have any impacts on hazardous waste locations in New Hampshire.

Alternative F is located approximately 1000 feet south of the Brattleboro coal tar hazardous waste site. On-shore and in-river borings have established that the coal tar hazardous waste deposits are generally localized, non-migratory, and located north of Alternative F (See Exhibit A.8). Construction of Alternative F would not impact these coal tar deposits. No impacts to other hazardous waste sites are anticipated due to construction of Alternative F. No hazardous materials mitigation requirements have been identified.

s.) VISUAL

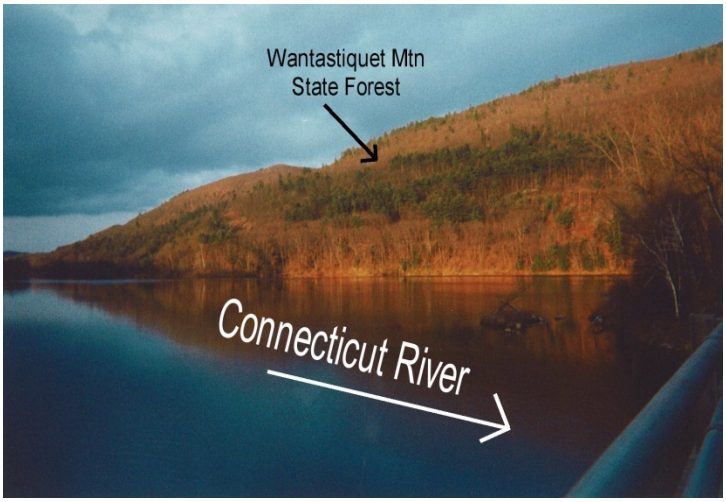


Photo D-11 Wantastiquet Mountain State Forest: View east from the Route 119 western bridge.

The Connecticut River corridor in the project area has exceptional aesthetic qualities. The terrain and land use on the eastern side of the river is substantially different from that on the western side, a contrast considered visually pleasing to many people. To the north, the New Hampshire shoreline is framed by the rugged terrain of the Wantastiquet Mountain State Forest that steeply rises from the river's edge. Except for the area

immediately adjacent to Route 119, the New Hampshire shoreline has limited residential and commercial development. The village of Hinsdale is located approximately 6 miles south of the Route 119 crossing so the dominant visual character around the proposed bridge is natural and undeveloped.

The Connecticut River is itself a substantial visual resource. Access by pedestrians and cyclists to the wooded island in the center of the river is possible via pedestrian walkways on the existing Route 119 bridges. At the turn of the century, this mid-channel island was a recreation site and included a baseball stadium and pavilion. The island still provides a scenic visual resource for Brattleboro.

The Vermont side of the river consists of a densely settled urban area and historic district. This area of downtown Brattleboro includes a railroad line with Amtrak service, the Brattleboro Museum, numerous restaurants, stores, churches, offices and a large residential community. The visual connection between this community and the river is strong. To the north of the existing Route 119 crossing, Route 5 rises steeply to an intersection with Route 9. This area is the center of downtown Brattleboro and is characterized by churches, banks, and office buildings grouped in a densely developed urban setting.

Slightly south of the downtown Brattleboro area, along the riverfront, is an industrial area, which includes fuel and gas storage facilities. City-owned land adjacent to the river in this area was converted for use as a municipal waterfront park in 2012. This waterfront park includes a river overlook, redesigned parking, a bus stop, pedestrian facilities, and landscape elements. The park is proposed to also include boat docking facilities. It is located on the Vermont shoreline immediately adjacent to the existing Route 119 landing.

The Vermont shoreline south of the existing Route 119 corridor is separated from VT 142 by railroad tracks. Located along VT 142 are the Marlboro College and the Blue Seal buildings, which are connected to the downtown district with sidewalks. The western side of VT 142 is characterized by very

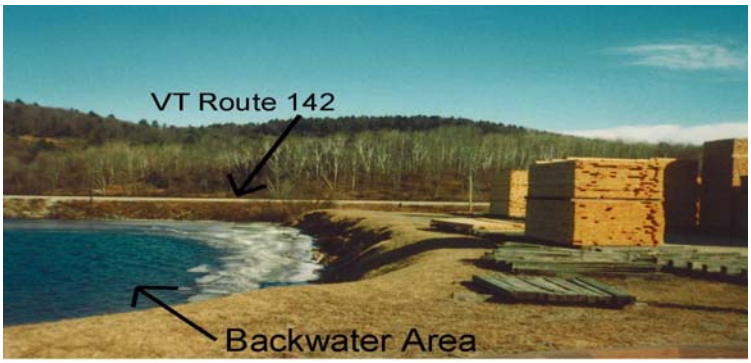


Photo D-12 Lumber Yard and Connecticut River Backwater located at the southern limit of the project area: View southwest from the Cersosimo lumberyard, across the Connecticut River backwater area

steep slopes and retaining walls of granite blocks. Farther south along VT 142 is an industrial area centered around the former Georgia Pacific plant and the Cersosimo lumber facility.

Throughout the project corridor, the Vermont side of the river is generally characterized by residential, commercial and industrial development associated with the Town of Brattleboro. Many of these structures and areas have unique architectural and historic qualities, which provide substantive urban visual characteristics. These contrast with the rural and undeveloped visual characteristics of the New Hampshire side of the river.

Visual Impacts

The visual impacts associated with Alternative F depend, in large part, on the type and final design of the selected bridge structure. Since the Alternative F does not utilize the mid-channel island in the proposed crossing, the location requires that a new structure be long enough to span the entire river. It must also have a elevated travel deck that is high enough to accommodate a grade-separated railroad crossing in Vermont. The new Alternative F bridge would most likely incorporate concrete supporting piers to accomplish this. The roadway elevation of Alternative F at the Vermont shoreline is estimated to be as high as the top of the western truss at the existing crossing location. Both the supporting piers in the river and the structure's height could be considered visual impacts.

Mitigation for potential visual impacts would entail selecting a bridge design that conforms with the historic and aesthetic context of the surrounding area. As identified in the September 5, 2000 Section 106 Letter of Effect, a Bridge Committee of community leaders from VT and NH has been involved in the design of the Alternative F bridge. This Brattleboro/Hinsdale Bridge Committee has identified visual effects as an important criterion in selecting a bridge design. The existing Route 119 bridges would be rehabilitated in accordance with the Secretary of Interior's Standards and within design parameters that would maintain their historic character.

Although the proposed structure associated with Alternative F would be longer and higher than other bridges in the vicinity, design elements could be incorporated that would allow it to better fit the surrounding context. Also, the elevated roadway would not affect the natural character of the eastern shoreline in NH. No additional visual mitigation measures are anticipated to be required.

t.) CONSTRUCTION

Alternative F would result in temporary impacts to the project area during the construction phase of the project. Construction would occur on both the western and eastern banks of the river requiring temporary detours and changes in access to some

properties adjacent to the project site. Constructing support piers will also occur in and over the Connecticut River and would likely involve coffer dams, work barges, heavy equipment, and temporary fills. Temporary construction impacts associated with these activities are anticipated for traffic, air quality, noise, water quality, and wildlife.

- Traffic - No long-term rerouting of Route 119 traffic would be necessary for the project. The existing bridges would remain open to vehicular traffic until construction of the new bridge is completed. During construction a partial lane closure of NH 119 would be necessary to accommodate construction of the NH 119 approach to the Alternative F bridge. Construction related traffic impacts may also occur as the result of VT 142 being elevated approximately 8 feet to accommodate the touchdown location of the Alternative F bridge.

  Construction measures would be taken to ensure that the duration of any closures of VT 142 would be minimized to the extent practicable. Local access to driveways along VT 142 would be maintained throughout any road closures. Existing local roads would provide an alternative traffic route during any required closure of VT 142 for construction.

  Traffic impacts would be mitigated by providing public notice of pending construction activities, and well signed detour routes for road closures. Additionally, lane closures would be limited during the AM and PM peak traffic periods.

- Air Quality - construction-related impacts to air quality are generally associated with dust and heavy equipment emissions. These impacts are generally sporadic and temporary in nature. During construction, airborne particles would minimally increase as dust is raised by construction vehicles and equipment operation. Additionally, vehicle emissions would increase due to the presence of construction vehicles.

  Construction-related air quality impacts should be minimal. Dust resulting from earth-moving activities and from exposed soils would be controlled during dry and windy conditions, by wetting unpaved roadways in the construction zone, covering loads on trucks, and by mulching and reseeding open areas as soon as possible. Vehicular air emissions can be reduced by proper vehicle maintenance and mandating the use of appropriate low-sulfur fuels. The impacts from nuisance odors and particulates, due to paint fumes during construction, would be controlled by the appropriate scheduling of structure painting and the use of screens/covers to reduce paint particle air dispersal.

- Noise - Construction activities that consist of building demolition, earthwork, paving, and bridge erection would increase noise levels in the vicinity of the

project during construction. Noise receptors at locations on VT 142 and on the eastern shore of the Connecticut River would notice a greater increase in noise levels during construction due to their proximity to the project site. Specific land uses in these areas include a residence directly across from the VT landing site, a college building, a marina, and a residence adjacent to the marina. The River View Diner, in Vermont, may also experience an increase in noise levels during rehabilitation of the western bridge.

Exact noise levels due to construction cannot be determined at specific sites, since the number and types of construction equipment that would be used would vary. However, based on typical construction equipment usage for projects similar to the construction of Alternative F, noise levels may reach 70 dBA within approximately 200 feet of the construction boundary and 80 dBA within approximately 75 ft of the construction boundary. However, noise at these levels would normally occur only during working hours involving intensive earthwork operations.

The construction of the proposed bridge would likely involve pile driving and may involve blasting of bedrock. Pile driving would likely be required for construction of each abutment and pier. Noise levels due to pile driving typically reach maximum noise levels of 97 to 103 dBA at 50 feet from the equipment. These levels are intermittent and reached only when the driving hammer contacts the pile. At most of the pier locations that would require pile driving, there are no receptors within 50 feet.

Blasting may be necessary in some areas where rock is excavated, particularly for construction of the west abutment. Blasting noise is different than mechanical equipment noise, as it is less frequent and shorter in duration. Noise levels due to blasting are typically around 94 dBA at 50 feet from the blast location. There would be no receptors within 50 feet of any area that would require blasting. Both pile driving and blasting operations, if required, can be completed during daylight hours so as to be less intrusive. Jackhammer operations are not currently anticipated for the proposed project.

Noise control measures would be used to reduce construction noise and noise impacts to the project area. Potential noise control strategies include:

- Source Control – The requirement to use properly designed and well-maintained mufflers, engine enclosures, and intake silencers to aid in the reduction of construction noise.

- Site Control – Stationary equipment would be placed as far away as possible from sensitive noise receptors, and work activities would be scheduled to avoid time periods when people would be most likely to be

affected by construction noise (i.e. minimizing or not allowing night work).

- Community Awareness – Notifying the public of upcoming construction operations likely to produce high noise levels (blasting etc..) could help minimize potential noise impacts.

- Water Quality and Wildlife - The NHDES Water Division has commented that proper sediment and erosion control will be required during construction, and that adequate stormwater management measures must be designed into the project. While construction water quality impacts cannot be avoided, their effects can be mitigated by utilization of best management practices for construction, the use of sedimentation and erosion controls, and seasonal scheduling of work.

  Shallow water in the project area supports emergent wetlands and provides rare plant habitat. Both resources could be impacted by water level fluctuations, especially dewatering. Any manipulations of the river's water level to facilitate bridge construction would likely have a temporary impact on these resources.

  Any impacts to fish, wildlife, and riverbed habitat that might occur during construction of the bridge piers and related on-shore construction support activities would be limited. Utilization of best management practices for construction, the scheduling of construction events to coincide with periods when fish spawning and migration activities are minimal, and compliance with construction erosion and sediment control procedures would limit these temporary impacts.

Overall, project construction-related impacts would be limited and temporary in nature. Air quality impacts would be reduced by the use of standard dust control measures. Noise impacts would be minimized by source control, site control, time restrictions, and community awareness. Water quality and wildlife impacts would be reduced by the use of best management practices, seasonal scheduling of work, and the use of sedimentation and erosion controls. Best management practices would be utilized during the removal of the bulk fuel storage tanks on the VT shoreline to ensure that no sediments or petroleum based pollutants enter the river.

3.) RESOURCE SUMMARY – NON-PREFERRED ALTERNATIVES

The river corridor that was evaluated for this project extends from the current Route 9 Bridge, approximately 2 miles north of Downtown Brattleboro, to a an area near the Cersosimo lumber facility, which is approximately 1.5 miles south of Brattleboro. Exhibit A.3 illustrates the alignment of the project alternatives that were considered within the study area. Environmental resources and constraints, within this study area, are identified, along with the project alternatives, on Exhibits A.5, A.6, A.7 and A.8, and

in Appendix F. Impacts associated with these 10 alternatives are shown on Resource Summary Table (Table D-4 on the following page).

Coordination with Federal and State resource agencies, field investigations, archival research, and the use of GIS database information were used to identify and locate area resources onto a GIS base map. The ten project alternatives were then digitized onto this base map and quantifiable area resource impacts for each alternative were determined.

For those resources which did not lend themselves to a quantitative analysis, qualitative descriptors were used to assist in describing an alternative's impact upon identified resources. They were: None, Minimal, Limited, Moderate, and Substantial. See the following Resource Impact Summary Table.

Alternatives B (Replace on Existing), C (Alignment Improvement), D (Grade-Separated), and H (Route 9/Main Street) require the use of temporary bridges to maintain traffic during construction. Impacts associated with the construction of these temporary bridges are listed in parentheses in the Resource Summary Table (Table D-4). To determine the total impacts of an alternative, for a given resource, the alternative's construction impacts and the impact of the temporary bridges should be considered. Alternative F, the project's Preferred Alternative, is highlighted in Table D-4.

4.) RESOURCE MITIGATION AND COMMITMENTS SUMMARY – ALTERNATIVE F

The following items summarize mitigation requirements associated with Alternative F and its potential impact to area resources.

- Land Use – The project would impact some of the existing land uses in VT. On VT 142 a commercial building that currently houses two businesses, Raymond James Metals and North Country Naturals, would be removed. A private residence in the vicinity would also be removed. Both businesses and residents of the private home would need to be relocated. A bulk petroleum storage and distribution facility on the VT shoreline will need to be removed.

- Indirect/Cumulative Effect – Project growth impacts from indirect or cumulative effects would be minimal. No mitigation measures would be required.

- Agricultural – No agricultural impacts are anticipated. No agricultural mitigation measures would be required.

Table D-4: Resource Summary Table

RESOURCE		ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E	ALTERNATIVE E Modified	ALTERNATIVE F	ALTERNATIVE G	ALTERNATIVE H
	No-Action	**Rehabilitation**	**Replace on Existing**	**Alignment Improvement**	**Grade-Separated**	**Parallel Structure**	**Parallel Tangent Structure**	**Blue Seal (Preferred)**	**Georgia Pacific**	**Route 9/Main Street**
Land Use/Induced Growth	None/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Substantial/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Moderate/ Minimal
Agricultural	None	None	None	None	None	None	None	None	None	None
Socio-economic/Enviro Justice	Substantial/ None	Limited/None	Limited/None	Limited/None	Substantial/ None	Limited/None	Limited/None	Limited/None	Substantial/ None	Substantial/ None
Acquisitions-Residential/ Commercial	0 / 0	0 / 0	0 / 2	0 / 2	0 / 13	0 / 1	0 / 1	1 / 1	0 / 0	0 / 4
Acquisition Area (acres)	0	0	0.35	0.49	2.05	1.46	1.4	3.21	4.23	0.94
Pedestrian/Bicycle	None	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Recreational/Section 4(f) (Alternatives A, B, C, E, and E-Modified would have no 4(f) impacts if the existing bridges are rehabilitated and maintained)	None/ None	Minimal/ Minimal	Minimal/ Substantial	Minimal/ Moderate	Minimal/ Substantial	Minimal/ Moderate	Minimal/ Moderate	Minimal/ None	Minimal/ None	Minimal/ Substantial
Air Quality	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Noise	Limited	Limited	Limited	Limited	Moderate	Limited	Limited	Limited	Limited	Moderate
Water Quality	None	Minimal	Limited	Limited	Limited	Substantial	Substantial	Limited	Limited	Limited
Wetlands (acres)	None	Minimal	1.68	1.85	2.53	1.60	1.91	0.11	0.66	2.74
Waterbody Modifications	None	None	Limited	Limited	Limited	Limited	Limited	Limited	Limited	Limited
Floodplains (acres)	None	Minimal	1.94	2.08	3.07	1.71	2.07	0.12	3.42	2.92
Fish & Wildlife / Threatened & Endangered Species (Potential impacts to two NH-listed aquatic plants)	None / None	Minimal / None	Minimal / Minimal	Limited / Minimal	Limited / Minimal	Limited / Minimal	Limited / Minimal	Limited / Minimal	Limited / None	Limited / Minimal
Historic District Impacts	None	None	Substantial	Substantial	Substantial	Moderate	Moderate	Minimal	Minimal	Substantial
Archaeological	None	None	Limited	Limited	Limited	Limited	Limited	None	Minimal	Limited
Hazardous Materials	None	None	Minimal (Substantial)	Minimal (Substantial)	Minimal (Substantial)	Substantial	Substantial	Minimal	Minimal	Minimal
Visual	None	None	Minimal	Minimal	Substantial	Moderate	Moderate	Limited	Limited	Substantial
Construction	None	Minimal	Limited	Limited	Substantial	Limited	Limited	Limited	Limited	Substantial

QUALITATIVE DESCRIPTORS (As determined by the Bridge Committee):

- None
- Limited
- Substantial
- Minimal
- Moderate

Note: Permanent impacts only; temporary impacts are discussed in report text.

- Socio-Economic/Environmental Justice – Socio-economic impacts would be limited; mitigation would consist of rehabilitation of the existing Route 119 bridges to maintain pedestrian/bicycle access between the downtown Brattleboro area and the George's Field (Hinsdale) retail area in New Hampshire. The project would not impact any identifiable minority/low income neighborhoods. No environmental justice mitigation measures would be required.

- Acquisitions – In Vermont, the implementation of Alternative F would result in acquiring one residential and one commercial structure, the removal of several bulk fuel storage tanks, and the loss of approximately 25 parking spaces at Marlboro College. In New Hampshire, Alternative F would require the relocation of a private access road to a marina, and acquisition of private property on the mid-channel island. Multiple overhead and underground utilities will need to be relocated in both Vermont and New Hampshire.

  Mitigation would include acquisition and relocation actions that would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, as amended. Relocation assistance would be made available to all residential and business relocations without discrimination. Committing to installing a retaining wall along roadway side-slopes will minimize the number of parking spaces lost at Marlboro College.

- Pedestrian/Bicycle – Pedestrian/bicycle impacts would be minimal. The western touchdown area of Alternative F would be relocated approximately 1,000 feet south of the existing Route 119 touchdown area. Mitigation would consist of installing 10 foot shoulders and a sidewalk on the new bridge as well as rehabilitating and maintaining the existing Route 119 bridges for pedestrian/bicycle usage. Under the Alternative F scenario the existing bridges would continue to provide non-motor vehicle access to and from the mid-channel island, the George's Field retail area in New Hampshire, and the downtown Brattleboro area.

- Recreational/Public Parks – The project would not adversely affect Brattleboro's 'Union Station' waterfront park. To provide for continued access to the mid-channel island for island recreational opportunities, the existing Route 119 bridges are to be rehabilitated and maintained for pedestrian/bicycle passage. Closing the rehabilitated bridges to non-emergency vehicles would prevent some private recreational usage of the mid-channel island; the NHDOT will address this item further as right-of-way plans progress. No other project-related impacts to recreational facilities are anticipated.

- Air Quality – Only minimal impacts to existing air quality, with no violations of NAAQS, are anticipated.

- Noise –A single private residence in VT was predicted to be impacted by noise but the property will be acquired as part of the project's property acquisitions. Noise abatement measures will not be needed.

- Water Quality –Coordination with resource agencies during final design will determine the most appropriate stormwater treatment approach to mitigate the additional impervious area created by the new bridge. Best management practices (BMP) will be required during construction to minimize sediment and/or pollutant loading to the river.

- Wetlands – Location of a bridge pier on the southern portion of the mid-channel island would result in approximately 5,000 square feet of wetland impacts. Should this pier placement be necessary, the project would comply with all wetland permitting requirements. Wetland impacts associated with construction at the boat launch enhancement site could be an additional 1,100 square feet.

- Waterbody Modifications – Placement of bridge piers within the Connecticut River would result in limited waterbody modifications impacts to the river.

- Floodplains – Both the western and eastern bridge approaches of Alternative F, and its bridge abutments, would be above the Connecticut River's 100-year floodplain. Approximately six bridge piers would be located in the river's floodway. Locating a bridge pier on the southern portion of the mid-channel island would result in approximately 5,000 square feet of floodplain impacts. If the bridge pier is not located on the mid-channel island, floodplain impacts are estimated at 100 square feet. No floodplain or floodway mitigation measures would be required.

- Fish and Wildlife/Threatened and Endangered Species – Most project impacts to fish and wildlife would be temporary and construction-related. No project-related wildlife impacts are anticipated. Two aquatic plant species listed as Endangered by the NH Natural Heritage Bureau (NHB) are present in the project area. One of these species was only observed on the southwestern side of the mid-channel island. Final designs will be needed to determine if these individuals would be impacted by the proposed work. If impacts are unavoidable, VAOT will work with the NH NHB to develop an appropriate mitigation strategy. No other threatened or endangered species were identified in the project area.

- Historic – The Downtown Brattleboro Historic District and the existing Route 119 bridges have been identified as being listed or eligible for listing on the National Register of Historic Places. The VT and NH SHPO Section 106 No Adverse Effect determination (September 5, 2000) recommends the existing Route 119 bridges to be rehabilitated in accordance with the Secretary of Interior's Standards, and then maintained. To ensure project aesthetic conformity with the

Downtown Brattleboro Historic District, the Brattleboro/Hinsdale Bridge Committee is to be a full partner in the design of the new bridge, having meaningful and important input into the design of the bridge.

- Archaeological – The September 5, 2000 VT and NH SHPO Section 106 Letter of Effect states that the project would have no potential to cause effects on identified archaeological resources. No archaeological mitigation measures are required.

- Hazardous Materials – Release of fuel could occur during the removal of the bulk fuel tanks along the Vermont rail line. Care would be exercised during removal, and any releases during removal would be treated and remediated. No other project impacts on area hazardous materials sites have been identified.

- Visual – Project-related visual impacts to the Connecticut River, its adjacent shorelines, and downtown Brattleboro depend, in large part, on the final design of the bridge structure. A bridge committee of community leaders is to be a full partner in the bridge's design and to have meaningful and important input into the bridge's design. This Committee has identified visual effects as an important criterion in their efforts to identify an appropriate bridge design.

- Construction – Potential construction impacts are anticipated to be associated with traffic, air, noise, water quality, and wildlife. The closure of VT 142, to construct the VT 119/142 intersection, will require a temporary detour. Noise and air quality impacts will require the use of construction scheduling, public notices, appropriate equipment usage, and dust reduction practices. Construction on the riverbanks, and placement of the piers in the Connecticut River, could result in some limited construction-related water quality impacts. Coordination with resource agencies during final design and the use of BMPs would reduce water turbidity and soil sedimentation during construction

  The Vermont Fish and Wildlife Department has requested that construction be scheduled to minimize impacts on migrating and spawning fish. Coordination with resource agencies, the use of BMPs during construction, and compliance with construction erosion and sediment control requirements would limit impacts to area fish species.

Chapter E – Comments and Coordination

Table of Contents

E.) COMMENTS AND COORDINATION

1.) PUBLIC PARTICIPATION

Alternative F was identified as the project's preferred alternative after an extensive, thorough, and lengthy public participation process.

At the initiation of the current project in December 1995, input from local and regional sources was used to identify area transportation requirements and deficiencies to the Route 119 transportation corridor. To facilitate these inputs, the Windham Regional Commission (WRC) organized the Brattleboro/Hinsdale Bridge Committee (Bridge Committee).

The purpose of the Bridge Committee was initially to identify local and regional transportation needs and potential solutions for these transportation needs. Subsequent committee tasks included: conducting public informational forums, the identification and evaluation of project alternatives, the identification and evaluation of project resource impacts, and the identification of a Preferred Alternative. The Bridge Committee members included representatives from the Brattleboro Selectboard (VT), Hinsdale Selectboard (NH), WRC (VT), Southwest Regional Planning Commission (NH), the Town of Chesterfield (NH), local citizens; and representatives from area social services, emergency services, and local interest groups.

The Bridge Committee met sixteen times between February 1996 and June 2000. Bridge Committee meetings were open to the public and were held in Brattleboro, Vermont and Hinsdale, New Hampshire. Between April 1996 and April 1999 the Windham Regional Commission, (WRC) in coordination with the Bridge Committee, published the following four public informational newsletters, which were sent to over 300 citizens and organizations.

- April, 1996 – This newsletter provided a summary of the history of past bridge studies and an explanation of the current study.

- June, 1997 – This newsletter provided an update of the work accomplished and identified preliminary corridor alternatives.

- November, 1997 – This newsletter provided a detailed identification and description of the project's alternatives.

- April, 1998 – This newsletter set forth the Bridge Committee's findings, and recommended Alternative F (Blue Seal) as the Bridge Committee's preferred alternative.

In April 1998, the Bridge Committee recommended Alternative F; a new bridge to be located 1,000 ft. south of the existing western Route 119 Bridge, as its Preferred Alternative, (PA). During June 1998, the project's draft Initial Scoping Report (ISR) was reviewed by the Bridge Committee and made available to the public for review. The Bridge Committee then voted unanimously to accept the ISR, with the recommendation that Alternative F be selected as the P.A.. On June 6, 2000, the Bridge Committee reaffirmed its recommendation of Alternative F as its P.A.

The Bridge Committee subsequently met several times with NHDOT between 2001 and 2002 to help NHDOT identify and evaluate different bridge types and designs. In January 2005, the Bridge Committee reconvened to consider NHDOT's identification of a steel I-beam/concrete deck bridge as the bridge type to be constructed. During 2005, the Bridge Committee met several additional times with NHDOT to provide input into bridge design features that would retain the functionality of the bridge, while maintaining area aesthetic qualities. In November 2005, the Bridge Committee concurred with NHDOT's recommendation of a steel I-beam girder bridge; with aesthetic enhancements, as the new Route 119 bridge type.

Working Group

A project Working Group was formed to identify and analyze technical issues, address Bridge Committee comments, provide coordination with resource agencies, formulate project alternatives, and assist in project management. Working group meetings were open to the public and were held in Brattleboro, VT and Hinsdale, NH. Members of the Working Group included:

- Vermont Agency of Transportation
- New Hampshire Department of Transportation
- Windham Regional Commission
- DuBois & King, Inc.
- Clough, Harbour & Associates, LLP

A total of twenty Working Group meetings were held between February 1996 and June 2000.

Public Informational Meetings

In addition to the Bridge Committee meetings being open to the public, the Bridge Committee conducted two public informational meetings.

The first public informational meeting, a public scoping/agency concerns meeting co-hosted with VAOT and NHDOT, was held on April 10, 1996 in Brattleboro, Vermont. Public Notice of the meeting was published in the Brattleboro Reformer on April 2, 1996. The history of the project, scope for this project as well as a request for public and agency comments were set forth at the meeting. Approximately forty people attended the meeting, including local residents, business owners, project team members, local and state government officials, resource agency representatives, and several journalists. This meeting resulted in several project comments.

A second public informational meeting; also co-hosted with VAOT and NHDOT, was conducted on December 10, 1997, in Brattleboro, Vermont, and was broadcast on a local cable access television channel. This meeting provided information on area social and environmental resources, identified project alternatives, and included discussion groups to evaluate the various project alternatives. Approximately eighty-five people; including committee members and members of the public, attended this meeting. An informal poll taken of those in attendance showed a strong public preference for the two southern alternatives: Alternative F (Blue Seal) and Alternative G (Georgia Pacific).

A public meeting was held August 1, 2013 in conjunction with a 30 day public comment period which began July 15. The EA document was made available to the public at several locations for its review. At the meeting the project, alternatives and preferred alternative were presented, and then comments and questions were received. This meeting was held to meet the public comment requirement under NEPA. The meeting transcript, public comments, and responses are included in Appendix E.

2.) AGENCY COORDINATION

To facilitate the early and continuous involvement of federal and state agencies, project updates were sent to several agencies, and agency comments on the project were solicited (see Chapter E). Project agency coordination actions included:

Resource Agency Coordination

- April 10, 1996 – An Agency Concerns Meeting was held in Brattleboro, Vermont. Notice of the meeting was mailed to federal and state resource agencies.

- August 28, 1996 – A project description and area location map were sent to resource agencies, with a request for agency comments.

- December 16, 1996 – The project's purpose and need statement was mailed to federal and state agencies, with a request for agency comments.

- January 2, 1998 – The pre-conceptual design drawings of the ten identified project alternatives, an alternative evaluation table, and a copy of the purpose and need statement were mailed to federal and state agencies, with a request for agency comments.

- January 22, 1998 – At the NHDOT Resource Agency Meeting the project was presented. Attendance at the meeting included representatives from the NH Fish & Game Department (NHF&G), United States Fish & Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), US Army Corps of Engineers (COE), Federal Highway Administration, NHDES Wetlands Bureau, NH Designated Rivers Coordinator, and the United States Environmental Protection Agency (USEPA).

- February 4, 1998 – At the VAOT's Resource Agency Meeting the project was presented. Attendees at this meeting included representatives from the COE, Vermont Agency of Natural Resources (VANR), VANR Wetlands, and VANR (Stream Alteration).

- October 2005 – A project status letter, with alternative and resource maps and matrices, was forwarded to the COE, VANR, and NHDES, with a request for additional comments.

- August 2009 – Additional coordination with regulatory agencies was again undertaken to update the USFWS, COE, VANR, and NHDES on the project's status and determine if there were any new issues with regulated resources in the project area. This resulted in numerous field studies including a rare aquatic plant survey and a shoreline survey for shells of the federally endangered Dwarf Wedge Mussel.

- January 2012 – Former NH members of the Bridge Committee and officials with the NHF&G, NH Department of Resources and Economic Development (DRED), NHDOT, and TransCanada were all contacted in an effort to determine ownership and maintenance responsibility for the mid-channel island boat-launch facility.

Throughout this process of involvement with federal, state, and local agencies, numerous comments were received. No objections to the project were raised by any of these resource agencies.

<u>NHDOT Resource Agency Meetings</u>

The project was presented to federal and state resource agencies at the NHDOT Resource Agency Meeting on January 22, 1998. Resource agency comments included:

- Historical – Maintain existing bridges. (The existing Route 119 bridges will be rehabilitated and maintained for pedestrian/bicycle usage.)

- Hazardous Waste – Minimize impacts to existing coal tar deposits in the Connecticut River along the Vermont shoreline. (Alternative F avoids the coal tar deposits.)

- Wetlands – Minimize wetland impacts, Vermont COE will have project jurisdiction. (Alternative F will result in only minimal wetland impacts – see Chapter D.)

- Alternatives – Alternative E (Parallel Structure) and E-Modified (Parallel Tangent Structure) are not favored if they retain the existing bridges for vehicular traffic. Alternatives D (Grade-Separated) and H (Route 9/Main Street) are not favored due to their extensive impacts to downtown Brattleboro. (Alternative F has been identified as the project's preferred alternative.)

The NHDOT Resource Agency Meeting notes are attached as part of Appendix E. Meeting attendees included representatives from NH Fish and Game Department, US Fish and Wildlife Service, COE, NH Wetlands Bureau, NH Rivers Management, NH Division of Historical Resources and US Environmental Protection Agency. Although project comments were made by several agencies, no objections to the project were raised by any of the resource agency representatives.

<u>VAOT Resource Agency Meetings</u>
The project was presented at the VAOT Resource Agency meeting held February 4, 1998. Resource agency comments included:

- VANR – A request for a preliminary visual analysis of Alternative F. (Visual analysis information for Alternative F is included in Chapters C and D, and Appendix A.)

- Historical – Preservation of the existing Route 119 bridges, if possible. (The existing Route 119 bridges will be rehabilitated and maintained for pedestrian/bicycle usage.)

- COE – Requested that a modified Alternative H be considered to determine if a modified Alternative H would reduce wetland impacts. (Alternative H-Modified was subsequently designed. A conceptual design of this alternative identified that both the wetlands impacts and construction costs would be extensive. As a result,

Alternative H-Modified was subsequently dropped from project consideration.) The COE suggested the Bridge Committee make a recommendation as to the Committee's Preferred Alternative. (The Bridge Committee identified Alternative F as the Preferred Alternative in April 1998.)

The VAOT Resource Agency meeting minutes and attendees list are attached as part of Appendix E. Meeting attendees included representatives from the COE, VANR, VANR (wetlands) and VANR (stream alteration). Although project comments were made by several agency attendees, no objections to the project were raised by any of the resource agency representatives.

VAOT and NHDOT SHPO Coordination

SHPO Coordination

Extensive project coordination has occurred with, and between, the Vermont and New Hampshire State Historic Preservation Officers (SHPO). This coordination is summarized as follows:

- April, 1996 – The Vermont Division for Historic Preservation (VT DHP) and the New Hampshire Division of Historical Resources (NHDHR) were provided notification of the project's Agency Concerns meeting and requested to provide comments.

- January 22, 1998 – The project was identified and discussed with the NHDHR at the NHDOT resource meeting.

- February 4, 1998 – The project was identified and discussed with the VAOT SHPO at the VAOT resource meeting.

- June 23, 1999 – Project coordination occurred between VT FHWA and the VAOT SHPO regarding project Section 106 issues.

- August 31, 1999 – VAOT SHPO and VT DHP met and discussed project Section 106 issues.

- August 23, 2000 thru September 5, 2000 – VAOT SHPO, VT DHP and NHDHR conducted coordination regarding project impacts on historical/archaeological resources and a potential Section 106 determination of effect for the project.

- September 6, 2000 – Section 106 Letter of Effect for the Brattleboro, Vermont – Hinsdale, New Hampshire BRF 2000(19) SC project was signed by: VT FHWA, VT DHP, VAOT, NH FHWA, NHDHR and NHDOT.

- September 7, 2000 – VAOT, NHDOT, VT FHWA, NH FHWA, VAOT SHPO and NHDHR met to discuss Section 106 coordination/determination of effect issues and requirements.

- June 16, 2000 – VAOT conducted coordination with VAOT SHPO regarding project status and Section 106 compliance.

Section 106 Documentation

The following documents have been developed as part of the project's Section 106 compliance process:

- Historic (see Appendix D)

    - December 10, 1996 – Section 106 Review document.

    - January 26, 1997 – Section 106 Review Update document.

    - September 17, 1999 – VAOT SHPO Memorandum, re: Historic Buildings, Structures, Sites, and Districts.

- Archaeological (see Project Technical Reports)

    - January, 1997 – Archaeological Sensitivity Assessment.

    - October, 1997 – Archaeological Sensitivity Assessment Addendum.

    - November, 2000 – Archaeological Phase 1B Survey.

    - December, 2001 – Phase 1A Archaeological Survey of the Mid-Channel Island.

- Letter of Effect – September 5, 2000

A Section 106 Letter of Effect, for the Brattleboro, Vermont – Hinsdale, New Hampshire BRF 2000(19) SC project was signed by the VT FHWA, VT DHP, VAOT, NH FHWA, NHDHR, and NHDOT on September 6, 2000.

The Letter of Effect required, as conditions of a determination of 'No Adverse Effect', the following:

- The existing Route 119 historic bridges to be minimally rehabilitated by NHDOT, in accordance with the Secretary of Interior's Standards,

for pedestrian/bicycle use by NH and VT residents and visitors. Vermont and New Hampshire are to share in the maintenance responsibilities for these bridges.

- The Brattleboro-Hinsdale Bridge Committee is to have input into the bridge design process that will be a meaningful and important element in the final design.

The Section 106 Determination of Effect for the project is:

- Archaeological – The project would have no potential to cause effects on identified archaeological resources.

- Historic – The project will have No Adverse Effect on historic properties listed or eligible for listing on the National Register of Historic Places; provided that the Brattleboro – Hinsdale Bridge Committee is a full partner in the design of the new bridge.

Agency Coordination

Several federal and state agencies have provided written project comments. Generally, these comments express a desire to remain informed of the project and identify concerns for area resources. As part of the project information and coordination process, the following agencies were contacted:

- National Marine Fisheries Service
- State of Vermont Department of Fish and Wildlife
- State of Vermont Agency of Natural Resources Department of Forests, Parks and Recreation
- State of Vermont Department of Agriculture, Food and Markets
- State of New Hampshire Department of Environmental Services
- State of New Hampshire Executive Department Office of Emergency Management
- State of New Hampshire Department of Resources and Economic Development
- Federal Energy Regulatory Commission, New York Regional Office
- United States Department of the Interior, Fish and Wildlife Service
- United States Coast Guard
- United States Natural Resource Conservation Service
- United States Army Corps of Engineers
- United States Environmental Protection Agency
- Town of Brattleboro, Vermont, Planning Commission
- Town of Brattleboro, Vermont, Board of Selectman
- Town of Hinsdale, New Hampshire, Board of Selectman
- Town of Hinsdale, New Hampshire, Planning Board

- Town of Chesterfield, New Hampshire, Board of Selectman
- Windham Regional Planning Commission (Vermont)
- Southwestern Regional Planning Commission (New Hampshire)
- Connecticut River Joint Commissions, Wantastiquet Region River Subcommittee
- Vermont Division for Historic Preservation
- New Hampshire Division of Historic Resources

Agency comments are included in Appendix E.

Agency coordination included the following entities:
- New England Power Service
- New England Central Railroad
- Marlboro College

Regional and Local Coordination

- Transportation access across the Connecticut River; to include during the construction period, is essential for maintaining area economic and social relationships and maintaining emergency services between Brattleboro and Hinsdale. Construction of a grade-separated railroad crossing would improve safety and reduce the potential for emergency vehicle delays due to trains blocking the Route 119 highway/railroad crossing. Both Brattleboro and Hinsdale strongly support maintaining a transportation crossing of the Connecticut River within the project corridor.

- A transportation corridor that provides access to downtown Brattleboro is important to the continued vitality of the downtown Brattleboro area. The Windham Regional Commission Plan identifies, in its proposed Transportation System section, the reconstruction of the Route 119 Hinsdale bridges.

- A transportation corridor located in the southern part of the project corridor would provide Hinsdale residents with better access to I-91 in Vermont, particularly if a Vermont bypass to I-91 is ever constructed. However, an I-91 bypass is not currently anticipated by the State of Vermont (see Appendix E).

- Additional regional and local comments included:
    - The project be consistent with the historic developmental patterns in downtown Brattleboro.
    - The historic train station/museum in downtown Brattleboro be preserved.
    - The project recognize the historic values of the existing bridges.

- An adequate pedestrian/bicycle accessway across the river near downtown Brattleboro be maintained.
- The project be consistent with the Main Street traffic project to improve traffic flow through downtown Brattleboro.
- Access to the waterfront, the mid-channel island, and the river be maintained.
- The project provide adequate transportation access to Hinsdale, New Hampshire.
- The project minimize the impact of traffic through residential neighborhoods.
- The project minimize traffic impacts to private land.
- Existing land use patterns be maintained.

3.) COMMITMENTS

The following project commitments exist:

- A new Bridge Committee of community leaders from both Hinsdale and Brattleboro will be formed which would be a full partner in the final design of Alternative F's new bridge. The Bridge Committee's input into the design process will consider architectural aesthetics as a criterion in determining a final design.

- NHDOT and VAOT are to minimally rehabilitate the existing Route 119 bridges in accordance with the Secretary of Interior's Standards for pedestrians, bicycle or an alternative transportation use.

- VAOT and NHDOT are to share maintenance responsibilities for the rehabilitated Route 119 bridges.

- Relocation assistance will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Vermont anticipates the following acquisitions during the implementation of the Preferred Alternative:

    i. A residential structure on VT 142, slightly northwest of the proposed VT 119/142 intersection.

    ii. The former Blue Seal Building, located at the VT touchdown location. There are two businesses that currently (April 2012) operate out of this building: Raymond James Metals, a specialty metals recycler and North Country Natural, a natural foods distributor.

iii. A bulk fuel storage facility on the western bank of the Connecticut River on the proposed route 119 alignment. While the bridge would be elevated enough to pass over most of its infrastructure, required safety clearances will obligate the state of Vermont to acquire and remove some structures associated with this facility.

iv. Easements for Alternative F to pass over tracks of the New England Central Railroad (NECR).

v. In order for the bridge to have adequate clearance over the NECR tracks, the grade of the VT 142 roadway must be elevated approximately 8-feet at the proposed intersection of Route 119. To accomplish this, a portion of the Marlboro College commuter parking lot would need to be acquired. If a retaining wall is incorporated into the final roadway design to minimize impacts, approximately 25 of the 130 parking spaces found in the lot would be required for the project.

- New Hampshire anticipates the following acquisitions during the implementation of the Preferred Alternative:

  i. Construction would require relocating the access road to the marina and automobile recycling center located immediately south of the New Hampshire Route 119 touchdown location. Although, this would result in a longer access road, it would not substantially impact the access or use of either facility.

- During any removal of fuel tanks, care will be exercised to minimize the potential for petroleum releases, and any releases will be remediated.

- Coordination will be conducted with the VT Fish and Wildlife Department, NH Fish and Game Department, and the National Marine Fisheries Service, to schedule construction activities to minimize impacts on migrating and spawning fish.

- Impacts to two NH-listed Endangered plants, known to occur in the project area, will be determined once preliminary design plans are available and communicated to the NH Natural Heritage Bureau. If impacts to the local populations are unavoidable, further coordination with the NH NHB will be required.

- Best Management Practices, for erosion prevention and sediment control will be utilized during all phases of construction, both on-shore and in-water, to minimize project-related impacts to water quality.

- During construction, efforts will be made to continually minimize and mitigate construction-related impacts to traffic, air, noise, and water quality in the project area.

4.) FEDERAL AND STATE REQUIREMENTS

- PROJECT PERMITS – Dependent upon final project design, the following federal and state permits will likely be required for the project:
  - NHDES 401 Water Quality Certificate
  - NHDES Dredge and Fill Permit
  - VANR Vermont Stream Alteration Permit
  - COE 404 Wetlands Permit
  - COE Section 9 or 10 Navigable Waterways Permit
  - VT 401 Water Quality Certificate
  - National Pollution Discharge Elimination System (NPDES) Permit
  - VT Stormwater Discharge Permit
  - Vermont Act 250 Land Use Permit

It is anticipated that all applicable permits will be obtained.

Appendix A

APPENDIX A - Alternative Descriptions and Evaluations

Table of Contents

Figures

Tables

Page

APPENDIX A

Alternative Descriptions And Evaluations

1) ALTERNATIVE DESCRIPTIONS

The following pre-conceptual plans and profiles were completed when metric units were standard for VAOT. The agency has reverted to using English units again in the interim period before this EA was finalized. Although metric units were removed from the main chapters of the document, both units of measurement were retained in this appendix so the metric plan sheets can be referenced where necessary. For each of the ten project alternatives, the location and estimated costs are identified and described as follows:

- No-Action Alternative – This would provide for only the continued maintenance of the existing bridges and approach roadway sections. The existing bridges would continue to deteriorate and would require increased maintenance efforts to remain in operation. Traffic patterns would remain unchanged with this alternative.

- Alternative A (Rehabilitation) – Rehabilitation of Existing Bridges and Reconstruction of Approach Roadway Sections. (See Figures A-1, A-2)

  Alternative A would provide for the rehabilitation of both the western and eastern existing Route 119 bridges, and the reconstruction of the Route 119 approach roadway sections. Construction would begin at the Main Street intersection in Brattleboro and would end approximately 66 ft (20 m) east of Mountain Drive on NH 119 in Hinsdale. During rehabilitation of the bridges, phased construction would be utilized to maintain one-way alternating traffic on both bridges at all times. This alternative would not improve the existing sub-standard horizontal and vertical curves on the approach roadway sections. Horizontal and vertical alignments for this alternative would be identical to Alternative B.

  Rehabilitation of the bridges would improve the bridge decks, gusset plates on the truss bottom chords, paint, concrete bridge seats, and scour protection. The rehabilitation would not improve the load rating of the bridges, as the load ratings are determined by the bridge trusses. Replacement of the bridge trusses would be required to improve the load rating to the standard of MS23 (HSS25). The existing sub-standard bridge clear width and vertical clearance would also be retained with Alternative A. The structural repairs would extend the service life of the bridge by 15

to 30 years, assuming that interim maintenance such as painting and deck repair was completed. Proposed rehabilitation work would include:

- Complete cleaning and painting of both structures, utilizing full containment for removal of the lead-based paint.
- Applying a new asphalt wearing surface, with a membrane on the bridge deck.
- Performing miscellaneous steel repairs.
- Performing concrete repairs to the abutments of the main channel (western) bridge, and repairs to the columns of the side channel (eastern) bridge.
- Installation of rip rap for scour protection at the abutments of the main channel bridge, and to the piers of the side channel bridge.

There is no additional right-of-way required for his alternative, nor are there any commercial or residential displacements.

Figure 2, Appendix B, indicates that the alternatives on existing alignment (Alternatives A through E) would not change travel patterns in the study area. The unsignalized Route 5/119/142 intersection would continue to operate at level of service F during the peak hour.

The estimated construction costs (2008) associated with Alternative A are as follows:

Rehabilitate Bridge Cost (Vehicle)	$1,917,510
Approach Roadway Cost	$611,380
TOTAL COST	$2,528,890

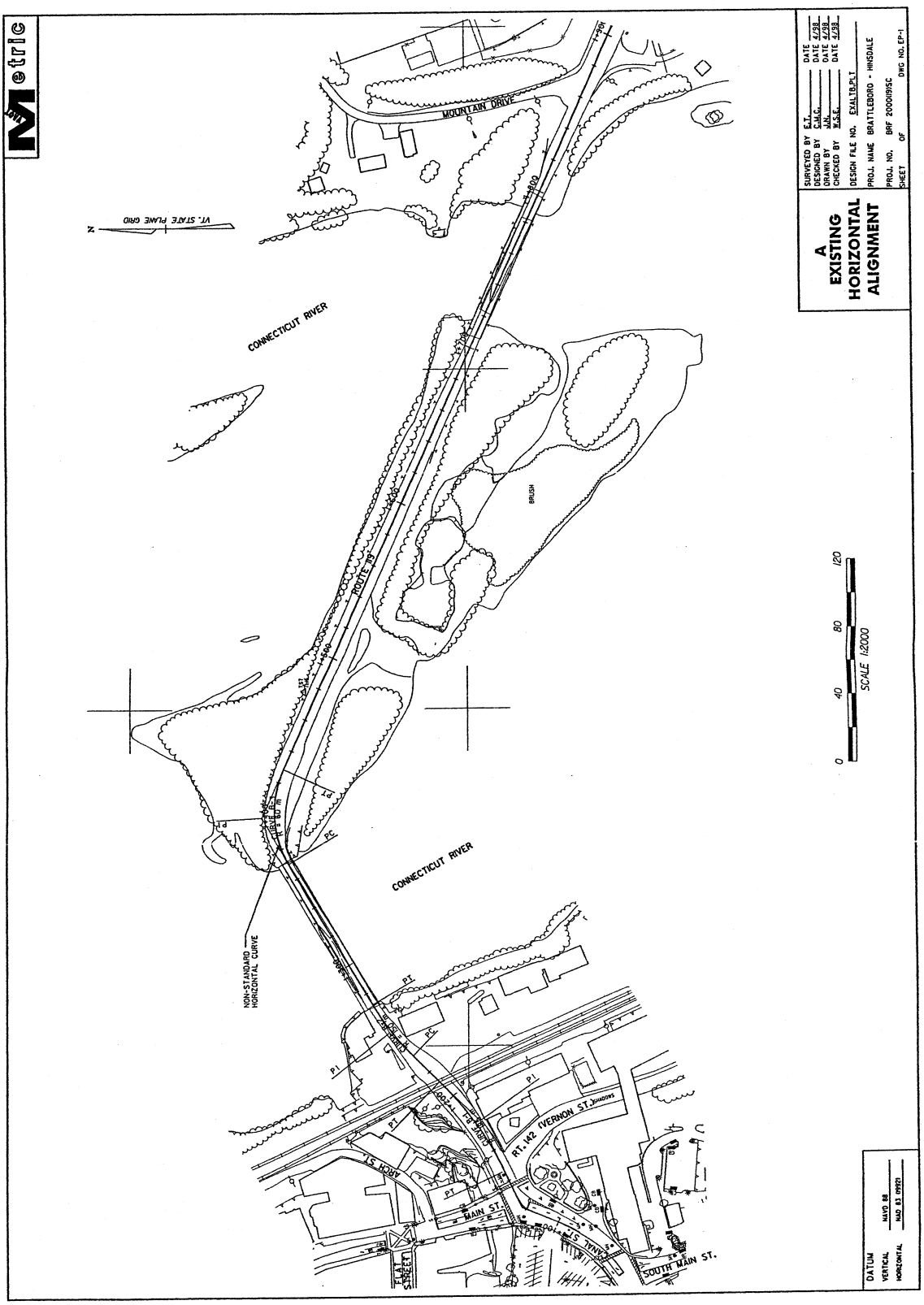
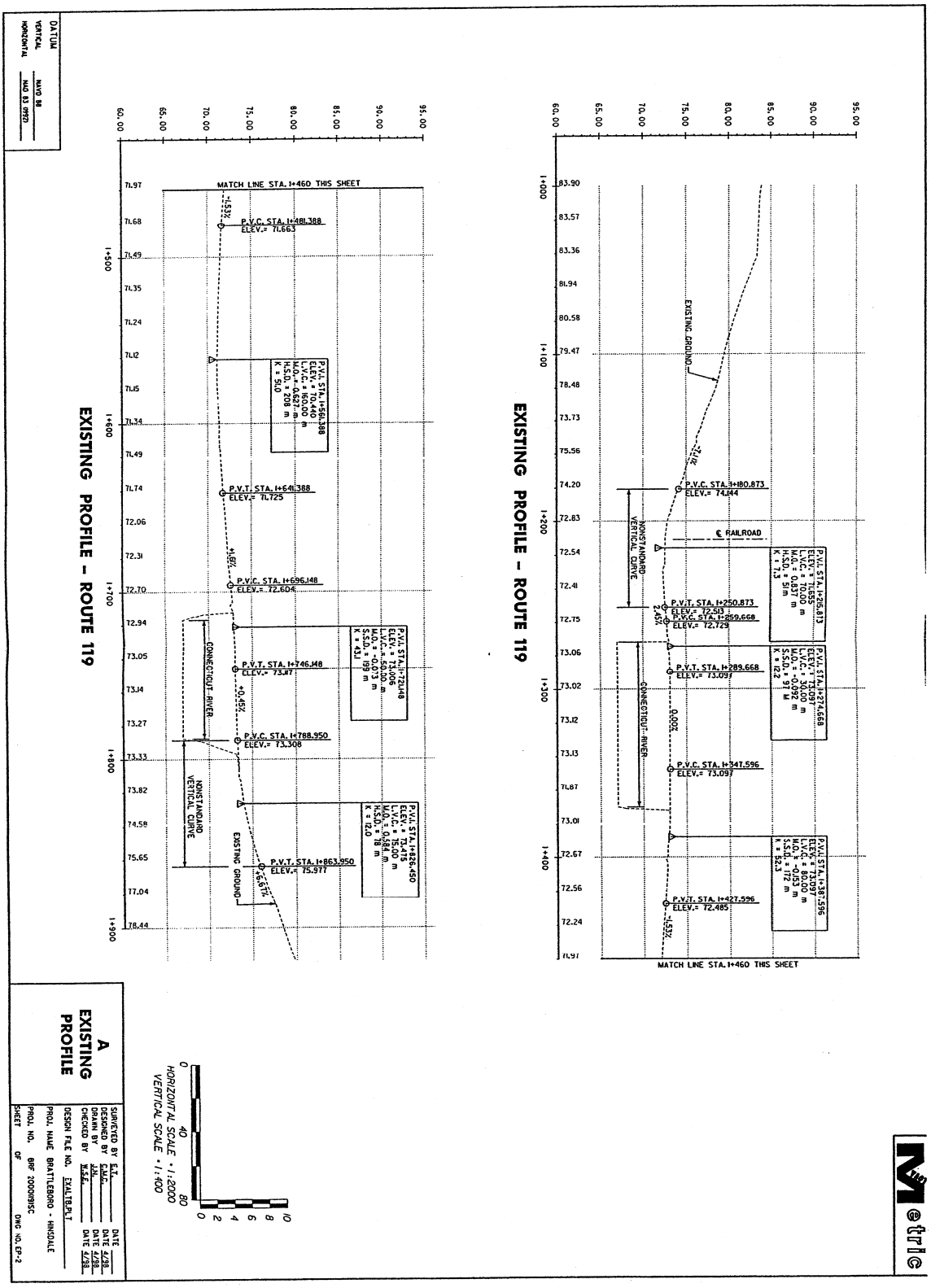


Figure A-1 – Alternative A Existing Horizontal Alignment

Figure A-2- Alternative A Existing Profile



- Alternative B (Replace on Existing) – Replacement of Existing Bridges and Reconstruction of Approach Roadway Sections. (See figures A-3, A-4)

  Alternative B would provide for the replacement of both the western and eastern existing Route 119 bridges, and the reconstruction of the Route 119 approach roadway sections. Construction would begin at the Main Street intersection in Brattleboro and would end approximately 66 ft (20 m) east of Mountain Drive on NH 119 in Hinsdale. Temporary bridges would be utilized during the replacement of the existing bridges in order to maintain two lanes of traffic over the Connecticut River. This alternative would not allow for improvement to the existing sub-standard horizontal and vertical curves, nor to substandard sight distances associated with the approach roadway sections.

  The total right-of-way required for this alternative would be approximately 0.4 acres (1400 m^2). The proposed construction of the western bridge and approach roadway sections would require the relocation of the Riverview Diner and demolition of the former Synergy Gas Building.

  Figure 2, Appendix B, indicates that the alternatives on existing alignment (Alternatives A through E) would not change the travel patterns in the study area. The unsignalized Route 5/119/142 intersection would continue to operate at level of service F.

  The estimated construction costs (2008) associated with Alternative B are as follows:

New Bridge Cost	$9,212,385
Remove Existing Bridges	$1,167,180
Temporary Bridge Cost	$1,986,985
Roadway Cost	$611,380
TOTAL COST	$12,977,930

Figure A-3 – Alternative B Plan

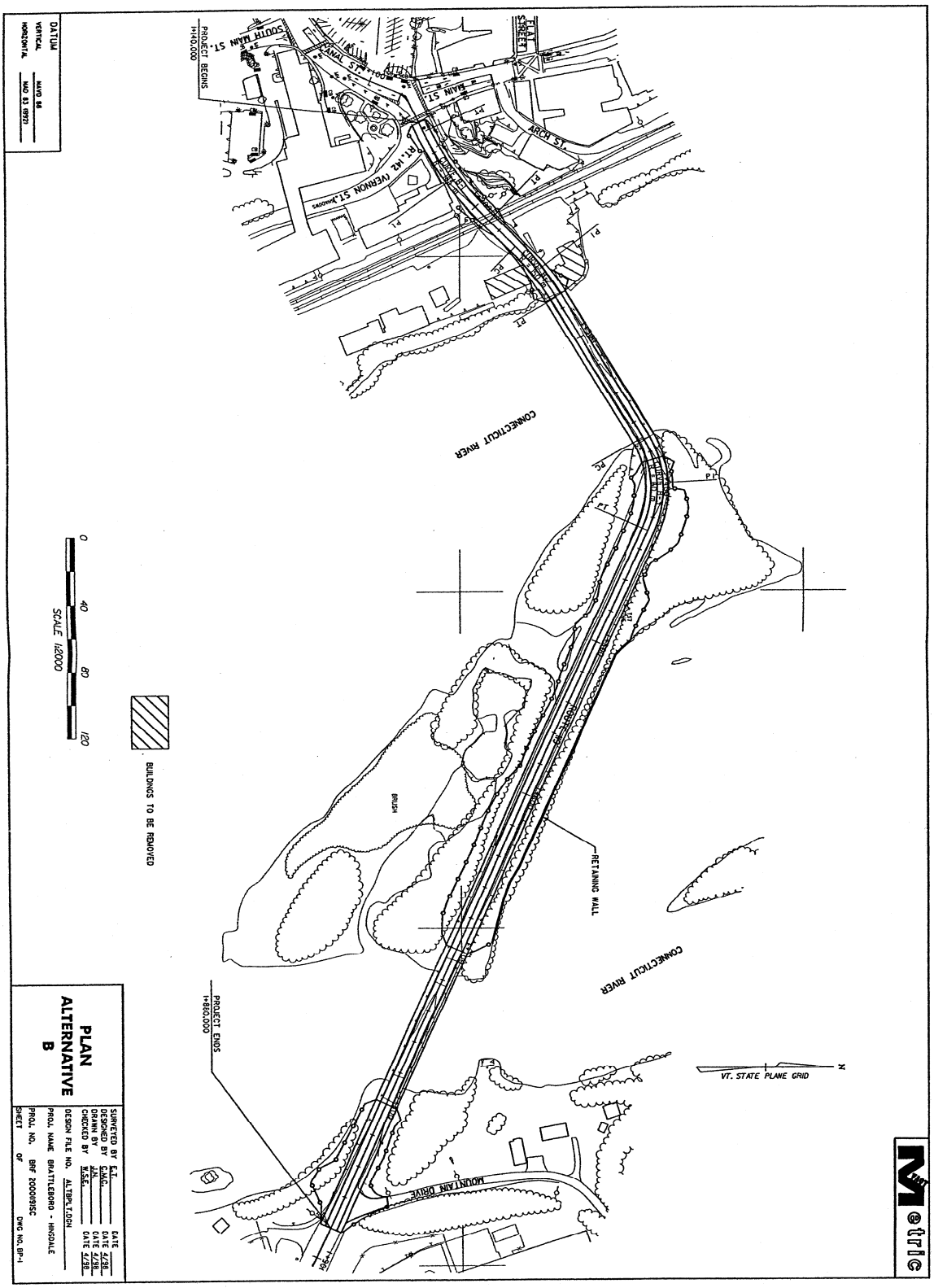
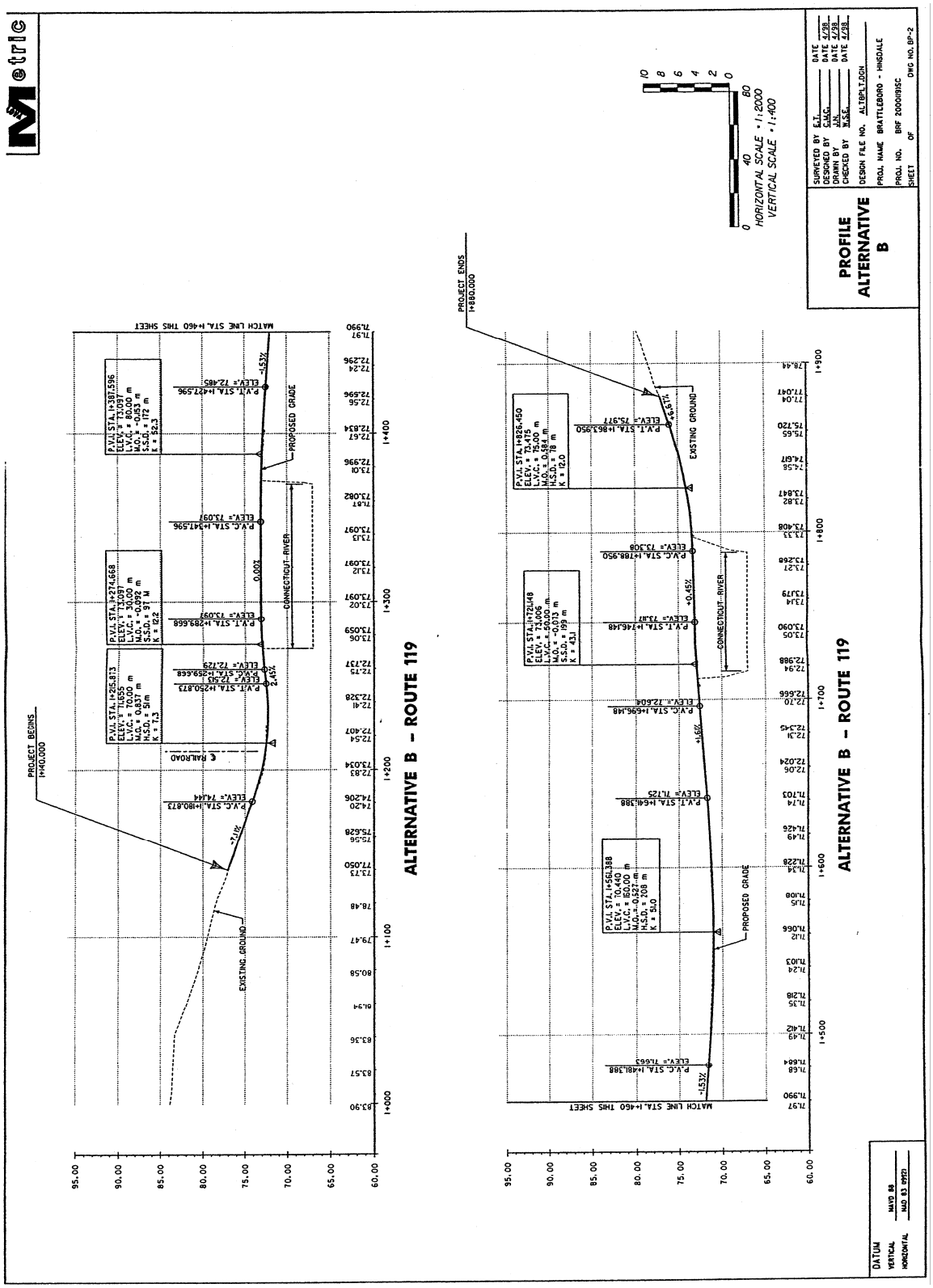


Figure A-4 – Alternative B Profile



- Alternative C (Alignment Improvement) – Replacement of Existing Bridges and Reconstruction of Approach Roadway Sections with Minor Geometric Improvements. (See Figures A-5, A-6)

  Alternative C would provide for the replacement of both existing Route 119 bridges at approximately the same location as the existing bridges, and would include the reconstruction of the Route 119 approach roadway sections. The reconstruction would begin at the Main Street intersection in Brattleboro and would end approximately 66 ft (20 m) east of Mountain Drive on NH 119 in Hinsdale.

  Alternative C would improve the horizontal and vertical alignments to provide for a design speed of 35 mph (60 km/h). A 623 ft (190 m) radius curve over the western bridge section would replace the existing sub-standard 187 ft (60 m) radius curve on the eastern approach to the western bridge. Due to the at-grade railroad crossing, the vertical alignment would retain a sub-standard curve with a sub-standard sight distance of 95 ft (29 m). The minimum standard sight distance for a design speed of 35 mph is 275 ft (83.8 m).

  Temporary bridges would be utilized during the replacement of the existing bridges in order to maintain two lanes of traffic over the Connecticut River. The roadway approach to the temporary bridge on the Brattleboro side would require the demolition of the former Synergy Gas building. The proposed reconstruction would also require the acquisition of the Riverview Diner in order to provide for a standard horizontal curve.

  The total right-of-way required for Alternative C would be approximately 0.50 acres (2,000 m^2). Aside from acquisition of the Synergy Gas building and the Riverview Diner, no other commercial or residential displacements would be required.

  Figure 2, Appendix B, indicates that the alternatives on existing alignment (Alternatives A through E) would not change the travel patterns in the study area. The unsignalized Route 5/119/142 intersection would continue to operate at level of service F.

The estimated construction costs (2008) associated with this alternative are as follows:

New Bridge Cost	$10,838,100
Remove Existing Bridges	$1,167,180
Temporary Bridge Cost	$1,986,985
Roadway Cost	$847,595
TOTAL COST	$14,839,860

Figure A-5 – Alternative C Plan

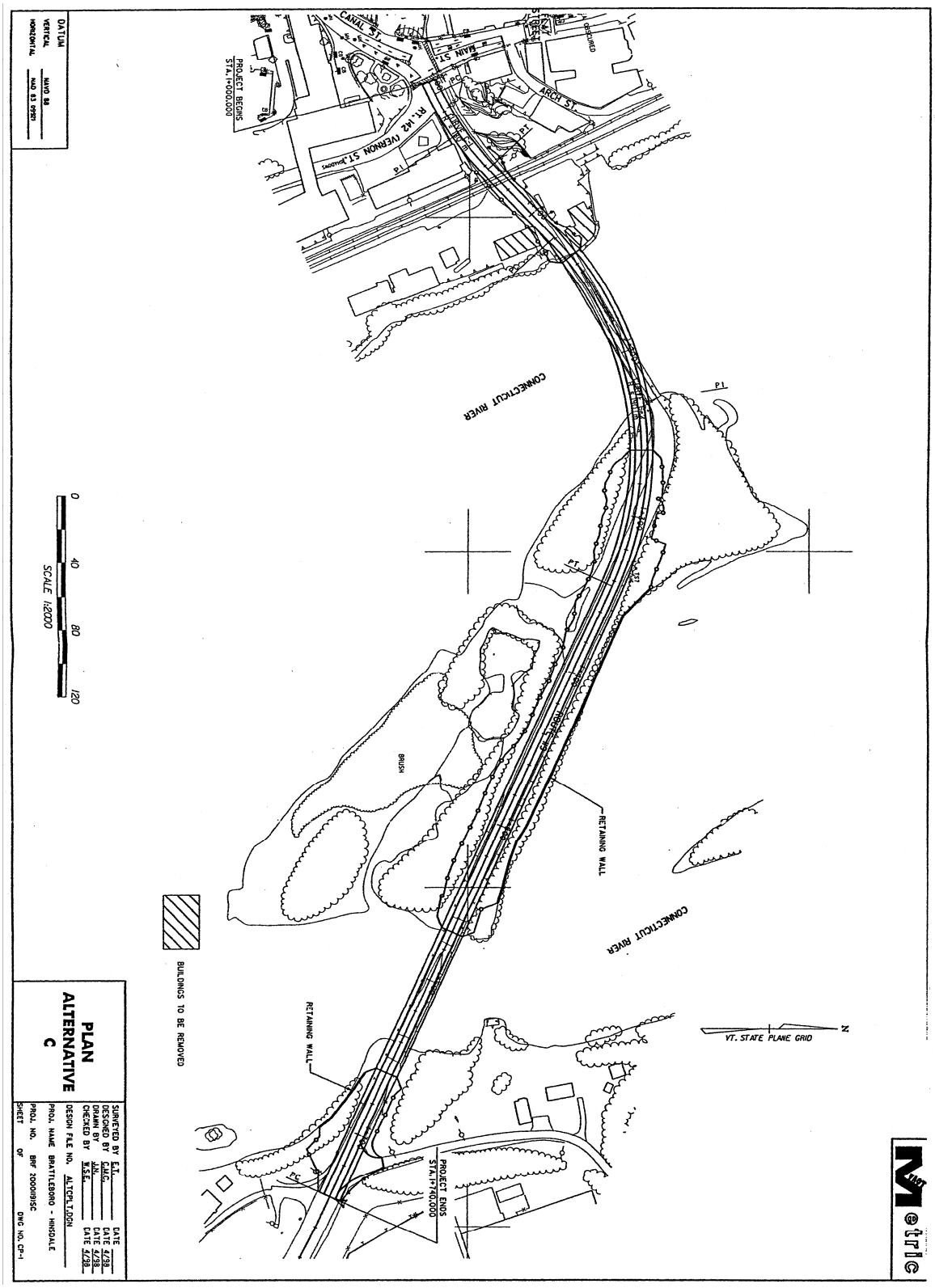
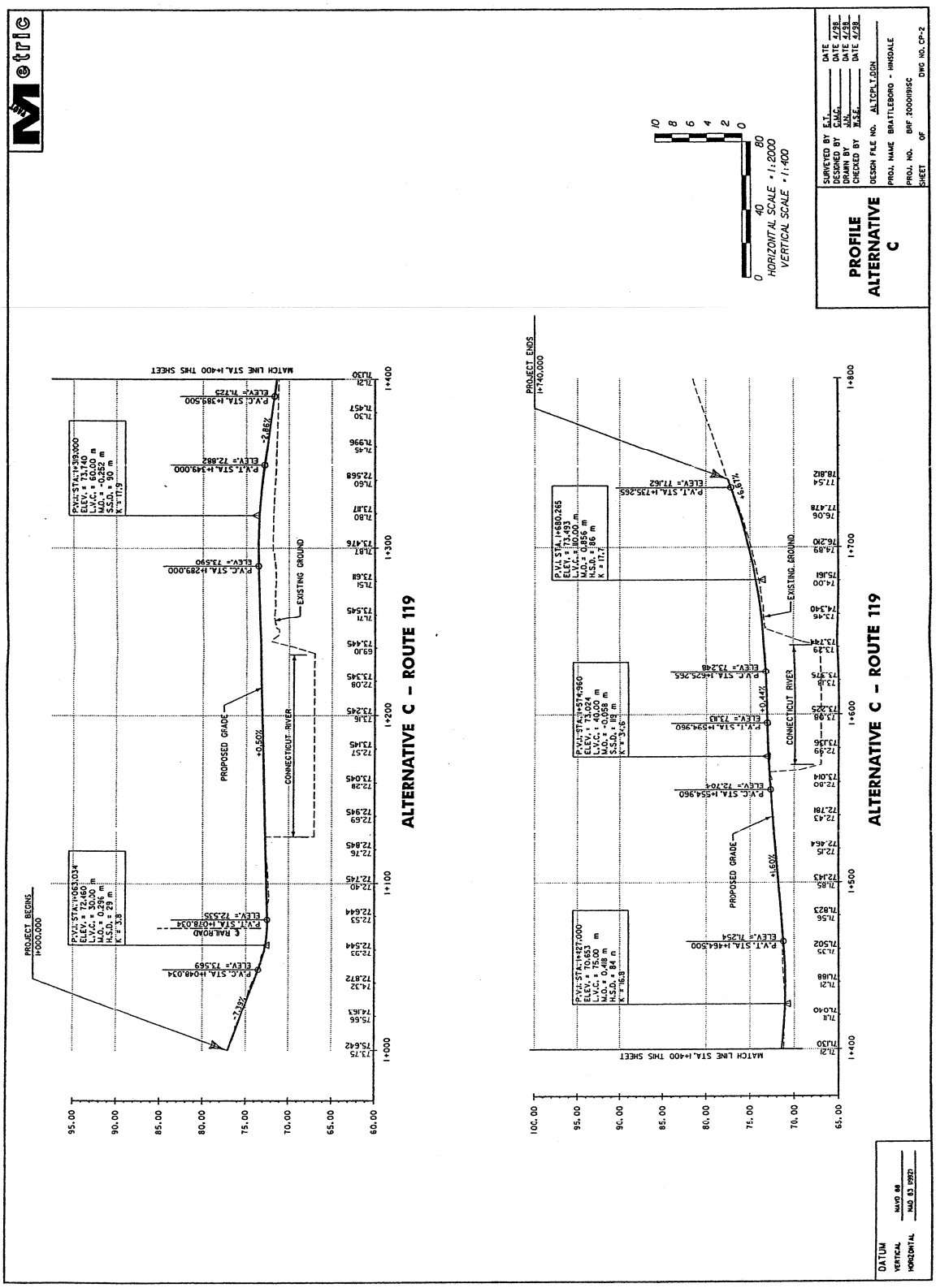


Figure A-6 – Alternative C Profile



- Alternative D (Grade-Separated) – Replacement of Existing Bridges with Grade-Separated Railroad Crossing at Existing Location. (See Figures A-7, A-8, A-9, A-10)

  Alternative D would replace both Route 119 bridges at approximately the location of the existing bridges, and would provide a new bridge over the railroad. The reconstruction would begin approximately 98 ft (30 m) west of the Route 5/119/142 intersection in Brattleboro and would end 98 ft (30 m) east of Mountain Drive on NH 119 in Hinsdale.

  The proposed horizontal and vertical alignment for Alternative D would meet standards for a 35 mph design speed. In order to provide standard grades, vertical curves, and railroad clearances, the Route 119 profile would require the Route 5/119/142 intersection to be raised approximately 8 ft (2.5 m). Reconstruction of 374 ft (114 m) of Main Street, 348 ft (106 m) of Vernon Street, 122 ft (37 m) of Flat Street, and 305 ft (93 m) of Arch Street would also be required. The Main Street reconstruction would require replacement of the Whetstone Bridge.

  The proposed new western bridge would be approximately 34 ft (10.3 m) higher than the existing bridge on the Brattleboro side. A cross section taken at the west shoreline depicts the existing and proposed bridge elevations as well as the Riverview Diner and museum locations (see Figure A-10).

  The reconstruction of Arch Street would include two sub-standard vertical curves. Due to the proposed raising of Main Street and the existing non-standard features of Arch Street, the headlight and stopping sight distances for the two curves would be a sub-standard 82 ft (25 m) and 72 ft (22 m) respectively. The minimum standard sight distance for a design speed of 25 mph is 150 ft (45.7 m).

  The reconstruction and raising of the Route 5/119/142 intersection would require acquisition of the Barrows Coal Building, located on Main Street between Whetstone Brook and Arch Street. Additionally, access to the first floor of the Wilder Building, located on Main Street between Whetstone Brook and Flat Street, would be eliminated. The reconstruction of Arch Street would also require the acquisition of the building behind the Barrows Coal building.

  The proposed bridge and approach roadways for Alternative D would be in approximately the same location as the existing bridge and roadway. During construction, traffic would be maintained on temporary bridges.

Access to the temporary bridges on the Brattleboro side would be provided using a temporary roadway to the south of Bridge Street (Route 119). This temporary roadway would require acquisition of the Union Station Building, which houses the museum and train station, and is listed in the National Register of Historic Places. Upon completion of construction, a new riverfront access road would be provided from Vernon Street (Route 142), and be located in the vicinity of the existing Union Station building. The proposed bridge location would also require acquisition of the Riverview Diner and demolition of the former Synergy Gas building.

The total right-of-way required for Alternative D would be approximately 2.05 acres (8300 m^2). In addition, Alternative D would require a total of 12 commercial displacements, plus the Union Station building. No residential displacements would be required.

Figure 2, Appendix B, indicates that the alternatives on existing alignment (Alternatives A through E) would not change the travel patterns in the study area. The unsignalized Route 5/119/142 intersection would continue to operate at level of service F.

The estimated construction costs (2008) for Alternative D are as follows:

New Bridge Cost	$21,620,620
Remove Existing Bridges	$1,167,180
Temporary Bridge Cost	$1,986,985
Roadway Cost	$3,751,650
TOTAL COST	$28,526,435

Figure A-7 – Alternative D Plan

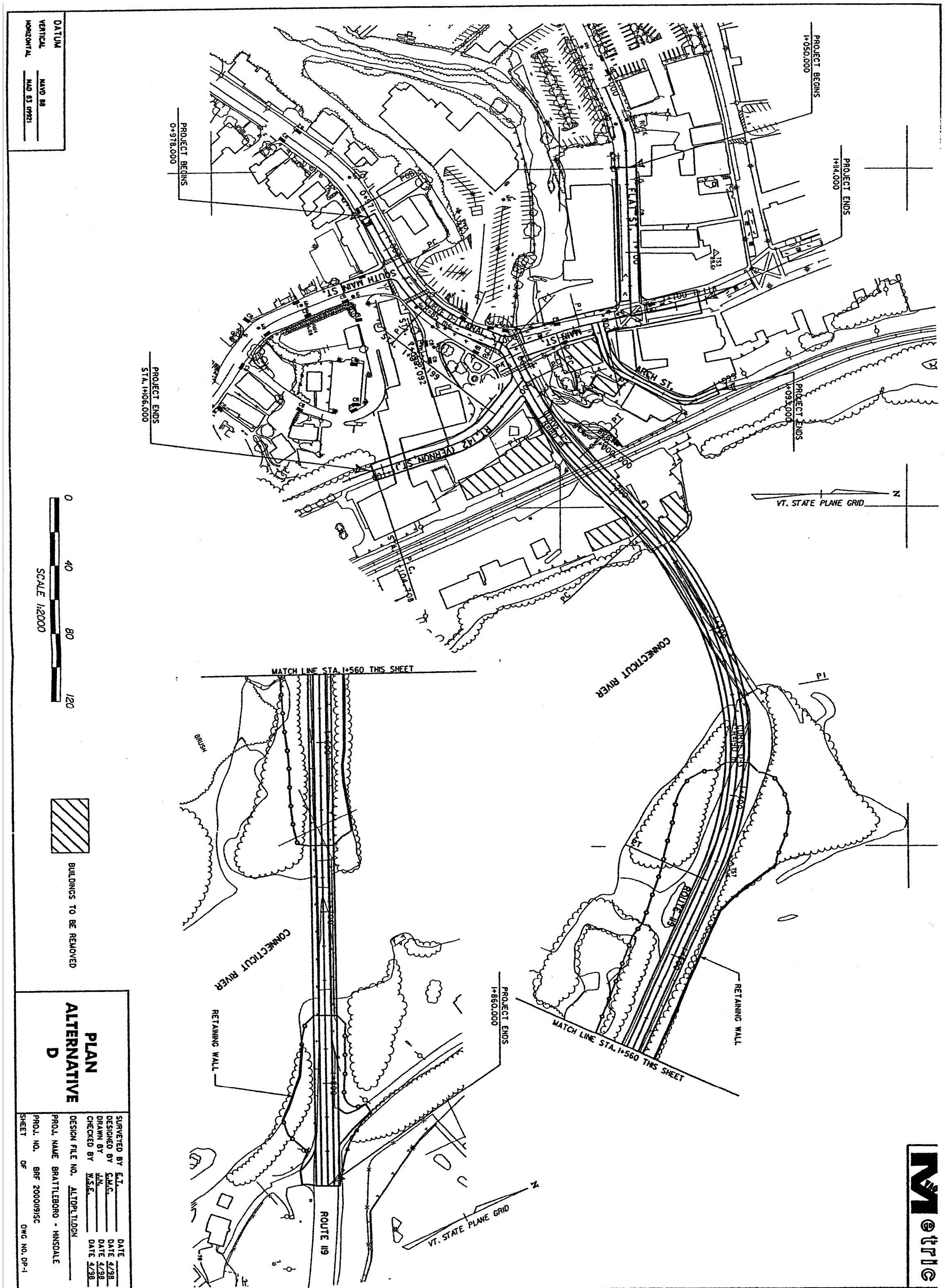


Figure A-8 – Alternative D Profile – Route 119

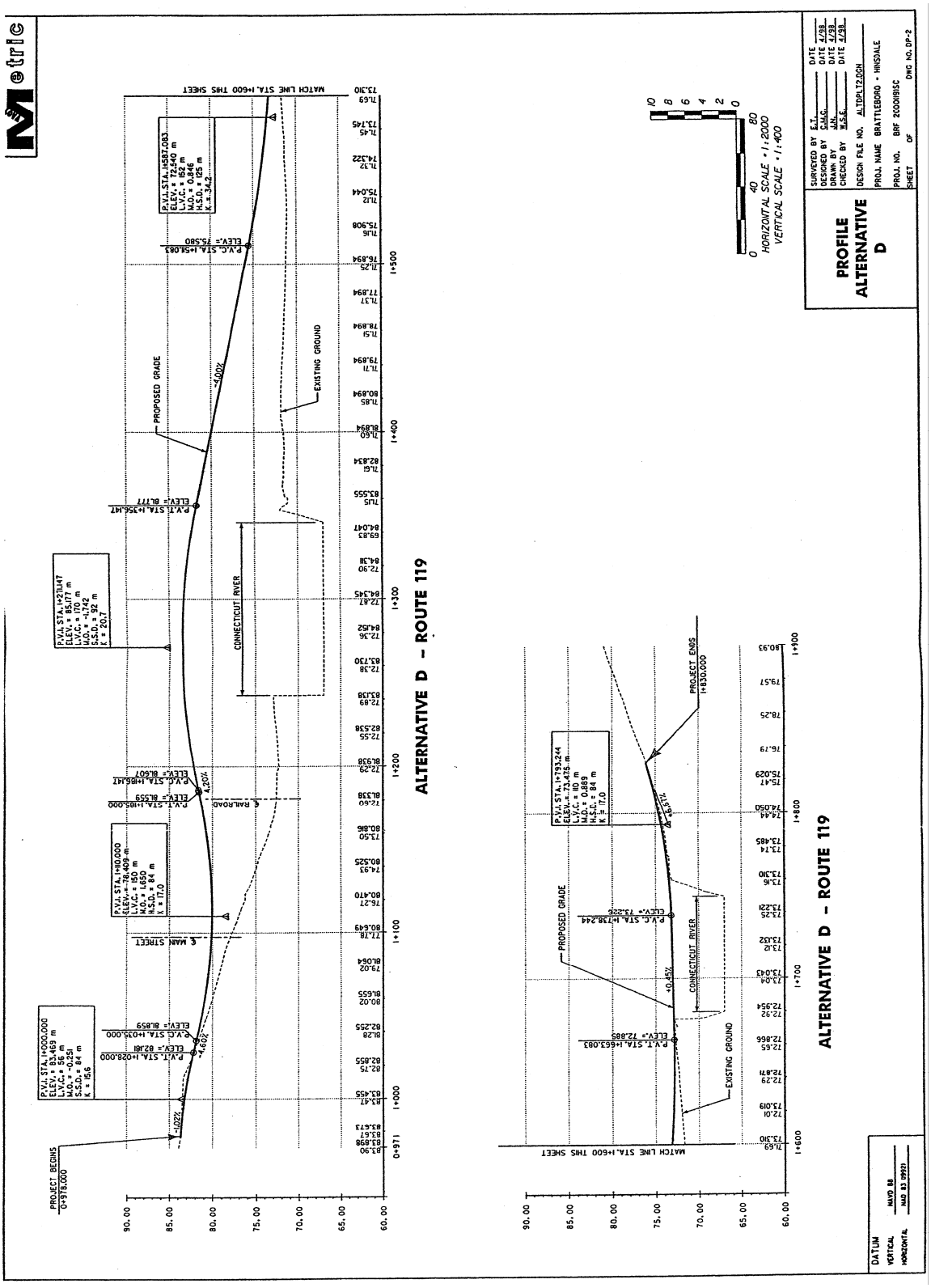


Figure A-9 – Alternative D Profile – Local Streets

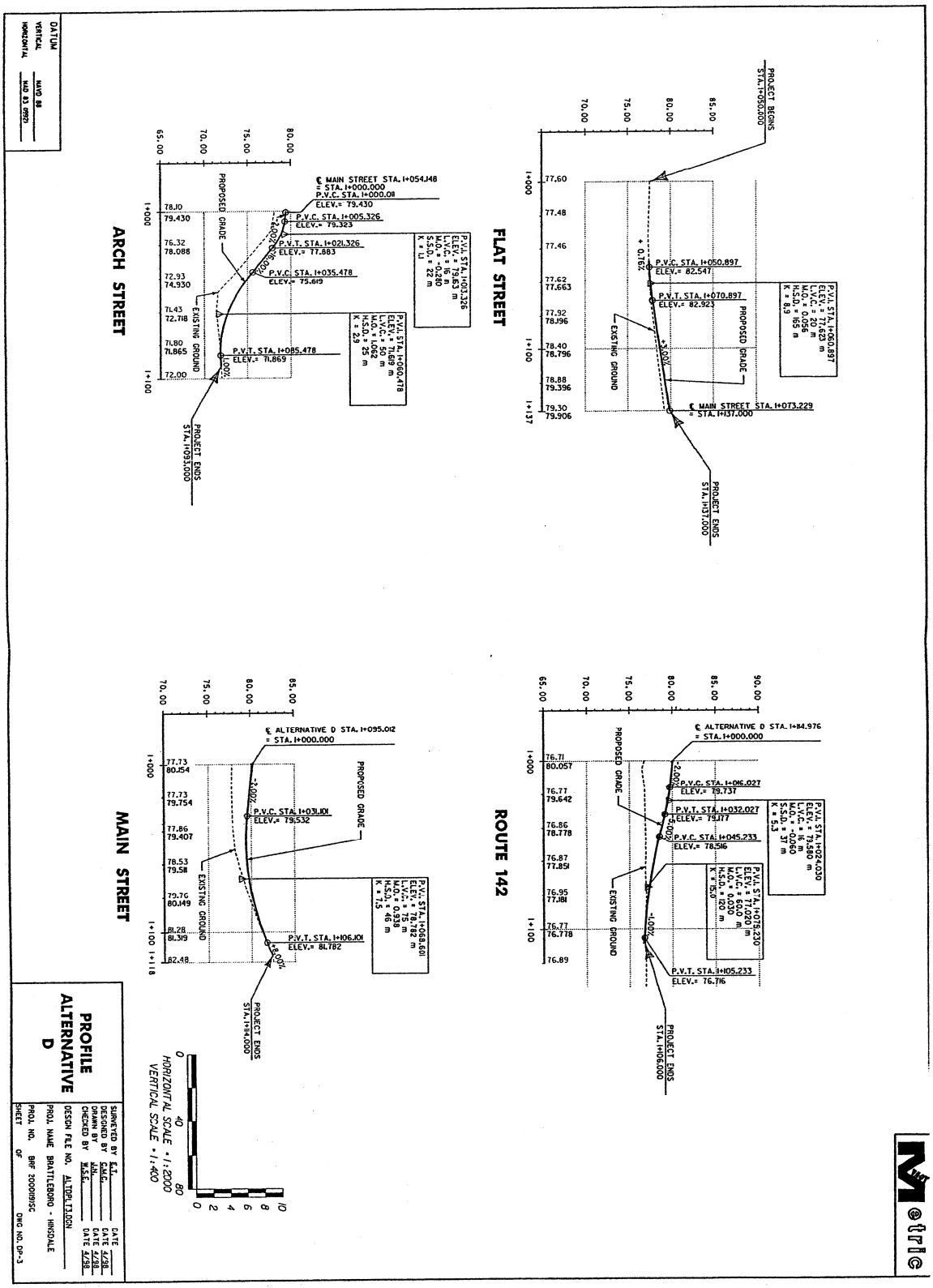
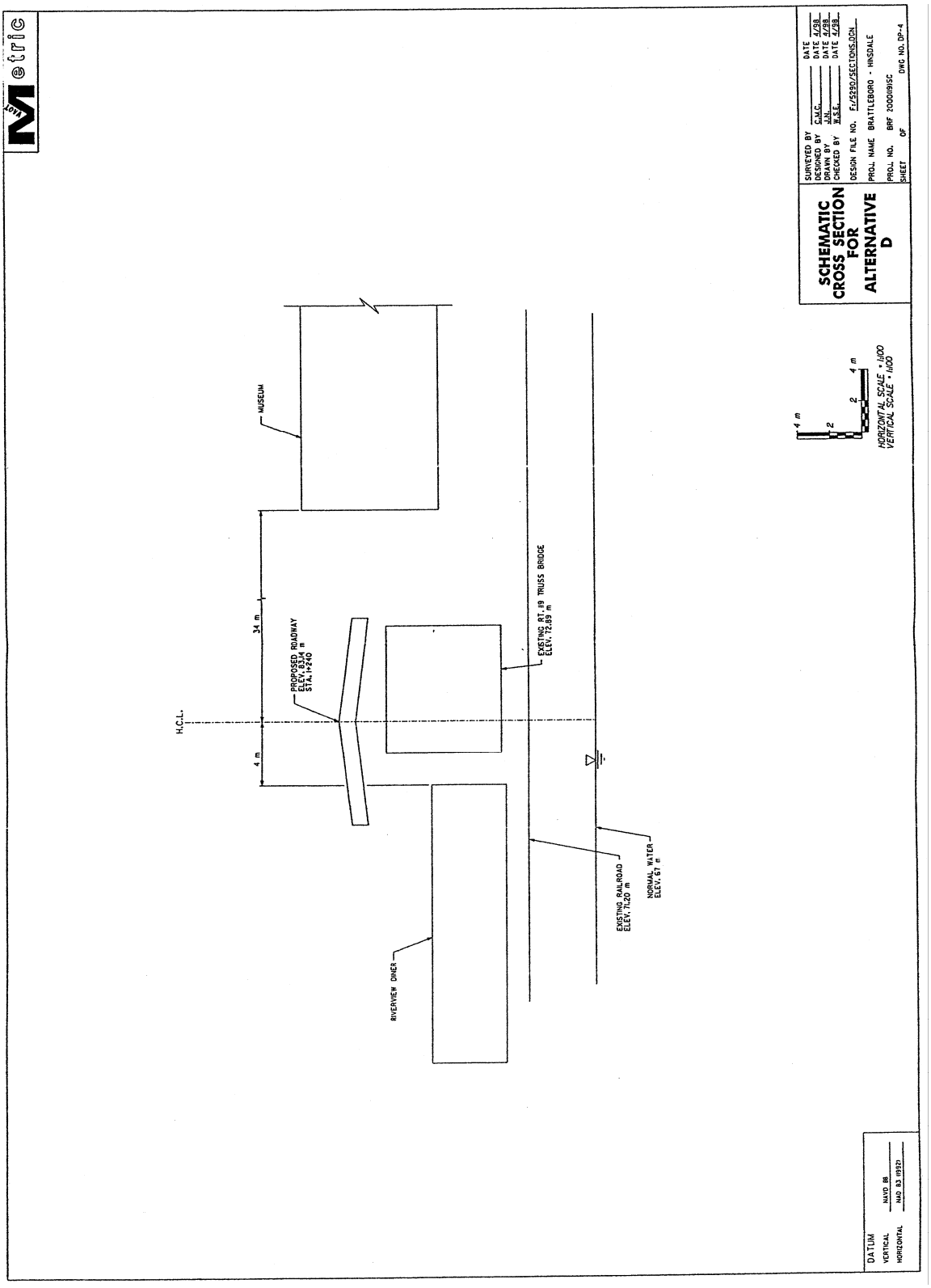


Figure A-10 – Alternative D Schematic Cross-section



- Alternative E (Parallel Structure) – Replacement of Existing Bridges on Parallel Alignment. (See Figures A-11, A-12)

  Alternative E would provide for the replacement of both the existing Route 119 western and eastern bridges with new, parallel bridges and approach roadway sections. To meet standards for a design speed of 35 mph (60 km/h) the western bridge would be curved with a radius of 623 ft (190 m). The proposed parallel alignment would utilize the existing bridges to maintain two lanes of traffic at all times during construction. After construction, the existing bridges could be used for pedestrian and bicyclist traffic. Reconstruction would begin at the Main Street intersection in Brattleboro and end approximately 65 ft (20m) east of the George's Field access in Hinsdale on NH 119. As a sub-alternative to Alternative E, the existing bridges could be used in combination with the new bridges with each carrying one-way traffic (this sub-alternative is not shown in the plans or reflected in the costs shown below).

  Due to the at-grade railroad crossing, the vertical alignment would contain a sub-standard curve with a sub-standard stopping sight distance of 105 ft (32 m), which would not meet the standards for a design speed of 35 mph. The minimum standard stopping sight distance for a design speed of 35 mph is 275 ft (83.8 m). The remaining portions of the vertical and horizontal alignments would meet standards for a design speed of 35 mph.

  The total right-of-way required for this alterative would be approximately 1.5 acres (5900 m^2). In addition to the right-of-way, the proposed alignment would require demolition of the former Synergy Gas building. No other commercial or residential displacements would be required.

  Figure 2, Appendix B, indicates that the alternatives on existing alignment (Alternatives A through E) would not change the travel patterns in the study area. The intersection of Route 5/119/142 would continue to operate at similar to current and projected levels of service.

  The estimated construction costs (2008) associated with this alternative are as follows:

New Bridge Cost	$8,309,210
Rehabilitate Existing Bridges (Pedestrian)	$1,584,030
Temporary Bridge Cost	$0
Roadway Cost	$812,858
TOTAL COST	$10,706,098

Figure A-11 – Alternative E Plan

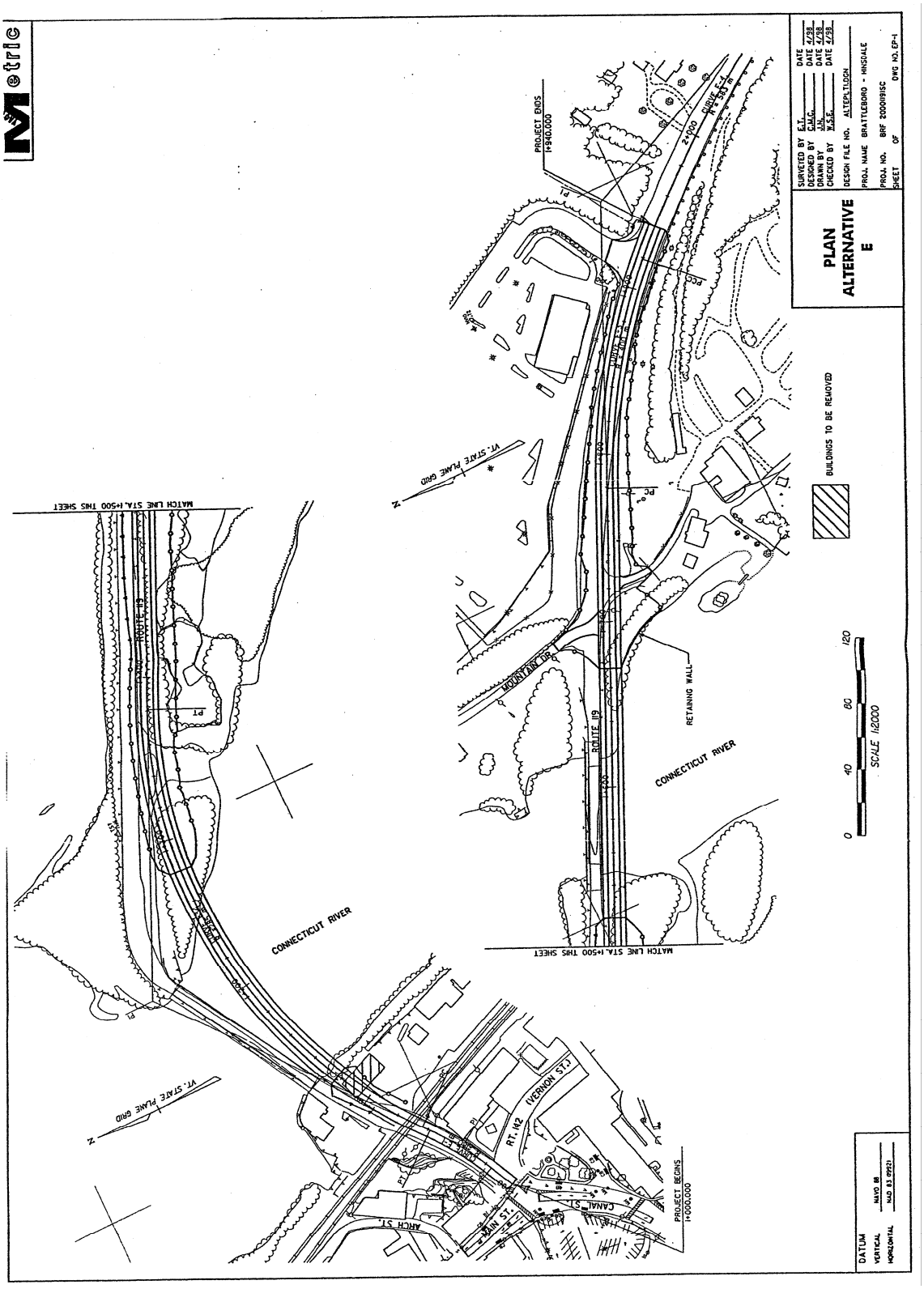
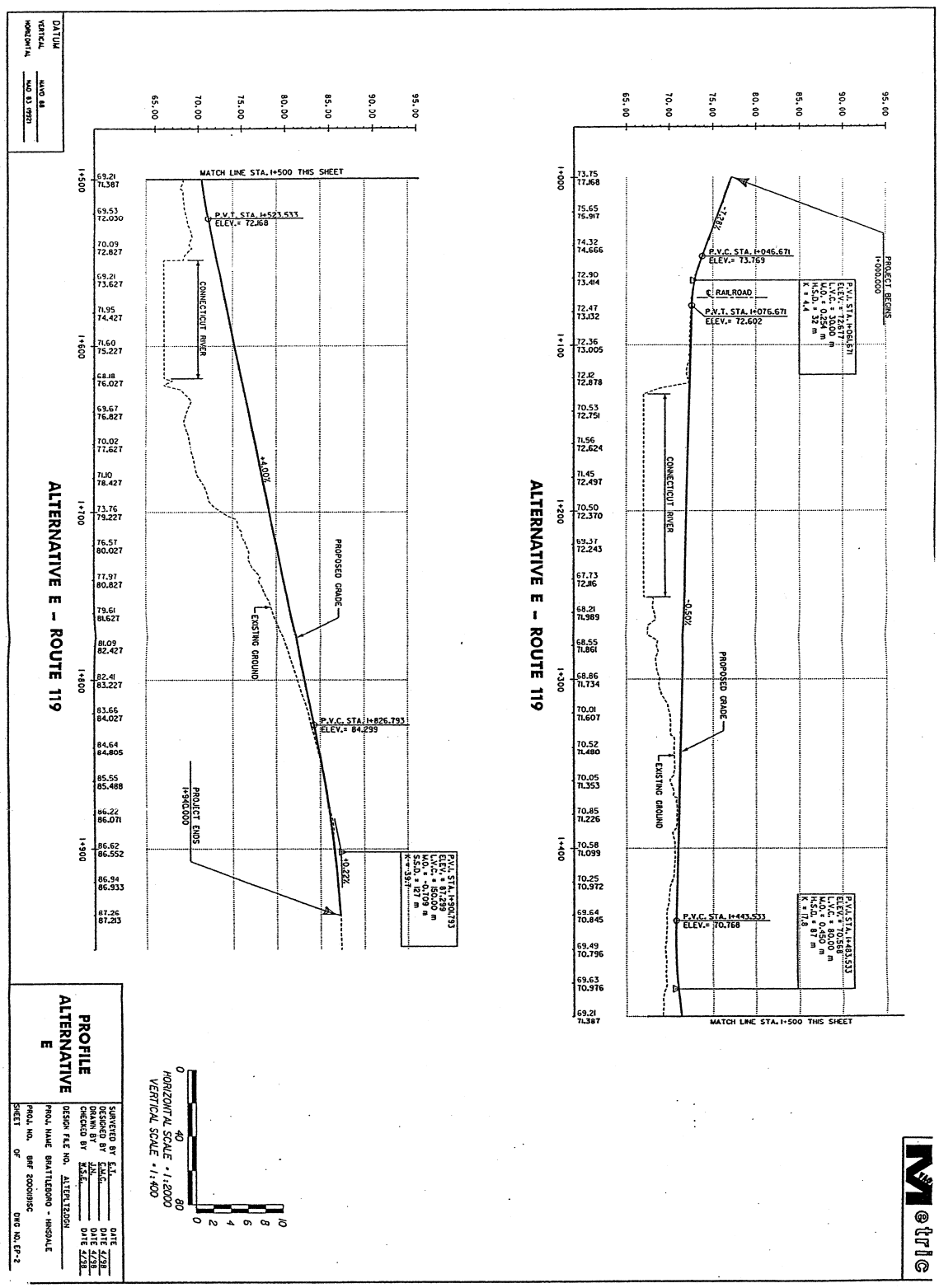


Figure A-12 – Alternative E Profile



- Alternative E-Modified (Parallel Tangent Structure) – Replacement of Existing Bridges with Tangent Bridges on Parallel Alignment. (See Figures A-13, A-14)

  Alternative E-Modified would be identical to Alternative E, except that the new western bridge would be constructed on a tangent alignment. In order to provide a tangent bridge for the western span of the Connecticut River, a sub-standard curve with a radius of 328 ft (100 m) would be required on the eastern approach. The minimum standard radius for a design speed of 35 mph is 410 ft (125 m). The 328 ft (100 m) radius curve would meet standards for a 34 mph design speed. The remainder of the horizontal alignment would be identical to Alternative E.

  The vertical alignment would be very similar to Alternative E and would contain the same sub-standard curve at the railroad crossing. The existing bridges would be utilized to maintain two lanes of traffic at all times during construction. After construction, the existing bridges could be used for pedestrian and bicyclist traffic.

  The total right-of-way required for this alternative would be approximately 1.4 acres (5700 m^2). In addition to this right-of-way, the proposed bridge location would require demolition of the former Synergy Gas building. No other commercial or residential displacements would be required.

  Figure 2, Appendix B, indicates that the alternatives on existing alignment (Alternatives A through E) would not change the travel patterns in the study area. The intersection of Route 5/119/142 would continue to operate at similar to current and projected levels of service..

  The estimated construction costs (2008) associated with this alternative are as follows:

New Bridge Cost	$8,309,210
Rehabilitate Existing Bridges (Pedestrian)	$1,584,030
Temporary Bridge Cost	$0
Roadway Cost	$812,858
TOTAL COST	$10,706,098

Figure A-13 – Alternative E - Modified Plan

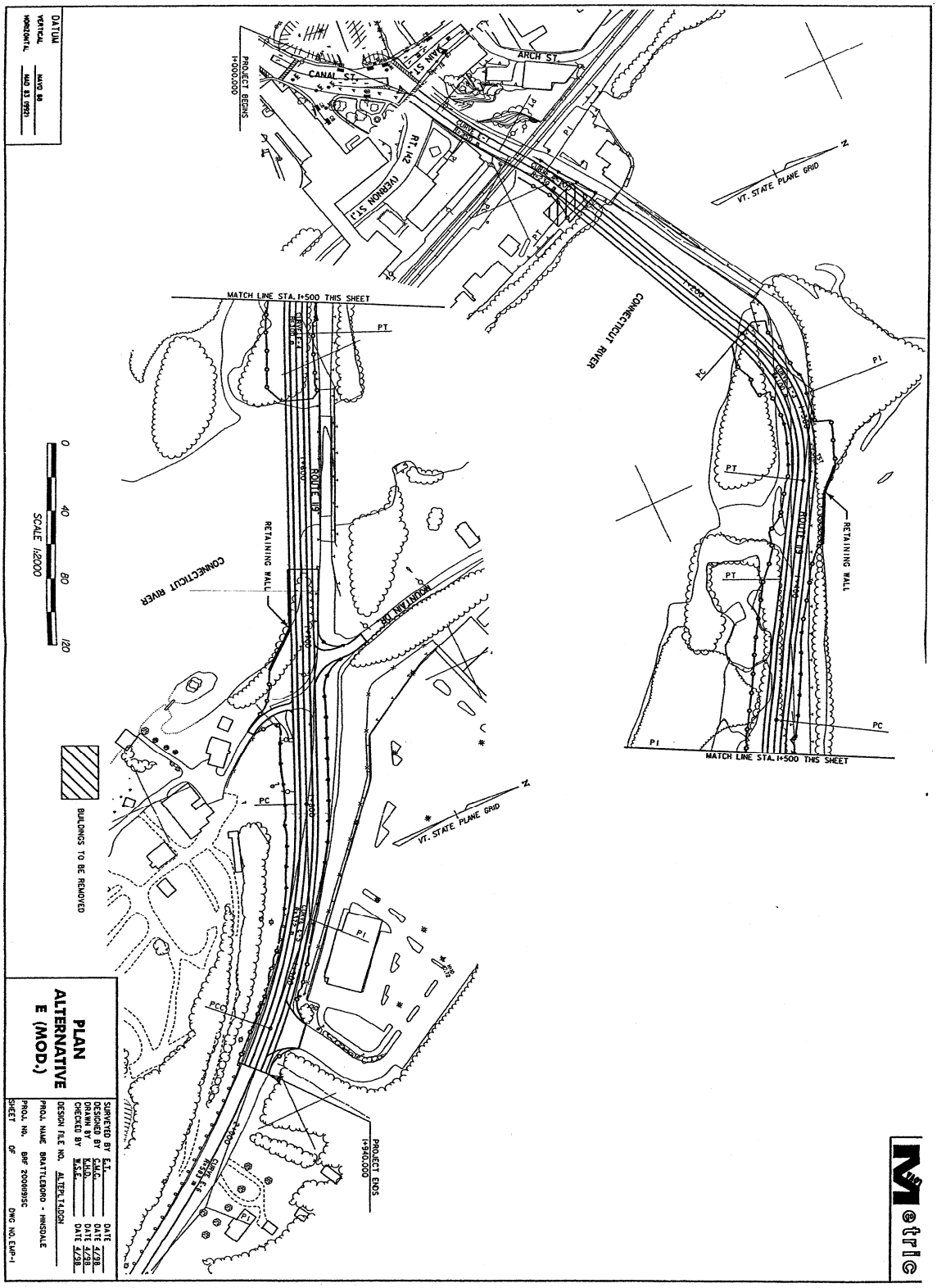
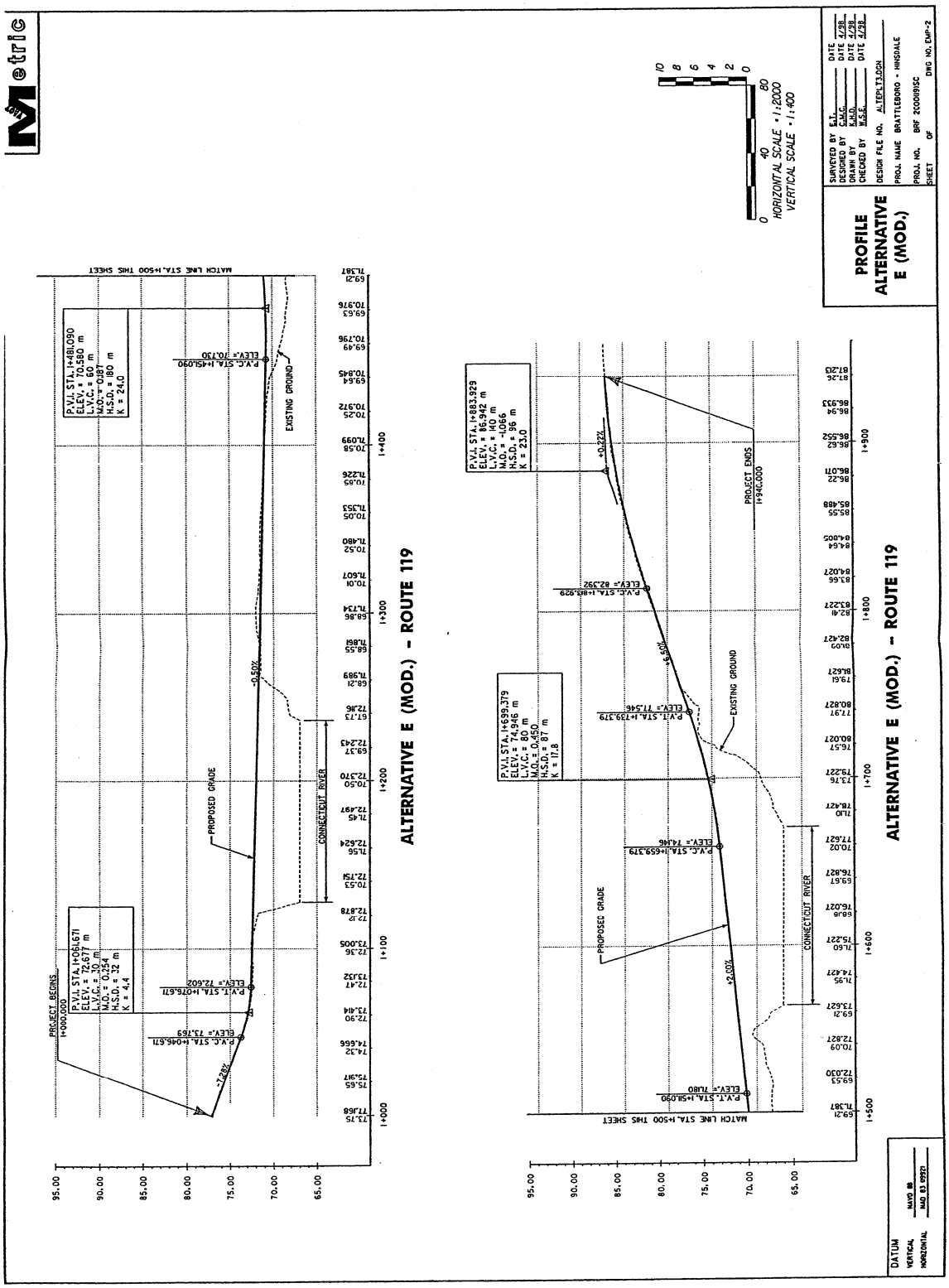


Figure A-14 – Alternative E - Modified Profile



- Alternative F (Blue Seal) – Replacement of Existing Bridges and Construction of Approach Roadway Sections on New Alignment

  Alternative F (Blue Seal) is the project's preferred alternative, and is identified, located, described, and analyzed in the EA document (see Chapter C). Alternative F would provide for the replacement of both the existing Route 119 eastern and western bridges with one bridge, located approximately 1,000 feet (300 meters) south of the existing VT 119 touchdown location and would join with NH 119 slightly east of the George's Field/Route 119 intersection in New Hampshire.

  The following figures, A-15 through A-26, identify, locate, and partially describe Alternative F (Blue Seal). See also, Figure 3, Appendix B, for changes in area traffic flow patterns associated with Alternative F.

Figure A-15 – Alternative F Plan – VT 119/142 Touchdown Intersection

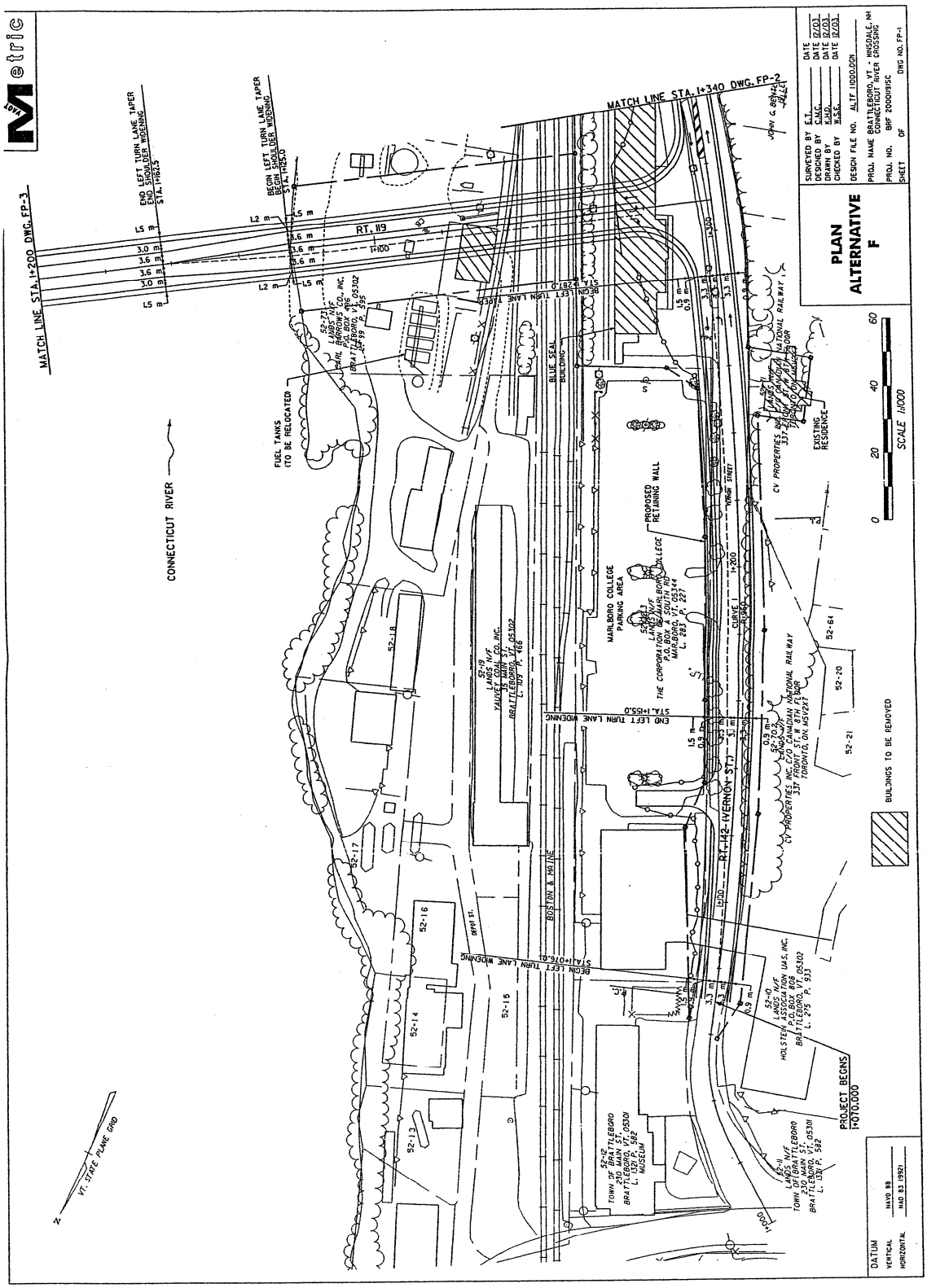


Figure A-16 – Alternative F Plan – VT 142 (South)

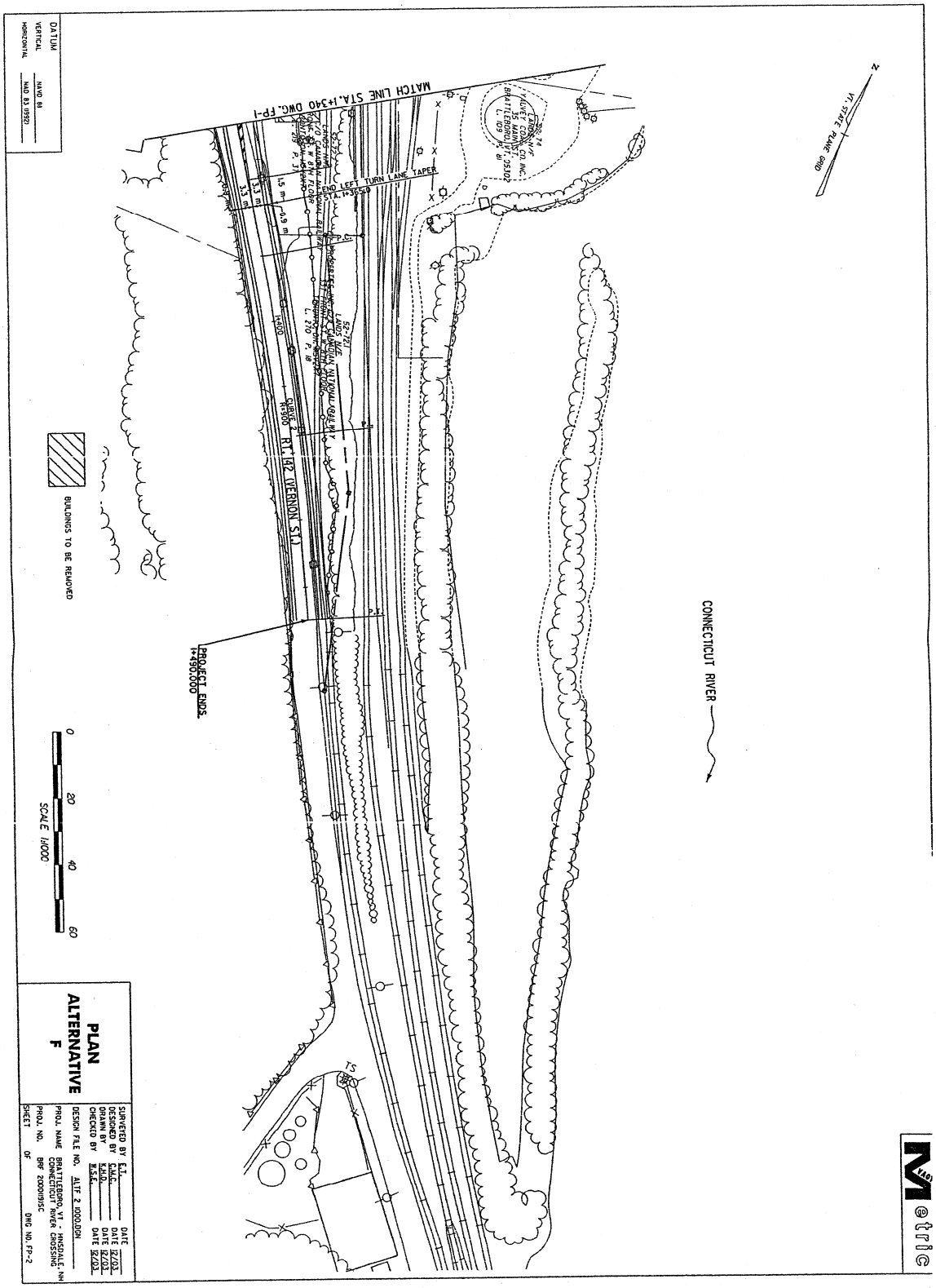


Figure A-17 – Alternative F Plan – Route 119 Mid-Channel Island

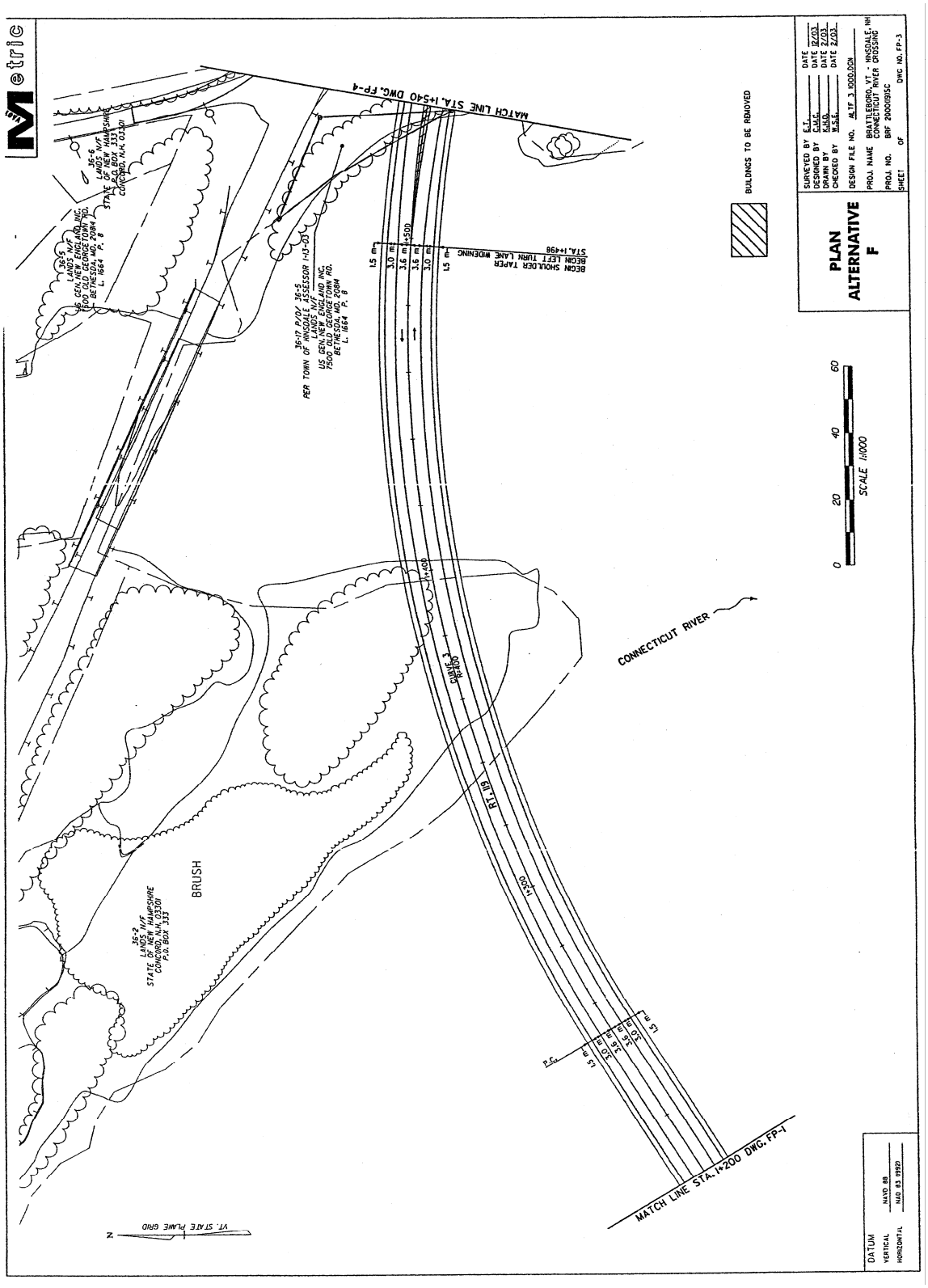


Figure A-18 – Alternative F Plan – NH 119 Touchdown

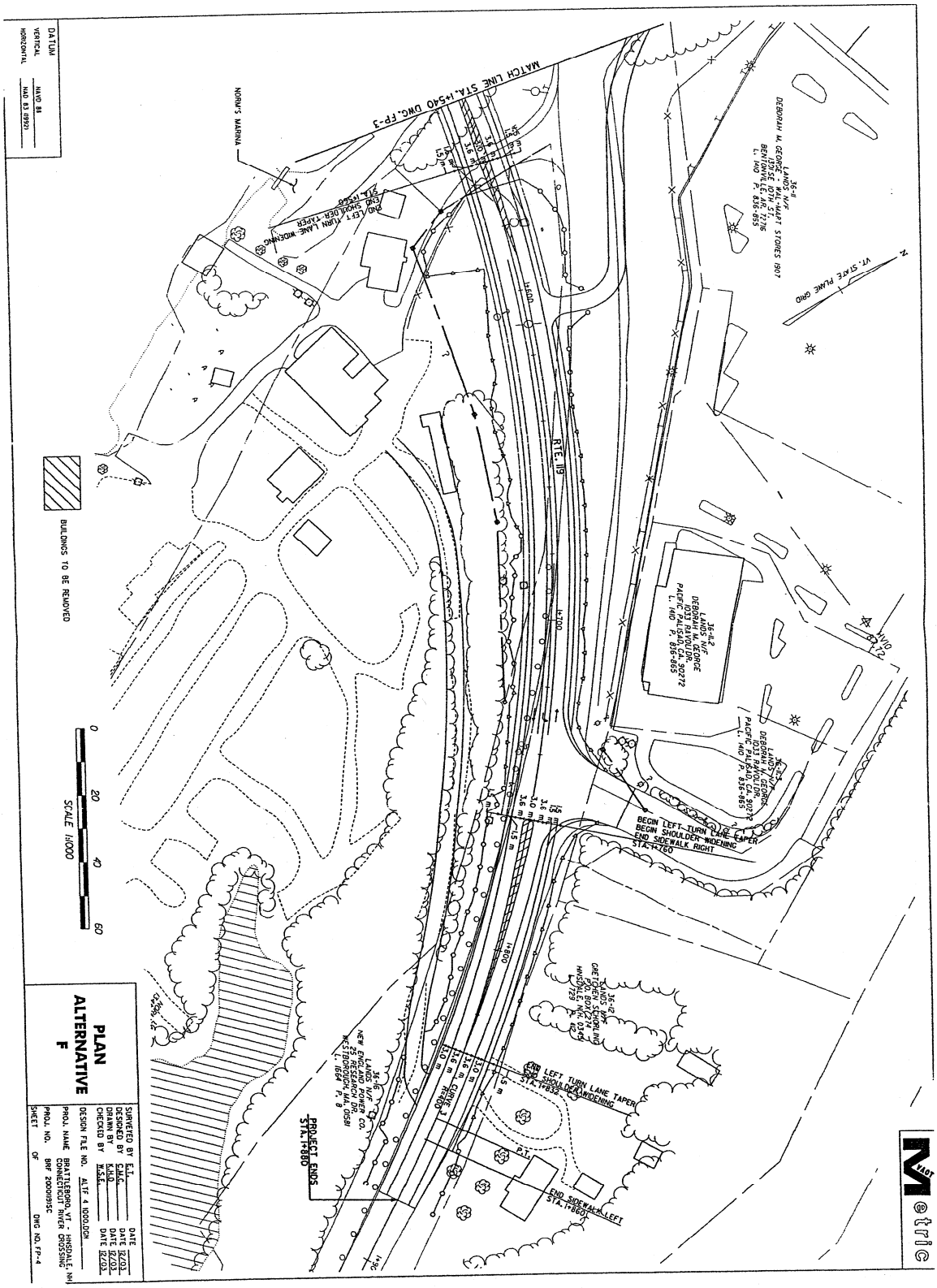


Figure A-19 – Alternative F Profile – VT 119

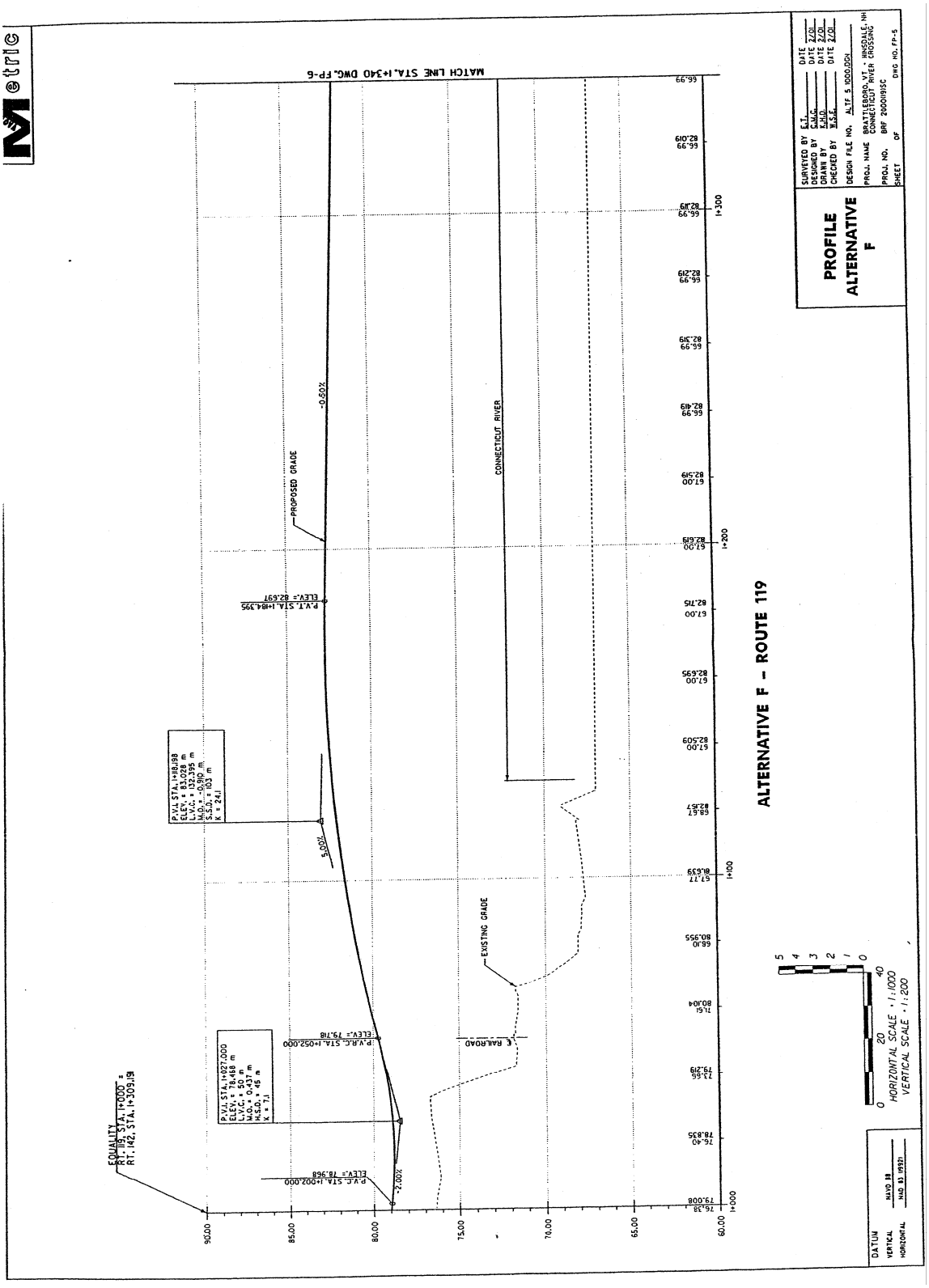


Figure A-20 – Alternative F Profile – Route 119 Mid-Channel

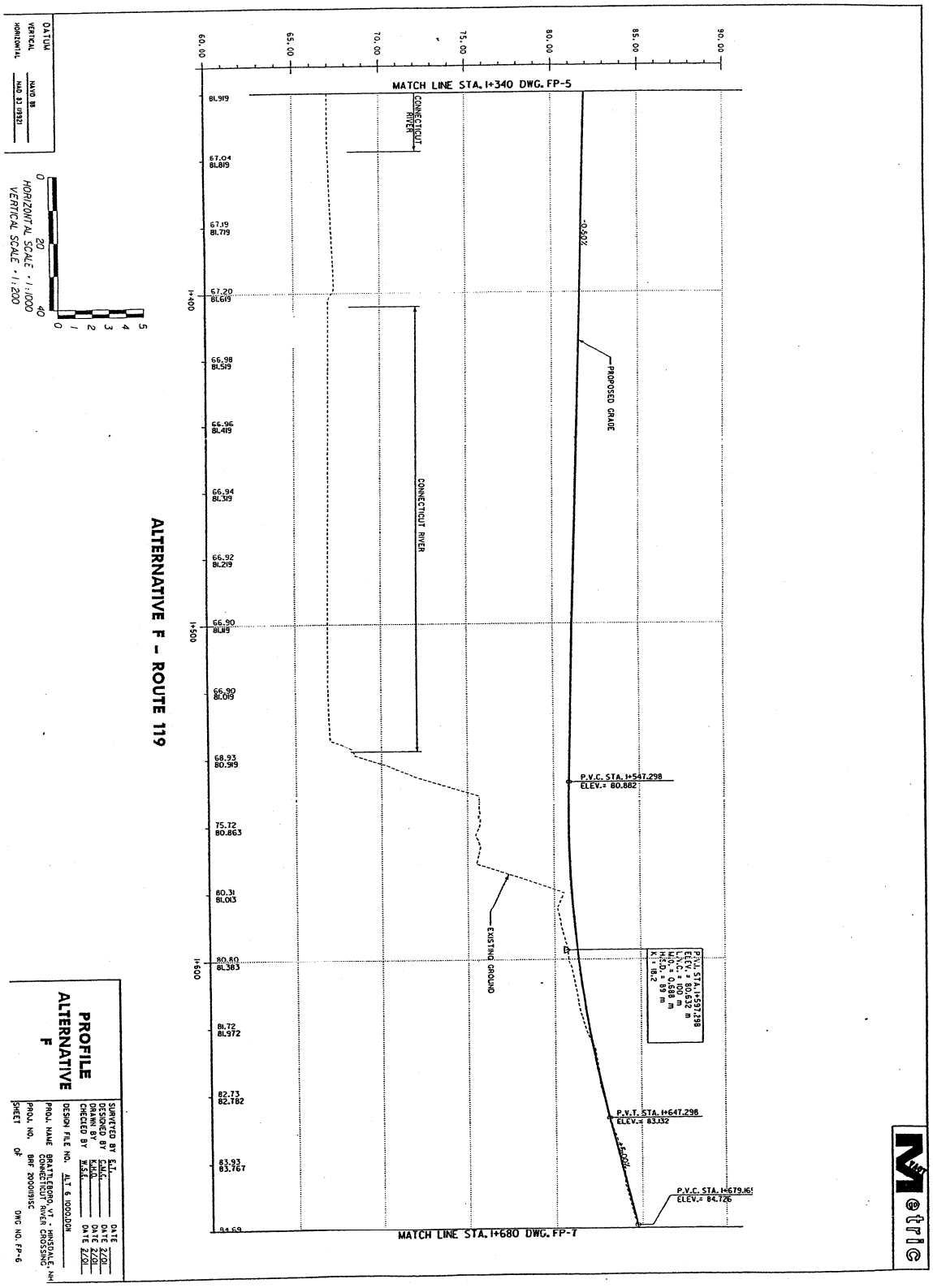


Figure A-21 – Alternative F Profile – NH 119 Touchdown

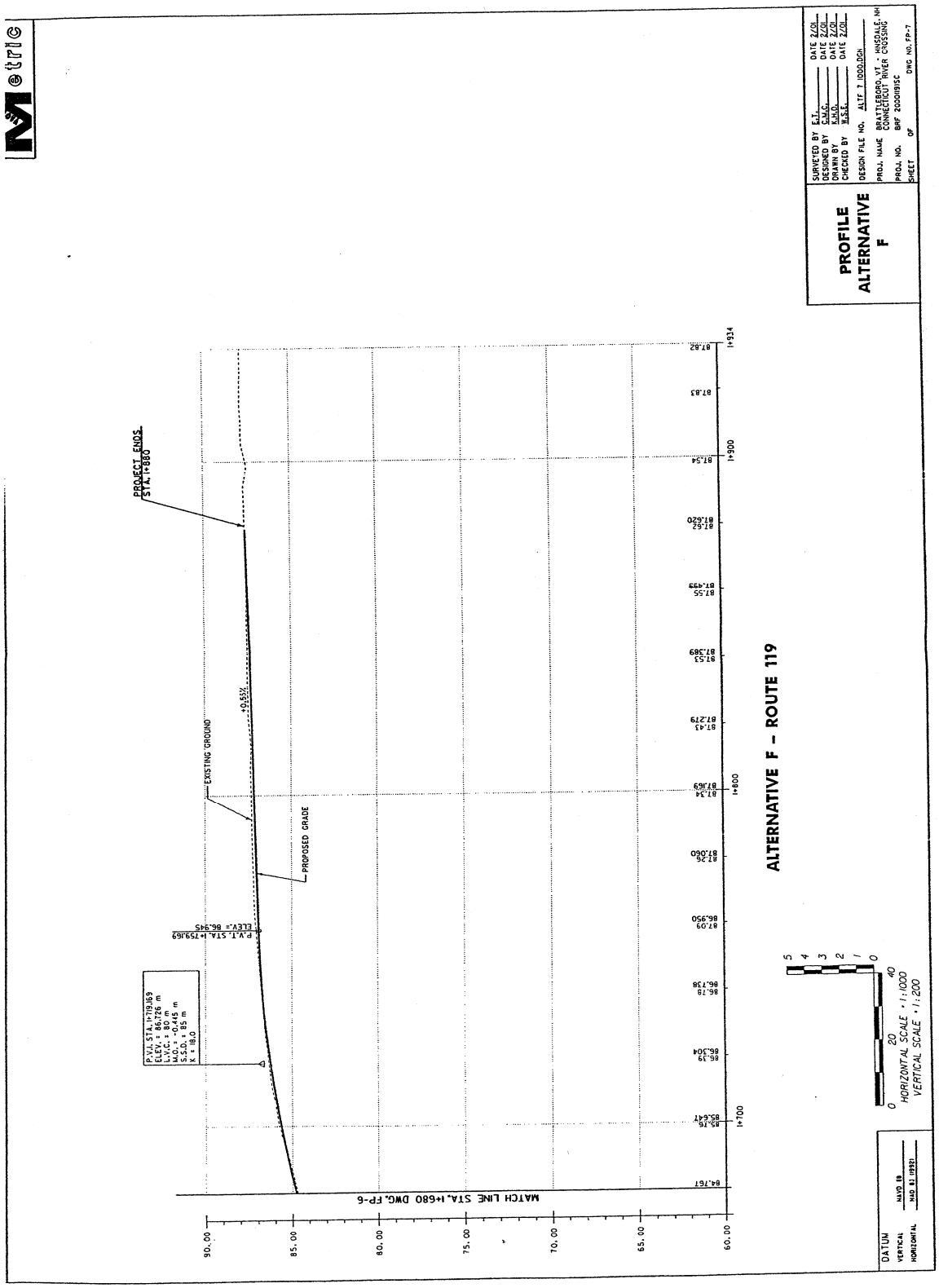


Figure A-22 – Alternative F Profile – VT 142 (North)

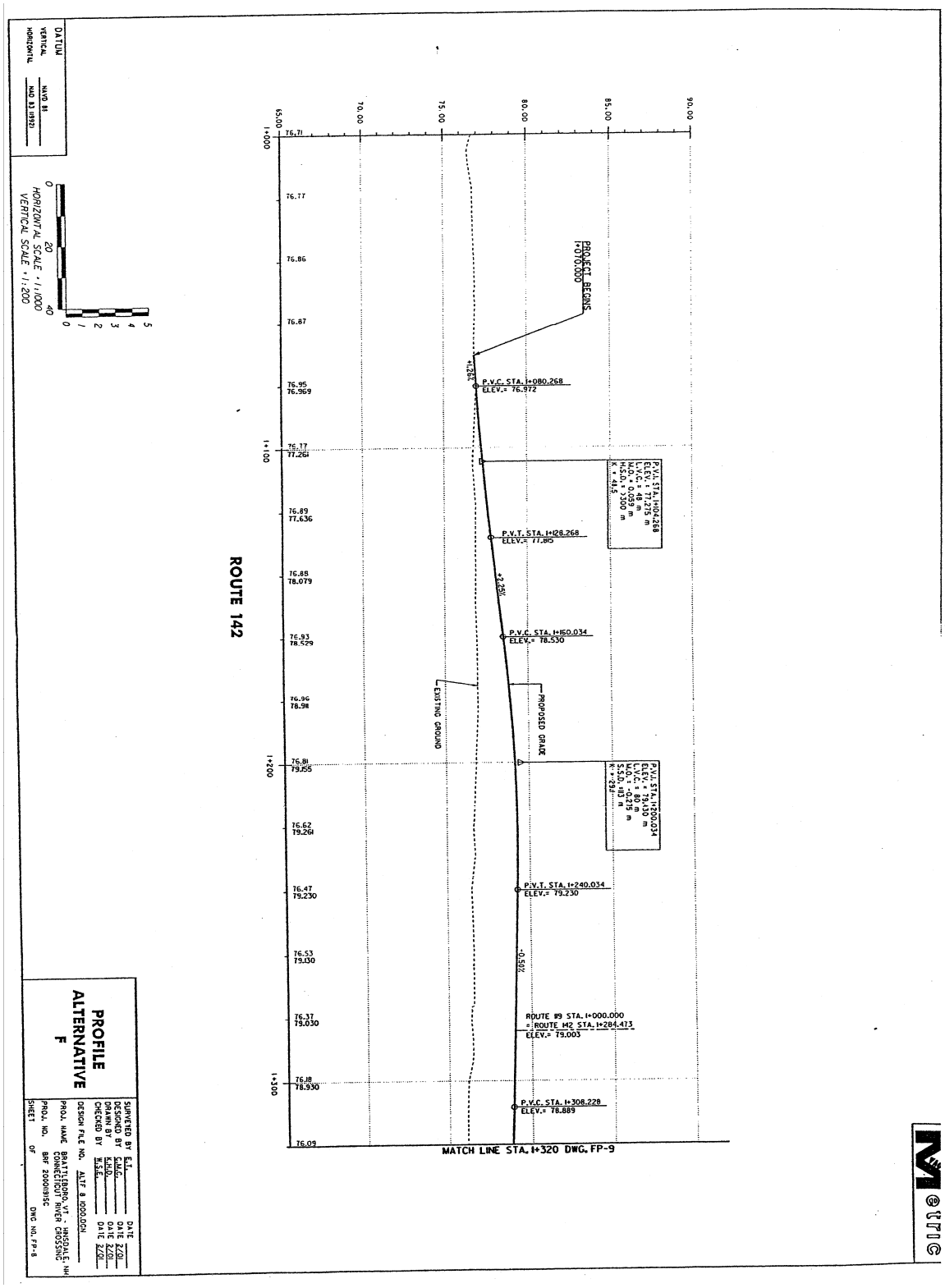


Figure A-23 – Alternative F Profile – VT 142 (South)

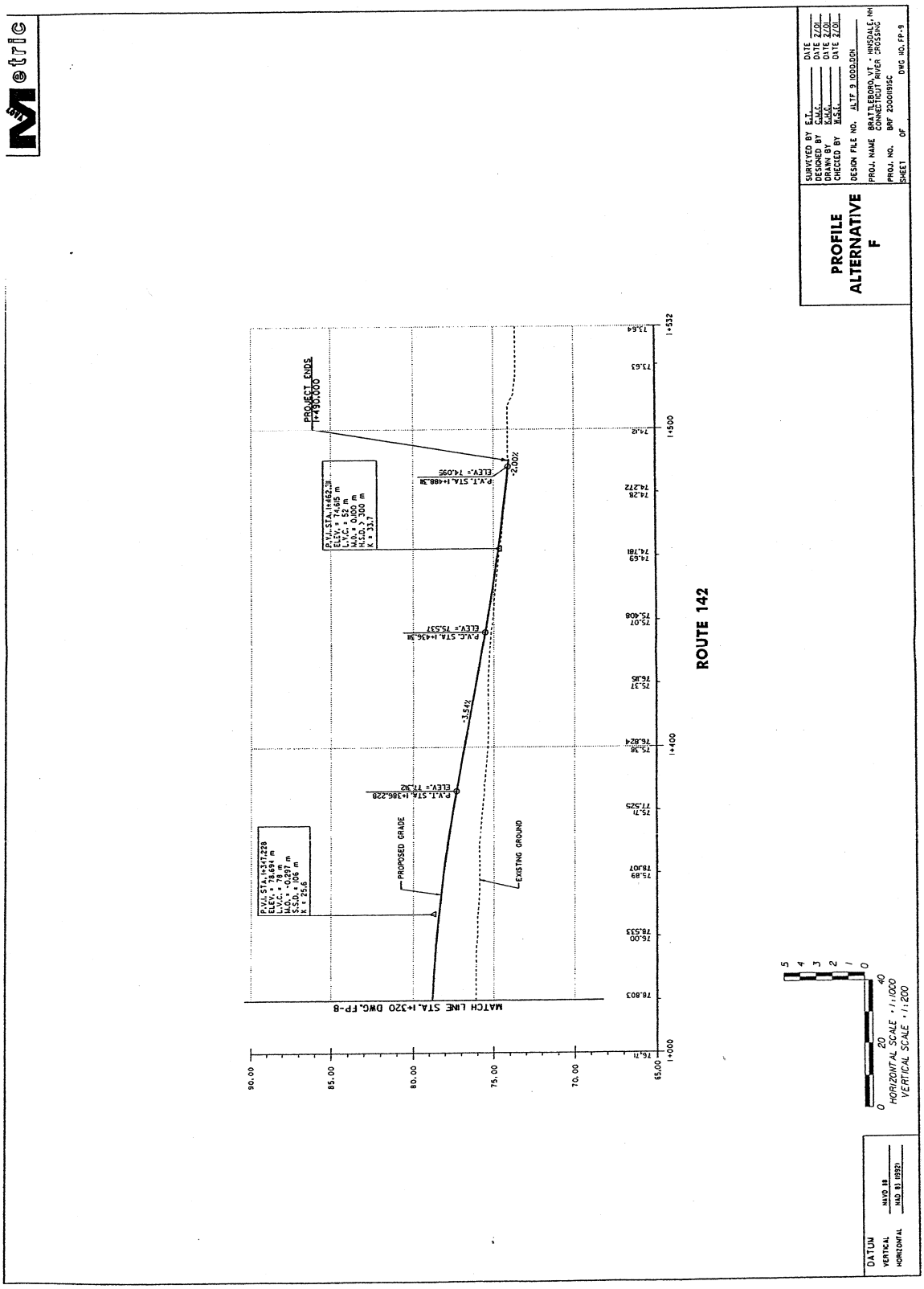


Figure A-24 – Alternative F Schematic Cross-section

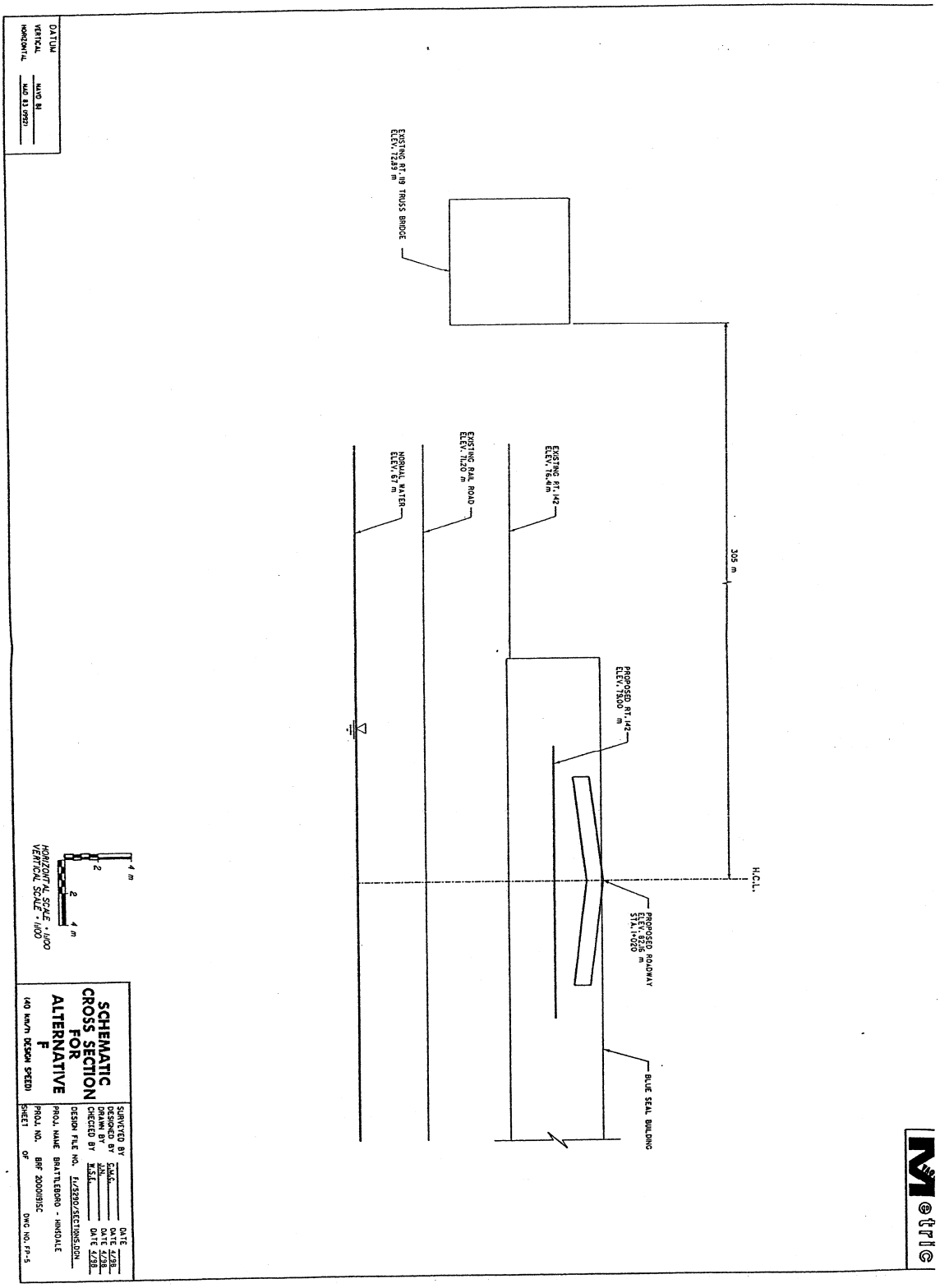


Figure A-25 – Alternative F River Access Plan

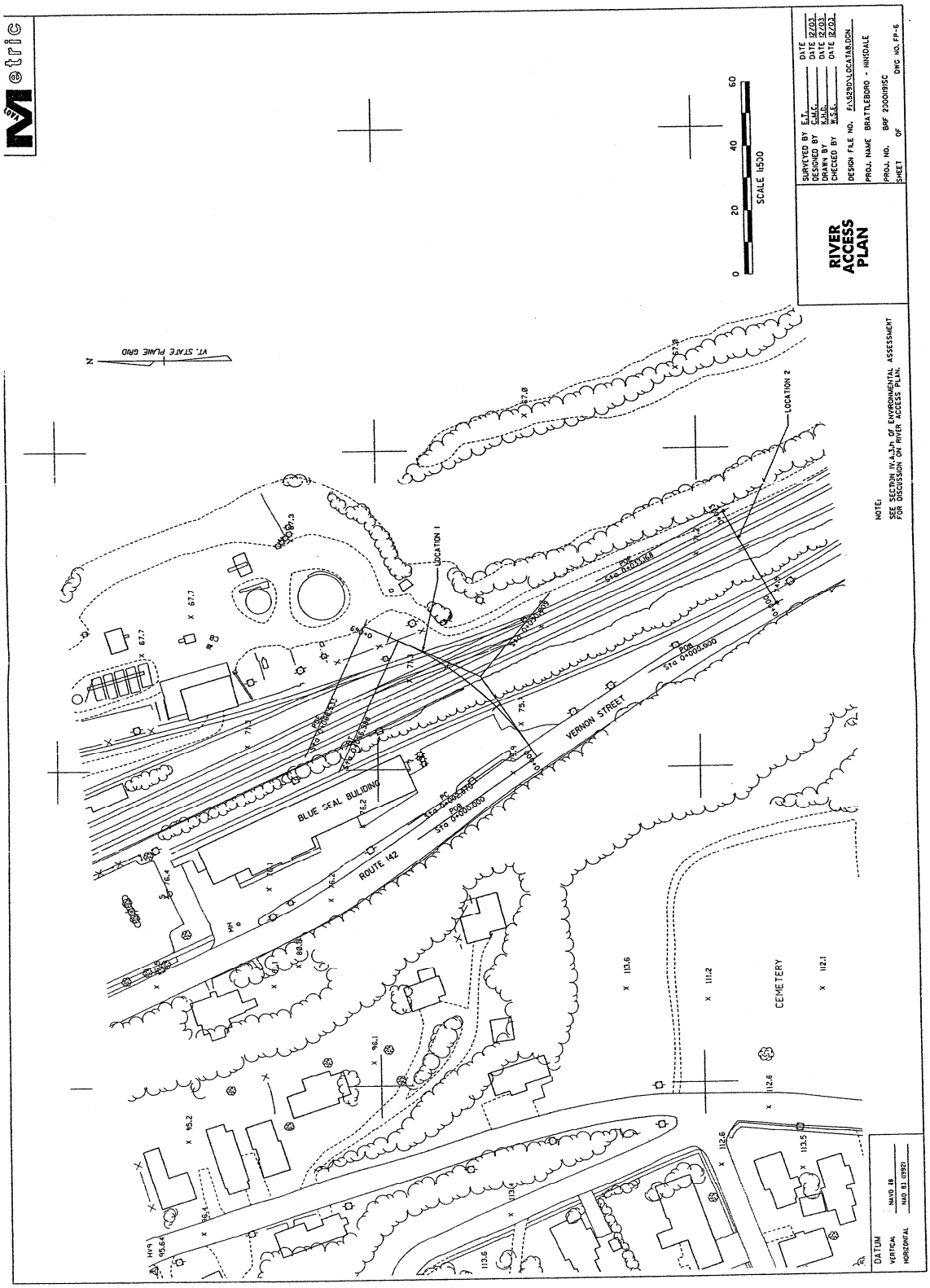
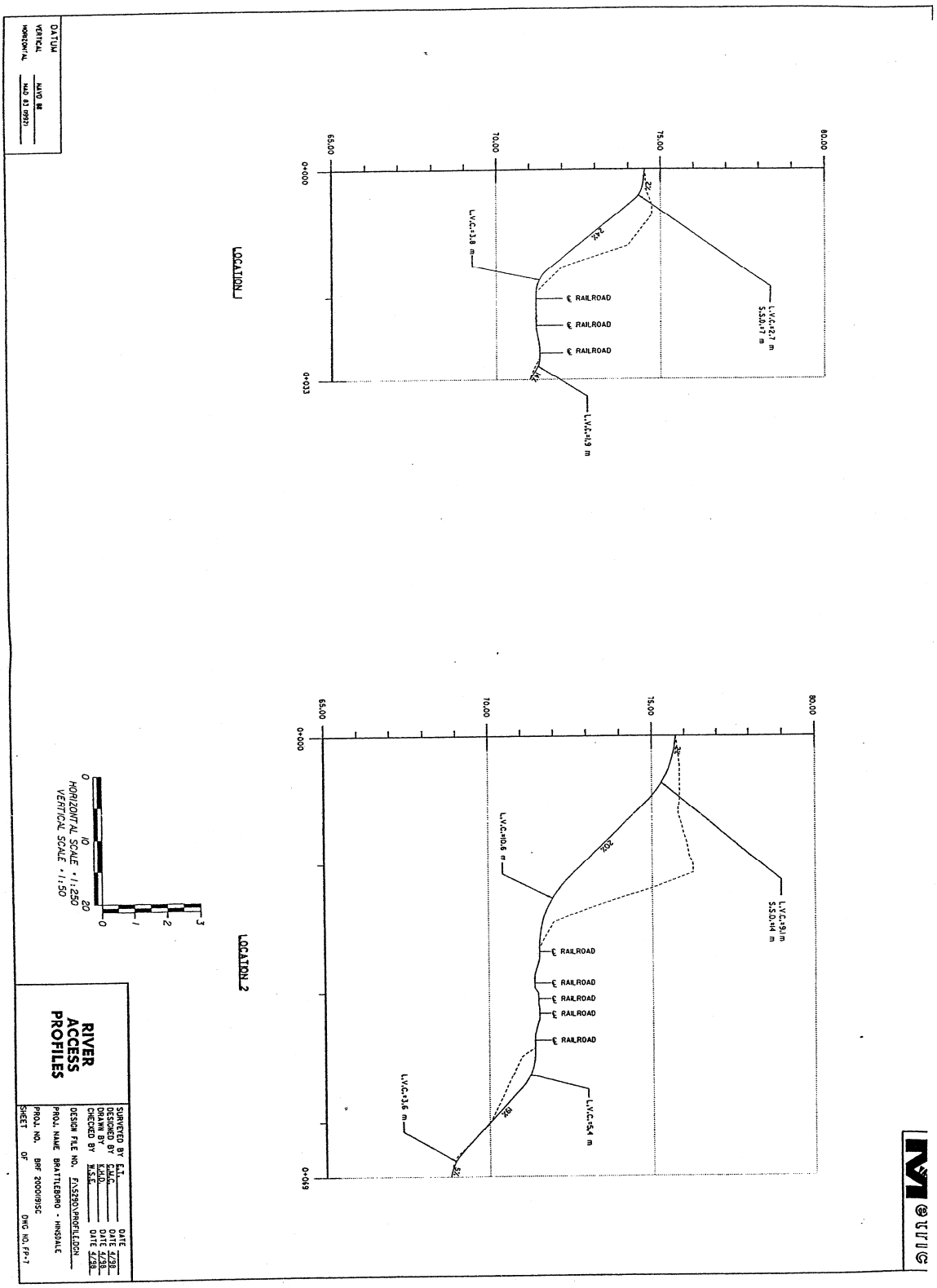


Figure A-26 – Alternative F River Access Profiles



- Alternative G (Georgia Pacific) – Replacement of Existing Bridges in the Vicinity of the Abandoned Railroad Bridge. (See Figures A-27, A-28, A-29)

  Alternative G would provide for the replacement of both the existing Route 119 eastern and western bridges with one bridge, in the vicinity of the abandoned railroad bridge. Construction would begin on VT 142 at the existing railroad siding grade crossing approximately 1 mile (1600 m) south of the Main Street intersection. The proposed bridge would be located parallel to, and just south of, the abandoned railroad bridge and would meet NH 119 approximately 1 mile (1600 m) south of the George's Field access to Route 119.

  The proposed horizontal and vertical alignments would meet standards for design speeds of 35 mph in New Hampshire and 25 mph in Vermont. Utilizing a 35 mph design speed in Vermont would locate Route 119 through a CVPS sub-station, and would require a retaining wall to avoid acquisition of two adjacent commercial properties. A 25 mph design avoids these impacts, as well as impacts to the Cersosimo Lumber Company truck garage.

  The location of the new bridge would provide two options for the existing bridges, demolition or rehabilitation. The new bridge would be too far removed from the existing bridge locations to serve pedestrians and bicyclists that currently use the existing bridges.

  A prepared "rails to trails" route utilizing the abandoned railroad bridge in the vicinity of Alternative G could limit the need for pedestrian and bicyclist provisions on the new bridge. As such, the costs shown below assume the new bridge would not provide for pedestrian and bicyclists, and the existing Route 119 bridges would be rehabilitated and utilized for pedestrian and bicyclists.

  The right-of-way required for this alternative would be approximately 4.2 acres (17,100 m^2). No residential or commercial acquisitions would be required for Alternative G.

  Figure 4, Appendix B, indicates that Alternative G would alter the travel patterns on Route 142, South Main Street, Fairground Road, and Route 5 (Canal Street). The location of Alternative G would increase the attractiveness of Fairground Road and Cotton Mill Hill over use of Route 5, South Main Street, and the Route 5/119/142 intersection for travelers

accessing the bridge. The traffic volumes through the Route 5/119/142 intersection would decrease about 10%; however, this intersection would continue to operate similar to current and projected levels of service.

The estimated construction costs (2008) associated with this alternative are as follows:

New Bridge Cost	$27,456,520
Rehabilitate Existing Bridges (Pedestrian)	$1,584,030
Temporary Bridge Cost	$0
Roadway Cost	$2,403,835
TOTAL COST	$31,444,385

Figure A-27 – Alternative G Plan

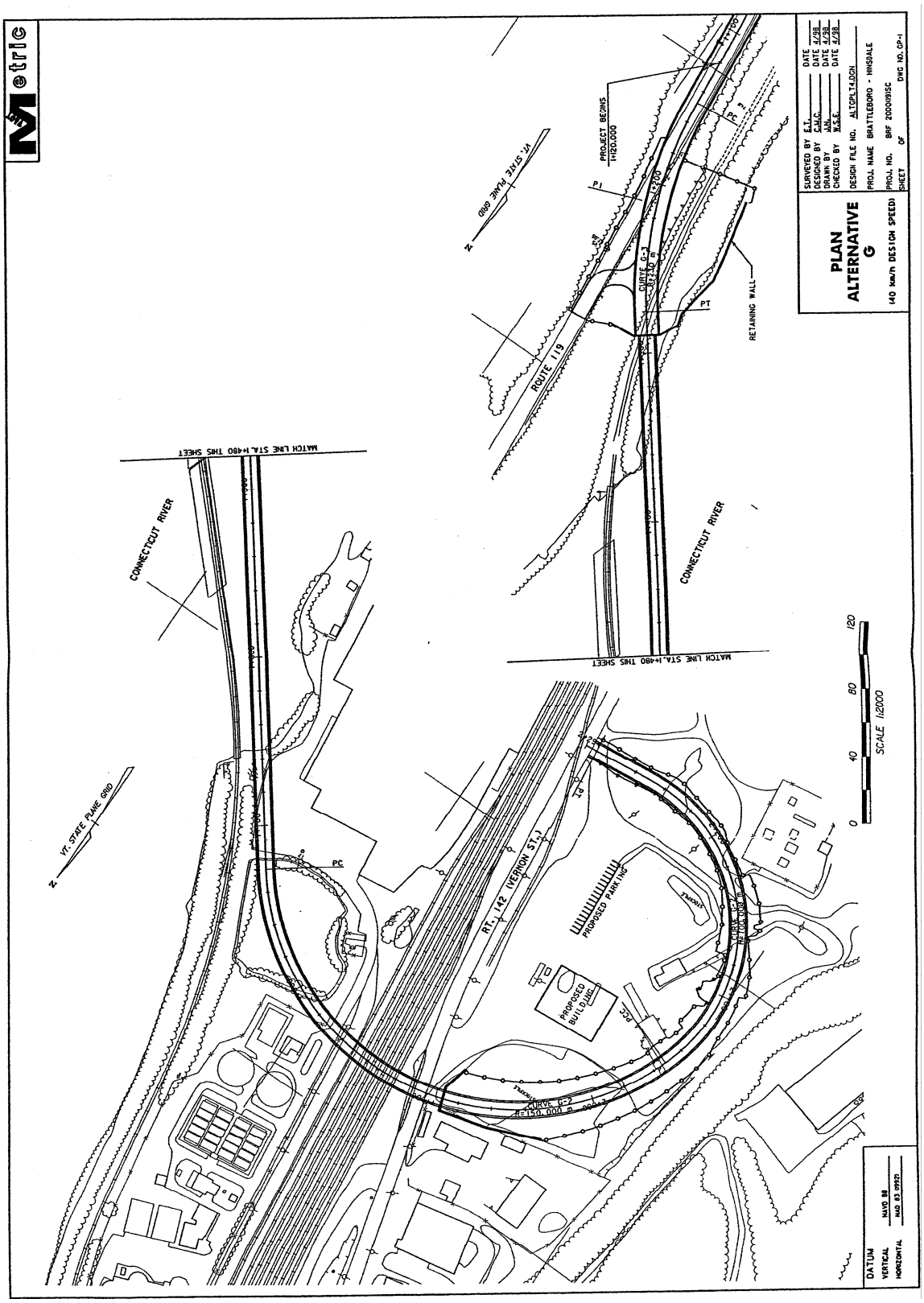


Figure A-28 – Alternative G Profile

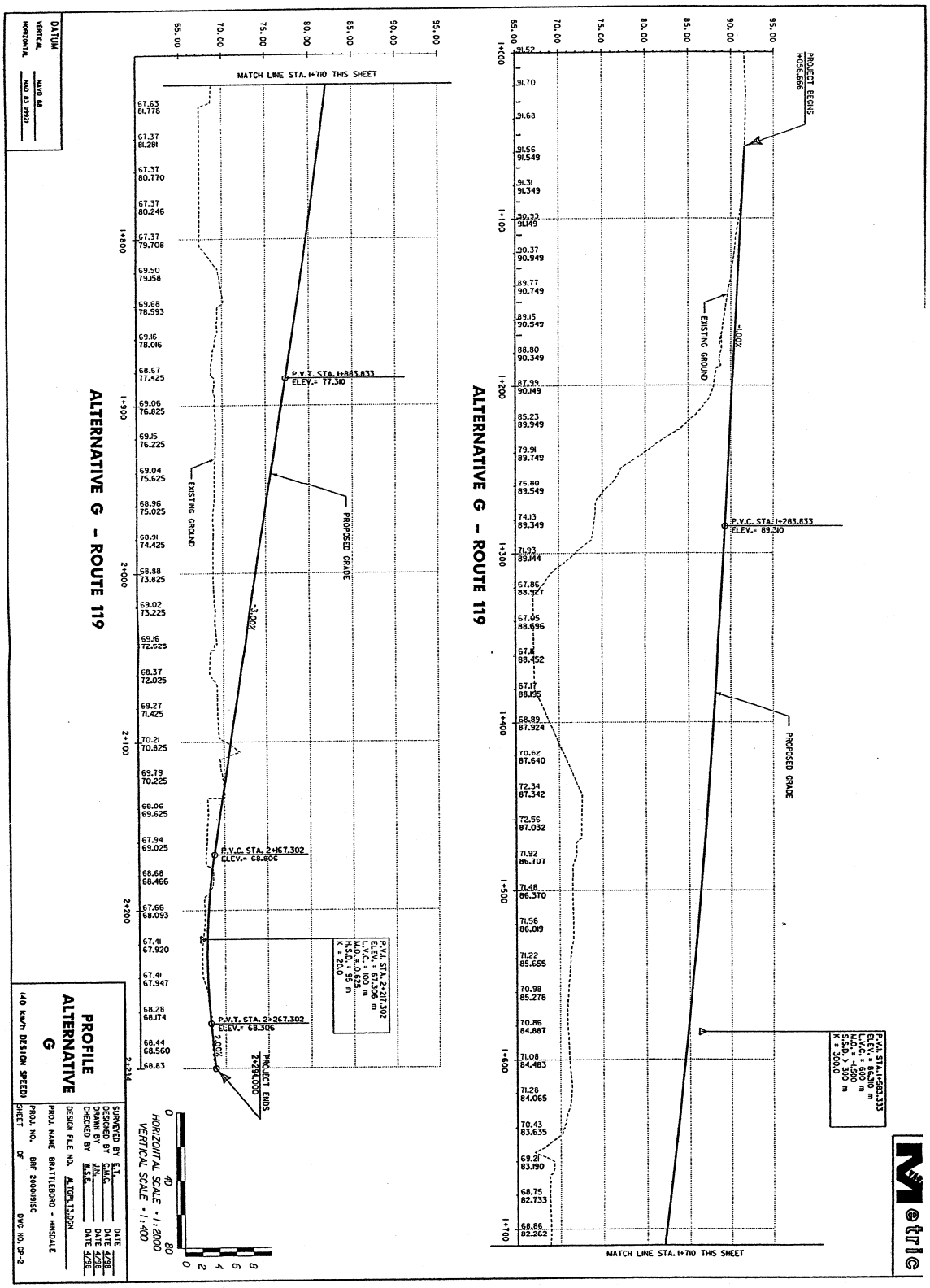
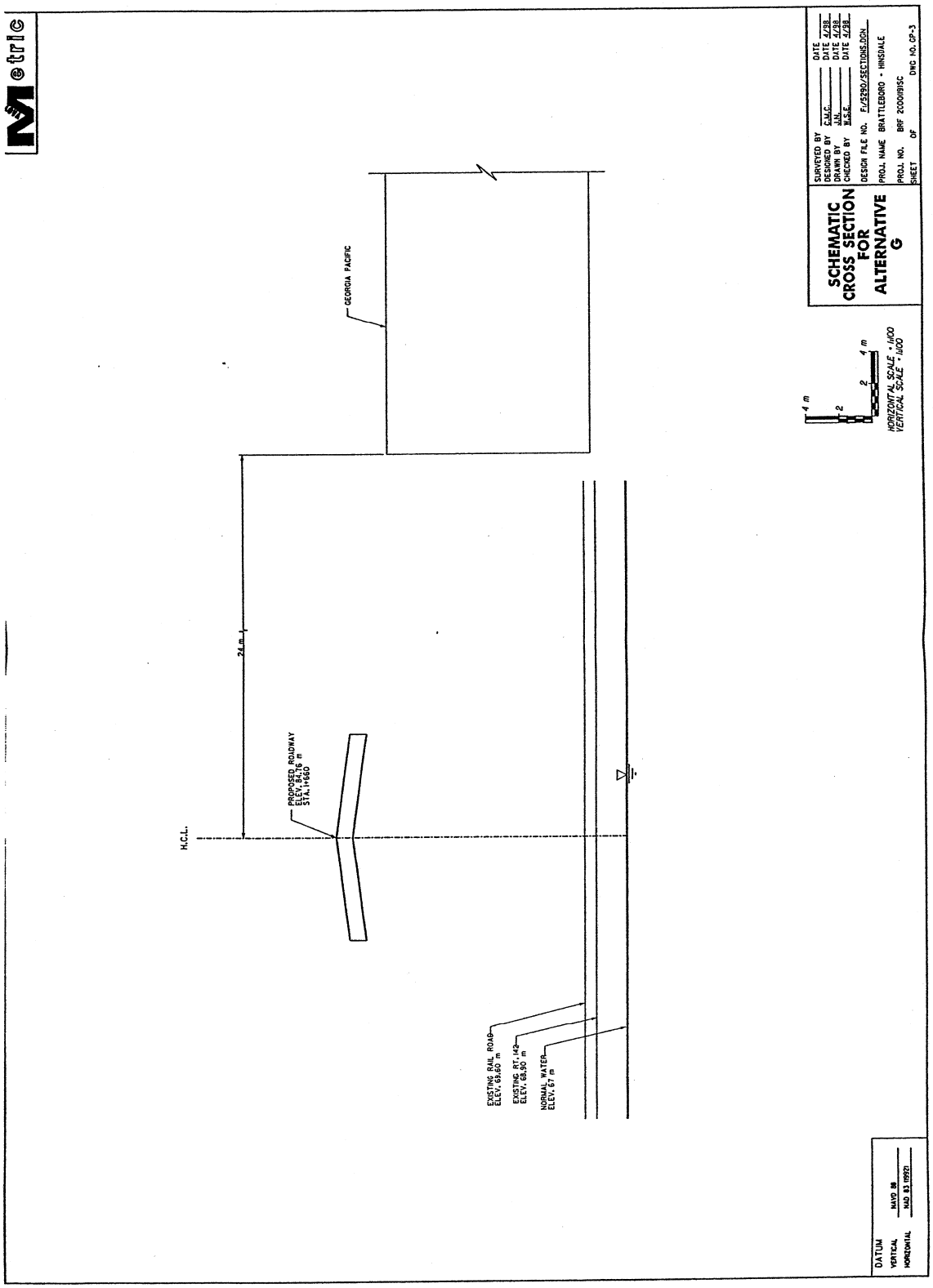


Figure A-29 – Alternative G Schematic Cross-section



- Alternative H (Route 9/Main Street) – Replacement of Existing Bridges to Intersect Main Street at the Route 9 Intersection. (See Figures A-30, A-31)

  Alternative H would provide for the replacement of both existing Route 119 bridges. Alternative H would create an alignment that would intersect Main Street at the Route 9 intersection. A grade-separated railroad crossing would be provided. The proposed horizontal and vertical alignments would meet standards for a design speed of 35 mph. The existing western bridge would remain open during construction to maintain two lanes of traffic over the main channel of the Connecticut River. The eastern bridge would be replaced and require a temporary bridge. The project would begin at the intersection of Route 9 and Main Street in Brattleboro and end approximately 66 ft (20 m) east of Mountain Drive on Route 119 in Hinsdale, NH.

  The total right-of-way required for this alternative would be approximately 1 acre (3800 m^2) and would require acquisition of one building, which contains four businesses located at the intersection of Route 9 and Main Street. No other commercial or residential displacements would be required.

  Figure 5, Appendix B, indicates that Alternative H would reduce traffic volumes on Route 5 (Main Street) and through the Route 5/119/142 intersection. Traffic volumes through the intersection would decrease approximately 35%, and the intersection could then operate at a B level of service.

  The estimated construction costs (2008) associated with this alternative are as follows:

New Bridge Cost	$24,385,725
Remove Existing Bridge	$1,167,180
Temporary Bridge Cost	$687,555
Roadway Cost	$1,917,510
TOTAL COST	$28,157,970

Figure A-30 – Alternative H Plan

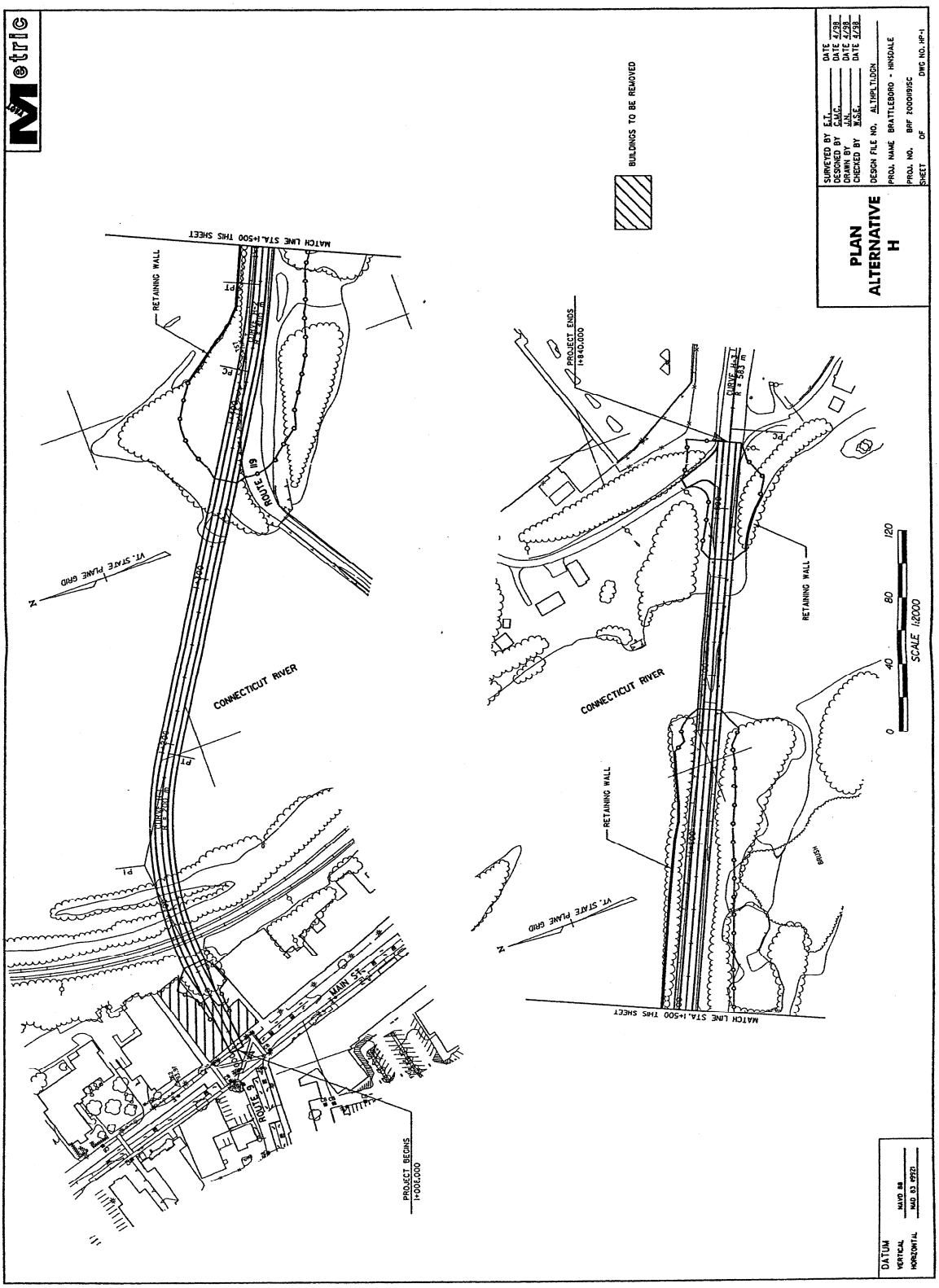
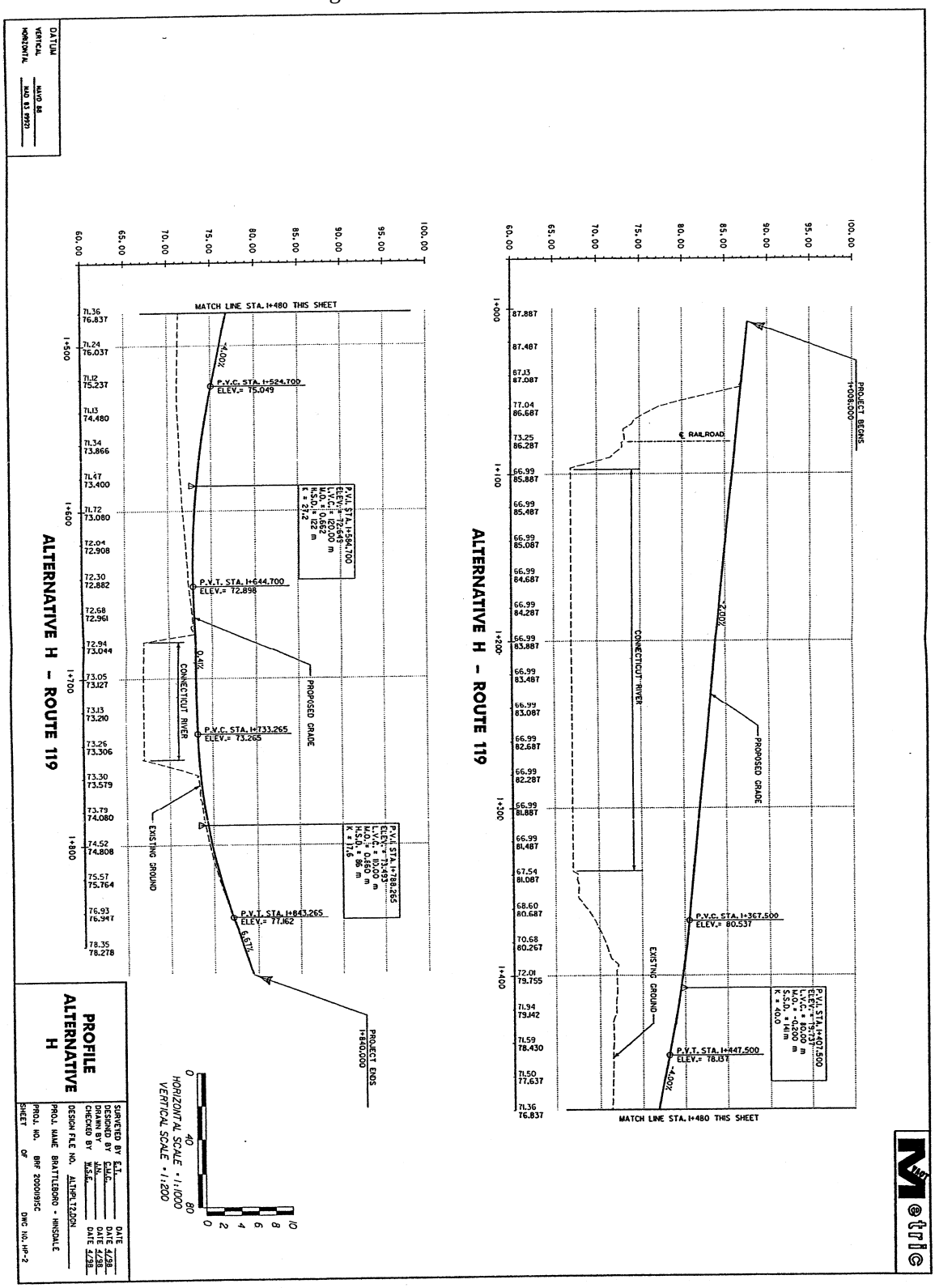


Figure A-31 – Alternative H Profile



2). ALTERNATIVE EVALUATION CRITERIA

The Bridge Committee developed a number of evaluation criteria to identify and analyze each of the proposed project alternatives. They were divided into Purpose and Need criteria or Construction criteria and are identified below:

A) Purpose and Need Criteria

The purpose and need of a project directs and focuses the process of alternative identification, analysis, and selection. The extent to which an alternative satisfies the project's purpose and need is a substantial factor in evaluating the viability of that alternative.

- Maintain Transportation Corridor – This criterion considers an alternative's ability to maintain the existing transportation corridor between downtown Brattleboro, Vermont and Hinsdale, New Hampshire. The farther the Vermont touchdown location is relocated from downtown Brattleboro, the less the alternative is able to meet this criterion. Due to the existing safety, traffic efficiency, and structural deficiencies that exist with the current Route 119 corridor crossing, the No-Action Alternative and Alternative A (Rehabilitation) do not meet this criterion. Additionally, Alternative G (Georgia Pacific), located approximately 1 mile to the south, does not meet this transportation corridor criterion due to the alternative's distance from the downtown Brattleboro area. All other alternatives meet this transportation corridor criterion.

- Correct Safety Deficiencies – The existing Route 119 corridor crossing has several transportation safety concerns, which include the at-grade railroad crossing of Route 119 between the western bridge and the Route 5/119/142 intersection. This active railroad crossing results in vehicles queuing eastward across the western bridge, and queuing westward through the Route 5/119/142 intersection during times of train passage. The lengthy blocking of Route 119 by a train at the railroad crossing can substantially degrade the shared emergency services between Brattleboro and Hinsdale. The No-Action Alternative, Alternative A (Rehabilitation), Alternative B (Replace on Existing), Alternative E (Parallel Structure), and Alternative E-Modified (Parallel Tangent Structure) would maintain a Route 119 at-grade railroad crossing. Alternatives D (Grade-Separated), F (Blue Seal), G (Georgia Pacific), and H (Route 9/Main Street) provide a grade-separated railroad crossing.

The New Hampshire approach to the eastern bridge narrows from a 32 foot (9.7 meter) roadway to a 20 foot (6.1 meter) bridge width. The roadway approach alignment to the western bridge, from the east, 187 foot radius curve leading immediately to a 20 foot (6.1 meter) bridge width. Both of these roadway deficiencies create safety concerns. The No-Action Alternative and Alternative A (Rehabilitation) do not meet the safety criterion, as these alternatives would maintain the existing roadway geometrics, bridge widths, and the at-grade railroad crossing. All other alternatives meet this safety criterion.

- Correct Structural Deficiencies – Both Route 119 bridges have deteriorated since their construction in the 1920's. The concrete in the abutments, piers and backwalls is spalled and eroded, and reinforcing steel is exposed. The strength of floor beams and stringers have had their strength substantially reduced. In 2004, New Hampshire engineers rated the western bridge as having a sufficiency rating of 30.5%, and being classified by the National Bridge Inventory (NBI) Appraisal Rating as "Functionally Obsolete". The eastern bridge had a 2004 sufficiency rating of 32.5% and an NBI Appraisal Rating of "Functionally Obsolete".

  Limited structural repairs were completed on both bridges in 1988 at a cost of $1,660,000. These repairs consisted of replacement of the bridge decking, stringers, floor beams and diaphragms, which corrected some structural deficiencies. In 2003 additional rehabilitation was performed on the bridges. This rehabilitation work consisted of replacing the steel bridge planking with precast concrete deck panels. The 2003 rehabilitation is anticipated to have a life cycle of 10 years or longer.

  The bridges continue to show signs of structural deficiencies. All alternatives, except for the No-Action Alternative and Alternative A (Rehabilitation), due to this alternative's failure to correct the existing Route 119 bridges structural loading deficiencies, were determined to meet this structural criterion.

- Correct Functional Deficiencies – The traffic functionality of the existing Route 119 bridges is limited by vertical clearance heights, curb-to-curb widths, varying roadway widths and a 187 foot radius curve on the eastern approach to the western bridge, and the at-grade rail crossing located west of the western bridge. Simultaneous passage of two large trucks across the western bridge

is very difficult. The maximum vehicle capacity that these bridges can currently accommodate is approximately 1,935 vehicles per hour. Since the No-Action Alternative, Alternative A (Rehabilitation), and Alternative B (Replace on Existing) do not correct the existing roadway geometric deficiencies, they do not meet this functional criterion. All other alternatives meet this criterion.

- Maintain Social Relationships – The Brattleboro/Hinsdale transportation corridor facilitates area social activities, influences area land uses, and allows Brattleboro and Hinsdale to share emergency rescue, fire, and medical services. Loss of this transportation corridor would adversely affect the availability of area medical services for Hinsdale residents, as the closest hospital is located in Brattleboro.

  Due to the limited ability of the exiting Route 119 structures to meet existing and projected area transportation requirements, the No-Action Alternative does not meet this criterion. Alternative D (Grade-Separated) also does not meet this criterion due to this alternative's extensive relocation impacts to the downtown Brattleboro area. Alternative G (Georgia Pacific) does meet this criterion due to Alternative G's distance from the downtown Brattleboro area. Alternative H (Route 9/Main Street) does meet this criterion due to this alternative's adverse impact on traffic and pedestrian activities near the Route 9/Main Street touchdown area in Vermont. All other alternatives meet this social criterion.

- Maintain Economic Relationships – Brattleboro is the principal commercial and industrial center in southeastern Vermont, and an important commercial and employment center for southwestern New Hampshire. Due to the close economic ties between the Brattleboro and Hinsdale communities, and the lack of any other reasonable alternative transportation route between the towns, loosing this transportation corridor would result in substantial economic hardship to the area.

  Due to the limited ability of the exiting Route 119 structures to meet existing and projected transportation requirements between Brattleboro and Hinsdale, the No-Action Alternative does meet this criterion. Alternatives D (Grade-Separated) and H (Route 9/Main Street) do not meet this criterion due to their potential to result in substantial adverse physical and economic impacts to the downtown Brattleboro businesses district. Alternative G (Georgia

Pacific) does not meet this criterion due to this alternative's distance from the downtown Brattleboro area. All other alternatives meet this economic criterion.

- Preserve Area Resources – The Brattleboro/Hinsdale transportation corridor has numerous resources that contribute to the social, economic, environmental, and aesthetic qualities of the area.

  Although, the No-Action Alternative would result in long-term socio-economic impacts to the Brattleboro/Hinsdale area, this alternative would not result in other impacts to area resources. As such, the No-Action Alternative would meet this resource criterion.

  Alternative A (Rehabilitation) would result in no impacts to agricultural land, waterbodies, threatened and endangered species, historic and archeological resources, hazardous materials, and visual resources; and only minimal impacts to water quality, fish and wildlife, floodplains, air, wetlands, and land use resources. As such, Alternative A meets this resource criterion.

  As Alternative B (Replace on Existing) results in approximately 1.7 acres of wetland impacts, 1.9 acres of floodplain impacts, demolition of the historic Route 119 bridges, and would require impacting the coal tar deposits. As such, Alternative B does not meet this resource criterion.

  As Alternative C (Alignment Improvement) results in approximately 1.9 acres of wetland impacts, 2.1 acres of floodplain impacts, demolition of the historic Route 119 bridges, and potential impacts to the exiting area coal tar deposits. As such, Alternative C does not meet this resource criterion.

  As Alternative D (Grade-Separated) results in approximately 2.5 acres of wetland impacts, 3.1 acres of floodplain impacts, substantial socio-economic and land-use impacts, adverse historic impacts to downtown Brattleboro and the historic Route 119 bridges, and potential impacts to the area's coal tar deposits. As such, Alternative D does not meet this resource criterion.

  As Alternative E (Parallel Structure) results in approximately 1.6 acres of wetlands impacts, 1.7 acres of floodplain impacts, and substantially impacts the area's coal tar deposits. As such, Alternative E does not meet this resource criterion.

As Alternative E-Modified (Parallel Tangent Structure) results in approximately 1.9 acres of wetland impacts, 2.1 acres of floodplain impacts, and substantially impacts the area's coal tar deposit areas. As such, Alternative E-Modified does not meet this resource criterion.

Alternative F (Blue Seal) would preserve and maintain the exiting Route 119 historic bridges for pedestrian and bicycle usage. This alternative would avoid impacts to: the area's coal tar deposits, agricultural lands, and archaeology resources; Alternative F would result in only minimal impacts to wetlands, threatened and endangered species, floodplains, historic, pedestrian/bicycle, land use, hazardous materials, and air quality resources. Additionally, only limited impacts would result to waterbodies, water quality, noise, fish and wildlife, visual, and socio-economic resources. As such, Alternative F meets this resource criterion.

Alternative G (Georgia Pacific) would result in substantial socio-economic impacts to downtown Brattleboro, VT, approximately 0.7 acres of wetland impacts, and 3.4 acres of floodplain impacts. As such, Alternative G does not meet this resource criterion.

Alternative H would result in substantial socio-economic impacts to downtown Brattleboro, VT, moderate land use impacts, approximately 3.4 acres of wetlands impacts, and 4.2 acres of floodplain impacts. As such, Alternative H does not meet this resource criterion.

B) Construction Criteria

- Design Speed – The State of New Hampshire has responsibility for project design for that portion of the project that is in New Hampshire, which includes the Connecticut River as it extends to the ordinary low water mark on the Vermont shoreline. The State of Vermont has responsibility for that portion of the project located western of the Vermont shoreline. The designated bridge design speed is 35 mph. Due to design limitations, the 35 mph design speed could not be achieved for the No-Action Alternative and Alternatives A (Rehabilitation), B (Replace on Existing), and E-Modified (Parallel Tangent Structure). All other alternatives have a 35 mph design speed. Alternatives F (Blue Seal) and G (Georgia Pacific) utilize a 25 mph design speed for bridge approaches on only the Vermont side.

- Disposition of Existing Bridges – The existing Route 119 bridges are classified as historic resources. The Vermont Division for Historic Preservation and the New Hampshire Division of Historic Resources have commented that the existing Route 119 bridges should be preserved. The No-Action Alternative would maintain the current status of the Route 119 bridges. Alternative A (Rehabilitation) maintains the existing bridges for traffic use. Alternatives B (Replace on Existing), C (Alignment Improvement), and D (Grade Separated) would result in the removal of the bridges. Alternatives E (Parallel Structure), E-Modified (Parallel Tangent Structure), F (Blue Seal), G (Georgia Pacific), and H (Route 9/Main Street) provide options for retaining and rehabilitating the existing bridges for pedestrian/bicycle usage.

- Bridge Typical Section – The NHDOT used the AASHTO policy of 12 foot (3.6 m) travel lanes and 10 foot (3 m) shoulders for design guidance on the bridges and eastern approaches in New Hampshire. The No-Action Alternative and Alternative A (Rehabilitation) would maintain the existing road width of 20.3 ft (6.2 meters). For this roadway classification, using AASHTO guidance, all other construction alternatives would be designed to provide for a 10-12-12-10 foot (3-5.6-5.6-3 meter) roadway typical, resulting in an overall roadway width of 44 feet (13.2 meters).

- Truss Bridges Feasibility – To assist in evaluating the potential for any new structure to aesthetically match the existing structures, the feasibility of each alternative to accommodate a truss type bridge was requested by the Bridge Committee. While this criterion was originally identified by the Bridge Committee to evaluate the potential for visual impacts, consideration of aesthetic impacts has now been integrated into the bridge type and design studies. The No-Action Alternative would retain the exiting Route 119 truss bridges. Alternatives A (Rehabilitation), B (Replace on Existing) and E-Modified (Parallel Tangent Structure) could be constructed as truss bridges. For Alternatives C (Alignment Improvement), D (Grade-Separated), E (Parallel Structure) and H (Route 9/Main Street) the east bridge could be a truss type bridge. For Alternatives D (Grade-Separated), F (Blue Seal) and G (Georgia Pacific) the western portion of the proposed bridge could be a truss type bridge.

- Grade-Separated Railroad Crossing – A grade-separated railroad crossing of Route 119 would enhance the efficiency of the transportation corridor's traffic flows, reduce the vehicular accident potential at the existing at-grade railroad crossing, and facilitate the travel of emergency vehicles between Brattleboro and Hinsdale. The No-Action Alternative would continue the existing Route 119 at-grade crossing. Alternatives A (Rehabilitation), B (Replace on Existing), and C (Alignment Improvement) do not provide for a grade-separated crossing. Alternatives E (Parallel Structure) and E-Modified (Parallel Tangent Structure), as designed, do not provide for a grade-separated railroad crossing. However, Alternative E (Parallel Structure) and E-Modified (Parallel Tangent Structure) could be designed to include a grade-separated railroad crossing. A grade-separated railroad crossing would increase the costs for Alternative E (Parallel Structure) and E-Modified (Parallel Tangent Structure) by approximately $8,190,000 each. Alternatives D (Grade-Separated), F (Blue Seal), G (Georgia Pacific) and H (Route 9/Main Street) are designed to provide for a grade-separated railroad crossing.

- Cost for Coal Tar Remediation – Located immediately south of the existing Route 119 touchdown area in Vermont is an area of coal tar deposits, which extends along the Vermont shoreline and out into the Connecticut River for approximately 150 feet (45 m). These coal tar deposits were evaluated by the E.C. Jordan Company for the New Hampshire Department of Public Highways in 1984. They were further investigated by DuBois & King, Inc., in 1998 and 1999, and Haley & Aldrich in 2000 and through 2003. Groundwater monitoring of the area near the existing western Route 119 bridge was initiated in 2001 and is ongoing.

  Any alternative, which touches down just south of the existing Vermont 119 touchdown location, or requires the construction of a temporary bridge located immediately south of the existing western bridge, could impact these coal tar deposits. Currently, these deposits are located under 6 to 10 feet of sediment and appear to be generating only limited releases of coal tar residues to the environment.

  To preclude additional coal tar releases, the area of the coal tar residues should be avoided. If avoidance is not possible or practicable, the coal tar site should either be remediated prior to construction, or specialized construction techniques utilized to minimize releases. Without knowing the full extent of the coal tar

deposits, or the exact location of new bridge piers, coal tar deposit remediation/construction costs are difficult to estimate. In 1984, the E.C. Jordan Company report indicated remediation costs might approach $1,000,000, today these costs would be substantially higher.

The No-Action Alternative and Alternative A (Rehabilitation) would not result in construction within the identified coal tar deposit areas. Alternatives B (Replace on Existing), C (Alignment Improvement), D (Grade-Separated), E (Parallel Structure) and E-Modified (Parallel Tangent Structure) would require construction or temporary bridges within the limits of the existing coal tar deposits. Alternative H (Route 9/Main Street) is located north of the coal tar deposits, Alternatives F (Blue Seal) and G (Georgia Pacific) are located south of the coal tar deposits. Construction of Alternatives F (Blue Seal), G (Georgia Pacific), and H (Route 9/Main Street) are not anticipated to result in construction impacts to these coal tar deposit areas.

- Cost for Truss Bridge – Based on the desire of the Bridge Committee for the project to aesthetically complement the existing Route 119 bridges, the potential of each alternative to incorporate a truss bridge into the design was evaluated. If a truss type bridge were to be utilized for the project, the additional costs to each of the alternatives were estimated and set forth as follows:

❑ No-Action – N/A	
❑ Alternative A (Rehabilitation)	- $0
❑ Alternative B (Replace on Existing)	- $ 1,848,035
❑ Alternative C (Alignment Improvement)	- $ 833,700
❑ Alternative D (Grade-Separated)	- $ 833,700
❑ Alternative E (Parallel Structure)	- $ 1,903,615
❑ Alternative E-Modified (Parallel Tangent Structure)	- $ 2,153,725
❑ Alternative F (Blue Seal)	- $N/A
❑ Alternative G (Georgia Pacific)	- $ 3,147,218
❑ Alternative H (Route 9/Main Street)	- $ 2,153,725

A project bridge design study will consider aesthetic requirements. A truss bridge for Alternative F was removed from consideration during the bridge structure study.

- Estimated Right-of-Way Costs – As alternative design plans are only pre-conceptual, construction limits and property takings have not yet been clearly defined. However, to provide some estimation of the potential right-of-way costs associated with each alternative, right-of-way costs are described utilizing the terms low, moderate and high. Project right-of-way costs are estimated to be between $1 million and $10 million.

  The No-Action Alternative and Alternative A (Rehabilitation) are not anticipated to result in any additional right-of-way acquisition costs. Alternatives B (Replace on Existing), C (Alignment Improvement), E (Parallel Structure), and E-Modified (Parallel Tangent Structure) are anticipated to have low right-of-way acquisition costs. Alternatives G (Georgia Pacific) and H (Route 9/Main Street) are anticipated to have moderate right-of-way acquisition costs. Both alternatives D (Grade-Separated), and F (Blue Seal), are anticipated to have a high right-of-way acquisition costs. These relocation cost classifications are for alternative comparisons only, and may be subject to substantial changes upon a final determination of property acquisition requirements.

- Construction Costs – Estimated construction costs (in year 2008 dollars) for each alternative are set forth more fully previously in this Appendix. Construction costs include the costs of demolition for Alternatives B (Replace on Existing), C (Alignment Improvement), D (Grade-Separated), and H (Route 9/Main Street). Construction costs for Alternatives E (Parallel Structure), E-Modified (Parallel Tangent Structure), F (Blue Seal), and G (Georgia Pacifica) include rehabilitation of the existing bridges for pedestrian and bicyclist usage. If the existing bridges are to be removed instead of rehabilitated, then the cost of these alternatives could be reduced by approximately $300,000. Estimated construction costs, for each alternative, (year 2008 dollars) are identified as follows:

  - No-Action – N/A
  - Alternative A (Rehabilitation) - $ 2,528,890
  - Alternative B (Replace on Existing) - $12,977,930
  - Alternative C (Alignment Improvement) - $14,839,860
  - Alternative D (Grade-Separated) - $28,526,435
  - Alternative E (Parallel Structure) - $10,706,098
  - Alternative E-Modified (Parallel Tangent Structure) - $10,706,098
  - Alternative F (Blue Seal) - $31,500,000

- Alternative G (Georgia Pacific) - $31,444,385
- Alternative H (Route 9/Main Street) - $28,157,970

- Traffic Maintenance During Construction – Maintaining a transportation corridor between Brattleboro and Hinsdale during construction is essential to maintain existing economic and social relationships, and to provide for area emergency services. The No-Action Alternative would maintain the existing transportation corridor facilities. Alternative A (Rehabilitation) would maintain the existing corridor through phased construction techniques, which would require one lane usage of the existing bridges. Alternatives B (Replace on Existing), C (Alignment Improvement), and D (Grade-Separated) would require the construction of temporary bridges during construction. For these alternatives, the western temporary bridge would be located immediately south of the existing Route 119 west bridge, the eastern temporary bridge would be located immediately north of the existing Route 119 east bridge. Alternatives E (Parallel Structure), E-Modified (Parallel Tangent Structure), F (Blue Seal), and G (Georgia Pacific) would use the existing bridges for traffic during construction. Alternative H (Route 9/Main Street) would use the existing western bridge during construction, but require a temporary eastern bridge.

C) Alternative Evaluation Table

Construction criteria, with estimated construction costs, are set forth for each alternative in the following table. Additionally, the ability of each alternative to meet the project's purpose and need criteria is set forth in the table. The table was developed and utilized by the Bridge Committee to summarize and evaluate the project's alternatives.

Table A-1: Alternative Evaluation Table

		ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E	ALTERNATIVE E-Modified	ALTERNATIVE F	ALTERNATIVE G	ALTERNATIVE H
	No-Action	**Rehabilitation**	**Replace on Existing**	**Alignment Improvement**	**Improvement and Grade Separated**	**Parallel Structure**	**Parallel Tangent Structure**	**Blue Seal (Preferred)**	**Georgia Pacific**	**Route 9/Main Street**
PURPOSE AND NEED CRITERIA										
Maintain Transportation Corridor	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Correct Safety Deficiencies	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Correct Structural Deficiencies	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Correct Functional Deficiencies	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maintain Social Relationships	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
Maintain Economic Relationships	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
Preserve Area Resources (11)	Yes	Yes	No	No	No	No	No	Yes	No	No
CONSTRUCTION CRITERIA										
Design Speed	N/A	25 mph (1)	35 mph (1)	35 mph	35 mph	35 mph	34 mph (1)	35 mph	35 mph	35 mph
Disposition of Existing Bridges	N/A	Used For Traffic	Removed	Removed	Removed	Options (2)	Options (2)	Options (2)	Options (2)	Options (2)
Bridge Typical Section (3)	N/A	10'-2"-10'-2"	10'-12'-12'-10'	10'-12'-12'-10'	10'-12'-12'-10'	10'-12'-12'-10'	10'-12'-12'-10'	10'-12'-12'-10'	10'-12'-12'-10'	10'-12'-12'-10'
Truss Bridge Feasibility (4)	N/A	Yes	Yes	Yes (5)	Yes (5, 6)	Yes (5)	Yes	Yes (6)	Yes (6)	Yes (5)
Grade-Separated Railroad Crossing	N/A	No	No	No	Yes	No (7)	No (7)	Yes	Yes	Yes
Cost for Coal Tar Remediation	N/A	$0	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$0 (8)	$0 (8)	$0 (8)
Cost for Truss Bridge	N/A	$0	$1,848,035	$833,700	$833,700	$1,903,615	$2,153,725	N/A (4)	$3,147,218	$2,153,725
Estimated ROW Costs	N/A	$0	Low	Low	High	Low	Low	High	Moderate	Moderate
Construction Costs (9)	N/A	$2,528,890	$12,977,930	$14,839,860	$28,526,435	$10,706,098	$10,706,098	$31,500,000	$31,444,385	$28,157,970
Traffic Maintenance During Construction	N/A	Staged Construction	Temporary Bridges	Temporary Bridges	Temporary Bridges	Existing Bridges	Existing Bridges	Existing Bridges	Existing Bridges	Existing (10) & Temporary

PURPOSE AND NEED RATINGS:
Yes - Alternative meets the purpose and need criteria.
No - Alternative does not meet the purpose and need criteria.

CONSTRUCTION NOTES:
(1) Due to design limitation, Alternatives A, B and E-Modified a design speed of 35 mph is not achievable.
(2) With Alternatives E, E-Modified, F, G and H the existing bridges could be rehabilitated for pedestrians and bicyclists ($1,584,030), vehicle traffic ($1,917,510) or removed ($1,167,180).
(3) Preliminary design speeds and lane widths.
(4) Based upon the desire of the Bridge Committee to evaluate the potential of a new bridge to be a truss type bridge, which could aesthetically complement the existing Route 119 bridges. A project bridge design study is ongoing, which will consider aesthetic requirements. A trust bridge for Alternative F was removed from consideration during the bridge structure type study.
(5) For Alternatives C, D, E and H the east bridge could be a truss.
(6) For Alternative D, F and G, a portion of the bridge could be a truss.
(7) As shown, Alternative E and Alternative E-Modified do not include a grade-separated rail crossing. However, Alternative E and Alternative E-Modified could include a grade-separated rail crossing. The impacts would be similar to Alternative D, and the cost would increase by $11,380,005 over the cost shown for Alternative E and Alternative E-Modified.
(8) Alternatives F and G are south of the existing coal tar deposits, Alternative H is north of the coal tar deposits, estimated remediation costs are in 1984 dollars and would be substantially more in present day estimates.
(9) The costs for Alternative A assumes the existing Route 119 bridges are rehabilitated for vehicular traffic. The costs for Alternatives B, C, D and H assume the existing Route 119 bridges are removed. The costs for Alternatives E, E-Modified, F and G assume the existing Route 119 bridges are rehabilitated for pedestrian usage. All construction costs are estimated in year 2008 dollars.
(10) For Alternative H, the west bridge would be utilized for traffic during construction; construction of the east bridge would require a temporary bridge.
(11) See Resource Summary Table, pg. C-21, for individual environmental analyses for each category (see also, Appendix F).

Appendix B

APPENDIX B - Traffic Volumes

Table of Contents

Table of Contents Cont.

Page

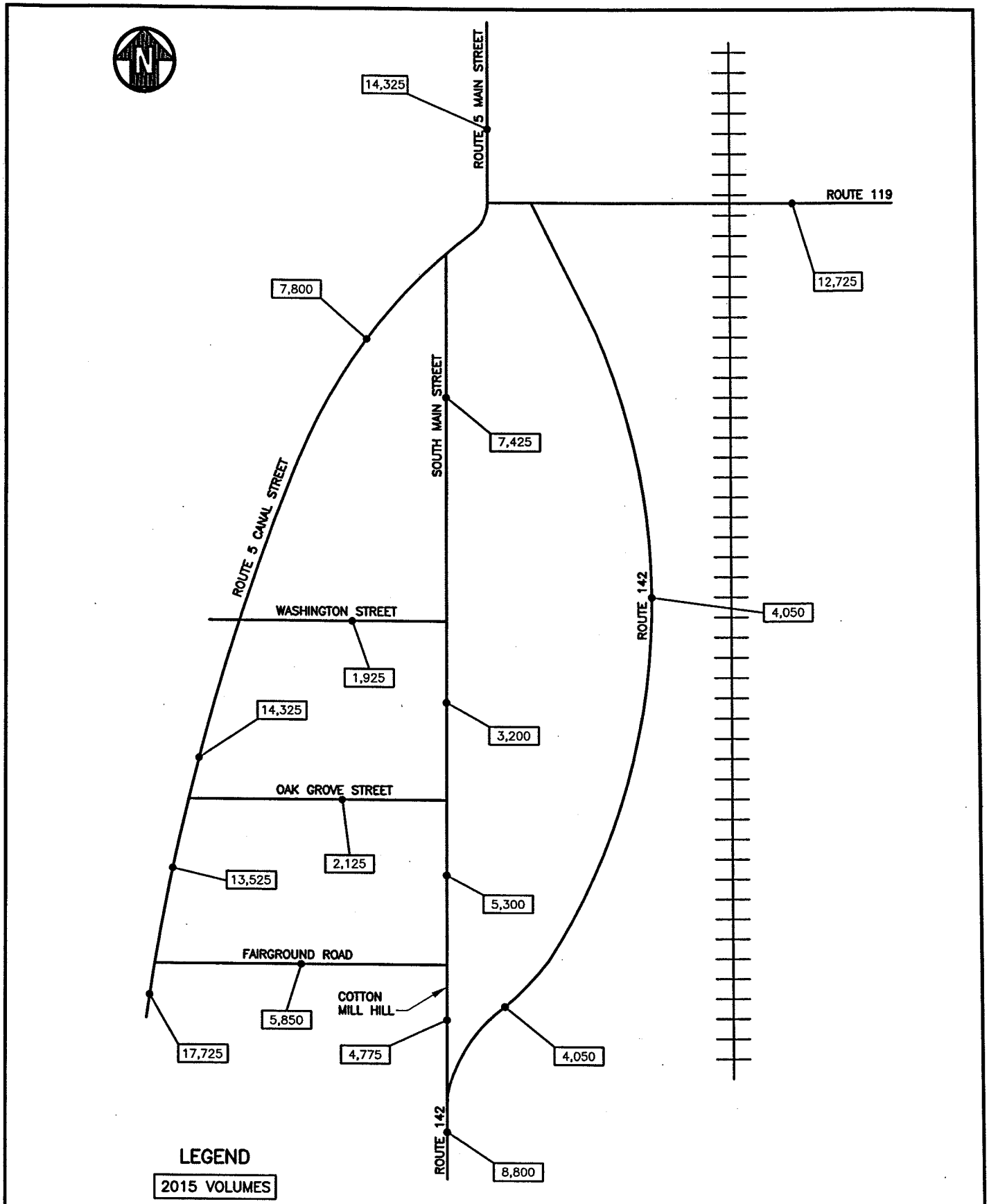


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FIGURE 1
2015 DAILY TRAFFIC VOLUMES
(NULL ALTERNATIVE)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

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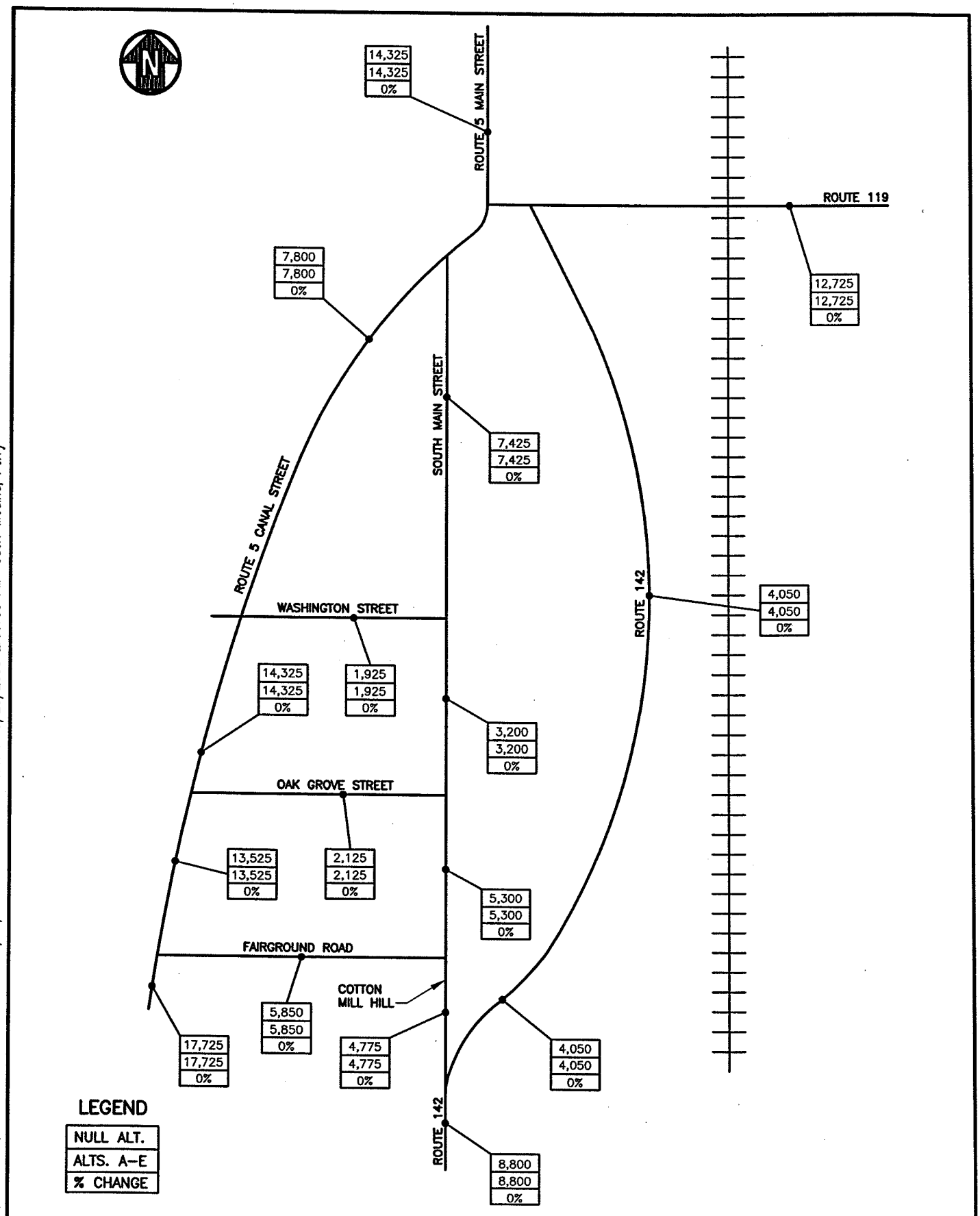

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FIGURE 2
2015 DAILY TRAFFIC VOLUMES
(ALTERNATIVES A – E)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

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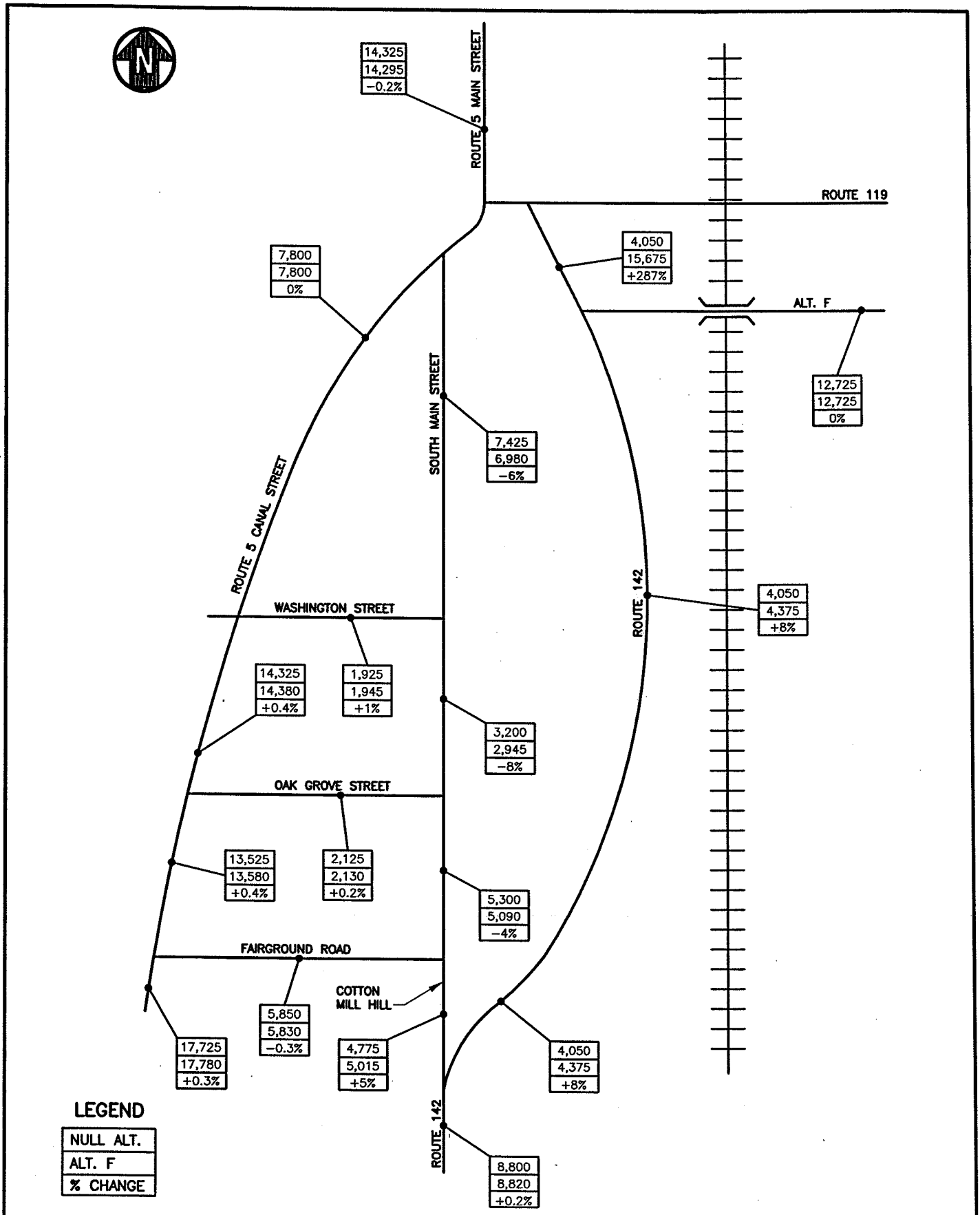

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FIGURE 3
2015 DAILY TRAFFIC VOLUMES
(ALTERNATIVE F)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

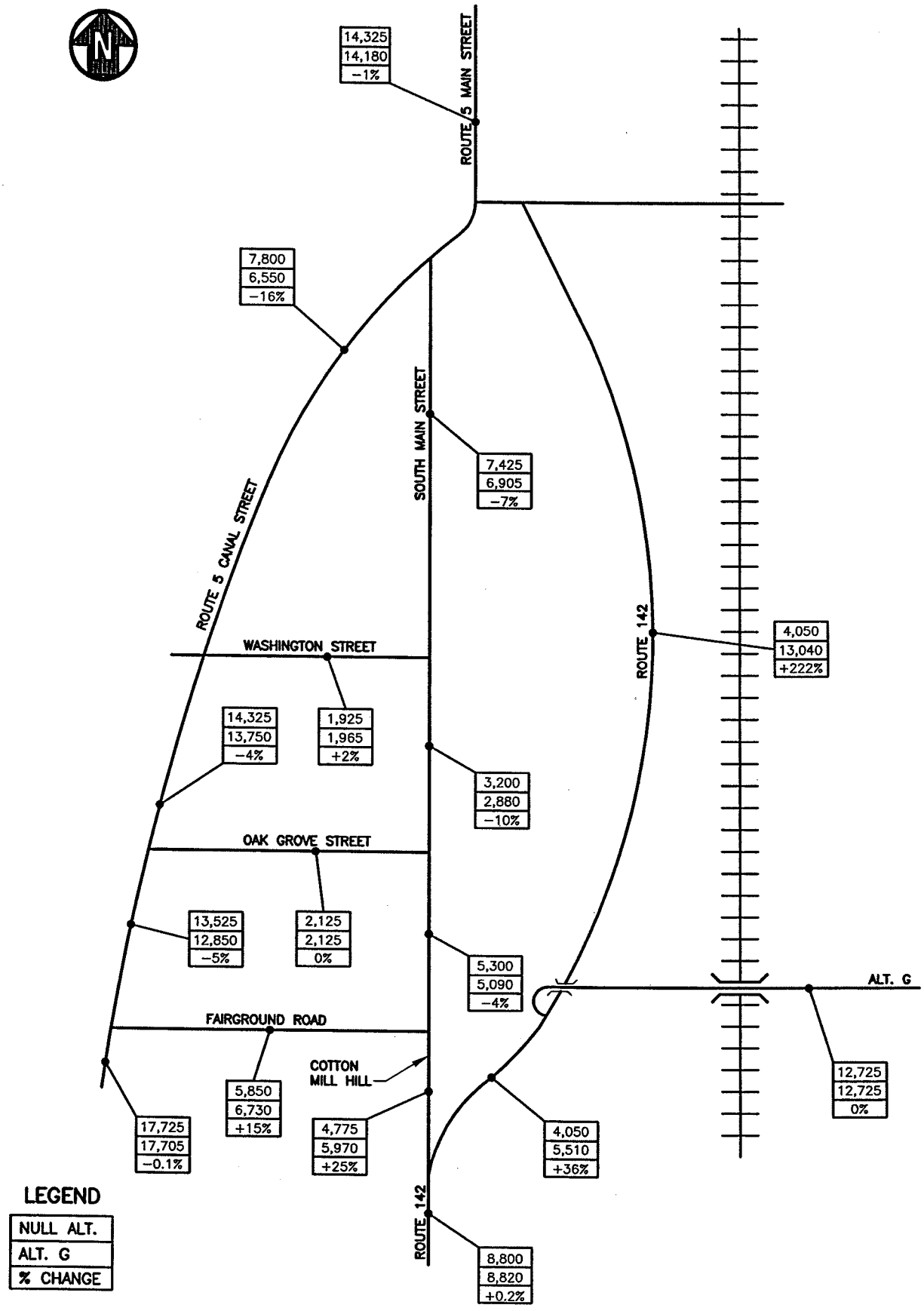

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FIGURE 4
2015 DAILY TRAFFIC VOLUMES
(ALTERNATIVE G)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

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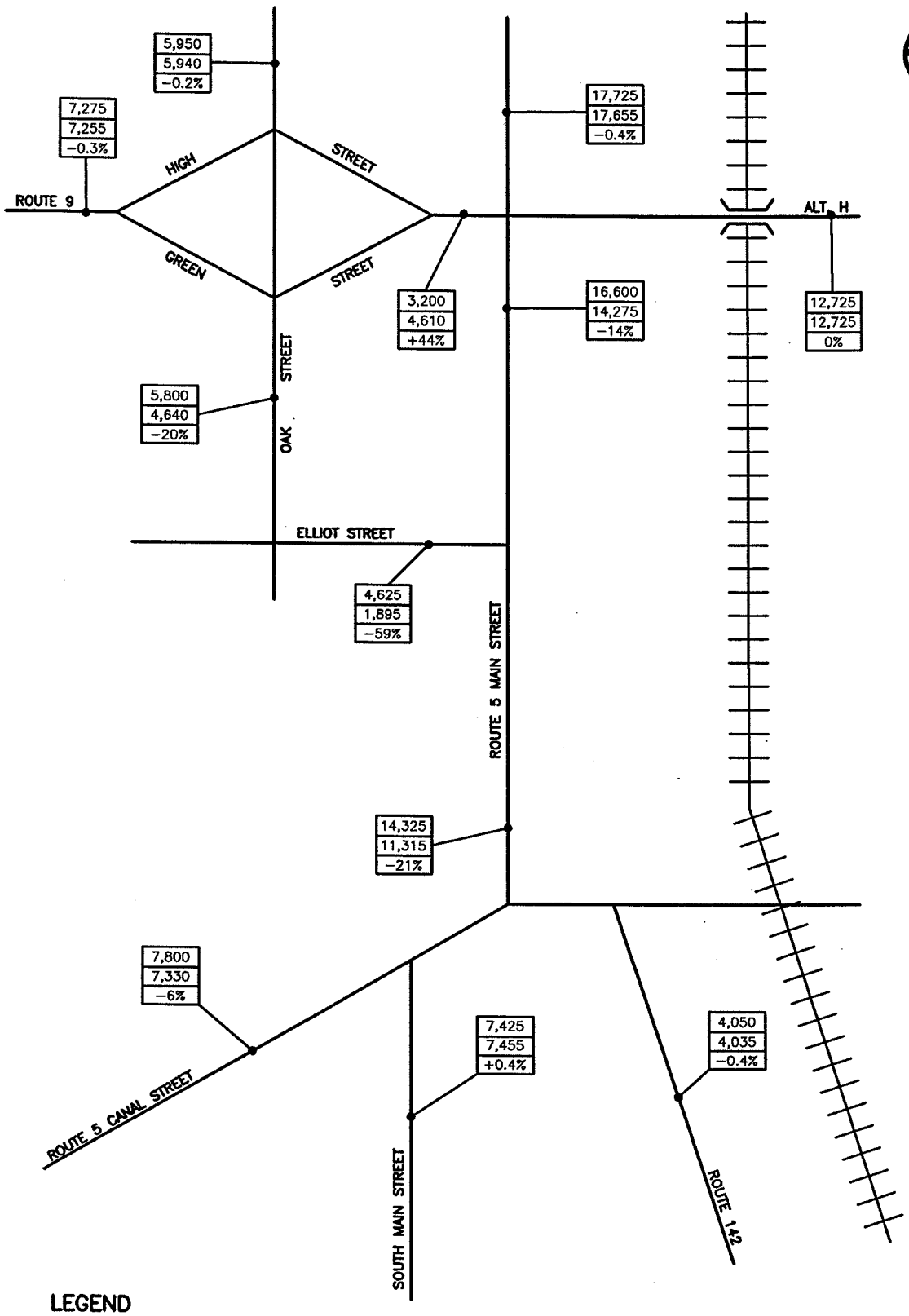

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FIGURE 5
2015 DAILY TRAFFIC VOLUMES
(ALTERNATIVE H)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

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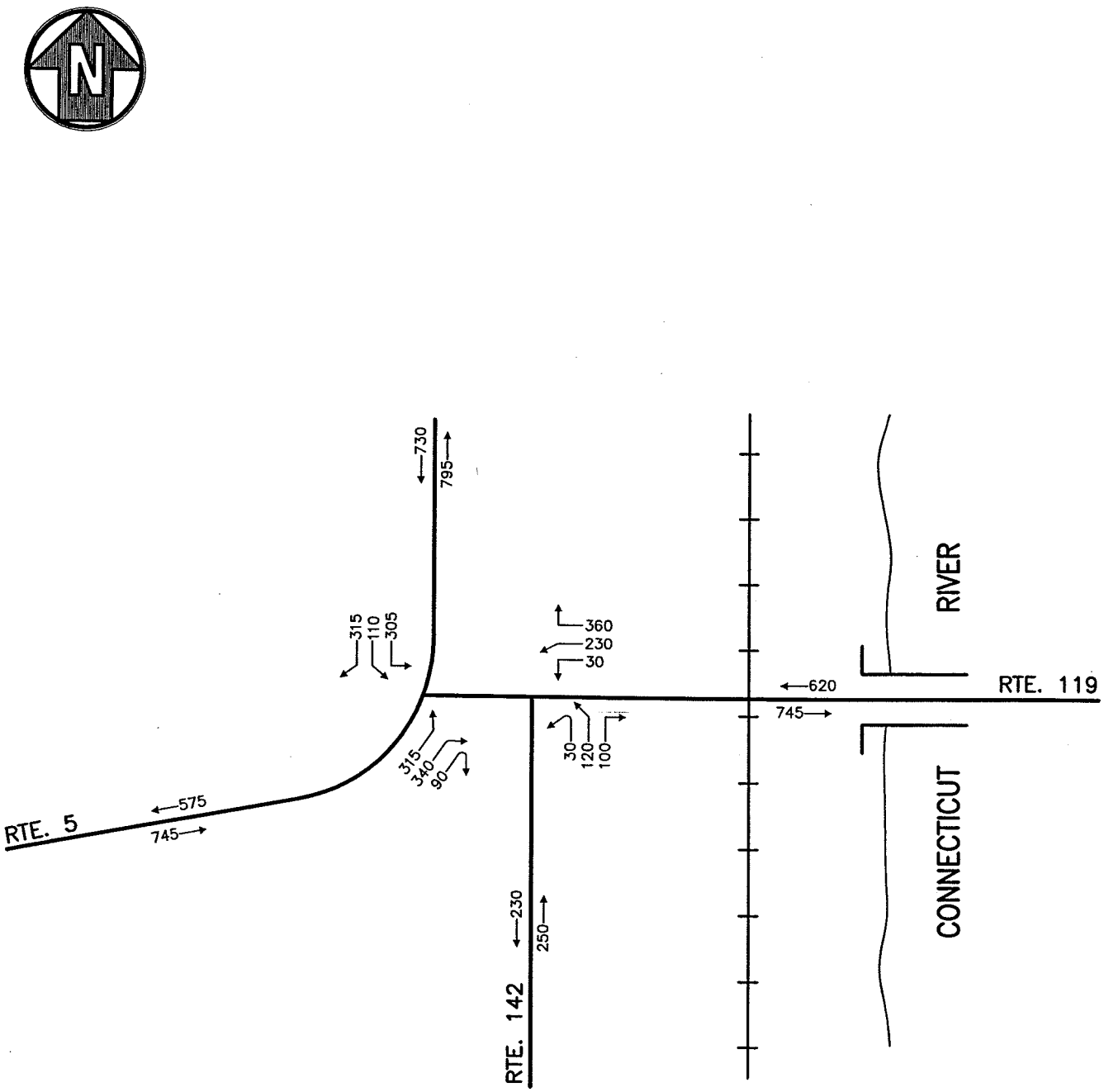

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FIGURE 6
2015 DESIGN HOUR TRAFFIC VOLUMES
(NULL ALTERNATIVE)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

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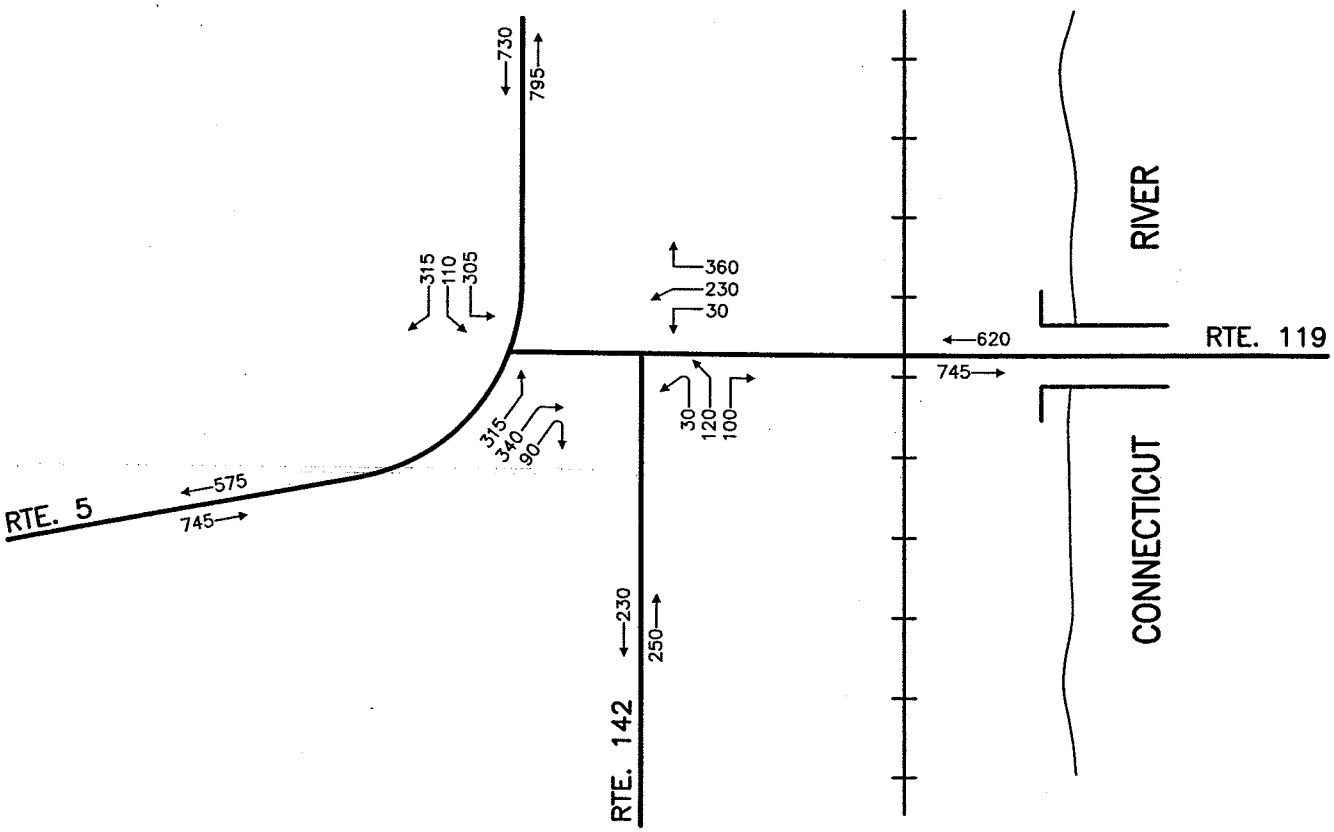

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FIGURE 7
2015 DESIGN HOUR TRAFFIC VOLUMES
(ALTERNATIVES A – E)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

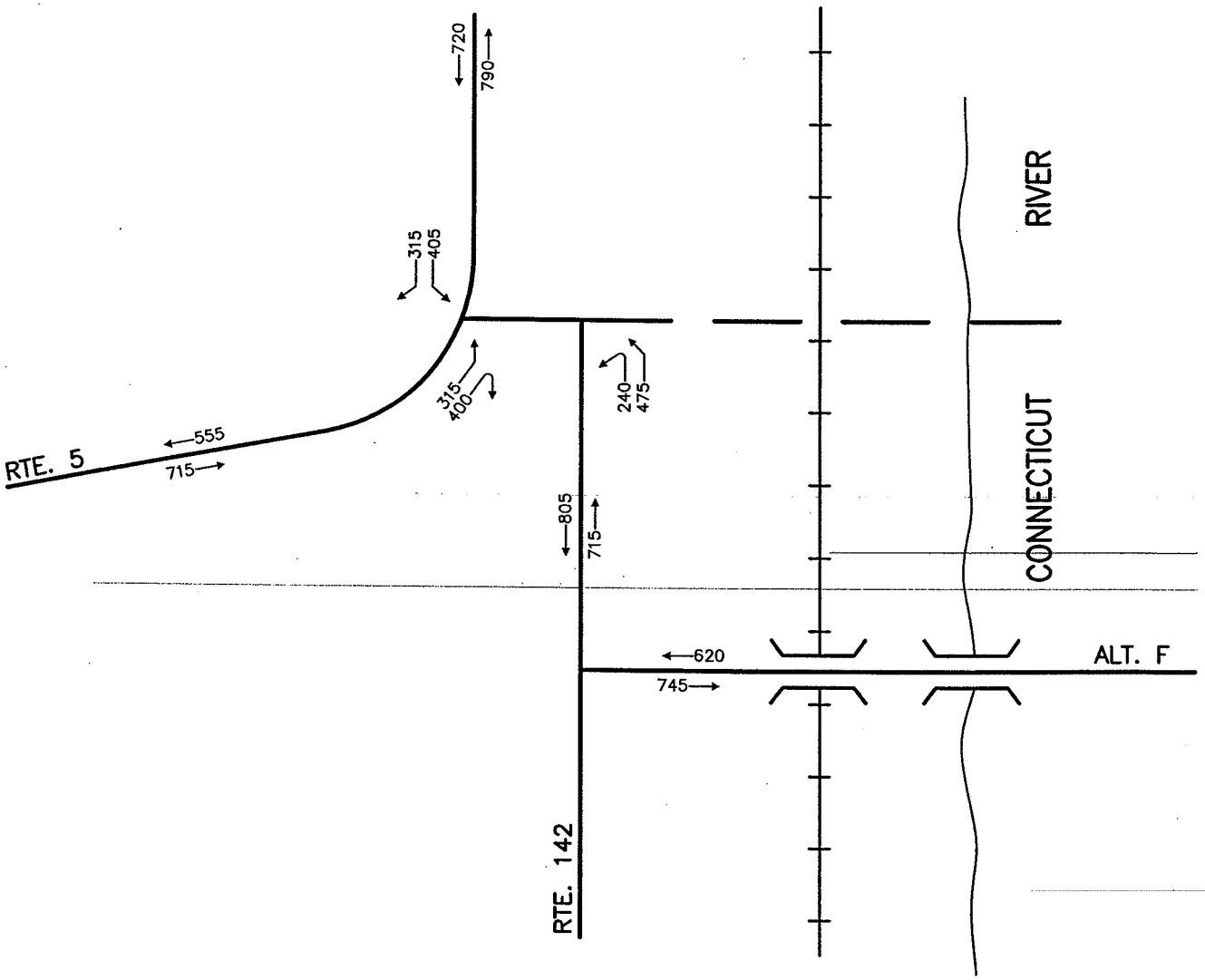

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FIGURE 8
2015 DESIGN HOUR TRAFFIC VOLUMES
(ALTERNATIVE F)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

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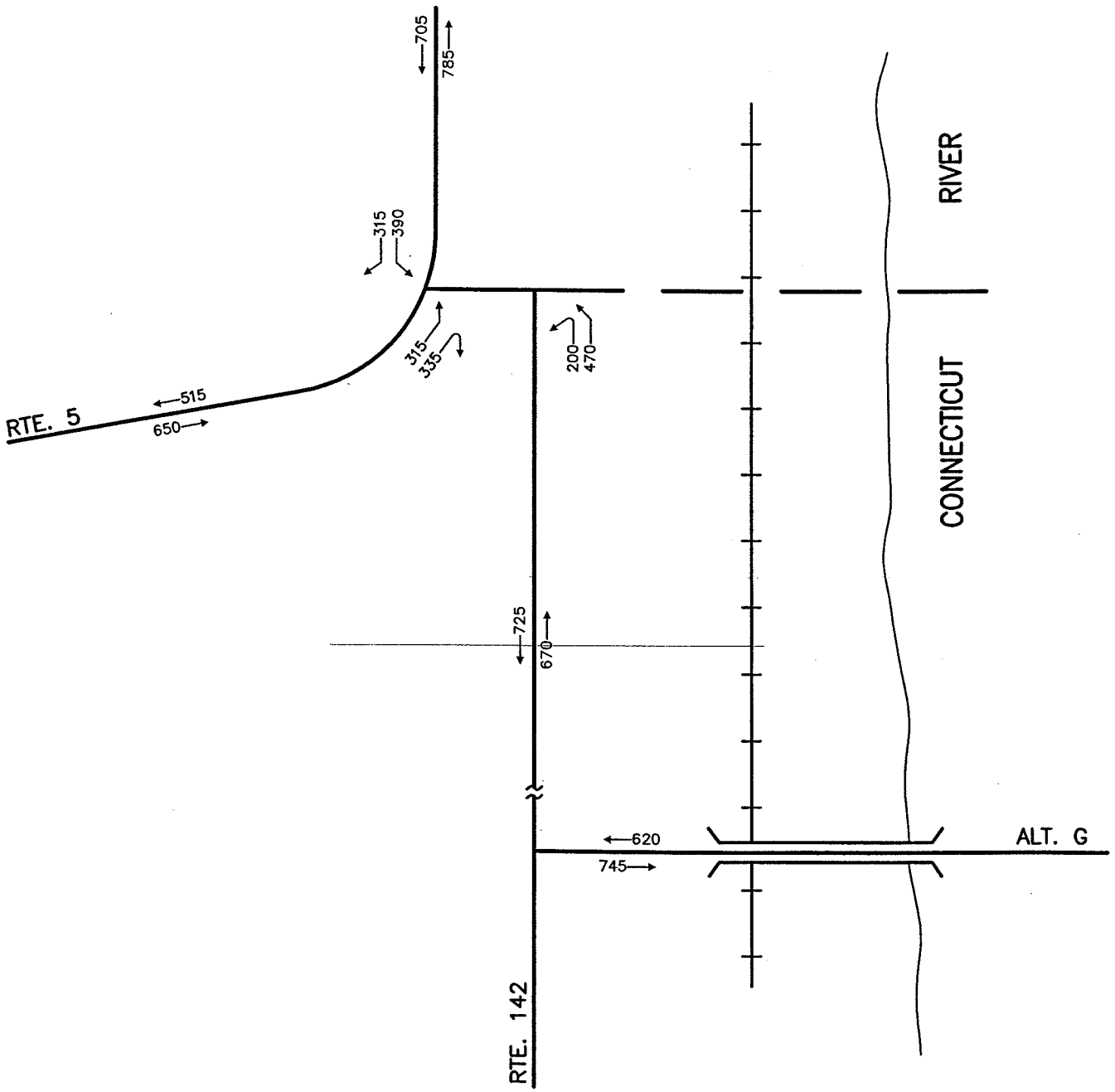

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FIGURE 9
2015 DESIGN HOUR TRAFFIC VOLUMES
(ALTERNATIVE G)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

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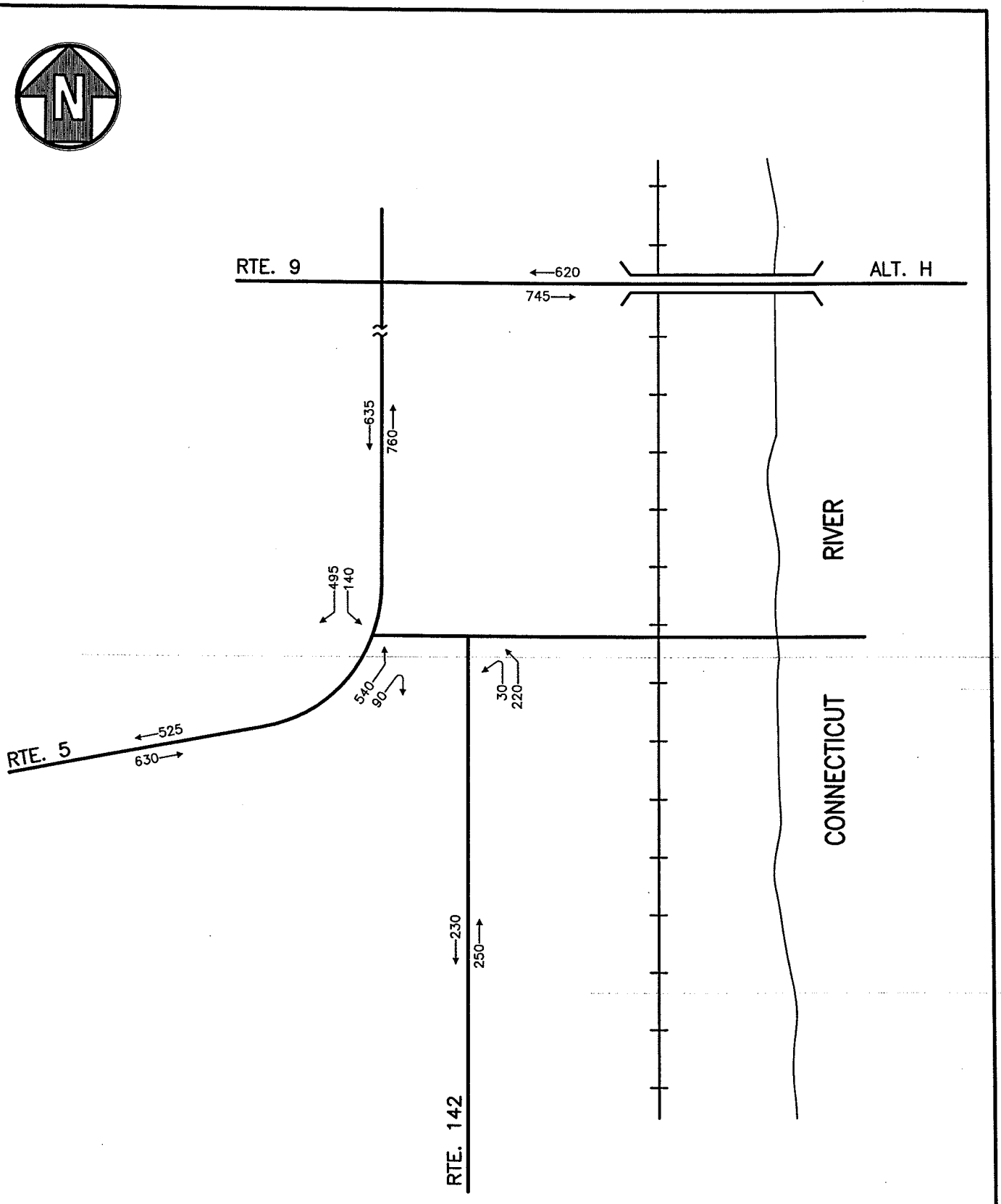

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FIGURE 10
2015 DESIGN HOUR TRAFFIC VOLUMES
(ALTERNATIVE H)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

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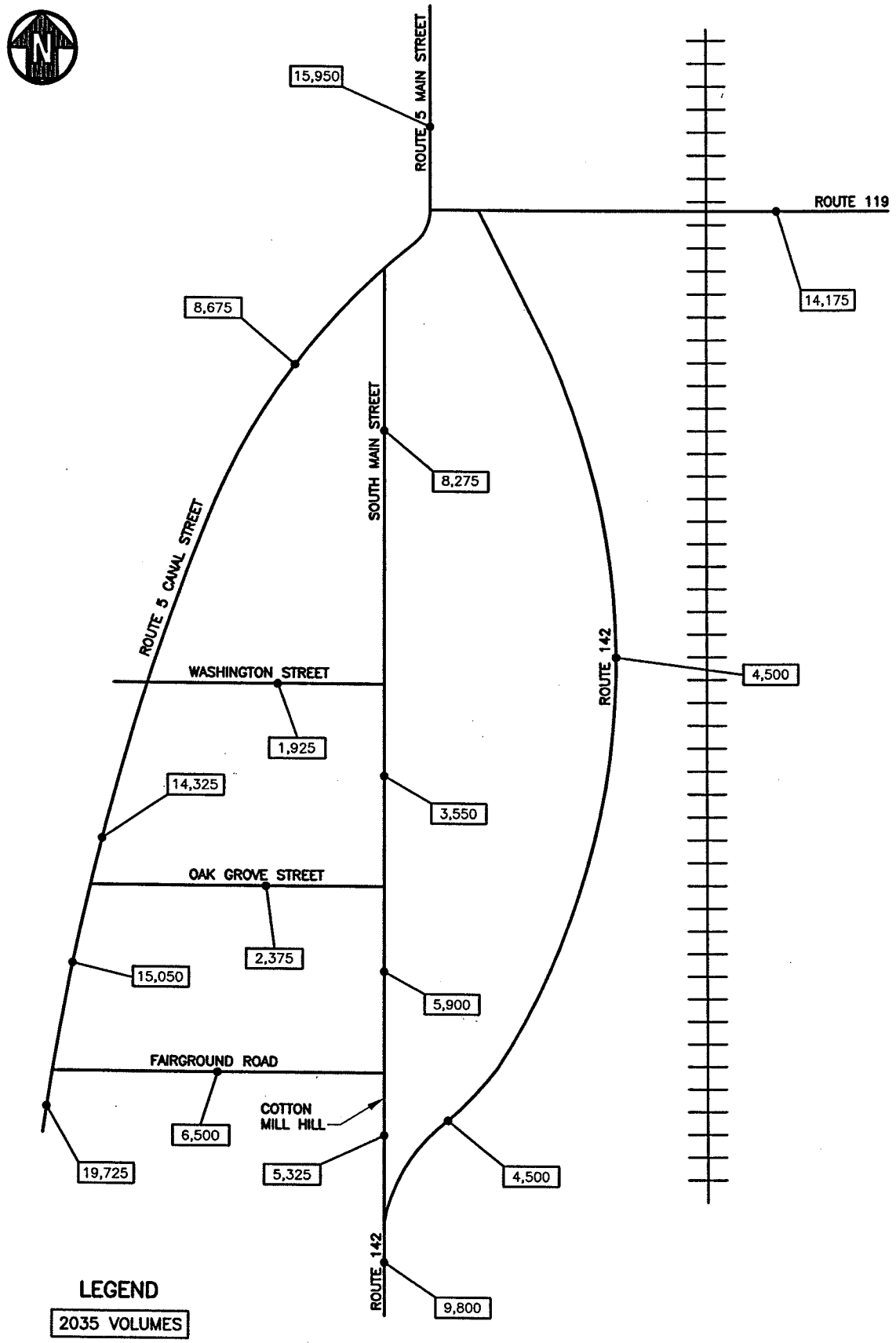

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FIGURE 11
2035 DAILY TRAFFIC VOLUMES
(NULL ALTERNATIVE)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

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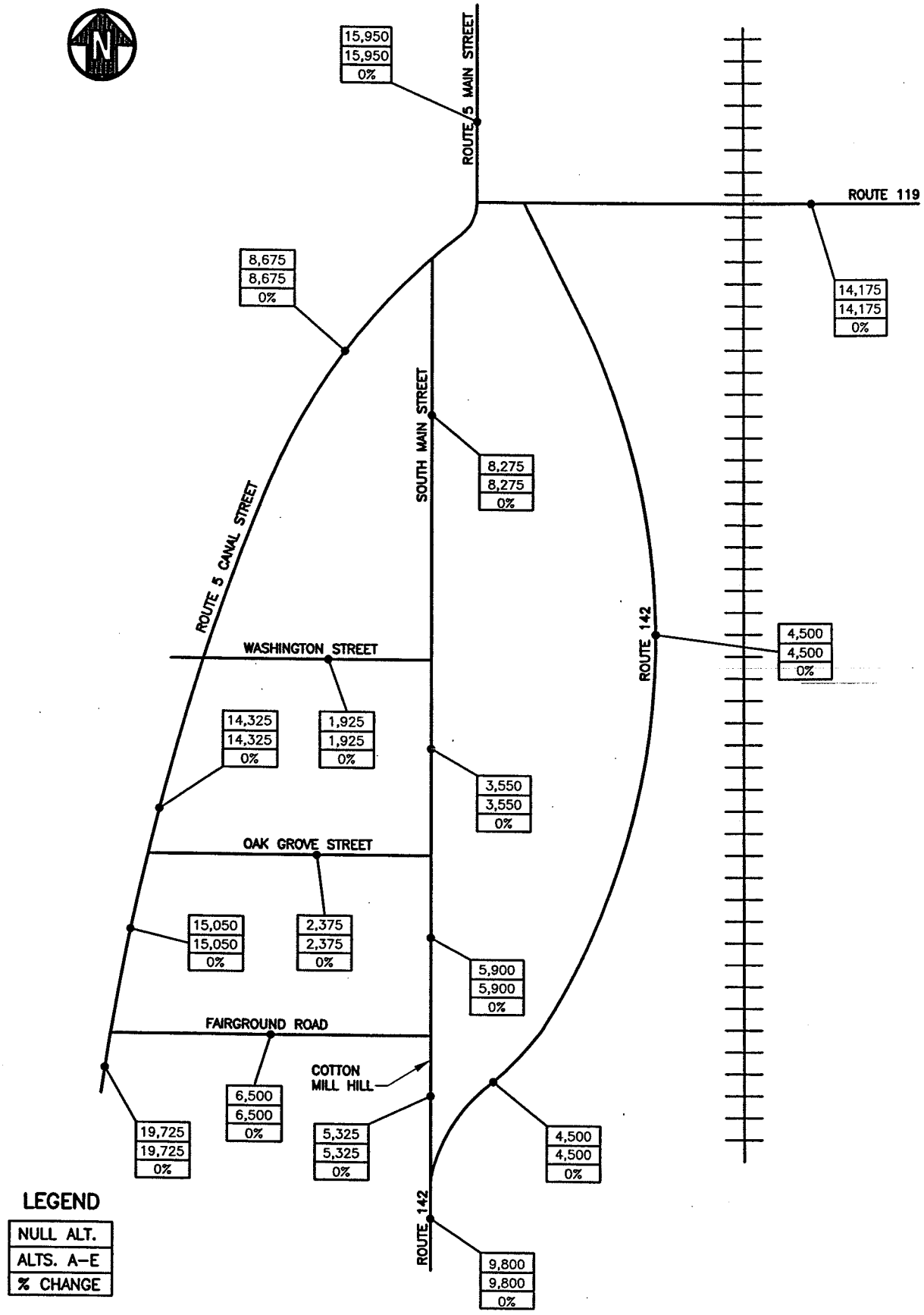

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FIGURE 12
2035 DAILY TRAFFIC VOLUMES
(ALTERNATIVES A – E)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

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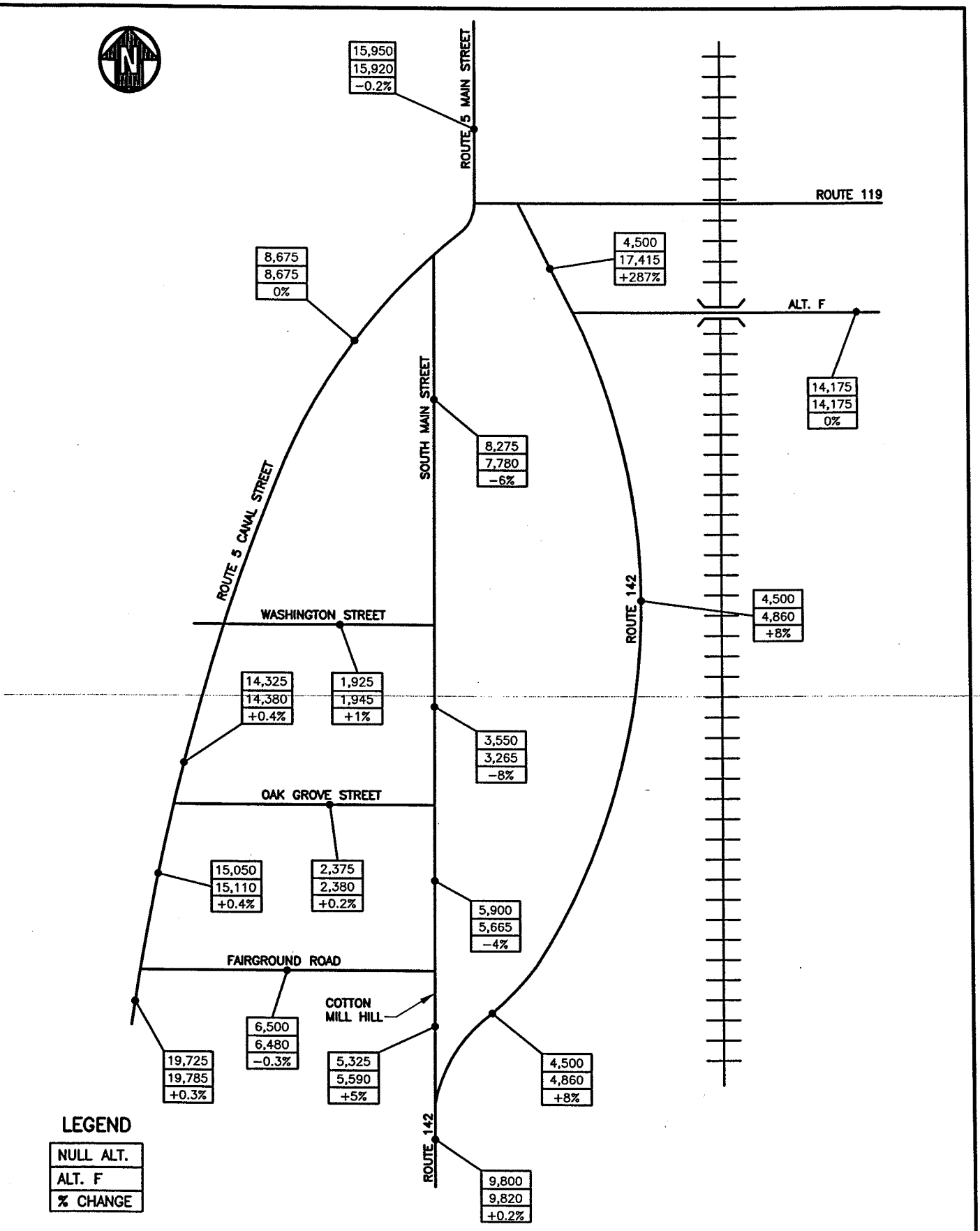

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FIGURE 13
2035 DAILY TRAFFIC VOLUMES
(ALTERNATIVE F)

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CONNECTICUT RIVER CROSSING

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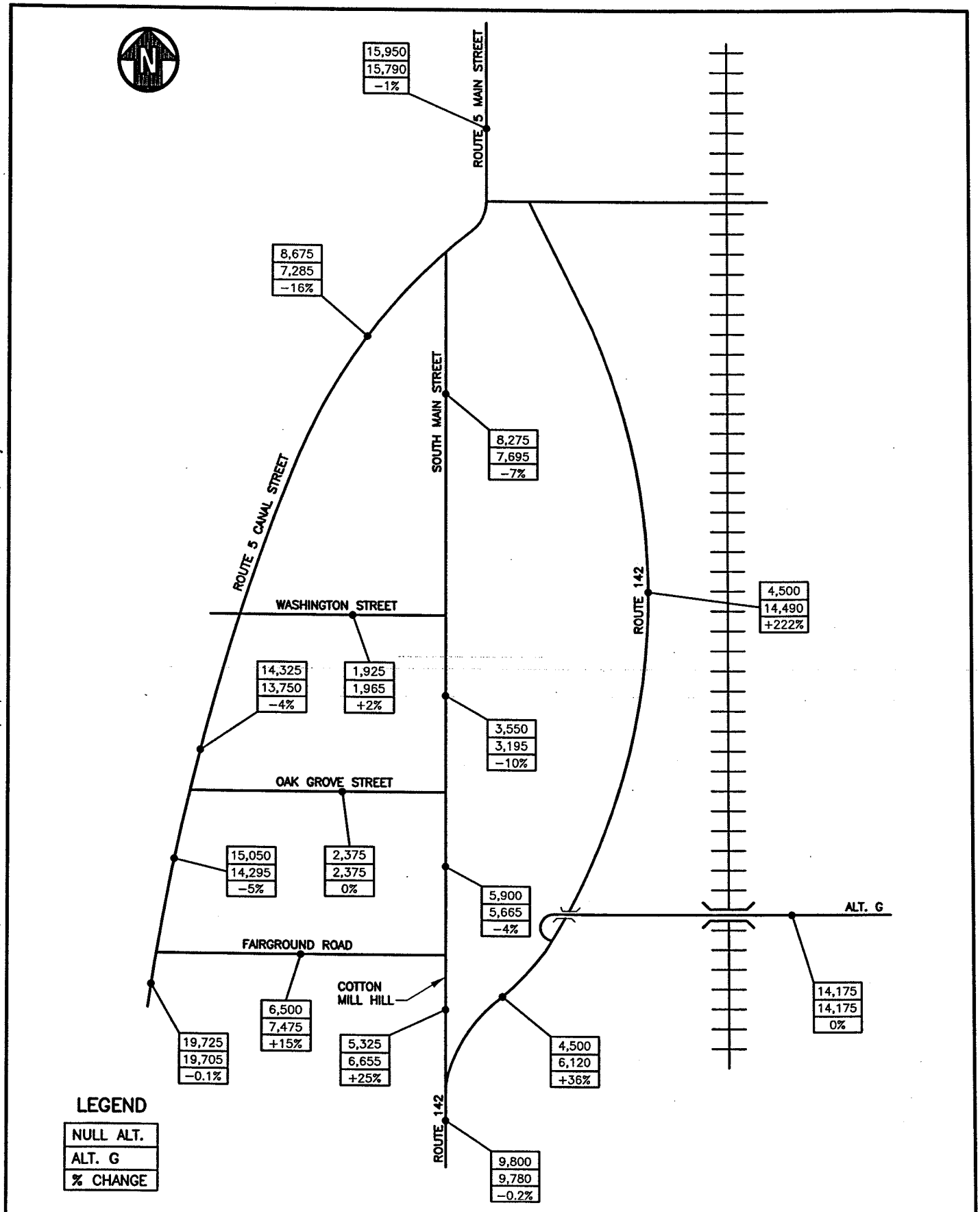

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FIGURE 14
2035 DAILY TRAFFIC VOLUMES
(ALTERNATIVE G)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

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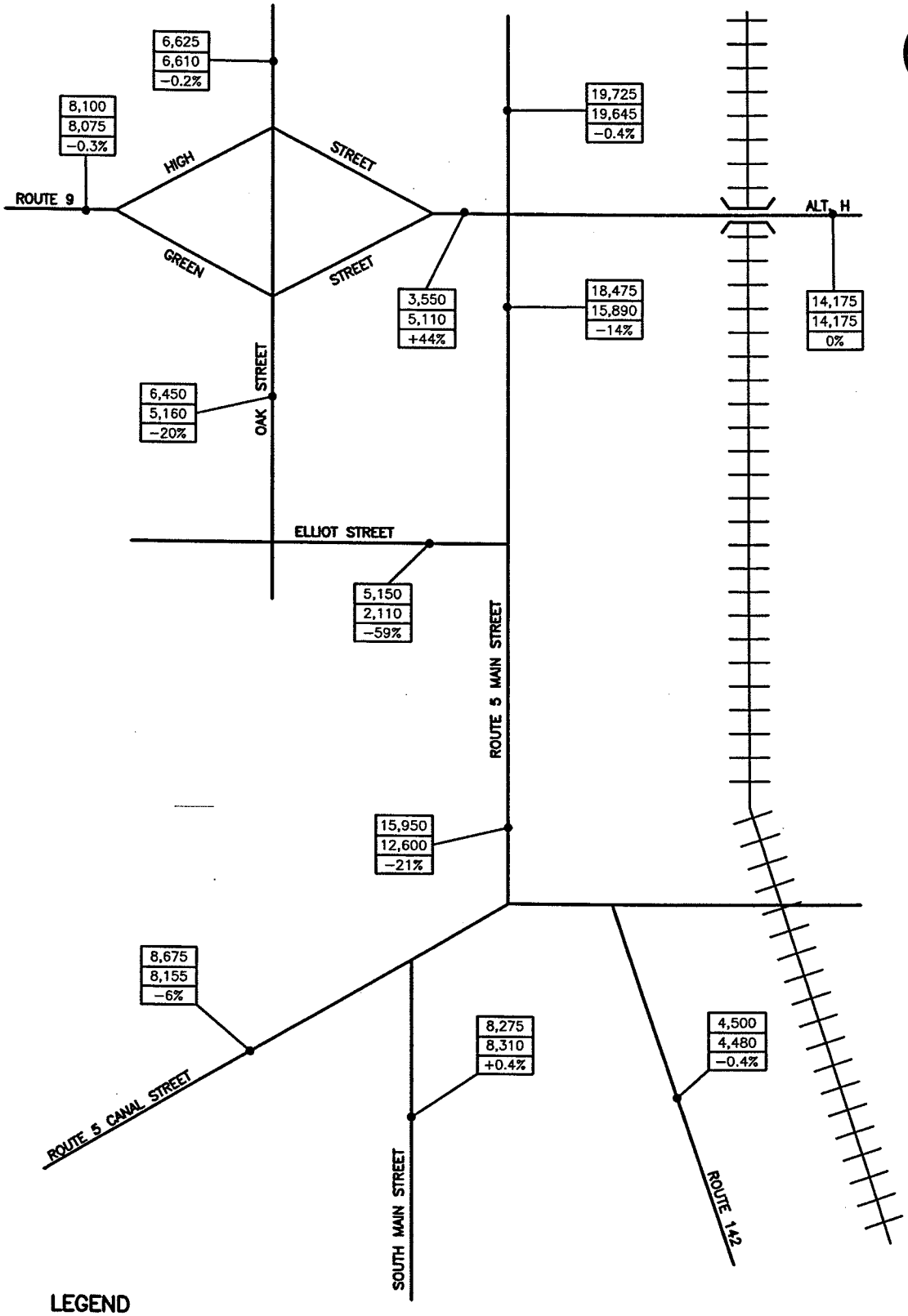

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FIGURE 15
2035 DAILY TRAFFIC VOLUMES
(ALTERNATIVE H)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

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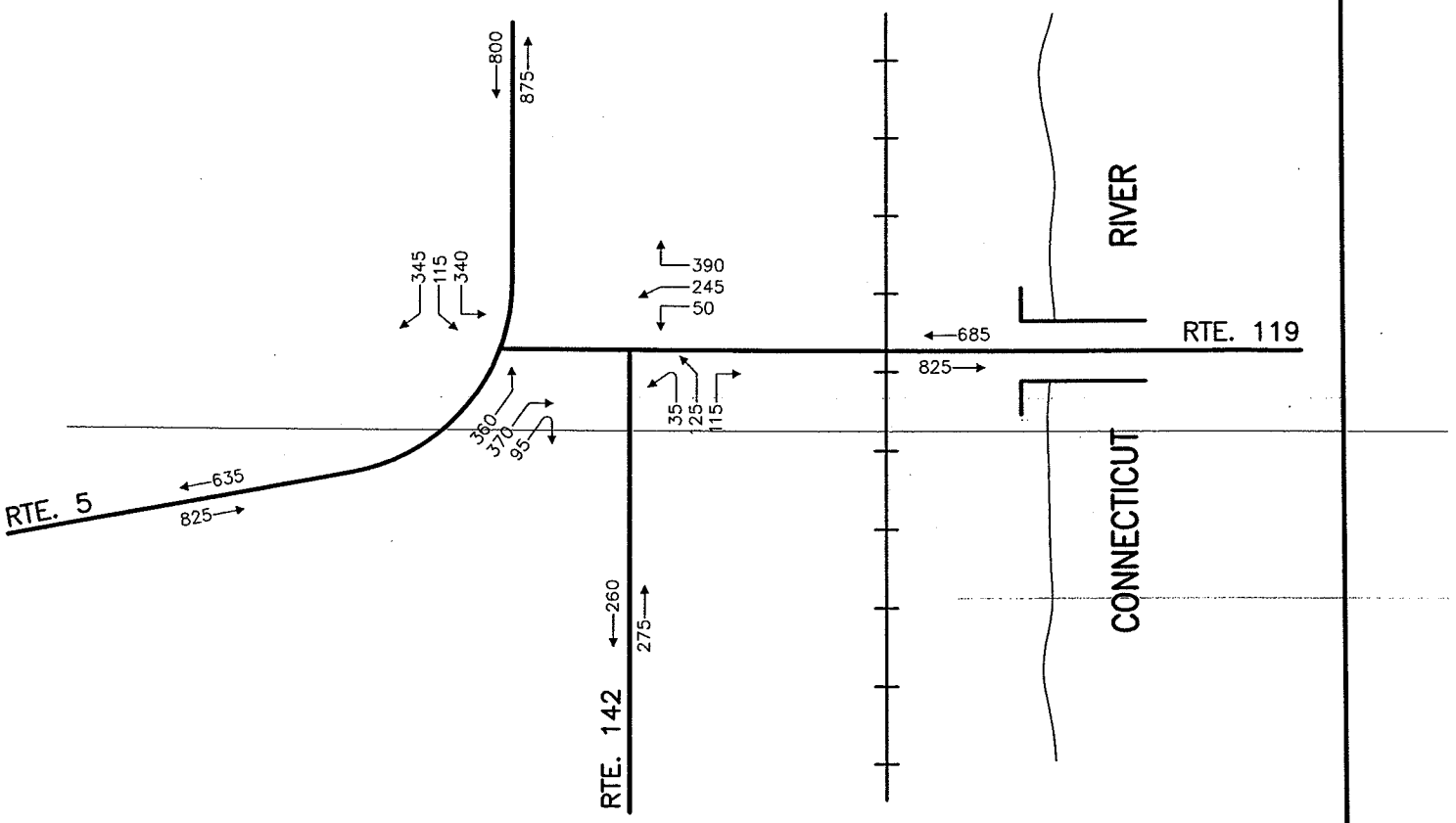

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FIGURE 16

2035 DESIGN HOUR TRAFFIC VOLUMES
(NULL ALTERNATIVE)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

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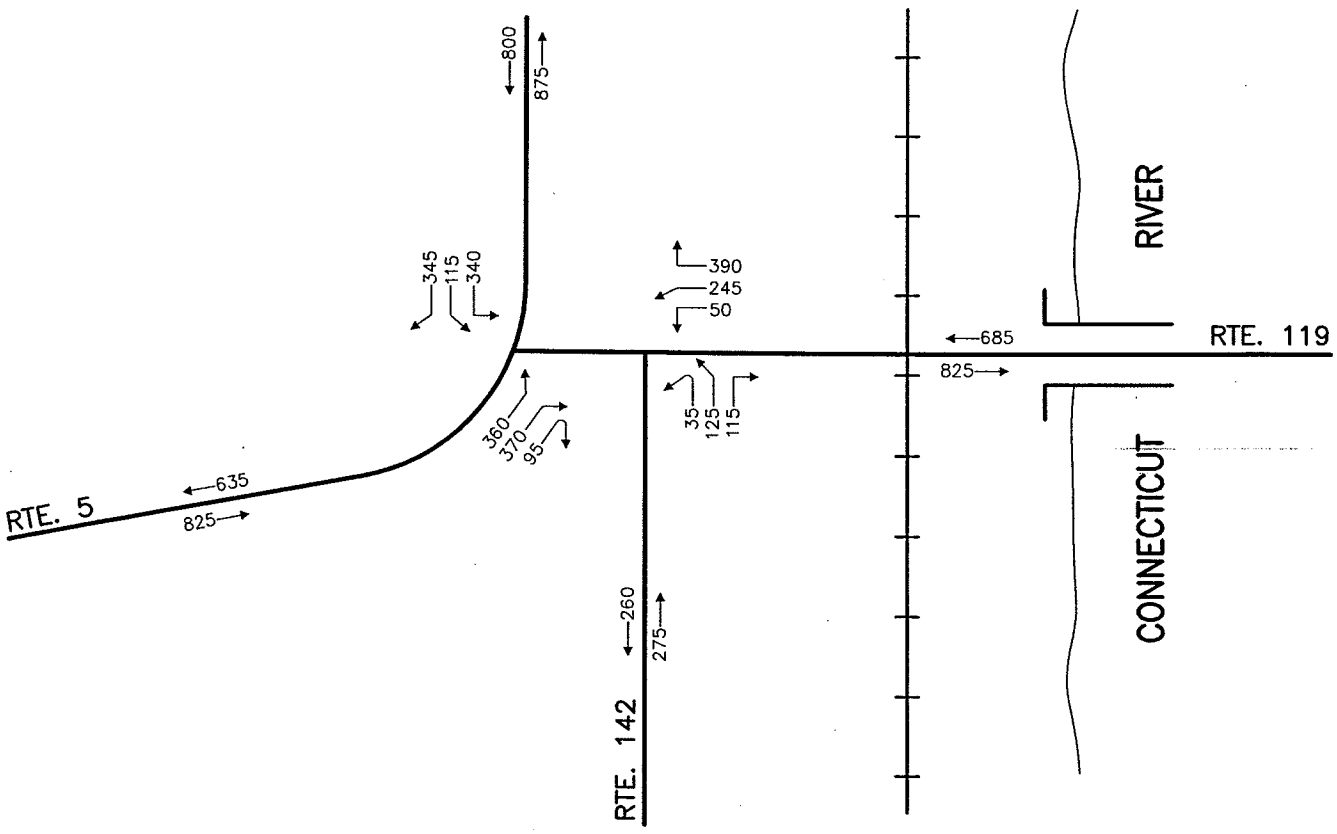

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FIGURE 17
2035 DESIGN HOUR TRAFFIC VOLUMES
(ALTERNATIVES A – E)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

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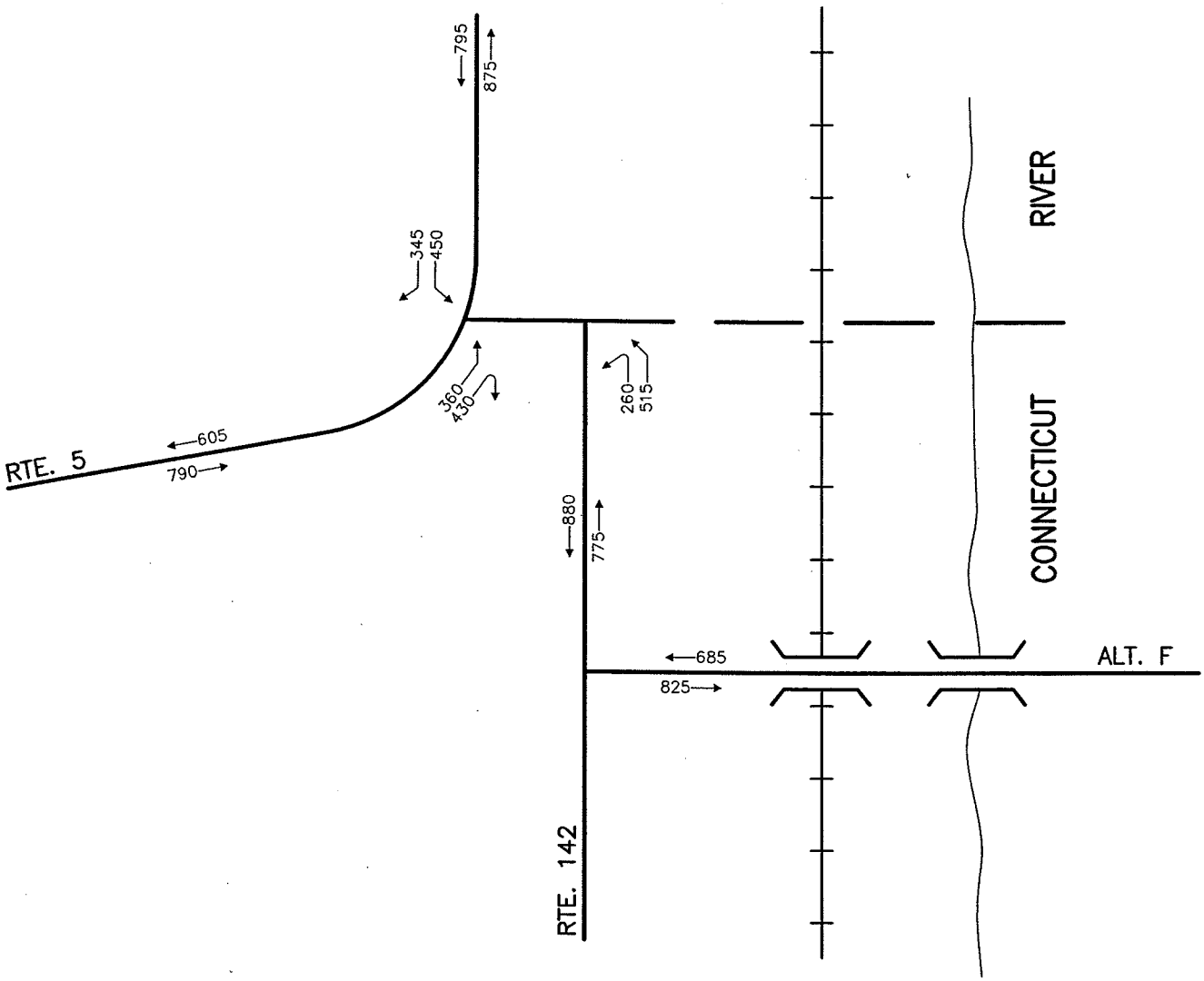

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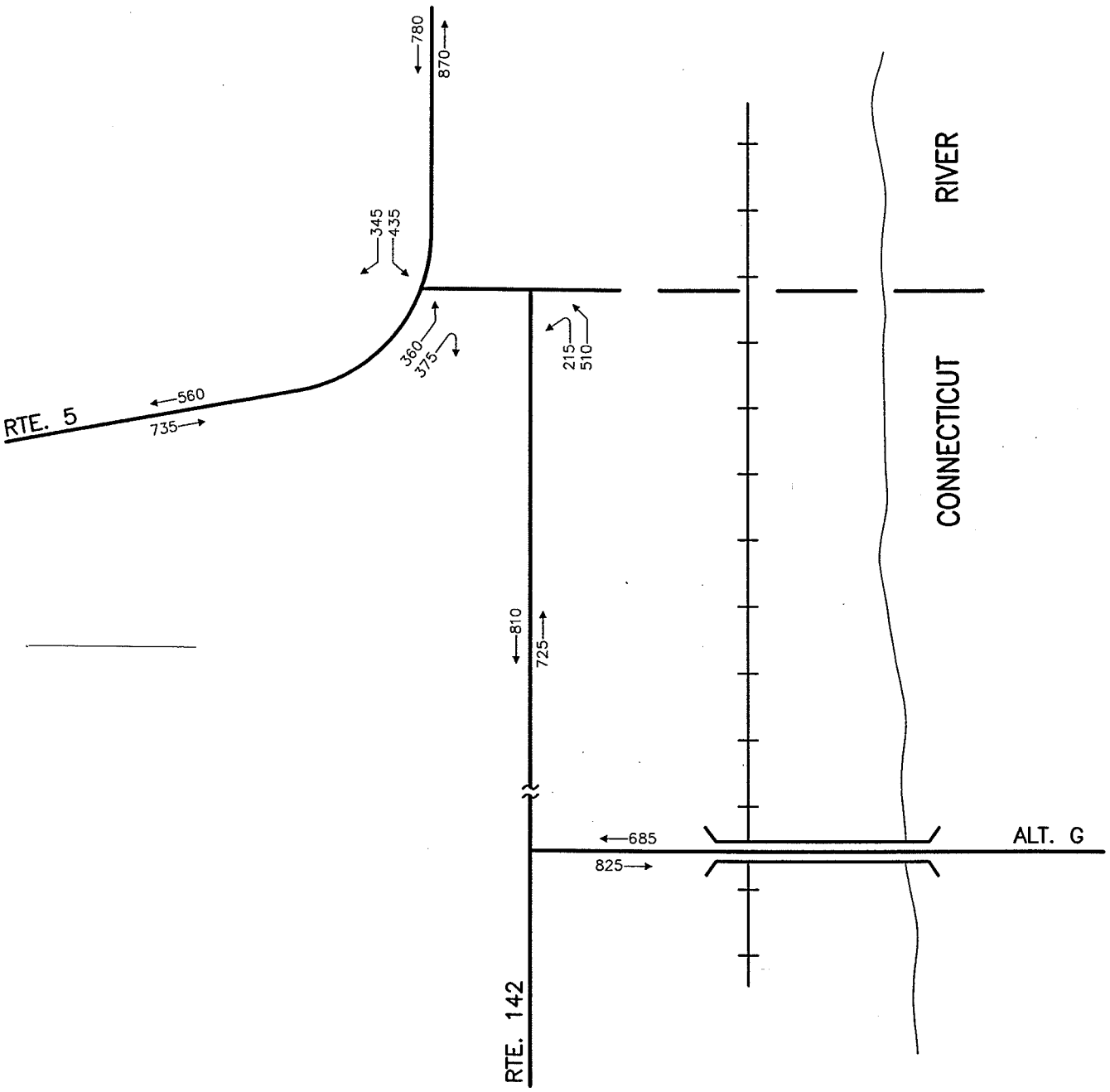
FIGURE 18
2035 DESIGN HOUR TRAFFIC VOLUMES
(ALTERNATIVE F)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

File: U:\5290\ACAD\31\REV 2005\REV DHV 2005\2035_F_DHV.DWG Saved: 11/2/2005 10:38:43 AM PLotted: 11/2/2005 10:38:50 AM User: Doughney, Edward



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PROJECT NO. 5290 | NOT TO SCALE

FIGURE 19
2035 DESIGN HOUR TRAFFIC VOLUMES
(ALTERNATIVE G)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

File: U:\5290\ACAD\31\REV 2005\REV DHV 2005\2035_G_DHV.DWG Saved: 11/2/2005 10:39:24 AM Plotted: 11/2/2005 10:39:30 AM User: Doughney, Edward

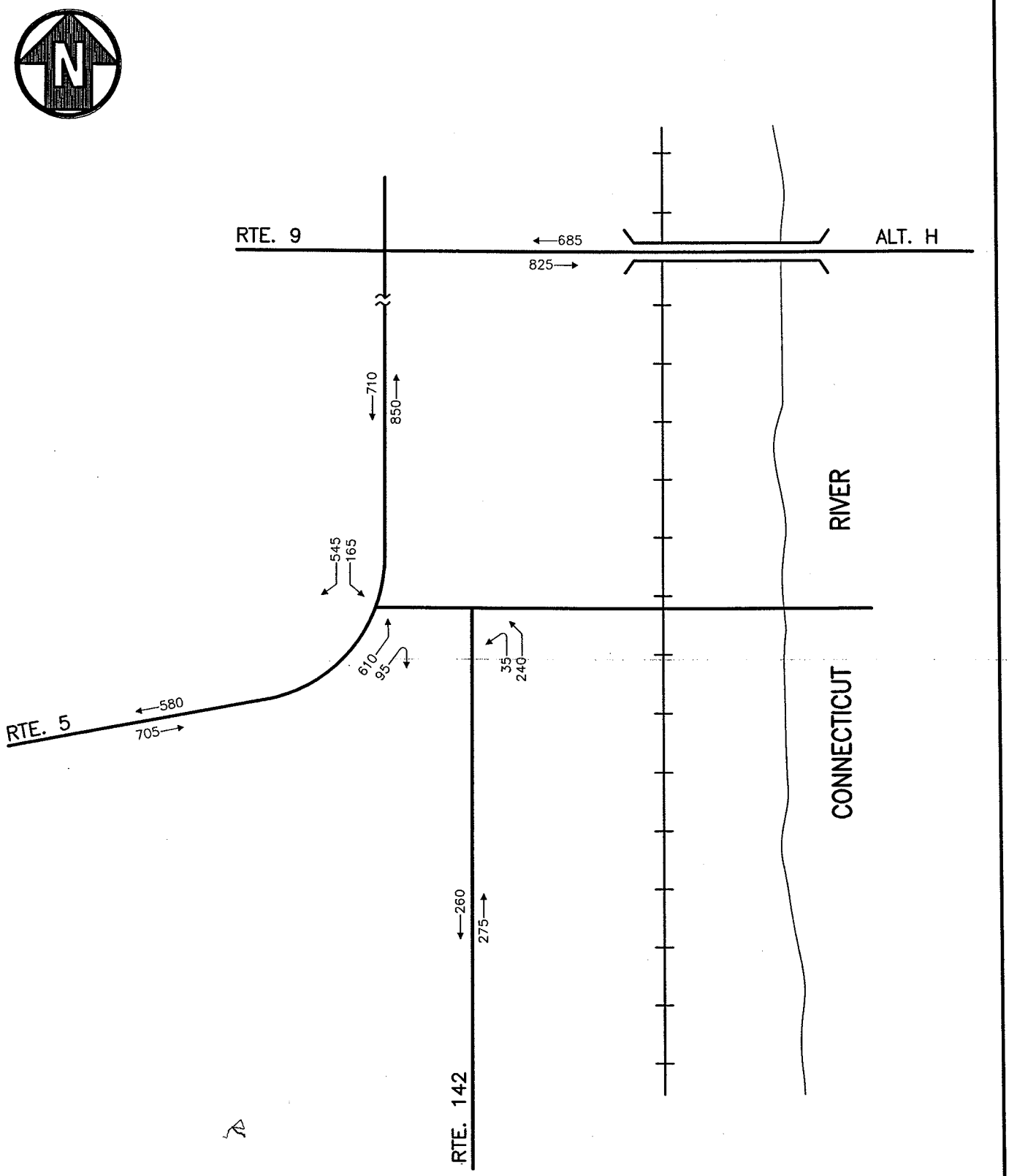

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FIGURE 20
2035 DESIGN HOUR TRAFFIC VOLUMES
(ALTERNATIVE H)

BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

File: U:\5290\ACAD\31\REV 2005\REV DHV 2005\2035_H_DHV.DWG Saved: 11/2/2005 10:40:04 AM PLotted: 11/2/2005 10:40:11 AM User: Doughney, Edward

Appendix C

APPENDIX C - Project Photographs

Table of Contents

Page

APPENDIX C

Project Photographs

Photo 1 – River View Restaurant
View of the Riverview Restaurant from the westerly Route 119 bridge west towards Brattleboro.

Photo 2 – Mid-Channel Island Wetland
View of the island's southern tip wetland from the mid-channel island south towards the Connecticut River.

Photo 3 – Route 119 Westerly Bridge
View of the Route 119 westerly bridge from the New Hampshire private marina northwest towards Brattleboro

Photo 4 – Route 119 Easterly Bridge
View of the Route 119 Easterly Bridge from the Connecticut River northeast towards New Hampshire.

APPENDIX C

Project Photographs

Photo 5 – Marina Access Road (West)
View of the New Hampshire boat marina access road from NH 119 southwest to the Connecticut River.

Photo 6 – Marina Access Road (East)
View of the New Hampshire touchdown area from the NH boat marina entrance northeast towards NH 119.

Photo 7 – Marina
View of the New Hampshire boat marina, north along the Connecticut River towards the Route 119 easterly bridge.

Photo 8 – Brattleboro Coal Tar Deposit Area
View of the former Brattleboro Gas Works building in VT and area adjacent to the Connecticut River in which coal tar residues have been identified northeast towards the Connecticut River from Depot Street.

APPENDIX C

Project Photographs

Photo 9 – Brattleboro Gas Works Building
View of the only remaining structure associated with the former Brattleboro Gas Works from Depot Street in VT northeast towards the westerly Route 119 bridge.

Photo 10 – Blue Seal Building (Front)
View of the front of the former Blue Seal building (VT touchdown area) from VT 142 southeast towards New Hampshire.

Photo 11 – Blue Seal Building (Side)
View of the south side of the former Blue Seal Building (VT touchdown area) north along Route 142 towards the Marlboro College Building.

Photo 12 – Blue Seal Building (Rear)
View of the rear of the former Blue Seal Building (VT touchdown area) from Depot Street west towards VT 142.

APPENDIX C

Project Photographs

Photo 13 – Bulk Fuel Tanks
View of fuel storage tanks (which will be removed by the project in the Preferred Alternative) from Depot Street in Brattleboro northwest towards the Marlboro College Building.

Photo 14 – Living Memorial Park
View of the Living Memorial Park from the Route 5/119/142 intersection east towards New Hampshire.

Photo 15 – VT 142 Residence
View of VT 142 residence (which may be acquired by the project) from VT 142 west towards Brattleboro.

Appendix D

APPENDIX D - Historical Resources

Table of Contents

State of Vermont
Agency of Transportation
National Life Building
Drawer 33
Montpelier, VT
05633-5001

VTrans Working to Get You There

September 5, 2000

Letter of Effect

Brattleboro VT - Hinsdale NH BRF 2000(19)SC

In order to assist the Federal Highway Administration (FHWA) in complying with Section 106 of the National Historic Preservation Act of 1966 and its amendments, the Vermont Agency of Transportation has reviewed this undertaking according to the standards set forth in 36 C.F.R., regulations established by the Advisory Council on Historic Preservation to implement Section 106. Project review consists of identifying the project's potential impacts to historic buildings, structures, historic districts, historic landscapes, and settings, and to known or potential archeological resources.

By agreement among VTrans, VT SHPO, VT-FHWA, NH DOT, NH SHPO, and NH-FHWA, the Section 106 review of this project for both states will be combined and completed by VTrans Historic Preservation Coordinator. Additionally, and as required by the Section 106 and 4(f) regulations, the historic bridge rehabilitation and construction of the bypass bridge are being reviewed together as a single undertaking.

Project Background / Public Involvement

The purpose of this project is to provide a safe, functionally efficient and cost-effective transportation corridor over the Connecticut River in the vicinity of downtown Brattleboro, Vermont, and Hinsdale, New Hampshire. Two bridges connecting to a mid-river island accomplish the existing crossing of the river in this location. Structural concerns with these bridges, functional highway deficiencies and traffic congestion near the Vermont touchdown area have resulted in a comprehensive effort to find a solution to these problems. To that end, the Brattleboro/Hinsdale Bridge Committee was organized by the Windham Regional Commission in February 1996. The bridge committee met a total of 16 times between February 15, 1996 and July 6, 1988. Technical assistance to that committee was provided by a Working Group that included: Windham regional Planning Commission (WRC), Vermont Agency of Transportation (VTrans), New Hampshire Department of Transportation (NH DOT), Dubois & King Inc., Clough, Harbor & Associates, and various other organizations. All Bridge Committee meetings were open to the public and two informational meetings were conducted by the committee. The bridge Committee was substantially involved in developing the project's purpose and need, identifying area resources, providing public informational forums, developing, refining, and recommending a preferred project alternative. In addition, Windham Regional Commission published four public informational newsletters during the project study that were sent to over 300 citizens and organizations. The newletters are attached

in the scoping report as Appendix F. Please refer to pages 10 - 13 of the Scoping Report for a fully detailed description of public involvement.

Ten alternatives were studied by the Bridge Committee. The analysis of these options begins on page 49 of the attached Scoping Report conducted by Dubois & King. In April of 1998, the Bridge Committee made public its project findings and recommendations, which are set forth fully on page 86 in Appendix F of the Scoping Report. The Bridge Committee strongly urged that Alternative F (Blue Seal) be identified as the preferred alternative. By letter dated July 7, 1998, the Town of Brattleboro Selectboard unanimously voted to accept and support the Bridge Committee's recommendation as the preferred alternative. By letter dated May 15, 1998, the Town of Hinsdale unanimously voted to accept and support the Bridge Committee's recommendation as the preferred alternative. Please see the "Project Description" for a detailed description of Alternative F.

Existing Conditions

Conditions of the existing roadway approaches and the spans themselves were investigated by NH DOT engineers. It was reported that both bridges have seriously deteriorated over the years. The concrete in the abutments, piers and backwalls is spalled and eroded, and reinforcing steel is exposed. Structural repairs completed in 1988 have a limited life expectancy. The main channel deck is exhibiting some corrosion and section loss and is leaking at the joints. The truss bottom chords are corroded, the superstructure paint is peeling, and the concrete bridge seats are cracked and spalled. An underwater inspection (1989) revealed scour in the form up to 10 feet of sheetpiling exposed at the west abutment and a 2 - 4 foot deep scour hole occurring at the west abutment. The side channel bridge is in similar condition to the main bridge with corrosion and leaking at the deck joints. The truss bottom chords are exhibiting corrosion and there is evident section loss on the lateral bracing and gusset points at the panel points. The superstructure paint has failed in areas and there is corrosion section loss occurring at the rivets. In addition, the concrete bridge seats have minor cracking and spalling. An underwater inspection (1995) found moderate to serious scouring at both piers and grout bags that were placed around the south pier in 1988 are visible beneath the timber cribbing and the footing is exposed up to 6 feet high. In addition, severe scaling was observed on the pier columns.

Project Description

Alternative "F", or "Blue Seal" alternative is the proposed alignment for the new bypass bridge crossing based on the bridge committee's findings and comprehensive public input. Alternative F will bypass both spans of the historic bridge with a single span bridge and provide for a grade-separated railroad crossing at a new location. The existing historic bridge will remain open during construction. Construction will begin on Route 142 in Brattleboro approximately 300 m south of the main street intersection. The project would end approximately 140 m east of the Wal Mart access in Hinsdale on Route 119. Please refer to attached maps for proposed alignment.

The proposed Vermont-side landing area for the new bridge is located approximately one-quarter mile south of the existing bridge. The new span would touchdown west of the RR tracks, and will be 26 feet higher than the existing bridge deck at the VT shore. A new

intersection will be created where Route 119 and Route 142 (Vernon Street) meet. This alignment will necessitate the removal of several storage tanks, the removal of two buildings (Nos. 1 and 2 on attached map - see 10/17/99 comments by Gurley) and a storage shed, and the partially burying of a segment of a large stone retaining wall along Route 142. No historic buildings will be taken nor adversely affected (see VTrans Gurley comments and VT SHPO concurrence - 10/17/99).

The proposed New Hampshire-side landing for the new bridge is located approximately 100 m east of the Wal Mart access (see attached map). As depicted, the bridge approach replaces a section of, and joins with, the existing Route 119.

The existing historic bridges will be minimally rehabilitated by NH DOT in accordance with the Secretary of the Interior's Standards, for recreational use by NH and VT residents and visitors. VT and NH DOTs will share maintenance responsibilities.

Above-Ground Historic Resources

The bridge carrying Route 119 over the main channel (western side) of the Connecticut River (Bridge No. 041/040) is a single-span, steel Parker truss structure carrying one lane of traffic in each direction. It has a span length of 330 feet and width between curbs of 20.2 feet. The bridge was originally constructed in 1920, with much of the floor system replaced in 1988. The bridge retains a high degree of historic integrity, is individually eligible for the National Register of Historic Places, and constitutes an important gateway into the City of Brattleboro.

The bridge carrying Route 119 over the side channel (eastern side) of the Connecticut River (Bridge No. 042/044) also built in 1920 is a three-span steel structure carrying one lane of traffic in each direction. The main span has a through truss superstructure with a span length of 200 feet. The approach spans have deck plate-girder superstructures with span lengths of 47 feet. Much of the main span floor system was replaced in 1988 and the approach span superstructures were replaced and a new asphalt filled, galvanized bridge plank deck was installed on the truss span at the same time. The abutments are constructed of concrete, as are the frame type piers. A 6-foot wide sidewalk cantilevered from the north side, was added in 1933. Both spans appear eligible for the National Register, significant as major engineering works illustrating the standardized bridge building practice of the early 20th century.

On the Vermont side, no historic properties within the project area other than the bridge span appear eligible for the National Register, and none will be adversely affected by this project (see VTrans Gurley comments and VT SHPO concurrence - 10/17/99).

On the New Hampshire side, historic properties in the project area were identified by Liz Pritchett Associates of Montpelier, VT in December, 1996. Ms Pritchett's 12/10/96 report indicates the presence of three historic properties appearing eligible for the National Register of Historic Places being site #'s 1, 2, and 8 (please refer to attached descriptions, maps, plans and photos keyed to these numbers. None of the buildings (#'s 1,2) will be taken by this project and the historic bridge (#8) will be rehabilitated consistent with the Secretary's Standards.

Though the bridge is to be rehabilitated and retained for recreational use, its original and

primary function of carrying vehicular traffic as a gateway into downtown Brattleboro will be lost. To compensate, the new bridge will be designed by NH DOT in partnership with the Brattleboro-Hinsdale Bridge Committee, which will be reactivated. The Committee will be organized by the Windham Regional Planning Commission to have comprehensive representation from NH and VT as it did during the Scoping phase of this project. The Committee input into the design process will be a meaningful and important element in the final design.

Archaeological Resources An archeological investigation was conducted on the VT and NH sides by UM-F who concluded that the project will have no potential to cause effects on identified archaeological resources. The VDHP concurred and the sign-off sheet is attached.

Assessment of Effect Based on our review of the project plans, public involvement documentation, and visits to the project site, we have concluded that the project will have No Adverse Effect on historic properties listed in or eligible for the National Register of Historic Places - provided that the Brattleboro-Hinsdale Bridge Committee is a full partner in the design of the new bridge.

VT FEDERAL HIGHWAY ADMINISTRATION

By: Charles E. Basner Date: 9-6-00
Charles Basner, Division Administrator

VT DIVISION FOR HISTORIC PRESERVATION

By: Emily Wadhams Date: 9/6/00
Emily Wadhams, State Historic Preservation Officer

VT AGENCY OF TRANSPORTATION

By: John H. Perkins Date: 6 Sept 00
John H. Perkins, Director, Technical Services

NH FEDERAL HIGHWAY ADMINISTRATION

Nancy S. Kinter Date: 9/6/00
for Kathleen O. Laffey, Administrator, NH-FHWA

NH DEPARTMENT OF HISTORICAL RESOURCES, SHPO

Nancy C. Dutton Date: 9/6/00
Nancy C. Dutton, NHDHR, SHPO

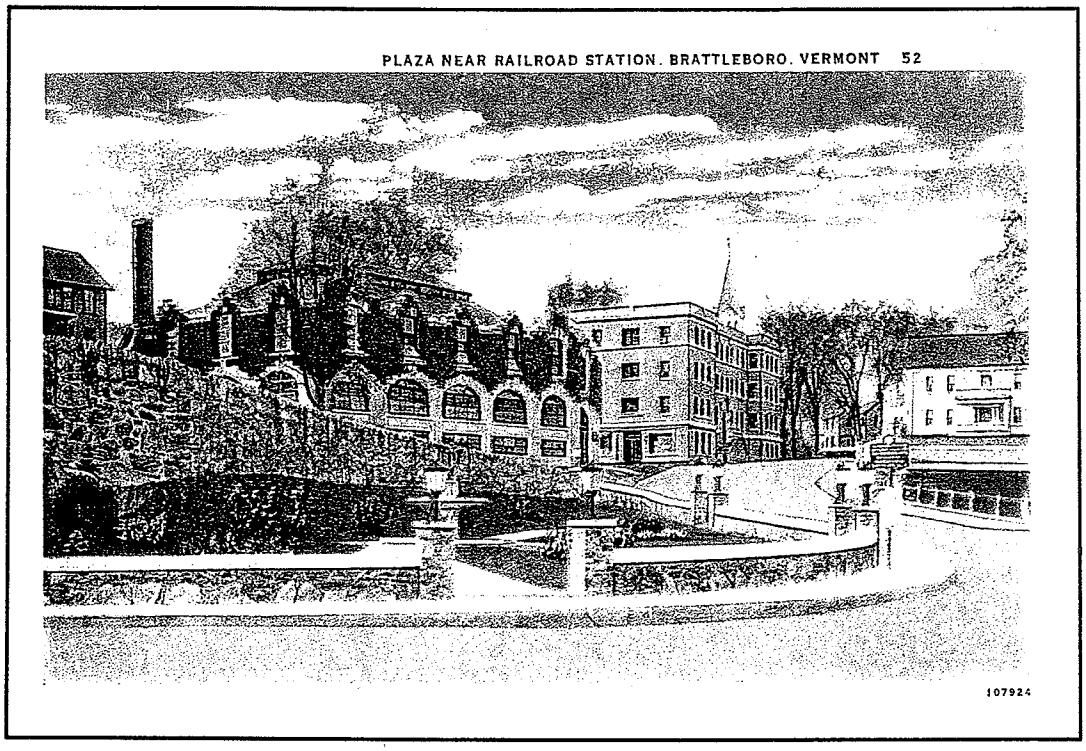
NH DEPARTMENT OF TRANSPORTATION

Joyce B McKay Date: 9/6/00
Joyce B. McKay, Historian

J-4

SECTION 106 REVIEW
BRATTLEBORO - HINSDALE BRIDGE PROJECT

Bridge Crossing over the Connecticut River
between
Brattleboro, Vermont, and Hinsdale, New Hampshire
Identification of Constraints Phase



Frontispiece: Postcard, c. 1935. Plaza / intersection of Routes 119, 5, 142, west of Railroad Station, Brattleboro, Vt. View looking west to Canal Street. Courtesy Vermont Historical Society.

Prepared For:
Vermont Agency of Transportation
133 State Street
Montpelier, Vermont 05633

and

Dubois & King, Inc.
P.O. Box 339
Randolph, Vermont 05060

Prepared By:
Liz Pritchett Associates
58 East State Street
Montpelier, Vermont 05602

December 10, 1996

Liz Pritchett Associates

HISTORIC PRESERVATION • ARCHITECTURAL CONSERVATION

December 1, 1996

Suzanne Jamele, Historic Preservation Review Coordinator
Vermont Division for Historic Preservation
135 State Street, Drawer 33
Montpelier, Vermont 05633-1201

Re: Section 106 Review - VAOT Brattleboro-Hinsdale Bridge Project, Brattleboro, Vt.

Dear Suzanne,

I have attached the Section 106 Review report of the above-referenced project, to comply with the National Historic Preservation Act and 36CFR 800, the regulations that implement Section 106. I am seeking your concurrence on the Inventory I have developed, which lists the historic resouces in the project area that are eligible for the National Register of Historic Places.

The Brattleboro-Hinsdale Bridge Project addresses traffic and safety issues along Routes 9, 5 119, and 142 in Vermont and New Hampshire within the general project area along the Connecticut River in Brattleboro, Vt., and Chesterfield and Hinsdale, NH, - from the Route 9 bridge, south to the Route 119 bridges, and the backwater area of Brattleboro. This Section 106 Report reviews historic resources in the project area and makes recommendations for resource eligibility for the National Register of Historic Places. The inventory in the report identifies within the project area, one existing National Register District (the Downtown Brattleboro Historic District), a potential National Register District (the Putney Road Residential Historic District), and sixteen individual sites that either have been determined eligible or appear eligible for the National Register. Because of the existing and recommended NR sites and districts in the project area, the potential exists for adverse effects to historic resources from undertakings that may alter the characteristics of the properties that qualify them for the NR, including alteration of location, setting or use. When design alternatives are more fully developed, they will need to be reviewed by an Historic Preservation consultant.

The project area studied for this phase included the properties along the Connecticut River corridor. Historic resources adjacent to this corridor may need further review as the project alternatives are defined. The resources at the downtown Brattleboro intersection of Routes 5, 142 and 119 may need additional review, to include for example, the Holstein building and other structures adjacent to the existing Downtown Historic District, and along the converging roadways at the intersection.

Please contact me if you have questions concerning this project.

Sincerely,

Liz Pritchett

Liz Pritchett
Historic Preservation Consultant

cc: John Hanna, Dubois & King

58 EAST STATE ST. MONTPELIER, VERMONT 05602 • 802-229-1035

ABSTRACT

The Brattleboro-Hinsdale Bridge Project addresses traffic and safety issues along Routes 9, 5 119, and 142 in Vermont and New Hampshire within the general project area along the Connecticut River in Brattleboro, Vt., and Chesterfield and Hinsdale, NH, - from the Route 9 bridge, south to the Route 119 bridges, and the backwater area of Brattleboro. This Section 106 Report reviews historic resources in the project area and makes recommendations for resource eligibility for the National Register of Historic Places. The inventory in the report identifies within the project area, one existing National Register District (the Downtown Brattleboro Historic District), a potential National Register District (the Putney Road Residential Historic District), and sixteen individual sites that either have been determined eligible or appear eligible for the National Register. Because of the existing and recommended NR sites and districts in the project area, the potential exists for adverse effects to historic resources from undertakings that may alter the characteristics of the properties that qualify them for the NR, including alteration of location, setting or use. When design alternatives have been developed, they will need to be reviewed by an Historic Preservation consultant.

TABLE OF CONTENTS

INTRODUCTION

This Section 106 Review report has been prepared according to 36 CFR 800 regulations to determine the potential effect to above-ground historic resources from a possible new bridge crossing over the Connecticut River between Brattleboro, Vermont and Hinsdale, New Hampshire. The report was prepared by Liz Pritchett of Liz Pritchett Associates, Montpelier, Vermont, for the Vermont Agency of Transportation, Project Development & Environmental Section, 133 State Street, Montpelier, Vermont 05633. Ms. Pritchett is subconsultant for Dubois & King Engineers, Inc., Randolph, Vermont. The report will assist the Vermont Agency of Transportation, the Federal Highway Administration, and the Vermont Division of Historic Preservation with compliance under Section 106 of the National Historic Preservation Act, and Section 4(f) of the U.S. Department of Transportation.

The objective of the report is to develop an inventory of properties in the project area that are eligible for listing on the National Register of Historic Places (see Maps 2-4). The determination of National Register eligibility follows guidelines established in *National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation* published by the National Park Service.

Field visits to Brattleboro, Vermont and Hinsdale, New Hampshire were made on September 9 and November 13, 1996. During the field visits, photographs were taken of representative resources in the project area. Research was conducted at the Vermont Division for Historic Preservation, Vermont State Library, Montpelier, Vermont, and the Brattleboro Town Offices, Brattleboro, Vermont. On November 14, 1996 a telephone interview was conducted with Nancy C. Muller, Director and State Historic Preservation Officer, New Hampshire Division of Historical Resources (NHDHS), Concord, New Hampshire. Copies of NHDHS files relative to the three existing vehicular bridges crossing the Connecticut River in the project area were forwarded to Liz Pritchett Associates (see Appendix Survey Forms).

Copies of the Historic Resource Review report have been distributed to the Vermont Division for Historic Preservation, 135 State Street, Drawer 33, Montpelier, Vermont 05633; and Dubois & King Inc., P.O. Box 339, Randolph, Vermont 05060.

PROJECT DESCRIPTION

Purpose and Need

See Maps 1,2. This phase of the Brattleboro-Hinsdale Bridge Project, called the Identification of Constraints Phase, which includes the Section 106 Review of Historic Resources, will identify constraints that could effect the development and design alternatives of the project. The purpose and need of the Brattleboro-Hinsdale Bridge Project is to address the present and future traffic congestion, and deteriorating serviceability for traffic passing through downtown Brattleboro at the Route 5/119/142 intersection; to maintain a viable and safe transportation corridor between downtown Brattleboro, Vermont, and Hinsdale, New Hampshire; to ensure emergency access between Brattleboro and Hinsdale, and to minimize environmental, social, economic, and fiscal impacts associated with this project.

Location of Project

See Map 2. The current project corridor extends for approximately 4.5 miles, from the NH Route 9 Bridge over the Connecticut River, south along the Connecticut River to the "backwater" area south of Brattleboro. Historic, above-ground resources were reviewed in an area bounded by Route 9 on the north, the eastern bank of the Connecticut River on the east between Route 9, Wantastiquet Mountain, and the Hinsdale Raceway along NH Route 119 to the south, the western bank of the Connecticut River from the Vernon Town line north along VT Route 142 to the downtown Brattleboro intersection with Routes 9 and US 5, following north to the Routes 9 and 5 intersection just east of Interstate-91 Exit 3.

Alternatives

Three alternatives to the proposed project have been identified.

1) No action alternative - do nothing;

2) Rehabilitation alternative - rehabilitate the Route 9 bridge (Site 22, Figs. 42-44) and construct an adjacent two lane bridge just north of the existing bridge, thereby increasing road capacity from two lanes to four lanes;

3) "Backwater" crossings south of the Route 119 bridges - possibly involving use of the abandoned historic railroad truss bridge (Site 5, Fig. 7) over the Connecticut River.

INVENTORY AND DESCRIPTION OF THE RESOURCES

Introduction

All above-ground resources in the project area were reviewed for their potential eligibility for listing on the National Register (NR). The inventory of sites below includes sites currently on the NR and the Vermont Historic Sites and Structures Survey (VHSSS), and those that have been determined eligible for listing on the NR as a result of this Historic Resources Report. In addition, a number of sites that are do not appear eligible for the NR, but have marginal significance and may be considered eligible for the VHSSS have been included below as additional contextual information about the project area, as well as for future reference when some of the sites (Putney Rd. Sites 13,16,17) may indeed become eligible for listing on the NR in the early 1950s.

National Register Districts

A. Brattleboro Downtown Historic District (see Maps 2,3) was entered on the National Register of Historic Places on February 17, 1983. This district is listed as Site A on the Project Map (Map 2). The boundaries of the historic district are noted on the NR map (Map 3). Research for the Brattleboro-Hinsdale Bridge Project has revealed additional evidence that an amendment could be completed to extend the district in order to include several more sites at the eastern and southern boundaries of the historic district. As historic rail lines are now considered eligible for listing on the National Register, it appears that the eastern and southeastern boundaries for the historic district should be expanded to include the **rail line for the Boston and Maine Railroad** along the western bank of the Connecticut River, as well as the **rail yard and related railroad structures** south of Bridge Street (see Figures 15-19). In addition, the **Main Street Bridge** (with modern deck/road surface), over the Whetstone Brook in downtown Brattleboro, abutting the southerly boundary of the historic district, appears eligible for inclusion in the historic district as a contributing structure for its historic, engineering and architectural significance.

Union Station (Fig. 16) dominates the visual character of the intersection of Route 119, 142 and 5. The stone railroad station, built in 1915 to replace an earlier station near this site, is now a museum and art center. Entered on the NR on June 7, 1974, this building is one of the most significant structures in Brattleboro relating to the historic contexts Industry and Commerce, and Transportation in Brattleboro. According to local history, in the 1920s Brattleboro was a large shipping and transfer

center for Connecticut Valley Freight, with some trains dispatched from the local yards nearly 100 cars long (*With Interest*, Aug. 1925, #5).

B. Putney Road Residential Historic District (see Map 4, Figures 21-25) has never been surveyed by the Vermont Division for Historic Preservation but appears clearly eligible for listing on the National Register of Historic Places as an historic district significant for its outstanding examples of 19th and 20th century residential, educational, and ecclesiastical architecture, dating from various periods of growth and development in Brattleboro. The properties represent various historic themes and contexts developed by the VDHP for the Vermont Historic Preservation Plan, such as Historic Architecture and Patterns of Town Development, Culture and Government, Education, and Religious Trends. This district is listed as Site B on the Project Map (Map 2) . Separated for a short distance from the northeast corner of the Downtown Historic District in the vicinity of Harris Place, where new development has occurred, the potential Putney Road Residential Historic District appears to be bounded on the south by the properties along Walnut Street, on the east by the properties along Tyler Street, on the north by Bradley Avenue, and on the west by the properties along Putney Road from the Walnut Street intersection north to the West River. Near the north end of the district, the proposed boundary extends to the west to include a small housing development dating from the early 20th century, with properties on Eaton Avenue, Deacon Place and Vermont Avenue.

C. Canal Street - Clark St. Neighborhood Historic District (Map 2)
This National Register district listed on the NR on July 7, 1993 is outside of the project area, being located along Route 5 just southwest of the Downtown Brattleboro Historic District.

D. Canal Street Schoolhouse #6 (Map 2)
This National Register site listed on the NR on August 19, 1977 is outside of the project area, being located along Route 5 just south of the Canal Street-Clark Street district.

Vermont Historic Sites and Structures Survey (VHSSS/State Register)

Sites in the project area currently listed on the VHSSS, that are not part of the Downtown Brattleboro Historic District are (see Map 5):

VHSSS #1302-26 - Route 119, metal truss bridge over the Connecticut River (Vermont Bridge Survey No. CT-03, see Site 9 below for determination of eligibility for the NR)
VHSSS #1302-27 - Route 9, metal truss bridge over the Connecticut River (Vermont Bridge Survey No. CT-04, see Site 22 below for determination of eligibility for the NR)

National Register Individual Sites

The sites listed below are keyed to Project Map 2. All sites in the project area were reviewed for eligibility for listing on the National Register. As indicated below, not all individual sites appear eligible for the NR.

1. House, c. 1890, Route 119, Hinsdale, NH (Fig. 1)
Architectural Description: 2 1/2-story, gable roof, vernacular Queen Anne style house with distinctive porches and unique oval window, double hung windows with multi-light upper sash, historic dormer, intact massing, clapboard siding. Intact garage, two additional outbuildings, mature trees in front yard.
Statement of Significance: This house has architectural significance as an outstanding, well-preserved example of a vernacular Queen Anne style dwelling. The house has historic significance for its location on Route 119, an important transportation corridor between New Hampshire and Vermont.
Evaluation of Eligibility and Integrity: Although not a high style dwelling, the intact condition of the house and its well-preserved features indicate that the structure could be eligible for listing on the NR under Criteria A (architectural significance) and C (historic significance).
Evaluation of Effect: Potential for adverse effect

2. Norm's Auto Sales, c. 1880, Route 119, Hinsdale, NH (Figs.2,3)
Architectural Description: This 1 1/2-story, vernacular Italianate style building is distinctive for its slate roof, hooded round arch windows on the west side, tall double hung windows with peaked cornice caps on the west and north sides, and paired cornice brackets under the roof eaves of the main block. The building has a non-contributing shed appendage on the south side and a non-contributing garage at the northeast corner.
Statement of Significance: The commercial building has architectural significance for its Italianate style features, including the rounded head windows and cornice brackets.
Evaluation of Eligibility and Integrity: The integrity and significance of the building have been compromised by the addition of modern windows, the rear (south side) shed appendage, and north side garage. Not eligible for the NR due to alterations.
Evaluation of Effect: No potential for effect.

3. Fort Dummer Marker, 1901; Historic Grave Marker, 1763 (?), off Route 142, Brattleboro, VT (Fig. 4)
Architectural Description: These two stone markers, according to their text, were moved in 1908 approximately 2200 feet northwest of their original sites.
Statement of Significance: Both markers appear significant for their age (over fifty years old) and their associations with early settlement in Vermont, as outlined by the VDHP historic context Contact, Exploration, Conflict and Early Settlement.
Evaluation of Eligibility and Integrity: Although nothing appears to remain of Fort Dummer, the general vicinity of this site may have the potential to yield information, and thus the site may be eligible for listing on the NR under Criterion D (archeological potential).
Evaluation of Effect: Potential for adverse effect.

4. Cotton Mill/ Brattleboro Development Credit Corporation, c. 1900, Cotton Mill Hill, Brattleboro, VT (Fig. 5)
Architectural Description: This 3-story, brick, flat roof industrial building, with replacement modern windows, historic and new additions, is just outside of the project area.

Statement of Significance: The building is an important early 20th century commercial structure, and is significant to the industrial history of Brattleboro, according to the VDHP historic context Industry and Commerce.
Evaluation of Eligibility and Integrity: Recent alterations to the windows and doors on the first and second stories have not substantially compromised the architectural integrity of the building, and it appears to have retained its eligibility for the NR, as determined by the VDHP prior to the recent window alterations (VDHP File #WD94-013).
Evaluation of Effect: Potential for adverse effect.

5. Railroad Bridge, c. 1928 (?), over the Connecticut River (Fig. 7)
Architectural Description: Abandoned steel, twin-span Warren Through truss railroad bridge.
Statement of Significance: This metal truss bridge is significant as a local example of early 20th century bridge engineering in New England, according to VDHP contexts for Transportation, and MPDF Metal Truss Bridges in Vermont. The bridge most likely served not only passenger trains, but also freight trains that carried goods manufactured in the "backwater" area of Brattleboro, just west of the bridge, an important industrial area since the 19th century. The robust metal trusses of the bridge indicate that it may have been built after the Flood of 1927, built to withstand the threat of future flooding.
Evaluation of Eligibility and Integrity: As Vermont's Division for Historic Preservation has determined that all metal truss bridges in Vermont have the potential to be individually eligible for listing on the National Register, it is possible that this bridge which appears intact, is eligible for the NR.
Evaluation of Effect: Potential for adverse effect.

6. Barn/ Loney Construction, c. 1915, Vernon St. (Rte. 142), Brattleboro, VT (Fig. 9)
Architectural Description: This simple vernacular style, 2-story, flat roofed, wood frame building is distinguished by its false front roof line with central arched parapet, banks of multi-light windows, and front facade, second story, haydoor with diagonal bracing.
Statement of Significance: Although modest in detail and style, the commercial structure is typical of industrial buildings of the early 20th century, and is significant as one of the few generally intact historic structures that remain in this important industrial area along the rail corridor in the "backwater" area of Brattleboro. This building appears to be the structure listed on the 1919 Sanborn Insurance Map as the Purebred Livestock Sales Company "Sales Stable" with interior sales ring and office. Loney Construction is the current (1996) owner. The building relates to historic contexts in the VDHP theme Industry and Commerce.
Evaluation of Eligibility and Integrity: Despite the addition of some modern windows and doors, the massing and much of the fenestration of the structure are generally intact. The building appears to have the potential for listing on the National Register as an individual site.
Evaluation of Effect: Potential for adverse effect.

7. Railroad/Turntable Building, c. 1930, Vernon St. (Rte. 142), Brattleboro, VT (Fig. 11)
Architectural Description: Vernacular, 1-story, flat roof, brick building with intact massing, form and windows, located just north of the Wastewater Treatment Plant. Building is located between tracks

for the railroad, and according to town officials (Barile interview), is related to the operation of a former turntable at this site.
Statement of Significance: The location of this building, along the railroad corridor paralleling the west bank of the Connecticut River, indicates that it has an important history associated with the railroads and the various industries that prospered in the backwater area of Brattleboro during the 20th century, which relate to the VDHP themes of Transportation, and Industry and Commerce.
Evaluation of Eligibility and Integrity: The intact condition of the building indicates that it may be eligible for listing on the NR under Criterion A for its well-preserved architectural qualities, and for Criterion C, for its associations with the patterns of transportation and industrial history in Brattleboro.
Evaluation of Effect: Potential for adverse effect.

8. Hinsdale Bridge, 1926, NH Rte. 119 (Bridge St.) over the channel of the Connecticut River, Hinsdale, NH (Figs. 12,13)
Architectural Description: Single span steel high Parker Truss bridge (NHDOT bridge survey no. 042/040), listed as unusual in the state of New Hampshire, in substantially original condition, having a length of 200 feet, and designed by Storrs & Storrs.
Statement of Significance: Although the bridge is generally intact and historic, it was not rated as unusual in length or architectural/ engineering detail by the NHDOT.
Evaluation of Eligibility and Integrity: The NHDOT determined that the bridge, although noteworthy, was not eligible for the National Register. According to the Vermont criteria for metal truss bridges, the Hinsdale bridge would be considered eligible for listing on the NR.
Evaluation of Effect: The New Hampshire DOT (owner of the bridge) and NH Division for Historical Resources, according to their current records, have made the determination of no potential for effect, but the NHDHS has stated that their office might reconsider the eligibility of the bridge for this project.

9. Brattleboro-Hinsdale Bridge, 1920, NH Rte. 119 (Bridge St.) over the Connecticut River, Hinsdale, NH (Figs. 14-16)
Architectural Description: Single span steel Pennsylvania Through Truss bridge (NHDOT bridge survey no. 041/040, VT bridge survey no. CT-03, VHSSS #1302-26), listed as unusual in the states of New Hampshire and Vermont, in substantially original condition, having a length of 340 feet, designed by Storrs & Storrs, fabricated by the American Bridge Company, built by the United Construction Company, owned by the State of New Hampshire.
Statement of Significance: The Vermont bridge survey states that the bridge is significant as a major engineering work illustrating the standardized bridge practice of the early 20th century; the New Hampshire survey states that the bridge is significant for its length, unusual materials and detail, and its historic integrity.
Evaluation of Eligibility and Integrity: Both Vermont and New Hampshire have listed the bridge as eligible for the National Register as an individual site. The bridge is eligible for the NR under Criteria A and C.
Evaluation of Effect: Potential for adverse effect

The Island in the Connecticut River connecting the two Rte. 119 bridges has an interesting and significant history relating to the themes of Agriculture, Transportation, and Tourism. During the 19th century, when the island was connected to the shores of Vermont and New Hampshire by means of covered bridges, the island was a large fertile tract of land which supported several farms. The flood of 1862 reduced the island from 22 to 8 acres, damaged the crop land, swept away the farmhouses and the smaller bridge over the channel, and enlarged the channel (Cabot p.823). By 1906 (Sanborn Map) an iron bridge replaced the large covered bridge over the river, and the island became known as Island Park. By the early 20th century the island had been developed for recreational use. A large dance pavilion and confectionary, baseball grounds, boat houses, a boat landing, and a changing house (for swimmers), as well as several houses, tenements and even a granite works are all listed on the 1912 Sanborn Map (Map 7). The island was again flooded and structures swept away during the flood of 1927. More recently, the size of the island was further reduced when the Vernon dam was flooded, which raised the water level of the river. Today no structures remain on the island; pull off areas for parking exist, as do paths for pedestrians who cross the river by means of the bridge walkways.

10. Bradley Mansion/Hilltop House, c. 1865, Harris Ave., Brattleboro, VT (Fig. 26)
Architectural Description: 2-story, French Second Empire style house with Mansard roof, has significant Italianate style details including paired cornice brackets, cornice arcading, round headed windows, round roofed dormers, and bay windows. A large, modern addition projects from the rear (east) facade.
Statement of Significance: This imposing structure originally dominated the hill overlooking the river and according to the Beers' map of 1869 was surrounded by a large parcel of land with a greenhouse and stable to the south. Local residents state that the property was a gentleman's farm owned by Bostonian and summer resident, Richards Bradley, who acquired view rights to the north and northwest, overlooking the Retreat Farm. The original drive for the property is now Harris Ave., named after Fred and Helen Harris who subdivided this large property for housing in the 1950s and later.
Evaluation of Eligibility and Integrity: The architectural integrity of the main block of the structure appears generally intact, but has been substantially compromised by the multi-story rear addition, so that the building appears no longer eligible for listing on the NR.
Evaluation of Effect: No effect

11. Railroad Bridge, c. 1928 (?), over the West River (Fig. 29)
Architectural Description: Steel, single span Warren through truss railroad bridge.
Statement of Significance: This metal truss bridge is significant as a local example of early 20th century bridge engineering in New England according to VDHP contexts for Transportation, and MPDF Metal Truss Bridges in Vermont. The bridge most likely served not only passenger trains, but also freight trains that carried goods manufactured in the many factories and mills in Brattleboro, an important industrial area since the late 18th century. The robust metal trusses of the bridge indicate that it may have been built after the flood of 1927, built to withstand the threat of future flooding. C. 1925 historic photos of a different metal truss bridge at this location also indicate that this bridge is a replacement built after the flood of 1927.

Evaluation of Eligibility and Integrity: As Vermont's Division for Historic Preservation has determined that all metal truss bridges in Vermont have the potential to be individually eligible for listing on the National Register, it is possible that this bridge, which appears intact, is eligible for the NR.
Evaluation of Effect: Potential for adverse effect.

12. Milk Plant/ Maple Farms, c. 1930, Putney Rd., Brattleboro, VT (Fig. 30)
Architectural Description: This massive, 2-story industrial building, with jerkinhead roof, metal industrial windows with splayed lintels, some replacement 1/1 windows, and various shed appendages on the first story, is also distinguished by its generally intact massing and fenestration patterns.
Statement of Significance: According to local history, the building was a milk processing plant for the dairy farms located to the north in the vicinity of Putney Road, many of which were lost to strip development along Rte. 5 in the 1950s and later. The structure is significant for its associations with Dairying in Vermont, one of the historic contexts developed for the Historic Preservation Plan by the VDHP.
Evaluation of Eligibility and Integrity: The intact condition of the exterior, original windows and other architectural details indicate that the building may be eligible for listing on the National Register of Historic Places as an individual site under Criterion A, for its architectural significance, and Criterion C, for its associations with Vermont's patterns of history.
Evaluation of Effect: Potential for adverse effect.

13. Windham Veterinary Clinic, 1950, Putney Rd., Brattleboro, VT (Fig. 31)
Architectural Description: This 1 1/2-story, vernacular Colonial Revival style, brick cape was built by Dr. David Hopkins in 1950, according to a plaque on the wall in the building. Distinctive features include the symmetrical, 5-bay front facade, multi-light double hung windows with arched, inset lintels, and gable roof dormers. An historic garage is located to the northeast on the property.
Statement of Significance: The building is architecturally significant as a good example of a mid-20th century Colonial Revival style cape, and is historically significant as one of the early commercial buildings constructed along this portion of Rte. 5 which earlier in the century was primarily lined by agricultural properties.
Evaluation of Eligibility and Integrity: In three years (2000), the building will be 50 years old; at that time, and because of its intact condition and local significance, the property may then be eligible for the NR.
Evaluation of Effect: No effect

14. Landmark Hill, c. 1920, Landmark Hill Drive, Brattleboro, VT (Fig. 32)
Architectural Description: Colonial Revival style, 1-story, flat roof, clapboard sided building, with a tuscan colonnade surrounding the front and side facades, 1/1 single and paired windows, ornate geometric roof parapet, and modern addition across the rear. Contemporaneous barn with cupola and altered fenestration located to the east.
Statement of Significance: According to local history this structure was originally a doctor's residence (Tyler interview). According to VDHP historic contexts for architectural styles in Vermont, the building has retained its architectural significance embodied by the Colonial Revival

style features of the building, and is also significant for its association with local history in Brattleboro.
Evaluation of Eligibility and Integrity: Despite the new rear addition and altered barn, the distinctive main block of the Colonial Revival style structure is intact and continues to dominate the building, so that the property appears eligible for listing on the NR as an individual structure.
Evaluation of Effect: Potential for adverse effect.

15. Chickering House, c. 1900, Putney Rd., Brattleboro, VT (Fig. 33)
Architectural Description: Queen Anne, 2 1/2-story, gable roof, wood frame house, with contemporaneous wrap-around front porch, corner bay window surmounted by a 2-story octagonal tower, double hung windows, and attached 2 1/2-story carriage barn with central cupola. According to Brattleboro resident, Bill Tyler, the large split leaf maple in the front yard was planted when the house was built, and is considered one of the biggest trees of its type in Vermont.
Statement of Significance: According to the VDHP contexts for Historic Architecture and Patterns of Town Development, the house is architecturally significant as a well-preserved example of the Queen Anne style in Brattleboro, and one of the few intact historic structures remaining along this portion of Route 5.
Evaluation of Eligibility and Integrity: The intact house and setting, despite modern intrusions surrounding the property, appears eligible for the NR for its architectural significance (Criterion A) and its associations with Brattleboro history throughout the 20th century (Criterion C).
Evaluation of Effect: Potential for adverse effect.

16. North End Market, c. 1954, Putney Rd., Brattleboro, VT (Fig. 34)
Architectural Description: This 2-story, flat roof commercial building was constructed, according to local history, around 1954. Its casement windows and commercial storefront appear to be original.
Statement of Significance: The building is one of several structures that exist from the 1950s along this portion of Rte. 5, built to take advantage of both commuter and tourist travel along this busy road, and to serve residents who lived in the newly emerging neighborhoods nearby.
Evaluation of Eligibility and Integrity: In several years, this building will be 50 years old and because of its intact condition, may then be eligible for listing as an individual site on the NR as a good example of a neighborhood grocery store in Brattleboro.
Evaluation of Effect: No effect

17. Buraczynski Property: Kay's Yarn Shop c. 1945; Bowling Alley, c. 1954; House, c. 1860, Putney Rd., Brattleboro, VT. (Figs. 35,36,37)
Architectural Description: The Yarn Shop is a 1-story, gable front commercial building with an enclosed gable roof entry porch, and assorted windows which appear historic. The Bowling Alley is a Quonset hut type, rectangular building, distinguished by its moderne style, flat roof projection over the southwestern entrance, with a stainless steel cornice covering the rounded corners of the roof. The Farmhouse is a 1 1/2-story, gable front, vernacular, sidehall plan structure with attached ell, some replacement windows.
Statement of Significance: The Yarn Shop is a good example of mid-20th century American roadside architecture, and according to local history was originally built as King's Drive-In, one of the first

hamburger stands in town. A small cabin behind the Yarn Shop is the only remaining example of the five guest cabins on this site, formerly called King's Cabins. The Bowling Alley is a relatively rare existing example of Quonset hut construction. The small, 19th century Farmhouse has a related playhouse with a shallow front porch, and a louvered cupola on the gable roof. All structures are part of the same parcel of land. The Bowling Alley and Yarn Shop, although currently vacant, are an embodiment of the importance of this corner to the growing neighborhoods in this part of Brattleboro during the mid-20th century. The Farmhouse is a fair example of a vernacular 19th century dwelling.
Evaluation of Eligibility and Integrity: The Yarn Shop appears eligible for listing on the NR as a contributing structure to an historic district. In several years, when the Bowling Alley meets the 50 year age criterion for the NR, it along with the Yarn Shop, the North End Market, and the small grouping of c. 1940s houses to the west on Black Mountain Road, may be eligible for the NR as a small historic district. The Farmhouse, although generally intact, does not appear to have outstanding or distinguishing architectural features that would qualify it for listing as an individual site on the NR.
Evaluation of Effect: No effect

18. Carpenter House, c. 1930, Putney Rd., Brattleboro, VT (Fig. 38)
Architectural Description: Large, 2 1/2-story, gable roof, 3 x 2 bay, Colonial Revival style house with a 2-story gable end ell which has an enclosed second story sleeping porch, and an attached 1-story gable roof crafts/ antique shop which appears to be a somewhat later addition. The house is well-preserved with intact double hung windows having multi-light upper sash. A 2-bay modern garage is also located on the property.
Statement of Significance: According to the VDHP historic context for Historic Architecture and Patterns of Town Development, the house is a good example of an intact, vernacular, c. 1930, Colonial Revival style house in Brattleboro. According to local history, the Carpenter sisters, owners of the house and avid knitters, took advantage of their roadside location along this busy Rte 5 north-south thoroughfare by selling their crafts and antiques in the attached shop.
Evaluation of Eligibility and Integrity: The property appears eligible for listing on the NR under Criterion A for its architectural significance, and under Criterion C, for its associations with patterns of history in Brattleboro.
Evaluation of Effect: Potential for adverse effect.

19. Howard Johnson's, c. 1948/ c. 1965, Putney Rd., Brattleboro, VT
Architectural Description: According to local residents, this Howard Johnson's restaurant is about 50 years old, but modifications and additions in the 1960s have altered the original appearance of the structure.
Statement of Significance: Although not in its original condition, the building has historic significance as one of the earliest examples of roadside architecture in Brattleboro, built to take advantage of local and tourist business at this busy intersection of Routes 9 and 5.
Evaluation of Eligibility and Integrity: It appears by alterations to the structure, that the building's historic integrity has been substantially altered, so that it is would not be eligible for the NR.
Evaluation of Effect: No effect.

20. American Optical Co./Fulflex of Vermont, Inc., c. 1940, Putney Rd., Brattleboro, VT (Fig. 40)

Architectural Description: Large 1-story, brick, flat roof, factory complex, with banks of multi-light windows, flat roof monitors, tall brick smoke stacks. Set back from Putney Rd., the complex is located close to the rail line to the east, and is fronted on the west by mature trees and grass lawn.

Statement of Significance: Since the war years when the factory manufactured optical lenses for pilots, the factory has been an important employer for Brattleboro residents. In the 1970s the complex was purchased by Fulflex for the manufacture of elastic for diapers. According to VDHP contexts for Industry and Commerce, the factory is significant for its associations with industrial history in Brattleboro, and remains as a good example of a well-preserved industrial site that has adapted to modern production methods.

Evaluation of Eligibility and Integrity: This well-preserved industrial site appears to have retained its architectural integrity so that the site is most likely eligible for the National Register as an individual site under Criteria A and C.

Evaluation of Effect: Potential for adverse effect.

21. Railroad overpass, 1937, Route 9, Brattleboro, VT (Fig. 41)

Architectural Description: Railroad overpass over Route 9, with concrete abutments, date panel on south end abutment.

Statement of Significance: This overpass is an historic component of the Boston and Maine Railroad which it serves, and according to the VDHP context for Railroads is significant for its associations with the history of railroads in Vermont.

Evaluation of Eligibility and Integrity: As the State of Vermont is now exploring the history and significance of all rail lines in the state, this historic overpass may be considered a contributing structure to the historic rail system in Vermont.

Evaluation of Effect: Potential for adverse effect

22. Route 9 Bridge, 1937, Chesterfield, VT (Figs. 42-44)

Architectural Description: Steel Through Arch, single span, 440 foot bridge over the Connecticut River. Owned by the State of New Hampshire. Built by O.W. Miller. Vermont Bridge Survey No. CT-04, VHSSS #1302-27, NHDOT Survey No. 040/095

Statement of Significance: The Vermont bridge survey states that the bridge is significant as a representative example of the steel arch form, developed in the early 20th century for use across a long span without intermediate piers. A plate on the structure reads: "American Institute of Steel Construction, Annual Award of Merit, Most Beautiful Steel Bridge, Class C, 1937."

Evaluation of Eligibility and Integrity: Both the States of Vermont and New Hampshire have determined that the bridge is eligible for the National Register for its architectural, engineering and historical merit, Criteria A and C.

Evaluation of Effect: Potential for adverse effect.

23. Smith Camp, c. 1940, Mountain Rd., Chesterfield, NH (Fig. 46)

Architectural Description: 1-story, vernacular style camp with novelty board siding, assorted windows.

Statement of Significance: This structure is significant as one of a cluster of small, early 20th century seasonal cottages on the east bank of the Connecticut River.
Evaluation of Eligibility and Integrity: Although of local significance, the camps at this location do not appear to be of outstanding architectural or historic merit to qualify them for listing on the National Register of Historic Places.
Evaluation of Effect: No effect

EVALUATION OF EFFECT

Conclusion

As outlined above, the Inventory lists two Historic Districts in the project area that have the potential for Adverse Effect. Of twenty-three individual properties reviewed for eligibility for the National Register, seven were determined not eligible with No Effect to the resources, and sixteen were determined eligible for the NR with potential for Adverse Effect.

Because defined alternatives have not yet been determined for the Brattleboro-Hinsdale Bridge Project, specific areas of adverse effect can not yet be discussed. General comments for the three broad alternatives listed above in the Project Description (p.2) are as follows:

Alternative 1, Do Nothing - no adverse effect on historic resources.

Alternative 2, Rehabilitation Alternative - No Adverse Effect on the Route 9 bridge if the rehabilitation meets the Secretary of the Interior's Standards for Rehabilitation, and No Adverse Effect if the new bridge design does not adversely effect historic resources in the project area that are determined eligible for the National Register.

Alternative 3, New Crossings (south of Rte. 119) - possible Adverse Effect to the railroad bridge in the backwater area, and to existing historic resources identified in the Inventory (Map 2).

The project area studied for this phase included the properties along the Connecticut River corridor. Historic resources adjacent to this corridor may need further review as the project alternatives are defined. The resources at the downtown Brattleboro intersection of Routes 5, 142 and 119 may need additional review, to include for example, the Holstein building and other structures adjacent to the existing Downtown Historic District, and along the converging roadways at the intersection.

MITIGATION

Mitigation of adverse effect to historic resources calls for avoidance of impacts to the properties listed above that are eligible for the National Register of Historic Places. Adverse effects to an historic property can occur if an undertaking may alter the characteristics of the property that may qualify it for the National Register, including alteration to the property's location, setting or use.

When design alternatives for the project are being developed, effect and mitigation issues for each alternative must be addressed by an historic preservation consultant, for review and concurrence by the Vermont Division for Historic Preservation.

Evaluation of Effect Summary Chart: VAOT Brattleboro-Hinsdale Bridge Project

Site No.	Property Name	NR Listed/eligible	Potential for Adverse Effect
A	Brattleboro Downtown HD/ amendment	Listed 2/17/83; amendment eligible	Yes
B	Putney Rd. Residential HD	appears eligible	Yes
1	House, NH Rte. 119	appears eligible	Yes
2	Norm's Auto Sales	not eligible	No
3	Fort Dummer Marker & Grave Marker	site appears eligible	Yes
4	Cotton Mill	appears eligible	Yes
5	Railroad bridge	appears eligible	Yes
6	Barn	appears eligible	Yes
7	Railroad/turntable building	appears eligible	Yes
8	Hinsdale bridge	appears eligible	Yes
9	Brattleboro-Hinsdale bridge	eligible	Yes
10	Bradley Mansion	not eligible	No
11	Railroad bridge	appears eligible	Yes
12	Milk Plant	appears eligible	Yes
13	Windham Veterinary Clinic	not eligible	No
14	Landmark Hill	appears eligible	Yes
15	Chickering House	appears eligible	Yes
16	North End Market	not eligible	No
17	Buraczynski property	not eligible	No
18	Carpenter House	appears eligible	Yes
19	Howard Johnson's Restaurant	not eligible	No
20	Fulflex of Vermont, Inc.	appears eligible	Yes
21	Railroad overpass	appears eligible	Yes
22	Route 9 bridge	eligible	Yes
23	Camp	not eligible	No

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Interviews

Barile, Leo. Assistant Assessor, Town of Brattleboro. November 13, 1996

Buraczynski, Mrs. Anthony (Kay), resident of Putney Rd. since 1948, Brattleboro, Vt.
Phone Interview, December 7, 1996

Tyler, Bill. Owner of Colonial Motel, Putney Rd., long-time resident of Brattleboro.
Phone Interview, December 4, 1996

APPENDIX

Qualifications of Consultant

All work was performed by Principal Investigator, Liz Pritchett. Ms. Pritchett, an architectural historian with a Master's degree in Historic Preservation from the University of Vermont, Ms. Pritchett meets 36 C.F.R. standards set for review and documentation of historic resources established by the National Park Service. Her firm, Liz Pritchett Associates, is a registered D.B.E. firm in Vermont and New Hampshire.

VHSSS Survey Forms

Maps

1. USGS Map, Hanover NH - VT Quad. 1959/1988
2. Project Location/ Site Inventory Map
3. Brattleboro Downtown Historic District Map, Site A
4. Potential Putney Road Residential Historic District Map, Site B
5. Vermont Historic Sites and Structures Survey Map
6. Beers' Atlas Map of Brattleboro, Vt., 1869
7. Sanborn Insurance Map of Island Park, Brattleboro, Vt., 1912

Photographs

STATE OF VERMONT
Division for Historic Preservation
Montpelier, VT 05602

HISTORIC SITES & STRUCTURES SURVEY
Bridge Survey Inventory Form

SURVEY NUMBER: 1302-26
FIELD SITE NUMBER: CT-03
Negative File Number: 85-A-172

UTM REFERENCES:
Zone/Easting/Northing

18/699960/4746990

U.S.G.S. QUAD. MAP:

LOCATION:

✓ VT 119 (Bridge Street)
STREET, ROUTE or TOWN HIGHWAY

Connecticut River
FEATURE CROSSED

County: Windham
Town: Brattleboro
Village: Brattleboro

COMMON NAME:

OWNER:
ADDRESS:

AOT Bridge Number (BCN):
N/A

Still in Use? Yes [] No []

Original Use: Highway [] Railroad []
Other []

Designer: Storrs & Storrs
Fabricator: American Bridge Company
Contractor: United Construction Company

MATERIAL/DESIGN/FORM:	DATE:
Steel/Pennsylvania/Through Truss (ex.: Steel/Warren/Through Truss)	1920

GENERAL DESCRIPTION

Construction Details

Metal Trusses: Pinned Connections [] Riveted XX Bolted [] Other []

Masonry arches: Ashlar [] Rubble [] Rubble w/ cut ring stones [] Other []
Type of Stone: _____

Concrete arches:

Other Features: Builder's Plate XX Other Date [] Portal Ornament [] Railing XX
Sidewalks [] Inclined End Panels XX Segmental Top Chord XX Skewed [] Other []

Abutments: Ashlar [] Rubble [] Poured Concrete XX Other [] _____

Alterations: Structural Reinforcement XX New Deck [] Repointing [] Relocated []
Replaced Railing [] Other [] _____

DIMENSIONS

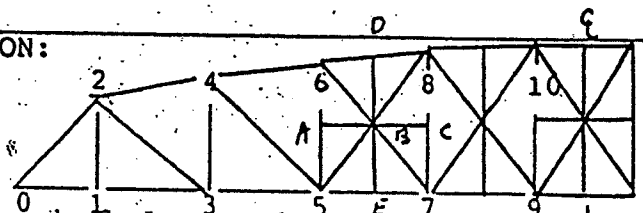
Number of Spans: ___ Overall Length: 340'

SPAN #	LENGTH	# PANELS	WIDTH	HEIGHT OVER FEATURE CROSSED	DEPTH of TRUSS	PORTAL CLEARANCE
1	330'	11	20.7	c.20	48.7	12.5

SURROUNDING ENVIRONMENT: Open Land [] Woodland XX "Road-side Strip" Development []
Scattered Buildings [] Moderately Built-up [] Densely Built-up XX
Residential [] Commercial XX Agricultural [] Industrial [] Other [] _____

Related Features:

ADDITIONAL DESCRIPTION:



Top chord: box girder formed of plates and angles with latticed underside, 18x24".
Bottom chord: I-section with web of plates c.4' apart; except for end panels, thickness of flanges are doubled with added plates.
Main verticals: lattice-girders (I-section) of varying dimensions.
Hip verticals and lower sub-verticals (e.g.,B-E): paired angles joined by stay plates c.3' apart.
Upper sub-verticals (e.g.D-B): I-section with web of spaced plates.
Diagonals (except counters): I-section with web of plates c.3'apart, graduated in size from 8x14" (8-9) to 13x14" (2-3).
Counter diagonals (e.g., 7-10) and horizontal stiffener (A-C): paired angles joined by stay plates.
Top bracing: lattice-girder struts and cross-bracing.
Deep sway bracing: crossed angles between top strut and lattice-girder lower strut.
Portal bracing: lattice of angles; curved sway braces formed of angles and plate, each with three circular cut-outs.
Floor system: I-section plate-girder floor beams, with added plate welded to bottom flange; 7 I-beam and 2 channel stringers, heavy angle cross-bracing; grill floor on small channels (1938). (Continued on attached sheet)

STATEMENT OF SIGNIFICANCE: One of two Pennsylvania trusses across the Connecticut both built in the 1920s, this 330' bridge is significant as a major engineering work illustrating the standardized bridge practice of the early 20th century. The Pennsylvania truss was a variation on the standard Pratt design. Like the Parker truss, it uses a curved top chord to give depth ot the truss in the center, where it is needed to resist bending forces. In lengths over about 300', the depth of the truss and hence the length of the panels increased to a point where the floor joists would have to be very long and heavy to span the length of a panel. By subdividing the panels (in this case only the middle panels), the Pennsylvania truss provided extra floor beams and thus a lighter and more economical floor system. As was typical in the early 1920s, the bridge makes extensive use of built-up members where later trusses used rolled channels and I-beams. The built-up members saved some weight, a nicety discarded because they were more expensive to fabricate. Also typical is the vestige of decorative intent visible in the portal ornament and sidewalk railing. (cont.pg. 1)

REFERENCES:
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SKETCH MAP (Indicate North in Circle)

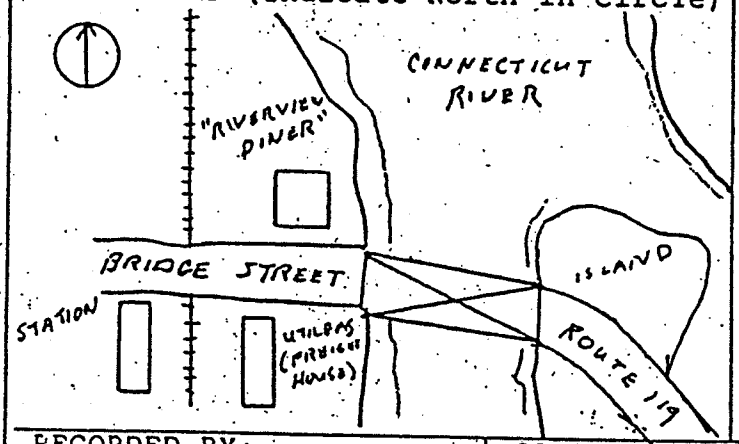


Plate Information:

CONTRACTORS

THE UNITED CONSTRUCTION CO.

ALBANY, NY

AMERICAN BRIDGE COMPANY

RECORDED BY:	ORGANIZATION:	DATE RECORDED:
Bruce Clouette	Historic Resource Consultants	June 19, 1985

Survey # 1302-26
Field # CT-03

Statement of Significance Continued

The American Bridge Company was one of the country's largest fabricators and a major supplier of Vermont bridges from its inception in 1900. United Construction, an Albany, New York, contractor, was often associated with American Bridge in the erection of these spans, though their near-exclusive relationship seems to have ended after American Bridge was reorganized in 1914.

John W. Storrs was an important northern New England bridge engineer of the early 20th century. Born in Montpelier, he lived most of his life in Concord, New Hampshire where he worked as engineer for the B & M Railroad. Around 1909 his son Edward associated with him as Storrs & Storrs consulting engineers. Storrs also designed the Quechee Gorge arch and the granite bridge in Barre.

STATE OF VERMONT
Division for Historic Preservation
Montpelier, VT 05602

HISTORIC SITES & STRUCTURES SURVEY
Bridge Survey Inventory Form

SURVEY NUMBER: 1302-27
FIELD SITE NUMBER: CT-04
Negative File Number: 85-A-172

UTM REFERENCES:
Zone/Easting/Northing

18/699690/4873300

U.S.G.S. QUAD. MAP:
Brattleboro /15'

LOCATION:

VT 9
STREET, ROUTE or TOWN HIGHWAY

Connecticut River
FEATURE CROSSED

County: Windham
Town: Brattleboro
Village:

COMMON NAME:

AOT Bridge Number (BCN):
N/A

Still in Use? Yes [X] No [ ]

Original Use: Highway [X] Railroad [ ]
Other [ ]

Designer:
Fabricator:
Contractor: O.W. Miller

OWNER: Steel of New Hampshire
ADDRESS: Dept. of Public Works & Highways
Concord, N.H. 03301

MATERIAL/DESIGN/FORM: Steel/ /Through Arch
(ex.: Steel/Warren/Through Truss)

DATE: 1937

GENERAL DESCRIPTION

Construction Details

Metal Trusses: Pinned Connections [ ] Riveted [X] Bolted [ ] Other [ ]

Masonry arches: Ashlar [ ] Rubble [ ] Rubble w/ cut ring stones [ ] Other [ ]
Type of Stone:

Concrete arches:

Other Features: Builder's Plate [ ] Other Date [X] Portal Ornament [ ] Railing [X]
Sidewalks [X] Inclined End Panels [ ] Segmental Top Chord [ ] Skewed [ ] Other [ ]

Abutments: Ashlar [ ] Rubble [ ] Poured Concrete [X] Other [ ]

Alterations: Structural Reinforcement [ ] New Deck [ ] Repointing [ ] Relocated [ ]
Replaced Railing [ ] Other [ ]

DIMENSIONS

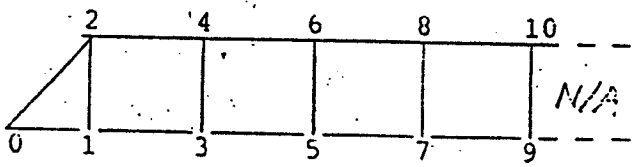
Number of Spans: 1 Overall Length: 440

SPAN #	LENGTH	# PANELS	WIDTH	HEIGHT OVER FEATURE CROSSED	DEPTH of TRUSS	PORTAL CLEARANCE
1	425	N/A	24	c.32	N/A	13.5

SURROUNDING ENVIRONMENT: Open Land [ ] Woodland [X] "Road-side Strip" Development [ ]
Scattered Buildings [X] Moderately Built-up [ ] Densely Built-up [ ]
Residential [ ] Commercial [X] Agricultural [ ] Industrial [ ] Other [ ]

Related Features:

ADDITIONAL DESCRIPTION:



Parabolic steel rib arch with one-piece ribs. Arch is two-hinged design with pivots at each end. Ribs spring from concrete footings well below the level of the roadway; they consist of large box girders with two internal plates. They measure 44" wide by 78" deep at the ends, and have 12x24" oval cutouts on the bottoms.

Ribs are tied together with triangular-truss struts formed of channels. Between struts are two similar members running diagonally from the center of one strut to the ends of the next, creating a repeating-K pattern in the direction of the bridge's center.

Deck is supported with I-beam suspenders pinned at the top and bottom. Corrugated metal floor on 8 I-beam stringers, carried on rolled I-section floor beams. Heavy angle cross-bracing. Bottom chord is a 4x12" channel.

Angle and channel guardrail mounted on I-section stanchions. At each end are concrete structures incorporating railings and niches.

STATEMENT OF SIGNIFICANCE: This bridge is significant as a representative example of a form developed in the early 20th century, the steel arch. It is one of four rib arches in the survey (the Quechee Gorge bridge is a spandrel-braced arch) and it is nearly identical to the ;arch at Fairlee. Steel arches first appeared in America in the 1890s and early 1900s and were used where a long crossing had to be made without intermediate piers. One of their chief advantages was that they could be erected without falsework, cantilevered out over the river and supported by temporary stay cables. The arhc was also appreciated for its aesthetic qualities, a viewpoint the American Institute of Steel Construction tried to promote through its awards, a program instituted in part as a reaction to the growing popularity of reinforced concrete.

Although its very length makes it an important work of engineering, this bridge is a late example of the type. It may be that the large steel (continued pg. 1)

REFERENCES:

Vermont Highway Commissioners, Biennial Report, 1936, p.53

SKETCH MAP (Indicate North in Circle)

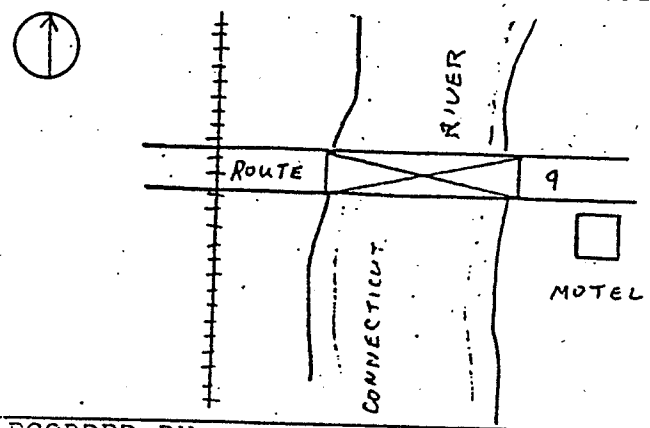


Plate Information:

AMERICAN INSTITUTE OF STEEL CONSTRUCTION

ANNUAL AWARD OF MERIT

MOST BEAUTIFUL STEEL BRIDGE

CLASS C 1937

RECORDED BY:	ORGANIZATION:	DATE RECORDED:
Bruce Clouette	Historic Resource Consultants	June 19, 1985

Survey # 1302-27
Field # CT-04

Statement of Significance Continued

sections from which it is formed were more feasible to fabricate, transport, and hoist in the 1930s, but overall it represents little technological advance over earlier arches. It was erected in 1937 as a replacement for a bridge washed out in the flood of 1936. Vermont's share was paid by W.P.A. funds.

THROUGH STEEL ARCHES

THEMATIC REVIEW

The following committee reviewed the Through Steel Arch Bridges on January 28, 1988: Daniel Geiger, NHDOT; John Moore, NHDOT; Gary Hume, SHPO and Harry Kinter, FHWA.

Video tape of each structure was viewed and reference material was available.

There are four bridges in the thematic grouping. These are Chesterfield Br.No. 040/095, NH Rte. 9 over the Connecticut River; Haverhill Br.No. 219/178, US Rte. 302 over the Connecticut River at Woodsville; Orford Br.No. 062/124, NH Rte. 25-A over the Connecticut River and Woodstock Br.No. 177/148, NH Rte. 175 over the Pemigewasset River.

The structures were rated on an agreed-upon scale in regard to Historicity, Technological Significance and Environmental Quality. The evaluation scale used by the committee was adapted from the one used in West Virginia. As the committee proceeded into the evaluation process, certain modifications and refinements were agreed upon until the format included in this report had been involved. At this time it was agreed that, if appropriate, points between those listed in the scale could be used in the evaluation.

These bridges had been reviewed by the State Historic Preservation Office at the time that the Manchester Notre Dame Bridge was being reviewed. The above-mentioned committee viewed the video presentation and, in general, concurred with the SHPO determinations.

Under "Historicity" Category I-A, Development Period, the Haverhill Bridge, which was built in 1923, was considered to be between "Early Flourishing Phase" and "Mature Flourishing Phase". All others in this grouping were considered to be "Mature Flourishing Phase". Under Category I-B, Rarity in New Hampshire, all were considered to be "Rare". Also under Category I-C, Integrity, all were considered to be in "original condition". Under Category I-D, Historicity of Site, the Haverhill Bridge was considered to be "National Historical Significance" as it carried US Rte. 302 across the State Line. Also adjacent to it is a steel structure which now carries the railroad and which formerly carried the highway on its lower level. Chesterfield and Orford were considered to be of "State Historical Significance" in as much as they carry state highways across the Connecticut River. The Woodstock Bridge was considered to be "Local Historical Significance".

Under "Technological Significance" Category II-A, Engineer-Builder-Company, the Haverhill Bridge, designed by J.R. Worcester and built by Boston Bridge Works, was considered to be "Prolific Builder of Conventional Types". The others were designed by the New Hampshire Highway Department. Chesterfield was fabricated by Bethlehem Steel Company, Orford by American Bridge Company and Woodstock by Lackawanna Steel Construction Corporation. All three were considered to be "Prolific Builder of Conventional Types".

Under Category II-B, Structural System and Materials, all were considered to be "Excellent Example of a Widely Used Type". Under Category II-C, Length and Number of Spans, the Chesterfield and Orford Bridges, which were the two longer arch spans, were considered "Significant Length and/or Number of Spans". Haverhill and Woodstock were considered to be "Typical Length and/or Number of Spans".

Under Category II-D, Architectural and/or Engineering Details, the Haverhill Bridge, which has ornate details as well as builders and dedication plaques as well as a sidewalk, was considered to be "unusual or novel". The Chesterfield Bridge bears a plaque from the American Institute of Steel Construction recognizing and "Annual Award of Merit - Most Beautiful Steel Bridge - Class C - 1937". The Orford Bridge has an exterior sidewalk. The Woodstock Bridge has an emergency walk on each side of the roadway. These were each considered to be a "Noteworthy Example".

Under "Environmental Quality" Category I-A, Aesthetic, Chesterfield and Haverhill were considered to each have "Noteworthy Proportions and Details". Orford was considered to be an "Excellent Example of Widely Used Type" and Woodstock as "Typical But in an Attractive Location".

Under Category III-B, Integrity of Site, Orford and Woodstock were considered to be "Site in Original Condition" and Chesterfield and Haverhill to have had "Minor Site Alterations".

Point totals varied from 17 to 22 and all were considered to be eligible for the National Register of Historic Places.

A copy of the evaluation scale listing the bridges and their respective ratings and point totals is included as a part of this report.

The bridges will be written up on HABS/HAER Inventory Forms and included with the National Parks Service Registration Form.

N.H. V.U. | Bridge Rating System

STEEL ARCHES

	Points	CHESTERFI- 040/095	HAVERHIL- 219/170	ORFORD 062/124	WOODSTO- PBR/18	STEWARTS- 054/163
Historicity						
A. Development Period						
1. Pioneering Phase	6					
2. Early Flourishing Phase	4		3			
3. Mature Flourishing Phase	2	2		2	2	2
4. Obsolescent Phase	0					
B. Rarity in New Hampshire						
1. Sole Survivor	6					6
2. Rare	4	4	4	4	4	
3. Unusual	2					
4. Common	0					
C. Integrity						
1. In Original Condition	3	3	3	3	3	
2. Substantially Original Condition	2					2
3. Minor Alterations	1					
4. Major Alterations	0					
D. Historicity of Site						
1. National Historical Significance	3					
2. State Historical Significance	2	2	3	2	1	1
3. Local Historical Significance	1					
4. Not Significant	0					
Technological Significance						
A. Engineer/Builder/Company						
1. International Leader	4					
2. Significant or Unusual	3	3		3	3	
3. Prolific Builder of Conventional Types	2		2			2
4. Contribution Limited or Unknown	1	1		1	1	
5. Unknown	0					
B. Structural System and Materials						
1. Outstanding Early Example	4					
2. Significant Early Example	3					2
3. Unusual or Novel	2	1	1	1	1	
4. Excellent Example of a Widely Used Type	1					
5. Typical	0					
C. Length and Number of Spans						
1. Outstanding Length and/or Number of Spans	3					
2. Noteworthy Length and/or Number of Spans	2					
3. Significant Length and/or Number of Spans	1	1	0	1	0	1
4. Typical Length and/or Number of Spans	0					
D. Architectural and/or Engineering Details						
1. Outstanding	3					
2. Unusual or Novel	2					
3. Noteworthy Example	1	1	2	1	1	1
4. Typical	0					
Environmental Quality						
A. Aesthetic						
1. Unusually Fine Proportions and Details	4					
2. Noteworthy Proportions and Details	3	3	3	2	1	3
3. Excellent Example of Widely Used Type	2					
4. Typical but in an Attractive Location	1					
5. Not Significant	0					
B. Integrity of Site						
1. Site in Original Condition	2			2	2	
2. Minor Site Alterations	1	1	1			1
3. Site Greatly Altered	0					
TOTAL		19	22	19	16	21

20 19

SINGLE SPAN HIGH PARKER TRUSSES

THEMATIC REVIEW

The following committee reviewed the single span steel high parker trusses on December 16, 1987: Daniel Geiger, NHDOT; John Moore, NHDOT; R. Stuart Wallace, SHPO; Gary Hume, SHPO; Harry Kinter, FHWA and David Hall, FHWA.

Video tape of each structure was viewed and reference material was available.

The eight bridges reviewed were:

Bristol-New Hampton	113/040	Central Street over the Pemigewasset River
Hinsdale	042/040	NH Rte. 119 over the Channel of the Connecticut River
Hinsdale-Brattleboro	041/040	NH Rte. 119 over the Connecticut River
Holderness-Plymouth	046/139	NH Rte. 175A over the Pemigewasset River
Littleton	220/056	Beacon Street over the Ammonoosuc River
Monroe-Barnet	081/106	McIndoes Road over the Connecticut River
Monroe-Barnet	110/125	Barnet Road over the Connecticut River
Stewartstown-Canaan	028/146	Main Street, West Stewartstown, NH over the Connecticut River

Under "Historicity", all eight bridges were considered to have been built in the "Mature Flourishing Phase" and all were considered to be "unusual" with respect to the number of bridges in the inventory. The two Monroe bridges were considered to be "In Original Condition" and Stewartstown to have undergone minor alterations. The remaining bridges were considered to be in "Substantially Original Condition". The sites at Holderness-Plymouth, Bristol-New Hampton and Littleton were considered to be "Local in Significance". The remaining bridges which are across the Connecticut River were deemed to be of "State Significance".

Under "Technological Significance", those structures fabricated by American Bridge Company and Berlin Construction Company were considered to be by a "Prolific Builder of Conventional Types". Holderness-Plymouth and Monroe-Barnet were done by the Lackawanna Steel Construction Corporation of Buffalo, New York and were also considered to be by a "Prolific Builder of Conventional Types". Hinsdale Br.No. 042/044 was considered to be "Typical" as to Structural System and Materials. Hinsdale-Brattleboro Br.No. 041/040 and Monroe Br.No. 081/106 at McIndoes Falls were considered to be "Unusual or Novel". The remaining structures were considered to be "Excellent Examples of a Widely Used Type".

Monroe Br.No. 081/106 and Hinsdale-Brattleboro Br.No. 041/040 have span lengths 305'-6" and 330'-0" respectively and were considered to be "Outstanding". Holderness-Plymouth and Monroe-Barnet with span lengths of 250'-3" and 264'-0" respectively were considered to be "Noteworthy". Bristol-New Hampton, Littleton and Stewartston-Canaan were considered to be "Significant" and Hinsdale Br.No. 042/044 as "Typical". Bristol-New Hampton and Monroe Br.No. 081/106 were considered to have "Unusual or Novel" Architectural and/or Engineering Details. Littleton, Hinsdale-Brattleboro and Stewartstown-Canaan were considered "Noteworthy" because of the exterior sidewalks. The remaining bridges were "Typical".

Under "Environmental Quality", Bristol-New Hampton and Monroe Br.No. 081/106 were considered to have "Noteworthy Proportions and Details". Hinsdale-Brattleboro was considered to be an "Excellent Example of a Widely Used Type". Holderness-Plymouth was not considered significant and remaining bridges were considered to be "Typical But in an Attractive Location". The site of the Holderness-Plymouth Bridge was considered to have been greatly altered. The site at Hinsdale-Brattleboro was considered to have had minor alterations and the remaining sites were considered to be in original condition.

Point totals for the thematic review varied from 11 to 23. Using 16 as a cut-off, four bridges were at 16 or above and four below. The four bridges at 16 or above would be included with the National Parks Service Registration Form. All eight bridges would each be written up on a HABS/HAER Inventory Form with the forms for the four selected structures included with the National Parks Service Registration Form.

These are:

Bristol-New Hampton	113/064
Hinsdale, NH-Brattleboro, VT	041/040
Monroe, NH-Barnet, VT	081/106
Monroe, NH-Barnet, VT	110/125

A copy of the evaluation scale listing the bridges and the respective points for each category is included as a part of this report.

SINGLE SPAN PARKER TRUSSES (HIGH)

TOWN	BR. NO.	LOCATION	YEAR BUILT	C-C Brg.	BETW. CURBS	DESIGNED BY ℄ FILE NO.	CONTRACTOR	STEEL FAB.	
Bristol-New Hampton	113/064	Central Street over Pemigewasset R.	1926	240'-0"	18'-0"	State H.E. Langley F-14		Berlin Const. Co	Holder.
Hinsdale	042/044	NH Rte 119 over Connecticut River	1926	200'-0"	19'-6"	Storrs & Storrs 1-3-33			
Hinsdale-Brattleboro	041/040	NH Rte 119 over Connecticut River	1920	330'-00"	20'-2"	Storrs & Storrs 1-3-33	United Const. Co.	Am. Br.	
Holderness-Plymouth	046/139	over Pemigewasset R.	1934	250'-3"	21'-0"	State Q 20	Lackawanna Steel Co		
Littleton	220/056	Beacon St. over Ammonoosuc R	1928	220'-0"	21'-0"	State G-14	Am. Br. Co	Am. Br. Co	
Monroe-McIndoes Falls	061/106	McIndoes St. over Connecticut River	1930	305'-6"	21'-0"	State K-44	Am. Br. Co	Am Br. Co.	
Monroe-Barnet	110/125	over Connecticut River	1937	264'-0"	24'-0"	State 2-1-3-6	O W Miller	Lackawanna Steel Const	
Stewartstown-Canaan	026/146	over Connecticut River	1928	220'-0"	21'-0"	State G-26	Force Acct	Am Br. Co.	Aver
MULTI-SPAN PARKER TRUSSES									
Boscawen-Canterbury	132/085	over Merrimack R.	1907	2@170'-3"	17'-1"	Storrs	United Const	Am. Bridge Co.	Penac
Lancaster-Guildhall	111/129	over Connecticut R	1950	2@198'-0"	28'-0"	State 2-10-1-1	W H Hinman Inc.	Bancroft & Martin	White
Lyme-Thetford	053/112	over Connecticut R	1937	2@231'-9"	21'-1"	State 1-14-2-6	O.W. Miller Co.	Am. Bridge Co.	

LISTED BY SPAN LENGTH

SINGLE SPAN PARKER TRUSSES HIGH

TOWN	BR. NO.	LOCATION	YEAR BUILT	C-C Brg.
Hinsdale	042/044	NH Rte 119 over Connecticut River	1926	200'-0"
Littleton	220/056	Beacon St. over Ammonoosuc R	1928	220'-0"
Stewartstown - Canaan	026/146	over Connecticut River	1926	220'-0"
Hinsdale - Brattleboro	041/040	NH Rte 119 over Connecticut River	1920	330'-0"
Bristol - New Hampton	113/064	Central Street over Pemigewasset R.	1926	248'-6"
Holderness - Plymouth	046/139	over Pemigewasset R	1934	250'-3"
Monroe - Barnet	110/125	over Connecticut River	1937	264'-0"
Monroe - McIndoes Falls	061/106	McIndoes St. over Connecticut River	1930	305'-6"

MULTI-SPAN PARKER TRUSSES

Boscawen - Canterbury	132/085	over Merrimack R.	1907	2 @ 170'-3"
Lancaster - Guildhall	111/129.	over Connecticut R.	1950	2 @ 198'-0"
Lyme - Thetford	053/112	over Connecticut R	1937	2 @ 231'-9"

LISTED BY AGE

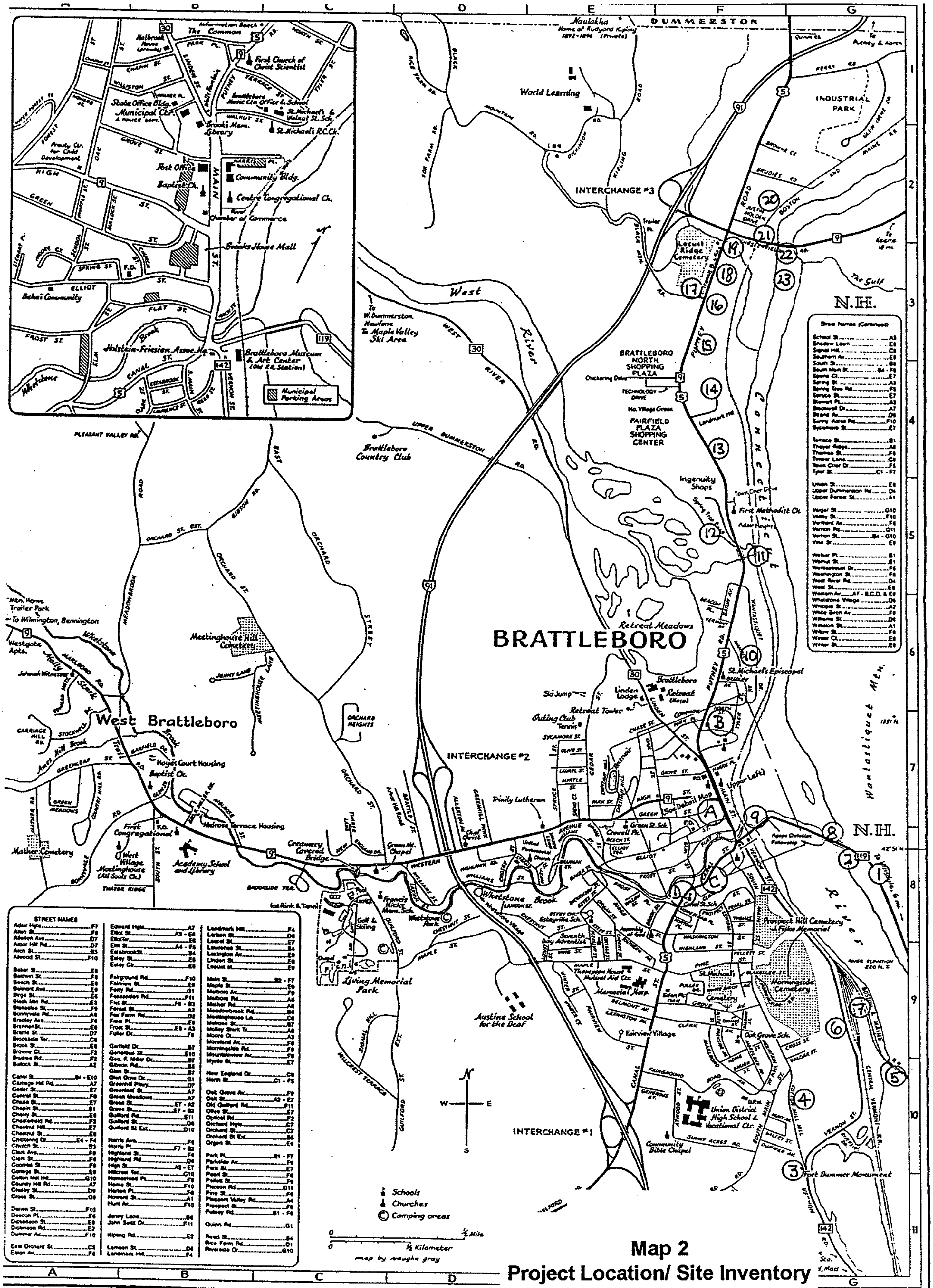
SINGLE SPAN PARKER TRUSSES (HIGH)

TOWN	BR. NO.	LOCATION	YEAR BUILT	C-C Brg.
Hinsdale-Brattleboro	048/040	NH Rte 119 over Connecticut River	1920	330'-06"
Hinsdale	042/044	NH Rte 119 over Connecticut River	1926	200'-0"
Bristol-New Hampton	113/064	Central Street over Pemigewasset R.	1926	248'-0"
Littleton	220/056	Beacon St. over Ammonoosuc R	1928	220'-0"
Stewartstown-Canaan	028/146	over Connecticut River	1928	220'-0"
Monroe-McIndoes Falls	061/106	McIndoes St. over Connecticut River	1930	305'-6"
Holderness-Plymouth	046/139	over Pemigewasset R	1934	250'-3"
Monroe-Barnet	110/125	over Connecticut River	1937	264'-0"

MULTI-SPAN PARKER TRUSSES

Boscawen-Canterbury	132/085	over Merrimack R.	1907	2@ 170'-3"
Lyme-Thetford	053/112	over Connecticut R	1937	2@ 231'-9"
Lancaster-Guildhall	111/129.	over Connecticut R	1950	2@ 198'-0"

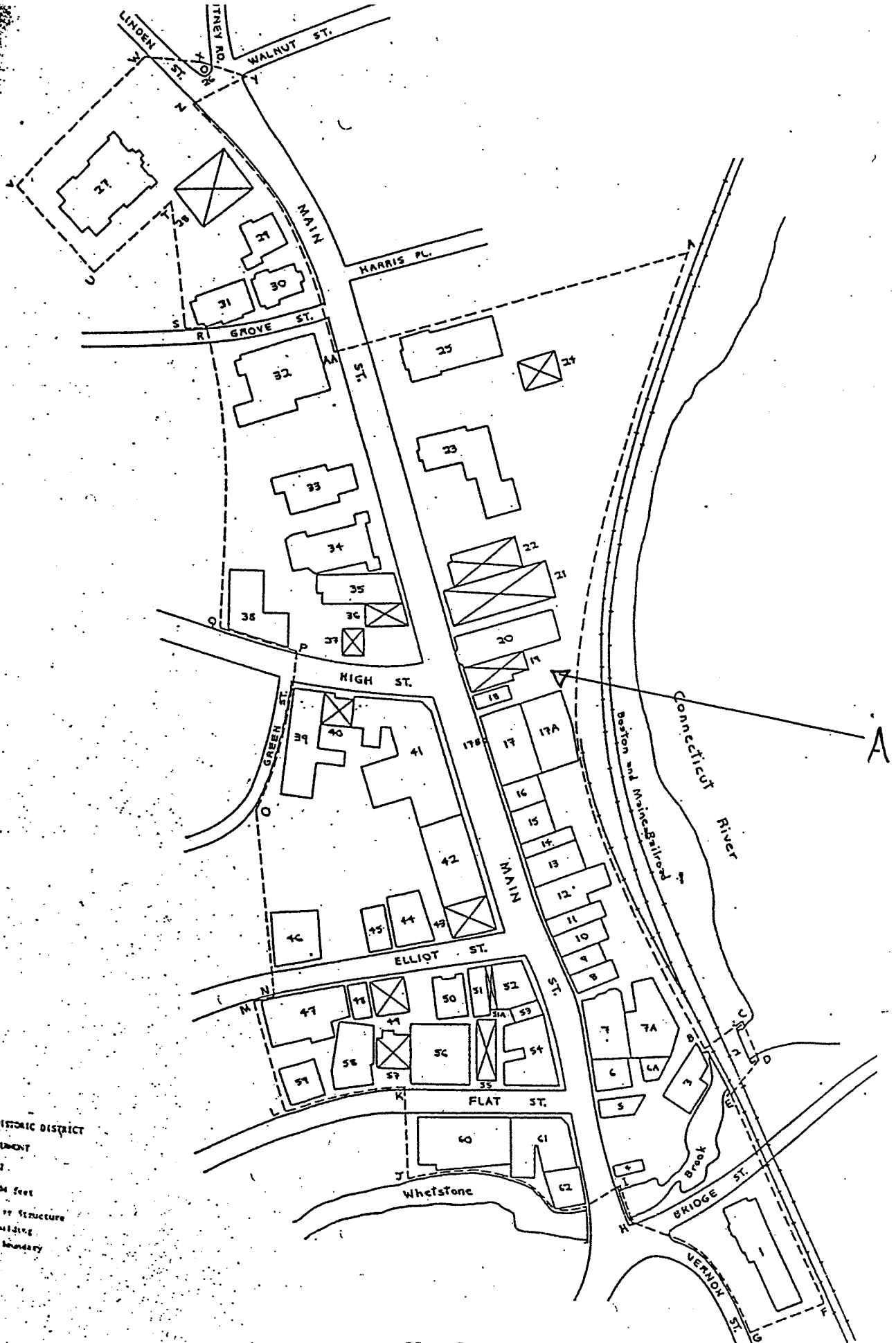
Map 1
USGS Map, Hanover NH - VT
Quad. 1959/1988



DUMMERSTON
Naulakha
Home of Rudyard Kipling 1892-1896 (Private)
World Learning
INDUSTRIAL PARK
INTERCHANGE #3
Locust Ridge Cemetery
West River
N.H.
BRATTLEBORO NORTH SHOPPING PLAZA
TECHNOLOGY DRIVE
FAIRFIELD PLAZA SHOPPING CENTER
Ingenuity Shops
First Methodist Ch.
Brattleboro Country Club
Retreat Meadows
BRATTLEBORO
St. Michael's Episcopal
Linden Lodge
Brattleboro Retreat (Hosp.)
Ski Jump
Retreat Tower
Outing Club Tennis
INTERCHANGE #2
Trinity Lutheran
Green St. Sch.
See Detail Map
Meetinghouse Hill Cemetery
ORCHARD HEIGHTS
West Brattleboro
Hayes Court Housing
Baptist Ch.
Melrose Terrace Housing
First Congregational
West Village Meetinghouse (All Souls Ch.)
Academy School and Library
Mather Cemetery
Creamery Covered Bridge
Green Mt. Chapel
Whetstone Brook
Living Memorial Park
Prospect Hill Cemetery & Fiske Memorial
Morningside Cemetery
St. Michael's Cemetery
Memorial Hosp.
Thompson House Mutual Aid Ctr.
Austine School for the Deaf
Fairview Village
Oak Grove Sch.
Union District High School & Vocational Ctr.
Community Bible Chapel
INTERCHANGE #1
Fort Dummer Monument
Wantastiquet Mtn.
The Common
First Church of Christ Scientist
Brattleboro Music Ctr. Office & School
St. Michael's & Walnut St. Sch.
State Office Bldg.
Municipal Ctr.
Brooks Mem. Library
St. Michael's R.C.Ch.
Post Office
Community Bldg.
Baptist Ch.
Centre Congregational Ch.
Chamber of Commerce
Brooks House Mall
Baha'i Community
Holstein-Friesian Assoc. Hq.
Brattleboro Museum & Art Center (Old R.R. Station)
Municipal Parking Areas
STREET NAMES
Schools
Churches
Camping areas
1/2 Mile
1/2 Kilometer
map by vaughn gray

Map 2
Project Location/ Site Inventory

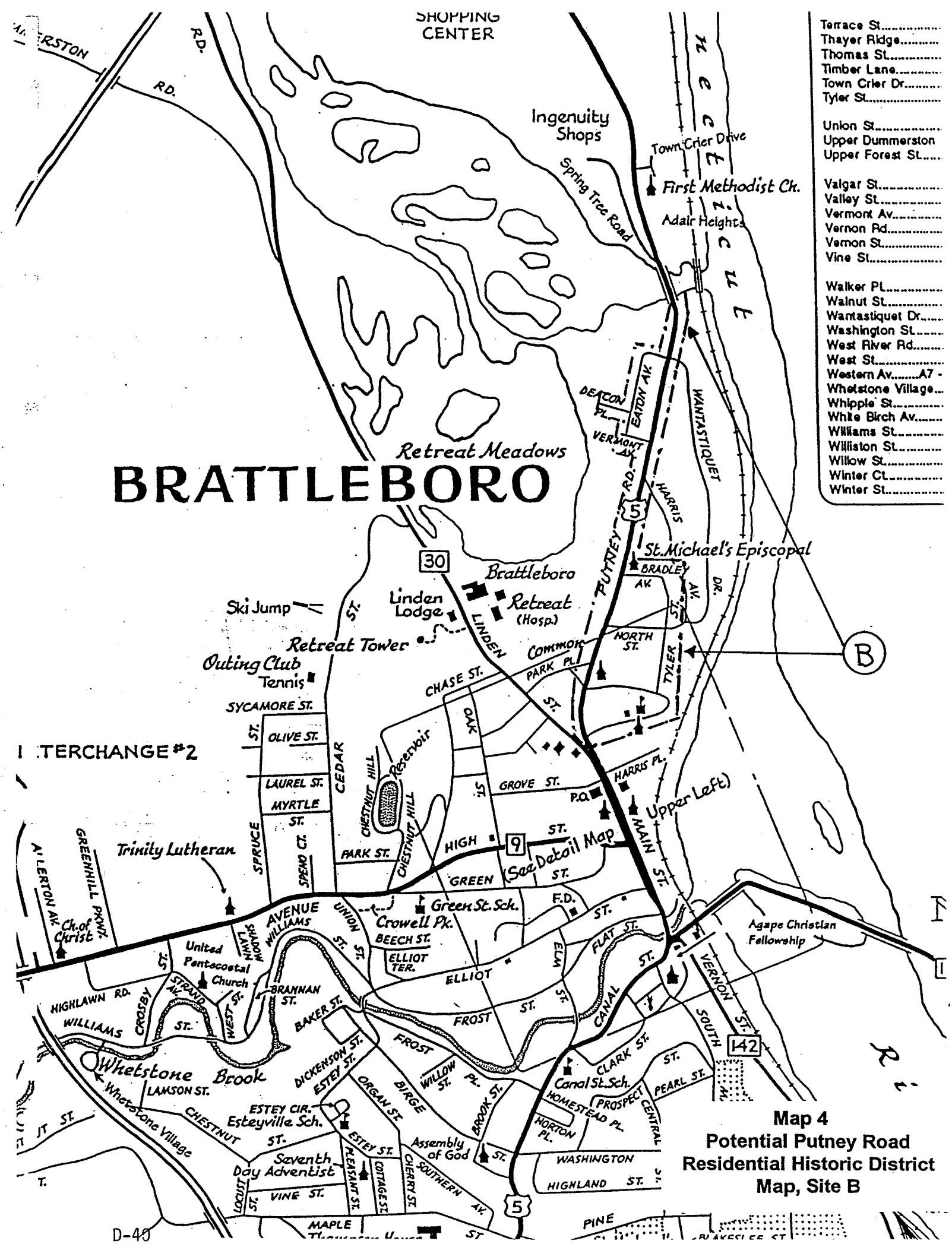
Inventory Site / Historic District ◯



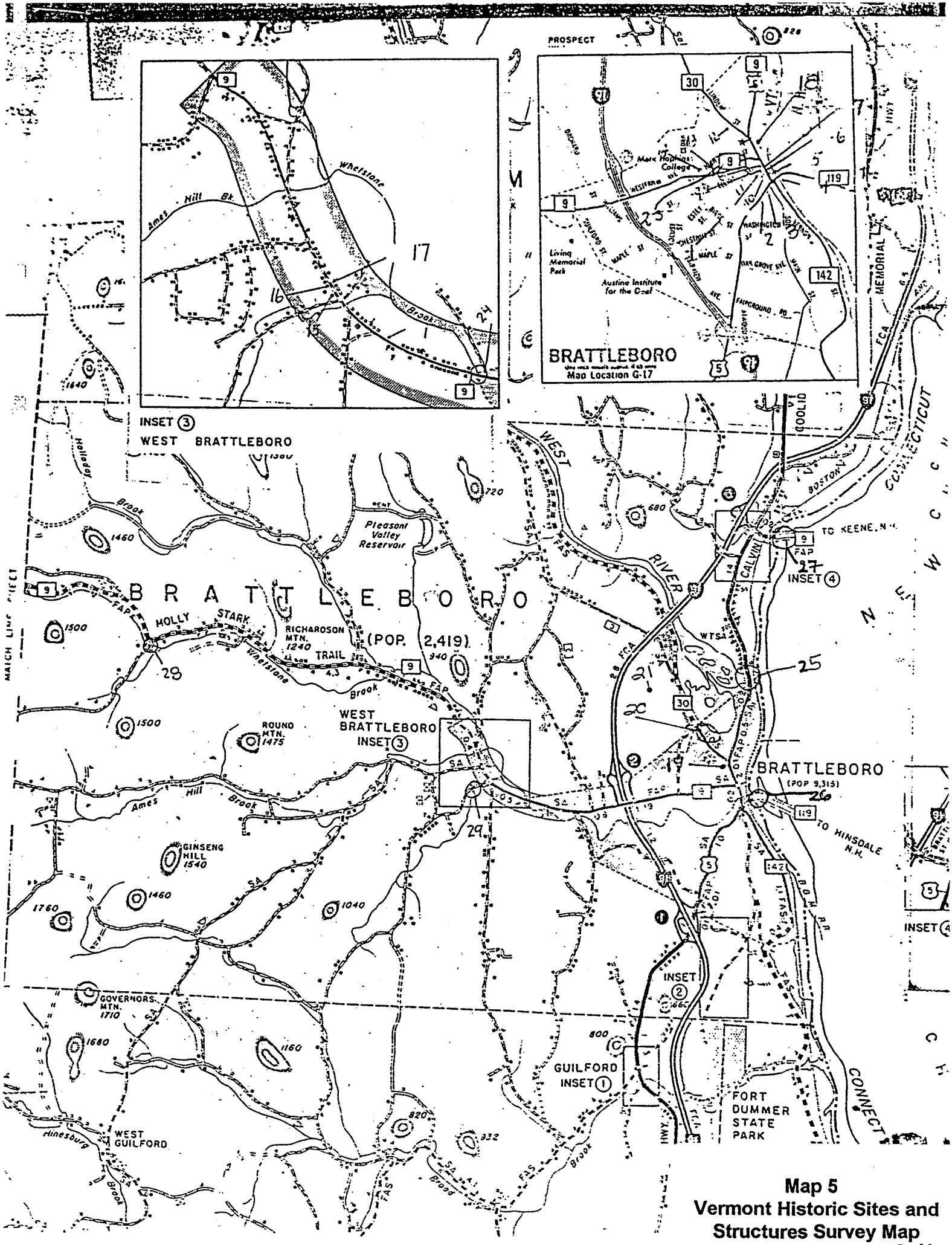
Map 3
Brattleboro Downtown Historic District Map, Site A

Not to Scale

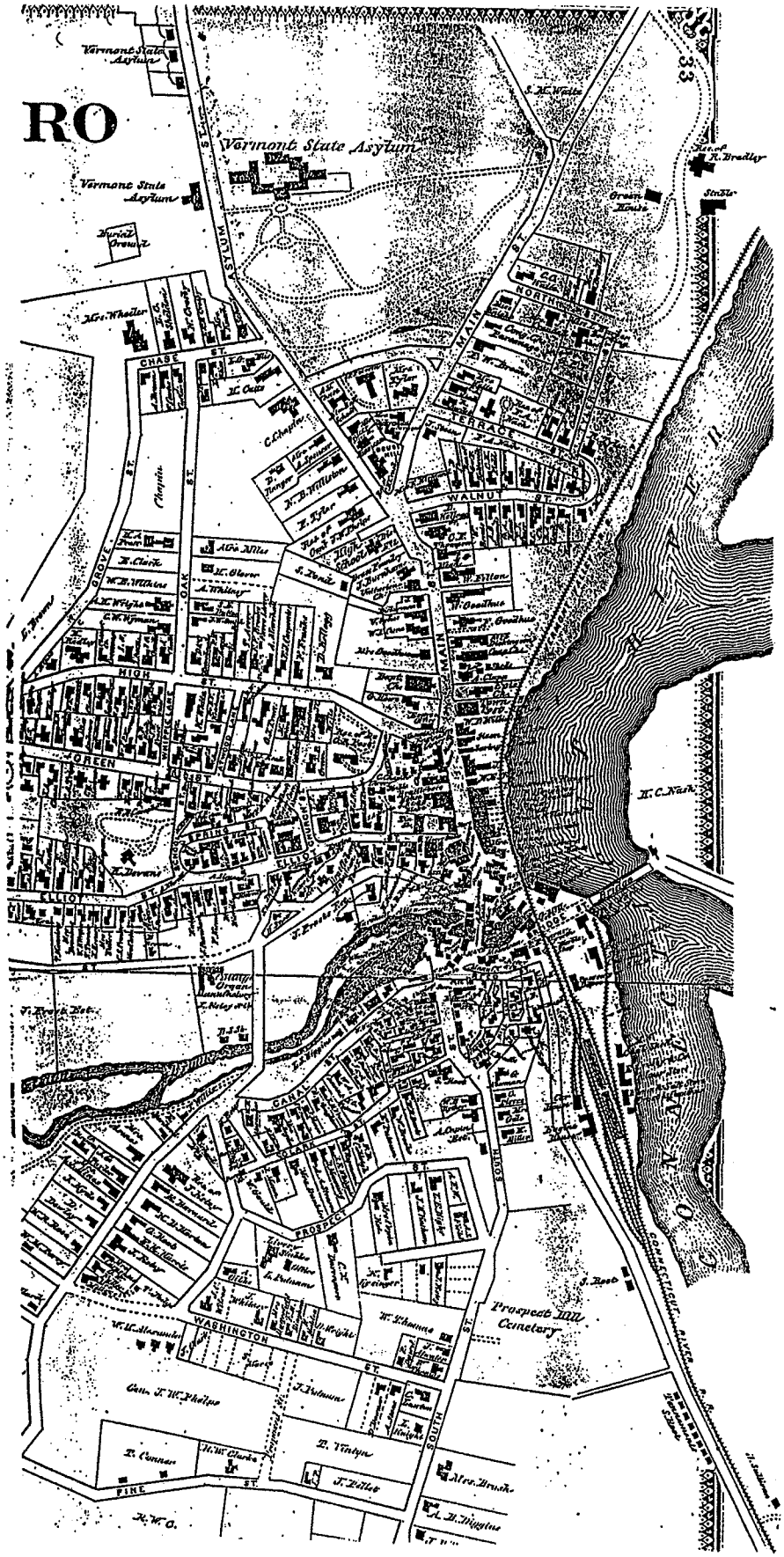
---- boundary



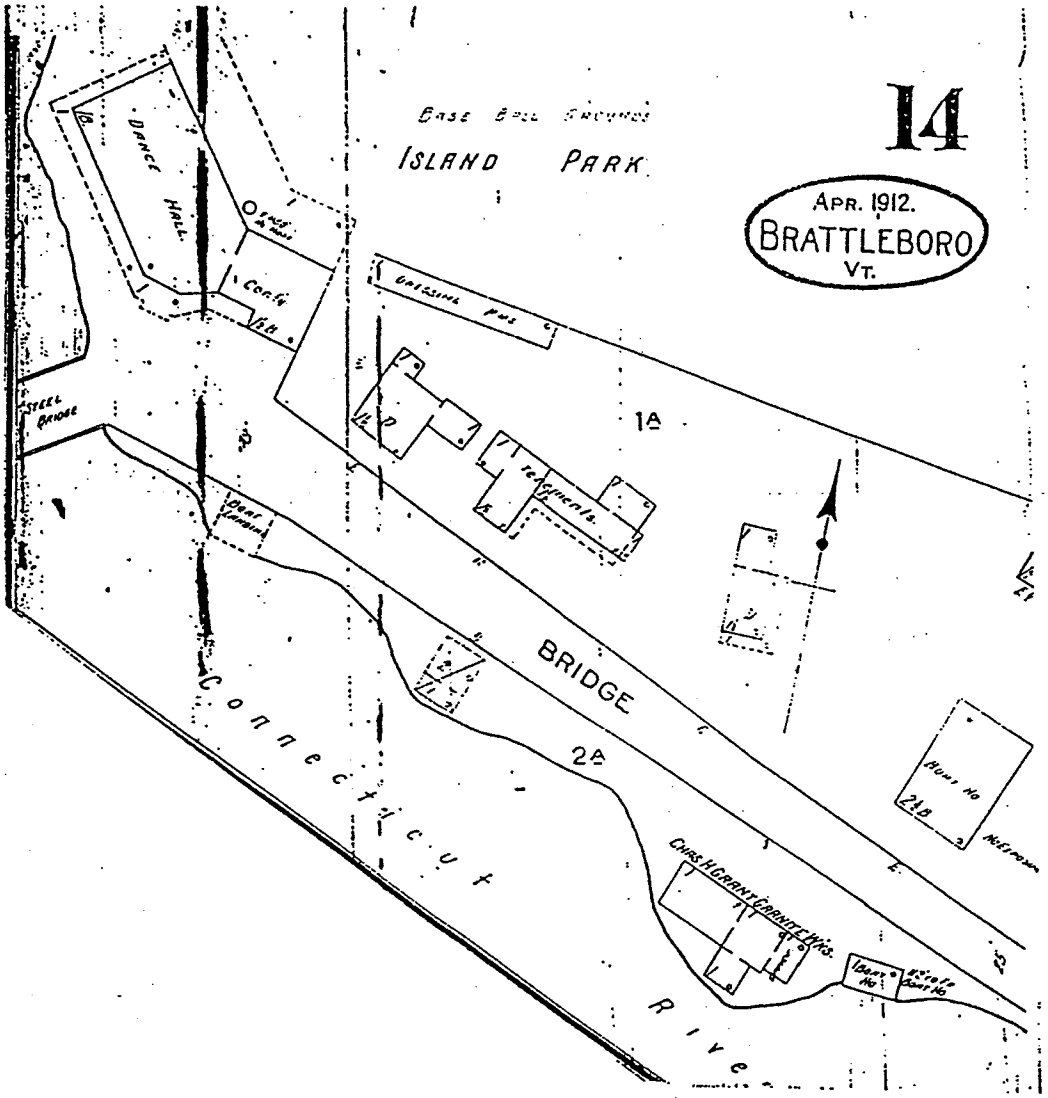
Map 4
Potential Putney Road Residential Historic District Map, Site B



Map 5
Vermont Historic Sites and Structures Survey Map

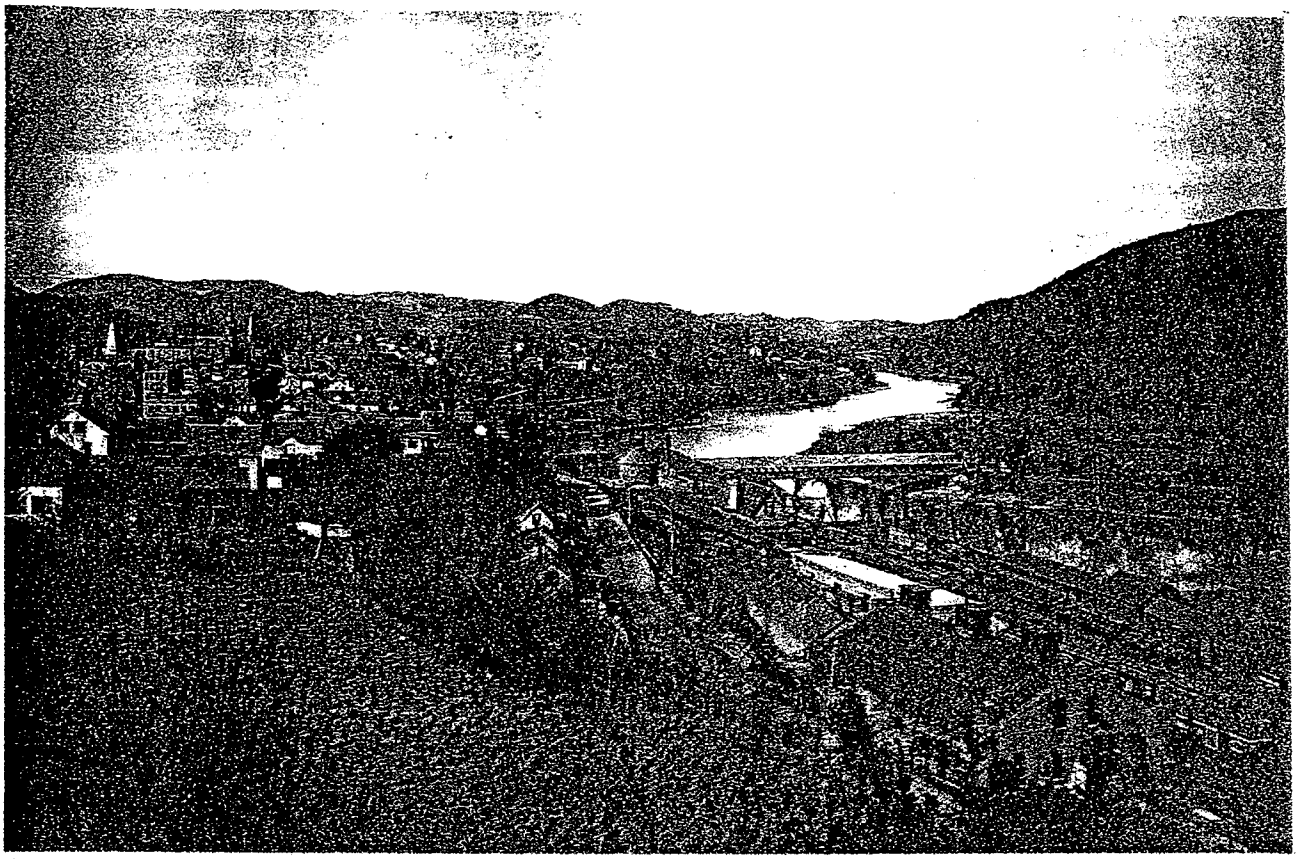


Map 6
Beers' Atlas Map of
Brattleboro, Vt., 1869

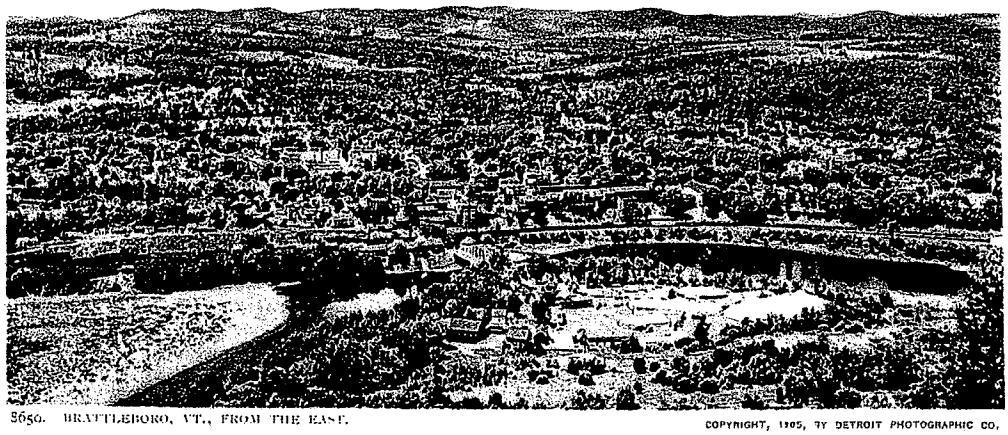


Map 7
Island Park, Brattleboro, Vt.
Sanborn Insurance Map
1912

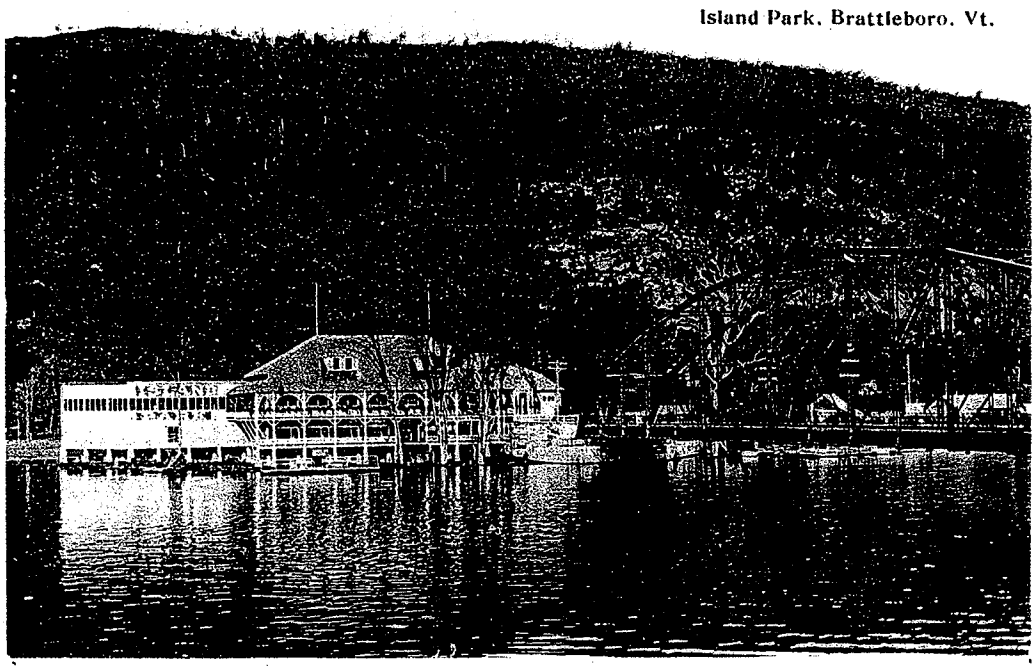
Historic Photographs



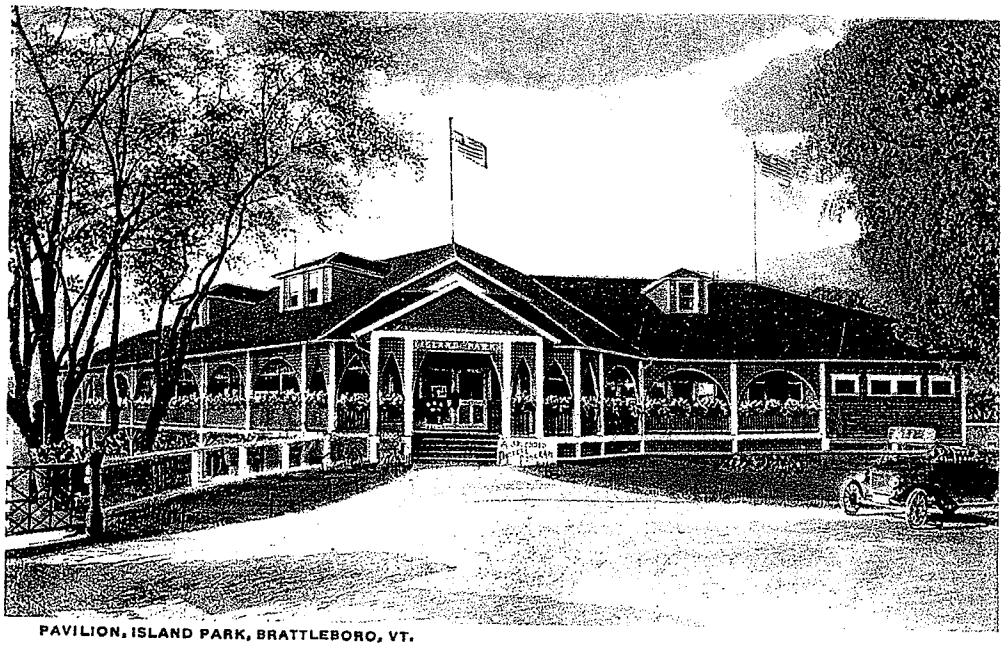
1. Downtown Brattleboro, railyard, and covered bridge to Island over Connecticut River, c. 1890. Photograph courtesy *The Olden Times of Brattleboro*, Vermont Historical Society, Montpelier.



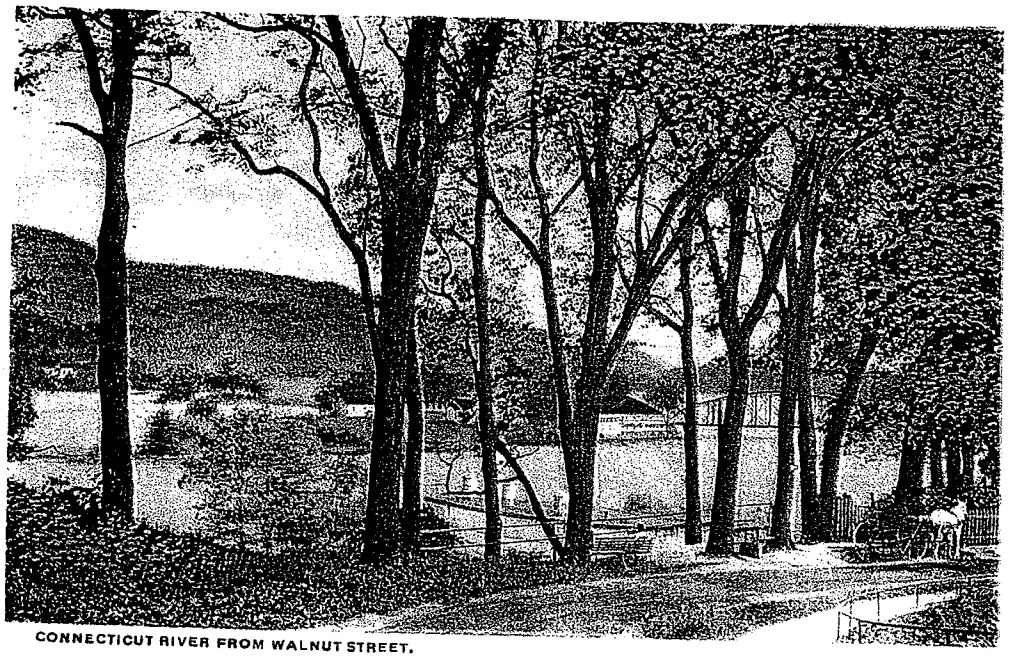
2. Postcard, c. 1905. Brattleboro from the east Courtesy Vermont Historical Society, Montpelier, Vt.



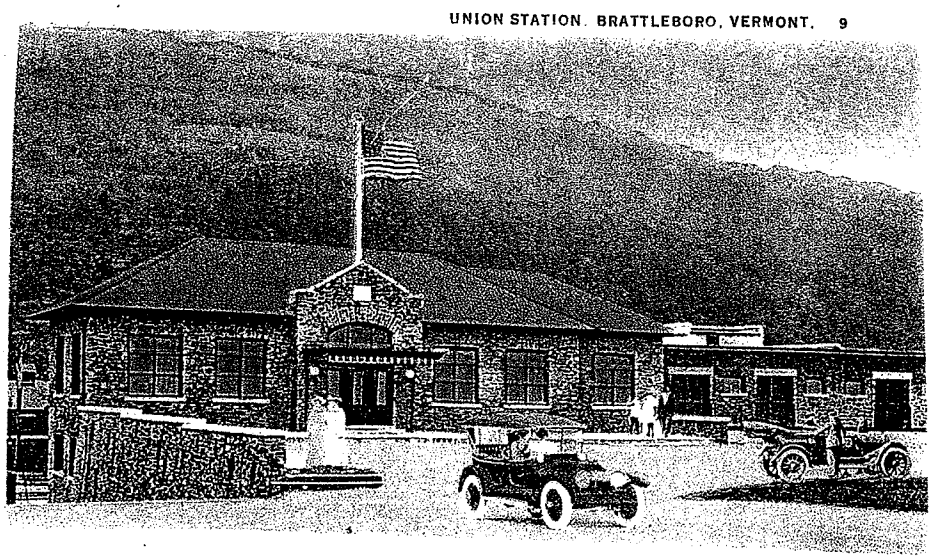
3. Postcard, 1913 postmark. Island Park, Brattleboro, Vt.
Courtesy Vermont Historical Society, Montpelier, Vt.



4. Postcard, c. 1920. Pavilion, Island Park, Brattleboro, Vt.
Courtesy Vermont Historical Society, Montpelier, Vt.



5. Postcard, c. 1915 View from Walnut Street to Island Park
Courtesy Vermont Historical Society, Montpelier, Vt.



6. Postcard, c. 1920 Union Station, Brattleboro, Vt.
Courtesy Vermont Historical Society, Montpelier, Vt.

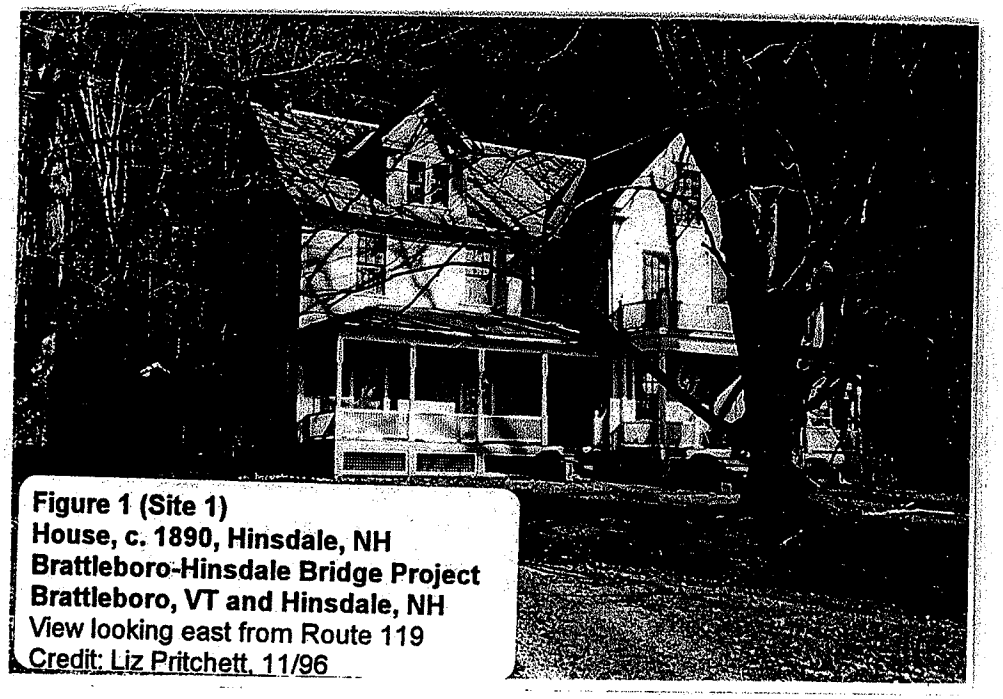


Figure 1 (Site 1)
House, c. 1890, Hinsdale, NH
Brattleboro-Hinsdale Bridge Project
Brattleboro, VT and Hinsdale, NH
View looking east from Route 119
Credit: Liz Pritchett, 11/96

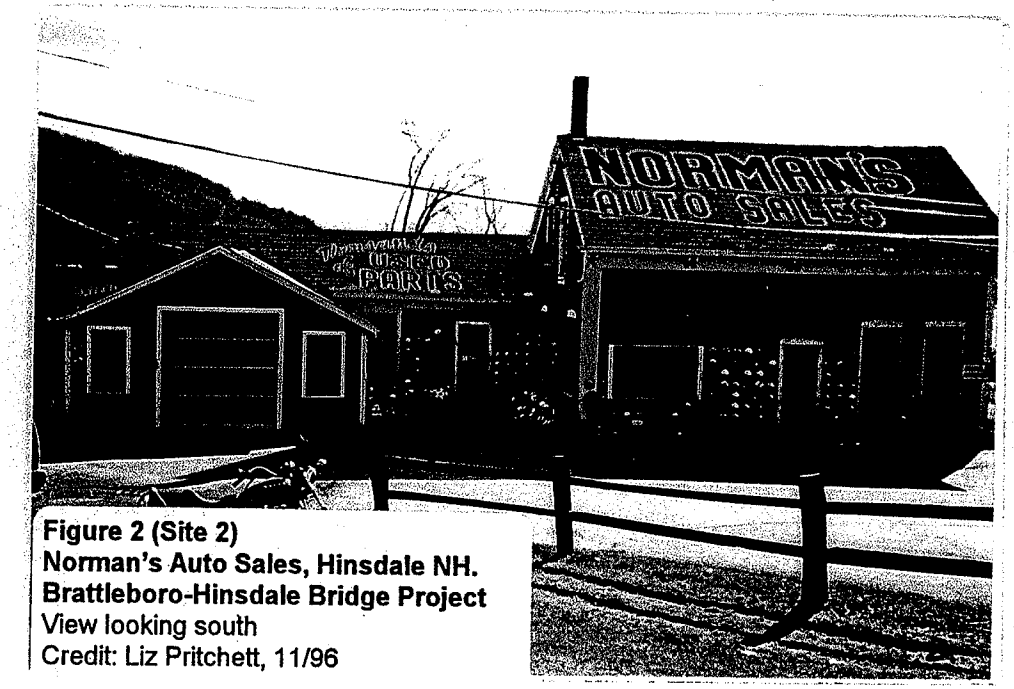


Figure 2 (Site 2)
Norman's Auto Sales, Hinsdale NH.
Brattleboro-Hinsdale Bridge Project
View looking south
Credit: Liz Pritchett, 11/96

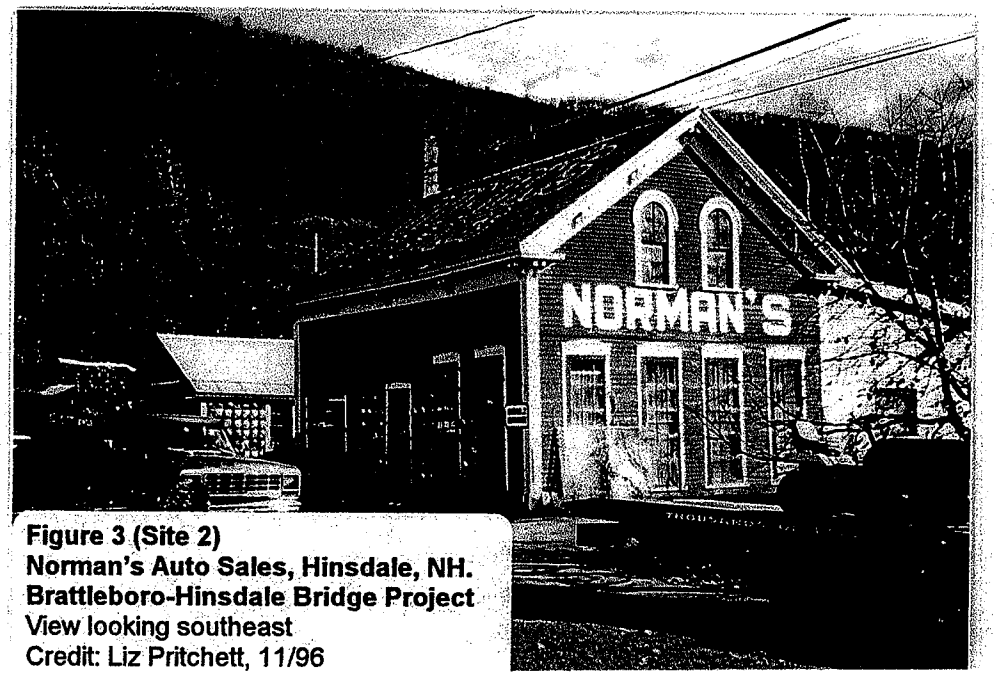


Figure 3 (Site 2)
Norman's Auto Sales, Hinsdale, NH.
Brattleboro-Hinsdale Bridge Project
View looking southeast
Credit: Liz Pritchett, 11/96

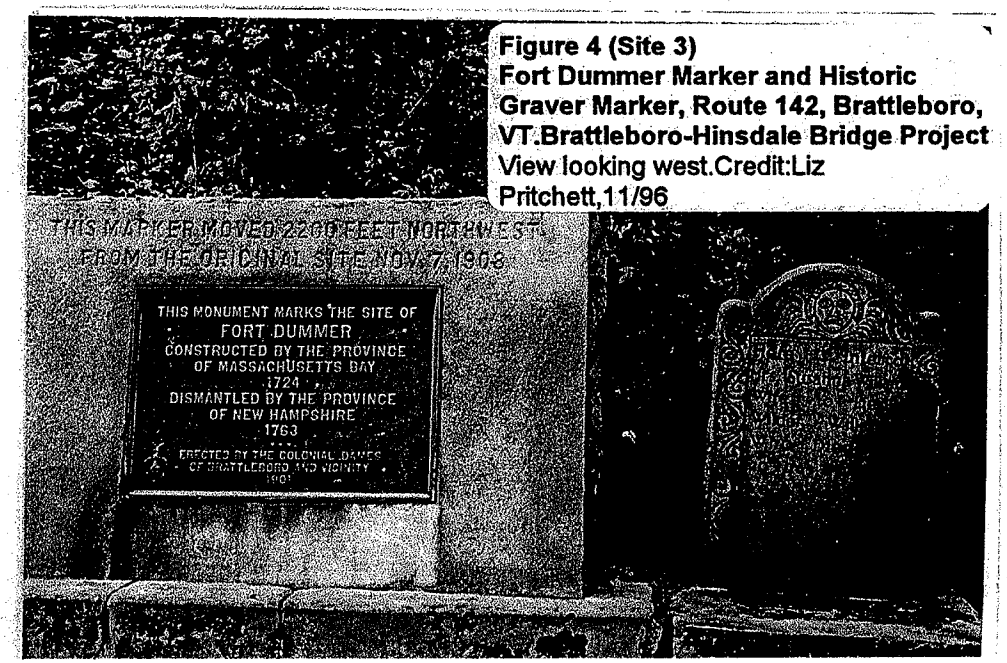


Figure 4 (Site 3)
Fort Dummer Marker and Historic Graver Marker, Route 142, Brattleboro, VT.Brattleboro-Hinsdale Bridge Project
View looking west.Credit:Liz Pritchett,11/96

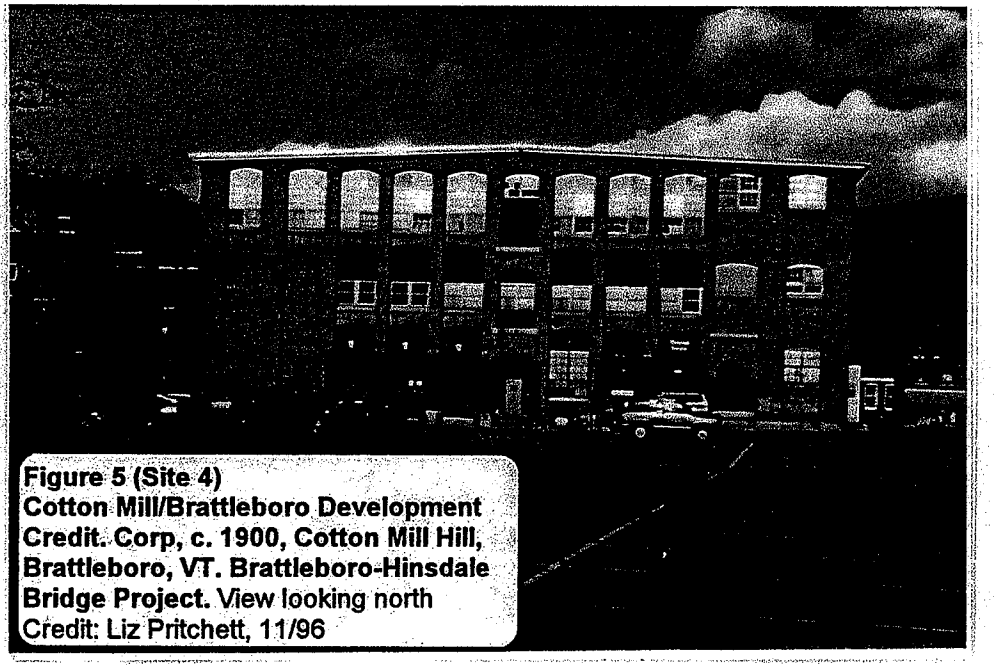


Figure 5 (Site 4)
Cotton Mill/Brattleboro Development Credit. Corp, c. 1900, Cotton Mill Hill, Brattleboro, VT. Brattleboro-Hinsdale Bridge Project. View looking north
Credit: Liz Pritchett, 11/96

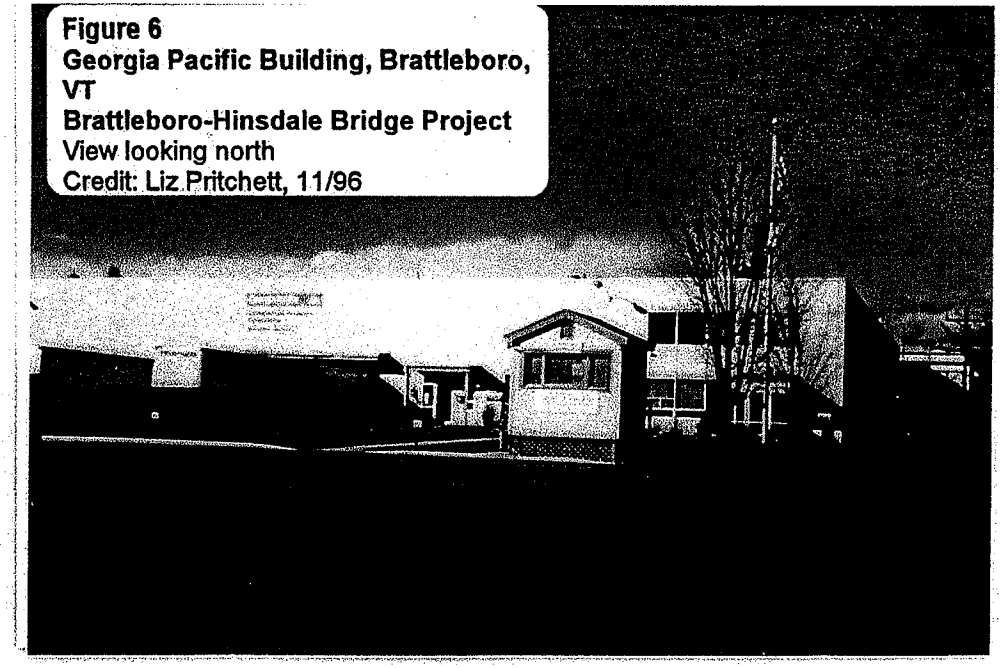


Figure 6
Georgia Pacific Building, Brattleboro, VT
Brattleboro-Hinsdale Bridge Project
View looking north
Credit: Liz Pritchett, 11/96

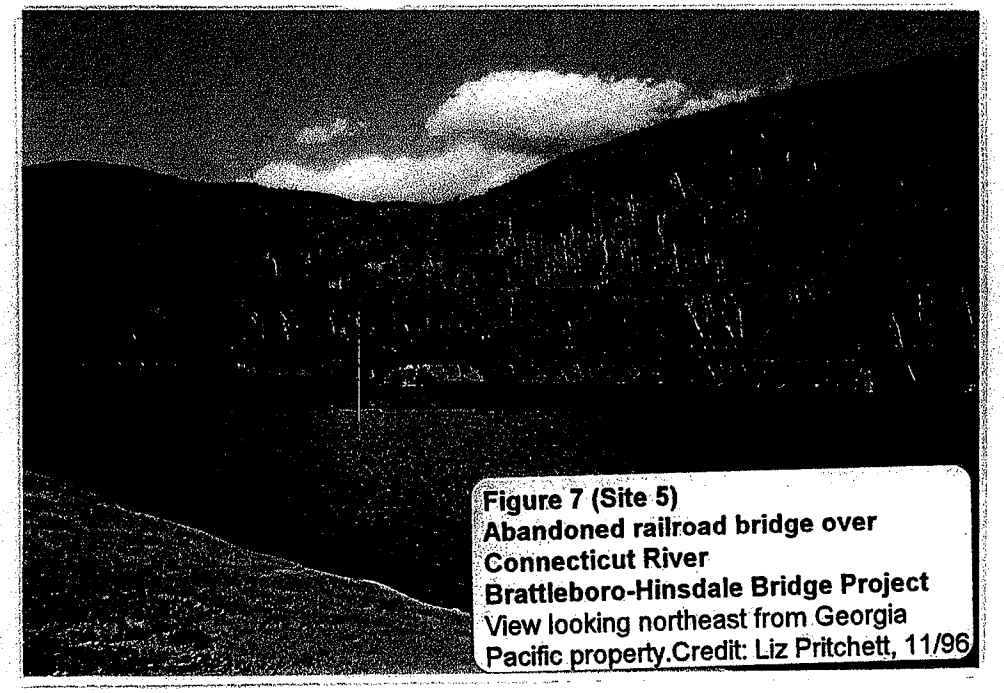


Figure 7 (Site 5)
Abandoned railroad bridge over Connecticut River
Brattleboro-Hinsdale Bridge Project
View looking northeast from Georgia Pacific property.Credit: Liz Pritchett, 11/96

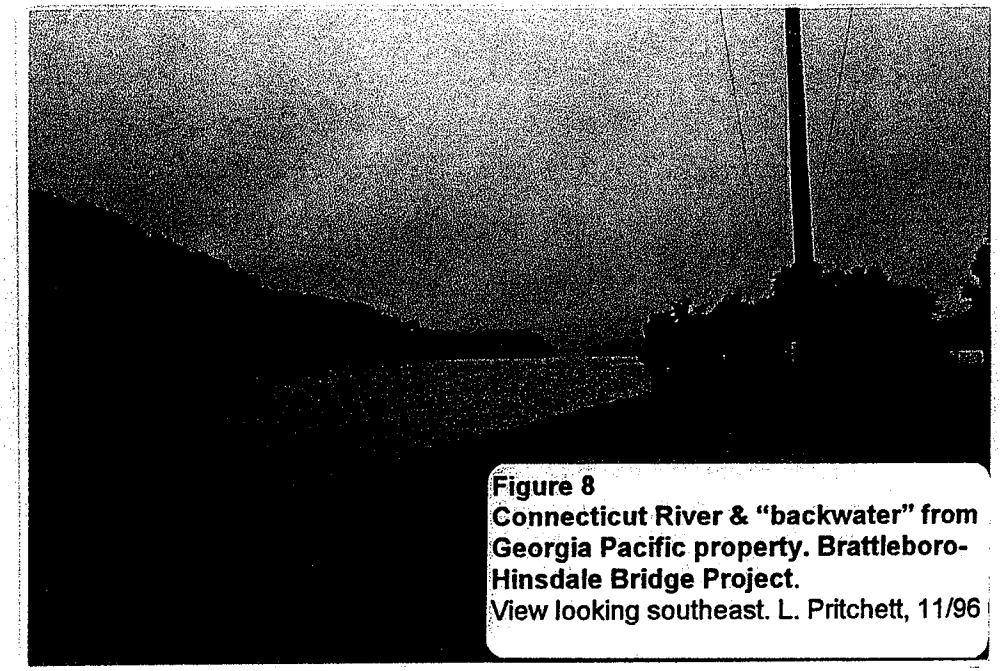


Figure 8
Connecticut River & "backwater" from Georgia Pacific property. Brattleboro-Hinsdale Bridge Project.
View looking southeast. L. Pritchett, 11/96

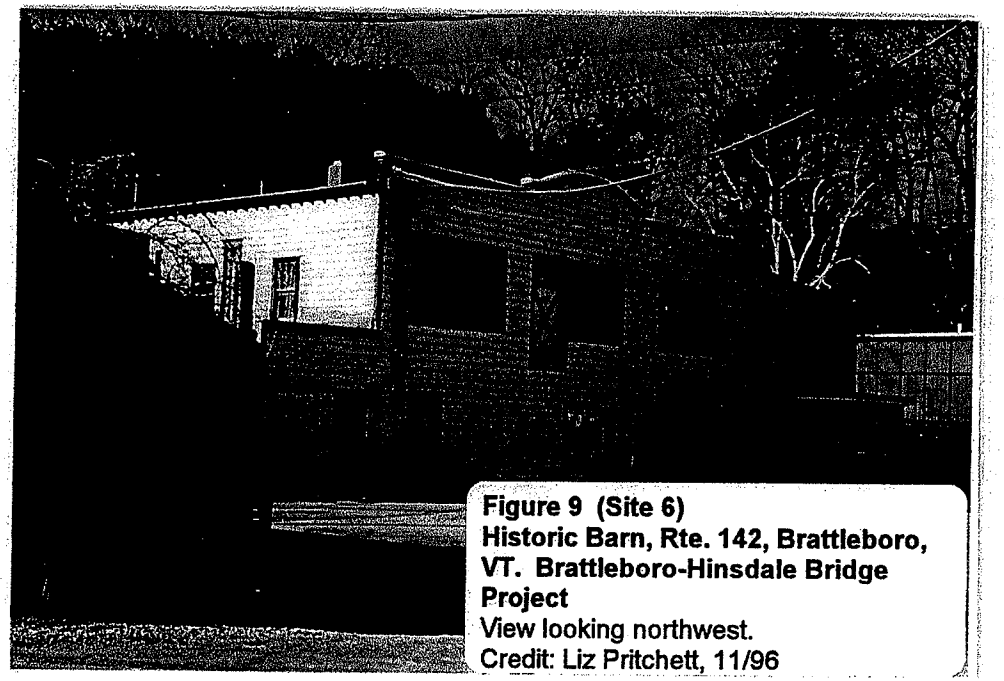


Figure 9 (Site 6)
Historic Barn, Rte. 142, Brattleboro, VT. Brattleboro-Hinsdale Bridge Project
View looking northwest.
Credit: Liz Pritchett, 11/96

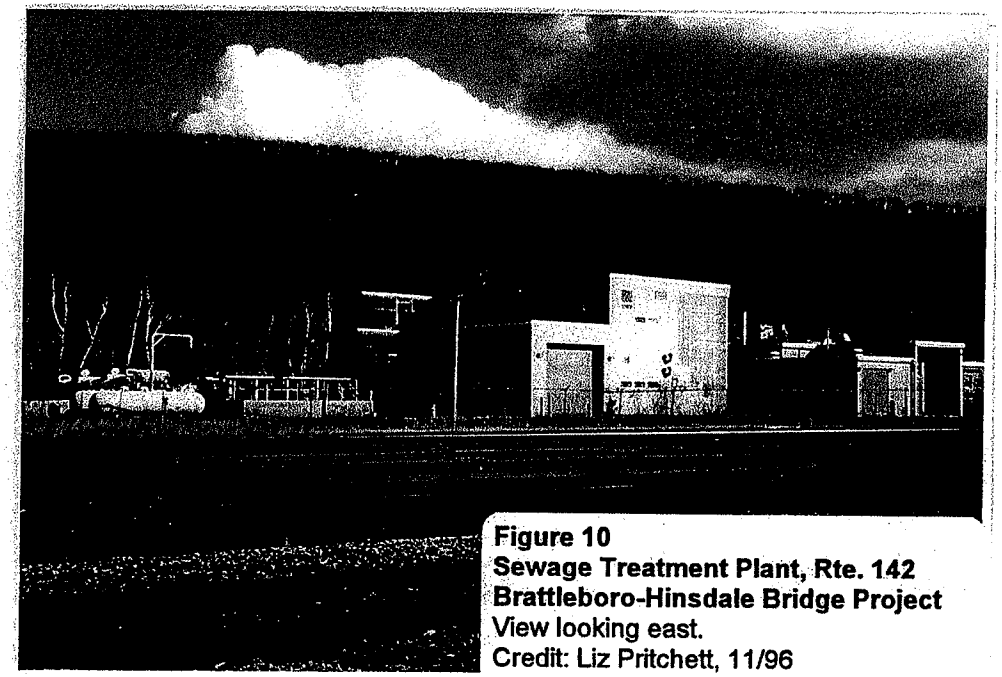


Figure 10
Sewage Treatment Plant, Rte. 142
Brattleboro-Hinsdale Bridge Project
View looking east.
Credit: Liz Pritchett, 11/96

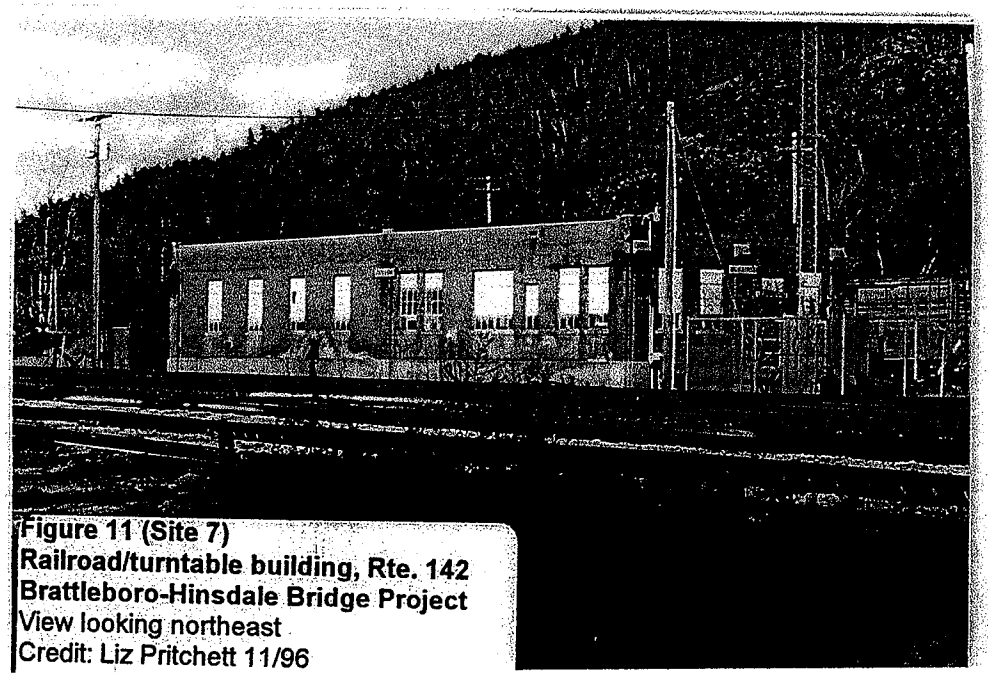


Figure 11 (Site 7)
Railroad/turntable building, Rte. 142
Brattleboro-Hinsdale Bridge Project
View looking northeast
Credit: Liz Pritchett 11/96

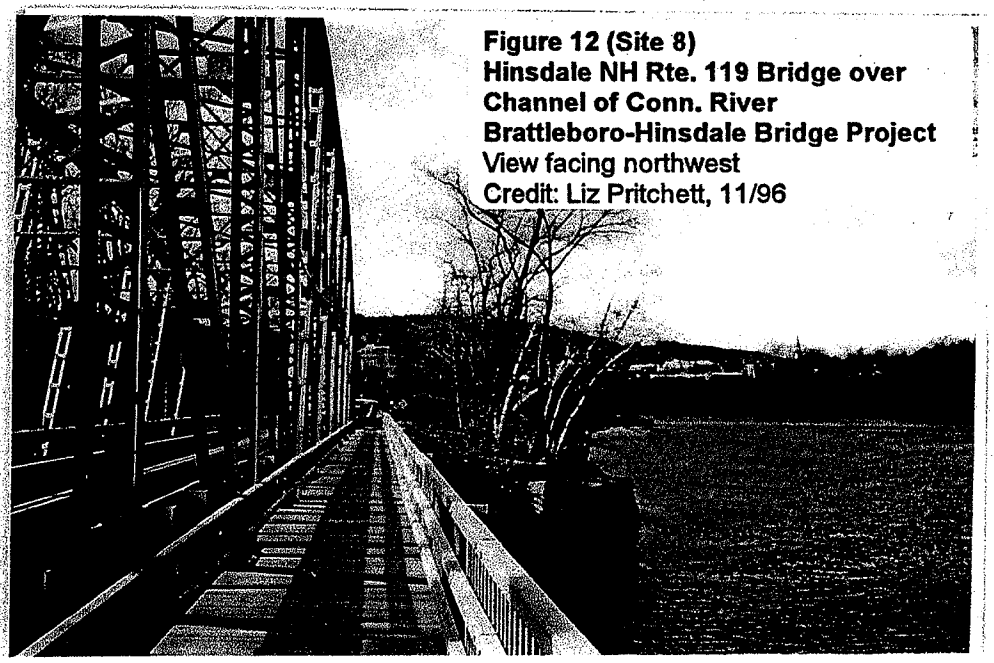


Figure 12 (Site 8)
Hinsdale NH Rte. 119 Bridge over Channel of Conn. River
Brattleboro-Hinsdale Bridge Project
View facing northwest
Credit: Liz Pritchett, 11/96

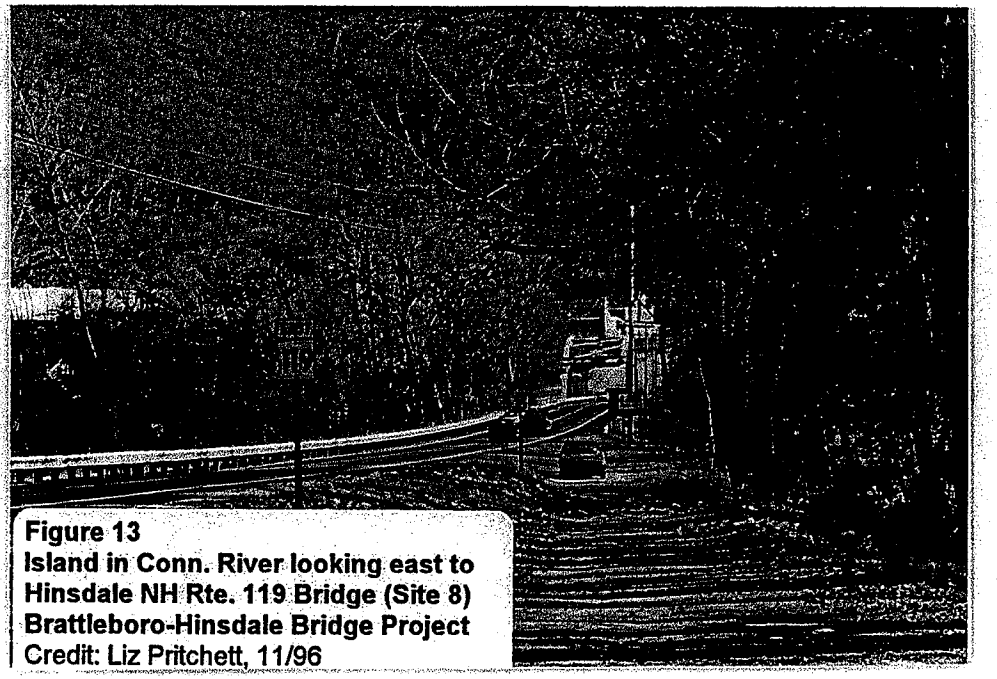


Figure 13
Island in Conn. River looking east to Hinsdale NH Rte. 119 Bridge (Site 8) Brattleboro-Hinsdale Bridge Project
Credit: Liz Pritchett, 11/96

Figure 14 (Site 9)
Hinsdale-Brattleboro NH Rte. 119 Bridge over Conn. River Brattleboro-Hinsdale Bridge Project
View looking west
Credit: Liz Pritchett, 11/96

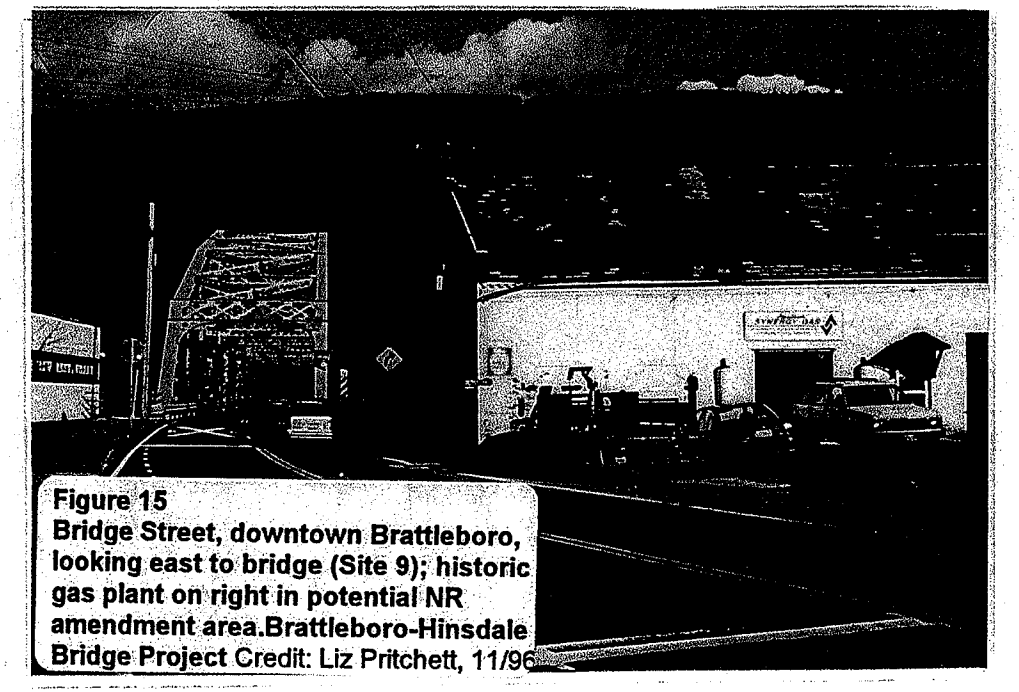


Figure 15
Bridge Street, downtown Brattleboro, looking east to bridge (Site 9); historic gas plant on right in potential NR amendment area.Brattleboro-Hinsdale Bridge Project Credit: Liz Pritchett, 11/96

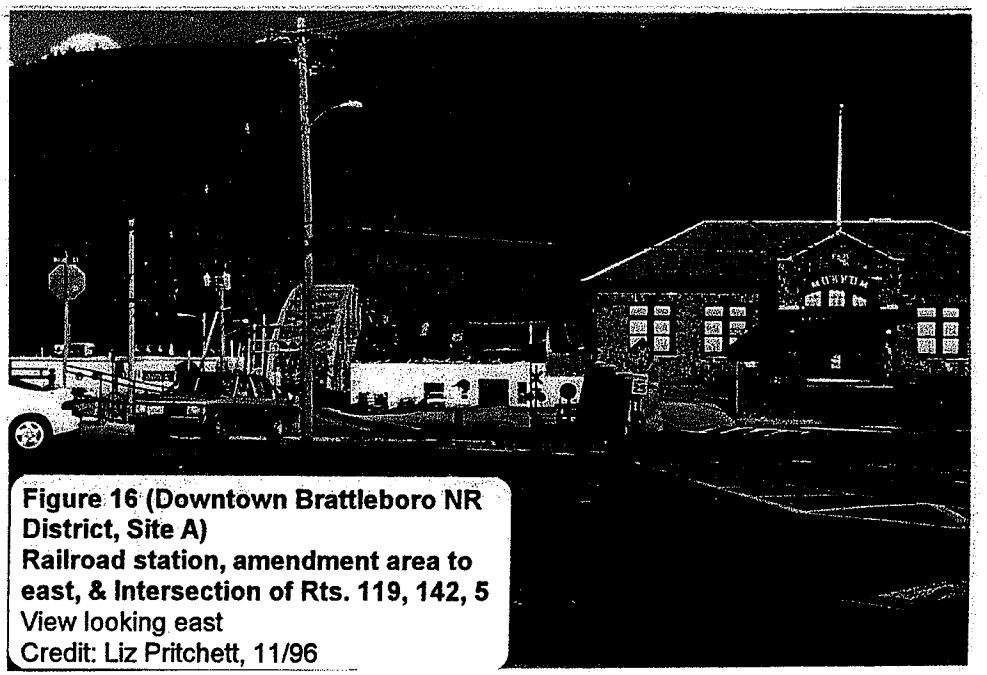


Figure 16 (Downtown Brattleboro NR District, Site A)
Railroad station, amendment area to east, & Intersection of Rts. 119, 142, 5
View looking east
Credit: Liz Pritchett, 11/96

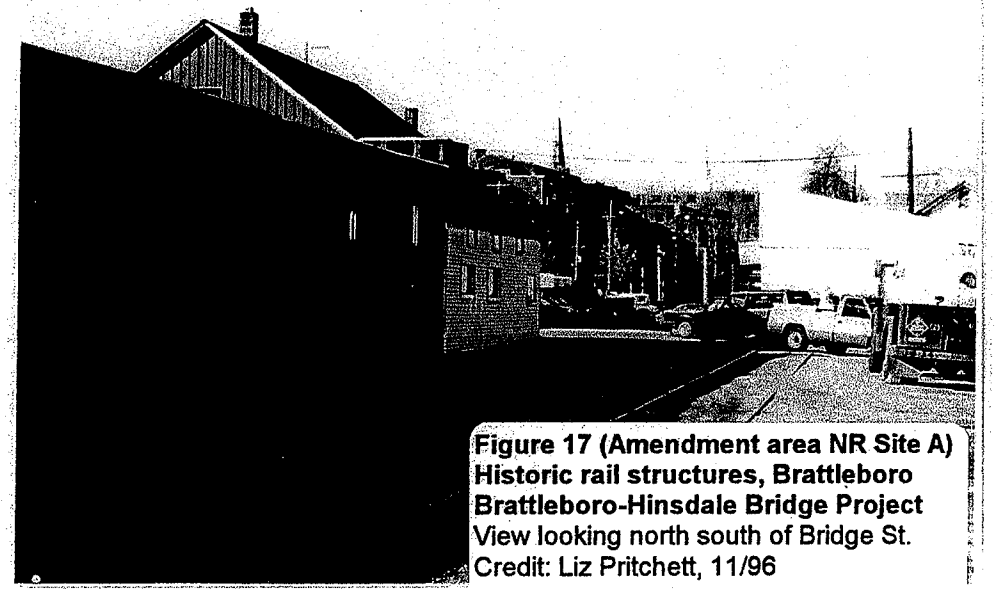


Figure 17 (Amendment area NR Site A)
Historic rail structures, Brattleboro
Brattleboro-Hinsdale Bridge Project
View looking north south of Bridge St.
Credit: Liz Pritchett, 11/96

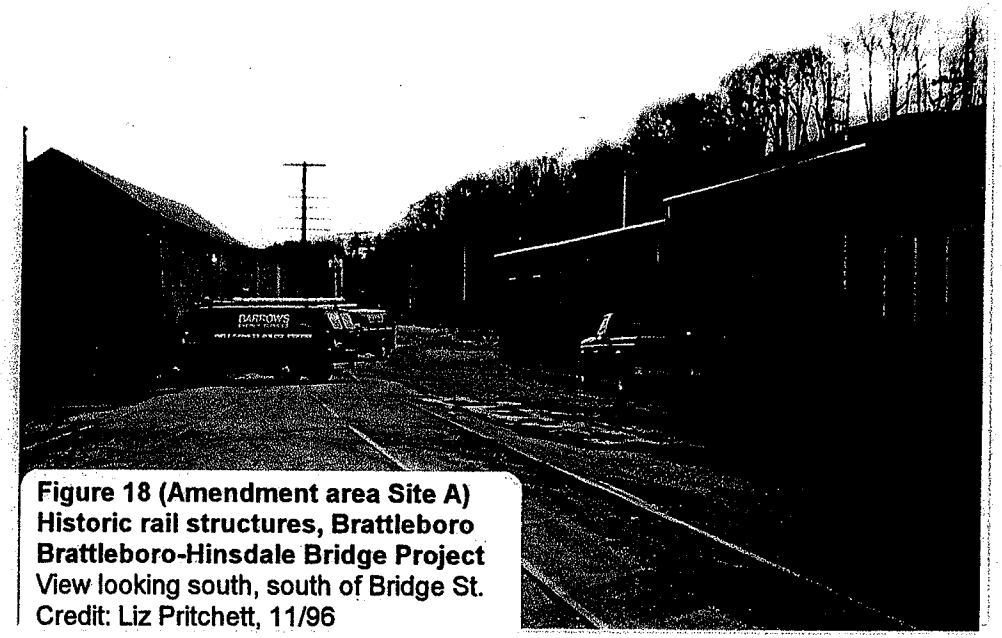


Figure 18 (Amendment area Site A)
Historic rail structures, Brattleboro
Brattleboro-Hinsdale Bridge Project
View looking south, south of Bridge St.
Credit: Liz Pritchett, 11/96

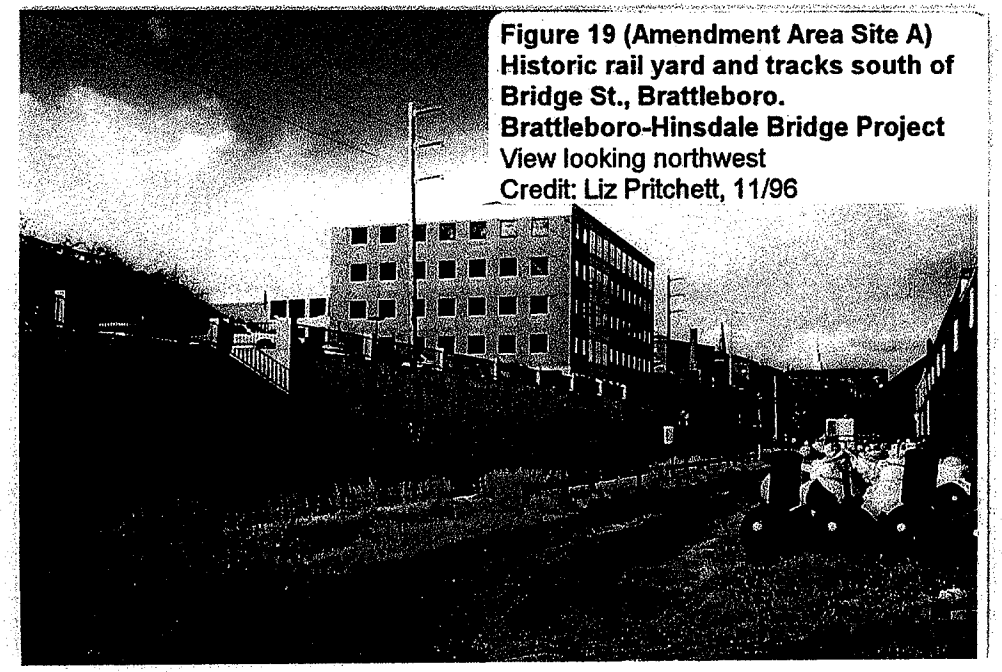


Figure 19 (Amendment Area Site A)
Historic rail yard and tracks south of Bridge St., Brattleboro.
Brattleboro-Hinsdale Bridge Project
View looking northwest
Credit: Liz Pritchett, 11/96

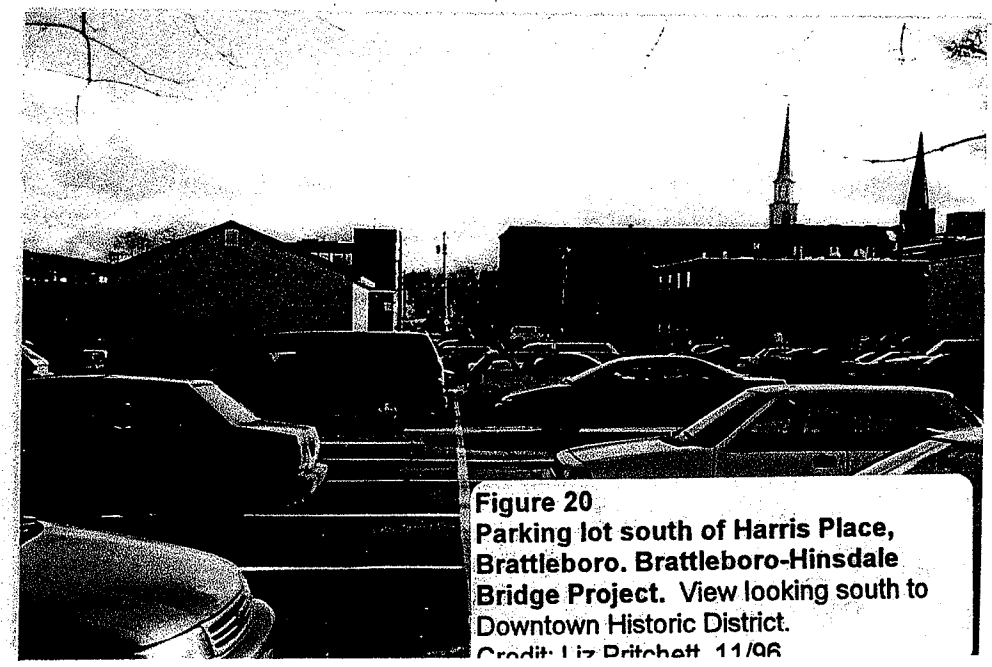


Figure 20
Parking lot south of Harris Place, Brattleboro. Brattleboro-Hinsdale Bridge Project. View looking south to Downtown Historic District.
Credit: Liz Pritchett, 11/96

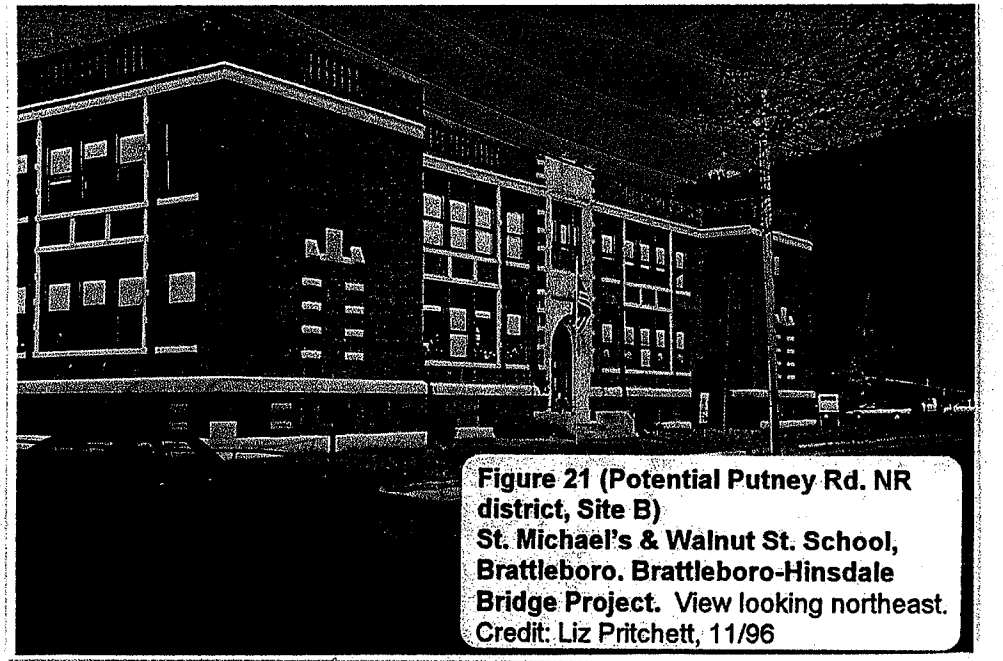


Figure 21 (Potential Putney Rd. NR district, Site B)
St. Michael's & Walnut St. School, Brattleboro. Brattleboro-Hinsdale Bridge Project. View looking northeast.
Credit: Liz Pritchett, 11/96

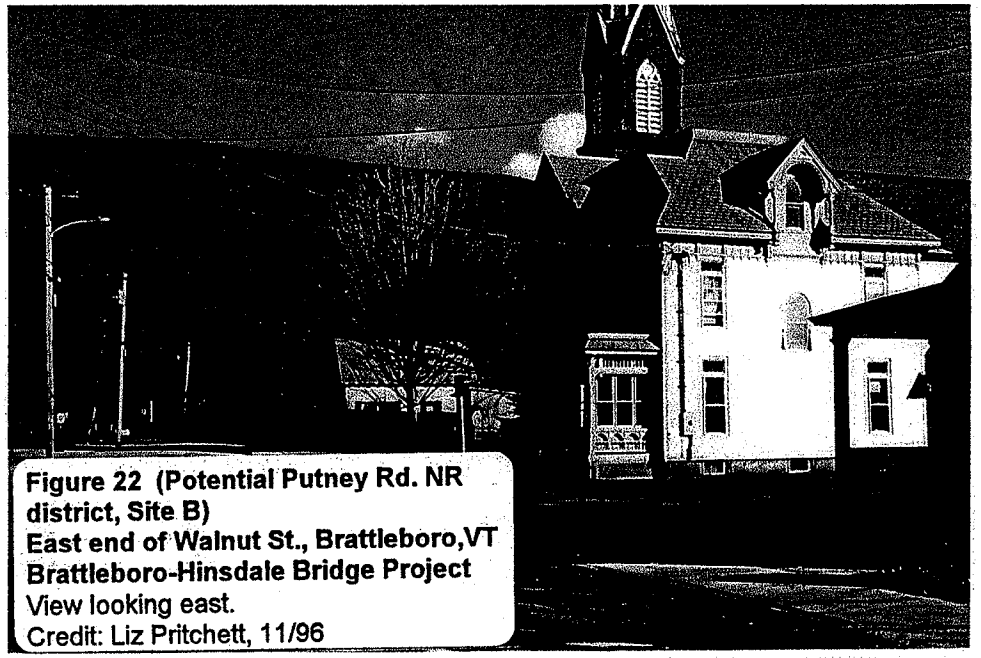


Figure 22 (Potential Putney Rd. NR district, Site B)
East end of Walnut St., Brattleboro,VT
Brattleboro-Hinsdale Bridge Project
View looking east.
Credit: Liz Pritchett, 11/96

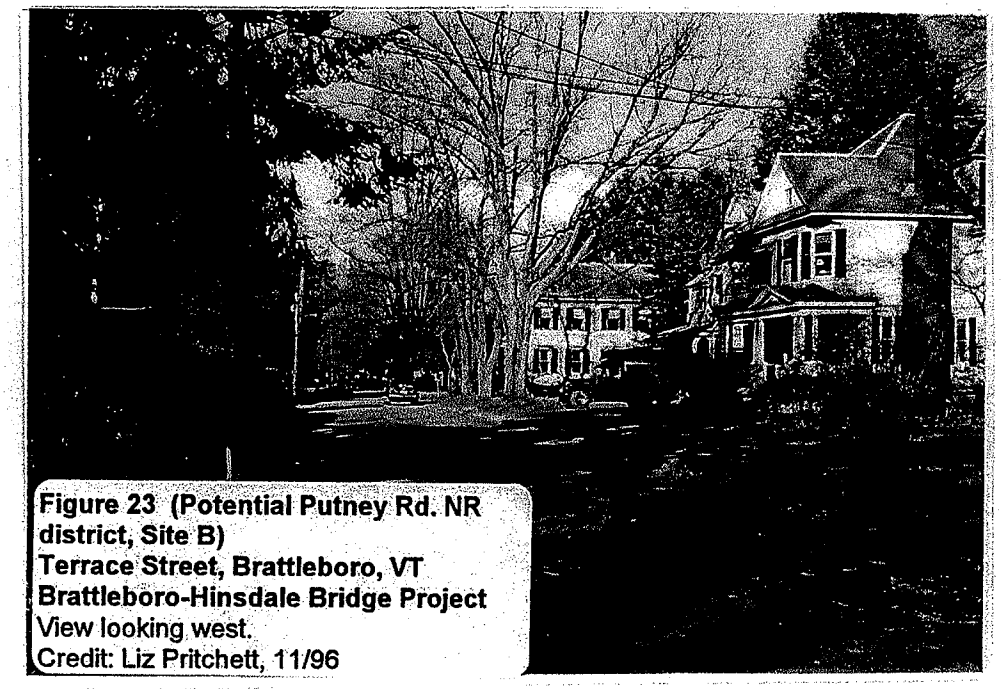


Figure 23 (Potential Putney Rd. NR district, Site B)
Terrace Street, Brattleboro, VT
Brattleboro-Hinsdale Bridge Project
View looking west.
Credit: Liz Pritchett, 11/96

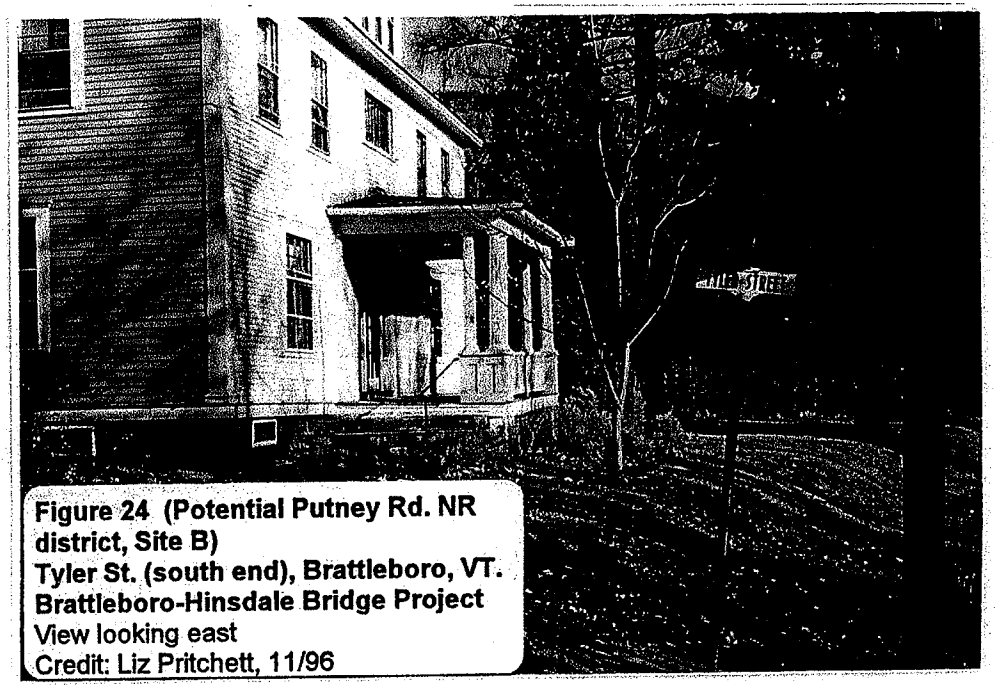


Figure 24 (Potential Putney Rd. NR district, Site B)
Tyler St. (south end), Brattleboro, VT.
Brattleboro-Hinsdale Bridge Project
View looking east
Credit: Liz Pritchett, 11/96

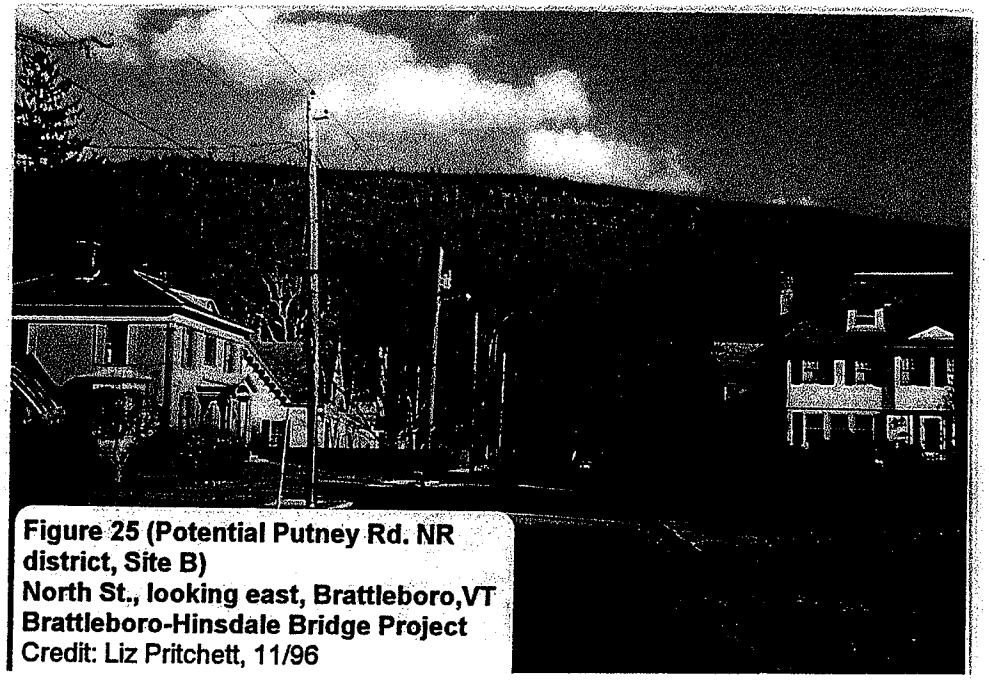


Figure 25 (Potential Putney Rd. NR district, Site B)
North St., looking east, Brattleboro,VT
Brattleboro-Hinsdale Bridge Project
Credit: Liz Pritchett, 11/96

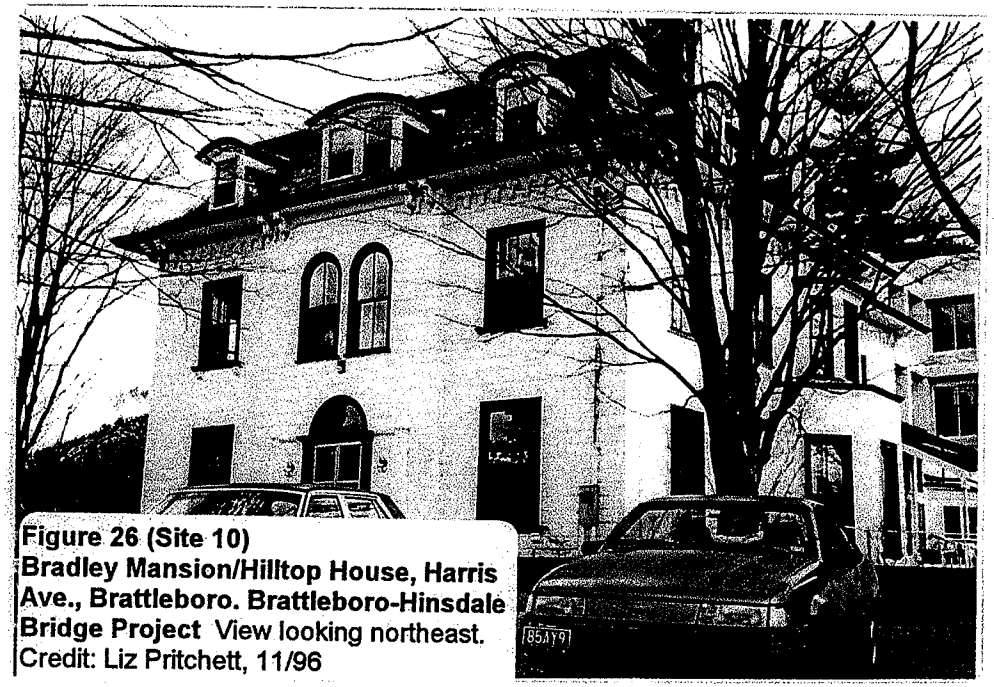


Figure 26 (Site 10)
Bradley Mansion/Hilltop House, Harris Ave., Brattleboro. Brattleboro-Hinsdale Bridge Project View looking northeast.
Credit: Liz Pritchett, 11/96

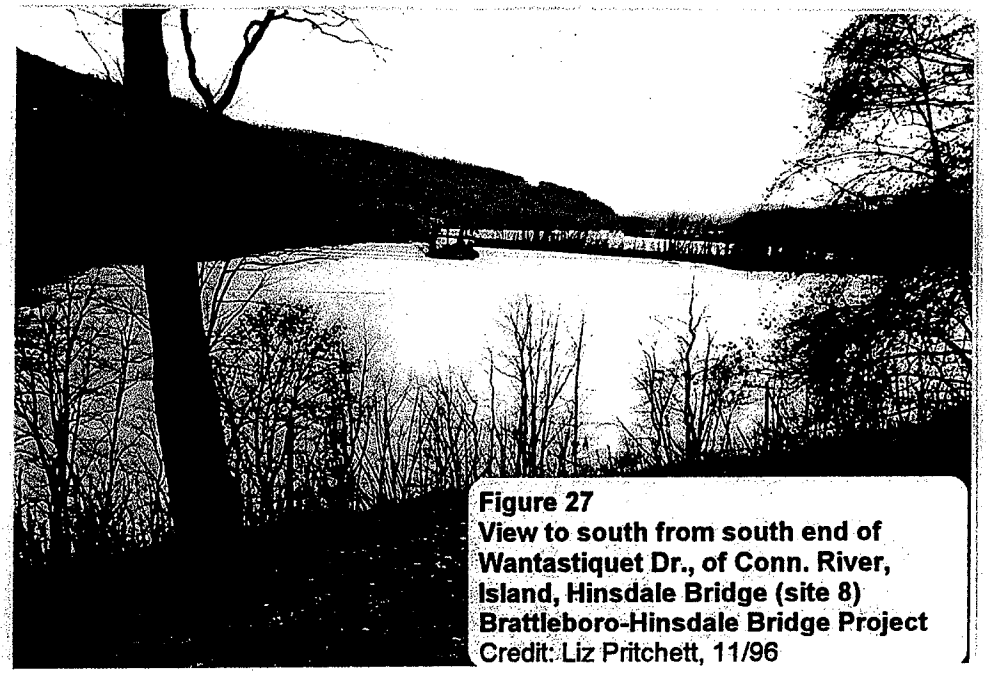


Figure 27
View to south from south end of Wantastiquet Dr., of Conn. River, Island, Hinsdale Bridge (site 8)
Brattleboro-Hinsdale Bridge Project
Credit: Liz Pritchett, 11/96

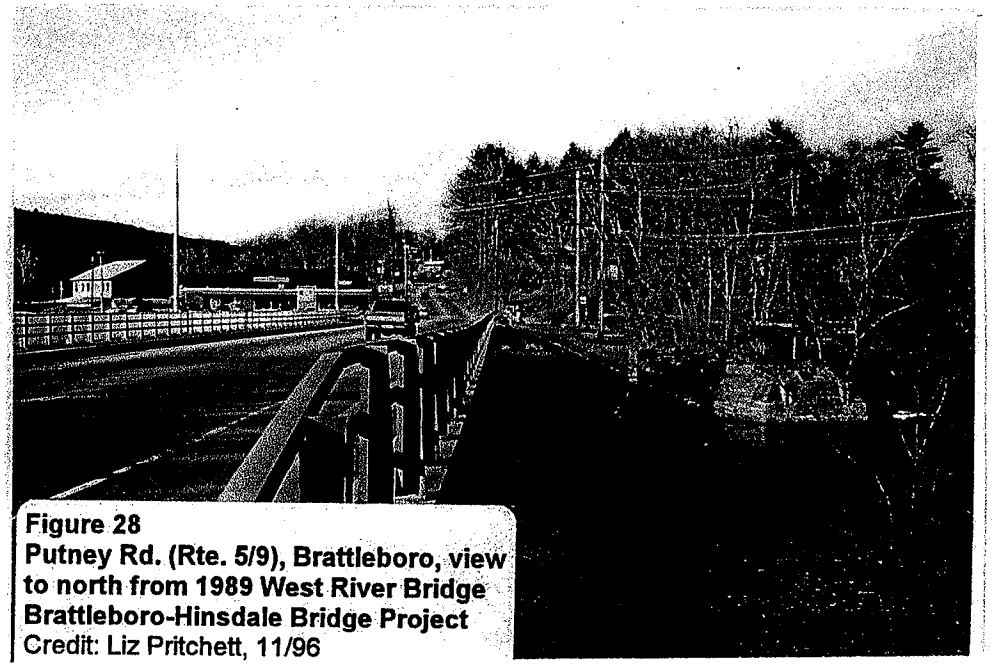


Figure 28
Putney Rd. (Rte. 5/9), Brattleboro, view to north from 1989 West River Bridge
Brattleboro-Hinsdale Bridge Project
Credit: Liz Pritchett, 11/96

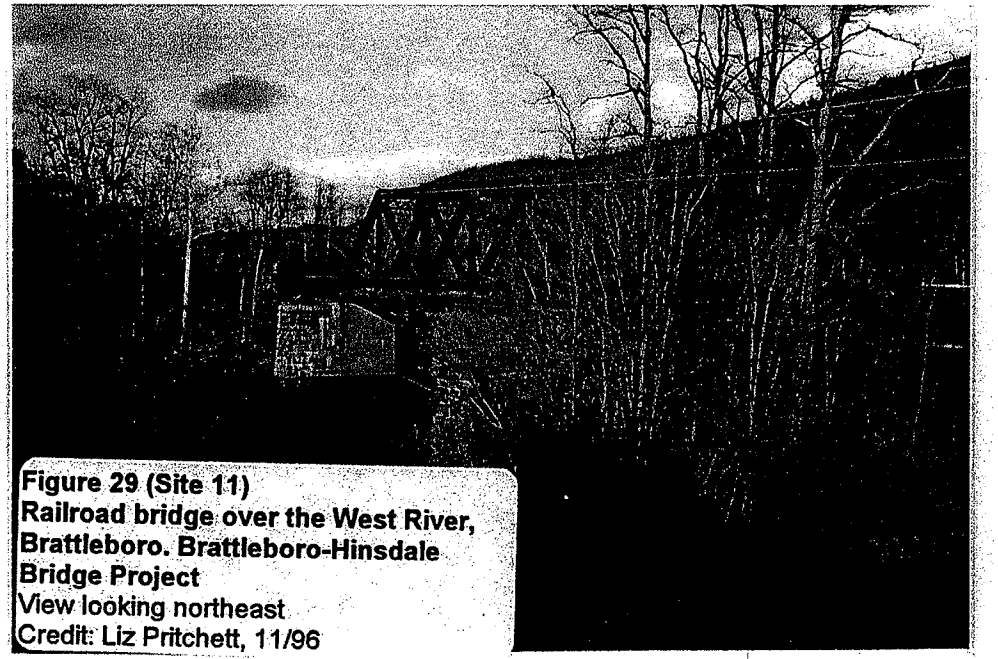


Figure 29 (Site 11)
Railroad bridge over the West River, Brattleboro. Brattleboro-Hinsdale Bridge Project
View looking northeast
Credit: Liz Pritchett, 11/96

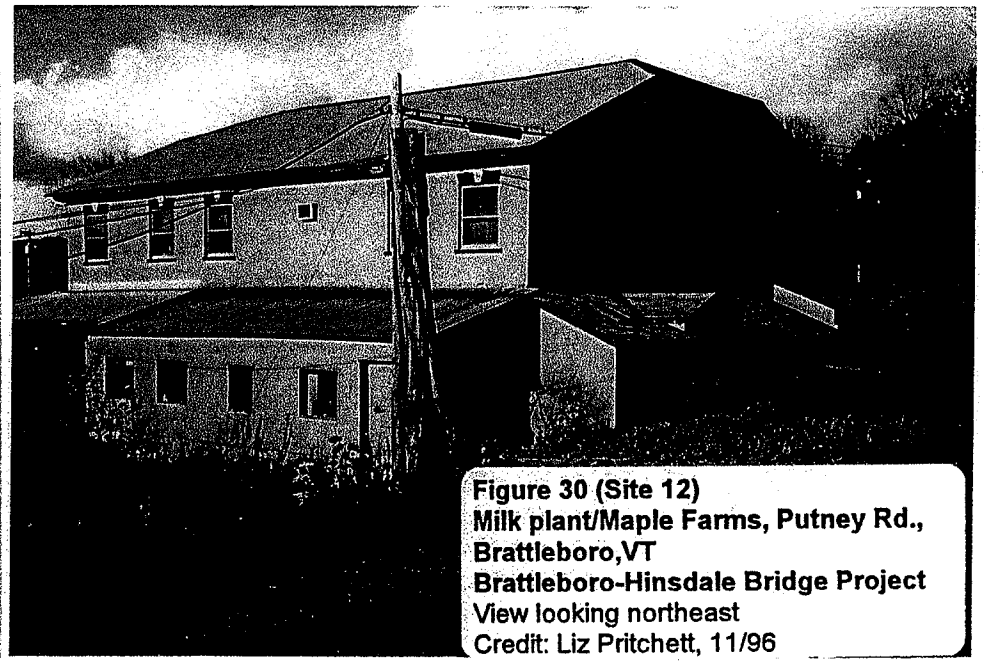


Figure 30 (Site 12)
Milk plant/Maple Farms, Putney Rd., Brattleboro,VT
Brattleboro-Hinsdale Bridge Project
View looking northeast
Credit: Liz Pritchett, 11/96

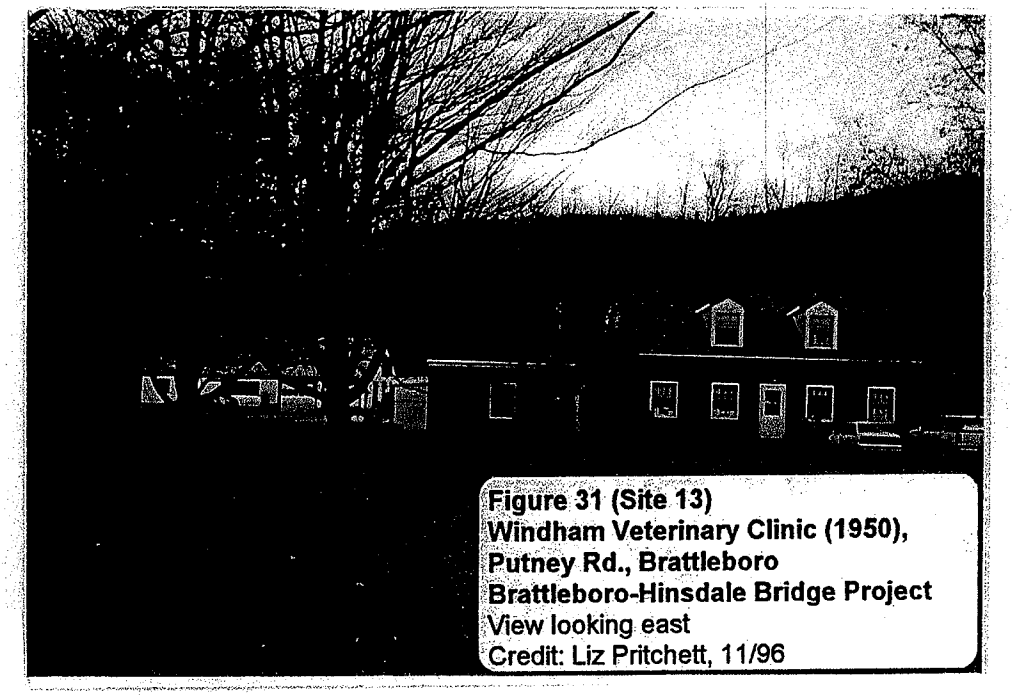


Figure 31 (Site 13)
Windham Veterinary Clinic (1950), Putney Rd., Brattleboro
Brattleboro-Hinsdale Bridge Project
View looking east
Credit: Liz Pritchett, 11/96

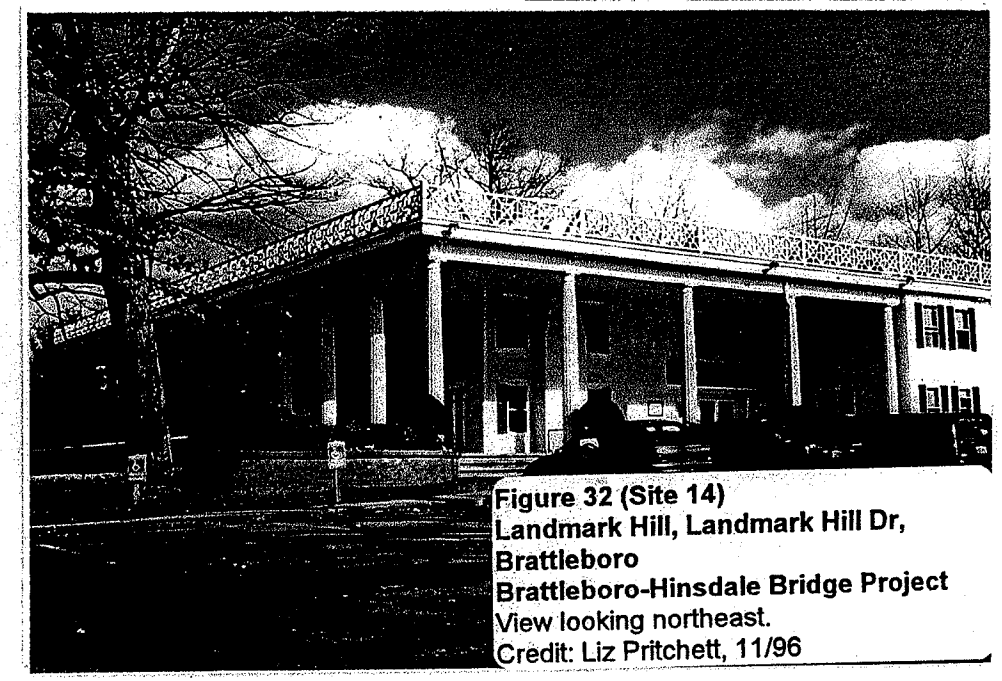


Figure 32 (Site 14)
Landmark Hill, Landmark Hill Dr, Brattleboro
Brattleboro-Hinsdale Bridge Project
View looking northeast.
Credit: Liz Pritchett, 11/96

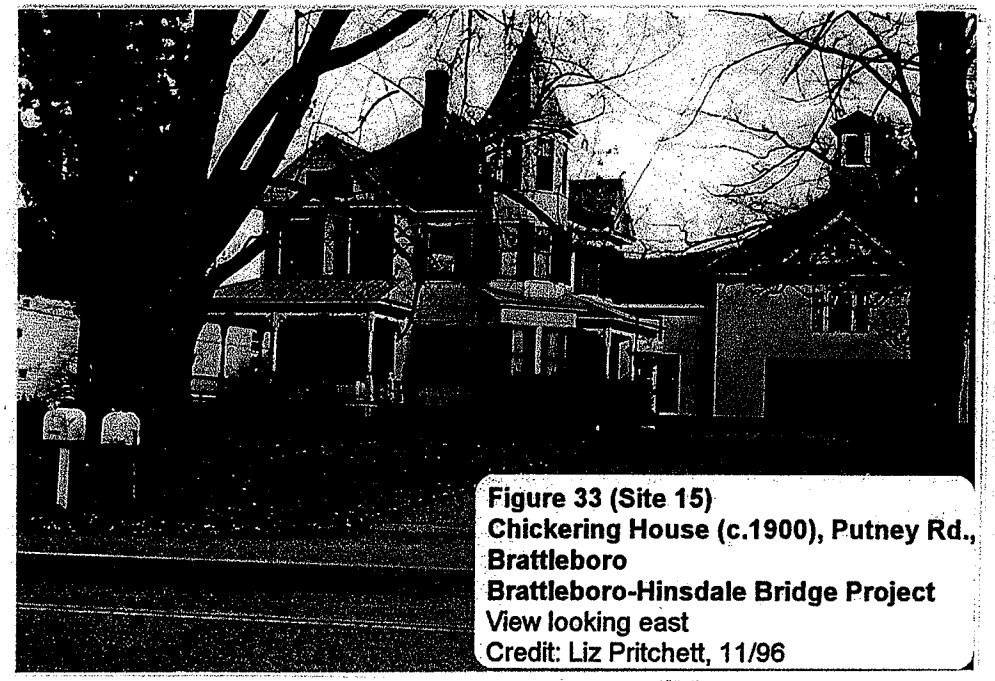


Figure 33 (Site 15)
Chickering House (c.1900), Putney Rd., Brattleboro
Brattleboro-Hinsdale Bridge Project
View looking east
Credit: Liz Pritchett, 11/96

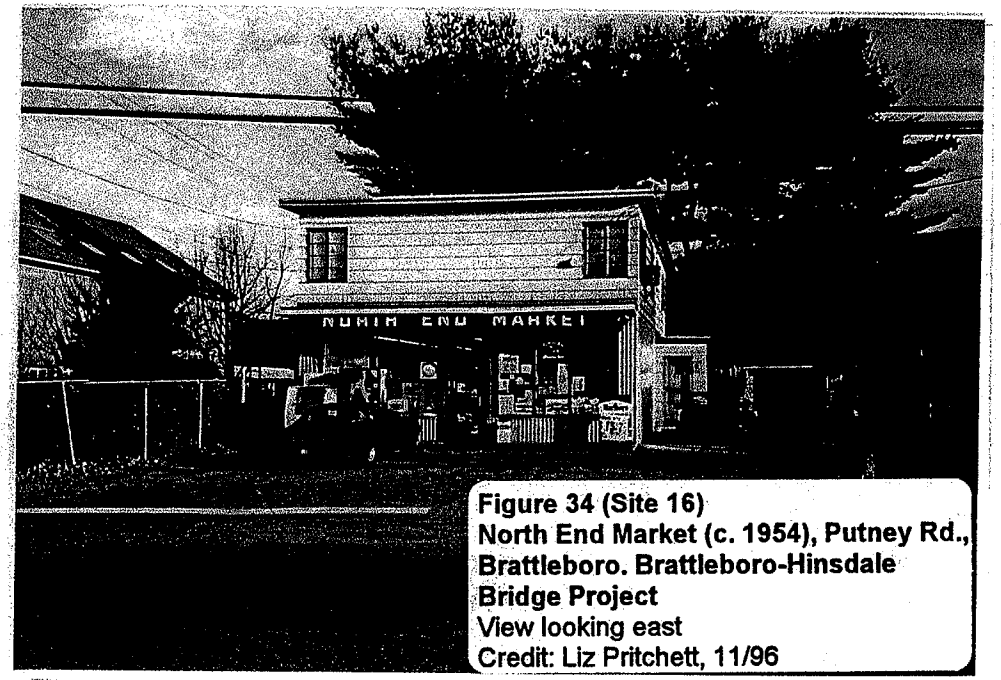


Figure 34 (Site 16)
North End Market (c. 1954), Putney Rd., Brattleboro. Brattleboro-Hinsdale Bridge Project
View looking east
Credit: Liz Pritchett, 11/96

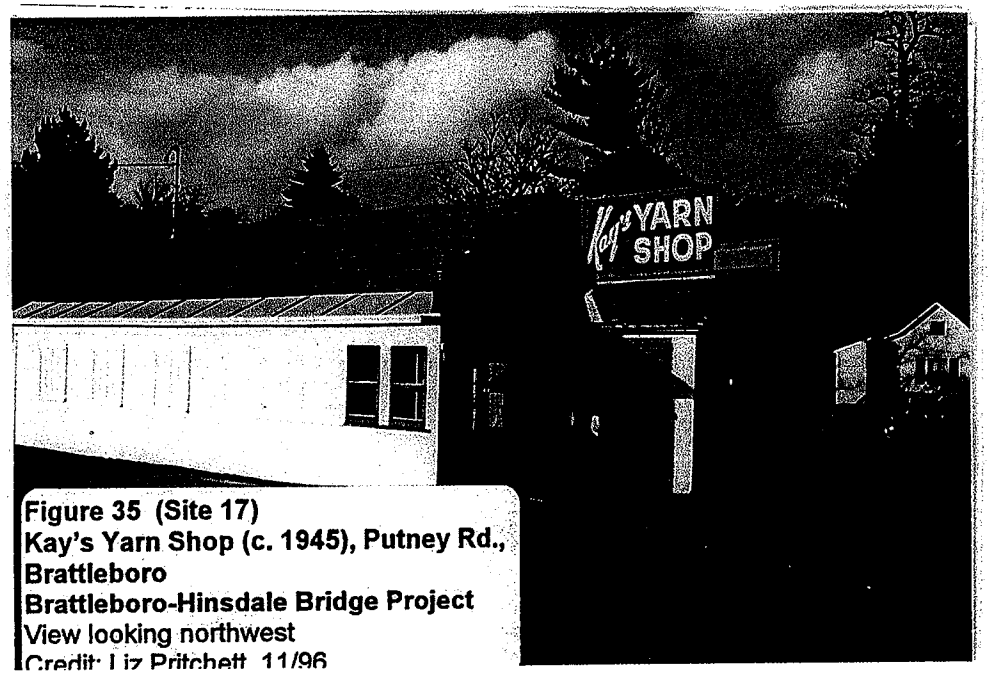


Figure 35 (Site 17)
Kay's Yarn Shop (c. 1945), Putney Rd., Brattleboro
Brattleboro-Hinsdale Bridge Project
View looking northwest
Credit: Liz Pritchett, 11/96

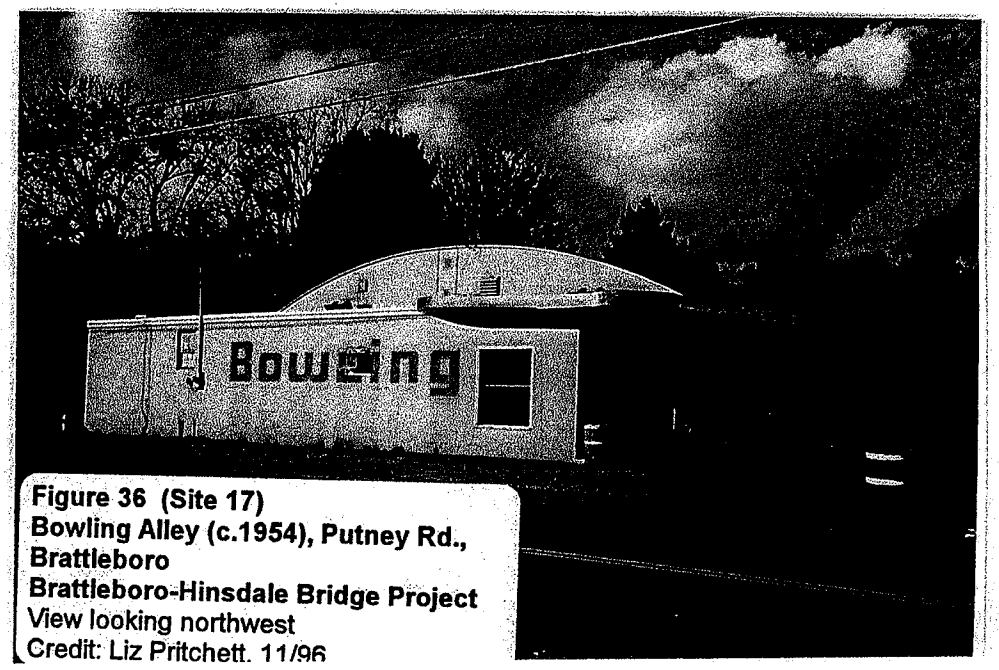


Figure 36 (Site 17)
Bowling Alley (c.1954), Putney Rd., Brattleboro
Brattleboro-Hinsdale Bridge Project
View looking northwest
Credit: Liz Pritchett, 11/96

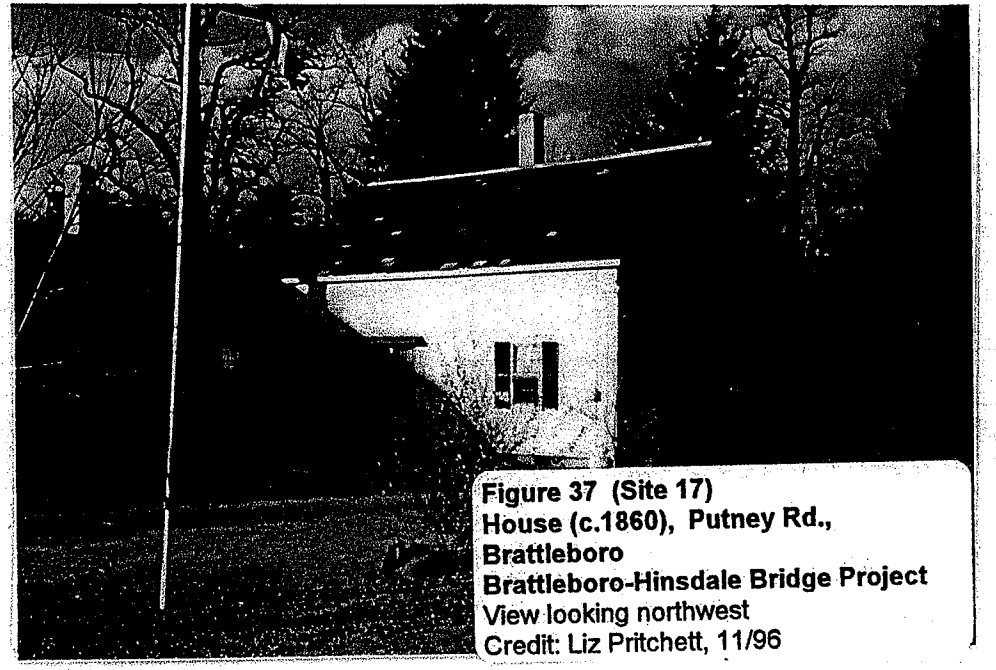


Figure 37 (Site 17)
House (c.1860), Putney Rd., Brattleboro
Brattleboro-Hinsdale Bridge Project
View looking northwest
Credit: Liz Pritchett, 11/96

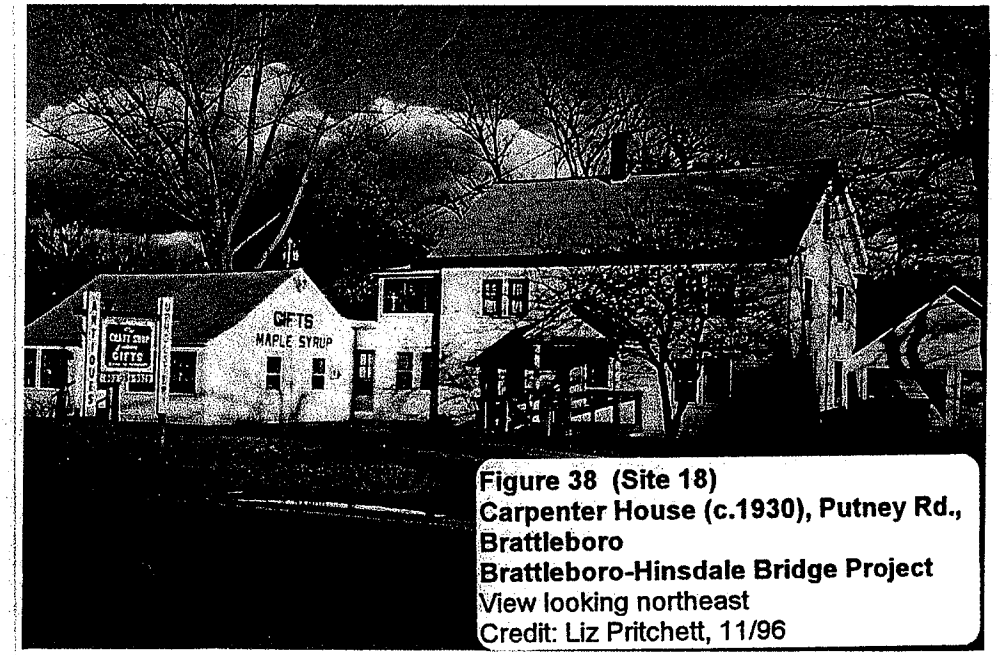


Figure 38 (Site 18)
Carpenter House (c.1930), Putney Rd., Brattleboro
Brattleboro-Hinsdale Bridge Project
View looking northeast
Credit: Liz Pritchett, 11/96

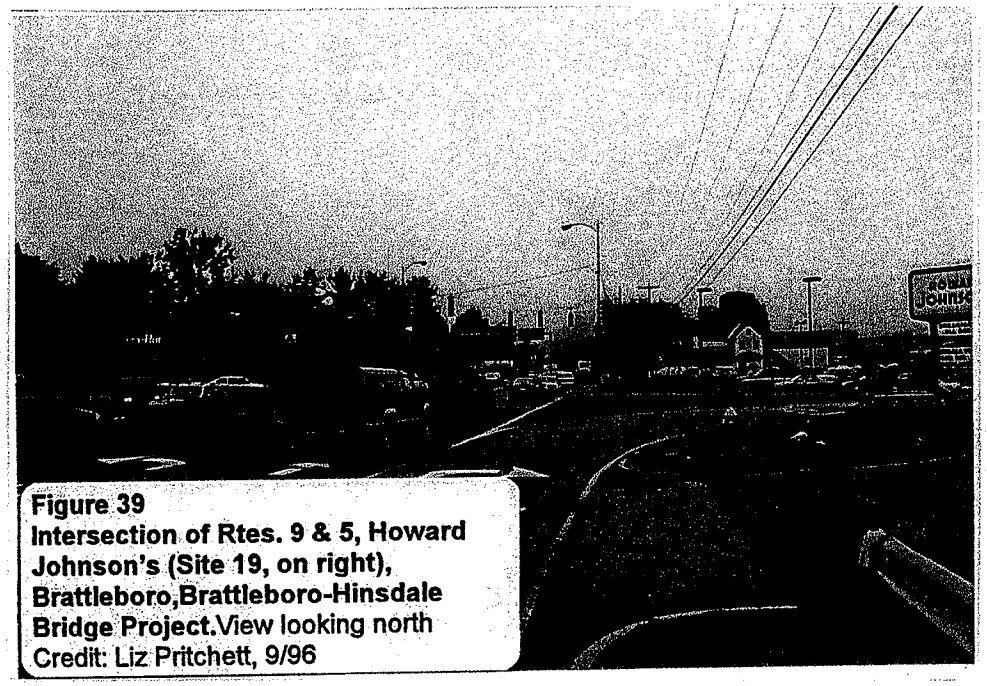


Figure 39
Intersection of Rtes. 9 & 5, Howard Johnson's (Site 19, on right), Brattleboro,Brattleboro-Hinsdale Bridge Project. View looking north
Credit: Liz Pritchett, 9/96

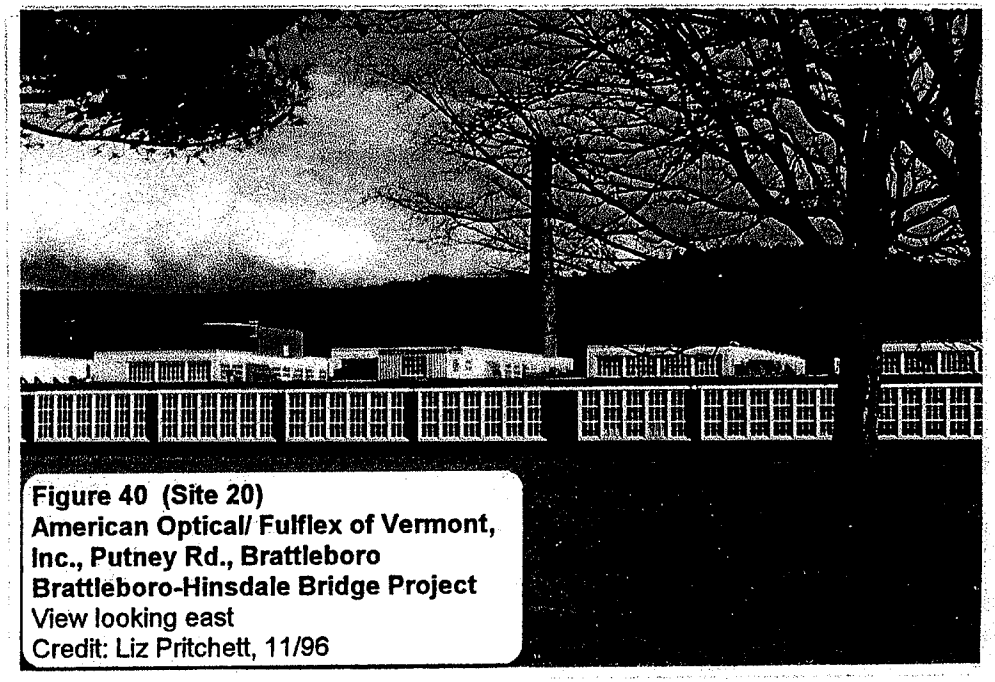


Figure 40 (Site 20)
American Optical/ Fulflex of Vermont, Inc., Putney Rd., Brattleboro
Brattleboro-Hinsdale Bridge Project
View looking east
Credit: Liz Pritchett, 11/96

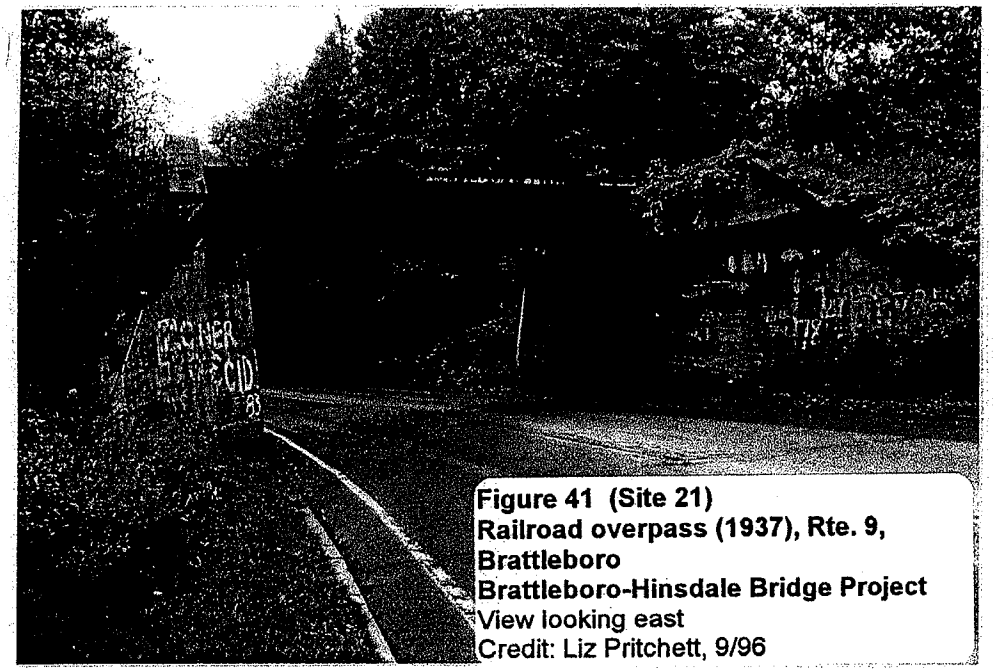


Figure 41 (Site 21)
Railroad overpass (1937), Rte. 9, Brattleboro
Brattleboro-Hinsdale Bridge Project
View looking east
Credit: Liz Pritchett, 9/96

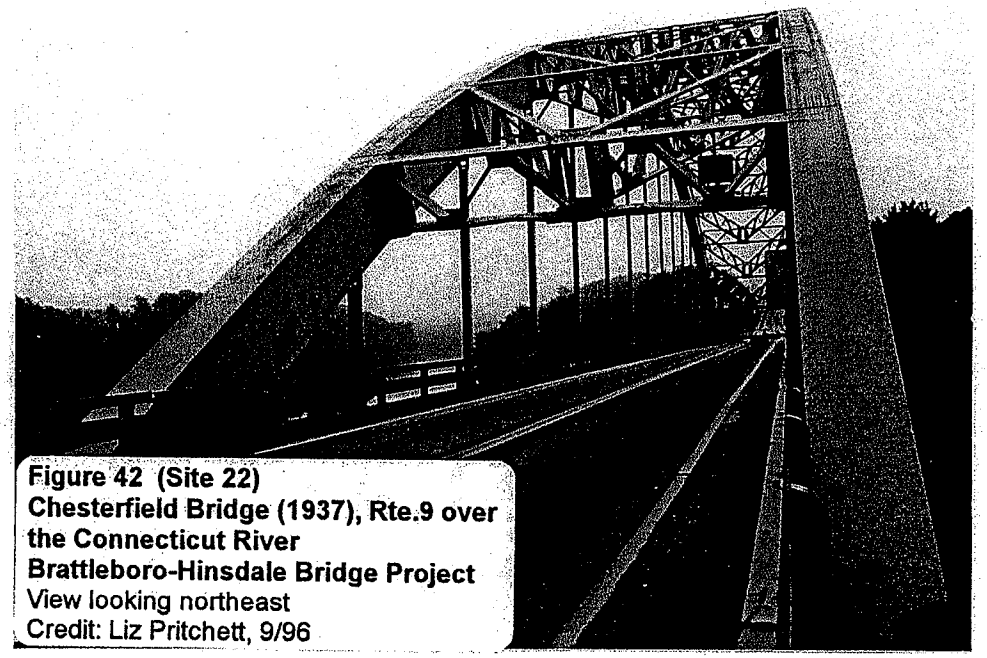


Figure 42 (Site 22)
Chesterfield Bridge (1937), Rte.9 over the Connecticut River
Brattleboro-Hinsdale Bridge Project
View looking northeast
Credit: Liz Pritchett, 9/96

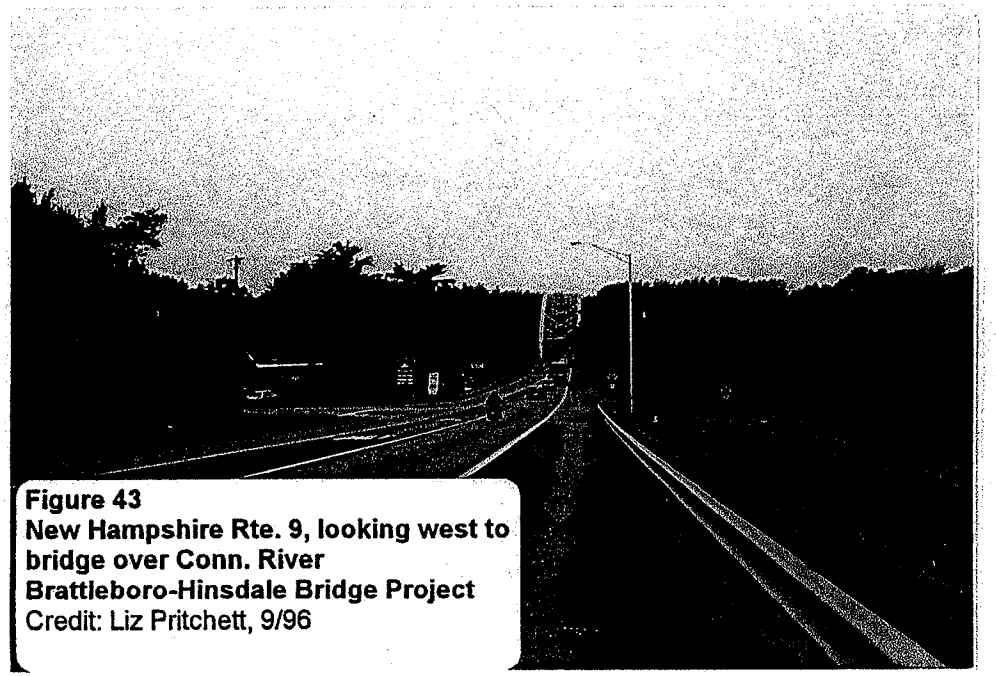


Figure 43
New Hampshire Rte. 9, looking west to bridge over Conn. River
Brattleboro-Hinsdale Bridge Project
Credit: Liz Pritchett, 9/96

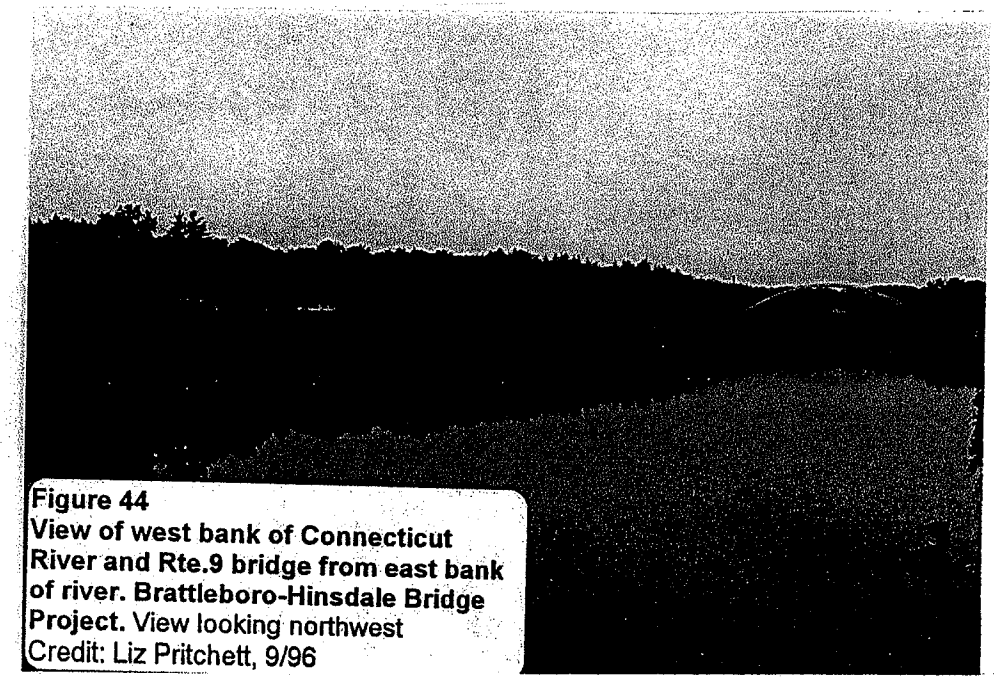


Figure 44
View of west bank of Connecticut River and Rte.9 bridge from east bank of river. Brattleboro-Hinsdale Bridge Project. View looking northwest
Credit: Liz Pritchett, 9/96

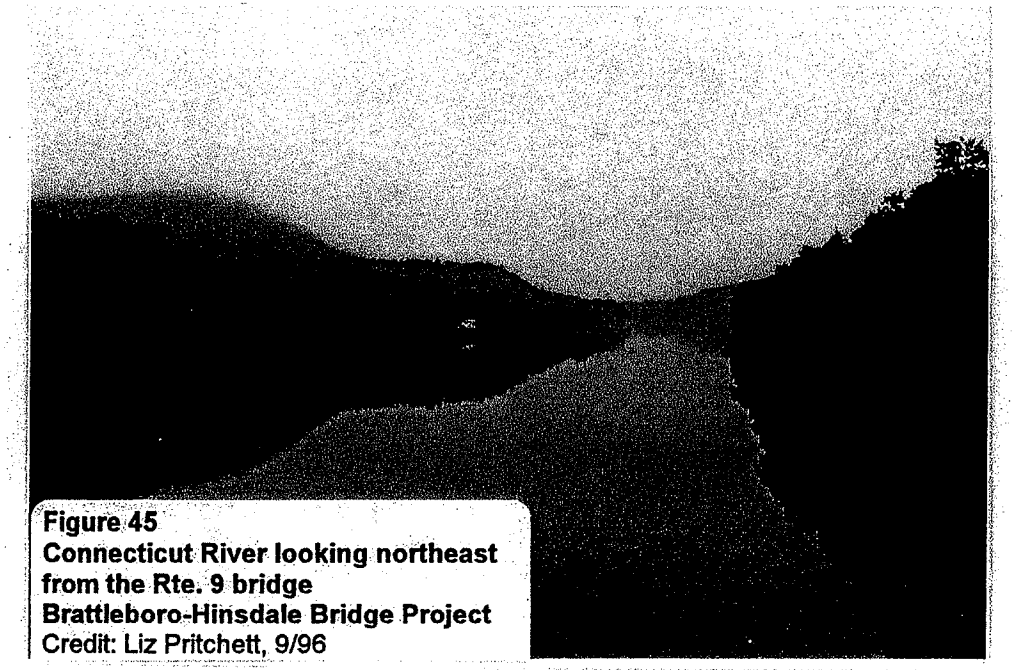


Figure 45
Connecticut River looking northeast from the Rte. 9 bridge
Brattleboro-Hinsdale Bridge Project
Credit: Liz Pritchett, 9/96

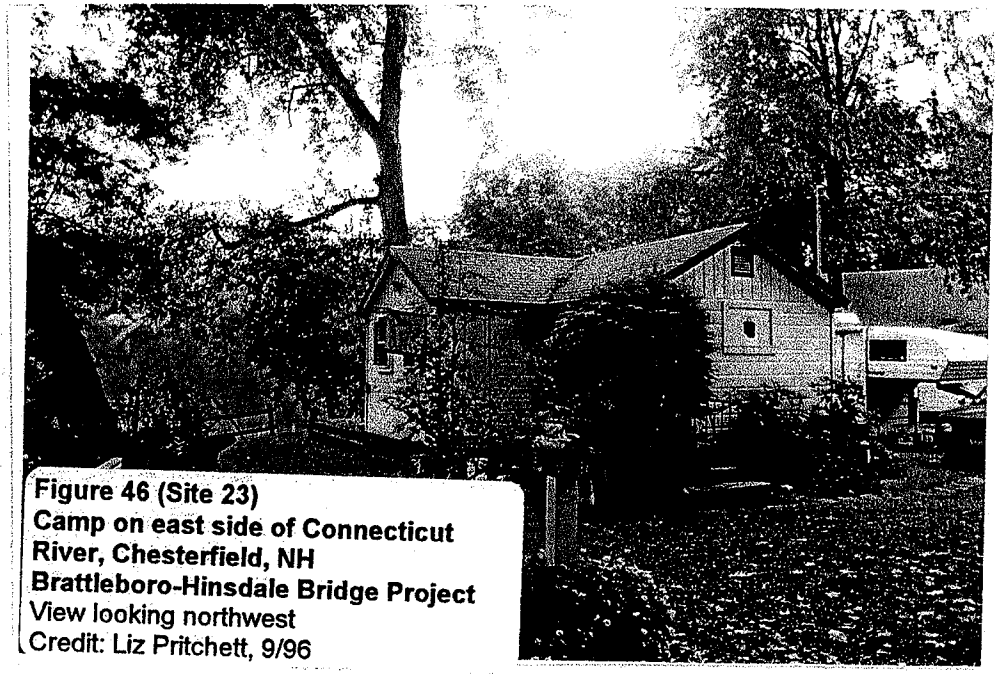


Figure 46 (Site 23)
Camp on east side of Connecticut River, Chesterfield, NH
Brattleboro-Hinsdale Bridge Project
View looking northwest
Credit: Liz Pritchett, 9/96

Liz Pritchett Associates

HISTORIC PRESERVATION • ARCHITECTURAL CONSERVATION

January 26, 1997

DUBOIS & KING, INC.
FILE # R13805F
SUBJ Brattleboro / Hinsdale

JAN 29 1997

REFD TO: File
NOTED: JSH

John Hannah, Environmental Specialist
Dubois & King, Inc.
P.O. Box 339
Randolph, Vermont 05060

Re: Brattleboro-Hinsdale BRF 2000(19)SC- Section 106 Review

Dear John;

In response to your letter dated January 2, 1997 with attached comments from the Vermont Agency of Transportation December 30, 1996, I have the following comments concerning my Section 106 Report dated December 10, 1996 for the Brattleboro-Hinsdale Bridge Project, Identification of Constraints Phase.

1. The three alternatives I noted in the report (p.3) are potential alternatives only, and were identified as such in the Scope of Services and Dubois and Kings' proposal for the project. In my Scope of Work, developed for Historic Resource Review, I state that in Phase I, I will complete an Historic Resource Review report with an inventory and background research, which will also address recommendations for mitigation, but that alternatives review will be focused upon primarily in Phases 2 and 3.

2. Please note that I included the backwater area in my inventory review and field work as far south as the Brattleboro-Vernon town line (Report, Location of Project, p.2), and included several historic sites in that area (Report, Map 2).

3. As alternatives and designs for the project have not yet been fully developed, the Inventory in my report is the primary focus for the Identification of Constraints Phase. As stated in my report, my comments on effect were general in nature, and that additional review will be necessary when design alternatives have been developed (Report p.13).

4. Additional review of the Holstein building and other structures adjacent to the Downtown Historic District (see cover letter to Sue Jamele at DHP and Report p.13, paragraph 4). As discussed in my report (p.3), I recommended an amendment to the Historic District to include the Main Street Bridge, and historic rail line and related railyard structures. I limited my review in this area to the structures adjacent to the river and east of Vernon Street (Rte. 142) at the intersection of Rtes. 142, 119, and 5. In this area I did not extend review west of the intersection because I felt the Scope of work did not include those properties as I was concentrating on the properties along the edge of the Connecticut River. Clearly, however, this is an historic intersection and most properties and structures here appear to have both historic and architectural significance. The new Brookside Shopping Plaza, c. 1960 auto care business, and the new

58 EAST STATE ST. MONTPELIER, VERMONT 05602 • 802-229-1035

addition to the Holstein building on the east side of Vernon Street appear to be the only non-historic structures near the intersection. The properties to the west along Canal Street and South Main Street which are either in or abut the Canal Street Clark Street Neighborhood Historic District (see attached map) are historic and have the potential for adverse effect from road alterations. Because of the high density of significant historic structures along Clark Street and at the intersection including the sidewalk and the massive stone walls fronting the Holstein building and surrounding the pocket park fronting the Museum (former railroad station), there appears to be no room for road widening, and options for alternatives at this location would be extremely difficult to develop without adverse impacts to the resources.

Please contact me if you or the AOT have additional questions.

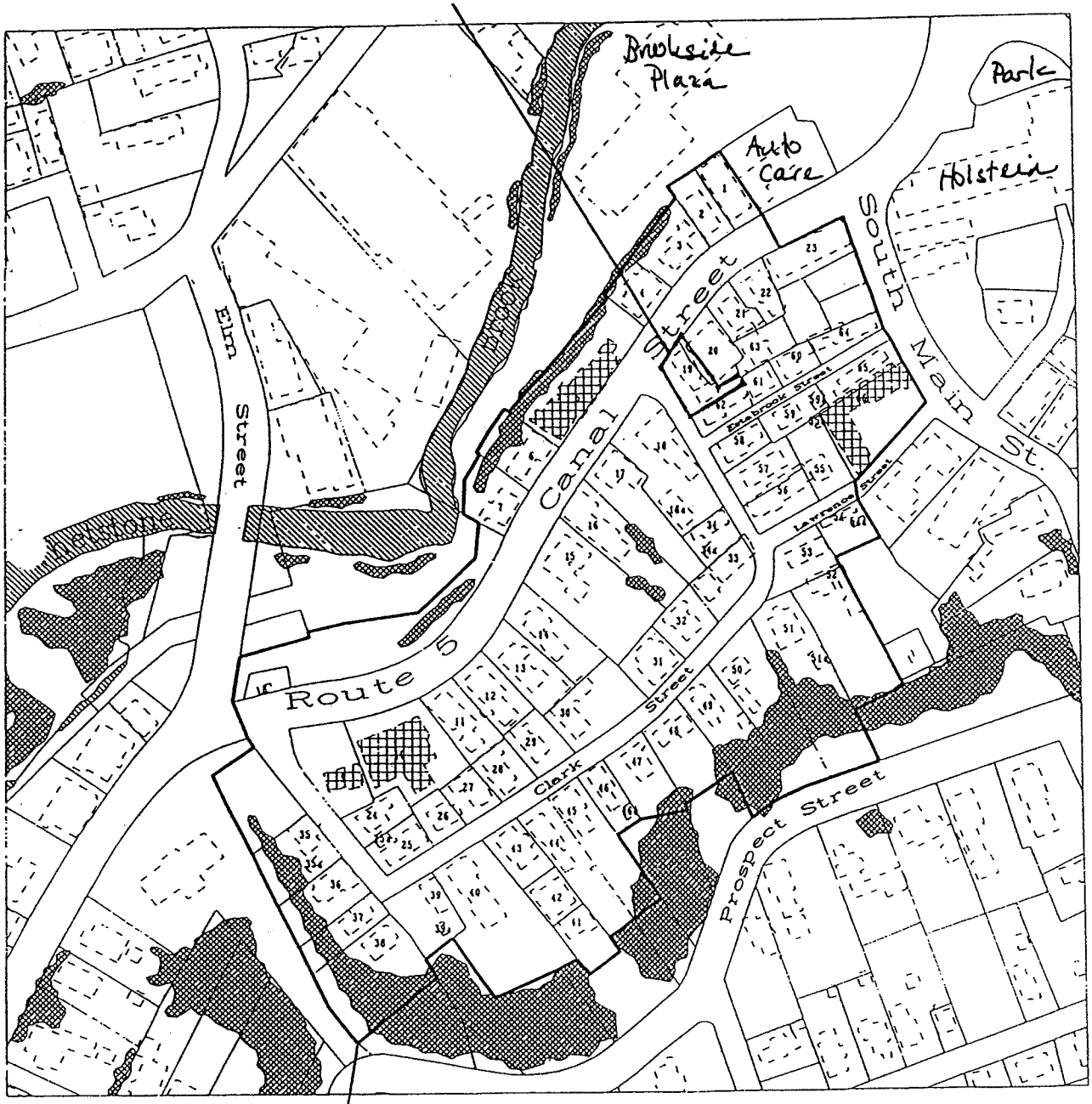
Sincerely yours,

Liz Pritchett

Liz Pritchett
Historic Resource Consultant

cc: Jeff LeFevre, Systems Planning, VAOT
Sue Jamele, VDHP

Canal Street–Clark Street Neighborhood
Historic District



Historic
Parcel li
Buildin
Contribu
Non-Co
Trees
Surface

Sources

Buildings, tree surface water d 1976 1:1250 pho orthophotos

Parcel lines sc 1:5000 tax maps

Historic distri by Brattleboro Services Depart

Plot

Scale 1:1250

Boundary of historic district.

Liz Pritchett Associates

HISTORIC PRESERVATION * ARCHITECTURAL CONSERVATION

MEMORANDUM

DUBOIS & KING, INC.
FILE # R13805F
SUBJ Brattleboro - Hinsdale

FEB 18 1997

REFD TO: File
NOTED: JH

TO: John Hannah, Environmental Specialist
Dubois & King, Inc.
Randolph, Vt.

DATE: February 14, 1997

FROM: Liz Pritchett

RE: Brattleboro-Hinsdale BRF 2000(19)SC-Section 106 Review

John,

Please attach these photographs to my letter dated January 26, 1997, as supporting materials for the discussion on the Routes 142, 119 and 5 intersection in Downtown Brattleboro, which is sandwiched between the Downtown Brattleboro Historic District to the north and the Canal Street- Clark Street Historic District to the southwest.

Please call if I can be of further assistance.

Sincerely yours,

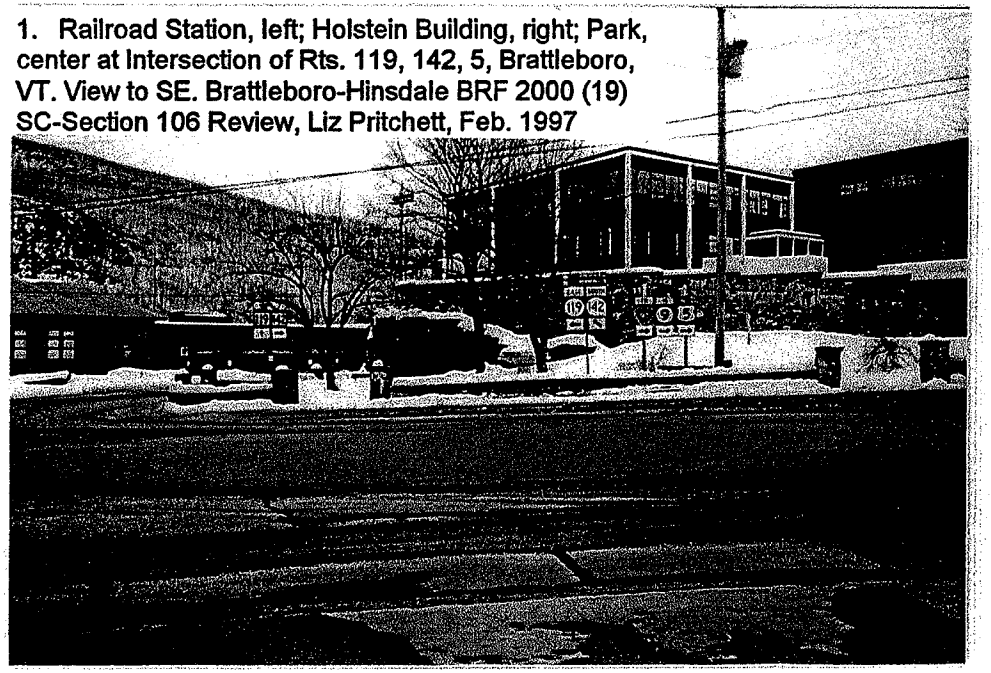
Liz Pritchett

Liz Pritchett

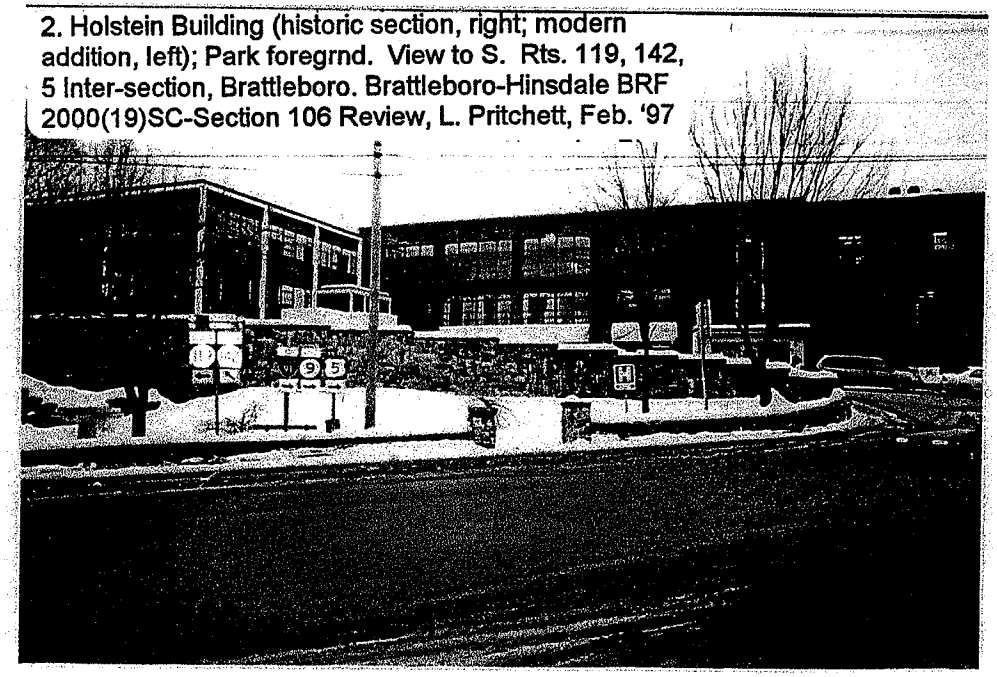
cc: Sue Jamele, VDHP, Historic Preservation Review Coordinator

58 EAST STATE ST. MONTPELIER, VERMONT 05602 * PHONE & FAX 802-229-1035

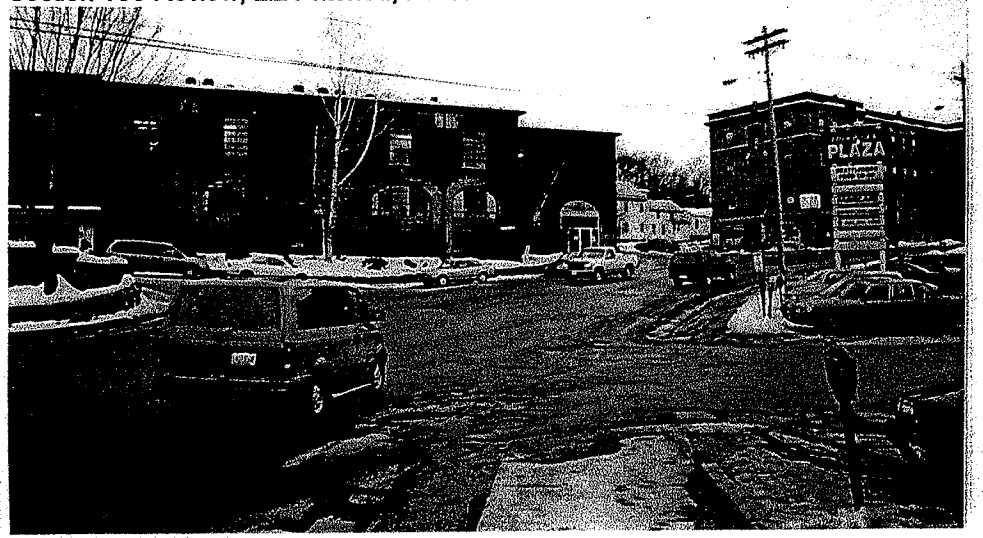
1. Railroad Station, left; Holstein Building, right; Park, center at Intersection of Rts. 119, 142, 5, Brattleboro, VT. View to SE. Brattleboro-Hinsdale BRF 2000 (19) SC-Section 106 Review, Liz Pritchett, Feb. 1997



2. Holstein Building (historic section, right; modern addition, left); Park foregrnd. View to S. Rts. 119, 142, 5 Inter-section, Brattleboro. Brattleboro-Hinsdale BRF 2000(19)SC-Section 106 Review, L. Pritchett, Feb. '97

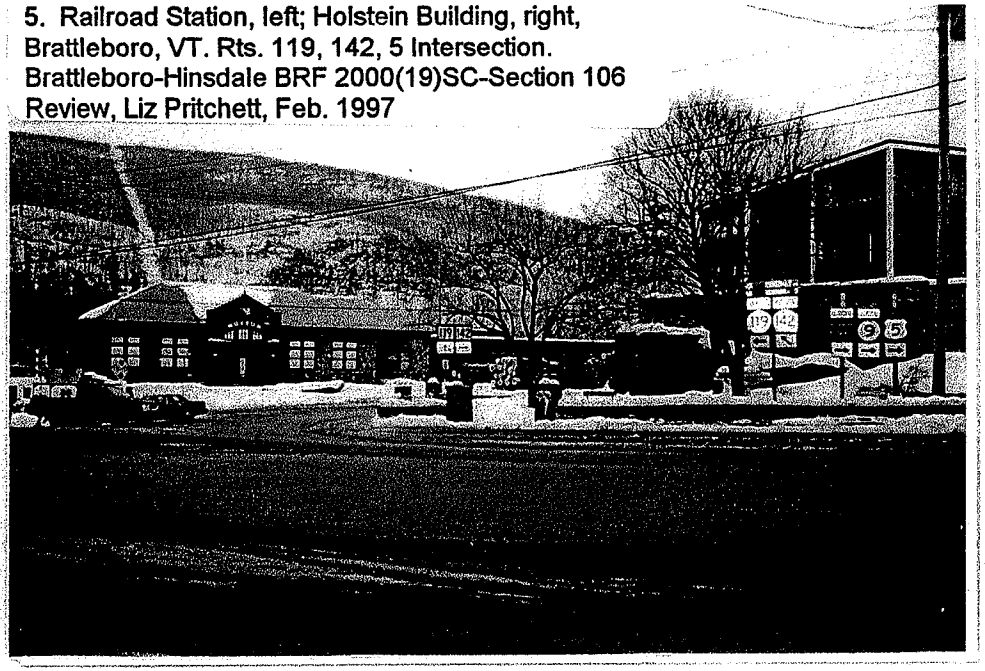


3. Holstein Building left; brick building, right is structure #23 in Canal St.-Clark St. Hist. Dist. View looking SW. Brattleboro- Hinsdale BRF 2000(19)SC-Section 106 Review, Liz Pritchett, Feb.1997

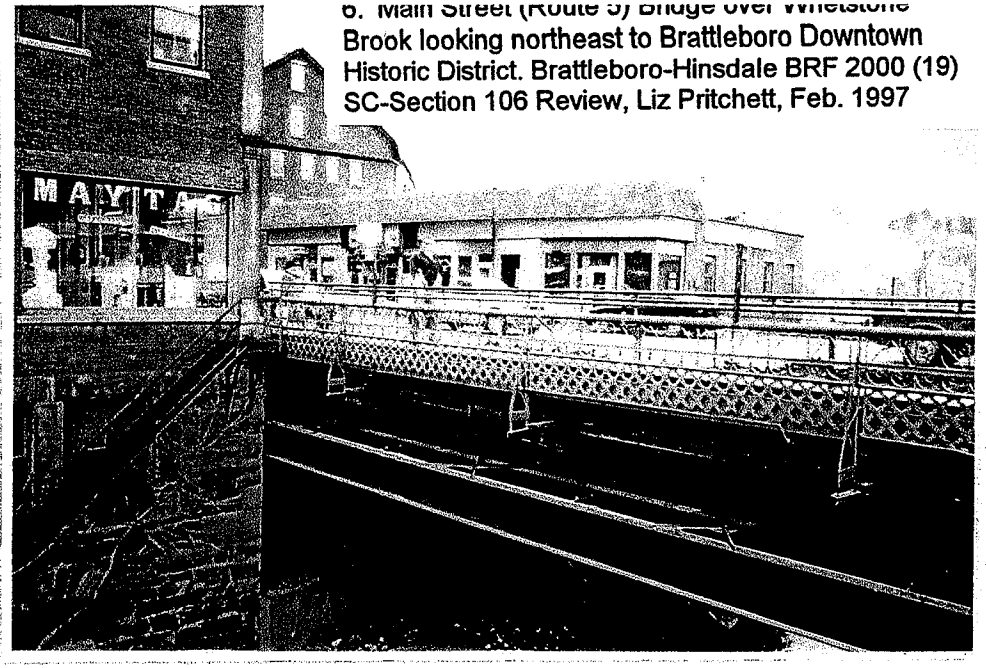


4. View to SW looking from Brookside Shopping Plaza to Canal St.-Clark St. Hist. Dist, Brattleboro, Vt. Brattleboro-Hinsdale BRF 2000(19)SC-Section 106 Review, Liz Pritchett, Feb. 1997

5. Railroad Station, left; Holstein Building, right, Brattleboro, VT. Rts. 119, 142, 5 Intersection. Brattleboro-Hinsdale BRF 2000(19)SC-Section 106 Review, Liz Pritchett, Feb. 1997



6. Main Street (Route 5) Bridge over Whetstone Brook looking northeast to Brattleboro Downtown Historic District. Brattleboro-Hinsdale BRF 2000 (19) SC-Section 106 Review, Liz Pritchett, Feb. 1997



STATE OF VERMONT
AGENCY OF TRANSPORTATION
133 State Street, Administration Building
Montpelier, Vermont 05633-5001

TO: Emily Wadhams, State Historic Preservation Officer

FROM: By: Scott Gurley, Historic Preservation Specialist

DATE: September 17, 1999

SUBJECT: Brattleboro-Hinsdale BRF 2000(19)SC

HISTORIC BUILDINGS, STRUCTURES, SITES, AND DISTRICTS

These preliminary comments will advise you about the project's potential effect on historic buildings, structures, sites and districts. This project involves the construction of a new bridge over the Connecticut River between the towns of Brattleboro, VT and Hinsdale, NH. A scoping report completed last year looked at 11 alternatives, including rehabilitation of both the metal truss bridges at the existing crossing. Alternative F was recently chosen as the preferred alternative by a committee of residents from both New Hampshire and Vermont. This option involves the construction of a new bridge on a new alignment (see attached map) and rehabilitation of the existing bridges for recreational use.

The proposed landing area for the new bridge is located approximately a quarter mile south of existing bridge. A new intersection will be created where Route 119 and Route 142 (Vernon Street) meet. This alignment will require the relocation of several storage tanks, the removal of 2 buildings and a storage shed, and possibly the alteration of several stone retaining walls. An historic resource analysis done by Liz Pritchett Associates in 1996 looked at the general area surrounding the existing bridges, but it did not specifically address the buildings to be removed. These comments will assess the historic significance of these buildings and focus on the potential effects of Alternative F.

Building No. 1 on the attached map will be removed as part of this project. It is a one story contemporary structure that is less than 50 years of age. It is not individually eligible for the National Register due to age.

Building No. 2 is a 2-story wood-frame house with a full basement and a 1 1/2 story wing. The building features a variety of window types and has two porches that span its front facade. According to Sanborn Maps and business directories, the building was constructed c. 1914. At the time the building was constructed, a railroad freight house was located across the street. Although an early resident of the building was employed by the Central Vermont Railroad, there is no evidence to suggest that the building was built or used by the railroad. In summary, Building No. 2 has a tangential relationship to the railroad but it lacks architectural distinction. Based on our research, we have concluded that the building's association with

railroad development in Brattleboro is not significant enough to make it individually eligible for the National Register under Criteria A (history).

We have also surveyed the surrounding area in order to determine if Building No. 2 is part of a potential historic district. Although the building is only several hundred yards from Union Station and the boundary to the Brattleboro Downtown Historic District, its historic context has been compromised by new construction. Building No. 1 and a modern office building are located across the street. These new structures isolate the house both physically and visually from the Historic District and from other railroad-related structures. Consequently, we do not believe Building No. 2 is part of an historic district.

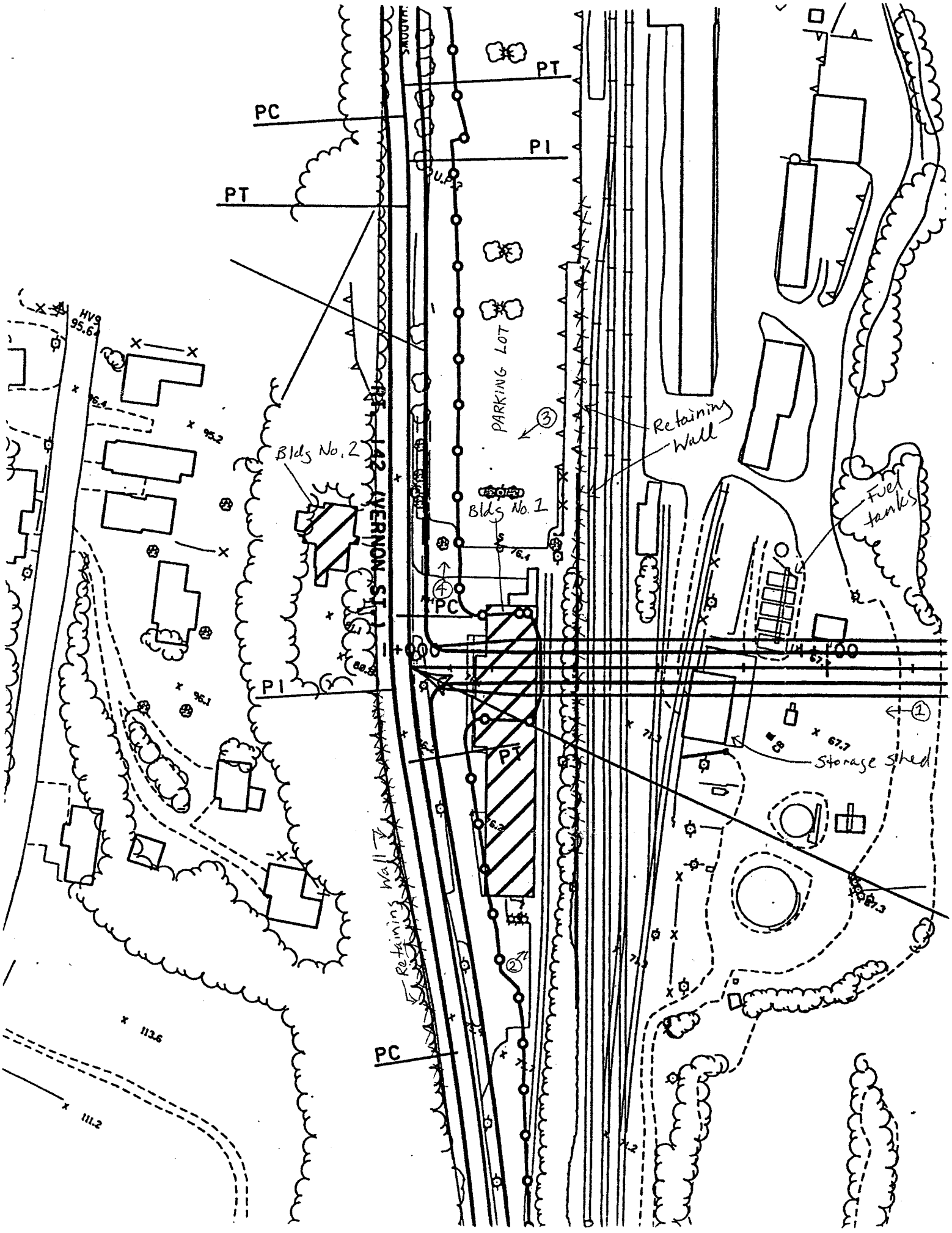
A fuel storage facility is located along the banks of the Connecticut River at the landing site for the new bridge. A concrete shed and some fuel tanks will have to be moved and/or demolished as part of this project. These structures are less than 50 years of age and are not historically significant. Other sheds located to the north of these structures may be related historically to the railroad. Under the proposed alignment, these sheds appear to be located outside the area of potential effect.

Several old stone walls are also located within the proposed project area. The largest of these structures is located on the west side of Vernon Street, south of the new intersection. This retaining wall was probably built c. 1914 when the rail yard was expanded and Vernon Street was realigned. The wall is approximately 60' high at its highest point, making it one of the largest structures of its type in Vermont. Although project plans have not been developed, it appears that approximately 8' of this wall will be covered in order to elevate Vernon Street and span the adjacent railroad tracks. Another stone retaining wall is located along the western side of the railroad tracks but it will not be affected by the project. Both walls clearly contribute to the historic character of the rail corridor.

In conclusion, no historic buildings will be affected by this proposal, but an historic stone wall may be altered. If the wall is left in place a determination of "No Adverse Effect" is probable, but a final determination cannot be made until project plans are developed. Nevertheless, we are confident that appropriate mitigation for the alteration of this structure can be developed, if needed.

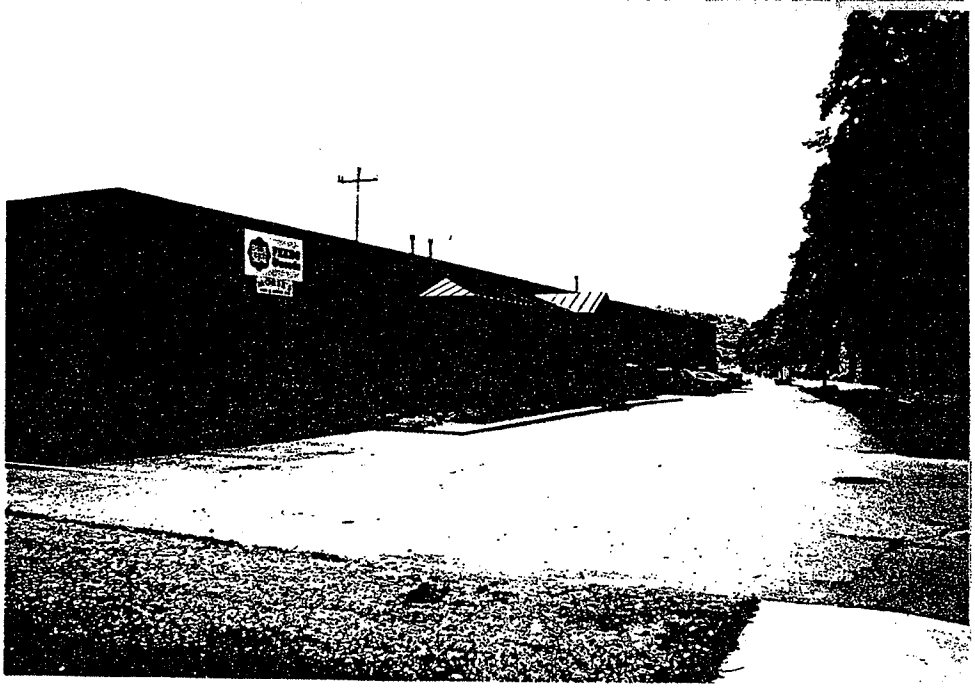
SCG: hs
c: central files via John Narowski
Craig Keller, VAOT Project Manager
May Sligh, VAOT Environmental Specialist
Kenneth R. Sikora, Jr., FHWA
John Hannah, DuBois & King

Attachments:
maps
photographs


PT
PC
PI
PT
PARKING LOT
Retaining Wall
Bldg No. 2
Bldg No. 1
Fuel tanks
PC
PI
PT
Storage shed
Retaining Wall
PC
142 (VERNON ST.)
HV9
95.6
113.6
111.2

Building No. 2

Photo No. 3



Building No 1

Proposed Bridge Landing Area

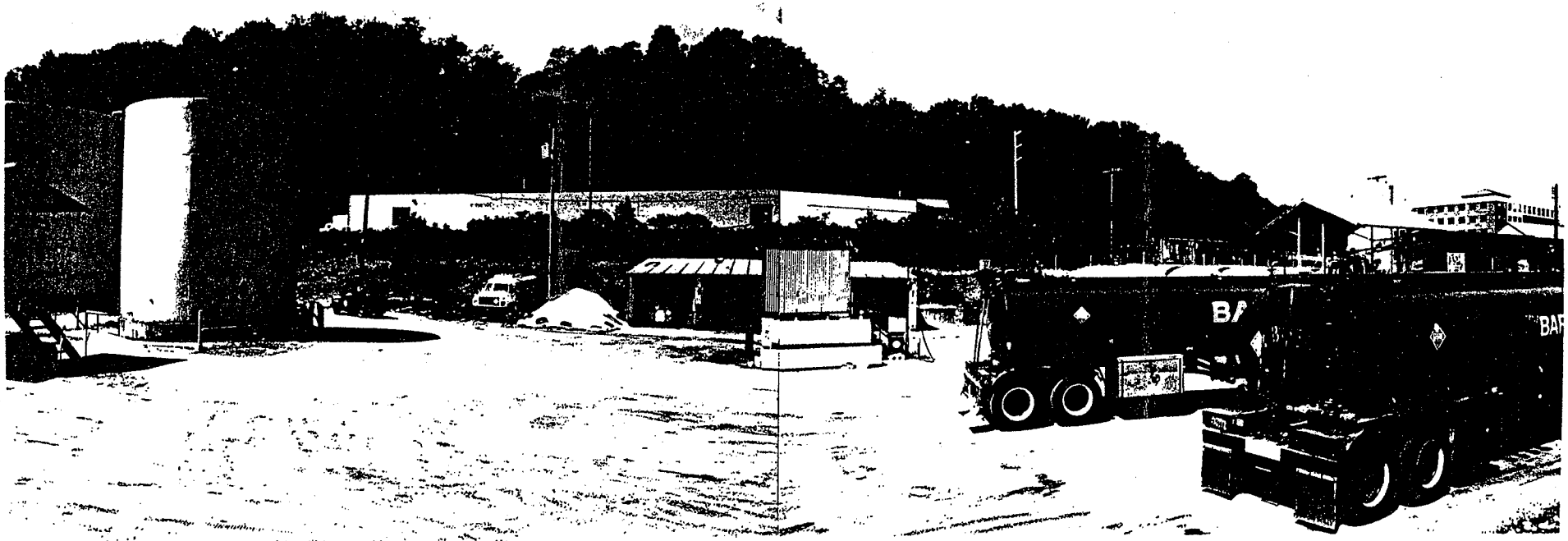
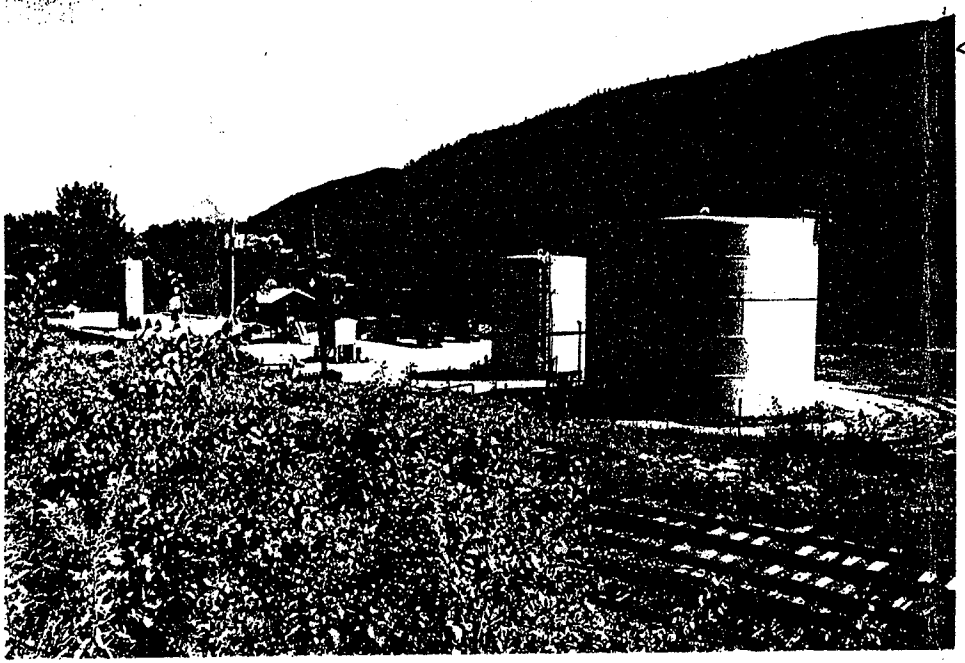
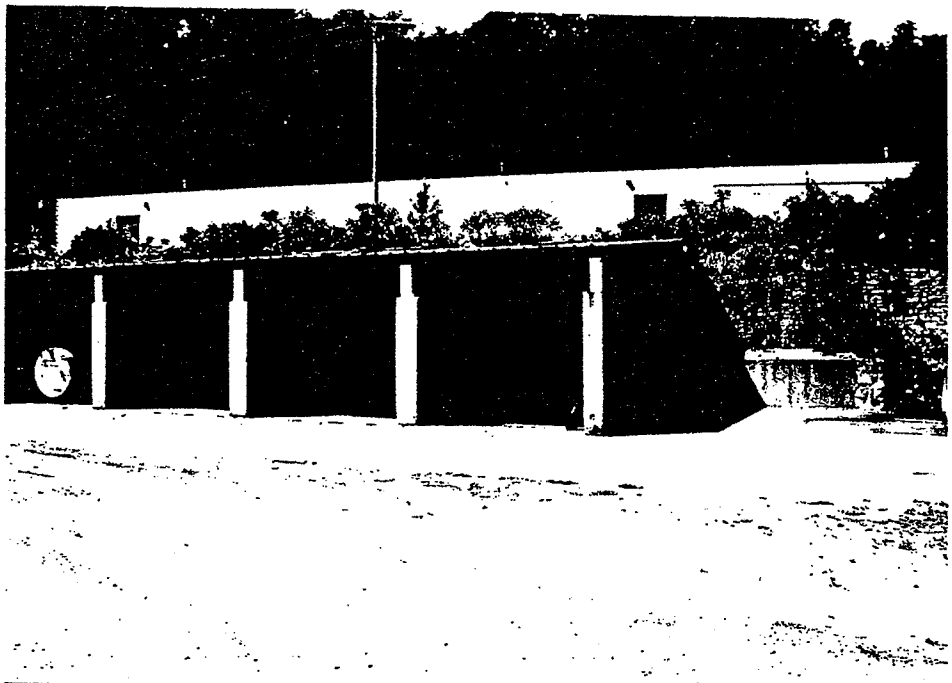


Photo No. 1 →
View West
From River

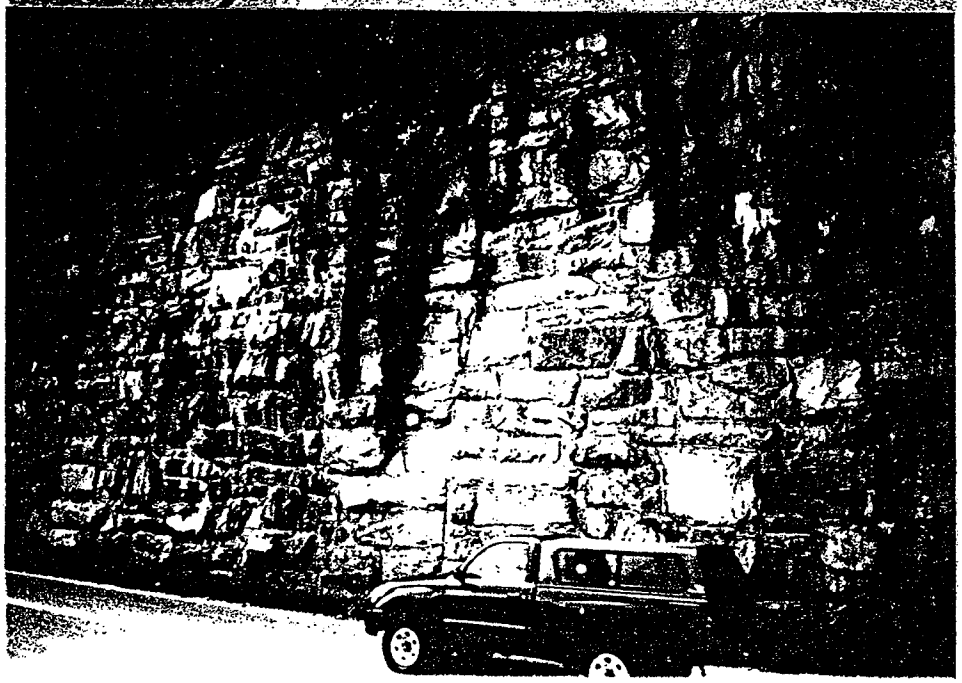


← Photo No. 2
View Northeast
from Vernon St.

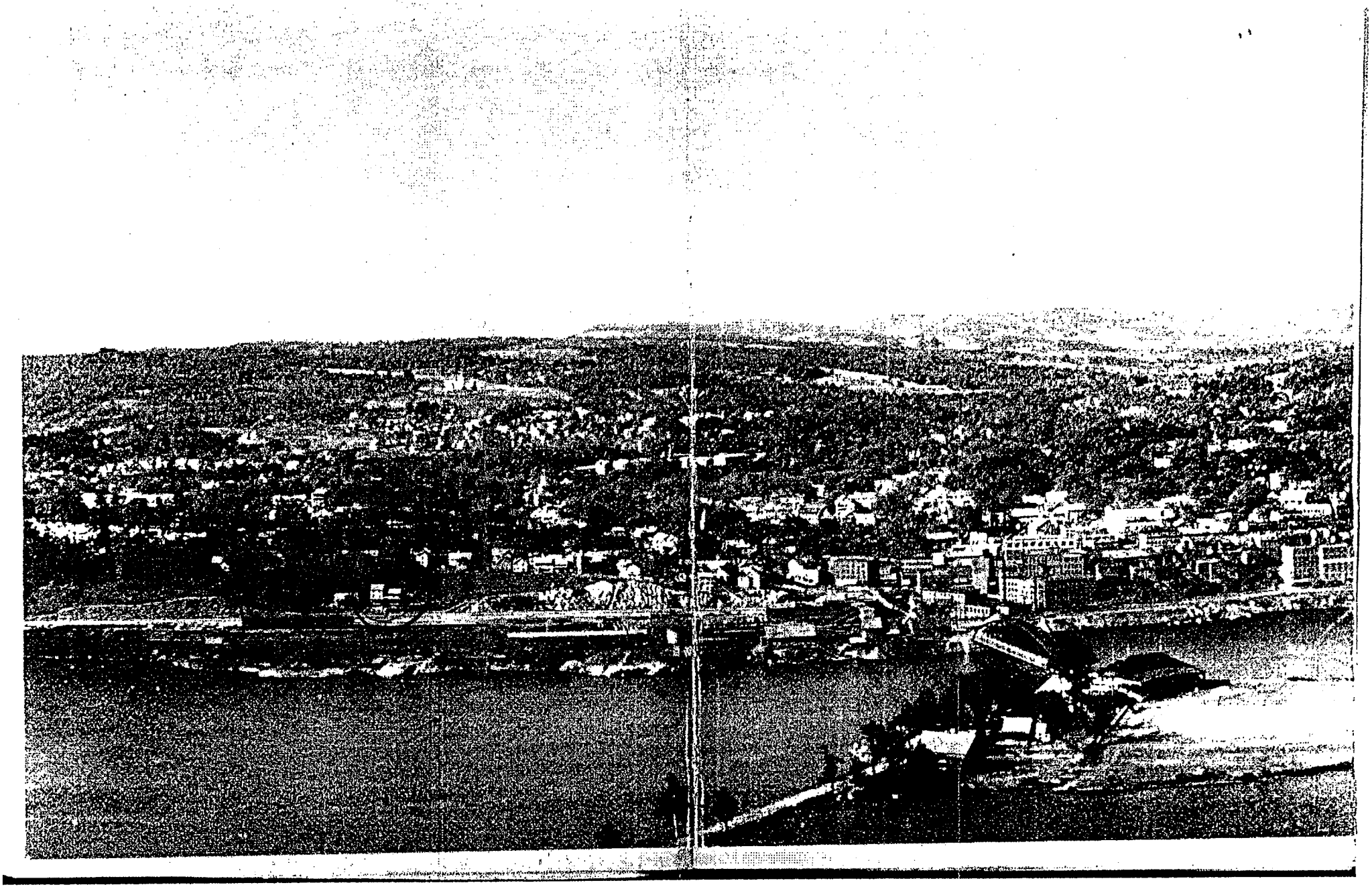


Storage Shed

Photo 4



Retaining Wall on Vernon St.



C. 1922

APPENDIX E - Public/Agency Coordination

Table of Contents

Page

RESOURCE AGENCY CORRESPONDENCE

Table of Contents

Page

STATE OF VERMONT

DEPARTMENT OF AGRICULTURE, FOOD & MARKETS

OFFICE OF THE COMMISSIONER
DIVISION OF AGRICULTURAL DEVELOPMENT
DIVISION OF ANIMAL & DAIRY INDUSTRIES
DIVISION OF PLANT INDUSTRY, LABORATORIES & CONSUMER ASSURANCE

DuBois & King March 30, 1996
FILE # R13805F1
SUBJ Brattleboro / Hinsdale

APR 2 1996

REFD TO: File
NOTED: JSA

Mr. John K. Benson, P.E., Director
Environmental Planning & Documentation
DuBois & King, Inc.
P.O. Box 339
Randolph, VT 05060

RE: Brattleboro - Hinsdale, N.H. Bridge Project

Dear John:

Improvements to the Connecticut River bridge between Hinsdale, N.H. and Brattleboro will not involve farmland or farm operations if the reconstruction occurs in the existing bridge's location. Consequently, the Department would have no concerns with the project.

Sincerely,

Amy Jestes Llewellyn
Agricultural Land Use Planner

SEAL OF QUALITY Vermont DEPT. OF AGRICULTURE®

116 STATE STREET
DRAWER 20
MONTPELIER, VT 05620-2901
(802) 828-2500 FAX: (802) 828-2361

State of Vermont

AGENCY OF NATURAL RESOURCES

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation
State Geologist

Department of Fish and Wildlife
RR 1, Box 33 (363 River Street)
North Springfield, VT 05150-9726

Telephone: (802) 886-2215
FAX: (802) 886-2206
TDD (Device for the Deaf): 1-800-253-0191
e-mail address: kencox@anspring.anr.state.vt.us

DUBOIS & KING INC
FILE # R13805
SUBJ Brat-Hinsdale

March 18, 1996

MAR 2 0 1996

REFD TO: JSH
NOTED: JKB/CCB

John K. Benson, P.E.
Environmental Documentation Director
DuBois & King, Inc.
P.O. Box 339
Randolph, VT 05060

Dear Mr. Benson:

This letter is in response to your invitation, dated March 8, 1996, regarding the upcoming Brattleboro-Hinsdale agency/scoping meeting scheduled for April 10 in Brattleboro. Unfortunately, I am unable to attend the meeting but do want to submit preliminary comments on potential fishery resource issues for your and the Agency of Transportation's consideration during further project planning.

The Connecticut River in the vicinity of the proposed bridge project supports mixed fisheries of warm, cold and anadromous species. Warmwater fishes (e.g., large- and smallmouth bass, walleye, yellow perch, northern pike and pickerel) reside in the area year round. On the other hand, the occurrence of coldwater and andromous fishes (i.e., brown and rainbow trout, anadromous Atlantic salmon, and American shad) is seasonal and associated with spawning migrations, spawning and juvenile rearing, and/or migrations to the sea.

Since 1967, the Vermont Fish and Wildlife Department has been an active cooperator with the three other Connecticut River Basin states (NH, MA, CT), the U.S. Fish and Wildlife Service and National Marine Fisheries Service involved in the restoration of anadromous Atlantic salmon and American shad to the Connecticut River and it's tributaries. In 1981, a fish ladder at New England Power Company's Vernon dam became operational and has annually passed upstream migrating adult salmon and shad to the Connecticut River in the vicinity of Brattleboro. Salmon migrate through the proposed project area eventually finding suitable spawning sites in the tributaries. In contrast, shad spawn in the Connecticut River main stem, including waters around the proposed project area. As many as 30,000 plus shad have passed above Vernon dam in some years. In the Brattleboro locality the spawning migration season for salmon and shad is from May 15 through early July.

Juvenile salmon on their way out to sea migrate through the project area between mid April and mid June; juvenile shad downstream migration occurs in late summer-fall (early September - late October). Project design and construction will need to assure up- and downstream migrations are not obstructed or adversely affected.

The river and its associated wetlands and setbacks are critical habitats for many of the warmwater fishes that contribute significantly to sportfishing opportunities in the area. Wetlands and setbacks are used by sportfish for spawning, juvenile rearing, and feeding areas. These typically shallow water habitats are vulnerable to water level fluctuations, especially dewatering. As the project area is located in a section of the Connecticut River, where water levels are controlled at Vernon dam, any consideration of pond level manipulation to facilitate bridge construction will need to avoid adversely impacting these critical areas.

As this project proceeds through the planning process and the design becomes more detailed, we look forward to the opportunity to provide additional comments on the project and resource protection issues. If you desire additional information, please do not hesitate to contact me.

Sincerely,

Kenneth M. Cox
District Fisheries Biologist

KMC

cc: Gina Campoli, ANR Regulatory Review Coordinator
Frederick Nicholson, ANR Stream Alteration Engineer

FEDERAL ENERGY REGULATORY COMMISSION
NEW YORK REGIONAL OFFICE
19 WEST 34th STREET - SUITE 400
NEW YORK, NEW YORK 10001

Telephone No. (212) 631-8110 FAX No. (212) 631-8124

DUBOIS & KING, INC.
March 19, 1996 FILE
SUBJ

MAR 25 1996

REFD TO:
NOTED:

Mr John K. Benson, P.E.
DuBois & King Inc.
Route 66 Professional Center
P. O. Box 339
Randolph, Vermont 05060

Ref.: Project No. 1904-VT/NH, Vernon
NATDAM No. NH00097

Dear Mr. Benson:

Thank you for your invitation , dated March 8, 1996, to attend an agency concerns/scoping meeting for the proposed Brattleboro-Hinsdale bridge project scheduled for April 10, 1996. Since the bridge is located within the Vernon Project boundary, you are advised to directly contact the licensee regarding the proposed bridge project. By copy of this letter, your letter has been forwarded to the licensee.

The contact person for the licensee is Mr. Steven C. Doret. His mailing address and telephone number are listed as follows:

Mr. Steven C. Doret
Manager, Civil Engineering and
Structural/Mechanical Design
New England Power Service Company
25 Research Drive
Westborough, MA 01582-0099

Telephone: (508) 389-9001

Sincerely,

for Anton J. Sidoti, Director

MEMORANDUM
R13805F

TO: File

FROM: JSH

SUBJECT: Brattleboro - Hinsdale Shoreland Protection Act

DATE: September 5, 1996

I received a telephone message from Natalie Landry, stating that the Shoreland Protection Act does not cover the Connecticut River, and that the project is not within the jurisdiction of the Shoreland Protection Act.

P:\DATA\BRAT-HIN\LANDRY.MES

MEMORANDUM
R13805F

TO: File

FROM: JSH

SUBJECT: Brattleboro - Hinsdale Air Quality

DATE: September 10, 1996

I received a telephone call from Kent Finemore, NH DES Air Quality Division, stating that Cheshire County is not classified as non attainment. Thus, projects in Cheshire County are not required to achieve a 15% VOC reduction for SIP compliance. Normally, indirect source permitting requirements under DES regulations would apply. He stated he knew of no substantive air concerns for this project.

P:\DATA\BRAT-HIN\INFO-LTR\AIR-QUAL.RES

DUBOIS & KING, INC
FILE # R13805
SUBJ Brett - Hinsdale
OCT 16 1996
REFD TO JSH
NOTED CWB

State of Vermont AGENCY OF NATURAL RESOURCES

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation
State Geologist

DEPARTMENT OF FISH AND WILDLIFE
103 South Main Street, 10 South
Waterbury, Vermont 05671-0501

Tel.: (802) 241-3700
TDD: 1-800-253-0191

Nongame and Natural Heritage Program
October 15, 1996

Charlotte Brodie
DuBois & King Inc.
13 Dorset Lane
P.O. Box 634
Williston, VT 05495

Dear Ms. Brodie:

This letter is in response to your recent request for information regarding threatened and endangered species in and near the Connecticut River near Brattleboro. A review of our maps and files indicate the following:

- Brattleboro is an historic site for the dwarf wedgemussel, *Alasmidonta heterodon*, a federal endangered species. We have no recent occurrence information for this species near Brattleboro; however, it may still inhabit the Connecticut River in this area.

- Slender muhly, *Muhlenbergia tenuiflora*, and mountain laurel, *Kalmia latifolia*, both uncommon species, occur near the Rt. 9 crossing north of Brattleboro.

- Lace love-grass, *Erigrostis capillaris*, a rare to uncommon species, occurs just south of Rt. 119 near the bridge.

- Wild sensitive plant, *Cassia nictitans*, a rare species, occurs on the north end of the backwater, adjacent to the potential route to the northern backwater crossing, as drawn on the map you enclosed.

If you need more information or if I can be of further assistance, please feel free to contact me at 241-3667.

Sincerely,

Mark T. Ferguson

Mark T. Ferguson
Zoologist

cc: Gina Campoli, Everett Marshall

New England Power Service
A New England Electric System company

New England Power Service Company
25 Research Drive
Westborough, Massachusetts 01582-0099
Telephone: (508) 366-9011

December 20, 1996

DUBOIS & KING, INC.
FILE # B.S802 EL
SUBJ. Bra H / Hinsdale
DEC 2 7 1996
REF'D TO: File
NOTED: [illegible]

Mr. John Hannah
Dubois & King Inc.
Route 66 Professional Center
P.O. Box 339
Randolph, Vermont 05060

RE: Brattleboro-Hinsdale Transportation Crossing

Dear Mr. Hannah:

I am writing on behalf of New England Power Company in regard to the "Purpose and Need Statement". For the record we have no comments.

I also would like to take this opportunity to remind the interested parties in this process that should a taking of land be required from New England Power Company, a process to release such land from the Vernon license must be filed by New England Power Company with the Federal Energy Regulatory Commission.

We thank you for keeping us informed in this process.

Sincerely,

Stephen C. Doret

Stephen C. Doret
Manager - Hydro Services

cc: E. B. Griggs
File

STATE OF NEW HAMPSHIRE
EXECUTIVE DEPARTMENT

STEPHEN MERRILL
Governor

Office of Emergency Management
State Office Park South
107 Pleasant Street
Concord, New Hampshire 03301-3809
603-271-2231
1-800-852-3792
FAX 603-225-7341

GEORGE L. IVERSON
Director

December 23, 1996

Mr. John Hannah
Dubois & King, Inc.
PO Box 339
Randolph, VT 05060

Subject: Brattleboro-Hinsdale Transportation Crossing

Dear Mr. Hannah:

Thank you for the information concerning the Subject project.

At this point, my concern would be related to how you propose to physically change the crossing.

As you will note in the attached photo copies of the related Flood Insurance Mapping, there is a floodway involved and therefore care must be taken regarding encroachment.

Will be pleased to meet with you and others that might be involved.

Look forward to hearing from you soon and the best for the coming year!

Sincerely,

George T. Musler for the
National Flood Insurance
Program

GTM/jjf

cc: Jane Hubbard, NHOSP
C. Hood, NHDOT
George Hatch, FEMA

State of Vermont

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation

AGENCY OF NATURAL RESOURCES
103 South Main St., 10 South
Waterbury, Vermont 05671-0601

DEPT. OF FORESTS, PARKS AND RECREATION
FPR Business Section 802/241-3650
Fax: (802) 244-1481

Direct tel.: 802/241-3690
E-Mail: lpercy@fpr.anr.state.vt.us

December 30, 1996

DUBOIS & KING, INC.
FILE # R13805F1
SUBJ Brattleboro-Hinsdale

DEC 31 1996

REFD TO: FIY
NOTED: GSA

John Hannah
Environmental Specialist
DuBois & King, Inc.
Route 66 Professional Center
PO Box 339
Randolph, VT 05060

Dear John,

I have received your December 16 letter (Reference R13805F1) regarding the Brattleboro-Hinsdale Transportation Crossing, Purpose & Need Statement. In response, I am enclosing a copy of our complete list of Vermont's Land & Water Conservation Fund (Section 6[f][3]) projects.

Please note that the L&WCF program is no longer funded for either project grants or for program administration; therefore, this list will remain current for the foreseeable future and is to be used by Vermont Transportation Agency employees and consultants to determine potential impacts to funded sites prior to contacting this office.

Should it be determined that the referenced transportation project as proposed may impact any L&WCF site, please contact me directly as soon as possible so that we may coordinate appropriate steps. Thank you.

Sincerely,

Laurie J. Percy
Recreation & Trails
Administrative Assistant

/ljp
encl.
c: Peter Strobridge, FP&R Business Manager
Robert Shattuck, AOT Design Engineer w/attach

STATE OF NEW HAMPSHIRE
DEPARTMENT of RESOURCES and ECONOMIC DEVELOPMENT
DIVISION of FORESTS and LANDS
172 Pembroke Road P.O. Box 1856 Concord, New Hampshire 03302-1856

603-271-2214
FAX: 603-271-2629

ROBB R. THOMSON
Commissioner

JOHN E. SARGENT
Director

January 9, 1997

Mr. Jeff Nugent
Windham Regional commission
139 Main St, Ste 505
Brattleboro, VT 05301

Dear Mr. Nugent,

I have reviewed the study area corridor maps for the Hinsdale Bridge project that you sent on December 30, 1996. Based on our records, it appears that only one sensitive species, Houghton's umbrella-sedge *(Cyperus houghtonii)*, is known to occur within the study area. I have enclosed a summary of our records on the occurrence. Unfortunately, the original record was from an herbarium specimen so the precise location is unclear. On the attached map, I have marked the general area where the plant was found, and where we recommend that field surveys be conducted.

I hope this information is helpful to you. Please call if you have questions or need additional information.

Best regards,

David VanLuven
Coordinator, Natural Heritage Inventory

STATE OF NEW HAMPSHIRE
EXECUTIVE DEPARTMENT

Office of Emergency Management
State Office Park South
107 Pleasant Street
Concord, New Hampshire 03301-3609
603-271-2231
1-800-852-3792
FAX 603-225-7341

JEANNE SHAHEEN
Governor

WOODBURY P. FOGG, P.E.
Director

January 12, 1998

DUBOIS & KING, INC.
FILE # R15E05F
SUBJ Brattleboro

JAN 14 1998

REFD TO:
NOTED:

Mr. John Hannah
DuBois & King, Inc.
PO Box 339
Randolph, VT 05060

Subject: Brattleboro/Hinsdale Connecticut River Bridge Project

Dear Mr. Hannah:

With respect to your interests and the National Flood Insurance Program, there is a regulatory floodway involved and this floodway is recognized in Hinsdale's NFIP ordinances.

The ordinance reflects the provisions of 44CFR, Part 60.3 (d) (3+4).

A copy of that portion of the Hinsdale study in the area (Cross section L-L) being considered shows the floodway level calculated at .8 feet.

That does not leave you much room for additional encroachment. Whatever you are considering must be supported by a hydrological study to insure that Hinsdale's status is not in jeopardy.

Sincerely,

George T. Musler for the
National Flood Insurance
Program

GTM/jjf

cc: Jane Hubbard, NHOSP
George Hatch, FEMA
Lewis Major, Selectmen Chair
Michael Tepper, Planning Board

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Field Office
22 Bridge Street, Unit #1
Concord, New Hampshire 03301-4986

RE: Brattleboro/Hinsdale Connecticut River Bridge

January 21, 1998

DUBOIS & KING, INC.
FILE # R13805.01
SUBJ Bratt / Hinsdale

JAN 23 1998

REFD TO: File
NOTED: JH

John S. Hannah
DuBois & King, Inc.
Route 66 Professional Center
P.O. Box 339
Randolph, VT 05060

Dear Mr. Hannah:

We have reviewed your request for information on endangered and threatened species and their habitats for the above-referenced project. No federally-listed or proposed threatened species under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area, with the exception of occasional wintering and transient bald eagles (*Haliaeetus leucocephalus*) or peregrine falcons (*Falco peregrinus*). Based on the project description and location, it appears that no impacts to federally-listed species will occur. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

However, we suggest that you contact David Van Luven, New Hampshire Natural Heritage Inventory, P.O. Box 1856, Concord, NH 03302-0856, (603) 271-3623 and Everett Marshall of the Vermont Natural Heritage Program, Agency of Natural Resources, 10 South, 103 S. Main St., Waterbury, VT 05671-0501, 802-241-3700 for information on state-listed species that may be present.

Thank you for your cooperation and please call me at 603-225-1411 if I can be of further assistance.

Sincerely yours,

Susanna L. von Oettingen

Susanna L. von Oettingen
Endangered Species Specialist
New England Field Office

Enclosure

FEDERAL ENERGY REGULATORY COMMISSION
NEW YORK REGIONAL OFFICE
19 WEST 34th STREET - SUITE 400
NEW YORK, NEW YORK 10001

Telephone No. (212) 273-5900

FAX No. (212) 631-8124

January 21, 1998

Mr. John Hannah
DuBois & King, Inc.
PO Box 339
Randolph, VT 05060

Re: FERC Project No. 1904-VT/NH, Vernon
Brattleboro/Hinsdale Connecticut River Bridge

Dear Mr. Hannah:

We received your letter with drawings dated January 2, 1998, indicating the pre-conceptual alignments of the proposed Route 119 bridge crossing of the Connecticut River between Brattleboro, Vermont and Hinsdale, New Hampshire.

As requested, we have reviewed the furnished information with regard to the potential impact of the proposed construction on hydroelectric projects on the Connecticut River. The bridge locations being considered are between five to six miles upstream of the New England Power Company's Vernon Dam, and about twenty miles downstream of their Bellows Falls dam. Based on our review, it does not appear that proposed new bridge will have any impact on the safety of these projects. However, the locations being considered are within the flowage rights granted to New England Power Company for the operation of it's Vernon Project. Accordingly, New England Power Company should be notified so that they can determine if the proposed bridge will impact the operation of that hydroelectric facility.

We suggest that you contact Mr Ernest Griggs of New England Power Company at 25 Research Drive, Westborough, MA 01581. If there are any further questions, please contact Mr. Richard Deubert at (212) 273-5933.

Sincerely,

Anton J. Sidoti
Director

cc: Ernest Griggs
New England Power
25 Research Drive
Westborough, MA 01581

State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES
6 Hazen Drive, P.O. Box 95, Concord, NH 03302-0095
(603) 271-3503 FAX (603) 271-2982

February 5, 1998

DUBOIS & KING, INC.
FILE # 813605 F1
SUBJ Brattl / Hinsdale
FEB 09 1998
REFD TO: File
NOTED: JH

John S. Hannah
Environmental Specialist
DuBois & King, Inc.
PO Box 339
Randolph, Vermont 05060

Subject: Hinsdale, NH/Brattleboro, VT Connecticut River Bridge Project

Dear Mr. Hannah:

This is in response to your letter of January 2, 1998 to Edward J. Schmidt, PE former Director of the Water Division, NH DES. Because of the preliminary nature of your proposal we have no specific comments at this time. It is expected that proper sediment and erosion controls will be required during construction and that adequate stormwater management measures will be designed into the project.

As you know the Wetlands Bureau of this department is also reviewing these alternatives. Additional comments may be forthcoming from them when they are done with their review.

If you have any questions feel free to contact me at (603)271-2973.

Yours truly,

James T. Spaulding, PE
Wastewater Engineering Bureau

FILE:D&K.WPD
cc: Russell A. Nylander, PE, Chief Engineer, WD/DES
Lori Sommer, WB/WD/DES

Memo

NH NATURAL HERITAGE BUREAU

To: Matt Montgomery, EIV Technical Services, LLC
93 South Main Street
Waterbury , VT 05676

From: Melissa Coppola, NH Natural Heritage Bureau
Date: 7/20/2009 (valid for one year from this date)
Re: Review by NH Natural Heritage Bureau
NHB File ID: NHB09-1387
Project type: Roads, Driveways, Bridges: Bridge, etc.
Town: Hinsdale
Location: NH Shoreline on the Connecticut River south of the existing Route 119 Bridges

cc: Kim Tuttle, Susi von Oettingen

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments: This site is within an area flagged for possible impacts on the federally-listed *Alasmidonta heterodon* (dwarf wedgemussel) in Connecticut River.

NHB has concerns about the impact this project may have on rare plants. Please send detailed project plans to Melissa Coppola.

Invertebrate Species	**State**[1]	**Federal**	**Notes**
Dwarf Wedge Mussel (*Alasmidonta heterodon*)	E	E	Contact the NH Fish & Game Dept and the US Fish & Wildlife Service (see below).

Plant species	**State**[1]	**Federal**	**Notes**
Knotty Pondweed (*Potamogeton nodosus*)	E	--	Threats to aquatic species include changes in water quality, e.g., due to pollution and stormwater runoff, and significant changes in water level.
Water Stargrass (*Heteranthera dubia*)	E	--	Threats to aquatic species include changes in water quality, e.g., due to pollution and stormwater runoff, and significant changes in water level.

[1]Codes: "E" = Endangered, "T" = Threatened, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544. Contact for federally-listed species: Susi von Oettingen, US FWS, at (603) 223-2541.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. For some purposes, including legal requirements for state wetland permits, the fact that no species of concern are known to be present is sufficient. However, an on-site survey would provide better information on what species and communities are indeed present.

Department of Resources and Economic Development
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

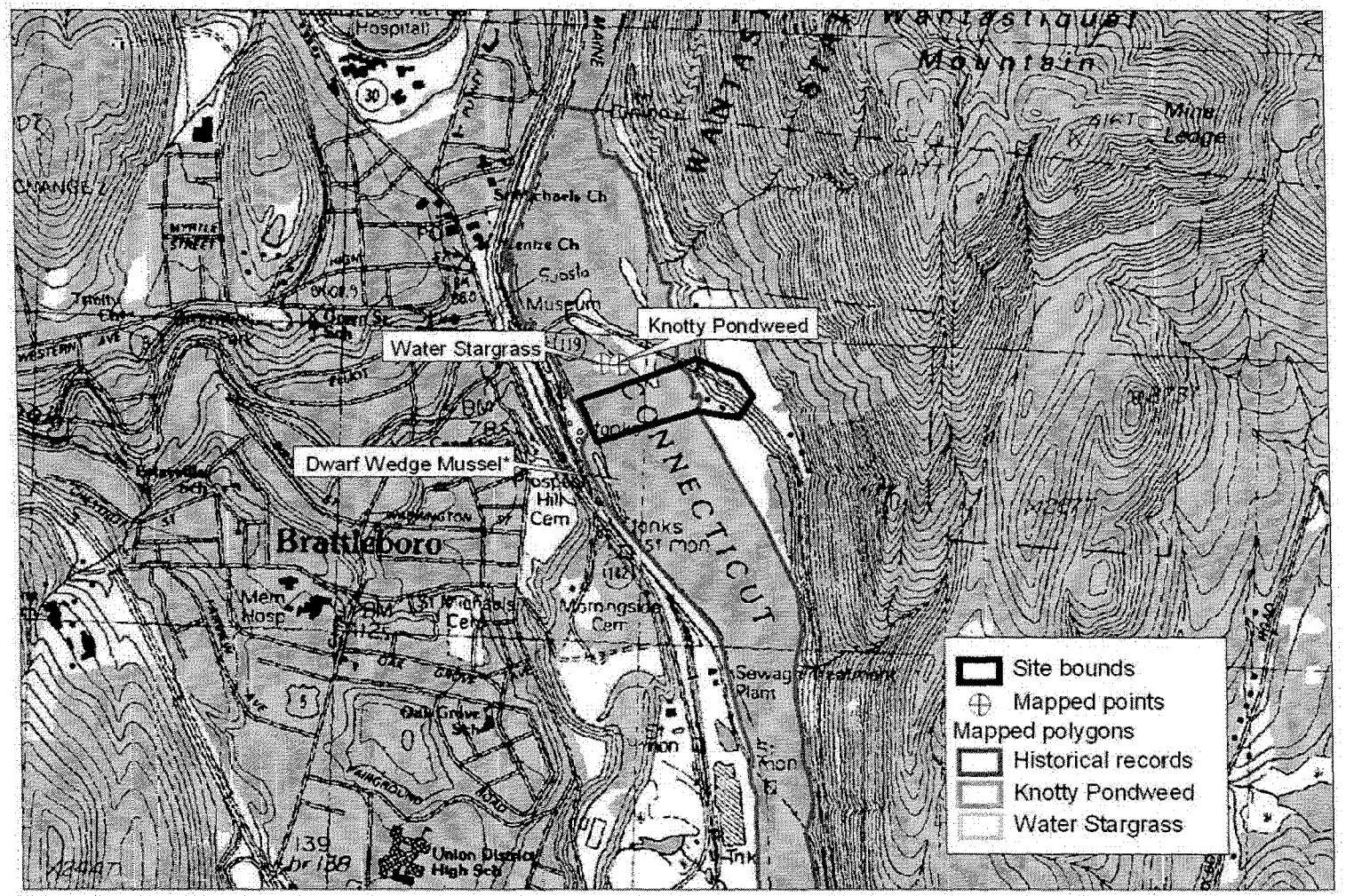
DRED/NHB
PO Box 1856
Concord NH 03302-1856

NHB09-1387

NH NATURAL HERITAGE BUREAU

Known locations of rare species and exemplary natural communities

Note: Mapped locations are not always exact. Occurrences that are not in the vicinity of the project are not shown.



*Historical record

Valid for one year from this date: 20 Jul 2009

New Hampshire Natural Heritage Bureau - Plant Record

Water Stargrass (*Heteranthera dubia*)

Legal Status	Conservation Status
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2007: Scattered plants and patches in good condition. No fruits/seeds observed.
General Area: 2007: Littoral zone, sandy bottom area of the CT River. Associated species include: *Elodea* spp. (waterweed), *Vallisneria americana* (tapegrass), and floating leaved *Sparganium* spp. (bur-reed). Invasive *Myriophyllum spicatum* (Eurasian water milfoil) and *Potamogeton crispus* (curled pondweed) also in the surrounding area.
General Comments:
Management Comments:

Location

Survey Site Name: Brattleboro, east of
Managed By:

County: Cheshire
Town(s): Hinsdale
Size: .4 acres
USGS quad(s): Brattleboro East (4207275)
Lat, Long: 425102N, 0723313W
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Rte. 119 in Hinsdale to "unofficial" hand-carry launch at N 42.85116, W 72.55357. Go south to south shore of island in the littoral zone.

Dates documented

First reported: 2007-10-04 Last reported: 2007-10-04

Callahan, Laurie. 2007. Field survey to east of Brattleboro on October 4.

New Hampshire Natural Heritage Bureau - Plant Record

Knotty Pondweed (*Potamogeton nodosus*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2007: Scattered plants in patches in the general vicinity. Some leaf deterioration, no flowers or fruits observed.

General Area: 2007: Connecticut River in sandy bottom, littoral zone. Associated species include: *Elodea* spp. (waterweeds), *Vallisneria americana* (tapegrass), floating leaved *Sparganium* spp. (bur-reeds). Invasive *Myriophyllum spicatum* (Eurasian water milfoil) and *Potamogeton crispus* (curled pondweed) also in the surrounding area.

General Comments:
Management Comments:

Location

Survey Site Name: Brattleboro, east of
Managed By:

County:	Cheshire	USGS quad(s):	Brattleboro East (4207275)
Town(s):	Hinsdale	Lat, Long:	425102N, 0723310W
Size:	.4 acres	Elevation:	

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Rte. 119 to "unofficial" hand-carry launch at N 42.85116, W 72.55357. Go just south along the shore of the island (in the littoral zone).

Dates documented

First reported:	2007-10-04	Last reported:	2007-10-04

Callahan, Laurie. 2007. Field survey to east of Brattleboro on October 4.

New Hampshire Natural Heritage Bureau - Animal Record

Dwarf Wedge Mussel (*Alasmidonta heterodon*)

Legal Status		Conservation Status	
Federal:	Listed Endangered	Global:	Critically imperiled due to rarity or vulnerability
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank:	Historical records only - current condition unknown.
Comments on Rank:	Field surveys in 1991 failed to verify this occurrence. Presumed extirpated.
Detailed Description:	1991: field survey by L. Master, A. Cutko, S. von Oettingen, C. Fichtel failed to locate any Dwarf Wedge mussels from the Vernon Dam (Vermont) south to the Massachusetts border. No Date: 5 valves deposited at MCZ.
General Area:	1991: Some appropriate habitat was found during the field survey, particularly in the cobble/gravel sections around islands.
General Comments:	
Management Comments:	

Location

Survey Site Name:	Connecticut River at Hinsdale		
Managed By:	Wantastiquet Mountain Natural Area		
County:	Cheshire	USGS quad(s):	Brattleboro East (4207275)
Town(s):	Hinsdale	Lat, Long:	424732N, 0723130W
Size:	1538.1 acres	Elevation:	220 feet

Precision: Within 1.5 miles of the area indicated on the map (location information is vague or uncertain).

Directions: Connecticut River at Brattleboro.

Dates documented

First reported:	No Date	Last reported:	NO DATE

The U.S. Fish & Wildlife Service has jurisdiction over Federally listed species. Please contact them at 70 Commercial Street, Suite 300, Concord NH 03301 or at (603) 223-2541.

State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES
6 Hazen Drive, P.O. Box 95, Concord, NH 03302-0095
(603) 271-3503 FAX (603) 271-2867

February 12, 1997

John Hannah
Environmental Specialist
DuBois & King, Inc.
Route 66 Professional Center
P.O. Box 339
Randolph, VT 05060

RE: BRATTLEBORO-HINSDALE TRANSPORTATION CROSSING-POTENTIAL ENVIRONMENTAL PERMITS
(R13805F1)

DUBOIS & KING, INC.
FILE # R13805F1
SUBJ Brattleboro/Hinsdale

FEB 18 1997

REFD TO: File
NOTED: SEB

Dear Mr. Hannah:

In response to your recent request to Edward Schmidt, I have reviewed your letter and have identified some potential environmental permits that could be triggered by such a transportation project in New Hampshire. Since I had only your letter to Dr. Schmidt for reference, the selected New Hampshire Department of Environmental Services (DES) authorizations are somewhat speculative at this stage, but represent those that have commonly been involved with prior bridge work projects.

Wetlands Permit

Any work on the banks or in the bed of the Connecticut River will require a DES Wetlands Bureau permit. Reconstruction of the bridge approach on the New Hampshire riverbank and the mid-river island are within jurisdiction. The installation of coffer dams in the water (if contemplated) will also trigger a wetlands permit, as will any dredge and/or fill activities. DES wetlands permits are reviewed with the Army Corps of Engineers under a cooperative State Programmatic General Permit system. Thus, there is a built-in history of interagency coordination for projects such as yours. While the DES Wetlands Bureau will be responsible for the state permit, the Army Corps will use the DES filing in its consideration of whether or not an "individual permit" is warranted. The Corps will notify you within thirty days following action by the DES Wetlands Bureau. The intent of the General Permit review procedure in New Hampshire is to minimize the number of submittals you must prepare and reduce the duplication of effort toward a decision on the part of reviewing agencies.

Section "401" Water Quality Certificate

This certification is processed by DES, based on federal Clean Water Act requirements for federally-related projects such as those of the U. S. Department of Transportation. The "401" Certificate's purpose is to prevent degradation of surface water quality as a consequence of construction activities which have the potential of causing erosion and sedimentation into surface waterbodies. The "401" Certificate applies to projects in wetland environments, land parcels that include wetland areas where work in the water is proposed, or where proposed activities may adversely affect waterbody functions and values such as with the Connecticut River. The "401" Certificate may require regular sampling and reporting, as well as defining specific post-construction operating conditions. The Army Corps of Engineers requires the "401" Certificate to be in place as an assurance that water quality will be protected before, during, and after the project.

Certificate for Direct Re-Use of a Solid Waste

I assume from your letter that there may be waste concrete and other solid wastes generated by the upgrading of the bridge decks and stringers. You may have to dispose of this material at a DES- or Vermont-permitted solid waste management facility. However, in certain

cases, you may want to discuss with our Waste Management Division staff any ideas you may have for beneficial re-use of the waste concrete, recycling of the steel, etc. The permit review group's direct telephone number at the DES Waste Management Division is (603) 271-2935.

Hazardous Waste Activity Notification

If you intend to remove old lead-based paint from the bridges' superstructure, you may need to notify DES's Waste Management Division at (603) 271-2900 of hazardous waste generation activities. We also have a list of permitted hazardous waste transporters should you need to remove the material from the site. I have enclosed a summary of this notification for your use.

Air Quality Permit

If mobile or stationary rock crushing or asphalt batching equipment (either for aggregate, rock or concrete) is to be on site, there may be a need for a DES Temporary Permit, followed by a Permit-to-Operate. Much depends on throughput rate, concentration of particulate or volatile organic compound emissions, and impact to air quality. Dusts from sandblasting operations may also require some special measures to capture and control the particles and protect local air quality. This aspect of the project was not mentioned in your letter, so I have included a summary of the appropriate portion of the Air Program that may apply, just in case.

Rivers Management and Protection Program

The Connecticut River is one of the twelve designated rivers, or river segments, that fall under the auspices of this DES program. Initially, there were several local advisory committees that dealt with particular segments of this large river system between the two states. However, these groups have now combined their efforts to form the Connecticut River Joint Commissions, Inc. I have enclosed a Fact Sheet that introduces DES's role in the program, and some literature that outlines the role of the Joint Commissions (as well as its recommended best management practices). The bridge work will likely face a review with both the DES Rivers Management Program (as part of the DES Wetlands Bureau application process) and the Joint Commissions group.

This sums up the most likely permits and programs that your project may encounter. I offer my services in making arrangements to hold a pre-application meeting for all interested parties to discuss the finer points of the project and coordinate multi-media permitting. This meeting can be arranged at your request. Should you have additional questions/concerns or prefer a single point of contact for now, I can be reached by telephone at (603) 271-3306 or Fax at (603) 271-2867. Thank you.

Best regards,

Timothy W. Drew

Timothy W. Drew
Administrator
Public Information and Permitting
Office of the Commissioner

encs.
cc: Dana Bisbee, Assistant Commissioner, NHDES
Edward J. Schmidt, Ph.D., P.E., Director, NHDES-WD

JAN 30 1998

STATE OF VERMONT
AGENCY OF TRANSPORTATION
133 State Street, Administration Building
Montpelier, Vermont 05633-5001

January 23, 1998

Mr. Charlie Miller
Bridge Committee, Chair
c/o Windham Regional Commission
139 Main Street
Brattleboro, VT 05301

Re: Brattleboro BRF 2000(19)SC

Dear Charlie:

I am writing this letter to share my thoughts on the issue of providing I-91 access as part of this town highway bridge project. I have spoken with Jeff LeFebvre, the VAOT project manager for this environmental study and Warren Tripp, Program Manager of the Structures Town Highway Bridge Program. I understand the concerns expressed at your last public meeting held December 10, 1997.

The project is in the Town Highway Bridge Program. As such, by Federal law, it can address only the portion of the project where the bridge touches down. That excludes incorporating a section of new roadway under this source of funds. In addition, new roadway projects on new alignment have an extremely high cost (we estimate the average per mile at $13 million). Third, the difficulty in obtaining permits virtually precludes accomplishing such work in any reasonable time frame.

Such a connection does not show up in any local or regional plan for this area, though a new project could be submitted to the agency through the Regional Planning Commission in the future. It is essential to keep in mind the financial and environmental constraints that almost always accompany such a project.

I understand the complexities of this project and commend your efforts in working together with local, state and federal officials to select an affordable, permittable solution that satisfies the current and anticipated need.

Cordially,

Glenn Gershaneck
Secretary

cc: Lew Sorenson, WRC Executive Director
Warren Tripp, Program Manager, Structures Division
Jeff LeFebvre, Transportation Planning Coordinator, Planning Division

U.S. Department of Homeland Security

United States Coast Guard

Commander
First Coast Guard District

One South Street
Battery Park Building
New York, NY 10004-1466
Staff Symbol: obr
Phone: (212) 668-7165
Fax: (212) 668-7967

16211/NV-626
CONNECTICUT RIV/NH

January 26, 2005

Mr. William F. O'Donnell
Environmental Programs Manager
FHWA, NH Division
19 Chenell Drive, Suite One
Concord, NH 03301-8539

Re: Route 119 Bridge over Connecticut River

Dear Mr. O'Donnell:

This is in response to your letter dated 18 January 2005 invoking 23 U.S.C. Section 144 (h) for the referenced bridge project. Based upon information you have provided, we concur with your determination.

Although this project will not require a bridge permit other areas of Coast Guard jurisdiction apply. The following stipulations must be met:

a. Upon completion of design and finalization of the location and plans, New Hampshire Department of Transportation should coordinate with the First Coast Guard District bridge staff regarding approval of lights and other signals that may be required under 33 CFR 118. Approval of said lighting or waiver of same shall be obtained prior to construction.

b. Any spillage of oil or oil based products during construction must be promptly reported to the Coast Guard by calling 1-800-424-8802.

If you have any further questions feel free to contact this office at the number above.

Sincerely,

Gary Kassof
Bridge Program Manager
First Coast Guard District
By direction of the District Commander

Copy: 1) FHWA, VT
2) VAOT
3) NHDOT

Subject:	**Re: Brattleboro/Hinsdale Connecticut River Bridge-Dwarf W**
To:	**"John Hannah" <jhannah@dubois-king.com>**
Copies to:	**michael.marchand@WILDLIFE.STATE.NH.US**
From:	**Susi_vonOettingen@fws.gov**
Date sent:	**Tue, 3 May 2005 11:30:11 -0400**

Hi John,

I don't think any additional dwarf wedgemussel surveys are necessary at
this point. We still have no evidence that dwarf wedgemussels are in the
stretch of river between Brattleboro and Below's Falls, VT (Hinsdale to Walpole, NH). So, I believe your survey of 1999 will stand.

Susi

Susi von Oettingen
US Fish and Wildlife Service
70 Commercial Street, Suite 300
Concord, NH 03301
603-223-2541 ext. 22

Matthew Montgomery

From: Ethan Nedeau [ethan@biodrawversity.com]

Sent: Wednesday, August 19, 2009 9:14 PM

To: Matthew Montgomery

Cc: 'Ferguson,Mark'; Susi_vonOettingen@fws.gov; 'Lepore,John'

Subject: Re: FW: Mussels in the CT River around Brattleboro

Definitely not a dwarf wedgemussel. Small elliptio and eastern lampmussels can sometimes be hard to distinguish, since elliptio can be highly variable. But it doesn't really matter -- both are there and neither are endangered. I've never surveyed the Brattleboro area for mussels -- a few people have but have never found anything noteworthy (at least in the last three to four decades). A thorough SCUBA search by someone with DWM experience would be worthwhile but sometimes hard to justify, given bleak results of past surveys. But they've gone undetected in many places, only to be redscovered in the last few years, so there are surely some more undiscovered populations out there...

-Ethan

-----Original Message-----
From: Matthew Montgomery
Sent: Aug 19, 2009 11:58 AM
To: 'Ethan Nedeau'
Cc: '"Ferguson, Mark"' , Susi_vonOettingen@fws.gov, '"Lepore, John"'
Subject: FW: Mussels in the CT River around Brattleboro

Hey Ethan-

Just left you a voice mail. I was thinking about you last week while canoeing and snorkeling in the CT River looking for mussels. We were doing some preliminary field recon (mostly a shoreline survey) around Brattleboro for Susi vO of the USFWS to see if another full blown SCUBA survey was justified at this project site for the dwarf wedgemussel. Almost called you to see if you could come with us but didn't have you worked into our budget. Regardless, we'll probably have some work for you on this job if it ever comes to construction.

Based on the photos/descriptions/and distribution maps in your book, I saw lots of what I thought was E. Elliptio and some E. Lampmussel (Maybe ~95%/5% split between those two) We found and sorted through about 6 muskrat middens, mostly on the NH side, and collected a representative smattering of shells. I met with Mark Ferguson this AM and showed him the smallest of the ones we collected. He confirmed my ID on all of them but one, and gave me a copy of Fichtel and Smiths "Freshwater mussels of VT". Good resource-I think you had a copy with you last year when I helped you up in the Missisquoi?

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Thanks and be in touch,

M-

Matthew Montgomery
Ecologist/Soil Scientist
EIV Technical Services, LLC
93 South Main Street
Waterbury, VT 05676
off: 802-244-7453

like to know if the area that is anticipated to be impacted (any in river fill for example) has changed at all and is more or less suitable for mussels. Dwarf wedgemussels have not been found between Brattleboro and Bellows Falls, however, we haven't looked in the last 10 years either.

Because the survey is so dated, I would like to see a description of the river bottom substrate and at least shoreline surveys for mussel middens. If a variety of species show up and/or the substrate in the area that would be immediately impacted is suitable, then I would request that a survey be done again. Generally, we do have a time frame in which we consider surveys to be valid, and for this case, 10 years is probably a little too long. We've found a lot of new sites in the last ten years, better survey efforts and maybe even improved habitat!

I hope this answers your question?

Susi

Susi von Oettingen
Endangered Species Biologist
US Fish and Wildlife Service
70 Commercial St., Suite 300
Concord, NH 03301
603-223-2541 ext. 22
603-491-8219 (cell)
http://www.fws.gov/northeast/newenglandfieldoffice

"Those who say it cannot be done should not interrupt the people doing it." Chinese Proverb

"Matthew Montgomery" <mmontgomery@eivtech.com>

07/20/2009 03:15 PM

To <susi_vonOettingen@fws.gov>
cc
Subject DWM concerns Re: Brattleboro/Hinsdale Bridge

Hi Susi-

I left you voice mail earlier this afternoon. I remember now that we met in the field while netting for bats several years ago. We were looking for Indianas with Scott Darling at the site of a rail bridge project in Pittsford VT. Major shame about the white nose syndrome by the way. I am curious if the Geomyces fungus is the cause or the effect of something else. My bet is that it is just a symptom.

We inherited some NEPA permitting from another consulting company and are charged with completing and releasing a draft Environmental Assessment by the end of this summer. It addresses the proposed bridge that is to replace the two failing ones on VT/NH Route 119 over the Connecticut River between Brattleboro VT and Hinsdale NH. Discussions about this project have been going on for over three decades.

I am working on the natural resource chapters and wanted to touch base with you about the dwarf wedge mussel in that area. Evidently a field survey was completed in 1999 and none were found. I also have a copy of some electronic correspondence between you and John Hannah of (Dubois and King) from May 2005. In it you state that this previous survey addressed the concerns of the USFWS and that no further coordination is necessary regarding this project and its potential impacts to the DWM.

Now it is four years later. I wanted to confirm that no further investigation is warranted at this point. That would be my inclination but let me know your thoughts.

Thanks for your time,

Matthew Montgomery

From: Matthew Montgomery [mmontgomery@eivtech.com]
Sent: Wednesday, July 22, 2009 10:42 AM
To: 'Susi_vonOettingen@fws.gov'
Cc: 'Ferguson, Mark'; 'moleary@eivtech.com'
Subject: RE: DWM concerns Re: Brattleboro/Hinsdale Bridge
Attachments: VT.NH Rte119replacement bridge overview.doc

Hi again Susi-

Just writing to confirm and document what we discussed by telephone yesterday afternoon in regards to DWM at the Brattleboro/Hinsdale Bridge site. While the 1999 dive survey for DWM is outdated, another extensive dive survey of the project corridor may not be justified at this time. Rather, a less intensive field reconnaissance will be sufficient to determine if further, more extensive investigation would be needed.

I understand that this reconnaissance can be canoe based and needs to consist of: 1)evaluating and documenting the habitat substrate along the riverbanks and, if possible, at several points mid-channel, and 2)searching for mussel shell middens and collecting or photo-documenting any shells small enough to potentially be from the DWM (<~1.75 inches).

The investigated area should be on both the east and west banks where they intersect with the proposed roadway alignment, and extend ~100' upstream and ~200' downstream from the location of potential abutments. If any collected shells or photos of shells are thought to be from the DWM, they will be shown to you and/or a mussel specialist for a positive ID. If observed shells suggest that the DWM may have re-colonized the project area, you will suggest that another dive survey of the entire impact area be conducted.

Let me know that this is accurate. The work may not be done this field season and it would be good to have clear direction whenever it does happen. My suspicions are that the coal tar plume, which extends out into the river from the western bank, alters the water chemistry in this area enough to degrade the habitat quality for these pollution sensitive animals.

Also, with the direction of Mark Ferguson, VT Fish and Wildlife, we were able relocate individual mussels on another recent project in the Missisquoi River. The mussels were classified as VT T and/or E and moving them out of direct impact areas immediately prior to construction satisfied the VT F and W. If DWM is found in this area, and their population densities make it feasible, would relocation be an option here also?

I have attached a few aerial photos of the project area and a conceptual rendering of the new bridge for your records. Thanks for your time.

M-

From: Susi_vonOettingen@fws.gov [mailto:Susi_vonOettingen@fws.gov]
Sent: Tuesday, July 21, 2009 1:38 PM
To: Matthew Montgomery
Subject: Re: DWM concerns Re: Brattleboro/Hinsdale Bridge

Hi Matt,

Oh yes, I remember the great railroad survey! Those were the good old days, pre- WNS. It's a huge part of my life now, fascinating but also quite depressing.

Re: the bridge, I checked with the consultant who surveyed the area in 1999. He needed divers and said it was a big area. He also said there was suitable substrate. I guess, since it has been 10 years, I would

Matthew Montgomery

From: Ethan Nedeau [ethan@biodrawversity.com]

Sent: Wednesday, August 19, 2009 9:14 PM

To: Matthew Montgomery

Cc: 'Ferguson,Mark'; Susi_vonOettingen@fws.gov; 'Lepore,John'

Subject: Re: FW: Mussels in the CT River around Brattleboro

Definitely not a dwarf wedgemussel. Small elliptio and eastern lampmussels can sometimes be hard to distinguish, since elliptio can be highly variable. But it doesn't really matter -- both are there and neither are endangered. I've never surveyed the Brattleboro area for mussels -- a few people have but have never found anything noteworthy (at least in the last three to four decades). A thorough SCUBA search by someone with DWM experience would be worthwhile but sometimes hard to justify, given bleak results of past surveys. But they've gone undetected in many places, only to be redscovered in the last few years, so there are surely some more undiscovered populations out there...

-Ethan

-----Original Message-----
From: Matthew Montgomery
Sent: Aug 19, 2009 11:58 AM
To: 'Ethan Nedeau'
Cc: "'Ferguson, Mark'" , Susi_vonOettingen@fws.gov, "'Lepore, John'"
Subject: FW: Mussels in the CT River around Brattleboro

Hey Ethan-

Just left you a voice mail. I was thinking about you last week while canoeing and snorkeling in the CT River looking for mussels. We were doing some preliminary field recon (mostly a shoreline survey) around Brattleboro for Susi vO of the USFWS to see if another full blown SCUBA survey was justified at this project site for the dwarf wedgemussel. Almost called you to see if you could come with us but didn't have you worked into our budget. Regardless, we'll probably have some work for you on this job if it ever comes to construction.

Based on the photos/descriptions/and distribution maps in your book, I saw lots of what I thought was E. Elliptio and some E. Lampmussel (Maybe ~95%/5% split between those two) We found and sorted through about 6 muskrat middens, mostly on the NH side, and collected a representative smattering of shells. I met with Mark Ferguson this AM and showed him the smallest of the ones we collected. He confirmed my ID on all of them but one, and gave me a copy of Fichtel and Smiths "Freshwater mussels of VT". Good resource-I think you had a copy with you last year when I helped you up in the Missisquoi?

I thought the shell from the unknown species was too big to be from the DWM but Mark wasn't sure. It measures ~1-7/8". It isn't in the best shape either so a definitive ID from photos will be tough (if not impossible) but I'm sending you a few shots for you to check out anyway. Look for them in a subsequent e-mail. Mark thought you were coming up this way at the end of the month for some work. If the photos are not good enough, maybe you could see it then.

Thanks and be in touch,

M-

Matthew Montgomery
Ecologist/Soil Scientist
EIV Technical Services, LLC
93 South Main Street
Waterbury, VT 05676
off: 802-244-7453

cell: 802-793-3109
fax: 802-244-5052
mmontgomery@eivtech.com

From: Matthew Montgomery [mailto:mmontgomery@eivtech.com]
Sent: Monday, August 17, 2009 2:15 PM
To: 'Ferguson, Mark'
Subject: Mussels in the CT River

Hi Mark-

About three weeks ago I copied you on some correspondence I had with Susi VonOtteingen about the possible presence of DWM in the CT down around Brattleboro. Since the potential impact area of this bridge we are permitting (for VT/NH 119) had already been surveyed for DWM in 1990 and again in 1999, she asked us to do some field recon to see if another full-blown dive survey was warranted.

I was able to get down there last Friday to get some photos, check on some rare plants for NH Natural Heritage, and do the shore-line survey she requested. I also used my snorkel gear for about an hour (from a canoe) on the VT side, just south of a bulk petroleum storage facility and saw hundreds of individuals (probably thousands) embedded in fine sediment in 6-10 feet of water just off of that big wetland. Mussels are not my specialty but I think we saw almost exclusively eastern elliptio with a few eastern lamp thrown in. I saw no living mussels that were small enough to be the DWM (not surprising though-it was murky even moving upstream).

We gathered a few shells from middens found on both sides of the river (mostly NH) and I wanted you to check them out for me. Only two of the hundred+ that we saw were small enough to be from the DWM.

Let me know if you would be willing to come over sometime this week to look at them. Thanks,

Matt

Matthew Montgomery
Ecologist/Soil Scientist
EIV Technical Services, LLC
93 South Main Street
Waterbury, VT 05676
off: 802-244-7453
cell: 802-793-3109
fax: 802-244-5052
mmontgomery@eivtech.com

Ethan Nedeau, principal
Biodrawversity LLC
441 West Street, Amherst, MA 01002
www.biodrawversity.com
Phone: (413) 253-6561

State of Vermont

AGENCY OF NATURAL RESOURCES

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conervation

Fish & Wildlife Department
100 Mineral Street, Suite 302
Springfield, VT 05156-3168
Telephone: (802) 885-8828
Fax: (802) 885-8890
ken.cox@state.vt.us

DUBOIS & KING, INC.
FILE #
SUBJ

NOV 09 2005

REFD TO:
NOTED:

John S. Hannah, Project Manager
DuBois & King, Inc.
P.O. Box 339
Randolph, VT 05060

RE: Brattleboro/Hinsdale Route 119 Bridge

Dear Mr. Hannah:

This letter confirms receipt of yours dated October 27, 2005 notifying us of the plans to proceed with the above-referenced project.

The fishery resource information summarized in the department's March 18, 1996 letter continues to be applicable to this project and is appears to more comprehensive than the September 2001 information source mentioned in your letter. At this time we are unaware of any critical resident fish species habitats that might be affected by the latest proposed alignment. On the other hand, as pointed out in our 1996 letter this section of the Connecticut River is an important migration corridor for anadromous and catadromous fishes, including Atlantic salmon, American shad, sea lamprey, and American eel. As more detailed project information is brought to our attention through the planning and permitting process we will assess potential impacts on these species.

Sincerely,

Kenneth M. Cox
District Fisheries Biologist

Cc: Frederick Nicholson, Stream Alteration Engineer

Memorandum

To: File

From: JSH

Subject: Brattleboro/Hinsdale COE Coordination

Date: November 10, 2005

On November 10, 2005, I received a phone call from Marty Lefebvre, Senior Project Manager, COE, Vermont Project Office. The call was in response to my October 27, 2005 letter, which provided updates on the Brattleboro/Hinsdale bridge project, and requested any additional comments from the COE. Marty stated there were no additional COE comments at this time, that the identified preferred alignment (Alternative F) was as previously identified to the COE, and that COE permitting may be required upon the completion of final project design plans.

New Hampshire
Fish and Game Department

11 Hazen Drive, Concord, NH 03301-6500
Headquarters: (603) 271-3421
Web site: www.WildNH.com

TDD Access: Relay NH 1-800-735-2964
FAX (603) 271-1438
E-mail: info@wildlife.nh.gov

Glenn Normandeau
Executive Director

January 25, 2012

Matthew Montgomery
EIV Technical Services
93 South Main Street
Waterbury, VT 05676

Dear Mr. Montgomery,

This letter is in reference to your request for NH Fish and Game comment on the loss of access to the Connecticut River Hinsdale Island Boat Launch in Hinsdale, NH. The access will be eliminated under the proposed reconstruction of the Route 119 Bridge.

Although the department does not own or maintain this particular site, we have been charged with carrying out the statewide public boat access program under RSA 233-A. Loss of any public access site is very concerning to the Statewide Public Boat Access Program and the Public Water Access Advisory Board (PWAAB) since it is challenging to establish new sites. As it is currently, access to the CT River is limited. The department gets numerous requests each year inquiring about improving or adding access to the river in that part of the state.

I would stand behind the previous assessment from NHFG's Rich Tichko, dated June 17 2005, that the site has importance as a recreational site. Although it does not appear, at this time, to receive adequate maintenance, it does still get used. A representative from the NH Office of Energy and Planning made recent visits to numerous access sites across the state including this particular site, gathering information for a statewide GIS database. He indicated that based on his observations, the site does get used. I would further argue that given proper care, signage and maintenance, the island site would attract many more boaters.

Thus from the standpoint of this and other similar projects, the department would expect that loss of any public water access point be mitigated to provide equal or greater opportunities to the public.

Thank you for the opportunity to comment.

Sincerely,

Jeffrey King
Statewide Public Boat Access Program Coordinator

MEMORANDUM

R13805F1

TO: File

FROM: John Hannah, DuBois & King, Inc.

SUBJECT: NH DOT Resource Meeting - Brattleboro/Hinsdale Bridge Project

DATE: January 28, 1998

On January 22, 1998, at 9:00 AM, the Brattleboro/Hinsdale bridge project was discussed in the conference room of the NH DOT, John O. Morton Building, Concord, New Hampshire. Meeting attendees included:

NH DOT
- Charlie Hood
- Mark Hemmerlein
- Jason Stone
- Donald Coleman
- Deb Clarner
- Don Lyford
- Alex Vogt

NH FISH AND GAME
- William Ingham

FISH AND WILDLIFE SERVICES
- William Neiderymyer

DuBOIS & KING, INC.
- Bob Klimm
- Harry Colombo
- John Hannah

ARMY CORPS OF ENGINEERS
- Rich Roach

NH WETLANDS BUREAU
- Lori Sommer

NH RIVERS MANAGEMENT
- Jim MacCartney

DIVISION OF HISTORICAL RESOURCES
- Linda Wilson

EPA
- Janet LaBonte

FEDERAL HIGHWAY ADMINISTRATION
- William O'Donnell
- Dave Hall

1. PRESENTATION

John Hannah, DuBois & King, Inc., using visual displays, gave an overview presentation of the proposed Brattleboro/Hinsdale bridge project.

A. History

Replacement of the two Route 119 bridges over the Connecticut River between Brattleboro, Vermont and Hinsdale, New Hampshire, has been an on-going project for nearly 30 years, without, as of yet, an acceptable solution being reached. In tne mid-1980's a tentative solution involving a new bridge slightly south of the existing bridges was identified. However, this bridge was never built due to a disagreement between New Hamsphire, which wanted a separated grade crossing over the railroad located along the Vermont side of the river, and Vermont which did not support the separated grade crossing.

In 1996, a new study was initiated in an attempt to find an acceptable transportation corridor across the Connecticut River in the Brattleboro/Hinsdale area. Vermont was designated the lead state, up to the final design stage, at which time New Hampshire would be responsible for final design. The project area extends from the Route 9 crossing north of Brattleboro to the backwater area of the Connecticut River, south of Brattleboro.

Starting in 1996 the Windham Regional Commission (VT) formed a task force of Brattleboro/Hinsdale residents and others, to guide the study process. This task force has been very active and has had substantial input into developing the project's purpose and need and identifying preconceptual alternatives.

B. Project Purpose and Need

The project's purpose and needs, as adopted by the Bridge Committee, and as attached, are to:

- Maintain a transportation corridor across the Connecticut River
- Correct the existing safety, structural and functional deficiencies
- Maintain social and economical relationships
- To the extent possible, preserve area resources

John Hannah then explained the area resources inventory which had been conducted. He stated that historical, archaeological, wetland, public lands and hazardous waste evaluations had been conducted.

Historically, the Downtown Brattleboro/Hinsdale District, the Cotton Mill hill area in Brattleboro, and two of the potentially eligible historical districts in Vermont might be effected by the project. The western bridge is eligible for inclusion on the National Register of Historic Places, the eastern bridge, although, not originally considered to be eligible, may now be eligible. Archaeologically, the shorelines along both sides of the river are archaeologically sensitive.

Wetlands exist near the northern and southern ends of the project area in Vermont. The mid-river island, owned by New Hampshire, has been evaluated and determined to consist of mostly wetland areas which surround the existing Route 119 road and bridges across the river.

A hazardous waste area exists immediately south of the existing bridges on the western side of the river. This area extends from the western bank of the river, out into the river approximately 150 feet and southerly for an unknown distance. The area was evaluated during the mid 1980's when investigations were accomplished for a new bridge alignment. This hazardous waste area contains coal tar deposits from a mid to late 1800's coal gasification plant on the Vermont side of the river. The coal tar deposits from this operation were placed on the river bank and migrated into the river. Evaluation of these deposits indicate they are relatively stable and are covered with six to ten feet of sediment. Construction immediately south of the existing westerly bridge, either for a temporary or permanent structure, may pose a threat to the stability of these deposits, if construction results in impacts to the deposits or the sediment surrounding them.

Public lands include the Wantastiquet State Forest, which is located in New Hampshire in the northern area of the project. This undeveloped nature area, with steep topography and no existing through roads, reduces the viability of the northern portion of the project area to support a transportation corridor. At the southern edge of the project area exist public recreational lands owned by Brattleboro. These lands, when combined with the large width of the river in this area the distance from downtown Brattleboro, and area commercial development, limit the feasibility of locating alternative in the southern most area of the corridor.

The attached environmental matrix, which was distributed at the meeting, sets forth potential area resource impacts associated with each identified alternative.

C. Identification of Project Alternatives

John Hannah, utilizing the attached alternative location drawing, identified and described ten pre-conceptual alternatives. These alternatives are:

- No-Action
- Alternative A - Rehabilitation of the existing bridges
- Alternative B - Replace on existing alignment
- Alternative C - Replace near the existing alignment with minor alignment changes
- Alternative D - Replace near the existing alignment with a grade separated railroad crossing
- Alternative E - New parallel structure near the existing alignment and rehabilitation of existing structures
- Alternative E-Modified - New parallel truss structure near the existing alignment and rehabilitation of the existing structure
- Alternative F - A new alignment approximately 1000 feet south of the existing crossing
- Alternative G - A new alignment approximately ½ mile south of the existing alignment
- Alternative H - A new alignment, slightly north of the existing alignment, that connects with Route 9 in downtown Brattleboro

John Hannah stated that all alternatives were conceptual in nature, with no identified preferred alignment. Informal bridge committee and public consensus showed a preference for the two more southerly alternatives (G and H).

II. RESOURCE AGENCY COMMENTS

After the presentation, comments were received from the resource agencies.

A. Historical

Linda Wilson, New Hampshire Division of Historical Resources, stated the western bridge was eligible for the register, and subsequent evaluation may show the eastern bridge is also eligible for the register. She expressed concern for any alternatives that adversely affected the existing and potential historic districts, and expressed some concern for the southern Alternative G to divert traffic through residential areas of southern Brattleboro that may have historic significance.

B. Hazardous Waste

Jim MacCartney, New Hampshire Rivers Management, expressed concern for alternatives that would impact the coal tar deposits south of the existing westerly bridge. Temporary bridges, associated with the replacement on existing alignment alternatives, and alternatives immediately south of the existing bridge could impact these deposits. John Hannah stated that alternative realignments and bridge pier placement adjustments could be utilized to reduce impacts to the coal tar deposits. Potentially, additional work may be required to determine the southerly and easterly extent of the coal tar deposits.

C. Water Quality

Rich Roach, Corps of Engineers, expressed the opinion that placing piers in the river should not have a substantial impact on water quality. Jim MacCartney concurred, stating that impacts to the river might not be great if construction impacts were minimized. Concern was expressed for impacts to water quality if coal tar deposits were released during the construction phase of the project.

D. Wetlands

Few comments were received concerning impacts to wetland areas. Rich Roach stated that the Vermont Division of the COE would have the COE responsibility for the project.

E. Threatened and Endangered

John Hannah stated that the Connecticut River once provided habitat for the federally endangered species of the dwarf wedge mussell. Concern was expressed that prior to construction impacted areas of the river be evaluated for the presence of the dwarf wedge mussell.

F. Alternatives

Comments addressed the potential of the project to connect with I-91 in Vermont. John Hannah explained that the Vermont AOT did not consider this project to be an I-91 connector or Brattleboro bypass project. Funding for the project is to be by New Hampshire for work on the New Hampshire side and across the Connecticut River to the Vermont shoreline, all work on the Vermont side is to be the responsibility of Vermont. The majority of work for an I-91 connector or bypass would be

on the Vermont side and VAOT may not be willing to fund any I-91 connector or bypass work.

Concern was expressed for two alternatives (E and E-Modified) as these alternatives resulted in the construction of both a new bridge and rehabilitation of the old bridges for vehicle traffic. Comments suggested the project should not be constructing a new vehicle bridge while rehabilitating and maintaining the adjacent original bridges for vehicle traffic. Rehabilitation of the existing bridges for pedestrian and bicycle traffic might be acceptable if an agreement with Brattleboro and Hinsdale for maintenance of these bridges could be obtained.

Consensus of the resource agencies was that Alternative D (separated grade crossing on existing alignment) and H (connection with Route 9 in downtown Brattleboro) could be dropped from further consideration due to their impact on the Brattleboro Historic District and their social and economic impacts on downtown Brattleboro. Additionally, consensus was that Alternative E and E-Modified (construction of parallel structures to the existing bridges and rehabilitation of the existing bridges for vehicular traffic) could be dropped from further consideration due to the creation of additional vehicular bridges in the same location while maintaining the existing bridges for vehicular traffic, and the potential impacts of the new westerly bridge on the existing coal tar deposits.

III. ADDITIONAL COMMENTS

It was suggested that the Bridge Committee work to reduce the number of alternatives, and upon the completion of additional project work and greater alternative and resource definition the resource agencies be further updated.

The Brattleboro/Hinsdale discussion terminated at approximately 10:15 AM.

JSH/ccb

Attachments
- Project Purpose and Need
- Environmental Matrix
- Alternative Location Drawing

CENAE-CO-R-61 (1145b) 5 February 1998

MEMORANDUM FOR The Files

SUBJECT: VT Agency of Transportation
Highlights of 4 February 1998 Coordination Meeting

1. On 4 February 1998, the following individuals met at the VT AOT offices in Montpelier, Vermont:

a. Marty Abair - COE
b. Al Blake- VTAOT (ROW)
c. John Lepore - VT AOT (Biologist)
d. Peter Keibel - VT ANR (Wetlands)
e. Jacques Couture - VT AOT (Design)
f. Stewart Menard - VT AOT (Design)
g. John Narowski - VT AOT (Technical Services)
h. Bob DellaSanta - VT AOT (Design)
i. Allison Murray - VT AOT - (Technical Services)
j. Charlotte Brodie - DuBois & King
k. Dennis Benjamin - VT AOT (Planning)
l. Alec Portalupi - VT AOT
m. Chris Bean - CLD
n. Bill Grace - CLD
o. Paul Hodge - VT AOT (Survey)
p. John Hannah - DuBois & King
q. May Sligh - VT AOT
r. Jeff Lefebvre - VT AOT
s. Craig Keller - VT AOT
t. Gina Campoli - VT ANR
u. Rob Sikora - FHWA
v. Fred Nicholson - VT ANR
w. Duncan Wilkie - VT AOT (Technical Services)

2. This meeting was the twenty-fourth bimonthly coordination meeting to discuss pending AOT projects. Projects discussed and highlights of discussions are as follows:

a. Brattleboro-Hinsdale [NH BRF 2000(19)SC] - John Hannah gave a presentation on the alternatives under consideration for the project. He indicated that they looked at alignments fur-

CENAE-CO-R-61 (1145b)
SUBJECT: VT Agency of Transportation
Highlights of 4 February 1998 Coordination Meeting

ther to the north of the existing bridge, but topography was too steep. Alternatives B, C and D would require temporary bridges. These temporary structures would likely cross over an old coal tar gasification plant. Alternative E would also impact this area. Main Street itself would have to be raised with Alternative D, which would result in a high impact to historic resources. Alternative F would allow for a separated grade crossing, would be constructed mostly on piers, and would result in the taking of the "Blue Seal" building. It would require raising Route 142 8'-10' - lowering the speed limit could reduce this by a few feet. Alternative G would go over the wastewater treatment plant. The area where it is proposed to touch down now has a $500,000 building proposed by Cerosimo Lumber. Alternative H may have aesthetic impacts and has received virtually no support. It was developed to provide a more complete range of alternatives.

Hannah indicated that there is concern that the southerly alternatives (F and G) may result in the diversion of traffic through the historic district and residential neighborhoods.

Hannah said that New Hampshire indicated they feel Alternatives H, D, E and E Modified do not warrant much further discussion.

The northerly alternatives will encounter difficulties with construction access. I asked if the impacts for Alternative F included temporary access fills. They do not. I asked how they would plan to gain access for pier construction. Hopefully, they will be able to access the area by barge.

We discussed rehabilitation of the existing bridges. Hannah indicated that trains stopping at the Amtrak station will block the roadway, which also blocks the only access for emergency vehicles to get to Hinsdale. Campoli questioned whether the train station could be moved to alleviate this problem. A bad corner and the narrow bridge width are also problems for trucks.

Hannah indicated that NHDES favors at grade crossings near the existing alignment, and Alternatives F and G.

Campoli asserted that much of the traffic increase is likely generated by the Wal-Mart that was recently constructed in Hinsdale. She questioned whether there is some way in which to manage this traffic.

Nicholson indicated that he would support Alternative A or F. With Alternative F, however, he would recommend removal of the existing bridges.

CENAE-CO-R-61 (1145b)
SUBJECT: VT Agency of Transportation
Highlights of 4 February 1998 Coordination Meeting

Carupoli indicated that existing recreational use of the area, as well as visual and aesthetic impacts are of concern. She said that Alternative H would be difficult to deal with, and that she would like a study of the visual impact of Alternative F. She said that VT ANR is not ready to take an official position on the project, or on the removal or retention of the existing bridges. They will, however, support the rehabilitation on existing alignment alternative.

Wilkie indicated that he feels VT DHP would prefer Alternative A. Alternative H could be archaeologically sensitive. He questioned what would be done with the islands if the bridges were removed, and indicated that VT DHP would be in favor of keeping the existing bridges (the western bridge is NR-eligible, and the eastern bridge may be NR-eligible). Hannah indicated that NH SHPO has a strong preference to maintain the bridges. Wilkie said that VT DHP would likely not be enthusiastic about Alternatives C, D or E.

I asked if there would be a substantial decrease in cost if the existing eastern bridge was rehabilitated rather than replaced and the western leg of Alternative H was constructed. Hannah indicated that this would decrease the cost by about $3 million and would also decrease the wetland impacts. I indicated that I would like them to evaluate this option. I also indicated that with the information currently available, the Corps would consider either rehabilitation of the existing structures, on alignment, or Alternative F as the least environmentally damaging options. A modified Alternative H may also be included, depending on the impacts.

Next Action - AOT and their consultants to evaluate a modified Alternative H. Additional information will also be needed about construction impacts of the alternatives. Additional information to be presented at a future coordination meeting.

Town of Brattleboro
Planning Commission
230 Main Street, Room 202, Brattleboro, VT 05301
Phone (802) 254-4541 Fax (802) 257-2322

JAN 22 1998

MEMORANDUM

TO: Brattleboro Board of Selectmen

FROM: Monroe Whitaker, Chairperson
Brattleboro Planning Commission

DATE: January 21, 1998

RE: *Brattleboro-Hinsdale Bridge Replacement Project*

At its meeting of January 20, 1998, the Planning Commission reviewed and discussed in detail the alternatives presented by the Vermont and New Hampshire Transportation departments for the replacement of the Brattleboro-Hinsdale Bridge. Based upon the alternatives and level of information presented, we wish to express our unanimous support for "Alternative F", which proposes a bridge with a grade-separated approach in the vicinity of the Blue Seal building on Vernon Street.

In coming to this recommendation, the Commission rated each of the alternatives presented in light of the guiding principles set forth in the Selectmen's April 18, 1996 letter to the Vermont Agency of Transportation, a copy of which is enclosed for your review[1]. The Commission was of the opinion that, on balance, the Blue Seal alternative provides an optimal solution by 1) ensuring grade separation between the railroad tracks and the bridge, 2) removing vehicular traffic from the Plaza intersection to a less intrusive location, and 3) minimizing negative impacts to the downtown during and after construction.

---

[1] The Commission did not compare the alternatives with regard to the final principle (#9), as this pertains to final design elements of the proposed bridge project. Also, with regard to principle #6, which states that "Convenient access to the island and Mt. Wantastiquet should be maintained for recreational uses", the Commission expanded the principle to include the maintenance of the "usefulness" of the island for recreational purposes. This was done because several of the alternatives provide access to the island, yet require roadway construction over sensitive areas of the island. Also, regarding principle #8, which reads "(s)trong pedestrian connections should be provided between new Hampshire and downtown Brattleboro, for both recreational and commercial purposes", it was assumed that the existing bridge would remain in place for pedestrian use should a new bridge be constructed elsewhere.

While several of the other alternatives seemed worthy of further study, there was no support on the Commission for Alternatives D and H. Although these alternatives call for grade-separated bridge approaches, at South Main Street and High Street, respectively, each was felt to be potentially highly disruptive to both existing business and downtown land use and circulation patterns.

Again, the Planning Commission is supportive of the "Blue Seal" alternative, and recommends that the Board of Selectmen propose this concept to the Brattleboro-Hinsdale Bridge Committee as the Town's preferred alternative. The Planning Commission would gladly meet with the Board should additional information or discussion be of assistance.

encl.- April 18, 1996 letter

cc: Charles Miller, Brattleboro-Hinsdale Bridge Committee
Jerry Remillard, Town Manager
Shane O'Keefe, Planning Director
Jim Matteau, Windham Regional Commission

Town of Hinsdale

HINSDALE, NEW HAMPSHIRE
03451

OFFICE OF SELECTMEN

DUBOIS & KING, INC.
FILE #
SUBJ

JUL 08 1998

REPLY TO:
NOTED:

May 15, 1998

MAY 20 1998

Mr. Robert Greer
Director of Project Development
New Hampshire Department of Transportation
PO Box 483
Concord, NH 03302-0483

RE: Hinsdale/Brattleboro Bridge Replacement

Dear Mr. Greer:

On May 11, 1998 the Hinsdale Board of Selectmen met with representatives of the bridge committee, the Windham Regional Planning Commission and the Southwest Region Planning Commission to discuss the ideas brought forth over the last two years of meetings. It was a very informative meeting, with open communication from both sides of the river.

The Board voted to support the entire proposal as presented to them. As you are aware, this is a vital issue to the Town of Hinsdale and its economic future. We would like you to support us in our efforts to have this bridge replaced as soon a possible.

Thank you for your consideration of this most important issue. If you have any questions or would like to meet with the board please feel free to contact Cory Carrier our Town Administrator.

Hinsdale Board of Selectmen:

Lewis D. Major, Chairman

Kathy A. Stephens, Vice Chairman

William Nebelski, Selectman

Daniel S. Seymour, Selectman

Richard F. Tracy Jr., Selectman

BUREAU OF BRIDGE DESIGN
NH DEPT. OF TRANSPORTATION

WB Tripp

TOWN OF BRATTLEBORO

Administrative Offices • 230 Main Street • Brattleboro, VT 05301
(802) 254-4541 FAX (802) 257-2322

July 7,1998

David Scott
Director of Project Development
Vermont Agency of Transportation
133 State Street
Montpelier, VT 05633-5001

Re: Brattleboro/Hinsdale Bridge Project
Brattleboro BRF 2000(19)SC

Dear Mr. Scott:

On behalf of the Town of Brattleboro Board of Selectmen, I am writing to inform you of the Board's May 5, 1998 decision with regard to a preferred alternative for the Brattleboro/Hinsdale Bridge Project. The Board has reviewed the alternatives provided by your consultant, DuBois & King, as well as input on the alternatives given by the Brattleboro Planning Commission, the Brattleboro/Hinsdale Bridge Committee, and the citizens of the town. The Board unanimously voted to accept and support the Committee's recommendation of Alternative F as the preferred alternative. As you know, this alternative proposes a bridge with a grade-separated approach in the vicinity of the Blue Seal building on Vernon Street. The Board also supports the Committee's recommendations with regard to design of the new bridge and the retention and rehabilitation of the existing bridges.

It is the feeling of the Board that this alternative responds most favorably to the initial guiding principles outlined in our letter of April 18, 1996, addresses the project's Purpose and Needs Statement, and is in the best interest of the people of Brattleboro.

Sincerely,

Robert S. Fagelson, Chairman
Brattleboro Board of Selectmen

cc: Board of Selectmen, Town of Hinsdale, NH
Charles Miller, Chairman, Brattleboro-Hinsdale Bridge Advisory Committee
Lew Sorenson, Executive Director, Windham Regional Commission
Barry Driscoll, Vermont Agency of Transportation
Jerry Remillard, Town Manager
Shane O'Keefe, Planning Director

Town of Hinsdale

HINSDALE, NEW HAMPSHIRE
03451

OFFICE OF SELECTMEN

February 27, 2012

Commissioner Christopher Clement
NH Department of Transportation
7 Hazen Drive
PO Box 483
Concord, NH 03302-0483

RE: Hinsdale-Brattleboro Bridge

Dear Commissioner Clement:

The Hinsdale Board of Selectmen is in support of the preferred alternative for the proposed Hinsdale-Brattleboro Bridge.

This project is a very important component to the economic well being of Hinsdale and the Region. Hinsdale recently expanded its Roadside Commercial District along Route 119. We have a Wal-Mart Superstore which is our largest employer at 230 positions. Along this corridor we have seen further growth. Hinsdale has taken measures to establish a Tax Increment Finance District in its Commercial/Industrial District to encourage economic growth.

The bridges that currently serve as the "gateway" to Southern New Hampshire from Interstate 91 in Vermont are intimidating to the traveling public and have been a safety concern. With the narrow roadway, tractor trailers need to straddle the middle of the bridges, which hold up traffic and cause congestion. Rescue vehicles are subject to a railroad crossing, which can lengthen response time for emergencies. Between one-way traffic; the railroad crossing; and the intersection on the Vermont side cars often idle for periods throughout the day which is not very environmentally friendly.

The alternative locations would help eliminate traffic congestion and the railroad crossing will no longer serve as a problem for rescue vehicles.

If you should have any questions, or would like to meet with us regarding our concerns, please feel free to contact Jill Collins, Town Administrator, at 336-5710, ext. 11.

Sincerely,
The Town of Hinsdale
By its Selectmen

Bruce Bellville, Chairman

Richard Schill, Selectman

Michael Darcy, Selectman

John D. Smith, Selectman

Jefmone Ebbighausen, Jr., Selectman

cc: JB Mack, SWRPC

New Hampshire DOT
Department of Transportation

THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION

CHRISTOPHER D. CLEMENT, SR.
COMMISSIONER

JEFF BRILLHART, P.E.
ASSISTANT COMMISSIONER

Hinsdale-Brattleboro
12210
NH 119 Bridges over the Connecticut River

Commissioners Office
Tel: (603) 271-3734
Fax: (603) 271-3914

April 2, 2012

Mr. Bruce Bellville
Chairman, Board of Selectmen
11 Main Street, PO Box 13
Hinsdale, NH 03451

Dear Mr. Bellville,

I am writing in response to the Selectmen's letter of February 27, 2012 expressing support for the preferred alternative alignment for the replacement of the NH 119 bridges that span the Connecticut River between Hinsdale, NH and Brattleboro, VT.

I appreciate the continued support from the Town regarding this project. It is an important link between the Towns and provides access to Interstate 91 for regional travel. Construction funding is an ongoing concern for this project and many others as potential funding sources are uncertain at this time. In the short term, we will continue to work with Vermont to move the project forward and complete the required Environmental Documentation. For the longer term, we will monitor the bridge conditions, seek funding opportunities, and look to have the project ready when funds are available.

If you have any questions about the project please, contact NHDOT Project Manager Don Lyford (271-2171).

Sincerely,

Christopher D. Clement, Sr.
Commissioner

CDC/dal

cc: David Brillhart, Assistant Commissioner
Bill Cass, Director of Project Development
Don Lyford, NHDOT Project Manager
Dan Landry, VTrans Project Manager
JB Mack, SWRPC
Matt Mann, Windham VT Regional Commission
Matthew Montgomery, EIV Tech Consulting

TOWN OF BRATTLEBORO

Town Manager's Office
230 Main Street, Suite 208
Brattleboro, VT 05301
Phone (802) 251-8151
Fax (802) 257-2322
www.brattleboro.org

MAR 23 2012

March 20, 2012

Danny R. Landry
Structures Project Manager
Vermont Agency of Transportation
1 National Life Dr.
Montpelier, Vt. 05633 - 5001

Dear Mr. Landry:

The Town of Brattleboro's Selectboard at the March 20, 2012 meeting reaffirmed the Town's support of the preferred alternative F as set forth on Exhibit X (attached hereto) for the proposed Hinsdale-Brattleboro Bridge.

This bridge project is a vital connector to Hinsdale and points east of Brattleboro. The relationship between Hinsdale and Brattleboro are inter-related. One includes the employment and social services that are utilized by Hinsdale residents in Brattleboro. Many Hinsdale residents, on a daily basis, commute into Brattleboro for work, shopping needs and healthcare appointments.

Brattleboro residents regularly utilize Hinsdale's commercial services. Brattleboro residents also take full advantage of the natural beauty and trails, via walking and hiking, along and on Mount Wantastiquet.

This Hinsdale-Brattleboro inter-relationship is connected by the Hinsdale-Brattleboro Bridge. If you should have any questions, or would like to meet with us regarding the future of this project, please feel free to contact Barbara Sondag, Town Manager, at 802-251-8151.

Sincerely,

Barbara Sondag
Town Manager

CC: Matt Mann – Windham Regional Commission

John Hannan

WINDHAM REGIONAL COMMISSION

Brattleboro/Hinsdale Bridge

Agency Concerns/Scoping Meeting

3:00 p.m. - Wednesday - April 10, 1996
Gibson-Aiken Senior Citizens Center
Brattleboro, VT

Attendance (see also attached sign-in sheet):

Melinda Doyle, Executive Director - Brattleboro Drop In Center/Bridge Committee
Shane O'Keefe, Planning Director - Town of Brattleboro
Charles Miller - Brattleboro WRC Commissioner, Executive Board member, Bridge Committee member
Greg Worden - WRC Commissioner/Brattleboro Selectboard, Bridge Committee
Jeff Porter - SW Region Planning Commission
Lew Sorenson, WRC Executive Director
Lee Ecyer and Tom Johnson - Clough, Harbor & Assoc.
Jeff LeFebvre , VAOT Planning Coordinator
Jason Owen, VAOT Rail, Air, & Public Transportation
Cindy Garso VAOT Planning Division
Jason Stone, Charlie Hood, and Donald Lyford - NHDOT
Maurice LaPerle - New England Central R.R.
Richard J. Guthrie - Brattleboro Police Chief
Harry R. Colombo, John S. Hannah, John Benson, and Charlotte Brodie - DuBois & King, Inc.
Marcia Duffy - Keene Sentinel.

The meeting began at 3:15 p.m.

Cindy Garso (Vermont Agency of Transportation) gave a brief introduction of the intent of the meeting. She noted the purpose of the meeting is to obtain comments and/or concerns from interested agencies. Written comments were requested from agencies on a state or federal perspective. Comments should be forwarded by April 20, 1996 to:

139 Main Street, Suite 505 / Brattleboro, Vermont 05301 / 802 257-4547 / Fax: 802 254-6383

VT Agency of Transportation Secretary
Attn: Cindy Garso
VAOT Planning Division
133 State Street
Montpelier, VT 05633

Lew Sorenson (Windham Regional Commission) handed out the recent WRC News Brief which contained a summary of the Bridge History and noted the last study on the bridge was done by the Commission in 1992 for the VAOT which looked at issues at the bridge and the intersection and made recommendations on a number of topics. It recommended that an environmental review proceed for a Bridge location at or just south of the existing location. We have currently been working with a local Bridge Committee made up of citizens and public officials from both sides of the river. The committee has begun its work and made some comments on issues of concern in the News Brief.

John Benson (Dubois & King) explained that they are at an information gathering stage of the study process which should result in recommendations being carried forth into the project. At the present stage they are trying to collect as much background information as available. From information gathered they will develop a basic Purpose and Needs statement. A list of alternatives with a matrix to compare all the alternatives will later be developed. Once the initial Scoping Report is developed it will be sent out to resource and transportation agencies for their feedback and input on the various alternatives to move to conclusion of the initial scoping report. They will then move into the environmental assessment process.

John Hannah (Dubois & King) stated his part in the study process is with the EA (Environment Assessment) that comes from NEPA (National Environmental Policy Act). NEPA requires any project that is funded by the Federal Government to be looked at to see if there will be any significant impacts on the quality of the natural or human environment. The Environmental Assessment consists of a scoping meeting like this meeting; identification of a purpose and need statement; what alternatives reasonably satisfy the purpose and needs; where these alternatives should be located, and also what impact they will have on the environment. The process involves and requires a lot of public input and hopefully comes out in a public hearing where the agencies' preferred alternative is presented to the public and comments again are taken. Ultimately the agency comes up with a document that makes a finding as to the preferred alternative and to the impact of that preferred alternative. If everything goes without problems or complications it should take about 6 months to complete the process.

The meeting was opened for questions or comments.

Jason Stone, NHDOT: Noted that his Department has information on the bridge's historic values. Water tables may be key issue. The Army Corp of Engineers will address impacts and concerns.

Charlie Miller: The main point at the 1980 study had to do with the at-grade crossing. The Vermont Governor at the time felt that the design presented to replace the bridge and go over the top of the existing crossing would do too much damage to the community itself.

Melinda Dodge: Commenting for the low income community who may not have any transportation form except their feet. These people shop at WalMart and feel access should be close walking distance, safety as far as lighting and a firm barricade between them and the traffic. In addition are the recreation issues for people who don't have transportation to other recreation areas and use the island for swimming, fishing, etc.

John Benson: Recapped that they will be taking issues identified to date and develop the purpose and need statement. It will be circulated back to the Bridge Committee for their review, to the regulatory agencies for their review, and to NHDOT and VAOT for their review. Hopefully everyone comes to agreement/consensus on the Purpose and Need and that will basically define the rest of the project on developing and evaluating alternatives.

In response to a question regarding agencies not attending this meeting, John stated that as part of the process they will be developing information and soliciting the input from many different folks who may not have been heard from yet.

A reference was made to the inter-relationship between Brattleboro and Hinsdale with respect to emergency response vehicles. There have been times when the train has blocked the crossing. Are there reasons for the train stopping over the crossing?

Richard Guthrie: The trains are more of a concern than traffic on a blockage gridlock situation. The intersection itself is a major concern, between 3 and 5 and Saturdays and Sundays are the worst.

Charlie Miller: Noted a priority project recently identified by the VAOT was the reconstruction of the Main Street area. The two projects have got to come together. One without the other is not going to work, no matter where you put the bridge. The two projects need to basically work off of each other.

John Benson: Reminded everybody that if they have additional concerns or think of something that wasn't addressed at the meeting to let us know within the next twenty days or so. Send comment or note to Cindy Garso. This will get it into the record. Thank you for coming.

MEMORANDUM

R13805F1

TO: File

FROM: John Hannah, DuBois & King, Inc.

SUBJECT: Brattleboro/Hinsdale - Bridge Committee/Public Meeting - 12/10/97

DATE: December 10, 1997

On December 10, 1997, the Bridge Committee met at the Aiken Center from 3:30 PM to 6:30 PM and followed the attached agenda. A public informational meeting was conducted from 6:30 PM to 9:15 PM.

Bridge Committee Meeting

Charlie Miller called the meeting to order, minutes were approved, agenda discussed and DuBois & King, Inc., and Clough Harbour and Associates were requested to make presentations.

The presentation included updates from prior questions and comments.

1. Alternative F

   A. Blue Seal Feed and Acquisition limitations (John Hannah, D&K)

Value - tax appraisal	$436,900
relocation	100,000
	$540,000

   Acquisition Limitations - HUD and VAOT ROW - no limitations unless reversionary rights are in deed or funding agreement document provides language.

   VAOT/ROW have acquired numerous properties like this with no complications relating to funding sources.

   B. Elevations (Lee Ecker, CHA)

   Elevations of the bridge deck for alternative F would be approximately the same height as the top of the existing truss bridge.

2. Alternative E-Modified - one way pair (Lee Ecker, CHA)

Lee explained that the use of the existing bridges as a one way pair could reduce the width of the new bridge, but the new bridge would still require a moderate width (approximately 40').

3. Alternative D-Modified (Lee Ecker, CHA)

Lee explained that reducing the design speed on the Vermont side to 25 mph would allow a type of bridge structure over the railroad that would touch down at the existing grade of the Whetstone bridge while providing a separated grade crossing. After extensive discussion involving resource impacts, design features and traffic impacts, the Bridge Committee voted not to further pursue this alternative.

The Bridge Committee then requested additional review of the project work completed. John Hannah, D&K presented the following information:

1. Social/Economic Conditions

A. Social Impacts Refer to:

- Changes in neighborhoods or community cohesiveness, such as splitting of neighborhoods, changing or separating residents from community facilities.
- Changes in travel patterns that effect area accessibility.
- Impacts on school districts five districts and recreations areas.
- Impacts to identifiable social groups, particularly minority and low income groups.

B. Economic Impacts refer to:

- Effects of the project on local development, tax recovery, and retail stores.
- Effects of the project on existing highway related businesses (gas stations and motels).
- Effects on established business districts.

C. Four Areas of Concern

- Downtown Brattleboro Business District
- George's Field
- Hinsdale
- Residential area south of Brattleboro from rerouted traffic associated with the southerly alternatives.

2. Environmental Considerations (John Hannah, D&K)

A. Wetlands

- No wetlands on the Brattleboro side of the river near the existing crossing.
- Island essentially entirely wetland (forested wetland-mostly cottonwood). Will require an individual COE 404 permit (and NH Major Permit). Impact must be minimized.
- COE least Environmentally Damage Practicable Alternative Analysis will be required.

B. Hazardous Waste

- Coal tar sediments - just south of existing bridge on west embankment and within river - covered by sediments.
  - Contamination 2- 10 feet thick.
  - Heaviest concentration is on the bank and lessens as it moves into the river.
  - Sediment cover is approximately 6 - 12 feet thick.

C. Threatened & Endangered

- Dwarf Wedge Mussel - Federal endangered - no recent occurrences but may still inhabit river in this area.
- Lace Love Grass - South of the Route 119 Bridge, Vermont side, (uncommon to rare).
- Houghton's Umbrella Sedge - southeast of Route 119 bridge area in NH (sensitive species).

3. Traffic Consideration (Tom Johnson, CHA)

Tom described the current traffic conditions, the 2025 traffic conditions with no action, and the 2025 traffic conditions with each alternative. Considerable discussion involved the impacts of Alternative F and G and the diversion of traffic south away from the Route 119/5/142 intersection. The further south an alternative intersects with Route 142, the more traffic that would be diverted south. Tom stated that if one leg of the intersection (Route 119) was removed, this would help traffic through the intersection, even if traffic amounts remained the same, as a lesser number of intersection legs would result in more time for each of the remaining legs to go through the intersection.

4. Emergency Services (John Hannah, D&K)

John stated that the continued availability of emergency services to individuals and areas was very important.

- Brattleboro/Hinsdale have shared fire, rescue and medical emergency services.
- Transportation corridors must provide access for these services.
- Railroad crossing of Route 119 - potential safety (collision) and traffic delay for emergency vehicles are concerns with an at grade crossing.

At the end of these presentations, sandwiches were available and discussions continued among committee members.

Lee Ecker, CHA and John Hannah, D&K, set up exhibits of various project alternatives for a 6:30 PM public viewing, which was well attended.

At 7:00 PM Charlie Miller (Bridge Committee Chairman) called the public informational meeting to order. Approximately 80 individuals were in attendance.

Individuals were introduced from the Bridge Committee and the various agencies.

VAOT	Warren Tripp, Jeff LeFebvre, Chris Magnan, Craig Keller
NHDOT	Don Lyford, Alex Voght, Charlie Hood
WRC	Lew Sorenson, Sue McMahon, Molly Martin

Lew Sorenson addressed the public explaining the purpose and process of the meeting. The meeting was broadcast live on local public access cable TV.

John Hannah and Lee Ecker, utilizing exhibits, presented and explained the project alternatives to the public and responded to limited questions.

After the presentation, the public was divided into working groups, each facilitated by one or more Bridge Committee members. Group comments were recorded on paper. After 30 minutes the meeting was reconvened, and the Bridge Committee member for each group presented that group's comments to the meeting at-large. Recurring comments included:

- A desire for the project to consider a southerly connector to I-91.
- A desire to facilitate traffic flow through the Route 1195/5/142 intersection.
- A dislike for alternative H (Route A Alternative)
- Preference for a separated grade crossing.
- A belief that socioeconomic impacts of Alternative D (separated grade crossing at existing location) were too severe to justify this alternative.

- A general preference for the southerly alternatives of Alternative E and F.

Charlie Miller then requested comments and questions from the public. Questions were taken and addressed by various VAOT, NH DOT, Bridge Committee, WRC, D & K and CHA personnel.

At approximately 9:10 PM Charlie Miller requested a non-binding straw poll of public preferences for the various alternatives. Both Alternatives F and G (southerly alternatives) evidenced equally strong public support. Public support for alternatives using the mid-river island was weak, and non existent for the northerly Alternative H. Charlie adjoined the meeting at approximately 9:15 PM. Bridge Committee members, VAOT and NH DOT members, WRC personnel and representatives of D & K and CHA remained available for approximately 30 minutes to answer individual comments and questions from the public.

JSH/ccb

Attachments - Agenda

cc: _____

CHH CHH
JAE

STATE OF NEW HAMPSHIRE
Inter-Department Communication

To: Charles H. Hood, Chief
Project Development Section

Date: September 6, 2006

From: Richard J Tichko
Fisheries Biologist II

Division: Land Resources Bureau

Subject: Connecticut River Boat Access, Hinsdale

Please accept this New Hampshire Fish and Game Department (NHF&G) correspondence as a letter of support for the NHDOT proposed concept plan for the replacement of a public boat access facility fronting the Connecticut River, in Hinsdale, New Hampshire. The NHF&G Department understands that the proposed plan is conceptual, and that the NHF&G Department will have an opportunity to provide comments as the plan moves towards final design.

In closing, thank you for affording the NHF&G Department the opportunity to participate in ensuring that the public will continue to enjoy the fishery resources of the Connecticut River.

Cc: David Mikolaities, Supervisor
Land Resources

FILE: HINSDALE-BRATTLEBORO
12210

EIV TECHNICAL SERVICES

55 Leroy Rd, Suite 15
Williston, VT 05495
off: 802.497.3653
fax: 802.497.3656

July 11th, 2013

PUBLIC NOTICE

NEPA Environmental Assessment
Brattleboro, VT – Hinsdale, NH Route 119 Transportation Corridor
Public Meeting

In accordance with the National Environmental Policy Act (NEPA), the Federal Highway Administration, the New Hampshire Department of Transportation and the Vermont Agency of Transportation are announcing the availability of and requesting comments on the Draft Environmental Assessment (Draft EA) for the Brattleboro, VT-Hinsdale, NH Bridge replacement project.

Both a hard copy and the electronic files are available for viewing at the following locations:

- City of Brattleboro, VT Office
- Town of Hinsdale, NH Office
- Vermont Agency of Transportation
- New Hampshire Department of Transportation
- Brattleboro, VT Public Library
- Hinsdale, NH Public Library
- Windham Regional Planning Commission
- Southwest Region Planning Commission
- Vermont Office for the Federal Highway Administration
- New Hampshire Office for the Federal Highway Administration

A 30-day public comment period is being held to receive written comments on the Draft EA. A public meeting will also be held to provide information and receive oral and written comments on the Draft EA. Federal, state, and local agencies and interested individuals are invited to comment on the Draft EA or attend the public meeting at 6:00 pm on August 1st, 2013 at the Windham Regional Career Center, Cusic Room #296 (2nd Floor).

For additional information concerning the Draft EA or to send comments, you can contact:

Jacqueline Dagesse
EIV Technical Services
55 Leroy Rd., Ste 15
Williston, VT 05495
802-497-3653
jdagesse@eivtech.com

STATE OF VERMONT
VERMONT AGENCY OF TRANSPORTATION

In Re: BRATTLEBORO, VT – HINSDALE, NH TRANSPORTATION CORRIDOR BRF 2000(19)SC

ENVIRONMENTAL ASSESSMENT HEARING

As recorded on Thursday, August 1, 2013,
at the Brattleboro Union High School,
131 Fairground Road, Brattleboro, VT 05301

Presenters:

Danny Landry
Vermont Agency of Transportation
One National Life Drive
Montpelier, VT 05633-5001
dan.landry@state.vt.us
802-828-3639

Mary O'Leary
EIV Technical Services
55 Leroy Road, Suite 15
Williston, VT 05495
802-497-3656
jdagesse@eivtech.com

Transcriber: Pamela Mayo Hamel

In Attendance:

Jacqueline Dagesse
J.B. Mack
Rob Sikora
Dwight Sprague
Bill Butynsky
Bruce Urquhart
James Banslaben
Don Lyford
Sue Fillion
Olga Peters
Bob Harcke
Maria Dominquez
Steve Lindsey
Matt Mann
Mike Mulligan
Edwin Smith
James MacDonell
Joan Morel
Caleb Linn
John Angil
Domenic Poli
Denise Korepta
Matt Mass

THURSDAY, AUGUST 1, 2013;
(Recording 080113-Environmental Assessment Hearing)

MR. LANDRY: Good evening, it's nice to see a lot of people out tonight on a night that's not a real great weather night, but appreciate it.

Before I forget, anybody that comes in should sign that sign-in sheet, so we all have a record that you've been here.

My name is Danny Landry, I've met several of you in the past, I'm a project manager with the structures division of Vermont Agency of Transportation, and we're here tonight to gather comments for the environmental assessment for the Brattleboro-Hinsdale Bridge replacement job which has been titled BRF 2000(19) SC.

Tonight's agenda is going to be rather informal, I'm not real big on formal presentations, but we're going to start out with Mary O'Leary from the visionary consulting firm of EIS -- EVI --

MS. O'LEARY: EIV.

MR. LANDRY: -- EIV, excuse me -- who is a principal author in the environmental assessment. Mary is going to talk a little bit about environmental documents, what they are, why we do them, and then she'll get into this environmental

document and discuss some details of it and what the document basically says. After she completes her presentation -- and I should point out this is Jackie Dagesse, who's also with EIV, and she'll be taking notes, and so forth, of the comments that are made tonight.

After Mary finishes her presentation, we're going to open it up to the field and have people provide comment to the project, and also if there are questions, I prefer that you eliminate or have those questions relate to clarity of what's been said up here more than exact detail. Much of the engineering has not been -- actually has been no engineering that's been done, at this point. It's been all we have a conceptual idea of what the project will look like in its finished product.

So we're going to limit also the comments to, verbal comments, to about five minutes per person in order to get everyone in, and once we have as many questions as we feel that everybody has had a chance, we can open it up for additional questions and comments, too, at that point in time.

Written comments can be unlimited. We have 15 days left before the environmental assessment is completed. You may write everyday, you may write as

long as you want, and those comments, along with the verbal comments we hear tonight, will be incorporated into the final environmental assessment document.

The Agency of Transportation will attempt to reply to each of those comments if it is appropriate; in other words, there'll be certain comments that we won't reply to, such as "I'm in favor of the project," fine, that's great. "I'm not in favor of the project," okay, that's fine, too. But we will comment on certain specific comments that you have; for example, you're missing a comma on page 23, okay, we will -- our comment would be we'll fix that.

Okay, so at this time, I'd like to have Mary step up and start her presentation.

MS. O'LEARY: Thank you, Danny. So forgive my voice, I was on vacation for ten days, and I just got in at 2 a.m., in Burlington, so it's been a bit of a hazy day.

So I'm also not going to talk a lot tonight because we're really looking for comments from people on the environmental document, so I'm just going to describe what NEPA is and why we're doing a document like this, why we're required to by law, a

brief history of the project, I think many of you are familiar with it, and then a brief description of the project, and then we'll open it up for comments.

So we're here because of NEPA, National Environmental Policy Act, was enacted in 1970, and it said that any Federal project, any undertaking by the Federal Government has to consider environmental impacts, and not only that, but they have to include public comments and documentation of those public comments. And that environmental impact has grown to include social impacts, economic impacts, cultural resources and natural resources, so all of those are looked at under a NEPA documentation.

There are three levels that kind of -- lowest level is called the categorical exclusion, that's for projects that are done over and over by the agencies; for example, for a transportation agency, a categorical exclusion project would be a paving project that stayed within the right-of-way. All right, so there's the check list that you go through and show that you have met all of those requirements under NEPA for the cultural, social, economic and in natural resource qualities.

For the next step up, which is what we have

here, it's called an environmental assessment. That's when the project is a little different or may be a little larger, and you don't know exactly what the environmental impacts are going to be from the project, so you do an assessment to determine what those impacts will be. If after the assessment you find that there is no significant impact from the project, a FONSI is issued, a finding of no significant impact. Those of you who are old enough remember Fonzi, so --

If, after an environmental assessment like this, you find that there are significant impacts, the project gets bumped into an environmental impact statement, which probably many of you have heard about the larger, more controversial projects in both New Hampshire and Vermont run into an environmental impact statement, and it's much more complex, it's a lot more analysis, it's a way bigger document, it takes a lot longer period of time. So we are an environmental assessment, we feel at this point, we're hoping, that we will be able to get a FONSI, a finding of no significant impact.

So the Federal agency that is responsible for this particular project is the Federal Highway Administration because it's a transportation

project, so they have reviewed this document already before it goes out to the public. And then as Danny said, we're going to be taking everybody's comments today verbally, we'll write everything down, we have already received comments by e-mail and by letter. We'll continue to take written comments for the next 15 days, and as Danny described, we'll respond to those as well as we can. We'll change the document as we need to.

And then we include the transcript of what happens today, all of the letters, or anything that got sent in to us, and any of the changes, documentation of what changes we made from those comments, those all go with this document to Federal Highway, Rob Sikora, who's sitting in the back of the room, and he gets to look at this and make a determination as the lead agency for this NEPA documentation.

Any questions? That's your environmental regulatory process.

UNIDENTIFIED SPEAKER: Just one more time. Environmental, what do you mean by that.

MS. O'LEARY: Environmental assessment.

UNIDENTIFIED SPEAKER: Oh, in, you know, just the -- like pollution, and that kind of thing,

like a.

MS. O'LEARY: No, so cultural and natural resources, economic and social aspects, that's how this is designed.

UNIDENTIFIED SPEAKER: So that's what this is ultimately going to be used --

MS. O'LEARY: All of those things, yeah.

UNIDENTIFIED SPEAKER: Thank you.

MS. O'LEARY: You're welcome.

All right, so for the project, itself, the project actually started in the 1970s, a long, long, long time ago, unfortunately, right. However, it really kicked into there were a lot of issues with the rail crossing on the Vermont side, back and forth between Vermont and New Hampshire on who was going to handle things, there were budget constraints, there were a lot of different issues that kind of had to be worked out, so the project really did not get into gear until the 1990s.

In the early 1990s a bridge committee was formed, I believe we have several members here today. And that was a local organization, it was made up of people from other select boards from Hinsdale, New Hampshire, Brattleboro, Vermont, Town of Chesterfield, the regional planning commissions

on both sides, and then other interested parties and organizations and individuals, and that bridge committee was very active, actually. They met almost -- I think just slightly under 20 times within a few years, in the late 1990s and early 2000. They published a newsletter four or five times that went out to the whole region. They had two public hearings, informational hearings that talked about the project and the preferred alternative that they had recommended.

There was also a technical working group that was made up of the design engineers that were involved before we were in this project, New Hampshire DOT and Vermont AOT and a fourth group that I can't think of right now, a technical working group. They also met about 20 times and had at least one public meeting or participated in public meetings for that.

So then design engineers were hired, but not to do the design of the bridge, it was to do this conceptual design and the alternative studies. So the environmental assessment that I was talking about earlier is very prescribed what we need to look at. You need to identify the purpose and need for the project, and there's, you know, all kinds of

regulations that say what you need to include in this. You need to look at the alternatives for your project. You need to assess each of those alternatives for function, for the social impacts, for environmental impacts and for cost.

So the bridge committee helped assess all of those alternatives, helped disseminate that information throughout the public. Between all of those groups and all of the public information that had happened, and between the agencies that were involved, in addition to the regulatory agencies, like the wetlands group and Army Corps of Engineers and Fish and Game, there has been a preferred alternative identified which is option F, and we it -- I'll show it to you on the map, and we have it here in the document.

So within -- we were hired about three years ago. There had been a lot of work done on this project and a bunch of different companies had worked on it, and so we pulled together all of that documentation. We also updated some of the environmental studies that had become out-of-date in that time frame, and finished up this document to the point we are today. So it has been, at this point, reviewed by Federal Highway. It's ready to

go out to you, it's been out for 15 days, it will be out for another 15 days, as I said. And then we'll be compiling all of that and sending it into Federal Highway.

Any questions on that? No. All right.

So the existing bridges that we're talking about, two bridges that span the Connecticut River. The western bridge actually goes over the main channel of the Connecticut River from Brattleboro to a mid-channel island, then the eastern bridge goes from the mid-channel island over to Hinsdale, New Hampshire.

Both bridges, they were built in the 1920s. They are deemed by the bridge-rating system, the National Bridge Rating-System to be functionally-obsolete. They have scores of I think it's 47 and 49 out of 100, so they are structurally-deficient, functionally-deficient as far as sight distances, and things like that, so they need to be replaced.

As part of this environmental assessment, we looked at ten different alternatives. One alternative required by NEPA requirements is nothing, that you don't do anything, that you leave it as it is, that's always a choice. So we looked

at that. Of course that does not meet the purpose and need to have a state-efficient transportation corridor.

Then we also looked at replacing the -- rehabbing the bridges on the existing alignment, replacing the bridges on the existing alignment, and then six other alternatives of various different geometry and tweaking of the bridges to come up with the preferred alternative, which is a single-span bridge south of the existing location -- and I know it's hard to see from back there, it's this red line here, it's called alternative F, it's called the Blue Seal option in the environmental document. And if you've read it, because the building there, at the time, used to be Blue Seal, it's not any longer, but because that's what all the old documents had, we're keeping that name so that everybody knows what we're talking about.

It's approximately 1800 feet, it hits in Vermont at Route 142 about a thousand feet south of the existing intersection, and it hits in Hinsdale, New Hampshire just slightly south of the existing bridges by George's Field, just south of there.

So as Danny explained, this is conceptual. So we don't have a lot of the engineering details

set up, so the work that we're doing is based on these conceptual numbers. There are some environmental concerns in this area. There are some wetlands, there's coal-tar contamination in the Connecticut River. There are two endangered plant species that are in the area. And from the Connecticut River we have flood-way issues, flood-plain issues, so all of those issues are discussed in the environmental documentation.

We are fairly comfortable that we will be able to avoid the environmental resources or minimize the impact to them or mitigate for them. And until we actually get the final bridge design, we won't know exactly how many acres.

We have a hand-out for you.

MR. LANDRY: You want me to take care of that for you?

MS. O'LEARY: Sure, thank you.

MR. LANDRY: You want one copy left on the --

MS. O'LEARY: I have one right there.

MR. LANDRY: Okay.

MS. O'LEARY: So these talk about the ten alternatives and the different environmental impacts -- should have handed those out before --

and approximate cost for the project.

Now fiscal responsibility is part of NEPA, it is not the only part, it's equal to all of the other aspects. They say maintaining social and economic relationships in the area and conserving resources. So on the one side you'll see -- and in -- alternate evaluation table, and this goes through each of the alternatives that were looked at, identifies whether or not we meet the purpose and need of the project. And then identifies if there are any issues under some of the design criteria, the fact that we have a design sheet set up, construction costs, trying to avoid this coal-tar, which is why we're not going north of the project, the existing project.

On the back side of this document is the resource summary table for each of the alternatives that we look at. Alternative F is the preferred alternative, and that goes through agricultural impact, socio-economic, air qualtiy, noise, water quality, wetlands, threatened and endangered species, historic impacts, all of those resources that we looked at as part of this document.

The bridges, themselves, are existing bridges, are historic. They will be under

alternative F, our preferred alternative, they will be preserved. They'll be minimally-changed and kept as pedestrian and bike pathways.

Yes?

UNIDENTIFIED SPEAKER: Your alternative is to, like you just said, conservative (unclear) --

MS. O'LEARY: Yes, --

UNIDENTIFIED SPEAKER: -- the best alternative.

MS. O'LEARY: -- that's it, yeah, alternative F is to build a new single-span shore-to-shore, keep the two existing bridges as pedestrian and bike bridges.

UNIDENTIFIED SPEAKER: Oh, thank you, (unclear).

MS. O'LEARY: I'm sorry, not single-span, shore-to-shore. There'll be a number of piers, their exact location hasn't been chosen, yet.

UNIDENTIFIED SPEAKER: Thank you.

MS. O'LEARY: You're welcome. Is there any other -- is there any questions before I open it up for comments?

So the environmental document has been -- this environment assessment, which I know you can all use for late-night reading if you haven't

already. The executive summary I think is 20 pages, so you can read that, and then delve into more of the chapters if you are interested.

So in the public notice that you all saw, and we have those locations, this is available a variety of places, each of the planning commissions, New Hampshire DOT, Vermont AOT, we can certainly point you to other places where it is located if you haven't already had a chance to look at this.

Yes?

UNIDENTIFIED SPEAKER: Who would be funding this project?

MS. O'LEARY: This will be funded -- I think you have a good question. So this is not unique because it has some software. So for this, this is Vermont and New Hampshire together, the funding comes through on the Federal Highway, the Federal Government. Vermont has been in charge of this part, the environmental documentation up to this point for actual design of the bridge, and moving to construction, New Hampshire is going to be in charge of that, but it's several steps down the road.

First, we have to get this approved, then there's some negotiations and some other aspects of

the project that still need to be looked at, and then New Hampshire will move into design and construction of the project.

Yes?

UNIDENTIFIED SPEAKER: So in the future, what if the Federal Government goes broke and there's no money, then we'd go back to the original alternative and don't do anything, or --

MS. O'LEARY: Yes.

UNIDENTIFIED SPEAKER: -- is there another other way of doing this? So the sooner we do it, the most likely we would have a bridge.

MS. O'LEARY: Potentially. If no one has any specific questions, I'd like to open up for comments. If anyone has comments about the environmental assessment, anything you notice that we said that was factually inaccurate, anything that you think we missed that we would need to put in.

Mike.

MR. MULLIGAN: First of all, the characterization of the traffic on the bridge is incomplete as far as the -- you said that barely two trucks couldn't pass the -- on the Hinsdale Bridge, and actually only one truck at a time can easily -- can pass the bridge.

Also, I'm interested on both sides of the bridge, to the geometry issue, --

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: -- can go on, and so the truck has to stick its nose way out in the traffic, and there's all sorts of issues with -- of obstructing traffic. These trucks going out there, (unclear), stuff like that, so that sort --

MS. O'LEARY: And geometrically, right, there are definitely issues with both bridges and approach-ways. That is documented in the EA, as I said, and I think that it said that two bridges can't -- or two trucks can't pass at the same time, that's the difficulty, if they need to, that's what we're trying to fix, and they can't right now, so you're correct only that one at a time, under certain conditions at certain parts of Route 19 across the bridge, that is correct.

MR. MULLIGAN: And cars --

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: -- a car can't pass a tractor-trailer on the bridge where it approaches, and stuff like that.

MS. O'LEARY: On either?

MR. MULLIGAN: On either, right, right, so

that we know.

And also, that the greater issue is -- the core issues of the bridge, you know, my side of the story is, I want you guys to expect everybody to start digging dirt in the spring of next year.

MS. O'LEARY: Hmm.

MR. MULLIGAN: The socio-economic issue of it, or a bridge shut-down, or the -- restricting the weight on the bridges, and all that sort of stuff, --

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: -- will be tremendous as far as both communities; and also hindering as far as growth and business growth, and stuff like that, is a great concern if the bridges are allowed to stand as they are.

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: As far as 2010, there were 7200 vehicles per day, --

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: -- and 2012, there were 10,000 vehicles per day, and in 2015 -- you want me to correct -- projects 13,000 vehicles a day, --

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: -- and that's a tremendous

increase in vehicle traffic. We don't know what the break-out is as far as trucks and stuff like that.

MS. O'LEARY: Right.

MR. MULLIGAN: On the -- the bigger problem again is the condition of the bridges. I think it is grossly-inaccurate in your report and also the DOT. I see tremendous bridge-type issues on the bridge. There's tremendous member of bending and gusset-bending and gusset-weakening, and the -- the side -- the thing that's in the gusset is half-an-inch, --

EAH-1

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: -- and there's another half-inch or less on the outside, so how can New Hampshire even consider construction and integrity of the gusset? These bridges, as you know, are critical -- are both critical, --

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: -- both (unclear), or both critical, or both (unclear), whatever it is.

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: A gusset goes and the whole bridge goes in the drink. So we have the footing (phonetic) problems, the Brattleboro west side bridge, that whole -- additions, the dirt, and

everything, is all shifting.

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: And there's gusset movement and bending and stuff like that.

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: And indicates that there's been movement of that side of the bridge, and stuff like that. But everybody's playing, you know, let's make believe, this is the way it is, and nobody wants to go down there and really look at that bridge --

MS. O'LEARY: So you feel that we over -- even though we're saying it's structurally-obsolete and functionally-obsolete, you're feeling that we're over-estimating the safety of the bridge is your comment.

MS. MULLIGAN: By many magnitudes.

MS. O'LEARY: Okay.

MR. MULLIGAN: And -- and like I said, when this issue of all these members meeting, --

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: -- all these super-structure members being bended, tremendous damage, tremendous bending of these members, and stuff like that, would that be critical, a bridge like that -- one of those

things would go and the whole bridge could go in. As long as the -- they indicated with the footings and the huge truss knuckles underneath the bridge, there's a tremendous amount of wastage (phonetic) on those knuckles and bolts that hold the trusses together, and stuff like that, along that.

So you have the members that are bent and huge areas of these trusses -- well, not huge, --

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: -- let's say, the huge trusses, themselves, are bent and will be opened up, and stuff, along with all that stuff underneath it. How do we know that New Hampshire DOT really understands these two interactions together, how do we really know that these bridges are going to last for another 50 years? Because the way it's going now, New Hampshire isn't going to change their politics, and -- and they're starving their transportation budgets, right, --

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: -- stagnation and starving for the last 30 years. They can't pass -- you know, that bridge is unsafe, they can't pass it, to shut it down if it's unsafe, right? And so the gap, the gap of these two things, you know, these New

Hampshire officials don't have the courage, they'll face tremendous political outcome if they had to shut that bridge down. And so -- and so the gap, the gap, between these two things, these two impossibilities is they falsify documents.

MS. O'LEARY: Well, I certainly can't speak to that, and I can tell you that we don't have any falsified documents in here, and unfortunately I can't speak to the New Hampshire budget, either, but bridges are rated on an engineering scale that's used across the country for safety. And so they did score low in the 40s, definitely, which is why they're in line to be fixed, but it's not made-up reasons, there's definitely -- there's criterias, and there's -- specific things get checked on every bridge, and so that has been done, and that's why we have the numbers in the 40s.

MR. MULLIGAN: All I say -- one more thing --

MS. O'LEARY: Yeah.

MR. MULLIGAN: -- is that that's a near collapse, we're going to break apart, where that bridge is so fragile, there's so many degraded parts, the super-structure underneath the bridge. The New Hampshire -- the DOT, they come with these

fancy words about engineering, and stuff, and degrees, and Master's Degrees and Ph.Ds, and you can -- you can baloney the people, and stuff, with, you know, the institutional stuff with the engineers and educators, and stuff like that, and at the end of the day, you're not asking proof of these guys, they're just throwing you -- they're just throwing you trash and words, and stuff like that, and they're not showing you any of the events that are really going on, and stuff. And so just by throwing out (unclear) the professional class, and --

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: -- and you don't have to have (unclear) from us, we'll just -- we'll go on our statute and our sense of professionalism. A guy like me, they don't ask -- they ask like what's your proof, what's your proof that that bridge is going to go down, and stuff like -- they ask me triplicate proof, they simply -- you know, they don't trust me. The professional class, they -- they trust them to be infinite, you know, as far as that, so -- and there you go.

MS. O'LEARY: All right, well, thank you for your comments.

MR. MULLIGAN: Thank you.

MS. O'LEARY: Sir.
MR. SPRAGUE: I'm sorry, I missed the first part of the meeting, what -- what are we supposed to be asking questions about?
MS. O'LEARY: So for the Route 119 Brattleboro-Hinsdale, New Hampshire Bridge, this is the environmental assessment, it has to be done by Federal law, and so we look at the project, we look at all the different alternatives, --
MR. SPRAGUE: Okay.
MS. O'LEARY: -- identify a purpose and need. In this case, the bridges are functionally-obsolete, they need to be replaced, --
MR. SPRAGUE: Oh.
MS. O'LEARY: -- and so we're looking at the alternatives. We've looked at ten and came up with a preferred alternative, after a lot of work with community, and regional people, and the two agencies from Vermont and New Hampshire, and came up with this environmental document. It's been on public notice for 15 days, it's going to continue to be on public notice for the next 15 days.
And so what we're looking for tonight is specific comments on this document, on the preferred alternative, if you feel that there is anything that

we missed in here. If, like Danny said, if we had, you know, even -- I mean we will take commas, you know, you missed a comma, or you need this, or you called something the wrong name, you know, editorial comments are fine. Bigger-picture comments, any other concerns, --

MR. SPRAGUE: Okay.

MS. O'LEARY: -- anything about the project, itself.

MR. SPRAGUE: I'm from Hinsdale, New Hampshire, --

MS. O'LEARY: Hm-hmm.

MR. SPRAGUE: -- I'm a taxpayer over there. And my wife is in a wheelchair, and she occasionally has to have the ambulance bring her to the hospital --

MS. O'LEARY: Hm-hmm.

MR. SPRAGUE: -- for various items. And I do worry that, you know, there's going to be a train on the track sometime, and they're not going to be able to get through it soon enough, that's one thing. EAH-2

Another thing I think about, and I -- I don't really think about it, but what if there's a nuclear accident and everybody has to use that

bridge, and you have how many, first, student buses goes across that bridge --

MS. O'LEARY: Hm-hmm.

MR. SPRAGUE: -- I think they come from Brattleboro, don't they?

MS. O'LEARY: I believe so.

MR. SPRAGUE: I don't know on that.

UNIDENTIFIED SPEAKER: That bridge is not in the evacuation plans for the town (unclear).

MS. O'LEARY: That bridge isn't?

UNIDENTIFIED SPEAKER: That bridge is not in the evacuation plans for the town.

MR. SPRAGUE: It isn't, okay. Hinsdale has to go over on 119 to Keene, I believe it is, up, but I imagine it's still -- there's going to want to be people, parents, and everything else, that are going to want to go that way, you know, but I think that would be a really, really --

MS. O'LEARY: So some of the things that you mentioned are being addressed with this alternative F, with the --

MR. SPRAGUE: (unclear).

MS. O'LEARY: -- alternative F, the preferred alternative. There'll be a grade separated for the rail, so the traffic will not back

up onto the bridge the way that it does now, so there'll be a lot easier flow back and forth.

MR. SPRAGUE: Yes.

MS. O'LEARY: And one of the considerations for this actual bridge design is to improve emergency services back and forth between the two towns.

MR. SPRAGUE: Yes, that'd be wonderful.

MS. O'LEARY: Hm-hmm.

MR. SPRAGUE: But there was an accident on the bridge today. EAH-3

MS. O'LEARY: Hm-hmm, an accident did you say?

MR. SPRAGUE: She had -- she had an accident, yes.

MS. O'LEARY: Oh, hm-hmm.

MR. SPRAGUE: It ripped the side of a box trailer, utility box trailer, one of those nice black ones.

MS. O'LEARY: Hm-hmm.

MR. SPRAGUE: Just ripped the whole side of it right off it, there was I think a gas truck coming the other way.

MS. O'LEARY: Hm-hmm.

MR. SPRAGUE: And so then another truck

stopped coming this -- coming from Hinsdale.

MS. O'LEARY: Hm-hmm.

MR. SPRAGUE: So you had to go around this way, around this way, around this way, and that way through the three vehicles that were involved, one-way traffic, and it was a real mess.

MS. O'LEARY: Hm-hmm.

MR. SPRAGUE: We had a doctor's appointment, my wife did, and I had to get there late. It's stuff like that that's --

MS. O'LEARY: And that is one -- that is one -- you just said it perfectly -- that is one of the deficiencies right now, the geometry, --

MR. SPRAGUE: Yes.

MS. O'LEARY: -- and the width of the road, and the consistency of the road across the two bridges, so this alternative F will address that.

MR. SPRAGUE: One thing that got me at the last meeting I was at, I was at the meeting over in Hinsdale, they said all their money is going to be funneled into Route 93, you know, I think that's so wrong.

MS. O'LEARY: Hm-hmm.

MR. SPRAGUE: I mean I realize -- I drove that road for quite a number of years, --

MS. O'LEARY: Hm-hmm.
MR. SPRAGUE: -- and it's a mess up there, I realize that.
MS. O'LEARY: Hm-hmm.
MR. SPRAGUE: But I think they have to consider it, you know, a problem, you know, here, too.
MS. O'LEARY: Right.
MR. SPRAGUE: And I imagine the economy would be a lot better in this area if we had another bridge. Brattleboro, I don't think, wants a lot of tractor-trailers going through Brattleboro.
MS. O'LEARY: Hm-hmm.
MR. SPRAGUE: But it would (unclear) this economy. They've got 400 acres of land over there, industrial land which is waiting to be developed over there.
MS. O'LEARY: Hm-hmm.
MR. SPRAGUE: And plus the whole commercial corridor over there, and I just -- I just think it's too dangerous.
MS. O'LEARY: So the bad news is that this isn't going to happen next year because you know the way these things happen, but the good news is that this is a very good first step, and it has to happen

first in order to go to design engineering and then construction design.

MR. SPRAGUE: It said in the paper that they were on the ten-year list, they aren't on a ten-year list unless they just went on it recently.

UNIDENTIFIED SPEAKER: I saw that in the paper, too, and --

MS. O'LEARY: Yeah.

UNIDENTIFIED SPEAKER: -- (unclear).

MR. SPRAGUE: It's not on the ten-year list.

UNIDENTIFIED SPEAKER: As far as I know, it's not on the ten-year list.

MS. O'LEARY: Yeah, I don't think it is.

MR. SPRAGUE: It's not on any list.

MS. O'LEARY: No.

MR. SPRAGUE: Because -- because of the population, I think is what --

MS. O'LEARY: Hm-hmm.

UNIDENTIFIED SPEAKER: Okay, that's fine.

MS. O'LEARY: Thank you. Sir?

MS. DAGESSE: Wait, Mary, --

MS. O'LEARY: Oh, I'm sorry.

MS. DAGESSE: -- (unclear) name.

MS. O'LEARY: Sir, I'm sorry, could we have

your name?

MR. SPRAGUE: Dwight Sprague.

MS. O'LEARY: Sprague. Thank you, Mr. Sprague.

MS. DAGESSE: And you have to move (unclear).

MS. O'LEARY: Oh. You're only going to hear me talking on this, not everyone else.

Can I have your name, sir?

MR. LINDSEY: Steve Lindsey from Keene, New Hampshire. And I have some associations with this area, even though I live up in the county seat, I was a State Rep from there. I would like to -- we keep referring to these two bridges as the 119 bridges, but they have formal names, just as the Vilas Bridge, and Bellows Falls has a formal name, and the CV Bridge in Chesterfield has a formal name. The larger of the two is the Anna Hunt Marsh Bridge, and the smaller one is the Charles Anderson Dana Bridge, named after prominent Hinsdale residents who went on to change the world.

And I'd like the media and the Government to name the bridges with their formal names. The Legislature approved this, the Towns of Hinsdale and here approved it, and the Governor signed it, so I'd

EAH-4

like that to be put in.

I've got two other things, and I understand as an avid historic preservationist and a lover of our built environment, I understand that a new bridge is necessary, and I can see it as much, but I would like to see the two old bridges remain standing as a recreational span, as well as for emergency vehicles. We are over a major body of water, the interface of two states, two political entities, and I hope that we can save the Charles Anderson Dana Bridge and the Anna Hunt Marsh Bridge and we utilize them as a historic, recreational and also for emergency resources. Thank you for listening to me. In the interstit disclosure, I'm the one that submitted the bills that named those bridges a few years back, thank you. EAH-5

MS. O'LEARY: Thank you. So I was not aware of the formal names. We can get the documentation and certainly include that in the document.

UNIDENTIFIED SPEAKER: Yeah, yeah.

MS. O'LEARY: And to answer your -- your other point is that the existing bridges are going to be left for recreational and for pedestrian and bicycle use. I'm not exactly sure about emergency

services, but we can certainly -- they're not, at this time, but we can certainly at least include your comments in the document and look into that.

MR. LINDSEY: I appreciate it, and thank you for considering the formal names, they have distinct personalities as people, who cross them everyday, realize.

MS. O'LEARY: Okay, thank you. Any other comments? Yeah. Sir. Your name?

MR. SMITH: Edwin Smith. I have served on several of those committees that you referred to in the beginning.

MS. O'LEARY: Hm-hmm.

MR. SMITH: And I think it took us a long time to get to this point. There has been a professional assessment done, it points to choice F --

MS. O'LEARY: Hm-hmm.

MR. SMITH: -- on our papers here. I think that we should do whatever we can to make this happen. This is shown by the experts, who have looked at it, to be environmentally-friendly, it's shown to be functionally-workable. The two bridges that we have now don't meet any of those criteria, there are a lot of criteria that they don't meet.

The bridges that we're looking at now are somewhere close to 90-years-old, and we're looking at probably five to seven to ten years before this bridge can be designed and have traffic on it just because of the process of the engineering, and all of the rights-of-way, and other things that have to be looked at during the process. I think it's time that we did focus on choice F --

MS. O'LEARY: Hm-hmm.

MR. SMITH: -- and move this forward so that we do get out of the situation we're in now with bridges that are functionally, and, in many ways, obsolete. I don't have all the terminology that the young lady had, but it's time to do the right thing in this case and get a bridge that does -- and one of the other points that was referred to --

MS. O'LEARY: Hm-hmm.

MR. SMITH: -- a few minutes ago by Representative Lindsey was the impact on our medical --

MS. O'LEARY: Hm-hmm.

MR. SMITH: -- because that's where -- our emergency medical source comes from Brattleboro.

MS. O'LEARY: Hm-hmm.

MR. SMITH: That's where our emergency medical needs are met in Hinsdale. Other than that, -- and the hospital, as well. The hospital from Hinsdale is seven miles, the next closest hospital is in Keene which is 21 miles away.

MS. O'LEARY: Hm-hmm.

MR. SMITH: We also have to think about doing these in a timely fashion so that they aren't closed, because if they are closed, it's more than 20 miles from the bridge -- the bridges we're talking about to the bridge in Chesterfield, which is the closest one, the other alternative is down in Northfield which is about 10 miles further.

MS. O'LEARY: Hm-hmm, farther.

MR. SMITH: If these bridges aren't replaced -- at the last traffic count, there were 9700 cars going across these bridges daily. If only half of that traffic goes up Route 63 in New Hampshire, that road is going to be an environmental disaster, as well as a lot of other things, because it's going to require a lot of funding just to keep it up. EAH-6

The other big factor on the Vermont side is Putney Road's already congested. If half of those people from the south side of Brattleboro go up to

the Putney Road, that road is going to become a lot more congested than it is now. So both states have a horse in this race, I guess, --

MS. O'LEARY: Hm-hmm.

MR. SMITH: -- we'll go back to the old Hinsdale harness racing days -- do have a horse in this race, and it's important to get this thing done and get it where it should be so that we can have a better bridge, thank you.

MS. O'LEARY: Thank you. Sir?

MR. BUTYNSKY: My name is Bill Butynsky, and I've had the opportunity to serve on the bridge committee for the last year or two and have lived in the area for over half my life. I strongly support alternative F and moving forward with a new bridge as soon as possible.

MS. O'LEARY: Hm-hmm.

MR. BUTYNSKY: Just to reinforce what Mr. Sprague said earlier, in terms of his wife in a wheelchair, my mother, in fact was 97, in serious ill health for a number of years, she passed away recently, but to get to the hospital, you have to go across the railroad tracks, and that was always a danger for her or for anybody else in Hinsdale that has a heart attack or has immediate medical needs.

EAH-7

And I would just like to see that type of thing, if it's possible, to be put into the environmental assessment.

The other reality is, when the trains go across, obviously all of the cars back up, and it certainly negatively-impacts air quality.

MS. O'LEARY: Hm-hmm.

MR. BUTYNSKY: And I think that could be reinforced within the report. So there are a variety of things in there, but I just want to say I strongly endorse what you propose in terms of alternative F and moving forward as fast as possible.

And again, it isn't even just the medical care, it's also police, --

MS. O'LEARY: Hm-hmm.

MR. BUTYNSNKY: -- fire, I mean any safety of Hinsdale, we are to a large extent dependent upon Brattleboro, and vice versa, sometimes our people come in and help Brattleboro. But when there are trains going across there, we can do nothing, and that's a very serious problem that I just want to --

MS. O'LEARY: Hm-hmm.

MR. BUTYNSKY: -- I'd like to see emphasized more within the plan, but --

MS. O'LEARY: Okay.
MR. BUTYNSKY: -- again, I fully endorse, strongly support alternative F and hope we can move forward as soon as possible, thank you.
MS. O'LEARY: Thank you. Sir?
UNIDENTIFIED SPEAKER: Just a quick question, I'm with the Brattleboro Reformer. Just a quick question for clarification.
MS. O'LEARY: Hm-hmm.
UNIDENTIFIED SPEAKER: Would this new bridge go over or bypass the railroad tracks that does not -- making the railroad tracks a problem for ambulances or other emergency vehicles?
MS. O'LEARY: Correct, they'll be separated.
UNIDENTIFIED SPEAKER: They would go over, okay, perfect, thank you.
MS. O'LEARY: Hm-hmm. Yes?
MR. MACK: Just a quick statement. I'm J.B. Mack, I'm a transportation planner at Southwest Region Planning Commission in New Hampshire, and I'm going to be submitting some written comments, minor things, but --
MS. O'LEARY: Hm-hmm.
MR. MACK: -- but one kind of sort of

stand-up comment that I wanted to make tonight was a little bit of a discussion or small piece of information about train traffic --

MS. O'LEARY: Hm-hmm.

MR. MACK: -- and changes that we may be seeing in train traffic in the vicinity of the bridge project.

MS. O'LEARY: Hm-hmm.

MR. MACK: Massachusetts and Vermont have been upgrading their rail systems --

MS. O'LEARY: Hm-hmm.

MR. MACK: -- with the idea that they'll be using them more frequently, --

MS. O'LEARY: Hm-hmm.

UNIDENTIFIED SPEAKER: -- have more frequent Amtrak service, is my understanding.

MS. O'LEARY: Hm-hmm.

MR. MACK: And, you know, also taking away some obstacles so that you can actually have higher loads passing through the area, freight loads passing through the area, is my understanding. I don't work in those states, --

MS. O'LEARY: Hm-hmm.

MR. MACK: -- so I can't verify that, but if you could do a little inquiry with --

MS. O'LEARY: Hm-hmm.
MR. MACK: -- the state -- a state --
MS. O'LEARY: So to clarify whether or not the -- although, again, this is conceptual, at this point, that the concept is including the possibility to increase train traffic, --
MR. MACK: Yeah, --
MS. O'LEARY: -- if that is planned in the region, okay.
MR. MACK: -- my point being is that an alternative, where you can bypass the track system, --
MS. O'LEARY: Hm-hmm.
MR. MACK: -- will be even more important in the future.
MS. O'LEARY: Hm-hmm, okay.
MR. MACK: And that, you know, it's just as we're showing traffic projections of vehicles crossing over the bridge, --
MS. O'LEARY: Hm-hmm.
MR. MACK: -- what kind of traffic will we be seeing with our train system, as well? EAH-8
MS. O'LEARY: I don't know the prediction for that, thank you, I'll look into that.
UNIDENTIFIED SPEAKER: That was my

question.

MS. O'LEARY: That was your point, too? Okay.

Any other comments, questions? We will be here for awhile if you have specific -- oh, I'm sorry, Mike.

MR. MULLIGAN: There -- my friends in Hinsdale are wondering why I'm not in jail tonight, and maybe I should be. It's associated with the walkway, --

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: -- the walkway's been in terrible condition.

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: The State has known that the walkway, they have loose boards on the walkway. And I've seen a (unclear) from Brattleboro, they go to the convenience store, and there's two or three people with wheelchairs that uses that walkway. It's unavailable in the wintertime because nobody wants to snow-blow it.

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: A lot of fear that the bridges would collapse if there's a lot of heavy vehicles, or machines, and stuff like that. And so

they've had a recent inspection. The bridge, they had actually two inspections, last fall and this spring, and stuff, and -- and a thorough inspection, more or less, --

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: -- but they didn't catch the bridge walkway. They didn't catch all the dangerous boards that were loose, and, you know, as you're -- you go with a bicycle, and you go lap-lap-lap-lap-lap, there are loose boards, and I'm the expert at knowing something in boards in Hinsdale because I threw a bunch of them in the river yesterday.

And so the thing is, really the thing is, is that you can't trust the State, you cannot trust the State to do an inspection. You can -- they're too politically-controlled, and stuff like that. That the walkway is a metaphor for how the New Hampshire DOT handles oversight and inspections, and it's like I said, there's a prime example that they couldn't take that -- I was on there this spring with the inspectors, the bridge inspectors, and talking to them, and stuff like that. I explained to them how dangerous these boards are and how the hundreds of thousands of people -- and that's what

I'm saying, hundreds of thousands of people who have gone past me, and who I've submitted, and who I've thrown kisses at and -- by the way, females and males, and an assortment of antics, --

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: -- and stuff like that, how, you know, how dangerous it is, the conditions are dangerous.

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: What's more dangerous with the State of New Hampshire Department of Transportation, they cannot fill out paperwork accurately. They -- the bridgeway -- the walkway, and stuff like that, which I handle myself by throwing boards over, and made it impassable, and they had a, you know, a -- they couldn't come down on their own, fix it right, they have a bridge (unclear) do the work that the New Hampshire Department of Transportation should have done, and stuff.

And so, you know, you watch a movie, you see these movies where there's been terrible bridge accidents, right? --

MS. O'LEARY: Hm-hmm.

MR. MULLIGAN: -- and in all of them,

there's always an angel hanging around the bridge before the collapse, I'm that bridge angel, thank you.

MS. O'LEARY: Thank you, Mike.

MR. LANDRY: There was a question over here.

MS. O'LEARY: Yes.

UNIDENTIFIED SPEAKER: (unclear). I think -- I had a question -- it mentioned (unclear) that there was air-quality monitoring done, I can't quite connect to where it -- the map is, and so I was curious at what time of year that was done, because it's our understanding of where Brattleboro is, sometimes subject to temperature aversion, winter, --

MS. O'LEARY: Hm-hmm.

UNIDENTIFIED SPEAKER: -- although there's no air-monitoring stations. The closest one is Keene, and --

MS. O'LEARY: Right.

UNIDENTIFIED SPEAKER: -- we're a little far away for that, so I was just curious, you know, the traffic backing up now, you know, if it was monitored on a day that's --

MS. O'LEARY: On a day --

UNIDENTIFIED SPEAKER: -- not in the winter, you know, --

MS. O'LEARY: Right, I do believe it was in summer, I don't have the dates off the top of my head, but I can certainly find that information, find what was done. I do believe it was in summer because, you know, we do try to look at the peak issues which would be when things were backing up.

UNIDENTIFIED SPEAKER: Yes.

MS. O'LEARY: So I'll have to get that to you.

UNIDENTIFIED SPEAKER: It may be worth mentioning that, you know, there is the temperature aversion issue that happens here.

MS. O'LEARY: Hm-hmm.

UNIDENTIFIED SPEAKER: So sometimes air quality could be poor in the wintertime, so the continued traffic on the existing bridges.

MS. O'LEARY: On the existing bridges. Okay, thank you. Sir?

MR. MANN: Matt Mann, I'm J.B. Mack's counterpart, --

MS. O'LEARY: Hm-hmm.

MR. MANN: -- Windham Regional Commission. And to his question or comment about the train

traffic --

MS. O'LEARY: Hm-hmm.

MR. MANN: What Vermont, Massachusetts and Connecticut are in the process of doing is upgrading the rails to 286,000 pounds, --

MS. O'LEARY: Hm-hmm.

MR. MANN: -- it's called the Knowledge Corridor. Vermont's already completed their section up to the Massachusetts line. Massachusetts and Connecticut, as I understand, will probably be completed in 2015, 2016. That would probably increase the freight traffic, --

MS. O'LEARY: Hm-hmm.

MR. MANN: -- but there hasn't been discussion about passenger rail, yet.

MS. O'LEARY: Hm-hmm.

UNIDENTIFIED SPEAKER: So --

MS. O'LEARY: Okay.

MR. MANN: And I've worked with NECR in terms of trying to get out of them their forecast for the train traffic, and it's been tough.

MS. O'LEARY: Okay.

MR. MANN: You know, some of it's pri -- proprie --

UNIDENTIFIED SPEAKER: Proprietary, yeah.

MS. O'LEARY: Proprietary, hm-hmm.
MR. MANN: Sure -- that information, so -- but I can definitely be of assistance if -- if --
MS. O'LEARY: Okay.
MR. MANN: -- if you work on it.
MS. O'LEARY: And again, at this point, you know, we just have the concept, so we don't have the actual engineering details, and those types of details would be incorporated as we go forward with final design, but it's definitely an important thing to consider, and we'll make sure we include the comment on that.
Anyone else? All right, thank you very much for attending tonight. We will be here for a while longer if you have any questions or comments, or you want more detailed information, or we can discuss any chapters in the assessment. And if -- I will leave some business cards out over on the table with the address of where you can put in written comments, it was on the notice that went out, but I'll leave some additional ones here so you can send in formal written -- e-mails are fine, don't have to be formal, text language is probably not so good, but I probably would be able to figure it out.
UNIDENTIFIED SPEAKER: (unclear) sign, sign

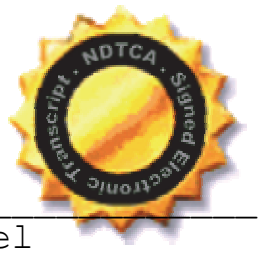
in.

MS. O'LEARY: And please sign in if you came in late and did not get a chance to sign in. Thank you very much. Have a good evening.

(End of recording)

CERTIFICATE

I, PAMELA MAYO HAMEL, hereby certify that the foregoing pages, numbered 3 through 50, inclusive, are a true, accurate and complete transcription, to the best of my ability, of an Environmental Assessment Hearing, BRF 2000(19) SC, held on August 1, 2013.



Pamela Mayo Hamel

Laura Wheelock

From: Jacqueline Dagesse <jdagesse@eivtech.com>
Sent: Wednesday, August 21, 2013 12:40 PM
To: Laura Wheelock
Subject: Fwd: Hinsdale, NH New Bridge Pubic Comment
Attachments: Route 119 Hinsdale, NH Bridge comment.docx

---------- Forwarded message ----------
From: **Michael Mulligan** <steamshovel2002@yahoo.com>
Date: Thu, Jul 25, 2013 at 2:22 PM
Subject: Re: Hinsdale, NH New Bridge Pubic Comment
To: jdagesse@eivtech.com

Dear Jacqueline Dagesse,
Could you place my attachment into the comment section of the Hinsdale, NH Route 119 Transportation Corridor public meeting documentation?
Thanks,
Mike Mulligan
Hinsdale, NH
16033368320

Dear Loriella Babkirk,

What a pretty first name!

I received a copy of your e-mail titled "RE: Brattleboro/ Hinsdale Bridge" dated July 8, 2013 a few days ago. The documents were placed anonymously on the open front seat of my car at the approach of the Route 119 Brattleboro. Actually, I got the Vermont and NH state DOT officials' response to youy letter also with all the attachments. You haven't seen the truth in these official state responses and their documents.

By the way, could somebody send me through e-mail those NHDOT bridge inspection reports and photos stated in the attachments please…the five attachments?

You know, everyone's got to start buckling up here right now. This ride is going to get goddamn rough.

I am the guy at the Route 119 Hinsdale bridges blessing you and everyone else who passes this area. Have you recently seen me dressed up with my nice halo as a bridge safety angel? I am warning all of the lands with an impending bridge collapse or closure in the near future. It is going to be an economic, individual and multi community catastrophe.

As you know, I have spent considerable time at the bridge this year. This is my third year working on this project. I am the talk of the town in Hinsdale...mostly positive and a few even threatening harm to me. Most of Hinsdale thinks I have really gone overboard with my halo and blue angel get-up. Pictures of pathetic me wearing a halo are on my blog! See pictures on my blog!

I would consider our grossly technically obsolete 1921 and dangerously degraded bridge…engineers language… being a "super fracture critical" bridge! The collapsed I35 Minneapolis Bridge was built in 1964 and the I-5 Skagit River Bridge was built in 1955. The Hinsdale/Brattleboro Bridges were built in 1921. The Concord, NH Sewalls Falls road bridge five miles north of Concord, NH was built in 1915. This is the future of our bridge.

> NTSB 2007 Investigation into the Minneapolis I35 Bridge Collapse
> "NTSB findings:
>
> Because the deck truss portion of the I-35W bridge was non-load-path redundant, the total collapse of the deck truss was likely once the gusset plates at the U10 nodes failed.
>
> Non-load-path-redundant: The condition where fracture of an individual structural element (a fracture-critical element) could lead to a partial or total collapse of the entire bridge. A bridge that is non-load-path-redundant is not inherently unsafe, but it does lack redundancy in the design of its support structure. Such bridges are sometimes

referred to as fracture critical. The I-35W bridge was of a non-load-path-redundant design."

I will speak plainly to you. I think the NH bridge inspection process is severely corrupted. The NHDOT roads and bridges budget has been severely restrained for many years now. NH got a huge back log of projects. We are never going to catch up to our responsibilities. They don't have enough money to keep the 1921 Hinsdale Bridge functional and up to date with maintenance considering the growth of traffic and large trucks. So these guys just close their eyes to Hinsdale. The NHDOT fear the enormous political fallout if they are forced to restrict flow of the traffic or close the bridge. NHDOT fears more the approximate $35 million dollar cost with the replacement bridge.

New Hampshire and their NHDOT are in existentialism's vice between money limitations and vital societal pubic needs. It ends up as a disproportional war against small town and rural New Hampshire from the powerful well-heeled and high population areas. An unfair and severely unsafe proportion of the NHDOT budgets (and stimulus) has been going to the powerful well healed Concord, Nashua and our NH golden seacoast corridor triangle. This is Boston's exurbia bedroom community within New Hampshire. That blood sucking sound you hear is all the big southeast NH transportation projects stealing our hopes and dreams from us…the jobs and transportation resources from rural NH.

Our Route 119 Hinsdale/Brattleboro Bridge is tragically obsolete and fracture critical. I keep thinking about the disgusting bent, corroded gusset and the deeply displaced vertical member caused by a vehicle crash on our bridge. How come that wasn't ever repaired. This indicates a profound agency attitude with valuing human life and infrastructure engineering integrity.

"I-5 Bridge listed as 'fracture critical"

Columbia River span could collapse if hit with big enough blow

Tuesday, May 28, 2013

Both spans of the Interstate 5 Bridge over the Columbia River are considered "fracture critical" by the Oregon Department of Transportation, meaning if one crucial part of the bridge sustains a big enough blow, the bridge could collapse.

In it, the I-5 Columbia River Bridge is categorized as a bridge without safety redundancies or backups that would prevent it from collapsing if part of a bridge truss is damaged or removed.

"If one of the fracture-critical pieces is somehow taken out, removed or fails in some way, the whole bridge could collapse," Oregon transportation spokesman Don Hamilton said Tuesday. He declined to specify where the bridge would need to be damaged in order to collapse, because he didn't want to make the bridge's weak spots public.

It is the absence of our tiny voice within New Hampshire government with how we control the arterial life blood flow within little Hinsdale and all of the small town and rural New Hampshire. And our tiny voice stands up for the efficiency of traffic flow and safety for our surrounding communities and bordering states. The majority of the flow of traffic on Hinsdale's route 119 is not our town's people. This itty bitty voice in the wilderness is sticking up for the safety interest of the multitudes. They all come from far and wide for passage through our town or to see our little rendition of heaven.

I am saying, who is going to oversee and regulate the state bridge inspectors? Who is going to inspect the NH bridge inspectors? I wouldn't be surprised after reading the 2007 NTSB's Minneapolis I35 bridge report if knowingly grossly inaccurate and falsified state and federal documents are legal in New Hampshire. You know, the privilege of kings with total unaccountability. This is a fundament flaw with our nation. We don't have one highway and road standard, seeing how we send many million dollars to the states. Our federal system should have stick oversight of the State Dots. As an example, just look at the I-35 Minneapolis bridge collapse. There was many known long term flaws in bridge maintenance and state DOT engineering codes. Who is going to step in if the states don't give a shit?

So the easy way out of this political mess is to falsify bridge inspections and state and federal documents. The NHDOT staff and officials of NHDOT are severely demoralized, underpaid and intimidated by severely underfunded and highly politicalized agency state budgets. The NHDOT employees are all facing massive and unprecedented employee, personal and official layoffs and firings in the next two years. The organizations are a "black hole" with withholding information and selective truth telling for political, personal and career protection. Just give them the minimum transparency, boys…for our protection. This is black hole organization is beyond the control of any entity on the planet because of their self-interested selective truth-telling, lying and object and uncontested NH and federal illegal document falsification.

So below article is an analogy for similar cultures and systems across many organizations. Who plays the roles of the patients, the doctors, the medical employees and the medical establishment and the bureaucracy in our system of bridges, towns, employees, voters/taxpayers/ public, the feds, state DOT and our wider transportation system. If the NHDOT respects their professional employees more will Hinsdale town's people be more secure and safe? At least the citizens of Hinsdale would have a lot more accurate information to engage our state politicians. Of course, our state government never operates on the facts. Is the sick patient the Hinsdale Route 119 Bridge or is it all the people and businesses who use our bridges?

Why is government always hiding in the deep shadows?

Where is the respect of us and why is it lacking in in our wider culture and system? I bet you it's all related to greed and economic insecurity?

"In a Culture of Disrespect, Patients Lose Out" (NYT)

I've always thought about respect as common decency, something we should do because it's simply the right thing to do. In the medical world, we certainly need to strive for respectful behavior, especially given our historically rigid pecking order, our ingrained traditions of hierarchical bullying and, of course, a primary constituency — patients — who are often on uniquely vulnerable footing.

But then I stumbled across two articles in Academic Medicine that talked about respect as an issue of patient safety. The authors, a group of doctors and researchers at Harvard Medical School, outlined the myriad acts of disrespect that we've come to accept as a way of life in medicine, and showed how these can lead to a final pathway of harm to our patients.

This shift in perspective was a shock to the system. When we tolerate a culture of disrespect, we aren't just being insensitive, or obtuse, or lazy, or enabling. We're in fact violating the first commandment of medicine. How can we stand idly by when our casual acceptance of disrespect is causing the same harm to our patients as medication errors, surgical mistakes, handoff lapses and missed lab results?

… Though these annoyances may seem trivial, this lack of respect "undermines morale, and inhibits transparency and feedback," the authors write. Morale, transparency and feedback are pillars of preventing medical error. Patients ultimately bear the brunt of this unhealthy atmosphere.

…Added to the clarion call should be patient safety. The connection between disrespectful behavior to patient safety should be made explicit in our efforts, since this is a rallying point that everyone can agree on. Medical staff members should absolutely be holding ourselves to the highest bar of professional and respectful conduct. We have no excuses for anything less. But beyond this, the medical system needs to re-evaluate itself and the way it respects — or disrespects — its own workers, and by extension, its patients.

We are still trying to figure out what this NHDOT scientific and engineering phrase means. A lead "bridge inspector" told us this. He was performing a bridge inspection this spring. We got pictures...see my blog. He told us his group was just "corn cobbing" these bridges. What does "corn cobbing" a bridge inspection mean? This is such obscene disrespect to concerned members of the public.

So this is my blog: "The Poppervillve Town Hall".

"Summer 2013: Hinsdale/Brat Route 119 Bridge Protest"

http://steamshovel2002.blogspot.com/

http://steamshovel2002.blogspot.com/2013/07/the-route-119-hinsdale-family-killer.html

Don't forget to click on my other articles and links in my blog...I pictured up most of the underneath of the Route 119 Brattleboro and Hinsdale bridge. Scroll down to look at all of my bridge pictures...you won't be able to stop. These are dangerously obscene pictures of the structures of the bridge.

The Vermont DOT officials might recognize my name. I took pictures of their I 91 (between exit 1 and 2) “William Street" interstate bridge in early 2007. See my pictures of this now demolished bridge under steamshovel2002 and Flickr. Those bridge piers were in dangerously and atrocious conditions. This rather new 1960 (smile) bridge was functionally obsolete. The I91 Interstate Bridge was dangerously narrow and didn’t have safety breakdown lanes like Hinsdale’s route 119 bridges.

Do you remember a tractor trailer who was trying to miss a skidded and stalled car on the Williams Street Bridge? The semi tried to skid around the stalled car on the north bound bridge. Instead, he went right through the bridge railings like tissue paper to his death. I renamed that bridge the Vermont “Daddy Killer Bridge” because the driver had young kids. What shall I name the Hinsdale Route 119 Bridges?

I thinking “The Route 119 Hinsdale, NH Family Killer Bridges“. I could make this a sign and plaster the bridges with it.

I forced Vermont into the replacement of these bridges and many blame me with a rethink on the conditions of all I 91 bridges. This demolished young (humor) bridge was built in the early 1960 and the new bridges are 1000 times more gorgeous than the dead headed baby boomer bridge when we were developing our Interstate system.

Man, I am in love with those new huge concrete piers holding the new Brattleboro "William Street" bridge. You know, those NJ style integral to the bridge concrete safety barriers will certainly contain any fully loaded tractor trailer. The Vermont DOT official knows what i mean. Mr. Mike Hedges of the VTDOT, you tell the NHDOT how powerful my pictures are. They are going bend to my will!

So here is my list of safety and economic concerns with the Route 119 Hinsdale bridges. They are all pictured up on my blog. If any of these issues are missing and not explained in detail in the past NHDOT inspection reports this is “prima facia” evidence there is massive NHDOT bridge fraud and falsification of paperwork throughout the state. It is NHDOT bridge illegal

paperwork falsification to meet a political and self-interested ends? My experience with organizational lying and fraud…it doesn't happen in one spot in the organizations. The rot is in everything in the organization and in related organizations.

1) A few days ago I was on the Brattleboro side of the Route 119 Bridge and standing directly across from the new Whetstone Station restaurant. I had my halo on and was dressed up as a blue angel warning everyone of an impending bridge collapse. Dave, the owner of the restaurant walked over to me. I thought he was irked that I was scaring away his customers. He has a large bar with huge windows facing my protest area on the Hinsdale side of the bridge. Seems, they were watching me. These huge picture windows have a gorgeous elevated view of the Connecticut River and Wantastiquet Mountain. I asked him if I am chasing away your customers. He said not at all. I explained I am trying to replace this bridge. Dave said I am totally on your side. Then he asked me, "Did you hear about the recent serious bicycling accident on the bridge walkway?"

The bridge wooden walkway has many loose and warped planks. It is much worse than last year. As a bicyclist was crossing the bridge walkway, his tire flipped up a loose plank. He did an Endo…flipped over the handle bars on the bridge. He crashed into the railing banging his head and breaking his shoulders. He was almost thrown into the river. He was stunned. Dave called the ambulance. The bicyclist said he would have been dead if he was flipped into the river.

So this spring I was interviewing my NHDOT "corn cobbling" lead bridge inspector buddy. I got pictures of this…see my blog. I said at one point, you guys got big problems with the bridge walkway wooden planks. Most of the planks are loose and many warping. It is getting worst. Some planks are warping where the middle is sticking up and many are warping where one end sticks way up in the air. He told me, "the iron metal structure that attaches the planks by screws to the bride is too corroded to accept the screws." "It is all just rust down there and all the screws just spin." You got to wonder will the wooden walkway collapse into the river someday. I told "Mr Corn cobbing bridge inspector" (2013), you know, we got many disabled people with motorized wheelchairs traveling this walkway. They complain to me about the plank bumps and the not snow blowed walkways in the winter? They mostly go the convenience store in the old Wal-Mart store.

> <u>"A Plea To President Obama For A NewBridge" (Sept 24, 2012)</u>
>
> "These bridges have an increasing diabetic rotting wasting disease…"
>
> "The bridge underneath looks like this diabetic's rotting legs and bridge's rotting railings and beams."
>
> "There is a lot of grass over-growth into the middle of the sidewalk that rubs onto his wheelchair and face. Robert worries a piece of metal will get pulled out into the walkway and then he not sees it. It cuts his leg and then he can't control the infection, or the cut won't heal. Then they have to cut off the leg. A fallen down branch could be

hidden in the overgrown grass onto the sidewalk...again he is at extreme risk with losing a limb if it cuts or bruises him. This could easily put him in the grave."

"The little spin in his wheel chair is one of the few freedoms Robert has."

"He has had his family fixing the ruts (sidewalk) in this asphalt sidewalk." (So his wheelchair wouldn't fall over or make him stuck in place.)

…"Here is Robert right to your face (Sept 24, 2012). You notice the decaying bridge wood walkway planking under his wheelchair...many loose and warped big time."

Note: My blog and my picture (fall 2012) of Robert's diabetic leg and the rotting bridge railing made the NHDOT fix the cancerous railing in the 2013 spring inspection. May god have mercy on all our runaway monstrous Frankenstein New Hampshire souls? You see the rotting wooden planks under the rotting railing and this poor man's wheelchair. They completely ignored the dangerous wooden planks and the screws that wouldn't catch. This unsafe walkway are well known to NHDOT for many years.

Hinsdale use to remove the snow from the walkway with their special sidewalk plowing vehicle. They stopped because Hinsdale figured out the machine was too heavy for the walkway and it was also scraping up the loose wooded planks. Why can't they drive down the road with a snow blower in a pickup? Why can't the state pay Hinsdale to snow blow the state walkway? How come the bridge walkway doesn't get snow plowed in the winter? I get it, money, money, money!

You know what I am really trying do here; I am trying to save the soul of the state of New Hampshire!

You see the New Hampshire monstrous disregard for the value of human life with the Route 119 Hinsdale/ Brattleboro bridge walkway issue. Let's role play the NHDOT District 4 Engineer's job. Did you see his pathetically poverty stricken and isolated list of small towns in his area. One can only imagine the magnitude the long list of backlogged transportation jobs for his District. I wonder what the criteria is for shoving out NHDOT projects in his district? I bet it is political and population density!

So the Hinsdale Route 119 bridge walkways come to his attention. They are in unsafe condition. He knows he just can't put screws into the rotting wooden planks. They pop that baby open and he knows it going to be a complete rework of the walkway and their iron support structure. He knows if they go mucking around the bridge deck support iron beams and severely corroded gussets might need a lot of work. The job cost could get really big and shut the bridge anyways. The bridge is obsolete by four times and it is breathing its death throes. He goes spending big bucks in Hinsdale…then ten other towns in his district are going to be looking to string him up to their worst bridge.

It makes you wonder if we are seeing a NHDOT organizational disease. We make one of those "facilitative assumptions" where the bridge is so dilapidated and old, why waste money in it. A new bridge is right around the corner so shut your eyes and don't waste money on it. The state effectively disconnects itself from the overseeing the bridge and doing the proper upkeep of it. A young or middle-age bridge has a huge value in it so we will take care of it. A decrepit bridge is so ugly and expensive…just turn away your eyes from it and don't look. It is only human nature. Is there something in our brain or organization that unintentionally turns off our caring because of these affects…obscures our vision and curiosity?

The below from the most recent spring 2013 Environmental Assessment is interesting. The first Wal-Mart store forced Hinsdale and the NHDOT to construct a sidewalk and a walkway. With the rot going on in wooden planks and rotting iron works who won't hold a screw or hold on to the planks, it must be a cheapy defective design and construction of this walkway.

You know, that is the "New Hampshire Advantage". It is a whole set of half ass fixes and "facilitative assumptions". This unseen and hidden corruption goes on for decades after decades into the indefinite. A facilitative assumption is when a CEO, politician and agency head…especially the professional class and engineers…who knowingly makes a corrupt critical organizational decision based on self-interest or a narrow interest in order to save his job and career. You make an assumption deep under the citizenry and employees, knowingly not aligned with the facts or the greater good in order fulfill a narrow and shallow interest. It is dastardly hidden corruption deep behind the scenes that screws all the innocent and good citizens. It mostly benefits the professional class and the politicians.

There are also good facilitative assumptions. A young man makes a mistake. You think he is just inexperience and immature…but you give him many breaks because you know he will become a great man. You will make him a great man. And he then does become a great man.

Heuristics is related this…

> <u>Environmental Assessment</u>
>
> BRATTLEBORO, VT – HINSDALE, NH TRANSPORTATION CORRIDOR BRF 2000(19)SC June, 2013
>
> …In 1993 a sidewalk was installed on the north side of both bridges…
>
> So the Hinsdale bridge walkway becomes direly unsafe…the District 4 Engineer's choices are to refurbish the walkway or to block the walkway from further traffic. He doesn't have the funding to do our bridge walkways. All the pedestrians will then have to walk the bridge deck roadway. Two opposing cars at the same time got barely enough room to pass each other…certainly there in insufficient room for two big trucks. Can you image the hue and cry to the District 4 Engineer and Concord if they make pedestrians walk on the functionally obsolete bridge road bed without any safety breakdown lane?

Believe me; the daily peak traffic doesn't have enough room to get the cars by without a lot of time delay, with the sharp 90 degree turn and massive public speeding.

I know the solution considering the realities in Concord, NH and keeping my job…only one lane of traffic going across the one bridge at one time. Here comes the New Hampshire Advantage? It will reduce the traffic stress of the bridge to extend the bridge life and allow pedestrians to passage the bridge without a separated walkway. Everyone will be safe. But traffic will be backed up all the way to Putney and Winchester?

Many people and my own family have come up to me to explain how impacted and inconvenienced they will be. Mike, if the bridge closes, you are going to eat up between two to three hours a day with a round trip. We are talking about 30 miles and verging on $10 bucks a day. This is going to severely impact thousands of innocent people. Mike, you know your town is poverty stricken and most of our community is struggling with inadequate income and time. This is going to hurt the poor way more than anyone else…don't even talk about gasoline prices. Mike, you are stealing money right out of their purses and pockets.

So you got conflicting human needs and budgets, priories and limitations... budgets, priorities and limitations are always extraordinarily immoral. The limitations always get concentrated in the poorest and weakest segments of our society. The state of New Hampshire with this NH Advantage has become a monster to our weakest and poorest. It is tax breaks for the big boys and suffering and insecurity for the bottom half…

The bridge inspection group leader right in front of me turned a blind eye to the deterioration of safety with the walkway…he knew injuries and possible deaths was right around the corner. The enormous consequences without adequate budgets for valuing human life was too severe for the NHDOT and the Districts 4 Engineer…the known severely degraded walkway wooden planks and the iron works that holds up the walkway. The easy default that just defers pain and suffering…compared to shutting downing down the bridge, walkway or gaining more funding for the NH transportation system…was to knowingly turn a blind eye to the rotting walkway and to falsify NH and federal documents.

As Ralph Nader once chewed us all out…he said it was always about the least worst choice. It always about the least worst choice. It is never about our highest or best choice. It is never about us all being honorable men and women. The miserable and rotten system makes our lives all about least worst choices. Our children live whole least worst lives. Did god make a least worst Universe?

You know when an organization is near brain dead…where they don't appreciate paper work and the bureaucracy. Were everyone in trained that documented observations and concerns are extraordinarily important attributes for a learning organization. You make it easily document their concerns in public form and you make is the issues non erasable and searchable. You hold yourself accountable to the voter, public, and everyone.

If you ignore something or miss it then a person can come back through the recorded document. I warned them. Here, this is from their system…see, they got a pattern going on here. I am telling you this is powerful stuff and it leverages experiences in the learning organization.

Then you got the constant do nothing complainers. You say stop that chatter, do something about it. Make a complaint and stick with to the end. The rumor is these guys are serious with complaints and you can change things. Right, you are talking about public participation and the little guy gaining faith in government. But I am crazy guy at the foot of the bridge wearing a halo and putting a cut blue sheet over my shoulders…

It is easily apparent to me the NHDOT increasingly is losing the organizational ability to discriminate between little human safety risk or community well-being risk and enormous risk of injury, death and widespread wellbeing risk to a community. They increasingly can't separate the background noise from an important signals or message. The NHDOT is facing deepening troubles with NHDOT budgets and ever increasing to-do-list of degraded roads, bridge and infrastructure. A human's brain or organization ability to discriminate big problems from little problems is a wonderful gift…when a brain is forced to discriminate too much it becomes exhausted or we call it we "become numbed". Becoming numb in high consequence organizations, as is in prolong driving a car in heavy metropolitan congestion and traffic becomes extraordinarily dangerous when you become numbed…is very dangerous. It is much like if an organization dances around or jumps over the fire too much…you become numb to the dangers of the fire.

I am warning you, New Hampshire is a runaway monster without a conscience…or they have become severely numbed by an increasing assortment of problems, financial problems and pressures. They can't tell right from wrong, background noise from critical warnings and information. NH is acting as a monster…we have become monsters because we have become so inattentive, exhausted and numbed because of insecurity, inadequate resources and increasing needs.

2) You got real issues with this 1921 (Brattleboro) bridge swinging, vibrating and swaying under light load and traffic conditions. It gets much worst increasingly with heavier traffic. Two or three cars and a pickup truck on the bridge gets that bridge vibrating uncomfortably. Heavy traffic, big trucks and especially semis creates stomach wrenching vibrations, creates resonant traffic vibrations. I am taking about swaying and up and down…plus the big vibrations. There got to be some engineering limits or standards to this dangerous motion. Something is really wrong with that bridge.

I consider this abnormal bridge movement a dire warning of imminent bridge collapsed and a direly weak or damaged bridge structure. I kid everyone; you have to take your motion sickness (Dramamine) meds if you don't want to throw up before you get 350 feet to the other side of the bridge.

I am just saying, you could have a lot of unseen damage and degradation to the bridge stiffening structural members, relatively small iron works…this could set up this tragic heavy unnatural vibration and swaying. It just could be a poor design for the conditions we place this 1921 bridge under with the heavier vehicles and never anticipated heavy traffic. Traffic levels drastically are on the way up too in the coming years…

They got small cell phone like instrumentation and powerful accelerometers. They could record the bridge vibration and send them the data intermittently through the cell phone system. They got decent accurate modern computer structural programs…they could give you a normal range of bridge vibrations. It would give you an early indication of developing bridge problems. Did I remind you this bridge is 93 years old?

> It is interesting thinking about the historic and future daily average traffic going across this bridge. As I say, New Hampshire is a monster without a conscience to think our "hanging by thread"severely degraded bridge can withstand the beating of 13,000 car and trucks per day for any length of time.
>
> Think about this increasingly severe degradation going on in an assortment of 1921 bridge components and 13,000 vehicles traveling across the bridge in 2015. They should put the NHDOT executives into the Brattleboro Retreat. You catch trend with the rate of change of vehicles a day going over this in a very short period? How much traffic will the farm tractor supply store and burgeoning fireworks industry bring us by 2020? My best estimate with the politics of New Hampshire is the new bridge won't be built for 50 years.
>
> The 1915 "Sewalls Falls Road Bridge" in Concord NH is another of the NHDOT's Frankenstein monsters with allowing huge chunks of the bridge to fall off and they say you are good to go till 2015 if you cross that bridge with your eyes closed. Hinsdale is heading directly to the Sewalls Falls Road Bridge with huge weight restriction and lane limitations.
>
> God help us all if the economy picks up?
>
> 2010: 7200 vehicles per day (vpd)
>
> 2012: 9700 vpd
>
> 2015: 13,000 vpd

This spring I asked my "corn cobbling" NHDOT Bridge lead inspector buddy if this bridge is swaying and vibrating dangerously? He said the new Navy Seabees Bridge does the same vibrating and swinging…all modern bridge does this to minimize stresses. It sounded good from a NHDOT bridge inspection leader, right. I wonder how much bridge inspection training they really get and their educations levels. These guys probable get a three week quickie course and

a few days of training every ten years. The first thing NH cuts has always been training and education.

The next thing I know I was then standing for 2 hours in the middle of the New Route 9 Connecticut River Seabees Bridge four miles upstream from Hinsdale in heavy traffic. It is really a beautiful and sturdy bridge. The bridge doesn't have any walkway, the old bridge is the walkway…so I was standing on the unprotected spacey and gorgeous breakdown safety lane. I mean, what was I going to tell the cops if they came? I was trying to get a feel for the bridge vibration? They would have been taking me to Retreat. It was solid and vibration free. It was if I standing on a granite outcrop on the nearby Wantastiquet Mountain. I think all these NHDOT employees are habituated into lying and telling half-truths to the stupid mushroom public. Or just not talking when they know something…

3) What is up with that huge anchor bolt not being attached to the concrete footing on the Brattleboro Bridge's southern corner side? Why is the really thick iron plate bent that attaches the nut to the dangling anchor bolt? Why is the thick iron plate below the bent iron plate mostly destroyed by corrosion and it is 80% delaminated? The concern I have with seeing this picture with the original 1921 concrete, is massive degradation of the bridge west concrete footing. The big semis would be beating the hell out of this concrete. As with the massive unseen corrosion destruction of the iron plates seen in my picture that is deep within the belly of this beast, how assured can we be that the other iron structural components on or near the footing or foundation are not destroyed.

> *"WSDOT Bridge Design Manual"*
>
> Obviously, bridges cannot be built incrementally longer without eventually requiring expansion joint devices. The incidence of approach pavement distress problems increases markedly with increased movement that must be accommodated by the end diaphragm pressing against the backfill. Approach pavement distress includes pavement and backfill settlement and broken approach slab anchors.
>
> …If some means was not used to accommodate this, the bridge could buckle.

4) The Brattleboro Bridge has no expansion joint. Our bridge can expand and contract to the tune of 2 to 6 inches between the extremes of the outside seasonal temperatures. Both sides of these bridges are hard attached by multiple large anchor bolts to the crumbling 1921 concrete footing or foundation. The bridge has an expansion joint on the west side…it is non-functional…the deck is hard attached to the footing on both side. Why isn't a lack of a functioning bridge expansion joint leading to serious bridge degradation and an eventual bride collapse? I think this is a critical bridge design error and it is amazing that massive bridge damage hasn't shown up yet…

> NTSB 2007 Investigation into the Minneapolis I35 Bridge Collapse

"Expansion joint**:** A meeting point between two parts of a structure that is designed to allow for independent movement of the parts due to thermal expansion while protecting the parts from damage. Expansion joints are commonly visible on a bridge deck as a hinged or movable connection perpendicular to the roadway"

5) The bridge rollers are frozen in place and a roller (rocker bearing) is displaced at an angle indicating severe bridge movement. I got a feeling during prior bridge renovations and refurbishment the NHDOT intentionally bypassed the bridge rollers by hard connecting the bridge deck to the footing or foundation though huge anchor bolting?

NTSB 2007 Investigation into the Minneapolis I35 Bridge Collapse

"Rocker bearing: A bridge support bearing that accommodates thermal expansion and contraction of the superstructure through a rocking action."

This should be damaging the bridge and leading to a bridge collapse as read in all the bridge engineering and maintenance procedures. It leads to much more expensive maintenance on a bridge on a not maintained bridge. It should be noticed the traffic entrance at both ends of the bridge comes on the bridge at an angle or not good geometry…not a straight shot across the bridge including their entrances. It is a lot to torque (centrifugal) and stress for a bridge with a car or heavy truck turning on the bridge at high speeds. This creates all sorts unnatural bridge stress with the modern vehicle weights and unimagined traffic at bridge design time that was never considered in the initial bridge analysis. See pictures in my blog.

6) On the west side of the Brattleboro Bridge the huge upper truss (2) iron beams (holds up the deck) are connected to the concrete by a huge metal bracket (4). A huge metal nut and bolt, along with metal plates, holds the critical truss to the concrete abutment or footing. There is massive and severe corrosion going on in all these components. The concrete footing is severely cracked and spalled allowing road water to intrude deeply into the degraded abutment or/and footing. I estimate the safety critical truss, bolting and brackets are more than 70% destroyed. Stomach wrenching and throwing up disgusting pictures of these components are on my blog. The pictures from my camera don't near capture how bad this area is and can't give you a good impression of the depth of wastage.

7) The whole Brattleboro Bridge East entrance is subsiding and shifting. This includes the bridge abutment, footing, foundation, masonry materials, the large granite blocks are displaced, piers and the whole east end of the bridge. In the right weather conditions, saturated soil the heavy truck vibrations could get massive shifting or a landside of the entrance under soil ending with the huge bridge and its passengers calving into the river. That includes both sided of the bridge detaching from the foundations with its weak attachments and the bridge tipping over in the river. We have no idea what is under the bridge foundation…it is probably river sand, composting sentiment and compacting mud. In 1921 you can't count on it being rock ledge or granite bed rock. Remember "Island Park" is nothing but a Connecticut River sand bar.

8) Let's play the "value of human" life hide and seek game? State NHDOT peek-a-boo. This should take the breath away from any bridge civil engineer of any standing what-so-ever.

NTSB 2007 Investigation into the Minneapolis I35 Bridge Collapse

Distortion of Gusset Plates: The Safety Board concludes that distortion such as bowing is a sign of an out-of-design condition that should be identified and subjected to further engineering analysis to ensure that the appropriate level of safety is maintained.

Can you find the bent and detaching bridge gusset on the Brattleboro Bridge? Bent and damage bridge gussets are a severe indication of imminent bridge failure or collapse. You blind and stupid civil engineers' need a clue and a real life, it is on the east side of the Brattleboro Route 119 Bridge with the subsiding bridge entrance and its foundation, and the severe corrosion to the upper truss connection, to the bridge crumbling foundation.

Environmental Assessment

BRATTLEBORO, VT – HINSDALE, NH TRANSPORTATION CORRIDOR BRF 2000(19)SC *June, 2013*

'The existing substructures are a mix of concrete and masonry materials. Vertical and horizontal clearances are inadequate by current AASHTO design standards. In 1988 structural elements were replaced. In 1993 a sidewalk was installed on the north side of both bridges. In 2003 precast concrete deck panels were installed on both bridges. Despite ongoing maintenance efforts, both bridges are considered seriously deteriorated due to river scouring at the foundations, concrete spalling in the abutments and piers, and corrosion to the structural steel framing."

9) Towards the west end of the Brattleboro Bridge a vertical member, maybe a diagonal member near the road bed is severely bent and displaced. I suspect it occurred on contact with a snow plow or it comes from a vehicle accident when this member wasn't protected by, maybe the 1988 installed guard rail job.

NTSB 2007 Investigation into the Minneapolis I35 Bridge Collapse

"Corrosion on Gusset Plates: The I-35W bridge was only one of a number of steel truss bridges that were found to have gusset plate corrosion and section loss that had been overlooked or underestimated by State bridge inspectors. In 1996, gusset plates on the eastbound Lake County Grand River bridge in Ohio failed while the bridge was undergoing maintenance. The failure was attributed to corrosion and section loss, which had completely penetrated the gusset plates at some locations. The amount of section loss had been masked by corrosion products to the extent that it could not be adequately assessed solely through visual bridge inspections."

The below road grade gusset to which the vertical member is attached is severely corroded and the rust is black and delaminating. It's got two huge rust bubbles on this gusset protruding out maybe a quarter inch on each side and thick delaminated rust layers can clearly be seen. The gusset is below road level and it is exposed to a lot of salt in the winter. I suspect the significant vehicle contact bent the lower gusset in two places…this is where the cancerous rust is growing. For all the below road grade gussets I intensely inspected, this gusset is by far the worst…this is ””way”” worse than any of the others.

> NTSB 2007 Investigation into the Minneapolis I35 Bridge Collapse
>
> Finding #21
>
> "The Safety Board therefore concludes that because visual bridge inspections alone, regardless of their frequency, are inadequate to always detect corrosion on gusset plates or to accurately assess the extent or progression of that corrosion, inspectors should employ appropriate nondestructive evaluation technologies when evaluating gusset plates."

I believe bending this gusset in a vehicle collision intensified the corrosion process and poor inspection allowed this condition to fester. This corrosion is so thick there just in no way to access the metal integrity underneath it. The thickness of the metal plate could be severely degraded and we have no idea if there are cracks developing in the gusset underneath the member damage and severely delaminating rust. This half inch gusset looks like it is an "inch" thick looking at it from the side.

> NTSB 2007 Investigation into the Minneapolis I35 Bridge Collapse
> Probable Cause
>
> The National Transportation Safety Board determines that the probable cause of the collapse of the I-35W bridge in Minneapolis, Minnesota, was the inadequate load capacity, due to a design error by Sverdrup & Parcel and Associates, Inc., of the gusset plates at the U10 nodes, which failed under a combination of (1) substantial increases in the weight of the bridge, which resulted from previous bridge modifications, and (2) the traffic and concentrated construction loads on the bridge on the day of the collapse. Contributing to the design error was the failure of Sverdrup & Parcel's quality control procedures to ensure that the appropriate main truss gusset plate calculations were performed for the I-35W bridge and the inadequate design review by Federal and State transportation officials.
>
> >>>Contributing to the accident was the generally accepted practice among Federal and State transportation officials of giving inadequate attention to gusset plates during inspections for conditions of distortion, such as bowing, and of excluding gusset plates in load rating analyses.<<<

It doesn't look like the NHDOT did their mandatory gusset inspection of every similar style bridge coming out of the 2007 NTSB Minneapolis I 35 bridge collapse investigation…

NTSB 2007 Investigation into the Minneapolis I35 Bridge Collapse

Gusset plate: A metal plate used to unite multiple structural members of a truss.

I believe the 'Environmental Assessment BRATTLEBORO, VT – HINSDALE, NH TRANSPORTATION CORRIDOR BRF 2000(19)SC " is severely incomplete and has a serious lack of granularity. The Environment Assessment report wasn't observant enough with truck and car bridge interactions. They are keying off the NHDOT who have falsified their reports and they haven't done independent evaluations of the structural condition of both bridges.

I will submit to you, there is way more tractor trailers and giant logging tractor trailers trucks than cement trucks.

This is how it should have been stated the truck and car interaction. The local population who crosses these bridges know what I am saying is accurate. Typically only one large semi and no cars can passage critical choke points at the same times. If the assessment is so incomplete with traffic interactions, why isn't other assessment and analysis incomplete?

Typically on both entrances of the Brattleboro Bridge, the vast majority of the semis stop before he enters the bridge. He is waiting for all the traffic to clear before he jumps onto the bridge. He is also waiting for a polite vehicle on the other side of the bridge to stop before enters the bridge. At multiple points, his cab has to jump into the opposing traffic lane so he can get his big butt "way back there" to make it around the protruding corner of the bridge. It take him many feet to get his big rig straighten out on the bridge. A lot of these semis once on the bridge ride in the middle of bridge straddling both lanes. He doesn't want anyone on the bridge with him. Then he has to put his cab in the opposing traffic lane so his butt "way back there" will be able to make it around the corner. The sides of the bridge have drastically inadequate height…he could damage the trailer and bridge because the trailer is too high if he drive too close to the outside of the road. He drives in both lanes of traffic so his trailer won't be damaged. So that is another reason these semis take up the two lanes of this two lane bridge. They even do that on the Hinsdale Bridge even with no sharp corners and a straight approach in both directions. Even small trucks and the semis know the small truck can't be on the bridge with the semi.

You can see the guard railing damage on both sides of the bridge when a semi driver misjudges this maneuver…it happens a lot.

I am saying this report severely minimizes the truck traffic and car problems with their passage through the critical choke points on the Hinsdale Route 119 bridges. They just weren't very observant with their reporting. They are severely downplaying the condition of the bridge.

Environmental Assessment

"Simultaneous passage of <u>two large trucks</u> at this curve, and on the bridges, is difficult."

We are in a Town and locale emergency…it is a huge emergency. This report doesn't state that clearly. We could lose the bridge at any moment…get draconian vehicle restrictions in the next second…lose lives in a bridge collapse. These could hurt tens of thousands of people and many businesses. We are in a state NHDOT hurricane Katrina or Superstorm Sandy emergency…our New Hampshire state government has caught on fire and nobody has called 911 and the fire department yet.

I am available to give tours explaining my pictures…especially for executives and engineers with the NHDOT, any government officials and the media. I will teach you a lot. You should bring Dramamine and wear old jeans. Some areas would need you to be a little gutsy and you shouldn't be too afraid of heights. Just give me a call or throw me email.

Mike Mulligan, Hinsdale, NH

1-603-336-8320

steamshovel2002@yahoo.com

I was the instigator of one of the largest fraud criminal cases in the State of New Hampshire ($500 million -$600 million dollars and many people going to jail).

God only gives me the impossible cases….the problems everyone has given up on. They bring me into a problem when all hope is lost. I take the cases nobody else will touch. I am the prince of the improbable and the impossibility.

Sincerely,

Mike Mulligan
PO 161
Hinsdale, NH

Thurs 8/1/13

To whom it may concern:

We are in favor of any new bridge to replace Route 119 bridges between Hinsdale and Brattleboro.

The current ones are really so bad that we won't wait on either bridge if traffic is held up! You can feel the bridges shake from the weight!

If something happens to one or other bridge not only would lives be lost but it would be an economic disaster to Hinsdale businesses and the community

Traffic would have to be routed over R 63 N, which is in bad condition or R 63 S thru Northfield, Ma. Either route could not handle all that traffic.

Sincerely

Joe and Ellen Foy
456 Brattleboro Rd
Hinsdale NH 03451

Laura Wheelock

From: Jacqueline Dagesse <jdagesse@eivtech.com>
Sent: Wednesday, August 21, 2013 12:28 PM
To: Laura Wheelock
Subject: Fwd: Hinsdale bridges comment

---------- Forwarded message ----------
From: <fabouch@comcast.net>
Date: Thu, Aug 1, 2013 at 6:26 AM
Subject: Hinsdale bridges
To: jdagesse@eivtech.com

From Frances K. Boucher:

I have been a resident of Hinsdale for 38 years. We have navigated the bridges for all of that time and for 12 of those years it was on a daily basis for me as I traveled to my teaching position at Bellows Falls Union High School. Both bridges become instant one-way bridges if there are any large trucks that need to get through. I have noticed that the local bus to Hinsdale only uses them as a one-way approach. I have not read the hard copy report yet, but since I will not be available for Thursday's meeting I wanted to at least express my opinion on the design of the bridges. There is a tremendous amount of history behind the bridges, esp. the Anna Hunt Marsh bridge. I feel the design of the bridge should coordinate with the Brattleboro downtown efforts to preserve a more colonial effect that would be both complementary and inviting to Brattleboro and Hinsdale. The lighting should be similar to a lamppost or lantern that reflects the historical nature of the area. If there are plaques now on the present bridges consider preserving them as historical artifacts. The bridges are not far from the Col. Ebenezer Hinsdale Homestead located on Rte. 119 that has just been listed on the NH State Registry; which includes the Anna Hunt Marsh Annex. It is important to consider the historical area references as well as cost.

Frances K. Boucher

Town of Hinsdale

HINSDALE, NEW HAMPSHIRE
03451

OFFICE OF SELECTMEN

August 12, 2013

Jacqueline Dagesse
EIV Technical Services
55 Leroy Road Ste 15
Williston, VT 05495

Re: Comments for Inclusion in the Draft Environmental Assessment for the Brattleboro, VT – Hinsdale, NH Bridge Replacement Project

The Town of Hinsdale, New Hampshire Board of Selectmen strongly supports Preferred Alternative F (Blue Seal) as described in the Draft Environmental Assessment presented and discussed at the Public Meeting held at Brattleboro Union High School August 1, 2013.

Alternative F best meets the purposes originally stated by the Brattleboro-Hinsdale Bridge Committee and repeated in this Environmental Assessment: *To provide a safe, functionally efficient and cost effective Route 119 transportation corridor across the Connecticut River connecting Hinsdale, NH and downtown Brattleboro, VT, and to preserve the socio-economics and environmental resources associated with the transportation corridor.*

Alternative F meets the needs of both Brattleboro and Hinsdale, which have many strong community ties and stakeholders reliant on the improved and continued access this would provide, among them: the hospital, mutual aid, emergency response, ambulance service and medical providers who all contribute to community health and safety; and the shared common labor market of employers and employees who bolster the economy in retail and manufacturing businesses that order in supplies and products then made available to the traveling public.

Alternative F maintains a primary transportation link while eliminating the existing safety, structural, and functional bridge deficiencies. It includes rehabilitation of the existing Anna Hunt Marsh and Charles Dana bridges to provide for pedestrian and bicycle usage by members of both communities, and makes possible a vision of future community use for the island, as well. It promotes area social and economic relationships. It preserves natural and cultural resources.

Beginning in 1998, this Board has written three previous letters of support for Alternative F and has met many times over the years with various Vermont and New Hampshire state and county agencies, senators, representatives, councilors, and committees, all of which have spent

countless hours researching and working to build a quantitative and narrative case in support of the bridge project. We look forward to the completion of this Environmental Assessment and the opportunity to move forward on the bridge project.

Sincerely,

The Town of Hinsdale
By Its Selectmen

Mike Darcy, Chairman

Jay Ebbighausen, Selectman

Wayne Gallagher, Selectman

Joan Morel, Selectman

Bernie Rideout, Selectman

Laura Wheelock

From: Jacqueline Dagesse <jdagesse@eivtech.com>
Sent: Wednesday, August 21, 2013 12:42 PM
To: Laura Wheelock
Subject: Fwd: Environmental Assessment, Brattleboro VT - Hinsdale NH Transportation Corridor BRF (19) SC

From: "Robert Harcke" <rharcke@cibranco.com>
Date: August 13, 2013, 2:52:32 PM EDT
To: <moleary@eivtech.com>
Subject: Environmental Assessment, Brattleboro VT - Hinsdale NH Transportation Corridor BRF (19) SC

Dear Ms. O'Leary,

I am President of the Hinsdale Commercial and Industrial Development Corporation (HCIDC) and attended your recent presentation of the environmental assessment for the Brattleboro – Hinsdale Bridge. Our organization extends our thanks to you for a thorough job completed and your excellent presentation August 1. We wish to extend our enthusiastic support for alternative F and hope that the completion of your study will accelerate the desperately needed completion of this project.

As an organization responsible for promoting economic development in Hinsdale our greatest single concern is the link between Hinsdale and Brattleboro. Hinsdale actively seeks business development and, as a suburb of Brattleboro, depends heavily on services provided by Brattleboro businesses and the access to I-91. Brattleboro and Hinsdale residents in substantial numbers rely on this link to get to their jobs in the respective towns. The potential red listing of these bridges would have a definitive adverse effect on Brattleboro's economy and would be devastating to Hinsdale. We have over 400 acres of land zoned for and awaiting industrial and commercial development that would be a tremendous jobs stimulus for our area and generate future revenue in the form of tax dollars to New Hampshire. A 90 year old set of dysfunctional bridges is too serious an obstacle to overcome and we hope that this can be remedied soon with our "alternative F" bridge.

Please contact me if our organization can be of assistance,

Sincerely,

Hinsdale Commercial and Industrial Development Corporation

Robert S. Harcke, President

603-381-4100

rharcke@cibranco.com

Response to Received Comments

Public Meeting 8/1/2013
EAH-1 Page 21 Line 4 Response: The proposed bridge will replace the existing structures under the preferred alternative.

EAH-2 Page 27 Line 18 Response: The preferred alternative will provide for grade separation of the roadway and railway.

EAH-3 Page 30 Line 10 Response: The proposed bridge will replace the existing structures under the preferred alternative.

EAH-4 Page 33 Line 22 Response: The formal names for the Western Bridge (Anna Hunt Marsh Bridge) and Eastern Bridge (Charles Dana Bridge) have been added into the narrative regarding the existing structures in Chapter B.

EAH-5 Page 34 Line 2 Response: In the preferred alternative the two existing bridges are scheduled to be rehabilitated to become pedestrian and bicycle structures.

EAH-6 Page 37 Line 15 Response: The preferred alternative will address the deficiencies identified with the existing bridges. With the completion of the Environmental Assessment the project is poised to move forward to the next stage of design.

EAH-7 Page 38 Line 22 Response: The preferred alternative will address the deficiencies identified with the existing bridge, the railroad, and emergency service responses between Brattleboro and Hinsdale. With the completion of the Environmental Assessment the project is poised to move forward to the next stage of design

EAH-8 Page 42 Line 20 Response: The grade separation of the roadway and railway under the preferred alternative will use current design standards, including sufficient vertical clearance to provide double stacking of rail cars.

Written Comments
July 25, 2013 Email from Mike Mulligan: Under the preferred alternative the existing structures will be rehabilitated and a new structure will be constructed off alignment thereby addressing your concerns.

August 1, 2013 Letter from Joe and Ellen Roy: The preferred alternative includes replacement of the existing deficient bridges.

August 1, 2013 Email from Frances K. Boucher: The deficiency you noted is included in the environmental assessment and identified in the purpose and need for this project. Under the preferred alternative the existing structures will remain in place; they will be rehabilitated and used as bicycle and pedestrian bridges. At this stage of the project the design of the proposed structure has not been conceptualized, there will be separate public meetings to receive input on the new structure.

August 12, 2013 Letter from the Town of Hinsdale Board of Selectmen: The support from the Town of Hinsdale for the preferred alternative is understood and how it will meet the needs of the entire community.

August 13, 2013 Letter from Robert S. Harcke of the Hinsdale Commercial and Industrial Development Corporation: The support from the Hinsdale Commercial and Industrial Development Corporation for the preferred alternative is understood and how it will meet the needs of the entire community and the Industrial Development Corporation.

Appendix F

APPENDIX F - Non-Preferred Alternatives – Impacts

Table of Contents

Page

Table of Contents

Page

Figures

Page

Tables

Page

APPENDIX F

NON-PREFERRED PROJECT ALTERNATIVES – IMPACTS

1) NON-PREFERRED PROJECT ALTERNATIVES

This appendix identifies and evaluates resource impacts for the project alternatives that were not identified as the project's preferred alternative.

Alternative F (Blue Seal) is the project's preferred alternative. Alternative F provides for a new alignment that will consist of a single bridge that touches down on the Vermont side of the Connecticut River approximately 1,000 feet south of the existing Route 119 touchdown area. The existing Route 119 bridges would be rehabilitated and maintained for pedestrian/bicyclist usage. Alternative F's effect on area resources is fully described and evaluated in the main text of the Environmental Assessment (EA), (see Chapter D).

The transportation corridor alternatives not identified as the project's preferred alternative are:

- **No-Action Alternative** – This alternative would provide for the continued maintenance of the existing bridges.

- **Alternative A** (Rehabilitation) – This alternative would consist of rehabilitation of the existing Route 119 corridor crossing.

- **Alternative B** (Replace on Existing) – This alternative would consist of replacement of the existing Route 119 corridor, to be located on the existing alignment.

- **Alternative C** (Alignment Improvement) – This alternative would consist of replacement of the existing Route 119 corridor with minor modifications to the existing highway geometrics, to be located in the same approximate area as the existing alignment.

- **Alternative D** (Grade-Separated) – This alternative would consist of replacement of the existing Route 119 corridor, to be located on the existing alignment, but with a grade-separated railroad crossing in Vermont.

- **Alternative E** (Parallel Structure) – This alternative would consist of construction of a parallel set of bridges immediately to the south of the existing bridges. The existing bridges could either be rehabilitated and maintained for pedestrian/bicycle usage, or be demolished.

- **Alternative E-Modified** (Parallel Tangent Structure) – This alternative would consist of construction of a parallel set of tangent type bridges immediately to the south of the existing bridges. The existing bridges could either be rehabilitated and maintained for pedestrian/bicycle usage, or be demolished.

- **Alternative G** (Georgia Pacific) – The alternative would consist of construction of a new alignment that touches down on the Vermont side approximately 1 mile south of the existing Route 119 touchdown area. The existing bridges could either be rehabilitated and maintained for pedestrian/bicyclist usage, or be demolished.

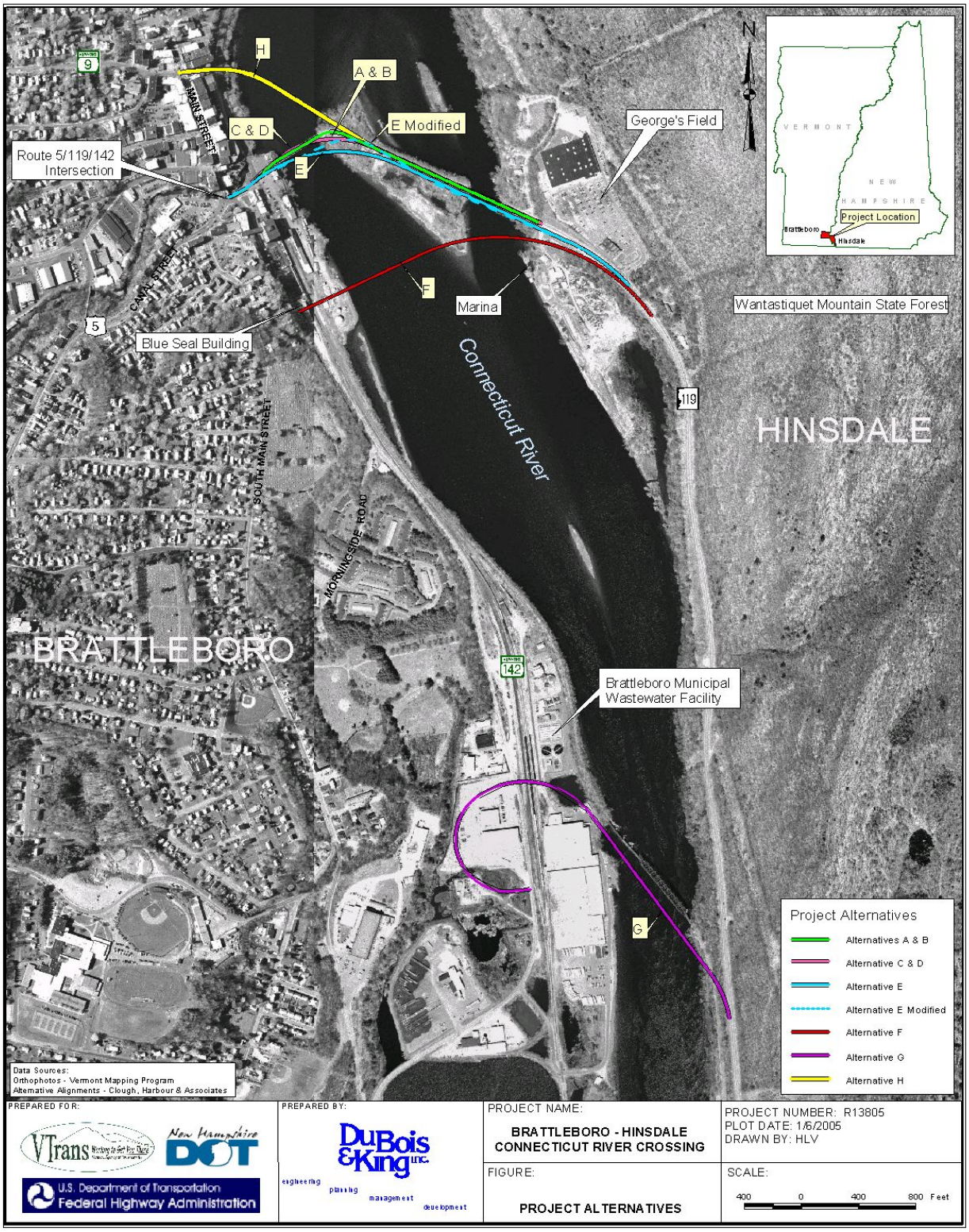
- **Alternative H** (Route 9/Main Street) – This alternative would consist of construction on a new alignment for the westerly bridge, which would touch down on the Vermont side to intersect with Route 9, approximately 1,000 feet north of the existing Route 119 Vermont touchdown area. The existing easterly bridge would be replaced on alignment. The westerly bridge could either be rehabilitated and maintained for pedestrian/bicyclist usage, or be demolished.

The New Hampshire touchdown areas, for Alternatives A (Rehabilitation), B (Replace on Existing), C (Alignment Improvement), D (Grade-Separated), E (Parallel Structure), E-Modified (Parallel Tangent Structure) and H (Route 9/Main Street) would be located at approximately the same location as the existing NH Route 119 touchdown area. Alternative G (Georgia Pacific) would touch down in New Hampshire just south of an abandoned railroad bridge in an undeveloped area, prior to linking with NH Route 119.

The Vermont touchdown locations for Alternatives A, B, C, D, E, and E-Modified would be located at the same approximate location as the existing VT Route 119 touchdown area. Alternative G would touch down in Vermont in an industrial area approximately 1 mile south of downtown Brattleboro. The Vermont touchdown area for Alternative H would be at the intersection of Route 9 and Main Street, located in the commercial/retail center of downtown Brattleboro.

Additionally, a Transportation Systems Management (TSM) alternative consisting of traffic flow and control devices, lane modifications, and intersection improvements was initially considered. While the TSM alternative could have assisted in enhancing Route 119 traffic flows, this alternative would not have addressed the structural, functional, and safety concerns associated with the existing Route 119 corridor. As such, the TSM alternative was not identified for further project consideration.

Figure F-1 – Project Alternatives



2) RESOURCE IMPACTS – NON-PREFERRED PROJECT ALTERNATIVES

Each non-preferred project alternative has been evaluated to identify potential impacts to existing area resources. Area resources and project impacts that have been identified and evaluated in the Environmental Assessment (EA) (see Chapter D), will be referenced and summarized where possible in this appendix.

A) Land Use / Induced Growth

1) Land Use

The western-side of the project corridor along the Connecticut River is located within the Town of Brattleboro, Vermont. The northern part of this western side corridor evidences commercial and residential development. The center portion of the western-side corridor includes downtown Brattleboro, an urbanized area. The southern section is characterized by large commercial/industrial type facilities with adjacent undeveloped areas.

The eastern side of the project corridor is located within the Town of Hinsdale, New Hampshire, except for the northeastern portion of the eastern-side corridor, which is located in Chesterfield, New Hampshire. The northeastern section of this corridor is dominated by the Wantastiquet Mountain State Forest, an undeveloped natural area characterized by steep topography and forested areas. Near the New Hampshire Route 119 crossing of the Connecticut River several commercial and retail facilities exist. The southern area of this corridor, on the New Hampshire side, is largely undeveloped with some limited commercial and residential development.

Land use impacts, associated with each of the non-preferred alternatives, are identified as follows:

- No-Action Alternative – None; this alternative would not change existing land uses.

- Alternatives A (Rehabilitation), B (Replace on Existing), C (Alignment Improvement), E (Parallel Structure), and E-Modified (Parallel Tangent Structure) – Minimal; these alternatives would touch down in both Vermont and New Hampshire in the same approximate location as the current Route 119 touchdown areas. Only minimal changes to existing area land uses are anticipated with these alternatives.

- Alternative D (Grade-Separated) – Substantial; this alternative, in Vermont, would touch down at the existing Route 5/119/142 intersection. The required changes in elevation for this reconstructed intersection, and adjacent streets, would substantially impact the commercial/retail land uses that exist in the area.

- Alternative G (Georgia Pacific) – Minimal; this alternative, in New Hampshire, would be located in an undeveloped area just south of an abandoned railroad bridge.

This area is characterized by steep topography adjacent to the river. No changes to existing land uses are anticipated in this area. In Vermont, Alternative G would touch down in an industrialized area. Existing area facilities include a trucking facility, lumberyard, and municipal wastewater treatment facility. Minimal changes in existing land uses are anticipated with this alternative.

- Alternative H (Route 9/Main Street) – Moderate; this alternative, in New Hampshire, would touch down at the location of the existing Route 119 touchdown area, with no change in existing land uses. In Vermont, Alternative H would touch down in an area that is the commercial/retail center of downtown Brattleboro. This touchdown location could result in increasing the amount of traffic in downtown Brattleboro, and effect existing area land uses. Moderate changes to existing land uses are anticipated with this alternative.

2) Induced Growth

Indirect impacts are those that are caused by an action and are delayed in time, but are still reasonably foreseeable. Cumulative impacts are those that result from the incremental consequences of an action when added to past actions and reasonably foreseeable future actions.

A change in accessibility to an area, resulting from a change in the area's transportation system, will effect the potential for growth in the area. While development is often the result of other (non-transportation) growth factors, changes in the transportation system can redirect the location of this growth.

The No-Action Alternative would not change the existing transportation corridor.

Alternatives A, B, C, D, E and E-Modified would be located in the same approximate location as the existing Route 119 corridor. Alternative G would be located approximately 1 mile to the south of the existing Vermont and New Hampshire bridge touchdown areas. For Alternative G, the Vermont touchdown area would be in an existing industrial area, the New Hampshire touchdown area would be in an underdeveloped area that is not favorable for development.

Alternative H would be located approximately 1,000 feet north of the existing Vermont touchdown area. For Alternative H, the Vermont touchdown area would be located in the commercial/retail center of downtown Brattleboro, the New Hampshire touchdown area would be located along the existing Route 119 corridor.

- Indirect Growth

The No-Action Alternative would result in only minimal additional indirect growth as the project corridor has been in existence over 100 years, and most indirect growth spawned by this transportation corridor has already occurred.

Alternatives A, B, C, D, E, E-Modified, G and H would replace the existing Route 119 crossing of the Connecticut River. However, these alternatives would not materially change the location of this transportation corridor, area travel patterns, or the amount of vehicular traffic in the Brattleboro/Hinsdale area. As such, any changes in area accessibility, due to construction of any of these non-preferred alternatives, would be minimal, and hence the potential for any of these alternatives to result in identifiable indirect growth in the Brattleboro/Hinsdale area is minimal.

- Cumulative Growth

Within the last 40 years the total amount and type of development within the project area (Brattleboro/Hinsdale) has not materially changed. Future growth in the project area is predicted to be consistent with past developmental patterns, which have resulted in only minimal changes in growth. The potential for any of the non-preferred alternatives to result in identifiable cumulative growth in the Brattleboro/Hinsdale area is minimal.

Overall the project-related indirect/cumulative growth affects of the project's non-preferred alternatives on area resources are anticipated to be minimal.

B) Agricultural

Vermont, within the project transportation corridor, is characterized by industrial and commercial usages and is largely developed. New Hampshire, within the project transportation corridor, is characterized by the steep forested slopes of the Wantastiquet Mountain State Forest area, retail and commercial areas adjacent to Route 119, and undeveloped areas along the southern portion of the corridor. No agricultural lands, in either Vermont or New Hampshire, would be impacted by any of the non-preferred project alternatives.

C) Socio-Economic/Environmental Justice

3) Socio-Economic

The 1997 Windham Regional Plan designates Brattleboro as a regional growth center. As a regional growth center, Brattleboro serves as a focal point for area employment, social, and recreational activities.

The Brattleboro downtown business area is immediately west of the existing Route 119 crossing. This location is the center of the project area's social and economic activities, and is fully served by public utilities and transportation facilities. This area consists of mixed-use development, which includes residential, commercial, industrial, religious, and public uses. Currently, Route 119 traffic flows through a portion of this area.

Hinsdale, New Hampshire is located east of the Connecticut River. The village portion of Hinsdale is located approximately 5.9 miles east on Route 119 from the existing Route 119 river crossing. Route 119 provides Hinsdale residents access to Brattleboro for employment opportunities, social interaction, and medical/emergency services.

Socio-economic impacts, associated with each of the non-preferred alternatives, are identified as follows:

- No-Action Alternative – Substantial; continued deterioration of the existing Route 119 bridges will eventually result in their closure, which will have substantial adverse affects on existing area socio-economic relationships.

- Alternatives A (Rehabilitation), B (Replacement on Existing), C (Alignment Improvement), E (Parallel Structure), and E-Modified (Parallel Tangent Structure) – Limited; these alternatives would largely maintain the existing Route 119 transportation corridor. While a limited number of commercial acquisitions are associated with some of these alternatives, the existing socio-economic relationships would be maintained for the project area, as overall the established commercial and social centers in these areas would be only partially affected by the project. These alternatives would result in limited impacts to the area's existing socio-economic relationships.

- Alternative D (Grade-Separated) – Substantial; this alternative would result in the westerly terminus of the Route 119 bridge being located at the downtown Brattleboro's Route 5/119/142 intersection, and would require the reconstruction of this intersection along with Main Street, Vernon Street, Flat Street, and Arch Street in Brattleboro, resulting in 13 commercial acquisitions. These changes to downtown Brattleboro would result in substantial impacts to the area's existing socio-economic relationships.

- Alternative G (Georgia Pacific) – Substantial; this alternative would relocate Route 119 approximately 1 mile south of the existing Route 119 corridor. In Vermont, this would affect the socio-economic relationships that exist in the downtown Brattleboro area by directing personal and commercial transportation away from this downtown area. In New Hampshire, the George's Field commercial/retail area would be located at the dead-end of a side road to Route 119. This alternative would result in substantial impacts to the area's existing socio-economic relationships.

- Alternative H (Route 9/Main Street) – Substantial; this alternative would relocate the Vermont bridge touchdown area into the commercial/retail center of downtown Brattleboro, resulting in several commercial acquisitions. The relocation of Route 119 traffic through the social and economic center of Brattleboro, combined with the loss of some existing commercial enterprises, would substantially impact the area's existing socio-economic relationships.

2) Environmental Justice

- Introduction

  Executive Order (EO) 12898 was signed on February 11, 1994. EO 12898 states:

  To the greatest extent practicable and permitted by law, each Federal Agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportional effects of its programs, policies and activities on minority populations and low income populations in the United States…

- Area Minority/Low-Income Populations

  No identifiable minority/low-income populations, as defined by EO 12898, exist within the project area.

- EO 12898 Compliance

  Construction of any of the project alternatives will not impact any identifiable minority/low-income populations. Extensive project public participation opportunities have provided numerous opportunities for minority/low-income populations to become aware of the project, and to provide for public comment and input into the project. The project, to include all of the non-preferred alternatives, will not have any disproportionately high and adverse human or environmental effects on any minority/low-income populations.

D) Acquisitions

Potential acquisitions and relocations are identified on each alternative's design drawings (see Appendix A). The limits of construction are approximate, and the existing road right-of-way is assumed to be three rods (49½ feet).

Project-related acquisitions, associated with each of the non-preferred alternatives, are identified as follows:

- No-Action Alternative – None.

- Alternative A (Rehabilitation) - None.

- Alternatives B (Replace on Existing) and C (Alignment Improvement) - Two commercial structures in Vermont, the Riverside Diner and the former Synergy Gas building, would require acquisition for either of these alternatives. The total right-of-way required for Alternative B would be approximately 0.4 acres; for Alternative C, the total right-of-way required would be approximately 0.5 acres.

- Alternative D (Grade-Separated) - To achieve the necessary rail line overpass height for a Route 119 grade-separated rail crossing, the Route 5/119/142 intersection touchdown area would have to be raised approximately 8 ft. This would require the raising of the VT 142, Route 5 and Main Street approaches to this intersection, which would result in impacts to 13 commercial enterprises in downtown Brattleboro. The total right-of-way required for Alternative D would be approximately 2.05 acres. Additionally, several other businesses would be economically impacted as a result of the changes in street elevations, which would restrict access to these businesses.

  To reduce this impact, a 40 km/hour design speed for the Vermont approach was considered. Although, this did reduce the required elevation change of the Route 5/119/142 intersection, the resulting elevation change did not change the number of acquisitions required for this alternative.

- Alternatives E (Parallel Structure) and E-Modified (Parallel Tangent Structure) – A slight southerly alignment shift, associated with these two alternatives, from the existing Vermont touchdown location, would result in the acquisition of the Synergy gas building. Alternative E (Parallel Structure) requires the taking of approximately 1.5 acres. Alternative E-Modified (Parallel Tangent Structure) requires the taking of approximately 1.4 acres.

- Alternative G (Georgia Pacific) - To achieve a grade-separated crossing of the railroad, this alignment would cross over VT 142 and complete a 180-degree turn, while at the same time descending to the south to a touch down with VT 142. A design speed of 37 mph for the Vermont approach would result in the loss of three commercial structures, one of which is a power substation.

  Utilizing a 25 mph design speed for the Vermont approach reduces the curve radius such that acquisition of the substation and the other two commercial properties would not be required. However, a 25 mph design speed would locate the Vermont touchdown area near the Cersosimo Lumber Company, Inc., truck maintenance facility. A slight shifting of the curve alignment could allow the 37mph alignment to miss both the substation and the truck maintenance facility.
  Acquisition of property in the touchdown area, and the potential acquisition of easements for the alignment's overpass of the railroad and the Brattleboro municipal

wastewater treatment plant, would be necessary. The right-of-way required for this property would be approximately 4.2 acres.

- Alternative H (Route 9/Main Street) - The Vermont touchdown area, utilizing a 37mph Vermont approach design speed, is located near the center of the downtown Brattleboro commercial area. Lowering the design speed to 25 mph would not effect this alternative's acquisition requirements, as the alignment's approach would still need to rise to meet Main Street, not drop to the connecting roadway as with Alternatives' D (Grade-Separated), F (Blue Seal) and G (Georgia Pacific). The total right-of-way required for this alternative would be approximately 1 acre, with up to four commercial acquisitions.

E) Pedestrian/Bicycle

The existing Route 119 corridor provides pedestrian and bicycle access between the downtown Brattleboro, Vermont commercial district and the George's Field retail/commercial center located immediately north of Route 119 in New Hampshire. Additionally, the existing Route 119 bridges provide access to the mid-channel island for recreational activities. Numerous individuals, particularly individuals without access to private vehicular transportation, utilize the existing Route 119 pedestrian/bicycle passageway between downtown Brattleboro, Vermont, the mid-channel island, and the George's Field retail area in New Hampshire.

Movement of this transportation corridor away from its existing location would adversely effect the ability of pedestrian and bicyclists to access the mid-channel island and the New Hampshire retail area from downtown Brattleboro, Vermont.

Bicycle/pedestrian impacts, associated with each of the non-preferred alternatives, are identified as follows:

- No-Action Alternative – None.

- Alternatives A (Rehabilitation), B (Replace on Existing), C (Alignment Improvement), D (Grade-Separated), E (Parallel Structure), and E-Modified (Parallel Tangent Structure) – Minimal; slight changes in Route 119 touchdown locations and roadway alignments would result in only minimal impacts to pedestrian and bicycle usage.

- Alternative G (Georgia Pacific) – Minimal; this most southerly alternative is located approximately 1.5 kilometers south of the existing crossing. Rehabilitation of the existing Route 119 bridges would maintain pedestrian/bicycle access across the river in the project area.

- Alternative H (Route 9/Main Street) – Minimal; location of the Vermont touchdown area in downtown Brattleboro, would not adversely effect area pedestrian/bicycle facilities. Additionally, Alternative H would maintain both pedestrian and bicycle access across the mid-channel island.

F) Recreational/Section 4(f)

1) Recreational Facilities

The project corridor offers numerous recreational opportunities. The Connecticut River provides excellent fishing and boating opportunities. Fishing access is provided from the river's shoreline, with boat access to the river being available from the NH Fish and Game Department's public boat access site on the mid-channel island. The Wantastiquet Mountain State Forest in New Hampshire offers hiking, biking, and hunting opportunities.

The Town of Brattleboro has identified the construction of a waterfront park as a potential future recreational area. This proposed waterfront park would be located on the west bank of the Connecticut River, immediately south of the existing Route 119 touchdown area. The proposed waterfront facility would include: a terrace/overlook of the river, reconfigured parking, landscaping, and a boat mooring facility.

The only Land Water Conservation Fund (LWCF) 6(f) property located in the project corridor is in the southerly "backwater area" of the Connecticut River, and is on the Vermont side of the river. This five acre parcel is approximately 1.2 miles south of the Brattleboro downtown area, and is a peninsula type section of land located between the backwater area and the river.

The No-Action Alternative would have no impacts on any area recreational facilities. All other project alternatives would have only minimal impacts on area recreational facilities, generally associated with slight changes in accessibility, either temporary or permanent, to existing area recreational facilities.

2) Section 4(f) Properties

Potentially impacted Section 4(f) properties within the project area include:

- The Brattleboro Downtown Historic District
- The existing Route 119 Bridges
- Living Memorial Park (immediately south of, and adjacent to, the Route 5/119/142 intersection in Vermont)
- Wantastiquet Mountain State Forest (Multi-Use)

Use of Section 4(f) resources, associated with each of the non-preferred alternatives, are identified as follows:

- No-Action Alternative – None.

- Alternatives A (Rehabilitation), B (Replace on Existing), C (Alignment Improvement), E (Parallel Structure), and E-Modified (Parallel Tangent Structure) – Moderate; these alternatives would remove or rehabilitate the historic Route 119 bridges.

- Alternative D (Grade-Separated) – Substantial; this alternative would: remove the historic Route 119 bridges, use the Living Memorial Park (adjacent to the Route 5/119/142 intersection), and adversely effect the downtown Brattleboro Historic District.

- Alternative G (Georgia Pacific) – Moderate; recreational access to the mid-channel island would be restricted by this alternative to non-vehicular usage.

- Alternative H (Route 9/Main Street) – Substantial; this alternative would remove the Route 119 historic westerly bridge, and adversely effect the downtown Brattleboro Historic District, as a result of reconstructing the Route 9/Main Street intersection in downtown Brattleboro. Recreational access to the mid-channel island would be maintained by this alternative.

G) Air Quality

National Ambient Air Quality Standards (NAAQS) have been identified by USEPA to evaluate regional air quality. Standards have been set for six criteria pollutants. The project must be in conformity with the State Implementation Plans (SIP) for air quality in both Vermont and New Hampshire. Based on air quality monitoring data received from sites in the Brattleboro, Vermont area, the USEPA has designated this area of Vermont as "in attainment" for all transportation-related NAAQS pollutants. Coordination with the NHDES Air Resources Division, established that Cheshire County, New Hampshire, in which New Hampshire's portion of the project is located, is also "in attainment" status for all six NAAQS pollutants.

Carbon Monoxide (CO) testing is used in transportation studies to identify localized roadway air pollutant levels. As set forth in the EA (see Chapter D), a microscale CO analysis was conducted for the No-Action Alternative and Alternative F (Blue Seal).

As regards traffic volumes, flows, and location, the No-Action Alternative is similar, for air analyses, to Alternatives A (Rehabilitation), B (Replace on Existing), C (Alignment Improvement), D (Grade-Separated), E (Parallel Structure), and E-Modified (Parallel Tangent Structure). As such, the air analysis conducted for the No-Action Alternative is indicative of air quality affects associated with Alternatives A, B, C, D, E and E-Modified.

Alternative F is similar, as regards air analyses, to Alternatives G (Georgia Pacific) and H (Route 9/Main Street), as Alternative F traffic flows and volumes are similar to the traffic conditions that would exist with Alternatives G and H. As such, the air analysis conducted for Alternative F is indicative of air quality affects associated with Alternatives G and H.

As set forth in the EA, both existing and projected CO air quality, associated with the No-Action and Alternative F (Blue Seal) Alternatives, are within NAAQS criteria and meet State air quality standards.

Air quality impacts, associated with each of the non-preferred alternatives, are identified as follows:

- No-Action Alternative – Minimal; Existing traffic patterns would remain unchanged with this alternative. The Brattleboro area is classified as "in attainment" for NAAQS. Even with normal increases in traffic levels, the air quality within the project area would continue to be in compliance with the NAAQS.

- Alternatives A (Rehabilitation), B (Replace on Existing), C (Alignment Improvement), D (Grade-Separated), E (Parallel Structure), and E-Modified (Parallel Tangent Structure) – Minimal; project-related traffic flows, volumes, and locations are anticipated to experience only minimal changes, which would result in minimal changes to existing and projected area air quality. Air quality, associated with the construction of these alternatives, is anticipated to remain in compliance with all NAAQS.

- Alternatives G (Georgia Pacific) and H (Route 9/Main Street) – Minimal; these alternatives would result in air quality impacts that are similar to those air quality affects associated with Alternative F (Blue Seal). The Alternative F air quality analysis indicated compliance with all NAAQS. Alternatives' G and H affect on area air quality is anticipated to be minimal. Air quality is anticipated to remain in compliance with the NAAQS.

H) Noise

Most project-related noise, other than construction-generated noise, occurs as the results of additional traffic. Traffic noise is variable, and is affected by the number and type of vehicles, speed of the vehicles, type of highway surface, the distance the noise receptor is located from the vehicles, and climatic conditions.

FHWA Noise Abatement Criteria (NAC) levels, based on land use, are listed in the following table. This table lists the noise levels, for each land use category, at which consideration of noise abatement measures is appropriate. A noise impact occurs if the predicted noise level approaches or exceeds the NAC level.

Table F-1
Noise Abatement Criteria Table
Hourly A – Weighted Sound Level – Decibels (dBA)

Activity Category	$L_{eq}(h)$	Description of Activity Category
A	57 dBA (Exterior)	Tracts of land which serenity and quiet are of extraordinary significance and serve an important public need, and where preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 dBA (Exterior)	Residences, motels, hotels, schools, churches, public meeting rooms, libraries, hospitals, picnic areas, recreation areas, playgrounds, active sports areas and parks.
C	72 dBA (Exterior)	Developed lands, properties or activities not included in Categories A and B above.
D	---	For undeveloped lands.
E	52 dBA (Interior)	Residences, motels, hotels, schools, churches, public meeting rooms, libraries, hospitals and auditoriums.

As set forth in the EA (see Chapter D), a noise analysis was conducted for the No-Action Alternative and Alternative F (Blue Seal). As regards traffic volumes, flows, and location of noise receptors, the No-Action Alternative is similar, for noise analyses, to Alternatives A (Rehabilitation), B (Replace on Existing), C (Alignment Improvement), D (Grade-Separated), E (Parallel Structures), and E-Modified (Parallel Tangent Structure).

Alternative F is similar, as regards noise analyses, to Alternatives G (Georgia Pacific) and H (Route 9/Main Street), as Alternative F traffic flows and volumes would be similar to the traffic conditions that would exist with Alternatives G and H.

As regards noise receptor locations, Alternatives F and H have similar noise receptors in New Hampshire. There exist no adjacent residential or commercial noise receptors in New Hampshire associated with Alternative G. In Vermont, Alternative G touches down in an industrialized area. Alternative H, in Vermont, touches down in a developed commercial/retail area.

Limited noise level impacts are projected with both the No-Action Alternative and Alternative F (see EA, Chapter D).

Noise impacts, associated with each of the non-preferred alternatives, are identified as follows:

- No-Action Alternative – Limited; Existing noise level measurements were taken at various locations within the project area. Area traffic patterns would remain unchanged for the No-Action Alternative, and as such, project-related noise levels will be similar to the existing noise levels. Receptor site 4 currently experiences noise levels that exceed the FHWA NAC. This site would continue to experience noise levels that exceed the NAC with the No-Action Alternative.

- Alternatives A (Rehabilitation), B (Replace on Existing), and C (Alignment Improvement), – Limited; project-related traffic flows, volumes and noise receptor locations are similar to those associated with the No-Action Alternative. Limited increases in noise levels, at some existing area noise receptors, would occur. FHWA NAC noise levels could be approached, or slightly exceeded, at some area noise receptors.

- Alternative D (Grade-Separated) – Moderate; traffic flows and volumes are anticipated to be similar to those associated with the No-Action alternative. The Vermont touchdown area for Alternative D is the Route 5/119/142 intersection. Several noise receptors are located adjacent to this intersection. Potentially, moderate increases in noise levels, at some adjacent noise receptors, would occur. FHWA NAC noise levels would be approached and exceeded at some area noise receptors.

- Alternatives E (Parallel Structure) and E-Modified (Parallel Tangent Structure) – Limited; traffic patterns would remain relatively unchanged from existing travel patterns for these alternatives, and, as such, noise levels would be similar to existing traffic noise levels at most locations. However, these alternatives would shift the alignment closer to the marina on the eastern site of the Connecticut River. This would create the possibility of increased noise levels at this location. Noise receptor site 14 (see EA, Chapter D), located in the vicinity of the marina, currently experiences noise levels well below the NAC. The alignment shift introduced by these alternatives is not anticipated to result in area noise levels that exceed the NAC or result in a substantial increase in noise levels over existing levels. Receptor site 4 (see EA, Chapter D) currently experiences noise levels that exceed the FHWA NAC. This site would continue to experience noise levels that exceed the NAC with these alternatives.

- Alternative G (Georgia Pacific) – Limited; Alternative G would relocate the intersection of Route 119 and VT 142 to an industrial area. This alternative would

increase traffic volumes in the vicinity of this relocated Vermont intersection. The traffic noise levels in the vicinity of the new intersection could approach the noise levels predicted for the intersection of Route 119 and VT 142 associated with Alternative F, and could represent a traffic noise impact at receptors near the proposed intersection. Noise levels along VT 142 south of the existing Route 119 intersection would be similar to the noise levels predicted for Alternative F. Noise levels elsewhere in the project area would remain largely the same as those associated with the No-Action Alternative.

- Alternative H (Route 9/Main Street) – Moderate; project-related traffic flows and volumes are anticipated to be similar to those associated with Alternative F. The Vermont touchdown area for Alternative H is located in the center of the downtown Brattleboro commercial/retail area. Several noise receptors areas are located adjacent to this intersection. The introduction of the new bridge, along with a new eastern leg of the Route 9 and Main Street intersection, may result in traffic noise impacts at adjacent noise receptors. Moderate increases in noise levels at some of these noise receptors could occur. FHWA NAC noise levels will be approached and could be exceeded at some area noise receptors.

I) Water Quality

The Connecticut River is an important water resource for municipal drinking water, fisheries, recreation, and wildlife. Project water quality impacts will generally be associated with construction-related activities.

Water quality impacts, associated with each of the non-preferred alternatives, are identified are identified below. The following impact determinations first identify the potential for each alternative to impact water quality, and then identify the potential impact that construction of a temporary bridge would have on water quality.

- No-Action Alternative – None.

- Alternative A (Rehabilitation) - Minimal.

- Alternatives B (Replace on Existing), C (Alignment Improvement), and D (Grade-Separated) - Limited; construction of these alternatives would result in limited, but temporary, water quality impacts. Due to the necessity of maintaining access across the river during construction, a temporary bridge would be constructed just south of the existing westerly bridge. This temporary bridge would be within the area of identified coal tar deposits, and construction could cause the release of coal tar residues into the Connecticut River (Substantial).

- Alternatives E (Parallel Structure) and E-Modified (Parallel Tangent Structure) – ubstantial; these alternatives would be constructed within the area of the river

containing the identified coal tar deposits. Disturbance of these deposits during bridge construction could cause the release of coal tar residues into the Connecticut River.

- Alternatives G (Georgia Pacific) and H (Route 9/Main Street) – Limited; the placement of bridge piers within the river would result in some limited and temporary construction impacts to water quality. No impacts to the area's coal tar deposits are anticipated with these alternatives.

J) Wetlands

The Route 119 mid-channel island, except for the existing roadway, consists largely of wetlands. Each alternative's potential wetland impacts result largely from a shift in that alternative's roadway alignment on the mid-channel island. Some of these island wetland impacts could be mitigated for by returning that portion of the island, from which the alignment is shifted away from, back to wetlands.

Wetland impacts, associated with each of the non-preferred alternatives, are identified below. The following impact determinations first identify the potential for each alternative to impact area wetlands, and then identify the potential impact that construction of a temporary bridge would have on area wetlands.

- No-Action Alternative – None.

- Alternative A (Rehabilitation) - Minimal.

- Alternative B (Replace on Existing) – Alternative B would result in approximately 1.7 acres of wetland impacts. Construction of the temporary Route 119 bridges would result in an additional 0.1 acres of impact to wetlands.
- Alternative C (Alignment Improvement) – Alternative C would result in approximately 1.8 acres of wetland impacts. Construction of the temporary Route 119 bridges would result in an additional 0.1 acres of impact to wetlands.

- Alternative D (Grade-Separated) - Alternative D would result in approximately 2.5 acres of wetland impacts. Construction of the temporary Route 119 bridges would result in an additional 0.1 acres of impact to wetlands.

- Alternative E (Parallel Structure) – Alternative E would result in approximately 1.6 acres of wetland impacts.

- Alternative E-Modified (Parallel Tangent Structure) – Alternative E-Modified would result in approximately 1.9 acres of wetland impacts.

- Alternative G (Georgia Pacific) – Alternative G would result in approximately 0.7 acres of wetland impacts.

- Alternative H (Route 9/Main Street) – Alternative H would result in approximately 2.7 acres of wetland impacts. Construction of an easterly temporary bridge would result in less than 0.1 acres of additional impact to wetlands.

  At the February 4, 1998 VTrans Resource Agency meeting, the COE inquired if Alternative H (Route 9/Main Street) could be modified to include the rehabilitation of the existing easterly bridge instead of the replacement of this bridge, along with a shifting of the roadway alignment to reduce island wetland impacts. Rehabilitation of the easterly bridge, instead of replacement, is possible and reduces the cost of this alternative by approximately $2,150,000. However, due to the necessity of the westerly Alternative H bridge to head northwesterly off the island, as opposed to the current southwesterly direction of the existing bridge, an increase in wetland impacts, associated with a roadway shift on the mid-channel island for Alternative H, is anticipated. This increase in wetland impacts could be partially mitigated for by restoring to wetlands that portion of the island vacated by the removed westerly bridge and its roadway approach. By coordination, in November 2005, the COE expressed agreement with identification of Alternative F as the project's alternative.

K) Waterbody Modifications

The Connecticut River drains 3,930 square miles in Vermont and 3,050 square miles in New Hampshire. The river and its shorelines provide a valuable habitat resource for wildlife and waterfowl, drinking water supplies, recreational and agricultural activities, and fisheries, forestry, and plant habitats. The existing Route 119 crossing of the Connecticut River is currently accomplished by easterly and westerly bridges that connect to an island near the middle of the river. Both existing Route 119 bridges are truss bridges.

Waterbody modifications, associated with each of the non-preferred alternatives, are identified as follows:

- No-Action Alternative – None.

- Alternative A (Rehabilitation) – None; this alternative would maintain the existing crossing.

- Alternatives B (Replace on Existing), C (Alignment Improvement), and D (Grade-Separated) – Limited; these alternatives are within the immediate area of the existing Route 119 crossing. Dependent upon bridge design, piers would be placed within the river, which would result in some limited waterbody modifications to the Connecticut River.

- Alternatives E (Parallel Structure), E-Modified (Parallel Tangent Structure), G (Georgia Pacific), and H (Route 9/Main Street) – Limited; these alternatives would result in new crossings of the Connecticut River, and would require piers being placed within the river, which would result in some limited waterbody modifications to the Connecticut River.

L) Floodplains

A large portion of the east and west shorelines of the Connecticut River, within the project area, are included in the river's 100-year floodplain. The floodplain elevation, near the existing Route 119 crossing, is 233 feet above sea level. The southern portion of the project area evidences a larger amount of floodplain than other areas of the project area. Most floodplain impacts will be associated with construction impacts to the island. Floodway impacts will be associated with the placement of bridge piers in the river.

Floodplain impacts, associated with each of the non-preferred alternatives, are identified below. The following impact determinations first identify the potential for each alternative to impact area floodplains, and then identify the potential impact that construction of a temporary bridge would have on area floodplains.

- No-Action Alternative – None.

- Alternative A (Rehabilitation) - Minimal.

- Alternative B (Replace on Existing) – Alternative B would impact approximately 1.9 acres of floodplain, an additional 0.15 acres of floodplain would be impacted by construction of the temporary Route 119 bridges.

- Alternative C (Alignment Improvement) – Alternative C would impact approximately 2.1 acres of floodplain, an additional 0.15 acres of floodplain would be impacted by construction of the temporary Route 119 bridges.

- Alternative D (Grade-Separated) – Alternative D would impact approximately 3.1 acres of floodplain, an additional 0.15 acres of floodplain would be impacted by construction of the temporary Route 119 bridges.

- Alternative E (Parallel Structure) – Alternative E would impact approximately 1.7 acres of floodplain.

- Alternative E-Modified (Parallel Tangent Structure) – Alternative E-Modified would impact approximately 2.1 acres of floodplain.

- Alternative G (Georgia Pacific) – Alternative G, due to the length and width of the fill required to bring the Vermont bridge approach down to the VT 142 elevation, would impact approximately 3.4 acres of floodplain near the Vermont touchdown area.

- Alternative H (Route 9/Main Street) – Alternative H would impact approximately 2.9 acres of floodplain, an additional 0.15 acres of floodplain would be impacted by construction of the easterly temporary Route 119 bridge.

M) Fish and Wildlife/Threatened and Endangered Species

1) Fish and Wildlife

The Connecticut River, in the vicinity of the proposed project, supports mixed fisheries of warm, cold, and anadromous species. Warm water fish (e.g. large and small mouth bass, walleye, yellow perch, northern pike and pickerel) reside in the area year round. The occurrence of cold water and anadromous fish (i.e. brown and rainbow trout, anadromous Atlantic salmon, and American shad) are seasonal and associated with migrations, spawning, and juvenile rearing.

The Vermont side of the Connecticut River shoreline is moderately developed in the project area. Smaller animals that tolerate human development can be found in this area. The project area shoreline, on both the Vermont and New Hampshire sides of the river, provides habitat for waterfowl and water dependent animals. The State of New Hampshire Wantastiquet Mountain State Forest is located immediately adjacent to the northeastern segment of the project corridor. This area provides habitat for larger wildlife, such as the white-tailed deer.

Fish and wildlife impacts, associated with each of the non-preferred alternatives, are identified as follows:

- No-Action Alternative – None.

- Alternatives A (Rehabilitation) and B (Replace on Existing) – Minimal; as these alternatives maintain the existing crossing corridor, fish and wildlife impacts are anticipated to be minimal.

- Alternatives C (Alignment Improvement), D (Grade-Separated), E (Parallel Structure), E-Modified (Parallel Tangent Structure), G (Georgia Pacific) and H (Route 9/Main Street) – Limited; compliance with erosion and sediment control procedures, and observance of construction scheduling restrictions, will minimize fish and wildlife impacts.

2) Threatened and Endangered Species

The Connecticut River, in the vicinity of the Brattleboro, is believed to have formerly supported colonies of the Dwarf Wedge mussel, a federally endangered species. In September and October, 1999 a Phase I Fresh Water Mussel Survey was conducted. The study area included the Connecticut River 100 feet upstream from the Alternative F alignment and 300 feet downstream from this alignment. The Connecticut River, near the mid-channel island, was also explored thoroughly. No live specimens, or shells, of the Dwarf Wedge mussel were discovered in the study area.

By correspondence dated December 13, 1999, the USFWS stated there existed no further project coordination or requirements regarding potential impacts to the federally endangered Dwarf Wedge mussel species, as it was determined no Dwarf Wedge mussels exist within the project area. By correspondence in May 2005, the USFWS restated that further project investigations for the Dwarf Wedge mussel were not required, as no evidence exists of the presence of this species in this area of the Connecticut River.

The VANR Non-Game Natural Heritage Program (NNHP) and the NH Department of Resources and Economic Development (DRED), Division of Forest and Lands requested a field evaluation of the identified project area to determine the presence of, and potential impacts to, the following species:

- Slender muhly (Muhlenbergia tenuiflora) and Mountain laurel (Kalmia latifolia) – Both are uncommon species, which may occur near the Route 9 crossing north of Brattleboro, Vermont.
- Lace love-grass (Erigrostis capillaries) – A rare to uncommon species, which may occur just south of Route 119 near the bridge in Vermont.

- Wild sensitive plant (Cassia nictitans) – A rare species, which may occur on the north end of the backwater area in Vermont.

- Houghton's umbrella-sedge (Cyperus houghtonii) – An uncommon species, thought to occur in the project area near the NH Route 119 crossing of the Connecticut River.

Field surveys were conducted in both the Vermont and New Hampshire project areas. These surveys did not identify any of the above species within, or adjacent to, the project area.

Field inspections have not identified the presence of any endangered or threatened species within any of the alternatives' limits of construction.

N) Historic

As the Route 119 bridges are eligible for the National Register of Historic Places, any alternative that demolishes or visually impacts these structures could have a historic impact.

The Brattleboro Downtown Historic District was listed in the National Register of Historic Places on February 17, 1983. The District includes areas adjacent to existing Vermont Route 119 west and south of the railroad tracks, and the area to the north of VT 119.

Most project-related historic resource impacts would potentially be associated with impacts to the Brattleboro Downtown Historic District and to the historic Route 119 bridges.

Historic impacts, associated with each of the non-preferred alternatives, are identified below. The following impact determinations first identify the potential for each alternative to impact area historic districts, and then identify the potential impact that construction of a temporary bridge would have upon area historic districts.

- No-Action Alternative and Alternative A (Rehabilitation) - None.

- Alternative B (Replace on Existing) – Substantial; Alternative B would impact approximately 0.15 acres of the District, with construction of a temporary bridge resulting in an additional 0.15 acres of impact to the District. The existing Route 119 historic truss bridges would be removed.

- Alternative C (Alignment Improvement) – Substantial; Alternative C would impact approximately 0.24 acres of the District, with construction of a temporary bridge resulting in an additional 0.22 acres of impact to the District. The existing Route 119 historic truss bridges would be removed.

- Alternative D (Grade-Separated) - Substantial; Alternative D would impact approximately 0.22 acres of the District, with construction of a temporary bridge resulting in an additional 0.23 acres of impact to the District. The existing Route 119 truss bridges would be removed.

- Alternative E (Parallel Structure) – Moderate; Alternative E would impact approximately 0.5 acres of the District. The existing Route 119 truss bridges would either be removed or rehabilitated.

- Alternative E-Modified (Parallel Tangent Structure) – Moderate; Alternative E-Modified would impact approximately 0.3 acres of the District. The existing Route 119 truss bridges would either be removed or rehabilitated.

- Alternative G (Georgia Pacific) – Minimal; this alternative is located south of the District, and its construction would not impact the District. The existing Route 119 truss bridges would be rehabilitated and maintained for pedestrian and bicycle usage.

- Alternative H (Route 9/Main Street) – Substantial; Alternative H would impact approximately 0.25 acres of the District. The western Route 119 truss bridge would be removed and the eastern Route 119 truss bridge could either be removed or rehabilitated.

O) Archaeological

The Connecticut River is an identified area of sensitivity for archaeological resources. Several area archaeological studies and assessments have been conducted for the project area (see EA, Chapter D).

Archaeological impacts, associated with each of the non-preferred alternatives, are identified as follows:

- No-Action Alternative and Alternative A (Rehabilitation) - None.

- Alternatives B (Replace on Existing), C (Alignment Improvement), D (Grade-Separated), E (Parallel Structure), and E-Modified (Parallel Tangent Structure) – Limited; these alternatives are located in the same approximate location as the No-Action Alternative. As this area has undergone extensive development, the potential for archeologically significant resources in this area to be effected is limited.

- Alternative G (Georgia Pacific) – Minimal; although on new alignment, this alternative is located adjacent to previously disturbed areas, both in New Hampshire (abandoned railroad) and in Vermont (industrial area).

- Alternative H (Route 9/Main Street) – Limited; the easterly portion of this alternative is located closely approximate to existing Route 119, the westerly touchdown area is in a retail/commercial area of Brattleboro that has undergone extensive prior disturbance. As this area has undergone extensive development, the potential for archaeologically significant resources in this area to be effected is limited.

P) Hazardous Materials

Petroleum product hazardous waste sites are located throughout the developed areas along the western side of the river. Coal tar deposits are located on the western riverbank and are buried in the river bottom just south of the existing Route 119 Vermont touchdown area. These coal tar deposits have the potential to be impacted by the project. The deposits are generally 4 to 10 feet thick, extend from the riverbank approximately 150 feet into the river, and are covered with six to ten feet of sediment. Construction of

an alternative that requires abutments or piers to be located in or adjacent to these deposits could result in the release of hazardous waste materials into the river.

Hazardous material impacts, associated with each of the non-preferred alternatives, are identified below. The following impact determinations first identify the potential for each alternative to impact identified area hazardous waste sites, and then identify the potential impact that construction of a temporary bridge would have upon the identified coal tar deposits.

- No-Action Alternative – None.

- Alternative A (Rehabilitation) – None.

- Alternatives B (Replace on Existing) – Minimal; construction of Alternative B on the existing alignment would avoid identified hazardous materials areas. However, construction of a westerly temporary bridge would be within the identified coal tar residue area, and could result in coal tar releases into the environment (Substantial).

- Alternative C (Alignment Improvement) – Minimal; construction of Alternative C on the existing alignment, with minor changes to the existing alignment near the westerly end of the island, would avoid identified hazardous materials areas. However, construction of a westerly temporary bridge would be within the coal tar residue area, and could result in coal tar releases into the environment (Substantial).

- Alternative D (Grade-Separated) - Minimal; construction of Alternative D, on the existing alignment with a grade-separated railroad crossing, and with a Vermont touchdown location near the Route 5/119/142 intersection, would avoid identified hazardous materials areas. However, construction of a westerly temporary bridge would be within the coal tar residue area and could result in coal tar releases into the environment (Substantial).

- Alternatives E (Parallel Structure) and E-Modified (Parallel Tangent Structure) – Substantial; Alternatives E and E-Modified are located immediately south of the existing Route 119 Vermont touchdown area. While not impacting any identified petroleum based hazardous materials sites, borings taken indicate the riverbank and the river bottom in this area contain coal tar residues. Construction of either Alternative E or E Modified could result in coal tar releases into the Connecticut River.

- Alternative G (Georgia Pacific) – Minimal; Alternative G's touchdown location is generally near a municipal sewage lagoon and two Vermont listed hazardous waste petroleum sites. However, the potential for Alternative G to impact these sites is

minimal. Alternative G is substantially south of the identified coal tar residue area and will not impact the coal tar deposits.

- Alternative H (Route 9/Main Street) – Minimal; Adjacent to the proposed Vermont touchdown area for Alternative H are two Vermont listed petroleum sites. However, the potential for Alternative H to impact these sites is minimal. Alternative H is located north of the identified coal tar residue area and will not impact the coal tar deposits.

Q) Visual

The Connecticut River corridor in the project area has exceptional aesthetic qualities. The project's visual corridor extends approximately 4.5 miles along the Connecticut River, from the Route 9 bridge in the north to the backwater area south of Brattleboro. This corridor is bordered by the Towns of Hinsdale and Chesterfield, New Hampshire on the east, and the Town of Brattleboro, Vermont on the west. The terrain and land uses on the eastern side of the river differ from that on the western side.

The New Hampshire shoreline is framed by the rugged terrain of the Wantastiquet Mountain State Forest that steeply rises from the river's edge. Except for the area immediately adjacent to Route 119, near the center of the corridor area, the New Hampshire shoreline has limited residential and commercial development. The visual character of this area is natural and largely undeveloped, with a view of Mt. Wantastiquet's steep slopes and forested cover.

The Brattleboro side of the river, near the existing Route 119 crossing, consists of a settled urban area and historic district. This area includes a railroad line with Amtrak service, the Brattleboro Museum, numerous restaurants, stores, churches, and a large residential community. This area is the center of Brattleboro and is characterized by churches, banks, and office buildings grouped in a densely developed urban setting.

The visual connection between the adjacent communities and the river is strong. The visual impacts associated with each alternative depend, in large part, on the type and design of the selected bridge structure.

Visual impacts, associated with each of the non-preferred alternatives, are identified as follows.

- No-Action Alternative – None.

- Alternative A (Rehabilitation) – None; rehabilitation of the existing Route 119 bridges would be conducted in accordance with the Secretary of Interior's preservation guidelines.

- Alternatives B (Replace on Existing) and C (Alignment Improvement) – Minimal; a new bridge type, on or near the existing crossing, which is consistent with the area's aesthetic attributes, would result in only minimal visual impacts to the river corridor and the Brattleboro Downtown Historic District.

- Alternative D (Grade-Separated) - Substantial; a new bridge type, elevated for a grade-separated railroad crossing, with numerous commercial acquisitions in downtown Brattleboro, would result in substantial visual impacts to the Brattleboro Downtown Historic District and moderate visual impacts to the river corridor.

- Alternatives E (Parallel Structure) and E-Modified (Parallel Tangent Structure) – Moderate; a new bridge type, parallel to and larger than the immediately adjacent existing Route 119 bridges would result in moderate visual impacts to the river corridor and downtown Brattleboro. Alternative E-Modified (Parallel Tangent Structure) provides for a truss type bridge, which dependent upon structure design, size, and placement could partially mitigate for project-related visual impacts.

- Alternative G (Georgia Pacific) – Limited; this alternative would consist of a new bridge in a new location. The alternative would require a lengthy structure to span the river, with a raised elevation to provide for a grade-separated railroad crossing in Vermont. This structure would not be adjacent to the existing Route 119 bridges. At the Vermont shoreline, the structure's roadway elevation would be at an elevation approximately equal to the top of the truss structure of the existing westerly Route 119 Bridge. The new bridge structure would be compatible in size with the adjacent abandoned rail bridge across the Connecticut River.

- Alternative H (Route 9/Main Street) – Substantial; Alternative H provides for a large and elevated new bridge on a new alignment, which would touch down within the center of the Brattleboro Downtown Historic District. This would result in substantial visual impacts to the downtown Brattleboro area and moderate visual impacts to the river corridor.

R) Construction

Construction-related impacts will exist within the project area during the construction phase of the project.

Construction impacts, associated with each of the non-preferred alternatives, are identified as follows.

- No-Action Alternative – None.

- Alternative A (Rehabilitation) – Minimal.

- Alternative B (Replace on Existing) – Limited; construction impacts associated with replacing the highway on the existing alignment would be limited.

- Alternatives C (Alignment Improvement), E (Parallel Structure), E-Modified (Parallel Tangent Structure), and G (Georgia Pacific) – Limited; these alternatives would either modify the existing alignment or provide for construction on new alignment, and would generally result in limited construction impacts. Construction impacts are anticipated to consist primarily of impacts to traffic flows, air quality, noise, and water quality.

- Alternative D (Grade-Separated) and H (Route 9/Main Street) – Substantial; these alternatives will require extensive downtown Brattleboro relocations and reconstruction, in addition to bridge construction impacts. Extensive interruptions to public, commercial and transportation activities will occur as a result of the construction-related activities associated with these alternatives.

3) RESOURCE SUMMARY

A) Resource Locations

The project corridor extends from the Route 9 Connecticut River Bridge (northern limit) to the "backwater" area south of Brattleboro near the Cersosimo Lumber Facility (southern limit). Environmental resources and constraints within the project corridor are identified, along with the project alternatives, on Figures F-2, F-3, and F-4.

Figure F-2
Project Corridor – Historic & Archaeological Resources

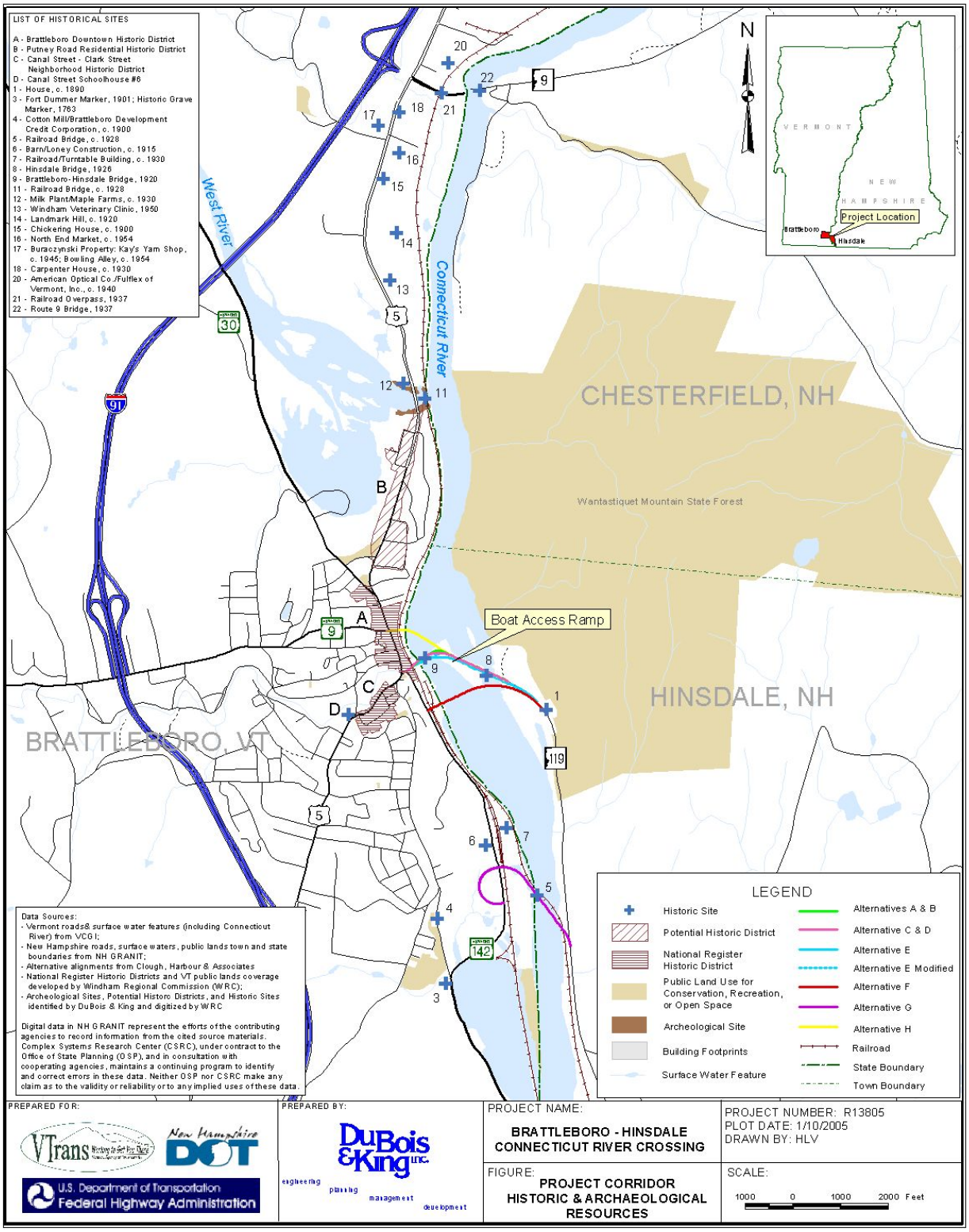


Figure F-3
Project Corridor – Natural Resources Map

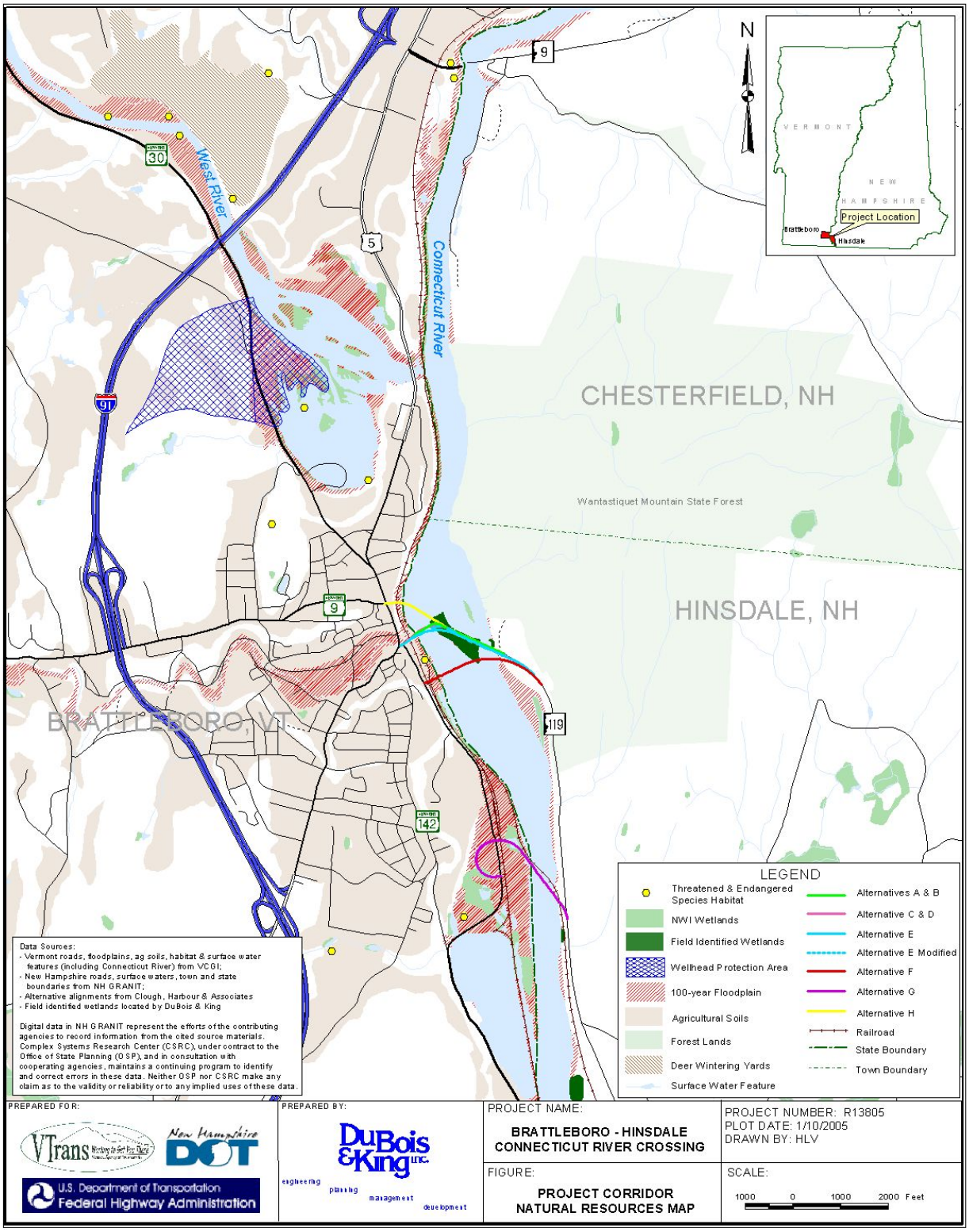
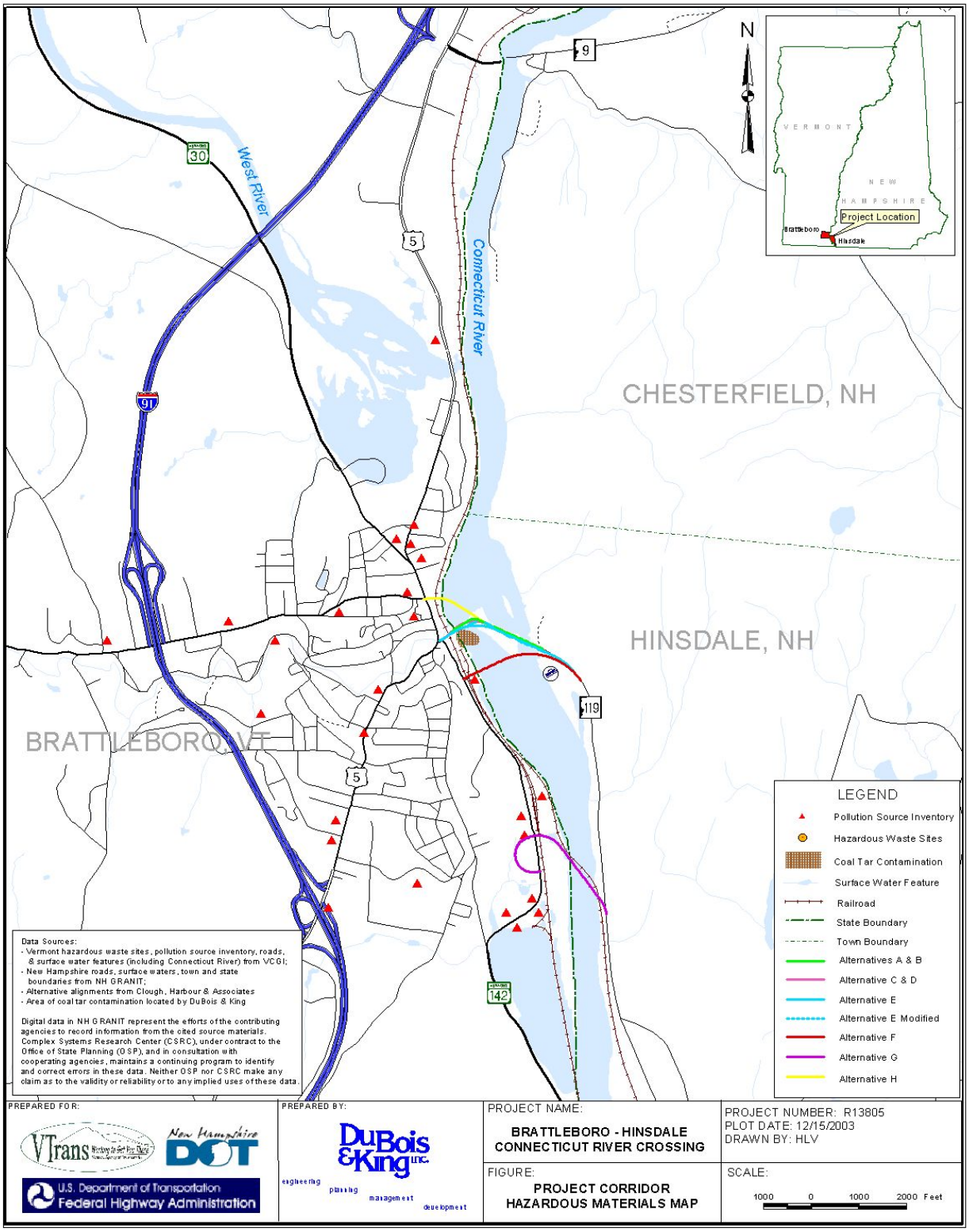


Figure F-4
Project Corridor – Hazardous Materials Maps



B) Resource Summary Table

Coordination with federal and State resource agencies, field investigations, archival research and the use of GIS data base information were utilized to identify and locate area resources. These resources were digitized onto a GIS base map. The ten project alternatives were then digitized onto the base map and quantifiable area resource impacts for each alternative were determined from this GIS database.

For those resources which did not lend themselves to quantitative analysis the following qualitative descriptors, as identified by the Bridge Committee, were used to describe an alternative's impact upon identified resources:

- None
- Minimal
- Limited
- Moderate
- Substantial

Alternatives B (Replacing on Existing), C (Alignment Improvement), D (Grade-Separated) and H (Route 9/Main Street) would require the use of temporary bridges to maintain traffic during construction. Additional impacts associated with the construction of these temporary bridges are listed in (parenthesis) in the following Resource Summary Table. Alternative F, the project's preferred alternative, is highlighted in the table.

Table C-2: Resource Summary Table

RESOURCE		ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D	ALTERNATIVE E	ALTERNATIVE E Modified	ALTERNATIVE F	ALTERNATIVE G	ALTERNATIVE H
	No-Action	**Rehabilitation**	**Replace on Existing**	**Alignment Improvement**	**Grade-Separated**	**Parallel Structure**	**Parallel Tangent Structure**	**Blue Seal (Preferred)**	**Georgia Pacific**	**Route 9/Main Street**
Land Use/Induced Growth	None/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Substantial/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Minimal/ Minimal	Moderate/ Minimal
Agricultural	None	None	None	None	None	None	None	None	None	None
Socio-economic/Enviro Justice	Substantial/ None	Limited/None	Limited/None	Limited/None	Substantial/ None	Limited/None	Limited/None	Limited/None	Substantial/ None	Substantial/ None
Acquisitions-Residential/ Commercial	0 / 0	0 / 0	0 / 2	0 / 2	0 / 13	0 / 1	0 / 1	1 / 1	0 / 0	0 / 4
Acquisition Area (acres)	0	0	0.35	0.49	2.05	1.46	1.4	3.21	4.23	0.94
Pedestrian/Bicycle	None	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Recreational/Section 4(f)	None/ None	Minimal/ Minimal	Minimal/ Substantial	Minimal/ Moderate	Minimal/ Substantial	Minimal/ Moderate	Minimal/ Moderate	Minimal/ None	Minimal/ Moderate	Minimal/ Substantial
Air Quality	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
Noise	Limited	Limited	Limited	Limited	Moderate	Limited	Limited	Limited	Limited	Moderate
Water Quality	None	Minimal	Limited (Substantial)	Limited (Substantial)	Limited (Substantial)	Substantial	Substantial	Limited	Limited	Limited
Wetlands (acres)	None	Minimal	1.68	1.85	2.53	1.60	1.91	0.11	0.66	2.74
Waterbody Modifications	None	None	Limited	Limited	Limited	Limited	Limited	Limited	Limited	Limited
Floodplains (acres)	None	Minimal	1.94	2.08	3.07	1.71	2.07	0.12	3.42	2.92
Fish & Wildlife / Threatened & Endangered Species	None / None	Minimal / None	Minimal / Minimal	Limited / Minimal	Limited / Minimal	Limited / Minimal	Limited / Minimal	Limited / Minimal	Limited / None	Limited / Minimal
Historic (Impact to Historic District)	None	None	Substantial	Substantial	Substantial	Moderate	Moderate	Minimal	Minimal	Substantial
Archaeological	None	None	Limited	Limited	Limited	Limited	Limited	None	Minimal	Limited
Hazardous Materials	None	None	Minimal (Substantial)	Minimal (Substantial)	Minimal (Substantial)	Substantial	Substantial	Minimal	Minimal	Minimal
Visual	None	None	Minimal	Minimal	Substantial	Moderate	Moderate	Limited	Limited	Substantial
Construction	None	Minimal	Limited	Limited	Substantial	Limited	Limited	Limited	Limited	Substantial

***QUALITATIVE DESCRIPTORS (As determined by the Bridge Committee)**:*

- None
- Limited
- Substantial
- Minimal
- Moderate

Note: Permanent impacts only; temporary impacts are discussed in report text.

EXHIBITS

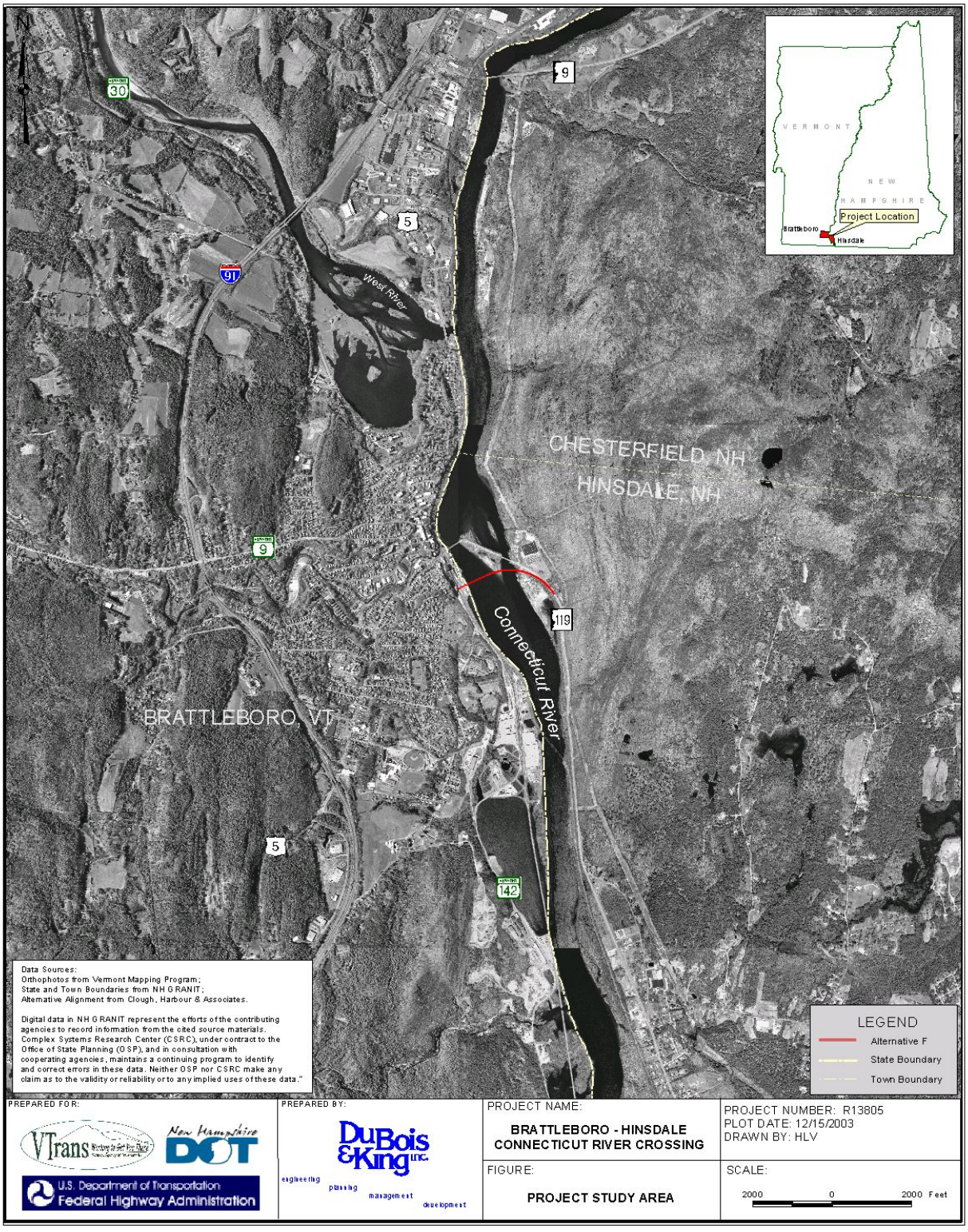
Brattleboro – Hinsdale Environmental Assessment

December 2013

Contents

Exhibits A: Project Location

Exhibit A.1 – Project Study Area



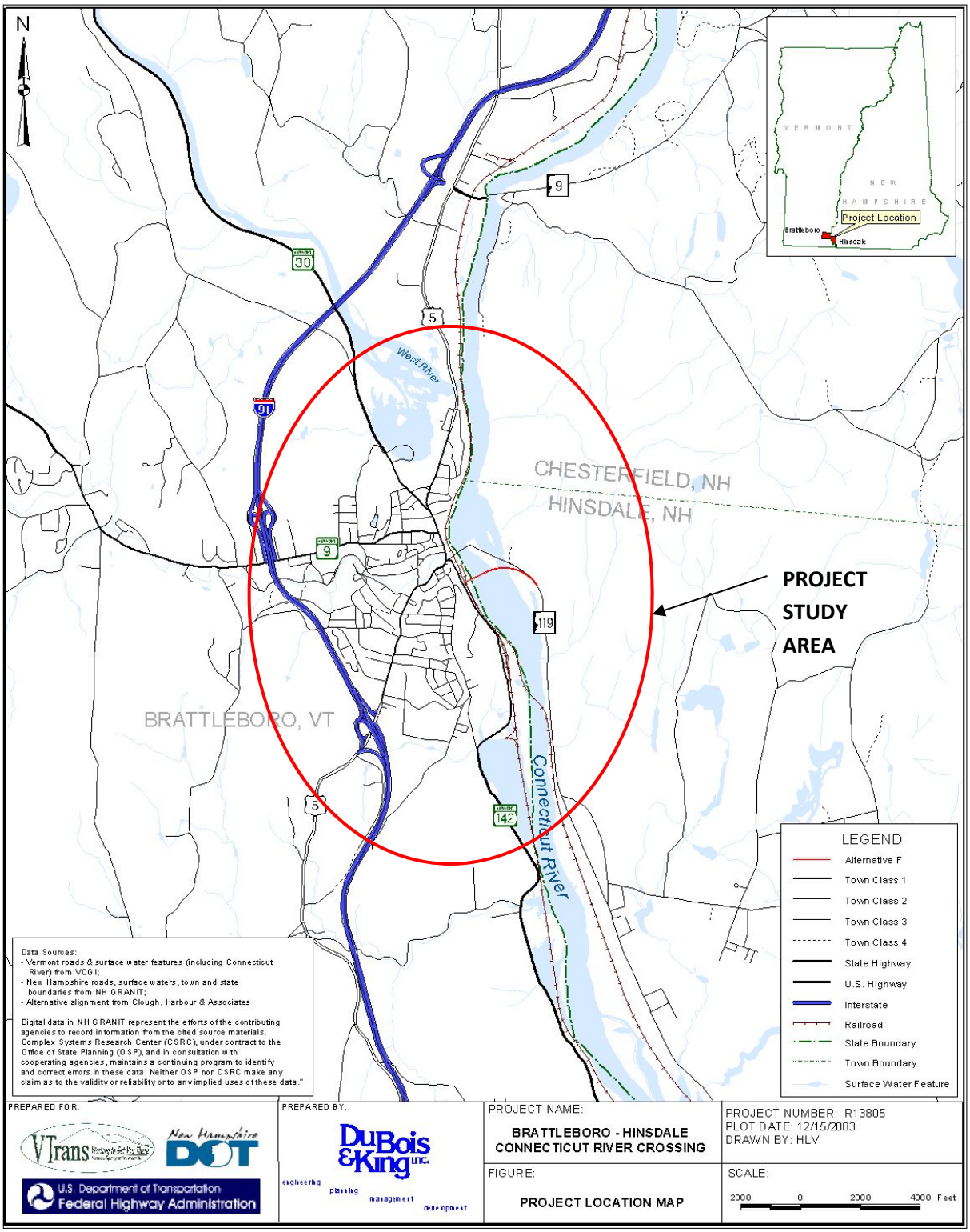

N
VERMONT
NEW HAMPSHIRE
Project Location
Brattleboro
Hinsdale
9
30
5
91
West River
CHESTERFIELD, NH
HINSDALE, NH
9
119
PROJECT STUDY AREA
BRATTLEBORO, VT
5
142
Connecticut River
LEGEND
Alternative F
Town Class 1
Town Class 2
Town Class 3
Town Class 4
State Highway
U.S. Highway
Interstate
Railroad
State Boundary
Town Boundary
Surface Water Feature
Data Sources:
- Vermont roads & surface water features (including Connecticut River) from VCGI;
- New Hampshire roads, surface waters, town and state boundaries from NH GRANIT;
- Alternative alignment from Clough, Harbour & Associates
Digital data in NH GRANIT represent the efforts of the contributing agencies to record information from the cited source materials. Complex Systems Research Center (CSRC), under contract to the Office of State Planning (OSP), and in consultation with cooperating agencies, maintains a continuing program to identify and correct errors in these data. Neither OSP nor CSRC make any claim as to the validity or reliability or to any implied uses of these data."
PREPARED FOR:
VTrans
New Hampshire DOT
U.S. Department of Transportation
Federal Highway Administration
PREPARED BY:
DuBois & King inc.
engineering
planning
management
development
PROJECT NAME:
BRATTLEBORO - HINSDALE
CONNECTICUT RIVER CROSSING
PROJECT NUMBER: R13805
PLOT DATE: 12/15/2003
DRAWN BY: HLV
FIGURE:
PROJECT LOCATION MAP
SCALE:
2000 0 2000 4000 Feet

Exhibit A.2 – Existing Route 119 Corridor

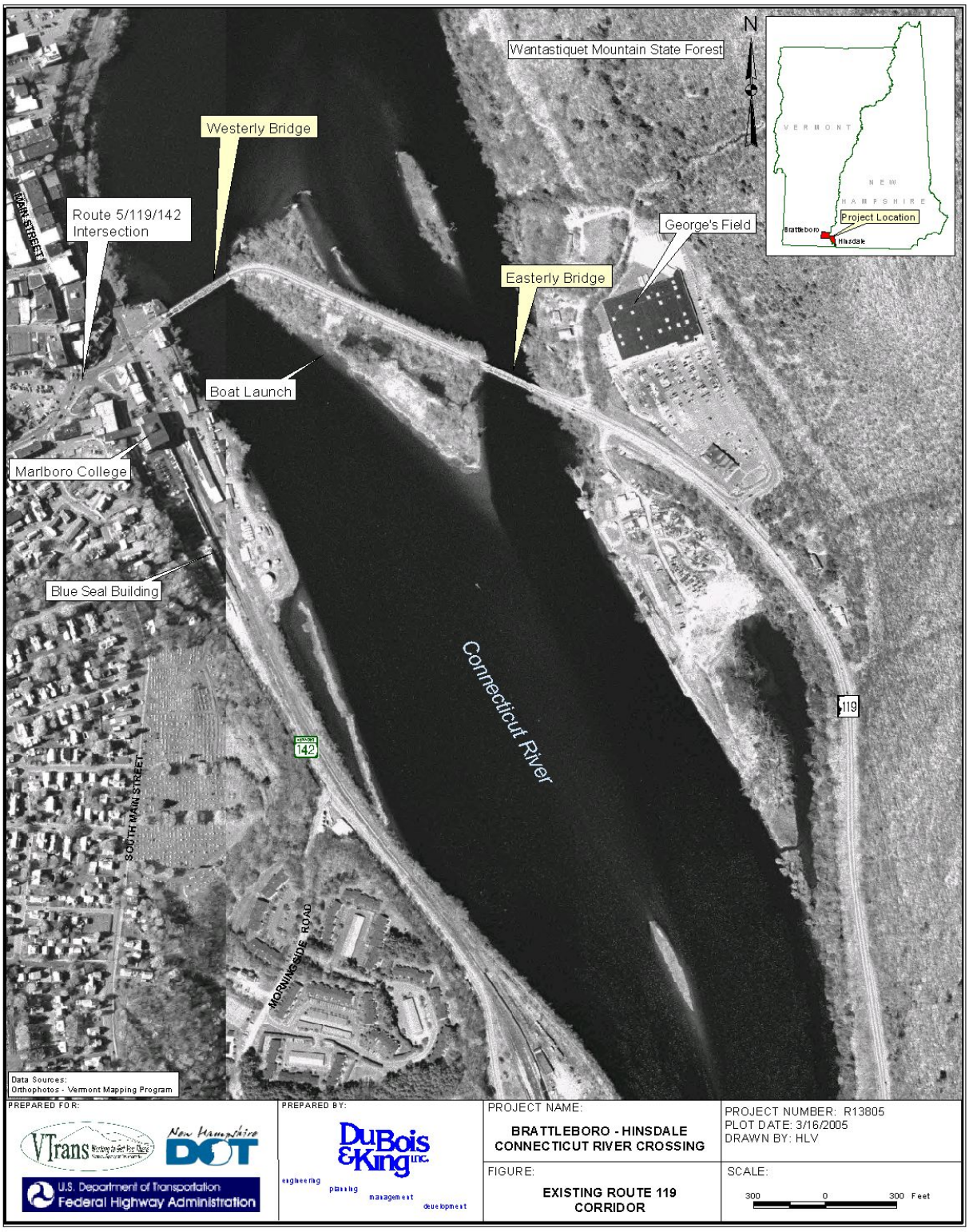


Exhibit A.3– Project Alternatives

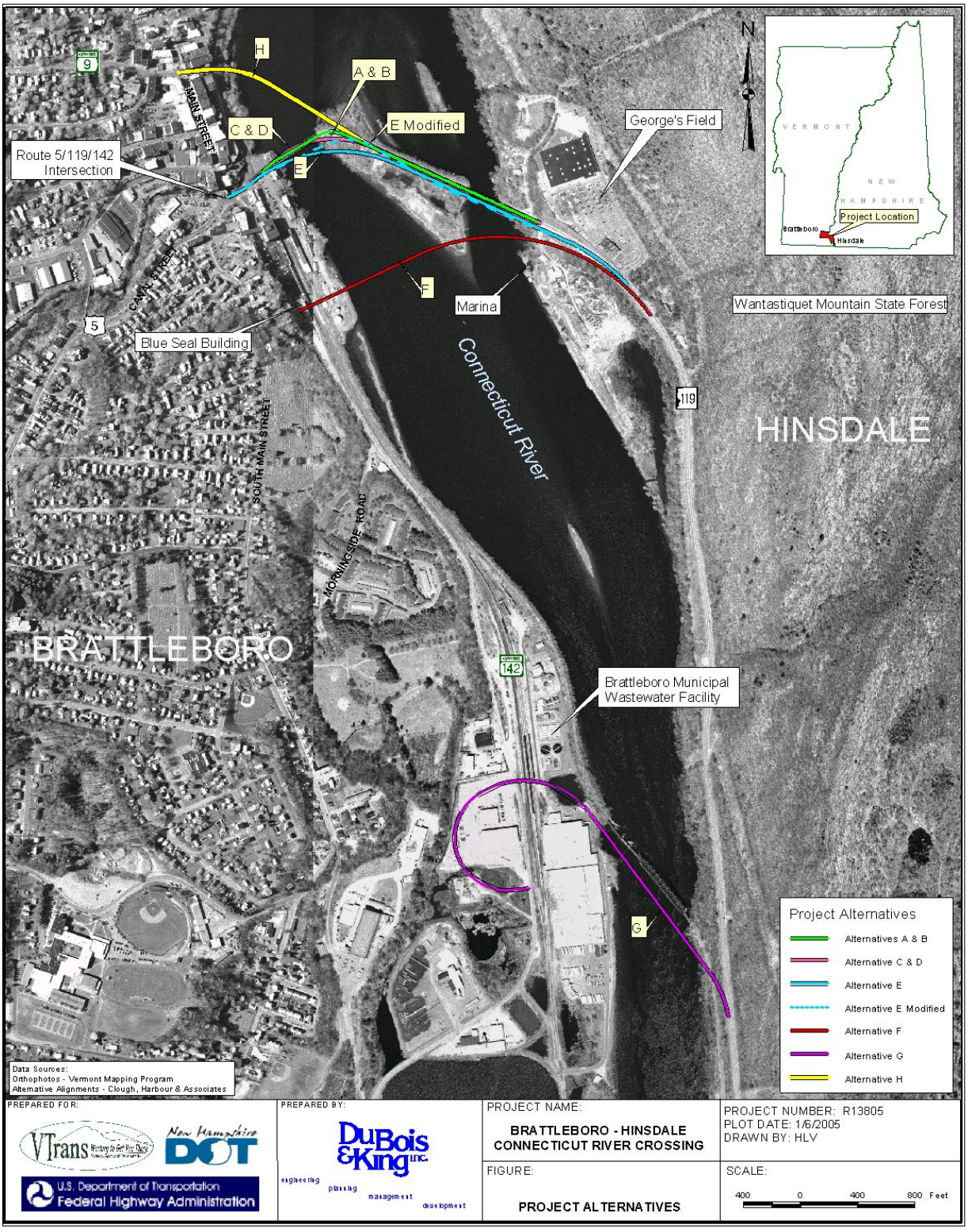


Exhibit A.4– Project Alternatives Road Map

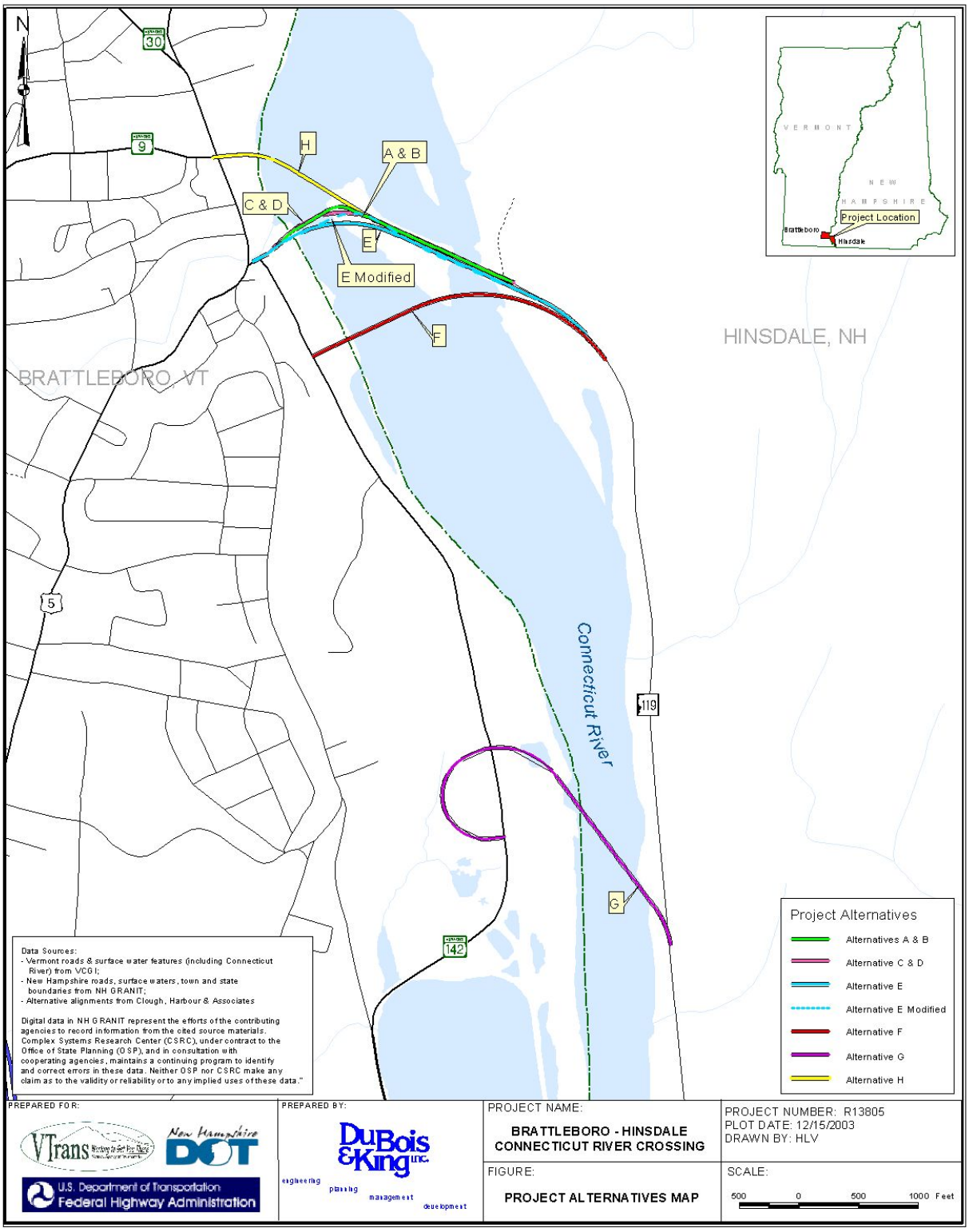


Exhibit A.5– Project Alternatives (Boat Launch)

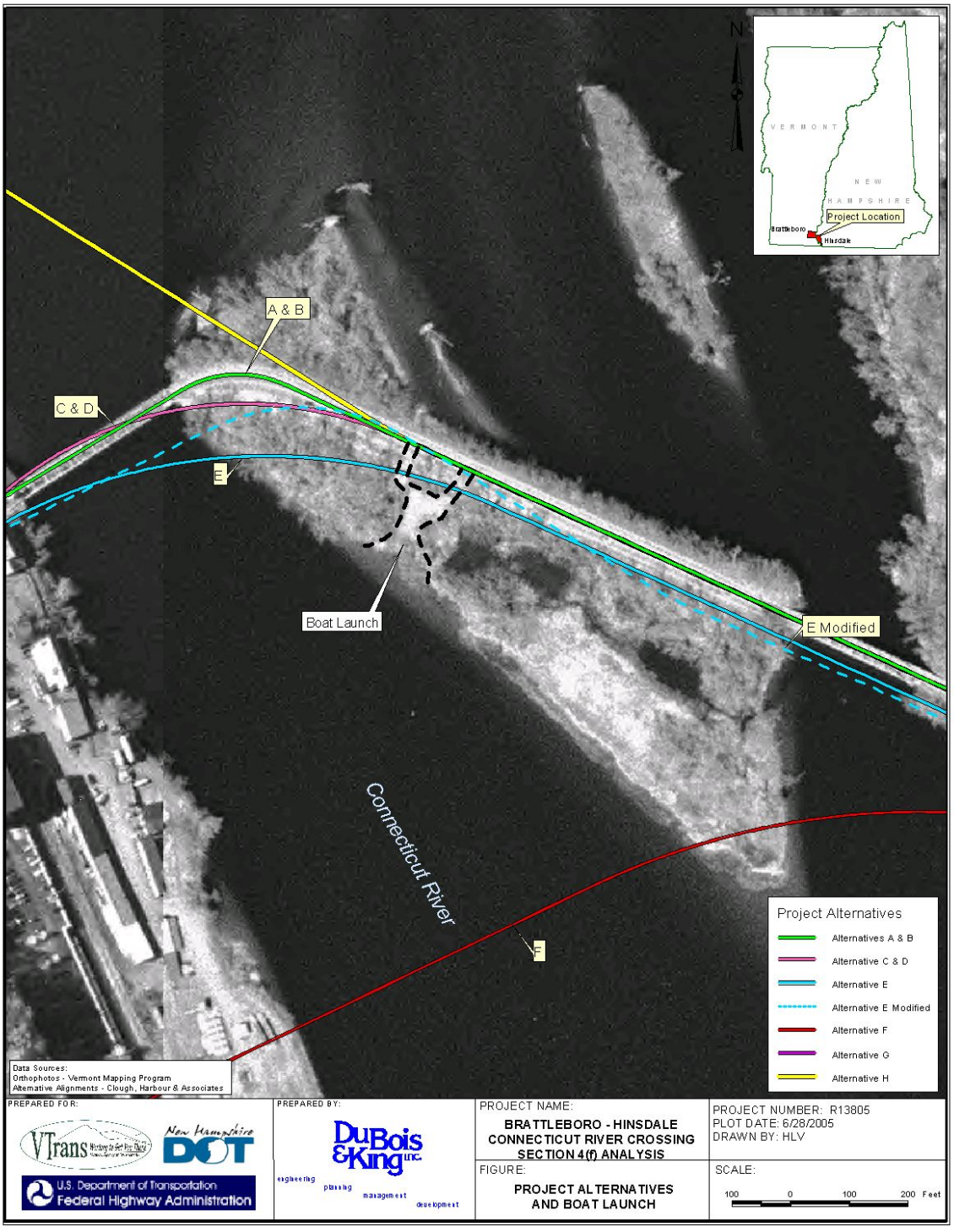


Exhibit A.6 –Natural Resources Map

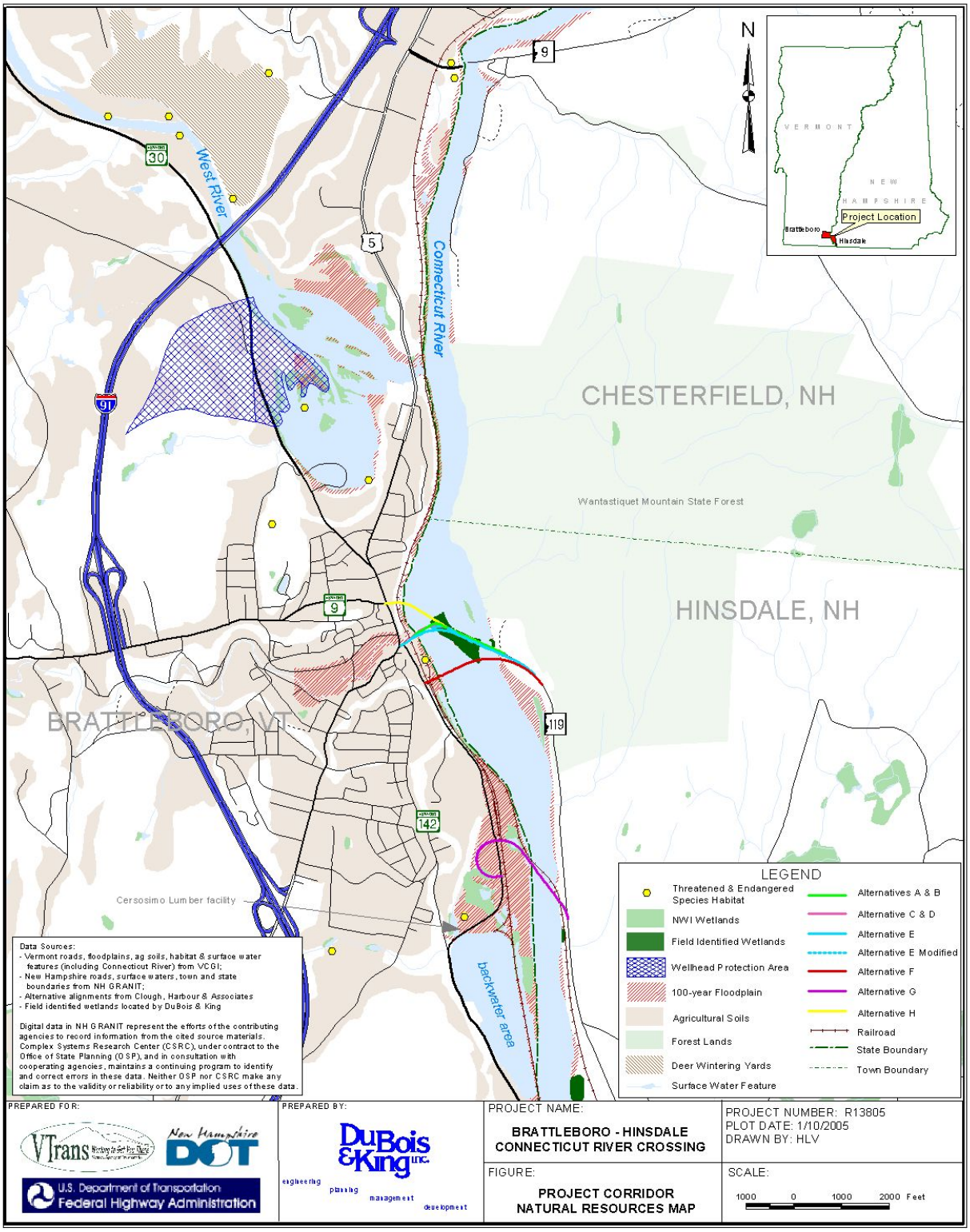


Exhibit A.7 –Historic & Archaeological Resources

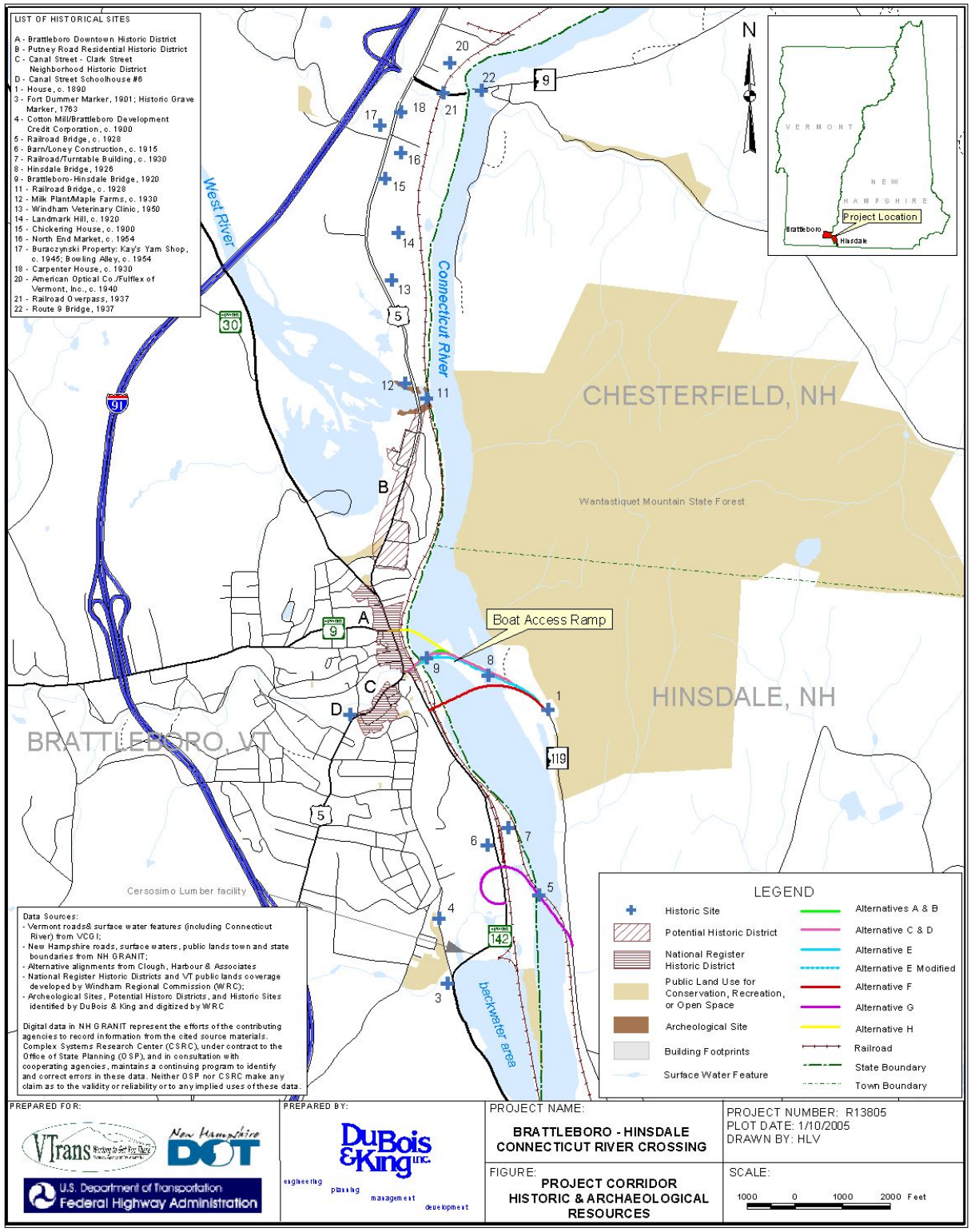
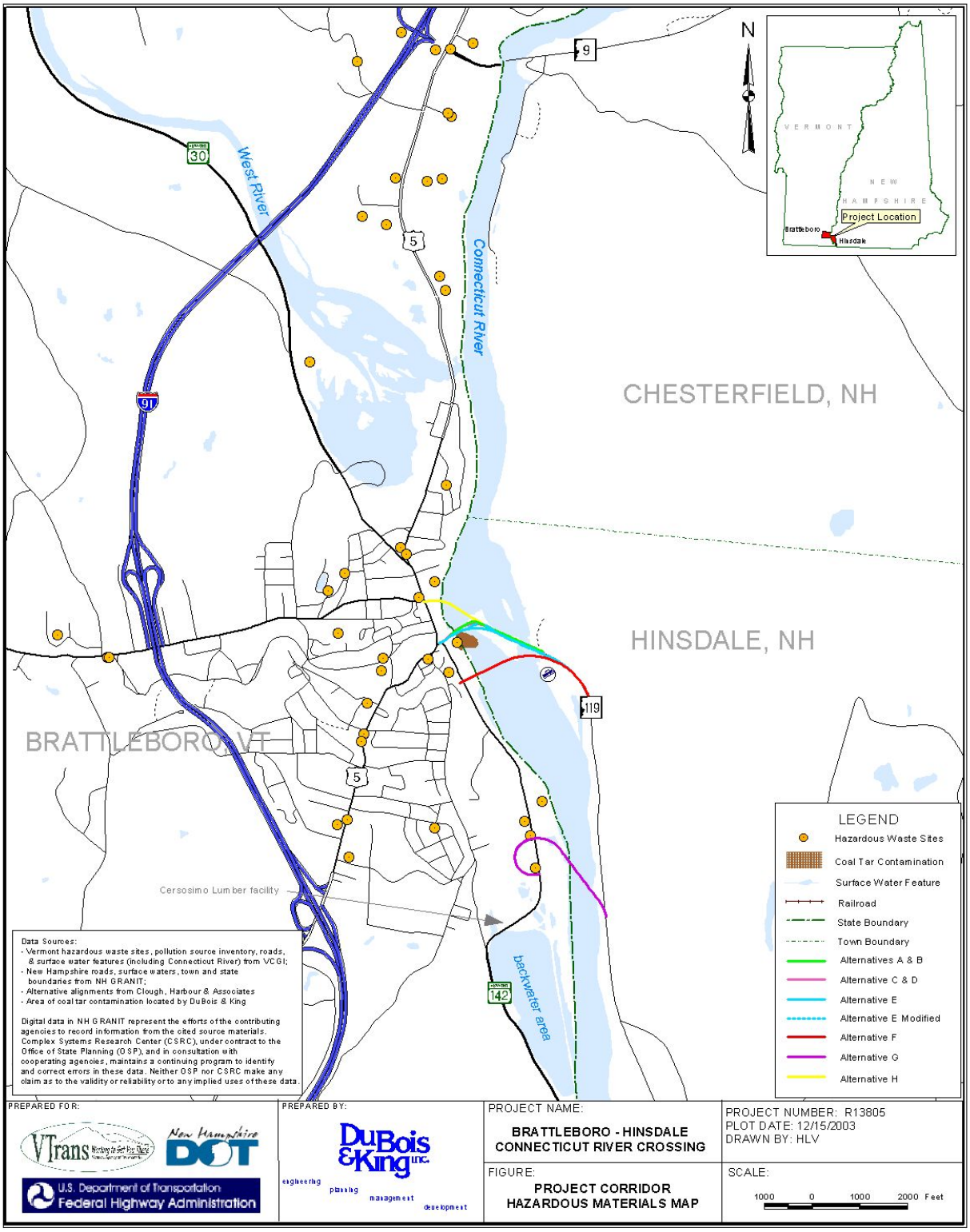


Exhibit A.8- Hazardous Materials Map



Exhibits B: Existing Conditions

Exhibit B.1– Existing Air Quality Map

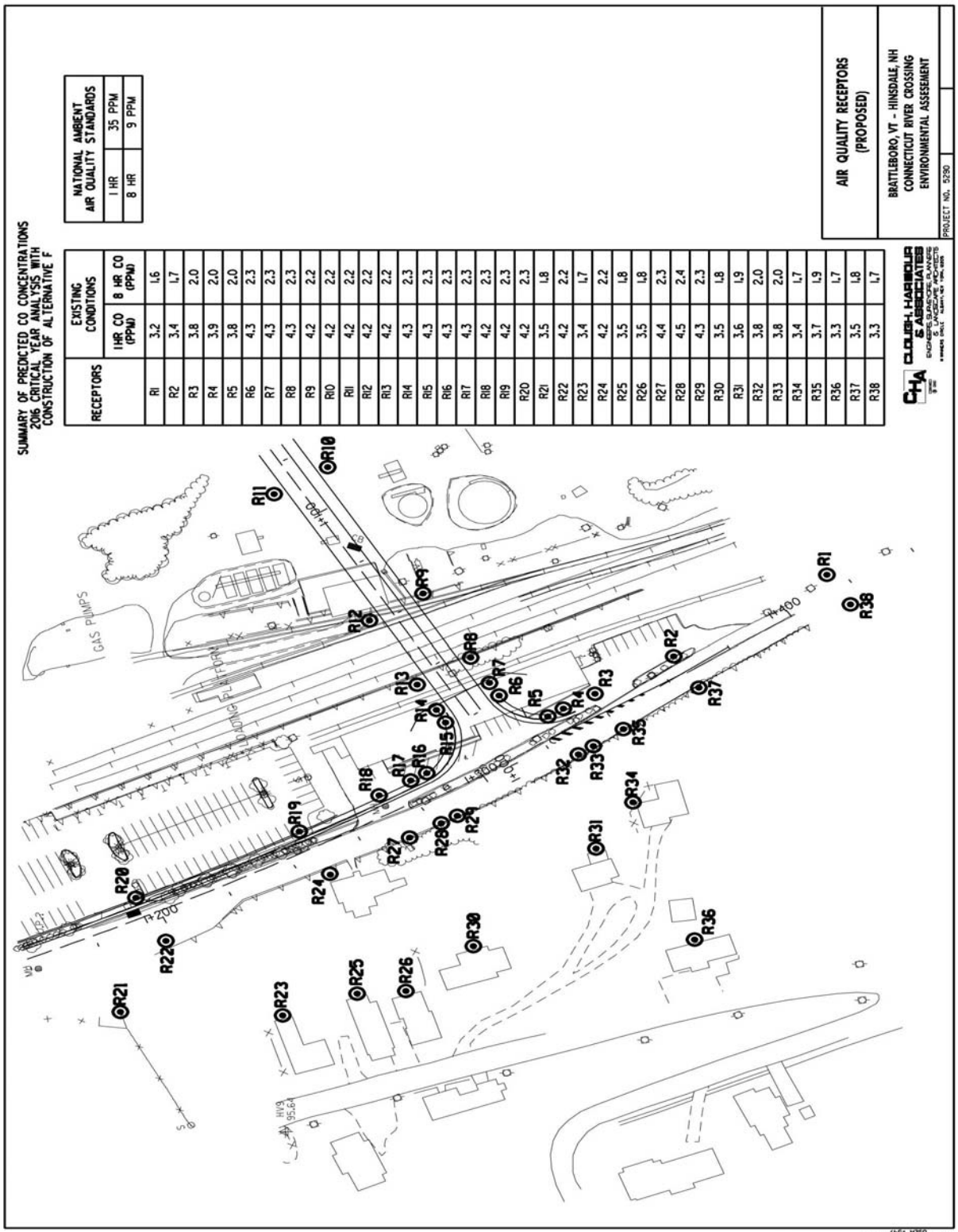


Exhibit B.2- Route 5/119/142 Intersection – Downtown

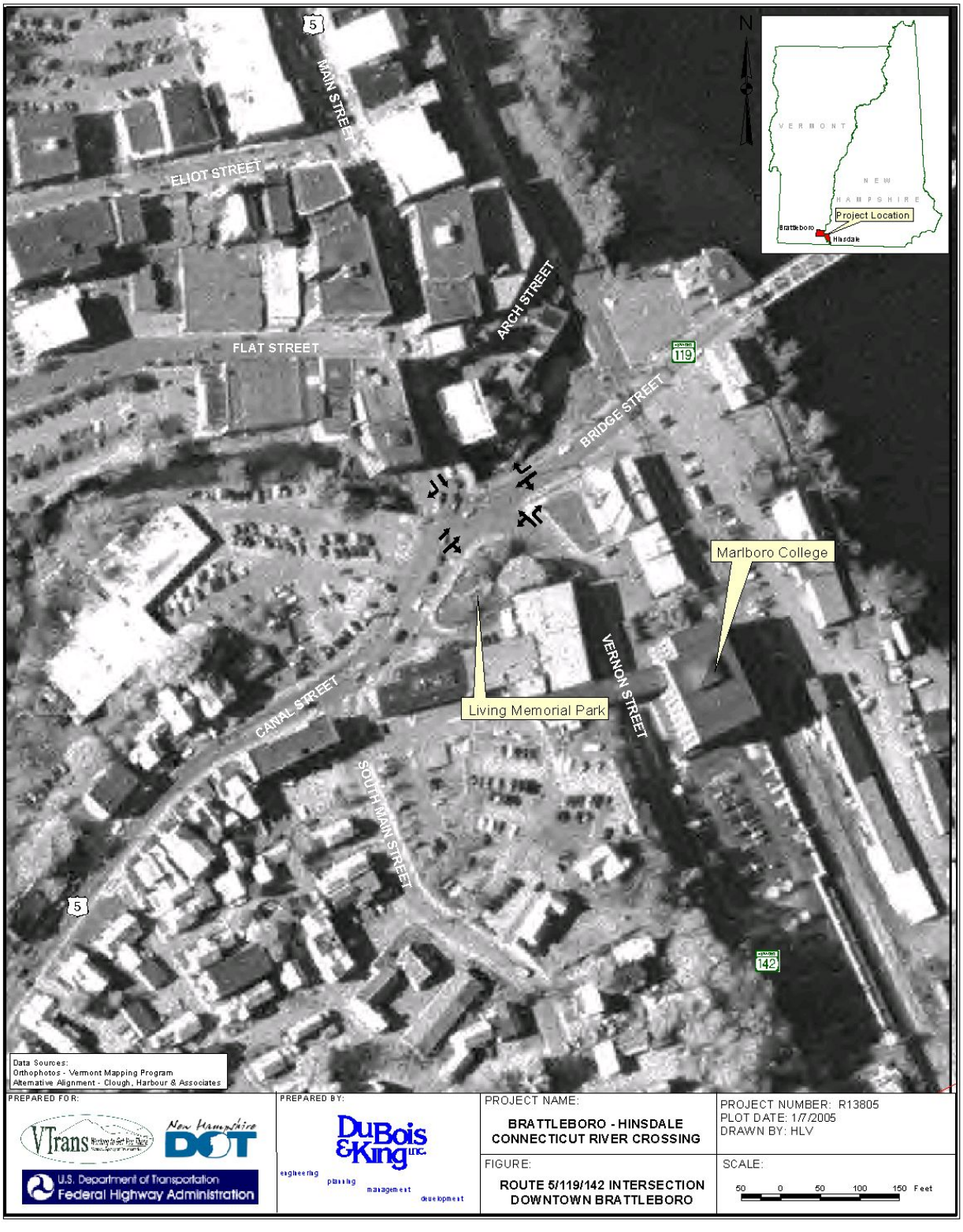
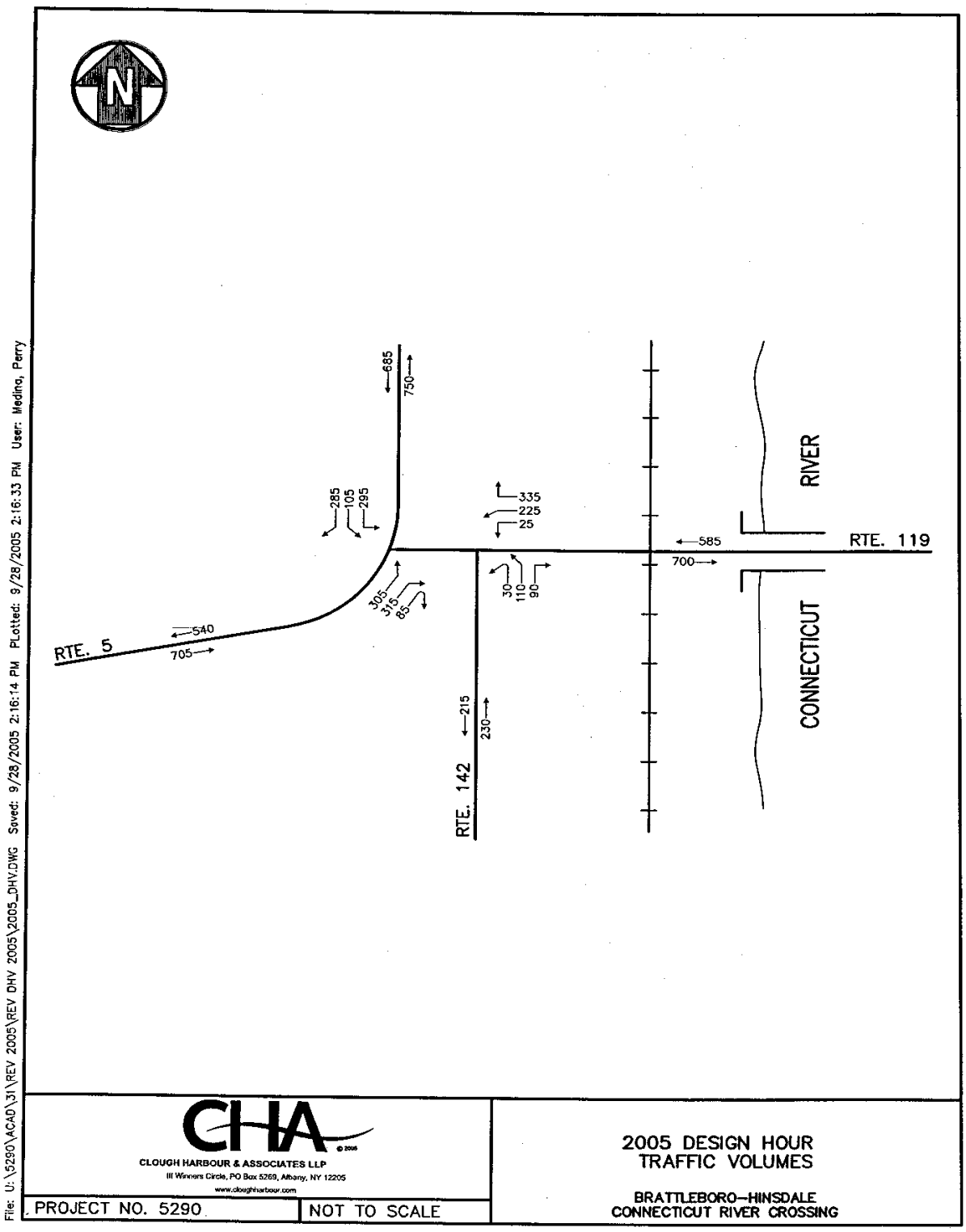


Exhibit B.3– 2005 Design Hour Traffic Volumes



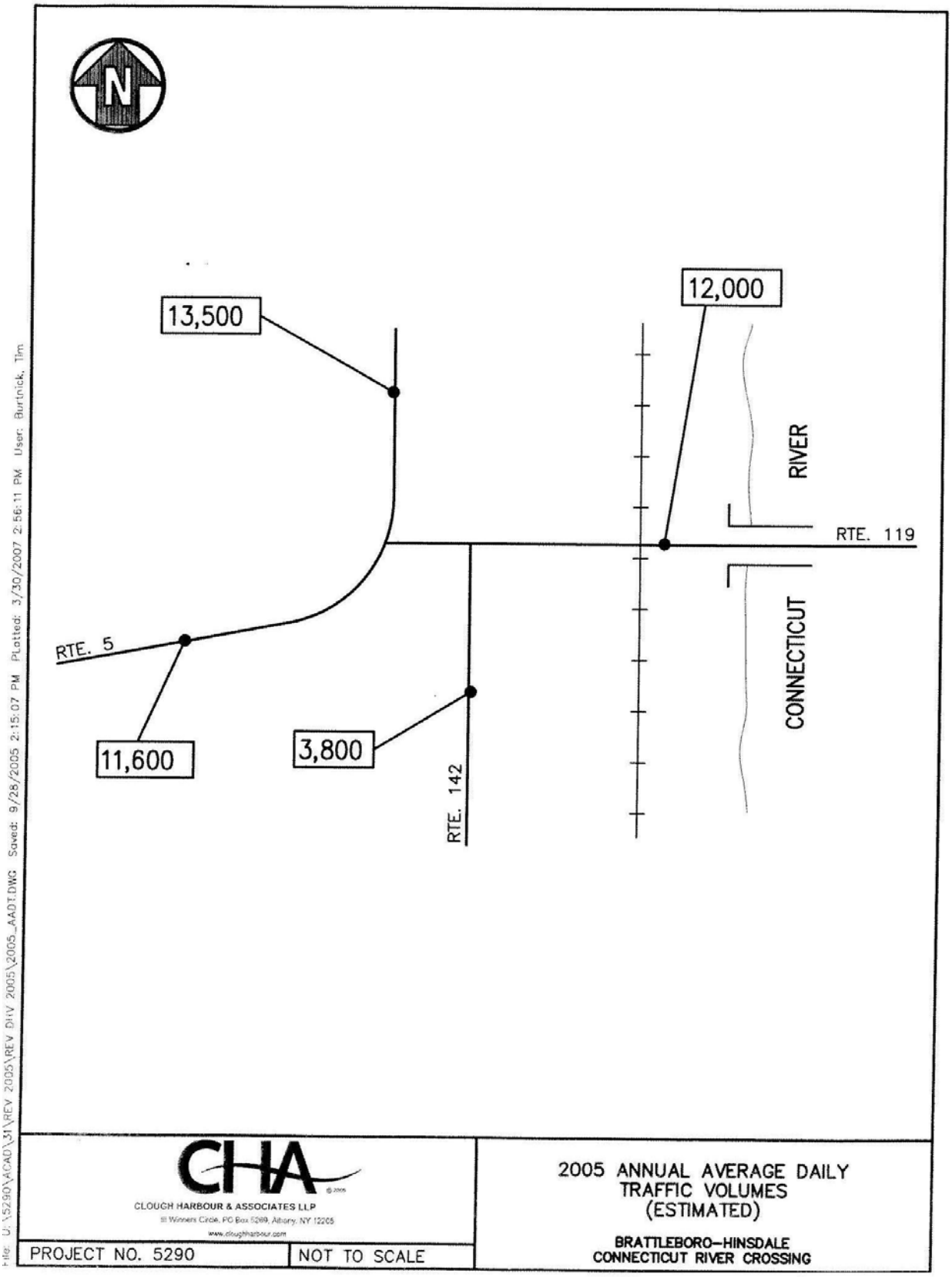
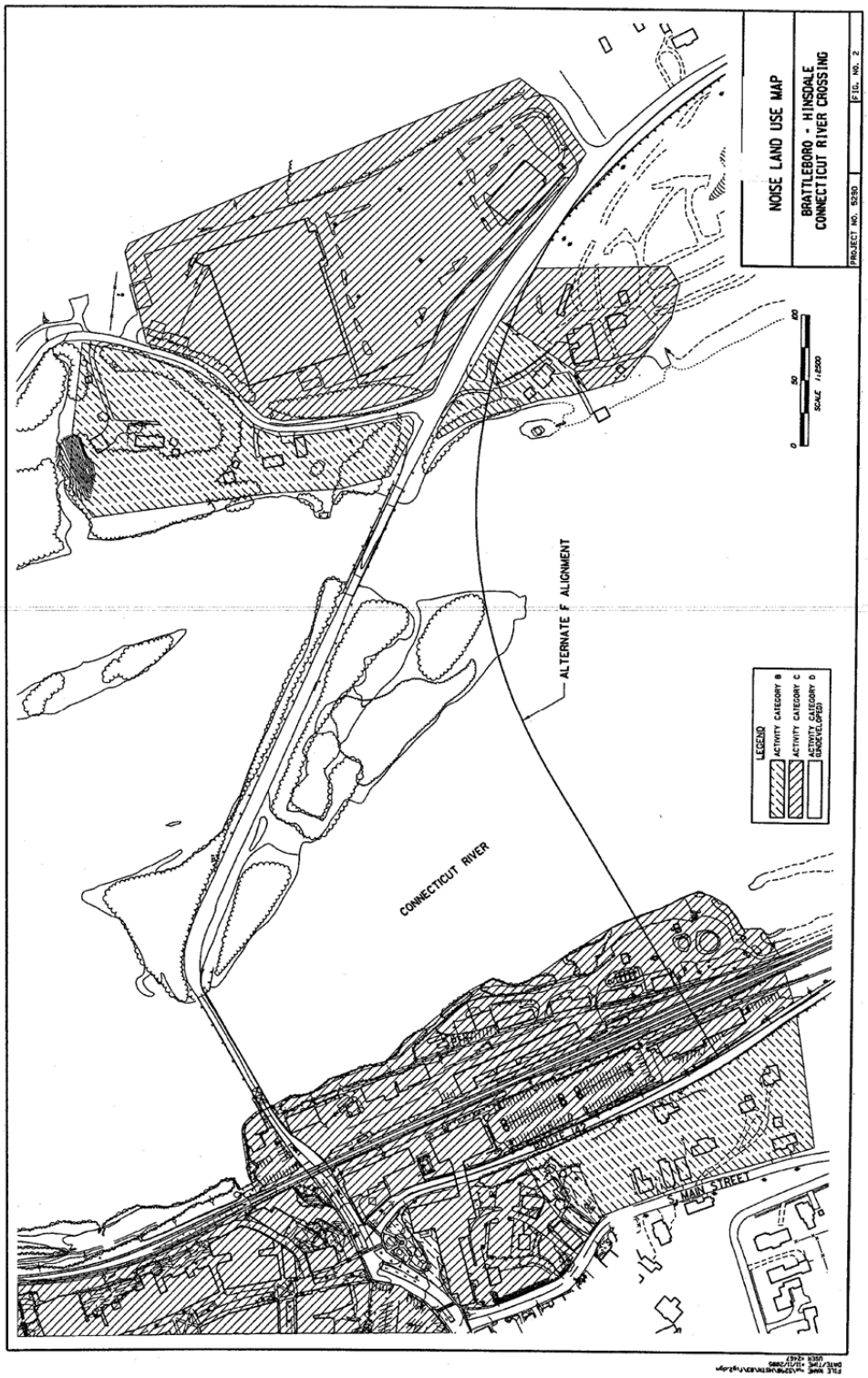

N
13,500
12,000
RIVER
RTE. 119
CONNECTICUT
RTE. 5
11,600
3,800
RTE. 142
CLOUGH HARBOUR & ASSOCIATES LLP
PROJECT NO. 5290
NOT TO SCALE
2005 ANNUAL AVERAGE DAILY TRAFFIC VOLUMES (ESTIMATED)
BRATTLEBORO–HINSDALE
CONNECTICUT RIVER CROSSING

Exhibit B.4 – Noise Land UseMap



Exhbits C: Alternative F

Exhibit C.1 – Alternative F, Orthorectified Image

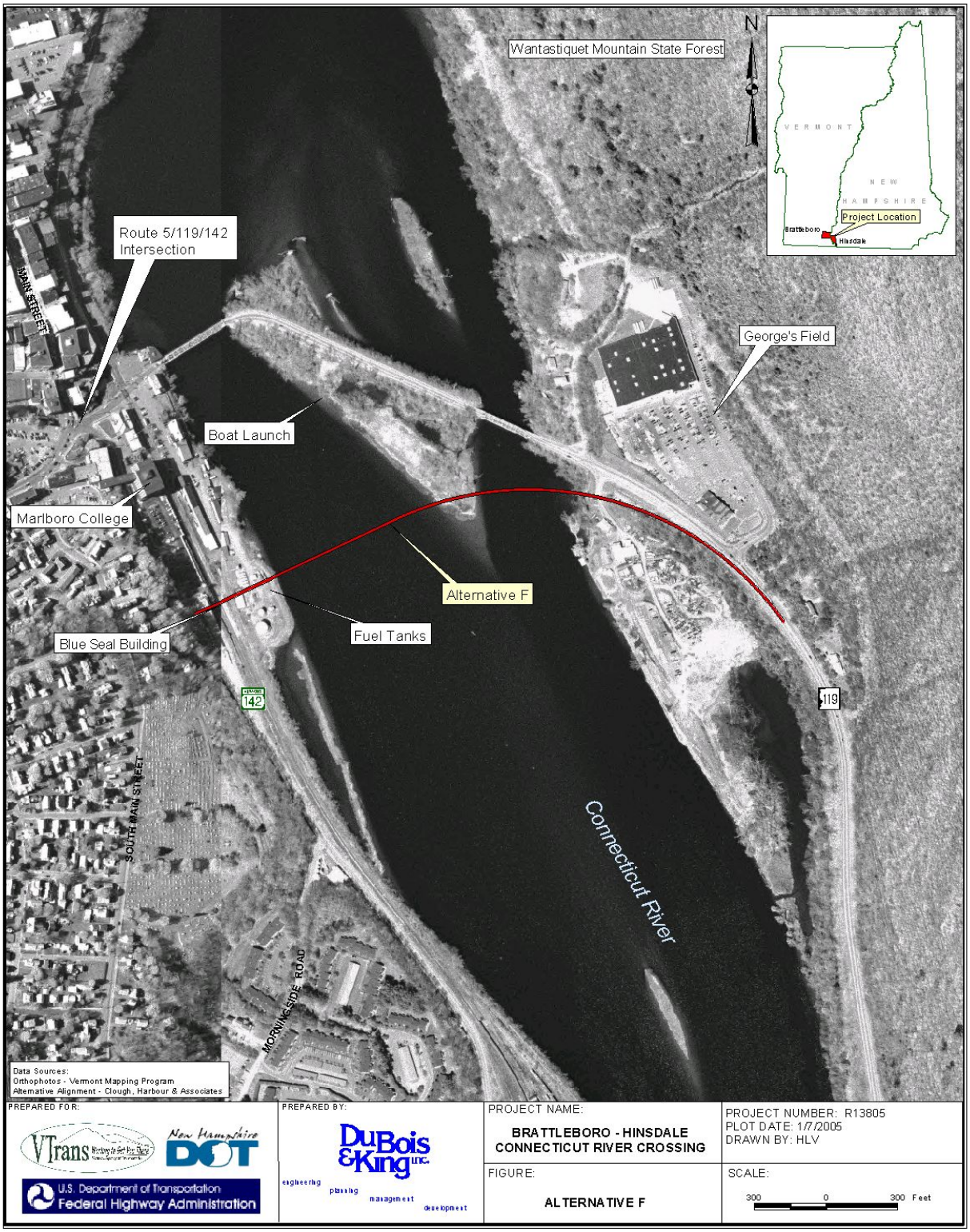


Exhibit C.2 – Alternative F, Road Map

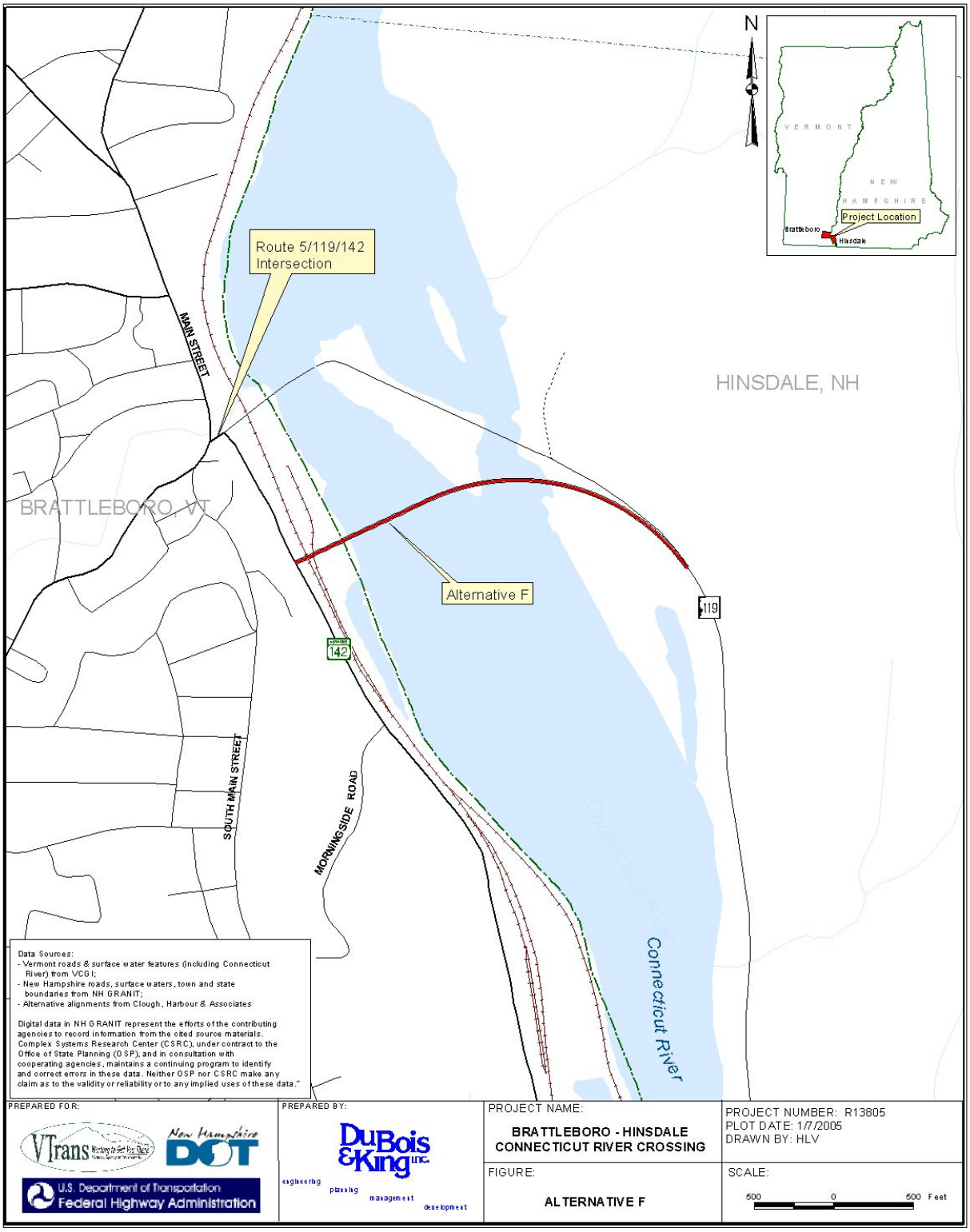


Exhibit C.3 –Proposed Bridge Graphically Depicted

Exhibit C.4 –Natural Resources Map

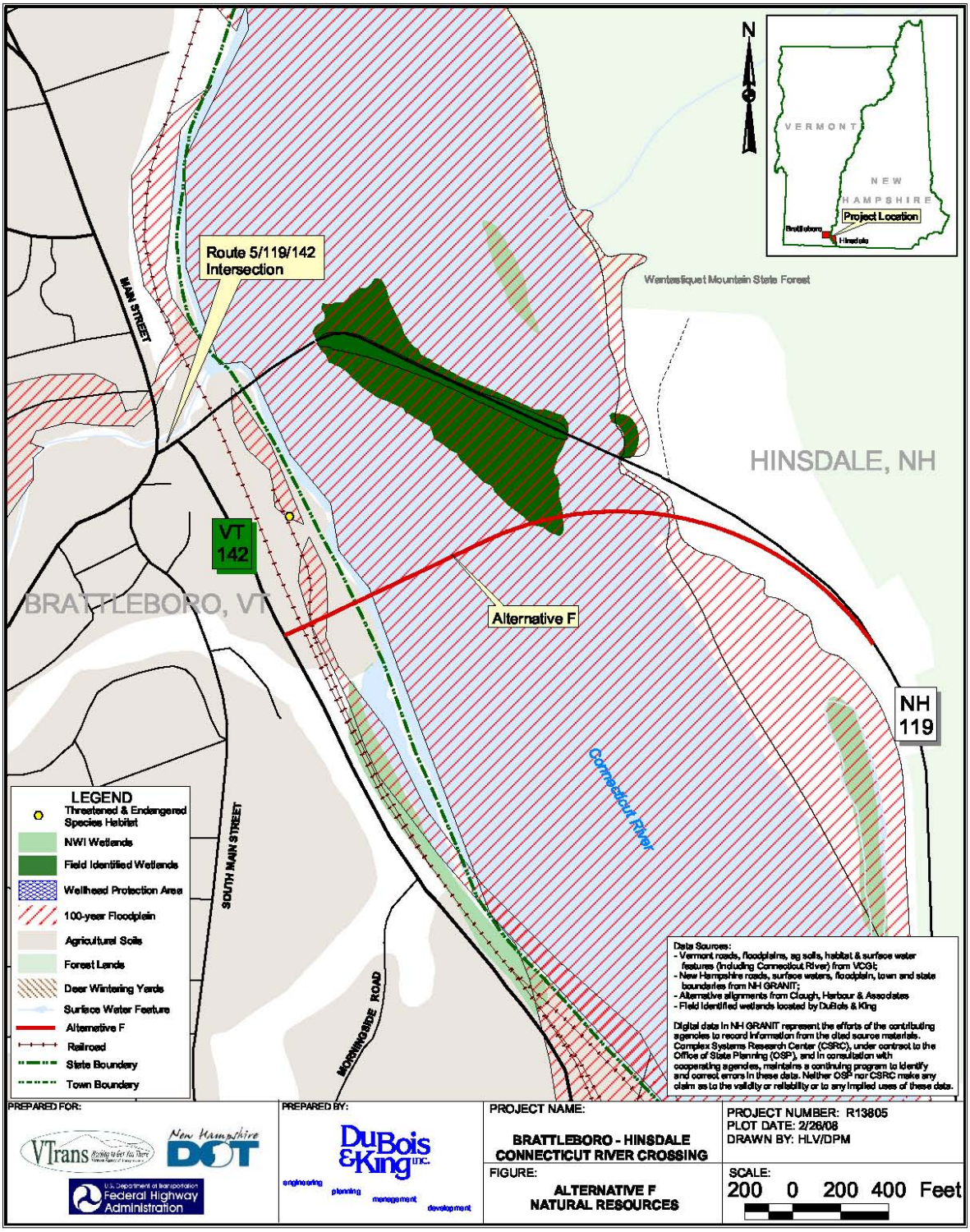


Exhibit C.5 - Dwarf Wedge Mussel Study Area

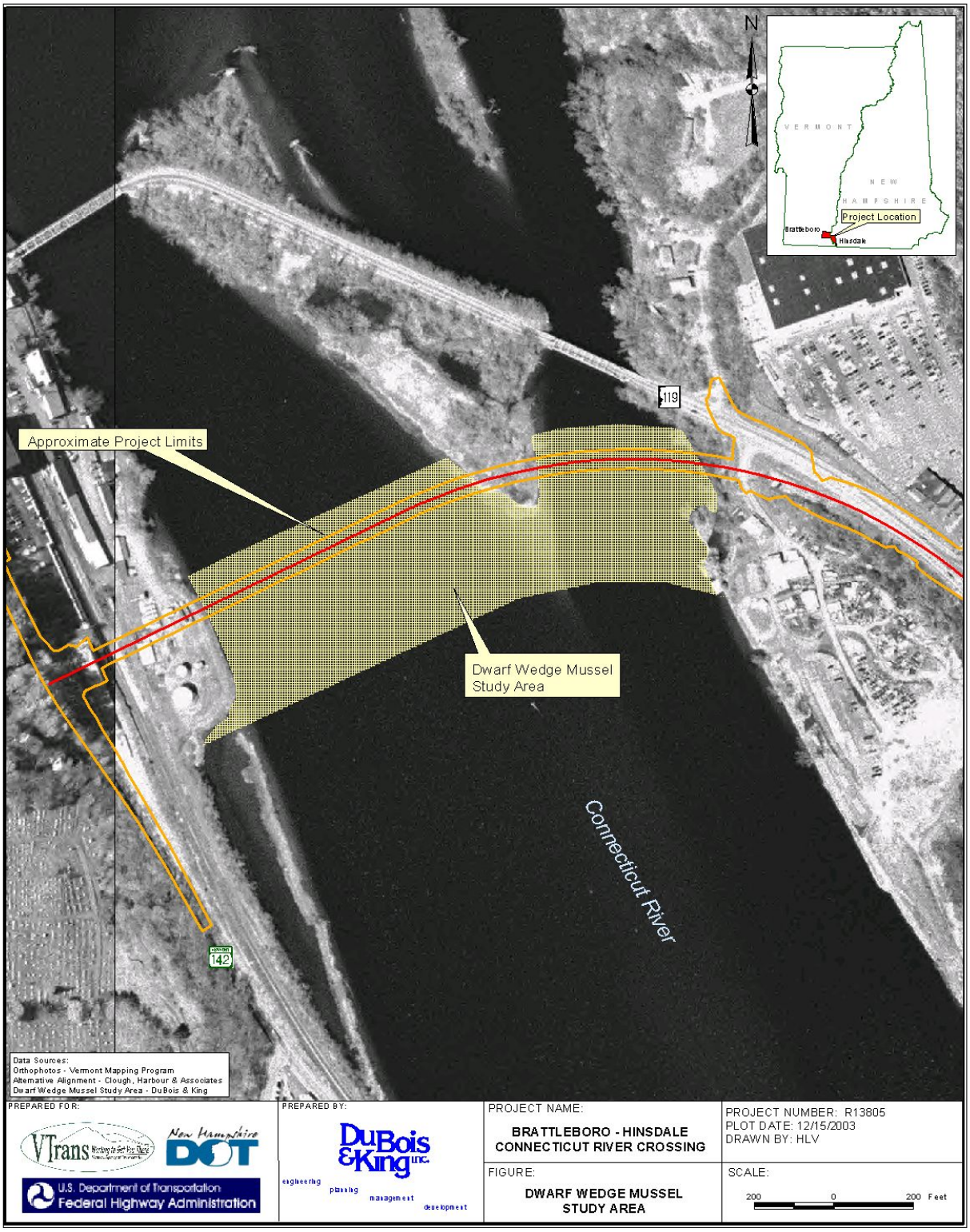


Exhibit C.6 - Pollution/Hazardous Materials Map

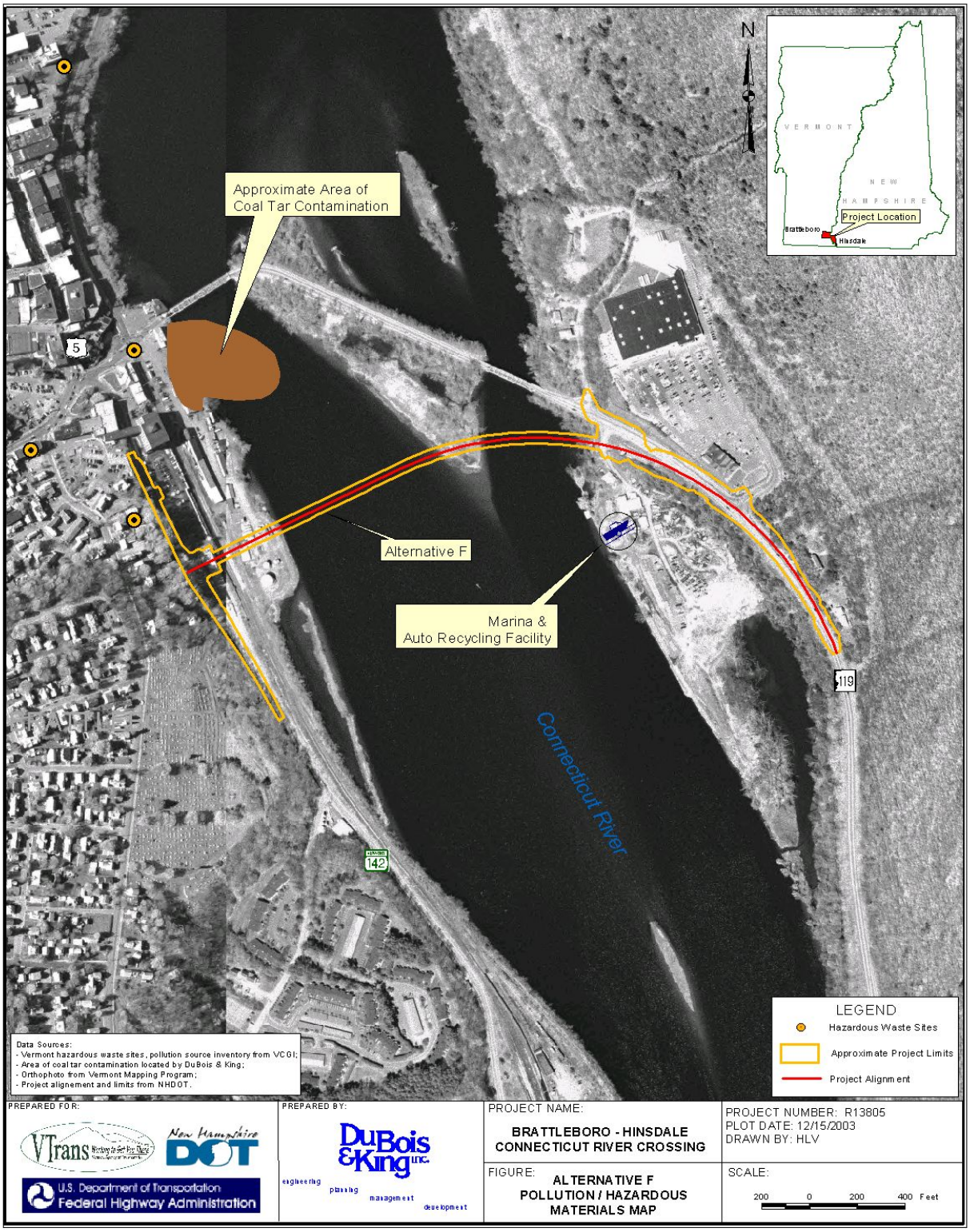


Exhibit C.7 – Alternative F Resources

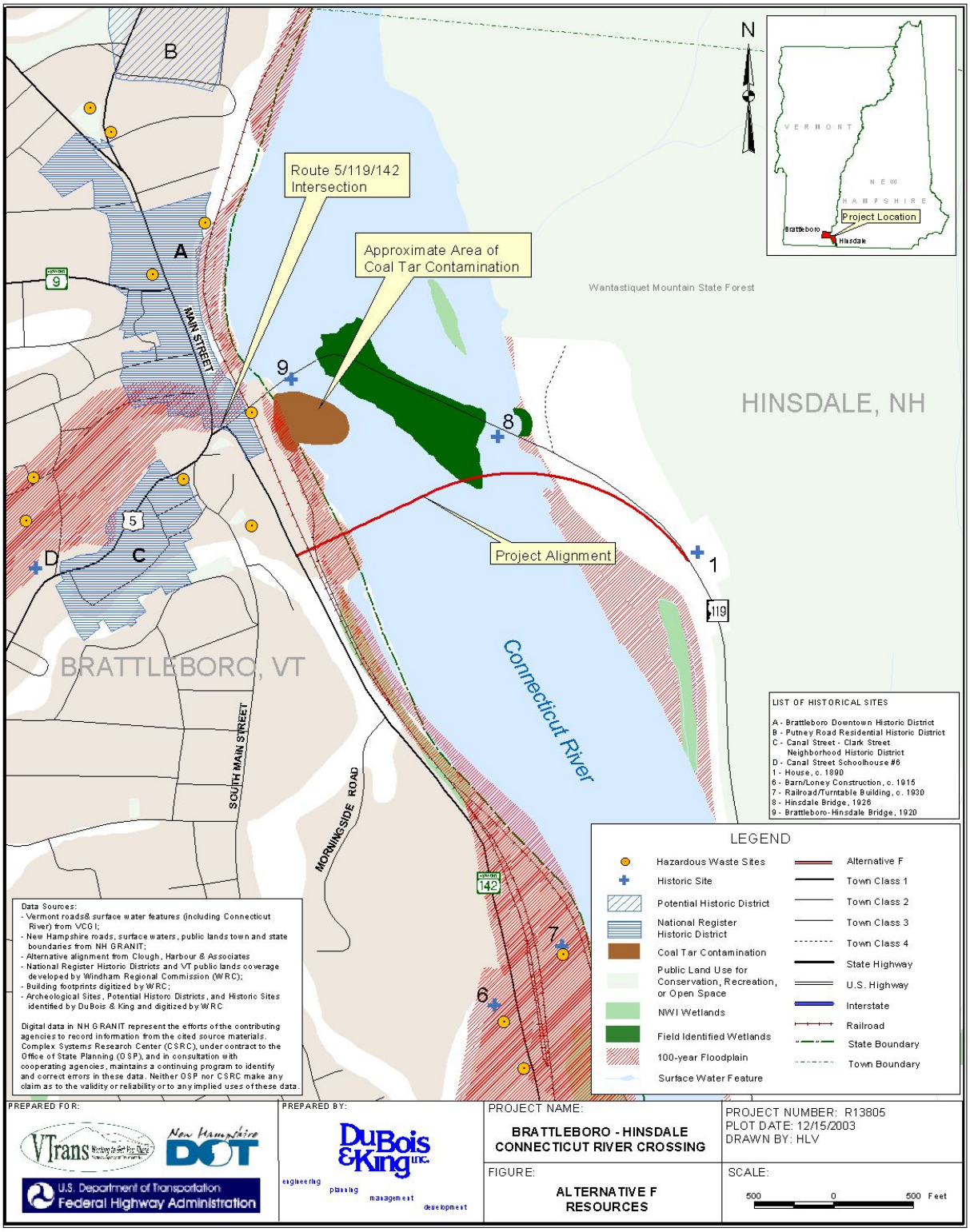


Exhibit C.8 – Union Station Waterfront Park

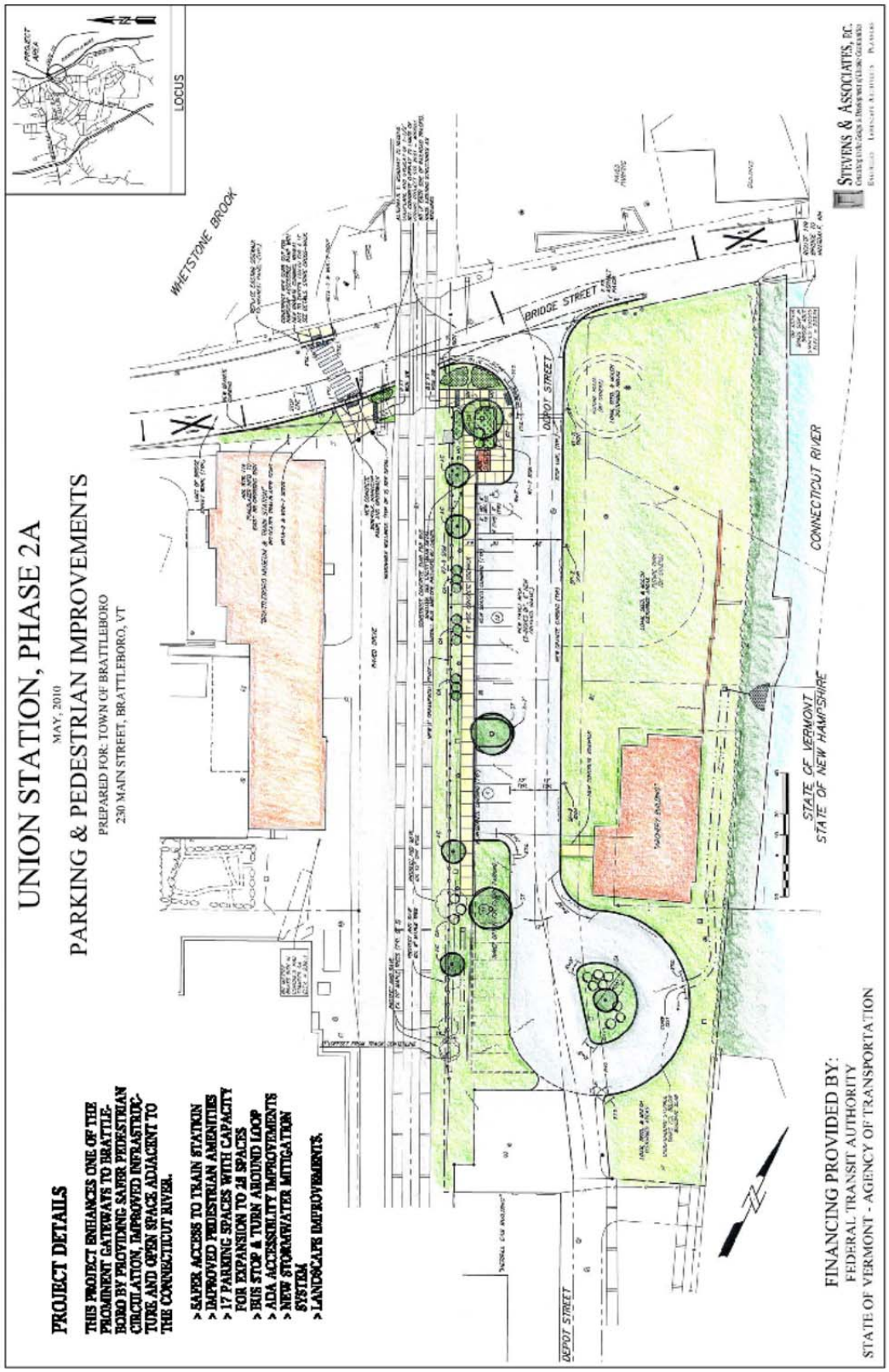


Exhibit C.9 - Recreational Facilities

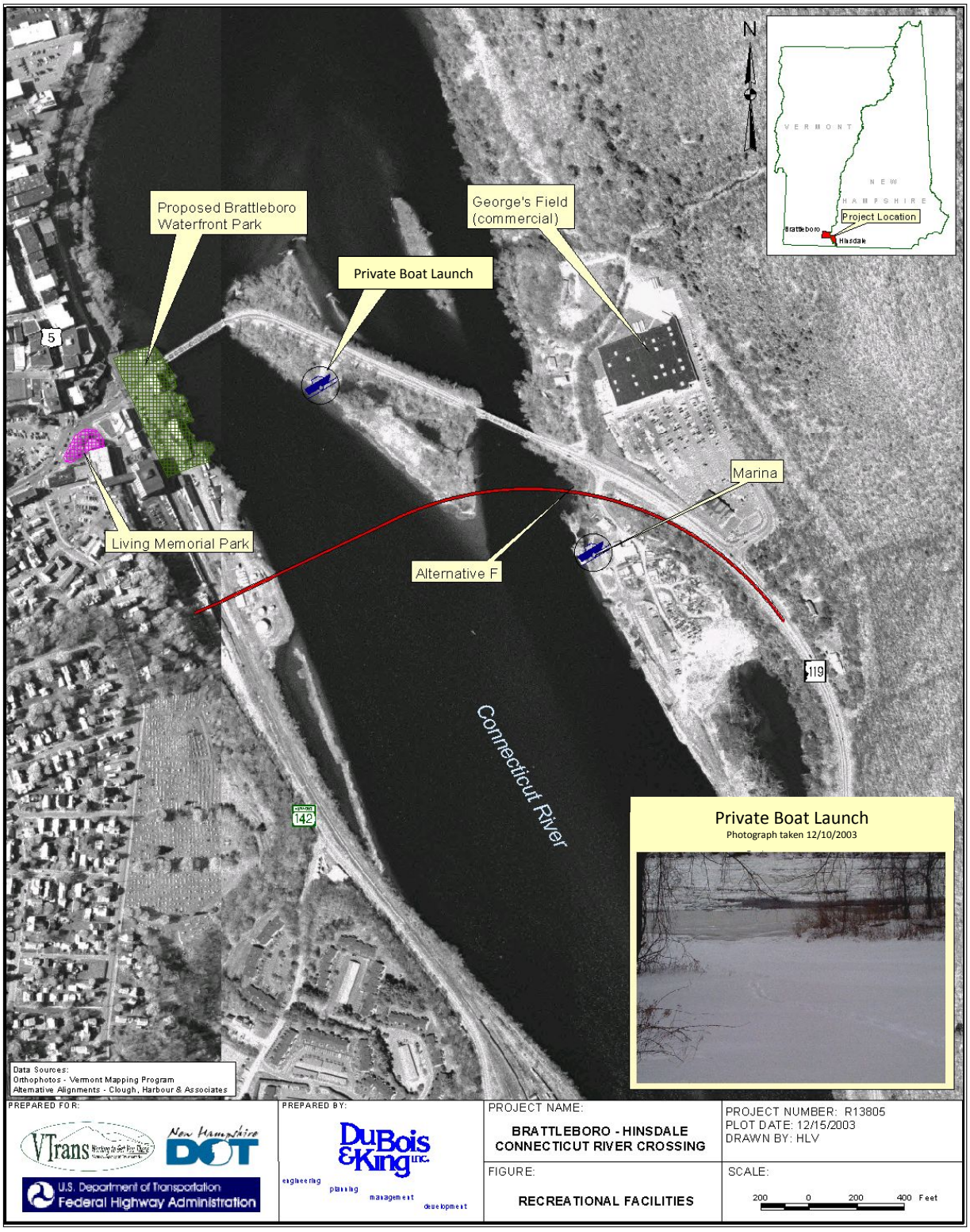


Exhibit C.10 - Proposed Air Quality for Alternative F