REGION 1

STATE OF NEW HAMPSHIRE

ROADSIDE STONE WALL RECONSTRUCTION POLICY

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ABSTRACT

This report discusses the significance of stone walls to the character of the New Hampshire landscape and addresses the development and implementation of the New Hampshire Department of Transportation's policy concerning preservation of certain stone walls impacted by transportation improvements. It also discusses the conditions for Federal-aid participation in stone wall reconstruction, and notes the relationship of the stone wall policy with the federal Scenic Byways Program and the New Hampshire Scenic and Cultural Byways System.

New Hampshire is largely rural, and much of its countryside is rich in historical resources. The state's proximity to metropolitan Boston, and to the other New England states, has aided New Hampshire in developing a strong tourist industry and in attracting those who seek a high quality of life. Many elements contribute to the rural character that makes New Hampshire a destination for tourists and a cherished place of residence. The state has taken the lead in preserving one of those elements: the roadside stone wall.

The post-glacial surface geology of the state ensures that stone and stone walls are characteristic elements of New Hampshire's landscape. New Hampshire's natural ground surface is strewn with glacial debris, including millions of stones and boulders of varying sizes. Tear-drop-shaped hills called drumlins, composed of gravel, sand, and larger, rounded stones deposited by waters flowing beneath glaciers thousands of years ago, are also distributed across the countryside. These geological conditions have made stone and stone walls an inescapable portion of New Hampshire's visual character.

Farmers in the eighteenth and nineteenth centuries used the stones that littered their pastures, or appeared with each year's plowing, to build walls that delineated the boundaries of their property and constrained their livestock. Some of these walls are little more than lines of stone. Others are examples of fine craftsmanship. Several different styles of stone walls are evident in New Hampshire, as shown in the drawings at the end of this narrative.

Most early roads were bordered by stone walls. Subsequent improvements, especially those driven by the advent of the automobile, have typically included widening, straightening, leveling, and paving the routes. Despite this incessant work, and despite the inevitable loss of roadside stone walls it has occasioned, a surprising number of roadside walls have survived.

Yet as the ceaseless pace of development of the late twentieth century continues into the twenty-first, it is certain that many other roadways will be slated for reconstruction or

rehabilitation, bringing the threat of further losses to New Hampshire's characteristic roadside walls.

The New Hampshire Department of Transportation long subscribed to a traditional right-of-way policy governing the taking of roadside stone walls for highway improvement. This policy entailed removal of the wall and reimbursement of the landowner for its "contributory value." The "contributory value" of a stone wall is the estimated monetary value that the wall adds to the property as a whole.

When a stone wall was taken for a highway project and the landowner was compensated for the contributory value of the feature, the former policy permitted NHDOT to deposit the stones at some place beyond the right-of-way if the landowner was interested in resetting the wall. However, the cost of resetting a wall is often considerably more than the financial compensation made on the basis of the wall's contributory value to the property. The owner thus faced a large expense if he or she wished to have the stone wall rebuilt on a new alignment.

In keeping with a common policy in the states of Region 1, New Hampshire previously paid for the actual reconstruction of only one category of stone wall: those that were associated with properties that had been determined eligible for listing in the National Register of Historic Places. Since relatively few stone walls are associated with National Register-eligible properties, implementation of such a policy resulted in the disappearance of many such walls across the region.

New Hampshire's policy of paying only the contributory value of stone walls was contested in 1989. A road improvement in Webster, along N. H. Route 127, required the acquisition of some 9.8 acres of right-of-way to facilitate road widening and straightening. This newly acquired right-of-way impacted approximately 9,000 feet of stone wall. Although a small portion of the wall was slated for reconstruction due to the National Register eligibility of abutting properties, most of the 9,000 feet of wall was bought for its contributory value, with no plans for rebuilding.

Affected landowners strongly protested the loss of their cherished walls. Repeated letters to Governor Judd Gregg caught his attention and that of the NHDOT. Both the governor and the agency recognized that the historic and aesthetic value of stone walls was not being protected by the contributory value policy. A committee was formed to examine the existing policy and to make recommendations for improving it. The committee included representatives from the New Hampshire Federal Highway Administration (FHWA) Division Office, the New Hampshire Department of Transportation, the Office of the Governor, and the State Historic Preservation Office (SHPO). The committee was chaired by Carol Murray, then an administrator in the Bureau of Planning of the NHDOT.

Unfortunately, the committee failed to create a new policy in time to help the abutters to the N. H. Route 127 project in Webster. Many sections of stone wall along that project were lost, although some property owners asked to have stones relocated in order to rebuild their walls at their own expense.

Yet the Webster project was the catalyst for the development of a policy that has preserved other stone walls and thus honored the historic and rural character that helps to define New Hampshire's cultural landscape.

The committee ultimately devised a policy (see Appendix A) that was adopted by the state in November 1989. This policy requires the analysis of stone walls that are to be impacted by roadway projects, using an objective scoring system to determine which walls qualify for reconstruction (see Appendix C).

Staff of the Bureau of Environment at NHDOT perform the initial assessment. The evaluation uses a multi-tiered screening system. The first step examines the project as a whole. This phase employs criteria that consider the functions of the roadway itself, the degree of current roadside development, and the route's zoning for future development. Roadside aesthetics, visual impression, and the amount of frontage of stone walls in the

project are also evaluated and assigned a numerical score. A flow chart depicting this evaluative process is included in Appendix B.

A project that scores 70 points or more (of a possible 98) in the first phase of screening will be approved for reconstruction of all disturbed walls within the project area. If the project does not score enough points to qualify as a whole, however, the separate walls within the project area are evaluated for possible individual reconstruction in Phase Three of the screening process.

The results of the first phase of the screening process are presented to the FHWA and SHPO for review and comment in Phase Two. Both the FHWA and SHPO conduct a field and/or video review of the affected walls, and assign final point values for the project. Phase Two of the evaluation process provides an opportunity for comments concerning the need for further evaluation of individual walls within any project that does not qualify for project-wide wall preservation.

Phase Three of the screening process, the assessment of individual walls, examines separate walls within projects that do not qualify for project-wide preservation. This phase uses a different scoring sheet to examine the aesthetics and function of the wall itself, designating the wall type according to the classification shown in the drawing at the end of this narrative. A minimum score of 26 (of a possible 48 points) qualifies a particular wall for reconstruction.

As with overall project evaluations, this screening is first carried out by the NHDOT Bureau of Environment and is then reviewed by the FHWA and SHPO. This evaluation also includes video and photo reviews for individual walls, or field reviews where appropriate.

Phase Four of the screening process is carried out by NHDOT's Bureau of Highway Design. This phase evaluates the feasibility, with respect to the surrounding environment, of rebuilding those walls found eligible for reconstruction in Phase Three.

Primary consideration is given to the possibility of redesigning the roadway to preserve existing stone walls in place. Such factors as topography, wetlands, clear zone, wall visibility, and cultural resources are examined. FHWA, SHPO, and NHDOT's Bureau of Environment review the findings. The results of the stone wall evaluation are discussed in the project's environmental documents.

When reconstruction of eligible walls is found to be feasible, the NHDOT Bureau of Right-of-Way attempts to attach a preservation covenant to the warrantee deed that transfers the acquired right-of-way to the State (see Appendix E). The covenant is a legal document that requires current and future landowners to obtain the state's permission to alter or remove a wall that was reconstructed at state expense.

It is often necessary to work outside the right-of-way in reconstructing a stone wall. In such cases, NHDOT must also obtain a right of entry onto private property in order to provide contractors with the work area that they need for the reconstruction of the wall.

If the landowner declines to sign a preservation covenant, the state will purchase a permanent preservation easement, or acquire such an easement through the eminent domain process, in cases involving properties that have been determined eligible for listing in the National Register of Historic Places. When the owner of a non-Register-eligible property declines to sign a covenant, NHDOT reverts to the old method of paying the contributory value of the wall, and then removes the stones.

A wall reconstruction project that has been deemed eligible under this scoring system becomes a construction item for the roadway improvement project. Section 572 of the NHDOT Standard Specifications defines measurement and payment details necessary to make the preservation of stone walls a bid item (see Appendix D).

Among its tasks, the planning committee of 1989 needed to resolve the crucial question of Federal-aid assistance with the extra costs resulting from implementation of the

proposed policy. FHWA ultimately decided that federal project funds could be utilized in the reconstruction of stone walls if certain conditions were met. These conditions were:

1. The selection process must be comprehensive and have a rational basis, with objective eligibility criteria.

2. Reconstruction costs must be in lieu of monetary payment for the contributory value of stone walls that are reconstructed.

3. Reconstructed walls must be protected by preservation covenants or permanent easements.

4. The reconstruction must be physically feasible and cause no adverse environmental impact.

The stone wall policy has been found to meet these conditions.

The National Scenic Byways Program, established under the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and re-authorized under subsequent transportation acts, became active in 1992. The program's principles reinforce those of New Hampshire's stone wall reconstruction policy.

The National Scenic Byways Program designates certain roads as national byways on the strength of six attributes: *archaeological resources, cultural resources, historical resources, natural features, recreational activities, and scenic beauty*. To be designated as a National Scenic Byway, a road must possess characteristics of regional significance within at least one of these six attributes. To qualify as an All-American Road, a route must possess characteristics of national significance in at least two of these intrinsic qualities.

The preservation of roadside stone walls may be regarded as enhancing a highway's archaeological, cultural, historic, and scenic qualities. The legislation that created the Scenic Byways Program defines *archaeological resources* to include "physical evidence of historic or prehistoric human life or activity that are visible and capable of being inventoried and interpreted." Archaeological resources may include ruins, structural remains, and other physical evidence that has the potential of educating the viewer and stirring an appreciation of the past.

According to the official definition of the National Scenic Byways Program, *cultural resources* are evidences of the customs or traditions of a distinct group of people, which are currently practiced. The stone wall became the predominant method of impounding livestock and delineating property boundaries in eighteenth- and nineteenth-century New England. It has been estimated that 252,539 miles of stone wall were constructed in the New England states and New York during this period. The stone wall thus qualifies as one of the most extensive, enduring, and characteristic cultural resources created by the New England settler and farmer. Thanks to New Hampshire's stone wall reconstruction policy, the building of stone walls, never abandoned even after the advent of different modes of fencing, has experienced a strong revival and is currently practiced.

Historical qualities along a highway are defined as "legacies of the past that are distinctly associated with physical elements of the landscape . . . [and] are of such historic significance that they educate the viewer and stir an appreciation of the past." Historical objects should retain integrity of location, design, setting, materials, workmanship feeling, and association—the same qualities that are sought in determining eligibility for listing in the National Register of Historic Places. These attributes are measured under New Hampshire's stone wall reconstruction policy, in somewhat different manner, through the use of the stone wall evaluation sheets (see Appendix C).

The National Scenic Byways Program defines *scenic qualities* as "characteristics of the landscape [that] are strikingly distinct and offer a pleasing and most memorable visual experience." The weight given to the visual qualities of the stone wall under New

Hampshire's evaluative procedures ensures that walls that are preserved or reconstructed will offer such an experience.

Encouraged by the National Scenic Byways Program, the State of New Hampshire instituted its own Scenic and Cultural Byways System in 1992. RSA 238:19-23 established the system in to "provide the opportunity for residents and visitors to travel a system of byways which feature the scenic and cultural qualities of the state within the existing highway system, promote retention of rural and urban scenic byways, support the cultural, recreational, and historic attributes along these byways, and expose the unique elements of the state's beauty, culture, and history."

Both federal and New Hampshire state laws, then, reinforce and encourage the purposes for which New Hampshire established its roadside stone wall reconstruction policy. The walls that have been preserved or reconstructed under the state policy, or that will be in the future, have met criteria that ensure their contribution to the same purposes for which the National Scenic Byways Program and the New Hampshire Scenic and Cultural Byways Program were established in 1991 and 1992.

Questions or comments about the New Hampshire stone wall policy should be directed to FHWA, New Hampshire Division Realty Officer Harry Kinter at FTS 834-4644 or (603) 228-3057, extension 109.

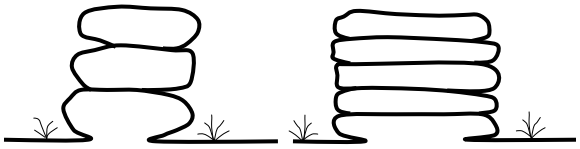
DRAWINGS

STONE WALL TYPOLOGY

I. Natural (native) stone (glacially rounded or faceted):

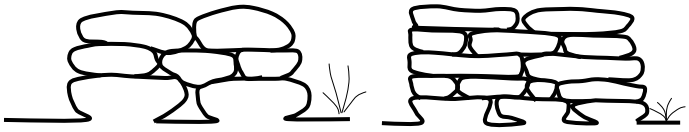
A. One stone in thickness:

572.1



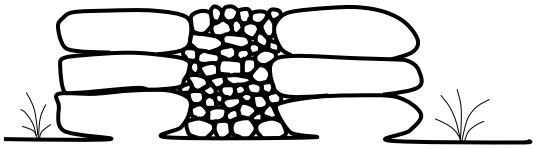
B. Two or more stones thick:

572.2

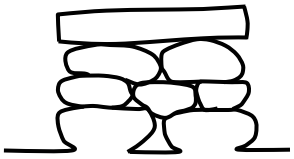


C. Two stone faces with loose infill:

572.3

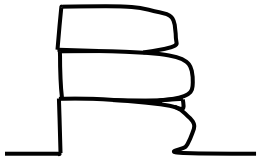


Natural stone with split stone coping:

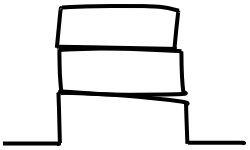


II. Split stone:

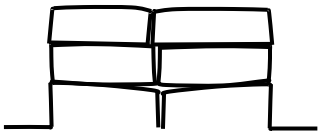
A. One stone in thickness, one split face:



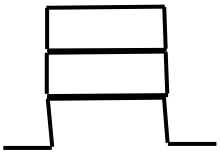
B. One stone thick, two split faces:



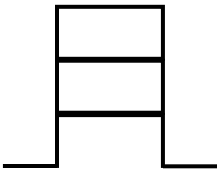
C. Two stones thick, two split faces



D. Squared ashlar:



E. Hammered ashlar:



APPENDIX A

NEW HAMPSHIRE STONE WALL RECONSTRUCTION POLICY

STONE WALL RECONSTRUCTION POLICY

1. The initial screening is on a project-by-project basis as part of the environmental review process. The Bureau of Environment performs the screening, the results of which are then presented to the State Historic Preservation Office and the Federal Highway Administration for comment and review (Phase One). Once the comments have been addressed, the State Historic Preservation Office will approve the screening results for inclusion in the environmental documents (Phase Two).

   A draft of the numerical project rating systems (Phase One and Phase Two) are attached and include such items as:

   a. Functional classification of the highway
   b. Roadside development
   c. Current and zoned land use
   d. Traffic volumes
   e. Extent of project involvement with walls

2. The treatment of historic walls under the Section 106 process will not be altered by this policy except that owners will be asked to sign a covenant to preserve the walls and/or landscaping. If the owner refuses to sign a covenant, the New Hampshire Department of Transportation will acquire a permanent easement for preservation purposes through eminent domain action.

3. Any walls disturbed or destroyed by a project meeting the screening criteria will be eligible for reconstruction if the project design cannot be changed to provide for preservation in place.

4. A second review will be done prior to purchase plans being issued to the Bureau of Right-of-Way. The design team evaluates the proposed wall reconstruction or preservation to determine if the mitigation measures are comparable to the design. The results of this evaluation are brought back to the State Historic Preservation Office and the Federal Highway Administration through the Bureau of Environment for review (Phase Four).

5. The appraiser(s) will be given clear direction to identify in their report(s) the contributory value of stone walls.

6. The Land Damage Commission will explain to owners that walls will be rebuilt at project expense in exchange for a covenant and right-of-entry needed to provide room for construction. If no amiable agreement is reached, then payment will be made for walls based on their contributory value as identified in the appraisal(s).

7. Stone walls are to be rebuilt “in kind” as an item in the construction contract. Specifications reflecting types of walls will be included in bid documents along with proper notations on the construction plans (see attached specifications).

8. The walls are not to be maintained by the Department of Transportation. The owner has permission to maintain the walls, if desired.

9. Reconstructed walls cannot be removed or relocated except where permitted by the State under a driveway permit or specific written permission. The District Maintenance Engineer will forward these requests to the Bureau of Right-of-Way for comment before issuing any driveway permit involving stone walls that have been reconstructed by highway projects.

10. Video records will be done by the Department of Transportation prior to and at the conclusion of construction. File records of all stone wall covenants will include a copy of the videotape. These records are to be maintained in the Bureau of Right-of-Way.

11. The Right-of-Way record plans will reflect areas where covenants are acquired. This information will also be provided to the appropriate Maintenance District office. The maintenance foreman will make periodic reviews to verify compliance. Violations are to be reported to the Bureau of Right-of-Way in writing.

12. Appropriate landscaping may be installed in the areas where walls are rebuilt, at project expense.

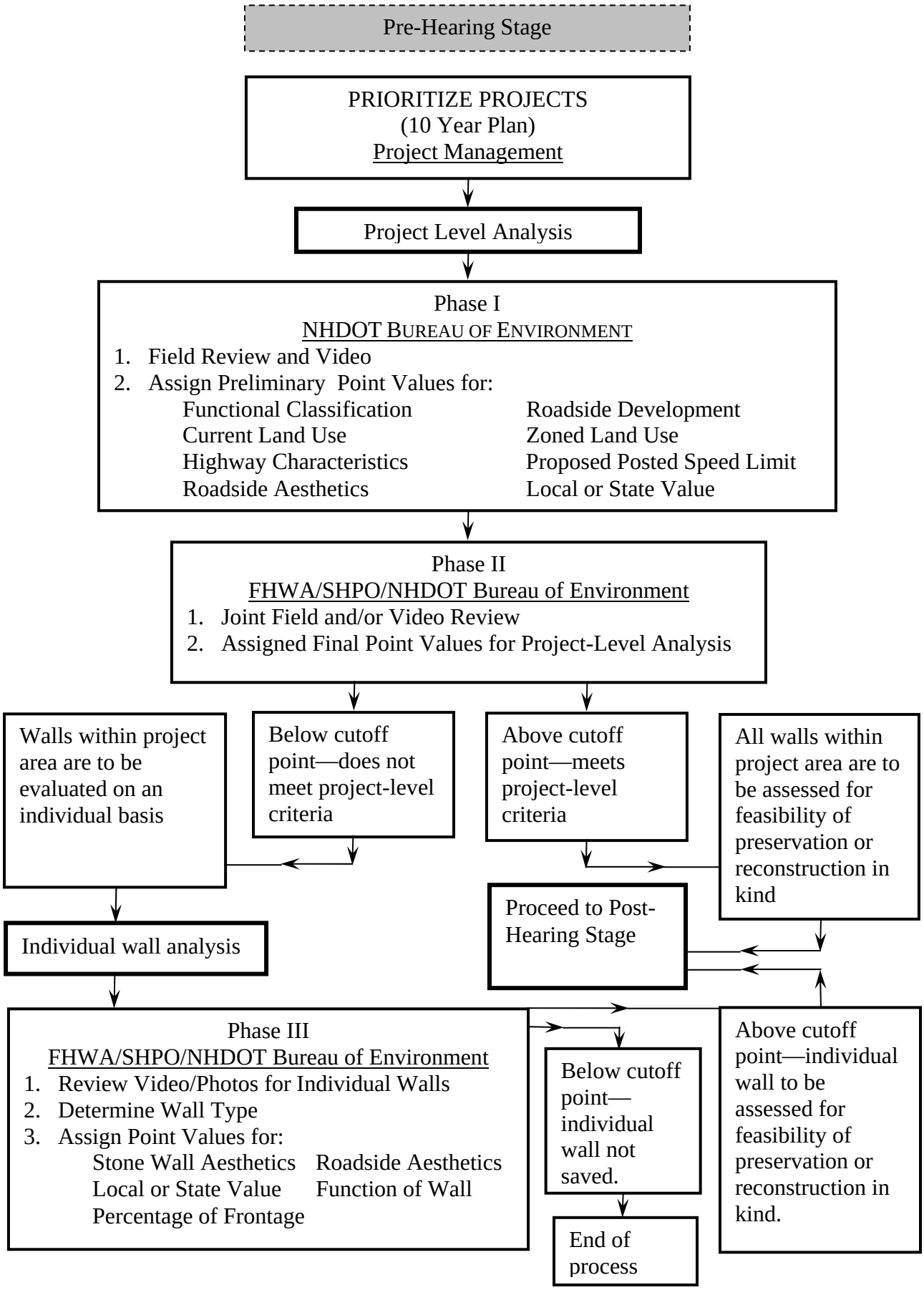
13. Violations of the terms of the covenants will be subject to action by the Attorney General to obtain acceptable repair and/or injunctive relief.

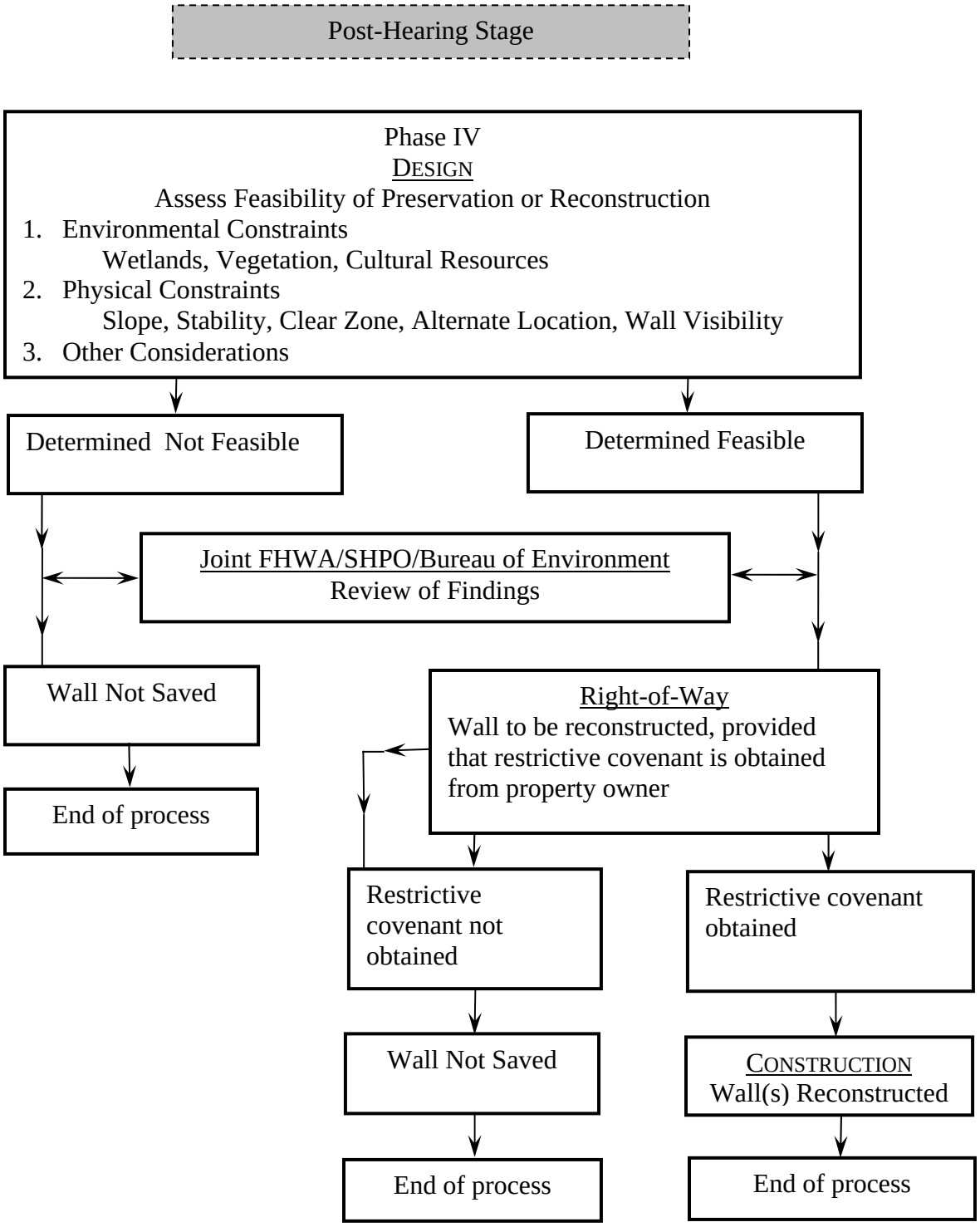
14. For those projects which do not meet the eligibility criteria, individual walls are then evaluated under a screening process (see Phase Three, attached). Those stone walls identified as eligible would then proceed through steps 4-13, above.

APPENDIX B

FLOW CHARTS – NHDOT STONE WALL POLICY

IMPLEMENTATION OF NHDOT STONE WALL POLICY




Post-Hearing Stage
Phase IV
DESIGN
Assess Feasibility of Preservation or Reconstruction
1. Environmental Constraints
Wetlands, Vegetation, Cultural Resources
2. Physical Constraints
Slope, Stability, Clear Zone, Alternate Location, Wall Visibility
3. Other Considerations
Determined Not Feasible
Determined Feasible
Joint FHWA/SHPO/Bureau of Environment
Review of Findings
Wall Not Saved
End of process
Right-of-Way
Wall to be reconstructed, provided that restrictive covenant is obtained from property owner
Restrictive covenant not obtained
Restrictive covenant obtained
Wall Not Saved
CONSTRUCTION
Wall(s) Reconstructed
End of process
End of process

APPENDIX C

PROJECT RATING SYSTEM

PHASE ONE

PROJECT RATING SYSTEM

Project Name: Federal No.: State No.:

Phase 1—Page 1

Functional Classification
(Circle Points That Apply)

	Environmental	Joint
Off System	10 points	10 points
Minor Collector	8 points	8 points
Major Collector	6 points	6 points
Principal Arterial	4 points	4 points
Interstate/Turnpike	0 points – eliminate from consideration	0 points

Roadside Development

	Environmental	Joint
Sparse	10 points	10 points
Intermediate	5 points	5 points
Dense	0 points	0 points

Interpretation or modification subject to consent of: Federal Highway Administration, State Historic Preservation Office, and New Hampshire Department of Transportation.

Phase 1 – Page 1 Subtotal: _____

Project Name: Federal No.: State No.:

Phase 1—Page 2

Current Land Use
(Circle Points That Apply)

	Environmental	Joint
Active Agricultural	10 points	10 points
Historically Agricultural	8 points	8 points
Residential	6 points	6 points
Mixed	4 points	4 points
Commercial	2 points	2 points
Industrial	0 points	0 points

Zoned Land Use

	Environmental	Joint
Agricultural	10 points	10 points
Residential	8 points	8 points
Mixed	6 points	6 points
Commercial	2 points	2 points
Industrial	0 points	0 points

Highway Characteristics

	Environmental	Joint
Existing ADT under 1,000	10 points	10 points
Existing ADT 1,000 to 5,000	6 points	6 points
Existing ADT 5,000 to 10,000	2 points	2 points
Existing ADT 10,000 and over	0 points	0 points

Interpretation or modification subject to consent of: Federal Highway Administration, State Historic Preservation Office, and New Hampshire Department of Transportation.

Phase 1 – Page 2 Subtotal: _____

Project Name: Federal No.: State No.:

Phase 1—Page 3

Proposed Posted Speed Limit
(Circle Points That Apply)

	Environmental	Joint
Under 50 MPH	10 points	10 points
50 MPH and above	5 points	5 points

Roadside Aesthetics

	Environmental	Joint
Attractive Vegetation		
Yes	2 points	2 points
No	0 Points	0 points
Characteristic Roadside Architecture		
Yes	2 points	2 points
No	0 points	0 points
Visible from Roadway		
Yes	2 points	2 points
No	0 points	0 points
Existing Right-of-Way Delineated Stone Walls		
Yes	2 points	2 points
No	0 points	0 points

Interpretation or modification subject to consent of: Federal Highway Administration, State Historic Preservation Office, and New Hampshire Department of Transportation.

Phase 1 – Page 3 Subtotal: _____

Project Name: Federal No.: State No.:

Phase 1—Page 4

Local or State Value
(Circle Points That Apply)

	Environmental	Joint
Located Adjacent to Historic Resource	10 points	10 points
Identified as Important by Local Officials (Aesthetically or other)	10 points	10 points
Identified as Important by Interested Citizens (Aesthetically or other)	5 points	5 points
No Concern Expressed	0 points	0 points

Total Percentage of Stone Walls on Project

	Environmental	Joint
Entire Project	10 points	10 points
Over 75%	8 points	8 points
50-75%	6 points	6 points
25-49%	2 points	2 points
Under 25%	0 points	0 points

Visual Impression of Stone Walls

	Environmental	Joint
Superior	10 points	10 points
Moderate	5 points	5 points
Minimal	0 points	0 points

Interpretation or modification subject to consent of: Federal Highway Administration, State Historic Preservation Office, and New Hampshire Department of Transportation.

Phase 1 – Page 4 Subtotal: _____

PHASE TWO

PROJECT RATING SUMMARY

A. Date of Review: _____

B. Rating Results:

Phase 1 – Page 1 Subtotal: _____

Phase 1 – Page 2 Subtotal: _____

Phase 1 – Page 3 Subtotal: _____

Phase 1 – Page 4 Subtotal: _____

Phase 1 Total: _____

Project Cutoff: _____

Project Qualified: Yes _____
(check feasibility of preservation or reconstruction)

No _____
(proceed to individual wall analysis, Phase 3)

C. Summary of Project Rating:

Comments on Project Rating (include discussion of preservation or reconstruction)

_____

_____

_____

_____

_____

_____

_____

Interpretation or modification subject to consent of: Federal Highway Administration, State Historic Preservation Office, and New Hampshire Department of Transportation.

PHASE THREE

INDIVIDUAL WALL RATING SYSTEM

Project Name: Federal No.: State No.:

Date:

Owner's Name: _____ Station: _____

Phase 3 – Page 1

Stone Wall Aesthetics

Unique or Distinctive Workmanship	10 points
Maintained Walls	8 points
Common Boundary Walls (unmaintained)	6 points
Aligned Stones	2 points

Roadside Aesthetics

Tree-lined

Yes	2 points
No	0 points

Attractive Vegetation

Yes	2 points
No	0 points

Characteristic Roadside Architecture

Yes	2 points
No	0 points

Visible from Roadway

Yes	2 points
No	0 points

Interpretation or modification subject to consent of: Federal Highway Administration, State Historic Preservation Office, and New Hampshire Department of Transportation.

Phase 3 – Page 1 Subtotal: _____

Local or State Value

Located Adjacent to Historical Resource	10 points
Identified as Important by Local Officials (Aesthetically or Other)	10 points
Identified as Important by Interested Citizens (Aesthetically or Other)	5 points
No Concern Expressed	0 points

Function of Wall

Identifiable Historic Purpose	10 points
Boundary Marker	6 points
Ornamental	2 points

Percentage of Frontage

Entire Frontage	10 points
Over 50%	6 points
25-50%	2 points
Under 25%	0 points

Note: Stone walls functioning as retaining walls will be discussed with the design team for engineering input.

Interpretation or modification subject to consent of: Federal Highway Administration, State Historic Preservation Office, and New Hampshire Department of Transportation.

Phase 3 – Page 2 Subtotal: _____

Phase 3 – Page 1 Subtotal: _____

Phase 3 Total: _____

Cutoff: _____

PHASE FOUR

RECONSTRUCTION FEASIBILITY OF INDIVIDUAL WALLS

Project Name: Federal No.: State No.:

Owner's Name:_____ Station:_____ Date:_____

Environmental Conditions

Adverse Wetland Effects due to Reconstruction Yes _____ No _____

Negative Consequences to Natural Vegetation as a Result of Relocation Yes _____ No _____

Negative Consequences to Cultural Resources as a Result of Relocation Yes _____ No _____

Physical Situation

Slope Conditions Allow Construction of a Stable Wall Yes _____ No _____

A. Is There an Alternative Location? Yes _____ No _____

New Wall Location Not Visible from Roadway or Property Improvement Yes _____ No _____

Outside Clear Zone Yes _____ No _____

Other Considerations: (List and Describe)

1. _____

_____

2. _____

_____

3. _____

_____

4. _____

_____

Interpretation or modification subject to consent of: Federal Highway Administration, State Historic Preservation Office, and New Hampshire Department of Transportation.

Reconstruct
(If Yes, Proceed to Next Page) Yes _____ No _____

Date of Joint Review: _____

Stone Wall Type
(See Drawings of Wall Types)

Item Number		Station – Station (LT or RT)
572.1	One Stone Wide	_____
572.2	Multiple Stones Wide	_____
572.3	Double Faced With Loose Fill	_____

Special (Describe) _____

_____

_____

_____

Interpretation or modification subject to consent of: Federal Highway Administration, State Historic Preservation Office, and New Hampshire Department of Transportation.

APPENDIX D

CONTRACT, SECTION 572

SECTION 572—STONE WALL

Description

1.1 This work shall consist of reconstructing stone walls where shown on the plans or as ordered.

Materials

2.1 Stone from the existing stone wall shall be utilized to reconstruct the wall at the specified location.

2.1.1 Any special stone features such as lintels, gate posts, copings, markers, etc., shall be retained for resetting.

2.2 Any added stone shall conform to the type used in the original wall.

Construction Requirements

3.1 The reconstructed stone wall shall march the existing wall as closely as possible.

3.1.1 The Contractor shall, by photographs and measurements acceptable to the Engineer, record the width, height, and configuration of the existing wall prior to removal. These photographs and measurements, along with the prevailing width, height, and configuration, shall be used to guide the reconstruction of the wall. These records shall be made at intervals of not more than 500 feet and at locations where characteristics of the wall change. The photographs shall become the property of the State at the end of the project.

3.1.2 When existing wall sections designated for reconstruction are in such disrepair that the original wall configuration cannot be determined, these sections shall be rebuilt to match abutting wall segments.

3.2 The stone wall reconstruction shall be supervised by a person with experience in dry masonry construction.

3.3 Care shall be taken to keep weathered faces exposed.

3.4 The Contractor shall retain all stone from the existing wall for reuse. Additional stones that may be necessary shall be blended with the existing stones in order to reproduce the appearance of the existing wall.

3.5 The Contractor shall carefully replace chinking, blocking, bond stones and headers, as appropriate to the original style of wall, to ensure the maximum stability of the wall.

3.6 The Contractor shall carefully duplicate special features of the original wall, such as lintels, gate posts, openings, copings, markers, etc.

3.7 The ground surface shall be prepared by removing brush, vegetation, topsoil and unsuitable material. The area shall be rough graded to obtain a reasonably firm and level surface.

Method of Measurement

4.1 Reconstructing stone walls will be measured by the linear foot along the center line of the reconstructed wall.

4.2 Clearing and grubbing will be measured as provided in 201.

4.3 Gravel required for surface preparation will be measured by the cubic yard, complete in place. Limits of gravel will be as shown on the plans, or as ordered.

Basis of Payment

5.1 The accepted quantity of reconstructed wall will be paid for at the contract unit price per linear foot complete in place.

5.1.1 Any additional stone required to complete the reconstruction will be subsidiary.

5.1.2 Reconstruction of special features as defined in 3.6 will be subsidiary.

5.1.3 Photographs and measurement records of the existing wall will be subsidiary.

5.2 Ground surface preparation will be subsidiary.

5.2.1 When special site preparation, such as clearing and grubbing or gravel base courses, are ordered, this work will be paid under appropriate items of the contract. If appropriate items are not included in the contract, this work will be paid as provided in 109.04.

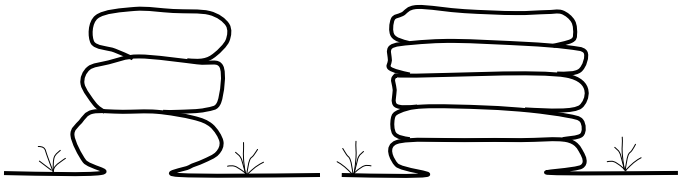
5.2.2 Gravel for surface preparation shall meet the requirements of 209.

Pay items and units:

572.1	Reconstructing Stone Wall, One Stone Wide	L.F.
572.2	Reconstructing Stone Wall, Multiple Stones Wide	L.F.
572.3	Reconstructing Stone Wall, Double Faced with Loose Fill	L.F.

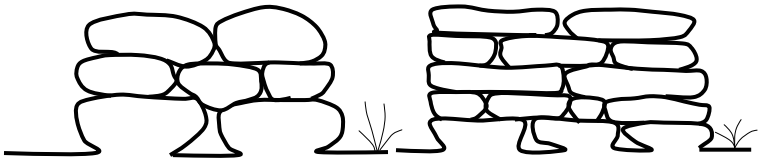
A. One stone in thickness:

572.1



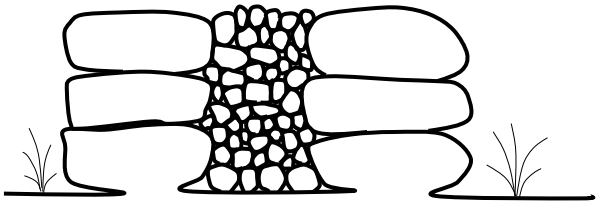
B. Two or more stones thick:

572.2



C. Two stone faces with loose infill:

572.3



Note: Depictions are for description of the items and not intended to be used for construction detail.

FOR INFORMATION

GENERAL CONFIGURATION OF STONE WALLS

APPENDIX E

PRESERVATION COVENANT

AGREEMENT

FOR

STONE WALL CONSTRUCTION AND PRESERVATION

(*specific names, distances, and locations are for example only*)

THIS INDENTURE, entered into this day between ****, hereinafter termed the Party of the First Part, and the State of New Hampshire Department of Transportation, hereinafter termed the Party of the Second Part,

WITNESSETH that for and in consideration of the sum of $1.00, the receipt of which is hereby acknowledged, the Party of the First Part does hereby release to the Party of the Second Part, the right to enter upon the property of the Party of the First Part for the purpose of relocating and reconstructing a stone wall situated between Route 4 Construction Center Line Station 437 + 09 and Main Street Construction Center Line Station 25 + 00, including four (4) barways and containing approximately seven hundred twenty (720) lineal feet of stone wall as shown on a plan of Chichester FG-F-012-2(17), P-4809K.

WITNESSETH that the Party of the First Part and the Party of the Second Part do hereby covenant and agree to the following stipulations:

1) The Party of the Second Part will rebuild the wall described above "in kind" at their expense.

2) The Party of the First Part will allow right of entry onto the property by the Party of the Second Part to allow for the reconstruction of said wall. Said right of entry is to expire upon completion of the project referred to above.

3) The Party of the First Part shall not alter or remove said stone wall, or any portion thereof, without first obtaining written permission from the Party of the Second Part.

4) The area so disturbed by said stone wall construction will be returned as near as possible to its original condition by the Party of the Second Part.

5) The Party of the First Part may maintain said stone wall, if so desired.

6) The Party of the Second Part agrees to install appropriate landscaping where applicable, at their expense.

The above stipulations shall run with the land and shall be binding upon the successors and assigns of the Party of the First Part.

WITNESS MY/OUR HAND(S), this _____ day of _____
A. D. 20**.

Signed and delivered
In the presence of: