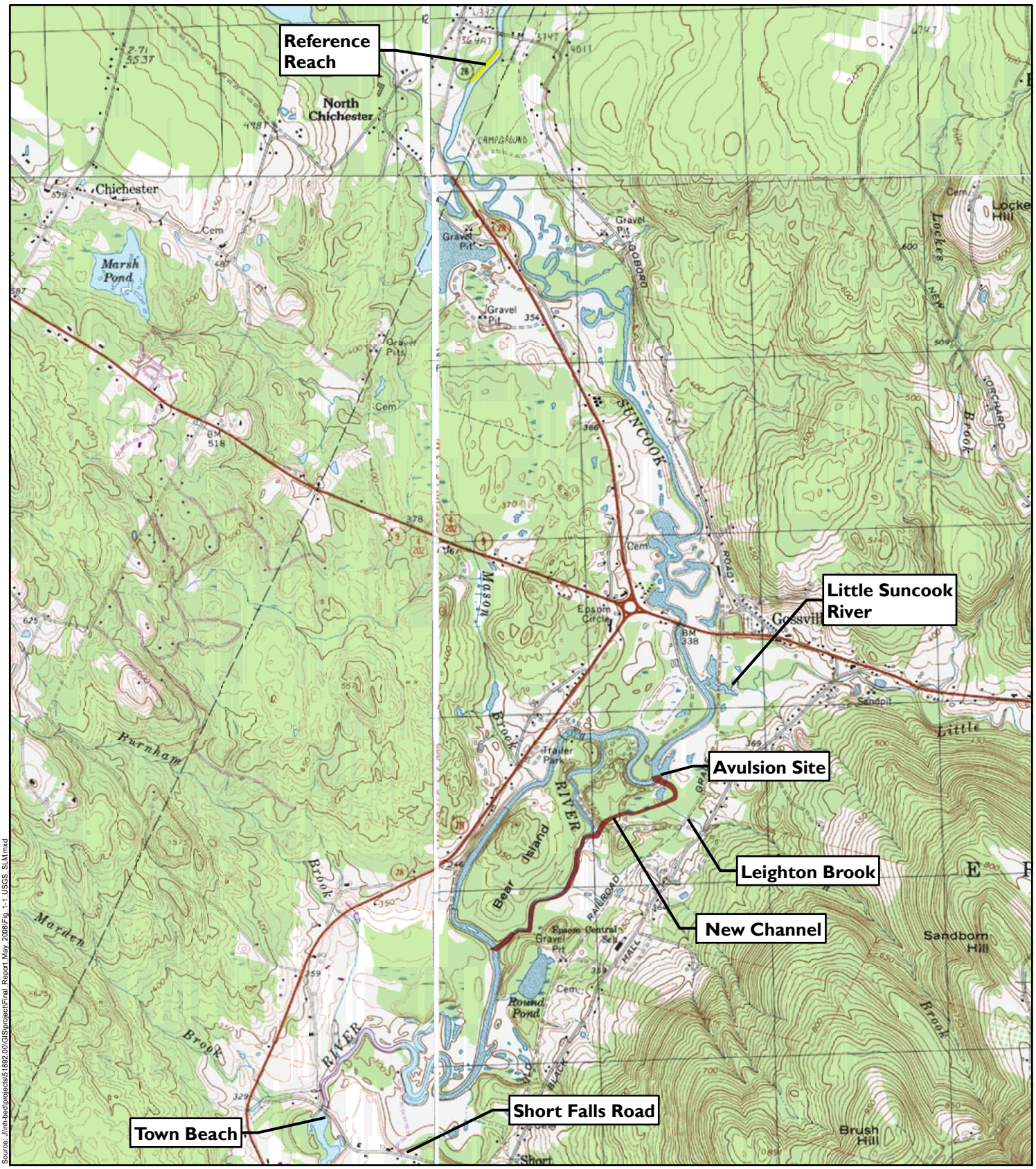

Vanasse Hangen Brustlin, Inc.

0 1,000 2,000 Feet

Figure 1-1

Site Location Map

Suncook River Restoration Alternatives
Epsom, New Hampshire

Source: USGS, Gossville, Loudon, Pittsfeidl & Suncook 7.5-minute Quadrangles

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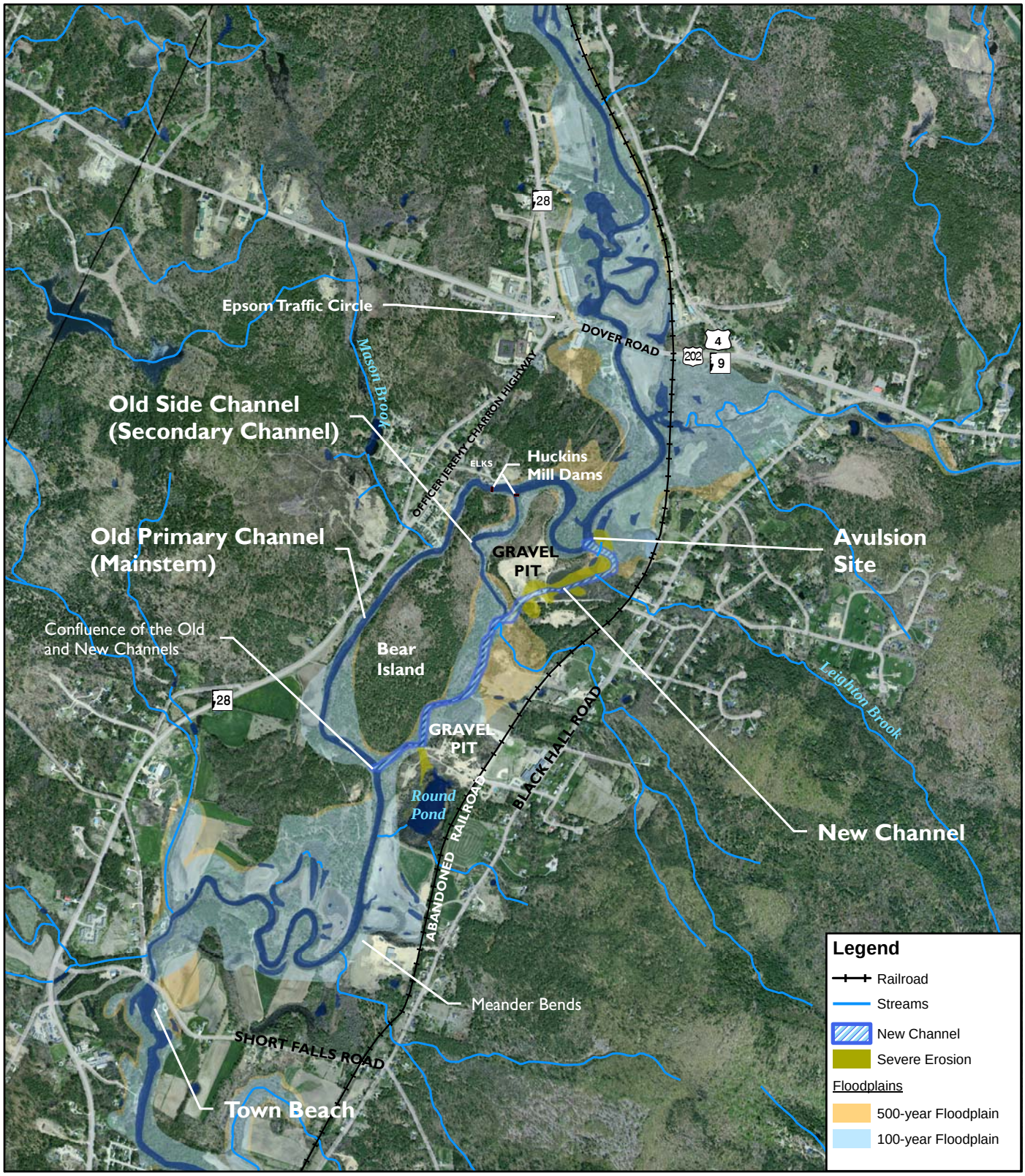

Vanasse Hangen Brustlin, Inc.

0 1,000 Feet

Figure 1-2

Location of the May 2006 Avulsion

Suncook River Restoration Alternatives
Epsom, New Hampshire

Source: Aerial photo captured by NHDOT, 2005

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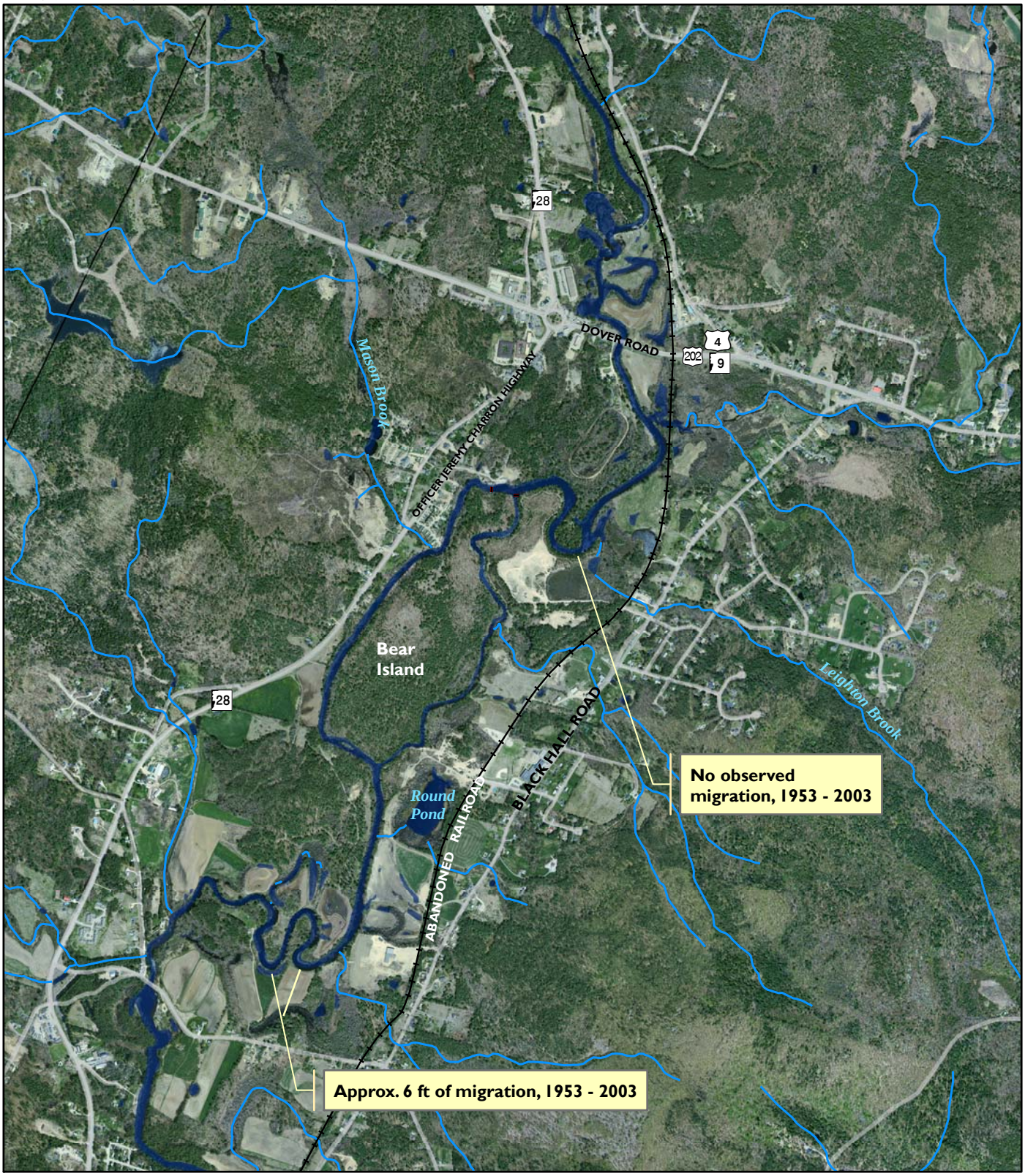

Vanasse Hangen Brustlin, Inc.

0 1,000 2,000 Feet

Figure 1-3

Meander Migration Rates

Suncook River Restoration Alternatives
Epsom, New Hampshire

Source: Aerial photo captured by NHDOT, 2005

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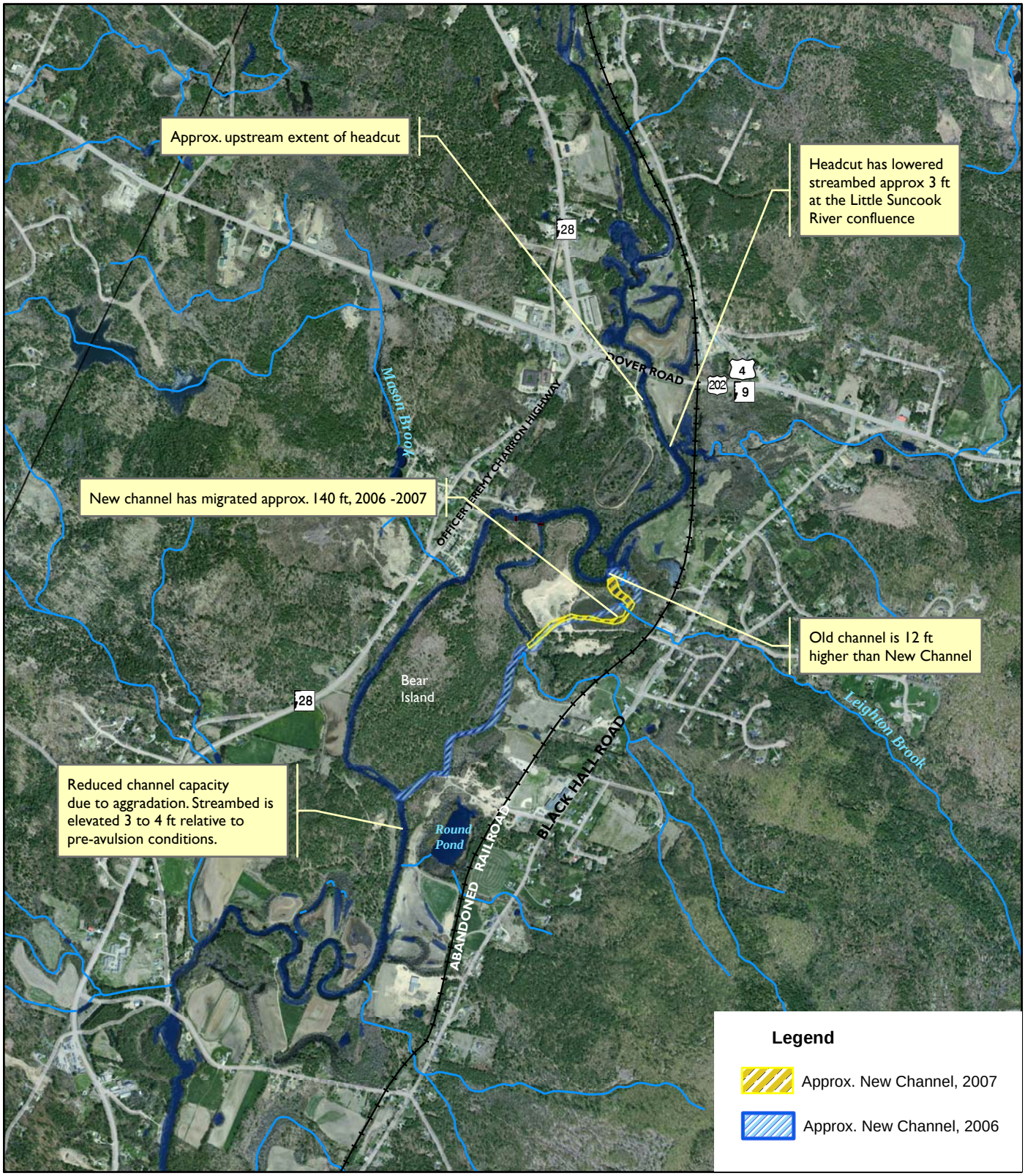


Vanasse Hangen Brustlin, Inc.

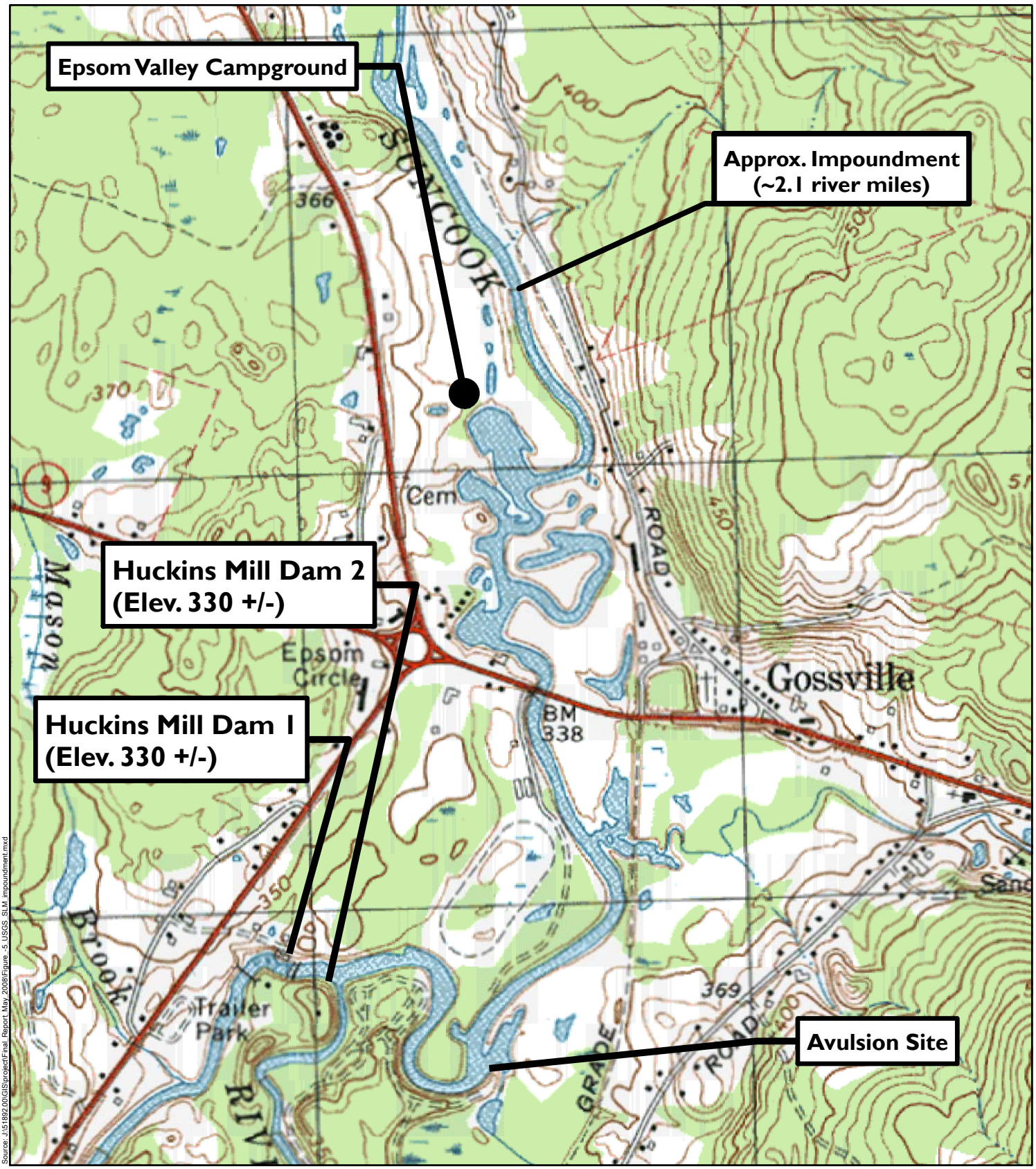
0 500 1,000 2,000 Feet

Figure 1-4

Channel Adjustment

Suncook River Restoration Alternatives
Epsom, New Hampshire

Source: Aerial photo captured by NHDOT, 2005



Vanasse Hangen Brustlin, Inc.

0 500 1,000 Feet

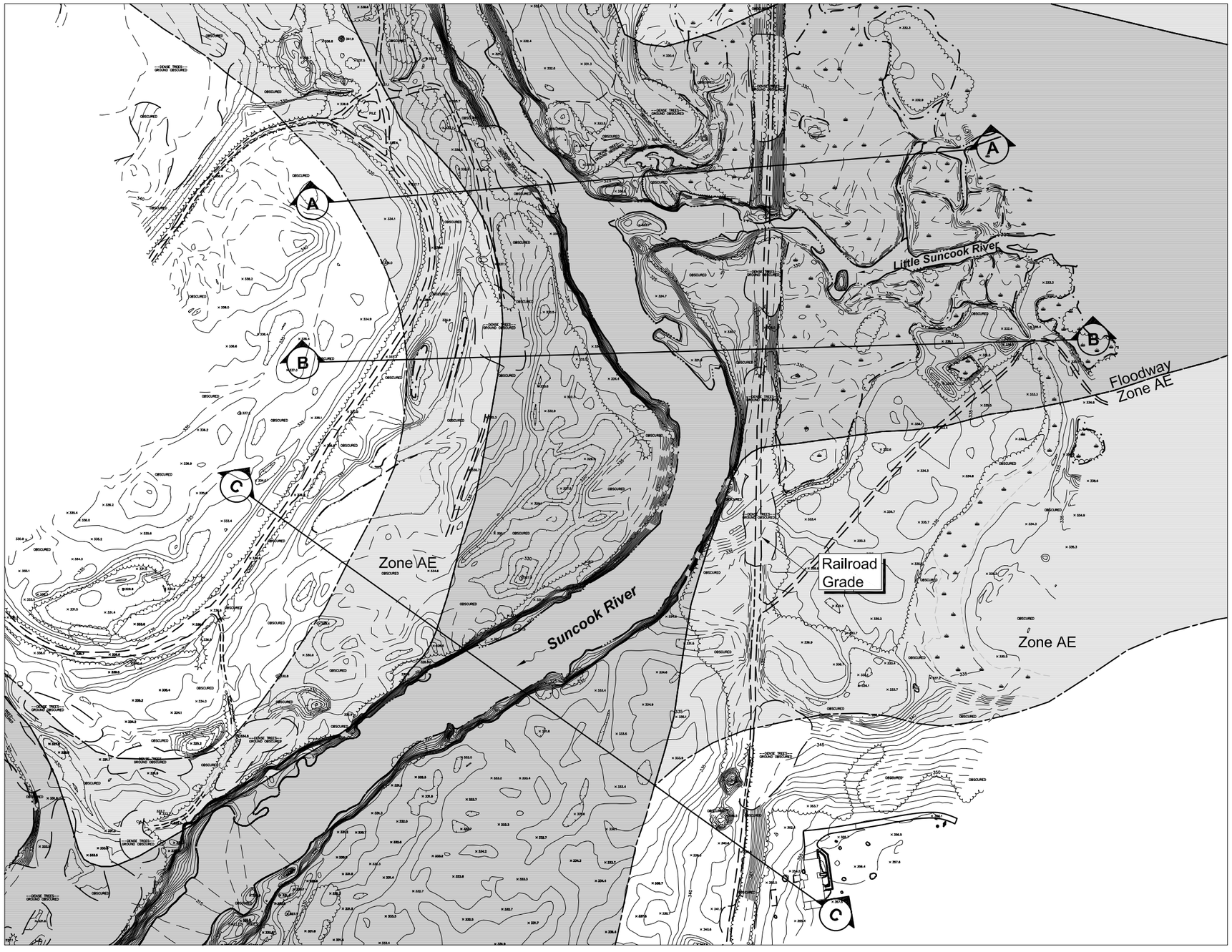
Figure 1-5

Location of the May 2006 Avulsion

Suncook River Restoration Alternatives
Epsom, New Hampshire

Source: USGS, Gossville 7.5-minute Quadrangle

Vanasse Hangen Brustlin, Inc.



Notes:

1. Survey Performed by Eastern Topographics, Based on Aerial Photography Completed May 12, 2007.
2. Floodplain Boundaries are from the Federal Emergency Management Agency, 2005 DFIRM via GRANIT.
3. See Figure 1-7 for Cross-Sections.

Legend

100 Year Floodplain

Floodway

Cross-Section Location

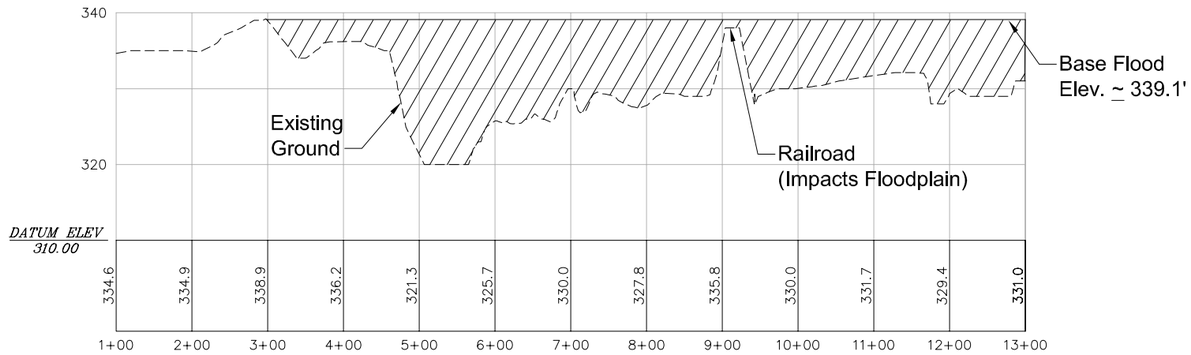
0 100 200 Feet

Figure 1-6

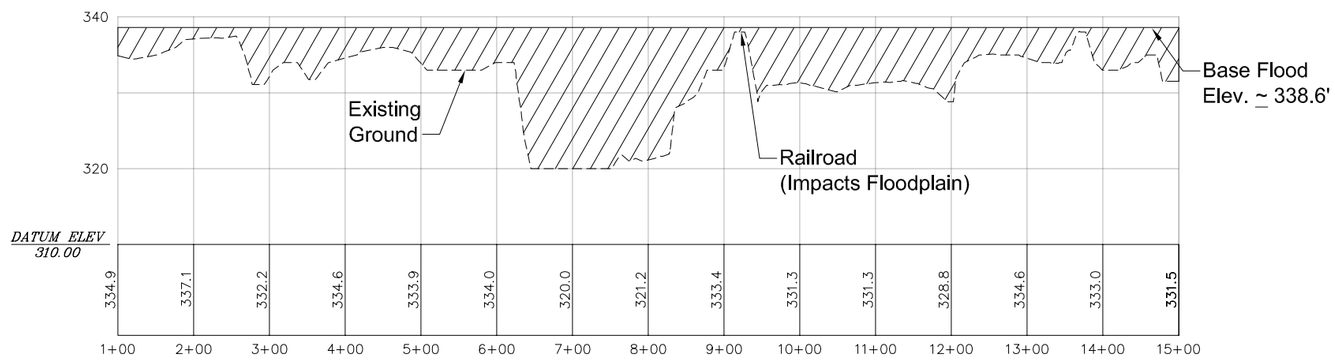
Floodplain Upstream of Avulsion

Suncook River Restoration Alternatives
Epsom, New Hampshire

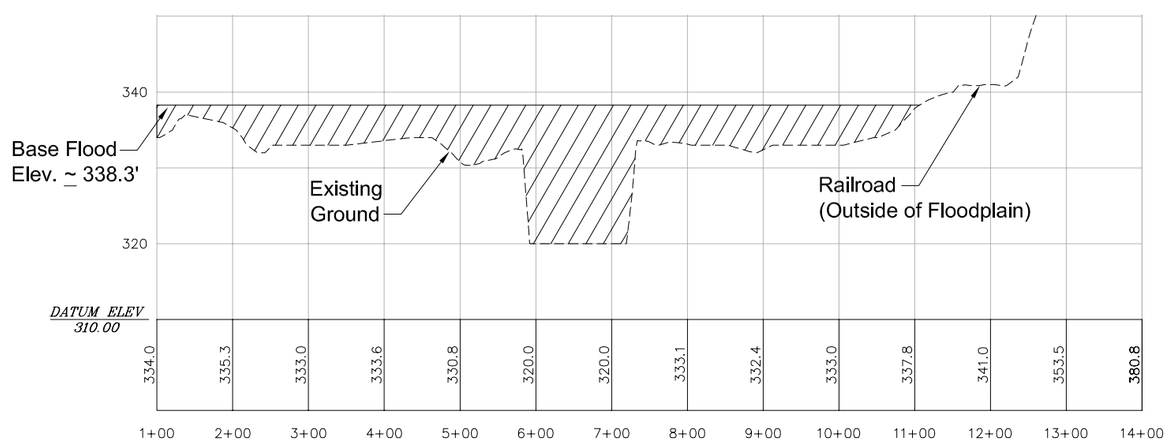
Vanasse Hangen Brustlin, Inc.



Section A-A



Section B-B



Section C-C

Notes:

1. Floodplain Elevations Interpolated from the Federal Emergency Management Agency FIS for the Town of Epsom, January 1978 (Cross-Sections V&W).

2. See Figure 1-6 for the Location of each Cross-Section.

0 100 200 Feet
Scale: 1"=200' Hor. / 1"=20' Vert.

Figure 1-7

Floodplain Cross-Sections Upstream of Avulsion

Suncook River Restoration Alternatives
Epsom, New Hampshire

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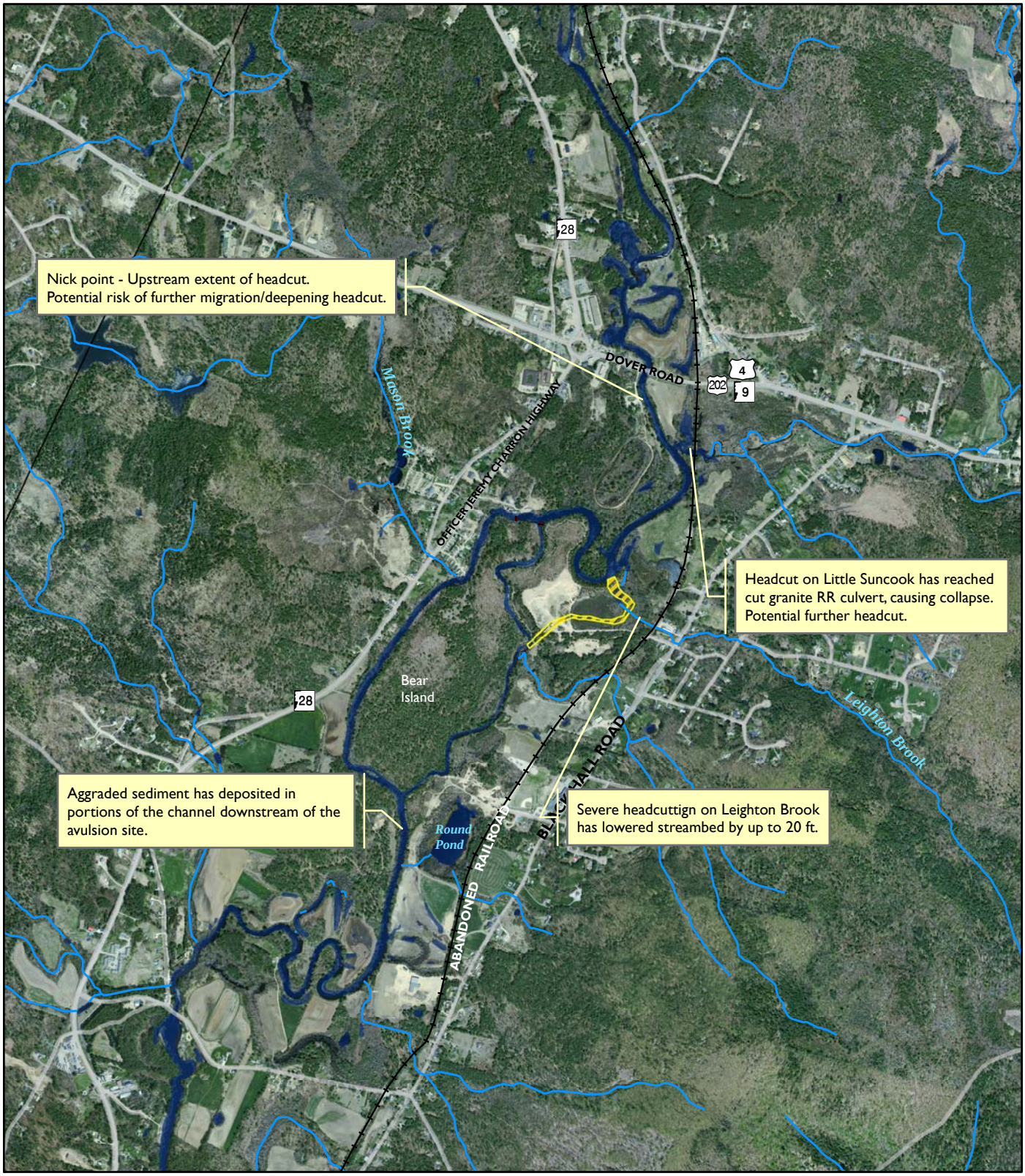

Vanasse Hangen Brustlin, Inc.

0 500 1,000 2,000 Feet

Figure 2-1

Alternative 1 - No Action

Suncook River Restoration Alternatives
Epsom, New Hampshire

Source: Aerial photo captured by NHDOT, 2005

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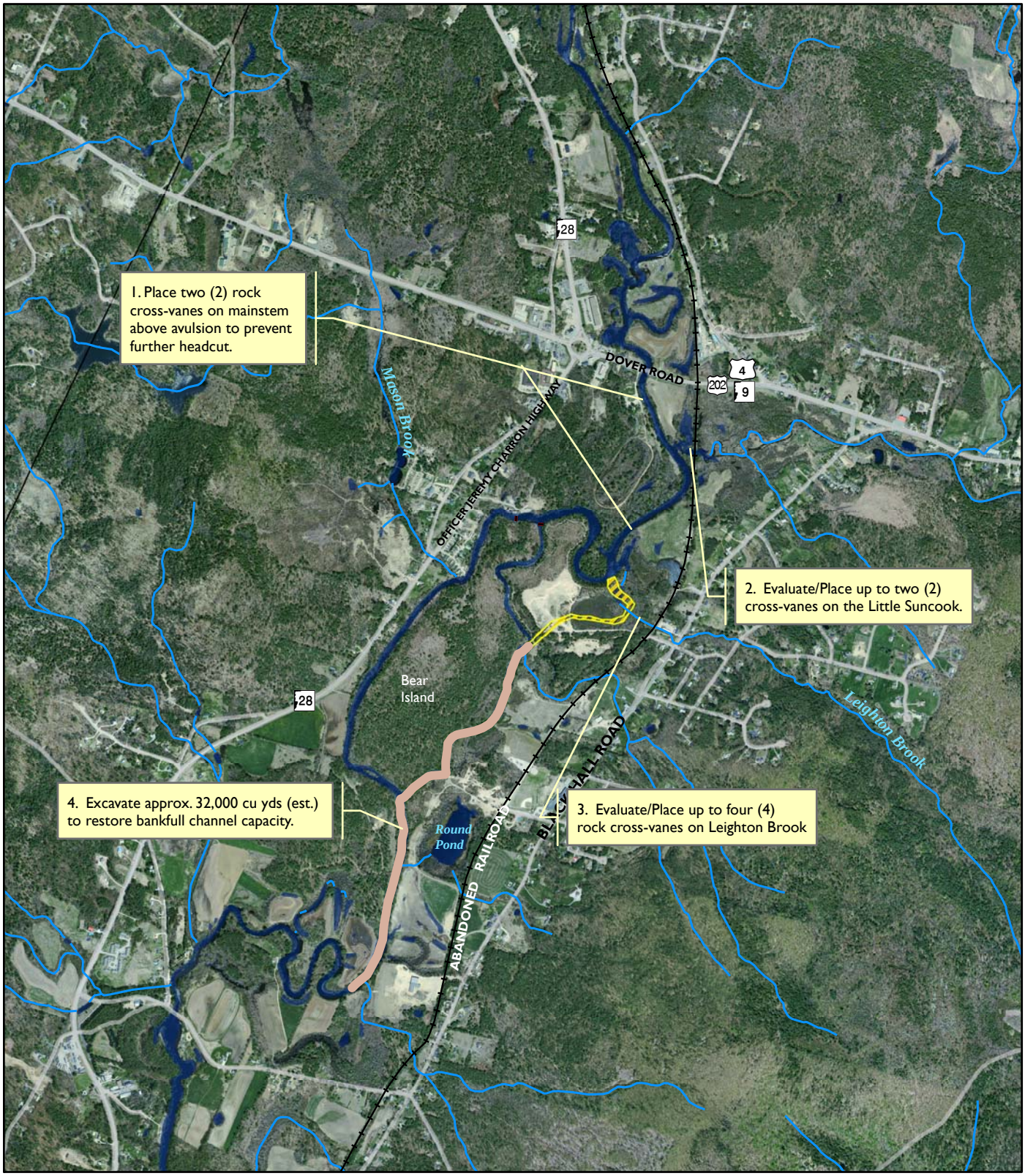

Vanasse Hangen Brustlin, Inc.

0 500 1,000 2,000 Feet

Figure 2-2

Alternative 2 - Strategic Treatments

Suncook River Restoration Alternatives
Epsom, New Hampshire

Source: Aerial photo captured by NHDOT, 2005

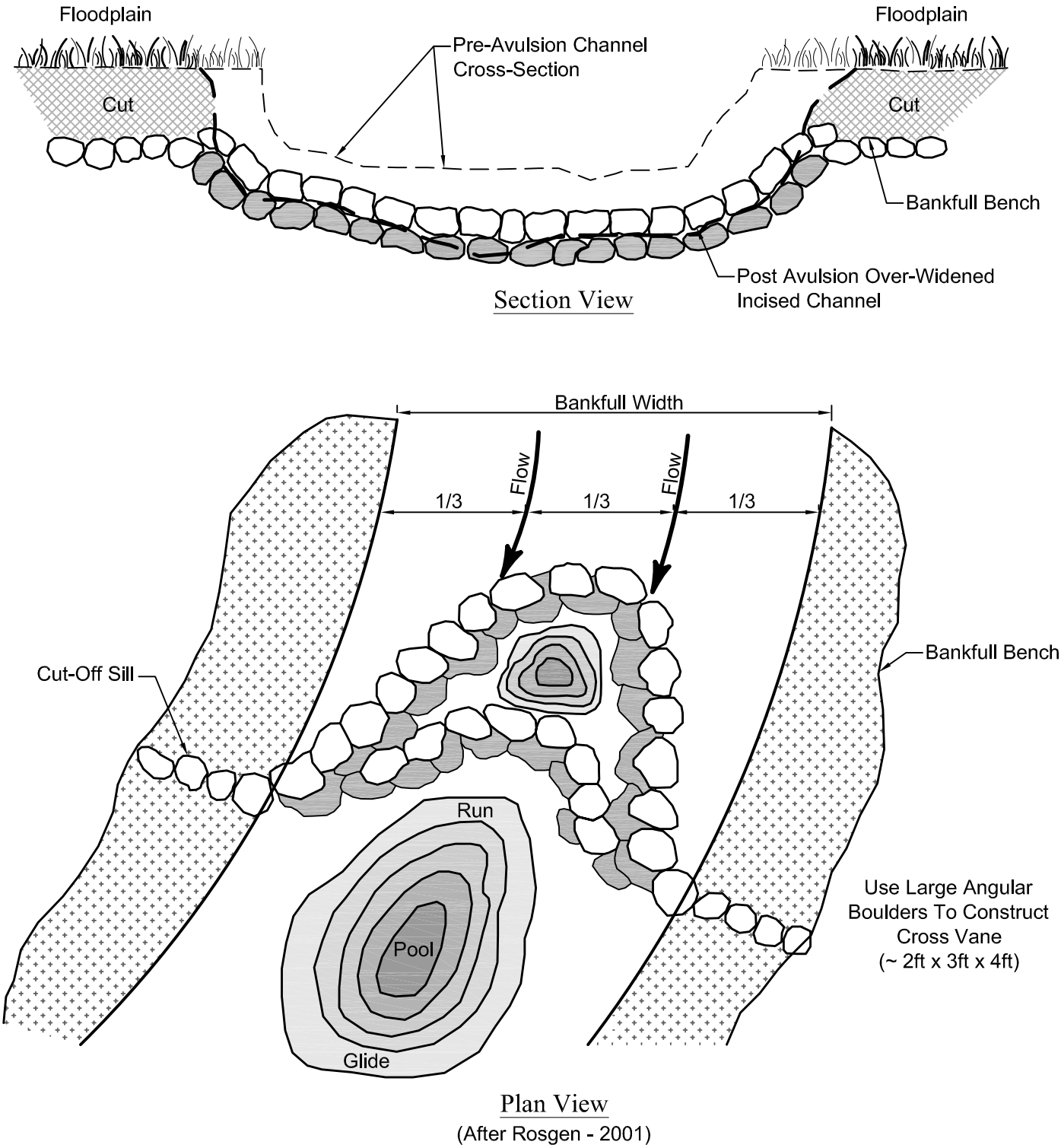

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Figure 2-3

Rock Cross Vanes

Suncook River Restoration Alternatives
Epsom, New Hampshire

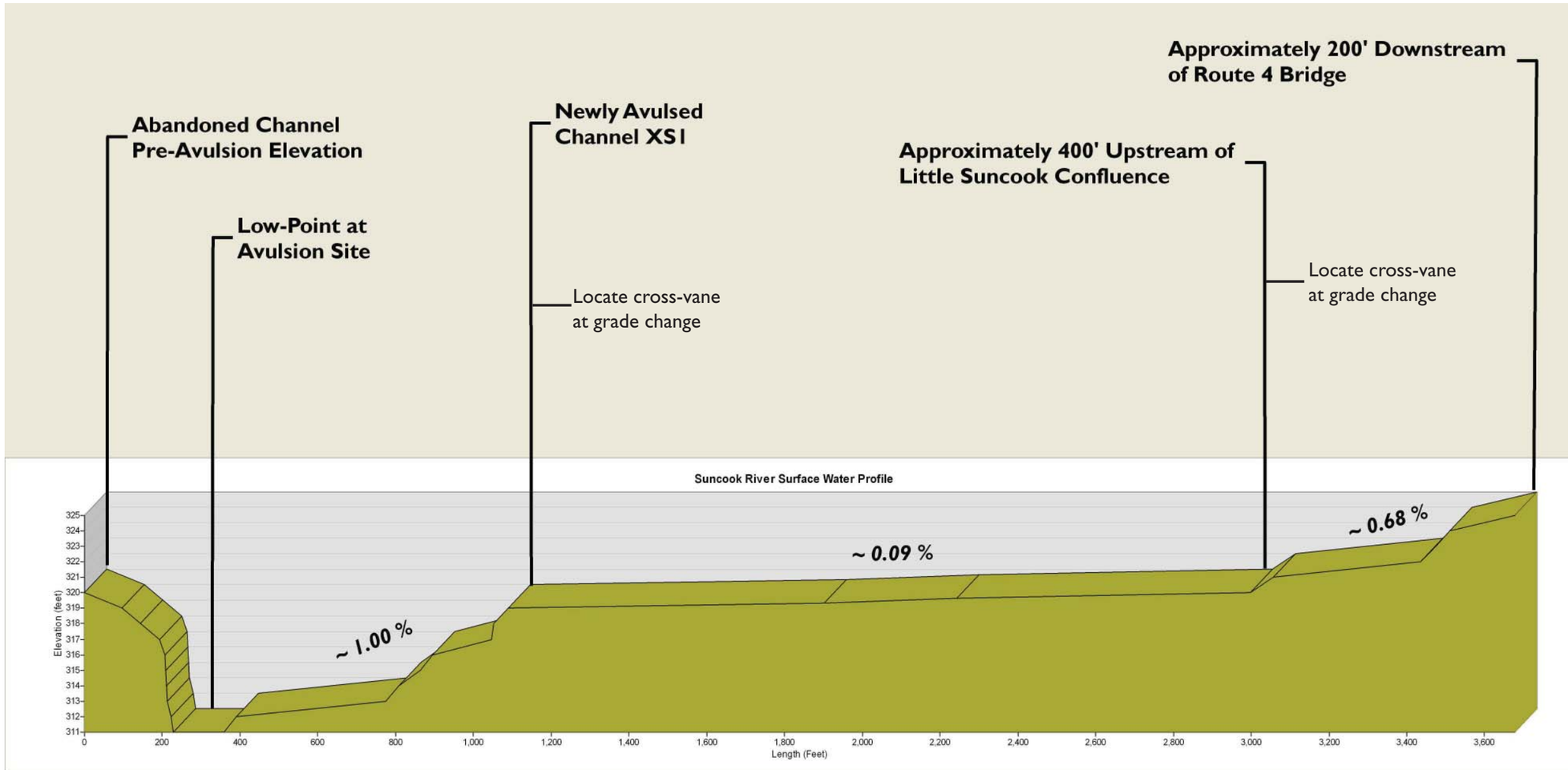


Figure 2-4

Cross-vane Locations
Suncook River

Suncook River Avulsion Aternatives
Epsom, New Hampshire

Note:
Profile is based on streambed survey supplemented by water surface elevations from Eastern Topo, 2007.

Source: VHB and Eastern Topo

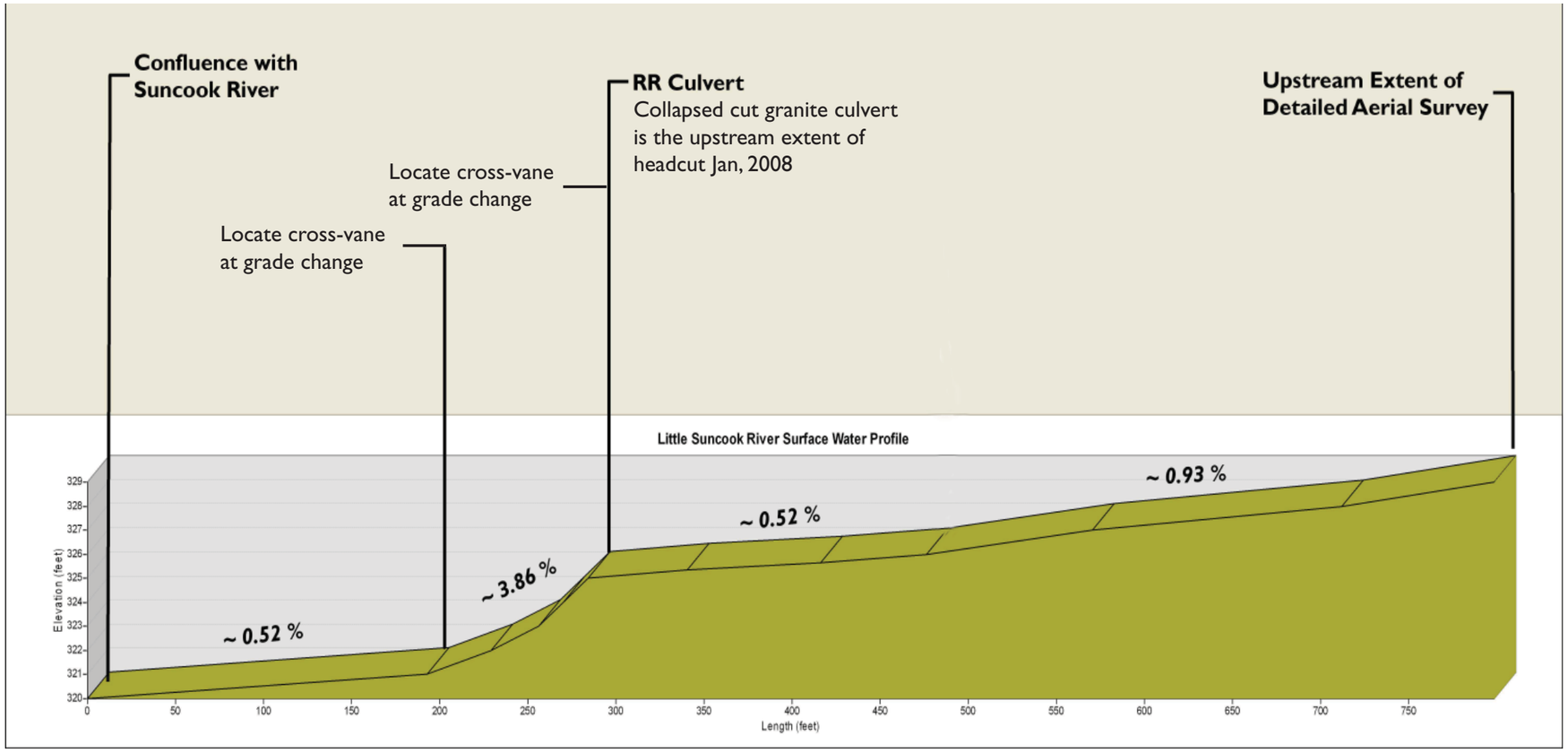


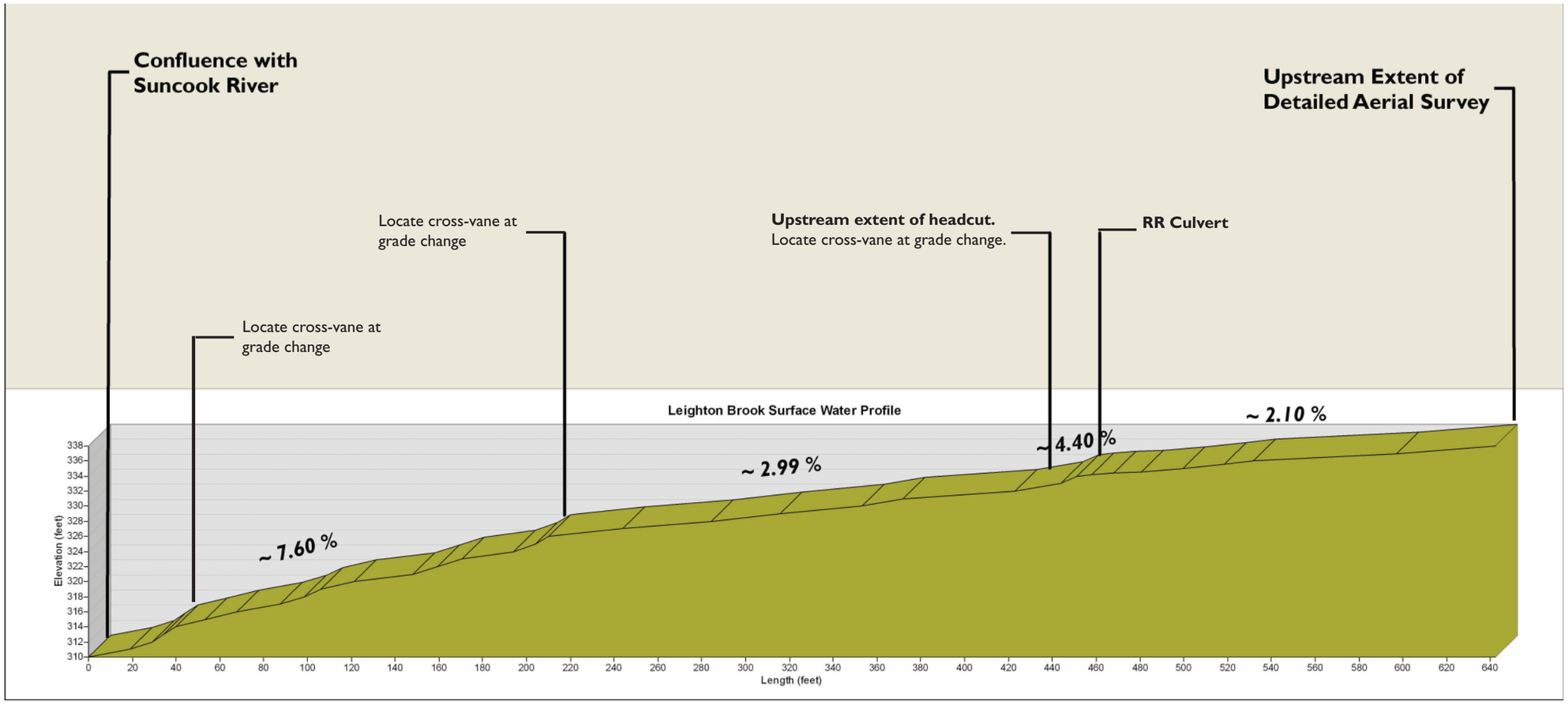
Figure 2-5

Cross-vane Locations
Little Suncook River

Suncook River Avulsion Aternatives
Epsom, New Hampshire

Note:
Profile is based on streambed survey supplemented by water surface elevations from Eastern Topo, 2007.

Source: VHB and Eastern Topo



Note:
Profile is based on streambed survey supplemented by water surface elevations from Eastern Topo, 2007.

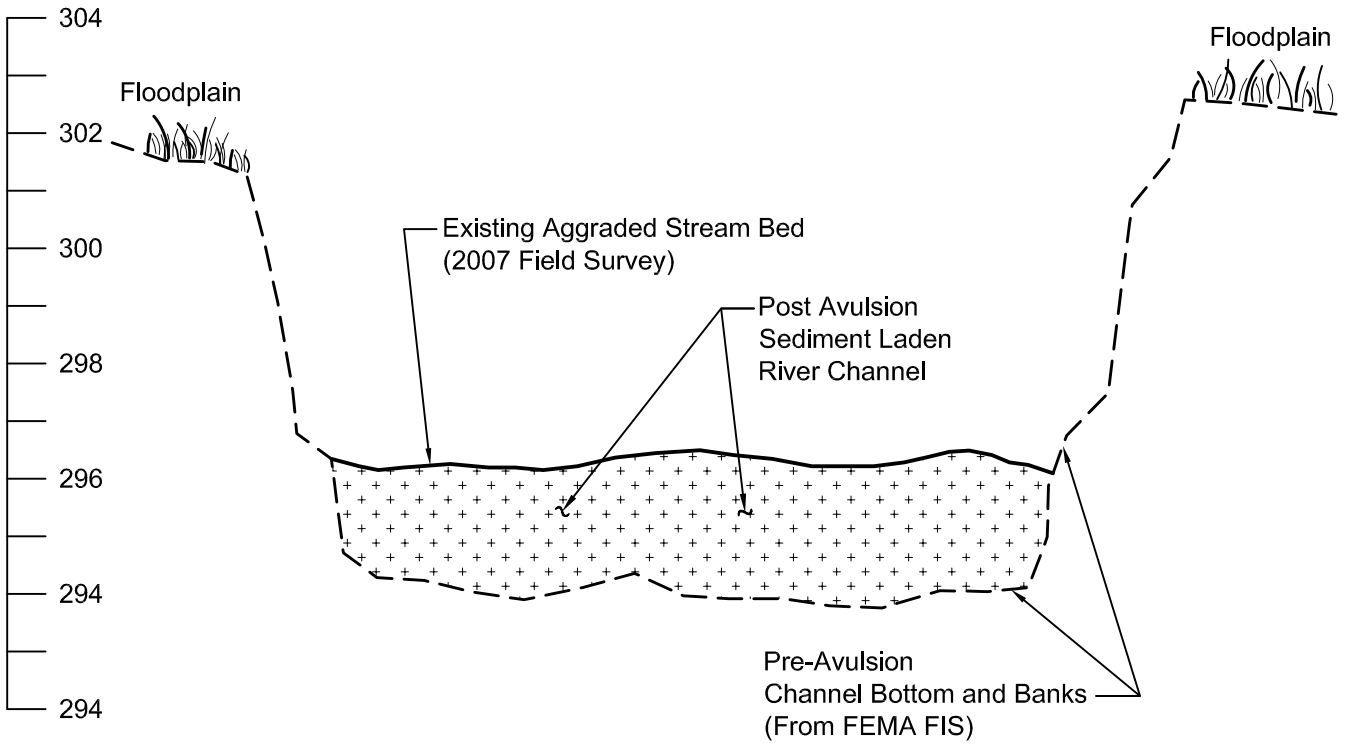
Figure 2-6

Cross-vane Locations
Leighton Brook

Suncook River Avulsion Aternatives
Epsom, New Hampshire

Source: VHB and Eastern Topo

Sediment Removal to Restore Bankfull Cross-Sectional Area



Cross-Section View
(FEMA Cross-Section M)
VHB Cross-Section #18

- Restore Bankfull Cross Sectional Area Through Excavation or Hydro-Dredging
- Remove Only the Sediment Required to Restore Bankfull X-Sectional Area to the River Channel. (Approx. 3 ft at This Cross Section)
- To The Extent Practical and Allowable, Spread Removed Sediment Uniformly Across The Floodplain
- Total Volume Estimated to be Approx. 32,000 cu. yds.

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Figure 2-7

Dredging of Aggraded Stream Reaches

Suncook River Restoration Alternatives
Epsom, New Hampshire

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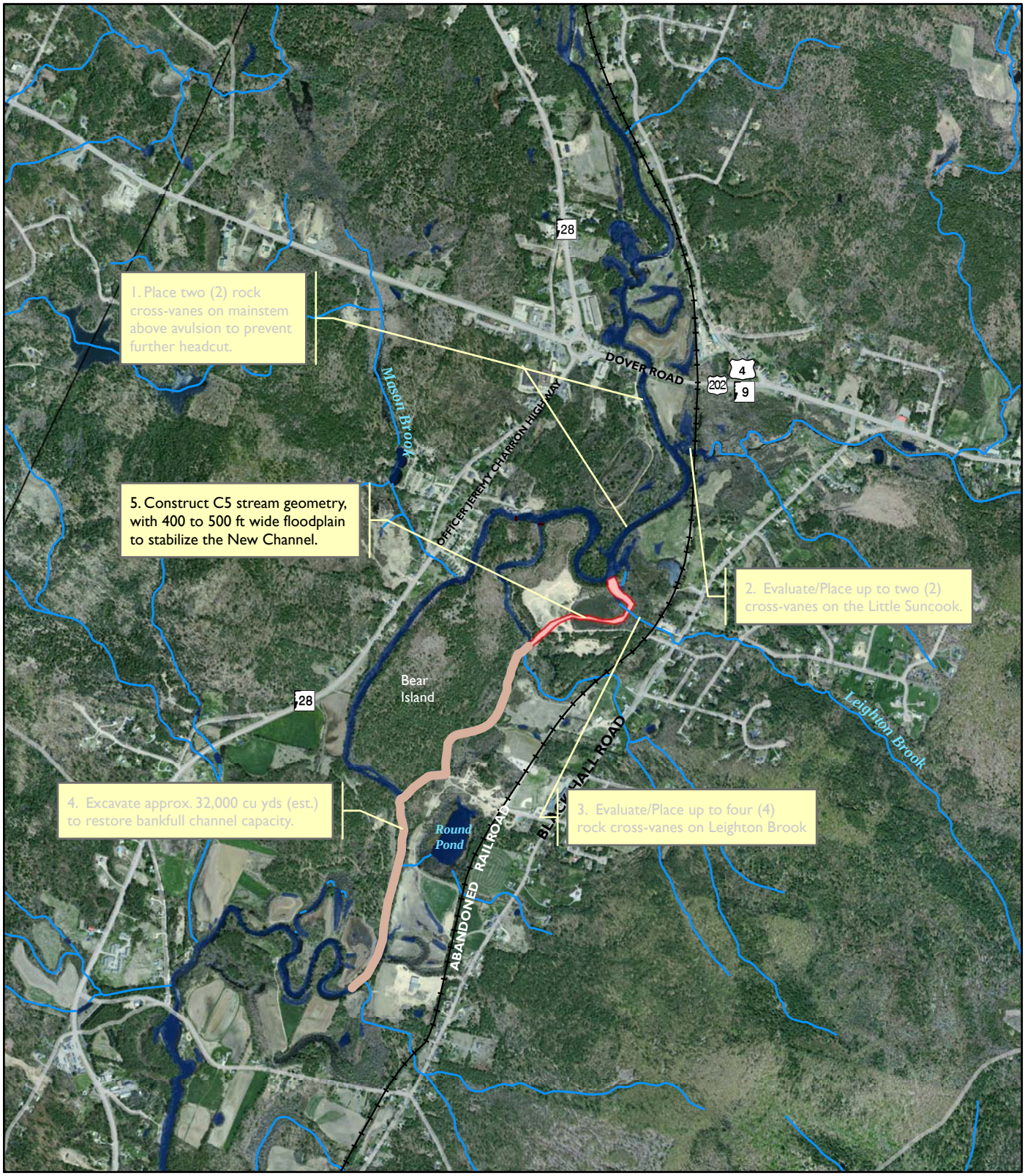

Vanasse Hangen Brustlin, Inc.

0 500 1,000 2,000 Feet

Figure 2-8

Alternative 3 - New Channel Restoration

Suncook River Restoration Alternatives
Epsom, New Hampshire

Source: Aerial photo captured by NHDOT, 2005

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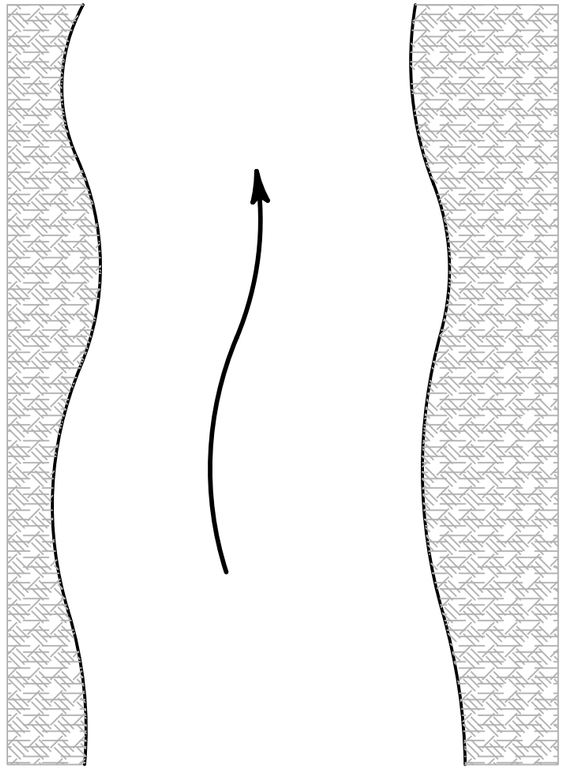
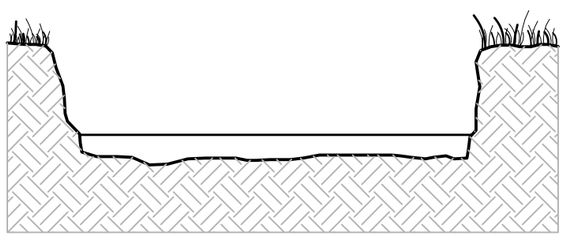
F5 Stream Type

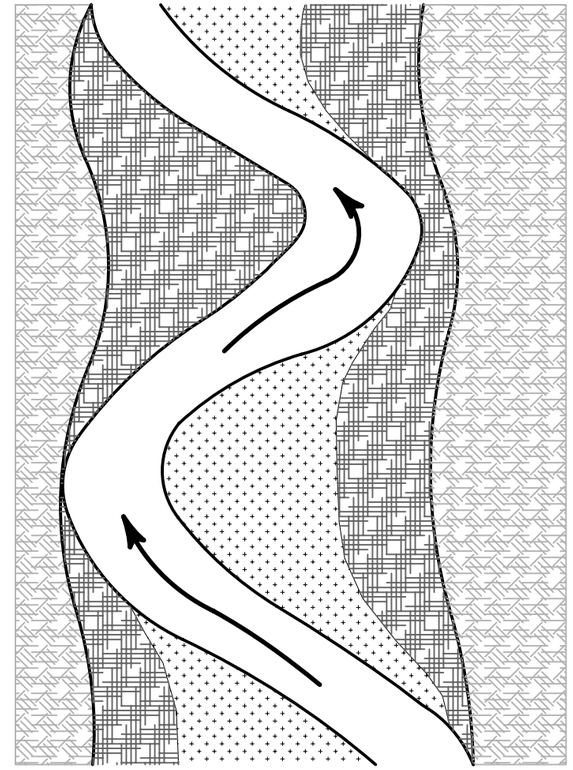


Plan View

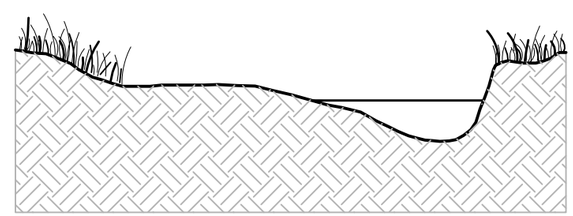


Section View

C5 Stream Type



Plan View



Section View

Note:

Stream type classification follows Rosgen (1996).

Existing Conditions

CEM - Stage III		
Width/Depth	-	>40
Entrenchment Ratio	-	1.36
Slope	-	0.17%
Sinuosity	-	1.2

Proposed Conditions

CEM - Stage IV / V		
Width/Depth	-	20 - 25
Entrenchment Ratio	-	>3
Slope	-	0.05% - 0.13%
Sinuosity	-	2.5 - 3.5

Figure 2-9

Alternative 3 - Restoration of New Channel Planform & Cross-Section

Suncook River Restoration Alternatives
Epsom, New Hampshire

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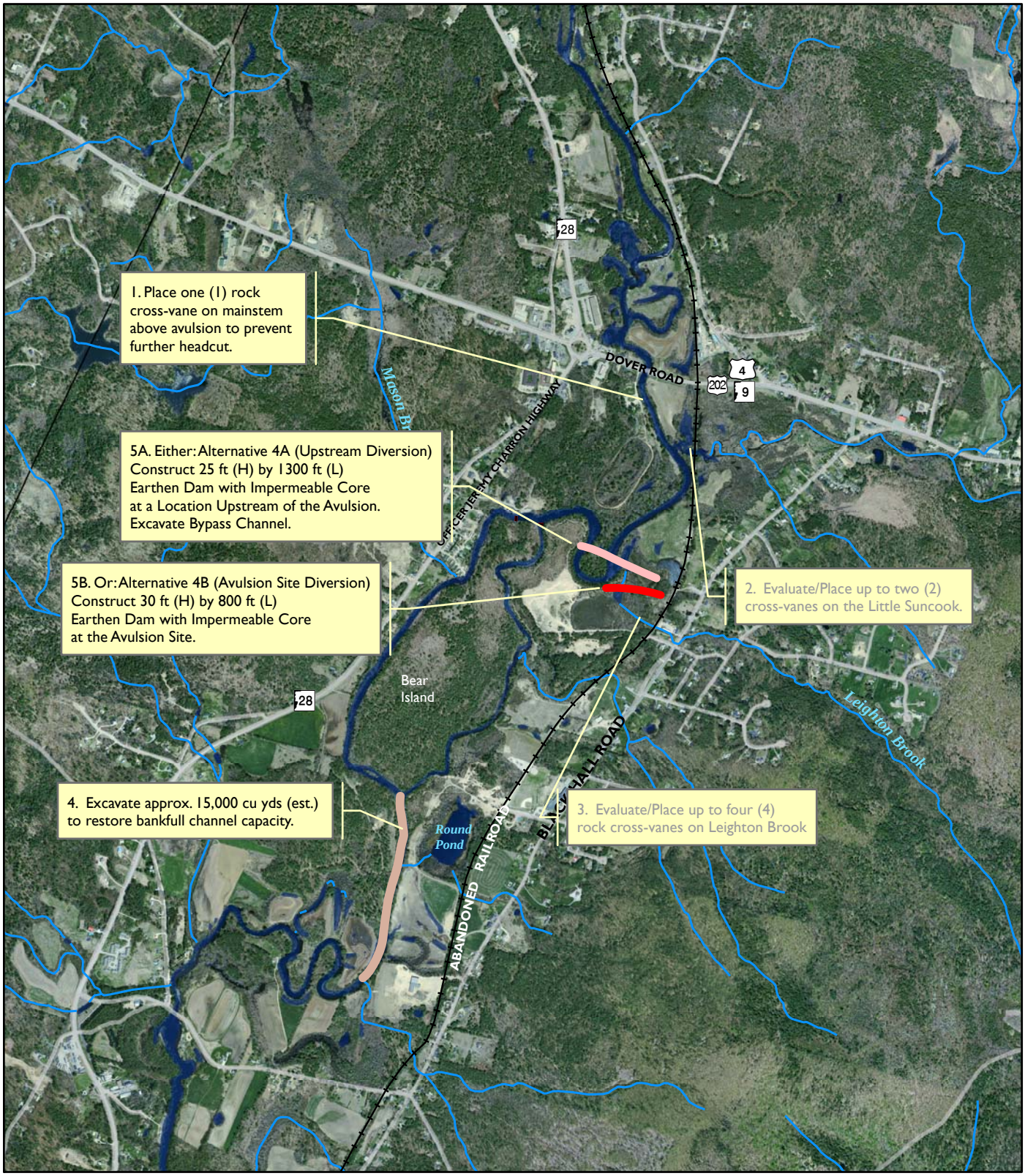


Vanasse Hangen Brustlin, Inc.

0 500 1,000 2,000 Feet

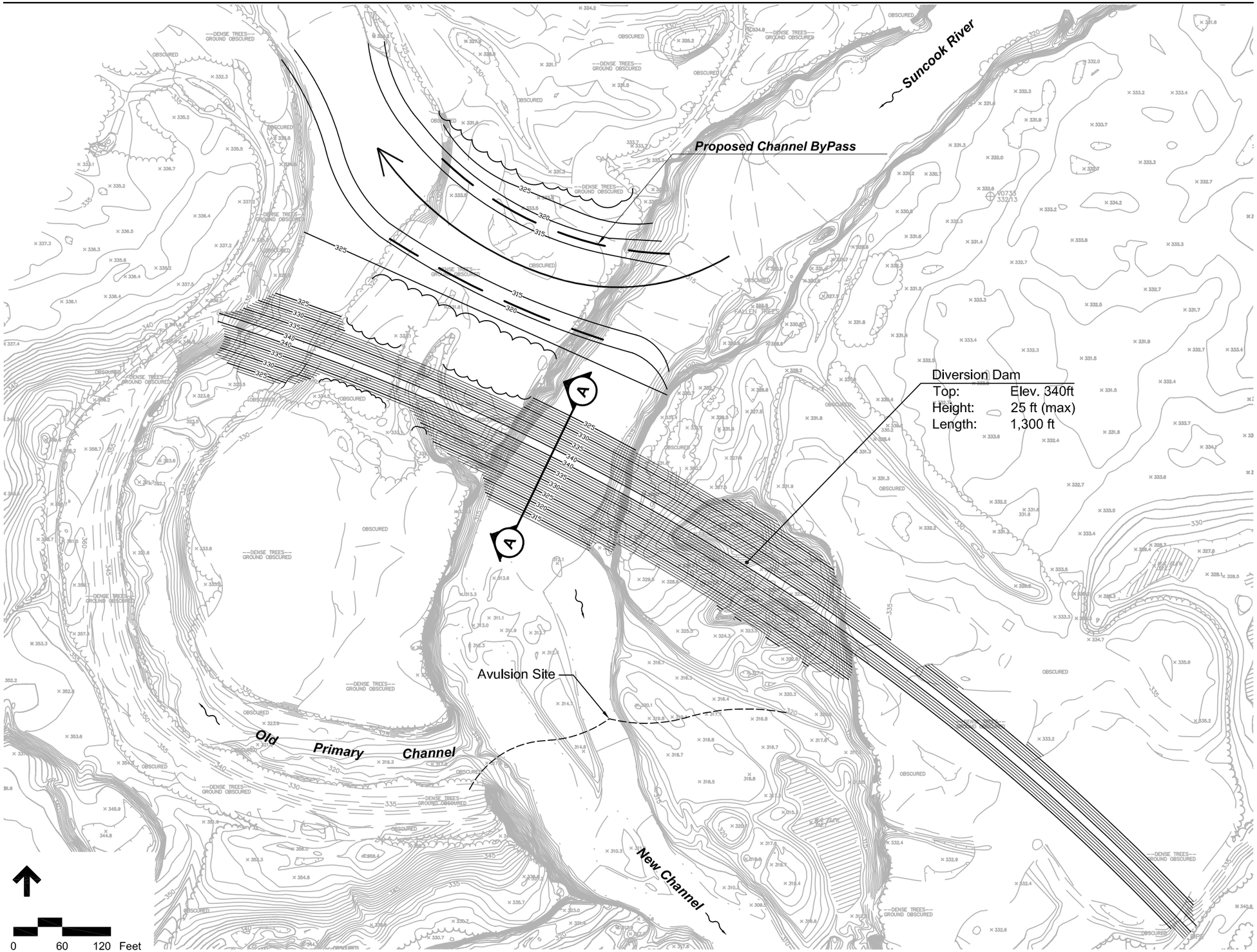
Figure 2-10

Alternative 4 - Diversion to Former Channel

Suncook River Restoration Alternatives
Epsom, New Hampshire

Source: Aerial photo captured by NHDOT, 2005

J:\51892.00\cad\ev\planmisc\NewDamTopo.dwg



Vanasse Hangen Brustlin, Inc.

Notes:

1. Diversion Dam Would be Classified as a Class B - Significant Hazard Under State Regulations.

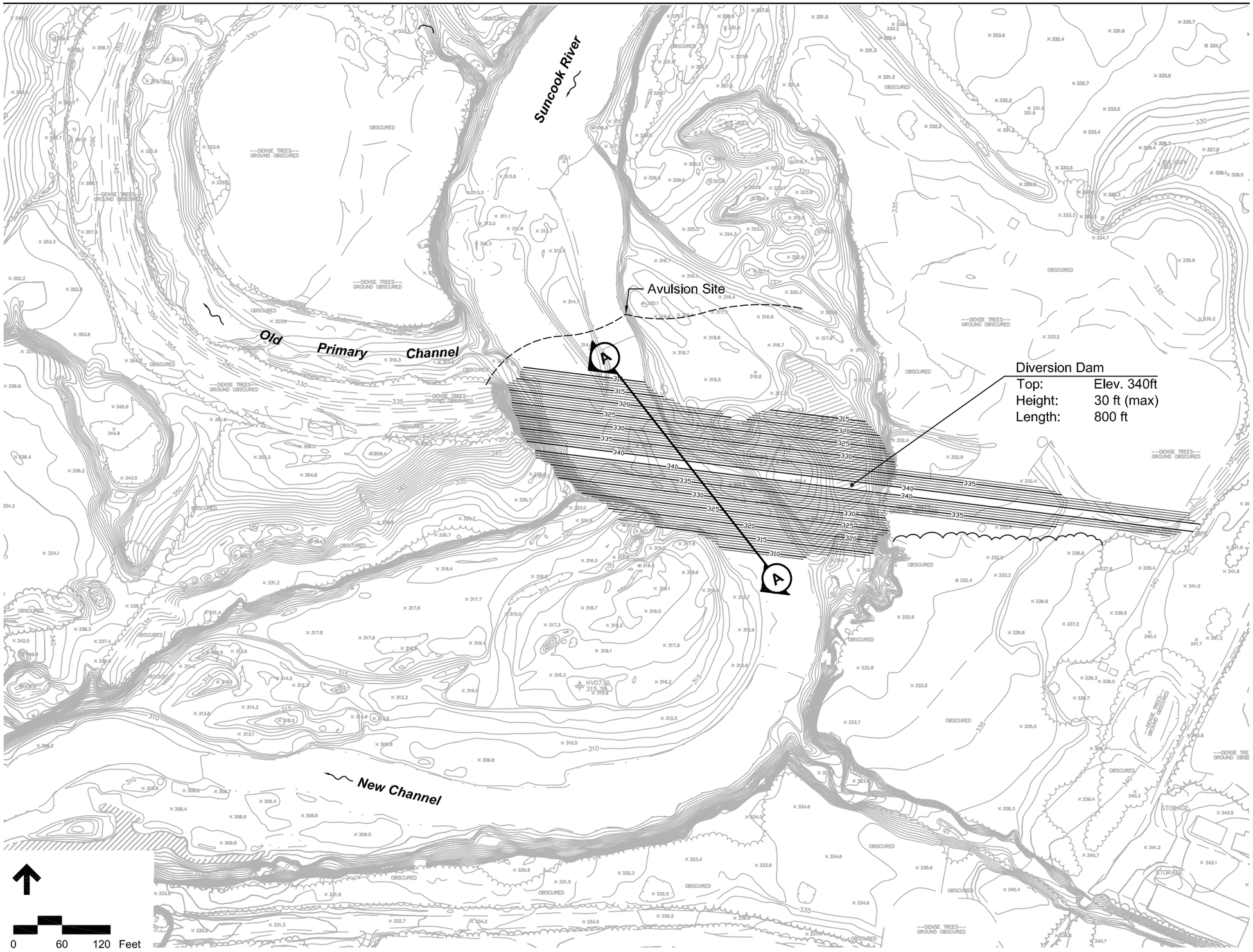
2. Diversion Dam Concept Plan Development by Kleinschmidt Associates.

Figure 2-11

Alternative 4A
Upstream Diversion

Suncook River Restoration Alternatives
Epsom, New Hampshire

J:\51892.00\cad\ev\planmisc\NewDamTopo.dwg



Vanasse Hangen Brustlin, Inc.

Notes:

1. Diversion Dam Would be Classified as a Class B - Significant Hazard Under State Regulations.

2. Diversion Dam Concept Plan Development by Kleinschmidt Associates.

Figure 2-12

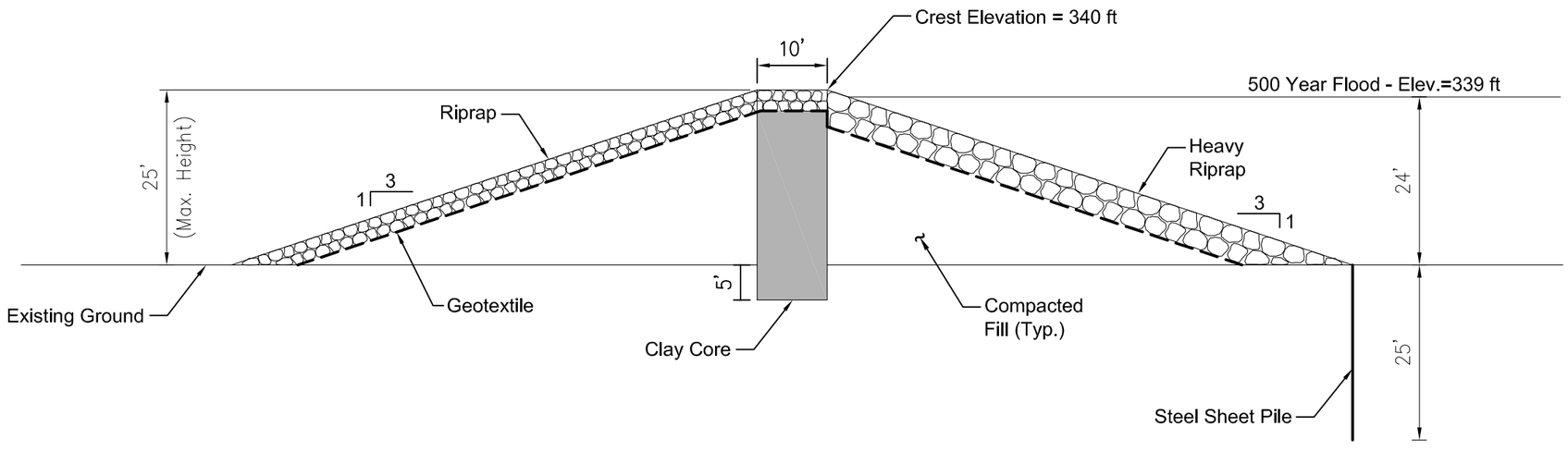
Alternative 4B
Avulsion Site Diversion

Suncook River Restoration Alternatives
Epsom, New Hampshire

Vanasse Hangen Brustlin, Inc.

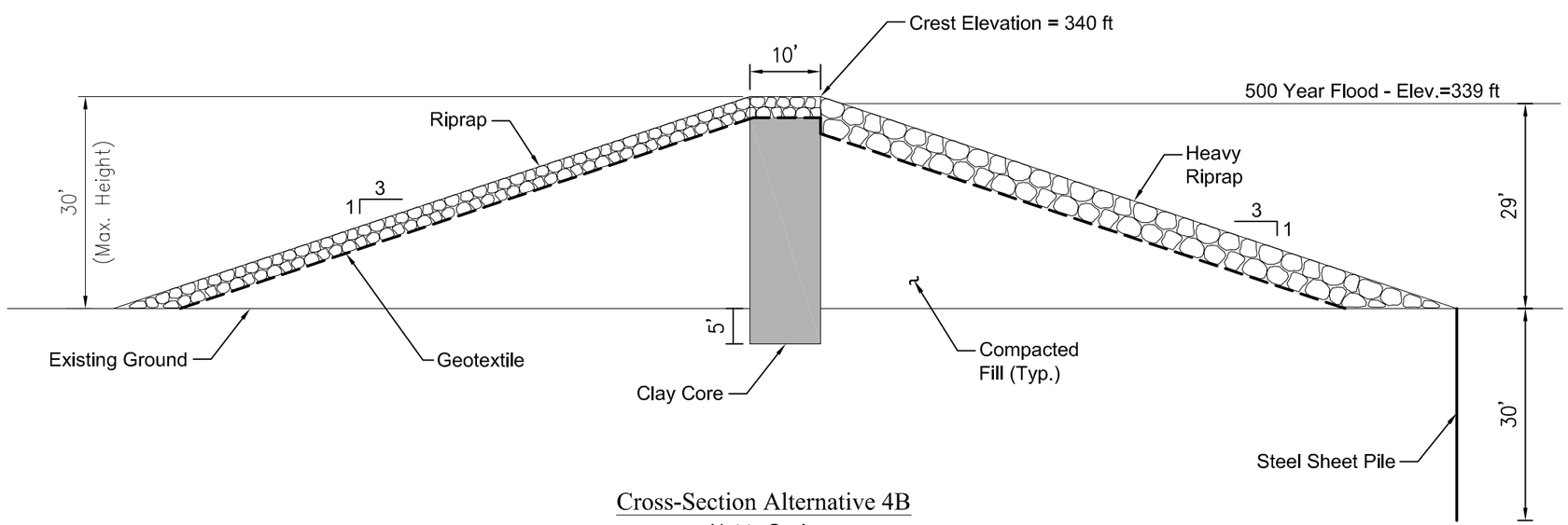
Note:

Cross-Sections Based on a Conceptual Design Developed by Kleinschmidt Associates.



Cross-Section Alternative 4A

Not to Scale



Cross-Section Alternative 4B

Not to Scale

Figure 2-13

Typical Diversion Dam

Suncook River Restoration Alternatives
Epsom, New Hampshire