Sudbury Bruce Freeman Rail Trail Task Force Meeting

March 9, 2021

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Concepts for Discussion

Potential Amenities at Broadacres Parking Lot

- Information kiosk/trail head signage
- Picnic area
- Bike racks
- Benches
- Bike repair station
- Rest rom facility:
  - Waterless (composting) toilet facility
  - Hand washing
- Hydration station
- Recycling/Trash Recepticals
- Pavilion

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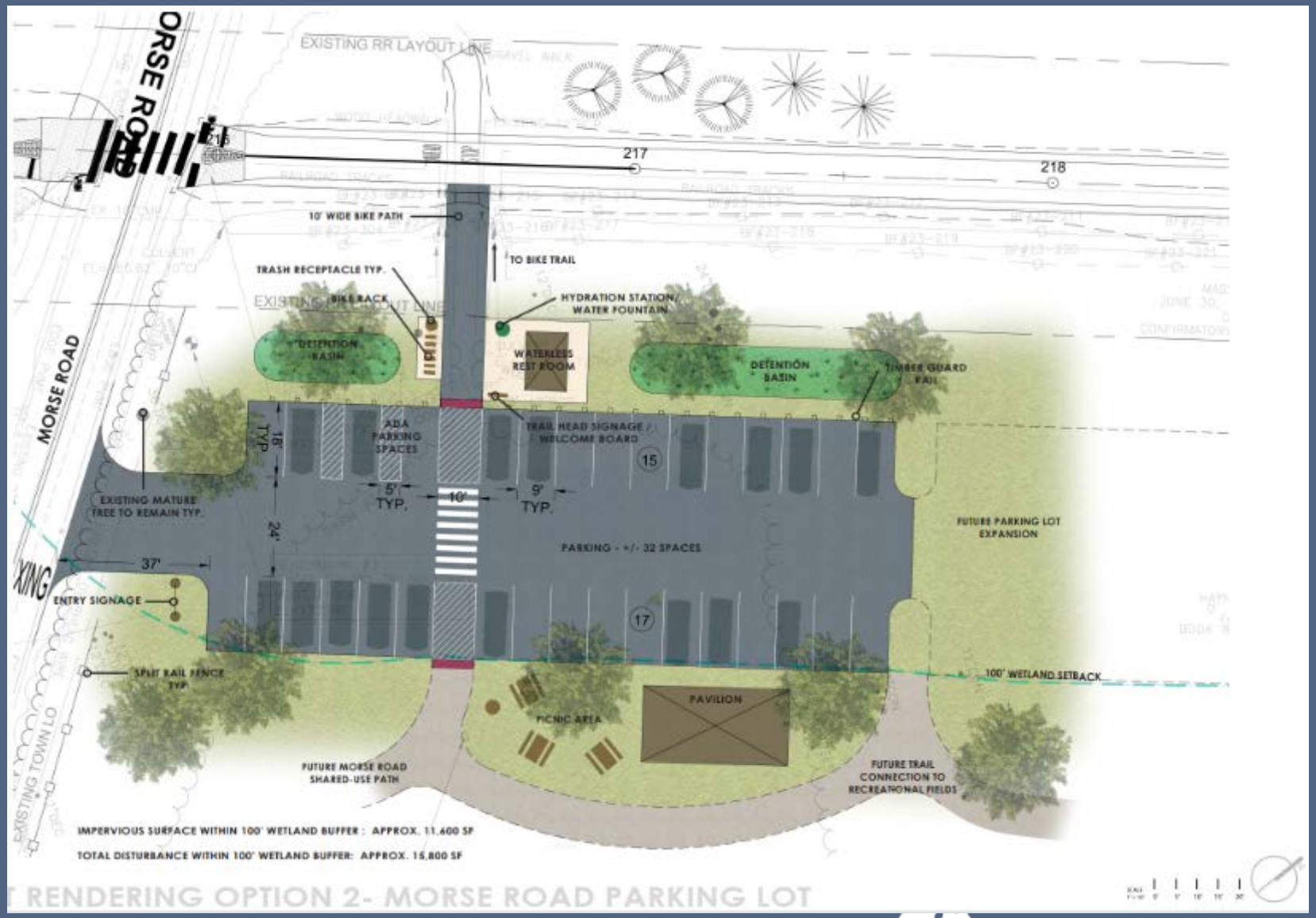
Broadacres Parking Lot – Option 2



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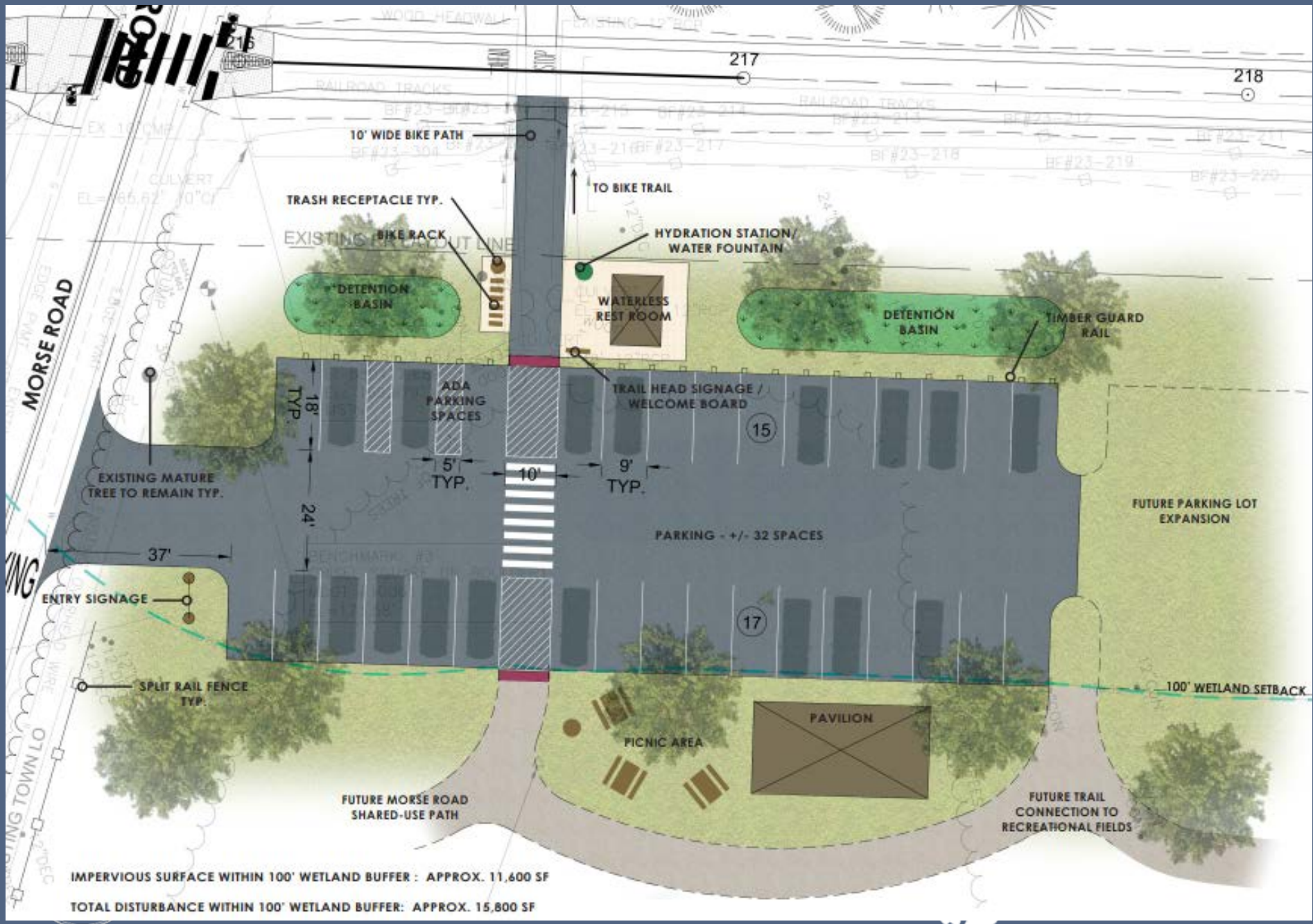
MORSE ROAD
216
217
218
10' WIDE BIKE PATH
TO BIKE TRAIL
TRASH RECEPTACLE TYP.
BIKE RACK
EXISTING PAVEMENT LAYOUT LINE
HYDRATION STATION/ WATER FOUNDATION
DETENTION BASIN
WATERLESS REST ROOM
DETENTION BASIN
TIMBER GUARD RAIL
TRAIL HEAD SIGNAGE / WELCOME BOARD
ADA PARKING SPACES
18' TYP.
15
5' TYP.
10'
9' TYP.
EXISTING MATURE TREE TO REMAIN TYP.
24'
37'
PARKING - +/- 32 SPACES
FUTURE PARKING LOT EXPANSION
ENTRY SIGNAGE
17
SPLIT RAIL FENCE TYP.
100' WETLAND SETBACK
PAVILION
PICNIC AREA
FUTURE MORSE ROAD SHARED-USE PATH
FUTURE TRAIL CONNECTION TO RECREATIONAL FIELDS
IMPERVIOUS SURFACE WITHIN 100' WETLAND BUFFER : APPROX. 11,600 SF
TOTAL DISTURBANCE WITHIN 100' WETLAND BUFFER: APPROX. 15,800 SF

Amenities at Broadacres Parking Lot

Amenities at Broadacres Parking Lot

Parkinson's (Ti-Sales) Field

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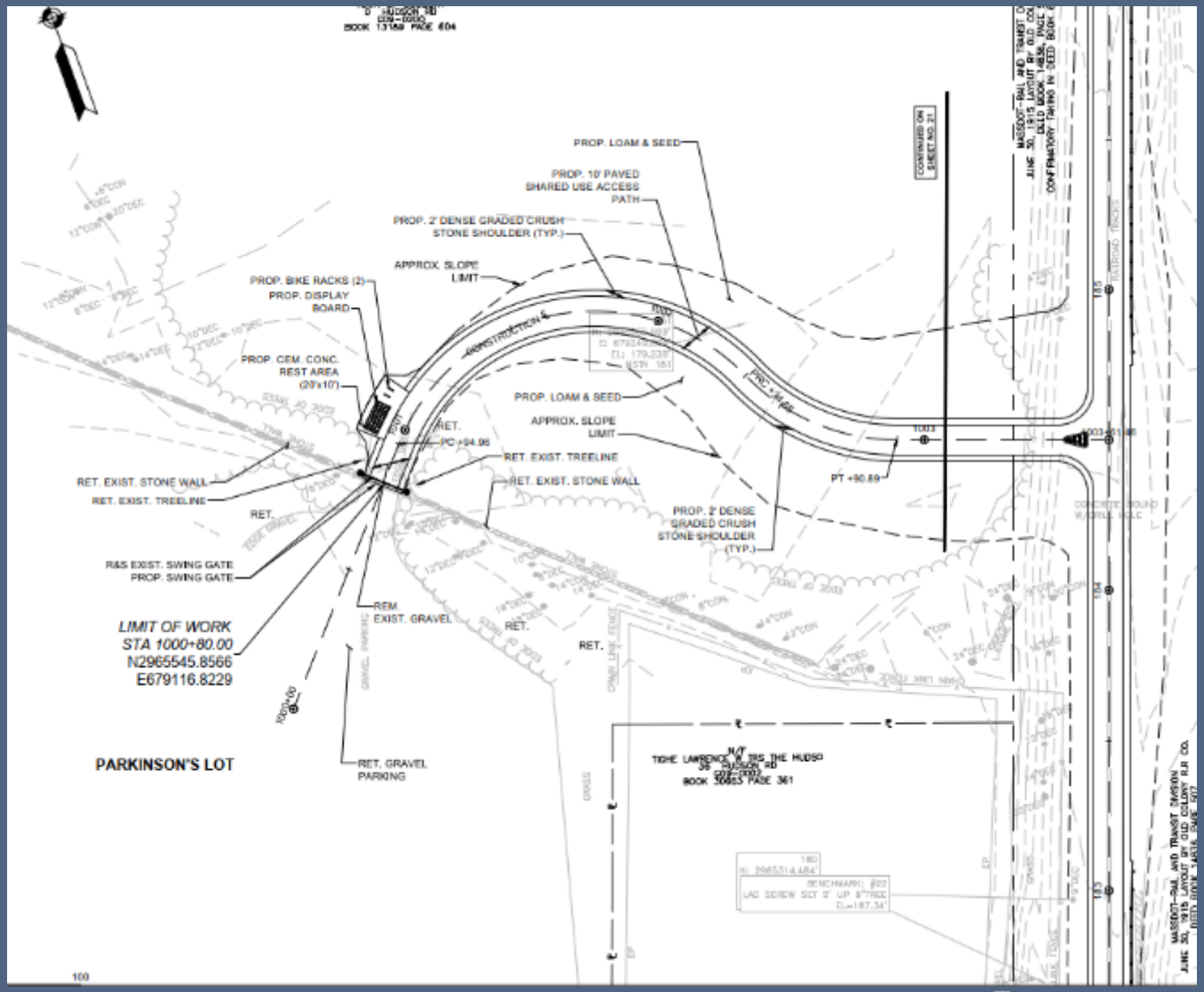
Parkinson's (Ti-Sales) Field

Parkinson's (Ti-Sales) Field



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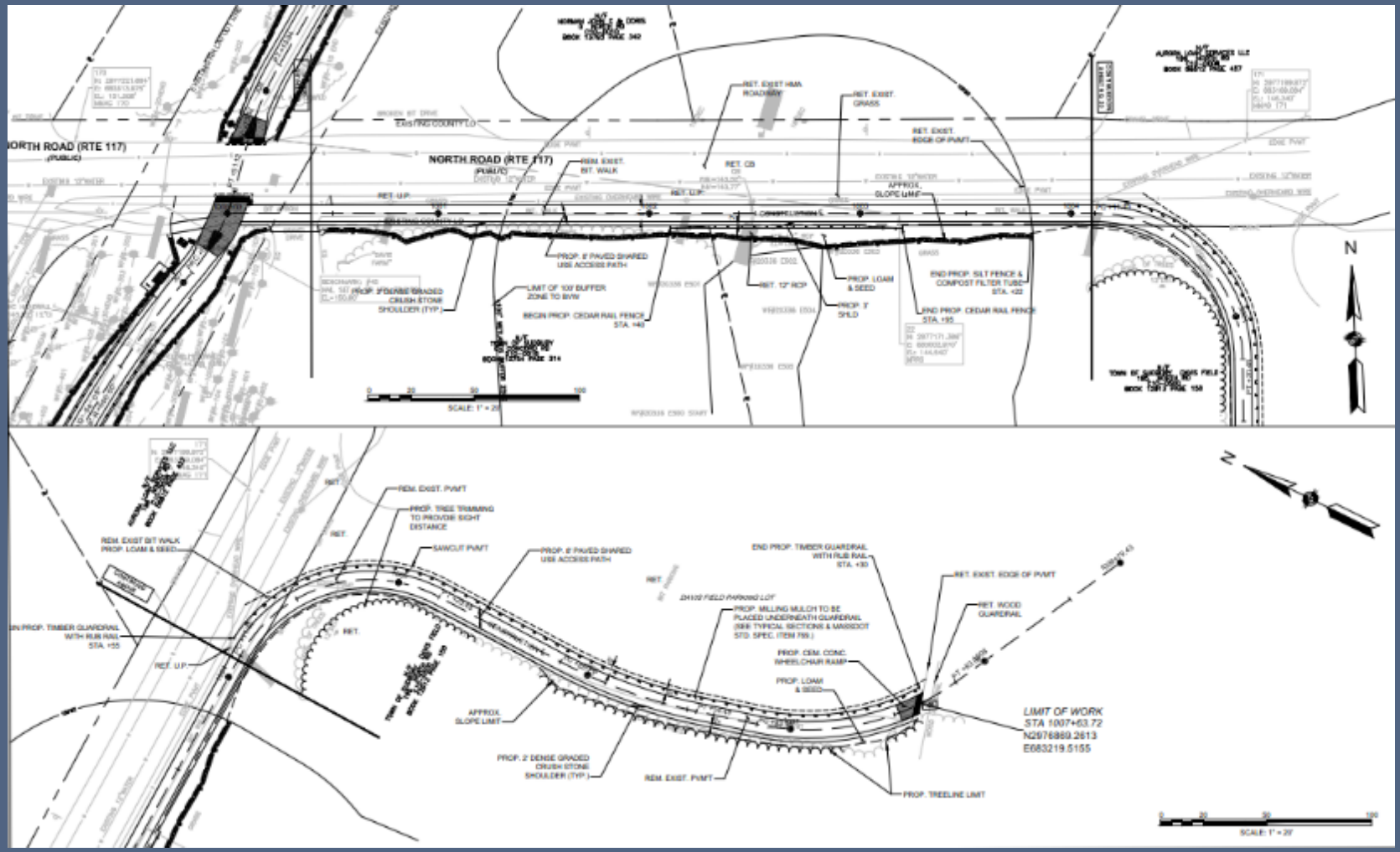
North Road Spur to Davis Rec Field



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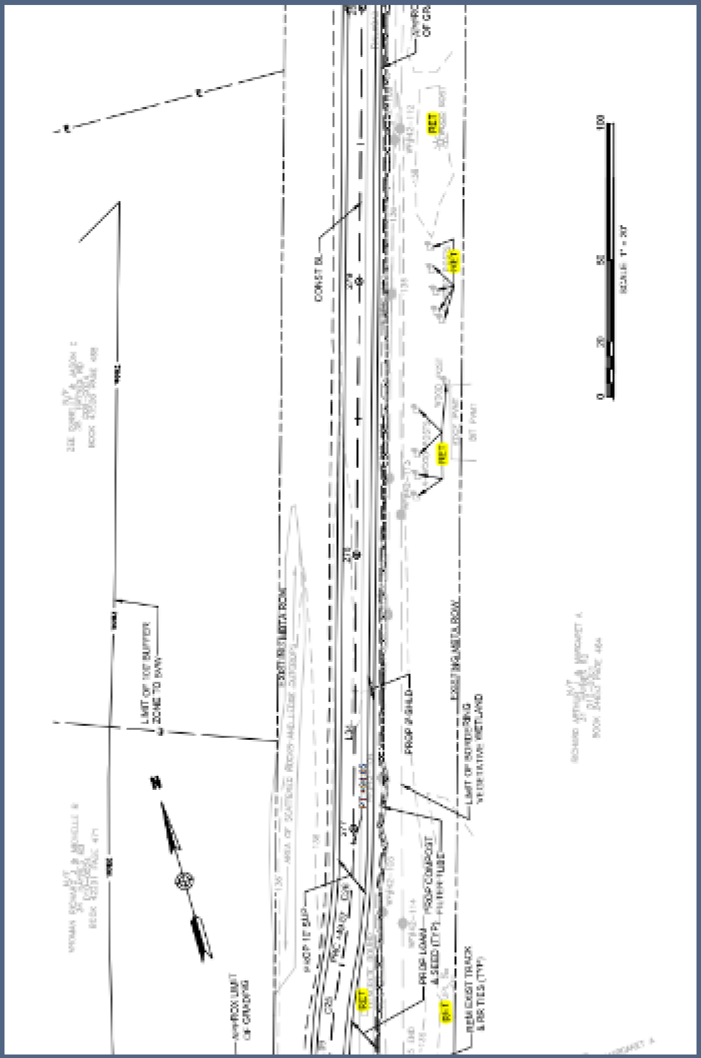
Historical Resources Discussion

Historical Resources within Area of Potential Effects

Inventory of Historic Resources through Sudbury portion of Trail Corridor

Field Survey



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Early Environmental Coordination Checklist

massDOT Highway Division

U.S. Department of Transportation Federal Highway Administration

25% Design Submission Checklist Responses.

Early Environmental Coordination Checklist for Design Projects

BIKE PATH CONSTRUCTION (BRUCE FREE
SUDBURY, MASSACHUSET

Public Coordination

1. Addressed. Coordination with local town boards and officials the project. See summary of public meetings provided in Qu

2. Addressed. Significant public outreach has occurred over a 1 Trail (BFRT) in Sudbury, MA. Since preliminary funding source in Sudbury has progressed through a series of formal public feedback. Additional information meetings have been held t an interest in the project. In September 2016, a Bruce Freem was formed to increase public involvement and input. Below to date and minutes posted on the Town of Sudbury website

Table 1. Summary of Public Meetings

Meeting Title	Meeting Date	Location	A
Rails to Trails Forum hosted by Board of Selectmen	January 22, 2015	Sudbury Town Hall	Town
Public Charrette	August 25, 2016	Sudbury Town Hall	Town

500-year floodplain (see Figure 4: FEMA Locus)
- Zone II Wellhead Protection Areas (see Figure 5: Environmental Constraints)
- High Quality Streams, Hop Brook and unnamed tributary to Hop Brook (see Figure 5: Environmental Constraints)

Sensitive environmental resources **not present** within or adjacent to the project include:
- National Wild and Scenic Rivers
- ACOE Special Aquatic Sites
- Essential Fish Habitat
- NHESP Priority Habitats of Rare Species, (see Figure 3: NHESP Locus)
- NHESP Estimated Habitats of Rare Wildlife, (see Figure 3: NHESP Locus)

12. Addressed. According to the Massachusetts Cultural Resource Information System (MACR *2.0 beta* website, multiple Listed/Inventoried properties and districts line the corridor. A s historic resources is provided in Table 2 below.

Table 2: Summary of Historical Resources

MACRIS #	Historic Name	District or Point	Address	Designati
SUD.A	Sudbury Center Historic District	District		National Register Places
SUD.B	South Sudbury	District		Inventoried
SUD.J	Old Sudbury Historic District	District		Local Historic
SUD.O	Maenpaa Farm – Haynes Farm – Broad Acre Farm	District		Inventoried
SUD.45	Parmenter House	Point	623 Peakham Road	Local Historic Prope Register of Histor
SUD.63	Framingham and Lowell Railroad Station	Point	40 Hudson Road	Local Historic Prope Register of Histor
SUD.174	Schulte House	Point	30 Hudson Road	Local Historic Prope Register of Histor
SUD.175	Quirk Property	Point	27 Hudson Road	Local Historic Prope Register of Histor
SUD.210	N/A	Point	610 Peakham Road	Inventoried
SUD.352	Broad Acres Farm Indoor Riding Ring	Point	82 Morse Road	Inventoried

4

massDOT | MassDOT Project No: 608164 | **EEC Checklist Photographic Log**

Project Title: BIKE PATH CONSTRUCTION (BRUCE FREEMAN RAIL TRAIL) - SUDBURY

Photo No. 5 | **Date:** 05-26-2016

Site Description:
View of the southern bridge abutment at Hop Brook crossing.

massDOT | MassDOT Project No: 608164 | **EEC Checklist Photographic Log**

Project Title: BIKE PATH CONSTRUCTION (BRUCE FREEMAN RAIL TRAIL) - SUDBURY

Photo No. 6 | **Date:** 05-26-2016

Site Description:
View of Railroad ROW looking north from bridge over Hop Brook.

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BRUCE FREEMAN RAIL TRAIL - SUDBURY SEGMENT
HISTORIC RESOURCES INVENTORY (3/1/21 DRAFT)

Page 1

Survey Station(s) Location	Plan Sheet (25%)	Artifact	Disposition
Throughout		Existing Track and RR Ties	Remove
142+70	12	Abandoned Electrical Cabinet	Retain in place
163+-5	14	Abandoned Electrical Cabinet	Retain in place
128+20	10, 11	Abandoned Signal Well	Remove
189+60	17	Battery on Concrete Pad	Retain in place
162+95	14	Concrete Pad	Retain in place
190+55	18	Cattle Crossing	Retain in place
258+50	24	Cattle Crossing	Retain in place
269+70	25	Cattle Crossing	Retain in place
321+60	33	Cattle Crossing	Retain in place
225+50	21	Concrete Post	Retain in place
229+00	22	Concrete Post	Retain in place
244+10	22	Metal Post	Remove
274+30	26	Metal Post	Remove
332+95	34	Metal Post	Retain in place
200+50	18	Metal Rail Post	Retain in place
303+10	30	Upright Rail	Retain in place
101+45	8	Post	Remove
104+15	8	Post	Retain in place
278+80-279+50	27	Wood Post	Retain in place
225+10	21	Granite Mile Post	Retain in place
172+30	15	Granite post	Retain in place

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156+30	14	Whistle Post	Remove & Reset
161+55	14	Whistle Post	Remove & Reset
188+75	17	Whistle Post	Remove & Reset
107+00	8	Sign	Remove & Reset
108+20	8	Sign	Remove & Reset
119+75	10	Sign	Remove & Reset
120+10	10	Sign	Remove & Reset
152+30	13	Stone Wall segment	Retain in place
167+50	14, 15	Stone Wall segment	Retain in place
171+00-171+80	15	Stone Wall segment	Retain in place
230+40	22	RR Tie Steps	Retain in place
101+75-104+40	8	Abandoned Utility Pole	Retain in place
142+0-142+75	12	Abandoned Utility Pole	Retain in place
145+75-153+80	13	Abandoned Utility Pole	Retain in place
168+30	15	Abandoned Utility Pole	Retain in place
171+00	15	Abandoned Utility Pole	Retain in place
228+00-239+90	21, 22, 23	Abandoned Utility Pole	Retain in place
245+40-255+80	23, 24	Abandoned Utility Pole	Retain in place
267+90-276+40	25, 26, 27	Abandoned Utility Pole	Retain in place
288+00-302+50	29, 30	Abandoned Utility Pole	Retain in place
3327+70-331+50	33, 34	Abandoned Utility Pole	Retain in place
Numerous Sections		Wire Fence at edge of ROW	Retain in place

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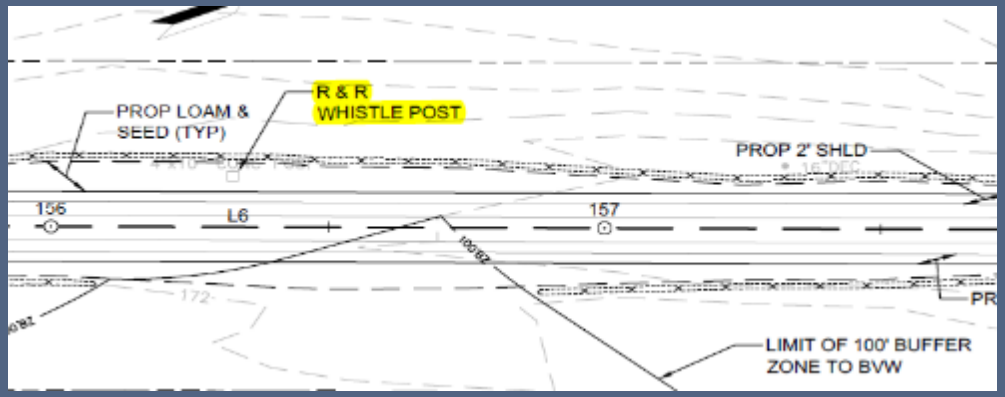
Historic Resources Inventory

Whistle Post

Cattle Crossing

Whistle Posts



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Cattle Crossing – Sta. 190+55

Cattle Crossing – Sta. 258+50

Cattle Crossing – Sta. 269+80

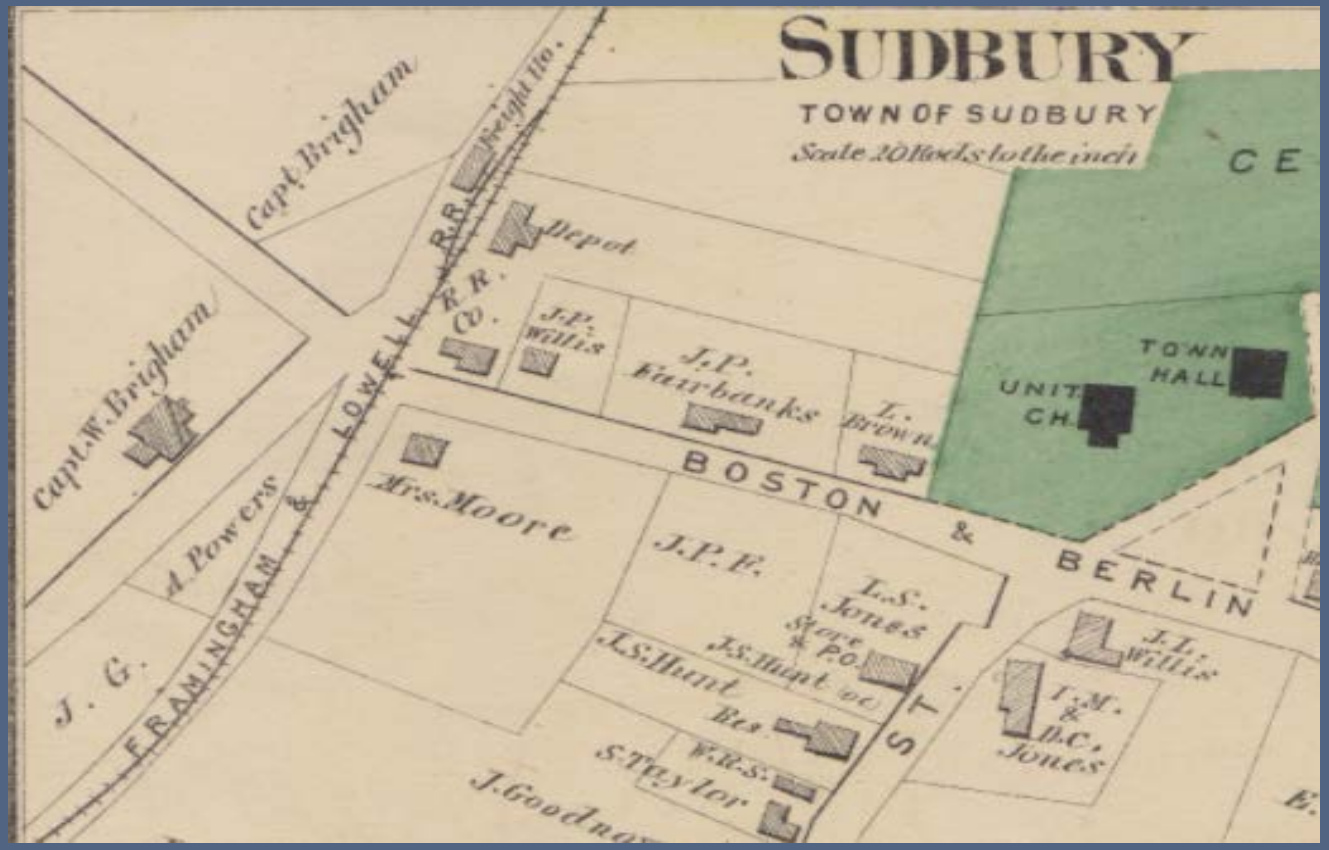
Cattle Crossing – Sta. 321+60

Granite posts

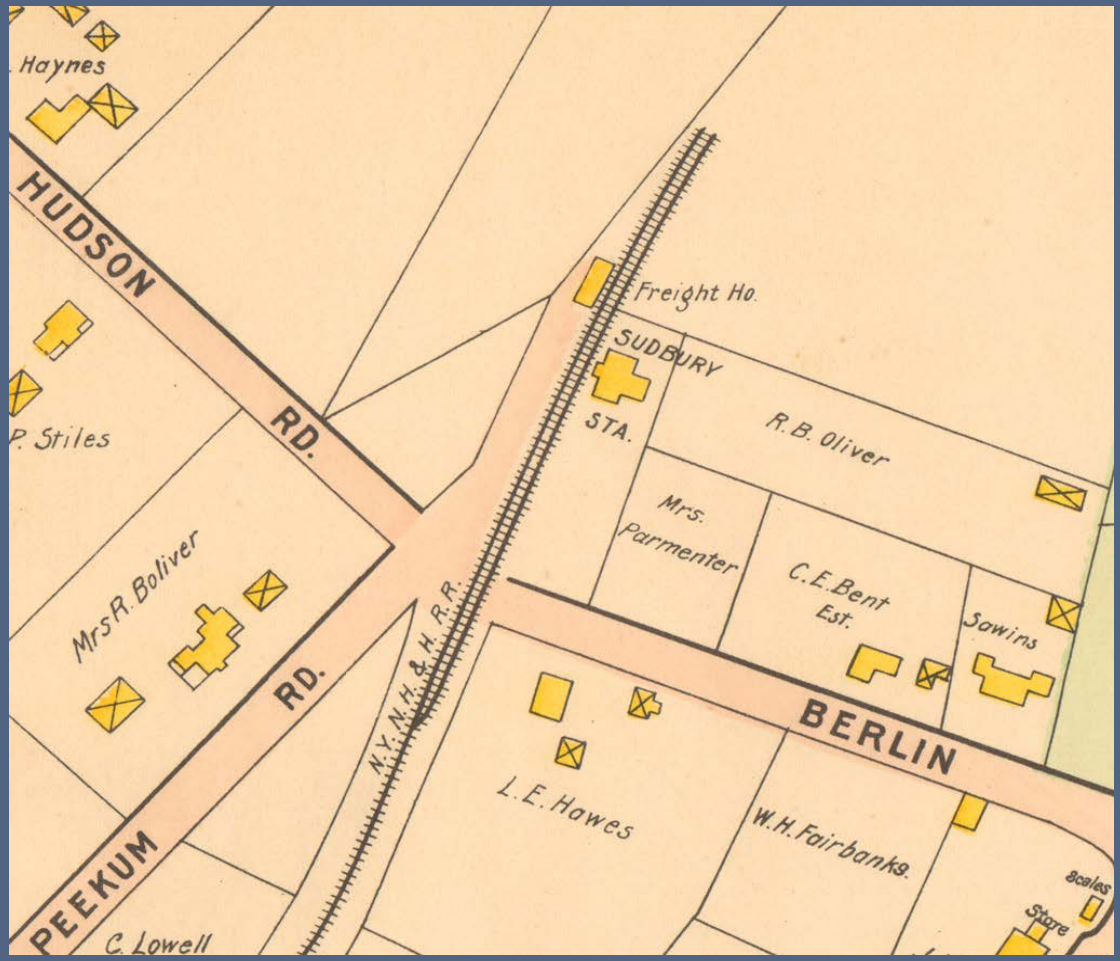
Electrical Cabinet – Sta. 142+70

Rail Rest

Siding at Ti-Sales (former Freight House area)



Siding at Ti-Sales (former Freight House area)



Siding at Ti-Sales (former Freight House area)

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Signal Pole – South of Hudson Road

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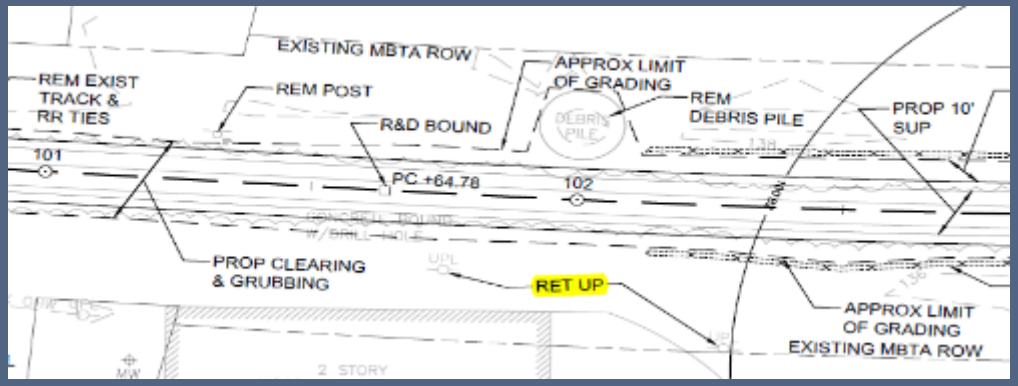
Telegraph Poles (typical)



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Proposed Treatment of Historic Resources

Treatment of Different Types of Historic Resources

- Retain in existing location and condition.
- Protect during construction. Retain in existing location and condition.
- Inspect for structural integrity. Retain in existing location and condition.
- Remove during construction for protection. Reinstall in original location after path construction and associated grading.
- Photo document and remove. Copies to Sudbury Historical Commission.

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BRUCE FREEMAN RAIL TRAIL - SUDBURY SEGMENT

HISTORIC RESOURCES INVENTORY AND PROPOSED TREATMENTS (3/1/21 DRAFT)

Survey Station(s) Location	Plan Sheet (25%)	Artifact	Disposition	Quantity	Artifact Type	Location	Recommended Treatment
Throughout		Existing Track and RR Ties	Remove		Railroad ties and track	Throughout	Photo document. Copies to Sudbury Historical Commission.
142+70	12	Abandoned Electrical Cabinet	Retain in place	1	Abandoned Electrical Cab	142+70	Protect during construction. Retain in existing location and condition. Prepare and repaint.
163+-5	14	Abandoned Electrical Cabinet	Retain in place	1	Abandoned Electrical Cab	163+-5	Protect during construction. Retain in existing location and condition. Prepare and repaint.
				2	***TOTAL ELECTRICAL CABINETS***		
128+20	10, 11	Abandoned Signal Well	Remove	1	Abandoned Signal Well	128+20	Photo document. Copies to Sudbury Historical Commission.
189+60	17	Battery on Concrete Pad	Retain in place	1	Battery on Concrete Pad	189+60	Protect during construction. Retain in existing location and condition.
162+95	14	Concrete Pad	Retain in place	1	Concrete Pad	162+95	Retain in existing location and condition.
				3	***TOTAL CONCRETE PADS***		
190+55	18	Cattle Crossing	Retain in place	1	Cattle Crossing	190+55	Protect during construction. Retain in existing location and condition.
258+50	24	Cattle Crossing	Retain in place	1	Cattle Crossing	258+50	Protect during construction. Retain in existing location and condition.
269+70	25	Cattle Crossing	Retain in place	1	Cattle Crossing	269+70	Protect during construction. Retain in existing location and condition.
321+60	33	Cattle Crossing	Retain in place	1	Cattle Crossing	321+60	Protect during construction. Retain in existing location and condition.
				4	***TOTAL CATTLE CROSSINGS***		
225+50	21	Concrete Post	Retain in place	1	Concrete Post	225+50	Retain in existing location and condition.
229+00	22	Concrete Post	Retain in place	1	Concrete Post	229+00	Retain in existing location and condition.
244+10	22	Metal Post	Remove	1	Metal Post	244+10	Photo document. Copies to Sudbury Historical Commission.
274+30	26	Metal Post	Remove	1	Metal Post	274+30	Photo document. Copies to Sudbury Historical Commission.
332+95	34	Metal Post	Retain in place	1	Metal Post	332+95	Protect during construction. Retain in existing location and condition.
200+50	18	Metal Rail Post	Retain in place	1	Metal Rail Post	200+50	Protect during construction. Retain in existing location and condition.
303+10	30	Upright Rail	Retain in place	2	Upright Rail	303+10	Protect during construction. Retain in existing location and condition.
101+45	8	Post	Remove	1	Post	101+45	Photo document. Copies to Sudbury Historical Commission.
104+15	8	Post	Retain in place	1	Post	104+15	Protect during construction. Retain in existing location and condition.
278+80-279+50	27	Wood Post	Retain in place	2	Wood Post	278+80-279+50	Protect during construction. Retain in existing location and condition.
				12	***TOTAL WOOD, METAL, RAIL AND CONCRETE POSTS***		
225+10	21	Granite Mile Post	Retain in place	1	Granite Mile Post	225+10	Protect during construction. Retain in existing location and condition.
172+30	15	Granite post	Retain in place	1	Granite post	172+30	Protect during construction. Retain in existing location and condition.
				2	***TOTAL GRANITE POSTS***		
156+30	14	Whistle Post	Remove & Reset	1	Whistle Post	156+30	Remove during construction for protection. Reinstall in original location after path construction and associated grading.
161+55	14	Whistle Post	Remove & Reset	1	Whistle Post	161+55	Remove during construction for protection. Reinstall in original location after path construction and associated grading.
188+75	17	Whistle Post	Remove & Reset	1	Whistle Post	188+75	Remove during construction for protection. Reinstall in original location after path construction and associated grading.
				3	***TOTAL WHISTLE POSTS***		
107+00	8	Sign	Remove & Reset	1	Sign	107+00	Remove during construction for protection. Reinstall in original location after path construction and associated grading.
							Remove during construction for protection. Reinstall in original location after path construction and associated

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SUMMARY OF HISTORICAL RESOURCES DISPOSITION

	Artifacts retained	
2	TOTAL ELECTRICAL CABINETS	
3	TOTAL CONCRETE PADS	
4	TOTAL CATTLE CROSSINGS	
12	TOTAL WOOD, METAL, RAIL AND CONCRETE POSTS	
2	TOTAL GRANITE POSTS	
3	TOTAL WHISTLE POSTS	
4	TOTAL SIGNS	
3	TOTAL STONE WALL SEGMENTS	
1	TOTAL RAIL TIE STEPS	
51	TOTAL UTILITY POLES	
85	**GRAND TOTAL RETAINED HISTORIC RESOURCES**	
	Artifacts documented and removed	
1	Abandoned Signal Well	
1	Metal Post	
1	Metal Post	
1	Post	
4	**GRAND TOTAL DOCUMENTED AND REMOVED RESOURCES**	

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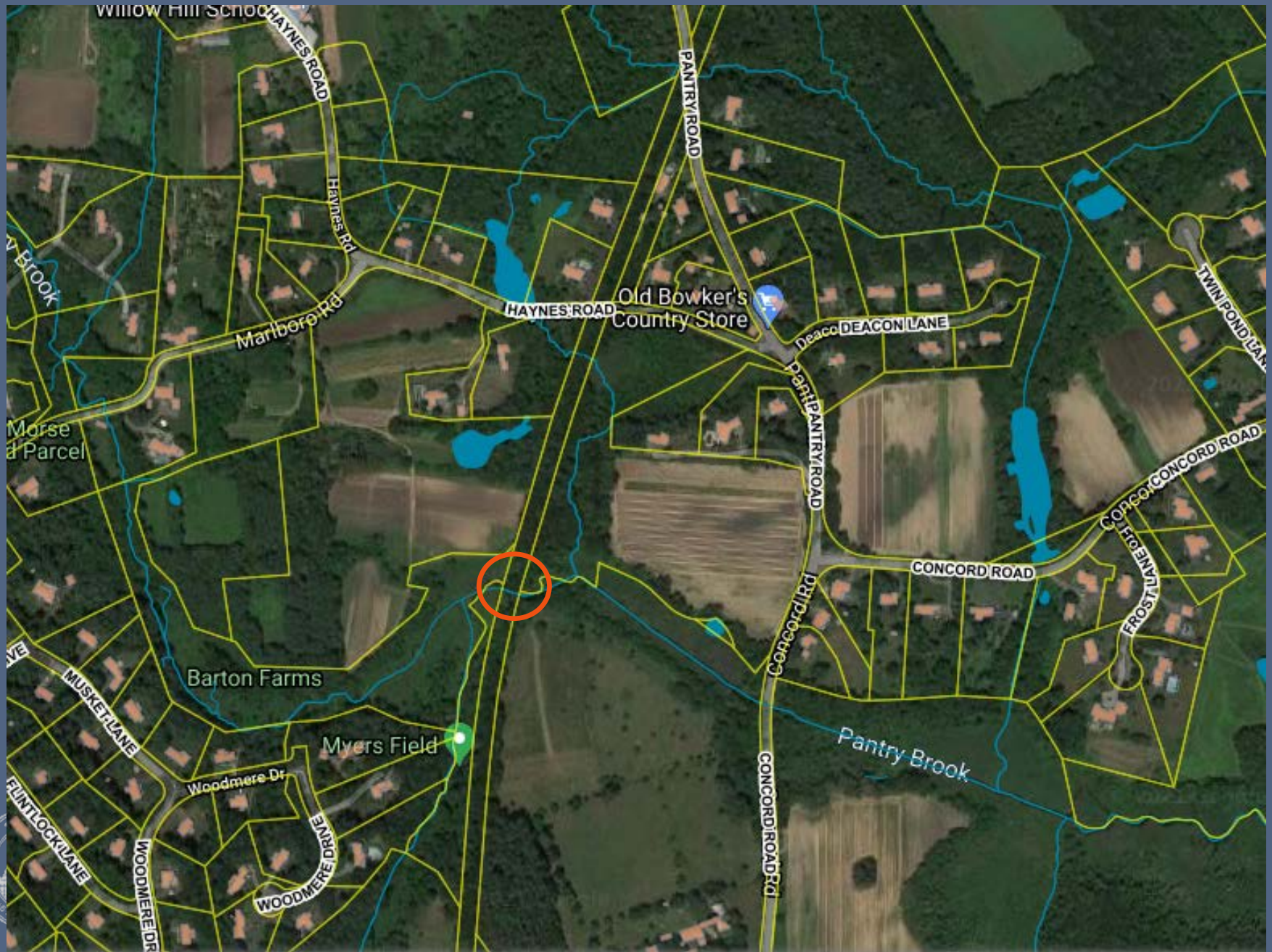
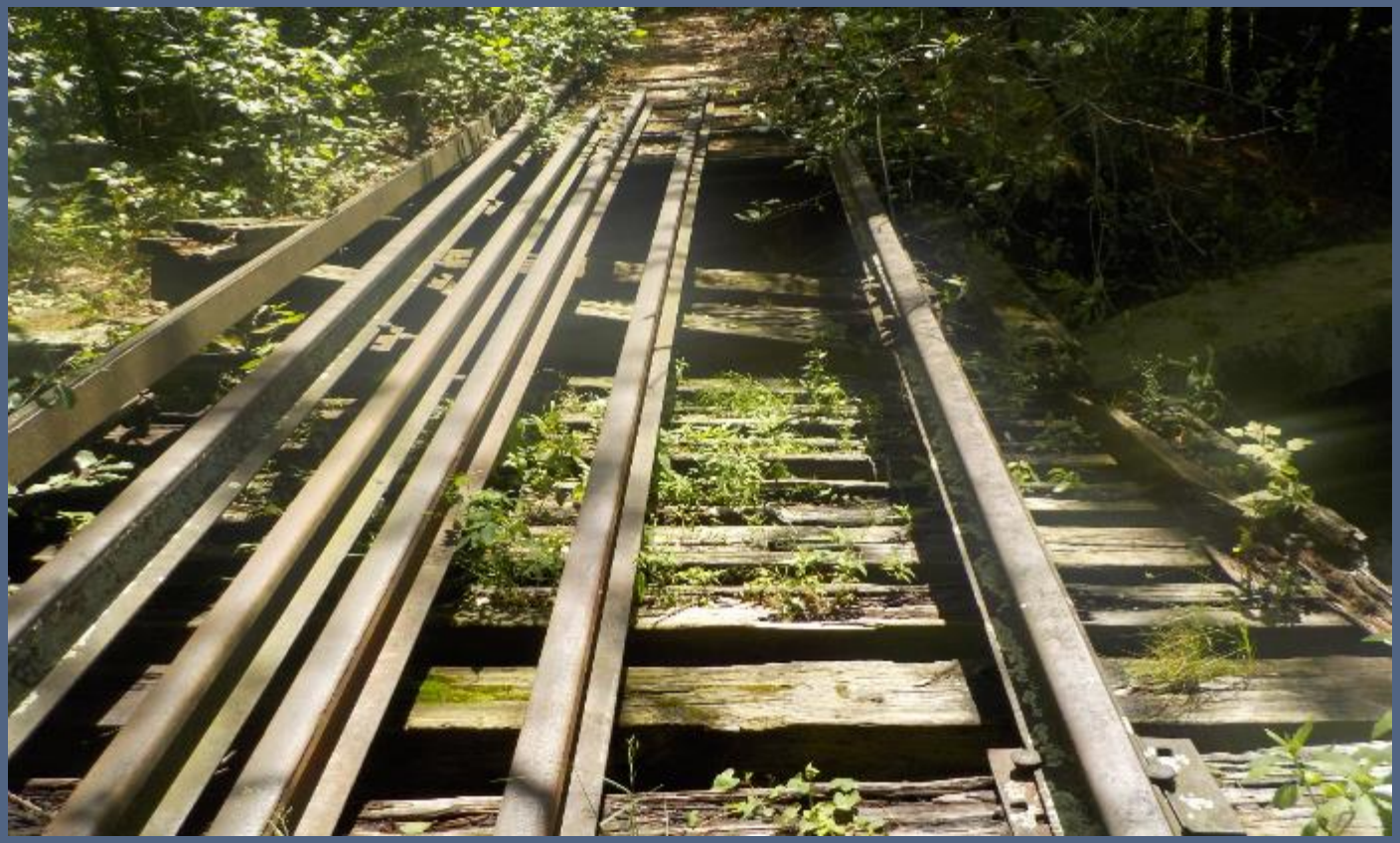
Pantry Brook - Location



Existing Conditions - Pantry Brook



EXISTING PANTRY BROOK BRIDGE DECK

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Existing Conditions - Pantry Brook

EXISTING PANTRY SOUTH ABUTMENT

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Existing Conditions - Pantry Brook

EXISTING PANTRY SOUTH ABUTMENT

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Proposed Design - Pantry Brook

- **Full bridge replacement of collapsed bridge**
- **Proposed concrete arch**
- **Precast panels allow for easier constructability**
- **More durable than other arch types**
- **Ability for Town to choose façade**

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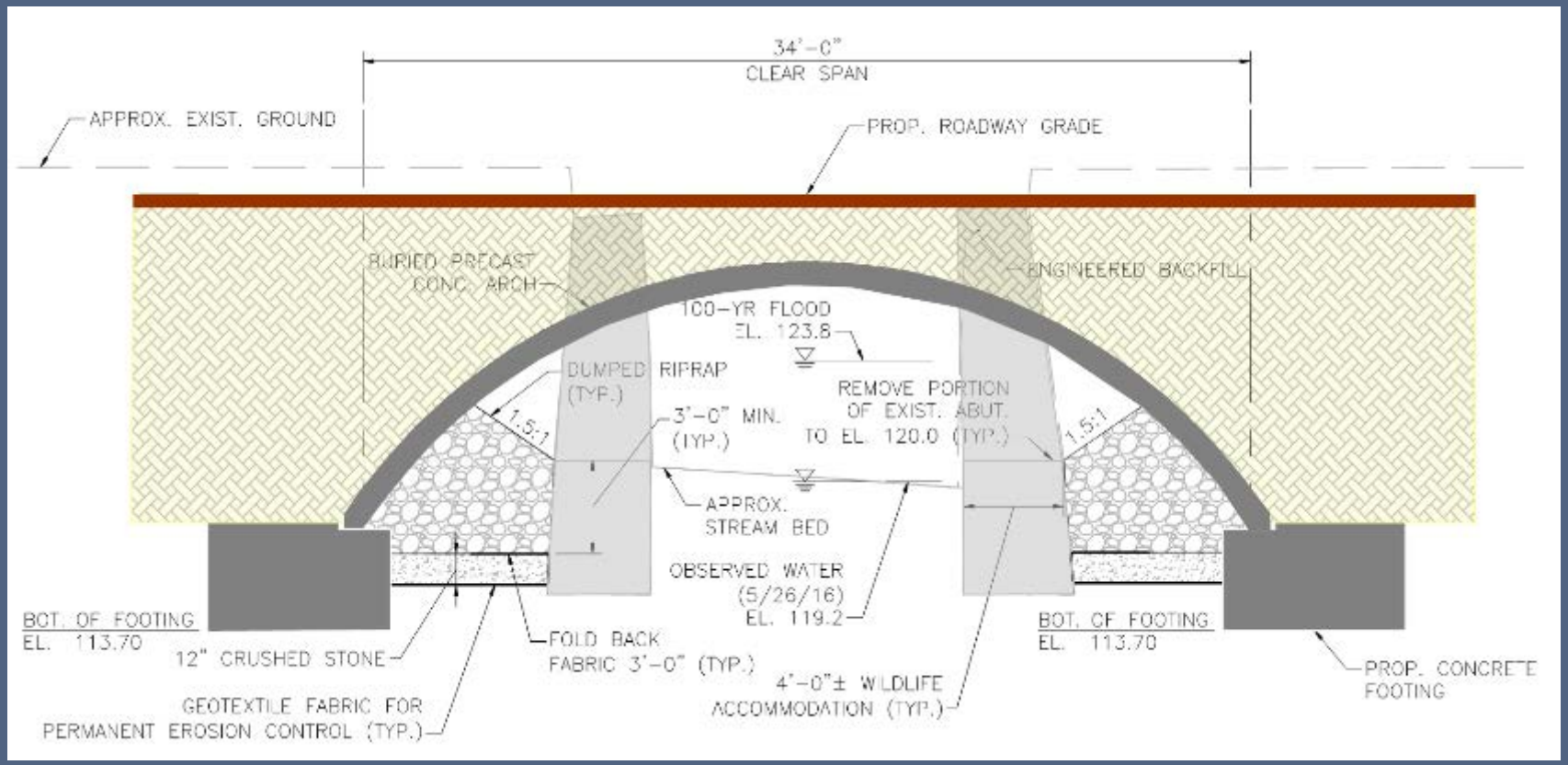
Proposed Design - Pantry Brook



PROPOSED CONCRETE ARCH

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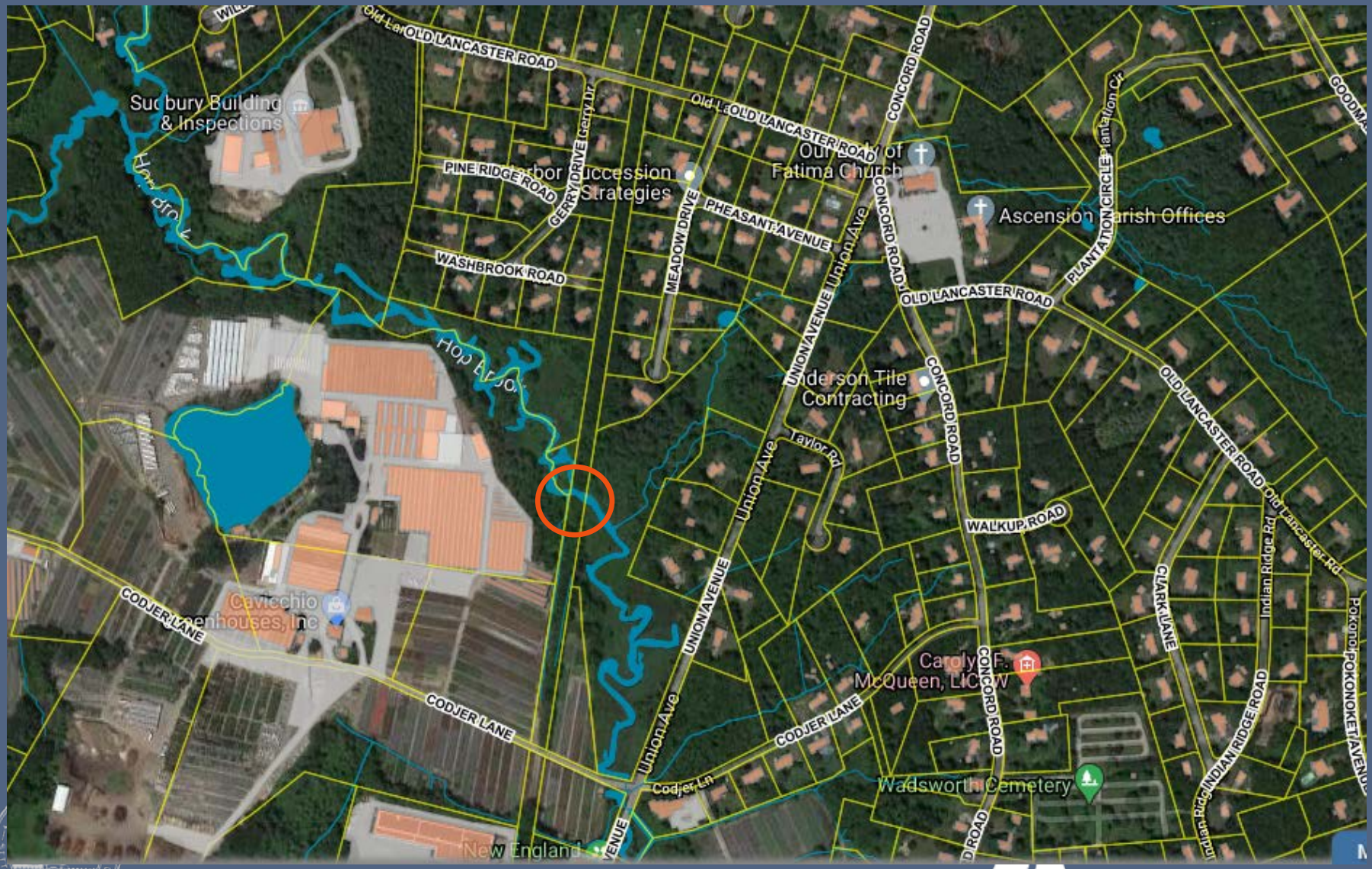
Hop Brook - Location



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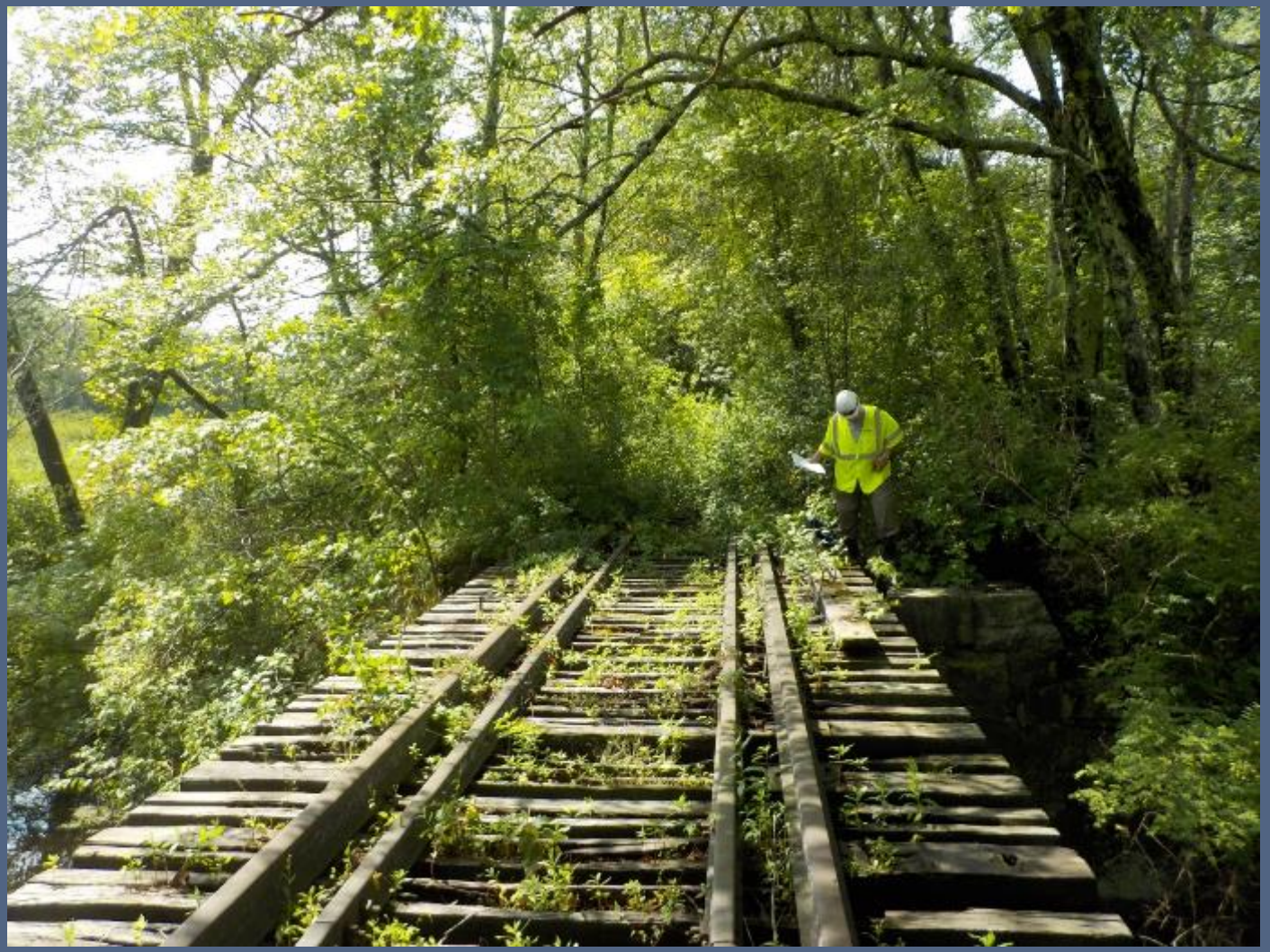
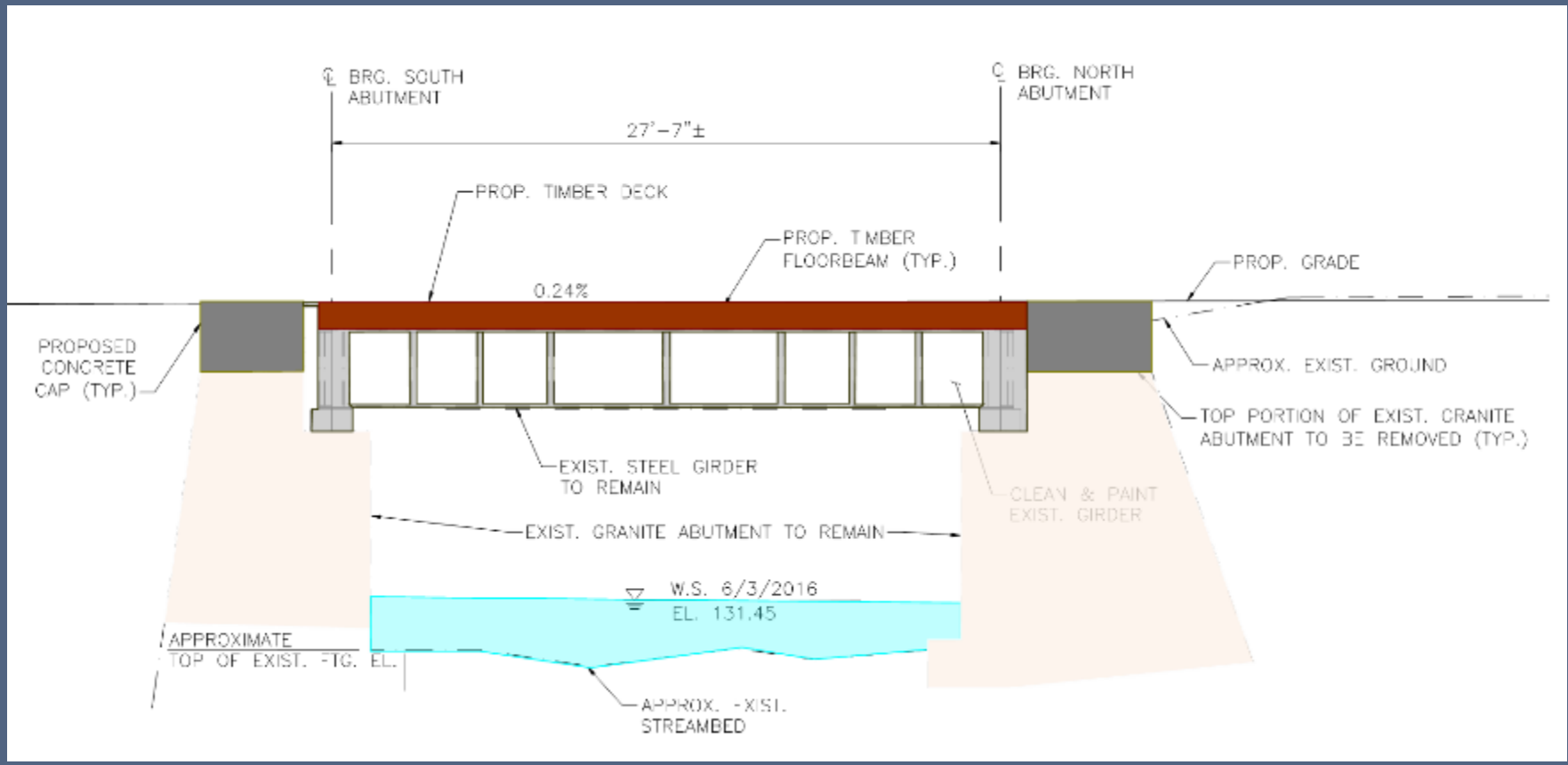
Existing Conditions - Hop Brook



Sketch Plan Proposed Design - Hop Brook



PROPOSED SECTION

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Sketch Plan Proposed Design - Hop Brook

- Reuse existing steel superstructure
- Clean and repaint existing beams
- Replace decking with pressure treated timber

- Detailed investigation and design shows lack of depth for bridge deck that matches proposed trail surface grade

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Revised Plan Proposed Design - Hop Brook

- Remove existing steel beams
- Install lower profile steel “I” beams with wood nailer plates
- Install new decking and rails
- Will match proposed trail grade without requiring:
  - extensive regrading of trail approach segments,
  - construction of new wing walls to support raised grade
  - Stormwater management intervention

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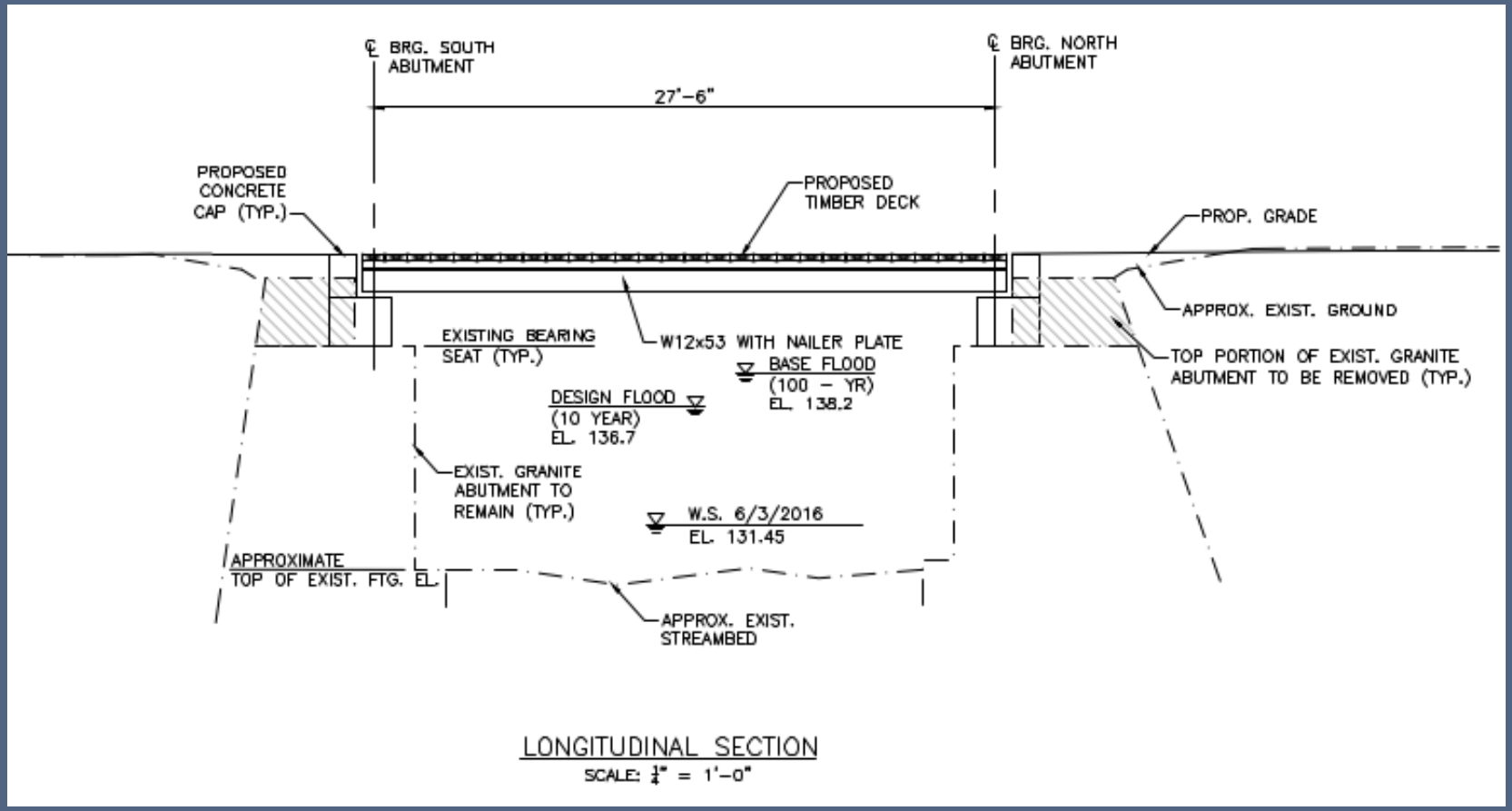
Revised Proposed Design - Hop Brook



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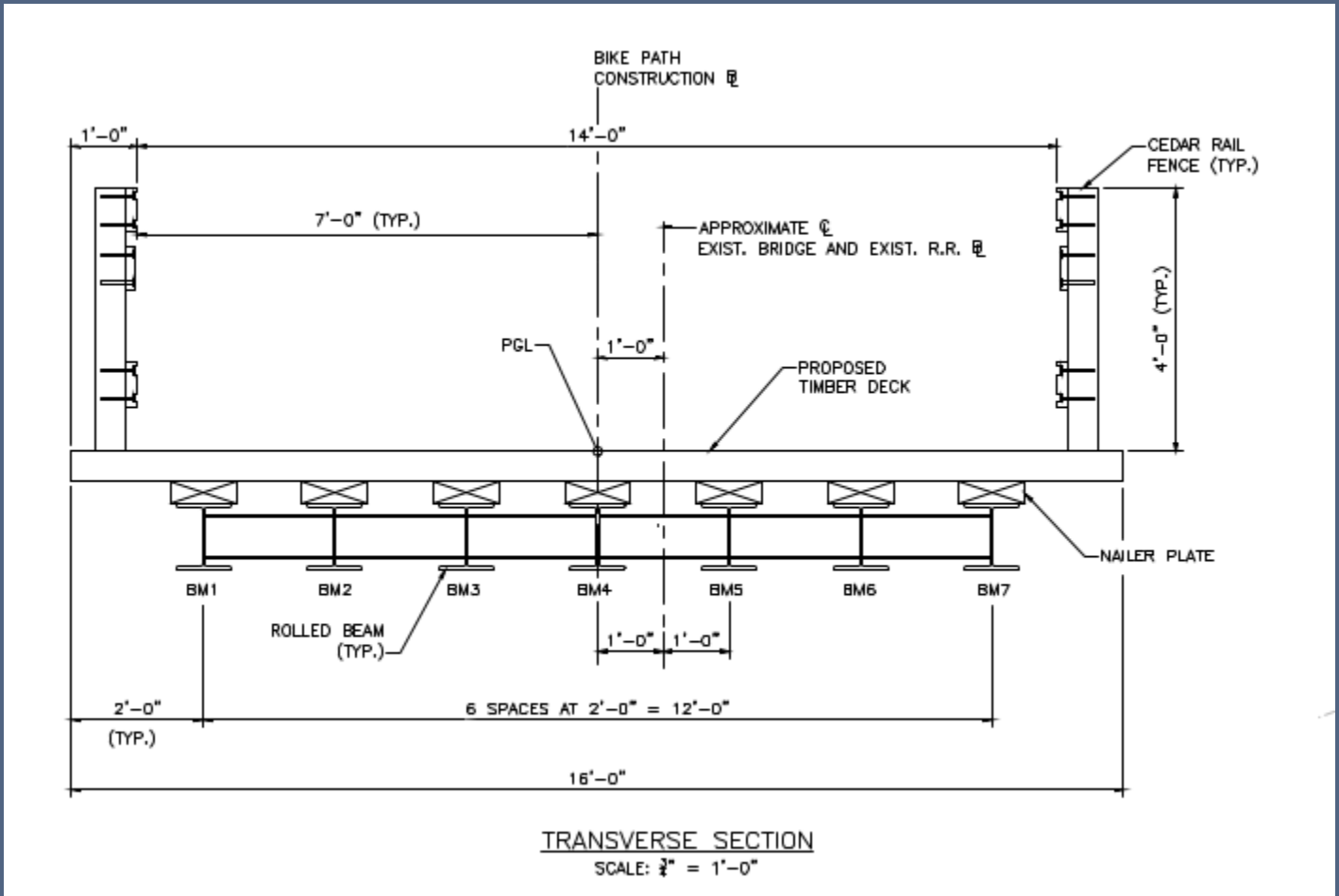
Revised Proposed Design - Hop Brook



TRANSVERSE SECTION

SCALE: ¾" = 1'-0"

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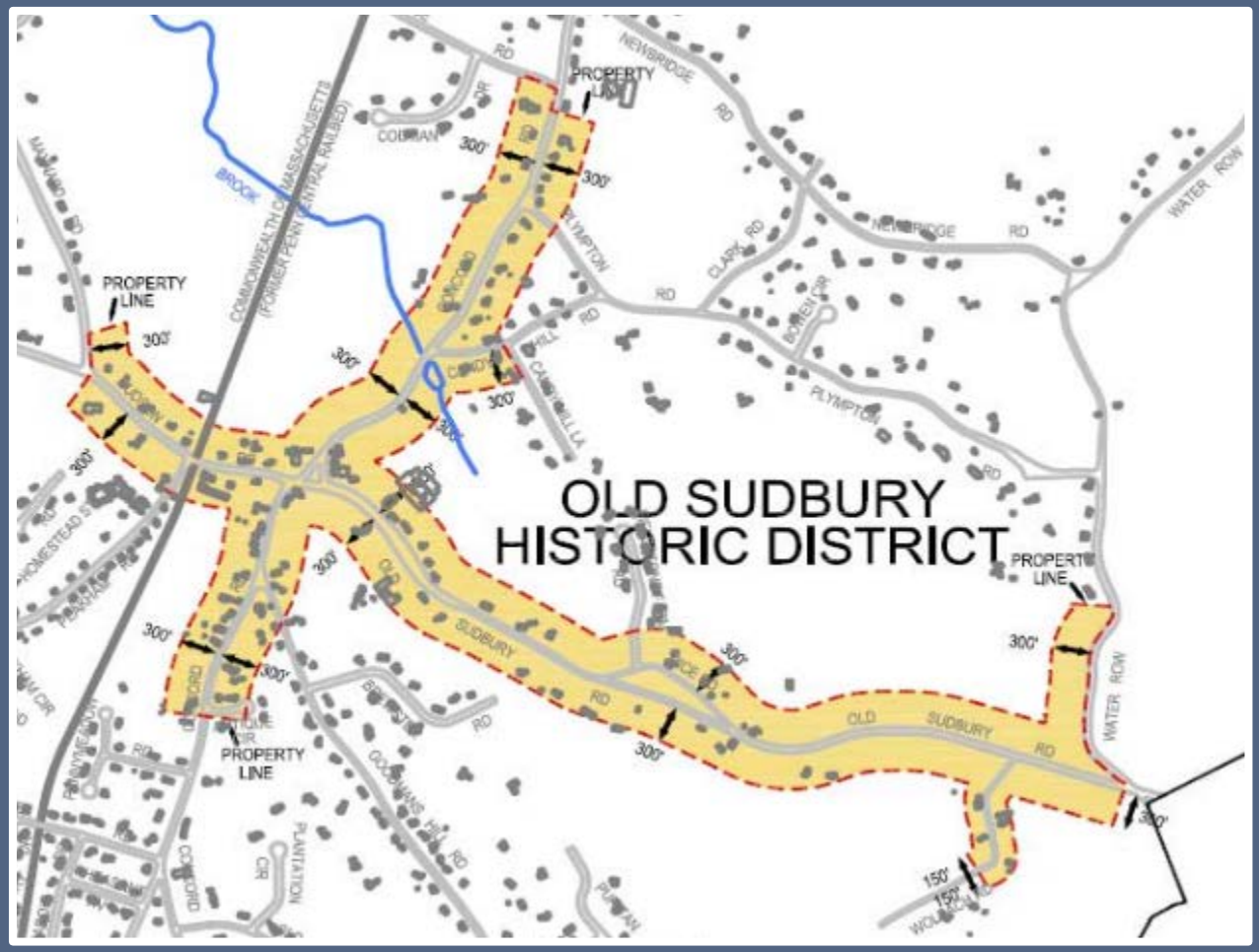
Historic District Commission

Map of District



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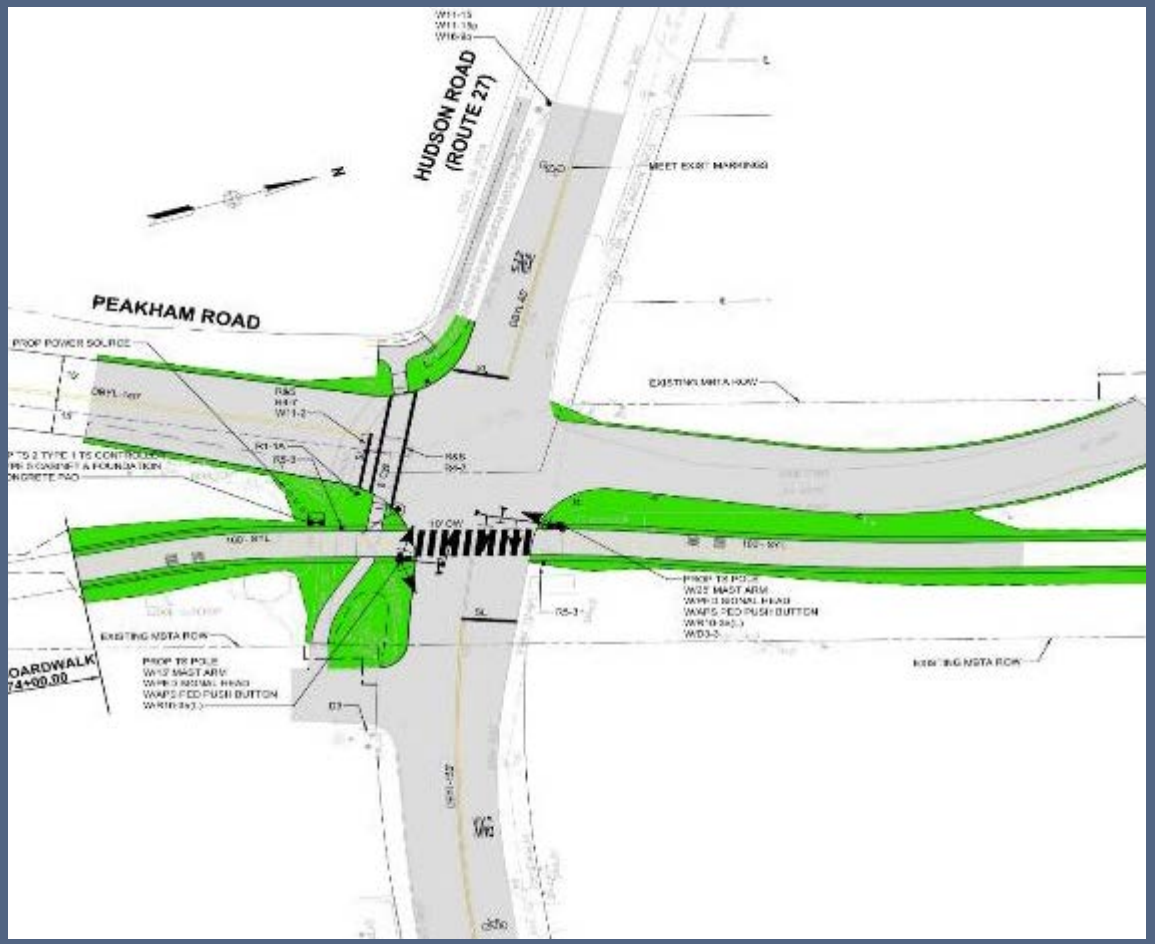
Roadway Crossing – Hudson Rd



Discussion on Amenities and Signage

Gateways at Major Entry/Exit Point

- Critical elements:
  - Signage for Rail Trail (confirm users are in right place)
  - Information kiosk
  - Trail rules signage
  - Directional wayfinding signage
  - Bike racks
  - Benches/Seating areas
  - Often adjacent to parking for trail users
- Opportunity for:
  - Bike repair station
  - Hydration station
  - Interpretive signage

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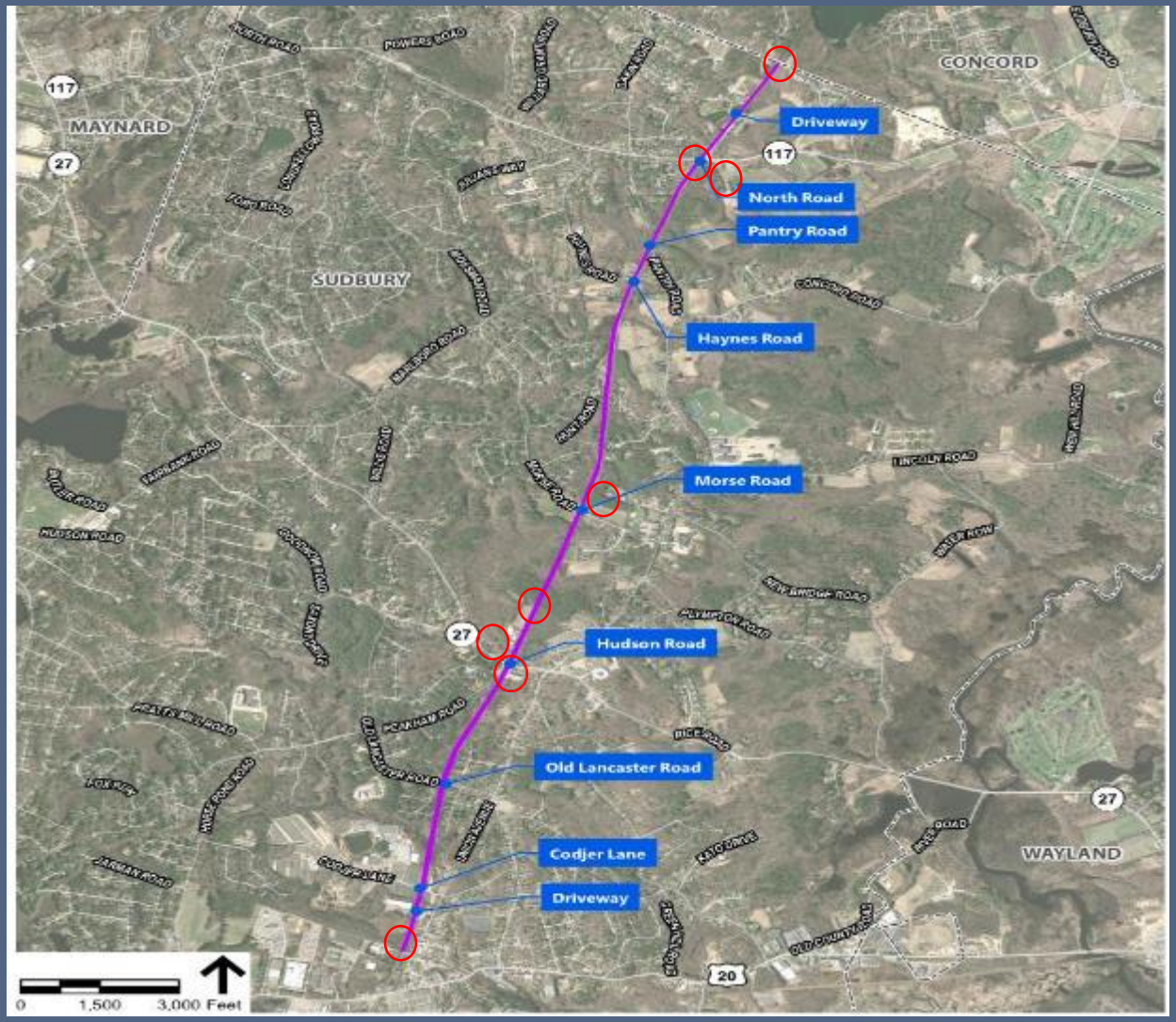
Gateway Opportunities



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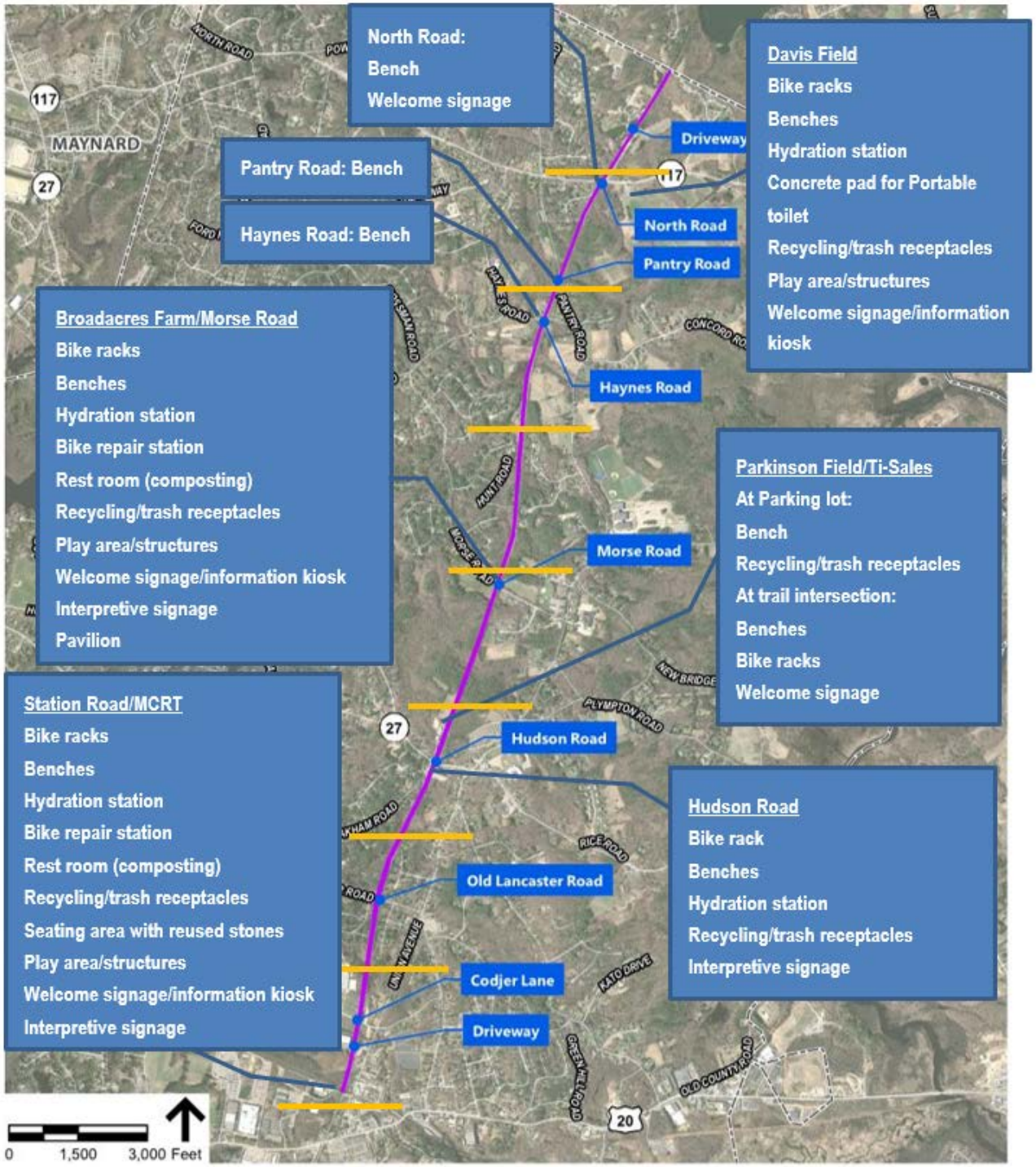
North Road:
Bench
Welcome signage
Pantry Road: Bench
Haynes Road: Bench
Broadacres Farm/Morse Road
Bike racks
Benches
Hydration station
Bike repair station
Rest room (composting)
Recycling/trash receptacles
Play area/structures
Welcome signage/information kiosk
Interpretive signage
Pavilion
Station Road/MCRT
Bike racks
Benches
Hydration station
Bike repair station
Rest room (composting)
Recycling/trash receptacles
Seating area with reused stones
Play area/structures
Welcome signage/information kiosk
Interpretive signage
Davis Field
Bike racks
Benches
Hydration station
Concrete pad for Portable toilet
Recycling/trash receptacles
Play area/structures
Welcome signage/information kiosk
Parkinson Field/Ti-Sales
At Parking lot:
Bench
Recycling/trash receptacles
At trail intersection:
Benches
Bike racks
Welcome signage
Hudson Road
Bike rack
Benches
Hydration station
Recycling/trash receptacles
Interpretive signage
Driveway
North Road
Pantry Road
Haynes Road
Morse Road
Hudson Road
Old Lancaster Road
Codjer Lane
Driveway
MAYNARD
117
27
20
0
1,500
3,000 Feet

Information Kiosks

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Upright Kiosks/Panels

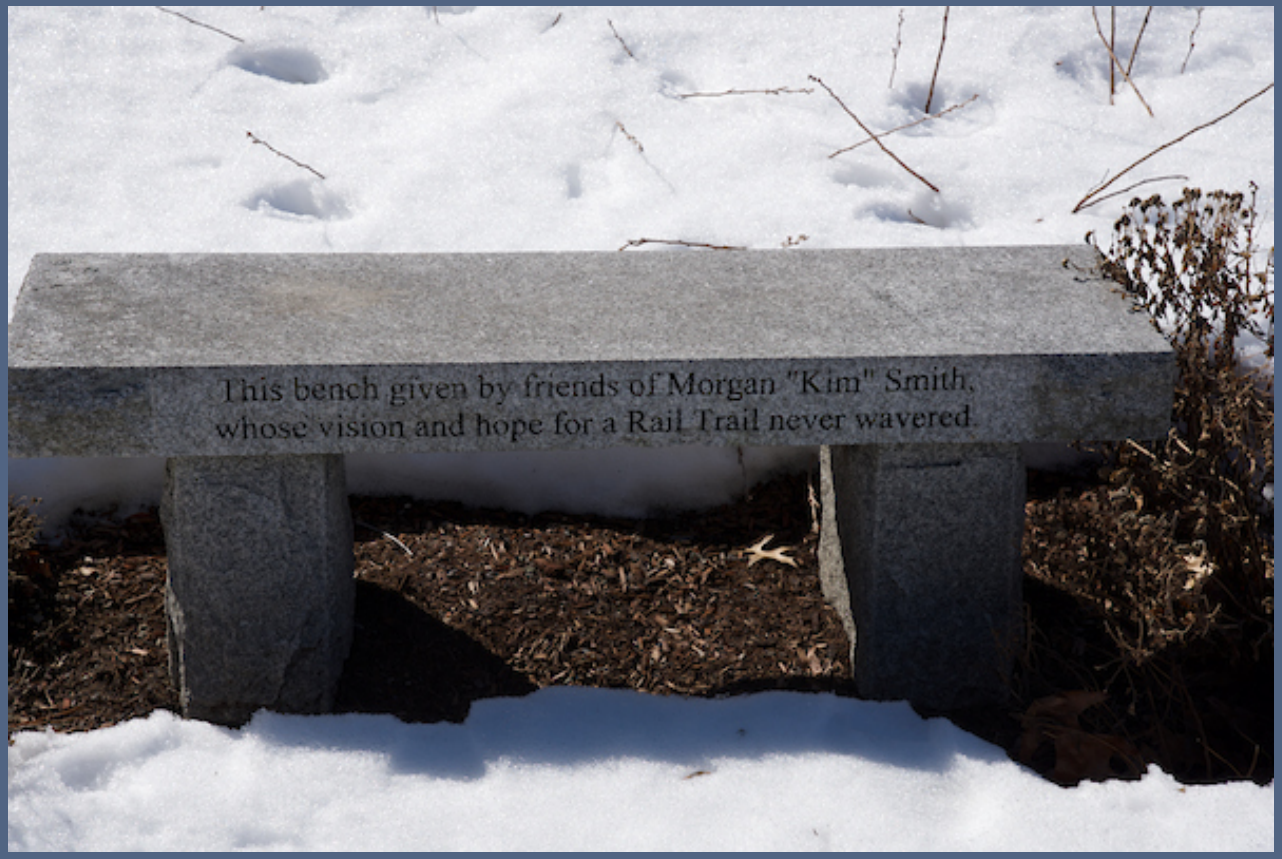
Benches

Metal Benches for Gateways/Rest Areas

Wood Benches for Natural SEttings

Wood Benches for Natural SEttings

Granite Benches –Memorial Opportunities



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Bike Racks

Bike Racks – BFRT Concord

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Bike Repair Stations


Washington Recreation Trail

Hydration Stations

FUSS & O'NEILL

Recycling/Trash Recepticals

Play amenities

Nature-based play area/amenities

Nature-based play area/amenities

Wayfinding Signage

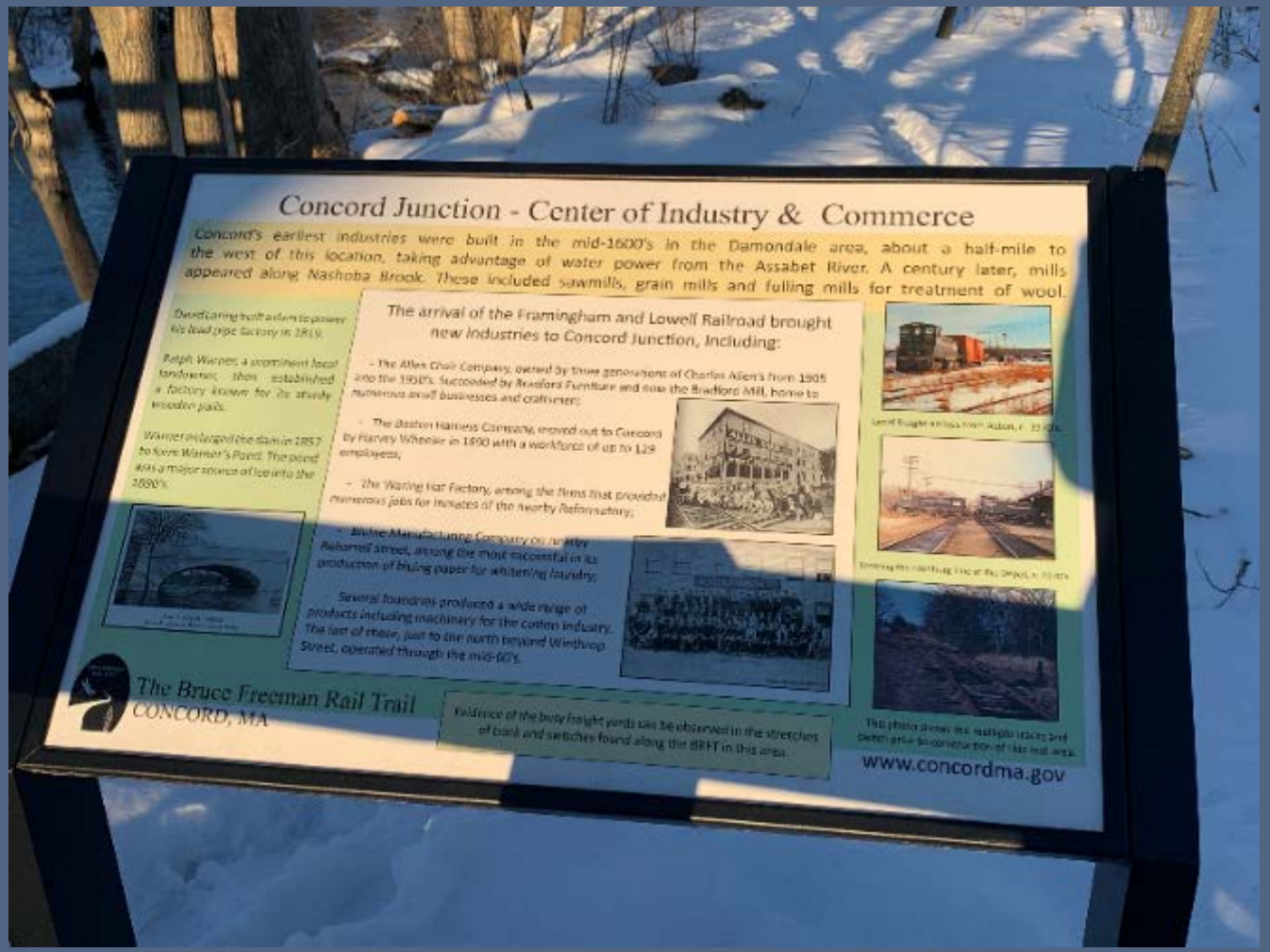
- Entry to Town of Sudbury
- Road crossings
- Stream crossings
- Nearby destinations

Wayfinding Signage – To Route

Mile markers

Wayfinding Signage Confirmational – On Route

Interpretive Signage: Design Standards


Concord Junction - Center of Industry & Commerce
Concord's earliest industries were built in the mid-1600's in the Damondale area, about a half-mile to the west of this location, taking advantage of water power from the Assabet River. A century later, mills appeared along Nashoba Brook. These included sawmills, grain mills and fulling mills for treatment of wool.
The arrival of the Framingham and Lowell Railroad brought new industries to Concord Junction, including:
- The Allen Chair Company, owned by three generations of Charles Allen's from 1905 into the 1950's. Succeeded by Bradford Furniture and now the Bradford Mill, home to numerous small businesses and craftsmen;
- The Boston Harness Company, moved out to Concord by Harvey Wheeler in 1890 with a workforce of up to 129 employees;
- The Waring Hat Factory, among the items that provided numerous jobs for inmates of the nearby Reformatory;
Several foundries produced a wide range of products including machinery for the cotton industry. The last of these, just to the north beyond Winthrop Street, operated through the mid-60's.
The Bruce Freeman Rail Trail
CONCORD, MA
Evidence of the busy freight yards can be observed in the stretches of track and switches found along the BFRT in this area.
www.concordma.gov

Interpretive Signage

Small interpretive sign

Interpretive Signage:
Historical Content/Locations

Historical Interpretive Signage

Potential Topics:

- History of Lowell-Framingham Line
- Town Center History
- Junction with Mass Central Rail Trail
- Broadacres Farm – History of Haynes Farm
- Cavicchio – history of agriculture in Sudbury
- Cattle crossings

FUSS & O'NEILL

Concord Junction - Center of Industry & Commerce

Concord's earliest industries were built in the mid-1600's in the Damondale area, about a half-mile to the west of this location, taking advantage of water power from the Assabet River. A century later, mills appeared along Nashoba Brook. These included sawmills, grain mills and fulling mills for treatment of wool.

David Loring built a dam to power his lead pipe factory in 1819.

Ralph Warner, a prominent local landowner, then established a factory known for its sturdy wooden pails.

Warner enlarged the dam in 1857 to form Warner's Pond. The pond was a major source of ice into the 1890's.

The arrival of the Framingham and Lowell Railroad brought new industries to Concord Junction, including:

- The Allen Chair Company, owned by three generations of Charles Allen's from 1905 into the 1950's. Succeeded by Bradford Furniture and now the Bradford Mill, home to numerous small businesses and craftsmen;

- The Boston Harness Company, moved out to Concord by Harvey Wheeler in 1890 with a workforce of up to 129 employees;

- The Waring Hat Factory, among the firms that provided numerous jobs for inmates of the nearby Reformatory;

- Bluine Manufacturing Company on nearby Beharrell Street, among the most successful in its production of bluing paper for whitening laundry;

- Several foundries produced a wide range of products including machinery for the cotton industry. The last of these, just to the north beyond Winthrop Street, operated through the mid-60's.

Local freight arrives from Acton, c. 1970's.

Crossing the Fitchburg Line at the Depot, c. 1970's.

This photo shows the multiple tracks and switch prior to construction of this rest area.

The Bruce Freeman Rail Trail
CONCORD, MA

Evidence of the busy freight yards can be observed in the stretches of track and switches found along the BRFT in this area.

www.concordma.gov

SUDBURY SETTLED 1638 INCORPORATED 1639

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Interpretive Signage:
Natural Resources Content/Locations


Lowland Beginning Habitat
Van Meer Natural Area
Upriver Protected Land & Water

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Natural Resources Interpretive Signage

Potential Topics:

- Stream Crossings
- Wetland functionality
- Species habitats
- Trees and plant types

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PUBLIC COMMENTS

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Broadacres Farm

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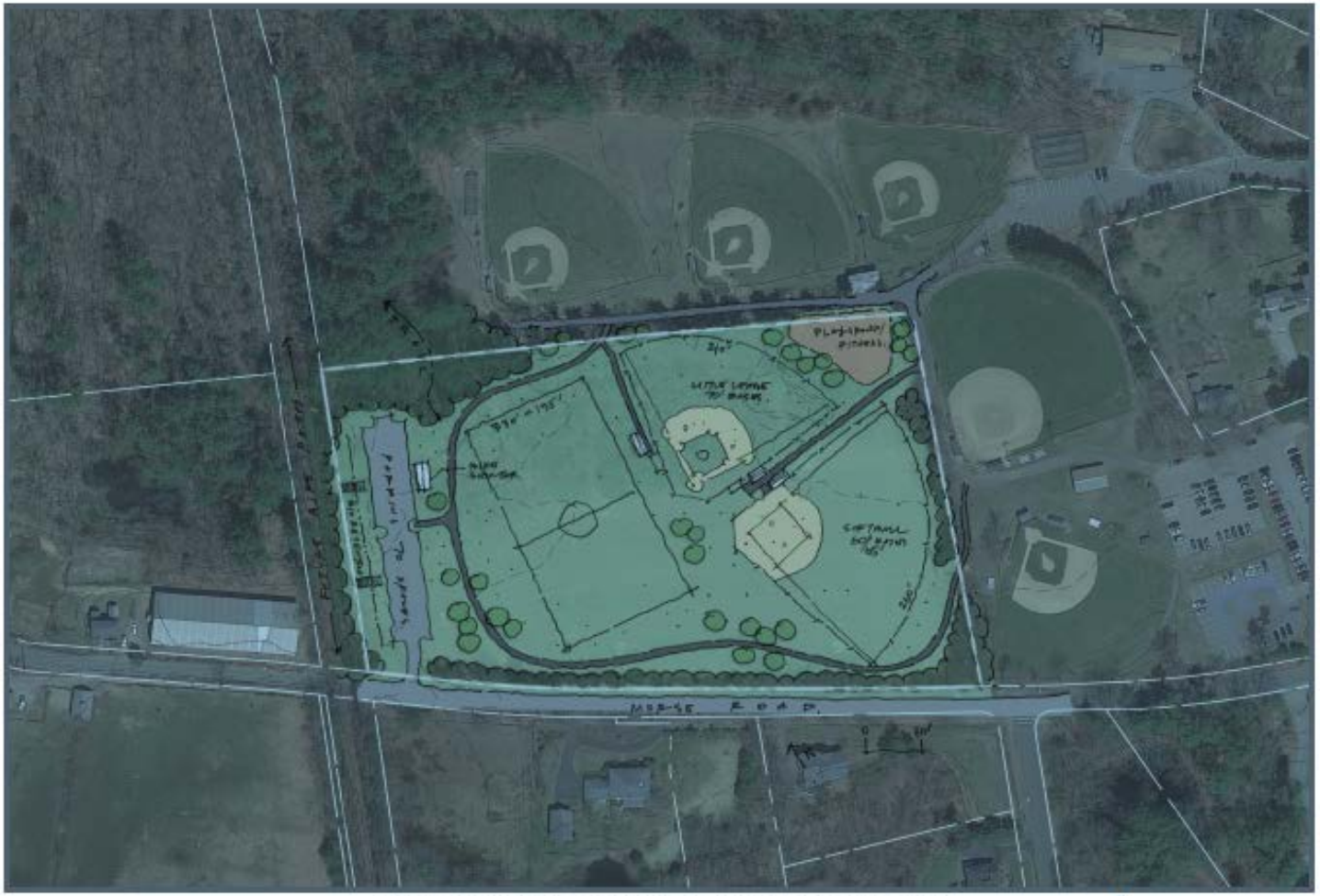

DRAFT FOR REVIEW
2-28-2019

BROADACRE FARM PARCEL AT FEATHERLAND PARK

MASTER PLAN CONCEPT A

WARNER LARSON
LANDSCAPE ARCHITECTS

FUSS & O'NEILL

DRAFT FOR REVIEW
2-28-2019

BROADACRE FARM PARCEL AT FEATHERLAND PARK

MASTER PLAN CONCEPT B

WARNER LARSON
LANDSCAPE ARCHITECTS

FUSS & O'NEILL