

Independence Greenway & Border to Boston

Connection Feasibility Report

Prepared for the
City of Peabody

August 2019



Lt. Ross Park



Independence Greenway Terminus



Border to Boston Trail
Kristen Crowley Trailhead



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To: Brendan Callahan, Asst. Dir. of Planning
City of Peabody, Massachusetts

Date: August 23, 2019

From: William Paille, PE

Project No. 28380.00

Re: Independence Greenway & Border-to-Boston Connection Feasibility Study

A. Project Background

BSC Group was retained by the City of Peabody (City) in May 2018 to provide preliminary assessment and coordination, geotechnical engineering, structural engineering, transportation engineering, and cost estimating services as part of the preparation of a feasibility study to connect the existing Independence Greenway at the western terminus at Lt. Ross Park to the eastern terminus at the intersection with Peabody Road, and to the existing northern terminus of the Border-to-Boston Trail at Lowell Street in the City of Peabody, Massachusetts. We have prepared this Feasibility Report for the City to document existing conditions, public engagement and the process that was undertaken to develop various conceptual design alternatives and elements along with associated order-of-magnitude construction costs anticipated to complete this vital connection.

B. Existing Conditions

The existing conditions plan of the study corridor was developed utilizing MassGIS information, supplemented by GIS data provided by the City of Peabody, right-of-way information provided by the Massachusetts Department of Transportation (MassDOT) and measurements obtained from multiple site visits. An evaluation of the existing study corridor resulted in several key sections within the public right-of-way, State Highway Layout (SHLO) or private property described as follows (Refer to Appendices A.1 Existing Conditions Plan):

a. Peabody Road

Classified as a local road and generally runs in a northerly-southerly direction while traversing through all residential land use and connects the Clark Road neighborhood (south of the Independence Greenway) to Lowell Street (north of the Independence Greenway). The roadway is bi-directional consisting of a paved width of approximately 32 feet with vertical granite curb along both sides. The Independence Greenway and Proctor Brook intersect toward the southern end of the roadway.

b. Lowell Street

Classified as an urban major arterial and generally runs in a westerly-easterly direction and connects Peabody Road to Route 1 NB & SB while traversing through commercial and some residential land use that includes the Peabody High School (Feery Road). The speed limit along this section of Lowell Street is not posted. The roadway is bi-directional consisting of a paved width of approximately 32 feet with vertical granite curb and cement concrete sidewalk along both sides.

c. Abandoned Railbed

Within the study corridor, the City has agreed to a 99-year lease with the MBTA for use as a multi-use trail described as follows:

- i. West of Route 1 & I-95 includes the section from Lt. Ross Park to the western edge of the Route 1 SB State Highway Layout where the City right-of-way is approximately 65 feet wide and consists of track ballast and one set of tracks/ties;

- ii. East of Route 1/I-95 includes the section from the eastern edge of the I-95 State Highway Layout to Peabody Road where the City right-of-way is approximately 87 feet and consists of track ballast. There are residential properties located along both sides as well as the Beth El Cemetery.
- d. I-95 & Route 1
Classified as a freeway and generally runs in a northerly-southerly direction with a state highway layout width of 600+ feet, includes the Route 1 NB off-ramp that traverses under and parallel to I-95 and the Proctor Brook.
- e. 215 Newbury Street
Private and commercial property that is bordered by Route 1 NB to the west, the Route 1 NB off-ramp to the north, and Lowell Street/I-95 to the east. The property contains an existing 20' wide access easement from Lowell Street to Route 1 allowing the construction of a multi-use trail (Refer to Appendices A.3_MBTAs Lease – City).

C. Key Milestones (Kickoff, Site Visits, Survey & Public Engagement)

The following is a summary of meetings with project stakeholders and submissions (Refer to Appendices for Minutes):

- a. May 2, 2018. Kickoff with City staff including Curt Bellavance (Dir. of Planning), Brendan Callahan (Asst. Dir. of Planning), Jennifer Davis (Dir. of Parks, Recreation and Forestry), Peter Reed (BSC Group), and Bill Paille (BSC Group). Meeting included introductions, trail experience, history of the Greenway, discussion of corridor and initial trail alternatives. BSC reviewed the scope of work, next steps including data collection, site visits and coordination with utility companies and MassDOT.
Location: Peabody City Hall – Planning Conference Room
- b. June 7, 2018. 1st Site walk by BSC Group to explore the corridor and develop understanding of existing conditions and challenges.
Location: Peabody Road, Lowell Street, CVS/Bonkers Parking Lot, Cemetery Access Road
- c. July 2, 2018. Progress meeting with City staff via telephone to provide update on data collection including MassDOT as-built plans of I-95/Lowell Street overpass, existing conditions plan including use of City GIS layers to convert into AutoCad and property research.
- d. August 3, 2018. Progress meeting with City staff via telephone to provide update on existing conditions plan, route development, exploration of bridge over Lowell Street to connect Border to Boston trail to 215 Newbury Street, confirming height/position of overhead wires along and over Route 1.
- e. August 16, 2018. Progress phone call with City to discuss status of existing conditions plan and project schedule.
- f. August 24, 2018. 2nd Site walk by BSC Group to explore Peabody Road, Bourbon Street and Lowell Street including measurements; walking along the abandoned railbed from Peabody Road to I-95; walking along the section of I-95 from the abandoned railbed to Lowell Street; walking along the existing plaza parking lot; walking along the abandoned railbed from Greenway Park to the west side of Route 1 SB, recording dimensions, taking photos and updating the existing conditions plan. Several key observations were recorded that resulted in a revised existing conditions plan and allowed the route development to advance.
- g. September 13, 2018. Progress meeting with City staff (Curb B., Brendan C., Bill S.) to review the updates to the existing conditions plan, various route options, issues, challenges and next steps including contacting

MassDOT-D4 to set up a meeting to present the project. Several bridge types were also discussed and images were subsequently sent to the City via email.

Location: Peabody City Hall – Planning Conference Room

- h. October 4, 2018. Meeting with 215 Newbury Street property owner and City staff (Brendan C.) to discuss project, existing easement thru property granted to City for use as a multi-use trail, need for access to parking and landscape business currently using back of property.
- i. October 4, 2018. Meeting with Bonkers property owner and City staff (Brendan C.) to discuss project and potential easement thru property to connect Lowell Street to Border to Boston trail access at rear of property. Use of Bourbon Street as a shared-use to connect the Border to Boston trail to Lowell Street was also discussed and the future site improvements planned by Bonkers property owner – they provided a site plan to BSC Group.
- j. October 11, 2018. Meeting with Clark Road residents and City staff (Brendan C.) to present project and discuss concerns of city-owned railbed behind their properties from Peabody Road to the I-95 property. Discussed design/review process by MassDOT and options for the residents to participate in the public engagement process to address their concerns.
- k. October 29, 2018. Meeting with MassDOT District 4 personnel (Connie R. & Frank K.) and City staff (Brendan C.) and BSC Group (Peter R. & Bill P.) to present the project, various route options, and discuss concerns/options to improve project. Project well received by MassDOT and encouraged to meet with Boston folks.
- l. November 28, 2018. Progress meeting with City staff (Brendan C.) via telephone to discuss route options, discuss need to perform traffic counts along Lowell Street from Route 1 access to Bourbon Street and evaluate possibility of utilizing Lowell Street shoulder under I-95 to connect 215 Newbury Street property to Bourbon Street. Also, investigate possibility of utilizing Bonkers property to connect Lowell Street to the Border to Boston trail.
- m. February 5, 2019. Progress meeting with City staff (Brendan C.) via telephone to discuss options, preferred route, traffic analysis along Lowell Street and report, develop cost estimate, coordinate with utility owners to understand overhead wires along and over Route 1 and finalize conceptual plans connecting Lt. Ross Park to Independence Greenway terminus at Peabody Road and Lowell connection to Border to Boston trail.
- n. April 18, 2019. 2nd Meeting with MassDOT District 4 personnel (Connie R. & Frank K.) and City staff to present preferred option, traffic analysis, road diet along Lowell Street from I-95 overpass to Bourbon Street, the trail option along I-95 toe of slope, meeting with Clark Street residents, coordination with Bonkers property owner, coordination with 215 Newbury Street property owner.
- o. April 29, 2019. Meeting with MassDOT personnel (Mike Trepanier & X), City staff (Curt B., & Brendan C.) to present project, discuss permitting, funding, schedule and PIF/PNF process.
Location: MassDOT, 10 Park Plaza, 6th Floor, Room 6320, Project Management Conference Room
- p. May 29, 2019. Meeting with Mayor and City staff (Curt B. & Brendan C.), BSC Group (Matt C. & Bill P.) to present project, preferred route, and process including meetings with abutters and MassDOT and next steps.
- q. July 17, 2019. Project Notification Form submitted to MassDOT and approved.

- r. August 19, 2019. Project Initiation Form submitted to MassDOT for approval.

D. Bike path, Greenway or Multi-Use Trail Route Options

Several route options were developed and presented to the City, MassDOT and specific project abutters including the owners of 215 Newbury Street, owners of the CVS/Bonkers, and the residents of Clark Street who abut the section of abandoned railbed from Peabody Road to I-95 NB toe of slope. The following is a summary of the various alternatives that were developed (Refer to Appendices B.1_Alternatives – East of I-95 & B.2_Alternatives – West of I-95):

a. Independence Greenway Extension (Blue)

This option begins at the existing terminus of the Independence Greenway located at Peabody Road and extends along the abandoned railbed as a multi-use trail to the MassDOT right-of-way where it travels along the I-95 toe of slope to Lowell Street and the Bourbon Street intersection (Refer to Appendices B.3_Typical Sections (Sheet 2)).

Advantages include continuation of the existing Independence Greenway as an off-road path along the abandoned railbed; providing maintenance access to existing overhead high voltage power lines by the utility owner; and providing access behind residential properties along Clark Road for police, fire and rescue, and city dpw.

Challenges include requiring a physical separation and/or screening behind several residential properties located along the north side of Clark Road to address safety and privacy concerns raised by owners; requires either a new structure (i.e. boardwalk or bridge) to carry path over existing 60-inch culvert/spillway at corner of City/MassDOT property; and access easement of long-term lease from MassDOT.

b. Protected Bike Lanes Along Peabody Road & Lowell Street (Yellow)

This option begins at the existing terminus of the Independence Greenway located at Peabody Road and travels northerly along Peabody Road as a separated on-road bike path on both sides of the road to the intersection with Lowell Street, travels westerly along Lowell Street as a separated on-road bike path along both sides of the road to the intersection with Bourbon Street (Refer to Appendices B.3_Typical Sections (Sheet 1)).

Advantages include existing available paved width and low volume/speed along Peabody Road to provide on-road connection to Lowell Street with little to no impact to roadway; use of existing ample paved width along Lowell Street to implement 'road diet' to provide separate painted or protected bike lanes to connect Peabody Road to Bourbon Street with little to no impact to roadway.

Challenges include requiring upgrade to existing paved surface along Peabody Road and Lowell Street, improvements to intersection of Peabody Road and Lowell Street including possible need for new traffic signals; and upgrade of existing traffic signals along Lowell Street.

c. Bonkers Path (Red)

This option begins at the intersection of Lowell and Bourbon Street and travels along the easterly side of Lowell Street as a separated bike path, enters onto the Bonkers property and travels along the base of the existing I-95 NB retaining wall via MassDOT right-of-way, along the back of the existing Bonkers property parking lot before entering onto City property and connecting to the existing Border to Boston bike path.

Advantages include providing continuation of Independence Greenway from either Lowell Street (separated on-road path) or from the Route 1 NB to I-95 NB connector SHLO and connection to the

existing Border to Boston trail; and eliminates need to traverse under I-95 along Lowell Street (Refer to Appendices B.3_Typical Sections (Sheet 1)).

Challenges include need for land taking/easement from Bonkers property; coordination with Bonkers property to reconfigure re-design of parking lot that has been approved by the City (Refer to Appendices A.2_535 Lowell Street).

d. Lowell Street Connection (Green)

This option begins at the intersection of Lowell and Bourbon Street and travels along either the westerly or easterly side of Lowell Street as a protected bike path and connects to the existing terminus of the Border to Boston trail located on the easterly side of Lowell Street.

Advantages include continuation of separated on-road path along Lowell Street south of the Bourbon Street intersection to connect directly to the existing Border to Boston trailhead north of the I-95 overpass (Refer to Appendices B.3_Typical Sections (Sheet 1)).

Challenges include need to reconfigure Lowell Street from the intersection with Bourbon Street to the Route 1 NB on/off ramp and approval from MassDOT

e. Border-to-Boston & Independence Greenway Link (Orange)

This option begins at the existing terminus of the Border to Boston trail on Lowell Street and travels along an existing access easement through the 215 Newbury Street property as an off-road multi-use trail, traverses over Route 1 NB/SB, continues westerly along existing abandoned railbed where it connects to the Lt. Ross Park.

Advantages include continuation of existing Border to Boston trail from Lowell Street trailhead to Lt. Ross park as an off-road trail that is safe and ADA compliant; providing access to existing overhead high voltage power lines currently located within the abandoned railbed right-of-way; and providing access for police, fire and rescue and dpw.

Challenges include requiring modification of existing parking lot on private property to accommodate the trail; requiring a new pedestrian bridge structure over Route 1; and relocation/protection of existing overhead utility lines along Rte 1.

E. Preferred Route Option

All the route options explored and described in this study were determined to be viable. However, as the route evaluation advanced, it became clear that specific options were more feasible than others. The following is a summary of the route options that define the preferred route that connects the Independent Greenway from Lt. Ross Park to Peabody Road and the Border to Boston trail at Lowell Street (Refer to Appendices C.3_Preferred Route Plans):

a. Abandoned Railbed (Lt. Ross Park to Route 1)

This section utilizes abandoned railbed currently under a 99-year lease from the MBTA. The existing tracks and ballast are still in place, in excellent shape and separated from adjacent properties by forest and chain link fence along the property boundary.

This section is ideal to accommodate a new 12-foot wide multi-use trail as the corridor has already been established with no impact to existing right-of-way and little to no impact to the adjacent environmental resources areas.

The estimated construction cost of this section is \$1,250,000.

b. Bridge over Route 1

Although an at-grade crossing was considered, as a result of several discussions with MassDOT with the District and Headquarters, it was dismissed for two primary reasons: first, MassDOT would not support nor approve the traffic signals that would be required to allow trail users to safely cross 4 lanes of heavy volume and high-speed traffic; and second, the severe delay and impact to current levels of service along this section of Route 1 would simply be unacceptable MassDOT and the traveling public.

Two options regarding the number of structural supports (i.e. single span vs two span) for the proposed structure was discussed with MassDOT. Although a single-span structure was feasible, it was decided a two-span structure was more practical (i.e. center pier in the Route 1 median) and preferred by MassDOT, primarily due to the need to reduce the length of time Route 1 would be closed to traffic and the proximity of the overhead utility lines spanning over Route 1 that would likely restrict the available lifting space for the cranes.

There are existing overhead utility lines (power and communication) that parallel Route 1 along both sides of the roadway that will need to be relocated below ground where they intersect the future crossing of the trail.

In addition, there are low voltage wires supported overhead on several steel towers that run through the 215 Newbury Street property and then span over Route 1. Based on correspondence with National Grid it appears the lines crossing over Route 1 are low voltage at either 13kV, 23kV, or 34.5kV capacity. According to standard practice and using a voltage of 34.5kV as a worse-case scenario, the recommended minimum clearance distance to live overhead power lines is 10 feet. Therefore, the proposed pedestrian bridge structure will have to be positioned a minimum of 10 feet from the closest line. Refer to Appendices B.5_Typical Sections.

Assuming the bottom of the proposed bridge structure must be a minimum of 17.5 feet above the surface of Route 1, the vertical clearance of the top of the proposed bridge structure to the lowest wire would be approximately 4 feet. Similarly, based on field measurements, an existing right-of-way width of 45 feet, a 14-foot wide x 10-foot deep pedestrian bridge, positioned 5 feet from the southern side of the right-of-way, the horizontal offset is calculated to be approximately 15 feet which is greater than the minimum 10 feet recommended clearance to the live power lines.

The estimated construction cost of this section is \$715,000.

c. 215 Newbury Street Property

This section utilizes an existing lease agreement between the MBTA and the City of Peabody granted in 2011 that specifically used "...for purposes of the installation, operation, maintenance and use of a rail-trail as defined M.G.L. C.82§35A and in the definition of Owner or Operator in M.G.L.C. 21E§2, and as amended from time to time, and as further defined under M.G.L.C.21E§2(d)*1), as a property converted from a former use as a railroad right-of-way to a revitalized use as a publicly owned, improved and maintained corridor for bicycle, pedestrian and other non-motorized public transportation, recreation and associated purposes...".

During the study, BSC Group met with the owner of the property to present the project and better understand vehicle access from Route 1 NB and Lowell Street, vehicle circulation, existing parking, building deliveries, need for access to the east side of the property that is currently being leased by a landscaping company, and the location of the access easement from the MBTA currently in force. As a result, the

attached conceptual preferred plan was developed to accommodate a multi-use trail through the property, allow access for the landscaping business and create safe separation between the parking lot and the trail.

The estimated construction cost of this section is \$1,175,000.

d. Lowell Street Connection

This section connects the 215 Newbury Street property to the intersection of Lowell and Bourbon Street via a protected bike path along the west side of Lowell Street. The route also provides a safe crossing of Lowell Street utilizing the existing traffic signals to provide a connection from the 215 Newbury Street property to the existing Kristen Crowley trailhead as well as a connection to the Lowell Street to Abandoned Railbed Connection.

The estimated cost of this section is \$525,000.

e. Lowell Street to Abandoned Railbed Connection

This section utilizes the existing toe of slope along the I-95 NB connector within MassDOT property to connect the I-95 underpass terminus to the existing abandoned railbed. There is existing highway guard at the top of slope along this section to provide safe separation from vehicular traffic but additional separation would be needed along the toe of slope such as chain link fence. There is an existing chain link fence along this section that provides separation from the Proctor Brook that would remain and there are two locations where existing culvert outfalls would require upgrades to accommodate a new multi-use trail.

The estimated construction cost of this section is \$350,000.

f. Abandoned Railbed (I-95 NB to Peabody Road)

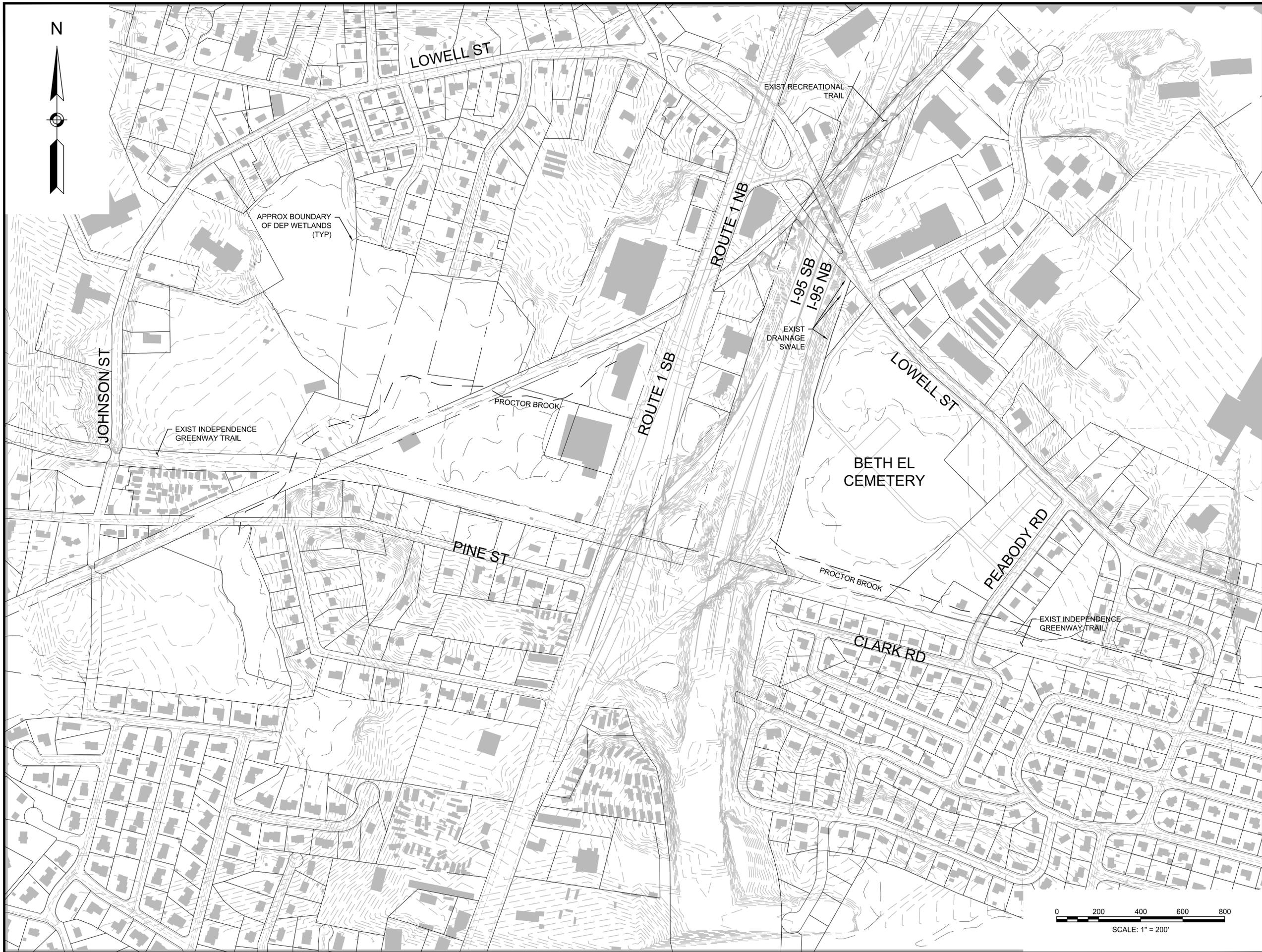
This section utilizes abandoned railbed currently under a 99-year lease from the MBTA. The existing tracks and ballast have essentially been removed due to the corridor being accessed by the utility owner to maintain the overhead low voltage lines. Although a majority of the adjacent Clark Road properties are separated by wood fence, there are 3-4 properties at the west end of the corridor that are only separated by forest and have encroached onto the abandoned railbed property.

Despite the potential need to provide additional screening and/or separation, this section is ideal to accommodate a new 12-foot wide multi-use trail as the corridor has already been established with no impact to existing right-of-way and little to no impact to the adjacent environmental resources areas.

The estimated construction cost of this section is \$270,000.

APPENDICES

APPENDIX A
EXISTING CONDITIONS PLAN & ROW DOCUMENTS



WILLIAM PAILLE
PROFESSIONAL ENGINEER

DATE

**INDEPENDENCE
GREENWAY
FEASIBILITY STUDY**
OVER ROUTE 1/INTERSTATE 95
IN
PEABODY
MASSACHUSETTS
ESSEX COUNTY

JUNE, 2018

REVISIONS:

NO.	DATE	DESC.

PREPARED FOR:
CITY OF PEABODY
24 LOWELL STREET
PEABODY, MA 01960

BSC GROUP
803 Summer Street
Boston, Massachusetts
02127
617 896 4300

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SCALE: SEE PLAN

FILE: \PROJ\2838000\TRANS_DWG\PROG
DWG.:
JOB. NO: 28376.00 SHEET OF 3

REV	DATE	DESCRIPTION
1	10/27/17	ISSUED FOR PERMITS
2	11/22/17	REVISED TO ADD NEW SIGNAGE AND ENTRY
3	12/15/17	REVISED TO ADD SIGNAGE
4	01/10/18	REVISED TO ADD SIGNAGE
5	02/15/18	REVISED TO ADD SIGNAGE
6	03/22/18	REVISED TO ADD SIGNAGE

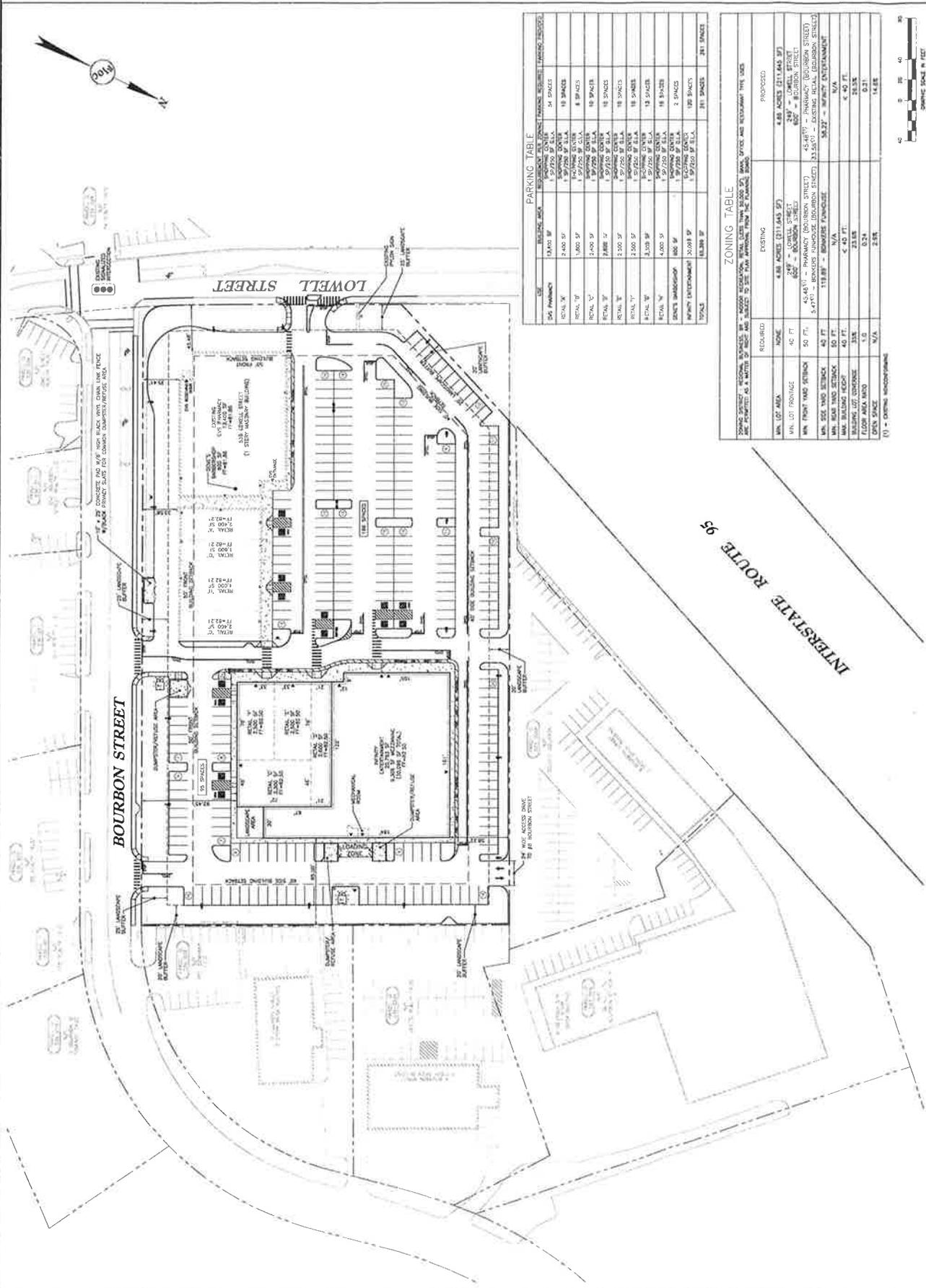
DESIGNED BY: BJO
 DRAWN BY: BJO
 CHECKED BY: BJO
 SCALE: 1"=40'
 DATE: 07/15/2018

**608 LOWELL STREET
 PEABODY, MA**
 610 VERBA REALTY VENTURES
 610 VERBA STREET
 PEABODY, MA 01960
 978-233-3097

**RJO'CONNELL
 & ASSOCIATES, INC.**
 CIVIL ENGINEERS, SURVEYORS
 85 MONTVALE AVE.
 PEABODY, MA 01960
 978-278-4118
 FAX: 781-278-0113

**REDEVELOPMENT OF
 608 LOWELL STREET
 PEABODY, MA**
 OVERALL SITE AND
 PHASING PLAN

OS-1
 SCALE: 1"=40'
 13105



TYPE	SPACE	AREA (SQ FT)	AREA (SQ YD)	AREA (SQ AC)	AREA (SQ MI)
STANDARD	1,000	10,000	2,222	0.47	0.00047
COMPACT	1,000	5,000	1,111	0.24	0.00024
VEHICLE STORAGE	1,000	10,000	2,222	0.47	0.00047
BIKE	1,000	1,000	222	0.05	0.00005
TOTAL	3,000	26,000	5,777	1.23	0.00123

PARAMETER	REQUIRED	EXISTING	PROPOSED
MIN. LOT AREA	NONE	4.88 ACRES (211,648 SF)	4.88 ACRES (211,648 SF)
MIN. LOT FRONTAGE	40 FT	749' - LOWELL STREET 600' - BOURBON STREET	349' - LOWELL STREET 600' - BOURBON STREET
MIN. FRONT YARD SETBACK	50 FT	45-48' - PHARMACY (BOURBON STREET) 5-14' - PHARMACY (LOWELL STREET)	45-48' - PHARMACY (BOURBON STREET) 33-50' - PHARMACY (LOWELL STREET)
MIN. SIDE YARD SETBACK	40 FT	N/A	54.27' - PHARMACY (ENTERTAINMENT)
MIN. REAR YARD SETBACK	40 FT	N/A	N/A
MIN. BUILDING HEIGHT	40 FT	23.8'	23.8'
BUILDING LOT COVERAGE	35%	0.24	0.21
FLOOR AREA RATIO	1.0	0.24	0.21
OPEN SPACE	N/A	2.9%	14.8%



ALTERNATIVE TRANSPORTATION CORRIDOR LEASE AGREEMENT

BY AND BETWEEN

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

AND

THE CITY OF PEABODY

NOVEMBER 2011

[ONLY FOR RIGHTS-OF-WAY NOT IN ACTIVE USE]

**ALTERNATIVE TRANSPORTATION CORRIDOR
LEASE AGREEMENT BETWEEN
MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
AND
CITY OF PEABODY**

This Lease Agreement (hereinafter referred to as the "Lease" or the "Agreement") entered into as of the 28th day of DECEMBER 2011 by and between the Massachusetts Bay Transportation Authority, a body politic and corporate and a political subdivision of the Commonwealth of Massachusetts, established pursuant to M.G.L.C. 161A, having its usual place of business at Ten Park Plaza, Boston, Massachusetts 02116 (hereinafter referred to as the "MBTA") and the City of Peabody, of Essex County, a Massachusetts municipal corporation, having its usual place of business at 24 Lowell Street, Peabody, Massachusetts 01960 (hereinafter referred to as the "MUNICIPALITY").

WITNESSETH THAT:

1. Agreement

In consideration of the mutual covenants and agreements herein contained, the parties hereto agree as follows:

2. Premises

The Premises consist of the parcel or parcels of land described in Exhibit A attached hereto, consisting generally of that certain railroad right of way known as the Newburyport Branch in the Municipality of Peabody as shown on Valuation Maps V 7.3/ 5, 6, 7 and 8 starting at the Lynnfield/ Peabody line and ending at the Peabody/Danvers line. Within the Premises the MUNICIPALITY shall, with the consent of the MBTA, which shall not be unreasonably withheld or delayed, designate a contiguous corridor (the "Corridor") within which the uses permitted hereby shall be located.

3. Use of Premises

Subject to the terms and conditions herein, the MBTA hereby leases the Premises to the MUNICIPALITY for use as follows:

- (a) The Corridor is to be used for purposes of the installation, operation, maintenance and use of a rail-trail as defined M.G.L. C.82 §35A and in the definition of Owner or Operator in M.G.L.C. 21E§2, and as amended from time to time, and as further defined under M.G.L.C.21E§2(d)(1), as a property converted from a former use as a railroad right-of-way to a revitalized use as a publicly owned, improved and maintained corridor for bicycle, pedestrian and other non-motorized public transportation, recreation and associated purposes and

- (b) The remainder of the Premises shall be further be used solely by the Municipality exclusively to access, construct and maintain the Corridor, for ancillary uses which provide no revenue or other tangible benefit, and for such other uses as MBTA may permit by prior written consent.

Notwithstanding the preceding, this Lease is not intended to transfer land or easements for purposes protected by or to create a perpetual right to any use that may be subject to protection by Article XCVII (97), as amended of the Amendments to the Constitution of the Commonwealth of Massachusetts or by legislation enacted to pursuant thereto.

The MBTA reserves the right to reasonably require the MUNICIPALITY to install improvements (including but not limited to signs) designed to prevent or discourage those using the Corridor from entering onto the remainder of the Premises. The Corridor shall be open to the public, and no fee or other consideration shall be charged for use of the Premises.

The Municipality will diligently act to secure funds necessary to fulfill its obligations under the Lease for the design, bidding and the construction of the rail-trail project. The Municipality acknowledges that a failure to undertake efforts to secure funds may negate the municipal liability exemption for rail trails under M.G.L.C. 21E§2, and as amended from time to time

The Municipality also agrees that it will provide its plans for the use of the site sixty (60) days prior to the bidding to the MBTA for its approval, said approval which shall not be unreasonably withheld provided that the use is consistent with paragraph 3(a) and 3(b), above. If the plans for the site are not consistent with paragraph 3(a) and 3(b), above, the MBTA reserves the right to void the lease and demand return of the property. Said use shall also comply with the current (as of the commencement of construction) MA DEP Best Management Practices:

No testing shall be made of the soil by the Municipality on the Premises and no soil shall be removed from the Premises until this lease has been fully executed and entered into by an official Municipal authority (Exhibit C) and the MBTA, unless necessary to respond to a release of Hazardous Materials on the Premises as described in Exhibit D. The Municipality shall be responsible for all costs associated with any such testing.

4. Term

The Term of this Lease shall be for a period of ninety-nine (99) years beginning on the date hereof; except that the MBTA may terminate this Lease upon two (2) years' written notice to the MUNICIPALITY, as provided by M.G.L. C.82 §35A. The Municipality acknowledges that that the Premises or a major portion thereof may be necessary for active railroad or other transportation purposes in the future. The MBTA may terminate this Agreement for the greater public good other than the Transportation Enhancement (the defined ATC) and the MBTA will not be required to provide any reimbursement

whatsoever for said termination. The MBTA may also terminate this Lease with respect to any part of the non-Corridor portion of the Premises with one (1) year's written notice for any reason so long as the use to be made of that portion will not substantially interfere with the public use of the Corridor for the uses stated above.

5. Condition of the Premises

The MUNICIPALITY has inspected the Premises, accepts the Premises "as is", and agrees the Premises are suitable for MUNICIPALITY's intended use. The MBTA makes no warranty of any kind, express or implied, as to the condition of the Premises or its suitability for the above uses. The MUNICIPALITY assumes all risk of entry on the Premises, including, but not limited to the presence of oil or hazardous material, if any, as defined in M.G.L.C. 21E, as amended from time to time.

6. Terms and Conditions of Lease

This Lease is subject to the following terms and conditions:

6.1 Indemnification and Release of MBTA

- (a) The Municipality will not be required to indemnify the MBTA, unless specifically required by Federal law in connection with any grant for construction of a rail-trail, provided the Municipality has purchased environmental insurance naming the MBTA as an additional insured with minimum coverage limits of \$3,000,000.00 per incident, a maximum deduction of \$50,000.00 per incident, and a term of at least 5 years. If the Municipality is unable to or chooses not to purchase environmental insurance consistent with the aforementioned terms the following provisions will apply;
- (1) the MUNICIPALITY, in accordance with official Municipal approval (Exhibit D), agrees to indemnify (to the extent permitted by law) defend (at the option of the MBTA) and save the MBTA harmless from and against any and all liabilities, losses, damages, costs, expenses (including reasonable attorneys' expenses and fees), causes of action, suits, claims, demands or judgments of any nature whatsoever including, without limitation, any accident, injury to, or death of any person or any damage to property occurring on the Premises (or any part thereof) or caused by something occurring on the Premises or that may be imposed upon, incurred by, or asserted against the MBTA by reason of any of the following occurrences:
 - (a) the activities of the MUNICIPALITY, members of the public or others present on the Premises; or
 - (b) the discovery of pre-existing Hazardous Materials, defined below, or the release of any Hazardous Materials on the Premises (or other property of the MBTA adjacent to the Premises) which is a result of (i) the MUNICIPALITY'S activities hereunder including the activities of those present from time to time on the Premises, or (ii)

the migration from land now or previously owned, leased, occupied or operated by the MUNICIPALITY or for which the MUNICIPALITY is a potentially responsible party as defined under Chapter 21E, defined below; or

- (2) any failure of the MUNICIPALITY to perform or comply with any of the terms hereof, or of any contracts, agreements or restrictions, statutes, laws, ordinances or regulations affecting the activities or any part thereof.

Notwithstanding anything in the previous paragraph, the MUNICIPALITY does not agree to indemnify the MBTA for claims arising from natural or man-made disasters, injuries that occurred prior to the execution of this Lease, war, civil unrest or claims arising from the exercise of rights expressly reserved by the MBTA under this agreement.

"Hazardous Materials" is defined to be "oil," "hazardous materials," or "hazardous wastes" as those terms are defined in Massachusetts General Laws Chapter 21E ("Chapter 21E"), as from time to time amended, and the regulations promulgated pursuant thereto, including the Massachusetts Contingency Plan, 310 CMR 40.0000 et seq. (the "MCP") and as further defined in all other applicable state and Federal laws regarding Hazardous Materials.

For the purposes of this Lease, the term "applicable laws" with regard to environmental laws and/or Hazardous Materials means, without limitation, all applicable laws, statutes, codes, acts, ordinances, orders, judgments, decrees, injunctions, rules, regulations, permits, licenses, authorizations, directions and requirements, of all governments, departments, and offices relating in any way to the control and/or abatement of environmental pollution and environmental hazards that now or at any time hereafter may be applicable.

- (3) The MUNICIPALITY hereby releases the MBTA from any responsibility for the MUNICIPALITY'S losses or damages related to the condition of the Premises. The MUNICIPALITY covenants and agrees that it will not assert or bring, nor cause any third party to assert or bring, any claim, demand, lawsuit or cause of action (whether by way of original claim, cross claim, counterclaim, contribution claim, indemnification claim, third-party claim or fourth-party claim) (hereinafter "Claims") against the MBTA including, without limitation, claims for response actions, response costs, assessments, containment, removal and remedial costs, governmental oversight charges, including any overhead or response action costs incurred or assessed by DEP, fines or penalties, permit and annual compliance fees, reasonable attorney and expert fees, natural resource damages, property damages, including diminution in property value claims, and personal injury damages and damages related to a person's illness or death relating to, or arising from, the MUNICIPALITY'S use of the Premises (or the use of the Premises by those permitted onto the

Premises by the MUNICIPALITY) pursuant to this Lease.

- (4) The MUNICIPALITY shall be timely notified, in writing, by the MBTA of the assertion of any claim against it that the MUNICIPALITY has agreed to indemnify as stated above (the "Indemnified Claim").
- (a) If the MBTA decides to itself conduct the defense of an Indemnified Claim against it or to conduct any other response itself, the MUNICIPALITY shall cooperate therewith and reimburse the MBTA for all reasonable costs and expenses (including, without limitation, reasonable attorney's fees and expenses) incurred by the MBTA in connection with the MBTA's defense of the Indemnified Claim against it and/or the conduct of all response actions, including, without limitation, those required by Chapter 21E and the MCP.
- (b) If the MBTA decides to have the MUNICIPALITY defend the claim or handle the response action, the MBTA shall notify the MUNICIPALITY of that decision in writing, and the MUNICIPALITY shall bear the entire cost thereof and shall have sole control of the defense of any Indemnified Claim and all negotiations for its settlement or compromise provided that the MBTA is fully indemnified by the MUNICIPALITY and provided further that the settlement or compromise shall not include the admission of guilt (or comparable plea), wrongdoing or negligence or the permitting or imposition of civil or criminal penalties or indictments, or the entering of consent decrees or orders of any kind by the MUNICIPALITY on behalf of the MBTA or any other action that would materially prejudice the rights of the MBTA without the MBTA's express written approval. The MBTA may at any time assume defense of any claim by notice to the Municipality and shall cooperate with the MUNICIPALITY in the defense of any Indemnified Claim.

If any response action due to the presence of Hazardous Materials or the threat of release of Hazardous Materials onto the Premises (or other property of the MBTA which abuts the Premises) is performed by the MUNICIPALITY, the response action shall be performed in accordance with Section 6.2.

If the MBTA determines in good faith for any reason, any indemnification herein of the MBTA by the MUNICIPALITY proves ineffective, the MBTA shall have the right to immediately terminate this Lease. The provisions of this Section 6.1 shall survive the termination or expiration of this Lease.

- (c) For purposes of this Section, the term "MBTA" shall include the MBTA and its directors, officers, employees, agents and any legislatively approved entity that may succeed the MBTA. For the purposes of This Section the term "MBTA" expressly does not include easement holders, MBTA

lessees, or licensees or successors to any real property of the MBTA through sale, exchange or gift.

- (d) The MBTA reserves the right to lease, assign, pledge and otherwise alienate all or part of the premises to third parties ("Third party Transferee's") and to retain all consideration therefore; provided that such lease, license, mortgage, assignment, or other facility of transfer is conditioned upon any third Party Transferee: (a) not unreasonably interfering with the Municipality's use of the Premises and (b) fulfilling obligations to provide the Municipality insurance under Section 9.2. Any such transfer shall not relieve the MBTA or the Third Party Transferee from any obligations it may have under this Agreement.

6.2 Remediation Obligation of the MUNICIPALITY

During the design, construction and operation of the rail trail, the Municipality shall follow the provisions of BMP's for Controlling Exposure to Soil during the Development or Rail Trails promulgated by the Massachusetts Department of Environmental protection in March 2004.

Whenever the MUNICIPALITY is responsible for the remediation of Hazardous Materials on or below the Premises by law or pursuant to this Lease, the MUNICIPALITY, upon written demand of the MBTA, shall conduct at its sole cost and expense (or, at the MBTA's election, reimburse the MBTA for the cost and expense incurred by the MBTA in connection with the MBTA'S conduct of), all response actions required by Chapter 21E and the MCP with respect to the Hazardous Materials (including the hiring of a Licensed Site Professional).

Any such response action, if performed by the MUNICIPALITY, shall be performed in accordance with Chapter 21E, the MCP, any other applicable statutes and regulations, and in accordance with plans and specifications approved by the MBTA, shall be completed in a timely manner to the reasonable satisfaction of the MBTA, and shall allow the MBTA to use the Premises, and/or adjacent or contiguous property, for its present use and/or any future use that the MBTA deems appropriate. The MUNICIPALITY shall also be responsible for the reasonable costs incurred by the MBTA in hiring consultants to review, supervise and inspect any plans, specifications, proposed method of work, installation, operation and results. Such costs shall be presumed to be reasonable if the MBTA (1) provides the MUNICIPALITY with a notice that it intends to hire a consultant, a scope of work and a budget and (2) solicits three (3) price proposals from three (3) eligible consultants.

For purposes of this Section, the term "MBTA" shall include the MBTA, and its directors, officers, employees, agents and any legislatively approved entity that may exceed the MBTA. Additionally, for purposes of this Section the "MBTA" does not include easement holders, MBTA lessees, or licensees or successors to any real property of the MBTA through sale, assignment, pledge, mortgage, exchange or gift.

6.3 Insurance

Prior to entry hereunder, and during the Term hereof, the MUNICIPALITY and its consultants and contractors shall provide the MBTA, hereof, insurance (*notwithstanding the environmental insurance required pursuant to Section 6.1 above*) for the activities permitted hereunder and the MUNICIPALITY's covenant of indemnification in Section 6.1(a)(1) and 6.1(a)(3) hereinabove, with companies that are reasonably acceptable to the MBTA, as stated below, and which provide minimum liability coverage as follows:

(a) Commercial General Liability Insurance

Insuring the MBTA and the Premises and all activities allowed hereunder as well as the MUNICIPALITY'S indemnification obligations contained in Section 6.1(a)(1) and 6.1(a)(3) with a minimum liability coverage for personal injury, bodily injury and property damage with limits not less than One Million (\$1,000,000.00) Dollars per occurrence and Three Million (\$3,000,000.00) Dollars in aggregate. Umbrella liability coverage with limits of not less than Two Million (\$2,000,000.00) Dollars covering all work performed must also be provided. Such insurance shall be written on an occurrence basis (as opposed to a claims-made basis) and name the MUNICIPALITY, MBTA and others hereinafter designated as additional insureds as their interests may appear. Such insurance may be subject to standard exclusions found in property and general liability insurance policies.

(b) Worker's Compensation Insurance

- (i) For all Municipal contractors, insuring all persons employed by the MUNICIPALITY in connection with any work done on or about the Premises with respect to which claims for death or bodily injury could be asserted against the MBTA or the Premises with limits of liability of not less than those required by Massachusetts General Laws Chapter 152 as amended. The policy shall contain a clause waiving the company's right to subrogation against the MBTA if such a policy is commercial available, and
- (ii) For all MUNICIPAL employees by providing evidence of an active workmen's compensation program for MUNICIPAL workers funded by the MUNICIPALITY, a copy of which is attached.

(c) Automobile Liability Insurance

Automobile liability insurance with limits of not less than One Million (\$1,000,000.00) Dollars covering all owned, non-owned, hired, rented or leased vehicles or the MUNICIPALITY.

The required insurance coverage's herein specified shall be placed with insurance companies licensed by the Massachusetts Division of Insurance to do business in the Commonwealth of Massachusetts and having a Best's rating of B+ or better; shall be taken out before the Lease is commenced and be kept in full force and effect throughout the term of the Lease; shall be primary to and non-contributory to any coverages maintained by the MBTA; and shall require the MBTA be given at least thirty (30) days' advance notice in the event of any cancellation or materially adverse change in coverage. Prior to the inception date of the Lease and throughout the term, the MBTA

shall be provided with certificates of insurance evidencing that such insurance policies are in place and provide coverage as required. The required insurance coverage's herein specified may be increased from time to time upon notice by the MBTA to such coverage's as the MBTA may then customarily require for similar circumstances. Each of the MUNICIPALITY's contractors and agents whole employees enter onto the Premises shall have similar policies covering their employees. The MUNICIPALITY shall be responsible for seeing that its contractors and consultants are properly covered by insurance.

In the event of the cancellation of any policy during the term of this Lease, or the failure to keep in effect the insurance required by this section, the MBTA may, without further notice and at its option, procure or renew such insurance on account of the MUNICIPALITY. The MUNICIPALITY agrees to repay such MBTA expense, with interest thereon at the rate of eighteen (18%) percent annually as an additional fee.

Notwithstanding any other provision of this section 6.3, the MUNICIPALITY reserves the right to propose to meet the requirement by adding such insurance coverage to existing policies subject to the terms and conditions of those existing policies or to obtain new policies containing terms and conditions generally included in policies provided to municipalities in Massachusetts.

6.4. Compliance with Laws

The MUNICIPALITY shall comply with, and shall cause all work performed to comply with, all applicable Federal, state, county, municipal and other governmental statutes, laws, rules, orders, regulations and ordinances. The MUNICIPALITY shall also be responsible for obtaining any and all applicable Federal, state, and/or local permits and/or approvals necessary to carry out the activities permitted hereunder.

7. Maintenance

During the Term hereof, the MUNICIPALITY shall keep, repair, manage, operate, and maintain the entire Premises in good and clean order, operation, condition and repair. Except for any claim of damage arising from the exercise by the MBTA of the rights reserved to it, the MBTA shall have no responsibility whatsoever for the maintenance, repair or the condition of the Premises.

8. Utilities

Except as reasonably necessary for the operation of the alternative transportation use of the Corridor, no utilities shall be installed on the Premises by the MUNICIPALITY without the approval of the MBTA.

9. Reservation of Rights

9.1 Non-Exclusivity

(a) The MBTA makes no representations or warranty, express or implied, that the MUNICIPALITY shall have sole or exclusive use of the Premises. In the event other licenses, leases or easements have been or are granted or exist by reservations in deeds, the MUNICIPALITY shall be responsible for coordinating its work and activities with that of other licensees, grantees and other parties with interests in the Premises. The MBTA shall not be liable for delays, obstructions, or like occurrences affecting the MUNICIPALITY, arising out of the work of the MBTA or other licensees, grantees or parties in interest; provided, however, that the MBTA shall make reasonable efforts to mitigate impacts on the Use of the Premises. The MBTA will make a list available to the Municipality of any and all leases or licenses along the Corridor designated under this Lease.

(b) The MUNICIPALITY'S rights herein are granted subject to existing, easements, and rights of record to the extent that such easements rights and takings are still in effect and applicable. The MBTA explicitly reserves the right to all uses of the Premises not herein granted to the MUNICIPALITY, except that the MBTA shall not (and shall not grant to others the right to) do anything on the Premises that shall materially impede the permitted Use of the Premises except temporarily (e.g. while a pipe line is being installed or repaired).

The Municipality's rights herein are granted subject to existing leases and licenses to the extent that such rights are still in effect and applicable. The MBTA hereby agrees to provide the Municipality with copies of the documents that establish the location and term of existing licenses and leases. Upon completing a 25% design of the proposed rail trail, the MUNICIPALITY may request that the MBTA exercise any rights it may have to modify or terminate an existing lease or license that would prevent the creation of a contiguous Corridor. The MBTA shall make all reasonable attempts to fulfill such requests to create a contiguous corridor.

(c) The MUNICIPALITY expressly agrees that any revenues obtained from the leasing, licensing, or the granting of rights for any use of the Premises to any utility or other entity shall belong solely to the MBTA.

The MUNICIPALITY shall not be entitled to impose any fees, charges, requirements for betterments, linkage payments or other benefits to the MUNICIPALITY on any lessee, licensee or grantee of the MBTA or any other party either for installations on the Premises or on public way crossings along the Premises (except those fees normally charged by the MUNICIPALITY for engineering and environmental review, if any). If despite this section the MUNICIPALITY does receive some such benefit, then the MBTA shall be paid the fair market value of that benefit by the MUNICIPALITY.

(d) The Municipality expressly agrees that if there is any encroachment onto the Premises by a third-party, the MBTA will have the sole right to cure said encroachment and to obtain revenue from such cure or to permit such

encroachment, provided that such cure does not substantially interfere with the Municipality's use of the Corridor. Notwithstanding the preceding, to the extent that the encroachment is on the Corridor, then the Municipality shall have the right to expel such encroacher.

9.2 Utility and Communication Lines and Emergency Access

The MBTA expressly reserves all of its rights in the Premises for itself, its successors and assigns, to install, maintain, repair, replace and remove aerial, surface and subsurface utility and communication lines, wires, antennas and conduits in, on, under or above the Premises as well as the right to lease, license and/or grant easements for such utility and communication rights to third parties; except that the MUNICIPALITY shall have the rights specifically granted herein. The MBTA shall take all necessary safety measures including, but not by way of limitation, notification to the MUNICIPALITY of its intention to perform (or have performed) such installation and/or maintenance, the erection of barricades, as shall be reasonably required to protect persons performing such work and construction, as well as members of the public, from injury or damage caused by, or resulting from, any entry, work or construction performed by the MBTA or its contractors, licensees, lessees, grantees (and their contractors) pursuant to this Section. The MBTA shall, at its cost and expense, return the Premises to a condition in which the Premises can be used for the purposes for which they were used before the work pursuant to this paragraph, if its contractors, licensee, lessees, or grantees, as the case may be, fail to do so.

Prior to entry, the MBTA shall require that any contractor, licensee, lessee or grantees provide the Municipality, during the Term thereof, insurance of the activities permitted by the MBTA, to the same extent and on the same terms that the MBTA is insured. The Municipality shall be named as an additional insured on any general liability policy. All policies shall waive the right of subrogation for any claim that may be made against the Municipality.

10. Security and Operations

The MBTA shall have no obligation to provide security services or lighting at the Corridor. The MUNICIPALITY shall be responsible for providing public safety and emergency services for the Corridor. The MUNICIPALITY may install lighting and adopt time of use and other restrictions applicable to the public.

11. Default

If the MUNICIPALITY defaults under any of its covenants and obligations contained in this Lease including, without limitation, the failure to fully indemnify the MBTA and its related parties as provided in Section 6.1, and such default is not cured by the MUNICIPALITY within thirty (30) days after notice, the MBTA may elect, in order to preserve the public's usage and access to the Premises and to ensure the public's safety, security and enjoyment, to pursue any or all of the following remedies: (i); without obligation, cure said default, which cure may include, without limitation, entry

upon the Premises for purposes of maintenance thereof, and invoice the MUNICIPALITY for the cost of such cure, which invoice the MUNICIPALITY shall promptly pay; (ii) if the MUNICIPALITY shall continue to remain in default and/or fail to pay the MBTA after such notice, the MBTA may remove the custody and management of the Premises from the MUNICIPALITY in accordance with the provisions of this Lease and transfer said management and control of the Premises by a new lease agreement to another qualified party for that period remaining under this Lease as provided in Section 4, and the MBTA shall seek reimbursement from the MUNICIPALITY of all necessary and reasonable costs of management so incurred by the MBTA; and/or (iii) seek specific performance or other equitable relief from a court of competent jurisdiction and exercise any available remedy at law or in equity. In the event the MBTA shall seek removal of the MUNICIPALITY from the management and control of the Premises, no party other than the MUNICIPALITY shall be deemed qualified to assume such management and control, without the prior written approval of the Massachusetts Highway Department and the Federal Highway Administration (FHWA), in acknowledgement of the significant federal-aid investments in the construction of the rail-trail by the MUNICIPALITY undertaken as required under FHWA transportation enhancement policies and guidelines. In any event the Premises shall remain as an alternative transportation corridor in keeping with Section 3 [Use of Premises (Supra)] and provide for the access and enjoyment for the public for the duration of the Term as defined in Section 4, under the management and control of the MBTA, if necessary, until the execution of a new lease agreement or some other preliminary agreement by the MBTA with another duly selected qualified party. The MBTA shall exercise its right to block access to the Premises from the public only in the event of a continuing public safety situation and the failure of the MUNICIPALITY to undertake immediate action. No delay or failure by the MBTA in exercising its rights and remedies in any one instance shall constitute a waiver of such rights and remedies in any other instance. MBTA's remedies hereunder shall be cumulative and not exclusive to any other available remedy.

12. Condition of the Premises at Termination

The MUNICIPALITY agrees to deliver up the Premises to the MBTA at the expiration of the Term hereof in as good condition as the Premises were after the MUNICIPALITY-installed improvements were made, reasonable wear and tear excepted. Notwithstanding the preceding, if the MBTA is terminating this Lease because it plans to use the Premises for transportation purposes, the MBTA may require The MUNICIPALITY to restore the Premises to the grade existing at the commencement of this Lease.

13. Existing Utilities

The Municipality acknowledges that there may be surface and subsurface utilities on and adjacent to the Premises and agrees to exercise extreme caution in performance of the scope of work. The Municipality shall comply with Massachusetts General Laws, Chapter 82, Section 40 (said statute also known as the "Dig Safe" law) and the

regulations promulgated pursuant thereto including but not limited to the Code of Massachusetts Regulations, more particularly, 220 CMR 99.00 et seq. To the extent the MBTA, or parties acting in behalf of the MBTA, locate and mark railroad utilities in the railroad rights of way and appurtenant thereto, the Municipality shall be responsible for payment to such parties for such services which may include, but not be limited to, locating and marking utilities, facilities and appurtenances thereto serving the railroad line(s) or used in connection with services or operations of the MBTA. Any damage to such utilities caused by the Municipality shall be the sole responsibility of the Municipality. If the Municipality does not immediately repair any utilities it has damaged, the MBTA, without being under any obligation to do so and without waiving the Municipality's obligation hereunder, may repair any utilities damaged by the Municipality immediately and without notice in case of emergency. In the event the MBTA exercises such right, the Municipality shall pay to the MBTA immediately upon demand all of the MBTA's cost of performing such repairs plus a fee equal to twenty-five percent of the MBTA's cost of performing such repairs to reimburse the MBTA for its administrative costs.

The MBTA reserves the right to remove the rail infrastructure and agrees that if it chooses to do so, said removal shall be within 180 days of the date the MUNICIPALITY notifies the MBTA to be the date of the trail construction commencement. The MUNICIPALITY shall be responsible for removal and disposal of all other rail infrastructure.

14. Notice of Project Completion and Record Drawings

Upon completion of its work, the Municipality shall provide written notice ("Notice of Project Completion") to the MBTA Railroad Operations Department of the date of project completion. The Municipality shall also provide the MBTA Railroad Operations Department with one reproducible "As-Built" copy of each approved construction drawing marked to indicate all changes and deviations from the original approved plans and recording the final conditions of the Premises ("Record Drawings") upon completion of the work authorized hereunder. All Record Drawings shall be received and accepted by the MBTA prior to final inspection. The Notice of Project Completion and the Record Drawings shall be delivered to:

Chief, Engineering and Maintenance
MBTA Railroad Operations Department
32 Cobble Hill Road
Somerville, MA 02143

15. Results

If the Municipality conducts certain investigations on MBTA owned land, then the Municipality agrees to provide to the MBTA, at no cost, a copy of the results of such

investigations (including data and analysis) and all other work conducted under this Lease in both hard copy form and in a digital format specified by the MBTA regardless of whether the report was prepared by the Municipality, its agent, consultant or contractor, or prepared on behalf of the Municipality. All results and reports shall be provided to the MBTA within ten (10) days of receipt by the Municipality. The Municipality agrees to consult with the MBTA prior to contacting any governmental entity, regarding any information, results of analysis or reports regarding the Premises. The Municipality shall give the MBTA a copy of any reports or notifications, including but not limited to release notifications, prior to submitting the same to any governmental entity.

16. Construction and Access Plan

The Municipality shall submit a plan and detailed specifications (including the materials to be used) and the proposed methods of performing the work, or any part thereof (the "Plan") to the MBTA. The Municipality shall not enter the Premises until the Plan has been approved by the MBTA, which approval shall not be unreasonably withheld. The scope of work for said construction, installation, maintenance, operation and/or replacement will be more fully defined in the approved Plan, which approved Plan will automatically be incorporated herein by reference and made part of this Lease. The Municipality shall also provide the MBTA with a detailed schedule of times when the Municipality, its employees, contractors, subcontractors, or agents would like to be on the Premises to undertake the scope of work (the "Access Plan"). The MBTA shall have full power to make a final determination of when the Municipality may be on the Premises as it is necessary to coordinate the work of all those desiring or having the right to access the Premises.

17. Contracts for Improvements

All contracts for the construction or installation of the improvements at the Premises shall require:

- (a) that all contractors and subcontractors provide labor that can work in harmony with other elements of labor employed or to be employed at or near the Premises.
- (b) insurance coverage and suretyship reasonably satisfactory to the MBTA;
- (c) that all contractors or subcontractors comply with all applicable provisions of this Lease; and
- (d) performance bonds and payment bonds in form and substance satisfactory to the MBTA, each of which shall name the MBTA, as an additional obligee and which shall be in the penal sum equal to the amount of the Municipality's construction contracts.

18. Notices

All notices required or permitted to be given hereunder shall be in writing and addressed as follows:

In the case of the MBTA to:

Massachusetts Bay Transportation Authority
10 Park Plaza, Room 5750
Boston, Massachusetts 02116
Attn: Assistant General Manager for Development

With a copy to:

MBTA Railroad Operations Directorate
Section Chief, Engineering and Maintenance
32 Cobble Hill Road
Somerville, Massachusetts 02143

With a copy to:

DESIGNATED REPRESENTATIVE
Transit Realty Associates, LLC
77 Franklin Street, 9th floor
Boston, Massachusetts 02110
Attn: General Counsel

And in the case of the MUNICIPALITY to:

Michael J. Bonfanti, Mayor
City of Peabody
24 Lowell Street
Peabody, MA 01960

All notices, demands, requests, consents, approvals and other instruments required or permitted to be given pursuant to the terms hereof (hereinafter "Notice"), shall be in writing and shall be deemed to have been properly given when deposited in registered or certified United States mail, postage prepaid, return receipt requested, addressed, as described above or when delivered by messenger or overnight mail service to the correct addressee. Notice shall be deemed received when actually received or when the proffered Notice has been refused by the Addressee. The signature of an employee, servant or agent of the Addressee shall be determinative on the issue of actual receipt.

The MUNICIPALITY and the MBTA shall, at any time and from time to time, have the right to specify as their proper addresses for purposes of this Lease any other address or addresses giving fifteen (15) days' written notice thereof to the other party.

19. Nondiscrimination

With respect to its exercise of all rights and privileges herein granted, the MUNICIPALITY shall undertake affirmative action as required by Federal and State laws, rules and regulations pertinent to Civil Rights and Equal Opportunity unless otherwise exempted therefrom. The MUNICIPALITY agrees that it shall comply with any and all required affirmative action plans submitted pursuant to the directives of any Federal agency and in accordance with applicable Federal law and applicable state laws, rules and regulations.

The MUNICIPALITY shall use reasonable efforts to contact, encourage and utilize minority and female business enterprises in the procurements of materials and services under this Lease.

The MUNICIPALITY shall not discriminate against any person, employee or applicant for employment because of race, color, religion, creed, national origin, age, sex, sexual orientation, disability/handicap or veteran status in its activities at the Premises, including without limitation, the hiring and discharging of employees, the provision or use of services and the selection of suppliers, contractors or subcontractors.

20. Work In Harmony

The MUNICIPALITY agrees that in any work performed in or about the Premises, it will employ only labor which can work in harmony with all elements of labor being employed by the MBTA on or adjacent to the Premises.

21. Assignment

The MUNICIPALITY shall not, without the prior written consent of the MBTA, transfer or assign this Lease or any part hereof. Such consent may be withheld in the sole discretion of the MBTA.

22. Entire Agreement

This Lease contains the entire agreement of the parties hereto with respect to the subject matter hereof, and no representations, inducements, promises, or agreements, oral or otherwise, between the parties hereto with respect to the subject matter hereof not embodied herein shall be of any force or effect.

SIGNATURES ON NEXT PAGE

IN WITNESS WHEREOF, the parties hereto, each for itself, its successors and assigns, have caused these presents to be executed, as a sealed instrument, by its officers, thereunto duly authorized.

Approved as to Form:

CITY OF PEABODY

John A. O'Keefe
City Solicitor

BY: Michael J. Bonfanti
Michael J. Bonfanti, Mayor

Approved as to Form:

MASSACHUSETTS BAY
TRANSPORTATION AUTHORITY

Gerald K. Kelley
Gerald K. Kelley
Acting General Counsel

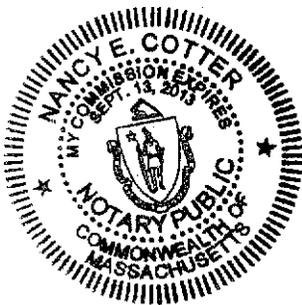
BY: Jonathan R. Davis
Jonathan R. Davis
Acting General Manager and
Rail and Transit Administrator

COMMONWEALTH OF MASSACHUSETTS

Suffolk, ss.

_____, 2011

On this 28th day of December, 2011 before me, the undersigned notary public, personally appeared Jonathan R. Davis, proved to me through satisfactory evidence of identification, which was personal knowledge, to be the person whose name is signed on the preceding page, and acknowledged to me that he signed it voluntarily for its stated purpose as Acting General Manager of the Massachusetts Bay Transportation Authority.



Nancy E. Cotter
Notary Public

Print Name: NANCY E. COTTER

My Commission expires: 9-13-2013



PEABODY CITY COUNCIL

December 1, 2011

Ward Councillors

Barry P. Osborne, Ward 1
Arthur W. Athas, Ward 2
Rico E. Mello, Ward 3
Robert E. Driscoll, Ward 4
David R. Gamache, Ward 5
Barry C. Sinewitz, Ward 6

Councillors at Large

Edward A. Bettencourt, Jr.
Michael V. Garabedian
David C. Gravel
James K. Liacos
Anne M. Manning-Martin

Clerk of Council

Timothy E. Spanos

City Council

Stenographer
Allyson Danforth

Ms. Karen Sawyer, Director
Community Development Department
City Hall
Peabody, MA

RE: P882-11 MBTA lease agreement/Newburyport Branch Railroad

Dear Ms. Sawyer:

I am enclosing herewith a copy of the original vote recorded
at the most recent regular or special meeting of the Peabody City Council.

Your attention is directed to the motion, order or resolution
which has been referred to you for appropriate action.

Very truly yours,

Timothy E. Spanos
City Clerk

City Hall
24 Lowell Street

978-538-5900
FAX (978) 538-5985



CITY OF PEABODY

Office of Finance and Administration

24 Lowell Street
Peabody, MA 01960
(978) 538-5710 • Fax (978) 538-5981

Patricia Davis Schaffer
Director of Finance

EXHIBIT C

Jonathan R. Davis
General Manager and Rail and Transit Administrator
Massachusetts Bay Transportation Authority
10 Park Plaza
Boston MA 02116

Re: Alternative Transportation Corridor Lease Agreement: Peabody
Workmen's Compensation Program

Dear Mr. Davis:

I am writing on behalf of the City of Peabody in relation to the Workmen's Compensation provision of Section 6.3(b)(ii) of the Alternative Transportation Corridor Lease Agreement between the MBTA and the City.

The City has an active, self-insured workmen's compensation program. The program has an office at Peabody City Hall, 24 Lowell Street, Peabody, MA 01960. The phone number is 978-538-5711. The City allocated \$350,000 in the Fiscal Year 2012 to pay workmen compensation claims. The amount of claims paid varies from year to year based on the number and seriousness of injuries.

If you require any additional information regarding this program please contact me at 978-538-5710

Sincerely,

Patricia Davis Schaffer
Director of Finance

EXHIBIT D

MBTA BOARD OF DIRECTORS VOTE



**MASSACHUSETTS
BAY
TRANSPORTATION
AUTHORITY**

Board of Directors
Transportation Building
Ten Park Plaza
Boston, Massachusetts 02116

I, Yolanda L. Reed, Recording Secretary of the Board of Directors of the Massachusetts Bay Transportation Authority, hereby certify that, at a Meeting of the Board of Directors of the Massachusetts Bay Transportation Authority, acting under the provisions of Chapter 161A of the General Laws, as amended to date, duly called and held on the eleventh day of August 2010, at which a quorum was present, the following Vote was adopted:

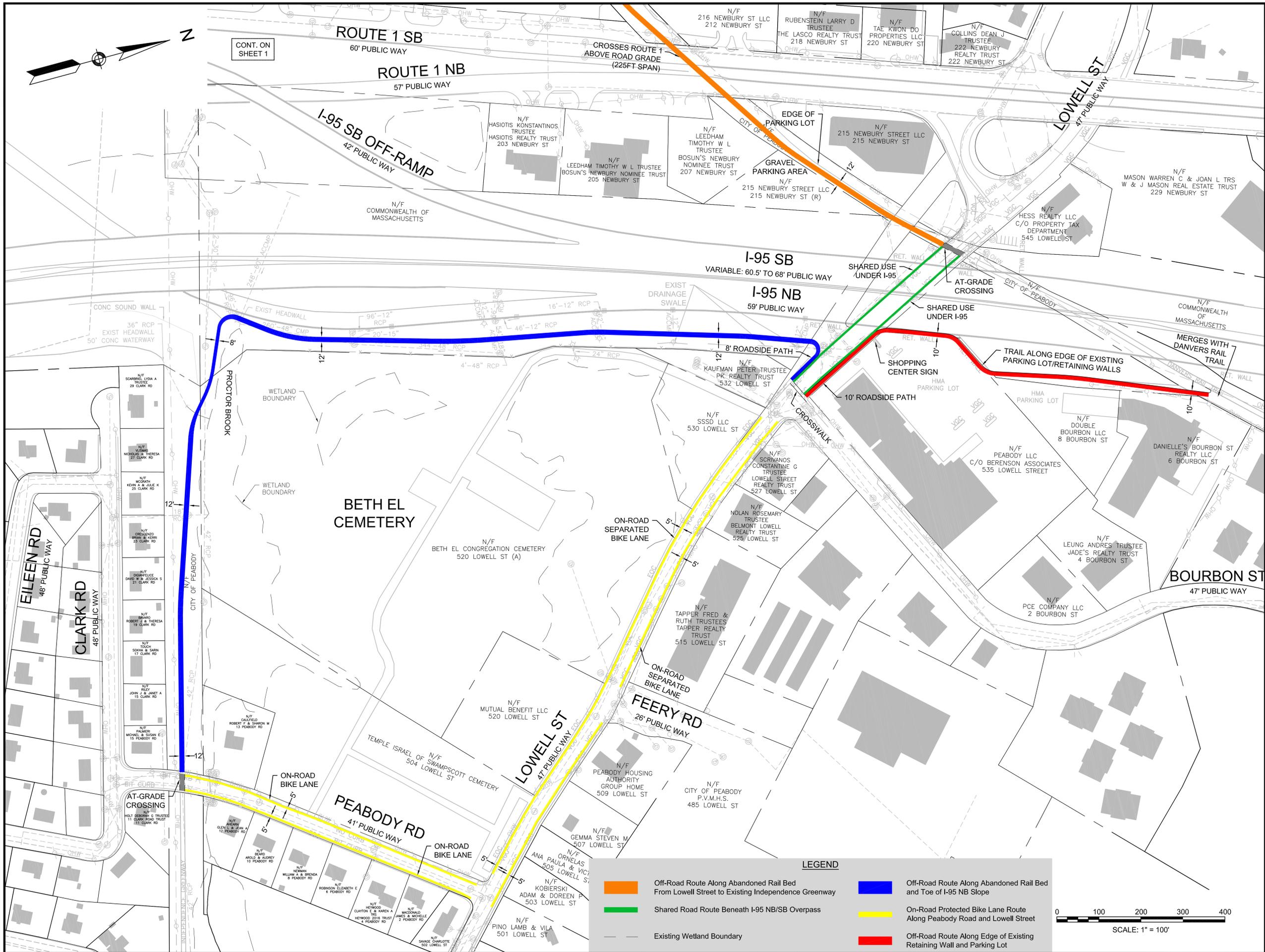
VOTED: That the General Manager be, and he hereby is, authorized in the name of and on behalf of the Authority, and in a form approved by the General Counsel, to enter into a Ninety-nine (99) year Long Term Lease Agreement, and any and all other instruments deemed necessary for the long term lease of that certain section of abandoned railroad right of way consisting of approximately 2.7 miles known as the Newburyport Branch, extending from the Lynnfield/Peabody line to the Peabody/Danvers line and shown on Valuation Plans, V7.3, sheets 5, 6, 7 and 8 with the City of Peabody for nominal consideration and solely for use as an Alternative Transportation Corridor open to the public. Said Lease Agreement and any other necessary instruments and documents shall contain such other terms and conditions as determined to be necessary and/or advisable by the General Counsel.

A true copy.

Attest: August 12, 2010

Yolanda L. Reed
Recording Secretary
Board of Directors of the
Massachusetts Bay Transportation
Authority

APPENDIX B
ROUTE ALTERNATIVES & TYPICAL SECTIONS



WILLIAM PAILLE
PROFESSIONAL ENGINEER

DATE

**INDEPENDENCE
GREENWAY
FEASIBILITY STUDY**
OVER ROUTE 1/INTERSTATE 95

IN
PEABODY
MASSACHUSETTS
ESSEX COUNTY

ROUTE ALTERNATIVES

OCTOBER 2018

REVISIONS:

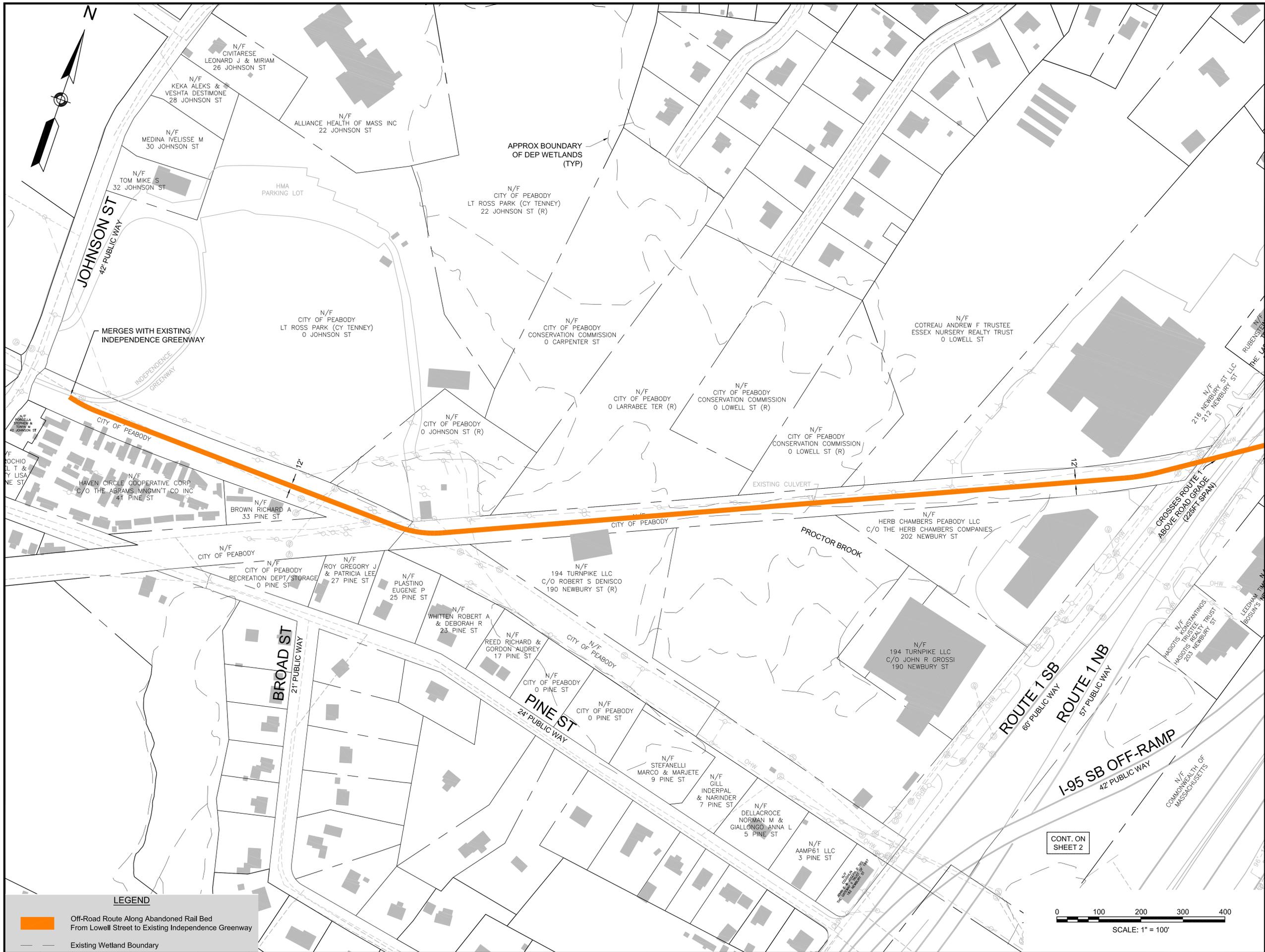
NO.	DATE	DESC.

PREPARED FOR:
CITY OF PEABODY
24 LOWELL STREET
PEABODY, MA 01960

BSC GROUP
803 Summer Street
Boston, Massachusetts
02127
617 896 4300

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SCALE: SEE PLAN

FILE: \PROJ\2838000\TRANS\DWG\PROG
DWG.:
JOB. NO: 28376.00 SHEET 2 OF 2



WILLIAM PAILLE DATE
 PROFESSIONAL ENGINEER

**INDEPENDENCE
 GREENWAY
 FEASIBILITY STUDY**
 OVER ROUTE 1/INTERSTATE 95
 IN
 PEABODY
 MASSACHUSETTS
 ESSEX COUNTY

ROUTE ALTERNATIVES

OCTOBER 2018

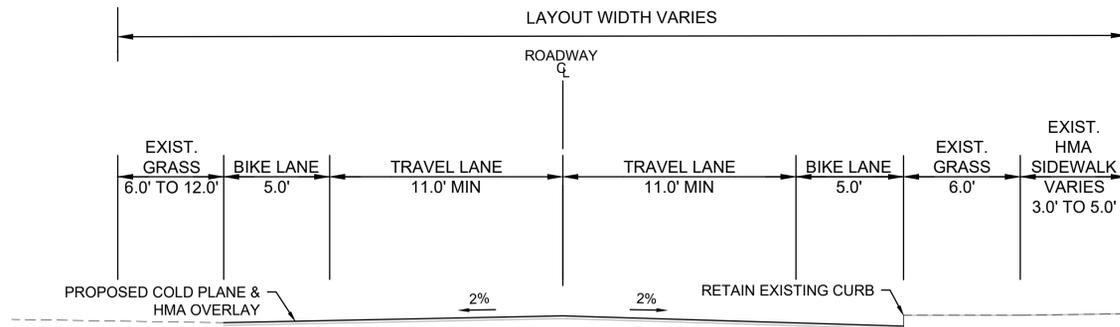
REVISIONS:

NO.	DATE	DESC.

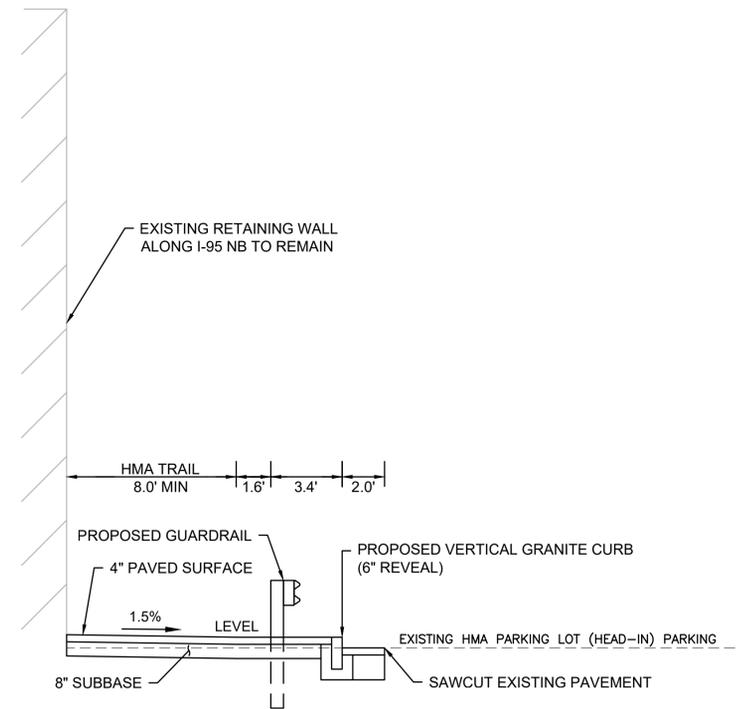
PREPARED FOR:
 CITY OF PEABODY
 24 LOWELL STREET
 PEABODY, MA 01960

BSC GROUP
 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300

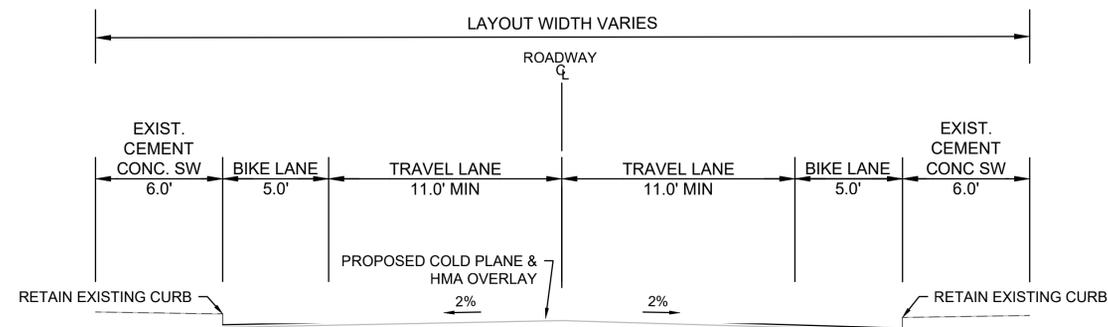
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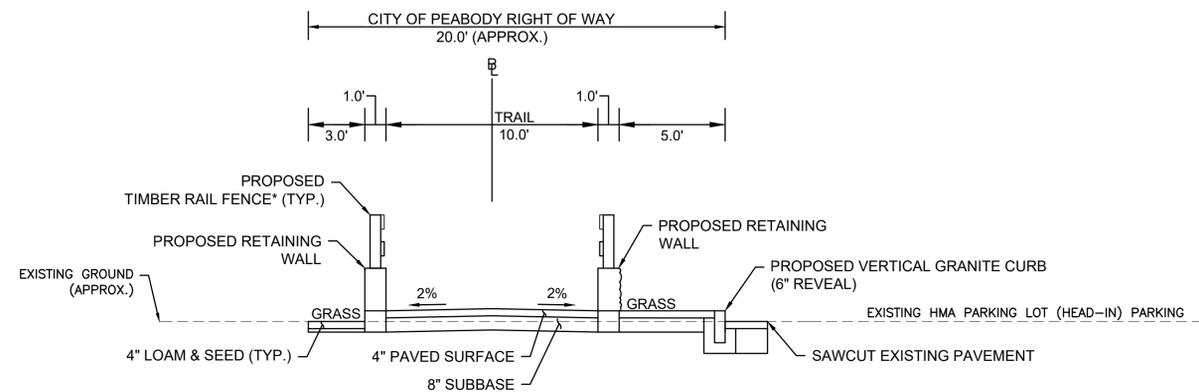
ON-ROAD TRAIL
PEABODY ROAD NB
SCALE: 1" = 4'



OFF-ROAD TRAIL
THROUGH BONKERS/CVS
PARKING LOT
SCALE: 1" = 4'



ON-ROAD TRAIL
LOWELL STREET NB
SCALE: 1" = 4'



OFF-ROAD TRAIL
ABANDONED RAIL BED BETWEEN
LOWELL ST AND ROUTE 1
SCALE: 1" = 4'

NOTE:
* LOCATION OF TIMBER RAIL FENCE AS REQUIRED BY ENGINEER.

WILLIAM PAILLE
PROFESSIONAL ENGINEER

DATE

**INDEPENDENCE
GREENWAY
FEASIBILITY STUDY**

OVER ROUTE 1/INTERSTATE 95

IN
PEABODY
LOWELL STREET
MULTI-USE PATH OPTION
MASSACHUSETTS
ESSEX COUNTY
TYPICAL SECTIONS

APRIL 2019

REVISIONS:

NO.	DATE	DESC.

PREPARED FOR:
CITY OF PEABODY
24 LOWELL STREET
PEABODY, MA 01960

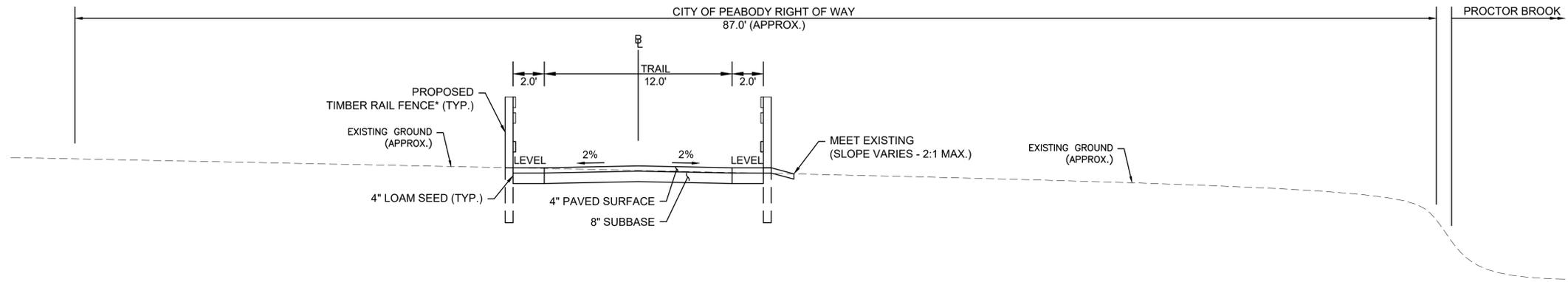


803 Summer Street
Boston, Massachusetts
02127

617 896 4300

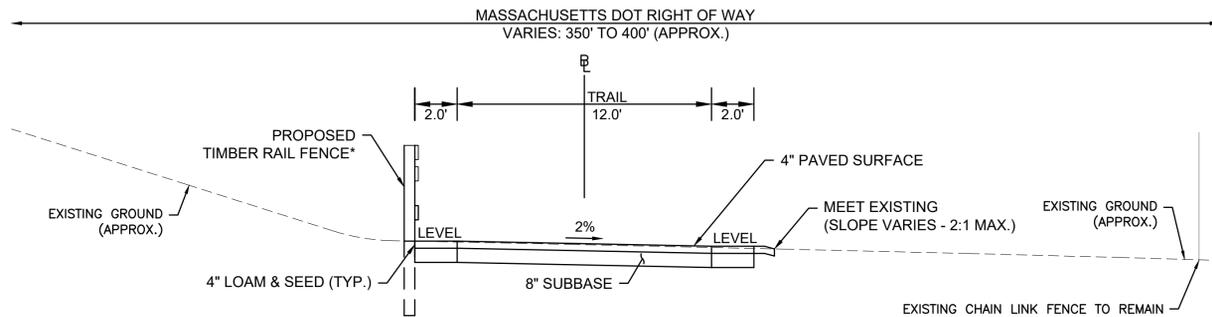
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FILE: \PROJ\2838000\TRANS_DWG\PROG
DWG.:
JOB. NO: 28376.00 SHEET 1 OF 3



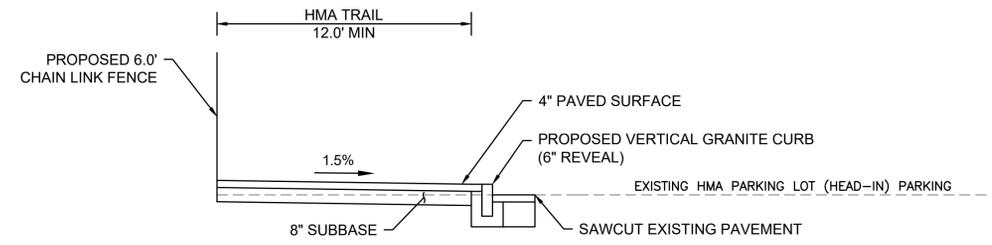
OFF-ROAD TRAIL
 ABANDONED RAIL BED WB
 PEABODY ROAD TO I-95
 SCALE: 1" = 4'

NOTE:
 * LOCATION OF TIMBER RAIL FENCE AS REQUIRED BY ENGINEER.

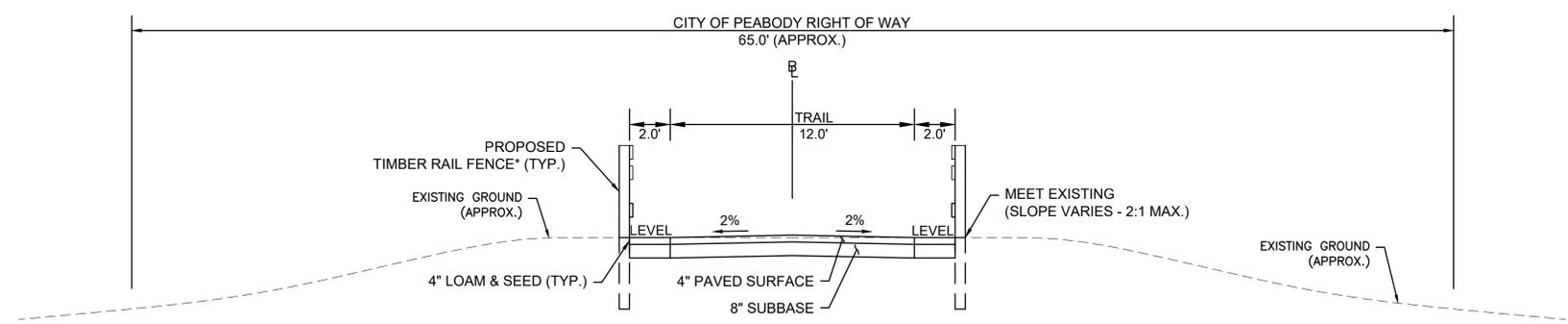


OFF-ROAD TRAIL
 I-95 TOE OF SLOPE
 ABANDONED RAIL BED TO
 LOWELL STREET
 SCALE: 1" = 4'

NOTE:
 * LOCATION OF TIMBER RAIL FENCE AS REQUIRED BY ENGINEER.



OFF-ROAD TRAIL
 ABANDONED RAIL BED
 LOWELL STREET TO ROUTE 1
 (215 NEWBURY ST. PROPERTY)
 SCALE: 1" = 4'



OFF-ROAD TRAIL
 ABANDONED RAIL BED
 ROUTE 1 TO LT. ROSS PARK
 SCALE: 1" = 4'

NOTE:
 * LOCATION OF TIMBER RAIL FENCE AS REQUIRED BY ENGINEER.

WILLIAM PAILLE
 PROFESSIONAL ENGINEER

DATE

**INDEPENDENCE
 GREENWAY
 FEASIBILITY STUDY**

OVER ROUTE 1/INTERSTATE 95

IN
 PEABODY
 LOWELL STREET
 MULTI-USE PATH OPTION
 MASSACHUSETTS
 ESSEX COUNTY
 TYPICAL SECTIONS

APRIL 2019

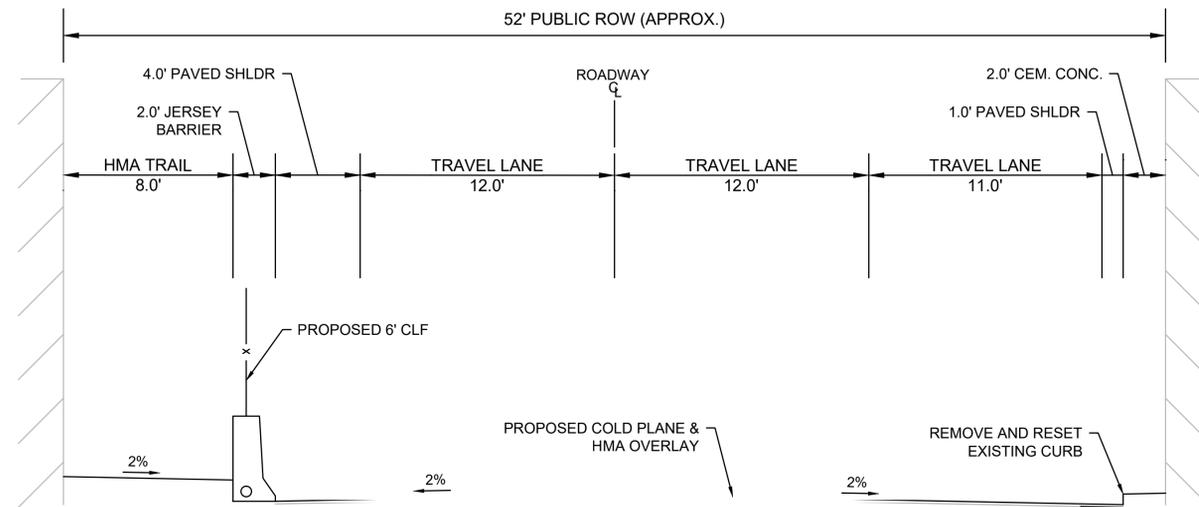
REVISIONS:

NO.	DATE	DESC.

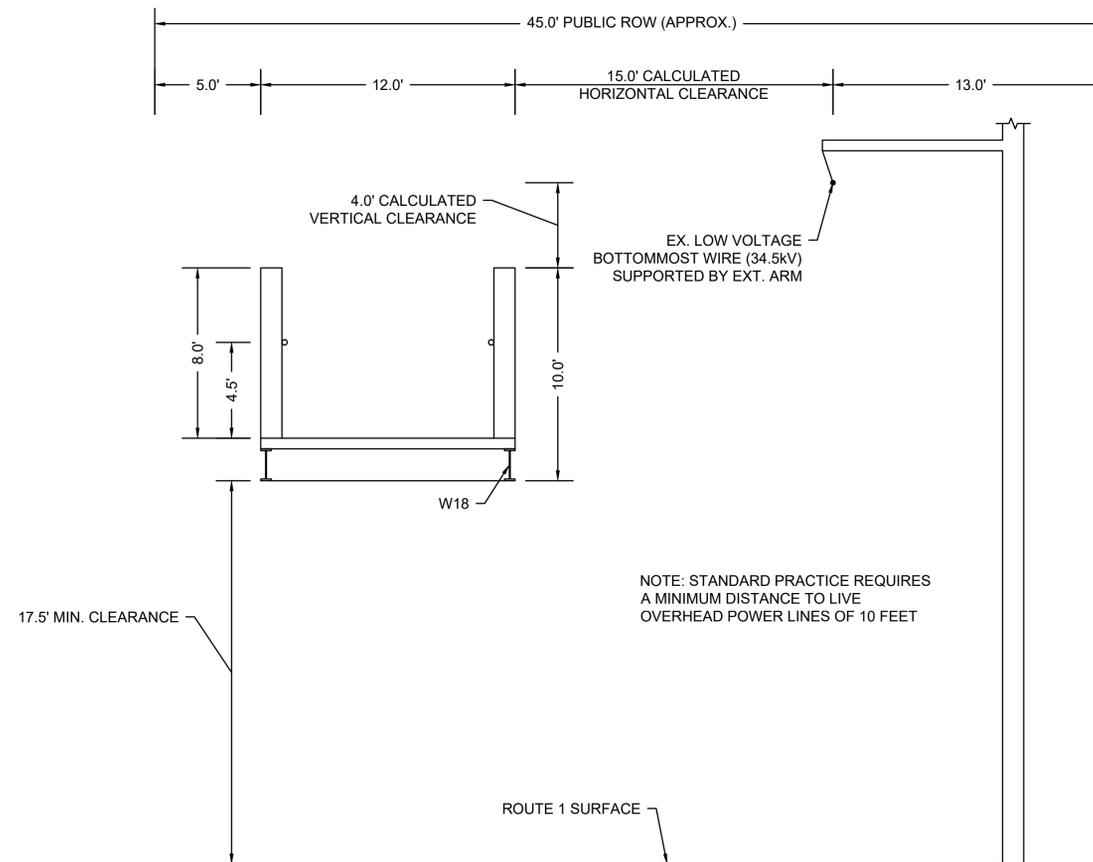
PREPARED FOR:
 CITY OF PEABODY
 24 LOWELL STREET
 PEABODY, MA 01960

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 803 Summer Street
 Boston, Massachusetts
 02127
 617 896 4300

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 SCALE: SEE PLAN



ON-ROAD TRAIL
 LOWELL STREET NB - I-95 UNDERPASS
 SCALE: 1" = 4'



OFF-ROAD TRAIL
 BRIDGE WB SPANNING ROUTE 1
 SCALE: 1" = 4'

WILLIAM PAILLE
 PROFESSIONAL ENGINEER

DATE

**INDEPENDENCE
 GREENWAY
 FEASIBILITY STUDY**

OVER ROUTE 1/INTERSTATE 95

IN
 PEABODY
 LOWELL STREET
 MULTI-USE PATH OPTION
 MASSACHUSETTS
 ESSEX COUNTY
 TYPICAL SECTIONS

APRIL 2019

REVISIONS:

NO.	DATE	DESC.

PREPARED FOR:
 CITY OF PEABODY
 24 LOWELL STREET
 PEABODY, MA 01960



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 Boston, Massachusetts
 02127

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FILE: \PROJ\2838000\TRANS_DWG\PROG

DWG.:

JOB. NO: 28376.00 SHEET 3 OF 3

APPENDIX C
TECHNICAL MEMOS & PREFERRED ROUTE

November 20, 2018

Brendan Callahan, Asst. Dir. of Planning
City Hall, 1st Floor
24 Lowell Street
Peabody, MA 01960

**RE: Peabody Bikeway Project – Route 1 & I-95 Feasibility Study
Path Alternative Summary**

Dear Mr. Callahan:

Based on site visits performed last summer, meeting with Peabody LLC (Bonkers property) and 215 Newbury Street LLC (Office Bldg.) October 4th, meeting with Clark Road residents October 11th, meeting with MassDOT (D4) on October 29th, the following is a summary of the routes currently being considered (Refer to attached plans):

- Independence Greenway Extension

Segment begins at the current terminus of the Independence Greenway located at Peabody Road and extends along the abandoned railbed and toe of I-95 NB slope before connecting to Lowell Street at the intersection with Bourbon Street.

Advantages include continuation of existing Independence Greenway as an off-road path along the abandoned railbed; providing maintenance access to existing overhead high voltage power lines by utility; and providing access behind residential properties along Clark Road for police, fire and rescue and maintenance by DPW.

Disadvantages include requiring physical separation and/or screening along back of several residential properties along Clark Road to address safety concerns of property owners; requiring new structure (i.e. boardwalk or bridge) to carry path over 60-inch culvert/spillway at corner of City and MassDOT property (i.e. end of sound wall); and requiring access easement from MassDOT to traverse along I-95 toe of slope.

- Protected Bike Lane along Peabody Road & Lowell Street

Segment begins at the current terminus of the Independence Greenway located at intersection with Peabody Road as painted bike lanes in either direction along Peabody Road and Lowell Street to the intersection of Lowell Street and Bourbon Street

Advantages include providing safe access for bicyclists along roadway while maintaining the existing sidewalks/curb/driveways in either direction and safe access for pedestrians; and requiring only minimal modification to the existing roadway by milling/pavement overlay and repainting pavement markings to reflect new bike lanes.

Disadvantages include placing bicyclists along roadway that will detract from the overall experience an off-road path provides; and requiring signal upgrades to accommodate new bicycle lanes at two existing signalized intersections and possible new signals/ADA upgrades at the intersection of Lowell Street with Peabody Road.

Engineers

Environmental
Scientists

Custom Software
Developers

Landscape
Architects

Planners

Surveyors



- Bonkers Path

Segment begins at the intersection of Lowell Street and Bourbon Street and travels along edge of future parking lot and retaining wall supporting I-95 owned and maintained by MassDOT, and along MassDOT property before connecting to the existing Danvers Rail Trail at the back of Danielle's Bourbon St Realty LLC property.

Advantages include providing natural continuation of Independence Greenway Extension option across Lowell Street that connects to the existing Danvers Rail Trail; and eliminating need to reconfigure typical section along Lowell Street from intersection with Bourbon Street to Route 1 off-ramp.

Disadvantages include requiring land taking/easement from Bonkers property to connect path from Lowell Street along edge of proposed parking lot to public right-of-way.

- Lowell Street Connection

Segment begins at the intersection of Lowell and Bourbon Street as either a shared-use path in either direction or a separated/protected bike lane along one side of Lowell Street before connecting to the current terminus of the Danvers Rail Trail via existing signals.

Advantages include continuation of protected bike lane along Lowell Street option to Danvers RT.

Disadvantages include requiring reconfiguration of roadway along Lowell Street from intersection with Bourbon Street to Route 1 off-ramp and approval from MassDOT.

- Danvers/Independence Greenway Link

Segment begins at terminus of the Danvers Rail Trail at Lowell Street through existing parking lot owned by 215 Newbury Street LLC via access easement, crosses over Route 1 via a new pedestrian bridge where it continues along abandoned railbed to Lt Ross Park and connects to the existing Independence Greenway.

Advantages include continuation of existing Danvers RT from Lowell Street to Lt Ross Park and Independence Greenway as an off-road trail; providing access to existing overhead high voltage power lines by utility; and providing access for police, fire and rescue and maintenance by DPW.

Disadvantages include requiring modification of existing parking lot on private property to provide proper separation of the trail; requiring new pedestrian bridge structure over Route 1; and relocation/protection of existing overhead utility lines along Route 1.

If you have any questions or require additional information, please contact me by phone at 617.896.4312 or by email at wpaille@bscgroup.com

Sincerely,

BSC Group, Inc.



William G. Paille, P.E.

Project Manager

cc: Curt Bellavance, Dir. of Planning, City of Peabody
Jennifer Davis, Dir. of Parks Recreation and Forestry, City of Peabody
Peter Reed, Dir. of Transportation, BSC Group
File

To: Brendan Callahan, Asst. Director of Planning
City of Peabody

Date: February 8, 2019

From: William Paille, PE

Project No. 28380.00

Re: Peabody Bikeway Project – Route 1 & I-95 Feasibility Study
Lowell Street Alternative – Route 95 to Bourbon Street

One route being considered as part of the study includes a protected bike lane along the westerly side of Lowell Street from the intersection with Bourbon Street to the existing Route 1 NB on/off ramp. This alternative will provide a protected and safe connection from the off-road segment along the I-95 toe of slope to the existing parking lot via an access easement through the 215 Newbury Street property (Refer to attached plan). In addition, this alternative provides a safe connection to the existing Border to Boston Trail – Trailhead utilizing the existing traffic signal at the Route 1 NB off/on ramp. The purpose of this memo is to summarize the impact to traffic operations resulting from this alternative.

Existing Conditions

Lowell Street

Lowell Street is classified as an urban major arterial and generally runs in a northerly-southerly direction, traverses under the I-95 NB/SB bridge structure with Route 1 to the north and Bourbon Street to the south of I-95. Adjacent land use along Lowell Street is primarily commercial with some residential with majority of the corridor within Massachusetts Department of Transportation (MassDOT) jurisdiction. The speed limit along this section of Lowell Street is not posted.

Lowell Street consists of two travel lanes in the WB direction from the intersection with Bourbon Street to the Route 1 NB access ramp intersection with a thru/left and thru lane as it approaches the signalized intersection.

Lowell Street consists of two travel lanes in the EB direction from the Route 1 NB access ramp intersection toward the intersection with Bourbon Street that transitions to an exclusive left turn lane and thru lane as it approaches the signalized intersection. There is approximately 237' from the existing stop line at the Route 1 NB access ramp intersection to the I-95 bridge abutment along Lowell Street in the WB direction. Currently, vehicles utilize this distance as well as the entire length of Lowell Street under the I-95 bridge to make this transition when only $[12' \times (30\text{mph})^2] / 60 = 180'$ is required.

There is an existing 4' wide hot mix asphalt sidewalk with vertical granite curb along the easterly side and 1' wide paved surface with vertical granite curb along the westerly side of Lowell Street from Bourbon Street to the Route 1 NB access ramp intersection. The existing paved width along this section of Lowell Street is approximately 45' (i.e. curb to curb).

Existing Traffic Volumes

Existing turning movement counts were performed on Lowell Street by placing cameras at two locations: cameras were positioned at the intersection of Lowell Street and the Route 1 interchange; and cameras were positioned at the intersection of Lowell Street and Bourbon Street. Counts were performed on Thursday December 6, 2018 from 7:00 AM to 9:00 AM & 4:00 PM to 6:00 PM respectively. These counts included truck, bicycle and pedestrian volumes in addition to vehicular volumes and are summarized in Table 1 and the complete analysis results are attached.

Table 1 – Existing Peak Hour Turning Volumes Summary

Location	Direction	AM*	PM*
Lowell & Bourbon Street Intersection			
		7:00 to 8:00	5:00 to 6:00
Lowell Street - EB (from North)	Right	1	9
	Thru	954	873
	Left	40	108
Bourbon Street - SB (from East)	Right	99	103
	Thru	-	-
	Left	91	67
Location	Direction	AM*	PM*
Lowell & Bourbon Street Intersection Continued			
		7:30 to 8:30	5:00 to 6:00
Lowell Street - WB (from South)	Right	16	52
	Thru	567	795
	Left	1	3
Subway Driveway - NB (from West)	Right	1	1
	Thru	-	-
	Left	-	2
Route 1 NB Ramps & Lowell Street Intersection			
		7:30 to 8:30	5:00 to 6:00
Lowell Street - EB (from North)	Right	465	425
	Thru	802	765
	Left	-	2
	Hard Left	-	3
Gas Station Drive Center - SB (from Northeast)	Hard Right	4	8
	Thru	-	-
	Left	-	-
Gas Station Drive South - SB (from East)	Right	2	-
	Thru	11	13
	Left	20	29
	U-Turn	-	1
Lowell Street - WB (from South)	Right	33	53
	Bear Right	1	7
	Thru	472	647
		Left	194
Newbury St (Rte 1) NB Ramps - NB (from West)	Right	194	197
	Thru	17	8
	Bear Left	5	3
	Left	226	327

* Cars (Motorcycles, Cars, Light Goods) & Heavy Vehicles (Buses, Single-Unit Trucks, Articulated Trucks)

2018 Existing Conditions Capacity Analysis

Capacity analyses provide a standardized indication of the ability of the intersection to accommodate traffic demands placed upon it. A primary result of capacity analyses is the assignment of Levels of Service (LOS) to traffic facilities under various traffic flow conditions. Analyses were conducted using methods defined in the Highway Capacity Manual 2010 (TRB, 2010) for unsignalized intersections. The concept of Level of Service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists.

A Level of Service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. In so doing, Level of Service provides an index to quality of traffic flow.

Six Levels of Service are defined for each type of facility and are assigned letter designations, from A to F, with LOS A representing the best operating conditions and LOS F representing the worst. Since the Level of Service of a traffic facility is a function of traffic flows placed upon it, an intersection may operate at a wide range of Levels of Service, depending on time of day, day of week, or period of year.

The average delay per vehicle approaching an intersection is used to quantify the Level of Service at a specific intersection. This is discussed herein, and LOS designations are defined in Table 2. Average delay measures the mean stopped delay experienced by vehicles entering an intersection during the design period. Average delay is measured for each separate turning movement that must yield the right of way, including thru vehicles that experience no delay.

Table 2: Level of Service Designations

<u>Category</u>	<u>Unsignalized / Roundabout Delay</u> <u>(sec/veh)</u>	<u>Signalized Delay</u> <u>(sec/veh)</u>
LOS A	0.0 – 10.0	0.0 – 10.0
LOS B	10.1 – 15.0	10.1 – 20.0
LOS C	15.1 – 25.0	20.1 – 35.0
LOS D	25.1 – 35.0	35.1 – 55.0
LOS E	35.1 – 50.0	55.1 – 80.0
LOS F	50.1 +	80.1+

Source: Transportation Research Board, Highway Capacity Manual, National Research Council, 2010.

The results of the capacity analysis for the intersections evaluated under existing conditions are summarized in Table 3 and the complete analysis results are attached. The Synchro traffic analysis software package (Version 10) was utilized to evaluate current operating conditions for the existing signalized intersection at the Route 1 NB Ramps/Lowell Street/Gas Station. This software uses methodology based on the Highway Capacity Manual (2010 edition) to perform the analyses and is accepted for use by MassDOT.

Table 3: Existing Conditions Capacity Analysis Summary

	2018 Existing AM				2018 Existing PM			
	Total Delay (sec)	LOS	V/C Ratio	*Queue Length (feet)	Total Delay (sec)	LOS	V/C Ratio	*Queue Length (feet)
Route 1 NB Ramps & Lowell Street (Signalized)								
Lowell Street EB L	-	-	-	-	-	-	-	-
Lowell Street EB T	8.8	A	0.70	189	8.7	A	0.68	164
Lowell Street EB R	-	-	-	-	-	-	-	-
Lowell Street WB L	-	-	-	-	-	-	-	-
Lowell Street WB T	11.8	B	1.12dl	136	29.8	C	1.32dl	#288
Lowell Street WB R	-	-	-	-	-	-	-	-
Route 1 Ramp NB L	-	-	-	-	-	-	-	-
Route 1 Ramp NB T	45.0	D	0.84	#202	61.9	E	0.95	#286
Route 1 Ramp NB R	8.4	A	0.40	60	7.0	A	0.36	55
Gas Station SB L	-	-	-	-	-	-	-	-
Gas Station SB T	15.8	B	0.09	27	16.8	B	0.12	34
Gas Station SB R	-	-	-	-	-	-	-	-
<i>Overall</i>	<i>13.4</i>	<i>B</i>	<i>0.84</i>	<i>-</i>	<i>22.6</i>	<i>C</i>	<i>0.95</i>	<i>-</i>
Abbreviations: NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left, T = Thru, R = Right, dl = Defacto Left Lane, # = 95 th percentile volume exceeds capacity, queue may be longer								

* 95th Percentile

It should be noted traffic coming off Route 1 NB waiting to turn left onto Lowell Street is experiencing queuing and operating at a LOS D & E respectively during the AM & PM hour while traffic waiting to turn right onto Lowell Street is experiencing little to no delay and operating at LOS A respectively during the AM & PM hour. Similarly, traffic traveling along Lowell Street EB is experiencing little to no delay and operating at LOS A during the AM & PM hour while traffic traveling WB along Lowell is experiencing more delay and operating at LOS B & C respectively during the AM & PM hour.

The intersection of Lowell and Bourbon Street was not analyzed primarily because the existing geometry and/or lane configuration is not being changed and the protected bike lane terminates prior to the intersection and thus has no impact on LOS.

2018 Build Intersection Capacity Analysis

The Route 1 NB Ramp/Lowell Street/Gas Station intersection was analyzed under build conditions using current traffic volumes (Refer to the attached plans and the results of the capacity analysis). The 'Build' scenario essentially transitions the two lanes into one single lane along Lowell Street in the EB direction to allow for an 8-foot protected path along Lowell Street. The results of the analysis are summarized in Table 4 and the complete analysis results are attached.

Table 4: 2018 Build Conditions Capacity Analysis

	2018 Existing AM				2018 Existing PM			
	Total Delay (sec)	LOS	V/C Ratio	*Queue Length (feet)	Total Delay (sec)	LOS	V/C Ratio	*Queue Length (feet)
Route 1 NB Ramps & Lowell Street (Signalized)								
Lowell Street EB L	-	-	-	-	-	-	-	-
Lowell Street EB T	17.9	B	0.84	#334	17.9	B	0.68	164
Lowell Street EB R	-	-	-	-	-	-	-	-
Lowell Street WB L	12.6	B	0.54	59	17.9	B	-	-
Lowell Street WB T	7.6	A	0.49	145	10.6	B	1.32dl	#288
Lowell Street WB R	-	-	-	-	-	-	-	-
Route 1 Ramp NB L	-	-	-	-	-	-	-	-
Route 1 Ramp NB T	65.2	E	0.93	#225	119.8	F	0.95	#286
Route 1 Ramp NB R	5.9	A	0.39	44	5.6	A	0.36	55
Gas Station SB L	-	-	-	-	-	-	-	-
Gas Station SB T	18.3	B	0.10	30	20.0	C	0.12	34
Gas Station SB R	-	-	-	-	-	-	-	-
<i>Overall</i>	<i>19.3</i>	<i>B</i>	<i>0.93</i>	<i>-</i>	<i>28.0</i>	<i>C</i>	<i>1.14</i>	<i>-</i>
Abbreviations: NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left, T = Thru, R = Right, dl = Defacto Left Lane, # = 95 th percentile volume exceeds capacity, queue may be longer								

* 95th Percentile

Under this scenario traffic coming off Route 1 NB waiting to turn left onto Lowell Street experiences the same level of queuing and slightly more delay dropping to LOS E & F respectively during the AM & PM hour due to the fact that additional time is needed for Lowell Street WB left turns, while traffic waiting to turn right onto Lowell Street continues to experience little to no delay and operate at LOS A during the AM & PM hour. Traffic traveling along Lowell Street EB is experiences additional delay and drops to LOS B during the AM & PM hour while traffic traveling WB along Lowell experiences less delay and improves to LOS A & B respectively during the AM & PM hour.

2028 Build Intersection Capacity Analysis

The Route 1 NB Ramp/Lowell Street/Gas Station intersection was also analyzed under build conditions using projected traffic volumes (Refer to the attached plans and the results of the capacity analysis). Again, the ‘Build’ scenario essentially transitions the two lanes into one single lane along Lowell Street in the EB direction to allow for an 8-foot protected path along Lowell Street. The results of the analysis are summarized in Table 5 and the complete analysis results are attached.

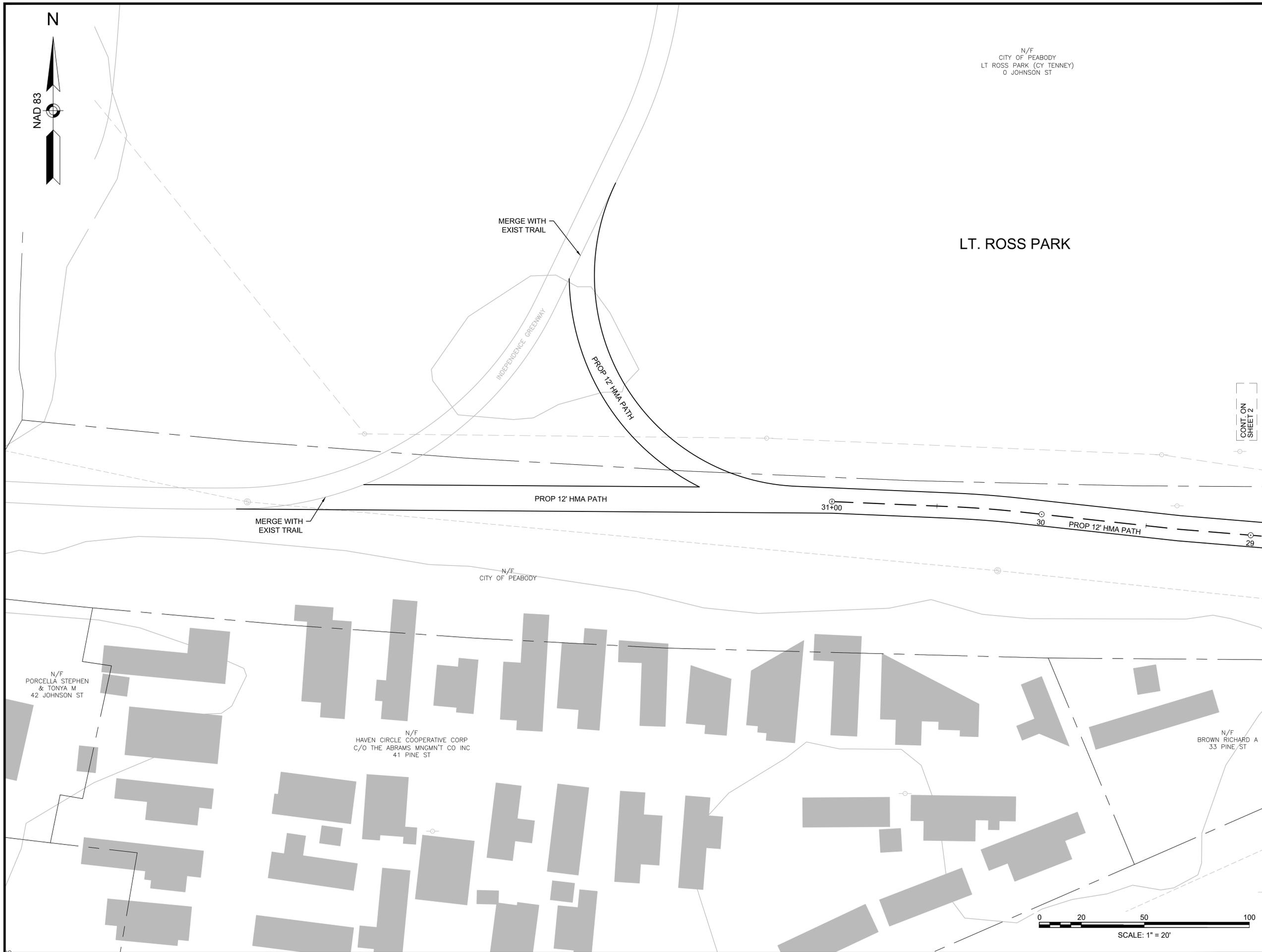
Existing traffic volumes were expanded ten years in the future using an annual growth rate of traffic volumes of 1.0%. The Synchro traffic analysis software package (Version 10) was utilized to evaluate operating conditions for the proposed intersection and the proposed traffic signal alternative.

Table 5: 2028 Build Conditions Capacity Analysis

	2028 Existing AM				2028 Existing PM			
	Total Delay (sec)	LOS	V/C Ratio	*Queue Length (feet)	Total Delay (sec)	LOS	V/C Ratio	*Queue Length (feet)
Route 1 NB Ramps & Lowell Street (Signalized)								
Lowell Street EB L	-	-	-	-	-	-	-	-
Lowell Street EB T	32.0	C	0.97	#398	22.9	C	0.91	#352
Lowell Street EB R	-	-	-	-	-	-	-	-
Lowell Street WB L	14.4	B	0.59	#68	22.8	C	0.72	#122
Lowell Street WB T	8.1	A	0.53	169	11.9	B	0.72	294
Lowell Street WB R	-	-	-	-	-	-	-	-
Route 1 Ramp NB L	-	-	-	-	-	-	-	-
Route 1 Ramp NB T	100.9	F	1.07	#255	200.1	F	1.34	#349
Route 1 Ramp NB R	6.0	A	0.43	47	5.9	A	0.42	47
Gas Station SB L	-	-	-	-	-	-	-	-
Gas Station SB T	18.5	B	0.13	33	22.4	C	0.27	43
Gas Station SB R	-	-	-	-	-	-	-	-
<i>Overall</i>	<i>30.73</i>	<i>C</i>	<i>1.07</i>	<i>-</i>	<i>41.2</i>	<i>D</i>	<i>1.34</i>	<i>-</i>
Abbreviations: NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, L = Left, T = Thru, R = Right, dl = Defacto Left Lane, # = 95 th percentile volume exceeds capacity, queue may be longer								

*95th Percentile

Under this scenario traffic coming off Route 1 NB waiting to turn left onto Lowell Street experiences additional queuing and delay and drops to LOS F during the AM & PM hour due to the fact that additional time is needed for Lowell Street WB left turns, while traffic waiting to turn right onto Lowell Street continues to experience little to no delay and operate at LOS A during the AM & PM hour. Traffic traveling along Lowell Street EB experiences additional queuing and delay and drops to LOS C during the AM & PM hour while traffic traveling WB along Lowell experiences less delay and improves to LOS A & B during the AM & PM hour.



N/F
CITY OF PEABODY
LT ROSS PARK (CY TENNEY)
O JOHNSON ST

LT. ROSS PARK

MERGE WITH
EXIST TRAIL

INDEPENDENCE GREENWAY

PROP 12' HMA PATH

CONT. ON
SHEET 2

MERGE WITH
EXIST TRAIL

PROP 12' HMA PATH

31+00

30

PROP 12' HMA PATH

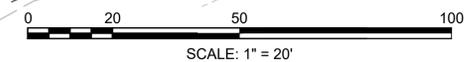
29

N/E
CITY OF PEABODY

N/F
PORCELLA STEPHEN
& TONYA M
42 JOHNSON ST

N/F
HAVEN CIRCLE COOPERATIVE CORP
C/O THE ABRAMS MNGMNT CO INC
41 PINE ST

N/F
BROWN RICHARD A
33 PINE ST



WILLIAM PAILLE
PROFESSIONAL ENGINEER

DATE

**INDEPENDENCE
GREENWAY
FEASIBILITY STUDY**

OVER ROUTE 1/INTERSTATE 95

IN
PEABODY
LOWELL STREET
MULTI-USE PATH OPTION
MASSACHUSETTS
ESSEX COUNTY

APRIL 2019

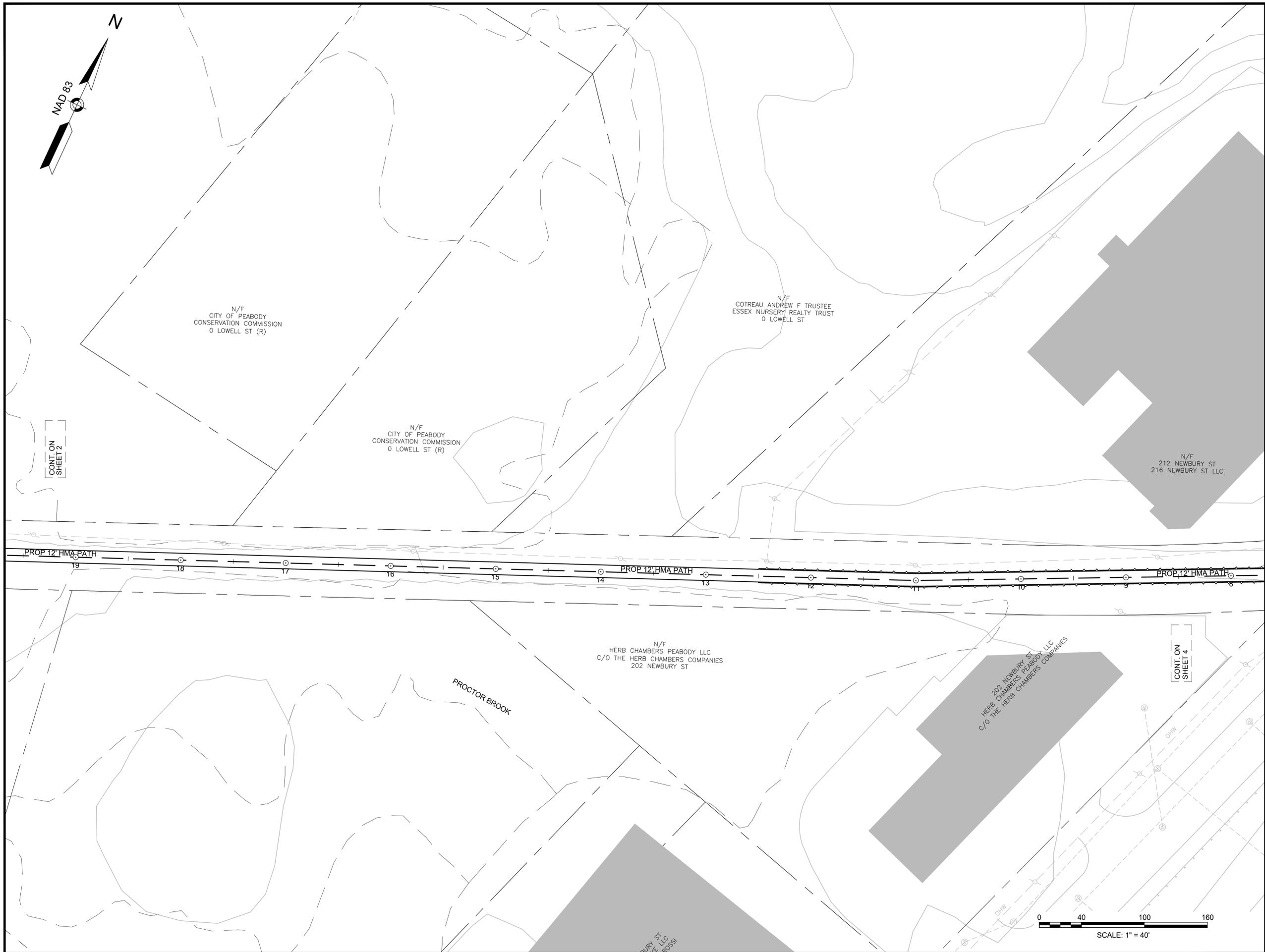
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PEABODY, MA 01960

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**INDEPENDENCE
GREENWAY
FEASIBILITY STUDY**

OVER ROUTE 1/INTERSTATE 95

IN
PEABODY
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MULTI-USE PATH OPTION
MASSACHUSETTS
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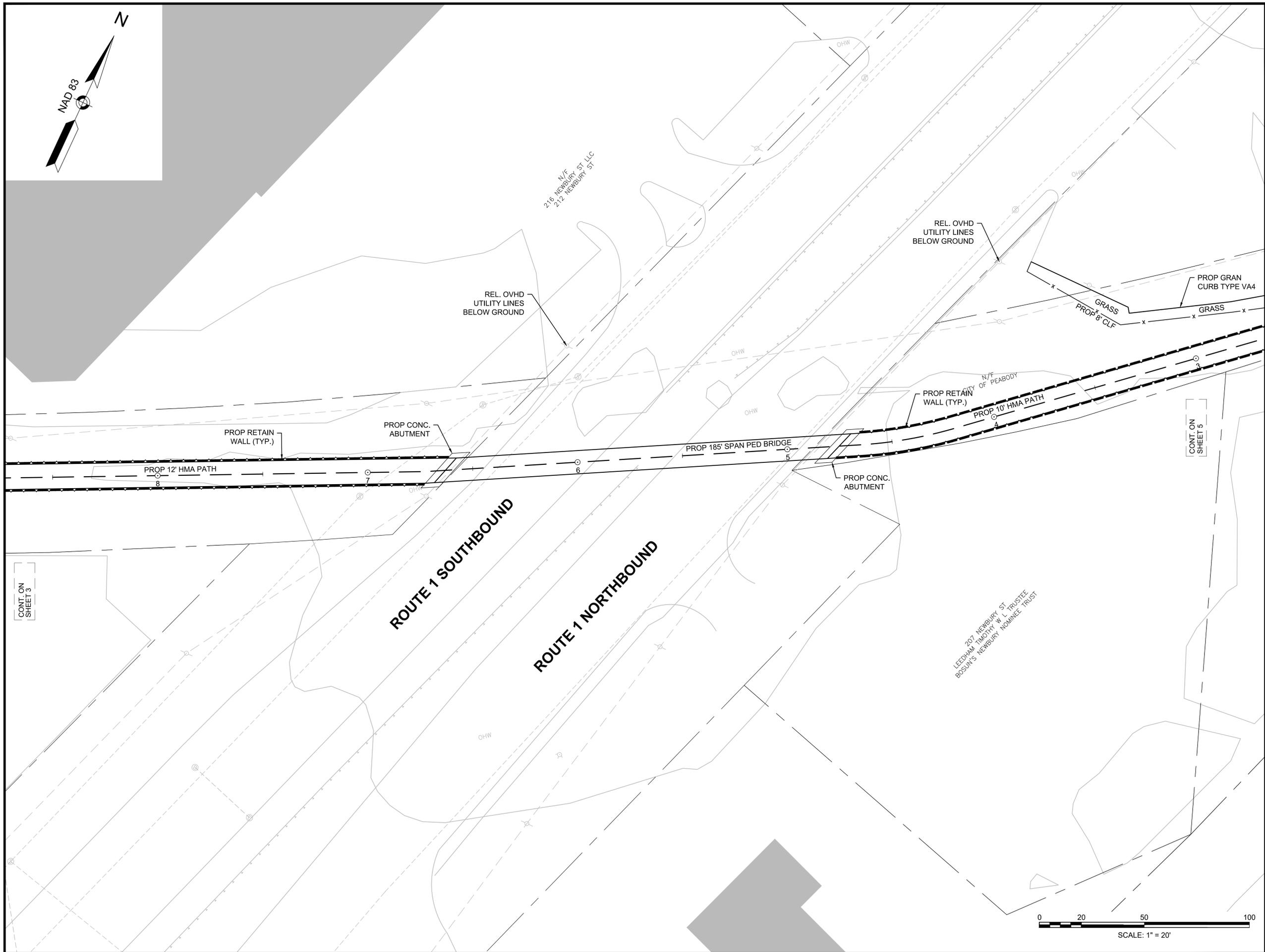
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DWG:

JOB. NO: 28376.00 SHEET 3 OF 12



WILLIAM PAILE
PROFESSIONAL ENGINEER

DATE

**INDEPENDENCE
GREENWAY
FEASIBILITY STUDY**

OVER ROUTE 1/INTERSTATE 95

IN
PEABODY
LOWELL STREET
MULTI-USE PATH OPTION
MASSACHUSETTS
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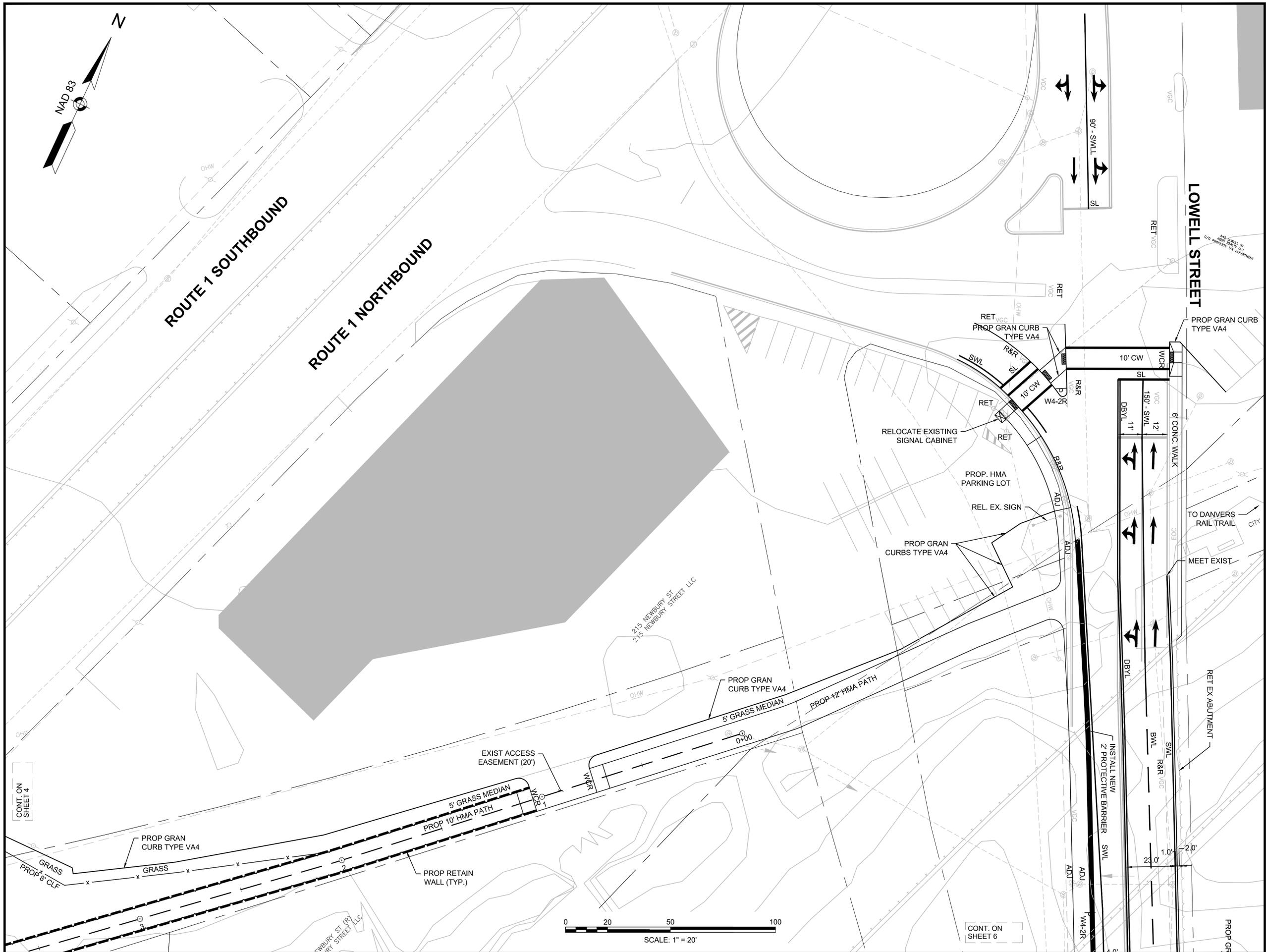
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PROFESSIONAL ENGINEER

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INDEPENDENCE GREENWAY FEASIBILITY STUDY

OVER ROUTE 1/INTERSTATE 95

IN
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MASSACHUSETTS
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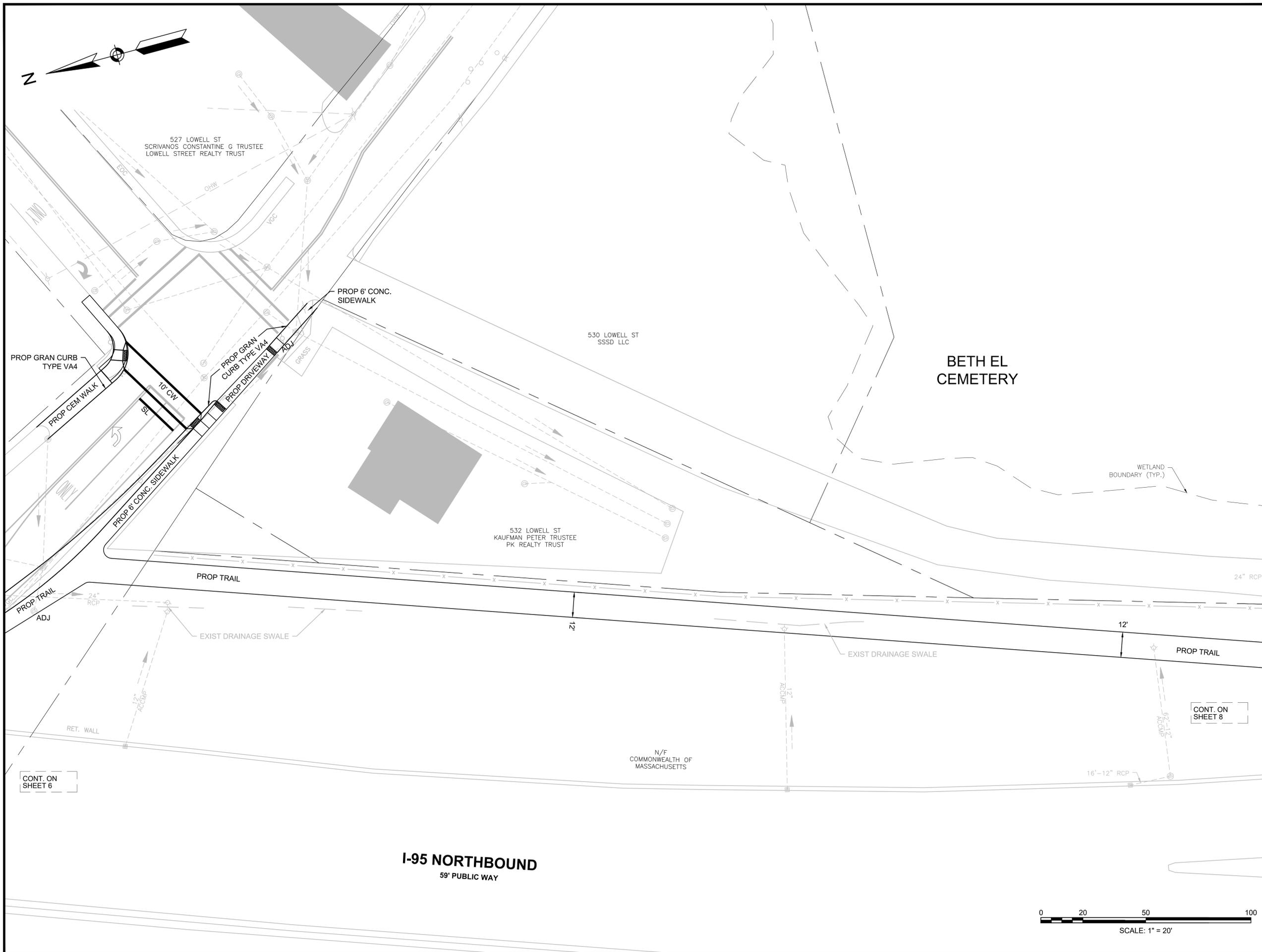
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SHEET 5 OF 12



WILLIAM PAILLE
PROFESSIONAL ENGINEER

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**INDEPENDENCE
GREENWAY
FEASIBILITY STUDY**

OVER ROUTE 1/INTERSTATE 95

IN
PEABODY
LOWELL STREET
MULTI-USE PATH OPTION
MASSACHUSETTS
ESSEX COUNTY

ROUTE IMPACT TO
I-95 SLOPE

APRIL 2019

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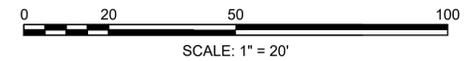
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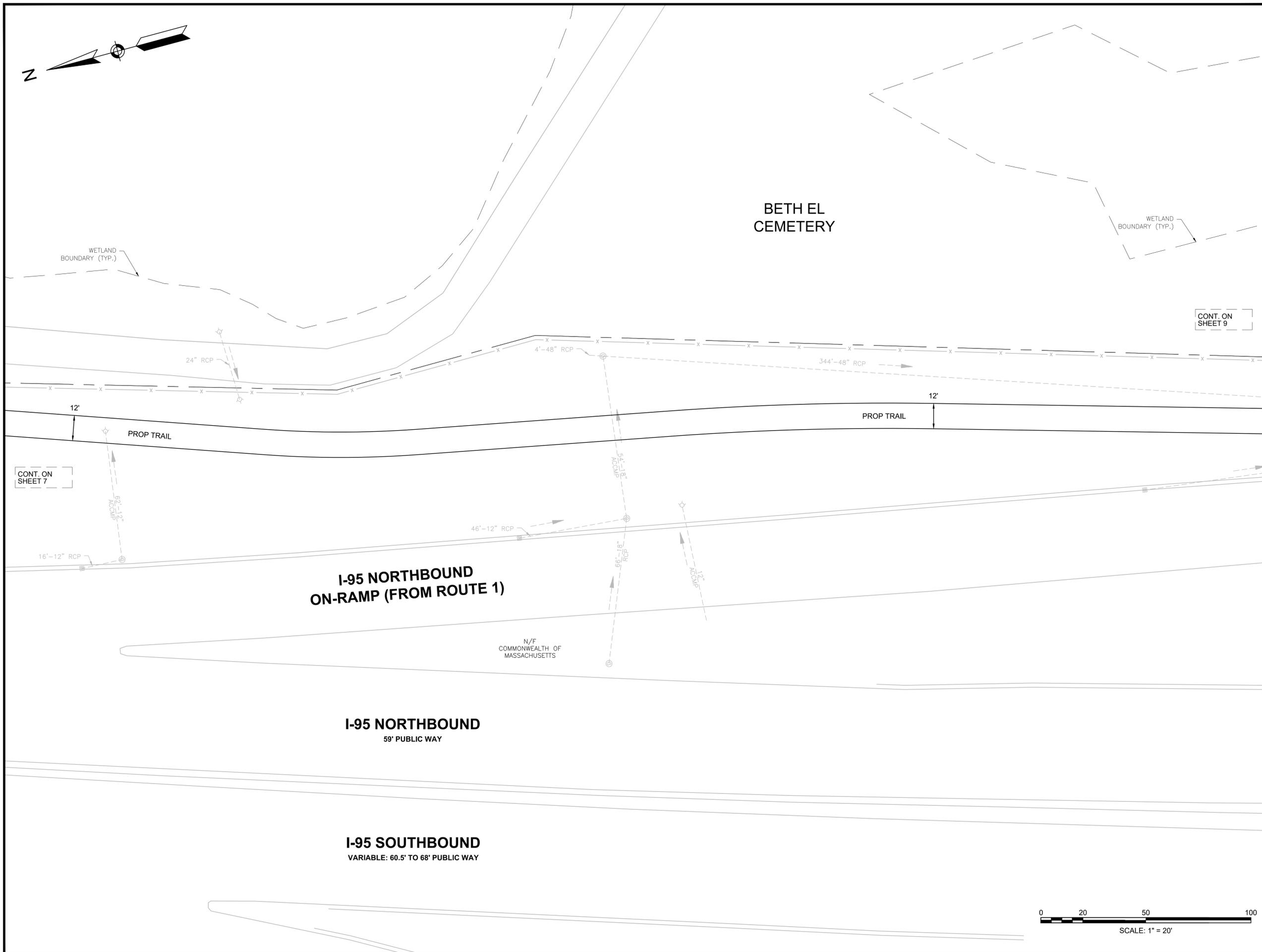


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WILLIAM PAILLE
PROFESSIONAL ENGINEER

DATE

**INDEPENDENCE
GREENWAY
FEASIBILITY STUDY**

OVER ROUTE 1/INTERSTATE 95

IN
PEABODY
LOWELL STREET
MULTI-USE PATH OPTION
MASSACHUSETTS
ESSEX COUNTY

ROUTE IMPACT TO
I-95 SLOPE

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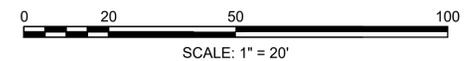
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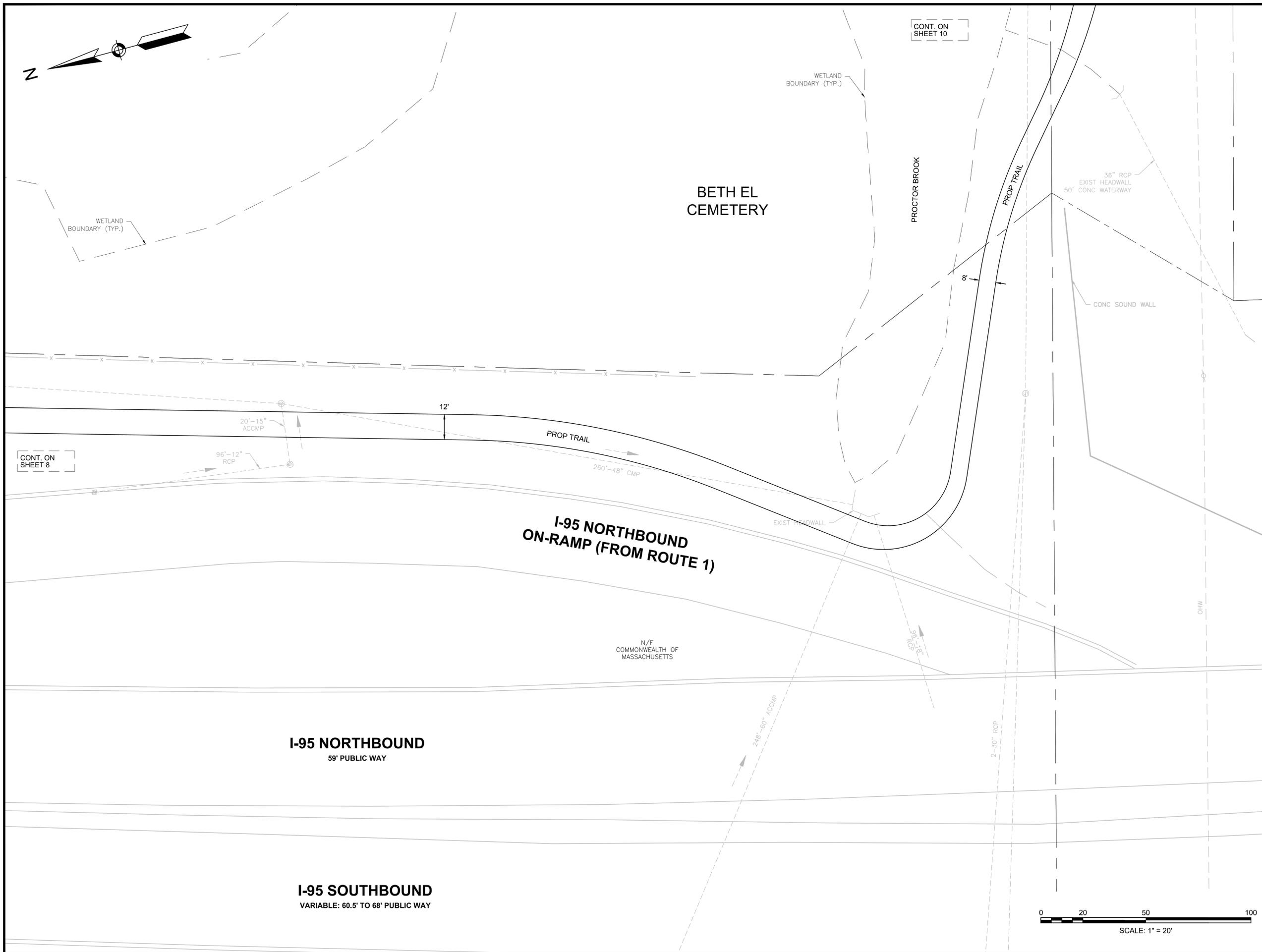
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CONT. ON SHEET 10

CONT. ON SHEET 8

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GREENWAY
FEASIBILITY STUDY**
OVER ROUTE 1/INTERSTATE 95
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ESSEX COUNTY
ROUTE IMPACT TO
I-95 SLOPE
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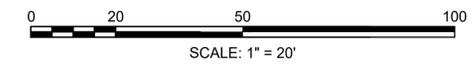
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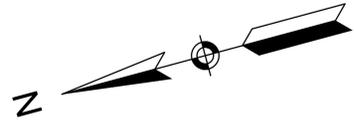
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CONT. ON SHEET 11

WETLAND BOUNDARY (TYP.)

BETH EL CEMETERY

N/F BETH EL CONGREGATION CEMETERY
520 LOWELL ST (A)

WETLAND BOUNDARY (TYP.)

BETH EL CEMETERY

PROCTOR BROOK

36" RCP EXIST HEADWALL
50' CONC WATERWAY

N/F CITY OF PEABODY

PROP TRAIL

12'

OHW

N/F CRESCENZO BRIAN & KERRI
23 CLARK RD

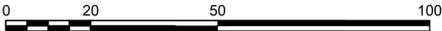
N/F MCGRATH KEVIN A & JULIE K
25 CLARK RD

N/F VLISMAS NICHOLAS & THERESA
27 CLARK RD

N/F SCARBRIEL LYDIA A TRUSTEE
29 CLARK RD

CLARK RD
48' PUBLIC WAY

CONT. ON SHEET 9



SCALE: 1" = 20'

WILLIAM PAILLE
PROFESSIONAL ENGINEER

DATE

INDEPENDENCE GREENWAY FEASIBILITY STUDY

OVER ROUTE 1/INTERSTATE 95

IN
PEABODY
LOWELL STREET
MULTI-USE PATH OPTION
MASSACHUSETTS
ESSEX COUNTY

ROUTE IMPACT TO
CLARK ROAD HOMES

APRIL 2019

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GREENWAY
FEASIBILITY STUDY**

OVER ROUTE 1/INTERSTATE 95

IN
PEABODY
LOWELL STREET
MULTI-USE PATH OPTION
MASSACHUSETTS
ESSEX COUNTY

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PROFESSIONAL ENGINEER

DATE

INDEPENDENCE GREENWAY FEASIBILITY STUDY

OVER ROUTE 1/INTERSTATE 95

IN
PEABODY
LOWELL STREET
MULTI-USE PATH OPTION
MASSACHUSETTS
ESSEX COUNTY

ROUTE IMPACT TO
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Item List and Cost Estimate
Independence Greenway & Border to Boston Trail
Peabody, MA

Computed By: KDL & MRC
Checked By: PVR & WGP
Date: 08/22/19

Item	Unit	Description	DOT Unit Price	Segments												Cost			
				Railbed Lt. Ross to Rte 1		Bridge over Rte 1		215 Newbury Street Property		Lowell St. Connection		Rte 1 NB to I-95 NB Connection		Railbed I-95 to Peabody Rd		Total Quantity	Total Cost		
				Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost				
101.	A	CLEARING AND GRUBBING	\$26,000.00	2	\$52,000.00		\$0.00		\$0.00		\$0.00		\$0.00	1	\$26,000.00	3	\$78,000.00		
120.1	CY	UNCLASSIFIED EXCAVATION	\$35.00	1,013	\$35,437.50		\$0.00	338	\$11,812.50	225	\$7,875.00	675	\$23,625.00	450	\$15,750.00	2,700	\$94,500.00		
151.	CY	GRAVEL BORROW	\$47.00	375	\$17,625.00		\$0.00	125	\$5,875.00	83	\$3,901.00	250	\$11,750.00	167	\$7,849.00	1,000	\$47,000.00		
170.	SY	FINE GRADING AND COMPACTING - SUBGRADE AREA	\$6.00	3,038	\$18,225.00		\$0.00	1,013	\$6,075.00	675	\$4,050.00	2025	\$12,150.00	1,350	\$8,100.00	8,100	\$48,600.00		
201.	EA	CATCH BASIN	\$3,300.00		\$0.00		\$0.00	2	\$6,600.00	2	\$6,600.00		\$0.00		\$0.00	4	\$13,200.00		
202.	EA	MANHOLE	\$3,750.00		\$0.00		\$0.00	1	\$3,750.00	1	\$3,750.00		\$0.00		\$0.00	2	\$7,500.00		
222.3	EA	FRAME AND GRATE (OR COVER) MUNICIPAL STANDARD	\$825.00		\$0.00		\$0.00	3	\$2,475.00	3	\$2,475.00		\$0.00		\$0.00	6	\$4,950.00		
241.12	FT	12 INCH REINFORCED CONCRETE PIPE	\$90.00		\$0.00		\$0.00	250	\$22,500.00	250	\$22,500.00		\$0.00		\$0.00	500	\$45,000.00		
241.36	FT	36 INCH REINFORCED CONCRETE PIPE	\$160.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	50	\$8,000.00	50	\$8,000.00		
402.	CY	DENSE GRADED CRUSHED STONE FOR SUB-BASE	\$75.00	750	\$56,250.00		\$0.00	250	\$18,750.00	167	\$12,525.00	500	\$37,500.00	333	\$24,975.00	2,000	\$150,000.00		
460.	TON	HOT MIX ASPHALT	\$100.00	638	\$63,750.00		\$0.00	213	\$21,250.00	142	\$14,200.00	425	\$42,500.00	283	\$28,300.00	1,700	\$170,000.00		
504.	FT	GRANITE CURB TYPE VA4 - STRAIGHT	\$40.00		\$0.00		\$0.00	500	\$20,000.00		\$0.00		\$0.00		\$0.00	500	\$20,000.00		
509.	FT	GRANITE TRANSITION CURB FOR WHEELCHAIR RAMPS - STRAIGHT	\$45.00		\$0.00		\$0.00		\$0.00	36	\$1,620.00		\$0.00		\$0.00	36	\$1,620.00		
509.1	FT	GRANITE TRANSITION CURB FOR WHEELCHAIR RAMPS - CURVED	\$50.00		\$0.00		\$0.00		\$0.00	12	\$600.00		\$0.00		\$0.00	12	\$600.00		
580.	FT	CURB REMOVED AND RESET	\$26.00		\$0.00		\$0.00		\$0.00	600	\$15,600.00		\$0.00		\$0.00	600	\$15,600.00		
620.12	FT	GUARDRAIL, TL-2 (SINGLE FACED)	\$35.00		\$0.00		\$0.00	100	\$3,500.00		\$0.00		\$0.00		\$0.00	100	\$3,500.00		
629.1	FT	PRECAST CONCRETE BARRIER - SINGLE FACED	\$140.00		\$0.00		\$0.00		\$0.00	325	\$45,500.00		\$0.00		\$0.00	325	\$45,500.00		
644.096	FT	96 INCH CHAIN LINK FENCE (SPRING TENSION WIRE)	\$63.00	250	\$15,750.00		\$0.00	250	\$15,750.00		\$0.00	1500	\$94,500.00		\$0.00	2,000	\$126,000.00		
656.	FT	PRESSURE TREATED TIMBER RAIL FENCE	\$53.00	500	\$26,500.00		\$0.00	1,500	\$79,500.00		\$0.00	1500	\$79,500.00	2,000	\$106,000.00	5,500	\$291,500.00		
685.4	SF	PRECAST MODULAR BLOCK WALL	\$60.00	13,050	\$783,000.00		\$0.00	13,050	\$783,000.00		\$0.00		\$0.00		\$0.00	26,100	\$1,566,000.00		
701.	SY	CEMENT CONCRETE SIDEWALK	\$50.00		\$0.00		\$0.00	125	\$6,250.00	75	\$3,750.00		\$0.00		\$0.00	200	\$10,000.00		
701.1	SY	CEMENT CONCRETE SIDEWALK AT DRIVEWAYS	\$55.00		\$0.00		\$0.00	40	\$2,200.00		\$0.00		\$0.00		\$0.00	40	\$2,200.00		
701.2	SY	CEMENT CONCRETE WHEELCHAIR RAMP	\$85.00		\$0.00		\$0.00	30	\$2,550.00	15	\$1,275.00		\$0.00		\$0.00	45	\$3,825.00		
748.	LS	MOBILIZATION	\$25,000.00	0.2	\$5,000.00	0.2	\$5,000.00	0.2	\$5,000.00	0.2	\$5,000.00		\$0.00	0.2	\$5,000.00	1	\$25,000.00		
816.01	LS	TRAFFIC SIGNAL RECONSTRUCTION LOCATION NO. 1 (LOWELL & RTE 1)	\$175,000.00		\$0.00		\$0.00		\$0.00	1	\$175,000.00		\$0.00		\$0.00	1	\$175,000.00		
816.02	LS	TRAFFIC SIGNAL RECONSTRUCTION LOCATION NO. 2 (LOWELL & BOURBON)	\$25,000.00		\$0.00		\$0.00		\$0.00	1	\$25,000.00		\$0.00		\$0.00	1	\$25,000.00		
867.104	FT	4 INCH REFLECTORIZED YELLOW LINE (THERMOPLASTIC)	\$1.00	2,250	\$2,250.00		\$0.00	750	\$750.00	500	\$500.00	1500	\$1,500.00	1,000	\$1,000.00	6,000	\$6,000.00		
995.02	FT	STEEL TRUSS PEDESTRIAN BRIDGE - INCLUDES CONCRETE ABUTMENT	\$3,000.00		\$0.00	185	\$555,000.00		\$0.00		\$0.00		\$0.00		\$0.00	185	\$555,000.00		
999.001	HR	POLICE DETAIL	\$40.00		\$0.00	1,500	\$60,000.00		\$0.00	2,500	\$100,000.00		\$0.00		\$0.00	4,000	\$160,000.00		
					\$1,237,155.63		\$713,000.00		\$1,170,225.63		\$519,479.15		\$348,478.75		\$265,620.10				
SUBTOTAL BID ITEMS																\$	3,699,095.00		
Check																\$4,253,959.25	15% GENERAL CONTINGENCY	\$	554,864.25
TOTAL																\$	4,253,959.25		
SAY																\$	4,254,000		

APPENDIX D
MEETING MINUTES & SUMMARIES

To: Brendan Callahan, Asst. Dir. Of Planning, City of Peabody **Date:** May 2, 2018
From: Bill Paille, Project Manager **Proj. No.** 28380.00
Re: Peabody Bikeway Project - Route 1 & I-95 Feasibility Study
Date of Meeting: May 2, 2018 **Time:** 10:30 AM
Place of Meeting: Peabody City Hall
Purpose: Kickoff with City Staff
List of Attendees: Curt Bellavance (Dir. of Planning), Brendan Callahan (Asst. Dir. Of Planning), Jennifer Davis (Dir. Of Parks Recreation and Forestry), Peter Reed (BSC), Bill Paille (BSC)

Item	Discussion	Action
1.	B. Callahan opened meeting by welcoming everyone followed by introductions. Bill and Peter provided a brief project experience history related to trails and bike paths. B. Callahan provided brief history of the project including the development of the Independence Greenway. City distributed the agenda and maps of project corridor (Attached). Parks & Recreation will be responsible for maintaining the trail once it is constructed.	None
2.	Initial alternates including connection from Danvers Trail (i.e. Border to Boston) from Lowell Street to Independence Greenway (i.e. Lt. Ross Park Trailhead) via abandoned railroad bed; connection of Independence Greenway from Albert Road Trailhead to Lt. Ross Park Trailhead via abandoned railroad bed/sewer easement; connection along I-95 right-of-way from the Danvers Trail to the Independence Greenway; connection of Independence Greenway (Albert Road Trailhead to Lt. Ross Park Trailhead) via City streets including Peabody Road, Lowell Street and Johnson Street. Although the three off-road trail alternatives are desired, the City emphasized the Danvers Trail to the Lt. Ross Park Trailhead alternative as the key connection.	City to provide electronic version of Right-of-Way & Track Map Plans to BSC.
3.	B. Paille reviewed the project scope of work and next steps that BSC would begin focusing on including information/data collection, site visit, coordination with utility companies/MassDOT, development of an existing conditions plan, development of alternatives and identification of challenges and obstacles, development of preferred alternative, summary of findings including order-of-magnitude construction costs and preparation of PNF/PIF.	BSC to provide list of GIS layers needed to City.
4.	City has not contacted or coordinated with any key abutters including MassDOT, Temple Bethel Cemetery, Flow Yoga Studio property, etc.	BSC to provide list of key abutters to City for contact info.
5.	Green International recently completed 25% plans for downtown section	None

ACCURACY NOTICE

We have sought to record accurately the minutes of this meeting. If any of the above items do not agree with your understanding, please contact us within seven (7) days from the date of this document.

Item	Discussion	Action
	of Independence Greenway. City still waiting to meet with PRC before Project Number assigned and 25% design can be submitted to MassDOT.	
6.	Schedule – Next Steps	BSC to develop revised schedule to City by next week

cc:

APPENDIX E
PNF & PIF APPLICATIONS

MASSDOT - HIGHWAY DIVISION

Project Need Form

This form is intended to provide preliminary information about the proposed project. It is not expected that all information that is asked for is available or known but applicants are encouraged to complete the form as fully as possible.

Part I - Facility Location and General Information

Municipality: PEABODY

Primary Roadway(s) or Facility: Along Lowell Street & over Route 1 NB/SB

MassDOT District: District 4

MPO Region: Boston Region

Estimated project limits by mile marker, station or other distinguishing landmarks such as cross street(s). **Please include a locus map of the potential project location.**

Route/Street ID	Route/Street Name	Begin	End	Mileage	Primary
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Is the location in an urban or rural area?

Urban Rural

What is the federal functional classification of the road? Identify each section.

- Interstate
 Urban Collector
 Urban Principal Arterial
 Rural Principal Arterial
 Urban Minor Arterial
 Rural Minor Arterial

 Rural Major Collector
 Rural Minor Collector
 Other Classification _____

Is the proposed project on the National Highway System?

Yes

No

Who owns the roadway/facility? If multiple owners, please give the ownership percentage for each.

City or Town 65 %

MassDOT 20 %

Other State Agency _____ 0 %

Other 215 Newbury(Esemnt) 15 %

Project Need: Briefly describe or characterize, in general terms, the primary project need or goal (e.g. rehabilitate a roadway, improve safety at an intersection, reduce corridor congestion, improve pedestrian facilities, or provide bike accommodation).

To connect the existing Independence Greenway from the existing trailhead located at Lt. Ross Park to the existing trailhead at Peabody Road. In addition, provide a connection to the Border to Boston Trail that terminates at the intersection of Lowell Street and the bridge carrying I-95 over Lowell Street.

Part II - Project or Program Description

Provide whatever information is available to characterize the existing, general attributes of the facility.

CHARACTERISTIC	DATA	Comments
Number of Lanes	_____	
Lane Width	_____	
Shoulder Width	_____	
Sidewalk Availability/Width	_____	
Existing Right of Way	_____	

CHARACTERISTIC	DATA	Comments
Annual Daily Traffic (ADT)	_____	
Percent Truck Traffic	_____ % _____	
Daily Bicycle Traffic	_____	
Daily Pedestrian Traffic	_____	
Traffic Control (signal, flash, signs, etc.)	_____	
Roadway Lighting	_____	
Posted Speed Limit	_____	
Transit Route & Facilities	_____	

In what type of area is the project located? *Project limits may include more than one type of area. For a definition of areas, please refer to Chapter 3 of the Guidebook.*

- | | |
|---|---|
| <input checked="" type="checkbox"/> Rural Natural | <input type="checkbox"/> Suburban Low Density |
| <input type="checkbox"/> Rural Village | <input type="checkbox"/> Suburban High Density |
| <input type="checkbox"/> Rural Developed | <input type="checkbox"/> Suburban Village/Town Center |
| <input type="checkbox"/> Urban Residential or CBD | |

How does the roadway/facility function in the community?

- High-speed, primary corridor with limited access
- Moderate speed, major corridor between towns/regions
- Low to moderate speed corridor between towns/regions
- Moderate speed, major street connecting residential areas to a town center or major connector
- Low to moderate speed street connecting residential areas with other streets
- Primarily or exclusively a residential street
- Exclusive pedestrian/bicycle facility

Regional Considerations: Identify any regional use of the roadway (Characterize how neighboring communities use the roadway, what kind of link it provides to major arterials or highways).

Trail will connect municipalities to the east & west via the Independence Greenway trail network and to the north via the Border to Boston trail network

Part III - Identification of Problem, Need or Opportunity

A. Condition of Existing Facilities - Problem, Need, or Opportunity

1. **Primary Asset:** Please describe the condition of the roadway, path, or other horizontal facility, such as type and extent of cracking, ride-ability, utility patching or other surface defects such as rutting, raveling, shoving, bleeding, etc. This may be based on visual inspection or automatic detection methods. Are deformations related to the pavement structure, indicating road sub-base issues? include any PMS (Pavement Management System) ratings, PCI (Pavement Condition Index) data and/or photos, if available.

Trail will travel along abandoned railbed from the existing trailhead at Peabody Road, toe of slope of the I-95 NB off-ramp, the south side of Lowell Street and under I-95, along an existing 20' access easement thru 215 Newbury Street property, over Route 1 via a pedestrian bridge, along abandoned railbed where it will connect to the existing trailhead at Lt. Ross Park

Interstate Pavement: Present Serviceability Ratings within project limits: I95 NB: PSI:3.35,IRI:76.22 I95 SB: PSI:2.86,IRI:91.34 • Non-Interstate Pavement: Present Serviceability Ratings within project limits:
 • US1 NB: PSI:2.67,IRI:129.65
 • US1 SB: PSI:3.06,IRI:85.72

2. **Preventive Maintenance:** Describe any repair or preventive maintenance to the roadway or appurtenances. Include the extent of the work (resurfacing, rehabilitation, reconstruction or replacement) and when the last repair was done?

The new trail surface will be hot mix asphalt. The surface of the new pedestrian bridge will be cement concrete.

3. **Other Existing Assets:** Please describe the condition of facility appurtenances, such as signs, signals, lighting, median barriers, guardrail, pavement markings, curbing, landscaping, fences, ITS components, etc.

The trail will be a new facility

4. **Drainage System:** Please describe any specific concerns related to the existing drainage system. If there is a history of flooding in the project area, describe the potential solutions under consideration, such as increased maintenance, repair/replacement of drainage infrastructure, raising the vertical profile, or culvert replacement, etc. Are there opportunities for improving storm water management, including drainage outfalls, within the project limits?

The trail will traverse over or around existing drainage outfalls carrying storm water runoff from the I-95 NB off-ramp to the Proctor Brook. The trail will traverse along abandoned railbed that already has drainage swales located along both sides of the corridor and box culverts over existing streams.

5. **Bridges:** If the project/program includes a bridge or bridges, please describe the condition, such as bridge ratings, dates of inspection, weight restrictions, closings, structural adequacy, functional obsolescence, condition of other bridge elements, etc. Identify the bridge location and ID number (if known).

Facility will require a new pedestrian bridge over Route 1 NB/SB

There was no intersection with Bridge Database.

6. **Existing Utilities:** Identify and locate any underground utilities (water, sewer, gas, other) and overhead utilities (electric phone, cable). Identify any larger utility appurtenances, above ground or underground, such as cabinets or vaults. Identify any active or inactive railroad crossings.

The trail will traverse along abandoned railbed from Peabody Road to the toe of slope of the I-95 NB off-ramp where there are existing overhead high power lines. The trail will span over Route 1 NB/SB and near existing overhead power and communication lines that parallel Route 1 and traverse over Route 1

B. Mobility - Problem, Need, or Opportunity

1. **Motor Vehicle Mobility and Congestion:** Please describe any existing or prospective highway congestion issues or bottlenecks. Identify the nature and extent of congestion, including when it occurs and whether there is queuing. Include any traffic analysis, including LOS (Level of Service) data or travel times, if available. Please describe any need or opportunity for greater connectivity or improved access along the corridor or to particular points along the facility. Identify any missing connection or constraint in access that could be improved for greater motor vehicle mobility.

This trail will not impact vehicle mobility along Peabody Road, Lowell Street or Route 1

2. **Pedestrian Mobility and Accommodations:** Please describe the condition of any existing pedestrian facilities. Include the limits and width of any existing sidewalks and identify any obstructions. Note if the existing sidewalks are ADA/AAB compliant. In addition, please characterize the pedestrian need, including any indication that pedestrians use the corridor beyond existing sidewalks (rutted paths, pedestrian using the roadway shoulder, etc.).

This is a new trail facility that will be fully compliant with current ADA/AAB standards

3. **Bicycle Mobility and Accommodations:** Please describe the existing bike accommodation (5' minimum shoulder width, bike lane, or shared use path), including the limits and width of any existing facility. In addition, please characterize existing bike traffic, and condition of any bike racks or other associated appurtenances. Identify if project location is included in any local, regional or state bicycle routes.

The trail will be a minimum 10' width and serve as a multi-use path for all types of users

4. Transit Mobility and Accommodations: Please describe the existing transit accommodations (bus stops, bump outs, shelters, transit signal prioritization), include known bus routes and providers. In addition, please characterize existing transit usage, and other known obstructions.

The trail will allow access to existing transit mobility along Lowell Street although there are no current routes

- There was no intersection with MBTA Transit Routes
- There was no intersection with Regional Transit - BAT.
- There was no intersection with Regional Transit - BRTA.
- There was no intersection with Regional Transit - CATA.
- There was no intersection with Regional Transit - CCRTA.
- There was no intersection with Regional Transit - FRTA.
- There was no intersection with Regional Transit - GATRA.
- There was no intersection with Regional Transit - LRTA.
- There was no intersection with Regional Transit - MART.
- There was no intersection with Regional Transit - MVRTA.
- There was no intersection with Regional Transit - MWRTA.
- There was no intersection with Regional Transit - NRTA.
- There was no intersection with Regional Transit - PVTA.
- There was no intersection with Regional Transit - SRTA.
- There was no intersection with Regional Transit - VTA.
- There was no intersection with Regional Transit - WRTA.
- There was no intersection with Park & Ride Lots.

5. Connectivity: Please describe any need or opportunity for greater connectivity or improved access along the corridor or to particular points along the facility. Identify any missing connection or constraint in access that could be improved for greater bicycle or pedestrian mobility.

The trail will connect the existing trailhead for the Independence Greenway at Peabody Road to the existing trailhead for the Independence Greenway at Lt. Ross Park. In addition, the trail will connect the Independence Greenway at Lowell & I-95 bridge to the Border to Boston trail network. The trail will also connect to other key destinations including the High School, local shops and housing along Lowell Street and Bourbon Street

C. Safety - Problem, Need, or Opportunity

1. Motor Vehicle Safety: Please describe any safety concerns on the facility. Please note the presence of any MassDOT crash clusters, regionally identified high-crash locations, or any other documented need for improvements. Provide any crash history within the project limits, including number and severity of crashes, type of crashes and whether there have been any fatalities. Include the calculated crash rate, if available. If the project location contains any MassDOT identified crash clusters, a Road Safety Audit will need to be conducted prior to making a 25% submission.

The trail will traverse along the southerly side of Lowell Street and under I-95 from Bourbon Street to #215 Newbury Street property but will be separated from vehicular traffic with a cement concrete barrier and rail. The trail connection to the Border to Boston trailhead will be via existing traffic signals at the intersection of Lowell Street and the Route 1 access ramp

- There was no intersection with Top 200 Crash Clusters 2013-2015.
- There was no intersection with Top 200 Crash Clusters 2012-2014.
- There was no intersection with Top 200 Crash Clusters 2011-2013.
- There was no intersection with HSIP Crash Clusters 2013-2015.
- There was no intersection with HSIP Crash Clusters 2012-2014.
- There was no intersection with HSIP Crash Clusters 2011-2013.

2. Safety for Other Users: Please describe adjacent significant activity centers (schools, senior centers, places of assembly, industrial operations, or parks) and describe any safety issues for other users such as pedestrians, bicyclists, persons with disabilities, transit riders, trucks, school children, etc. Please note the presence of any MassDOT bike or pedestrian clusters, or any other documented need for improvements. If the project location contains any MassDOT identified crash clusters, a Road Safety Audit will need to be conducted prior to making a 25% submission.

The trail will traverse thru the existing parking lot of the property at 215 Newbury Street via an existing 20' wide access easement that has been granted to the City of Peabody. The trail will be separated from moving and/or parked vehicles using granite curb and vegetated buffer and fence. The trail will cross a driveway entrance within the parking lot of the same property that will allow access to a landscaping business currently leasing the property from the owner of 215 Newbury. The driveway entrance will be delineated using curb, cement concrete driveway and signage ensure safety of users crossing the driveway.

- There was no intersection with HSIP Pedestrians Crash Clusters.
- There was no intersection with HSIP Bicycle Crash Clusters.

3. Evacuation Routes: Please describe whether there are any known evacuation routes identified at the state, local or private level.

There are no known evacuation routes along the proposed trail alignment

D. Economic Development - Problem, Need, or Opportunity

1. Economic Impact on a City, Town, or Village Center: Identify if the project is located within a city/town/village center, an area ≥ 5000 population per square mile, or if the roadway provides an important connection to a city/town/village center or population center. If the roadway is a high truck ADT corridor, please note and provide documentation. Identify any economic needs or opportunities that can benefit from the project.

The proposed Independence Greenway Over Route 1 project will connect three bikeway segments and ultimately to two civic downtown areas, City of Peabody and Town of Danvers, but will not be located therein. The population density in the census tract containing the project area is reported to be approximately 2600 residents/square mile.

2. Priority Development Areas: Identify any Priority Development Areas (PDAs) that benefit from the project. (Examples of PDAs are Designated Growth Districts, 43D Priority Development Sites, Brownfields Redevelopment Sites, Mill Revitalization Districts (MRD), or Undeveloped Land Zoned Industrial or Commercial). Identify any needs for improved access to services, industry clusters, or job creation in the project area or opportunities for improvement.

The Independence Greenway Over Route 1 project area is not located near any Priority Development Areas.

3. Local Economic Considerations: Identify needs or opportunities to fill vacant storefronts or office spaces in city/town/village center, or the need for any amenities that improve accessibility, wayfinding, pedestrian accommodations, or beautification of a city/town/village center with the intent of attracting consumers.

Not applicable; The Independence Greenway Over Route 1 will not be located near any clusters of vacant commercial buildings and will not be located in close proximity to the city center.

E. Environmental & Health Effects - Problem, Need, or Opportunity

1. Air Quality and Greenhouse Gases: Describe any opportunities to meet the State goals of improving Air Quality and reducing Greenhouse Gas emissions in the area. Please note any bottlenecks or congestion corridors that can be improved via improved traffic operations, as well as transit, bicycle, and pedestrian infrastructure that can be expanded (please reference section B: Mobility). For mode information on MassDOT Greenhouse Gas Reduction and Air Quality standards, please use the following link: [MassDOT Greenhouse Gas Reduction](#)

The expansion of the bicycle/pedestrian infrastructure and associated reduction in motorized vehicle transportation demand that would occur as a result of the extension of the Independence Greenway will reduce greenhouse gas emissions.

2. Stormwater Improvements/Impaired Waterbodies: Identify any impaired waterbodies or TMDL watersheds for nutrients near the project, and any stormwater runoff issues associated with the project.

There will be no impaired waterbodies or stormwater runoff issues associated with this project

- There was no intersection with a Category {category} MassDEP Impaired Water - 2014 Integrated List of Waters (305(b)/303(d)).

3. Wetland(s) and Resource Areas: Identify any wetlands, watersheds, or resource areas adjacent to the project, along with their current condition. Identify any opportunities to provide wetland restoration to a degraded wetland resource area.

There are existing wetlands located along the project corridor including the abandoned railbed section from Peabody Road to and along the I-95 NB off-ramp to Lowell Street due to the proximity of Proctor Brook. There are also existing wetlands along the abandoned railbed from Route 1 to Lt. Ross Park. However, this

project will not impact any wetlands or outstanding resource areas due to the fact the existing abandoned railbed is elevated and above the resource areas.

- There was no intersection with Outstanding Resource Water.
- Project may exist within wetland resources and require permitting.
- There was no intersection with Areas of Critical Environmental Concern.
- There was no intersection with BioMap2 Core Habitat.
- There was no intersection with Coldwater Fish Resources within buffer limit.
- There was no intersection with NHESP 2008 Priority Habitats of Rare Species within buffer limit.
- There was no intersection with NHESP 2008 Estimated Habitats of Rare Wildlife within buffer limit.
- There was no intersection with NHESP Certified Vernal Pools.
- There was no intersection with Potential Vernal Pools.

4. Wildlife Habitat(s): Identify any priority habitats within a ½ mile of the project limits. (Examples of priority development areas include: Core Habitat and Critical Natural Landscape, Coldwater fisheries, diadromous fish runs, Vernal Pools, and NHESP Priority and Estimated Rare species habitat).

This project is not located within a priority habitat or area of critical concern

- There was no intersection with Outstanding Resource Water.
- There was no intersection with Areas of Critical Environmental Concern.
- There was no intersection with BioMap2 Core Habitat.
- There was no intersection with Coldwater Fish Resources within buffer limit.
- There was no intersection with NHESP 2008 Priority Habitats of Rare Species within buffer limit.
- There was no intersection with NHESP 2008 Estimated Habitats of Rare Wildlife within buffer limit.
- There was no intersection with NHESP Certified Vernal Pools.
- There was no intersection with Potential Vernal Pools.

5. Resiliency: Indicate whether the project is located in a 100-year flood zone. Identify any failing culverts or headwalls, and any evidence of stream bed or stream bank erosion, scour, or any hydraulic restrictions at bridges or culverts.

The project is likely located within a 100-year flood zone along the existing abandoned railbed due to the proximity to the Proctor Brook.

- There was no intersection with FEMA National Flood Hazard Layer

6. Historic/Cultural/Archaeological Resource(s): Identify any National Register listed or eligible properties in the area, any nearby Open Space, or any potential 4(f) or Article 97 protected land in the area.

Although the project is located adjacent to Lt. Ross Park and may be subject to Article 97 protected land, the trail will connect to the existing park via an existing abandoned railbed and not require a modification of Article 97.

- This location is adjacent to Lt Ross Park, Larrabee Conservation Land, Conservation Area. Please review whether the project would impact any potential 4(f) or Article 97 protected land.

7. Hazardous Materials: Identify any hazardous materials or sites adjacent to the project. Discuss if the project will involve handling hazardous materials or on any adjacent properties.

It is likely the existing abandoned railbed from Peabody Road to the I-95 NB off-ramp and existing abandoned railbed from Route 1 to Lt. Ross Park will contain hazardous materials as a result of prior use as an active railway corridor. However, the project will not be disturbing the existing track bed but managing any contaminants on-site per current MADEP and local conservation regulations and guidelines.

F. Social Equity - Problem, Need, or Opportunity

1. Environmental Justice: Identify if the project is located in, or within a ¼ mile of, an Environmental Justice area. Indicate any documented need to improve the environmental impacts, safety, sustainability, or mobility of the EJ community. Please note that the proponent is encouraged to fully engage any EJ communities to assess any problems, needs, or opportunities for improvement in the area.

The section of the project along the abandoned railbed from Peabody Road to the I-95 NB off-ramp and along the I-95 NB toe of slope and along Lowell Street from Bourbon Street to Route 1 is located in EJA (Income). This project is going to provide ideal connections to these EJA communities to access Lt. Ross Park, other trail networks, shops, retail stores, family entertainment, restaurants and the High School.

- Project exists within or adjacent to a 2010 Census - Environmental Justice Population.

2. Title VI: Identify if the project is located in, or within a ¼ mile of, a Title VI area. Identify any documented need or opportunity to improve the access, safety, sustainability, or mobility to the Title VI community through public outreach. Please note that the proponent is encouraged to fully engage Title VI communities to assess any problems, needs, or opportunities for improvement in the area.

The Environmental Justice (EJ) area noted in F.1. above follows Lowell Street, which is within the Independence Greenway Over Route 1 will be located. By connecting the the Lowell Street trailhead and Peabody Road trailhead, close to the EJ Area, a greater number of people can gain access to the trail and use it for either recreation or travel to destinations where goods and services may be obtained.

3. Regional Equity: Please note the last project the proponent initiated seeking Federal Transportation Funds, along with the year initiated. If any projects have been constructed using Federal Transportation Funds in the last 5 years, please identify along with the year completed. If the area is located in a rural area, discuss the importance of any potential improvements to the community or region.

The proponent has applied for a two Massachusetts Recreational Trail Program (RTP) funding for the Independence Greenway Extension Project in early 2018 and South Peabody Trail Project. An RTP grant was issued in 2018 for the Independence Greenway Extension project for design purposes and the grant deadline was June 30, 2019. An RTP grant was awarded in 2017 for work on the South Peabody Trail Project which was completed in late 2017. The City was approved by the Boston MPO for MassDOT Transportation Improvement Program (TIP Construction funding, in the amount of \$2.2M for Federal Fiscal Year 2024.

G. Planning and Public Outreach - Problem, Need, or Opportunity

1. Describe any Public Outreach that has occurred. Include any public informational meetings, local mailings, workshops, planning documents, etc., where the proposed improvements were specifically presented to abutters, businesses and/or the general public. Please note any local support or opposition to the project, including any local advocacy groups.

The project was presented to several abutters through direct meetings on site including the residents of Clark Street (who abut the abandoned railbed from Peabody Road to the I-95 NB off-ramp), the owner of the 215 Newbury Street property (i.e. granted the 20' wide access easement) and the owners of the Bonkers property located along Lowell Street.

2. Describe any special needs that need to be accommodated to fully engage the public with respect to public outreach.

3. Identify any local or regional planning documents that identify the problem, need or opportunity outlined within this PNF.

4. Identify efforts to coordinate with relevant government agencies, including RTA(s), DCR, regulatory agencies, or neighboring municipalities.

The City and their consultant met with the District 4 office on two occasions and the MassDOT's Office of Transportation Planning once to present and discuss the project.

Thank you for completing this form. Upon clicking “Submit for Acceptance”, this form will be sent to the Regional MPO/RPA and the MassDOT Highway Division District office.

MASSDOT - HIGHWAY DIVISION

Project Initiation Form

Part I - General Information

Project Location: Along Lowell Street & over Route 1 NB/SB - City of Peabod

Scope of Work: Describe the proposed improvements including limits of work, length of the project, major improvements, proposed cross-section, improvements to secondary assets, and related work. The description of improvements to secondary assets should include any proposed improvements to curbing, sidewalks, traffic signals, signs, lighting, landscaping, drainage, walls, etc. The scope of work for a multi-use path should also identify any proposed at-grade crossing treatments.

The project includes construction of a new 12-foot wide multi-use paved path westerly along the abandoned railbed, owned by the City of Peabody, beginning at the end of the existing Independence Greenway at Peabody Road to the existing state right-of-way of the Route 1 NB to I-95 NB connection; then northerly along the toe of slope of the Route 1 NB to I-95 NB connection within MassDOT right-of-way to Lowell Street; then northerly along the west side of Lowell Street as a protected path, under the I-95 NB/SB overpass; then onto land now or formerly of 215 Newbury Street via an existing access easement granted to the City of Peabody; then over Route 1 NB/SB via a new two-span pedestrian bridge; then westerly along abandoned railbed, owned by the City of Peabody, where it will connect to Lt. Ross Park. The project also includes a connection to the existing Border to Boston trailhead at Lowell Street via the existing signalized crossing at the Route 1 NB off/on ramp (i.e. Speedway) and a connection to the signalized intersection of Lowell and Bourbon Street. The work includes full depth pavement construction, minor drainage improvements, vegetative privacy screening, new timber rail, resetting and new granite curb, new cement concrete sidewalk and/or hot mix asphalt, new precast cement concrete barrier, signal upgrades at Lowell/Bourbon Street and Route 1NB/Lowell Street intersection, new 2-span steel pedestrian bridge, and various curb/walk/parking improvements to the existing parking lot at 215 Newbury Street.

Regional Benefit: Describe any regional benefits that would be realized should the Project Need be met.

The project will provide a vital connection of the Independence Greenway (Lt. Ross Park & the trailhead at Peabody Road), that has been cut-off by Route 1 & I-95 for decades, to the west into North Reading and to the east into downtown Peabody. The project will also provide a connection to the existing Border to Boston trail and continue the network to the north to Topsfield.

Right of Way: Identify how much right of way is anticipated to complete the project, including fee takings, permanent and temporary easements.

A majority of the project is within land either owned by the City of Peabody or an easement granted to the City (i.e. 215 Newbury Street). The project will require an access easement from MassDOT to traverse along the existing Route 1 NB to I-95 NB connection toe of slope and along the west side of Lowell Street under the I-95 overpass.

Part II - Project Costs and Responsibilities

Estimated Costs: Provide available cost estimates or estimated cost ranges in current-year dollars and attach any cost estimate work sheets or summaries.

	Component	Value	Definition
A	Office Estimate (construction items)	\$3,540,000.00	This is the portion of project cost based on definitive items of work. For conceptual project estimates, this value can be determined by making equivalencies to past projects. (character of work & lane miles)
B	Design Contingency	\$550,000.00	This value accounts for the risk and uncertainty inherent to design development. The amount is calculated as a percentage of the construction items (A), based on guidance from MassDOT
C	Construction Contingencies	\$555,000.00	This amount is calculated as a percentage of the construction items (A), and accounts for variation in quantities during construction. The following percentages should be used: 0% NFA Maintenance Non-Site Specific 10% All Federal Aided Projects and NFA Site Specific
D	Traffic Police	\$160,000.00	This amount is calculated as a percentage of the construction items (A), and accounts for police details during construction. Refer to guidance from MassDOT.
E	Construction Engineering	\$354,000.00	This amount is calculated as a percentage of the Construction Items & Traffic Police (A + D), and represents the cost of MassDOT construction management for the project. The following values should be used: 15% Construction Items < \$1m 10% \$1m <= Construction Items < \$5m 5% Construction Items => \$5m
F	Utility Relocation	\$500,000.00	This is the value of utility work necessitated by construction of the project. These costs are provided by utility owners once substantial design has been completed. During conceptual design, values are provided for specific projects, based on guidance from MassDOT
G			

	Total Construction Cost	\$5,659,000.00	This is the sum of lines A-F
H	Consultant Planning/Design	\$0.00	This is the value of Highway Division Consultant services necessary to deliver the project (if municipal consultant, reflect cost as \$0)
I	MassDOT Project Development Costs	\$75,000.00	This amount is calculated as a percentage of the total direct project cost (G) and represents the cost of MassDOT project development for the project
J	Right-of-way	\$0.00	0% Only municipal alterations or no alterations
			1% For alterations to State Highway Layouts, assume 1% of Office Estimate (A) <u>unless otherwise known</u>
			- If significant State Highways Layout alterations are possible, refer to guidance from MassDOT
K	Total Project Costs	\$5,734,000.00	This is the sum of G-J

Anticipated Funding Program: Indicate all potential sources of funding that may apply to the project

- STP NHPP
- TAP HSIP
- NFA HPP
- CMAQ Other (WT, Tobin, MHS, etc.) _____

Project Responsibilities:	MassDOT	Community	Other (specify)
Project Management	100%	0%	0%
Design	0%	100%	0%
Permitting	0%	100%	0%
Right of Way	100%	0%	0%

Part III - Project Description

A. System Preservation

1. **Primary Asset and Condition:** Identify the Primary Asset included in the project area (e.g. roadway, bridge, or bike trail), condition of asset (specify if asset is a new facility), and what project improvements are anticipated by project.

New multi-use trail, protected trail under I-95 overpass, new pedestrian bridge, existing traffic signal upgrades

Interstate Pavement: Present Serviceability Ratings within project limits: I95 NB: PSI:3.35,IRI:76.22 I95 SB: PSI:2.86,IRI:91.34 • Non-Interstate Pavement: Present Serviceability Ratings within project limits:
 • US1 NB: PSI:2.67,IRI:129.65
 • US1 SB: PSI:3.06,IRI:85.72

2. **Proposed Treatment to the Primary Asset:** Describe the proposed rehabilitation methods that are being considered for the primary asset (e.g. overlay, reclamation, full depth reconstruction). Keep in mind that the final pavement improvements will be identified through the development of a pavement design submitted as part of the project design process.

Full depth construction along abandoned railbed and the Route 1 NB to I-95 NB connection toe of slope; full depth reconstruction along Lowell Street from the intersection with Bourbon Street to Route 1 NB on/off ramp; full depth construction through 215 Newbury Street property; construction of new 2-span steel pedestrian bridge over Route 1 NB/SB

3. **Describe Improvements to Other Existing Assets:** Identify efforts to retain or preserve existing Infrastructure. Other existing assets may include: signal reconstruction, signal upgrades or improvements, large diameter culverts (4'+), box culverts, retaining walls, sidewalks, ramps, guardrail, drainage, signs, and curbing (or bridges, paths, and pavement if not already the primary asset).

Signal upgrades at intersection of Lowell/Bourbon Street & Route 1 NB on/off ramp; extension of existing culverts along toe of slope of Route NB to I-95 NB connection; repair of existing sound wall panel(s) at the Route 1 NB to I-95 NB connection; resetting of existing granite curb along Lowell Street from Bourbon Street to Route 1 NB on/off ramp

There was no intersection with Bridge Database.

4. **Potential Impacts to Utilities:** Identify any anticipated impacts or complications the proposed improvements will have on utilities. List utilities that will be impacted.

New pedestrian bridge over Route 1 NB/SB will require relocation of existing overhead utility lines parallel to and along both sides of Route 1

B. Mobility

1. **Effect on Motor Vehicle Mobility and Congestion:** Describe how the proposed improvements will impact the mobility of motor vehicles. Please note the presence of bottlenecks or congestion, and include any traffic

analysis, including LOS (Level of Service) data, if available. Please include existing and proposed LOS, delays, queue lengths and travel time.

Crossing of Peabody Road will not impact traffic due to very low volume; crossing at Route 1 NB access and Lowell Street intersection will not adversely impact traffic flow; connection to Lowell/Bourbon Street intersection will not adversely impact traffic flow

2. Effect on Pedestrian Mobility and Accommodations: Describe how the improvements are addressing pedestrian accommodation, including ADA/AAB requirements, through improving existing facilities, improving safety and traffic calming, or proposing new or expanded pedestrian facilities. HTP requires 2 sidewalks in urban areas. (Examples of improved pedestrian facilities are new or expanded sidewalks, crossings, pedestrian signals, RRFBs, shared-use paths, side-paths, etc.).

Pedestrian access, ADA compliance and safety will be improved dramatically at the Lowell/Bourbon & Route 1 NB on/off ramp intersections as a result of this project. In addition, access for all users will be provided from Lt. Ross Park to the existing Independence Greenway trailhead at Peabody Road and to the Border to Boston trailhead at Lowell Street as a result of this project.

3. Effect on Bicycle Mobility and Accommodations: Describe how the improvements are addressing bicycle accommodation through new or improved facilities. HTP requires a minimum 5 ft. shoulder for improved bicycle accommodations. (Examples of improved bicycle facilities are new or expanded 5' shoulders, marked or buffered bicycle lanes, shared-use paths, etc.). For more information on

This project will connect (all off-road or protected) the northern terminus to the southern terminus of the Independence Greenway as well as connect the Independence Greenway to the existing Border to Boston trail

4. Effect on Transit Mobility and Accommodations: Describe how the improvements are addressing transit mobility through new or improved facilities or accommodations. (Examples include dedicated bus lanes, transit signal prioritization, BRT, or new park & rides, bus stops, shelters, bump outs, etc.)

This project will not impact or accommodate transit mobility through the corridor

- There was no intersection with MBTA Transit Routes
- There was no intersection with Regional Transit - BAT.
- There was no intersection with Regional Transit - BRTA.
- There was no intersection with Regional Transit - CATA.

- There was no intersection with Regional Transit - CCRTA.
- There was no intersection with Regional Transit - FRTA.
- There was no intersection with Regional Transit - GATRA.
- There was no intersection with Regional Transit - LRTA.
- There was no intersection with Regional Transit - MART.
- There was no intersection with Regional Transit - MVRTA.
- There was no intersection with Regional Transit - MWRTA.
- There was no intersection with Regional Transit - NRTA.
- There was no intersection with Regional Transit - PVTA.
- There was no intersection with Regional Transit - SRTA.
- There was no intersection with Regional Transit - VTA.
- There was no intersection with Regional Transit - WRTA.
- There was no intersection with Park & Ride Lots.

5. Connectivity: Identify whether the proposed improvements will impact connectivity or access along the corridor or to other facilities. Please specify whether the project completes a link between existing bicycle and pedestrian facilities, or if the project creates new connections to businesses, residences, open space, transit stops, etc.

The trail will connect the existing trailhead for the Independence Greenway at Peabody Road to the existing trailhead for the Independence Greenway at Lt Ross Park. In addition, the trail will connect the Independence Greenway at Lowell I-95 bridge to the Border to Boston trail network. The trail will also connect to other key destinations including the High School, local shops and housing along Lowell Street and Bourbon Street.

6. Design Exceptions: Identify whether any exceptions to MassDOT design criteria are anticipated, such as exemptions for meeting AASHTO 13 design requirements or HTP.

No design exceptions are anticipated for this project

C. Safety

1. Motor Vehicle Safety: Describe any improvements that are expected to reduce the crash potential or improve the general safety for motor vehicles. Please provide any highway safety analysis that has been completed, including Road Safety Audits.

Directing trail users to either the intersection of Lowell/Bourbon Street or the Route 1 NB on/off ramp intersection will eliminate any potential vehicle/pedestrian conflict; construction of a new pedestrian bridge over Route 1 will eliminate any potential vehicle/pedestrian conflict.

- There was no intersection with Top 200 Crash Clusters 2013-2015.
- There was no intersection with Top 200 Crash Clusters 2012-2014.
- There was no intersection with Top 200 Crash Clusters 2011-2013.
- There was no intersection with HSIP Crash Clusters 2013-2015.
- There was no intersection with HSIP Crash Clusters 2012-2014.
- There was no intersection with HSIP Crash Clusters 2011-2013.

2. **Safety for Other Users:** Describe any improvements that are expected to improve the safety for other multi-modal users such as pedestrians, bicyclists, persons with disabilities, transit riders, school children, etc. Please provide any highway safety analysis that has been completed, including Road Safety Audits.

This project will result in ADA and pedestrian signal-related upgrades at the Route 1 NB on/off ramp & Bourbon/Lowell Street intersections. In particular the existing Border to Boston trailhead at Lowell will be improved as all users will be directed to an existing signalized intersection to safely cross Lowell Street.

- There was no intersection with HSIP Pedestrians Crash Clusters.
- There was no intersection with HSIP Bicycle Crash Clusters.

3. **Evacuation Routes:** If the project is a known evacuation route identified at the state, local or private level, indicate how the project impacts the route.

The proposed project is not within or part of a known evacuation route identified at either the private, municipal or state level

D. Economic Impacts

1. **Economic Impact on a City, Town, or Village Center:** If the project is located within a city/town/village center, an area ≥ 5000 population per square mile, or is a roadway that provides an important connection to a city/town/village center or population center, please identify any economic impacts the project is anticipated to have on the city/town/village or population center.

The proposed Independence Greenway Over Route 1 project will connect three bikeway segments and ultimately to two civic downtown areas, City of Peabody and Town of Danvers, but will not be located therein. The population density in the census tract containing the project area is reported to be approximately 2600 residents/square mile

2. **Priority Development Areas:** Identify any positive impacts to a Priority Development Area(s), as well as any improved access to services, industry clusters, or job creation in the project area (including the number of jobs to be created, if available). Please note any other proposed improvements that reflect the Commonwealth's Smart Growth/Smart Energy programs or Sustainable Development principles.

The project is not located near any Priority Development Areas

3. **Local Economic Considerations:** Identify if the project includes any improvements with the specific intent to fill vacant storefronts or office spaces in city/town/village center, or if it incorporates any amenities that improve accessibility, wayfinding, pedestrian accommodations, or beautification of a city/town/village center with the intent of attracting consumers. (Examples of amenities or improvements can be new or ornamental lighting, benches, bike racks, landscaping enhancements, new parking, wayfinding signs, etc.)

Not applicable. The project will not be located near any clusters of vacant commercial buildings and will not be located in close proximity to the city center.

E. Environmental & Health Effects

1. Air Quality and Greenhouse Gases: Indicate if the project is expected to produce an improvement to Air Quality or a reduction in Greenhouse Gases, confirmation pending completion of the Air Quality Analysis Worksheet. Please note any Traffic Operational Improvements, any increase to motor vehicle capacity, any expanded transit accommodations or park-and-rides that decrease motor vehicle miles travelled, and any new bicycle and pedestrian infrastructure proposed.

The expansion of the bicycle/pedestrian infrastructure and associated reduction in motorized vehicle transportation demand that would occur as a result of the extension of the Independence Greenway will reduce greenhouse gas emissions.

2. Stormwater Improvements/Impaired Waterbodies: Indicate the potential impact to any impaired waterbodies or TMDL watersheds near the project, and list any proposed BMP's that will be included to improve stormwater treatment. State how the proposed BMP's will meet or work towards MassDEP stormwater standards or TMDL requirements. Also include whether the project is proposing to decrease or increase the amount of impervious cover.

There will be no impaired waterbodies or stormwater runoff issues associated with this project

- There was no intersection with a Category {category} MassDEP Impaired Water - 2014 Integrated List of Waters (305(b)/303(d)).

3. Wetland(s) and Resource Areas: If there are any wetlands, watersheds, or resource areas adjacent to the project, discuss how the project impacts the identified locations. Include an estimate of the quantity of temporary and permanent impacts to any wetlands, and a summary of how impacts will be mitigated.

There are existing wetlands located along the project corridor including the abandoned railbed section from Peabody Road to and along the I-95 NB off-ramp to Lowell Street due to the proximity of Proctor Brook. There are also existing wetlands along the abandoned railbed from Route 1 to Lt Ross Park. However, this project will not impact any wetlands or outstanding resource areas due to the fact the existing abandoned railbed is elevated and above the resource areas.

- There was no intersection with Outstanding Resource Water.
- There was no intersection with Areas of Critical Environmental Concern.
- There was no intersection with BioMap2 Core Habitat.
- There was no intersection with Coldwater Fish Resources within buffer limit.
- There was no intersection with NHESP 2008 Priority Habitats of Rare Species within buffer limit.
- There was no intersection with NHESP 2008 Estimated Habitats of Rare Wildlife within buffer limit.
- There was no intersection with NHESP Certified Vernal Pools.
- There was no intersection with Potential Vernal Pools.

4. Wildlife Habitat(s): Identify any priority habitats within a 1/2 mile of the project limits, and discuss how the project may impact any locations identified. Include a discussion of temporary and permanent impacts, and any improvements that are being proposed. If project includes work on bridges or culverts, discuss if new structures will meet the Massachusetts River and Stream Crossing standards. (Examples of priority development areas include: Core Habitat and Critical Natural Landscape, Coldwater fisheries, diadromous fish runs, Vernal Pools, and NHESP Priority and Estimated Rare species habitat.)

This project is not located within a priority habitat or area of critical concern

- There was no intersection with Outstanding Resource Water.
- There was no intersection with Areas of Critical Environmental Concern.
- There was no intersection with BioMap2 Core Habitat.
- There was no intersection with Coldwater Fish Resources within buffer limit.
- There was no intersection with NHESP 2008 Priority Habitats of Rare Species within buffer limit.
- There was no intersection with NHESP 2008 Estimated Habitats of Rare Wildlife within buffer limit.
- There was no intersection with NHESP Certified Vernal Pools.
- There was no intersection with Potential Vernal Pools.

5. Resiliency: Indicate if the project is located within a 100-year floodplain or any area identified as vulnerable through a municipal, state, or federal vulnerability assessment. Identify any improvements to the system's resiliency to flood events and other climate change stressors through resiliency best management practices (BMPs) such as increasing the hydraulic opening of a bridge or culvert(s), armoring of hydraulic and/or hydrologic features, replacement of a standalone headwall, scour protection at a structure, or erosion prevention along a bank or shoreline.

The project is likely located within a 100-year flood zone along the existing abandoned railbed due to the proximity to the Proctor Brook

- There was no intersection with FEMA National Flood Hazard Layer

6. Historic/Cultural/Archaeological Resource(s): If there is any Open Space, National Register listed or eligible properties, or 4(f) or Article 97 protected land in the area, discuss any positive or negative impacts to these resources, including improved or hindered access. Please reference the MACRIS database to determine if any National-Register Listed or Eligible properties are located within the project limits.

Although the project is located adjacent to Lt Ross Park and may be subject to Article 97 protected land, the trail will connect to the existing park via an existing abandoned railbed and not require a modification of Article 97

- This location is adjacent to Lt Ross Park, Larrabee Conservation Land, Conservation Area. Please review whether the project would impact any potential 4(f) or Article 97 protected land.

7. Hazardous Materials: If there are any hazardous materials or sites adjacent to the project, discuss how the project will handle any hazardous materials.

It is likely the existing abandoned railbed from Peabody Road to the Route 1 NB to I-95 NB connection and existing abandoned railbed from Route 1 to Lt Ross Park will contain hazardous materials as a result of prior use as an active railway corridor. However, the project will not be disturbing the existing track bed but managing any contaminants on-site per current MADEP and local conservation regulations and guidelines.

F. Social Equity

1. **Environmental Justice:** If the project is located in, or within a ¼ mile of, an Environmental Justice area, please identify any elements of the project designed to decrease environmental impacts or improve the safety, sustainability, or mobility of the EJ community. Identify any improvements that involve community planning and equitable sharing of benefits/burden or are particularly targeted within an Environmental Justice area.

The section of the project along the abandoned railbed from Peabody Road to the Route 1 NB to I-95 NB connection and along the Route 1 NB to I-95 NB connection toe of slope and along Lowell Street from Bourbon Street to Route 1 is located in EJA Income. This project is going to provide ideal connections to these EJA communities to access Lt. Ross Park other trail networks shops retail stores family entertainment restaurants and the High School

- Project exists within or adjacent to a 2010 Census - Environmental Justice Population.

2. **Title VI:** If the project is located in, or within a ¼ mile of, a Title VI area, please identify any elements of the project designed to have a positive impact on the community through public outreach. Identify any improvements that involve community planning and equitable sharing of benefits/burden or are particularly targeted within a Title VI community.

The Environmental Justice EJ area noted in F1 above follows Lowell Street which is within the Independence Greenway Over Route 1 will be located by connecting the the Lowell Street trailhead and Peabody Road trailhead close to the EJ Area a greater number of people can gain access to the trail and use it for either recreation or travel to destinations where goods and services may be obtained

3. **Regional Equity:** Please note the last project the proponent initiated seeking Federal Transportation Funds, along with the year initiated (other than this project). If any projects have been constructed using Federal Transportation Funds in the last 5 years, please identify along with the year completed. If this project is located in a rural area, discuss the importance of this project to the community or region.

The City has applied for two Massachusetts Recreational Trail Program RTP funding grants for the Independence Greenway Extension Project in early 2018 and South Peabody Trail Project. An RTP grant was issued in 2018 for the Independence Greenway Extension project for design purposes and the grant deadline was June 30 2019. An RTP grant was awarded in 2017 for work on the South Peabody Trail Project which

was completed in late 2017. The City was approved by the Boston MPO for MassDOT Transportation Improvement Program TIP Construction funding in the amount of 22M for Federal Fiscal Year 2024

G. Policy Support

1. Risk Assessment and Appropriateness: Discuss any other alternatives considered, and how the chosen concept is the most appropriate solution to the projects needs and potential risks in comparison to other alternatives, if any. Identify whether the project involves any innovative or non-traditional design or construction techniques intended to improve safety, reduce costs, improve customer service, reduce environmental or climate impacts, expedite project completion, or enhance the statewide or national transportation system.

Several route options were evaluated including an at-grade crossing of Route 1 NB/SB, at-grade and pedestrian bridge crossing of Lowell Street at the existing Border to Boston trail as well as various on-road options along Lowell Street to connect the 215 Newbury Street property to Bourbon Street. The selected option (Refer to attached plans) includes use of the existing Route 1 NB to I-95 connection toe of slope to connect the abandoned railbed to Lowell Street and a protected bike path along the south side of Lowell Street to provide a safe connection from Bourbon Street to 215 Newbury Street. Careful consideration of the existing power lines over Route 1 with assistance from the utility owners to confirm feasibility of spanning over Route 1 with a pedestrian bridge. Coordination with MassDOT was instrumental in determining feasibility and best practical solution to span over Route 1 utilizing a two-span structure.

2. Statewide Policies and Plans: If the project concept or location is mentioned or supported by any other MassDOT policy or plan not noted elsewhere, please describe. If the project is supported by any other state entities, please describe level of support. Examples of other state entities may be DCR, MBTA, RTA, etc. Statewide Plans may include, but are not limited to, the following: Bicycle, Freight, Pedestrian, Port, Rail or ITS.

3. Regional Policy: Describe how the project meets regional policies or performance measures supported by a regional entity such as a Regional Planning Agency. Reference any regional studies or plans that include the project location. Identify efforts to coordinate with relevant government agencies, including RTA(s), DCR, regulatory agencies, or neighboring municipalities.

This project is in line with the MPO as it provides a vital connection of two major bicycle networks.

4. Local Policy: Describe how the project meets local policies. Reference any local studies or plans that reference the project or location. (Examples of local policies or plans may include the Master Plan, community compacts, livability plans, health assessments, local ordinances, bylaws, a designated Green Community, a Complete Streets Policy, etc.)

The project meets the City's Complete Streets Policy to provide a safe and accessible network for all types of users that not only connects neighborhoods to two regional trails but provides access to local commercial and retail businesses. The project also contributes to the City's initiative to promote healthy living and environmental sustainability.

5. Planning and Public Outreach and Support: Describe any Public Outreach that has occurred. Include any public informational meetings, local mailings, workshops, planning documents, etc., where the proposed improvements were specifically presented to abutters, businesses and/or the general public. Please note any local support or opposition to the project, including any local advocacy groups.

The project was presented to several abutters through direct meetings on site including the residents of Clark Street (who abut the abandoned railbed from Peabody Road to the I-95 NB off-ramp), the owner of the 215 Newbury Street property (i.e. granted the 20' wide access easement) and the owners of the Bonkers property located at 535 Lowell Street.

Thank you for completing this form. Upon clicking “Submit for Acceptance”, this form will be sent to the Regional MPO/RPA and the MassDOT Highway Division District office.