

July 23, 2025

ADDENDUM No. 1

To Prospective Bidders and Others On:

LEE, LENOX AND PITTSFIELD

MassDOT Berkshire Line Civil Improvements

Transmitting revisions to the contract documents as follows:

RESPONSE TO BIDDERS' QUESTIONS	4 Pages
DOCUMENT A00801	Pages 17, 21, 107 and 108; Edits are in red.
2018 CULVERT INSPECTION REPORTS	30 Pages

Please take note of the above, substitute the revised pages, documents and plan sheets for the originals. Delete documents indicated add new documents and acknowledge Addendum No.1 in your Expedite Proposal file before submitting your bid.

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1. Drawing number K-601 shows 1,238 LF of ballast replacement required between stations 1489+00 and 1501+60. The Price Proposal document B00420 includes a Ballast Cleaning item (ref 492.10.1) with a much lesser quantity of 400 LF. Please clarify.

Response: Ballast Replacement only occurs at locations determined in the field where it is necessary within the station range of 1489+00 and 1501+60. The intention is to only replace fouled ballast in spot locations.

2. Please confirm

- a. Furnishing of ballast is incidental to (i) each of the culvert construction/reconstruction bid items, (ii) ballast cleaning, and (iii) trackbed stabilization

Response: Furnishing of ballast is incidental to each of the culvert construction/reconstruction bid items and (ii) ballast cleaning. Furnish Ballast is not incidental to (iii) trackbed stabilization.

- b. the separate bid item for 'furnish ballast' relates specifically to (i) track construction at bridge locations and (ii) surfacing & track raising outside of bridge and culvert locations.

Response: Furnish Ballast specifies the requirements for furnishing, testing, and procurement of ballast to be used on any item.

3. In the Special Provisions under, Holiday & Weather Work Restrictions, it states tie replacement in CWR track is restricted between November 15 and March 15. Does that include all track work associated with the culvert replacements and bridge work?

Response: No track work that may disturb the CWR is to occur between the dates listed.

4. According to the Geotechnical Recommendations from HDR, found in the Appendix of the specifications, section 1.4.1 Proposed Construction for Bridge 76.23 states the scope of work includes installation of reinforced concrete breastwalls at the abutments with tieback anchors. According to the contract drawings there is no mention of either breastwall or tieback installation for bridge MP 76.23. Please confirm that scope of work for the Bridge located at MP 76.23.

Response: As shown on the plans, installation of breastwalls and tiebacks at the abutments of Bridge MP 76.23 are not in scope of work.

5. Section titled Disposal of Excess Material on Contract Specification Section A00801-10 notes that all excess soils are to be disposed of off-site. Contract Dwg CT-101 Note 10 notes that all excess soil material is to be disposed of on site, within RR ROW. Item 492.11.3 indicates that all excess soils will be disposed of within RR ROW. Please confirm where excess soil will be disposed of, as spot ditching locations combined with Item 140 will generate significant excess fill.

Response: all excess soil material is to be disposed of on site, within RR ROW. As indicated under Item 492.11.3, disposal areas may be located up to 10 miles from the excavation areas.

6. Bid Item 140 Bridge Excavation notes that excavated material from the Bridges 74.17, 76.23, and 85.32 will be spread in RR ROW at location to be determined by HRRC. Please provide MP locations for soil disposal areas along the RR ROW.

Response: MP locations will be determined during construction by Housatonic Railroad. As indicated under Item 492.11.3, disposal areas may be located up to 10 miles from the excavation areas.

7. Section 114 notes that the contractor is responsible for obtaining all utility relocation permits. Please provide a list of utility permits that you anticipate the need for, and verify who is responsible for the cost of any relocations?

Response: We don't anticipate relocation of existing utilities needed for demolition activities at Br. 74.17, Br. 76.23 and Br. 85.32. But the Contractor shall do their due diligence to confirm. The cost for utility relocation will be paid under the allowance Item 493.1 or by others.

8. Contract specifications indicate that there will be multiple round the clock weekend outages, but specification section titled Work Schedule, Section A00801-16 notes that the contractor must comply with local noise ordinances and that work hours are from 6 AM to 7 PM. Please provide copies of applicable noise ordinances and advise what work hours are allowed during weekend outages.

Response: The applicable noise ordinances can be found on the municipalities' website. The Contractor shall work with municipalities and notify adjacent properties for work that need to be performed around the clock.

9. Section 850.41 notes that MASS DOT will not be responsible for delays associated with HRRC Flagger Service. Would MASSDOT consider establishing an allowance for delays and costs associated with railroad flagging service, as there is no way for the contractor to identify this cost?

Response: There will be weekly coordination meetings with Housatonic Railroad, MassDOT and Designers. The Contractor will provide an updated three-weeks-look-ahead schedule to discuss their needs for flagger in each meeting and obtain confirmation from Housatonic Railroad for the flagger availability of the coming weeks. Contractor must coordinate work windows with Housatonic Railroad daily as needed.

10. During the pre-bid site walk, we were not able to visibly inspect/see all of the culverts that are identified to be cleaned in the contract plans. Can you provide a list of the sizes (length/diameter) of all culverts that are scheduled to be cleaned under this contract?

Response: see existing culvert information included in this addendum. The inspections were performed in 2018 and reports don't reflect the current condition of culverts.

11. Is a Licensed Site Professional (LSP) required for the excavation of the in-situ material on this project?

Response: A Licensed Site Professional (LSP) is not required for the excavation of the in-situ material on this project.

12. Contract Drawing CT-203 seems to indicate that the proposed 36" Steel Pipe at 74.30 has a wall thickness of 1" (stated OD 36", ID 35"). The table on drawing CT-301 calls for a wall thickness of 0.500" at this same location. Please confirm the wall thickness for this 36" steel pipe.

Response: OD 36" -0.5" x2 = ID 35"; therefore, the wall thickness is 0.5".

13. The table on Contract Drawing CT-301 does not contain information for the double steel pipe crossing at MP 73.23 and 73.24. Please provide information for this location, specifically wall thickness of the proposed pipe.

Response: The existing Culvert at MP 73.23 will be abandoned and filled. A double pipe crossing will be at MP 73.24. Information for the double pipe crossing is shown on Sheets CT-202, 302 & 402. Wall thicknesses for proposed pipes are shown on Sheet CT-202.

14. Contract Drawing CT-203 makes reference to "Appendix E of the Special Provisions" which contains inspection reports. Current special provisions do not contain this information. Can this information be provided?

Response: Culvert inspection reports are included in this addendum. The inspections were performed in 2018 and reports don't reflect current condition of culverts.

15. Drawing **S-310 Note 8**, refers to an outdated **Category III** designation for major steel bridges. AISC has updated its Fabricator Certification Program, replacing the former Category I, II, and III classifications with the current **SBR, IBR, and ABR** categories. Under the revised system, **Certified Bridge Fabricator – Intermediate (IBR)** includes typical bridge types such as:

- Rolled beam bridges with or without splices (radius > 500 ft),
- Built-up I-shaped plate girder bridges with constant or variable web depth (including haunched), either straight or with a radius > 500–1000 ft,
- Trusses ≤ 200 ft that are pre-assembled at the certified facility.

Could you please confirm whether a fabricator with **IBR certification** is considered qualified to bid and perform fabrication for this project?

Response: A fabricator with ABR certification is required to bid and perform fabrication for this project.

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run on Sunday. A total of fifteen extended weekend closures from mid-night **Thursday** to noon of **Sunday** will be provided for construction at locations for culvert replacement, Bridge 74.14, Bridge 76.23, Br. 77.28, Bridge 85.32 and Br, 85.52. The contractor shall coordinate with HRRC to schedule the weekend closures. The track must be restored for operation by the Contractor at the end of each work window. The train will be advanced to just south of the work area and hold until workers clear each day. However, this schedule is also subject to change due to factors outside HRRC control including customer demands, interchange partners, other construction projects and weather. The contractor shall provide their monthly construction schedule and daily work hours to HRRC two weeks in advance and with weekly updates. HRRC, to the best of its knowledge, will notify the Contractor of any changes in schedule one week in advance.

HRRC is engaged in the business of providing freight rail transportation services in Western Massachusetts. HRRC will endeavor to operate its train service to provide track occupancy periods as long as practicable to facilitate efficient construction of the work.

No work will be permitted by the contractor without the HRRC EIC (Employee in Charge) being present. Each workday will begin with the required Job Briefing which will be given by the HRRC EIC.

Frequent and ongoing communication between the Contractor, the Engineer, and HRRC representatives is highly encouraged to enable efficient coordination of work activities and train service.

The Railroad determination of work schedules will take precedence over all other planning and scheduling efforts. The protection of trains, overall safe operations, and the protection of workmen and railroad personnel are paramount objectives in prosecuting the Work.

SUBSECTION 8.02: SCHEDULE OF OPERATIONS

Replace this subsection with the following:

An integrated cost and schedule controls program shall be implemented by the Contractor to track and document the progress of the Work from Notice to Proceed (NTP) through the Contractor Field Completion (CFC) Milestone. The Contractor's schedules will be used by the Engineer to monitor project progress, plan the level-of-effort required by the Department's work force and consultants and as a critical decision-making tool. Accordingly, the Contractor shall ensure that it complies fully with the requirements specified herein and that its schedules are both accurate and updated as required by the specification throughout the life of the project. Detailed requirements are provided in Division II, Section 722 Construction Scheduling.

CONTRACTUAL MILESTONES AND DURATIONS:

Contractual Milestones:

This Contract contains the following Contractual Milestones that are to be included in the Contractor's Baseline Contract Progress Schedule submission. The Contractor shall identify the completion of the work pertaining to each Contractual Milestone through the inclusion of a Finish Milestone and hammock activities in the accepted baseline Contract Progress Schedule using the stated description.

3. President's Day (Federal Holiday)
4. Patriot's Day (State Holiday)
5. Memorial Day (Federal Holiday)
6. Juneteenth (Federal Holiday)
7. Independence Day (Federal Holiday)
8. Labor Day (Federal Holiday)
9. Columbus Day (Federal Holiday)
10. Veterans' Day (Federal Holiday)
11. Thanksgiving Day (Federal Holiday)
12. Christmas Day (Federal Holiday)

1 All track work in CWR track is restricted between November 15 and March 15.

ROADWAY WORKER PROTECTION FOR RAILROAD CONTRACTORS

HRRC strictly adheres to the practice of operating a safe railroad and mandates that all Contractors and their Subcontractors, their Officers, employees, agents and all personnel employed or engaged by them in the performance of the Work or activity while on or adjacent to Railroad property operate and perform all activities in a safe manner and in strict accordance with HRRC On-Track Safety Manual and all Provisions of 49 CFR Parts 214, 219 and 243, as promulgated by the Federal Railroad Administration (FRA). See ITEM 180.1 HEALTH AND SAFETY PLAN for additional information on 49 CFR Parts 219 and 243.

All employees, agents and any personnel employed by and or engaged by the Contractor or his Subcontractors shall attend Roadway Worker Protection (RWP) training conducted by the HRRC, prior to entry upon Railroad property. RWP training provided online by the HRRC shall be completed prior to initiation of work activities and at other times to accommodate the project schedules. The training will be conducted in English. If the Contractor has employees who may not be able to adequately understand the content of the training in English, then the Contractor will be responsible to provide the appropriate translation to ensure that their employees are in compliance with FRA requirements.

Personal Protective Equipment (PPE) requirements are specified in the FRA Regulations and the Housatonic Railroad On-Track Safety Manual. The manual is included in the bid documents. Wearing and use of PPE shall be mandatory and strictly enforced. Failure to adhere to the PPE requirements may be grounds for removal of an individual from Railroad property and prohibition from work. Continual disregard for safety and failure to obey and adhere to safety directives of the Railroad shall be cause for termination of the Contract.

ROADWAY WORKER PROTECTION AND CWR TRAINING AND QUALIFICATION

1. HRRC RWP training is provided online through the RailPros website. All employees, agents and personnel employed by and or engaged by the Contractor or his Subcontractors working on the Project are required to successfully complete RWP training and to have their training and qualification card on their person while on site. All costs for training are the responsibility of the Contractor.
2. Housatonic CWR – Installation, Adjustment, Maintenance and Inspection of Continuous Welded Rail is provided online through the RailPros website. See ITEM 492.12.1

ITEM 492.15**TRACKBED STABILIZATION****LINEAR FOOT****GENERAL**

This section specifies furnishing and installing geocell materials for reinforcement within the subballast or subgrade of the trackbed at proposed track stabilization locations indicated on the Drawings and/or as directed by MassDOT.

SUBMITTALS

1. Name and contact information for the material manufacturer and supplier and the manufacturer's catalog cuts and material specifications.
2. Qualifications of crew installing geogrid material.
3. Manufacturer's certificate attesting to the shipped material's compliance with minimum values for material properties.
4. A construction sequence for geocell installation consistent with manufacturer's instructions.

PRODUCTS**GEOCELL FOR RAILROAD TRACK BED STABILIZATION**

1. Geocell shall meet the requirements of AREMA Chapter 1, Section 10.5 "Geocell System Guidelines for Railroad Use", Section 10.5.2 "Material Requirements".
2. In particular, geocell cellular confinement sections shall have the minimum chemical and physical property values as stipulated in AREMA Table 1-10-13, Chapter 1, Section 10.5.2.1 "Geocell Sections".

INFILL

1. Infill material shall be in compliance with AREMA Chapter 1, Section 10.5 "Geocell System Guidelines for Railroad Use", Section 10.5.2.2 "Infill Material".

MATERIALS FURNISHED BY THE CONTRACTOR**1**

1. **Ballast furnished by ITEM 458.6.1 FURNISH BALLAST.**

EXECUTION

1. Installation of geocell materials shall be in compliance with AREMA Chapter 1, Section 10.5 "Geocell System Guidelines for Railroad Use", Section 10.5.5.5 "Construction Details and Methods" and in accordance with manufacturer's instructions.
2. Install the geotextile separation layer in accordance with the requirements of ITEM 492.14 GEOTEXTILE MATERIALS.
3. The work shall be performed in accordance with the contract drawings, ITEM 492.11.1 TRACK RECONSTRUCTION, with relevant requirements under MassDOT MW-1, and ~~Items 458.6.1 FURNISH BALLAST & ITEM 492.8.1 SURFACE AND~~

1

ALIGN BALLASTED TRACK. The existing top rail elevations and track alignment should be maintained after trackbed stabilization installation. The track work is incidental to trackbed stabilization replacement.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

The Contractor shall provide all necessary labor, equipment and materials to be incorporated into the work as indicated in the Contract Drawings and in these Special Provisions.

Work under ITEM 492.15 TRACKBED STABILIZATION shall be measured and paid at the contract unit price per LINEAR FOOT under ITEM 492.15 TRACKBED STABILIZATION.



2018 CULVERT INSPECTION REPORTS

MassDOT Rail and Transit
Berkshire Line Culvert Inspection
Culvert No. 72.84

Team Leader: KCK Date: 6/5/2018
Inspector: CLJ Date: 6/5/2018
PM: JQW Date: 6/5/2018
Page: 1 of 2

Line:	Berkshire Line	City/Town:	Lee	Culvert No.:	72.83
Location:	M.P. 72.83	Type of Culvert:	Cast Iron	Size/Dia.:	24" Dia., 1" Thick
Over:	Stream	No. of Spans:	1	Total Length:	37.5'
Latitude:	42.2769965	No. of Tracks:	1	Year Built:	Unknown
Longitude:	-73.2618460	Flow Direction:	West to East	Insp. Date:	6/5/2018

PHOTOGRAPHS:

ITEM	GENERAL	RATING: 6	REMARKS	PHOTO #
1	Action Under Trains	H	Not observed. Train traffic not present during the inspection.	
2	Embankment	7	Stable.	
3	Track Over Culvert	6	No dips, similar to adjacent track.	1
ITEM	STREAM CONDITIONS	RATING: 7	REMARKS	PHOTO #
4	Alignment - West	7	No signs of migration. RCP pipe from siding track embankment just upstream.	2
5	Alignment - East	7	No signs of migration. Stream is perpendicular to railroad. Flows into marsh.	5
6	Channel - East	7	Stream bank has slight erosion. See Note 2.	5
7	Channel - West	7	24" RCP pipe from siding. See Note 3.	3
8	Stream Bed	7	Gravel and sand with moderate flow.	7
9	Channel Protection	N		
10	Drift/Debris	7	4" sediment at bottom of pipe. Slight stream blockage at east end.	6
11	Scour	7	None present.	
ITEM	CULVERT STRUCTURE	RATING: 6	REMARKS	PHOTO #
12	Abutment (N or E)	N		
13	Abutment (S or W)	N		
14	Head Walls - West	5	Loose and missing mortar. See Note 3.	3 & 8
15	Head Walls - East	5	See Note 4.	4
16	Wingwalls	N		
17	Ceiling Slab	N		
18	Invert Slab	N		
19	Walls	N		
20	Arch Ring	N		
21	Pointing	N		
22	Pipes/Circular Culverts	7	Slight surface rusting.	6
23	Apron	N		

OVERAL CONDITION RATING: 6

CRITICAL FINDINGS: None.

FOR IMMEDIATE ATTENTION: None.

MAINTENANCE: Reset displaced stone in West Headwall.

NBI Condition Ratings: 9:Excellent, 8:Very Good, 7:Good, 6:Satisfactory, 5:Fair, 4:Poor, 3:Serious, 2:Critical, 1:"Imminent" Failure, 0:Failed, H:Hidden, N:Not Applicable, X:Unknown



Photo 1

Description: From South Approach, Looking North.

Comment:



Photo 2

Description: Looking Upstream (west)

Comment: Culvert pipe for siding, just upstream.



Photo 3

Description: West Elevation

Comment: Displaced block from headwall in stream.



Photo 4

Description: East Elevation

Comment: Cracked block, See Note 4.



Photo 5

Description: Looking Downstream (east)

Comment: Slight erosion.



Photo 6

Description: Typical Culvert Interior

Comment: Slight surface rusting.



MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 72.84

Team Leader: KCK Date: 6/5/2018
 Inspector: CLJ Date: 6/5/2018
 PM: JQW Date: 6/5/2018
 Page: 2 of 2

Line:	<u>Berkshire Line</u>	City/Town:	<u>Lee</u>	Culvert No.:	<u>72.83</u>
Location:	<u>M.P. 72.83</u>	Type of Culvert:	<u>Cast Iron</u>	Size/Dia.:	<u>24" Dia., 1" Thick</u>
Over:	<u>Stream</u>	No. of Spans:	<u>1</u>	Total Length:	<u>37.5'</u>
Latitude:	<u>42.2769965</u>	No. of Tracks:	<u>1</u>	Year Built:	<u>Unknown</u>
Longitude:	<u>-73.2618460</u>	Flow Direction:	<u>West to East</u>	Insp. Date:	<u>6/5/2018</u>

NOTES:

- 1) Culvert Cover: 7' from Top of Culvert to Top of Rail.
- 2) Minor stream bank erosion on both banks on the East side.
- 3) Stone from N.W. corner has fallen into stream slightly restricting flow. See Photo 8.
- 4) Cracked block at south half of east headwall one course down from cap. Stone displaced at mud line 6" from East headwall. See Photo 4.

ADDITIONAL PHOTOGRAPHS:



Photo 7

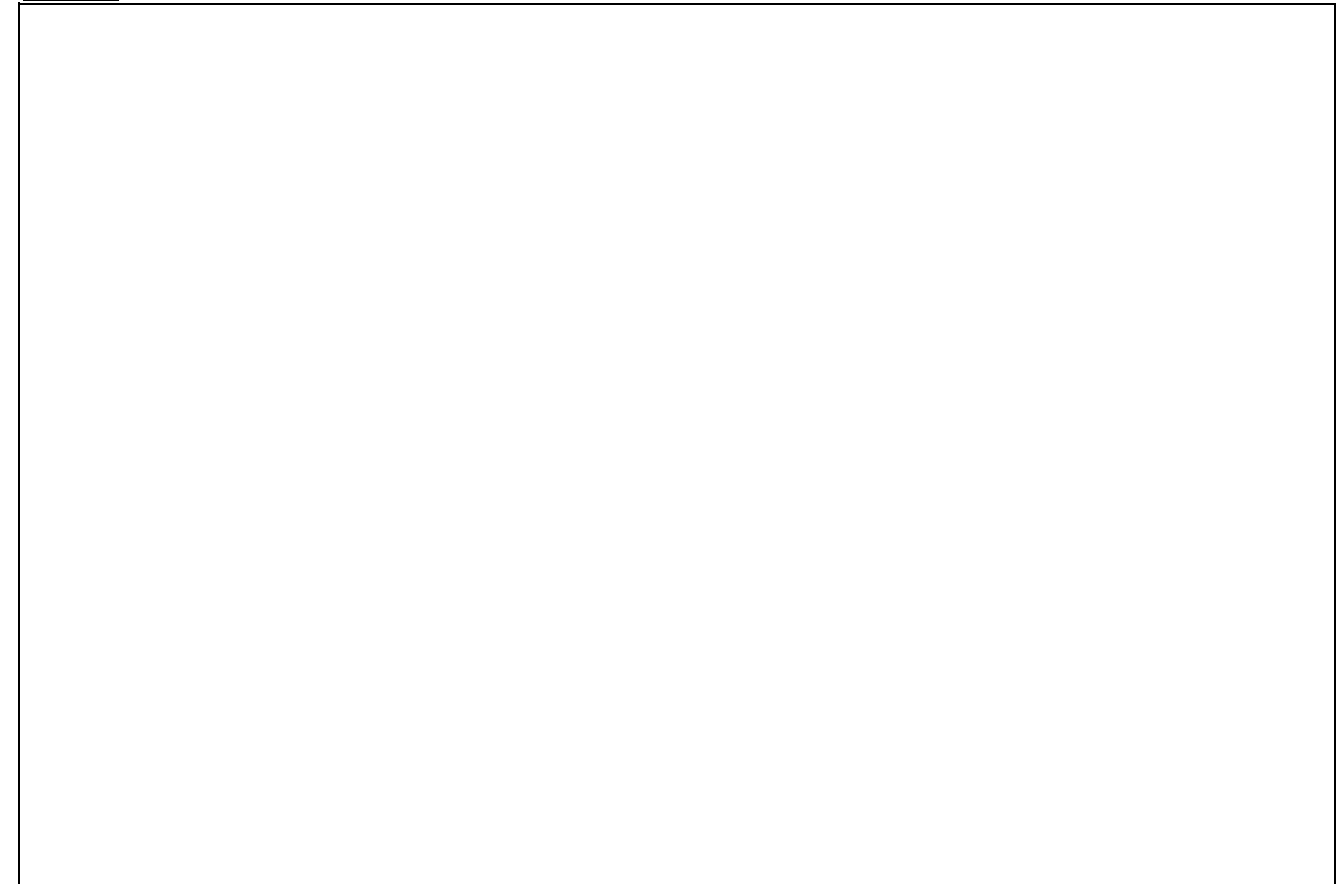
Description: East Stream Bed and Channel.
 Comment: Minor drift. Slight stream bank erosion.



Photo 8

Description: West Headwall
 Comment: Dislodged masonry block.

SKETCHES:





MassDOT Rail and Transit
Berkshire Line Culvert Inspection
Culvert No. 73.23

Team Leader: KCK Date: 6/5/2018
Inspector: CLJ Date: 6/5/2018
PM: JQW Date: 6/5/2018
Page: 1 of 2

Line: Berkshire Line City/Town: Lee Culvert No.: 73.24
Location: M.P. 73.24 Type of Culvert: Cast Iron Size/Dia.: 30" Dia.
Over: Stream and drainage No. of Spans: 1 Total Length: 26'
Latitude: 42.2772862 No. of Tracks: 1 Year Built: Unknown
Longitude: -73.2539569 Flow Direction: West to East Insp. Date: 6/5/2018

PHOTOGRAPHS:

ITEM	GENERAL	RATING: 4	REMARKS	PHOTO #
1	Action Under Trains	H	Not observed. Trains not present during inspection.	
2	Embankment	4	Loss of ballast into culvert. Moderate erosion on east slope.	
3	Track Over Culvert	4	Track profile dip over culvert, ballast slipping down east slope.	1
ITEM	STREAM CONDITIONS	RATING: 5	REMARKS	PHOTO #
4	Alignment - West	7	Stream aligned perpendicular to track.	
5	Alignment - East	7	Stream aligned perpendicular to track.	
6	Channel - East	5	Degradation/local scour hole 6' east of downstream end, 24" deeper than stream bank.	8
7	Channel - West	5	Slight restriction of flow due to downed tree inside culvert.	4
8	Stream Bed	5	See Items 6,7 and 11.	7,8
9	Channel Protection	N	None present.	
10	Drift/Debris	6	6" diameter tree at west end of the pipe.	4
11	Scour	5	Scour is present beneath the east end of the pipe.	7
ITEM	CULVERT STRUCTURE	RATING: 4	REMARKS	PHOTO #
12	Abutment (N or E)	N		
13	Abutment (S or W)	N		
14	Head Walls - West	5	Masonry block at upper, south corner is displaced by 7". See Note 3.	2 & 6
15	Head Walls - East	N	No east headwall present.	
16	Wingwalls	N		
17	Ceiling Slab	N		
18	Invert Slab	N		
19	Walls	N		
20	Arch Ring	N		
21	Pointing	5	Loose/missing mortar present on west headwall.	
22	Pipes/Circular Culverts	4	See Notes 2 & 6. Pipe joint open, 16" L, ballast spilling into culvert.	4, 5 & 7
23	Apron	N		

OVERAL CONDITION RATING: 4

CRITICAL FINDINGS: None

FOR IMMEDIATE ATTENTION: Repair open joints before. Protect east end of culvert from scour, consider installing headwall.

MAINTENANCE: Fill scour hole and undermining with stone and rip rap. Clear pipe. Repair rail profile dip. Perform track maintenance.

NBI Condition Ratings: 9:Excellent, 8:Very Good, 7:Good, 6:Satisfactory, 5:Fair, 4:Poor, 3:Serious, 2:Critical, 1:"Imminent" Failure, 0:Failed, H:Hidden, N:Not Applicable, X:Unknown



Photo 1

Description: From North Approach, Looking North

Comment:



Photo 2

Description: West Elevation

Comment:



Photo 3

Description: East Elevation

Comment: Scour present underneath pipe.



Photo 4

Description: Typical Culvert Interior

Comment: 6" dia. log within culvert.

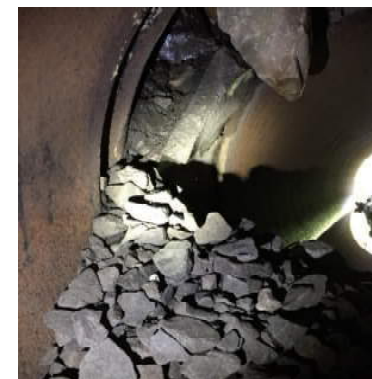


Photo 5

Description: Pipe Interior

Comment: Open Pipe Joint. Ballast lost into culvert.



Photo 6

Description: West Headwall

Comment: Vertical crack. Masonry block displaced by 7".



MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 73.23

Team Leader: KCK Date: 6/5/2018
 Inspector: CLJ Date: 6/5/2018
 PM: JQW Date: 6/5/2018
 Page: 2 of 2

Line:	<u>Berkshire Line</u>	City/Town:	<u>Lee</u>	Culvert No.:	<u>73.24</u>
Location:	<u>M.P. 73.24</u>	Type of Culvert:	<u>Cast Iron</u>	Size/Dia.:	<u>30" Dia.</u>
Over:	<u>Stream and drainage</u>	No. of Spans:	<u>1</u>	Total Length:	<u>26'</u>
Latitude:	<u>42.2772862</u>	No. of Tracks:	<u>1</u>	Year Built:	<u>Unknown</u>
Longitude:	<u>-73.2539569</u>	Flow Direction:	<u>West to East</u>	Insp. Date:	<u>6/5/2018</u>

NOTES:

1) Culvert Cover: 49" from Top of Culvert to Top of Rail.

2) Undermining at east end of pipe 24" long, along pipe. See Photo 7.

3) West headwall has a vertical crack starting at the 2 o'clock position on pipe. See Photo 6.

4) Fallen trees and branches slightly restrict flow on west channel.

5) Culvert pipe wall is 1" thick.

6) Minor surface rusting present inside culvert.

ADDITIONAL PHOTOGRAPHS:



Photo 7

Description: East Culvert Pipe End

Comment: Undermining of pipe (east end).



Photo 8

Description: East Channel

Comment: Degradation and local scour present.

SKETCHES:



MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 73.24

Team Leader: KCK Date: 6/5/2018
 Inspector: CLJ Date: 6/5/2018
 PM: JQW Date: 6/5/2018
 Page: 1 of 2

Line: Berkshire Line City/Town: Lee Culvert No.: 73.23
 Location: M.P. 73.23 Type of Culvert: Stone Box Size/Dia.: 30" W x 34" H
 Over: Stream No. of Spans: 1 Total Length: 24'
 Latitude: 42.277262 No. of Tracks: 1 Year Built: Unknown
 Longitude: -73.2540196 Flow Direction: West to East Insp. Date: 6/5/2018

PHOTOGRAPHS:

ITEM	GENERAL	RATING: 4	REMARKS	PHOTO #
1	Action Under Trains	H	Not observed. Trains not present during inspection.	
2	Embankment	5	Low ballast around ties over culvert. Possible due to settlement, loss of fill.	1 & 5
3	Track Over Culvert	4	Track dips over culvert and joint. Low ballast beneath joint.	5
ITEM	STREAM CONDITIONS	RATING: 5	REMARKS	PHOTO #
4	Alignment - West	6	Stream bends 45 degrees to the N.W.	
5	Alignment - East	7		
6	Channel - East	5	Moderate erosion of banks.	
7	Channel - West	5	Channel erosion and vegetation restricting channel. See Note 5.	6
8	Stream Bed	5	9" estimated degradation of stream bed.	
9	Channel Protection	N	None present.	
10	Drift/Debris	5	Drift and tree trunk restrict flow downstream.	
11	Scour	5	East side has scour present around headwall.	3
ITEM	CULVERT STRUCTURE	RATING: 4	REMARKS	PHOTO #
12	Abutment (N or E)	N		
13	Abutment (S or W)	N		
14	Head Walls - West	5		
15	Head Walls - East	5	Minor settlement and stone displacement. Scour without undermining.	2
16	Wingwalls	N		
17	Ceiling Slab	4	See Notes 2, 4 & 6.	7 & 8
18	Invert Slab	N		
19	Walls	4	See Notes 3 & 4.	7 & 8
20	Arch Ring	N		
21	Pointing	N		
22	Pipes/Circular Culverts	N		
23	Apron	N		

OVERALL CONDITION RATING: 4

CRITICAL FINDINGS: None

FOR IMMEDIATE ATTENTION: Consider replacement or culvert lining. Correct track defects.

MAINTENANCE: Protect embankment and track from erosion and culvert from scour. Clear debris. Track Maintenance.

NBI Condition Ratings: 9:Excellent, 8:Very Good, 7:Good, 6:Satisfactory, 5:Fair, 4:Poor, 3:Serious, 2:Critical, 1:"Imminent" Failure, 0:Failed, H:Hidden, N:Not Applicable, X:Unknown



Photo 1

Description: From North Approach, Looking South

Comment:



Photo 2

Description: East Elevation

Comment: Minor settlement and displacement.



Photo 3

Description: East Stream Bed

Comment: Minor scour, without undermining at corner.



Photo 4

Description: West Elevation

Comment: Vegetation restricting stream.



Photo 5

Description: Track over Culvert

Comment: Track dips over culvert. Low ballast under joint.



Photo 6

Description: West Stream Bed

Comment: Moderate erosion. Bank slumping.



Culvert No. 73.24

Line:	<u>Berkshire Line</u>	City/Town:	<u>Lee</u>	Culvert No.:	<u>73.23</u>
Location:	<u>M.P. 73.23</u>	Type of Culvert:	<u>Stone Box</u>	Size/Dia.:	<u>30" W x 34" H</u>
Over:	<u>Stream</u>	No. of Spans:	<u>1</u>	Total Length:	<u>24'</u>
Latitude:	<u>42.277262</u>	No. of Tracks:	<u>1</u>	Year Built:	<u>Unknown</u>
Longitude:	<u>-73.2540196</u>	Flow Direction:	<u>West to East</u>	Insp. Date:	<u>6/5/2018</u>

NOTES:

- 1) Culvert Cover: 36" from Top of Culvert to Top of Rail.
- 2) Ceiling slab has several stones displaced downward approximately 4-6". One stone beneath the tracks has been dislodged.
- 3) Walls have displaced and missing stones, typical along the length of both sides. Most blocks show displacement/rotation or are missing.
- 4) Culvert profile sags under track approximately 4" to 6".
- 5) 27" of erosion along west banks.
- 6) Top stone is 12" thick.

ADDITIONAL PHOTOGRAPHS:



Photo 7

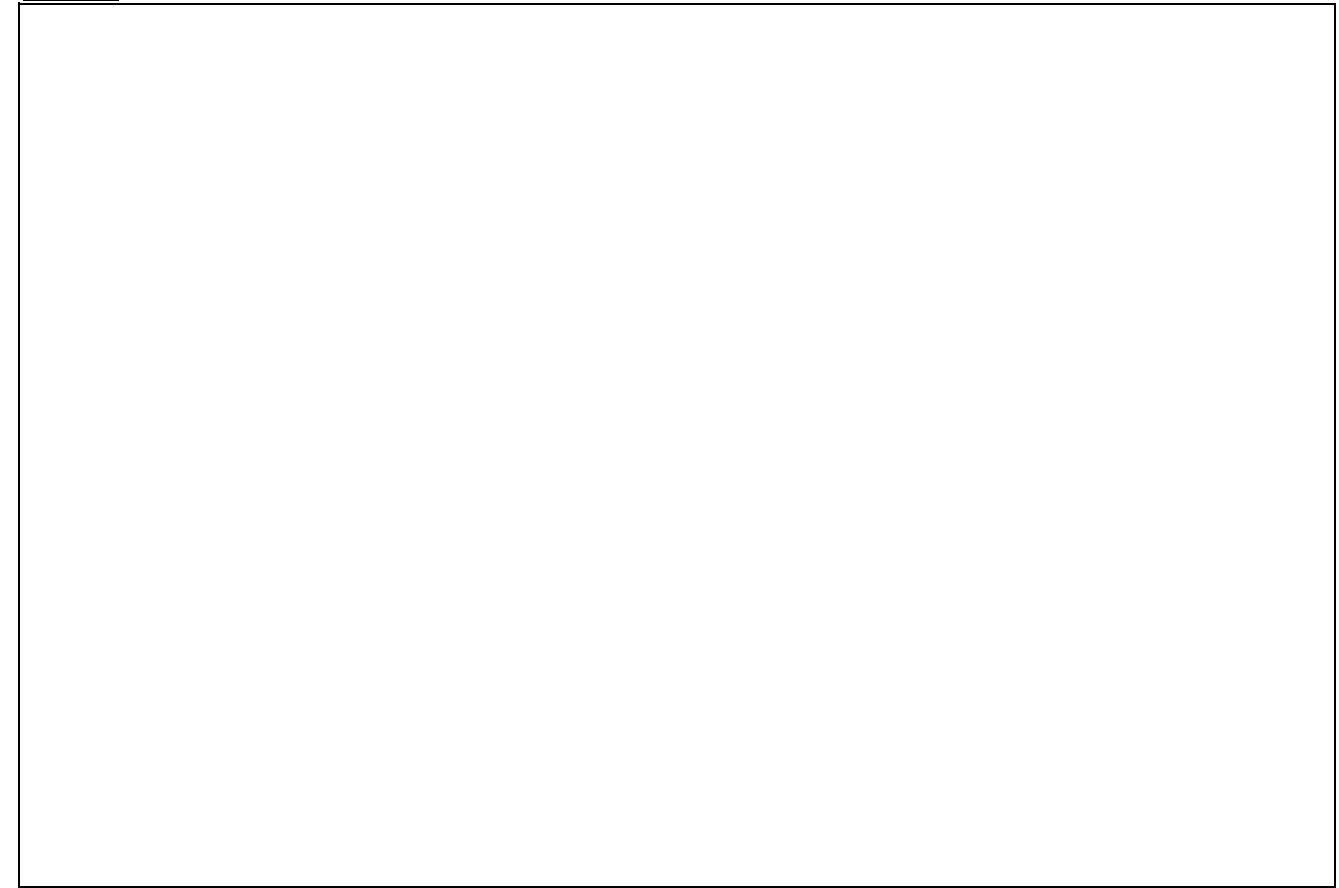
Description: Typical Culvert Interior (from west end)
Comment: Displaced walls and ceiling masonry.



Photo 8

Description: Typical Culvert Interior (from east end)
Comment: Displaced walls and ceiling masonry.

SKETCHES:





MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 74.30

Team Leader: DJM Date: 6/5/2018
 Inspector: RAC Date: 6/5/2018
 PM: JQW Date: 6/5/2018
 Page: 1 of 2

Line: Berkshire Line City/Town: Lee Culvert No.: 74.38
 Location: M.P. 74.38 Type of Culvert: Concrete Size/Dia.: varies
 Over: Drainage No. of Spans: 1 Total Length: 21'
 Latitude: 42.290239 No. of Tracks: 1 Year Built: Unknown
 Longitude: -73.251526 Flow Direction: West to East Insp. Date: 6/5/2018

PHOTOGRAPHS:

ITEM	GENERAL	RATING: X	REMARKS	PHOTO #
1	Action Under Trains	N	Not observed.	
2	Embankment	6	Satisfactory condition.	
3	Track Over Culvert	5	Moderate ballast loss.	4
ITEM	STREAM CONDITIONS	RATING: X	REMARKS	PHOTO #
4	Alignment - West	6	Alignment crosses generally perpendicular under railroad.	
5	Alignment - East	6	Alignment crosses generally perpendicular under railroad.	
6	Channel - East	5	Fair condition.	
7	Channel - West	5	Fair condition.	
8	Stream Bed	5	14" of water, minimal sediment.	1
9	Channel Protection	N	None	
10	Drift/Debris	6	Minimal debris built-up.	
11	Scour	5	Spall with scour on west inflow	
ITEM	CULVERT STRUCTURE	RATING: X	REMARKS	PHOTO #
12	Abutment (N or E)	5	Spall with scour at north abutment. North and south abutments rotated 5 degrees inward	1
13	Abutment (S or W)	5	Missing stone at south abutment. North and south abutments rotated 5 degrees inward.	7
14	Head Walls - West	5	Spall with scour at wingwall	8
15	Head Walls - East	5	Missing stone at northeast wingwall	7
16	Wingwalls	6	Satisfactory condition.	
17	Ceiling Slab	6	Satisfactory condition, rail topped.	
18	Invert Slab	N	None	
19	Walls	5	Rotated backwall at east inflow	5
20	Arch Ring	N	None	
21	Pointing	N	None	
22	Pipes/Circular Culverts	N	None	
23	Apron	N	None	

OVERALL CONDITION RATING: 6 - Satisfactory

CRITICAL FINDINGS:

FOR IMMEDIATE ATTENTION:

MAINTENANCE: Monitor culvert abutment movement, replace missing stone and shore culvert.

NBI Condition Ratings: 9:Excellent, 8:Very Good, 7:Good, 6:Satisfactory, 5:Fair, 4:Poor, 3:Serious, 2:Critical, 1:"Imminent" Failure, 0:Failed, H:Hidden, N:Not Applicable, X:Unknown



Photo 1

Description: North Abutment
 Comment: Scour at bottom of stone



Photo 2

Description: Looking Downstream
 Comment:



Photo 3

Description: Looking Upstream
 Comment:



Photo 4

Description: Track Condition
 Comment: Missing Ballast



Photo 5

Description: Culvert Interior
 Comment: Rotated Backwall at East End



Photo 6

Description: East Elevation
 Comment:



MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 74.30

Team Leader: DJM Date: 6/5/2018
 Inspector: RAC Date: 6/5/2018
 PM: JQW Date: 6/5/2018
 Page: 2 of 2

Line:	Berkshire Line	City/Town:	Lee	Culvert No.:	74.38
Location:	M.P. 74.38	Type of Culvert:	Concrete	Size/Dia.:	varies
Over:	Drainage	No. of Spans:	1	Total Length:	21'
Latitude:	42.290239	No. of Tracks:	1	Year Built:	Unknown
Longitude:	-73.251526	Flow Direction:	West to East	Insp. Date:	6/5/2018

NOTES:

- 1) Culvert Cover: 20" from Top of Culvert to Top of Rail.
- 2) North and south abutments rotated 5 degrees inward (See Sketch)

ADDITIONAL PHOTOGRAPHS:



Photo 7

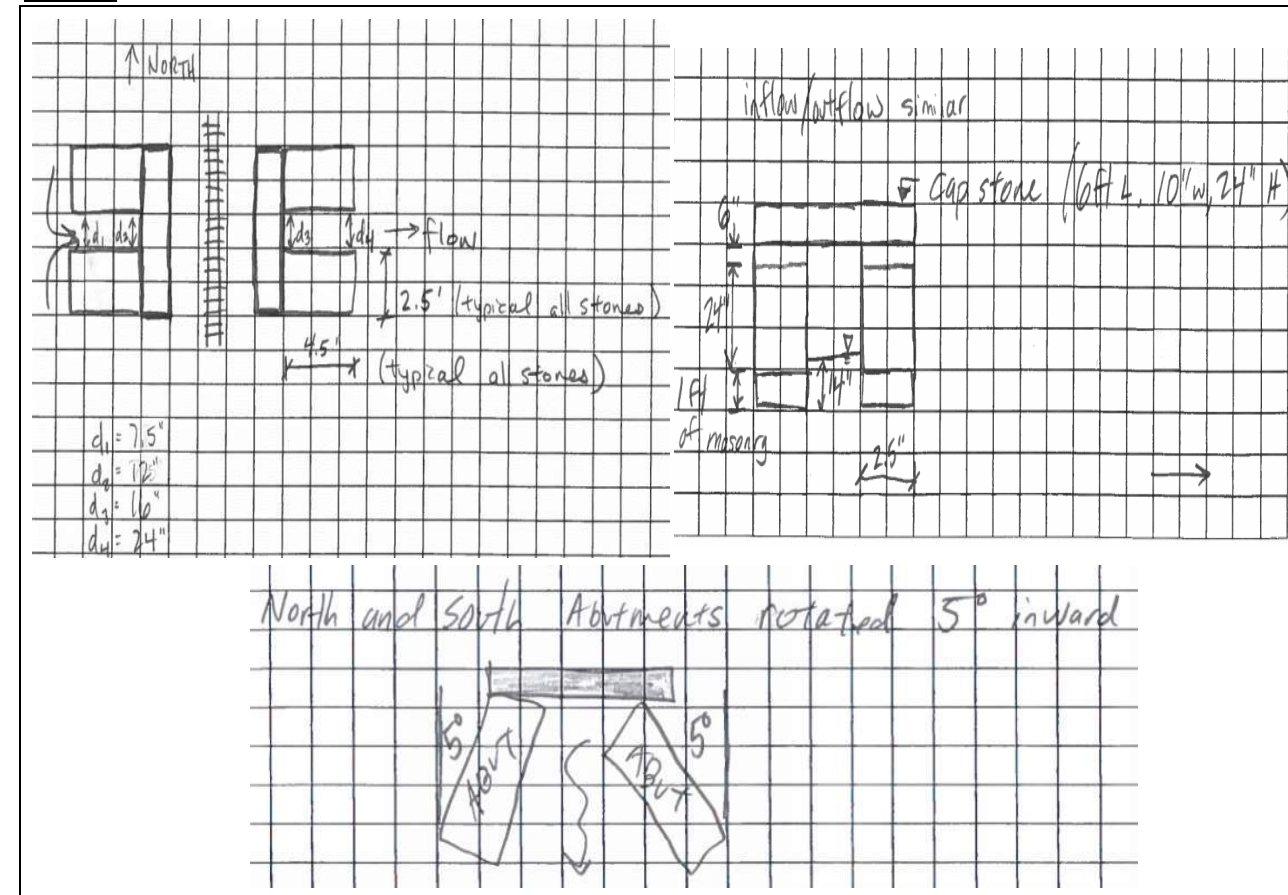
Description: West Inflow
 Comment: Missing Stone at South Abutment



Photo 8

Description: Northeast Wingwall
 Comment: Missing Stone at North Abutment

SKETCHES:





MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 76.05

Team Leader: KCK Date: 6/7/2018
 Inspector: AK Date: 6/7/2018
 PM: JQW Date: 6/7/2018
 Page: 1 of 2

Line: Berkshire Line City/Town: Lee Culvert No.: 76.04
 Location: M.P. 76.04 Type of Culvert: Cor. Pipe Size/Dia.: 12"
 Over: [Redacted] No. of Spans: 1 Total Length: 19.5'
 Latitude: 42.3116695 No. of Tracks: 1 Year Built: _____
 Longitude: -73.2482988 Flow Direction: East to West Insp. Date: 6/7/2018

PHOTOGRAPHS:

ITEM	GENERAL	RATING: X	REMARKS	PHOTO #
1	Action Under Trains			
2	Embankment		Severe erosion around W. culvert end	
3	Track Over Culvert			
ITEM	STREAM CONDITIONS	RATING: X	REMARKS	PHOTO #
4	Alignment - West		Stream perpendicular to RR, flows to Housatonic River	
5	Alignment - East		Drainage ditch parallel to track	3
6	Channel - East		Sandy with light veg.	
7	Channel - West			
8	Stream Bed		Downstream has rip rap with moderate damage	3
9	Channel Protection			
10	Drift/Debris		None	
11	Scour		Loss of embankment around outflow	
ITEM	CULVERT STRUCTURE	RATING: 3	REMARKS	PHOTO #
12	Abutment (N or E)			
13	Abutment (S or W)			
14	Head Walls - West			
15	Head Walls - East			6
16	Wingwalls			
17	Ceiling Slab			
18	Invert Slab			
19	Walls			
20	Arch Ring			
21	Pointing			
22	Pipes/Circular Culverts			
23	Apron			

OVERAL CONDITION RATING:

CRITICAL FINDINGS:

FOR IMMEDIATE ATTENTION:

MAINTENANCE:



Photo 1

Description: From Culvert Look. N.

Comment:



Photo 2

Description: Looking Upstream

Comment:



Photo 3

Description: Looking Downstream

Comment:



Photo 4

Description: West Elevation

Comment:



Photo 5

Description: East Elevation

Comment:



Photo 6

Description: East Headwall

Comment:



MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 76.05

Team Leader: KCK Date: 6/7/2018
 Inspector: AK Date: 6/7/2018
 PM: JQW Date: 6/7/2018
 Page: 2 of 2

Line:	<u>Berkshire Line</u>	City/Town:	<u>Lee</u>	Culvert No.:	<u>76.04</u>
Location:	<u>M.P. 76.04</u>	Type of Culvert:	<u>Cor. Pipe</u>	Size/Dia.:	<u>12"</u>
Over:	<u>0</u>	No. of Spans:	<u>1</u>	Total Length:	<u>19.5'</u>
Latitude:	<u>42.3116695</u>	No. of Tracks:	<u>1</u>	Year Built:	<u></u>
Longitude:	<u>-73.2482988</u>	Flow Direction:	<u>East to West</u>	Insp. Date:	<u>6/7/2018</u>

NOTES:

1) Culvert Cover: 52" from Top of Culvert to Top of Rail.

2) East headwall: spall concrete at embedded steel 3-6" from top F. full length. See Photo 6.

3) Catch basin type structure: accept drainage from ditch and 18" galvanized culvert from under roadway. Steel cover on top is loose, 9 pieces

4) Severe erosion around outtake of pipe, 82" long. Pipe diameter is 12". See photo 7.

5) From 7 o'clock to 5 o'clock position, pipe has corrosion holes along full length. See photo 8.

6) No dip in track, similar to adjacent track.

7) No debris in pipe and no flattening or misalignment.

ADDITIONAL PHOTOGRAPHS:



Photo 7

Description: West Elevation

Comment: Severe erosion around outtake of pipe



Photo 8

Description: Typ. Culvert Interior

Comment: Corrosion holes

SKETCHES:



MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 76.10

Team Leader: KCK Date: 6/7/2018
 Inspector: AK Date: 6/7/2018
 PM: JQW Date: 6/7/2018
 Page: 1 of 2

Line: Berkshire Line City/Town: Lee Culvert No.: 76.07
 Location: M.P. 76.07 Type of Culvert: Clay Pipe Size/Dia.: 12" Dia.
 Over: Drainage No. of Spans: 1 Total Length: 25'-6"
 Latitude: 42.3119776 No. of Tracks: 1 Year Built: _____
 Longitude: -73.2478173 Flow Direction: East to West Insp. Date: 6/7/2018

PHOTOGRAPHS:

ITEM	GENERAL	RATING: X	REMARKS	PHOTO #
1	Action Under Trains			
2	Embankment		Steep with veg.	
3	Track Over Culvert		No dip, similar to adjacent track	7
ITEM	STREAM CONDITIONS	RATING: X	REMARKS	PHOTO #
4	Alignment - West		Perpendicular to railroad, pours down steep embankment	
5	Alignment - East		Drainage ditch parallel to track and road drainage	
6	Channel - East			
7	Channel - West			
8	Stream Bed			
9	Channel Protection			
10	Drift/Debris			
11	Scour			
ITEM	CULVERT STRUCTURE	RATING: 5	REMARKS	PHOTO #
12	Abutment (N or E)			
13	Abutment (S or W)			
14	Head Walls - West		H. Wall made of stone with mortar, mortar is loose and some is missing	
15	Head Walls - East		E. half of culvert is inaccessible	6
16	Wingwalls			
17	Ceiling Slab			
18	Invert Slab			
19	Walls			
20	Arch Ring			
21	Pointing			
22	Pipes/Circular Culverts		50% of area of pipe is filled with sediment	5
23	Apron			



Photo 1

Description: From Culvert Look. N.

Comment:



Photo 2

Description: Looking Upstream

Comment:



Photo 3

Description: West Elevation

Comment:



Photo 4

Description: East Elevation

Comment:



Photo 5

Description: West End of pipe

Comment:



Photo 6

Description: Culvert Interior

Comment: E. half of culvert inaccessible

OVERAL CONDITION RATING:

CRITICAL FINDINGS:

FOR IMMEDIATE ATTENTION:

MAINTENANCE:

NBI Condition Ratings: 9:Excellent, 8:Very Good, 7:Good, 6:Satisfactory, 5:Fair, 4:Poor, 3:Serious, 2:Critical, 1:"Imminent" Failure, 0:Failed, H:Hidden, N:Not Applicable, X:Unknown



MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 78.10

Team Leader: MCC Date: 6/7/2018
 Inspector: MTS Date: 6/7/2018
 PM: JQW Date: 6/7/2018
 Page: 1 of 2

Line: Berkshire Line City/Town: Lenox Culvert No.: 78.09
 Location: M.P. 78.09 Type of Culvert: Cast Iron Pipe Size/Dia.: 10" ID
 Over: Drainage No. of Spans: 1 Total Length: 21'-0"
 Latitude: 42.3377245 No. of Tracks: 1 Year Built: _____
 Longitude: -73.2443174 Flow Direction: West to East Insp. Date: 6/7/2018

PHOTOGRAPHS:

ITEM	GENERAL	RATING: X	REMARKS	PHOTO #
1	Action Under Trains			
2	Embankment	5	Erosion at east end (no headwall)	5
3	Track Over Culvert	6	No issues noted, similar condition to approach track	7
ITEM	STREAM CONDITIONS	RATING: X	REMARKS	PHOTO #
4	Alignment - West			
5	Alignment - East			
6	Channel - East			
7	Channel - West			
8	Stream Bed			
9	Channel Protection			
10	Drift/Debris		W. end clogged, see notes	6
11	Scour	5	8 of pipe fully exposed at E. end	5
ITEM	CULVERT STRUCTURE	RATING: 4	REMARKS	PHOTO #
12	Abutment (N or E)			
13	Abutment (S or W)			
14	Head Walls - West			
15	Head Walls - East			
16	Wingwalls			
17	Ceiling Slab			
18	Invert Slab			
19	Walls			
20	Arch Ring			
21	Pointing			
22	Pipes/Circular Culverts	4	Open joints under track, see notes	2
23	Apron			



Photo 1

Description: From Bridge Look. S.

Comment:



Photo 2

Description: Typ. Culvert Interior

Comment: Note open joints in pipe



Photo 3

Description: Looking Upstream

Comment:



Photo 4

Description: Looking Downstream

Comment:



Photo 5

Description: E. Elevation

Comment:



Photo 6

Description: W.Elevation

Comment: West entrance blocked

OVERAL CONDITION RATING:

CRITICAL FINDINGS:

FOR IMMEDIATE ATTENTION:

MAINTENANCE: Clear debris from west end of pipe

NBI Condition Ratings: 9:Excellent, 8:Very Good, 7:Good, 6:Satisfactory, 5:Fair, 4:Poor, 3:Serious, 2:Critical, 1:"Imminent" Failure, 0:Failed, H:Hidden, N:Not Applicable, X:Unknown



MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 78.10

Team Leader: MCC Date: 6/7/2018
 Inspector: MTS Date: 6/7/2018
 PM: JQW Date: 6/7/2018
 Page: 2 of 2

Line:	<u>Berkshire Line</u>	City/Town:	<u>Lenox</u>	Culvert No.:	<u>78.09</u>
Location:	<u>M.P. 78.09</u>	Type of Culvert:	<u>Cast Iron Pipe</u>	Size/Dia.:	<u>10" ID</u>
Over:	<u>Drainage</u>	No. of Spans:	<u>1</u>	Total Length:	<u>21'-0"</u>
Latitude:	<u>42.3377245</u>	No. of Tracks:	<u>1</u>	Year Built:	<u>0</u>
Longitude:	<u>-73.2443174</u>	Flow Direction:	<u>West to East</u>	Insp. Date:	<u>6/7/2018</u>

NOTES:

- 1.) Culvert Cover: 45" from Top of Pipe to Top of Rail (measured at east end)
- 2.) 4'-8" from W. end to near rail
- 3.) West opening filled with debris (tarp)
- 4.) Tarp pulled out slightly at W. end, unable to completely remove, top of pipe exposed
- 5.) Pipe under track and E. end are clear, debris is only at west end
- 6.) Pipe in 3 or 4 segment - gaps are visible at the joints with misalignment up to 1"
- 7.) Pipe has surface rust with minor pitting
- 8.) E. end was flame cut and has uneven edge
- 9.) No headwall at either end (just pipe)

ADDITIONAL PHOTOGRAPHS:

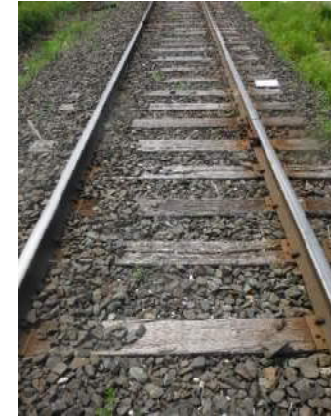
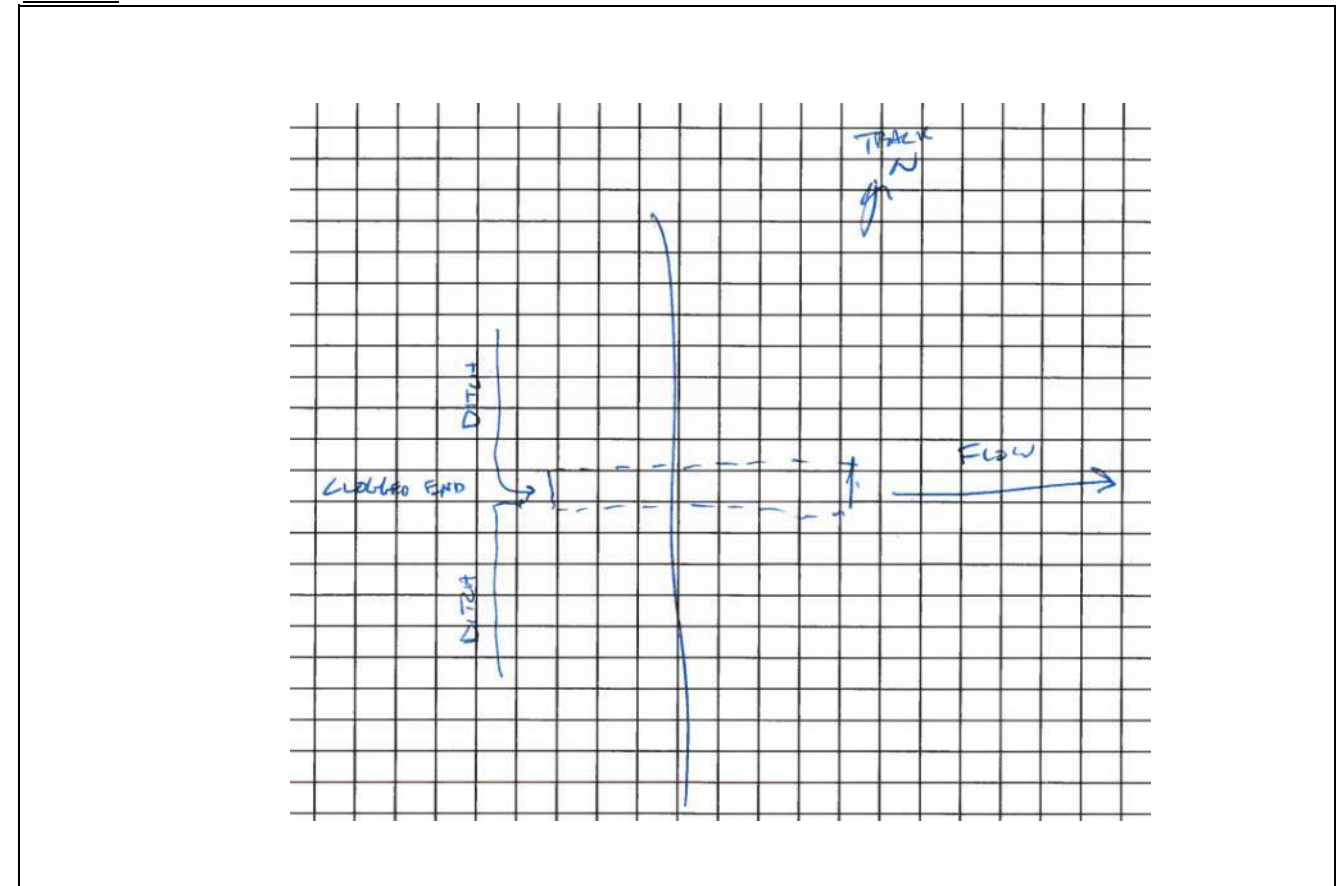


Photo 7

Description: Typ. Track/Top Side

Comment:

SKETCHES:





MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 78.17

Team Leader: MCC Date: 6/7/2018
 Inspector: MTS Date: 6/7/2018
 PM: JQW Date: 6/7/2018
 Page: 1 of 2

Line: Berkshire Line City/Town: Lenox Culvert No.: 78.17
 Location: M.P. 78.17 Type of Culvert: Iron Pipe Size/Dia.: 24" ID
 Over: Drainage No. of Spans: 1 Total Length: 25'-3"
 Latitude: 42.3389146 No. of Tracks: 1 Year Built: _____
 Longitude: -73.2447995 Flow Direction: West to East Insp. Date: 6/7/2018

ITEM	GENERAL	RATING: X	REMARKS	PHOTO #
1	Action Under Trains			
2	Embankment		Some spilled ballast around W. headwall	
3	Track Over Culvert	3	Settlement at E. rail, see notes	
ITEM	STREAM CONDITIONS	RATING: X	REMARKS	PHOTO #
4	Alignment - West			
5	Alignment - East			
6	Channel - East			
7	Channel - West			
8	Stream Bed			
9	Channel Protection			
10	Drift/Debris		Subballast in pipe at joint, see notes	
11	Scour			
ITEM	CULVERT STRUCTURE	RATING: 4	REMARKS	PHOTO #
12	Abutment (N or E)			
13	Abutment (S or W)			
14	Head Walls - West	4	Cracks, edge spall, and delam. , see notes	
15	Head Walls - East	5	No cracks or delam. , noted	
16	Wingwalls			
17	Ceiling Slab			
18	Invert Slab			
19	Walls			
20	Arch Ring			
21	Pointing			
22	Pipes/Circular Culverts	3	Open joint with subballast infiltration, surface rust, and minor pitt. see notes	
23	Apron			

OVERAL CONDITION RATING:

CRITICAL FINDINGS:

FOR IMMEDIATE ATTENTION:

MAINTENANCE: Adress settlement and subballast infiltration into pipe

NBI Condition Ratings: 9:Excellent, 8:Very Good, 7:Good, 6:Satisfactory, 5:Fair, 4:Poor, 3:Serious, 2:Critical, 1:"Imminent" Failure, 0:Failed, H:Hidden, N:Not Applicable, X:Unknown

PHOTOGRAPHS:



Photo 1

Description: From Bridge Look. N.

Comment:



Photo 2

Description: Typ. Culvert Interior

Comment: Subballast pile at open joint



Photo 3

Description: Looking Upstream

Comment:



Photo 4

Description: Looking Downstream

Comment:



Photo 5

Description: W. Elevation

Comment: Concrete has cracks, edge spall, and delam.



Photo 6

Description: E. Elevation

Comment:



MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 78.17

Team Leader: MCC Date: 6/7/2018
 Inspector: MTS Date: 6/7/2018
 PM: JQW Date: 6/7/2018
 Page: 2 of 2

Line:	<u>Berkshire Line</u>	City/Town:	<u>Lenox</u>	Culvert No.:	<u>78.17</u>
Location:	<u>M.P. 78.17</u>	Type of Culvert:	<u>Iron Pipe</u>	Size/Dia.:	<u>24" ID</u>
Over:	<u>Drainage</u>	No. of Spans:	<u>1</u>	Total Length:	<u>25'-3"</u>
Latitude:	<u>42.3389146</u>	No. of Tracks:	<u>1</u>	Year Built:	<u>0</u>
Longitude:	<u>-73.2447995</u>	Flow Direction:	<u>West to East</u>	Insp. Date:	<u>6/7/2018</u>

NOTES:

- 1.) Virtually no cover between bottom of ties and top of pipe
- 2.) 14'-0" from E. end to near rail
- 3.) Ballast settled under E. rail, undermined tie, 4 loose ties total
- 4.) East rail sits high, roughly 3/4"
- 5.) West headwall, decam majority of south side face is delaminated, aprox. 30" x 30", cracks up to 1/4", edge spall 9"x 9" x 28" long above pipe
- 6.) Subballast pile in pipe at open joint, appears to be aligned with settlement location under E. rail
- 7.) E. end concrete headwall in satisfactory condition
- 8.) Pipe clear except for pile of subballast in the middle

ADDITIONAL PHOTOGRAPHS:



Photo 7

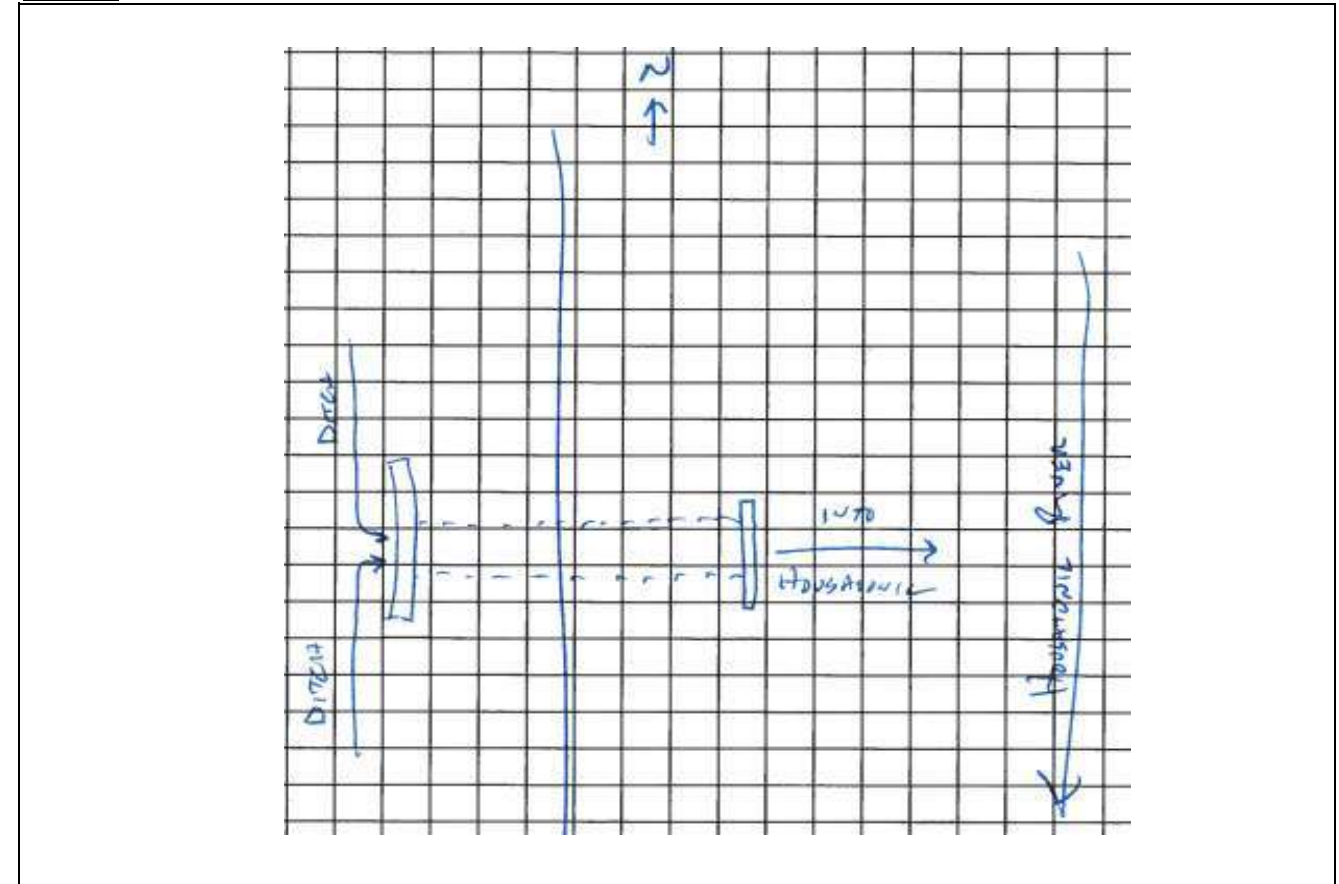
Description: Typ. Track/Top Side - East
 Comment: Ballast settled under east end of tie



Photo 8

Description: Rail Elevation - East
 Comment: East rail sits 3/4" high

SKETCHES:





MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 78.21

Team Leader: MCC Date: 6/7/2018
 Inspector: MTS Date: 6/7/2018
 PM: JQW Date: 6/7/2018
 Page: 1 of 2

Line: Berkshire Line City/Town: Lenox Culvert No.: 78.21
 Location: M.P. 78.21 Type of Culvert: Iron Pipe Size/Dia.: 12" ID
 Over: Drainage No. of Spans: 1 Total Length: 19'-0"
 Latitude: 42.3393364 No. of Tracks: 1 Year Built: _____
 Longitude: -73.2449273 Flow Direction: West to East Insp. Date: 6/7/2018

ITEM	GENERAL	RATING: X	REMARKS	PHOTO #
1	Action Under Trains			
2	Embankment		Spilled ballast on both sides of track	5-6
3	Track Over Culvert	6	Ballast tight to ties, no settlement noted	7
ITEM	STREAM CONDITIONS	RATING: X	REMARKS	PHOTO #
4	Alignment - West			
5	Alignment - East			
6	Channel - East			
7	Channel - West			
8	Stream Bed			
9	Channel Protection			
10	Drift/Debris			
11	Scour			
ITEM	CULVERT STRUCTURE	RATING: 5	REMARKS	PHOTO #
12	Abutment (N or E)			
13	Abutment (S or W)			
14	Head Walls - West			
15	Head Walls - East			
16	Wingwalls			
17	Ceiling Slab			
18	Invert Slab			
19	Walls			
20	Arch Ring			
21	Pointing			
22	Pipes/Circular Culverts	5	See notes, Top broken at W. end, misaligned joints	5
23	Apron			

OVERAL CONDITION RATING:

CRITICAL FINDINGS:

FOR IMMEDIATE ATTENTION:

MAINTENANCE:

NBI Condition Ratings: 9:Excellent, 8:Very Good, 7:Good, 6:Satisfactory, 5:Fair, 4:Poor, 3:Serious, 2:Critical, 1:"Imminent" Failure, 0:Failed, H:Hidden, N:Not Applicable, X:Unknown

PHOTOGRAPHS:



Photo 1

Description: From Bridge Look. N

Comment:



Photo 2

Description: Typ. Culvert Interior

Comment: Note misaligned joints



Photo 3

Description: Looking Upstream

Comment:



Photo 4

Description: Looking Downstream

Comment:



Photo 5

Description: W. Elevation

Comment: Pipe broken at top



Photo 6

Description: E. Elvation

Comment: Note ballast spilled around pipe



MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 78.21

Team Leader: MCC Date: 6/7/2018
 Inspector: MTS Date: 6/7/2018
 PM: JQW Date: 6/7/2018
 Page: 2 of 2

Line:	<u>Berkshire Line</u>	City/Town:	<u>Lenox</u>	Culvert No.:	<u>78.21</u>
Location:	<u>M.P. 78.21</u>	Type of Culvert:	<u>Iron Pipe</u>	Size/Dia.:	<u>12" ID</u>
Over:	<u>Drainage</u>	No. of Spans:	<u>1</u>	Total Length:	<u>19'-0"</u>
Latitude:	<u>42.3393364</u>	No. of Tracks:	<u>1</u>	Year Built:	<u>0</u>
Longitude:	<u>-73.2449273</u>	Flow Direction:	<u>West to East</u>	Insp. Date:	<u>6/7/2018</u>

NOTES:

1) Culvert Cover: 33" from Top of Pipe to Top of Rail (measured at east end)

2.) 5'-3" from W end to near rail

3.) 2 short segments on E. side- one long segment under track

4.) Small gaps between joints but no ballast or debris observed in pipe

ADDITIONAL PHOTOGRAPHS:

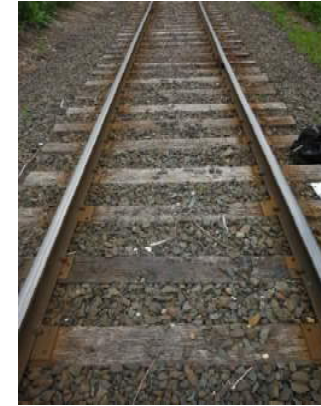
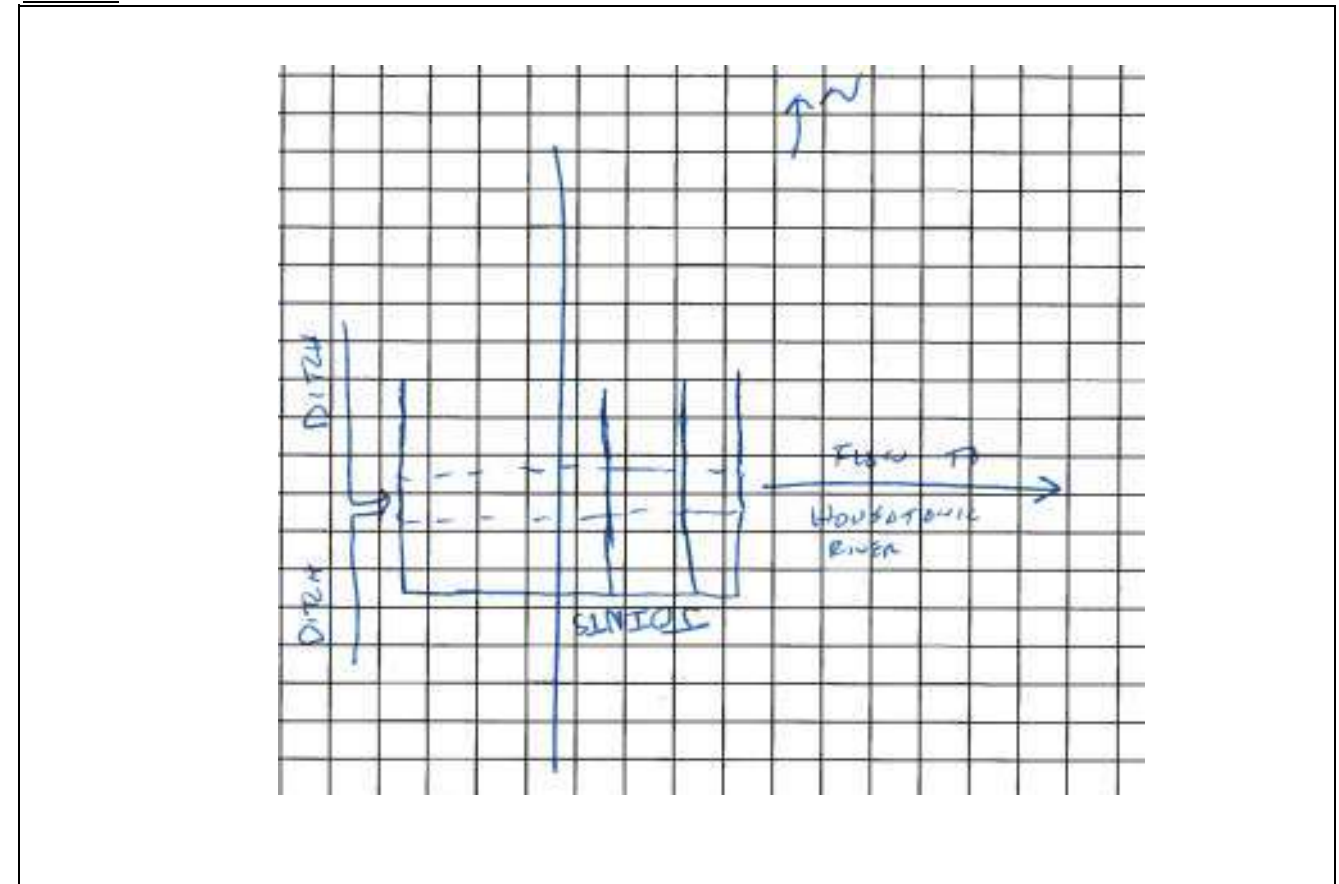


Photo 7

Description: Typ. Track/Top Side

Comment: Ballast tight to ties

SKETCHES:





MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 78.50

Team Leader: KCK Date: 6/7/2018
 Inspector: AK Date: 6/7/2018
 PM: JQW Date: 6/7/2018
 Page: 1 of 2

Line: Berkshire Line City/Town: Lenox Culvert No.: 78.58
 Location: M.P. 78.58 Type of Culvert: CI Pipe Size/Dia.: 24"
 Over: [Redacted] No. of Spans: 1 Total Length: 25'
 Latitude: 42.3456576 No. of Tracks: 1 Year Built: _____
 Longitude: -73.2458955 Flow Direction: West to East Insp. Date: 6/7/2018

PHOTOGRAPHS:

ITEM	GENERAL	RATING: X	REMARKS	PHOTO #
1	Action Under Trains			
2	Embankment		Stream degradation causes erosion on embankment	
3	Track Over Culvert		Similar to adjacent track, no dip	1
ITEM	STREAM CONDITIONS	RATING: X	REMARKS	PHOTO #
4	Alignment - West			
5	Alignment - East			
6	Channel - East		Severe degradation, banks steep, channel exposed	8
7	Channel - West		Ditch parallel to track, heavy vegetation	
8	Stream Bed		Silt and sand present	5
9	Channel Protection			
10	Drift/Debris			
11	Scour			
ITEM	CULVERT STRUCTURE	RATING: 4	REMARKS	PHOTO #
12	Abutment (N or E)			
13	Abutment (S or W)			
14	Head Walls - West	6	Full height vertical crack 1/32" thick	7
15	Head Walls - East	3	Concrete has no defects, 24" W undermining at 6"	6
16	Wingwalls			
17	Ceiling Slab			
18	Invert Slab			
19	Walls			
20	Arch Ring			
21	Pointing			
22	Pipes/Circular Culverts	6	Clear with light rust	5
23	Apron		Slab broken and undermined	

OVERALL CONDITION RATING: 5

CRITICAL FINDINGS:

FOR IMMEDIATE ATTENTION: Repair scour under east headwall and repair riprap on stream bank

MAINTENANCE:

NBI Condition Ratings: 9:Excellent, 8:Very Good, 7:Good, 6:Satisfactory, 5:Fair, 4:Poor, 3:Serious, 2:Critical, 1:"Imminent" Failure, 0:Failed, H:Hidden, N:Not Applicable, X:Unknown



Photo 1

Description: From Culvert Look. N.

Comment:



Photo 2

Description: Looking Downstream (east)

Comment:



Photo 3

Description: East Elevation

Comment:



Photo 4

Description: Looking Upstream

Comment:



Photo 5

Description: Typ. Culvert Interior

Comment:



Photo 6

Description: East Headwall

Comment: Undermining



MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 78.60

Team Leader: KCK Date: 6/7/2018
 Inspector: AK Date: 6/7/2018
 PM: JQW Date: 6/7/2018
 Page: 1 of 2

Line: Berkshire Line City/Town: Lenox Culvert No.: 78.70
 Location: M.P. 78.70 Type of Culvert: CI Pipe Size/Dia.: 12" Dia.
 Over: [Redacted] No. of Spans: 1 Total Length: 19'
 Latitude: 42.3465076 No. of Tracks: 1 Year Built: _____
 Longitude: -73.2456893 Flow Direction: West to East Insp. Date: 6/7/2018

ITEM	GENERAL	RATING: X	REMARKS	PHOTO #
1	Action Under Trains			
2	Embankment	3	Severe erosion around outfall	6
3	Track Over Culvert		No dips, similar to adjacent track	7
ITEM	STREAM CONDITIONS	RATING: X	REMARKS	PHOTO #
4	Alignment - West		Drainage ditch parallel to track	3
5	Alignment - East			
6	Channel - East			
7	Channel - West			
8	Stream Bed		Silt and sand present	
9	Channel Protection			
10	Drift/Debris		None	
11	Scour	3	Scour at outfall, 12" below natural stream bed and 24" before outfall invert.	3
ITEM	CULVERT STRUCTURE	RATING: 7	REMARKS	PHOTO #
12	Abutment (N or E)			
13	Abutment (S or W)			
14	Head Walls - West			
15	Head Walls - East			
16	Wingwalls			
17	Ceiling Slab			
18	Invert Slab			
19	Walls			
20	Arch Ring			
21	Pointing			
22	Pipes/Circular Culverts	7	Clear, minor scour, joints tight	3
23	Apron			

OVERAL CONDITION RATING:

CRITICAL FINDINGS:

FOR IMMEDIATE ATTENTION: Armor embankment and stream bed at outfall

MAINTENANCE:

NBI Condition Ratings: 9:Excellent, 8:Very Good, 7:Good, 6:Satisfactory, 5:Fair, 4:Poor, 3:Serious, 2:Critical, 1:"Imminent" Failure, 0:Failed, H:Hidden, N:Not Applicable, X:Unknown

PHOTOGRAPHS:



Photo 1

Description: From Culvert Look. N.

Comment:



Photo 2

Description: West Elevation

Comment:



Photo 3

Description: East Elevation

Comment:



Photo 4

Description: Looking Upstream

Comment:



Photo 5

Description: Looking Downstream

Comment:



Photo 6

Description: East Outfall

Comment: Severe erosion



MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 78.60

Team Leader: KCK Date: 6/7/2018
 Inspector: AK Date: 6/7/2018
 PM: JQW Date: 6/7/2018
 Page: 2 of 2

Line:	<u>Berkshire Line</u>	City/Town:	<u>Lenox</u>	Culvert No.:	<u>78.70</u>
Location:	<u>M.P. 78.70</u>	Type of Culvert:	<u>CI Pipe</u>	Size/Dia.:	<u>12" Dia.</u>
Over:	<u>0</u>	No. of Spans:	<u>1</u>	Total Length:	<u>19'</u>
Latitude:	<u>42.3465076</u>	No. of Tracks:	<u>1</u>	Year Built:	
Longitude:	<u>-73.2456893</u>	Flow Direction:	<u>West to East</u>	Insp. Date:	<u>6/7/2018</u>

NOTES:

1) Culvert Cover: 19" from Top of Culvert to Top of Rail.

ADDITIONAL PHOTOGRAPHS:



Photo 7

Description: Typ. Track/Top Side

Comment:

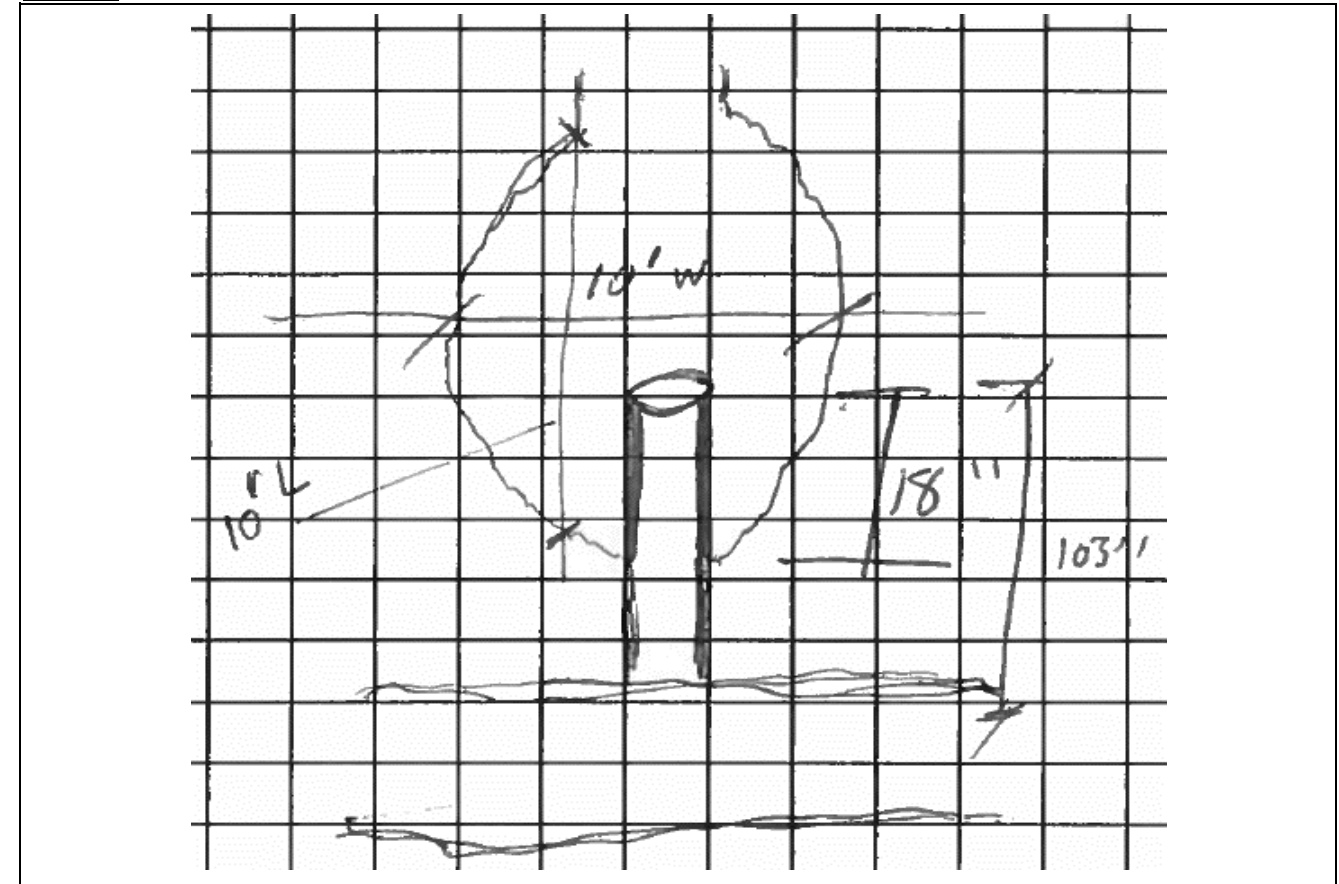


Photo 8

Description: From Culvert Look. S.

Comment:

SKETCHES:





MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 78.65

Team Leader: KCK Date: 6/7/2018
 Inspector: AK Date: 6/7/2018
 PM: JQW Date: 6/7/2018
 Page: 1 of 2

Line: Berkshire Line City/Town: Lenox Culvert No.: 78.73
 Location: M.P. 78.73 Type of Culvert: CI Pipe Size/Dia.: 12" Dia.
 Over: Drainage No. of Spans: 1 Total Length: 18'-3"
 Latitude: 42.3471580 No. of Tracks: 1 Year Built: _____
 Longitude: -73.2454976 Flow Direction: West to East Insp. Date: 6/7/2018

PHOTOGRAPHS:

ITEM	GENERAL	RATING: X	REMARKS	PHOTO #
1	Action Under Trains			
2	Embankment		Stable	
3	Track Over Culvert		No dips, similar to adjacent track	1
ITEM	STREAM CONDITIONS	RATING: X	REMARKS	PHOTO #
4	Alignment - West		Drainage ditch parallel to track	
5	Alignment - East		Stream to river perpendicular to track	
6	Channel - East			
7	Channel - West			
8	Stream Bed		Dead veg. present, stable	
9	Channel Protection			
10	Drift/Debris		Minor dead veg.	2
11	Scour			
ITEM	CULVERT STRUCTURE	RATING: 6	REMARKS	PHOTO #
12	Abutment (N or E)			
13	Abutment (S or W)			
14	Head Walls - West			
15	Head Walls - East			
16	Wingwalls			
17	Ceiling Slab			
18	Invert Slab			
19	Walls			
20	Arch Ring			
21	Pointing			
22	Pipes/Circular Culverts	6	Minor surface rusting, clear of debris	6
23	Apron			

OVERAL CONDITION RATING: 7

CRITICAL FINDINGS:

FOR IMMEDIATE ATTENTION: None

MAINTENANCE: None

NBI Condition Ratings: 9:Excellent, 8:Very Good, 7:Good, 6:Satisfactory, 5:Fair, 4:Poor, 3:Serious, 2:Critical, 1:"Imminent" Failure, 0:Failed, H:Hidden, N:Not Applicable, X:Unknown



Photo 1

Description: From Culvert Look. N.

Comment:



Photo 2

Description: West Elevation

Comment:



Photo 3

Description: East Elevation

Comment:



Photo 4

Description: Looking Upstream

Comment:



Photo 5

Description: Looking Downstream

Comment:



Photo 6

Description: Culvert Interior Looking W.

Comment: Minor surface rusting



MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 80.90

Team Leader: KCK Date: 6/8/2018
 Inspector: AK Date: 6/8/2018
 PM: JQW Date: 6/8/2018
 Page: 1 of 2

Line: Berkshire Line City/Town: Lenox Culvert No.: 80.90
 Location: M.P. 80.90 Type of Culvert: CI Pipe Size/Dia.: 30" Dia.
 Over: Marsh/Stream No. of Spans: 1 Total Length: 25'
 Latitude: 42.3781201 No. of Tracks: 1 Year Built: _____
 Longitude: -73.2463462 Flow Direction: West to East Insp. Date: 6/8/2018

PHOTOGRAPHS:

ITEM	GENERAL	RATING: X	REMARKS	PHOTO #
1	Action Under Trains			
2	Embankment		Hole has opened beneath ties 18" D x 18" L x 36" W	5
3	Track Over Culvert			
ITEM	STREAM CONDITIONS	RATING: X	REMARKS	PHOTO #
4	Alignment - West		Parallel to RR	
5	Alignment - East		Flow at 15 degrees S.E. skew to centerline of culvert	
6	Channel - East		Heavy veg.	
7	Channel - West			
8	Stream Bed		Agr. 15-20' downstream restricts flow	
9	Channel Protection			
10	Drift/Debris			
11	Scour			
ITEM	CULVERT STRUCTURE	RATING: 5	REMARKS	PHOTO #
12	Abutment (N or E)			
13	Abutment (S or W)			
14	Head Walls - West			
15	Head Walls - East			
16	Wingwalls			
17	Ceiling Slab			
18	Invert Slab			
19	Walls			
20	Arch Ring			
21	Pointing			
22	Pipes/Circular Culverts			
23	Apron			

OVERAL CONDITION RATING:

CRITICAL FINDINGS:

FOR IMMEDIATE ATTENTION:

MAINTENANCE:

NBI Condition Ratings: 9:Excellent, 8:Very Good, 7:Good, 6:Satisfactory, 5:Fair, 4:Poor, 3:Serious, 2:Critical, 1:"Imminent" Failure, 0:Failed, H:Hidden, N:Not Applicable, X:Unknown



Photo 1

Description: From Culvert Look S.

Comment:



Photo 2

Description: Looking Upstream

Comment:



Photo 3

Description: West Elevation

Comment:



Photo 4

Description: East Elevation

Comment:



Photo 5

Description: Track Elevation

Comment: Hole beneath ties



Photo 6

Description: West Embankment

Comment: Erosion



MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 80.90

Team Leader: KCK Date: 6/8/2018
 Inspector: AK Date: 6/8/2018
 PM: JQW Date: 6/8/2018
 Page: 2 of 2

Line:	<u>Berkshire Line</u>	City/Town:	<u>Lenox</u>	Culvert No.:	<u>80.90</u>
Location:	<u>M.P. 80.90</u>	Type of Culvert:	<u>CI Pipe</u>	Size/Dia.:	<u>30" Dia.</u>
Over:	<u>Marsh/Stream</u>	No. of Spans:	<u>1</u>	Total Length:	<u>25'</u>
Latitude:	<u>42.3781201</u>	No. of Tracks:	<u>1</u>	Year Built:	<u>0</u>
Longitude:	<u>-73.2463462</u>	Flow Direction:	<u>West to East</u>	Insp. Date:	<u>43259</u>

NOTES:

- 1) Culvert Cover: 49" from Top of Culvert to Top of Rail.
- 2) Upstream there is light corrosion at south, tree and debris, and 2" misc. of joint under track.
- 3) Signs of sluffing on embankment, erosion present. See photo 6.
- 4) Downstream has soil build-up and aggregation.
- 5) East headwall has stone displaced and rotated outward 9" and is partially collapsed at both North and South end. Scour is undermined by 6" deep 12" long underneath pipe. No sign of undermining headwall.

ADDITIONAL PHOTOGRAPHS:



Photo 7

Description: East Headwall
 Comment: Displaced stone 9" outward



Photo 8

Description: Typ. Culvert Interior
 Comment:

SKETCHES:



MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 82.69

Team Leader: MCC Date: 6/7/2018
 Inspector: MTS Date: 6/7/2018
 PM: JQW Date: 6/7/2018
 Page: 1 of 2

Line: Berkshire Line City/Town: Lenox Culvert No.: 82.69
 Location: M.P. 82.69 Type of Culvert: Iron Pipe Size/Dia.: _____
 Over: Drainage No. of Spans: 1 Total Length: _____
 Latitude: 42.4038245 No. of Tracks: 1 Year Built: _____
 Longitude: -73.2456488 Flow Direction: West to East Insp. Date: 6/7/2018

PHOTOGRAPHS:

ITEM	GENERAL	RATING: X	REMARKS	PHOTO #
1	Action Under Trains			
2	Embankment			
3	Track Over Culvert	5		5
ITEM	STREAM CONDITIONS	RATING: X	REMARKS	PHOTO #
4	Alignment - West			
5	Alignment - East			
6	Channel - East			
7	Channel - West			
8	Stream Bed			
9	Channel Protection			
10	Drift/Debris			
11	Scour			
ITEM	CULVERT STRUCTURE	RATING: H	REMARKS	PHOTO #
12	Abutment (N or E)			
13	Abutment (S or W)			
14	Head Walls - West	H		
15	Head Walls - East	H		
16	Wingwalls			
17	Ceiling Slab			
18	Invert Slab			
19	Walls			
20	Arch Ring			
21	Pointing			
22	Pipes/Circular Culverts	H		
23	Apron			



Photo 1

Description: From Culvert Look. N.

Comment:



Photo 2

Description: From Culvert Look. S.

Comment:



Photo 3

Description: Looking Upstream

Comment:



Photo 4

Description: Looking Downstream

Comment:

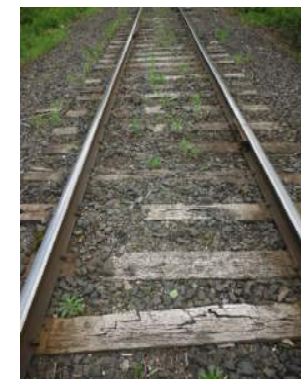


Photo 5

Description: Typ. Track/Top Side

Comment:

OVERAL CONDITION RATING:

CRITICAL FINDINGS:

FOR IMMEDIATE ATTENTION:

MAINTENANCE: Trim poison ivy for access to culvert ends



MassDOT Rail and Transit
 Berkshire Line Culvert Inspection
Culvert No. 84.40

Team Leader: MCC Date: 6/8/2018
 Inspector: CLJ Date: 6/8/2018
 PM: JQW Date: 6/8/2018
 Page: 1 of 2

Line: Berkshire Line City/Town: Pittsfield Culvert No.: 84.42_Stone
 Location: M.P. 84.42 Type of Culvert: Abandoned Stone Box Size/Dia.: _____
 Over: Wampenum Brook No. of Spans: 1 Total Length: _____
 Latitude: 42.4282181 No. of Tracks: 1 Year Built: _____
 Longitude: -73.2500117 Flow Direction: West to East Insp. Date: 6/8/2018

PHOTOGRAPHS:

ITEM	GENERAL	RATING: X	REMARKS	PHOTO #
1	Action Under Trains			
2	Embankment			
3	Track Over Culvert	6	No settlement noted	
ITEM	STREAM CONDITIONS	RATING: X	REMARKS	PHOTO #
4	Alignment - West			
5	Alignment - East			
6	Channel - East			
7	Channel - West			
8	Stream Bed			
9	Channel Protection			
10	Drift/Debris			
11	Scour			
ITEM	CULVERT STRUCTURE	RATING: 3	REMARKS	PHOTO #
12	Abutment (N or E)			
13	Abutment (S or W)			
14	Head Walls - West		See notes	
15	Head Walls - East		See notes	
16	Wingwalls			
17	Ceiling Slab			
18	Invert Slab			
19	Walls			
20	Arch Ring			
21	Pointing			
22	Pipes/Circular Culverts			
23	Apron			

OVERAL CONDITION RATING:

CRITICAL FINDINGS:

FOR IMMEDIATE ATTENTION:

MAINTENANCE: Clear debris from upstream end of culvert

NBI Condition Ratings: 9:Excellent, 8:Very Good, 7:Good, 6:Satisfactory, 5:Fair, 4:Poor, 3:Serious, 2:Critical, 1:"Imminent" Failure, 0:Failed, H:Hidden, N:Not Applicable, X:Unknown



Photo 1

Description: Typ. Culvert Interior - Looking West

Comment:



Photo 2

Description: Typ. Track/Top Side

Comment:



Photo 3

Description: Looking Upstream

Comment:



Photo 4

Description: Looking Downstream

Comment:



Photo 5

Description: W.Elevation

Comment:



Photo 6

Description: E. Elevation

Comment:



Culvert No. 84.40

Line:	<u>Berkshire Line</u>	City/Town:	<u>Pittsfield</u>	Culvert No.:	<u>84.42_Stone</u>
Location:	<u>M.P. 84.42</u>	Type of Culvert:	<u>Abandoned Stone Box</u>	Size/Dia.:	<u>0</u>
Over:	<u>Wampenum Brook</u>	No. of Spans:	<u>1</u>	Total Length:	<u>0</u>
Latitude:	<u>42.4282181</u>	No. of Tracks:	<u>1</u>	Year Built:	<u>0</u>
Longitude:	<u>-73.2500117</u>	Flow Direction:	<u>West to East</u>	Insp. Date:	<u>6/8/2018</u>

NOTES:

- 1.) HDPE culvert was installed to the north as an apparent replacement
- 2.) Stones collapsed at SE side but daylight is visible
- 3.) Culvert mostly clear, no signs of stones shifting below track, collapsed stones are only at the east and west headwalls
- 5.) Collapsed west side. Capstone replaced with ties to retain soil
- 6.) Debris fence installed at opening

ADDITIONAL PHOTOGRAPHS:

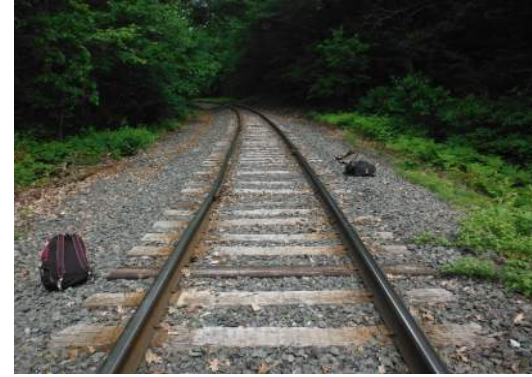


Photo 7

Description: From Culvert Look. N.

Comment:



Photo 8

Description: From Culvert Look. S.

Comment:

SKETCHES: