APPENDIX C

Culvert Inspection Reports

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

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CULVERT INSPECTION REPORT

EASTERN TRAIL EXTENSION PROJECT
From Milliken Mills Road in Old Orchard Beach to
Thornton Academy in Saco

Inspector: Andrew Morrell

Inspection Date: 9/28/09

INSPECTION #1	Inlet	Outlet
Approximate Location:	Thornton Academy Campus parking area for middle school southeast of baseball field	Thornton Academy Campus parking area for middle school southeast of baseball field
Any nearby existing features:	Thornton Academy	Thornton Academy
Size:	CB with 8-inch outlet	8" PVC
Material:	PVC Culvert	PVC Culvert
Condition of Culvert:	Good	Good
Does pipe appear to be undersized:	No	No
Flow Direction:	North to south under parking area	North to south under parking area
Sedimentation:	No	Unknown
Erosion:	Yes	Unknown
General Comments:	- CB not inspected as part of this review - Minor erosion along EOP to be repaired	- Outlet cannot be found - May be buried by piled debris

Catch basin inlet looking southeast

Catch basin inlet looking northwest

Potential outlet ditch looking southeast

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CULVERT INSPECTION REPORT

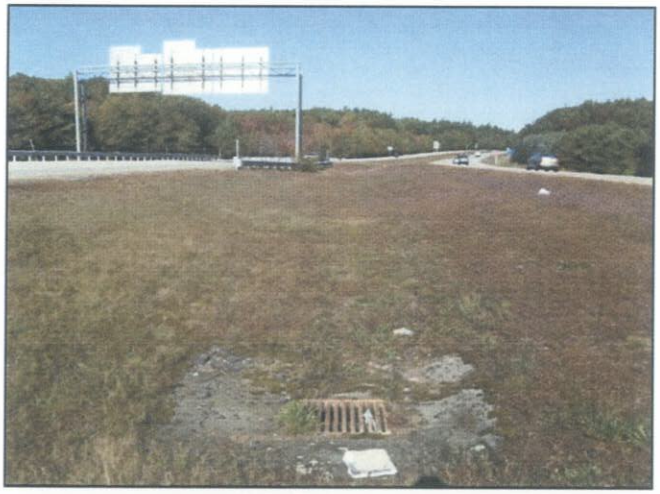
EASTERN TRAIL EXTENSION PROJECT
From Milliken Mills Road in Old Orchard Beach to Thornton Academy in Saco

Inspector: Andrew Morrell

Inspection Date: 9/28/09

INSPECTION #2	Inlet	Outlet
Approximate Location:	West of Trail in Segment A between east/west travel lanes on I-195 west of U.S. Route 1 Interchange	East of Trail & I-195 in Segment A west of U.S. Route 1 Interchange – Station 56+64 (Trail stationing)
Any nearby existing features:	I-195	I-195
Size:	CB with 18-inch outlet	18-inch
Material:	RCP Culvert	RCP Culvert
Condition of Culvert:	Unknown	Good
Does pipe appear to be undersized:	Unknown	No
Flow Direction:	Northeast to southwest under I-195 (eastbound)	Northeast to southwest under I-195 (eastbound)
Sedimentation:	Unknown	No
Erosion:	No	No
General Comments:	- CB not inspected as part of this review - CB has 6'x6' paved apron within ditch bottom	- RCP pipe chipped at top of pipe - Proposed Trail will cross over the outlet - Culvert extension may be required

Catch basin inlet looking southeast



Catch basin inlet looking northwest

Outlet looking northeast

Outlet outfall looking southwest

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CULVERT INSPECTION REPORT

EASTERN TRAIL EXTENSION PROJECT
From Milliken Mills Road in Old Orchard Beach to Thornton Academy in Saco

Inspector: Andrew Morrell

Inspection Date: 9/28/09

INSPECTION #3	Inlet	Outlet
Approximate Location:	West of Trail in Segment A between east/west travel lanes on I-195 west of U.S. Route 1 Interchange	East side of Trail & I-195 in Segment A west of U.S. Route 1 Interchange – Station 59+24 (Trail stationing)
Any nearby existing features:	I-195 (between east/west travel lanes)	I-195/Hannaford Bros. Co.
Size:	CB with 18-inch outlet	18-inch
Material:	Unknown	RCP Culvert
Condition of Culvert:	Unknown	Good
Does pipe appear to be undersized:	Unknown	No
Flow Direction:	Northeast to southwest under I-195 (eastbound)	Northeast to southwest under I-195 (eastbound)
Sedimentation:	Unknown	No
Erosion:	No	No
General Comments:	- CB not inspected as part of this review - CB has 6'x6' paved apron within ditch bottom	- Dense vegetation - Outlet marked with a sign - Proposed Trail will cross over near the outlet, recommend culvert extension

Catch basin inlet looking southeast

Catch basin inlet looking northwest

Outlet looking northeast

Outlet outfall looking southwest

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CULVERT INSPECTION REPORT

EASTERN TRAIL EXTENSION PROJECT
From Milliken Mills Road in Old Orchard Beach to Thornton Academy in Saco

Inspector: Andrew Morrell

Inspection Date: 9/28/09

INSPECTION #4	Inlet	Outlet
Approximate Location:	East side of Trail & I-195 in Segment A west of U.S. Route 1 Interchange	West side of Trail & I-195 eastbound off ramp to U.S. Route 1 in Segment A west of U.S. Route 1 Interchange – Station 62+05 (Trail stationing)
Any nearby existing features:	I-195/Hannaford Bros. Co.	I-195/Hannaford Bros. Co.
Size:	36-inch	36-inch
Material:	RCP Culvert	RCP Culvert
Condition of Culvert:	Good	Good
Does pipe appear to be undersized:	No	No
Flow Direction:	West to east under I-195 EB off-ramp	West to east under I-195 EB off-ramp
Sedimentation:	No	No
Erosion:	No	No
General Comments:	- Low storage area upstream - Dense vegetation - Proposed Trail will cross over the existing inlet, recommend culvert extension	- Dense vegetation - Flows through ditch to pond along U.S. Route 1

Inlet looking northeast

Inlet ditch looking southeast

Outlet looking southeast

Outlet outfall looking northeast

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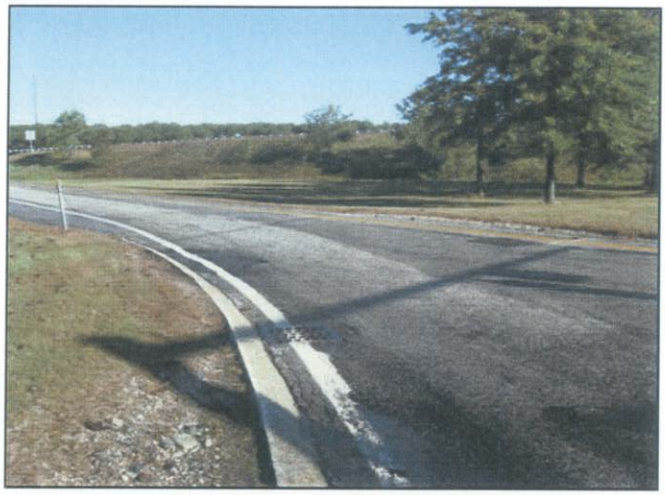
CULVERT INSPECTION REPORT

EASTERN TRAIL EXTENSION PROJECT
From Milliken Mills Road in Old Orchard Beach to Thornton Academy in Saco

Inspector: Andrew Morrell

Inspection Date: 9/28/09

INSPECTION #5	Inlet	Outlet
Approximate Location:	West side of Trail & U.S. Route 1 in Segment B on western side of I-195 east off ramp to U.S. Route 1 – Station 35+48 (U.S. Route 1 stationing)	West side of Trail & U.S. Route 1 in Segment B on eastern side off I-195 east off- ramp to U.S. Route 1 – Station 67+80 (Trail stationing)
Any nearby existing features:	I-195 eastbound off ramp	Detention area
Size:	CB with 12-inch	12-inch
Material:	CMP Culvert	CMP Culvert
Condition of Culvert:	Unknown	OK
Does pipe appear to be undersized:	Unknown	No
Flow Direction:	West to east under off-ramp	West to east under off-ramp
Sedimentation:	Unknown	No
Erosion:	No	No
General Comments:	- CB not inspected as part this review	- Pipe buried, recommend removal of sediment - Recommend vegetation be trimmed at outlet - This culvert is beneath the EB off-ramp from I-195. No Trail activities are currently contemplated in this culvert



Inlet catch basin looking north

Outlet looking southwest

Outlet outfall to pond looking northeast

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CULVERT INSPECTION REPORT

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Inspector: Andrew Morrell

Inspection Date: 9/28/09

INSPECTION #6	Inlet	Outlet
Approximate Location:	West side of Trail & U.S. Route 1 in Segment B west of I-195 over pass – Station 68+50 (Trail stationing)	East side of Trail & U.S. Route 1 in Segment B west of I-195 overpass – Approx. Station 68+50 (Trail stationing)
Any nearby existing features:	I-195 overpass, off ramp & detention area	I-195 overpass & off ramp
Size:	48-inch	48-inch
Material:	RCP Culvert	RCP culvert
Condition of Culvert:	Good	Good
Does pipe appear to be undersized:	No	No
Flow Direction:	North to south under U.S. Route 1	North to south under U.S. Route 1
Sedimentation:	No	12-inches (pipe partially buried)
Erosion:	No	No
General Comments:	- Dense vegetation - Few small stones	- Dense vegetation - Culvert partially buried

Inlet looking southeast

Inlet pond looking southwest

Outlet looking northwest

Outlet outfall looking southeast

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CULVERT INSPECTION REPORT

EASTERN TRAIL EXTENSION PROJECT
From Milliken Mills Road in Old Orchard Beach to Thornton Academy in Saco

Inspector: Andrew Morrell

Inspection Date: 9/18/09 Outlet and 9/28/09 Inlet

INSPECTION #7	Inlet	Outlet
Approximate Location:	South side of I-195 – Station 5041+20 (railroad stationing)	North side of I-195 - Station 5043+92 (railroad stationing)
Any nearby existing features:	I-195	I-195
Size:	42-inch	42-inch
Material:	RCP Culvert	RCP culvert
Condition of Culvert:	Good	Good
Does pipe appear to be undersized:	No	No
Flow Direction:	West to east under I-195	West to east under I-195
Sedimentation:	No	No
Erosion:	Minor	No
General Comments:	- Few small stones in stream bed - Dense vegetation - This culvert conveys an unnamed tributary to Goosefare Brook - No Trail activities are contemplated in the area of this culvert	- Dense vegetation at outlet - No trail activities are contemplated in the area of this culvert

Inlet looking east

Inlet ditch looking west

Outlet looking west

Outlet outfall looking west

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CULVERT INSPECTION REPORT

EASTERN TRAIL EXTENSION PROJECT
From Milliken Mills Road in Old Orchard Beach to
Thornton Academy in Saco

Inspector: Andrew Morrell

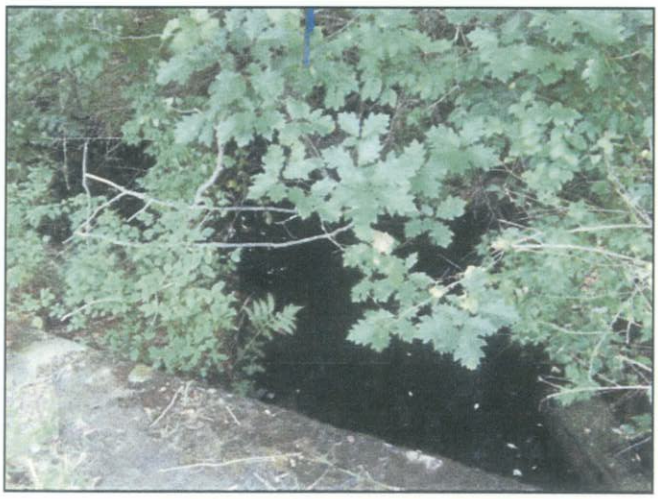
Inspection Date: 9/18/09

INSPECTION #8	Inlet	Outlet
Approximate Location:	West of Trail in Segment B west of Moody Street - Station 5049+10 (railroad stationing)	East of Trail in Segment B west of Moody Street - Station 5049+10 (railroad stationing)
Any nearby existing features:	Tributary to Goosefare Brook	Tributary to Goosefare Brook
Size:	6' wide by 1' tall with approx. 2' of cover over top of box	6' wide by 1' tall with approx. 2' of cover over top of box
Material:	Reinforced concrete box culvert	Reinforced concrete box culvert
Condition of Culvert:	Satisfactory	Satisfactory
Does pipe appear to be undersized:	Unknown – culvert conveys stream flow originating from 42" culvert at I-195, located approx. 515 LF south of this culvert crossing	Unknown
Flow Direction:	Northwest to southeast under Trail	Northwest to southeast under Trail
Sedimentation:	Unknown	Unknown
Erosion:	No	Yes - minor
General Comments:	- Dense vegetation to be trimmed	- Dense vegetation/tree growth to be trimmed - Soil stabilization needed – Recommend riprap be considered

Inlet looking southeast

Inlet ditch looking west

Outlet looking northwest



Outlet outfall looking southeast

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CULVERT INSPECTION REPORT

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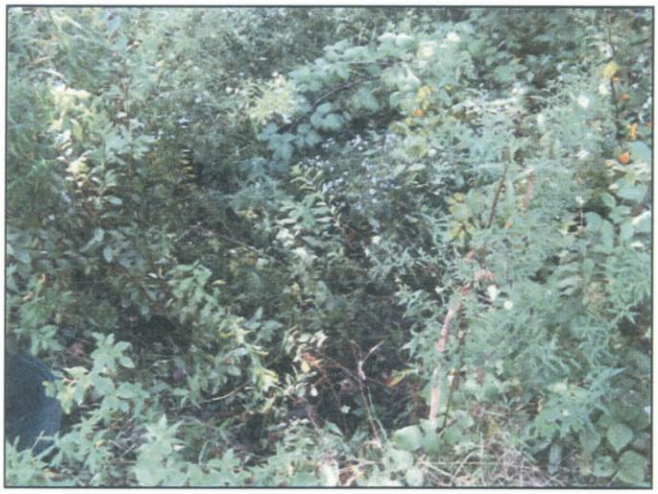
Thornton Academy in Saco

Inspector: Andrew Morrell

Inspection Date: 9/18/09

INSPECTION #9	Inlet	Outlet
Approximate Location:	Culvert crosses Moody Street on west side of Trail – Station 5052+85 (railroad stationing)	Culvert crosses Moody Street on west side of Trail – Station 5053+23 (railroad stationing)
Any nearby existing features:	Moody Street	Moody Street
Size:	18-inch	18-inch
Material:	CMP Culvert	CMP Culvert
Condition of Culvert:	Adequate	Adequate
Does pipe appear to be undersized:	Unknown – no overtopping of Moody Street apparent	Unknown
Flow Direction:	Appears to be west to east under Moody Street (parallel to Trail)	Appears to be west or east under Moody Street (parallel to Trail)
Sedimentation:	10-inches	8-inches
Erosion:	No	Minor
General Comments:	- Dense vegetation in ditch - Limited cover over pipe - No flow	- Recommend sediment to be removed from pipe and inlet/outlet areas stabilized with riprap – Pipe to be replaced to allow for ditch modifications.

Inlet looking northeast



Inlet ditch looking southwest

Outlet looking southwest

Outlet ditch looking northeast

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EASTERN TRAIL EXTENSION PROJECT
From Milliken Mills Road in Old Orchard Beach to Thornton Academy in Saco

Inspector: Andrew Morrell

Inspection Date: 9/18/09

INSPECTION #10	Inlet	Outlet
Approximate Location:	West of Trail in Segment C west of U.S. Route 1 – Station 5060+50 (railroad stationing)	East of Trail in Segment C west of U.S. Route 1 - Station 5060+85 (railroad stationing)
Any nearby existing features:	Tributary to Goosefare Brook	Tributary to Goosefare Brook
Size:	Unknown	3' wide by 3' tall
Material:	Unknown	Granite stone box culvert
Condition of Culvert:	Unknown	Adequate
Does pipe appear to be undersized:	Unknown	No
Flow Direction:	West to east under Trail	West to east under Trail
Sedimentation:	Unknown	6-inches
Erosion:	Major	Yes
General Comments:	- Slope has eroded over inlet - Unable to confirm existing conditions - Recommend inlet repairs and stabilization to improve conditions	- Large stones and debris blocking outflow downstream of outlet

Potential inlet looking east

Potential inlet ditch looking northwest

Outlet looking northwest

Outlet outfall looking southeast

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CULVERT INSPECTION REPORT

EASTERN TRAIL EXTENSION PROJECT
From Milliken Mills Road in Old Orchard Beach to Thornton Academy in Saco

Inspector: Andrew Morrell

Inspection Date: 9/18/09

INSPECTION #11	Inlet	Outlet
Approximate Location:	West of Trail in Segment C west of U.S. Route 1 – Station 5071+00 (railroad stationing)	East of Trail in Segment C west of U.S. Route 1 - Station 5071+00 (railroad stationing)
Any nearby existing features:	Goosefare Brook and Innis Brook	Goosefare Brook and Innis Brook
Size:	7' wide by 4' tall	7' wide by 4' tall
Material:	Granite stone arch culvert	Granite stone arch culvert
Condition of Culvert:	Adequate	Adequate
Does pipe appear to be undersized:	No	No
Flow Direction:	West to east under Trail	West to east under Trail
Sedimentation:	Minor	Unknown
Erosion:	Minor	Unknown
General Comments:	- Concrete weir broken, needs to be repaired - Significant tree debris has formed dam creating large pond of water upstream of inlet – possible beaver activity	- Water ponded to almost top of structure - Downstream conditions should be inspected

Inlet looking east

Inlet upstream ponded area looking north

Outlet looking west

Outlet outfall looking southeast

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EASTERN TRAIL EXTENSION PROJECT
From Milliken Mills Road in Old Orchard Beach to
Thornton Academy in Saco

Inspector: Andrew Morrell

Inspection Date: 9/18/09

INSPECTION #12	Inlet	Outlet
Approximate Location:	West of Trail in Segment E east of U. S. Route 1 Station 5079+66 (railroad stationing)	East of Trail in Segment E east of U.S. Route 1 Station 5079+84 (railroad stationing
Any nearby existing features:	Seacoast RV site outfall	Silver Springs Campground
Size:	1.5' wide by 2' tall	2' wide by 2' tall
Material:	Reinforced concrete box culvert w/headwall	Granite stone box culvert
Condition of Culvert:	Good	Adequate
Does pipe appear to be undersized:	No	No
Flow Direction:	West to east under Trail	West to east under Trail
Sedimentation:	None	6-inches
Erosion:	None	Yes
General Comments:	- Outfall from Seacoast RV appears to be corroded pipe (rust colored flow)	- Ditch slopes have been stabilized with fabric - Significant erosion has occurred at this location - Recommend additional stabilization of outfall ditch

Inlet looking south

Seacoast RV site outfall looking northwest

Outlet looking north

Outlet outfall looking southeast

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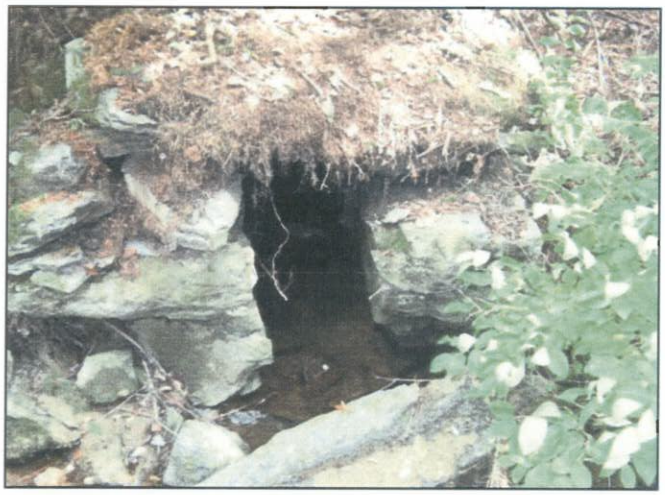
EASTERN TRAIL EXTENSION PROJECT
From Milliken Mills Road in Old Orchard Beach to
Thornton Academy in Saco

Inspector: Andrew Morrell

Inspection Date: 9/18/09

INSPECTION #13	Inlet	Outlet
Approximate Location:	West of Trail in Segment E east of U. S. Route 1 – located within a natural ravine Station 5085+80 (railroad stationing)	East of Trail in Segment E east of U.S. Route 1 – located within a natural ravine Station 5085+80 (railroad stationing)
Any nearby existing features:	Tributary to Goosefare Brook	Tributary to Goosefare Brook
Size:	3' wide by 3' tall	May be 3' x 3'
Material:	Granite stone box culvert	Granite stone box culvert
Condition of Culvert:	Adequate	Poor due to erosion
Does pipe appear to be undersized:	No	Unknown
Flow Direction:	West to east under Trail	Appears to be west to east under Trail
Sedimentation:	6-inches	Unknown
Erosion:	Yes	Yes
General Comments:	- Some stones have fallen off the box culvert and are blocking inlet	- Significant erosion found - Tree debris blocking access to outlet - Unable to confirm culvert location or size - Slope has partially eroded over outlet - Recommend stabilization of outfall



Inlet looking southeast

Upstream inlet ditch looking northwest

Outlet looking northwest

Outlet outfall looking northeast

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From Milliken Mills Road in Old Orchard Beach to
Thornton Academy in Saco

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Inspection Date: 9/18/09

INSPECTION #14	Inlet	Outlet
Approximate Location:	West of Trail in Segment E east of U. S. Route 1 – located within a natural ravine Station 5088+11 (railroad stationing)	East of Trail in Segment E east of U.S. Route 1 – located within a natural ravine Station 5088+11 (railroad stationing)
Any nearby existing features:	Tributary to Goosefare Brook	Tributary to Goosefare Brook
Size:	3' wide by 3' tall	3' wide by 3' tall
Material:	Granite stone box culvert	Granite stone box culvert
Condition of Culvert:	Adequate	Adequate
Does pipe appear to be undersized:	No	No
Flow Direction:	West to east under Trail	West to east under Trail
Sedimentation:	6-inches	18-inches
Erosion:	Yes	Yes
General Comments:	- Tree debris/trash at inlet should be removed	- Erosion could be remedied with some stabilization such as riprap

Inlet looking southeast

Inlet ditch looking northwest

Outlet looking northwest

Outlet outfall looking southeast

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From Milliken Mills Road in Old Orchard Beach to
Thornton Academy in Saco

Inspector: Andrew Morrell

Inspection Date: 9/18/09

INSPECTION #15	Inlet	Outlet
Approximate Location:	West of Trail in Segment E east of U. S. Route 1 – located within natural ravine Station 5091+01 (railroad stationing)	East of Trail in Segment E east of U.S. Route 1 – located within a natural ravine Station 5090+80 (railroad stationing)
Any nearby existing features:	Tributary to Goosefare Brook	Tributary to Goosefare Brook
Size:	Possibly 2' x 2'	2' wide by 2' tall
Material:	Probable granite box	Granite stone box culvert
Condition of Culvert:	Poor – eroded inlet banks	Adequate
Does pipe appear to be undersized:	Unknown	No
Flow Direction:	Appears to be west to east under Trail	West to east under Trail
Sedimentation:	Unknown	6-inches
Erosion:	Yes	Yes
General Comments:	- Slope has eroded onto inlet and covered what looks like an existing granite box culvert - Unable to confirm existing culvert conditions	- Downstream tree debris in channel below outlet is blocking outflow

Potential inlet looking southeast

Potential inlet ditch looking north

Outlet looking northwest

Outlet outfall looking southeast

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EASTERN TRAIL EXTENSION PROJECT
From Milliken Mills Road in Old Orchard Beach to
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Inspector: Andrew Morrell

Inspection Date: 9/18/09

INSPECTION #16	Inlet	Outlet
Approximate Location:	West of Trail in Segment E east of U. S. Route 1 – located within a natural ravine Station 5093+46 (railroad stationing)	East of Trail in Segment E east of U.S. Route 1 – located within a natural ravine Station 5092+96 (railroad stationing)
Any nearby existing features:	Tributary to Goosefare Brook	Tributary to Goosefare Brook
Size:	Possibly 2' x 2'	2' x 2'
Material:	Granite box	Granite box
Condition of Culvert:	Poor due to blocked inlet	Poor due to eroded slopes and debris
Does pipe appear to be undersized:	Unknown	Unknown
Flow Direction:	Appears to be west to east under Trail	Appears to be west to east under Trail
Sedimentation:	Unknown	Unknown
Erosion:	Minor	Yes
General Comments:	- Inlet plugged with eroded soils, roots & tree debris - Unable to locate pipe culvert - Appears to be remnants of 2' x 2' granite stone box culvert	- Outlet covered by large tree and root system - Unable to locate pipe/culvert - Erosion could be remedied with stabilization - Appears to be remnants of 2' x 2' granite stone box culvert

Potential inlet looking east

Potential inlet ditch looking north

Potential outlet looking northwest

Potential outlet outfall looking southeast

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EASTERN TRAIL EXTENSION PROJECT
From Milliken Mills Road in Old Orchard Beach to
Thornton Academy in Saco

Inspector: Andrew Morrell **Inspection Date:** 9/18/09

INSPECTION #17	Inlet	Outlet
Approximate Location:	West of Trail in Segment E east of U. S. Route 1 – located within a natural ravine Station 5099+29 (railroad stationing)	East of Trail in Segment E east of U.S. Route 1 – located within a natural ravine Station 5099+18 (railroad stationing)
Any nearby existing features:	Tributary to Goosefare Brook	Tributary to Goosefare Brook
Size:	RR records show 2.5' x 2'	Unknown – RR records show 2.5' x 2'
Material:	Granite box	Granite box
Condition of Culvert:	Unknown – obscured by eroded slopes	Obscured by eroded slopes
Does pipe appear to be undersized:	Unknown	Unknown
Flow Direction:	Appears to be west to east under Trail	Appears to be west to east under Trail
Sedimentation:	Unknown	Unknown
Erosion:	Unknown	Unknown
General Comments:	- Pipe/culvert not found - Could be submerged in water - Tree debris exists as well - Remnants of granite stone present	- Pipe/culvert not found - Could be submerged in water

Potential inlet looking east

Potential inlet collection area looking northwest

Potential outlet looking northwest

Potential outlet outfall looking southeast

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From Milliken Mills Road in Old Orchard Beach to
Thornton Academy in Saco

Inspector: Andrew Morrell

Inspection Date: 9/18/09

INSPECTION #18	Inlet	Outlet
Approximate Location:	West of Trail in Segment E southwest of Cascade Road (Route 98)	West of Trail in Segment E southwest of Cascade Road (Route 98)
Any nearby existing features:	Abutting residence to northwest	Abutting residence to northwest
Size:	12-inch	12-inch
Material:	CMP culvert	CMP culvert
Condition of Culvert:	Eroded at bottom	Eroded at bottom
Does pipe appear to be undersized:	No	No
Flow Direction:	Southwest to northeast along Trail (west side)	Southwest to northeast along Trail (west side)
Sedimentation:	6-inch	None
Erosion:	Minor	None
General Comments:	- Culvert provides access for abutting residence to existing trail. This culvert does not pass beneath trail. - Minor flow - Tree debris blocking inlet	- Small flow (less than 1-inch) - Outlet 6-inches above ground

Access to abutting residence over culvert looking northwest from existing trail

Inlet looking northeast

Outlet looking south

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

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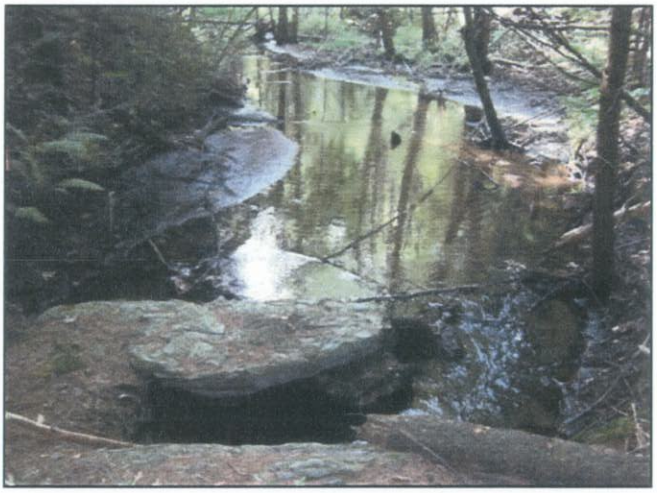
CULVERT INSPECTION REPORT

EASTERN TRAIL EXTENSION PROJECT
From Milliken Mills Road in Old Orchard Beach to Thornton Academy in Saco

Inspector: Andrew Morrell **Inspection Date:** 9/18/09

INSPECTION #19	Inlet	Outlet
Approximate Location:	East of Trail in Segment E southwest of Cascade Road (Route 98)	West of Trail in Segment E northeast of Cascade Road (Route 98)
Any nearby existing features:	Tributary to Mill Brook	Tributary to Mill Brook – passes under Cascade Road
Size:	Unknown (unable to measure) – RR records show 4' x 4'	60-inch
Material:	Granite stone box culvert	CMP culvert
Condition of Culvert:	Poor	Good
Does pipe appear to be undersized:	Unknown	No
Flow Direction:	Southwest to northwest (under Trail and Cascade Road)	Southwest to northwest (under Trail and Cascade Road)
Sedimentation:	Unknown	18-inches
Erosion:	Unknown	None
General Comments:	- Inlet has ponded water 4'-6' deep at granite box - Unknown structure size (approx. 6' wide x 4'-6' deep) - No signs of 60" CMP - Length to outlet is approximately 150 feet	- Culvert embedded into ground, thus flow potential has been reduced - Flowing with 14" water at time of visit

Inlet looking north



Inlet looking south

Outlet outfall looking north

Outlet looking south

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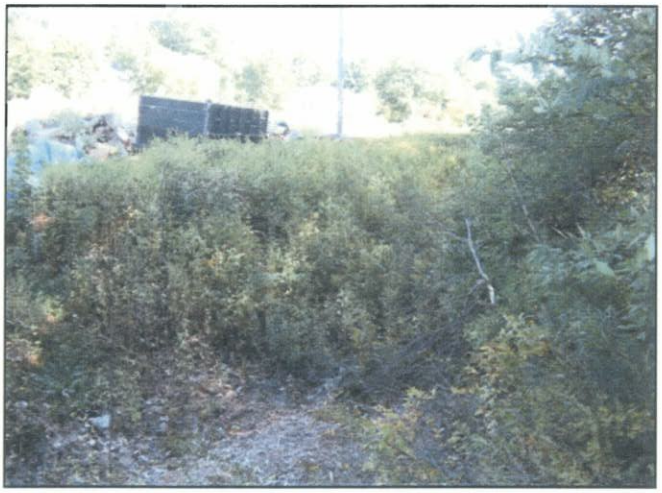
CULVERT INSPECTION REPORT

EASTERN TRAIL EXTENSION PROJECT
From Milliken Mills Road in Old Orchard Beach to Thornton Academy in Saco

Inspector: Andrew Morrell **Inspection Date:** 9/18/09

INSPECTION #20	Inlet	Outlet
Approximate Location:	West of Trail in Segment F northeast of Old Cascade Road	East of Trail in Segment F northeast of Old Cascade Road
Any nearby existing features:	Abutting residences and pole line to west	Milliken Mills Pond downstream (east)
Size:	Unknown	Unknown
Material:	Unknown	Unknown
Condition of Culvert:	Unknown	Unknown
Does pipe appear to be undersized:	Unable to determine	Unable to determine
Flow Direction:	Appears to be west to east (under Trail)	Appears to be west to east (under Trail)
Sedimentation:	Unknown	Unknown
Erosion:	None	Minor
General Comments:	- No culvert found however based on downstream conditions it appears one exists here, may be plugged/buried - No flowing water found - Vegetated ditch filled with brush/grass debris	- No culvert found, may be plugged/buried - Water seeps out of ground (less than 2" deep) - Water flows through ditch to Milliken Mills Pond



Potential inlet looking northeast

Potential outlet outfall looking west

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CULVERT INSPECTION REPORT

EASTERN TRAIL EXTENSION PROJECT
From Milliken Mills Road in Old Orchard Beach to
Thornton Academy in Saco

Inspector: Andrew Morrell **Inspection Date:** 9/18/09

INSPECTION #21	Inlet	Outlet
Approximate Location:	West of Trail in Segment F northeast of Old Cascade Road	East of Trail in Segment F northeast of Old Cascade Road
Any nearby existing features:	Abutting residences and pole line to west	Milliken Mills Pond downstream (east)
Size:	30-inch	40" wide by 18" tall
Material:	Steel culvert with granite stone headwall	Granite stone box culvert
Condition of Culvert:	Signs of some corrosion	Adequate
Does pipe appear to be undersized:	No	No
Flow Direction:	West to East (under Trail)	West to East (under Trail)
Sedimentation:	3-inches	6 to 12-inches (varies across outlets)
Erosion:	Minor	None
General Comments:	- Slight flow of water (less than 1") - Ditch has dense vegetation and tree debris that should be removed	- No flow exiting outlet - Build-up sediment restricting flow - No signs of steel pipe

Inlet looking east

Inlet ditch looking west from proposed Trail

Outlet looking west

Outlet outfall looking east to Milliken Mills Pond

Eastern Trail –Thornton Academy in Saco, Maine to Milliken Mills Road in OOB, Maine PIN # 13340.00

Summary of Existing Granite Box Culverts at 6 locations

Railroad Stationing Location	Drainage Area (ac)	Existing Size	Flow –Q50 (cfs)	Flowing Full Capacity (cfs)
5079+66	6.76	2' x 2' Granite Box	31.48	23.04
5085+80	27.92	3' x 3' granite box	58.87	26.85
5088+11	10.91	3' x 3' granite box	30.91	26.85
5091+01	43.12	2' x 2' Granite Box	83.80	24.09
5093+46	6.54	2' x 2' Granite Box	15.96	20.96
5099+29	74.75	2.5' x 2' Granite Box	93.18	12.21

Notes:

1. The drainage areas are based on watershed limits extrapolated from the City of Saco Aerial Mapping with 2' contour intervals.
2. All culvert sizes are based on measurements provided by Dow and Coulombe Inc.
3. The 50 year storm event flow values are based on the following methods as outlined in the Maine DOT Highway Design Guide: Potters Method, Benson Method, BPR1021 Method, Rational Method and USGS methods. Flow values for the applicable methods were calculated and an average flow rate determined.
4. Following full culvert capacity is based on the manning's formula where n=0.013. Slope values are based on invert information provided by Dow and Coulombe Inc.