COMMITMENT & INTEGRITY
DRIVE RESULTS

WOODARD &CURRAN

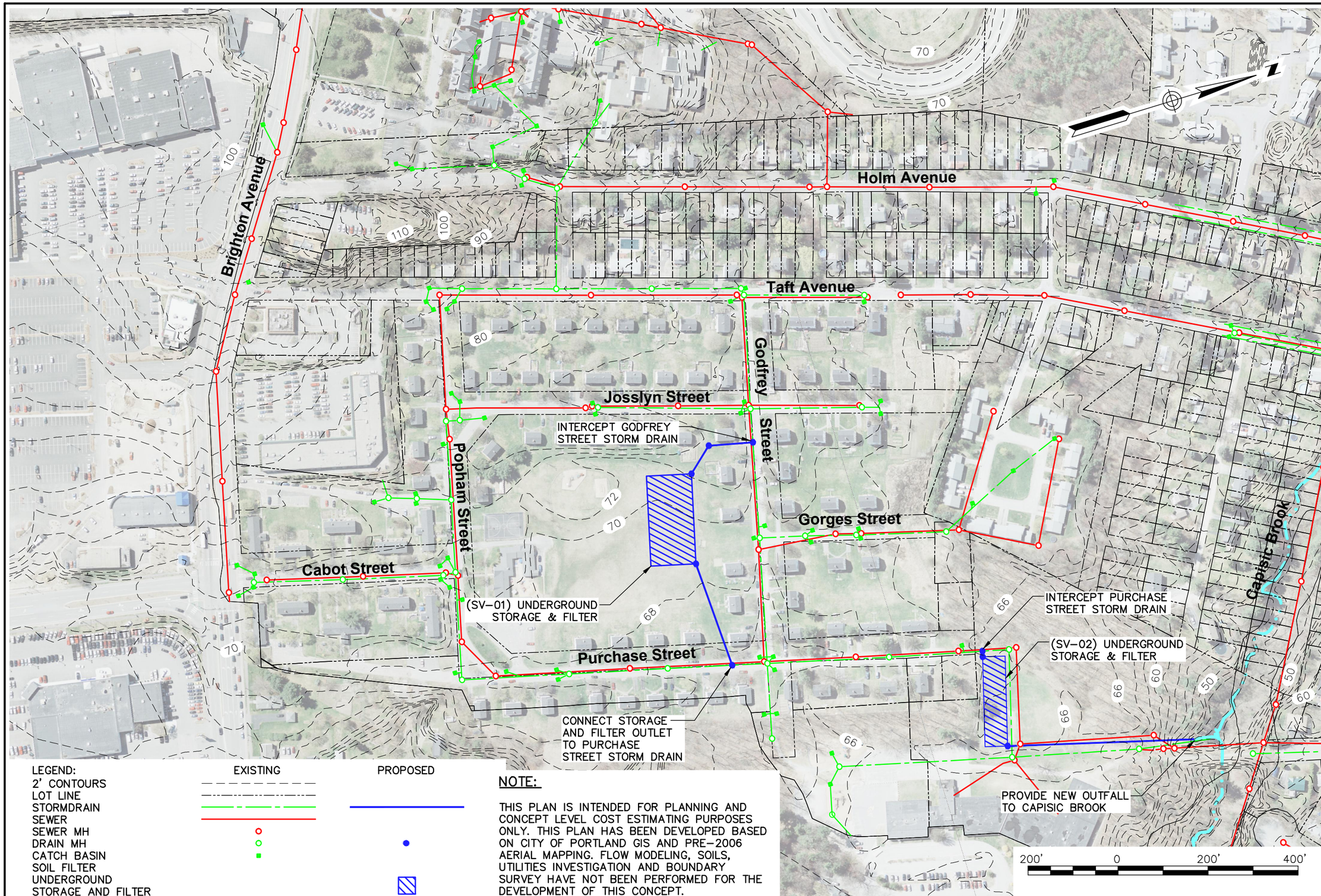
41 Hutchins Drive
Portland, Maine 04102
Tel. 207-774-2756

CLIENT	Portland, ME		
PROJECT	Stormwater Retrofits		
DESIGNED BY	ML	DATE	10/16/2010
CHECKED BY	ZLH	DATE	10/24/2010
PROJECT NO.	203939.51	SHEET NO.	1 of 1

Capisic Brook Stormwater Retrofit Treatment Area Summary Spreadsheet

Retrofit Opportunity Area	Retrofit ID	Drainage Area Contributing to Retrofit (sf)	Impervious Area within Drainage Area (sf)	Assumed Developed Area within Drainage Area (sf)	Target Water Quality Volume (cf)	Available Water Quality Volume (cf)	% of WQV Treated (IC and Landscaped Area)	% of WQV Treated (IC Only)
Sagamore Village	SV-01	657,973	292,830	292,114	34,140	40,000	117%	164%
Sagamore Village	SV-02	1,020,000	386,541	506,767	49,104	20,000	41%	62%
Riverside Street	RS-01 - RS-02	203,398	139,705	50,954	13,341	19,851	149%	171%
Riverside Street	RS-03	57,087	44,673	9,931	4,054	609	15%	16%
Larrabee Road	LR-01	241,037	224,940	12,878	19,174	9,141	48%	49%
Larrabee Road	LR-02	207,964	163,819	35,316	14,829	21,675	146%	159%
Larrabee Road	LR-03	343,260	215,584	102,141	21,370	37,879	177%	211%
Larrabee Road	LR-04	159,829	132,625	21,763	11,778	9,901	84%	90%
West Tributary	WT-01	247,181	160,482	69,359	15,685	11,544	74%	86%
West Tributary*	WT-02	10,105,920	4,000,000	4,884,736	496,158	474,000	96%	142%
Capisic Brook Wetland Park	CW-01	7,334,638	2,098,127	4,189,209	314,484	177,072	56%	101%

* IC assumed. Does not include Maine Turnpike.



LEGEND:

	EXISTING	PROPOSED
2' CONTOURS		
LOT LINE		
STORMDRAIN		
SEWER		
SEWER MH		
DRAIN MH		
CATCH BASIN		
SOIL FILTER UNDERGROUND STORAGE AND FILTER		

NOTE:

THIS PLAN IS INTENDED FOR PLANNING AND CONCEPT LEVEL COST ESTIMATING PURPOSES ONLY. THIS PLAN HAS BEEN DEVELOPED BASED ON CITY OF PORTLAND GIS AND PRE–2006 AERIAL MAPPING. FLOW MODELING, SOILS, UTILITIES INVESTIGATION AND BOUNDARY SURVEY HAVE NOT BEEN PERFORMED FOR THE DEVELOPMENT OF THIS CONCEPT.

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COMMITMENT & INTEGRITY DRIVE RESULTS
WOODARD & CURRAN

SAGAMORE VILLAGE
STORMWATER IMPROVEMENTS

DESIGNED BY: ZLH
DRAWN BY: JBC
CHECKED BY: ZLH
203939.51–X00C.DWG

CITY OF PORTLAND
PORTLAND, MAINE

CAPISIC BROOK WATERSHED
MANAGEMENT PLAN

JOB NO: 203939.51
DATE: NOVEMBER 2010
SCALE: 1"=200'

Figure 1

COMMITMENT & INTEGRITY
DRIVE RESULTS
WOODARD & CURRAN
41 Hutchins Drive
Portland, Maine 04102
Tel. 207-774-2112

CLIENT	City of Portland		
PROJECT	Stormwater Retrofits - Capisic Brook Watershed - Sagamore Village		
DESIGNED BY	ZH	DATE	7/15/2010
COST BY	MDL	DATE	12/13/2010
CHECKED BY	ZH/DS	DATE	12/13/2010
PROJECT NO.	203939.51		

Sagamore Village (SV) Stormwater Retrofits - Opinion of Probable Cost

Assumptions: Unit costs are reflective of retrofit construction. Unit costs provided for this estimate were based on averaged MaineDOT unit bid prices from recent projects bid and constructed in Portland, Maine. The ENR Construction Cost Index for this estimate is 8951 as of November 2010.

SV-01 Below Grade Storage with Below Grade Filter (installation in unpaved setting)

	Quantity	Unit	Unit Cost	Price	Total
Excavation & Disposal	7,000	CY	$ 12.00	$ 84,000.00	
Loam	3,700	SY	$ 4.00	$ 14,800.00	
Seed	3,700	SY	$ 2.00	$ 7,400.00	
Stormwater Chamber (SC-740)	565	EA	$ 225.00	$ 127,125.00	
3/4" Angular Stone	1,900	CY	$ 35.00	$ 66,500.00	
Geotextile Fabric	5,000	SY	$ 4.00	$ 20,000.00	
4" Underdrain	4,000	LF	$ 25.00	$ 100,000.00	
Sand	1,200	CY	$ 25.00	$ 30,000.00	
				Construction Cost per Unit:	***$ 449,825.00***
				Engineering & Permitting (15%), Survey (5%) & Const. Bonds, Insurance, etc. (5%):	***$ 112,456.25***
				Contingency (25%)	***$ 140,570.31***
				Total Cost per System:	***$ 702,851.56***

Notes

SV-01: Popham St, Josslyn St, Godfrey St & Purchase St
Parcel ID: 274 H001

Water Quality Volume Provided = 40,000 cf

Assumed Dimension: 100' x 200'

SV-02 Below Grade Storage with Below Grade Filter (installation in unpaved setting)

	Quantity	Unit	Unit Cost	Price	Total
Excavation & Disposal	4,000	CY	$ 12.00	$ 48,000.00	
Loam	2,100	SY	$ 4.00	$ 8,400.00	
Seed	2,100	SY	$ 2.00	$ 4,200.00	
Stormwater Chamber (SC-740)	282	EA	$ 225.00	$ 63,450.00	
3/4" Angular Stone	1,000	CY	$ 35.00	$ 35,000.00	
Geotextile Fabric	2,700	SY	$ 4.00	$ 10,800.00	
4" Underdrain	2,000	LF	$ 25.00	$ 50,000.00	
Sand	600	CY	$ 25.00	$ 15,000.00	
				Construction Cost per Unit:	***$ 234,850.00***
				Engineering & Permitting (15%), Survey (5%) & Const. Bonds, Insurance, etc. (5%):	***$ 58,712.50***
				Contingency (25%)	***$ 73,390.63***
				Total Cost per System:	***$ 366,953.13***

Notes

SV-02: Purchase St
Parcel ID: 275 C048

Water Quality Volume Provided = 20,000 cf

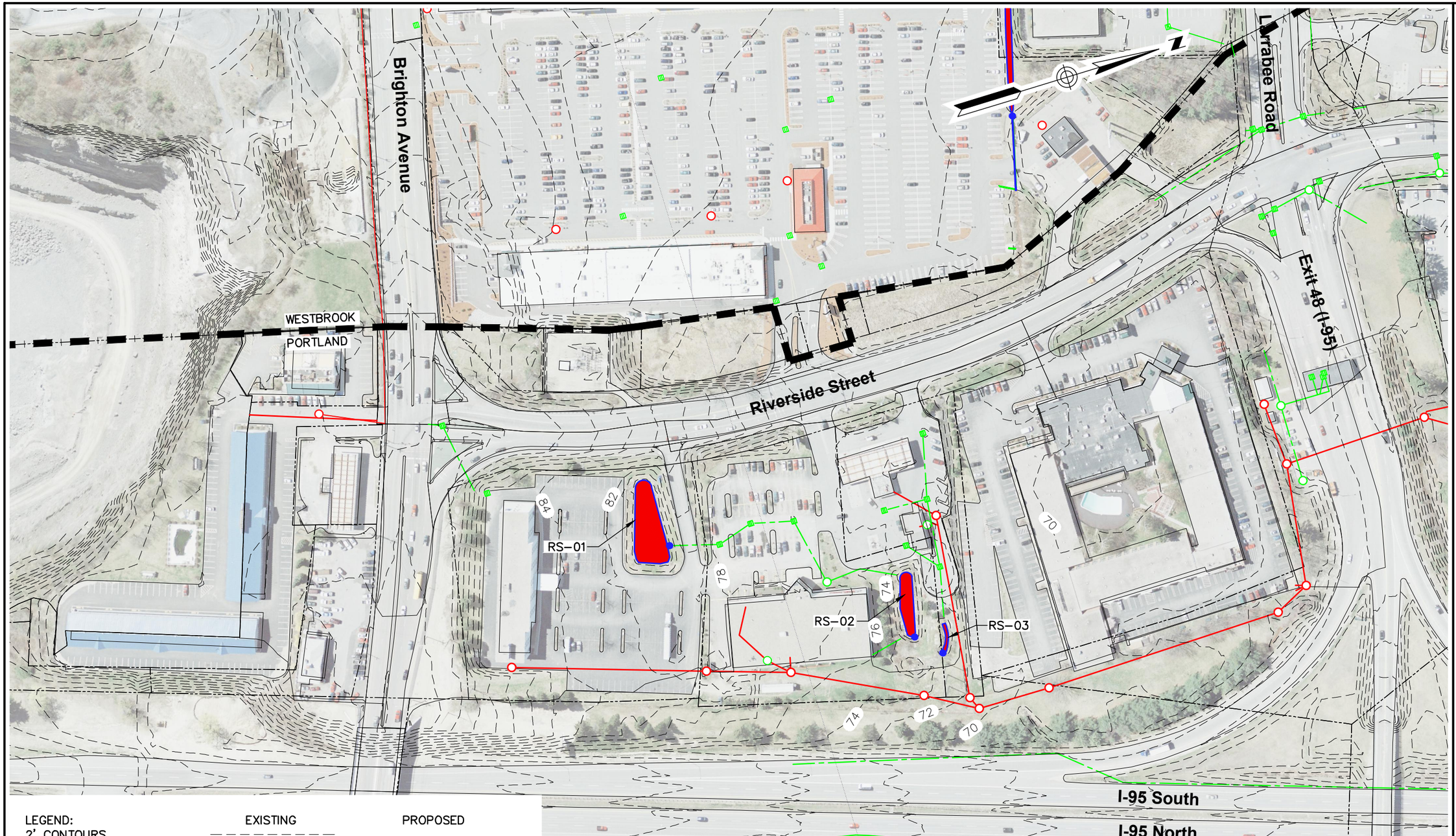
Assumed Dimension: 50' x 200'

Transport Piping and Structures

	Quantity	Unit	Unit Cost	Price	Total
Clearing	1	LS	$ 5,000.00	$ 5,000.00	
Remove Existing Pavement	25	SY	$ 5.00	$ 125.00	
Loam	750	SY	$ 4.00	$ 3,000.00	
Seed	750	SY	$ 2.00	$ 1,500.00	
Diversion Manhole	2	EA	$ 5,000.00	$ 10,000.00	
Manhole (4')	4	EA	$ 3,500.00	$ 14,000.00	
Vortsentry	2	EA	$ 50,000.00	$ 100,000.00	
18" PVC Piping (w/ trench excavation)	840	LF	$ 95.00	$ 79,800.00	
Bituminous Pavement (3")	4	TON	$ 100.00	$ 400.00	
Aggregate Base (3") and Subbase (15")	10	CY	$ 30.00	$ 300.00	
Bituminous Driveway Apron	65	SY	$ 45.00	$ 2,925.00	
Riprap	10	CY	$ 75.00	$ 750.00	
Remove & Reset Fence	500	LF	$ 40.00	$ 20,000.00	
Baseball Infield Repair (cut and sod)	1	LS	$ 5,000.00	$ 5,000.00	
Baseball Backstop Replacement	1	LS	$ 12,000.00	$ 12,000.00	
				Construction Cost per Unit:	***$ 254,800.00***
				Engineering & Permitting (15%), Survey (5%) & Const. Bonds, Insurance, etc. (5%):	***$ 63,700.00***
				Contingency (25%)	***$ 79,625.00***
				Total Cost:	***$ 398,125.00***

Notes

Total Project Construction Cost:	***$***	***1,468,000.00***
Total Cost per Cubic Foot Treated:	***$***	***24.47***



LEGEND:

	EXISTING	PROPOSED
2' CONTOURS		
LOT LINE		
STORMDRAIN		
SEWER		
SEWER MH		
DRAIN MH		
CATCH BASIN		
GRAVEL WETLAND		

NOTE:

THIS PLAN IS INTENDED FOR PLANNING AND CONCEPT LEVEL COST ESTIMATING PURPOSES ONLY. THIS PLAN HAS BEEN DEVELOPED BASED ON CITY OF PORTLAND GIS AND PRE-2006 AERIAL MAPPING. FLOW MODELING, SOILS, UTILITIES INVESTIGATION AND BOUNDARY SURVEY HAVE NOT BEEN PERFORMED FOR THE DEVELOPMENT OF THIS CONCEPT.

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COMMITMENT & INTEGRITY DRIVE RESULTS
WOODARD & CURRAN

RIVERSIDE STREET STORMWATER IMPROVEMENTS

DESIGNED BY: ZLH
DRAWN BY: JBC
CHECKED BY: ZLH
203939.51-X00C.DWG

CITY OF PORTLAND
PORTLAND, MAINE

CAPISIC BROOK WATERSHED MANAGEMENT PLAN

JOB NO: 203939.51
DATE: NOVEMBER 2010
SCALE: 1"=150'

Figure 2

COMMITMENT & INTEGRITY DRIVE RESULTS
WOODARD & CURRAN
41 Hutchins Drive
Portland, Maine 04102
Tel. 207-774-2112

CLIENT	City of Portland		
PROJECT	Stormwater Retrofits - Capisic Brook Watershed - Riverside Street		
DESIGNED BY	ZH	DATE	10/27/2010
COST BY	MDL	DATE	12/13/2010
CHECKED BY	ZH	DATE	12/13/2010
PROJECT NO.	203939.51		

Riverside Street (RS) Stormwater Retrofits - Opinion of Probable Cost

Assumptions: Unit costs are reflective of retrofit construction. Unit costs provided for this estimate were based on averaged MaineDOT unit bid prices from recent projects bid and constructed in Portland, Maine. The ENR Construction Cost Index for this estimate is 8951 as of November 2010.

RS-01 Gravel Wetland

	Quantity	Unit	Unit Cost	Price	Total
Excavation & Disposal	529	CY	$ 12.00	$ 6,348.00	
Gravel Wetland Media:					
Wetland Soil (8" depth)	121	CY	$ 30.00	$ 3,630.00	
Pea Gravel (3" depth)	46	CY	$ 35.00	$ 1,610.00	
3/4" Crushed Stone (24" depth)	363	CY	$ 35.00	$ 12,705.00	
6" Underdrain	140	LF	$ 25.00	$ 3,500.00	
Overflow Structure (4' diameter)	1	EA	$ 3,500.00	$ 3,500.00	
Loam and Seed	653	SY	$ 6.00	$ 3,918.00	
Landscaping	1	LS	$ 24,500.00	$ 24,500.00	
Construction Cost per Unit:					***$ 59,711.00***
Engineering & Permitting (15%), Survey (5%) & Const. Bonds, Insurance, etc. (5%):					***$ 14,927.75***
Contingency (25%)					***$ 18,659.69***
Total Cost per System:					***$ 93,298.44***

Notes

RS-01: Portland, Maine
Parcel ID: 226 A001
Gravel Wetland
Water Storage Volume Provided= 14,679 cf
Assumed Storage Depth = 3'

RS-02 Gravel Wetland

	Quantity	Unit	Unit Cost	Price	Total
Excavation & Disposal	187	CY	$ 12.00	$ 2,244.00	
Gravel Wetland Media:					
Wetland Soil (8" depth)	43	CY	$ 30.00	$ 1,290.00	
Pea Gravel (3" depth)	16	CY	$ 35.00	$ 560.00	
3/4" Crushed Stone (24" depth)	128	CY	$ 35.00	$ 4,480.00	
6" Underdrain	110	LF	$ 25.00	$ 2,750.00	
Overflow Structure (4' diameter)	1	EA	$ 3,500.00	$ 3,500.00	
Loam and Seed	230	SY	$ 6.00	$ 1,380.00	
Landscaping	1	LS	$ 8,700.00	$ 8,700.00	
Construction Cost per Unit:					***$ 24,904.00***
Engineering & Permitting (15%), Survey (5%) & Const. Bonds, Insurance, etc. (5%):					***$ 6,226.00***
Contingency (25%)					***$ 7,782.50***
Total Cost per System:					***$ 38,912.50***

Notes

RS-02: Portland, Maine
Parcel ID: 266 A004
Gravel Wetland
Water Storage Volume Provided= 5,172 cf
Assumed Storage Depth = 3'

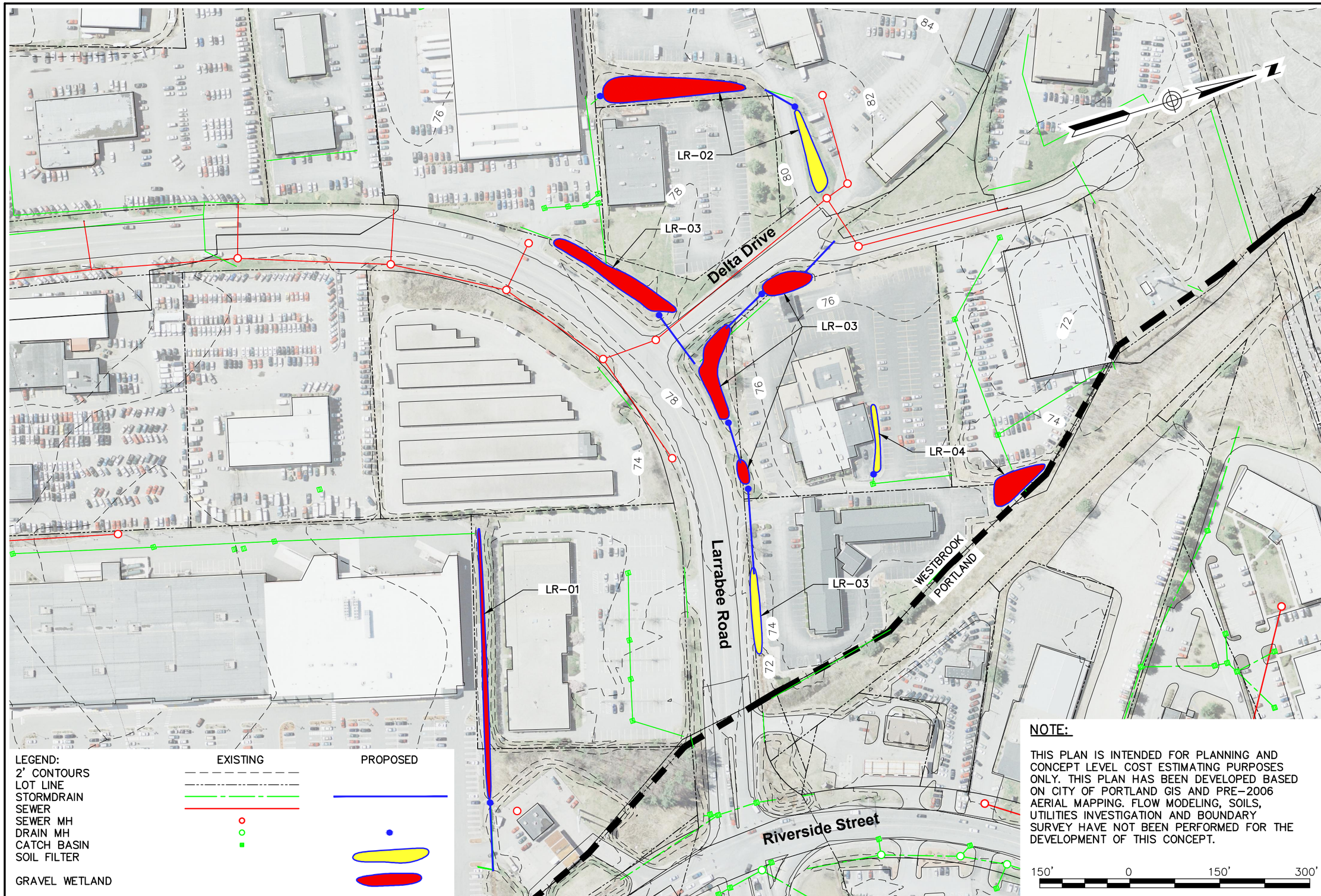
RS-03 Gravel Wetland

	Quantity	Unit	Unit Cost	Price	Total
Excavation & Disposal	22	CY	$ 12.00	$ 264.00	
Gravel Wetland Media:					
Wetland Soil (8" depth)	6	CY	$ 30.00	$ 180.00	
Pea Gravel (3" depth)	2	CY	$ 35.00	$ 70.00	
3/4" Crushed Stone (24" depth)	16	CY	$ 35.00	$ 560.00	
6" Underdrain	40	LF	$ 25.00	$ 1,000.00	
Overflow Structure (4' diameter)	1	EA	$ 3,500.00	$ 3,500.00	
Loam and Seed	28	SY	$ 6.00	$ 168.00	
Landscaping	1	LS	$ 1,000.00	$ 1,000.00	
Construction Cost per Unit:					***$ 6,742.00***
Engineering & Permitting (15%), Survey (5%) & Const. Bonds, Insurance, etc. (5%):					***$ 1,685.50***
Contingency (25%)					***$ 2,106.88***
Total Cost per System:					***$ 10,534.38***

Notes

RS-03: Portland, Maine
Parcel ID: 266 A003
Gravel Wetland
Water Storage Volume Provided= 609 cf (provided)
Assumed Storage Depth = 3'

Total Project Construction Cost:	***$***	***143,000.00***
Total Cost per Cubic Foot Treated:	***$***	***6.99***



NOTE:

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WOODARD & CURRAN
COMMITMENT & INTEGRITY DRIVE RESULTS

LARRABEE ROAD STORMWATER IMPROVEMENTS

DESIGNED BY:	ZLH
DRAWN BY:	JBC
CHECKED BY:	ZLH
	203939.51-X00C.DWG

CITY OF PORTLAND
PORTLAND, MAINE

CAPISIC BROOK WATERSHED MANAGEMENT PLAN

JOB NO: 203939.51
DATE: NOVEMBER 2010
SCALE: 1"=150'

Figure 3

COMMITMENT & INTEGRITY DRIVE RESULTS
WOODARD & CURRAN
41 Hutchins Drive
Portland, Maine 04102
Tel. 207-774-2112

CLIENT	City of Portland		
PROJECT	Stormwater Retrofits - Capisic Brook Watershed - Larrabee Road		
DESIGNED BY	ZH	DATE	10/27/2010
COST BY	MDL	DATE	12/13/2010
CHECKED BY	ZH	DATE	12/13/2010
PROJECT NO.	203939.51		

Larrabee Road (LR) Stormwater Retrofits - Opinion of Probable Cost

Assumptions: Unit costs are reflective of retrofit construction. Unit costs provided for this estimate were based on averaged MaineDOT unit bid prices from recent projects bid and constructed in Portland, Maine. The ENR Construction Cost Index for this estimate is 8951 as of November 2010.

LR-01 Gravel Wetland

	Quantity	Unit	Unit Cost	Price	Total
Excavation & Disposal	330	CY	$ 12.00	$ 3,960.00	
Gravel Wetland Media:					
Wetland Soil (8" depth)	76	CY	$ 30.00	$ 2,280.00	
Pea Gravel (3" depth)	29	CY	$ 35.00	$ 1,015.00	
3/4" Crushed Stone (24" depth)	226	CY	$ 35.00	$ 7,910.00	
6" Underdrain	500	LF	$ 25.00	$ 12,500.00	
Overflow Structure (4' diameter)	1	EA	$ 3,500.00	$ 3,500.00	
12" Diameter PVC Pipe	115	LF	$ 85.00	$ 9,775.00	
Loam and Seed	407	SY	$ 6.00	$ 2,442.00	
Landscaping	1	LS	$ 15,000.00	$ 15,000.00	
Construction Cost per Unit:					***$ 58,382.00***
Engineering & Permitting (15%), Survey (5%) & Const. Bonds, Insurance, etc. (5%):					***$ 14,595.50***
Contingency (25%)					***$ 18,244.38***
Total Cost per System:					***$ 91,221.88***

Notes

LR-01: Westbrook, Maine
Parcel ID: 042A 010 & 042A 010A

Gravel Wetland
Water Storage Volume Provided= 9,141 cf
Assumed Storage Depth = 3'

LR-02 Gravel Wetland & Soil Filter

	Quantity	Unit	Unit Cost	Price	Total
Excavation & Disposal	1,038	CY	$ 12.00	$ 12,456.00	
Remove Existing Pavement	65	SY	$ 5.00	$ 325.00	
Gravel Wetland Media:					
Wetland Soil (8" depth)	179	CY	$ 30.00	$ 5,370.00	
Pea Gravel (3" depth)	67	CY	$ 35.00	$ 2,345.00	
3/4" Crushed Stone (24" depth)	536	CY	$ 35.00	$ 18,760.00	
Soil Filter Media:					
Mulch Layer (3" depth)	24	CY	$ 45.00	$ 1,080.00	
Soil Filter (18" depth)	141	CY	$ 50.00	$ 7,050.00	
Coarse Gravel (12" depth)	94	CY	$ 35.00	$ 3,290.00	
6" Underdrain	400	LF	$ 25.00	$ 10,000.00	
Geotextile	315	SY	$ 4.00	$ 1,260.00	
Overflow Structure (4' diameter)	2	EA	$ 3,500.00	$ 7,000.00	
12" Diameter PVC Pipe	58	LF	$ 85.00	$ 4,930.00	
Bituminous Driveway Apron	65	SY	$ 45.00	$ 2,925.00	
Loam and Seed	1,301	SY	$ 6.00	$ 7,806.00	
Landscaping	1	LS	$ 48,800.00	$ 48,800.00	
Construction Cost per Unit:					***$ 133,397.00***
Engineering & Permitting (15%), Survey (5%) & Const. Bonds, Insurance, etc. (5%):					***$ 33,349.25***
Contingency (25%)					***$ 41,686.56***
Total Cost per System:					***$ 208,432.81***

Notes

LR-02: Westbrook, Maine
Parcel ID: 047 004 & 042A 011A

Gravel Wetland
Water Storage Volume Provided= 21,675 cf
Assumed Storage Depth = 3'

Soil Filter
Water Storage Volume Provided= 94 cf
Assumed Storage Depth = 1'

Total Water Storage Provided = 21,769 cf

LR-03 Gravel Wetland & Soil Filter

	Quantity	Unit	Unit Cost	Price	Total
Excavation & Disposal	1,487	CY	$ 12.00	$ 17,844.00	
Remove Existing Pavement	167	SY	$ 5.00	$ 835.00	
Gravel Wetland Media:					
Wetland Soil (8" depth)	297	CY	$ 30.00	$ 8,910.00	
Pea Gravel (3" depth)	112	CY	$ 35.00	$ 3,920.00	
3/4" Crushed Stone (24" depth)	890	CY	$ 35.00	$ 31,150.00	
Soil Filter Media:					
Mulch Layer (3" depth)	18	CY	$ 45.00	$ 810.00	
Soil Filter (18" depth)	104	CY	$ 50.00	$ 5,200.00	
Coarse Gravel (12" depth)	69	CY	$ 36.00	$ 2,484.00	
6" Underdrain	665	LF	$ 25.00	$ 16,625.00	
Geotextile	240	SY	$ 4.00	$ 960.00	
Overflow Structure (4' diameter)	4	EA	$ 3,500.00	$ 14,000.00	
Remove Existing Pipe	600	LF	$ 25.00	$ 15,000.00	
Remove & Reset Existing Pipe	50	LF	$ 25.00	$ 1,250.00	
12" Diameter PVC Pipe	184	LF	$ 85.00	$ 15,640.00	
18" Diameter PVC Pipe	70	LF	$ 95.00	$ 6,650.00	
30" Diameter RCP Pipe	143	LF	$ 175.00	$ 25,025.00	
Bituminous Pavement (3")	5	TON	$ 100.00	$ 500.00	
Aggregate Base (3") and Subbase (15")	14	CY	$ 30.00	$ 420.00	
Bituminous Driveway Apron	139	SY	$ 45.00	$ 6,255.00	
Loam and Seed	1,849	SY	$ 6.00	$ 11,094.00	
Landscaping	1	LS	$ 69,400.00	$ 69,400.00	
Construction Cost per Unit:					***$ 253,972.00***
Engineering & Permitting (15%), Survey (5%) & Const. Bonds, Insurance, etc. (5%):					***$ 63,493.00***
Contingency (25%)					***$ 79,366.25***
Total Cost per System:					***$ 396,831.25***

Notes

LR-03: Westbrook, Maine
Parcel ID: 042A 011B, 047 002 & 047 001

Gravel Wetland
Water Storage Volume Provided= 36,021 cf
Assumed Storage Depth = 3'

Soil Filter
Water Storage Volume Provided= 1,858 cf
Assumed Storage Depth = 1'

Total Water Storage Provided = 37,879 cf

COMMITMENT & INTEGRITY
DRIVE RESULTS
WOODARD & CURRAN
41 Hutchins Drive
Portland, Maine 04102
Tel. 207-774-2112

CLIENT	City of Portland		
PROJECT	Stormwater Retrofits - Capisic Brook Watershed - Larrabee Road		
DESIGNED BY	ZH	DATE	10/27/2010
COST BY	MDL	DATE	12/13/2010
CHECKED BY	ZH	DATE	12/13/2010
PROJECT NO.	203939.51		

Larrabee Road (LR) Stormwater Retrofits - Opinion of Probable Cost

Assumptions: Unit costs are reflective of retrofit construction. Unit costs provided for this estimate were based on averaged MaineDOT unit bid prices from recent projects bid and constructed in Portland, Maine. The ENR Construction Cost Index for this estimate is 8951 as of November 2010.

LR-04 Gravel Wetland & Soil Filter

	Quantity	Unit	Unit Cost	Price	Total
Excavation & Disposal	424	CY	$ 12.00	$ 5,088.00	
Gravel Wetland Media:					
Wetland Soil (8" depth)	74	CY	$ 30.00	$ 2,220.00	
Pea Gravel (3" depth)	28	CY	$ 35.00	$ 980.00	
3/4" Crushed Stone (24" depth)	220	CY	$ 35.00	$ 7,700.00	
Soil Filter Media:					
Mulch Layer (3" depth)	10	CY	$ 45.00	$ 450.00	
Soil Filter (18" depth)	57	CY	$ 50.00	$ 2,850.00	
Coarse Gravel (12" depth)	38	CY	$ 35.00	$ 1,330.00	
6" Underdrain	360	LF	$ 25.00	$ 9,000.00	
Geotextile	356	SY	$ 4.00	$ 1,424.00	
Overflow Structure (4' diameter)	1	EA	$ 3,500.00	$ 3,500.00	
Loam and Seed	530	SY	$ 6.00	$ 3,180.00	
Landscaping	1	LS	$ 18,400.00	$ 18,400.00	
				Construction Cost per Unit:	***$ 56,122.00***
				Engineering & Permitting (15%), Survey (5%) & Const. Bonds, Insurance, etc. (5%):	***$ 14,030.50***
				Contingency (25%)	***$ 17,538.13***
				Total Cost per System:	***$ 87,690.63***

Notes

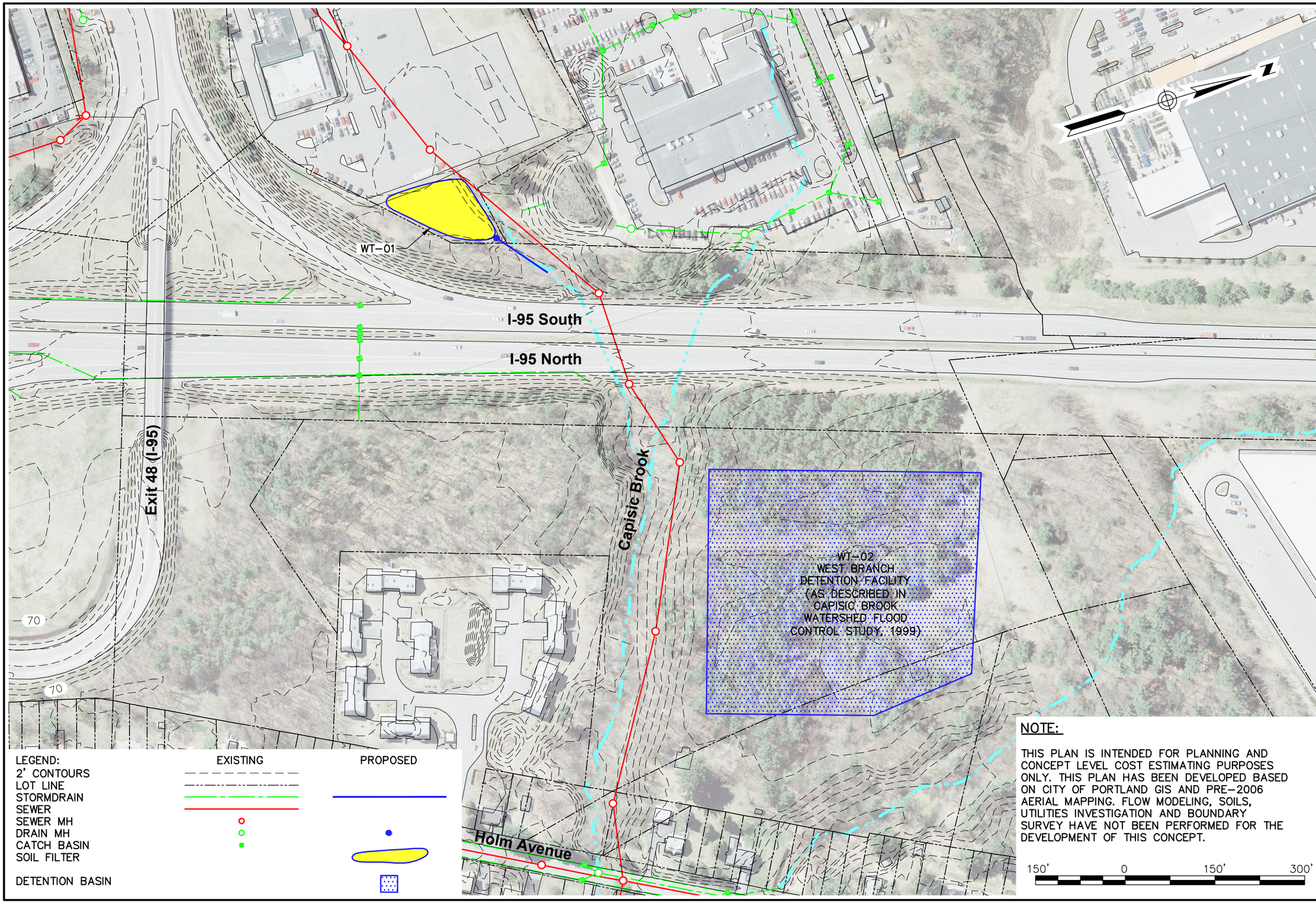
LR-04: Westbrook, Maine
Parcel ID: 047 201 & 047 002

Gravel Wetland
Water Storage Volume Provided= 8,889 cf
Assumed Storage Depth = 3'

Soil Filter
Water Storage Volume Provided= 1,012 cf
Assumed Storage Depth = 1'

Total Water Storage Provided = 9,901 cf

Total Project Construction Cost:	***$***	***785,000.00***
Total Cost per Cubic Foot Treated:	***$***	***9.98***



NOTE:

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WOODARD & CURRAN
COMMITMENT & INTEGRITY DRIVE RESULTS

WEST TRIBUTARY STORMWATER IMPROVEMENTS

DESIGNED BY: ZLH
DRAWN BY: JBC
CHECKED BY: ZLH
203939.51-X00C.DWG

CITY OF PORTLAND
PORTLAND, MAINE

CAPISIC BROOK WATERSHED MANAGEMENT PLAN

JOB NO: 203939.51
DATE: NOVEMBER 2010
SCALE: 1"=150'

Figure 4

COMMITMENT & INTEGRITY
DRIVE RESULTS
WOODARD &CURRAN
41 Hutchins Drive
Portland, Maine 04102
Tel. 207-774-2112

CLIENT	City of Portland		
PROJECT	Stormwater Retrofits - Capisic Brook Watershed - West Tributary		
DESIGNED BY	ZH	DATE	10/27/2010
COST BY	MDL	DATE	12/13/2010
CHECKED BY	ZH	DATE	12/13/2010
PROJECT NO.	203939.51		

West Tributary (WT) Stormwater Retrofits - Opinion of Probable Cost

Assumptions: Unit costs are reflective of retrofit construction. Unit costs provided for this estimate were based on averaged MaineDOT unit bid prices from recent projects bid and constructed in Portland, Maine. The ENR Construction Cost Index for this estimate is 8951 as of November 2010.

	Quantity	Unit	Unit Cost	Price	Total
WT-01 Soil Filter					
Excavation & Disposal	1176	CY	$ 12.00	$ 14,112.00	
Soil Filter Media:					
Mulch Layer (3" depth)	107	CY	$ 45.00	$ 4,815.00	
Soil Filter (18" depth)	642	CY	$ 50.00	$ 32,100.00	
Coarse Gravel (12" depth)	428	CY	$ 35.00	$ 14,980.00	
6" Underdrain	625	LF	$ 25.00	$ 15,625.00	
Overflow Structure (4' diameter)	1	EA	$ 3,500.00	$ 3,500.00	
12" Diameter PVC Pipe	105	LF	$ 85.00	$ 8,925.00	
Geotextile	1333	SY	$ 4.00	$ 5,332.00	
Loam and Seed	1540	SY	$ 6.00	$ 9,240.00	
Landscaping	1	LS	$ 57,800.00	$ 57,800.00	
Construction Cost per Unit:					***$ 166,429.00***
Engineering & Permitting (15%), Survey (5%) & Const. Bonds, Insurance, etc. (5%):					***$ 41,607.25***
Contingency (25%)					***$ 52,009.06***
Total Cost per System:					***$ 260,045.31***

Notes

WT-01: Portland, Maine

Parcel ID: 268 A011 & 267 B001

Soil Filter
Water Storage Volume Provided= 11,544 cf
Assumed Storage Depth = 1'

	Quantity	Unit	Unit Cost	Price	Total
WT-02 West Branch Detention Facility					
Holm Avenue Culvert Replacement	1	LS	$ 237,300.00	$ 237,300.00	
Traffic Control, Mobilization & Demobilization	1	LS	$ 21,900.00	$ 21,900.00	
Site Preparation & Cleaning	9	AC	$ 4,400.00	$ 39,600.00	
Common Excavation	172,350	CY	$ 14.00	$ 2,412,900.00	
Gravel Wetland Media:					
Wetland Soil (8" depth)	3,675	CY	$ 30.00	$ 110,250.00	
Pea Gravel (3" depth)	1,379	CY	$ 35.00	$ 48,265.00	
3/4" Crushed Stone (24" depth)	11,025	CY	$ 35.00	$ 385,875.00	
6" Underdrain	700	LF	$ 25.00	$ 17,500.00	
Riprap	240	CY	$ 60.00	$ 14,400.00	
Geotextile	475	SY	$ 4.00	$ 1,900.00	
Loam and Seed	12,250	SY	$ 6.00	$ 73,500.00	
Stream Diversion	1	LS	$ 43,800.00	$ 43,800.00	
Outlet Control Structure	1	LS	$ 65,700.00	$ 65,700.00	
Construction Cost per Unit:					***$ 3,472,890.00***
Engineering & Permitting (15%), Survey (5%) & Const. Bonds, Insurance, etc. (5%):					***$ 868,222.50***
Contingency (25%)					***$ 1,085,278.13***
Total Cost per System:					***$ 5,426,390.63***

Notes

WT-02: Portland, Maine

Parcel ID: 270 C004

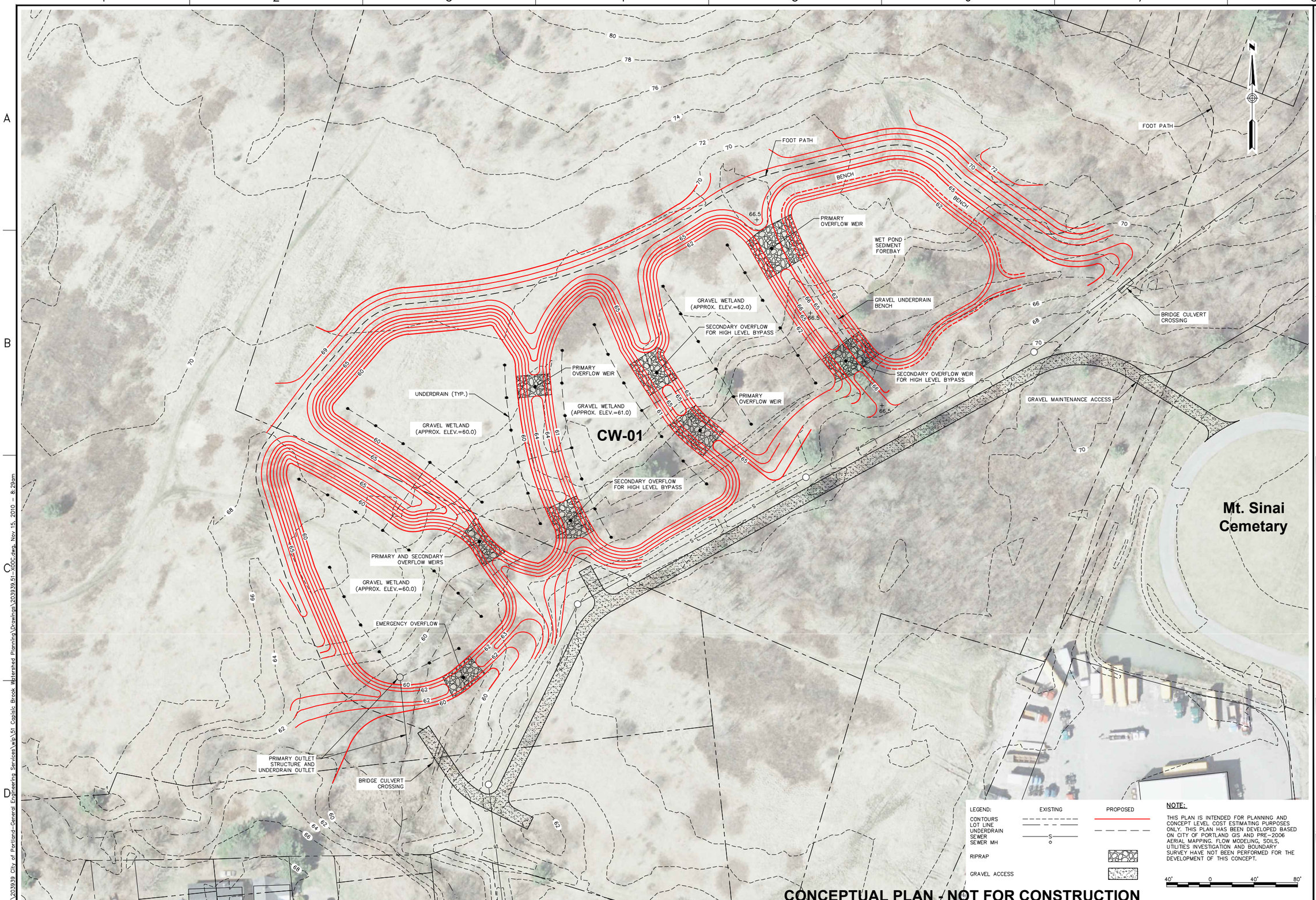
Gravel Wetland
Water Storage Volume Provided= 474,000 cf
Assumed Storage Depth = 3'

Costs based on Capisic Brook Flood Control Study Re-evaluation, Deluca-Hoffman Associates, 1999 with addition of gravel wetland filtration. Prices adjusted using ENR Construction Costs index

Land Acquisition Not Assumed to be Required for this System

Total Project Construction Cost:	***$***	***5,687,000.00***
Total Cost per Cubic Foot Treated:	***$***	***11.71***

22x34 SHEET
1:2



CONCEPTUAL PLAN - NOT FOR CONSTRUCTION

O:\203939 City of Portland-General Engineering Services\wip\51 Capisic Brook Watershed Planning\Drawings\203939.51-XXOC.dwg, Nov 15, 2010 - 8:29am

WOODARD & CURRAN
41 Hutchins Drive
Portland, Maine 04102
800.426.4262 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

THE PROPERTY OF WOODARD & CURRAN INC. AND ITS CLIENT. REPRODUCTION OR MODIFICATION WITHOUT WRITTEN PERMISSION IS PROHIBITED.

REV	DESCRIPTION	DATE

DESIGNED BY: DLC
DRAWN BY: JBC
CHECKED BY: DLC
203939.51-XXOC.DWG

CAPISIC BROOK STORMWATER WETLANDS PARK

CITY OF PORTLAND
PORTLAND, MAINE

CAPISIC BROOK WATERSHED MANAGEMENT PLAN

JOB NO.: 203939.51
DATE: NOVEMBER 2010
SCALE: 1" = 40'
SHEET: 5 OF 5

Figure 5

COMMITMENT & INTEGRITY
DRIVE RESULTS
WOODARD &CURRAN
41 Hutchins Drive
Portland, Maine 04102
Tel. 207-774-2112

CLIENT	City of Portland		
PROJECT	Stormwater Retrofits - Capisic Brook Watershed - Stormwater Wetland Park		
DESIGNED BY	DLC	DATE	10/8/2010
COST BY	MDL	DATE	12/13/2010
CHECKED BY	ZH	DATE	12/13/2010
PROJECT NO.	203939.51		

Capisic Brook Stormwater Wetlands Park - Opinion of Probable Cost

Assumptions:.Unit costs are reflective of retrofit construction. Unit costs provided for this estimate were based on averaged MaineDOT unit bid prices from recent projects bid and constructed in Portland, Maine. The ENR Construction Cost Index for this estimate is 8951 as of November 2010.

Wet Pond and Gravel Wetlands	Quantity	Unit	Unit Cost	Price	Total
Excavation & Reuse	1,182	CY	$ 9.00	$ 10,638.00	
Excavation & Disposal	40,835	CY	$ 12.00	$ 490,020.00	
Gravel Wetland Media:					
Wetland Soil (8" depth)	2,562	CY	$ 30.00	$ 76,860.00	
Pea Gravel (3" depth)	961	CY	$ 35.00	$ 33,635.00	
3/4" Crushed Stone (24" depth)	7,685	CY	$ 35.00	$ 268,975.00	
6" Underdrain	2,675	LF	$ 25.00	$ 66,875.00	
Overflow Structure (4' diameter)	1	EA	$ 3,500.00	$ 3,500.00	
Riprap (18" depth)	476	CY	$ 75.00	$ 35,700.00	
Geotextile	8,576	SY	$ 4.00	$ 34,304.00	
Access Drive (20' wide)	965	LF	$ 65.00	$ 62,725.00	
Foot Path (5' wide)	1,688	LF	$ 20.00	$ 33,760.00	
Bridge Culvert	2	EA	$ 1,000.00	$ 2,000.00	
Loam and Seed	27,215	SY	$ 6.00	$ 163,290.00	
Landscaping	1	LS	$ 100,000.00	$ 100,000.00	
Construction Cost per Unit:					***$ 1,382,282.00***
Engineering & Permitting (15%), Survey (5%) & Const. Bonds, Insurance, etc. (5%):					***$ 345,570.50***
Contingency (25%)					***$ 431,963.13***
Total Cost per System:					***$ 2,159,815.63***

Notes

CW-01: Portland, Maine
Parcel ID: 301 J010 & 302 A001

Gravel Wetland
Water Storage Volume Provided= 177,072 cf
Assumed Storage Depth = 3'

Land Acquisition Assumed to be Required for this System

Construction Cost:	***$***	***2,160,000.00***
Land Acquisition:	***$***	***2,000,000.00***
Total Project Cost:	***$***	***4,160,000.00***
Total Cost per Cubic Foot Treated:	***$***	***23.49***

COMMITMENT & INTEGRITY
DRIVE RESULTS

41 Hutchins Drive
Portland, Maine 04102
Tel. 207-774-2112

CLIENT	Portland, ME	DATE	9/22/2010
PROJECT	Capisic Brook	DATE	9/22/2010
DESIGNED BY	ZLH	DATE	9/22/2010
COST BY	AJM	SHEET NO.	1 of 1
CHECKED BY	ZLH		
PROJECT NO.	203939.51		

Street Sweeping Cost Estimates

STREET SWEEPING ASSUMPTIONS	
13 Lane-miles per day	290 CY disposed annually
2 No. of operators	12 CY disposed per trip
$23.99 Hourly Labor Rate	$149 per CY disposed

CAPITAL OPERATIONS AND MAINTENANCE

Equipment & Maintenance	Unit Cost per Hour	Hours per Event	O&M Cost per Event	Annual O&M Costs
Tymco 500x Street Sweeper	$ 85.00	35	$ 3,007.69	$ 12,030.77
Disposal		6	$ 10,911.19	$ 43,644.76
		Annual Capital Replacement and Maintenance		*$ 55,675.53*

SWEEPING LABOR

	Lane-Miles	Labor Cost per Event	Annual Sweeping Labor Costs
Town & State Roadways	46.0	$ 1,697.75	$ 6,791.02
	Annual Street Sweeping Labor		*$ 6,800.00*
	TOTAL ANNUAL STREET SWEEPING COSTS		*$ 62,475.53*

Cost Analysis Assumptions:

1. Annual Street Sweeping Costs assume quarterly sweeping of all town- and state-owned roadways.
2. Capital Operations and Maintenance Costs have been normalized by the City of Portland and incorporated into an hourly rate of use.
3. Costs apply to sweeping of Town- and State-owned roads only.
4. Town and State roadway miles per GIS analysis. Two (2) lane-miles assumed per mile of roadway.
5. Ten (10) -hour work days.

COMMITMENT & INTEGRITY
DRIVE RESULTS

41 Hutchins Drive
Portland, Maine 04102
Tel. 207-774-2112

CLIENT	Portland, ME	DATE	9/22/2010
PROJECT	Capisic Brook	DATE	9/22/2010
DESIGNED BY	ZLH	DATE	9/22/2010
COST BY	AJM	SHEET NO.	1 of 1
CHECKED BY	ZLH		
PROJECT NO.	203939.51		

Catch Basin Cleaning Cost Estimates

	No. Catch Basins	*Cost per Catch Basin*	*Cost per Event*	*Annual Sweeping Costs*
Catch Basin Cleaning	431	$ 83.96	$ 36,186.76	$ 36,186.76
			TOTAL ANNUAL CATCH BASIN CLEANING COSTS	***$ 36,186.76***

Cost Analysis Assumptions:

1. Assumes all catch basins are cleaned annually.
2. Catch basin cleaning unit cost includes labor, equipment and disposal costs - as provided by City of Portland.
3. Number of catch basins were determined using GIS database.
4. Costs apply to catch basins located within the City of Portland or State roadway ROW only.

COMMITMENT & INTEGRITY
DRIVE RESULTS

41 Hutchins Drive
Portland, Maine 04102
Tel. 207-774-2112

CLIENT	Portland, ME	DATE	9/22/2010
PROJECT	Capisic Brook	DATE	9/22/2010
DESIGNED BY	ZLH	DATE	9/22/2010
COST BY	AJM	SHEET NO.	1 of 1
CHECKED BY	ZLH		
PROJECT NO.	203939.51		

Street Tree Planting Cost Estimates

	No. Parcels (Commercial /Industrial)	*No. Trees Planted*	*Cost per Planting*	*Total*
	285	428	$ 298.00	$ 127,395.00
		TOTAL STREET TREE PLANTING COSTS		***$ 127,395.00***

Cost Analysis Assumptions:

1. Number of commercial and industrial parcels were determined using GIS land use data.
2. Cost assumes half of commercial parcels participate in program and 3 trees planted per parcel.
3. Cost per planting includes cost of tree (as provided by City of Portland Parks & Forestry Department) and cost of labor.