Worksheet 2-3. Field form for Level II stream classification (Rosgen, 1996; Rosgen , 2006b).

Stream: Sweet Run			
Basin: Potomac	Drainage Area:	acres 1.635	mi^2
Location: 39° 16' 49.71" N	-77° 44' 29.93" W		
Twp.&Rge:	Sec.&Qtr.:		
Cross-Section Monuments (Lat./Long.):		Date: 3/26	
Observers: Team 3		Valley Type: 8 b	

Bankfull WIDTH (W_{bkf}) WIDTH of the stream channel at bankfull stage elevation, in a riffle section.	23.8	ft
Bankfull DEPTH (d_{bkf}) Mean DEPTH of the stream channel cross-section, at bankfull stage elevation, in a riffle section ($d_{bkf} = A / W_{bkf}$).	0.85	ft
Bankfull X-Section AREA (A_{bkf}) AREA of the stream channel cross-section, at bankfull stage elevation, in a riffle section.	20.2	ft^2
Width/Depth Ratio (W_{bkf} / d_{bkf}) Bankfull WIDTH divided by bankfull mean DEPTH, in a riffle section.	27.9	ft/ft
Maximum DEPTH (d_{mbkf}) Maximum depth of the bankfull channel cross-section, or distance between the bankfull stage and Thalweg elevations, in a riffle section.	1.4	ft
WIDTH of Flood-Prone Area (W_{fpa}) Twice maximum DEPTH, or ($2 \times d_{mbkf}$) = the stage/elevation at which flood-prone area WIDTH is determined in a riffle section.	48.4	ft
Entrenchment Ratio (ER) The ratio of flood-prone area WIDTH divided by bankfull channel WIDTH (W_{fpa} / W_{bkf}) (riffle section).	2.0	ft/ft
Channel Materials (Particle Size Index) D_{50} The D_{50} particle size index represents the mean diameter of channel materials, as sampled from the channel surface, between the bankfull stage and Thalweg elevations.	23	mm
Water Surface SLOPE (S) Channel slope = "rise over run" for a reach approximately 20–30 bankfull channel widths in length, with the "riffle-to-riffle" water surface slope representing the gradient at bankfull stage.	1.2	ft/ft
Channel SINUOSITY (k) Sinuosity is an index of channel pattern, determined from a ratio of stream length divided by valley length (SL / VL); or estimated from a ratio of valley slope divided by channel slope (VS / S).	1.2	

Stream Type B4c **See Classification Key (Figure 2-21)**

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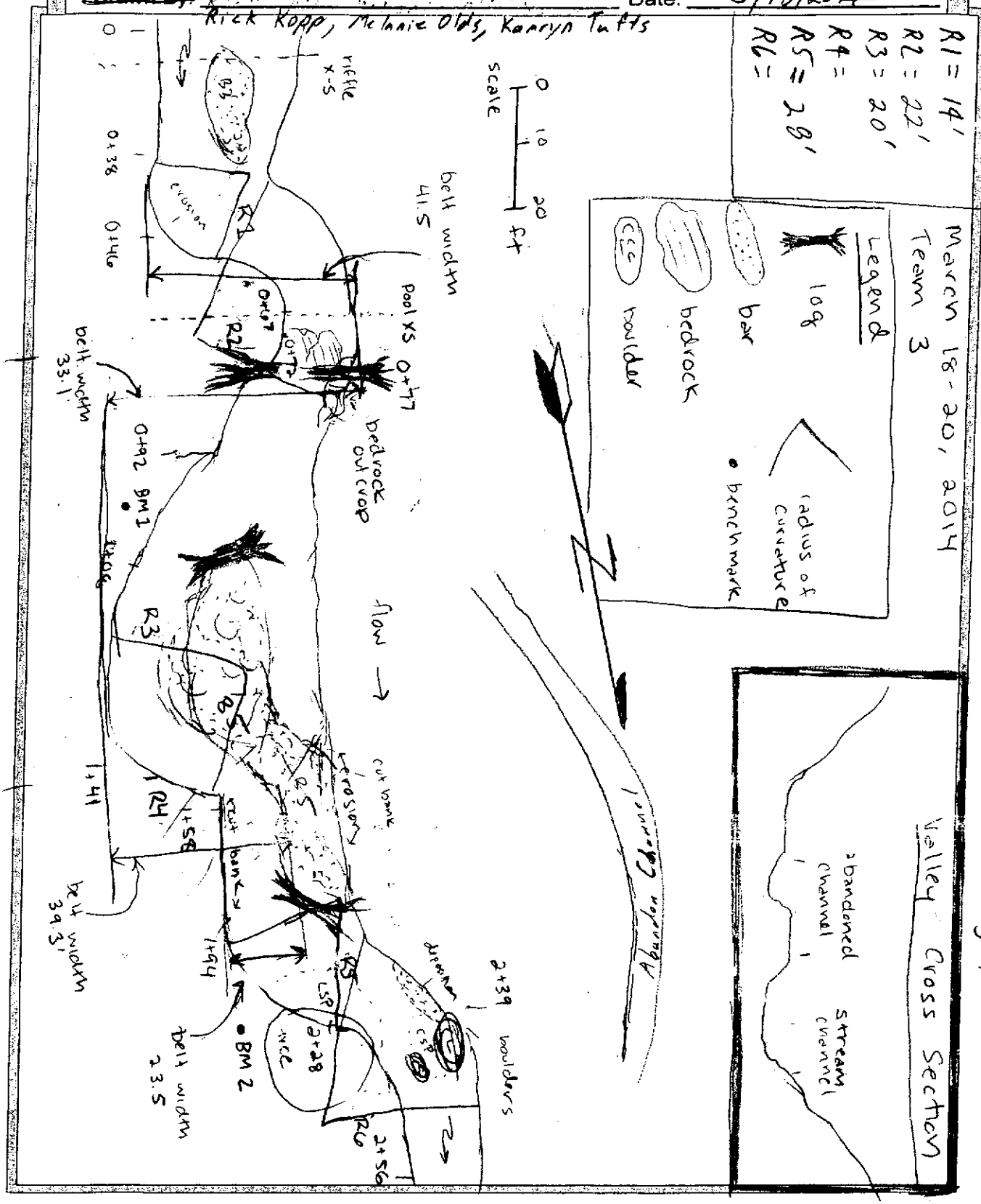
AREA-SITE LOCATION....REACH MAP

Stream: Sweet Run Reach: Reach 3

~~Drawn By:~~ Surveyors Kathleen Cullen, Lovell Facemire, Andrew Hartzog, Rick Kopp, Melanie Olds, Kamryn Tufts Date: 3/18/2014



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Riffle #1

Riffle Stability Index

~85%

Material	Size Range (mm)		Pebble Counts	% in Class	Cumulative
silt/clay	0	0.062			12
very fine sand	0.062	0.13			1
fine sand	0.13	0.25			5
medium sand	0.25	0.5			1
coarse sand	0.5	1			3
very coarse sand	1	2			2
very fine gravel	2	4			6
fine gravel	4	6			10
fine gravel	6	8			10
medium gravel	8	11			11
medium gravel	11	16			15
coarse gravel	16	22			9
coarse gravel	22	32			16
very coarse gravel	32	45			11
very coarse gravel	45	64			4
small cobble	64	90			11
medium cobble	90	128			12
large cobble	128	180			8
very large cobble	180	256			10
small boulder	256	362			6
small boulder	362	512			5
medium boulder	512	1024			2
large boulder	1024	2048			0
very large boulder	2048	4096			1

Total Particles =

Enter intermediate diameters (mm) of 10 – 30 particles on bar:

1	180	11	241	21	175
2	130	12	98	22	190
3	160	13	101	23	230
4	138	14	299	24	160
5	155	15	110	25	340
6	120	16	135	26	190
7	149	17	77	27	360
8	142	18	95	28	100
9	159	19	185	29	240
10	94	20	330	30	

Geometric Mean Grain Size (mm) = $1.236677138 \times 10^{64}$

Geometric mean of the bar sample particles 162.21

Field Data Sheet for Discharge Measurements

Stream Discharge Measurement Sheet

Site ID #: _____
Name and Location: Sweet Run Loudoun Co. VA
Date: 20 Mar 2014 Crew: Team 3

County: Loudoun
Weather: Mostly sunny
Cross-section Location: _____
Meter: _____

Total Width - 20.8

Station	Width	Depth	Area (Width x Depth)	~~Run Length~~	~~Secs~~	Velocity ~~(cfs)~~ ft/s	~~Average Velocity~~ ~~Use with 2pt method (0.2+0.8)/2~~	(cfs) Discharge (Area x Velocity)
1	2'	0.35'	0.70			0.02		0.014
2	2'	0.4	0.80			1.25		1.000
3	2'	0.35	0.70			0.72		0.504
4	2	0.50	1.00			0.89		0.890
5	2	0.45	0.90			0.60		0.540
6	2	0.45	0.90			0.26		0.234
7	2	0.40	0.80			0.01		0.008
8	2	0.30	0.60			0.01		0.006
9	2	0.70	1.40			1.00		1.400
10	2	0.55	1.10			0.32		0.352
								~~4.944~~
								4.944

Total Discharge: 4.944 CFS (oMeasured, o Estimated)

Comments:

Field Data Sheet for Discharge Measurements

Stream Discharge Measurement Sheet

Site ID #: Sweet Run
Name and Location:
Date: 3-20-14 Crew: Team 3

County: POOL
Weather:
Cross-section Location:
Meter:

Station	Total 7.8 Width	Depth	Area (Width x Depth)	~~Run Length~~	~~Secs~~	Velocity (cfs)	~~Average Velocity Use with 2pt method (0.2+0.8)/2~~	(cfs) Discharge (Area x Velocity)
	~~7.8~~	1.28	9.98			.28		2.79
	0.78	1.45	11.31			.64		7.24
		1.2	9.36			.67		6.27
		1.3	10.14			.68		6.89
		1.05	8.19			.57		4.67
		.92	7.18			.54		3.23
		.90	7.02			.61		4.28
		.80	6.24			.53		3.30
		.75	5.85			.45		2.63
		.78	6.08			.50		3.04
								44.33

Total Discharge: 4.433 CFS (oMeasured, o Estimated)

Comments:

Field Data Sheet for Discharge Measurements

Stream Discharge Measurement Sheet

Site ID #: sweet run

Name and Location:

Date: 3/20/14 Crew: Team 3

County: Loudoun

Weather: clear, sunny

Cross-section Location:

Meter:

Station	Width	Depth	Area (Width x Depth)	~~Run Length~~	~~Secs~~	ft/sec Velocity ~~(cfs)~~	Average Velocity Use with 2pt method (0.2+0.8)/2	cfs Discharge (Area x Velocity)
2.3	1.3	0.1	0.13			0.40		0.052
3.6	1.3	0.2	0.26			0.48		0.125
4.9	1.3	0.4	0.52			0.75		0.39
6.2	1.3	0.4	0.52			1.15		0.59
7.5	1.3	0.45	0.585			1.79		1.05
8.8	1.3	0.45	0.585			1.02		0.59
10.1	1.3	0.4	0.52			1.42		0.74
11.4	1.3	0.4	0.52			1.13		0.59
12.7	1.3	0.3	0.39			0.8		0.31
13.0	1.3	0.05	0.065			0		0

Total Discharge: 4.437 CFS (oMeasured, o Estimated)

Comments:

Stream Sweet Run Location: Team: # 3

Systematic transects spaced at 2 mean stream widths intervals. *Velocity*, *Depth*, *Substrate*, and *Embeddedness* measurements taken at points 0.25, 0.5, and 0.75 wetted stream width of transect. Four substrate measurements taken at each observation point. Measurements taken from left descending bank to right descending bank

Silt (<0.062) = 1, Sand (0.062 - 2 mm) = 2, Gravel (fine; 2 – 16 mm) = 3, Gravel (coarse or "Pebble"; 17 – 63 mm) = 4, Cobble (64 – 256 mm) = 5, Boulder (256 – 4,096 mm) = 6, Bedrock (> 4,096 mm)

Embeddedness: **1** = <5%, **2** = 5 – 25%, **3** = 26 – 50%, **4** = 51 – 75%, **5** > 75%

Canopy presence/absence: taken with tube densiometer at 10 evenly spaced points per transect; P = 1.

Strip transect: *Instream cover* (2 foot intervals); >10 cm = 2 surfaces, <10 cm = 1 surface, <3 cm apart = 1 surface, > 3 cm apart = 2 surfaces; *Structural complexity* (6 foot intervals)

At each end of transect: *Bank angle* (taken with clinometer), *Riparian cover* density (taken with spherical densiometer)

Distance (feet)	Wetted Width	Velocity (ft/sec)	Depth (inches)	Substrate	Embedded	Bank angle L	Bank angle R	Instr Cover	Mesohabitat Type	Rip density L	Rip density R	Canopy P/A
27.0'	20'	0.79 0(bar) 1.44	5 cm 20.5 cm 25 cm	3 3 3 3 — 4 4 5 5		55°	130°	4	run	10/17 59%	4/17 24%	10 P
38.7'	18.2'	0.06 0.02 2.3	11 cm 9.2 cm 2.75 cm	3 3 3 3 3 2 2 4 5 5 6 4		153°	148°	4	run	10/17 59%	11/17 65%	8 P

stem density | 27.0' R - 5 | 38.7' L - 2 R - 1

basal area | 27.0' R - 160 ft²/acre | 38.7' L - 150 ft²/acre R - 155 ft²/acre