MANNINGS TRAPEZOIDAL CHANNEL, using channel transect data

using wetted width as bottom width, using average water depth, top width = bankful width

CALC. I.D.	DEPTH (d) (ft)	BOTTOM (b) (ft)	TOP (TW) (ft)	SIDE (e) (ft)	(TW-b)/2 (ft)	CX area (sq ft)	wet perim. (ft)	HYDR. RADIUS (ft)	SLOPE (ft/ft)	S1/2	ROUGHNESS COEF.	VELOCITY (fps)	FLOW (cfs)	FLOW (MGD)
BDL-2	1.05	15.8	24.3		4.25	21.28	24.97	0.85	0.0012	0.0349	0.045	1.04	22.10	14.28
LC-4	1.79	16	20.1		2.05	35.21	24.17	1.46	0.0002	0.0125	0.068	0.35	12.39	8.01
LC-3	1.08	8.9	15.4		3.25	13.40	16.24	0.83	0.0021	0.0462	0.104	0.58	7.80	5.04

using wetted width as bottom width, using average (mean) bankful depth (Dbkf), top width = bankful width

CALC. I.D.	DEPTH (d) (ft)	BOTTOM (b) (ft)	TOP (TW) (ft)	SIDE (e) (ft)	(TW-b)/2 (ft)	CX area (sq ft)	wet perim. (ft)	HYDR. RADIUS (ft)	SLOPE (ft/ft)	S1/2	ROUGHNESS COEF.	VELOCITY (fps)	FLOW (cfs)	FLOW (MGD)
BDL-2	2.50	15.8	24.3		4.25	66.06	37.63	1.76	0.0012	0.0349	0.045	1.68	111.11	71.78
LC-4	2.92	16	20.1		2.05	64.20	29.32	2.19	0.0002	0.0125	0.068	0.46	29.65	19.15
LC-3	1.57	8.9	15.4		3.25	21.98	19.58	1.12	0.0021	0.0462	0.104	0.71	15.71	10.15

Verify values using 4/13/10 data

CALC. I.D.	DEPTH (d) (ft)	BOTTOM (b) (ft)	TOP (TW) (ft)	SIDE (e) (ft)	(TW-b)/2 (ft)	CX area (sq ft)	wet perim. (ft)	HYDR. RADIUS (ft)	SLOPE (ft/ft)	S1/2	ROUGHNESS COEF.	VELOCITY (fps)	FLOW (cfs)	FLOW (MGD)		area	Q (cfs)	vel (fps)
BDL-2	0.9	4.5	11		3.25	6.7	10.62	0.63	0.0012	0.0349	0.045	0.85	5.67	3.66	BDL-2	6.7	5.63	0.74
LC-4	1.80	3	14		5.50	23.2	23.12	1.00	0.0002	0.0125	0.068	0.27	6.38	4.12	LC-4	16.5	6.37	0.30
LC-3	1.20	2.75	8.5		2.88	7.44	10.06	0.74	0.0021	0.0462	0.104	0.54	4.03	2.60	LC-3	7.45	4.04	0.44

Verify values using 4/13/10 data uncertain about e and Z calculation

CALC. I.D.	DEPTH (d) (ft)	BOTTOM (b) (ft)	TOP (TW) (ft)	SIDE (e) (ft)	Z (ft)	CX area (sq ft)	wet perim. (ft)	HYDR. RADIUS (ft)	SLOPE (ft/ft)	S1/2	ROUGHNESS COEF.	VELOCITY (fps)	FLOW (cfs)	FLOW (MGD)		area	Q (cfs)	vel (fps)
LC-4	1.80	3	14	6.26	3.48	16.7	16.03	1.04	0.0002	0.0125	0.05	0.38	6.37	4.12	LC-4	16.5	6.37	0.30