



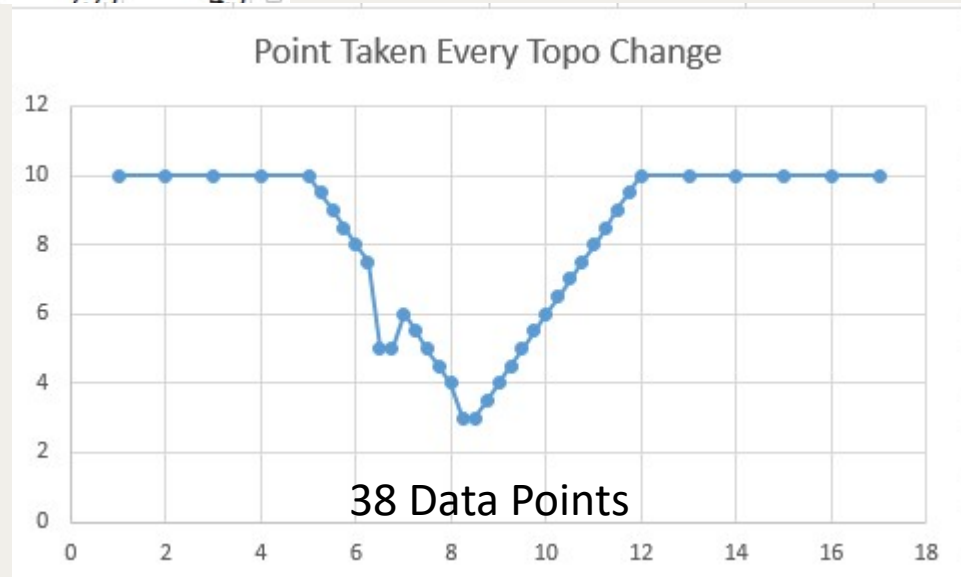
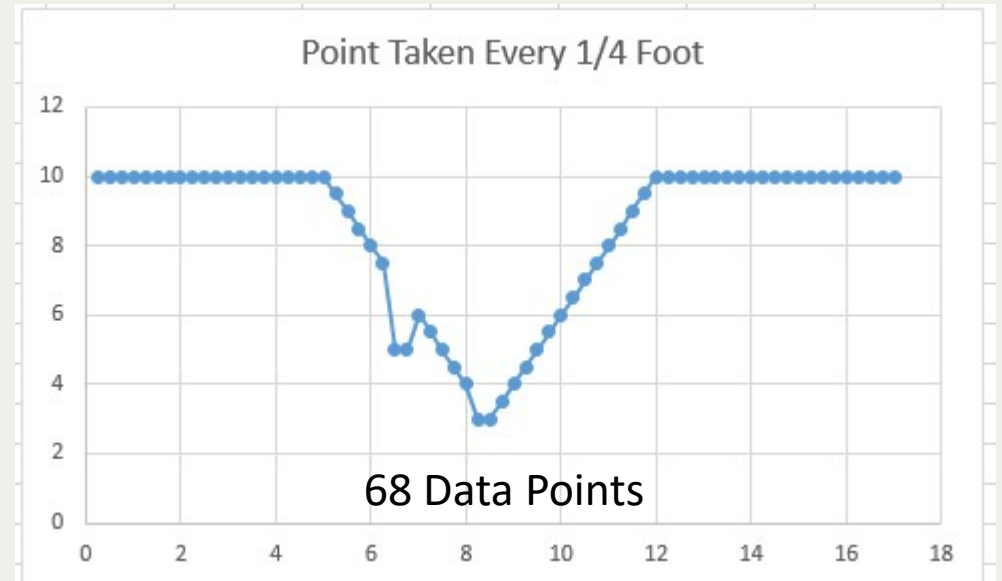
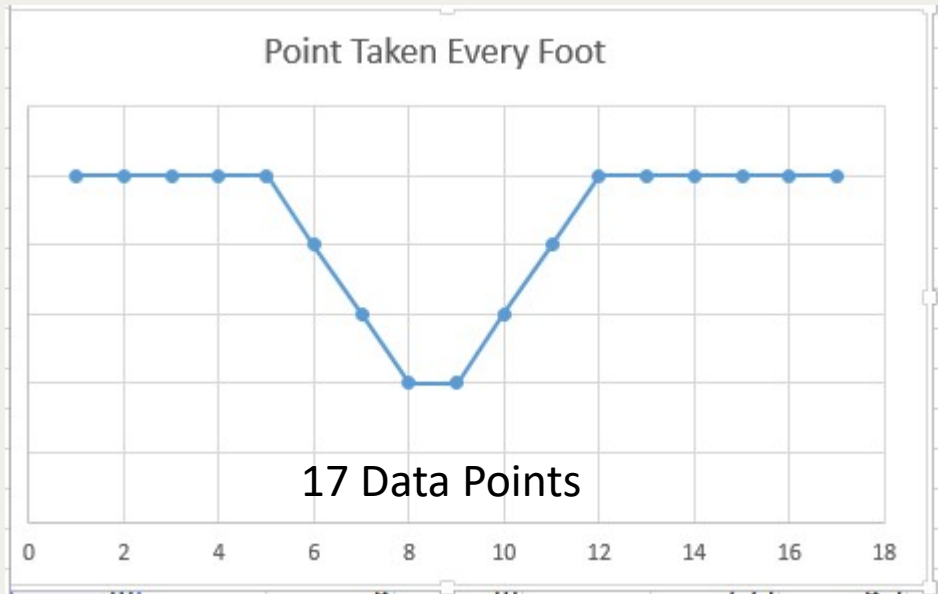
Columbia Land Trust

CONSERVING THE NATURE YOU LOVE

Cross Section Protocol

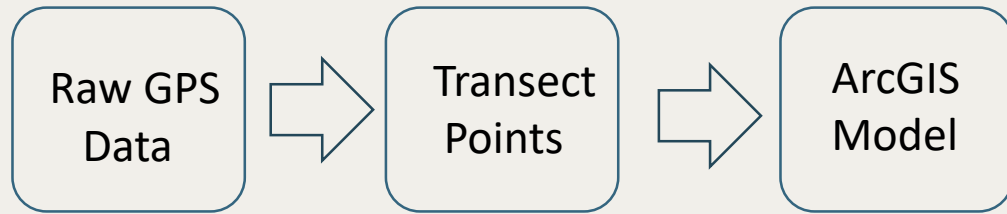
Science Work Group – 12/17/19







Workflow & Conceptual Model



Step 1

Process Field Data Using Template Schema

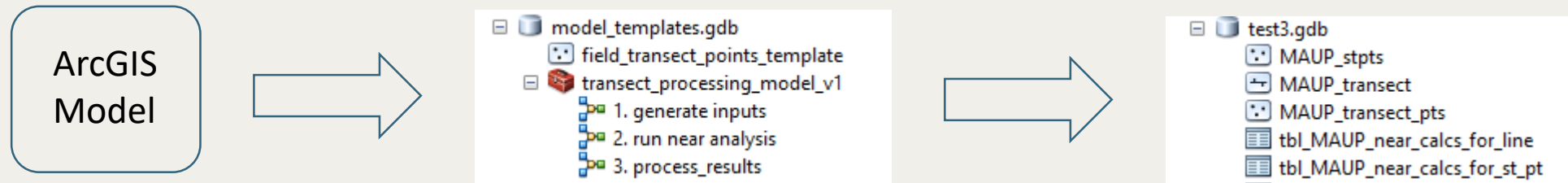
Transect Names – **transect_id**

Start Point/Stop Point – **start_points**

FID *	Shape *	PT_ID	NORTHING	EASTING	ELEVATION	DESCRIPTIO	start_points	transect_id
1	Point ZM	MAUP_S	377634.6875	843576.75	9.46	MAUP-S	1	MAUP
2	Point ZM	MAUP_N	377737.75	843428.3125	9.468	MAUP-N	2	MAUP
3	Point ZM	XY1	377836.4503	845062.1957	7.5189	TOP	1	XY
4	Point ZM	XY2	377836.6601	845062.1153	7.314		<Null>	XY
5	Point ZM	XY3	377840.6001	845049.8643	7.2392		<Null>	XY
6	Point ZM	XY4	377842.4773	845043.6241	5.7424		<Null>	XY
7	Point ZM	XY5	377845.0299	845037.1391	6.1743		<Null>	XY
8	Point ZM	XY6	377846.8979	845034.5874	3.9644		<Null>	XY
9	Point ZM	XY7	377849.2382	845029.4782	4.0247		<Null>	XY
10	Point ZM	XY8	377851.0848	845025.1751	4.0935		<Null>	XY
11	Point ZM	XY9	377852.7104	845022.3777	5.0115		<Null>	XY
12	Point ZM	XY10	377855.2481	845015.8223	6.6349		<Null>	XY
13	Point ZM	XY11	377859.1233	845005.049	7.2341		2	XY
14	Point ZM	MAUP1	377632.1268	843580.6845	9.4267		<Null>	MAUP
15	Point ZM	MAUP2	377634.9769	843575.6557	9.3749		<Null>	MAUP
16	Point ZM	MAUP3	377641.1496	843563.3034	8.9771		<Null>	MAUP
17	Point ZM	MAUP4	377645.1676	843556.9553	6.7968		<Null>	MAUP
18	Point ZM	MAUP5	377653.9335	843543.4465	5.8141		<Null>	MAUP
19	Point ZM	MAUP6	377659.6115	843533.8946	5.7491		<Null>	MAUP
20	Point ZM	MAUP7	377663.6981	843529.4717	2.7445		<Null>	MAUP
21	Point ZM	MAUP8	377668.2116	843522.5782	-0.3996		<Null>	MAUP
22	Point ZM	MAUP9	377673.3361	843515.1509	-0.9275		<Null>	MAUP
23	Point ZM	MAUP10	377678.1009	843508.4114	-1.7896		<Null>	MAUP
24	Point ZM	MAUP11	377684.0465	843499.7159	-1.7177		<Null>	MAUP
25	Point ZM	MAUP12	377689.7233	843493.3476	-1.4135		<Null>	MAUP
26	Point ZM	MAUP13	377691.4041	843491.6375	0.9264		<Null>	MAUP
27	Point ZM	MAUP14	377694.2732	843487.2073	3.1022		<Null>	MAUP
28	Point ZM	MAUP15	377696.8447	843483.2846	5.5778		<Null>	MAUP
29	Point ZM	MAUP16	377701.186	843479.3093	6.3205		<Null>	MAUP
30	Point ZM	MAUP17	377711.5529	843466.1124	6.4022		<Null>	MAUP
31	Point ZM	MAUP18	377721.4264	843457.7574	7.0589		<Null>	MAUP



Workflow & Conceptual Model



1. Generate Inputs -

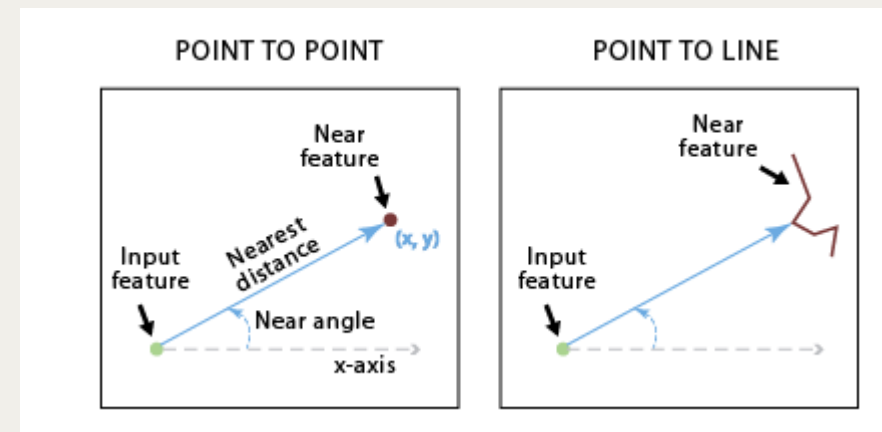
Takes processed data and generates:

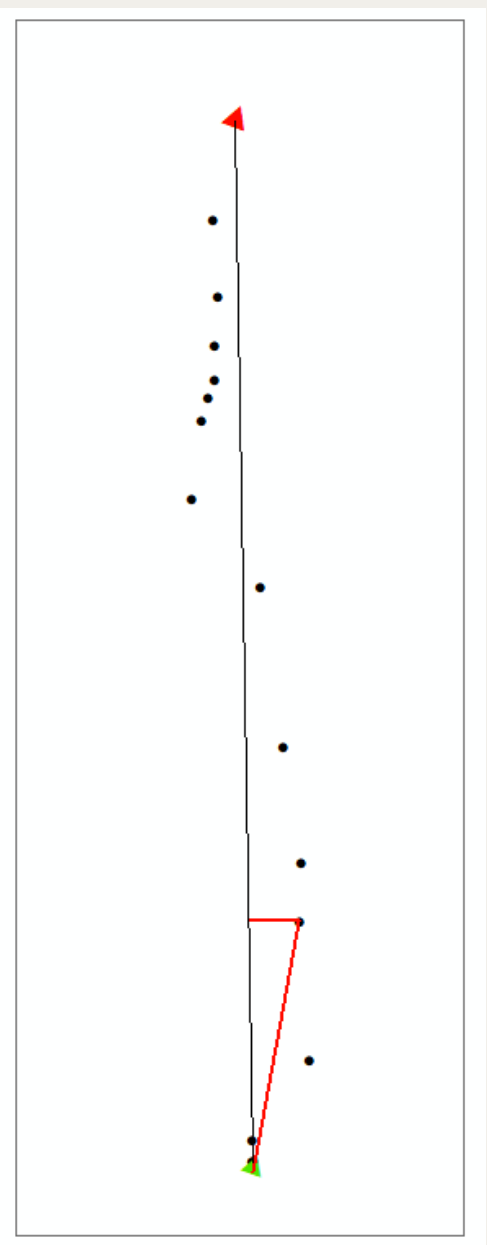
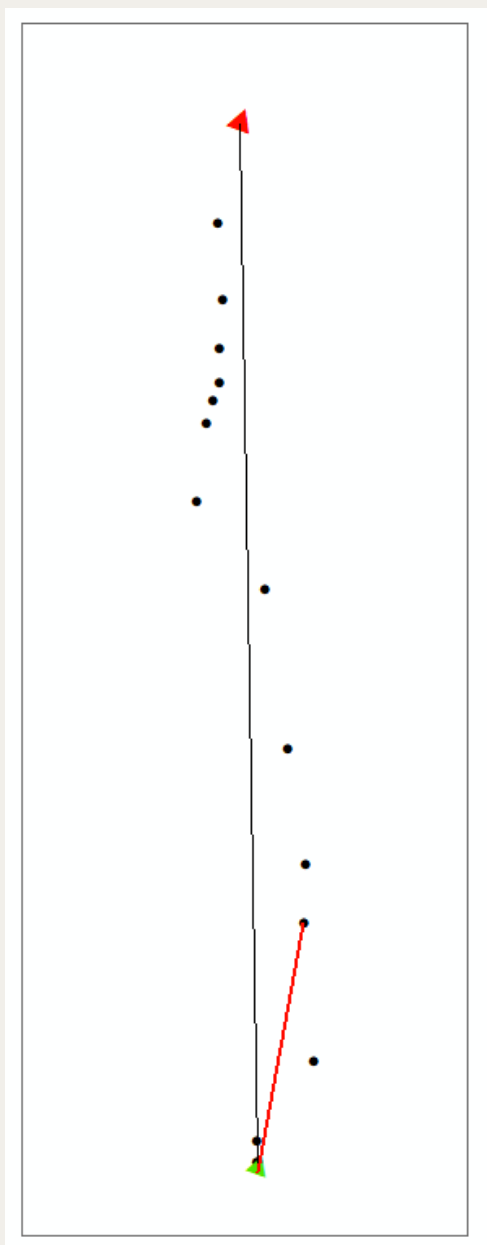
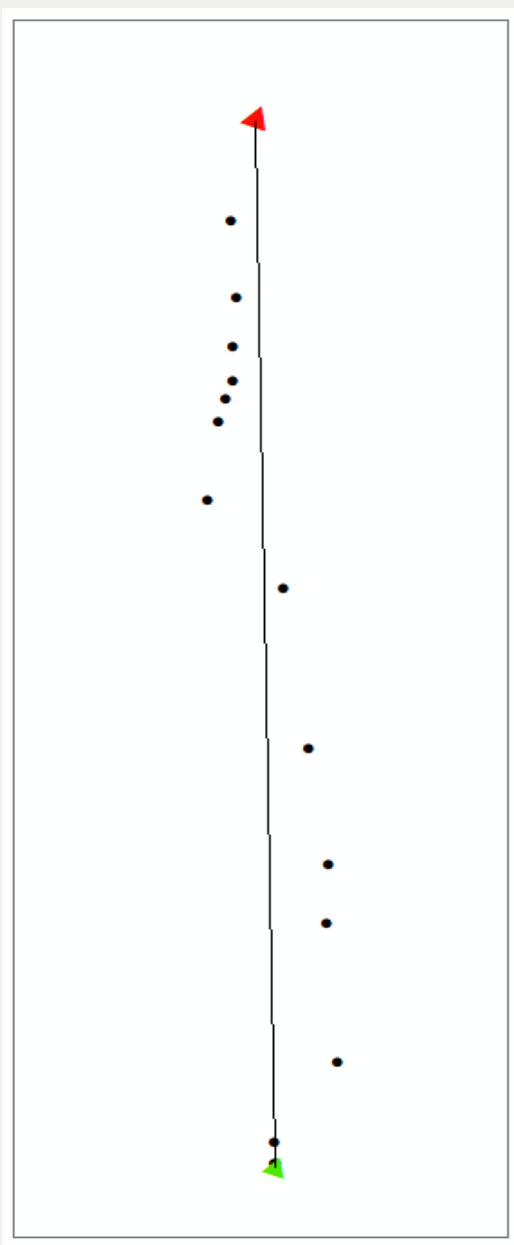
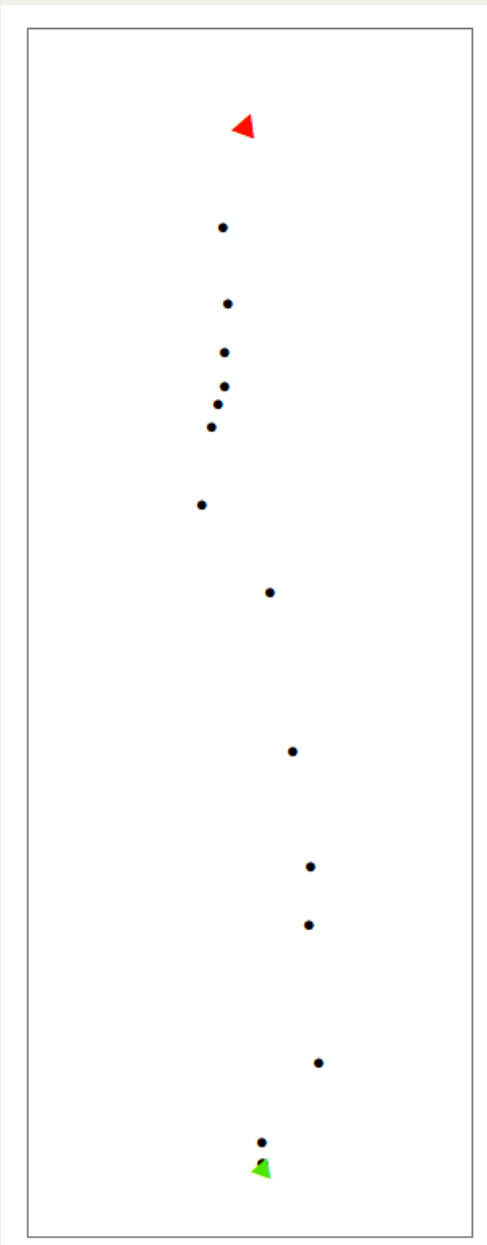
1. Individual Transect Feature Classes
2. Start Points/Endpoints Feature Classes
3. Transect Line Feature Class

2. Run Spatial Analytics (Near Analysis)

1. Calculates the spatial error around the transect line

3. Appends the results to each Transect Feature Class





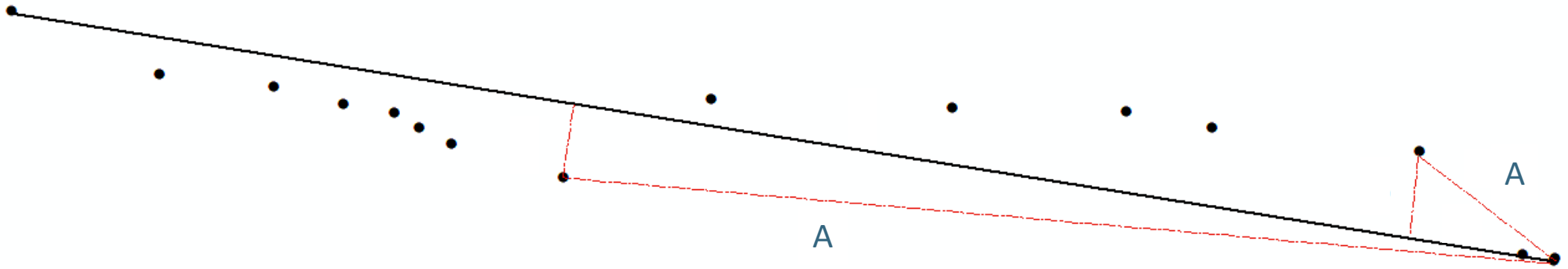
FID *	Shape *	PT_ID	NORTHING	EASTING	ELEVATION	DESCRIPTIO	start_points	transect_id	straight_line_distance_to_stpt	distance_along_transect_from_origin	distance_off_transect_line
1	Point ZM	XX1	377684.7628	844083.3841	7.7629		1	XX	0	0	0
2	Point ZM	XX2	377676.9143	844081.2865	7.5195	<Null>		XX	8.123839	8.106441	0.531392
3	Point ZM	XX3	377672.0807	844078.687	6.0678	<Null>		XX	13.52387	13.51853	0.379855
4	Point ZM	XX4	377665.1108	844076.4663	4.6145	<Null>		XX	20.83385	20.83239	0.247179
5	Point ZM	XX5	377661.9187	844075.3023	2.3918	<Null>		XX	24.23153	24.22934	0.325537
6	Point ZM	XX6	377654.7863	844073.7822	0.6856	<Null>		XX	31.47684	31.4725	0.523088
7	Point ZM	XX7	377651.8588	844072.8543	-0.5397	<Null>		XX	34.54793	34.543	0.58321
8	Point ZM	XX8	377648.6136	844071.3929	-1.3339	<Null>		XX	38.08611	38.08535	0.240268
9	Point ZM	XX9	377645.2837	844070.6678	-1.3293	<Null>		XX	41.47634	41.47168	0.621784
10	Point ZM	XX10	377642.9743	844069.6277	-1.229	<Null>		XX	43.99458	43.99295	0.377746
11	Point ZM	XX11	377634.8573	844066.9784	2.3197	<Null>		XX	52.53275	52.53062	0.472572
12	Point ZM	XX12	377630.9745	844065.6722	2.7305	<Null>		XX	56.62941	56.62737	0.480919
13	Point ZM	XX13	377629.7435	844065.3668	5.4428	<Null>		XX	57.89413	57.89116	0.586855
14	Point ZM	XX14	377625.7434	844064.4963	6.3031	<Null>		XX	61.96819	61.95937	1.045547
15	Point ZM	XX15	377617.6787	844060.6607	6.6599		2	XX	70.82824	70.82824	0



A

FID *	Shape *	PT_ID	NORTHING	EASTING	ELEVATION	DESCRIPTIO	start_points	transect_id	straight_line_distance_to_stpt	distance_along_transect_from_origin	distance_off_transect_line
1	Point ZM	XX1	377684.7628	844083.3841	7.7629		1	XX	0	0	0
2	Point ZM	XX2	377676.9143	844081.2865	7.5195	<Null>		XX	8.123839	8.106441	0.531392
3	Point ZM	XX3	377672.0807	844078.687	6.0678	<Null>		XX	13.52387	13.51853	0.379855
4	Point ZM	XX4	377665.1108	844076.4663	4.6145	<Null>		XX	20.83385	20.83239	0.247179
5	Point ZM	XX5	377661.9187	844075.3023	2.3918	<Null>		XX	24.23153	24.22934	0.325537
6	Point ZM	XX6	377654.7863	844073.7822	0.6856	<Null>		XX	31.47684	31.4725	0.523088
7	Point ZM	XX7	377651.8588	844072.8543	-0.5397	<Null>		XX	34.54793	34.543	0.58321
8	Point ZM	XX8	377648.6136	844071.3929	-1.3339	<Null>		XX	38.08611	38.08535	0.240268
9	Point ZM	XX9	377645.2837	844070.6678	-1.3293	<Null>		XX	41.47634	41.47168	0.621784
10	Point ZM	XX10	377642.9743	844069.6277	-1.229	<Null>		XX	43.99458	43.99295	0.377746
11	Point ZM	XX11	377634.8573	844066.9784	2.3197	<Null>		XX	52.53275	52.53062	0.472572
12	Point ZM	XX12	377630.9745	844065.6722	2.7305	<Null>		XX	56.62941	56.62737	0.480919
13	Point ZM	XX13	377629.7435	844065.3668	5.4428	<Null>		XX	57.89413	57.89116	0.586855
14	Point ZM	XX14	377625.7434	844064.4963	6.3031	<Null>		XX	61.96819	61.95937	1.045547
15	Point ZM	XX15	377617.6787	844060.6607	6.6599		2	XX	70.82824	70.82824	0

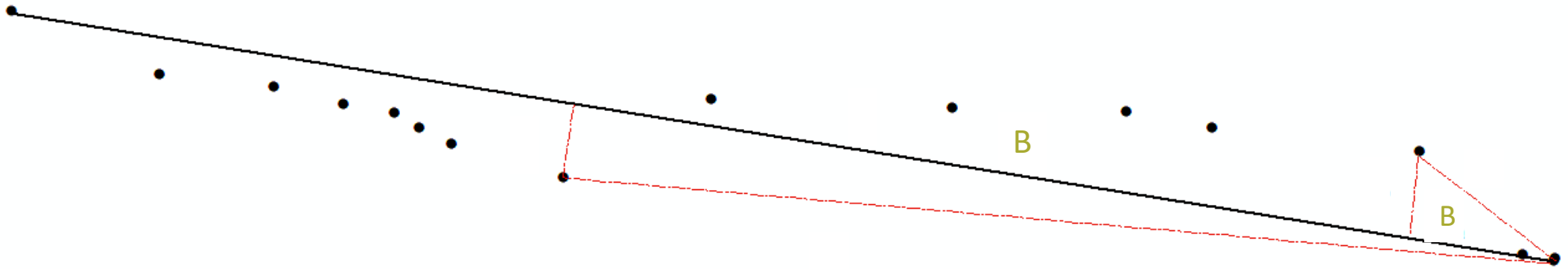




B

FID *	Shape *	PT_ID	NORTHING	EASTING	ELEVATION	DESCRIPTIO	start_points	transect_id	straight_line_distance_to_stpt	distance_along_transect_from_origin	distance_off_transect_line
1	Point ZM	XX1	377684.7628	844083.3841	7.7629		1	XX	0	0	0
2	Point ZM	XX2	377676.9143	844081.2865	7.5195	<Null>		XX	8.123839	8.106441	0.531392
3	Point ZM	XX3	377672.0807	844078.687	6.0678	<Null>		XX	13.52387	13.51853	0.379855
4	Point ZM	XX4	377665.1108	844076.4663	4.6145	<Null>		XX	20.83385	20.83239	0.247179
5	Point ZM	XX5	377661.9187	844075.3023	2.3918	<Null>		XX	24.23153	24.22934	0.325537
6	Point ZM	XX6	377654.7863	844073.7822	0.6856	<Null>		XX	31.47684	31.4725	0.523088
7	Point ZM	XX7	377651.8588	844072.8543	-0.5397	<Null>		XX	34.54793	34.543	0.58321
8	Point ZM	XX8	377648.6136	844071.3929	-1.3339	<Null>		XX	38.08611	38.08535	0.240268
9	Point ZM	XX9	377645.2837	844070.6678	-1.3293	<Null>		XX	41.47634	41.47168	0.621784
10	Point ZM	XX10	377642.9743	844069.6277	-1.229	<Null>		XX	43.99458	43.99295	0.377746
11	Point ZM	XX11	377634.8573	844066.9784	2.3197	<Null>		XX	52.53275	52.53062	0.472572
12	Point ZM	XX12	377630.9745	844065.6722	2.7305	<Null>		XX	56.62941	56.62737	0.480919
13	Point ZM	XX13	377629.7435	844065.3668	5.4428	<Null>		XX	57.89413	57.89116	0.586855
14	Point ZM	XX14	377625.7434	844064.4963	6.3031	<Null>		XX	61.96819	61.95937	1.045547
15	Point ZM	XX15	377617.6787	844060.6607	6.6599		2	XX	70.82824	70.82824	0

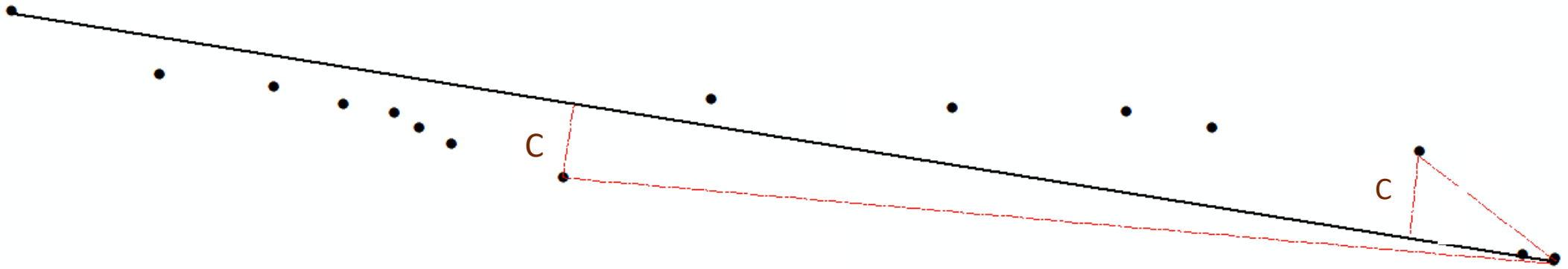


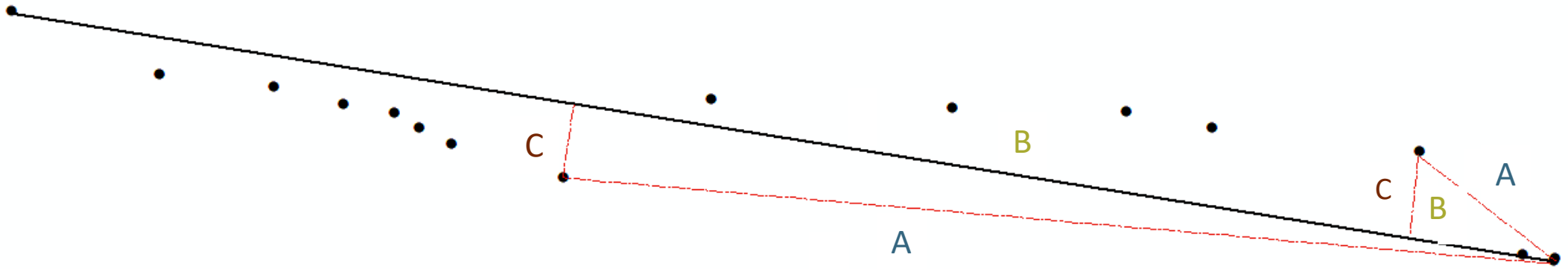


C

FID *	Shape *	PT_ID	NORTHING	EASTING	ELEVATION	DESCRIPTIO	start_points	transect_id	straight_line_distance_to_stpt	distance_along_transect_from_origin	distance_off_transect_line
1	Point ZM	XX1	377684.7628	844083.3841	7.7629		1	XX	0	0	0
2	Point ZM	XX2	377676.9143	844081.2865	7.5195	<Null>		XX	8.123839	8.106441	0.531392
3	Point ZM	XX3	377672.0807	844078.687	6.0678	<Null>		XX	13.52387	13.51853	0.379855
4	Point ZM	XX4	377665.1108	844076.4663	4.6145	<Null>		XX	20.83385	20.83239	0.247179
5	Point ZM	XX5	377661.9187	844075.3023	2.3918	<Null>		XX	24.23153	24.22934	0.325537
6	Point ZM	XX6	377654.7863	844073.7822	0.6856	<Null>		XX	31.47684	31.4725	0.523088
7	Point ZM	XX7	377651.8588	844072.8543	-0.5397	<Null>		XX	34.54793	34.543	0.58321
8	Point ZM	XX8	377648.6136	844071.3929	-1.3339	<Null>		XX	38.08611	38.08535	0.240268
9	Point ZM	XX9	377645.2837	844070.6678	-1.3293	<Null>		XX	41.47634	41.47168	0.621784
10	Point ZM	XX10	377642.9743	844069.6277	-1.229	<Null>		XX	43.99458	43.99295	0.377746
11	Point ZM	XX11	377634.8573	844066.9784	2.3197	<Null>		XX	52.53275	52.53062	0.472572
12	Point ZM	XX12	377630.9745	844065.6722	2.7305	<Null>		XX	56.62941	56.62737	0.480919
13	Point ZM	XX13	377629.7435	844065.3668	5.4428	<Null>		XX	57.89413	57.89116	0.586855
14	Point ZM	XX14	377625.7434	844064.4963	6.3031	<Null>		XX	61.96819	61.95937	1.045547
15	Point ZM	XX15	377617.6787	844060.6607	6.6599		2	XX	70.82824	70.82824	0







Year	Transect #	Elevation	Easting	Northing	Method	Horizontal Distance Along Transect (S - N)
2014	XX	6.6240	844055.9170	377620.2420	RTK GPS - CREST	0.0000
2014	XX	6.1580	844055.5550	377620.2040	RTK GPS - CREST	0.3639
2014	XX	5.9050	844057.7480	377623.4090	RTK GPS - CREST	3.6582
2014	XX	5.1140	844059.7920	377629.1410	RTK GPS - CREST	9.7060
2014	XX	4.1220	844061.6720	377634.4610	RTK GPS - CREST	15.3397
2014	XX	3.0210	844062.0010	377636.7550	RTK GPS - CREST	17.5983
2014	XX	0.0160	844061.3410	377638.9010	RTK GPS - CREST	19.4315
2014	XX	-1.7230	844064.6650	377646.4150	RTK GPS - CREST	27.5964
2014	XX	-2.0060	844067.0530	377651.6300	RTK GPS - CREST	33.3050
2014	XX	1.2310	844068.7910	377657.8710	RTK GPS - CREST	39.7705
2014	XX	2.6160	844070.9210	377663.3210	RTK GPS - CREST	45.6172
2014	XX	4.3160	844073.0220	377669.5310	RTK GPS - CREST	52.1727
2014	XX	6.3580	844075.3400	377677.0920	RTK GPS - CREST	60.0764
2014	XX	7.1680	844077.5630	377682.4700	RTK GPS - CREST	65.8856
2014	XX	7.2570	844078.7850	377686.1480	RTK GPS - CREST	69.7607
2014	XX	7.6950	844078.7200	377686.3630	RTK GPS - CREST	69.9425

Year	Transect #	Elevation	Easting	Northing	Method	Horizontal Distance Along Transect (S - N)
2015	XX	6.8873	844060.6973	377617.3773	RTK GPS - CLT	0.0000
2015	XX	6.6737	844061.7381	377620.5284	RTK GPS - CLT	3.3178
2015	XX	6.2469	844062.8482	377625.2087	RTK GPS - CLT	8.1194
2015	XX	5.6198	844063.8379	377628.7869	RTK GPS - CLT	11.8307
2015	XX	4.8719	844064.5755	377631.4596	RTK GPS - CLT	14.6025
2015	XX	4.3065	844065.0917	377632.3334	RTK GPS - CLT	15.5839
2015	XX	3.5945	844066.4196	377634.1560	RTK GPS - CLT	17.7228
2015	XX	2.5797	844066.5700	377635.2385	RTK GPS - CLT	18.7967
2015	XX	0.7100	844067.5640	377637.1634	RTK GPS - CLT	20.9381
2015	XX	-1.2842	844068.0488	377640.0293	RTK GPS - CLT	23.8084
2015	XX	-1.5611	844071.5246	377648.1136	RTK GPS - CLT	28.5626
2015	XX	-1.5074	844070.9668	377644.0383	RTK GPS - CLT	32.5783
2015	XX	0.6867	844074.3682	377654.7576	RTK GPS - CLT	39.7905
2015	XX	2.5580	844073.9353	377656.5661	RTK GPS - CLT	41.3525
2015	XX	3.4628	844073.3566	377660.6394	RTK GPS - CLT	45.0632
2015	XX	4.2797	844075.3017	377663.2871	RTK GPS - CLT	48.1628
2015	XX	4.6005	844076.5313	377665.7873	RTK GPS - CLT	50.9189
2015	XX	5.2768	844078.1363	377670.5030	RTK GPS - CLT	55.8988
2015	XX	6.8396	844079.3139	377673.9009	RTK GPS - CLT	59.4933
2015	XX	7.7868	844081.1147	377678.7380	RTK GPS - CLT	64.6497
2015	XX	7.9814	844083.2474	377684.8312	RTK GPS - CLT	71.1030

Year	Transect #	Elevation	Easting	Northing	Method	Horizontal Distance Along Transect (S - N)
2018	XX	6.6599	844060.6607	377617.6787	RTK GPS - CLT	0.0000
2018	XX	6.3031	844064.4963	377625.7434	RTK GPS - CLT	8.9303
2018	XX	5.4428	844065.3668	377629.7435	RTK GPS - CLT	12.9502
2018	XX	2.7305	844065.6722	377630.9745	RTK GPS - CLT	14.2089
2018	XX	2.3197	844066.9784	377634.8573	RTK GPS - CLT	18.3035
2018	XX	-1.2290	844069.6277	377642.9743	RTK GPS - CLT	26.8379
2018	XX	-1.3293	844070.6678	377645.2837	RTK GPS - CLT	29.3629
2018	XX	-1.3339	844071.3929	377648.6136	RTK GPS - CLT	32.7437
2018	XX	-0.5397	844072.8543	377651.8588	RTK GPS - CLT	36.2900
2018	XX	0.6856	844073.7822	377654.7863	RTK GPS - CLT	39.3592
2018	XX	2.3918	844075.3023	377661.9187	RTK GPS - CLT	46.5999
2018	XX	4.6145	844076.4663	377665.1108	RTK GPS - CLT	49.9963
2018	XX	6.0678	844078.6870	377672.0807	RTK GPS - CLT	57.3108
2018	XX	7.5195	844081.2865	377676.9143	RTK GPS - CLT	62.7238
2018	XX	7.7629	844083.3841	377684.7628	RTK GPS - CLT	70.8282



Transect XX Channel Cross Section
2014 - 2018

