Bend Listing

Client: Enbridge Energy Limited Partnership
Project: NPS 20 GEOPIG Geometry Inspection

Run Date: July 30, 2013
Location: Line 5 Straights of Mackinac - West Loop

Projection: UTM
Datum: WGS 84

Zone: 16
C.M.: -87

Feature Identifier	Absolute Chainage (ft)	Enbridge Chainage (ft)	Nearest U/S GWD	Dist to U/S GWD (ft)	Bend		Azimuth		Pitch		Northing (m)	Easting (m)	Height (m)
					Rad. (D)	Angle (deg.)	Change (deg).	Dir.	Change (deg).	Dir.			
BND 1	115.19	16.40	61	7.08	9.5	29.9	.3	Right	29.9	Down	5,078,865.97	674,354.97	143.02
BND 2	133.80	34.82	81	7.42	10.3	29.9	.7	Left	29.9	Up	5,078,867.16	674,350.06	140.47
BND 3	148.42	48.91	91	7.12	9.9	29.5	29.5	Left	.0	Up	5,078,868.02	674,345.72	140.26
BND 4	170.41	70.55	111	7.59	10.2	29.8	29.8	Right	.3	Down	5,078,866.47	674,339.22	140.25
BND 5	577.74	479.07	300	14.81	24.9	19.4	19.4	Left	.3	Up	5,078,893.83	674,218.13	140.40
BND 6	598.57	500.17	310	10.86	24.9	21.5	21.5	Left	.3	Up	5,078,893.14	674,211.85	140.38
BND 7	625.53	527.24	320	12.62	26.1	24.0	24.0	Left	.9	Down	5,078,889.25	674,204.68	140.43
BND 8	649.24	550.82	330	10.89	23.1	23.3	23.3	Left	1.5	Up	5,078,883.54	674,200.32	140.44
BND 9	15,173.89	14,957.63	5960	14.34	63.4	1.7	.8	Right	1.5	Up	5,074,576.80	673,198.24	113.24
BND 10	15,419.37	15,201.29	6050	25.81	51.5	3.7	1.7	Left	3.3	Down	5,074,504.28	673,180.18	117.00
BND 11	15,425.66	15,207.51	6060	5.69	49.6	2.7	.9	Left	2.5	Down	5,074,502.41	673,179.80	116.96
BND 12	15,447.98	15,229.55	6070	5.67	47.5	4.4	1.5	Right	4.1	Up	5,074,495.72	673,178.64	116.39
BND 13	15,481.28	15,262.43	6080	16.71	29.6	9.3	5.2	Right	7.7	Up	5,074,485.78	673,176.61	116.25
BND 14	15,529.24	15,309.99	6100	17.33	25.0	6.0	3.1	Left	5.2	Down	5,074,471.85	673,172.53	117.93
BND 15	15,982.22	15,760.13	6280	3.96	45.9	3.0	2.2	Left	2.1	Up	5,074,337.55	673,140.44	117.98
BND 16	20,938.68	20,666.54	8190	15.41	24.2	8.1	.0	Left	8.1	Down	5,072,867.29	672,797.69	148.75
BND 17	21,176.43	20,901.71	8280	21.33	28.8	4.3	.2	Right	4.3	Up	5,072,796.87	672,780.80	151.30
BND 18	21,190.22	20,915.22	8290	7.16	30.0	5.1	.0	Right	5.1	Up	5,072,792.82	672,779.78	151.72
BND 19	21,218.57	20,943.80	8300	11.17	24.4	11.1	10.0	Left	5.2	Up	5,072,784.57	672,777.72	153.26
BND 20	21,251.17	20,976.05	8310	17.53	23.7	18.9	19.6	Left	1.3	Up	5,072,775.01	672,777.08	155.82
BND 21	21,274.86	20,998.75	8320	12.51	22.4	24.2	25.0	Left	2.0	Down	5,072,768.39	672,778.99	157.86
BND 22	21,300.66	21,024.32	8330	14.18	25.0	23.6	22.8	Left	7.6	Down	5,072,762.57	672,783.82	159.83
BND 23	21,323.06	21,046.58	8340	9.72	25.1	15.3	14.2	Left	5.8	Down	5,072,759.36	672,789.74	160.71
BND 24	21,841.93	21,560.09	8620	8.38	25.5	11.4	.3	Right	11.4	Up	5,072,723.10	672,943.70	160.44
BND 25	21,877.64	21,596.42	8640	12.45	27.4	12.4	.6	Left	12.4	Down	5,072,720.62	672,954.08	162.55