

CHAPTER 1 RIVER CHANNEL, DIKE AND FLOODWALL



1.1 Earth Work for River Channel and Dike

**WEST FLOODWAY/GABANG RIVER
EARTH WORK
RECAPITULATION**

SECTION	RIGHT						LEFT							
	Land Excavation (m ³)	River Excavation (m ³)	Embankment (m ³)	Earthfill (m ³)	Cleaning and Grubbing (m ³)	Stripping of top soil (m ³)	Sodding (m ³)	Land Excavation (m ³)	River Excavation (m ³)	Embankment (m ³)	Earthfill (m ³)	Cleaning and Grubbing (m ³)	Stripping of top soil (m ³)	Sodding (m ³)
By pass channel (WF-0-R - WF-15-R)	9697.78	62.14	1271.52	1478.77	4075.50	1018.87	3775.01							
River Mouth - NRR Bridge WF(0-9) - WF-15	17973.54	120399.79	7429.66	9651.23	17696.62	4424.16	5896.61	933.92	99395.72	510.31	463.60	2849.32	410.79	2441.36
NRR Bridge - Simongan Weir WF-15 - WF-96	147015.25	247398.68	4655.90	14398.12	54702.04	2268.58	19175.42	83580.72	130968.67	7027.67	10097.19	26600.77	2726.11	19149.87
Simongan Weir - Kreo Junction WF (104) - WF-184	176615.97	71132.52	3650.42	4778.46	10735.01	721.50	14897.75	81552.18	65794.52	995.27	1023.87	5853.82	0.00	8284.21
Total	351302.54	439013.13	17007.51	30506.58	87209.17	7414.24	43744.79	166066.82	296158.91	8533.25	11584.67	35303.90	3136.90	29876.45
Rin Ran														
WF-31 - WF-39	3064.00													
WF-45 - WF-52	1799.00													
WF-126+39 - WF-132	1542.00													
WF-142 - WF-146	1194.00													
Total	7599.00													

**WEST FLOODWAY/GARANG RIVER
EARTH WORK**

LEFT SIDE

X-SECT NO.	DISTANCE (M)	LAND EXCAVATION			RIVER EXCAVATION			EMBANKMENT			EARTH FILL		
		AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)
BP OF CONSTRUCTION													
WF φ -9	210.000		0.000	0.000	106.39	22341.900	22341.900		0.000	0.000		0.000	0.000
WF φ -8	13.700		0.000	0.000	106.79	1460.283	23802.183		0.000	0.000		0.000	0.000
WF φ -7	49.910		0.000	0.000	111.39	5449.673	29251.856		0.000	0.000		0.000	0.000
WF φ -6	47.970		0.000	0.000	111.12	5341.699	34593.553		0.000	0.000		0.000	0.000
WF φ -5	54.050		0.000	0.000	117.50	6178.456	40772.011		0.000	0.000		0.000	0.000
WF φ -4	47.960		0.000	0.000	124.29	5798.124	46570.155		0.000	0.000		0.000	0.000
WF φ -3	50.020		0.000	0.000	122.75	6178.470	52748.603		0.000	0.000		0.000	0.000
WF φ -2	49.990		0.000	0.000	124.32	6175.515	58924.120		0.000	0.000		0.000	0.000
WF φ -1	50.010		0.000	0.000	126.75	6278.005	65202.125		0.000	0.000		0.000	0.000
WF - 0	49.990		0.000	0.000	111.33	5950.810	71152.935		0.000	0.000		0.000	0.000
WF - 1	46.989		0.000	0.000	87.68	4675.640	73828.575		0.000	0.000		0.000	0.000
WF - 2	46.044		0.000	0.000	70.93	3651.519	79480.095		0.000	0.000		0.000	0.000
WF - 3	51.877		0.000	0.000	63.13	3477.315	82957.410		0.000	0.000		0.000	0.000
WF - 4	52.949		0.000	0.000	30.68	2483.573	85440.983		0.000	0.000		0.000	0.000
WF - 5	60.543		0.000	0.000	32.39	1909.224	87350.206		0.000	0.000		0.000	0.000
WF - 6	50.937		0.000	0.000	32.64	1656.217	89006.423		0.000	0.000	1.33	33.873	33.873
WF - 7	40.717		0.000	0.000	35.20	1381.121	90387.544		0.000	0.000	1.49	57.411	91.284
WF - 8	51.884		0.000	0.000	10.69	1190.478	91578.022		0.000	0.000	1.70	82.755	174.039
WF - 9	46.387		0.000	0.000	8.77	451.346	92029.368		0.000	0.000	0.00	39.429	213.468
WF - 10	50.444		0.000	0.000	7.36	406.831	92436.198		0.34	8.575	0.00	0.000	213.468
WF - 11	47.408		0.000	0.000	7.68	356.508	92792.707		1.88	52.623	0.00	0.000	213.468
WF - 12	49.909		0.000	0.000	18.85	662.043	93454.749		7.93	244.804	0.00	0.000	213.468
WF - 13	51.527	6.44	165.917	165.917	29.94	1257.001	94711.751		0.00	204.305	0.00	0.000	213.468
WF - 14	44.317	5.65	267.896	433.813	39.13	1530.488	96242.238		0.00	0.000	3.41	75.560	289.028
WF - 15	34.469	12.71	500.107	933.920	76.66	3153.483	99395.721		0.00	0.000	3.00	174.573	463.602
NRR BRIDGE													

Sheet:

X-SECT. NO.	DISTANCE (M)	LAND EXCAVATION			RIVER EXCAVATION			EMBANKMENT			EARTHFILL		
		AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)
WF- 15		12.71	0.000	0.000	76.66	0.000	0.000	0.00	0.000	0.000	3.00	0.000	0.000
WF- 16	55.962	8.71	599.353	599.353	68.80	4070.116	4070.116	2.77	77.507	77.507	5.70	243.435	243.435
WF- 17	46.156	0.00	201.009	800.362	84.36	3534.626	7604.743	2.88	130.391	207.898	9.80	357.709	601.144
WF- 18	50.231	0.00	0.000	800.362	79.01	4103.119	11707.862	3.00	147.679	355.577	14.02	598.251	1199.395
WF- 19	61.180	0.00	0.000	800.362	106.75	5682.398	17390.260	3.14	187.823	543.400	3.43	533.796	1733.190
WF- 20	46.620	24.22	564.568	1364.931	84.99	4469.459	21859.720	3.25	148.951	692.351	5.04	197.436	1930.626
WF- 21	52.051	19.05	1126.123	2491.054	84.83	4419.650	26279.370	3.38	172.549	864.900	7.01	313.607	2244.233
WF- 22	51.364	19.57	991.839	3482.893	74.53	4092.684	30372.054	3.37	173.354	1038.253	7.93	383.689	2627.922
WF- 23	50.972	16.45	918.006	4400.899	61.63	3470.174	33842.227	3.59	177.383	1215.636	6.67	372.096	3000.018
WF- 24	46.049	15.89	744.612	5145.511	49.01	2547.431	36389.658	3.75	169.000	1384.636	4.47	256.493	3256.511
WF- 25	44.175	18.89	768.203	5913.714	52.08	2232.825	38622.484	3.86	168.086	1552.722	4.96	208.285	3464.796
WF- 26	49.761	16.12	871.066	6784.780	46.76	2459.189	41081.672	3.99	195.312	1748.033	2.22	178.642	3643.438
WF- 27	53.816	10.18	707.680	7492.461	62.02	2927.052	44008.724	3.51	201.810	1949.843	1.03	87.451	3750.889
WF- 28	53.395	7.61	474.949	7967.409	55.30	3132.151	47140.875	3.97	199.697	2149.541	0.28	34.974	3765.863
WF- 29	52.381	4.03	304.857	8272.267	48.48	2718.050	49858.925	0.98	129.643	2279.184	0.00	7.333	3773.196
WF- 30	52.311	6.33	270.971	8543.238	52.07	2629.936	52488.861	4.02	130.778	2409.961	0.50	13.078	3786.274
WF- 31	54.872	8.36	403.035	8946.273	61.38	3112.614	55601.475	3.60	209.062	2619.024	0.00	0.000	3799.992
WF- 32	51.803	10.86	497.827	9444.099	71.10	3431.431	59032.906	2.90	168.360	2787.383	0.00	0.000	3799.992
WF- 33	52.889	14.48	670.104	10114.203	77.44	3928.066	62960.972	2.73	148.883	2936.266	11.75	310.723	4110.715
WF- 34	53.628	13.55	751.596	10865.799	86.13	4385.966	67346.938	1.43	111.546	3047.812	15.08	719.420	4850.134
WF- 35	44.904	7.79	479.126	11344.925	87.97	3908.893	71255.831	2.32	84.195	3132.007	18.08	744.508	5574.643
WF- 36	45.069	12.33	459.394	11798.319	86.84	3939.256	75195.087	3.67	134.982	3266.989	14.09	724.935	6299.578
WF- 37	49.307	19.06	775.873	12572.193	76.89	4036.518	79231.604	3.30	171.835	3438.824	12.85	664.165	6963.743
WF- 38	49.114	11.04	739.166	13311.358	64.34	3468.185	82699.789	2.79	149.552	3588.376	4.12	416.806	7380.549
WF- 39	54.155	20.00	840.486	14151.844	46.77	3008.581	85708.370	3.36	166.527	3754.902	0.00	111.641	7492.189
WF- 40	46.052	16.99	851.732	15003.576	50.95	2250.101	87958.471	3.24	151.972	3906.874	0.00	0.000	7492.189
WF- 41	52.485	13.70	805.382	15808.958	46.85	2566.517	90524.988	3.27	170.839	4077.713	0.00	0.000	7492.189
WF- 42	50.975	15.48	743.725	16552.683	45.46	2352.751	92877.739	3.54	173.570	4251.283	0.00	0.000	7492.189
WF- 43	48.218	13.85	707.117	17259.800	41.96	2107.609	94985.348	3.26	163.941	4415.224	0.00	0.000	7492.189
WF- 44	50.336	11.20	630.458	17890.259	28.38	1770.317	96755.665	2.60	147.484	4562.708	0.00	0.000	7492.189
WF- 45	52.028	8.87	522.101	18412.360	32.56	1585.293	98340.938	0.89	90.789	4653.497	0.38	9.885	7502.075
WF- 46	51.048	9.77	475.767	18888.127	30.02	1597.292	99338.250	1.88	70.701	4724.199	2.20	65.852	7567.927
WF- 47	47.583	7.85	419.206	19307.353	28.57	1393.944	101332.194	1.27	74.943	4799.142	7.59	232.919	7800.845
WF- 48	51.302	9.73	450.945	19758.278	28.36	1460.311	102792.505	0.00	32.577	4831.719	6.45	360.140	8160.985
WF- 49	51.470	9.21	487.421	20245.699	24.86	1369.617	104162.122	0.00	0.000	4831.719	7.74	363.180	8526.165
WF- 50	48.795	8.06	421.345	20667.044	22.28	1150.098	105312.220	0.54	13.175	4844.893	10.28	439.643	8965.808
WF- 51	48.459	6.22	345.997	21013.041	16.92	949.796	106262.016	0.16	16.961	4861.854	3.72	339.213	9405.021
WF- 52	49.365	0.96	177.220	21190.261	10.16	668.402	106930.419	0.61	19.006	4880.859	0.61	106.875	9411.896
WF- 53	51.789	0.50	37.806	21228.067	5.59	407.838	107338.257	0.00	0.000	4896.655	0.12	18.903	9430.799
WF- 54	52.231	0.00	13.058	21241.125	1.38	182.025	107520.282	3.02	78.869	4975.524	0.34	12.013	9442.812
WF- 55	48.406	0.00	0.000	21241.125	15.11	399.107	107919.389	3.98	169.421	5144.945	0.90	30.012	9472.824
WF- 56	50.267	2.11	55.032	21294.157	7.58	570.279	108489.669	3.07	177.191	5322.136	2.41	83.192	9556.016

X-SECT NO.	DISTANCE (M)	LAND EXCAVATION			RIVER EXCAVATION			EMBANKMENT			EARTHFILL		
		AREA (M ²)	VOLUME (M ³)	ACVOL (M ³)	AREA (M ²)	VOLUME (M ³)	ACVOL (M ³)	AREA (M ²)	VOLUME (M ³)	ACVOL (M ³)	AREA (M ²)	VOLUME (M ³)	ACVOL (M ³)
WF-57	50.228	3.04	129.337	21423.494	7.35	374.952	108864.621	2.14	130.844	5432.980	0.67	77.351	9633.367
WF-58	51.865	4.93	206.682	21630.176	4.52	107.819	109172.439	2.42	118.252	5571.232	1.16	47.456	9680.824
WF-59	47.230	5.33	242.290	21872.466	3.07	379.238	109351.677	0.61	71.553	5642.786	0.00	27.933	9708.217
WF-60	50.268	4.21	239.778	22112.244	4.18	182.222	109533.899	2.99	90.482	5733.268	0.69	17.342	9725.559
WF-61	53.049	5.88	267.632	22379.876	4.12	220.153	109754.052	3.31	167.104	5900.372	0.64	35.278	9760.837
WF-62	48.939	1.64	184.011	22563.887	2.06	151.222	109905.274	3.20	159.296	6059.669	0.90	37.683	9798.520
WF-63	47.656	2.32	94.359	22658.246	0.75	66.957	109972.230	2.64	139.156	6198.824	0.66	37.172	9835.692
WF-64	51.814	0.11	62.954	22721.200	0.00	19.430	109991.660	3.02	146.711	6345.536	0.00	17.099	9852.790
Railway Br / WF-65	49.558	2.16	56.248	22777.448	3.04	75.328	110066.989	0.36	83.827	6429.363	0.00	0.000	9852.790
WF-66	26.587	21.06	308.675	23086.123	11.63	195.016	110262.004	0.20	7.444	6436.807	0.00	0.000	9852.790
WF-67	45.754	32.07	1215.455	24301.578	18.74	694.774	110956.779	0.40	13.726	6450.534	0.00	0.000	9852.790
WF-68	44.146	40.92	1611.108	25912.686	25.38	973.861	111930.640	0.00	8.829	6459.363	0.00	0.000	9852.790
WF-69	53.201	53.37	2508.161	28420.847	29.31	1454.781	113385.421	0.00	0.000	6459.363	0.00	0.000	9852.790
WF-70	53.074	55.92	2900.229	31321.076	28.51	1534.369	114919.790	0.40	10.615	6469.978	0.00	0.000	9852.790
WF-71	54.141	56.66	3047.597	34368.673	25.63	1465.597	116385.387	0.00	10.828	6480.806	0.00	0.000	9852.790
WF-72	55.980	28.22	2375.791	36744.464	15.24	1143.951	117529.338	0.00	0.000	6480.806	0.00	0.000	9852.790
National Br / WF-72+22	29.366	14.79	631.516	37375.980	18.01	488.210	118017.548	0.00	0.000	6480.806	0.00	0.000	9852.790
National Br / WF-72+29	11.000	14.53	161.260	37537.240	17.74	196.625	118214.173	0.00	0.000	6480.806	0.00	0.000	9852.790
National Br / WF-73	2.000	17.42	31.950	37569.190	17.73	35.470	118249.643	0.00	0.000	6480.806	0.00	0.000	9852.790
National Br / WF-73+9	11.137	16.89	191.055	37760.245	17.04	193.617	118443.260	0.00	0.000	6480.806	0.00	0.000	9852.790
WF-74	45.513	9.19	593.490	38353.735	3.64	470.604	119213.864	0.00	0.000	6480.806	0.00	0.000	9852.790
WF-75	49.107	18.67	684.061	39037.795	8.43	296.361	119210.225	0.00	0.000	6480.806	0.00	0.000	9852.790
WF-76	49.940	35.38	1354.623	40392.418	14.45	571.314	119781.539	1.60	39.952	6520.758	0.00	0.000	9852.790
WF-77	52.279	37.92	1921.253	42313.671	16.28	803.267	120584.805	1.10	70.577	6591.334	0.00	0.000	9852.790
WF-78	46.050	48.59	1991.893	44305.564	17.83	785.383	121370.188	2.87	91.409	6682.744	2.70	62.168	9914.938
WF-79	47.348	54.11	2431.370	46736.884	15.27	783.609	122153.798	3.09	141.097	6823.841	2.29	118.133	10033.091
WF-80	55.983	51.43	2954.223	49691.107	13.95	817.912	122971.709	1.03	115.325	6939.166	0.00	64.101	10097.192
WF-81	50.123	41.84	2337.486	52028.593	10.97	624.533	123596.242	1.27	57.641	6996.807	0.00	0.000	10097.192
WF-82	48.606	39.55	1978.021	54006.614	8.91	483.144	124079.385	0.00	30.865	7027.672	0.00	0.000	10097.192
WF-83	50.561	37.74	1953.930	55960.544	9.10	455.302	124534.687	0.00	0.000	7027.672	0.00	0.000	10097.192
WF-84	48.645	32.81	1715.952	57676.496	8.26	422.239	124956.926	0.00	0.000	7027.672	0.00	0.000	10097.192
WF-85	54.033	34.35	1814.428	59490.924	9.25	473.059	125429.985	0.00	0.000	7027.672	0.00	0.000	10097.192
WF-86	50.097	34.22	1717.576	61208.500	11.12	510.238	125940.223	0.00	0.000	7027.672	0.00	0.000	10097.192
WF-87	47.756	40.59	1786.313	62994.813	11.67	544.180	126484.402	0.00	0.000	7027.672	0.00	0.000	10097.192
WF-88	50.018	47.42	2201.042	65193.855	14.43	652.735	127137.137	0.00	0.000	7027.672	0.00	0.000	10097.192
WF-89	49.744	61.08	2698.612	67894.467	13.54	695.670	127832.807	0.00	0.000	7027.672	0.00	0.000	10097.192
WF-90	50.295	59.46	3081.280	70925.747	10.94	615.611	128448.418	0.00	0.000	7027.672	0.00	0.000	10097.192
WF-91	53.526	48.44	2887.728	73813.475	11.46	599.491	129047.909	0.00	0.000	7027.672	0.00	0.000	10097.192
WF-92	50.493	44.41	2344.138	76157.612	8.37	500.638	129548.547	0.00	0.000	7027.672	0.00	0.000	10097.192
WF-93	48.367	23.56	1643.752	77801.363	1.60	241.109	129789.657	0.00	0.000	7027.672	0.00	0.000	10097.192
WF-94	47.764	29.05	1256.432	79057.797	4.75	151.651	129941.307	0.00	0.000	7027.672	0.00	0.000	10097.192
Old. Sim. Br/WF-94+23	26.866	52.13	1090.491	80148.287	14.37	264.899	130206.206	0.00	0.000	7027.672	0.00	0.000	10097.192
WF-95	25.918	46.97	1284.237	81432.524	5.76	268.640	130474.846	0.00	0.000	7027.672	0.00	0.000	10097.192
WF-96	46.173	46.08	2148.199	83580.723	15.63	493.820	130968.666	0.00	0.000	7027.672	0.00	0.000	10097.192

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		AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)
Simongan Weir / WF- 101+20	0.000	26.54					65.49				0.00	0.000	0.000
WF- 102	34.870	5.95					52.75				0.00	0.000	0.000
WF- 103	50.539	5.24					59.17				0.00	0.000	0.000
WF- 104	58.390	8.23					59.55				0.00	0.000	0.000
WF- 105	50.623	17.00	638.609	638.609			57.90	2972.836	2972.836		0.00	0.000	0.000
WF- 106	46.910	3.27	475.433	1114.042			34.91	2176.859	5149.694		0.00	0.000	11.728
WF- 107	52.383	13.64	442.898	1556.940			51.04	2251.159	7400.854		0.00	0.000	24.823
WF- 108	53.394	27.48	1097.781	2654.721			41.72	2476.414	9877.267		0.00	0.000	24.823
WF- 109	42.440	39.18	1414.525	4069.246			43.56	1809.642	11686.909		0.00	0.000	24.823
WF- 110	48.417	93.81	3219.488	7288.735			43.53	2108.318	13795.227		0.00	0.000	24.823
WF- 111	48.237	25.78	2884.331	10173.066			38.71	1983.505	15778.733		0.00	0.000	24.823
WF- 112	33.216	1.99	461.204	10634.270			32.75	1186.808	16965.540		0.00	0.000	44.089
WF- 113	44.094	7.21	202.832	10837.102			51.50	1857.460	18823.000		0.00	0.000	69.663
WF- 114	48.018	51.69	1414.130	12251.233			91.67	3437.369	22260.369		0.00	0.000	69.663
WF- 115	46.871	74.88	2966.231	15217.464			100.16	4495.632	26756.001		0.00	0.000	69.663
WF- 116	48.763	68.76	3502.159	18719.622			67.58	4089.753	30845.753		0.00	0.000	69.663
WF- 117	48.629	67.18	3305.313	22024.936			60.80	3121.496	33967.249		0.00	0.000	69.663
WF- 118	46.524	71.05	3215.506	25240.442			62.56	2869.600	36836.849		0.00	0.000	69.663
WF- 119	46.856	92.47	3830.947	29071.388			65.00	2988.476	39825.325		0.00	0.000	69.663
WF- 120	48.226	50.00	3435.379	32506.768			50.15	2776.612	42601.937		0.00	0.000	69.663
WF- 121	43.077	26.86	1655.449	34162.217			49.38	2143.727	44745.664		0.00	0.000	69.663
WF- 122	39.273	8.68	697.881	34860.098			50.92	1969.541	46715.205		0.00	0.000	69.663
WF- 123	31.760	4.62	211.204	35071.302			54.03	1666.606	48381.811		0.00	0.000	69.663
WF- 124	29.761	4.63	137.645	35208.946			21.49	1123.775	49505.586		0.00	0.000	69.663
WF- 125	32.527	6.38	179.061	35388.008			16.21	613.134	50118.720		0.00	0.000	69.663
WF- 126	49.643	6.67	323.921	35711.928			2.09	454.233	50572.953		0.00	0.000	69.663
WF- 126+39.0	39.000	0.00	130.065	35841.993			0.00	40.755	50613.708		0.00	0.000	69.663
WF- 127	9.972	0.00	0.000	35841.993			11.59	57.788	50671.496		0.00	0.000	69.663
WF- 128	42.213	0.00	0.000	35841.993			16.83	599.847	51271.343		0.00	0.000	69.663
WF- 129	42.766	0.00	0.000	35841.993			5.41	475.558	51746.901		0.00	0.000	69.663
WF- 130	38.570	3.84	74.054	35916.048			10.24	301.810	52048.711		0.00	0.000	69.663
WF- 131	47.384	11.20	350.328	36272.375			16.61	636.130	52684.841		0.00	0.000	69.663
WF- 132	37.073	0.00	207.609	36479.984			8.48	465.081	53149.922		0.00	0.000	69.663
WF- 133	37.266	1.35	25.155	36505.139			8.22	311.171	53461.093		0.00	0.000	69.663
WF- 134	42.892	13.28	313.755	36818.894			14.51	487.468	53948.561		0.00	0.000	69.663
WF- 135	68.840	38.20	1771.942	38590.835			8.71	799.232	54747.793		0.00	0.000	69.663
WF- 136	58.395	23.59	1862.509	40453.344			4.51	385.991	55133.784		0.00	0.000	69.663
WF- 137	64.869	22.65	1564.640	42017.984			6.73	364.564	55498.348		0.00	0.000	69.663
WF- 138	56.933	7.56	859.973	42877.957			13.32	570.753	56069.101		0.00	0.000	69.663
WF- 139	63.828	33.18	1300.175	44178.133			18.78	1024.439	57093.541		0.00	0.000	90.088
WF- 140	60.271	13.80	1415.766	45593.899			12.12	931.187	58024.728		1.59	47.915	499.328
WF- 141	51.611	0.00	356.116	45950.015			4.40	426.307	58451.034		0.00	0.000	833.251
WF- 142	66.193	0.00	0.000	45950.015			0.00	145.629	58596.663		0.00	0.000	833.251

X-SECT NO.	DISTANCE (M)	LAND EXCAVATION			RIVER EXCAVATION			EMBANKMENT			EARTHFILL		
		AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)
WF- 143	70.715	0.88	31.115	45981.130	1.08	38.186	58634.850	0.00	0.000	88.946	0.00	0.000	833.251
WF- 144	55.466	15.04	441.509	46422.639	5.23	174.995	58809.845	0.00	0.000	88.946	0.00	0.000	833.251
WF- 145	47.049	33.07	1131.764	47554.403	6.61	278.550	59088.375	0.00	0.000	88.946	0.00	0.000	833.251
WF- 146	37.717	0.84	639.492	48193.894	1.59	154.640	59243.015	0.00	0.000	88.946	0.00	0.000	833.251
WF- 146+22	22.000	0.00	9.240	48203.134	0.00	17.490	59260.505	0.00	0.000	88.946	0.00	0.000	833.251
WF- 147	22.950	35.45	406.789	48609.923	3.63	41.654	59302.159	0.00	0.000	88.946	0.00	0.000	833.251
WF- 148	49.490	48.77	2084.024	50693.947	3.34	172.473	59474.631	0.00	0.000	88.946	0.00	0.000	833.251
WF- 149	56.037	26.37	2105.310	52799.257	2.34	159.145	59633.777	2.91	81.534	170.480	0.00	0.000	833.251
WF- 150	43.296	5.94	699.447	53498.704	0.49	61.264	59695.040	2.07	107.807	278.287	0.00	0.000	833.251
WF- 151	33.164	12.63	326.498	53825.202	1.61	36.922	59731.963	0.00	0.000	314.682	0.00	0.000	833.251
WF- 152	29.570	42.90	821.011	54646.213	2.11	55.000	59786.963	0.00	0.000	314.682	0.00	0.000	833.251
WF- 153	42.207	39.10	1730.487	56376.700	5.86	168.195	59955.158	0.00	0.000	314.682	0.00	0.000	833.251
WF- 154	46.273	80.19	2759.953	59136.653	4.46	238.769	60193.926	0.00	0.000	314.682	0.00	0.000	833.251
WF- 155	51.643	70.82	3899.305	63035.958	4.44	229.811	60423.738	0.00	0.000	314.682	0.00	0.000	833.251
WF- 156	50.046	60.25	3279.765	66315.722	2.23	166.903	60590.641	0.00	0.000	314.682	0.00	0.000	833.251
WF- 157	55.546	17.12	2148.797	68464.519	2.12	120.813	60711.454	0.00	0.000	314.682	0.00	0.000	833.251
WF- 158	50.472	0.00	432.040	68896.560	0.00	53.500	60764.954	0.00	0.000	314.682	0.00	0.000	833.251
WF- 159	48.327	2.90	70.074	68966.634	0.00	0.000	60764.954	0.00	0.000	314.682	0.00	0.000	833.251
WF- 160	57.635	3.42	182.127	69148.760	0.00	0.000	60764.954	0.00	0.000	314.682	0.00	0.000	833.251
WF- 161	33.976	13.26	283.360	69432.120	0.00	0.000	60764.954	0.00	0.000	314.682	0.00	0.000	833.251
WF- 162	56.038	3.44	467.917	69900.037	0.00	0.000	60764.954	12.67	355.001	669.683	0.00	0.000	833.251
WF- 163	51.395	2.08	141.850	70041.888	0.00	0.000	60764.954	0.00	323.587	995.270	1.15	29.552	862.803
WF- 164	39.314	3.28	105.362	70147.249	8.99	176.716	60941.670	0.00	0.000	995.270	0.30	28.503	891.306
WF- 165	43.008	3.73	150.743	70297.992	6.49	332.882	61274.552	0.00	0.000	995.270	2.70	64.512	955.818
WF- 166	26.587	1.37	67.797	70365.789	4.50	146.096	61420.648	0.00	0.000	995.270	0.00	0.000	991.710
WF- 167	45.754	28.34	679.676	71045.465	10.21	336.521	61757.169	0.00	0.000	995.270	0.00	0.000	991.710
WF- 168	44.146	33.88	1373.382	72418.847	9.97	445.433	62202.602	0.00	0.000	995.270	0.00	0.000	991.710
WF- 169	53.201	26.46	1605.074	74023.921	6.27	431.992	62634.594	0.00	0.000	995.270	0.00	0.000	991.710
WF- 170	53.074	0.76	722.337	74746.258	0.00	166.387	62800.981	0.00	0.000	995.270	0.60	15.922	1007.633
WF- 171	54.141	5.83	178.395	74924.653	1.57	42.501	62843.482	0.00	0.000	995.270	0.00	16.242	1023.875
WF- 172	50.305	14.69	516.129	75440.782	0.80	59.611	62903.093	0.00	0.000	995.270	0.00	0.000	1023.875
WF- 173	57.294	53.06	1940.834	77381.616	2.29	88.519	62991.612	0.00	0.000	995.270	0.00	0.000	1023.875
WF- 174	53.883	46.50	2682.296	80063.912	0.95	87.290	63078.903	0.00	0.000	995.270	0.00	0.000	1023.875
WF- 174+25	25.000	0.00	581.250	80645.162	0.00	11.875	63090.778	0.00	0.000	995.270	0.00	0.000	1023.875
WF- 175	25.650	8.63	110.680	80755.842	7.63	97.855	63188.632	0.00	0.000	995.270	0.00	0.000	1023.875
WF- 176	45.912	0.00	198.110	80953.952	13.74	490.570	63679.202	0.00	0.000	995.270	0.00	0.000	1023.875
WF- 177	49.330	0.00	0.000	80953.952	18.85	803.832	64483.034	0.00	0.000	995.270	0.00	0.000	1023.875
WF- 178	55.000	2.20	60.500	81014.452	7.05	712.250	65195.284	0.00	0.000	995.270	0.00	0.000	1023.875
WF- 179	49.260	6.79	221.424	81235.876	0.45	184.725	65380.009	0.00	0.000	995.270	0.00	0.000	1023.875
WF- 180	53.450	1.22	214.067	81449.943	6.29	180.127	65560.136	0.00	0.000	995.270	0.00	0.000	1023.875
WF- 181	49.870	2.88	102.234	81552.176	3.11	234.389	65794.525	0.00	0.000	995.270	0.00	0.000	1023.875

WEST FLOODWAY/GARANG RIVER
EARTH WORK

LEFT SIDE

Sheet :

X-SECT NO.	DISTANCE (M)	Clearing and Grabbing			SODDING			Riprap			Stripping of Top Soil		
		LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	AREA (M ²)	VOLUME (M ³)	AC-VOL (M ³)
WF φ-9		0.00	0.000	0.000	1.74	0.000	0.000				0.00	0.000	0.000
WF φ-8	13.700	0.00	0.000	0.000	1.74	23.838	23.838				0.00	0.000	0.000
WF φ-7	49.910	1.60	39.928	39.928	1.74	86.843	110.681				0.00	0.000	0.000
WF φ-6	47.970	1.50	74.354	114.282	1.66	81.549	192.230				0.00	0.000	0.000
WF φ-5	54.050	2.60	110.803	225.084	1.97	98.101	290.331				0.00	0.000	0.000
WF φ-4	47.960	2.20	115.104	340.188	1.90	92.803	383.134				0.00	0.000	0.000
WF φ-3	50.020	1.80	100.040	440.228	2.05	98.790	481.923				0.00	0.000	0.000
WF φ-2	49.990	3.00	119.976	560.204	2.21	106.479	588.402				0.00	0.000	0.000
WF φ-1	50.010	2.00	125.023	685.229	2.21	110.522	698.924				0.00	0.000	0.000
WF-0	49.990	2.40	109.978	795.207	3.42	140.722	839.646				0.00	0.000	0.000
WF-1	46.989	1.40	89.279	884.486	3.18	155.064	994.710				0.00	0.000	0.000
WF-2	46.044	2.70	94.390	978.876	3.66	157.470	1152.180				0.00	0.000	0.000
WF-3	51.877	3.00	147.849	1126.726	3.19	177.679	1329.859				0.00	0.000	0.000
WF-4	52.949	0.00	79.424	1206.149	0.00	84.454	1414.312				0.00	0.000	0.000
WF-5	60.543	0.00	0.000	1206.149	0.00	0.000	1414.312				0.00	0.000	0.000
WF-6	50.937	3.43	87.357	1293.506	0.00	0.000	1414.312				0.86	21.839	21.839
WF-7	40.717	3.71	145.360	1438.866	0.00	0.000	1414.312				0.93	36.340	36.340
WF-8	51.884	4.21	205.461	1644.327	0.00	0.000	1414.312				1.05	51.365	51.365
WF-9	46.387	0.00	97.645	1741.971	0.00	0.000	1414.312				0.00	24.411	24.411
WF-10	50.444	3.10	78.188	1820.159	3.30	83.233	1497.545				0.78	19.547	19.547
WF-11	47.408	4.34	176.358	1996.517	4.58	186.788	1684.333				1.09	44.089	44.089
WF-12	49.909	9.67	349.613	2346.130	9.72	356.849	2041.182				2.42	87.403	87.403
WF-13	51.527	0.00	249.133	2395.263	1.50	289.066	2330.248				0.00	62.283	62.283
WF-14	44.317	2.00	44.317	2639.580	1.40	64.260	2394.508				0.50	11.079	11.079
WF-14+33.5	33.469	2.00	66.938	2706.518	1.40	46.857	2441.365				0.50	16.735	16.735
WF-14+33.5	0.000	6.80	0.000	2706.518	0	0.000	2441.365				1.70	0.000	0.000
NRR BRIDGE / WF-15	21.000	6.80	142.800	2849.318	0	0.000	2441.365				1.70	35.700	35.700

WEST FLOODWAY/GARANG RIVER
EARTH WORK

LEFT SIDE

Sheet :

X-SECT NO.	DISTANCE (M)	Clearing and Grubbing			SODDING			Riprap			Stripping of Top Soil		
		LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	AREA (M ²)	VOLUME (M ³)	AC-VOL (M ³)
WF-15		11.80	0.000	0.000	5.76	0.000	0.000				1.13	0.000	0.000
WF-16	55.962	11.80	660.352	660.352	5.76	322.341	322.341				1.13	63.237	63.237
WF-17	46.156	17.30	671.570	1331.921	7.27	300.706	623.047				1.14	52.387	115.624
WF-18	50.231	13.20	766.023	2097.944	7.11	361.161	984.208				1.13	57.314	173.139
WF-19	61.180	10.70	731.101	2829.045	5.93	398.894	1383.102				1.17	70.969	244.107
WF-20	46.620	11.50	517.482	3346.527	6.08	279.953	1663.035				1.18	54.779	298.886
WF-21	52.031	16.40	726.111	4072.639	6.21	319.853	1982.908				1.19	61.680	360.566
WF-22	51.364	21.15	964.359	5036.998	6.27	320.511	2303.420				1.21	61.637	422.203
WF-23	50.972	26.77	1221.289	6258.287	5.46	298.951	2602.371				1.22	61.831	484.134
WF-24	46.049	26.50	1226.515	7484.802	5.44	250.967	2853.338				1.23	56.410	540.544
WF-25	44.175	21.50	1060.200	8543.002	5.17	234.348	3087.686				1.24	54.556	595.100
WF-26	49.761	11.60	823.545	9368.546	5.23	258.757	3346.443				1.25	61.952	637.053
WF-27	53.816	9.60	570.430	9938.996	5.29	283.072	3629.515				1.04	61.619	713.672
WF-28	53.395	9.20	501.913	10440.909	5.35	284.061	3913.577				1.27	61.671	780.343
WF-29	52.381	3.40	330.000	10770.909	5.41	281.810	4195.387				0.87	56.048	836.391
WF-30	52.311	9.60	340.022	11110.931	5.47	284.572	4479.958				1.27	55.973	892.364
WF-31	54.872	5.00	400.566	11511.496	5.53	301.796	4781.754		0.000	0.000	1.28	69.962	962.326
WF-32	51.803	4.50	246.064	11757.561	5.59	288.025	5069.779		1.14	184.937	1.14	62.682	1025.007
WF-33	52.889	12.65	453.523	12211.084	5.52	293.798	5363.577		10.88	476.530	1.34	65.582	1090.590
WF-34	53.628	12.52	674.908	12885.992	5.54	296.563	5660.140		9.14	536.816	0.99	62.477	1153.066
WF-35	44.904	16.61	654.027	13540.019	5.55	248.993	5909.133		10.70	445.448	1.38	53.211	1206.277
WF-36	45.069	12.57	657.557	14197.576	5.56	250.358	6159.491		10.67	481.562	1.14	56.787	1263.064
WF-37	49.307	11.60	595.875	14793.451	5.58	274.640	6434.131		8.60	475.073	1.36	61.634	1324.698
WF-38	49.114	11.07	556.707	15350.158	5.59	274.302	6708.433		4.89	331.274	1.28	64.830	1389.529
WF-39	54.155	4.70	427.012	15777.170	5.61	303.268	7011.701		0.00	132.409	1.21	67.423	1456.952
WF-40	46.052	4.60	214.142	15991.312	5.62	258.582	7270.283				1.21	55.723	1512.674
WF-41	52.485	4.80	246.680	16237.992	5.64	295.491	7565.773				1.22	63.769	1576.444
WF-42	50.975	4.90	247.229	16485.220	5.48	283.421	7849.194				1.23	62.444	1638.888
WF-43	48.218	4.90	236.268	16721.488	5.49	264.476	8113.670				1.24	59.549	1698.437
WF-44	50.336	3.98	223.492	16944.980	5.51	276.848	8390.518				1.16	60.403	1758.841
WF-45	52.028	4.60	223.200	17168.180	5.70	291.617	8682.135		0.00	0.000	1.15	60.092	1818.933
WF-46	51.048	7.12	299.141	17467.322	5.73	291.739	8973.874		4.21	107.456	1.08	56.919	1875.851
WF-47	47.583	6.64	327.371	17794.693	5.73	272.651	9246.525		7.33	275.030	1.05	50.676	1926.527
WF-48	51.302	6.32	332.437	18127.130	2.74	217.341	9463.866		6.65	359.114	0.00	26.934	1953.461
WF-49	51.470	4.47	277.681	18404.810	2.78	141.620	9605.486		6.75	344.849	0.00	0.000	1953.461
WF-50	48.795	7.06	281.303	18686.114	2.76	135.162	9740.648		6.75	329.366	0.00	0.000	1953.461
WF-51	48.459	5.23	297.781	18983.894	2.79	134.958	9875.606		4.49	272.340	0.00	0.000	1953.461
WF-52	49.365	5.35	261.141	19245.035	3.52	155.747	10031.553		0.00	110.824	0.44	10.860	1964.321
WF-53	51.789	1.40	174.788	19419.823	3.14	172.457	10203.810				0.22	17.090	1981.411
WF-54	52.231	7.95	244.180	19664.003	5.89	235.823	10439.633				1.43	43.091	2024.502
WF-55	48.406	15.48	567.076	20231.079	5.87	284.627	10724.260				1.42	68.979	2093.481

**WEST FLOODWAY/ GARANG RIVER
EARTH WORK**

LEFT SIDE

Sheet :

X-SECT NO.	DISTANCE (M)	Clearing and Grabbing			SODDING			Riprap			Stripping of Top Soil		
		LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	AREA (M ²)	VOLUME (M ³)	AC-VOL (M ³)
WF - 56	50.267	17.45	827.646	21058.725	6.36	307.583	11031.643				1.43	71.630	2165.111
WF - 57	50.228	10.77	708.717	21767.442	6.37	319.701	11351.344				1.32	69.064	2234.175
WF - 58	51.865	12.45	602.153	22369.495	6.24	327.009	11678.333				1.44	71.574	2305.748
WF - 59	47.230	2.52	353.517	22723.111	4.74	259.293	11937.646				0.81	53.134	2358.882
WF - 60	50.268	8.95	288.287	23011.398	6.43	280.747	12218.393				1.44	56.552	2415.434
WF - 61	53.049	8.81	471.075	23482.474	6.61	345.879	12564.272				1.45	76.656	2492.089
WF - 62	48.939	9.40	445.590	23928.063	8.85	378.298	12942.571				1.48	71.696	2563.785
WF - 63	47.656	8.45	425.330	24353.393	5.65	345.506	13288.077				1.24	64.812	2628.597
WF - 64	51.814	4.11	325.392	24678.785	5.53	289.640	13577.717				1.29	65.545	2694.142
Railway Br / WF - 65	49.558	4.11	203.683	24882.468	5.53	274.056	13851.773				0.00	31.965	2726.107
WF - 65	0.000	1.47	0.000	24882.468	1.40	0.000	13851.773				0.00	0.000	2726.107
WF - 66	26.587	1.47	39.083	24921.551	1.40	37.222	13888.994				0.00	0.000	2726.107
WF - 67	45.754	1.30	63.369	24984.920	1.40	64.056	13953.050				0.00	0.000	2726.107
WF - 68	44.146	0.00	28.695	25013.615	0.76	47.678	14000.728				0.00	0.000	2726.107
WF - 69	53.201	0.00	0.000	25013.615	1.01	47.083	14047.810				0.00	0.000	2726.107
WF - 70	53.074	0.00	0.000	25013.615	1.53	67.404	14115.214				0.00	0.000	2726.107
WF - 71	54.141	0.00	0.000	25013.615	1.66	86.355	14201.569				0.00	0.000	2726.107
WF - 72	55.980	0.00	0.000	25013.615	0.00	46.463	14248.033				0.00	0.000	2726.107
National Br / WF - 72+22	29.366	0.00	0.000	25013.615	0.00	0.000	14248.033				0.00	0.000	2726.107
National Br / WF - 72+29	11.000	0.00	0.000	25013.615	0.00	0.000	14248.033				0.00	0.000	2726.107
National Br / WF - 73	2.000	0.00	0.000	25013.615	0.00	0.000	14248.033				0.00	0.000	2726.107
National Br / WF - 73+9	11.137	0.00	0.000	25013.615	0.00	0.000	14248.033				0.00	0.000	2726.107
WF - 74	45.513	0.00	0.000	25013.615	1.58	35.955	14283.988				0.00	0.000	2726.107
WF - 75	49.107	4.20	103.125	25116.740	4.53	150.022	14434.010				0.00	0.000	2726.107
WF - 76	49.940	4.20	209.748	25326.498	4.05	214.243	14648.253				0.00	0.000	2726.107
WF - 77	52.279	7.94	317.334	25643.822	4.04	211.469	14859.721				0.00	0.000	2726.107
WF - 78	46.050	8.28	373.466	26017.287	4.75	202.390	15062.111				0.00	0.000	2726.107
WF - 79	47.348	3.70	283.615	26300.902	9.78	343.983	15406.094				0.00	0.000	2726.107
WF - 80	55.983	3.70	207.137	26508.039	9.80	548.074	15954.168				0.00	0.000	2726.107
WF - 81	50.123	0.00	92.728	26600.766	4.34	354.370	16308.537				0.00	0.000	2726.107
WF - 82	48.606	0.00	0.000	26600.766	2.37	163.073	16471.610				0.00	0.000	2726.107
WF - 83	50.561	0.00	0.000	26600.766	6.72	229.800	16701.410				0.00	0.000	2726.107
WF - 84	48.645	0.00	0.000	26600.766	3.00	236.415	16937.825				0.00	0.000	2726.107
WF - 85	54.033	0.00	0.000	26600.766	3.56	177.228	17115.053				0.00	0.000	2726.107
WF - 86	50.097	0.00	0.000	26600.766	2.93	162.565	17277.618				0.00	0.000	2726.107
WF - 87	47.756	0.00	0.000	26600.766	3.00	141.597	17419.214				0.00	0.000	2726.107
WF - 88	50.018	0.00	0.000	26600.766	3.95	173.813	17593.027				0.00	0.000	2726.107
WF - 89	49.744	0.00	0.000	26600.766	4.11	200.468	17793.495				0.00	0.000	2726.107
WF - 90	50.295	0.00	0.000	26600.766	7.27	286.179	18079.674				0.00	0.000	2726.107
WF - 91	53.526	0.00	0.000	26600.766	2.85	270.842	18350.515				0.00	0.000	2726.107
WF - 92	50.493	0.00	0.000	26600.766	2.69	159.866	18490.381				0.00	0.000	2726.107
WF - 93	48.367	0.00	0.000	26600.766	3.95	160.578	18650.959				0.00	0.000	2726.107

**WEST FLOODWAY/GARANG RIVER
EARTH WORK**

LEFT SIDE

Sheet :

X-SECT NO.	DISTANCE (M)	Clearing and Grubbing			SODDING			Riprap			Stripping of Top Soil		
		LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	AREA (M ²)	VOLUME (M ³)	AC-VOL (M ³)
WF- 94	47.764	0.00	0.000	26600.766	3.56	179.354	18830.313				0.00	0.000	2726.107
Old. Sim. Br/WF- 94-23	26.866	0.00	0.000	26600.766	3.95	100.882	1893.195				0.00	0.000	2726.107
WF- 95	25.918	0.00	0.000	26600.766	2.77	87.084	19018.280				0.00	0.000	2726.107
WF- 96	46.173	0.00	0.000	26600.766	2.93	131.593	19149.873				0.00	0.000	2726.107
Simongan Weir / WF- 101+20	0.000	0.00	0.000	0.000	0.00	0.000	0.000				0.00	0.000	0.000
WF- 102	34.870	0.00	0.000	0.000	0.00	0.000	0.000				0.00	0.000	0.000
WF- 103	50.539	0.00	0.000	0.000	0.00	0.000	0.000				0.00	0.000	0.000
WF- 104	58.390	0.00	0.000	0.000	3.32	96.927	96.927				0.00	0.000	0.000
WF- 105	50.623	0.00	0.000	0.000	5.14	214.135	311.063				0.00	0.000	0.000
WF- 106	46.910	0.00	0.000	0.000	1.03	144.717	455.780				0.00	0.000	0.000
WF- 107	52.383	0.00	0.000	0.000	2.13	82.765	538.545				0.00	0.000	0.000
WF- 108	53.394	0.00	0.000	0.000	4.74	183.408	721.954				0.00	0.000	0.000
WF- 109	42.440	0.00	0.000	0.000	10.67	327.000	1048.934				0.00	0.000	0.000
WF- 110	48.417	0.00	0.000	0.000	0.00	258.305	1307.258				0.00	0.000	0.000
WF- 111	48.237	0.00	0.000	0.000	0.00	0.000	1307.258				0.00	0.000	0.000
WF- 112	33.216	2.62	43.513	43.513	4.72	78.390	1385.648				0.00	0.000	0.000
WF- 113	44.094	0.00	57.763	101.276	0.71	119.715	1505.363				0.00	0.000	0.000
WF- 114	48.018	7.30	175.266	276.542	4.63	128.256	1633.620				0.00	0.000	0.000
WF- 115	46.871	0.00	171.079	447.621	1.42	141.832	1775.451				0.00	0.000	0.000
WF- 116	48.763	0.00	0.000	447.621	0.47	46.081	1821.532				0.00	0.000	0.000
WF- 117	48.629	0.00	0.000	447.621	1.42	45.954	1867.487				0.00	0.000	0.000
WF- 118	46.524	0.00	0.000	447.621	3.16	106.540	1974.027				0.00	0.000	0.000
WF- 119	46.856	0.00	0.000	447.621	4.43	177.819	2151.845				0.00	0.000	0.000
WF- 120	48.226	0.00	0.000	447.621	3.95	202.067	2353.912				0.00	0.000	0.000
WF- 121	43.077	0.00	0.000	447.621	2.77	144.739	2498.651				0.00	0.000	0.000
WF- 122	39.273	0.00	0.000	447.621	2.53	104.073	2602.724				0.00	0.000	0.000
WF- 123	31.760	0.00	0.000	447.621	1.34	61.456	2664.180				0.00	0.000	0.000
WF- 124	29.761	0.00	0.000	447.621	1.11	36.457	2700.637				0.00	0.000	0.000
WF- 125	32.527	0.00	0.000	447.621	1.19	37.406	2738.043				0.00	0.000	0.000
WF- 126	49.643	0.00	0.000	447.621	1.90	76.698	2814.741				0.00	0.000	0.000
WF- 126+39.0	39.000	0.00	0.000	447.621	0.00	37.050	2851.791				0.00	0.000	0.000
WF- 127	9.972	0.00	0.000	447.621	0.00	0.000	2851.791				3.85	19.196	19.196
WF- 128	42.213	0.00	0.000	447.621	0.00	0.000	2851.791				3.90	163.575	182.771
WF- 129	42.766	0.00	0.000	447.621	0.00	0.000	2851.791				2.00	126.160	308.931
WF- 130	38.570	0.00	0.000	447.621	0.00	0.000	2851.791				14.30	314.346	623.277
WF- 131	47.484	0.00	0.000	447.621	0.00	0.000	2851.791				12.43	633.287	1256.564
WF- 132	37.073	0.00	0.000	447.621	0.00	0.000	2851.791				2.95	285.091	1541.655
WF- 133	37.266	0.00	0.000	447.621	1.58	29.440	2881.232				0.00	0.000	0.000
WF- 134	42.892	0.00	0.000	447.621	0.71	49.111	2930.343				0.00	0.000	0.000

**WEST FLOODWAY/GARANG RIVER
EARTH WORK**

LEFT SIDE

Sheet: 1

X-SECT NO.	DISTANCE (M)	Clearing and Grubbing			SODDING			Riprap			Stripping of Top Soil		
		LENGTH (M)	AREA (M ²)	AC.AREA (M ²)	LENGTH (M)	AREA (M ²)	AC.AREA (M ²)	LENGTH (M)	AREA (M ²)	AC.AREA (M ²)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)
WF- 135	68.840	0.00	0.000	447.621	2.45	108.767	3039.110				0.00	0.000	0.000
WF- 136	58.395	7.00	204.383	652.003	7.19	281.464	3320.374				0.00	0.000	0.000
WF- 137	64.869	0.00	227.042	879.045	8.22	499.816	3820.390				0.00	0.000	0.000
WF- 138	56.933	0.00	0.000	879.045	6.09	407.356	4227.745				0.00	0.000	0.000
WF- 139	63.828	5.20	165.953	1044.998	5.20	194.356	4422.102				0.00	0.000	0.000
WF- 140	60.271	44.65	1502.255	2547.252	4.62	139.226	4561.328				0.00	0.000	0.000
WF- 141	51.611	0.00	1152.216	3699.468	0.00	119.221	4680.549				0.00	0.000	0.000
WF- 142	66.195	0.00	0.000	3699.468	0.00	0.000	4680.549	0.00	0.000	0.000	0.00	0.000	0.000
WF- 143	70.715	0.00	0.000	3699.468	0.00	0.000	4680.549	3.08	108.901	108.901	0.00	0.000	0.000
WF- 144	55.466	0.00	0.000	3699.468	0.00	0.000	4680.549	7.34	288.978	397.879	0.00	0.000	0.000
WF- 145	47.049	0.00	0.000	3699.468	0.00	0.000	4680.549	14.04	502.954	900.833	0.00	0.000	0.000
WF- 146	37.717	0.00	0.000	3699.468	0.00	0.000	4680.549	1.52	293.438	1194.271	0.00	0.000	0.000
WF- 146+22	22.000	0.00	0.000	3699.468	0.00	0.000	4680.549				0.00	0.000	0.000
WF- 147	22.950	5.15	59.096	3758.564	4.58	52.556	4733.105				0.00	0.000	0.000
WF- 148	49.490	0.00	127.437	3886.001	0.00	113.332	4846.437				0.00	0.000	0.000
WF- 149	56.037	4.50	126.083	4012.084	3.40	95.263	4941.700				0.00	0.000	0.000
WF- 150	43.296	3.60	175.349	4187.433	2.65	130.970	5072.670				0.00	0.000	0.000
WF- 151	35.164	8.50	212.742	4400.175	8.35	193.402	5266.072				0.00	0.000	0.000
WF- 152	29.570	6.20	217.340	4617.515	5.74	208.321	5474.393				0.00	0.000	0.000
WF- 153	42.207	6.00	257.463	4874.977	7.91	288.063	5762.455				0.00	0.000	0.000
WF- 154	46.273	0.00	138.819	5013.796	0.79	201.288	5963.743				0.00	0.000	0.000
WF- 155	51.643	5.46	140.985	5154.782	5.57	164.225	6127.968				0.00	0.000	0.000
WF- 156	50.046	0.00	136.626	5291.407	3.40	224.456	6352.424				0.00	0.000	0.000
WF- 157	55.546	0.00	0.000	5291.407	1.19	127.478	6479.902				0.00	0.000	0.000
WF- 158	50.472	0.00	0.000	5291.407	0.00	30.031	6509.933				0.00	0.000	0.000
WF- 159	48.327	0.00	0.000	5291.407	0.63	15.223	6523.156				0.00	0.000	0.000
WF- 160	57.635	0.00	0.000	5291.407	3.71	125.068	6650.224				0.00	0.000	0.000
WF- 161	33.976	0.00	0.000	5291.407	4.90	146.267	6796.490				0.00	0.000	0.000
WF- 162	56.038	10.47	293.359	5884.766	10.57	433.454	7229.944				0.00	0.000	0.000
WF- 163	51.395	0.00	269.053	5853.819	1.90	320.448	7550.392				0.00	0.000	0.000
WF- 164	39.314	0.00	0.000	5853.819	2.21	80.790	7631.183				0.00	0.000	0.000
WF- 165	43.008	0.00	0.000	5853.819	2.53	101.929	7733.111				0.00	0.000	0.000
WF- 166	26.587	0.00	0.000	5853.819	0.79	44.134	7777.246				0.00	0.000	0.000
WF- 167	45.754	0.00	0.000	5853.819	1.58	54.218	7831.464				0.00	0.000	0.000
WF- 168	44.146	0.00	0.000	5853.819	0.63	48.781	7880.246				0.00	0.000	0.000
WF- 169	53.201	0.00	0.000	5853.819	1.58	58.787	7939.033				0.00	0.000	0.000
WF- 170	53.074	0.00	0.000	5853.819	0.40	52.543	7991.576				0.00	0.000	0.000
WF- 171	54.141	0.00	0.000	5853.819	0.40	21.656	8013.232				0.00	0.000	0.000
WF- 172	50.305	0.00	0.000	5853.819	1.19	39.992	8053.225				0.00	0.000	0.000
WF- 173	57.294	0.00	0.000	5853.819	3.56	136.073	8189.298				0.00	0.000	0.000
WF- 174	53.883	0.00	0.000	5853.819	0.00	95.912	8285.210				0.00	0.000	0.000
Toll Bridge / WF- 174													
WF- 174+25	23.000	0.00	0.000	5853.819	0.00	0.000	8285.210				0.00	0.000	0.000

WEST FLOODWAY/GARANG RIVER
EARTH WORK

LEFT SIDE

Sheet :

X-SECT NO.	DISTANCE (M)	Clearing and Grubbing			SODDING			Riprap			Stripping of Top Soil		
		LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	AREA (M ²)	VOLUME (M ³)	AC-VOL (M ³)
WF- 175	25.650	0.00	0.000	5853.819	0.00	0.000	8285.210				0.00	0.000	0.000
WF- 176	45.912	0.00	0.000	5853.819	0.00	0.000	8285.210				0.00	0.000	0.000
WF- 177	49.330	0.00	0.000	5853.819	0.00	0.000	8285.210				0.00	0.000	0.000
WF- 178	55.000	0.00	0.000	5853.819	0.00	0.000	8285.210				0.00	0.000	0.000
WF- 179	49.260	0.00	0.000	5853.819	0.00	0.000	8285.210				0.00	0.000	0.000
WF- 180	53.450	0.00	0.000	5853.819	0.00	0.000	8285.210				0.00	0.000	0.000
WF- 181	49.870	0.00	0.000	5853.819	0.00	0.000	8285.210				0.00	0.000	0.000

**WEST FLOODWAY/GARANG RIVER
EARTH WORK**

RIGHT SIDE

Sheet :

X-SECT NO.	DISTANCE (M)	LAND EXCAVATION			RIVER EXCAVATION			EMBANKMENT			EARTHFILL		
		AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)
BP OF CONSTRUCTION													
WF φ -9	210.00		0.000	0.000	87.21	18314.100	18314.100		0.000	0.000		0.000	0.000
WF φ -8	13.700		0.000	0.000	97.53	1265.469	19579.569		0.000	0.000		0.000	0.000
WF φ -7	49.910		0.000	0.000	96.22	4835.031	24414.600		0.000	0.000		0.000	0.000
WF φ -6	47.970		0.000	0.000	90.33	4474.402	28889.002		0.000	0.000		0.000	0.000
WF φ -5	54.050		0.000	0.000	87.73	4812.072	33701.074		0.000	0.000		0.000	0.000
WF φ -4	47.960		0.000	0.000	60.13	3545.683	37246.756		0.000	0.000		0.000	0.000
WF φ -3	50.020		0.000	0.000	89.64	3745.748	40992.504		0.000	0.000		0.000	0.000
WF φ -2	49.990		0.000	0.000	91.05	4516.347	45508.851		0.000	0.000		0.000	0.000
WF φ -1	50.010		0.000	0.000	78.22	4232.596	49741.447		0.000	0.000		0.000	0.000
WF φ 0	46.689		0.000	0.000	124.30	5061.987	54803.434		0.000	0.000		0.000	0.000
WF - 1	46.044		0.000	0.000	90.94	5024.670	59828.104	10.07	235.079	235.079	8.18	190.958	190.958
WF - 2	51.877		0.000	0.000	74.85	3816.817	63644.922	8.65	430.972	666.051	11.00	441.562	632.520
WF - 3	52.949		0.000	0.000	76.33	3921.382	67566.304	8.88	469.128	1588.843	13.38	684.258	1316.778
WF - 4	60.453		0.000	0.000	67.16	3798.826	71365.130	8.88	469.128	1588.843	13.38	684.258	1316.778
WF - 5	50.937		0.000	0.000	10.57	2349.506	73714.636	8.27	518.384	2107.228	27.52	1247.448	3335.427
WF - 6	40.717		0.000	0.000	35.26	1167.221	74881.857	9.91	463.017	2570.243	17.52	1147.101	4482.529
WF - 7	51.884		0.000	0.000	72.55	2194.850	77076.707	10.15	408.392	2978.637	10.39	568.206	5050.734
WF - 8	46.387		0.000	0.000	96.27	4379.528	81456.236	10.48	535.183	3513.820	12.18	585.511	5636.245
WF - 9	50.444		0.000	0.000	92.62	4381.020	83837.256	10.77	492.862	4006.682	9.55	503.995	6140.240
WF - 10	47.408		0.000	0.000	114.09	5213.640	91050.896	11.48	561.190	4567.872	5.38	376.564	6516.805
WF - 11	49.909		0.000	0.000	123.50	5631.833	96683.729	11.21	537.844	5105.715	16.62	521.488	7038.293
WF - 12	51.527		0.000	0.000	121.49	6113.603	102796.332	10.75	548.001	5653.716	5.74	557.983	7596.275
WF - 13	44.317		0.000	0.000	128.12	6430.827	109227.159	11.58	575.299	6229.015	24.65	782.933	8379.238
WF - 14	54.469		0.000	0.000	104.96	5164.703	114391.862	12.32	529.588	6758.603	11.59	803.024	9182.252
WF - 15					115.64	6007.931	120399.793	12.32	671.058	7429.661	5.63	468.978	9651.230
NRR BRIDGE													

X-SECT NO.	DISTANCE (M)	LAND EXCAVATION			RIVER EXCAVATION			EMBANKMENT			EARTHFILL		
		AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)
WF- 15		23.40	0.000	0.000	115.64	0.000	0.000	2.29	0.000	0.000	5.63	0.000	0.000
WF- 16	55.962	20.87	1238.719	1238.719	98.90	6003.044	6003.044	2.29	128.153	128.153	1.05	186.913	186.913
WF- 17	46.156	27.23	1110.052	2348.771	86.14	4270.353	10273.397	1.21	80.775	208.926	0.00	24.232	211.145
WF- 18	50.231	3.92	782.348	3131.118	71.22	3952.175	14225.572	0.53	43.701	252.627	0.83	20.846	231.991
WF- 19	61.180	20.18	737.219	3868.337	79.00	4595.230	18820.802	0.42	29.061	281.687	0.00	25.390	257.381
WF- 20	46.620	21.17	963.869	4832.206	74.69	3582.514	22403.316	0.65	24.942	306.629	0.00	0.000	257.381
WF- 21	52.051	14.87	937.959	5770.165	91.04	4313.206	26716.522	0.32	25.245	331.874	0.62	16.136	273.516
WF- 22	51.364	24.45	1009.816	6779.981	99.47	4892.678	31609.200	0.33	16.693	348.567	1.05	42.889	316.405
WF- 23	50.972	19.81	1128.010	7907.992	125.97	5745.564	37354.763	0.53	21.918	370.485	2.56	92.004	408.410
WF- 24	46.049	23.92	1006.861	8914.853	130.11	5895.999	43250.762	0.64	26.939	397.424	2.20	109.597	518.006
WF- 25	44.175	33.19	1261.417	10176.270	125.09	5636.620	48887.382	0.12	16.787	414.210	4.87	156.159	674.165
WF- 26	49.761	31.62	1612.505	11788.775	127.63	6287.800	55175.182	0.00	2.986	417.196	4.87	242.336	916.501
WF- 27	53.816	22.04	1443.883	13232.659	142.23	7261.393	62436.575	0.00	0.000	417.196	7.94	344.691	1261.193
WF- 28	53.395	25.71	1274.806	14507.464	141.90	7585.561	70022.135	0.98	26.164	443.360	7.14	402.598	1663.791
WF- 29	52.381	40.90	1744.549	16252.013	138.78	7351.150	77373.285	0.42	36.667	480.026	7.24	376.619	2040.410
WF- 30	52.311	24.07	1699.323	17951.336	136.92	7211.071	84584.356	2.03	64.081	544.107	8.25	403.149	2445.559
WF- 31	54.872	28.49	1442.036	19393.372	131.96	7376.992	91961.348	1.65	100.964	645.072	6.82	413.461	2859.019
WF- 32	51.803	44.01	1877.859	21271.231	131.28	6818.311	98779.659	1.73	87.547	732.618	0.00	176.648	3035.668
WF- 33	52.889	37.76	2162.367	23433.598	128.81	6877.950	105657.609	1.39	82.507	815.126	2.47	65.318	3100.986
WF- 34	53.628	33.92	1921.893	23555.491	135.68	7092.035	112749.644	0.98	63.549	878.675	12.85	410.790	3511.776
WF- 35	44.904	30.28	1441.306	26796.798	137.67	6137.142	118886.786	0.70	37.719	916.394	18.13	695.563	4207.339
WF- 36	45.069	41.85	1625.413	28422.211	133.51	6110.793	124997.579	0.00	15.774	932.168	17.38	800.200	5007.539
WF- 37	49.307	40.17	2022.080	30444.291	126.21	6403.007	131400.586	0.81	19.969	952.138	15.01	798.527	5806.066
WF- 38	49.114	37.45	1906.114	32350.405	131.22	6321.709	137722.294	0.00	19.891	972.029	20.61	874.720	6680.786
WF- 39	54.155	48.93	2338.954	34689.360	119.50	6788.871	144511.165	2.56	69.318	1041.347	15.65	981.830	7662.616
WF- 40	46.052	53.06	2348.422	37037.782	120.91	5535.681	150046.846	3.59	141.610	1182.957	17.73	768.608	8431.224
WF- 41	52.485	49.32	2686.707	39724.489	121.46	6360.395	156407.240	4.20	204.429	1387.386	18.20	942.893	9374.117
WF- 42	50.975	60.74	2805.154	42529.643	110.47	5911.316	162318.556	3.20	188.608	1575.994	16.66	888.494	10262.612
WF- 43	48.218	58.90	2884.401	45414.044	110.09	5317.481	167636.037	4.98	197.212	1773.205	3.91	737.012	10999.624
WF- 44	50.336	52.82	2811.769	48225.813	105.67	5430.248	173066.285	4.25	232.301	2005.506	16.22	758.312	11757.936
WF- 45	52.028	52.14	2730.429	50956.242	97.70	5290.467	178356.752	3.17	193.024	2198.530	11.73	727.091	12485.027
WF- 46	51.048	44.71	2471.989	53428.242	97.82	4990.452	183347.205	3.56	171.777	2370.306	13.10	633.761	13118.788
WF- 47	47.583	45.20	2139.094	55567.335	94.02	4564.161	187911.366	3.95	178.674	2548.980	6.67	470.358	13589.146
WF- 48	51.302	44.88	2310.642	57877.977	85.48	4604.355	192515.720	0.00	101.321	2650.302	9.51	415.033	14004.179
WF- 49	51.470	56.55	2610.301	60488.278	71.25	4033.447	196549.167	2.32	59.705	2710.007	5.25	379.849	14384.028
WF- 50	48.795	48.30	2558.078	63046.336	73.73	3537.150	200086.317	2.67	121.744	2831.751	1.09	154.680	14538.708
WF- 51	48.459	52.32	2437.972	65484.329	66.89	3407.152	203493.469	2.16	117.028	2948.779	0.00	26.410	14565.118
WF- 52	49.365	44.98	2401.607	67883.936	57.23	3063.592	206557.061	0.04	54.302	3003.081	0.00	0.000	14565.118
WF- 53	51.789	50.70	2477.586	70363.522	46.20	2678.268	209233.329	0.00	1.036	3004.116	0.00	0.000	14565.118
WF- 54	52.231	44.23	2479.144	72842.666	36.19	2151.656	21386.985	3.71	96.889	3101.005	0.00	0.000	14565.118
WF- 55	48.406	37.27	1972.545	74815.211	36.82	1767.061	213154.046	0.44	100.442	3201.447	0.00	0.000	14565.118
WF- 56	50.267	44.91	2065.471	76880.682	25.88	1575.870	214729.916	0.53	24.379	3225.827	0.00	0.000	14565.118

X-SECT NO.	DISTANCE (M)	LAND EXCAVATION			RIVER EXCAVATION			EMBANKMENT			EARTHFILL		
		AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)
WF- 57	50.228	31.69	1923.732	78804.414	29.79	1398.096	21628.013	3.92	111.757	3337.584	0.00	0.000	14565.118
WF- 58	51.865	34.30	1711.286	80514.700	27.18	1477.375	217605.387	1.09	129.922	3467.506	0.42	10.892	14576.010
WF- 59	47.230	35.27	1642.896	82158.595	32.79	1416.192	219021.579	1.49	60.927	3528.433	0.25	15.822	14591.852
WF- 60	50.268	40.43	1902.644	84061.239	25.81	1472.852	220494.431	1.14	66.102	3394.535	0.00	6.284	14598.115
WF- 61	53.049	42.09	2188.802	86250.041	28.88	1450.625	221945.056	2.58	98.671	3693.206	0.00	0.000	14598.115
WF- 62	48.939	46.91	2177.786	88427.826	31.57	1479.181	223424.237	1.20	92.495	3785.701	0.00	0.000	14598.115
WF- 63	47.656	40.97	2094.005	90521.831	32.23	1520.226	224944.464	1.61	66.957	3852.658	0.00	0.000	14598.115
WF- 64	51.814	52.63	2424.895	92946.726	28.91	1583.934	226528.418	0.00	0.000	3894.368	0.00	0.000	14598.115
Railway Br/WF- 65	49.558	43.27	2376.306	93323.032	42.07	1738.813	228287.231	0.00	0.000	3944.949	0.00	0.000	14598.115
WF- 66	50.581	43.64	2197.997	97521.030	21.98	1619.857	229907.088	2.00	50.581	4000.752	0.00	0.000	14598.115
WF- 67	52.397	36.58	2101.644	99622.673	14.78	963.057	230870.145	0.13	55.803	4000.752	0.00	0.000	14598.115
WF- 68	46.986	29.97	1563.459	101186.132	8.39	544.333	231414.477	0.19	7.518	4008.269	0.00	0.000	14598.115
WF- 69	49.202	23.00	1303.115	102489.247	8.59	417.725	231832.202	2.44	106.694	4179.664	0.00	0.000	14598.115
WF- 70	50.566	23.62	1178.693	103667.941	6.07	370.649	232202.851	1.78	150.130	4329.795	0.00	0.000	14598.115
WF- 71	50.978	21.62	1153.122	104821.063	7.12	336.200	232539.051	4.11	218.042	4547.837	0.00	0.000	14598.115
WF- 72	55.980	26.23	1339.322	106160.385	12.13	538.808	233077.859	3.68	108.067	4655.904	0.00	0.000	14598.115
National Br/WF- 72+22	29.366	27.66	791.267	106951.652	27.01	574.693	233652.551	0.00	0.000	4655.904	0.00	0.000	14598.115
National Br/WF- 72+22	0.000	27.66	0.000	106951.652	27.01	0.000	233652.551	0.00	0.000	4655.904	0.00	0.000	14598.115
National Br/WF- 72+29	11.000	22.22	274.340	107234.992	26.95	296.780	233949.331	0.00	0.000	4655.904	0.00	0.000	14598.115
National Br/WF- 73	2.000	16.42	38.640	107264.632	22.52	49.470	233998.801	0.00	0.000	4655.904	0.00	0.000	14598.115
National Br/WF- 73+9	11.137	16.88	185.431	107450.063	23.06	253.812	234252.613	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 74	43.513	16.88	734.499	108184.562	35.35	1270.797	235523.411	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 74+7	7.000	47.61	225.715	108410.277	27.50	219.975	235743.386	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 75	42.107	47.61	2004.714	110414.991	15.20	898.984	236642.370	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 76	49.940	45.04	2313.471	112728.462	10.96	653.215	237295.585	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 77	52.279	34.15	2059.987	114798.449	6.21	448.815	237744.400	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 78	46.050	27.87	1428.011	116226.459	4.38	243.835	239888.235	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 79	47.348	25.53	1264.192	117490.651	5.15	225.613	238213.848	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 80	55.983	15.92	1160.248	118650.899	6.74	332.819	238546.667	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 81	50.123	20.43	910.986	119561.884	8.84	390.458	238937.126	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 82	48.606	32.06	1275.664	120837.549	11.04	483.144	239420.269	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 83	50.561	30.70	1586.604	122424.159	9.48	518.756	239939.025	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 84	48.645	47.21	1894.966	124319.119	13.45	557.713	240496.740	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 85	54.033	43.19	2442.292	126761.410	12.29	695.405	241192.145	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 86	50.097	46.67	2250.838	129012.269	15.24	689.583	241881.730	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 87	47.756	42.84	2137.850	131149.588	11.17	630.618	242512.348	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 88	50.018	35.79	1966.458	133116.046	11.14	587.951	243070.299	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 89	49.744	37.09	1812.671	134928.717	9.02	501.420	243571.718	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 90	50.295	28.42	1647.413	136576.130	6.56	391.798	243963.516	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 91	53.526	34.19	1675.631	138251.762	9.15	420.447	244383.963	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 92	50.493	53.46	2212.856	140464.617	10.43	494.326	244878.289	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 93	48.367	69.29	2968.525	143433.142	14.62	605.797	245484.086	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 94	47.764	51.65	2888.289	146321.431	8.58	554.062	246038.148	0.00	0.000	4655.904	0.00	0.000	14598.115
Old. Sim. Br/WF- 94+23	26.866	0.00	693.814	147015.245	8.47	229.033	246267.181	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 95	25.918	0.00	0.000	147015.245	18.70	352.096	246619.277	0.00	0.000	4655.904	0.00	0.000	14598.115
WF- 96	46.173	0.00	0.000	147015.245	15.06	779.400	247398.677	0.00	0.000	4655.904	0.00	0.000	14598.115

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		AREA (M ²)	VOLUME (M ³)	ACVOL (M ³)	AREA (M ²)	VOLUME (M ³)	ACVOL (M ³)	AREA (M ²)	VOLUME (M ³)	ACVOL (M ³)	AREA (M ²)	VOLUME (M ³)	ACVOL (M ³)
Simongan Weir	WF- 101+20	0.00	0.000	0.000	46.08	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000
WF- 102	54.870	12.27			42.21			0.00	0.00		0.00		
WF- 103	50.539	22.80			54.05			0.00	0.00		0.00		
WF- 104	58.390	14.30			52.73			0.00	0.00		0.00		
WF- 105	50.623	7.75	558.119	558.119	52.75	2669.857	2669.857	0.00	0.000	0.000	0.00	0.000	0.000
WF- 106	46.910	5.70	315.470	873.588	28.86	1914.163	4384.020	0.85	19.937	19.937	0.00	0.000	0.000
WF- 107	52.383	30.93	939.395	1832.983	49.83	2061.009	6645.029	0.00	22.263	42.200	0.00	0.000	0.000
WF- 108	53.394	14.45	1211.510	3044.493	50.92	2685.723	9334.751	0.00	0.000	42.200	0.00	0.000	0.000
WF- 109	42.440	20.58	743.337	3787.829	53.76	2221.310	11556.061	0.00	0.000	42.200	0.00	0.000	0.000
WF- 110	48.417	1.89	543.965	4331.754	50.24	2517.684	14073.745	0.00	0.000	42.200	1.97	47.691	47.691
WF- 111	48.237	10.67	302.928	4634.723	49.35	2401.961	16475.706	0.00	0.000	42.200	0.00	47.513	95.204
WF- 112	33.216	1.79	206.936	4841.658	56.69	1761.112	18236.819	0.00	0.000	42.200	4.72	78.390	173.594
WF- 113	44.094	21.09	504.435	5346.094	60.92	2592.948	20829.766	0.00	0.000	42.200	0.00	104.062	277.656
WF- 114	48.018	37.43	1405.007	6751.101	55.17	2787.203	23616.971	0.00	0.000	42.200	0.00	0.000	277.656
WF- 115	46.871	0.00	877.191	7628.291	23.00	1831.953	25448.924	0.00	0.000	42.200	0.00	0.000	277.656
WF- 116	48.763	10.76	262.345	7890.636	55.31	1914.192	27363.116	0.00	0.000	42.200	0.00	0.000	277.656
WF- 117	48.629	3.77	353.290	8243.926	45.57	2457.710	29820.826	0.00	0.000	42.200	0.00	0.000	277.656
WF- 118	46.524	8.27	280.074	8524.000	46.15	2133.591	31954.416	0.00	0.000	42.200	0.00	0.000	277.656
WF- 119	46.856	0.00	193.750	8717.750	39.43	2004.968	33959.384	0.00	0.000	42.200	0.00	0.000	277.656
WF- 120	48.226	6.63	159.869	8877.619	53.10	2231.76	36190.560	0.00	0.000	42.200	0.00	0.000	277.656
WF- 121	43.077	28.94	766.124	9643.744	54.32	2313.666	38504.226	0.00	0.000	42.200	0.00	0.000	277.656
WF- 122	39.273	21.65	993.411	10637.154	46.15	1972.879	40477.105	0.00	0.000	42.200	0.00	0.000	277.656
WF- 123	31.760	25.03	741.278	11378.433	49.72	1522.416	41999.521	0.00	0.000	42.200	0.00	0.000	277.656
Ground Sill	WF- 124	29.761	25.26	748.340	12126.773	20.06	1038.361	43037.882	0.00	0.000	42.200	0.000	277.656
WF- 125	32.527	21.80	765.360	12892.133	18.26	623.217	43661.099	0.00	0.000	42.200	0.00	0.000	277.656
WF- 126	49.643	37.00	1459.504	14351.637	19.93	947.933	44609.032	0.00	0.000	42.200	0.00	0.000	277.656
WF- 127	48.972	52.22	2184.641	16536.278	21.00	1002.212	45611.244	0.00	0.000	42.200	0.00	0.000	277.656
WF- 128	42.213	49.90	2155.396	18691.674	20.08	867.055	46478.299	0.00	0.000	42.200	0.00	0.000	277.656
WF- 129	42.766	7.32	1223.535	19913.209	18.07	815.761	47294.061	4.33	92.588	134.788	0.00	0.000	277.656
WF- 130	38.570	61.33	1323.915	21239.125	21.97	772.171	48066.232	0.46	92.375	227.163	0.00	0.000	277.656
WF- 131	47.384	89.30	3568.726	24807.851	20.08	996.249	49062.481	0.00	10.898	238.061	0.00	0.000	277.656
WF- 132	37.073	69.66	2946.562	27754.413	19.86	740.348	49802.829	0.00	0.000	238.061	0.00	0.000	277.656
WF- 133	37.266	57.06	2361.174	30115.586	15.29	654.950	50457.779	0.00	0.000	238.061	0.00	0.000	277.656
WF- 134	42.892	39.30	2066.537	32182.123	10.61	555.451	51013.230	0.00	0.000	238.061	0.00	0.000	277.656
WF- 135	68.840	5.34	1536.509	33718.632	9.66	697.693	51710.923	7.76	267.099	505.161	0.00	0.000	277.656
WF- 136	58.395	41.42	1365.275	35083.907	19.93	863.954	52574.877	12.47	590.665	1095.826	8.36	244.091	521.747
WF- 137	64.869	105.47	4764.304	39848.210	14.35	1111.855	53686.732	0.00	404.458	1500.284	0.00	0.000	792.899
WF- 138	56.933	1.46	3043.923	42892.133	11.38	732.443	54419.175	0.00	0.000	1500.284	0.00	0.000	792.899
WF- 139	63.828	1.98	109.784	43001.918	12.58	764.659	55183.835	3.99	127.337	1627.621	0.00	0.000	792.899
WF- 140	60.271	2.85	145.554	43147.472	12.49	755.497	55939.332	11.41	464.087	2091.708	61.29	1847.005	2639.904
WF- 141	51.611	54.31	1475.042	44622.514	11.26	612.881	56552.212	0.00	294.441	2386.149	0.00	0.000	4221.523
WF- 142	66.195	84.67	4599.891	49222.405	15.38	881.717	57433.930	0.00	0.000	2386.149	0.00	0.000	4221.523
WF- 143	70.715	106.83	6770.961	55993.366	11.14	937.681	58371.611	0.00	0.000	2386.149	0.00	0.000	4221.523
WF- 144	55.466	94.27	5777.106	61570.472	9.98	585.721	58957.331	0.00	0.000	2386.149	0.00	0.000	4221.523
WF- 145	47.049	85.92	4238.880	63809.352	9.20	451.200	59408.531	0.00	0.000	2386.149	0.00	0.000	4221.523
WF- 146	37.717	109.41	3683.631	69492.983	8.39	331.721	59740.252	0.00	0.000	2386.149	0.00	0.000	4221.523

X-SECT NO.	DISTANCE (M)	LAND EXCAVATION			RIVER EXCAVATION			EMBANKMENT			EARTHFILL		
		AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)
WF- 147	44.950	41.69	3395.973	72888.935	7.31	352.858	60093.110	0.00	0.000	2386.149	0.00	0.000	4221.523
WF- 148	49.490	27.98	1723.984	74612.940	4.43	290.506	60383.616	0.00	0.000	2386.149	0.00	0.000	4221.523
WF- 149	56.037	61.71	2512.979	77125.919	4.99	263.934	60647.550	0.00	0.000	2386.149	0.00	0.000	4221.523
WF- 150	43.296	75.69	2974.435	80100.334	7.11	261.941	60909.491	0.00	0.000	2386.149	0.00	0.000	4221.523
WF- 151	35.164	72.07	2597.916	82698.270	6.08	231.907	61141.398	0.00	0.000	2386.149	0.00	0.000	4221.523
WF- 152	29.570	48.83	1788.246	84486.516	3.91	147.702	61289.100	0.00	0.000	2386.149	0.00	0.000	4221.523
WF- 153	42.207	24.33	1545.409	86031.925	0.93	102.141	61391.241	0.00	0.000	2386.149	0.00	0.000	4221.523
WF- 154	46.273	3.19	637.179	86659.105	0.00	21.517	61412.758	0.08	1.851	2387.999	0.10	2.314	4223.837
WF- 155	51.643	10.27	347.557	87016.662	0.00	0.000	61412.758	0.00	2.066	2390.063	0.00	2.582	4226.419
WF- 156	50.046	43.68	1349.991	88356.633	1.22	30.528	61443.286	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 157	55.546	76.31	3332.482	91699.135	4.47	158.028	61601.314	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 158	50.472	100.82	4470.053	96169.188	1.00	138.041	61739.355	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 159	48.327	117.79	5282.383	101451.571	1.18	52.676	61792.032	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 160	57.635	112.34	6631.171	108033.342	0.49	48.125	61840.157	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 161	33.976	100.24	3611.309	111694.651	1.38	31.768	61871.924	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 162	56.038	110.27	5898.280	117592.931	1.58	82.936	61954.861	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 163	51.395	114.83	5784.507	123377.438	1.24	72.467	62027.328	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 164	39.314	66.55	3565.387	126942.824	10.86	237.850	62265.177	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 165	43.008	97.39	3525.366	130468.190	13.93	333.084	62798.261	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 166	26.587	82.40	2390.038	132838.229	9.63	313.195	63111.456	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 167	45.754	59.20	3239.383	136097.612	4.63	326.226	63437.682	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 168	44.146	45.82	2318.106	138415.718	4.02	190.931	63628.614	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 169	53.201	59.78	2809.013	141224.731	5.54	254.301	63882.915	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 170	53.074	99.08	4215.668	145440.399	9.83	407.874	64290.788	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 171	54.141	105.98	5551.077	150991.476	7.29	463.447	64754.235	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 172	50.305	70.06	4427.846	155419.322	6.04	335.283	65089.518	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 173	57.294	0.00	2007.009	157426.331	0.00	173.028	65262.546	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 174	53.883	52.83	1423.858	158830.189	3.29	88.638	65351.183	0.00	0.000	2390.063	0.00	0.000	4226.419
Total Bridge / WF- 174+180		52.83	951.300	159801.489	3.29	59.220	65410.403	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 175	0.000	69.01	0.000	159801.489	9.58	0.000	65410.403	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 176	32.665	69.01	2254.212	162055.700	9.58	312.931	65723.334	0.00	0.000	2390.063	0.00	0.000	4226.419
WF- 177	45.912	52.53	2790.531	164846.232	13.83	537.400	66260.734	0.00	0.000	2390.063	4.12	94.579	4320.998
WF- 178	49.330	34.52	2147.582	166993.813	9.46	574.448	66835.182	0.00	0.000	2390.063	1.73	144.290	4465.288
WF- 179	55.000	43.97	2158.475	169152.288	1.98	314.600	67149.782	0.00	0.000	2390.063	4.70	176.825	4642.113
WF- 180	58.020	58.92	2984.839	172137.127	45.49	1377.105	68526.887	0.00	0.000	2390.063	0.00	0.000	4778.460
WF- 181	93.440	25.80	3958.118	176095.246	4.83	2350.950	70877.837	8.53	398.522	2788.587	0.00	0.000	4778.460
WF- 182	37.400	0.99	500.973	176596.219	4.77	179.520	71057.357	7.98	308.737	3097.324	0.00	0.000	4778.460
WF- 183	39.900	0.00	19.751	176615.969	0.00	95.162	71152.519	3.00	219.051	3316.373	0.00	0.000	4778.460
WF- 184	44.470	0.00	0.000	176615.969	0.00	0.000	71152.519	5.00	177.880	3494.253	0.00	0.000	4778.460
WF- 184	44.620	0.00	0.000	176615.969	0.00	0.000	71152.519	2.00	156.170	3650.425	0.00	0.000	4778.460

**WEST FLOODWAY/GARANG RIVER
EARTH WORK**

RIGHT SIDE

X-SECT NO.	DISTANCE (M)	Clearing and Grubbing		SODDING		Stripping of Top Soil				
		LENGTH (M)	AREA (M ²)	AC.AREA (M ²)	LENGTH (M)	AREA (M ²)	AC.AREA (M ²)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)
WF φ -9		0.00	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000
WF φ -8	13.700	0.00	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000
WF φ -7	49.910	0.00	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000
WF φ -6	47.970	0.00	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000
WF φ -5	54.050	0.00	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000
WF φ -4	47.960	0.00	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000
WF φ -3	50.020	0.00	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000
WF φ -2	49.990	0.00	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000
WF φ -1	50.010	0.00	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000
WF φ 0	49.990	0.00	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000
WF - 1	46.689	27.15	633.803	633.803	10.00	233.445	233.445	6.79	138.451	158.451
WF - 2	46.044	26.35	1231.677	1865.480	9.41	446.837	680.302	6.59	307.919	466.370
WF - 3	51.877	27.06	1385.375	3250.855	9.72	496.204	1176.506	6.77	346.344	812.714
WF - 4	52.949	26.56	1419.563	4670.418	8.67	486.866	1663.372	6.64	354.891	1167.605
WF - 5	60.453	26.3	1597.773	6268.191	7.10	476.672	2140.043	6.58	399.443	1567.048
WF - 6	50.937	28.98	1407.899	7676.090	7.96	383.556	2523.599	7.25	351.975	1919.022
WF - 7	40.717	28.95	1179.368	8855.458	7.36	311.892	2835.491	7.24	294.842	2213.864
WF - 8	51.884	28.98	1502.820	10350.278	7.66	389.649	3225.140	7.25	375.705	2589.569
WF - 9	46.387	28.88	1341.976	11700.253	7.63	354.629	3579.769	7.22	335.494	2925.063
WF - 10	50.444	21.65	1274.468	12974.721	8.08	396.238	3976.006	5.41	318.617	3243.680
WF - 11	47.408	27.93	1175.244	14149.965	8.21	386.138	4362.145	6.98	293.811	3537.491
WF - 12	49.909	30.24	1451.603	15601.569	13.48	541.263	4903.408	7.56	362.901	3900.392
WF - 13	51.527	19.60	1284.053	16885.622	9.28	586.377	5489.785	4.90	321.013	4221.405
WF - 14	44.317	17.00	811.001	17696.623	9.08	406.830	5896.615	4.25	202.730	4424.156
NRR BRIDGE										

Sheet:

**WEST FLOODWAY/GARANG RIVER
EARTH WORK**

RIGHT SIDE

Sheet:

X-SECT NO.	DISTANCE (M)	Clearing and Grubbing			SODDING			Stripping of Top Soil		
		LENGTH (M)	AREA (M ²)	AC.AREA (M ²)	LENGTH (M)	AREA (M ²)	AC.AREA (M ²)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)
WF - 15		11.00	0.000	0.000	7.52	0.000	0.000	2.75	0.000	0.000
WF - 16	55.962	11.00	615.582	615.582	7.52	420.834	420.834	1.07	106.887	106.887
WF - 17	46.156	3.80	341.554	957.136	6.94	333.708	754.542	0.96	46.848	153.736
WF - 18	50.231	7.60	286.317	1243.453	5.53	313.190	1067.732	0.87	45.961	199.697
WF - 19	61.180	3.30	333.431	1576.884	4.84	317.218	1384.951	0.85	52.615	252.312
WF - 20	46.620	3.00	146.833	1723.737	4.89	226.806	1611.757	0.76	37.529	289.841
WF - 21	52.051	5.85	230.326	1954.063	6.53	297.211	1908.968	0.83	41.381	331.222
WF - 22	51.364	8.50	368.537	2322.599	5.96	320.768	2229.736	0.87	43.659	374.881
WF - 23	50.972	8.87	442.692	2765.291	6.41	315.262	2544.998	0.01	22.428	397.309
WF - 24	46.049	12.45	490.882	3256.174	6.62	300.009	2845.007	0.95	22.104	419.412
WF - 25	44.175	12.10	542.248	3798.422	3.67	227.280	3072.288	0.61	34.457	433.809
WF - 26	49.761	13.64	640.424	4438.846	3.73	184.116	3256.404	0.26	21.646	475.515
WF - 27	53.816	18.65	868.859	5307.705	3.79	202.348	3458.752	0.11	9.956	485.471
WF - 28	53.395	17.00	951.766	6259.471	6.38	271.514	3730.265	0.90	26.964	512.435
WF - 29	52.381	15.50	851.191	7110.662	6.04	325.286	4055.551	0.82	45.048	557.483
WF - 30	52.311	25.00	1059.298	8169.960	6.49	327.728	4383.280	0.96	46.557	604.040
WF - 31	54.872	25.20	1377.287	9547.247	6.59	358.863	4742.143	1.02	54.323	658.363
WF - 32	51.803	4.00	756.324	10303.571	5.59	315.480	5057.623	1.03	53.098	711.461
WF - 33	52.889	25.80	788.046	11091.617	6.31	314.690	5372.312	0.98	53.153	764.614
WF - 34	53.628	39.50	1750.954	12842.571	6.33	338.929	5711.241	0.93	51.215	815.829
WF - 35	44.904	41.50	1818.612	14661.183	6.34	284.467	5995.708	0.84	39.740	855.569
WF - 36	45.069	39.00	1814.027	16475.211	3.35	218.359	6214.067	0.00	18.929	874.498
WF - 37	49.307	48.50	2157.181	18632.392	6.37	239.632	6453.700	0.89	21.942	896.440
WF - 38	49.114	43.50	2259.244	20891.656	6.54	317.031	6770.730	0.00	20.856	918.295
WF - 39	54.155	47.80	2472.176	23363.812	6.40	350.383	7121.113	1.13	30.598	948.893
WF - 40	46.052	48.11	2208.424	25572.255	6.41	294.963	7416.076	1.35	57.104	1005.998
WF - 41	52.485	44.60	2432.942	28005.177	6.43	336.954	7753.030	1.35	70.855	1076.852
WF - 42	50.975	39.51	2143.754	30148.951	6.27	323.691	8076.721	1.36	69.071	1145.923
WF - 43	48.218	39.00	1892.798	32041.729	6.12	298.711	8375.432	0.64	48.218	1194.141
WF - 44	50.336	37.03	1913.523	33955.232	6.22	310.573	8686.005	1.37	50.388	1244.729
WF - 45	52.028	35.61	1889.657	35844.909	6.49	330.638	9016.643	1.37	71.278	1316.007
WF - 46	51.048	34.50	1789.488	37654.396	6.59	333.854	9330.497	1.37	69.916	1385.943
WF - 47	47.583	35.50	1665.405	39299.801	6.05	300.725	9651.221	1.42	66.378	1452.322
WF - 48	51.302	29.37	1663.980	40963.782	2.74	225.472	9876.694	0.00	36.424	1488.746
WF - 49	51.470	32.48	1591.710	42555.491	4.76	193.013	10069.706	1.18	30.567	1519.113
WF - 50	48.795	10.80	1055.924	43611.415	5.58	252.270	10321.976	1.24	59.042	1578.155

**WEST FLOODWAY/GARANG RIVER
EARTH WORK**

RIGHT SIDE

Sheet: _____

X-SECT NO.	DISTANCE (M)	Clearing and Grubbing			SODDING			Stripping of Top Soil		
		LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	AREA (M ²)	VOLUME (M ³)	AC-VOL (M ³)
WF - 51	48.459	3.95	357.385	43968.800	5.79	275.489	10597.466	1.18	58.635	1636.791
WF - 52	49.365	0.00	97.496	44066.296	2.81	212.270	10809.735	0.29	36.283	1673.074
WF - 53	51.789	0.00	0.000	44066.296	2.83	146.045	10955.780	0.00	7.509	1680.583
WF - 54	52.231	5.18	135.278	44201.574	5.85	226.683	11182.463	1.39	36.301	1716.884
WF - 55	48.406	3.10	200.401	44401.975	8.17	339.326	11521.789	0.77	52.278	1769.162
WF - 56	50.267	3.60	168.394	44570.370	5.89	353.377	11875.166	0.90	41.973	1811.135
WF - 57	50.228	4.06	192.373	44762.743	5.90	296.094	12171.260	1.28	54.749	1865.884
WF - 58	51.865	3.87	205.645	44968.388	5.94	307.041	12478.301	1.14	62.757	1928.640
WF - 59	47.230	3.50	174.043	45142.430	4.14	238.039	12716.340	1.41	60.218	1988.859
WF - 60	50.268	3.32	171.414	45313.844	4.16	208.612	12924.952	0.98	60.070	2048.929
WF - 61	53.049	4.97	219.888	45533.732	5.98	268.958	13193.910	1.38	62.598	2111.527
WF - 62	48.939	3.29	202.118	45733.850	5.00	268.675	13462.586	0.84	54.322	2165.849
WF - 63	47.656	4.09	175.851	45911.701	6.02	262.585	13725.170	1.10	46.226	2212.075
WF - 64	51.814	0.00	105.960	46017.661	3.03	234.458	13959.628	0.00	28.498	2240.573
WF - 65	49.558	0.00	0.000	46017.661	3.03	130.161	14109.789	0.00	0.000	2240.573
WF - 66	50.581	4.43	224.074	46241.734	4.00	202.324	14312.113	0.00	28.009	2268.582
WF - 67	52.397	2.00	168.456	46410.191	2.00	157.191	14469.304	0.00	0.000	2268.582
WF - 68	46.986	150.00	3570.936	49981.127	1.40	79.876	14549.180	0.00	0.000	2268.582
WF - 69	49.202	4.25	3794.704	53775.831	4.03	133.583	14682.764	0.00	0.000	2268.582
WF - 70	50.566	4.25	214.906	53990.737	4.03	203.781	14886.545	0.00	0.000	2268.582
WF - 71	50.978	5.20	240.871	54231.608	4.90	227.617	15114.162	0.00	0.000	2268.582
WF - 72	55.980	3.95	256.109	54487.716	4.02	249.671	15363.832	0.00	0.000	2268.582
National Br WF - 72+22	29.366	3.95	115.996	54603.712	4.02	118.051	15481.884	0.00	0.000	2268.582
National Br WF - 72+22	0.000	0.00	0.000	54603.712	0.00	0.000	15481.884	0.00	0.000	2268.582
National Br WF - 72+29	11.000	0.00	0.000	54603.712	0.00	0.000	15481.884	0.00	0.000	2268.582
National Br WF - 73	2.000	0.00	0.000	54603.712	0.00	0.000	15481.884	0.00	0.000	2268.582
National Br WF - 73+9	11.137	0.00	0.000	54603.712	0.00	0.000	15481.884	0.00	0.000	2268.582
WF - 74	43.513	0.00	0.000	54603.712	0.00	0.000	15481.884	0.00	0.000	2268.582
WF - 74+7	7.000	0.00	0.000	54603.712	0.00	0.000	15481.884	0.00	0.000	2268.582
WF - 75	42.107	0.00	0.000	54603.712	0.00	0.000	15481.884	0.00	0.000	2268.582
WF - 76	49.940	0.00	0.000	54603.712	0.45	11.237	15493.120	0.00	0.000	2268.582
WF - 77	52.279	2.00	52.279	54655.991	1.20	43.130	15536.250	0.00	0.000	2268.582
WF - 78	46.050	0.00	46.050	54702.041	0.63	42.136	15578.386	0.00	0.000	2268.582
WF - 79	47.348	0.00	0.000	54702.041	7.91	202.176	15780.562	0.00	0.000	2268.582
WF - 80	55.983	0.00	0.000	54702.041	2.37	287.753	16068.315	0.00	0.000	2268.582
WF - 81	50.123	0.00	0.000	54702.041	2.21	114.782	16183.096	0.00	0.000	2268.582
WF - 82	48.606	0.00	0.000	54702.041	1.90	99.885	16282.982	0.00	0.000	2268.582
WF - 83	50.561	0.00	0.000	54702.041	1.82	94.043	16377.025	0.00	0.000	2268.582
WF - 84	48.645	0.00	0.000	54702.041	5.06	167.359	16544.364	0.00	0.000	2268.582

**WEST FLOODWAY/ GARANG RIVER
EARTH WORK**

RIGHT SIDE

Sheet:

X-SECT NO.	DISTANCE (M)	Clearing and Grubbing			SODDING			Stripping of Top Soil		
		LENGTH (M)	AREA (M ²)	AC.AREA (M ²)	LENGTH (M)	AREA (M ²)	AC.AREA (M ²)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)
WF- 85	54.033	0.00	0.000	54702.041	5.22	277.730	16822.094	0.00	0.000	2268.582
WF- 86	50.097	0.00	0.000	54702.041	8.38	340.660	17162.753	0.00	0.000	2268.582
WF- 87	47.756	0.00	0.000	54702.041	8.70	407.836	17570.589	0.00	0.000	2268.582
WF- 88	50.018	0.00	0.000	54702.041	6.92	390.641	17961.230	0.00	0.000	2268.582
WF- 89	49.744	0.00	0.000	54702.041	9.09	398.201	18359.431	0.00	0.000	2268.582
WF- 90	50.295	0.00	0.000	54702.041	8.38	439.327	18798.758	0.00	0.000	2268.582
WF- 91	53.526	0.00	0.000	54702.041	2.93	302.690	19101.447	0.00	0.000	2268.582
WF- 92	50.493	0.00	0.000	54702.041	0.00	73.972	19175.419	0.00	0.000	2268.582
WF- 93	48.367	0.00	0.000	54702.041	0.00	0.000	19175.419	0.00	0.000	2268.582
WF- 94	47.764	0.00	0.000	54702.041	0.00	0.000	19175.419	0.00	0.000	2268.582
WF- 95	26.866	0.00	0.000	54702.041	0.00	0.000	19175.419	0.00	0.000	2268.582
WF- 96	25.918	0.00	0.000	54702.041	0.00	0.000	19175.419	0.00	0.000	2268.582
WF- 96	46.173	0.00	0.000	54702.041	0.00	0.000	19175.419	0.00	0.000	2268.582
Simougan Weir WF- 101+20	0.000	0.00	0.000	0.000	1.18			0.00	0.000	0.000
WF- 102	54.870	0.00	0.000	0.000	0.59			0.00	0.000	0.000
WF- 103	50.539	0.00	0.000	0.000	1.03			0.00	0.000	0.000
WF- 104	58.390	0.00	0.000	0.000	2.77			0.00	0.000	0.000
WF- 105	50.623	0.00	0.000	0.000	0.00	70.113	70.113	0.00	0.000	0.000
WF- 106	46.910	2.50	58.638	58.638	1.74	40.812	110.925	0.00	0.000	0.000
WF- 107	52.383	0.00	65.479	124.116	0.00	45.573	156.498	0.00	0.000	0.000
WF- 108	53.394	0.00	0.000	124.116	0.55	14.683	171.181	0.00	0.000	0.000
WF- 109	42.440	0.00	0.000	124.116	0.00	11.671	182.852	0.00	0.000	0.000
WF- 110	48.417	0.00	0.000	124.116	0.30	7.263	190.115	0.00	0.000	0.000
WF- 111	48.237	0.00	0.000	124.116	7.35	184.507	374.621	0.00	0.000	0.000
WF- 112	33.216	8.68	144.157	268.274	9.30	276.523	651.144	0.00	0.000	0.000
WF- 113	44.094	0.00	191.368	459.642	4.31	300.060	951.204	0.00	0.000	0.000
WF- 114	48.018	0.00	0.000	459.642	7.51	283.786	1234.990	0.00	0.000	0.000
WF- 115	46.871	0.00	0.000	459.642	0.00	176.001	1410.991	0.00	0.000	0.000
WF- 116	48.763	0.00	0.000	459.642	0.00	0.000	1410.991	0.00	0.000	0.000
WF- 117	48.629	0.00	0.000	459.642	0.00	0.000	1410.991	0.00	0.000	0.000
WF- 118	46.524	0.00	0.000	459.642	0.00	0.000	1410.991	0.00	0.000	0.000
WF- 119	46.856	0.00	0.000	459.642	0.00	0.000	1410.991	0.00	0.000	0.000
WF- 120	48.226	0.00	0.000	459.642	0.00	0.000	1410.991	0.00	0.000	0.000
WF- 121	43.077	0.00	0.000	459.642	0.00	0.000	1410.991	0.00	0.000	0.000
WF- 122	39.273	0.00	0.000	459.642	0.63	12.371	1423.362	0.00	0.000	0.000
WF- 123	31.760	0.00	0.000	459.642	0.63	20.009	1443.371	0.00	0.000	0.000
WF- 124	29.761	0.00	0.000	459.642	1.11	25.892	1469.263	0.00	0.000	0.000
WF- 125	32.527	0.00	0.000	459.642	0.00	18.052	1487.315	0.00	0.000	0.000

WEST FLOODWAY/GARANG RIVER
EARTH WORK

RIGHT SIDE

Sheet:

X-SECT NO.	DISTANCE (M)	Clearing and Grubbing		SODDING		Stripping of Top Soil				
		LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	LENGTH (M)	AREA (M ²)	AC-AREA (M ²)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)
WF- 126	49.643	0.00	0.000	459.642	0.30	7.446	1494.762	0.00	0.000	0.000
WF- 127	48.972	0.00	0.000	459.642	1.26	38.198	1532.960	0.00	0.000	0.000
WF- 128	42.213	0.00	0.000	459.642	0.40	35.037	1567.997	0.00	0.000	0.000
WF- 129	42.766	7.33	156.737	616.379	8.34	186.887	1754.884	0.00	0.000	0.000
WF- 130	38.570	4.00	218.499	834.878	2.81	215.028	1969.912	0.00	0.000	0.000
WF- 131	47.384	0.00	94.768	929.646	3.24	143.337	2113.249	0.00	0.000	0.000
WF- 132	37.073	0.00	0.000	929.646	3.64	127.531	2240.780	0.00	0.000	0.000
WF- 133	37.266	0.00	0.000	929.646	2.37	111.984	2352.764	0.00	0.000	0.000
WF- 134	42.892	0.00	0.000	929.646	2.61	106.801	2459.565	0.00	0.000	0.000
WF- 135	68.840	9.80	337.316	1266.962	9.53	417.859	2877.424	0.00	0.000	0.000
WF- 136	58.395	31.85	1216.076	2483.038	8.36	522.343	3399.767	0.00	0.000	0.000
WF- 137	64.869	0.00	1033.039	3516.077	6.09	468.679	3868.446	0.00	0.000	0.000
WF- 138	56.933	0.00	0.000	3516.077	5.22	321.956	4190.402	0.00	0.000	0.000
WF- 139	63.828	0.00	0.000	3516.077	3.87	290.098	4480.500	0.00	0.000	0.000
WF- 140	60.271	45.36	1366.946	4883.023	2.50	191.963	4672.463	0.00	0.000	0.000
WF- 141	51.611	0.00	1170.537	6033.561	0.48	76.900	4749.364	0.00	0.000	0.000
WF- 142	66.195	0.00	0.000	6033.561	3.16	120.475	4869.838	0.00	0.000	0.000
WF- 143	70.715	0.00	0.000	6033.561	4.98	287.810	5157.649	0.00	0.000	0.000
WF- 144	55.466	0.00	0.000	6033.561	5.14	280.658	5438.307	0.00	0.000	0.000
WF- 145	47.049	0.00	0.000	6033.561	0.87	141.382	5579.689	0.00	0.000	0.000
WF- 146	37.717	0.00	0.000	6033.561	3.16	76.000	5655.689	0.00	0.000	0.000
WF- 147	44.950	0.00	0.000	6033.561	1.58	106.532	5762.220	0.00	0.000	0.000
WF- 148	49.490	0.00	0.000	6033.561	2.61	103.682	5865.902	0.00	0.000	0.000
WF- 149	56.037	0.00	0.000	6033.561	4.66	203.694	6069.596	0.00	0.000	0.000
WF- 150	43.296	0.00	0.000	6033.561	4.74	203.491	6273.087	0.00	0.000	0.000
WF- 151	35.164	0.00	0.000	6033.561	5.38	177.930	6451.017	0.00	0.000	0.000
WF- 152	29.570	0.00	0.000	6033.561	4.98	153.173	6604.190	0.00	0.000	0.000
WF- 153	42.207	0.00	0.000	6033.561	5.38	218.632	6822.822	0.00	0.000	0.000
WF- 154	46.273	0.00	0.000	6033.561	0.00	124.474	6947.296	0.00	0.000	0.000
WF- 155	51.643	0.00	0.000	6033.561	4.74	122.394	7069.690	0.00	0.000	0.000
WF- 156	50.046	0.00	0.000	6033.561	5.14	247.227	7316.917	0.00	0.000	0.000
WF- 157	55.546	0.00	0.000	6033.561	5.61	298.560	7615.477	0.00	0.000	0.000
WF- 158	50.472	0.00	0.000	6033.561	5.61	283.148	7898.625	0.00	0.000	0.000
WF- 159	48.327	0.00	0.000	6033.561	5.93	278.847	8177.472	0.00	0.000	0.000
WF- 160	57.635	0.00	0.000	6033.561	0.00	170.888	8348.360	0.00	0.000	0.000
WF- 161	33.976	0.00	0.000	6033.561	0.00	0.000	8348.360	0.00	0.000	0.000
WF- 162	56.038	0.00	0.000	6033.561	0.00	0.000	8348.360	0.00	0.000	0.000
WF- 163	51.395	0.00	0.000	6033.561	5.22	134.141	8482.501	0.00	0.000	0.000
WF- 164	39.314	0.00	0.000	6033.561	0.00	102.610	8585.110	0.00	0.000	0.000

**WEST FLOODWAY/GARANG RIVER
EARTH WORK**

RIGHT SIDE

Sheet:

X-SECT NO.	DISTANCE (M)	Clearing and Grubbing			SODDING			Stripping of Top Soil		
		LENGTH (M)	AREA (M ²)	AC.AREA (M ²)	LENGTH (M)	AREA (M ²)	AC.AREA (M ²)	AREA (M ²)	VOLUME (M ³)	AC.VOL (M ³)
WF- 165	43.008	0.00	0.000	6033.561	3.24	69.673	8654.783	0.00	0.000	0.000
WF- 166	26.587	0.00	0.000	6033.561	3.16	83.078	8739.862	0.00	0.000	0.000
WF- 167	45.754	0.00	0.000	6033.561	4.74	180.728	8920.590	0.00	0.000	0.000
WF- 168	44.146	0.00	0.000	6033.561	4.74	209.252	9129.842	0.00	0.000	0.000
WF- 169	53.201	0.00	0.000	6033.561	3.64	222.912	9352.754	0.00	0.000	0.000
WF- 170	53.074	0.00	0.000	6033.561	5.06	230.872	9583.626	0.00	0.000	0.000
WF- 171	54.141	0.00	0.000	6033.561	4.19	250.402	9834.028	0.00	0.000	0.000
WF- 172	50.305	0.00	0.000	6033.561	2.61	171.037	10005.065	0.00	0.000	0.000
WF- 173	57.294	0.00	0.000	6033.561	1.11	106.567	10111.632	0.00	0.000	0.000
WF- 174	53.883	0.00	0.000	6033.561	2.13	87.290	10198.922	0.00	0.000	0.000
WF- 174+180	18.000	0.00	0.000	6033.561	2.13	38.340	10237.262	0.00	0.000	0.000
WF- 174+180	0.000	0.00	0.000	6033.561	1.66	0.000	10237.262	0.00	0.000	0.000
WF- 175	32.665	0.00	0.000	6033.561	1.66	54.224	10291.486	0.00	0.000	0.000
WF- 176	45.912	6.25	143.473	6197.036	4.00	129.931	10421.417	0.00	0.000	0.000
WF- 177	49.330	3.56	241.964	6438.999	3.31	180.301	10601.718	0.00	0.000	0.000
WF- 178	55.000	6.32	271.700	6710.699	7.00	283.525	10885.243	0.00	0.000	0.000
WF- 179	58.020	12.61	549.159	7259.859	14.08	611.531	11496.774	0.00	0.000	0.000
WF- 180	93.440	19.00	1476.819	8736.678	18.35	1515.130	13011.904	4.75	221.920	221.920
WF- 181	37.400	20.20	733.040	9469.718	19.85	714.340	13726.244	5.05	183.260	405.180
WF- 182	39.900	6.60	534.660	10004.378	6.00	515.708	14241.951	1.65	133.665	538.845
WF- 183	44.470	8.50	335.749	10340.126	7.47	299.505	14541.457	2.13	83.937	622.782
WF- 184	44.620	9.20	394.887	10735.013	8.50	356.291	14897.747	2.30	98.722	721.504