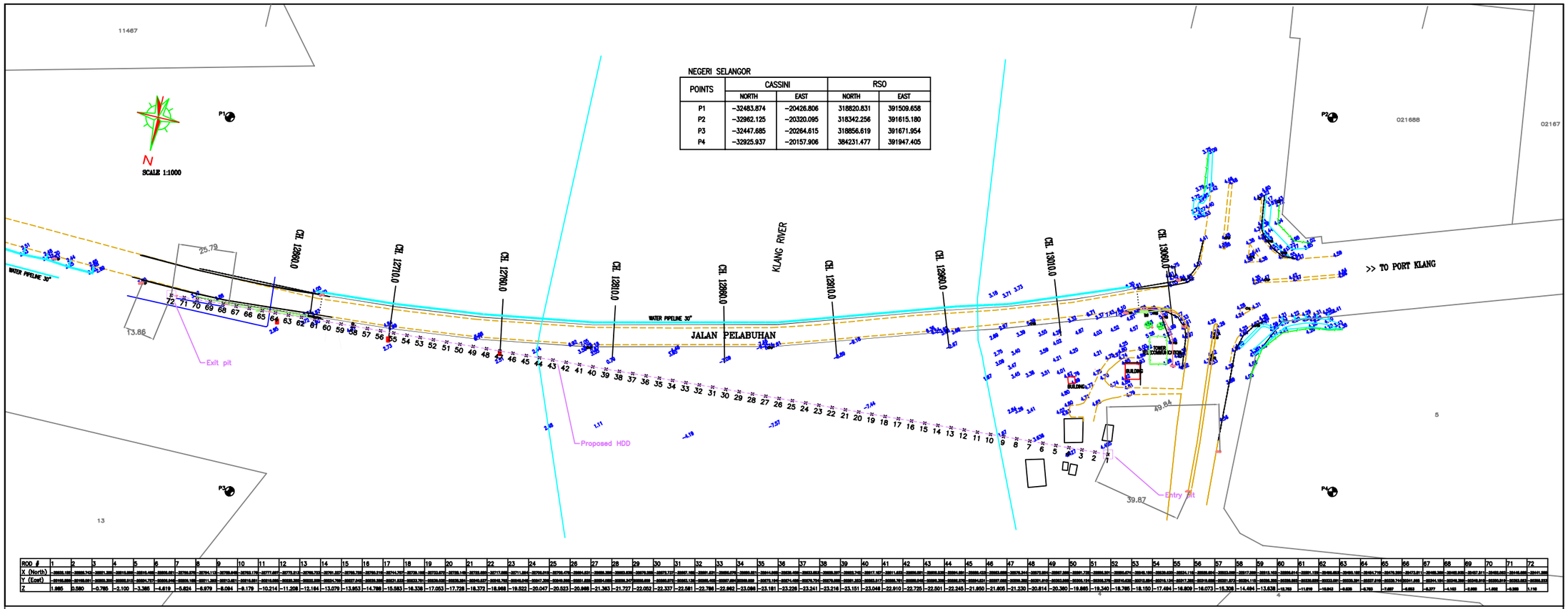
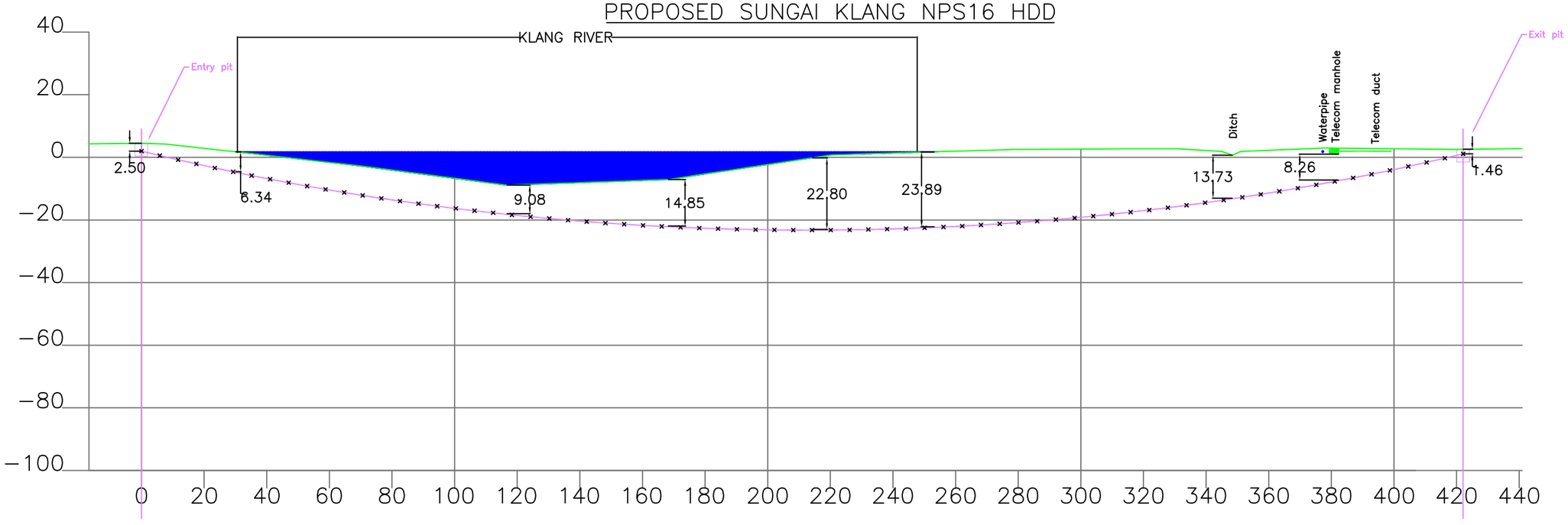


POINTS	CASSINI		RSO	
	NORTH	EAST	NORTH	EAST
P1	−32483.874	−20426.806	318820.831	391509.658
P2	−32962.125	−20320.095	318342.256	391615.180
P3	−32447.685	−20264.615	318856.619	391671.954
P4	−32925.937	−20157.906	384231.477	391947.405

ROD #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
X (North)	−32825.185	−32888.742	−32891.388	−32914.898	−32916.492	−32896.667	−32799.872	−32794.112	−32798.646	−32765.176	−32777.687	−32779.813	−32795.733	−32791.557	−32795.739	−32795.318	−32744.707	−32736.192	−32733.672	−32738.140	−32735.492	−32717.885	−32711.884	−32705.813	−32705.470	−32684.631	−32689.388	−32685.638	−32679.588	−32673.737	−32667.188	−32661.839	−32656.470	−32650.101	−32644.685	−32639.432	−32633.852	−32628.387	−32623.745	−32617.187	−32611.432	−32606.887	−32600.832	−32594.887	−32589.432	−32583.852	−32578.387	−32573.687	−32567.832	−32561.735	−32556.387	−32550.674	−32545.180	−32539.432	−32534.116	−32528.852	−32523.387	−32517.832	−32512.180	−32506.614	−32501.180	−32495.852	−32490.180	−32484.716	−32479.388	−32473.611	−32468.388	−32462.832	−32457.611	−32452.388	−32446.832	−32441.388
Y (East)	−20195.866	−20189.091	−20350.350	−20355.510	−20354.707	−20356.646	−20350.180	−20211.365	−20213.651	−20214.881	−20214.085	−20355.350	−20355.350	−20354.766	−20357.246	−20355.350	−20351.835	−20353.791	−20356.429	−20356.184	−20340.057	−20340.765	−20345.534	−20347.350	−20349.350	−20351.850	−20354.466	−20355.347	−20355.659	−20353.272	−20353.129	−20355.429	−20357.659	−20359.659	−20371.184	−20374.466	−20379.714	−20379.666	−20381.853	−20382.817	−20385.761	−20386.042	−20389.350	−20392.676	−20394.431	−20397.090	−20399.350	−20401.676	−20403.350	−20405.853	−20406.666	−20409.350	−20410.430	−20412.664	−20416.134	−20417.350	−20419.666	−20421.677	−20424.112	−20426.350	−20428.665	−20430.859	−20433.081	−20435.350	−20437.916	−20439.744	−20441.665	−20444.164	−20446.350	−20448.916	−20450.915	−20453.053	−20455.722
Z	1.865	0.580	−0.785	−2.100	−3.365	−4.619	−5.624	−6.979	−8.094	−9.179	−10.214	−11.208	−12.164	−13.079	−13.953	−14.788	−15.583	−16.338	−17.053	−17.728	−18.372	−18.968	−19.522	−20.047	−20.523	−20.948	−21.363	−21.727	−22.052	−22.337	−22.581	−22.786	−22.962	−23.099	−23.181	−23.229	−23.241	−23.216	−23.151	−23.046	−22.910	−22.725	−22.501	−22.246	−21.950	−21.606	−21.230	−20.814	−20.360	−19.865	−19.340	−18.785	−18.150	−17.494	−16.809	−16.073	−15.306	−14.494	−13.638	−12.769	−11.919	−10.943	−9.939	−8.783	−7.597	−6.653	−5.377	−4.153	−2.929	−1.656	−0.399	0.118

PROPOSED SUNGAI KLANG NPS16 HDD



ROD #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
DRILLING LENGTH	0.00	6.00	12.00	18.00	24.00	30.00	36.00	42.00	48.00	54.00	60.00	66.00	72.00	78.00	84.00	90.00	96.00	102.00	108.00	114.00	120.00	126.00	132.00	138.00	144.00	150.00	156.00	162.00	168.00	174.00	180.00	186.00	192.00	198.00	204.00	210.00	216.00	222.00	228.00	234.00	240.00	246.00	252.00	258.00	264.00	270.00	276.00	282.00	288.00	294.00	300.00	306.00	312.00	318.00	324.00	330.00	336.00	342.00	348.00	354.00	360.00	366.00	372.00	378.00	384.00	390.00	396.00	402.00	408.00	414.00	420.00	426.00
HORIZONTAL DISTANCE	0.00	5.84	11.69	17.55	23.42	29.30	35.19	41.08	46.98	52.89	58.81	64.73	70.66	76.59	82.53	88.48	94.43	100.39	106.35	112.31	118.28	124.26	130.23	136.22	142.20	148.18	154.17	160.16	166.16	172.15	178.15	184.15	190.14	196.14	202.14	208.14	214.14	220.14	226.14	232.14	238.14	244.13	250.13	256.12	262.11	268.10	274.09	280.07	286.05	292.03	298.00	303.97	309.93	315.89	321.85	327.80	333.75	339.69	345.62	351.55	357.47	363.39	369.29	375.19	381.09	386.97	392.85	398.72	404.58	410.43	416.28	422.09
DEPTH (FROM STREETS ANALYSIS CALCULATION)	0.00	1.37	2.70	3.99	5.24	6.44	7.60	8.73	9.81	10.85	11.85	12.81	13.73	14.61	15.45	16.25	17.01	17.74	18.42	19.06	19.66	20.22	20.75	21.23	21.68	22.08	22.45	22.78	23.07	23.32	23.53	23.70	23.83	23.93	23.98	24.00	23.96	23.92	23.82	23.68	23.50	23.28	23.03	22.73	22.40	22.03	21.62	21.17	20.68	20.15	19.58	18.97	18.33	17.64	16.91	16.15	15.34	14.49	13.61	12.68	11.72	10.71	9.66	8.57	7.45	6.28	5.07	3.82	2.52	1.19	−0.19	−1.61
DEPTH (ACTUAL DEPTH)	2.50	3.74	4.59	5.28	5.90	6.49	7.05	7.54	7.98	8.38	8.74	9.06	9.31	9.45	9.54	9.60	9.61	9.58	9.52	9.41	9.54	10.34	11.11	11.84	12.52	13.18	13.76	14.36	14.89	15.84	16.99	18.10	19.16	20.22	21.22	22.17	23.09	23.97	24.11	24.19	24.23	24.22	24.17	24.10	23.98	23.81	23.61	23.33	22.91	22.45	21.98	21.42	20.84	20.21	19.54	18.82	17.85	16.71	15.35	14.71	14.00	13.25	12.47	11.64	10.61	9.43	8.20	6.94	5.63	4.25	2.85	1.46
GROUNDLEVEL	4.49	4.32	3.81	3.16	2.52	1.87	1.22	0.56	−0.12	−0.80	−1.47	−2.15	−2.85	−3.63	−4.41	−5.19	−5.97	−6.76	−7.54	−8.32	−8.83	−8.63	−8.42	−8.21	−8.00	−7.79	−7.58	−7.37	−7.16	−6.50	−5.59	−4.68	−3.78	−2.87	−1.96	−1.06	−0.15	0.76	0.96	1.14	1.32	1.50	1.67	1.85	2.03	2.21	2.38	2.52	2.55	2.59	2.62	2.66	2.69	2.72	2.73	2.74	2.55	2.22	1.71	1.95	2.18	2.40	2.63	2.85	2.92	2.87	2.83	2.78	2.72	2.65	2.58	2.58
PIPE LEVEL	1.99	0.58	−0.79	−2.10	−3.39	−4.62	−5.82	−6.98	−8.09	−9.18	−10.21	−11.21	−12.16	−13.08	−13.95	−14.79	−15.58	−16.34	−17.05	−17.73	−18.37	−18.97	−19.52	−20.05	−20.52	−20.97	−21.36	−21.73	−22.05	−22.34	−22.58	−22.79	−22.96	−23.09	−23.18	−23.23	−23.24	−23.22	−23.15	−23.05	−22.91	−22.73	−22.50	−22.25	−21.95	−21.61	−21.23	−20.81	−20.36	−19.87	−19.34	−18.77	−18.15	−17.49	−16.81	−16.07	−15.31	−14.49	−13.64	−12.75	−11.82	−10.84	−9.84	−8.78	−7.69	−6.55	−5.38	−4.18	−2.91	−1.60	−0.27	1.12
PITCH (DEGREES)	13.07	12.69	12.31	11.93	11.55	11.17	10.79	10.42	10.04	9.66	9.29	8.91	8.54	8.16	7.79	7.41	7.04	6.67	6.29	5.92	5.55	5.17	4.80	4.43	4.06	3.69	3.31	2.94	2.57	2.20	1.83	1.46	1.09	0.72	0.35	−0.03	−0.40	−0.77	−1.14	−1.51	−1.88	−2.25	−2.62	−2.99	−3.37	−3.74	−4.11	−4.48	−4.85	−5.22	−5.60	−5.97	−6.34	−6.72	−7.09	−7.46	−7.84	−8.21	−8.59	−8.96	−9.34	−9.71	−10.09	−10.47	−10.84	−11.22	−11.60	−11.98	−12.38	−12.74	−13.12	−13.50
PITCH (% GRADE)	22.98	22.31	21.68	20.99	20.32	19.66	19.00	18.35	17.69	17.02	16.38	15.71	15.07	14.40	13.76	13.09	12.45	11.80	11.14	10.49	9.85	9.18	8.54	7.89	7.25	6.60	5.94	5.29	4.64	4.00	3.35	2.71	2.06	1.41	0.77	0.10	−0.54	−1.19	−1.83	−2.48	−3.13	−3.77	−4.42	−5.06	−5.73	−6.37	−7.02	−7.67	−8.31	−8.96	−9.62	−10.27	−10.91	−11.56	−12.22	−12.87	−13.53	−14.18	−14.84	−15.49	−16.15	−16.80	−17.46	−18.12	−18.77	−19.43	−20.10	−20.76	−21.42	−22.09	−22.75	−23.41