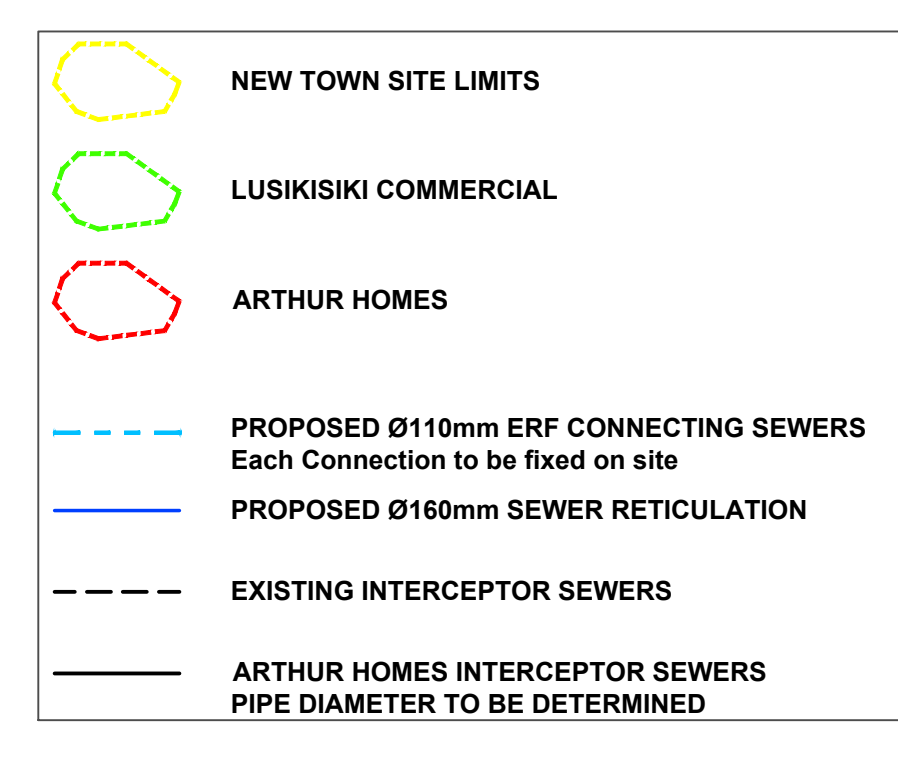


GENERAL NOTES:

- All Work To Be Done According To The Project Specifications.
- All Levels And Dimensions To Be Checked On The Site Prior To Commencement Of Any Construction.
- All Existing Coordinates Are On The WGS84, LO29 System. Coordinates To Be Checked Prior To Any Construction.
- All Existing Services To Be Exposed To Establish Exact Levels Before Construction May Commence.
- The Contractor Must Liaise With Responsible Service Providers With Respect To Affected Services And Protection Thereof.
- The Contractor Must Liaise With The Roads & Stormwater Division With Respect To Re-alignment Of Road Surfacing & Sidewalks.
- Where Applicable Trenches To Extend 1m On Either Side Of The Road Edge.
- All Conditions As Specified In The Environmental Management Plan, Must Be Complied With.
- Maximum Deflection Angle At Couplings To Comply With Minimum Recommended By Pipe Manufacturer.
- All Future Sewer Reticulation Pipelines To Be 100mmØ. Connections Into Manholes To Be As Directed On Site By The Engineer.
- Existing Sewer Reticulation To Be Confirmed On Site. Connections Into Manholes To Be As Directed On Site By The Engineer.
- Existing Septic And Conservancy Tanks to be confirmed on site and house connections to be adjusted as directed by the Engineer.
- Where two invert levels are given, they refer to invert levels at the centre of the manhole.

BENCH MARKS (WGS 84 Lo = 29)
16mm PEG IN CONCRETE

Name	Y Co-ord	X Co-ord	Height
BM1	-53150.18	3470371.65	592.722
BM2	-53259.02	3470745.49	589.596
BM3	-53559.38	3470582.26	563.413
BM4N	-54036.16	3470295.45	561.091
BM5	-54134.64	3469845.94	602.584
BM6N	-54173.62	3469551.30	541.106
BM7	-54420.47	3469534.59	542.937
BM8	-54665.56	3469690.56	534.734
BM9	-54962.68	3469858.32	532.258
BM10	-55124.69	3470097.31	539.505
BM11N	-55278.77	3470209.37	536.395
BM12	-55417.76	3470206.85	532.658
BM13	-55527.25	3470489.20	534.251
BM14	-55198.47	3470857.30	550.636
BM15	-55113.18	3471213.19	533.338
BM16	-54702.83	3471105.37	547.184
BM17N	-54589.10	3470916.37	557.286
BM18N	-54537.38	3471152.73	560.729
BM19	-54188.47	3471552.44	662.323
BM20	-53810.21	3471607.79	567.013
BM21	-53562.80	3471835.51	578.429
BM22	-54888.93	3471535.68	572.038
BM23	-55124.29	3471495.36	580.627
BM24	-55337.29	3471755.64	582.184
BM25N	-55452.25	3471979.79	581.060
BM26	-55422.32	3472343.53	590.483
BM27	-55148.29	3472567.22	597.988
BM28N	-55493.80	3472732.48	602.445
BM29	-55670.40	3472989.99	600.959
BM30	-56074.52	3472314.47	610.769



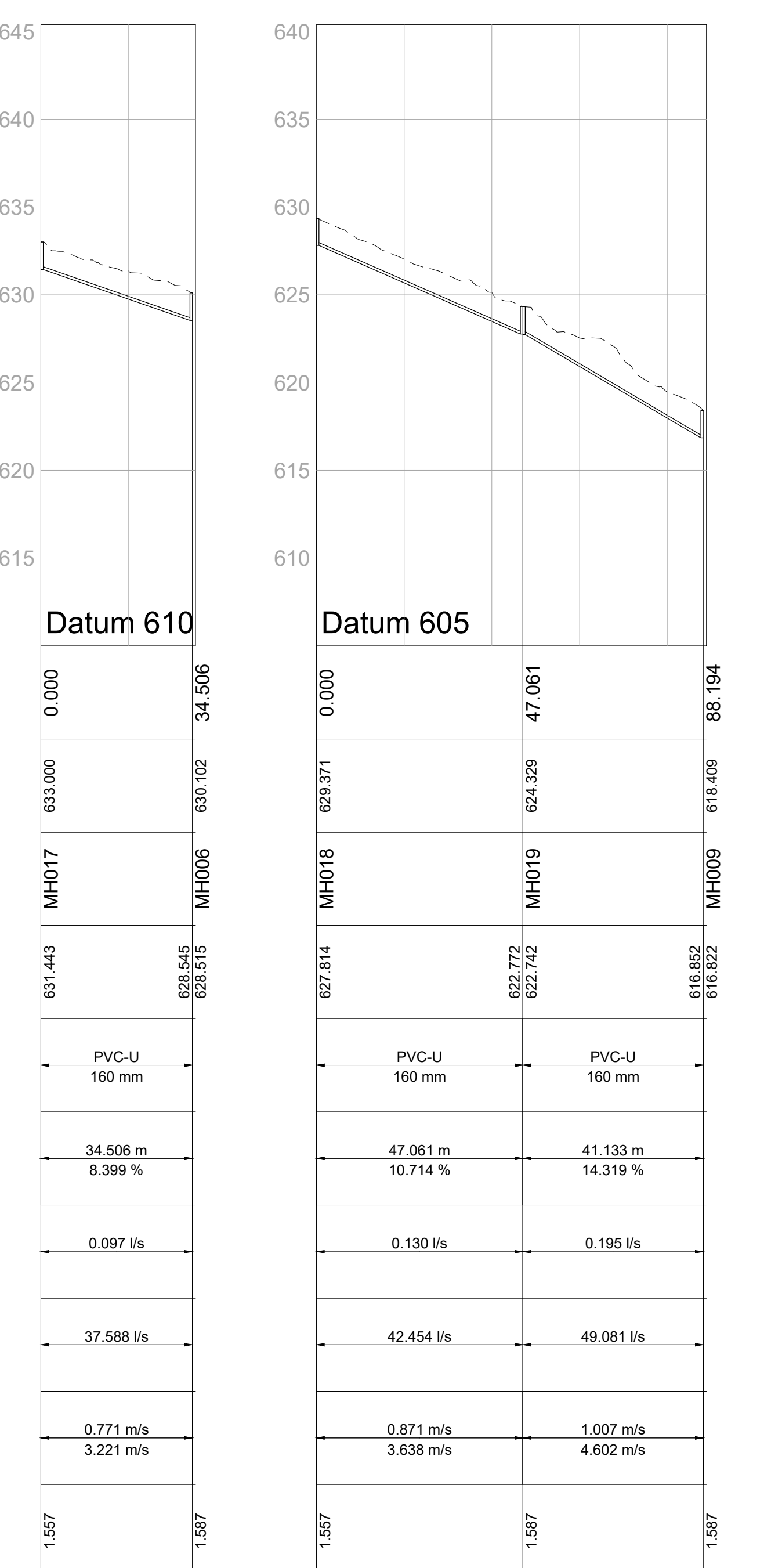
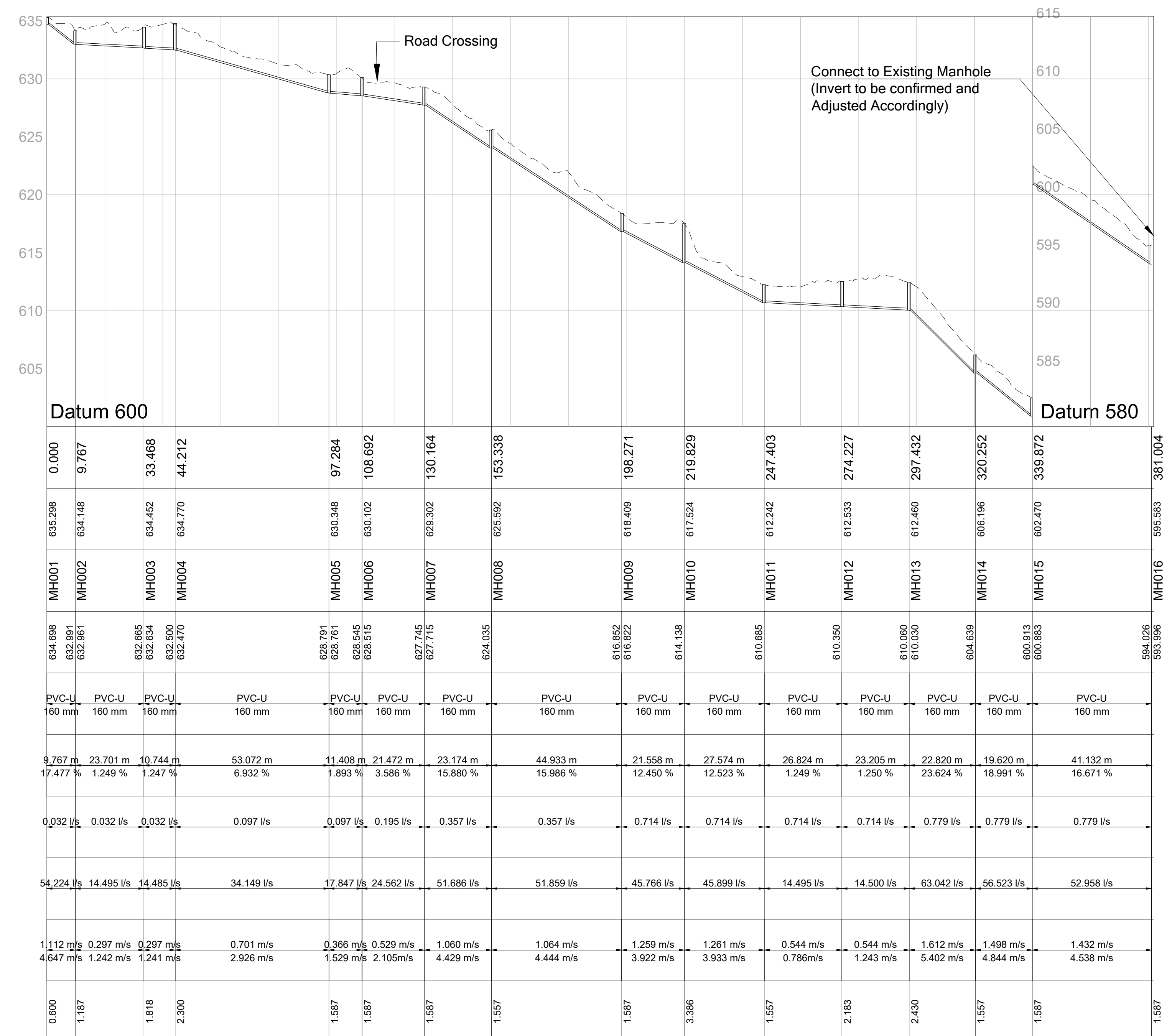
Sewer Schedule

Name	Y-Coord	X-Coord	Cover	Inlet	Depth	Length	Slope	Type	Size
MH001	-54661.88	3473015.63	635.30	634.70	0.60	9.77	17.48	%PVC-U	160 mm
MH002	-54656.37	3473007.56	634.15	632.96	1.19	23.70	1.25	%PVC-U	160 mm
MH003	-54661.84	3472984.50	634.45	632.63	1.82	10.74	1.25	%PVC-U	160 mm
MH004	-54670.72	3472978.46	634.77	632.47	2.30	53.07	6.93	%PVC-U	160 mm
MH005	-54641.38	3472934.23	630.35	628.76	1.59	11.41	1.89	%PVC-U	160 mm
MH006	-54543.78	3472933.08	612.51	608.51	1.58	21.47	3.58	%PVC-U	160 mm
MH007	-54623.77	3472915.29	629.30	627.72	1.59	23.17	15.98	%PVC-U	160 mm
MH008	-54610.87	3472896.05	625.59	624.03	1.56	44.93	15.99	%PVC-U	160 mm
MH009	-54585.85	3472858.73	618.41	616.82	1.59	21.56	12.45	%PVC-U	160 mm
MH010	-54573.84	3472840.82	617.52	614.14	3.38	27.57	12.52	%PVC-U	160 mm
MH011	-54558.48	3472817.92	612.24	610.68	1.56	26.82	1.25	%PVC-U	160 mm
MH012	-54543.54	3472795.64	612.53	610.95	2.18	22.82	23.62	%PVC-U	160 mm
MH013	-54523.93	3472783.23	612.46	610.03	2.43	19.62	18.99	%PVC-U	160 mm
MH014	-54505.05	3472796.05	606.20	604.64	1.56	41.13	16.67	%PVC-U	160 mm
MH015	-54488.82	3472807.07	602.47	600.88	1.59	18.74	14.85	%PVC-U	160 mm
MH016	-54447.69	3472806.24	595.58	594.03	1.56	34.51	8.40	%PVC-U	160 mm
MH017	-54671.73	3472902.84	633.00	631.44	1.56	629.51	1.59		
MH018	-54643.78	3472923.08	630.10	628.51	1.59	47.06	10.71	%PVC-U	160 mm
MH019	-54520.25	3472836.19	624.23	622.74	1.59	662.323	1.59		
MH020	-54585.85	3472858.73	618.41	616.82	1.59	610.03	2.43		
MH020	-54539.44	3472772.71	614.40	612.84	1.56				
MH013	-54523.93	3472783.23	612.46	610.03	2.43				

SEWER PIPE
NGL

SCALE
VERTICAL 1 : 250
HORIZONTAL 1 : 1000

Chainage	Ground Level	Manhole Name	Invert Level	Link Type / Link Size	Length / Slope	Flow	Capacity	Velocity/Full-bore Velocity	Depth
0.000	635.298	MH001	634.688	PVC-U 160 mm	3.767 m / 17.477 %	0.032 l/s	54.224 l/s	1.112 m/s / 4.647 m/s	0.600 / 1.187
9.767	634.148	MH002	632.991	PVC-U 160 mm	23.701 m / 1.249 %	0.032 l/s	14.495 l/s	0.297 m/s / 1.242 m/s	1.816 / 2.300
35.468	634.452	MH003	632.695	PVC-U 160 mm	10.744 m / 1.247 %	0.032 l/s	14.485 l/s	0.297 m/s / 1.241 m/s	1.816 / 2.300
46.212	634.770	MH004	632.470	PVC-U 160 mm	21.472 m / 6.932 %	0.097 l/s	34.149 l/s	0.701 m/s / 2.926 m/s	1.587 / 1.587
67.684	630.102	MH005	628.781	PVC-U 160 mm	11.408 m / 1.893 %	0.097 l/s	17.847 l/s	0.366 m/s / 1.529 m/s	1.587 / 1.587
79.094	625.302	MH006	625.315	PVC-U 160 mm	21.472 m / 3.586 %	0.195 l/s	24.562 l/s	0.529 m/s / 2.105 m/s	1.587 / 1.587
100.562	625.692	MH007	625.745	PVC-U 160 mm	23.174 m / 15.880 %	0.357 l/s	51.686 l/s	1.060 m/s / 4.429 m/s	1.587 / 1.587
123.736	625.338	MH008	625.695	PVC-U 160 mm	44.933 m / 15.986 %	0.357 l/s	51.859 l/s	1.064 m/s / 4.444 m/s	1.587 / 1.587
168.657	614.409	MH009	616.822	PVC-U 160 mm	21.558 m / 12.450 %	0.714 l/s	45.766 l/s	1.259 m/s / 3.922 m/s	1.587 / 1.587
190.215	617.524	MH010	614.138	PVC-U 160 mm	27.574 m / 12.523 %	0.714 l/s	45.899 l/s	1.261 m/s / 3.933 m/s	3.388 / 1.587
217.789	612.242	MH011	610.685	PVC-U 160 mm	26.824 m / 1.249 %	0.714 l/s	14.495 l/s	0.544 m/s / 0.786 m/s	1.587 / 1.587
244.613	612.533	MH012	610.350	PVC-U 160 mm	23.205 m / 1.250 %	0.714 l/s	14.500 l/s	0.544 m/s / 1.243 m/s	2.183 / 2.430
267.818	612.460	MH013	610.090	PVC-U 160 mm	22.820 m / 23.624 %	0.779 l/s	63.042 l/s	1.612 m/s / 5.402 m/s	1.587 / 1.587
290.633	606.196	MH014	604.639	PVC-U 160 mm	19.620 m / 18.991 %	0.779 l/s	56.523 l/s	1.498 m/s / 4.844 m/s	1.587 / 1.587
310.253	602.470	MH015	600.913	PVC-U 160 mm	41.132 m / 16.671 %	0.779 l/s	52.958 l/s	1.432 m/s / 4.538 m/s	1.587 / 1.587
351.373	594.026	MH016	598.398	PVC-U 160 mm					1.587 / 1.587
381.004	631.443	MH017	631.443	PVC-U 160 mm	34.506 m / 8.399 %	0.097 l/s	37.588 l/s	0.771 m/s / 3.221 m/s	1.587 / 1.587
415.510	628.545	MH018	628.545	PVC-U 160 mm					1.587 / 1.587
449.012	628.315	MH019	628.315	PVC-U 160 mm					1.587 / 1.587
470.661	623.371	MH020	623.371	PVC-U 160 mm	47.061 m / 10.714 %	0.130 l/s	42.454 l/s	0.871 m/s / 3.638 m/s	1.587 / 1.587
517.714	623.326	MH019	623.326	PVC-U 160 mm	41.133 m / 14.319 %	0.195 l/s	49.081 l/s	1.007 m/s / 4.602 m/s	1.587 / 1.587
558.794	616.822	MH009	616.822	PVC-U 160 mm					1.587 / 1.587
600.000	614.400	MH020	614.400	PVC-U 160 mm	18.740 m / 14.851 %	0.065 l/s	49.983 l/s	1.025 m/s / 4.283 m/s	1.587 / 2.430
618.740	610.000	MH013	610.000	PVC-U 160 mm					1.587 / 1.587



MH001 to MH016

MH017 to MH020

MH018 to MH009

MH020 to MH013

FOR TENDER PURPOSES

REV	DATE	BY	DESCRIPTION	CHECKED	APPR'D	REV	DATE	BY	DESCRIPTION	CHECKED	APPR'D
A	MAY 2020	LA	FIRST ISSUE FOR TENDER	NL	IF						

CLIENT: **O.B. TAMBO DISTRICT MUNICIPALITY**

SCALE: AS SHOWN

DRAWN: N. LELALA

DISCIPLINE: CIVIL

DATE: MAY 2020

DESIGNED BY: N. LELALA

SIGNATURE: [Signature]

CHECKED BY: I. FIELD

SIGNATURE: [Signature]

HATCH

Tshiki Consulting Engineers

IN JOINT VENTURE WITH

PROJECT		TITLE		SHEET	
LUSIKISIKI SEWER RETICULATION		PHASE 3A : ARTHUR HOMES PLAN AND LONSECTIONS SHEET 1 OF 10		A0	
CONTRACT No.	20209	DRAWING No.	20209/03A/00/500/200	REVISION	A