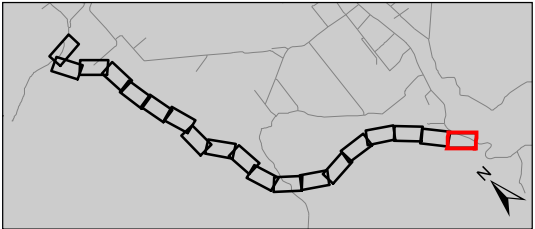


Appendix B. Historic & Site Specific Geotechnical Investigation Layout Plans

Figure 1: Geotechnical Investigation Plans (Sheet 1 of 19)



LEGEND

- Chainage
- Geotechnical Locations Completed**
 - ✚ Test Pit
 - ⊕ Borehole
 - River PS Discharge Pipe
- Transfer PS Site 3 Suction
- Transfer Pipeline S2 - Option 1A - HMC Alignment (West)
- Railway
- Secondary Roads
- ▭ Cadastre
- ▨ Pipeline Infrastructure

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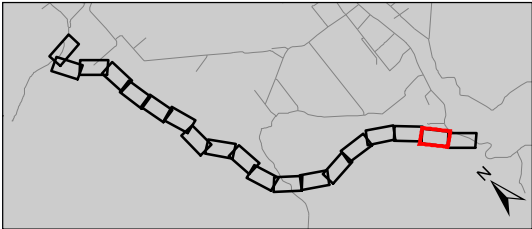
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Metres

A3 1:5,000

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Figure 1: Geotechnical Investigation Plans (Sheet 2 of 19)



LEGEND

- Chainage
- Geotechnical Locations Completed
 - + Test Pit
- Transfer Pipeline S2 - Option 1A - HMC Alignment (West)
- Unconstructed and/or dedicated
- Cadastre

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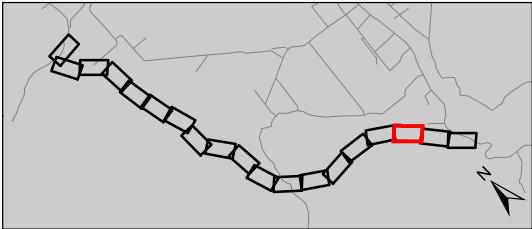
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Metres

A3 1:5,000

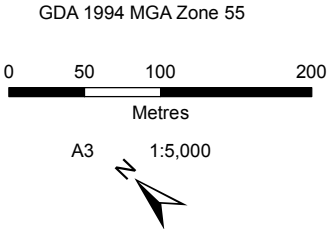
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Figure 1: Geotechnical Investigation Plans (Sheet 3 of 19)



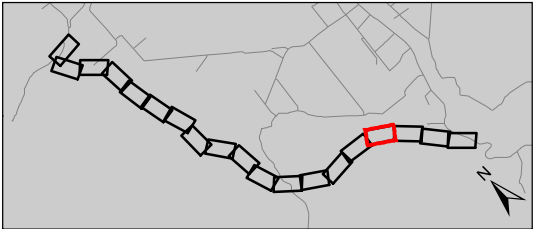
- LEGEND**
- Chainage
 - ⊕ Historical Geotech Locations
 - Geotechnical Locations Completed
 - ⊕ Test Pit
 - Transfer Pipeline S2 - Option 1A - HMC Alignment (West)
 - Cadastre



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Figure 1: Geotechnical Investigation Plans (Sheet 4 of 19)



LEGEND

- Chainage
- ⊕ Historical Geotech Locations
- Geotechnical Locations Completed
- ⊕ Test Pit
- Transfer Pipeline S2 - Option 1A - HMC Alignment (West)
- ▭ Cadastre

GDA 1994 MGA Zone 55

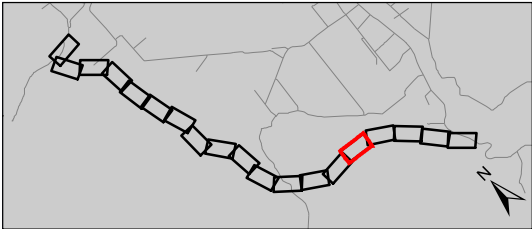
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Metres

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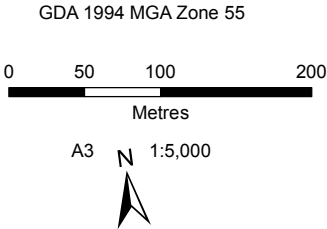
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Figure 1: Geotechnical Investigation Plans (Sheet 5 of 19)



- LEGEND**
- Chainage
 - ⊕ Historical Geotech Locations
 - Geotechnical Locations Completed
 - ⊕ Test Pit
 - Transfer Pipeline S2 - Option 1A - HMC Alignment (West)
 - ▭ Cadastre



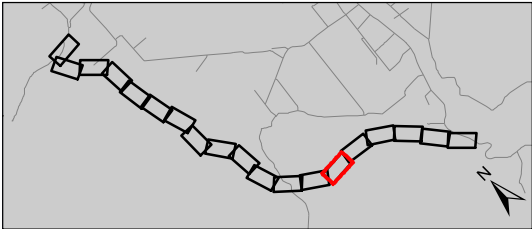
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Figure 1: Geotechnical Investigation Plans (Sheet 6 of 19)



Name	Easting	Northing
JTP14	515032	7801363
JTP15	514577	7801397



LEGEND

- Chainage
- ⊕ Historical Geotech Locations
- Geotechnical Locations Completed**
- ⊕ Test Pit

- Transfer Pipeline S2 - Option 1A - HMC Alignment (West)
- ▭ Cadastre

GDA 1994 MGA Zone 55

050100200

Metres

A3

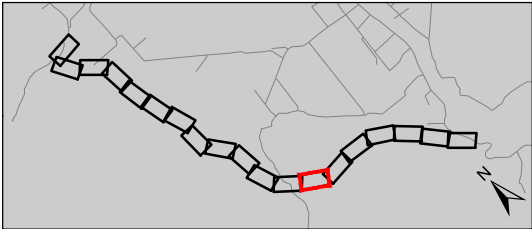
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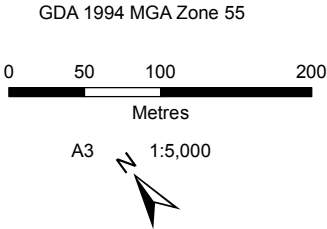
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Figure 1: Geotechnical Investigation Plans (Sheet 7 of 19)



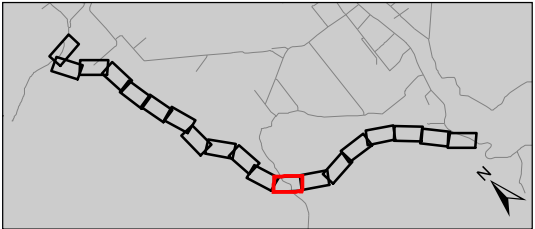
- LEGEND**
- Chainage
 - ⊕ Historical Geotech Locations
 - Geotechnical Locations Completed
 - ⊕ Test Pit
 - Transfer Pipeline S2 - Option 1A - HMC Alignment (West)
 - Unconstructed and/or dedicated
 - Cadastre



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Figure 1: Geotechnical Investigation Plans (Sheet 8 of 19)



LEGEND

- Chainage
- ⊕ Historical Geotech Locations
- Geotechnical Locations Completed
 - ⊕ Test Pit
 - ⊕ Borehole
- Transfer Pipeline S2 - Option 1A - HMC Alignment (West)
- Local Connector Roads
- Cadastre

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0 50 100 200

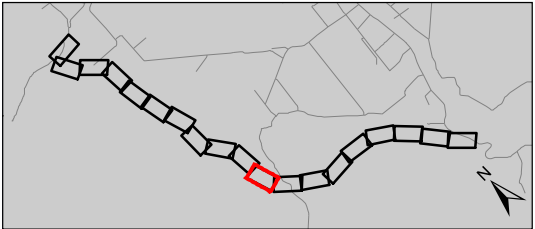
Metres

A3 1:5,000

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Figure 1: Geotechnical Investigation Plans (Sheet 9 of 19)



LEGEND

- Chainage
- ⊕ Historical Geotech Locations
- Geotechnical Locations Completed
 - ⊕ Test Pit
 - ⊕ Borehole
- Transfer Pipeline S2 - Option 1A - HMC Alignment (West)
- ▭ Cadastre

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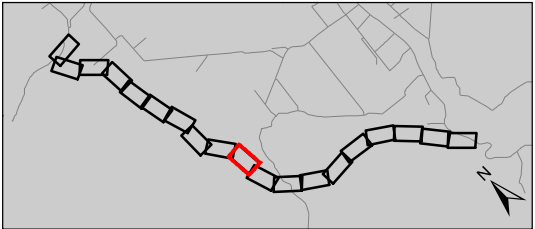
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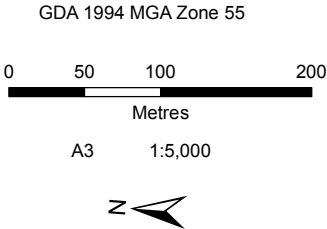
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Figure 1: Geotechnical Investigation Plans (Sheet 10 of 19)



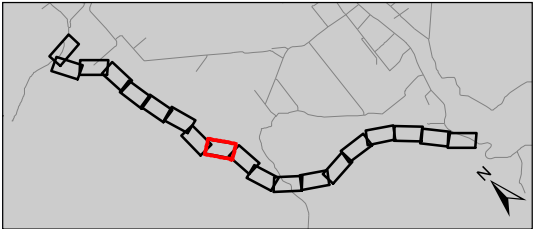
- LEGEND**
- Chainage
 - ⊕ Historical Geotech Locations
 - Geotechnical Locations Completed
 - ⊕ Test Pit
 - Transfer Pipeline S2 - Option 1A - HMC Alignment (West)
 - ▭ Cadastre



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Figure 1: Geotechnical Investigation Plans (Sheet 11 of 19)



LEGEND

- Chainage
- ⊕ Historical Geotech Locations
- Geotechnical Locations Completed
 - ⊕ Test Pit
 - ⊕ Borehole
- Transfer Pipeline S2 - Option 1A - HMC Alignment (West)
- ▭ Cadastre

GDA 1994 MGA Zone 55

0 50 100 200

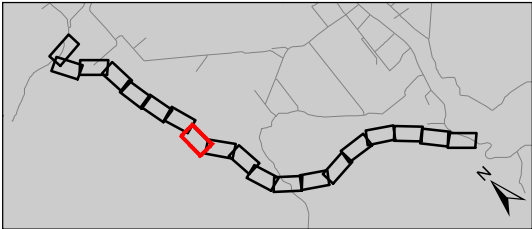
Metres

A3 1:5,000

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Figure 1: Geotechnical Investigation Plans (Sheet 12 of 19)



LEGEND

- Chainage
- ⊕ Historical Geotech Locations
- ⊕ Test Pit
- ⊕ Borehole

Geotechnical Locations Completed

- ⊕ Test Pit
- ⊕ Borehole

Transfer Pipeline S2 - Option 1A - HMC Alignment (West)

Cadastre

GDA 1994 MGA Zone 55

0 50 100 200

Metres

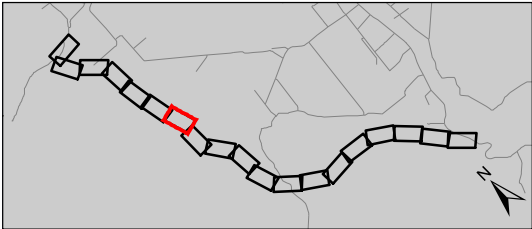
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North Arrow

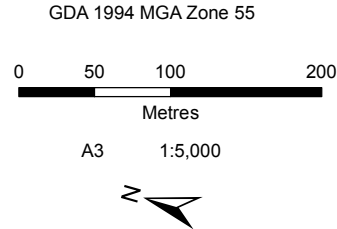
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Figure 1: Geotechnical Investigation Plans (Sheet 13 of 19)



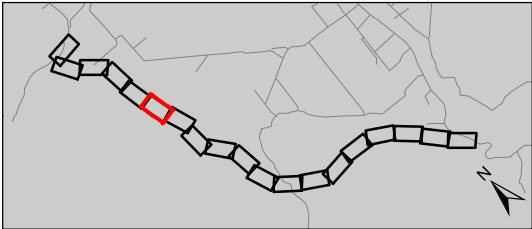
- LEGEND**
- Chainage
 - ⊕ Historical Geotech Locations
 - Geotechnical Locations Completed
 - ⊕ Borehole
 - Transfer Pipeline S2 - Option 1A - HMC Alignment (West)
 - Unconstructed and/or dedicated
 - Cadastre



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Figure 1: Geotechnical Investigation Plans (Sheet 14 of 19)



LEGEND

- Chainage
- ⊕ Historical Geotech Locations
- Geotechnical Locations Completed
- ⊕ Test Pit
- Transfer Pipeline S2 - Option 1A - HMC Alignment (West)
- Unconstructed and/or dedicated
- Cadastre

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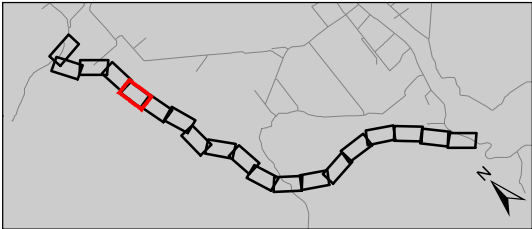
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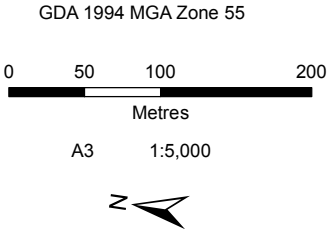
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Figure 1: Geotechnical Investigation Plans (Sheet 15 of 19)



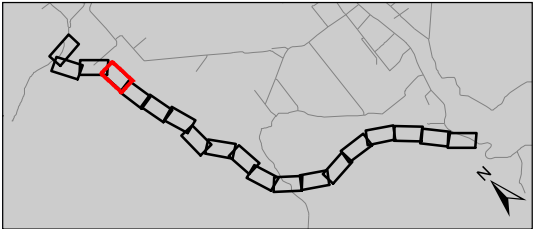
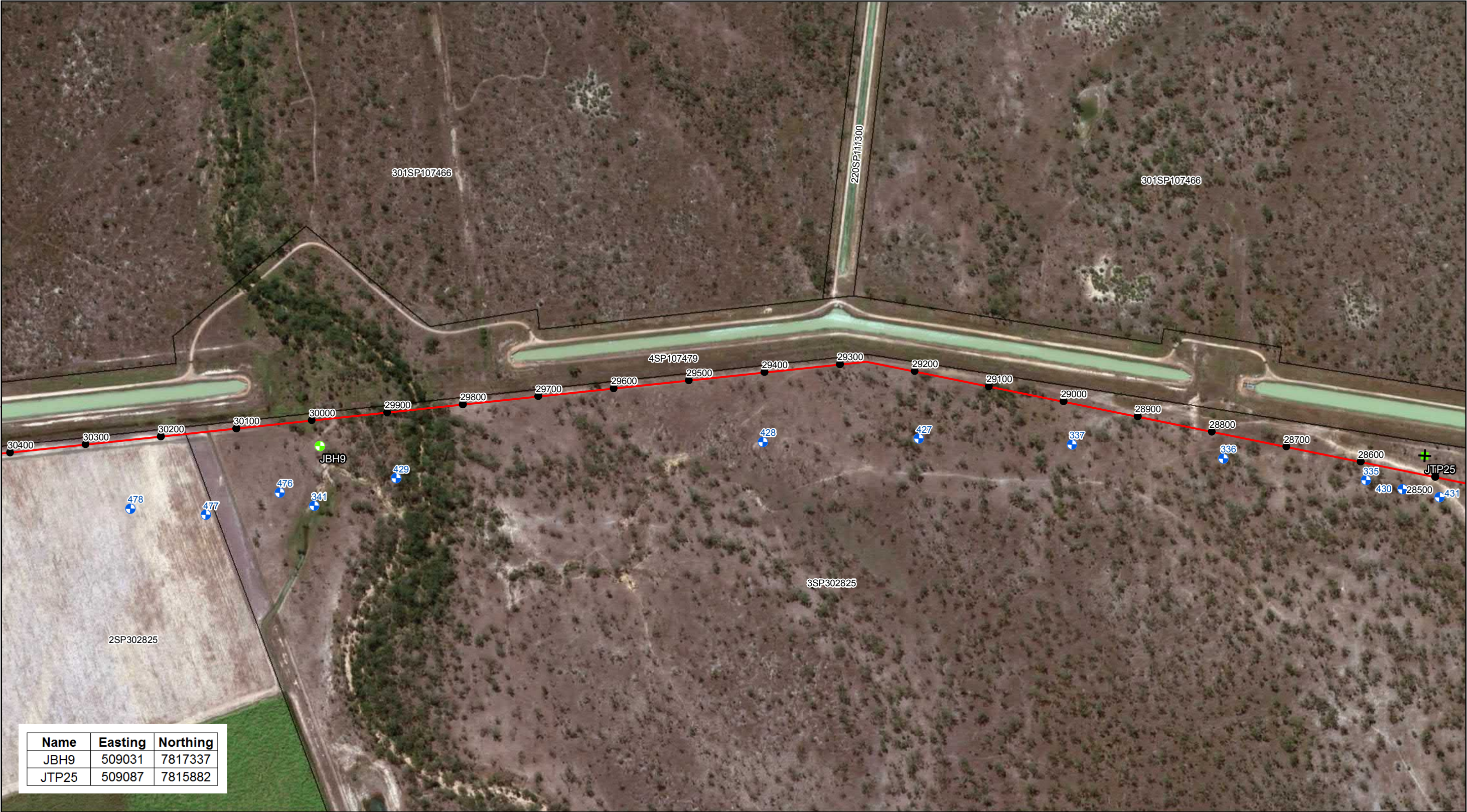
- LEGEND**
- Chainage
 - ⊕ Historical Geotech Locations
 - Geotechnical Locations Completed
 - ⊕ Test Pit
 - Transfer Pipeline S2 - Option 1A - HMC Alignment (West)
 - ▭ Cadastre



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Figure 1: Geotechnical Investigation Plans (Sheet 16 of 19)



LEGEND

- Chainage
- ⊕ Historical Geotech Locations
- Geotechnical Locations Completed**
- ⊕ Test Pit
- ⊕ Borehole
- Transfer Pipeline S2 - Option 1A - HMC Alignment (West)
- ▭ Cadastre

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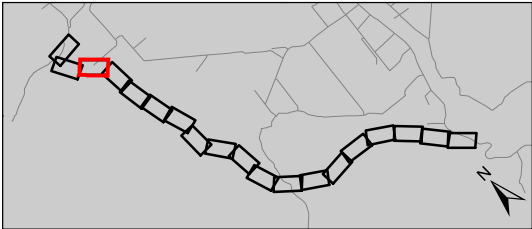
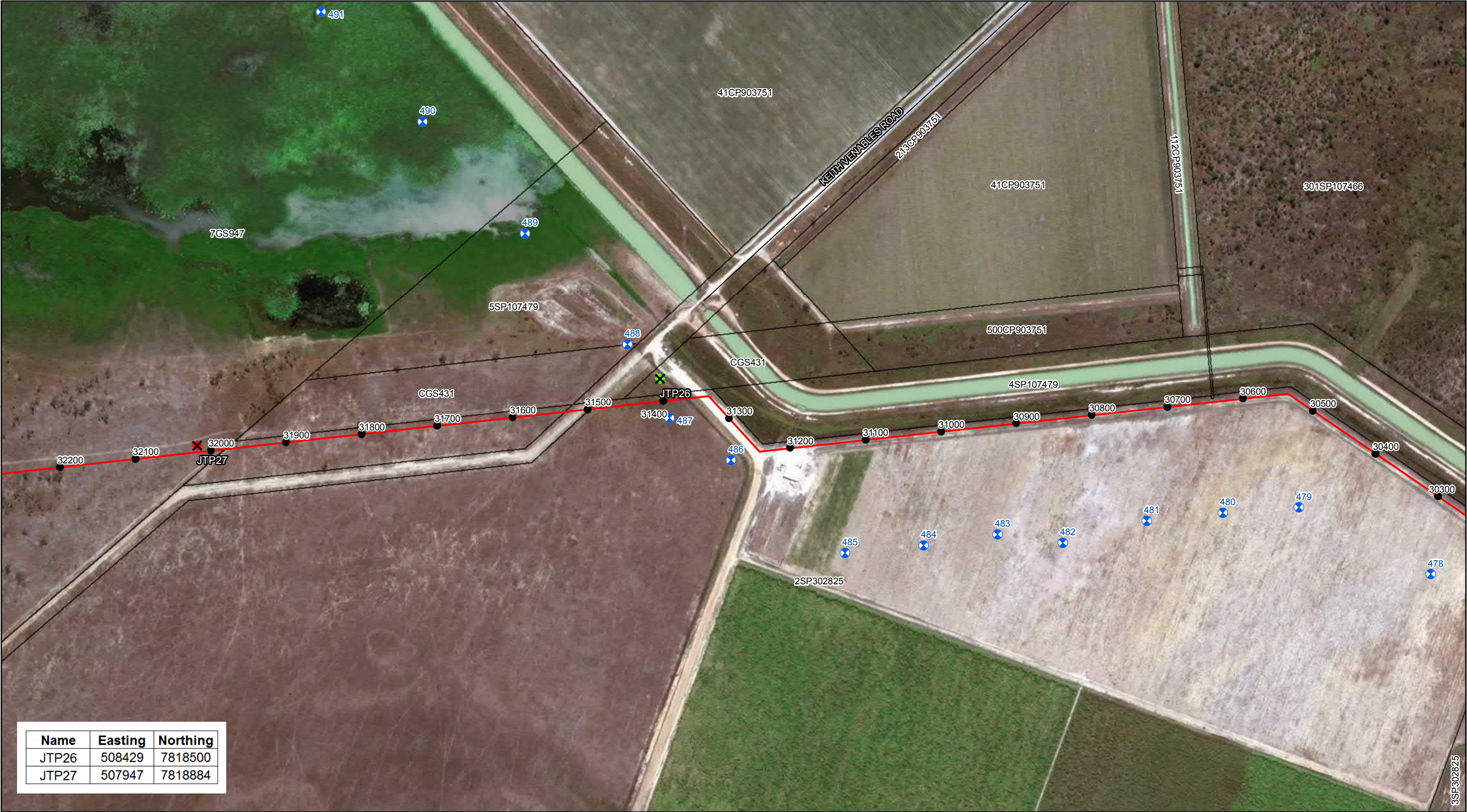
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Metres

A3 1:5,000

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Figure 1: Geotechnical Investigation Plans (Sheet 17 of 19)

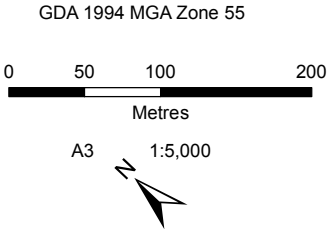


LEGEND

- Chainage
- ⊕ Historical Geotech Locations
- Geotechnical Locations Completed**
- ⊕ Test Pit

- Geotechnical Locations (Not completed due to lack of access)**
- ⊕ Test Pit
- Transfer Pipeline S2 - Option 1A - HMC Alignment (West)

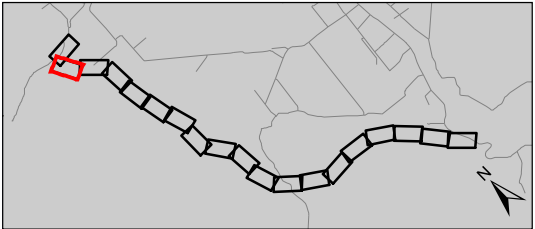
- Street/Local - only provides property access
- Cadastre



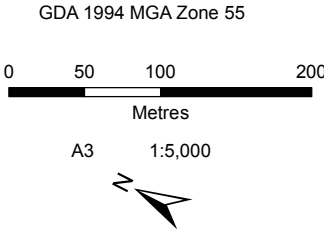
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Figure 1: Geotechnical Investigation Plans (Sheet 18 of 19)

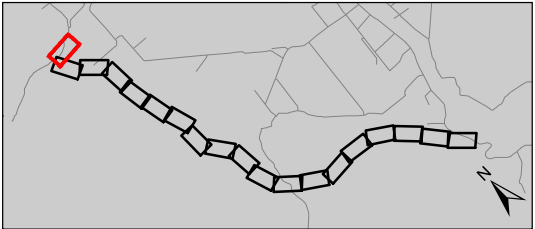


- LEGEND**
- Chainage
 - Geotechnical Locations (Not completed due to lack of access)
 - ✚ Test Pit
 - Transfer Pipeline S2 - Option 1A - HMC Alignment (West)
 - Street/Local - only provides property access
 - Cadastre



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Figure 1: Geotechnical Investigation Plans (Sheet 19 of 19)



LEGEND

- Chainage
- ⊕ Historical Geotech Locations
- Geotechnical Locations (Not completed due to lack of access)**
- ⊕ Borehole

- ⊕ Test Pit
- Haughton PS Connecting Pipe
- Transfer Pipeline S2 - Option 1A - HMC Alignment (West)
- Street/Local - only provides property access

- ▭ Cadastre
- ▨ Pipeline Infrastructure

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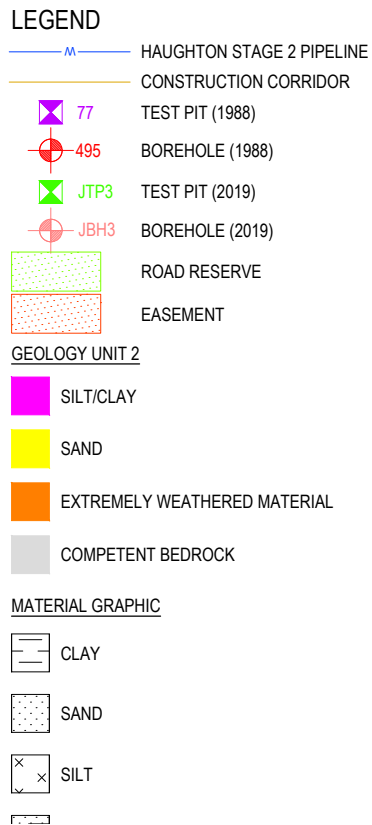
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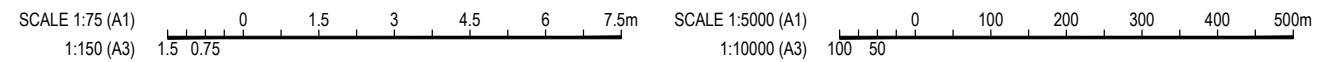
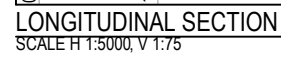
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Appendix C. Original Updated HMC Geotechnical Long Sections



CONCEPT DESIGN ISSUE

[illegible]



CONCEPT DESIGN ISSUE

[illegible]

[illegible]

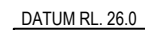


DATUM RL. 27.0			
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7000.000	36.593	32.266	
7200.000	35.684	32.483	
7255.570	35.594	32.543	
7400.000	35.841	32.699	
7451.257	35.787	32.755	
7600.000	36.187	32.296	
7733.189	34.971	31.886	
7800.000	35.121	32.017	
8000.000	35.844	32.409	
8200.000	36.042	32.802	
8300.000	35.998	32.998	
8400.000	35.968	32.846	
8600.000	35.842	32.542	
8800.000	35.529	32.238	
8893.225	35.808	32.096	
9000.000	35.594	32.205	
9200.000	35.641	32.407	
9218.398	35.667	32.426	
9400.000	35.849	32.610	
9530.366	35.946	32.743	
9597.866	36.375	31.642	
9600.000	36.305	31.570	
9624.866	36.123	30.730	
9638.366	36.232	30.508	
9651.866	35.893	30.522	
9665.366	36.240	30.770	
9678.866	36.491	31.254	
9692.366	36.475	31.737	
9705.866	36.343	31.985	
9719.366	36.363	32.234	
9800.000	35.886	32.346	
10000.000	35.869	32.625	
10194.022	35.943	32.896	
10200.000	35.953	32.882	
10267.335	36.011	32.731	
10400.000	35.572	32.434	
10487.464	35.576	32.237	
10500.000	35.539	32.253	

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1:150 (A3) 1.5 0.75

SCALE 1:5000 (A1) 0 100 200 300 400 500m
1:10000 (A3) 100 50

[illegible]



CHAINAGE	EXISTING SURFACE	PIPE INVERT LEVEL
10500.000	35.539	32.253
10560.018	35.743	32.356
10600.000	35.668	32.381
10739.297	35.698	32.559
10800.000	35.950	32.637
10905.760	36.515	32.772
10922.889	36.091	32.794
10978.170	35.726	32.467
11000.000	35.338	32.338
11158.208	35.050	31.402
11200.000	35.247	31.446
11361.977	35.236	31.617
11400.000	35.199	31.657
11600.000	35.298	31.869
11800.000	35.224	32.080
12000.000	35.292	32.292
12200.000	35.597	31.244
12226.960	35.253	31.103
12239.960	34.816	31.199
12289.069	35.711	31.508
12312.250	35.584	31.654
12325.750	36.034	31.667
12339.250	36.222	31.444
12352.750	36.190	30.985
12366.250	36.415	30.290
12376.895	36.301	29.928
12379.750	36.289	29.831
12393.250	34.271	29.608
12400.000	33.615	29.615
12406.750	34.158	29.622
12420.250	36.445	29.872
12447.250	36.086	30.844
12474.250	35.630	31.343
12501.250	35.539	31.370
12525.725	35.638	31.357
12600.000	35.570	31.317
12800.000	35.253	31.209
13000.000	35.012	31.101
13200.000	34.669	30.993
13400.000	34.377	30.886
13600.000	34.140	30.778
13800.000	33.917	30.670
13917.455	33.873	30.607
13982.588	34.085	30.572
14000.000	33.969	30.589

SCALE 1:75 (A1) 0 1.5 3 4.5 6 7.5m
1:150 (A3) 1.5 0.75

SCALE 1:2600 (A1) 0 100 200 300 400 500m
1:16000 (A3) 100 50

CONCEPT DESIGN ISSUE

[illegible]

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Townsville, QLD 4810
AUSTRALIA

Tel: +61 7 47269100
Web: www.jacobs.com

CLIENT	DEPARTMENT OF INFRASTRUCTURE, REGIONAL DEVELOPMENT AND CITIES
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PROJECT	HAUGHTON STAGE 2 PIPELINE
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DRAWN

	DRAWING CHECK
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	REVIEWED
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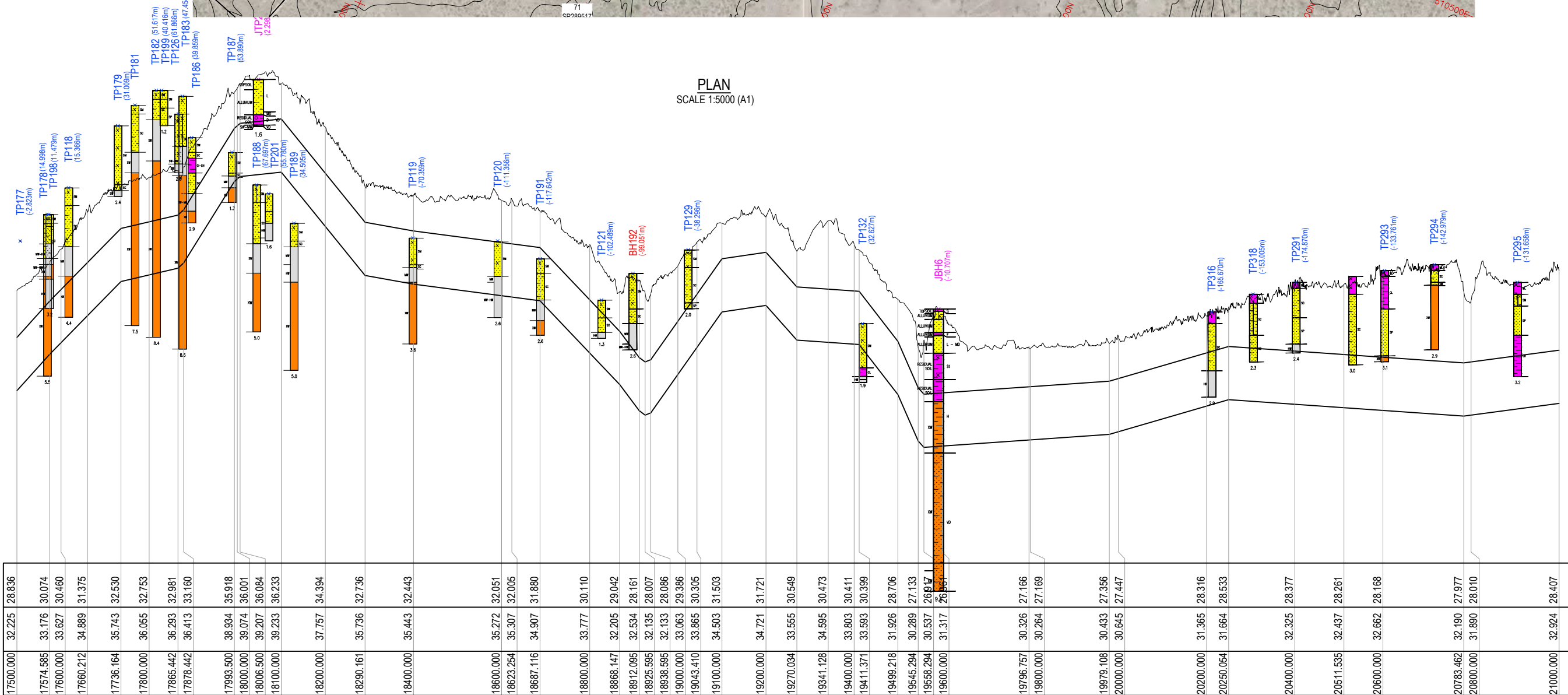
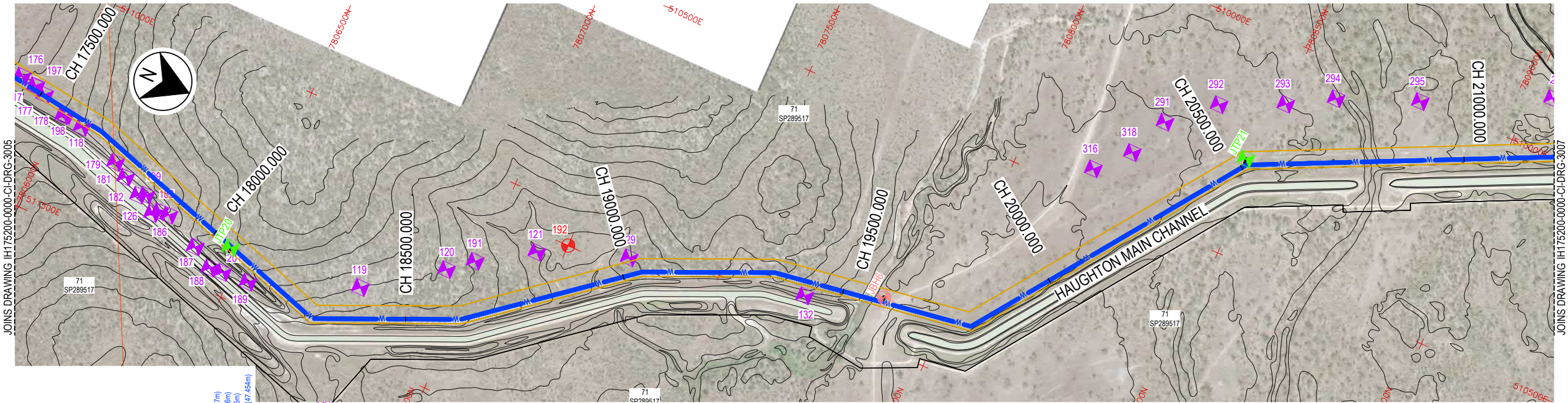
APPROVED

TITLE	CLARE - HAUGHTON PIPELINE GEOTECHNICAL WORKING PLAN AND SECTION SHEET 4 OF 11
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SCALE AS SHOWN	DRAWING No IH175200-0000-CI-DRG-3004
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REV
B

[illegible]



PIPE INVERT LEVEL	28.836	30.074	30.460	31.375	32.530	32.753	32.981	33.160	35.918	36.001	36.084	36.233	34.394	32.736	32.443	32.051	32.005	31.880	30.110	29.042	28.161	28.007	28.086	29.386	30.305	31.503	31.721	30.549	30.473	30.411	30.399	28.706	27.133	26.917	26.561	27.166	27.169	27.356	27.447	28.316	28.533	28.377	28.261	28.168	27.977	28.010	28.407
EXISTING SURFACE	32.225	33.176	33.627	34.889	35.743	36.055	36.293	36.413	38.934	39.074	39.207	39.233	37.757	35.736	35.443	35.272	35.307	34.907	33.777	32.205	32.534	32.135	32.133	33.063	33.865	34.503	34.721	33.555	34.595	33.803	33.593	31.926	30.289	30.537	26.561	30.326	30.264	30.433	30.645	31.365	31.664	32.325	32.437	32.662	32.190	31.890	32.924
CHAINAGE	17500.000	17574.585	17600.000	17660.212	17736.164	17800.000	17865.442	17878.442	17993.500	18000.000	18006.500	18100.000	18200.000	18290.161	18400.000	18600.000	18623.254	18687.116	18800.000	18868.147	18912.095	18925.595	18938.595	19000.000	19043.410	19100.000	19200.000	19270.034	19341.128	19400.000	19411.371	19498.218	19545.294	19558.294	19600.000	19796.757	19800.000	19979.108	20000.000	20200.000	20250.054	20400.000	20511.535	20600.000	20783.462	20800.000	21000.000

LONGITUDINAL SECTION
SCALE H 1:5000, V 1:75

SCALE 1:75 (A1) 0 1.5 3 4.5 6 7.5m
1:150 (A3) 1.5 0.75
SCALE 1:5000 (A1) 0 100 200 300 400 500m
1:10000 (A3) 100 50

CONCEPT DESIGN ISSUE

REV	DATE	DRAWN	REV'D	APP'D	REVISION	DRAWING NUMBER	REFERENCE DRAWING TITLE
B	28.05.19	LDH	GAJ	GAJ	CONCEPT DESIGN ISSUE		
A	09.05.19				PRELIMINARY ISSUE		

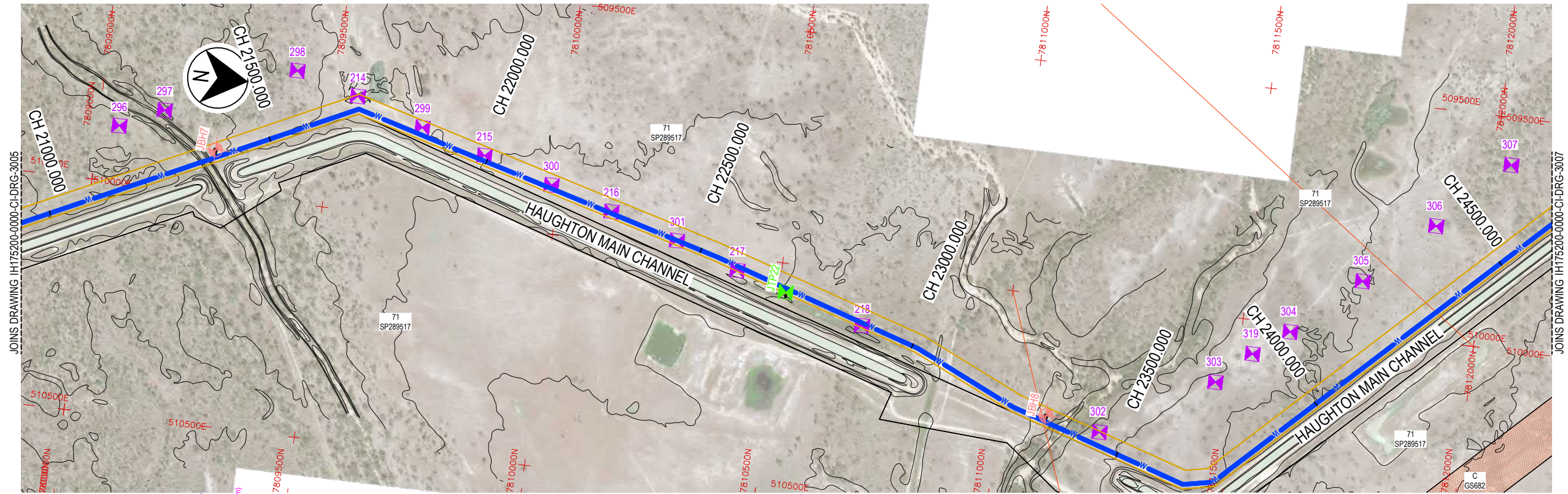
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Jacobs Group (Australia) Pty Ltd
444 Flinders St
Townsville, QLD 4810
AUSTRALIA

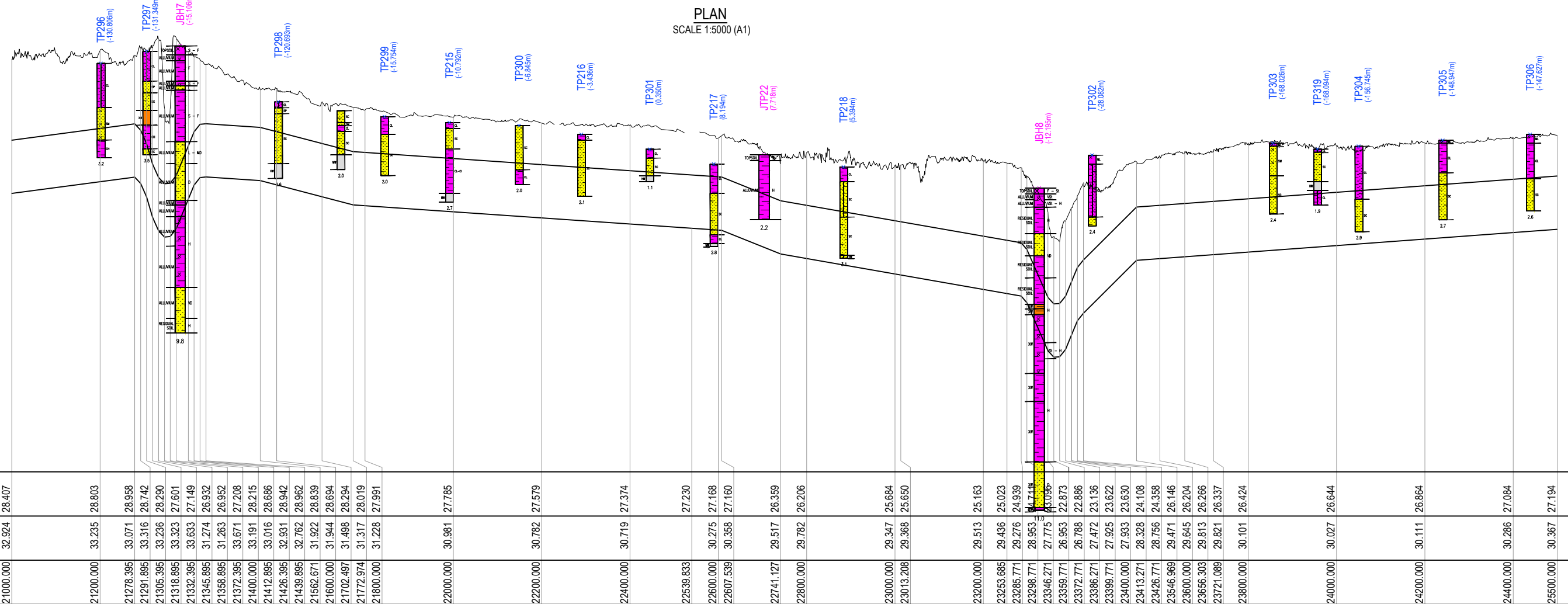
Tel: +61 7 47269100
Web: www.jacobs.com

CLIENT	DEPARTMENT OF INFRASTRUCTURE, REGIONAL DEVELOPMENT AND CITIES		
PROJECT	HAUGHTON STAGE 2 PIPELINE		
DRAWN TAB	DRAWING CHECK	REVIEWED	APPROVED
DESIGNED	DESIGN REVIEW		

TITLE			
CLARE - HAUGHTON PIPELINE GEOTECHNICAL WORKING PLAN AND SECTION SHEET 6 OF 11			
SCALE	DRAWING No		REV
AS SHOWN	IH175200-0000-CI-DRG-3006		



PLAN
SCALE 1:5000 (A1)



LONGITUDINAL SECTION
SCALE H 1:5000, V 1:75

SCALE 1:75 (A1) 0 1.5 3 4.5 6 7.5m
1:150 (A3) 1.5 0.75
SCALE 1:5000 (A1) 0 100 200 300 400 500m
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A	09.05.19				PRELIMINARY ISSUE		

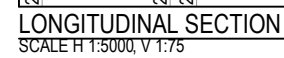
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PROJECT	HAUGHTON STAGE 2 PIPELINE		
DRAWN TAB	DRAWING CHECK	REVIEWED	APPROVED
DESIGNED	DESIGN REVIEW	DATE	DATE

TITLE			
CLARE - HAUGHTON PIPELINE GEOTECHNICAL WORKING PLAN AND SECTION SHEET 7 OF 11			
SCALE	DRAWING No.	REV	
AS SHOWN	IH175200-0000-CI-DRG-3007	B	

[illegible]



DATUM RL. 17.0		
CHAINAGE	EXISTING SURFACE	PIPE INVERT LEVEL
28000.000	29.316	25.989
28169.341	29.592	26.350
28200.000	29.553	26.416
28400.000	29.979	26.843
28418.722	29.921	26.883
28483.919	30.392	27.022
28600.000	30.040	26.499
28775.287	28.826	25.708
28800.000	30.045	25.866
28897.492	29.772	26.489
29000.000	29.760	26.213
29200.000	29.536	25.675
29227.757	29.400	25.600
29400.000	29.312	25.137
29600.000	28.685	24.599
29702.333	28.389	24.324
29729.333	28.548	23.878
29742.833	28.621	23.419
29756.333	28.778	22.724
29769.833	28.951	21.792
29783.333	28.835	21.097
29796.833	28.609	20.638
29800.000	28.261	20.586
29810.333	24.790	20.415
29823.833	24.549	20.429
29837.333	27.102	20.679
29850.833	28.743	21.165
29877.833	28.446	22.609
29891.333	28.154	23.095
29931.833	28.651	23.844
30000.000	28.324	23.951
30200.000	28.786	24.265
30400.000	28.842	24.579
30502.778	28.964	24.740
30600.000		24.893
30800.000	28.987	25.207
31000.000	29.114	25.521
31200.000	29.087	25.835
31203.701	29.110	25.840
31277.988	29.269	25.957
31400.000	29.485	26.148
31500.000	29.323	26.305

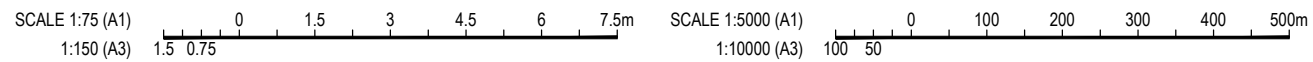
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1:150 (A3) 1.5 0.75

SCALE 1:5000 (A1) 0 100 200 300 400 500m
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CONCEPT DESIGN ISSUE

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CONCEPT DESIGN ISSUE

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