

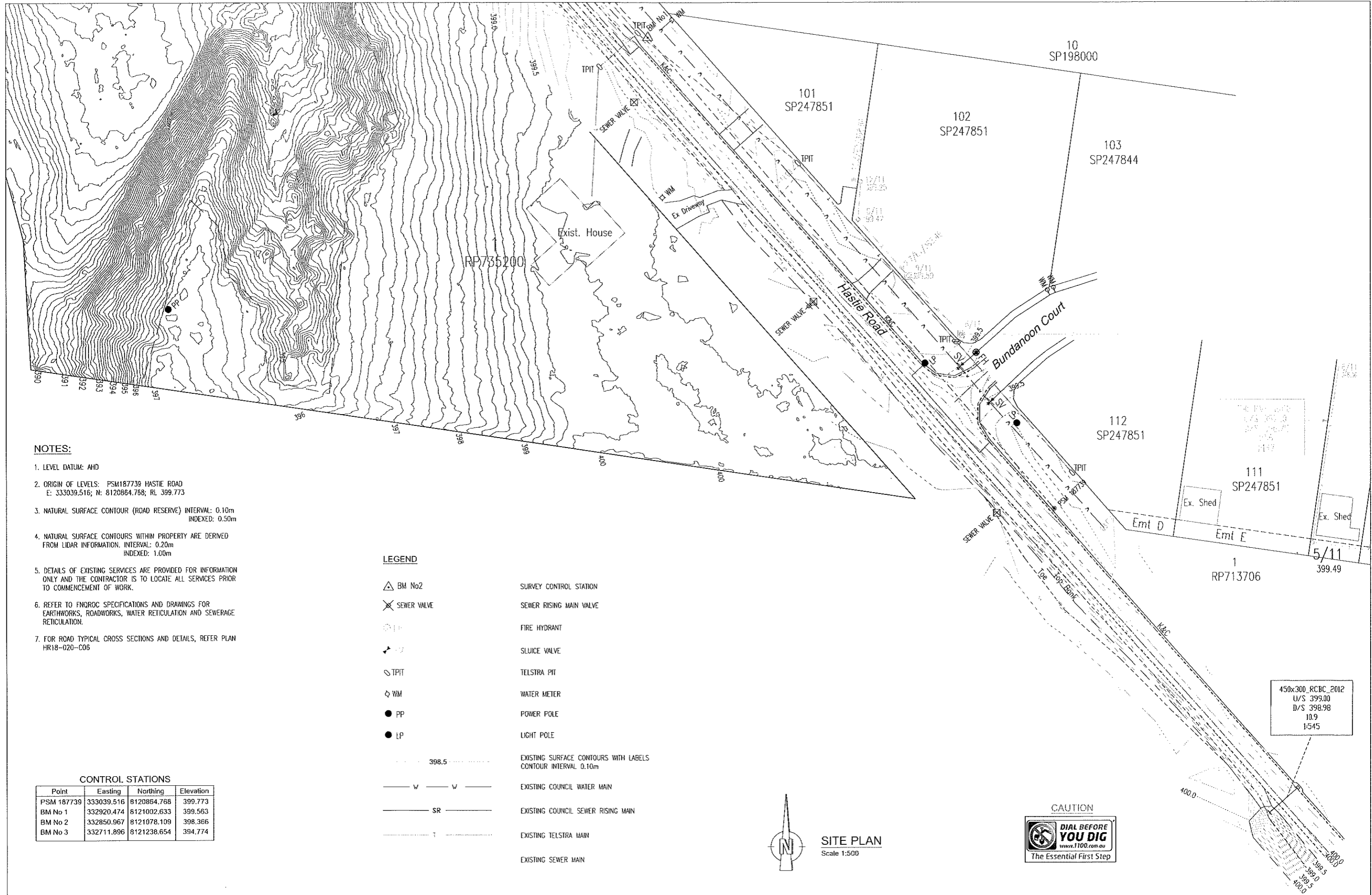
# RURAL RESIDENTIAL SUBDIVISION LOT 1 ON RP735200 - HASTIE ROAD OPERATIONAL WORKS DRAWINGS



DRAWING INDEX			
Drawing Number	Rev.	Date	Drawing Description
HR18-020-C01	A	24/08/18	COVER SHEET
HR18-020-C02	A	24/08/18	SITE PLAN - SHEET 1 OF 2
HR18-020-C03	A	24/08/18	SITE PLAN - SHEET 2 OF 2
HR18-020-C04	A	24/08/18	LAYOUT PLAN - SHEET 1 OF 2
HR18-020-C05	A	24/08/18	LAYOUT PLAN - SHEET 2 OF 2
HR18-020-C06	A	24/08/18	TYPICAL SECTIONS AND INTERSECTION DETAIL
HR18-020-C07	A	24/08/18	LONGITUDINAL SECTION - HASTIE ROAD WIDENING
HR18-020-C08	A	24/08/18	CROSS SECTIONS - HASTIE ROAD WIDENING
HR18-020-C09	A	24/08/18	CROSS SECTIONS - HASTIE ROAD WIDENING
HR18-020-C010	A	24/08/18	CROSS SECTIONS - HASTIE ROAD WIDENING
HR18-020-C011	A	24/08/18	CROSS SECTIONS - HASTIE ROAD WIDENING
HR18-020-C012	A	24/08/18	CROSS SECTIONS - HASTIE ROAD WIDENING
HR18-020-C013	A	24/08/18	EARTHWORKS - LAYOUT PLAN
HR18-020-C014	A	24/08/18	SEWERAGE RETICULATION - LAYOUT PLAN
HR18-020-C015	A	24/08/18	SEWERAGE LONGITUDINAL SECTIONS
HR18-020-C016	A	24/08/18	WATER RETICULATION - LAYOUT PLAN
HR18-020-C017	A	24/08/18	EROSION AND SEDIMENT - LAYOUT PLAN

**PRELIMINARY  
ISSUE**  
AUGUST, 2018

FNQROC STANDARD DRAWINGS		
Drawing Number	Rev.	Drawing Description
S2000	B	VALVE BOX INSTALLATION
S2005	B	HYDRANT BOX INSTALLATION
S2010	C	KERB/ROAD MARKERS
S2015	C	THRUST BLOCK DETAILS
S2016	B	WATER RETICULATION BEDDING DETAILS
S2020	B	MAIN CONNECTION DETAILS
S3000	C	SEWERAGE MANHOLES
S3005	C	STANDARD HOUSE CONNECTION BRANCHES
S3015	C	BEDDING AND TRENCHING DETAILS - SEWERAGE



**NOTES:**

1. LEVEL DATUM: AHD
2. ORIGIN OF LEVELS: PSM187739 HASTIE ROAD  
E: 333039.516; N: 8120864.768; RL 399.773
3. NATURAL SURFACE CONTOUR (ROAD RESERVE) INTERVAL: 0.10m  
INDEXED: 0.50m
4. NATURAL SURFACE CONTOURS WITHIN PROPERTY ARE DERIVED FROM LIDAR INFORMATION. INTERVAL: 0.20m  
INDEXED: 1.00m
5. DETAILS OF EXISTING SERVICES ARE PROVIDED FOR INFORMATION ONLY AND THE CONTRACTOR IS TO LOCATE ALL SERVICES PRIOR TO COMMENCEMENT OF WORK.
6. REFER TO FNDRQC SPECIFICATIONS AND DRAWINGS FOR EARTHWORKS, ROADWORKS, WATER RETICULATION AND SEWERAGE RETICULATION.
7. FOR ROAD TYPICAL CROSS SECTIONS AND DETAILS, REFER PLAN HR18-020-C06

**LEGEND**

- △ BM No2 SURVEY CONTROL STATION
- ✕ SEWER VALVE SEWER RISING MAIN VALVE
- F I FIRE HYDRANT
- ⊥ SLUICE VALVE
- TPIT TELSTRA PIT
- ◇ WM WATER METER
- PP POWER POLE
- LP LIGHT POLE
- 398.5 --- EXISTING SURFACE CONTOURS WITH LABELS  
CONTOUR INTERVAL 0.10m
- W --- W --- EXISTING COUNCIL WATER MAIN
- SR --- EXISTING COUNCIL SEWER RISING MAIN
- T --- EXISTING TELSTRA MAIN
- EXISTING SEWER MAIN

**CONTROL STATIONS**

Point	Easting	Northing	Elevation
PSM 187739	333039.516	8120864.768	399.773
BM No 1	332920.474	8121002.633	399.563
BM No 2	332850.967	8121078.109	398.366
BM No 3	332711.896	8121238.654	394.774



**SITE PLAN**  
Scale 1:500



Ref	Revision Notes	Date	Sign
A.	PRELIMINARY ISSUE	24/08/18	W.S.

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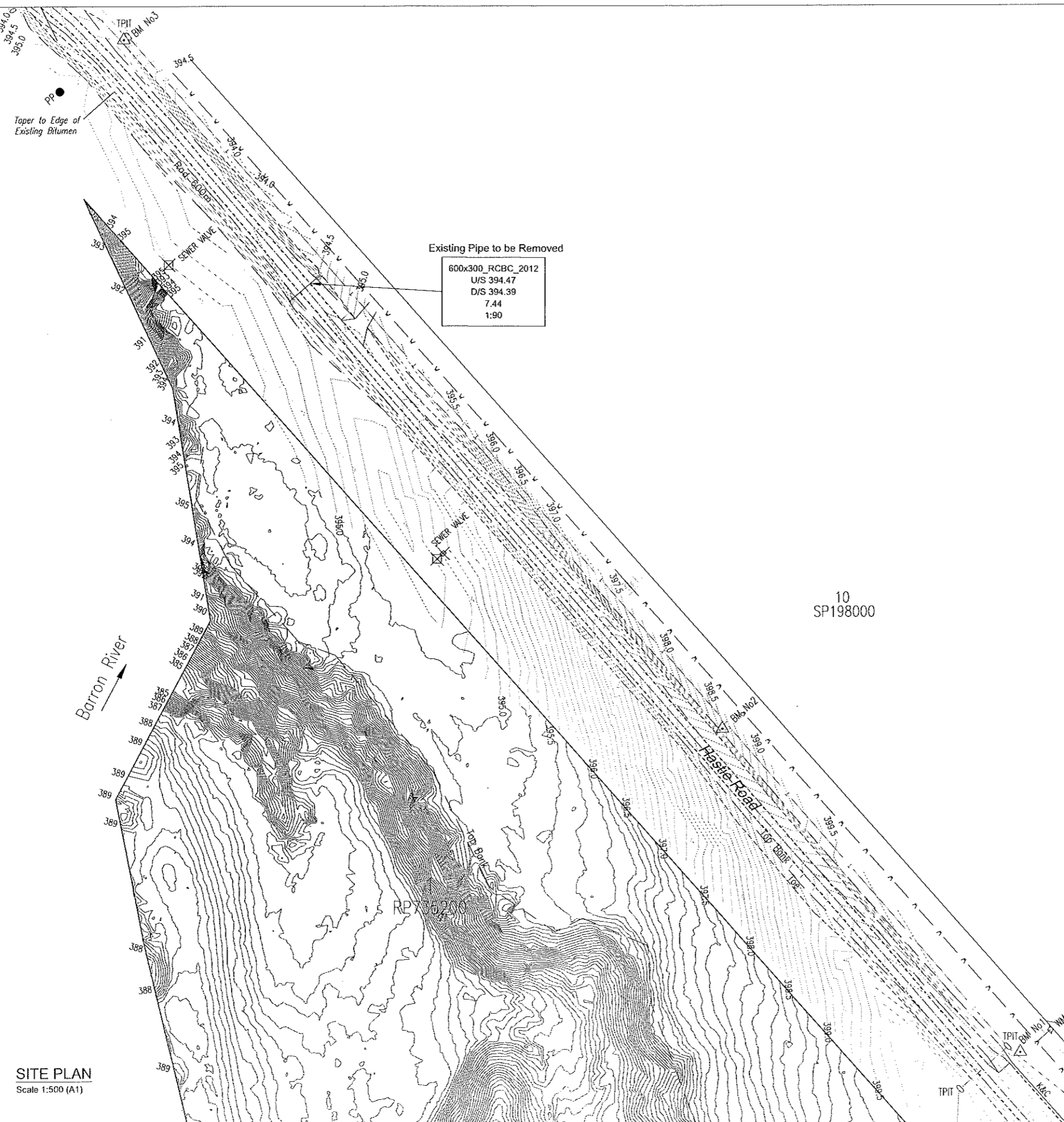
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DATUM: PM187739  
GDA94 ZONE 55  
AUSTRALIAN HEIGHT DATUM (AHD)

Scale 1:500 (A1)

Client: **B. T. M. & S. STANKOVICH PTY LTD**  
Project: **RURAL RESIDENTIAL SUBDIVISION OF LOT 1 ON RP735200**  
Title: **SITE PLAN**

Plan No:	HR18-020-C02
Sheet No:	2/17
Issue:	A



- NOTES:**
1. LEVEL DATUM: AHD
  2. ORIGIN OF LEVELS: PSM187739; HASTIE ROAD  
E: 333039.516; N: 8120864.768; RL 399.773
  3. NATURAL SURFACE CONTOUR (ROAD RESERVE) INTERVAL: 0.10m  
INDEXED: 0.50m
  4. NATURAL SURFACE CONTOURS WITHIN PROPERTY ARE DERIVED FROM LIDAR INFORMATION. INTERVAL: 0.20m  
INDEXED: 1.00m
  5. DETAILS OF EXISTING SERVICES ARE PROVIDED FOR INFORMATION ONLY AND THE CONTRACTOR IS TO LOCATE ALL SERVICES PRIOR TO COMMENCEMENT OF WORK.
  6. REFER TO FNROC SPECIFICATIONS AND DRAWINGS FOR EARTHWORKS, ROADWORKS, WATER RETICULATION AND SEWERAGE RETICULATION.
  7. FOR ROAD TYPICAL CROSS SECTIONS AND DETAILS, REFER PLAN HR18-020-C06

**LEGEND**

	BM No2	SURVEY CONTROL STATION
	SEWER VALVE	SEWER RISING MAIN VALVE
	FIRE HYDRANT	
	SLUICE VALVE	
	TPIT	TELSTRA PIT
	WM	WATER METER
	PP	POWER POLE
	LP	LIGHT POLE
	398.5	EXISTING SURFACE CONTOURS WITH LABELS CONTOUR INTERVAL 0.10m
	W	EXISTING COUNCIL WATER MAIN
	SR	EXISTING COUNCIL SEWER RISING MAIN
	T	EXISTING TELSTRA MAIN
		EXISTING SEWER MAIN

**CONTROL STATIONS**

Point	Easting	Northing	Elevation
PSM 187739	333039.516	8120864.768	399.773
BM No 1	332920.474	8121002.633	399.563
BM No 2	332850.967	8121078.109	398.386
BM No 3	332711.896	8121238.654	394.774

**SITE PLAN**  
Scale 1:500 (A1)

Ref.	Revision Notes	Date	Sign
A.	PRELIMINARY ISSUE	24/08/18	W.S.

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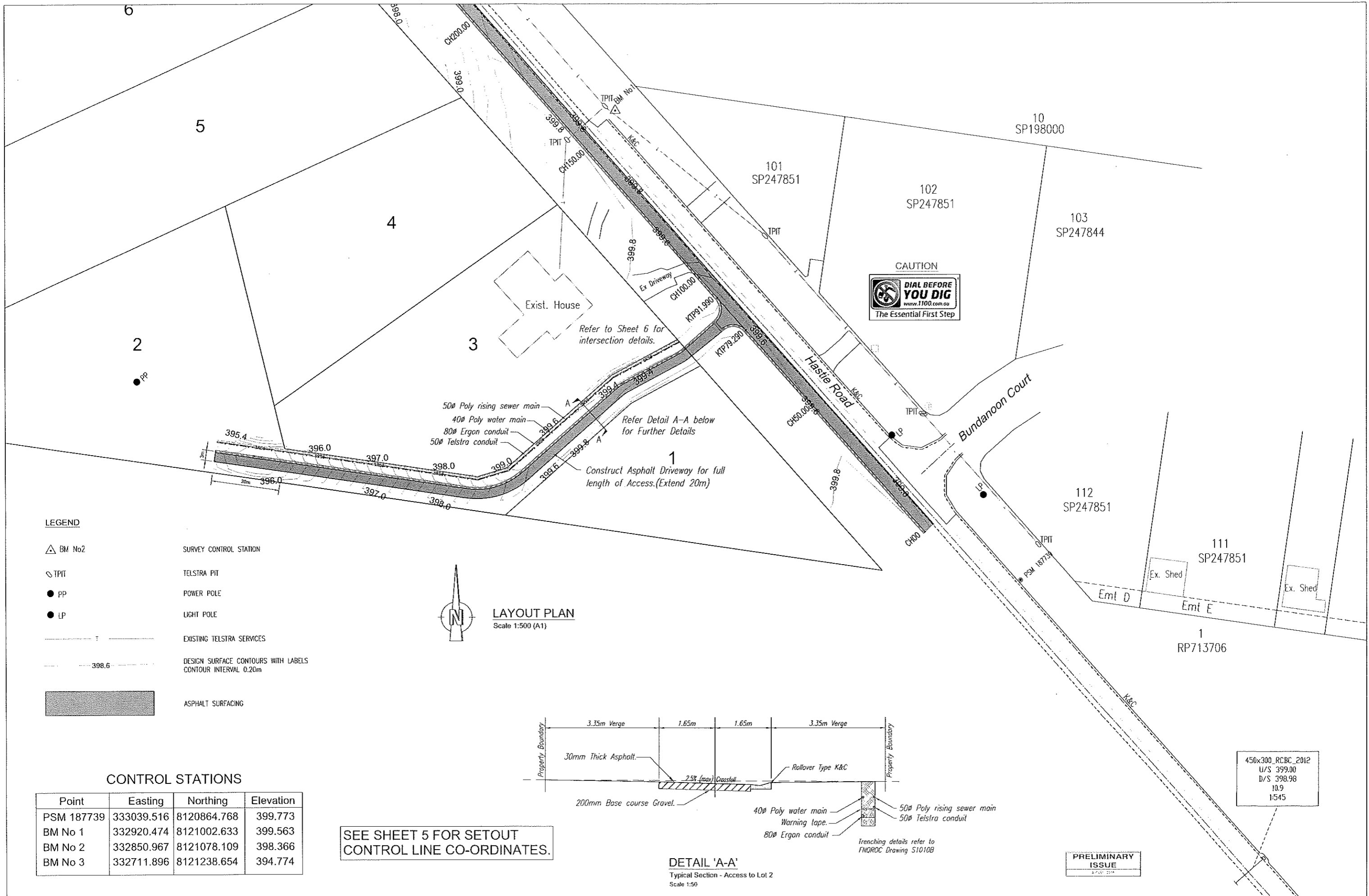
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GDA94 ZONE 55  
AUSTRALIAN HEIGHT DATUM (AHD)

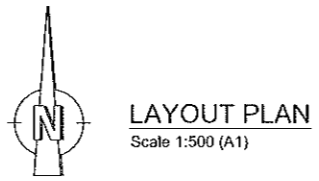
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Scale 1:500 (A1)

Client: **B. T. M. & S. STANKOVICH PTY LTD**  
Project: **RURAL RESIDENTIAL SUBDIVISION OF LOT 1 ON RP735200**  
Title: **SITE PLAN**

Plan No: <b>HR18-020-C03</b>	
Sheet No. <b>3/17</b>	Issue: <b>A</b>



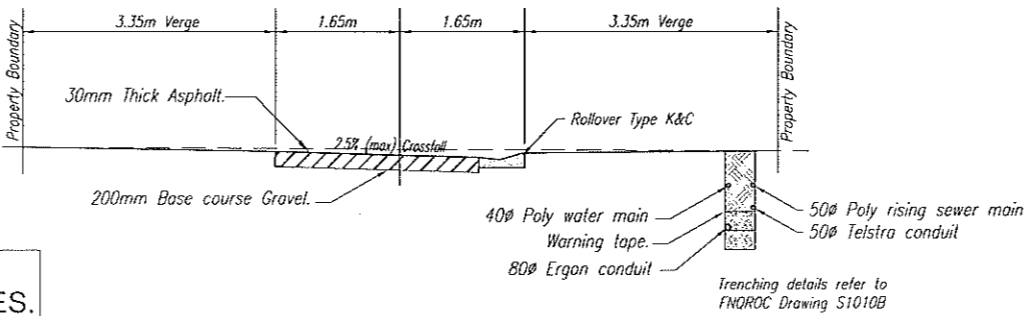
- LEGEND**
- △ BM No2 SURVEY CONTROL STATION
  - ▽ TPIT TELSTRA PIT
  - PP POWER POLE
  - LP LIGHT POLE
  - EXISTING TELSTRA SERVICES
  - - - 398.6 DESIGN SURFACE CONTOURS WITH LABELS  
CONTOUR INTERVAL 0.20m
  - █ ASPHALT SURFACING



**CONTROL STATIONS**

Point	Easting	Northing	Elevation
PSM 187739	333039.516	8120864.768	399.773
BM No 1	332920.474	8121002.633	399.563
BM No 2	332850.967	8121078.109	398.366
BM No 3	332711.896	8121238.654	394.774

SEE SHEET 5 FOR SETOUT CONTROL LINE CO-ORDINATES.



**DETAIL 'A-A'**  
Typical Section - Access to Lot 2  
Scale 1:50

450x300\_RCBC\_2012  
U/S 399.00  
D/S 398.98  
10.9  
1:545

PRELIMINARY ISSUE

Ref.	Revision Notes	Date	Sign
A.	PRELIMINARY ISSUE	15/08/18	W.S.

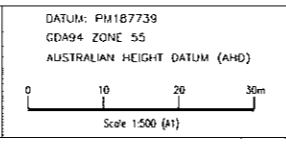
  

DRAWN W.S.	CHECKED W.S.	APPROVED
CAD FILE: HR18-020 OPERATIONAL WORKS.DWG		

**BENCHMARK SURVEY & DESIGN**

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Client: **B. T. M. & S. STANKOVICH PTY LTD**  
Project: **RURAL RESIDENTIAL SUBDIVISION OF LOT 1 ON RP735200**  
Title: **GENERAL ARRANGEMENT - LAYOUT PLAN**

Plan No:	HR18-020-C04
Sheet No:	4/17
Issue:	A

**CONTROL STATIONS**

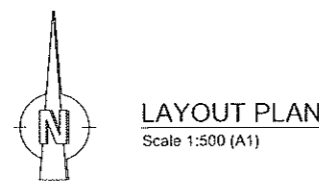
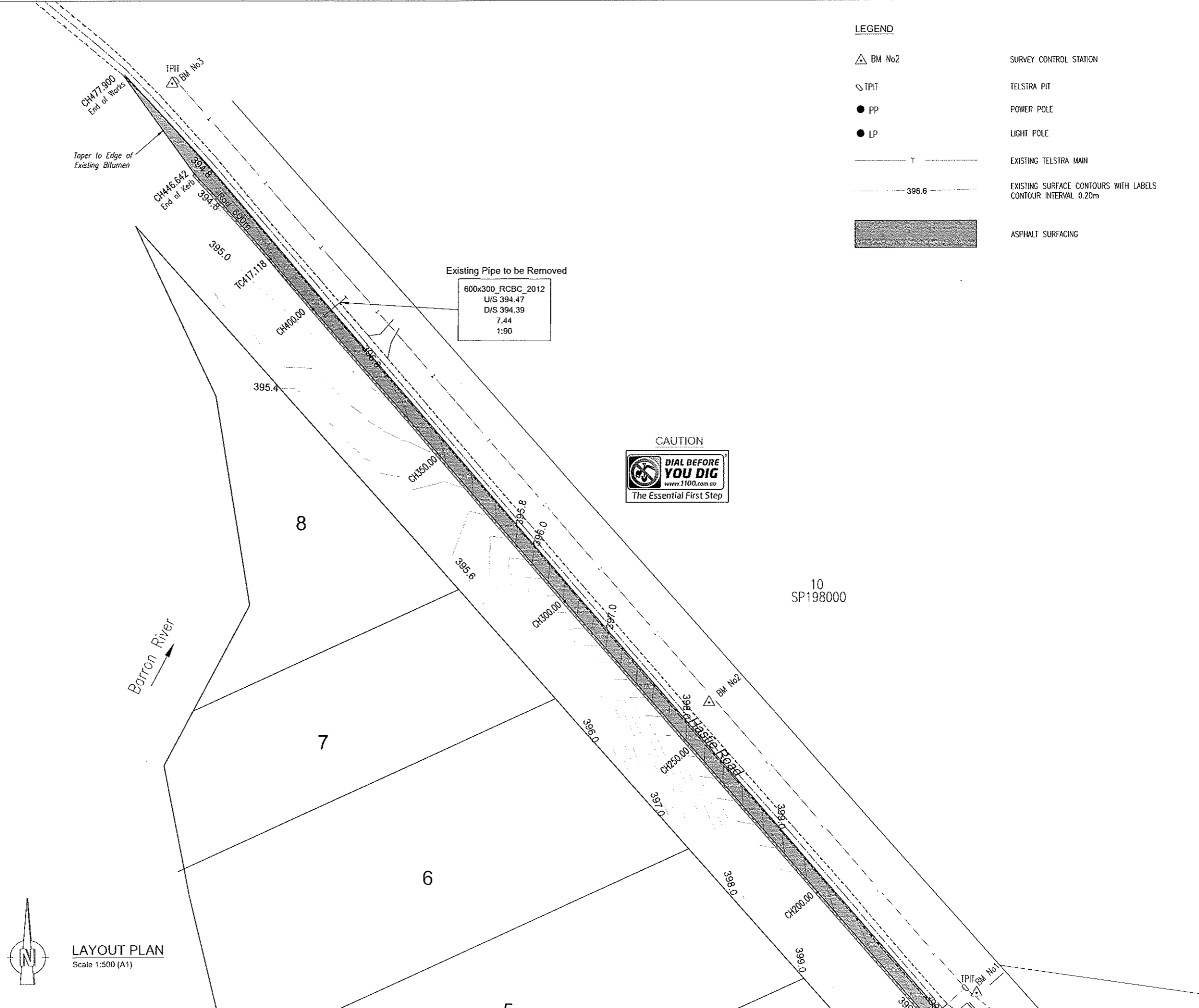
Point	Easting	Northing	Elevation
PSM 187739	333039.516	8120864.768	399.773
BM No 1	332920.474	8121002.633	399.563
BM No 2	332850.967	8121078.109	398.366
BM No 3	332711.896	8121238.654	394.774

**LEGEND**

	BM No2		SURVEY CONTROL STATION
	TPIT		TELSTRA PIT
	PP		POWER POLE
	LP		LIGHT POLE
	EXISTING TELSTRA MAIN		EXISTING SURFACE CONTOURS WITH LABELS CONTOUR INTERVAL 0.20m
	ASPHALT SURFACING		

**HASTIE ROAD CONTROL LINE - SETOUT POINTS LIP OF KERB**

POINT	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
IP1	0.000	333011.447	8120878.870	318°24'29"	
	10.000	333004.809	8120886.349	318°24'29"	
	20.000	332998.170	8120893.828	318°24'29"	
	30.000	332991.532	8120901.307	318°24'29"	
	40.000	332984.894	8120908.786	318°24'29"	
	50.000	332978.256	8120916.265	318°24'29"	
	60.000	332971.617	8120923.744	318°24'29"	
	70.000	332964.979	8120931.223	318°24'29"	
KTP	79.290	332958.812	8120938.171	318°24'29"	
	80.000	332958.341	8120938.702	318°24'29"	
	90.000	332951.703	8120946.181	318°24'29"	
KTP	91.990	332950.381	8120947.670	318°24'29"	
	100.000	332945.065	8120953.660	318°24'29"	
	110.000	332938.475	8120961.181	318°46'43"	
	120.000	332931.885	8120968.703	318°46'43"	
	130.000	332925.295	8120976.225	318°46'43"	
	140.000	332918.706	8120983.746	318°46'43"	
	150.000	332912.116	8120991.268	318°46'43"	
	160.000	332905.526	8120998.790	318°46'43"	
	170.000	332898.937	8121006.311	318°46'43"	
	180.000	332892.347	8121013.833	318°46'43"	
	190.000	332885.757	8121021.355	318°46'43"	
	200.000	332879.167	8121028.876	318°46'43"	
	210.000	332872.577	8121036.397	319°00'23"	
	220.000	332866.048	8121043.922	319°00'23"	
	230.000	332859.488	8121051.520	319°00'23"	
	240.000	332852.928	8121059.067	319°00'23"	
	250.000	332846.369	8121066.615	319°00'23"	
	260.000	332839.809	8121074.163	319°00'23"	
	270.000	332833.249	8121081.711	319°00'23"	
	280.000	332826.689	8121089.259	319°00'23"	
	290.000	332820.130	8121096.807	319°00'23"	
	300.000	332813.570	8121104.354	319°00'23"	
	310.000	332807.044	8121111.932	319°15'57"	
	320.000	332800.519	8121119.509	319°15'57"	
	330.000	332793.993	8121127.087	319°15'57"	
	340.000	332787.468	8121134.664	319°15'57"	
	350.000	332780.942	8121142.242	319°15'57"	
	360.000	332774.417	8121149.819	319°15'57"	
	370.000	332767.891	8121157.397	319°15'57"	
	380.000	332761.366	8121164.974	319°15'57"	
	390.000	332754.840	8121172.551	319°15'57"	
	400.000	332748.315	8121180.129	319°15'57"	
	410.000	332741.789	8121187.703	319°40'35"	
TC	417.118	332737.238	8121193.179	319°40'35"	
IP50	431.880	332727.683	8121204.436		600
CT	446.642	332717.587	8121215.209	316°51'25"	



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A.	PRELIMINARY ISSUE	15/08/18	W.S.

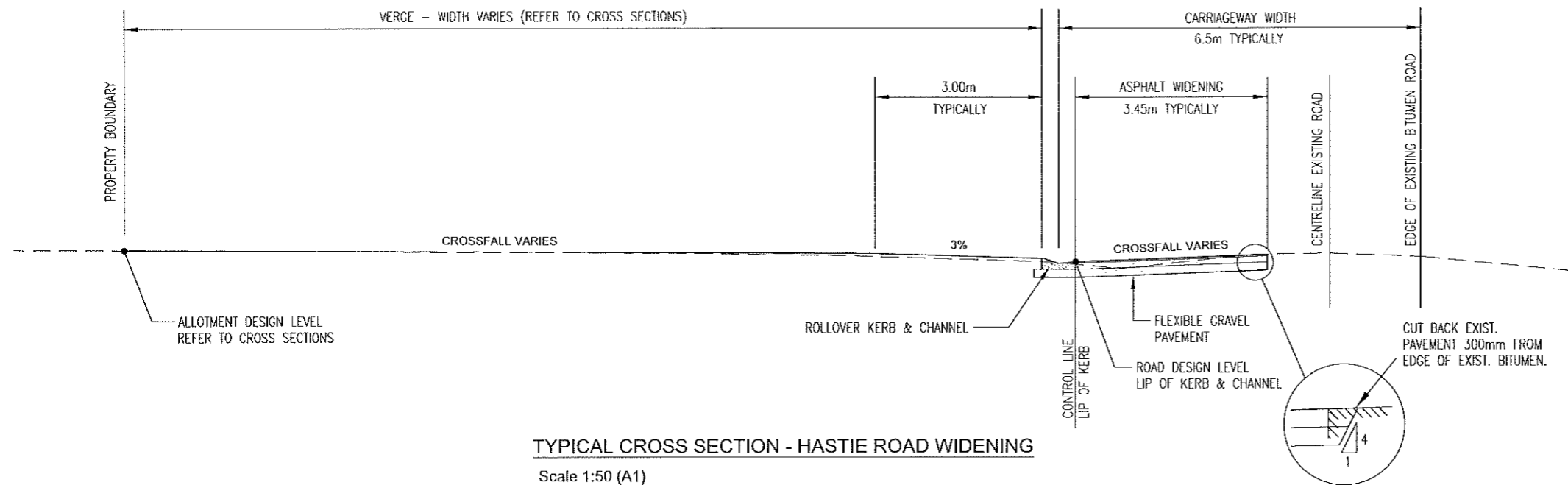
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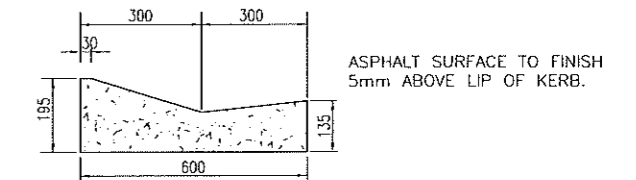
DATUM: PM187739  
 GDA94 ZONE 55  
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Client: **B. T. M. & S. STANKOVICH PTY LTD**  
 Project: **RURAL RESIDENTIAL SUBDIVISION OF LOT 1 ON RP735200**  
 Title: **LAYOUT PLAN**

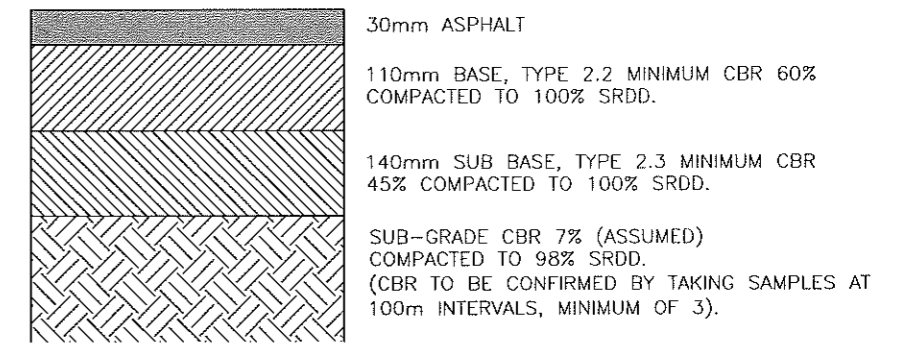
Plan No: <b>HR18-020-C05</b>	
Sheet No: <b>5/17</b>	Issue: <b>A</b>



TYPICAL CROSS SECTION - HASTIE ROAD WIDENING  
Scale 1:50 (A1)

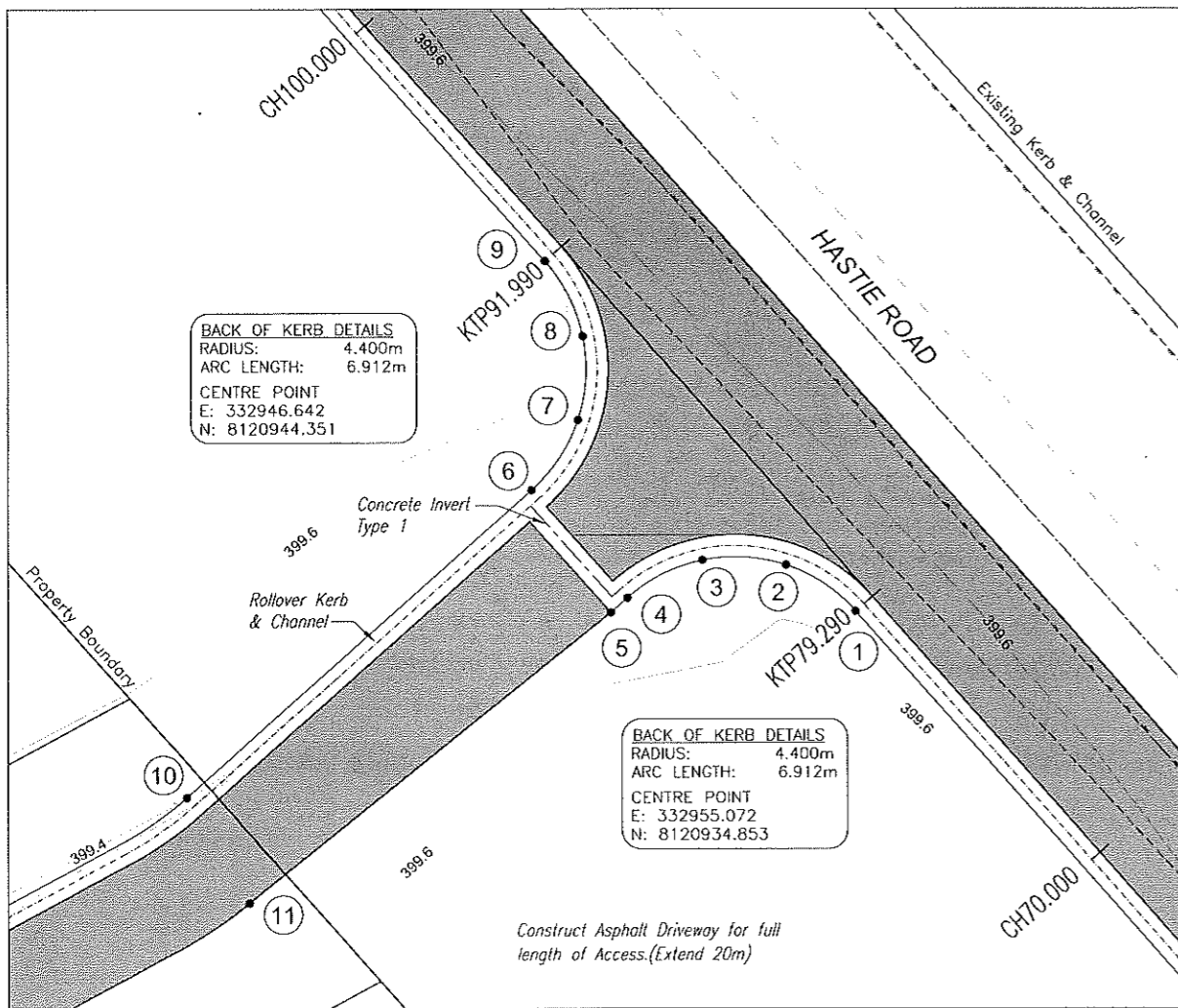


ROLLOVER KERB AND CHANNEL  
SCALE 1:10 (A1)



NOTE: SUBGRADE CBR RESULTS AND FINAL PAVEMENT DESIGN ARE TO BE SUBMITTED TO COUNCIL FOR APPROVAL PRIOR TO PLACEMENT OF GRAVEL.

PAVEMENT DETAIL  
N.T.S.



INTERSECTION DETAIL - ACCESS TO LOT 2  
Scale 1:100

BACK OF KERB SETOUT TABLE

POINT	EASTING	NORTHING	LEVEL
1	332958.363	8120937.774	399.570
2	332956.461	8120939.027	399.562
3	332954.188	8120939.163	399.554
4	332952.151	8120938.143	399.546
5	332951.703	8120937.745	399.486
6	332949.562	8120941.060	399.519
7	332950.816	8120942.961	399.549
8	332950.952	8120945.235	399.578
9	332949.932	8120947.272	399.608
10	332940.191	8120932.742	399.456
11	332941.907	8120929.873	399.464

- LEGEND
- 18 • BACK OF KERB SETOUT POINT AND POINT LABEL
  - KTP79.920 KERB TANGENT POINT
  - .....402.0 DESIGN CONTOURS WITH LABELS  
CONTOUR INTERVAL 0.20m

CHAINAGE	EXISTING SURFACE	CUT/FILL	DESIGN LINE GRADING
0	399.639	0.111	399.75
5	399.624	0.111	399.735
10	399.615	0.104	399.72
15	399.62	0.084	399.705
20	399.625	0.064	399.689
25	399.63	0.045	399.674
30	399.631	0.028	399.659
35	399.645	-0.001	399.644
40	399.66	-0.031	399.629
45	399.676	-0.052	399.614
50	399.691	-0.092	399.599
55	399.651	-0.068	399.584
60	399.612	-0.043	399.568
65	399.597	-0.044	399.553
70	399.584	-0.046	399.538
75	399.593	-0.07	399.523
79.28	399.602	-0.092	399.51
80	399.603	-0.09	399.512
85	399.606	-0.079	399.527
90	399.609	-0.067	399.542
91.99	399.611	-0.063	399.548
95	399.616	-0.059	399.557
100	399.629	-0.067	399.572
105	399.632	-0.045	399.587
110	399.635	-0.033	399.602
115	399.636	-0.019	399.617
120	399.631	0.001	399.632
125	399.627	0.02	399.647
130	399.614	0.048	399.662
135	399.614	0.063	399.677
140	399.64	0.052	399.692
145	399.657	0.05	399.707
150	399.672	0.045	399.717
152.679	399.68	0.038	399.718
155	399.679	0.038	399.717
160	399.649	0.059	399.708
165	399.619	0.069	399.688
170	399.591	0.068	399.659
175	399.621	-0.001	399.62
180	399.56	0.011	399.671
185	399.499	0.013	399.612
190	399.435	0.009	399.444
195	399.344	0.022	399.365
200	399.216	0.061	399.277
205	399.151	0.028	399.179
210	399.083	-0.011	399.071
215	398.982	-0.028	398.954
220	398.842	-0.011	398.831
225	398.685	0.023	398.708
230	398.523	0.062	398.586
235	398.362	0.089	398.461
240	398.2	0.131	398.331
245	398.04	0.157	398.197
250	397.887	0.171	398.058
255	397.735	0.18	397.915
260	397.565	0.202	397.767
265	397.415	0.199	397.614
270	397.245	0.212	397.457
275	397.062	0.233	397.295
280	396.881	0.247	397.128
285	396.706	0.251	396.957
290	396.532	0.249	396.781
285	396.344	0.259	396.603
300	396.145	0.28	396.425
305	396.005	0.248	396.252
310	395.842	0.247	396.089
315	395.678	0.259	395.937
320	395.514	0.28	395.794
325	395.416	0.245	395.662
330	395.308	0.232	395.54
335	395.199	0.228	395.428
340	395.091	0.235	395.326
345	395.005	0.23	395.235
350	394.929	0.224	395.154

HASTIE ROAD - LONGITUDINAL SECTION - LIP OF KERB

Horz Scale 1:500  
Vert Scale 1:50

CHAINAGE	EXISTING SURFACE	CUT/FILL	DESIGN LINE GRADING
325	395.416	0.245	395.662
330	395.308	0.232	395.54
335	395.199	0.228	395.428
340	395.091	0.235	395.326
345	395.005	0.23	395.235
350	394.929	0.224	395.154
355	394.854	0.229	395.082
360	394.778	0.243	395.022
365	394.732	0.239	394.971
370	394.728	0.202	394.93
375	394.73	0.17	394.9
380	394.731	0.149	394.88
385	394.733	0.132	394.865
390	394.766	0.084	394.85
395	394.797	0.038	394.835
400	394.756	0.064	394.82
405	394.722	0.083	394.805
410	394.708	0.082	394.79
415	394.685	0.09	394.775
417.117	394.675	0.083	394.769
420	394.653	0.097	394.76
425	394.648	0.097	394.745
430	394.624	0.106	394.73
435	394.645	0.07	394.715
440	394.672	0.028	394.7
445	394.704	-0.019	394.685
446.647	394.718	-0.038	394.68

HASTIE ROAD - LONGITUDINAL SECTION - LIP OF KERB

Horz Scale 1:500  
Vert Scale 1:50

Ref.	Revision Notes	Date	Sign
A.	PRELIMINARY ISSUE	24/08/18	W.S.
DRAWN W.S.   CHECKED W.S.		APPROVED	
CAD FILE: HR18-020 OPERATIONAL WORKS.DWG		DATE: 24/08/18	

**BENCHMARK SURVEY & DESIGN**

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E: highdodd@westnet.com.au - M: 0447 616 747

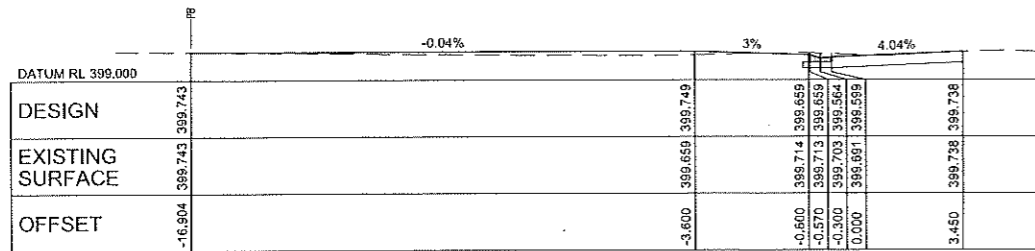
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DATUM: PM187739  
GDA94 ZONE 55  
AUSTRALIAN HEIGHT DATUM (AHD)

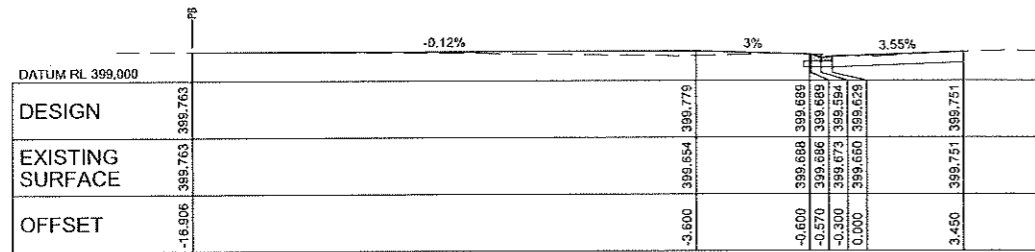
Scale 1:500 (A1)

Client: B. T. M. & S. STANKOVICH PTY LTD  
Project: RURAL RESIDENTIAL SUBDIVISION OF LOT 1 ON RP735200  
Title: HASTIE ROAD WIDENING - LONGITUDINAL SECTION

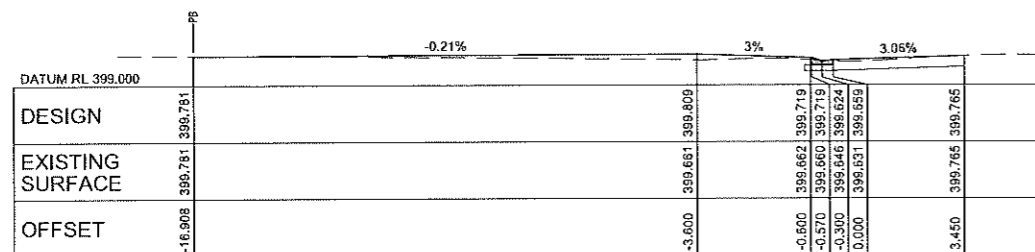
Plan No:	HR18-020-C07
Sheet No:	7/17
Issue:	A



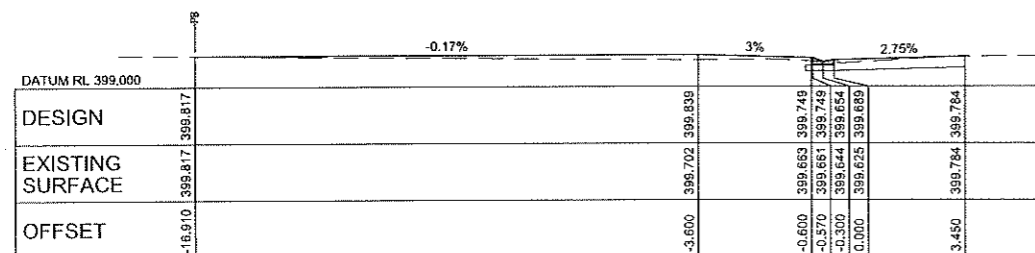
CHAINAGE 50



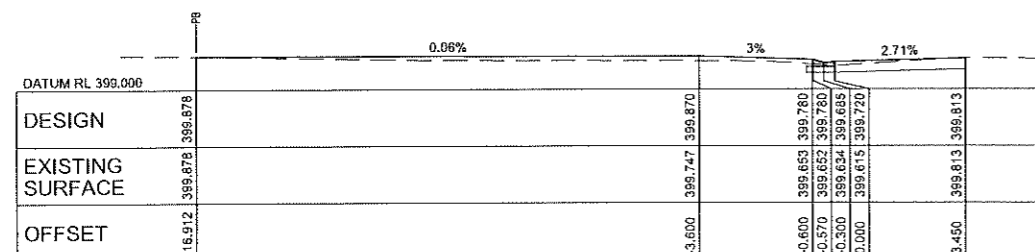
CHAINAGE 40



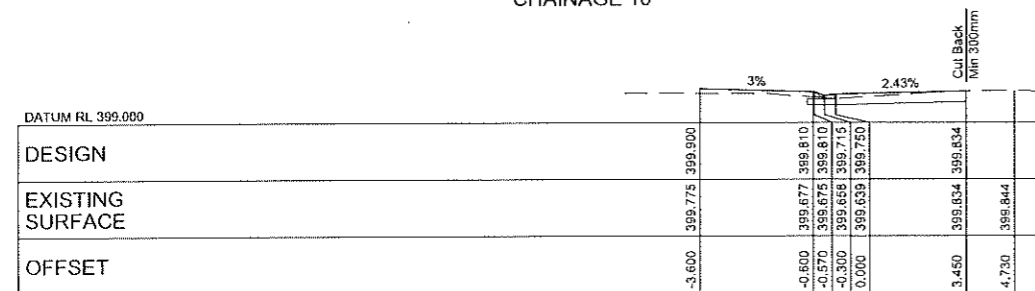
CHAINAGE 30



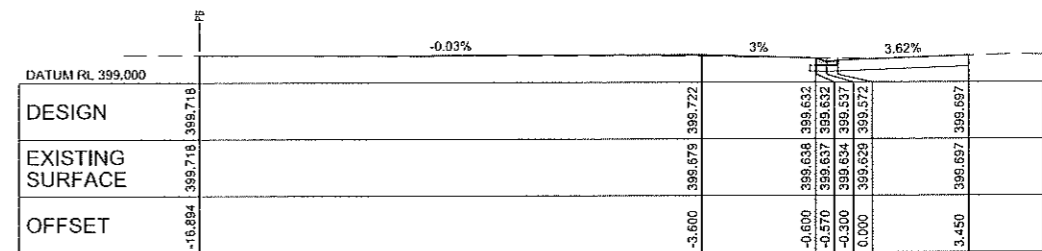
CHAINAGE 20



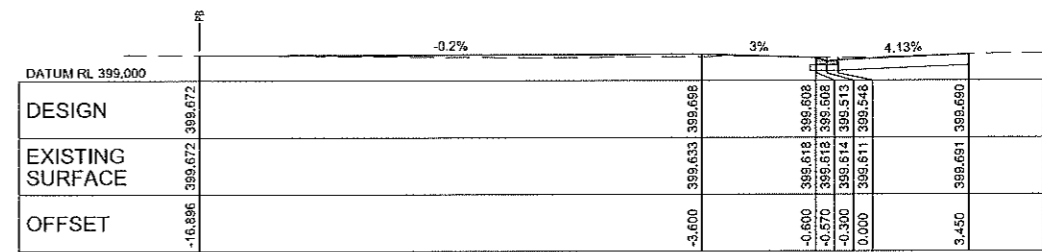
CHAINAGE 10



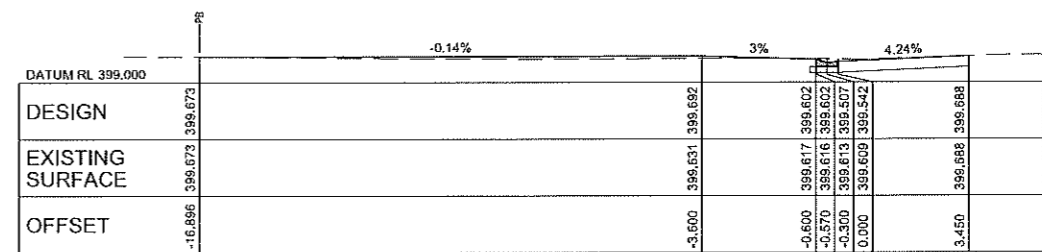
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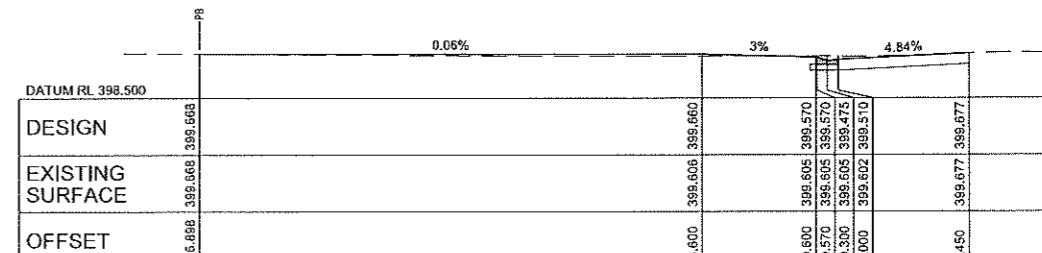
CHAINAGE 100



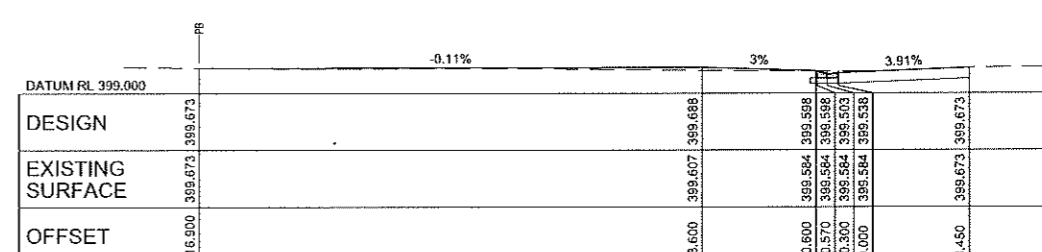
CHAINAGE 91.99



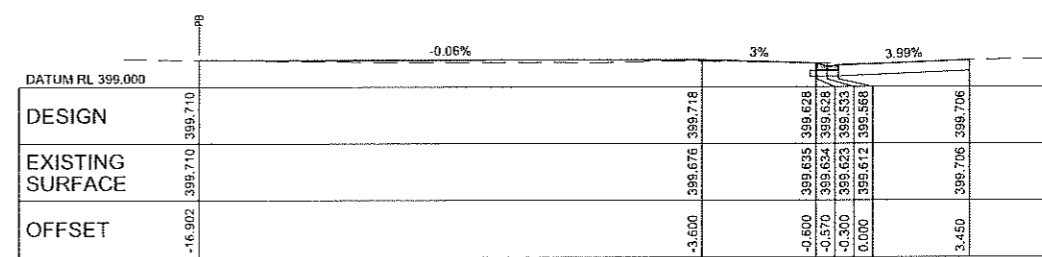
CHAINAGE 90



CHAINAGE 79.29



CHAINAGE 70



CHAINAGE 60

HASTIE ROAD WIDENING - CROSS SECTIONS

Scale 1:100

Ref	Revision Notes	Date	Sign
A.	PRELIMINARY ISSUE	24/08/18	W.S.
DRAWN W.S. CHECKED W.S.		APPROVED	
CAD FILE: HR18-020 OPERATIONAL WORKS.DWG		DATE: 24/08/18	

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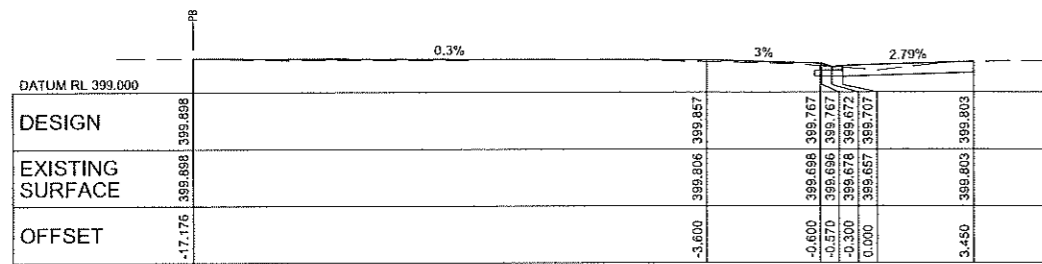
DATUM: PM187739  
 GDA94 ZONE 55  
 AUSTRALIAN HEIGHT DATUM (AHD)

Scale 1:100 (A1)

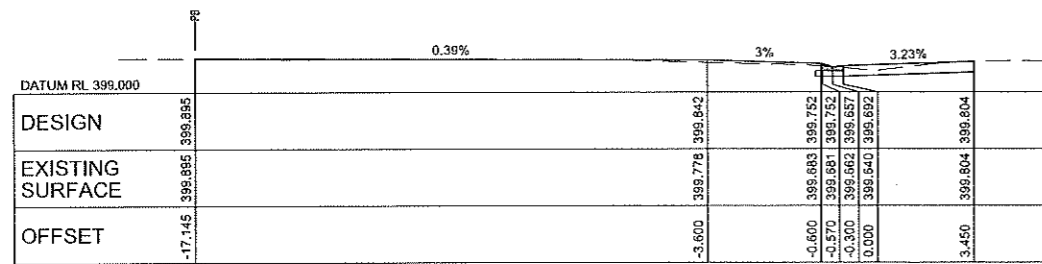
Client: B. T. M. & S. STANKOVICH PTY LTD  
 Project: RURAL RESIDENTIAL SUBDIVISION of LOT 1 on RP735200 - HASTIE ROAD  
 Title: HASTIE ROAD WIDENING - CROSS SECTIONS CH 00 to CH 100

Plan No:	HR18-020-C08
Sheet No:	8/17
Issue:	A

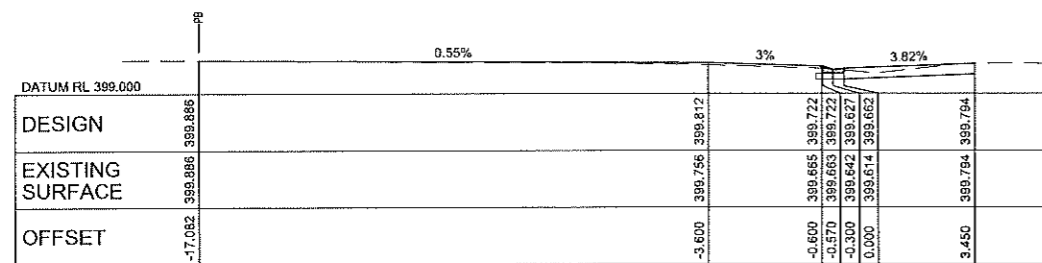




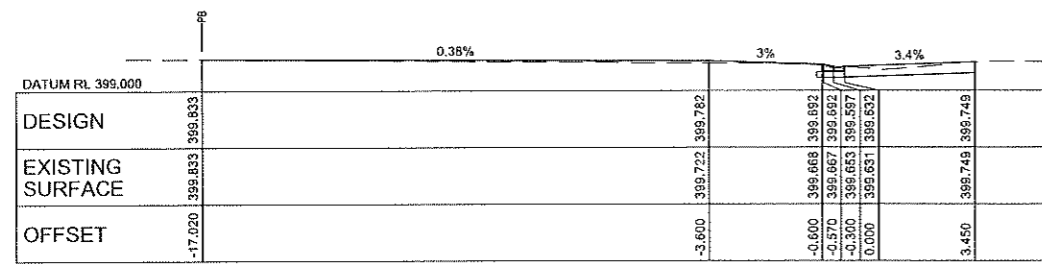
CHAINAGE 145



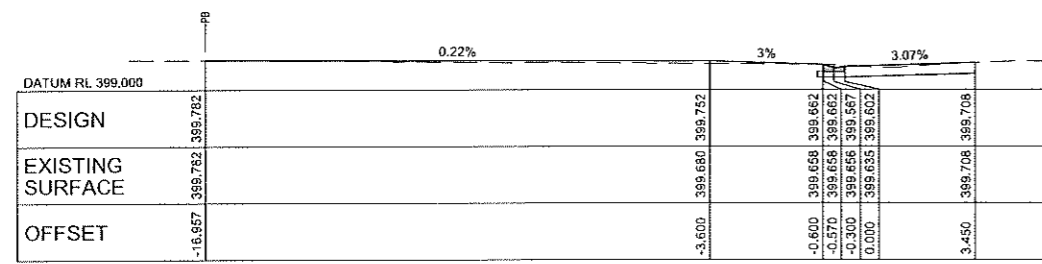
CHAINAGE 140



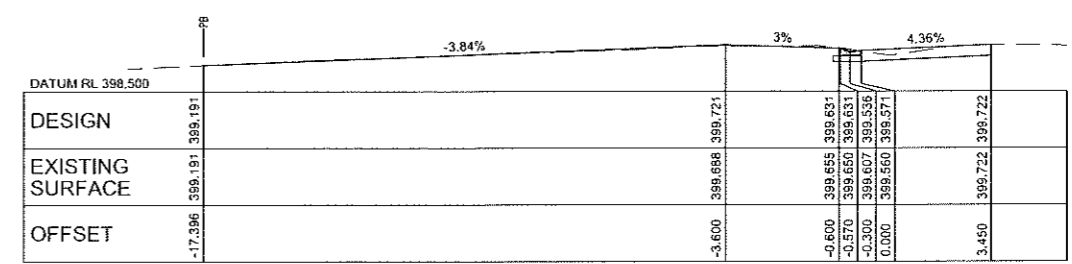
CHAINAGE 130



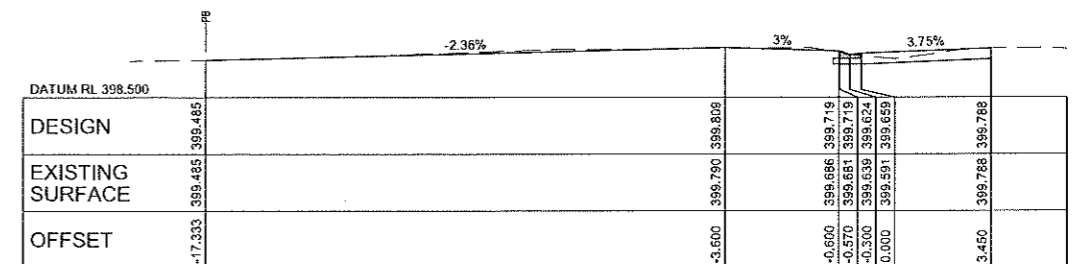
CHAINAGE 120



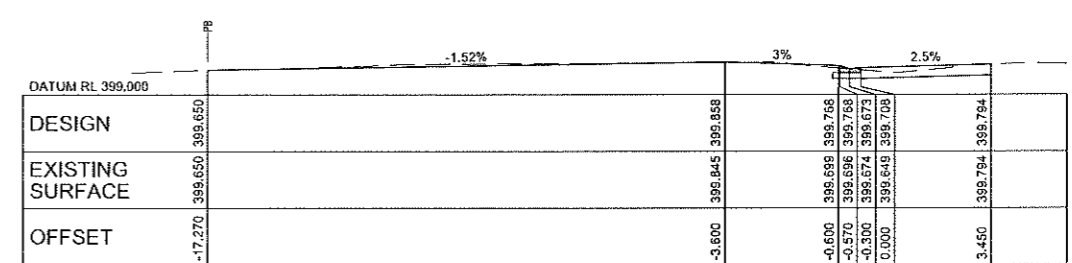
CHAINAGE 110



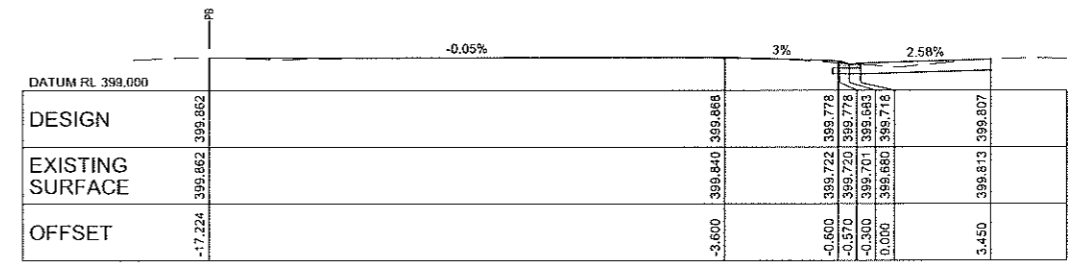
CHAINAGE 180



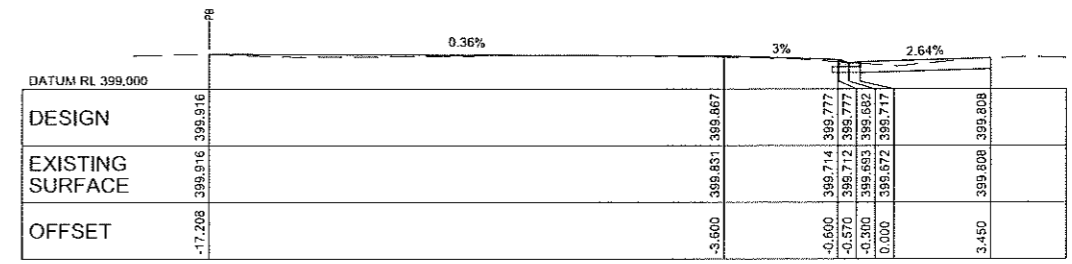
CHAINAGE 170



CHAINAGE 160



CHAINAGE 152.629



CHAINAGE 150

HASTIE ROAD WIDENING - CROSS SECTIONS

Scale 1:100

Ref:	Revision Notes	Date	Sign
A:	PRELIMINARY ISSUE	15/08/18	W.S.
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CAD FILE: HR18-020 OPERATIONAL WORKS.DWG		DATE: 15/08/18	

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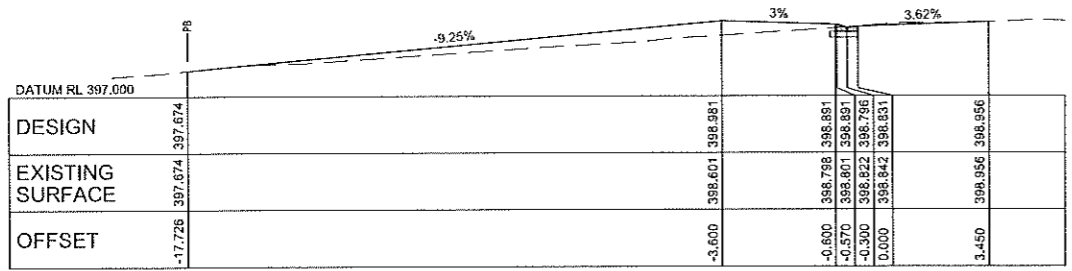
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DATUM: PM187739  
 GDA94 ZONE 55  
 AUSTRALIAN HEIGHT DATUM (AHD)

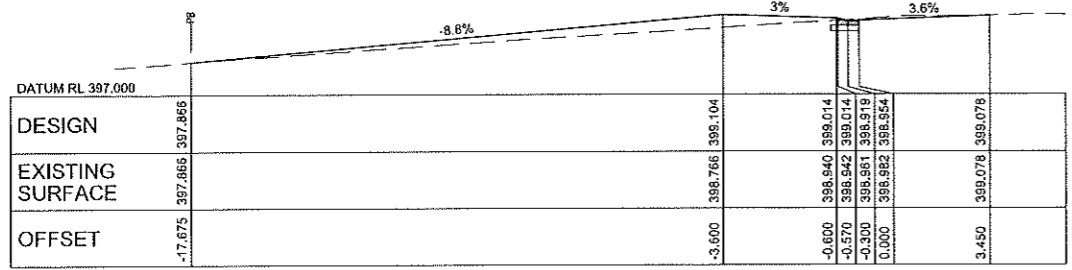
Scale 1:100 (A1)

Client: B. T. M. & S. STANKOVICH PTY LTD  
 Project: RURAL RESIDENTIAL SUBDIVISION of LOT 1 on RP735200 - HASTIE ROAD  
 Title: HASTIE ROAD WIDENING - CROSS SECTIONS CH 110 to CH 180

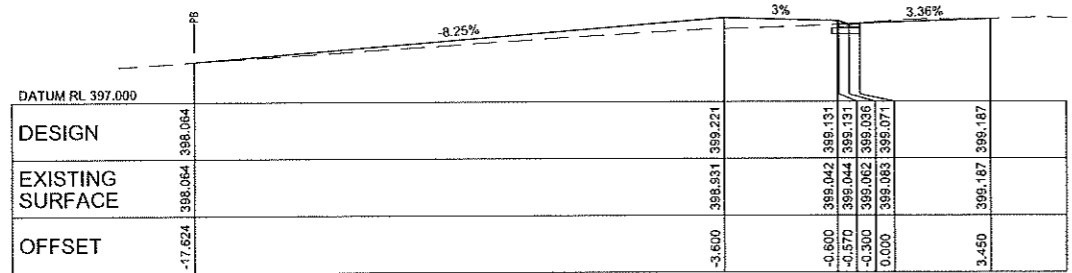
Plan No:	HR18-020-C09
Sheet No:	9/17
Issue:	A



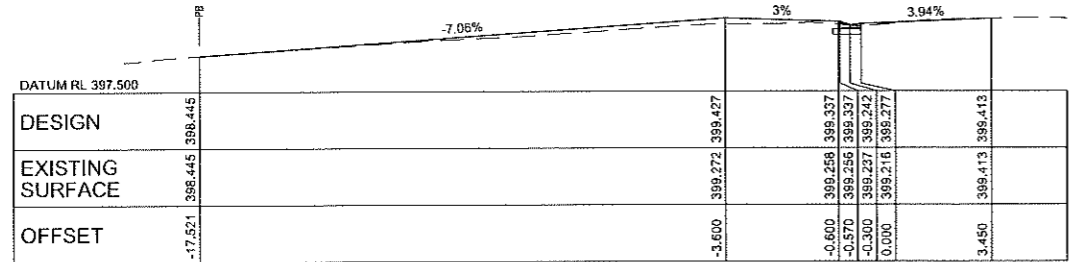
CHAINAGE 220



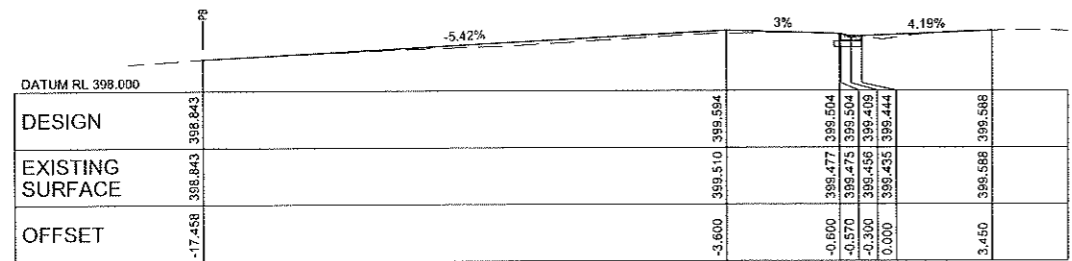
CHAINAGE 215



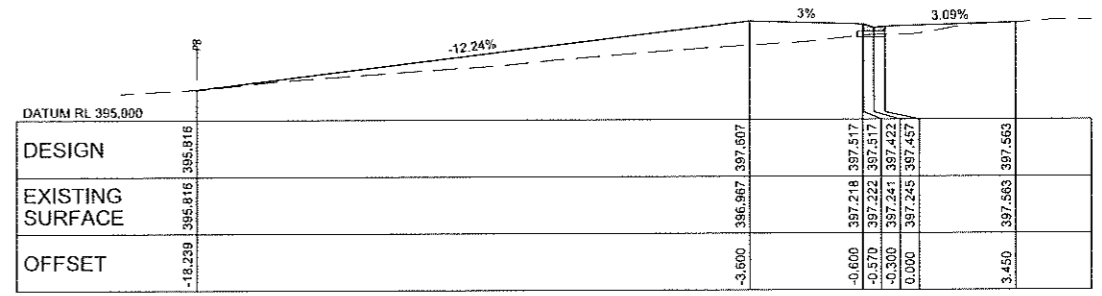
CHAINAGE 210



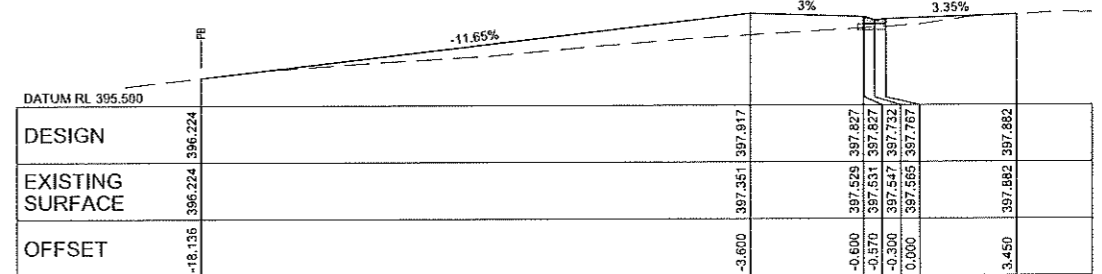
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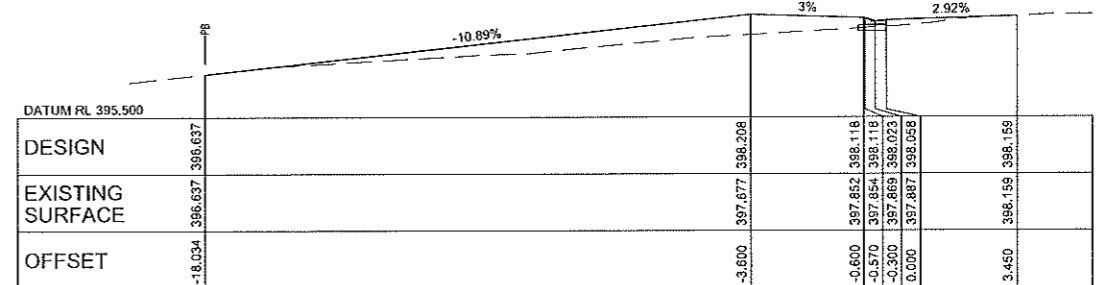
CHAINAGE 190



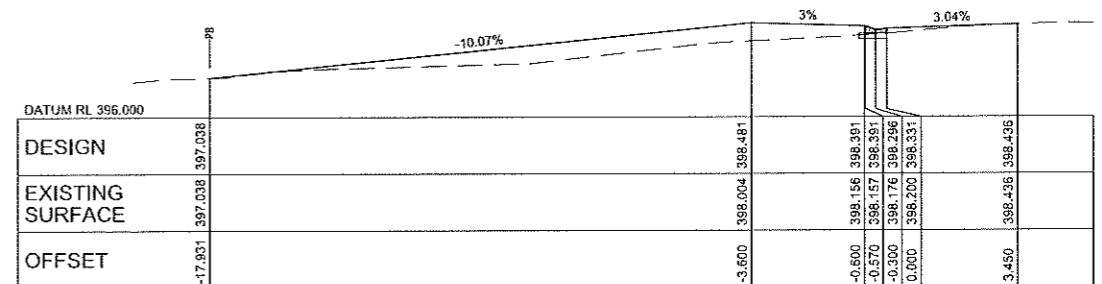
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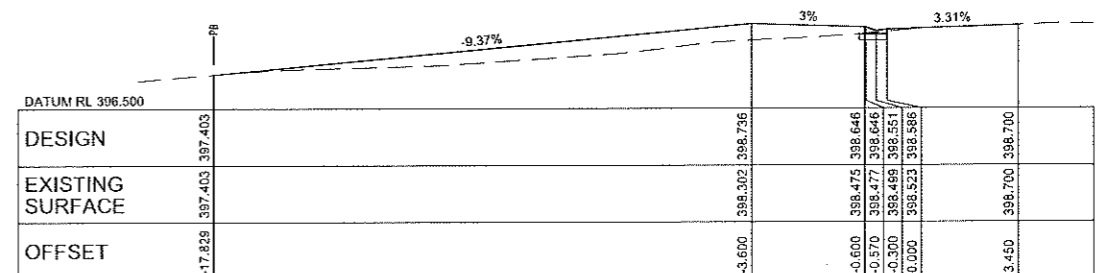
CHAINAGE 260



CHAINAGE 250



CHAINAGE 240



CHAINAGE 230

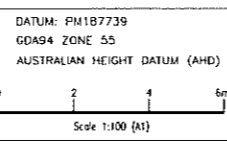
HASTIE ROAD WIDENING - CROSS SECTIONS

Scale 1:100

Ref.	Revision Notes	Date	Sign.
A.	PRELIMINARY ISSUE	15/08/18	W.S.
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CAD FILE: HR18-020 OPERATIONAL WORKS.DWG		DATE: 15/08/18	

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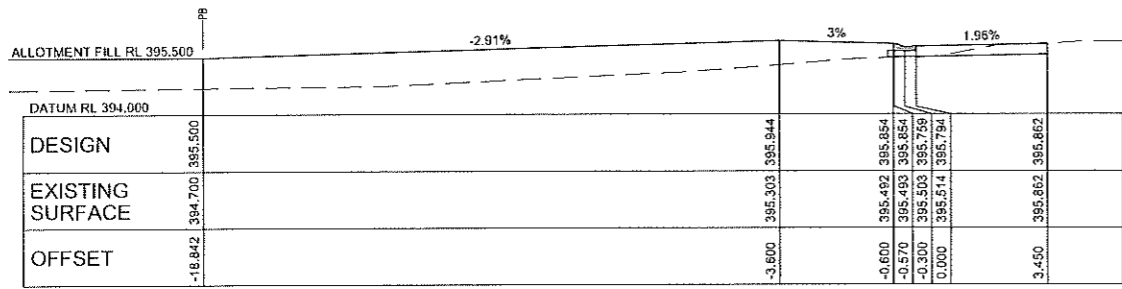
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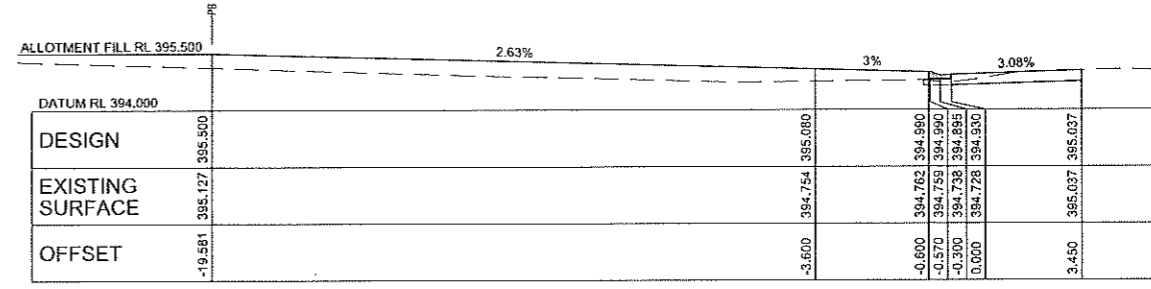
DATUM: PM187739  
 GDA94 ZONE 55  
 AUSTRALIAN HEIGHT DATUM (AHD)

Client: B. T. M. & S. STANKOVICH PTY LTD  
 Project: RURAL RESIDENTIAL SUBDIVISION of LOT 1 on RP735200 - HASTIE ROAD  
 Title: HASTIE ROAD WIDENING - CROSS SECTIONS CH 190 to CH 270

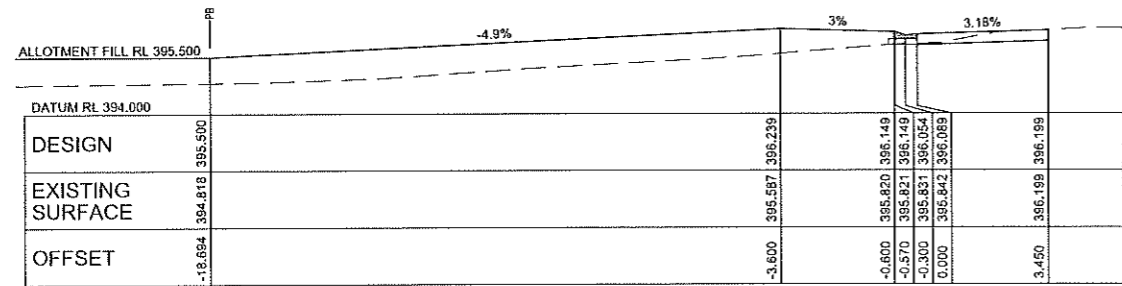
Plan No:	HR18-020-C10
Sheet No.:	10/17
Issue:	A



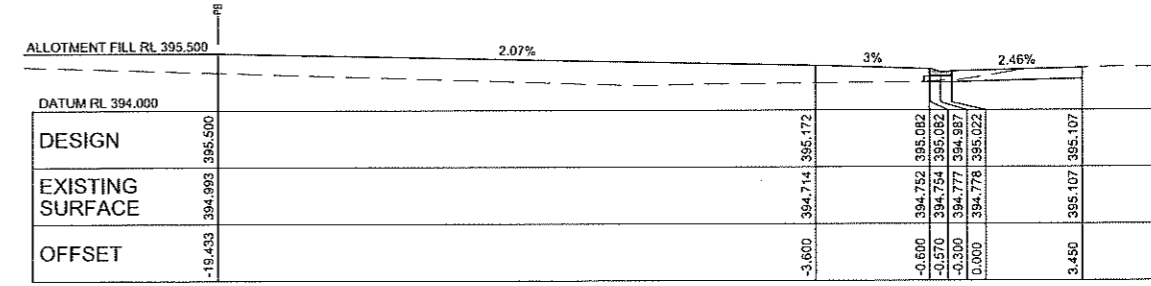
CHAINAGE 320



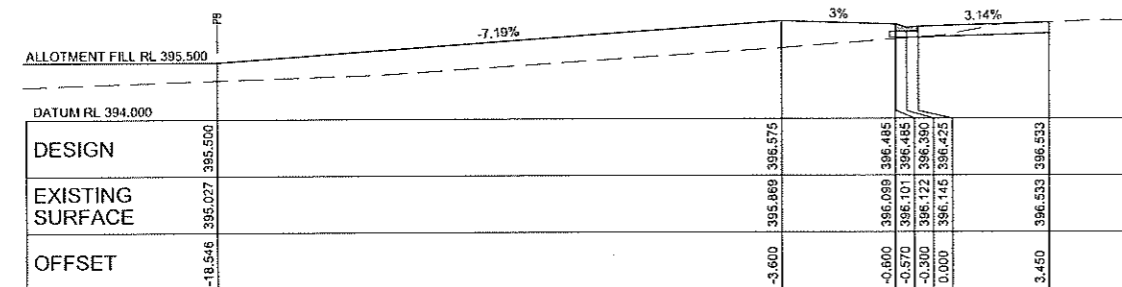
CHAINAGE 370



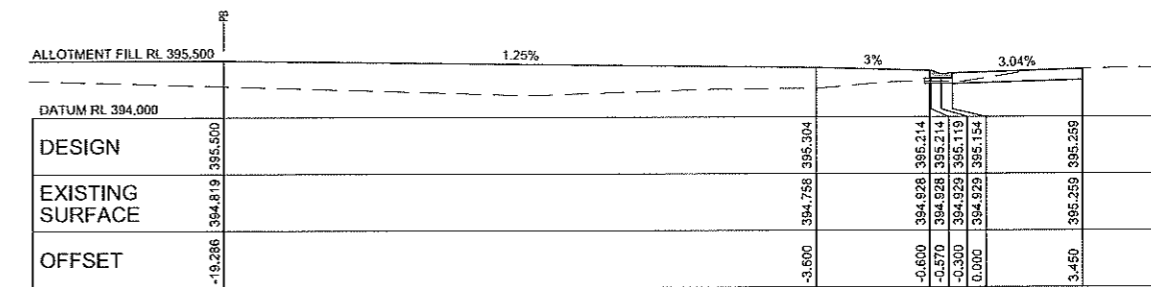
CHAINAGE 310



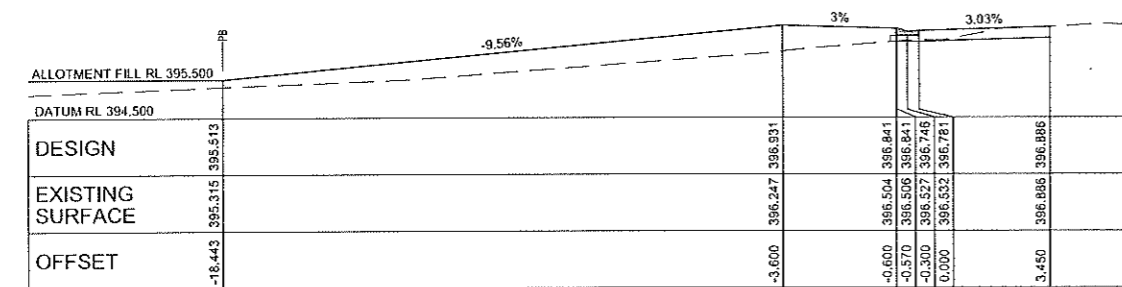
CHAINAGE 360



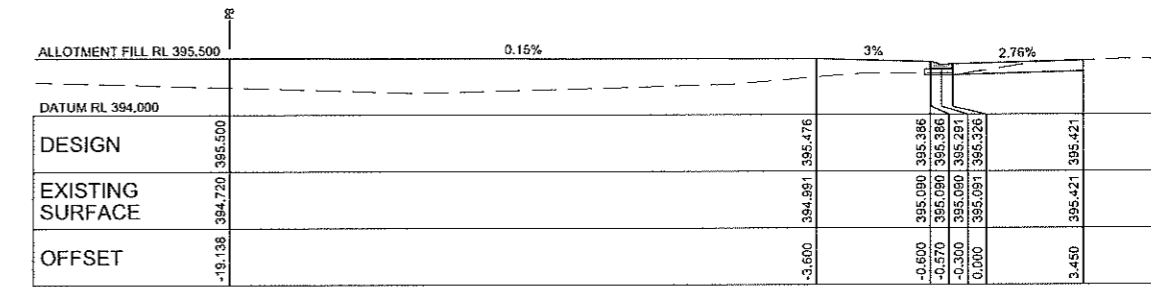
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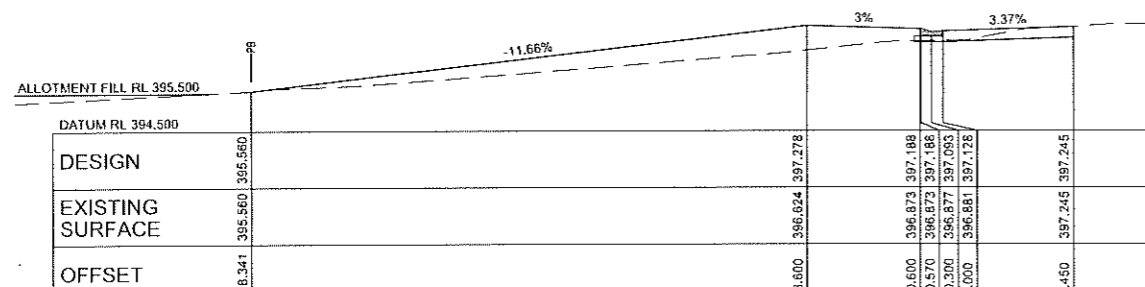
CHAINAGE 350



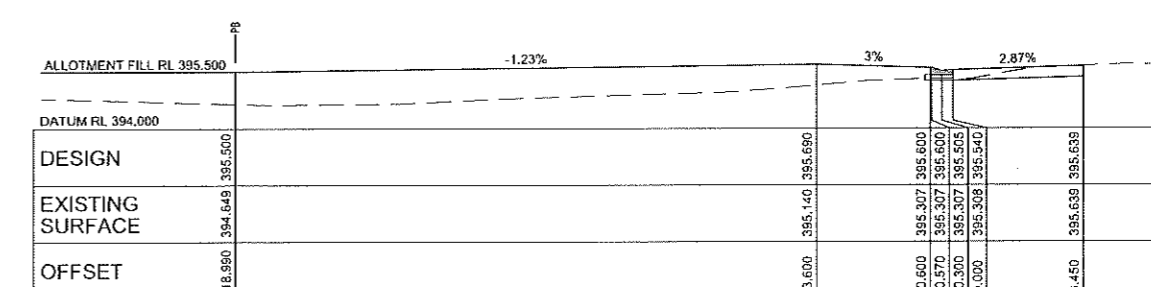
CHAINAGE 290



CHAINAGE 340



CHAINAGE 280



CHAINAGE 330

HASTIE ROAD WIDENING - CROSS SECTIONS

Scale 1:100

Ref	Revision Notes	Date	Sign
A	PRELIMINARY ISSUE	15/08/18	W.S.
DRAWN W.S. CHECKED W.S.		APPROVED	
CAD FILE: HR18-020 OPERATIONAL WORKS.DWG		DATE: 15/08/18	

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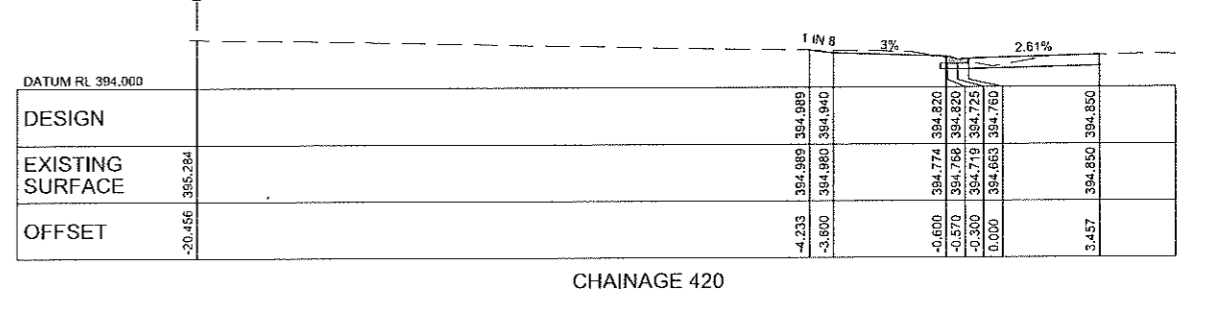
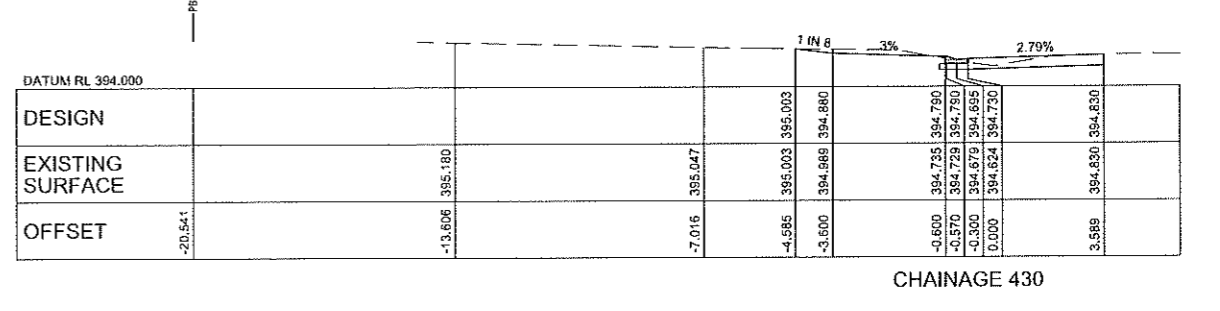
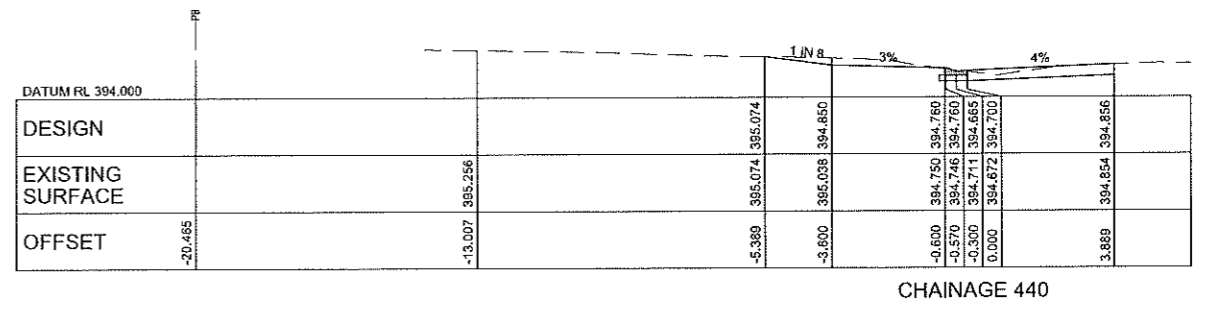
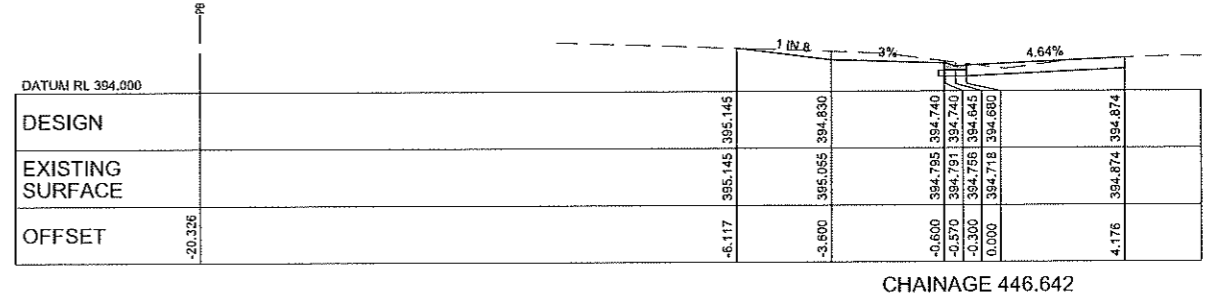
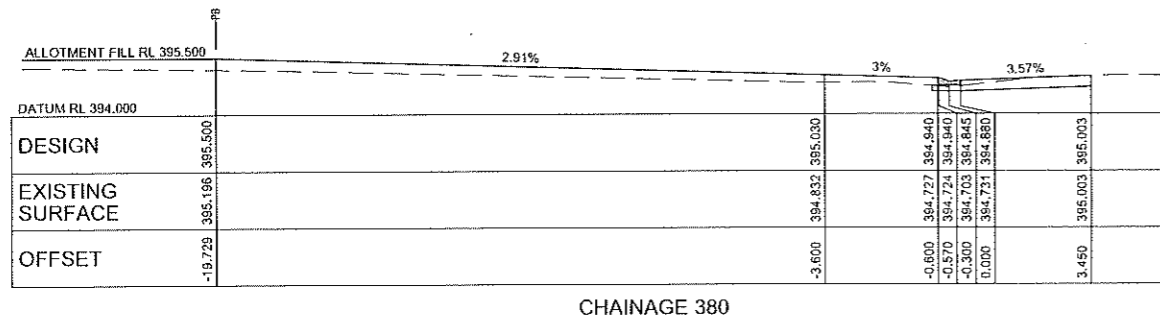
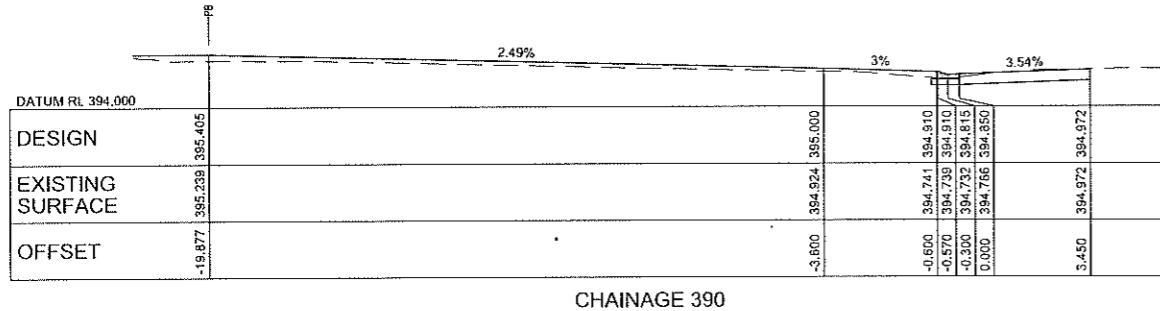
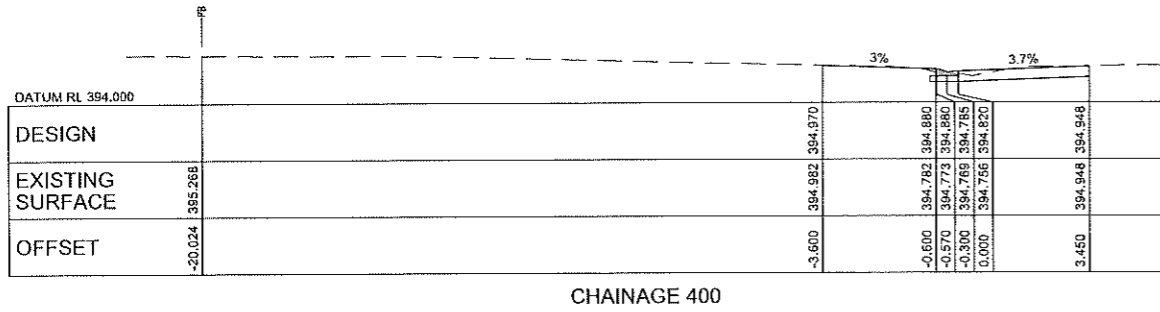
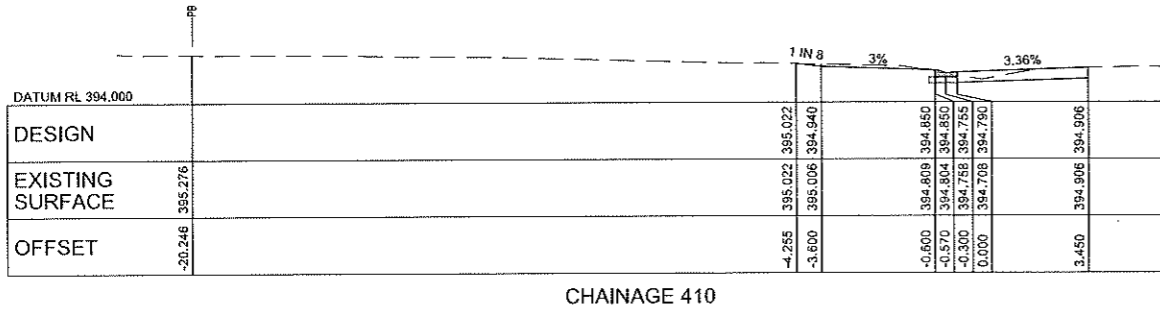
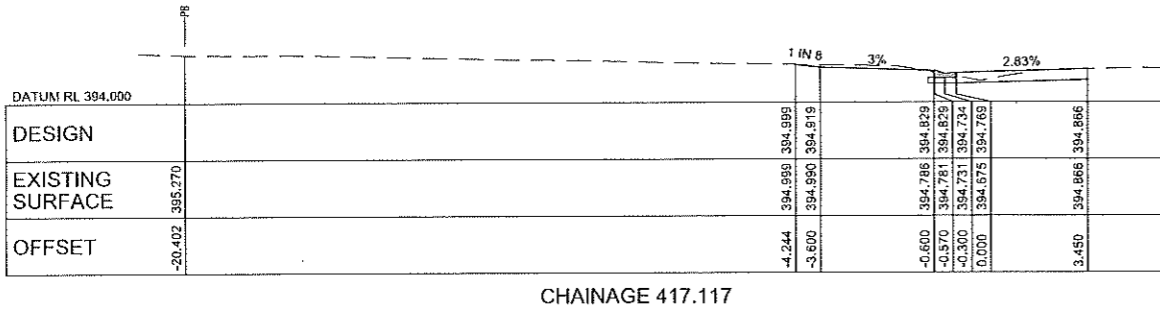
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DATUM: PM187739  
 GDA94 ZONE 55  
 AUSTRALIAN HEIGHT DATUM (AHD)

Scale 1:100 (A1)

Client: B. T. M. & S. STANKOVICH PTY LTD  
 Project: RURAL RESIDENTIAL SUBDIVISION of LOT 1 on RP735200 - HASTIE ROAD  
 Title: HASTIE ROAD WIDENING - CROSS SECTIONS CH 280 to CH 370

Plan No:	HR18-020-C11
Sheet No:	11/17
Issue:	A



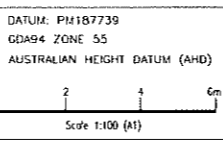
### HASTIE ROAD WIDENING - CROSS SECTIONS

Scale 1:100

Ref	Revision Notes	Date	Sign
A.	PRELIMINARY ISSUE	15/08/18	W.S.
DRAWN W.S.   CHECKED W.S.		APPROVED	
CAD FILE: HR18-020 OPERATIONAL WORKS.DWG		DATE: 15/08/18	

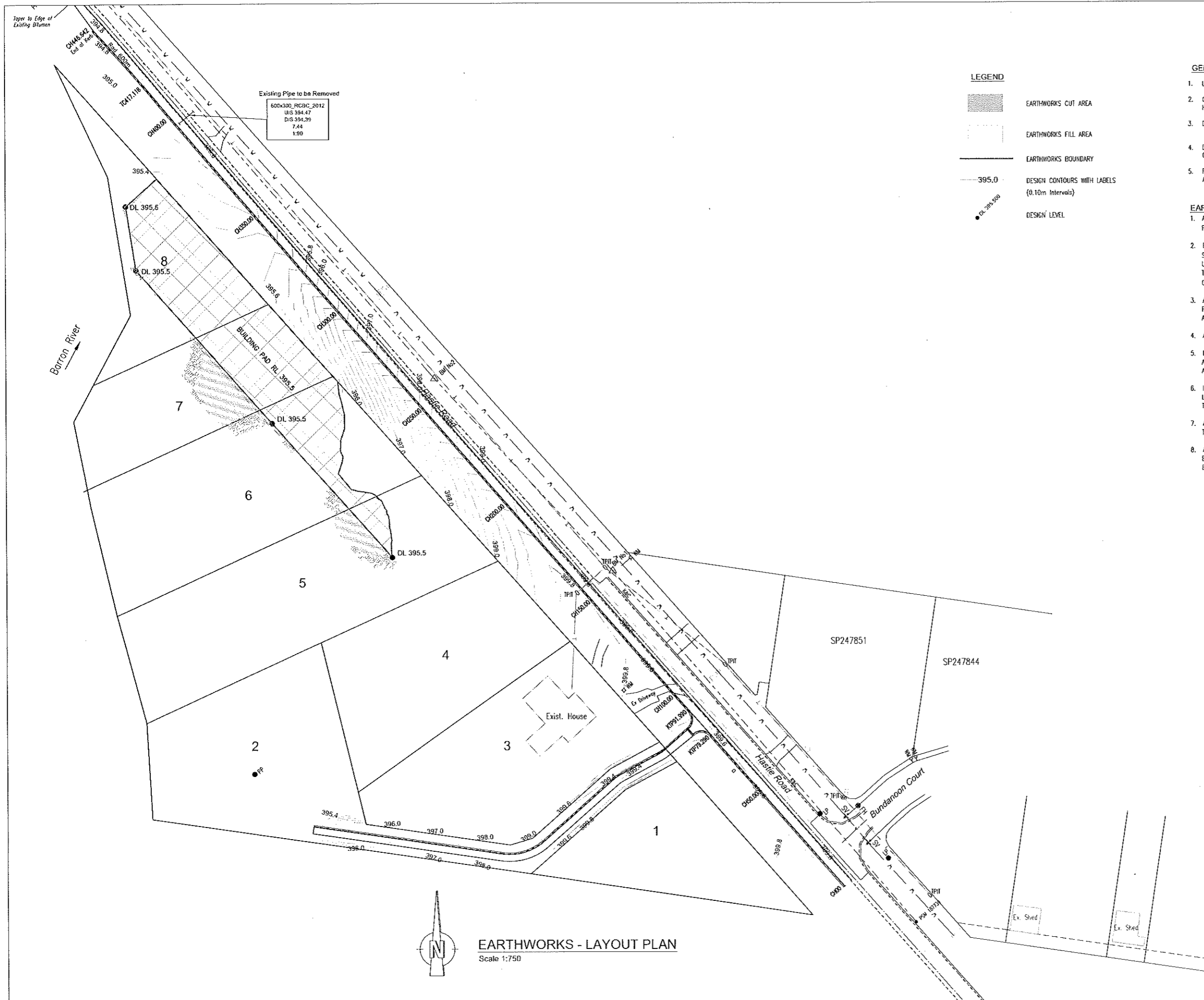
**BENCHMARK SURVEY & DESIGN**  
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**Client:** B. T. M. & S. STANKOVICH PTY LTD  
**Project:** RURAL RESIDENTIAL SUBDIVISION of LOT 1 on RP735200 - HASTIE ROAD  
**Title:** HASTIE ROAD WIDENING - CROSS SECTIONS CH 280 to CH 370

Plan No:	HR18-020-C12	
Sheet No:	12/17	Issue: A

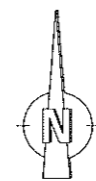


- LEGEND**
- EARTHWORKS CUT AREA
  - EARTHWORKS FILL AREA
  - EARTHWORKS BOUNDARY
  - DESIGN CONTOURS WITH LABELS (0.10m Intervals)
  - DESIGN LEVEL

- GENERAL NOTES**
1. LEVEL DATUM: AHD
  2. ORIGIN OF LEVELS: PSM187739; RL 399.773  
HASTIE ROAD. E 333039.516; N 8120864.768
  3. DESIGN SURFACE CONTOUR INTERVAL: 0.20m  
INDEXED: 1.00m
  4. DETAILS OF EXISTING SERVICES ARE PROVIDED FOR INFORMATION ONLY AND THE CONTRACTOR IS TO LOCATE ALL SERVICES PRIOR TO COMMENCEMENT OF WORK.
  5. REFER TO FNQROC SPECIFICATIONS AND DRAWINGS FOR EARTHWORKS, ROADWORKS, WATER AND STORMWATER DRAINAGE.
- EARTHWORKS NOTES**
1. ALL EARTHWORKS SHALL BE IN ACCORDANCE WITH AS3798 "GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS" AND FNQROC STANDARD SPECIFICATIONS.
  2. EARTHWORKS TO BE LEVEL TWO CONTROLLED FILL. COMPACTION TESTING IS TO COMPLY WITH SECTION 5 OF "GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS" UNLESS NOTED OTHERWISE. FILL LAYERS SHALL NOT EXCEED 200mm DEPTH AND COMPACTED TO 95% STANDARD COMPACTION. COMPACTION TESTS TO BE CARRIED OUT AT 1 TEST PER 200m<sup>2</sup> OR 1 PER 1000m<sup>3</sup> PER LAYER, WHICHEVER GIVES GREATER NUMBER OF TESTS.
  3. ALL DISTURBED AREAS ARE TO BE TOPSOILED AND DRILL SEEDING IN ACCORDANCE WITH THE FNQROC STANDARD SPECIFICATIONS, WITH EXCEPTION OF BATTERS STEEPER THAN 1 IN 4 THAT ARE TO BE TOPSOILED AND HYDROMULCHED.
  4. ALL CUT & FILL BATTERS ARE TO BE 1 IN 2 OR FLATTER.
  5. DUST SUPPRESSION MEASURES MUST BE UNDERTAKEN TO ENSURE THAT DUST DOES NOT CAUSE A NUISANCE TO SURROUNDING AREAS AND RESIDENTS. SUCH MEASURES MUST BE SUBMITTED AS PART OF THE SEDIMENT CONTROL PLAN.
  6. IF ANY DUST OR MUD IS BLOTTED ONTO THE ROAD PAVEMENT FROM WORKS ON THE SUBJECT LAND, IT MUST BE PROPERLY CLEANED AWAY TO ELIMINATE MUD OR DUST NUISANCE NO LATER THAN AT THE END OF EACH WORKING DAY.
  7. ALLOTMENTS SHALL BE PROVIDED WITH A MINIMUM FINISHED SURFACE GRADIENT OF 0.5%, TO FACILITATE DRAINAGE.
  8. ALL EMBANKMENTS AND CUTTINGS MUST BE OUTSIDE THE ROAD RESERVE. THE TOE OF ANY CUT BATTER IS TO BE 300mm INSIDE THE PROPERTY BOUNDARY; THE TOP OF ANY FILL BATTER IS TO BE 300mm INSIDE THE PROPERTY BOUNDARY.



**PRELIMINARY ISSUE**



**EARTHWORKS - LAYOUT PLAN**  
Scale 1:750

Ref.	Revision Notes	Date	Sign		<p><b>Conditions of Use:</b> This document may only be used by Benchmark Survey &amp; Design's client for the purpose for which it was prepared and must not be used by any other person or for any other purpose unless approved by Benchmark Survey &amp; Design.</p>	<p>DATUM: PM187739 GDA94 ZONE 55 AUSTRALIAN HEIGHT DATUM (AHD)</p> <p>Scale 1:750 (A1)</p>	<p>Client: <b>B. T. M. &amp; S. STANKOVICH PTY LTD</b> Project: <b>RURAL RESIDENTIAL SUBDIVISION OF LOT 1 ON RP735200</b> Title: <b>EARTHWORKS - LAYOUT PLAN</b></p>	Plan No:	HR18-020-C13	
A.	PRELIMINARY ISSUE	15/08/18	W.S.					2 Cullinane Close, Innisfail, QLD 4860 E: highdadd@westnet.com.au - M: 0447 616 747	Sheet No.	13/17
DRAWN W.S.   CHECKED W.S.		APPROVED DATE: 15/08/18								
CAD FILE: HR18-020 OPERATIONAL WORKS.DWG										

SEWER STRUCTURE SETOUT				
No.	EASTING	NORTHING	LEVEL	DESCRIPTION
1/12	333073.815	8120857.424	Top RL 399.84	Manhole
2/12	332978.637	8120888.100	Top RL 399.85	Manhole
3/12	332937.831	8120934.082	Top RL 399.60	Discharge Manhole
4/12	332901.791	8120974.718	Top RL 399.95	Discharge Manhole

CONTROL STATIONS			
Point	Easting	Northing	Elevation
PSM 187739	333039.516	8120864.768	399.773
BM No 1	332920.474	8121002.633	399.563
BM No 2	332850.967	8121078.109	398.366
BM No 3	332711.896	8121238.654	394.774

**FNQROC DRAWINGS**

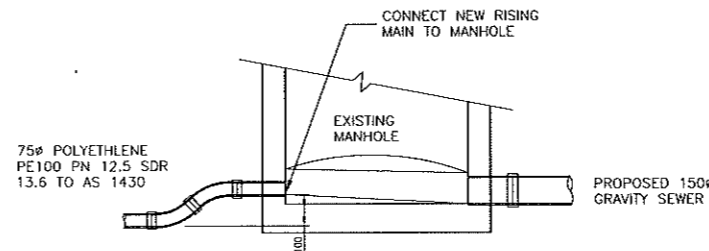
- S3000C SEWERAGE MANHOLES
- S3005D PROPERTY CONNECTION BRANCHES
- S3015C BEDDING AND TRENCHING DETAILS

**LEGEND**

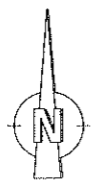
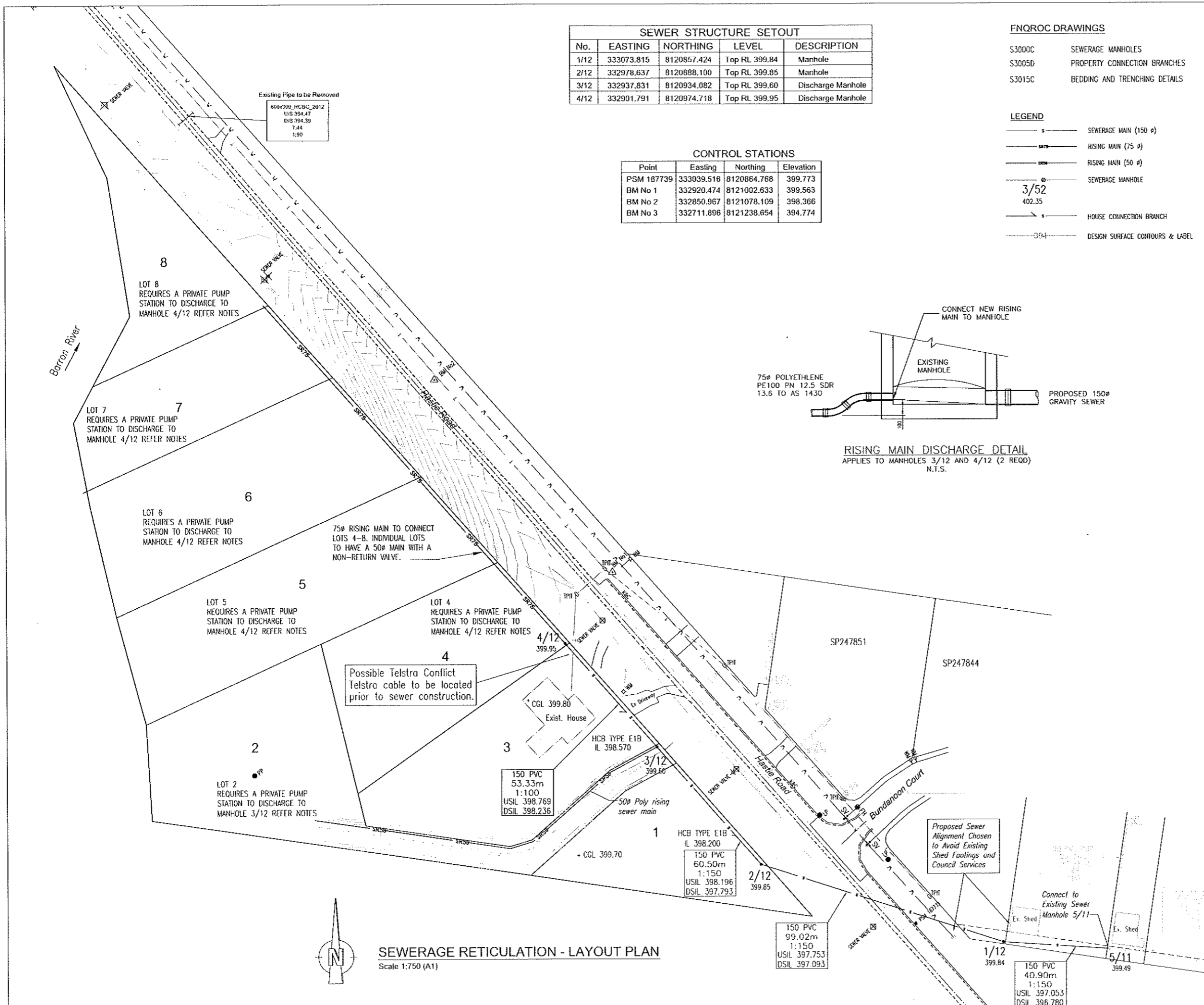
- SEWERAGE MAIN (150 ø)
- RISING MAIN (75 ø)
- RISING MAIN (50 ø)
- SEWERAGE MANHOLE
- HOUSE CONNECTION BRANCH
- DESIGN SURFACE CONTOURS & LABEL

**SEWER NOTES**

1. ALL SEWERS Ø150 uPVC CLASS SEH U.N.O. SEWER MANHOLES ARE TO BE LOCATED 1.5m FROM FRONT BOUNDARIES TO CENTRE OF MANHOLE AND 0.8m FROM SIDE AND REAR BOUNDARIES TO CENTRE OF MANHOLE U.N.O.
2. REFER TO FNQROC STANDARD DRAWINGS S3000 TO S3015 FOR SEWER CONSTRUCTION DETAILS. REFER DRAWINGS
3. REFER DWG HR18-020-C15 FOR SEWER LONGITUDINAL SECTION.
4. THE CONTRACTOR IS TO CONFIRM THE LOCATIONS AND LEVELS OF EXISTING SERVICES PRIOR TO CONSTRUCTION COMMENCING.
5. CONNECTIONS TO EXISTING WATER & SEWER MAINS TO BE UNDERTAKEN OR SUPERVISED BY MAREEBA SHIRE COUNCIL.
6. ENSURE MIN. 150mm CLEARANCE BETWEEN ALL SERVICES AND STORMWATER STRUCTURES.
7. SEWER TO HAVE MINIMUM 800mm COVER UNDER ROADS AND 600mm ELSEWHERE.
8. ALL MANHOLES ARE TO FINISH 50mm ABOVE FINISHED DESIGN SURFACE LEVEL.
9. ALL TYPE E1B HCB'S TO BE FABRICATED FIBREGLASS, HEAVY DUTY, DEEP SEWER DROPS.
10. BRING ALL HCB'S TO SURFACE WITH A VERTICAL RISER FITTED WITH A BOLTED TRAP SCREW & CONCRETE SURROUND.
11. INSTALL A RED PAINTED STAR PICKET ADJACENT TO RISER, 1m HIGH.
12. MANHOLE COVERS ARE TO BE GAS TIGHT.
13. MANHOLE COVERS ARE TO BE LOCATED SUCH THAT THE POSITION OF THE ACCESS IS DIRECTLY OVER THE OUTLET PIPE.
14. THE INSTALLATION OF PRECAST MANHOLE COVERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS' RECOMMENDED PROCEDURES AND REQUIREMENTS.
15. WHERE MANHOLES OCCUR AT THE ENDS OF SEWER LINES, THE STUB FOR THAT END ALLOTMENT SHALL CONNECT INTO THE MANHOLE IN ORDER TO AVOID A DRY MANHOLE SITUATION.
16. DESIGN CONTOURS ARE 0.2M INTERVAL.
17. IN LOTS 2, 4, 5, 6, 7 & 8 WHERE PRIVATE PUMP STATIONS ARE TO BE INSTALLED THEN THESE SHALL COMPLY WITH THE REQUIREMENTS OF THE FNQROC DEVELOPMENT MANUAL. A STANDBY GENERATOR SHALL BE PROVIDED.



**RISING MAIN DISCHARGE DETAIL**  
APPLIES TO MANHOLES 3/12 AND 4/12 (2 REQ)  
N.T.S.



**SEWERAGE RETICULATION - LAYOUT PLAN**  
Scale 1:750 (A1)



**PRELIMINARY ISSUE**

Ref	Revision Notes	Date	Sign
A.	PRELIMINARY ISSUE	15/08/18	W.S.

**BENCHMARK SURVEY & DESIGN**  
2 Cullinane Close, Innisfail, QLD 4860  
E: nighdadd@westnet.com.au - M: 0447 616 747

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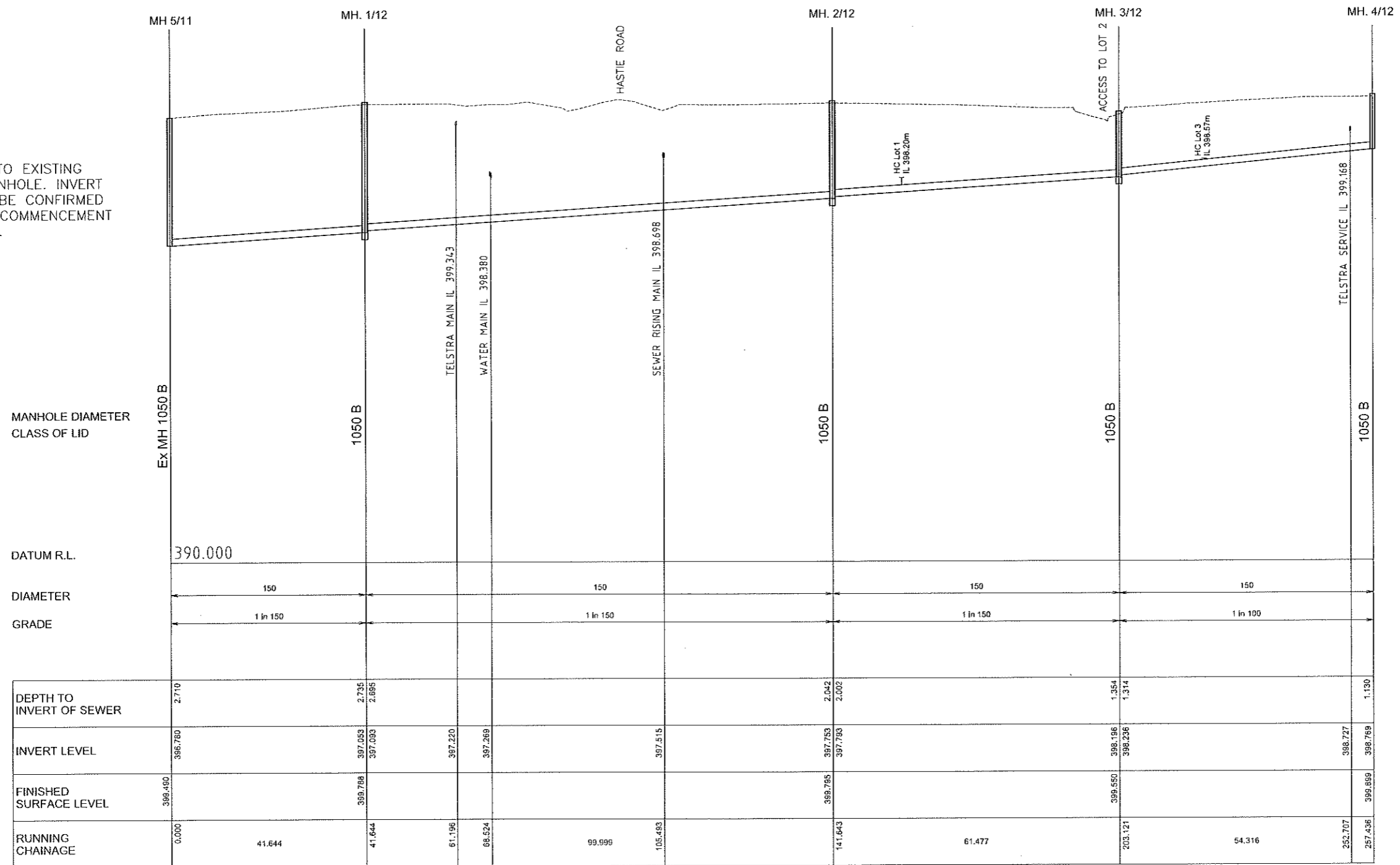
DATUM: PSM187739  
GDA84 ZONE 55  
AUSTRALIAN HEIGHT DATUM (AHD)

Scale 1:750 (A1)

Client: **B. T. M. & S. STANKOVICH PTY LTD**  
Project: **RURAL RESIDENTIAL SUBDIVISION OF LOT 1 ON RP735200**  
Title: **SEWERAGE RETICULATION - LAYOUT PLAN**

Plan No:	HR18-020-C14
Sheet No:	14/17
Issue:	A

CONNECT TO EXISTING SEWER MANHOLE. INVERT LEVEL TO BE CONFIRMED PRIOR TO COMMENCEMENT OF WORKS.



SEWERAGE RETICULATION - LONGITUDINAL SECTION

Horz Scale 1:500  
Vert Scale 1:50

CAUTION



Service Levels Shown are Approximate Only.  
All Services Should be Located Prior to Commencement of Works

Ref	Revision Notes	Date	Sign
A.	PRELIMINARY ISSUE	24/08/18	W.S.

**BENCHMARK SURVEY & DESIGN**  
2 Cullinane Close, Innisfail, QLD 4860  
E: highdodd@bmsd.net.au - M: 0447 616 747

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DATUM: PM187739  
GDA94 ZONE 55  
AUSTRALIAN HEIGHT DATUM (AHD)  
Scale 1:500 (A1)

Client: B. T. M. & S. STANKOVICH PTY LTD  
Project: RURAL RESIDENTIAL SUBDIVISION OF LOT 1 ON RP735200  
HASTIE ROAD WIDENING - SEWERAGE LONGITUDINAL SECTION

Plan No:	HR18-020-C15
Sheet No:	15/17
Issue:	A

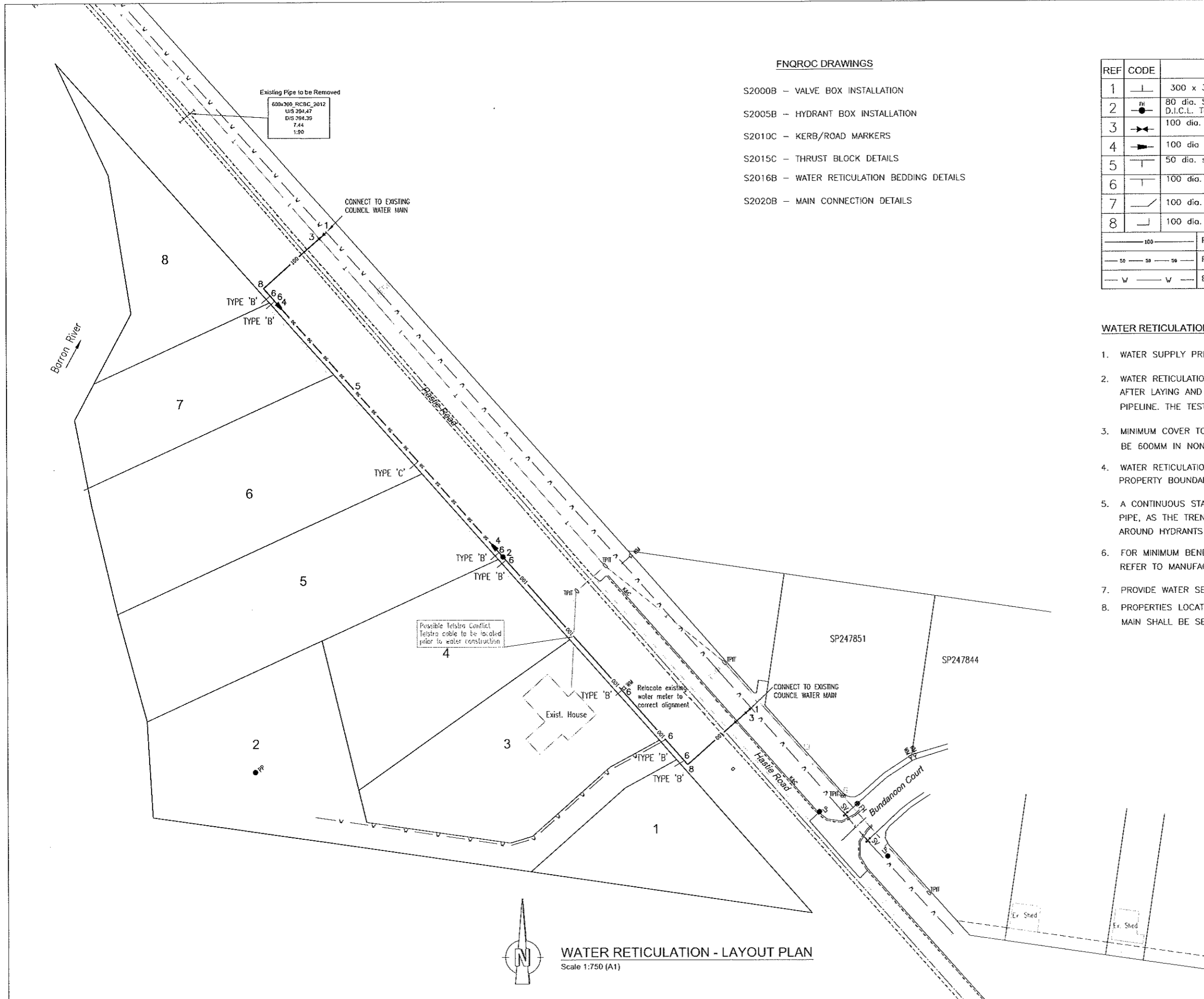
**FNQROC DRAWINGS**

- S2000B - VALVE BOX INSTALLATION
- S2005B - HYDRANT BOX INSTALLATION
- S2010C - KERB/ROAD MARKERS
- S2015C - THRUST BLOCK DETAILS
- S2016B - WATER RETICULATION BEDDING DETAILS
- S2020B - MAIN CONNECTION DETAILS

REF	CODE	DESCRIPTION
1	— —	300 x 300 x 100 D.I.C.L. Tee with concrete thrust block.
2	—●—	80 dia. Spring Hydrant "Maxi Flow" 2000 type (DN80) complete with D.I.C.L. Tee, Riser, C.I. cover box margin and kerb marker. (100 Main)
3	—>>—	100 dia. Sluice Valve Class 600 M.E. complete with C.I. cover box margin and kerb marker.
4	—>—	100 dia to 50 dia Reducer.
5	— —	50 dia. service fitting to 40 or 20Ø copper service to brass stop cock, meter & dirt box. TYPE 'C'
6	— —	100 dia. service fitting to 40 or 20Ø copper service to brass stop cock, meter & dirt box. TYPE 'B'
7	—/—	100 dia. 45° bend with concrete thrust block.
8	—\—	100 dia. 90° bend with concrete thrust block.
—100—		Proposed Water Main 50Ø I.D. (Class 16)
—50—		Proposed Water Main 50Ø I.D. (Class 16)
—w—		Existing Water Main

**WATER RETICULATION NOTES**

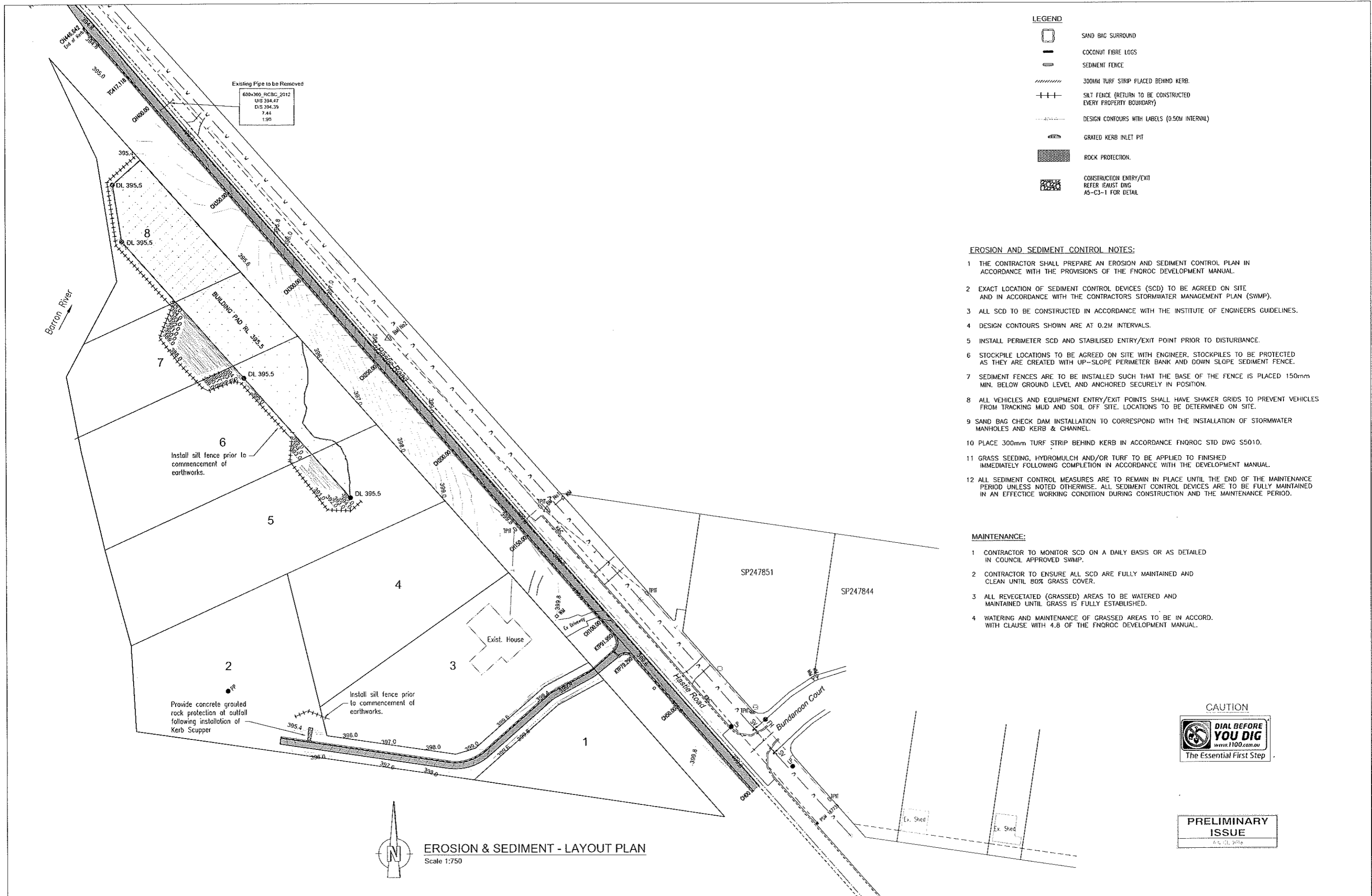
1. WATER SUPPLY PRESSURE PIPES TO COMPLY WITH AS1477.
2. WATER RETICULATION TO BE HYDRAULICALLY PRESSURE TESTED TO 1250 KPA AFTER LAYING AND BEFORE BEING CONNECTED TO THE EXISTING COUNCIL PIPELINE. THE TEST PRESSURE SHALL BE HELD FOR 15 MINUTES MIN. WITHOUT LOSS.
3. MINIMUM COVER TO ALL PIPES (TOP OF PIPE TO FINISHED SURFACE LEVEL) SHALL BE 600MM IN NON-TRAFFICKED AREAS AND 800MM IN TRAFFICKED AREAS.
4. WATER RETICULATION ALIGNMENT FOR ALL ROADS SHALL BE 2.0M FROM PROPERTY BOUNDARY.
5. A CONTINUOUS STAINLESS STEEL OR COPPER WIRE SHALL BE LAID 150MM ABOVE PIPE, AS THE TRENCH IS BACKFILLED. THIS WIRE SHALL BE WRAPPED ONCE AROUND HYDRANTS AND SLUICE VALVES.
6. FOR MINIMUM BENDING RADIUS TO 50 DIA POLYETHYLENE REFER TO MANUFACTURERS SPECIFICATIONS.
7. PROVIDE WATER SERVICE AND METER TO EACH PROPERTY.
8. PROPERTIES LOCATED ON THE OPPOSITE SIDE OF THE ROAD TO THE RETICULATION MAIN SHALL BE SERVICED BY A 50mm Dia (63 OD) POLYETHYLENE LOOP MAIN CI 16.



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A.	PRELIMINARY ISSUE	15/08/18	W.S.		
DRAWN W.S.   CHECKED W.S.   APPROVED DATE: 15/08/18				2 Cullinane Close, Ingham, QLD 4860 E: highdodd@aestnet.com.au - M. 0447 616 747	
CAD FILE: HR18-020 OPERATIONAL WORKS.DWG				DATUM: PM187739 GDA94 ZONE 55 AUSTRALIAN HEIGHT DATUM (AHD)	
				Scale 1:750 (A1)	
				Client: <b>B. T. M. &amp; S. STANKOVICH PTY LTD</b> Project: <b>RURAL RESIDENTIAL SUBDIVISION OF LOT 1 ON RP735200</b> Title: <b>WATER RETICULATION - LAYOUT PLAN</b>	
				Plan No: <b>HR18-020-C16</b> Sheet No: <b>16/17</b>   Issue: <b>A</b>	





**LEGEND**

	SAND BAG SURROUND
	COCONUT FIBRE LOGS
	SEDIMENT FENCE
	300MM TURF STRIP PLACED BEHIND KERB.
	SILT FENCE (RETURN TO BE CONSTRUCTED EVERY PROPERTY BOUNDARY)
	DESIGN CONTOURS WITH LABELS (0.50M INTERVAL)
	GRADED KERB INLET PIT
	ROCK PROTECTION.
	CONSTRUCTION ENTRY/EXIT REFER LEAST DWG AS-C3-1 FOR DETAIL

- EROSION AND SEDIMENT CONTROL NOTES:**
- 1 THE CONTRACTOR SHALL PREPARE AN EROSION AND SEDIMENT CONTROL PLAN IN ACCORDANCE WITH THE PROVISIONS OF THE FNQROC DEVELOPMENT MANUAL.
  - 2 EXACT LOCATION OF SEDIMENT CONTROL DEVICES (SCD) TO BE AGREED ON SITE AND IN ACCORDANCE WITH THE CONTRACTORS STORMWATER MANAGEMENT PLAN (SWMP).
  - 3 ALL SCD TO BE CONSTRUCTED IN ACCORDANCE WITH THE INSTITUTE OF ENGINEERS GUIDELINES.
  - 4 DESIGN CONTOURS SHOWN ARE AT 0.2M INTERVALS.
  - 5 INSTALL PERIMETER SCD AND STABILISED ENTRY/EXIT POINT PRIOR TO DISTURBANCE.
  - 6 STOCKPILE LOCATIONS TO BE AGREED ON SITE WITH ENGINEER. STOCKPILES TO BE PROTECTED AS THEY ARE CREATED WITH UP-SLOPE PERIMETER BANK AND DOWN SLOPE SEDIMENT FENCE.
  - 7 SEDIMENT FENCES ARE TO BE INSTALLED SUCH THAT THE BASE OF THE FENCE IS PLACED 150mm MIN. BELOW GROUND LEVEL AND ANCHORED SECURELY IN POSITION.
  - 8 ALL VEHICLES AND EQUIPMENT ENTRY/EXIT POINTS SHALL HAVE SHAKER GRIDS TO PREVENT VEHICLES FROM TRACKING MUD AND SOIL OFF SITE. LOCATIONS TO BE DETERMINED ON SITE.
  - 9 SAND BAG CHECK DAM INSTALLATION TO CORRESPOND WITH THE INSTALLATION OF STORMWATER MANHOLES AND KERB & CHANNEL.
  - 10 PLACE 300mm TURF STRIP BEHIND KERB IN ACCORDANCE FNQROC STD DWG S5010.
  - 11 GRASS SEEDING, HYDROMULCH AND/OR TURF TO BE APPLIED TO FINISHED IMMEDIATELY FOLLOWING COMPLETION IN ACCORDANCE WITH THE DEVELOPMENT MANUAL.
  - 12 ALL SEDIMENT CONTROL MEASURES ARE TO REMAIN IN PLACE UNTIL THE END OF THE MAINTENANCE PERIOD UNLESS NOTED OTHERWISE. ALL SEDIMENT CONTROL DEVICES ARE TO BE FULLY MAINTAINED IN AN EFFECTIVE WORKING CONDITION DURING CONSTRUCTION AND THE MAINTENANCE PERIOD.

- MAINTENANCE:**
- 1 CONTRACTOR TO MONITOR SCD ON A DAILY BASIS OR AS DETAILED IN COUNCIL APPROVED SWMP.
  - 2 CONTRACTOR TO ENSURE ALL SCD ARE FULLY MAINTAINED AND CLEAN UNTIL 80% GRASS COVER.
  - 3 ALL REVEGETATED (GRASSED) AREAS TO BE WATERED AND MAINTAINED UNTIL GRASS IS FULLY ESTABLISHED.
  - 4 WATERING AND MAINTENANCE OF GRASSED AREAS TO BE IN ACCORD. WITH CLAUSE WITH 4.8 OF THE FNQROC DEVELOPMENT MANUAL.



**PRELIMINARY ISSUE**

**EROSION & SEDIMENT - LAYOUT PLAN**  
Scale 1:750

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								Sheet No: 17/17