

Appendix A

IFD Table

DURATION	1 Year	2 years	5 years	10 years	20 years	50 years	100 years
5Mins	91.4	117	149	167	192	223	247
6Mins	85.7	110	140	157	180	210	232
10Mins	70.2	90.1	115	130	149	174	193
20Mins	51.2	66	85.1	96.2	111	130	144
30Mins	41.7	53.8	69.6	78.9	91.1	107	119
1Hr	28.4	36.7	47.7	54.2	62.7	73.9	82.4
2Hrs	18.8	24.3	31.6	35.9	41.5	48.9	54.6
3Hrs	14.7	19	24.6	27.9	32.3	38	42.4
6Hrs	9.59	12.4	16	18.1	20.9	24.5	27.3
12Hrs	6.27	8.09	10.4	11.8	13.6	16	17.8
24Hrs	4.09	5.29	6.85	7.76	8.97	10.5	11.7
48Hrs	2.6	3.37	4.41	5.02	5.83	6.87	7.68
72Hrs	1.94	2.52	3.31	3.77	4.38	5.18	5.79

Appendix B

Aquaplaning Results

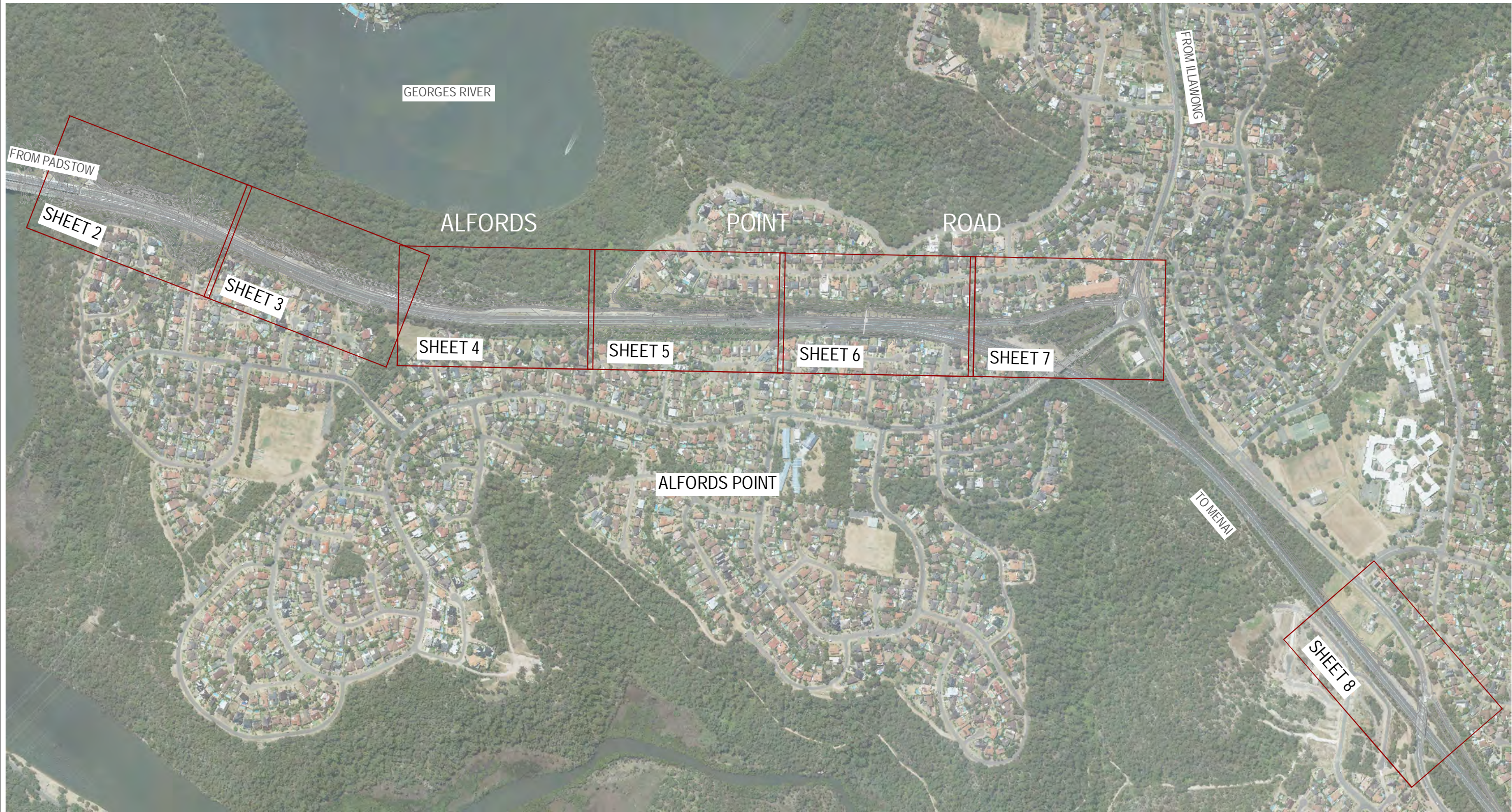
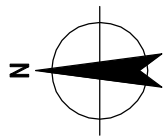
Station/Carriageway		L (m)	S (%)	d _w (mm)
100	North	36	8	1.43
325	South	86	7	2.40
1000	North	55	1	4.85
1500	North	48	1.1	4.35
1625	South	48	1.5	3.73
1825	Both	38	2.5	2.50

Table Notes:

- ▶ T_{xd} assumed to be 0.4mm to allow for future surface wear.
- ▶ All locations where superelevations switch (STN 325, 1000, 1500 and 1625) were assessed and are acceptable.
- ▶ Location where runoff sheets across both carriageways (STN 1825) was assessed and is acceptable.
- ▶ Typical road cross section (STN 100) assessed and is acceptable.



Appendix C

Design Plans



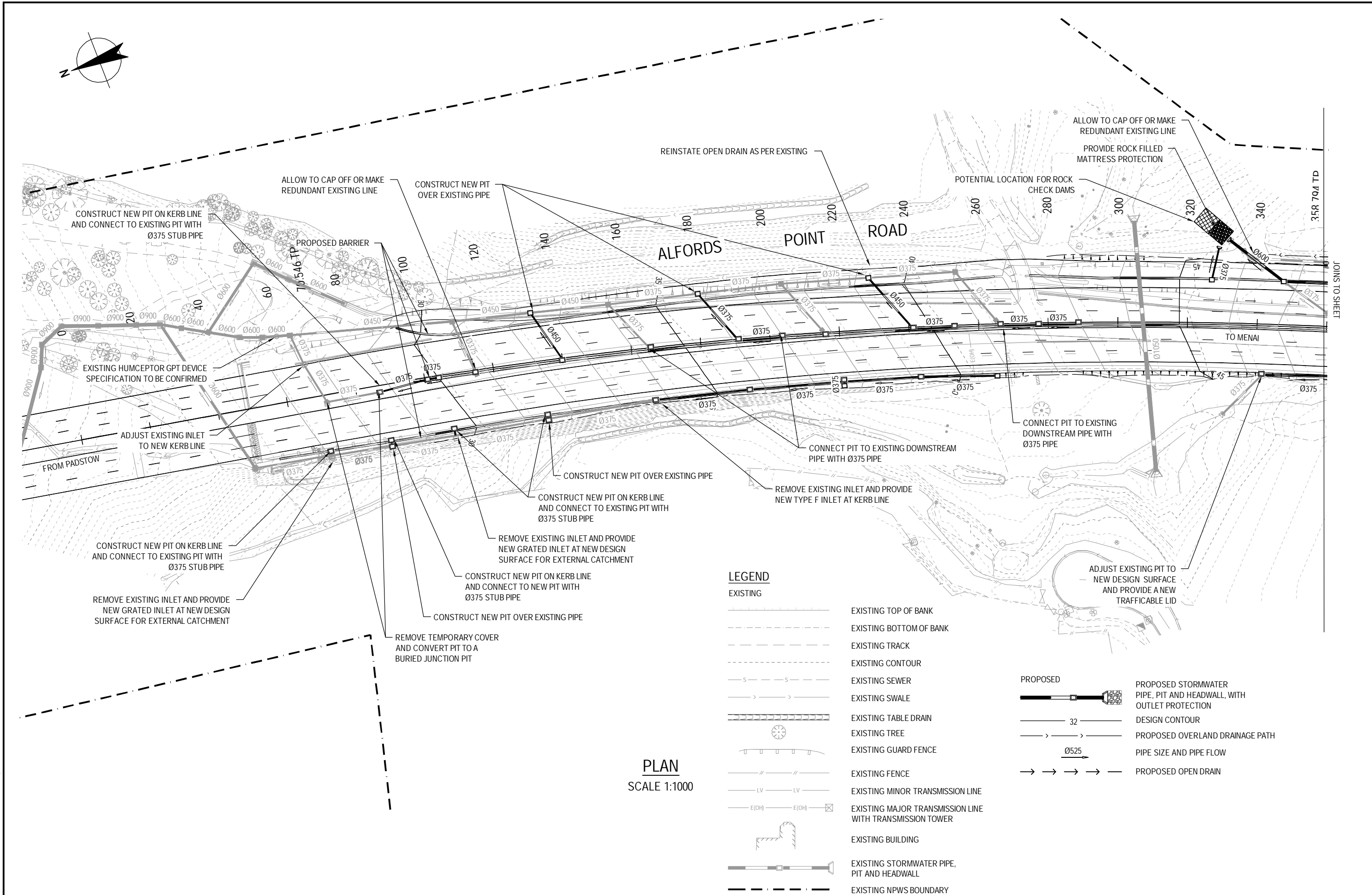
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PRELIMINARY

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No.		Amendment Description		Initials		Date							
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PLAN
SCALE 1:1000

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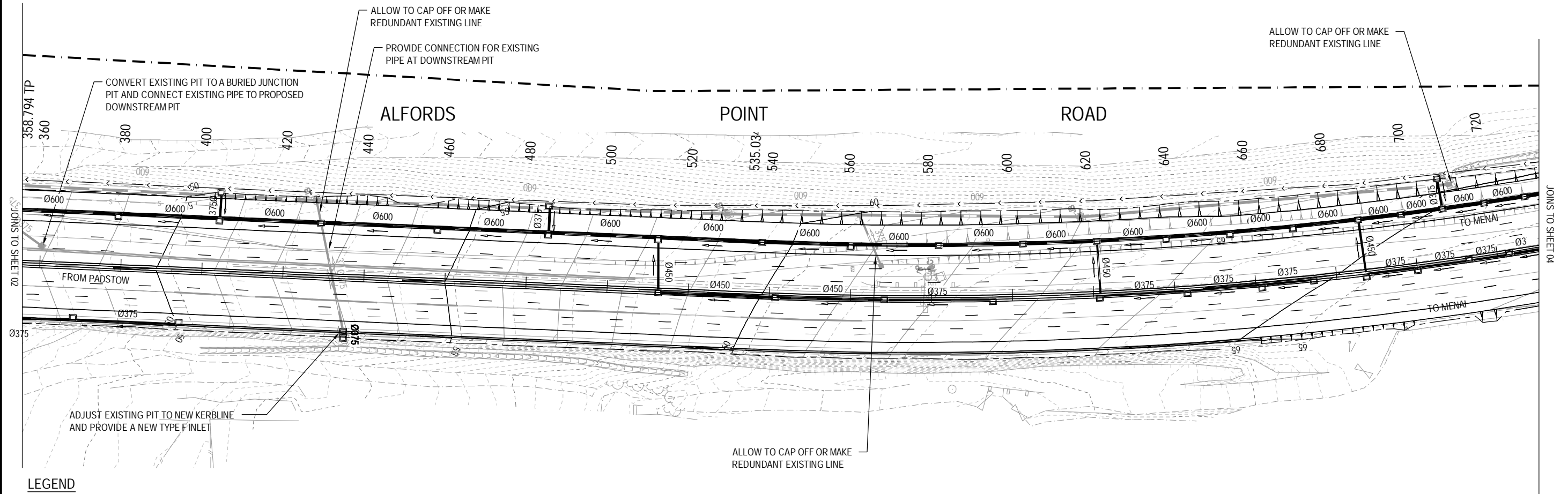
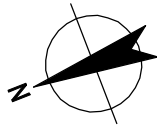
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Co-ordinate System: MGA Zone 56	Height Datum: A.H.D.

PREPARED BY	Levels 2 & 3 GHD Tower 24 Honeyuckie Drive Newcastle NSW 2300 Australia T 61 2 4979 9999 F 61 2 4979 9988 E ntmill@ghd.com.au W www.ghd.com.au
DESIGNED E. DONATI	
DRAWN R. COCKS	
REVIEWED	

ROADS & MARITIME SERVICES
SOUTHERLAND SHIRE COUNCIL AREA MR 190 ALFORDS POINT ROAD ROAD UPGRADE BETWEEN THE SOUTHERN ABUTMENT OF ALFORDS POINT BRIDGE AND BRUSHWOOD DRIVE, ALFORDS POINT DRAINAGE 20% CONCEPT DESIGN

FILE No. F3/505.1849	DRAWING 21-21268-C002.dwg	PRINTED DATE 09-Nov-12, 3:44 PM	SHEET No. 02 OF 14
REGISTRATION NUMBER DS2012/000XXX			

PRELIMINARY



LEGEND

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	EXISTING BOTTOM OF BANK
	EXISTING TRACK
	EXISTING CONTOUR
	EXISTING SEWER
	EXISTING SWALE
	EXISTING TABLE DRAIN
	EXISTING TREE
	EXISTING GUARD FENCE
	EXISTING FENCE
	EXISTING MINOR TRANSMISSION LINE
	EXISTING MAJOR TRANSMISSION LINE WITH TRANSMISSION TOWER
	EXISTING BUILDING
	EXISTING STORMWATER PIPE, PIT AND HEADWALL
	EXISTING NPWS BOUNDARY

PROPOSED	
	PROPOSED STORMWATER PIPE, PIT AND HEADWALL, WITH OUTLET PROTECTION
	DESIGN CONTOUR
	PROPOSED OVERLAND DRAINAGE
	PIPE SIZE AND PIPE FLOW
	PROPOSED OPEN DRAIN

PLAN
SCALE 1:1000

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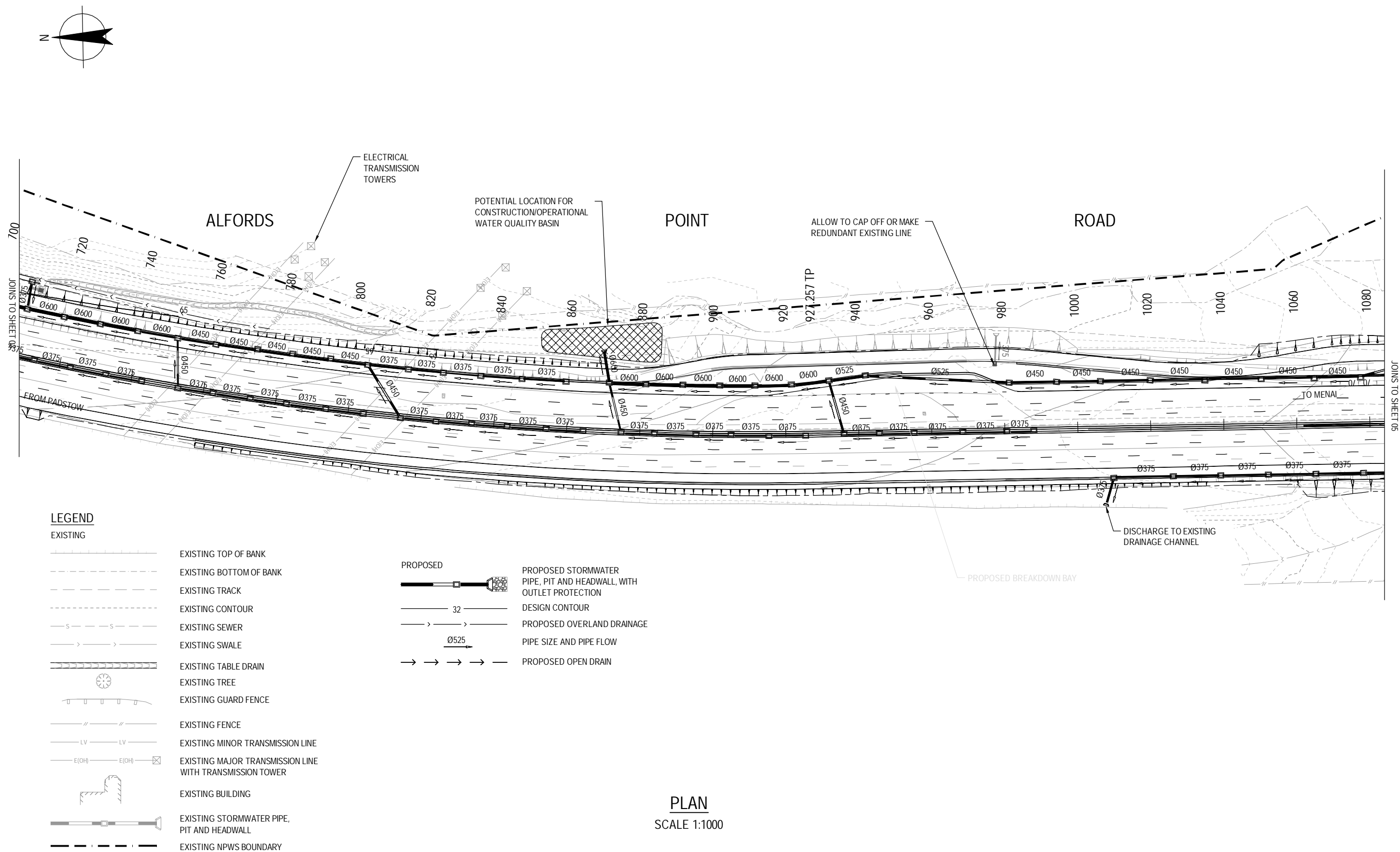
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DRAWN R. COCKS	
REVIEWED	

ROADS & MARITIME SERVICES	
SOUTHERLAND SHIRE COUNCIL AREA MR 190 ALFORDS POINT ROAD ROAD UPGRADE BETWEEN THE SOUTHERN ABUTMENT OF ALFORDS POINT BRIDGE AND BRUSHWOOD DRIVE, ALFORDS POINT DRAINAGE 20% CONCEPT DESIGN	

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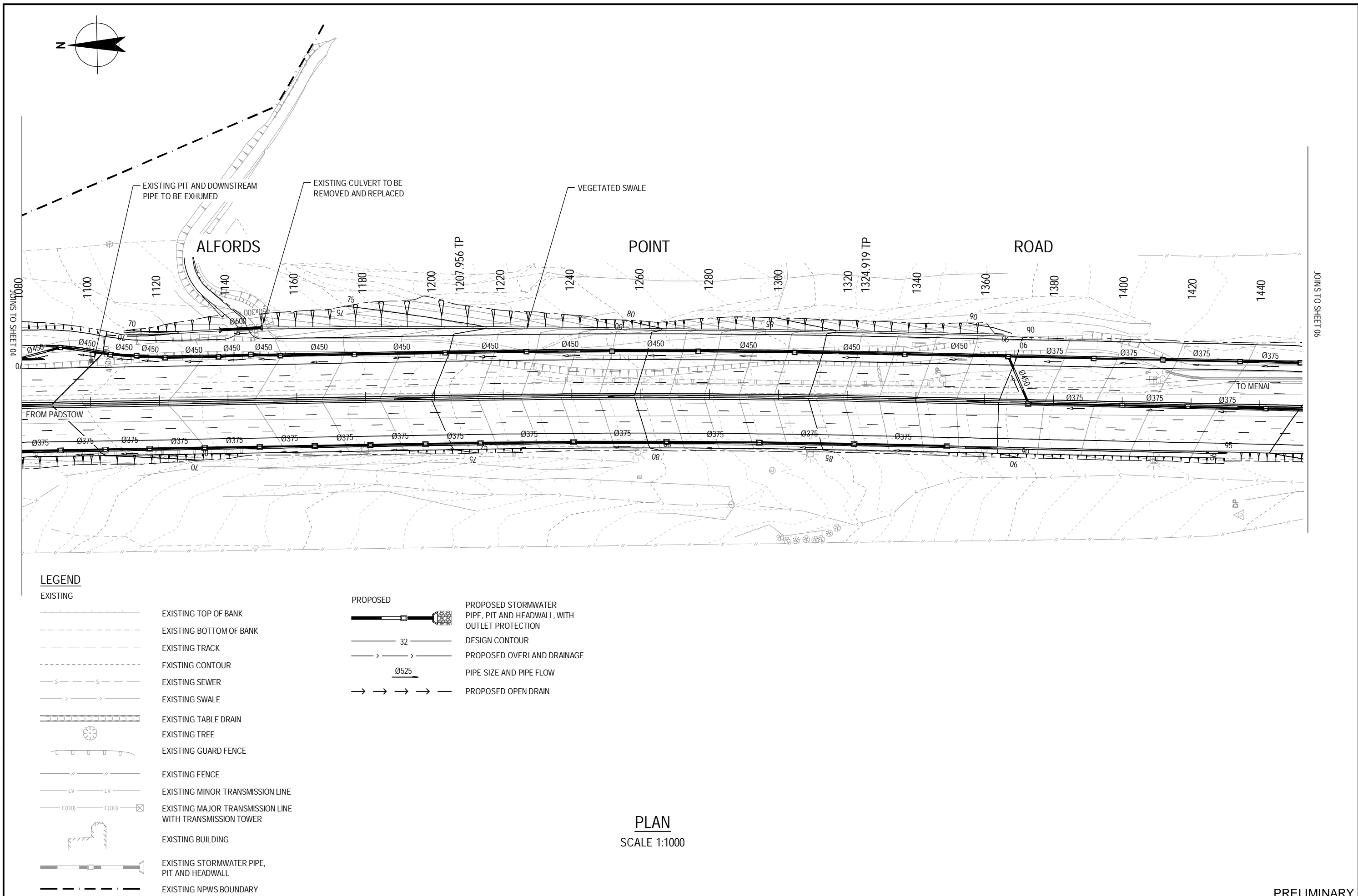
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DESIGNED E. DONATI	
DRAWN R. COCKS	
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ROADS & MARITIME SERVICES	
SOUTHERLAND SHIRE COUNCIL AREA MR 190 ALFORDS POINT ROAD ROAD UPGRADE BETWEEN THE SOUTHERN ABUTMENT OF ALFORDS POINT BRIDGE AND BRUSHWOOD DRIVE, ALFORDS POINT DRAINAGE 20% CONCEPT DESIGN	

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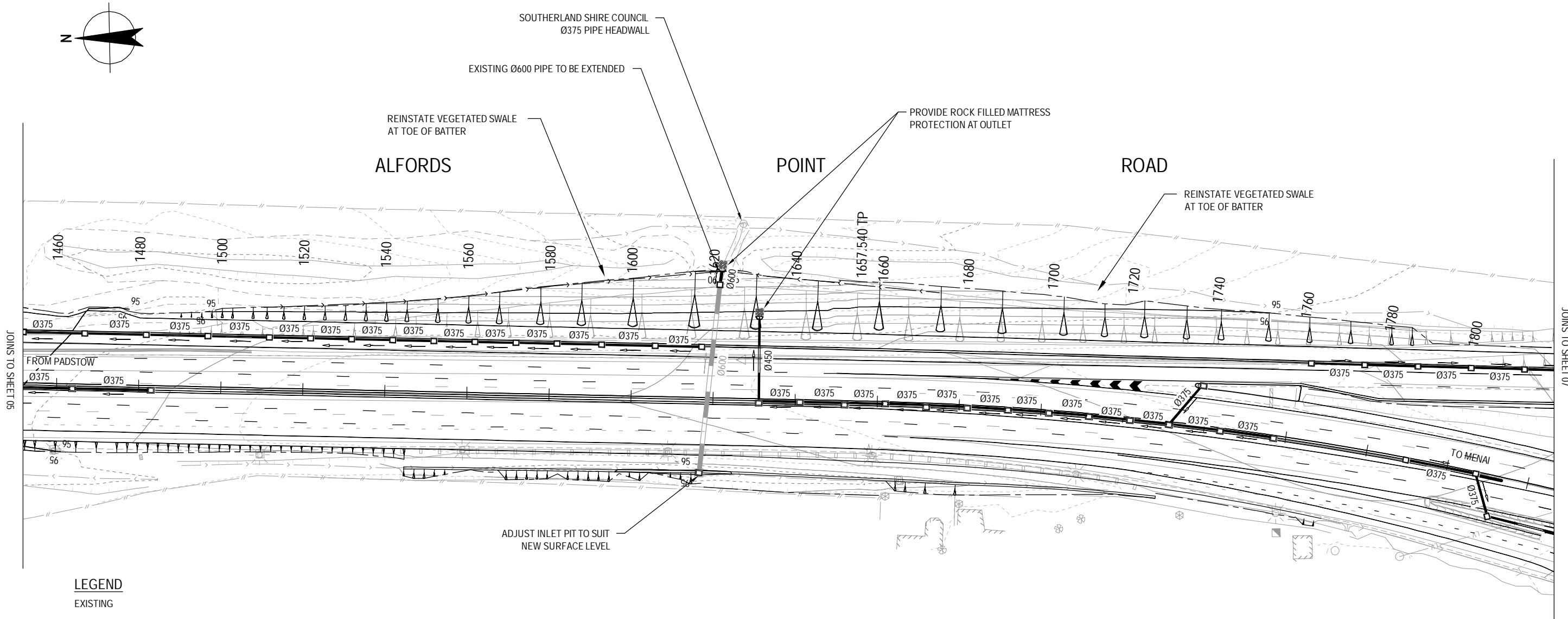
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LEGEND

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	EXISTING CONTOUR
	EXISTING SEWER
	EXISTING SWALE
	EXISTING TABLE DRAIN
	EXISTING TREE
	EXISTING GUARD FENCE
	EXISTING FENCE
	EXISTING MINOR TRANSMISSION LINE
	EXISTING MAJOR TRANSMISSION LINE WITH TRANSMISSION TOWER
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	EXISTING NPWS BOUNDARY

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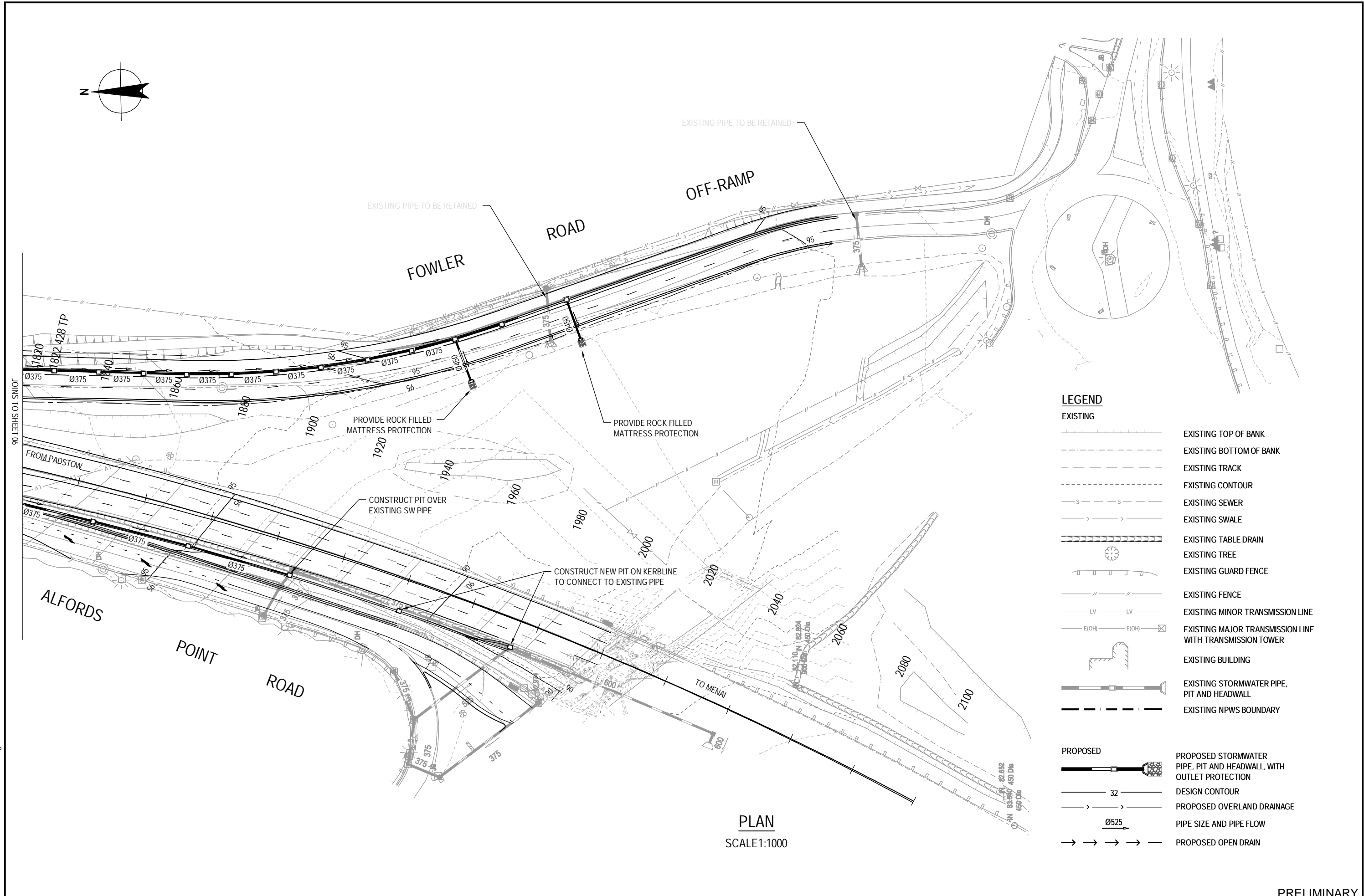
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	PIPE SIZE AND PIPE FLOW
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PLAN
SCALE 1:1000

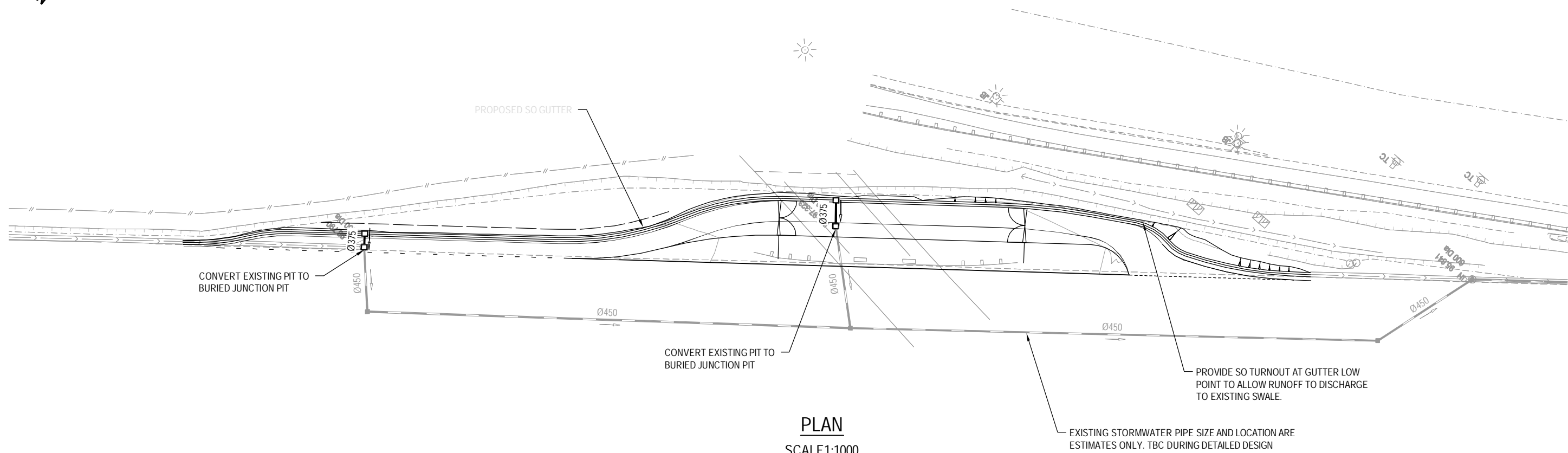
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LEGEND

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- EXISTING BOTTOM OF BANK
- EXISTING TRACK
- EXISTING CONTOUR
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PROPOSED

- PROPOSED STORMWATER PIPE, PIT AND HEADWALL, WITH OUTLET PROTECTION
- DESIGN CONTOUR
- PROPOSED OVERLAND DRAINAGE
- PIPE SIZE AND PIPE FLOW
- PROPOSED OPEN DRAIN

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PRELIMINARY

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