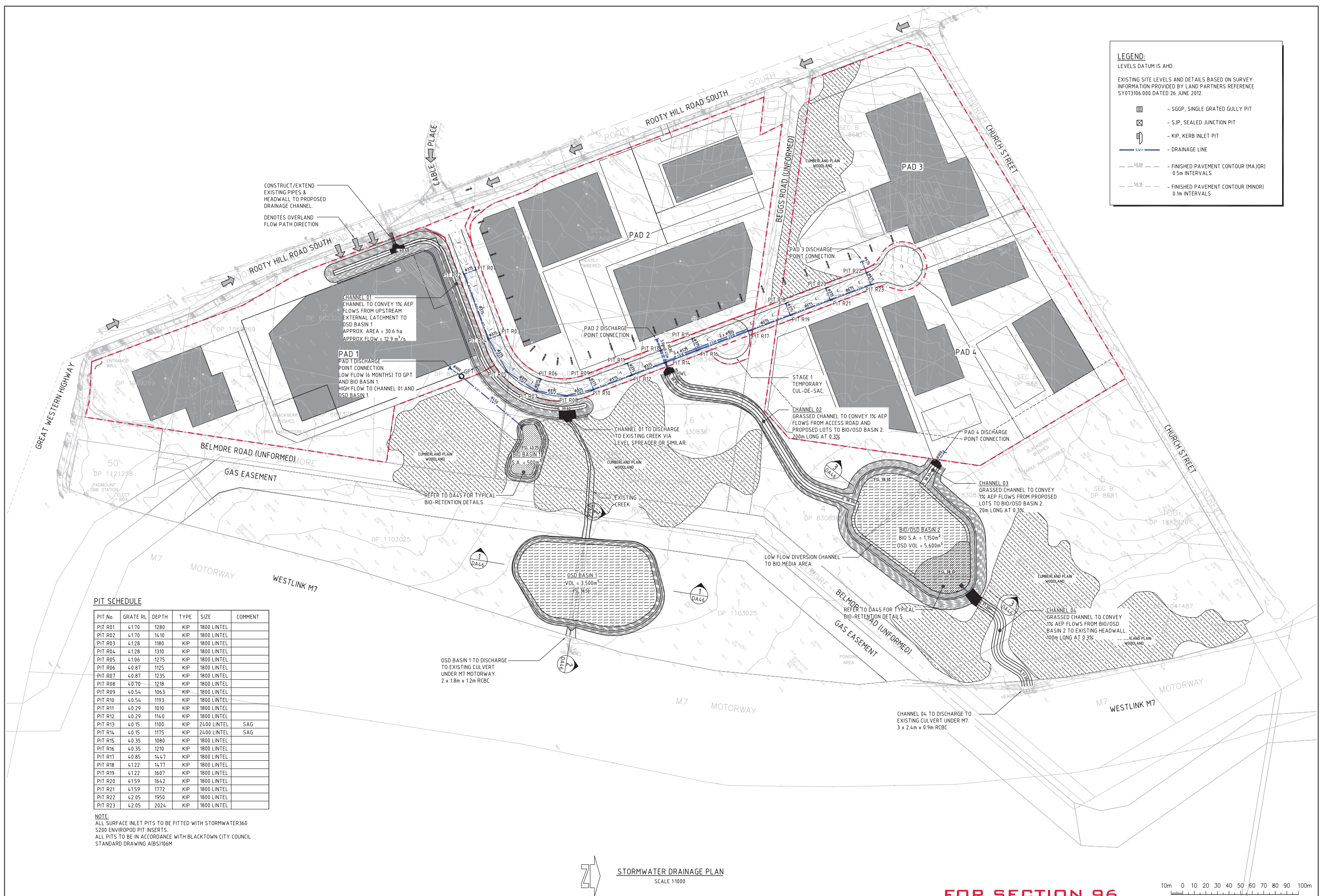


LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LAND PARTNERS REFERENCE SY073106.000 DATED 26 JUNE 2012.

-  - SGGP, SINGLE GRATED GULLY PIT
-  - SJP, SEALED JUNCTION PIT
-  - KIP, KERB INLET PIT
-  - DRAINAGE LINE
-  - FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
-  - FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS



PIT SCHEDULE

PIT No.	GRATE RL	DEPTH	TYPE	SIZE	COMMENT
PIT R01	41.70	1280	KIP	1800 LINTEL	
PIT R02	41.70	1410	KIP	1800 LINTEL	
PIT R03	41.28	1180	KIP	1800 LINTEL	
PIT R04	41.28	1310	KIP	1800 LINTEL	
PIT R05	41.06	1275	KIP	1800 LINTEL	
PIT R06	40.87	1125	KIP	1800 LINTEL	
PIT R07	40.87	1235	KIP	1800 LINTEL	
PIT R08	40.70	1218	KIP	1800 LINTEL	
PIT R09	40.54	1063	KIP	1800 LINTEL	
PIT R10	40.54	1193	KIP	1800 LINTEL	
PIT R11	40.29	1010	KIP	1800 LINTEL	
PIT R12	40.29	1140	KIP	1800 LINTEL	
PIT R13	40.15	1100	KIP	2400 LINTEL	SAG
PIT R14	40.15	1175	KIP	2400 LINTEL	SAG
PIT R15	40.35	1080	KIP	1800 LINTEL	
PIT R16	40.35	1210	KIP	1800 LINTEL	
PIT R17	40.85	1447	KIP	1800 LINTEL	
PIT R18	41.22	1477	KIP	1800 LINTEL	
PIT R19	41.22	1607	KIP	1800 LINTEL	
PIT R20	41.59	1642	KIP	1800 LINTEL	
PIT R21	41.59	1772	KIP	1800 LINTEL	
PIT R22	42.05	1950	KIP	1800 LINTEL	
PIT R23	42.05	2024	KIP	1800 LINTEL	

NOTE:
ALL SURFACE INLET PITS TO BE FITTED WITH STORMWATER360 S200 ENVIROPOD PIT INSERTS.
ALL PITS TO BE IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL STANDARD DRAWING A(BS)106M

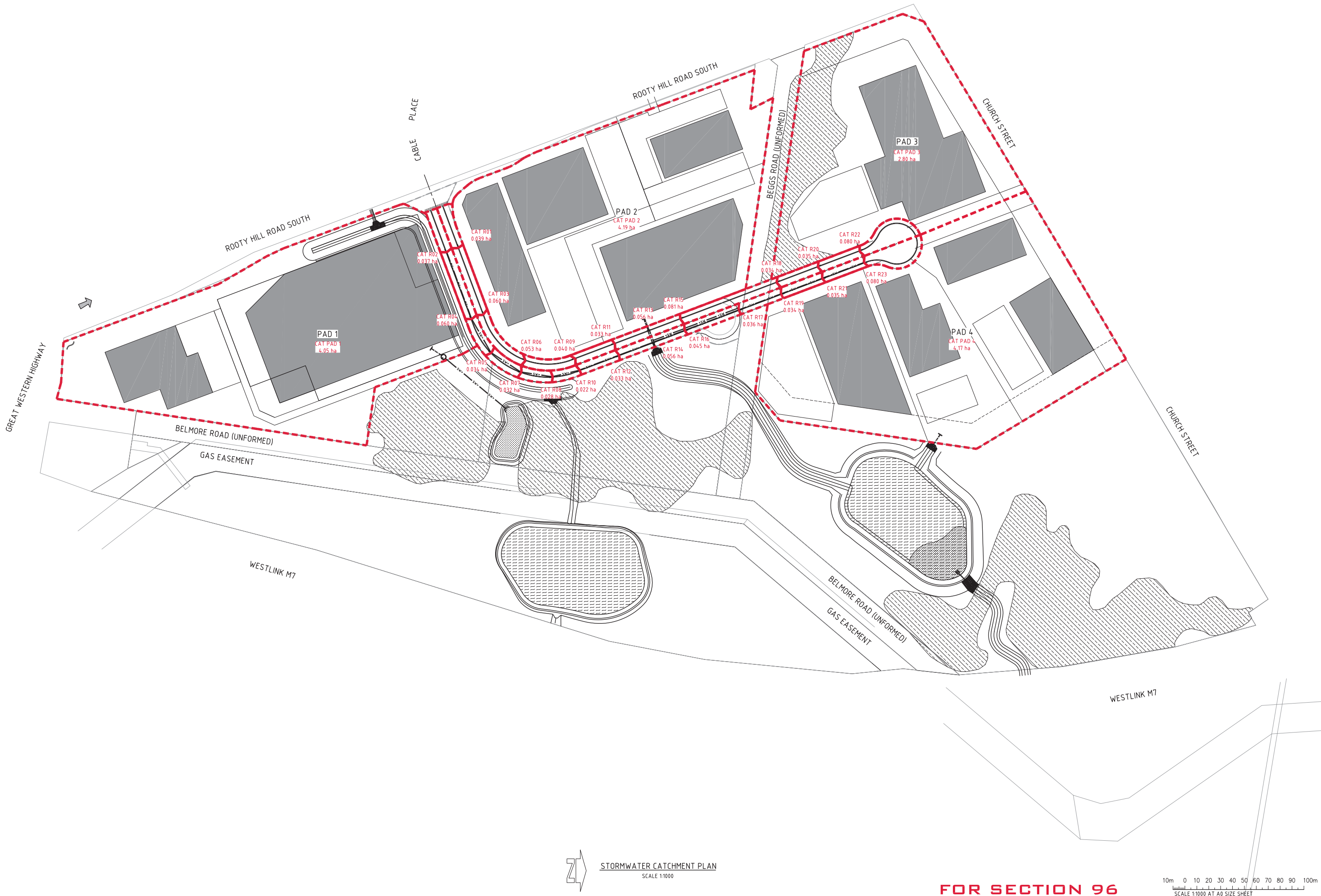


STORMWATER DRAINAGE PLAN
SCALE 1:1000

FOR SECTION 96

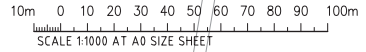
10m 0 10 20 30 40 50 60 70 80 90 100m
SCALE 1:1000 AT A0 SIZE SHEET

ISSUED FOR SECTION 96 FOR INFORMATION ONLY FOR INFORMATION ONLY AMENDMENTS	21.01.15 C 30.03.15 B 19.03.15 A DATE ISSUE	AMENDMENTS DATE ISSUE	ARCHITECT	CLIENT  WESTERN SYDNEY PARKLANDS TRUST LEVEL 1, 10 VALENTE AVE PARRAMATTA NSW 2150	PROJECT EASTERN CREEK BUSINESS HUB WESTERN SYDNEY PARKLANDS	DESIGNED BY DATE H.W. X.C. MAR 2015 CHECKED BY DATE H.W. X.C. MAR 2015 SCALE A0 CADD REF: 12693.00-DA40	Costin Roe Consulting Pty Ltd. Consulting Engineers Level 1, 8 Windmill Street Wahbi Bay, Sydney NSW 2000 Tel: (02) 8551-7000 Fax: (02) 8541-3721 email: mail@costinroe.com.au ©	CostinRoe Consulting Value in Engineering and Management	DRAWING TITLE STORMWATER DRAINAGE PLAN DRAWING No C012693.00-DA40 ISSUE C
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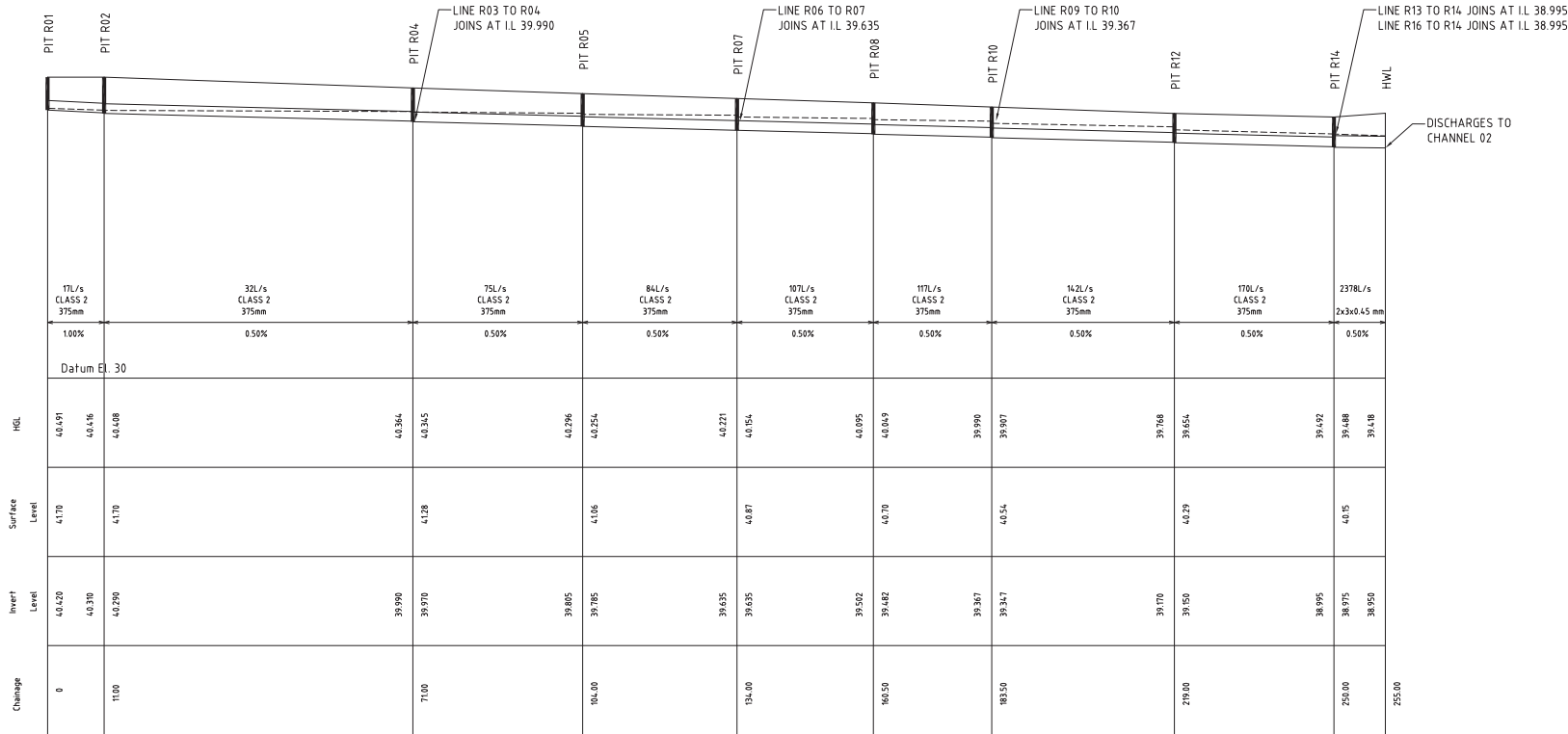


STORMWATER CATCHMENT PLAN
SCALE 1:1000

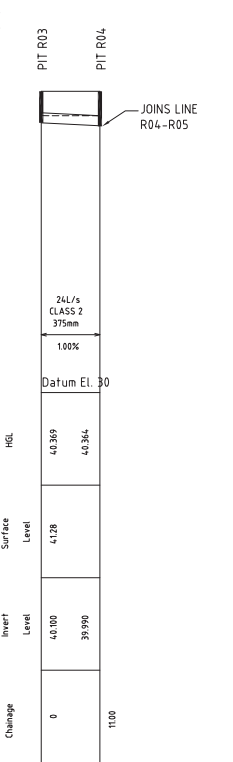
FOR SECTION 96



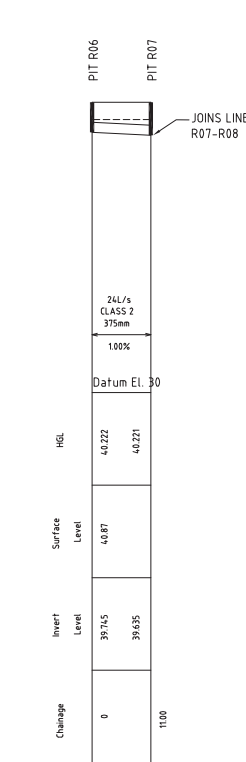
ISSUED FOR SECTION 96 FOR INFORMATION ONLY AMENDMENTS				21.07.15 30.03.15 DATE ISSUE				B A AMENDMENTS				DATE ISSUE AMENDMENTS DATE ISSUE				ARCHITECT				CLIENT NSW Western Sydney Parklands Trust WESTERN SYDNEY PARKLANDS TRUST LEVEL 7, 10 VALENTINE AVE PARRAMATTA NSW 2150				PROJECT EASTERN CREEK BUSINESS HUB WESTERN SYDNEY PARKLANDS				Costin Roe Consulting Pty Ltd. Consulting Engineers Level 1, 8 Windmill Street Wahah Bay, Sydney NSW 2000 Tel: (02) 8551-7889 Fax: (02) 8541-3721 email: mail@costinroe.com.au ©				DRAWING TITLE STORMWATER CATCHMENT PLAN				DRAWING No C012693.00-DA41				ISSUE B			
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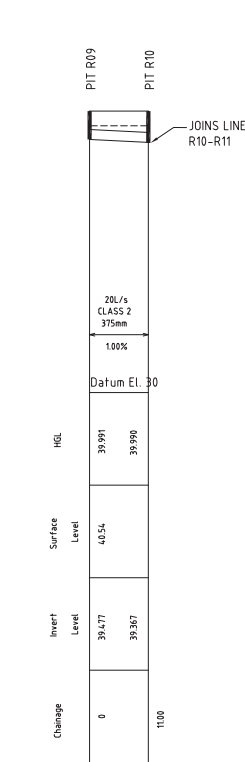
LONG SECTION - PIT R01 TO HEADWALL
SCALE 1:500 HORIZONTAL
1:100 VERTICAL



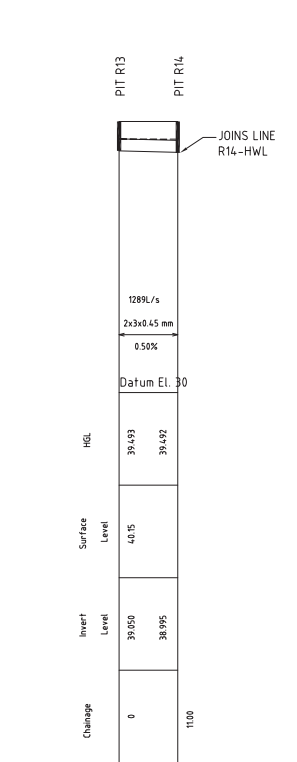
LONG SECTION - PIT R03 TO PIT R04
SCALE 1:500 HORIZONTAL
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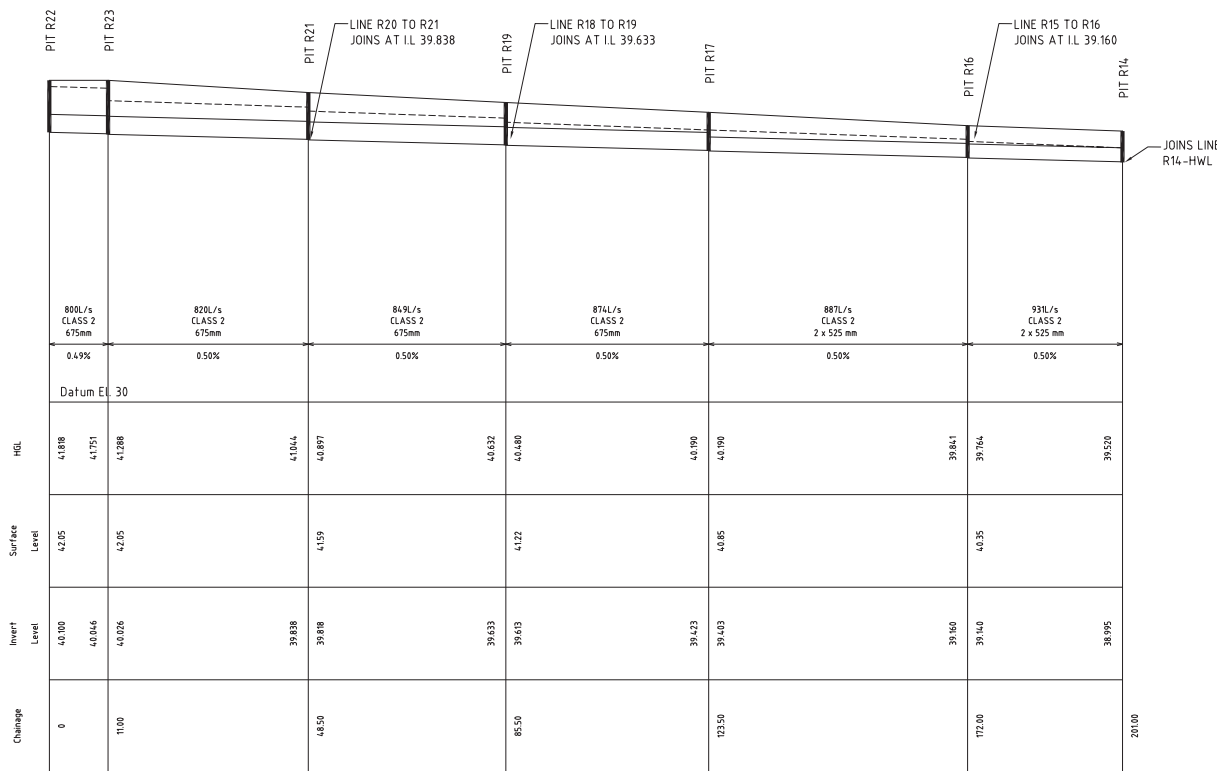
LONG SECTION - PIT R06 TO PIT R07
SCALE 1:500 HORIZONTAL
1:100 VERTICAL



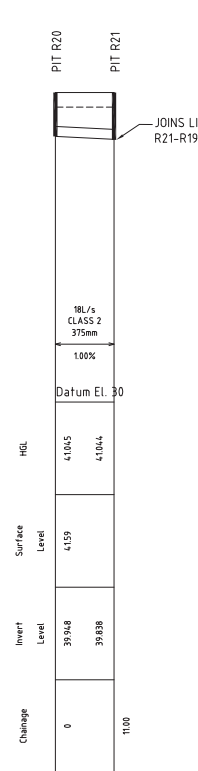
LONG SECTION - PIT R09 TO PIT R10
SCALE 1:500 HORIZONTAL
1:100 VERTICAL



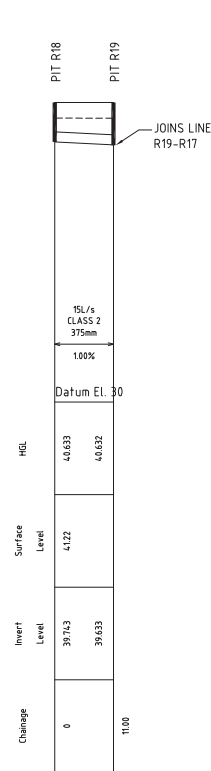
LONG SECTION - PIT R13 TO PIT R14
SCALE 1:500 HORIZONTAL
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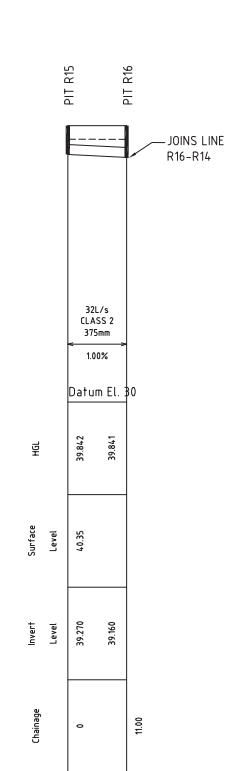
LONG SECTION - PIT R22 TO PIT R14
SCALE 1:500 HORIZONTAL
1:100 VERTICAL



LONG SECTION - PIT R20 TO PIT R21
SCALE 1:500 HORIZONTAL
1:100 VERTICAL



LONG SECTION - PIT R18 TO PIT R19
SCALE 1:500 HORIZONTAL
1:100 VERTICAL



LONG SECTION - PIT R15 TO PIT R16
SCALE 1:500 HORIZONTAL
1:100 VERTICAL

NOTE:
H.G.L & FLOWRATE SHOWN FOR Q20 A.R.I STORM EVENT



FOR SECTION 96

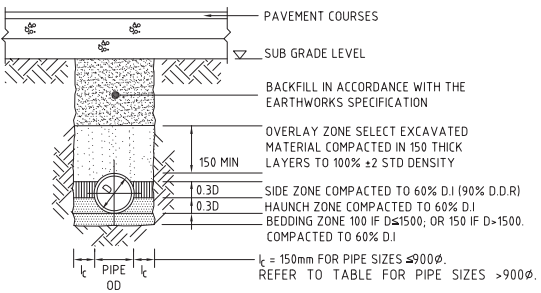
BEDDING & HAUNCH MATERIAL GRADING	
SIEVE SIZE	WEIGHT PASSING(%)
19	100
2.36	100 TO 50
0.60	90 TO 20
0.30	60 TO 10
0.15	25 TO 0
0.075	10 TO 0

SIDE ZONE MATERIAL GRADING	
SIEVE SIZE	WEIGHT PASSING(%)
75	100
9.5	100 TO 50
2.36	100 TO 30
0.60	50 TO 15
0.075	25 TO 0

SELECT FILL MATERIAL IN ACCORDANCE WITH TABLE 1 AS 3725

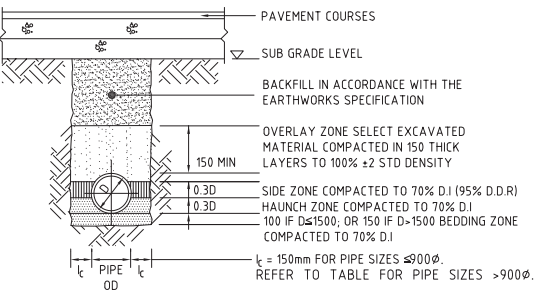
SIDE ZONE WIDTH	
PIPE SIZE	k (mm)
$\leq 900\phi$	150
1050 ϕ	175
1200 ϕ	200
1350 ϕ	225
1500 ϕ	250
1650 ϕ	275
1800 ϕ	300

REFER TO ENGINEER FOR TRENCH WIDTHS FOR PIPE SIZES GREATER THAN 1800 ϕ



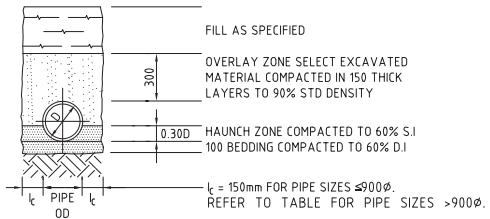
TYPE HS2 SUPPORT TO CONCRETE PIPES UNDER PAVEMENT

D ≤ 1350, MAX FILL = 4.0m
D > 1350, MAX FILL = 3.0m

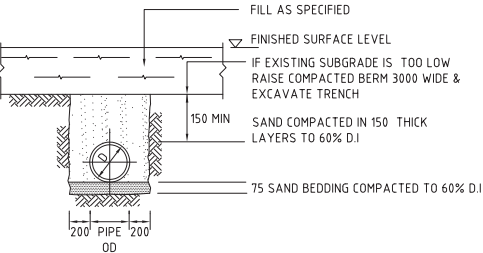


TYPE HS3 SUPPORT TO CONCRETE PIPES UNDER PAVEMENT

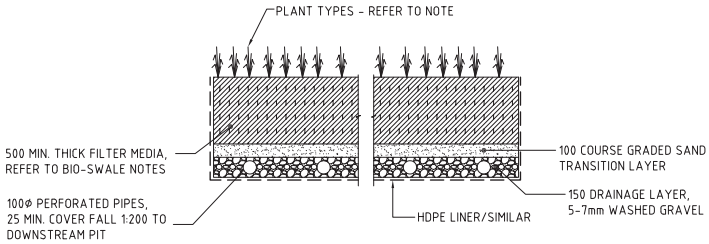
D ≤ 1050, MAX FILL = 6.0m
D > 1050, MAX FILL = 4.80m



TYPE H1 SUPPORT TO CONCRETE PIPES AT LANDSCAPED AREAS

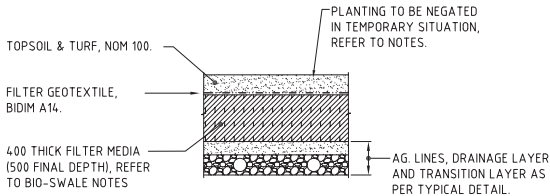


SUPPORT TO uPVC PIPES



TYPICAL BIO-RETENTION DETAIL

SCALE 1:20



TEMPORARY BIO-RETENTION PROTECTION DETAIL

SCALE 1:20
TEMPORARY CONSTRUCTION REQUIREMENT DETAIL - REFER TO NOTES FOR IMPLEMENTATION PERIODS.

BIO-RETENTION NOTES:

FILTER MEDIA TO BE LOAMY SAND WITH A PERMEABILITY NOT LESS THAN 200mm/hr. FILTER MEDIA TO BE FREE OF RUBBISH, DELETERIOUS MATERIAL, TOXICANTS, DECLARED PLANTS AND LOCAL WEEDS, AND IS TO NOT BE HYDROPHOBIC.

FILTER MEDIA TO HAVE THE FOLLOWING COMPOSITION RANGE:

CLAY & SILT (<0.05mm)	≤3%
VERY FINE SAND (0.05-0.15mm)	5-30%
FINE SAND (0.15-0.25mm)	10-30%
MEDIUM TO COARSE SAND (0.25-1.00mm)	40-60%
COARSE SAND (1.0-2.0mm)	7-10%
FINE GRAVEL (2.0-3.4mm)	≤3%

FILTER MEDIA THAT DOES NOT MEET THE FOLLOWING CRITERIA SHALL BE REJECTED:

- ORGANIC MATTER CONTENT TO BE IDEALLY WITHIN 1% TO 3% (W/W) AND TO BE NO GREATER THAN 5%(W/W).
- PH TO BE BETWEEN 5.5 AND 7.5
- PHOSPHOROUS CONTENT TO BE NO GREATER THAN 35mg/kg

FILTER MEDIA TO BE ASSESSED BY QUALIFIED HORTICULTURALIST TO ENSURE CAPABILITY OF SUPPORTING PLANT LIFE.

DRAINAGE LAYER TO BE CLEAN GRAVEL 5-7mm.

PLANTS TO BE IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL WSUD HANDBOOK PART 5 - VEGETATION SELECTION GUIDE, WITH A MINIMUM OF SIX DIFFERENT SPECIES.

PROVIDE 100mm TOPSOIL AND TEMPORARY EROSION PROTECTION (JUTEMASTER OR EQUIV) TO SWALE BATTER SLOPES AND ADJACENT LANDSCAPED AREAS. NOTE THAT NO TOPSOIL IS TO BE PLACED OVER FILTRATION MEDIA. PROVIDE SILT FENCE TO TOP OF BANK UNTIL SUCH TIME AS THIS STABILISING AND VEGETATION HAS BEEN COMPLETED.

BIO-RETENTION TO BE PARTIALLY INSTALLED, FOLLOWING COMPLETION OF THE ROAD, WITH THE TOP 75-100mm OF FILTER MEDIA REPLACED WITH A FINE TO COARSE SAND UNDERLAIN WITH A GEOTEXTILE LAYER (REFER TO DETAIL). FOLLOWING COMPLETION OF THE UPSTREAM DEVELOPMENT AND SITE STABILISATION, THE SAND IS TO BE REMOVED, REPLACED WITH FILTER MATERIAL AND PLANTED OUT. REFER TO TEMPORARY BIO-BASIN DETAIL

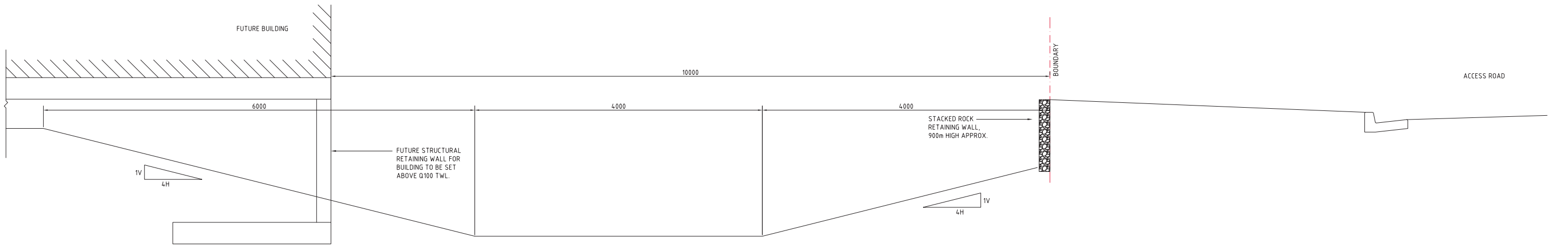
PRIOR TO PLANTING, THE TOP 100mm OF THE BIORETENTION FILTER MEDIA IS TO BE AMELIORATED WITH APPROPRIATE ORGANIC MATTER, FERTILISER AND TRACE ELEMENTS TO AID PLANT ESTABLISHMENT AS PER THE TABLE BELOW:

CONSTITUENT	QUANTITY (kg/m2 OF FILTER AREA)
GRANULATED POULTRY MANURE FINES	50
SUPERPHOSPHATE	2
MAGNESIUM SULPHATE	3
POTASSIUM SULPHATE	2
TRACE ELEMENT PKX	1
FERTILISER NPK (16-4-14)	4
LIME	20

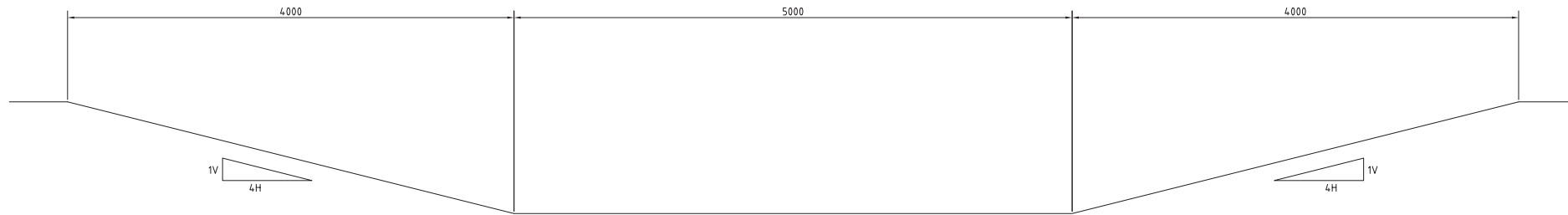
FOR SECTION 96

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT A0 SIZE SHEET

ISSUED FOR SECTION 96		21.07.15	B	ARCHITECT		CLIENT		PROJECT		DESIGNED		DRAWN		DATE		CHECKED		SIZE		SCALE		CAD REF:		COSTIN ROE CONSULTING PTY LTD.		DRAWING TITLE		ISSUE	
FOR INFORMATION ONLY		30.03.15	A					EASTERN CREEK BUSINESS HUB		M.W.		X.C.		MAR 2015				A0		AS SHOWN		12693.00-DA45		Consulting Engineers		STORMWATER DRAINAGE			
AMENDMENTS		DATE	ISSUE	AMENDMENTS		DATE		WESTERN SYDNEY PARKLANDS TRUST																Level 1, 8 Windmill Street Wahbah Bay, Sydney NSW 2000 Tel: (02) 8551-7899 Fax: (02) 8541-3721 email: mail@costinroe.com.au ©		C012693.00-DA45		B	



TYPICAL CHANNEL 01 SECTION
SCALE 1:20



TYPICAL CHANNEL 02 & 03 SECTION
SCALE 1:20



SECTION 1:200
TYPICAL THRU OSD 1

1
DA40



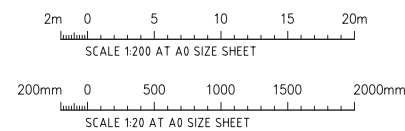
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TYPICAL THRU OSD 1

2
DA40



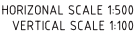
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TYPICAL THRU OSD2

3
DA40



FOR SECTION 96

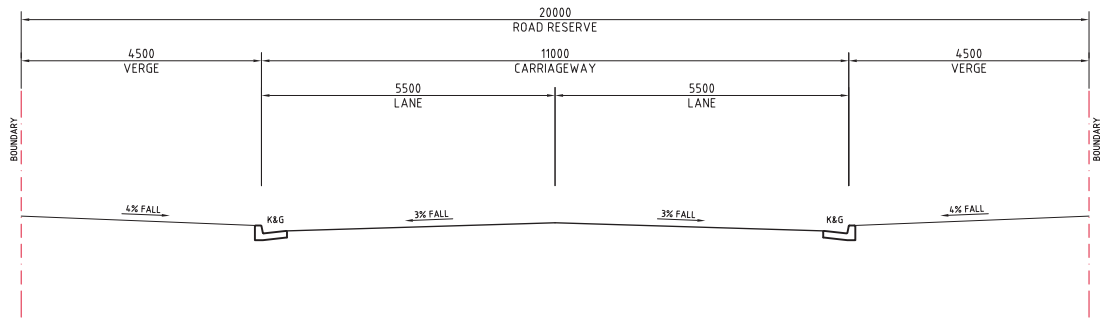
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Consulting Engineers Level 1, 8 Windmill Street Wahah Bay, Sydney NSW 2000 Tel: (02) 8551-7889 Fax: (02) 8541-3721 email: mail@costinroe.com.au																				DRAWING TITLE STORMWATER DRAINAGE DETAILS - SHEET 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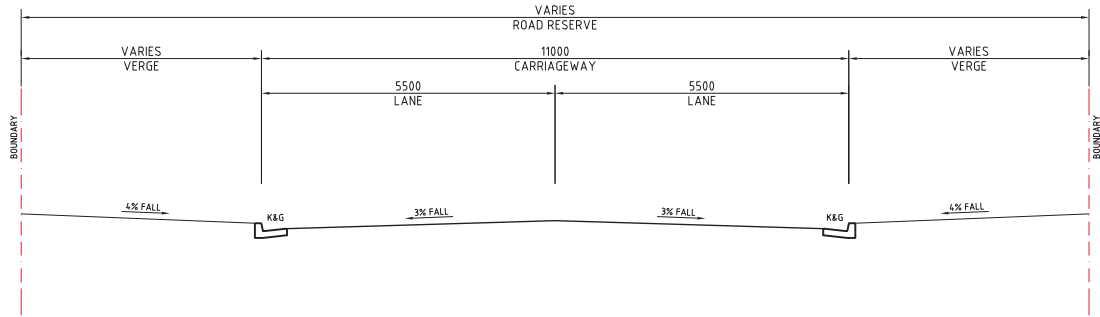
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SCALE 1:500 AT A0 SIZE SHEET

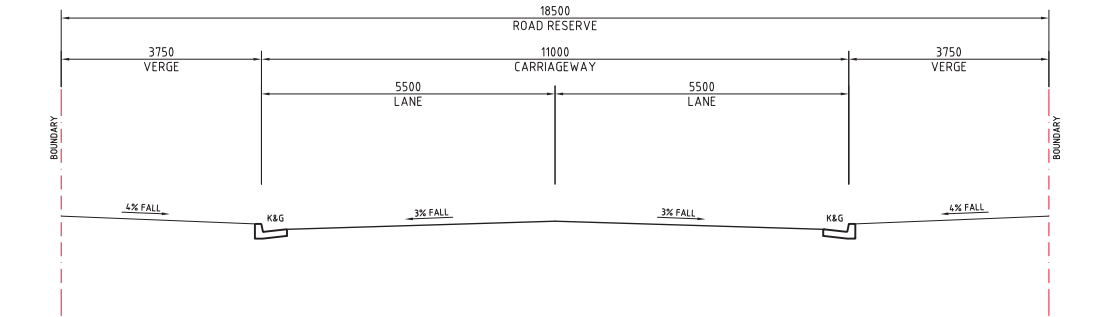
									ARCHITECT			CLIENT			PROJECT			DRAWING TITLE			DRAWING No					
												 Western Sydney Parklands Trust WESTERN SYDNEY PARKLANDS TRUST LEVEL 1, 10 VALENTINE AVE PARRAMATTA NSW 2150			 Costin Roe Consulting Pty Ltd. Consulting Engineers Level 1, 8 Windmill Street Walsh Bay, Sydney NSW 2000 Tel: (02) 9261-7899 Fax: (02) 9261-3728 email: mail@costinroe.com.au			EASTERN CREEK BUSINESS HUB WESTERN SYDNEY PARKLANDS			CostinRoe Consulting Value in Engineering and Management			ROAD 1 LONGITUDINAL SECTION C012693-00-DA51		
ISSUED FOR SECTION 94			21.07.15			B																				
FOR INFORMATION ONLY			30.03.15			A																				
AMENDMENTS			DATE			ISSUE			AMENDMENTS			DATE			ISSUE											



ACCESS ROAD
CHAINAGE 30.000 TO 133.150
SCALE 1:50



ACCESS ROAD
CHAINAGE 133.150 TO 229.603
SCALE 1:50



ACCESS ROAD
CHAINAGE 229.603 TO 520.000
SCALE 1:50

FOR SECTION 96

										ARCHITECT										CLIENT										PROJECT										CONSULTANT										DRAWING TITLE																																							
																				 Western Sydney Parklands Trust										EASTERN CREEK BUSINESS HUB										 Costin Roe Consulting Pty Ltd.										ROAD																																							
																				WESTERN SYDNEY PARKLANDS TRUST										WESTERN SYDNEY PARKLANDS										Consulting Engineers										TYPICAL CROSS SECTIONS																																							
																				LEVEL 7, 10 VALENTINE AVE																				Level 1, 8 Windmill Street																																																	
																				PARRAMATTA NSW 2150																				Wahah Bay, Sydney NSW 2000																																																	
																																								Tel: (02) 8551-7999 Fax: (02) 8641-3721																																																	
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Costin Roe Consulting

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