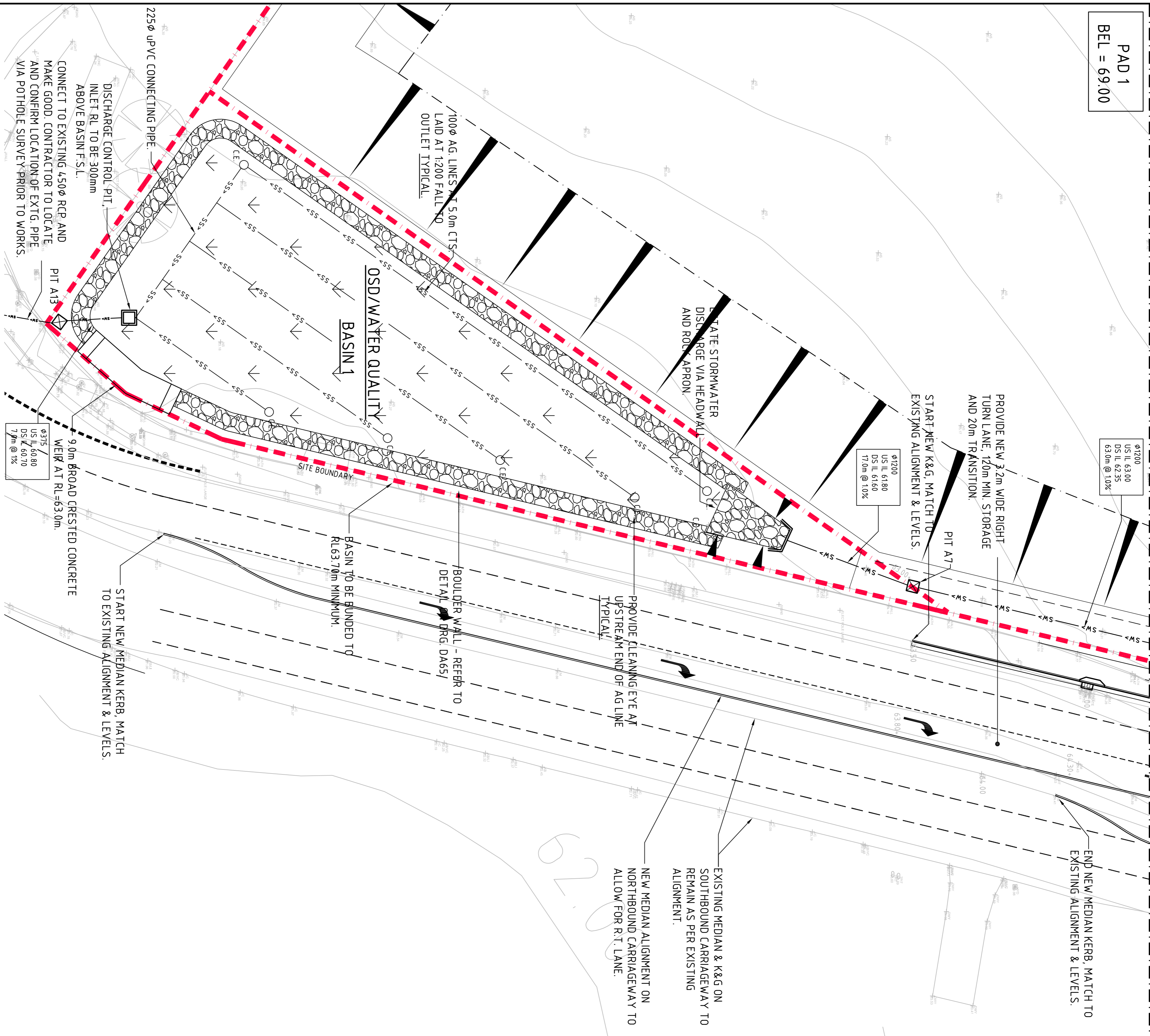


PAD 1
BEL = 69.00

BREAKLINE - FOR CONTINUATION REFER TO DRAWING DA4-1-2



INTERSECTION NOTES:
THROUGH LANES TO BE 3.5m MINIMUM TURN LANES TO BE 3.2m WIDE MINIMUM EXISTING ROUNDABOUT TO BE DECOMMISSIONED AND NEW SIGNALISED INTERSECTION PROVIDED. ALL WORKS TO BE COMPLETED IN ACCORDANCE WITH NSW ROAD AND MARITIME SERVICE (FORMER RTA) REQUIREMENTS.

LEGEND:
LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LAND PARTNERS SURVEYORS DATED 12.04.12.

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- DRAINAGE LINE
- OVERLAND FLOW PATH
- EXISTING DRAINAGE LINE
- FINISHED PAVEMENT SPOT HEIGHT
- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- EXISTING SURFACE CONTOUR
- EXISTING SURFACE SPOT HEIGHT

BASIN 1 - WATER QUALITY DETAILS
STORMWATER TREATMENT MEASURE: BIORETENTION
STORAGE PROPERTIES
EXTENDED DETENTION DEPTH: 300mm
STORAGE SURFACE AREA: 1300sqm MIN.
FILTER & MEDIA PROPERTIES
FILTRATION AREA: 1150sqm MIN
SAT. HYDRAULIC CONDUCTIVITY: 100mm/hr
FILTER DEPTH: 600mm

REFER TO DRG. DA46 FOR BIORETENTION NOTES AND DETAILS.

BASIN 1 - HYDROLOGIC DETAILS

ARI (yrs)	Storm Duration (hrs)	Flow (m ³ /s)		Water Level (m)	Storage (m ³)
		Pre - Devel	Post Devel (un-attenuated)		
2	0.5	0.348	187	0.325	1100
2	2	0.681	190	0.347	1350
100	0.5	1.76	3.77	1.407	2300
100	2	2.60	3.83	2.575	2450

FOR DEVELOPMENT APPLICATION

CONCEPT STORMWATER PLAN - SHEET 1
SCALE 1:250

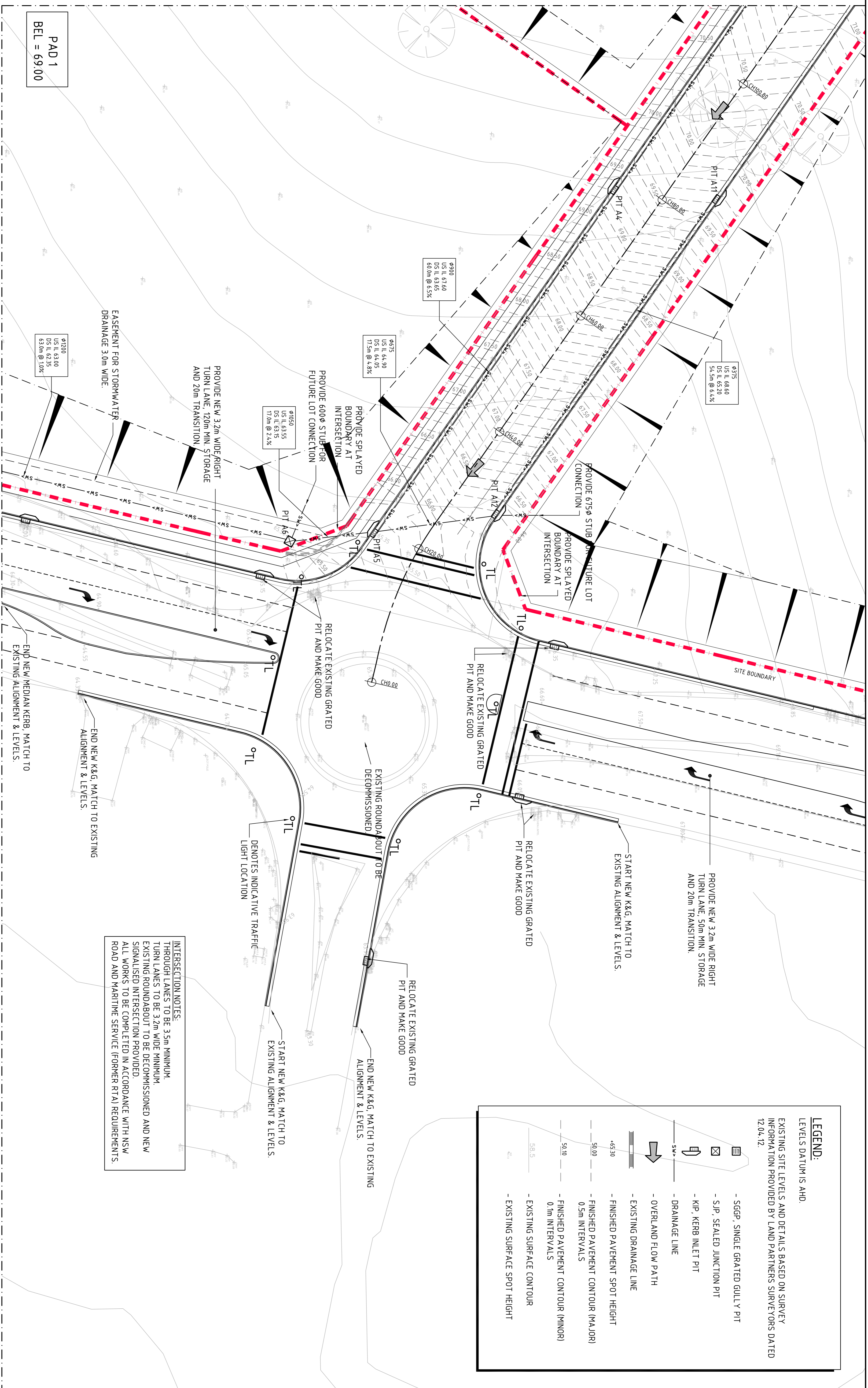
FOR DEVELOPMENT APPLICATION	08.06.12	C	<p>WESTERN SYDNEY PARKLANDS TRUST LEVEL 4, 10 VALENTINE AVE PARRAMATTA NSW 2150</p>	<p>HORSLEY DV. BUSINESS PARK CNR THE HORSLEY DV. & COMPASTURE RD WETHERILL PARK, NSW</p>	<p>Costin Roe Consulting Pty Ltd. Consulting Engineers Level 1, 8 Miranda Street Miranda NSW 2228 Tel: (02) 950 3788 Fax: (02) 9241-3781 email: mail@costinroe.com.au</p>
FOR INFORMATION ONLY	07.06.12	B			
AMENDMENTS	28.05.12	A			
DATE	ISSUE	AMENDMENTS	DATE	ISSUE	DATE

Value in Engineering and Management

Costin Roe Consulting

DRAWING TITLE: CONCEPT STORMWATER FINISHED LEVELS PLAN SHEET 1
DRAWING No: C011492.00-DA4-1-1

BREAKLINE - FOR CONTINUATION REFER TO DRAWING DA41-3



PAD 1
BEL = 69.00

FOR DEVELOPMENT APPLICATION
FOR APPLICATION



CONCEPT STORMWATER PLAN - SHEET 2
SCALE 1:250



INTERSECTION NOTES:
THROUGH LANES TO BE 3.5m MINIMUM.
TURN LANES TO BE 3.2m WIDE MINIMUM.
EXISTING ROUNDABOUT TO BE DECOMMISSIONED AND NEW
SIGNALISED INTERSECTION PROVIDED.
ALL WORKS TO BE COMPLETED IN ACCORDANCE WITH NSW
ROAD AND MARITIME SERVICE (FORMER RTA) REQUIREMENTS.

LEGEND:
LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY
INFORMATION PROVIDED BY LAND PARTNERS SURVEYORS DATED
12.04.12.

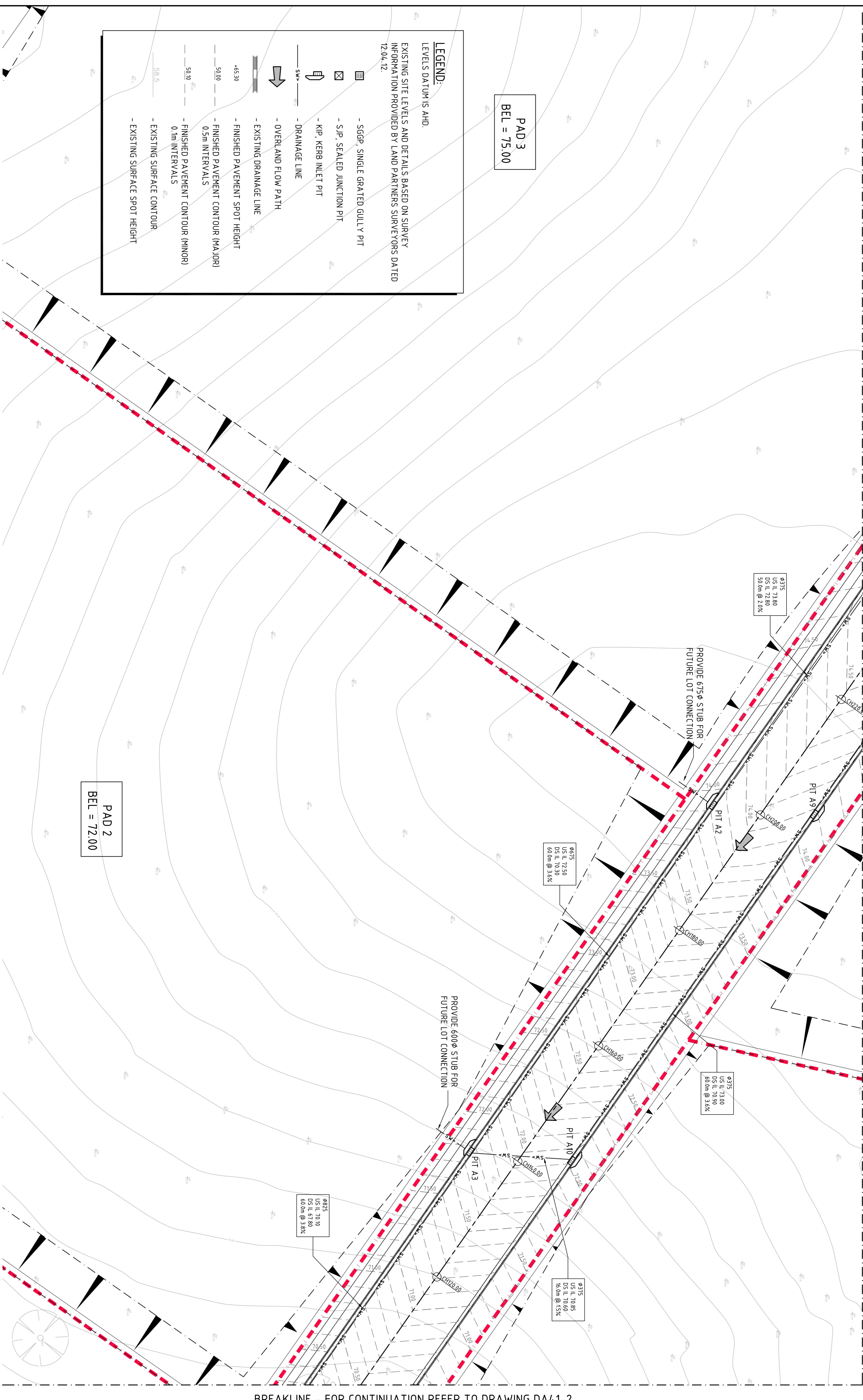
	- SGGP, SINGLE GRATED GULLY PIT
	- SJP, SEALED JUNCTION PIT
	- KIP, KERB INLET PIT
	- DRAINAGE LINE
	- OVERLAND FLOW PATH
	- EXISTING DRAINAGE LINE
	- FINISHED PAVEMENT SPOT HEIGHT
	- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
	- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
	- EXISTING SURFACE CONTOUR
	- EXISTING SURFACE SPOT HEIGHT

FOR DEVELOPMENT APPLICATION	08.06.12	C	CLIENT	Western Sydney Parklands Trust	PROJECT	HORSELEY DV. BUSINESS PARK CNR THE HORSELEY DV. & COMPASTURE RD WETHERILL PARK, NSW	COSTIN ROE CONSULTING PTY LTD. Consulting Engineers Level 1, 8 Miranda Street Miranda NSW 2228 Tel: (02) 950 2900 Fax: (02) 9241-3781 Email: mail@costinroe.com.au	DRAWING TITLE CONCEPT STORMWATER & FINISHED LEVELS PLAN SHEET 2								
FOR INFORMATION ONLY	07.06.12	B	DATE	WESTERN SYDNEY PARKLANDS TRUST LEVEL 4, 10 VALENTINE AVE PARRAMATTA, NSW, 2150	DESIGNED (P/AMM)	M.C.	Checked (P/AMM)		DATE	28.05.12	ISSUE	A	DATE	28.05.12	ISSUE	B
AMENDMENTS			DATE													

Costin Roe Consulting

DRAWING No: C011492.00-DA41-2

BREAKLINE - FOR CONTINUATION REFER TO DRAWING DA41-4



BREAKLINE - FOR CONTINUATION REFER TO DRAWING DA41-2

LEGEND:
LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LAND PARTNERS SURVEYORS DATED 12.04.12.

- S/GP SINGLE GRATED GULLY PIT
- SJP SEALED JUNCTION PIT
- KIP KERB INLET PIT
- DRAINAGE LINE
- OVERLAND FLOW PATH
- EXISTING DRAINAGE LINE
- FINISHED PAVEMENT SPOT HEIGHT
- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- EXISTING SURFACE CONTOUR
- EXISTING SURFACE SPOT HEIGHT

PAD 3
BEL = 75.00

PAD 2
BEL = 72.00

FOR DEVELOPMENT APPLICATION
FOR INFORMATION ONLY
FOR INFORMATION ONLY

FOR DEVELOPMENT APPLICATION	08.06.12	C
FOR INFORMATION ONLY	07.06.12	B
FOR INFORMATION ONLY	28.05.12	A
AMENDMENTS	DATE	ISSUE
	AMENDMENTS	DATE
	ISSUE	ISSUE

CLIENT

WESTERN SYDNEY PARKLANDS TRUST
LEVEL 4, 10 VALENTINE AVE
PARRAMATTA NSW 2150

PROJECT

HORSLEY DV. BUSINESS PARK
CNR THE HORSLEY DV. & COMPASTURE RD
WETHERILL PARK, NSW

DESIGNED (DRAWN) DATE CHECKED SIZE SCALE CNO REF.

M.W. M.C. 02.04.12 AT 1:50 SHOWN C011492.00-DA41-3

Costin Roe Consulting Pty Ltd.
Consulting Engineers and Surveyors
Level 1, 8 Miranda Street
Miranda NSW 2228
Tel: (02) 9298 3100 Fax: (02) 9241-3781
email: mir@costinroe.com.au

Value in Engineering and Management

DRAWING TITLE

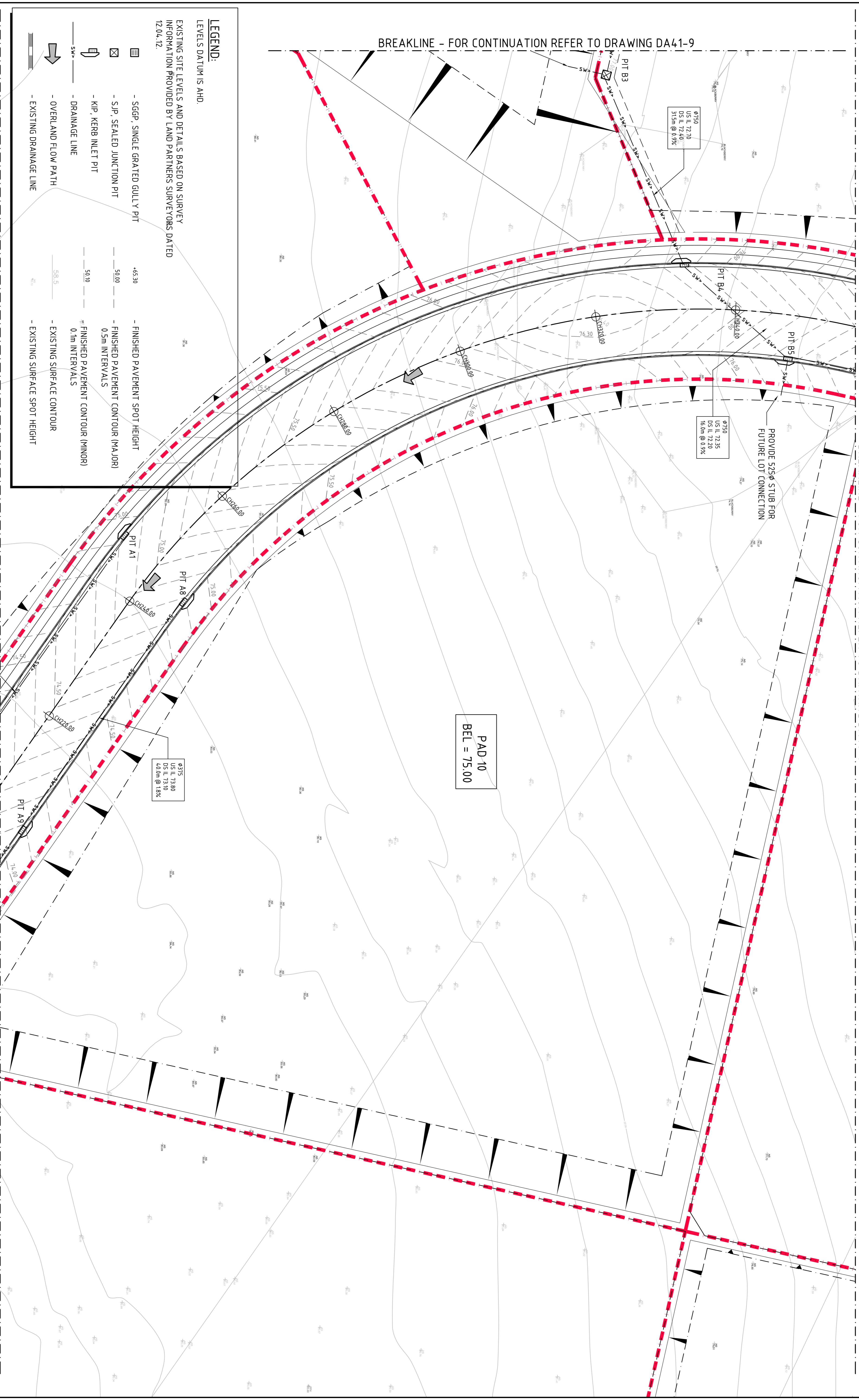
CONCEPT STORMWATER & FINISHED LEVELS PLAN SHEET 3

DRAWING No C011492.00-DA41-3

CONCEPT STORMWATER PLAN - SHEET 3
SCALE 1:250

SCALE 1:250 AT A1 SIZE PLOT

BREAKLINE - FOR CONTINUATION REFER TO DRAWING DA4-14



BREAKLINE - FOR CONTINUATION REFER TO DRAWING DA4-13

CONCEPT STORMWATER PLAN - SHEET 4

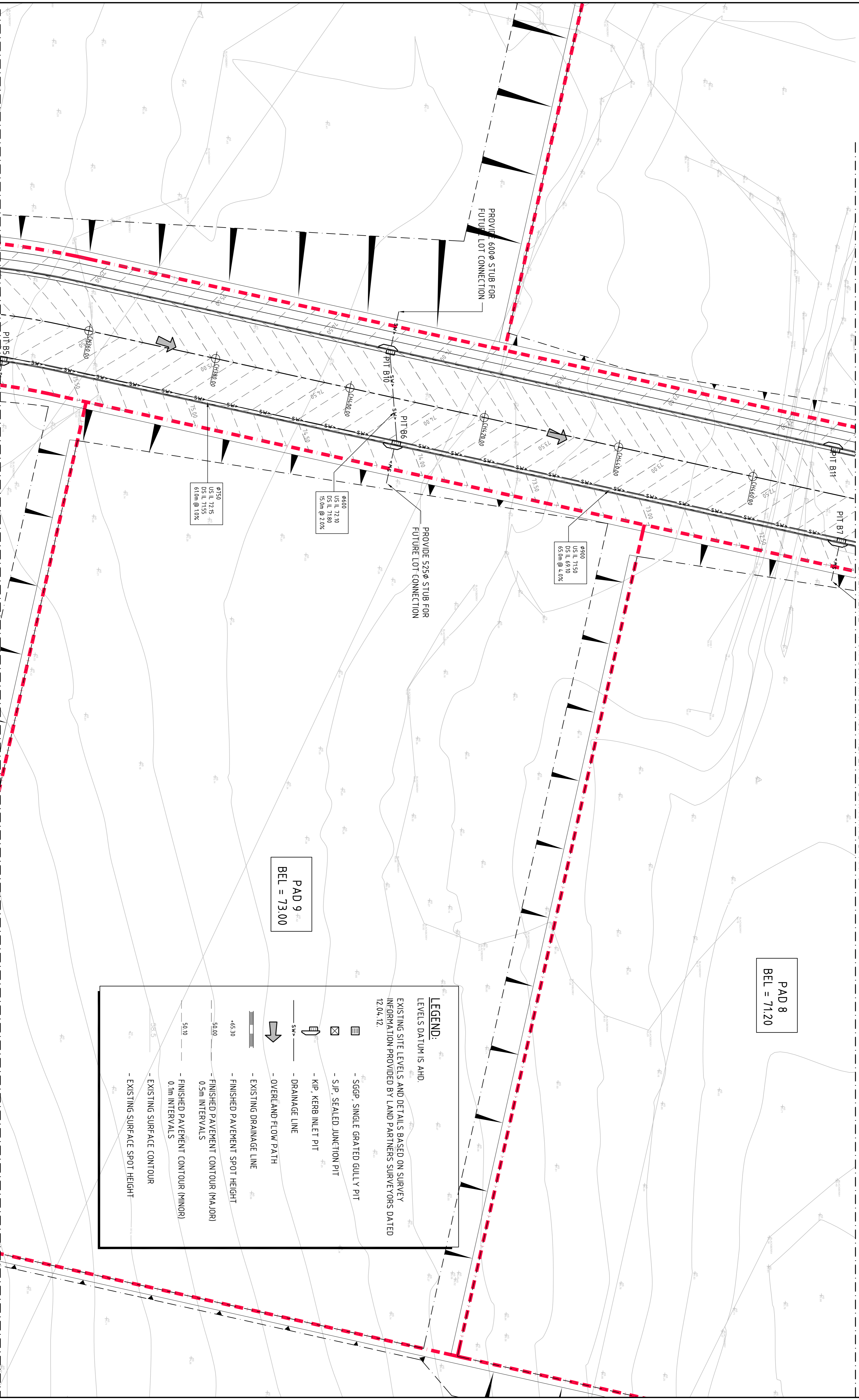
SCALE 1:250



FOR DEVELOPMENT APPLICATION

FOR DEVELOPMENT APPLICATION	08.06.12	C	CLIENT	Western Sydney Parklands Trust WESTERN SYDNEY PARKLANDS TRUST PARABRAVITA NSW 2150
FOR INFORMATION ONLY	07.06.12	B		
FOR INFORMATION ONLY	28.05.12	A	PROJECT	HORSELEY DV. BUSINESS PARK CNR THE HORSELEY DV. & COMPASTURE RD WETHERILL PARK, NSW
AMENDMENTS	DATE	ISSUE		
AMENDMENTS	DATE	ISSUE	Costin Roe Consulting Pty Ltd. Consulting Engineers Level 1, 8 Miranda Street Tel: (02) 952 7800 Fax: (02) 9241-3781 email: mail@costinroe.com.au	
AMENDMENTS	DATE	ISSUE		
Value in Engineering and Management				
DRAWING TITLE CONCEPT STORMWATER & FINISHED LEVELS PLAN SHEET 4 DRAWING No: C011492.00-DA4-1-4				

BREAKLINE - FOR CONTINUATION REFER TO DRAWING DA4-6



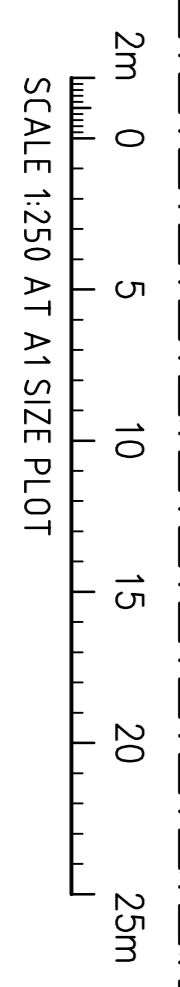
PAD 8
BEL = 71.20

PAD 9
BEL = 73.00

LEGEND:
LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LAND PARTNERS SURVEYORS DATED 12.04.12.

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- DRAINAGE LINE
- OVERLAND FLOW PATH
- EXISTING DRAINAGE LINE
- EXISTING DRAINAGE LINE
- FINISHED PAVEMENT SPOT HEIGHT
- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- EXISTING SURFACE CONTOUR
- EXISTING SURFACE SPOT HEIGHT



FOR DEVELOPMENT APPLICATION

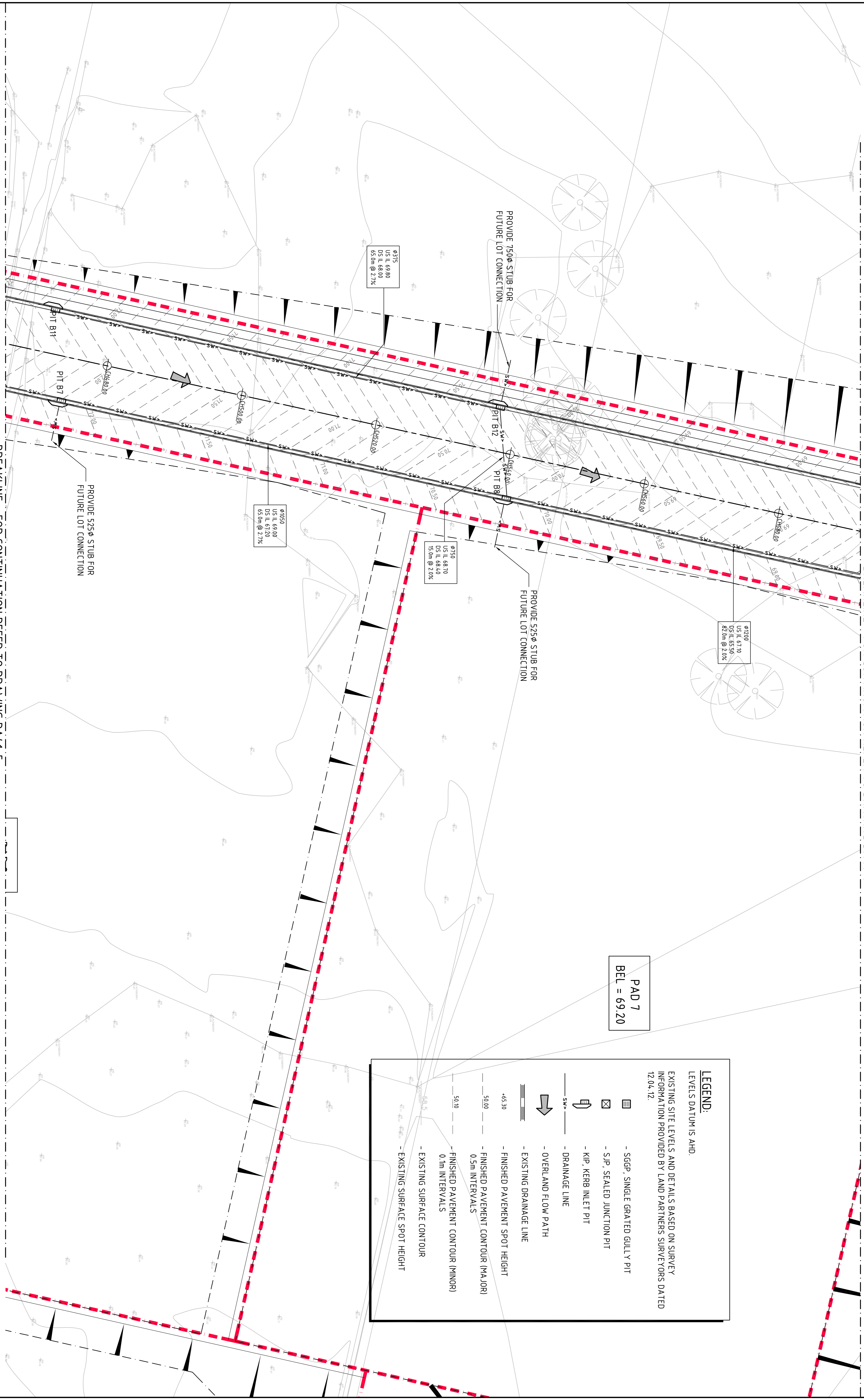
BREAKLINE - FOR CONTINUATION REFER TO DRAWING DA4-4

CONCEPT STORMWATER PLAN - SHEET 5

FOR DEVELOPMENT APPLICATION	08.06.12	C	
FOR INFORMATION ONLY	07.06.12	B	
FOR INFORMATION ONLY	28.05.12	A	
AMENDMENTS	DATE	ISSUE	AMENDMENTS

CLIENT	 WESTERN SYDNEY PARKLANDS TRUST LEVEL 4, 10 VALENTINE AVE PARRAMATTA, NSW, 2150
PROJECT	HORSLEY DV. BUSINESS PARK CNR THE HORSLEY DV. & COMPASTURE RD WETHERILL PARK, NSW
DESIGNED (DRAWN)	M.W. / M.C. DATE: 02/04/12 CHECKED: AT / AS SHOWN SIZE: SCALE COO. REF: C011492.00-DA4-1-5
	 Costin Roe Consulting Pty Ltd. Consulting Engineers Level 1, 8 Miranda Street Tel: (02) 956 2700 Fax: (02) 9241 3781 email: mail@costinroe.com.au
	 Value in Engineering and Management
DRAWING TITLE	CONCEPT STORMWATER & FINISHED LEVELS PLAN SHEET 5
DRAWING No	C011492.00-DA4-1-5
ISSUE	C

BREAKLINE - FOR CONTINUATION REFER TO DRAWING DA4-7



PAD 7
BEL = 69.20

LEGEND:
LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LAND PARTNERS SURVEYORS DATED 12.04.12.

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- DRAINAGE LINE
- OVERLAND FLOW PATH
- EXISTING DRAINAGE LINE
- FINISHED PAVEMENT SPOT HEIGHT
- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- EXISTING SURFACE CONTOUR
- EXISTING SURFACE SPOT HEIGHT

BREAKLINE - FOR CONTINUATION REFER TO DRAWING DA4-5

CONCEPT STORMWATER PLAN - SHEET 6

SCALE 1:250



FOR DEVELOPMENT APPLICATION

FOR APPLICATION

FOR DEVELOPMENT APPLICATION	08.06.12	C
FOR INFORMATION ONLY	07.06.12	B
FOR INFORMATION ONLY	28.05.12	A
AMENDMENTS	DATE	ISSUE

CLIENT: **NSW Parklands Trust**
WESTERN SYDNEY PARKLANDS TRUST
LEVEL 4, 10 ALENORNE AVE
PARRAMATTA, NSW, 2150

PROJECT: **HORSLEY DV. BUSINESS PARK**
CNR THE HORSLEY DV. & COMPASTURE RD
WETHERILL PARK, NSW

DESIGNED (DRAWN) DATE CHECKED SIZE SCALE CNO REF.

M.W. M.C. 02.04.12 AT AS SHOWN C011492.00-DA4-1-6

COSTIN ROE CONSULTING PTY LTD.
Consulting Engineers and Surveyors
Level 1, 8 Miranda Street
Miranda NSW 2228
Tel: (02) 952 2900 Fax: (02) 9241-3781
email: miranda@costinroe.com.au

Value in Engineering and Management

Costin Roe Consulting

DRAWING TITLE: **CONCEPT STORMWATER & FINISHED LEVELS PLAN SHEET 6**

DRAWING No: **C011492.00-DA4-1-6**

ISSUE: **C**

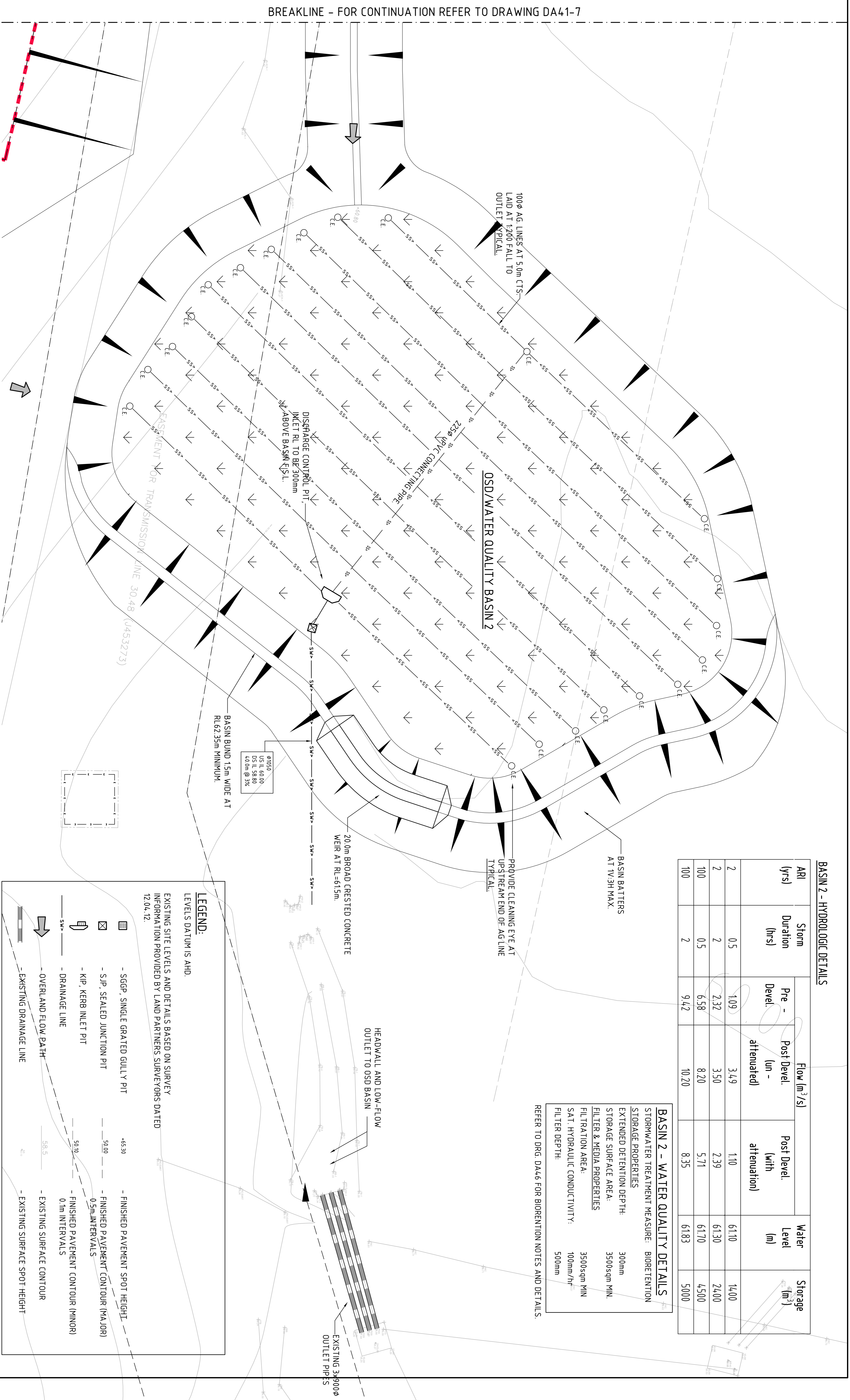
BASIN 2 - HYDROLOGIC DETAILS

ARI (yrs)	Storm Duration (hrs)	Flow (m ³ /s)		Water Level (m)	Storage (m ³)
		Pre - Devel.	Post Devel. (un-attenuated)		
2	0.5	1.09	3.49	6.110	14.00
2	2	2.32	3.50	6.130	24.00
100	0.5	6.58	8.20	6.170	4.500
100	2	9.42	10.20	6.183	5.000

BASIN 2 - WATER QUALITY DETAILS

STORMWATER TREATMENT MEASURE: BIORETENTION
 STORAGE PROPERTIES
 EXTENDED DETENTION DEPTH: 300mm
 STORAGE SURFACE AREA: 3500sqm MIN.
 FILTER & MEDIA PROPERTIES
 FILTRATION AREA: 3500sqm MIN
 SAT. HYDRAULIC CONDUCTIVITY: 100mm/hr
 FILTER DEPTH: 500mm

REFER TO DRG. DA46 FOR BIORETENTION NOTES AND DETAILS.



BREAKLINE - FOR CONTINUATION REFER TO DRAWING DA41-7

**FOR DEVELOPMENT APPLICATION
FOR APPLICATION**



CONCEPT STORMWATER PLAN - SHEET 8
SCALE 1:250

LEGEND:
LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LAND PARTNERS SURVEYORS DATED 12.04.12.

- SGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- DRAINAGE LINE
- OVERLAND FLOW PATH
- EXISTING DRAINAGE LINE
- FINISHED PAVEMENT SPOT HEIGHT
- FINISHED PAVEMENT CONTOUR (MAJOR)
- FINISHED PAVEMENT CONTOUR (MINOR)
- 0.1m INTERVALS
- EXISTING SURFACE CONTOUR
- EXISTING SURFACE SPOT HEIGHT



FOR DEVELOPMENT APPLICATION	08.06.12	C			
FOR INFORMATION ONLY	07.06.12	B			
FOR INFORMATION ONLY	28.05.12	A			
AMENDMENTS	DATE	ISSUE	AMENDMENTS	DATE	ISSUE

CLIENT: **Western Sydney Parklands Trust**
WESTERN SYDNEY PARKLANDS TRUST
LEVEL 4, 10 VALENTINE AVE
PARAMATTA, NSW, 2150

PROJECT: **HORSLEY DV. BUSINESS PARK**
CNR THE HORSLEY DV & COMPASTURE RD
WETHERILL PARK, NSW

DESIGNED DRAWN DATE CHECKED SIZE SCALE CAD REF:
M/W M/C 02.04.12 AT AS SHOWN C011492.00-DA41-8

AGEA

Costin Roe Consulting Pty Ltd.
Consulting Engineers
Level 1, 8 Madam Street
Sydney NSW 2000
Tel: (02) 9550 9900 Fax: (02) 921-3791
email: info@costinroe.com.au

Value in Engineering and Management

Costin Roe Consulting

DRAWING TITLE: **CONCEPT STORMWATER & FINISHED LEVELS PLAN SHEET 8**

DRAWING No: **C011492.00-DA41-8**

BREAKLINE - FOR CONTINUATION REFER TO DRAWING DA41-8

BREAKLINE - FOR CONTINUATION REFER TO DRAWING DA41-6



FOR DEVELOPMENT APPLICATION



CONCEPT STORMWATER PLAN - SHEET 9
SCALE 1:250

LEGEND:
LEVELS DATUM IS AHD.
EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LAND PARTNERS SURVEYORS DATED 12.04.12

	- SGGP, SINGLE GRATED GULLY PIT	45.30	- FINISHED PAVEMENT SPOT HEIGHT
	- SJP, SEALED JUNCTION PIT	50.00	- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
	- KIP, KERB INLET PIT	50.10	- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
	- DRAINAGE LINE	58.5	- EXISTING SURFACE CONTOUR
	- OVERLAND FLOW PATH		- EXISTING SURFACE SPOT HEIGHT
	- EXISTING DRAINAGE LINE		



AMENDMENTS	DATE	ISSUE	AMENDMENTS	DATE	ISSUE
FOR INFORMATION ONLY	07.06.12	A			
FOR DEVELOPMENT APPLICATION	08.06.12	C			
FOR INFORMATION ONLY	08.06.12	B			
FOR INFORMATION ONLY	29.06.12	D			

CLIENT

WESTERN SYDNEY PARKLANDS TRUST
LEVEL 4, 10 VALENTINE AVE
PARRAMATTA NSW 2150

PROJECT

HORSLEY DV. BUSINESS PARK
CNR THE HORSELEY DV. & COMPASTURE RD
WETHERILL PARK, NSW

DESIGNED (P/AMM)	DATE	CHECKED	SCALE	COO. REF.
M.W.	02.04.12	AT	AS SHOWN	C011492.00-DA41-9

ACEA

Costin Roe Consulting Pty Ltd.
Consulting Engineers
Level 1, 8 Miranda Street
Miranda NSW 2228
Tel: (02) 9241 3700 Fax: (02) 9241 3701
email: mail@costinroe.com.au












Value in Engineering and Management

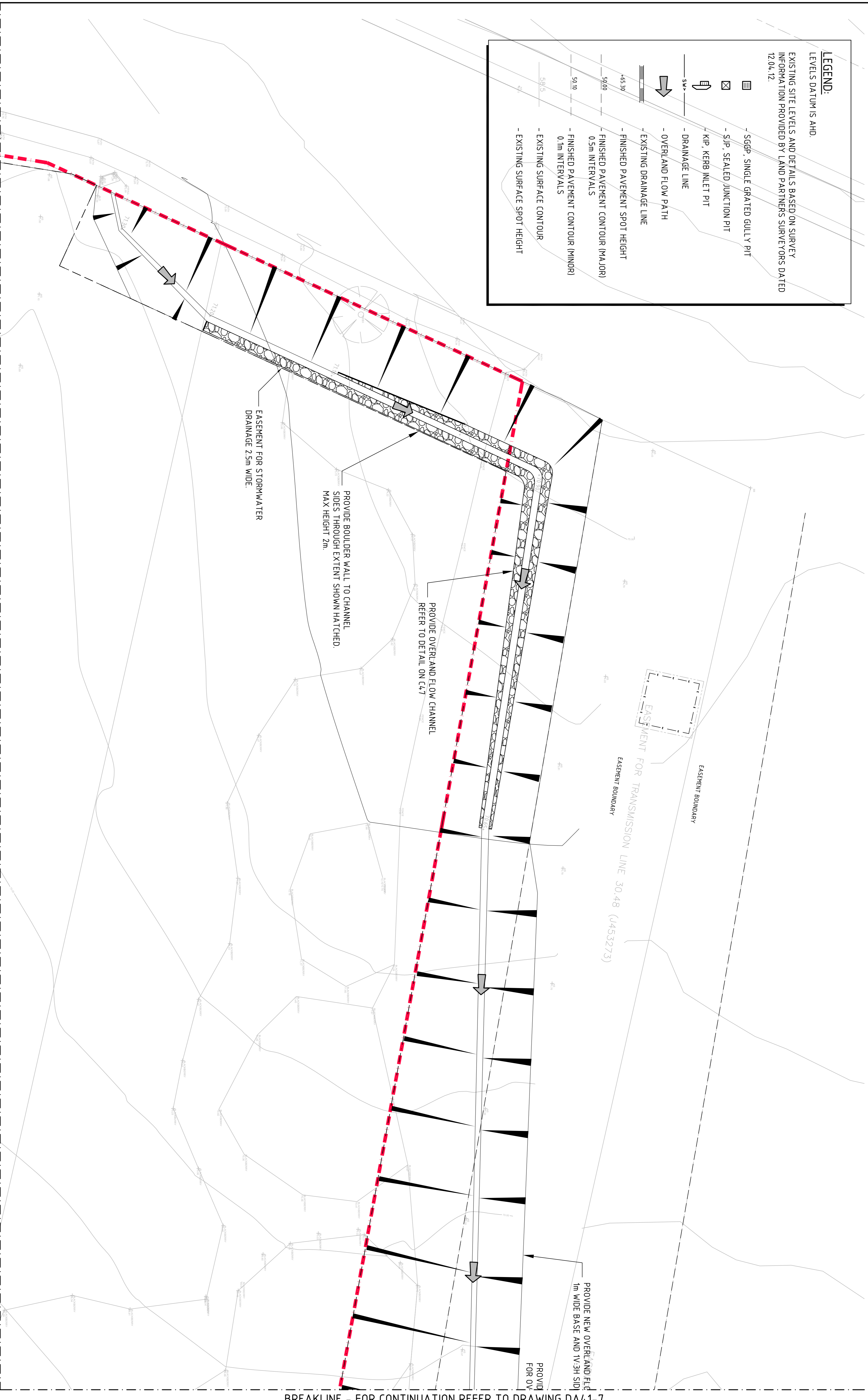
DRAWING TITLE

CONCEPT STORMWATER & FINISHED LEVELS PLAN SHEET 9

DRAWING No: C011492.00-DA41-9

LEGEND:
LEVELS DATUM IS AHD
EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LAND PARTNERS SURVEYORS DATED 12.04.12.

-  - SGGP, SINGLE GRATED GULLY PIT
-  - SJP, SEALED JUNCTION PIT
-  - KIP, KERB INLET PIT
-  - DRAINAGE LINE
-  - OVERLAND FLOW PATH
-  - EXISTING DRAINAGE LINE
-  - FINISHED PAVEMENT SPOT HEIGHT
-  - FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
-  - FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
-  - EXISTING SURFACE CONTOUR
-  - EXISTING SURFACE SPOT HEIGHT

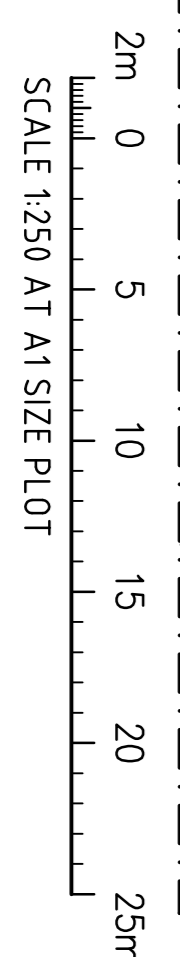




FOR DEVELOPMENT APPLICATION

BREAKLINE - FOR CONTINUATION REFER TO DRAWING DA41-6
CONCEPT STORMWATER PLAN - SHEET 10



SCALE 1:250



FOR DEVELOPMENT APPLICATION		08.06.12	B	CLIENT		 Western Sydney Parklands Trust WESTERN SYDNEY PARKLANDS TRUST LEVEL 4, 10 VALENTINE AVE PARRAMATTA, NSW - 2150	
FOR INFORMATION ONLY		07.06.12	A	PROJECT		HORSLEY DV. BUSINESS PARK CNR THE HORSELEY DV. & COMPASTURE RD WETHERILL PARK, NSW	
AMENDMENTS		DATE	ISSUE	AMENDMENTS	DATE	ISSUE	 Costin Roe Consulting Pty Ltd. Consulting Engineers Level 1, 8 Miranda Street Mirrabooka NSW 2150 Tel: (02) 9241 3700 Fax: (02) 9241 3701 email: mail@costinroe.com.au
				DRAWING TITLE		CONCEPT STORMWATER & FINISHED LEVELS PLAN SHEET 10	
				DRAWING No		C011492.00-DA41-10	
				ISSUE		B	
				Value in Engineering and Management		