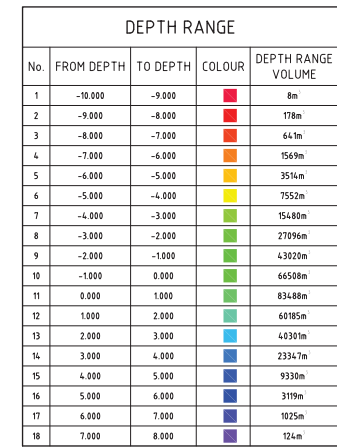


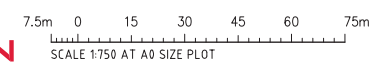


1. DRAIN PONDS OF WATER & DISCHARGE CLEAN WATER TO STORMWATER DRAINAGE SYSTEM (AS PER NOTES 2 & 3) – REFER TO PLAN FOR LOCATIONS.
2. DEWATERING TO BE PERFORMED IN SUCH A MANNER AS TO REMOVE CLEAN WATER WITHOUT REMOVING OR DISTURBING SILT, SEDIMENT OR OTHER ORGANIC MATERIAL FROM THE BASE OF THE PONDS.
3. DISCHARGE OF WATER FROM PONDS TO HAVE A PH RANGE OF 6.5-8.5 AND TSS < 50mg/L. PONDS TO BE DRESSED WITH GYPSUM (APPROX. 30mg PER CUBIC METRE) TO ACCELERATE SETTLEMENT OF SUSPENDED SOLIDS.
4. REMOVE ALL SILT, SEDIMENT AND WATER LOGGED MATERIAL FROM BASE OF POND (NOM. DEPTH 0.5-1.0m) AND DISPOSE OF IN ACCORDANCE WITH THE NSW DEPT. OF ENVIRONMENT CLIMATE CHANGE AND WATER REQUIREMENTS.
5. EXPOSE NATURAL SITE SOILS AND COMPACT SUBGRADE IN ACCORDANCE WITH THE SITE PREPARATION NOTES REMOVING ANY SOFT ZONES AS REQ'D.
6. PLACE AND COMPACT FILL AS PER SITE PREPARATION NOTES.

NOMINATED B.E.L. DETAIL
N.T.S.

THE EXISTING SURFACE IS BASED ON SURVEY & DESIGN INFORMATION PROVIDED. THIS SURVEY IS MOST CURRENT HOWEVER IT MAY NOT ACCURATELY REFLECT ACTUAL GROUND LEVELS OR STOCKPILES ETC ON SITE. IT IS THE CONTRACTORS RESPONSIBILITY TO CONFIRM VOLUMES AND ALLOWANCES FOR EARTHWORKS.

1. ALL EARTHWORKS SHALL BE COMPLETED GENERALLY IN ACCORDANCE WITH THE GUIDELINES SPECIFIED BY THE GEOTECHNICAL REPORT GT914-R002 PROVIDED BY GROUND TECHNOLOGIES GEOTECHNICAL ENGINEERS DATED 13.10.16.
2. EXISTING LEVELS ARE BASED ON INFORMATION PROVIDED BY MONTEATH & POWYS TITLED DETAIL SURVEY OF LOTS 18-23 DP 13961 COWPASTURE ROAD, WETHERILL PARK DATED 27.05.16.
3. STRIP ANY TOP SOIL OR DELETERIOUS MATERIAL AND DISPOSE OF FROM SITE OR STORE AS DIRECTED.
4. COMPLETE CUT TO FILL EARTHWORKS TO ACHIEVE THE REQUIRED LEVELS AS INDICATED ON THE DRAWINGS WITHIN A TOLERANCE OF +0mm/-10mm THROUGH BUILDING PADS/PAVEMENTS AND +0mm/-20mm ELSEWHERE.
5. PREPARE STEEP BATTERS TO RECEIVE FILL BY CONSTRUCTING BENCHING TO FACILITATE FILL PLACEMENT AND COMPACTION.
6. AREAS TO RECEIVE FILL (THAT ARE NOT ON BENCHED BATTERS) AND AREAS IN CUT SHALL BE PROOF ROLLED TO IDENTIFY ANY SOFT HEAVING MATERIAL. SOFT MATERIAL SHALL BE BOXED OUT AND REMOVED PRIOR TO FILL PLACEMENT.
7. SITE WON FILL TO BE PLACED IN MAXIMUM 300mm LOOSE LAYERS AND COMPACTED TO 100% STANDARD AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT.
8. IMPORTED FILL SHALL BE PLACED IN MAXIMUM 300mm LOOSE LAYERS AND COMPACTED TO 100% STANDARD AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT.
9. MAXIMUM PARTICLE SIZE TO BE THE SMALLER OF 150mm OR HALF THE (LOOSE) LAYER THICKNESS AND/OR TWO THIRDS THE LAYER THICKNESS AFTER COMPACTION.
10. ALL EARTHWORKS SHALL BE COMPLETED UNDER LEVEL 1 CONTROL IN ACCORDANCE WITH AS 3798-2007.
11. PRIOR TO ANY EARTHWORKS, EROSION CONTROL AS OUTLINED IN THE EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE COMPLETED.
12. EXISTING ROCK, IF ANY, SHALL BE REMOVED BY HEAVY ROCK BREAKING OR RIPPING.
13. MATCH EXISTING LEVELS AT BATTER INTERFACE.
14. CONTRACTOR TO MATCH EXISTING LEVELS AT THE INTERFACE OF EARTHWORKS AND EXISTING SURFACE AT BATTER LOCATIONS OR WHERE NO RETAINING WALLS ARE PRESENT. ANY DISCREPANCY BETWEEN DESIGN AND EXISTING LEVELS TO BE REFERRED TO THE ENGINEER FOR DIRECTION OR ADJUSTMENTS TO DESIGN LEVELS.



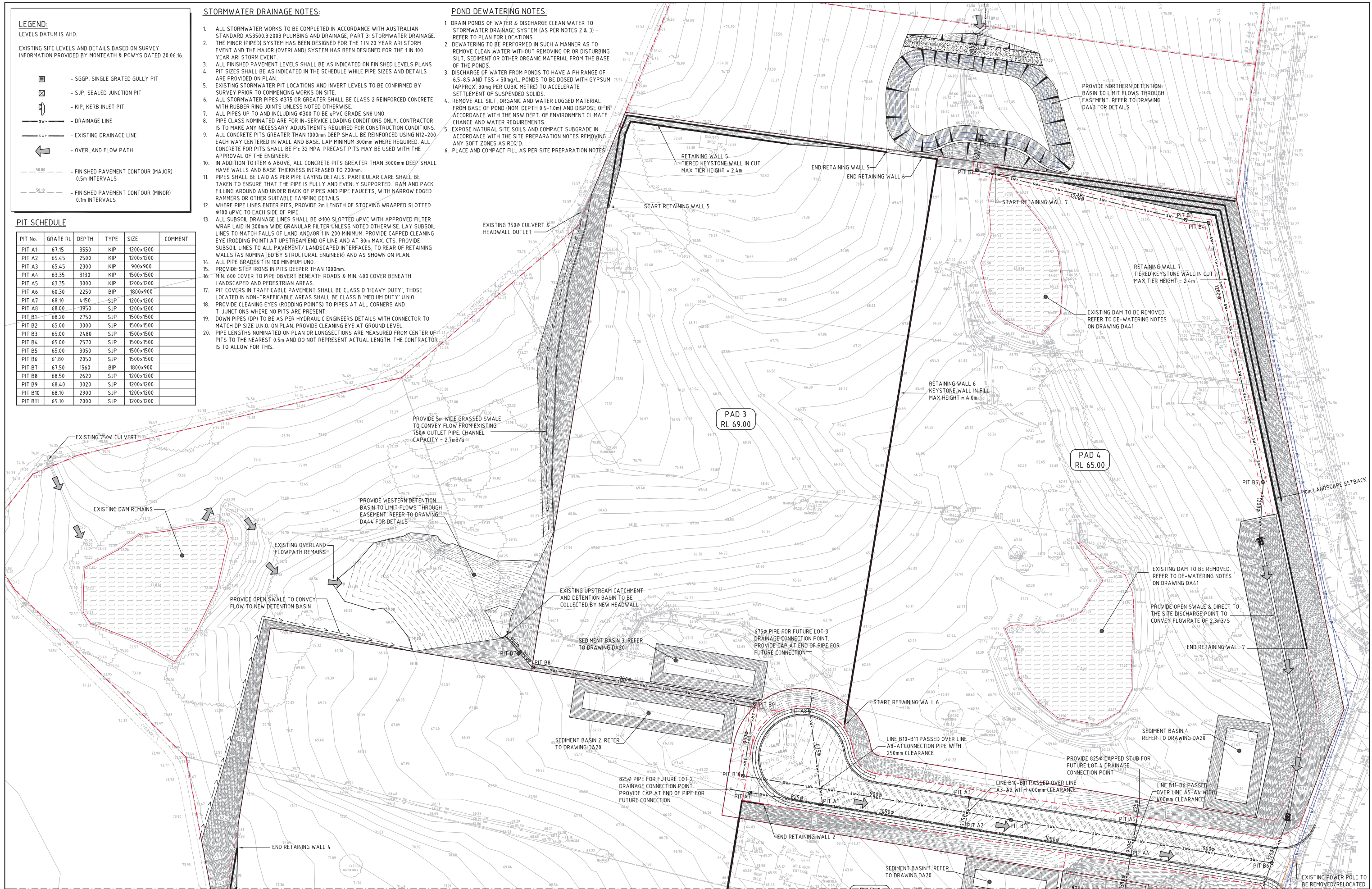
LEVELS DATUM IS AHD.

-  - SGGP, SINGLE GRATED GULLY PIT
-  - SJP, SEALED JUNCTION PIT
-  - KIP, KERB INLET PIT
-  - DRAINAGE LINE
-  - EXISTING DRAINAGE LINE
-  - OVERLAND FLOW PATH

PIT No.	GRATE RL	DEPTH	TYPE	SIZE	COMMENT
PIT A1	67.15	3550	KIP	1200x1200	
PIT A2	65.45	2500	KIP	1200x1200	
PIT A3	65.45	2300	KIP	900x900	
PIT A4	63.35	3130	KIP	1500x1500	
PIT A5	63.35	3000	KIP	1200x1200	
PIT A6	60.30	2250	BIP	1800x900	
PIT A7	68.10	4.50	SJP	1200x1200	
PIT A8	68.00	3950	SJP	1200x1200	
PIT B1	68.20	2750	SJP	1500x1500	
PIT B2	65.00	3000	SJP	1500x1500	
PIT B3	65.00	2480	SJP	1500x1500	
PIT B4	65.00	2570	SJP	1500x1500	
PIT B5	65.00	3050	SJP	1500x1500	
PIT B6	61.80	2050	SJP	1500x1500	
PIT B7	67.50	1560	BIP	1800x900	
PIT B8	68.50	2620	SJP	1200x1200	
PIT B9	68.40	3020	SJP	1200x1200	
PIT B10	68.10	2900	SJP	1200x1200	
PIT B11	65.10	2000	SJP	1200x1200	

1. ALL STORMWATER WORKS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS3500 3:2003 PLUMBING AND DRAINAGE, PART 3: STORMWATER DRAINAGE.
2. THE MINOR (PIPED) SYSTEM HAS BEEN DESIGNED FOR THE 1 IN 20 YEAR ARI STORM EVENT AND THE MAJOR (OVERLAND) SYSTEM HAS BEEN DESIGNED FOR THE 1 IN 100 YEAR ARI STORM EVENT.
3. ALL FINISHED PAVEMENT LEVELS SHALL BE AS INDICATED ON FINISHED LEVELS PLANS.
4. PIT SIZES SHALL BE AS INDICATED IN THE SCHEDULE WHILE PIPE SIZES AND DETAILS ARE PROVIDED ON PLAN.
5. EXISTING STORMWATER PIT LOCATIONS AND INVERT LEVELS TO BE CONFIRMED BY SURVEY PRIOR TO COMMENCING WORKS ON SITE.
6. ALL STORMWATER PIPES ≥ 75 OR GREATER SHALL BE CLASS 2 REINFORCED CONCRETE WITH RUBBER RING JOINTS UNLESS NOTED OTHERWISE.
7. ALL PIPES UP TO AND INCLUDING $\phi 300$ TO BE uPVC GRADE S18 UNO.
8. PIPE CLASS NOMINATED ARE FOR IN-SERVICE LOADING CONDITIONS ONLY. CONTRACTOR IS TO MAKE ANY NECESSARY ADJUSTMENTS REQUIRED FOR CONSTRUCTION CONDITIONS.
9. ALL CONCRETE PITS GREATER THAN 1000mm DEEP SHALL BE REINFORCED USING N12-200 EACH WAY CENTERED IN WALL AND BASE. LAP MINIMUM 300mm where REQUIRED. ALL CONCRETE FOR PITS SHALL BE $F_c \leq 32$ MPa. PRECAST PITS MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
10. IN ADDITION TO ITEM 6 ABOVE, ALL CONCRETE PITS GREATER THAN 3000mm DEEP SHALL HAVE WALLS AND BASE THICKNESS INCREASED TO 200mm.
11. PIPES SHALL BE LAID AS PER PIPE LAYING DETAILS. PARTICULAR CARE SHALL BE TAKEN TO ENSURE THAT THE PIPE IS FULLY AND EVENLY SUPPORTED. RAM AND PACK FILLING AROUND AND UNDER BACK OF PIPES AND PIPE FAUCETS, WITH NARROW EDGED RAMMERS OR OTHER SUITABLE TAMPING DETAILS.
12. WHERE PIPE LINES ENTER PITS, PROVIDE 2m LENGTH OF STOCKING WRAPPED SLOTTED $\phi 100$ uPVC TO EACH SIDE OF PIPE.
13. ALL SUBSOIL DRAINAGE LINES SHALL BE $\phi 100$ SLOTTED uPVC WITH APPROVED FILTER WRAP LINED IN 300mm MINIMUM SUBSOIL FILTER UNLESS NOTED OTHERWISE. LAY SUBSOIL LINES TO MATCH FALL OF LAND AND/OR 1 IN 200 MINIMUM. PROVIDE CAPPED CLEANING EYES (MATCH POINT) AT UPSTREAM END OF LINE AND AT 30m MAX. CTS. PROVIDE SUBSOIL LINES TO ALL PAVEMENT/ LANDSCAPED INTERFACES, TO REAR OF RETAINING WALLS (AS NOMINATED BY STRUCTURAL ENGINEER) AND AS SHOWN ON PLAN.
14. ALL PIPE GRADES 1 IN 100 MINIMUM UNO.
15. PROVIDE STEEL IRONS IN PITS DEEPER THAN 1000mm.
16. MIN. 600 COVER TO PIPE OBVERT BENEATH ROADS & MIN. 400 COVER BENEATH LANDSCAPED AND PEDESTRIAN AREAS.
17. PIT COVERS IN TRAFFICABLE PAVEMENT SHALL BE CLASS B "HEAVY DUTY", THOSE LOCATED IN NON-TRAFFICABLE AREAS SHALL BE CLASS B "MEDIUM DUTY" UNO.
18. PROVIDE CLEANING EYES (RODDING POINTS) TO PIPES AT ALL CORNERS AND AT ALL POINTS WHERE NO PITS ARE PRESENT.
19. DOWN PIPES (DP) TO BE AS PER HYDRAULIC ENGINEERS DETAILS WITH CONNECTOR TO MATCH DP SIZE UNO ON PLAN. PROVIDE CLEANING EYE AT GROUND LEVEL.
20. PIPE LENGTHS NOMINATED ON PLAN OR LONGSECTIONS ARE MEASURED FROM CENTER OF PITS TO THE NEAREST 0.5m AND DO NOT REPRESENT ACTUAL LENGTH. THE CONTRACTOR IS TO ALLOW FOR THIS.

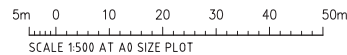
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BREAKLINE - REFER TO DRAWING DA42 FOR CONTINUATION



FOR DEVELOPMENT APPLICATION

[illegible]

CLIENT



**Western Sydney
Parklands Trust**

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

PROJECT					
HORSLEY DV. BUSINESS PARK					
STAGE 2					
COWPASTURE ROAD WETHERILL PARK, NSW					
DESIGNED M.C	DRAWN M.C	DATE 08.08.16	CHECKED M.W	SIZE A0	SCALE AS SHOWN



REF:
1492.11-DA41

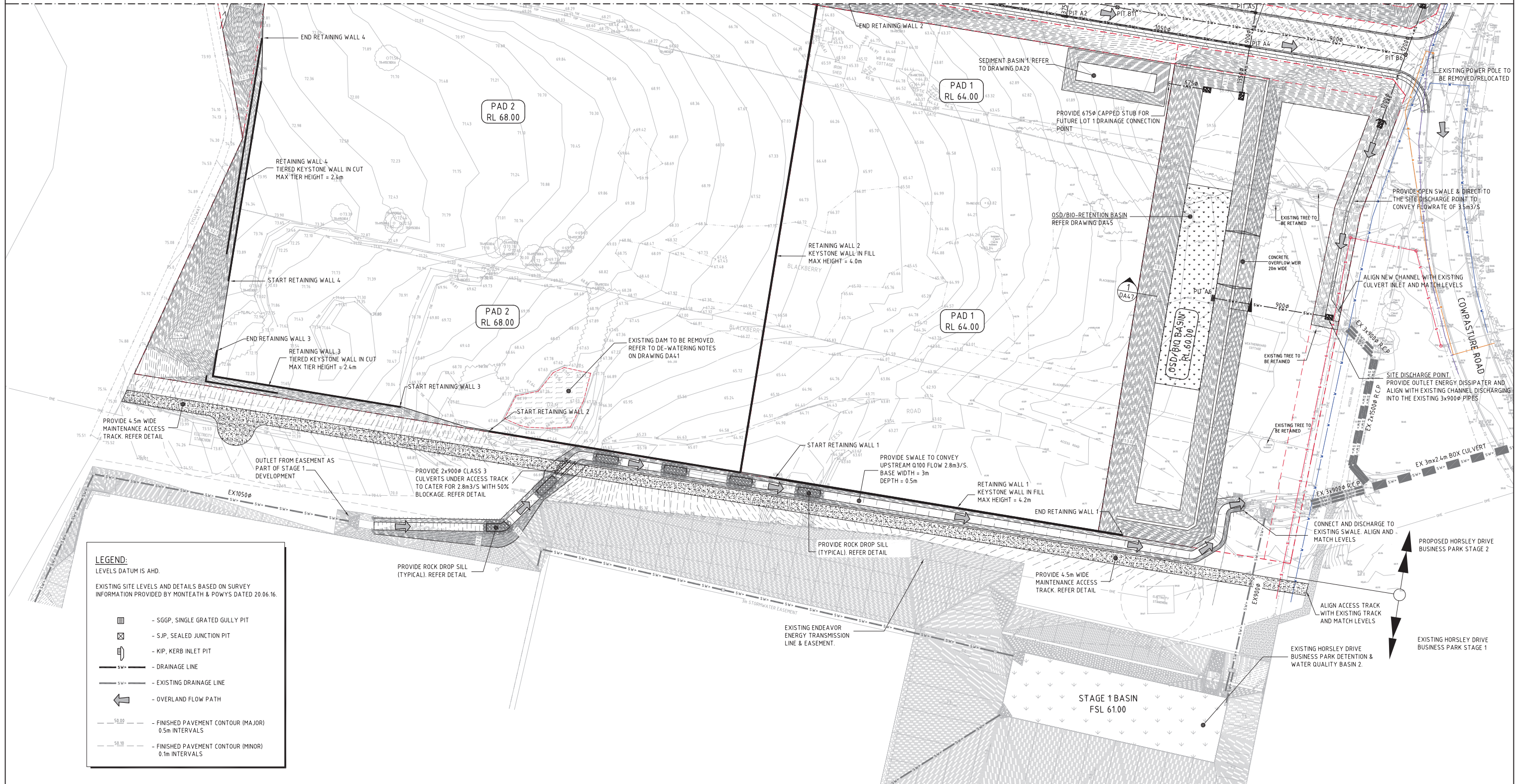
Costin Roe Consulting Pty Ltd.
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 Level 1, 8 Windmill Street
 Walsh Bay, Sydney NSW 2000
 Tel: (02) 9251-7899 Fax: (02) 9241-3731
 email: mail@costinroe.com.au ©

Costin Roe Consulting

PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE	
CONCEPT CIVIL WORKS PLAN SHEET 1	
DRAWING No	ISS
Co11492.11- DA41	

BREAKLINE - REFER TO DRAWING DA41 FOR CONTINUATION



LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY MONTEATH & POWYS DATED 20.06.16.

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



CONCEPT CIVIL WORKS PLAN - SHEET 2
SCALE 1:500

FOR DEVELOPMENT APPLICATION

5m 0 10 20 30 40 50m
SCALE 1:500 AT A0 SIZE PLOT

ISSUED FOR REVIEW	15.11.16	F			
ISSUED FOR REVIEW	31.10.16	E			
ISSUED FOR REVIEW	24.10.16	D			
FOR INFORMATION ONLY	18.10.16	C			
FOR INFORMATION ONLY	10.08.16	B			
FOR INFORMATION ONLY	08.08.16	A	ISSUED FOR DEVELOPMENT APPLICATION	01.12.16	G
AMENDMENTS	DATE	ISSUE	AMENDMENTS	DATE	ISSUE

CLIENT	 Western Sydney Parklands Trust
PROJECT	HORSLEY DV. BUSINESS PARK STAGE 2 COWPASTURE ROAD WETHERILL PARK, NSW
DESIGNED	DRW: M.C. DATE: 08.08.16
CHECKED	CHK: M.C. DATE: 08.08.16
SCALE	AS SHOWN
CDR REF:	C011492.11-DA42

PROJECT	HORSLEY DV. BUSINESS PARK STAGE 2 COWPASTURE ROAD WETHERILL PARK, NSW
DESIGNED	DRW: M.C. DATE: 08.08.16
CHECKED	CHK: M.C. DATE: 08.08.16
SCALE	AS SHOWN
CDR REF:	C011492.11-DA42

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Tel: (02) 8551-7899 Fax: (02) 8541-3721	email: mail@costinroe.com.au

Costin Roe Consulting

PRECISION | COMMUNICATION | ACCOUNTABILITY

DRAWING TITLE	CONCEPT CIVIL WORKS PLAN SHEET 2
DRAWING No	C011492.11- DA42
ISSUE	G

