

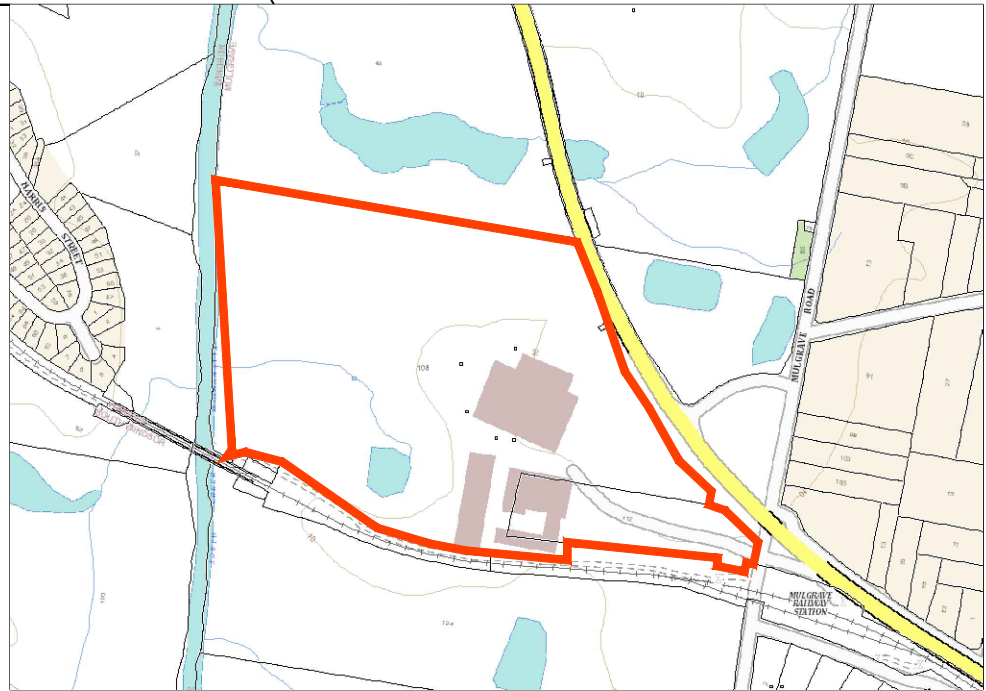
HAWKESBURY CITY COUNCIL
PROPOSED RESIDENTIAL DEVELOPMENT
108 & 112 MULGRAVE RD, MULGRAVE
DRIVEWAY & DRAINAGE PLANS

GENERAL NOTES

1. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH HAWKESBURY CITY COUNCIL'S WORKS SPECIFICATION CIVIL - 2002 REQUIREMENTS AND/OR AS DIRECTED BY THEIR REPRESENTATIVE.
2. THE CONTRACTOR IS TO IDENTIFY, LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION WORKS AND WHERE NECESSARY MAKE ARRANGEMENTS WITH THE RELEVANT AUTHORITY TO RELOCATE OR ADJUST WHERE NECESSARY.
3. COUNCIL'S TREE PRESERVATION ORDER MUST BE OBSERVED AND NO TREE SHALL BE FELLED, LOPPED OR REMOVED WITHOUT THE PRIOR APPROVAL OF COUNCIL.
4. ALL WORKS SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE WORK HEALTH & SAFETY ACT 2011 AND ALL RELEVANT OCCUPATIONAL HEALTH & SAFETY POLICIES AND REGULATIONS.
5. DIMENSIONS SHALL NOT BE SCALED FROM THE PLANS. CLARIFICATION OF DIMENSIONS SHALL BE SOUGHT FROM THE SUPERINTENDENT OR REFERRED TO THE DESIGNER.
6. SURVEY MARKS SHOWN THUS ▲ SHALL BE MAINTAINED AT ALL TIMES. WHERE RETENTION IS NOT POSSIBLE THE ENGINEER SHALL BE NOTIFIED AND CONSENT RECIEVED PRIOR TO THEIR REMOVAL.
7. ALL NEW WORK IS TO MAKE A SMOOTH JUNCTION WITH EXISTING CONDITIONS.
8. THE CONTRACTOR IS NOT TO ENTER UPON NOR DO ANY WORK WITHIN OR ON ADJACENT LANDS WITHOUT THE PRIOR APPROVAL OF THE SUPERINTENDENT AND THE WRITTEN PERMISSION OF THE OWNERS.
9. SEDIMENT MEASURES SHALL BE IMPLEMENTED PRIOR TO SOIL DISTURBANCE IN KEEPING WITH THE 4th EDITION OF LANDCOMS "SOILS AND CONSTRUCTION - MANAGING URBAN STORMWATER" MARCH 2004 TO THE SATISFACTION OF COUNCIL'S REPRESENTATIVE AND AS SHOWN IN THESE DRAWINGS.
10. THE CONTRACTOR SHALL CLEAR THE SITE BY REMOVING ALL RUBBISH, FENCES, OUT HOUSES, CAR BODIES, DEBRIS, ETC. THE CONTRACTOR SHALL NOT DISPOSE OF ANY DEBRIS BY BURNING OFF IN AN OPEN FIRE.
11. UNSOUND MATERIALS AS DETERMINED BY COUNCIL'S REPRESENTATIVE SHALL BE REMOVED FROM ROADS AND LOTS PRIOR TO ANY FILLING.
12. ALL SITE REGRADING AREAS SHALL BE GRADED TO THE SATISFACTION OF COUNCIL'S REPRESENTATIVE. THE CONTRACTOR SHALL TAKE LEVELS ON THE EXISTING SURFACE AFTER STRIPPING TOPSOIL AND PRIOR TO COMMENCING ANY FILL OPERATIONS.
13. SURPLUS EXCAVATED MATERIAL SHALL BE PLACED OR DISPOSED OF IN ACCORDANCE WITH THE CONTRACT, OR AS DIRECTED BY THE SUPERINTENDENT.
14. ALL SITE FILLING SHALL BE PLACED IN LAYERS NOT EXCEEDING 300mm AND COMPACTED IN ACCORDANCE WITH COUNCIL'S SPECIFICATION AND BE TESTED AT THE REQUIRED INTERVALS BY AN APPROVED N.A.T.A. GEOTECHNICAL LABORATORY.
15. MINIMUM 150mm THICK TOPSOIL SHALL BE SPREAD ON ALL FOOTPATHS, BERMS, BATTERS AND SITE REGRADING AREAS. EXCESS TOPSOIL SHALL BE DISPOSED OF AS DIRECTED BY THE SUPERINTENDENT.
16. ALL LAND DISTURBED BY EARTHWORKS SHALL BE SPRAY-GRASSED, OR SIMILARLY TREATED TO ESTABLISH GRASS COVER. SEED MIXTURES ARE TO BE APPROVED BY COUNCIL PRIOR TO SPRAYING. ALL GRASSED AREAS SHALL BE REGULARLY WATERED AND MAINTAINED UNTIL EXPIRATION OF THE MAINTENANCE PERIOD.
17. THE CONTRACTOR SHALL MAINTAIN DUST CONTROL THROUGHOUT THE DURATION OF THE PROJECT.
18. ALL PITS DEEPER THAN 1.2m SHALL HAVE STEP IRONS PROVIDED IN ACCORDANCE WITH COUNCIL'S STANDARDS.
19. ALL DRAINAGE LINES THROUGH LOTS SHALL BE CONTAINED WITHIN THEIR EASEMENTS AND CONFORM WITH COUNCIL'S STANDARDS.
20. ALL DRAINAGE LINES ON HIGH SIDE AND UNDER ROADS SHALL BE BACKFILLED WITH SHARP SAND AND HAVE 3.0m OF AGRICULTURAL LINE WRAPPED IN AN APPROVED FILTER FABRIC, DISCHARGING INTO THE DOWNSTREAM PIT.
21. SUBSOIL DRAINS SHALL BE CONSTRUCTED TO THE SATISFACTION OF COUNCIL'S REPRESENTATIVE.
22. PROVIDE VEHICULAR ENTRIES IN KERB AND GUTTER WHERE SHOWN OR WHERE DIRECTED BY THE SUPERINTENDANT.
23. GUIDE POSTS SHALL BE 100mm X 50mm HARDWOOD, PAINTED WHITE WITH REFLECTORS.
24. ERECT STREET NAME SIGNS, CONDUIT WARNING SIGNS AND NO THROUGH ROAD SIGNS WHERE SHOWN OR WHERE DIRECTED BY COUNCIL'S REPRESENTATIVE.
25. CONDUITS SHALL BE LAID AFTER POSITIONS HAVE BEEN DETERMINED BY THE RELEVANT AUTHORITIES AND BEFORE FINAL A.C. IS LAID
26. POSITION OF CONDUITS SHALL BE MARKED ON THE KERB.
27. FELLED TREES SHALL BE SALVAGED FOR RE-USE AS WOODCHIP MULCH OR LOG FORM FOR SITE REHABILITATION, NON-SALVAGEABLE MATERIAL SUCH AS STUMPS AND ROOTS SHALL BE DISPOSED OF OFF SITE.
28. THE CONTRACTOR SHALL PROVIDE MINIMUM 24 HOURS NOTICE TO COUNCIL'S REPRESENTATIVE FOR ALL INSPECTIONS.
29. THE CONTRACTOR SHALL MAINTAIN SERVICES AND ALL WEATHER ACCESS AT ALL TIMES TO THE ADJOINING PROPERTIES.
30. THE CONTRACTOR SHALL UNDERTAKE TRAFFIC CONTROL MEASURES TO COUNCIL'S SATISFACTION AND SHALL DISPLAY ALL APPROPRIATE WARNING SIGNS THROUGHOUT THE DURATION OF CONSTRUCTION.
31. ALL NATURAL SURFACE DATA HAS BEEN DETERMINED BY TERRAIN MODELLING. ALL CONSTRUCTION SITE WORKS MUST BE CARRIED OUT USING THE BENCH MARKS SHOWN ON THESE DRAWINGS.

Prepared for: ELF FARM SUPPLIES PTY LTD

LOCATION OF WORKS



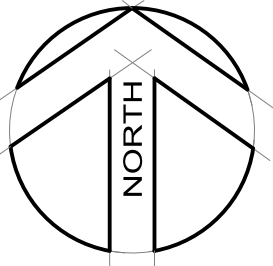
LOCALITY SKETCH
NOT TO SCALE

SHEET INDEX

SHEET No.	DESCRIPTION
COVER SHEET	COVER SHEET - GENERAL NOTES, SHEET INDEX AND LEGEND
2	SITE PLAN
3	BASIN 1 WORKS PLAN & DETAIL
4	NORTH EAST WATER QUALITY DESIGN
5	BASIN 2 WORKS PLAN & DETAIL
6	BASIN 3 WORKS PLAN & DETAIL
7	STORMWATER DETAILS
8	CATCHMENT PLAN - EXISTING APPROVAL
9	CATCHMENT PLAN - PROPOSED WORKS (MOD 3)

LEGEND

-  PROPOSED DRAINAGE LINE
-  EXISTING DRAINAGE LINE
-  NATURAL SURFACE CONTOUR
-  EXISTING HEADWALL
-  PROPOSED HEADWALL
-  GRATED SURFACE INLET PIT
-  SEALED PIT



- NOTE:
1. BASIN 1 AND 3 HAVE SUFFICIENT STORAGE FOR THEIR OSD REQUIREMENTS BUT REQUIRE THE OUTLETS TO BE RECONFIGURED TO ENSURE DISCHARGE RATES ARE AS PER COUNCIL REQUIREMENTS.
 2. BASIN 2 NEEDS TO HAVE AN INCREASED STORAGE AREA AND A RECONFIGURED OUTLET TO COMPLY.
 3. BASIN 1,2 AND 3 ALL REQUIRE ADDITIONAL WATER QUALITY TREATMENT MEASURES.
 4. CATCH DRAINS NEED TO BE CONSTRUCTED AS SHOWN TO ENSURE OSD AND WATER QUALITY TARGETS ARE SATISFIED.
 5. INSTALL A ROCLA WATER LEVEL CONTROLLER DOWNSTREAM OF ALL BASIN OUTLET PIPES TO ALLOW SHUTOFF OF STORMWATER.

BASIN 2 TO BE CONSTRUCTED GENERALLY IN ACCORDANCE WITH APPROVED DESIGN BUT TO INCORPORATE A BIO BASIN WITHIN THE STRUCTURE INSTEAD OF AS A SEPARATE STRUCTURE. REFER TO 5

EXISTING REED BED TO BE INCREASED (MIN AREA 450m2) IN ACCORDANCE WITH EXISTING APPROVED DESIGN (REFER TO SHEET 4)

BASIN 3 TO BE CONSTRUCTED IN ACCORDANCE WITH SHEET 6 TO CATER FOR THE REDIRECTED CATCHMENT

(BASIN 1 TO BE CONSTRUCTED IN ACCORDANCE WITH APPROVED DESIGN (REFER TO SHEET 3))



REV	AMENDMENT	ISSUED	DATE
A	ISSUED FOR INFORMATION	JT	12/04/18
B	ADDRESSED DOP COMMENTS	JT	12/07/18
C	ADDRESSED DOP COMMENTS	JT	08/08/18
D	AMENDED MATCH CONSULT	GJ	22/10/18
E	MINOR AMENDMENTS	JT	13/11/18



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Client:
ELF FARM SUPPLIES PTY LTD

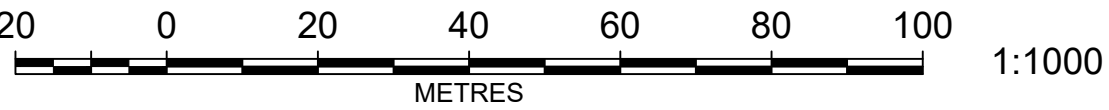
108 - 112 MULGRAVE RD, MULGRAVE
LOT 13 & 14 in DP 1138749
PROPOSED DRAINAGE WORKS
SITE PLAN

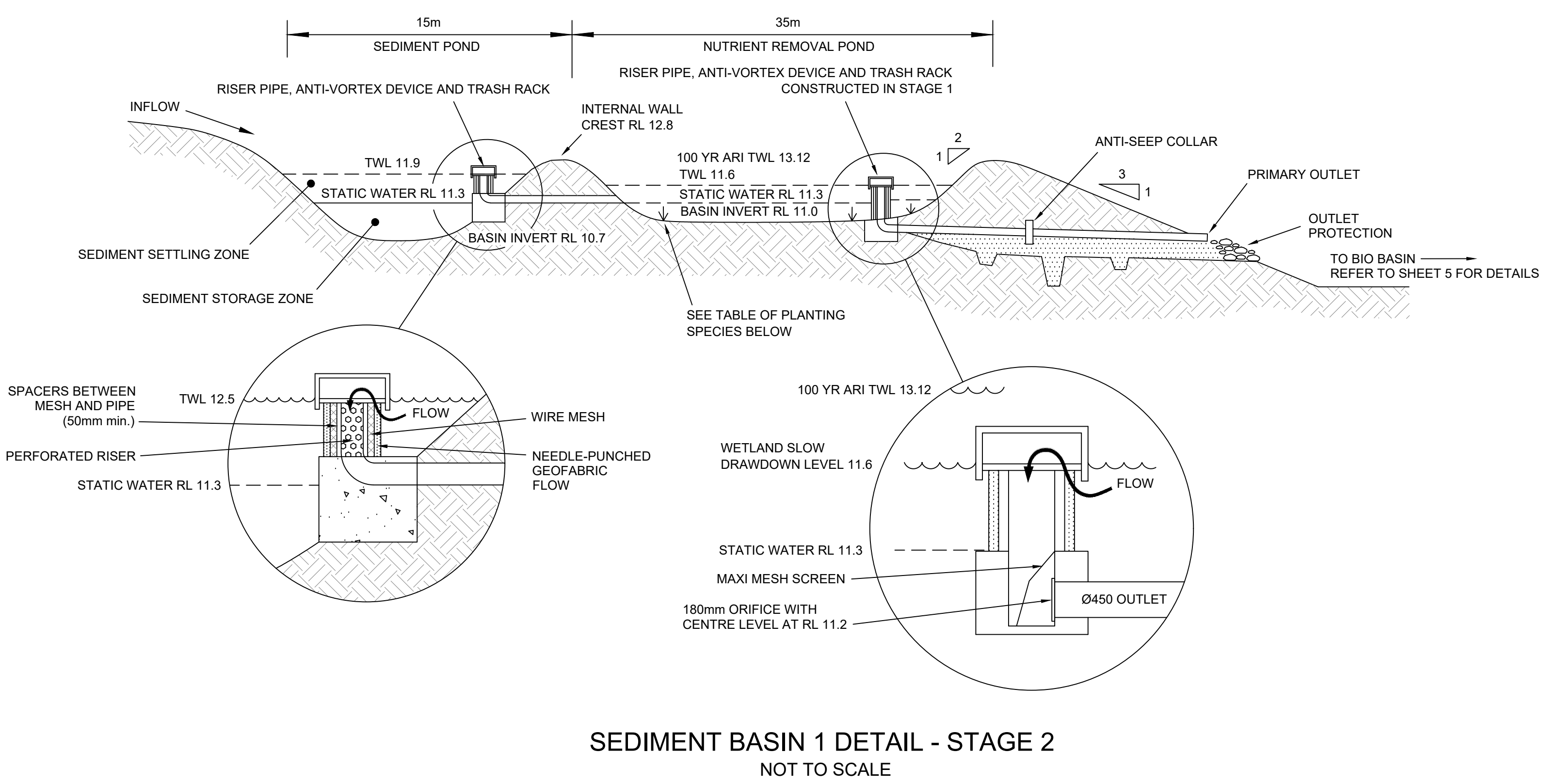
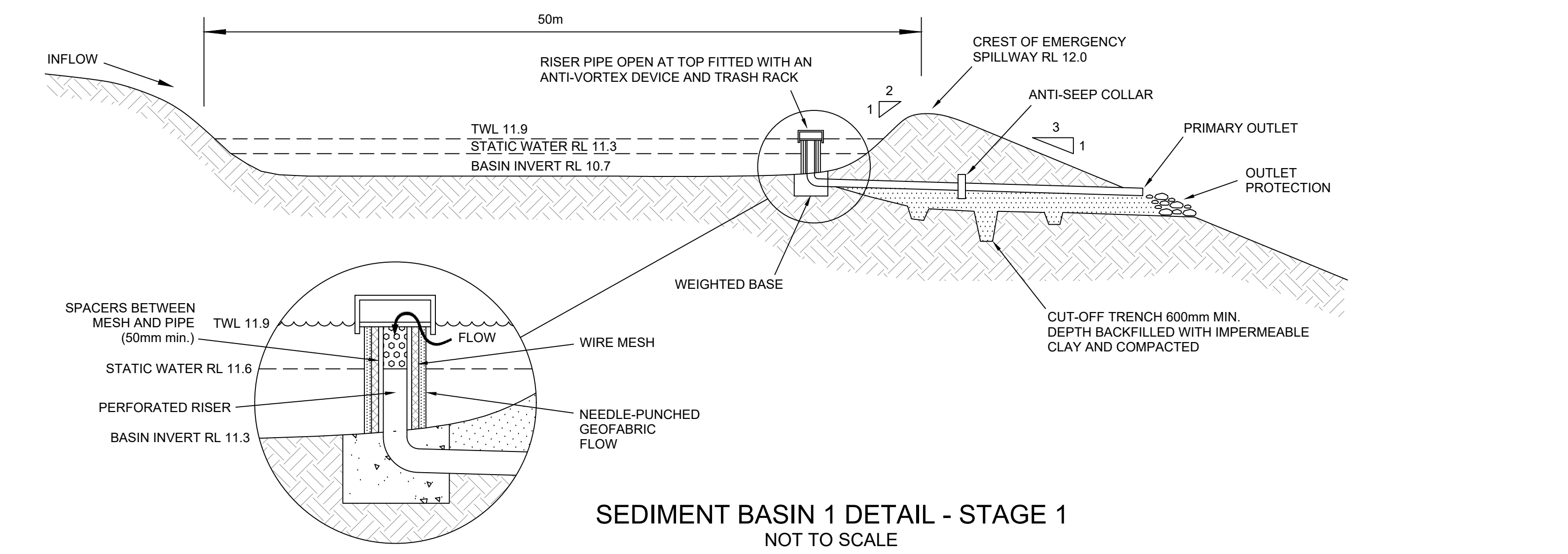
Designed: JT
Drawn: GJR / MB
Checked: GJR

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Vert.
X-Sect.

Datum: A.H.D.

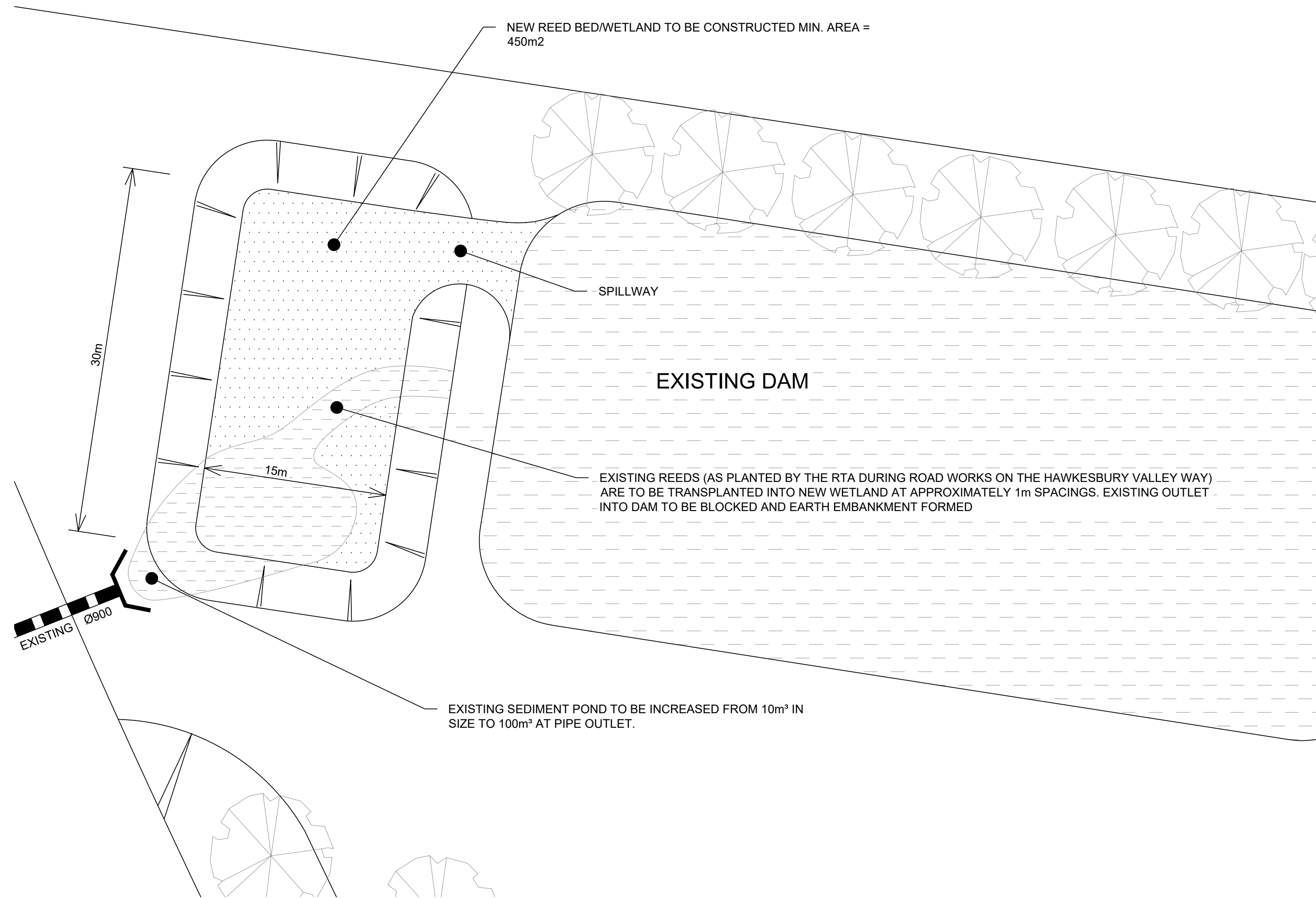
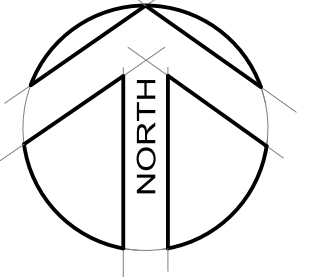
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SHEET 2 OF 9 SHEETS
REV.
E



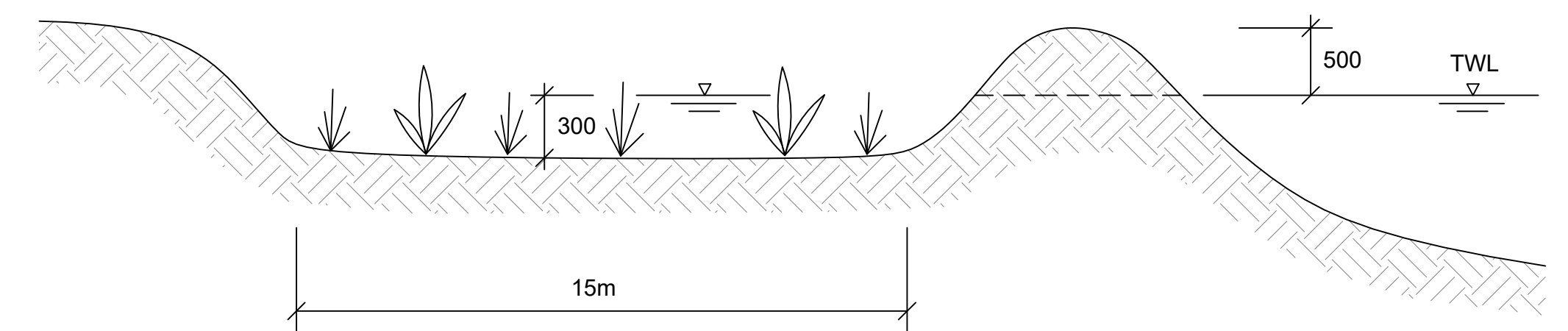


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A	ISSUED FOR INFORMATION	JT	12/04/18	SYDNEY P. 02 9659 0005 CENTRAL COAST P. 02 4325 5255 HUNTER P. 02 4966 8388 ABN: 26 134 067 842 barkerryanstewart.com.au mail@barkerryanstewart.com.au		ELF FARM SUPPLIES PTY LTD					
B	ADDRESSED DOP COMMENTS	JT	12/07/18								
C	ADDRESSED DOP COMMENTS	JT	08/08/18								
D	AMENDED MATCH CONSULT	GJ	22/10/18								
E	MINOR AMENDMENTS	JT	13/11/18								

A1



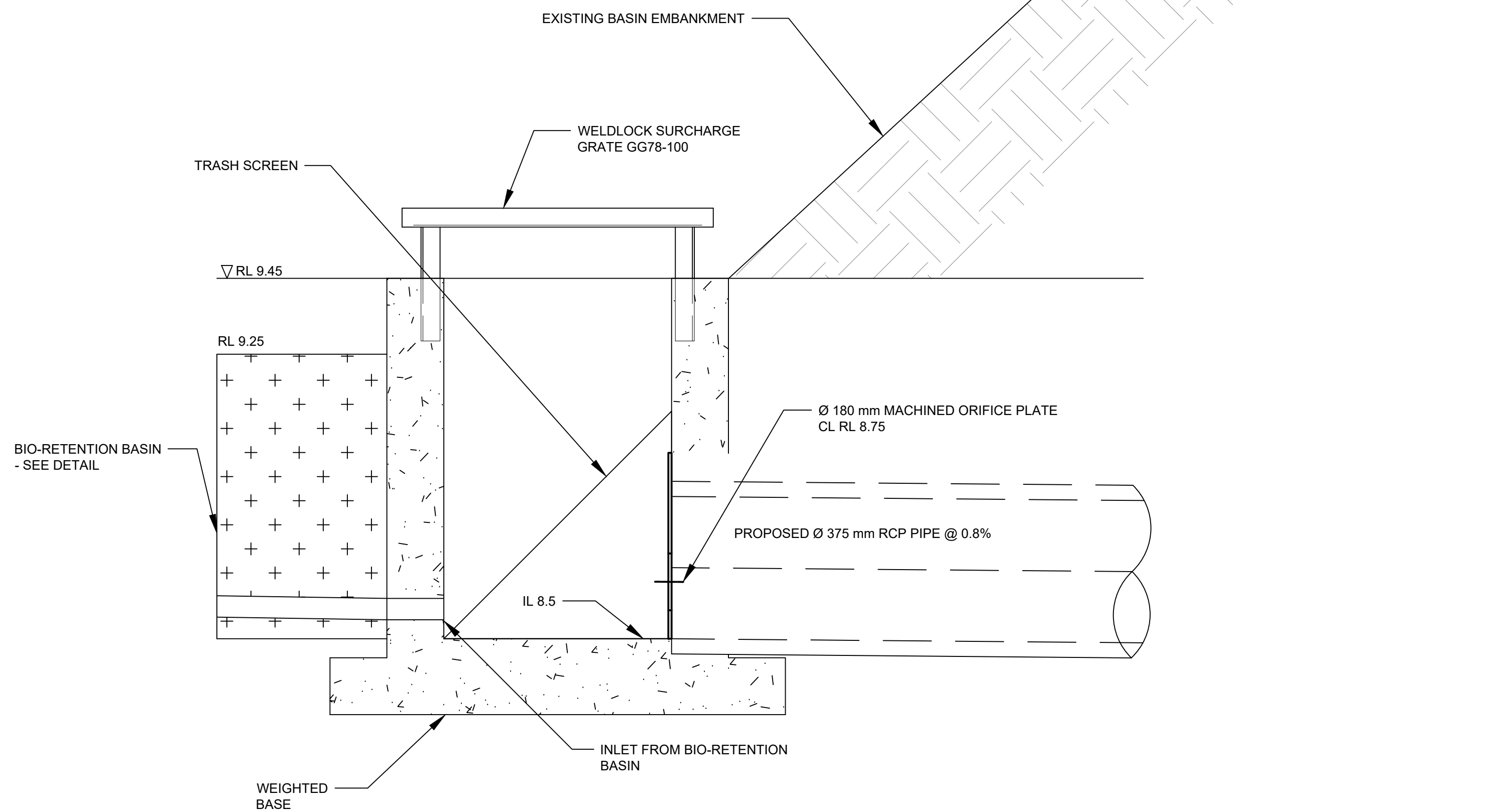
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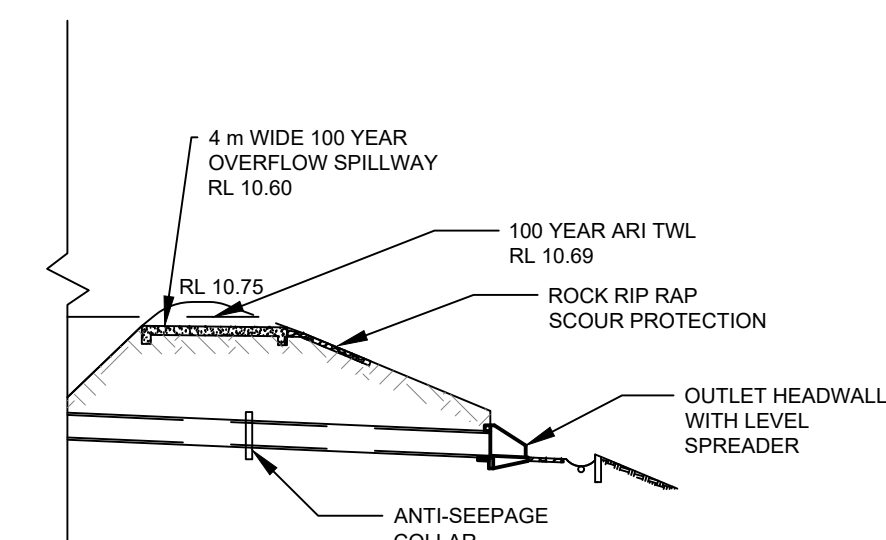
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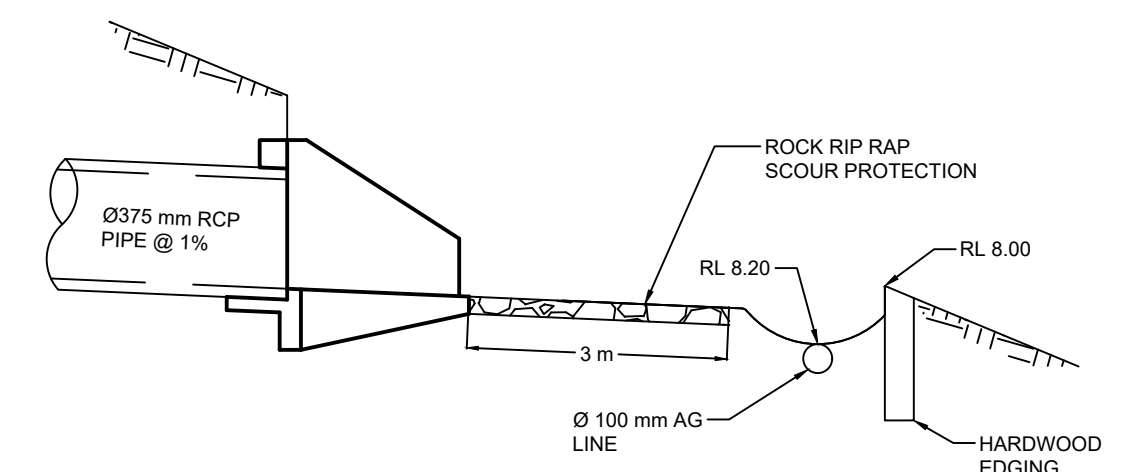
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A	ISSUED FOR INFORMATION	JT	12/04/18						
B	ADDRESSED DOP COMMENTS	JT	12/07/18						
C	ADDRESSED DOP COMMENTS	JT	08/08/18						
D	AMENDED MATCH CONSULT	GJ	22/10/18						
E	MINOR AMENDMENTS	JT	13/11/18						



DISCHARGE CONTROL PIT 2 DETAIL
1:100 SCALE



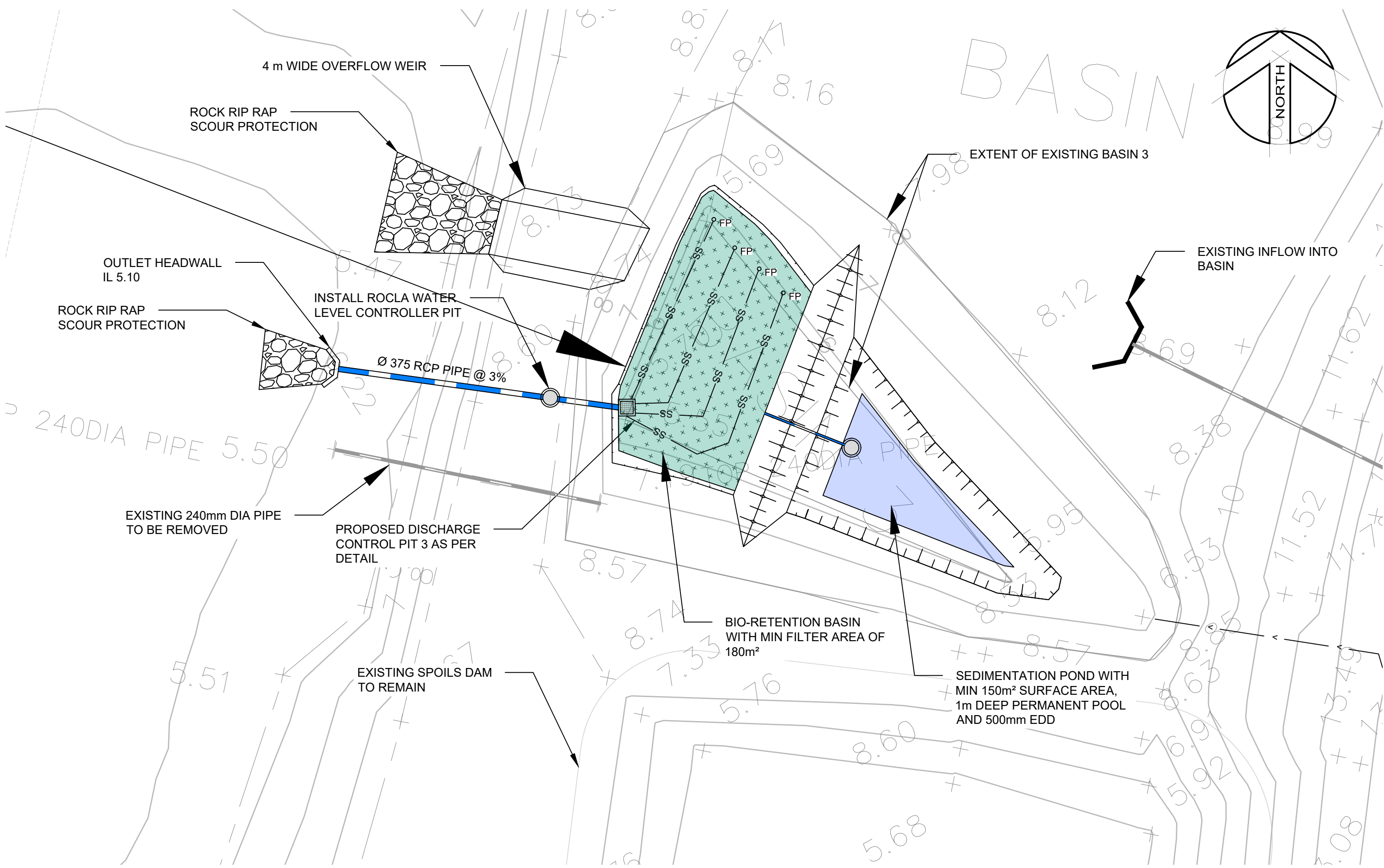
BASIN 2 SPILLWAY DETAIL
NOT TO SCALE



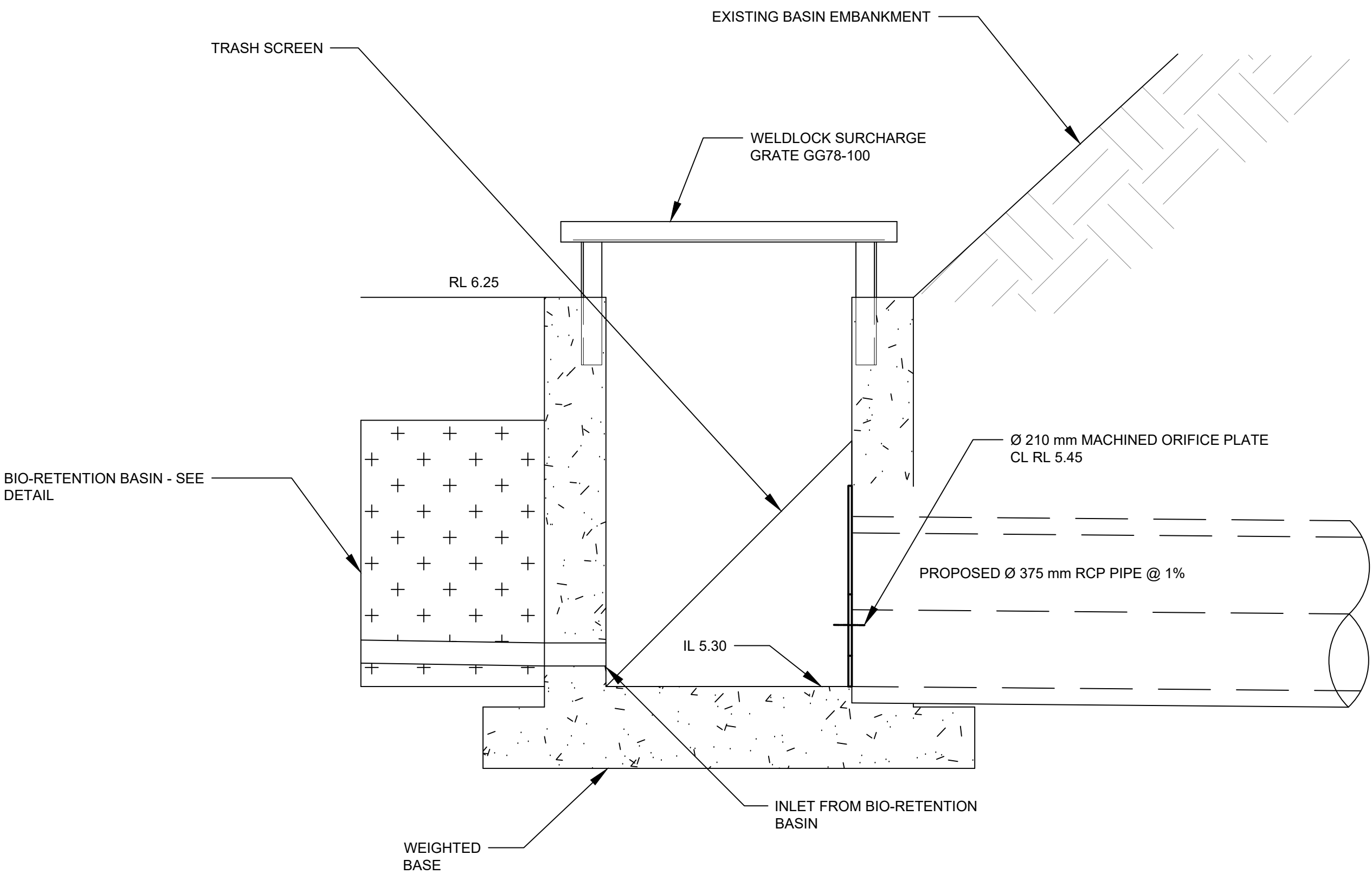
LEVEL SPREADER OUTLET DETAIL
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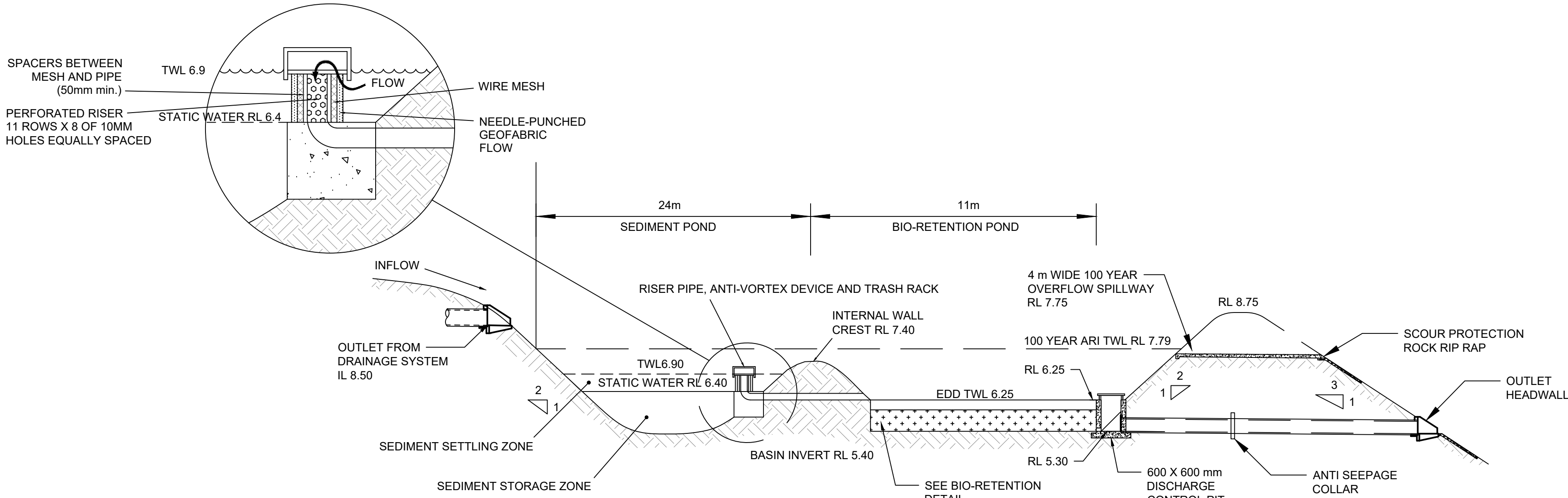
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A	ISSUED FOR INFORMATION	JT	12/04/18							
B	ADDRESSED DOP COMMENTS	JT	12/07/18							
C	ADDRESSED DOP COMMENTS	JT	08/08/18							
D	AMENDED MATCH CONSULT	GJ	22/10/18							
E	MINOR AMENDMENTS	JT	13/11/18							



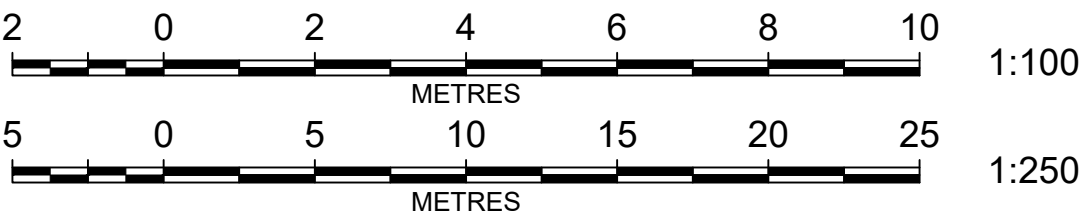
BASIN 3 SITE PLAN
1:250 SCALE



DISCHARGE CONTROL PIT 3 DETAIL
1:100 SCALE



BASIN 3 SECTION DETAIL
NOT TO SCALE



REV	AMENDMENT	ISSUED	DATE
A	ISSUED FOR INFORMATION	JT	12/04/18
B	ADDRESSED DOP COMMENTS	JT	12/07/18
C	ADDRESSED DOP COMMENTS	JT	08/08/18
D	AMENDED MATCH CONSULT	GJ	22/10/18
E	MINOR AMENDMENTS	JT	13/11/18



TOTAL PROJECT SOLUTIONS
PLANNING - PROJECT MANAGEMENT - ENGINEERING - CERTIFICATION

SYDNEY
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Client:
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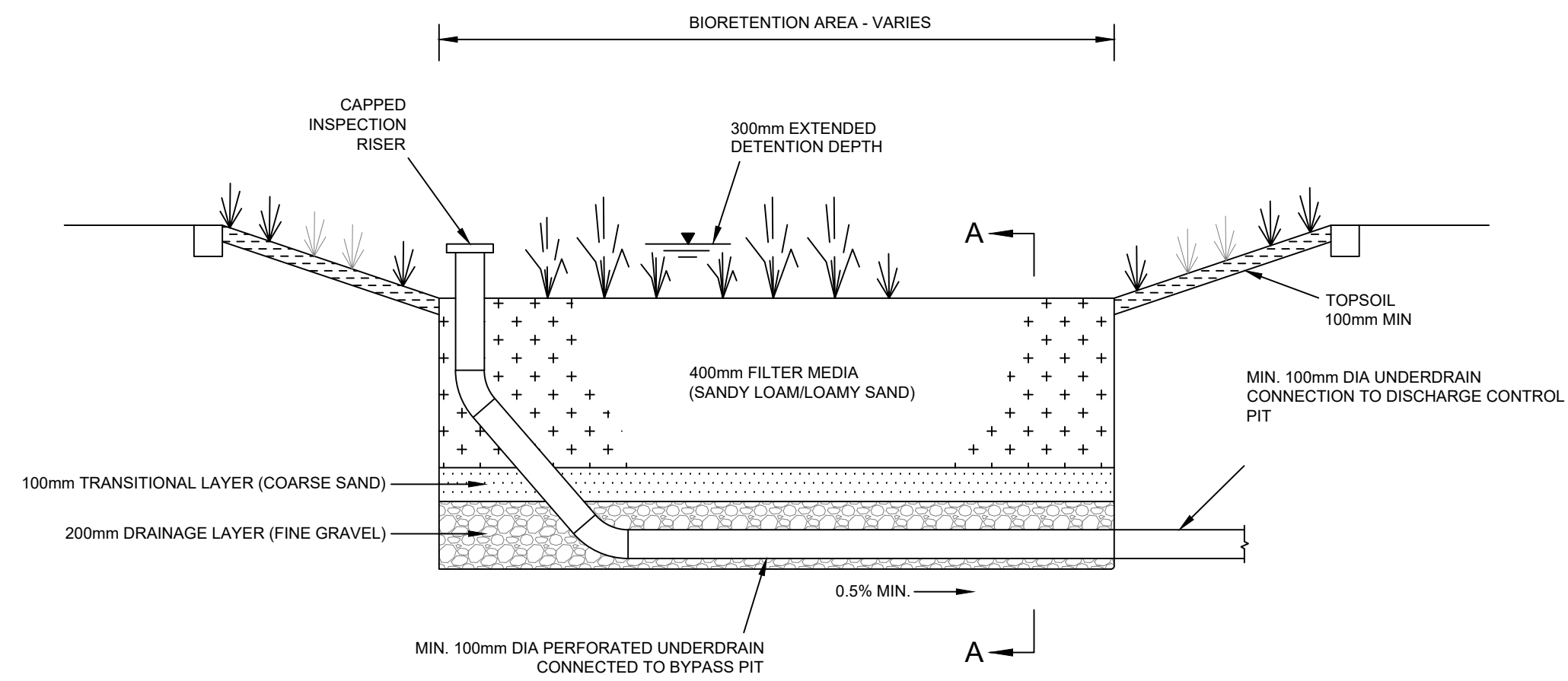
108 - 112 MULGRAVE RD, MULGRAVE
LOT 13 & 14 in DP 1138749
PROPOSED DRAINAGE WORKS
BASIN 3 WORKS PLAN & DETAILS

Designed: JT
Drawn: GJR / MB
Checked: GJR

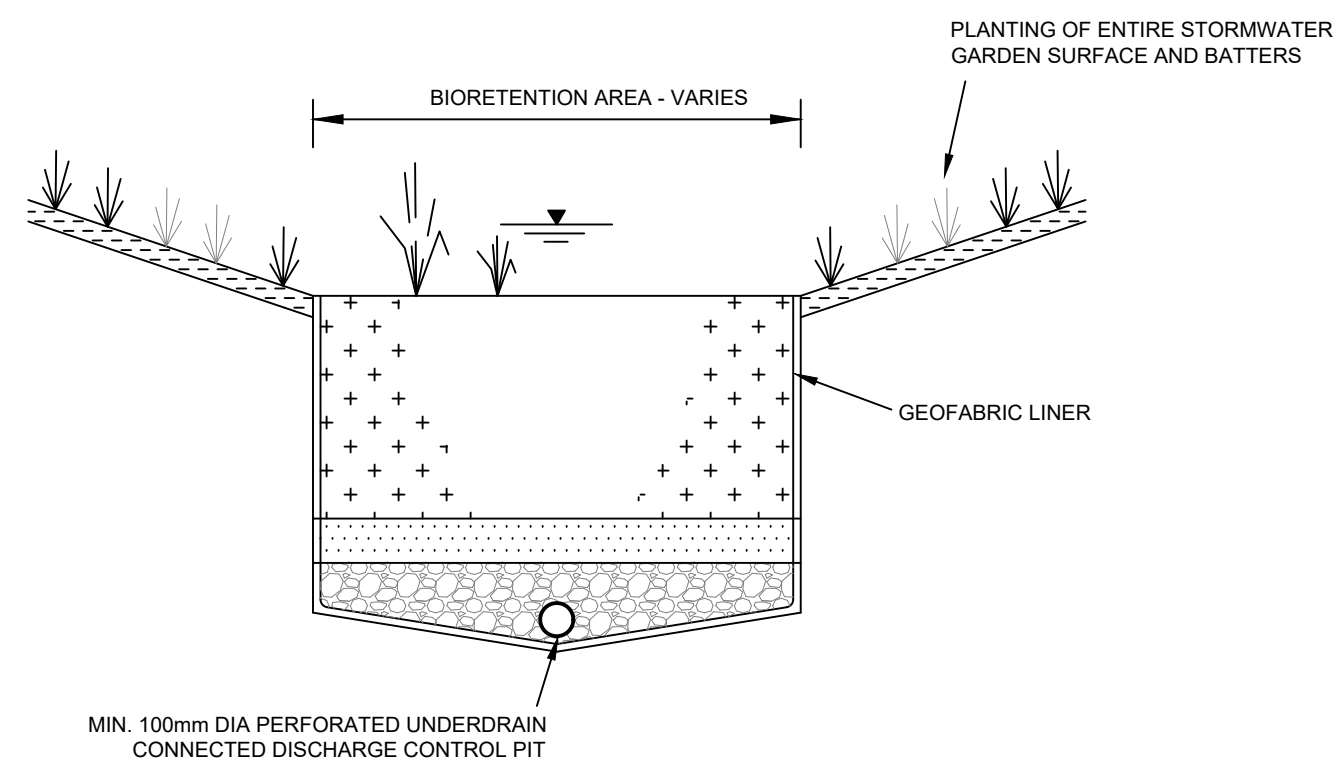
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X-Sect.

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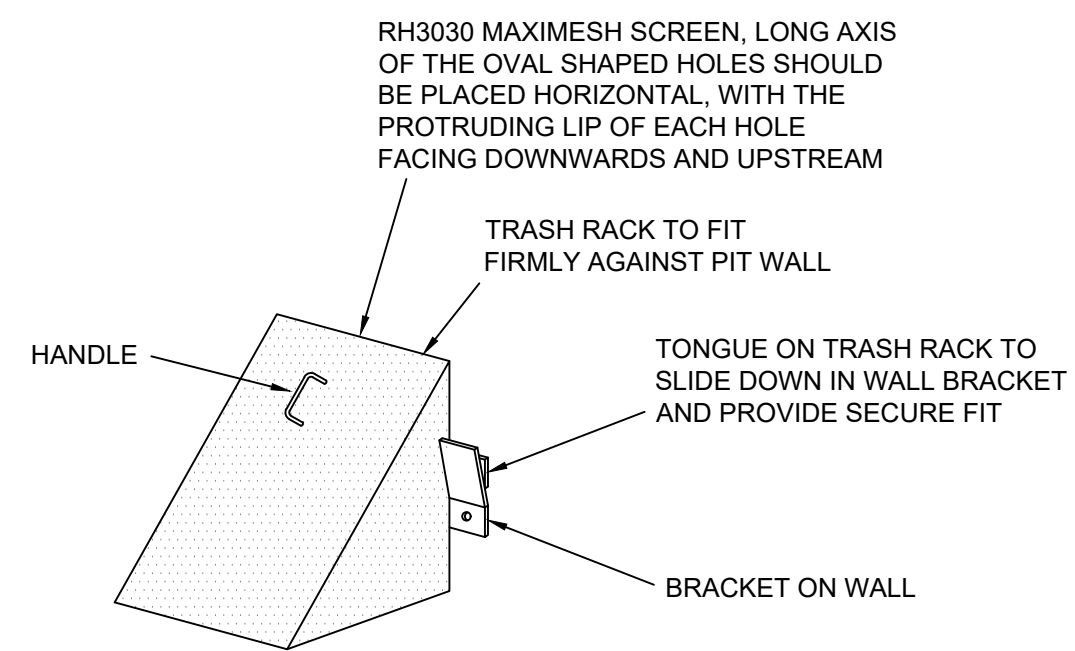
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File Ref.
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SHEET 6 OF 9 SHEETS
REV.
E



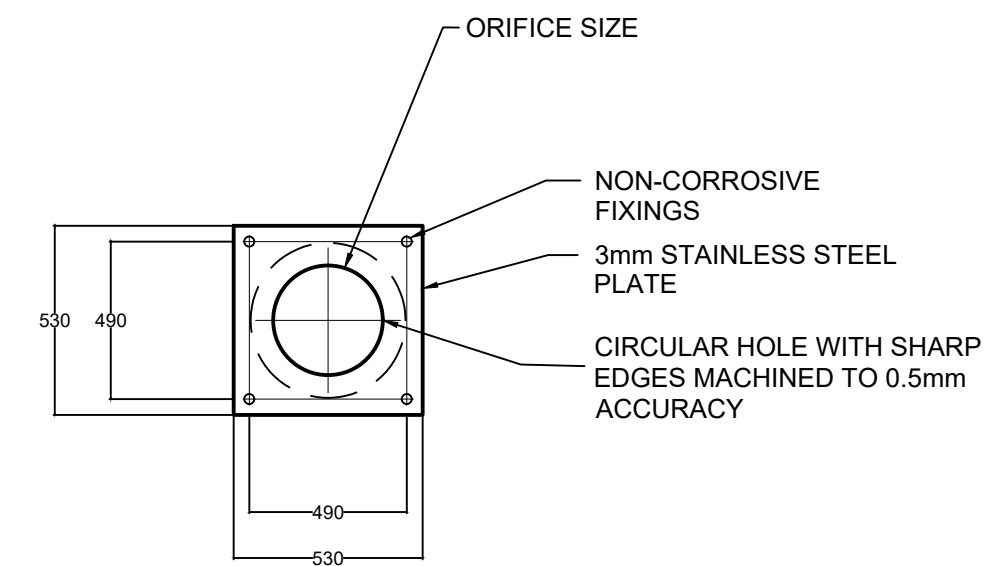
STORMWATER BIO-RETENTION
TYPICAL SECTION
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SECTION A-A
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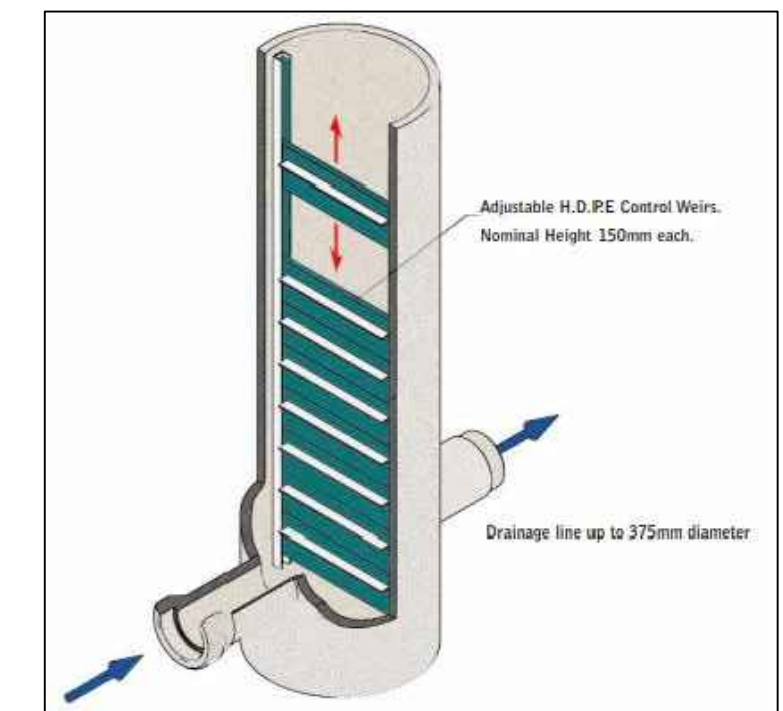


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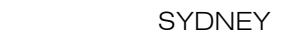
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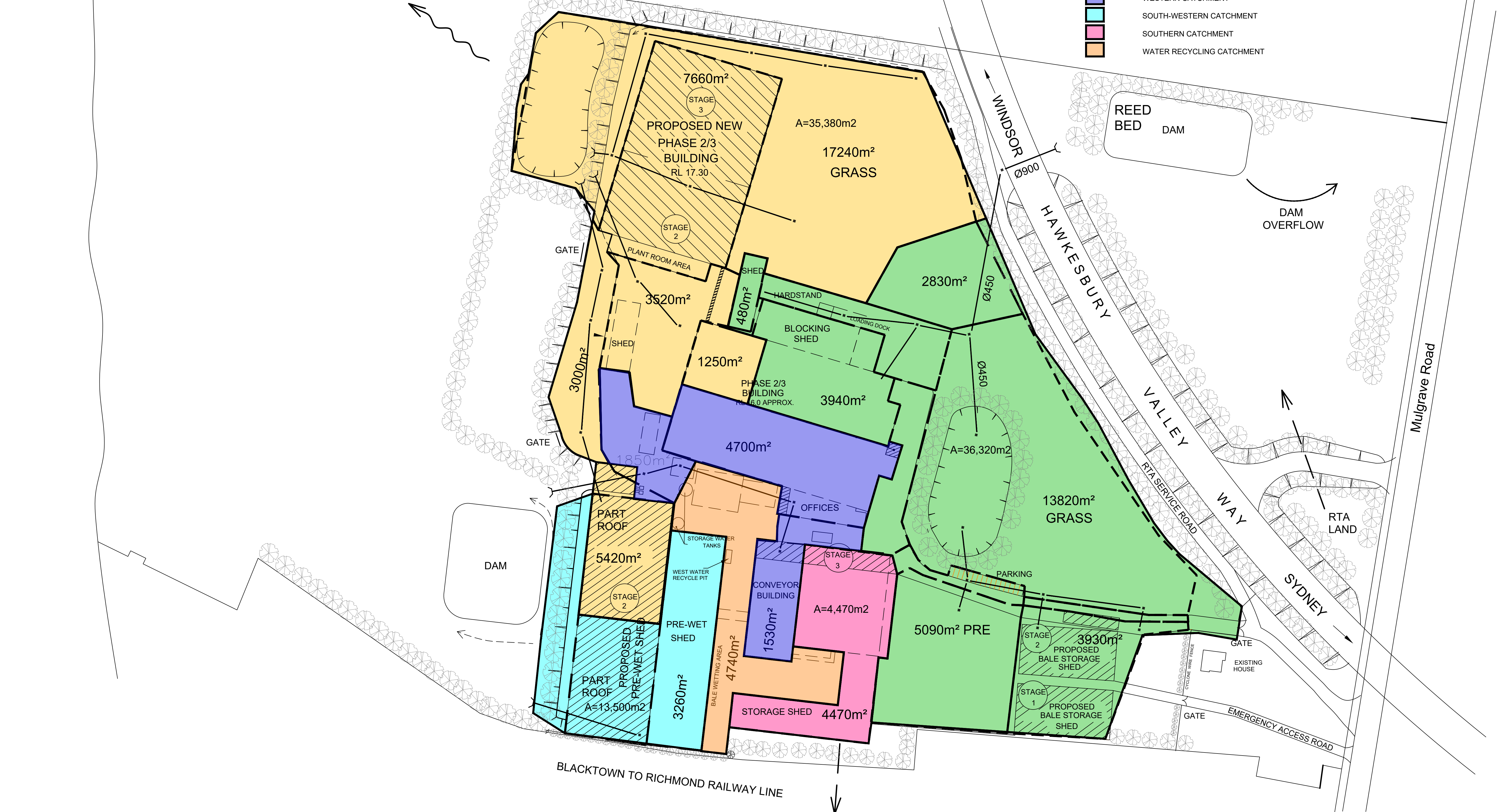


ROCLA WATER LEVEL CONTROLLER DETAIL

NOT TO SCALE



REV	AMENDMENT	ISSUED	DATE	 BARKER RYAN STEWART TOTAL PROJECT SOLUTIONS PLANNING - PROJECT MANAGEMENT - ENGINEERING - CERTIFICATION	SYDNEY P: 02 9659 0005 CENTRAL COAST P: 02 4325 5255 HUNTER P: 02 4966 8368 ABN: 26 134 067 842 barkerryanstewart.com.au mail@barkerryanstewart.com.au	Client: ELF FARM SUPPLIES PTY LTD	108 - 112 MULGRAVE RD, MULGRAVE LOT 13 & 14 in DP 1138749 PROPOSED DRAINAGE WORKS STORMWATER DETAILS	Designed: JT	Scales: Plan NTS	Plan No. 07166E20_CA06 File Ref. REV. 07166E20_CA.dwg SHEET 7 OF 9 SHEETS E
A	ISSUED FOR INFORMATION	JT	12/04/18					Drawn: GJR / MB	Horiz. Vert.	
B	ADDRESSED DOP COMMENTS	JT	12/07/18					Checked: GJR	X-Sect.	
C	ADDRESSED DOP COMMENTS	JT	08/08/18							
D	AMENDED MATCH CONSULT	GJ	22/10/18							
E	MINOR AMENDMENTS	JT	13/1/18							
								Datum: A.H.D.		



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C	ADDRESSED DOP COMMENTS	JT	08/08/18
D	AMENDED MATCH CONSULT	GJ	22/10/18
E	MINOR AMENDMENTS	JT	13/11/18



**BARKER
RYAN
STEWART**

TOTAL PROJECT SOLUTIONS
PLANNING - PROJECT MANAGEMENT - ENGINEERING - CERTIFICATION

SYDNEY
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Client:
ELF FARM SUPPLIES PTY LTD

108 - 112 MULGRAVE RD, MULGRAVE
LOT 13 & 14 in DP 1138749
PROPOSED DRAINAGE WORKS
CATCHMENT PLAN - EXISTING APPROVAL

Designed: JT
Drawn: GJR / MB
Checked: GJR

Scales: Plan 1:1000
Horiz.
Vert.
X-Sect.

Datum: A.H.D.

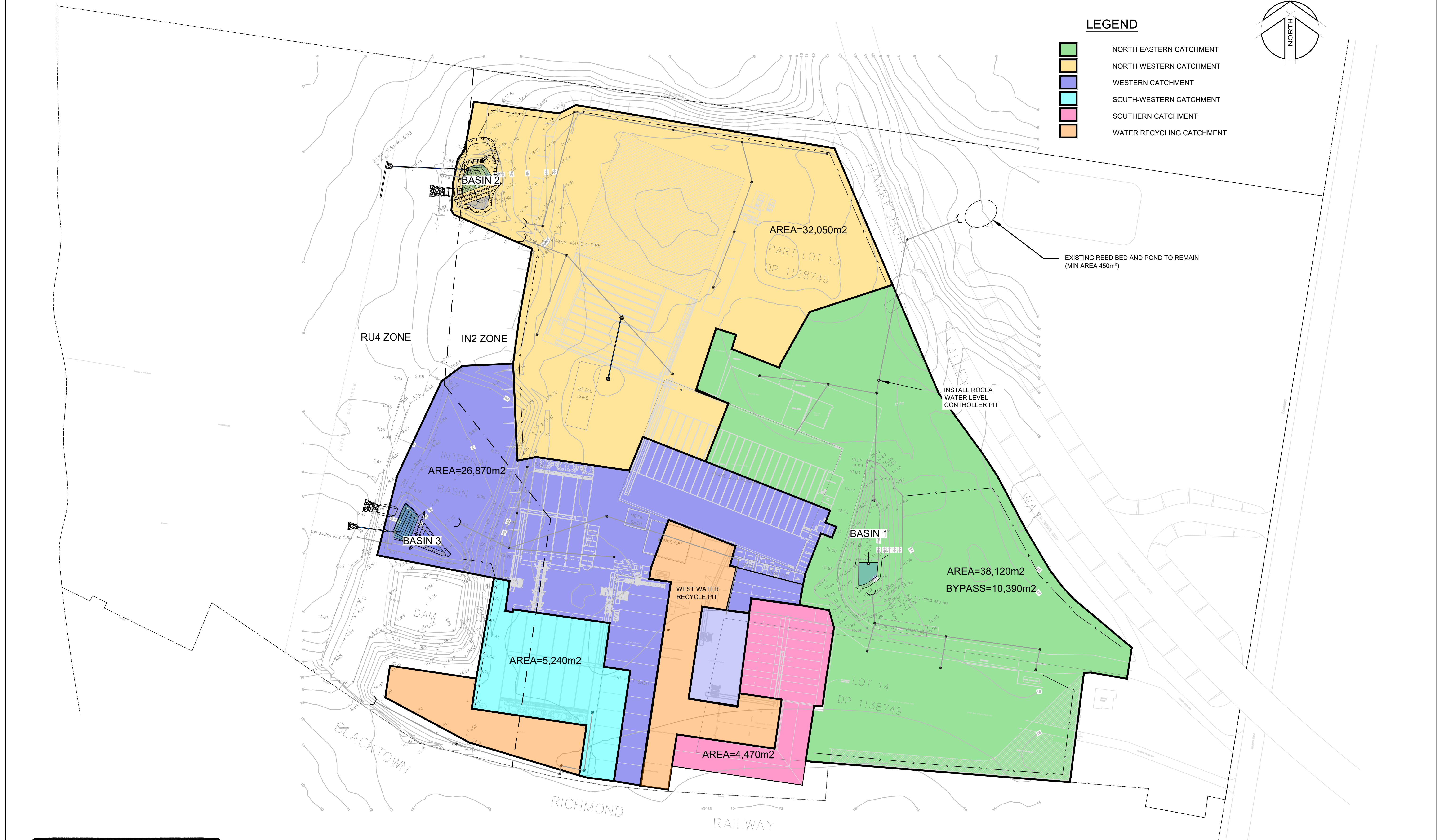
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SHEET 8 OF 9 SHEETS

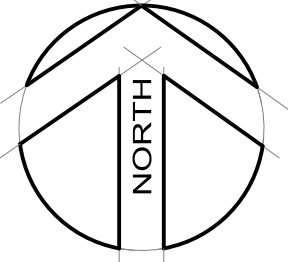
REV.
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LEGEND

- NORTH-EASTERN CATCHMENT
- NORTH-WESTERN CATCHMENT
- WESTERN CATCHMENT
- SOUTH-WESTERN CATCHMENT
- SOUTHERN CATCHMENT
- WATER RECYCLING CATCHMENT



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mail@barkeryanstewart.com.au

Client:
ELF FARM SUPPLIES PTY LTD

108 - 112 MULGRAVE RD, MULGRAVE
LOT 13 & 14 in DP 1138749
PROPOSED DRAINAGE WORKS
CATCHMENT PLAN - PROPOSED WORKS (MOD 3)

Designed: JT
Drawn: GJR / MB
Checked: GJR

Scales: Plan 1:1000
Horiz.
Vert.
X-Sect.
Datum: A.H.D.

Plan No.
07166E20_CA08
File Ref.
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SHEET 9 OF 9 SHEETS
REV.
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