

44-50 TENCH AVENUE, JAMISONTOWN NSW 2750

PROPOSED MUD MAP: THE ORANGE GROVE

STORMWATER CONCEPT PLANS - DEVELOPMENT APPLICATION

STORMWATER NOTES

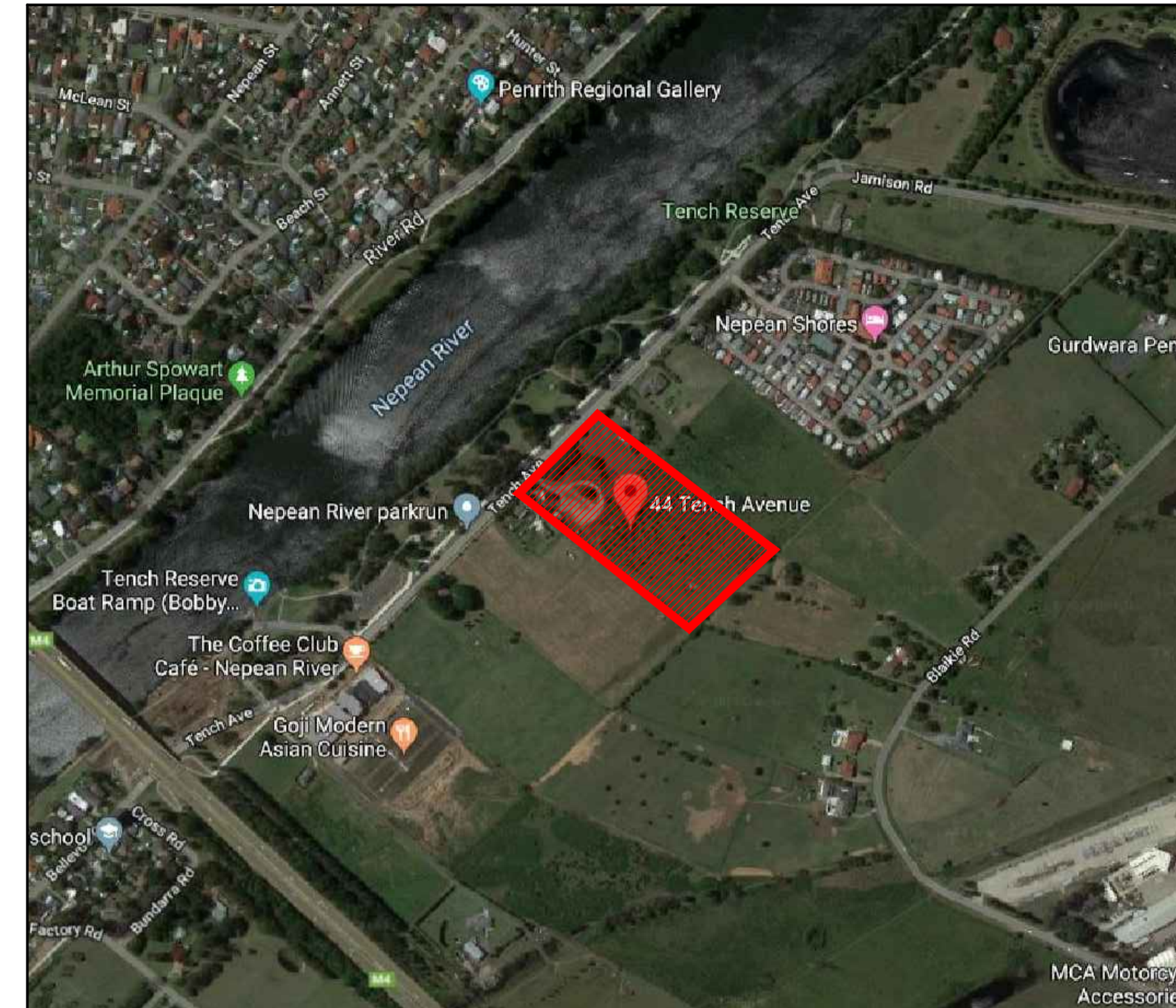
- CONTRACTOR MUST VERIFY ALL DIMENSIONS & EXISTING LEVELS, SERVICES & STRUCTURES ON SITE PRIOR TO COMMENCEMENT OF WORK.
- THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED ARCHITECTURAL, LANDSCAPE, STRUCTURAL, HYDRAULIC, & OTHER SERVICES DRAWINGS & SPECIFICATIONS. IF THERE EXISTS AND DISCREPANCIES BETWEEN THE DRAWINGS, THE BUILDER SHALL REPORT THE DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCEMENT OF ANY WORKS.
- EQUIVALENT STRENGTH REINFORCED CONCRETE PIPES MAY BE USED.
- WHERE SUBSOIL DRAINAGE LINES PASS UNDER FLOOR SLABS & VEHICULAR PAVEMENTS, UNSLOTTED uPVC SEWER GRADE PIPE SHALL BE USED.
- CHARGED LINES TO BE SEWER GRADE & SEALED.
- ALL PIPES TO HAVE MIN 150mm COVER IF LOCATED WITHIN PROPERTY.
- ALL PITS IN DRIVEWAYS TO BE CONCRETE & ALL PITS IN LANDSCAPED AREAS TO BE PLASTIC.
- PITS LESS THAN 600mm DEEP MAY BE BRICK, PRECAST OR CONCRETE.
- ALL BALCONIES & ROOFS TO BE DRAINED & TO HAVE SAFETY OVERFLOWS IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
- ALL GRATES TO HAVE CHILD PROOF LOCKS.
- ALL DRAINAGE WORKS TO AVOID TREE ROOTS.
- ALL DOWNPIPES & GUTTERS TO HAVE LEAF GUARDS.
- COUNCIL'S ISSUED FOOTWAY DESIGN LEVELS TO BE INCORPORATED INTO THE FINISHED LEVELS ONCE ISSUED BY COUNCIL.
- ALL WORKS SHALL BE IN ACCORDANCE WITH B.C.A. & A.S.3500.3.
- CARE TO BE TAKEN AROUND EXISTING SEWER, STRUCTURAL ADVICE REQUIRED FOR SEWER PROTECTION AGAINST ADDITIONAL LOADING FROM NEW PITS, PIPES, RETAINING WALLS & OSD BASIN WATER LEVELS.
- ALL Ø300 DRAINAGE PIPES & LARGER SHALL BE CLASS 2 APPROVED SPIGOT & SOCKET RCP PIPES WITH RUBBER RING JOINTS (U.N.O.). ALL DRAINAGE PIPES UP TO & INCLUDING Ø225 SHALL BE SEWER GRADE uPVC WITH SOLVENT WELD JOINTS (U.N.O.).
- EQUIVALENT STRENGTH FRC PIPES MAY BE USED.
- ALL PIPE JOINTS, BENDS & TAPERS UP TO & INCLUDING Ø450 SHALL BE VIA PURPOSE MADE FITTINGS.
- CONTRACTOR TO SUPPLY & INSTALL ALL FITTINGS & SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPE WORK.
- ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN A TRADESMAN-LIKE MANNER, & THE INTERNAL WALL OF THE PIT AT THE POINT OF ENTRY SHALL BE CEMENT RENDERED TO ENSURE A SMOOTH FINISH.
- WHERE TRENCHES ARE IN ROCK, THE PIPE SHALL BE BEDDED ON A MIN. 50mm CONCRETE BED (OR 75mm THICK BED OF 12mm BLUE METAL) UNDER THE BARREL OF THE PIPE. THE PIPE COLLAR AT NO POINT SHALL BEAR ON THE ROCK. IN OTHER THAN ROCK, PIPES SHALL BE LAID ON A 75mm THICK SAND BED. IN ALL CASES, BACKFILL THE TRENCH WITH SAND TO 200mm ABOVE THE PIPE. WHERE THE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH WITH SAND OR APPROVED GRANULAR BACKFILL COMPACTED IN 150mm LAYERS TO 98% STANDARD MAX. DRY DENSITY.
- BEDDING SHALL BE TYPE H1 (U.N.O.), IN ACCORDANCE WITH CURRENT RELEVANT AUSTRALIAN STANDARDS.
- WHERE STORMWATER LINES PASS UNDER FLOOR SLABS, SEWER GRADE RUBBER RING JOINTS ARE TO BE USED.
- ALL PIPES IN BALCONIES TO BE Ø65 uPVC CAST IN CONCRETE SLAB.
- Ø65 PVC @ MIN 1.0% Ø90 PVC @ MIN 1.0% Ø100 PVC @ MIN 1.0%
Ø150 PVC @ MIN 1.0% Ø225 PVC @ MIN 0.5% Ø300 PVC @ MIN 0.4%
UNLESS NOTED OTHERWISE
- CONTRACTOR TO PROVIDE A BREAK / OPEN VOID IN RAIL / BALLUSTRADE FOR STORMWATER EMERGENCY OVERFLOW.
- ALL ENCLOSED AREAS/PLANTER BOXES BE FITTED WITH FLOOR WASTES & TO DRAINED TO OSD.
- DOWNPIPES TO BE CHECKED BY ARCHITECT & PLUMBER PRIOR TO CONSTRUCTION.
- PROVIDE 3.0m LENGTH OF Ø100 SUBSOIL DRAINAGE PIPE WRAPPED IN FABRIC SOCK, AT UPSTREAM END OF EACH PIT.
- ALL THE CLEANING EYES (OR INSPECTION EYES) FOR THE UNDERGROUND PIPES HAVE TO BE TAKEN UP TO THE FINISHED GROUND LEVEL FOR EASY IDENTIFICATION & MAINTENANCE PURPOSES.
- ALL SUB-SOIL DRAINAGE SHALL BE A MIN OF Ø65 & SHALL BE PROVIDED WITH A FILTER SOCK. THE SUBSOIL DRAINAGE SHALL BE INSTALLED IN ACCORDANCE WITH DETAILS TO BE PROVIDED BY THE LANDSCAPE ARCHITECT.
- PRIOR TO COMMENCING ANY WORKS, THE BUILDER SHALL ENSURE THAT THE INVERT LEVELS OF WHERE THE SITE STORMWATER SYSTEM CONNECTS INTO THE COUNCILS KERB/DRAINAGE SYSTEM MATCHED THE DESIGN LEVELS. ANY DISCREPANCIES SHALL BE REPORTED TO THE DESIGN ENGINEER IMMEDIATELY.

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SITWORKS NOTES

- ORIGIN OF LEVELS : AUSTRALIAN HEIGHT DATUM (A.H.D.)
- CONTRACTOR MUST VERIFY ALL DIMENSIONS & EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK.
- ALL WORKS ARE TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS, THE SPECIFICATIONS & THE DIRECTIONS OF THE PRINCIPAL'S REPRESENTATIVE.
- EXISTING SERVICES HAVE BEEN PLOTTED FROM SUPPLIED DATA & AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LOCATION & LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE PRINCIPAL'S REPRESENTATIVE. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
- WHERE NEW WORKS ABOUT EXISTING, THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED.
- THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR.
- CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS ARE TO BE UNDERTAKEN OVER COMMUNICATIONS OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS.
- ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACKFILLED WITH AN APPROVED NON-NATURAL GRANULAR MATERIAL & COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS.1289.5.1.1.
- ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.
- ON COMPLETION OF PIPE INSTALLATION, ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL & GRASSED AREAS & ROAD PAVEMENTS.
- PROVIDE 12mm WIDE EXPANDING CORK JOINTS BETWEEN CONCRETE PAVEMENTS & ALL BUILDINGS, WALLS, FOOTINGS, COLUMNS, KERBS, DISH DRAINS, GRATED DRAINS, BOLLARD FOOTINGS ETC
- CONTRACTOR TO OBTAIN ALL AUTHORITY APPROVALS.
- ALL BATTERS TO BE GRASSED LINED WITH MIN 100mm TOPSOIL & APPROVED COUCH LAID AS TURF.
- MAKE SMOOTH TRANSITION TO EXISTING SERVICES & MAKE GOOD.
- THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY DIVERSION DRAINS & MOUNDS TO ENSURE THAT, AT ALL TIMES, EXPOSED SURFACES ARE FREE DRAINING &, WHERE NECESSARY, EXCAVATE SUMPS & PROVIDE PUMPING EQUIPMENT TO DRAIN EXPOSED AREAS.
- THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED ARCHITECTURAL, LANDSCAPE, STRUCTURAL, HYDRAULIC & ELECTRICAL DRAWINGS & SPECIFICATIONS. IF THERE EXISTS AND DISCREPANCIES BETWEEN THE DRAWINGS, THE BUILDER SHALL REPORT THE DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCEMENT OF ANY WORKS.
- TRENCHES THROUGH EXISTING ROAD & CONCRETE PAVEMENTS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE & A MIN 50mm IN BITUMINOUS PAVING.
- ALL BRANCH GAS & WATER SERVICES UNDER DRIVEWAYS & BRICK PAVING SHALL BE LOCATED IN Ø80 uPVC SEWER GRADE CONDUITS EXTENDING A MIN OF 500mm PAST PAVING.
- ALL WORKS WITHIN COUNCIL RESERVE TO BE INSPECTED BY COUNCIL PRIOR TO CONSTRUCTION.
- COUNCIL'S ISSUED FOOTWAY DESIGN LEVELS TO BE INCORPORATED INTO THE FINISHED LEVELS ONCE ISSUED BY COUNCIL.



LOCALITY PLAN
N.T.S



PERSPECTIVE PLAN
N.T.S

DIAL BEFORE YOU DIG NOTE



THE CONTRACTOR MUST CONTACT ALL SERVICES & MAINTAIN A SET OF 'DIAL BEFORE YOU DIG' DRAWINGS ON SITE AT ALL TIMES.

EROSION & SEDIMENT CONTROL NOTES

GENERAL INSTRUCTIONS:

- THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, & ANY OTHER PLANS OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED & RELATING TO DEVELOPMENT AT THE SUBJECT SITE.
- THE SITE SUPERINTENDENT WILL ENSURE THAT ALL SOIL & WATER MANAGEMENT WORKS ARE LOCATED AS INSTRUCTED IN THIS SPECIFICATION.
- ALL BUILDERS & SUB-CONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION & POLLUTION TO DOWNSLOPE LANDS & WATERWAYS.

CONSTRUCTION SEQUENCE:

- THE SOIL EROSION POTENTIAL ON THIS SITE SHALL BE MINIMISED. HENCE, WORKS SHALL BE UNDERTAKEN IN THE FOLLOWING SEQUENCE :
 - INSTALL SEDIMENT FENCES, TEMPORARY CONSTRUCTION EXIT & SANDBAG KERB INLET SEDIMENT TRAP
 - UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS, PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.

EROSION CONTROL:

- DURING WINDY CONDITIONS, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.
 - FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE & WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.
- ##### FENCING:
- STOCKPILES WILL NOT BE LOCATED WITHIN 2m OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS. WHERE THEY ARE BETWEEN 2 & 5m FROM SUCH AREAS, SPECIAL SEDIMENT CONTROL MEASURES SHOULD BE TAKEN TO MINIMISE POSSIBLE POLLUTION TO DOWNSLOPE WATERS, E.G. THROUGH INSTALLATION OF SEDIMENT FENCING.
 - ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) WILL BE REMOVED AS SOON AS POSSIBLE & WITHIN 10 WORKING DAYS FROM PLACEMENT.
 - WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.
 - TEMPORARY SOIL & WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.

OTHER MATTERS:

- ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE & MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS & LITTER.
- RECEPTORS FOR CONCRETE & MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS & LITTER ARE TO BE EMPTIED AS NECESSARY. DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT.

SITE INSPECTION & MAINTENANCE:

- EROSION & SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AFTER RAINFALL EVENTS TO ENSURE THAT THEY OPERATE EFFECTIVELY. REPAIR & OR MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED.

NOT FOR CONSTRUCTION - DA APPROVAL ONLY

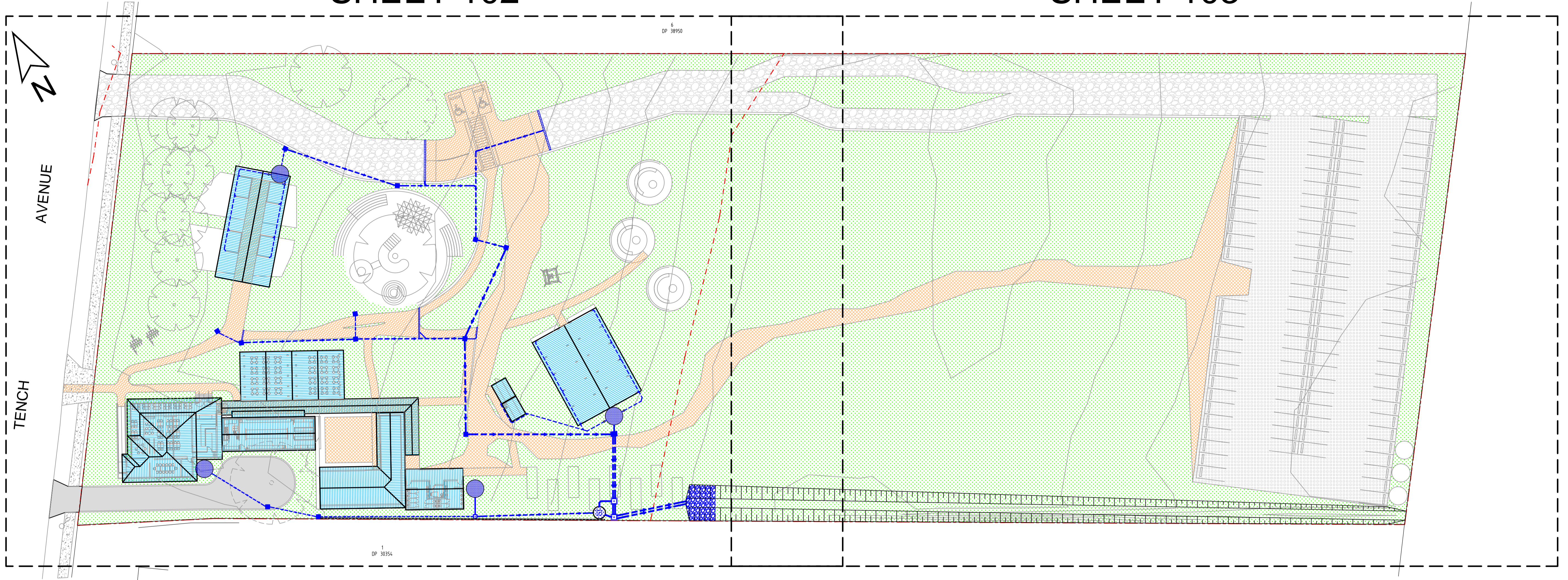
DIAL BEFORE YOU DIG NOTE



THE CONTRACTOR MUST CONTACT ALL SERVICES & MAINTAIN A SET OF 'DIAL BEFORE YOU DIG' DRAWINGS ON SITE AT ALL TIMES.

SHEET 102

SHEET 103



MASTER PLAN
SCALE 1:400

LEGEND

- PROPOSED BOUNDARY SHOWN OUTSIDE FOR CLARITY
- PROPOSED CONCRETE AREA
- RUSTIC LANDSCAPING (FEATHER GRASS OR SIMILAR TO FUTURE SPECIFICATION)
- PERMEABLE PATH (FIELDSTONES OR SIMILAR TO FUTURE SPECIFICATION)
- ACCESSIBLE PAVED PATHWAY & PARKING (TO FUTURE SPECIFICATION)
- COMPRESSED GRAVEL DRIVE (TO FUTURE SPECIFICATION)
- SENI PERMEABLE GROUND COVERING (TO FUTURE SPECIFICATION)
- EXISTING CONCRETE AREA
- PROPOSED OSD STORAGE AREA
- PROPOSED WATER QUALITY AREA
- PROPOSED STORMWATER PIPE
- PROPOSED STORMWATER CHARGED LINE DRAINING TO RWT
- ROOF SLOPE
- GUTTER DOWNPIPE
- DOWNPIPE NUMBER & SIZE
- Ø300 CLEANING EYE
- PROPOSED GRATED / SEALED PIT
- PROPOSED GRATED DRAIN
- COMBINED RAINWATER TANK & OSD TANK
- SURFACE FLOW ARROWS
- DESIGN SURFACE LEVEL
- EXISTING SURFACE LEVEL
- CLEAR PASSAGE & OPEN STYLE FENCING
- TREES TO BE RETAINED
- TREES TO BE REMOVED

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MBR CONSULTING ENGINEERS
0459 117 674
info@mbrcconsulting.com.au
PO Box 8288, Blacktown NSW 2148
ABN: 61 625 079 923
ACN: 625 079 923

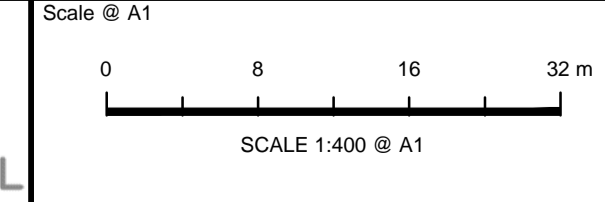
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ALL PLANS MUST BE PRINTED IN COLOUR & READ PRIOR TO CONSTRUCTION

Issue	Description	Date	Design	Check
A	ISSUE FOR DEVELOPMENT APPLICATION	09/12/2019	MBR	KE

Architect
Killing Matt Woods
1/160 Rochford Street,
Erskineville NSW 2043
EMAIL: solid@killingmattwoods.com
PHONE: 0421 848 462

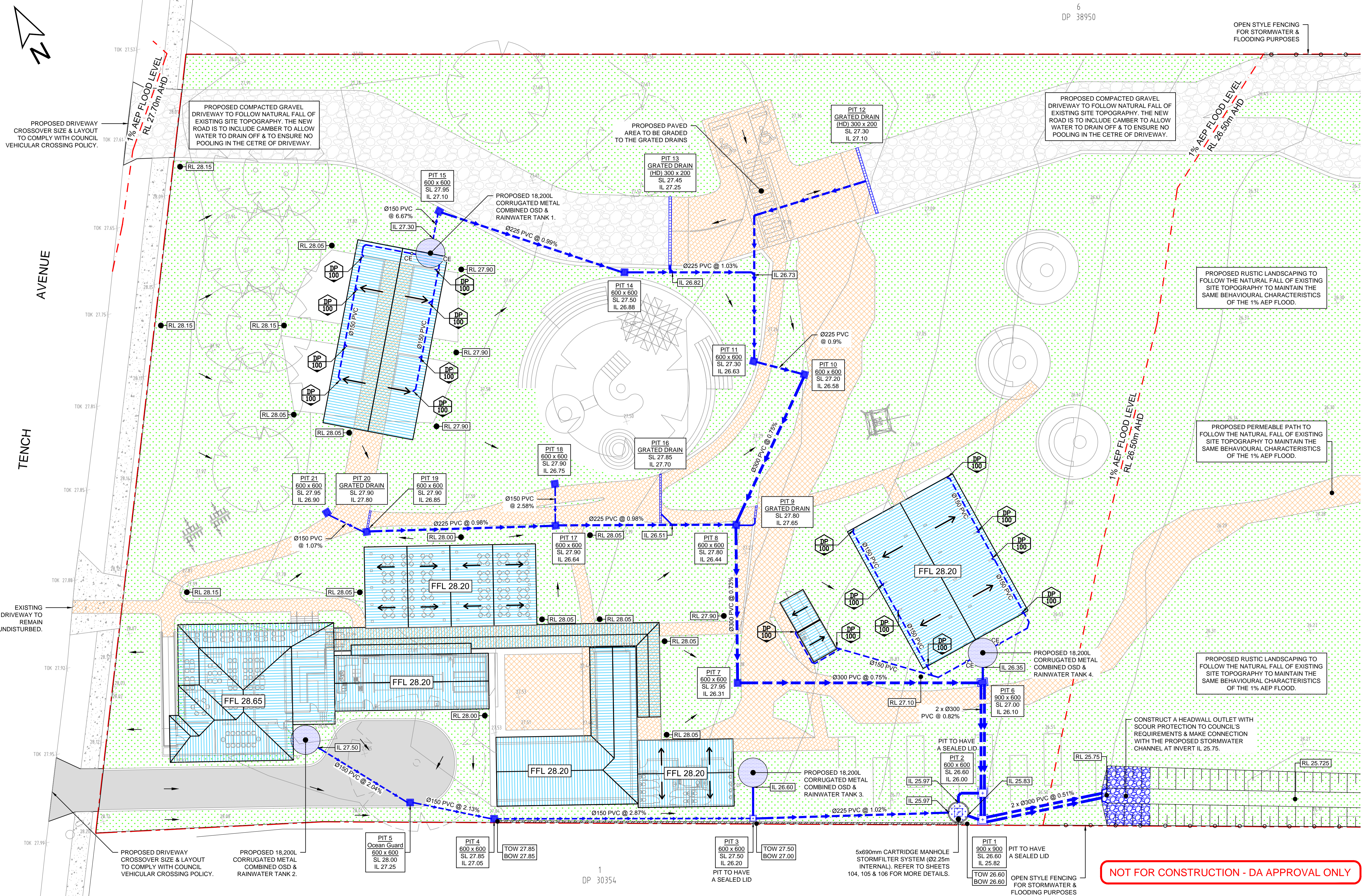
Client
MKD Cafe Pty Ltd



Project
**44-50 TENCH AVENUE, JAMISONTOWN
PROPOSED MUD MAP: THE ORANGE GROVE
STORMWATER CONCEPT PLAN
DEVELOPMENT APPLICATION**

Drawing Title
**STORMWATER CONCEPT PLAN
MASTER PLAN**

Project No.	19039
Dwg. No.	101
Rev	A



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MBR
CONSULTING ENGINEERS

0459 117 674
info@mbrconsulting.com.au
PO Box 8288, Blacktown NSW 2148
ABN: 61 625 079 923
ACN: 625 079 923

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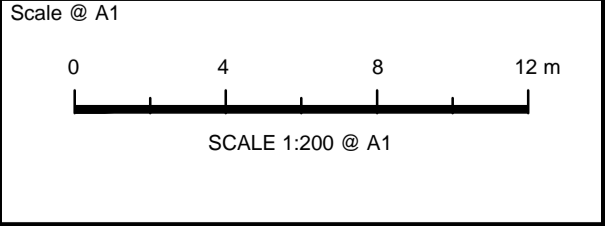
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A	ISSUE FOR DEVELOPMENT APPLICATION	09/12/2019	MBR	KE	Killing Matt Woods

Architect
Killing Matt Woods
1/160 Rochford Street,
Erskineville NSW 2043
EMAIL: solid@killingmattwoods.com
PHONE: 0421 848 462

Client
MKD Cafe Pty Ltd

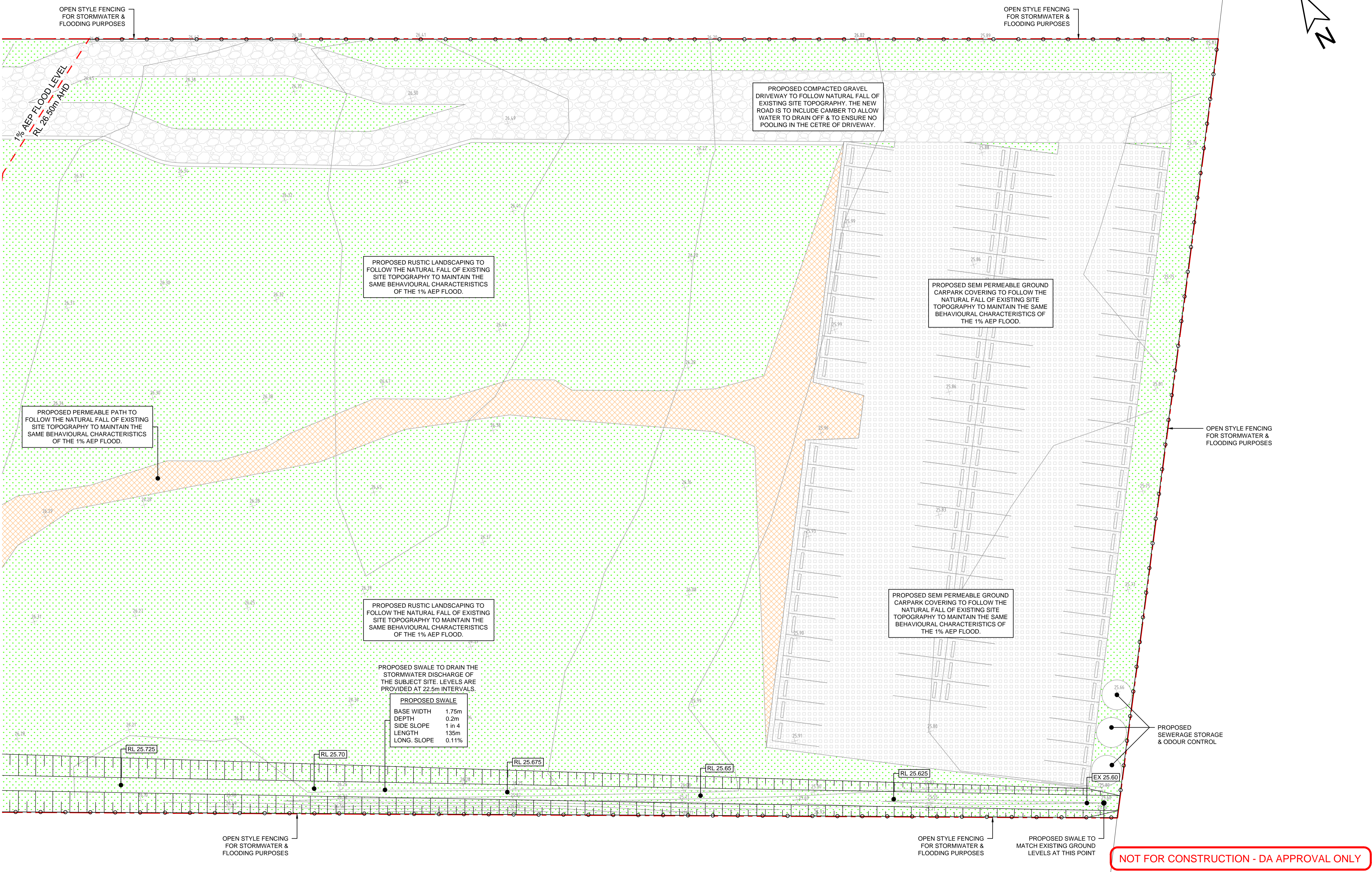
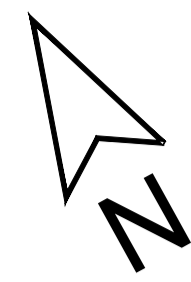
PENRITH CITY COUNCIL



Project
**44-50 TENCH AVENUE, JAMISONTOWN
PROPOSED MUD MAP: THE ORANGE GROVE
STORMWATER CONCEPT PLAN
DEVELOPMENT APPLICATION**

Drawing Title
**STORMWATER CONCEPT PLAN
SHEET 1 OF 2**

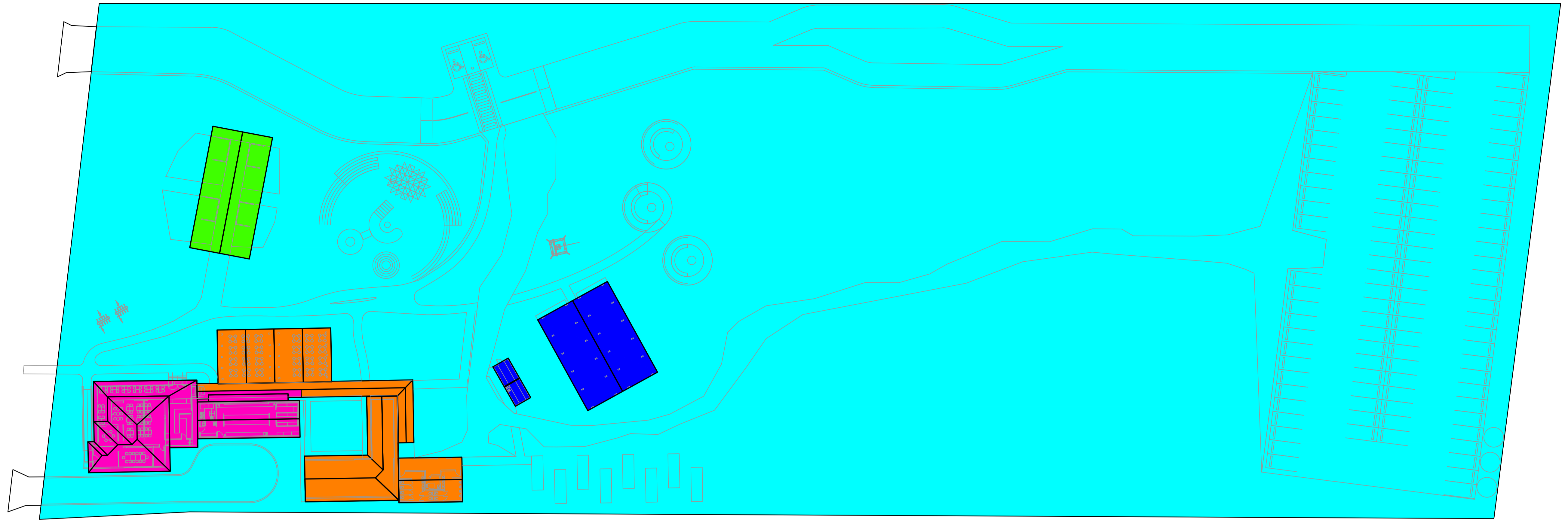
Project No.
19039
Dwg. No.
102
Rev
A



Issue	Description	Date	Design	Check
A	ISSUE FOR DEVELOPMENT APPLICATION	09/12/2019	MBR	KE

OSD CATCHMENT LEGEND

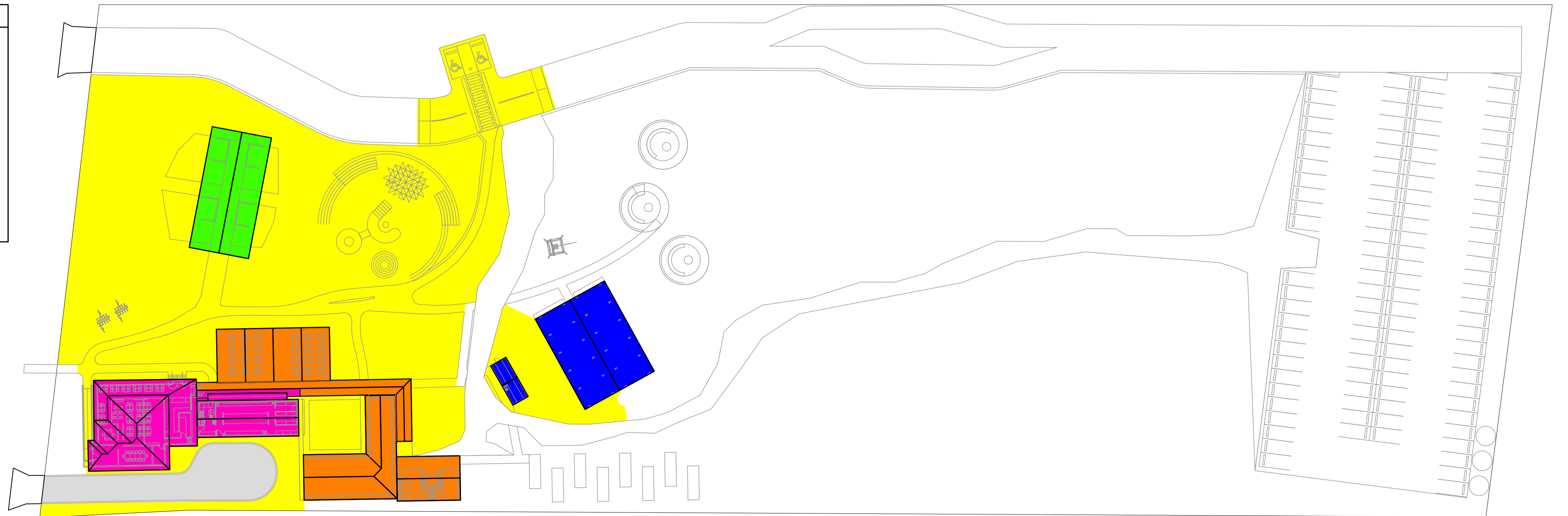
- AREA DRAINING TO OSD 1 = 232.0m²
- AREA DRAINING TO OSD 2 = 427.5m²
- AREA DRAINING TO OSD 3 = 565.4m²
- AREA DRAINING TO OSD 4 = 280.3m²
- AREA BYPASSING OSD = 21,610.6m²



OSD CATCHMENT PLAN
SCALE 1:400

WSUD CATCHMENT LEGEND

- ROOF AREA DRAINING TO RWT 1 THEN TO WSUD = 232.0m²
- ROOF AREA DRAINING TO RWT 2 THEN TO WSUD = 427.5m²
- ROOF AREA DRAINING TO RWT 3 THEN TO WSUD = 565.4m²
- ROOF AREA DRAINING TO RWT 4 THEN TO WSUD = 280.3m²
- GROUND AREA DRAINING TO WSUD = xxx.xm²
- ROAD AREA DRAINING TO THE WSUD = xxx.xm²

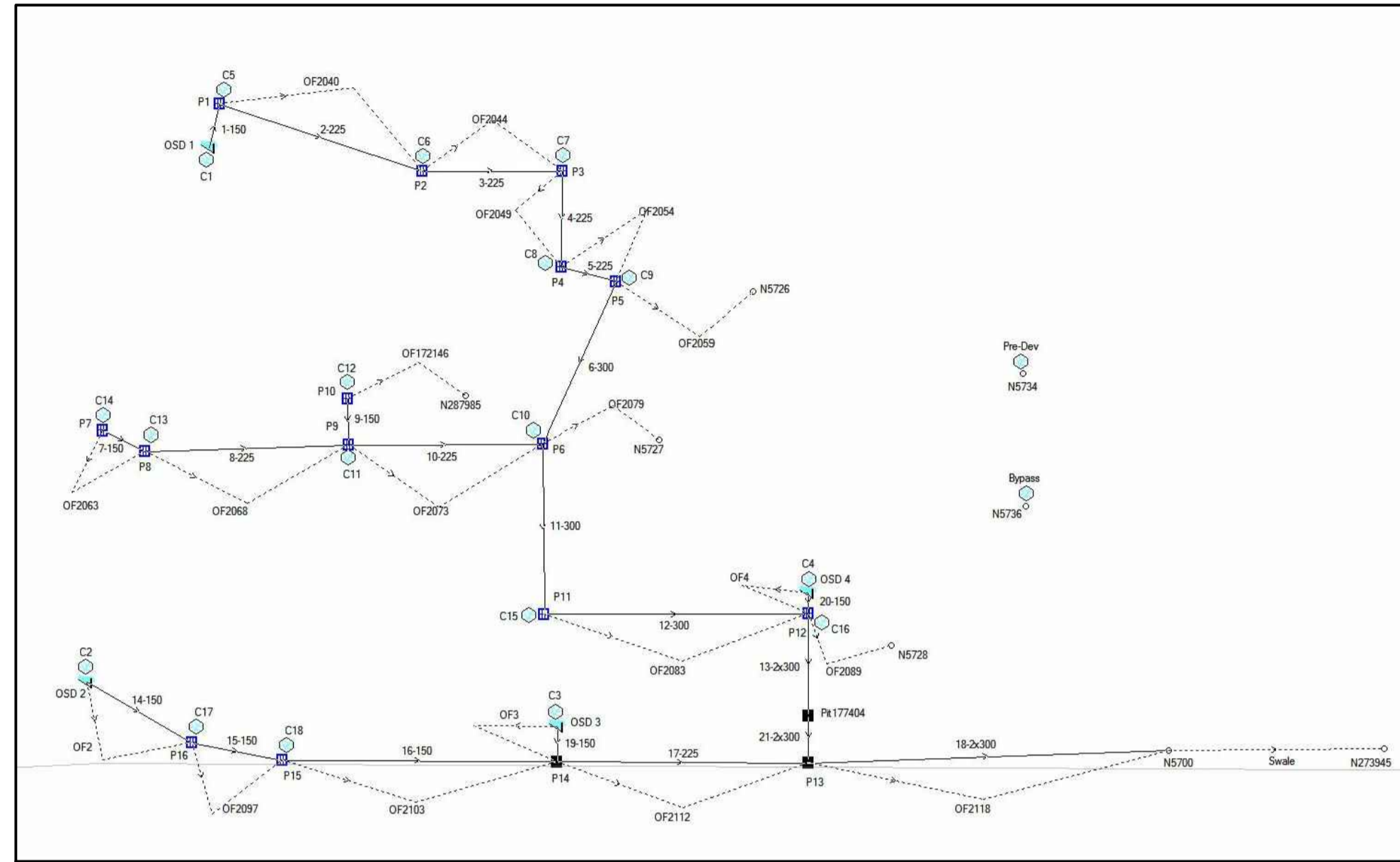


WSUD CATCHMENT PLAN
SCALE 1:400

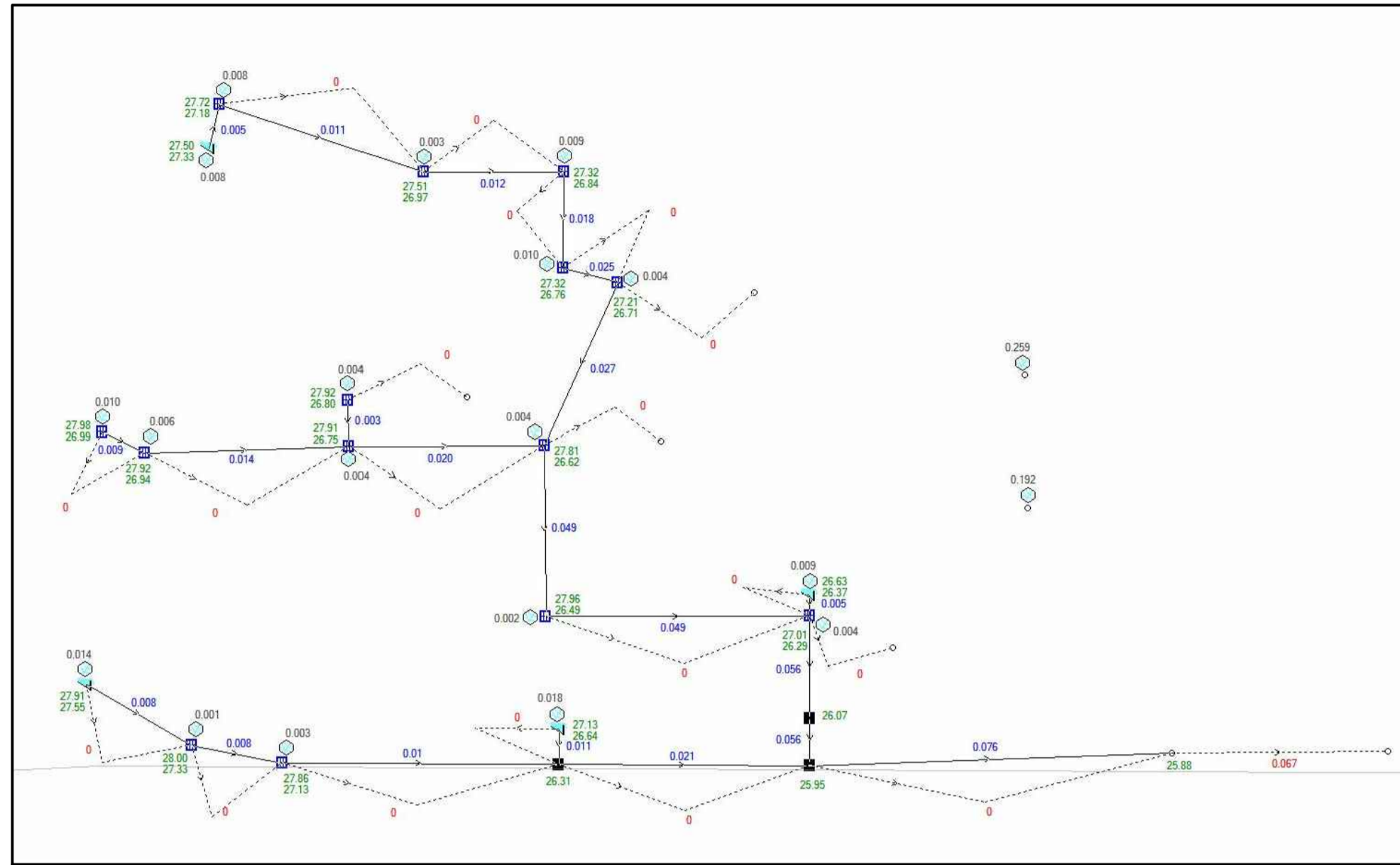
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Issue	Description	Date	Design	Check	Architect
A	ISSUE FOR DEVELOPMENT APPLICATION	09/12/2019	MBR	KE	Killing Matt Woods

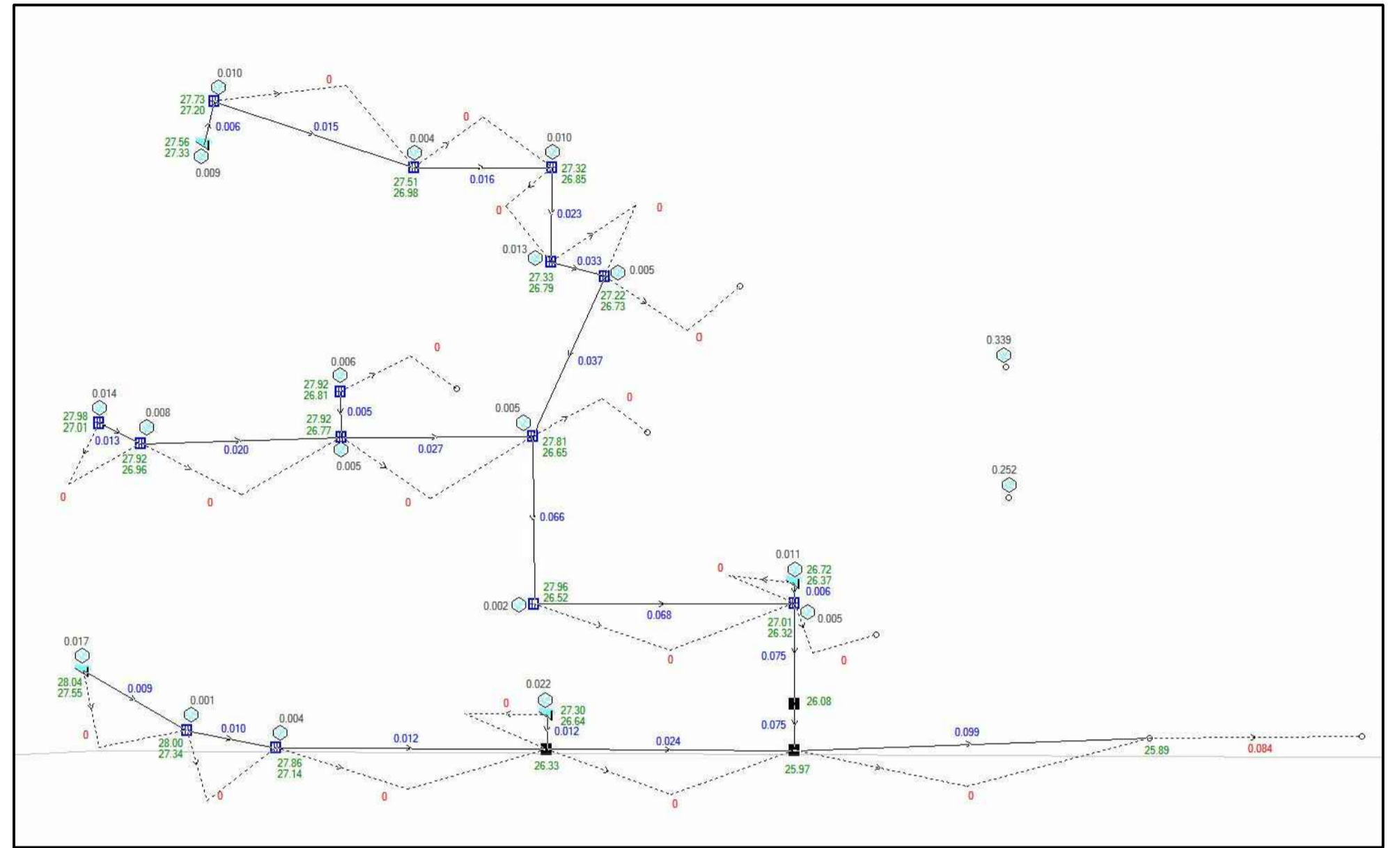
ON-SITE DETENTION PERFORMANCE SUMMARY																
STORM EVENT	PRE-DEVELOPMENT		POST-DEVELOPMENT													
	DISCHARGE (l/s)	DOWNSTREAM WATER LEVEL (m AHD)	ORIFICE 1 DISCHARGE (l/s)	ORIFICE 2 DISCHARGE (l/s)	ORIFICE 3 DISCHARGE (l/s)	ORIFICE 4 DISCHARGE (l/s)	BYPASS FLOWS (l/s)	TOTAL SITE DISCHARGE (l/s)	VOLUME 1 (m ³)	VOLUME 2 (m ³)	VOLUME 3 (m ³)	VOLUME 4 (m ³)	TWL 1 (m AHD)	TWL 2 (m AHD)	TWL 3 (m AHD)	TWL 4 (m AHD)
Q ₅	259	26.20	5	8	11	5	230	259	1.51	3.24	4.21	2.17	29.626	29.654	28.932	28.853
Q ₁₀	339	26.25	6	9	12	6	303	336	1.98	4.21	5.51	2.82	29.688	29.778	29.096	28.938
Q ₂₀	434	26.35	6	11	14	7	391	429	2.46	5.23	6.86	3.50	29.750	29.908	29.267	29.027
Q ₅₀	559	26.40	7	12	16	8	508	551	3.09	6.69	8.83	4.53	29.832	30.094	29.516	29.162
Q ₁₀₀	654	26.50	8	13	17	9	597	644	3.66	7.92	10.44	5.32	29.906	30.252	29.720	29.265



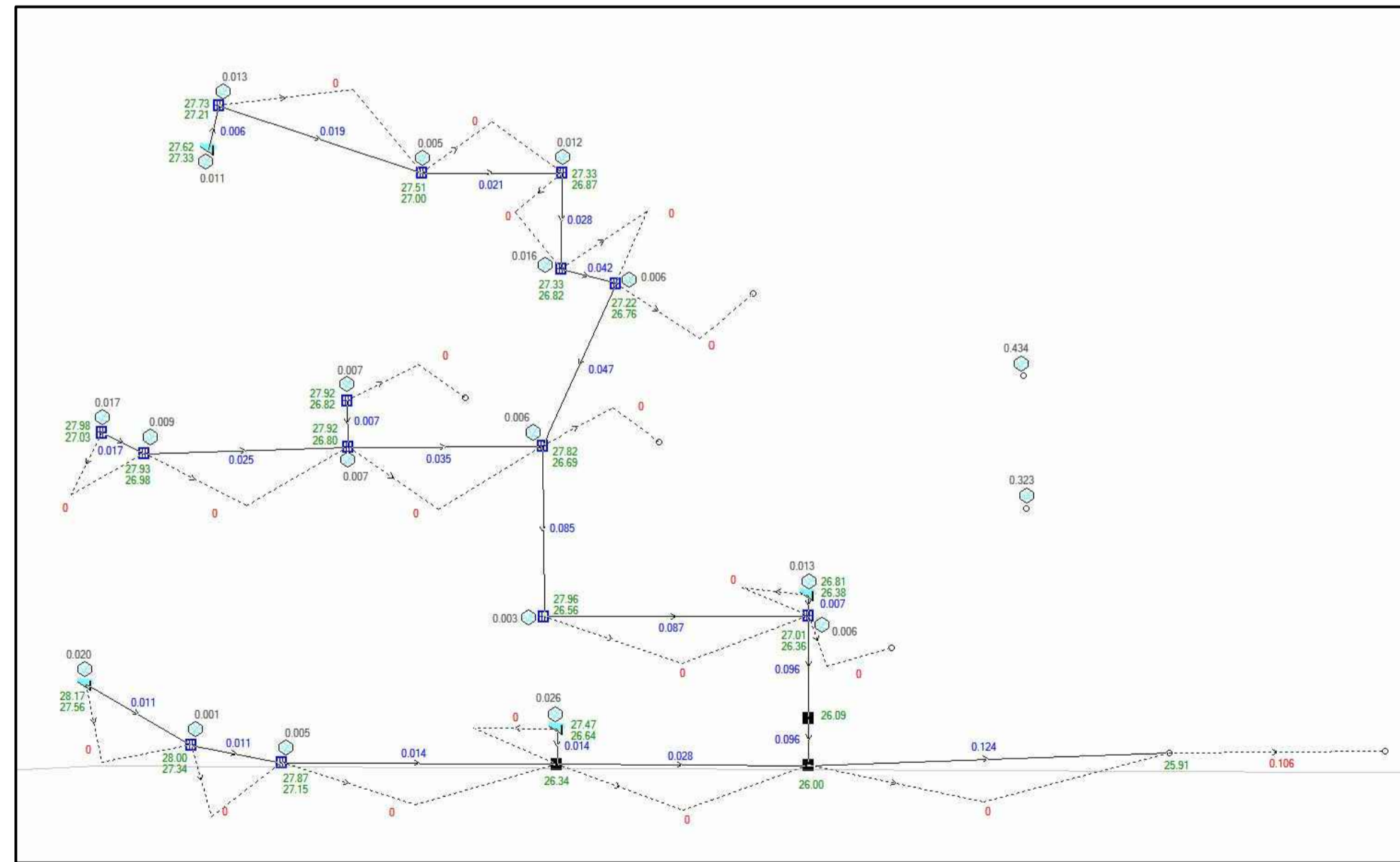
DRAINS WITHOUT RESULTS
N.T.S.



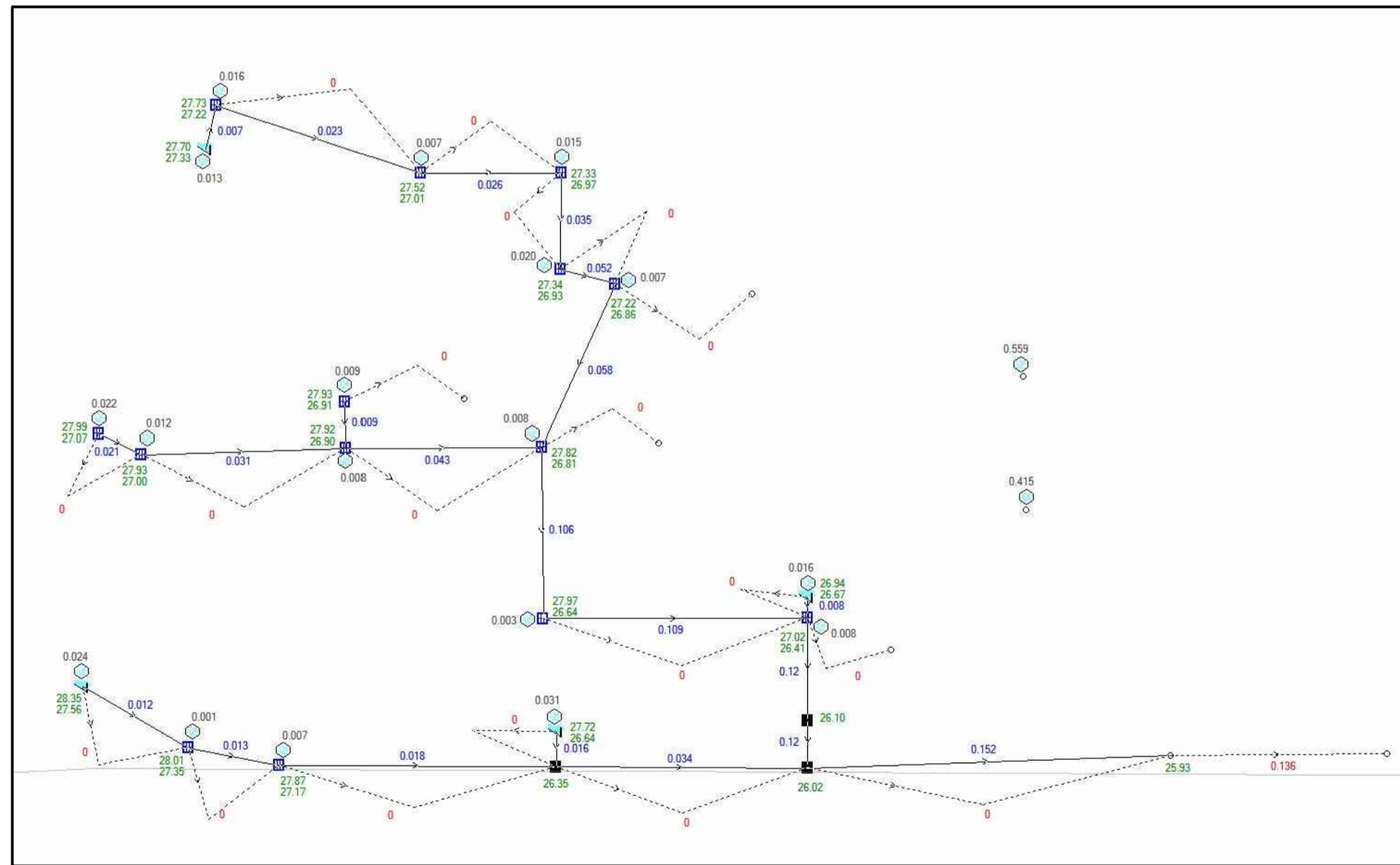
DRAINS RESULTS 5yr
N.T.S.



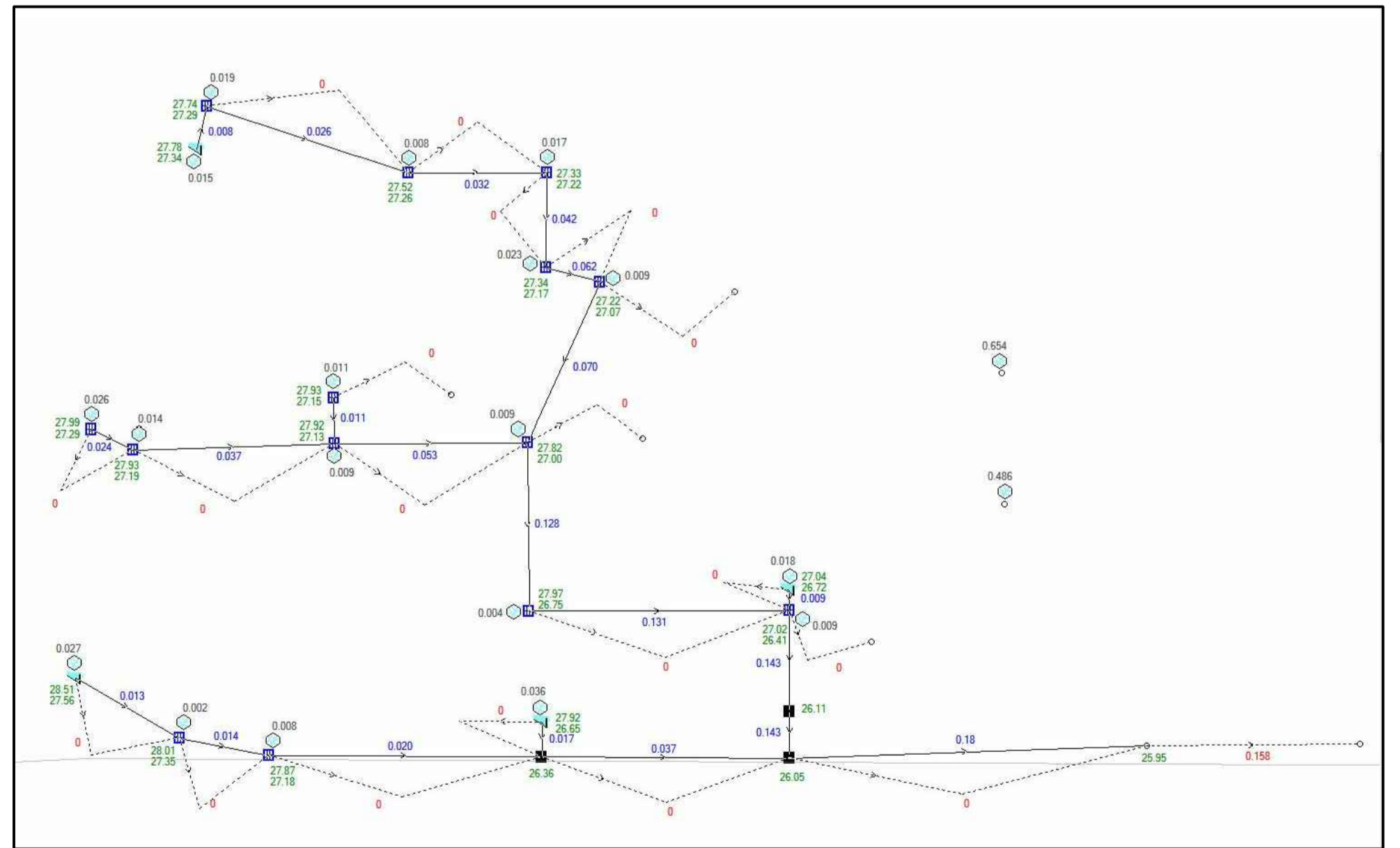
DRAINS RESULTS 10yr
N.T.S.



DRAINS RESULTS 20yr
N.T.S.



DRAINS RESULTS 50yr
N.T.S.



DRAINS RESULTS 100yr
N.T.S.

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ON-SITE DETENTION NOTES

1. THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED ARCHITECTURAL, LANDSCAPE, STRUCTURAL, HYDRAULIC, & OTHER SERVICES DRAWINGS & SPECIFICATIONS. IF THERE EXISTS AND DISCREPANCIES BETWEEN THE DRAWINGS, THE BUILDER SHALL REPORT THE DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCEMENT OF ANY WORKS.
2. THE OSD BASIN / TANK IS TO BE BUILT TO THE CORRECT LEVELS & SIZE AS PER THIS DESIGN. ANY VARIATIONS ARE TO BE DONE UNDER CONSULTATION FROM OUR OFFICE ONLY. ANY AMENDMENTS WITHOUT OUR APPROVAL WOULD RESULT IN ADDITIONAL FEES FOR REDESIGN AT OC STAGE OR IF A SOLUTION CANNOT BE FOUND, RECONSTRUCTION IS REQUIRED UNDER THE CONTRACTOR'S EXPENSES.

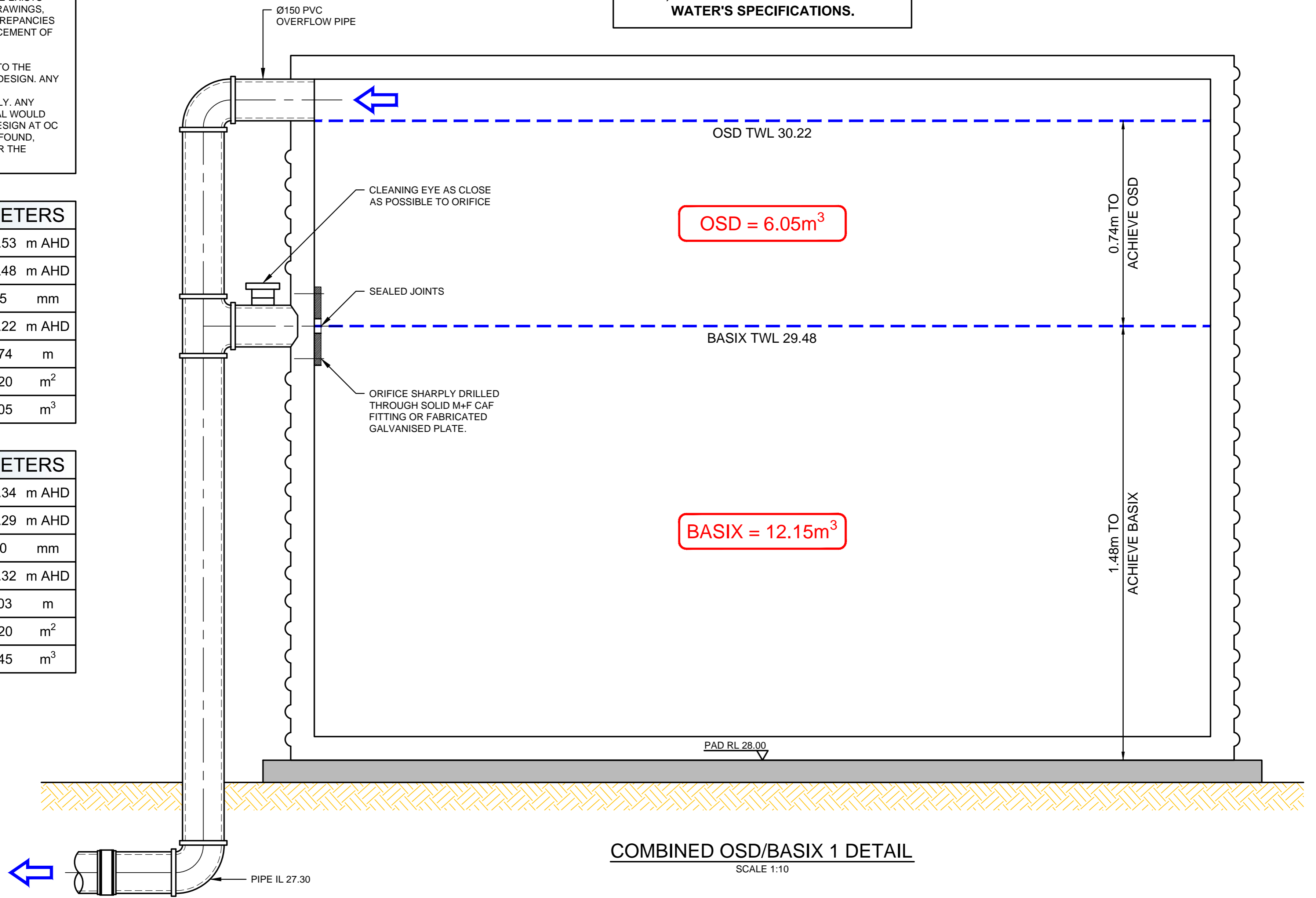
OSD 1 DESIGN PARAMETERS

ORIFICE INVERT LEVEL	29.53 m AHD
ORIFICE CENTERLINE	29.48 m AHD
ORIFICE DIAMETER	75 mm
DESIGN TOP WATER LEVEL	30.22 m AHD
HEAD TO ORIFICE	0.74 m
BASE AREA	8.20 m ²
VOLUME PROVIDED	6.05 m ³

OSD 2 DESIGN PARAMETERS

ORIFICE INVERT LEVEL	29.34 m AHD
ORIFICE CENTERLINE	29.29 m AHD
ORIFICE DIAMETER	80 mm
DESIGN TOP WATER LEVEL	30.32 m AHD
HEAD TO ORIFICE	1.03 m
BASE AREA	8.20 m ²
VOLUME PROVIDED	8.45 m ³

COMBINED TANK 1
 12.15m³ FOR BASIX & EFFECTIVE 6.05m³ FOR OSD. USE 18.2m³ ROUND RAINWATER TANK, TO MANUFACTURER'S & SYDNEY WATER'S SPECIFICATIONS.



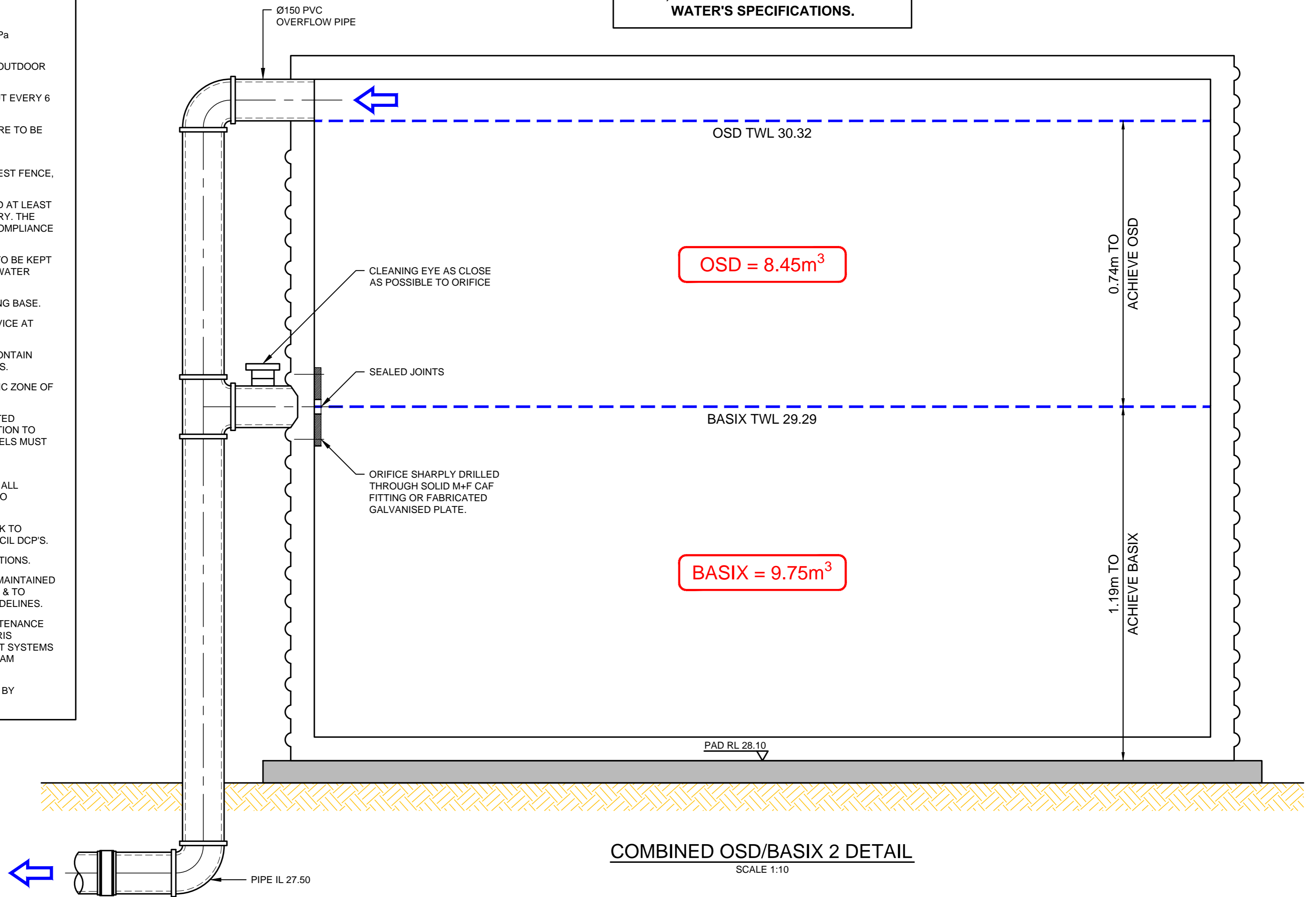
COMBINED OSD/BASIX 1 DETAIL
 SCALE 1:10

STORAGE TANK NOTES

1. TANK WATER TAPS SHALL BE MARKED 'RAINWATER NOT TO HUMAN CONSUMPTION'.
2. RAINWATER TANKS SHALL BE CONNECTED TO MAINS WATER SUPPLY AS BACK-UP.
3. THE PUMPS ARE TO BE INSULATED IN ACCORDANCE WITH COUNCIL POLICY.
4. PUMPS SHALL PROVIDE MINIMUM 150 kPa PRESSURE.
5. EACH TANK TO BE CONNECTED TO AN OUTDOOR TAP FOR IRRIGATION USE.
6. RAINWATER TANKS TO BE CLEANED OUT EVERY 6 MONTHS.
7. WATER TANK & ASSOCIATED STRUCTURE TO BE THE SAME COLOUR, OR A COLOUR COMPLEMENTARY TO THE DWELLING.
8. TOP TANK TO BE BELOW TOP OF NEAREST FENCE, OR 1.8m WHICHEVER IS LESS.
9. THE WATER TANK SHOULD BE LOCATED AT LEAST 450mm FROM ANY PROPERTY BOUNDARY. THE CLIENT IS RESPONSIBLE TO ENSURE COMPLIANCE WITH THIS IN THE INSTALLED STATE.
10. PLUMBING FROM THE WATER TANK IS TO BE KEPT SEPARATED FROM THE RETICULATED WATER SUPPLY SYSTEM.
11. TANK TO BE BUILT ON SELF-SUPPORTING BASE.
12. PROVIDE BACK-FLOW PREVENTION DEVICE AT MAINS WATER METER.
13. ROOF DRAINING TO TANK MUST NOT CONTAIN LEAD, TAR BASED PAINTS OR ASBESTOS.
14. WATER TO BE DRAWN FROM ANAEROBIC ZONE OF TANK.
15. TANK DETAILS SHOWN ARE A SUGGESTED CONFIGURATION ONLY. ANY MODIFICATION TO TANK VOLUME OR INLET & OUTLET LEVELS MUST BE APPROVED BY ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION.
16. ALL JOINTS TO BE SOLVENT WELDED & ALL EXPOSED PIPE WORK TO BE PAINTED TO WITHSTAND EXTERNAL ELEMENTS.
17. FIRST FLUSH WATER DIVERTER AT TANK TO COMPLY WITH SYDNEY WATER & COUNCIL DCP'S.
18. PUMPS TO MANUFACTURER SPECIFICATIONS.
19. RAINWATER TANK TO BE INSTALLED & MAINTAINED TO MANUFACTURER'S SPECIFICATIONS & TO COMPLY WITH ALL SYDNEY WATER GUIDELINES.
20. CLIENT TO BE RESPONSIBLE FOR MAINTENANCE SYSTEM OF CHARGED PIPELINES. DEBRIS ACCUMULATION SIGNIFICANTLY AFFECT SYSTEMS PERFORMANCE. MAINTENANCE PROGRAM ESSENTIAL.
21. STRUCTURAL DETAILS FOR TANK BASE BY MANUFACTURERS OR OTHERS.



COMBINED TANK 2
 9.75m³ FOR BASIX & EFFECTIVE 8.45m³ FOR OSD. USE 18.2m³ ROUND RAINWATER TANK, TO MANUFACTURER'S & SYDNEY WATER'S SPECIFICATIONS.



COMBINED OSD/BASIX 2 DETAIL
 SCALE 1:10



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Issue	Description	Date	Design	Check	Project
A	ISSUE FOR DEVELOPMENT APPLICATION	09/12/2019	MBR	KE	

ON-SITE DETENTION NOTES

1. THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED ARCHITECTURAL, LANDSCAPE, STRUCTURAL, HYDRAULIC, & OTHER SERVICES DRAWINGS & SPECIFICATIONS. IF THERE EXISTS AND DISCREPANCIES BETWEEN THE DRAWINGS, THE BUILDER SHALL REPORT THE DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCEMENT OF ANY WORKS.
2. THE OSD BASIN / TANK IS TO BE BUILT TO THE CORRECT LEVELS & SIZE AS PER THIS DESIGN. ANY VARIATIONS ARE TO BE DONE UNDER CONSULTATION FROM OUR OFFICE ONLY. ANY AMENDMENTS WITHOUT OUR APPROVAL WOULD RESULT IN ADDITIONAL FEES FOR REDESIGN AT OC STAGE OR IF A SOLUTION CANNOT BE FOUND, RECONSTRUCTION IS REQUIRED UNDER THE CONTRACTOR'S EXPENSES.

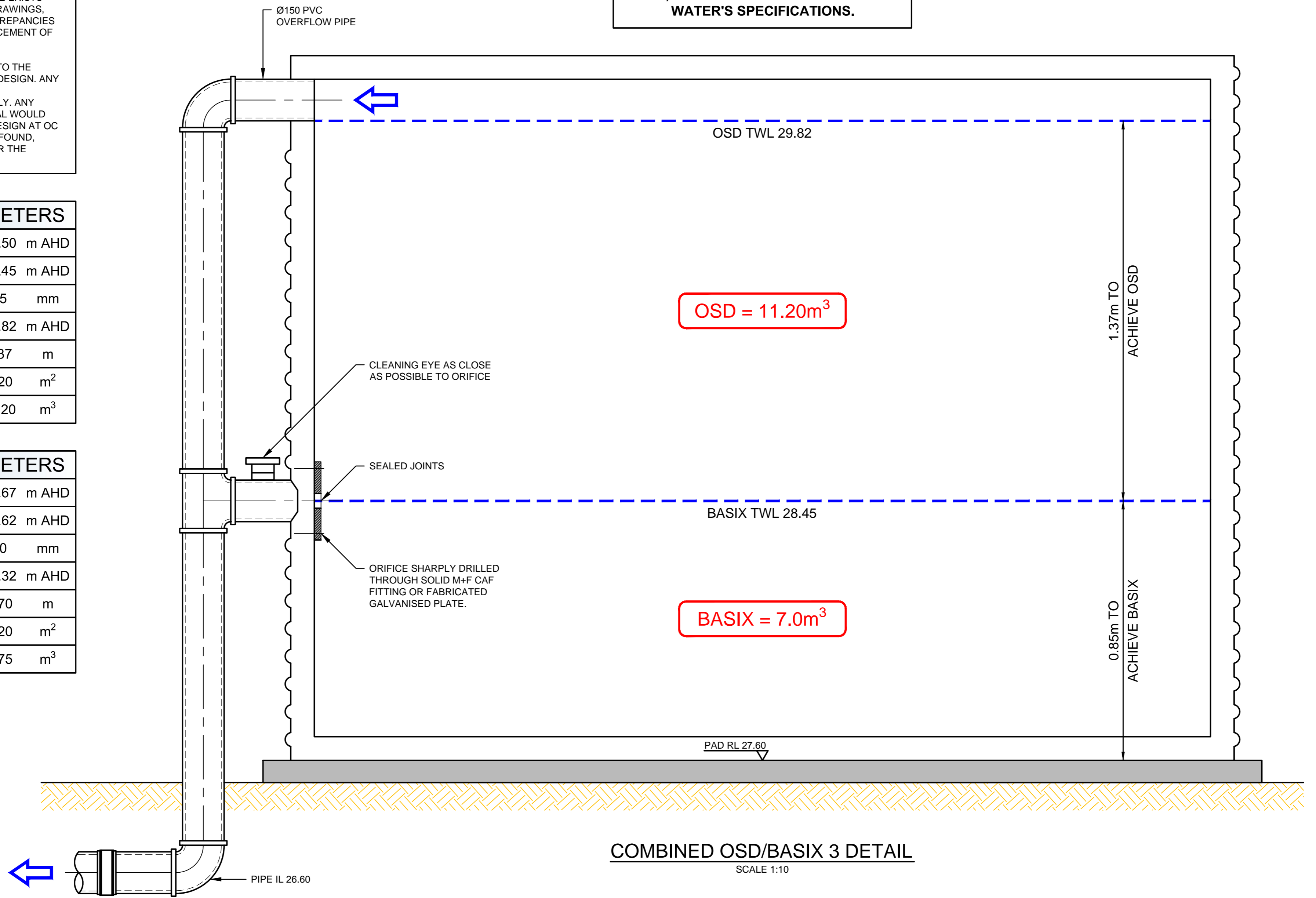
OSD 3 DESIGN PARAMETERS

ORIFICE INVERT LEVEL	28.50 m AHD
ORIFICE CENTERLINE	28.45 m AHD
ORIFICE DIAMETER	85 mm
DESIGN TOP WATER LEVEL	29.82 m AHD
HEAD TO ORIFICE	1.37 m
BASE AREA	8.20 m ²
VOLUME PROVIDED	11.20 m ³

OSD 4 DESIGN PARAMETERS

ORIFICE INVERT LEVEL	28.67 m AHD
ORIFICE CENTERLINE	28.62 m AHD
ORIFICE DIAMETER	70 mm
DESIGN TOP WATER LEVEL	29.32 m AHD
HEAD TO ORIFICE	0.70 m
BASE AREA	8.20 m ²
VOLUME PROVIDED	5.75 m ³

COMBINED TANK 3
7.0m³ FOR BASIX & EFFECTIVE 11.2m³ FOR OSD. USE 18.2m³ ROUND RAINWATER TANK, TO MANUFACTURER'S & SYDNEY WATER'S SPECIFICATIONS.



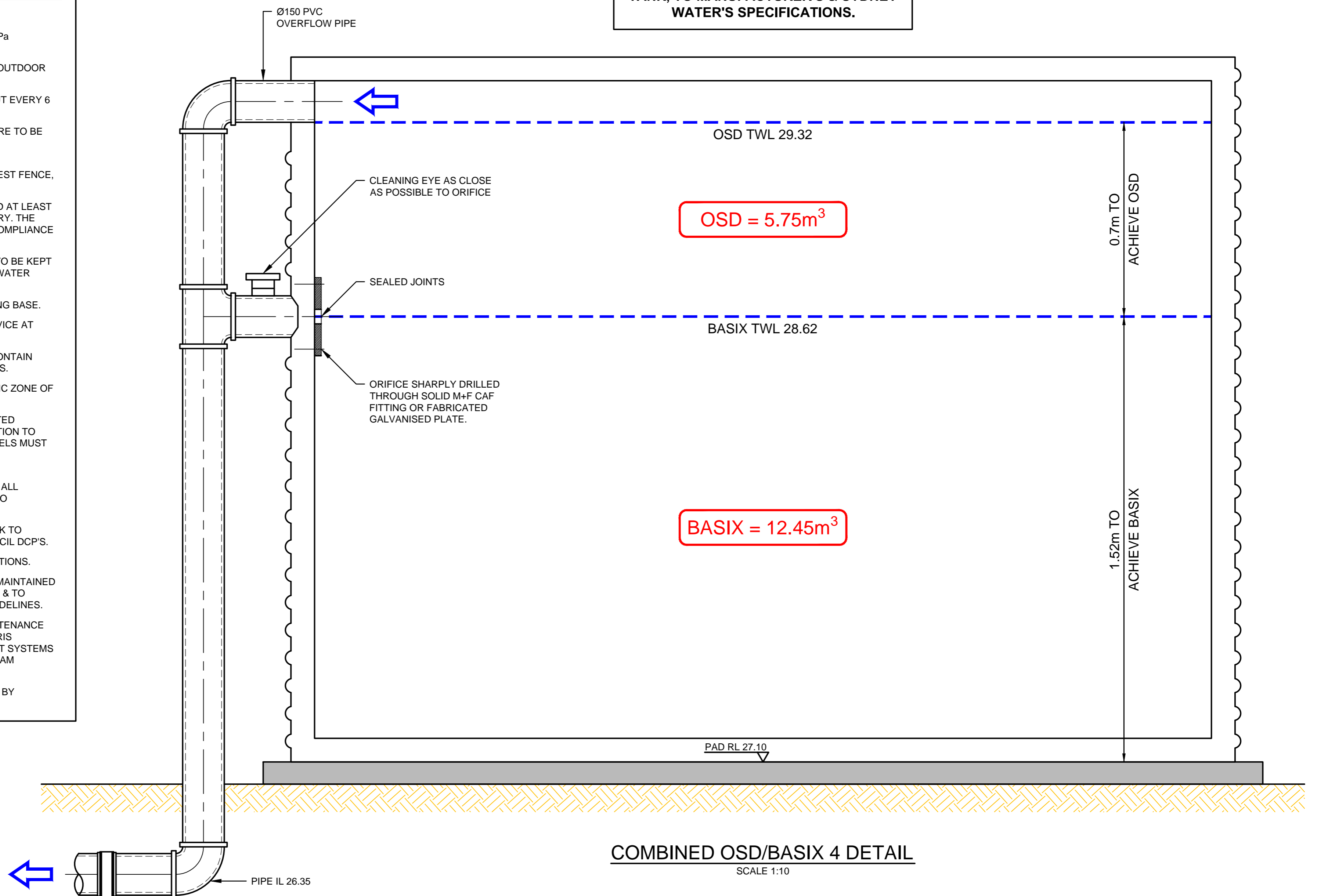
COMBINED OSD/BASIX 3 DETAIL
SCALE 1:10

STORAGE TANK NOTES

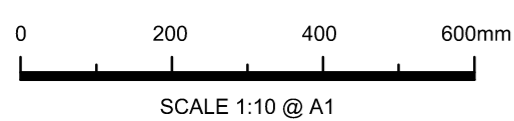
1. TANK WATER TAPS SHALL BE MARKED 'RAINWATER NOT TO HUMAN CONSUMPTION'.
2. RAINWATER TANKS SHALL BE CONNECTED TO MAINS WATER SUPPLY AS BACK-UP.
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8. TOP TANK TO BE BELOW TOP OF NEAREST FENCE, OR 1.8m WHICHEVER IS LESS.
9. THE WATER TANK SHOULD BE LOCATED AT LEAST 450mm FROM ANY PROPERTY BOUNDARY. THE CLIENT IS RESPONSIBLE TO ENSURE COMPLIANCE WITH THIS IN THE INSTALLED STATE.
10. PLUMBING FROM THE WATER TANK IS TO BE KEPT SEPARATED FROM THE RETICULATED WATER SUPPLY SYSTEM.
11. TANK TO BE BUILT ON SELF-SUPPORTING BASE.
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20. CLIENT TO BE RESPONSIBLE FOR MAINTENANCE SYSTEM OF CHARGED PIPELINES. DEBRIS ACCUMULATION SIGNIFICANTLY AFFECT SYSTEMS PERFORMANCE. MAINTENANCE PROGRAM ESSENTIAL.
21. STRUCTURAL DETAILS FOR TANK BASE BY MANUFACTURERS OR OTHERS.



COMBINED TANK 4
12.45m³ FOR BASIX & EFFECTIVE 5.75m³ FOR OSD. USE 18.2m³ ROUND RAINWATER TANK, TO MANUFACTURER'S & SYDNEY WATER'S SPECIFICATIONS.



COMBINED OSD/BASIX 4 DETAIL
SCALE 1:10



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A	ISSUE FOR DEVELOPMENT APPLICATION	09/12/2019	MBR	KE	

ON-SITE DETENTION NOTES

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2. THE OSD BASIN / TANK IS TO BE BUILT TO THE CORRECT LEVELS & SIZE AS PER THIS DESIGN. ANY VARIATIONS ARE TO BE DONE UNDER CONSULTATION FROM OUR OFFICE ONLY. ANY AMENDMENTS WITHOUT OUR APPROVAL WOULD RESULT IN ADDITIONAL FEES FOR REDESIGN AT OC STAGE OR IF A SOLUTION CANNOT BE FOUND, RECONSTRUCTION IS REQUIRED UNDER THE CONTRACTOR'S EXPENSES.

OCEAN PROTECT NOTES

1. PRECAST STRUCTURE SUPPLIED WITH CORE HOLES TO SUIT OUTER DIAMETER OF NOMINATED PIPE SIZE / MATERIAL.
2. IF THE PEAK FLOW RATE, AS DETERMINED BY THE SITE CIVIL ENGINEER, EXCEEDS THE PEAK HYDRAULIC CAPACITY OF THE PRODUCT, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.
3. PRECAST STRUCTURE SHALL MEET W80 WHEEL LOAD RATING ASSUMING A MAXIMUM EARTH COVER OF 2.0m & A GROUND WATER ELEVATION AT OR BELOW THE OUTLET PIPE INVERT ELEVATION. CERTIFYING ENGINEER TO CONFIRM ACTUAL GROUNDWATER ELEVATION. PRECAST STRUCTURE SHALL BE IN ACCORDANCE WITH AS3600.
4. ALL WATER QUALITY TREATMENT DEVICES REQUIRE PERIODIC MAINTENANCE AS OUTLINED IN THE O&M GUIDELINES.
5. SITE SPECIFIC PRODUCTION DRAWING WILL BE PROVIDED ON PLACEMENT OF ORDER.
6. ANY BACKFILL DEPTH, SUB-BASE, & OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS & SHALL BE SPECIFIED BY SITE CIVIL ENGINEER.
7. CONTRACTOR TO PROVIDE ALL EQUIPMENT WITH SUFFICIENT LIFTING & REACH CAPACITY TO LIFT & SET THE STORMFILTER STRUCTURE (LIFTING DETAIL PROVIDED SEPARATELY).
8. CONTRACTOR TO APPLY SEALANT TO ALL JOINTS & TO PROVIDE, INSTALL & GROUT INLET & OUTLET PIPES.



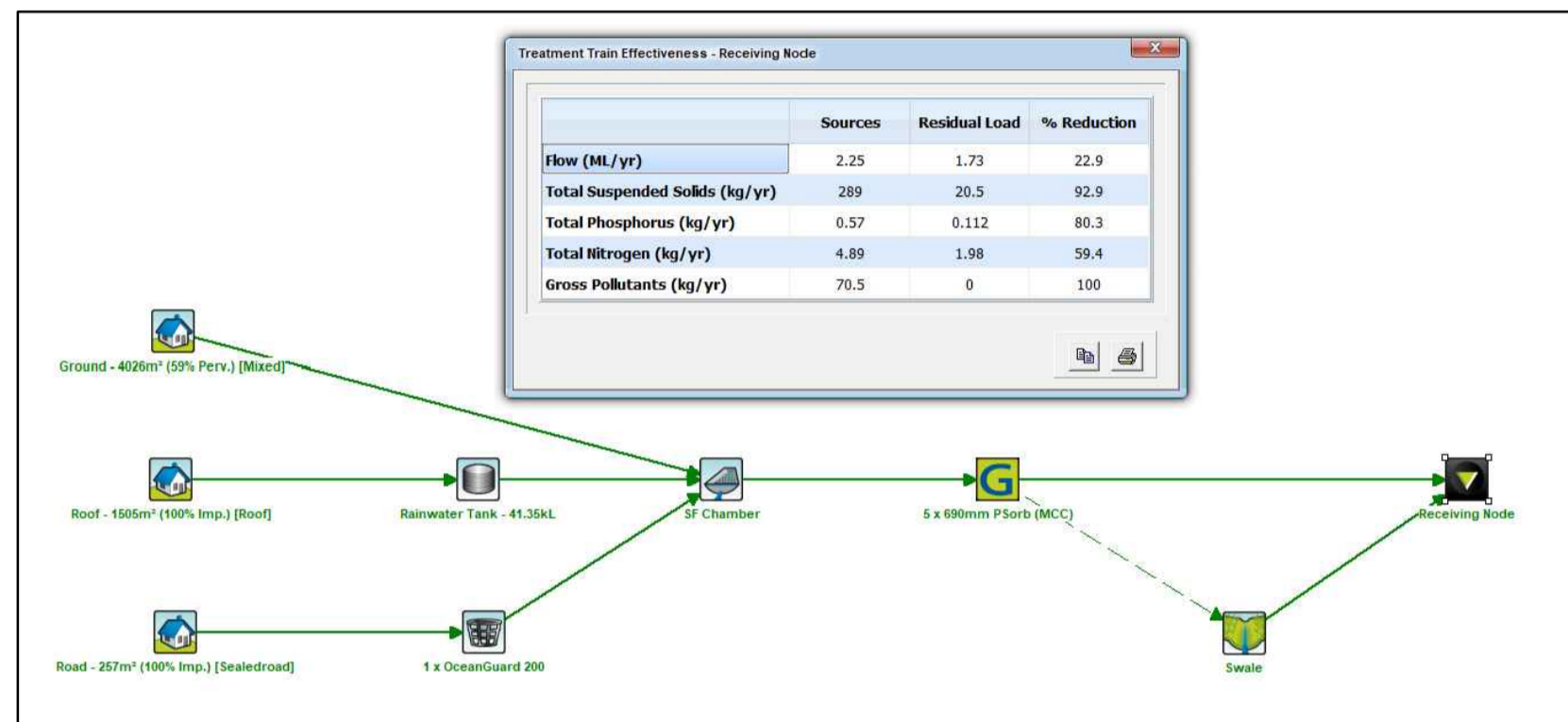
CONFINED SPACE DANGER SIGN

1. A CONFINED SPACE DANGER SIGN SHALL BE POSITIONED IN A LOCATION AT ALL ACCESS POINTS, SUCH THAT IT IS CLEARLY VISIBLE TO PERSONS PROPOSING TO ENTER THE BELOW GROUND TANK/S CONFINED SPACE.
2. MINIMUM DIMENSIONS OF THE SIGN - 300mm x 450mm (LARGE ENTRIES, SUCH AS DOORS) -250mm x 180mm (SMALL ENTRIES SUCH AS GRATES & MANHOLES).
3. THE SIGN SHALL BE MANUFACTURED FROM COLOUR BONDED ALUMINIUM OR POLYPROPYLENE.
4. SIGN SHALL BE AFFIXED USING SCREWS AT EACH CORNER OF THE SIGN.
5. COLOURS:
"DANGER" & BACKGROUND = WHITE
ELLIPTICAL AREA = RED
RECTANGLE CONTAINING ELLIPSE = BLACK
BORDER AND OTHER LETTERING = BLACK

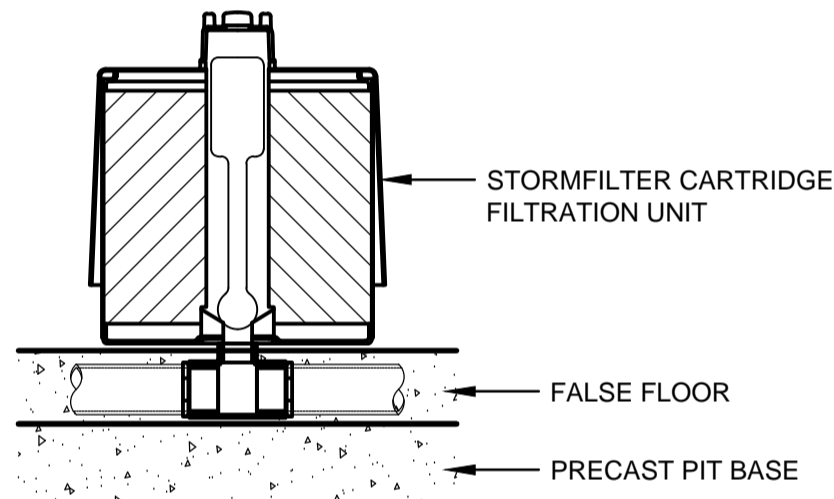


WSUD DATA REQUIREMENTS

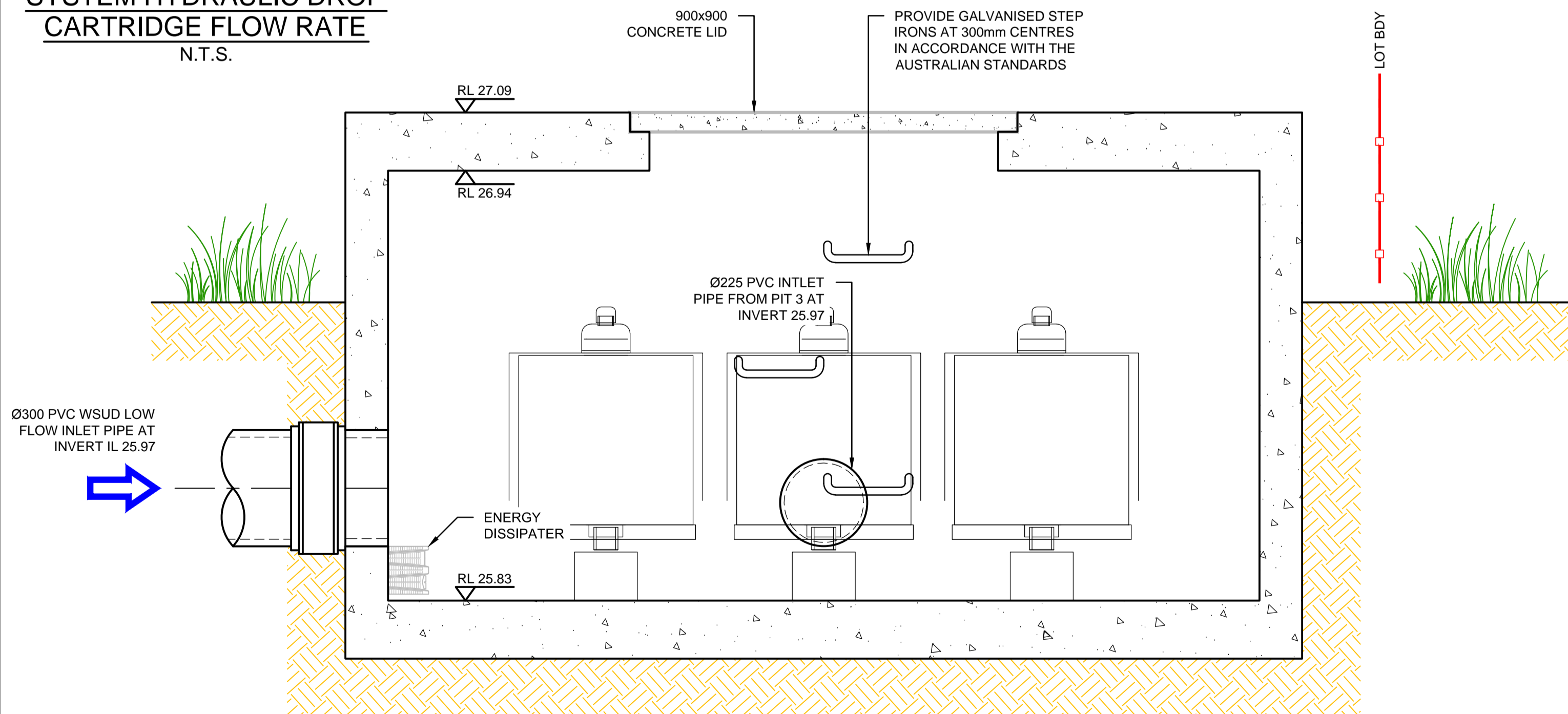
STRUCTURE ID	1		
WATER QUALITY FLOW RATE (L/S)	-		
PEAK FLOW RATE (L/S)	-		
RETURN PERIOD OF PEAK FLOW (yrs)	-		
No of CARTRIDGES REQUIRED	5		
CARTRIDGE HEIGHT (310, 460 or 690mm)	690		
MEDIA TYPE (PERLITE, PERLITE/ZEOLITE OR ZPG)	PSORB		
PRECAST VAULT WEIGHT	- kg		
PRECAST LID WEIGHT	- kg		
PIPE DATA	INVERT IL	MATERIAL	DIAMETER
INLET PIPE 1	25.97	PVC	300
INLET PIPE 2	25.97	PVC	225
OUTLET PIPE	25.83	PVC	300



WSUD RESULTS
N.T.S.

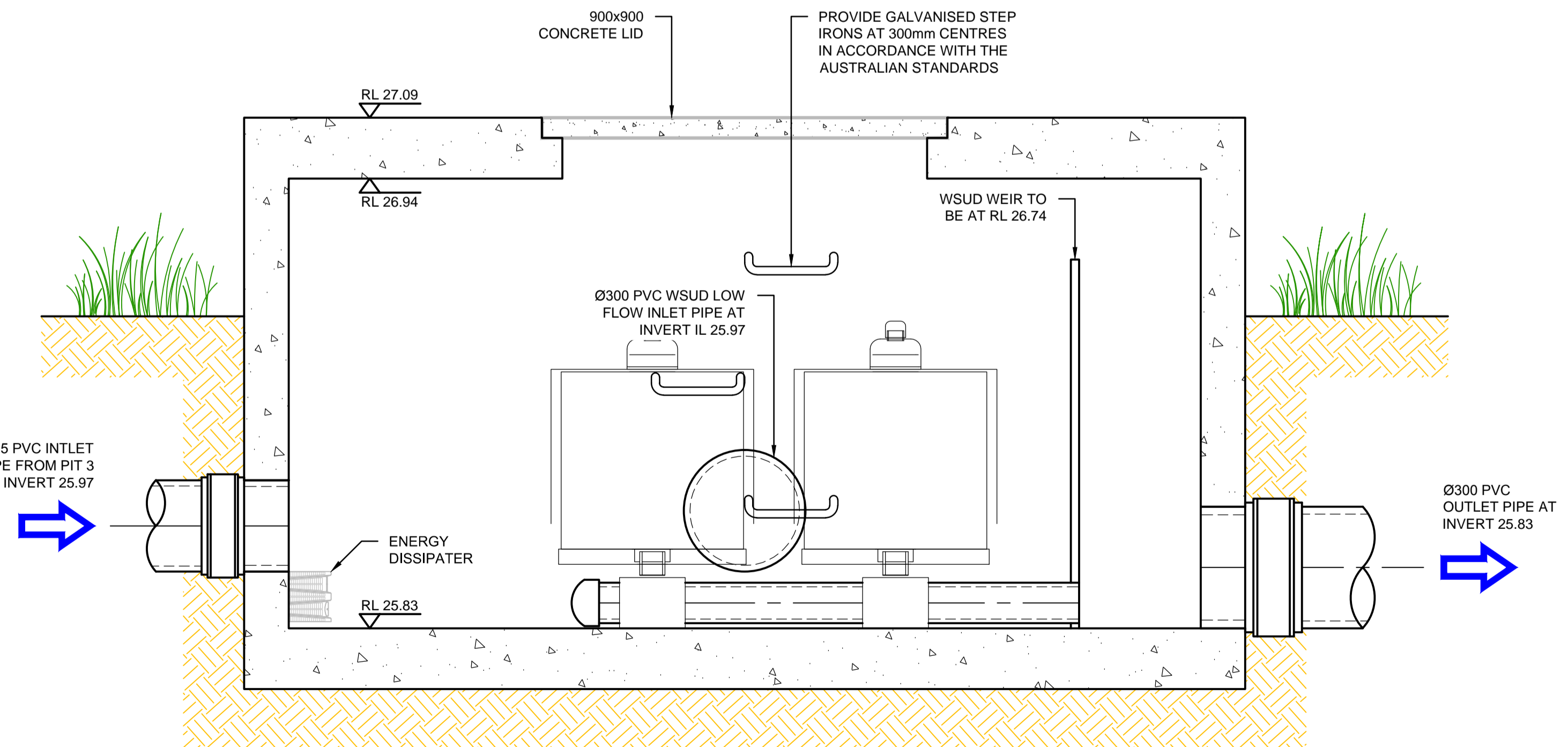


SYSTEM HYDRAULIC DROP CARTRIDGE FLOW RATE N.T.S.



SECTION B
WSUD STORMFILTER MANHOLE DETAIL
SCALE 1:10

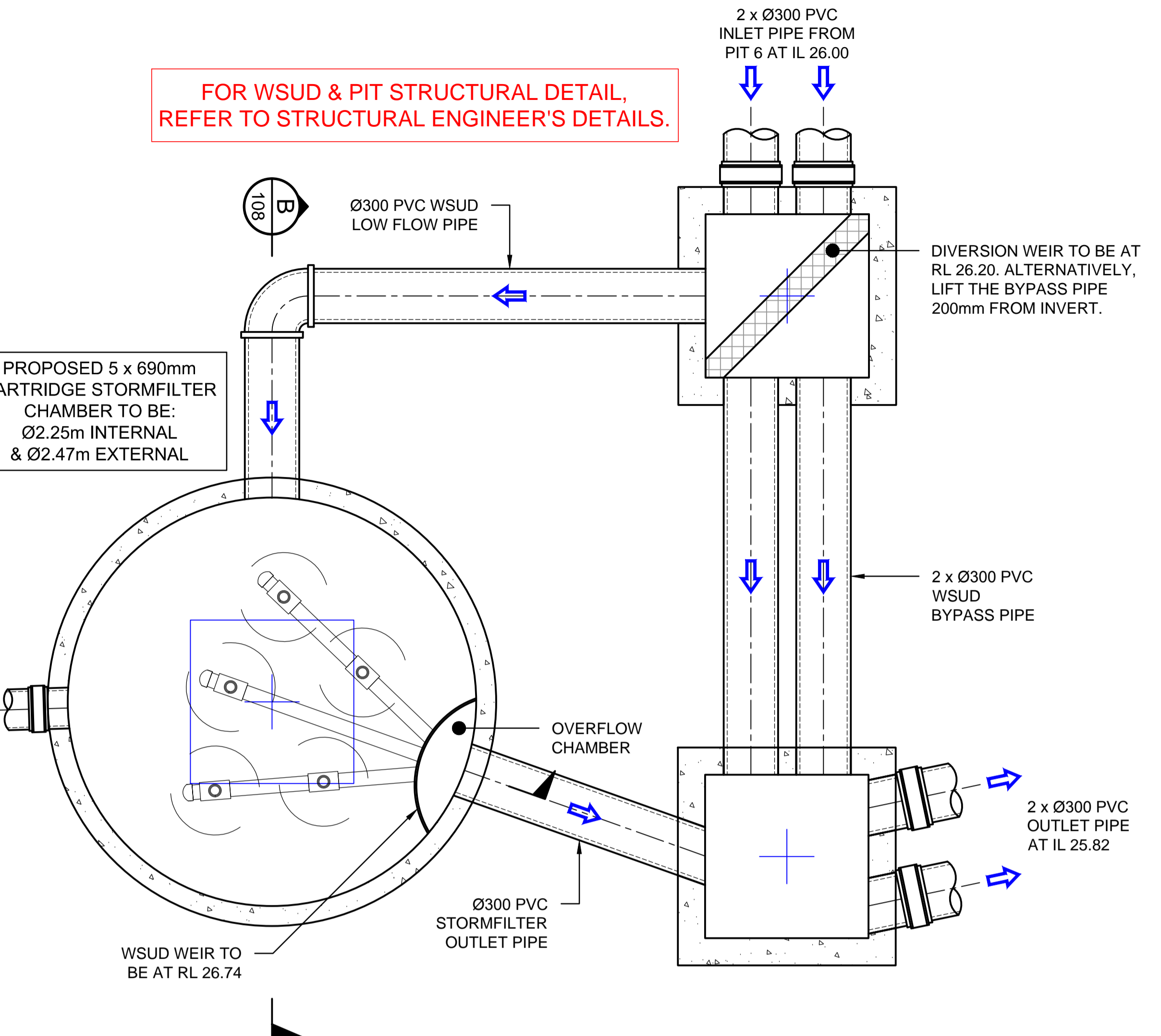
Ø225 PVC INLET PIPE FROM PIT 3 AT IL 25.97



SECTION A
WSUD STORMFILTER MANHOLE DETAIL
SCALE 1:10

FOR WSUD & PIT STRUCTURAL DETAIL, REFER TO STRUCTURAL ENGINEER'S DETAILS.

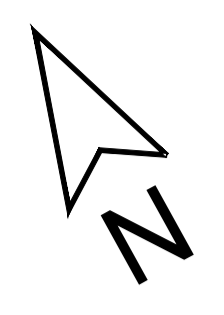
PROPOSED 5 x 690mm CARTRIDGE STORMFILTER CHAMBER TO BE: Ø2.25m INTERNAL & Ø2.47m EXTERNAL



FOR WSUD TANK STRUCTURAL DETAIL, REFER TO STRUCTURAL ENGINEER'S DETAILS.

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Document Set ID: 8967003
Version: 1, Version Date: 17/12/2019



PROVIDE SANDBAG KERB
INLET PROTECTION

TEMPORARY
STABILISED
SITE ACCESS

1.8m HIGH CONSTRUCTION
BARRIER FENCING SHOWN
OUTSIDE BOUNDARY FOR CLARITY

PROPOSED
SILT FENCE

AVENUE

TENCH

ONCE INSTALLED,
WRAP ALL GRATES IN
GEOTEXTILE FABRIC

TEMPORARY
STABILISED
SITE ACCESS

1.8m HIGH CONSTRUCTION
BARRIER FENCING SHOWN
OUTSIDE BOUNDARY FOR CLARITY

PROPOSED
SILT FENCE

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MBR
CONSULTING ENGINEERS

0459 117 674
info@mbrconsulting.com.au
PO Box 8288, Blacktown NSW 2148
ABN: 61 625 079 923
ACN: 625 079 923

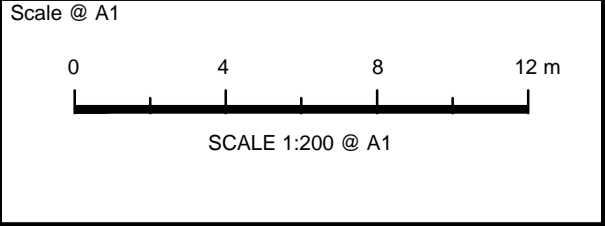
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**ALL PLANS MUST
BE PRINTED IN
COLOUR & READ
PRIOR TO
CONSTRUCTION**

Issue	Description	Date	Design	Check	Architect
A	ISSUE FOR DEVELOPMENT APPLICATION	09/12/2019	MBR	KE	

Killing Matt Woods
1/160 Rochford Street,
Erskineville NSW 2043
EMAIL: solid@killingmattwoods.com
PHONE: 0421 848 462

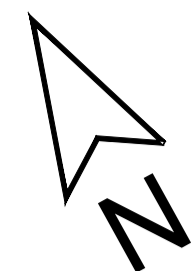
Client
MKD Cafe Pty Ltd



Project
**44-50 TENCH AVENUE, JAMISONTOWN
PROPOSED MUD MAP: THE ORANGE GROVE
STORMWATER CONCEPT PLAN
DEVELOPMENT APPLICATION**

Drawing Title
**SEDIMENT & EROSION
CONTROL PLAN
SHEET 1 OF 2**

Project No.
19039
Dwg. No.
109
Rev
A



- LEGEND**
- EXISTING SEWER MAIN (FROM RECORDS)
 - EXISTING CONTOUR
 - EXISTING SURFACE LEVEL
 - SILT FENCE
 - STABILISED SITE ACCESS
 - 1.8 HIGH CONSTRUCTION BARRIER FENCING
 - TREES TO BE RETAINED
 - TREES TO BE REMOVED
 - INLET PROTECTION

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Issue	Description	Date	Design	Check	Architect
A	ISSUE FOR DEVELOPMENT APPLICATION	09/12/2019	MBR	KE	Killing Matt Woods

Killing Matt Woods
1/160 Rochford Street,
Erskineville NSW 2043
EMAIL: solid@killingmattwoods.com
PHONE: 0421 848 462

Client
MKD Cafe Pty Ltd



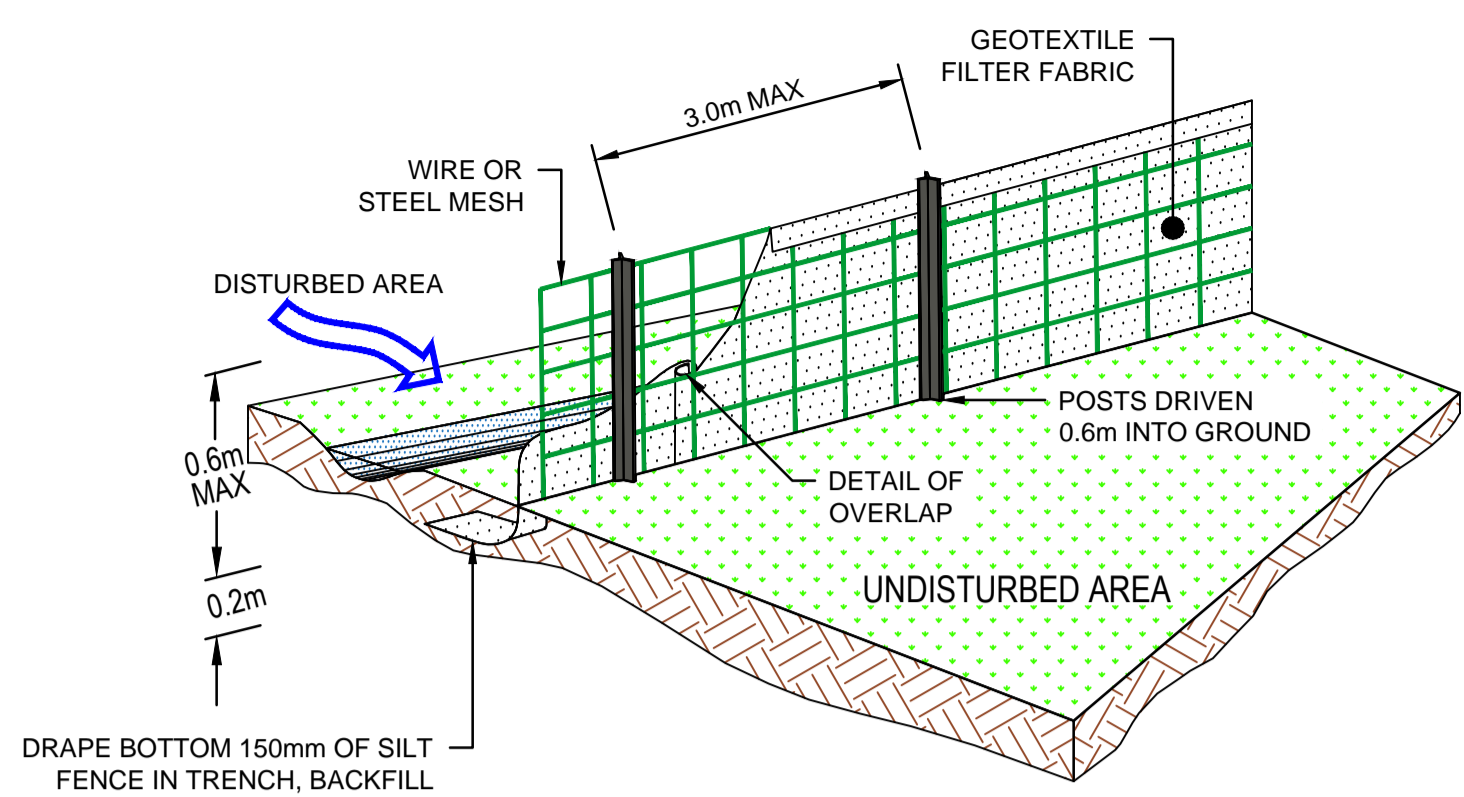
Project
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STORMWATER CONCEPT PLAN
DEVELOPMENT APPLICATION**

Drawing Title
**SEDIMENT & EROSION
CONTROL PLAN
SHEET 2 OF 2**

Project No.
19039

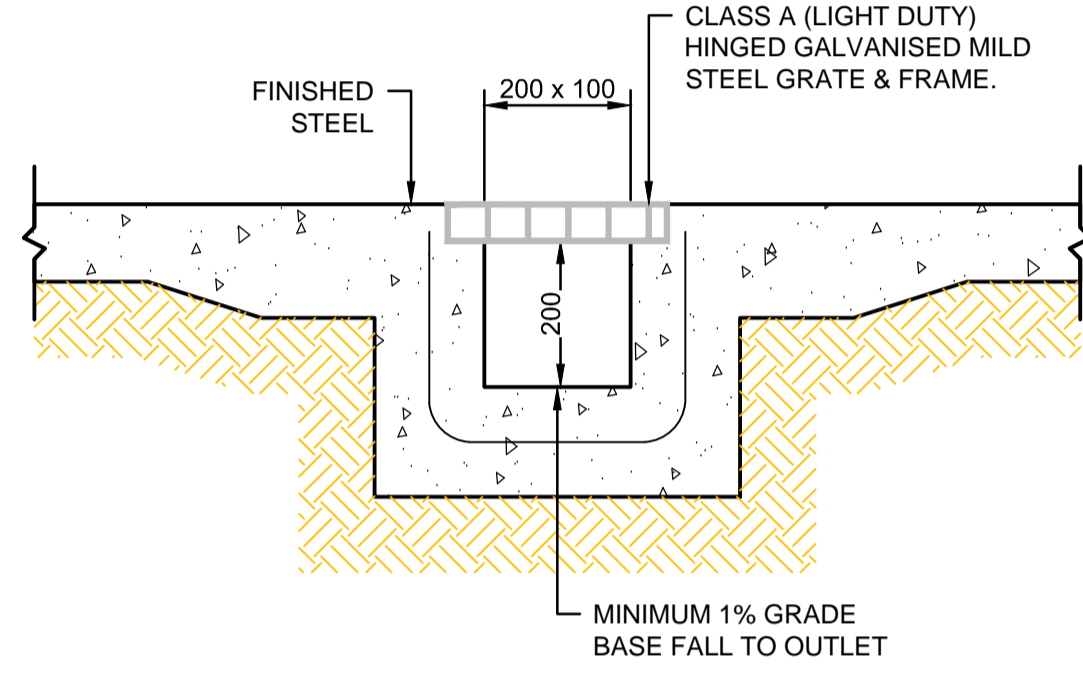
Dwg. No.
110

Rev
A

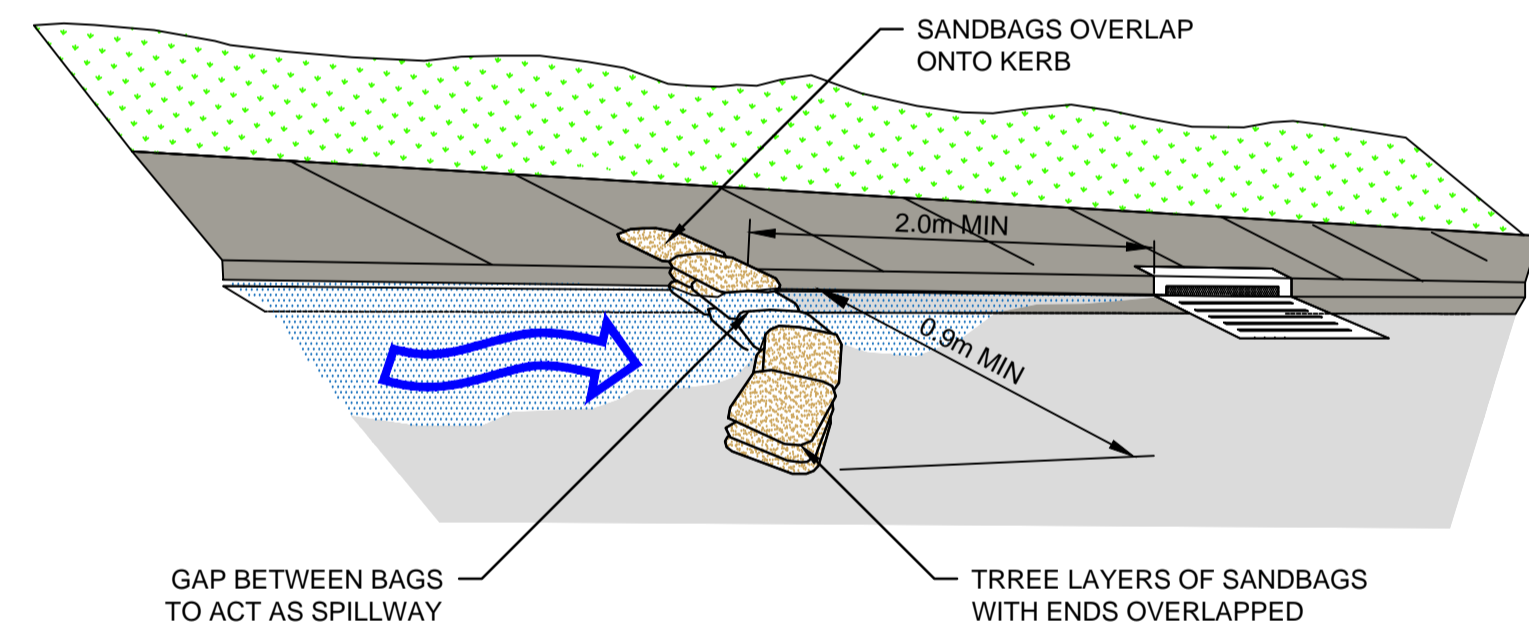


SILT FENCE DETAIL
N.T.S.

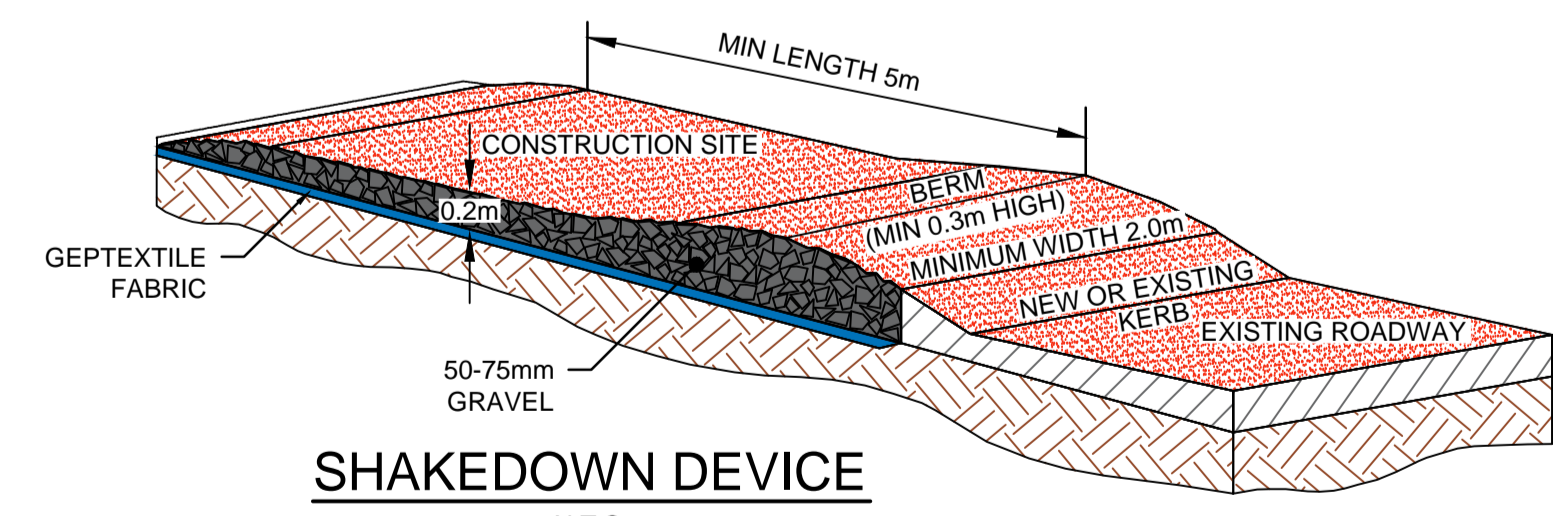
- SILT FENCE NOTES**
1. FILTER CLOTH TO BE FASTENED SECURELY TO POSTS WITH GALVANISED WIRE TIES, STAPLES OR ATTACHMENT BELTS.
 2. POSTS SHOULD NOT BE SPACED MORE THAN 3.0m APART.
 3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 150mm & FOLDED.
 4. FOR EXTRA STRENGTH TO SILT FENCE, WOVEN WIRE (14mm GAUGE, 150mm MESH SPACING) TO BE FASTENED SECURELY BETWEEN FILTER CLOTH & POSTS BY WIRE TIES OR STAPLES.
 5. INSPECTIONS SHALL BE PROVIDED ON A REGULAR BASIS, ESPECIALLY AFTER RAINFALL & EXCESSIVE SILT DEPOSITS REMOVED WHEN "BULGES" DEVELOP IN SILT FENCE.
 6. SEDIMENT FENCES SHALL BE CONSTRUCTED WITH SEDIMENT TRAPS & EMERGENCY SPILLWAYS AT SPACING NO GREATER THAN 40m ON FLAT TERRAIN DECREASING TO 20m SPACING ON STEEP TERRAIN.



GRADED TRENCH DRAIN DETAIL
SCALE 1:20

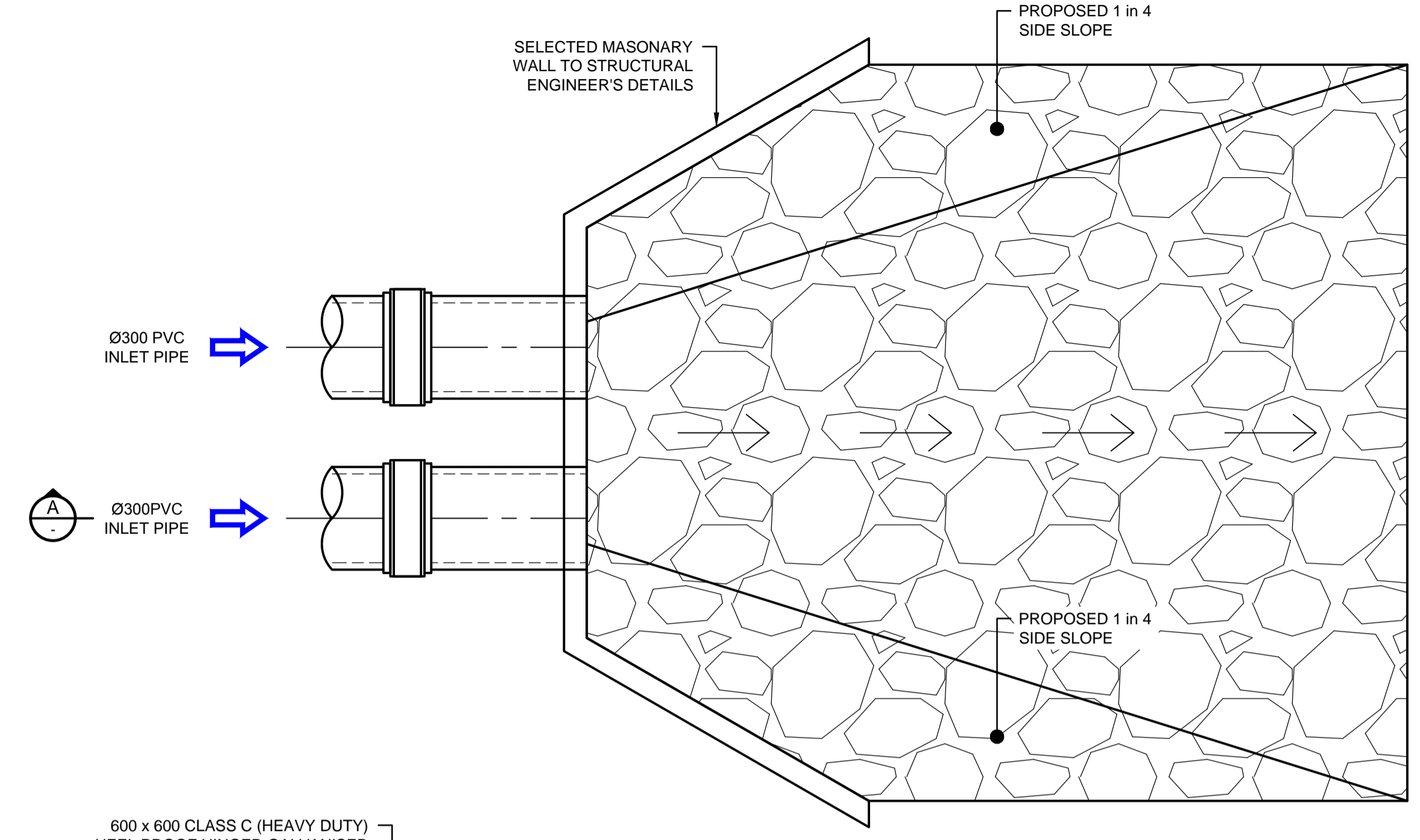


KERB INLET PROTECTION - ON GRADE GULLY PIT
N.T.S.

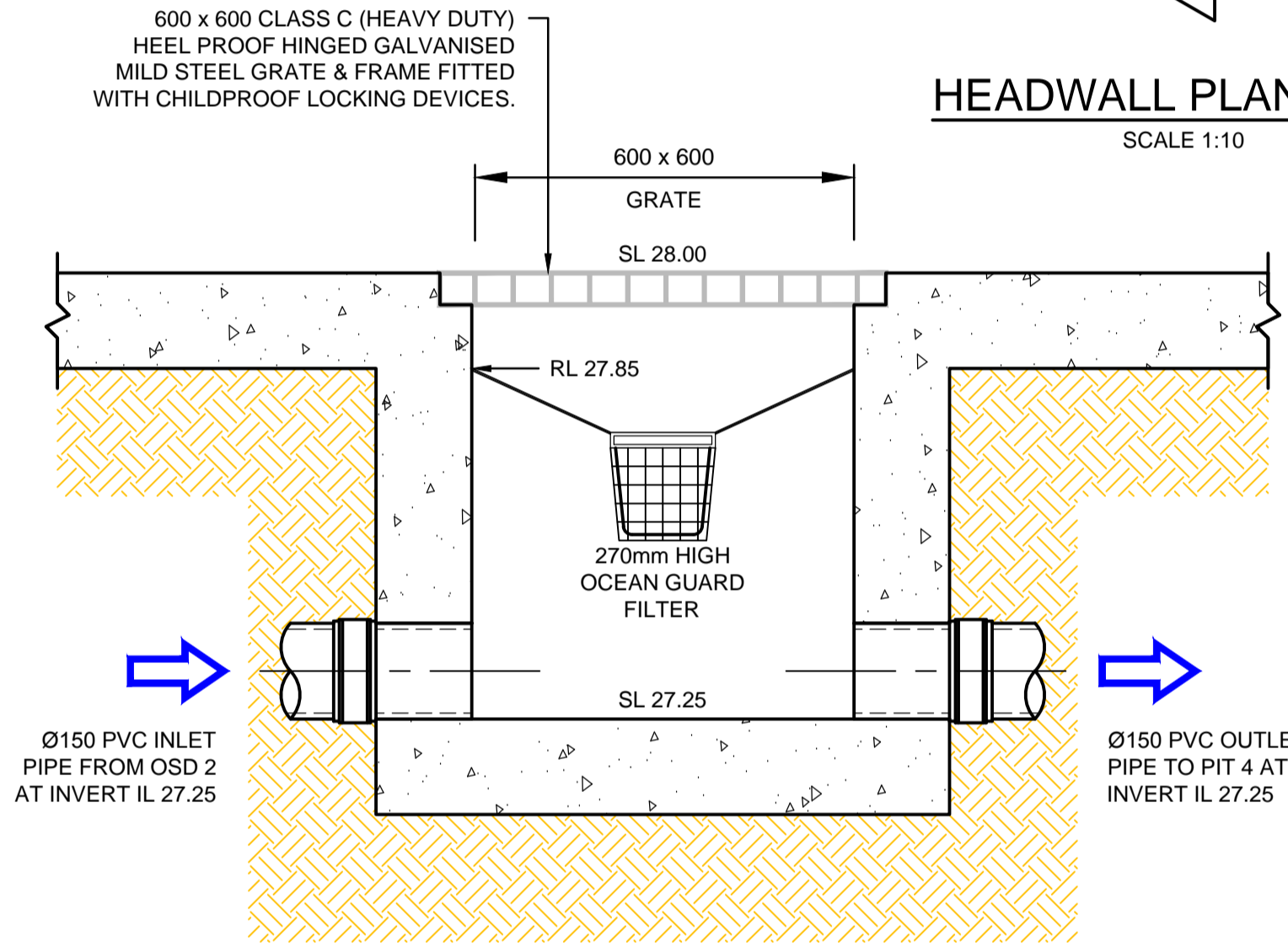


SHAKEDOWN DEVICE
N.T.S.

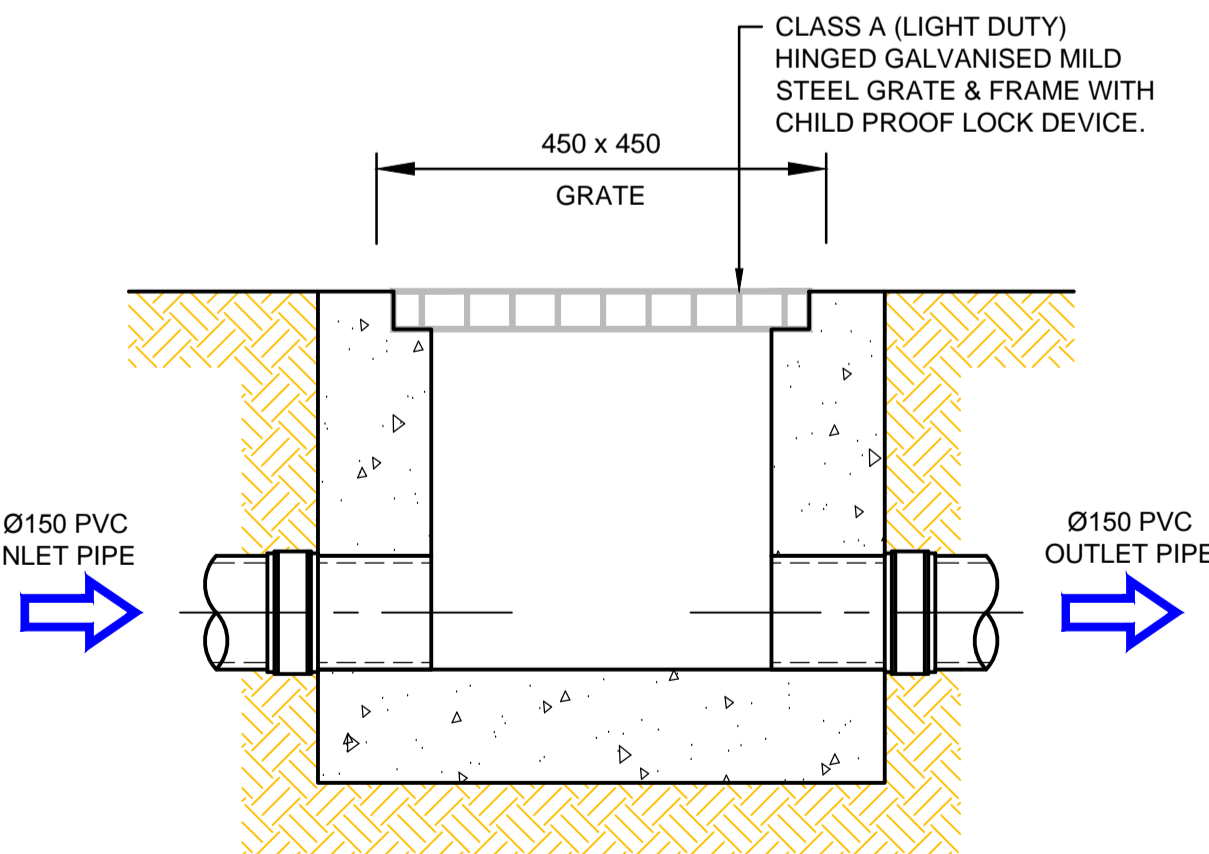
MAINTENANCE NOTES:
THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH PREVENTS TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL GRAVEL AS CONDITIONS DEMAND & REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.



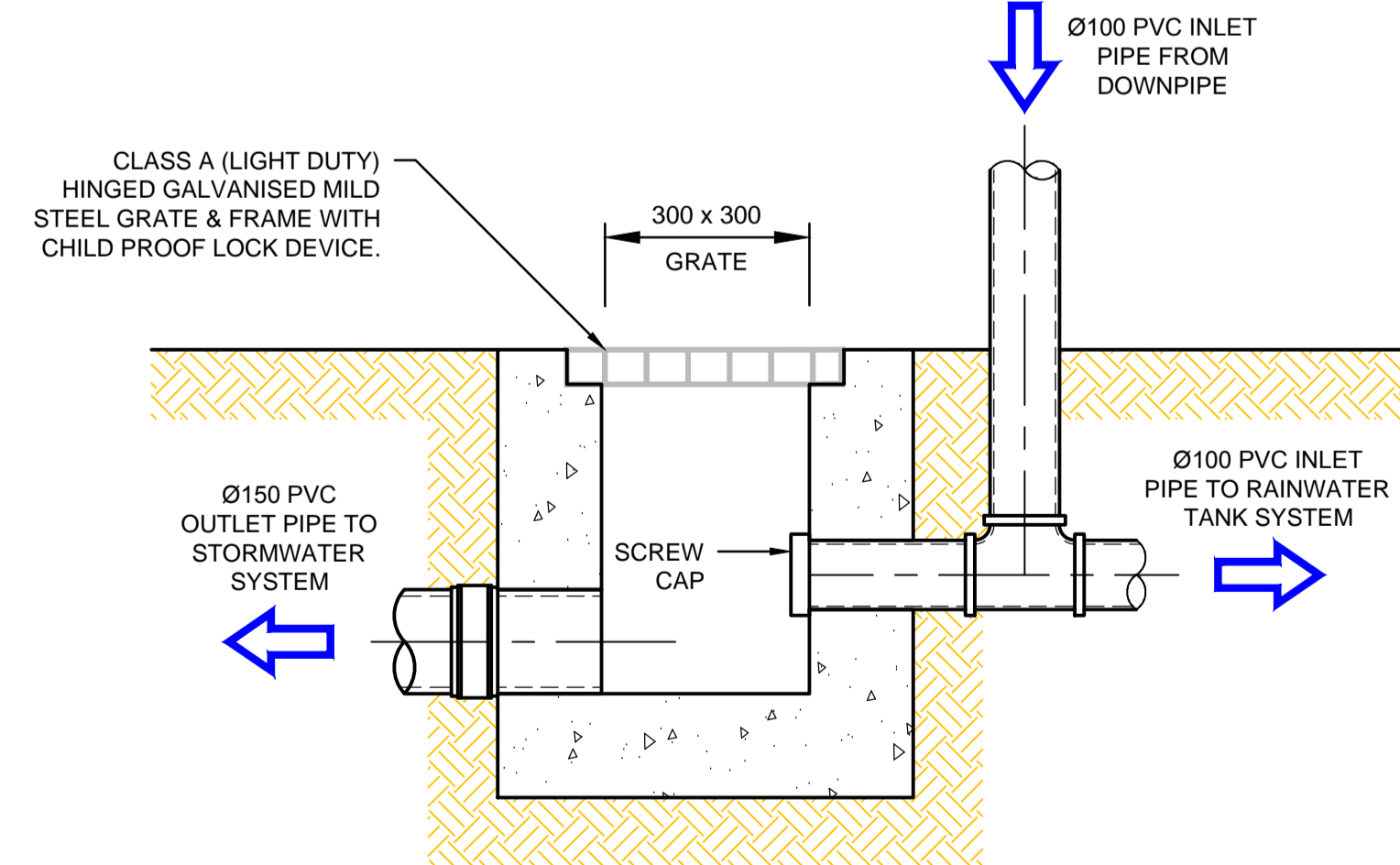
HEADWALL PLAN VIEW
SCALE 1:10



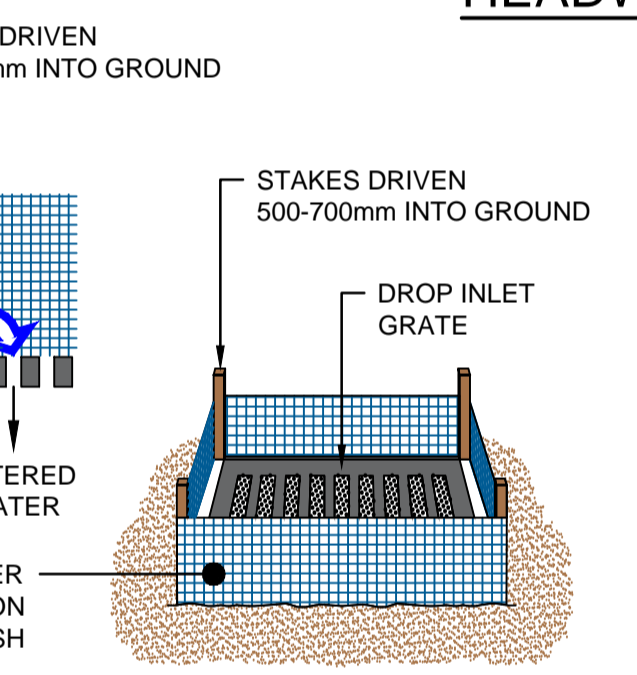
PIT 5 DROP PIPE OCEAN GUARD CONFIGURATION SECTION
SCALE 1:10



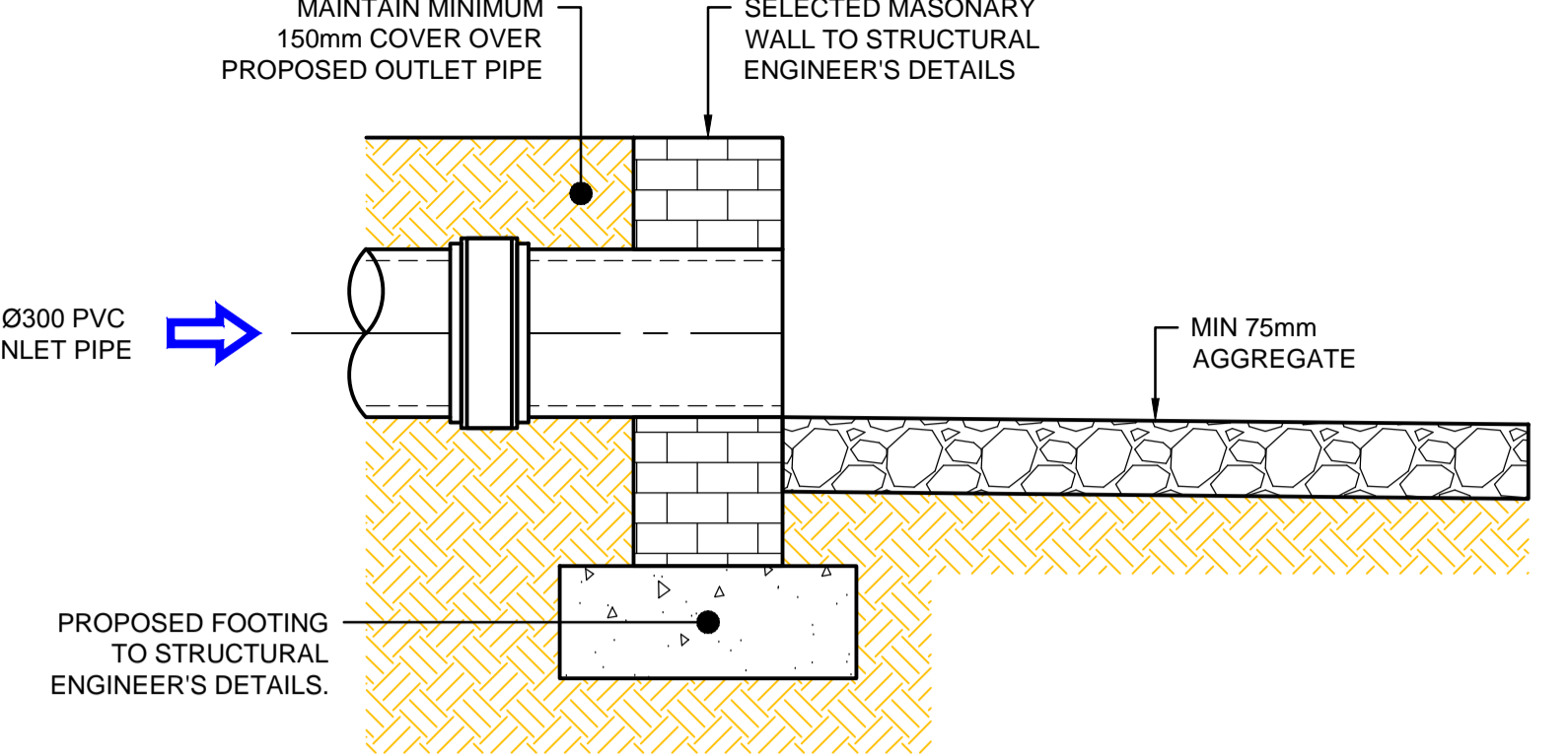
TYPICAL GRATED INLET PIT DETAIL
SCALE 1:10



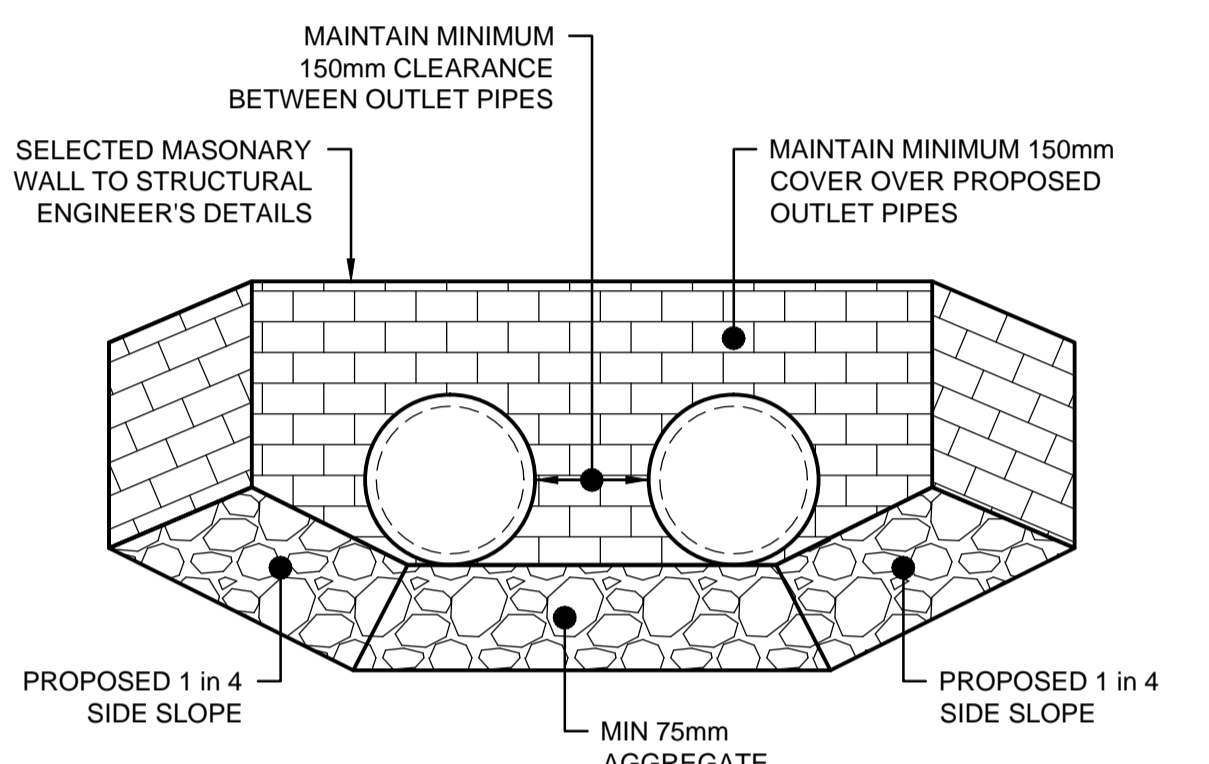
CLEANING EYE DETAIL
SCALE 1:10



FIELD INLET SEDIMENT TRAP
N.T.S.

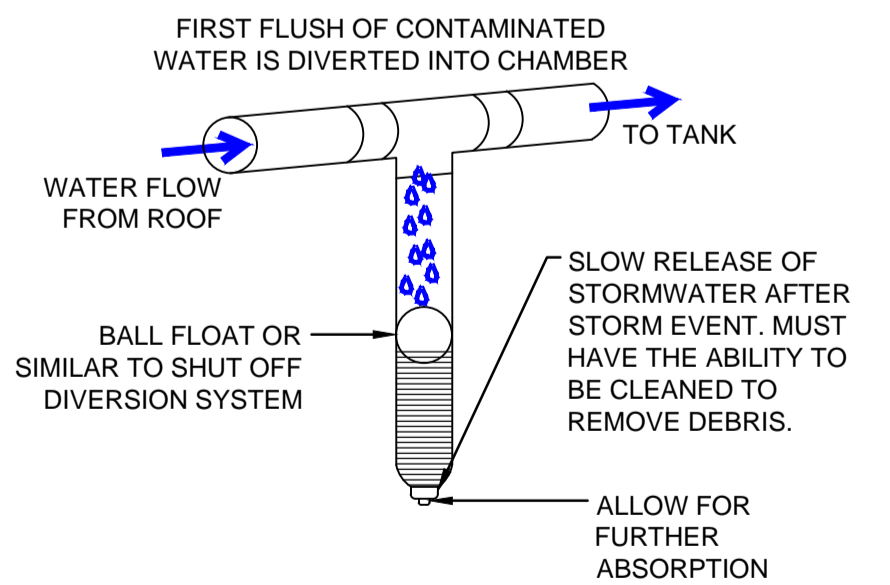


HEADWALL SECTION A
SCALE 1:10



HEADWALL FRONT VIEW
SCALE 1:10

- CONSTRUCTION NOTES**
1. SUBGRADE FILL TO BE COMPACTED TO THE DENSITY OF THE SURROUNDING UNDISTURBED MATERIAL.
 2. ENSURE THAT CONCRETE OR RIPRAP USED FOR ENERGY DISSIPATER OR OUTLET PROTECTION CONFORMS TO THE GRADING LIMITS SPECIFIED ON THE SWMP/ESCF.
 3. ENSURE THAT THE GEOTEXTILE DOES NOT SUSTAIN SERIOUS DAMAGE BY PREPARING A SMOOTH, EVEN FOUNDATION.
 4. REPAIR MINOR DAMAGE TO THE GEOTEXTILE BEFORE SPREADING ANY AGGREGATE, FOR REPAIRS PATCH ONE PIECE OF FABRIC OVER THE DAMAGE MAKING SURE THAT ALL JOINTS & PIECES OVERLAP MORE THAN 300mm.



FIRST FLUSH WATER DIVERTER DETAIL
N.T.S.

NOT FOR CONSTRUCTION - DA APPROVAL ONLY