

44-50 TENCH AVENUE, JAMISONTOWN NSW 2750

PROPOSED MUD MAP: THE ORANGE GROVE

STORMWATER MANAGEMENT PLANS - CONSTRUCTION CERTIFICATE

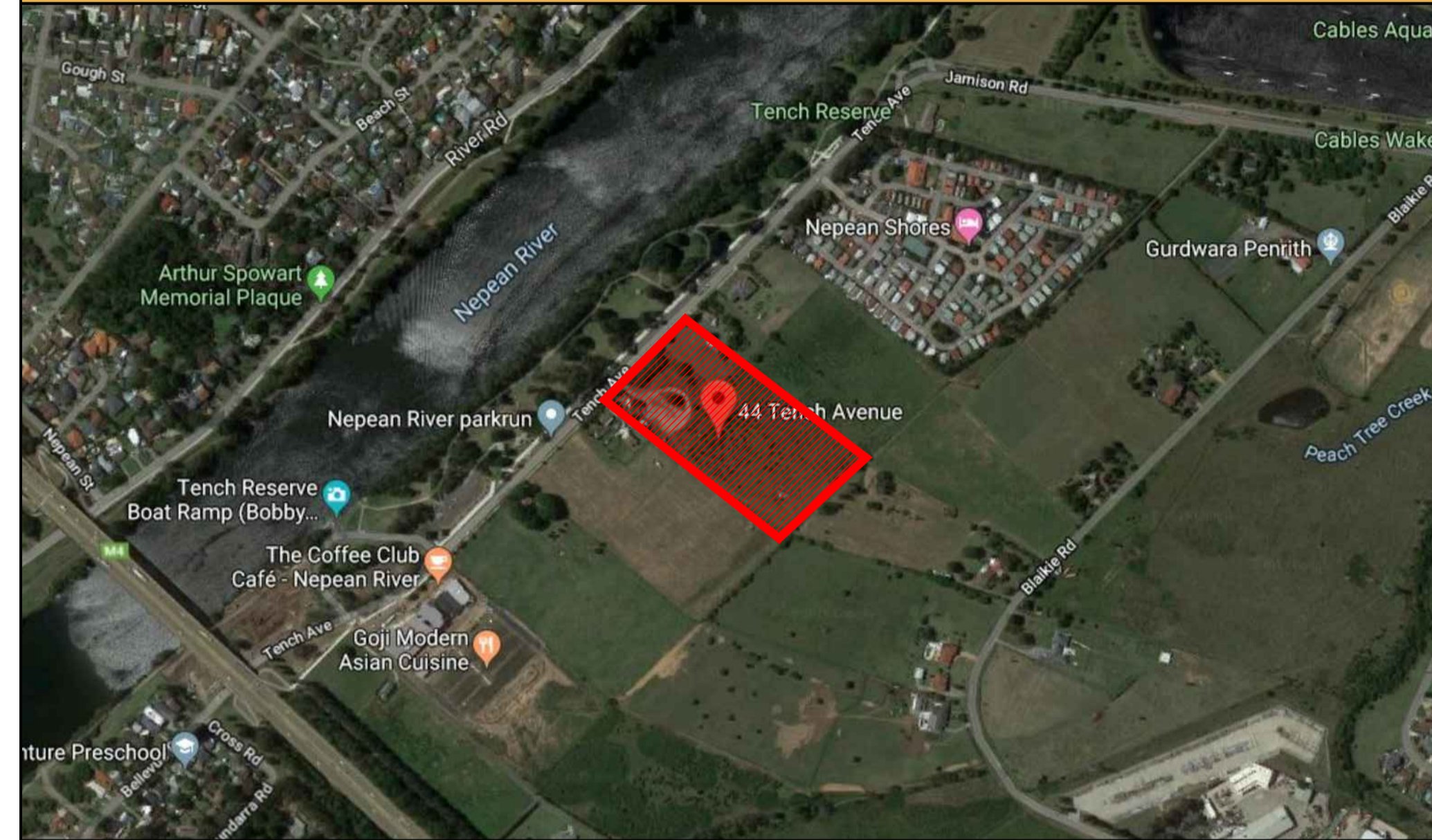
STORMWATER NOTES

- 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 JOUNCTIONS, 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.

DRAWING INDEX

Drawing No.	DESCRIPTION
MBR19039 - 000	COVER SHEET, NOTES & DRAWING INDEX
MBR19039 - 101	STORMWATER LAYOUT PLAN - GROUND LEVEL PLAN - SHEET 1 OF 2
MBR19039 - 102	STORMWATER LAYOUT PLAN - GROUND LEVEL PLAN - SHEET 2 OF 2
MBR19039 - 103	STORMWATER LAYOUT PLAN - ROOF PLAN - SHEET 1 OF 2
MBR19039 - 104	STORMWATER LAYOUT PLAN - ROOF PLAN - SHEET 1 OF 2
MBR19039 - 105	OSD & WSUD CATCHMENT PLANS
MBR19039 - 106	OSD & WSUD DETAILS & CALCULATION SHEETS - SHEET 1 OF 4
MBR19039 - 107	OSD & WSUD DETAILS & CALCULATION SHEETS - SHEET 2 OF 4
MBR19039 - 108	OSD & WSUD DETAILS & CALCULATION SHEETS - SHEET 3 OF 4
MBR19039 - 109	OSD & WSUD DETAILS & CALCULATION SHEETS - SHEET 4 OF 4
MBR19039 - 110	SEDIMENT & EROSION CONTROL PLAN - SHEET 1 OF 2
MBR19039 - 111	SEDIMENT & EROSION CONTROL PLAN - SHEET 2 OF 2
MBR19039 - 112	CUT - FILL PLAN
MBR19039 - 113	MISCELLANEOUS DETAILS SHEET - SHEET 1 OF 2
MBR19039 - 114	MISCELLANEOUS DETAILS SHEET - SHEET 2 OF 2

LOCALITY PLAN



PERSPECTIVE PLAN



DIAL BEFORE YOU DIG NOTE

DIAL BEFORE YOU DIG
www.1100.com.au

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

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.

NOT FOR CONSTRUCTION UNLESS FORMS PART OF THE CONSTRUCTION CERTIFICATE APPROVAL

MBR Consulting Engineers Pty Ltd
0424 711 117
info@mbrcnslng.com.au
www.mbrcnslng.com.au
PO Box 8288, Blacktown NSW 2148
ABN: 61 625 079 923

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Issue	Description	Date	Design	Check
A	ISSUE FOR DEVELOPMENT APPLICATION	09/12/2019	MBR	KE
B	COUNCIL COMMENTS	03/09/2020	MBR	MBR
C	COUNCIL COMMENTS	29/10/2020	MBR	MBR
D	ISSUE FOR APPROVAL ONLY	12/05/2021	MBR	KE
E	ISSUE FOR CONSTRUCTION CERTIFICATE	03/08/2021	MBR	KE

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MKD Cafe Pty Ltd

Scale @ A1

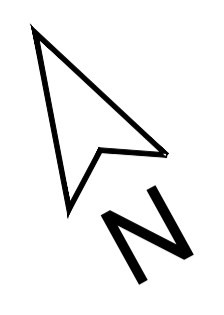
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STORMWATER MANAGEMENT PLAN
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COVER SHEET, NOTES & DRAWING INDEX

Project No.
19039

Dwg. No.
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Rev
E



OPEN STYLE FENCING FOR STORMWATER & FLOODING PURPOSES

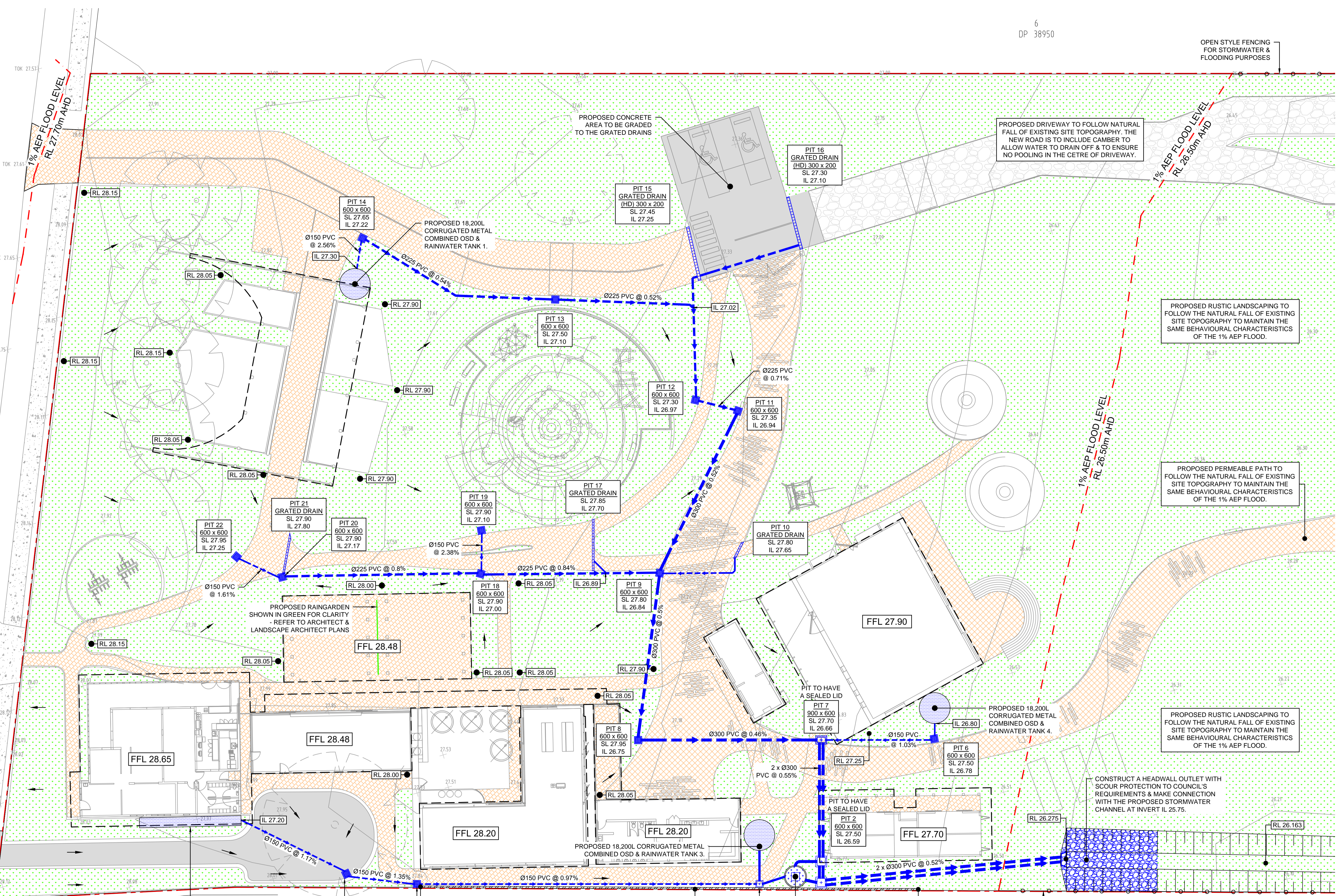
PROPOSED DRIVEWAY TO FOLLOW NATURAL FALL OF EXISTING SITE TOPOGRAPHY. THE NEW ROAD IS TO INCLUDE CAMBER TO ALLOW WATER TO DRAIN OFF & TO ENSURE NO POOLING IN THE CENTRE OF DRIVEWAY.

PROPOSED RUSTIC LANDSCAPING TO FOLLOW THE NATURAL FALL OF EXISTING SITE TOPOGRAPHY TO MAINTAIN THE SAME BEHAVIOURAL CHARACTERISTICS OF THE 1% AEP FLOOD.

PROPOSED PERMEABLE PATH TO FOLLOW THE NATURAL FALL OF EXISTING SITE TOPOGRAPHY TO MAINTAIN THE SAME BEHAVIOURAL CHARACTERISTICS OF THE 1% AEP FLOOD.

PROPOSED RUSTIC LANDSCAPING TO FOLLOW THE NATURAL FALL OF EXISTING SITE TOPOGRAPHY TO MAINTAIN THE SAME BEHAVIOURAL CHARACTERISTICS OF THE 1% AEP FLOOD.

CONSTRUCT A HEADWALL OUTLET WITH SCOUR PROTECTION TO COUNCILS REQUIREMENTS & MAKE CONNECTION WITH THE PROPOSED STORMWATER CHANNEL AT INVERT IL 25.75.



ABOVEGROUND OSD TANK 2
CAPACITY 12.6m³
TANK AREA 9.64m²
DEPTH TO ORIFICE 1.3m
ORIFICE CL 27.28
TWL 28.58

INSTALL 4 LARGE MODULE OF LANDSCAPE TANKS (2.8m L x 1.1m W x 1.6m H)

PIT 5 Ocean Guard
600 x 600
SL 27.85
IL 27.05

PIT 4
600 x 600
SL 27.85
IL 26.95

TOW 27.85
BOW 27.85

PIT 3
600 x 600
SL 27.70
IL 26.59

TOW 27.50
BOW 27.00

PIT 1
900 x 900
SL 27.50
IL 26.41

PIT 2
600 x 600
SL 27.50
IL 26.59

TOW 26.60
BOW 26.60

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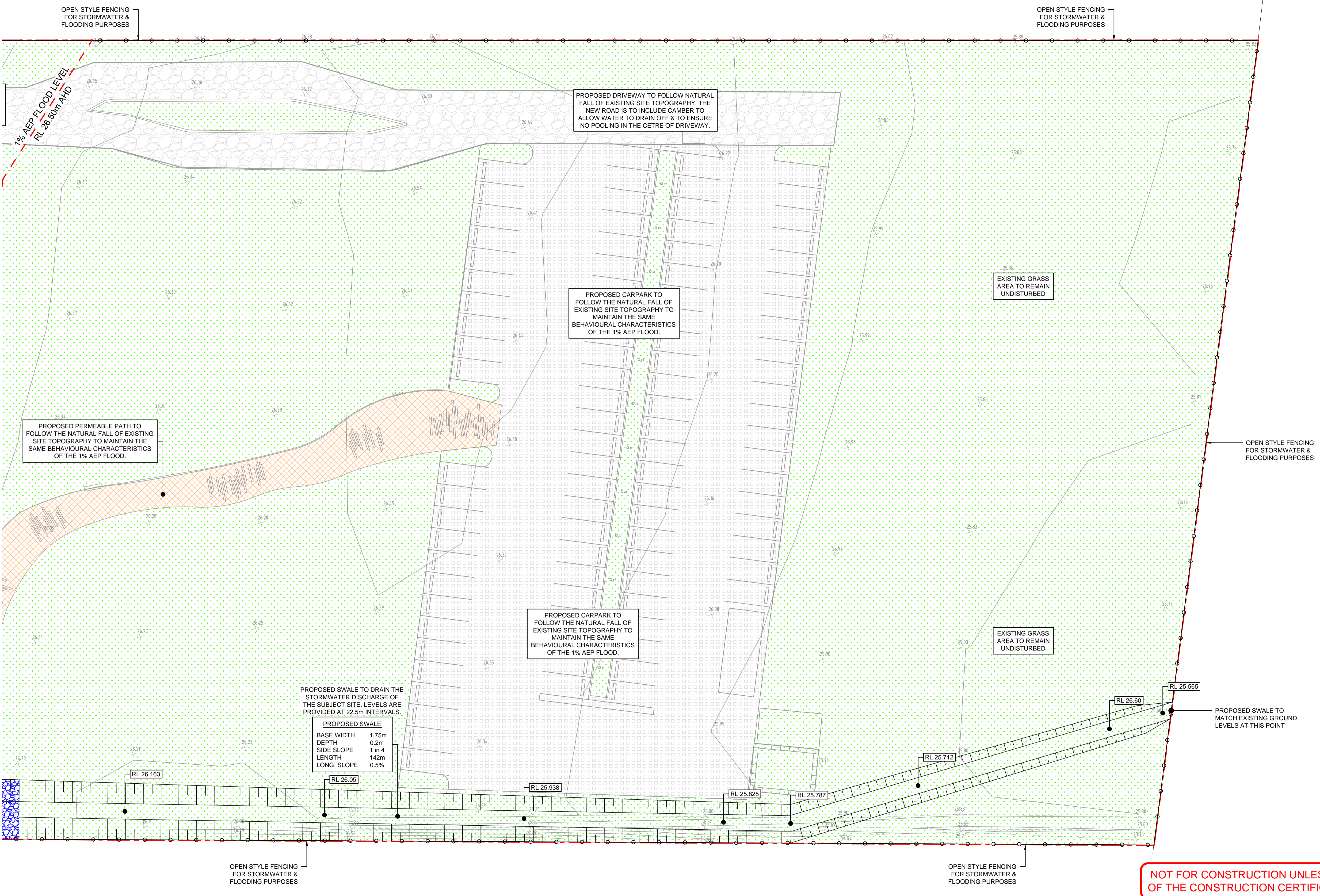
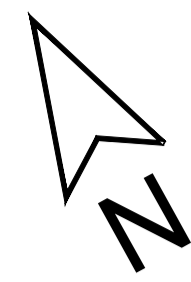
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Scale @ A1
0 4 8 12m
SCALE 1:200 @ A1

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STORMWATER MANAGEMENT PLAN
CONSTRUCTION CERTIFICATE

Drawing Title
STORMWATER LAYOUT PLAN
GROUND LEVEL PLAN
SHEET 1 OF 2

Project No.
19039
Dwg. No.
101
Rev
E



OPEN STYLE FENCING FOR STORMWATER & FLOODING PURPOSES

OPEN STYLE FENCING FOR STORMWATER & FLOODING PURPOSES

1% AEP FLOOD LEVEL
RL 26.50m AHD

PROPOSED DRIVEWAY TO FOLLOW NATURAL FALL OF EXISTING SITE TOPOGRAPHY. THE NEW ROAD IS TO INCLUDE CAMBER TO ALLOW WATER TO DRAIN OFF & TO ENSURE NO POOLING IN THE CENTRE OF DRIVEWAY.

PROPOSED CARPARK TO FOLLOW THE NATURAL FALL OF EXISTING SITE TOPOGRAPHY TO MAINTAIN THE SAME BEHAVIOURAL CHARACTERISTICS OF THE 1% AEP FLOOD.

EXISTING GRASS AREA TO REMAIN UNDISTURBED

PROPOSED PERMEABLE PATH TO FOLLOW THE NATURAL FALL OF EXISTING SITE TOPOGRAPHY TO MAINTAIN THE SAME BEHAVIOURAL CHARACTERISTICS OF THE 1% AEP FLOOD.

OPEN STYLE FENCING FOR STORMWATER & FLOODING PURPOSES

PROPOSED CARPARK TO FOLLOW THE NATURAL FALL OF EXISTING SITE TOPOGRAPHY TO MAINTAIN THE SAME BEHAVIOURAL CHARACTERISTICS OF THE 1% AEP FLOOD.

EXISTING GRASS AREA TO REMAIN UNDISTURBED

PROPOSED SWALE TO DRAIN THE STORMWATER DISCHARGE OF THE SUBJECT SITE. LEVELS ARE PROVIDED AT 22.5m INTERVALS.

PROPOSED SWALE
 BASE WIDTH 1.75m
 DEPTH 0.2m
 SIDE SLOPE 1 in 4
 LENGTH 142m
 LONG. SLOPE 0.5%

PROPOSED SWALE TO MATCH EXISTING GROUND LEVELS AT THIS POINT

OPEN STYLE FENCING FOR STORMWATER & FLOODING PURPOSES

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 info@mbrconsulting.com.au
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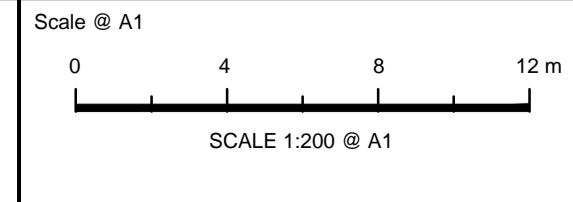
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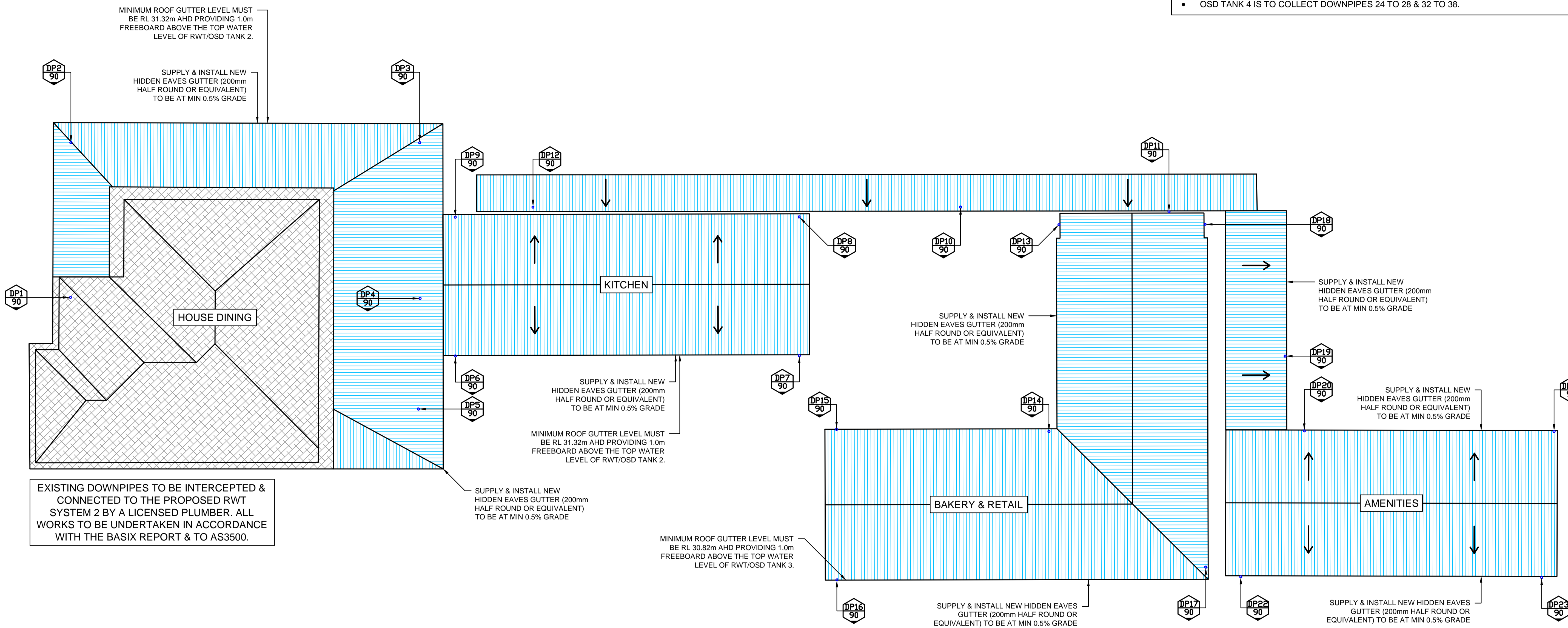
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 STORMWATER LAYOUT PLAN
 GROUND LEVEL PLAN
 SHEET 2 OF 2

Project No.
 19039
 Dwg. No.
 102
 Rev
 E

ROOF PLAN

CONTRACTOR SHALL ENSURE & CERTIFY THAT ALL ROOF GUTTERS & DOWNPIPES CAPTURE & CONVEY MINIMUM Q₁₀₀ PEAK RAINFALL RUNOFF TO RESPECTIVE OSD TANKS.

- OSD TANK 1 IS TO COLLECT DOWNPIPES 29, 30 & 31.
- OSD TANK 2 IS TO COLLECT DOWNPIPES 1 TO 9.
- OSD TANK 3 IS TO COLLECT DOWNPIPES 10 TO 13.
- OSD TANK 4 IS TO COLLECT DOWNPIPES 14 TO 28 & 32 TO 38.



EXISTING DOWNPIPES TO BE INTERCEPTED & CONNECTED TO THE PROPOSED RWT SYSTEM 2 BY A LICENSED PLUMBER. ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH THE BASIX REPORT & TO AS3500.

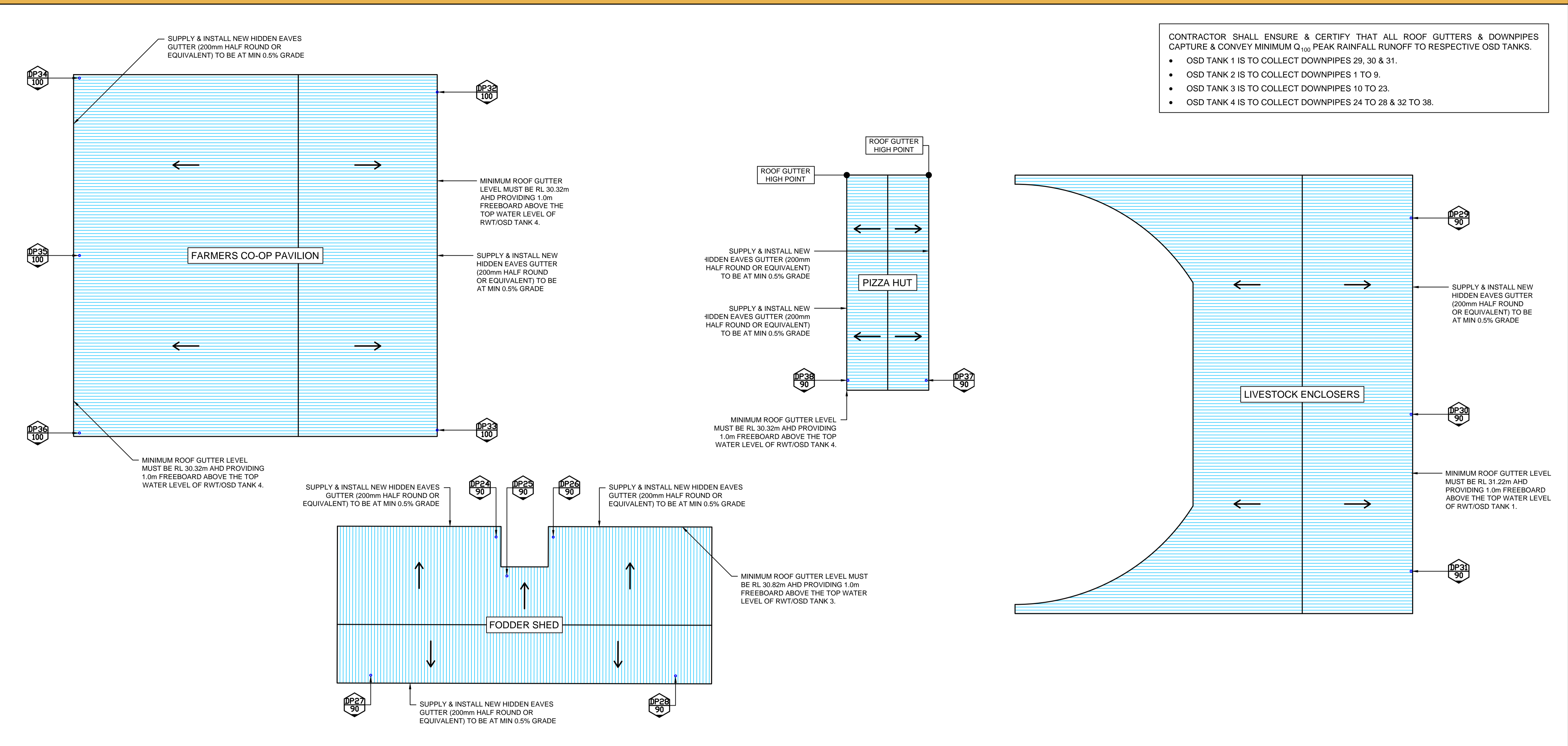
LEGEND

	PROPOSED BOUNDARY SHOWN OUTSIDE FOR CLARITY		CARPARK AREA (BY OTHERS)		DOWNPIPE NUMBER & SIZE		MASONRY RETAINING WALL TO STRUCTURAL ENGINEER'S DETAILS
	PROPOSED CONCRETE AREA		EXISTING CONCRETE AREA		PROPOSED GRATED / SEALED PIT		TREES TO BE RETAINED
	GRASS / LANDSCAPING TO LANDSCAPE ARCHITECT'S DETAILS		PROPOSED OSD STORAGE AREA		PROPOSED GRATED DRAIN		TREES TO BE REMOVED
	PROPOSED ROOF AREA		PROPOSED WATER QUALITY AREA		COMBINED RAINWATER TANK & OSD TANK AS PER BASIX CERTIFICATE, AS3500 & TO MANUFACTURER'S SPECIFICATIONS		SURFACE FLOW ARROWS
	PERMEABLE PATH TO LANDSCAPE ARCHITECT'S DETAILS		PROPOSED STORMWATER PIPE		DESIGN SURFACE LEVEL		ROOF SLOPE
	ACCESSIBLE PAVED PATHWAY & PARKING		ROOF SLOPE		EXISTING SURFACE LEVEL		GUTTER DOWNPIPE
	DRIVEWAY AREA (BY OTHERS)						

- PLUMBER & BUILDER NOTES**
- ALL STORMWATER DRAINAGE WORKS TO BE CONSTRUCTED BY A LICENSED PLUMBER / DRAINER IN ACCORDANCE WITH AS3500, BASIX & NCC.
 - LICENSED PLUMBER / DRAINER MUST PROVIDE WRITTEN CERTIFICATION THAT ALL MATERIALS & WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH AS3500, NCC, BASIX & THIS DESIGN. A COPY OF THIS CERTIFICATE MUST BE SENT TO US ON info@mbrconsulting.com.au TO KEEP ON OUR RECORDS.
 - CHARGED STORMWATER TO BE A FULLY SEALED SYSTEM TO UNDER SIDE OF GUTTER TO AS3500 SECURELY FIXED TO BUILDING TO WITHSTAND MINIMUM 2.0m CHARGED HEAD WITHIN PIPE.
 - UNDER ANY CIRCUMSTANCES, THE PLUMBER OR BUILDER MUST NOT AMEND THE DESIGN OR INTERFERE WITH THE DESIGN INTENT WITHOUT WRITTEN APPROVAL FROM OUR OFFICE. 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.

NOT FOR CONSTRUCTION UNLESS FORMS PART OF THE CONSTRUCTION CERTIFICATE APPROVAL

ROOF PLAN



RAINWATER TANK NOTES

THE RAINWATER TANK(S) IS TO BE:

- ERECTED ON A SELF-SUPPORTING BASE IN THE APPROVED LOCATION ON THE PROPERTY IN ACCORDANCE WITH THE STAMPED-APPROVED SITE PLANS FOR THE DEVELOPMENT.
- STRUCTURALLY SOUND & CONSTRUCTED IN ACCORDANCE WITH AS/NZS 3500 1.2 - 1998: NATIONAL PLUMBING & DRAINAGE - WATER SUPPLY - ACCEPTABLE SOLUTIONS,
- FULLY ENCLOSED & ALL OPENINGS SEALED TO PREVENT ACCESS BY MOSQUITOES,
- FITTED WITH A FIRST FLUSH DEVICE,
- FITTED WITH A TRICKLE SYSTEM TO TOP UP FROM MAINS WATER,
- PROVIDED WITH AN AIR GAP
- INSTALLED BY A LICENSED PLUMBER IN ACCORDANCE WITH SYDNEY WATER'S 'PLUMBING REQUIREMENTS INFORMATION FOR RAINWATER TANK SUPPLIERS & PLUMBERS APRIL 2003' & THE NSW CODE OF PRACTICE: PLUMBING & DRAINAGE.

ADDITIONALLY, THE FOLLOWING ARE TO BE PROVIDED:

- A BACK FLOW PREVENTION DEVICE SHALL BE PROVIDED AT THE WATER METER IN ACCORDANCE WITH SYDNEY WATER REQUIREMENTS.
- IN THE EVENT OF A POWER FAILURE, A BACK UP SUPPLY OF MAINS WATER SHALL BE PROVIDED TO AT LEAST ONE TOILET IN THE BUILDINGS.

THE RAINWATER TANKS & ASSOCIATED PIPING ARE TO BE LABELLED 'RAINWATER - NOT FOR DRINKING' IN ACCORDANCE WITH SYDNEY WATER REQUIREMENTS.

THE RAINWATER TANKS & PIPEWORK ARE TO BE PAINTED IN COLOURS MATCHING THE EXTERNAL FINISHES OF THE BUILDINGS & ARE TO BE OF NON-REFLECTIVE FINISH.

THE OVERFLOW FOR THE RAINWATER TANKS ARE TO BE CONNECTED INTO THE EXISTING STORMWATER DISPOSAL SYSTEM ON THE SITE.

BEFORE THE RAINWATER TANK CAN BE USED, A CERTIFICATE OR SUITABLE DOCUMENT IS TO BE SUBMITTED TO THE PRINCIPAL CERTIFYING AUTHORITY STATING THAT THE RAINWATER TANKS HAVE BEEN INSTALLED IN ACCORDANCE WITH:

- THE MANUFACTURER'S SPECIFICATIONS, &
- SYDNEY WATER & NSW HEALTH REQUIREMENTS.

THIS CERTIFICATE OR DOCUMENTATION IS TO BE PROVIDED BY THE LICENSED PLUMBER WHO INSTALLED THE RAINWATER TANKS ON THE PROPERTY, & IS TO BE SUBMITTED PRIOR TO THE ISSUE OF THE OCCUPATION CERTIFICATE.

THE CATCHMENT AREA (FOR THE RAINWATER TANKS) INCLUDE THE PART OF THE ROOF OF THE DWELLINGS FROM WHICH WATER IS COLLECTED & INCLUDES GUTTERS. TO ENSURE A SAFE SUPPLY OF WATER:

- ROOF CATCHMENT AREAS MUST BE KEPT CLEAR OF OVERHANGING VEGETATION;
- GUTTERS MUST HAVE SUFFICIENT FALL TO DOWNPIPES TO PREVENT POOLING OF WATER;
- OVERFLOW, DISCHARGE FROM BLEED OFF PIPES FROM ROOF MOUNTED APPLIANCES SUCH AS AIR CONDITIONERS, HOT WATER SERVICES & SOLAR HEATERS MUST NOT BE DISCHARGED INTO THE RAINWATER CATCHMENT AREA;
- FOR ROOFS CONTAINING LEAD BASED, TAR BASED OR ASBESTOS MATERIAL, THE TANK SUPPLY MUST NOT BE CONNECTED TO DRINKING, BATHING & GARDENING TAP WATER OUTLETS;
- APPROPRIATE MEASURES MUST BE INSTALLED TO PREVENT FOREIGN MATERIALS FROM CONTAMINATING THE WATER WHICH ENTERS THE RAINWATER TANK.

THE RAINWATER TANKS' SUPPLY MUST NOT BE CONNECTED TO DRINKING & BATHING WATER TAP OUTLETS.

THE RAINWATER TANKS' PUMPS MUST NOT EXCEED 5dBA ABOVE AMBIENT BACKGROUND NOISE LEVEL AT THE NEAREST RESIDENTIAL PROPERTY BOUNDARY. THE PROVISIONS OF THE PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997 APPLY TO THE DEVELOPMENT, IN TERMS OF REGULATING OFFENSIVE NOISE.

PLUMBER & BUILDER NOTES

- ALL STORMWATER DRAINAGE WORKS TO BE CONSTRUCTED BY A LICENSED PLUMBER / DRAINER IN ACCORDANCE WITH AS3500, BASIX & NCC.
- LICENSED PLUMBER / DRAINER MUST PROVIDE WRITTEN CERTIFICATION THAT ALL MATERIALS & WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH AS3500, NCC, BASIX & THIS DESIGN. A COPY OF THIS CERTIFICATE MUST BE SENT TO US ON info@mbrconsulting.com.au TO KEEP ON OUR RECORDS.
- CHARGED STORMWATER TO BE A FULLY SEALED SYSTEM TO UNDER SIDE OF GUTTER TO AS3500 SECURELY FIXED TO BUILDING TO WITHSTAND MINIMUM 2.0m CHARGED HEAD WITHIN PIPE.
- UNDER ANY CIRCUMSTANCES, THE PLUMBER OR BUILDER MUST NOT AMEND THE DESIGN OR INTERFERE WITH THE DESIGN INTENT WITHOUT WRITTEN APPROVAL FROM OUR OFFICE. 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.

NOT FOR CONSTRUCTION UNLESS FORMS PART OF THE CONSTRUCTION CERTIFICATE APPROVAL

MBR CONSULTING ENGINEERS
 MBR Consulting Engineers Pty Ltd
 0424 711 117
 info@mbrconsulting.com.au
 www.mbrconsulting.com.au
 PO Box 8288, Blacktown NSW 2148
 ABN: 61 625 079 923

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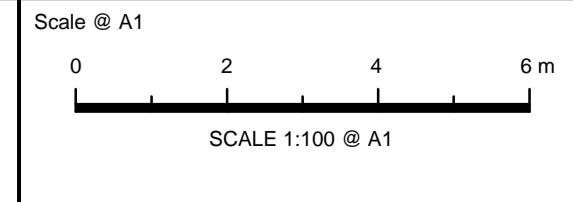
ALL PLANS MUST BE PRINTED IN COLOUR & READ PRIOR TO CONSTRUCTION

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A	ISSUE FOR DEVELOPMENT APPLICATION	09/12/2019	MBR	KE
B	COUNCIL COMMENTS	03/09/2020	MBR	MBR
C	COUNCIL COMMENTS	29/10/2020	MBR	MBR
D	ISSUE FOR APPROVAL ONLY	12/05/2021	MBR	KE
E	ISSUE FOR CONSTRUCTION CERTIFICATE	03/08/2021	MBR	KE

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PENRITH CITY COUNCIL






Client
 MKD Cafe Pty Ltd

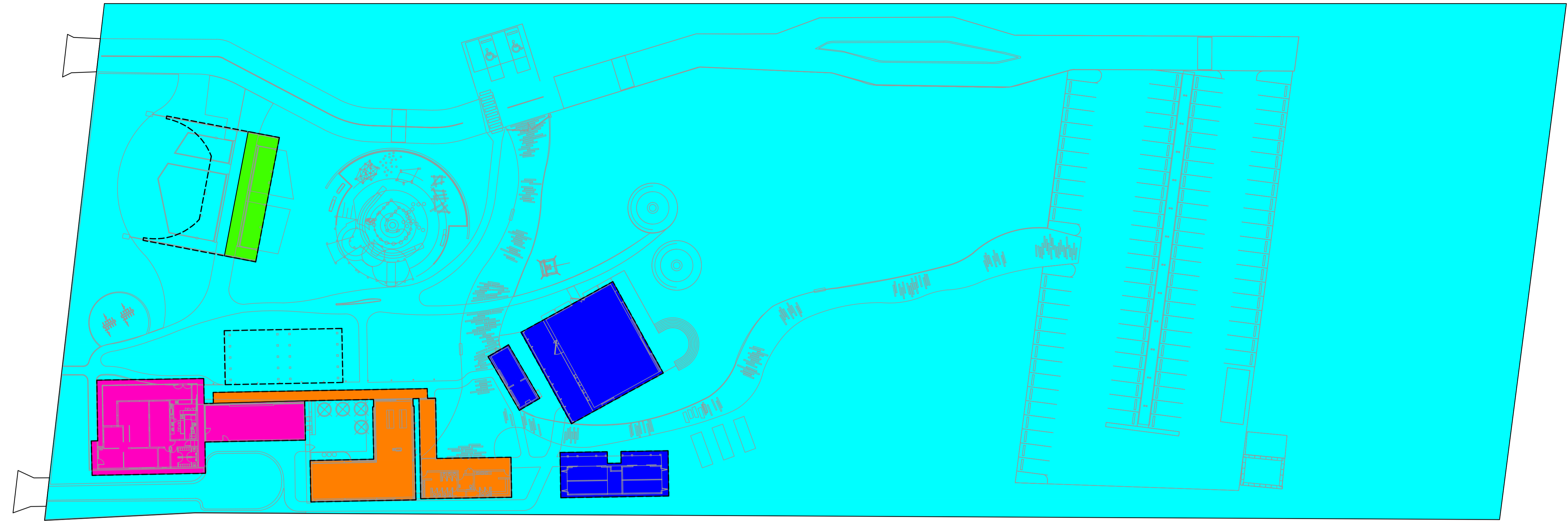


Project
 44-50 TENCH AVENUE, JAMISONTOWN NSW 2750
 PROPOSED MUD MAP: THE ORANGE GROVE
 STORMWATER MANAGEMENT PLAN
 CONSTRUCTION CERTIFICATE







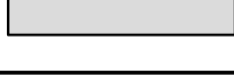
Drawing Title
 STORMWATER LAYOUT PLAN
 ROOF PLAN
 SHEET 2 OF 2

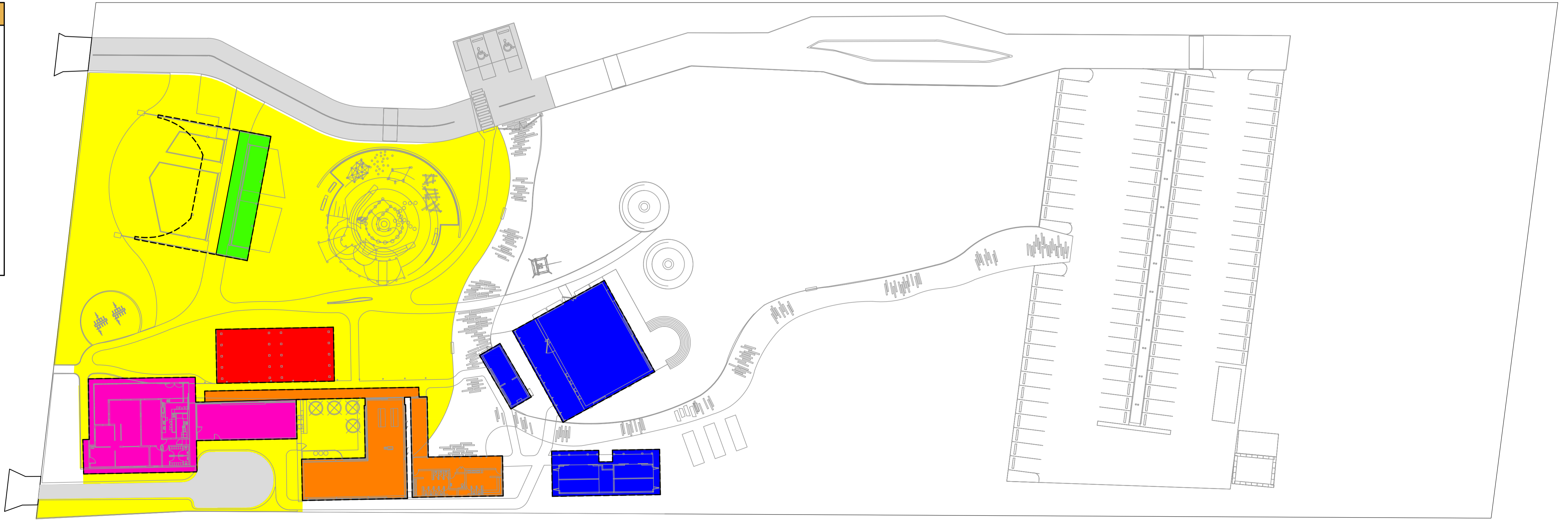
Project No.
 19039
 Dwg. No.
 104
 Rev
 E

OSD CATCHMENT LEGEND	
	AREA DRAINING TO OSD 1 = 124.5m ²
	AREA DRAINING TO OSD 2 = 442.1m ²
	AREA DRAINING TO OSD 3 = 421.5m ²
	AREA DRAINING TO OSD 4 = 530.1m ²
	AREA BYPASSING OSD = 21,597.6m ²



OSD CATCHMENT PLAN
SCALE 1:400

WSUD CATCHMENT LEGEND	
	ROOF AREA DRAINING TO RWT 1 THEN TO WSUD = 124.5m ²
	ROOF AREA DRAINING TO RWT 2 THEN TO WSUD = 442.1m ²
	ROOF AREA DRAINING TO RWT 3 THEN TO WSUD = 421.5m ²
	ROOF AREA DRAINING TO RWT 4 THEN TO WSUD = 530.1m ²
	ROOF AREA DRAINING TO RAINGARDEN THEN TO WSUD = 49.7m ²
	GROUND AREA DRAINING TO WSUD = 3,599.0m ²
	ROAD AREA DRAINING TO THE WSUD = 812.7m ²



WSUD CATCHMENT PLAN
SCALE 1:400

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LANDSCAPE TANKS DETAILS



Montrose—Structural Retaining Wall and courtyard Surround:



System structures

100mm HED tank overflow into reservoirs for endless capacity.

Base of HED tank slopes towards orifice plate on side or end as required.

5/5 Orifice plate. Located in slot in base of tank and affixed to internal sidewall of the tank using 5/5 Dyna bolts to ensure invert level of pipe is level with the tank floor for 100% drainage. Tanks all drain to HED tank and then to stormwater through orifice plate. V grooves in base of HED tank ensure all water drains away effectively.

The Landscape Tanks are very versatile and there are many and varied ways of configuring them to suit your project. The options offer endless water storage reservoir capacity. Place the HED unit (incorporating a pit and mesh filter) anywhere in the system to suit. Handy, lockable, easy access cover is standard with all HED units.

1" decline - eliminates ponding

Commercial and high flow environments.

The Landscape Tanks can also be "open vented" to allow the tanks to take as much water as possible or when full, the excess stormwater (1/100 year storm) will flow to stormwater LPO. Large sized piping can be accommodated in this manner.

Supplementary information

OSD system and water tank storage combined—from roof only.

Two attractive options using combined water storage and OSD system combined. In both cases below the integrity of the retaining wall or front fence or pool surround is also maintained.

Water tank on bottom half of system, OSD on the top. Water tank at one end and OSD at the other end.

Standard flow path.

Water flow. Water flow. Water emerging through control orifice. Emergency overflow may be located as required.

Orifice plate—3mm stainless.

Internal. Face of tank wall showing orifice plate. Invert level of PVC pipe ensure complete draining.

External. Tank wall showing PVC pipe inserted into rubber "O" ring seal. Orifice plate affixed on the internal side of concrete wall.

Access through planter top galvanised class B hinged grate.

Planter top with access. Flat top with access—not trafficable.

600mm x 600mm hinged grate - Class B. 900mm x 600mm hinged grate - class B.

Roof water only through standard tank 600mm tank filter—optional

Flat top available.

Technical specifications:

Full set of DWG downloadable files is available for downloading of our web site. www.landscape tanks.com.au (Go to the builders and architects tab) All tanks measure 2800mm long and 1100mm wide.

Capacity (including trash pit and HED tank)

- Small tank 1,750 litres
- Medium unit 2,250 litres
- Large unit 3,150 litres

Weight (including planter top)

- Small unit 2.5tonnes 1,055mm high
- Medium unit 2.250 tonnes 1,325mm high
- Large unit 4,00 tonnes 1,655mm high

Concrete (Standard—any strength available)

- High grade concrete (50mpa after 28 days).

Lifting (4 Swift anchor points per tank)

- Small tank 1.3 tonnes
- Medium tank 1.3 tonnes
- Large tank 2.5 tonnes.
- Planter tops (both sizes) 1.3 tonnes.

HED tank/trash pit mesh

RH 3030 galvanised

Access Hatch

Class B hinged galvanised grate. Optional lockable lightweight access hatch.

Delivery times

Please allow three weeks from order

Pipe plumbing sizes

Standard 90mm
Optional 100mm
Equalising ports 50mm standard.
Equalising ports 90/100mm optional.

More detail on physical sizing please see below.
Custom design configurations available subject to discussions with Landscape Tanks staff.
Specifications in this document are subject to change without notice.

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	28.50 m AHD
ORIFICE CENTERLINE	28.55 m AHD
ORIFICE DIAMETER	30 mm
DESIGN TOP WATER LEVEL	29.92 m AHD
HEAD TO ORIFICE	1.37 m
BASE AREA	8.20 m ²
VOLUME PROVIDED	11.20 m ³

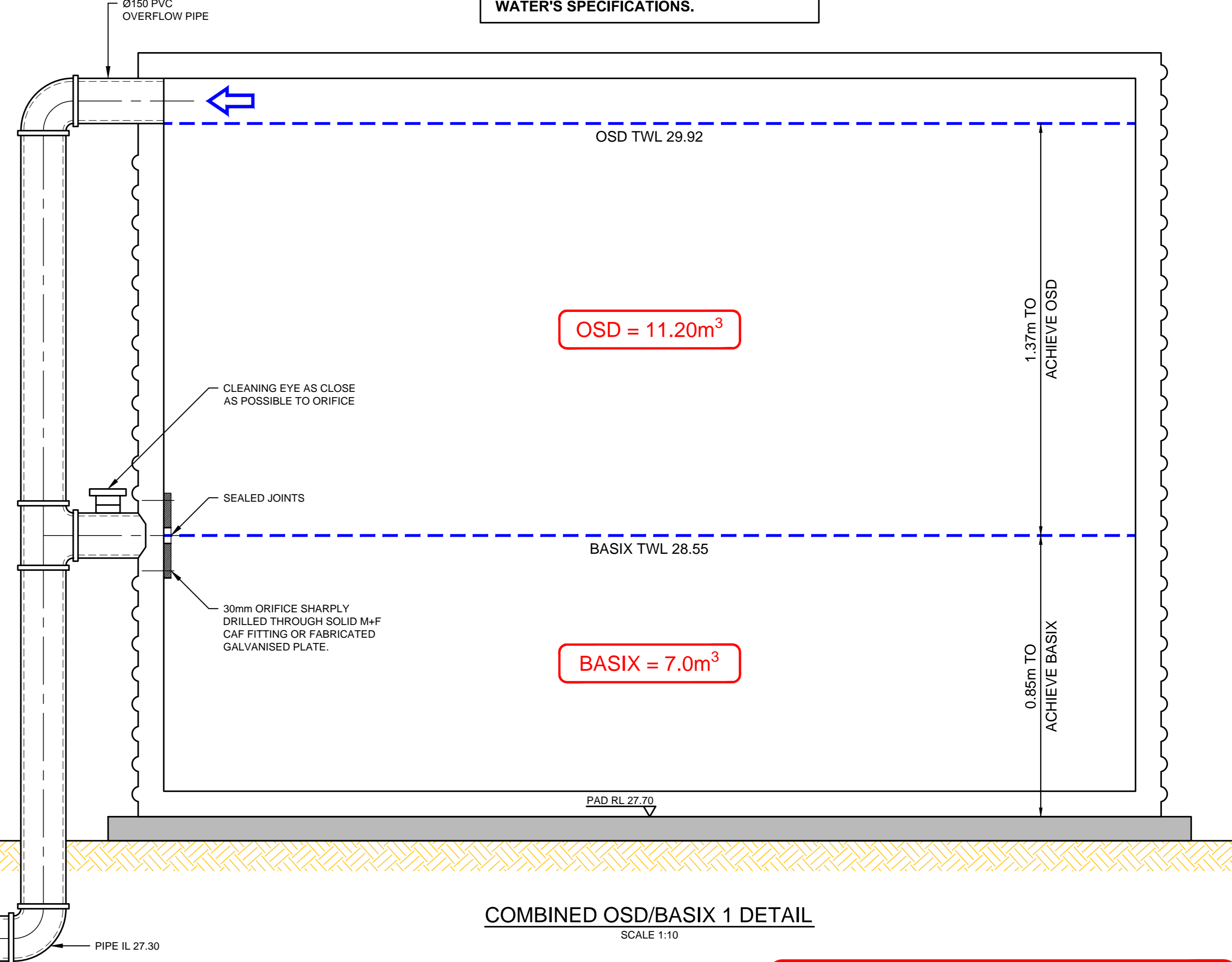
OSD 2 DESIGN PARAMETERS

ORIFICE INVERT LEVEL	27.20 m AHD
ORIFICE CENTERLINE	27.25 m AHD
ORIFICE DIAMETER	65 mm
DESIGN TOP WATER LEVEL	28.55 m AHD
HEAD TO ORIFICE	1.3 m
BASE AREA	9.64 m ²
VOLUME PROVIDED	12.6 m ³

PROPOSED RAINWATER TANKS MUST BE INSTALLED TO BE RE-USED FOR IRRIGATION & FOR TOILET FLUSHING (10 TOILETS IN TOTAL AT 100 litres/day PER TOILET).

COMBINED TANK 1

7.0m³ FOR BASIX & EFFECTIVE 11.20m³ FOR OSD. USE 18.2m³ ROUND RAINWATER TANK, TO MANUFACTURER'S & SYDNEY WATER'S SPECIFICATIONS.



COMBINED OSD/BASIX 1 DETAIL
SCALE 1:10

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OSD 3 DESIGN PARAMETERS

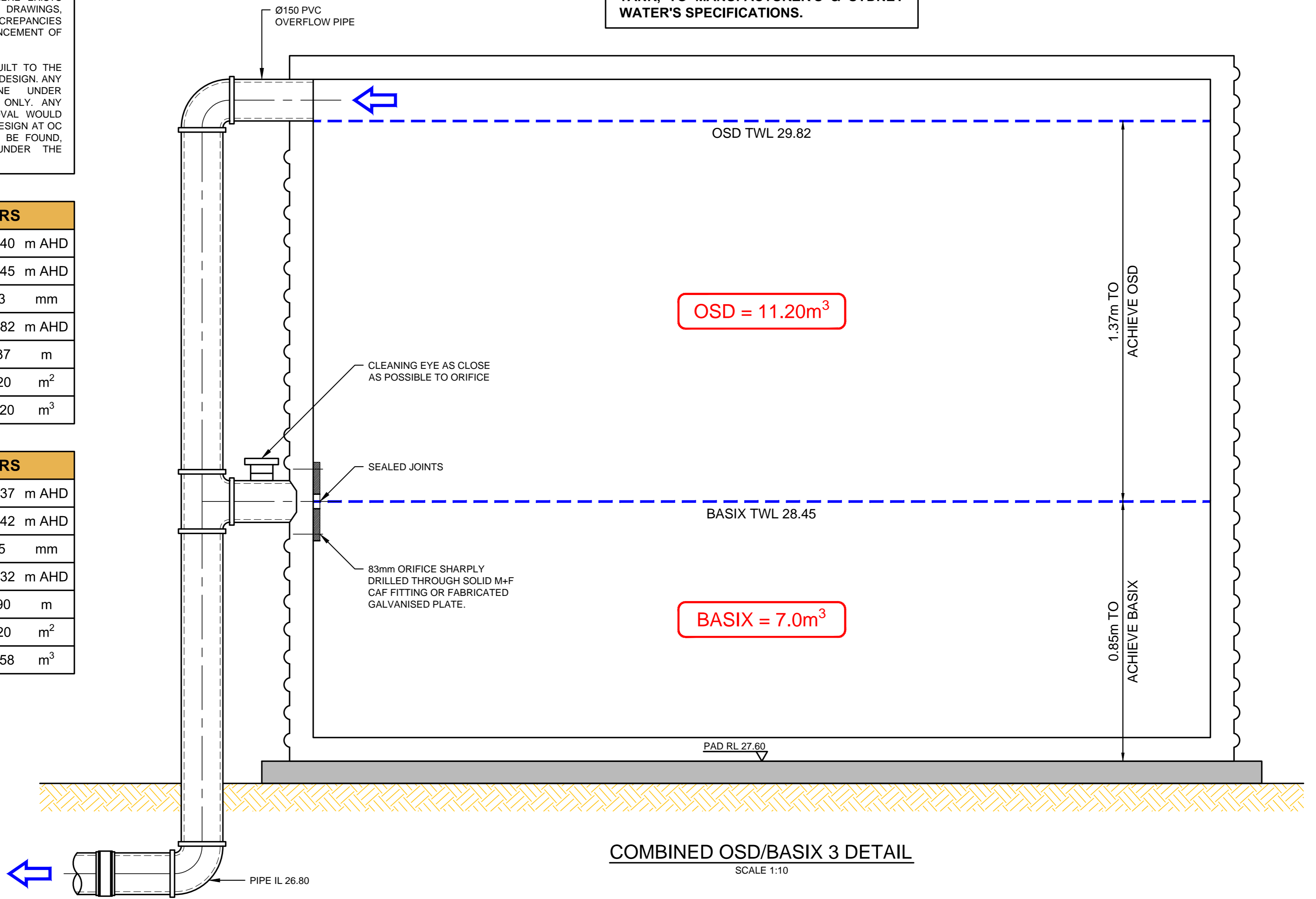
ORIFICE INVERT LEVEL	28.40 m AHD
ORIFICE CENTERLINE	28.45 m AHD
ORIFICE DIAMETER	83 mm
DESIGN TOP WATER LEVEL	29.82 m AHD
HEAD TO ORIFICE	1.37 m
BASE AREA	8.20 m ²
VOLUME PROVIDED	11.20 m ³

OSD 4 DESIGN PARAMETERS

ORIFICE INVERT LEVEL	27.37 m AHD
ORIFICE CENTERLINE	27.42 m AHD
ORIFICE DIAMETER	35 mm
DESIGN TOP WATER LEVEL	29.32 m AHD
HEAD TO ORIFICE	1.90 m
BASE AREA	8.20 m ²
VOLUME PROVIDED	15.58 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

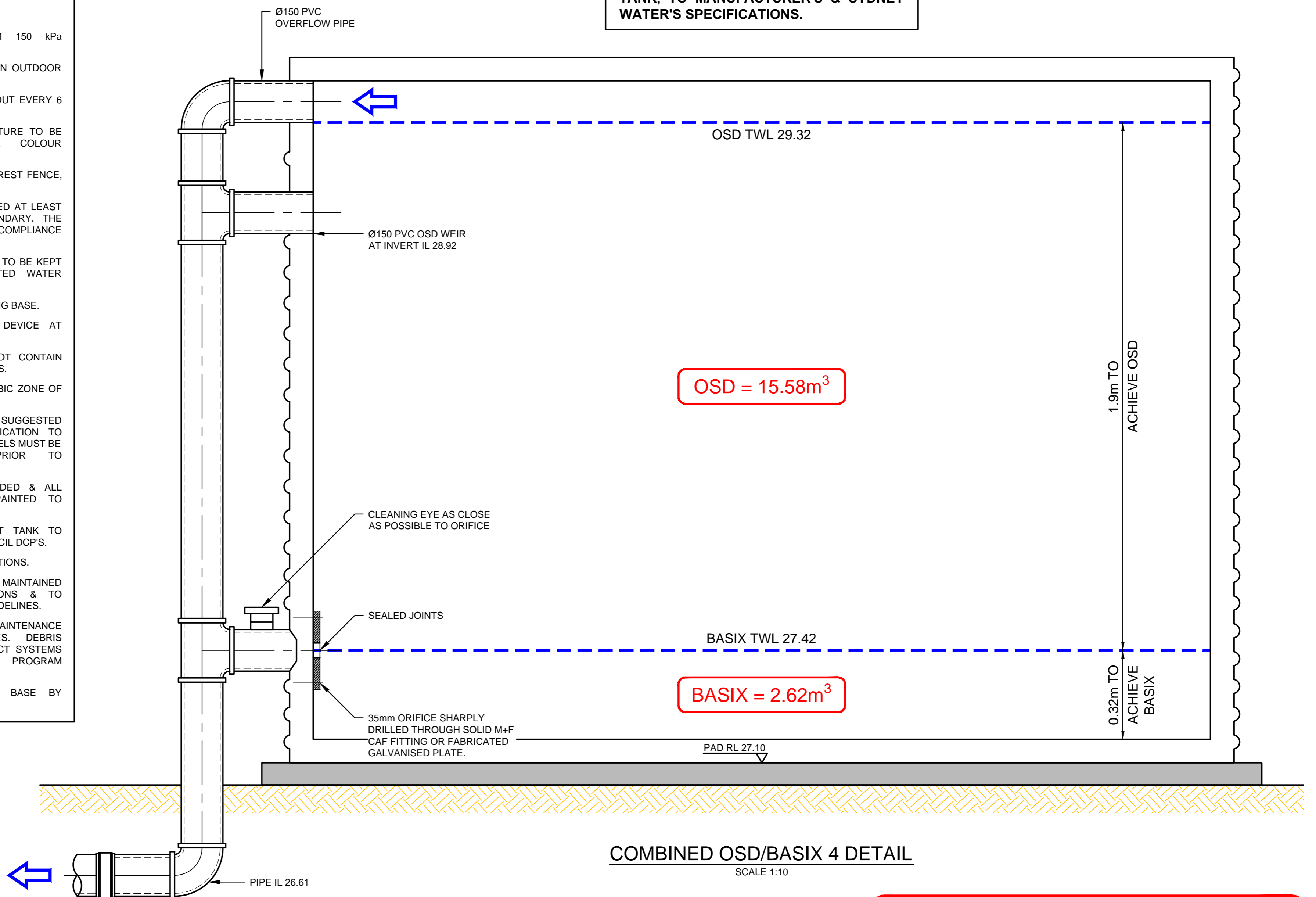
STORAGE TANK NOTES

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.
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 4

2.62m³ FOR BASIX & EFFECTIVE 15.58m³ FOR OSD. USE 18.2m³ ROUND RAINWATER TANK, TO MANUFACTURER'S & SYDNEY WATER'S SPECIFICATIONS.

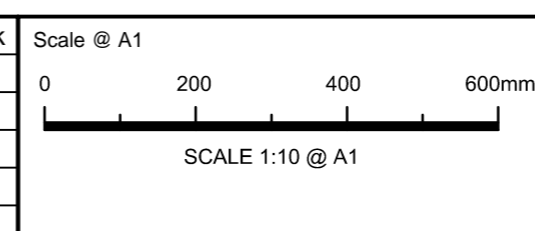


COMBINED OSD/BASIX 4 DETAIL
SCALE 1:10

PROPOSED RAINWATER TANKS MUST BE INSTALLED TO BE RE-USED FOR IRRIGATION & FOR TOILET FLUSHING (10 TOILETS IN TOTAL AT 100 litres/day PER TOILET).

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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

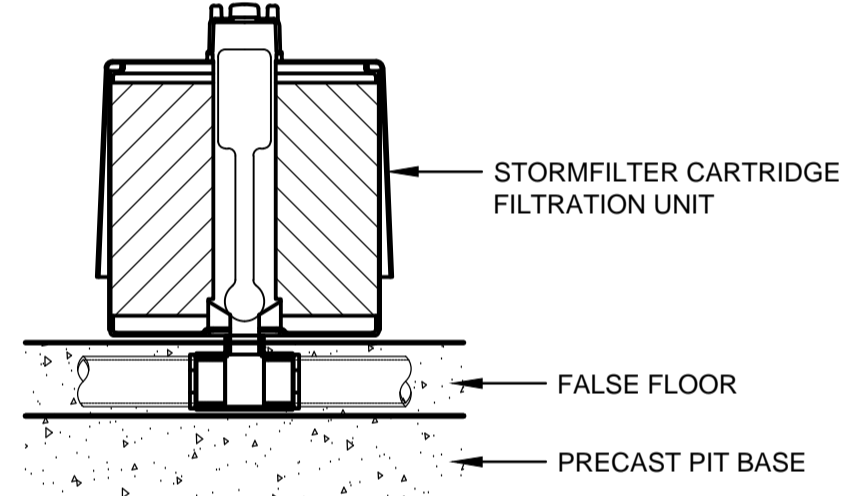
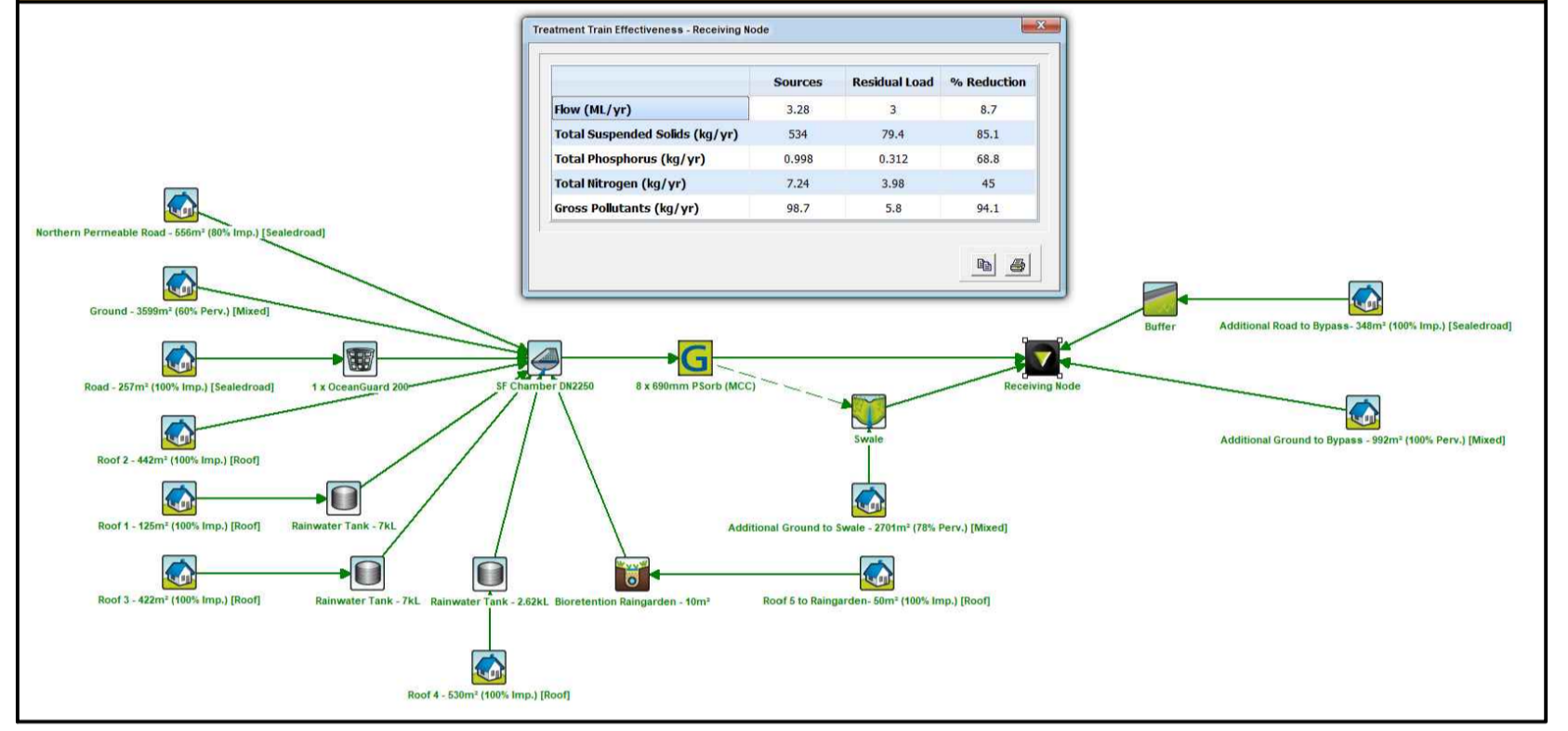
1. A CONFINED SPACE DANGER SIGN SHALL BE POSITIONED IN A LOCATION AT ALL ACCESS POINTS, SUCH THAT IT IS CLEARLY VISIBLE TO PERSONS PROPOSING TO ENTER THE BELOW GROUND TANK/S CONFINED SPACE.
2. MINIMUM DIMENSIONS OF THE SIGN - 300mm x 450mm (LARGE ENTRIES, SUCH AS DOORS) -250mm x 180mm (SMALL ENTRIES 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



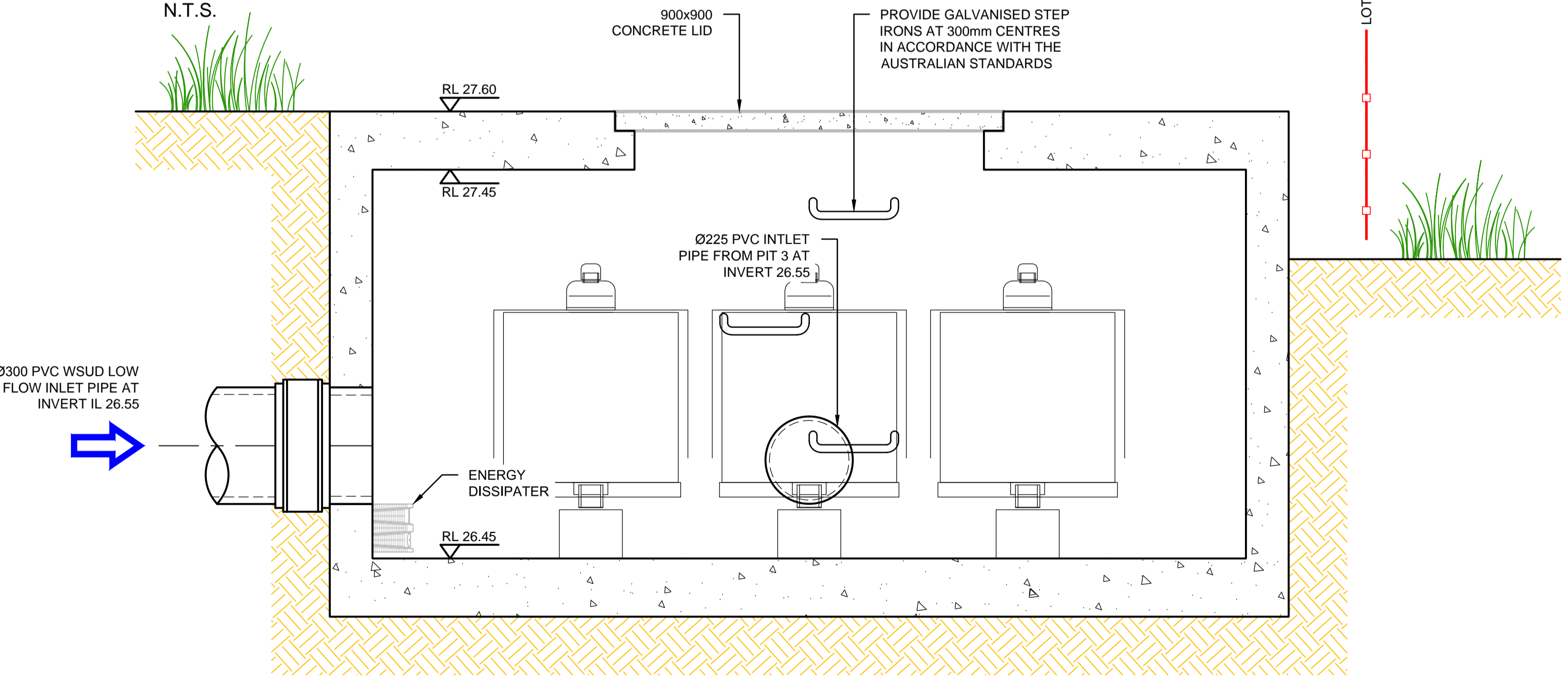
WSUD DATA REQUIREMENTS

STRUCTURE ID	1		
WATER QUALITY FLOW RATE (L/S)	-		
PEAK FLOW RATE (L/S)	-		
RETURN PERIOD OF PEAK FLOW (yrs)	-		
No OF CARTRIDGES REQUIRED	8		
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	26.55	PVC	300
INLET PIPE 2	26.55	PVC	225
OUTLET PIPE	26.45	PVC	300

WSUD & MUSIC RESULTS

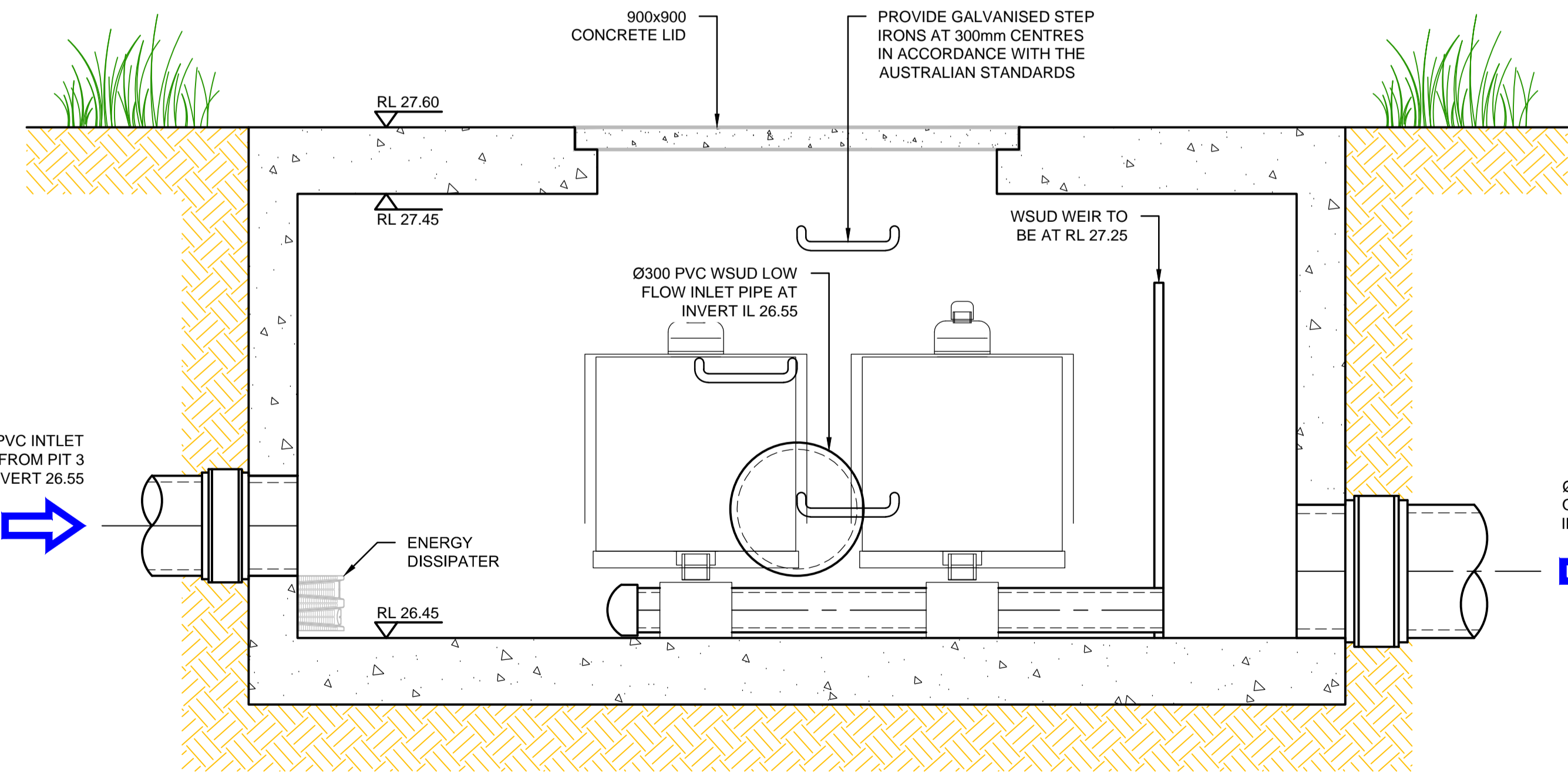


SYSTEM HYDRAULIC DROP CARTRIDGE FLOW RATE



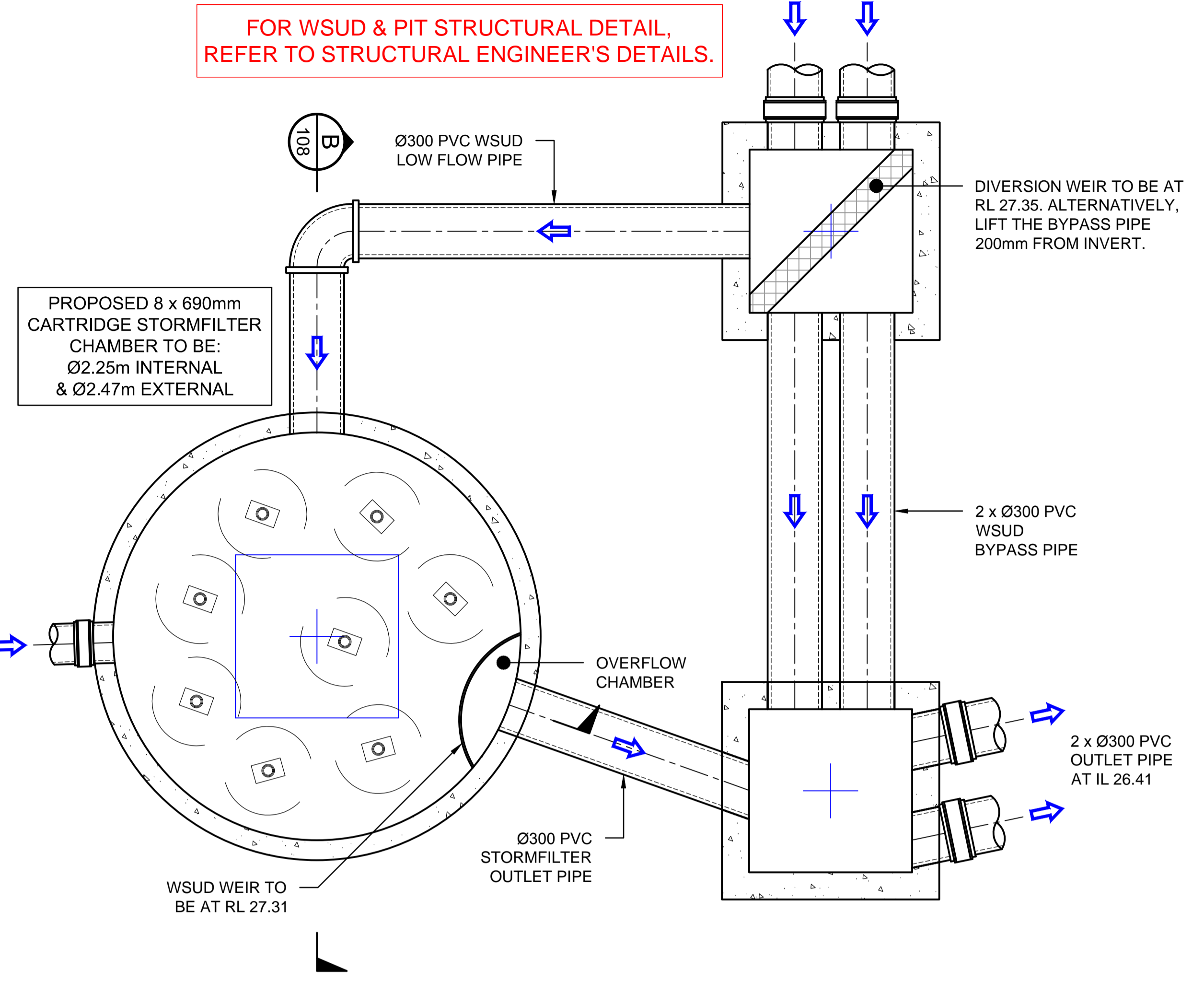
FOR WSUD TANK STRUCTURAL DETAIL, REFER TO STRUCTURAL ENGINEER'S DETAILS.

SECTION B
WSUD STORMFILTER MANHOLE DETAIL
SCALE 1:10

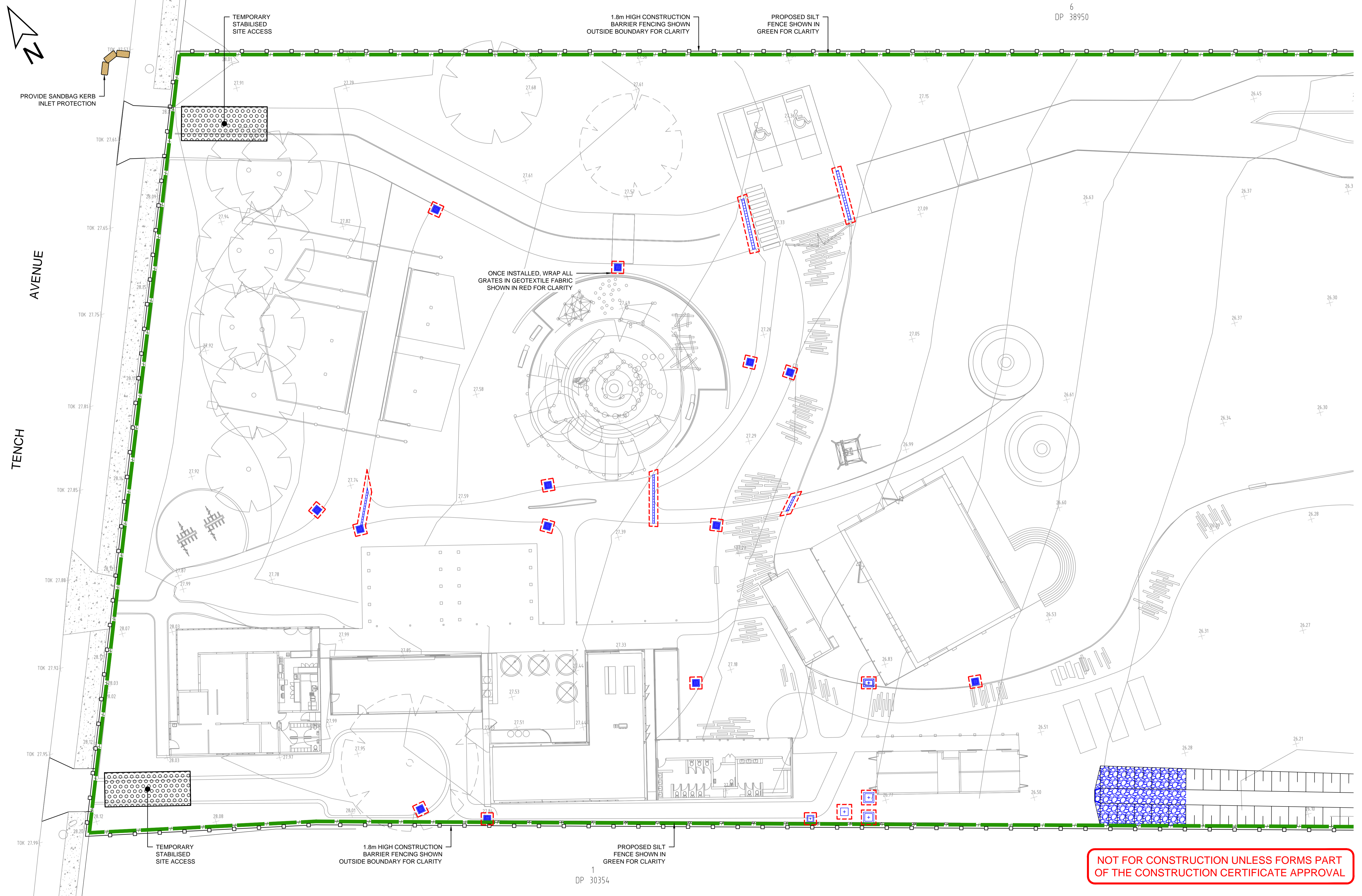


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SECTION A
WSUD STORMFILTER MANHOLE DETAIL
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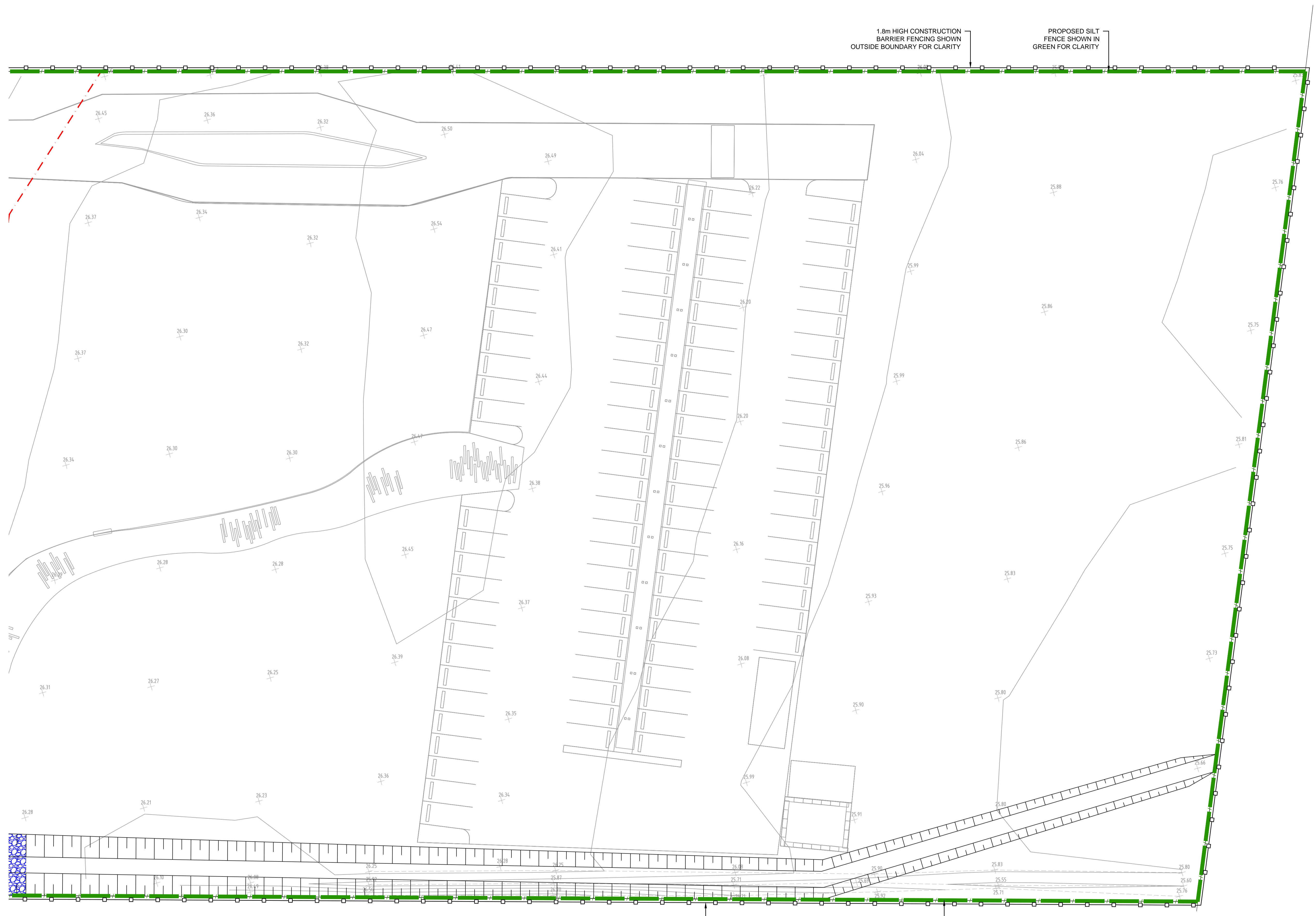
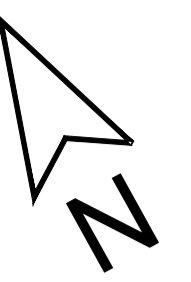


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1.8m HIGH CONSTRUCTION
BARRIER FENCING SHOWN
OUTSIDE BOUNDARY FOR CLARITY

PROPOSED SILT
FENCE SHOWN IN
GREEN FOR CLARITY

1.8m HIGH CONSTRUCTION
BARRIER FENCING SHOWN
OUTSIDE BOUNDARY FOR CLARITY

PROPOSED SILT
FENCE SHOWN IN
GREEN FOR CLARITY

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CONSULTING ENGINEERS

MBR Consulting Engineers Pty Ltd
0424 711 117
info@mbrconsulting.com.au
www.mbrconsulting.com.au
PO Box 8288, Blacktown NSW 2148
ABN: 61 625 079 923

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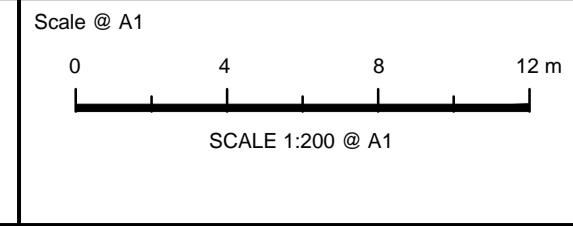
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E	ISSUE FOR CONSTRUCTION CERTIFICATE	03/08/2021	MBR	KE

**KILLING
MATT WOODS**

SOLOIDKILLINGMATTWOODS.COM
+61 421 944 462

**PENRITH
CITY COUNCIL**

Client
MKD Cafe Pty Ltd



Project
44-50 TENCH AVENUE, JAMISONTOWN NSW 2750
PROPOSED MUD MAP: THE ORANGE GROVE
STORMWATER MANAGEMENT PLAN
CONSTRUCTION CERTIFICATE

Drawing Title
SEDIMENT & EROSION CONTROL PLAN
SHEET 2 OF 2

Project No.
19039
Dwg. No.
111
Rev
E



CUT-FILL PLAN
SCALE 1:400

CUT-FILL NOTES

1. THE CUT & FILL VOLUMES ARE CALCULATED BASED OFF THE DIFFERENCE BETWEEN THE POST-DEVELOPMENT FINISHED SURFACE LEVELS & THE PRE-DEVELOPMENT EXISTING SURFACE LEVELS.
2. THE CUT VOLUMES ARE NEGATIVE & THE FILL VOLUMES ARE POSITIVE.
3. TOTAL CUT VOLUME = -154.5m³
TOTAL FILL VOLUME = 3,697.1m³
TOTAL BALANCE = 3,542.6m³

Fill (m)	Cut (m)
0.1 & Below	0.5 & Above
0.1 - 0.2	0.4 - 0.5
0.2 - 0.3	0.3 - 0.4
0.3 - 0.4	0.2 - 0.3
0.4 - 0.5	0.1 - 0.2
0.5 & Above	0.1 & Below

NOT FOR CONSTRUCTION UNLESS FORMS PART OF THE CONSTRUCTION CERTIFICATE APPROVAL

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EROSION & SEDIMENT CONTROL NOTES

GENERAL INSTRUCTIONS:

- E1. 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.
- E2. THE SITE SUPERINTENDENT WILL ENSURE THAT ALL SOIL & WATER MANAGEMENT WORKS ARE LOCATED AS INSTRUCTED IN THIS SPECIFICATION.
- E3. ALL BUILDERS & SUB-CONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION & POLLUTION TO DOWNSLOPE LANDS & WATERWAYS.

CONSTRUCTION SEQUENCE:

- E4. THE SOIL EROSION POTENTIAL ON THIS SITE SHALL BE MINIMISED. HENCE, WORKS SHALL BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:
 - a. INSTALL SEDIMENT FENCES, TEMPORARY CONSTRUCTION EXIT & SANDBAG KERB INLET SEDIMENT TRAP.
 - b. 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:

- E5. DURING WINDY CONDITIONS, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.
- E6. FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE & WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

FENCING:

- E7. 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.
- E8. 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.
- E9. 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.
- E10. TEMPORARY SOIL & WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.

OTHER MATTERS:

- E11. ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE & MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS & LITTER.
- E12. 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:

- E13. EROSION & SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AFTER RAINFALL EVENTS TO ENSURE THAT THEY OPERATE EFFECTIVELY. REPAIR & OR MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED.

DUST CONTROL NOTES

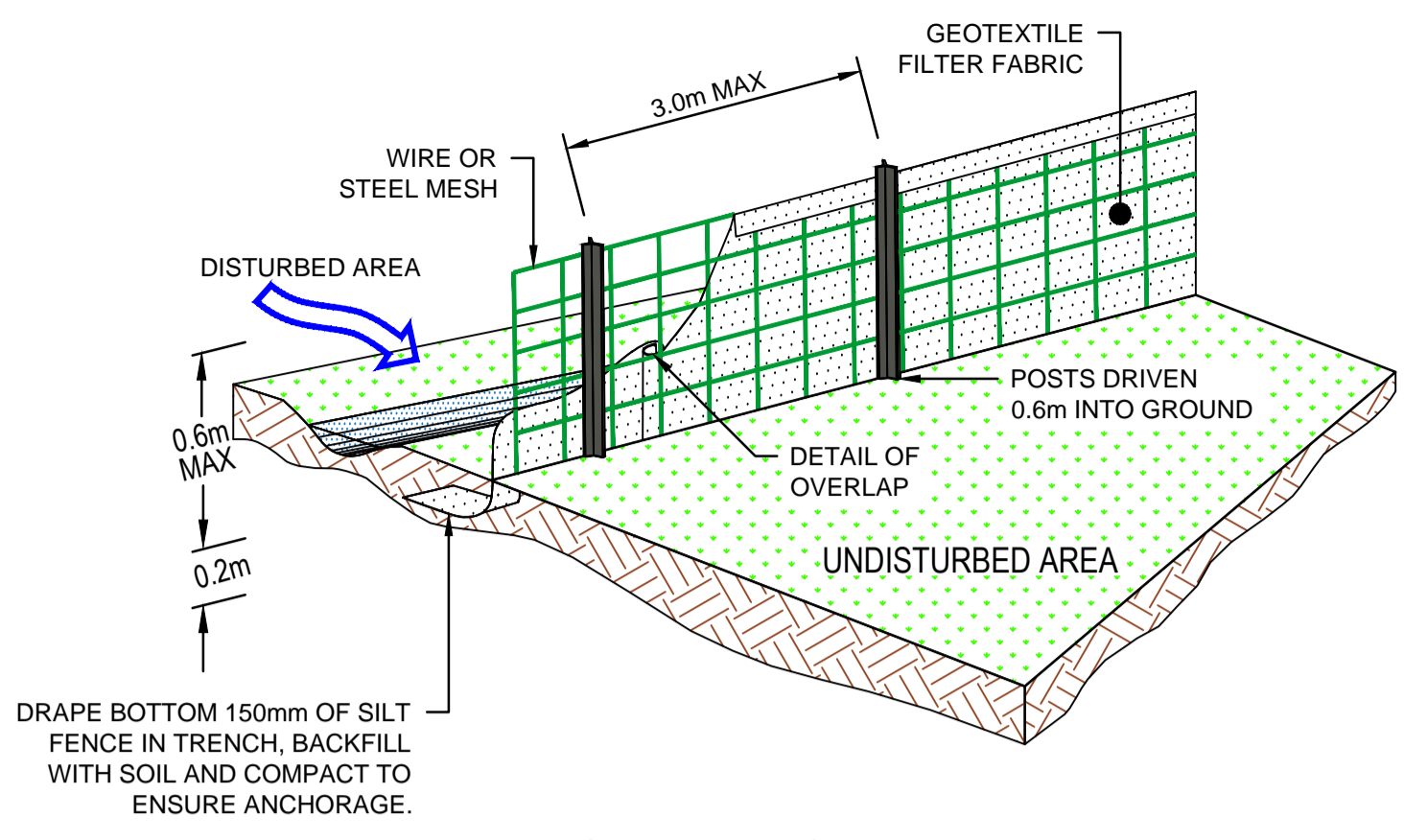
- 1. PHYSICAL BARRIERS SHALL BE ERECTED AT RIGHT ANGLES & SHALL BE PLACED AROUND OR OVER DUST SOURCES TO PREVENT WIND FROM GENERATING DUST.
- 2. EARTHWORKS & SCHEDULING ACTIVITIES SHALL BE MANAGED TO COINCIDE WITH THE NEXT STAGE OF DEVELOPMENT TO MINIMISE THE AMOUNT OF TIME THE SITE IS LEFT TO CUT OR EXPOSED.
- 3. ALL MATERIALS SHALL BE STORED OR STOCKPILED AT THE BEST LOCATIONS.
- 4. THE GROUND SURFACE SHOULD BE DAMPENED SLIGHTLY TO PREVENT DUST FROM BECOMING AIRBORNE & SHOULD NOT BE WET ENOUGH TO PRODUCE RUN-OFF.
- 5. AT ALL TIMES, ALL VEHICLES CARRYING SOIL OR RUBBLE TO OR FROM THE SITE SHALL BE COVERED TO PREVENT THE ESCAPE OF DUST.
- 6. ALL EQUIPMENT WHEELS SHALL BE WASHED BEFORE EXITING THE SITE USING MANUAL OR AUTOMATED SPRAYERS & DRIVE-THROUGH WASHING BAYS.
- 7. GATES SHALL BE CLOSED BETWEEN VEHICLE MOVEMENTS & SHALL BE FITTED WITH SHADE CLOTH.
- 8. CLEANING OF FOOTPATHS & ROADWAYS SHALL BE CARRIED OUT DAILY.
- 9. ALL SPOIL & MATERIAL UNSUITABLE FOR USE IN LANDSCAPE AREAS SHALL BE REMOVED FROM SITE UPON COMPLETION OF WORKS.

CONSTRUCTION SEQUENCE

- 1. INSTALL SEDIMENT FENCING & CUT DRAINS TO MEET THE REQUIREMENTS OF THE SEDIMENT & EROSION CONTROL PLAN. WASTE COLLECTION BINS SHALL BE INSTALLED ADJACENT TO THE SITE OFFICE.
- 2. CONSTRUCT STABILISED SITE ACCESS IN ACCORDANCE WITH COUNCIL'S REQUIREMENTS.
- 3. REDIRECT CLEAN WATER AROUND THE CONSTRUCTION SITE.
- 4. INSTALL SEDIMENT CONTROL PROTECTION MEASURES AT ALL NATURAL & MAN-MADE DRAINAGE STRUCTURES. MAINTAIN UNTIL ALL THE DISTURBED AREAS ARE STABILISED.
- 5. CLEAR & STRIP THE WORK AREAS. MINIMISE THE DAMAGE TO THE GRASS & LOW GROUND COVER OF NON-DISTURBED AREAS.
- 6. ANY DISTURBED AREAS, OTHER THAN BUILDING PAD AREAS, SHALL IMMEDIATELY BE COVERED WITH SITE TOPSOIL WITHIN 7 DAYS OF CLEARING. BUILDING PAD AREAS SHALL BE COVERED WITH BITUMEN EMULSION AS SPECIFIED.
- 7. APPLY PERMANENT STABILISATION TO SITE (LANDSCAPING).

SILT FENCE NOTES

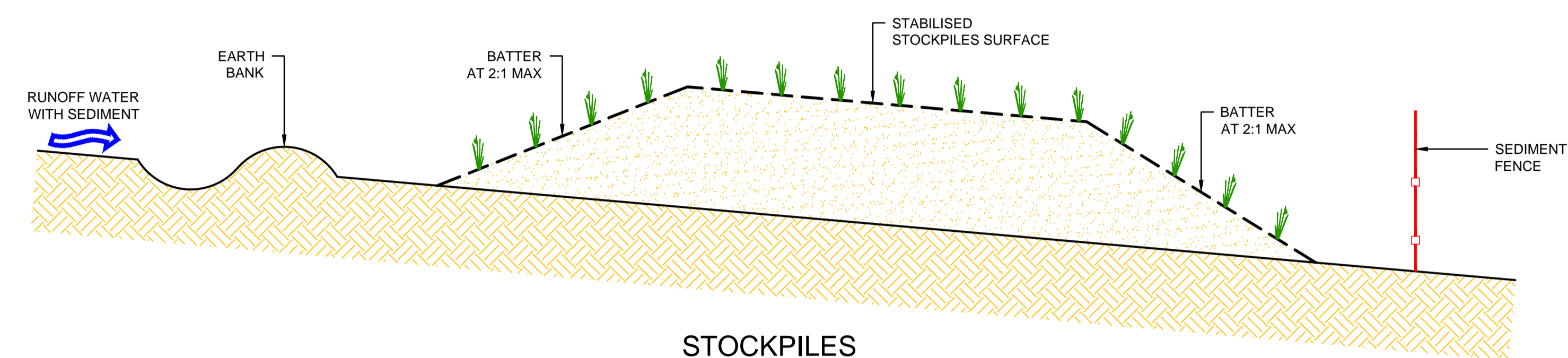
- 1. FILTER CLOTH TO BE FASTENED SECURELY TO POSTS WITH GALVANISED WIRE TIES, STAPLES OR ATTACHMENT BELTS.
- 2. POSTS SHOULD NOT BE SPACED MORE THAN 3.0m APART.
- 3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 150mm & FOLDED.
- 4. FOR EXTRA STRENGTH TO SILT FENCE, 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.



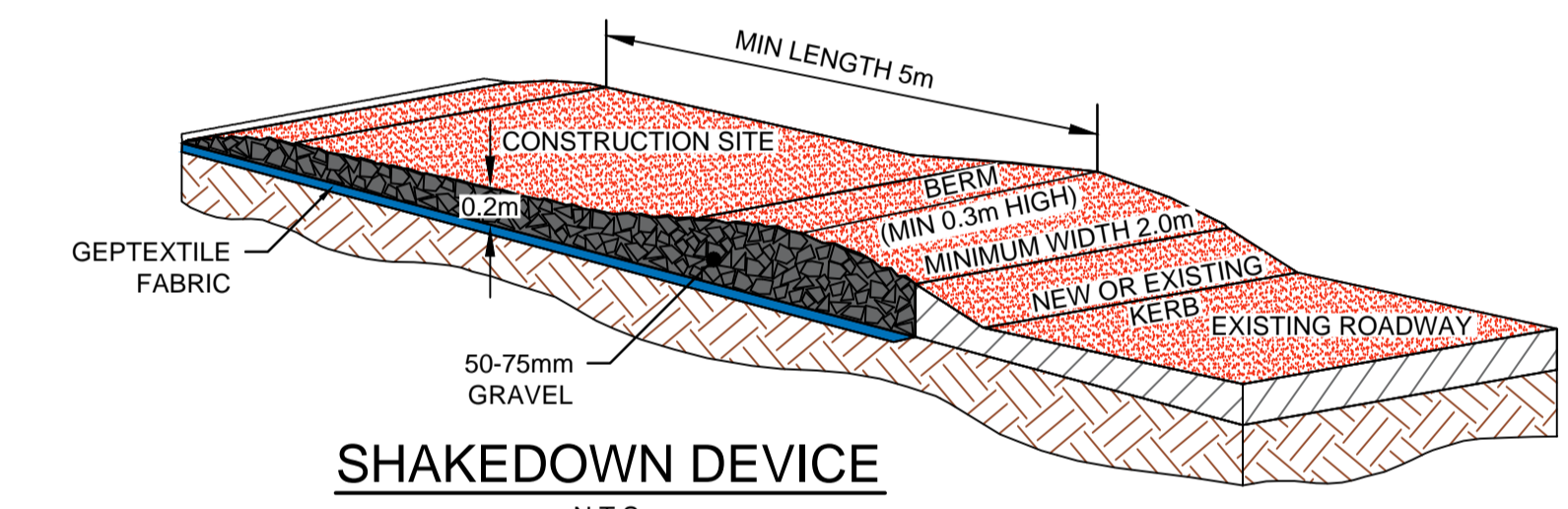
SILT FENCE DETAIL
N.T.S.

STOCKPILE NOTES

- 1. PLACE STOCKPILES MORE THAN 2.0m (PREFERABLY 5.0m) FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS & HAZARD AREAS.
- 2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT & ELONGATED MOUNDS.
- 3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2.0m IN HEIGHT.
- 4. WHERE THEY ARE TO BE PLACED FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED E.S.C.P. OR S.W.M.P. TO REDUCE THE C-FACTOR TO LESS THAN 0.1.
- 5. CONSTRUCT EARTH BANKS ON THE UPSTREAM SIDE TO DIVERT WATER AROUND STOCKPILES & SEDIMENT FENCES 1.0 TO 2.0m DOWNSTREAM.

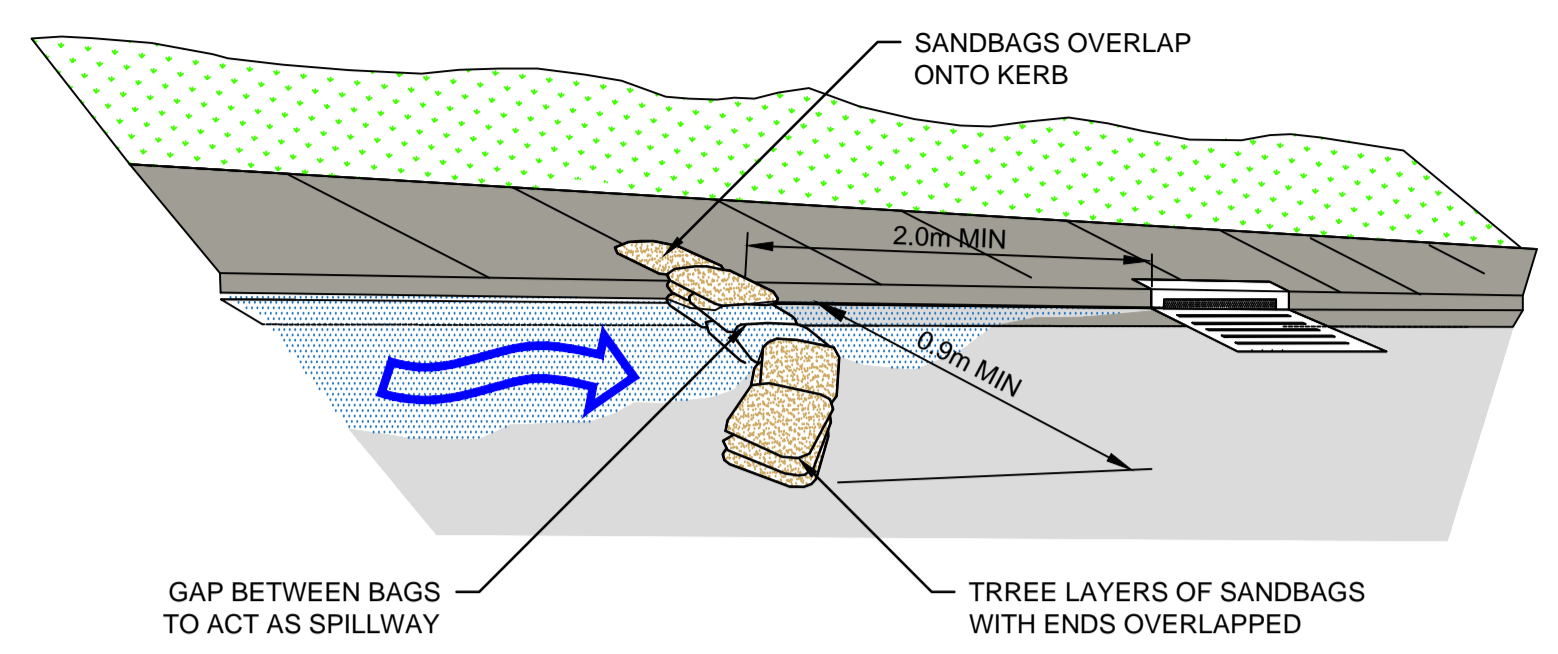


STOCKPILES
N.T.S.

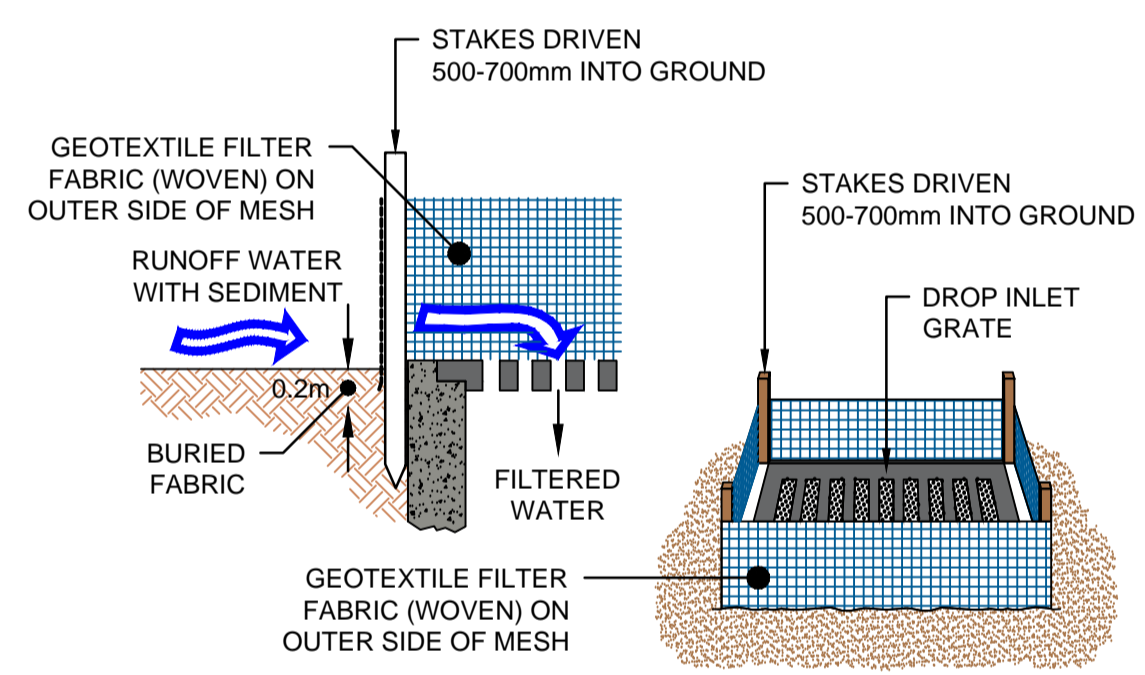


SHAKEDOWN DEVICE
N.T.S.

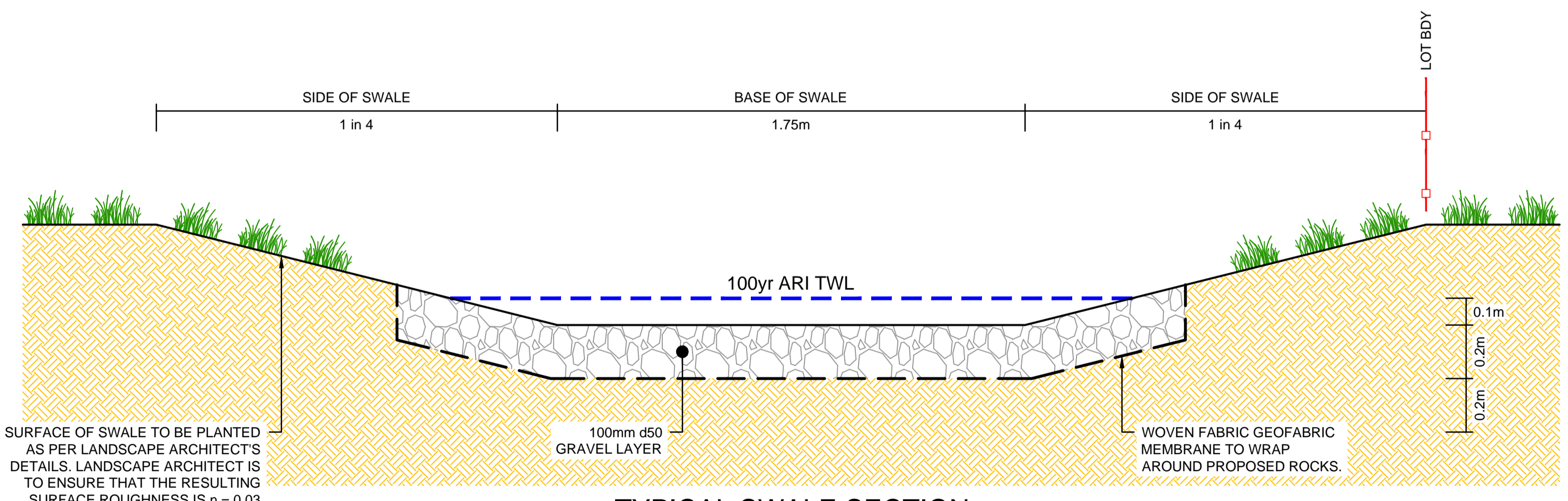
MAINTENANCE NOTES:
THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH PREVENTS TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL GRAVEL AS CONDITIONS DEMAND & REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT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



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



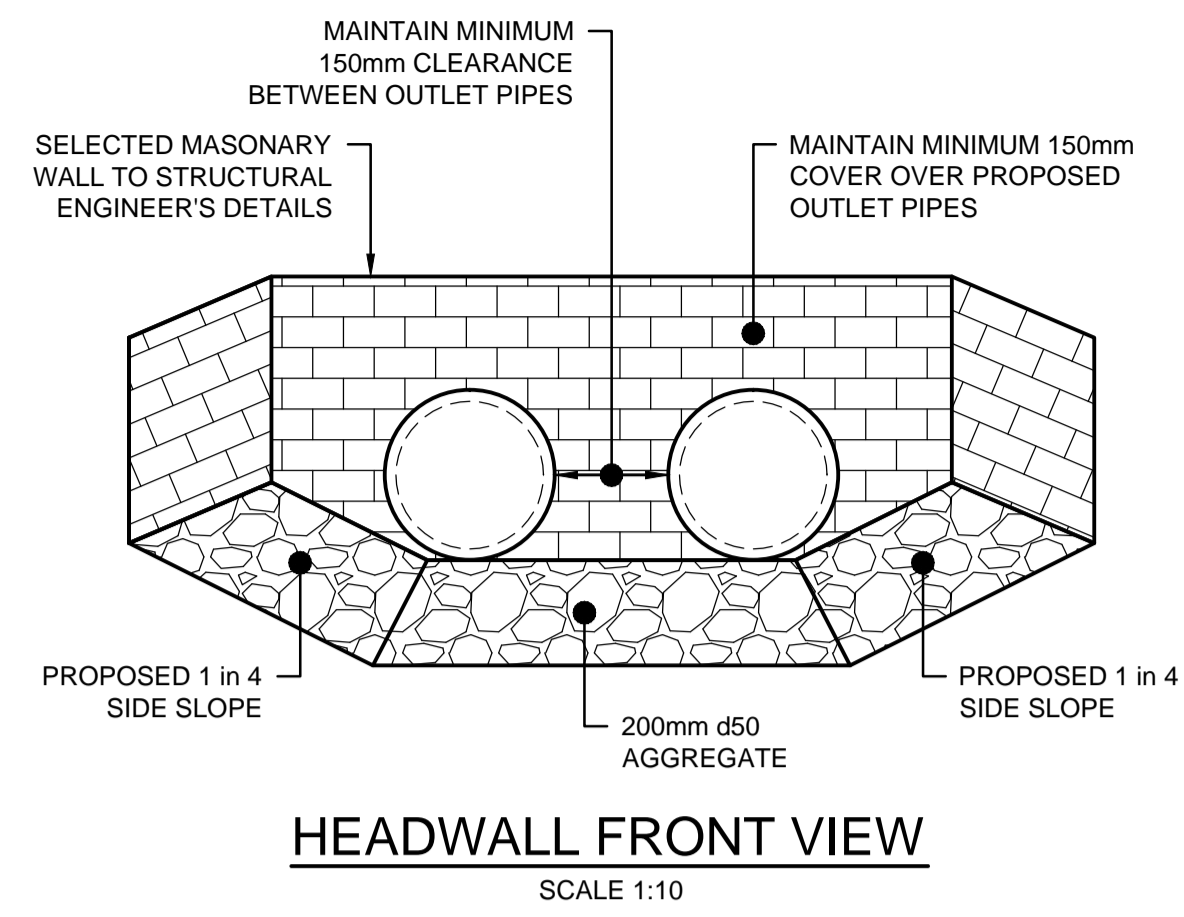
FIELD INLET SEDIMENT TRAP
N.T.S.



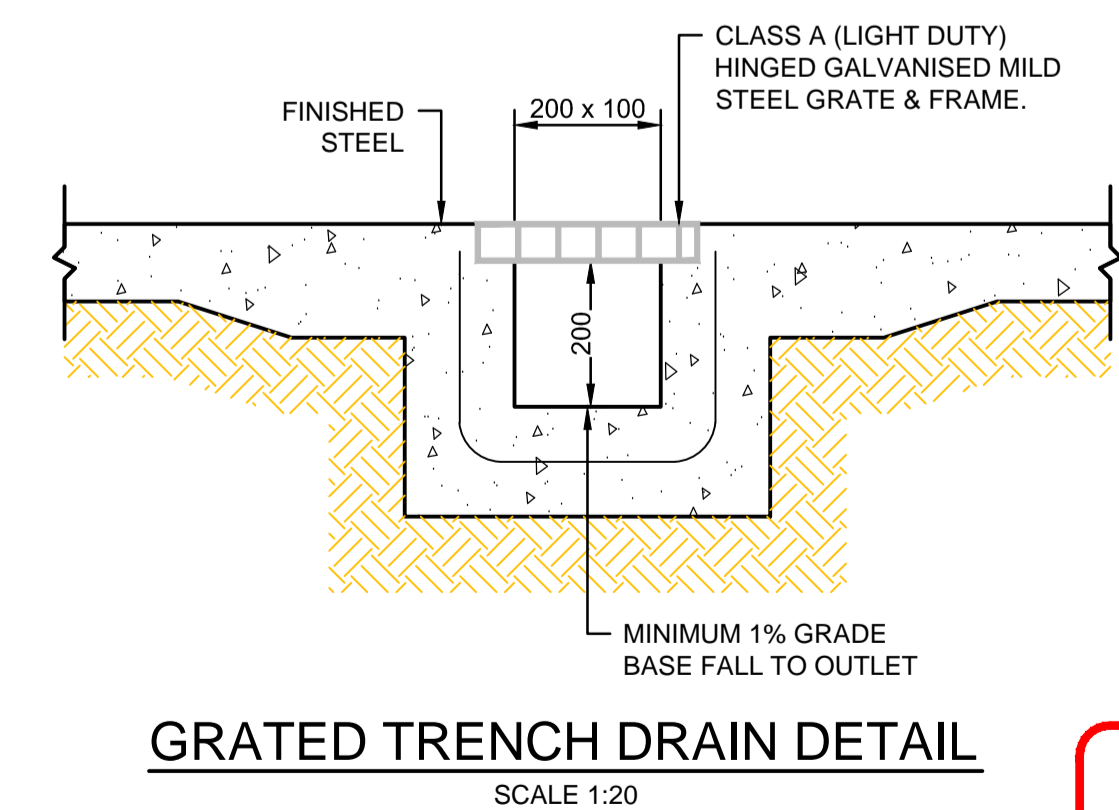
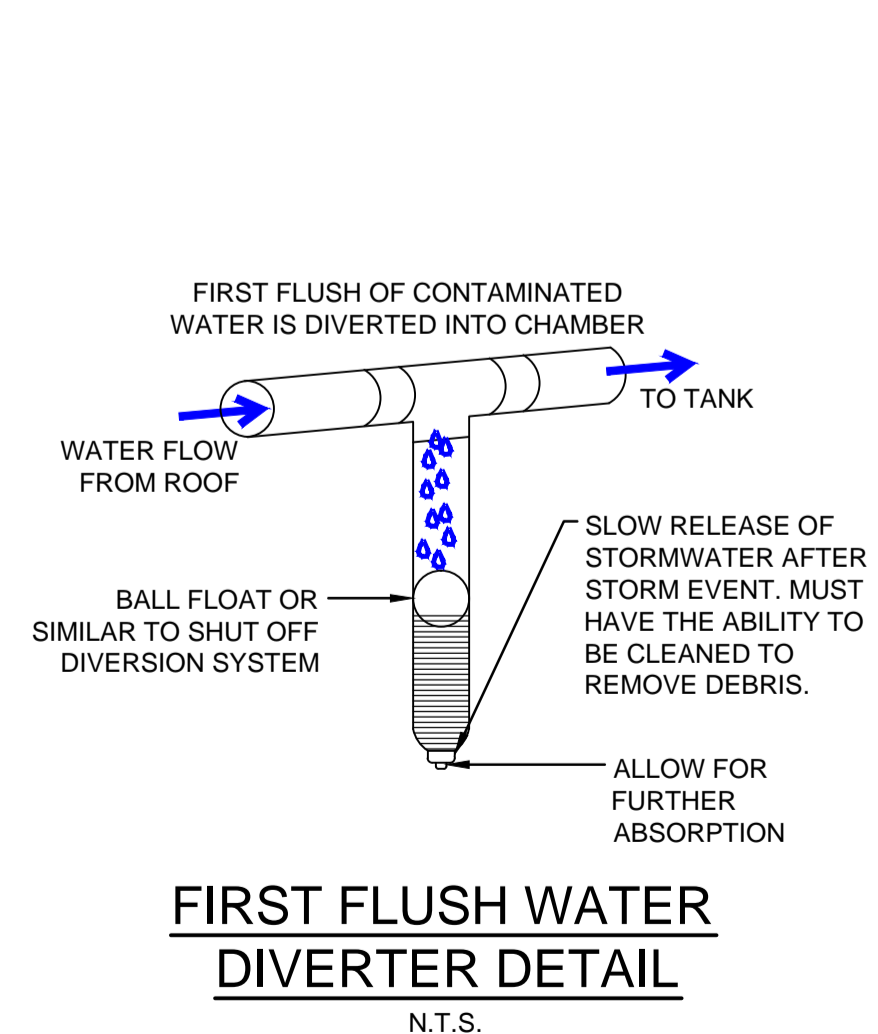
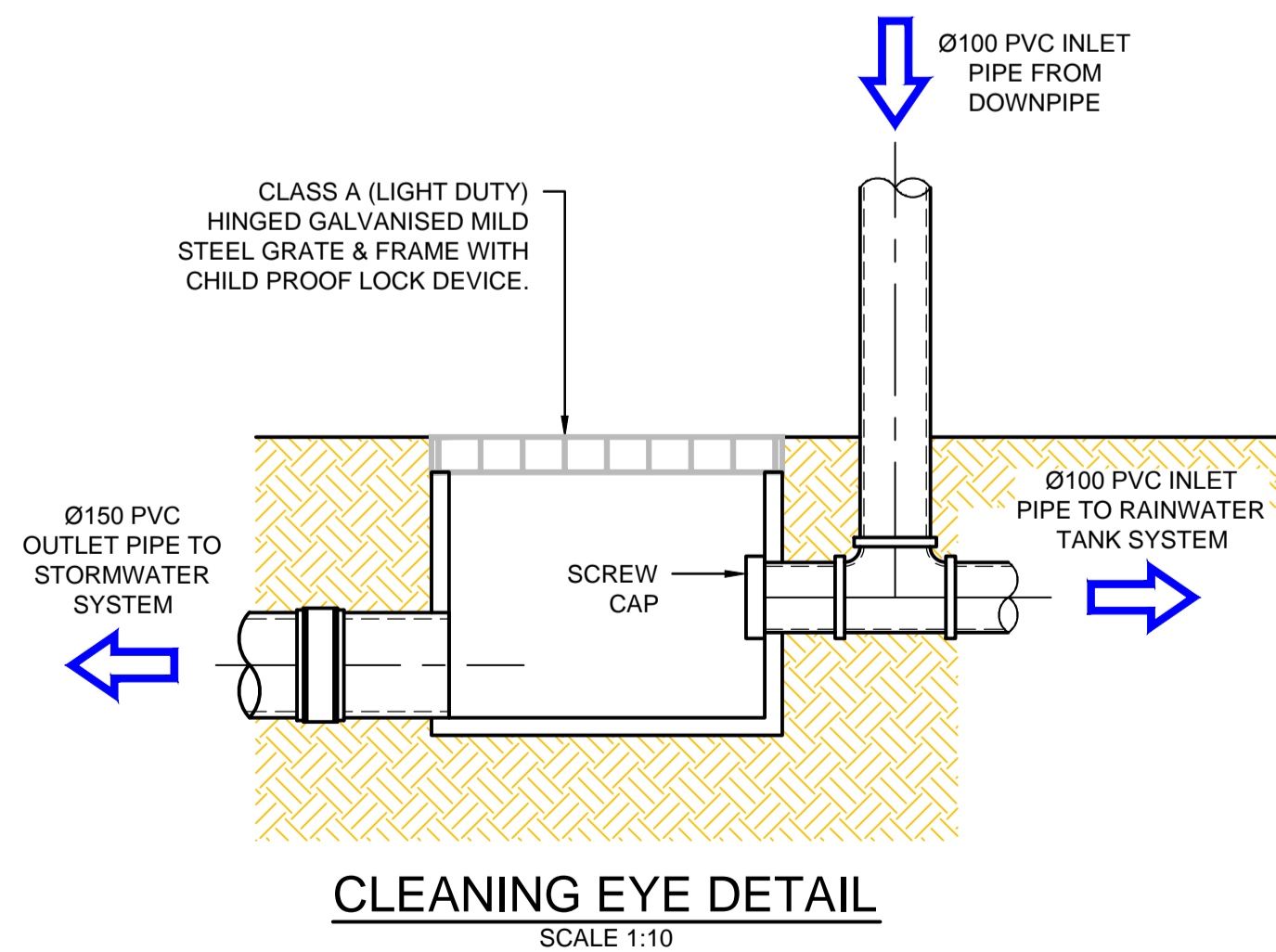
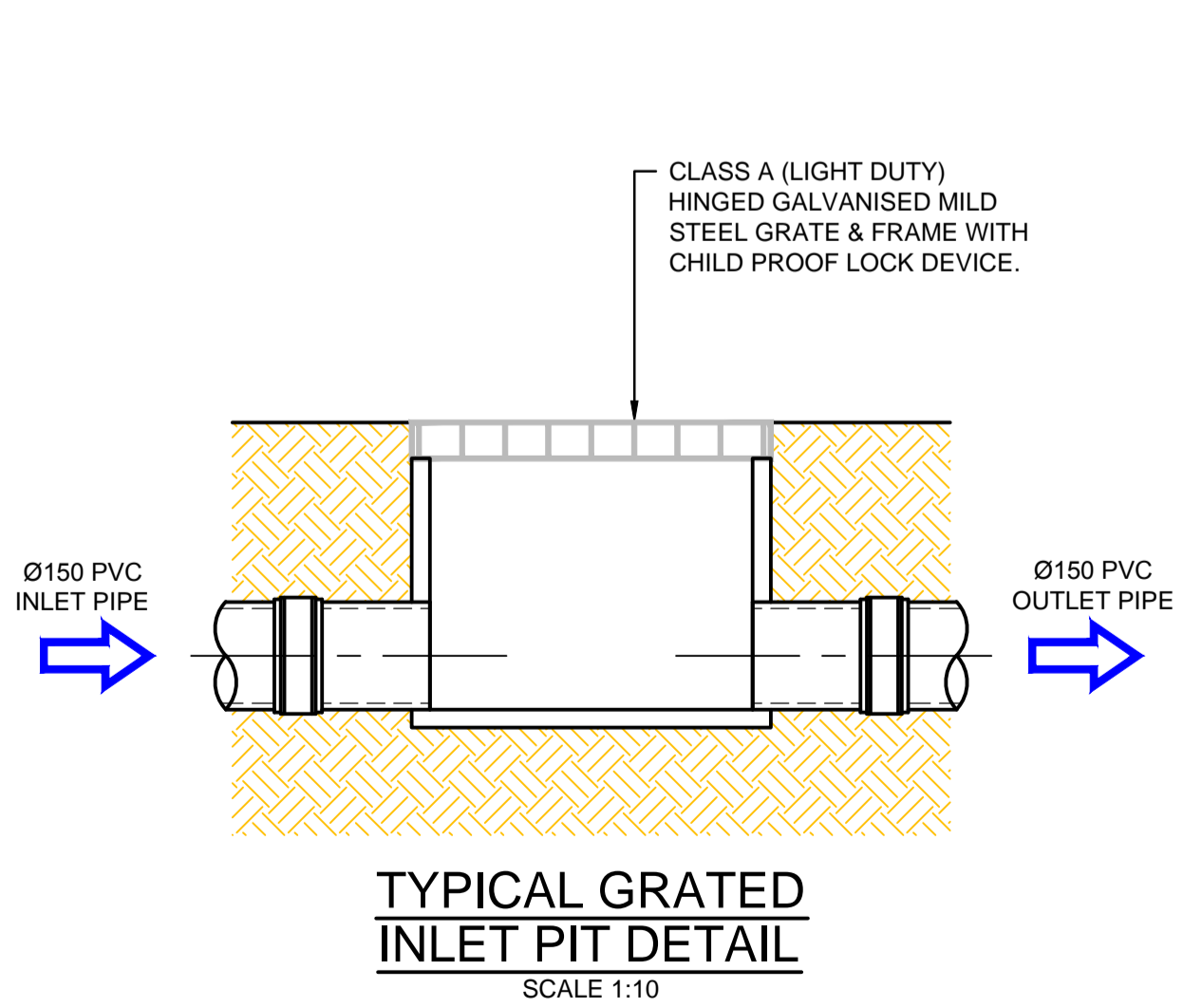
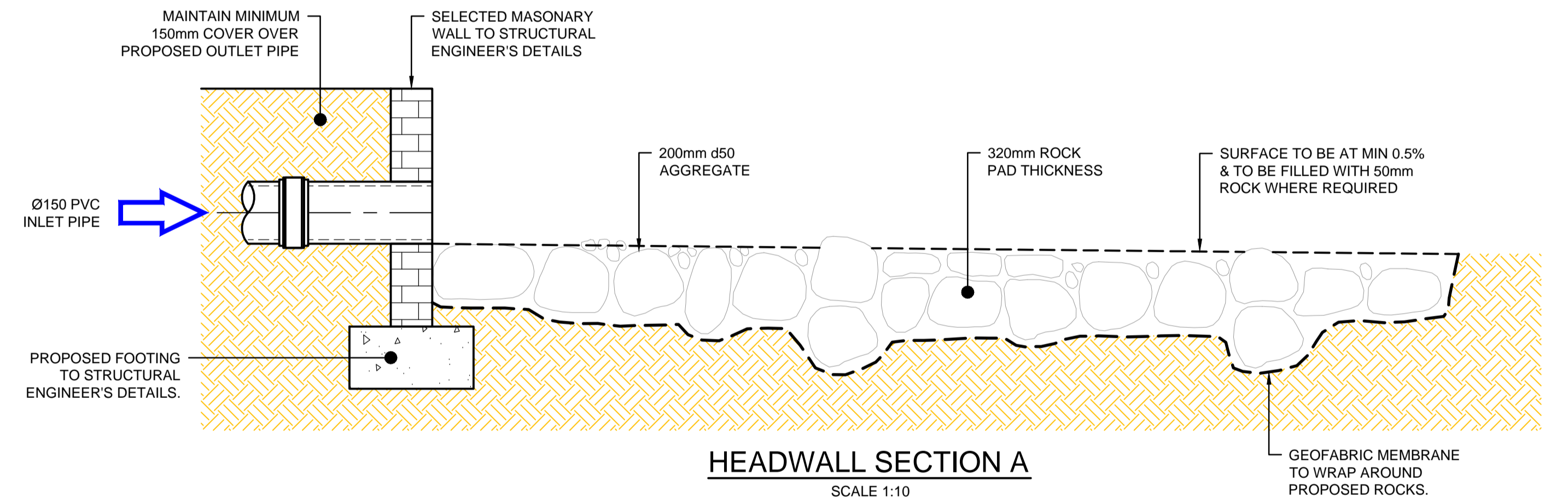
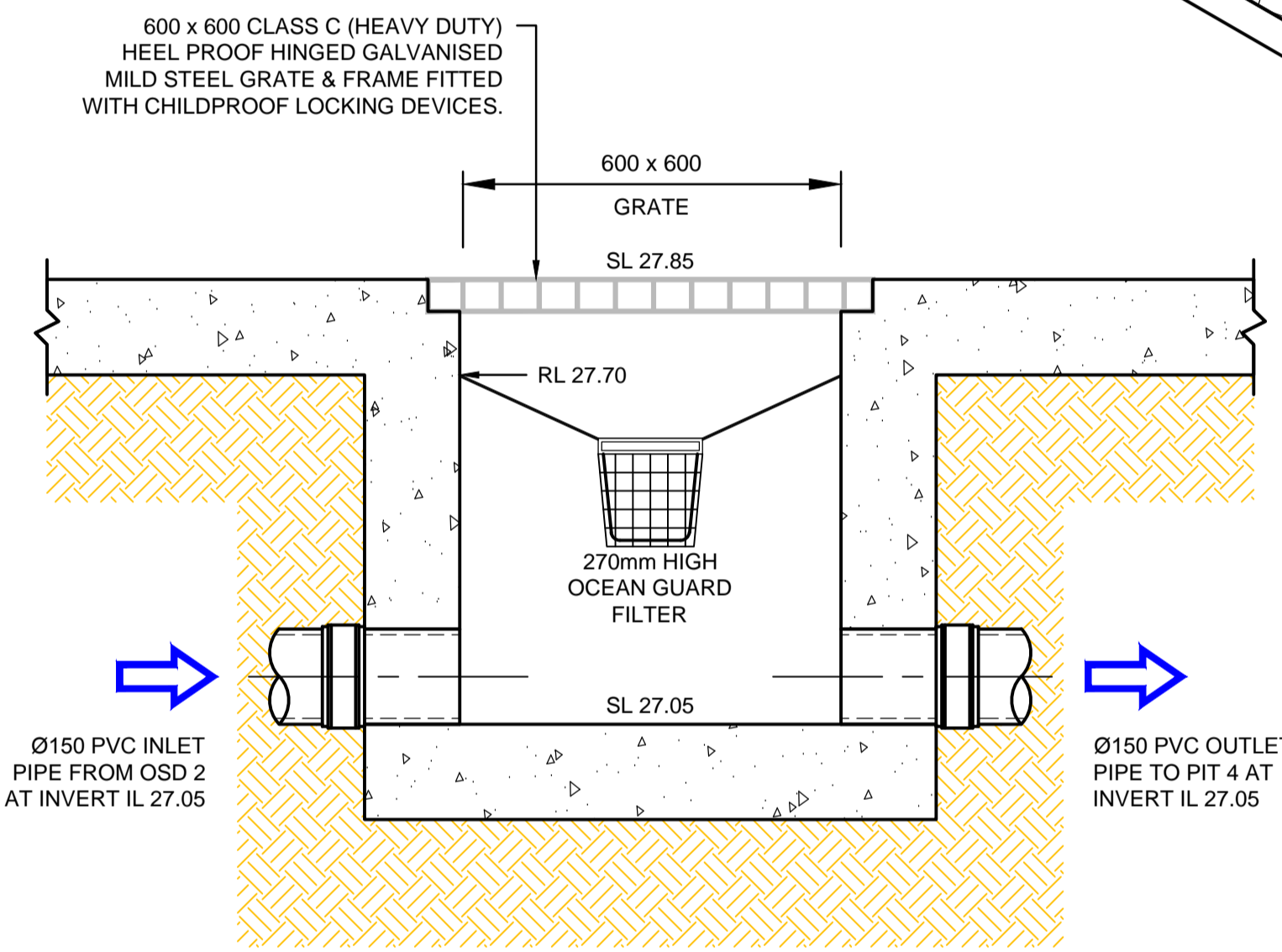
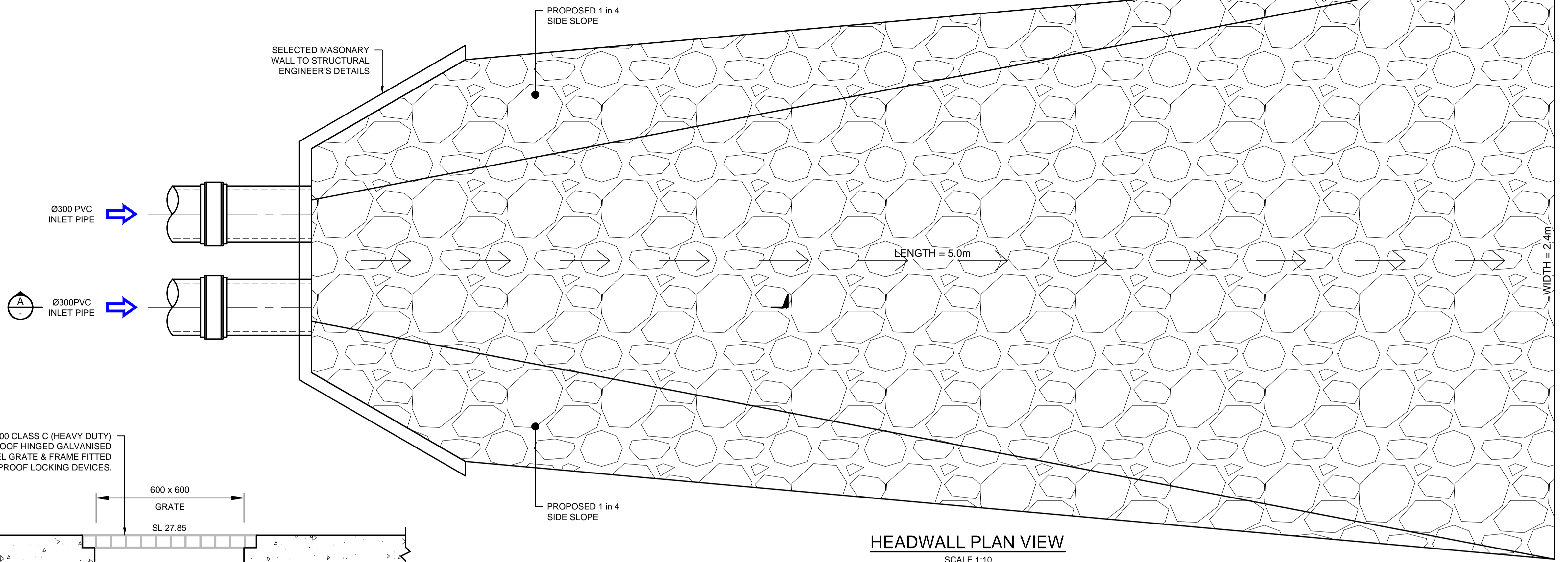
TYPICAL SWALE SECTION
SCALE 1:15

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- CONSTRUCTION NOTES**
- SUBGRADE FILL TO BE COMPACTED TO THE DENSITY OF THE SURROUNDING UNDISTURBED MATERIAL.
 - ENSURE THAT CONCRETE OR RIPRAP USED FOR ENERGY DISSIPATER OR OUTLET PROTECTION CONFORMS TO THE GRADING LIMITS SPECIFIED ON THE SWMP/ESCF.
 - ENSURE THAT THE GEOTEXTILE DOES NOT SUSTAIN SERIOUS DAMAGE BY PREPARING A SMOOTH, EVEN FOUNDATION.
 - 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.



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