

PROPOSED DEVELOPMENT

638 PITTWATER ROAD, BROOKVALE

STORMWATER PLANS

GENERAL NOTES

- G1. THE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL DRAWINGS AND SPECIFICATIONS AND OTHER WRITTEN INSTRUCTIONS THAT MAY BE ISSUED.
- G2. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING FROM THE DRAWINGS. REFER ARCHITECTS DRAWINGS FOR ALL DIMENSIONS.
- G3. REFER ANY DISCREPANCY TO THE ENGINEER/ARCHITECT.
- G4. MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE APPROPRIATE SAA SPECIFICATIONS OR CODE AND WITH THE REQUIREMENTS OF THE RELEVANT LOCAL AUTHORITY.
- G5. THE ALIGNMENT AND LEVEL OF ALL SERVICES SHOWN ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL CONFIRM THE POSITION AND LEVEL OF ALL SERVICES PRIOR TO COMMENCEMENT OF CONSTRUCTION. ANY DAMAGE TO SERVICES SHALL BE RECTIFIED AT THE CONTRACTORS EXPENSE.
- G6. NO WORKS ARE TO COMMENCE UNTIL THE REQUIRED TREE REMOVAL PERMITS HAVE BEEN GRANTED BY RELEVANT LOCAL AUTHORITY, AND THE APPROPRIATE NOTICE OF INTENTION TO COMMENCE GIVEN.
- G7. ALL SERVICES, OR CONDUITS FOR SERVICING SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF PAVEMENT CONSTRUCTION.
- G8. SUBSOIL DRAINAGE, COMPRISING 100 AGRICULTURE PIPE IN GEO-STOCKING TO BE PLACED AS SHOWN AND AS MAY BE DIRECTED BY THE SUPERINTENDENT. SUBSOIL DRAINAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT LOCAL AUTHORITY CONSTRUCTION SPECIFICATION.
- G9. NO WORK IS PERMITTED WITHIN ADJOINING PROPERTIES WITHOUT WRITTEN PERMISSION FROM THE OWNERS OR RESPONSIBLE AUTHORITY.

DRAINAGE NOTES

- D1. ALL DRAINAGE OUTLET LEVELS SHALL BE CONFIRMED ON SITE, PRIOR TO CONSTRUCTION COMMENCING.
- D2. ALL PIPES WITHIN THE PROPERTY TO BE MIN. 100 DIA UPVC @ 1% MIN. GRADE, UNO.
- D3. ALL PITS WITHIN THE PROPERTY ARE TO BE FITTED WITH 'WELDLOK' OR APPROVED EQUIVALENT GRATES:
- LIGHT DUTY FOR LANDSCAPED AREAS
 - HEAVY DUTY WHERE SUBJECTED TO VEHICULAR TRAFFIC
- D4. PITS WITHIN THE PROPERTY MAY BE CONSTRUCTED AS:
- 1) PRECAST STORMWATER PITS
 - 2) CAST INSITU MASS CONCRETE
 - 3) CEMENT RENDERED 230mm BRICKWORK
- SUBJECT TO THE RELEVANT LOCAL AUTHORITY CONSTRUCTION SPECIFICATION.
- D5. ENSURE ALL GRATES TO PITS ARE SET BELOW FINISHED SURFACE LEVEL WITHIN THE PROPERTY. TOP OF PIT RL'S ARE APPROXIMATE ONLY AND MAY BE VARIED SUBJECT TO APPROVAL OF THE ENGINEER. ALL INVERT LEVELS ARE TO BE ACHIEVED.
- D6. ANY PIPES BENEATH RELEVANT LOCAL AUTHORITY ROAD TO BE RUBBER RING JOINTED RCP, UNO.
- D7. ALL PITS IN ROADWAYS ARE TO BE FITTED WITH HEAVY DUTY GRATES WITH LOCKING BOLTS AND CONTINUOUS HINGE.
- D8. PROVIDE STEP IRONS TO STORMWATER PITS GREATER THAN 1200 IN DEPTH.
- D9. TRENCH BACK FILL IN ROADWAYS SHALL COMPRISE SHARP, CLEAN GRANULAR BACK FILL IN ACCORDANCE WITH THE RELEVANT LOCAL AUTHORITY SPECIFICATION TO NON-TRAFFICABLE AREAS TO BE COMPACTED BY RODDING AND TAMPING USING A FLAT PLATE VIBRATOR.
- D10. WHERE A HIGH EARLY DISCHARGE (HED) PIT IS PROVIDED ALL PIPES ARE TO BE CONNECTED TO THE HED PIT, UNO.
- D11. DOWN PIPES SHALL BE A MINIMUM OF DN100 SW GRADE UPVC OR 100X100 COLORBOND/ZINCALUME STEEL, UNO.
- D12. COLORBOND OR ZINCALUME STEEL BOX GUTTERS SHALL BE A MINIMUM OF 450 WIDE X 150 DEEP.
- D13. EAVES GUTTERS SHALL BE A MINIMUM OF 125 WIDE X 100 DEEP (OR OF EQUIVALENT AREA) COLORBOND OR ZINCALUME STEEL, UNO.
- D14. SUBSOIL DRAINAGE SHALL BE PROVIDED TO ALL RETAINING WALLS & EMBANKMENTS, WITH THE LINES FEEDING INTO THE STORMWATER DRAINAGE SYSTEM, UNO.

EARTHWORKS NOTES

- E1. THE EARTHWORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT.
- E2. THE SITE OF THE WORKS SHALL BE PREPARED BY STRIPPING ALL EXISTING TOPSOIL, FILL AND VEGETATION.
- E3. SUBGRADE SHALL BE COMPACTED UNTIL A DRY DENSITY HAS BEEN ACHIEVED OF NOT LESS THAN 100% OF THE STANDARD MAXIMUM DRY DENSITY WHEN TESTED IN ACCORDANCE WITH AS 1289 TESTS E.1.1. OR E.1.2.
- E4. THE EXPOSED SUBGRADE SHOULD BE PROOF ROLLED TO DETECT ANY SOFT OR WET AREAS WHICH SHOULD BE LOCALLY EXCAVATED AND BACK FILLED WITH SELECTED MATERIAL.
- E5. THE BACK FILLING MATERIAL SHALL BE IMPORTED GRANULAR FILL OF LOW PLASTICITY, PREFERABLY CRUSHED SANDSTONE, AND TO BE PLACED IN LAYERS NOT EXCEEDING 150 LOOSE THICKNESS AND COMPACTED TO 98% OF STANDARD DRY DENSITY AT A MOISTURE CONTENT WITHIN 2% OF OPTIMUM.
- E6. SITE WORKS ARE TO BE BATTERED TO ADJACENT PROPERTY LEVELS.
- E7. STORMWATER MUST NOT BE CONCENTRATED ON TO AN ADJACENT PROPERTY.
- E8. AT NO TIME DURING OR AFTER CONSTRUCTION IS STORMWATER TO BE PONDED ON ADJOINING PROPERTIES.
- E9. THE SITE SHALL BE GRADED AND DRAINED SO THAT STORMWATER WILL BE DIRECTED AWAY FROM THE BUILDING PLATFORM.
- E10. STORMWATER DRAINAGE SHALL BE PROVIDED AND MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION. ALL STORMWATER RUNOFF SHALL BE GRADED AWAY FROM THE SITE WORKS AND DISPOSED OF VIA SURFACE CATCHDRAINS AND STORMWATER COLLECTION PITS.
- E11. ALL SURFACE CATCH DRAINS SHALL BE GRADED AT 1% (1 IN 100) MINIMUM. THE GROUND SHALL GRADE AWAY FROM ANY DWELLING AT 5% (1 IN 20) FOR THE FIRST METRE THEN AT 2.5% (1 IN 40).
- E12. WHERE A CUT FILL PLATFORM IS USED THERE SHALL BE A MINIMUM BERM 1000 WIDE TO THE PERIMETER OF THE SITE WORKS WHICH SHALL BE SUPPORTED BY BATTERS OF 3:1 IN FILL.
- E13. ANY VERTICAL OR NEAR VERTICAL PERMANENT EXCAVATION (CUT) DEEPER THAN 600 IN MATERIAL OTHER THAN ROCK SHALL BE ADEQUATELY RETAINED OR BATTERED AT A MINIMUM OF 3:1.
- E14. WHERE BATTERS CANNOT BE PROVIDED TO SUPPORT THE CUT OR FILL, THEY SHALL BE ADEQUATELY RETAINED.
- E15. RETAINING WALLS ARE TO BE CONSTRUCTED WITH ADEQUATE SUBSOIL DRAINAGE.

CONCRETE PAVEMENT

- C1. SUBGRADE SHALL BE PREPARED AS OUTLINED IN EARTHWORKS.
- C2. PROVIDE JOINTING AT MINIMUM 6000 MAX. INTERVALS OR AS OTHERWISE SPECIFIED IN THE DRAWINGS.
- C3. CONCRETE SHALL COMPRISE A MIN. COMPRESSIVE STRENGTH OF 32MPa AT 28 DAYS IN ACCORDANCE WITH THE RELEVANT LOCAL AUTHORITY SPECIFICATION, UNO.
- C4. ANY SUB-BASE MATERIAL SHALL BE COMPACTED AS OUTLINED IN EARTHWORKS.
- C5. CONCRETE KERB AND GUTTER SHALL COMPRISE A MINIMUM COMPRESSIVE STRENGTH OF 25MPa, UNO.
- C6. CONCRETE WORKS ARE TO BE CURED BY ONE OF THE FOLLOWING MEANS:
- i) WETTING TWICE DAILY FOR THE FIRST THREE DAYS;
 - ii) USING AN APPROVED CURING COMPOUNDED FOR A MINIMUM OF 7 DAYS COMMENCING IMMEDIATELY AFTER POURING.

FLEXIBLE PAVEMENT NOTES

- F1. SUBGRADE SHALL BE PREPARED AS OUTLINED IN EARTHWORKS.
- F2. PAVEMENT MATERIAL SHALL CONSIST OF APPROVED OR RIPPED SANDSTONE, NATURAL GRAVEL OR FINE CRUSH ROCK AS PER THE RELEVANT COUNCIL AUTHORITY SPECIFICATION.
- F3. PAVEMENT MATERIALS SHALL BE SPREAD IN LAYERS NOT EXCEEDING 150 AND NOT LESS 75 COMPACTED THICKNESS.
- F4. PAVEMENT MATERIALS SHALL BE SIZED AND OF A STANDARD OUTLINED IN AS1141.
- F5. CRUSHED OR RIPPED SANDSTONE SHALL BE MINUS 75 NOMINAL SIZE DERIVED FROM SOUND, CLEAN SANDSTONE FREE FROM OVERBURDEN, CLAY SEAMS, SHALE AND OTHER DELETERIOUS MATERIAL.
- F6. PAVEMENT MATERIALS SHALL BE COMPACTED BY SUITABLE MEANS TO SATISFY THE FOLLOWING MINIMUM SPECIFICATIONS (AS PER AS1289.2)
- | DESCRIPTION | MEDIUM DENSITY RATIO |
|--------------------|----------------------|
| SUB-BASE | 98% MOD |
| BASE COURSE | 98% MOD |
| ASPHALTIC CONCRETE | 97% MOD |
- AND SUBJECT TO THE RELEVANT LOCAL AUTHORITY CONSTRUCTION SPECIFICATION.
- F7. TESTING FOR EACH LAYER SHALL BE UNDERTAKEN BY A N.A.T.A. REGISTERED LABORATORY IN ACCORDANCE WITH AS1289, AT NOT MORE THAN 50m INTERVALS AND A MINIMUM OF TWO PER LAYER. FURTHER FREQUENCY OF TESTING SHALL BE NO LESS THAN THAT REQUIRED BY AS3978.

PAVED AREAS NOTES

- A1. SUBGRADE SHALL BE PREPARED AS OUTLINED IN EARTHWORKS.
- A2. ALL PAVERS ARE TO BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION.
- A3. TRAFFICABLE AREAS:
- SUB-BASE TO BE 150 COMPACTED THICKNESS DGS75.
 - SUB-BASE TO BE SUITABLY COMPACTED TO MEDIUM DENSITY 98% MOD.
 - SUB-BASE TO EXTEND AT LEAST 200 BEYOND PAVED SURFACE.
 - PAVERS TO BE 80 THICK INTERLOCKING PAVERS ON 50 SAND BEDDING.
- A4. NON TRAFFICABLE AREAS:
- SUB BASE AS PER TRAFFICABLE AREAS
 - PAVERS TO BE 60 INTERLOCKING PAVERS ON 50 SAND BEDDING (UNO).

EROSION AND SEDIMENT NOTES

- B1. THIS PLAN TO BE READ IN CONJUNCTION WITH EROSION AND SEDIMENT CONTROL DETAILS AS ATTACHED.
- B2. THE CONTRACTOR SHALL IMPLEMENT ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS NECESSARY AND TO THE SATISFACTION OF THE RELEVANT LOCAL AUTHORITY PRIOR TO THE COMMENCEMENT OF AND DURING CONSTRUCTION. NO DISTURBANCE TO THE SITE SHALL BE PERMITTED OTHER THAN IN THE IMMEDIATE AREA OF THE WORKS AND NO MATERIAL SHALL BE REMOVED FROM THE SITE WITHOUT THE RELEVANT LOCAL AUTHORITY APPROVAL. ALL EROSION AND SEDIMENT CONTROL DEVICES TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH STANDARDS OUTLINED IN NSW DEPARTMENT OF HOUSING'S 'MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTIONS'.
- B3. TOPSOIL SHALL BE STRIPPED AND STOCKPILED OUTSIDE HAZARD AREAS SUCH AS DRAINAGE LINES. THIS TOPSOIL SHALL BE RESPREAD LATER ON AREAS TO BE REVEGETATED AND STABILISED ONLY, (I.E. ALL FOOTPATHS, BATTERS, SITE REGARDING AREAS, BASINS AND CATCHDRAINS). TOPSOIL SHALL NOT BE RESPREAD ON ANY OTHER AREAS UNLESS SPECIFICALLY INSTRUCTED BY THE SUPERINTENDENT. IF THEY ARE TO REMAIN FOR LONGER THAN ONE MONTH STOCKPILES SHALL BE PROTECTED FROM EROSION BY COVERING THEM WITH A MULCH AND HYDROSEEDING AND, IF NECESSARY, BY LOCATING BANKS OR DRAINS DOWNSTREAM OF A STOCKPILE TO RETARD SILT LADEN RUNOFF.
- B4. THE CONTRACTOR SHALL REGULARLY MAINTAIN ALL EROSION AND SEDIMENT CONTROL DEVICES AND REMOVE ACCUMULATED SILT FROM SUCH DEVICES SUCH THAT MORE THAN 60% OF THEIR CAPACITY IS LOST. ALL THE SILT IS TO BE PLACED OUTSIDE THE LIMIT OF WORKS. THE PERIOD FOR MAINTAINING THESE DEVICES SHALL BE AT LEAST UNTIL ALL DISTURBED AREAS ARE REVEGETATED AND FURTHER AS MAY BE DIRECTED BY THE SUPERINTENDENT OR COUNCIL.
- B5. LAY TURF STRIP (MIN 300 WIDE) ON 100 TOPSOIL BEHIND ALL KERB WITH 1000 LONG RETURNS EVERY 6000 AND AROUND STRUCTURES IMMEDIATELY AFTER BACKFILLING AS PER THE RELEVANT LOCAL AUTHORITY SPECIFICATION.
- B6. THE CONTRACTOR SHALL GRASS SEED ALL DISTURBED AREAS WITH AN APPROVED MIX AS SOON AS PRACTICABLE AFTER COMPLETION OF EARTHWORKS AND REGRADING.
- B7. VEHICULAR TRAFFIC SHALL BE CONTROLLED DURING CONSTRUCTION CONFINING ACCESS WHERE POSSIBLE TO NOMINATED STABILISED ACCESS POINTS.
- B8. WHEN ANY DEVICES ARE TO BE HANDED OVER TO COUNCIL THEY SHALL BE IN CLEAN AND STABLE CONDITION.
- B9. THE CONTRACTOR SHALL IMPLEMENT DUST CONTROL BY REGULAR WETTING DOWN (BUT NOT SATURATING) DISTURBED AREA.
- B10. PROVIDE AND MAINTAIN SILT TRAPS AROUND ALL SURFACE INLET PITS UNTIL CATCHMENT IS REVEGETATED OR PAVED.
- B11. REVEGETATE ALL TRENCHES IMMEDIATELY UPON COMPLETION OF BACKFILLING.
- B12. ALL DRAINAGE PIPE INLETS TO BE CAPPED UNTIL:
- DOWNPIPES CONNECTED
 - PITS CONSTRUCTED AND PROTECTED WITH SILT BARRIER

EROSION AND SEDIMENT NOTES

MINIMUM PIPE COVER SHALL BE AS FOLLOWS

LOCATION	MINIMUM COVER
NO SUBJECT TO VEHICLE LOADING	100mm SINGLE RESIDENTAL
SUBJECT TO VEHICLE LOADING	450mm WHERE NOT IN A ROAD
UNDER A SEALED ROAD	600mm
UNSEALED ROAD	750mm
PAVED DRIVEWAY	100mm PLUS DEPTH OF CONCRETE

SEE AS2032 INSTALLATION OF UPVC PIPES FOR FURTHER INFORMATION.

CONCRETE PIPE COVER SHALL BE IN ACCORDANCE WITH AS3725-1989 LOADS ON BURIED CONCRETE PIPES, HOWEVER A MINIMUM COVER OF 450mm WILL APPLY.


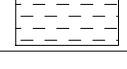
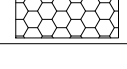
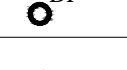
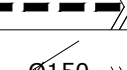
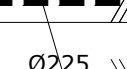





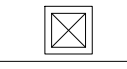

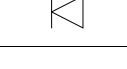
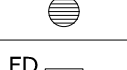

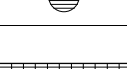
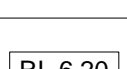

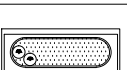
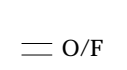
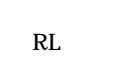
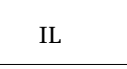



WHERE INSUFFICIENT COVER IS PROVIDED, THE PIPE SHALL BE COVERED AT LEAST 50mm THICK OVERLAY AND SHALL BE PAVED WITH AT LEAST:

- 150mm REINFORCED CONCRETE WHERE SUBJECT TO HEAVY VEHICLE TRAFFIC
- 75mm THICKNESS OF BRICK OR 100mm OF CONCRETE PAVING WHERE SUBJECT TO LIGHT VEHICLE TRAFFIC, OR
- 50mm THICK BRICK OR CONCRETE PAVING WHERE NOT SUBJECT TO VEHICLE TRAFFIC.

PIT SIZES AND DESIGN

DEPTH (mm)	MINIMUM PIT SIZE (mm)
UP TO 450mm	450 x 450
450mm TO 600mm	600 x 600 U.N.O
600mm TO 900mm	600 x 900 U.N.O
FROM 900mm	900 x 900 (WITH STEP IRON)

SYMBOLS

DESCRIPTION	
	DENOTE ON-SITE DETENTION TANK OR PUMP OUT TANK
	DENOTE ON-SITE DETENTION BASIN
	DENOTE ABSORPTION TRENCH
	DENOTES DOWNPIPE
	DENOTES 100mm DIA PVC (SEWER GRADE) AT 1% MIN. GRADE U.N.O
	DENOTES 150mm DIA PVC (SEWER GRADE) AT 1% MIN. GRADE U.N.O
	DENOTES 225mm DIA PVC (SEWER GRADE) AT 1% MIN. GRADE U.N.O
	DENOTES AGG. LINE
	DENOTES SEDIMENT FENCE
	DENOTES INSPECTION OPENING WITH SCREW DOWN LID AT FINISH SURFACE LEVEL
	DENOTES CLEANING EYE
	STORMWATER PIT - GRATED INLET
	STORMWATER PIT - SOLID COVER
	MAINTENANCE PIT
	NON RETURN VALVE
	DENOTE ROUND FLOOR DRAINS
	DENOTE SQUARE FLOOR DRAINS
	DENOTE PLANTER BOX DRAINS
	DENOTE GRATED DRAIN
	PROPOSED FINISH FLOOR LEVEL
	DENOTE EXISTING OVERLAND FLOW PATH
	DENOTE RAINWATER TANK
	DENOTE WATER OUTLET
	REDUCED LEVEL/SURFACE LEVELL
	INVERT LEVEL
	TOP OF KERB

SCHEDULE OF DRAWINGS

SHEET No	DESCRIPTION
COVER	GENERAL NOTES
SW01	SEDIMENT AND EROSION CONTROL PLAN
SW02	BASEMENT 3 DRAINAGE PLAN
SW03	BASEMENT 2 & 1 DRAINAGE PLAN
SW04	GROUND FLOOR DRAINAGE PLAN
SW05	STORMWATER SECTIONS AND DETAILS
SW06	WATER SENSITIVE URBANE DESIGN

CONCEPT PLAN FOR COORDINATION

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A	ISSUED FOR COORDINATION	02-07-2018
REVISION	AMENDMENT	ISSUE DATE



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PROJECT
**PROPOSED DEVELOPMENT
638 PITTWATER ROAD,
BROOKVALE**

DRAWING TITLE
GENERAL NOTES

DRAWING NO. A8256 - COVER	DESIGNED MD	DRAFTED SH
	APPROVED JM	REVISION A

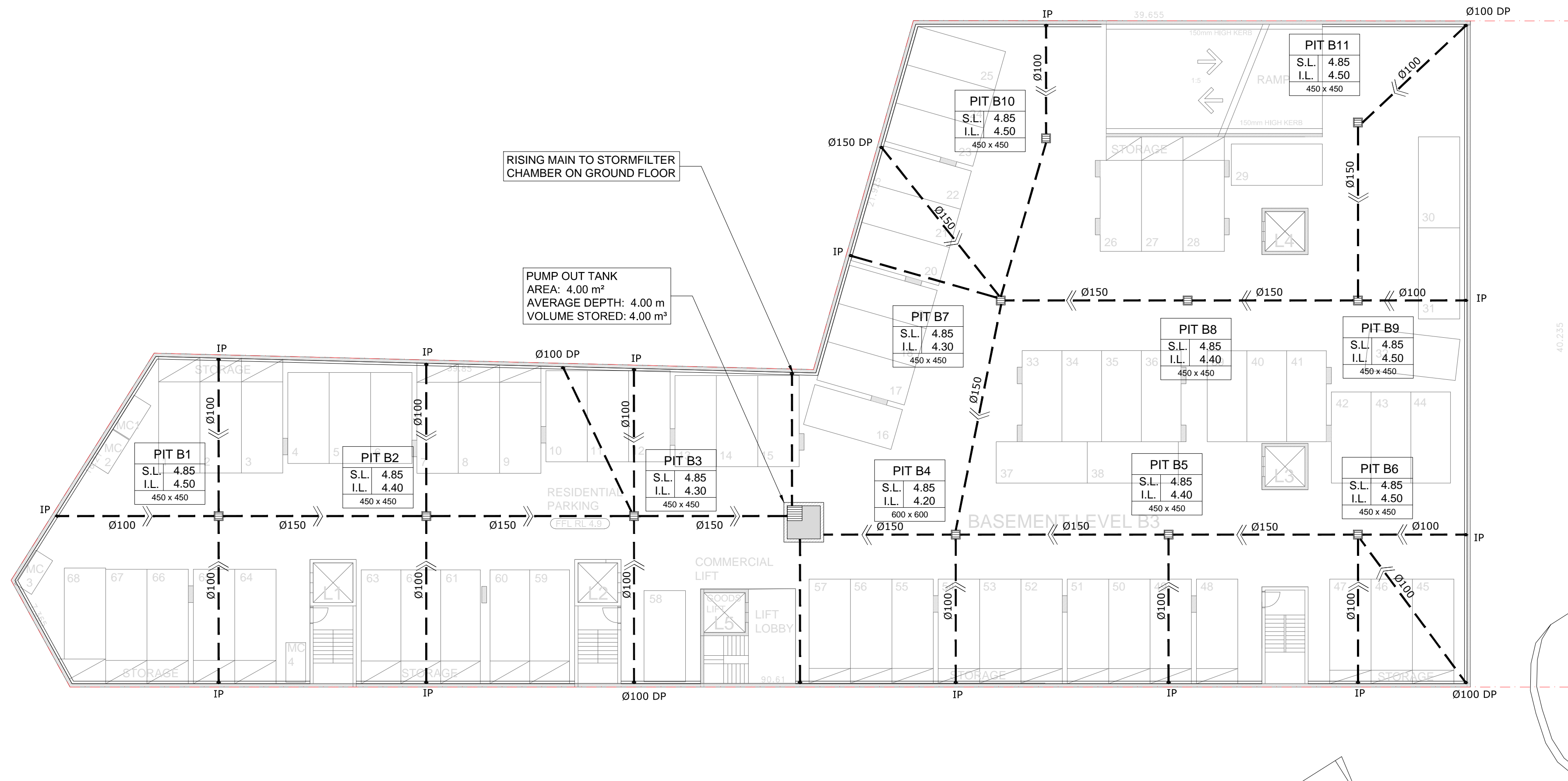


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CONCEPT PLAN FOR COORDINATION

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1 BASEMENT 3 DRAINAGE PLAN

1:200 @ A1

ALL DRAINAGE LINES SHALL BE UPVC (CLASS SH)
STORMWATER DRAINAGE PIPE, UNO.

ALL DRAINAGE LINES SHALL BE LAID @ 1% FALL MIN, UNO.
FIRST FLUSH RAINWATER DEVICES TO BE FITTED TO DRAINAGE LINES
TO BUILDER'S DETAIL, TYPICAL MINIMUM EFFECTIVE EAVES GUTTER
SIZE = 6700 mm²
MINIMUM EFFECTIVE EAVES GUTTER SLOPE = 1:500

THE FOLLOWING SYMBOLS & ABBREVIATIONS HAVE BEEN USED:

DP = Ø150, UNO.
FD = FLOOR OUTLET, REFER TO DETAIL
SIP = SURFACE INLET PIT (NO LINTEL)
100Ø = Ø100 CHARGED LINE
IP = Ø150 INSPECTION POINT
RWH = RAIN WATER HEAD
RWO = RAIN WATER OUTLET (300 x 300)
FG = FLOOR GULLY Ø150
S^{IP} = RAINWATER SPREADER
RL 6.20 = PROPOSED FINISHED SURFACE LEVEL
HR = HEAD ROOM UNDER PIPE

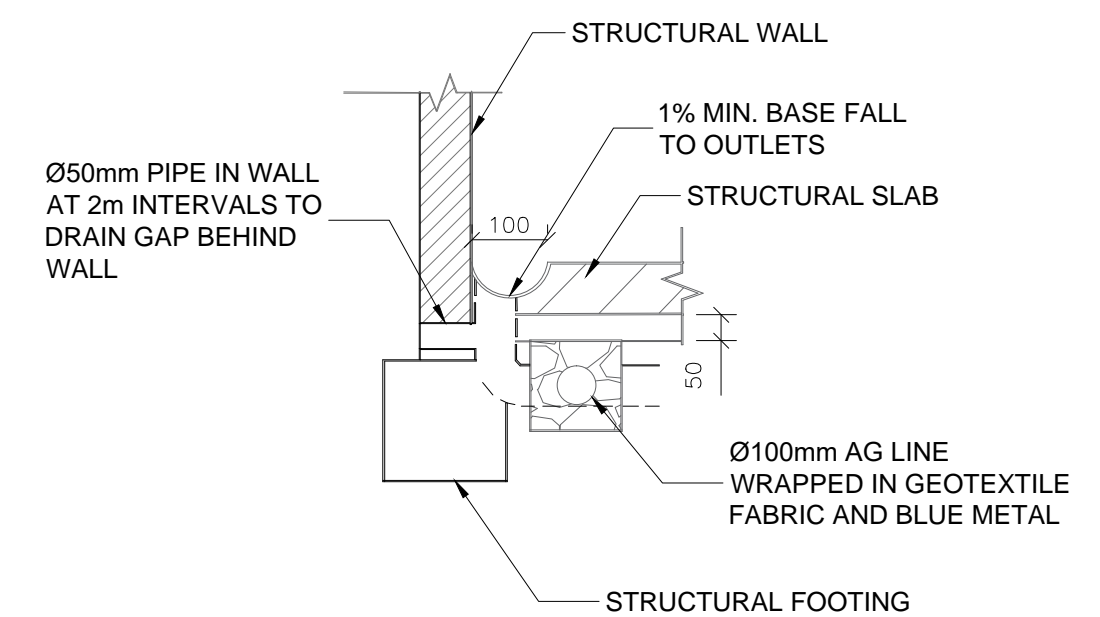
- BASEMENT SLAB TO HAVE 1% MIN. FALL TO INLET PIT AS PER AS2890 REQUIREMENT
- ALL BASEMENT PIT TO BE FITTED WITH HEAVY DUTY CLASS C GRATE & FRAME

PUMP DESIGN SUMMARY

CATCHMENT AREA = 0.00 m² (NO UNDER COVER AREA)
PUMP OUT TANK VOLUME PROVIDED = 4.0 m³ (MINIMUM
VOLUME AS PER AS STANDARD)

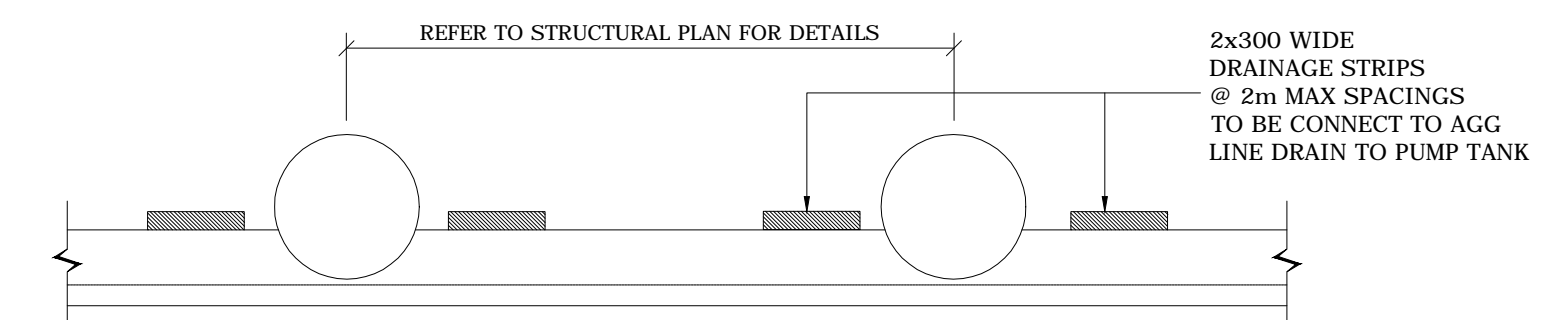
PUMP HEAD = 4 m

PUMP RATE REQUIRED = 210 x 43.4 / 3600 = 3 l/s



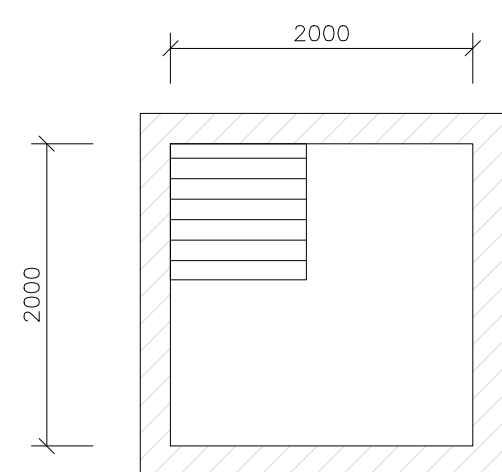
2 SECTION - SUBSOIL DRAINAGE DETAILS

1:10



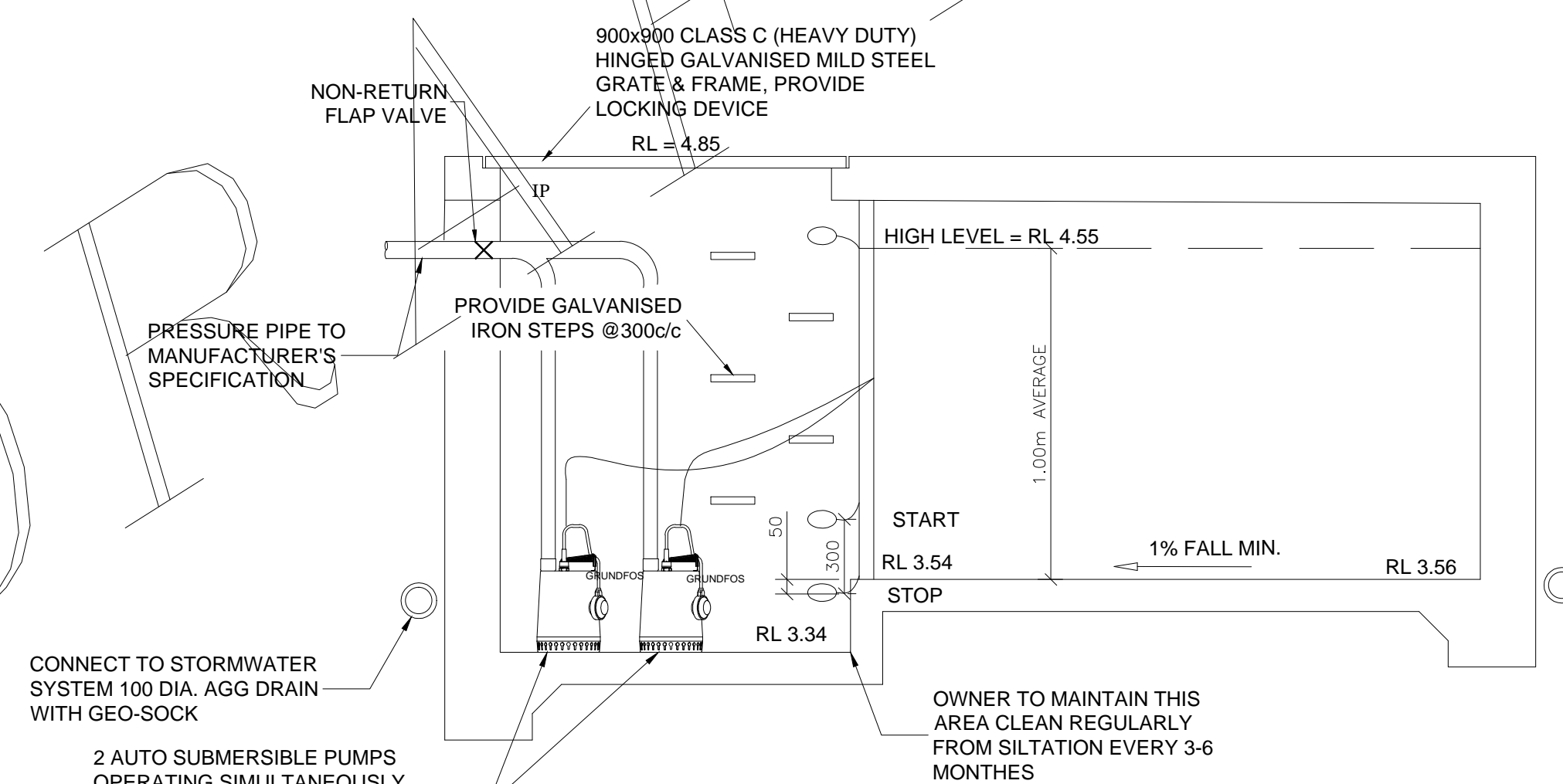
3 SECTION - SHOTCRETE WALL DRAINAGE

NTS



4 PUMP OUT TANK PLAN

1:100 @ A1



5 SECTION - SUBSOIL DRAINAGE PUMPOUT PIT

1:20

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PROJECT
**PROPOSED DEVELOPMENT
638 PITTWATER ROAD,
BROOKVALE**

DRAWING TITLE		
BASEMENT 3 DRAINAGE PLAN		
SCALES AS SHOWN	DESIGNED MD	DRAFTED SH
DRAWING NO. A8256 - SW02	APPROVED JM	REVISION A



BASEMENT 2 DRAINAGE PLAN

1:200 @ A1

ALL DRAINAGE LINES SHALL BE UPVC (CLASS SH)
STORMWATER DRAINAGE PIPE, UNO.

ALL DRAINAGE LINES SHALL BE LAID @ 1% FALL MIN, UNO.
FIRST FLUSH RAINWATER DEVICES TO BE FITTED TO DRAINAGE LINES
TO BUILDER'S DETAIL, TYPICAL MINIMUM EFFECTIVE EAVES GUTTER
SIZE = 6700 mm²
MINIMUM EFFECTIVE EAVES GUTTER SLOPE = 1:500

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- 100Ø = Ø100 CHARGED LINE
- IP = Ø150 INSPECTION POINT
- RWH = RAIN WATER HEAD
- RWO = RAIN WATER OUTLET (300 x 300)
- FG = FLOOR GULLY Ø150
- S_{DP} = RAINWATER SPREADER
- RL 6.20 = PROPOSED FINISHED SURFACE LEVEL

- BASEMENT SLAB TO HAVE 1% MIN. FALL TO INLET PIT AS PER AS2890 REQUIREMENT
- ALL BASEMENT PIT TO BE FITTED WITH HEAVY DUTY CLASS C GRATE & FRAME

BASEMENT 1 DRAINAGE PLAN

1:200 @ A1

ALL DRAINAGE LINES SHALL BE UPVC (CLASS SH)
STORMWATER DRAINAGE PIPE, UNO.

ALL DRAINAGE LINES SHALL BE LAID @ 1% FALL MIN, UNO.
FIRST FLUSH RAINWATER DEVICES TO BE FITTED TO DRAINAGE LINES
TO BUILDER'S DETAIL, TYPICAL MINIMUM EFFECTIVE EAVES GUTTER
SIZE = 6700 mm²
MINIMUM EFFECTIVE EAVES GUTTER SLOPE = 1:500

THE FOLLOWING SYMBOLS & ABBREVIATIONS HAVE BEEN USED:

- DP = Ø150, UNO.
- FD = FLOOR OUTLET, REFER TO DETAIL
- SIP = SURFACE INLET PIT (NO LINTEL)
- 100Ø = Ø100 CHARGED LINE
- IP = Ø150 INSPECTION POINT
- RWH = RAIN WATER HEAD
- RWO = RAIN WATER OUTLET (300 x 300)
- FG = FLOOR GULLY Ø150
- S_{DP} = RAINWATER SPREADER
- RL 6.20 = PROPOSED FINISHED SURFACE LEVEL
- HR = HEAD ROOM UNDER PIPE

- BASEMENT SLAB TO HAVE 1% MIN. FALL TO INLET PIT AS PER AS2890 REQUIREMENT
- ALL BASEMENT PIT TO BE FITTED WITH HEAVY DUTY CLASS C GRATE & FRAME

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CONCEPT PLAN FOR COORDINATION

A	ISSUED FOR COORDINATION	02-07-2018
REVISION	AMENDMENT	ISSUE DATE



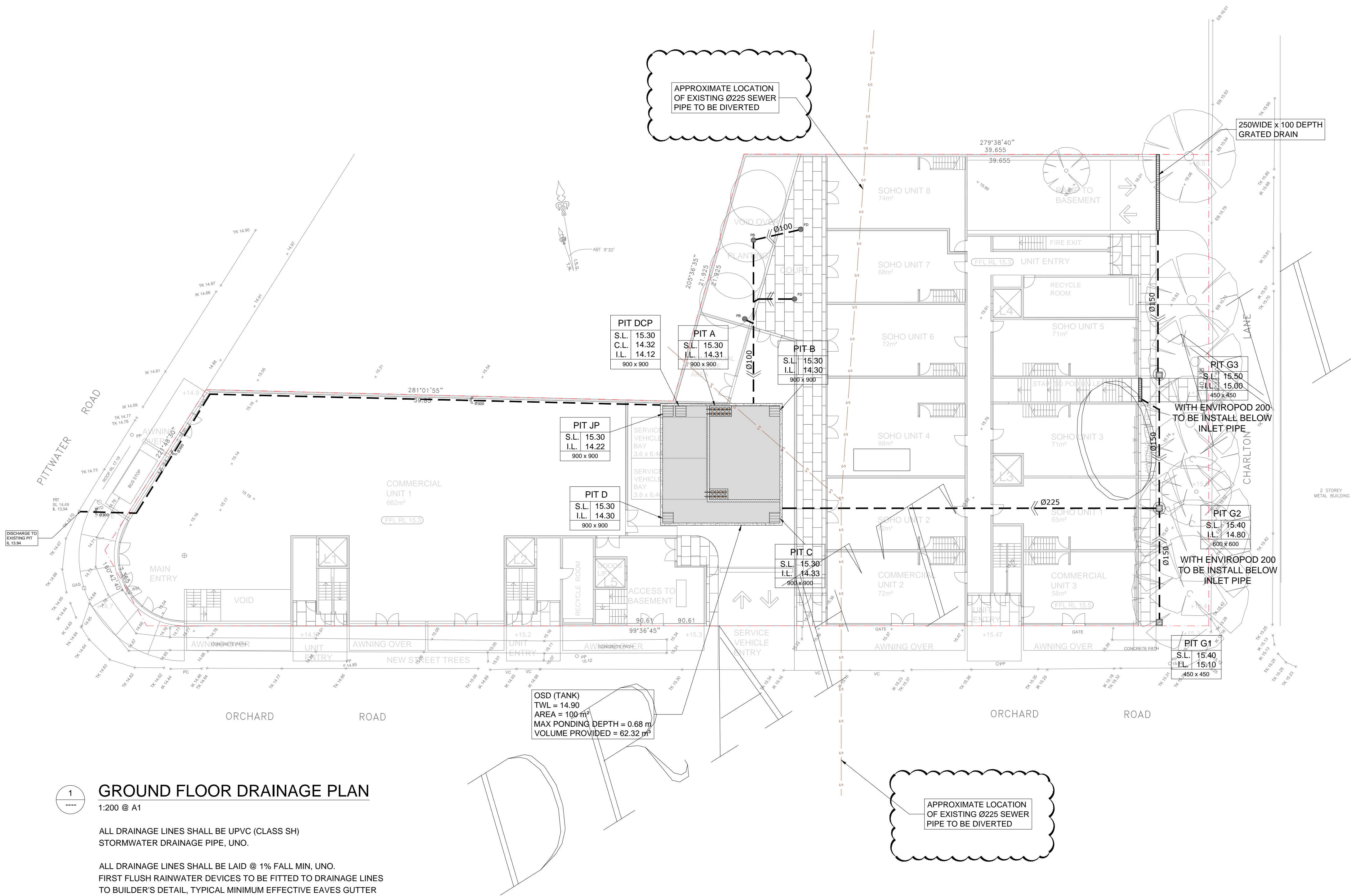
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PROJECT
**PROPOSED DEVELOPMENT
638 PITTWATER ROAD,
BROOKVALE**

DRAWING TITLE		
BASEMENT 2 & 1 DRAINAGE PLAN		
SCALES AS SHOWN	DESIGNED MD	DRAFTED SH
DRAWING NO. A8256 - SW03	APPROVED JM	REVISION A



DESIGN SUMMARY

SITE DISCHARGE CALCULATIONS:

	5 YEAR ARI	20 YEAR ARI	100 YEAR ARI
ALLOWED PEAK SITE DISCHARGE	46 L/s	78 L/s	114 L/s
ACHIEVED PEAK SITE DISCHARGE	46 L/s	56 L/s	102 L/s

THE PREDEVELOPED SITE HAS BEEN MODELLED AS 100% PERVIOUS IN ACCORDANCE WITH WARRINGAH (NOW NORTHERN BEACHES) COUNCIL REQUIREMENT OUTLINED IN THE 'ONSITE STORMWATER DETENTION TECHNICAL SPECIFICATION'.

ON-SITE DETENTION:

- PSD IS SET AT THE PREDEVELOPED STORM EVENT BASED ON A 0% IMPERVIOUS SITE AREA.
- BY PASS AREA/PERCENTAGE = 0% (ALL STORMWATER RUNOFF IS ROUTED THROUGH THE OSD)
- ON-SITE DETENTION STORAGE REQUIRED = 52.00m³
- ON-SITE DETENTION STORAGE PROVIDED = 62.32m³

ON-SITE DETENTION SUMMARY:

- TOP WATER LEVEL = RL14.90
- OVERFLOW LEVEL = RL14.90
- ORIFICE INVERT LEVEL = 14.22
- ORIFICE DIAMETER = 195mm

1 GROUND FLOOR DRAINAGE PLAN

1:200 @ A1

ALL DRAINAGE LINES SHALL BE UPVC (CLASS SH) STORMWATER DRAINAGE PIPE, UNO.

ALL DRAINAGE LINES SHALL BE LAID @ 1% FALL MIN, UNO.
FIRST FLUSH RAINWATER DEVICES TO BE FITTED TO DRAINAGE LINES TO BUILDER'S DETAIL, TYPICAL MINIMUM EFFECTIVE EAVES GUTTER SIZE = 6700 mm²
MINIMUM EFFECTIVE EAVES GUTTER SLOPE = 1:500

THE FOLLOWING SYMBOLS & ABBREVIATIONS HAVE BEEN USED:

- DP = Ø150, UNO.
- FD = FLOOR OUTLET, REFER TO DETAIL
- SIP = SURFACE INLET PIT (NO LINTEL)
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- FG = FLOOR GULLY Ø150
- S^{DP} = RAINWATER SPREADER
- RL 6.20 = PROPOSED FINISHED SURFACE LEVEL

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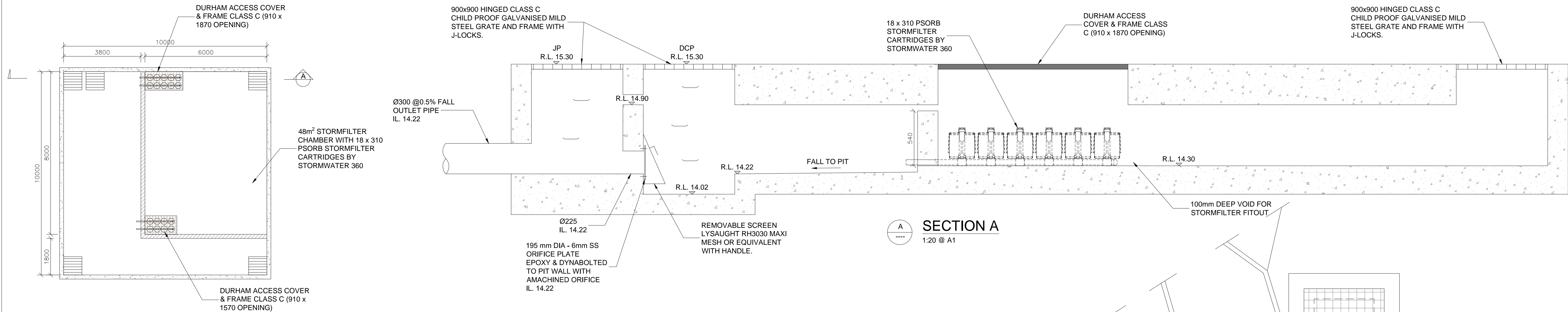
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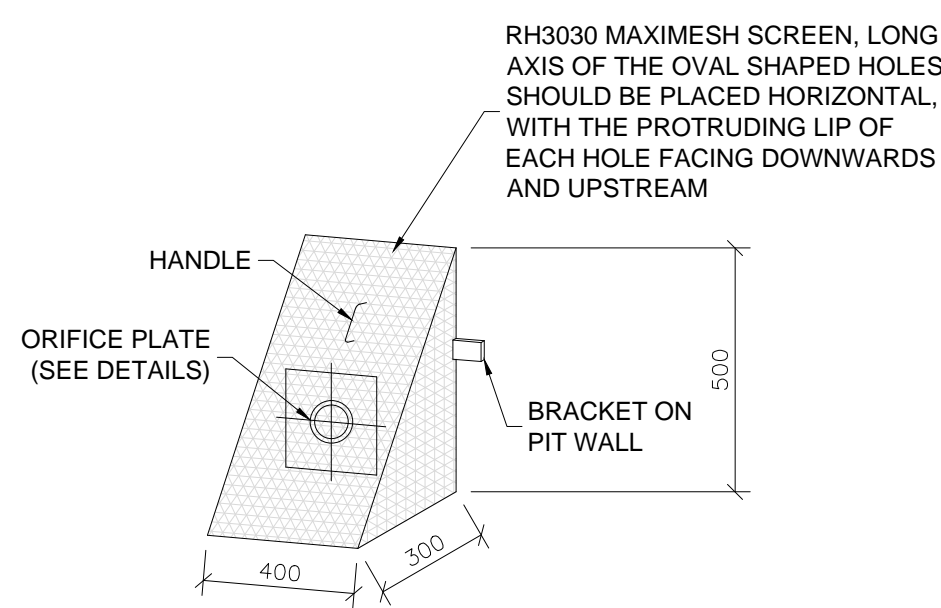
PROJECT
**PROPOSED DEVELOPMENT
638 PITTWATER ROAD,
BROOKVALE**

DRAWING TITLE
GROUND FLOOR DRAINAGE PLAN

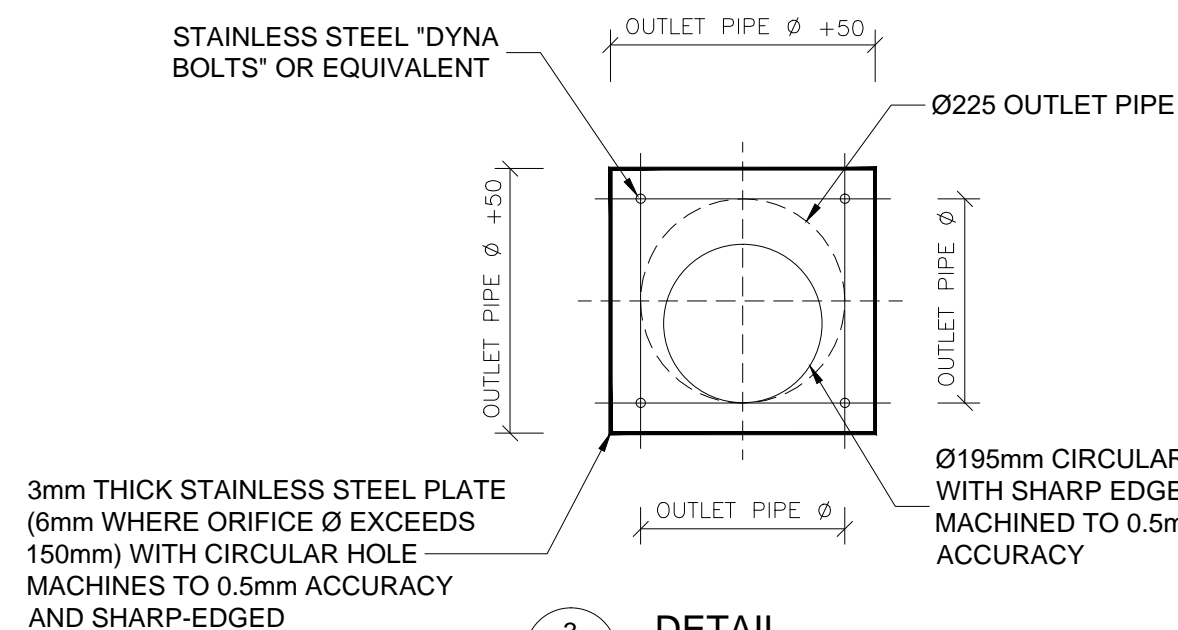
SCALES AS SHOWN	DESIGNED MD	DRAFTED SH
DRAWING NO. A8256 - SW04	APPROVED JM	REVISION A



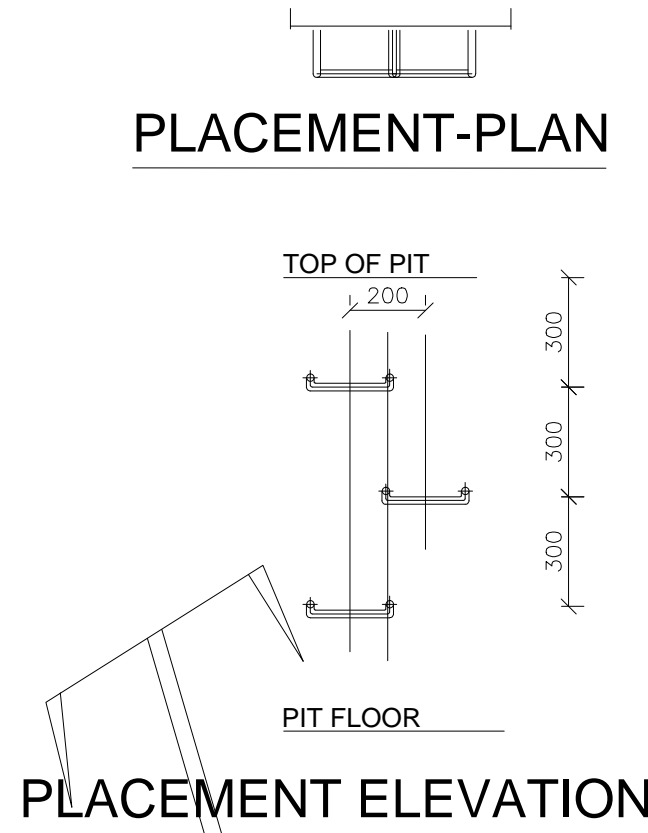
1 OSD TANK PLAN
1:100 @ A1



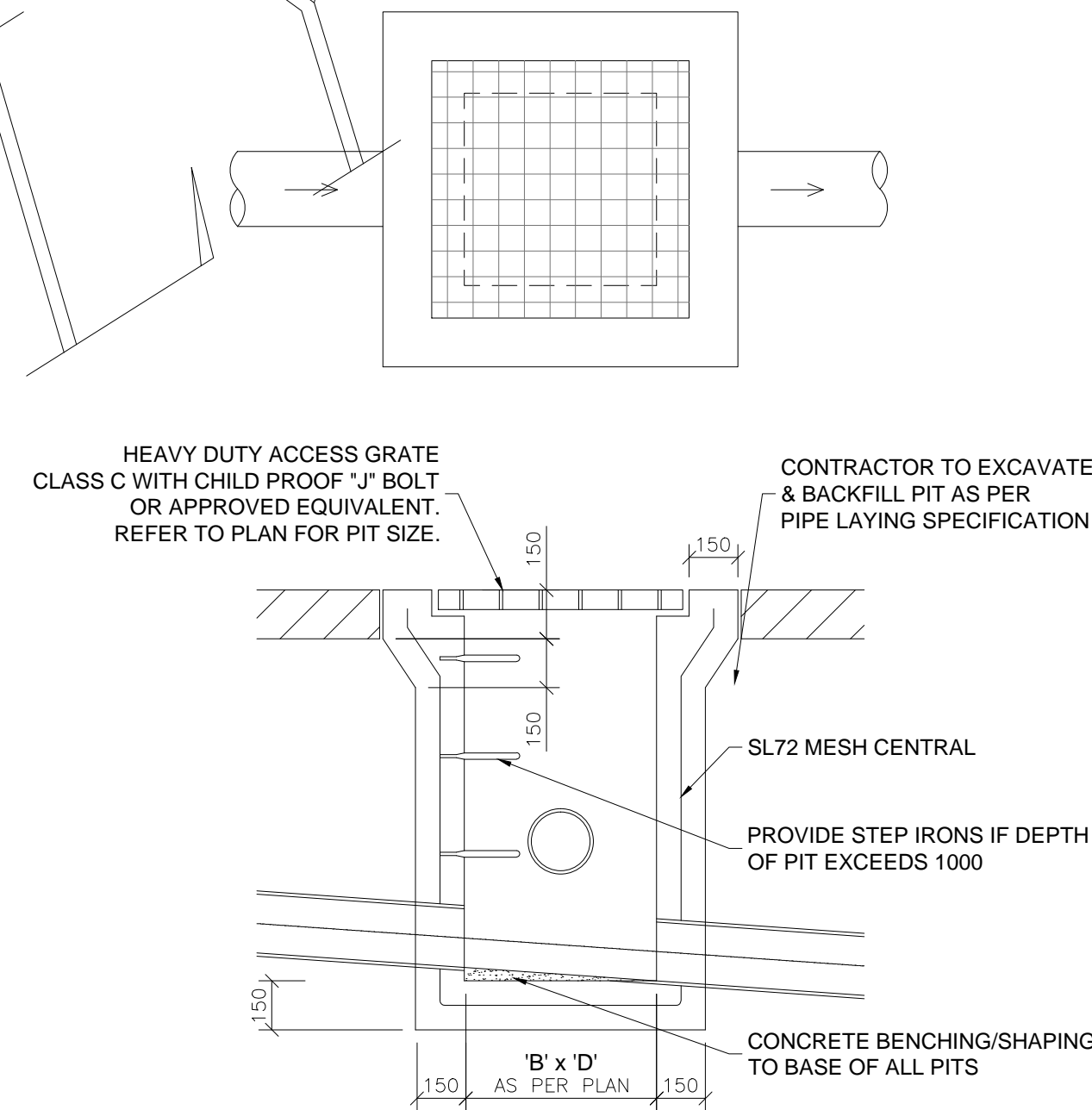
2 DETAIL - STANDARD TRASH SCREEN
1:20



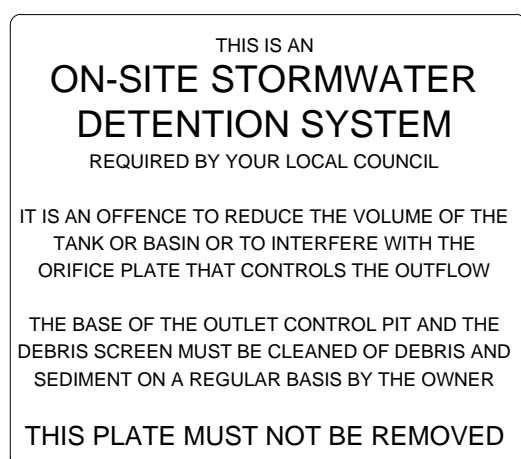
3 DETAIL ORIFICE PLATE
1:10



4 TYPICAL STEP IRONS
1:20

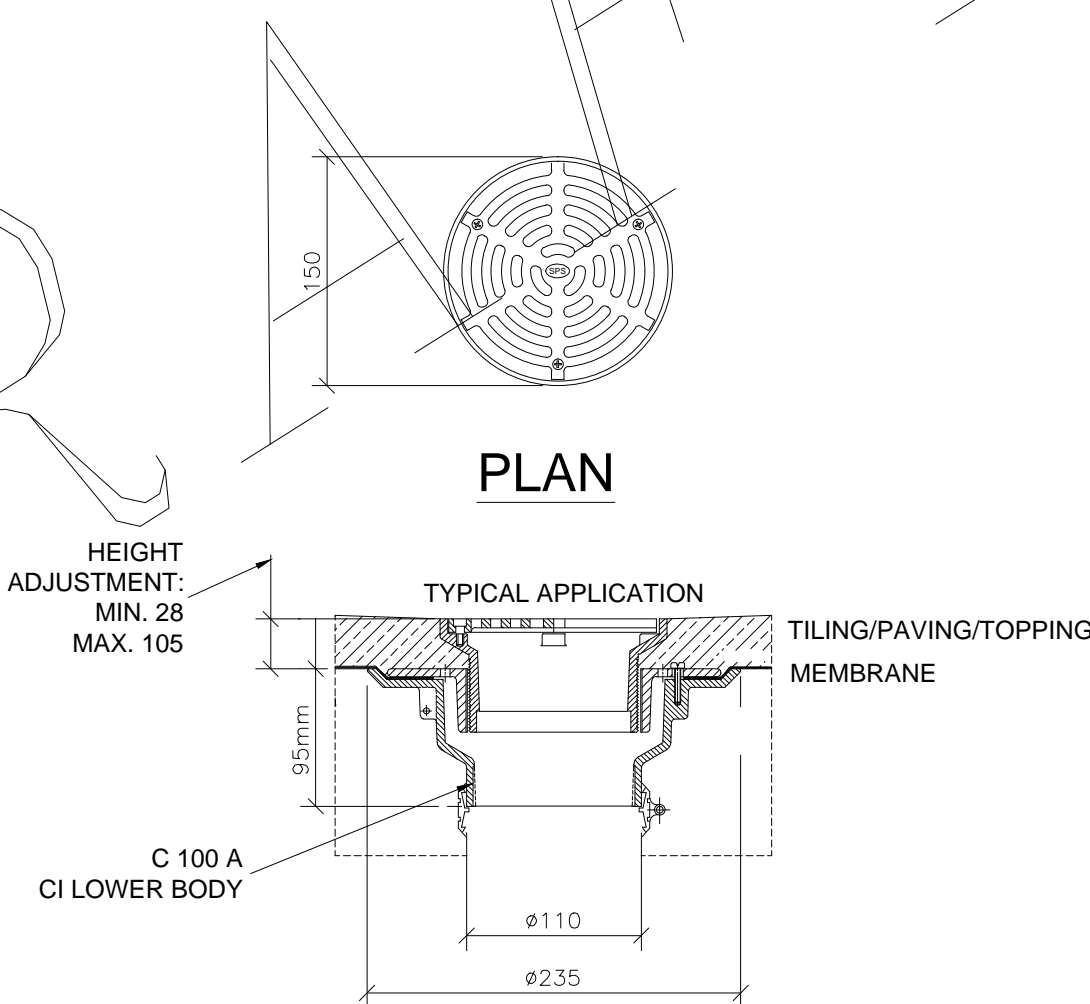


5 SECTION - TYPICAL SURFACE INLET PIT
1:5 @ A1
TYPICAL FOR ALL PITS IN DRIVEWAY/CARPAK AREAS

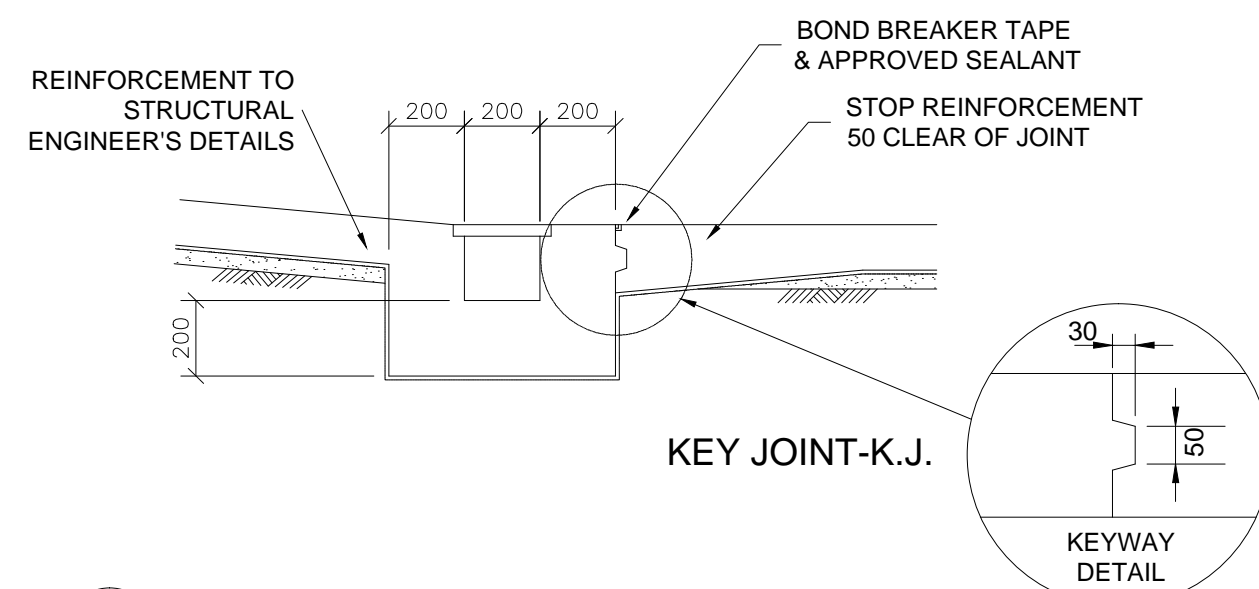


7 DETAIL - CONFINED SPACE SIGN TO BE PLACED INSIDE OSD TANK & BASEMENT PUMPOUT PIT
NTS

6 DETAIL OSD SIGN
NTS



8 SECTION - TYPICAL Ø150 FLOOR DRAIN (FD) INLET IN SUSPENDED SLAB
1:5 @ A1
SPECIFICATION CODE:
R150 G/C (BRONZE GRATE, CI LOWER BODY)
R150 N/C (NICKEL - BRONZE GRATE, CI LOWER BODY)
R150 S/C (316 STAINLESS STEEL GRATE, CI LOWER BODY)



9 SECTION - TYPICAL GRATED DRAIN
1:20



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A	ISSUED FOR COORDINATION	02-07-2018
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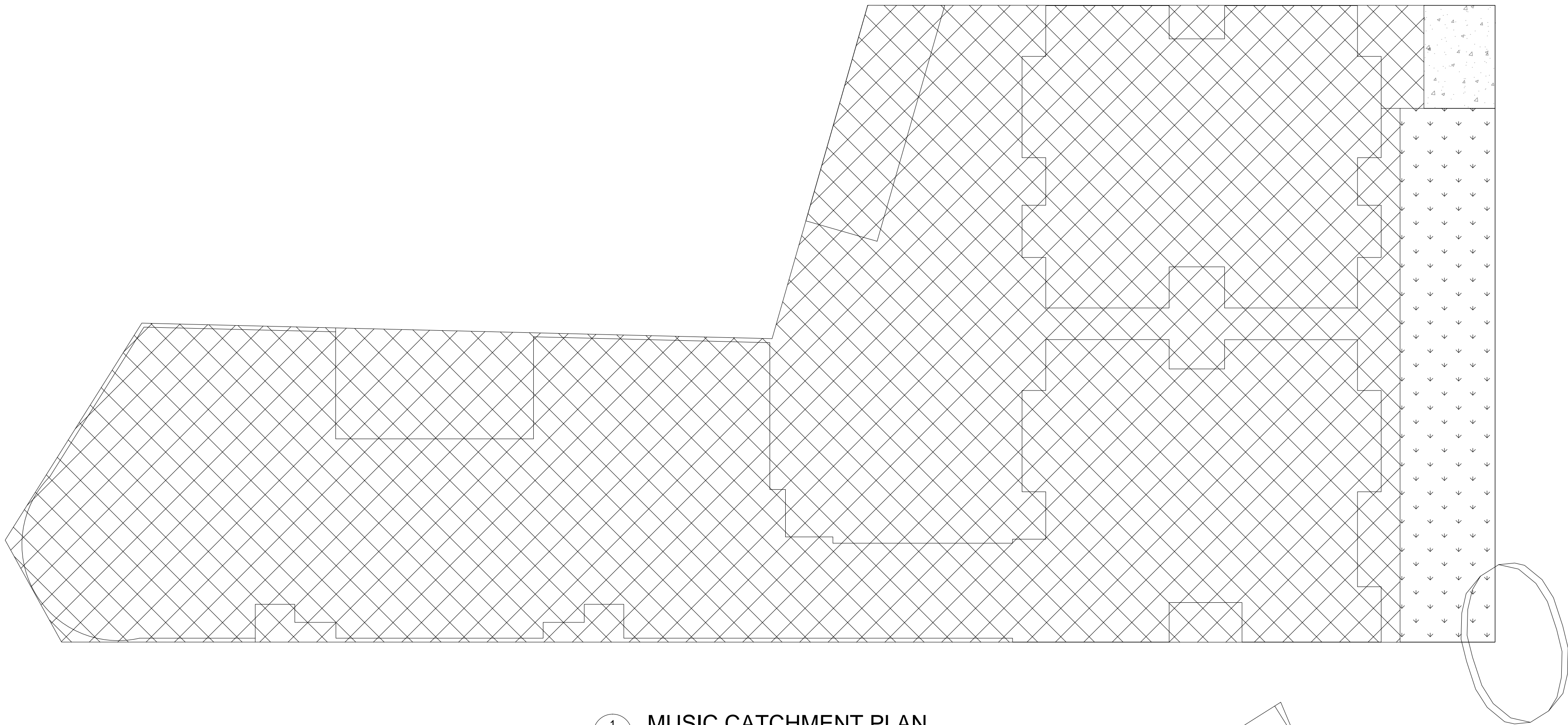
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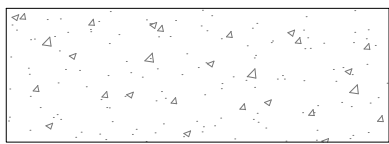
PROJECT
PROPOSED DEVELOPMENT
638 PITTWATER ROAD,
BROOKVALE

DRAWING TITLE		
STORMWATER SECTIONS AND DETAILS		
SCALES AS SHOWN	DESIGNED MD	DRAFTED SH
DRAWING NO. A8256 - SW05	APPROVED JM	REVISION A

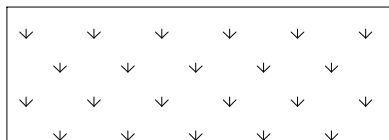


1 MUSIC CATCHMENT PLAN
1:200 @ A1

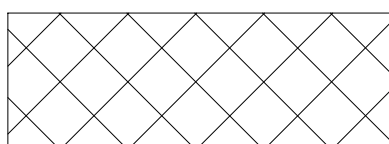
TOTAL SITE AREA = 2662 m²



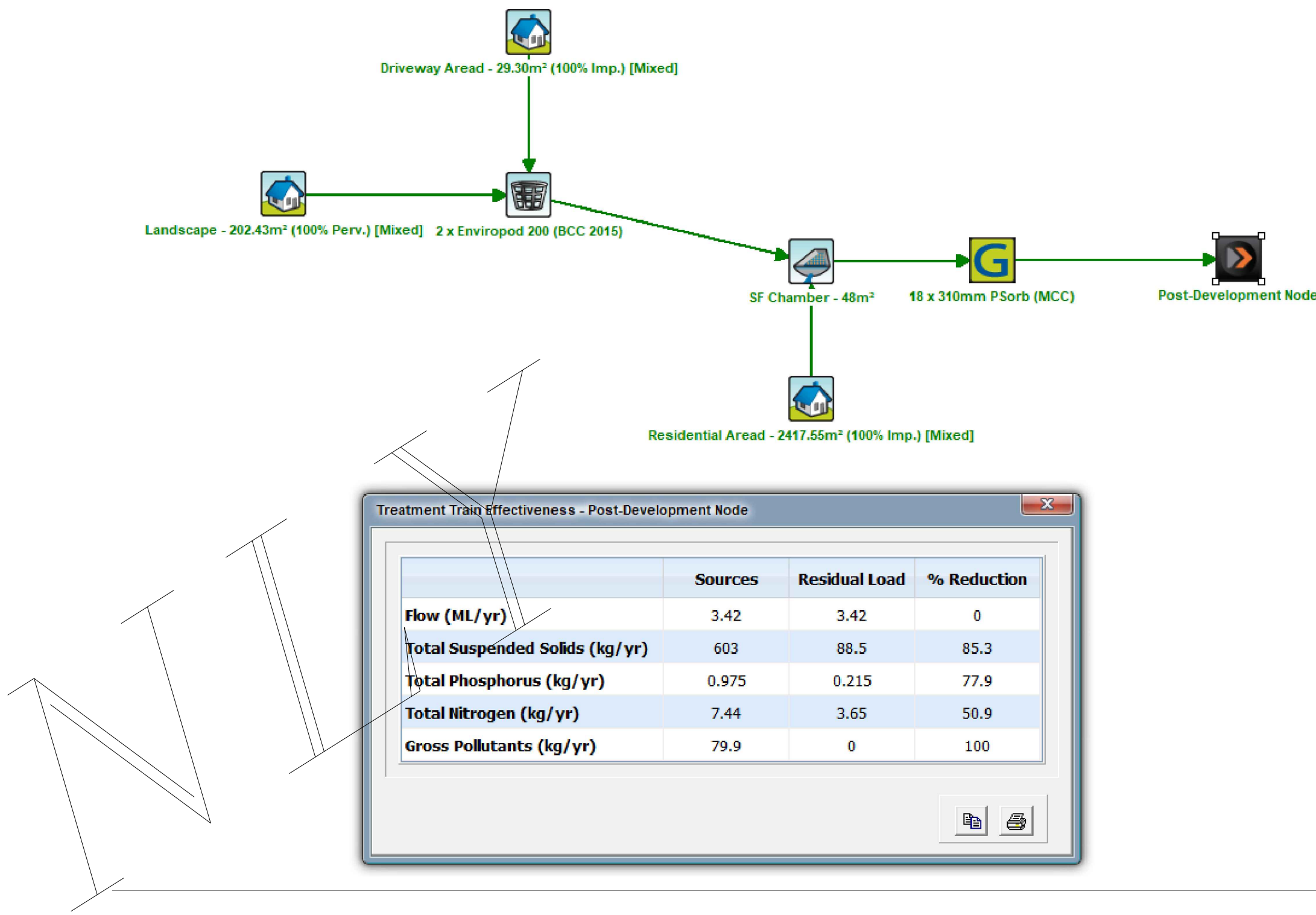
DRIVEWAY AREA = 29.30m² (100% IMP.)



LANDSCAPE AREA = 202.43 m² (100% PER.)



RESIDENTIAL AREA = 2417.55 m² (100% IMP.)



2 MUSIC MODEL LAYOUT & RESULTS
NTS
• SF CHAMBER NODE MODELLLED WITH "K" VALUE SET TO 1

Table 4 – General Stormwater Quality Requirements

Pollutant	Performance Requirements
Total Phosphorous	65% reduction in the post development mean annual load ¹
Total Nitrogen	45% reduction in the post development mean annual load ¹
Total Suspended Solids	85% reduction in the post development mean annual load ¹
Gross Pollutants	90% reduction in the post development mean annual load ¹ (for pollutants greater than 5mm in diameter)
pH	6.5 - 8.5
Hydrology	The post-development peak discharge must not exceed the pre-development peak discharge for flows up to the 2 year ARI

3 WSUD REQUIREMENT
NTS

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CONCEPT PLAN FOR COORDINATION

			<div>Alpha Engineering & Development</div>	<div>Phone: (02) 9745 5202 Fax: (02) 8004 7461 Email: Info@alphaengineering.com.au Address: 24A Burleigh St, Burwood NSW 2134 Website: www.alphaengineering.com.au</div> <div><small>COPYRIGHT THIS DRAWING REMAINS THE PROPERTY OF ALPHA ENGINEERING & DEVELOPMENT AND MAY NOT BE ALTERED IN ANY WAY WITHOUT ALPHA ENGINEERING'S WRITTEN CONSENT</small></div>	<div>ARCHITECT</div> <div></div> <div>Barry Rush & Associates Pty Ltd <small>Architects Suite 25A, 2 Beattie Street, Belmain, NSW, Australia, 2041 Phone: (612) 9555 8028 Fax: (612) 9810 0161 Email: info@barryrush.com.au www.barryrush.com.au</small></div>	<div>PROJECT</div> <div>PROPOSED DEVELOPMENT 638 PITTWATER ROAD, BROOKVALE</div>	DRAWING TITLE WATER SENSITIVE URBANE DESIGN		
							SCALES AS SHOWN	DESIGNED MD	DRAFTED SH
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