

16 - 24 HOPE STREET, PENRITH

PROPOSED MULTI-UNIT DEVELOPMENT

STORMWATER CONCEPT PLANS

LEGEND

- PROPOSED STORMWATER
- PIPE OVERCROSSING
MINIMUM 150mm CLEARANCE
- DP
GUTTER DOWNPIPE
- DP
DOWNPIPE WITH VERTICAL BEND
- DP1
100
DOWNPIPE NUMBER AND SIZE
- HP
ROOF GUTTER HIGH POINT
- ROOF SLOPE
- PG
PLANTER GRATE
- FG
FLOOR GRATE
- RWO
RAINWATER OUTLET
- BREAK / OPEN VOID IN RAIL /
BALLUSTRADE FOR STORMWATER
EMERGENCY OVERFLOW
- SURFACE FLOW ARROWS
- X RL 47.00
DESIGN SURFACE LEVEL
- + NS 26.45
EXISTING SURFACE LEVEL
- IL 47.00
INVERT LEVEL OF PIPE JUNCTION
- CLOSED STYLE FENCING
- PROPOSED OSD STORAGE
- UNDERGROUND
RAINWATER TANK
- PROPOSED WSUD / BIO-RETENTION
AREA / POND
- TILED AREA
- TREES TO BE RETAINED
- TREES TO BE REMOVED
- Ø80 RISER WITH
NON-RETURN VALVE



LOCALITY PLAN

N.T.S

PIPES NOTE:

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

DRAWING INDEX

Drawing No.	DESCRIPTION
000	COVER SHEET PLAN
101	STORMWATER CONCEPT PLAN BASEMENT LEVEL 2 SHEET 1 OF 2
102	STORMWATER CONCEPT PLAN BASEMENT LEVEL 2 SHEET 2 OF 2
103	STORMWATER CONCEPT PLAN BASEMENT LEVEL 1
104	STORMWATER CONCEPT PLAN GROUND LEVEL
105	ON-SITE DETENTION DETAILS AND CALCULATION SHEETS SHEET 1 OF 2
105.1	ON-SITE DETENTION DETAILS AND CALCULATION SHEETS SHEET 2 OF 2
106	MISCELLANEOUS DETAILS SHEET

GENERAL NOTES

1. ALL LINES ARE TO BE Ø90 uPVC 1.0% GRADE UNLESS NOTED OTHERWISE. CHARGED LINES TO BE SEWERGRADE & SEALED.
2. EXISTING SERVICES LOCATIONS SHOWN INDICATIVE ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE & LEVEL ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS.
3. ALL PIPES TO HAVE MIN 150mm COVER IF LOCATED WITHIN PROPERTY.
4. ALL PITS IN DRIVEWAYS TO BE 450x450 CONCRETE AND ALL PITS IN LANDSCAPED AREAS TO BE 450x450 PLASTIC OR CONCRETE.
5. PITS LESS THAN 600mm DEEP MAY BE BRICK, PRECAST OR CONCRETE.
6. ALL BALCONIES AND ROOFS TO BE DRAINED AND TO HAVE SAFETY OVERFLOWS IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
7. ALL EXTERNAL SLABS TO BE WATERPROOFED.
8. ALL GRATES TO HAVE CHILD PROOF LOCKS.
9. ALL DRAINAGE WORKS TO AVOID TREE ROOTS.
10. ALL DPs TO HAVE LEAF GUARDS.
11. ALL EXISTING LEVELS TO BE CONFIRMED BY BUILDER PRIOR TO CONSTRUCTION.
12. ALL WORK WITHIN COUNCIL RESERVE TO BE INSPECTED BY COUNCIL PRIOR TO CONSTRUCTION.
13. COUNCIL'S ISSUED FOOTWAY DESIGN LEVELS TO BE INCORPORATED INTO THE FINISHED LEVELS ONCE ISSUED BY COUNCIL.
14. ALL WORK SHALL BE IN ACCORDANCE WITH B.C.A. AND A.S.3500.3.
15. REFER TO LANDSCAPE ARCHITECT'S DRAWINGS FOR LANDSCAPING.
16. CARE TO BE TAKEN AROUND EXISTING SEWER. STRUCTURAL ADVICE IS REQUIRED FOR SEWER PROTECTION AGAINST ADDITIONAL LOADING FROM NEW PITS, PIPES, RETAINING WALLS AND OSD BASIN WATER LEVELS.
17. ALL WALLS FORMING THE DETENTION BASINS SHALL BE CONSTRUCTED WHOLLY WITHIN THE PROPERTY BOUNDARIES OF THE SITE BEING DEVELOPED.
18. OSD WARNING SIGN AND SAFETY FENCING SHALL BE PROVIDED TO ABOVE GROUND OSD STORAGE AREA IN ACCORDANCE WITH COUNCIL REQUIREMENTS.
19. ENSURE THAT NON FLOATABLE MULCH IS USED IN DETENTION BASINS, ie. USE DECORATIVE ROCK MULCH OR EQUIVALENT.
20. ALL PIPES IN BALCONIES TO BE Ø65 uPVC CAST IN CONCRETE SLAB. CONTRACTOR TO PROVIDE A BREAK / OPEN VOID IN RAIL / BALLUSTRADE FOR STORMWATER EMERGENCY OVERFLOW. ALL ENCLOSED AREAS/PLANTER BOXES TO BE FITTED WITH FLOOR WASTES & DRAINED TO OSD DOWNPIPES TO BE CHECKED BY ARCHITECT & PLUMBER PRIOR TO CONSTRUCTION
21. 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.

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
C	ISSUE FOR DEVELOPMENT APPLICATION	06/03/2020	JMH	OC
B	ISSUE FOR DEVELOPMENT APPLICATION	30/07/2018	JH	OC
A	ISSUE FOR DEVELOPMENT APPLICATION	27/07/2018	XNT	OC

Certification By Dr. Anthony Hasham (NFER):

Architect
Morson Group
 P.O Box 170,
 Potts Point, NSW 1335
 EMAIL : info@ad-s.com.au
 PHONE : 02 9380 4946

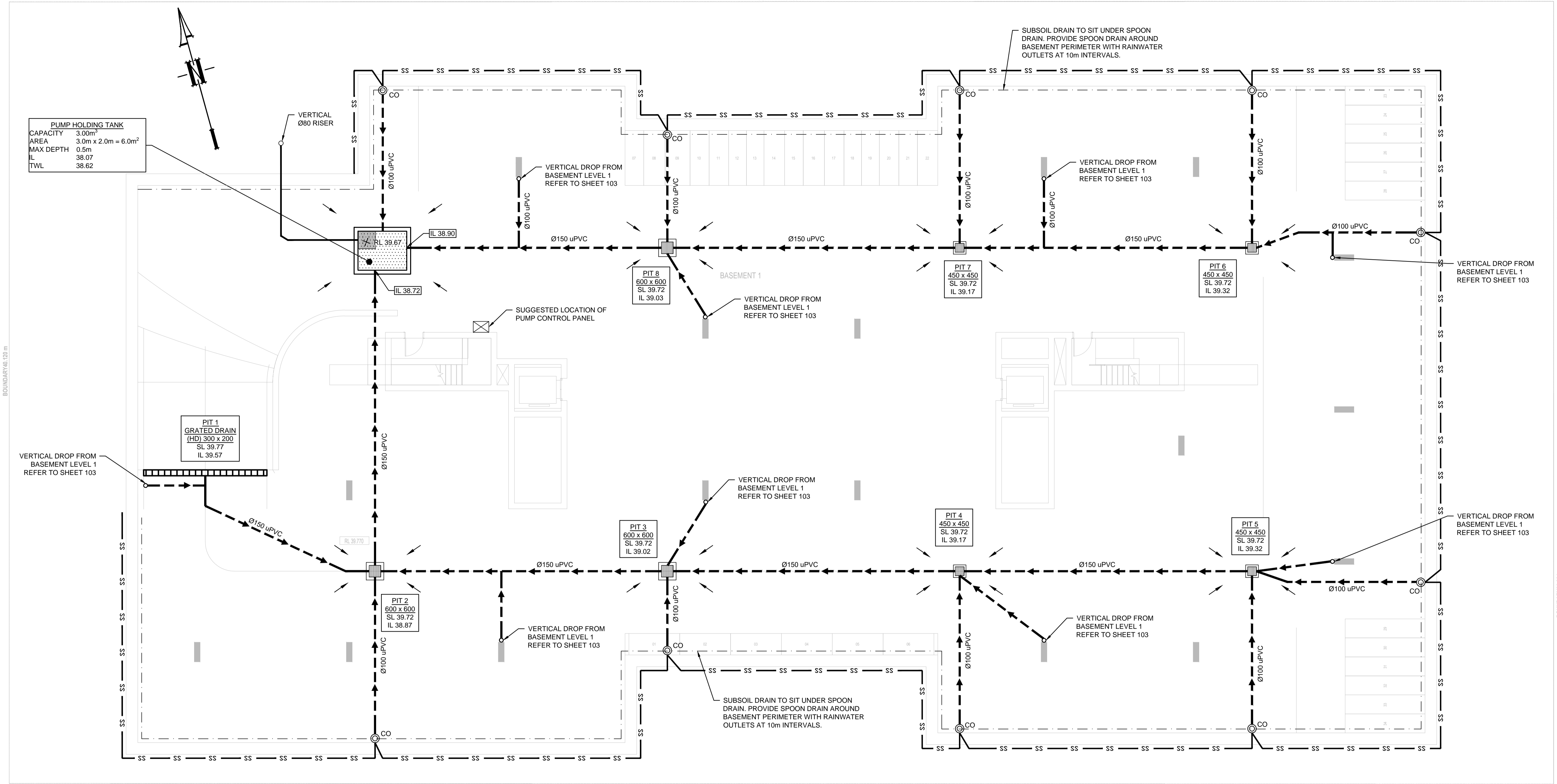
Client
Prestige Developments Group (NSW) Pty Ltd
 Council
Penrith City Council

Scale

AUSTRALIAN CONSULTING ENGINEERS.
 PTY LTD - A.C.N. 084 059 941
 SHOP 2-141 CONCORD RD NORTH STRATHFIELD NSW 2157
 PH: (02) 9763 1500 FX: (02) 9763 1515
 EMAIL: info@acceng.com.au

Project
**16 - 24 HOPE STREET, PENRITH
 PROPOSED MULTI-UNIT DEVELOPMENT
 STORMWATER CONCEPT PLANS
 DEVELOPMENT APPLICATION**

Drawing Title
COVER SHEET PLAN
 Scale N.T.S. Project No. 180919 Dwg. No. 000 Issue C



PUMP HOLDING TANK
 CAPACITY 3.00m³
 AREA 3.0m x 2.0m = 6.0m²
 MAX DEPTH 0.5m
 IL 38.07
 TWL 38.62

PIT 1
 GRATED DRAIN
 (HD) 300 x 200
 SL 39.77
 IL 39.57

PIT 3
 600 x 600
 SL 39.72
 IL 39.02

PIT 4
 450 x 450
 SL 39.72
 IL 39.17

PIT 5
 450 x 450
 SL 39.72
 IL 39.32

PIT 8
 600 x 600
 SL 39.72
 IL 39.03

PIT 7
 450 x 450
 SL 39.72
 IL 39.17

PIT 6
 450 x 450
 SL 39.72
 IL 39.32

- LEGEND**
- PROPOSED STORMWATER
 - SURFACE FLOW ARROWS
 - SUBSOIL DRAINAGE
 - CLEANING EYE (OR INSPECTION EYE)
 - PROPOSED STORAGE AREA
 - FINISHED SURFACE LEVEL
 - GRATED DRAIN
 - FLOOR GRATE

STANDARD PUMP OUT DESIGN NOTES

THE PUMP OUT SYSTEM SHALL BE DESIGN TO BE OPERATED IN THE FOLLOWING MANNER:
 1 - THE PUMP SHALL BE PROGRAMMED TO WORK ALTERNATELY TO ALLOW BOTH PUMPS TO HAVE AN EQUAL OPERATION LOAD AND PUMP LIFE.
 2 - A FLOAT SHALL BE PROVIDED TO ENSURE OF THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD THIS FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMPS AT THE MINIMUM WATER LEVEL. THE SAME FLOAT SHALL BE SET TO TURN ONE OF THE PUMPS ON UPON THE WATER LEVEL IN THE TANK RISING TO APPROXIMATELY 300mm ABOVE THE MINIMUM WATER LEVEL. THE PUMP SHALL OPERATE UNTIL THE TANK IS DRAINED TO THE MINIMUM WATER LEVEL.
 3 - A SECOND FLOAT SHALL BE PROVIDE AT A HIGH LEVEL, WHICH IS APPROXIMATELY THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHALL START THE OTHER PUMP THAT IS NOT OPERATING AND ACTIVATE THE ALARM.
 4 - AN ALARM SYSTEM SHALL BE PROVIDE WITH A FLASHING STROBE LIGHT AND A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED AT THE DRIVEWAY ENTRANCE TO THE BASEMENT LEVEL THE ALARM SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK-UP IN CASE OF POWER FAILURE.
 5 - A CONFINED SPACE DANGER SIGN SHALL BE PROVIDED AT ALL ACCESS POINT TO THE PUMP-OUT STORAGE TANK IN ACCORDANCE WITH THE UPPER PARRAMATA RIVER CATCHMENT TRUST OSD HANDBOOK.

DANGER

WHEN EXCAVATING WITHIN ANY SITE, FOOTPATH AND ROADWAY, ALL SERVICES SHALL BE LOCATED PRIOR TO COMMENCEMENT OF THE EXCAVATION WORKS.

CONTACT "DIAL BEFORE YOU DIG" ON PHONE No. 1100 OR GO TO THE WEB SITE

"www.1100.com.au"

WARNING

PUMP OUT SYSTEM FAILURE IN BASEMENT WHEN LIGHT IS FLASHING AND SIREN SOUNDING

BASEMENT PUMP OUT FAILURE WARNING SIGN

SIGN SHALL BE PLACED IN A CLEAR AND VISIBLE LOCATION WHERE VEHICLES ENTER THE BASEMENT

COLOURS:
 "WARNING" = RED
 BORDER AND OTHER LETTERING = BLACK

DANGER

CONFINED SPACE
 NO ENTRY WITHOUT TRAINING

CONFINED SPACE DANGER SIGN

A) 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.

B) MINIMUM DIMENSIONS OF THE SIGN - 300mm x 450mm (LARGE ENTRIES, SUCH AS DOORS) - 250mm x 180mm (SMALL ENTRIES SUCH AS GRATES & MANHOLES)

C) THE SIGN SHALL BE MANUFACTURED FROM COLOUR BONDED ALUMINIUM OR POLYPROPYLENE

D) SIGN SHALL BE AFFIXED USING SCREWS AT EACH CORNER OF THE SIGN

COLOURS:
 "DANGER" & BACKGROUND = WHITE
 ELLIPTICAL AREA = RED
 RECTANGLE CONTAINING ELLIPSE = BLACK
 BORDER AND OTHER LETTERING = BLACK

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
C	ISSUE FOR DEVELOPMENT APPLICATION	06/03/2020	JMH	OC
B	ISSUE FOR DEVELOPMENT APPLICATION	30/07/2018	JH	OC
A	ISSUE FOR DEVELOPMENT APPLICATION	27/07/2018	XNT	OC

Certification By: Dr. Anthony Hesham (NFER)
 Architect
Morson Group
 P.O Box 170,
 Potts Point, NSW 1335
 EMAIL : info@ad-s.com.au
 PHONE : 02 9380 4946

Client
Prestige Developments Group (NSW) Pty Ltd
 Council
Penrith City Council

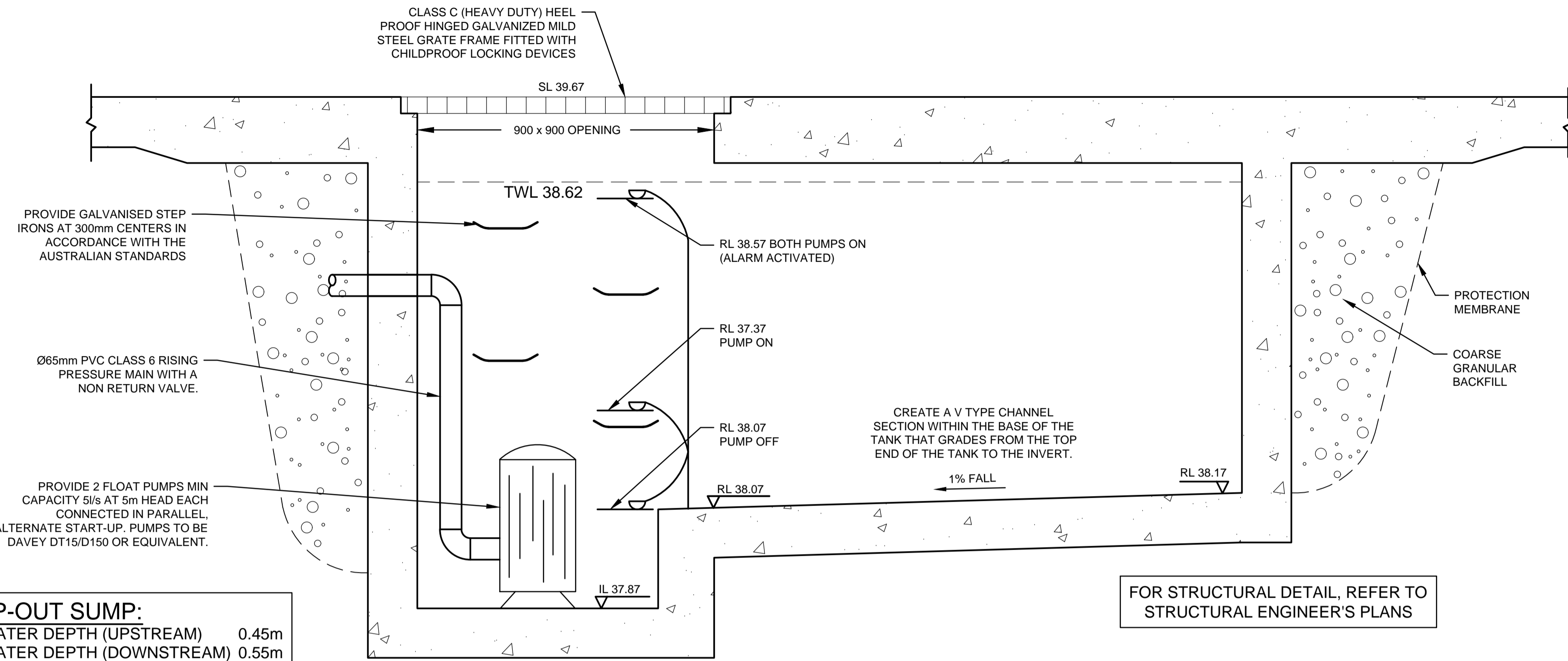
Scale
 0 2 4 6 m
 SCALE 1:100 @ A1

AUSTRALIAN CONSULTING ENGINEERS.
 PTY LTD - A.C.N. 084 059 941
 SHOP 2-141 CONCORD RD NORTH STRATHFIELD NSW 2157
 PH: (02) 9763 1500 FX: (02) 9763 1515
 EMAIL: info@acceng.com.au

Project
16 - 24 HOPE STREET, PENRITH PROPOSED MULTI-UNIT DEVELOPMENT STORMWATER CONCEPT PLANS DEVELOPMENT APPLICATION

Drawing Title
STORMWATER CONCEPT PLAN BASEMENT LEVEL 2 SHEET 1 OF 2

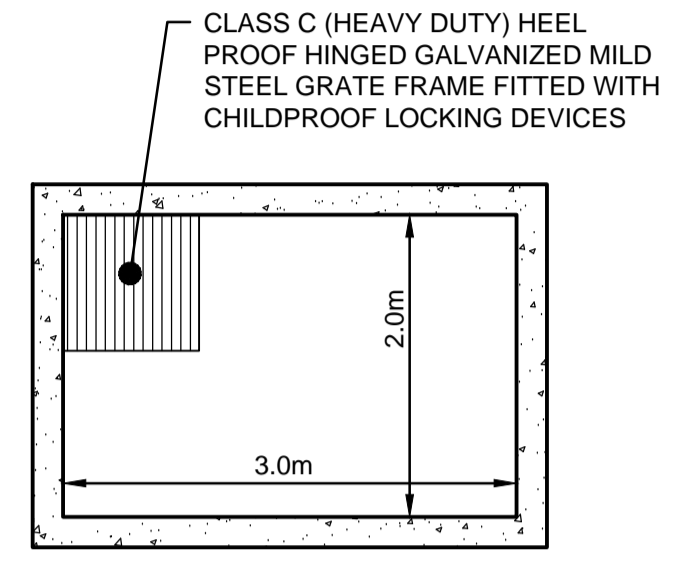
Scale A1 Project No. 180919 Dwg. No. 101 Issue C



PUMP-OUT SUMP:

MAX WATER DEPTH (UPSTREAM)	0.45m
MAX WATER DEPTH (DOWNSTREAM)	0.55m
WIDTH	3.0m
LENGTH	2.0m
VOLUME PROVIDED	3.0m ³

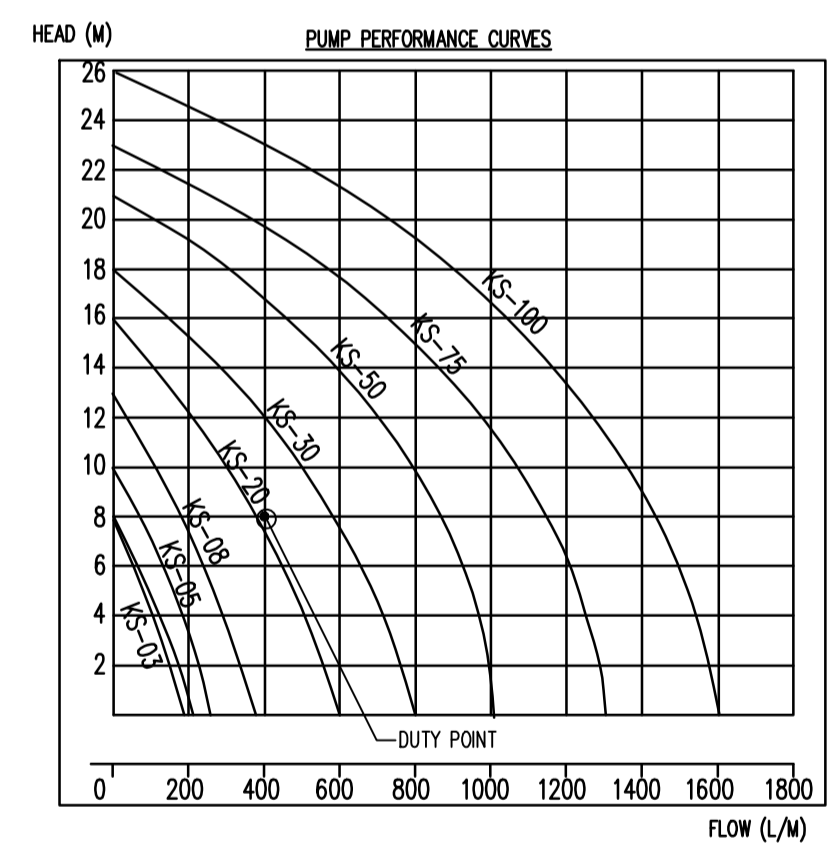
SECTION A
STORMWATER PUMP-OUT SUMP
SCALE 1:10



NOTE:

- FOR ALL THE STRUCTURAL DETAILS, REFER TO STRUCTURAL ENGINEER'S PLAN.
- ALL THE AG LINES BEHIND BASEMENT WALLS TO BE CONNECTED TO PUMP-OUT SUMP.

PUMP-OUT SUMP DETAIL
PLAN VIEW
SCALE 1:50



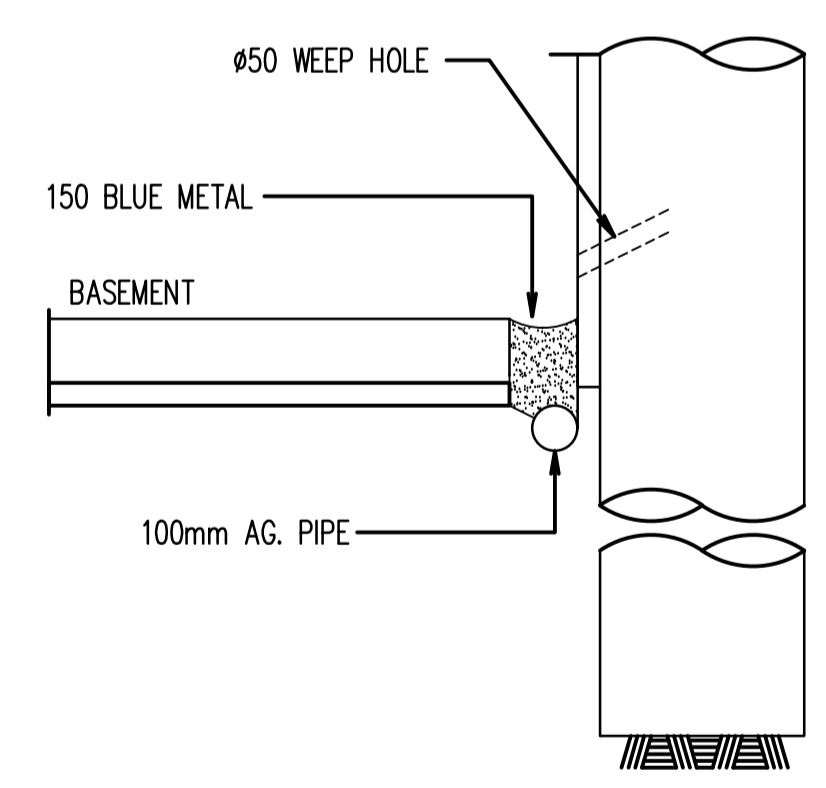
PUMP STORAGE VOLUME CALCULATION

AREA DRAINING TO SUMP = 17.9m²

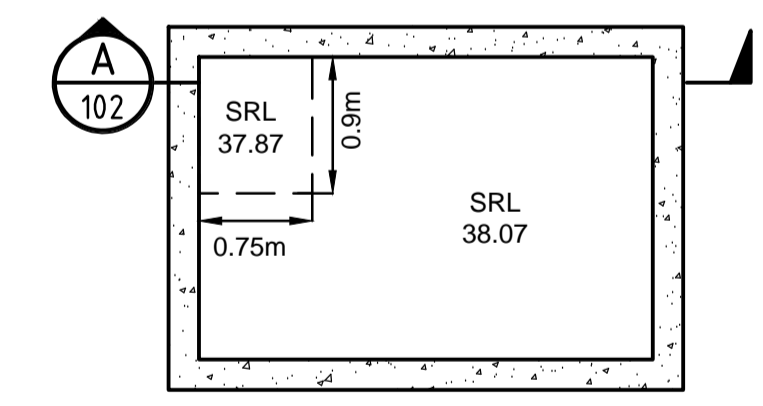
SUMP SIZE BASED ON 100 YEAR 2 HR STORM, I = 44.4 mm/hr,
 $Q = CIA/3600 = 1 \times 44.4 \times 17.9/3600 = 0.22 \text{ L/sec}$
 VOLUME REQUIRED = $0.22 \times (2 \times 60 \times 60) = 1584 \text{ L} = 1.584 \text{ m}^3$
 STORAGE PROVIDED $3.0 \times 2.0 \times 0.5 = 3.0 \text{ m}^3$

PUMP OUT RATE BASED ON 100YR 5MIN STORM, I = 220 mm/hr
 (MIN RATE REQUIRED AS PER AS3500.3 IS 10 L/sec)
 $Q = CIA/3600 = 1 \times 220 \times 17.9/3600 = 1.09 \text{ L/sec}$

DUAL KS-30 PUMP OR EQUIVALENT TO BE INSTALLED IN SUMP AND CONNECTED TO CONTROL PANEL WHICH WILL ALLOW FOR THE PUMP TO OPERATE ALTERNATIVELY ON HIGH LEVEL WITH ALARM AT 10 L/sec AT 8m HEAD



TYPICAL SPOON DRAIN DETAILS
N.T.S.



PUMP-OUT SUMP DETAIL
SRL
SCALE 1:50

Type	Output		Outlet		Rated Head Capacity		Maximum Head Capacity		Weigh Kg	Dimension		
	HP	kW	mm	Inch	M	LPM	M	LPM		L(mm)	W(mm)	H(mm)
KS-03	1/3	0.25	40	1 1/2"	3	130	8	180	9	188	141	305
KS-04	1/2	0.4	50	2"	5	150	8	220	11	208	140	359
KS-05	1/2	0.4	50	2"	5	160	10	260	14	230	156	375
KS-08	1	0.75	50	2"	6	240	13	380	21	290	180	425
KS-20	2	1.5	80	3"	10	300	16	600	31	278	182	475
KS-30	3	2.2	80	3"	10	500	18	800	42	390	250	450
KS-50	5	3.7	100	4"	10	800	21	1100	48	450	240	530
KS-75	7 1/2	5.6	100	4"	15	800	23	1300	60	550	310	590
KS-100	10	7.5	150	6"	18	900	25	1600	70	550	310	610

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
C	ISSUE FOR DEVELOPMENT APPLICATION	06/03/2020	JMH	OC
B	ISSUE FOR DEVELOPMENT APPLICATION	30/07/2018	JH	OC
A	ISSUE FOR DEVELOPMENT APPLICATION	27/07/2018	XNT	OC

Certification By: Dr. Anthony Hasham (NFER)

Architect: **Morson Group**
P.O Box 170, Potts Point, NSW 1335
EMAIL: info@ad-s.com.au
PHONE: 02 9380 4946

Client: **Prestige Developments Group (NSW) Pty Ltd**

Council: **Penrith City Council**

Scale: 0 200 400 600mm
SCALE 1:10 @ A1

0 1 2 3 m
SCALE 1:50 @ A1

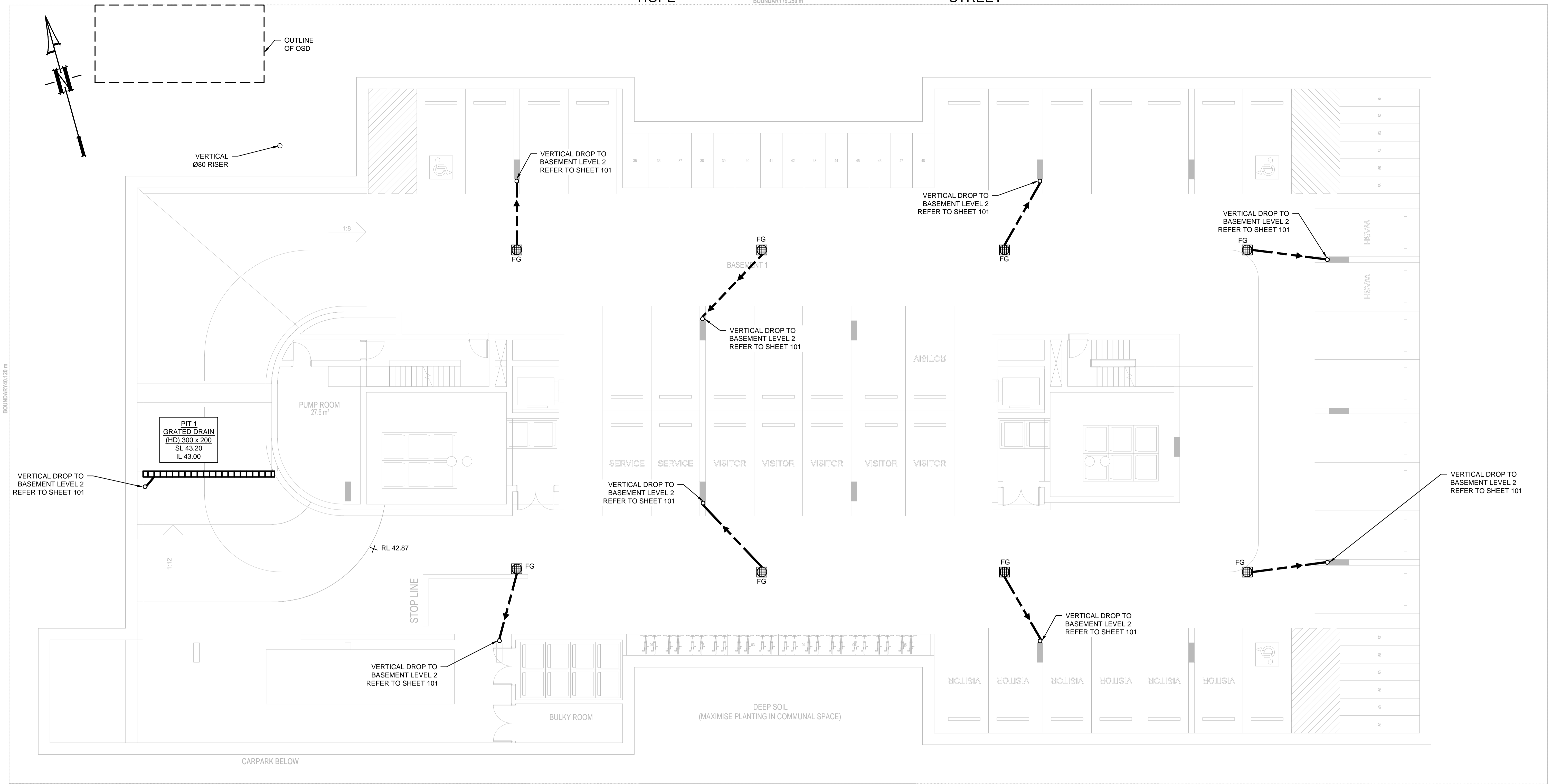
AUSTRALIAN CONSULTING ENGINEERS.

PTY LTD - A.C.N. 084 059 941
SHOP 2-141 CONCORD RD NORTH STRATHFIELD NSW 2157
PH: (02) 9763 1500 FX: (02) 9763 1515
EMAIL: info@acceng.com.au

Project: **16 - 24 HOPE STREET, PENRITH PROPOSED MULTI-UNIT DEVELOPMENT STORMWATER CONCEPT PLANS DEVELOPMENT APPLICATION**

Drawing Title: **STORMWATER CONCEPT PLAN BASEMENT LEVEL 2 SHEET 2 OF 2**

Scale: A1 Project No. 180919 Dwg. No. 102 Issue C



LEGEND

- PROPOSED STORMWATER
- SURFACE FLOW ARROWS
- SUBSOIL DRAINAGE
- CLEANING EYE (OR INSPECTION EYE)
- PROPOSED STORAGE AREA
- FINISHED SURFACE LEVEL
- GRATED DRAIN
- FLOOR GRATE

STANDARD PUMP OUT DESIGN NOTES

THE PUMP OUT SYSTEM SHALL BE DESIGN TO BE OPERATED IN THE FOLLOWING MANNER:

- 1 - THE PUMP SHALL BE PROGRAMMED TO WORK ALTERNATELY TO ALLOW BOTH PUMPS TO HAVE AN EQUAL OPERATION LOAD AND PUMP LIFE.
- 2 - A FLOAT SHALL BE PROVIDED TO ENSURE OF THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD THIS FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMPS AT THE MINIMUM WATER LEVEL. THE SAME FLOAT SHALL BE SET TO TURN ONE OF THE PUMPS ON UPON THE WATER LEVEL IN THE TANK RISING TO APPROXIMATELY 300mm ABOVE THE MINIMUM WATER LEVEL. THE PUMP SHALL OPERATE UNTIL THE TANK IS DRAINED TO THE MINIMUM WATER LEVEL.
- 3 - A SECOND FLOAT SHALL BE PROVIDE AT A HIGH LEVEL, WHICH IS APPROXIMATELY THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHALL START THE OTHER PUMP THAT IS NOT OPERATING AND ACTIVATE THE ALARM.
- 4 - AN ALARM SYSTEM SHALL BE PROVIDE WITH A FLASHING STROBE LIGHT AND A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED AT THE DRIVEWAY ENTRANCE TO THE BASEMENT LEVEL THE ALARM SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK-UP IN CASE OF POWER FAILURE.
- 5 - A CONFINED SPACE DANGER SIGN SHALL BE PROVIDED AT ALL ACCESS POINT TO THE PUMP-OUT STORAGE TANK IN ACCORDANCE WITH THE UPPER PARRAMATA RIVER CATCHMENT TRUST OSD HANDBOOK.



CONFINED SPACE DANGER SIGN

A) 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.

B) MINIMUM DIMENSIONS OF THE SIGN - 300mm x 450mm (LARGE ENTRIES, SUCH AS DOORS) - 250mm x 180mm (SMALL ENTRIES SUCH AS GRATES & MANHOLES)

C) THE SIGN SHALL BE MANUFACTURED FROM COLOUR BONDED ALUMINUM OR POLYPROPYLENE

D) SIGN SHALL BE AFFIXED USING SCREWS AT EACH CORNER OF THE SIGN

COLOURS:
 "DANGER" & BACKGROUND = WHITE
 ELLIPTICAL AREA = RED
 RECTANGLE CONTAINING ELLIPSE = BLACK
 BORDER AND OTHER LETTERING = BLACK

NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
C	ISSUE FOR DEVELOPMENT APPLICATION	06/03/2020	JMH	OC
B	ISSUE FOR DEVELOPMENT APPLICATION	30/07/2018	JH	OC
A	ISSUE FOR DEVELOPMENT APPLICATION	27/07/2018	XNT	OC

Certification By: Dr. Anthony Hasham (NFER)

Architect
Morson Group
 P.O Box 170,
 Potts Point, NSW 1335
 EMAIL : info@ad-s.com.au
 PHONE : 02 9380 4946

Client
Prestige Developments Group (NSW) Pty Ltd

Council
Penrith City Council

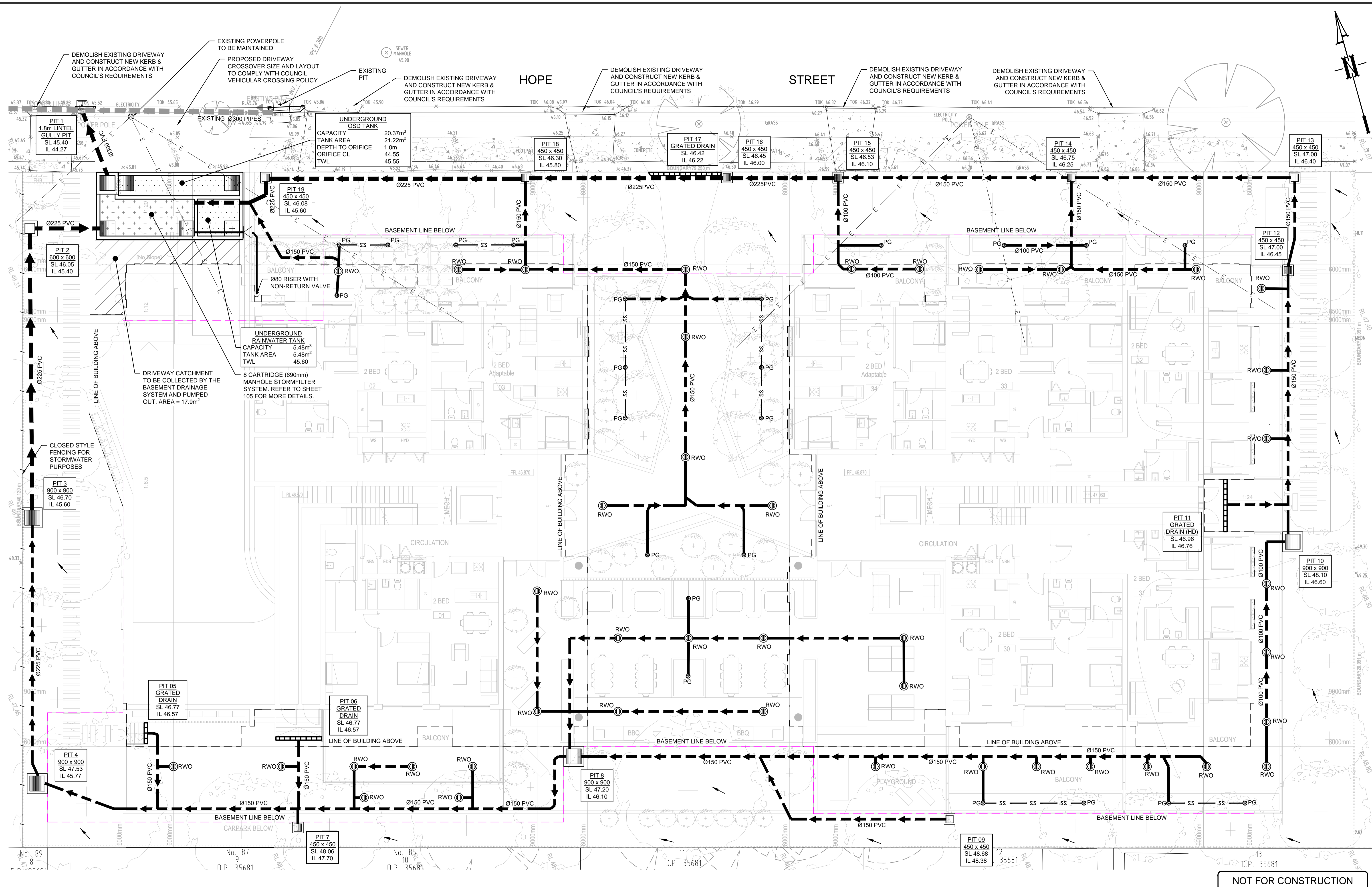
Scale
 0 2 4 6 m
 SCALE 1:100 @ A1

AUSTRALIAN CONSULTING ENGINEERS.
 PTY LTD - A.C.N. 084 059 941
 SHOP 2-141 CONCORD RD NORTH STRATHFIELD NSW 2157
 PH: (02) 9763 1500 FX: (02) 9763 1515
 EMAIL: info@aceng.com.au

Project
**16 - 24 HOPE STREET, PENRITH
 PROPOSED MULTI-UNIT DEVELOPMENT
 STORMWATER CONCEPT PLANS
 DEVELOPMENT APPLICATION**

Drawing Title
**STORMWATER CONCEPT PLAN
 BASEMENT LEVEL 1**

Scale: A1 Project No. 180919 Dwg. No. 103 Issue C



NOT FOR CONSTRUCTION

Issue	Description	Date	Design	Checked
C	ISSUE FOR DEVELOPMENT APPLICATION	06/03/2020	JMH	OC
B	ISSUE FOR DEVELOPMENT APPLICATION	30/07/2018	JH	OC
A	ISSUE FOR DEVELOPMENT APPLICATION	27/07/2018	XNT	OC

Certification By: Dr. Anthony Hasham (NFER)

Anthony Hasham

Morson Group
P.O. Box 170,
Potts Point, NSW 1335
EMAIL: info@ad-s.com.au
PHONE: 02 9380 4946

Client: **Prestige Developments Group (NSW) Pty Ltd**
Council: **Penrith City Council**

Scale: 0 2 4 6 m
SCALE 1:100 @ A1

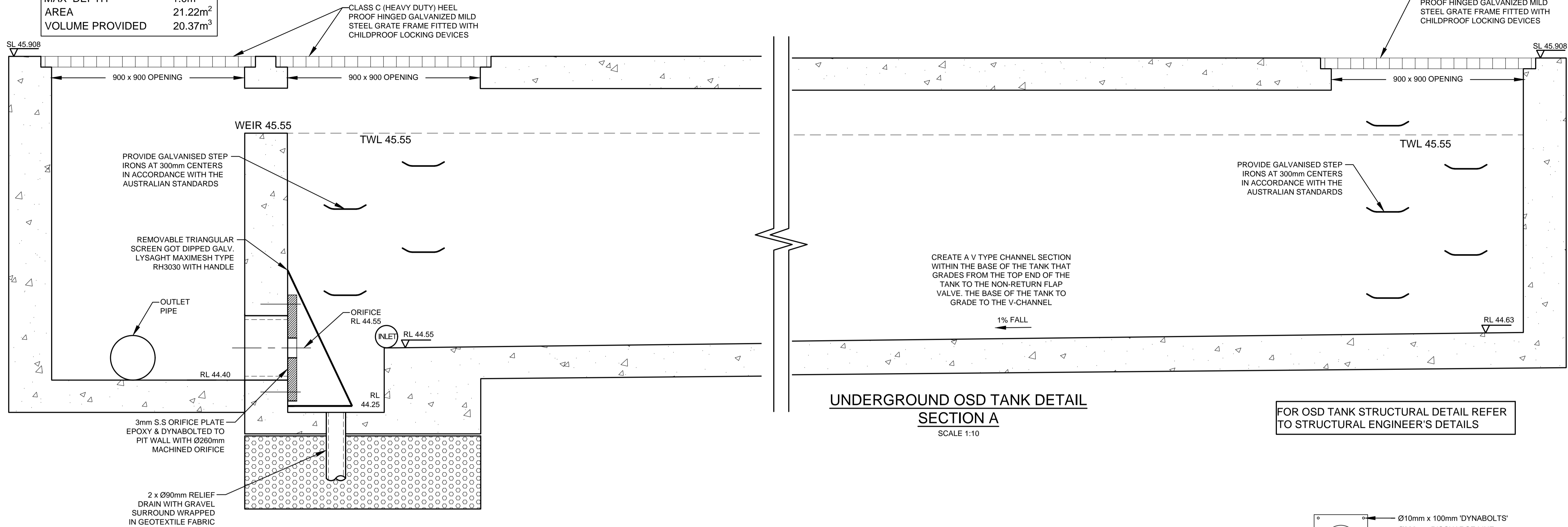
AUSTRALIAN CONSULTING ENGINEERS.
AUSTRALIAN CONSULTING ENGINEERS.
PTY LTD - A.C.N. 084 059 941
SHOP 2-141 CONCORD RD NORTH STRATHFIELD NSW 2157
PH: (02) 9743 1500 FX: (02) 9763 1515
EMAIL: info@aceng.com.au

Project: **16 - 24 HOPE STREET, PENRITH PROPOSED MULTI-UNIT DEVELOPMENT STORMWATER CONCEPT PLANS DEVELOPMENT APPLICATION**

Drawing Title: **STORMWATER CONCEPT PLAN**

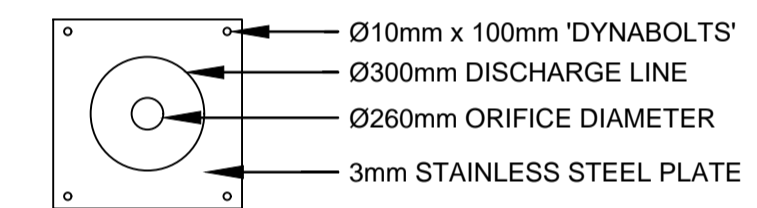
Scale: 1:100	Project No: 180919	Dwg. No: 104	Issue: C
--------------	--------------------	--------------	----------

DETENTION TANK :
 MAX DEPTH 1.0m
 AREA 21.22m²
 VOLUME PROVIDED 20.37m³



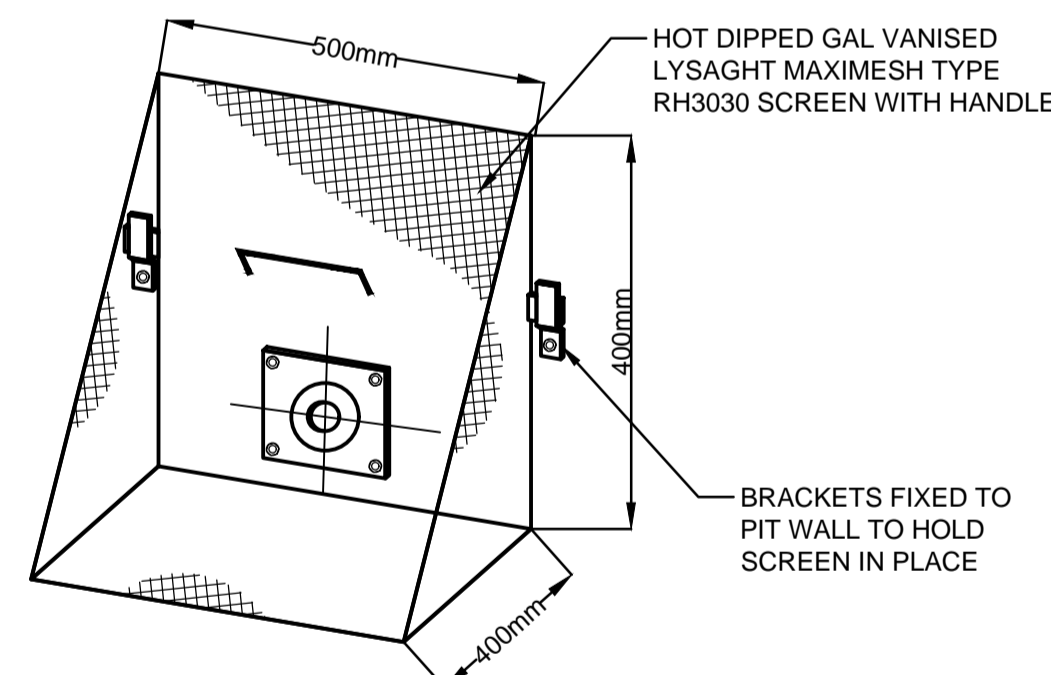
UNDERGROUND OSD TANK DETAIL
SECTION A
 SCALE 1:10

FOR OSD TANK STRUCTURAL DETAIL REFER TO STRUCTURAL ENGINEER'S DETAILS

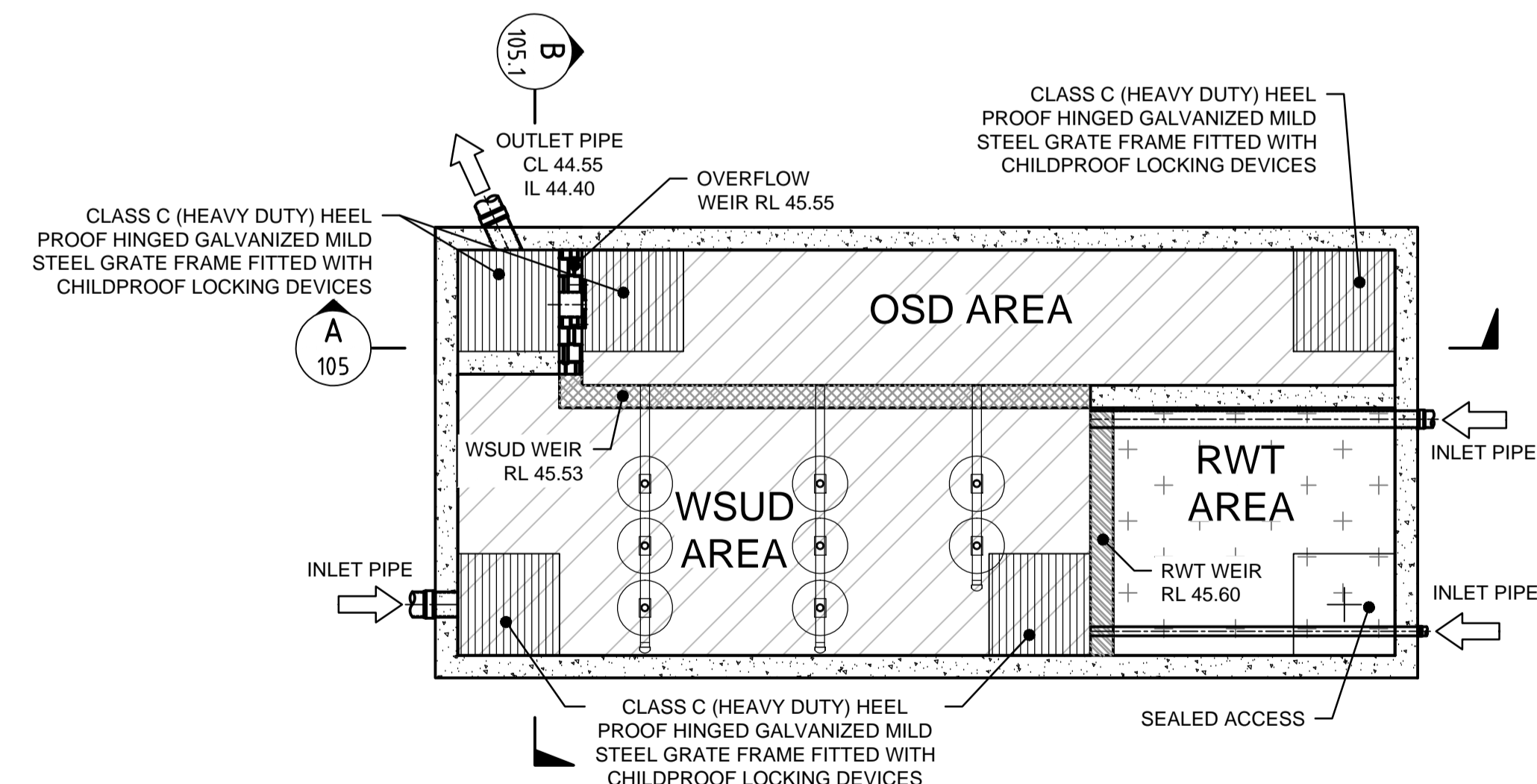


ORIFICE PLATE DETAIL
 N.T.S.

YEAR (event)	PRE DEVELOP FLOWS (l/s)	OSD DISCHRG (l/s)	FLOWS BYPASSING OSD (l/s)	TOTAL SITE DISCHARGE (l/s)	WATER STORAGE LEVEL (m)
5	86	86	0	86	44.97
10	104	96	0	96	45.08
20	123	109	0	109	45.23
50	132	116	0	116	45.33
100	149	132	0	132	45.52

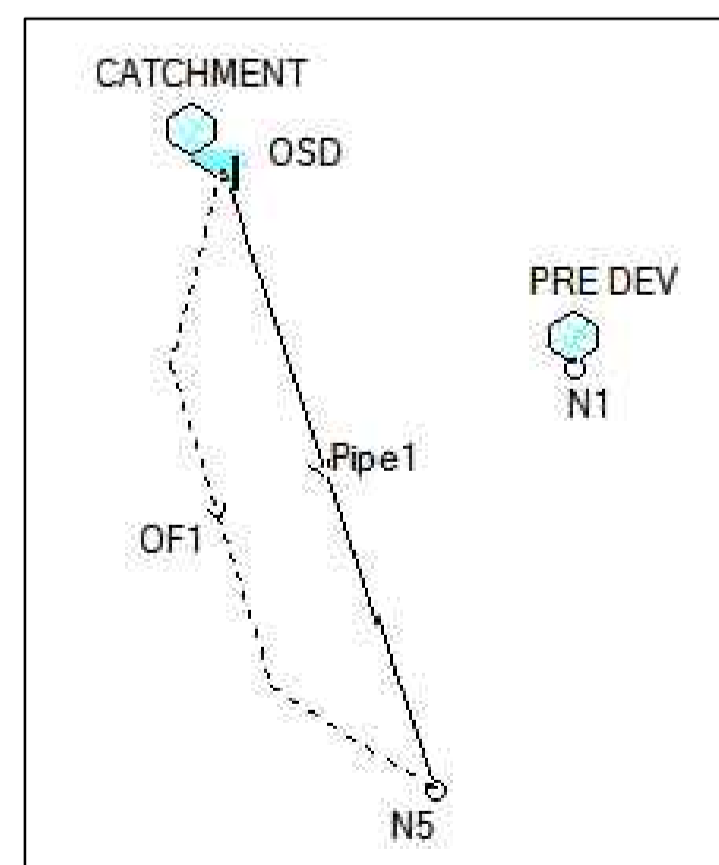


TRASH SCREEN DETAIL
 N.T.S.

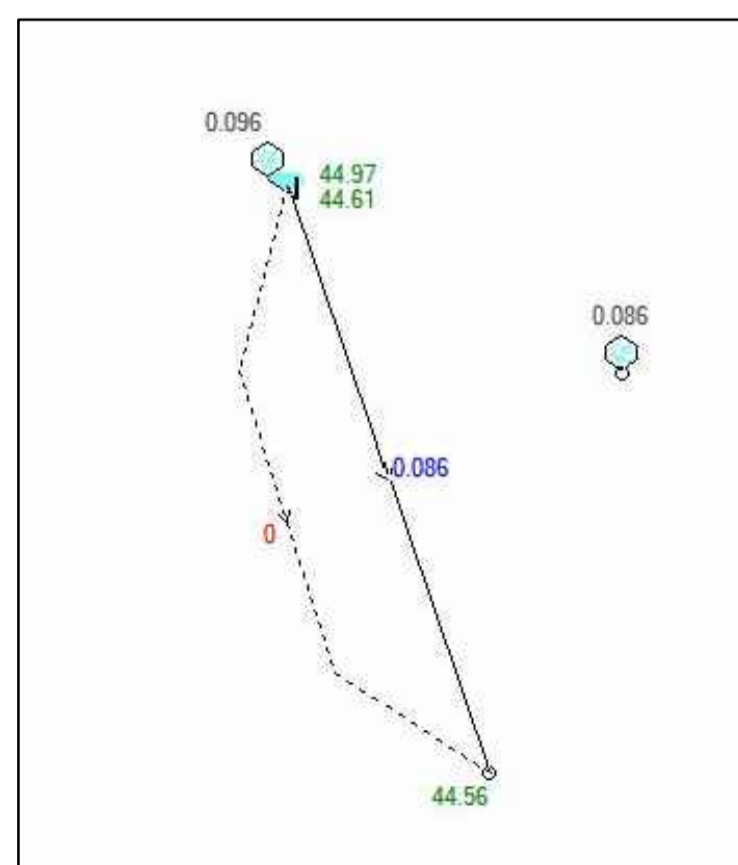


UNDERGROUND COMBINED OSD & WSUD TANK
PLAN VIEW
 SCALE 1:50

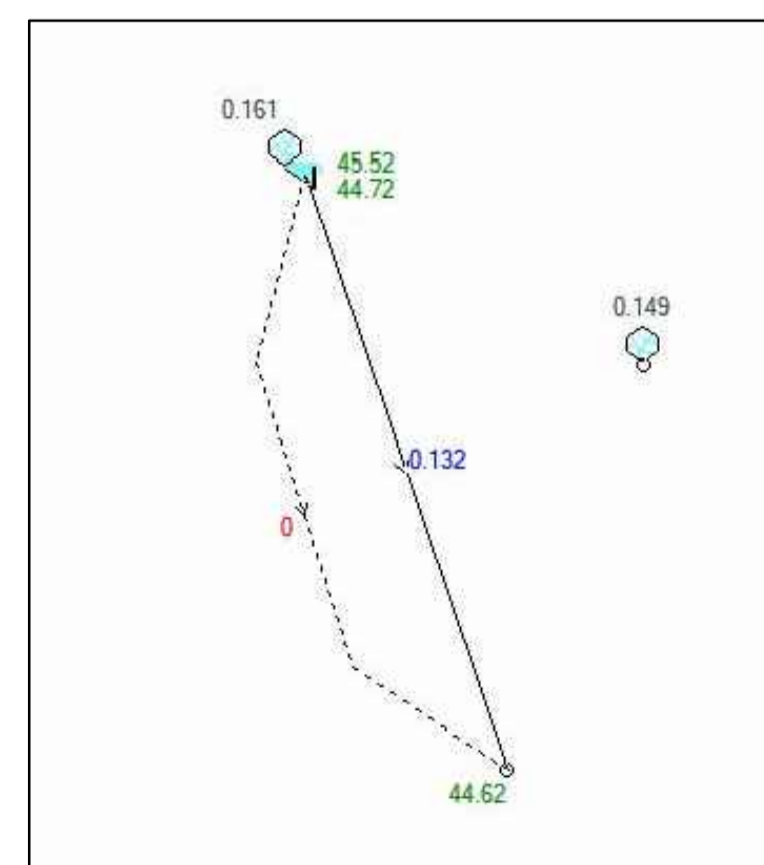
NOT FOR CONSTRUCTION



DRAINS WITHOUT RESULTS
 N.T.S.



DRAINS RESULTS 5yr
 N.T.S.



DRAINS RESULTS 100yr
 N.T.S.

Issue	Description	Date	Design	Checked
D	ISSUE FOR DEVELOPMENT APPLICATION	12/03/2020	JMH	OC
C	ISSUE FOR DEVELOPMENT APPLICATION	06/03/2020	JMH	OC
B	ISSUE FOR DEVELOPMENT APPLICATION	30/07/2018	JH	OC
A	ISSUE FOR DEVELOPMENT APPLICATION	27/07/2018	XNT	OC

Certification By Dr. Anthony Hasham (NFER):
 Architect
Morson Group
 P.O Box 170,
 Potts Point, NSW 1335
 EMAIL : info@ad-s.com.au
 PHONE : 02 9380 4946

Client
Prestige Developments Group (NSW) Pty Ltd
 Council
Penrith City Council

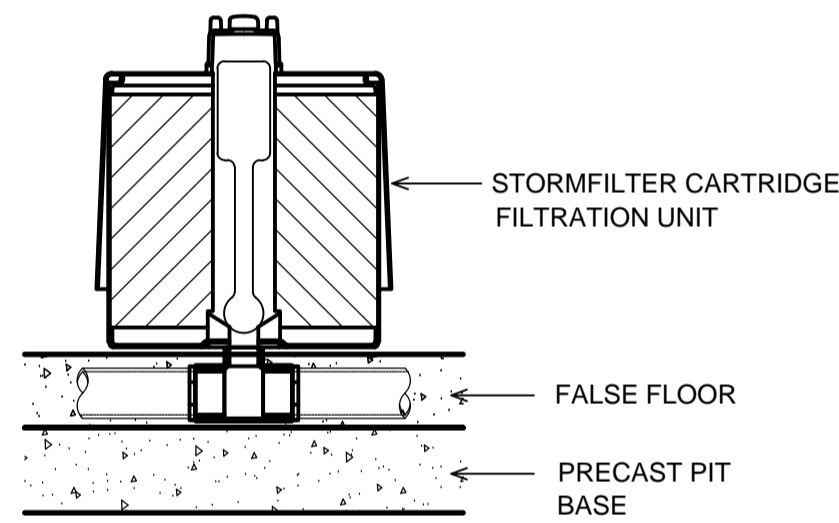
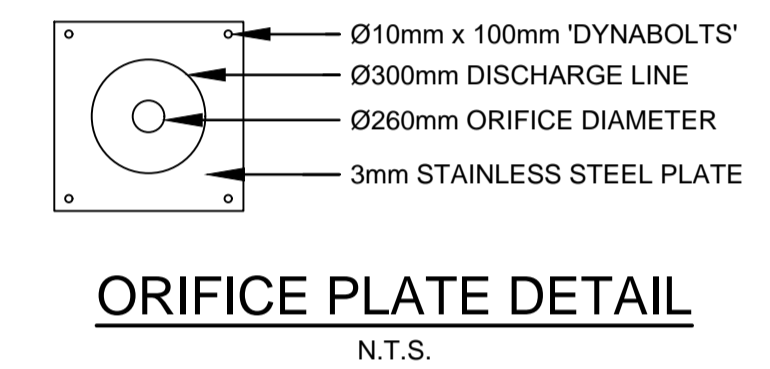
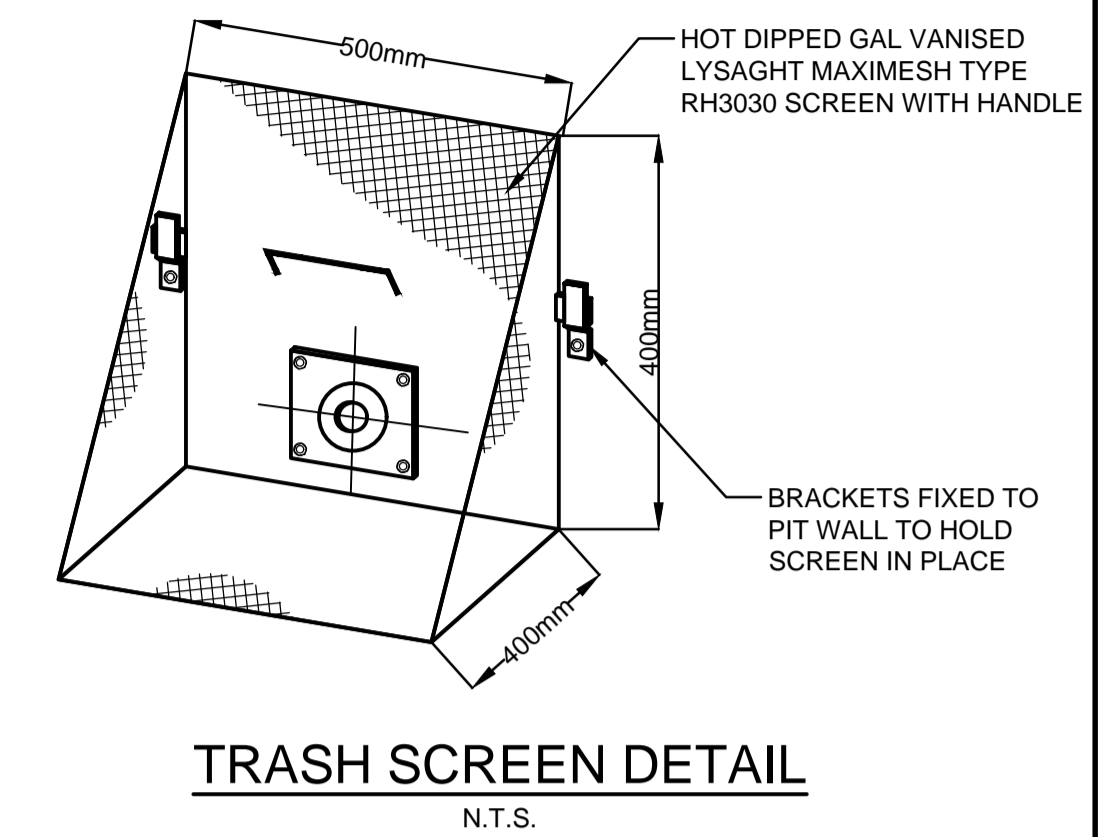
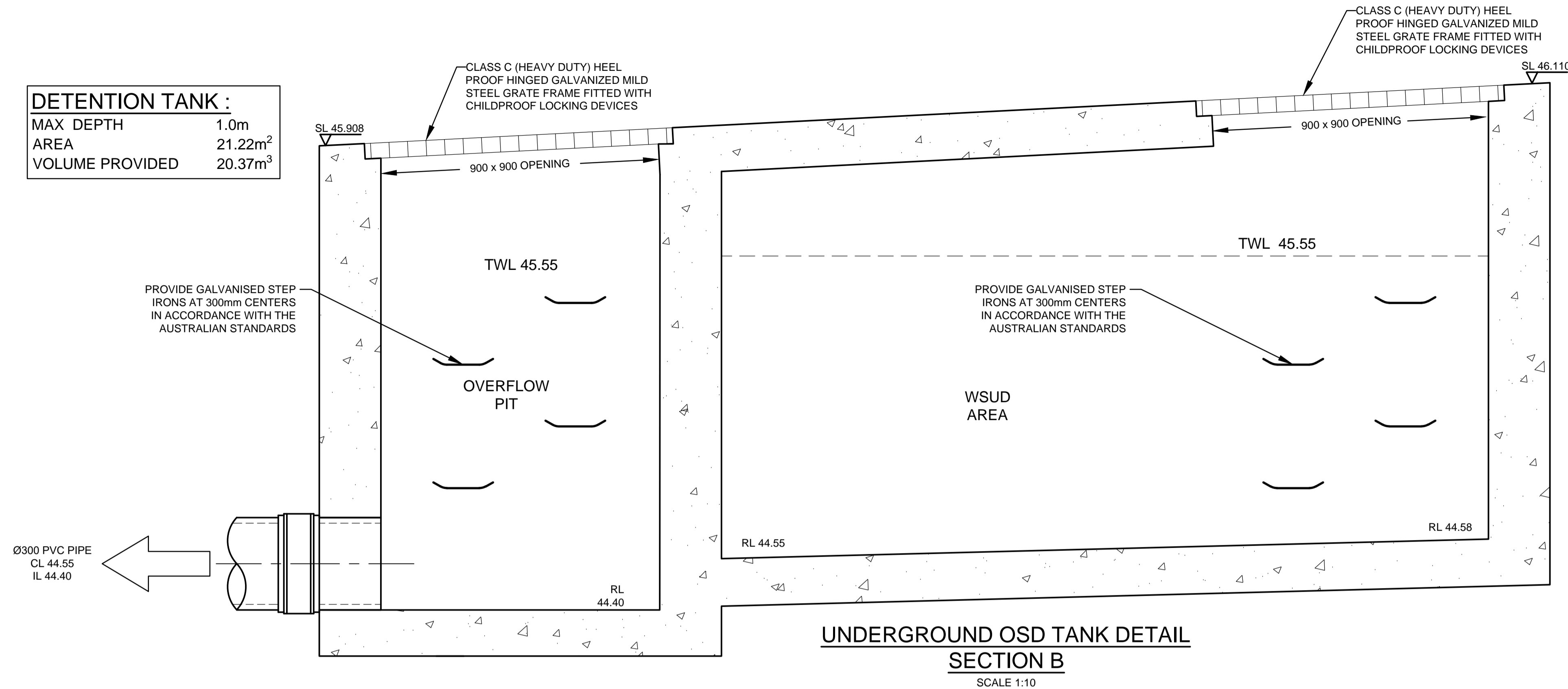
Scale
 0 200 400 600mm
 SCALE 1:10 @ A1
 0 1 2 3 m
 SCALE 1:50 @ A1

AUSTRALIAN CONSULTING ENGINEERS.
 AUSTRALIAN CONSULTING ENGINEERS.
 PTY LTD - A.C.N. 084 059 941
 SHOP 2-141 CONCORD RD NORTH STRATHFIELD NSW 2157
 PH: (02) 9763 1500 FX: (02) 9763 1515
 EMAIL: info@acceng.com.au

Project
16 - 24 HOPE STREET, PENRITH PROPOSED MULTI-UNIT DEVELOPMENT STORMWATER CONCEPT PLANS DEVELOPMENT APPLICATION

Drawing Title
ON-SITE DETENTION DETAILS AND CALCULATION SHEETS SHEET 1 OF 2
 Scale A1 Project No. 180919 Dwg. No. 105 Issue D

DETENTION TANK :	
MAX DEPTH	1.0m
AREA	21.22m ²
VOLUME PROVIDED	20.37m ³



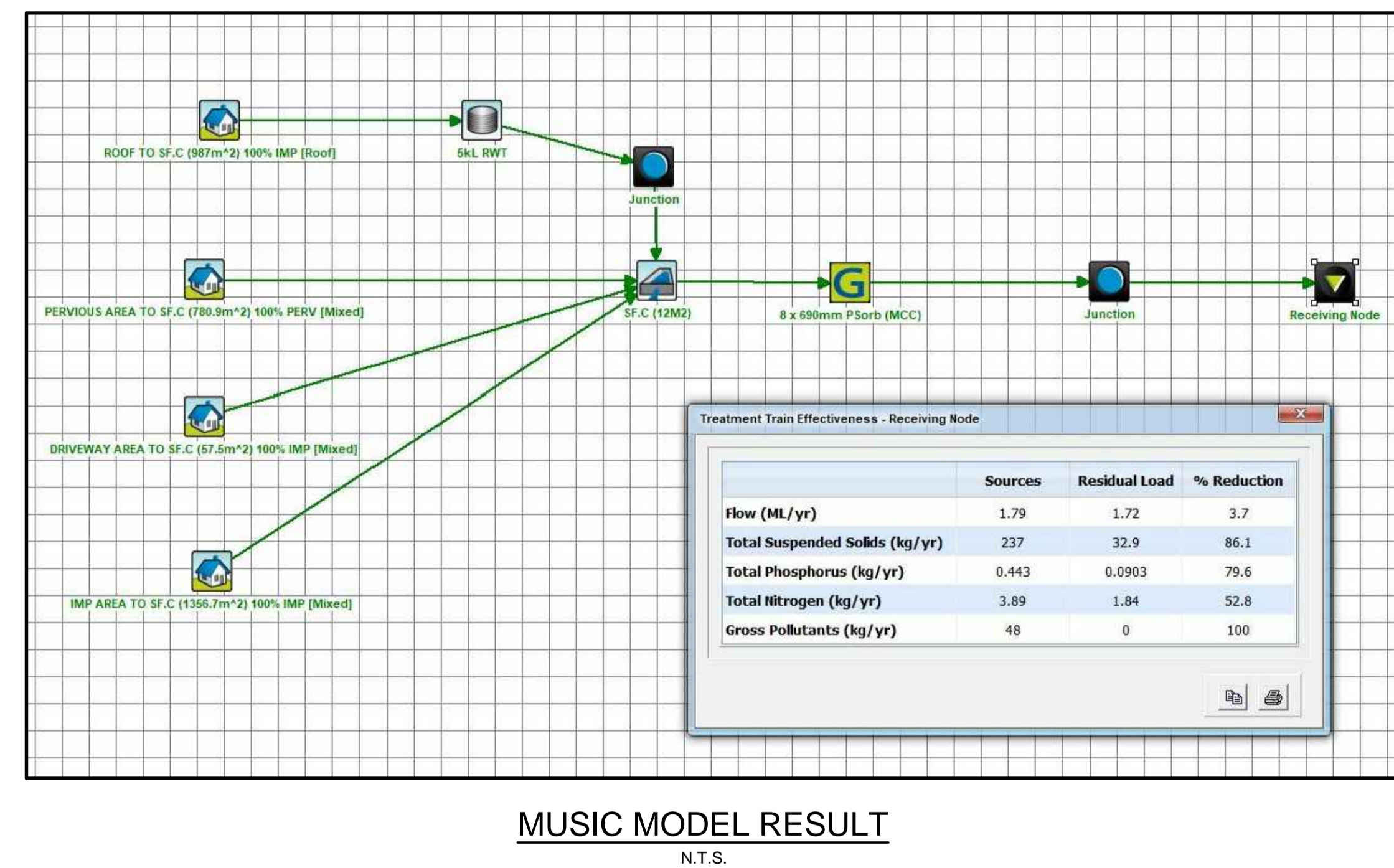
STORMFILTER DESIGN TABLE

- STORMFILTER TREATMENT CAPACITY VARIES BY NUMBER OF FILTER CARTRIDGES INSTALLED AND BY REGION SPECIFIC INTERNAL FLOW CONTROLS. CONVEYANCE CAPACITY IS RATED AT 80L/S.
- THE STANDARD CONFIGURATION IS SHOWN. ACTUAL CONFIGURATION OF THE SPECIFIED STRUCTURE(S) PER CIVIL ENGINEER WILL BE SHOWN ON SUBMITTAL DRAWING(S).
- ALL PARTS PROVIDED AND INTERNAL ASSEMBLY BY STORMWATER360 AUSTRALIA UNLESS OTHERWISE NOTED.

CARTRIDGE HEIGHT	690	460	310			
SYSTEM HYDRAULIC DROP (H - REQ'D. MIN.)	930	700	550			
TREATMENT BY MEDIA SURFACE AREA L/S/m ²	1.4	0.7	1.4	0.7	1.4	0.7
CARTRIDGE FLOW RATE (L/s)	1.42	0.71	0.95	0.47	0.63	0.32

GENERAL NOTES

1. INLET AND OUTLET PIPING SHALL BE SPECIFIED BY SITE CIVIL ENGINEER (SEE PLANS) AND PROVIDED BY CONTRACTOR. STORMFILTER IS PROVIDED WITH OPENINGS AT INLET AND OUTLET LOCATIONS.
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. PLEASE CONTACT STORMWATER360 FOR OPTIONS.
3. THE FILTER CARTRIDGE(S) ARE SIPHON-ACTUATED AND SELF-CLEANING. THE STANDARD DETAIL DRAWING SHOWS THE MAXIMUM NUMBER OF CARTRIDGES. THE ACTUAL NUMBER SHALL BE SPECIFIED BY THE SITE CIVIL ENGINEER ON SITE PLANS OR IN DATA TABLE BELOW. PRECAST STRUCTURE TO BE CONSTRUCTED IN ACCORDANCE WITH AS3600.
4. FOR SHALLOW, LOW DROP OR SPECIAL DESIGN CONSTRAINTS, CONTACT STORMWATER360 FOR DESIGN OPTIONS.
5. ALL WATER QUALITY PRODUCTS REQUIRE PERIODIC MAINTENANCE AS OUTLINED IN THE O&M GUIDELINES. PROVIDE MINIMUM CLEARANCE FOR MAINTENANCE ACCESS.
6. STRUCTURE AND ACCESS COVERS DESIGNED TO MEET AUSTRROADS T44 LOAD RATING WITH 0.2m FILL MAXIMUM.
7. THE STRUCTURE THICKNESSES SHOWN ARE FOR REPRESENTATIONAL PURPOSES AND VARY REGIONALLY. ANY BACKFILL DEPTH, SUB-BASE, AND OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY SITE CIVIL ENGINEER.
9. STORMFILTER BY STORMWATER360:
SYDNEY (AU) PHONE: (02) 9525 5833,
BRISBANE (AU) PHONE: (07) 3272 1872.



NOT FOR CONSTRUCTION

B	ISSUE FOR DEVELOPMENT APPLICATION	12/03/2020	JMH	OC
A	ISSUE FOR DEVELOPMENT APPLICATION	06/03/2020	JMH	OC
Issue	Description	Date	Design	Checked

Certification By Dr. Anthony Hasham (NFER):

Morson Group
 P.O Box 170,
 Potts Point, NSW 1335
 EMAIL: info@ad-s.com.au
 PHONE: 02 9380 4946

Client: **Prestige Developments Group (NSW) Pty Ltd**
 Council: **Penrith City Council**

Scale:
 0 200 400 600mm
 SCALE 1:10 @ A1
 0 1 2 3 m
 SCALE 1:50 @ A1

AUSTRALIAN CONSULTING ENGINEERS.
 AUSTRALIAN CONSULTING ENGINEERS.
 PTY LTD - A.C.N. 084 059 941
 SHOP 2-141 CONCORD RD NORTH STRATHFIELD NSW 2157
 PH: (02) 9763 1500 FX: (02) 9763 1515
 EMAIL: info@acceng.com.au

Project: **16 - 24 HOPE STREET, PENRITH PROPOSED MULTI-UNIT DEVELOPMENT STORMWATER CONCEPT PLANS DEVELOPMENT APPLICATION**

Drawing Title: **ON-SITE DETENTION DETAILS AND CALCULATION SHEETS SHEET 2 OF 2**
 Scale: A1 Project No: 180919 Dwg. No: 105.1 Issue: B