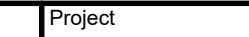


STORMWATER CONCEPT PLANS



DRAWING INDEX	
Drawing No.	DESCRIPTION
000	COVER SHEET PLAN
101	STORMWATER CONCEPT PLAN BASEMENT LEVEL 3 SHEET 1 OF 2
102	STORMWATER CONCEPT PLAN BASEMENT LEVEL 3 SHEET 2 OF 2
102.1	STORMWATER CONCEPT PLAN BASEMENT LEVEL 2
103	STORMWATER CONCEPT PLAN BASEMENT LEVEL 1
104	STORMWATER CONCEPT PLAN GROUND FLOOR
105	STORMWATER CONCEPT PLAN LEVEL 1
106	OSD DETAILS AND CALCULATION SHEET 1 OF 2
106.1	OSD DETAILS AND CALCULATION SHEET 2 OF 2
107	SEDIMENT & EROSION CONTROL PLAN & DETAILS

NOT FOR CONSTRUCTION

						Architect	Council	Scale	 CIVIL & STORMWATER ENGINEERING SERVICES PTY LTD ABN: 27 644 422 506 Shop 1, 143-147 Parramatta Road, Concord, NSW 2137 P:(02) 8397 6500 E:info@esaconsult.com.au	Project	Drawing Title
C	ISSUE FOR SECTION 4.55	01/10/2024	DBF	EH	OC	LOUCAS ARCHITECTS	CANTERBURY-BANKSTOWN COUNCIL			PROPOSED MIXED USE DEVELOPMENT 221-235, 241 HOMER STREET & 208 WARDELL ROAD, EARLWOOD STORMWATER CONCEPT PLANS	COVER SHEET PLAN
B	ISSUE FOR DEVELOPMENT APPLICATION	20/10/2022	DBF	OC	OC	L3 / Suite 309, 7-9 Gibbons St, Redfern NSW Australia Tel: (02) 8052 9600 Email: admin@loucasarc.com.au					
A	ISSUE FOR DEVELOPMENT APPLICATION	03/04/2020	JMH	OC							
Issue	Description	Date	Designed	Engineer	Checked						

LEGEND

- >--- PROPOSED STORMWATER PIPE
- PROPOSED GRATED STORMWATER PIT
- PROPOSED STORMWATER PIT FITTED WITH GAS TIGHT SEALED LID
- o VD Ø100mm VERTICAL DROP
- SURFACE FLOW DIRECTION
- SS --- SS --- Ø100mm SUBSOIL DRAINAGE TO BE WRAPPED IN GEOTEXTILE BIDIMA34 @MIN 1.0% SLOPE
- CLEANING EYE (OR INSPECTION EYE)
- o IO INSPECTION OPENING
- x RL 27.56 FINISHED SURFACE LEVEL
- GRATED DRAIN (HD)
- FG Ø150mm FLOOR GRATE
- (HD) (HEAVY DUTY)

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



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



NOTE
PROVIDE 75mm DEEP LAYER OF 10mm BLUE METAL AGGREGATE UNDER THE SLAB ON GROUND IN BETWEEN FOOTINGS. REFER DETAIL ON DRAWING 102.

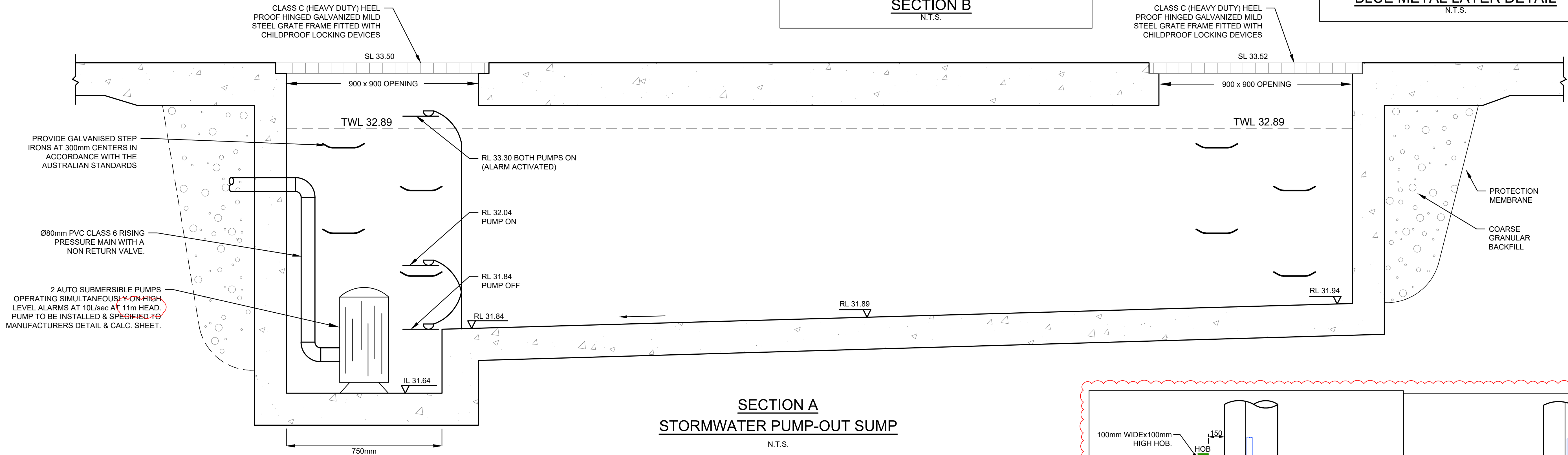
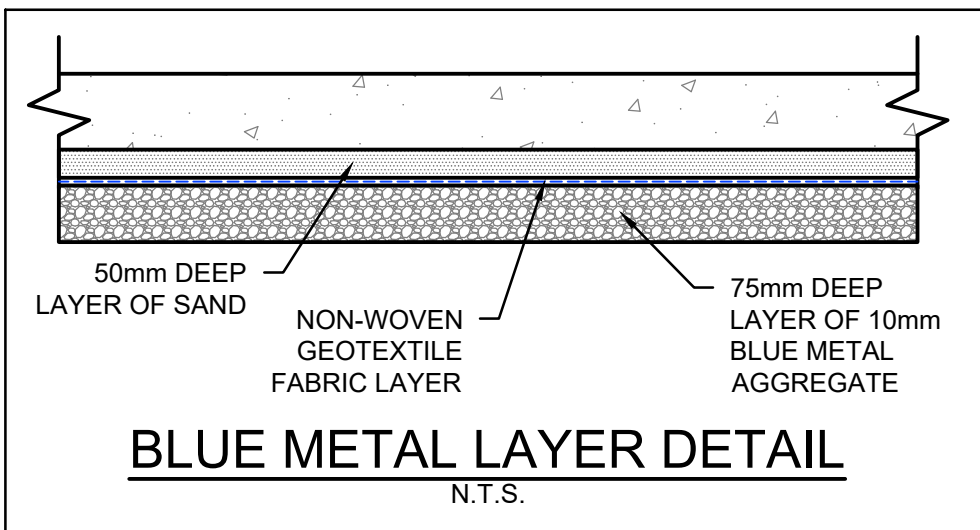
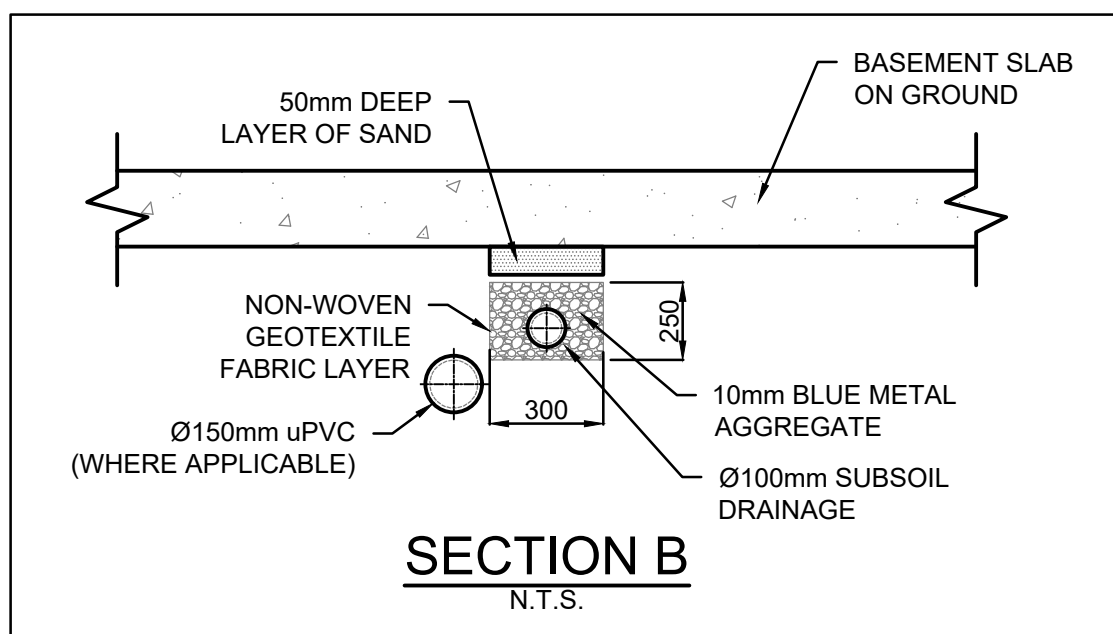
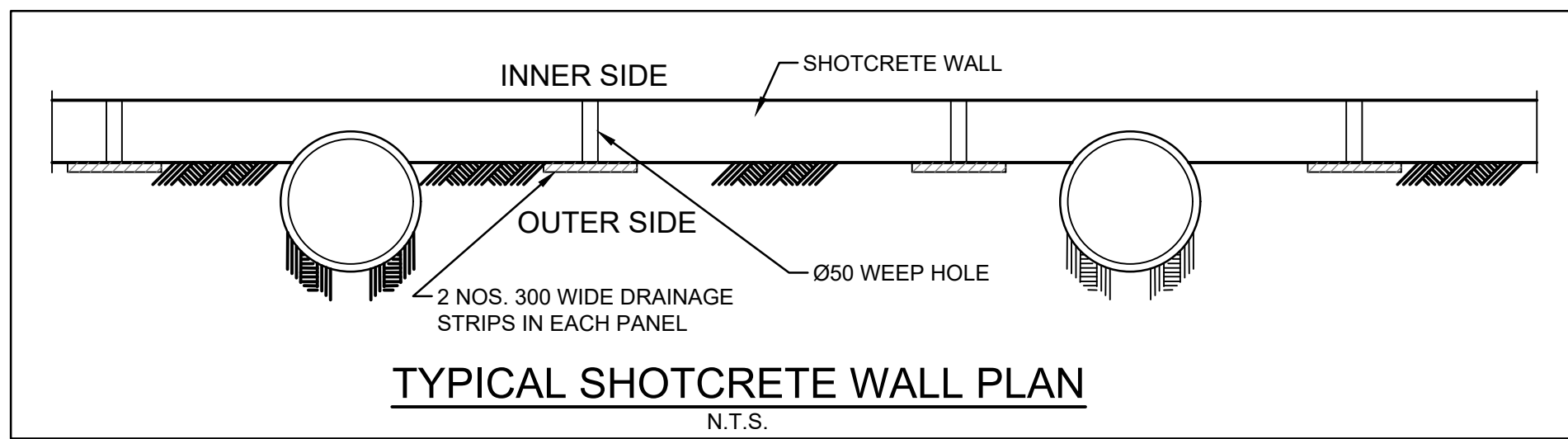
NOTE:
PIPES CAST IN CONCRETE BEAMS/SLABS MUST BE WRAPPED WITH 10mm ABLEFLEX.

NOTE:
ALL STORMWATER DRAINAGE PIPES ARE Ø100 uPVC U.N.O.

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

NOT FOR CONSTRUCTION

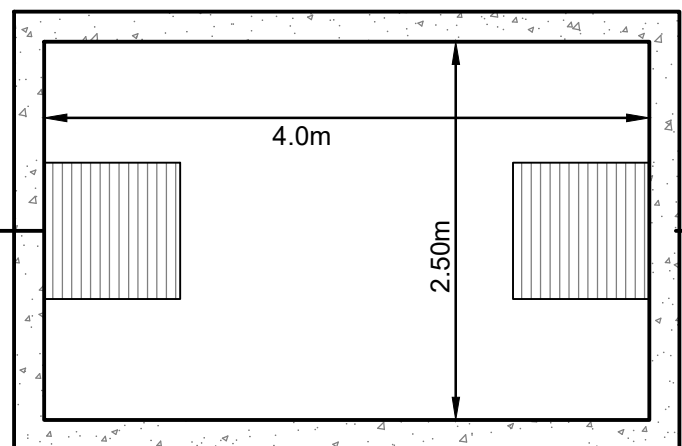
Architect						Council		Scale		Project		Drawing Title	
D	ISSUE FOR SECTION 4.55	01/10/2024	DBF	EH	OC	CANTERBURY-BANKSTOWN COUNCIL		0 4 8 12 m		PROPOSED MIXED USE DEVELOPMENT 221-235,241 HOMER STREET & 208 WARDELL ROAD, EARLWOOD STORMWATER CONCEPT PLANS		STORMWATER CONCEPT PLAN BASEMENT LEVEL 3 SHEET 1 OF 2	
C	ISSUE FOR DEVELOPMENT APPLICATION	01/12/2022	DBF	OC	OC	L3 / Suite 309, 7-9 Gibbons St, Redfern NSW Australia		SCALE 1:200 @ A1		CIVIL & STORMWATER ENGINEERING SERVICES PTY LTD		Scale	
B	ISSUE FOR DEVELOPMENT APPLICATION	20/10/2022	DBF	OC	OC	Tel: (02) 8052 9600		C & S ENGINEERING SERVICES		ABN: 27 644 422 506		A1	
A	ISSUE FOR DEVELOPMENT APPLICATION	03/04/2020	JMH	OC	OC	Email: admin@loucasarc.com.au		P:(02) 8397 6500		Shop 1, 143-147 Parramatta Road, Concord, NSW 2137		Project No.	
Issue	Description	Date	Designed	Engineer	Checked			E:info@esgconsult.com.au		200251		Dwg No.	
										101		Issue	
										200251		D	



SECTION A
STORMWATER PUMP-OUT SUMP

N.T.S.

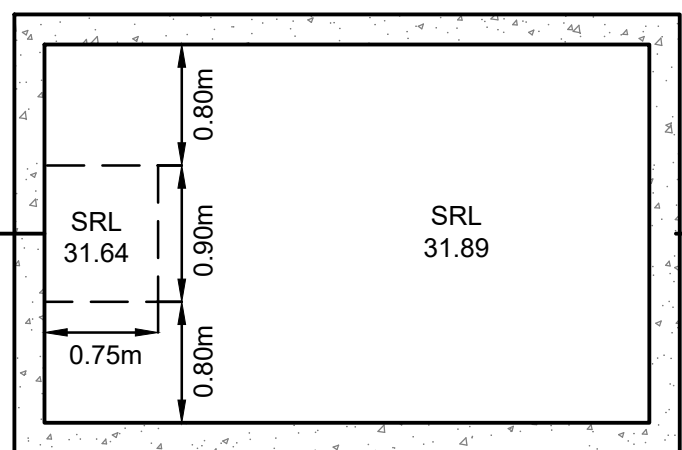
A
102



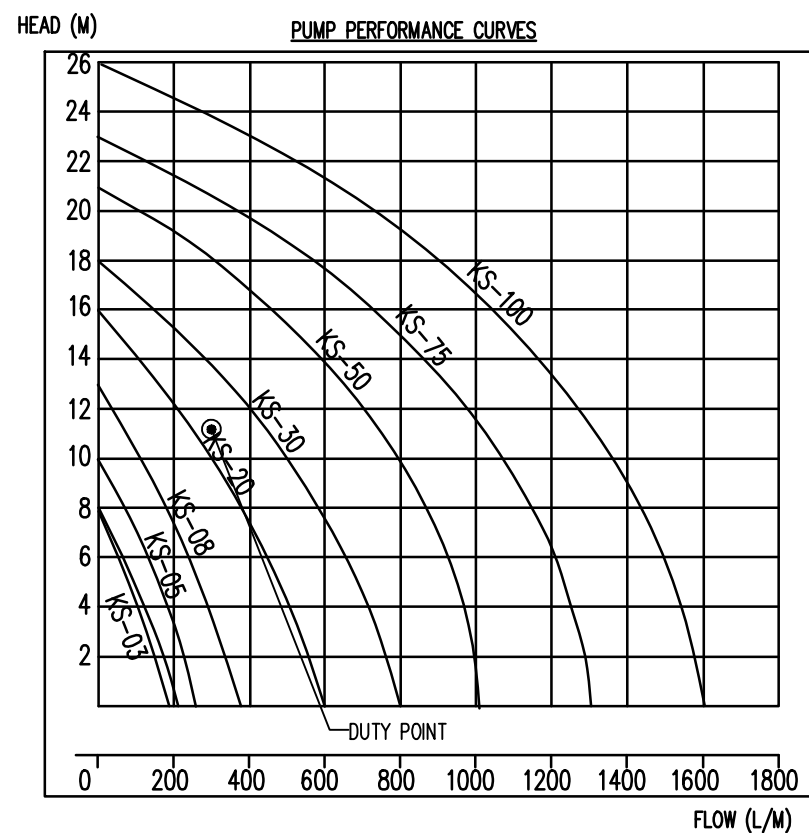
NOTE:
ALL THE AG LINES BEHIND
BASEMENT WALLS TO BE
CONNECTED TO PUMP-OUT SUMP.

PUMP-OUT SUMP DETAIL
PLAN VIEW
SCALE 1:50

A
102



PUMP-OUT SUMP DETAIL
SRL
SCALE 1:50



PUMP STORAGE VOLUME
CALCULATION

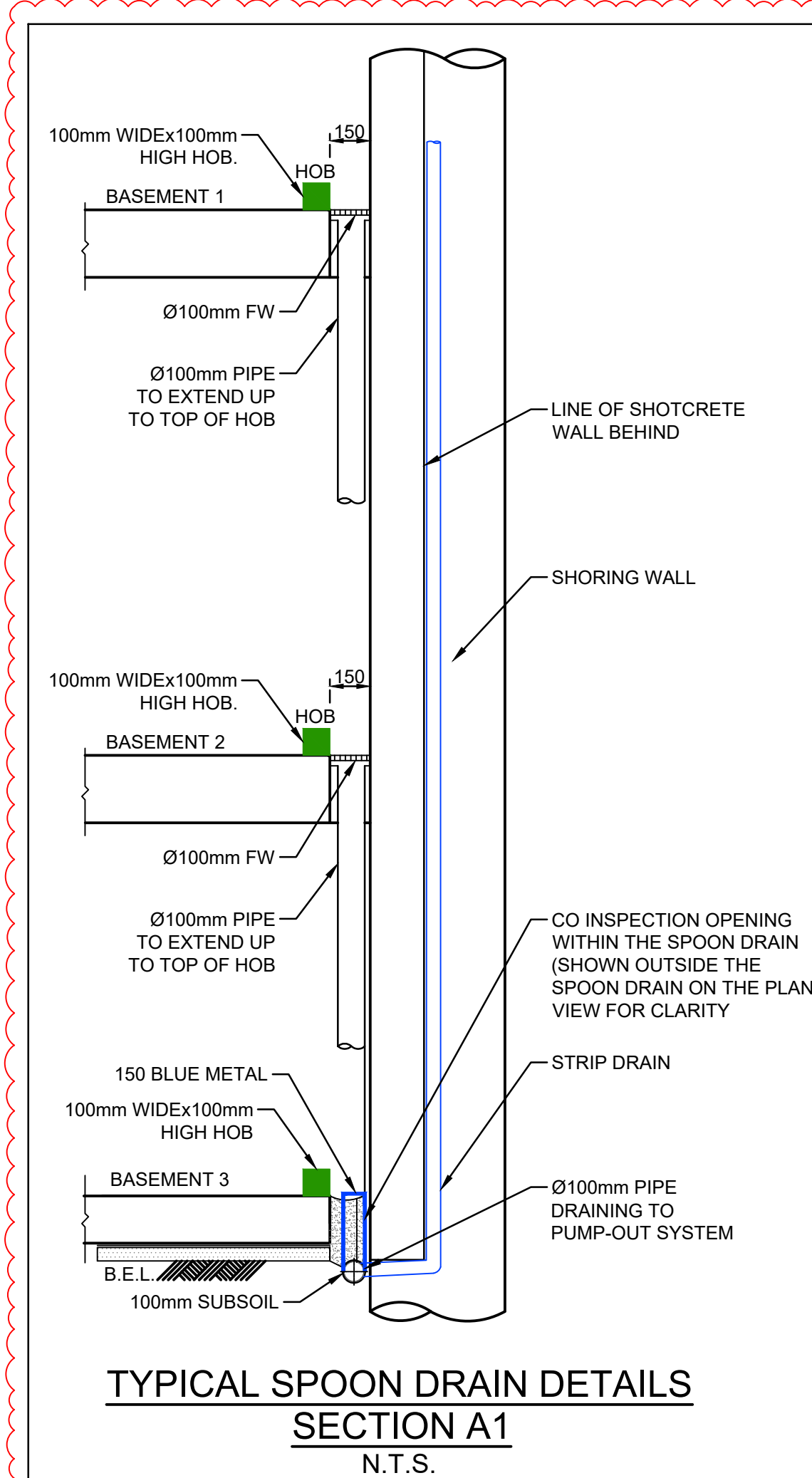
AREA DRAINING TO SUMP= 0m²

SUMP SIZE BASED ON 100 YEAR 2 HR STORM, I= 58.90 mm/hr,
 $Q = CIA/3600 = 1 \times 58.90 \times 0.3600 = 0.0 \text{ L/sec}$
VOLUME REQUIRED = $0.0 \times (2 \times 60 \times 60) = 0 \text{ L} = 0 \text{ m}^3$
STORAGE PROVIDED $4.0 \times 2.5 \times 1.0 = 10 \text{ m}^3$

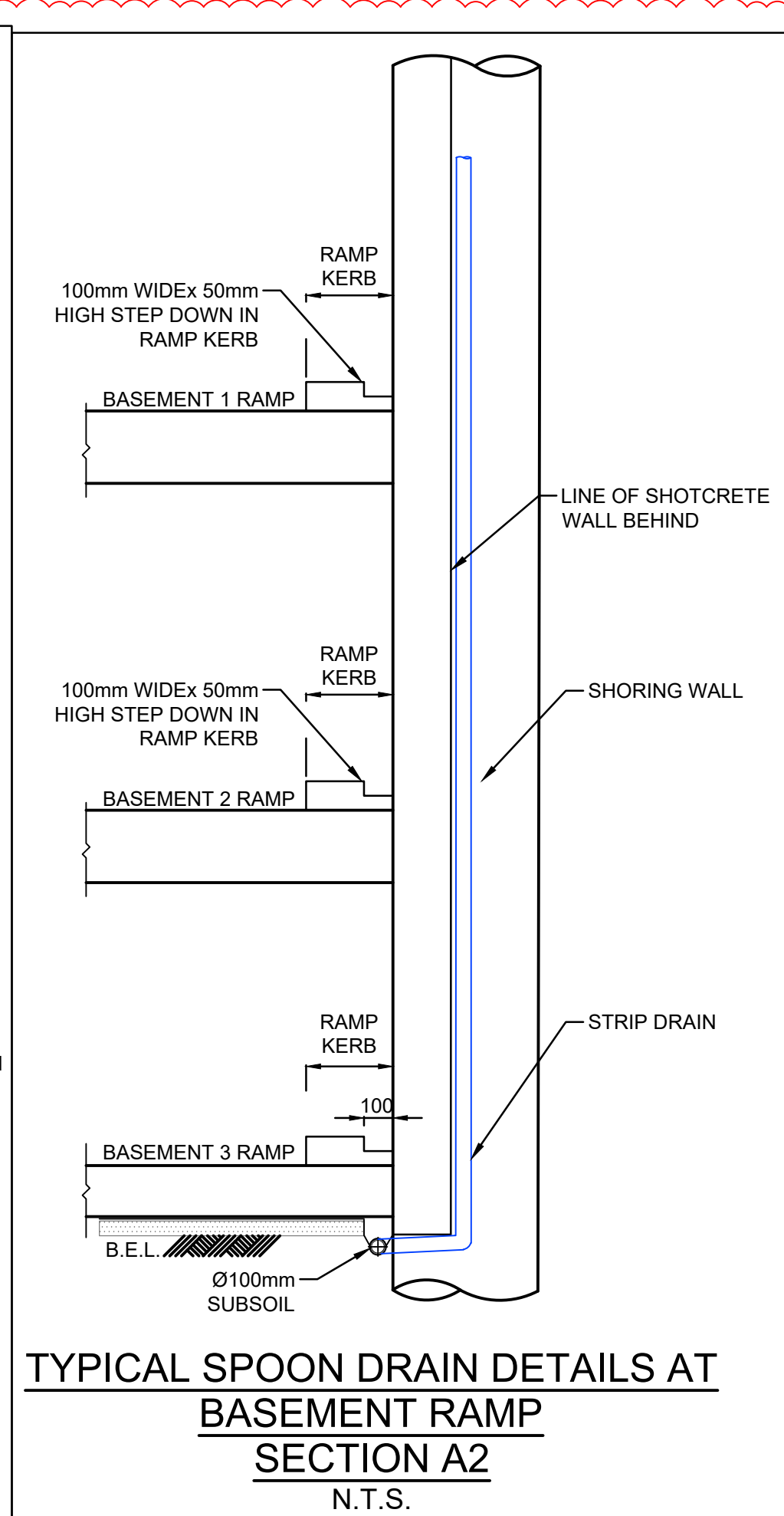
PUMP OUT RATE BASED ON 100YR 5MIN STORM, I=262 mm/hr
(MIN RATE REQUIRED AS PER AS3500.3 IS 10 L/sec)
 $Q = CIA/3600 = 1 \times 262 \times 0.3600 = 0 \text{ L/sec}$

DUAL KS-30 PUMP OR EQUIVALENT TO BE INSTALLED IN SUMP
AND CONNECTED TO CONTROL PANEL WHICH WILL ALLOW
FOR THE PUMP TO OPERATE SIMULTANEOUSLY ON HIGH
LEVEL WITH ALARM AT 10 L/sec AT 11m HEAD

Type	Output		Outlet		Rated		Maximum		Weigh	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	



TYPICAL SPOON DRAIN DETAILS
SECTION A1
N.T.S.

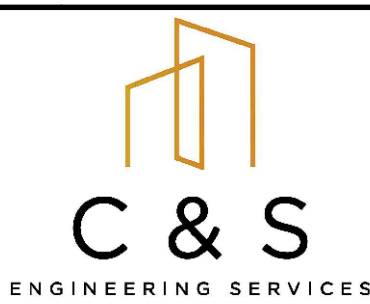
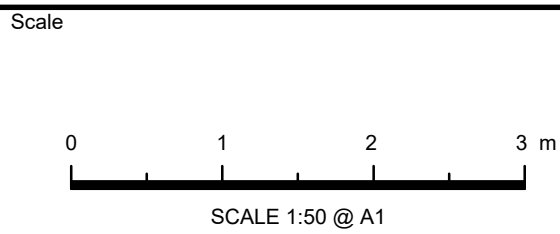


TYPICAL SPOON DRAIN DETAILS AT
BASEMENT RAMP
SECTION A2
N.T.S.

NOT FOR CONSTRUCTION

D	ISSUE FOR SECTION 4.55	01/10/2024	DBF	EH	OC	Architect LOUCAS ARCHITECTS L3 / Suite 309, 7-9 Gibbons St, Redfern NSW Australia Tel: (02) 8052 9600 Email: admin@loucasarc.com.au
C	ISSUE FOR DEVELOPMENT APPLICATION	01/12/2022	DBF	OC	OC	
B	ISSUE FOR DEVELOPMENT APPLICATION	20/10/2022	DBF	OC	OC	
A	ISSUE FOR DEVELOPMENT APPLICATION	03/04/2020	JMH	OC	OC	
Issue	Description	Date	Designed	Engineer	Checked	

Council
CANTERBURY-BANKSTOWN COUNCIL



CIVIL & STORMWATER ENGINEERING
SERVICES PTY LTD
ABN: 27 644 422 506
Shop 1, 143-147 Parramatta Road, Concord, NSW
2137
P:(02) 8397 6500
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Project
**PROPOSED MIXED USE DEVELOPMENT
221-235,241 HOMER STREET &
208 WARDELL ROAD, EARLWOOD
STORMWATER CONCEPT PLANS**

Drawing Title STORMWATER CONCEPT PLAN BASEMENT LEVEL 3 SHEET 2 OF 2			
Scale As Shown	A1	Project No. 200251	Dwg No. 102
Issue D			

LEGEND

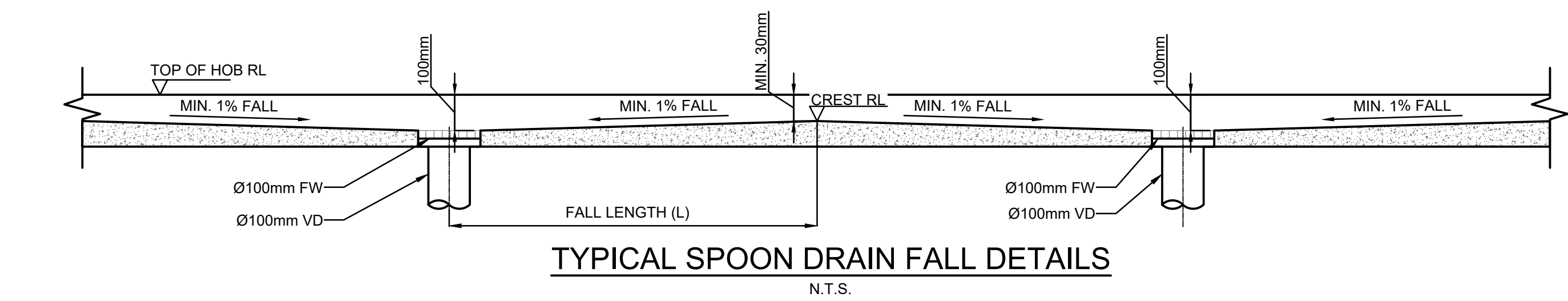
- PROPOSED STORMWATER
- VD Ø100mm VERTICAL DROP
- SURFACE FLOW DIRECTION
- SS Ø100mm SUBSOIL DRAINAGE TO BE WRAPPED IN GEOTEXTILE BIDIMA34 @MIN 1.0% SLOPE
- CLEANING EYE (OR INSPECTION EYE)
- IO INSPECTION OPENING
- RL 27.56 FINISHED SURFACE LEVEL
- GRATED DRAIN (HD)
- FG Ø150mm FLOOR GRATE (HD) (HEAVY DUTY)

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

NOTE:
ALL STORMWATER DRAINAGE PIPES ARE
Ø100 uPVC AT MIN 1.0% SLOPE U.N.O.

NOTE:
ALLOW BENCHING WITHIN SPOON DRAIN
TO ACHIEVE MIN 1.0% FALL TO FLOOR
WASTES.



BASEMENT 2

SCALE 1:200

PIPES NOTE:

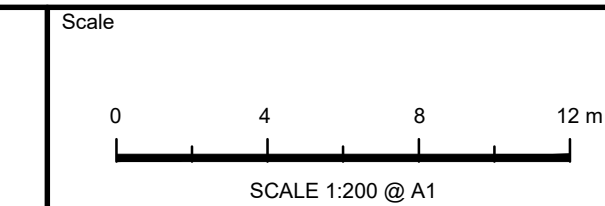
Ø65 PVC @ MIN 1.0%
Ø90 PVC @ MIN 1.0%
Ø100 PVC @ MIN 1.0%
Ø150 PVC @ MIN 1.0%
Ø225 PVC @ MIN 0.5%
Ø300 PVC @ MIN 0.4%
UNLESS NOTED OTHERWISE

NOT FOR CONSTRUCTION

Issue	Description	Date	Designed	Engineer	Checked
A	ISSUE FOR SECTION 4.55	01/10/2024	DBF	EH	OC

Architect
LOUCAS ARCHITECTS
L3 / Suite 309, 7-9 Gibbons St,
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Council
CANTERBURY-BANKSTOWN COUNCIL



CIVIL & STORMWATER ENGINEERING
SERVICES PTY LTD
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E:info@esgconsult.com.au

Project
**PROPOSED MIXED USE DEVELOPMENT
221-235,241 HOMER STREET &
208 WARDELL ROAD, EARLWOOD
STORMWATER CONCEPT PLANS**

Drawing Title	Scale	A1	Project No.	Dwg. No.	Issue
STORMWATER CONCEPT PLAN BASEMENT LEVEL 2	1:200		200251	102.1	A

LEGEND

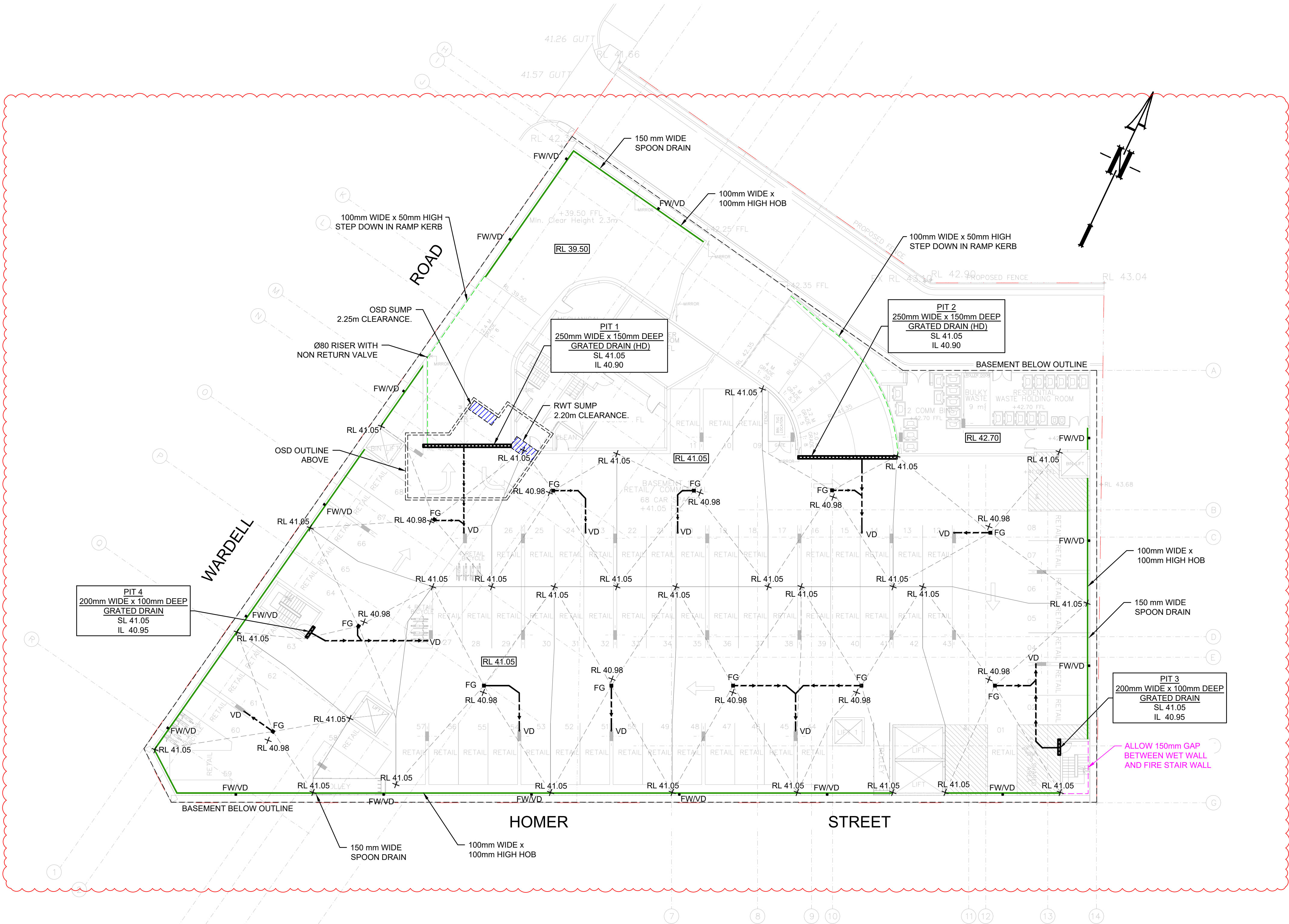
- PROPOSED STORMWATER
- VD Ø100mm VERTICAL DROP
- SURFACE FLOW DIRECTION
- SS Ø100mm SUBSOIL DRAINAGE TO BE WRAPPED IN GEOTEXTILE BIDIMA34 @MIN 1.0% SLOPE
- CLEANING EYE (OR INSPECTION EYE)
- IO INSPECTION OPENING
- FINISHED SURFACE LEVEL
- GRATED DRAIN (HD)
- FG Ø150mm FLOOR GRATE (HD) (HEAVY DUTY)

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

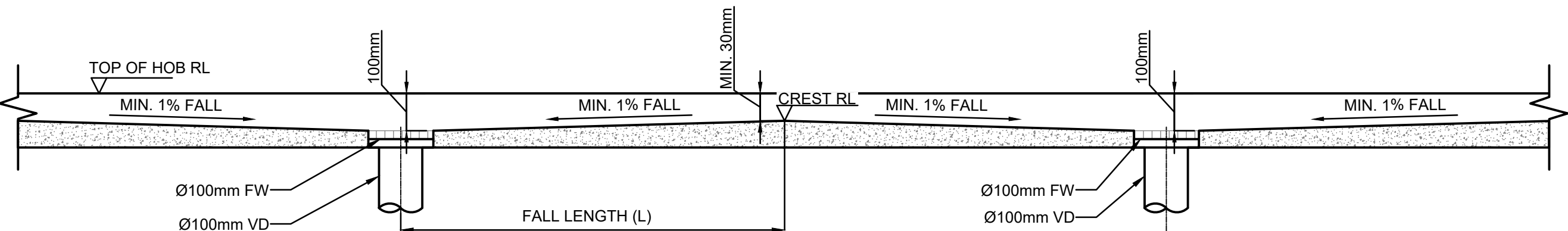
NOTE:
ALL STORMWATER DRAINAGE PIPES ARE Ø100 uPVC AT MIN 1.0% SLOPE U.N.O.

NOTE:
ALLOW BENCHING WITHIN SPOON DRAIN TO ACHIEVE MIN 1.0% FALL TO FLOOR WASTES.



BASEMENT 1

SCALE 1:200



TYPICAL SPOON DRAIN FALL DETAILS

N.T.S.

NOT FOR CONSTRUCTION

E	ISSUE FOR SECTION 4.55	01/10/2024	DBF	EH	OC	Architect	Council	Scale	Project	Drawing Title	
D	ISSUE FOR DEVELOPMENT APPLICATION	01/12/2022	DBF	OC	OC	LOUCAS ARCHITECTS L3 / Suite 309, 7-9 Gibbons St, Redfern NSW Australia Tel: (02) 8052 9600 Email: admin@loucasarc.com.au	CANTERBURY-BANKSTOWN COUNCIL	 SCALE 1:200 @ A1	 CIVIL & STORMWATER ENGINEERING SERVICES PTY LTD ABN: 27 644 422 506 Shop 1, 143-147 Parramatta Road, Concord, NSW 2137 P:(02) 8397 6500 E:info@esgconsult.com.au	PROPOSED MIXED USE DEVELOPMENT 221-235,241 HOMER STREET & 208 WARDELL ROAD, EARLWOOD STORMWATER CONCEPT PLANS	STORMWATER CONCEPT PLAN BASEMENT LEVEL 1
C	ISSUE FOR DEVELOPMENT APPLICATION	20/10/2022	DBF	OC	OC						
B	ISSUE FOR DEVELOPMENT APPLICATION	17/04/2020	JMH	OC							
A	ISSUE FOR DEVELOPMENT APPLICATION	03/04/2020	JMH	OC							
Issue	Description	Date	Designed	Engineer	Checked						
						Scale 1:200 @ A1		Scale A1 Project No. 200251 Dwg. No. 103 Issue E			

LEGEND

- PROPOSED STORMWATER DRAINAGE PIPE
- PROPOSED STORMWATER DRAINING TO OSD
- PROPOSED STORMWATER BYPASSING OSD
- Ø100 PVC WRAPPED IN 10mm ABLEFLEX STORMWATER DRAINAGE PIPE CAST IN SLAB
- Ø65 PVC WRAPPED IN 10mm ABLEFLEX STORMWATER DRAINAGE PIPE CAST IN SLAB
- Ø50mm PVC WRAPPED IN 10mm ABLEFLEX CAST IN SLAB
- PROPOSED STORMWATER PIPE TO RAINWATER TANK
- Ø100mm SUBSOIL DRAINAGE TO BE WRAPPED IN GEOTEXTILE BIDIMA34
- RISER PIPE
- Ø300 CLEANING EYE
- RAINWATER TANK
- DOWNPIPE Ø100
- VERTICAL DROP Ø100
- PLANTER GRATE Ø150
- FLOOR GRATE Ø150
- FLOOR GRATE 200x200 (ALLOW MINIMUM 1.0% FALL TO FG)
- FLOOR GRATE 300x300 (ALLOW MINIMUM 1.0% FALL TO FW)
- RAINWATER OUTLET Ø260 SPS (ALLOW MINIMUM 1.0% FALL TO RWO)
- SUSPENDED PLANTER BOX RAINWATER OUTLET
- DESIGN SURFACE LEVEL
- EXISTING SURFACE LEVEL
- INVERT LEVEL
- AC CONDENSER TUNDISH TO MANUFACTURER'S DETAILS
- Ø50mm EMERGENCY OVERFLOW SPITTERS/PIPES
- EXISTING STORMWATER
- EXISTING WATER MAIN
- EXISTING SEWER MAIN
- EXISTING TELSTRA
- EXISTING ELECTRICAL
- EXISTING GAS
- EXISTING OPTIC FIBER

GENERAL NOTES

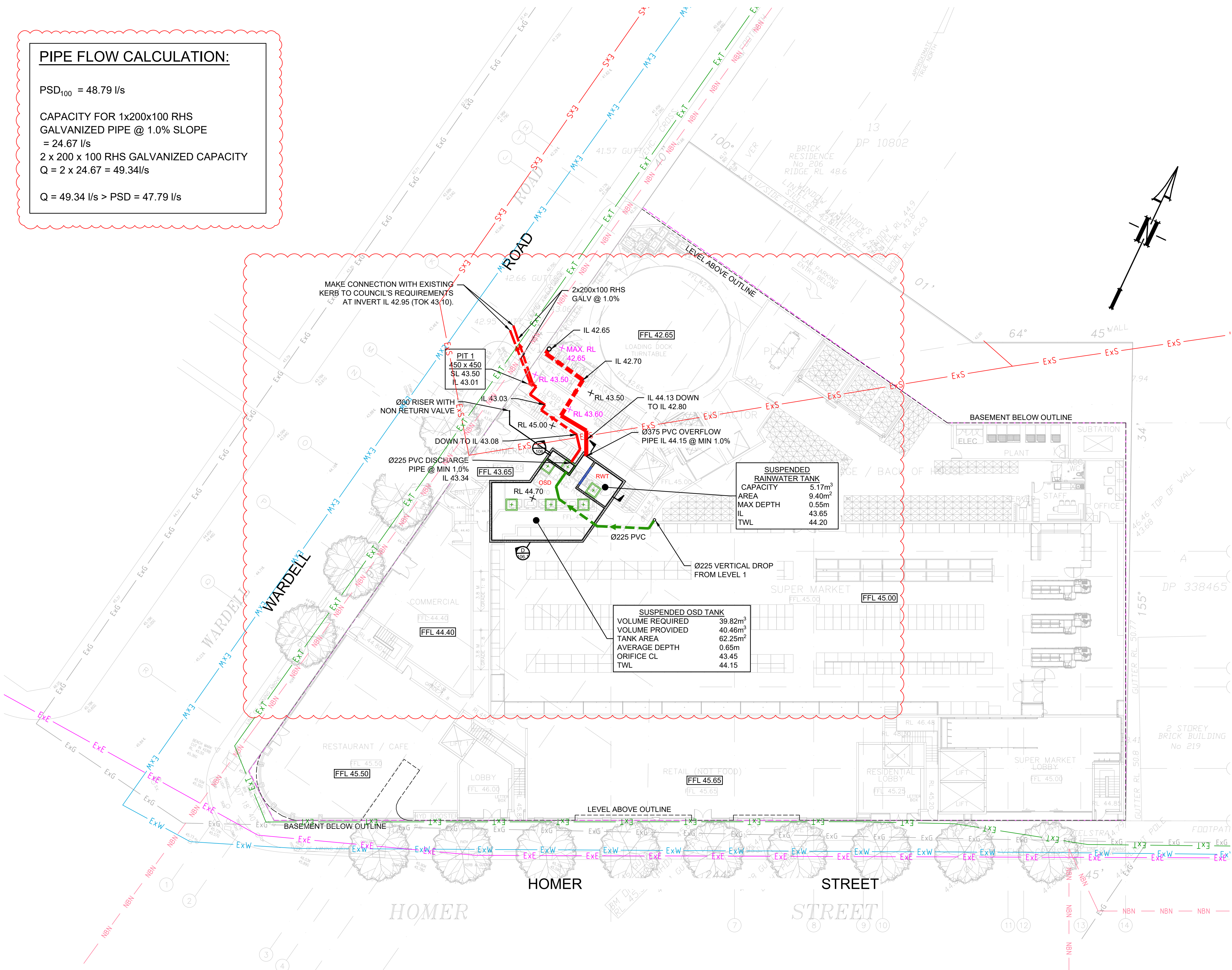
- ALL LINES ARE TO BE Ø100 uPVC 1.0% GRADE UNLESS NOTED OTHERWISE. CHARGED LINES TO BE SEWERGRADE & SEALED.
- EXISTING SERVICES LOCATIONS SHOWN INDICATIVE ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE & LEVEL ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS.
- ALL PIPES TO HAVE MIN 150mm COVER IF LOCATED WITHIN PROPERTY.
- ALL PITS IN DRIVEWAYS TO BE 450x450 CONCRETE AND ALL PITS IN LANDSCAPED AREAS TO BE 450x450 PLASTIC.
- PITS LESS THAN 600mm DEEP MAY BE BRICK, PRECAST OR CONCRETE.
- ALL BALCONIES AND ROOFS TO BE DRAINED AND TO HAVE SAFETY OVERFLOWS IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
- ALL EXTERNAL SLABS TO BE WATERPROOFED.
- ALL GRATES TO HAVE CHILD PROOF LOCKS.
- ALL DRAINAGE WORKS TO AVOID TREE ROOTS.
- ALL DPs TO HAVE LEAF GUARDS.
- ALL EXISTING LEVELS TO BE CONFIRMED BY BUILDER PRIOR TO CONSTRUCTION.
- ALL WORK 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.
- ALL WORK SHALL BE IN ACCORDANCE WITH B.C.A. AND A.S.3500.3.
- REFER TO LANDSCAPE ARCHITECT'S DRAWINGS FOR LANDSCAPING.
- 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.
- ALL PIPES IN BALCONIES TO BE Ø50mm PVC WRAPPED IN 10mm ABLEFLEX CAST IN SLAB AT MIN 1.0% SLOPE. 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.
- 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.

PIPE FLOW CALCULATION:

$PSD_{100} = 48.79 \text{ l/s}$

CAPACITY FOR 1x200x100 RHS GALVANIZED PIPE @ 1.0% SLOPE
 $= 24.67 \text{ l/s}$
2 x 200 x 100 RHS GALVANIZED CAPACITY
 $Q = 2 \times 24.67 = 49.34 \text{ l/s}$

$Q = 49.34 \text{ l/s} > PSD = 47.79 \text{ l/s}$



NOTE:
REFER ARCHITECTURAL DRAWINGS FOR FINAL SET-OUT LEVELS.

NOTE:
ALL GRATES WITHIN FOOTWAY AREAS TO BE HEEL GUARD & BIKE SAFE.

NOTE:
PITS DEEPER THAN 1.0m TO BE FITTED WITH STEP IRONS

NOTE
FIRE COLLARS TO BE APPROVED BY THE CONTRACTOR AND IN ACCORDANCE TO THE FIRE RATING REPORT OF THE FIRE ENGINEER.

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

NOTE:
ALL REDUNDANT PIPELINES WITHIN FOOTPATH AREA MUST BE REMOVED AND FOOTPATH/KERB REINSTATED.

NOTE:
IT IS CONTRACTOR'S RESPONSIBILITY TO ENSURE MINIMUM PONDING IS ACHIEVED OVER THE FLOOR WASTES BY GRADING CATCHMENTS' SURFACES AT MINIMUM 1.0% FALL

NOTES:
1- CONTRACTOR IS TO PROVIDE OVERFLOW OUTLETS & EMERGENCY OVERFLOW SPITTERS TO ALL TRAPPED AREAS.
2- DP/VD ARE Ø100mm PIPES U.N.O.
3- ALL TRANSFERRING PIPES ARE SUSPENDED U.N.O.
4- BALCONIES PIPES ARE Ø50mm HDPE OR PVC WRAPPED IN 10mm ABLEFLEX CAST IN SLAB AT MIN 1.0% SLOPE.

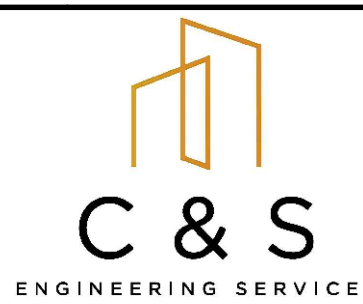
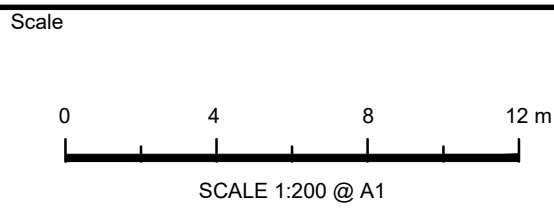
GROUND FLOOR PLAN
SCALE 1:200

NOT FOR CONSTRUCTION

F	ISSUE FOR SECTION 4.55	01/10/2024	DBF	EH	OC
E	ISSUE FOR DEVELOPMENT APPLICATION	01/12/2022	DBF	OC	OC
D	ISSUE FOR DEVELOPMENT APPLICATION	28/11/2022	DBF	OC	OC
C	ISSUE FOR DEVELOPMENT APPLICATION	20/10/2022	DBF	OC	OC
B	ISSUE FOR DEVELOPMENT APPLICATION	17/04/2020	JMH	OC	OC
Issue	Description	Date	Designed	Engineer	Checked

LOUCAS ARCHITECTS
L3 / Suite 309, 7-9 Gibbons St, Redfern NSW Australia
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CANTERBURY-BANKSTOWN COUNCIL



CIVIL & STORMWATER ENGINEERING SERVICES PTY LTD
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Shop 1, 143-147 Parramatta Road, Concord, NSW 2137
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E:info@esgconsult.com.au

PROPOSED MIXED USE DEVELOPMENT
221-235,241 HOMER STREET & 208 WARDELL ROAD, EARLWOOD
STORMWATER CONCEPT PLANS

Drawing Title	STORMWATER CONCEPT PLAN GROUND FLOOR		
Scale	A1	Project No.	200251
Dwg. No.	104	Issue	F

LEGEND

- PROPOSED STORMWATER DRAINAGE PIPE
- PROPOSED STORMWATER DRAINING TO OSD
- PROPOSED STORMWATER BYPASSING OSD
- Ø100 PVC WRAPPED IN 10mm ABLEFLEX STORMWATER DRAINAGE PIPE CAST IN SLAB
- Ø65 PVC WRAPPED IN 10mm ABLEFLEX STORMWATER DRAINAGE PIPE CAST IN SLAB
- Ø50mm PVC WRAPPED IN 10mm ABLEFLEX CAST IN SLAB
- PROPOSED STORMWATER PIPE TO RAINWATER TANK
- Ø100mm SUBSOIL DRAINAGE TO BE WRAPPED IN GEOTEXTILE BIDIMA34 RISER PIPE
- Ø300 CLEANING EYE
- RAINWATER TANK
- DOWNPIPE Ø100
- VERTICAL DROP Ø100
- PLANTER GRATE Ø150
- FLOOR GRATE Ø150
- FLOOR GRATE 200x200 (ALLOW MINIMUM 1.0% FALL TO FG)
- FLOOR GRATE 300x300 (ALLOW MINIMUM 1.0% FALL TO FW)
- RAINWATER OUTLET Ø260 SPS (ALLOW MINIMUM 1.0% FALL TO RWO)
- SUSPENDED PLANTER BOX RAINWATER OUTLET
- DESIGN SURFACE LEVEL
- EXISTING SURFACE LEVEL
- INVERT LEVEL
- AC CONDENSER TUNDISH TO MANUFACTURER'S DETAILS
- Ø50mm EMERGENCY OVERFLOW SPITTERS/PIPES
- EXISTING STORMWATER
- EXISTING WATER MAIN
- EXISTING SEWER MAIN
- EXISTING TELSTRA
- EXISTING ELECTRICAL
- EXISTING GAS
- EXISTING OPTIC FIBER

NOTES:

1- CONTRACTOR IS TO PROVIDE OVERFLOW OUTLETS & EMERGENCY OVERFLOW SPITTERS TO ALL TRAPPED AREAS.

2- DP/VD ARE Ø100mm PIPES U.N.O.

3- ALL TRANSFERRING PIPES ARE SUSPENDED U.N.O.

4- BALCONIES PIPES ARE Ø50mm PVC WRAPPED IN 10mm ABLEFLEX CAST IN SLAB AT MIN 1.0% SLOPE.

NOTE:

IT IS CONTRACTOR'S RESPONSIBILITY TO ENSURE MINIMUM PONDING IS ACHIEVED OVER THE FLOOR WASTES BY GRADING CATCHMENTS' SURFACES AT MINIMUM 1.0% FALL.

NOTE:

ALL LINEAR GRATED DRAINS TO BE MIN. 100mm DEEP.

NOTE:

REFER ARCHITECTURAL DRAWINGS FOR FINAL SET-OUT LEVELS.

NOTE:

ALL STORMWATER DRAINAGE PIPES ARE Ø100 PVC AT MIN 1.0% SLOPE U.N.O.

PIPES NOTE:

Ø65 PVC @ MIN 1.0%

Ø90 PVC @ MIN 1.0%

Ø100 PVC @ MIN 1.0%

Ø150 PVC @ MIN 1.0%

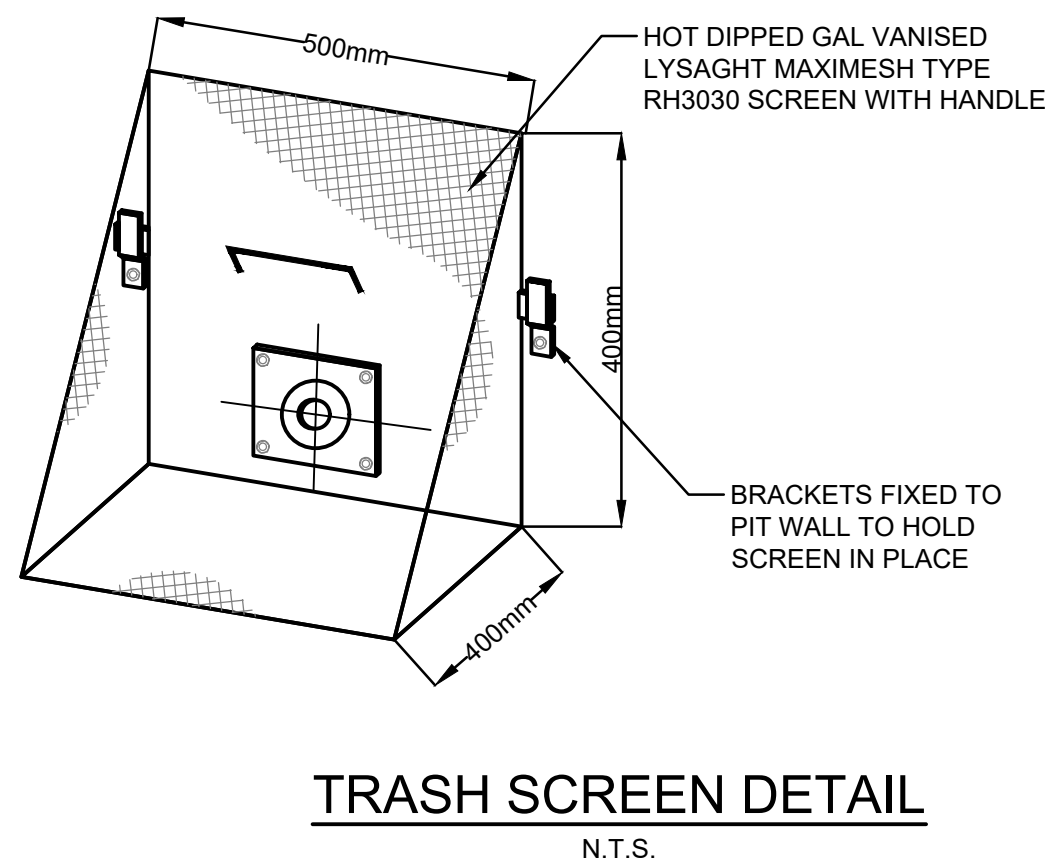
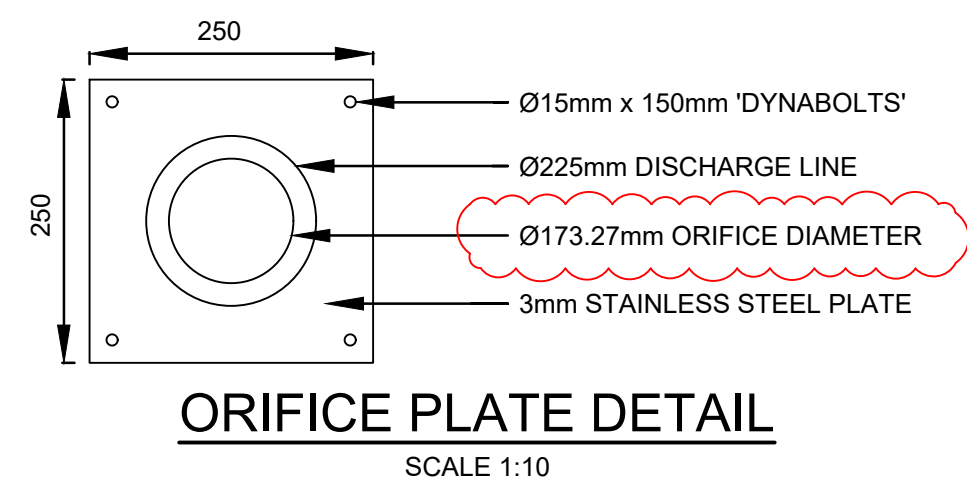
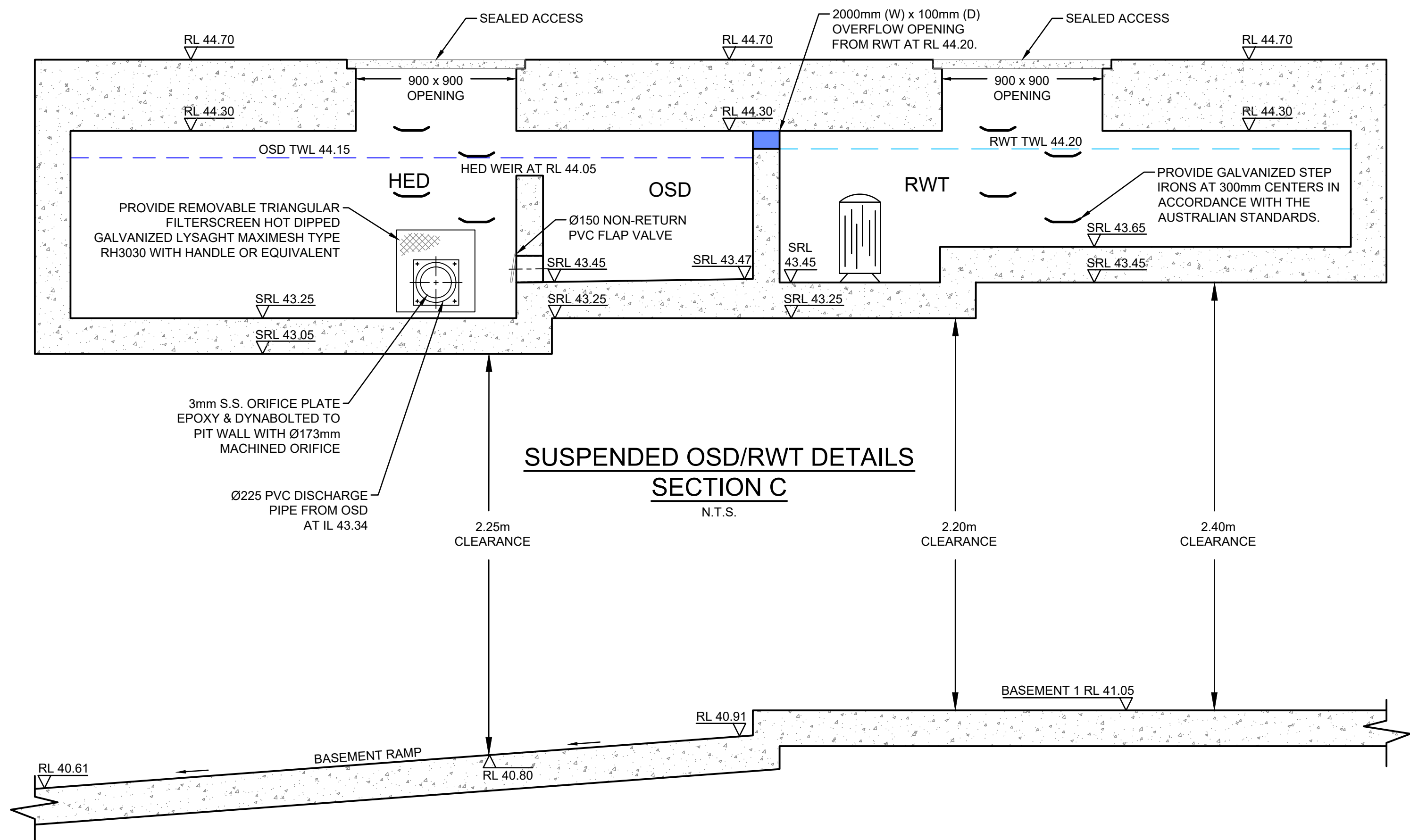
Ø225 PVC @ MIN 0.5%

Ø300 PVC @ MIN 0.4%

UNLESS NOTED OTHERWISE

NOT FOR CONSTRUCTION

E	ISSUE FOR SECTION 4.55	01/10/2024	DBF	EH	OC	Architect LOUCAS ARCHITECTS L3 / Suite 309, 7-9 Gibbons St, Redfern NSW Australia Tel: (02) 8052 9600 Email: admin@loucasarc.com.au	Council CANTERBURY-BANKSTOWN COUNCIL	Scale 04812 m SCALE 1:200 @ A1	 CIVIL & STORMWATER ENGINEERING SERVICES PTY LTD ABN: 27 644 422 506 Shop 1, 143-147 Parramatta Road, Concord, NSW 2137 P:(02) 8397 6500 E:info@esgconsult.com.au	Project PROPOSED MIXED USE DEVELOPMENT 221-235,241 HOMER STREET & 208 WARDELL ROAD, EARLWOOD STORMWATER CONCEPT PLANS	Drawing Title STORMWATER CONCEPT PLAN LEVEL 1					
D	ISSUE FOR DEVELOPMENT APPLICATION	01/12/2022	DBF	OC	OC											
C	ISSUE FOR DEVELOPMENT APPLICATION	20/10/2022	DBF	OC	OC											
B	ISSUE FOR DEVELOPMENT APPLICATION	17/04/2020	JMH	OC												
A	ISSUE FOR DEVELOPMENT APPLICATION	03/04/2020	JMH	OC												
Issue	Description	Date	Designed	Engineer	Checked											
0 10m at full size																
		Scale	A1	Project No.	200251	Dwg. No.	105	Issue								
		1:200						E								



CANTERBURY COUNCIL

Area (m²) = 3252.97
C (10yrs) ARAR 1987 p307 = 0.90

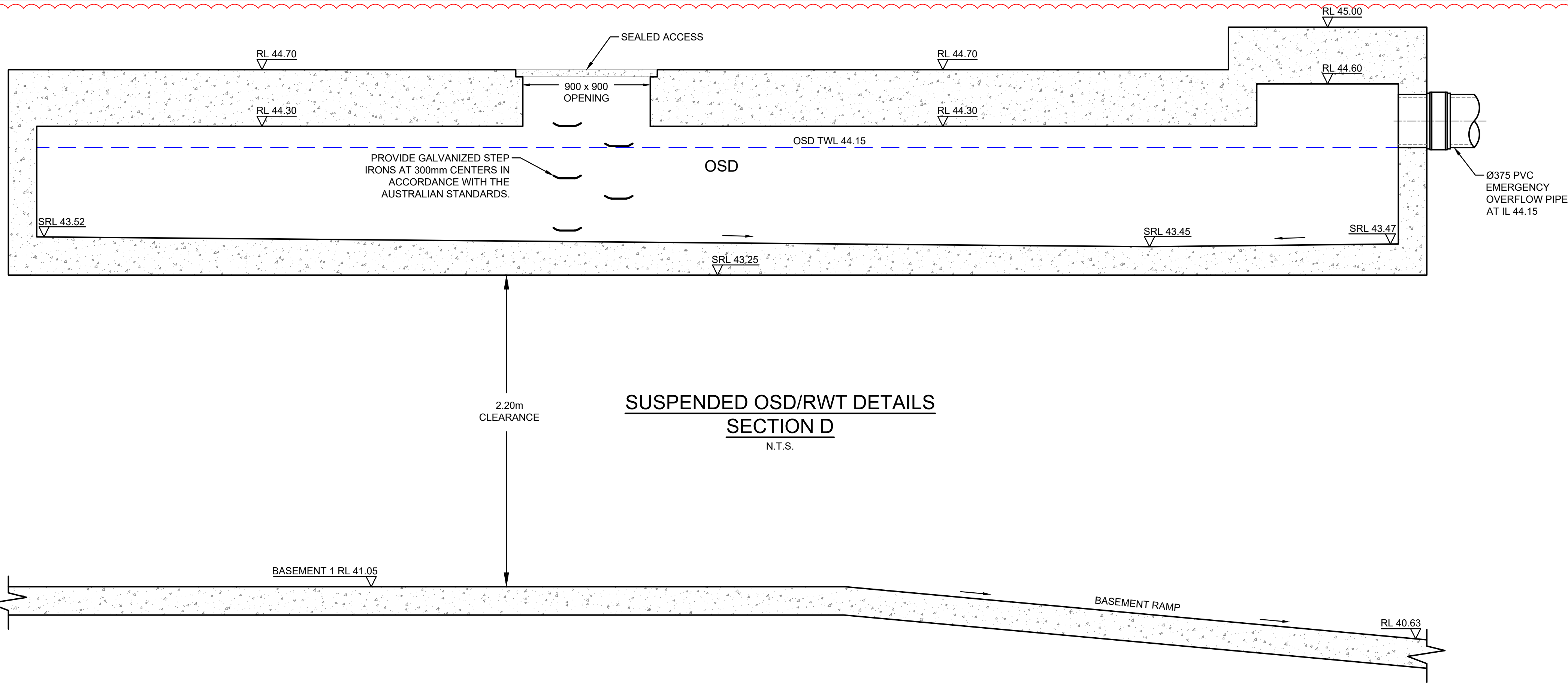
Storm Duration T (min)	1 10 yrs (mm/hr)	V of Hydrograph (m ³)	Inflow Peak discharge (L/s)	Required Storage (m ³)
5	173	42.21	140.69	27.57
6	163	47.72	132.56	30.16
7	155	52.94	126.05	32.45
8	147	57.38	119.55	33.96
9	141	61.92	114.67	35.57
10	135	65.87	109.79	36.60
11	130	69.78	105.72	37.57
12	126	73.78	102.47	38.65
13	121	76.75	98.40	38.70
14	118	80.61	95.96	39.62
15	114	83.44	92.71	39.53
16	111	86.66	90.27	39.82
17	108	89.59	87.83	39.82
18	105	92.22	85.39	39.53
20	100	97.59	81.32	39.04
25	90	109.79	73.19	36.60
30	83	121.50	67.50	33.68
35	76	129.79	61.81	27.33
40	71	138.58	57.74	21.48
45	67	147.12	54.49	15.38
50	63	153.70	51.23	7.33
55	60	161.02	48.79	0.02
60	57	166.88	46.35	-8.77

MIN Storage m ³ (Below Ground)=	39.82	
MIN Storage m ³ (Above Ground) =	47.79	Not Applicable
Storage Provided m ³ =	40.46	
Area m ² =	62.25	
Av depth water=	0.65	
Head in 1:10 (m) =	0.7	
PSD (L/s) =	48.79	(150/10,000 x Area)
Diameter (mm) =	173.27	

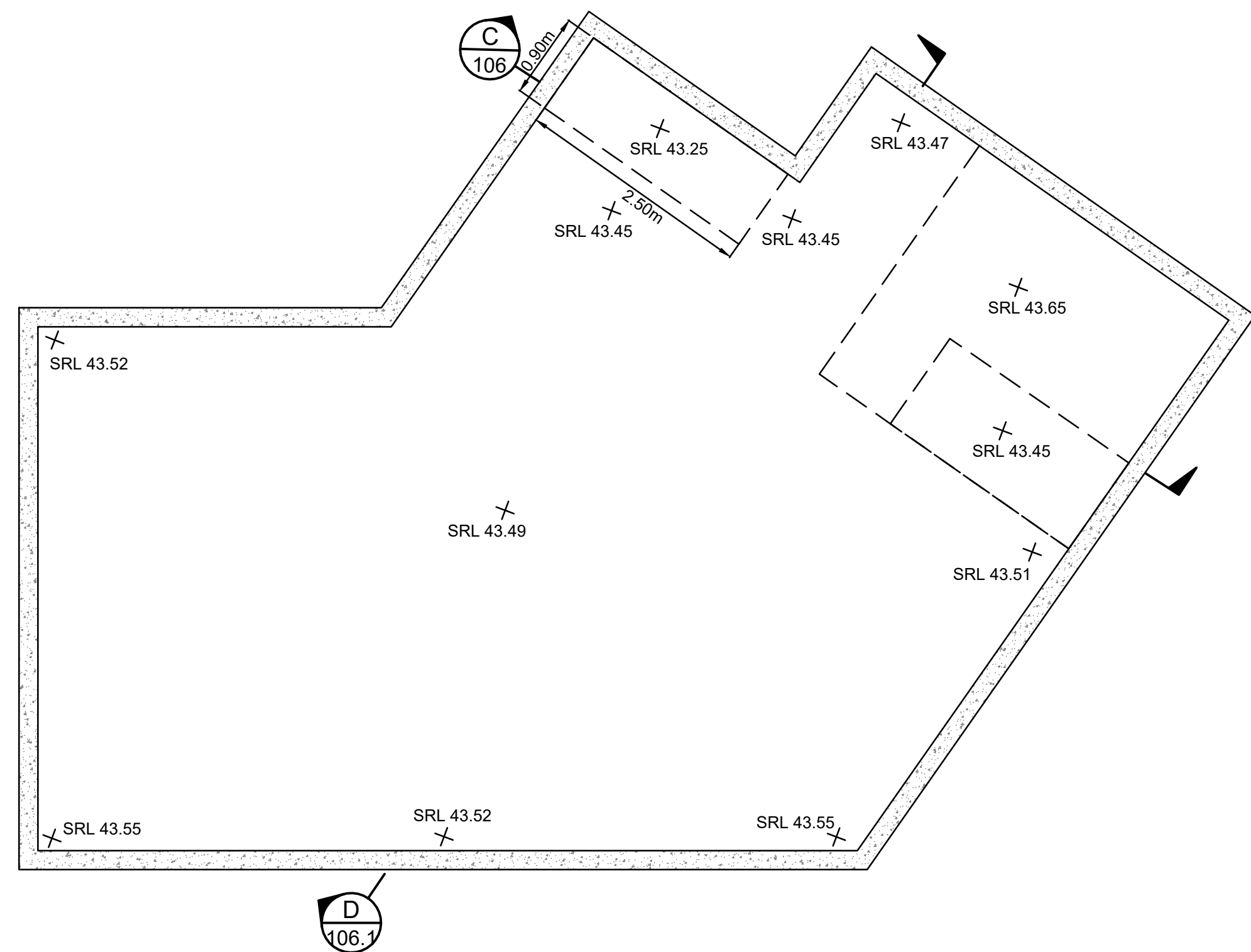
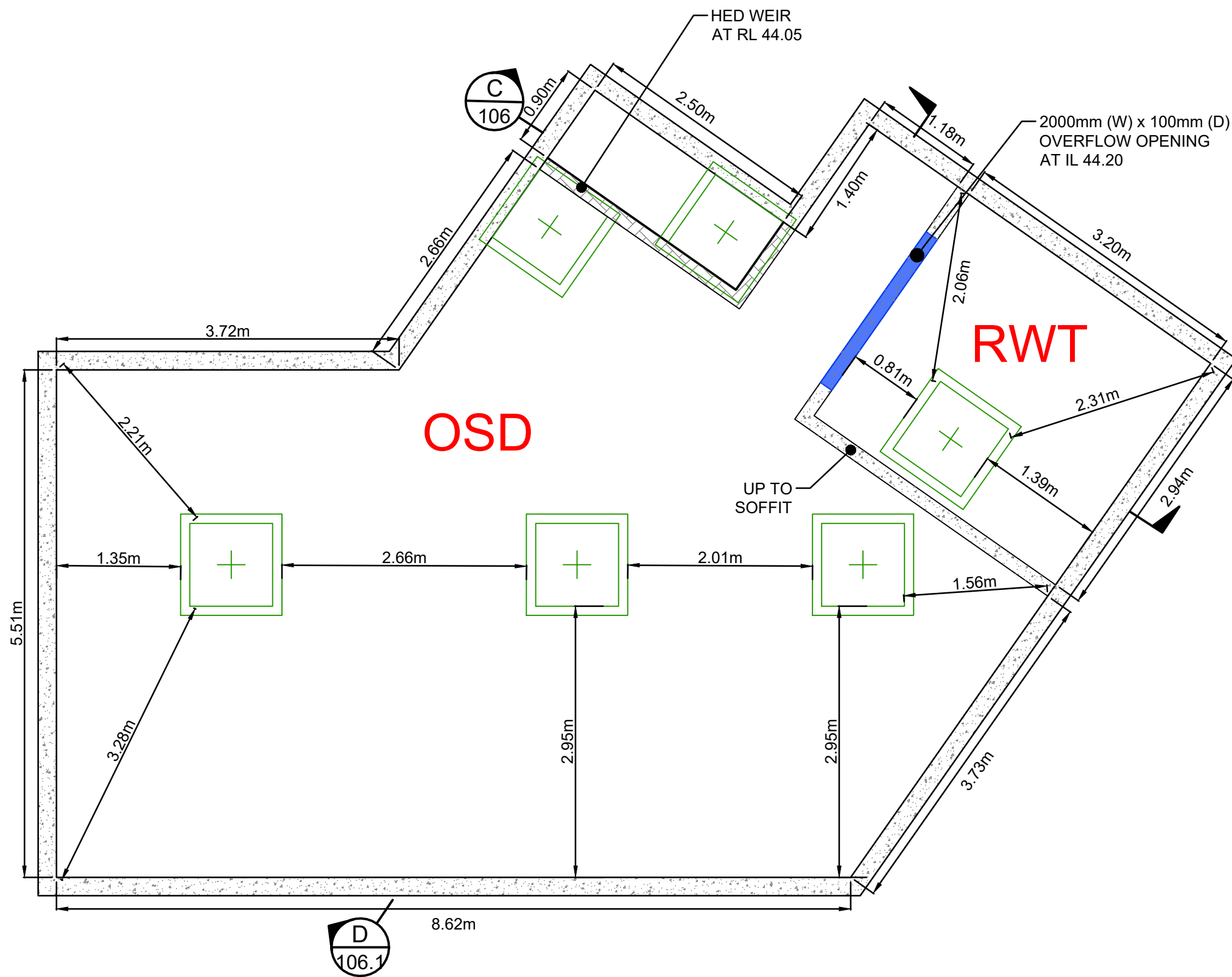
NOTE:
ALL ACCESS COVERS TO THE OSD TO BE FITTED WITH NON CORROSIVE, CHILDPROOF LOCKING DEVICES.

NOT FOR CONSTRUCTION

						Architect	Council	Scale	 CIVIL & STORMWATER ENGINEERING SERVICES PTY LTD ABN: 27 644 422 506 Shop 1, 143-147 Parramatta Road, Concord, NSW 2137 P:(02) 8397 6500 E:info@esgconsult.com.au	Project	Drawing Title						
D	ISSUE FOR SECTION 4.55	01/10/2024	DBF	EH	OC	LOUCAS ARCHITECTS L3 / Suite 309, 7-9 Gibbons St, Redfern NSW Australia Tel: (02) 8052 9600 Email: admin@loucasarc.com.au	CANTERBURY-BANKSTOWN COUNCIL			PROPOSED MIXED USE DEVELOPMENT 221-235,241 HOMER STREET & 208 WARDELL ROAD, EARLWOOD STORMWATER CONCEPT PLANS	OSD DETAILS AND CALCULATION SHEET 1 OF 2						
C	ISSUE FOR DEVELOPMENT APPLICATION	20/10/2022	DBF	OC	OC												
B	ISSUE FOR DEVELOPMENT APPLICATION	17/04/2020	JMH	OC													
A	ISSUE FOR DEVELOPMENT APPLICATION	03/04/2020	JMH	OC													
Issue	Description	Date	Designed	Engineer	Checked					Scale	A1	Project No.	200251	Dwg. No.	106	Issue	D



NOTE:
ALL ACCESS COVERS TO THE
OSD TO BE FITTED WITH NON
CORROSIVE, CHILDPROOF
LOCKING DEVICES.

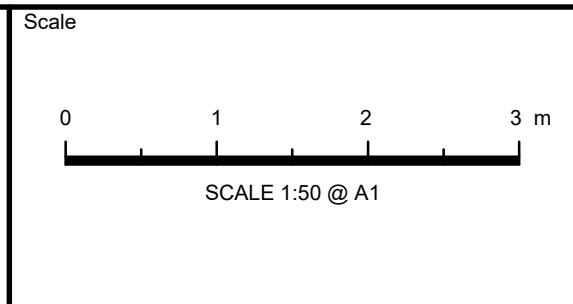


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B	ISSUE FOR SECTION 4.55	01/10/2024	DBF	EH	OC
A	ISSUE FOR DEVELOPMENT APPLICATION	20/10/2022	DBF	OC	OC
Issue	Description	Date	Designed	Engineer	Checked

Architect
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Redfern NSW Australia
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Email: admin@loucasarc.com.au

Council
CANTERBURY-BANKSTOWN COUNCIL



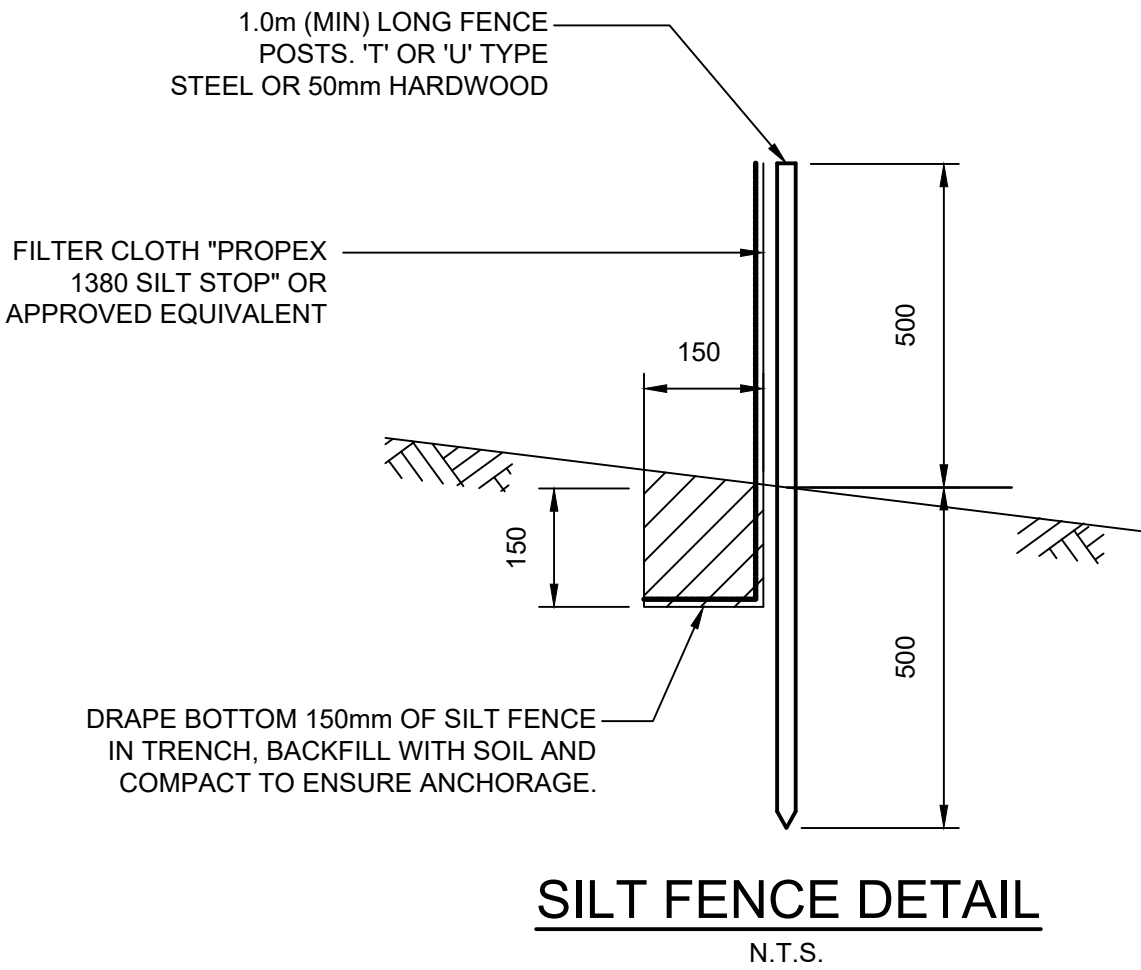
C & S
ENGINEERING SERVICES
CIVIL & STORMWATER ENGINEERING
SERVICES PTY LTD
ABN: 27 644 422 506
Shop 1, 143-147 Parramatta Road, Concord, NSW
2137
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E:info@esgconsult.com.au

Project
PROPOSED MIXED USE DEVELOPMENT
221-235,241 HOMER STREET &
208 WARDELL ROAD, EARLWOOD
STORMWATER CONCEPT PLANS

Drawing Title	OSD DETAILS AND CALCULATION SHEET 2 OF 2			
Scale	A1 As Shown	Project No. 200251	Dwg. No. 106.1	Issue B

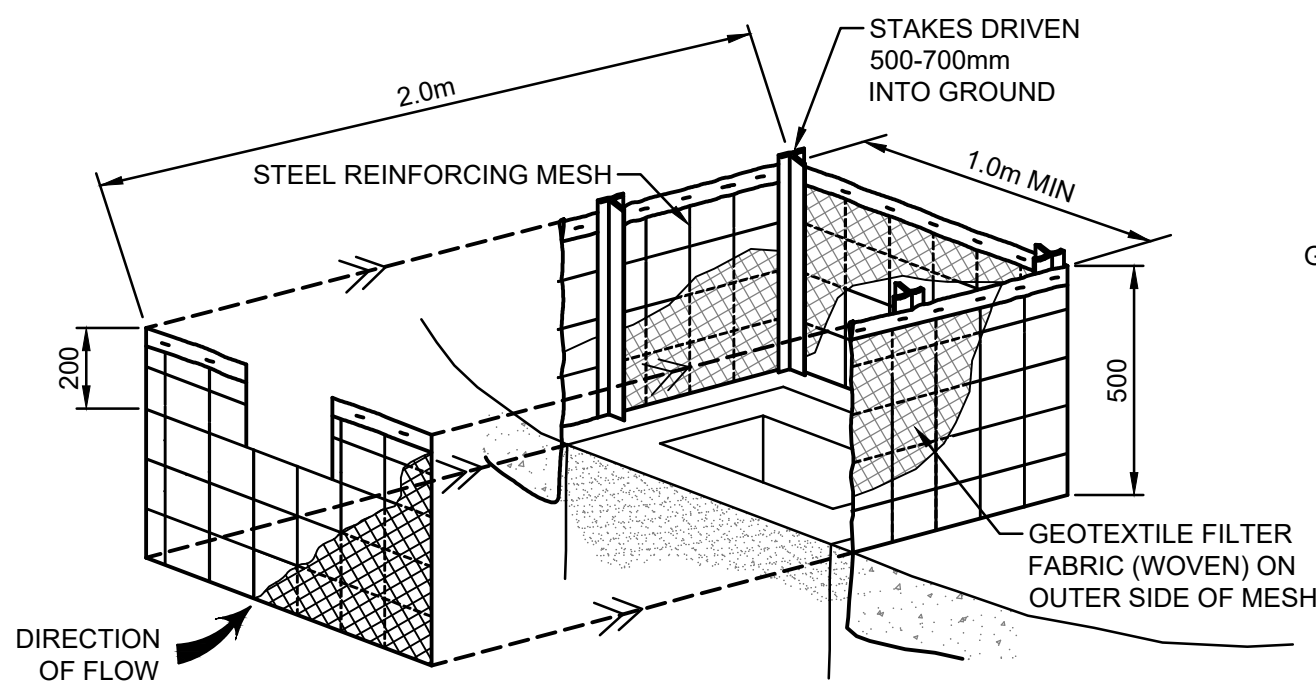
SEDIMENT & EROSION NOTES

1. IMMEDIATELY FOLLOWING SETTING OUT OF THE WORKS, BUT PRIOR TO COMMENCEMENT OF ANY CLEARING OR EARTHWORKS, THE CONTRACTOR AND SUPERINTENDENT SHALL WALK THE SITE TO NOMINATE THE LOCATIONS AND TYPES OF SEDIMENT AND EROSION CONTROL MEASURES TO BE ADOPTED. THESE MEASURES SHALL BE IMPLEMENTED PRIOR TO ANY CLEARING OR EARTHWORKS AND MAINTAINED UNTIL THE WORKS ARE COMPLETED AND NO LONGER POSE AN EROSION HAZARD, UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT.
2. IMMEDIATELY FOLLOWING SETTING OUT OF THE WORKS, BUT PRIOR TO COMMENCEMENT OF ANY CLEARING OR EARTHWORKS, THE CONTRACTOR AND SUPERINTENDENT SHALL WALK THE SITE TO IDENTIFY AND MARK TREES WHICH ARE TO BE PRESERVED. NOTWITHSTANDING THE ABOVE, THE CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO MINIMISE DISTURBANCE TO EXISTING VEGETATION AND GROUND COVER OUTSIDE THE MINIMUM AREAS REQUIRED TO COMPLETE THE WORKS AND SHALL BE RESPONSIBLE FOR RECTIFICATION, AT ITS OWN COST, OF ANY DISTURBANCE BEYOND THOSE AREAS.
3. PROVIDE GULLY GRATE INLET SEDIMENT TRAPS AT ALL GULLY PITS.
4. PROVIDE SILT FENCING ALONG PROPERTY LINE AS DIRECTED BY SUPERINTENDENT.
5. ADDITIONAL CONTROL DEVICES TO BE PLACED WHERE DIRECTED BY THE PRINCIPLE.
6. ALTERNATIVE DESIGNS TO BE APPROVED BY SUPERINTENDENT PRIOR TO CONSTRUCTION.
7. WASH DOWN/RUMBLE AREA TO BE CONSTRUCTED WITH PROVISIONS RESTRICTING ALL SILT AND TRAFFICKED DEBRIS FROM ENTERING THE STORMWATER SYSTEM.
8. NO WORK OR STOCKPILING OF MATERIALS TO BE PLACED OUTSIDE OF SITE WORK BOUNDARY.
9. APPROPRIATE EROSION AND SEDIMENT CONTROLS TO BE USED TO PROTECT STOCKPILES AND MAINTAINED THROUGH OUT CONSTRUCTION.
10. IT IS THE CONTRACTORS RESPONSIBILITY TO TAKE DUE CARE OF NATURAL VEGETATION. NO CLEARING IS TO BE UNDERTAKEN WITHOUT PRIOR APPROVAL FROM THE SUPERINTENDENT.
11. TO AVOID DISTURBANCE TO EXISTING TREES, EARTHWORKS WILL BE MODIFIED AS DIRECTED ON-SITE BY THE SUPERINTENDENT.
12. THE LOCATION OF EROSION AND SEDIMENTATION CONTROLS WILL BE DETERMINED ON SITE BY THE SUPERINTENDENT.
13. ACCESS TRACKS THROUGH THE SITE WILL BE LIMITED TO THOSE DETERMINED BY THE SUPERINTENDENT AND THE CONTRACTOR PRIOR TO ANY WORK COMMENCING.
14. ALL SETTING OUT IS THE RESPONSIBILITY OF THE CONTRACTOR PRIOR TO WORKS COMMENCING ON SITE. THE SUPERINTENDENT'S SURVEYOR SHALL PEG ALL ALLOTMENT BOUNDARIES. PROVIDE COORDINATE INFORMATION TO THESE PEGS AND PLACE BENCH MARKS. THE CONTRACTOR SHALL SET OUT THE WORKS FROM AND MAINTAIN THESE PEGS.
15. PLANS ARE MINIMUM REQUIREMENTS AND ARE TO BE USED AS A GUIDE ONLY. EXACT MEASURES USED SHALL BE DETERMINED ON SITE IN CONJUNCTION WITH PROGRAM OF CONTRACTORS WORKS etc.

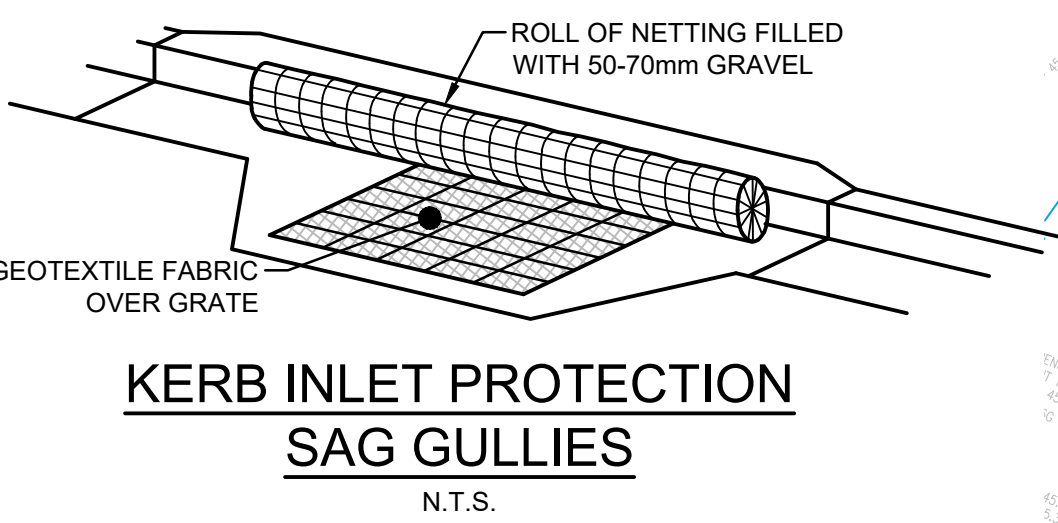


SILT FENCE NOTES:

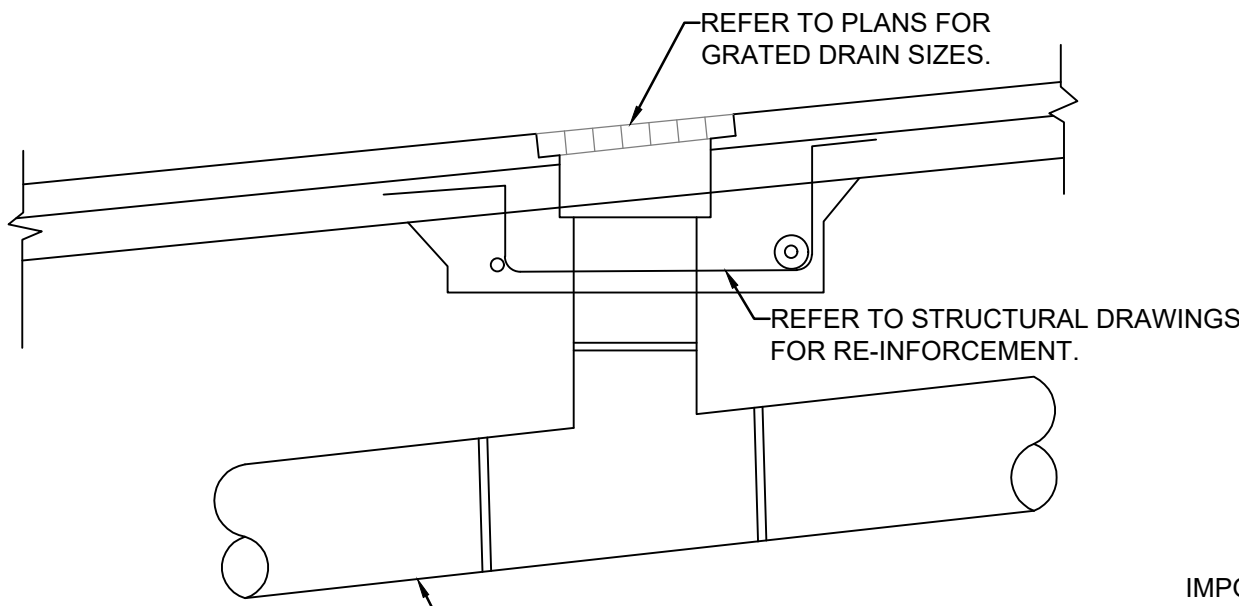
1. FILTER CLOTH TO BE FASTENED SECURELY TO POSTS WITH GALVANISED WIRE TIES, STAPLES OR ATTACHMENT BELTS.
2. POSTS SHOULD NOT BE SPACED MORE THAN 3.0m APART.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 150mm AND FOLDED.
4. FOR EXTRA STRENGTH TO SILT FENCE, WOVEN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



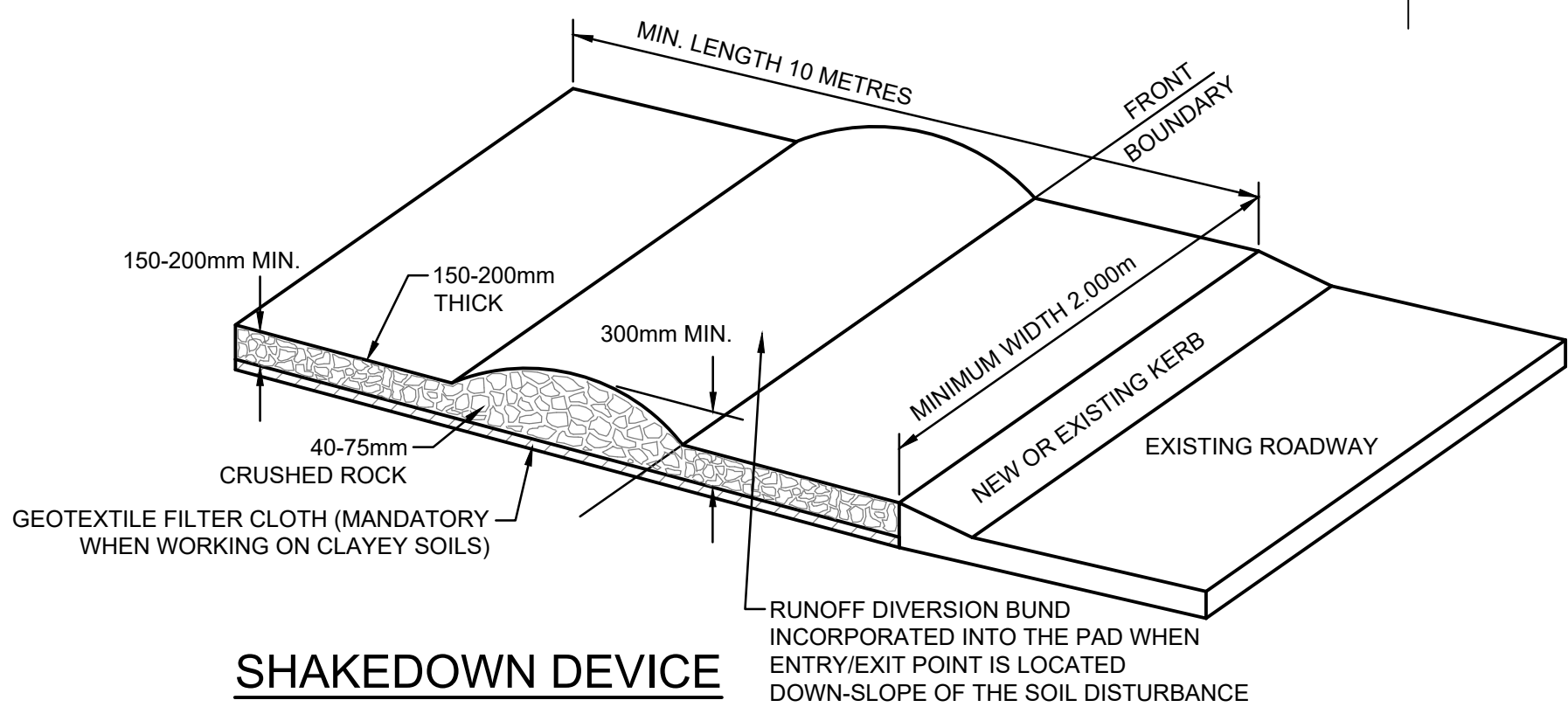
FIELD INLET SEDIMENT TRAP
N.T.S.



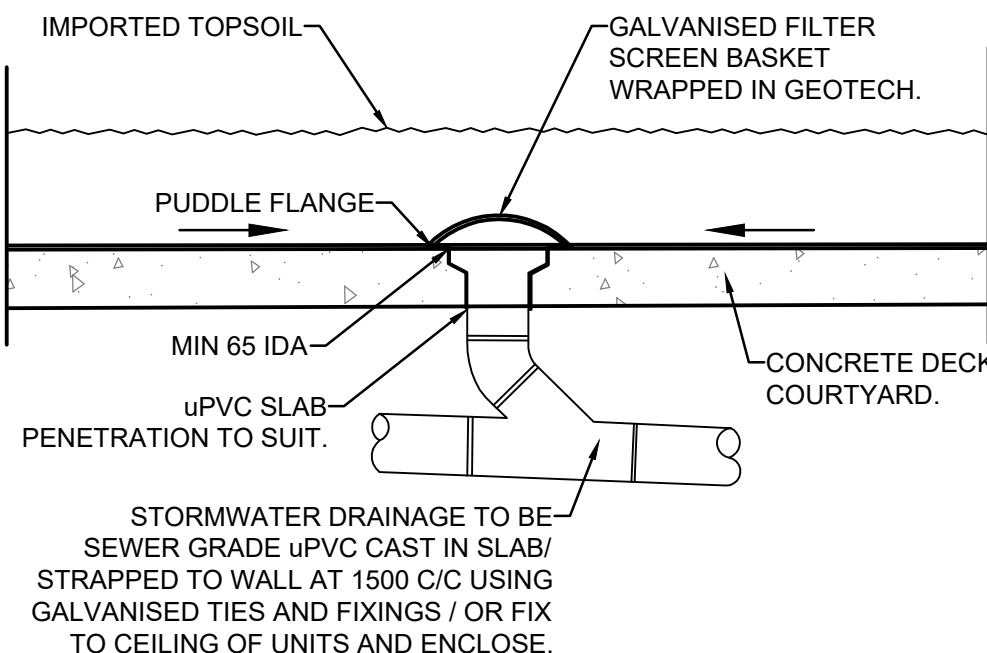
KERB INLET PROTECTION
SAG GULLIES
N.T.S.



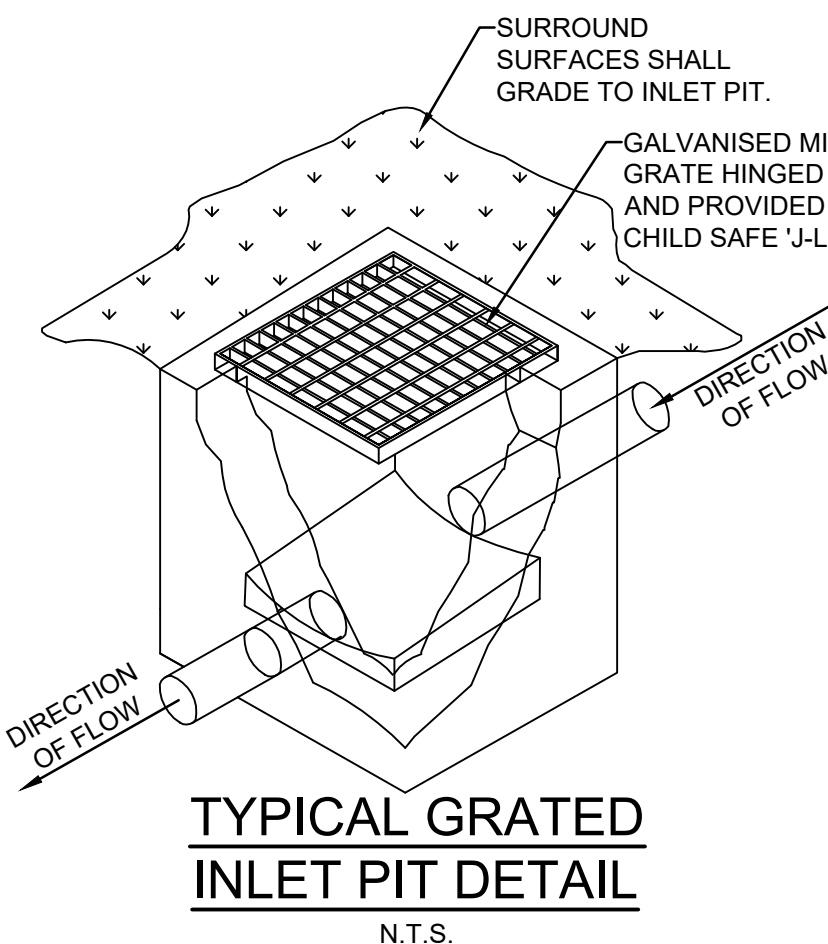
GRATED DRAIN DETAIL
N.T.S.



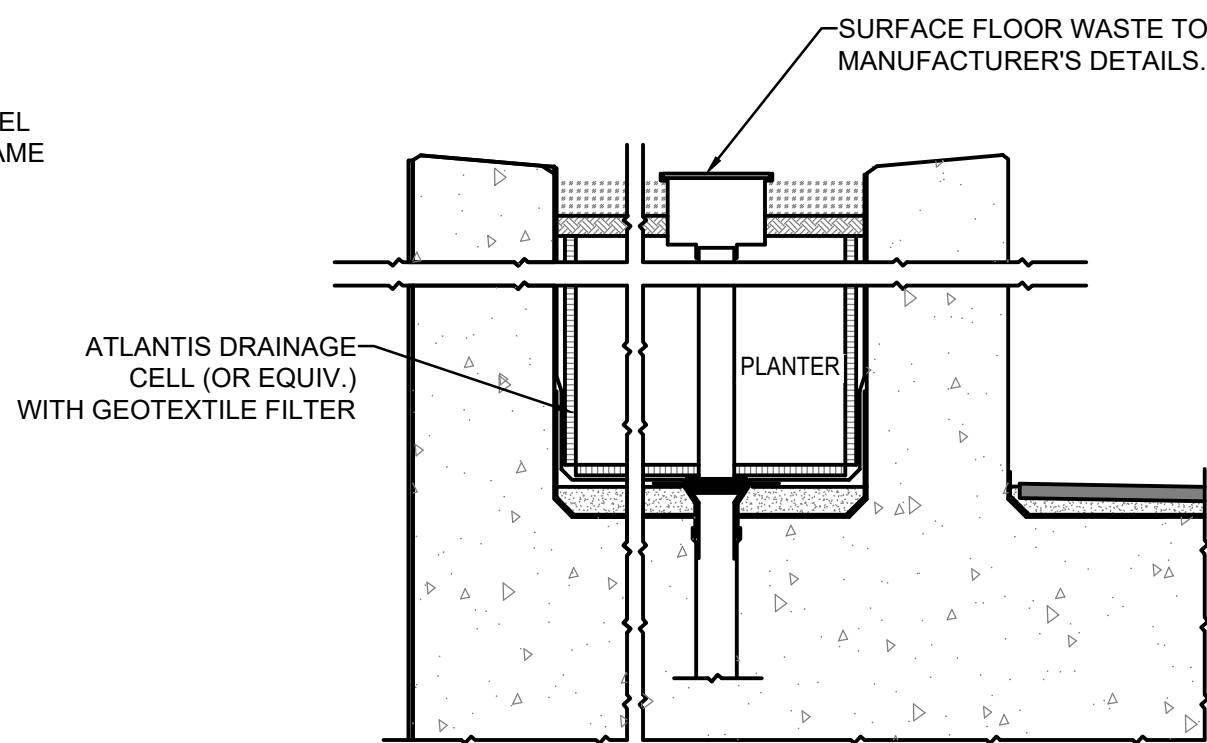
SHAKEDOWN DEVICE
N.T.S.



PLANTER GRATE DETAIL
N.T.S.



TYPICAL GRATED
INLET PIT DETAIL
N.T.S.



TYPICAL SUSPENDED PLANTER BOX FLOOR
WASTE DETAIL
N.T.S.

NOTE:
DETAIL TO BE CONFIRMED BY
WATERPROOFING CONSULTANT/ARCHITECT.

NOT FOR CONSTRUCTION

					Architect	Council		Scale	 CIVIL & STORMWATER ENGINEERING SERVICES PTY LTD ABN: 27 644 422 506 Shop 1, 143-147 Parramatta Road, Concord, NSW 2137 P:(02) 8397 6500 E:info@esgconsult.com.au	Project	Drawing Title				
B	ISSUE FOR SECTION 4.55				01/10/2024	DBF	EH	OC				SEDIMENT & EROSION CONTROL PLAN & DETAILS	Scale	A1	Project No.
A	ISSUE FOR DEVELOPMENT APPLICATION				03/04/2020	JMH	OC						As Shown		200251
Issue	Description				Date	Designed	Engineer	Checked	Dwg. No.		Issue				
0 10m at full size					100m		20m								
					Architect		Council		Scale		Project				
					LOUCAS ARCHITECTS		CANTERBURY-BANKSTOWN COUNCIL		0 4 8 12m		PROPOSED MIXED USE DEVELOPMENT				
					L3 / Suite 309, 7-9 Gibbons St, Redfern NSW Australia				SCALE 1:200 @ A1		221-235,241 HOMER STREET & 208 WARDELL ROAD, EARLWOOD				
					Tel: (02) 8052 9600						STORMWATER CONCEPT PLANS				
					Email: admin@loucasarc.com.au										