

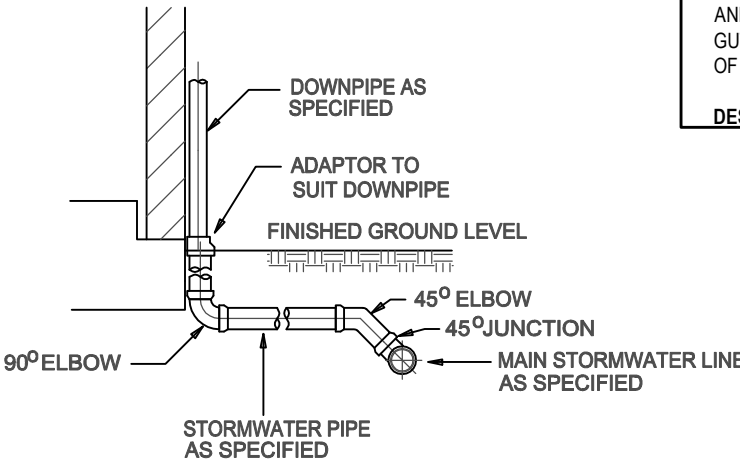
CONCEPT STORMWATER MANAGEMENT PLANS

PROPOSED NEW RESIDENTIAL DEVELOPMENT

No.15 INGLESIDE ROAD, INGLESIDE NSW 2101

LEGEND

	GRATED INLET PIT
450x450	450mm SQUARE INTERNAL
GRT 75.54	GRATE LEVEL = RL 75.54
IL 75.12	INVERT LEVEL = RL 75.12
○ IO	INSPECTION OPENING CAP
○ DP	PROPOSED DOWNPIPE 90mm dia or 100mm x 50mm RECTANGULAR UNO
	EXISTING TREE
	GRATED TRENCH DRAIN
	GRATED ROUND OUTLET 100mm DIAMETER
	PROPOSED DOWNPIPE SPREADER
	STRUCTURE No 1 (FOR HYDRAULIC CALCS)
---	STORMWATER DRAINAGE
---	100 DIA 1% MIN/CHARGED- ROOF AREA ONLY UNO



TYPICAL DETAIL - DOWNPIPE CONNECTION

NOT TO SCALE

NORTHERN BEACHES COUNCIL'S DRAINAGE

DESIGN REQUIREMENTS.

RELEVANT DESIGN CODE : WATER MANAGEMENT FOR DEVELOPMENT POLICY DATED FEBRUARY 2021.
SITE AREA = 676.60m²

DETENTION REQUIREMENT:
YES : CHECKLIST UNDERTAKEN AND CONFIRMED SO AS SUBJECT PROPERTY LOCATED IN REGION 1.

'Properties within Region 1 require an OSD facility to be installed where the development results in additional hard (impervious) surface area of greater than 50m² (on a cumulative basis since February 1996).'

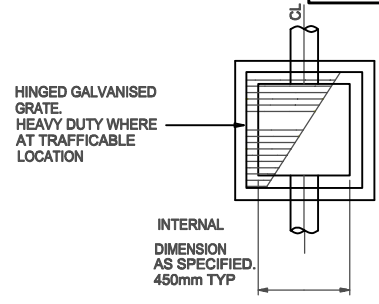
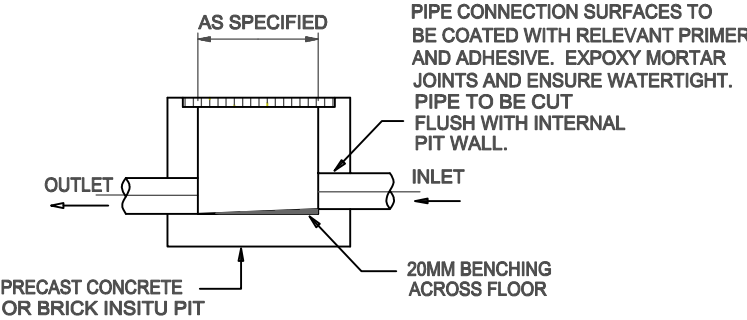
TABLE 7 IS APPLICABLE. NET INCREASE IN IMPERVIOUS AREA IS 63m².
PRE-DEVELOPED IMPERVIOUS AREA= 260m²
POST DEVELOPED IMPERVIOUS AREA= 260 + 63 = 323m²

Table 7 Requirements for Size and Allowable Discharge from On-Site Detention Systems

Additional Hard (Impervious) Surface Area (square metres)	Minimum Capacity of On-Site Detention Tank (Litres)	Discharge Rate Litres/Sec
0 - 50	Nil	Nil
>50 - 75	4,500	2

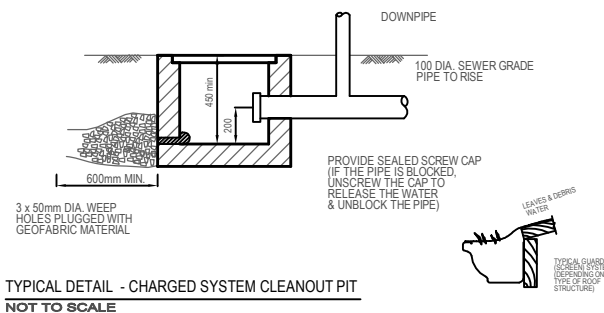
THEREFORE, PART OF THE NEW ROOF AREA TO DRAIN INTO BASIX RAINWATER TANK WITH THE OVERFLOW AND SURROUNDING IMPERVIOUS AREAS (REMAINING ROOF AREA, DRIVEWAY AREA) TO DRAIN VIA GUTTERS, DOWNPIPES, PITS ETC TO THE ABOVE GROUND DETENTION BASIN LOCATED AT THE LOW POINT OF THE SITE.

DESIGN BASED ON AR & R, AS 3500 AND RELEVANT COUNCIL STORMWATER MANAGEMENT GUIDELINES.



TYPICAL DETAIL - STANDARD PIT

NOT TO SCALE



TYPICAL DETAIL OF GUTTER PROTECTION

NOT TO SCALE

GENERAL NOTES

1. FINAL LOCATION OF NEW DOWNPIPES TO BE DETERMINED BY BUILDER/ARCHITECT AT TIME OF CONSTRUCTION.
2. THESE DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTS AND OTHER CONSULTANTS DRAWINGS. ANY DISCREPANCIES TO BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH WORK.
3. ALL MATERIALS AND WORKMANSHIP TO BE IN ACCORDANCE WITH AS/NZS 3500.3:2018 STORMWATER DRAINAGE, BCA AND LOCAL COUNCIL POLICY/CONSENT/REQUIREMENTS.
4. ALL DIMENSIONS AND LEVELS TO BE VERIFIED BY BUILDER ON-SITE PRIOR TO COMMENCEMENT OF WORKS. THESE DRAWINGS ARE NOT TO BE SCALED FOR DIMENSIONS NOR TO BE USED FOR SETOUT PURPOSES.
5. ALL SURVEY INFORMATION AND PROPOSED BUILDING AND FINISHED SURFACE LEVELS SHOWN IN THESE DRAWINGS ARE BASED ON LEVELS OBTAINED FROM DRAWINGS BY OTHERS.
6. THESE DRAWINGS DEPICT THE DESIGN OF SURFACE STORMWATER RUNOFF DRAINAGE SYSTEMS ONLY AND DO NOT DEPICT ROOF DRAINAGE OR SUBSOIL DRAINAGE SYSTEMS UNLESS NOTED OTHERWISE. THE DESIGN OF ROOF AND SUBSOIL DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF OTHERS.
7. ALL STORMWATER DRAINAGE PIPES ARE TO BE 100mm DIAMETER uPVC AT MINIMUM 1% GRADE UNLESS NOTED OTHERWISE.
8. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND LEVEL ALL EXISTING SERVICES OR OTHER STRUCTURES WHICH MAY AFFECT/BE AFFECTED BY THIS DESIGN PRIOR TO COMMENCEMENT OF WORKS.
9. ALL PITS WITHIN DRIVEWAYS TO BE 150mm THICK CONCRETE OR EQUAL.
10. THIS PLAN IS THE PROPERTY OF EZE DRAINAGE SOLUTIONS PTY LTD AND MAY NOT BE USED OR REPRODUCED WITHOUT WRITTEN PERMISSION FROM EZE DRAINAGE SOLUTIONS PTY LTD.

A	16.10.21	DA ISSUE
ISS	DATE	AMENDMENT

ARCHITECT/BUILDER
STOTHARD PROJECTS

CLIENT
BROWN

EZE DRAINAGE SOLUTIONS

Pty Ltd ACN 619 135 198

Ph: (02) 97067767
Fax: (02) 94754315

CONSULTING ENGINEERS
CIVIL & STORMWATER MANAGEMENT

Mobile: 0405507654
Email : info@ezeeng.com.au

DWG TITLE

COVER SHEET & DESIGN SUMMARY TABLE

PROJECT TITLE

PROPOSED NEW RESIDENTIAL DEVELOPMENT
No.15 INGLESIDE ROAD, INGLESIDE NSW 2101

DESIGNED BY :

EZ

ISSUED BY :



BE MIE Aust PENG

JOB No
12038

DWG No
D1

No IN SET
4

ISSUE
A

BASIX COMMITMENT
PROPOSED DWELLING TO HAVE A
3000 LITRE (MINIMUM)
RAINWATER TANK TO BE
CONNECTED TO 240m² OF ROOF
AREA IN ACCORDANCE WITH
BASIX REQUIREMENTS

NOTE
LOCATION OF NEW PITS
SHOWN ON THIS DRAWING ARE
SUBJECT TO VERIFICATION BY
BUILDER DURING CONSTRUCTION.
PIT LOCATIONS MAY BE VARIED
PROVIDED INTENT OF THIS DESIGN
IS MAINTAINED.

NOTE
THIS DRAWING IS FOR STORMWATER
MANAGEMENT DESIGN AND DOES
NOT COVER ANY OVERLAND FLOW
DESIGN REQUIREMENTS.

NOTE
THIS DRAWING IS NOT TO BE USED
FOR SETOUT PURPOSES- REFER TO
ARCHITECTURAL DRAWINGS.

NOTE
THIS DRAWING IS TO BE READ
IN CONJUNCTION WITH
ARCHITECTURAL DRAWINGS :
STOTHARD PROJECTS
JOB NO.BROWN ISSUE C
DATED 24.09.2021

NOTE
LOCATION OF NEW DOWNPIPES
SHOWN ON THIS DRAWING ARE
SUBJECT TO VERIFICATION BY
BUILDER DURING CONSTRUCTION.
DOWNPIPE LOCATION MAY BE VARIED
PROVIDED INTENT OF THIS DESIGN
IS MAINTAINED.



HD GRATED TRENCH DRAIN
150mm WIDE min
110mm DEEP min
GRATE RL : 110.60 NOM
100 DIA 1% MIN OUTLET

PIT P6 : 450 x 450 SQ
GRATE RL : 110.60 nom
INVERT RL : 110.20

PIT P5 : 450 x 450 SQ
GRATE RL : 112.70 nom
INVERT RL : 112.30

PIT P4 : 450 x 450 SQ
GRATE RL : 112.75 nom
INVERT RL : 112.40

PIT P3 : 450 x 450 SQ
GRATE RL : 112.20 nom
INVERT RL : 111.80

PIT P2 : 450 x 450 SQ
GRATE RL : 112.10 nom
INVERT RL : 111.60

DSP 1 : 600 x 600 SQ
GRATE RL : 110.50 nom
INVERT PIPE : 110.00
INVERT PIT : 109.80
REFER TYPICAL SECTION
SHEET D4.

STORMWATER DETENTION BASIN - ABOVE GROUND
EXTENT OF BASIN SHOWN SHADED.
DESIGN AREA = 15m²
AVERAGE DEPTH = 300mm
MAXIMUM DEPTH = 400mm
TOP WATER LEVEL = RL 110.90 AHD
DESIGN VOLUME = 4.50m³ MIN
DISCHARGE CONTROL PIT : REFER DETAIL SHEET D5
BASIN OVERFLOW : FRONT WALL WEIR - RL 110.90
PERIMETER WALL TO BE MASONRY & WATERTIGHT,
CLEAR OF SEWER AND OTHER SERVICES AND
TO SEPARATE STRUCTURAL ENGINEERS DETAIL
AT CONSTRUCTION CERTIFICATE STAGE.

BASIX RAINWATER/RE-USE TANK
1 x 3000 litre ABOVE GROUND TANK
DIMENSIONS : 2400 LONG x 950 WIDE x 1480 HIGH
"KINGSPAN EVOLUTION/SLIMLINE SERIES MKII"
OR APPROVED EQUIV.FOR RE-USE IN ACCORDANCE
WITH BASIX CERTIFICATE. INSTALL TO
MANUFACTURERS SPECIFICATIONS, AS 3500, DEPT
HEALTH AND COUNCIL'S REQUIREMENTS.
REFER TYPICAL DETAIL SHEET D3.
TANK INVERT = RL 112.80 nom
TOP TANK = RL 114.28
CONNECT AT LEAST **240m²** OF ROOF AREA TO
TANK AS REQUIRED BASIX CERTIFICATE.

WARNING
LOCATION AND DEPTH OF ALL
UNDERGROUND SERVICES TO
BE INVESTIGATED WITH THE
RELEVANT AUTHORITIES PRIOR
TO COMMENCING WORKS.

100 DIA ROOF ONLY.
CHARGED LINE PRESSURE GRADE
uPVC SOLVENT WELDED.
NOTE CHARGED SYSTEM TO BE
FULLY SEALED FROM TANK INLET
TO ROOF GUTTER LEVEL.
ROOF GUTTER RL = 118.50
TANK INLET RL = 114.30
DIFFERENTIAL HEAD = 4.20
SUFFICIENT TO DRIVE SYSTEM.

STORMWATER MANAGEMENT PLAN

SCALE 1: 200 A3

0 10m
SCALE 1:200 at A3

A	16.10.21	DA ISSUE
ISS	DATE	AMENDMENT

ARCHITECT/BUILDER STOTHARD PROJECTS
CLIENT BROWN

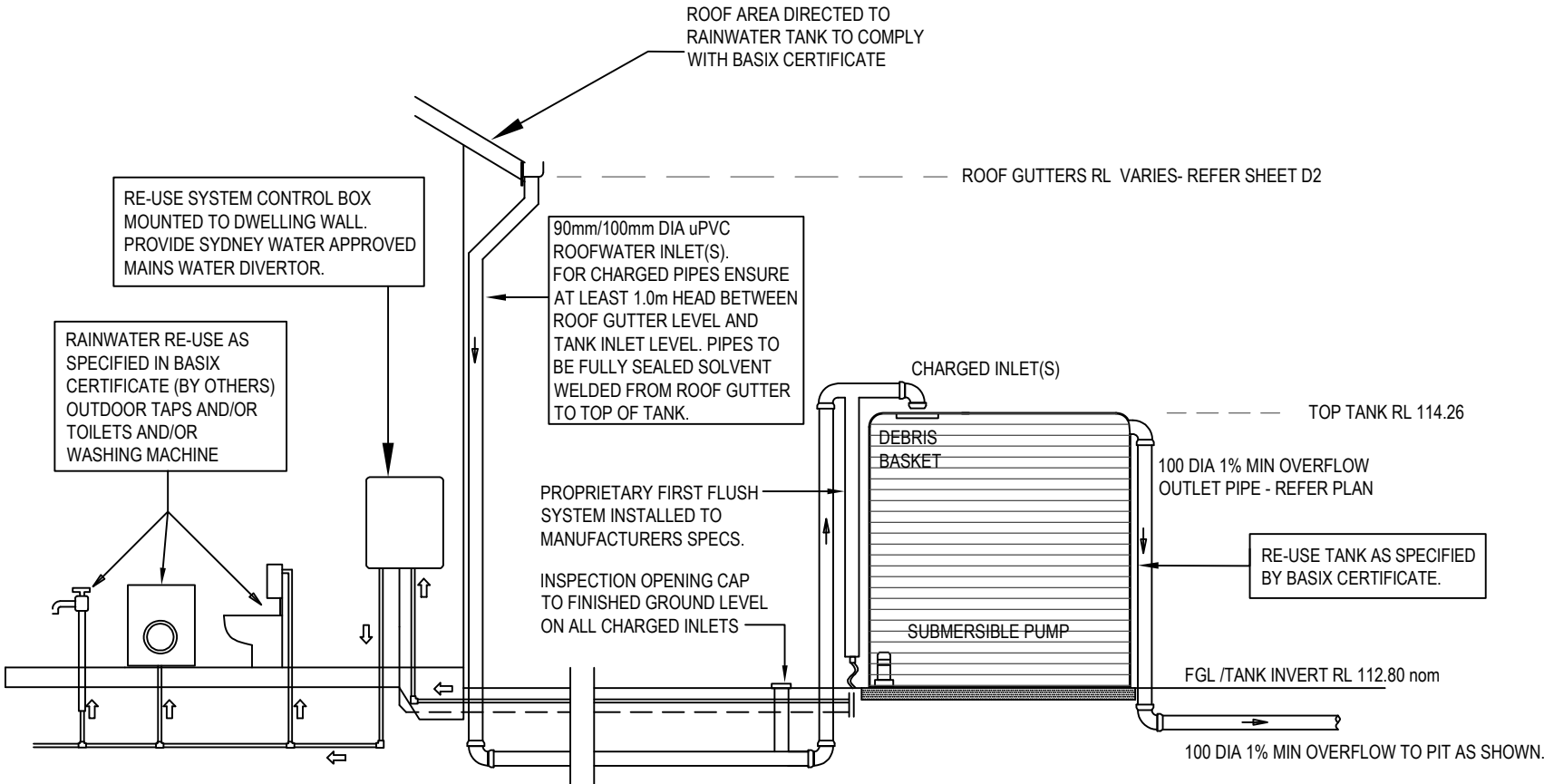
EZE DRAINAGE SOLUTIONS
Pty Ltd ACN 619 135 198
Ph: (02) 97067767
Fax: (02) 94754315
CONSULTING ENGINEERS
CIVIL & STORMWATER MANAGEMENT
Mobile: 0405507654
Email : info@ezeeng.com.au

DWG TITLE STORMWATER MANAGEMENT PLAN
PROJECT TITLE PROPOSED NEW RESIDENTIAL DEVELOPMENT No.15 INGLESIDE ROAD, INGLESIDE NSW 2101

DESIGNED BY : EZ		ISSUED BY :  BE MIE Aust PENG	
JOB No 12038	DWG No D2	No IN SET 4	ISSUE A

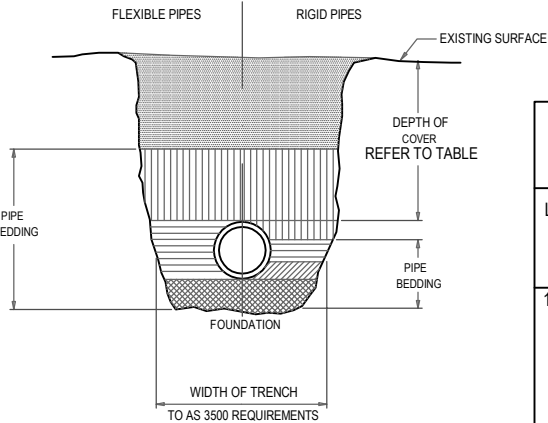
RAINWATER RE-USE SYSTEM NOTES

- TOWNWATER CONNECTION TO RAINWATER TANK TO BE TO THE SATISFACTION OF SYDNEY WATER. THIS MAY REQUIRE PROVISION OF:
 - PERMANENT AIR GAP.
 - A BACKFLOW PREVENTION DEVICE.
 - NO DIRECT CONNECTION BETWEEN TOWN WATER SUPPLY AND THE RAIN WATER SUPPLY.
 - AN APPROVED STOP VALVE AND/OR PRESSURE LIMITING VALVE AT THE RAINWATER TANK.
- PROVIDE AT LEAST ONE (1) EXTERNAL HOSE COCK ON THE TOWN WATER SUPPLY FOR FIRE FIGHTING.
- PROVIDE APPROPRIATE FLOAT VALVES AND/OR SOLENOID VALVES
- ALL PLUMBING WORKS ARE TO BE CARRIED OUT BY LICENSED PLUMBERS IN ACCORDANCE WITH AS3500.1 NATIONAL PLUMBING AND DRAINAGE CODE.
- PRESSURE PUMP ELECTRICAL CONNECTION TO BE CARRIED OUT BY LICENSED ELECTRICIAN.
- ONLY ROOF RUN-OFF IS TO BE DIRECTED TO THE RAINWATER TANK. SURFACE WATER INLETS ARE NOT TO BE CONNECTED.
- PIPE MATERIALS FOR RAINWATER SUPPLY PLUMBING ARE TO BE APPROVED MATERIALS TO AS 3500 PART 1 SECTION 2 AND TO BE CLEARLY AND PERMANENTLY IDENTIFIED "RAINWATER". THIS MAY BE ACHIEVED FOR BELOW GROUND PIPES USING IDENTIFICATION TAPE (MADE IN ACCORDANCE WITH AS 2648) OR FOR ABOVE GROUND PIPES BY USING ADHESIVE PIPE MARKERS (MADE IN ACCORDANCE WITH AS1345).
- EVERY RAINWATER SUPPLY OUTLET POINT AND THE RAINWATER TANK ARE TO BE LABELLED "RAINWATER" ON A METALLIC SIGN IN ACCORDANCE WITH AS 1319.
- ALL INLETS AND OUTLETS TO THE RAINWATER TANK ARE TO HAVE SUITABLE MEASURES PROVIDED TO PREVENT MOSQUITO AND VERMIN ENTRY.
- SYSTEM TO COMPLY WITH SYDNEY WATER REQUIREMENTS AND ANY CONDITIONS OF LOCAL COUNCIL DEVELOPMENT CONSENT.



TYPICAL DETAIL - RAINWATER RE-USE TANK

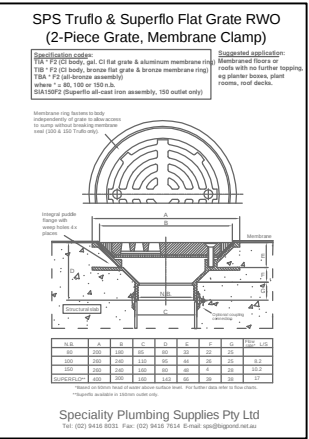
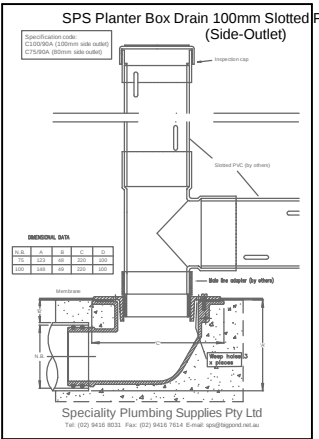
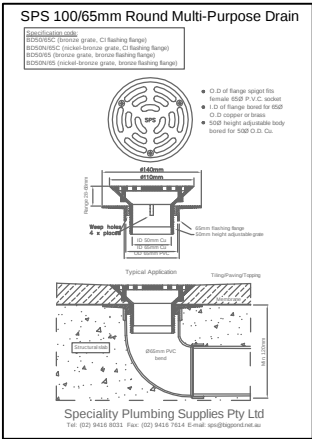
NOT TO SCALE



NOTE A
STORMWATER DRAINS CONSTRUCTED OF OTHER THAN CAST IRON, DUCTILE IRON OR GALVANISED STEEL HAVING COVER LESS THAN THAT SPECIFIED IN TABLE SHALL BE COVERED WITH AT LEAST 50mm OVERLAY AND SHALL BE PAVED WITH AT LEAST 100mm THICKNESS OF REINFORCED CONCRETE WHERE SUBJECT TO HEAVY VEHICULAR LOADING

LEGEND - TRENCH BACKFILL		
SYMBOL	FLEXIBLE PIPES	RIGID PIPES
	BACKFILL	BACKFILL
	PIPE OVERLAY	PIPE OVERLAY
	PIPE SIDE SUPPORT	SIDE ZONE
	HAUNCH ZONE	HAUNCH ZONE
	PIPE UNDERLAY	BED ZONE

MINIMUM PIPE COVER (FROM FINISHED SURFACE TO TOP OF PIPE)		
LOCATION	MINIMUM COVER (mm)	
	CAST/DUCTILE IRON GAL STEEL	OTHER AUTHORISED PRODUCTS (*)
1. NOT SUBJECT TO VEHICULAR LOADING: A. WITHOUT PAVEMENT: i. FOR SINGLE DWELLINGS - ii. OTHER THAN SINGLE DWELLINGS - B. WITH PAVEMENT OF BRICK/UNREINFORCED CONCRETE -	0	100
	0	300
	0 (**)	50 (**)
	0 (**)	50 (**)
2. SUBJECT TO VEHICULAR LOADING: A. OTHER THAN ROADS: i. WITHOUT PAVEMENT - ii. WITH PAVEMENT OF: - REINF. CONC. FOR HEAVY VEHICLES - - BRICK/UNREINF. CONC LIGHT VEHICLES - B. ROADS i. SEALED ii. UNSEALED	300	450
	0 (** #)	100 (** #)
	0 (** #)	75 (** #)
	300	500 (#)
3. SUBJECT TO CONSTRUCTION VEHICLES OR IN EMBANKMENT CONDITIONS	300	500 (#)
	300	500 (#)
(*) INCLUDES OVERLAY ABOVE THE TOP OF THE PIPE OF NOT LESS THAN 50mm THICK		
(**) BELOW THE UNDERSIDE OF THE PAVEMENT		
#) SUBJECT TO COMPLIANCE WITH AS1762, AS2033, AS/NZS 2566.1, AS3725 OR AS 4060		



TYPICAL DETAILS- PLANTER BOX, BALCONY & TERRACE GRATE

DWG TITLE
TYPICAL DETAILS

PROJECT TITLE
PROPOSED NEW RESIDENTIAL DEVELOPMENT
No.15 INGLESIDE ROAD, INGLESIDE NSW 2101

DESIGNED BY : EZ		ISSUED BY : BE MIE Aust PENG	
JOB No 12038	DWG No D3	No IN SET 4	ISSUE A

A	16.10.21	DA ISSUE
ISS	DATE	AMENDMENT

ARCHITECT/BUILDER
STOTHARD PROJECTS

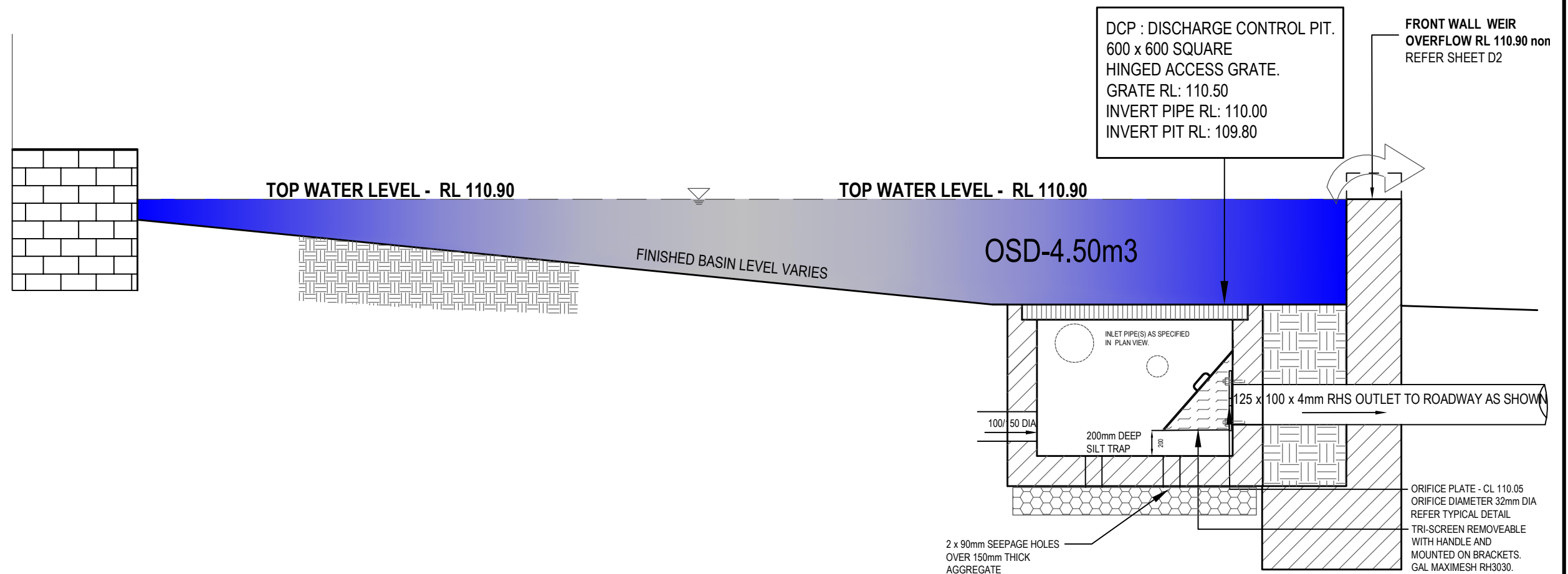
CLIENT
BROWN

EZE DRAINAGE SOLUTIONS
Pty Ltd ACN 619 135 198

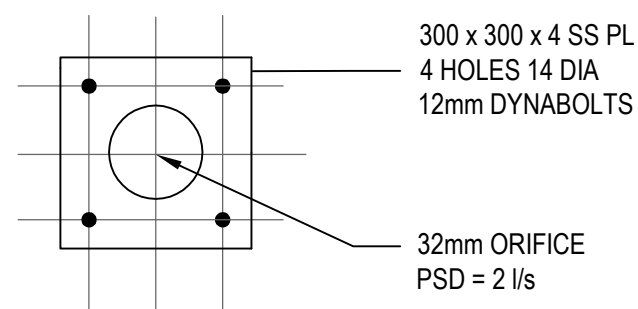
CONSULTING ENGINEERS
CIVIL & STORMWATER MANAGEMENT

Ph: (02) 97067767
Fax: (02) 94754315

Mobile: 0405507654
Email : info@ezeeng.com.au



TYPICAL SECTION THROUGH OSD BASIN
NTS



TYPICAL DETAIL - ORIFICE PLATE
NTS

To Calculate Orifice Size Plate	
	$D=21.9*(PSD/(h^{.5}))^{.5}$
D(Orifica Size)mm	32.25554478
PSD(Permitted Site Discharge) L/s	2
h(Pressure Head)	0.85

CALCULATING ORIFICE PLATE
NTS

A	16.10.21	DA ISSUE
ISS	DATE	AMENDMENT

ARCHITECT/BUILDER
STOTHARD PROJECTS

CLIENT
BROWN

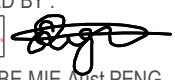
EZE DRAINAGE SOLUTIONS
Pty Ltd ACN 619 135 198

CONSULTING ENGINEERS
CIVIL & STORMWATER MANAGEMENT

Ph: (02) 97067767 Mobile: 0405507654
Fax: (02) 94754315 Email : info@ezeeng.com.au

DWG TITLE **PROPOSED OSD BASIN DESIGN DETAILS**

PROJECT TITLE
**PROPOSED NEW RESIDENTIAL DEVELOPMENT
No.15 INGLESIDE ROAD, INGLESIDE NSW 2101**

DESIGNED BY : EZ		ISSUED BY :  BE MIE Aust PENG	
JOB No 12038	DWG No D4	No IN SET 4	ISSUE A