

# ALTERATIONS & ADDITIONS AT 4 STINSON PLACE, FORESTVILLE

## GENERAL

- G1** These drawings shall be read in conjunction with all architectural and other consultants drawings and specifications and with such other written instructions and sketches as may be issued during the course of the Contract. Any discrepancies shall be referred to the Superintendent before proceeding with any related works. Construction from these drawings, and their associated consultant's drawings is not to commence until approved by the Local Authorities.
- G2** All materials and workmanship shall be in accordance with the relevant and current Standards Australia codes and with the By-Laws and Ordinances of the relevant building authorities except where varied by the project specification.
- G3** All set out dimensions shall be obtained from Architect's and Engineer's details. All discrepancies shall be referred to the Architect and Engineer for decision before proceeding with related work.
- G4** During construction the structure shall be maintained in a stable condition and no part shall be overstressed. Temporary bracing shall be provided by the builder/subcontractor to keep the works and excavations stable at all times.
- G5** Unless noted otherwise levels are in metres and dimensions are in millimetres.
- G6** 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.
- G7** Any substitution of materials shall be approved by the Engineer and included in any tender.
- G8** All services, or conduits for servicing shall be installed prior to commencement of pavement construction.
- G9** 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.
- G10** The structural components detailed on these drawings have been designed in accordance with the relevant Standards Australia codes and Local Government Ordinances for the following loadings. Refer to the Architectural drawings for proposed floor usage. Refer to drawings for live loads and superimposed dead loads.

## DRAINAGE NOTES

- D1** All drainage levels to be confirmed on site, prior to any construction commencing.
- D2** All pipes within the property to be a minimum of 100 dia upvc @ 1% minimum grade, uno.
- D3** All pits within the property are to be fitted with "weldiok" or approved equivalent grates:  
- Light duty for landscaped areas  
- Heavy duty where subjected to vehicular traffic
- D4** All pits within the property to be constructed as one of the following:  
1) Precast stormwater pits  
2) Cast in situ 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 100 x100 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.

## EROSION AND SEDIMENT CONTROL NOTES

- E1** These notes are to be read in conjunction with erosion and sediment control details in this drawing set.
- E2** 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".
- E3** Place straw bales length wise in a row as parallel as possible to the site contours, uno. Bale ends to be tightly butted. Bales are to be placed so that straws are parallel to the row. Bales are to be placed 1.5m to 2m downslope from the toe of the disturbed batter, uno.
- E4** Council approved filter fabric to be entrenched 150mm deep upslope towards disturbed surface. Fabric to be a minimum SF2000 or better. Fix fabric to posts with wire ties or as recommended with manufacture's specifications. Fabric joints to have a minimum of 150mm overlap. Wire to be strung between posts with filter fabric overlap to prevent sagging.
- E5** Stabilised entry/exit points to remain intact until finished driveway is complete. Construction of entry/exit points to be maintained and repaired as required so that it's function is not compromised. Construction of entry/exit point to be in accordance with the detail contained within this drawing set.
- E6** All drainage pipe inlets to be capped until:  
- downpipes connected  
- pits constructed and protected with silt barrier
- E6** Provide and maintain silt traps around all surface inlet pits until catchment is revegetated or paved.
- E7** 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.
- E8** The contractor shall implement dust control by regularly wetting down (but not saturating) disturbed area.
- E9** 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.
- E10** Lay 300 wide minimum turf strip on 100 topsoil behind all kerb and gutter with 1000 long returns every 6000 and around structures immediately after backfilling as per the relevant local authority specification.
- E11** The contractor shall grass seed all disturbed areas with an approved mix as soon as practicable after completion of earthworks and regrading.
- E12** Revegetate all trenches immediately upon completion of backfilling.
- E13** When any devices are to be handed over to council they shall be in clean and stable condition.

## STANDARD LINE TYPES AND SYMBOLS

|  |                                |
|--|--------------------------------|
|  | PROPOSED KERB & GUTTER         |
|  | EXISTING KERB & GUTTER         |
|  | PROPOSED BELOW GROUND PIPELINE |
|  | PROPOSED SUSPENDED PIPELINE    |
|  | EXISTING PIPELINE              |
|  | SUBSOIL DRAINAGE LINE          |
|  | PROPOSED KERB INLET PIT        |
|  | EXISTING KERB INLET PIT        |
|  | PROPOSED JUNCTION OR INLET PIT |
|  | EXISTING JUNCTION OR INLET PIT |
|  | DESIGN CENTRELINE              |
|  | EXISTING EDGE OF BITUMEN       |
|  | TELECOMMUNICATION CONDUIT      |
|  | GAS MAIN                       |
|  | WATER MAIN                     |
|  | SEWER MAIN                     |
|  | UNDERGROUND ELECTRICITY CABLES |
|  | PERMANENT MARK & S.S.M.        |
|  | BENCH MARK, SURVEY STATION     |

## STANDARD LINE TYPES AND SYMBOLS

|  |   |
|--|---|
|  | OVERLAND FLOW PATH                            |
|  | GUTTER DRAINAGE DIRECTION                     |
|  | DOWNPipe                                      |
|  | DOWNPipe WITH SIDE OVERFLOW                   |
|  | PERVIOUS (GRASSED) AREAS                      |
|  | EXISTING (PRE-DEVELOPMENT) RL                 |
|  | POST DEVELOPMENT RL                           |
|  | GRADED IMPERVIOUS AREA (ROOF, CONC SLABS ETC) |
|  | SEDIMENT FENCE                                |
|  | CROSSING PIPES                                |
|  | NODE POINT                                    |

## LEGEND

|      |                              |     |                        |
|------|------------------------------|-----|------------------------|
| AHD  | Australian height datum      | SS  | Stainless steel        |
| AG   | Ag-pipe (Sub soil drainage)  | SU  | Box gutter sump        |
| ARI  | Average recurrence interval  | TW  | Top of wall            |
| BG   | Box Gutter                   | TWL | Top water level        |
| BWL  | Bottom water level           | U/S | Underside of slab      |
| CL   | Cover level                  | VG  | Vally gutter           |
| CO   | Clean out inspection opening | UNO | Unless noted otherwise |
| DCP  | Discharge control pit        |     |                        |
| DP   | Down pipe                    |     |                        |
| DRP  | Dropper pipe                 |     |                        |
| EBG  | Existing box gutter          |     |                        |
| EDP  | Existing down pipe           |     |                        |
| EEG  | Existing eaves gutter        |     |                        |
| EG   | Eaves gutter                 |     |                        |
| FRC  | Fiber reinforced concrete    |     |                        |
| FW   | Floor waste                  |     |                        |
| GD   | Grated drain                 |     |                        |
| GSIP | Grated surface inlet pit     |     |                        |
| HED  | High early discharge         |     |                        |
| HP   | High point of gutter         |     |                        |
| IL   | Invert level                 |     |                        |
| IO   | Inspection opening           |     |                        |
| O/F  | Overflow                     |     |                        |
| OSD  | On-site detention            |     |                        |
| PSD  | Permissible site discharge   |     |                        |
| P1   | Pipe 1                       |     |                        |
| RCP  | Reinforced concrete pipe     |     |                        |
| RHS  | Rectangular hollow section   |     |                        |
| RL   | Reduced level                |     |                        |
| RRJ  | Rubber ring joint            |     |                        |
| RRT  | Rainwater re-use tank        |     |                        |
| RWH  | Rain water head              |     |                        |
| RWO  | Rain water outlet            |     |                        |
| SLAP | Sealed lid access pit        |     |                        |
| SP   | Spreader pipe                |     |                        |
| SPR  | Spreader                     |     |                        |

## RECOMMENDED MAINTENANCE SCHEDULE

| DISCHARGE CONTROL PIT (DCP)   | FREQUENCY   | RESPONSIBILITY         | PROCEDURE   |
|---|-------------|------------------------|---|
| Inspect flap valve and remove any blockage.                                       | Six monthly | Owner                  | Remove grate. Ensure flap valve moves freely and remove any blockages or debris.  |
| Inspect screen and clean.   | Six monthly | Owner                  | Remove grate and screen if required and clean it.   |
| Inspect & remove any blockage of orifice.   | Six monthly | Owner                  | Remove grate & screen to inspect orifice. see plan for location of dcp.   |
| Inspect dcp sump & remove any sediment-sludge.                                    | Six monthly | Owner                  | Remove grate and screen. Remove sediment/sludge build-up and check orifice and flap valve clear.  |
| Inspect grate for damage or blockage.   | Six monthly | Owner                  | Check both sides of grate for corrosion, (especially corners and welds) damage or blockage.   |
| Inspect return pipe from storage and return any blockage.                         | Six monthly | Owner                  | Remove grate and screen. ventilate underground storage if present. open flap valve and remove any blockages in return line. Check for sludge/debris on upstream side of return line.  |
| Inspect outlet pipe and remove any blockage.                                      | Six monthly | Maintenance Contractor | Remove grate and screen. ventilate underground storage if present. Check orifice and remove any blockages in outlet pipe. Flush outlet pipe to confirm it drains freely. Check for sludge/debris on upstream side of return line. |
| Check fixing of step irons is secure.   | Six monthly | Maintenance Contractor | Remove grate and ensure fixings secure prior to placing weight on step iron.  |
| Inspect overflow weir & remove any blockage.                                      | Six monthly | Maintenance Contractor | Remove grate and open cover to ventilate underground storage if present. ensure weir clear of blockages.  |
| Empty basket at overflow weir (if present).                                       | Six monthly | Maintenance Contractor | Remove grate and ventilate underground storage chamber if present. Empty basket, check fixings secure and not corroded.   |
| Check attachment of orifice plate to wall of pit (gaps less than 5 mm).           | Annually    | Maintenance Contractor | Remove grate and screen. ensure plate mounted securely, tighten fixings if required. seal gaps as required.   |
| Check attachment of screen to wall of pit.  | Annually    | Maintenance Contractor | Remove grate and screen. ensure screen fixings secure. repair as required.  |
| Check screen for corrosion.   | Annually    | Maintenance Contractor | Remove grate and examine screen for rust or corrosion, especially at corners or welds.  |
| Check attachment of flap valve to wall of .                                       | Annually    | Maintenance Contractor | Remove grate. Ensure fixings of valve are secure.   |
| Check flap valve seals against wall of pit.                                       | Annually    | Maintenance Contractor | Remove grate. fill pit with water and check that flap seals against side of pit with minimal leakage.   |
| Check any hinges of flap valve move freely.                                       | Annually    | Maintenance Contractor | Remove grate. Test valve hinge by moving flap to full extent.   |
| Inspect dcp walls (internal and external, if appropriate) for cracks or spalling. | Annually    | Maintenance Contractor | Remove grate to inspect internal walls. Repair as required. Clear vegetation from external walls if necessary and repair as required.   |
| Check step irons for corrosion.   | Annually    | Maintenance Contractor | Remove grate. Examine step irons and repair any corrosion or damage.  |
| Check orifice diameter correct and retains sharp edge.                            | Five yearly | Maintenance Contractor | Compare diameter to design (see work-as- executed) and ensure edge is not pitted or damaged.  |
| STORAGE   |             |                        |   |
| Inspect & remove any blockage of orifice.   | Six monthly | Owner                  | Remove grate and screen. remove sediment/sludge build-up.   |
| Check orifice diameter correct and retains sharp edge.                            | Six monthly | Owner                  | Remove blockages from grate and check if pit blocked.   |
| Inspect screen and clean.   | Six monthly | Owner                  | Remove debris and floatable material likely to be carried to grates.  |
| Check attachment of orifice plate to wall of pit (gaps less than 5 mm).           | Annually    | Maintenance            | Remove grate to inspect internal walls. repair as required. clear vegetation from external walls if necessary and repair as required.   |
| Check attachment of screen to wall of pit.  | Five yearly | Maintenance Contractor | Compare actual storage available with work-as executed plans. If volume loss is greater than 5%, arrange for reconstruction to replace the volume lost. Council to be notified of the proposal.                                   |
| Check attachment of screen to wall of pit.  | Five yearly | Maintenance Contractor | Check along drainage lines and at pits for subsidence likely to indicate leakages.  |

**NOTE:** BUILDER/PLUMBER TO INVESTIGATE SITE CONDITIONS, CONFIRM STORMWATER CONNECTION HEIGHT LEVELS AND LOCATION TO ENSURE CONSISTENCY WITH THE DESIGN. ANY DISCREPANCIES OR CONFLICTS WHICH MAY AFFECT THE PROPOSED DESIGN TO BE REPORTED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

**NOTE:** DO NOT SCALE OFF DRAWINGS. REFER TO ARCHITECTURAL PLANS. VERIFY DIMENSIONS ON SITE

|     |          |                                  |      |
|-----|----------|----------------------------------|------|
| D   | 14.03.23 | REVISED TANK DIMENSIONS          | F.I. |
| C   | 10.03.23 | REVISED TO SUIT COUNCIL COMMENTS | F.I. |
| B   | 21.12.22 | REVISED DRAINAGE DESIGN          | F.I. |
| A   | 20.12.22 | ISSUED FOR APPROVAL              | J.W. |
| REV | DATE     | DESCRIPTION                      | BY   |

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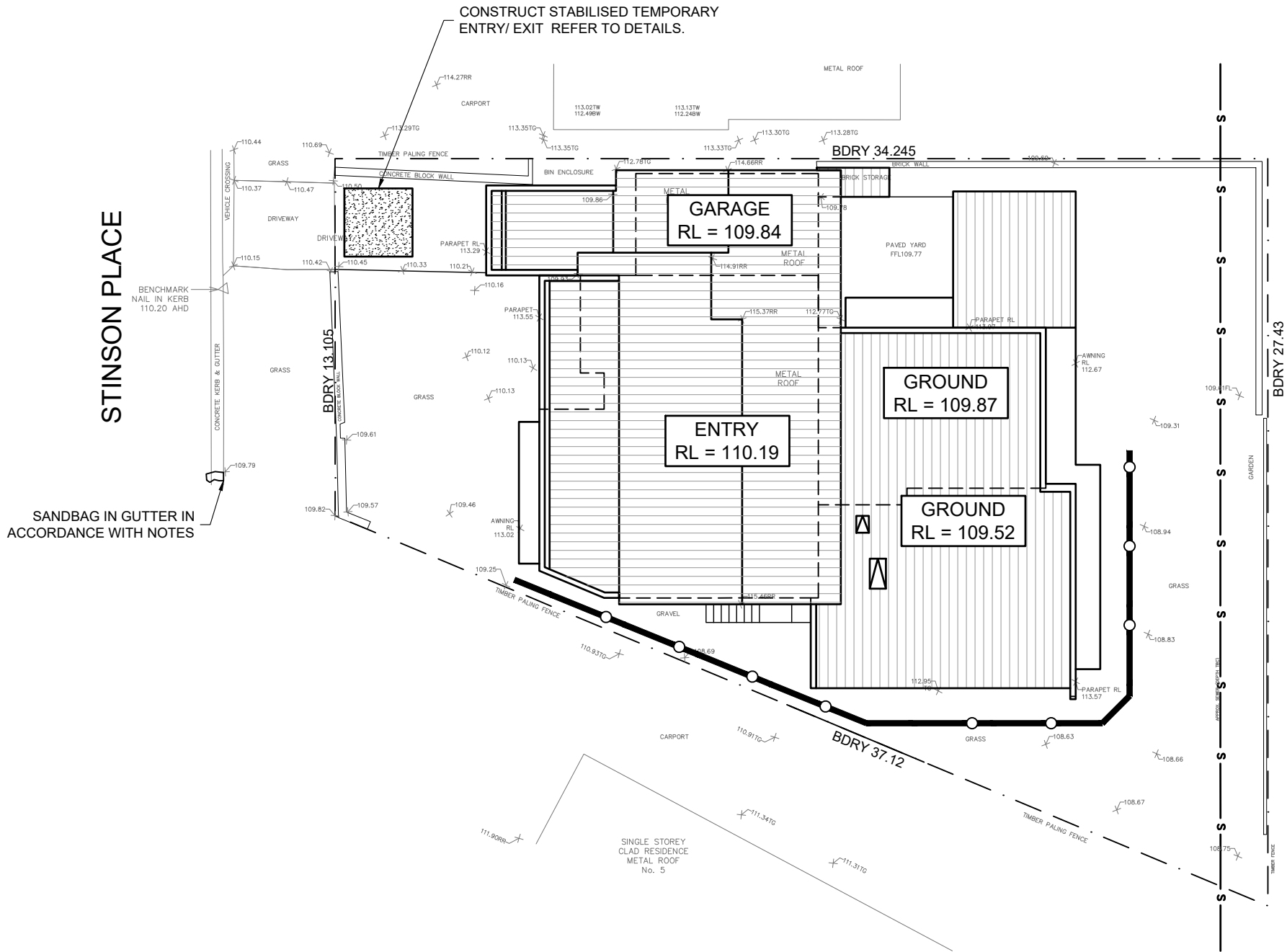
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## ALTERATIONS & ADDITIONS AT 4 STINSON PLACE, FORESTVILLE FOR U+I BUILDING STUDIO

## GENERAL NOTES

|                       |                        |                      |
|-----------------------|------------------------|----------------------|
| JOB NUMBER:<br>220742 | DWG NUMBER:<br>C00.01  | ORIGINAL SIZE:<br>A3 |
| DESIGNED BY:<br>S.R.  | DATE:<br>DECEMBER 2022 |                      |
| DRAWN BY:<br>J.W.     | SCALE:                 |                      |



**SEDIMENT & EROSION CONTROL PLAN**

1:200  
- DENOTES SEDIMENT FENCE

**NOTE:** BUILDER/PLUMBER TO INVESTIGATE SITE CONDITIONS, CONFIRM STORMWATER CONNECTION HEIGHT LEVELS AND LOCATION TO ENSURE CONSISTENCY WITH THE DESIGN. ANY DISCREPANCIES OR CONFLICTS WHICH MAY AFFECT THE PROPOSED DESIGN TO BE REPORTED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

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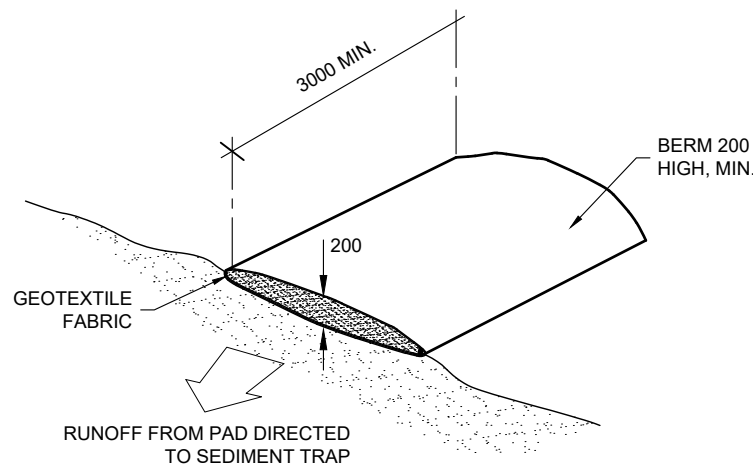
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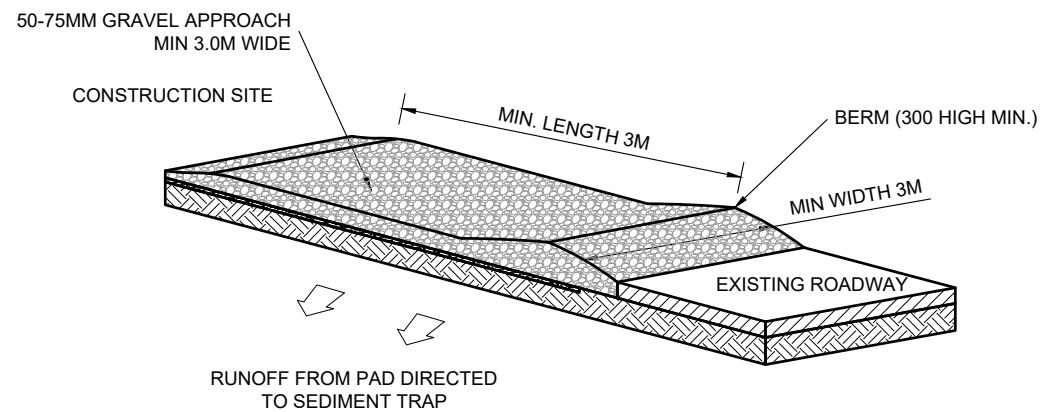
**ALTERATIONS & ADDITIONS**  
AT 4 STINSON PLACE, FORESTVILLE  
FOR U+I BUILDING STUDIO

**SEDIMENT & EROSION**  
**CONTROL PLAN**

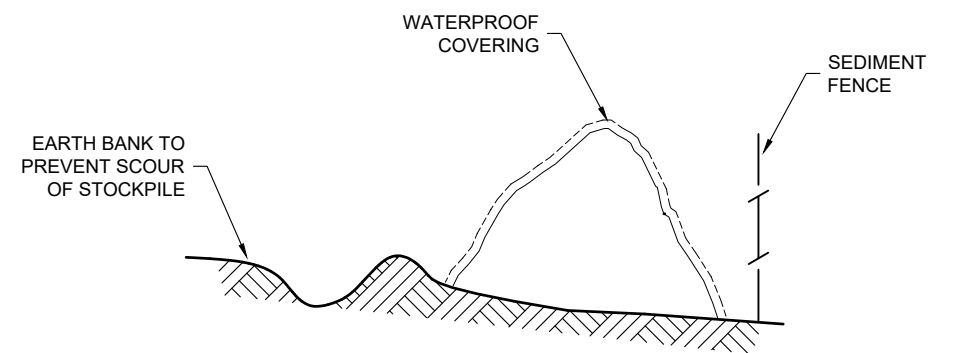
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|-----------------------|------------------------|---|
| JOB NUMBER:<br>220742 | DWG NUMBER:<br>C01.01  | ORIGINAL SIZE:<br>A3  |
| DESIGNED BY:<br>S.R.  | DATE:<br>DECEMBER 2022 |  |
| DRAWN BY:<br>J.W.     | SCALE:                 |   |



OPTION 1 - EXISTING DRIVEWAY TO REMAIN



OPTION 2 - DRIVEWAY TO BE RENEWED



## BUILDING MATERIAL STOCKPILES

N.T.S

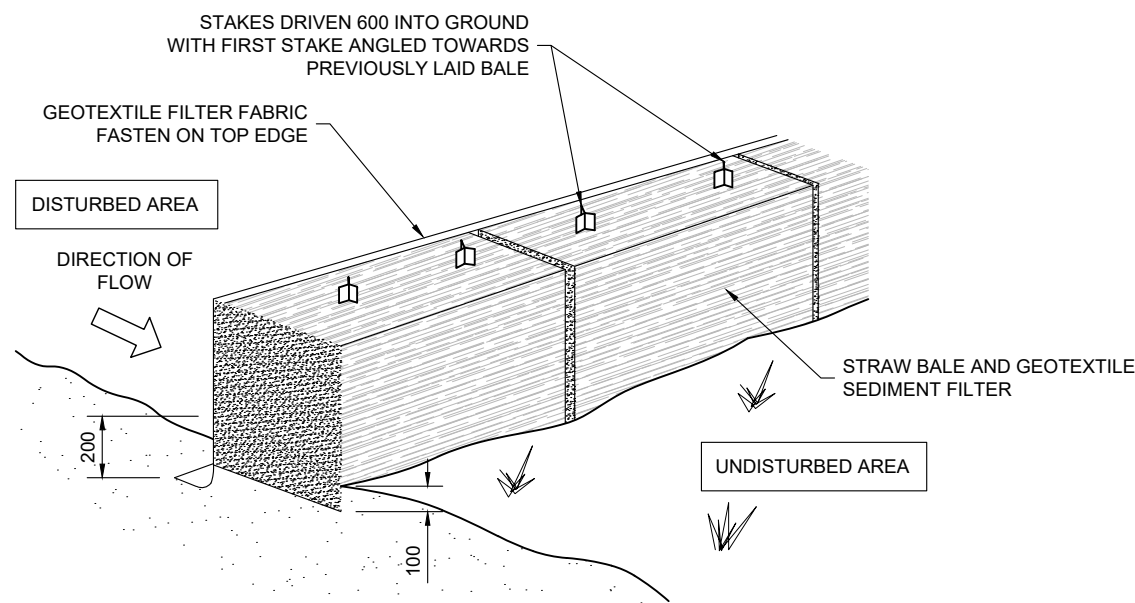
ALL STOCKPILES OF BUILDING MATERIAL SUCH AS SAND AND SOIL MUST BE PROTECTED TO PREVENT SCOUR AND EROSION.

THEY SHOULD NEVER BE PLACED IN THE STREET GUTTER WHERE THEY WILL WASH AWAY WITH THE FIRST RAINSTORM.

## VEHICLE ACCESS TO SITE

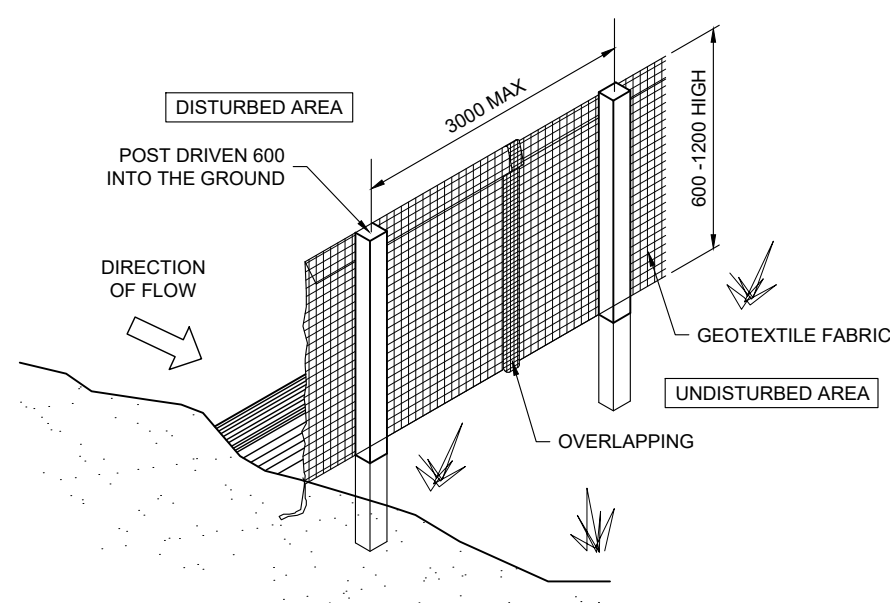
N.T.S

VEHICLE ACCESS TO THE BUILDING SITE SHOULD BE RESTRICTED TO A SINGLE POINT SO AS TO REDUCE THE AMOUNT OF SOIL DEPOSITED ON THE STREET PAVEMENT.



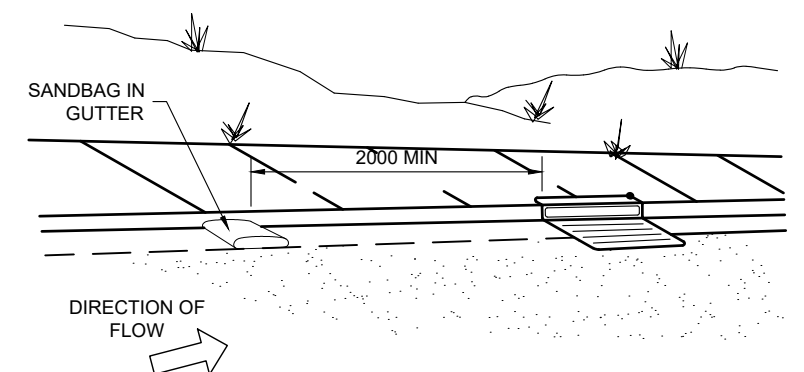
## STRAW BALE DETAIL

N.T.S



## SEDIMENT AND EROSION FENCE DETAIL

N.T.S



## SANDBAG KERB SEDIMENT TRAP

N.T.S

IN CERTAIN CIRCUMSTANCES EXTRA SEDIMENT TRAPPING MAY BE NEEDED IN THE STREET GUTTER.

**NOTE:** BUILDER/PLUMBER TO INVESTIGATE SITE CONDITIONS, CONFIRM STORMWATER CONNECTION HEIGHT LEVELS AND LOCATION TO ENSURE CONSISTENCY WITH THE DESIGN. ANY DISCREPANCIES OR CONFLICTS WHICH MAY AFFECT THE PROPOSED DESIGN TO BE REPORTED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

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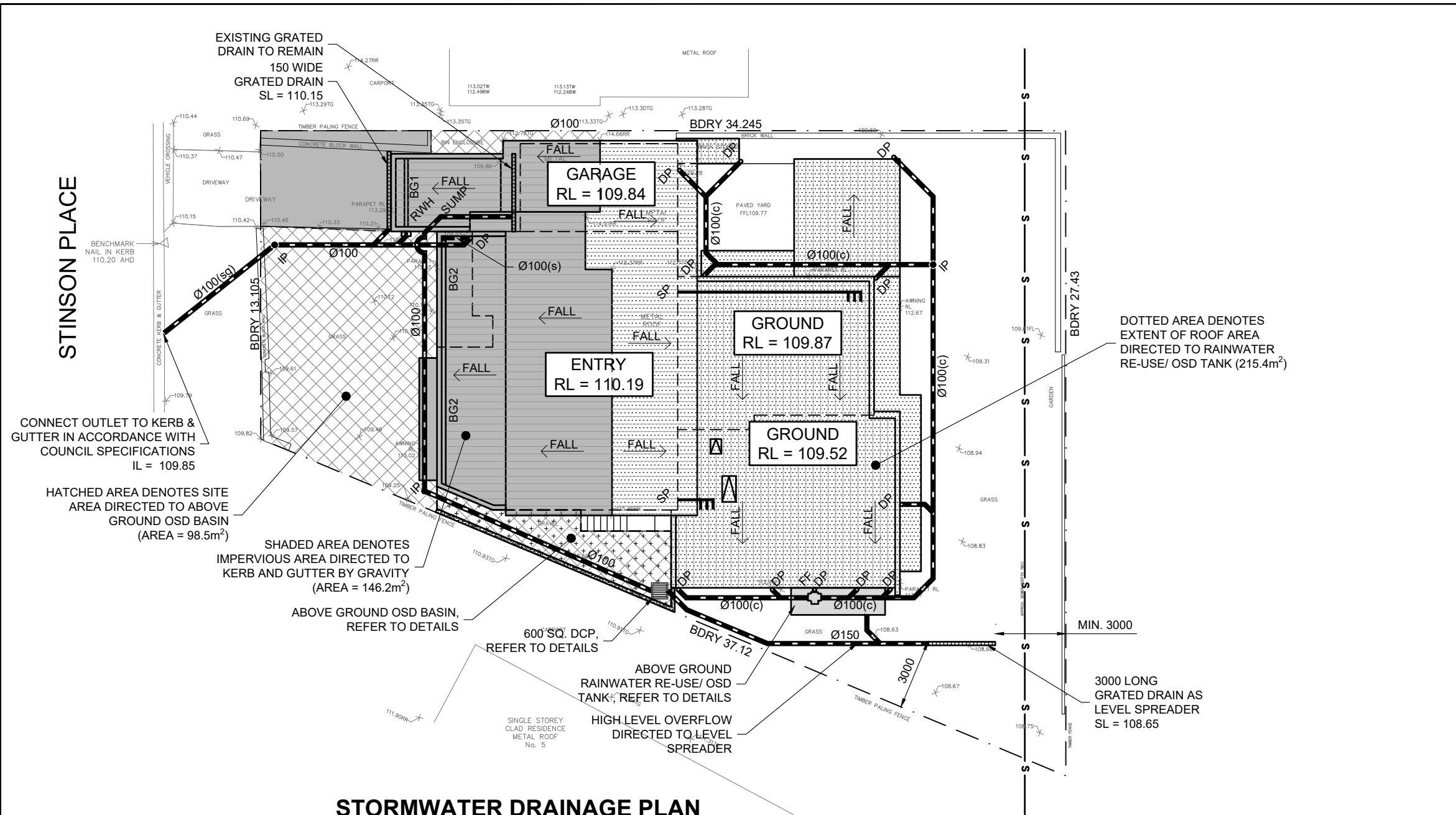
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**ALTERATIONS & ADDITIONS**  
AT 4 STINSON PLACE, FORESTVILLE  
FOR U+I BUILDING STUDIO

**SEDIMENT & EROSION**  
**CONTROL DETAILS**

|                       |                        |                      |
|-----------------------|------------------------|----------------------|
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| DESIGNED BY:<br>S.R.  | DATE:<br>DECEMBER 2022 |                      |
| DRAWN BY:<br>J.W.     | SCALE:                 |                      |



STORMWATER DESIGN SUMMARY

|                                   |                         |
|-----------------------------------|-------------------------|
| COUNCIL: NORTHERN BEACHES COUNCIL |                         |
| 1%, 5 MIN STORM                   | = 274 mm/h              |
| 2%, 5 MIN STORM                   | = 242 mm/h              |
| 5%, 5 MIN STORM                   | = 205 mm/h              |
| TOTAL SITE AREA                   | = 694.00 m <sup>2</sup> |
| NEW ROOF AREA                     | = 336.48 m <sup>2</sup> |
| IMPERVIOUS PATHS & DRIVEWAYS      | = 75.76 m <sup>2</sup>  |
| TOTAL IMPERVIOUS SITE AREA        | = 412.24 m <sup>2</sup> |
| IMPERVIOUS SITE PERCENTAGE        | = 59.4 %                |

215.4m<sup>2</sup> PROPOSED ROOF AREA DIRECTED TO COMBINED RAINWATER RE-USE/ ON-SITE DETENTION. HIGH LEVEL OVERFLOW DIRECTED TO LEVEL SPREADER VIA GRAVITY.

ALL ROOF DRAINAGE HAS BEEN DESIGNED TO SUIT 2% A.E.P. STORM EVENT.

ON-SITE INFILTRATION DESIGN SUMMARY

A DRAINS MODEL HAS BEEN PREPARED TO ASSESS THE STORMWATER RUNOFF FROM THE PROPOSED DEVELOPMENT. ON-SITE DETENTION HAS BEEN PROVIDED TO LIMIT THE 1% A.E.P. POST-DEVELOPED FLOW TO THE 20% A.E.P. PRE-DEVELOPMENT RUNOFF RATE. REFER TO THE SUMMARY ON THIS SHEET FOR MODELLING RESULTS.

|                                     |                       |
|-------------------------------------|-----------------------|
| COMBINED RAINWATER RE-USE/ OSD TANK |                       |
| REQUIRED OSD STORAGE                | = 7.45 m <sup>3</sup> |
| PROVIDED OSD STORAGE                | = 7.45 m <sup>3</sup> |
| ORIFICE DIAMETER                    | = 29mm                |

|                                      |                       |
|--------------------------------------|-----------------------|
| ABOVE GROUND BASIN ON-SITE DETENTION |                       |
| REQUIRED OSD STORAGE = 1.85 * 1.2    | = 2.22 m <sup>3</sup> |
| PROVIDED OSD STORAGE                 | = 2.4 m <sup>3</sup>  |
| ORIFICE DIAMETER                     | = 42mm                |

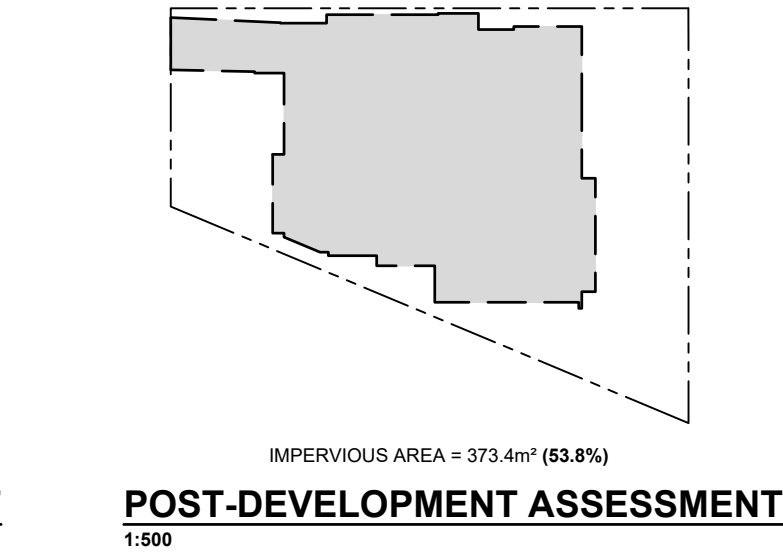
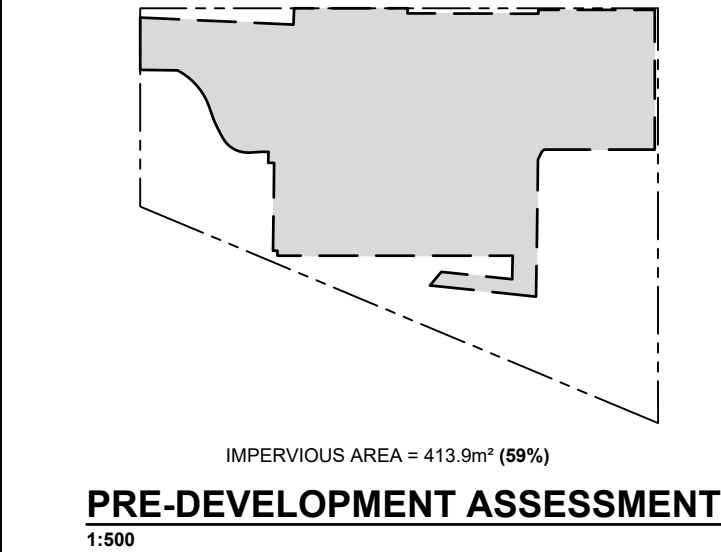
STORMWATER DRAINAGE NOTES

- ALL DRAINAGE LINES SHALL BE uPVC (CLASS SH) STORMWATER DRAINAGE PIPE, U.N.O.
- ALL DRAINAGE LINES SHALL BE LAID @ 1% FALL MIN, U.N.O.
- FIRST FLUSH RAINWATER DEVICES TO BE FITTED TO DRAINAGE LINES TO BUILDER'S DETAIL, TYPICAL
- MINIMUM EFFECTIVE EAVES GUTTER SLOPE = 1:500 U.N.O.
- MINIMUM EFFECTIVE BOX GUTTER SLOPE = 1:200 U.N.O.
- MINIMUM EFFECTIVE EAVES GUTTER SIZE = 7400 mm<sup>2</sup> (HALF ROUND 150)

LEGEND

|      |  |
|------|--|
| DP   | Ø100 OR 100 x 75 RECTANGULAR DOWN PIPE, U.N.O.                   |
| IP   | INSPECTION POINT   |
| SP   | RAINWATER SPREADER   |
| FFD  | FIRST FLUSH RAINWATER DEVICE TO BUILDERS DETAIL                  |
| (c)  | CHARGED PIPE   |
| ---  | PROPOSED BELOW GROUND PIPELINE                                   |
| ■    | PROPOSED SURFACE INLET PIT                                       |
| ⇒⇒⇒  | OVERLAND FLOW PATH   |
| BG1  | 300W x 120D BOX GUTTER   |
| RWH  | 300W x 125D x 120L RAINWATER HEAD WITH Ø100 DOWNPIPE             |
| SUMP | 300W x 120D x 400L SUMP WITH Ø100 DOWNPIPE & 300W x 70D OVERFLOW |

| PRE & POST DEVELOPMENT FLOWS  |            |           |
|-------------------------------|------------|-----------|
|                               | 20% A.E.P. | 1% A.E.P. |
| PRE - DEVELOPMENT FLOW (l/s)  | 15         | 38        |
| POST - DEVELOPMENT FLOW (l/s) | 8          | 15        |



**PRE-DEVELOPMENT ASSESSMENT**  
1:500

NOTE: BUILDER/PLUMBER TO INVESTIGATE SITE CONDITIONS, CONFIRM STORMWATER CONNECTION HEIGHT LEVELS AND LOCATION TO ENSURE CONSISTENCY WITH THE DESIGN. ANY DISCREPANCIES OR CONFLICTS WHICH MAY AFFECT THE PROPOSED DESIGN TO BE REPORTED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

**POST-DEVELOPMENT ASSESSMENT**  
1:500

NOTE: DO NOT SCALE OFF DRAWINGS. REFER TO ARCHITECTURAL PLANS. VERIFY DIMENSIONS ON SITE

|     |          |                                  |      |
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| B   | 21.12.22 | REVISED DRAINAGE DESIGN          | F.I. |
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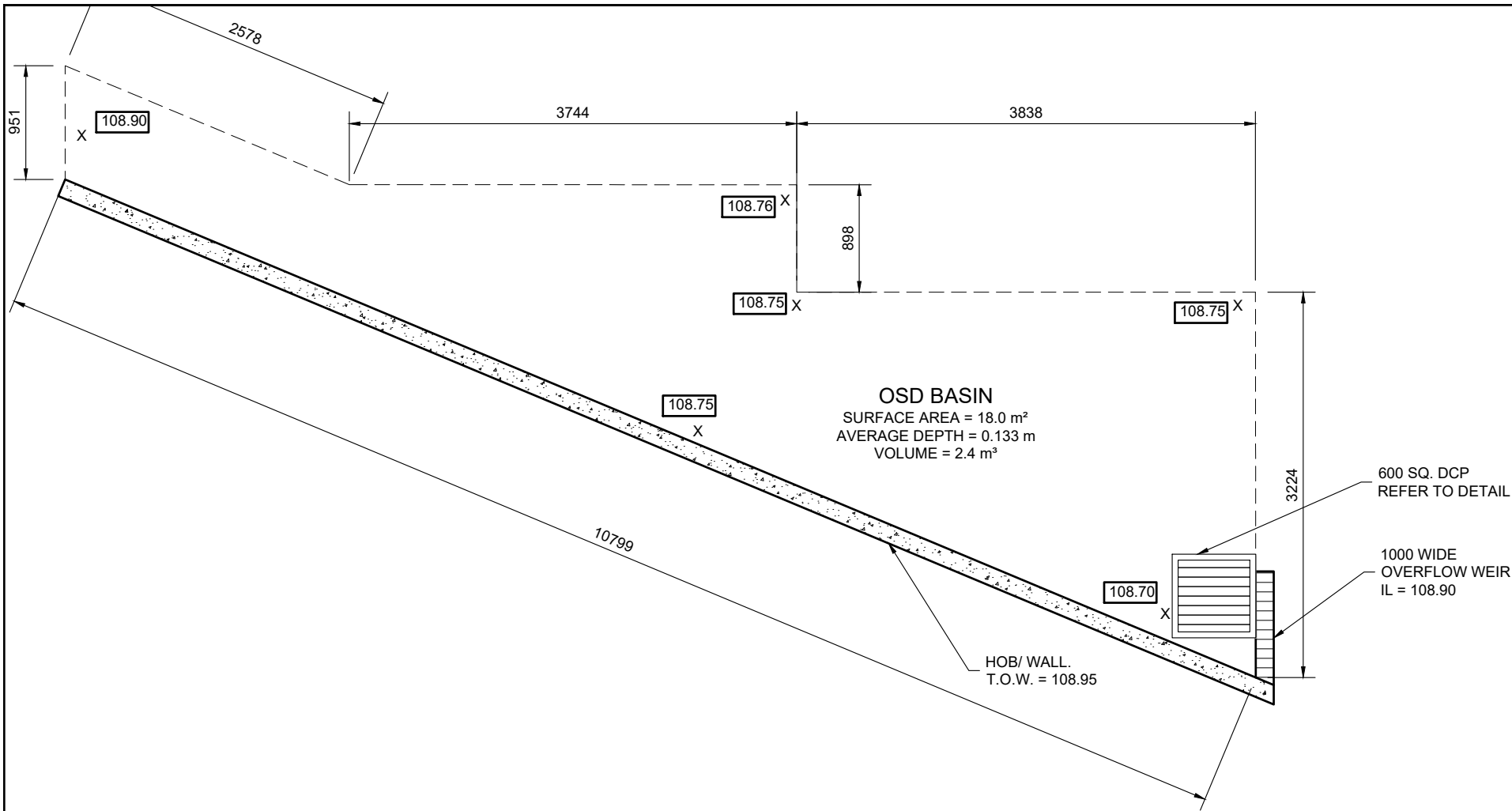
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**ALTERATIONS & ADDITIONS**  
AT 4 STINSON PLACE, FORESTVILLE  
FOR U+I BUILDING STUDIO

**STORMWATER DRAINAGE PLAN**

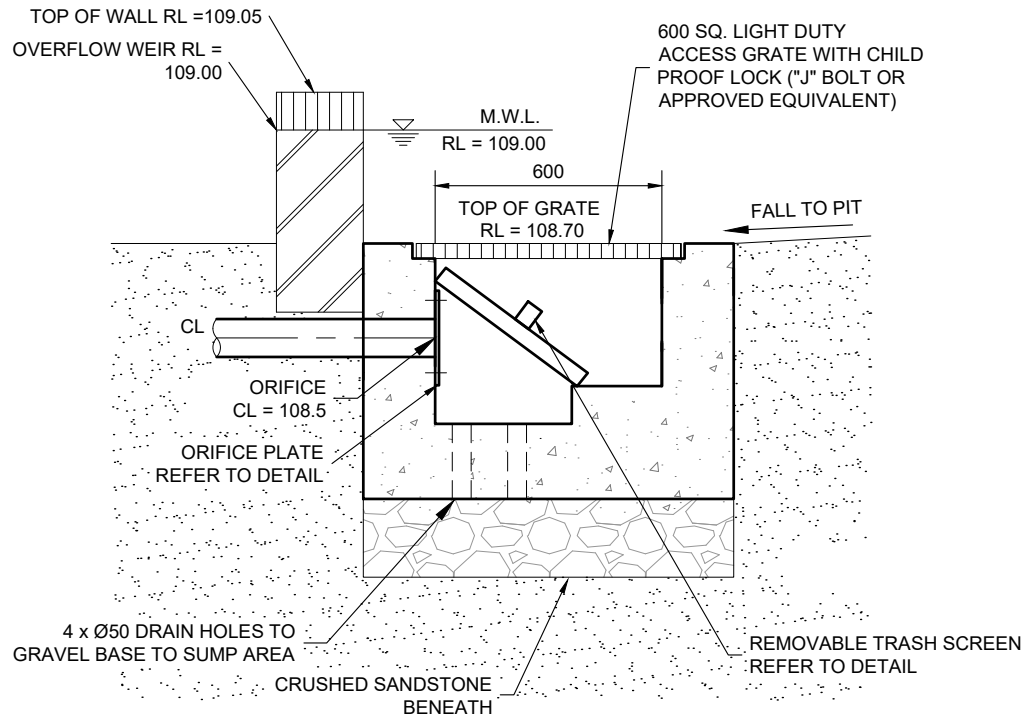
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|-----------------------|------------------------|----------------------|
| JOB NUMBER:<br>220742 | DWG NUMBER:<br>C02.01  | ORIGINAL SIZE:<br>A3 |
| DESIGNED BY:<br>S.R.  | DATE:<br>DECEMBER 2022 |                      |
| DRAWN BY:<br>J.W.     | SCALE:                 |                      |





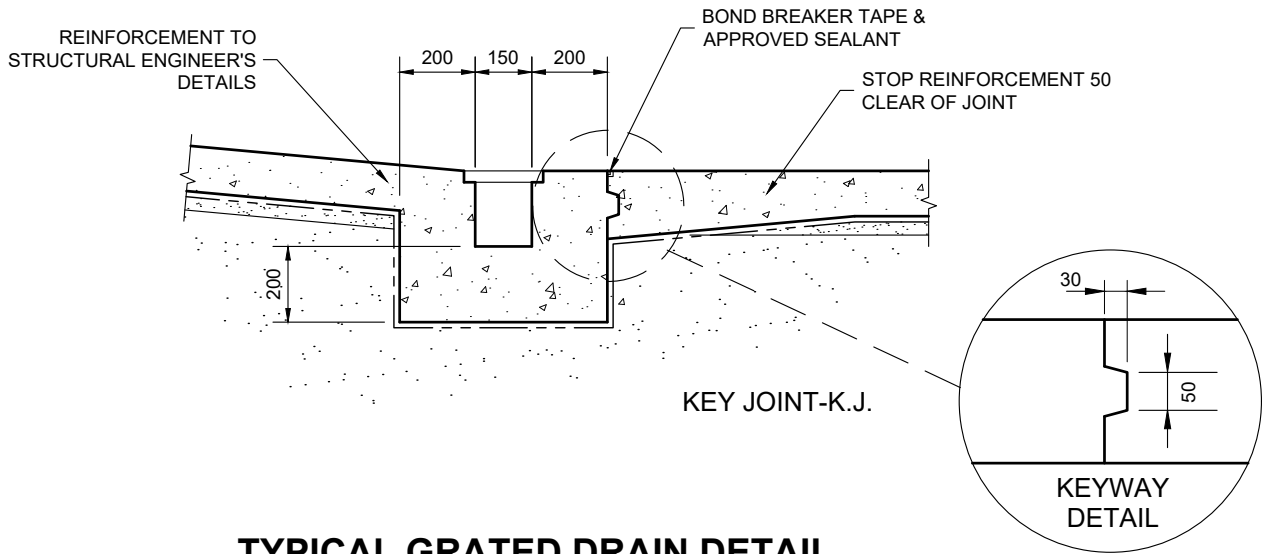
**ABOVE GROUND BASIN LAYOUT PLAN**

1:100



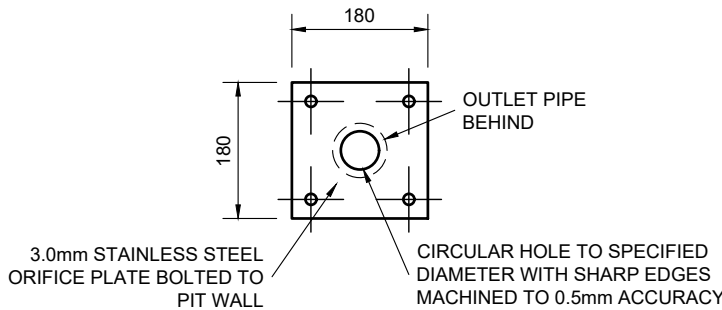
**DISCHARGE CONTROL PIT (DCP)**

1:20



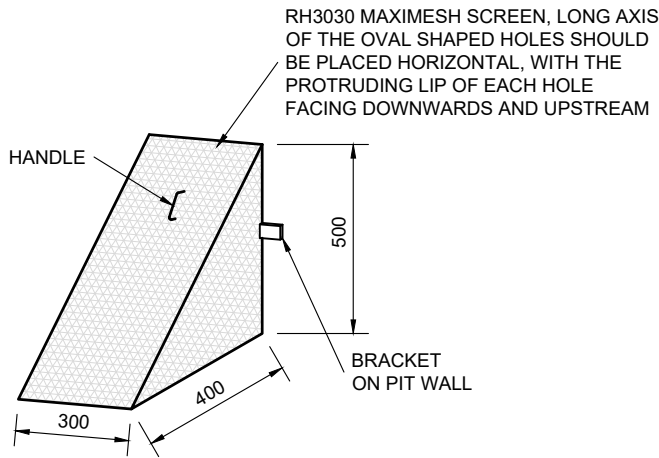
**TYPICAL GRATED DRAIN DETAIL**

1:20



**ORIFICE PLATE DETAIL**

1:10  
REFER TO ON-SITE DETENTION  
SUMMARY FOR ORIFICE DIAMETER



**STANDARD TRASH SCREEN**

NTS

**NOTE:** BUILDER/PLUMBER TO INVESTIGATE SITE CONDITIONS, CONFIRM STORMWATER CONNECTION HEIGHT LEVELS AND LOCATION TO ENSURE CONSISTENCY WITH THE DESIGN. ANY DISCREPANCIES OR CONFLICTS WHICH MAY AFFECT THE PROPOSED DESIGN TO BE REPORTED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

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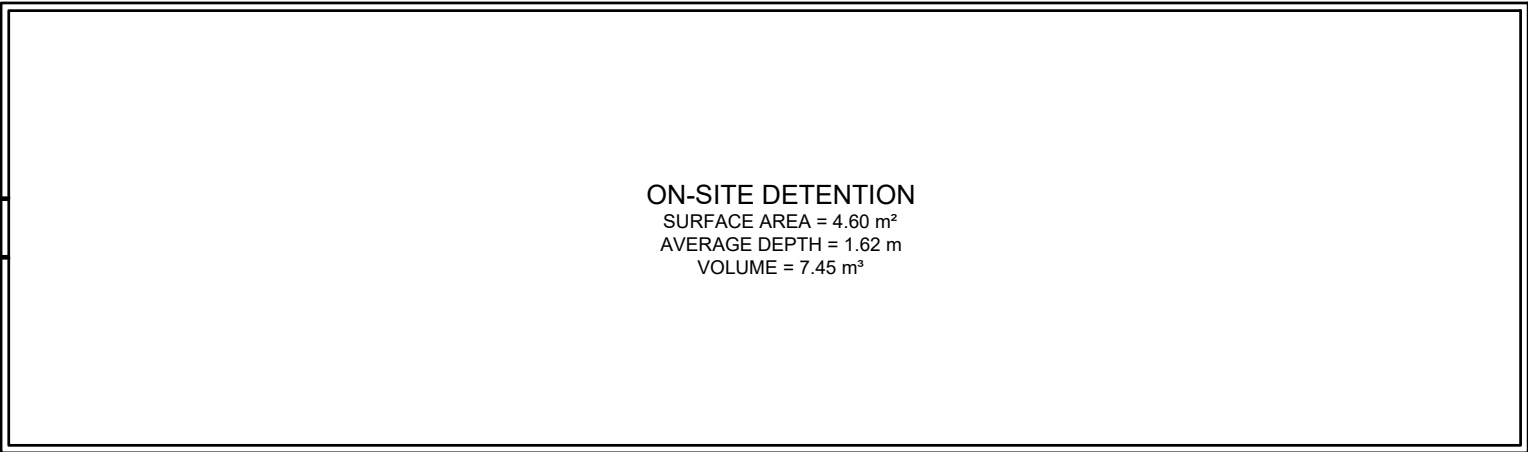
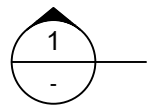
**ALTERATIONS & ADDITIONS**  
AT 4 STINSON PLACE, FORESTVILLE  
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**STORMWATER DETAILS SHEET**

1

|                       |                        |                      |
|-----------------------|------------------------|----------------------|
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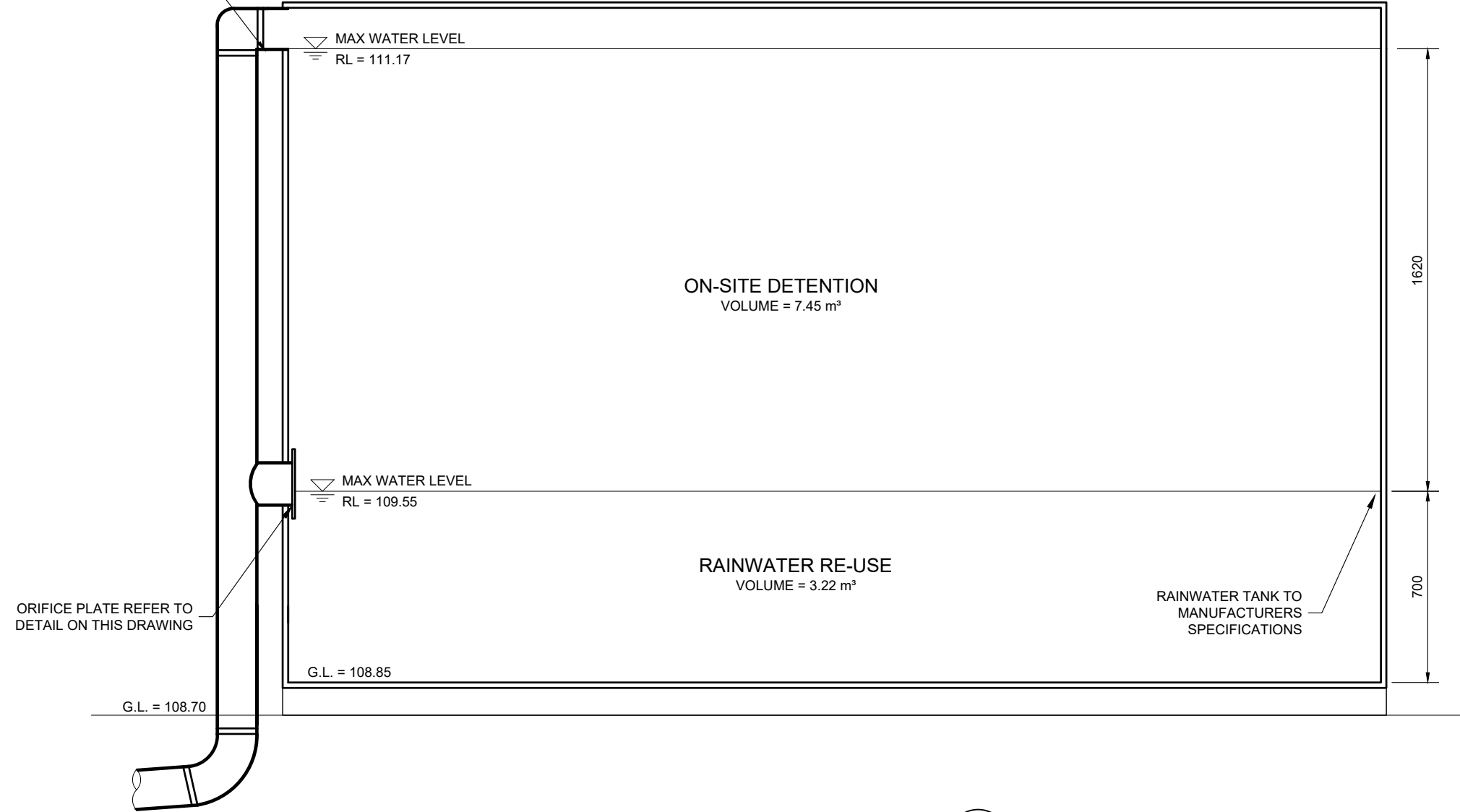


ON-SITE DETENTION  
SURFACE AREA = 4.60 m<sup>2</sup>  
AVERAGE DEPTH = 1.62 m  
VOLUME = 7.45 m<sup>3</sup>

**ABOVE GROUND RE-USE & DETENTION TANK DETAIL**

**NOTE:** DESIGN BASED ON 11,000L KINGSPAN MODLINE ABOVE GROUND RAINWATER TANK. IF ALTERNATIVE TANK IS SOUGHT TO BE USED, ENGINEERING STUDIO SHALL BE ADVISED

Ø150 HIGH LEVEL  
OVERFLOW DIRECTED TO  
LEVEL SPREADER



ORIFICE PLATE REFER TO  
DETAIL ON THIS DRAWING

**SECTION**

1:20



**NOTE:** BUILDER/PLUMBER TO INVESTIGATE SITE CONDITIONS, CONFIRM STORMWATER CONNECTION HEIGHT LEVELS AND LOCATION TO ENSURE CONSISTENCY WITH THE DESIGN. ANY DISCREPANCIES OR CONFLICTS WHICH MAY AFFECT THE PROPOSED DESIGN TO BE REPORTED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

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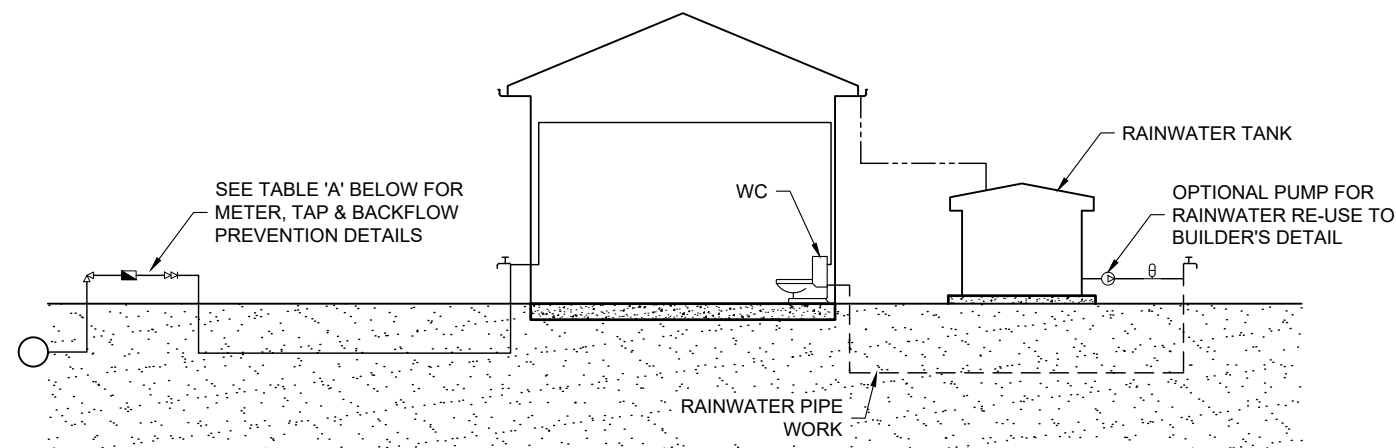
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**ALTERATIONS & ADDITIONS**  
AT 4 STINSON PLACE, FORESTVILLE  
FOR U+I BUILDING STUDIO

**STORMWATER DETAILS SHEET**  
2

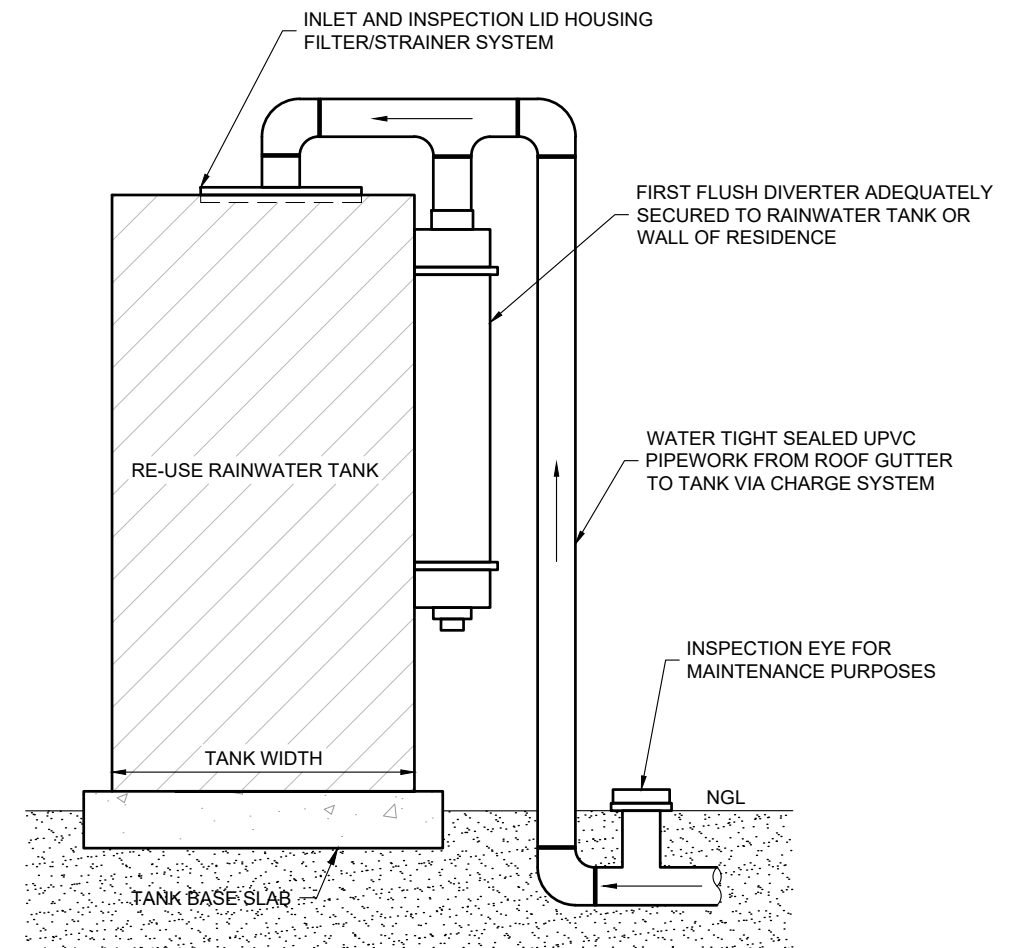
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|-----------------------|------------------------|----------------------|
| JOB NUMBER:<br>220742 | DWG NUMBER:<br>C02.03  | ORIGINAL SIZE:<br>A3 |
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| TABLE A                 |                 |             |  |
|-------------------------|-----------------|-------------|--|
| RAINWATER TANK LOCATION | METER SIZE (mm) | TYPE OF TAP | TYPE OF BACKFLOW PREVENTION            |
| ABOVE GROUND            | 20              | BALL VALVE  | DUAL CHECK VALVE (COMBINED WITH METER) |
|                         | 25              | BALL VALVE  | DUAL CHECK VALVE                       |
|                         | ≥ 32            | BALL VALVE  | DUAL CHECK VALVE                       |
| BELOW GROUND            | 20              | BALL VALVE  | TESTABLE DOUBLE CHECK VALVE            |
|                         | 25              | BALL VALVE  | TESTABLE DOUBLE CHECK VALVE            |
|                         | ≥ 32            | BALL VALVE  | TESTABLE DOUBLE CHECK VALVE            |

| LEGEND |                             |
|--------|-----------------------------|
|        | PRESSURE VESSEL             |
|        | METER                       |
|        | BALL VALVE RIGHT ANGLE TYPE |
|        | DUAL CHECK VALVE            |
|        | PUMP                        |
|        | GARDEN TAP                  |
|        | DRINKING WATER SUPPLY PIPES |
|        | RAINWATER SUPPLY PIPES      |
|        | DOWN PIPES                  |

- DIAGRAM NOTES:
- DRAWING TO BE READ IN CONJUNCTION WITH SYDNEY WATER PLUMBING REQUIREMENTS
  - FOR TANKS 10,000 LITRES OR LESS, COUNCIL DEVELOPMENT CONSENT IS NOT REQUIRED, IF THEIR CONDITIONS FOR INSTALLATION ARE FOLLOWED.
  - FOR TANKS GREATER THAN 10,000 LITRES COUNCIL DEVELOPMENT CONSENT IS GENERALLY REQUIRED.
  - FOR TANKS MORE THAN 10,000 LITRES APPROVAL IS REQUIRED FOR BUILDING OVER SEWERS.
  - SYDNEY WATER'S APPROVAL IS REQUIRED FOR ANY TOP UP FROM DRINKING WATER SUPPLY, REGARDLESS OF TANK SIZE. NO DIRECT CONNECTION IS ALLOWED BETWEEN THE DRINKING WATER SUPPLY AND THE RAINWATER TANK SUPPLY.
  - RAINWATER PIPEWORK IS SHOWN ON THE DIAGRAM AS SUPPLYING INTERNAL AND EXTERNAL RAINWATER USES. CUSTOMERS MAY WANT ONE OR THE OTHER.
  - ANY DESIGNED ACCESS LID INTO RAINWATER RE-USE TANK IS TO HAVE A LOCKABLE LID. IF THE LID IS DESIGNED TO BE ACCESSED BY A MAINTENANCE PERSON, IT MUST BE AT LEAST 600 mm x 900 mm IN SIZE.

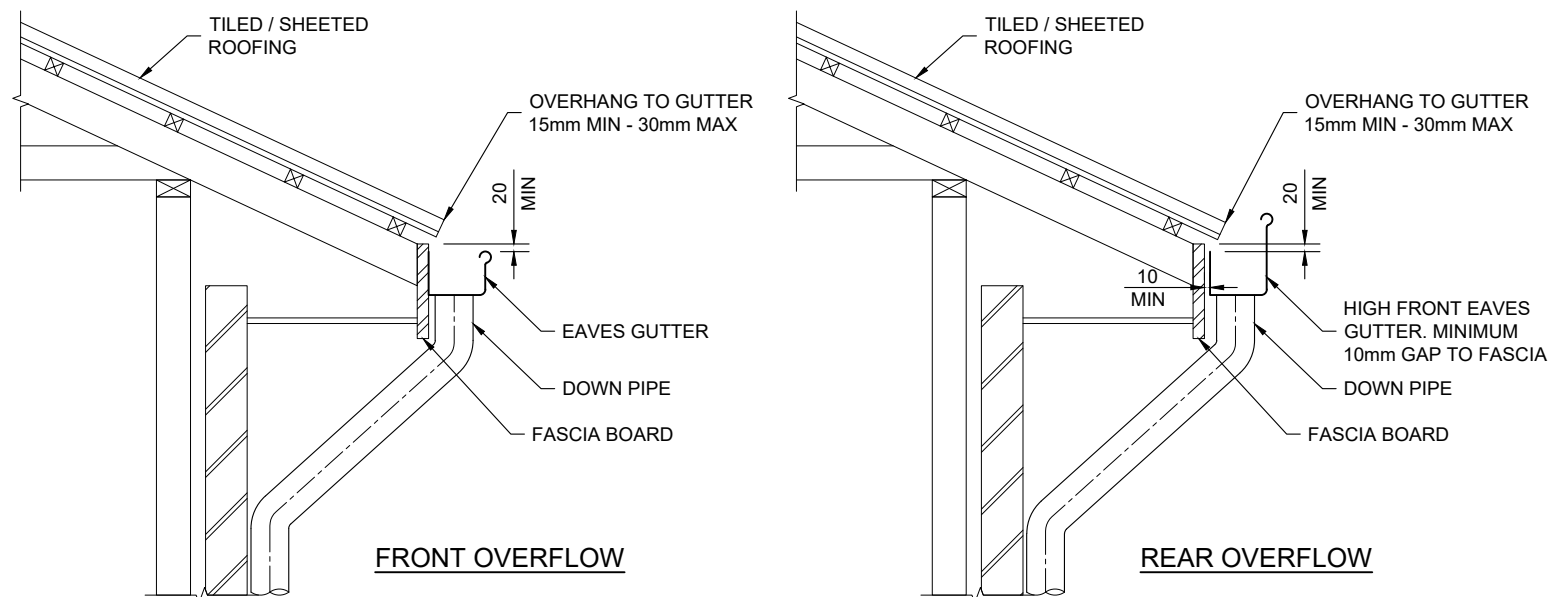


## DUAL DRINKING WATER & RAINWATER SUPPLY DIAGRAM

N.T.S.

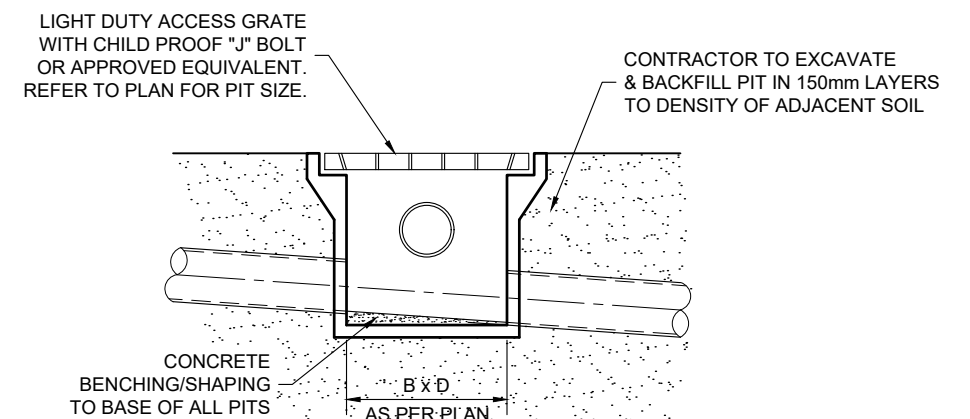
## TYPICAL FIRST FLUSH DETAIL

N.T.S.



## TYPICAL EAVES GUTTER DETAIL

1:20



## TYPICAL SURFACE INLET PIT DETAIL

1:20

**NOTE:** BUILDER/PLUMBER TO INVESTIGATE SITE CONDITIONS, CONFIRM STORMWATER CONNECTION HEIGHT LEVELS AND LOCATION TO ENSURE CONSISTENCY WITH THE DESIGN. ANY DISCREPANCIES OR CONFLICTS WHICH MAY AFFECT THE PROPOSED DESIGN TO BE REPORTED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

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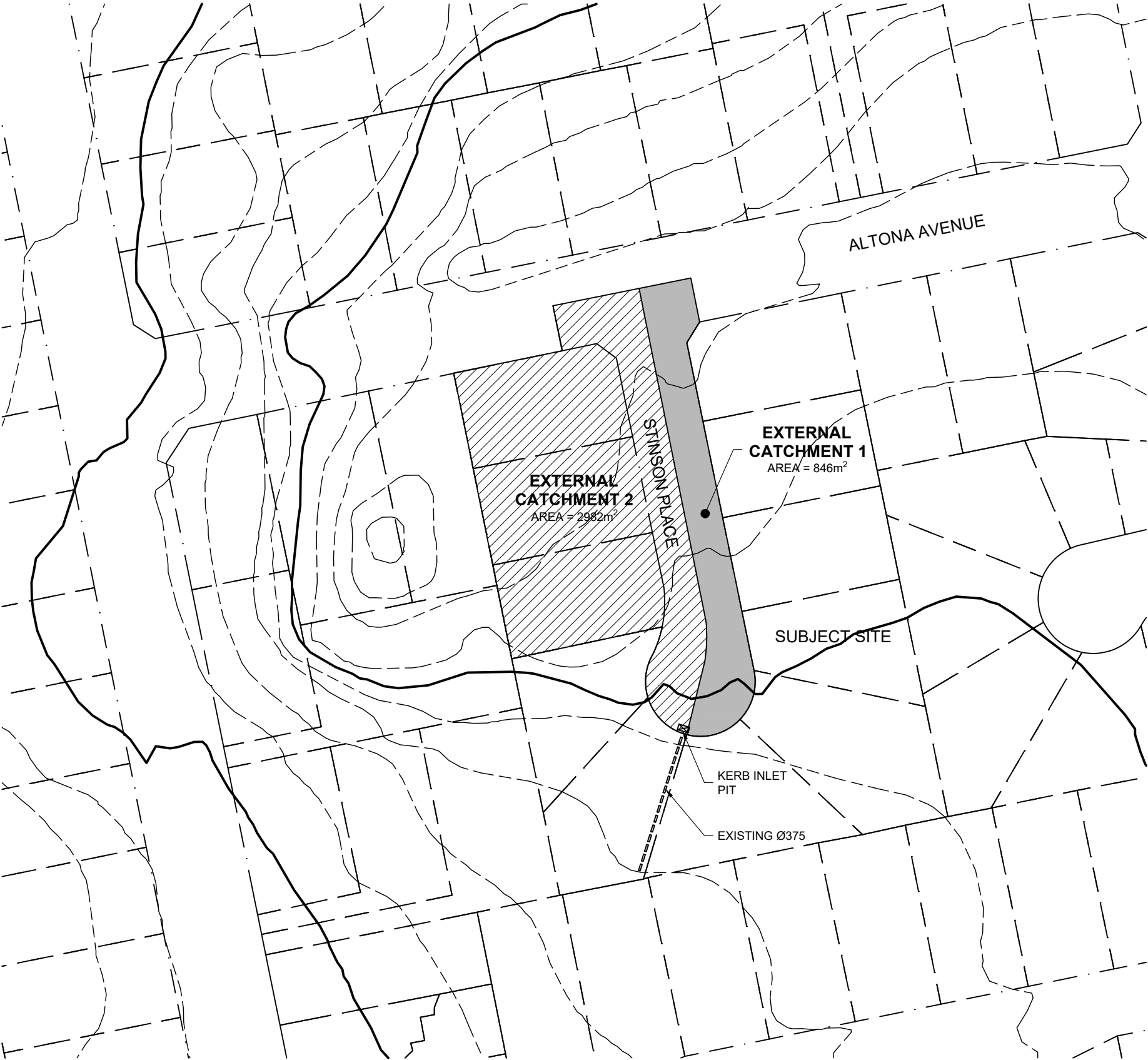
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**STORMWATER DETAILS SHEET**  
3

|                       |                        |                      |
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| JOB NUMBER:<br>220742 | DWG NUMBER:<br>C02.04  | ORIGINAL SIZE:<br>A3 |
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| DRAWN BY:<br>J.W.     | SCALE:                 |                      |



EXTERNA FLOW CALCULATIONS

GUTTER FLOW  
THE RATIONAL METHOD HAS BEEN USED TO ESTIMATE THE PEAK FLOW RATE OF THE EXTERNAL FLOW DIRECTED TO THE KERB & GUTTER.

CATCHMENT AREA (A) = 0.0846ha  
TIME OF CONCENTRATION (t) = 5min  
5% A.E.P. 5min RAINFALL INTENSITY (20<sub>15</sub>) = 205 mm/hr  
AVERAGE 80% FRACTION IMPERVIOUS ASSUMED  
10% A.E.P. RUNOFF COEFFICIENT (C<sub>10</sub>) = 0.81  
5% A.E.P. RUNOFF COEFFICIENT (C<sub>20</sub>) = 0.851  
1% A.E.P. PEAK FLOW RATE (Q<sub>100</sub>) = C\*A\*I/360  
= 0.851 \* 0.0846 \* 205 / 360  
= 0.041 m³/s

5% A.E.P. ADDITIONAL FLOW DIRECTED TO KERB AND GUTTER FROM SUBJECT SITE = 146 \* 205 / 3600  
= 0.008 m³/s

TOTAL FLOW DIRECTED TO KERB & GUTTER = 0.049 m3/s

ASSUMING 1% SLOPE, FLOW DEPTH IN GUTTER = 0.082m  
THEREFORE GUTTER HAS SUFFICIENT CAPACITY.

PIT AND PIPE CAPACITY  
THE RATIONAL METHOD HAS BEEN USED TO ESTIMATE THE PEAK FLOW RATE OF THE EXTERNAL FLOW DIRECTED TO THE KERB INLET PIT AT THE END OF STINSON PLACE

CATCHMENT AREA (A) = 0.3828ha  
TIME OF CONCENTRATION (t) = 5min  
5% A.E.P. 5min RAINFALL INTENSITY (20<sub>15</sub>) = 205 mm/hr  
AVERAGE 80% FRACTION IMPERVIOUS ASSUMED  
10% A.E.P. RUNOFF COEFFICIENT (C<sub>10</sub>) = 0.81  
5% A.E.P. RUNOFF COEFFICIENT (C<sub>20</sub>) = 0.851  
1% A.E.P. PEAK FLOW RATE (Q<sub>100</sub>) = C\*A\*I/360  
= 0.851 \* 0.3828 \* 205 / 360  
= 0.185 m³/s

ADDITIONAL FLOW DIRECTED TO KERB AND GUTTER FROM SUBJECT SITE = 146 \* 205 / 3600  
= 0.008 m³/s

TOTAL FLOW DIRECTED TO KERB INLET PIT = 0.193 m3/s

A DRAINS MODEL HAS BEEN PREPARED TO CHECK SAG INLET AND Ø375 OUTLET PIPE CAPACITY.  
CAPACITY= 0.256m³/s > 0.0192m³/s, THEREFORE OK

EXTERNAL CATCHMENT ASSESSMENT

1:1000

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EXTERNAL CATCHMENT  
ASSESSMENT

|                       |                        |                      |
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