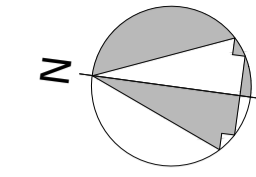
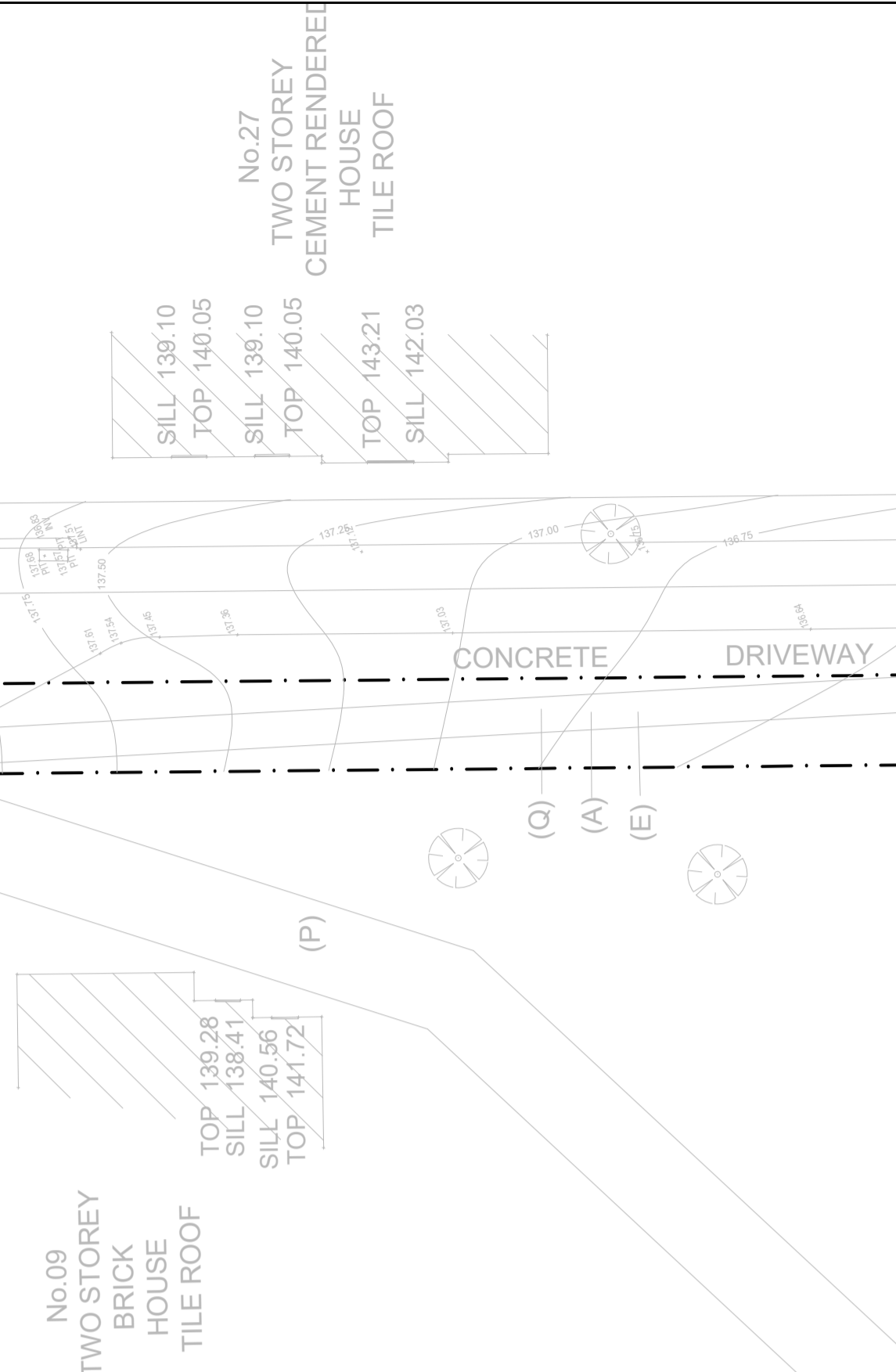


ALBERT ROAD

BM1STN
RL 138.51
(AHD)



LOT 102
DP 566971



CONCEPT DRAINAGE PLAN 1:200

- All drainage lines shall be UPVC (Class SH) Stormwater Drainage Pipe, UNO.
- All drainage lines shall be laid @ 1% min fall, UNO.
- DP = Down Pipe
- DPS = Down Pipe Spreader
- EDP = Existing Down Pipe (shown indicative only)
- RH = Rain Head

DRAWING KEY:

- Ø100 UPVC Stormwater Drainage Line
- Existing Drainage Line To Remain (TBC)
- Ø150 UPVC Stormwater Drainage Line

DRAINAGE LINE NOTE:

All underground pipes and pits shall not disturb tree roots.
All sub-soil drainage shall be installed to BCA requirements and connected to the drainage system.
Drainage line location is indicative and shown for clarity. Exact location subject to change to engineer's approval.
Existing drainage infrastructure shall be clean & in proper working order. All levels shall be verified by builder on-site prior to commencing.
All charged drainage lines shall be solvent jointed UPVC pipes.

THRESHOLD NOTE:

All new slabs shall have compliant set downs at all thresholds.
Threshold design is the responsibility of the architect and builder to comply with the requirements of the NCC (previously BCA) section 3.1.3.
E2 Design takes no responsibility for structures built without a compliant threshold set down.

DRAINAGE DESIGN CALCULATIONS:

Council: Hornsby

Site area = 2340 m² (0.0234 ha)
Pre-developed impervious area = 622.1 m²
Post-developed impervious area = 818.1 m²

Connect to existing drainage easement marked '(D)' on survey via gravity. Plumber to confirm existing system in clear and working order prior to re-use, repair or replace defective items as required.

| MARK | GUTTER SIZE | DP |
|------|----------------------------------|----------------|
| GS1 | Stramit M/S Pattern Eaves Gutter | Ø100 or 100x75 |
| GS2 | 200W x 150D Box Gutter | Ø100 |

NOTE: All Gutter Systems shall be GS1, UNO.

| PIT | PIT DIMENSIONS | PIPE I.L. | | TOP PIT R.L. |
|-----|--------------------------|-----------|--------|--------------|
| | | IN | OUT | |
| P1 | 450 SQ. Grated Inlet Pit | 134.76 | 134.71 | 134.91 |

All pits greater than 1200 mm deep shall have step irons.
Maximum pit depths: 450 x 450 - 600 mm max. 600 x 600 - 900 mm max. 600 x 900 - 1200 mm max. 900 x 900 - greater than 1200 mm

RETAINING WALL DRAINAGE BY OTHERS. STRUCTURAL INTEGRITY OF RETAINING WALLS IN SATURATED SOILS TO BE CONFIRMED BY OTHERS, TYPICAL.

INFILTRATION TRENCH, REFER DETAIL. INSTALL MIN. 5m FROM DOWNSTREAM PROPERTIES, 2m FROM STRUCTURES & 1m FROM SIDE BOUNDARIES, TYPICAL.

LEVEL SPREADER TO COUNCIL SPECIFICATIONS

INFILTRATION TRENCH, REFER DETAIL. INSTALL MIN. 5m FROM DOWNSTREAM PROPERTIES, 2m FROM STRUCTURES & 1m FROM SIDE BOUNDARIES, TYPICAL. 600 SQ. GRATED INLET PIT TOP OF PIT RL = 133.75

ALL EXISTING GROUND LEVEL DRAINAGE TO REMAIN. PLUMBER TO CONFIRM ADEQUACY, TYPICAL.

DIVERT PIPES AROUND TREES (PIPE LOCATION SHOWN INDICATIVELY FOR CLARITY ONLY). ARBORIST TO CONFIRM STABILITY OF THE TREES DUE TO PROXIMITY OF EXCAVATION.

GENERAL

- These drawings shall be read in conjunction with the architectural and other consultants' drawings / specifications and with other such written instructions as may be issued during the construction. Any discrepancy shall be referred to the Engineer before commencing the work.
- All dimensions are in millimeters, UNO (unless noted otherwise).
- These drawings shall not be scaled, refer to dimensions given only or refer to the Architectural drawings.
- All levels and setting out dimensions shown on the drawings shall be checked on site prior to the commencement of the work.
- During construction the structure shall be maintained in a stable condition with no part being overstrengthened.
- Existing services, where shown, have been drawn based on supplied information and as such their accuracy can not be guaranteed. It is the responsibility of the contractor to determine their exact location prior to the commencement of work.
- All service trenches under vehicular pavements shall be back filled in accordance with the respective authorities requirements.
- All trench backfill material shall be compacted to the same density as the surround material.
- All soil disturbed areas shall be reinstated to the original condition, including kerbs, footpaths, concrete areas, gravel and grassed areas, etc.
- It is the contractor responsibility to obtain all authority approvals.

STORMWATER DRAINAGE

- The stormwater drainage design shall be carried out in accordance with AS / NZS 3502.3 'Stormwater Drainage' & AS / NZS 3500.2.3 'Stormwater Drainage - Acceptable Solutions'.
- Any variations to the design levels shall be referred to the engineer immediately for approval.
- Any variations to specified products or details shall be referred to the engineer for approval prior to their installation.
- Subsoil drainage shall be provided to all retaining walls & embankments. They shall be a minimum of Ø100 slotted pipe in filter sock surrounded by crushed rock. They shall drain to the stormwater drainage system.

SEDIMENT & EROSION CONTROL NOTES

- The sediment & erosion controls shall be maintained effectively for the duration of the project. They shall not be removed until the site has been stabilized or landscaped to the principal certifying authorities satisfaction.

E2

- A single all weather access way shall be provided at the front of the property consisting of 50-80 mm aggregate or similar material with a minimum thickness of 150 mm laid over needle-punched geotextile fabric (Bulim A14 or similar) and installed prior to any works being commenced on site.
- Where the building works are greater than a single dwelling development, a shaker pad must be installed as part of the vehicular accessway. The shaker pad shall be:
 - Established on suitable prepared & compacted material.
 - Constructed such that it is flush with the adjoining surfaces.
 - A minimum of 5000 mm in length and breadth.
 - Designed with rungs spaced 200-250 mm apart & with a maximum width of 75 mm each.
- The contractor shall ensure that no spoil or fill encroaches upon adjacent areas during the project.
- The contractor shall ensure that all kerb inlets and drains affected by stormwater flow from the site are protected at all times during the project. Kerb inlet sediment traps shall be installed along the immediate vicinity along the street frontage. These shall be regularly maintained during the project.
- The street / road shall be kept clean from dirt and debris from vehicles departing the site.
- Sediment fencing shall be secured to posts (please note that if star pickets or similar are used then plastic safety caps shall be installed on top of the posts) at 2000 mm intervals with the geotextile fabric embedded a minimum of 200 mm in to the soil.
- All the topsoil stripped from the site shall be stockpiled such that it does not interfere with drainage lines and stormwater inlet pits. The stockpile shall be suitably covered with an impervious membrane and screened by sediment fencing.

SOIL CONSERVATION NOTE:

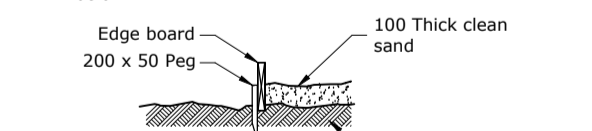
- Prior to the commencement of the site works the following shall be provided to capture water borne sediments:
 - Sediment fencing
 - Sediment trap
 - Washout area
- These shall be maintained regularly during the course of the construction with the sediment trap cleaned after each storm event.

SEDIMENT TRAP

- A 1000 x 1000 mm square by 500 mm deep pit located at the lowest point of the site.

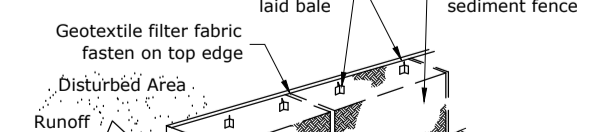
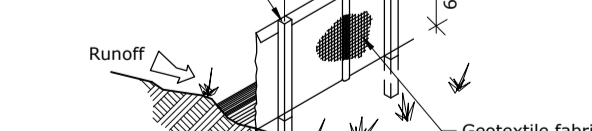
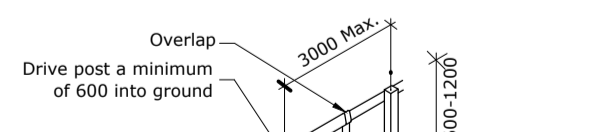
WASHOUT AREA

- The washout area shall be 1800 x 1800 mm allocated for the washing of tools & equipment in accordance with the detail below:



SEDIMENT FENCE

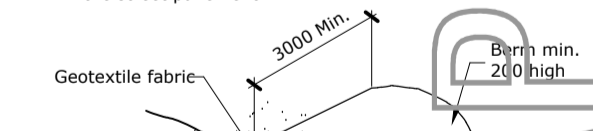
- Provide sediment fence on down slope boundary as shown on plan.
- Geotextile fabric to be buried 200 mm below ground at the lower edge.



- Drainage area is 0.5 HA with a maximum slope gradient 1:2 maximum and a maximum slope length of 50 m.

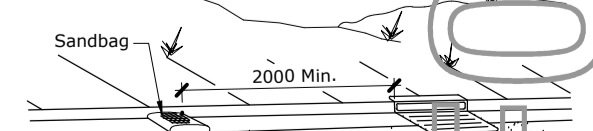
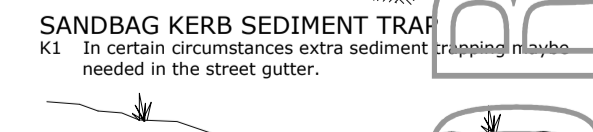
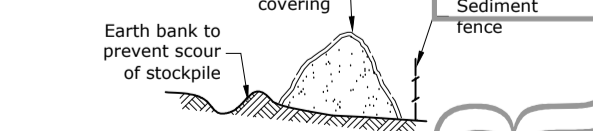
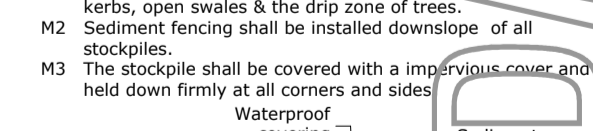
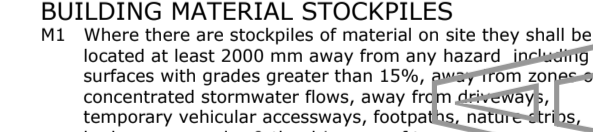
VEHICLE ACCESS TO SITE

- Vehicle access to the building site shall be restricted to a single point so as to reduce the amount of soil deposited on the street pavement.



BUILDING MATERIAL STOCKPILES

- Where there are stockpiles of material on site they shall be located at least 2500 mm away from any hazard, including surfaces with grades greater than 15%, away from proposed concentrated stormwater flows, away from driveway, temporary vehicular accessways, footpaths, kerbs, open swales & the drip zone of trees.
- Sediment fencing shall be installed downslope of all stockpiles.
- The stockpile shall be covered with an impervious cover and held down firmly at all corners and sides.



- Drainage area is 0.5 HA with a maximum slope gradient 1:2 maximum and a maximum slope length of 50 m.

| D | GENERAL REVISIONS - FOR DA APPROVAL ONLY | 13.04.22 | |
|-----|--|-----------------------|------|
| C | GENERAL REVISIONS - FOR DA APPROVAL ONLY | 08.04.22 | |
| B | GENERAL REVISIONS - FOR DA APPROVAL ONLY | 04.04.22 | |
| A | GENERAL REVISIONS - FOR DA APPROVAL ONLY | 03.02.22 | |
| REV | APP. | AMENDMENT DESCRIPTION | DATE |

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PROPOSED ALTERATIONS

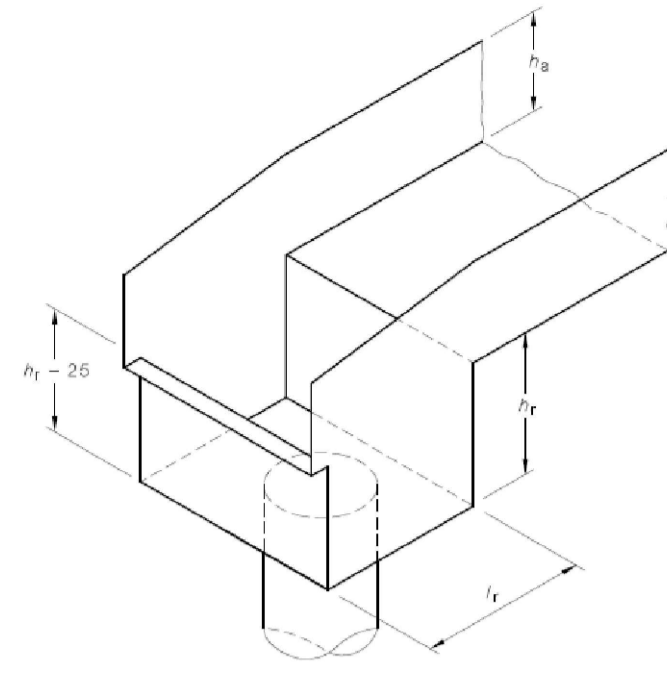
29B ALBERT ROAD
BECROFT NSW 2119

PERROTTET

Concept Drainage Plan

| SCALE: | DATE: | DESIGN: | REV: |
|--------|-------------|---------|------|
| 1:200 | 24 SEP 2021 | JDM | D |
| JOB: | DRW: | SIGNED: | |
| 21.395 | SW1 | | |

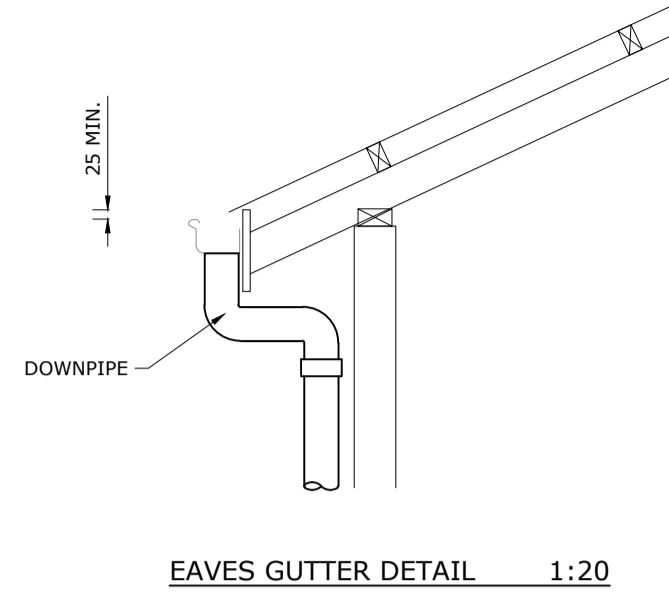
DO NOT SCALE FROM DRAWINGS - USE ONLY FIGURED DIMENSIONS



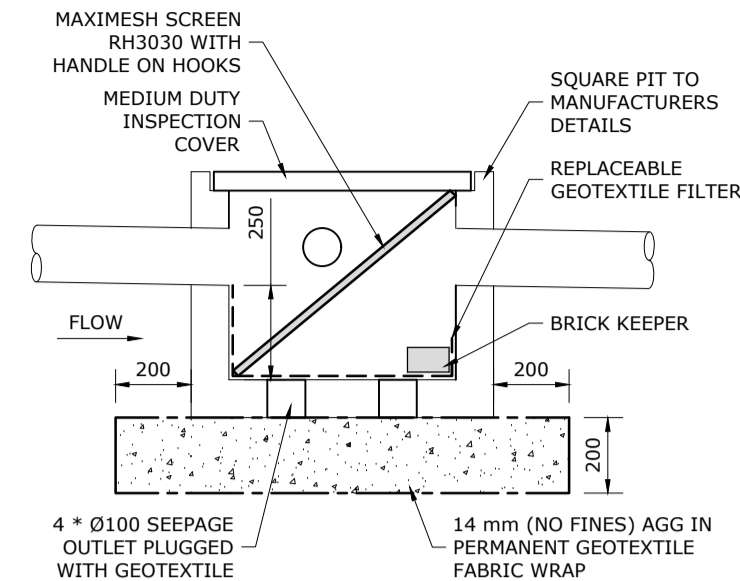
- NOTES:
- 1 This figure applies for $h_r \geq 1.25 D_r$ or $1.25 D_r$
 - 2 For h_r and l_r , see Figure I3.
 - 3 Width of rainhead is equal to the width of box gutter.
 - 4 The rainhead to be fully sealed to the box gutter and the front of the rainhead left open above the overflow weir.

FIGURE I2 RAINHEAD

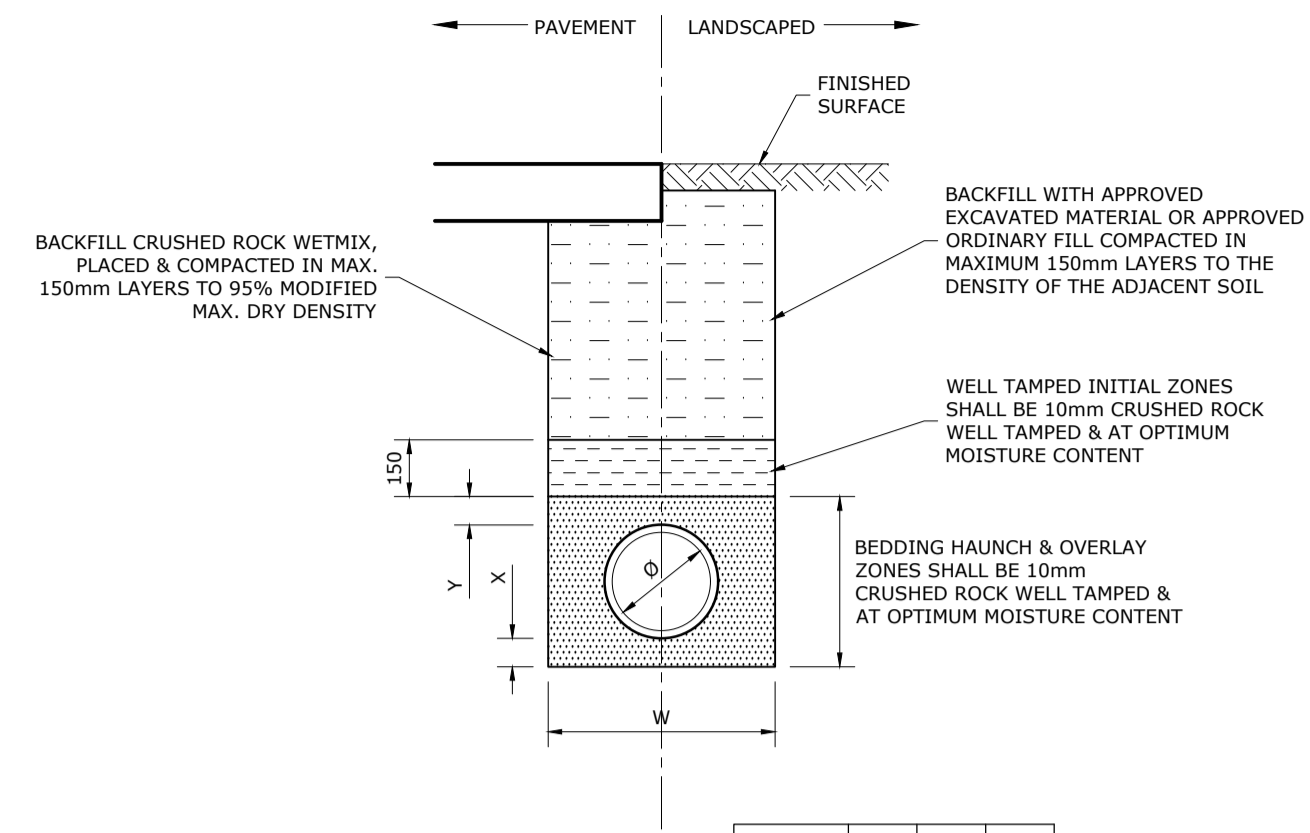
| RAINHEAD & BOX GUTTER DIMENSIONS | |
|----------------------------------|-------------------|
| MARK | MINIMUM DIMENSION |
| ha | 150mm |
| hr | 100mm |
| lr | 200mm |
| Box Gutter Width | 200mm |



EAVES GUTTER DETAIL 1:20



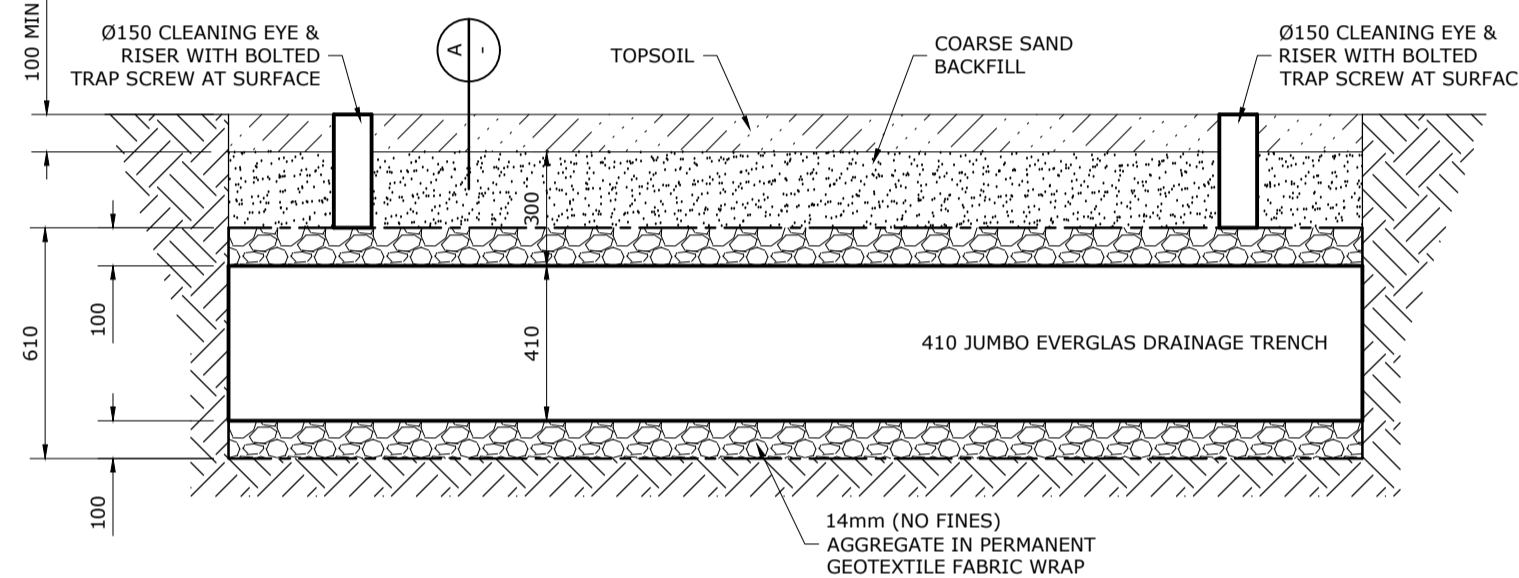
SILT ARRESTOR PIT 'P1' DETAIL 1:20



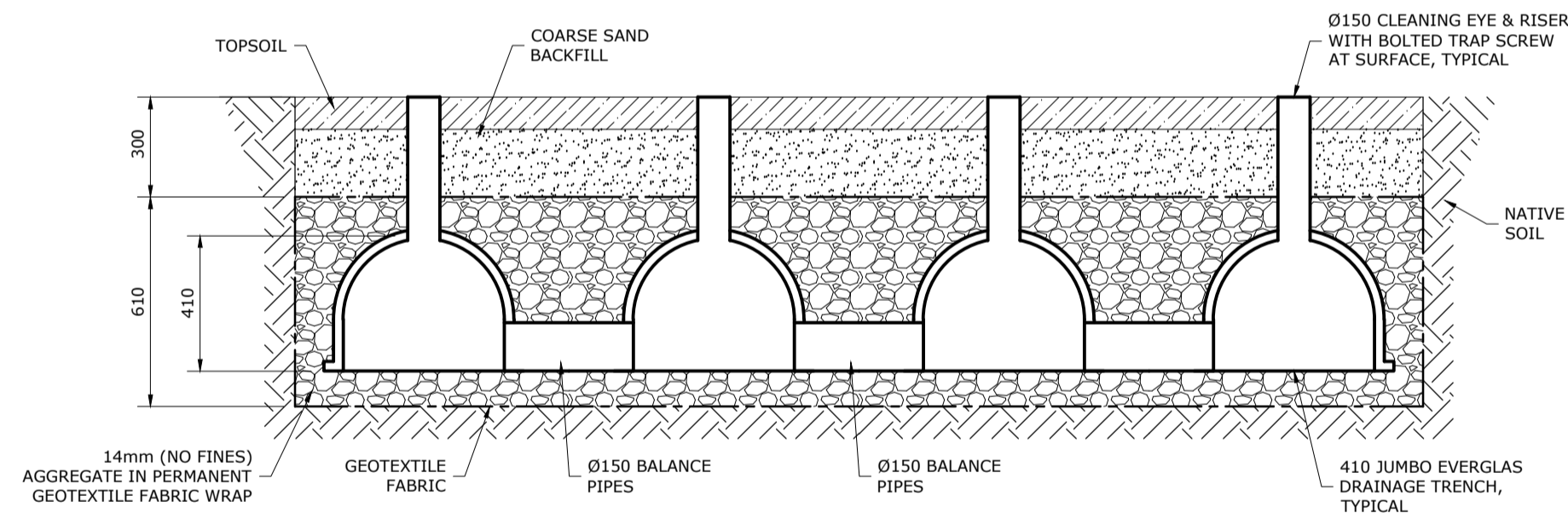
NOTE:
1. REFER TO PIPE LAYING SPECIFICATIONS FOR DETAILS

| PIPE DIA Ø | W | X MIN. | Y |
|---------------|-----|-----------|----|
| 100-150 | 300 | 75 | 75 |
| 225-300 | 600 | 75 | 75 |

UPVC DRAINAGE PIPE
TYPICAL PIPE LAYING DETAILS 1:20



INFILTRATION TRENCH TYPICAL DETAIL 1:20



A SECTION 1:20

FOR DA APPROVAL ONLY

| REV | APP. | AMENDMENT DESCRIPTION | DATE |
|-----|------|--|----------|
| B | | GENERAL REVISIONS - FOR DA APPROVAL ONLY | 08.04.22 |
| A | | GENERAL REVISIONS - FOR DA APPROVAL ONLY | 03.02.22 |
| 0 | | FOR DA APPROVAL ONLY | 24.09.21 |

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ACN 145 358 265



PROPOSED ALTERATIONS
29B ALBERT ROAD
BECROFT NSW 2119

PERROTTET

Concept Drainage Details

| SCALE: | DATE: | DESIGN: | REV: |
|--------|-------------|---------|------|
| 1:20 | 24 SEP 2021 | JDM | B |
| JOB: | DRW: | SIGNED: | |
| 21.395 | SW2 | | |

A1 ORIGINAL SIZE