

DO NOT SCALE FROM DRAWINGS - USE ONLY FIGURED DIMENSIONS

- GENERAL**
- G1 These drawings shall be read in conjunction with the architectural and other consultants' drawings / specifications and with other written instructions as may be issued during the construction. Any discrepancy shall be referred to the Engineer before commencing the work.
 - G2 All dimensions are in millimeters, UNO (unless noted otherwise).
 - G3 These drawings shall not be scaled, refer to dimensions given only or refer to the Architectural drawings.
 - G4 All levels and setting out dimensions shown on the drawings shall be checked on site prior to the commencement of the work.
 - G5 During construction the structure shall be maintained in a stable condition with no part being removed.
 - G6 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.
 - G7 All service trenches under vehicular pavements shall be back filled in accordance with the respective authorities requirements.
 - G8 All trench backfill material shall be compacted to the same density as the surrounding material.
 - G9 All site disturbed areas shall be reinstated to the original condition, including kerbs, footpaths, concrete areas, gravel and grassed areas, etc.
 - G10 It is the contractor responsibility to obtain all authority approvals.

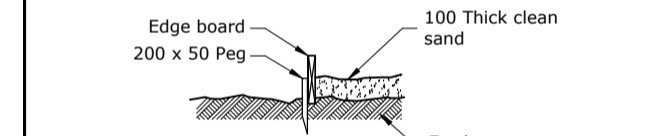
- STORMWATER DRAINAGE**
- S1 The stormwater drainage design has been carried out in accordance with AS / NZS 3500.3 "Stormwater Drainage" & AS / NZS 3500.2.3 "Stormwater Drainage - Acceptable Solutions".
 - S2 Any variations to the design levels shall be referred to the engineer immediately for approval.
 - S3 Any variations to specified products or details shall be referred to the engineer for approval prior to their installation.
 - S4 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**
- E1 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 (Bdim A14 or similar) and installed prior to any works being commenced on site.
 - E3 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.
 - E4 The contractor shall ensure that no spoil or fill encroaches upon adjacent areas during the project.
 - E5 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.
 - E6 The street / road shall be kept clean from dirt and debris from vehicles departing the site.
 - E7 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 the soil.
 - E8 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.

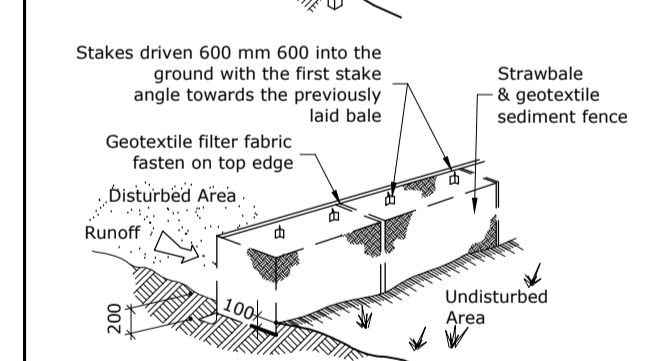
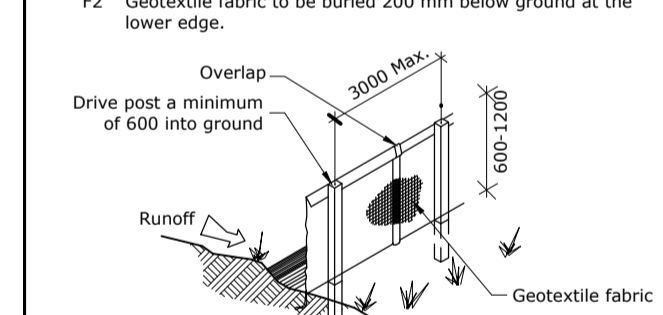
- SOIL CONSERVATION NOTE:**
- C1 Prior to the commencement of the site works the following shall be provided to capture water borne sediments:
 - Sediment fencing
 - Sediment trap
 - Washout area
 - C2 These shall be maintained regularly during the course of the construction with the sediment trap cleaned after each storm event.

- SEDIMENT TRAP**
- T1 A 1000 x 1000 mm square by 500 mm deep pit located at the low point of the site.

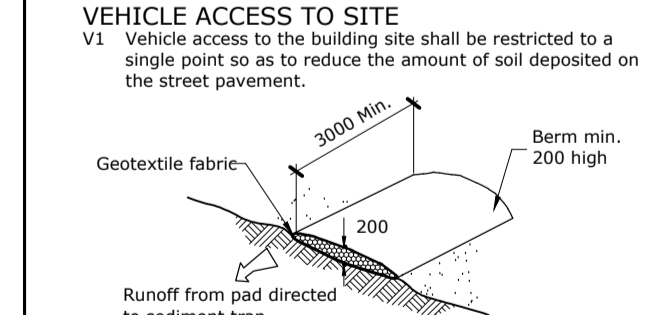
- WASHOUT AREA**
- W1 The washout area shall be 1800 x 1800 mm allocated for the washing of tools & equipment in accordance with the detail below:



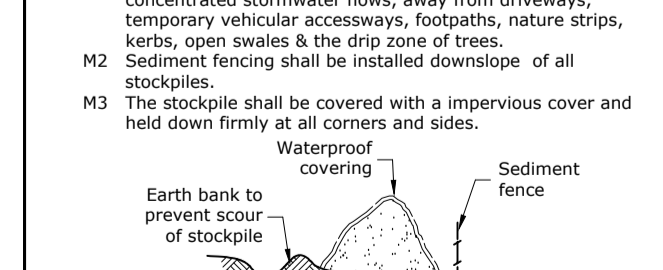
- SEDIMENT FENCE**
- F1 Provide sediment fence on down slope boundary as shown on plan.
 - F2 Geotextile fabric to be buried 200 mm below ground at the lower edge.



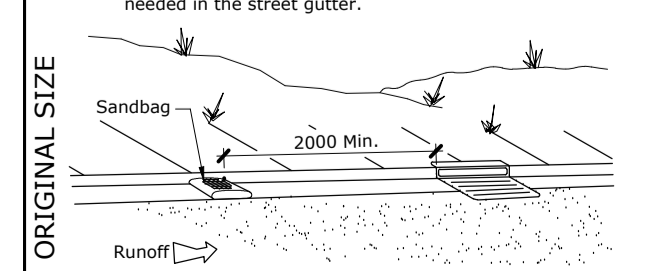
- VEHICLE ACCESS TO SITE**
- V1 Vehicle access to the building site shall be restricted to a single point so as to reduce the amount of soil deposited on the street pavement.



- BUILDING MATERIAL STOCKPILES**
- M1 Where there are stockpiles of material on site they shall be located at least 2000 mm away from any hazard including surfaces with grades greater than 15%, away from zones of concentrated stormwater flows, away from driveways, temporary vehicular accessways, footpaths, nature strips, kerbs, open swales & the drip zone of trees.
 - M2 Sediment fencing shall be installed down slope of all stockpiles.
 - M3 The stockpile shall be covered with an impervious cover and held down firmly at all corners and sides.

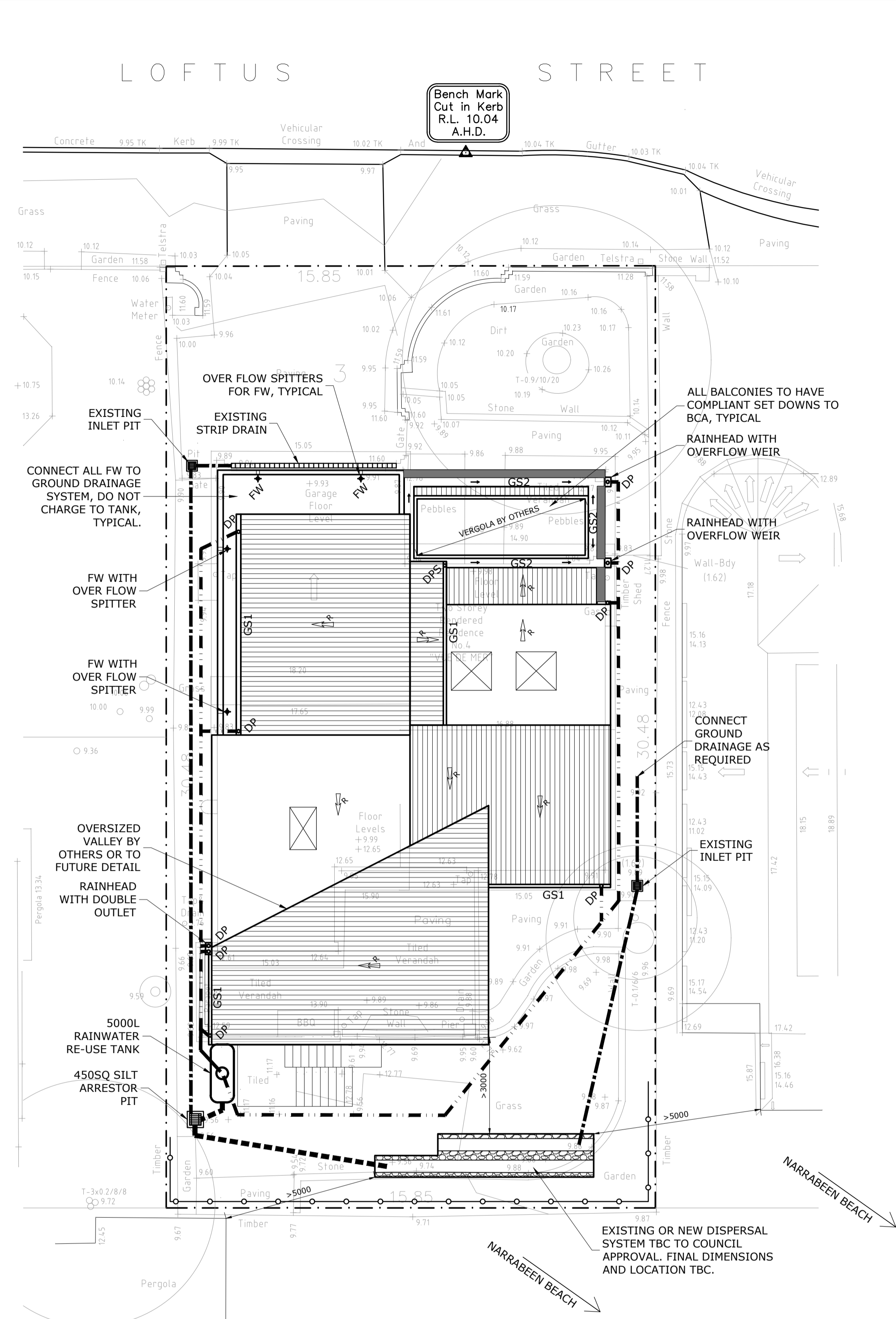


- SANDBAG KERB SEDIMENT TRAP**
- K1 In certain circumstances extra sediment trapping may be needed in the street gutter.



A1 ORIGINAL SIZE

FOR DA APPROVAL ONLY



CONCEPT DRAINAGE PLAN 1:100

- 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
- FW = Ø90 floor waste
- IO = Inspection Opening

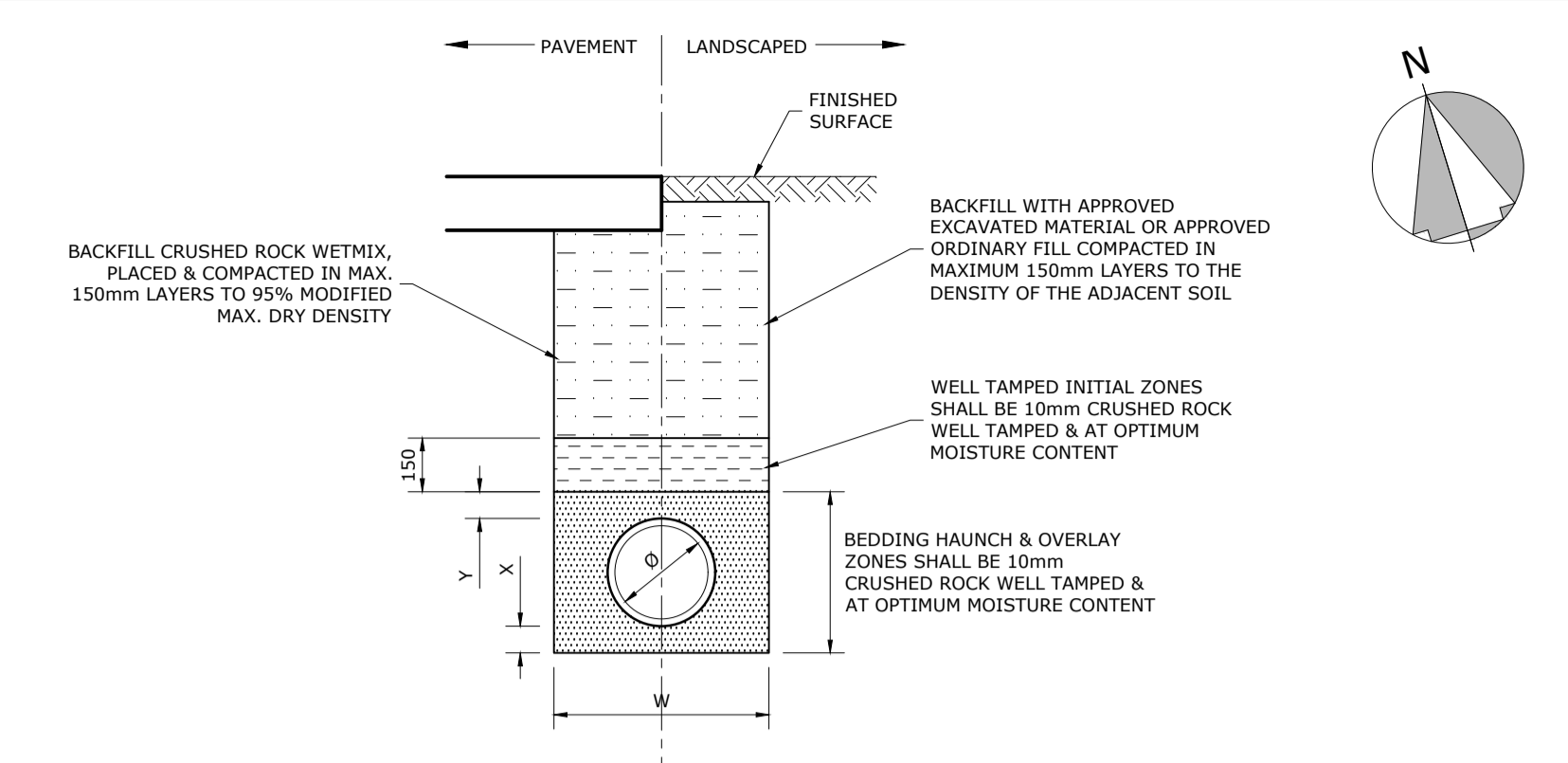
DRAWING KEY:

- Existing Gravity Stormwater Drainage Line TBC
- Ø100 UPVC Solvent Sealed Charged Drainage Line
- Ø150 UPVC Gravity Stormwater Drainage Line
- Sediment Fence Location

DOWNPIPE & GUTTER SCHEDULE

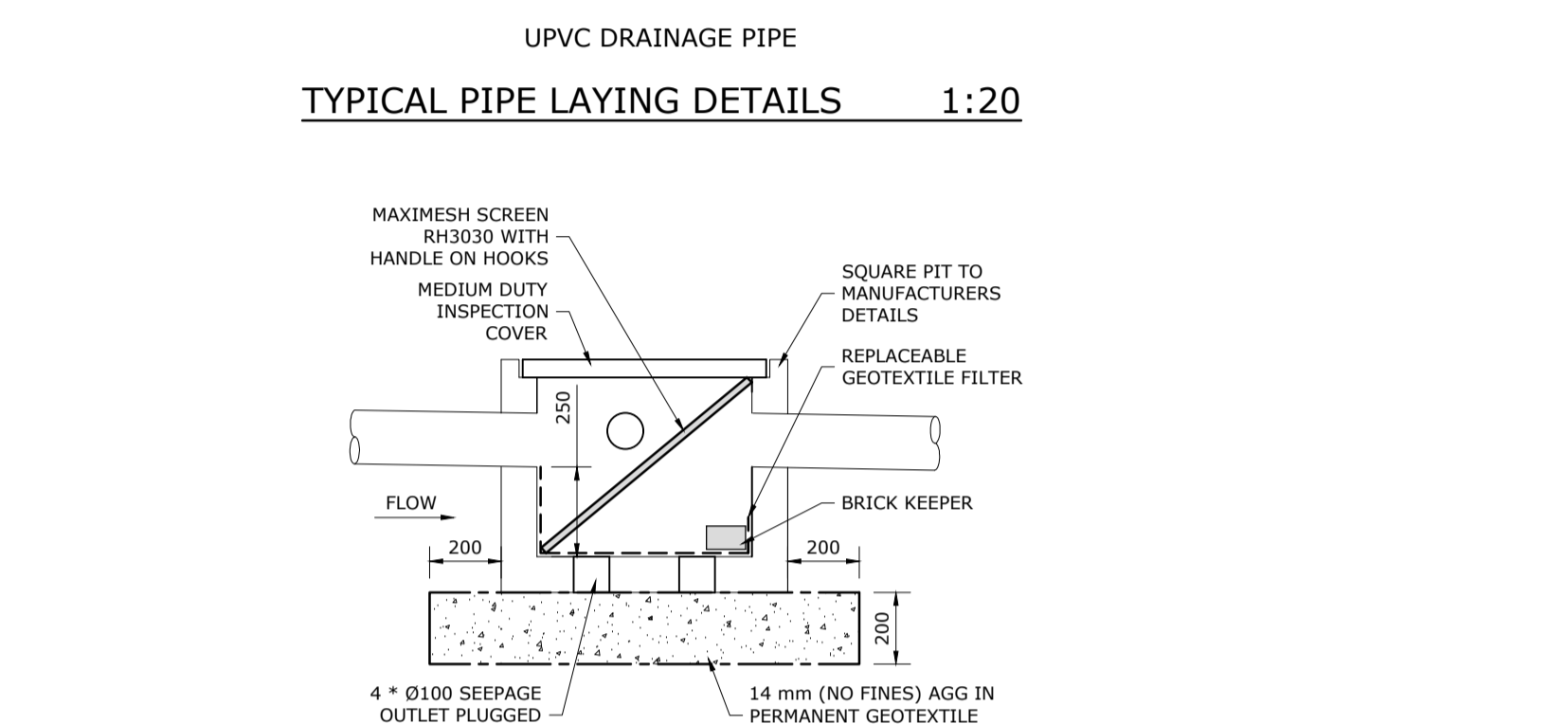
MARK	GUTTER SIZE	DP
GS1	150 Half Round Eaves Gutter	Ø100
GS2	250W x 150D (min) Box Gutter	Ø100

NOTE: All Gutter Systems shall be GS1, UNO.

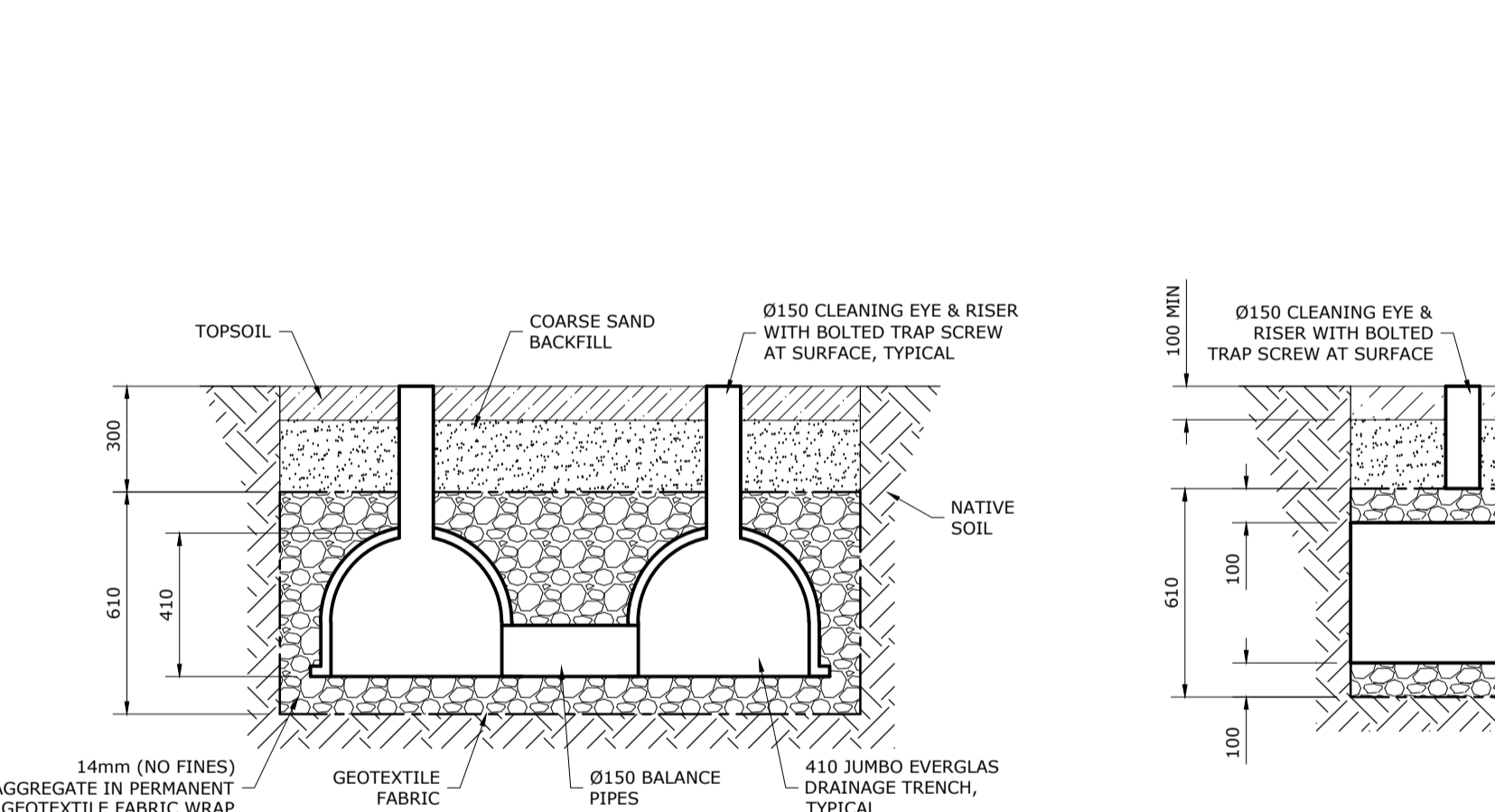


NOTE: 1. REFER TO PIPE LAYING SPECIFICATIONS FOR DETAILS

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



TYPICAL SILT ARRESTOR PIT DETAIL 1:20



SECTION A 1:20

DRAINAGE DESIGN CALCULATIONS:
Council: Northern Beaches - Region 2

Site area = 480.6 m² (0.04806 ha)
Pre-developed impervious area = 271.0 m²
Post-developed impervious area = 271.0 m²
Increase in impervious area = 0.0 m²
Single residential dwelling with a one off alterations and additions within the existing footprint with no net increase in impervious area.

Part 4.2.2 Exemptions - Alterations & additions to an existing single dwelling, therefore OSD is not required.

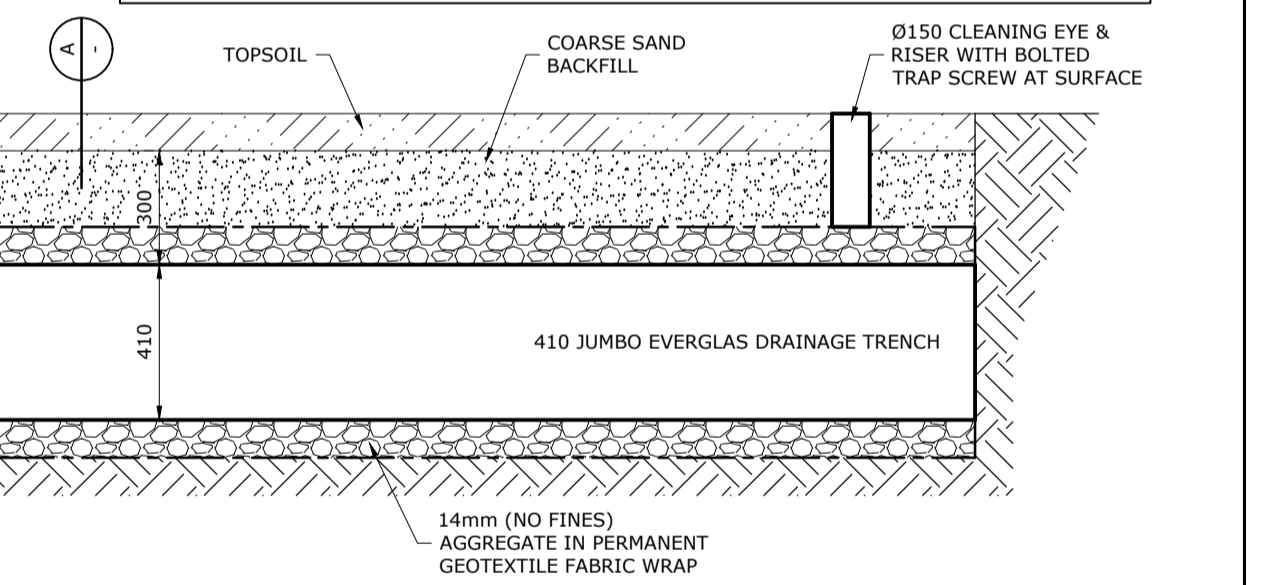
Site cannot discharge to street due to change of catchment. Street drainage discharges to Narrabeen Lagoon and is not suitable to connect to.

Easement is not feasible as directly adjacent to Narrabeen Beach and a direct outlet to the beach is not compliant.

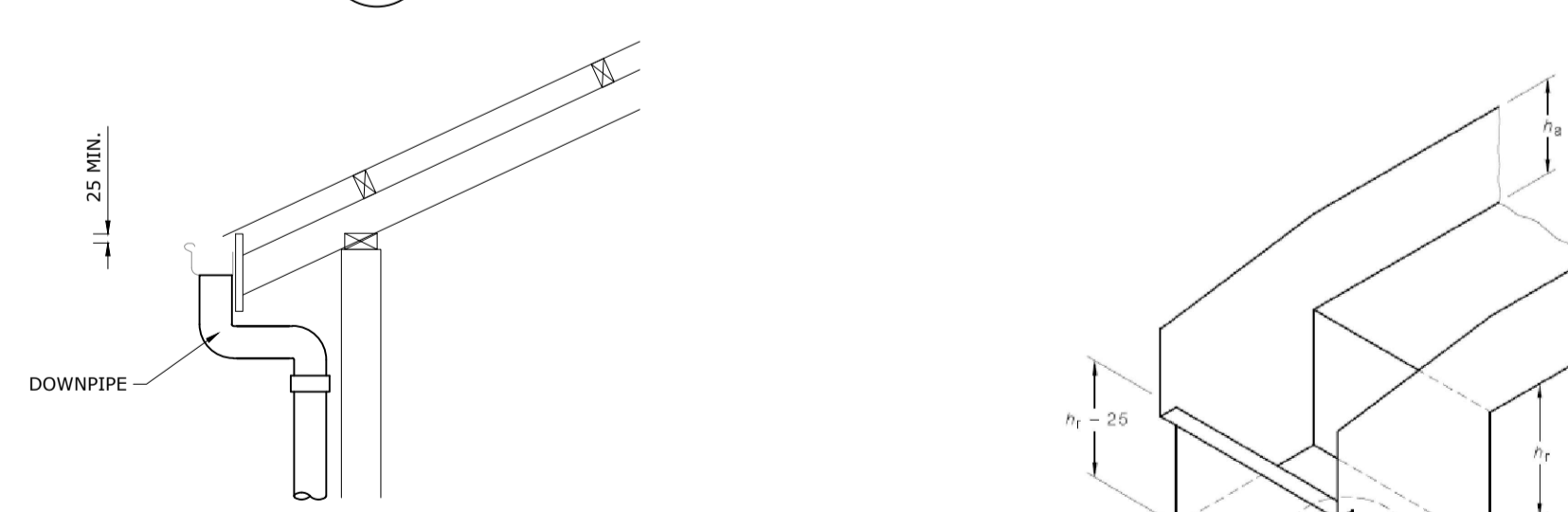
An infiltrator/dispersal system is the only feasible solution for this site. Given the residence footprint the minimum boundary offsets are not achievable. The site has an existing infiltration/dispersal system that is not visible. Plumber to expose and confirm the adequacy of the existing system, else a new system shall be designed by the hydraulic engineer.

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.**

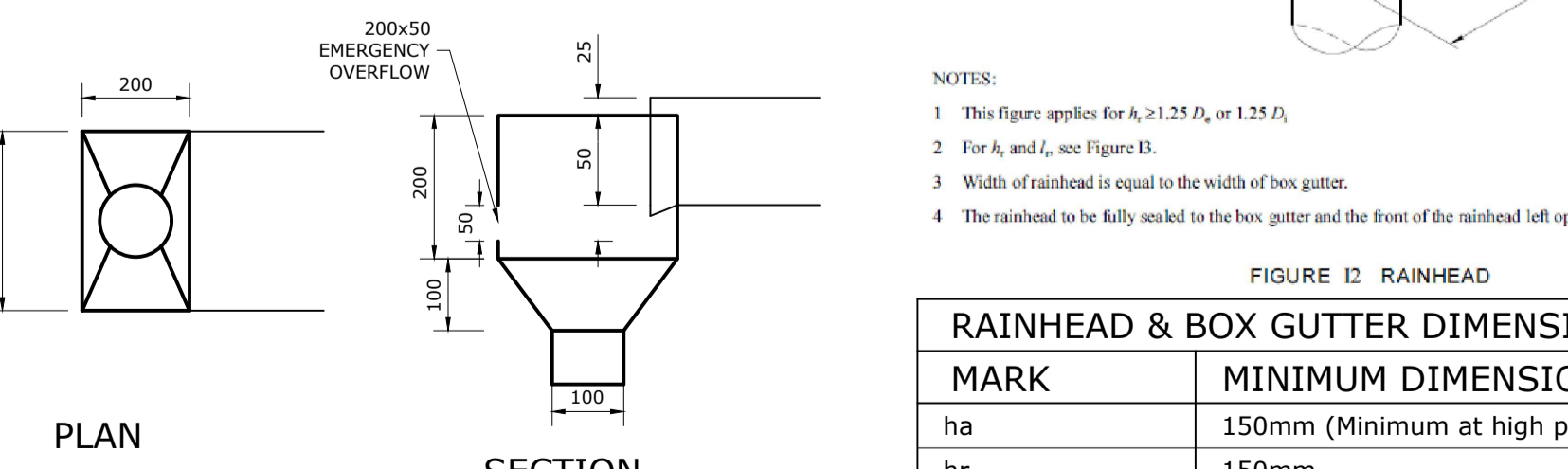
THRESHOLD NOTE:
All new slabs shall have compliant set downs at all thresholds. Threshold design is the responsibility of the architect and builder to comply with the requirements of the NCC (previously BCA) section 3.1.3. E2 Design takes no responsibility for structures built without a compliant threshold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



INFILTRATION TRENCH TYPICAL DETAIL 1:20



EAVES GUTTER DETAIL 1:20



RAINHEAD DETAILS 1:10

FIGURE 12: RAINHEAD

RAINHEAD & BOX GUTTER DIMENSIONS	
MARK	MINIMUM DIMENSION
ha	150mm (Minimum at high point)
hr	150mm
lr	200mm
Box Gutter Width	250mm

REV	APP.	AMENDMENT DESCRIPTION	DATE
0		FOR DA APPROVAL ONLY - UNENDORSED	23.03.23

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PROPOSED ALTERATIONS
4 LOFTUS STREET
NARRABEEN NSW

GOMES & DACOSTA

Concept Drainage Plan

SCALE: 1:100, 1:20	DATE: 13 Jan 2023	DESIGN: CB	REV: 0
JOB: 22.281	DRW: SW1	SIGNED:	

