



HYDRAULIC ENGINEERING







GENERAL

- 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.
- 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.
- 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.
- 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.
- Unless noted otherwise levels are in metres and dimensions are in millimetres.
- 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.
- Any substitution of materials shall be approved by the Engineer and included in any tender.
- All services, or conduits for servicing shall be installed prior to commencement of pavement construction.
- 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.
- 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

- All drainage levels to be confirmed on site, prior to any construction commencing.
- All pipes within the property to be a minimum of 100 dia upvc @ 1% minimum grade, uno.
- All pits within the property are to be fitted with "weldlok" or approved equivalent grates: - Light duty for landscaped areas - Heavy duty where subjected to vehicular traffic
- All pits within the property to be constructed as one of the following: 1) Precast stormwater pits
 - 2) Cast insitu mass concrete 3) Cement rendered 230mm brickwork subject to the relevant local authority construction specification.
- 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.
- Any pipes beneath relevant local authority road to be rubber ring jointed RCP, uno.
- All pits in roadways are to be fitted with heavy duty grates with locking bolts and continuous hinge.
- Provide step irons to stormwater pits greater than 1200 in depth.
- 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.
- Where a high early discharge (hed) pit is provided all pipes are to be connected to the hed pit, uno.
- Down pipes shall be a minimum of dn100 sw grade upvc or 100 x100 colorbond/zincalume steel, uno.
- 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.
- Subsoil drainage shall be provided to all retaining walls & embankments, with the lines feeding into the stormwater drainage system,

EROSION AND SEDIMENT CONTROL NOTES

- These notes are to be read in conjunction with erosion and sediment control details in this drawing set.
- 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".
- 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.
- 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 recomended with manufacturer's specifications. Fabric joints to have a minimum of 150mm overlap. Wire to be strung between posts with filter fabric overlap to prevent sagging.
- Stabalised 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.
- All drainage pipe inlets to be capped until:
 - downpipes connected - pits constructed and protected with silt barrier
- Provide and maintain silt traps around all surface inlet pits until catchment is revegetated or paved.
- 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.
- The contractor shall implement dust control by regularly wetting down (but not saturating) disturbed area.
- 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.
- The contractor shall grass seed all disturbed areas with an approved mix as soon as practicable after completion of earthworks and regrading.
- Revegetate all trenches immediately upon completion of backfilling.
- When any devices are to be handed over to council they shall be in clean and stable condition.

LEGEND

PRESSURE PIPE (CHARGED LINE) ____ GRAVITY PIPE AT MIN. 1% SLOPE U.N.O. AG. LINE AT MIN. 1% SLOPE DOWNPIPE MIN. Ø100 U.N.O.

GRATED PIT SL: SURFACE LEVEL IL: INVERT LEVEL

CLEANING EYE (INSPECTION EYE)

OVERLAND FLOW PATH

GRATED TRENCH

RECOMMENDED MAINTENANCE SCHEDULE

DISCHARGE CONTROL PIT (DCP)

Inspect flap valve and remove any blockage.

Inspect & remove any blockage of orifice.

Inspect grate for damage or blockage.

Inspect outlet pipe and remove any blockage.

Inspect overflow weir & remove any blockage.

Check attachment of orifice plate to wall of pit (gaps less than 5 | Annually

Empty basket at overflow weir (if present).

Check attachment of screen to wall of pit.

Check attachment of flap valve to wall of .

Check flap valve seals against wall of pit.

Check any hinges of flap valve move freely.

Inspect dcp walls (internal and external, if appropriate) for

Check orifice diameter correct and retains sharp edge.

Check orifice diameter correct and retains sharp edge.

Inspect & remove any blockage of orifice.

Check attachment of screen to wall of pit.

Check attachment of screen to wall of pit.

STORAGE

Check attachment of orifice plate to wall of pit (gaps less than 5 Annually

Check screen for corrosion.

cracks or spalling.

Check step irons for corrosion.

Inspect screen and clean.

Check fixing of step irons is secure.

Inspect dcp sump & remove any sediment-sludge.

Inspect return pipe from storage and return any blockage.

Inspect screen and clean.

+BL 26.05

FREQUENCY

Six monthly

Annually

Annually

Annually

Annually

Annually

Annually

Annually

Five yearly

Six monthly

Six monthly

Six monthly

Five yearly

Five yearly

RESPONSIBILITY

Owner

Owner

Owner

Owner

Owner

Maintenance

Maintenance

Maintenance

Contractor

Contractor Maintenance

Contractor

Contractor

Maintenance

Maintenance

Maintenance

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PROCEDURE

DESIGN RL

EXISTING RL

PERVIOUS (GRASSED) AREAS *** * * *** \times RL=?? EXISTING (PRE-DEVELOPMENT) RL × RL= ?? POST DEVELOPMENT RL GRADED IMPERVIOUS AREA (ROOF, CONC SLABS ETC) SEDIMENT FENCE **CROSSING PIPES**

NODE POINT

Remove grate. Ensure flap valve moves freely and remove any blockages or debris.

Remove grate and screen. Remove sediment/sludge build-up and check orifice and flap valve clear.

Remove grate and screen. ventilate underground storage if present. open flap valve and remove any blockages in

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.

Remove grate and open cover to ventilate underground storage if present. ensure weir clear of blockages.

Remove grate and screen. ensure plate mounted securely, tighten fixings if required. seal gaps as required.

Remove grate and ventilate underground storage chamber if present. Empty basket, check fixings secure and not

Check both sides of grate for corrosion, (especially corners and welds) damage or blockage.

Remove grate & screen to inspect orifice. see plan for location of dcp.

return line. Check for sludge/debris on upstream side of return line.

Remove grate and ensure fixings secure prior to placing weight on step iron.

Remove grate and screen. ensure screen fixings secure. repair as required.

Remove grate. Ensure fixings of valve are secure.

repair as required.

Remove grate. Test valve hinge by moving flap to full extent.

Remove grate and screen. remove sediment/sludge build-up.

Remove debris and floatable material likely to be carried to grates.

reconstruction to replace the volume lost. Council to be notified of the proposal.

Check along drainage lines and at pits for subsidence likely to indicate leakages.

Remove blockages from grate and check if pit blocked.

Remove grate. Examine step irons and repair any corrosion or damage.

Remove grate and examine screen for rust or corrosion, especially at corners or welds.

Remove grate. fill pit with water and check that flap seals against side of pit with minimal leakage.

Compare diameter to design (see work-as- executed) and ensure edge is not pitted or damaged.

Remove grate to inspect internal walls. Repair as required. Clear vegetation from external walls if necessary and

Remove grate to inspect internal walls. repair as required. clear vegetation from external walls if necessary and

Compare actual storage available with work-as executed plans. If volume loss is greater than 5%, arrange for

Revove grate and screen if required and clean it.

STANDARD LINE TYPES AND SYMBOLS

*** * * ***

OVERLAND FLOW PATH

DOWNPIPE

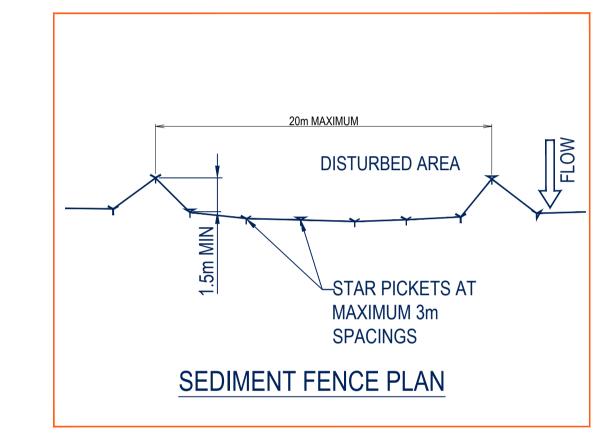
GUTTER DRAINAGE DIRECTION

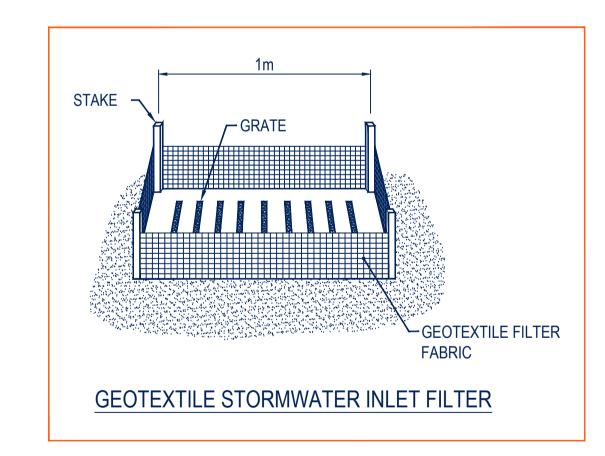
DOWNPIPE WITH SIDE OVERFLOW

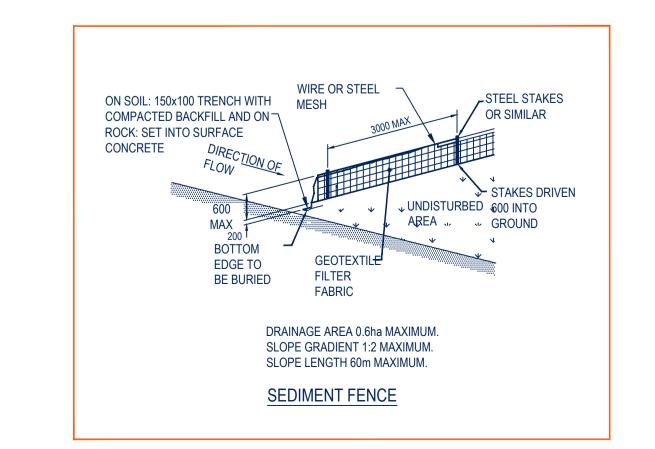
| LEGEN | LEGEND | | | |
|-----------|---------------------------------|-----|------------------------|--|
| AHD | Australian height datum | SS | Stainless steel | |
| AG | Ag-pipe (Sub soil drainage) | SU | Box gutter sump | |
| ARI | Average recurrence interval | TW | Top of wall | |
| BG | Box Gutter | 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 10 | Invert level | | | |
| 10 0/5 | Inspection opening | | | |
| O/F | Overflow | | | |
| OSD | On-site detention | | | |
| PSD P1 | Permissible site discharge | | | |
| RCP | Pipe 1 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 | | | |
| 000 | opioadoi pipo | | | |

SPR

Spreader









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ME23-S0342

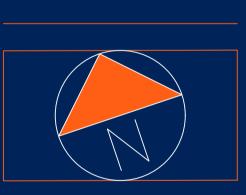
NA Client NA

Architect

Designed By: MY Approved By: YE

Internal Revisions:

YE 04/09/23 ISSUED FOR CDC





GENERAL NOTES

1. DRAWINGS TO BE READ IN

CONJUNCTION WITH ARCHITECTURAL REFER TO ARCHITECTURAL DRAWINGS FOR ALL SETOUT LEVELS.

. DO NOT SCALE ANY DIMENSIONS FROM STORMWATER DRAWINGS FOR SETTING OUT PURPOSES.

DRAWINGS TO BE READ & PRINTED IN COLOUR. . REFER TO SO1 FOR STORMWATER

NOTES & GENERAL DETAILS AS SHOWN

Sheet Name:

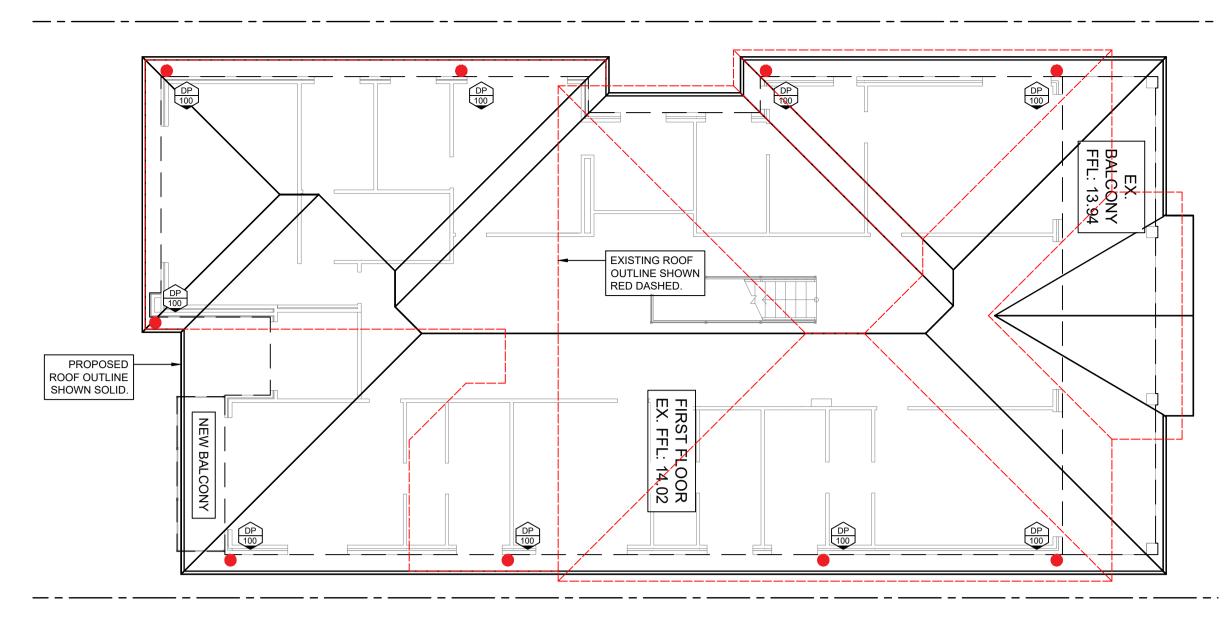
GENERAL NOTES

Sheet No:

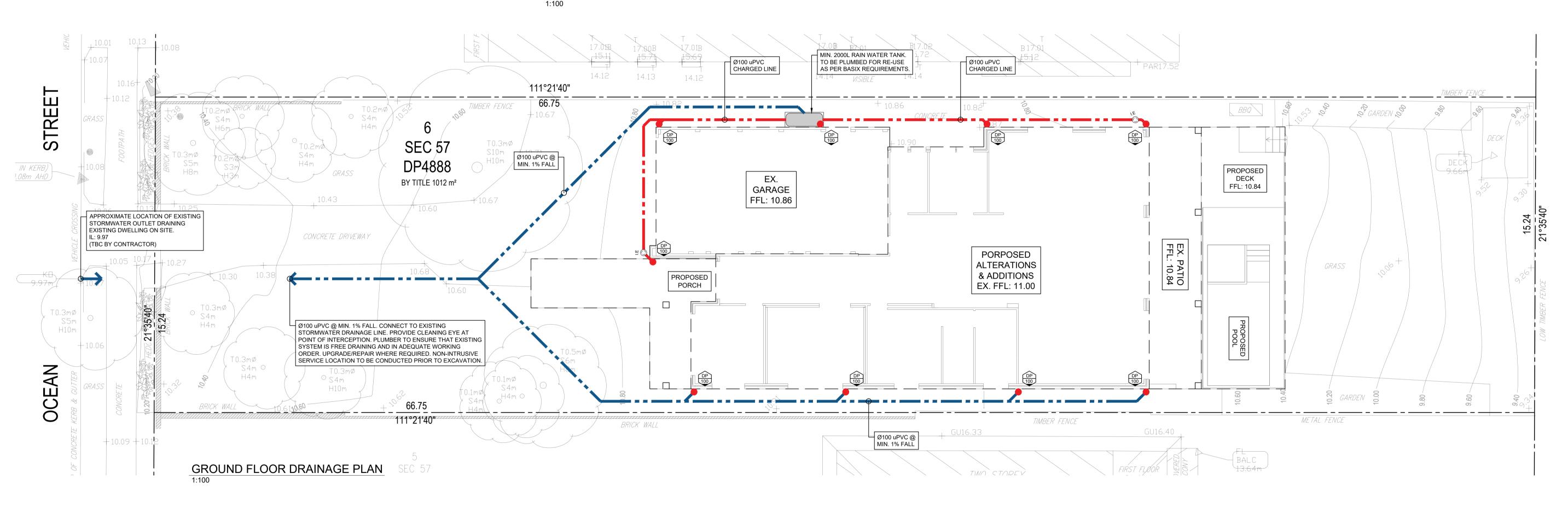
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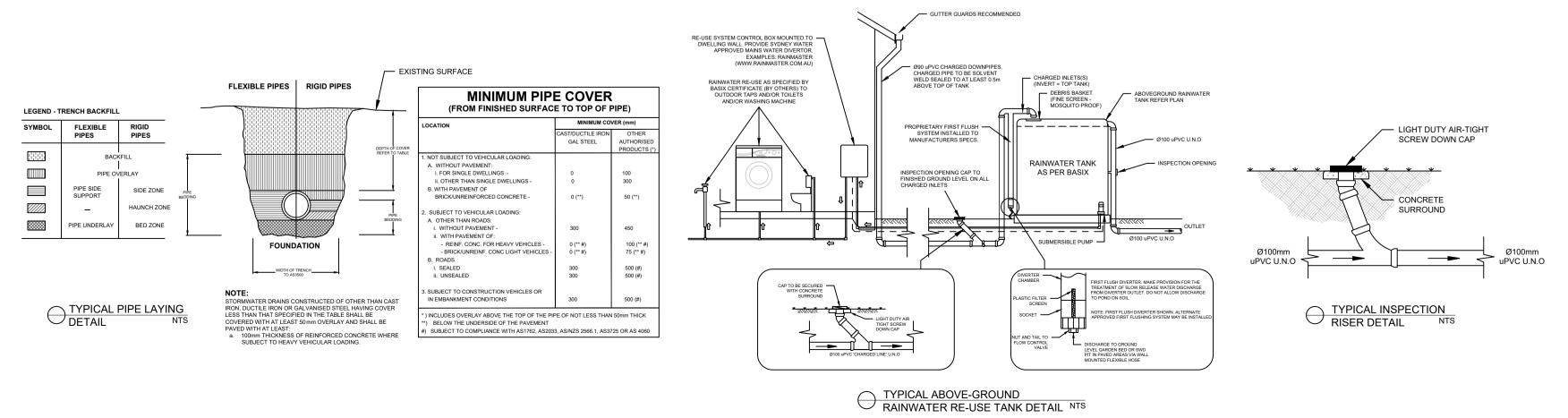
OSD WARRANT

IN ACCORDANCE WITH CLAUSE 9.3.2 (ONSITE STORMWATER DISPOSAL REQUIREMENTS REGION 2 -CENTRAL CATCHMENTS) OF NORTHERN BEACHES COUNCLS WATER MANAGEMENT FOR DEVELOPMENT POLICY, OSD IS NOT REQUIRED FOR ALTERATIONS AND ADDITIONS TO SINGLE RESIDENTIAL DWELLINGS.



ROOF DRAINAGE PLAN







Phone +61 404 344 027 Address

25 Restwell Street, Bankstown NSW

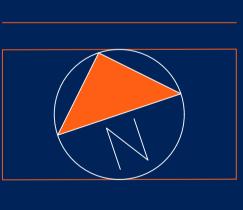
ME23-S0342

NA Designed By: MY

NA

Internal Revisions:

YE 04/09/23 ISSUED FOR CDC





GENERAL NOTES

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DRAWINGS FOR ALL SETOUT LEVELS. 3. DO NOT SCALE ANY DIMENSIONS

FROM STORMWATER DRAWINGS FOR SETTING OUT PURPOSES.
4. DRAWINGS TO BE READ & PRINTED

5. REFER TO S01 FOR STORMWATER NOTES & GENERAL DETAILS

Sheet Name:

STORMWATER DRAINAGE PLAN/DETAILS

Sheet No:

AS SHOWN