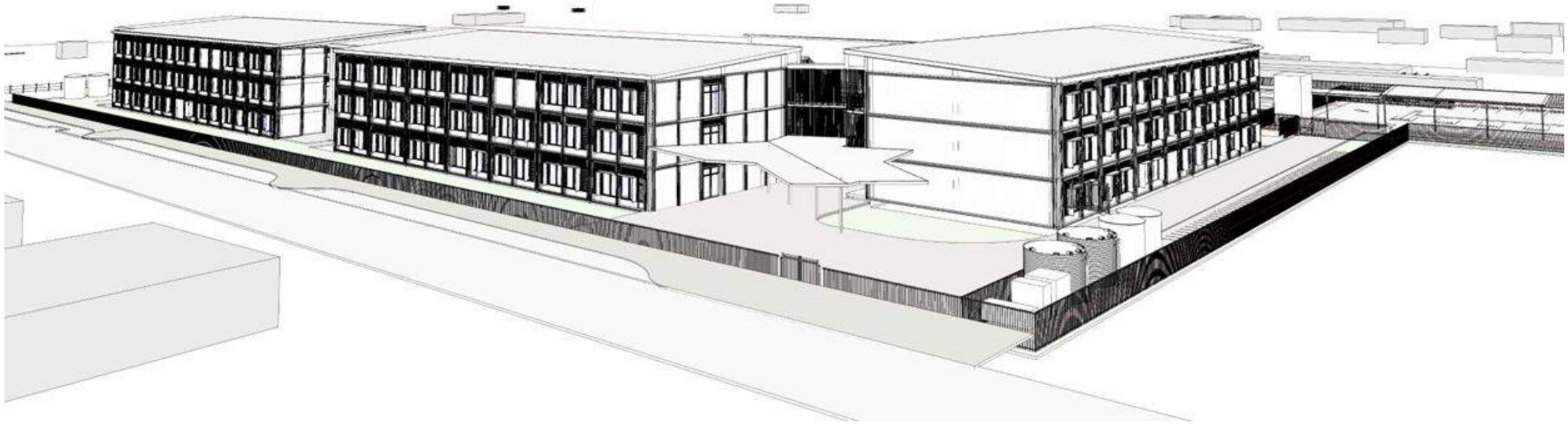
enstruct

NEW HIGH SCHOOL FOR MEDOWIE

CIVIL ENGINEERING REPORT



Prepared for: NSW Department of Education
By: **en**struct group pty ltd
January 2025

NEW HIGH SCHOOL FOR MEDOWIE

CIVIL ENGINEERING REF REPORT

ISSUE AUTHORISATION

PROJECT: New High School for Medowie
Project No: 140220

Rev	Date	Purpose of Issue / Nature of Revision	Prepared by	Reviewed by	Issue Authorised by
1	11/12/2024	Draft REF	T Henderson		
2	30/01/2025	Issue for REF	T Henderson	P Lambley	P Lambley

Executive Summary

enstruct have been engaged by NSW Department of Education to provide civil engineering consultancy services and design development of a New High School for Medowie.

This civil engineering report has been prepared to support a Review of Environmental Factors (REF) for the proposed New High School for Medowie

This report relates to the civil engineering elements of the REF design, and will discuss items such as site composition, stormwater, flooding, and erosion and sediment control.

The key items include:

- Onsite Stormwater Detention (OSD)
- Water Sensitive Urban Design (WSUD)
- Flooding
- Stormwater Overland Flow
- Public Domain
- Erosion and Sediment control
- Design Integration

Contents

1 Introduction

This civil engineering report has been prepared to support a Review of Environmental Factors (REF) for the proposed New High School for Medowie (the activity). The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) as "development permitted without consent" on land carried out by or on behalf of a public authority under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37A of the T&I SEPP.

The activity will be carried out at 6 Abundance Road, Medowie (the site). The purpose of this report is to outline the civil engineering design.

1.1 Site Description

The site has a street address of 6 Abundance Road, Medowie. It is 6.51ha in area, and comprises one allotment, legally described as Lot 3 in DP788451.

A large proportion of the site is currently unused and vacant. A small shed structure and caravan are located adjacent to the northern boundary. A cluster of buildings including a single storey dwelling, an outhouse/shed structure and temporary greenhouse are located within the south eastern corner.

The site contains a largely vegetated area to the south west corner. The site is relatively flat with a gradual fall from west to east toward Abundance Road.

The site has a primary frontage to Abundance Road to the east and Ferodale Road to the north. Abundance Road and Ferodale Road are both classified Local Roads. Medowie Road, approximately 1km east of the site, is a classified Regional Road.

The area surrounding the site mostly consists of industrial, rural residential, educational, and agricultural lands. Adjacent to the north western boundary is a Shell petrol station and mechanic garage. Adjacent to the north eastern boundary is a medical health clinic. Across Abundance Road along the eastern boundary are a number of warehouse and light industrial developments. Directly north of the site across Ferodale Road are large lots used for agricultural purposes. Medowie Public School is located on Ferodale Road, to the north west of the site, opposite the Shell petrol station.

Figure 1 Site aerial photo (Nearmap)

Figure 2 Site Survey (SDG pty ltd)

1.2 Existing Stormwater

The existing stormwater infrastructure servicing the site consists of a roadside swale along the length of Abundance Road. This swale discharges to the north and to the south, following the road gradient. The part flowing to the north discharges to a stormwater pit at the intersection with Ferodale Road.

The southern part of the swale continues south, ultimately discharging to the Campvale Drain.

The site frontage on Ferodale Road is serviced by the stormwater system in Ferodale Road, which includes a 525mm diameter pipe on the north side of the road.

1.3 Existing and Proposed Public Infrastructure

The public domain along Abundance Road consists of kerb and gutter with a grass verge on the east side of the road, while the west side fronting the subject site has no kerb and an open swale in the grass verge.

Additional public domain infrastructure has been proposed as a part of this design development. This infrastructure includes:

- Upgrade of Abundance Road with kerb and gutter, indented bus bays and kiss and ride bay, concrete footpath and underground storwmater.
- New pedestrian crossing on Abundance Road
- A continuation of the concrete footpath on Ferrodale Road along the subject site frontage
- New kerb and gutter along Abundance Road between the subject site and Ferodale Road
- New footpath the verge on the east side of Abundance Road from the proposed crossing to Ferodale Road and continuing east along the south side of Ferodale Road to the existing refuge crossing

2 Project Description

The proposed activity involves the construction of school facilities on the site for the purpose of the New High School for Medowie. The site contains a densely vegetated area to the southwest corner which is identified as land with high biodiversity values corresponding to the areas of remnant native vegetation (PCT 3995 – Hunter Coast Paperbark-Swamp Mahogany Forest). The existing dwelling house and other structures on the site will be demolished as part of the works. No other works are proposed within this area.

The proposed new school will accommodate 640 students in 29 permanent teaching spaces including 3 support teaching spaces across 3-storeys of buildings on the site. The proposed activity be delivered across 1 stage, and will consist of the following:

29 permanent teaching spaces including 3 support teaching spaces, to accommodate 640 students, and school hall to accommodate 1,000 students. Approximately 10,500 sqm of GFA is proposed.

- Main vehicular ingress and egress to Ferodale Road to the north, with a new pedestrian and vehicle crossing proposed.
- Main pedestrian access to Abundance Road.
- Kiss and ride, and bus drop and pick up areas to Abundance Road (6 x parallel spaces).
- New pedestrian wombat crossing to Abundance Road
- Approximately 55 x car parking spaces and 3 x accessible car parking spaces.
- Approximately 70 x bicycle parking spaces.
- Block A (Admin) consisting of administration and learning spaces.
- Block B (Foodtech/Workshop) consisting of food technology rooms and workshops.
- Block C (Hall) consisting of school hall to accommodate 1,000 students.
- Central quad, 1 playing field, and 1 sports courtyard.

The proposed school development will include the following spaces; general learning spaces, General support learning spaces, administrative services, staff areas, gym and canteen, library areas for science, wood and metal, food and textiles, health PE, performing arts, additional learning spaces, student amenities, storage, movement (stairs and covered walkways).

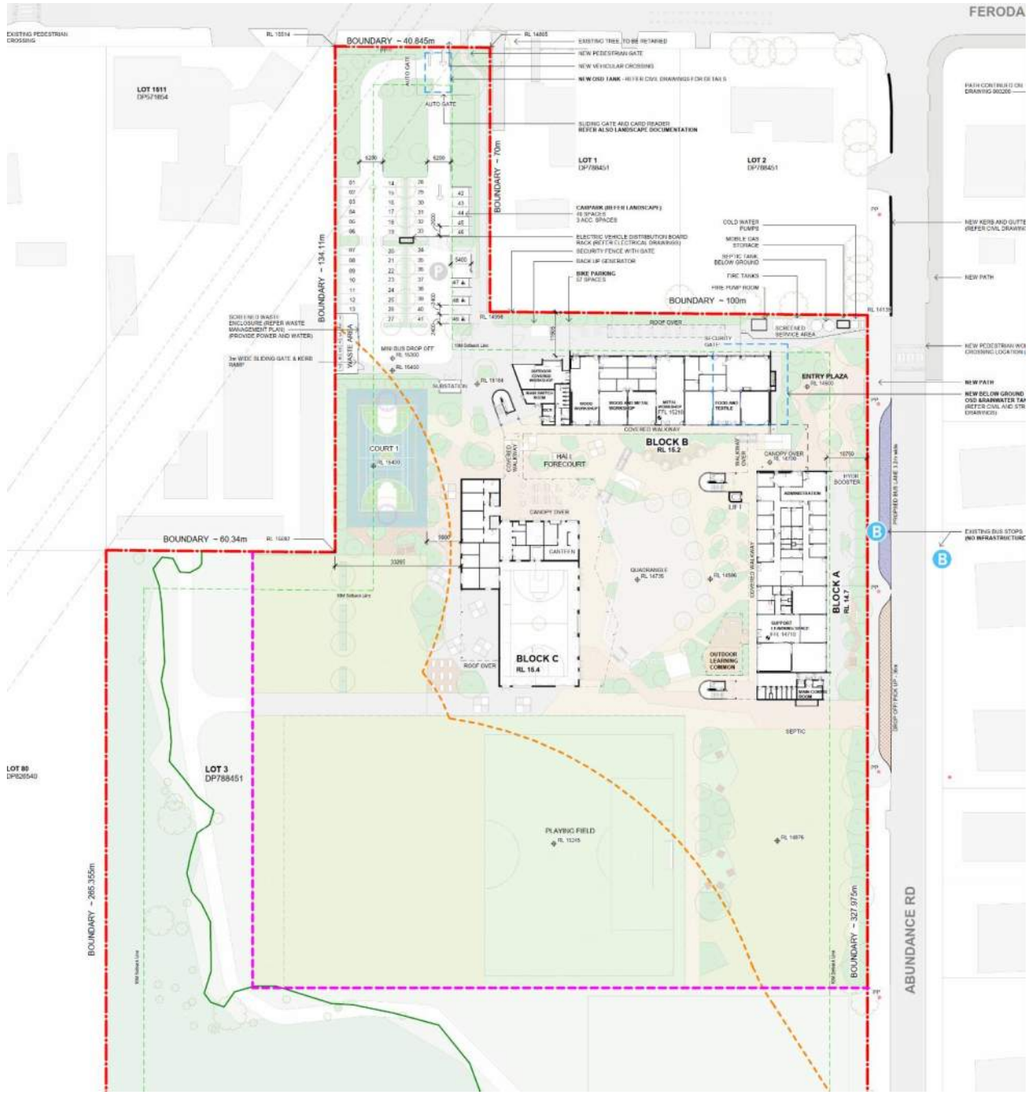


Figure 3 *Site Plan (NBRS)*

3 Standards List

- Australian Rainfall & Runoff 2019
- Austroads: Guide to Pavement Technology
- AS1428.1 Design for Access & Mobility
- AS3500.3 Plumbing and Drainage: Stormwater Drainage
- Port Stephens Council Development Control Plan (DCP) 2024
- Port Stephens Council 0074 Stormwater Drainage (Design) Development Design Specification 2022
- Port Stephens Council 0043 Subsurface Drainage (Design) Development Design Specification 2022
- Port Stephens Council Water Sensitive Development Strategy Guidelines 2011
- NSW MUSIC Modelling Guidelines 2015
- AS 3500.3-1990 National Plumbing and Drainage Code - Stormwater drainage.
- Managing Urban Stormwater: Soils and Construction, “The Blue Book” – 4th edition 2004.
- Concrete Pipe Selection and Installation - Concrete Pipe Association 1990.

4 Stormwater Design

The stormwater design must be in accordance with Australian Standards, Port Stephens Council Development Control Plan (2024), Port Stephens Council Development Design Specifications, and Australian Rainfall and Runoff (2019).

In general, drainage is designed to ensure that site facilities are available for students’ use in all weather conditions up to a 1% AEP storm event. All new roof stormwater will be collected in roof gutters and downpipes and conveyed to rainwater tanks which overflow to the in-ground pipe system. Surface stormwater will be collected in pits. The in-ground stormwater will be connected to water quality controls.

Pipes and pits are designed to satisfy the minimum provisions of AS 3500.3. They must be designed to convey, at least, the 5% Annual Exceedance Probability (AEP) flows as per ESFG guidelines. Where pipe capacity is exceeded i.e., greater than 5% AEP, stormwater will be conveyed as overland flow. Overland flow paths are designed to convey at the minimum 1% AEP stormwater flows with a Velocity x Depth to be less than 0.4m^2/s.

Class B, C and D pits are to be used in accordance with AS 3996, with heelgaurd grates in pedestrian areas in accordance with the EFSG.

4.1 Onsite Stormwater Detention (OSD)

The DCP outlines the requirements for OSD:

B4.2. On-site detention / on-site infiltration is required in stormwater requirement areas where the post-development flow rate or volume exceeds the pre-development flow rate or volume.

B4.3. On-site detention / on-site infiltration is to be:

- sized so that the post-development flow rate and volume equals the pre-development flow rate and volume for all storm events up to and including the 1% annual exceedance probability (AEP) storm event
- provided by either underground chambers, surface storage or a combination of the two and are generally positioned:
    - under grassed areas for any cellular system (which can be easily maintained)
    - under hardstand areas such as driveways for any concrete tank structures

The ESFG notes the preference for open and absorption storage systems, this is equivalent to a fenced pond. Port Stephens Hydrological Soil Group Mapping indicates that the site is located on “Group C” soils which have slow infiltration rates. Given the ineffectiveness of an absorption system, and the risk of ponded water on the site to students, underground OSD storage has been proposed.

4.2 OSD Modelling

Preliminary OSD modelling has been developed using DRAINS to assess the ability of the proposed OSD tanks to manage stormwater flows from the site to below predevelopment site flow rates. The hydrologic model parameters were based on those published by Council in the Soil Infiltration Technical Information Sheet rev 3 (May 2019).

Antecedent Moisture Condition is "Rather wet" (refer to ARR 2016, Table 5.3.11) and the Horton Maximum (Initial) Infiltration Rate is 33.7 mm/hr, the Minimum (Final) Infiltration Rate is 6 mm/hr and the Shape Factor/Decay Rate k is 2/hour (refer ARR 2016, Table 5.3.12)

Refer to Table 4.1 for the resultant OSD sizing

Table 4.1 OSD tank sizing

OSD tank	Catchment area	Impervious Fraction	Volume	Discharge location
Northern car park	3,560 m^2	87%	50m^3	Existing pit on Ferodale Road
Under Block B	12,750m^2	70%	400m^3	New stormwater line along Abundance Road to existing pit in Ferodale Road

4.3 Stormwater Service Infrastructure

The combination for the public domain upgrade and the discharge point for the site stormwater on Abundance Road will result in a new stormwater line on Abundance Road. Where the existing drainage consist of an open swale on the west side of the road, the proposed works includes new pits and pipes to the existing stormwater on Ferodale Road. This is shown in Figure 4 and in Figure 9.

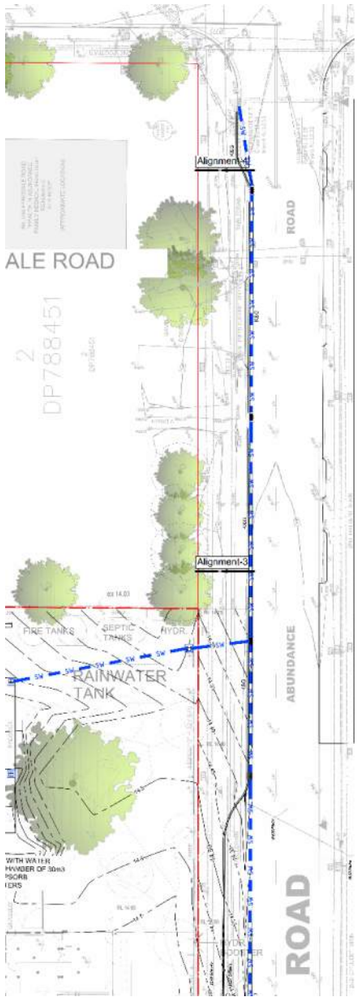


Figure 4 Proposed Stormwater on Abundance Road shown with blue dashed line

4.4 Flooding

4.4.1 Flood Planning

BMT has provided the report “Flood Assessment For New Medowie High School Site” dated 9 July 2024. This report is based on the ‘Medowie Floodplain Risk Management Study’ (WMAwater, 2016). An extract from their advice is included as Figure 5.

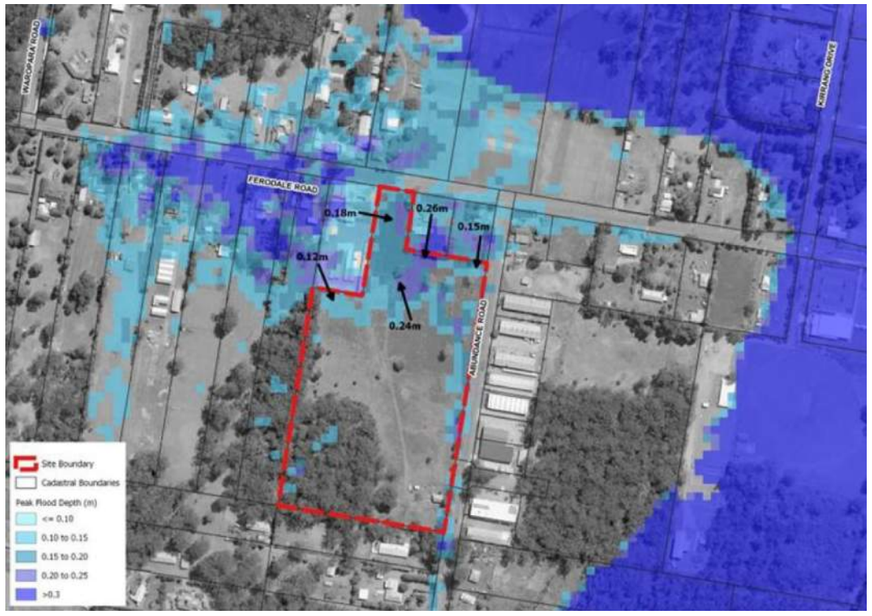


Figure 5 PMF map from BMT Flood Assessment

Section B5.3 of the DCP outlines flood planning level requirements. The flood planning level for a school is the PMF level. Flood Planning Levels (FPLs) for each building are shown in Figure 6.

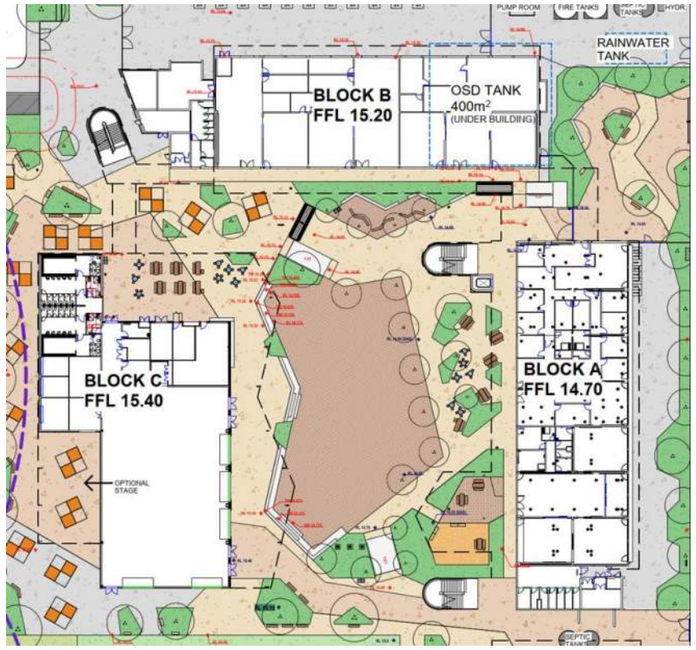


Figure 6 Flood Planning Levels (background by NBRS)

4.4.2 Flood Impact

A flood impact assessment (FIA) has been prepared to understand any potential impacts on surrounding properties as a result of the activity. The FIA found some minor flood impacts on the surrounding area, which will not have a significant impact on the environment. Refer to the New High School for Medowie Flood Impact Assessment, prepared by enstruct for additional details.

4.4.3 Flood Emergency Management

Site access and egress during rare and extreme rainfall events will need to be managed. Flood model results provided by Council from the ‘Medowie Floodplain Risk Management Study’ (WMAwater, 2016) shows the extent of the PMF will isolate the site for a period (Figure 7). This is confirmed by the FIA. The depth of flooding to the east of Ferodale Road and south on Abundance Road will prevent any access to the site during a PMF. Any access or egress will be via Ferodale Road to the west, although it is noted that localised flooding will cut off the road for a period. The site should be closed down where there is a risk of nearby flooding as outlined in the Flood Emergency Response Plan (FERP). While there is an expectation nobody will be present on the site during a PMF, all buildings on site are above the PMF, so a shelter-in-place strategy will be adopted in in this extreme scenario. Once the flood peak has subsided, evacuation can take place to the west via Ferodale Road, and on to Grahamstown Road.

The flood emergency response plan (FERP) has been prepared by enstruct for the activity, in consultation with the SES.

Figure 7 Medowie PMF map with proposed access/egress route to the proposed school (source WMAwater 2016)

4.5 Overland Flow Paths

If the piped in-ground stormwater system fails due to blockage or other obstruction, stormwater flows will be required to be conveyed as overland flow. The overland flow is to be directed away from buildings and towards the site's boundary.

Overland flow paths will be sized to accommodate the 1% AEP storm flows and not exceed safe Depth x Velocity products of 0.4m^2/s for pedestrians and vehicles.

4.6 Water Sensitive Urban Design (WSUD)

Water Sensitive Urban Design typically includes water reuse, pollutant removal via natural systems, and the minimisation of hard structures to control stormwater and improve aesthetic and recreational appeal.

Where open space exists, an attempt to incorporate WSUD principles into the stormwater design has been made. Flush kerbs in the car park allow surface water to passively irrigate the landscaped islands. WSUD feature with standing water have been avoided to minimise waterborne health risk.

4.7 Stormwater Quality

The ultimate receiving water body for stormwater runoff from the subject site is the Grahamstown Storage Reservoir, which provides approximately 40% of potable water for the Hunter Region. As a result, stormwater quality targets for the site are of a higher standard than other typical school sites across NSW.

The DCP outlines the stormwater quality targets as

Before water is released into public drainage, the water quality outcomes shall achieve:

- *NorBe: or*
- *Council's water quality stripping targets whichever achieves the better water quality outcome.*

"NorBe" is defined as a **N**eutral **or Be**neficial impact on stormwater quality.

The design includes a series of pollution control devices to remove contamination from stormwater runoff to the required level prior to discharge. Litter screens in all pits and an end of line treatment device to remove nitrogen & phosphorus contaminants etc., prior to discharge to Council's stormwater system. This system is preferred as it will be able to achieve pollutant reductions required, is easily maintained, and does not require large open areas or pose safety risk to the school population.

The hydraulic design includes roofwater capture and re-use, with approximately 100m^3 of rainwater storage on site. This forms part of the overall stormwater quality treatment strategy.

The pollution control devices will require on-going maintenance. Pollutant removal devices will require at least a yearly inspection and maintenance.

4.8 Model for Urban Stormwater Improvement Conceptualisation (MUSIC)

MUSICX modelling indicates that Tank 1 under Block B will require 30x 690mm ZPG stormfilter cartridges. Rainwater re-use for internal uses (toilets flushing) and external uses (irrigation) has been included in the model as this will have a beneficial impact on meeting stormwater quality treatment targets.

Tank 2 receives surface water from the car park and requires 10x 460mm ZPG stormfilter cartridges to achieve the stormwater quality requirements. Lower height cartridges are required due to the limited height within the tank.

5 Erosion and Sediment Control

During construction and while the site is disturbed, erosion prevention and sediment control measures will be required. Erosion prevention generally involves managing stormwater by diverting overland flow around construction areas as well as collecting stormwater within the construction zone and directing to sediment control devices. Devices to be incorporated are silt removal fences, hay bales, catch drains, and water flow dissipation and discharge control devices such as sandbags, pollution mattresses, and sedimentation basins.

Erosion prevention and sediment removal strategies need to be inspected regularly during construction works, cleaned, and maintained after storm events, and modified to suit construction work progress, decanting and demolition.

Erosion and sediment controls have been designed in accordance with Managing Urban Stormwater: Soils and construction - Volume 1 and maintained until the site is fully stabilised to prevent pollution of the receiving environment. An erosion and sediment control plan has been provided in the civil drawing set.

Erosion and sediment control drawings and notes are provided for the whole of the works. Should the Contractor stage these works then the design may be required to be modified. Variation to these details may require approval by the relevant authorities. The erosion and sediment control plan must be implemented and adapted by the contractor to meet the varying situations as work on site progresses.

6 Civil Design

6.1 Public Domain

The activity involves significant public domain works on Abundance Road. The existing west side of the road is simply a shoulder line approximately 300mm from the edge of the bitumen. Surface water falls into an open swale that runs the length of the site and beyond.

Proposed public domain works include bus bays and kiss-and-ride bay. A concrete footpath is proposed between the kerb and the boundary.

New footpath the verge on the east side of Abundance Road from the proposed crossing to Ferodale Road and continuing east along the south side of Ferodale Road to the existing refuge crossing

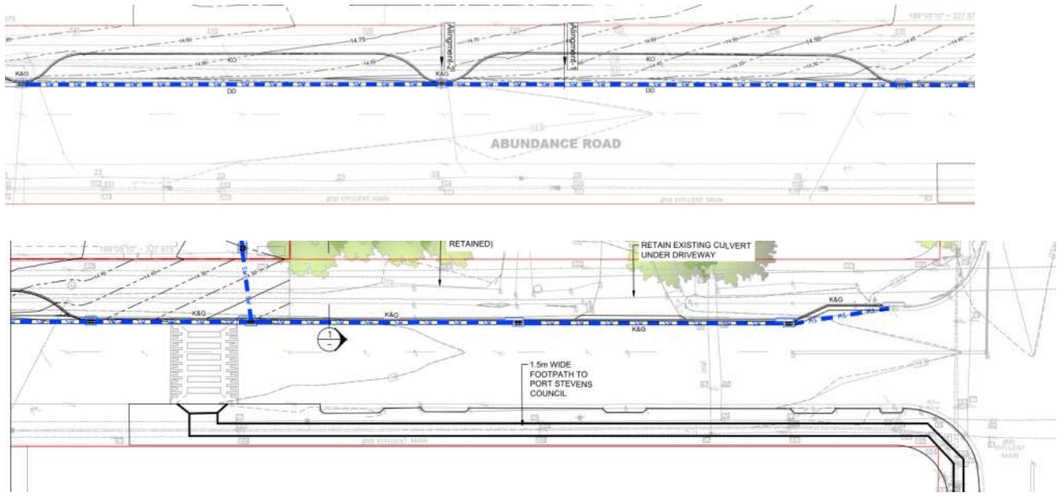


Figure 8 *Public domain works*

This work involves the installation of subsurface drainage (pits and pipe) in lieu of the existing open swale. This pipe would extend north to an existing stormwater pit on the intersection of Abundance Road and Ferodale Road.

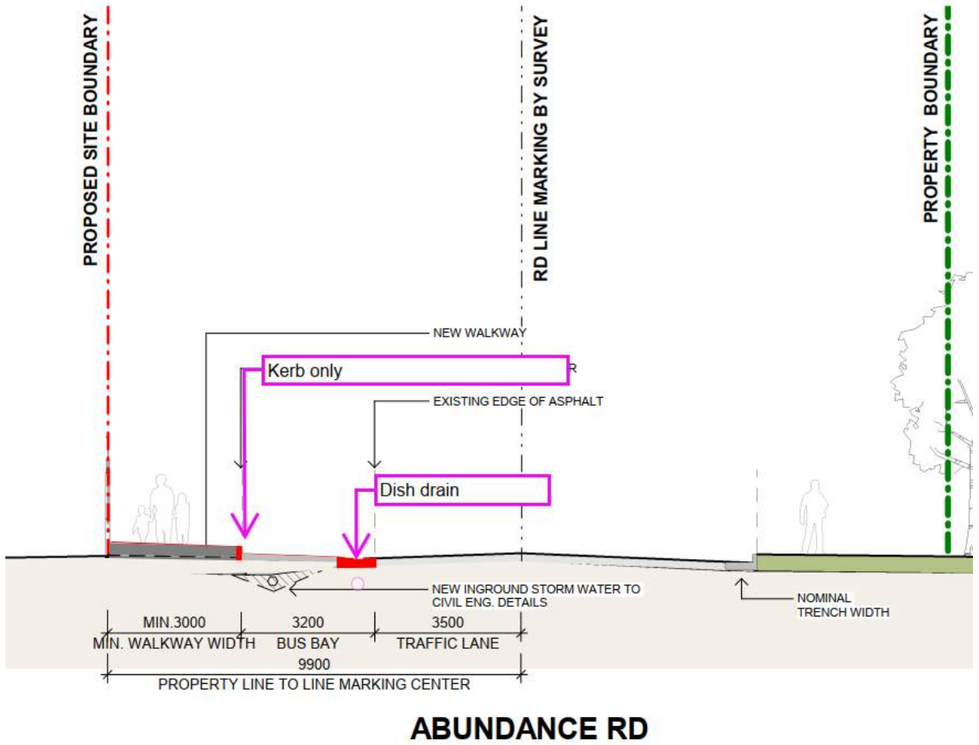


Figure 9 Bus bay typical section (NBRS)

6.2 Pavements

Pavement design is to meet the requirements of the geotechnical investigation provided by ADE Consulting Group, dated 8 May 2024. A California Bearing Ratio (CBR) of 6% is to be adopted in the pavement design. Pavement will also be designed to the requirements of 'AUSTROADS Guide to Pavement Technology.' The following items are applicable:

- All pavements to be designed for a 25-year life
- For other vehicular traffic areas design for 1.0 x 10^5 repetitions of a standard axle load, as defined by AUSTROADS.
- Allow for movements in the foundations caused by moisture variations and mine subsidence.
- Design rigid pavements so there is no vertical differential movement between panels at joints.
- For truck turning areas pavements shall be rigid in construction and finished with a reinforced concrete surface.
- For other areas pavements may be either flexible or rigid in construction. For flexible construction finish with a surface coat of asphaltic concrete.
- Breccia or dolerite is not to be used in road base or concrete mix.
- Non-skid finish for vehicular trafficked pavements
- Non-slip finish for pedestrian trafficked pavements, including carpark
- AC for roads and parking to be AC10 and have minimum thickness of 40mm or greater as the design requires.
- AC for games courts to be AC5 and have minimum thickness of 25mm levelling course plus 25mm surface course or greater as the design requires.
- Limit fly ash content to 20% of cementitious content of mix by weight.
- For roads and parking areas concrete shall have minimum 32 MPa characteristic compressive strength.
- For rigid method of construction finish with a reinforced concrete surface.
- Concrete pavements for vehicles shall be a minimum 150mm thick and reinforced with not less than SL92 mesh at top and 100 mm thick road base.
- Other concrete pavements shall be a minimum 100mm thick and reinforced with no less than SL72 mesh at top.
- Provide a thicker pavement and heavier mesh as the design requires and to meet durability requirements for minimum cover to reinforcement.
- For flexible construction finish with a surface coat of asphaltic concrete.
- Paving is to fall away from the buildings and covered areas.
- Finished vertical grades to be limited to < 1 in 10. Provide vertical curves where change of grade exceeds 3%. Provide cross-falls, as required.

Integration with all engineering and building systems, including services and traffic components, will continue to be coordinated through the upcoming phases. All stormwater drainage will be outside of the building extents and will require no structural penetrations.

7 *Summary of Mitigation Measures*

The mitigation measures presented in this report are summarised in the following table.

Mitigation Name	Aspect/ Section	Mitigation Measure	Reason for mitigation measure
Stormwater Quantity	General Measures	On-Site detention (OSD) tanks in accordance with the Port Stephens Council Development Control Plan	Eliminate any increase in peak stormwater discharge for events up to the 1%AEP
Stormwater Quality	General Measures	Rainwater re-use and filters with OSD tanks	Stormwater leaving the developed site should have a neutral or beneficial impact on stormwater quality as the site is within a drinking water catchment.
Erosion and sediment control	During construction	Provide erosion and sediment control plan in accordance with the Blue Book	Prevent sediment associated with construction works from entering the downstream environment.
Flood impact assessment and flood emergency response plan	General measures	Refer to separate documents for flood impacts and emergency response plan	Minimise any impact of the development on flooding.

8 *Conclusion*

The civil works associated with the design and construction of the new Medowie High School will be carried out in accordance with normal engineering practice and will meet the requirements of Port Stephens Council DCP and Australian standards. Stormwater detention has been designed to result in no increase in peak discharge from the site. Rainwater re-use combined with stormwater filters will be used to achieve a neutral or beneficial impact on stormwater quality

Erosion and sediment control measures are to be in place during construction to prevent contamination of the downstream stormwater system and tracking of grit and sediment onto the roadway.

These mitigation measures minimise the impact on the environment so there is no significant impact.

APPENDIX A: CIVIL REF DESIGN PLANS

A1

enstruct
MEMBER OF WSP

CIVIL ENGINEERING WORKS

MEDOWIE HIGH SCHOOL

LOCALITY PLAN
SCALE 1:5000

CIVIL ENGINEERING WORKS DRAWING LIST:

TO BE PRINTED IN FULL COLOUR

NOT FOR CONSTRUCTION

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02	30/01/25	ISSUE FOR REF	ASE	TAH
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rev	date	description	drn	ch'k

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drawing title
COVER SHEET & LOCALITY PLAN

status
ISSUE FOR REF

scale at A1	drawn	checked	approved
AS SHOWN	BEJ	TAH	TAH

project no.	sheet	rev.
140220	140220-CV-0000	02

GENERAL NOTES

1. Contractor must verify all dimensions and existing levels on site prior to commencement of works. Any discrepancies to be reported to the Engineer
2. Strip all topsoil from the construction area. All stripped topsoil shall be disposed of off-site unless directed otherwise.
3. Make smooth connection with all existing works.
4. Compact subgrade under buildings and pavements to minimum 98% standard maximum dry density in accordance with AS 1289 5.1.1. Compaction under buildings to extend 2m minimum beyond building footprint.
5. All work on public property, property which is to become public property, or any work which is to come under the control of the Statutory Authority; the Contractor is to ensure that the drawings used for construction have been approved by all relevant authorities prior to commencement site.
6. All work on public property, property which is to become public property, or any work which is to come under the control of the Statutory Authority is to be carried out in accordance with the requirements of the relevant Authority. The Contractor shall obtain these requirements from the Authority. Where the requirements of the Authority are different to the drawings and specifications, the requirements of the Authority shall be applicable.
7. For all temporary batters refer to geotechnical recommendations.
8. The approval of a substation shall be sought from the superintendant but is not an authorisation of a cost variation. The superintendant must approve any cost variation before any work starts

SAFETY IN DESIGN

Contractor to refer to the Civil Risk and Solutions Register.

EXISTING SERVICES

Contractor to be aware existing services are located within the site. Location of all services to be verified by the Contractor prior to commencing works. Contractor to confirm with relevant authority regarding measures to be taken to ensure services are protected or procedures are in place to demolish and/or relocate.

EXISTING STRUCTURES

Contractor to be aware existing structures may exist within the site. To prevent damage to existing structure(s) and/or personnel, site works to be carried out as far as practicably possible from existing structure(s).

EXISTING TREES

Contractor to be aware existing trees exist within the site which need to be protected. To prevent damage to trees and/or personnel, site works to be carried out as far as practicably possible from existing trees. Advice needs to be sought from Arborist and/or Landscape Architect on measures required to protect trees.

GROUNDWATER

Contractor to be aware ground water levels are close to existing surface level. Temporary de-watering may be required during construction works.

EXCAVATIONS

Deep excavations due to stormwater drainage works is required. Contractor to ensure safe working procedures are in place for works. All excavations to be fenced off and batters adequately supported to approval of Geotechnical Engineer.

GROUND CONDITIONS

Contractor to be aware of the site geotechnical conditions. Refer to geotechnical report by (insert report details) for details.

HAZARDOUS MATERIALS

Existing asbestos products & contaminated material may be present on site. Contractor to ensure all hazardous materials are identified prior to commencing works. Safe working practices as per relevant authority to be adopted and appropriate PPE to be used when handling all hazardous materials. Refer to geotechnical/environmental report by (insert report details) for details.

CONFINED SPACES

Contractor to be aware of potential hazards due to working in confined spaces such as stormwater pits, trenches and/or tanks. Contractor to provide safe working methods and use appropriate PPE when entering confined spaces.

MANUAL HANDLING

Contractor to be aware manual handling may be required during construction. Contractor to take appropriate measures to ensure manual handling procedures and assessments are in place prior to commencing works.

WATER POLLUTION

Contractor to ensure appropriate measures are taken to prevent pollutants from construction works contaminating the surrounding environment.

SITE ACCESS/EGRESS

Contractor to be aware site works occur in close proximity to footpaths and roadways. Contractor to erect appropriate barriers and signage to protect site personnel and public.

VEHICLE MOVEMENT

Contractor to supply and comply with traffic management plan and provide adequate site traffic control including a certified traffic marshall to supervise vehicle movements where necessary.

SITEWORKS NOTES

1. All basecourse material to comply with RMS specification No 3051 and compacted to minimum 98% modified dry density in accordance with AS 1289 5.2.1.
2. All trench backfill material shall be compacted to the same density as the adjacent material.
3. All service trenches under vehicular pavements shall be backfilled with an approved select material and compacted to a minimum 98% standard maximum dry density in accordance with AS 1289 5.1.1

BOUNDARY AND EASEMENTS NOTE

The property boundary and easements locations shown on enstruct drawing's have been based from information received from the surveyour.
Enstruct makes no guarantees that the boundary or easement information shown is correct. enstruct will accept no liabilities for boundary inaccuracies. The contractor/builder is advised to check/confirm all boundaries in relation to all proposed work prior to the commencement of construction. Boundary inaccuracies found are to be reported to the superintendent prior to construction starting.

TENDER NOTES

1. These drawings are preliminary drawings issued for tender as an indication of the extent of works only. They are not a complete construction set of drawings.
2. To determine the full extent of work, these drawings shall be read in conjunction with the architectural drawings and other contract documents. Allow for all items shown on architectural and other drawings as not all items are shown on the structural/civil works drawings.
3. Should any ambiguity, error, omissions, discrepancy, inconsistency or other fault exist or seem to exist in the documents, immediately notify in writing to the Superintendendent.
4. Rates shown on the drawings are for the final structure/civil works in place and do not allow for any wastage, rolling margins, over supply or fabrication requirements. etc.

KERBING NOTES

Includes all kerbs, gutters, dish drains, crossings and edges.

1. All kerbs, gutters, dish drains and crossings to be constructed on minimum 75mm granular basecourse compacted to minimum 98% modified maximum dry density in accordance with AS 1289 5.2.1.
2. Expansion joints (EJ) to be formed from 10mm compressible cork filler board for the full depth of the section and cut to profile. Expansion joints to be located at drainage pits, on tangent points of curves and elsewhere at 12m centres except for integral kerbs where the expansion joints are to match the joint locations in slabs.
3. Weakened plane joints to be min 3mm wide and located at 3m centres except for integral kerbs where weakened plane joints are to match the joint locations in slabs.
4. Broomed finished to all ramped and vehicular crossings, all other kerbing or dish drains to be steel float finished.
5. In the replacement of kerbs - Existing road pavement is to be sawcut 900mm from: Lip of gutter, invert of kerb, or edge of dish drain. Upon completion of new kerbs, new basecourse and surface is to be laid 900mm wide to match existing materials and thicknesses.
6. Existing allotment drainage pipes are to be built into the new kerb with a 100mm dia hole.
7. Existing kerbs are to be completely removed where new kerbs are shown.

RETAINING WALLS

1. Drainage shall be provided behind all walls. Refer to the drainage drawings for connections.
2. Backfilling shall be carried out after grout or concrete has reached a minimum strength of 0.85 f'c. Backfilling shall be approved granular material compacted in layers not exceeding 200mm to 95% Standard compaction unless noted otherwise.
3. Subgrade bearing tests must be completed and results reviewed prior to commencement of wall works.
4. Provide waterproofing to back of walls as specified or noted.
5. Where retaining walls rely on connecting structural elements for stability, do not backfill against the wall unless it is adequately propped or the elements have been constructed and have sufficient strength to withstand the loads.
6. For all temporary batters obtain geotechnical engineers recommendations.

BULK EARTHWORKS GENERAL NOTES

1. All bulk earthworks setout from grid lines U.N.O.
2.Batters are not to exceed the Geotechnical engineer specifications
(i) All permanent batter max slope of 4 (H) :1 (V) U.N.O.
(ii) All temporary batter max slope of 4 (H) :1 (V) U.N.O.
3. Excavated material may be used as structural fill provided,
(i) it complies with the specification requirements for fill material,
(ii) the placement moisture content complies with the Geotechnical Engineers' requirements, and allows filling to be placed and proofrolled in accordance with the specification. Where necessary the Contractor must moisture condition the excavated material to meet these requirements.

4. Compact fill areas and subgrade to not less than:

Location	Standard Dry Density (AS1289 5.1.1)	Moisture (OMC)
Under building slabs on ground:	98%	±2%
Under roads and carparks:	98%	±2%
Landscaped areas:	95%	±2%

5. Before placing fill, proof roll exposed subgrade with a 10 tonne minimum roller to test subgrade and then remove soft spots (areas with more than 3mm movement under roller). Soft spots to be replaced with granular fill U.N.O.
6. Contractor to provide proof roll compaction evidence for signoff.
7. Contractor shall place safety barriers around excavations in accordance with relevant safety regulations.
8. For interpretation of bulk earthworks foot print line shown on the bulk earthworks drawings refer to the bulk earthworks construction legend.
9. Bulk earthwork drawings are not to be used for detailed excavation.
10. Refer to the Geotechnical Report for detailed information.

STORMWATER DRAINAGE NOTES

1. Stormwater Design Criteria :
(A) Average exceedance probability -
1% AEP for roof drainage to first external pit
5% AEP for paved and landscaped areas
(B) Rainfall intensities -
Time of concentration: 5 minutes
1% AEP = 309.6 mm/hr
5% AEP = 219.6 mm/hr
(C) Rainfall losses -
Impervious areas: IL= 1.5 mm , CL = 0 mm/hr
Pervious areas: IL= 33.7mm/hr , CL = 6mm/hr

2. Pipes 300 dia and larger to be reinforced concrete Class "2" approved spigot and socket with rubber ring joints U.N.O. Pipes in public roadways (including public domain) to be class "4" reinforced concrete.
3. Pipes up to 225 dia may be sewer grade uPVC with solvent welded joints, subject to approval by the engineer
5. Enlargers, connections and junctions to be manufactured fittings where pipes are less than 300 dia.
6. Pipes are to be installed in accordance with AS 3725. All bedding to be type H2 U.N.O.
7. Care is to be taken with invert levels of stormwater lines. Grades shown are not to be reduced without approval.
8. Adopt invert levels for pipe installation (grades shown are only nominal).
8. All downpipe connections are to be 150mm DIA or the same size as the downpipe (whichever is larger) laid at 1% minimum fall connection to the nearest pit. Minimum cover 450mm in non-trafficable landscaped areas.
9. Pits in roadways (including public domain) are to be insitu to council details.
10. Pit grates and covers shall conform with AS3996-2006, and AS1428.1 for access requirements.

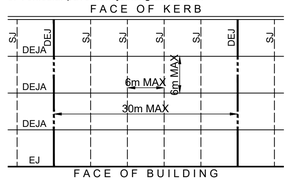
SUBSOIL NOTES

1. Subsoil drains to be slotted flexible uPVC U.N.O.
2. All subsoil drainage shall outlet to drainage pits or land drains.
3. Pavement subsoil drains are to be placed in accordance with standard drawings behind all kerb and gutter, on the low side of all pavements, and road crossings at sag vertical curves.
4. Where subsoil drains pass under floor slabs and/or vehicular pavements, unslotted uPVC sewer grade pipe is to be used.

JOINTING NOTES

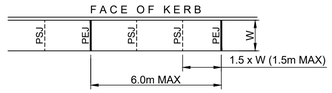
Vehicular Pavement Jointing

1. All vehicular pavements to be jointed as shown on drawings.
2. Keyed construction joints should generally be located at a maximum of 6m centres.
3. Sawn joints should generally be located at a maximum of 6m centres or 1.5 x the spacing of keyed joints, where key joint spacing is less than 4m, with dowelled expansion joints at maximum of 30m centres.
4. Provide 10mm wide full depth expansion joints between buildings and all concrete or unit pavers.
5. The timing of the saw cut is to be confirmed by the contractor on site. Site conditions will determine how many hours after the concrete pour before the saw cuts are commenced. Refer to the specification for weather conditions and temperatures required.
6. Vehicular pavement jointing as follows.



Pedestrian Footpath Jointing

1. Expansion joints are to be located where possible at tangent points of curves and elsewhere at max 6.0m centres.
2. Weakened plane/Sawcut joints are to be located at a max 1.5 x width of the pavement.
3. Where possible joints should be located to match kerbing and / or adjacent pavement joints.
4. All pedestrian footpath jointings as follows (uno).



CONCRETE NOTES

EXPOSURE CLASSIFICATION : External :B2

CONCRETE

Place concrete of the following characteristic compressive strength f'c as defined in AS 1379.

Location	AS 1379 f'c MPa at 28 days	Specified Slump	Nominal Agg. Size
Kerbs	S20	80	20
Pavements	S32	80	20
Retaining wall footing	S40	80	20

1. Use Type 'GP' cement, unless otherwise specified.
2. All concrete shall be subject to project assessment and testing to AS 1379.
3. Consolidate by mechanical vibration. Cure all concrete surfaces as directed in the Specification.
4. For all falls in slab, drip grooves, reglets, chamfers etc. refer to Architects drawings and specifications.
5. The location of all construction joints shall be submitted to Engineer for review.
6. No holes or chases shall be made in the slab without the approval of the Engineer.
7. Slurry used to lubricate concrete pump lines is not to be used in any concrete members.
8. All building slabs cast on ground require sand blinding with a Concrete Underlay. Refer to structural drawings.

FORMWORK

1. The design, certification, construction and performance of the formwork, falsework and backpropping shall be the responsibility of the contractor. Proposed method of installation and removal of formwork is to be submitted to the superintendent for comment prior to work being carried out.

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rev	date	description	drn	ch'k
02	30/01/25	ISSUE FOR REF	ASE	TAH
01	29/11/24	ISSUE FOR REF	BEJ	TAH

rev	date	description	drn	ch'k

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project: MEDOWIE HIGH SCHOOL
6 ABUNDANCE RD, MEDOWIE NSW 2318

drawing title: NOTES SHEET

status: ISSUE FOR REF

scale at A1	drawn	checked	approved
NTS	ASE	TAH	JAN-25

project no.	sheet	rev.
140220	140220-CV-0001	02

DRAWING CONTINUED ON 140220-CV-0101

EROSION AND SEDIMENT CONTROL LEGEND

- Siltation fence, with star pickets at max 2.5m centres (typ)
- Catch drain
- Overland flow path
- Sandbag sediment trap
- Temporary construction exit

EROSION AND SEDIMENT CONTROL NOTES

1. All work shall be generally carried out in accordance with
   (A) Local authority requirements,
   (B) EPA - Pollution control manual for urban stormwater,
   (C) LANDCOM NSW - Managing Urban Stormwater: Soils and Construction ("Blue Book").
2. Erosion and sediment control drawings and notes are provided for the whole of the works. Should the Contractor stage these works then the design may be required to be modified. Variation to these details may require approval by the relevant authorities. The erosion and sediment control plan shall be implemented and adapted to meet the varying situations as work on site progresses.
3. Maintain all erosion and sediment control devices to the satisfaction of the superintendent and the local authority.
4. When stormwater pits are constructed prevent site runoff entering the pits unless silt fences are erected around pits.
5. Minimise the area of site being disturbed at any one time.
6. Protect all stockpiles of materials from scour and erosion. Do not stockpile loose material in roadways, near drainage pits or in watercourses.
7. All soil and water control measures are to be put back in place at the end of each working day, and modified to best suit site conditions.
8. Control water from upstream of the site such that it does not enter the disturbed site.
9. All construction vehicles shall enter and exit the site via the temporary construction entry/exit.
10. All vehicles leaving the site shall be cleaned and inspected before leaving.
11. Maintain all stormwater pipes and pits clear of debris and sediment. Inspect stormwater system and clean out after each storm event.
12. Clean out all erosion and sediment control devices after each storm event.

Sequence Of Works

1. Prior to commencement of excavation the following soil management devices must be installed:
1.1. Construct silt fences below the site and across all potential runoff sites.
1.2. Construct temporary construction entry/exit and divert runoff to suitable control systems.
1.3. Construct measures to divert upstream clean flows into existing stormwater system.
1.4. Construct sedimentation traps/basin (if any) including outlet control and overflow; otherwise allocate a place for the runoff and temporary sediment storage.
1.5. Construct turf lined swales.
1.6. Provide sandbag sediment traps upstream of existing pits.
2. On completion of pavement provide sand bag sediment traps around pits.
3. Provide and maintain a strip of turf on both sides of all roads after the construction of kerbs.

WATER QUALITY TESTING REQUIREMENTS

Prior to discharge of site stormwater, groundwater and seepage water into council's stormwater system, contractors must undertake water quality tests in conjunction with a suitably qualified environmental consultant outlining the following:

- Compliance with the criteria of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000)
- If required subject to the environmental consultants advice, provide remedial measures to improve the quality of water that is to be discharged into Councils storm water drainage system.This should include comments from a suitably qualified environmental consultant confirming the suitability of these remedial measures to manage the water discharged from the site into Councils storm water drainage system. Outlining the proposed, ongoing monitoring, contingency plans and validation program that will be in place to continually monitor the quality of water discharged from this site. This should outline the frequency of water quality testing that will be undertaken by a suitably qualified environmental consultant.

SCALE 1:250
0 5 10 15 m

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rev	date	description	drn	ch'k
02	30/01/25	ISSUE FOR REF	ASE	TAH
01	18/11/24	ISSUE FOR TENDER	MZV	TAH

rev	date	description	drn	ch'k

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drawing title
EROSION AND SEDIMENT CONTROL PLAN SHEET 1

status
ISSUE FOR REF

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1:250	ASE	TAH	JAN-25

project no.	sheet	rev.
140220	140220-CV-0101	02

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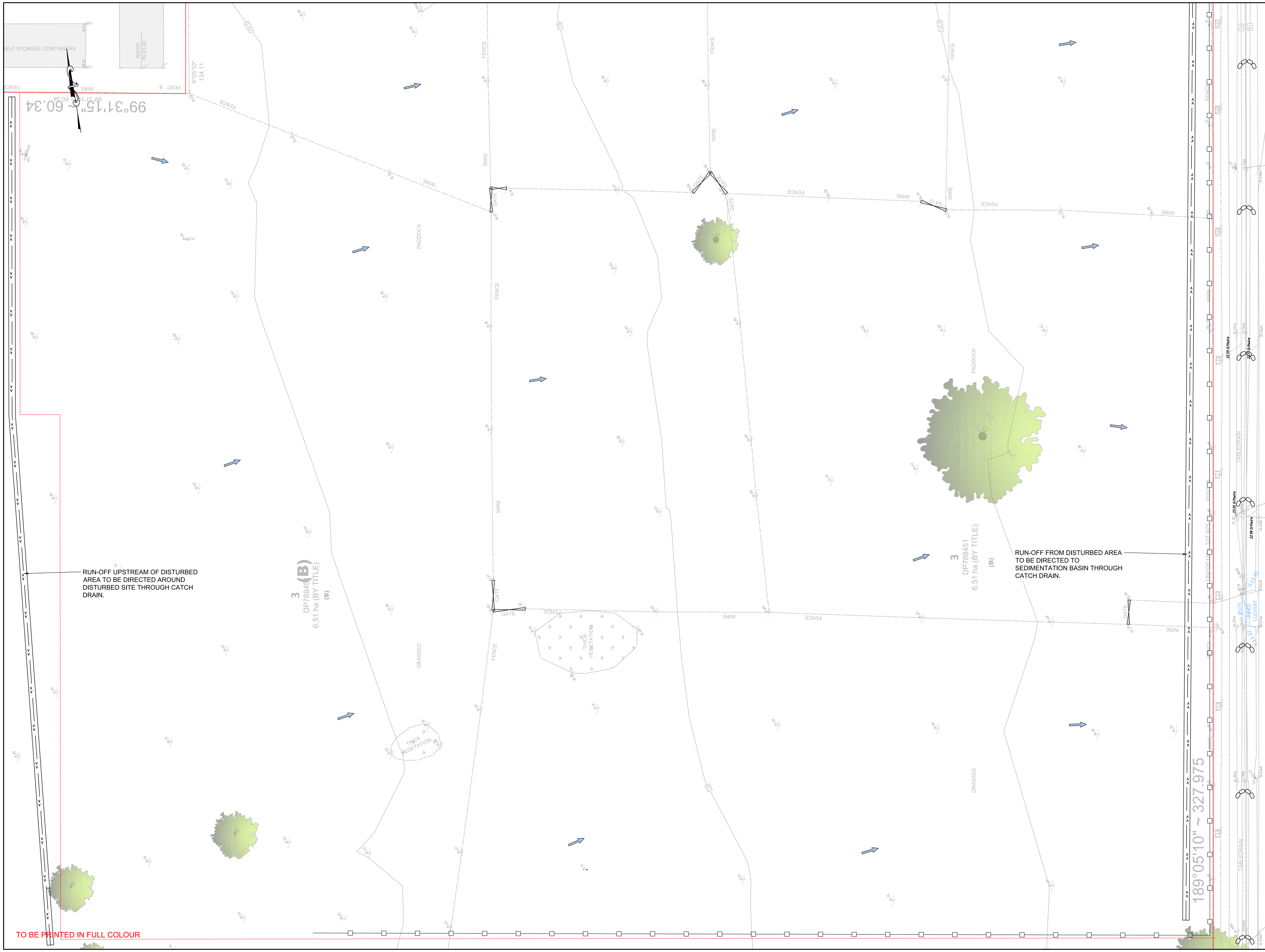

TO BE PRINTED IN FULL COLOUR

EROSION AND SEDIMENT CONTROL LEGEND

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EROSION AND SEDIMENT CONTROL NOTES

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02	30/01/25	ISSUE FOR REF	ASE	TAH
01	18/11/24	ISSUE FOR TENDER	MZV	TAH

rev	date	description	drn	ch'k

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project: MEDOWIE HIGH SCHOOL
6 ABUNDANCE RD, MEDOWIE NSW 2318

drawing title: EROSION AND SEDIMENT CONTROL PLAN SHEET 2

status: ISSUE FOR REF

scale at A1	drawn	checked	approved
1:250	ASE	TAH	JAN-25

project no.	sheet	rev.
140220	140220-CV-0102	02

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03	22/01/25	ISSUE FOR REF	SCO	TAH
02	29/11/24	ISSUE FOR REF	BEJ	TAH
01	18/11/24	ISSUE FOR TENDER	BEJ	TAH

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project
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drawing title
SITE PLAN SHEET 1

status
ISSUE FOR REF

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1:250	BEJ	TAH	JAN-25

project no.	sheet	rev.
140220	140220-CV-0401	04

A1

Alingment-1

Alingment-2

ROAD

ABUNDANCE

189°05'10" ~ 327.975

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02	29/11/24	ISSUE FOR REF	BEJ	TAH
01	18/11/24	ISSUE FOR TENDER	BEJ	TAH

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drawing title: SITE PLAN SHEET 2

status: ISSUE FOR REF

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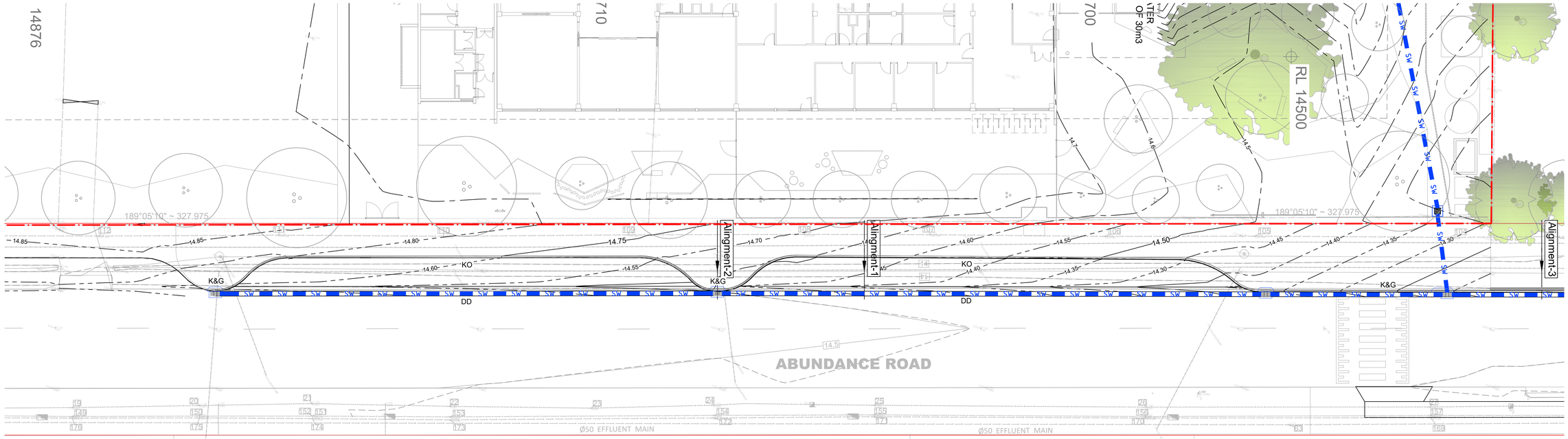

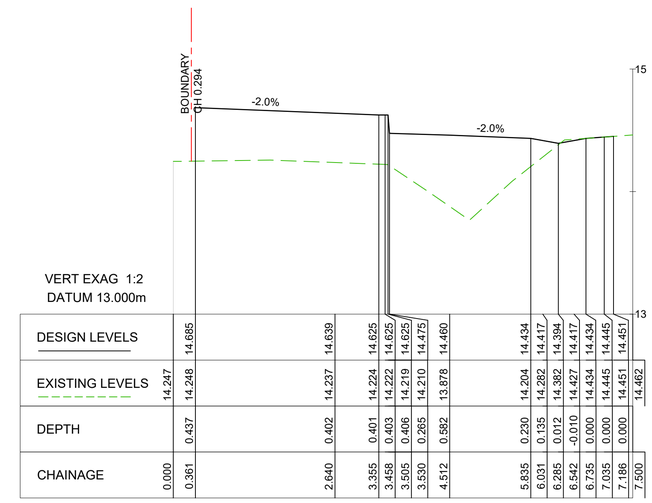

A1

SCALE 1:200

0 1 2 5 10m

SITEWORKS LEGEND

	Property boundary
× 22.20	Finished surface level
10.00	Finished contour
-1.0%	Design slope
K&G	Kerb and gutter
KO	Kerb only
FK	Flush kerb
DD	Dish drain
	Stormwater pit, flow direction and line with
IL10.00	Invert level upstream
600 Ø '2'	Pipe size and class
1.25%	Pipe grade
Q=345 L/s	Flow (Litres per second)
IL9.65	Invert level downstream
GD	Grated drain
SS SS	subsoil drainage line (100 dia)

VERT EXAG 1:2
DATUM 13.000m

DESIGN LEVELS		14.685	14.639	14.625	14.625	14.625	14.475	14.460	14.434	14.417	14.394	14.417	14.434	14.445	14.451	
EXISTING LEVELS	14.247	14.248	14.237	14.224	14.222	14.219	14.210	13.878	14.204	14.282	14.382	14.427	14.434	14.445	14.451	14.462
DEPTH		0.437	0.402	0.401	0.403	0.406	0.265	0.582	0.230	0.135	0.012	-0.010	0.000	0.000	0.000	
CHAINAGE	0.000	0.361	2.640	3.355	3.458	3.505	3.530	4.512	5.835	6.031	6.285	6.542	6.735	7.035	7.186	7.500

ALINGMENT-1

SCALE 1:50

0 1 2 3 m

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VERT EXAG 1:2
DATUM 13.000m

DESIGN LEVELS		14.748	14.694	14.660	14.656	14.654	14.653	14.651	14.650	14.649	14.649	14.649	14.649	14.499	14.511	14.515
EXISTING LEVELS	14.369	14.365	14.298	13.894	13.777	13.846	13.901	13.971	13.998	14.474	14.492	14.495	14.498	14.499	14.511	14.515
DEPTH		0.382	0.396	0.766	0.879	0.808	0.752	0.680	0.652	0.175	0.156	0.154	0.151	0.000	0.000	0.000
CHAINAGE	0.000	0.375	2.920	4.522	4.862	5.043	5.163	5.316	5.376	6.417	6.537	6.612	6.687	6.712	7.053	7.162

ALINGMENT-2

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01	22/01/25	ISSUE FOR REF	SCO	TAH
rev	date	description	drn	ch'k

rev	date	description	drn	ch'k

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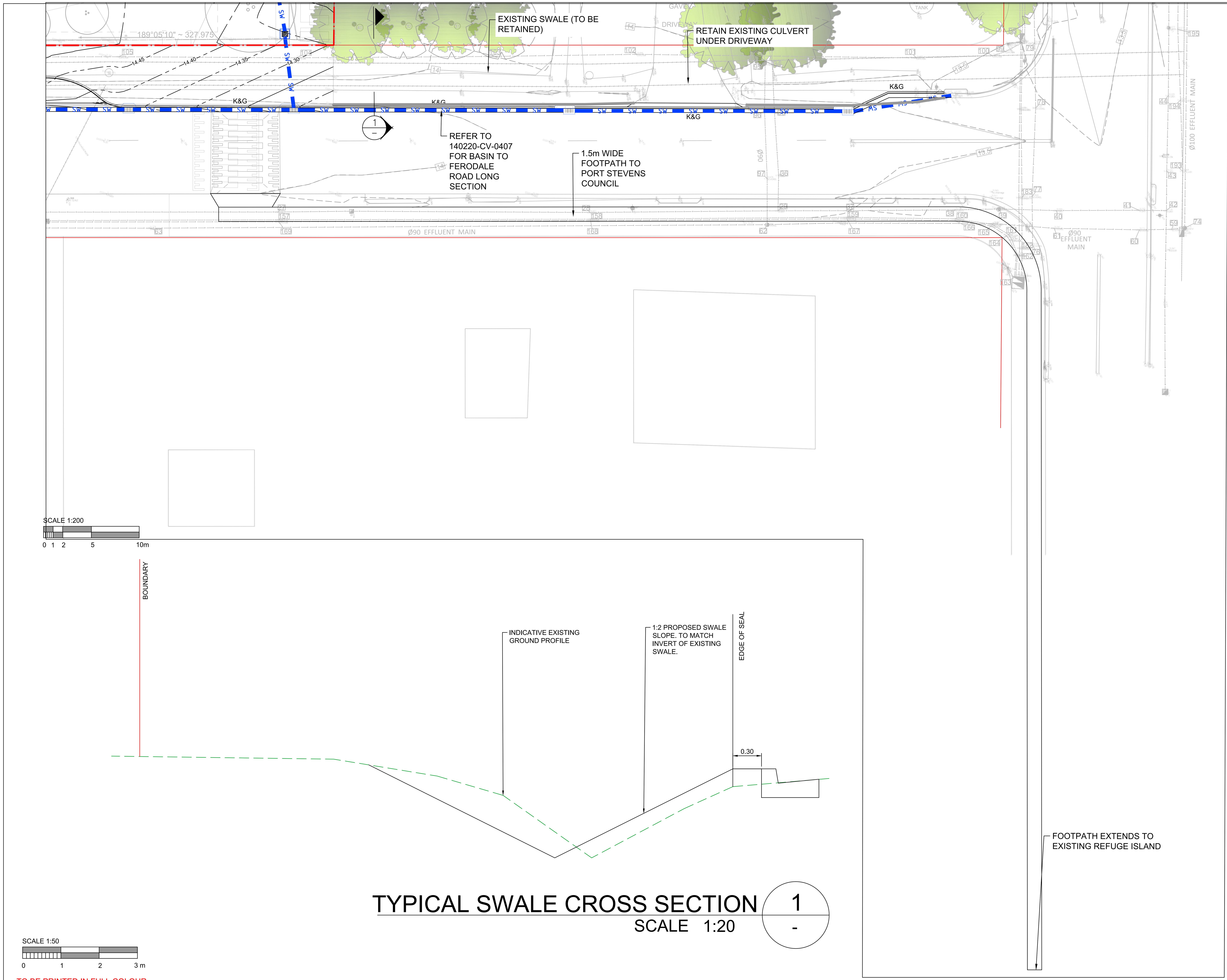
drawing title
PUBLIC DOMAIN SITE PLAN

status
ISSUE FOR REF

scale at A1	drawn	checked	approved
AS SHOWN	BEJ	TAH	JAN-25

project no.	sheet	rev.
140220	140220-CV-0405	02

A1



TYPICAL SWALE CROSS SECTION 1
SCALE 1:20

SCALE 1:50
0 1 2 3 m

TO BE PRINTED IN FULL COLOUR

SITEWORKS LEGEND

	Property boundary
× 22.20	Finished surface level
10.00	Finished contour
-1.0%	Design slope
K&G	Kerb and gutter
KO	Kerb only
FK	Flush kerb
DD	Dish drain
	Stormwater pit, flow direction and line with
IL10.00	Invert level upstream
600 Ø '2'	Pipe size and class
1.25%	Pipe grade
Q=345 L/s	Flow (Litres per second)
IL9.65	Invert level downstream
GD	Grated drain
SS	subsoil drainage line (100 dia)

NOT FOR CONSTRUCTION

rev	date	description	drn	ch'k
02	30/01/25	ISSUE FOR REF	ASE	TAH
01	22/01/25	ISSUE FOR REF	SCO	TAH

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drawing title
PUBLIC DOMAIN SITE PLAN SHEET 2

status
ISSUE FOR REF

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project no.	sheet	rev.
140220	140220-CV-0406	02

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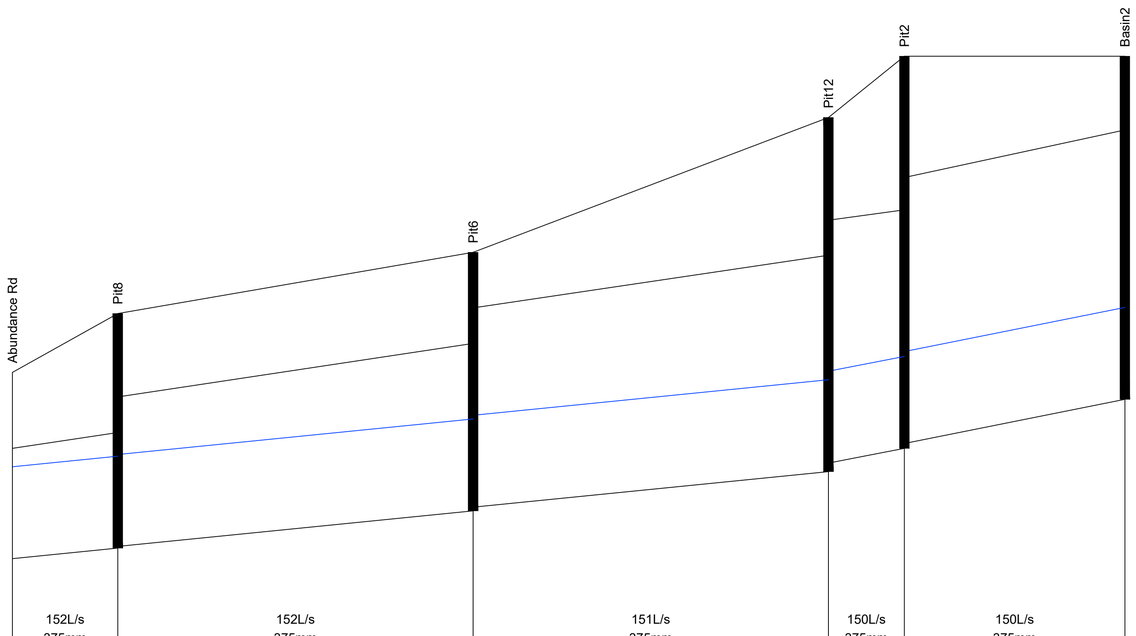

Datum El. 12

HGL	13.000	13.065	13.210	13.428	13.573	13.788	13.931	13.973	14.105	14.299
Surface Level	13.31		13.55		13.8		14.35		14.6	14.600
Invert Level	12.550	12.593	12.600	12.745	12.760	12.905	12.940	13.000	13.020	13.200
Chainage	0		8.60		37.60		66.60		72.80	90.80

BASIN TO FERODALE ROAD LONG SECTION - 5% AEP STORM EVENT

SCALE 1:250
0 5 10 15 m

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rev	date	description	drn	ch'k
01	30/01/25	ISSUE FOR REF	ASE	TAH

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project
MEDOWIE HIGH SCHOOL

6 ABUNDANCE RD, MEDOWIE NSW 2318

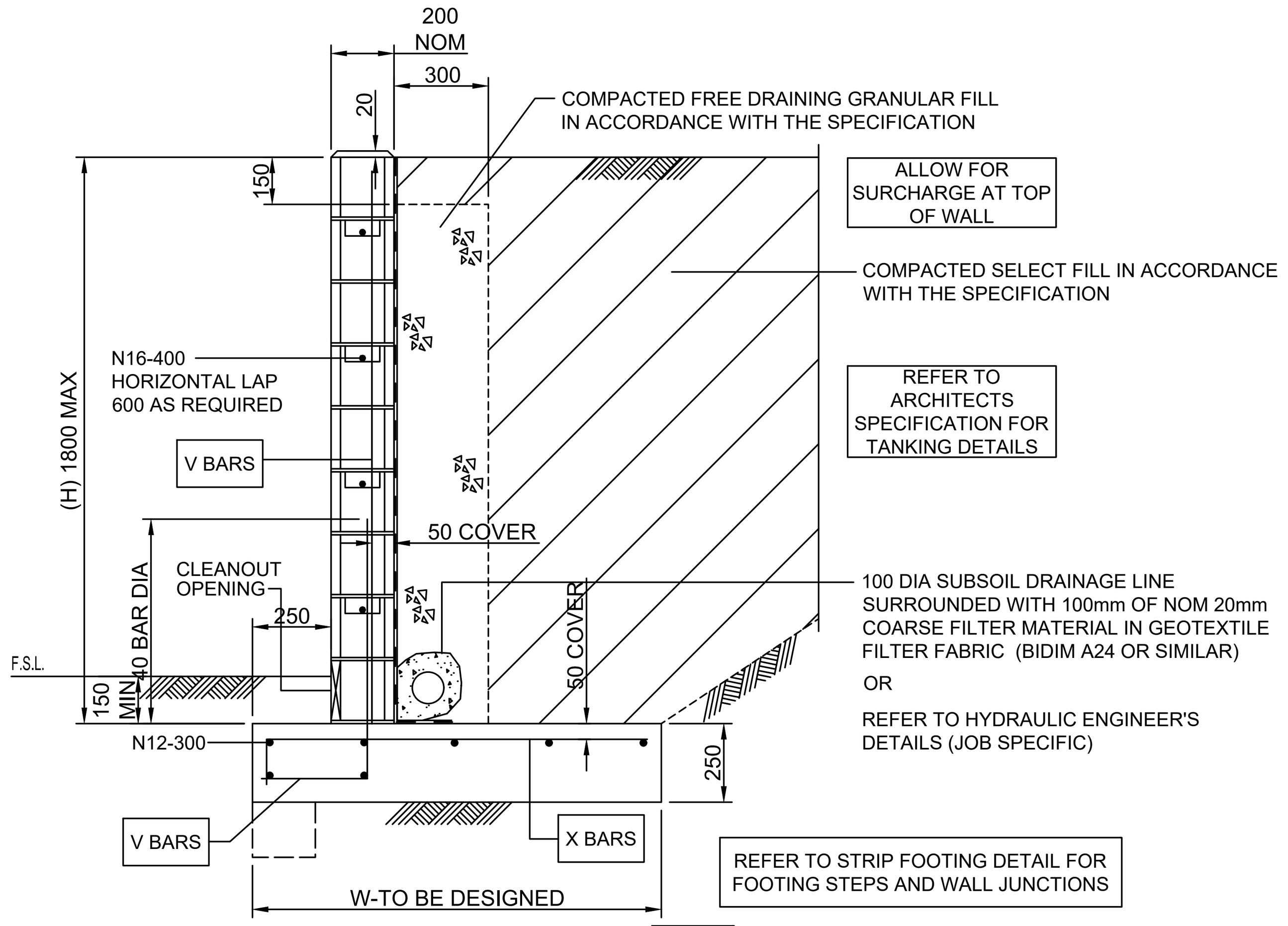
drawing title
PUBLIC DOMAIN
LONG SECTION

status
ISSUE FOR REF

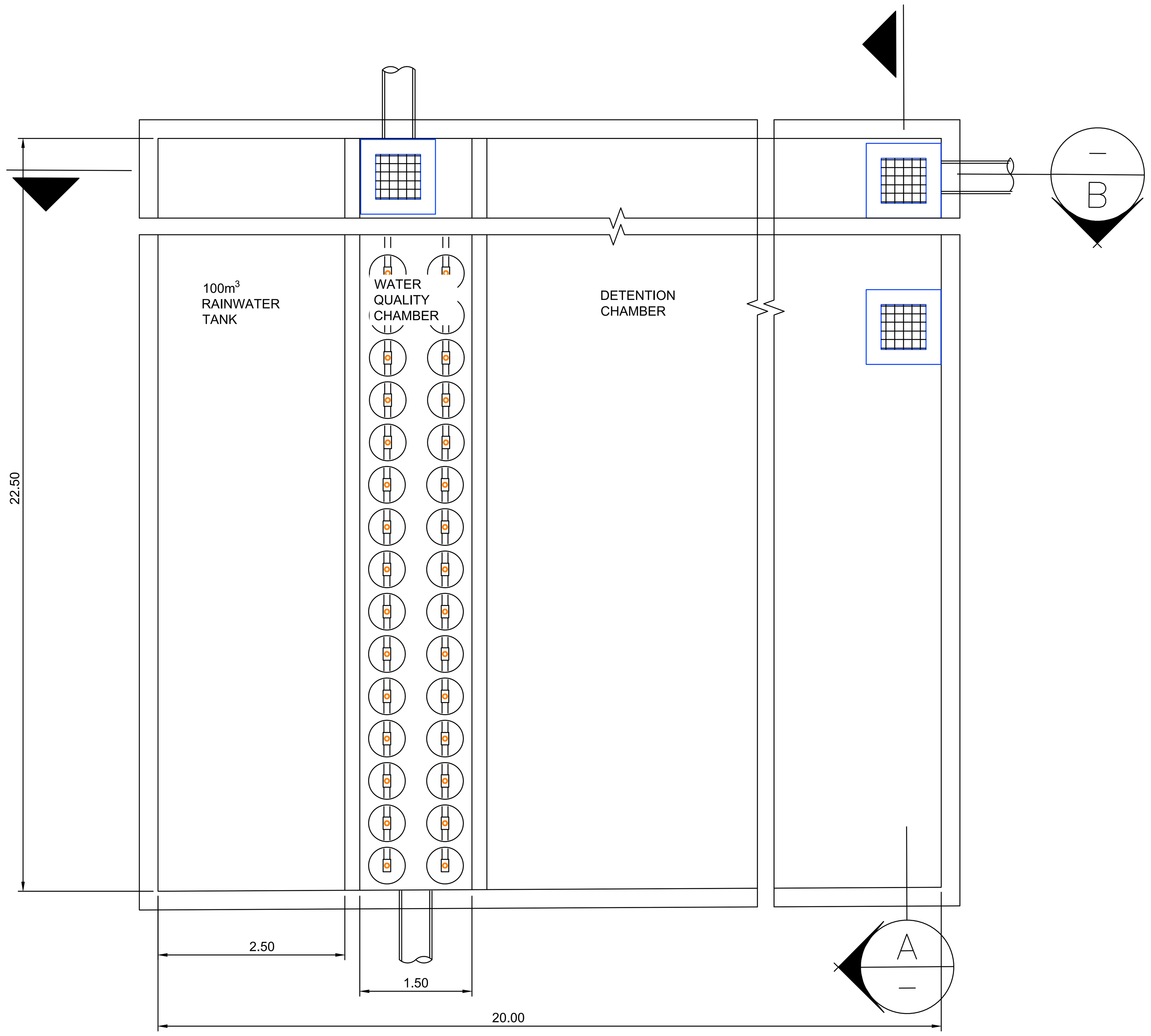
scale at A1	drawn	checked	approved
1:250	BEJ	TAH	JAN-25

project no.	sheet	rev.
140220	140220-CV-0407	01

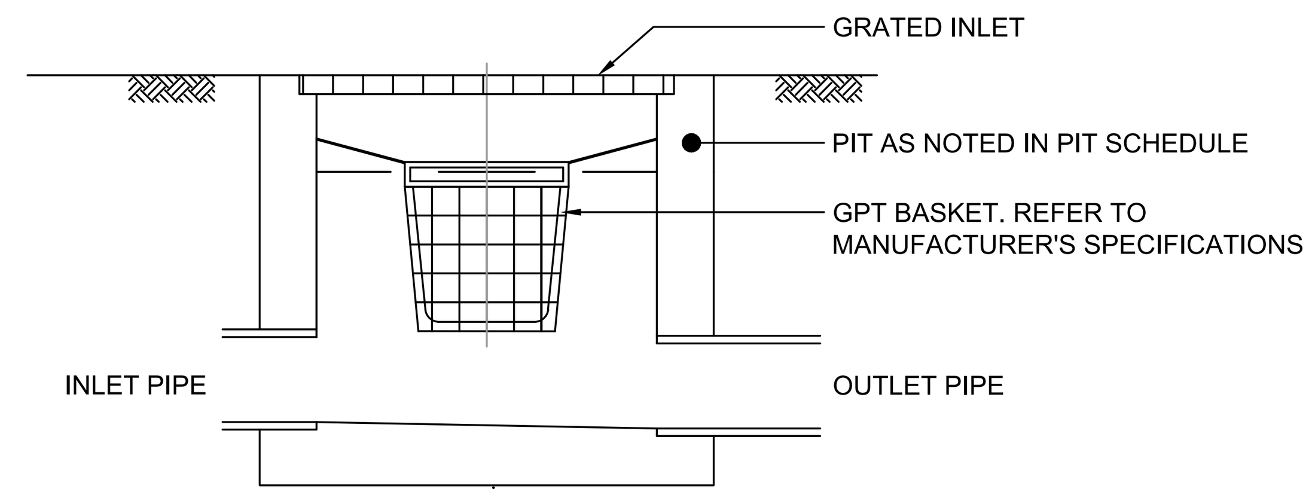
A1



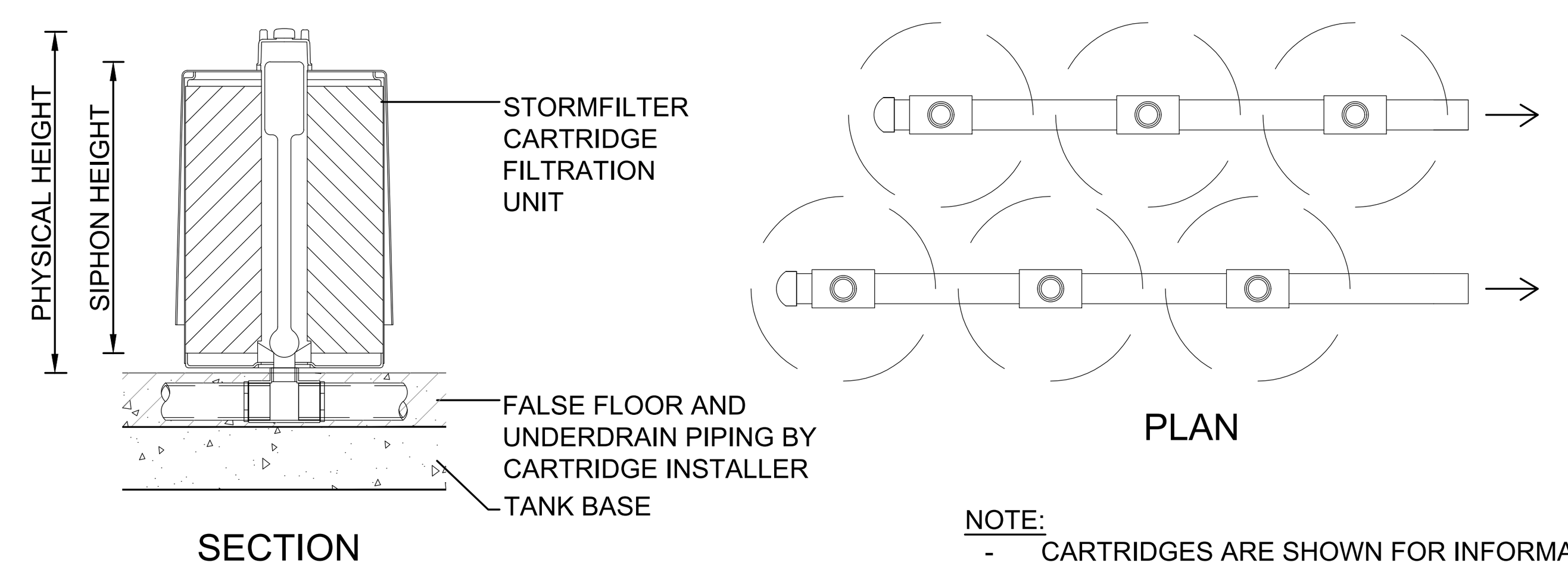
RETAINING WALL (RW#)
SCALE 1:20



UNDERGROUND ONSITE STORMWATER DETENTION (OSD) TANK 1 PLAN
SCALE: 1:50

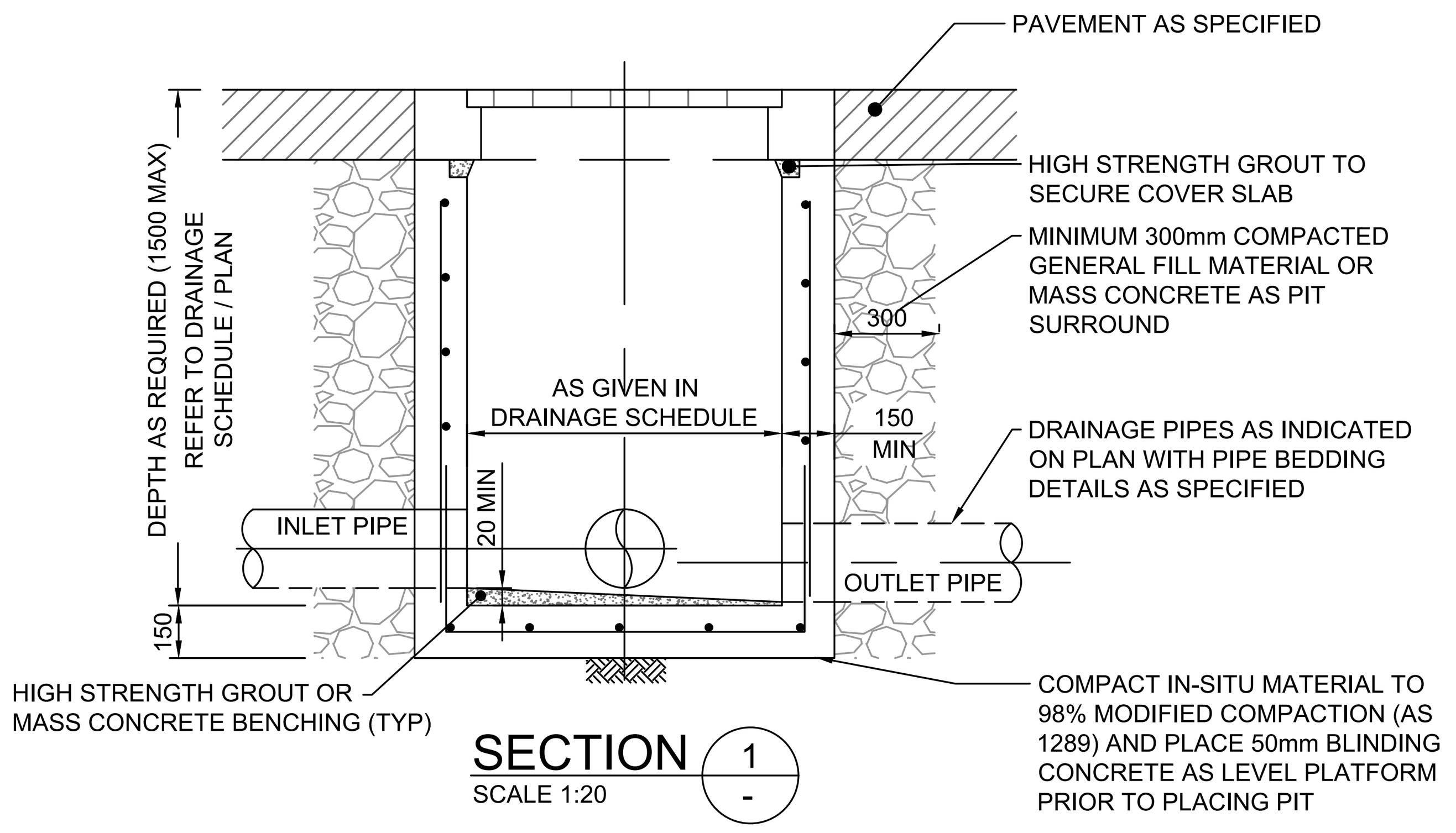


GROSS POLLUTANT TRAP (GPT)
PIT BASKET INSERT
FOR SURFACE INLET PITS
SCALE: NTS

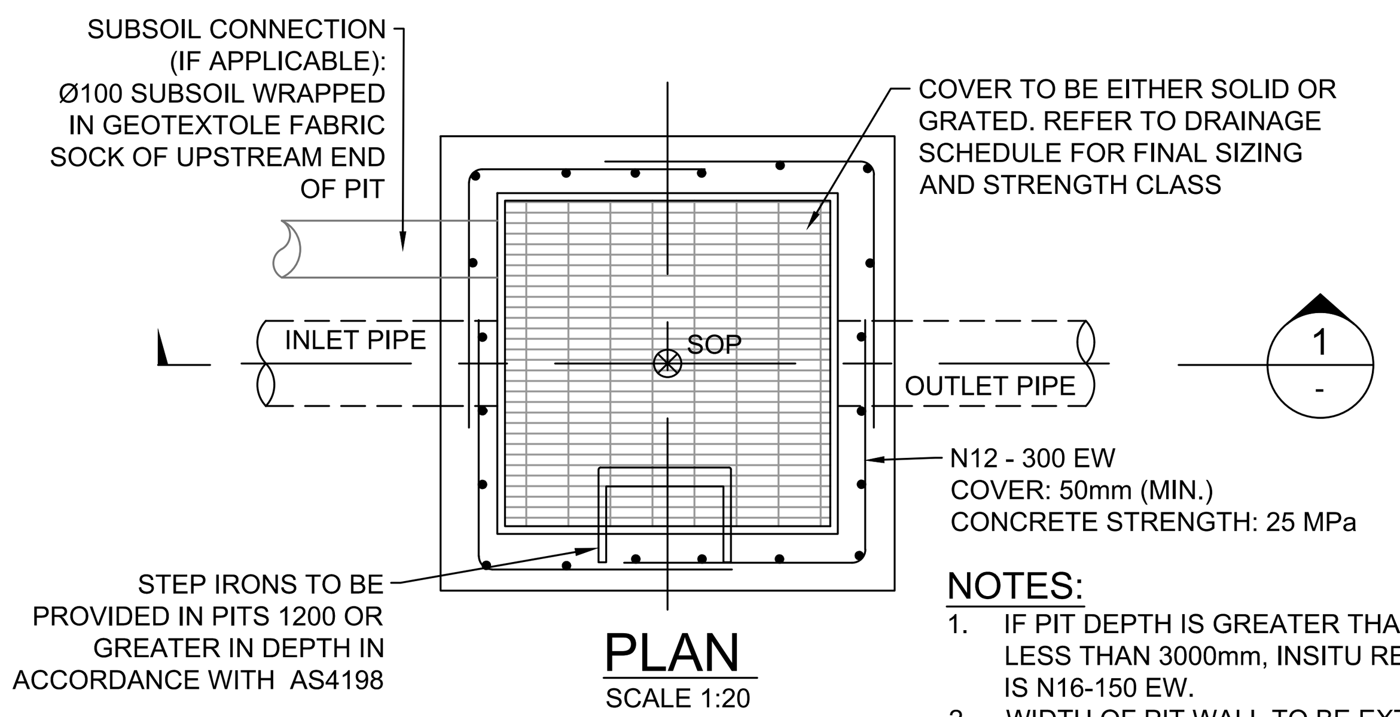


TYPICAL CARTRIDGE DETAIL
SCALE 1:50

NOTE:
- CARTRIDGES ARE SHOWN FOR INFORMATION ONLY. REFER TO MANUFACTURER'S SPECIFICATIONS FOR TECHNICAL DETAILS AND SPECIFICATIONS.
- ALL WATER QUALITY DEVICES REQUIRE MAINTENANCE. REFER TO MANUFACTURER'S MAINTENANCE SPECIFICATIONS AND SCHEDULES.



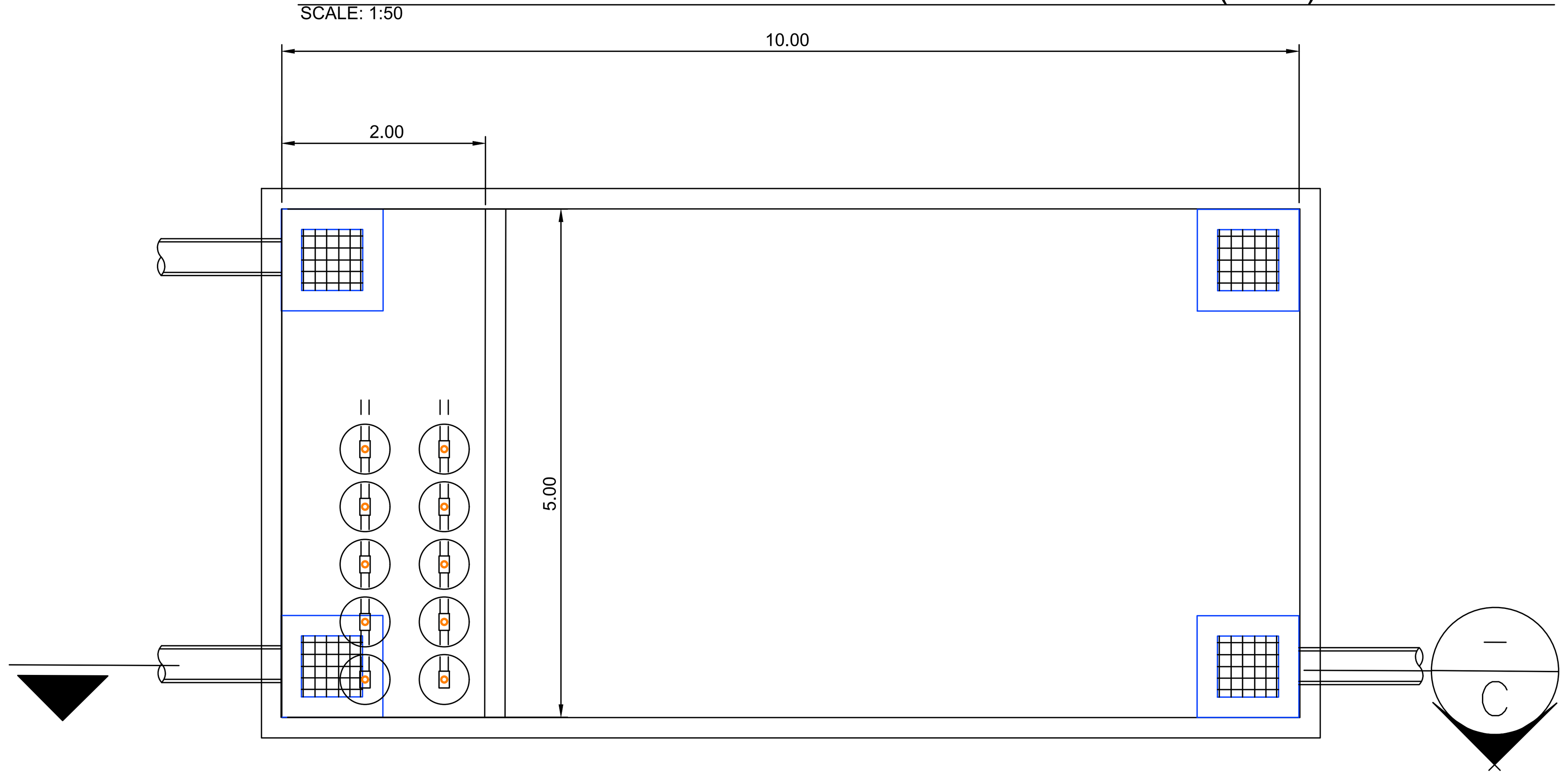
SECTION 1/-
SCALE 1:20



PLAN
SCALE 1:20

NOTES:
1. IF PIT DEPTH IS GREATER THAN 1500mm BUT LESS THAN 3000mm, INSITU REINFORCEMENT IS N16-150 EW.
2. WIDTH OF PIT WALL TO BE EXTENDED ACCORDINGLY TO ACCOMMODATE TWIN PIPES.

IN-SITU PIT - TYPICAL DETAIL
SCALE 1:20



UNDERGROUND ONSITE STORMWATER DETENTION (OSD) TANK 2 PLAN
SCALE: 1:50

SCALE 1:50
0 1 2 3 m

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03	30/01/25	ISSUE FOR REF	ASE	TAH
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01	18/11/24	TENDER DESIGN	BEJ	TAH

rev	date	description	drn	ch'k

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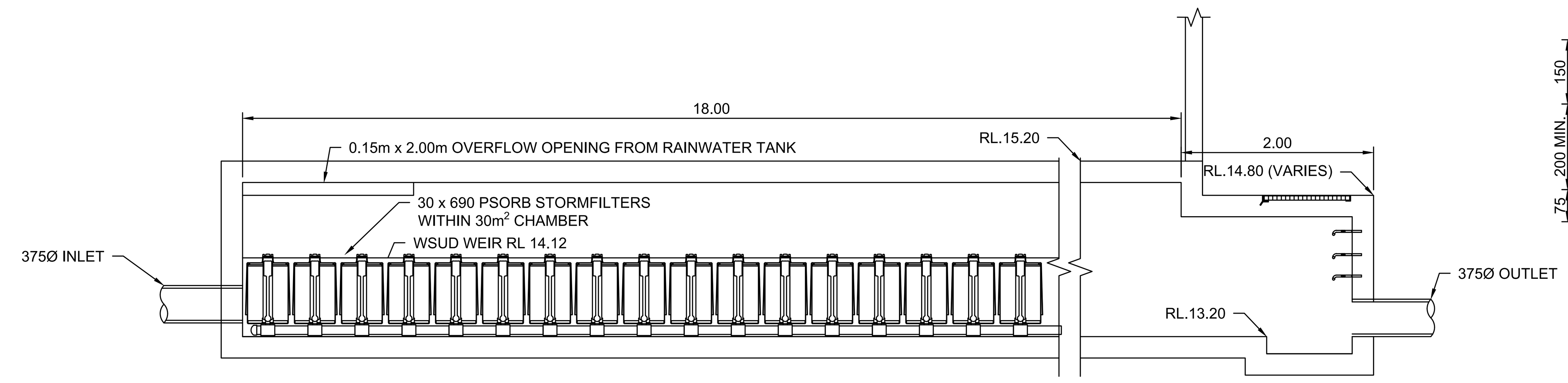
drawing title
DETAILS SHEET 1

status
ISSUE FOR REF

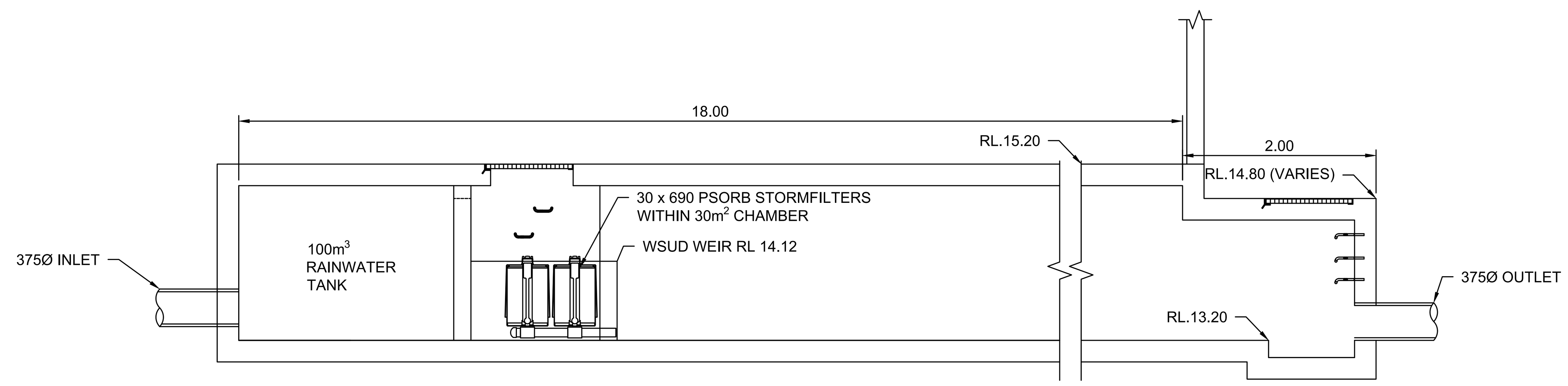
scale at A1	drawn	checked	approved
AS SHOWN	ASE	TAH	JAN-25

project no.	sheet	rev.
140220	140220-CV-0420	03

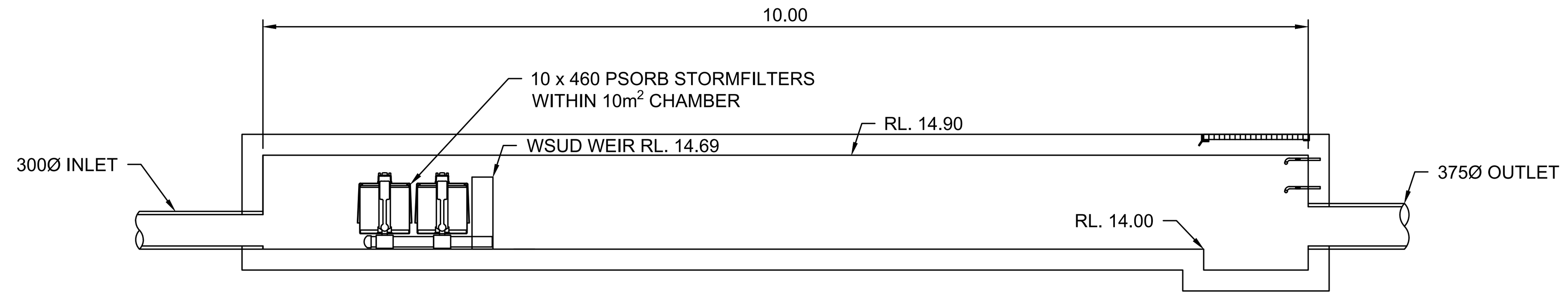
A1



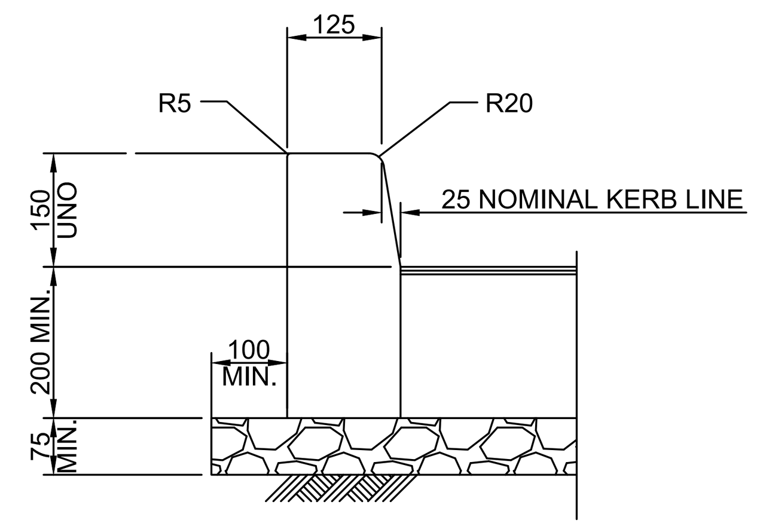
TANK 1 CROSS SECTION
SCALE 1:50
A
4020



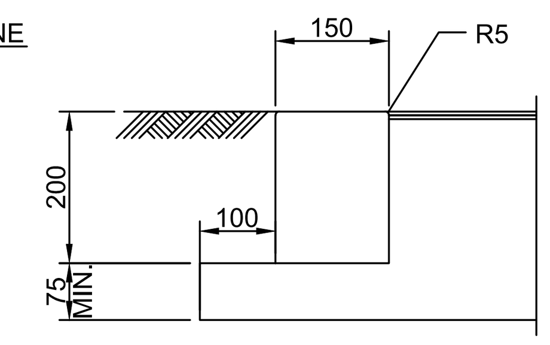
TANK 1 CROSS SECTION
SCALE 1:50
B
4020



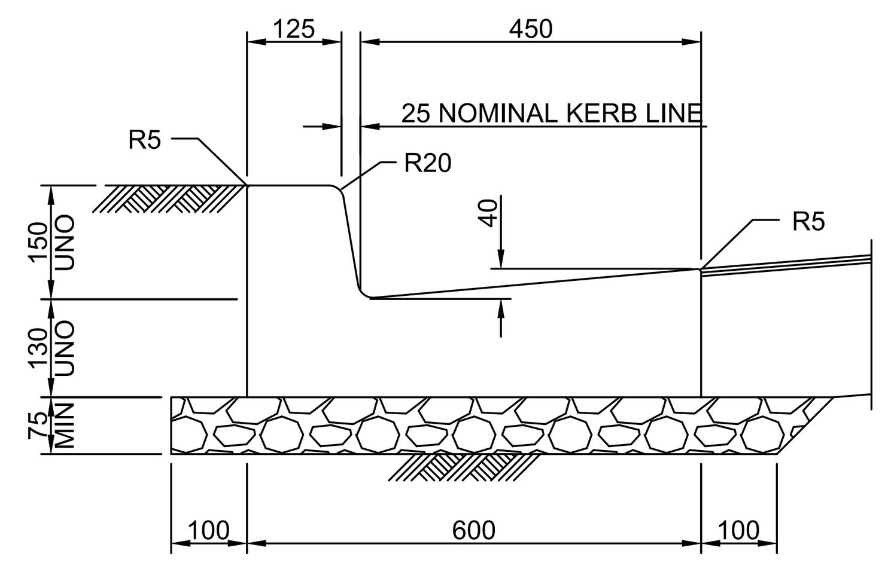
TANK 2 CROSS SECTION
SCALE 1:50
C
4020



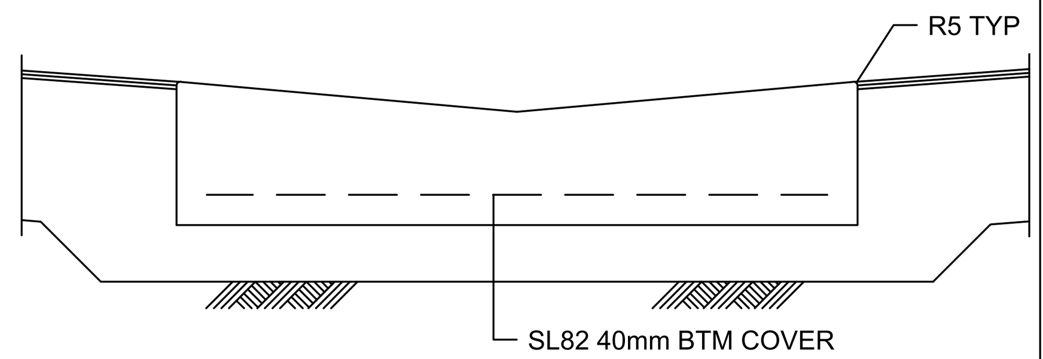
KERB ONLY (KO)
SCALE 1:10



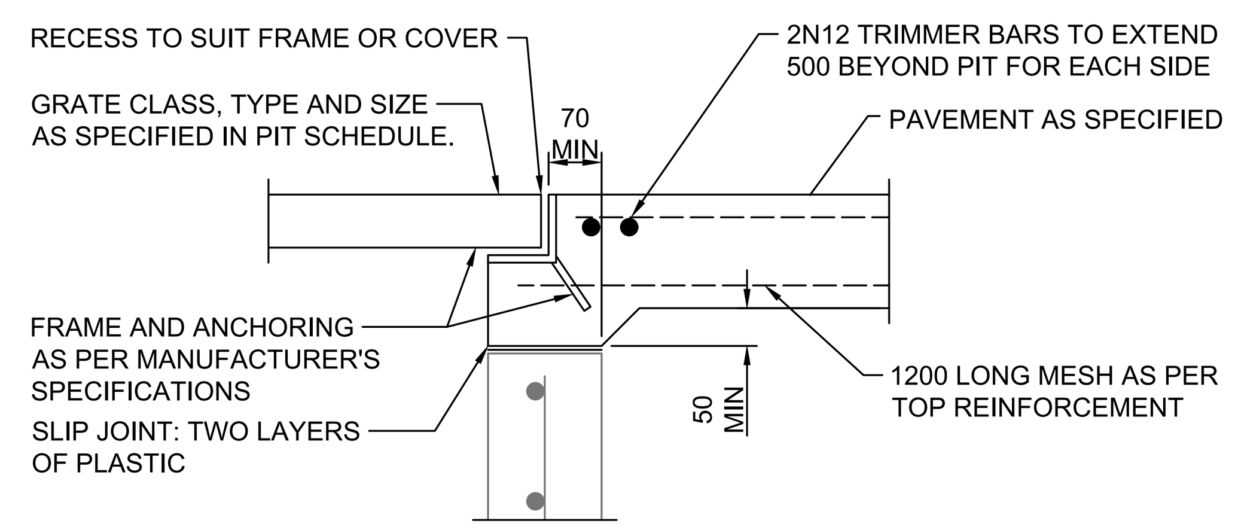
FLUSH KERB (FK)
SCALE 1:10



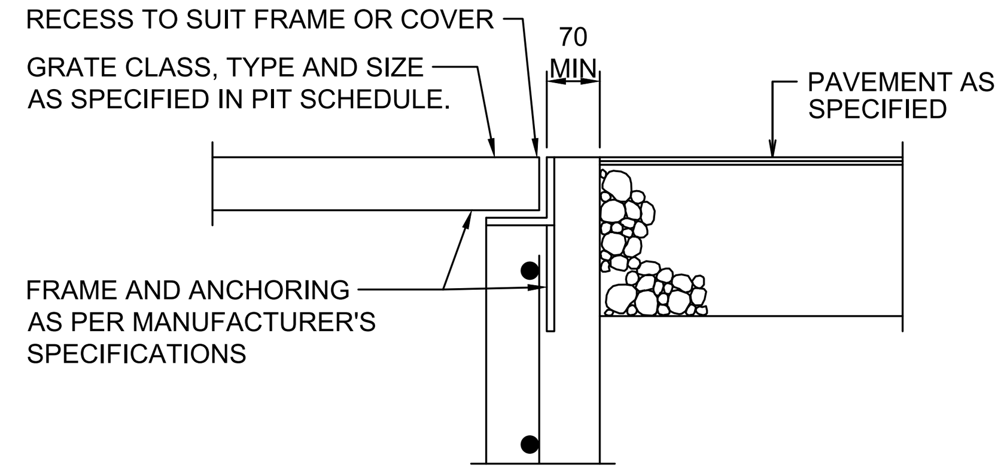
KERB AND GUTTER (K&G)
SCALE 1:10



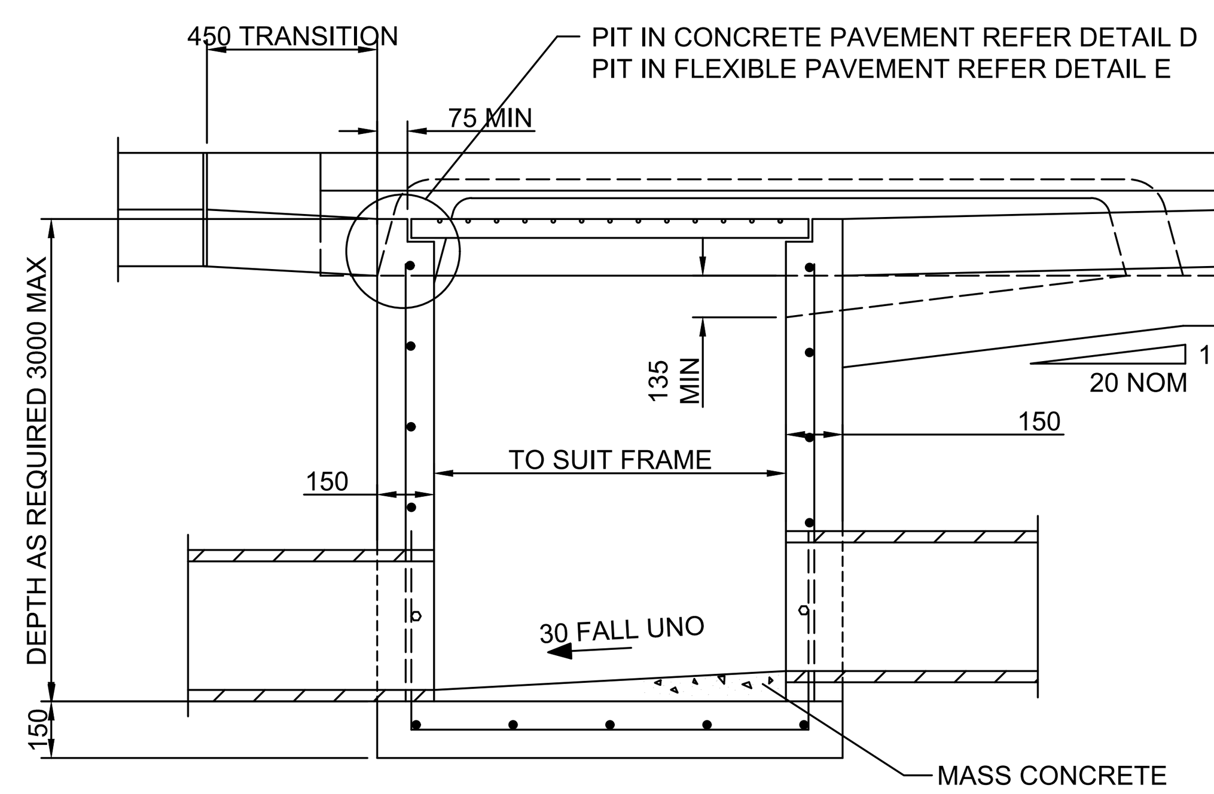
DISH DRAIN (DD) - 900 WIDE
SCALE 1:10



DETAIL D
INTERFACE WITH CONCRETE PAVEMENT
SCALE 1:10

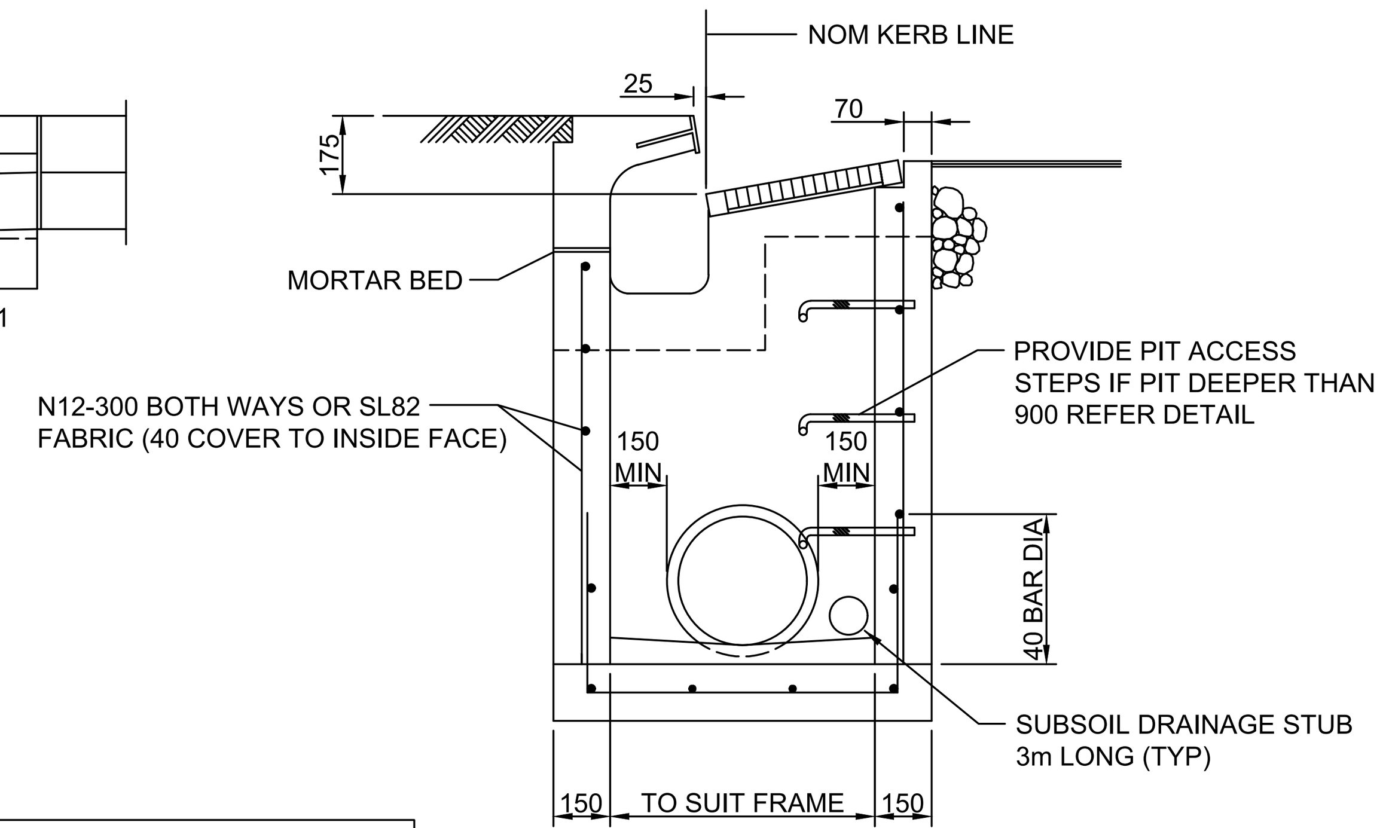


DETAIL E
INTERFACE WITH FLEXIBLE PAVEMENT
SCALE 1:10

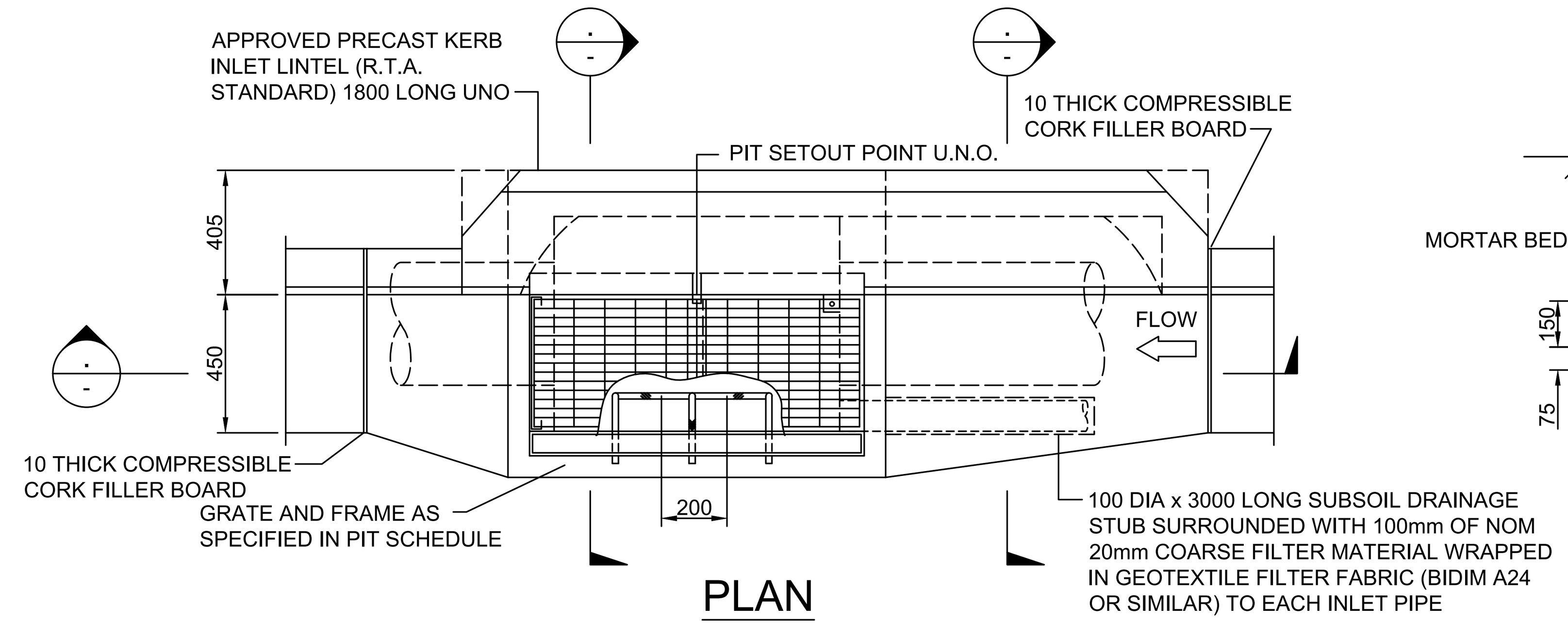


SECTION
SCALE 1: 20

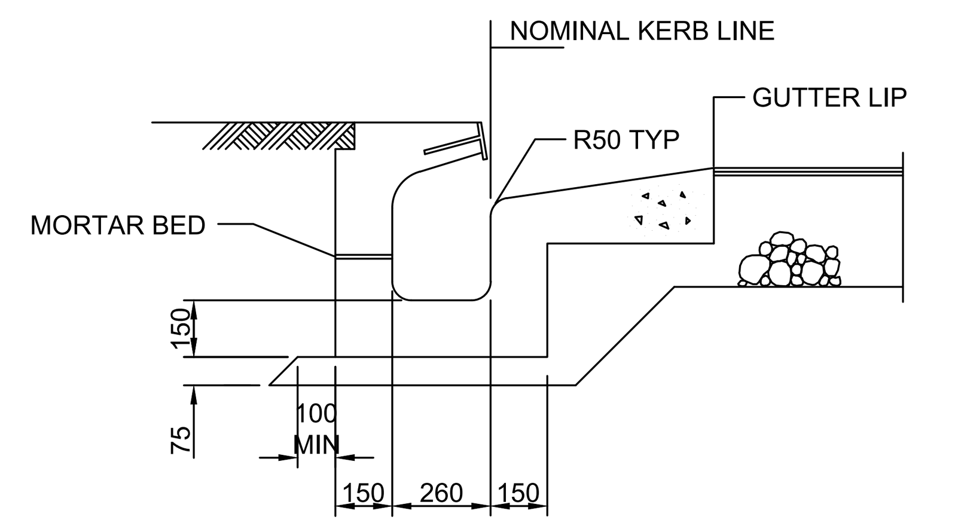
NOTE:IF REINFORCING FABRIC IS TO BE USED
REFER TO WALL AND CORNER DETAILS



SECTION
SCALE 1: 20



PLAN
SCALE 1:20



SECTION
SCALE 1: 20

IN-SITU STORMWATER PIT
WITH ON-GRADE KERB INLET

SCALE 1:50
0 1 2 3 m

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rev	date	description	drn	ch'k
02	30/01/25	ISSUE FOR REF	ASE	TAH
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rev	date	description	drn	ch'k

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drawing title
DETAILS SHEET 2

status
ISSUE FOR REF

scale at A1	drawn	checked	approved
AS SHOWN	BEJ	TAH	TAH

project no.	sheet	rev.
140220	140220-CV-0421	02

A1

PAVEMENT LEGEND

NOTES

1. Asphaltic concrete shall conform to AS2150 and the specification
2. Pavement based on geotechnical report by ADE CONSULTING Reference A201024.0124.00 Date 30.05.24

P1	Coloured or Standard Grey Concrete - Broom Finish 160mm Thickness concrete (f'c=32MPa) with SL82 mesh (40mm top cover) with sawn joints at max 6.0m centres and expansion joints at max 30m centres on 200mm Compacted thickness fine crushed rock (DGB20)
P2	Permeable Unit Paving 60mm Pavers to Architects specification on 400mm Thickness no fines concrete (f'c=32MPa) on Bidum B34 on Compacted subgrade
P3	Decomposed Granite Refer to landscape architect detail
P4	Coloured Court 160mm Thickness concrete (f'c=25MPa) with sawn joints at max 6.0m centres and expansion joints at max 30m centres on 200mm Compacted thickness fine crushed rock (DGB20)
P5	Wetpour Softfall Refer to landscape architect detail
P6	Carpark Flexible Pavement 40mm Thickness asphaltic concrete (AC10) on 150mm Compacted thickness fine crushed rock (DGB20) on 200mm Compacted thickness fine crushed rock (DGS40)
P7	Driveway Refer to council standard detail
P8	Coloured or Standard Grey Concrete - Broom Finish 120mm Thickness concrete (f'c=25MPa) with expansion joints at max 6.0m centres and weakened plane joints at max 1.5m centres on 20mm Sand bedding
P9	Council Pavement Refer to Port Stephens Council standard detail.

KERBS LEGEND

K&G	Kerb and gutter
KO	Kerb only
FK	Flush kerb
DD	Dish drain

SCALE 1:250

0 5 10 15 m

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01	18/11/24	ISSUE FOR TENDER	MZV	TAH

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project: MEDOWIE HIGH SCHOOL

6 ABUNDANCE RD, MEDOWIE NSW 2318

drawing title: PAVEMENT PLAN SHEET 1

status: ISSUE FOR REF

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1:250	MZV	TAH	JAN-25

project no.	sheet	rev.
140220	140220-CV-0501	03

DRAWING CONTINUED ON 140220-CV-0501

PAVEMENT LEGEND

NOTES
1. Asphaltic concrete shall conform to AS2150 and the specification
2. Pavement based on geotechnical report by ADE CONSULTING Reference A201024.0124.00 Date 30.05.24

P1 — Coloured or Standard Grey Concrete - Broom Finish
160mm Thickness concrete (f'c=32MPa) with SL82 mesh (40mm top cover) with sawn joints at max 6.0m centres and expansion joints at max 30m centres on
200mm Compacted thickness fine crushed rock (DGB20)

P2 — Permeable Unit Paving
60mm Pavers to Architects specification on
400mm Thickness no fines concrete (f'c=32MPa) on
Bidum B34 on
Compacted subgrade

P3 — Decomposed Granite
Refer to landscape architect detail

P4 — Coloured Court
160mm Thickness concrete (f'c=25MPa) with sawn joints at max 6.0m centres and expansion joints at max 30m centres on
200mm Compacted thickness fine crushed rock (DGB20)

P5 — Wetpour Softfall
Refer to landscape architect detail

P6 — Carpark Flexible Pavement
40mm Thickness asphaltic concrete (AC10) on
150mm Compacted thickness fine crushed rock (DGB20) on
200mm Compacted thickness fine crushed rock (DGS40)

P7 — Driveway
Refer to council standard detail

P8 — Coloured or Standard Grey Concrete - Broom Finish
120mm Thickness concrete (f'c=25MPa) with expansion joints at max 6.0m centres and weakened plane joints at max 1.5m centres on
20mm Sand bedding

P9 — Council Pavement
Refer to Port Stephens Council standard detail.

KERBS LEGEND

K&G	Kerb and gutter
KO	Kerb only
FK	Flush kerb
DD	Dish drain

SCALE 1:250
0 5 10 15 m

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01	18/11/24	ISSUE FOR TENDER	MZV	TAH

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drawing title: PAVEMENT PLAN SHEET 2

status: ISSUE FOR REF

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1:250	MZV	TAH	JAN-25

project no.	sheet	rev.
140220	140220-CV-0502	03