New Primary School In Murrumbateman

Fairley Street, Murrumbateman NSW 2582

CIVIL ENGINEERING SSDA REPORT

PREPARED FOR
Hansen Yuncken
B1 L3 75-85 O'Riordan Street
Alexandria NSW 2015

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Date: 12 August 2021

Civil SSDA Report

Revision Schedule

Date	Revision	Issue	Prepared By	Approved By
19.03.21	1	Draft	N. Sutherland	J. Gilligan
26.03.21	2	Final	N. Sutherland	J. Gilligan
08.04.21	3	Incorporating Review Comments	N. Sutherland	J. Gilligan
06.05.21	4	SSDA	N. Sutherland	J. Gilligan
17.05.21	5	SSDA	N.Sutherland	J.Gilligan
12.08.21	6	SSDA	N.Sutherland	J.Gilligan

Northrop Consulting Engineers Pty Ltd

ACN 064 775 088 | ABN 81 094 433 100

Level 11, 345 George Street, Sydney NSW 2000

02 9241 4188 | sydney@northrop.com.au | www.northrop.com.au

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1. Introduction

This Civil SSDA Report accompanies an Environmental Impact Statement (EIS) pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act) in support of an application for a State Significant Development (SSD-11233241).

The development is for a new primary school located at 2 Fairley Street, Murrumbateman.

This report addresses the relevant Secretary's Environmental Assessment Requirements (SEARs), namely:

SEARs	Report Section
15. Stormwater Drainage A preliminary stormwater management plan for the development that: - is prepared by a suitably qualified person in consultation with Council and any other relevant drainage authority - details the proposed drainage design for the site including on-site detention facilities, water quality measures and the nominated discharge point - demonstrates compliance with Council or other drainage authority requirements - stormwater plans detailing the proposed methods of drainage without impacting on the downstream properties Where drainage infrastructure works are required that would be handed over to Council, provide full hydraulic details and detailed plans and specifications of proposed works that have been prepared in consultation with Council and comply with Council's relevant standards Relevant Policies and Guidelines: - Guidelines for developments adjoining land managed by the Office of Environment and Heritage (OEH, 2013)"	Section 2.4 and Appendix A
16. Flooding - Identify any flood risk on-site in consultation with Council and having regard to the most recent flood studies for the development area and adjoining area, including Fairley Street and Barton Highway, and the potential effects of climate change, sea level rise and an increase in rainfall intensity - Assess the impacts of the development, including any changes to flood risk on-site or off-site, and detail design solutions to mitigate flood risk where required Relevant Policies and Guidelines: - NSW Floodplain Development Manual (DIPNR, 2005)"	Section 1.5
17. Soil and Water Provide: - an assessment of potential impacts on surface and groundwater (quality and quantity), soil, related infrastructure and watercourse(s) where relevant - details of measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles - an assessment of salinity and acid sulphate soil impacts, including a Salinity Management Plan and/or Acid Sulphate Soils Management Plan, where relevant Relevant Policies and Guidelines: - - Managing Urban Stormwater - Soils and Construction Volume 1 (Landcom, 2004). - Acid Sulfate Soil Manual, (NSW Acid Sulfate Soil Management Advisory Committee, 1998). - -Acid Sulfate Soils Assessment Guidelines (DoP, 2008). - Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom - 2004) and Volume 2 (A. Installation of Services; B. Waste Landfills; C. Unsealed Roads; D. Main Roads; E. Mines and Quarries) (DECC, 2008)"	Section 2.5

1.1 The Proposal

The proposed development is for construction and operation of a new primary school with Core 21 facilities in Murrumbateman that will accommodate up to 368 students.

The proposed development includes:

- A collection of 1-2 storey buildings containing 14 home base units, 2 special education learning units, hall, administration facilities and library.
- On-site parking lot with 40 spaces and kiss-and-ride area.
- Outdoor sports court and play area.
- Integrated landscaping, fencing and signage.

The purpose of this report is to explore various civil engineering design elements to inform the concept building design

The investigations for this report primarily focused on the following objectives:

- Identify site conditions and constraints with respect to Civil Engineering works.
- Identify stormwater requirements for development within the Yass Valley Council Local Government Area.
- Provide preliminary advice on a stormwater strategy for the site.
- Identify other potential opportunities and site constraints associated with civil engineering elements.

Comments provided herein are based on review of the following:

- Engineering Design and Construction Specifications obtained from Yass Valley Council regarding On-site Stormwater Detention (OSD) and Water Quality. Discussions with Council's Engineer, Terry Cooper.
- Proposed Architectural Site Layouts provided by Pedavoli Architects.
- Detailed site survey prepared by Clarke & Di Pauli Surveyors dated 30th July 2020
- Site Inspection undertaken on 23rd March 2021

Existing Site Conditions

1.2 Site Description

The site is located at 2 Fairley Street, Murrumbateman, in the local government area of Yass Valley Council. The site is formally described as Lot 302 DP1228766 (refer to Figure 1). The site is irregular in shape and has an area of 15,434.92m².

The site is located at the northern end of the Murrumbateman village, which is characterised by a mix of uses including low density residential and some commercial.

Immediately surrounding development includes a tourist hotel to the north across Fairley Street, Murrumbateman Library (located in the former Murrumbateman schoolhouse, a local heritage item) to the south, a medical centre and childcare centre to the west, and rural land and equestrian facilities to the east across Barton Highway. There is also a cycling and equestrian pathway to the south between the site and library.

The site contains an existing parking lot in its northern end and a driveway along its western boundary. There is also a mound of soil at the southern end of the site. The site is otherwise cleared and vacant.

Figure 1: Site aerial photograph
Source: Nearmap

1.3 Contamination and Geotechnical Conditions

1.3.1 Geotechnical

A detailed geotechnical investigation is to be undertaken for the site to advise on existing ground conditions for the purposes of earthworks and CBR's for road pavement design.

1.3.2 Contamination

A detailed contamination investigation may be required for the proposed site. Based on review of espade, the Land Use (2007) Alum 18-class indicates the land was previously used for urban and intensive uses which should be further investigated for contamination.

1.4 Existing Infrastructure and Easements

Northrop has undertaken a preliminary investigation of existing infrastructure in the vicinity of the proposed development site. Our assessment has been based on limited survey information as well as publicly available information from Yass Valley Council and DBYD.

1.4.1 Existing stormwater infrastructure

There is an existing easement to drain stormwater which cuts across the north western corner of the site conveying stormwater flows collected in a pit in the verge of the Barton Highway from existing stormwater infrastructure in Fairley Street. Our understanding is that this was previously a first order stream and was piped as part of the carpark construction. This is shown on the existing survey plan.

There are also several stormwater pits in the existing carpark and bitumen road which may become redundant as part of the proposed development.

Additional in-ground survey will be required to confirm the location of existing in-ground trunk stormwater mains throughout the site which will need to be reviewed as part of the Schematic Design phase of the project.

1.4.2 Existing Service Easements

There are a few existing easements identified on the site survey, mainly within the existing driveway off Fairley Street. These are mainly to service the adjacent Murrumbateman Health Hub. As part of the New Primary School development, these existing easement and services are to be retained and functional during and after construction.

In addition to the above, an existing water main easement currently runs through the site, which affects the New Primary School layout. Therefore the proposal is to extinguish the existing water main easement, however still utilizing the existing water main to service the New Primary School. This is subject to investigations from the project Hydraulic Consultant. Below is the site survey prepared by Clarke & Di Pauli Surveyors with the existing easements highlighted.

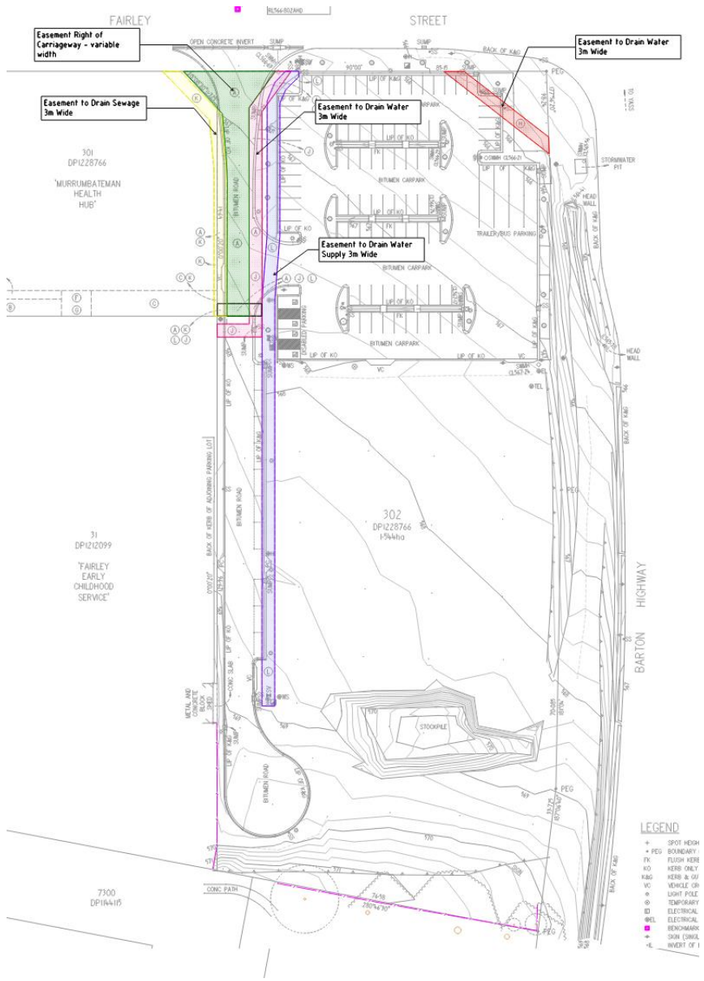

Figure 2: Site Survey Existing Easements (Clarke & Di Pauli Surveyors)

1.5 Flooding

From review of the Flooding Assessment prepared for Yass Valley Council (Murrumbateman, Bowning, Bookham and Binalong Flood Study – Lyall & Associates, August 2020) indicates that the site is not flood affected for the 1% AEP event. The north east corner of the site is affected in the PMF event with 0.1-0.3m depth of flooding. As part of this development we are not altering the existing site levels in this area and therefore does not affect the overall school development. Below are the Flood Maps for the 1% AEP and PMF.

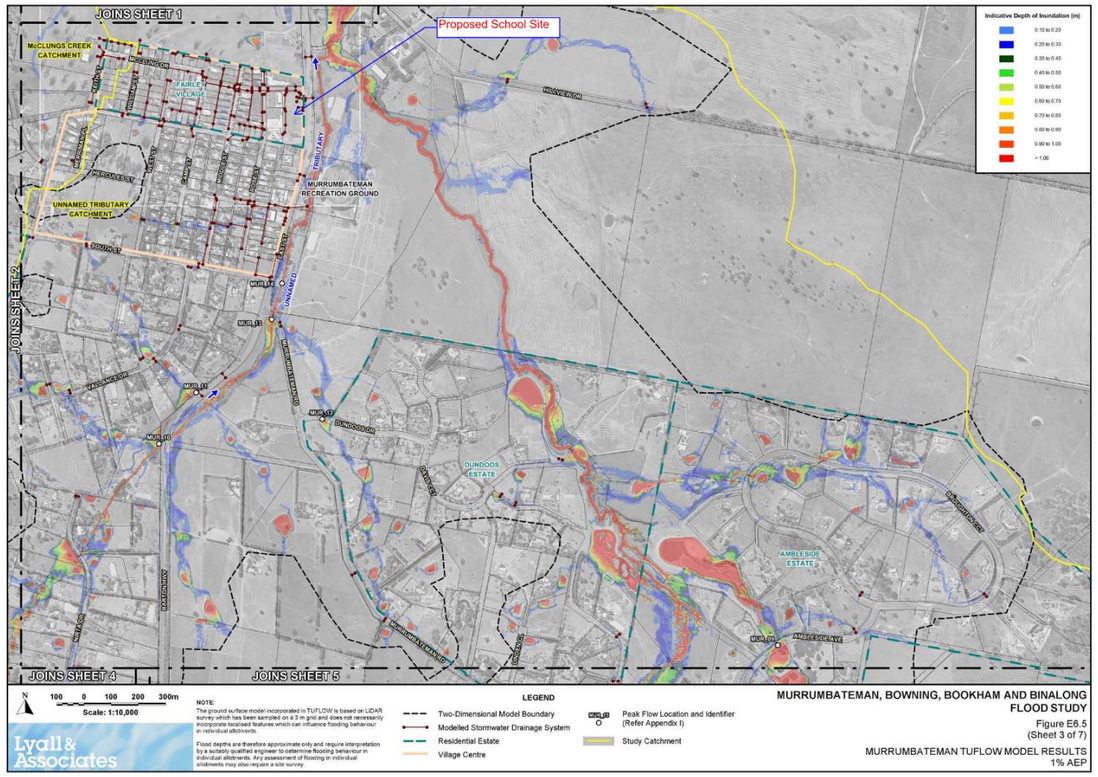

Figure 3: Flood Map 1% AEP (Lyall & Associates)

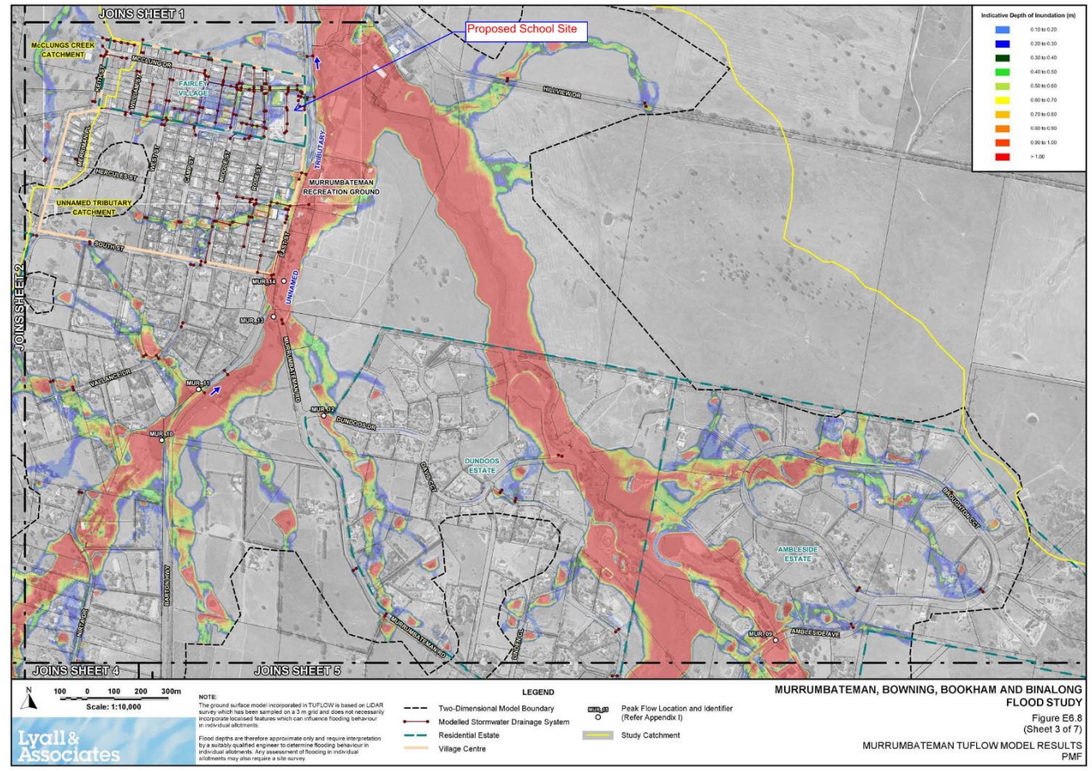

Figure 4: Flood Map PMF (Lyall & Associates)

2. Proposed Civil Works

2.1 Earthworks

The proposed works will generally consist of earthworks cut and fill operations to establish working platform levels consistent and reflective of the design of the New Primary School at Murrumbateman. The levels are to be designed to optimise and balance cut to fill material across the site where possible. Due to the sloping nature of the site and the layout of the proposed development, the site will predominantly be in cut to cater for the proposed development. Surplus material generated from the proposed development is to be spread over existing open areas.

2.2 Construction Sequencing

The sequence of work for the bulk earthworks will generally include:

- Provision of site establishment erosion and sediment control measures typically outlined in this report's section Erosion & Sediment Control.
- Clearing of vegetation from the proposed development site and either removal or mulching.
- Demolition of existing structures and pavements (as required).
- Stripping and stockpiling of topsoil suitable for reuse.
- Inspection of exposed natural material to ensure conformity with design assumptions and requirements.
- Placement of cut to fill layers not greater than 200mm in thickness and compacted to not less than 98% Standard Maximum Dry Density (SMDD) in accordance with the geotechnical report; and
- Spread topsoil to a maximum depth of 200mm and hydroseed or hydro mulch disturbed areas.

2.3 Pavements

For the purposes of the concept design, with consideration to traffic loading specified in the Educational Facilities Guidelines and Standards (5×10^5 ESAs) and an assumed CBR 3, a proposed flexible pavement profile may be as follows:

- 40mm AC10 Wearing Course (Polymer Modified)
- 150mm DGB20 Base Course Material compacted to 98% MMDD
- 330mm DGS40 Subbase Material compacted to 98% MMDD
- Existing Subgrade compacted to 100% SMDD

Should the existing subgrade achieve less than CBR 3, ground improvement may be required such as lime stabilisation or replacement with a select fill layer such as crushed sandstone, subject to further discussion with the project Geotechnical Engineer.

With regards to The New Primary School In Murrumbateman there may be an opportunity to utilise the existing carpark pavement for part or all of the new carpark where possible. Subject to confirmation of the existing pavement depth and quality the existing materials, it may be appropriate to mill the existing wearing course and replace it with a new layer of asphalt, which is to be further investigated as the design progresses.

Other pavement materials may be stockpiled and reused subject to further testing.

2.4 Stormwater Management Strategy

2.4.1 Stormwater Quantity Management

Northrop has performed a desktop investigation to determine a conceptual stormwater management strategy for the proposed development scenario, and the requirements for the development. This has relied on Yass Valley Council's current stormwater management requirements.

2.4.1.1 Major / Minor Drainage System

The major/minor approach to stormwater drainage is the recognised drainage concept for urban catchments within the Yass Valley Council Local Government Area

The minor drainage system is comprised of below ground pit and pipe network and is designed to control nuisance flooding and enable effective stormwater management for the site. Council requires the minor drainage system to be designed for the critical 5% Annual Exceedance Probability (AEP) with overland flow safely catering for the 1% AEP.

The major drainage system will be designed to control and convey flows from the critical 1% AEP event. This incorporates suitably designed overland flow paths and drainage to direct flows into the OSD, system for all events up to the critical 1% AEP storm event.

In accordance with Council's requirements, overland flow paths are to be designed to contain a 1% AEP storm flow are to be provided over all pipelines that are not designed to cater for this flow. The design of the overland flowpath must consider the velocity-depth hazard.

Further catchment and pipe network modelling will be required for the site to suitably size the major/minor drainage network during the design phase of the project. Allowance for stormwater pit and pipe network needs to be considered as a permanent feature of the proposed development. Please refer to Appendix A for a proposed concept stormwater layout for the New Primary School In Murrumbateman.

2.4.1.2 On-site Stormwater Detention

Based on discussion with Yass Valley Council, On-site Stormwater Detention (OSD) is generally required for all types of developments in the Yass Valley Council Local Government area to limit post development flows to predevelopment rates. This is typically provided on most developments to avoid nuisance flooding of downstream properties.

To control flows generated during storm events, water is stored and released at controlled rate on the development site. Storage is typically provided either of the following:

- below ground in a purpose made holding tanks; or
- above ground in landscaped basins or on the surface of hardstand areas such as car parks.

The proposed stormwater drainage layout shown in Appendix has provision for a below ground OSD system which is considered appropriate in a school environment.

A DRAINS model was used to calculate the OSD for the site to ensure the post development flowrates does not exceed the pre-development flowrates from the 20% AEP to 1% AEP. As the OSD tank is proposed within the new Kiss and Drop area, a portion of the site (existing remaining carpark) bypasses the OSD facility. This was taken into consideration when analysing the OSD system. Based on this, the OSD volume require for the development is **120 cubic meters**.

2.4.1.3 Connection to Councils Drainage System

Typically outflow pipes from stormwater drainage systems connect either directly to Council's stormwater infrastructure or utilise existing site stormwater connections within the site.

Based on review of the Detailed survey prepared by Clarke & Di Pauli Surveyors dated 30th July 2020, there is an existing stormwater pit in Barton Highway towards the north east of the site which will be utilised to connect the site stormwater network to the public system.

2.4.2 Stormwater Quality Management

As part of the stormwater quality strategy the NSW Water Quality Objectives (WQOs) and Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018) have been considered in relation to this project.

Based on discussions with Yass Valley Council, Northrop have been advised that Water Quality Treatment is not a requirement in this Local Government Area, however stormwater quality measures are required as part of the EFSG requirements for ESD.

We propose to treat the stormwater to meet the minimum level of pollutant load objectives in accordance with the below.

- 80% reduction in post development mean annual load of Total Suspended Solids (TSS)
- 30% reduction in post development mean annual load of Total Phosphorus (TP)
- 30% reduction in post development mean annual load of Total Nitrogen (TN)
- 85% reduction in post development mean annual load of total gross pollutants (greater than 5mm)
- 60% reduction in post development mean annual load of Total Petroleum Hydrocarbons
- 90% reduction in post development mean annual load of Free Oils

The reduction in pollutant loads can be achieved via a variety (or 'train) of different treatment devices including pit filter baskets, gross-pollutant traps, proprietary filtration devices and/or bioretention areas/basins. Proprietary devices are generally more expensive but can be located underground, saving space in the development.

To demonstrate reductions in pollutant loads, treatment removal loads have been analysed for post development scenarios using MUSIC (Model for Urban Stormwater Improvement Conceptualisation).

It is proposed that treatment devices are provided within the OSD tank rather than providing separate structures. This can be further refined as the design is developed.

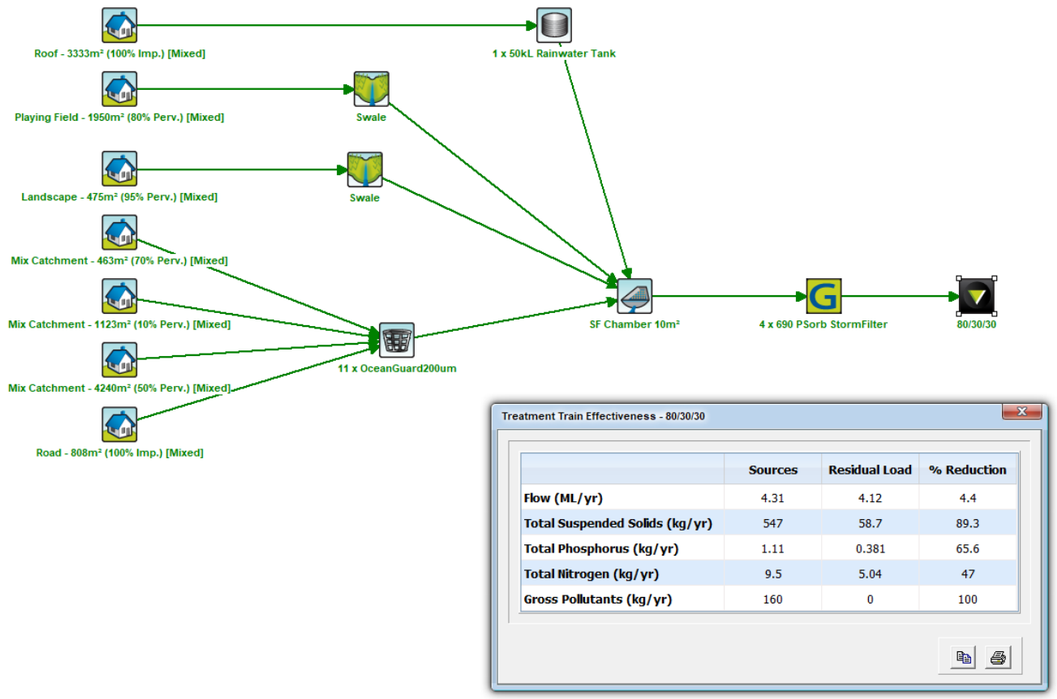

Figure 1 – MUSIC Model Treatment Train and Results

2.4.3 Proposed Treatment

Proposed stormwater quality treatment devices are discussed below.

2.4.3.1 Stormwater Pit Litter Baskets

Stormwater Pit Litter Baskets are an at source primary treatment device to treat stormwater runoff from the development. The stormwater pit insert baskets target pollutants including phosphorus, nitrogen, metals and hydrocarbons. The pit inserts sit beneath the stormwater pit grates and will collect gross pollutants and larger sediments prior to treatment by the StormFilter cartridges.

2.4.3.2 Storm filter cartridges

Filtration cartridges in the form of Storm Filters may be provided as an end of line treatment device to treat stormwater runoff from the proposed development. The StormFilter system targets a range of pollutants including total suspended solids, soluble heavy metals, oil and grease, and total nutrients. Each cartridge has a treatable flow rate of 1~1.6L/s.

2.4.3.3 Grass Lined Swales

Grass Lined Swales will direct the bypass flows to the Council drainage system. The swales will help to reduce the pollutant load (TSS, TP and TN) for the catchments that are bypassing the Storm Filter cartridges.

2.4.3.4 Rainwater Tanks

A Rainwater tank is proposed as part of the development. The roof runoff is captured to provide reuse for toilet flushing and irrigation.

Figures 6-7 (from Left to Right) – Stormfilter Cartridge System, Stormwater Pit Litter Basket Insert.

2.5 Soil and Water

2.5.1 Sediment and Erosion Control

The objectives of the erosion and sediment control for the development site will be to ensure:

- Adequate erosion and sediment control measures are applied prior to the commencement of construction and are maintained throughout construction; and
- Construction site runoff is appropriately treated in accordance with Yass Valley Council requirements prior to discharge.

As part of the works, the erosion and sedimentation control will need to be provided during the construction phase of the development in accordance with Yass Valley Council's requirements and the NSW Department of Housing Manual, "Managing Urban Stormwater Soil & Construction" 2004 (Blue Book) - prior to any earthworks commencing on site.

2.5.2 Sediment Basin

Due to the size of the proposed development, a temporary sediment basin will be required to capture site runoff during construction. The construction of the basin may be undertaken in stages to enable maximum runoff capture assisted by diversion swales and direct runoff to the basin.

Calculations to determine the required basin size are to be based on available geotechnical information regarding soil types and using the Soils and Construction Volume 1 Manual.

To ensure the sediment basin is working effectively it will need to be maintained throughout the construction works. Maintenance includes ensuring adequate settlement times or flocculation and pumping of clean water to reach the minimum storage volume at the lower level of the settling zone. The settling zone will be identified by pegs to clearly show the level at which design storage capacity is available.

The pumped water from the sediment basin can be reused for dust control during construction.

Overflow weirs are to be provided to control overflows for rainfall events more than the design criteria.

Detailed sediment basin sizing, configuration and location shall form part of the SSD documentation for the proposed development.

2.5.3 Sediment and Erosion Control Measures

Prior to any earthworks commencing on site, sediment and erosion control measure shall be implemented generally in accordance with the engineering drawings and the "Blue Book". The measures are intended to be a minimum treatment only as the contractor will be required to modify and stage the erosion and sedimentation control measures to suit the construction program, sequencing, and techniques. These measures may include:

- A temporary site security/safety fence is to be constructed around the site, the site office area, and the proposed sediment basin.
- Sediment fencing provided downstream of disturbed areas, including any topsoil stockpiles.
- Dust control measures including covering stockpiles, installing fence hessian and watering exposed areas.
- Placement of hay bales or mesh and gravel inlet filters around and along proposed catch drains and around stormwater inlets pits; and
- The construction of a temporary sediment basin as noted above.
- Stabilised site access at the construction vehicle entry/exits.

Any stockpiled material, including topsoil, shall be located as far away as possible from any associated natural watercourses or temporary overland flow paths. Sediment fences shall be installed to the downstream side of stockpiles and any embankment formation. All stockpiles and embankment formations shall be stabilised by hydroseeding or hydro mulching on formation.

Figure 3 – Sediment Fence

3. ESD / Civil Considerations

The New Primary School In Murrumbateman will be targeting a Four Star Greenstar / Best Endeavours rating through the Green Building Council of Australia (GBCA). Based on previous experience, we understand the following initiatives which affect civil engineering will be explored:

3.1 Greenstar Points

As a minimum, the Civil design will consider targeting Greenstar points:

- Stormwater – minimisation of peak stormwater flows

Based on review of Yass Valley Council's requirements, On-site Stormwater Detention is required for the proposed development. As such the development should meet the requirement to minimise peak stormwater flows.

- Stormwater – Protection of receiving waters from pollutants

By addressing EFSG's requirements for Water Quality Treatment, it typically achieves credit for this Greenstar item.

Figure 4 – Greenstar Design & As Built v1.3 Cover

4. Conclusion

In summary, the requirements for the proposed development are as follows:

Stormwater Infrastructure –Onsite Stormwater Detention (OSD) is required for the proposed development. OSD storage will be a below ground tank due to the nature of the proposed development and ultimate use as a School. Development runoff should be distributed to suit the drainage direction of existing catchment areas. On this basis, stormwater can be drained towards the Barton Highway to the north east and connected to Council's stormwater system.

Stormwater Quality - On-going maintenance of water quality and quantity systems will be required for the development regardless of the selected devices. As the design for the proposed development is progressed, information regarding on-going maintenance costs will need to be considered by the Project Team to ensure systems are financially feasible for the operational life of the development.

Appendix A – Civil Engineering Plans

NEW PRIMARY SCHOOL IN MURRUMBATEMAN

SSDA
CIVIL ENGINEERING PACKAGE

SOURCE: GOOGLE MAPS 2021

LOCALITY PLAN

CIVIL DRAWING SCHEDULE

DRG No.	DRAWING TITLE
MURR-CV-SD-DWG-100.01	COVER SHEET, DRAWING SCHEDULE & LOCALITY PLAN
MURR-CV-SD-DWG-101.11	SPECIFICATION NOTES - SHEET 01
MURR-CV-SD-DWG-101.12	SPECIFICATION NOTES - SHEET 02
MURR-CV-SD-DWG-101.21	GENERAL ARRANGEMENT PLAN
MURR-CV-SD-DWG-102.01	CONCEPT SEDIMENT & EROSION CONTROL PLAN
MURR-CV-SD-DWG-102.11	SEDIMENT & EROSION CONTROL DETAILS
MURR-CV-SD-DWG-103.01	BULK EARTHWORKS CUT & FILL PLAN
MURR-CV-SD-DWG-104.01	SITEWORKS & STORMWATER MANAGEMENT PLAN - SHEET 01
MURR-CV-SD-DWG-104.02	SITEWORKS & STORMWATER MANAGEMENT PLAN - SHEET 02
MURR-CV-SD-DWG-104.03	SITEWORKS & STORMWATER MANAGEMENT PLAN - SHEET 03
MURR-CV-SD-DWG-104.04	SITEWORKS & STORMWATER MANAGEMENT PLAN - SHEET 04
MURR-CV-SD-DWG-104.50	STORMWATER MANAGEMENT DEVICES
MURR-CV-SD-DWG-112.01	DETAILS SHEET - SHEET 01
MURR-CV-SD-DWG-112.02	DETAILS SHEET - SHEET 02
MURR-CV-SD-DWG-112.03	DETAILS SHEET - SHEET 03
MURR-CV-SD-DWG-112.04	DETAILS SHEET - SHEET 04

NOT FOR CONSTRUCTION

AMENDMENTS

REV	BY	DATE	DESCRIPTION
01	MM	30.04.21	ISSUED FOR DRAFT SCHEMATIC DESIGN
02	MM	06.05.21	ISSUED FOR DRAFT SSDA
03	MM	14.05.21	ISSUED FOR SSDA
04	MM	18.05.21	ISSUED FOR SSDA
05	MM	12.08.21	ISSUED FOR SSDA

NORTHROP
Sydney
Level 11 345 George Street, Sydney NSW 2000
Ph. (02) 9241 4188 Fax (02) 9241 4324
Email sydney@northrop.com.au ABN 81 094 433 100

HANSENYUNCKEN

NSW GOVERNMENT Education

PEDAVOLI ARCHITECTS PTY LTD
LEVEL 2,
458-468 WATTLE STREET
ULTIMO NSW 2007 AUSTRALIA

TEL: +61 2 9291 0000
WEB: www.pp-a.com.au

NOMINATED ARCHITECT:
VINCE PEDAVOLI
NSW REG. No. 5045

PEDAVOLI ARCHITECTS

DRAWING NAME
COVER SHEET, DRAWING SCHEDULE & LOCALITY PLAN

PROJECT
NEW PRIMARY SCHOOL IN MURRUMBATEMAN
FAIRLEY STREET, MURRUMBATEMAN

PROJECT NORTH

NOT TO SCALE

DRAWN	CHECKED	VERIFIED	DATE		REVISION
MM	NS		12.08.21		

MURR-CV-SD-DWG-100.01 05

NOTE: ALL CIVIL ENGINEERING CONSTRUCTION WORKS TO BE CARRIED OUT IN ACCORDANCE WITH YASS VALLEY COUNCIL DEVELOPMENT GUIDELINES. READ IN CONJUNCTION WITH THE NOTES PROVIDED BELOW. IF CONFLICT ARISE, YASS VALLEY COUNCIL GUIDELINES AND SPECIFICATIONS TAKE PRECEDENCE. WHERE YASS VALLEY COUNCIL GUIDELINSES AND SPECIFICATIONS ARE SILENT, THE SPECIFICATION NOTES BELOW TAKE PRECEDENCE

ACCESS AND SAFETY

1. THE CONTRACTOR SHALL COMPLY WITH ALL STATUTORY AND INDUSTRIAL REQUIREMENTS FOR PROVISION OF A SAFE WORKING ENVIRONMENT INCLUDING TRAFFIC CONTROL.
2. THE CONTRACTOR SHALL PROVIDE TRAFFIC MANAGEMENT PLANS FOR THE PROPOSED WORKS COMPLETED BY A SUITABLY QUALIFIED PERSON AND APPROVED BY COUNCIL / REGULATORY AUTHORITY. WORK IS NOT TO COMMENCE ON SITE PRIOR TO APPROVAL OF TRAFFIC MANAGEMENT SCHEME.
3. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES ACCESS TO BUILDINGS ADJACENT THE WORKS IS NOT DISRUPTED.
4. WHERE NECESSARY THE CONTRACTOR SHALL PROVIDE SAFE PASSAGE OF VEHICLES AND/OR PEDESTRIANS THROUGH OR BY THE SITE.
5. THE CONTRACTOR SHALL ENSURE PUBLIC ACCESS EXTERNAL TO THE SITE IS IN ACCORDANCE WITH COUNCILS REQUIREMENTS.

TREE PROTECTION

1. REFER TO LANDSCAPE / ARCHITECTS PLAN FOR TREES TO BE RETAINED AND PROTECTED.
2. ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY;
   - 2.1. PROTECTING THEM WITH BARRIER FENCING OR SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE.
   - 2.2. ENSURING THAT NOTHING IS NAILED TO ANY PART OF THE TREE.
   - 2.3. CARE IS TAKEN NOT TO CUT ROOTS UNNECESSARILY. COUNCILS AND/OR INDEPENDENT ARBORISTS TO BE CONSULTED WHERE TREE ROOTS ARE TO BE REMOVED AND/OR CUT.

SEDIMENT AND SOIL EROSION

1. THE SEDIMENT & EROSION CONTROL PLAN PRESENTS CONCEPTS ONLY. THE CONTRACTOR SHALL AT ALL TIMES BE RESPONSIBLE FOR THE ESTABLISHMENT & MANAGEMENT OF A DETAILED SCHEME MEETING COUNCILS DESIGN, OTHER REGULATORY AUTHORITY REQUIREMENTS AND MAKE GOOD PAYMENT OF ALL FEES.
2. THE CONTRACTOR SHALL INSTIGATE ALL SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH STATUTORY REQUIREMENTS AND IN PARTICULAR THE 'BLUE BOOK' (MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION), PRODUCED BY THE DEPARTMENT OF HOUSING AND COUNCILS POLICIES. THESE MEASURES ARE TO BE INSPECTED AND MAINTAINED ON A DAILY BASIS.
3. THE SITE SUPERINTENDENT SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED AS INSTRUCTED IN THE DRAWINGS AND ADHERE TO ALL REGULATORY AUTHORITY REQUIREMENTS.
4. THE CONTRACTOR SHALL INFORM ALL SUB CONTRACTORS OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS.
5. WHERE PRACTICAL, THE SOIL EROSION HAZARD ON THE SITE SHALL BE KEPT AS LOW AS POSSIBLE. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING SEQUENCE;
   - 5.1. CONSTRUCT TEMPORARY STABILISED SITE ACCESS INCLUSIVE OF SHAKE DOWN / WASH PAD.
   - 5.2. INSTALL ALL TEMPORARY SEDIMENT FENCES AND BARRIER FENCES. WHERE FENCES ADJACENT EACH OTHER, THE SEDIMENT FENCE CAN BE INCORPORATED INTO THE BARRIER FENCE.
   - 5.3. INSTALL SEDIMENT CONTROL MEASURES AS OUTLINED ON THE APPROVED PLANS.
6. UNDERTAKE SITE DEVELOPMENT WORKS SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF MINIMUM WORKABLE SIZE.
7. AT ALL TIMES AND IN PARTICULAR DURING WINDY AND DRY WEATHER, LARGE UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL ENSURING CONFORMITY TO REGULATORY AUTHORITY REQUIREMENTS.
8. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) SHALL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.
9. WATER SHALL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS THE CATCHMENT AREA HAS BEEN STABILISED AND/OR ANY LIKELY SEDIMENT BEEN FILTERED OUT.
10. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES SHALL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE STABILISED / REHABILITATED.
11. ALLOW FOR GRASS STABILISATION OF EXPOSED AREAS, OPEN CHANNELS AND ROCK BATTERS DURING ALL PHASES OF CONSTRUCTION.
12. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED TO ENSURE THAT THEY OPERATE EFFECTIVELY. REPAIRS AND/OR MAINTENANCE SHALL BE UNDERTAKEN REGULARLY AND AS REQUIRED, PARTICULARLY FOLLOWING RAIN EVENTS.
13. RECEPTORS FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER SHALL BE DISPOSED OF IN ACCORDANCE WITH REGULATORY AUTHORITY REQUIREMENTS. CONTRACTOR TO PAY ALL FEES AND PROVIDE EVIDENCE OF SAFE DISPOSAL.
14. IF A TEMPORARY SEDIMENT BASIN IS REQUIRED, ENSURE SAFE BATTER SLOPES IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. MAINTAIN ADEQUATE STORAGE VOLUME IN ACCORDANCE WITH PLANS. TEMPORARY PUMP 'CLEAN FLOCCULATED' WATER TO COUNCILS STORMWATER SYSTEM . ENSURE WHOLE SITE RUN-OFF IS DIRECTED TO TEMPORARY SEDIMENT BASIN.

EXISTING SERVICES

1. ALL UTILITY SERVICES INDICATED ON THE DRAWINGS ORIGINATE FROM SUPPLIED DATA OR DIAL BEFORE YOU DIG SEARCHES, THEREFORE THEIR ACCURACY AND COMPLETENESS IS NOT GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE AND CONFIRM THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY. NOTE SERVICE AUTHORITY REQUIREMENTS FOR LOCATING OF SERVICES PRIOR TO COMMENCEMENT OF WORKS.
2. CARE TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS AREA TO BE UNDERTAKEN OVER COMMUNICATION, GAS OR ELECTRICAL SERVICES. HAND EXCAVATION ONLY IN THESE AREAS.
3. THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING SERVICES THAT ARE TO BE RETAINED IN THE VICINITY OF THE PROPOSED WORKS. ANY AND ALL DAMAGE TO THESE SERVICES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE CONTRACTOR UNDER THE DIRECTION OF THE SUPERINTENDENT AT THE CONTRACTORS EXPENSE.
4. THE CONTRACTOR SHALL ALLOW IN THE PROGRAM FOR THE ADJUSTMENT (IF REQUIRED) OF EXISTING SERVICES IN AREAS AFFECTED BY WORKS.
5. THE CONTRACTOR SHALL ALLOW IN THE PROGRAM FOR THE CAPPING OFF, EXCAVATION AND REMOVAL (IF REQUIRED) OF EXISTING SERVICES IN AREAS AFFECTED BY WORKS UNLESS DIRECTED OTHERWISE ON THE DRAWINGS OR BY THE SUPERINTENDENT.
6. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED AND MAINTAINED.
7. PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL GAIN APPROVAL OF THE PROGRAM FOR THE RELOCATION AND/OR CONSTRUCTION OF TEMPORARY SERVICES AND FOR ANY ASSOCIATED INTERRUPTION OF SUPPLY.
8. THE CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIVERSION IS COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.

EARTHWORKS

1. AT THE COMMENCEMENT OF FILLING OPERATIONS FOR BULK EARTHWORKS A GEOTECHNICAL ENGINEER IS TO VISIT THE SITE & CONFIRM THE SUITABILITY OF THE METHODOLOGY OF ACHIEVING THE REQUIRED COMPACTION REQUIREMENTS.
2. STRIP TOPSOIL, VEGETABLE MATTER AND RUBBLE TO EXPOSE NATURALLY OCCURRING MATERIAL AND STOCKPILE ON SITE AS DIRECTED BY THE SUPERINTENDENT.
3. WHERE FILLING IS REQUIRED TO ACHIEVE DESIGN SUBGRADE, PROOF ROLL EXPOSED NATURAL SURFACE WITH A MINIMUM OF TEN PASSES OF A VIBRATING ROLLER (MINIMUM STATIC WEIGHT OF 10 TONNES) IN THE PRESENCE OF THE SUPERINTENDENT.
4. THE CONTRACTOR IS TO ALLOW FOR A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER TO PROVIDE ADVICE AND CERTIFICATION OF ANY WORKS ASSOCIATED WITH TREATING OR MANAGING UNSUITABLE GROUND CONDITIONS THROUGHOUT THE CONTRACT (e.g. STABILITY OF EXCAVATIONS, POOR SUBGRADE, etc).
5. ALL SOFT, WET OR UNSUITABLE MATERIAL IS TO BE REMOVED AS DIRECTED BY THE SUPERINTENDENT AND REPLACED WITH APPROVED MATERIAL SATISFYING THE REQUIREMENTS BELOW.
6. PROVIDE CERTIFICATES VERIFYING THE QUALITY OF IMPORTED MATERIAL FOR THE SUPERINTENDENTS APPROVAL.
7. ALL FILL MATERIAL SHALL BE PLACED IN MAXIMUM 200mm THICK LAYERS (LOOSE) AND COMPACTED AT OPTIMUM MOISTURE CONTENT (+ OR - 2%) TO ACHIEVE A DRY DENSITY DETERMINED IN ACCORDANCE WITH AS1289.2.1.1, AS1289.5.7.1 AND AS1289.5.8.8 OF NOT LESS THAN THE FOLLOWING STANDARD MINIMUM DRY DENSITY;

LOCATION	COMPACTION REQUIREMENT
LANDSCAPED AREAS	98% SMDD
ROADS	100% SMDD (IN ACCORDANCE WITH
COUNCIL SPECIFICATIONS)	
PAVED AREAS	100% SMDD (IN ACCORDANCE WITH
COUNCIL SPECIFICATIONS)	

8. TESTING OF THE SUBGRADE FOR BUILDINGS SHALL BE CARRIED OUT BY AN APPROVED N.A.T.A. REGISTERED LABORATORY.
9. ALLOW THE FOLLOWING COMPACTION TESTING BY N.A.T.A. REGISTERED LABORATORY FOR PLATFORMS AND FILL LAYERS IN ACCORDANCE WITH THE LATEST VERSION OF AS3798. (MINIMUM 3 TESTS PER LAYER) OR 1 TEST PER MATERIAL TYPE PER 2500sq.m OR 1 TEST.
10. WHERE TEST RESULTS ARE BELOW THE SPECIFIED COMPACTION, RECOMPACT AND RETEST UNTIL SPECIFIED COMPACTION STANDARDS ARE ACHIEVED, OTHERWISE SUBGRADE REPLACEMENT IS REQUIRED IF COMPACTION STANDARDS ARE NOT ACHIEVED.
11. ALLOW FOR EXCAVATION IN ALL MATERIALS AS FOUND U.N.O. NO ADDITIONAL PAYMENTS WILL BE MADE FOR EXCAVATION IN WET OR HARD GROUND.
12. WHERE THERE IS INSUFFICIENT EXCAVATED MATERIAL SUITABLE FOR FILLING OR SUBGRADE REPLACEMENT, THE CONTRACTOR IS TO ALLOW TO IMPORT FILL. IMPORTED FILL SHALL COMPLY WITH THE FOLLOWING;
   - 12.1. BE OF VIRGIN EXCAVATED NATURAL MATERIAL OR
   - 12.2. CONTRACTOR TO PROVIDE EVIDENCE IMPORT IS SUITABLE USE
   - 12.3. PLASTICITY INDEX BETWEEN 2-15% AND CBR > 8
   - 12.4. FREE FROM ORGANIC AND PERISHABLE MATTER
   - 12.5. MAXIMUM SIZE 50mm, PASSING 75 MICRON SIEVE (<25%)

EARTHWORKS (cont)

13. THE CONTRACTOR SHALL PROGRAM THE EARTHWORKS OPERATION SO THAT THE WORKING AREAS ARE ADEQUATELY DRAINED DURING THE PERIOD OF CONSTRUCTION. THE SURFACE SHALL BE GRADED AND SEALED OFF TO REMOVE DEPRESSIONS, ROLLERS MARKS AND SIMILAR WHICH WOULD ALLOW WATER TO POND AND PENETRATE THE UNDERLYING MATERIAL. ANY DAMAGE RESULTING FROM THE CONTRACTOR NOT OBSERVING THESE REQUIREMENTS SHALL BE RECTIFIED AT THEIR COST.
14. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE AND MAINTAIN THE INTEGRITY OF ALL SERVICES, CONDUITS AND PIPES DURING CONSTRUCTION, SPECIFICALLY DURING THE BACKFILLING AND COMPACTION PROCEDURE. ANY AND ALL DAMAGE TO NEW OR EXISTING SERVICES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST.
15. TESTING OF THE SUBGRADE SHALL BE CARRIED OUT BY AN APPROVED N.A.T.A. REGISTERED LABORATORY AT THE CONTRACTORS EXPENSE.

DEEP EXCAVATIONS

16. PRIOR TO THE COMMENCEMENT OF EXCAVATION WORKS GREATER THAN 1.5m IN DEPTH, THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER TO DETERMINE THE STABILITY OF A NATURAL MATERIAL AND BENCHING REQUIREMENTS.
17. THE CONTRACTOR MUST PROVIDE THE SUPERINTENDENT AND OR THE DESIGN ENGINEER WITH A COPY OF THE GEOTECHNICAL ENGINEERS REPORT.
18. THE CONTRACTOR IS TO PROVIDE SAFETY BARRIERS / FENCING IN ACCORDANCE WITH OH&S AND REGULATORY AUTHORITY REQUIREMENTS.

SERVICE TRENCHES

19. SAWCUT EXISTING SURFACES PRIOR TO EXCAVATION. BACKFILL ALL TRENCHES UNDER EXISTING ROADS, PAVEMENTS AND PATHS WITH STABILISED SAND 5% CEMENT OR DGS40 MATERIAL (5% CEMENT) COMPACTED IN 200mm THICK LAYERS TO 98% MMDD TO UNDERSIDE OF PAVEMENT.
20. BACKFILL ALL TRENCHES NOT UNDER ROADS, PAVEMENTS, PATHS AND BUILDINGS WITH APPROVED EXCAVATED OR IMPORTED MATERIAL COMPACTED TO 95% SMDD.

SITEWORKS

1. ALL WORKS TO BE IN ACCORDANCE WITH RELEVANT LOCAL COUNCIL / REGULATORY AUTHORITIES REQUIREMENTS, ALL SPECIFICATIONS AND AUSTRALIAN STANDARDS. CONFLICTS BETWEEN SAID DOCUMENTS SHALL BE REFERRED TO THE SUPERINTENDENT FOR DIRECTION.
2. THE CONTRACTOR IS TO DESIGN, OBTAIN APPROVALS AND CARRY OUT REQUIRED TEMPORARY TRAFFIC CONTROL PROCEDURES DURING CONSTRUCTION IN ACCORDANCE WITH ALL REGULATORY AUTHORITIES, INCLUSIVE OF LOCAL COUNCIL REGULATIONS AND REQUIREMENTS.
3. THE CONTRACTOR IS TO OBTAIN ALL AUTHORITY APPROVALS AS REQUIRED PRIOR TO COMMENCEMENT OF WORKS.
4. RESTORE ALL PAVED, COVERED, GRASSED AND LANDSCAPED AREAS TO THEIR ORIGINAL CONDITION OR AS DIRECTED BY THE SITE SUPERINTENDENT ON COMPLETION OF WORKS. WHERE PLANTING OF NEW GRASS IS NECESSARY REFER TO LANDSCAPE ARCHITECT AND / OR ARCHITECT DOCUMENTATION.
5. ON COMPLETION OF ANY TRENCHING WORKS, ALL DISTURBED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR AS DIRECTED BY THE SITE SUPERINTENDENT, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL, GRASSED AREAS AND ROAD PAVEMENTS.
6. THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR PRIOR TO COMMENCEMENT OF WORKS.
7. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING LEVELS ONSITE PRIOR TO LODGMENT OF TENDER AND ONSITE WORKS. THE PRICE AS TENDERED SHALL BE INCLUSIVE OF ALL WORKS SHOWN ON THE TENDER PROJECT DRAWINGS. ADDITIONAL PAYMENTS FOR WORKS SHOWN ON THE TENDER PROJECT DRAWINGS WILL NOT BE APPROVED.
8. DO NOT OBTAIN DIMENSIONS BY SCALING DRAWINGS.
9. IN CASE OF DOUBT OR DISCREPANCY REFER TO SUPERINTENDENT FOR CLARIFICATION OR CONFIRMATION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
10. WHERE NEW WORKS ABUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED. MAKE SMOOTH TRANSITION TO EXISTING FEATURES AND MAKE GOOD WHERE JOINED.
11. TRENCHES THROUGH EXISTING ROAD AND CONCRETE PAVEMENTS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE AND A MIN 50mm IN BITUMINOUS PAVING.
12. ALL CIVIL ENGINEERING DESIGN HAS BEEN DOCUMENTED UNDER THE ASSUMPTION THAT ALL NECESSARY SITE CONTAMINATION REMEDIATION WORKS HAVE BEEN SATISFACTORILY COMPLETED (IF APPLICABLE) AND THAT THE SITE IS NOT AFFECTED BY ANY SOIL STRATA OR GROUNDWATER TABLE CONTAMINATION.

STORMWATER DRAINAGE

1. ALL PIPES SHALL BE CLASS 2 RUBBER-RING JOINTED U.N.O. WHERE uPVC PIPES HAVE BEEN SPECIFIED, THE FOLLOWING CLASS PIPEWORK IS TO BE ADOPTED U.N.O. Ø100mm OR LESS TO BE CLASS 'SN10' AND ABOVE Ø100mm TO BE CLASS 'SN8'.
2. uPVC STORMWATER LINES PASSING UNDER FLOOR SLABS TO BE CONCRETE ENCASED.
3. PIPES EQUAL TO THAT OF THE STEEL REINFORCED CONCRETE PIPE CLASS SPECIFIED ON THE DRAWINGS MAY BE USED SUBJECT TO APPROVAL FROM THE SUPERINTENDENT.
4. ALL PIPE ARE TO BE LAID AT 1.0% MIN GRADE U.N.O.
5. COVERS
   - 5.1. USE HOT DIPPED GALVANISED COVERS AND GRATES COMPLYING WITH RELEVANT COUNCIL AND AUSTRALIAN STANDARDS.
   - 5.2. ALL COVERS AND GRATES TO BE POSITION IN A FRAME AND MANUFACTURED AS A UNIT.
   - 5.3. ALL COVERS AND GRATES TO BE FITTED WITH POSITIVE COVER LIFTING KEYS
   - 5.4. OBTAIN SUPERINTENDENTS APPROVAL FOR THE USE OF CAST IRON SOLID COVERS AND GRATES. CAST IRON SOLID COVERS (IF APPROVED) TO CONSIST OF CROSS-WEBBED, CELLULAR CONSTRUCTION WITH THE RIBS UPPERMOST TO ALLOW INFILLING WITH CONCRETE. INSTALL POSITIVE COVER LIFTING KEYS AND PLASTIC PLUGS.
   - 5.5. UNLESS DETAILED OR SPECIFIED OTHERWISE, COVERS AND GRATES TO BE CLASS 'D' IN VEHICULAR PAVEMENTS AND CLASS 'B' ELSEWHERE.
   - 5.6. ALL GRATED TRENCH DRAINS SHOULD BE 'CLASS D' CAST IRON WITHIN VEHICULAR PAVEMENTS AND CLASS 'B' HEEL SAFE WITHIN PEDESTRIAN PAVEMENTS.
6. ALL PIPE BENDS, JUNCTIONS, ETC ARE TO BE PROVIDED USING PURPOSE MADE FITTINGS OR STORMWATER PITS.
7. ALL CONNECTIONS TO EXISTING DRAINAGE STRUCTURES SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND CEMENT RENDERED TO ENSURE A SMOOTH FINISH.
8. STORMWATER PIPEWORK TO FINISH FLUSH WITH INTERNAL PIT WALLS AND MUST NOT PROTRUDE. CONNECTION TO BE NEATLY RENDER AND MADE NEAT.
9. THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.
10. U.N.O. MATERIAL USED FOR BEDDING OF PIPES SHALL BE APPROVED NON-COHESIVE GRANULAR MATERIAL HAVING HIGH PERMEABILITY AND HIGH STABILITY WHEN SATURATED AND FREE OF ORGANIC AND CLAY MATERIAL.
11. WHERE TRENCHES ARE IN ROCK, THE PIPE SHALL BE BEDDED ON A MIN 50mm CONCRETE BED (OR 75mm THICK BED OF 12mm BLUE METAL) UNDER THE BARREL OF THE PIPE. THE PIPE COLLAR AT NO POINT SHALL BEAR ON THE ROCK.
12. BEDDING SHALL BE U.N.O TYPE HS2 UNDER ROADS AND H2 UNDER GENERAL AREAS IN ACCORDANCE WITH CURRENT RELEVANT INDUSTRY STANDARDS AND GUIDELINES.
13. THE CONTRACTOR SHALL ENSURE AND PROTECT THE INTEGRITY OF ALL STORMWATER PIPES DURING CONSTRUCTION. ANY AND ALL DAMAGE TO THESE PIPES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE CONTRACTOR UNDER THE DIRECTION OF THE SUPERINTENDENT AND AT NO EXTRA COST.
14. NOTE THAT THE PIT COVER LEVEL NOMINATED IN GUTTERS ARE TO THE INVERT OF THE GUTTER WHICH ARE 40mm LOWER THAN THE PAVEMENT LEVEL AT LIP OF GUTTER. REFER KERB DETAILS FOR CONFIRMATION.

SUBSOIL DRAINAGE

15. Ø100mm SUBSOIL DRAINAGE LINES WITH NON-WOVEN GEOTEXTILE FILTER SOCK SURROUND SHALL BE CONNECTED TO A STORMWATER DRAINAGE PIT (AT MIN 1% LONGITUDINAL GRADE) AND PROVIDED IN THE FOLLOWING LOCATIONS;
   - 15.1. THE HIGH SIDE OF PROPOSED TRAFFICKED PAVEMENT AREAS.
   - 15.2. ALL PLANTER AND TREE BEDS PROPOSED ADJACENT TO PAVEMENT AREAS.
   - 15.3. BEHIND RETAINING WALLS (IN ACCORDANCE WITH RETAINING WALL DETAILS).
   - 15.4. ALL OTHER AREAS SHOWN ON DRAWINGS.
   - 15.5. CONTRACTOR IS TO MAKE ALLOWANCE IN BOTH TENDER AND CONSTRUCTION COSTING TO ALLOW FOR SUBSURFACE DRAINAGE BEHIND ALL RETAINING WALLS / ABOVE LOCATIONS AND TO MAKE CONNECTION TO STORMWATER SYSTEM.
16. WHERE SUBSOIL DRAINAGE PASSES BENEATH BUILDINGS / PAVED AREAS AND/OR PAVEMENTS. CONTRACTOR TO ENSURE Ø100mm CLASS 'SN10' uPVC DRAINAGE LINE IS USED AND THAT PROPRIETARY FITTINGS ARE USED TO RECONNECT SUBSOIL DRAINAGE LINE.
17. THE CONTRACTOR SHALL INSTALL INSPECTION OPENINGS / CLEAROUTS TO ALL SUBSOIL DRAINAGE LINES AND DOWNPIPE LINES AS SPECIFIED ON DRAWINGS AND IN ACCORDANCE WITH COUNCIL SPECIFICATIONS AT MAXIMUM 30m CENTRE AND AT ALL UPSTREAM ENDPOINTS.
18. PROVIDE 3.0m LENGTH OF Ø100 SUBSOIL DRAINAGE LINE WRAPPED IN NON-WOVEN GEOTEXTILE FILTER FABRIC TO THE UPSTREAM SIDE OF STORMWATER PITS, LAID IN STORMWATER PIPE TRENCHES AND CONNECTED TO DRAINAGE PIT.
19. IN AREAS WHERE DUMPED / HAND PLACED ROCK IS USED AS A MEANS OF SCOUR PROTECTION, CONTRACTOR IS TO EXCAVATE A MINIMUM OF 100mm FROM PROPOSED SURFACE, LEVEL AND COMPACT SUBGRADE AS SPECIFIED. ROCK TO THEN BE PLACED ON GEOTEXTILE FILTER FABRIC.

PRECAST STORMWATER PITS

1. THE USE OF PRE-CAST STORMWATER DRAINAGE PITS IS NOT ACCEPTED WITHOUT CONFIRMATION BETWEEN NORTHROP ENGINEERS AND THE CONTRACTOR REGARDING QUALITY CONTROL AND CERTIFICATION OF FINISHES.
2. REFER MANUFACTURERS SPECIFICATIONS FOR INSTALLATION GUIDELINES.
3. PRECAST PIT TO BE PLACED ON MINIMUM 150mm THICK CONCRETE PAD AND BED MINIMUM 50mm WHILST CONCRETE IS STILL PARTIALLY WET.
4. ENSURE PENETRATION IS CORED THROUGH PIT FACE TO ALLOW CONNECTION.
5. ENSURE A SMOOTH SEALED FINISH AT PIPE CONNECTIONS BY HAND APPLYING CONCRETE AROUND THE PIPE ON THE INTERNAL FACE OF THE PIT TO FILL IN ANY VOIDS CREATED WHEN PENETRATION FOR THE PIPE WAS CORED.
6. ENSURE A SEALED FINISH AT PIPE CONNECTIONS BY HAND-APPLYING MINIMUM 150mm THICK CONCRETE AROUND PIPE AT THE EXTERNAL FACE OF THE PIT. ENSURE CONCRETE DOES NOT AFFECT THE INTEGRITY OF THE SUBSOIL DRAINAGE CONNECTED TO THE PIT.
7. ENSURE PIPEWORK DOES NOT PROTRUDE INTO THE BEYOND THE WALL. PIPEWORK IS TO FINISH FLUSH WITH INTERNAL WALL (UNLESS OTHERWISE NOTED OR DETAILED).
8. ENSURE THE OUTLET PIPE IS CONNECTED AT THE INVERT LEVEL OF THE PIT TO DRAIN. ALTERNATIVELY FILL THE BASE OF THE PIT WITH MASS CONCRETE (MIN 50mm THICK) OR APPROVED GROUTING COMPOUND (LESS THAN 50mm THICK) TO DRAIN.
9. PROVIDE CONCRETE BENCHING TO SIDES OF PIT TO SUIT PIPE DIAMETER. HEIGHT TO MATCH MINIMUM 1/3 PIPE DIAMETER.

RAINWATER REUSE

1. PROVIDE RAINWATER RE-USE SYSTEM TO SUPPLY WATER FOR IRRIGATION.
2. GUTTER GUARD TO BE INSTALLED ON ALL EAVES GUTTERS.
3. PRESSURE PUMP / TAP TO BE PROVIDED FOR THE REUSE OF CAPTURED TANK WATER.
4. A PERMANENT SIGN IS TO BE LOCATED IN THE VICINITY OF THE TANK STATING THE WATER IS "NON POTABLE WATER" WITH APPROPRIATE HAZARD IDENTIFICATION.
5. ALL RAINWATER SERVICES SHALL BE CLEARLY LABELLED "NON POTABLE WATER" WITH APPROPRIATE HAZARD IDENTIFICATION.
6. PIPEWORK USED FOR RAINWATER SERVICES SHALL BE COLOURED LILAC IN ACCORDANCE WITH AS1345.
7. ALL VALVES AND APERTURES SHALL BE CLEARLY AND PERMANENTLY LABELLED WITH SAFETY SIGNS TO COMPLY WITH AS1319.
8. AN AIR GAP OR RPZD TO ENSURE BACKFLOW PREVENTION (IF MAINS 'TOP UP' / BYPASS UTILISED)
9. RAINWATER TANK RETICULATION SYSTEM AND MAINS WATER BYPASS ARRANGEMENT TO BE INSTALLED IN ACCORDANCE WITH AS/NZS 3500.1.2-2003 AND THE NSW CODE OF PRACTICE - PLUMBING AND DRAINAGE.
10. A FIRST FLUSH FILTRATION DEVICE IS TO BYPASS THE FIRST 1mm OF RAINWATER.

SIGNAGE AND LINEMARKING

1. ALL SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH AUSTRALIAN STANDARDS 1742 / RMS STANDARDS AND SPECIFICATIONS.
2. LINE MARKING AND PAINT SHALL BE IN ACCORDANCE WITH AS1742.3 AND RMS STANDARDS.
3. PAINT SHALL BE TYPE 3 CLASS 'A' AND THE COLOUR SHALL BE WHITE AND NOT SUBJECT TO DISCOLOURATION BY BITUMEN FROM ROAD SURFACE. ALL PAINT TO BE APPLIED BY MECHANICAL SPRAYER.
4. LINE MARKING SHALL BE SPOTTED OUT AND APPROVED PRIOR TO SPRAYING.
5. PAINT SHALL BE APPLIED AT A WET THICKNESS OF BETWEEN 0.35mm AND 0.40mm.
6. CARPARK LINEMARKING TO BE 80mm WIDE.

LANDSCAPING

1. REFER TO DRAWINGS BY OTHERS FOR DETAILS OF PROPOSED LANDSCAPING TREATMENT.
2. ALL DISTURBED SURFACE TO BE TEMPORARILY STABILISED WITH HYDROMULCH UPON COMPLETION OF WORKS. A 500mm STRIP OF TURF (CT2 COUCH) IS TO BE PLACED BEHIND ALL NEW KERB AND GUTTER / ROLL KERB.

PAVEMENTS

1. ALL PAVEMENT MATERIALS SHALL COMPLY WITH CURRENT RMS SPECIFICATIONS. PROVIDE MECHANICAL ANALYSIS FOR EACH BATCH OF PAVEMENT MATERIAL TO ENSURE CONFORMITY.
2. COMPACTION STANDARDS

BASE	98% MODIFIED MAXIMUM DRY DENSITY
SUBBASE	98% MODIFIED MAXIMUM DRY DENSITY
SUBGRADE	100% STANDARD MAXIMUM DRY DENSITY

3. THE CONTRACTOR SHALL CONFIRM THE DESIGN CBR WITH A MINIMUM OF 3 TESTS TAKEN AT SUBGRADE LEVEL. WHERE DISCREPANCY IS FOUND, CONTACT THE DESIGN ENGINEER.
4. ALLOW FOR COMPACTION TESTING BY A N.A.T.A. REGISTERED LABORATORY FOR BASE LAYER, SUBBASE LAYER AND SUBGRADE LAYER IN ACCORDANCE WITH THE LATEST VERSION OF AS3798 FOR PAVEMENTS (MINIMUM 2 TESTS PER LAYER). ALLOW FOR AT LEAST TWO SUCCESSFUL COMPACTION TESTS IN EACH LAYER.
5. MATCH NEW PAVEMENTS NEATLY AND FLUSH WITH EXISTING
6. AFTER BASE IS APPROVED, SWEEP CLEAN AND PRIME AT NOMINAL RATE OF 1.0L PER 1.0 sq.m.
7. PAVEMENT HOLD POINTS
   - 7.1. SUB-GRADE PROOF ROLL PRIOR TO SET-UP AND FORM FOR CONCRETE POUR.
   - 7.2. INSPECTION OF FORMWORK / STEEL PRIOR TO CONCRETE POUR.
   - 7.3. SUBMISSION OF SUB-GRADE AND BASE DENSITY TESTS.

ASPHALTIC CONCRETE

1. GENERAL
   - 1.1. ALL ASPHALTIC CONCRETE (AC) WORK TO BE PREPARED AND CARRIED OUT IN ACCORDANCE WITH GOOD ASPHALTIC PAVING PRACTICE AS DESCRIBED IN AS2150-2005 "ASPHALT (HOT-MIXED) PAVING - GUIDE TO GOOD PRACTICE" AND CURRENT RMS SPECIFICATIONS.
2. PAVEMENT PREPARATION
   - 2.1. THE FINISHED PAVEMENT SURFACE TO BE SEALED SHALL BE WITHIN +/- 2% OF THE OPTIMUM AND BROOMED BEFORE COMMENCEMENT OF WORK TO ENSURE COMPLETE REMOVAL OF ALL SUPERFICIAL FOREIGN MATTER.
   - 2.2. PRIME ALL SURFACES TO BE SEALED. ALLOW PRIME TO SETTLE FOR A MINIMUM OF 3 DAYS BEFORE APPLYING TACK COAT AND ASPHALT.
   - 2.3. SWEEP PRIMED SURFACES BEFORE APPLYING TACK COAT.
   - 2.4. ALL DEPRESSIONS OR UNEVEN AREAS ARE TO BE TACK-COATED AND BROUGHT UP TO GENERAL LEVEL OF PAVEMENT WITH ASPHALTIC CONCRETE BEFORE LAYING OF MAIN COURSE.
   - 2.5. ALL DEFECTS IN THE BASE COURSE INCLUDING CRACKS, SURFACE DEFORMATION AND THE LIKE SHALL BE REPAIRED AS DIRECTED BY THE SUPERINTENDENT PRIOR TO PLACEMENT OF TACK COAT AND/OR AC COURSES.
3. PLACEMENTS
   - 3.1. ALL ASPHALT SHALL BE PLACED UTILISING APPROVED MECHANICAL PAVING MACHINES. DO NOT HAND PLACE ASPHALT WITHOUT PRIOR APPROVAL FROM ENGINEER.
4. JOINTS
   - 4.1. THE NUMBER OF JOINTS BOTH LONGITUDINAL AND TRANSVERSE SHALL BE KEPT TO A MINIMUM.
   - 4.2. THE DENSITY AND SURFACE FINISH AT JOINTS SHALL BE SIMILAR TO THOSE OF THE REMAINDER OF THE LAYER.
5. COMPACTION
   - 5.1. ALL COMPACTION SHALL BE UNDERTAKEN USING SELF PROPELLED ROLLERS.
   - 5.2. INITIAL ROLLING SHALL BE COMPLETED BEFORE THE MIX TEMPERATURE FALLS BELOW 105°C USING A STEEL DRUM ROLLER HAVING A MINIMUM WEIGHT OF 8 TONNES AND A MAXIMUM UNIT LOAD ON THE REAR DRUM EQUIVALENT TO 55kN/m WIDTH OF DRUM.
   - 5.3. SECONDARY ROLLING SHALL BE COMPLETED BEFORE THE MIX TEMPERATURE FALLS BELOW 80°C USING A PNEUMATIC TYRED ROLLER OF AT LEAST 10 TONNES MASS. A MINIMUM TYRE PRESSURE OF 550kPA AND A MINIMUM TOTAL LOAD OF 1 TONNE ON EACH TYRE.
   - 5.4. ROLLED SURFACES SHALL BE SMOOTH AND FREE OF UNDULATIONS. BONY AND/OR UNEVEN SURFACES WILL BE REJECTED.
   - 5.5. PROVIDE 2 No. MINIMUM COMPACTION TESTS.
6. FINISHED SURFACE PROPERTIES
   - 6.1. FINISHED SURFACES SHALL BE SMOOTH, DENSE AND TRUE OF SHAPE AND SHALL NOT VARY MORE THAN;
     - 6.1.1. 3mm FROM THE SPECIFIED PLAN LEVEL AT ANY POINT.
     - 6.1.2. 3mm FROM THE BOTTOM OF A STRAIGHT EDGE LAID TRANSVERSELY.
     - 6.1.3. 5mm FROM THE BOTTOM OF A STRAIGHT EDGE LAID LONGITUDINALLY.
     - 6.1.4. MINUS 0 TO PLUS 2mm ADJACENT TO OTHER ELEMENTS SUCH AS KERBS AND THE LIKE TO AVOID POOLING OF SURFACE WATER.
     - 6.1.5. MINUS 0 FROM THE SPECIFIED THICKNESS.
7. DO NOT STORE PLANT EQUIPMENT OR TRAFFIC NEWLY LAID ASPHALTIC CONCRETE PAVEMENTS WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
8. DO NOT APPLY MARKING PAINTS UNTIL ASPHALT HAS CURED IN ACCORDANCE WITH PAINT MANUFACTURERS SPECIFICATIONS.

NOT FOR CONSTRUCTION

AMENDMENTS

REV	BY	DATE	DESCRIPTION
01	MM	30.04.21	ISSUED FOR DRAFT SCHEMATIC DESIGN
02	MM	06.05.21	ISSUED FOR DRAFT SSDA
03	MM	14.05.21	ISSUED FOR SSDA
04	MM	18.05.21	ISSUED FOR SSDA
05	MM	12.08.21	ISSUED FOR SSDA

NORTHROP
Sydney
Level 11 345 George Street, Sydney NSW 2000
Ph (02) 9241 4188 Fax (02) 9241 4324
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LEVEL 2,
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ULTIMO NSW 2007 AUSTRALIA
TEL: +61 2 9291 0000
WEB: www.pp-a.com.au
NOMINATED ARCHITECT:
VINCE PEDAVOLI
NSW REG. No. 5045

PEDAVOLI ARCHITECTS

DRAWING NAME
SPECIFICATION NOTES - SHEET 01

PROJECT
NEW PRIMARY SCHOOL IN MURRUMBATEMAN
FAIRLEY STREET, MURRUMBATEMAN

PROJECT NORTH

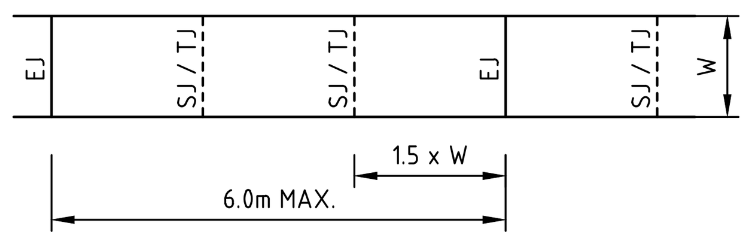
DRAWN	CHECKED	VERIFIED	DATE
MM	PC		12.08.21

MURR-CV-SD-DWG-101.11 REVISION 05

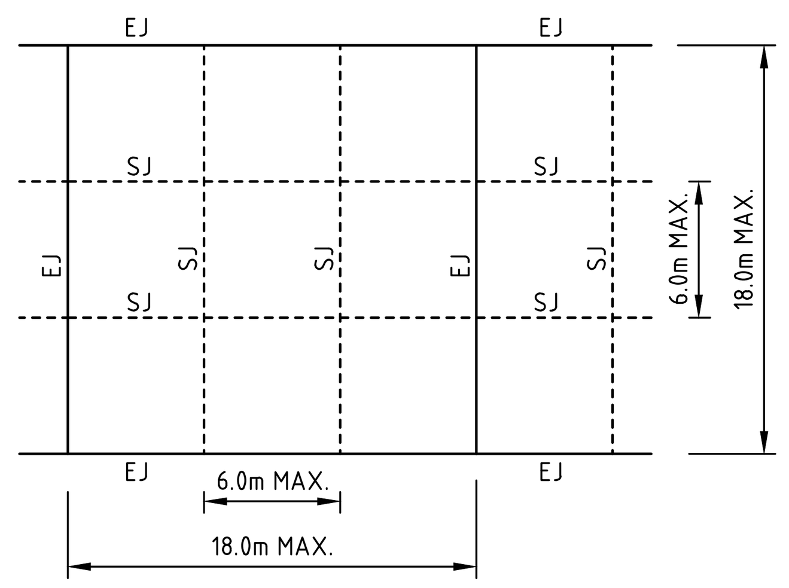
NOTE: ALL CIVIL ENGINEERING CONSTRUCTION WORKS TO BE CARRIED OUT IN ACCORDANCE WITH YASS VALLEY COUNCIL DEVELOPMENT GUIDELINES. READ IN CONJUNCTION WITH THE NOTES PROVIDED BELOW. IF CONFLICT ARISE, YASS VALLEY COUNCIL GUIDELINES AND SPECIFICATIONS TAKE PRECEDENCE. WHERE YASS VALLEY COUNCIL GUIDELINSES AND SPECIFICATIONS ARE SILENT, THE SPECIFICATION NOTES BELOW TAKE PRECEDENCE

PAVEMENT JOINTS

1. PROVIDE 10mm ABLEFLEX BETWEEN NEW CONCRETE WORKS AND EXISTING STRUCTURES.
2. LOCAL AUTHORITY REQUIREMENTS SHALL TAKE PRECEDENCE WITHIN THE PUBLIC ROAD RESERVE.
3. DOWELS TO BE PLACED ON PROPRIETARY CRADLES TO ENSURE CORRECT SPACING AND ALIGNMENT.
4. PEDESTRIAN PAVEMENTS
   ALL PEDESTRIAN PAVEMENTS ARE TO BE JOINTED AS FOLLOWS U.N.O. ON THE DESIGN DRAWINGS.
5. EXPANSION JOINTS ARE TO BE LOCATED WHERE POSSIBLE AT TANGENT POINTS OF CURVES AND ELSEWHERE AT MAX. 6.0m CENTRES.
6. WEAKENED PLANE JOINTS (SAWN OR TOOL JOINTS) ARE TO BE LOCATED AT A MAX. SPACING OF 1.5m x WIDTH OF THE PAVEMENT.
7. WHERE POSSIBLE JOINTS SHOULD BE LOCATED TO MATCH KERBING AND OR ADJACENT PAVEMENT JOINTS.
8. TYPICAL PEDESTRIAN PAVEMENT JOINT DETAIL



9. VEHICULAR PAVEMENTS
   ALL VEHICULAR PAVEMENTS TO BE JOINTED AS FOLLOWS U.N.O. ON THE DESIGN DRAWINGS.
10. TIED KEYED CONSTRUCTION JOINTS SHOULD GENERALLY BE LOCATED LONGITUDINALLY AT A MAX. OF 6.0m CENTRES.
11. SAWN JOINTS SHOULD GENERALLY BE LOCATED LATERALLY AT A MAX. OF 6.0m CENTRES WITH DOWELED EXPANSION JOINTS AT MAX. 18.0m CENTRES.
12. TYPICAL VEHICULAR PAVEMENT JOINT DETAIL.



13. KERB EXPANSION JOINTS SHALL BE FORMED FROM 10mm ABLEFLEX FOR FULL DEPTH OF SECTION.
14. KERB EXPANSION JOINTS TO BE LOCATED AT DRAINAGE PITS, TANGENT POINTS OF CURVES / CORNERS AND AT 12m MAX CENTRES.
15. KERB TOOLED JOINTS TO BE MIN 3mm WIDE AND LOCATED AT MAX 3m CENTRES.
16. INTEGRAL KERB JOINTS SHALL MATCH THE LOCATION OF PAVEMENT JOINTS.

SITEWORKS & STORMWATER LEGEND

	SITE BOUNDARY LINE
	ADJACENT BOUNDARY LINE
	EASEMENT LINE
	BUILDING LINE
	ROOF OVER
XX.XX	EXISTING CONTOURS
XX.XX	DESIGN CONTOURS
	EXISTING LINEWORK
	DESIGN LINEWORK
KR	KERB RAMP
	FENCE
	SAWCUT AND PAVEMENT INFILL
WS	WHEEL STOP
eKG	EXISTING KERB AND GUTTER
KO	KERB ONLY
KG	KERB AND GUTTER
DD	DISH DRAIN
RKG	ROLL KERB AND GUTTER
SSW	SANDSTONE LOG WALL
MTE	MATCH TO EXISTING
	EXISTING STORMWATER TO REMAIN
SW	EXISTING STORMWATER - TO BE REMOVED
W	EXISTING WATER TO REMAIN
W	EXISTING WATER - TO BE REMOVED
	STORMWATER PIPE
RW RW	RAINWATER PIPE
DP	DOWNPIPE
	GRATED INLET PIT
	JUNCTION PIT
	KERB INLET PIT
OSD	ON-SITE DETENTION TANK
RWT	RAINWATER TANK
STC2	HUMECEPTOR STC2
	DRAINAGE SWALE
	PAVEMENT MARKING
	FLEXIBLE PAVEMENT
	ROAD PAVEMENT
	EXISTING PAVEMENT - MILL AND RE-SHEET
	EXISTING PAVEMENT - TO BE RETAINED
	TRAFFICABLE CONCRETE PAVEMENT
	FOOTPATH
	SOFT PAVING
	SPORTS COURTS
	WASTE STORAGE PAD
	LANDSCAPE
	LANDSCAPE - MASS PLATING
	LANDSCAPE - MULCH BED
	DRY CREEK BED

NOT FOR CONSTRUCTION

AMENDMENTS

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LEVEL 2,
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NSW REG. No. 5045
PEDAVOLI ARCHITECTS

DRAWING NAME
SPECIFICATION NOTES - SHEET 02

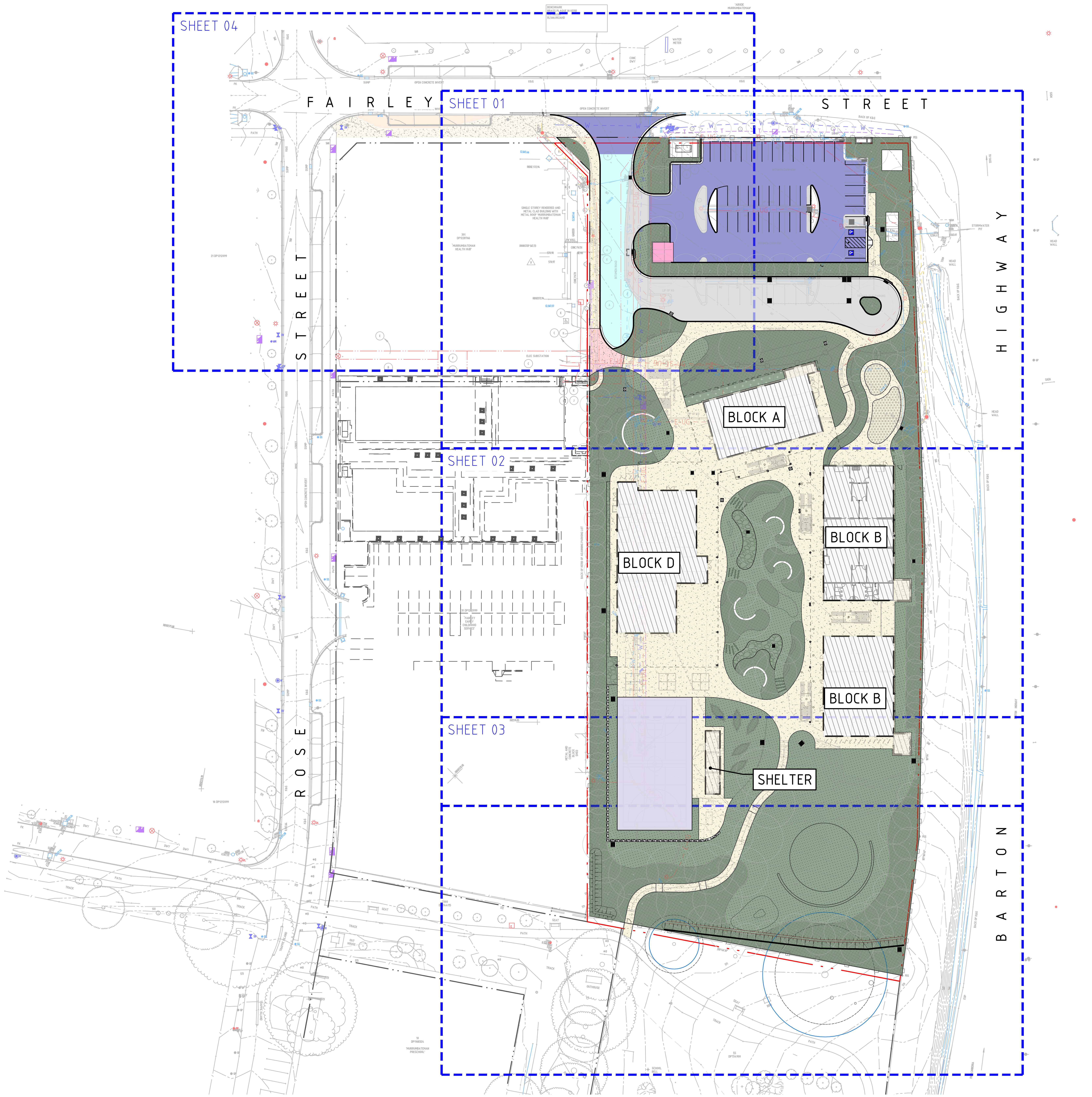
PROJECT
NEW PRIMARY SCHOOL IN MURRUMBATEMAN
FAIRLEY STREET, MURRUMBATEMAN

PROJECT NORTH

DRAWN	CHECKED	VERIFIED	DATE
MM	PC		18.05.21

MURR-CV-SD-DWG-101.12

REVISION 04



LEGEND

(red dash-dot line)	SITE BOUNDARY LINE
(grey dash-dot line)	ADJACENT BOUNDARY LINE
(light dashed line)	EASEMENT LINE
(black dashed line)	BUILDING OUTLINE
(blue dashed line)	SHEET LAYOUT
(grey dashed line)	SURVEY INFORMATION ALONG FAIRLEY STREET AND ROSE STREET SUPPLIED BY ASONGROUP

GENERAL NOTES

1. SURVEY INFORMATION SUPPLIED BY:
   - 1.1. NAME: CLARKE AND DI PAULI SURVEYORS
   - 1.2. DATE: 07.04.21
   - 1.3. REVISION: 01
   - 1.4. NAME: ASONGROUP
   - 1.5. DATE: 21.05.07
   - 1.6. REVISION: 01
2. ALL UTILITY SERVICES INDICATED ON THE DRAWINGS ORIGINATE FROM SUPPLIED DATA OR DIAL BEFORE YOU DIG SEARCHES, THEREFORE THEIR ACCURACY AND COMPLETENESS IS NOT GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE AND CONFIRM THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
   NOTE SERVICE AUTHORITY REQUIREMENTS FOR LOCATING OF SERVICES PRIOR TO COMMENCEMENT OF WORKS.
3. NORTHROP TAKE NO RESPONSIBILITY FOR THE ACCURACY AND/OR USE OF THIS SURVEY AND ITS CONTENTS

NOT FOR CONSTRUCTION

AMENDMENTS

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ULTIMO NSW 2007 AUSTRALIA
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NSW REG. No. 5045

PEDAVOLI ARCHITECTS

DRAWING NAME
GENERAL ARRANGEMENT PLAN

PROJECT
NEW PRIMARY SCHOOL IN MURRUMBATEMAN
FAIRLEY STREET, MURRUMBATEMAN

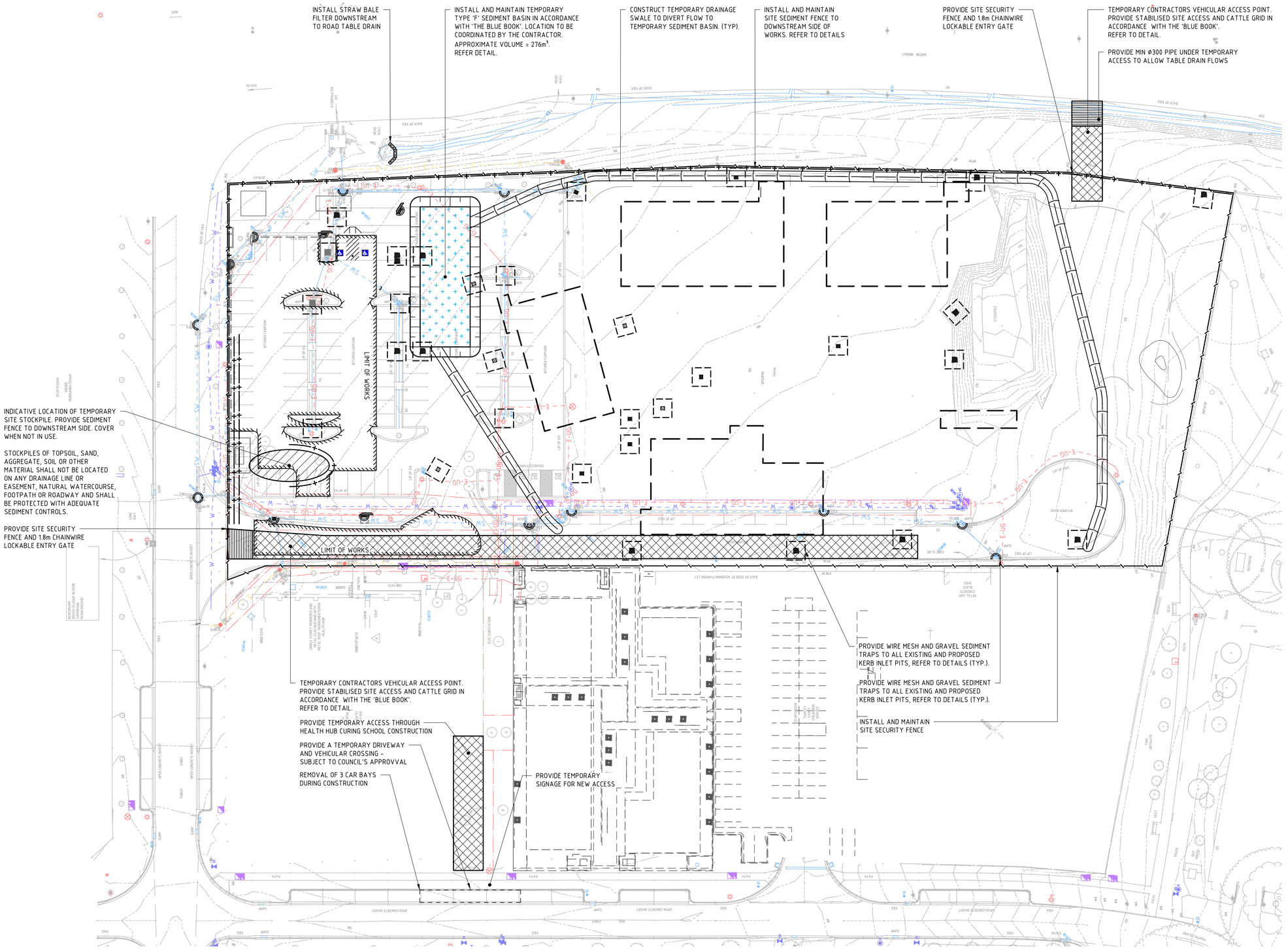
PROJECT NORTH
NORTH

SCALE 1:500@ A1 — 0 5 10 15 20 25m

DRAWN	CHECKED	VERIFIED	DATE
MM	NC		12.08.21

MURR-CV-SD-DWG-101.21

REVISION 05



LEGEND

- SITE BOUNDARY LINE
- ADJACENT BOUNDARY LINE
- EASEMENT LINE
- BUILDING LINE
- EXISTING ELECTRICITY
- EXISTING TELECOMMUNICATIONS
- EXISTING WATER
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING CONTOURS
- SEDIMENT FENCE
- SECURITY FENCE
- SECURITY GATE
- WIRE MESH AND GRAVEL SEDIMENT FILTER
- STRAW BALE FILTER
- GEOTEXTILE INLET FILTER TRAP
- TEMPORARY DRAINAGE SWALE
- STABILISED SITE ACCESS
- STOCKPILE
- SEDIMENT BASIN - WET
- LIMIT OF WORKS — LIMIT OF WORKS

NOTES

1. ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL / RELEVANT AUTHORITY SPECIFICATIONS AND DETAILS.
2. ALL SEDIMENT AND EROSION CONTROL MEASURES TO BE INSTALLED IN ACCORDANCE WITH THE 'BLUE BOOK'. CONTRACTOR TO ENSURE THESE MEASURES ARE IN PLACE AND MAINTAINED AT ALL TIMES DURING CONSTRUCTION WORKS.

SEDIMENT BASIN CALCULATIONS

PARAMETER	ADOPTED VALUE
TOTAL DISTURBED AREA (ha)	1.2ha
SOIL TEXTURE GROUP	F
DESIGN RAINFALL DEPTH (DAYS)	5
DESIGN RAINFALL DEPTH (PERCENTILE)	80
x-DAY, y-PERCENTILE RAINFALL EVENT	30
Cv	0.510
SETTLING ZONE VOLUME (m^3)	183.600
SEDIMENT STORAGE VOLUME (m^3)	92
TOTAL BAISN VOLUME (m^3)	275.400

NOT FOR CONSTRUCTION

AMENDMENTS

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NSW REG. No. 5045

PEDAVOLI ARCHITECTS

DRAWING NAME
CONCEPT SEDIMENT & EROSION CONTROL PLAN

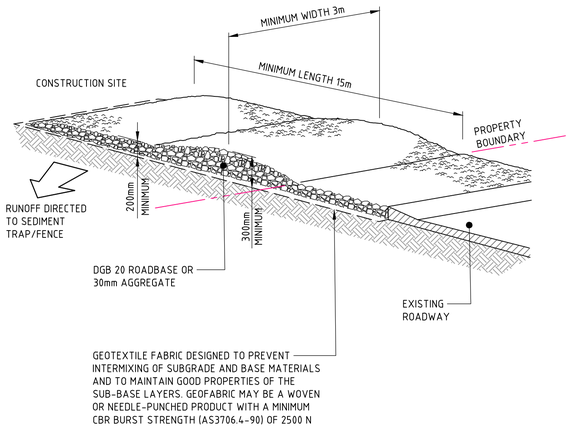
PROJECT
NEW PRIMARY SCHOOL IN MURRUMBATEMAN
FAIRLEY STREET, MURRUMBATEMAN

PROJECT NORTH
NORTH

SCALE 1:400@A1 0 4 8 12 16 20m

DRAWN	CHECKED	VERIFIED	DATE	REVISION
MM	PC		12.08.21	

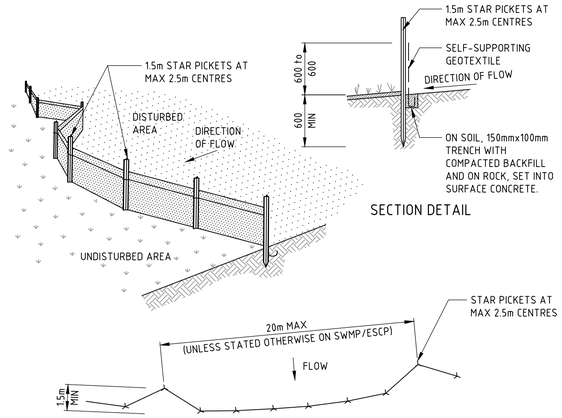
MURR-CV-SD-DWG-102.01 05



CONSTRUCTION NOTES

1. STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE.
2. COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
3. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.
4. ENSURE THE STRUCTURE IS AT LEAST 15 METRES LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3 METRES WIDE.
5. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE.

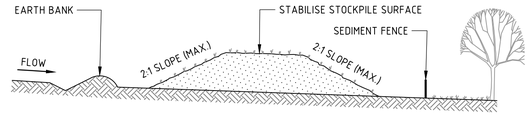
STABILISED SITE ACCESS



CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND AT 2.5 METRE INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

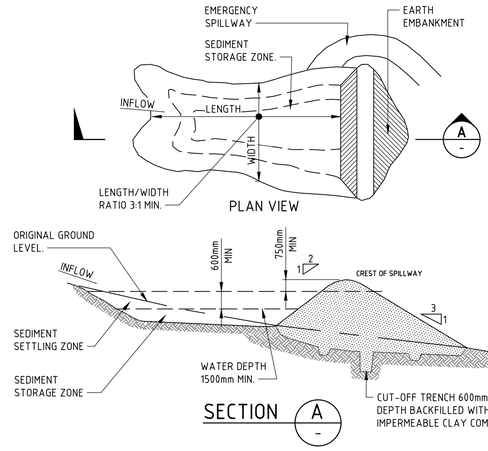
SEDIMENT FENCE



CONSTRUCTION NOTES

1. PLACE STOCKPILES MORE THAN 2m (PREFERABLY 5m) FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
4. WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) 1 TO 2m DOWNSLOPE.

STOCKPILE

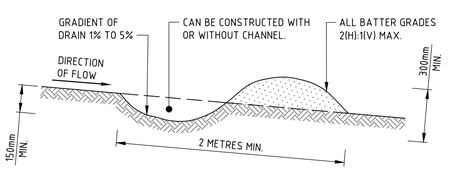


CONSTRUCTION NOTES

1. REMOVE ALL VEGETATION AND TOPSOIL FROM UNDER THE DAM WALL AND FROM WITHIN THE STORAGE AREA.
2. CONSTRUCT A CUT-OFF TRENCH 500mm DEEP AND 1200mm WIDE ALONG THE CENTRELINE OF THE EMBANKMENT EXTENDING TO A POINT ON THE GULLY WALL LEVEL WITH THE RISER CREST.
3. MAINTAIN THE TRENCH FREE OF WATER AND RECOMPACT THE MATERIALS WITH EQUIPMENT AS SPECIFIED IN THE SWMP TO 95 PER CENT STANDARD PROCTOR DENSITY.
4. SELECT FILL FOLLOWING THE SWMP THAT IS FREE OF ROOTS, WOOD, ROCK, LARGE STONE OR FOREIGN MATERIAL.
5. PREPARE THE SITE UNDER THE EMBANKMENT BY RIPPING TO AT LEAST 100mm TO HELP BOND COMPACTED FILL TO THE EXISTING SUBSTRATE.
6. SPREAD THE FILL IN 100mm TO 150mm LAYERS AND COMPACT IT AT OPTIMUM MOISTURE CONTENT FOLLOWING THE SWMP.
7. CONSTRUCT THE EMERGENCY SPILLWAY.
8. REHABILITATE THE STRUCTURE FOLLOWING THE SWMP.

(APPLIES TO 'TYPE D' AND 'TYPE F' SOILS ONLY)

SEDIMENT BASIN - WET



CONSTRUCTION NOTES

1. BUILD WITH GRADIENTS BETWEEN 1 AND 5 PERCENT.
2. AVOID REMOVING TREES AND SHRUBS IF POSSIBLE - WORK AROUND THEM.
3. ENSURE THE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPEDE WATER FLOW.
4. BUILD THE DRAINS WITH CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTIONS, NOT V SHAPED.
5. ENSURE THE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
6. COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION.

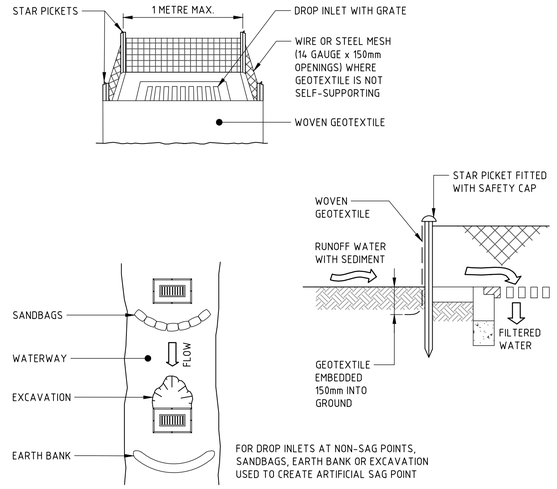
NOTE: ONLY TO BE USED AS TEMPORARY BANK WHERE MAXIMUM UPSLOPE LENGTH IS 80 METRES.

TEMPORARY DRAINAGE SWALE - LOW FLOW

CONSTRUCTION NOTES

1. CONSTRUCT THE STRAW BALE FILTER AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE.
2. PLACE BALES LENGTHWISE IN A ROW WITH ENDS TIGHTLY ABUTTING. USE STRAW TO FILL ANY GAPS BETWEEN BALES. STRAWS ARE TO BE PLACED PARALLEL TO GROUND.
3. ENSURE THAT THE MAXIMUM HEIGHT OF THE FILTER IS ONE BALE.
4. EMBED EACH BALE IN THE GROUND 75mm TO 100mm AND ANCHOR WITH TWO 1.2 METRE STAR PICKETS OR STAKES. ANGLE THE FIRST STAR PICKET OR STAKE IN EACH BALE TOWARDS THE PREVIOUSLY LAID BALE. DRIVE THEM 600mm INTO THE GROUND AND, IF POSSIBLE, FLUSH WITH THE TOP OF THE BALES. WHERE STAR PICKETS ARE USED AND THEY PROTRUDE ABOVE THE BALES, ENSURE THEY ARE FITTED WITH SAFETY CAPS.
5. WHERE A STRAW BALE FILTER IS CONSTRUCTED DOWNSLOPE FROM A DISTURBED BATTER, ENSURE THE BALES ARE PLACED 1 TO 2 METRES DOWNSLOPE FROM THE TOE.
6. ESTABLISH A MAINTENANCE PROGRAM THAT ENSURES THE INTEGRITY OF THE BALES IS RETAINED - THEY COULD REQUIRE REPLACEMENT EACH TWO TO FOUR MONTHS.

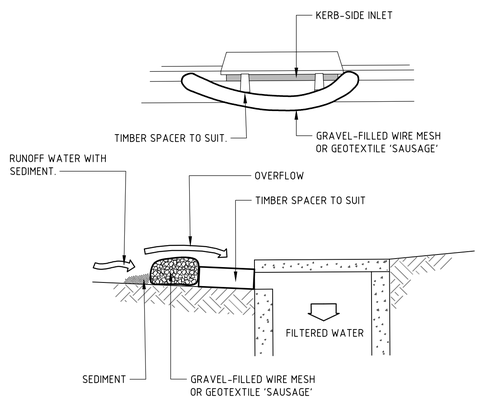
STRAW BALE FILTER



CONSTRUCTION NOTES

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1 METRE CENTRES.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

GEOTEXTILE INLET FILTER TRAPS



NOTE:THIS PRACTICE ONLY TO BE USED WHERE SPECIFIED IN APPROVED SWMP/ESCP.

CONSTRUCTION NOTES

1. INSTALL FILTERS TO KERB INLETS ONLY AT SAG POINTS.
2. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm TO 50mm GRAVEL.
3. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm HIGH x 400mm WIDE.
4. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET. MAINTAIN THE OPENING WITH SPACER BLOCKS.
5. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER.
6. SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY FIRMLY ABUT EACH OTHER AND SEDIMENT-LADEN WATERS CANNOT PASS BETWEEN.

WIRE MESH AND GRAVEL SEDIMENT FILTER

NOT FOR CONSTRUCTION

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PEDAVOLI ARCHITECTS

DRAWING NAME
SEDIMENT & EROSION CONTROL DETAILS

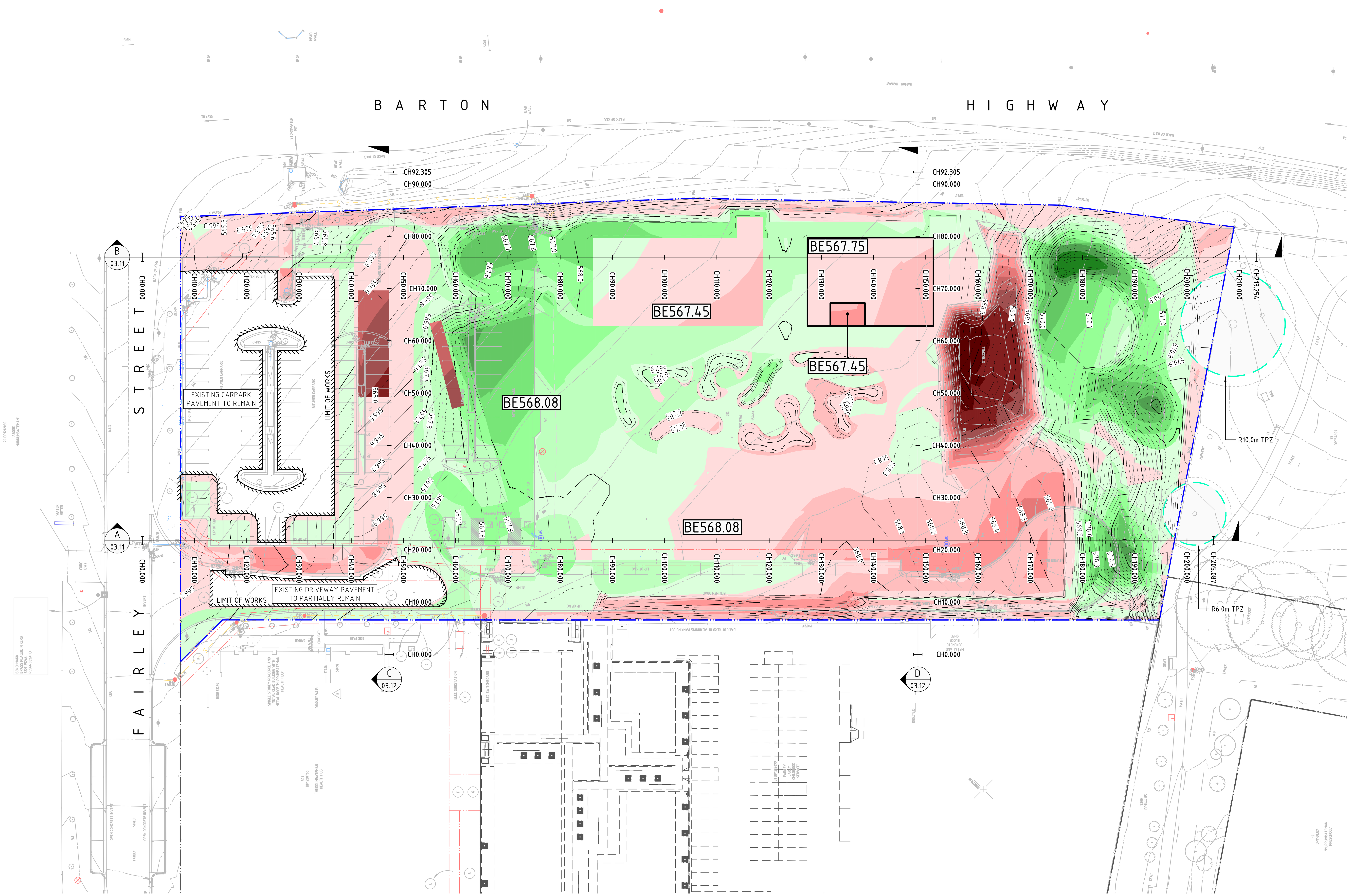
PROJECT
NEW PRIMARY SCHOOL IN MURRUMBATEMAN
FAIRLEY STREET, MURRUMBATEMAN

PROJECT NORTH

SCALE VARIES

DRAWN	CHECKED	VERIFIED	DATE	REVISION
MM	PC		12.08.21	

MURR-CV-SD-DWG-102.11 05



LEGEND

SITE BOUNDARY LINE	
ADJACENT BOUNDARY LINE	
EASEMENT LINE	
BUILDING LINE	
BEXX.XX	EARTHWORKS PAD LEVEL
EXISTING CONTOURS	
BULK EARTHWORKS CONTOURS	
LIMIT OF WORKS	

DEPTH OF CUT

- -2.0m TO -5.0m
- -2.0m TO -1.5m
- -1.5m TO -1.25m
- -1.25m TO -1.0m
- -1.0m TO -0.75m
- -0.75m TO -0.5m
- -0.5m TO -0.25m
- -0.25m TO -0.0m

DEPTH OF FILL

- 0.0m TO 0.25m
- 0.25m TO 0.5m
- 0.5m TO 0.75m
- 0.75m TO 1.0m
- 1.0m TO 1.25m
- 1.25m TO 1.5m
- 1.5m TO 2.0m
- 2.0m TO 5.0m

GENERAL NOTES:

1. REFER SPECIFICATIONS NOTES FOR EARTHWORKS GENERAL REQUIREMENTS.
2. ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL / RELEVANT AUTHORITY SPECIFICATIONS AND DETAILS.
3. CAD FILES / DTM FILES TO BE SUPPLIED IN AUTOCAD FORMAT FOR SETOUT PURPOSES (UPON REQUEST).
4. STRIP EXISTING TOPSOIL IN CONSULTATION WITH THE GEOTECHNICAL ENGINEER / REPORT.
5. NO ALLOWANCE HAS BEEN MADE FOR BULKING FACTORS. NOTE ALL VOLUMES DEPICTED ARE SOLID VOLUMES ONLY AND MAY NOT REFLECT DETAILED EARTHWORKS.
6. NO ALLOWANCE HAS BEEN MADE FOR DETAILED EARTHWORKS; ie SERVICE TRENCHING, DETAILED EXCAVATION, FOOTINGS, RETAINING WALLS, AND THE LIKE.
7. THE CONTRACTOR SHALL USE FINAL SURFACE LEVELS AND TYPICAL PAVEMENT DETAILS FOR ACTUAL EARTHWORKS LEVELS.
8. NO ALLOWANCE HAS BEEN MADE OF CONTAMINATED MATERIAL. CONTRACTOR TO TEST AND ALLOW FOR VOLUMES.
9. BULK EARTHWORKS ARE BASED ON THE FOLLOWING DEPTHS FROM FINISHED SURFACE LEVELS;
   - 9.1. BUILDINGS SLAB 170mm
   - 9.2. MODULAR BUILDING 500mm, 800mm
   - 9.3. FLEXIBLE PAVEMENT 520mm
   - 9.4. TURF/MULCH AREA 225mm
   - 9.5. MASS PLANTING AREA 375mm
   - 9.6. DRY CREEK BED 250mm
   - 9.7. WASTE PAD 250mm
   - 9.8. FOOTPATH PAVEMENT 150mm
   - 9.9. SPORTS COURT 200mm
10. APPROXIMATE BULK EARTHWORK VALUES AS FOLLOWS;
   - 10.1. CUT -2,296 cu.m
   - 10.2. FILL 2,842 cu.m
   - 10.3. BALANCE 546 cu.m (EXPORT)
   - 10.4. NOTE: SITE STRIPPING VOLUMES HAVE NOT BEEN INCLUDED IN THE ABOVE CALCULATIONS.
11. A 150mm STRIP HAS BEEN ALLOWED FOR EQUATING TO APPROX. 1,655 cu.m.
12. TEMPORARY BATTER SLOPES FOR EXCAVATIONS TO BE IN ACCORDANCE WITH GEOTECHNICAL ENGINEERS ADVICE AND RECOMMENDATIONS. CONTRACTOR TO CONFIRM ADEQUACY WITH GEOTECHNICAL ENGINEER.
13. EARTHWORKS PLAN ASSUMES RETAINING WALL HAVE BEEN CONSTRUCTED PRIOR TO FILLING OPERATIONS.

NOT FOR CONSTRUCTION

AMENDMENTS

REV	BY	DATE	DESCRIPTION
01	MM	30.04.21	ISSUED FOR DRAFT SCHEMATIC DESIGN
02	MM	06.05.21	ISSUED FOR DRAFT SSDA
03	MM	14.05.21	ISSUED FOR SSDA
04	MM	18.05.21	ISSUED FOR SSDA
05	MM	12.08.21	ISSUED FOR SSDA

NORTHROP
Sydney
Level 11 345 George Street, Sydney NSW 2000
Ph (02) 9241 4188 Fax (02) 9241 4324
Email sydney@northrop.com.au ABN 81 094 433 100

HANSENYUNCKEN

NSW GOVERNMENT | Education

PEDAVOLI ARCHITECTS PTY LTD
LEVEL 2,
458-468 WATTLE STREET
ULTIMO NSW 2007 AUSTRALIA
TEL: +61 2 9291 0000
WEB: www.pp-a.com.au
NOMINATED ARCHITECT:
VINCE PEDAVOLI
NSW REG. No. 5045
PEDAVOLI ARCHITECTS

DRAWING NAME
BULK EARTHWORKS CUT & FILL PLAN

PROJECT
NEW PRIMARY SCHOOL IN MURRUMBATEMAN
FAIRLEY STREET, MURRUMBATEMAN

PROJECT NORTH
NORTH

SCALE 1:400@ A1 — 0 4 8 12 16 20m

DRAWN	CHECKED	VERIFIED	DATE
MM	PC		12.08.21

MURR-CV-SD-DWG-103.01

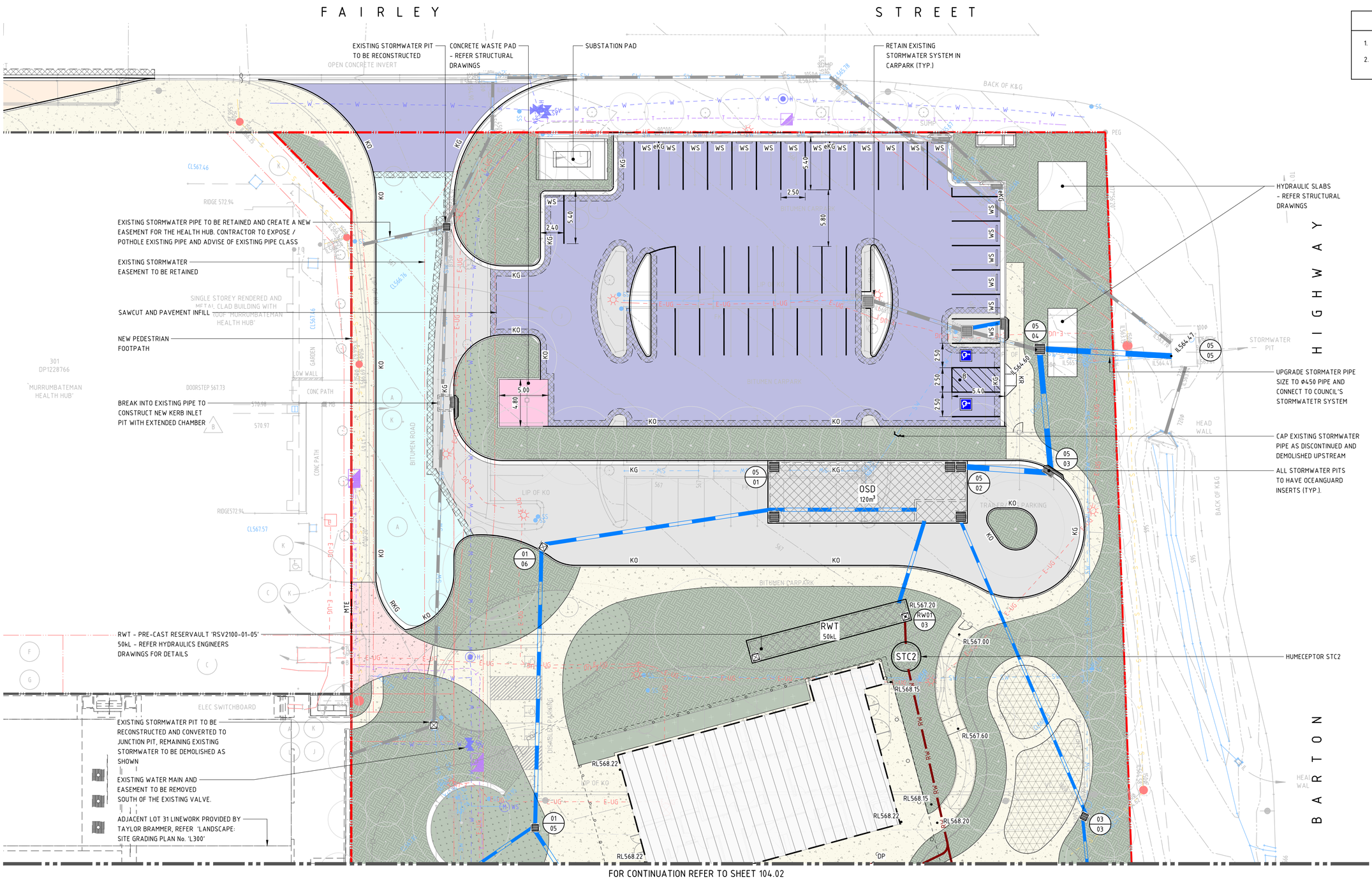
REVISION 05

LEGEND

FOR LEGEND ITEMS REFER TO DRAWING '101.12 SPECIFICATION NOTES – SHEET 02'

GENERAL NOTES

1. INSTALL OCEANGUARD PIT INSERTS TO ALL GRATED INLET PITS.
2. REFER HYDRAULICS DRAWINGS FOR DOWNPIPE LOCATIONS AND INSPECT OPENINGS AT CONNECTIONS.



NOT FOR CONSTRUCTION

AMENDMENTS

REV	BY	DATE	DESCRIPTION
01	MM	30.04.21	ISSUED FOR DRAFT SCHEMATIC DESIGN
02	MM	06.05.21	ISSUED FOR DRAFT SSDA
03	MM	14.05.21	ISSUED FOR SSDA
04	MM	18.05.21	ISSUED FOR SSDA
05	MM	12.08.21	ISSUED FOR SSDA

NORTHROP
Sydney
Level 11 345 George Street, Sydney NSW 2000
Ph (02) 9241 4188 Fax (02) 9241 4324
Email sydney@northrop.com.au ABN 81 094 433 100

HANSEN YUNCKEN
NSW GOVERNMENT Education

PEDAVOLI ARCHITECTS PTY LTD
LEVEL 2,
458-468 WATTLE STREET
ULTIMO NSW 2007 AUSTRALIA
TEL: +61 2 9291 0000
WEB: www.pp-a.com.au
NOMINATED ARCHITECT:
VINCE PEDAVOLI
NSW REG. No. 5045

PEDAVOLI ARCHITECTS

DRAWING NAME
SITEWORKS & STORMWATER MANAGEMENT PLAN - SHEET 01

PROJECT
NEW PRIMARY SCHOOL IN MURRUMBATEMAN
FAIRLEY STREET, MURRUMBATEMAN

PROJECT NORTH

SCALE 1:200@ A1 0 2 4 6 8 10m

DRAWN	CHECKED	VERIFIED	DATE	REVISION
MM	NS		12.08.21	

MURR-CV-SD-DWG-104.01 05

LEGEND

FOR LEGEND ITEMS REFER TO DRAWING '101.12 SPECIFICATION NOTES – SHEET 02'

GENERAL NOTES

1. INSTALL OCEANGUARD PIT INSERTS TO ALL GRATED INLET PITS.
2. REFER HYDRAULICS DRAWINGS FOR DOWNPIPE LOCATIONS AND INSPECT OPENINGS AT CONNECTIONS.

FOR CONTINUATION REFER TO SHEET 104.01

FOR CONTINUATION REFER TO SHEET 104.03

NOT FOR CONSTRUCTION

AMENDMENTS

REV	BY	DATE	DESCRIPTION
01	MM	30.04.21	ISSUED FOR DRAFT SCHEMATIC DESIGN
02	MM	06.05.21	ISSUED FOR DRAFT SSDA
03	MM	14.05.21	ISSUED FOR SSDA
04	MM	18.05.21	ISSUED FOR SSDA
05	MM	12.08.21	ISSUED FOR SSDA

NORTHROP
Sydney
Level 11 345 George Street, Sydney NSW 2000
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Email sydney@northrop.com.au ABN 81 094 433 100

HANSEN YUNCKEN
NSW GOVERNMENT Education

PEDAVOLI ARCHITECTS PTY LTD
LEVEL 2,
458-468 WATTLE STREET
ULTIMO NSW 2007 AUSTRALIA
TEL: +61 2 9291 0000
WEB: www.pp-a.com.au
NOMINATED ARCHITECT:
VINCE PEDAVOLI
NSW REG. No: 5045

PEDAVOLI ARCHITECTS

DRAWING NAME
SITEWORKS & STORMWATER MANAGEMENT PLAN - SHEET 02

PROJECT
NEW PRIMARY SCHOOL IN MURRUMBATEMAN
FAIRLEY STREET, MURRUMBATEMAN

PROJECT NORTH

SCALE 1:200@ A1 0 2 4 6 8 10m

DRAWN	CHECKED	VERIFIED	DATE	REVISION
MM	PC		12.08.21	

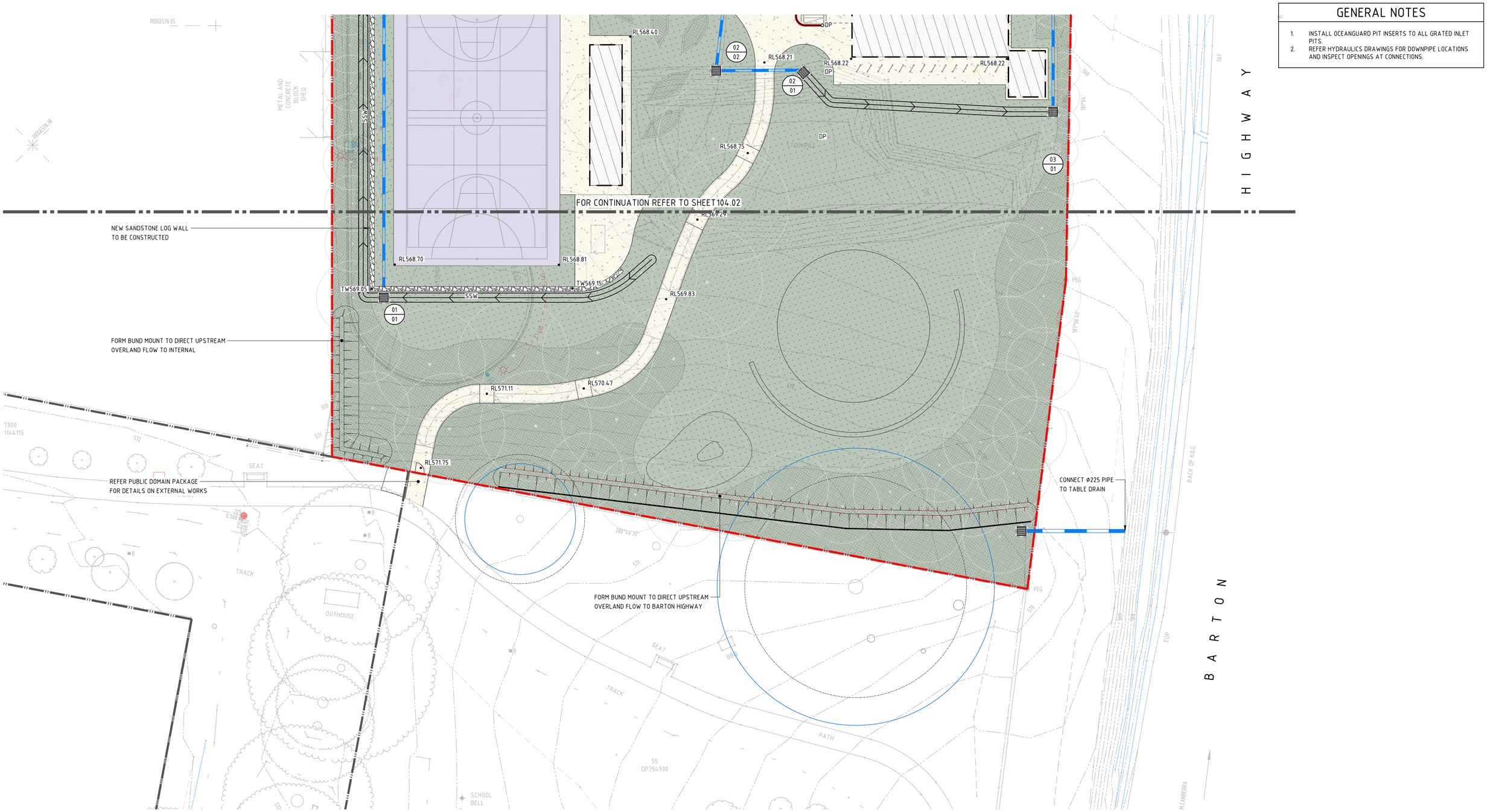
MURR-CV-SD-DWG-104.02 05

LEGEND

FOR LEGEND ITEMS REFER TO DRAWING '101.12 SPECIFICATION NOTES – SHEET 02'

GENERAL NOTES

1. INSTALL OCEANGUARD PIT INSERTS TO ALL GRATED INLET PITS.
2. REFER HYDRAULICS DRAWINGS FOR DOWNPIPE LOCATIONS AND INSPECT OPENINGS AT CONNECTIONS.



NOT FOR CONSTRUCTION

AMENDMENTS

REV	BY	DATE	DESCRIPTION
01	MM	30.04.21	ISSUED FOR DRAFT SCHEMATIC DESIGN
02	MM	06.05.21	ISSUED FOR DRAFT SSDA
03	MM	14.05.21	ISSUED FOR SSDA
04	MM	18.05.21	ISSUED FOR SSDA
05	MM	12.08.21	ISSUED FOR SSDA

NORTHROP
Sydney
Level 11 345 George Street, Sydney NSW 2000
Ph (02) 9241 4188 Fax (02) 9241 4324
Email sydney@northrop.com.au ABN 81 094 433 100

HANSEN YUNCKEN
NSW GOVERNMENT Education

PEDAVOLI ARCHITECTS PTY LTD
LEVEL 2,
458-468 WATTLE STREET
ULTIMO NSW 2007 AUSTRALIA
TEL: +61 2 9291 0000
WEB: www.pp-a.com.au
NOMINATED ARCHITECT:
VINCE PEDAVOLI
NSW REG. No. 5045

PEDAVOLI ARCHITECTS

DRAWING NAME
SITEWORKS & STORMWATER MANAGEMENT PLAN - SHEET 03

PROJECT
NEW PRIMARY SCHOOL IN MURRUMBATEMAN
FAIRLEY STREET, MURRUMBATEMAN

PROJECT NORTH

SCALE 1:200@ A1 (0 2 4 6 8 10m)

DRAWN	CHECKED	VERIFIED	DATE	REVISION
MM	NS		12.08.21	

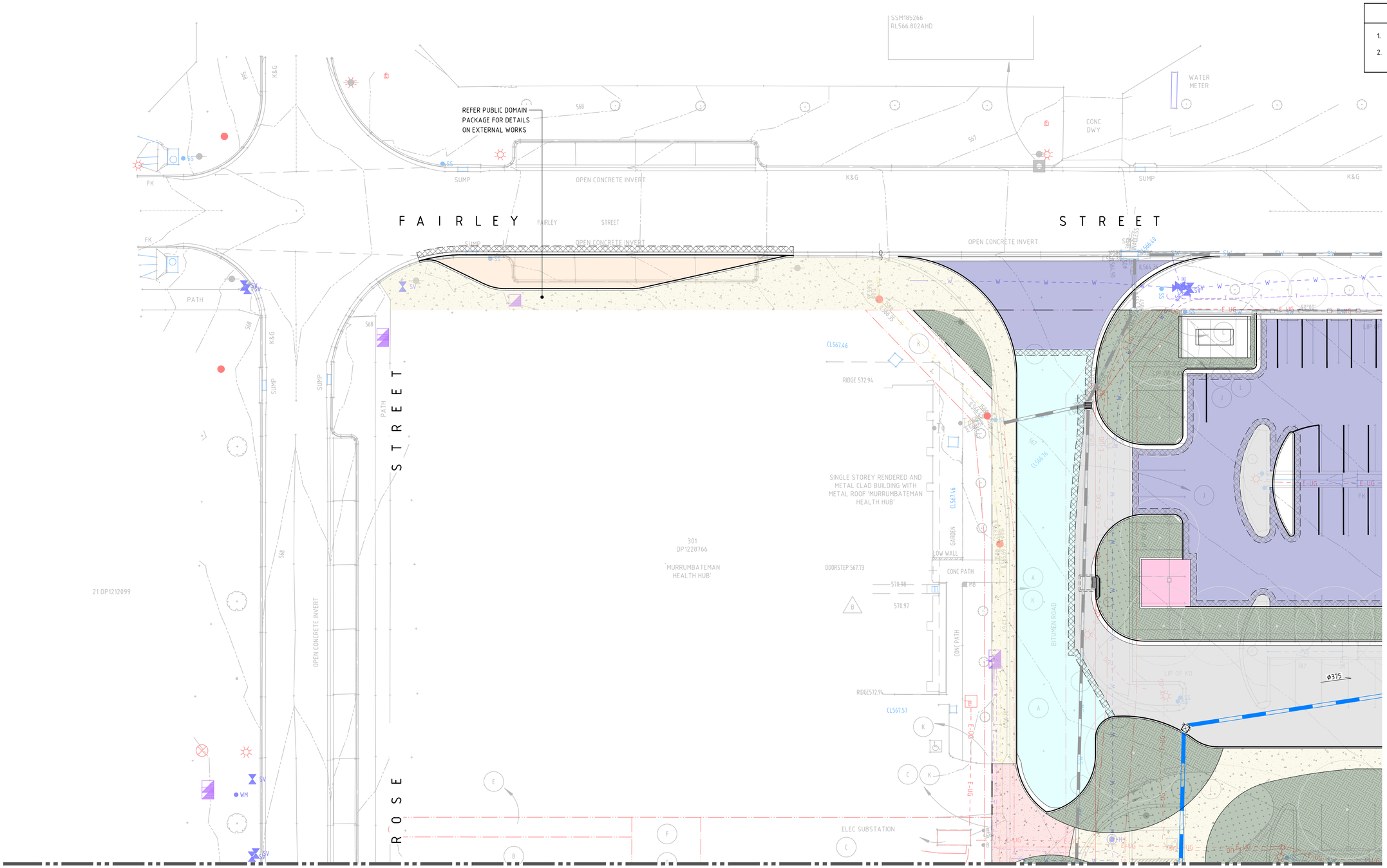
MURR-CV-SD-DWG-104.03 05

LEGEND

FOR LEGEND ITEMS REFER TO DRAWING '101.12 SPECIFICATION NOTES – SHEET 02'

GENERAL NOTES

1. INSTALL OCEANGUARD PIT INSERTS TO ALL GRATED INLET PITS.
2. REFER HYDRAULICS DRAWINGS FOR DOWNPIPE LOCATIONS AND INSPECT OPENINGS AT CONNECTIONS.



FOR CONTINUATION REFER TO SHEET 104.01

NOT FOR CONSTRUCTION

AMENDMENTS

REV	BY	DATE	DESCRIPTION
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02	MM	07.05.21	ISSUED FOR DRAFT SSDA
03	MM	14.05.21	ISSUED FOR SSDA
04	MM	18.05.21	ISSUED FOR SSDA
05	MM	12.08.21	ISSUED FOR SSDA

NORTHROP
Sydney
Level 11 345 George Street, Sydney NSW 2000
Ph (02) 9241 4188 Fax (02) 9241 4324
Email sydney@northrop.com.au ABN 81 094 433 100

HANSEN YUNCKEN
NSW GOVERNMENT Education

PEDAVOLI ARCHITECTS PTY LTD
LEVEL 2
458-468 WATTLE STREET
ULTIMO NSW 2007 AUSTRALIA
TEL: +61 2 9291 0000
WEB: www.pp-a.com.au
NOMINATED ARCHITECT:
VINCE PEDAVOLI
NSW REG. No. 5045

PEDAVOLI ARCHITECTS

DRAWING NAME
SITEWORKS & STORMWATER MANAGEMENT PLAN - SHEET 04

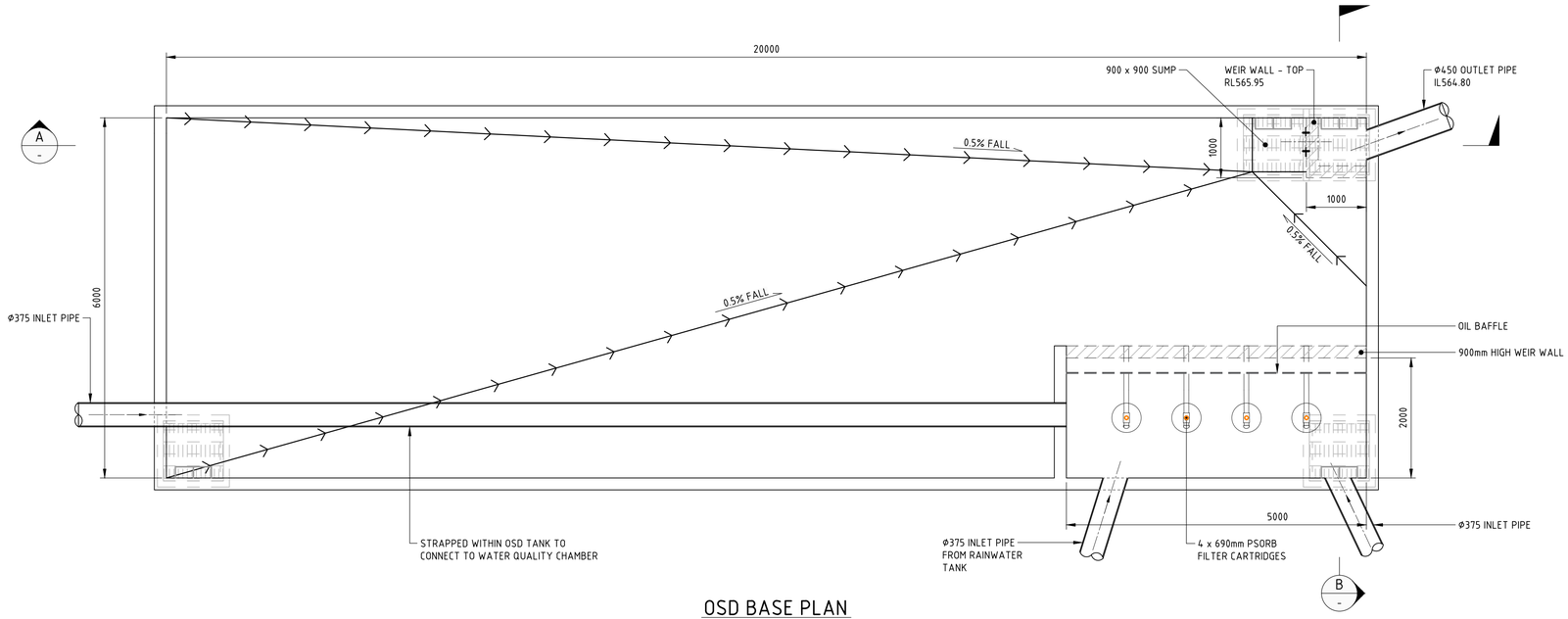
PROJECT
NEW PRIMARY SCHOOL IN MURRUMBATEMAN
FAIRLEY STREET, MURRUMBATEMAN

PROJECT NORTH

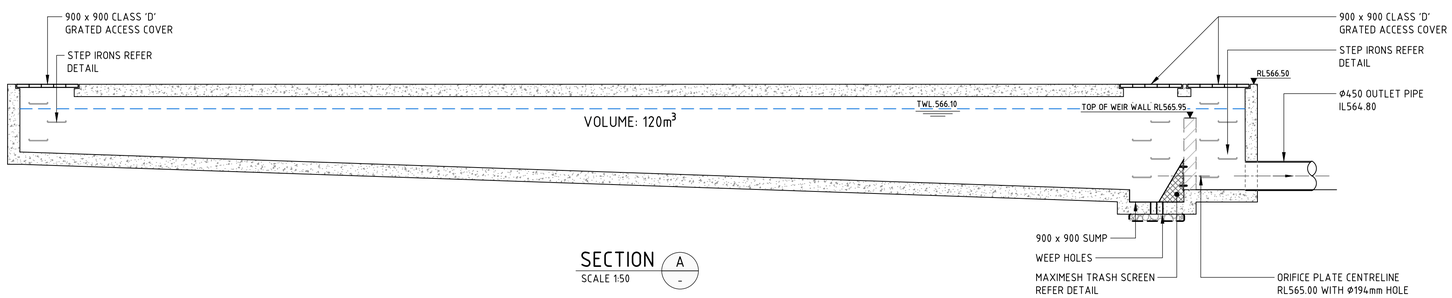
SCALE 1:200@ A1 (0 2 4 6 8 10m)

DRAWN	CHECKED	VERIFIED	DATE	REVISION
MM	NS		12.08.21	

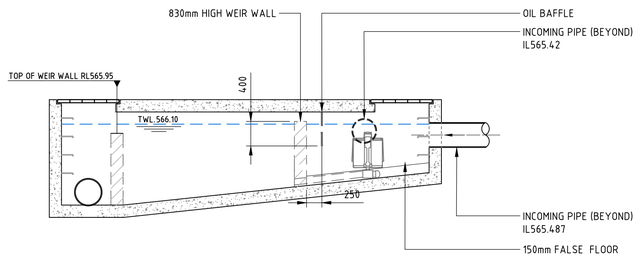
MURR-CV-SD-DWG-104.04 — 05



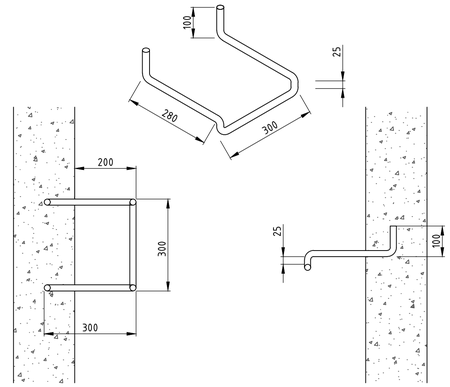
OSD BASE PLAN
SCALE 1:50



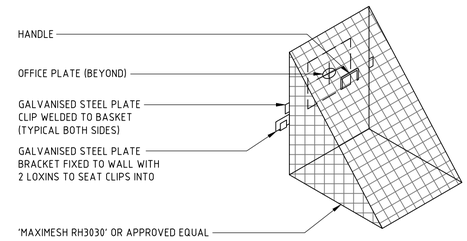
SECTION A
SCALE 1:50



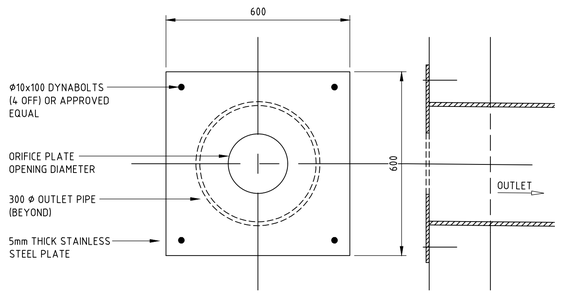
SECTION B
SCALE 1:50



STEP IRON DETAIL
STEP IRON OF 20mm GALVANISED STEEL MADE TO SHAPE AND DIMENSIONS AS SHOWN, PLACED AT 300 CENTRES AND STAGGERED HORIZONTALLY FOR ALL PITS DEEPER THAN 1.0m. THE USE OF PROPRIETARY STEP IRONS ARE ACCEPTABLE PROVIDED THE PRODUCT IS IN ACCORDANCE WITH AUSTRALIAN STANDARDS
SCALE 1:10



TRASH SCREEN DETAIL
SCALE 1:10



ORIFICE PLATE DETAIL
- ORIFICE PLATE - Φ 194mm

SCALE 1:10

NOT FOR CONSTRUCTION

AMENDMENTS

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01	MM	30.04.21	ISSUED FOR DRAFT SCHEMATIC DESIGN
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Sydney
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NSW GOVERNMENT Education

PEDAVOLI ARCHITECTS PTY LTD
LEVEL 2,
468-468 WATTLE STREET
ULTIMO NSW 2007 AUSTRALIA
TEL: +61 2 9291 0000
WEB: www.pp-a.com.au
NOMINATED ARCHITECT:
VINCE PEDAVOLI
NSW REG. No. 5545

PEDAVOLI ARCHITECTS

DRAWING NAME
STORMWATER MANAGEMENT DEVICES

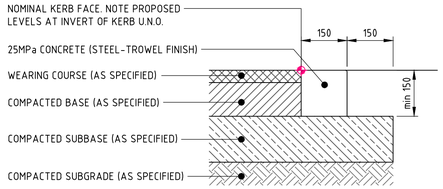
PROJECT
NEW PRIMARY SCHOOL IN MURRUMBATEMAN
FAIRLEY STREET, MURRUMBATEMAN

PROJECT NORTH

SCALE 1:10 @ A1
SCALE 1:50@ A1
0.0 0.1 0.2 0.3 0.4 0.5m
0.0 0.5 1.0 1.5 2.0 2.5m

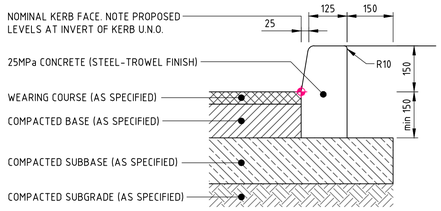
DRAWN	CHECKED	VERIFIED	DATE	REVISION
MM	NS		12.08.21	

MURR-CV-SD-DWG-104.50 05



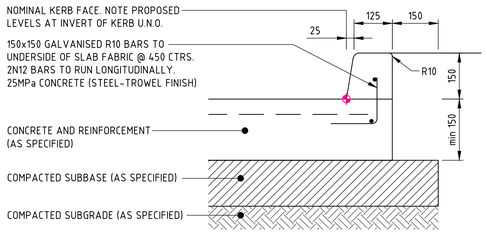
FLUSH KERB 'FK'

EXPANSION JOINTS @ MAX 12m CTRS / TOOL JOINTS @ MAX 3m CTRS
ALL RADII TO BE 5mm U.N.O.
SCALE 1:10



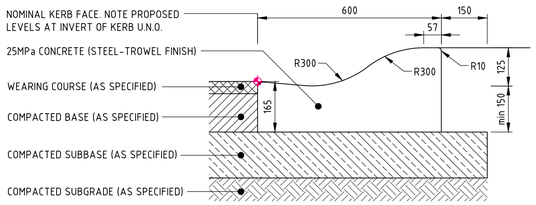
KERB ONLY 'KO'

EXPANSION JOINTS @ MAX 12m CTRS / TOOL JOINTS @ MAX 3m CTRS
ALL RADII TO BE 20mm U.N.O.
SCALE 1:10



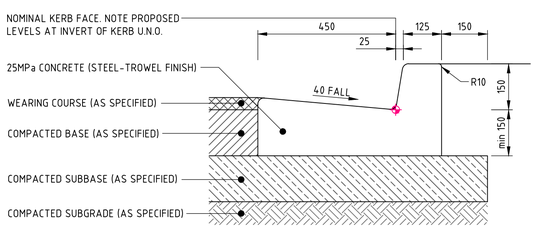
INTEGRAL KERB 'IK'

EXPANSION JOINTS @ MAX 12m CTRS / TOOL JOINTS @ MAX 3m CTRS TO ALIGN WITH PAVEMENT JOINTING. ALL RADII TO BE 20mm U.N.O.
SCALE 1:10



ROLL KERB AND GUTTER 'RKG'

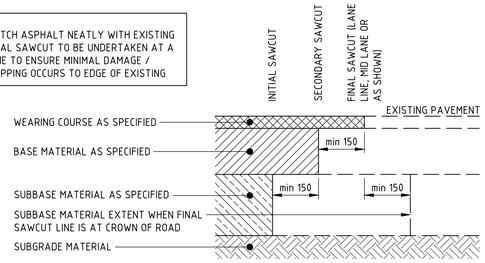
EXPANSION JOINTS @ MAX 12m CTRS / TOOL JOINTS @ MAX 3m CTRS
ALL RADII TO BE 20mm U.N.O.
SCALE 1:10



KERB & GUTTER 'KG'

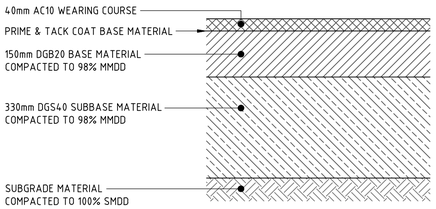
EXPANSION JOINTS @ MAX 12m CTRS / TOOL JOINTS @ MAX 3m CTRS
ALL RADII TO BE 20mm U.N.O.
SCALE 1:10

NOTES:
- MATCH ASPHALT NEATLY WITH EXISTING
- FINAL SAWCUT TO BE UNDERTAKEN AT A TIME TO ENSURE MINIMAL DAMAGE / CHIPPING OCCURS TO EDGE OF EXISTING



PAVEMENT INTERFACE 'INT'

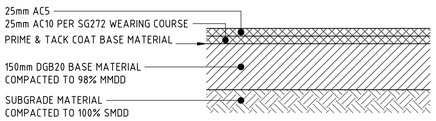
SCALE 1:10



PAVEMENT TYPE '1' – TRAFFICABLE FLEXIBLE PAVEMENT

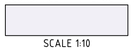
MIN CBR 3% (CONTRACTOR TO CONFIRM ONSITE) DESIGN
LOADING IN ACCORDANCE WITH 'EFSG' SPECIFICATIONS

SCALE 1:10

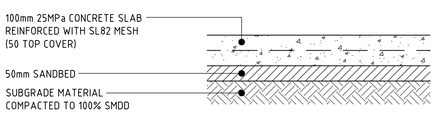


PAVEMENT TYPE '2' – SPORTS COURTS

MIN CBR 3% (CONTRACTOR TO CONFIRM ONSITE) DESIGN
LOADING IN ACCORDANCE WITH 'EFSG' SPECIFICATIONS



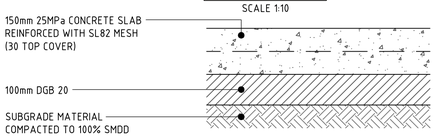
SCALE 1:10



PAVEMENT TYPE '3' – FOOTPATH

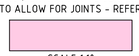
MIN CBR 3% (CONTRACTOR TO CONFIRM ONSITE).
CONTRACTOR TO ALLOW FOR JOINTS - REFER JOINT DETAILS

SCALE 1:10

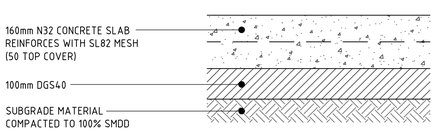


PAVEMENT TYPE '4' – WASTE STORAGE PAD

MIN CBR 3% (CONTRACTOR TO CONFIRM ONSITE).
CONTRACTOR TO ALLOW FOR JOINTS - REFER JOINT DETAILS



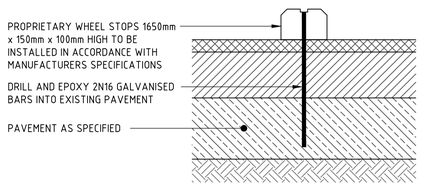
SCALE 1:10



PAVEMENT TYPE '5' – TRAFFICABLE CONCRETE PAVEMENT

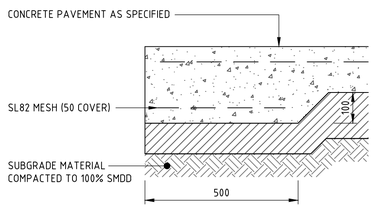
MIN CBR 3% (CONTRACTOR TO CONFIRM ONSITE).
CONTRACTOR TO ALLOW FOR JOINTS - REFER JOINT DETAILS

SCALE 1:10



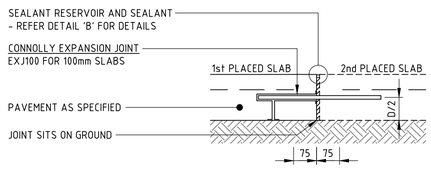
WHEEL STOP 'WS'

WHEEL STOPS TO BE INSTALLED IN ACCORDANCE WITH AUSTRALIAN STANDARDS AS2890.1
SCALE 1:10



THICKENED EDGE DETAIL 'TE'

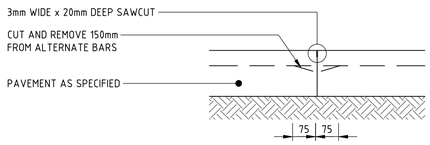
SELECT FILL COMPACTED TO 98% MMDD WHERE FILL IN EXCESS OF PAVEMENT THICKNESS
SCALE 1:10



FOOTPATH EXPANSION JOINT 'EJ'

- TO ALSO BE USED AS A 'STOPWORK JOINT'
- MAXIMUM CONTINUOUS POUR NOT TO EXCEED 36m
- JOINT TO BE INSTALLED TO MANUFACTURERS SPECIFICATIONS
- REFER SPECIFICATION NOTES FOR JOINT SPACINGS (6m UNO)

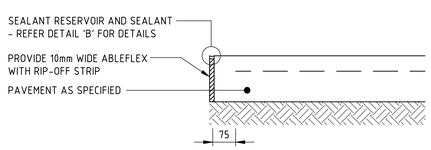
SCALE 1:10



FOOTPATH SAWN / CONTRACTION JOINT 'SJ'

- JOINT TO BE SAWN AS SOON AS CONCRETE HAS HARDENED SUFFICIENTLY THAT IT WILL NOT BE DAMAGED BY SAWING (MAX 24HRS)
- REFER SPECIFICATION NOTES FOR JOINT SPACINGS (2m UNO)

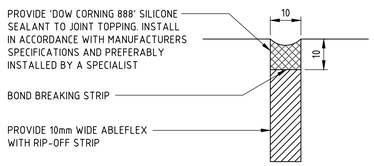
SCALE 1:10



ISOLATION JOINT 'IJ'

- PROVIDE JOINT BETWEEN ALL NEW CONCRETE AND EXISTING STRUCTURES
- JOINT TO BE USED AGAINST ALL WALLS, FOOTINGS, COLUMNS, BACK OF KERB, SERVICE PITS, DRAINAGE PITS AND ALL SLAB PENETRATIONS

SCALE 1:10



DETAIL 'B'

SCALE 1:10

NOT FOR CONSTRUCTION

AMENDMENTS

REV	BY	DATE	DESCRIPTION
01	MM	30.04.21	ISSUED FOR DRAFT SCHEMATIC DESIGN
02	MM	06.05.21	ISSUED FOR DRAFT SSDA
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Sydney
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Ph (02) 9241 4188 Fax (02) 9241 4324
Email sydney@northropp.com.au ABN 81 094 433 100

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ULTIMO NSW 2007 AUSTRALIA
TEL: +61 2 9291 0000
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NOMINATED ARCHITECT:
VINCE PEDAVOLI
NSW REG. No. 5045

PEDAVOLI ARCHITECTS

DRAWING NAME
DETAILS SHEET - SHEET 01

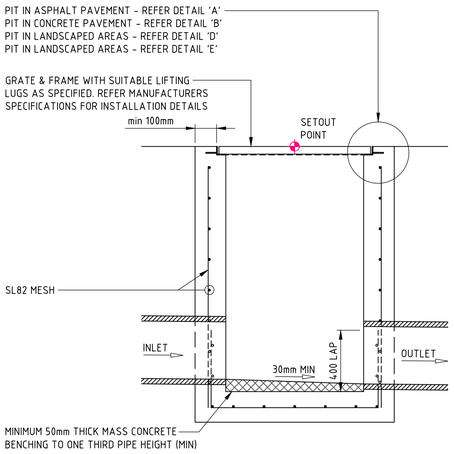
PROJECT
NEW PRIMARY SCHOOL IN MURRUMBATEMAN
FAIRLEY STREET, MURRUMBATEMAN

PROJECT NORTH

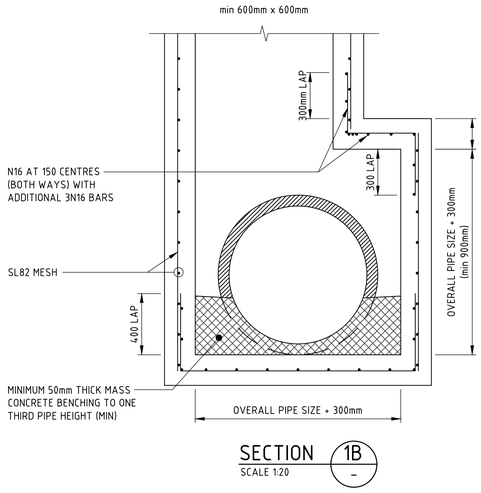
SCALE 1:10 @ A1 0.0 0.1 0.2 0.3 0.4 0.5m

DRAWN	CHECKED	VERIFIED	DATE	REVISION
MM	NS		12.08.21	

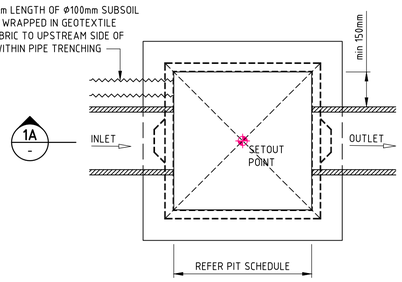
MURR-CV-SD-DWG-112.01 05



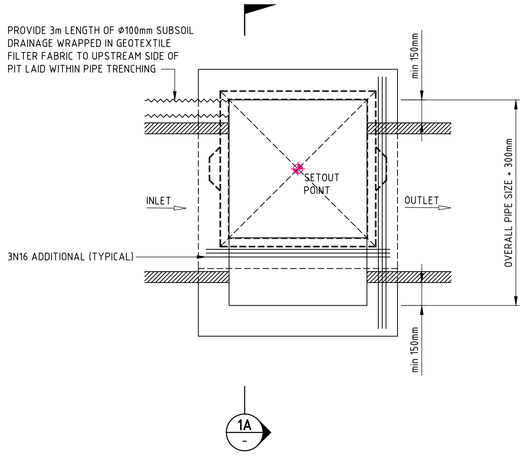
SECTION 1A
SCALE 1:20



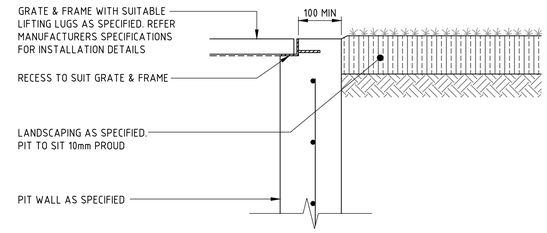
SECTION 1B
SCALE 1:20



PLAN
SURFACE INLET 'SIP' / JUNCTION PIT 'JP'
PIT STRUCTURE TO BE 200mm THICK UNLESS SHOWN OTHERWISE. DRILL AND EPOXY PLASTIC PROPRIETARY STEP IRONS IN ACCORDANCE WITH AUSTRALIAN STANDARDS AND MANUFACTURERS SPECIFICATIONS (PITS > 1000mm DEPTH).
REFER PIT INTERFACE DETAIL 'F' FOR CORNER REINFORCEMENT
SCALE 1:20

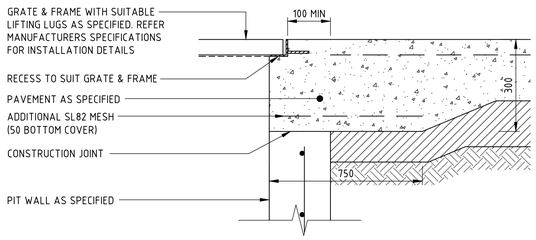


PLAN
DRAINAGE PIT - EXTENDED CHAMBER
PIT STRUCTURE TO BE 200mm THICK UNLESS SHOWN OTHERWISE. DRILL AND EPOXY PLASTIC PROPRIETARY STEP IRONS IN ACCORDANCE WITH AUSTRALIAN STANDARDS AND MANUFACTURERS SPECIFICATIONS (PITS > 1000mm DEPTH).
REFER PIT INTERFACE DETAIL 'F' FOR CORNER REINFORCEMENT
SCALE 1:20

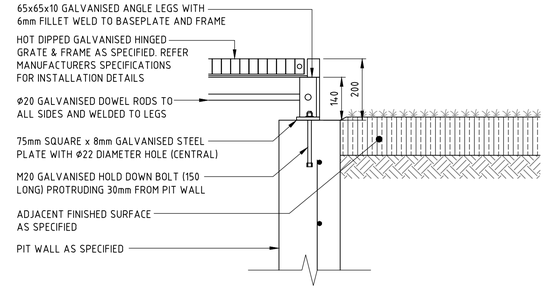


PIT INTERFACE - DETAIL 'D'
SCALE 1:10

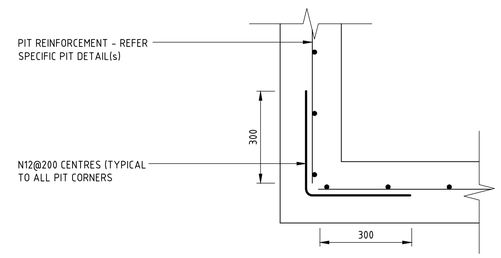
PIT INTERFACE - DETAIL 'A'
SCALE 1:10



PIT INTERFACE - DETAIL 'B'
SCALE 1:10



PIT INTERFACE - DETAIL 'E'
SCALE 1:10



PIT INTERFACE (PLAN VIEW)- DETAIL 'F'
APPLICABLE TO ALL STORMWATER DRAINAGE STRUCTURES
SCALE 1:10

NOT FOR CONSTRUCTION

AMENDMENTS

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LEVEL 2,
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ULTIMO NSW 2007 AUSTRALIA
TEL: +61 2 9291 0000
WEB: www.pp-a.com.au
NOMINATED ARCHITECT:
VINCE PEDAVOLI
NSW REG. No. 5045

PEDAVOLI ARCHITECTS

DRAWING NAME
DETAILS SHEET - SHEET 02

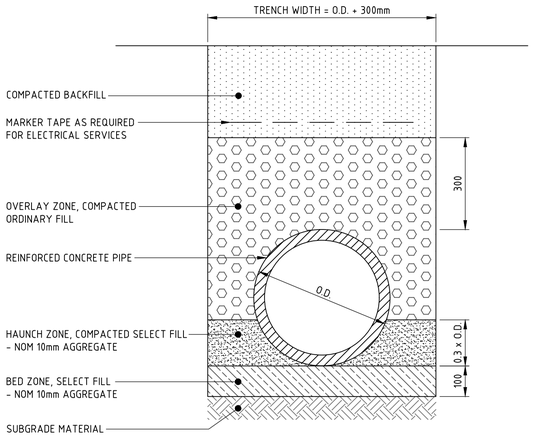
PROJECT
NEW PRIMARY SCHOOL IN MURRUMBATEMAN
FAIRLEY STREET, MURRUMBATEMAN

PROJECT NORTH

SCALE 1:10 @ A1
SCALE 1:20@ A1
0.0 0.1 0.2 0.3 0.4 0.5m
0.0 0.2 0.4 0.6 0.8 1.0m

DRAWN	CHECKED	VERIFIED	DATE	REVISION
MM	NS		12.08.21	

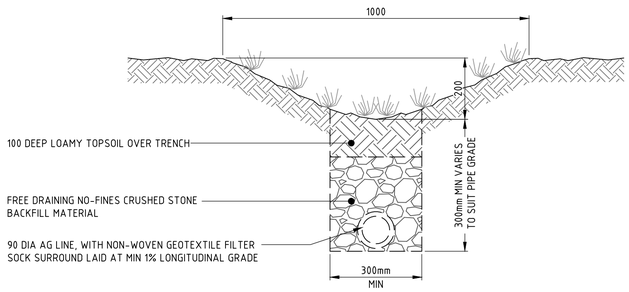
MURR-CV-SD-DWG-112.02 05



TYPICAL PIPE TRENCH - GENERAL AREAS

1. TRENCH WIDTH MAY NEED TO BE INCREASED SUBJECT TO ACHIEVING COMPACTION. ENSURE MINIMUM 300mm CLEARANCE BETWEEN, WHEN USING MULTIPLE PIPES TO ACHIEVE ADEQUATE COMPACTION.
2. MINIMUM PIPE COVER NOT UNDER ROADS TO BE 300mm U.N.O.
3. THE CONTRACTOR SHALL ENSURE THAT SHORING OF TRENCHES IS INSTALLED AS REQUIRED BY STATUTORY REQUIREMENTS.
4. ENSURE BACKFILLING COMPACTION MEETS THE FOLLOWING STANDARDS;
   - 4.1. TRENCHES UNDER PAVED AREAS / BUILDING - 100% SMDD
   - 4.2. TRENCHES NOT UNDER PAVEMENTS - 95% SMDD

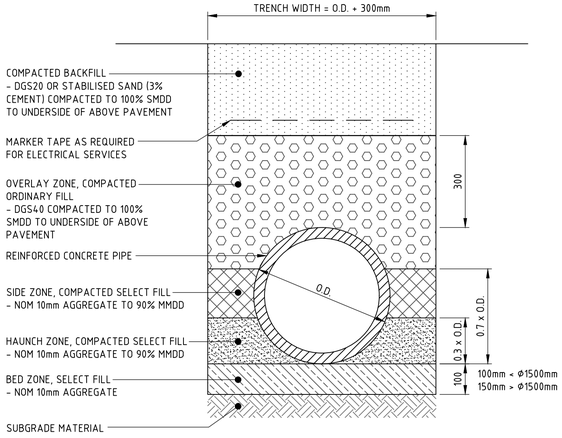
SCALE 1:10



TYPICAL SWALE DETAIL (1000 WIDE) WITH SUBSOIL DRAIN

NOTE: USED SEALED uPVC PIPE WHERE SUBSOIL DRAINAGE LINES CROSS BENEATH PAVEMENT AREAS

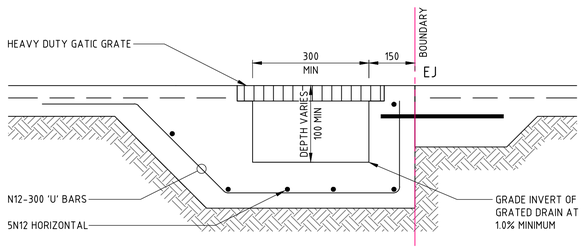
SCALE 1:10



TYPICAL PIPE TRENCH - UNDER ROADS

1. TRENCH WIDTH MAY NEED TO BE INCREASED SUBJECT TO ACHIEVING COMPACTION. ENSURE MINIMUM 300mm CLEARANCE BETWEEN, WHEN USING MULTIPLE PIPES TO ACHIEVE ADEQUATE COMPACTION.
2. MINIMUM PIPE COVER UNDER ROADS TO BE 600mm U.N.O. FOR CLASS '2' PIPES.
3. THE CONTRACTOR SHALL ENSURE THAT SHORING OF TRENCHES IS INSTALLED AS REQUIRED BY STATUTORY REQUIREMENTS.
4. ENSURE BACKFILLING COMPACTION MEETS THE FOLLOWING STANDARDS;
   - 4.1. TRENCHES UNDER PAVED AREAS / BUILDING - 100% SMDD

SCALE 1:10



GRATED TRENCH DRAIN 'GTD'

GRATED TRENCH DRAIN TO HAVE MINIMUM 150mm CLEARANCE AND 1% LONGITUDINAL FALL.
GRATE CLASS TO BE CLASS 'B' HEELSAFE IN PEDESTRIAN AREAS AND CLASS 'D' IN TRAFFICKED AREAS UNLESS NOTED OTHERWISE ON PLAN

SCALE 1:10

NOT FOR CONSTRUCTION

AMENDMENTS

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ULTIMO NSW 2007 AUSTRALIA
TEL: +61 2 9291 0000
WEB: www.pp-a.com.au
NOMINATED ARCHITECT:
VINCE PEDAVOLI
NSW REG. No. 5045

PEDAVOLI ARCHITECTS

DRAWING NAME
DETAILS SHEET - SHEET 03

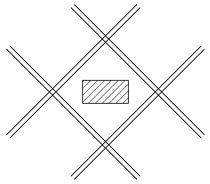
PROJECT
NEW PRIMARY SCHOOL IN MURRUMBATEMAN
FAIRLEY STREET, MURRUMBATEMAN

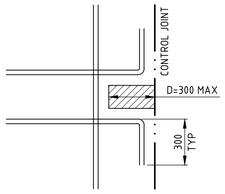
PROJECT NORTH

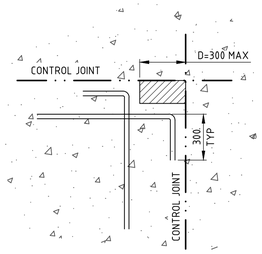
SCALE 1:10 @ A1 (0.0 0.1 0.2 0.3 0.4 0.5m)

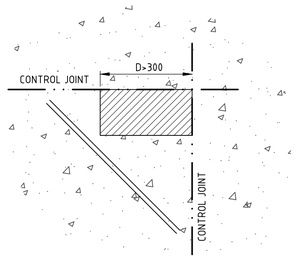
DRAWN	CHECKED	VERIFIED	DATE	REVISION
MM	NS		12.08.21	

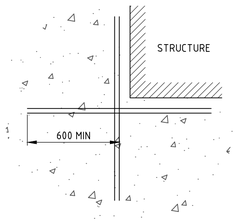
MURR-CV-SD-DWG-112.03 05

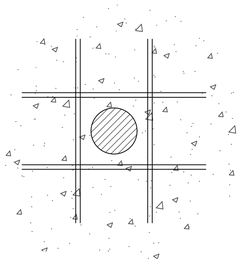


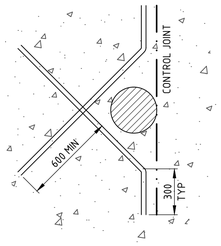


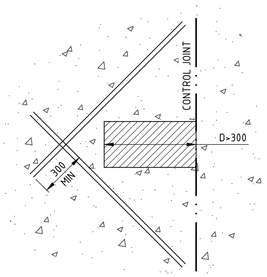


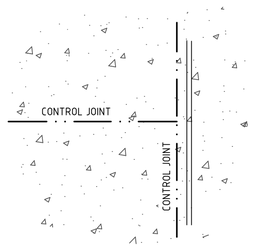


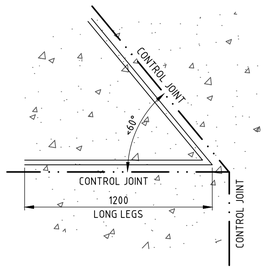








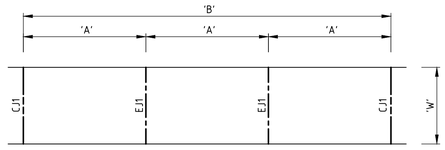




TYPICAL TRIMMER BAR DETAILS (TB)

NOTE:
- PROVIDE 2/N12 TRIMMER BARS MINIMUM 1200mm LONG UNLESS NOTED OTHERWISE AT ALL PITS, COLUMNS, INSPECTION OPENINGS, DOWNPIPES ETC THAT CAUSE A PENETRATION THROUGH THE SLAB.
- ALL TRIMMER BARS MUST MAINTAIN A MINIMUM 70mm COVER FROM PENETRATION & CONTROL JOINTS.
- UNLESS NOTED OTHERWISE PROVIDE ISOLATION JOINT (IJ) AT ALL PAVEMENT INTERFACES WITH STRUCTURE / PITS.
- APPLIES TO ALL DRAINAGE/SEWER PITS, SERVICE PITS, COLUMNS & SLAB PENETRATIONS.

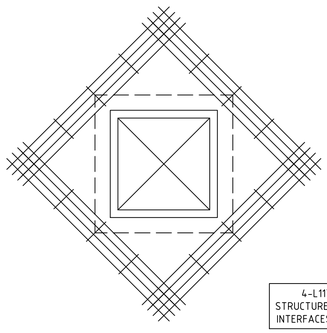
SCALE 1:20

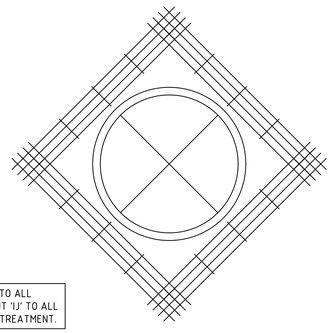


FOOTPATH/CYCLEWAY PAVEMENT TYPICAL JOINT LAYOUT

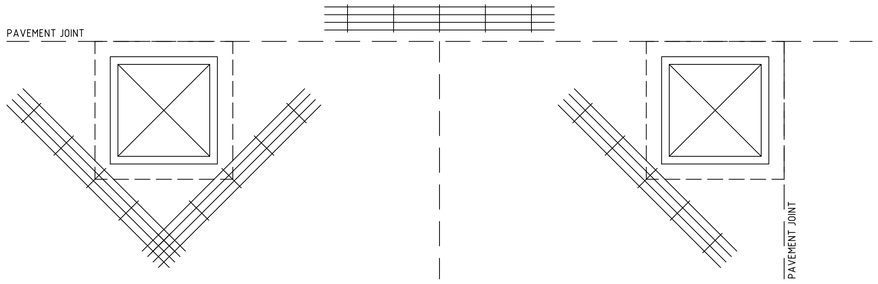
PAVEMENT JOINT SPACING

'W'	1.2m	2.4m
'A'	2.0m	3.5m
'B'	6.0m	10.5m





4-L11TM TIED TO UNDERSIDE OF MESH (1500mm LONG) TO ALL STRUCTURES / JOINTS AS SHOWN. PROVIDE ISOLATION JOINT 'IJ' TO ALL INTERFACES BETWEEN NEW CONCRETE AND EXISTING EDGE TREATMENT.



TRIMMER BAR ARRANGEMENTS 'TB'

THE ABOVE SHOWN DESIGN INTENT APPLIES TO ALL DRAINAGE / SEWER PITS, SERVICE PITS, COLUMNS AND SLAB PENETRATIONS

NOT FOR CONSTRUCTION

AMENDMENTS

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PEDAVOLI ARCHITECTS

DRAWING NAME
DETAILS SHEET - SHEET 04

PROJECT
NEW PRIMARY SCHOOL IN MURRUMBATEMAN
FAIRLEY STREET, MURRUMBATEMAN

PROJECT NORTH

SCALE 1:20@A1 0.0 0.2 0.4 0.6 0.8 1.0m

DRAWN	CHECKED	VERIFIED	DATE	REVISION
MM	NS		12.05.21	

MURR-CV-SD-DWG-112.04 05