



New Highschool in Jerrabomberra

Environa Road, Jerrabomberra, NSW 2619

NSW Department of Education

Civil Schematic Design Report

Revision: C

Report Amendment Register

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1. INTRODUCTION



Figure 1 - Site Location

This civil engineering schematic design 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 No 24461956). The SSDA is for a new high school located at Jerrabomberra.

The new highs school is proposed to meet increased learning demands - created by the rapid growth in the new residential development areas of South Jerrabomberra and newly introduced 'NSW Pathway Zones' seven-year phasing plan, which seeks to reallocate NSW-residing student enrolments back to the NSW live-in catchments from the ACT –

M+G Consulting have prepared a report on the civil engineering and flooding elements associated with the proposed development of the new Jerrabomberra High School which is part of the Monaro Cluster of Schools program which is designed to address increasing demand.

This Schematic Design Report addresses the proposed civil engineering works associated with the development of the new High School including drainage works and water quality/quantity control measures. Preliminary water quantity and quality assessment has been undertaken to ensure the proposed development complies with Queanbeyan Palerang Regional Council (QPRC) requirements.

This report addresses the Secretary’s Environmental Assessment Requirements (SEARs), notably:

SEARs Requirement	Response
<p>15. Stormwater Drainage</p> <p>Provide a preliminary stormwater management plan for the development that:</p> <ul style="list-style-type: none">- 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- an assessment of water quality impacts, particularly the impact of the relevant environmental values as outlined in the NSW Water Quality Objectives (NSW WQOs) and Australian New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC Guidelines) <p>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:</p> <p>Guidelines for developments adjoining land managed by the Office of Environment and Heritage (OEH, 2013).</p>	<p>The proposed stormwater management plan aims to safely convey the existing flow regimes throughout the site and achieve the water quality pollutant reduction targets in accordance with the guidelines contained in the QPRC Drainage Design Guidelines and the QPRC DCP 2008.</p> <p>Stormwater quantity will be managed via a pit and piped system which will route stormwater run-off to an On-Site Detention Tank, which will temporarily store water to attenuate post-development flows to the pre-existing conditions.</p> <p>Stormwater quality outcomes are proposed to be achieved by incorporating water treatment devices into the OSD tank. These devices capture pollutants in the stormwater runoff from the post-development site and reduce the pollutant loading to the required targets specified by QPRC.</p> <p>Further details of the proposed can be found in section 3 and appendix A of this report.</p>
<p>17. Soil and Water</p> <p>Provide:</p> <ul style="list-style-type: none">-an assessment of potential impacts on surface and groundwater (quality and quantity), soil, related infrastructure and watercourse(s) where relevant.-water quality impacts during construction.-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. <p>Relevant Policies and Guidelines:</p> <p>Managing Urban Stormwater - Soils and Construction Volume 1 (Landcom, 2004).</p> <p>Acid Sulphate Soil Manual, (NSW Acid Sulphate Soil Management Advisory Committee, 1998).</p> <p>Acid Sulphate Soils Assessment Guidelines (DoP, 2008).</p> <p>Guidelines for development adjoining land managed by the Office of Environment and Heritage (OEH, 2013).</p>	<p>The proposed soil and water management strategy ensures that control measures are put in place to manage runoff and ensure that there is no detrimental effect to the receiving environments downstream. This is further divided into the temporary condition (during the construction phase) and the permanent condition (handover).</p> <p>The temporary strategies generally refer to the control of the sediment and erosion, particularly during excavation works when sediments and suspended solids make their way into stormwater runoff. These measures attempt to minimize these the potential for these pollutants to be washed downstream into receiving waterways.</p> <p>The permanent strategies (also referenced above) refer to the design of water treatment devices used to achieve the pollutant reduction targets specified by QPRC.</p> <p>Further details of management strategies for both the temporary and permanent stages can be found in section 4 and appendix B of this report.</p>

2. PROPOSED DEVELOPMENT

The proposed development is for the construction of a new high school in Jerrabomberra. The proposal will meet community demand and to ensure new learning facilities are co-located near existing open space infrastructure. The proposal generally includes the following works:

- Site preparation;
- Construction of a series of buildings up to three storeys including administration/staff areas, library, hall and general learning spaces;
- Construction of new walkways, central plaza and outdoor games courts;
- Construction of a new at-grade car park;
- Associated site landscaping and open space.

The proposal has been designed to accommodate approximately 500 students with Stream 3 teaching spaces, however the core facilities will be future proofed to a Stream 5 to enable possible future expansion to meet projected demand.

The proposal will include site preparation works, such as clearing and levelling to accommodate the proposed buildings and play areas. The proposal will involve the construction of a series of buildings housing general learning spaces, administration and staff wings, outdoor learning areas, a library and assembly hall.

The proposal will include construction of a new driveway and hardstand with access proposed off the northern stub road east of Environa Drive. Pedestrian access is proposed off Environa Drive and the northern stub road.

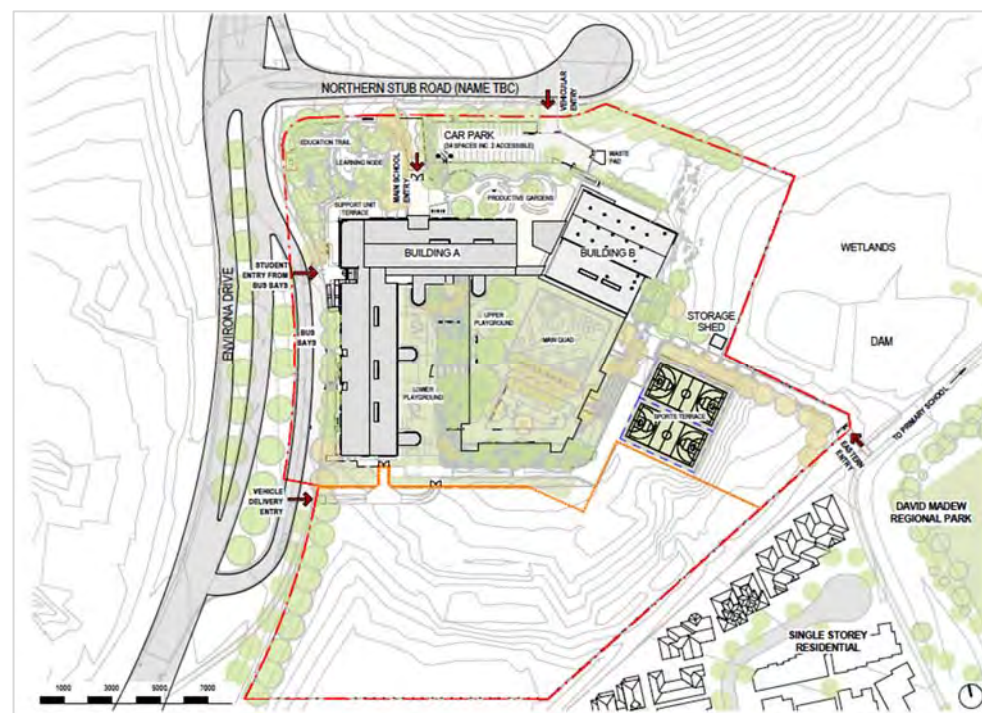


Figure 3 - JHS Proposed Site Plan (Source: TKD Architects)

2.1. Stormwater Drainage Strategy

In accordance with QPRC, calculations to determine peak flows for non-urban catchment shall be carried out in accordance with the Book 9 of Australian Rainfall and Runoff, Commonwealth of Australia (Geoscience Australia), 2016 (AR&R) and the requirements of QPRC Drainage Design Specifications.

An on-site detention (OSD) system is required for any developments with additional impervious surface area to ensure there is no adverse impact from increased stormwater runoff on downstream properties as a result of new developments or redevelopments during all storm events up to and including the 100-year Annual Recurrence Interval (ARI) event. The OSD storages are to be designed to meet the Permissible Site Discharge as indicated in Table D5.5 of QPRC Drainage Design guidelines.

The existing site is mostly grassed while the proposed site is approximately 50% impervious based on the proposed concept design details. An underground Onsite Detention (OSD) tank will be required to limit the post-development flows to the pre-development conditions as outlined in Table D5.5 of QPRC Drainage Design guidelines.

The preliminary analysis was undertaken using DRAINS software indicates a volume of approximately 100m³ of detention storage is required onsite to maintain non-worsening of post-development flows to pre-development flow conditions based on the architectural concept design. Please refer Figure 4 for the preliminary DRAINS layout.

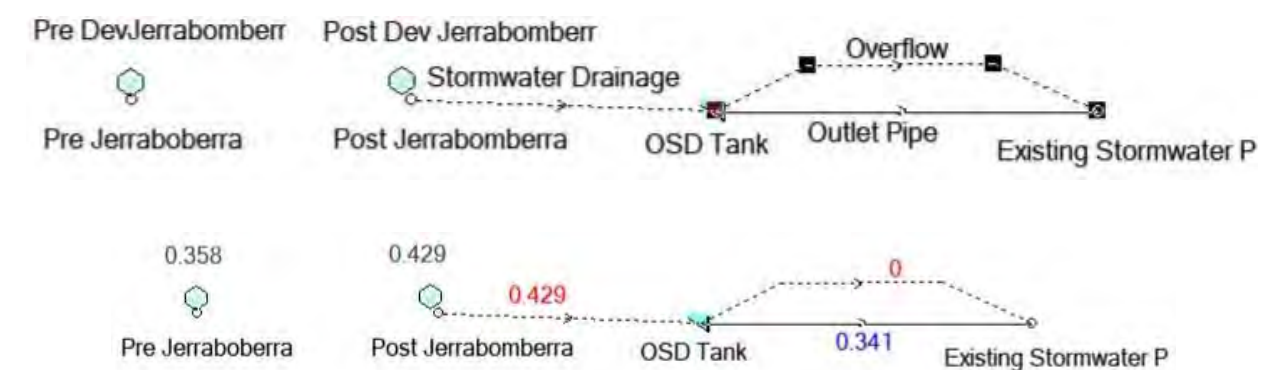


Figure 2 - DRAINS analysis for the site

In accordance with Council's Development Design Specification D5 – Stormwater Drainage Design, new developments are to provide a stormwater major/minor system. The "major" system shall provide safe, well-defined overland flow paths for rare and extreme storm runoff events while the "minor" system shall be capable of carrying and controlling flows from frequent runoff events.

Additionally, as outlined in the Educational Facilities Standards & Guidelines (EFGS), the proposed development is required to install/upgrade the minor stormwater drainage system including pits, underground pipes and kerb and gutter to cater for storm events up to the 20-year Average Recurrence Interval (ARI).

A major system is also required for the proposed development in the form of overland flow paths. The major system should be designed to convey flows surcharged from the underground drainage system for storm events up to 100-year ARI. The overland flow is to be directed away from the buildings and carparks and towards the public road kerb and gutter provided that no adverse impact on the downstream properties.

2.2. Stormwater Quality Management Strategy

To protect the existing ecology, the development will be required to satisfy the water quality requirements over the full range of rainfall events to maintain the long-term protection of the pre-determined Environmental Values. The Council’s Development Design Specification D7 - Erosion Control and Stormwater Management, outlines that any development except for single dwelling houses and dual occupancy housing must undertake a stormwater quality assessment to demonstrate that the development will achieve the post development pollutant load standards indicated below:

Proprietary water quality treatment products including Litter Baskets and Filtration cartridges within the OSD tank are proposed for the site as water quality treatment devices. For the benefit of reducing the demand on water supply, a rainwater harvesting system can be proposed onsite via the provision of a rainwater tank, subject to confirmation by the Project Manager.

Pollutant	Objective
Suspended Solids SS	80% retention of average annual load
Sediment	100% retention of sediment greater than 0.125mm for flows up to the 3 month ARI peak flow
Oil & Grease	No visible oils for flows up to the 3 month ARI peak flow
Litter	100% retention of litter greater than 5 mm for flows up to the 3 month ARI peak flow
Total Phosphorus (TP)	65% retention of average annual load
Total Nitrogen (TN)	65% retention of average annual load

Figure 3 - QPRC's Pollution Reduction Targets (DCP 2008)

Alternative methods of water treatment adopting the use of more organic processes is also feasible for the proposed development. These include the use of bio-retention basins and swales which capture sediments and nutrients in the stormwater run-off and filter them through biologically active media layers, effectively reducing the pollutant loading in the stormwater run-off.

Further details of the above proposed treatment methods are further discussed later in this section of the report.

“MUSIC” software by eWater Pty Ltd will used to assess the performance of the treatment devices in achieving the pollution reduction targets outlined in the QPRC DCP 2008. A Music Template with a 6-minute time step will adopted in the design of the WSUD elements.

BIO-RETENTION BASINS/SWALES

The proposed stormwater management strategy can adopt bio-retention basins/swales that can be integrated into the drainage network to treat runoff from impervious surfaces. These systems will be aimed at reducing the pollutants present in these flows to the nominated targets outlined previously in the report.

Stormwater is routed to the bio-retention basins (or through swales), either directly or via an inlet pit and pipe. The water is then filtered through a vegetated and biologically active media layer and is collected in slotted subsoil drainage pipes below the garden beds.

- The benefits of these bio-retention basins/swales include:
- Effective removal of fine and soluble pollutants;
 - Effective removal of sediment and heavy metals;
 - Effective removal of nutrients (Phosphorus & Nitrogen) and bacteria;
 - Reduction in impervious areas for the proposed development site;
 - Living plants provide an ecosystem for wildlife; and
 - Basin volumes assist in the management of stormwater quantity control.

The vegetation incorporated into these basins for the treatment of stormwater are to be core functional bioretention plant species. A list of acceptable species can be found in table 19 of the document by Water by Design – Bioretention Technical Design Guidelines Version 1.1, October 2014. The selection of plant species is to be approved by the design engineer prior to construction.

STORMWATER FILTRATION CARTRIDGES

Stormwater filtration cartridges are an underground stormwater treatment devise comprised of one or more structures that house rechargeable, media-filled cartridges that trap particulates and absorb pollutants from stormwater run-off such as total suspended solids, hydrocarbons, nutrients, metals and other common pollutants. Filtered (treated) stormwater run-off is collected in underdrain pipes below the cartridges and are directed towards an outlet structure. In major storm events, an overflow-weir of high-flow bypass allows excessive run-off to bypass the system and prevent damage or overloading on the treatment devices.

LITTER BASKETS (PIT INSERTS)

Litter baskets capture pollutants at drainage entry points and consists of a capture basket and an overflow bypass flap(s). The basket is fitted below the invert of the gutter inside the drainage inlet pit, and importantly does not obstruct flow in the outlet pipe. Solid pollutants enter the litter basket with the stormwater from roadside or other run-off areas and the pollutants aquaplane across the flow plate into the capture basket. The filtered stormwater then passes into the drainage network with minimal head/hydraulic loss through the unit. These litter baskets can be retrofitted into pre-cast pits and positioned below inlet pipes (with sufficient depth above outlet pipes), so that stormwater pollutants that have already entered the system can be captured at a downstream pit.

RAINWATER TANKS

Rainwater tanks serve to benefit the stormwater drainage design through harvesting and re-use. The re-use of stored rainwater from roofed surfaces reduces the demand of potable water and provide assists in water conservation, whilst the storage provided within these tanks assists in the restoration of flow regimes towards the pre-development conditions. Rainwater tanks also assist in the removal of contaminants such as Suspended Solids, Phosphorous and Nitrogen.

Regular inspections and ongoing maintenance of these assets are required to monitor performance and to ensure that these elements are performing as intended. A management schedule for these elements can be developed in accordance with the *Maintenance Guidelines for Stormwater Treatment Measures Version 1, September 2020* by Stormwater NSW, to be reviewed during the detailed design stage of the project.

3. SITE DESCRIPTION

3.1. Location

The proposed development is located within the South Jerrabomberra Innovation Precinct, also referred as the Poplars Innovation Hub, in the local government area of Queanbeyan-Palerang Regional Council.

The school site- is part of an existing lot (Lot 1 in DP 1263364), which is approximately 65.49ha in area and will be characterised by a mix of business park and open space uses and a new north-south connector road named Environa Drive.

Delivery of the Precinct is underway with Environa Drive currently under construction. Most of the-lot, however, remains undeveloped.

The school site is subject to a proposed lot (Lot 2 in DP 1263364), which was approved by Council under DA332-2015 on 10 March 2021 but is not yet registered. The approved lot is irregular in shape, is largely cleared and is approximately 4.5ha in area. A small dam is located adjacent to the south eastern boundary of the site, which forms part of a broader wetland.

The site is located in excellent proximity to existing open space facilities. It adjoins David Madew Regional Park to the south east and is located 100m east of an existing recreational field associated with Jerrabomberra Public School.



Figure 4 - Aerial image of proposed site

A description of the site is provided in the table below:

Table 1 – New High School in Jerrabomberra Site Description	
Item	Description
Site address	School address yet to be determined however, it is located within the Jerrabomberra Innovation Precinct at 300 Lanyon Drive, Jerrabomberra.
Legal description	Lot 1 in DP 1263364 (existing) Lot 2 in DP 1263364 (proposed, but not registered)
Total area	Lot 1 – 65.49ha Lot 2 – 4.5ha
Frontages	The site provides frontage to Environa Drive and the northern stub road, both currently under construction.
Existing use	The site is undeveloped and contains a series of small vegetation clusters scattered across the site.
Existing access	Existing access is via an informal unsealed driveway off Tomsitt Drive along the northern boundary of the existing lot. The site will be accessed via Environa Drive and a secondary access road (North Road), which is currently under construction.
Context	Land to the south is primarily residential in nature. Jerrabomberra Public School and David Madew Regional Park are located to the east/south-east, while land to the west is undeveloped and features Jerrabomberra Creek. The site is located within the South Jerrabomberra Innovation Precinct, which is currently under construction. The areas north and west of the site are currently undeveloped but the site is currently undergoing a transition from rural to business park uses. Development further north on the opposite side of Tomsitt Drive and along Edwin Land Parkway includes retail and commercial uses. Development immediately to the south includes existing low density residential development. Land in the south west has been identified for future low density residential, light industrial and business park uses.

3.2. Existing Services

A survey has been undertaken for the site however it does not identify any services passing through the proposed building envelope. Relocation and adjustment of the existing services may be required shall any services are identified on the site.

3.3. Existing Stormwater Network

Based on the provided survey, no stormwater infrastructure has been identified on the site within the proposed building envelopes.

4. EROSION & SEDIMENT CONTROL (DURING CONSTRUCTION)

Prior to any earthworks commencing on site, soil and water management control measures will need to be put in place generally in accordance with *Managing Urban Stormwater – Soils and Construction*, 4th Edition (2004) by Landcom.

The contractor will be responsible to attain all necessary licenses, permits or approvals prior to the commencement of the works.

The contractor will be responsible for the implementation and maintenance of the Erosion and Sediment Control measure used during construction of the works.

The temporary measures contained in this report are to be implemented and maintained throughout the construction phase of the project, until such a time when permanent measures can be put in place. Soil and water management requirements are not limited to the advice contained in this report and as such this document outlines the minimum requirements that are to be implemented by the contractor. The final design and implementation of all maintenance works is the sole responsibility of the contractor. Further assessment of the permanent stormwater management controls outlined in this report are required. This may require some revision to the measures, which is to be confirmed during the detailed design stage of the project.

The measures are to be installed as per the requirements contained in the documents referenced above and those outlined below:

- Clearly visible barrier, site fencing and hoarding shall be installed at the discretion of the superintendent to ensure site security, safety of the public, manage traffic control and prohibit any unnecessary site disturbance. Vehicular access to the site shall be limited to only what is essential for the construction activities and shall enter the site only through the stabilized access points.
- All disturbed areas are to be stabilised within 14 working days of the completion of earthworks. All disturbed areas are to be protected so that the land is permanently stabilised within six months.
- Proprietary silt fencing shall be installed by the contractor in accordance with the final approved erosion and sediment control plan and elsewhere at the discretion of the site superintendent to contain sedimentation to as near as possible to the original source.
- Sediment removed from any sediment trapping device shall be relocated where further pollution to downslope lands and waterways cannot occur.

- Stockpiles shall be located by the contractor in accordance with the final approved erosion and sedimentation control plan and elsewhere at the discretion of the project manager and/or superintendent. Where stockpiles are to be in place longer than 30 days they shall be stabilised.
- Water shall be prevented from entering the permanent drainage system unless it is sediment free. Drainage pits are to be protected in accordance with the final approved erosion and sedimentation control plan.
- Temporary sediment traps located at pits shall be retained throughout the early works stage and until the appropriate replacement measures for the subsequent stages are installed.

DURING WET WEATHER CONSTRUCTION

Soil and water management measures are to be incorporated into the construction works during wet weather construction works. These include, but are not limited, to:

- All plant and equipment are to be relocated away from edges of batters and edges of excavations.
- Construct temporary earth V-drains to direct surface water away from top of batters, edges of excavations batters and temporary shoring
- Inspect all batters and temporary shoring and undertake remedial works as required.
- Inspect all erosion and sediment control measures and repair as necessary.
- Check to ensure that sufficient supply of flocculant is on site for water treatment prior to discharge from site.
- Ensure all vehicle access tracks are in good condition. Undertake repairs and top with gravel/ballast as required.

WATER QUALITY (DURING CONSTRUCTION)

Special consideration is given towards the water quality impacts on the environmental values of downstream environments during the construction phase of the proposed works. Unsatisfactory management of disturbed areas allow for pollutants such as sediments to escape into these environments, carrying nutrients and oxygen demanding materials that present an array of issues including a reduction in:

- Light penetration of water;
- Suitability of habitats for some aquatic flora and fauna;
- Suitability for recreation, irrigation etc, particularly if toxic algae is present; and
- Aesthetic appeal of the water.

In accordance with the guidelines presented in *Managing Urban Stormwater – Soils and Construction Volume 1* by Landcom (2004), some general recommendations are provided to minimise the water quality impacts on downstream receiving waters. A summary of these recommendations is listed below:

- Design structures to minimise land disturbance.
- Pass any potential sediment-laden stormwater runoff through a trap or basin.
- Where possible, do not construct sediment basins on line on a watercourse.
- Design of any sediment retention basins to ensure that water is not diverted from its intended flow path.
- Where practical, place sediment control measures:
 - So that only waters polluted by on-site land disturbance activities enter them;
 - Off-line, so that trunk drainage carries only relatively clean water;
 - Away from normal construction operations; and
 - Upstream of any receiving waters.
- Ensure that the design of sediment control measures have adequate capacity to trap and store sediment and allow for adequate time for the settlement of desired particle sizes.
- Do not decommission temporary sediment control measures until the permanent works have been completed and fully stabilised for more than 90% of the contributing catchment.

For further details and proposed erosion and sediment control strategies, refer Appendix A of this report.

Appendix A – Civil Schematic Drawings

**12785-02C - NEW HIGH SCHOOL IN JERRABOMBERRA
ENVIRONA DRIVE, JERRABOMBERRA NSW 2619
CIVIL & STORMWATER**

DRAWING No.	DESCRIPTION
200095-JHS-MB-CE-SD-HS-2001	DRAWING REGISTER AND LOCALITY PLAN
200095-JHS-MB-CE-SD-HS-2002	CONSTRUCTION NOTES
200095-JHS-MB-CE-SD-HS-2003	LEGEND SHEET
200095-JHS-MB-CE-SD-HS-2005	SEDIMENT & EROSION CONTROL PLAN
200095-JHS-MB-CE-SD-HS-2006	SEDIMENT & EROSION CONTROL PLAN - DETAILS
200095-JHS-MB-CE-SD-HS-2009	BULK EARTHWORKS DETAIL PLAN
200095-JHS-MB-CE-SD-HS-2010	BULK EARTHWORKS LONGITUDINAL SECTIONS - SHEET 1
200095-JHS-MB-CE-SD-HS-2011	BULK EARTHWORKS LONGITUDINAL SECTIONS - SHEET 2
200095-JHS-MB-CE-SD-HS-2012	BULK EARTHWORKS LONGITUDINAL SECTIONS - SHEET 3
200095-JHS-MB-CE-SD-HS-2030	GENERAL ARRANGEMENTS PLAN
200095-JHS-MB-CE-SD-HS-2031	STORMWATER DRAINAGE PLAN - SHEET 1
200095-JHS-MB-CE-SD-HS-2032	STORMWATER DRAINAGE PLAN - SHEET 2
200095-JHS-MB-CE-SD-HS-2051	STORMWATER DRAINAGE DETAILS - SHEET 1
200095-JHS-MB-CE-SD-HS-2061	SITEWORKS AND PAVEMENT PLAN - SHEET 1
200095-JHS-MB-CE-SD-HS-2062	SITEWORKS AND PAVEMENT PLAN - SHEET 2
200095-JHS-MB-CE-SD-HS-2071	SITEWORKS - DETAILS - SHEET 1
200095-JHS-MB-CE-SD-HS-2091	PAVEMENT DETAILS



GENERAL NOTES

- G1 THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS OR SKETCHES AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE SUPERINTENDENT BEFORE PROCEEDING WITH WORK.
- G2 MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE SPECIFICATION, CURRENT SAA CODES, BUILDING REGULATIONS AND THE REQUIREMENTS OF ANY OTHER RELEVANT STATUTORY AUTHORITIES.
- G3 THESE DRAWINGS MUST NOT BE SCALED. ALL DIMENSIONS ARE IN METERS. ALL SET OUT DIMENSIONS AND LEVELS, INCLUDING THOSE SHOWN ON THESE DRAWINGS SHALL BE IN ACCORDANCE WITH THE ARCHITECT'S DRAWINGS AND VERIFIED ON SITE.
- G4 ALL SETOUT AND DIMENSIONS OF THE STRUCTURE INCLUDING KERBS AND RETAINING WALLS, AND BULK EARTHWORKS MUST BE TAKEN FROM THE ARCHITECT'S DRAWINGS. SETOUT OF THE STORMWATER PITS BY OTHERS. CONTRACTOR TO CONFIRM SETOUT OF SERVICE TRENCHING INCLUDING SUBSOIL ON SITE.
- G5 THE CONTRACTOR SHALL COMPLY WITH ALL REGULATIONS OF AUTHORITIES HAVING JURISDICTION VER THE WORKS. REFER TO GEOTECHNICAL REPORT BY 'DOUGLAS PARTNERS' ISSUED 23rd APRIL 2021.
- G6 ALL DIMENSIONS AND REDUCED LEVELS MUST BE VERIFIED ON SITE BEFORE THE COMMENCEMENT OF ANY WORK.
- G7 THE APPROVAL OF A SUBSTITUTION SHALL BE SOUGHT FROM THE SUPERINTENDENT BUT IS NOT AN AUTHORISATION OF A COST VARIATION. THE SUPERINTENDENT MUST APPROVE ANY COST VARIATION INVOLVED BEFORE ANY WORK STARTS.
- G8 ALL LEVELS SHOWN ARE TO THE AUSTRALIAN HEIGHT DATUM.
- G9 SERVICE INFORMATION SHOWN IS APPROXIMATE ONLY. PRIOR TO COMMENCEMENT OF ANY WORKS, THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND SERVICES AND COMPLY WITH ALL REQUIREMENTS OF THOSE AUTHORITIES.
- G10 EXISTING SURFACE CONTOURS, WHERE SHOWN, ARE INTERPOLATED AND MAY NOT BE ACCURATE.
- G11 UNLESS NOTED OTHERWISE, ALL VEGETATION SHALL BE STRIPPED TO A MINIMUM DEPTH OF 150mm UNDER ALL PROPOSED PAVEMENT AND BUILDING AREAS.
- G12 MAKE SMOOTH CONNECTION WITH ALL EXISTING WORKS.

SITEWORKS NOTES

- S1 PRIOR TO THE PLACEMENT OF ANY PAVEMENTS, BUILDINGS OR DRAINS THE EXPOSED SUBGRADE SHALL BE COMPACTED TO A MINIMUM OF 98% STANDARD COMPACTION IN ACCORDANCE WITH TEST E11 OF A.S. 1289 FOR THE TOP 300mm. ANY SOFT SPOTS SHALL BE REMOVED AND REPLACED WITH GRANULAR FILL TO THE ENGINEERS APPROVAL AND COMPACTED IN ACCORDANCE WITH THE COMPACTION REQUIREMENTS SET OUT BELOW. ON HIGHLY REACTIVE CLAY AREAS SITE EXCAVATED MATERIAL MAY BE USED WITH THE PRIOR AUTHORISATION OF THE ENGINEER.
- S2 ALL FILL AND PAVEMENT MATERIALS SHALL BE COMPACTED IN ACCORDANCE WITH GEOTECHNICAL REPORT BY 'DOUGLAS PARTNERS' ISSUED 23rd APRIL 2021. MOISTURE CONTENT TO BE MAINTAINED AT \pm 2% DMC. MINIMUM COMPACTION REQUIREMENTS ARE DETAILED BELOW FOR (ALL REQUIREMENTS ARE TO BE VERIFIED BY A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER):
- LANDSCAPED AREAS 98% STD.
 - FILL UNDER ANY FOOTINGS AND FLOOR SLABS FOR ANY STRUCTURE TO SUBGRADE LEVEL:
 - FINE CRUSHED ROCK 98% STD.
 - SELECTED FILL WITHOUT CONSPICUOUS CLAY CONTENT 98% STD.
 - BUILDING BASECOURSE 98% MOD.
 - FILL UNDER ROAD PAVEMENTS:
 - TO WITHIN 500mm OF FINISHED SUBGRADE LEVEL 98% STD.
 - UP TO FINISHED SUBGRADE LEVEL 98% STD.
 - ROAD PAVEMENT MATERIALS:
 - SUB BASE 98% MOD.
 - BASE COURSE 98% MOD.
- THE MAXIMUM COMPACTION IS TO BE NO GREAT THAN 4% ON TOP OF THE ABOVE MENTION VALUES.
- S3 GRADE EVENLY BETWEEN FINISHED SURFACE SPOT LEVELS. FINISHED SURFACE CONTOURS ARE SHOWN FOR CLARITY. WHERE FINISHED SURFACE LEVELS ARE NOT SHOWN, THE SURFACE SHALL BE GRADED SMOOTHLY SO THAT IT WILL DRAIN AND MATCH ADJACENT SURFACES OR STRUCTURES.
- S4 ALL DIMENSIONS GIVEN ARE TO FACE OF KERB, CENTER OF PIPE OR EXTERIOR FACE OF BUILDING UNLESS NOTED OTHERWISE.
- S5 ANY STRUCTURES, PAVEMENTS OR SURFACES DAMAGED, DIRTIED OR MADE UNSERVICEABLE DUE TO CONSTRUCTION WORK SHALL BE REINSTATED TO THE SATISFACTION OF THE ENGINEER.
- S6 ANY FILL REQUIRED SHALL BE APPROVED BY THE ENGINEER / GEOTECHNICAL CONSULTANT.
- S7 CONTRACTOR IS TO ENSURE THAT ALL EXCAVATIONS ARE MAINTAINED IN A DRY CONDITION WITH NO WATER ALLOWED TO REMAIN IN THE EXCAVATIONS.
- S8 ALL FINISHES AND COLOURS TO BE IN ACCORDANCE WITH ARCHITECTURAL SPECIFICATIONS.
- S9 REFER TO STRUCTURAL DRAWINGS FOR CONCRETE, REINFORCEMENT AND RETAINING WALL DETAILS.
- S10 GENERALLY FOR TRENCHING WORKS THE CONTRACTOR MUST:
- A) COMPLY WITH THE GENERAL PROVISIONS OF PART 3.1 "MANAGING RISKS TO HEALTH AND SAFETY" OF NSW WORK AND HEALTH AND SAFETY REGULATION 2011
- B) COMPLY PART 6.3 DIVISION 3 "EXCAVATION WORK" OF NSW WORK HEALTH AND SAFETY REGULATION NSW 2011
- S11 PRIOR TO THE EXCAVATION OF ANY TRENCH DEEPER THAN 15 METRES THE CONTRACTOR MUST:
- A) NOTIFY THE OCCUPATIONAL HEALTH AND SAFETY AUTHORITY ON THE APPROPRIATE FORM.

STORMWATER DRAINAGE NOTES

- SW1 UNLESS NOTED OTHERWISE BY HYDRAULIC ENGINEERS DRAWINGS, ALL DOWNPIPES & GRATED INLETS SHALL BE CONNECTED TO PITS OR MAIN STORMWATER DRAINS WITH 150 DIA. UPVC PIPES LAD AT A MINIMUM GRADE OF 1 IN 100. FOR SYPHONIC ROOF DRAINAGE SYSTEMS ALL DOWNPIPES CONNECTION DRAIN SIZES TO BE CONNECTED INTO MAIN STORMWATER DRAINS SHALL BE IN ACCORDANCE WITH HYDRAULIC ENGINEERS DRAWINGS.
- SW2 ALL MAIN STORMWATER DRAINS SHALL BE CONSTRUCTED USING MATERIALS AS SPECIFIED ON THE DRAWINGS IN ACCORDANCE WITH THE APPROPRIATE A.S. IF NOT SPECIFIED THEN CLASS 2 RRJ RCP SHALL BE USED FOR DIAMETERS \geq 225mm. SEWER CLASS SEH UPVC IN ACCORDANCE WITH AS1289 SHALL BE USED FOR \leq 225mm OR SMALLER.
- SW3 ALL PIPEWORK TO BE INSTALLED IN ACCORDANCE WITH AS3725 FOR RCP AND AS2032 FOR PVC. ALL BEDDING TO BE TYPE H2 UNLESS NOTED OTHERWISE.
- SW4 FOR ALL PITS \geq 12m DEEP, STEP IRONS SHALL BE INSTALLED.
- SW5 PRECAST PITS MAY BE USED EXTERNAL TO THE BUILDING SUBJECT TO APPROVAL BY MEINHARDT-BONACCI GROUP.
- SW6 ENLARGERS, CONNECTIONS AND JUNCTIONS TO BE PREFABRICATED FITTINGS WHERE PIPES ARE LESS THAN 300 DIA.
- SW7 WHERE SUBSOIL DRAINS PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS, UNSLOTTED UPVC SEWER GRADE PIPE IS TO BE USED.
- SW8 GRATES AND COVERS SHALL CONFORM WITH AS 3996 AND AS 1428.1 FOR ACCESS REQUIREMENTS.
- SW9 CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES ARE NOT TO BE REDUCED WITHOUT APPROVAL.
- SW10 AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
- SW11 ALL EXISTING STORMWATER DRAINAGE LINES AND PITS THAT ARE TO REMAIN ARE TO BE INSPECTED AND CLEARED. DURING THIS PROCESS ANY PART OF THE STORMWATER DRAINAGE SYSTEM THAT WARRANTS REPAIR SHALL BE REPORTED TO THE SUPERINTENDENT/ENGINEER FOR FURTHER DIRECTIONS.

KERBING NOTES

- K1 ALL CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 32 MPa U.N.O.
- K2 ALL KERBS, GUTTERS, DISH DRAINS AND CROSSINGS TO BE CONSTRUCTED ON 75mm GRANULAR BASECOURSE COMPACTED TO A MINIMUM 98% MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS1289 5.2.1.
- K3 EXPANSION JOINTS (EJ) TO BE FORMED FROM 10mm COMPRESSIBLE CORK FILLER BOARD FOR THE FULL DEPTH OF THE SECTION AND CUT TO PROFILE. EXPANSION JOINTS TO BE LOCATED AT DRAINAGE PITS, ON TANGENT POINTS OF CURVES AND ELSEWHERE AT MAX 12m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE EXPANSION JOINTS ARE TO MATCH THE JOINT LOCATIONS IN THE SLAB.
- K4 WEAKENED PLANE JOINTS TO BE MIN 3mm WIDE AND LOCATED AT 3m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE WEAKENED PLANE JOINTS ARE TO MATCH THE JOINT LOCATIONS IN THE SLAB.
- K5 BROOMED FINISH TO ALL RAMPED AND VEHICULAR CROSSINGS. ALL OTHER KERBING OR DISH DRAINS TO BE STEEL FLOAT FINISHED.
- K6 IN THE REPLACEMENT OF KERBS:-
 - EXISTING ROAD PAVEMENT IS TO BE SAWCUT 900mm U.N.O. FROM THE LIP OF GUTTER. UPON COMPLETION OF THE NEW KERB AND GUTTER, NEW BASECOURSE AND SURFACE TO BE LAD 600mm WIDE U.N.O.
 - EXISTING KERBS ARE TO BE COMPLETELY REMOVED WHERE NEW KERBS ARE SHOWN.

SEDIMENT AND EROSION CONTROL NOTES

1. IT HAS BEEN ASSUMED THAT HOARDINGS/SILT FENCING WILL BE PROVIDED TO THE STAGE BOUNDARY SUFFICIENT TO PREVENT SEDIMENT RUNOFF FROM LEAVING SITE (EXCEPT IN THE CASE OF ENTRY/EXIT LOCATIONS WHERE TEMPORARY CONSTRUCTION ENTRY/EXIT SEDIMENT TRAP ARE PROVIDED). IF THIS IS NOT THE CASE, PROVIDE SEDIMENT FENCE TO STANDARD DETAIL BELOW AS REQUIRED TO PREVENT SEDIMENT FROM LEAVING SITE, DIRECT RUNOFF TO SEDIMENT BASIN.
2. ALL SEDIMENT CONTROL MEASURES TO BE INSTALLED IN ACCORDANCE WITH LANDCOM MANAGING URBAN STORMWATER "BLUE BOOK".
- SEDIMENT CONTROL CONDITIONS
1. SEDIMENT FENCES WILL BE INSTALLED AS SHOWN AND ELSEWHERE AT THE DISCRETION OF THE SITE MANAGER TO CONTAIN COARSER SEDIMENT FRACTIONS INCLUDING AGGREGATED FINES) AS NEAR AS POSSIBLE TO THEIR SOURCE.
2. SEDIMENT REMOVED FROM ANY TRAPPING DEVICE WILL BE RELOCATED WHERE FURTHER POLLUTION TO DOWNSLOPE LANDS & WATERWAYS CANNOT OCCUR.
3. STOCKPILES WILL BE PLACED WHERE SHOWN ON DRAWING OR ELSEWHERE AT THE DISCRETION OF THE SITE MANAGER AND NOT WITHIN 5m OF HAZARD AREAS INCLUDING LIKELY AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS & DRIVEWAYS.
4. WATER WILL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM WITH INLET FILTERS (SEE DETAILS) UNLESS IT IS SEDIMENT FREE.
5. TEMPORARY SEDIMENT TRAPS WILL BE RETAINED UNTIL AFTER THE LANDS THEY ARE PROTECTING ARE COMPLETELY REHABILITATED.
6. CONTRACTOR TO DESIGN/SIZE/CONSTRUCT TEMPORARY SEDIMENT BASIN. WATER SHOULD BE ALLOWED TO SETTLE BEFORE DISCHARGE. CONTRACTOR MUST VERIFY THAT WATER QUALITY MEETS AUTHORITIES REQUIREMENTS PRIOR TO DISCHARGE. ACCUMULATED SEDIMENT SHOULD THEN BE REMOVED & DISPOSED OF IN ACCORDANCE WITH ENVIRONMENTAL MANAGEMENT PROCEDURES.

SITE INSPECTION & MAINTENANCE CONDITIONS

THE SITE MANAGER WILL INSPECT THE SITE AT LEAST WEEKLY AND WILL:

1. ENSURE THAT DRAINS OPERATE PROPERLY & TO EFFECT ANY NECESSARY REPAIRS
2. REMOVE SPILLED SAND OR OTHER MATERIALS FROM HAZARD AREAS, INCLUDING LANDS CLOSER THAN 5m FROM AREAS OF LIKELY CONCENTRATED OR HIGH VELOCITY FLOWS ESPECIALLY WATERWAYS & PAVED AREAS.
3. REMOVE TRAPPED SEDIMENT WHENEVER LESS THAN DESIGN CAPACITY REMAINS WITHIN THE STRUCTURE
4. ENSURE REHABILITATED LANDS HAVE EFFECTIVELY REDUCED THE EROSION HAZARD AND TO INITIATE UPGRADING OR REPAIR AS APPROPRIATE.
5. CONSTRUCT ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS.
6. MAINTAIN EROSION & SEDIMENT CONTROL MEASURES IN A FULLY FUNCTIONING CONDITION UNTIL ALL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS REHABILITATED.
7. REMOVE TEMPORARY SOIL CONSERVATION STRUCTURES AS THE LAST ACTIVITY IN THE REHABILITATION PROGRAM.

AS PART OF THE STATUTORY 'DILIGENCE OF CARE' RESPONSIBILITIES, THE SITE MANAGER WILL KEEP A LOGBOOK MAKING ENTRIES AT LEAST WEEKLY, IMMEDIATELY BEFORE FORECAST RAIN AND AFTER RAINFALL.

ENTRIES WILL INCLUDE:

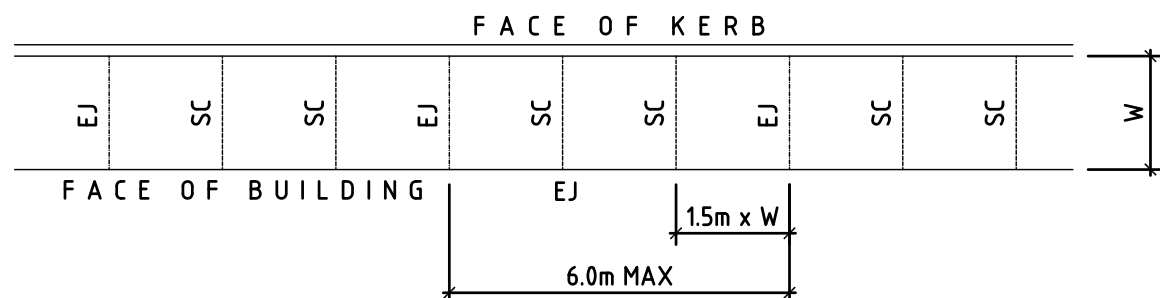
1. THE VOLUME & INTENSITY OF ANY RAINFALL EVENTS
2. THE CONDITION OF ANY SOIL & WATER MANAGEMENT WORKS
3. THE CONDITION OF VEGETATION & ANY NEED TO IRRIGATE
4. THE NEED FOR DUST PREVENTION STRATEGIES
5. ANY REMEDIAL WORKS TO BE UNDERTAKEN

THE BOOK WILL BE KEPT ONSITE & MADE AVAILABLE TO ANY AUTHORISED PERSON ON REQUEST. IT WILL BE GIVEN TO THE PROJECT MANAGER AT THE CONCLUSION OF WORKS.

JOINTING NOTES

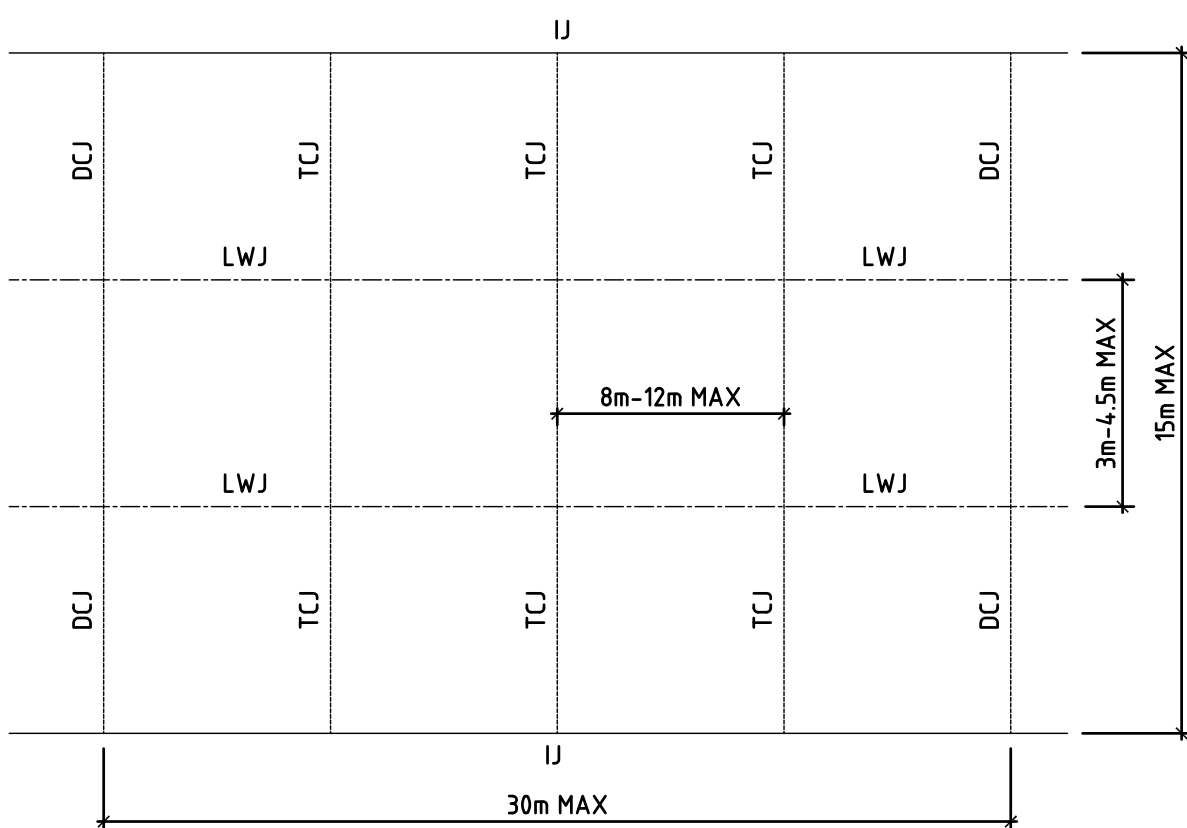
PEDESTRIAN FOOTPATH JOINTS

- J1 EXPANSION JOINTS (EJ) ARE TO BE LOCATED WHERE POSSIBLE AT TANGENT POINTS OF CURVES AND ELSEWHERE AT 6m CENTRES.
- J2 SAWCUT JOINTS (SCJ) ARE TO BE LOCATED AT A MAX 15m x WIDTH OF PAVEMENT. THE TIMING OF THE SAWCUT IS TO BE CONFIRMED BY THE CONTRACTOR ON SITE. SITE CONDITIONS WILL DETERMINE HOW MANY HOURS AFTER THE CONCRETE POUR BEFORE THE SAW CUTS ARE COMMENCED.
- J3 WHERE POSSIBLE JOINTS SHOULD BE LOCATED TO MATCH KERBING AND / OR ADJACENT PAVEMENT JOINTS.
- J4 PROVIDE 10mm WIDE FULL DEPTH EXPANSION JOINTS (EJ) BETWEEN BUILDINGS AND ALL CONCRETE OR UNIT PAVERS
- J5 ALL PEDESTRIAN FOOTPATH JOINTINGS AS FOLLOWS (U.N.O.)



VEHICULAR PAVEMENT JOINTS

- J6 ALL VEHICULAR PAVEMENTS TO BE JOINTED AS SHOWN ON DRAWINGS.
- J7 LONGITUDINAL WARPING JOINTS (LWJ) SHOULD GENERALLY BE LOCATED AT A MAXIMUM OF 3m TO 4.5m MAX CENTERS. ALL LWJ's SHOULD BE TIED UP TO A MAXIMUM TOTAL WIDTH OF 30m.
- J8 TRANSVERSE CONTRACTION JOINTS (TCJ) SHOULD GENERALLY BE LOCATED AT A MAXIMUM OF 8m TO 12m MAX CENTERS. TCJ's CAN BE SPACED AT SUITABLE INTERVALS UP TO A RECOMMENDED MAXIMUM LENGTH OF 15m.
- J9 TRANSVERSE DOWELLED CONSTRUCTION JOINTS (DCJ) TO BE PROVIDED FOR PLANNED INTERRUPTIONS SUCH AS AT THE END OF EACH DAY'S OPERATIONS (POUR BREAK), AT BLOCK OUTS FOR BRIDGES AND INTERSECTIONS OR FOR UNEXPECTED DELAYS WHEN THE SUSPENSION OF OPERATIONS IS LIKELY TO CREATE A JOINT.
- J10 ISOLATION JOINTS WITH SUB-GRADE BEAM (IJ) TO BE PROVIDED AT INTERSECTIONS OR AT THE JUNCTION OF A POUR BREAK.
- J11 ALL VEHICULAR PAVEMENTS TO BE JOINTED IN ACCORDANCE WITH AUSTRROADS AGPT02-12 GUIDE TO PAVEMENT TECHNOLOGY PART 2 STRUCTURAL PAVEMENT DESIGN AND SUPPLEMENT AP-136-06 PAVEMENT DESIGN FOR LIGHT TRAFFIC.
- J12 VEHICULAR PAVEMENT JOINTING AS FOLLOWS (U.N.O.)



WARNING
NO DRAINAGE WORKS SHALL COMMENCE UNTIL THE CONTRACTOR CONFIRMS THE I.L. OF ALL EXISTING DRAINS, AND CONFIRMS IN WRITING WITH THE ENGINEERING SUPERVISOR

ALL EXISTING PROPERTY SERVICES' LOCATIONS AND DEPTHS ARE APPROXIMATE AND MUST BE VERIFIED ON SITE. THE CONTRACTOR SHOULD SUPPLY PRECISE LOCATIONS AND DEPTHS TO THE ENGINEER FOR REVIEW PRIOR TO ANY WORKS THAT MAY AFFECT THESE SERVICES.

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES SHOWN ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE.

NOTES
1 SITE SURVEY SUPPLIED BY 'VERIS PTY LTD' (LAND DATA SURVEYS) PROJECT No. 17362.00 REV D. DATED 31st AUGUST 2018



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D	SCHEMATIC DESIGN	01.05.21	JHM	-					
C	SCHEMATIC DESIGN ISSUE	01.05.21	JHM	-					
B	SCHEMATIC DESIGN ISSUE	04.04.21	JHM	-					
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Project Name
NEW HIGH SCHOOL IN
JERRABOMBERRA
Drawing Title
CONSTRUCTION NOTES

SCHEMATIC DESIGN

Designed	CHK	Approved	Date	North
Drawn	HM			
Scale		Project Ref	Drawing No	Rev
Date	MAR 2021			
Sheet	A0	20095 CE-SD-HS-0202	E	

SURVEY LEGEND

	SITE BOUNDARY
	EX SURFACE LEVEL
	EX SURFACE CONTOUR
	EX TREE
	EXISTING STORMWATER DRAINAGE LINE
	EXISTING SEWER LINE
	EXISTING WATER MAIN
	EXISTING GAS LINE
	EXISTING TELECOMMUNICATIONS LINE
	EXISTING ELECTRICAL LINE
	EXISTING UNKNOWN SERVICE
	EXISTING SERVICE TO BE MADE REDUNDANT

BULK EARTHWORKS LEGEND

NOTE
1. VOLUMES ARE APPROXIMATE ONLY, WHICH ARE IN PLACE AND DO NOT INCORPORATE BULKING FACTORS, OVER EXCAVATION AND OSD.
2. GROUND WATER SEEPAGE MAY OCCUR IN EXCAVATED AREAS. DE-WATERING MAY BE REQUIRED IN THIS INSTANCE.

	EX ROCK CONTOUR
	FINISHED BULK EXCAVATION LEVEL
	BATTER

SOIL AND WATER MANAGEMENT LEGEND

	SEDIMENT FENCE
	CATCH DRAIN
	TEMPORARY SHAKER RAMP FOR ENTRY/EXIT
	SEDIMENT BASIN (LOCATION TBC ON-SITE)
	TEMPORARY STOCKPILE (LOCATION TBC ON-SITE)
	GEOTEXTILE PIT FILTER / FILTER SURROUND INSTALLED ON EXISTING PIT
	SANDBAGS INSTALLED ON EXISTING PIT
	OVERLAND FLOW

SITEWORKS LEGEND

	LIMIT OF WORKS
	EXISTING FINISHED SURFACE LEVEL
	FINISHED SURFACE SPOT LEVEL
	BULK EARTHWORKS SPOT LEVEL
	TOP OF KERB SPOT LEVEL
	TOP OF WALL SPOT LEVEL
	BOTTOM OF WALL SPOT LEVEL
	DIRECTION AND GRADE OF FALL
	FINISHED MINOR SURFACE CONTOUR
	FINISHED MINOR SURFACE CONTOUR
	KERB ONLY
	KERB AND GUTTER
	VEHICULAR CROSSING
	DISH DRAIN
	FLUSH KERB
	INTEGRAL KERB
	INTEGRAL KERB AND GUTTER
	MOUNTABLE KERB
	MOUNTABLE KERB AND GUTTER
	EDGE THICKENING
	W-BEAM (INSTALLED IN ACCORDANCE WITH RMS STANDARD DRAWINGS AND REQUIREMENTS)
	RETAINING WALL
	BATTER
	BOLLARD IN ACCORDANCE WITH ARCHITECTURAL SPECIFICATIONS
	PROPOSED SIGN POST
	EX SIGN POST
	TRAFFIC SIGNAL POST
	PROPOSED STREET LIGHTING
	EX STREET LIGHTING
	ARC RADIUS
	ARC LENGTH

DRAINAGE LEGEND

	SURFACE INLET PIT
	JUNCTION PIT
	KERB INLET PIT
	STORMWATER DRAINAGE LINE
	GRATED DRAIN
	DOWNPIPE AND CONNECTION LINE (REFER TO HYDRAULIC DRAWINGS FOR DETAILS)
	FLUSHOUT RISER (max 30m CTRS) WITH SUBSOIL DRAINAGE (1000Ø UPVC SLOTTED PIPE (UN-SOCKED))
	INSPECTION OPENING
	SWALE DRAIN
	EXISTING STORMWATER TO REMAIN
	EXISTING STORMWATER TO BE MADE REDUNDANT
	EXISTING STORMWATER TO REMAIN
	OVERLAND FLOW
	EMERGENCY FLOW

PAVEMENT LEGEND

NOTES
1. ASPHALTIC CONCRETE SHALL CONFORM TO AS2150 AND THE SPECIFICATIONS
2. PAVEMENT BASED ON GEOTECHNICAL REPORT BY JWGEO/TECHNICS REF:30991L2.rpt DATE 15 NOVEMBER 2019

	PAVEMENT TYPE 1 HEAVY DUTY ASPHALT PAVEMENT
	PAVEMENT TYPE 2 MEDIUM DUTY ASPHALT PAVEMENT
	PAVEMENT TYPE 4 HEAVY DUTY CONCRETE PAVEMENT
	PAVEMENT TYPE 7 CONCRETE FOOTPATH PAVEMENT
	PAVEMENT TYPE 8 LIGHT DUTY UNIT PAVERS
	PAVEMENT TYPE 12 'TERRAM BODAV 85' GRASS REINFORCED PAVEMENT SUPPLIED BY 'POLYFABRICS' OR APPROVED EQUIVALENT.
	SAWCUT JOINT
	EXPANSION JOINT
	DOWELLED EXPANSION JOINT
	KEYED CONSTRUCTION JOINT
	TRANSVERSE CONTRACTION JOINT
	LONGITUDINAL WARPING JOINT
	ISOLATION JOINT

LINEMARKING LEGEND

NOTE
LINEMARKING TO BE IN ACCORDANCE WITH AS1742.2 AND THE RELEVANT LOCAL OR STATE AUTHORITY GUIDELINES.

	DIVIDING BARRIER LINES (TWO WAY)
	LANE LINE
	LANE LINE
	EDGE LINE
	EDGE LINE (PAINTED MEDIAN)
	CONTINUITY LINE
	TURN LINE
	STOP LINE
	GIVE WAY LINE (USED WITH SIGNS)
	GIVE WAY LINE (USED ON RIGHT SIDE OF ROAD)
	PEDESTRIAN CROSS WALK LINES

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Project Name: JERRABOMBERRA HIGH SCHOOL

SCHEMATIC DESIGN

Designed	GK	Approved	Date	North
Drawn	HM			
Scale	-	Project Ref	Drawing No	Rev
Date	HAR 2021			
Sheet	A0	20095 CE-SD-HS-0203	E	

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SOIL AND WATER MANAGEMENT NOTES

1. IT HAS BEEN ASSUMED THAT HOARDINGS/SILT FENCING WILL BE PROVIDED TO THE STAGE BOUNDARY SUFFICIENT TO PREVENT SEDIMENT RUNOFF FROM LEAVING SITE (EXCEPT IN THE CASE OF ENTRY/EXIT LOCATIONS WHERE TEMPORARY CONSTRUCTION ENTRY/EXIT SEDIMENT TRAP ARE PROVIDED). IF THIS IS NOT THE CASE, PROVIDE SEDIMENT FENCE TO STANDARD DETAIL, BELOW AS REQUIRED TO PREVENT SEDIMENT FROM LEAVING SITE, DIRECT RUNOFF TO SEDIMENT BASIN.
2. ALL SEDIMENT CONTROL MEASURES TO BE INSTALLED IN ACCORDANCE WITH LANDCOM MANAGING URBAN STORMWATER "BLUE BOOK".

SEDIMENT CONTROL CONDITIONS

1. SEDIMENT FENCES WILL BE INSTALLED AS SHOWN AND ELSEWHERE AT THE DISCRETION OF THE SITE MANAGER TO CONTAIN COARSE SEDIMENT FRACTIONS INCLUDING AGGREGATED FINES) AS NEAR AS POSSIBLE TO THEIR SOURCE.
2. SEDIMENT REMOVED FROM ANY TRAPPING DEVICE WILL BE RELOCATED WHERE FURTHER POLLUTION TO DOWNSLOPE LANDS & WATERWAYS CANNOT OCCUR.
3. STOCKPILES WILL BE PLACED WHERE SHOWN ON DRAWING OR ELSEWHERE AT THE DISCRETION OF THE SITE MANAGER AND NOT WITHIN 5m OF HAZARD AREAS INCLUDING LIKELY AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS & DRIVEWAYS.
4. WATER WILL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM WITH INLET FILTERS (SEE DETAILS) UNLESS IT IS SEDIMENT FREE.
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SITE INSPECTION & MAINTENANCE CONDITIONS

THE SITE MANAGER WILL INSPECT THE SITE AT LEAST WEEKLY AND WILL:

1. ENSURE THAT DRAINS OPERATE PROPERLY & TO EFFECT ANY NECESSARY REPAIRS.
2. REMOVE SPILLED SAND OR OTHER MATERIALS FROM HAZARD AREAS, INCLUDING LANDS CLOSER THAN 5m FROM AREAS OF LIKELY CONCENTRATED OR HIGH VELOCITY FLOWS ESPECIALLY WATERWAYS & PAVED AREAS.
3. REMOVE TRAPPED SEDIMENT WHENEVER LESS THAN DESIGN CAPACITY REMAINS WITHIN THE STRUCTURE.
4. ENSURE REHABILITATED LANDS HAVE EFFECTIVELY REDUCED THE EROSION HAZARD AND TO INITIATE UPGRADING OR REPAIR AS APPROPRIATE.
5. CONSTRUCT ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS.
6. MAINTAIN EROSION & SEDIMENT CONTROL MEASURES IN A FULLY FUNCTIONING CONDITION UNTIL ALL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS REHABILITATED.
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1. THE VOLUME & INTENSITY OF ANY RAINFALL EVENTS
2. THE CONDITION OF ANY SOIL & WATER MANAGEMENT WORKS
3. THE CONDITION OF VEGETATION & ANY NEED TO IRRIGATE
4. THE NEED FOR DUST PREVENTION STRATEGIES
5. ANY REMEDIAL WORKS TO BE UNDERTAKEN

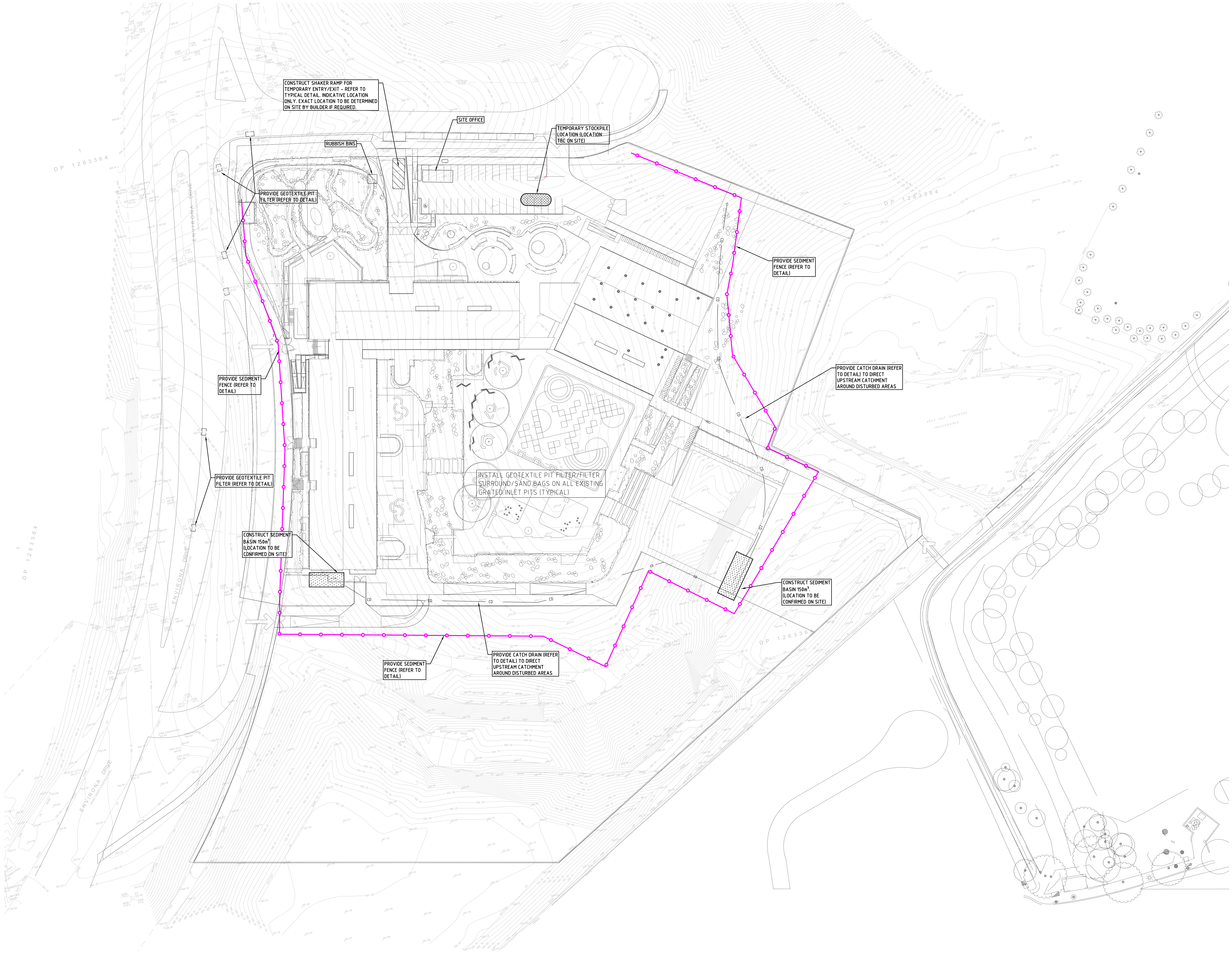
THE BOOK WILL BE KEPT ONSITE & MADE AVAILABLE TO ANY AUTHORISED PERSON ON REQUEST. IT WILL BE GIVEN TO THE PROJECT MANAGER AT THE CONCLUSION OF WORKS.

SURVEY LEGEND

- SITE BOUNDARY
- EX SURFACE LEVEL
- EX SURFACE CONTOUR
- EX TREE
- EX SW — EXISTING STORMWATER DRAINAGE LINE

SOIL AND WATER MANAGEMENT LEGEND

- HOARDING OR SITE FENCE
- SEDIMENT FENCE
- CATCH DRAIN
- OVERLAND FLOW
- TEMPORARY SHAKER RAMP FOR ENTRY/EXIT
- SEDIMENT BASIN (LOCATION TBC ON-SITE)
- TEMPORARY STOCKPILE (LOCATION TBC ON-SITE)
- GEOTEXTILE PIT FILTER / FILTER SURROUND INSTALLED ON EXISTING PIT
- SANDBAGS INSTALLED ON EXISTING PIT



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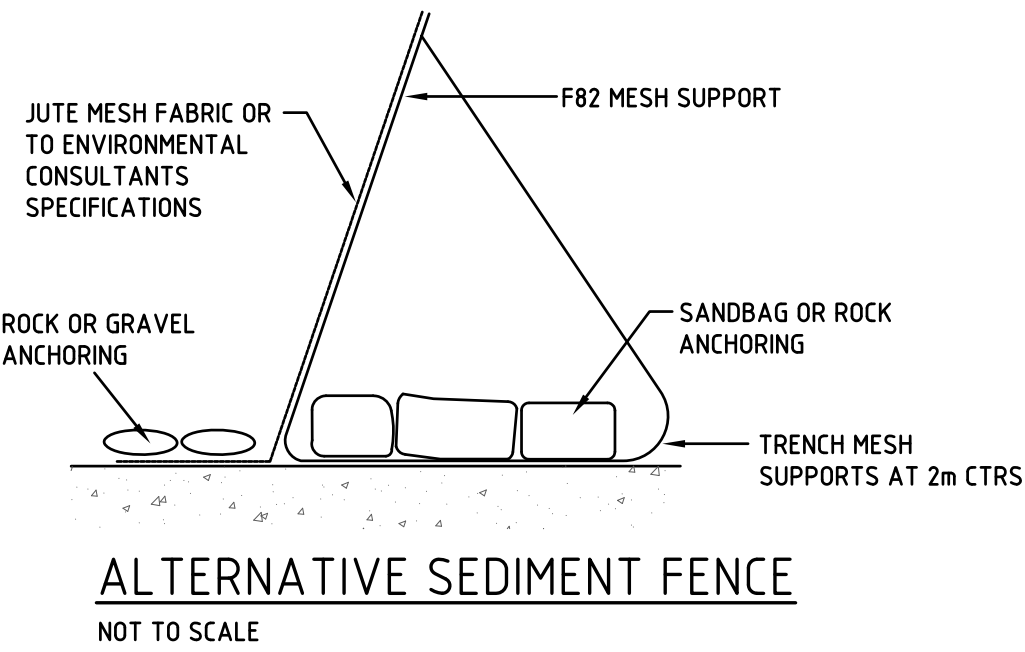
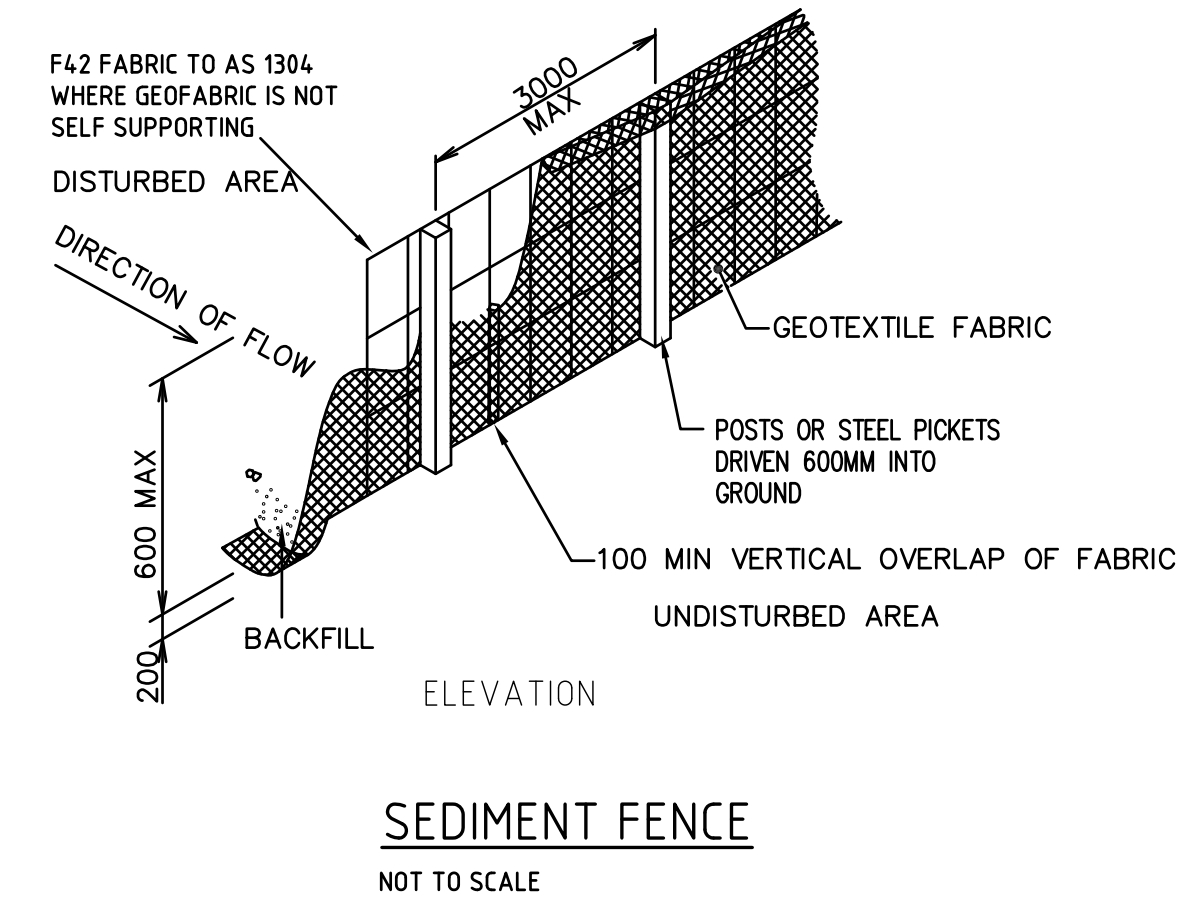
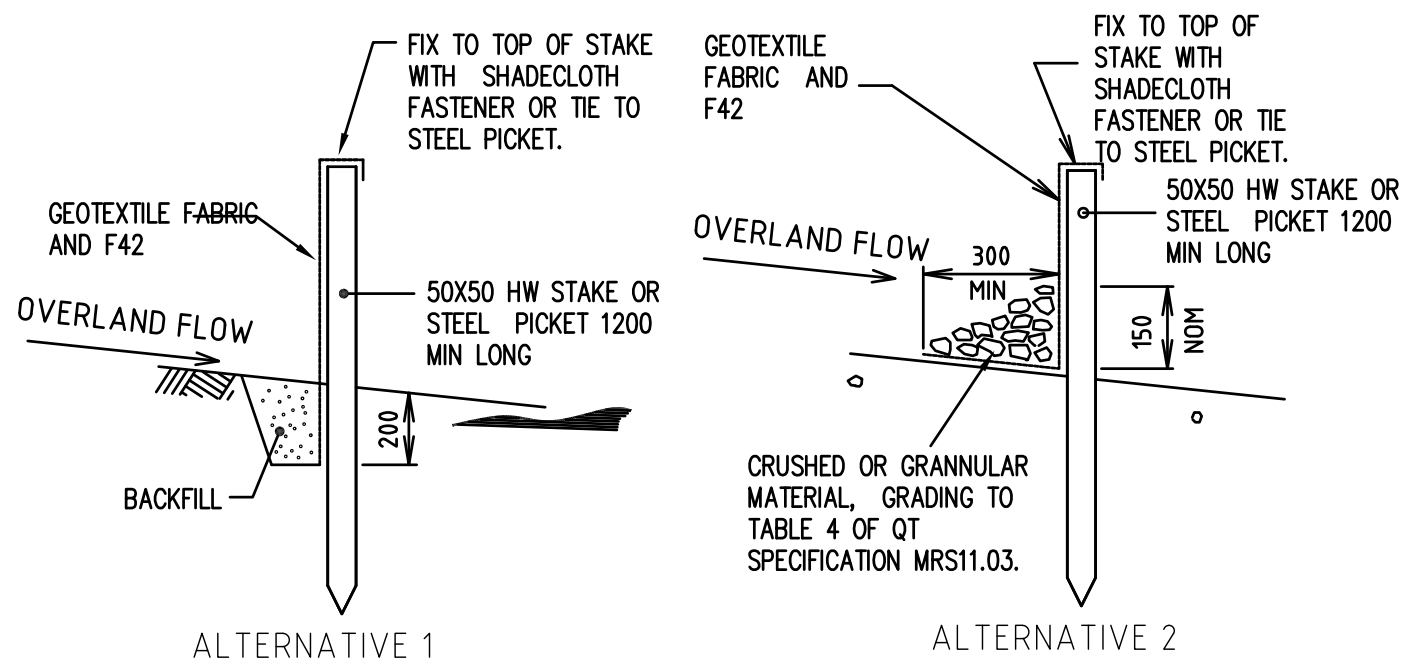


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Project Name	NEW HIGH SCHOOL IN JERRABOMBERRA		
Drawing Title	SEDIMENT & EROSION CONTROL PLAN		

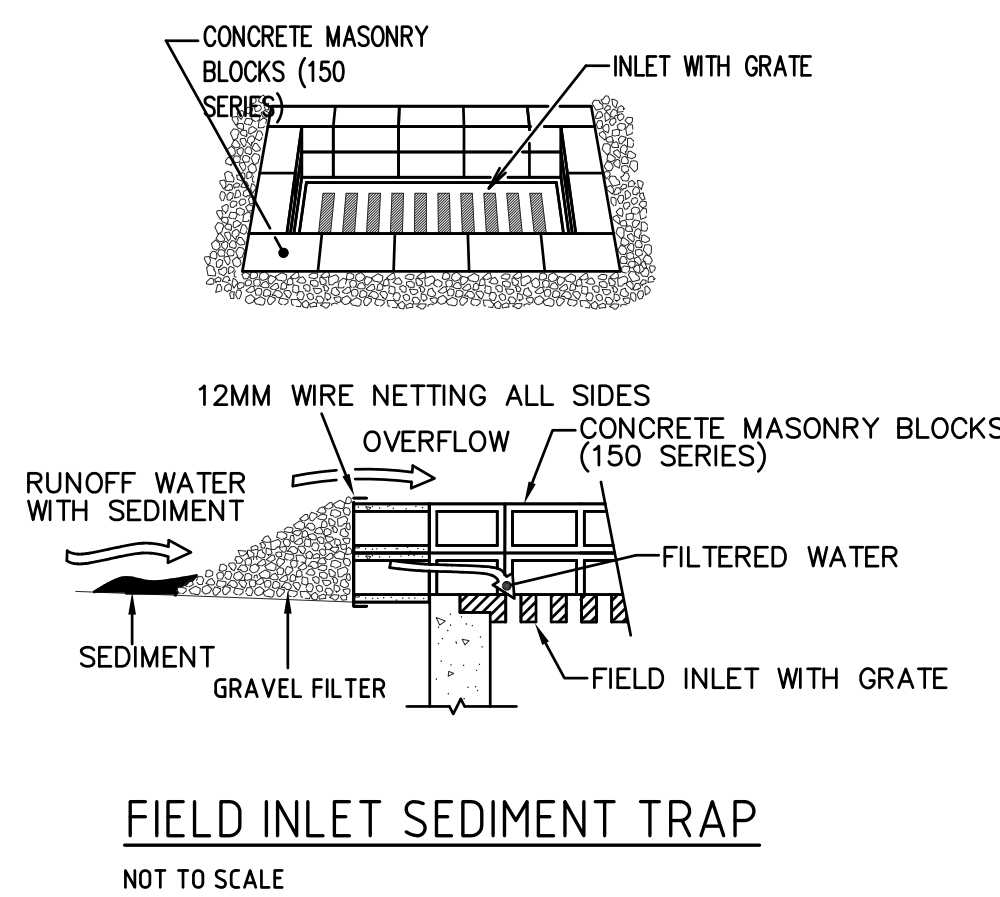
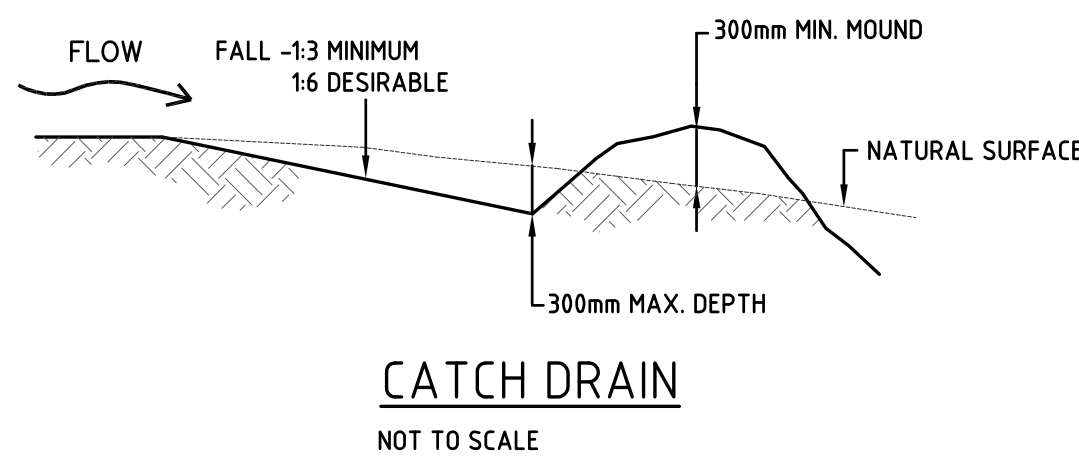
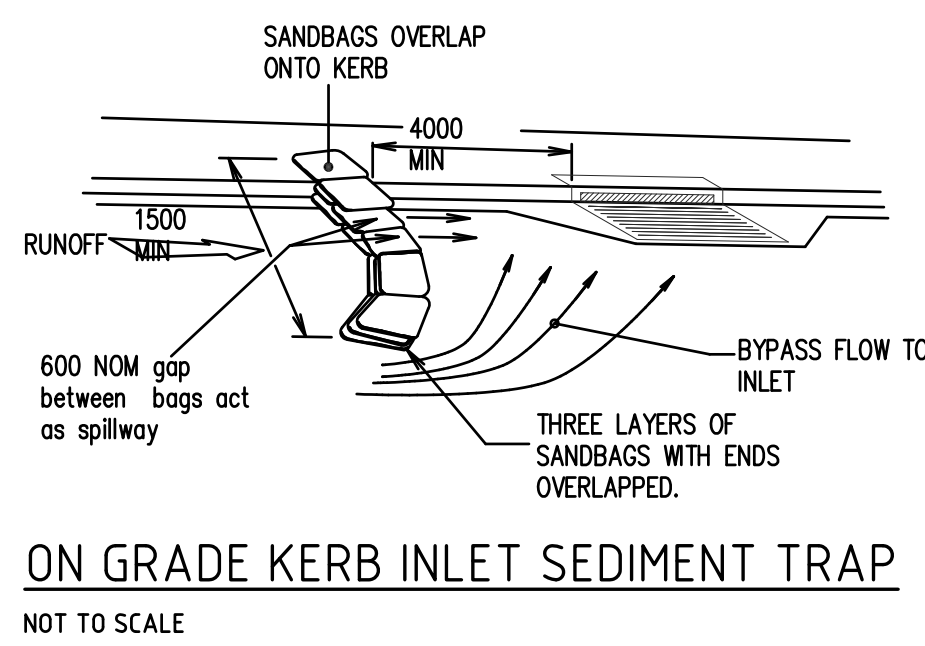
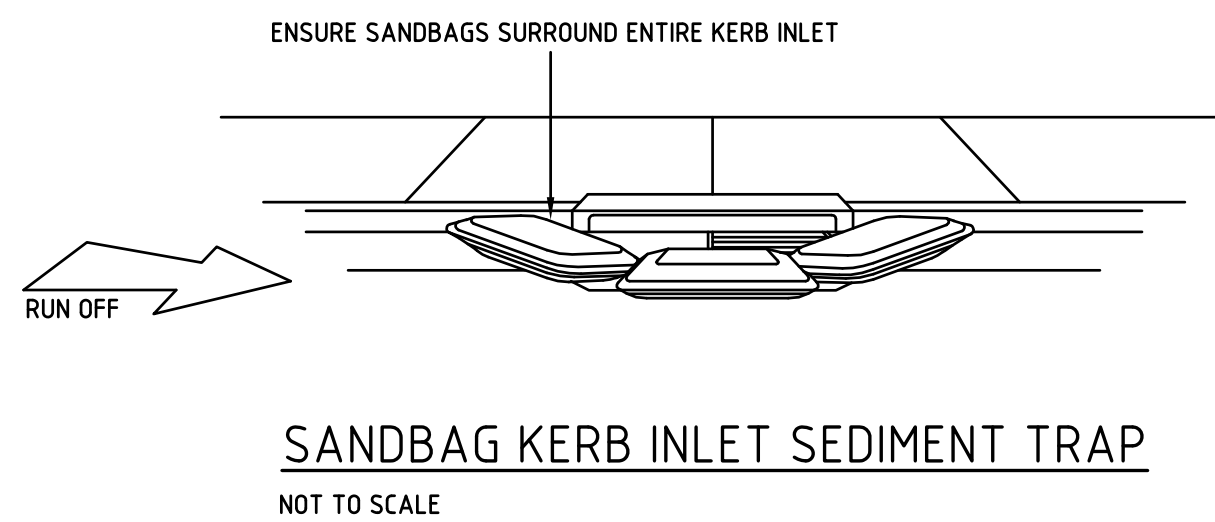
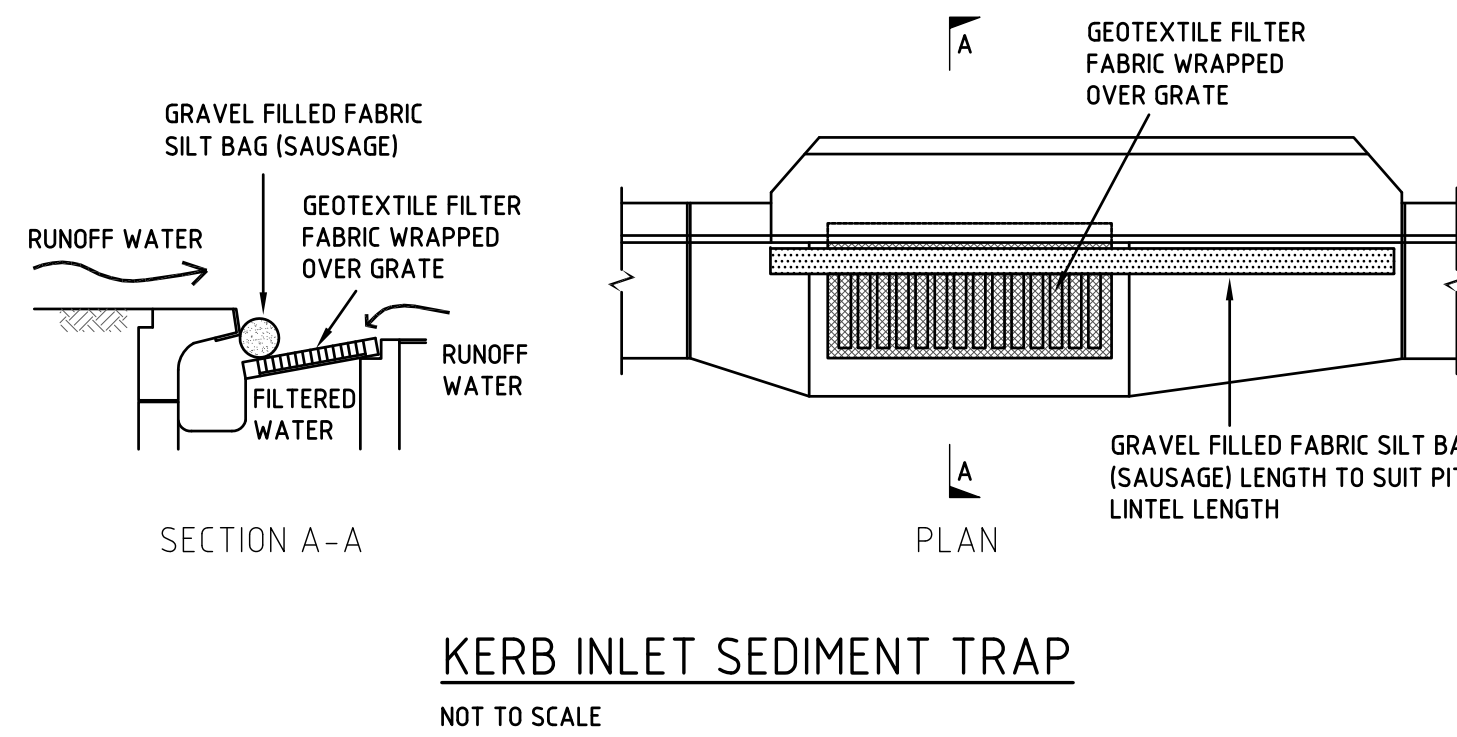
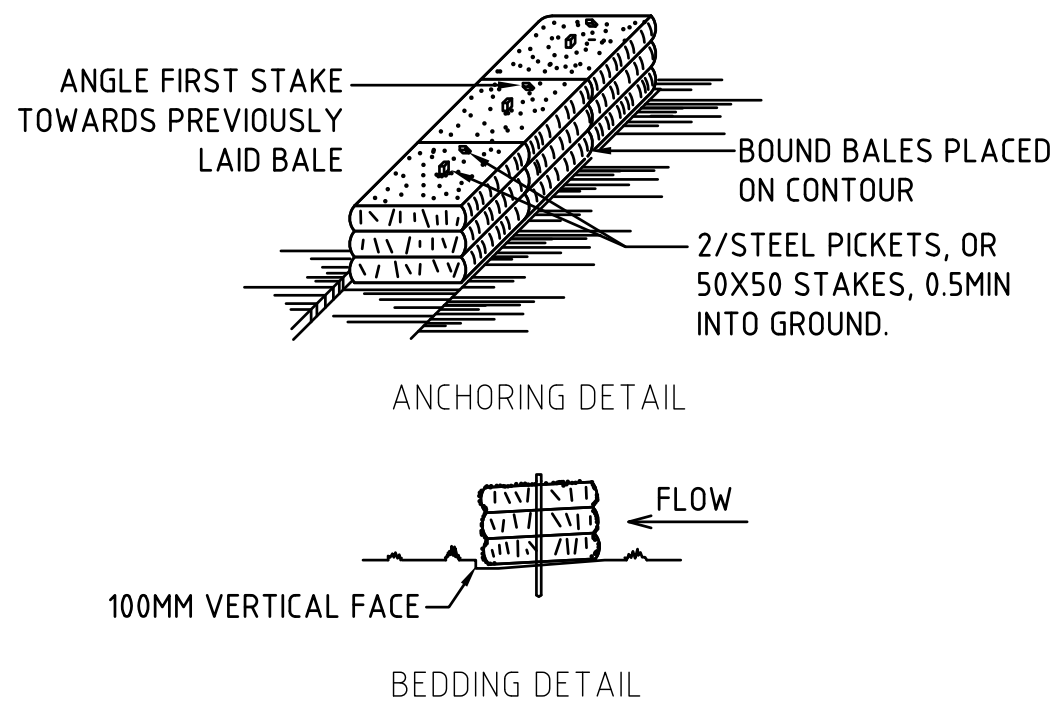
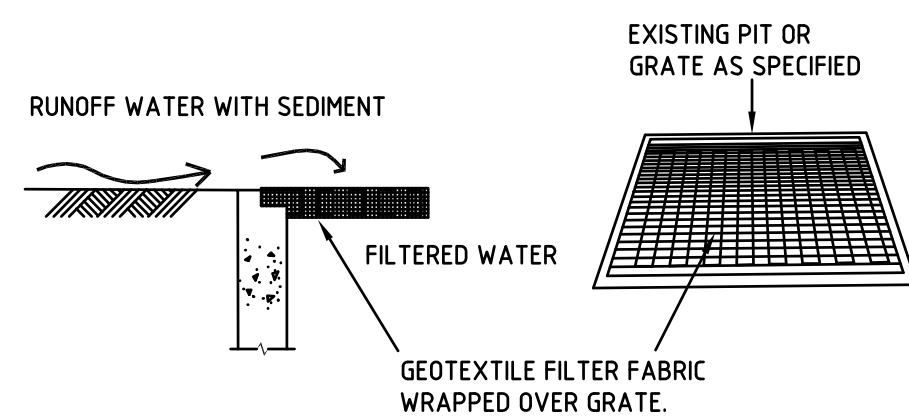
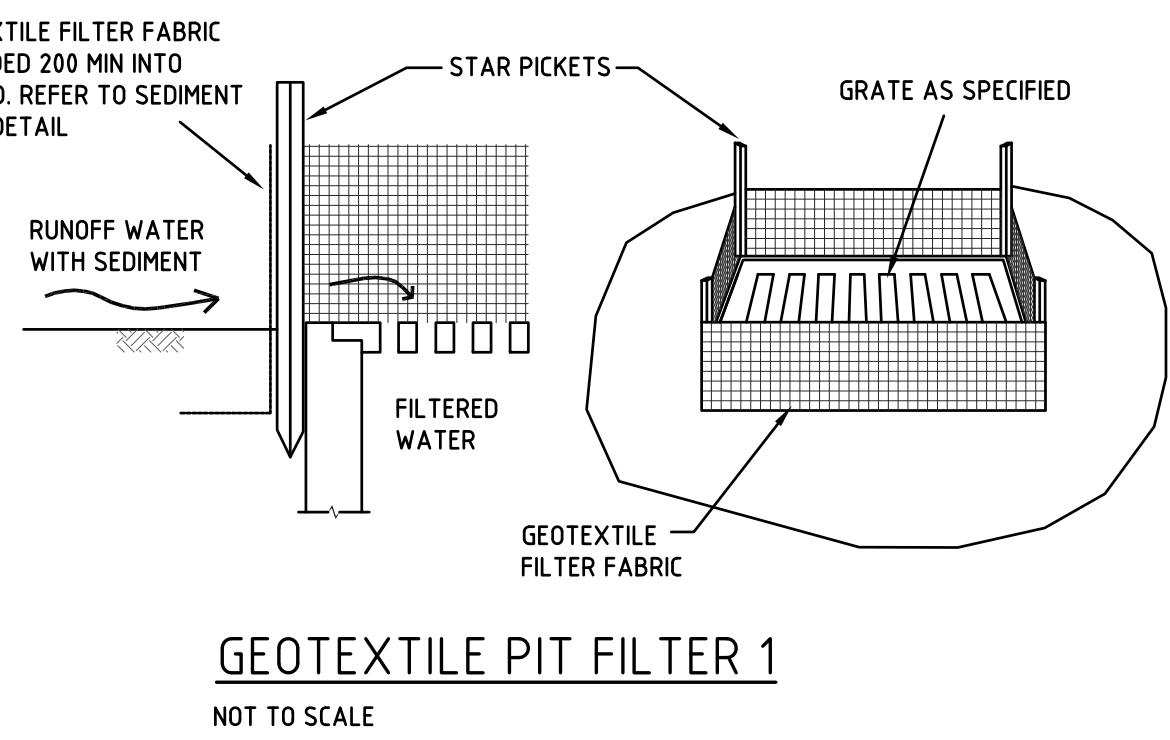
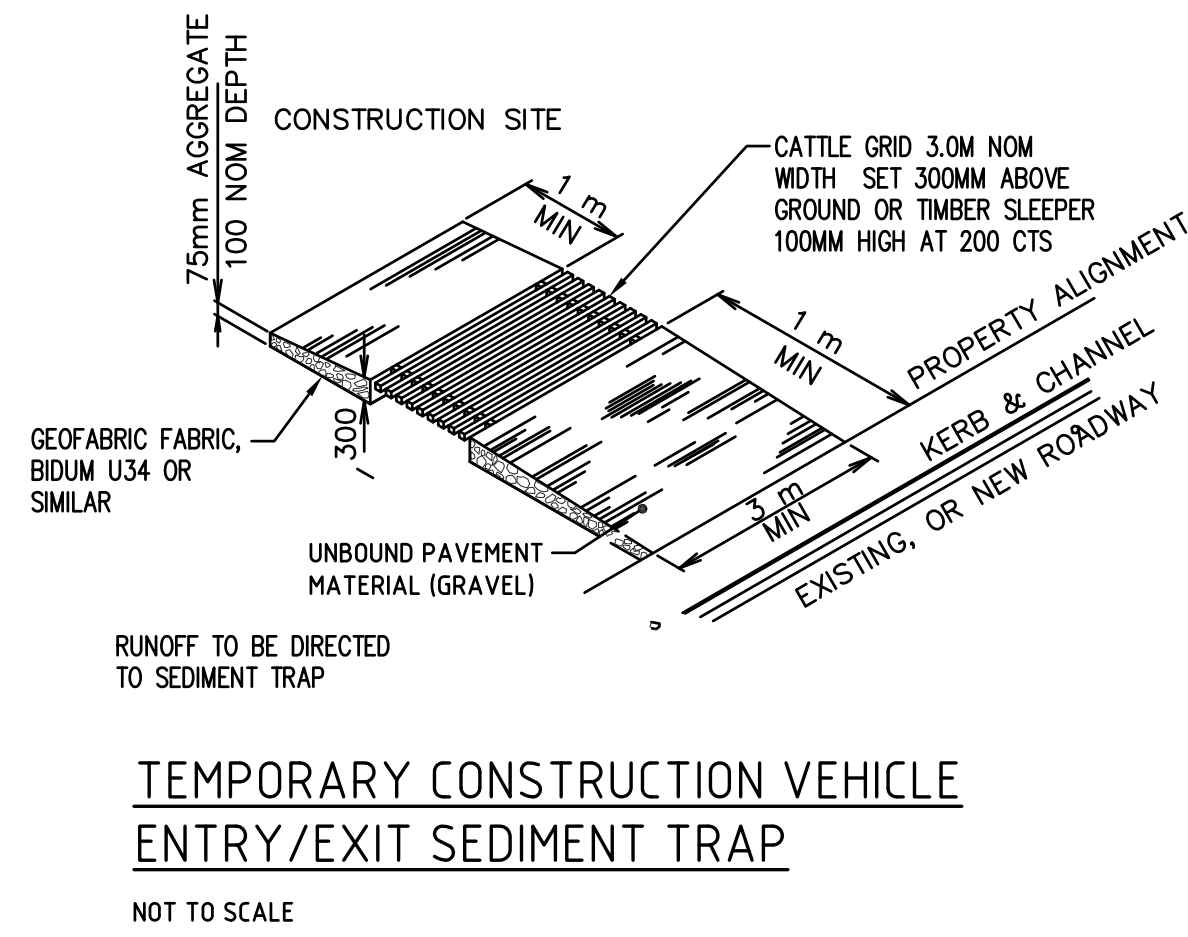
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Designed	CK	Approved	Date
Drawn	HM		
Scale	1:500	Project Ref	Drawing No
Date	MAR 2021		Rev
Sheet	A0		

20095 CE-SD-HS-2005 F



ALTERNATIVE SEDIMENT FENCE NOTES

1. INSTALL THIS TYPE OF SEDIMENT FENCE WHEN USE OF SUPPORT POSTS IS NOT DESIRABLE OR NOT POSSIBLE. SUCH CONDITIONS MIGHT APPLY, FOR EXAMPLE, WHERE APPROVAL IS GRANTED FROM THE APPROPRIATE AUTHORITIES TO PLACE THESE FENCES IN HIGHLY SENSITIVE ESTUARINE AREAS.
2. USE BENT TRENCH MESH TO SUPPORT THE F82 WELDED MESH FACING AS SHOWN ON THE DRAWING ABOVE. ATTACH THE JUTE MESH TO THE WELDED MESH FACING USING UV-RESISTANT CABLE TIES.
3. STABILISE THE WHOLE STRUCTURE WITH SANDBAG OR ROCK ANCHORING OVER THE TRENCH MESH AND THE LEADING EDGE OF THE JUTE MESH. THE ANCHORING SHOULD BE SUFFICIENTLY LARGE TO ENSURE STABILITY OF THE STRUCTURE IN THE DESIGN STORM EVENT, USUALLY THE 10 YEAR EVENT.



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Project Name
NEW HIGH SCHOOL IN
JERRABOMBERRA
Drawing Title
SEDIMENT & EROSION CONTROL
PLAN - DETAILS

SCHEMATIC DESIGN
Designed GK Approved HM Date North
Scale - Project Ref Drawing No Rev
Date MAR 2021 Drawing No
Sheet A0 20095 CE-CO-HS-2006 E

BULK EARTHWORKS DEPTH RANGE				
Lower_value	Upper_value	Colour		
-10.5	to -10	2		
-10	to -9.5	2		
-9.5	to -9	2		
-9	to -8.5	2		
-8.5	to -8	2		
-8	to -7.5	2		
-7.5	to -7	2		
-7	to -6.5	2		
-6.5	to -6	2		
-6	to -5.5	2		
-5.5	to -5.0	2		
-5.0	to -4.5	2		
-4.5	to -4.0	2		
-4.0	to -3.5	2		
-3.5	to -3.0	2		
-3.0	to -2.5	2		
-2.5	to -2.0	2		
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-1.5	to -1.0	2		
-1.0	to -0.5	2		
-0.5	to 0	2		
0	to 0.5	2		
0.5	to 1.0	2		
1.0	to 1.5	2		
1.5	to 2.0	2		
2.0	to 2.5	2		
2.5	to 3.0	2		
3.0	to 3.5	2		
3.5	to 4.0	2		
4.0	to 4.5	2		
4.5	to 5.0	2		
5.0	to 5.5	2		
5.5	to 6	2		
6	to 6.5	2		
6.5	to 7	2		
7	to 7.5	2		
7.5	to 8	2		

SURVEY LEGEND

---	SITE BOUNDARY
---	EX SURFACE LEVEL
---	EX SURFACE CONTOUR
---	LEGEND
---	BULK EARTHWORKS MINOR SURFACE CONTOUR
---	BULK EARTHWORKS MAJOR SURFACE CONTOUR

EXCAVATION NOTES

- E1 VOLUMES ARE APPROXIMATE ONLY AND DO NOT INCORPORATE BULKING FACTORS AND OVER EXCAVATION. VOLUMES HAVE BEEN CALCULATED BETWEEN 150mm STRIPPED SURFACE LEVELS AND BULK EARTHWORKS SURFACE OR AS NOTED IN GEOTECHNICAL REPORT.
- E2 GROUND WATER SEEPAGE MAY OCCUR IN EXCAVATED AREAS. DE-WATERING MAY BE REQUIRED IN THIS INSTANCE.
- E3 THIS DRAWING ONLY DETAILS EXCAVATION ASSOCIATED WITH THE BUILDING SLAB INCLUDING STRUCTURAL FOOTINGS, BEAMS AND COLUMNS. IN ADDITION TO MAKING NO ALLOWANCE FOR TRENCH BACKFILL, TREE ROOTBALLS OR DETAILED EXCAVATION.
- E4 PROVIDE TEMPORARY MAXIMUM 1 IN 1 BATTERS UNLESS GEOTECH TO CONFIRM BATTER ACCEPTABILITY DURING CONSTRUCTION.
- E5 THE EXCAVATED MATERIAL IS TO BE TEMPORARILY STOCKPILED WITHIN THE LANDSCAPED AREAS (TO BE CONFIRMED ON-SITE) AND RE-USED USING VALIDATED MATERIALS AS LANDSCAPING SOIL BUILD-UP/BACKFILL IN ACCORDANCE WITH LANDSCAPE ARCHITECTS SPECIFICATIONS.
- E6 REFER TO ARBORIST REPORT FOR TREE PROTECTION MEASURES IF REQUIRED.
- E7 500mm ZONE OFFSET FROM BUILDING HAS BEEN ALLOWED FOR FORM WORK.
- E8 SITE SURVEY SUPPLIED BY PROJECT SURVEYORS' PTY LTD JOB REFERENCE No. B04-901 DRAWING No. B04-901-JPS-1 DATED 16/03/21

BULK EARTHWORKS QUANTITIES SUMMARY (IN-PLACE)

150mm STRIPPED SURFACE (ASSUMED TO BE REMOVED OFF-SITE)	= 4,885m ³
TOTAL CUT VOLUME	= 14,720m ³
VOLUME INCLUDES THE FOLLOWING:	
EXCAVATION INTO ROCK = 3,770m ³	
SHOWN THIS	
TOTAL FILL VOLUME	= 8,600m ³
TOTAL EXCESS CUT VOLUME	= 6,120m ³
(FILL VOLUME BASED ON 100% REUSABLE EXCAVATED MATERIAL)	

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Project Name
**NEW HIGH SCHOOL IS
JERRABOMBERRA**

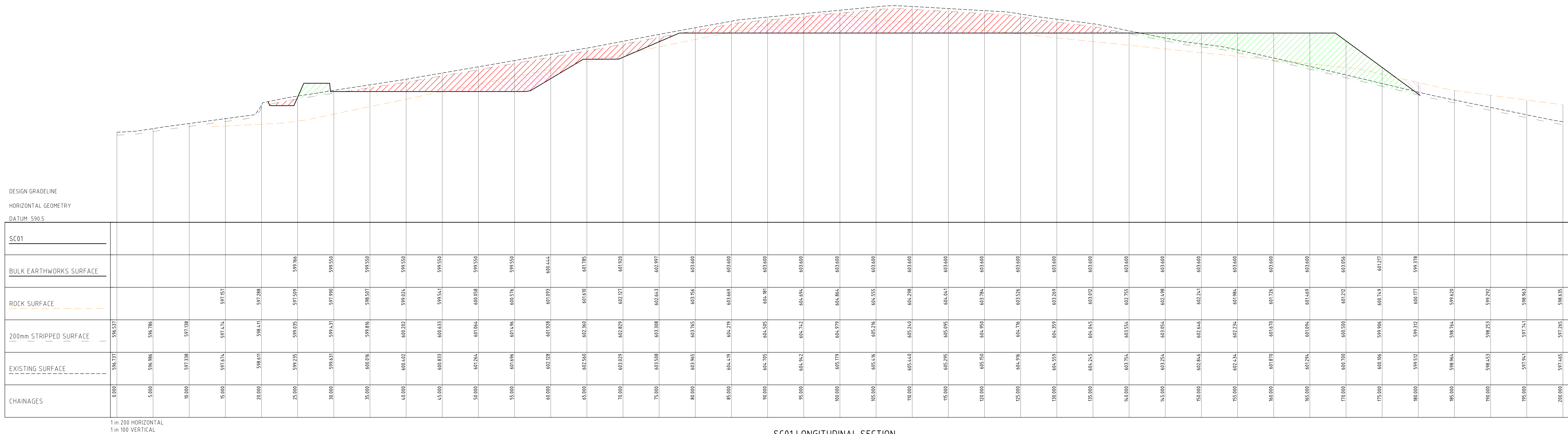
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SCHEMATIC DESIGN

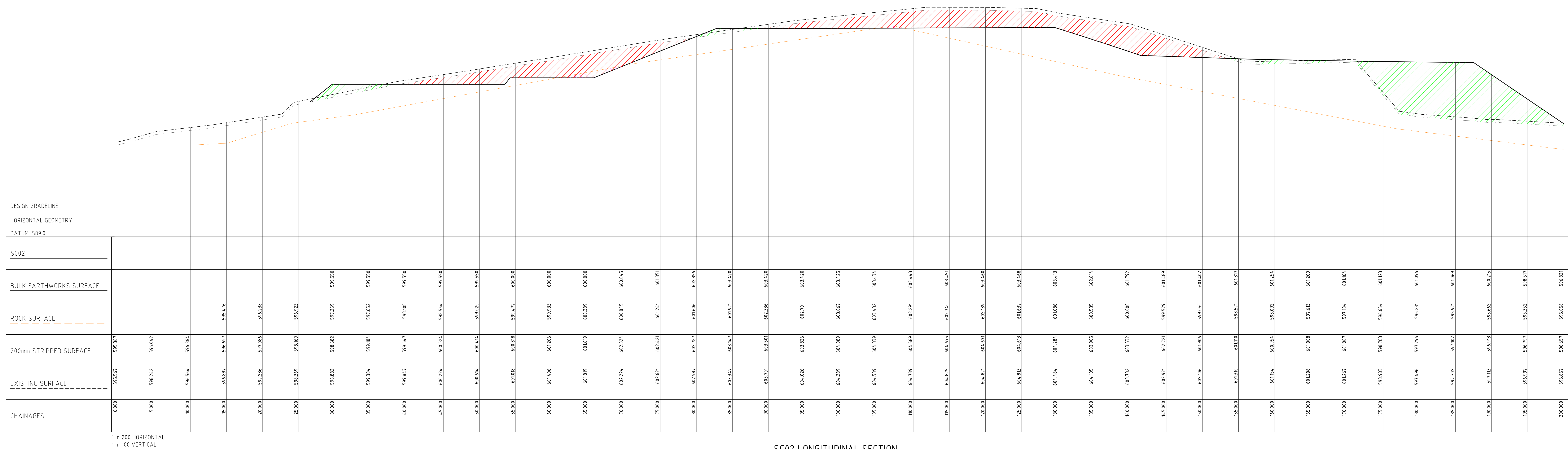
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Scale	1:500				
Date	MAR 2021				
Sheet	A0				

Project Ref
20095 CE-SD-HS-2009

Drawing No
G



SC01 LONGITUDINAL SECTION



SC02 LONGITUDINAL SECTION

LEGEND

 CUT FROM STRIPPED SURFACE
TO BULK EARTHWORK LEVEL

FILL FROM STRIPPED SURFACE
TO BULK EARTHWORK LEVEL

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C	SCHEMATIC DESIGN ISSUE				17.07.21	AM	-		
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Project Name **NEW HIGH SCHOOL IN JERRABOMBERRA**

Drawing Title	BULK EARTHWORKS PLAN LONGITUDINAL SECTIONS SHEET 1
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Scale	-	Project Ref	Drawing No	Rev
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Sheet	A0			

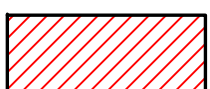


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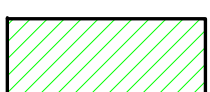


SC03 LONGITUDINAL SECTION

LEGEND



UT FROM STRIPPED SURFACE
O BULK EARTHWORK LEVEL



ALL FROM STRIPPED SURFACE
TO BULK EARTHWORK LEVEL

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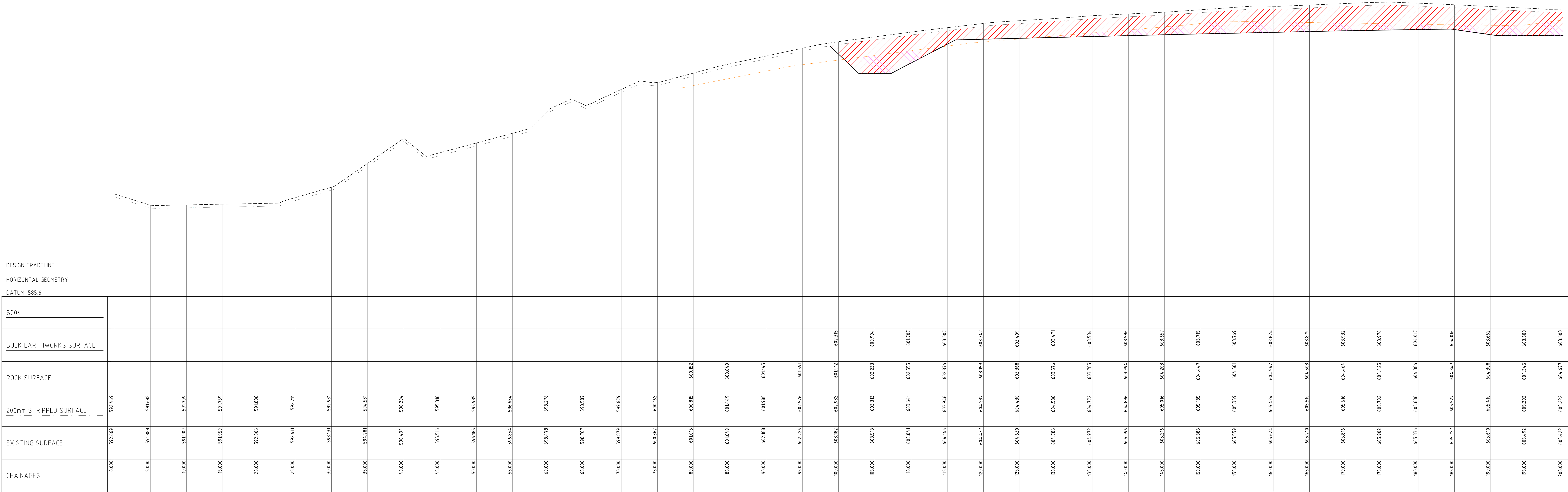
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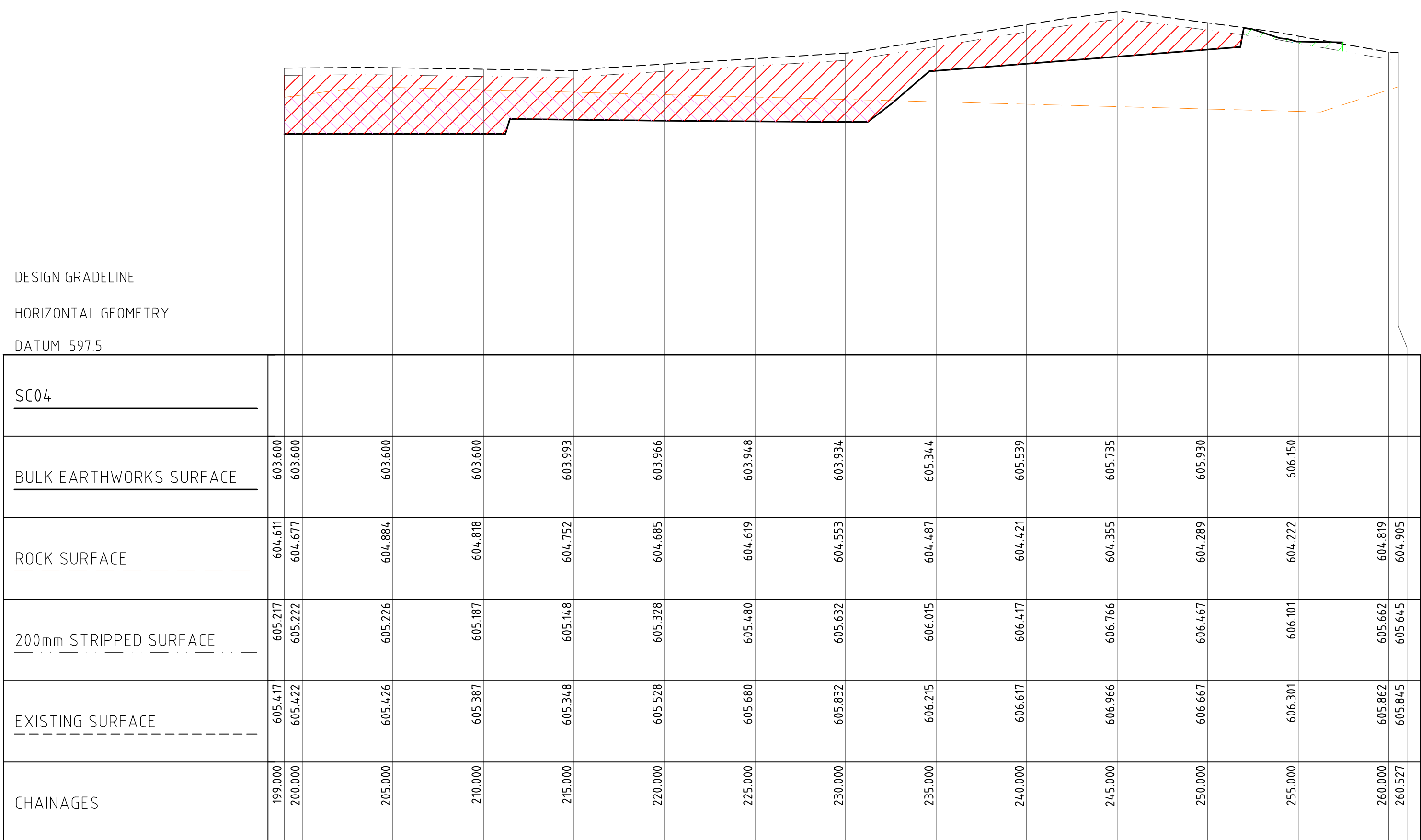
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		Sheet	A0	Project Ref	Drawing No	Rev
				20095 CE-SD-HS-2011 E		



1 in 200 HORIZONTAL
1 in 100 VERTICAL

SC04 LONGITUDINAL SECTION



1 in 200 HORIZONTAL
1 in 100 VERTICAL

SC04 LONGITUDINAL SECTION

LEGEND

- CUT FROM STRIPPED SURFACE TO BULK EARTHWORK LEVEL
- FILL FROM STRIPPED SURFACE TO BULK EARTHWORK LEVEL

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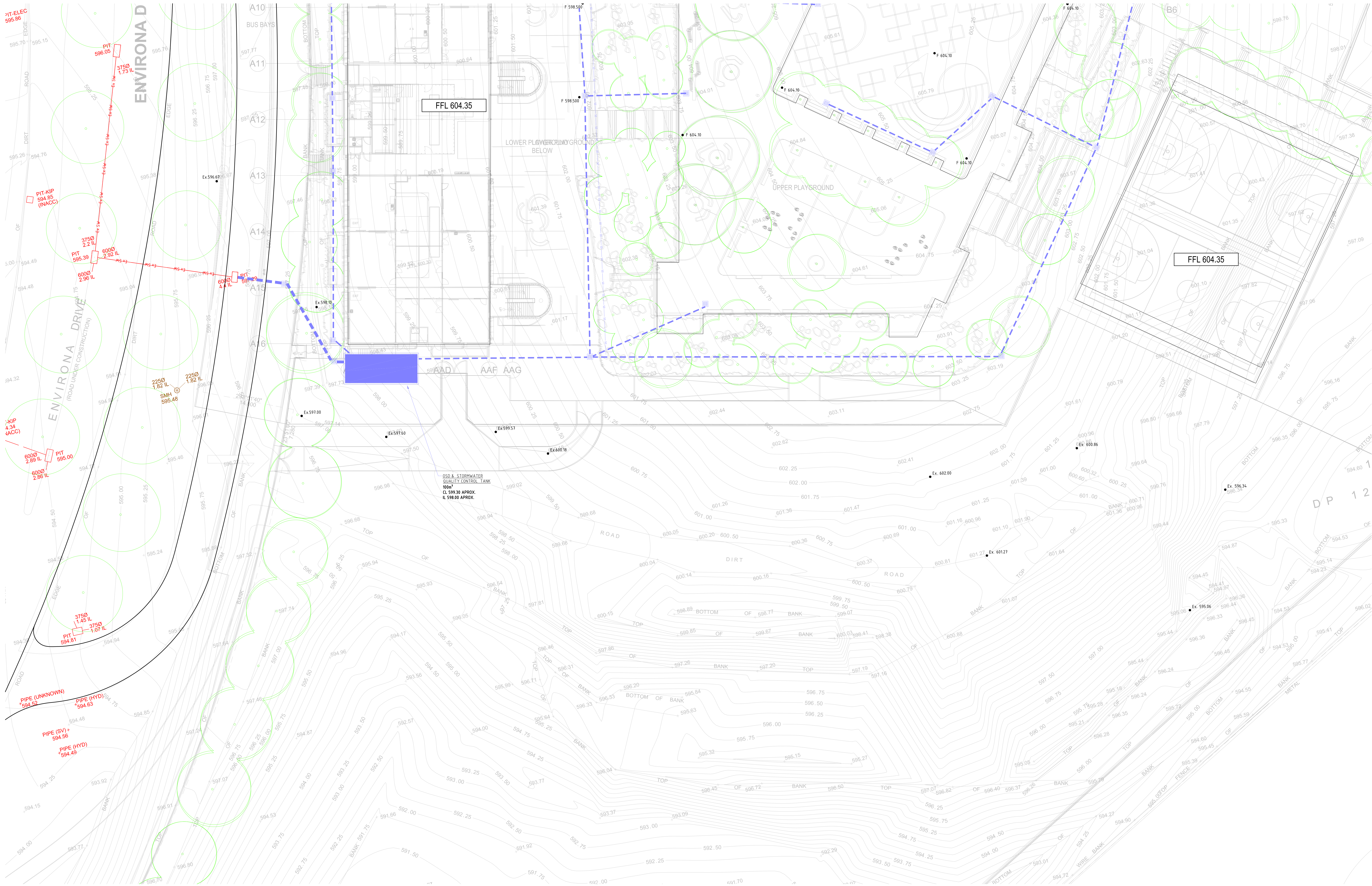
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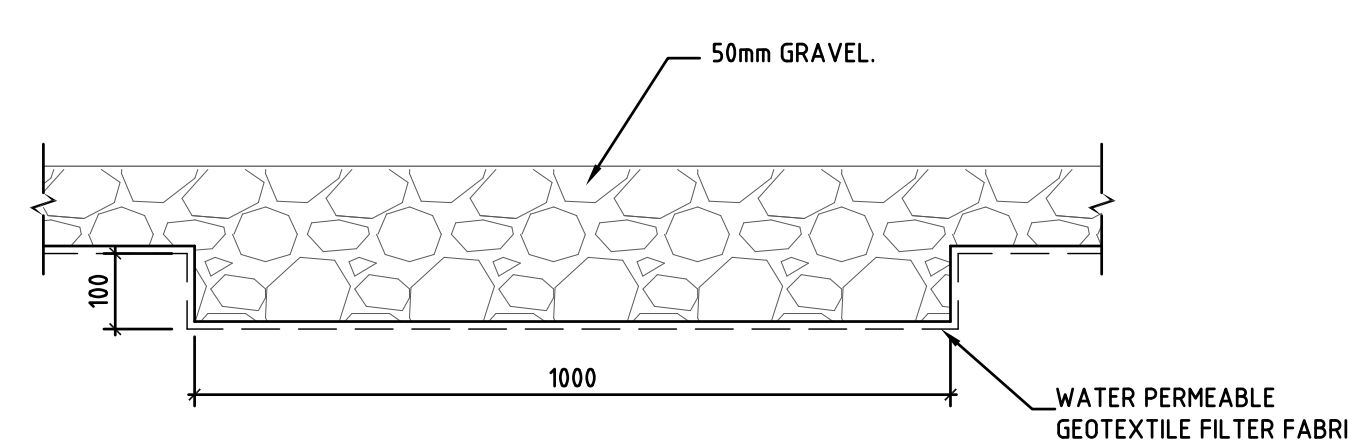
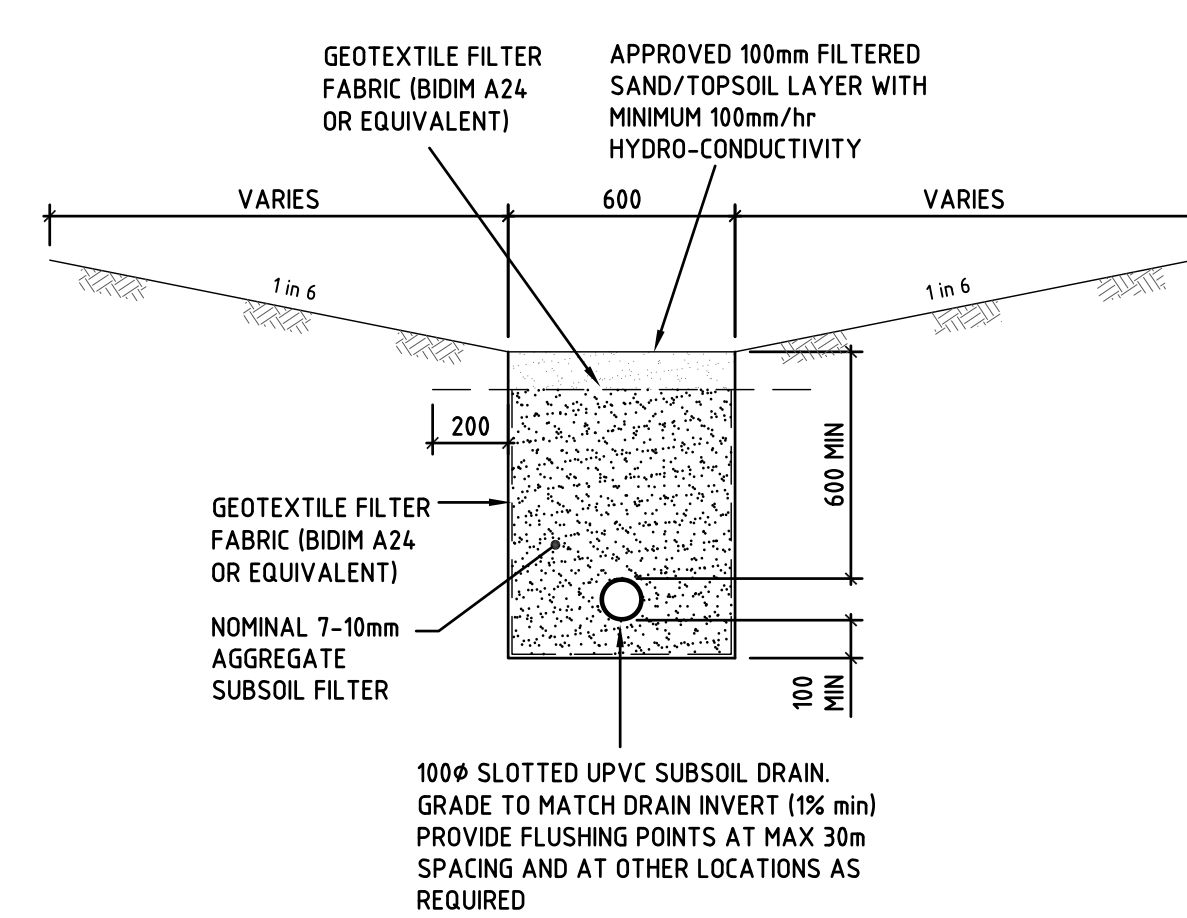
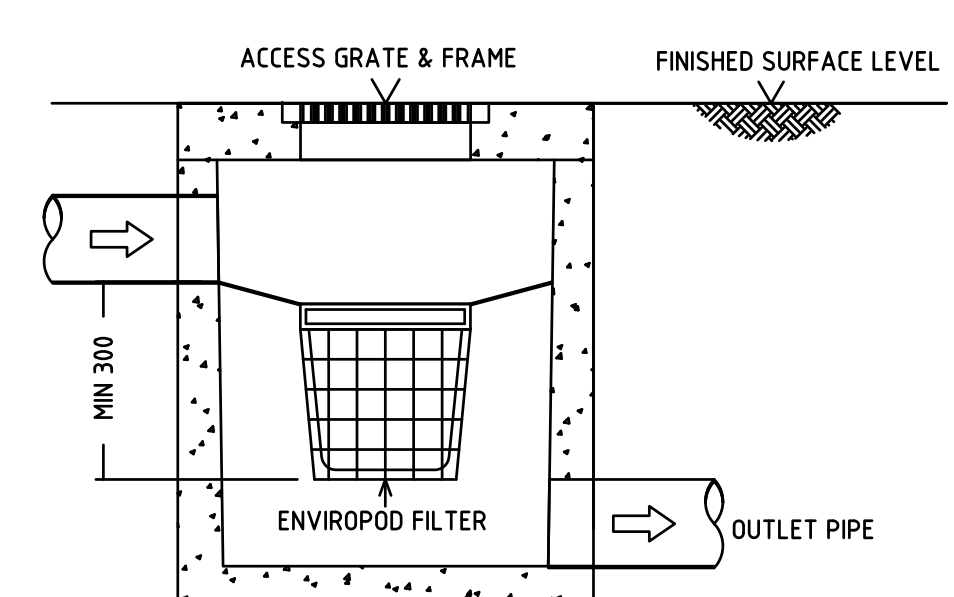
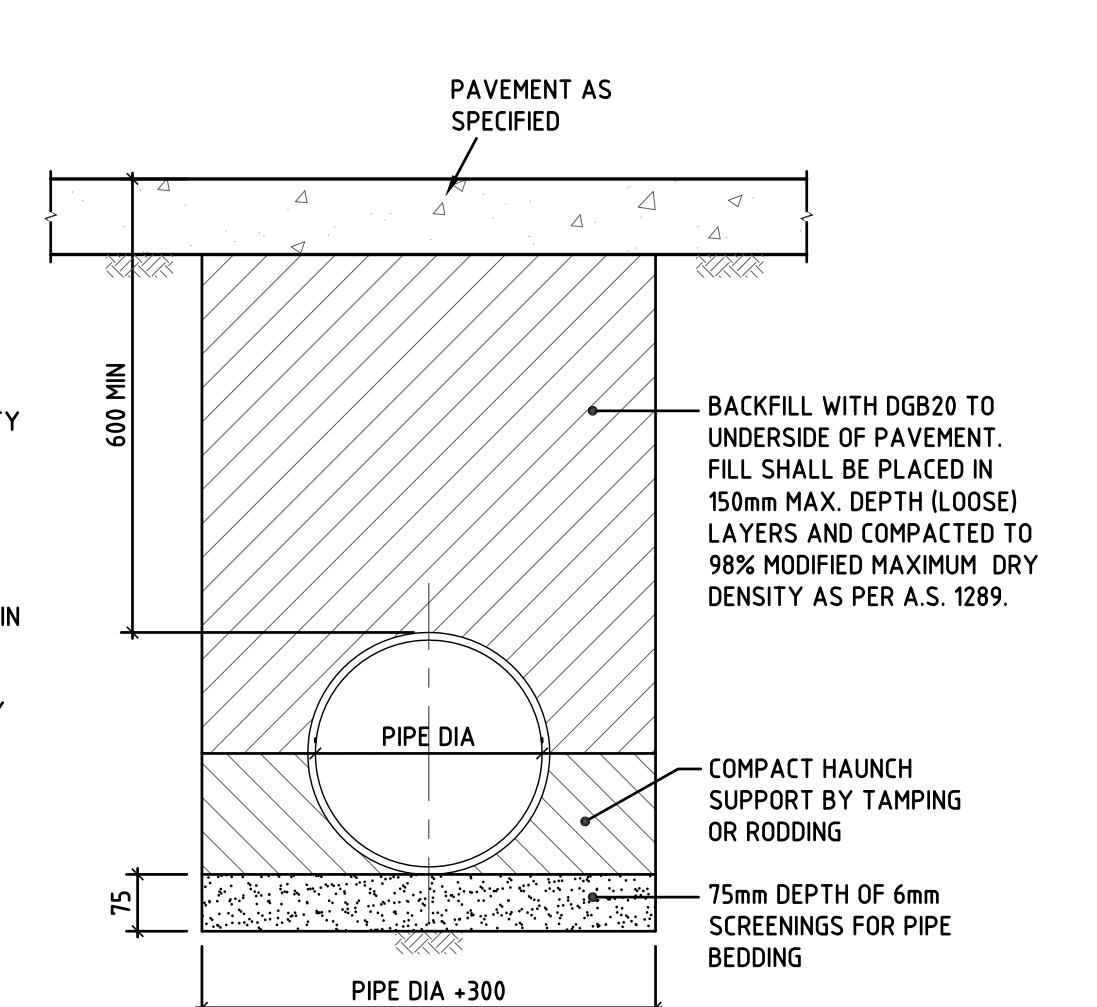
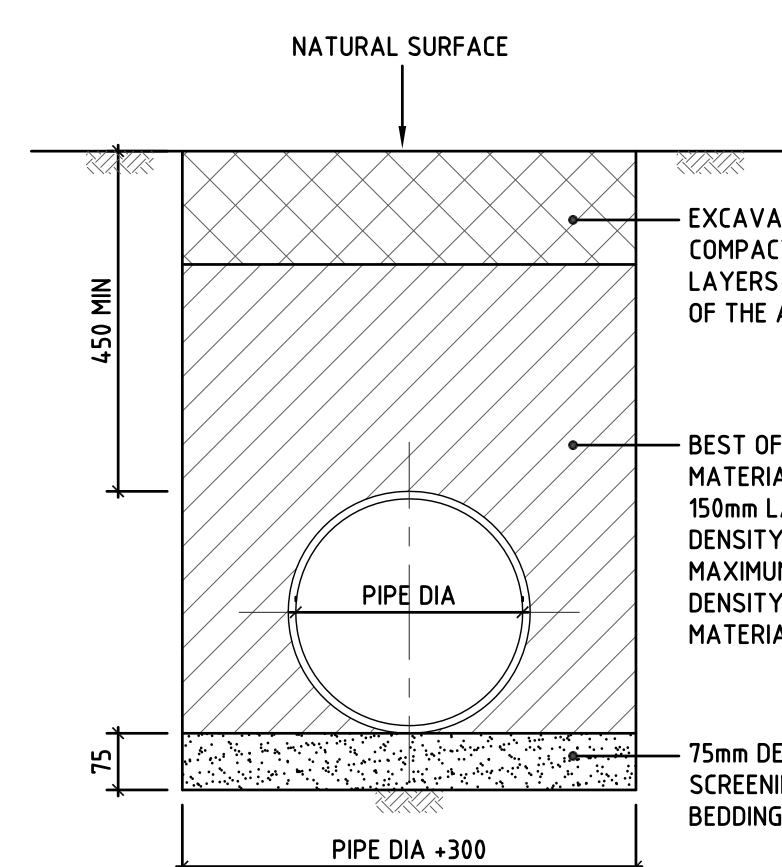
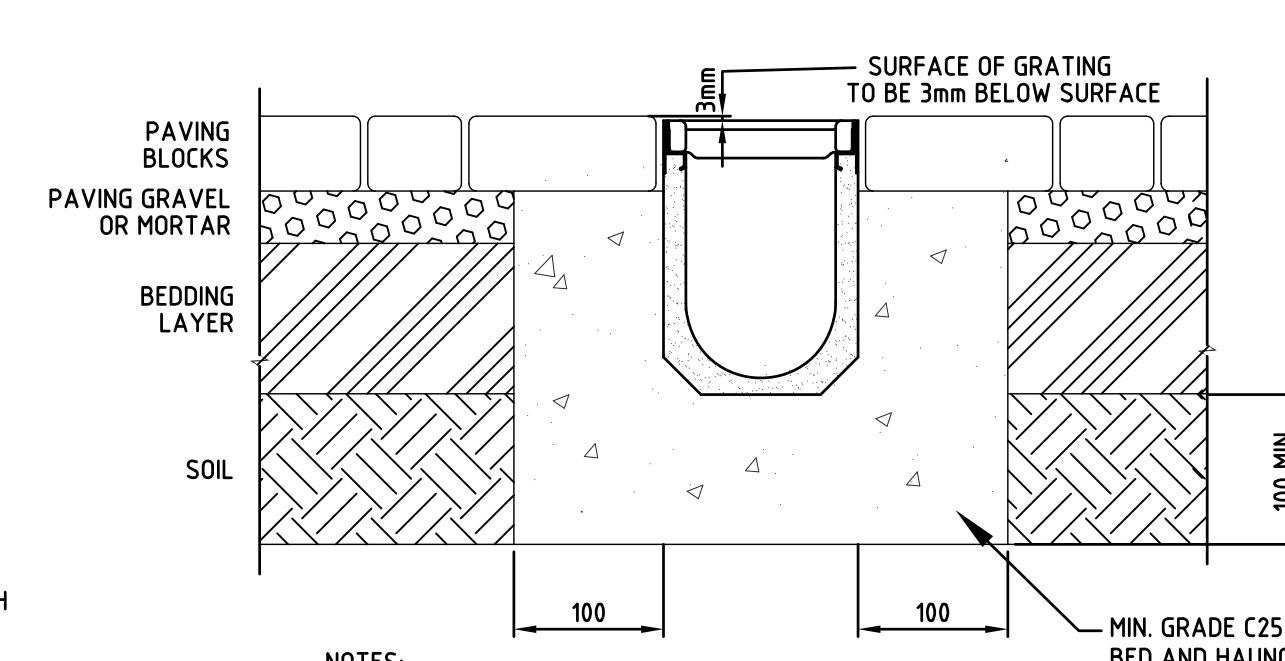
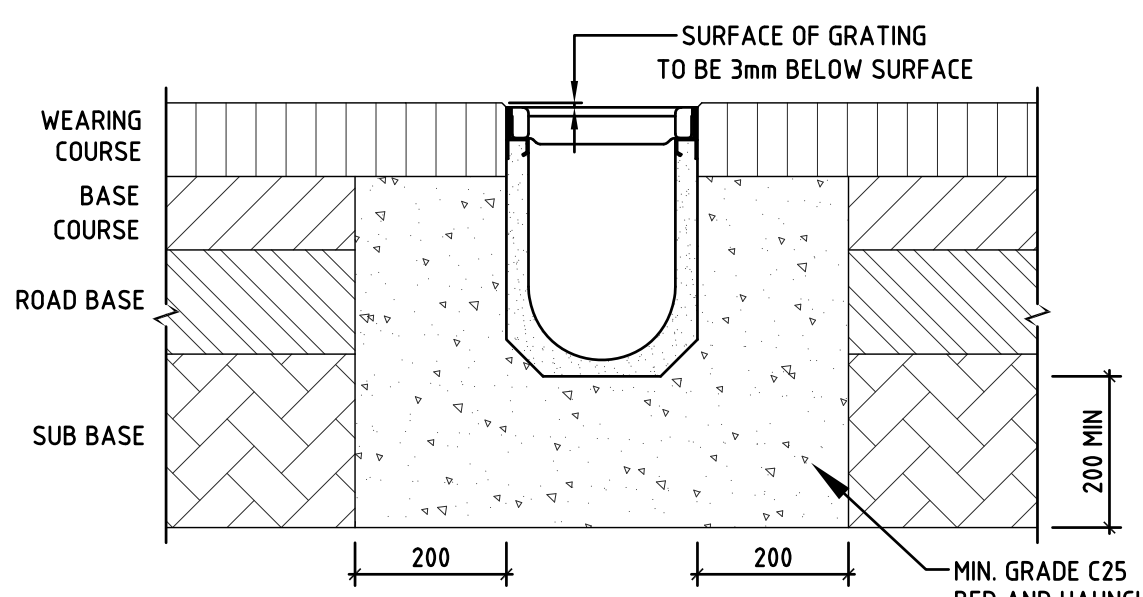
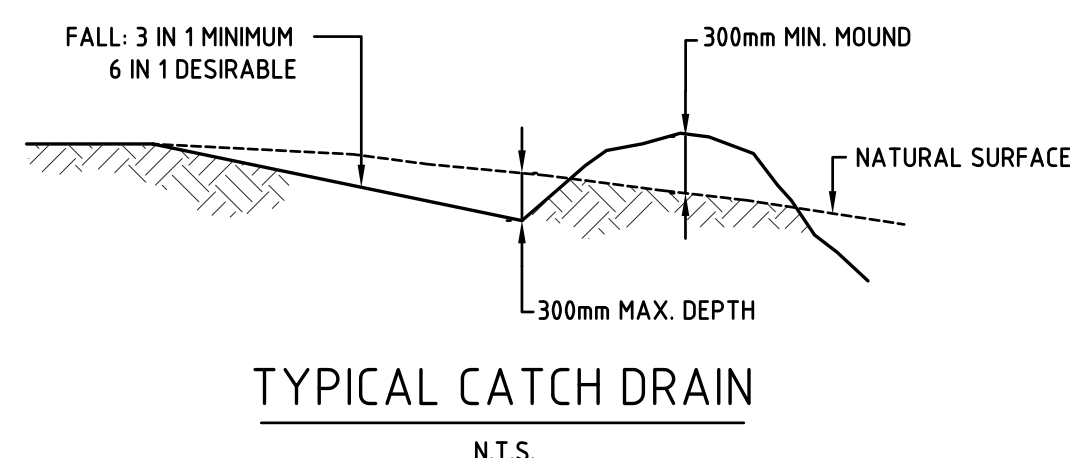
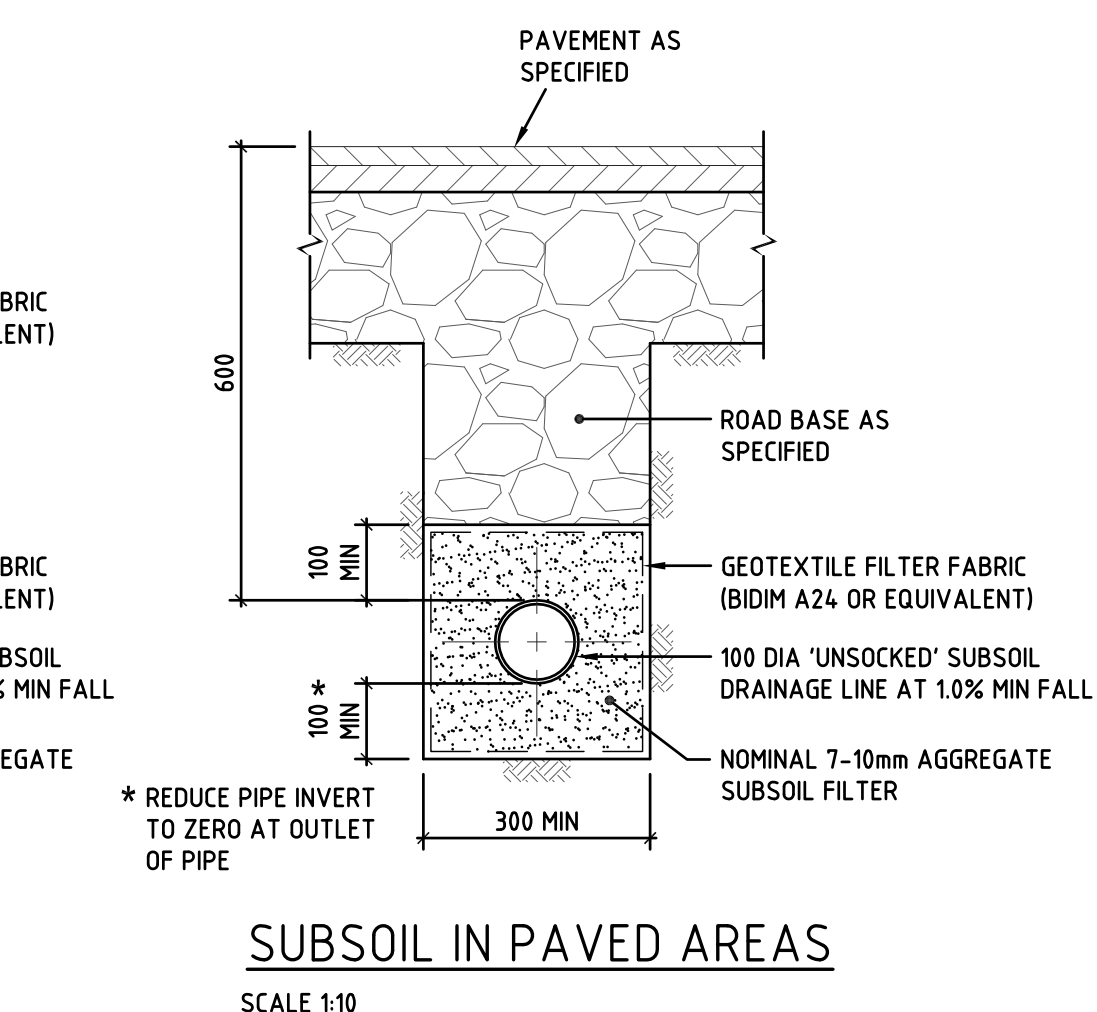
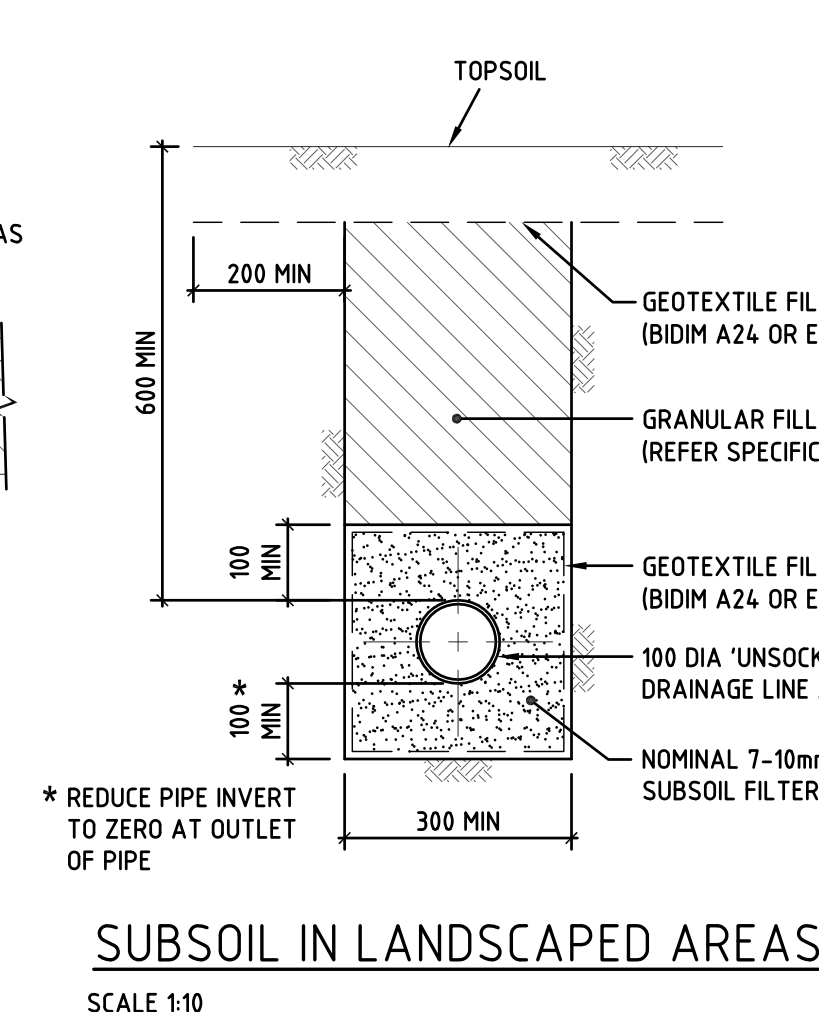
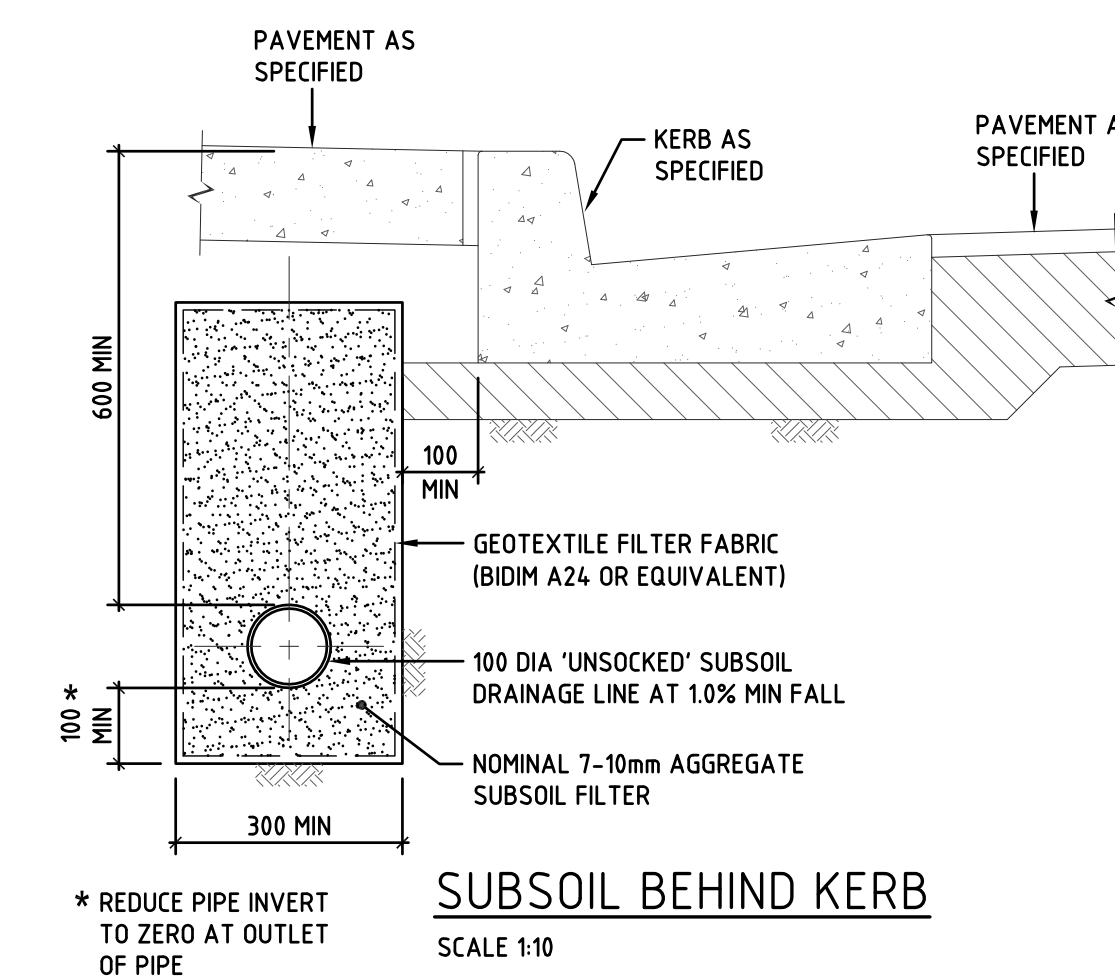
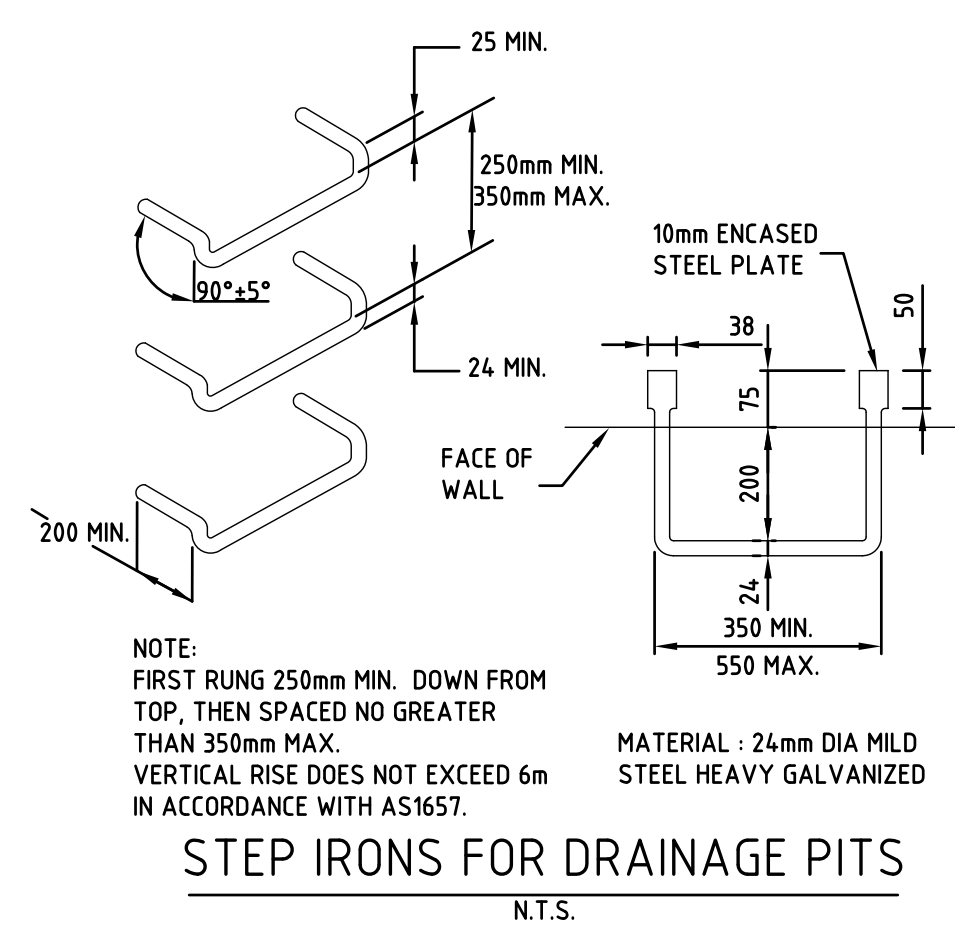
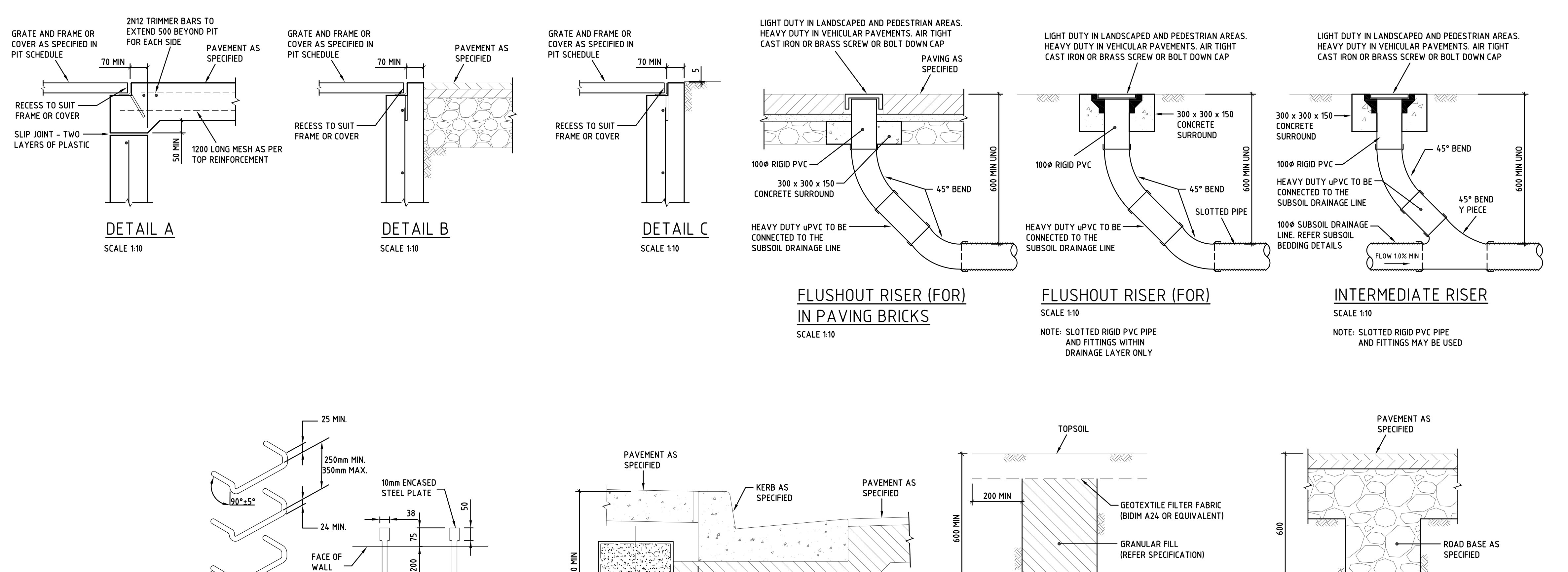


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Project Name	NEW HIGH SCHOOL IN JERRABOMBERRA		
Drawing Title	STORMWATER DRAINAGE PLAN SHEET 1		

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FOR CONTINUATION REFER TO SHEET CE-CO-HS-2062

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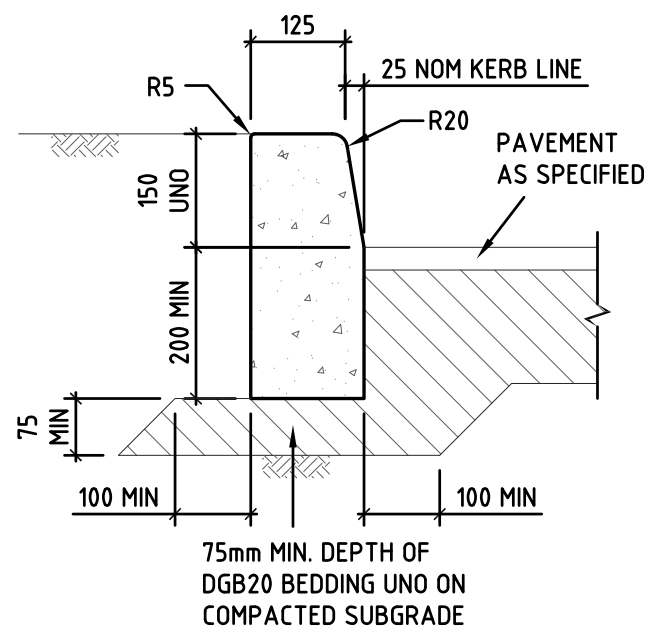
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Project Name
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Drawing Title
SITENETWORKS AND PAVEMENT PLAN
SHEET 1

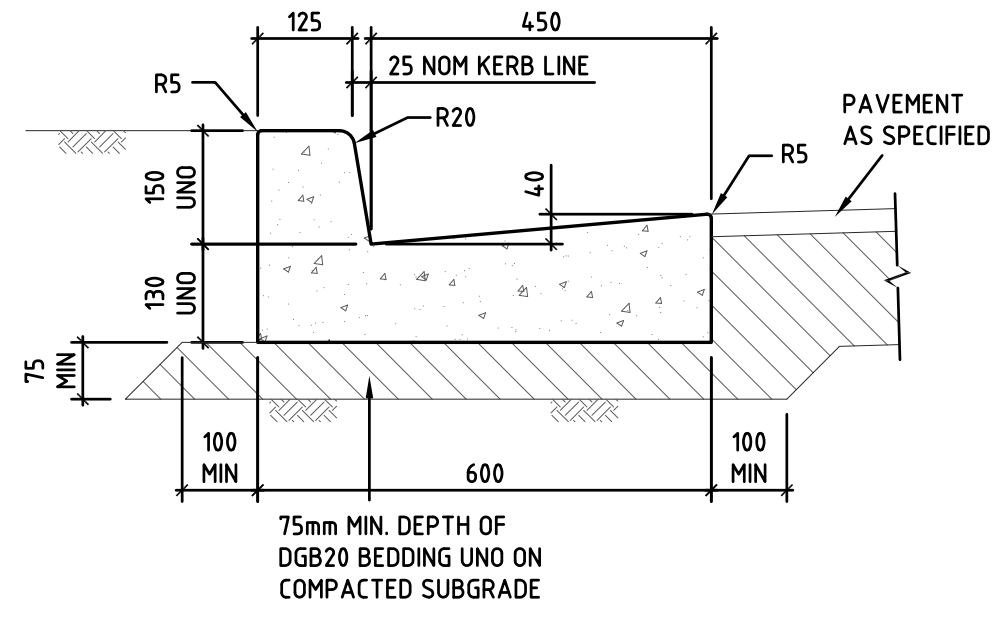
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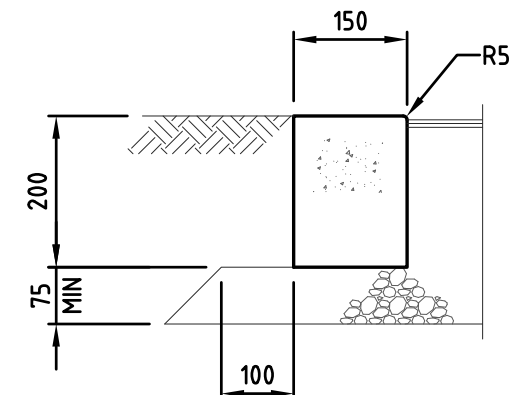
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	PAVEMENT TYPE 7 CONCRETE FOOTPATH PAVEMENT
	PAVEMENT TYPE 4 HEAVY DUTY CONCRETE PAVEMENT
	LANDSCAPE (REFER TO LANDSCAPE CONSULTANTS DRAWINGS AND SPECIFICATIONS)
	PAVEMENT TYPE 8 REFER TO ARCHITECTS/ LANDSCAPE



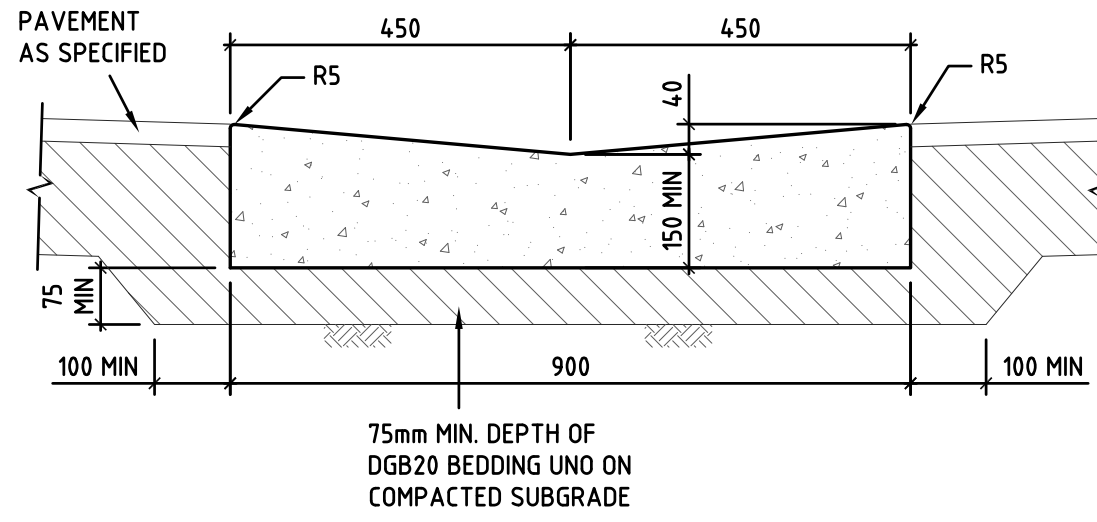
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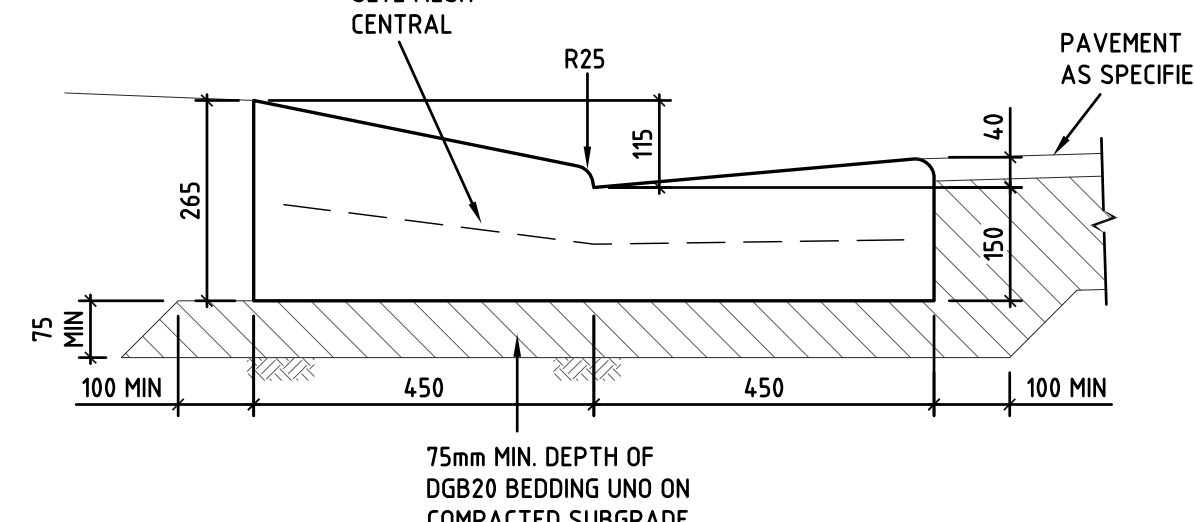
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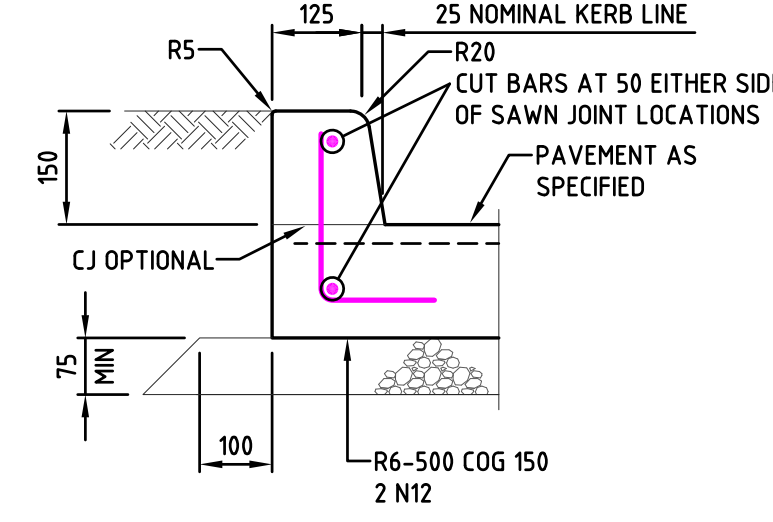
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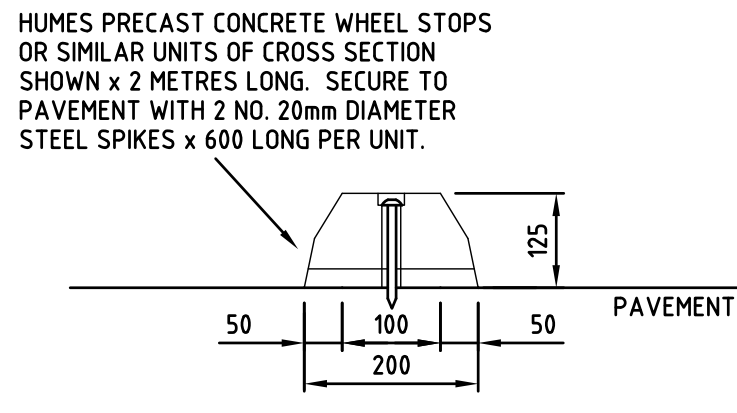
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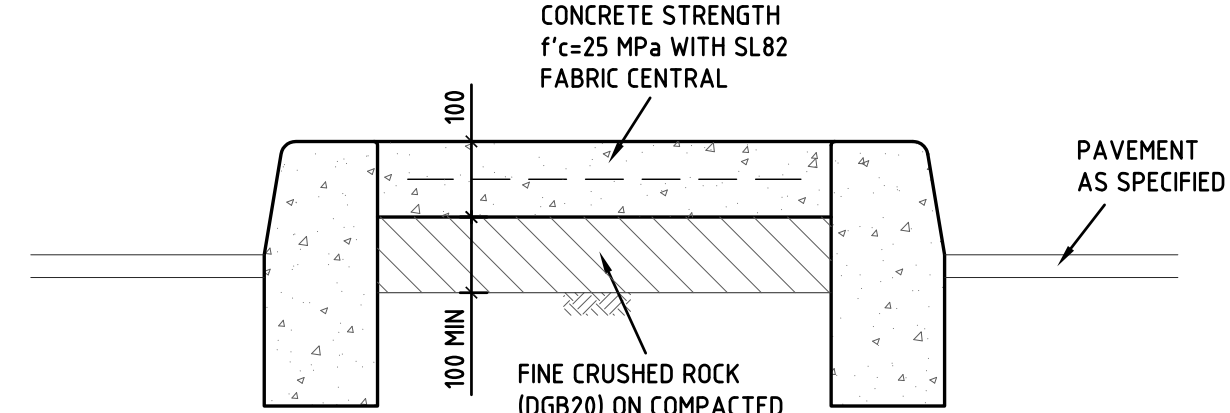
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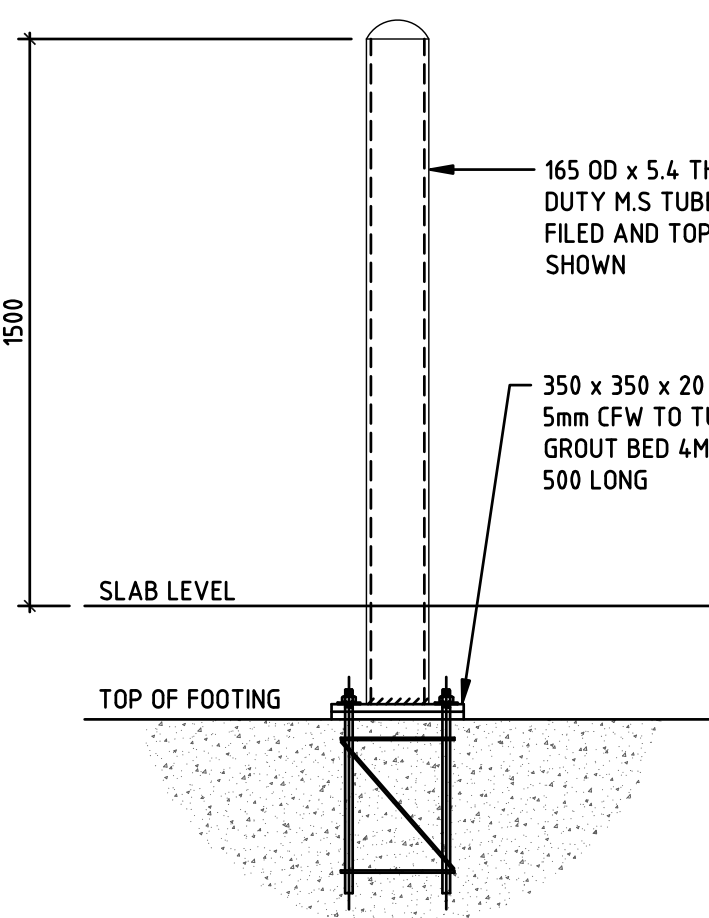
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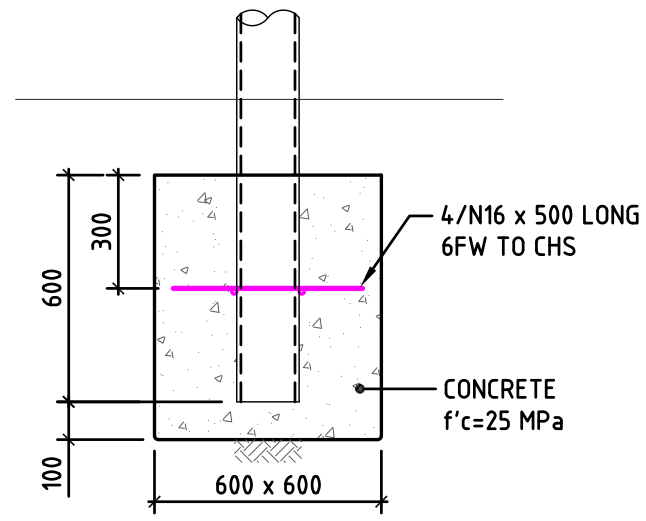
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N.T.S.



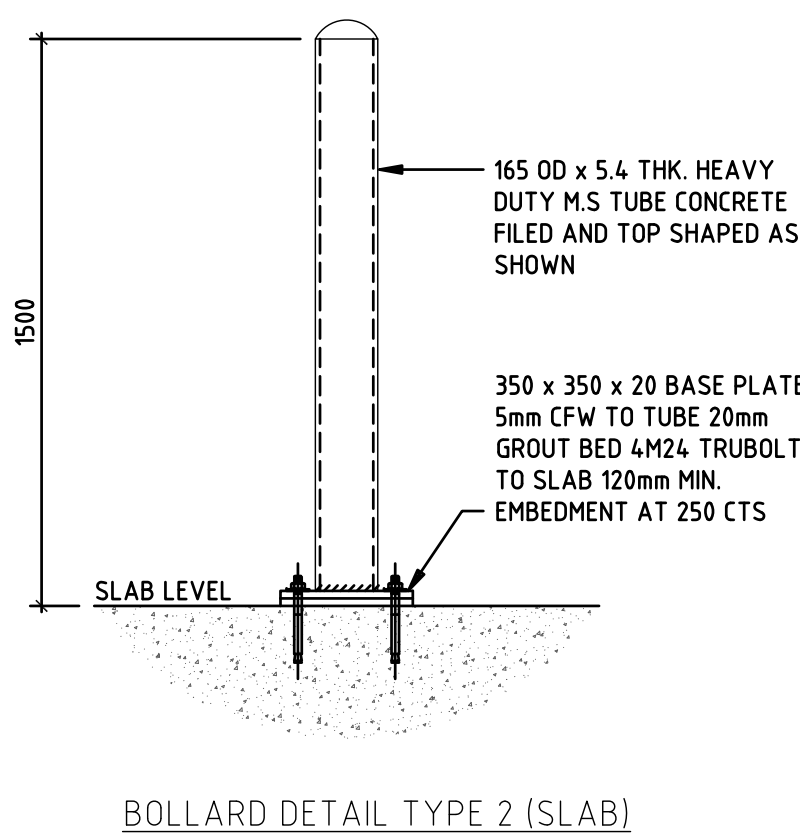
CONCRETE ISLAND INFILL
SCALE 1:10



BOLLARD DETAIL TYPE 1 (FOOTING)

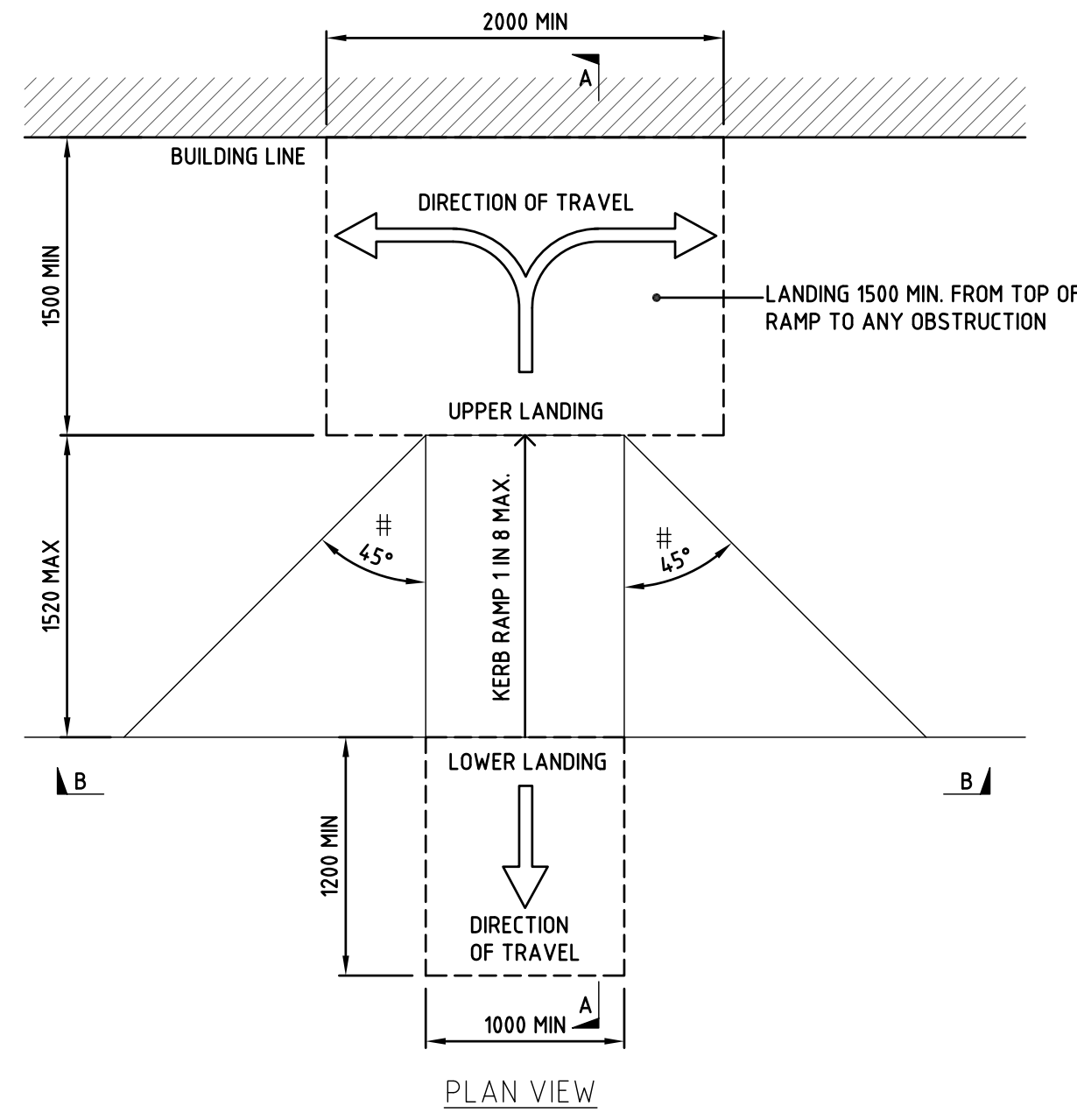


BOLLARD FOOTING DETAIL

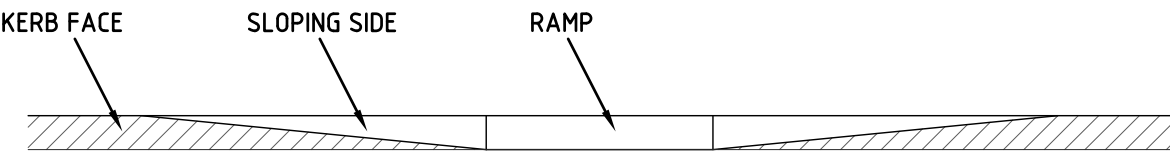


BOLLARD DETAIL TYPE 2 (SLAB)

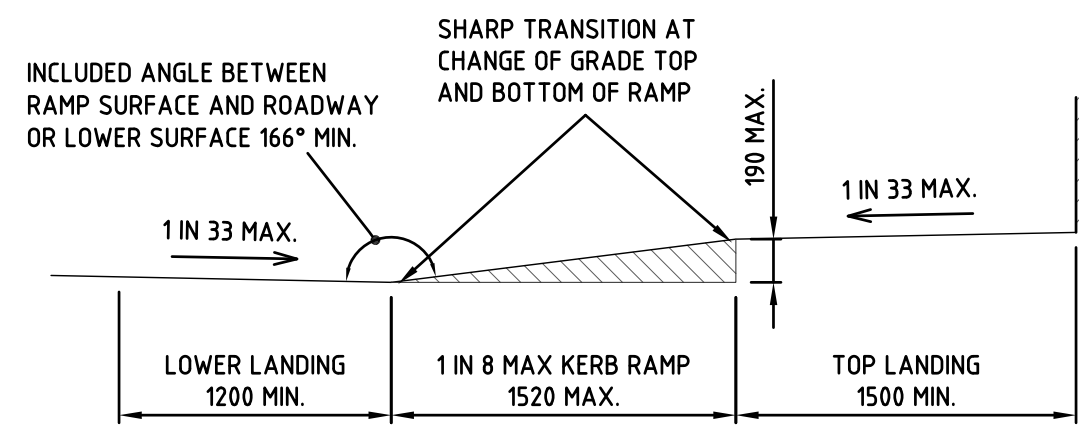
TYPICAL BOLLARD DETAILS
SCALE 1:20



PLAN VIEW



SECTION B - B



SECTION A - A

PRAM RAMP DETAIL
NTS

- NOTES**
- THE RAMP AND SLOPING SIDES SHOULD BE SLIP RESISTANT AND OF A COLOUR THAT CONTRASTS WITH THE ADJOINING SURFACES.
 - A TACTILE INDICATOR, AS SPECIFIED IN AS1428.4 SHOULD BE INTEGRATED AND EXTENDED FOR 200mm AWAY FROM THE RAMP AT THE SHARP TRANSITION AT THE TOP AND BOTTOM OF THE RAMP. THIS COULD TAKE THE FORM OF ROUGH BROODING OR SIMILAR TEXTURE WHICH WILL AID ORIENTATION FOR PEOPLE WITH A VISUAL IMPAIRMENT.
 - H WHERE CONSTRAINTS DICTATE THE ANGLE MAY BE REDUCED TO 30° IN ACCORDANCE WITH RMS STANDARD DRAWING No. R0300-11.
 - MINIMUM 125mm THICKNESS OF CONCRETE REINFORCED WITH SL82 MESH BOTTOM, 40mm COVER

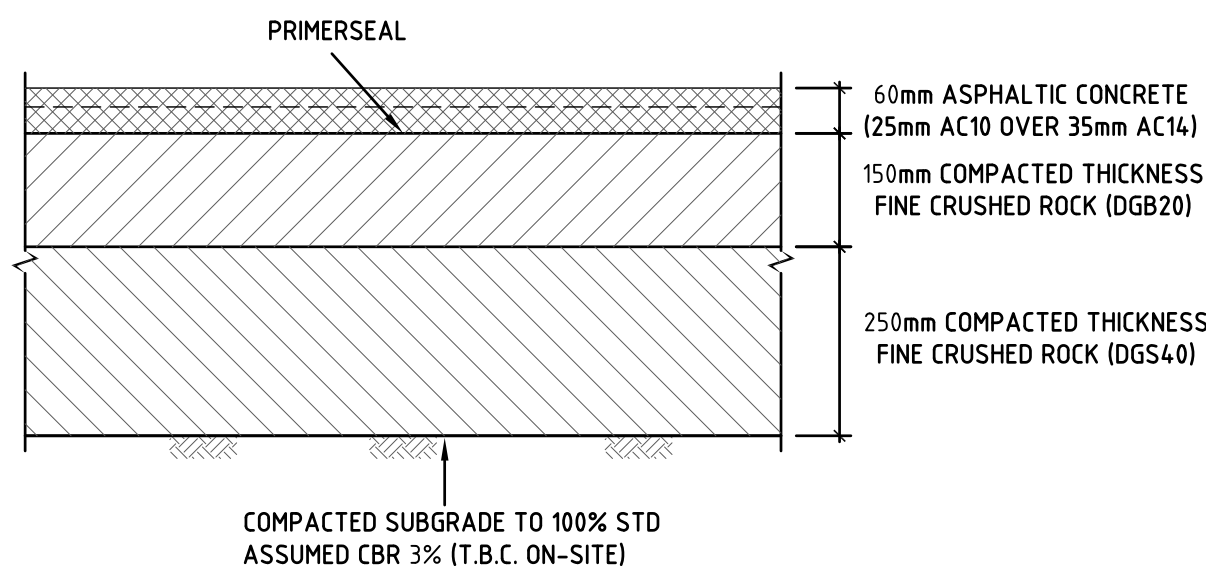
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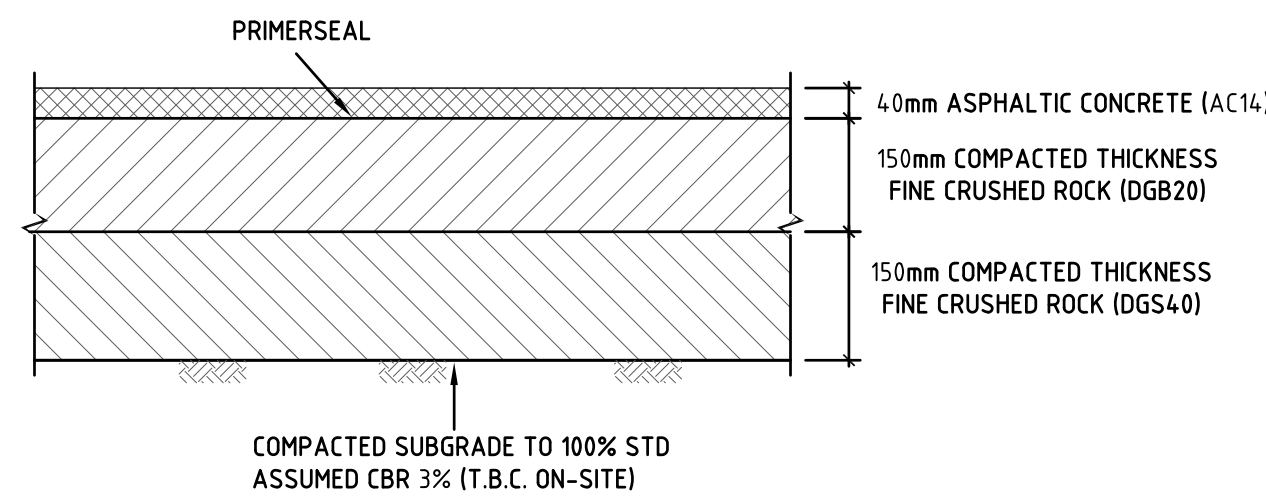
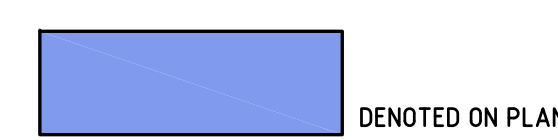


Project Name NEW HIGH SCHOOL IN JERRABOMBERRA		SCHEMATIC DESIGN	
Designed	CK	Approved	Date
Drawn	HM	Scale	AS SHOWN
Date	MAR 2021	Project Ref	20095 CE-SD-HS-2071
Sheet	A0	Drawing No	Rev

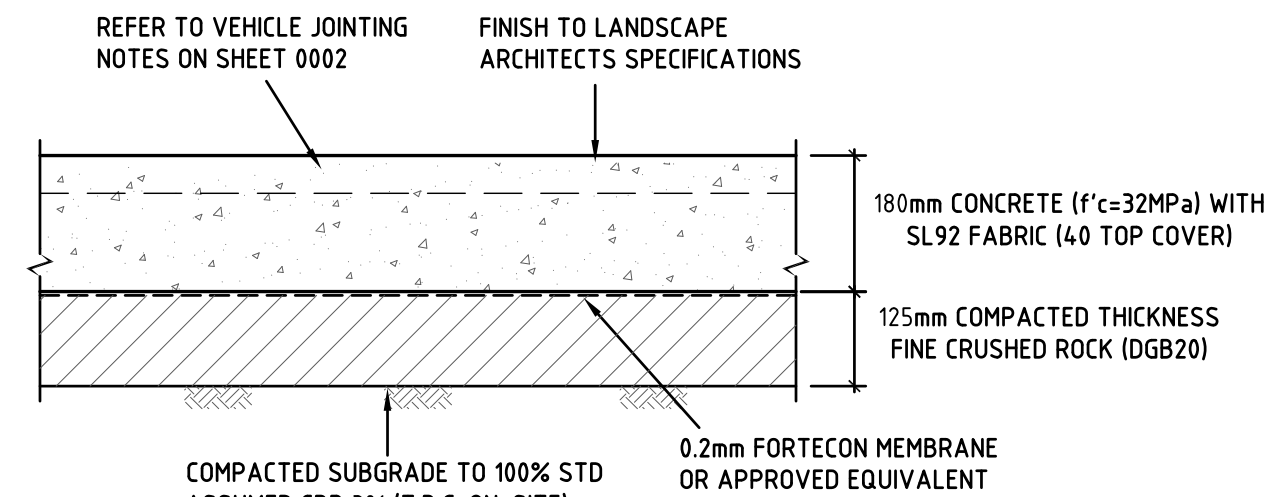
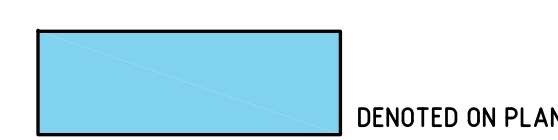
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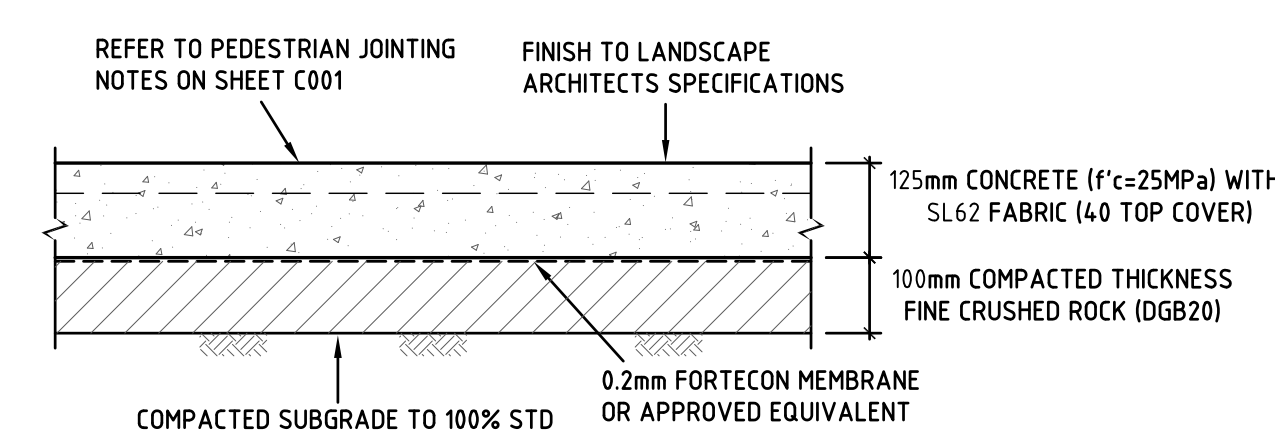
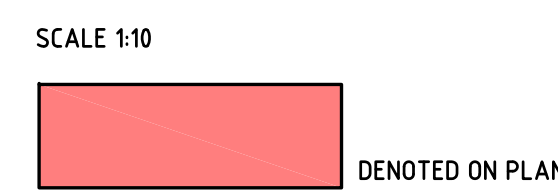
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HEAVY DUTY ASPHALT PAVEMENT
SCALE 1:10



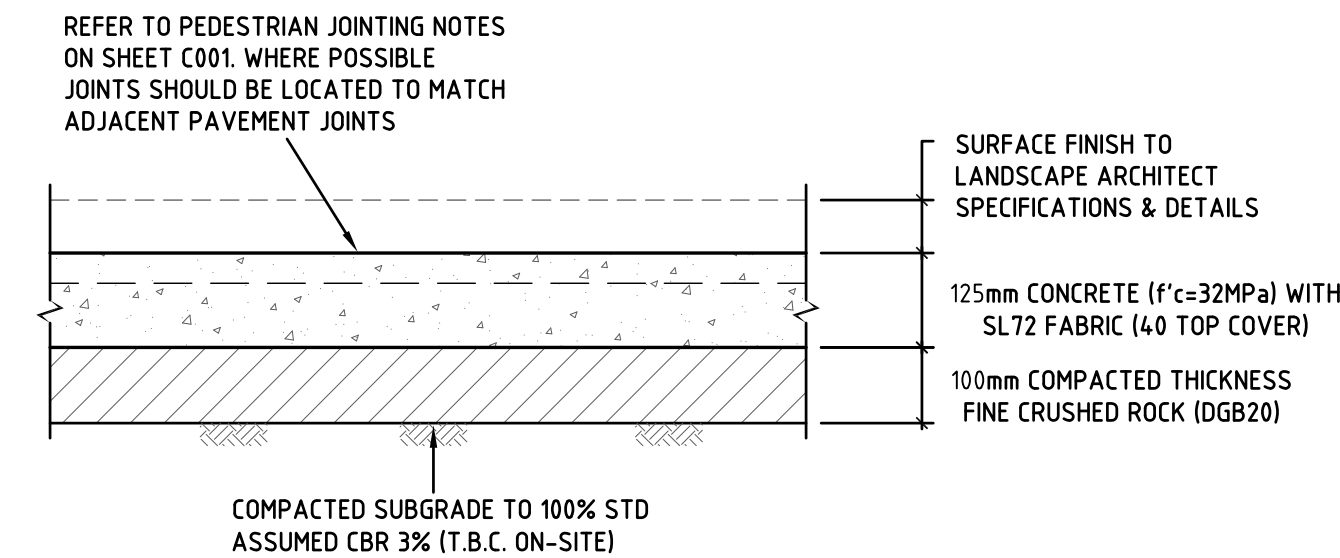
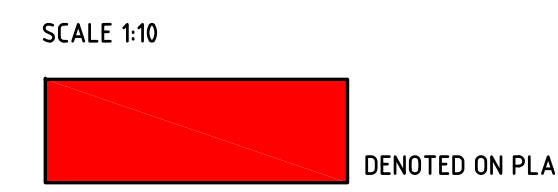
PAVEMENT TYPE P2
MEDIUM DUTY ASPHALT PAVEMENT
SCALE 1:10



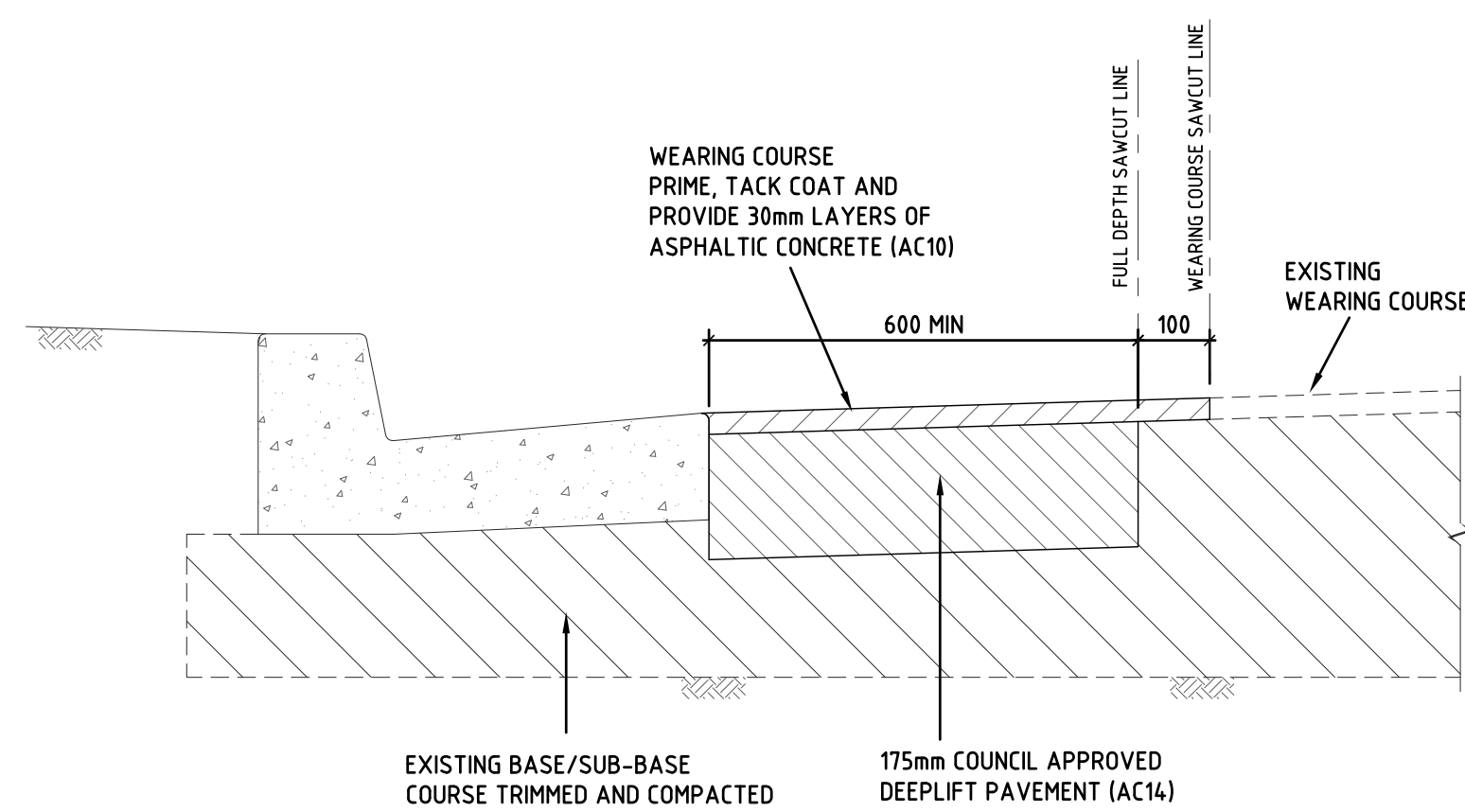
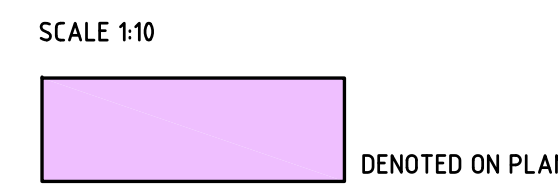
PAVEMENT TYPE P4
HEAVY DUTY CONCRETE PAVEMENT
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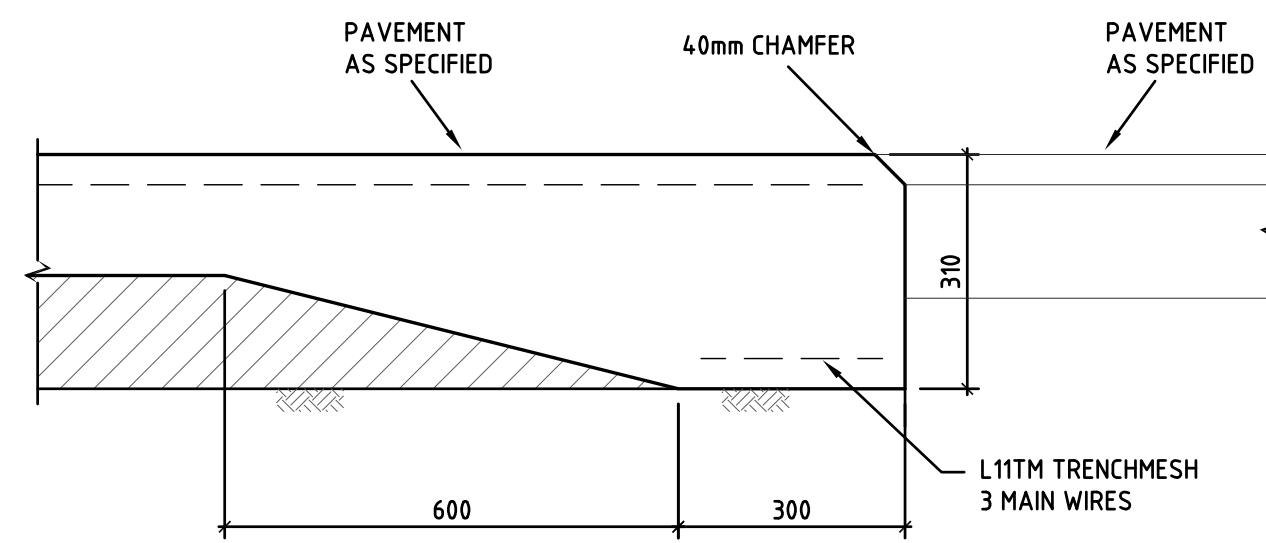
PAVEMENT TYPE P7
CONCRETE FOOTPATH PAVEMENT
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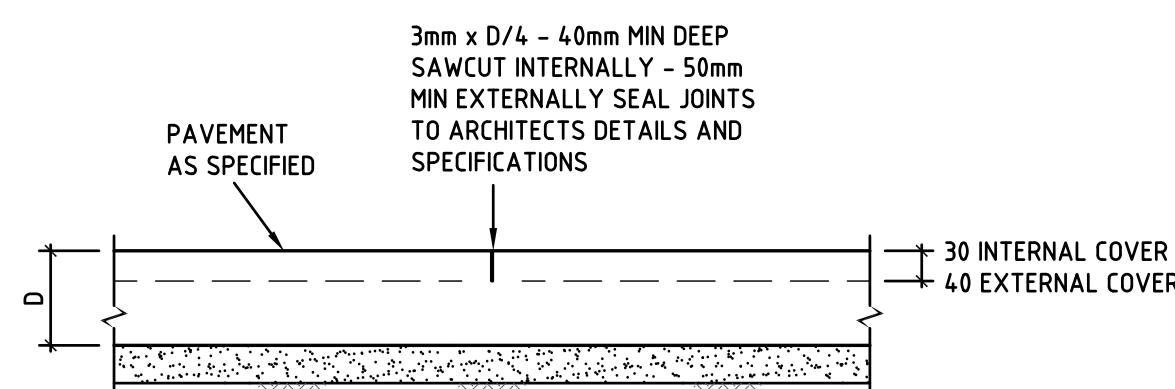
PAVEMENT TYPE P8



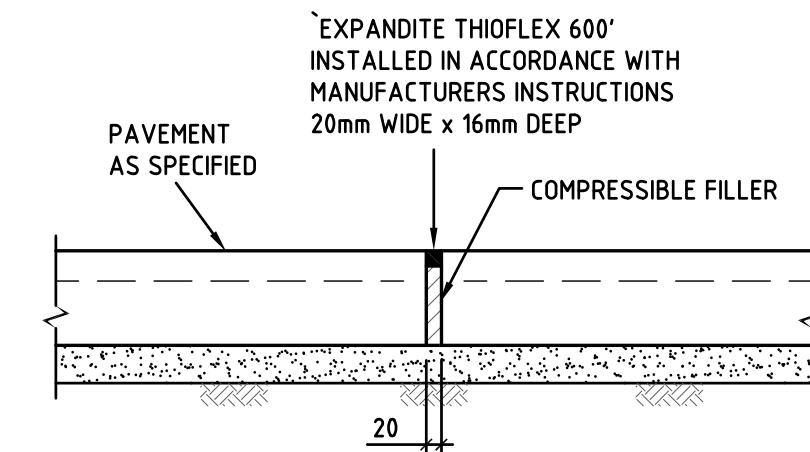
PAVEMENT - DEEPLIFT
SCALE 1:10



EDGE THICKENING (ET)
SCALE 1:10

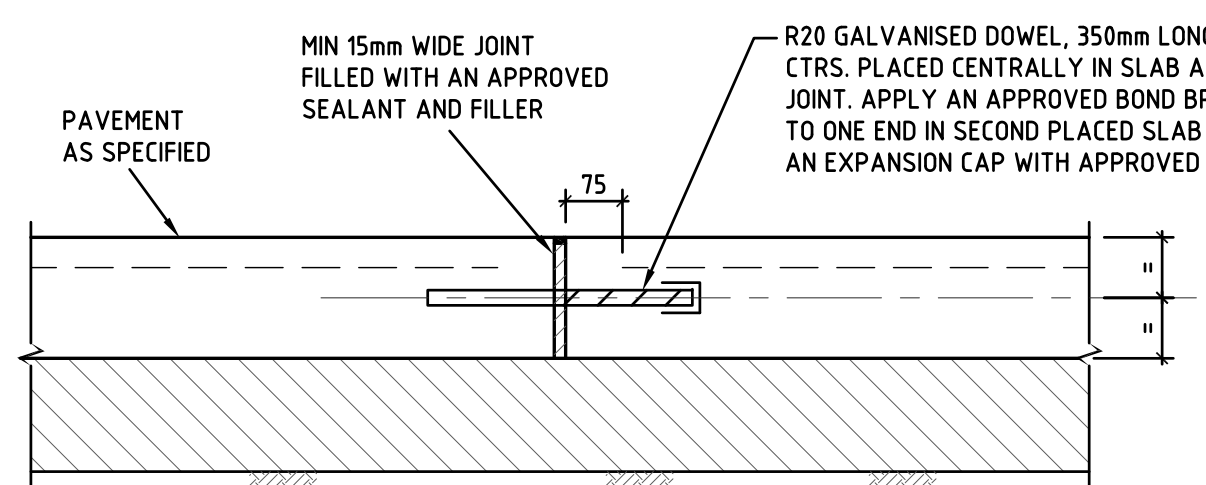


SAWCUT JOINT (SJ)
SCALE 1:10

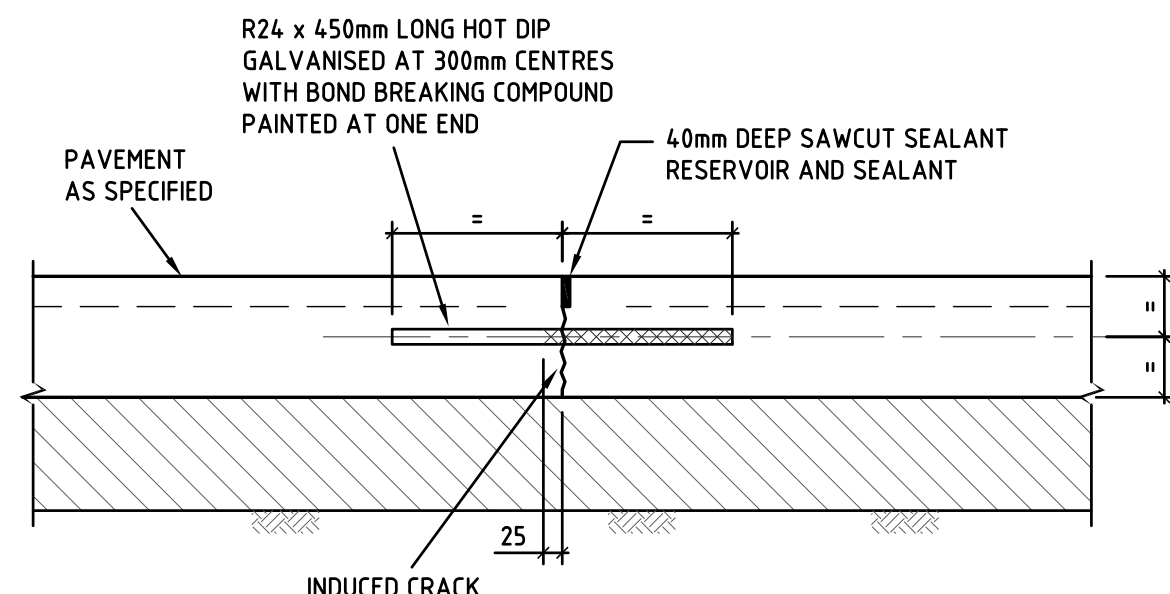


EXPANSION JOINT (EJ)
SCALE 1:10

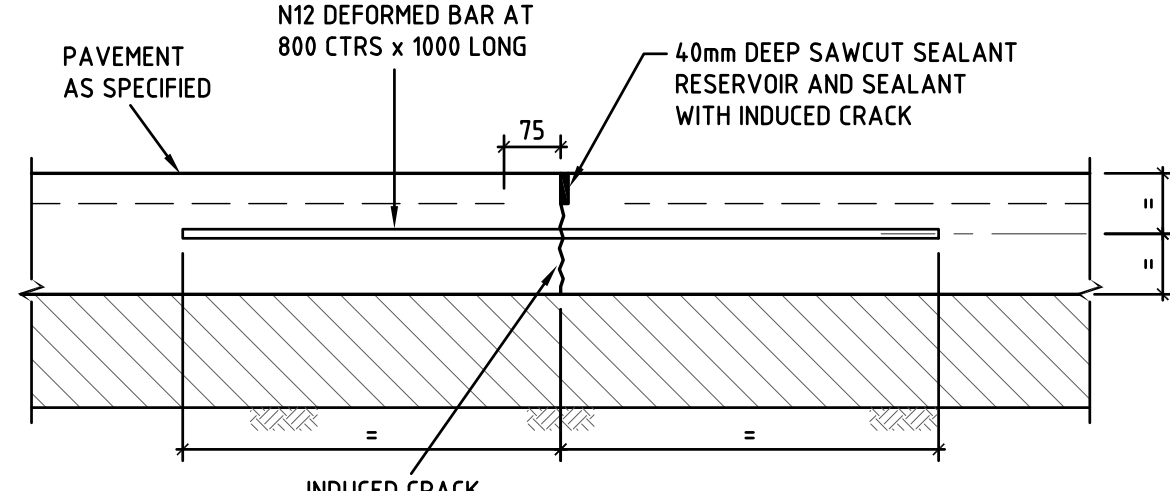
- NOTES
1. SLAB MUST BE SAWCUT AS SOON AS PRACTICABLE AFTER FINISHING OF THE SLAB WITHOUT CAUSING DAMAGE TO THE SAWCUT EDGES - USUALLY 12-24 HOURS.
 2. SLABS MUST NOT BE POURED IF TEMPERATURE EXCEEDS 32°
 3. HOT WEATHER PLACING (25° AND OVER) MAY REQUIRE SLABS TO BE SAWCUT AS SOON AS 5-6 HOURS AFTER POURING.
 4. ANY SLAB BAY IN WHICH SHRINKAGE CRACKS OCCUR DUE TO LATE SAWCUTTING MUST BE REMOVED AND REPLACED BY THE BUILDER/CONTRACTOR.



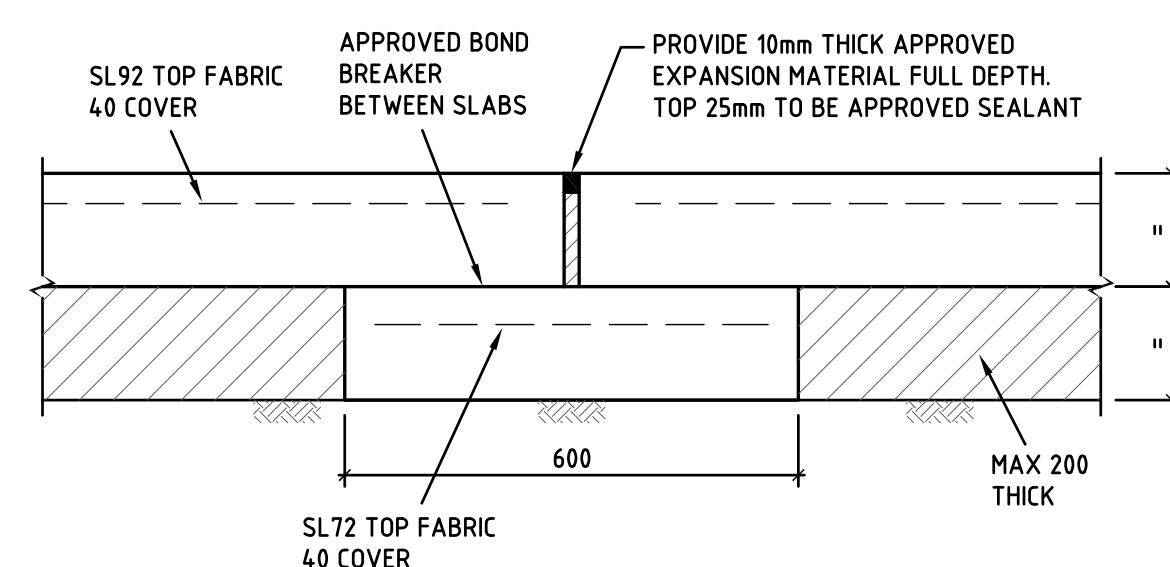
DOWELLED EXPANSION JOINT (DEJ)
SCALE 1:10



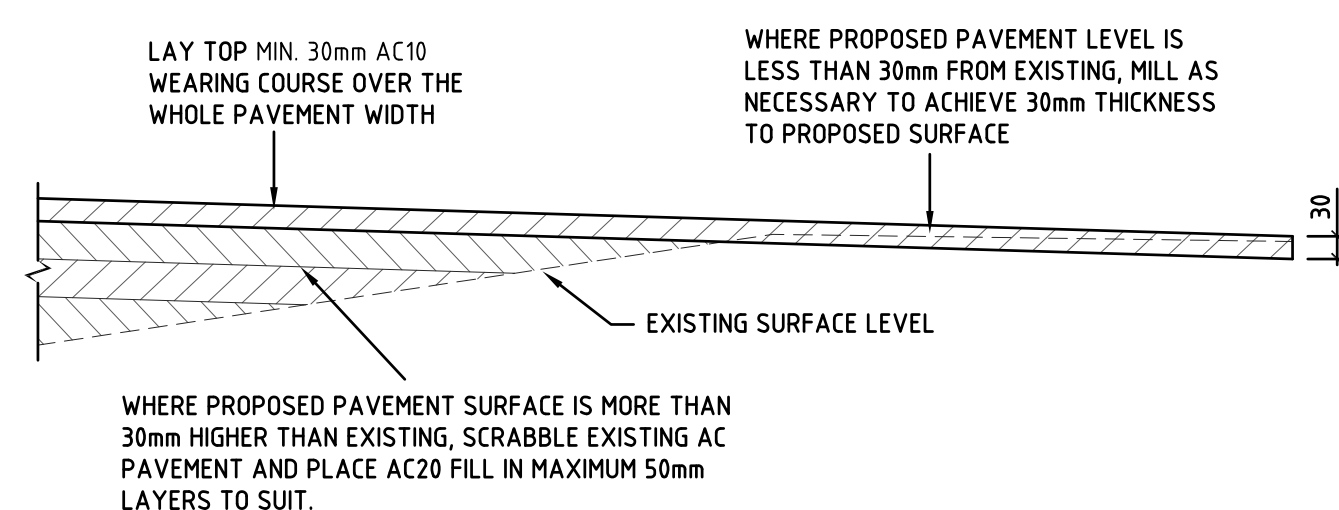
TRANSVERSE CONTRACTION JOINT (TCJ)
SCALE 1:10



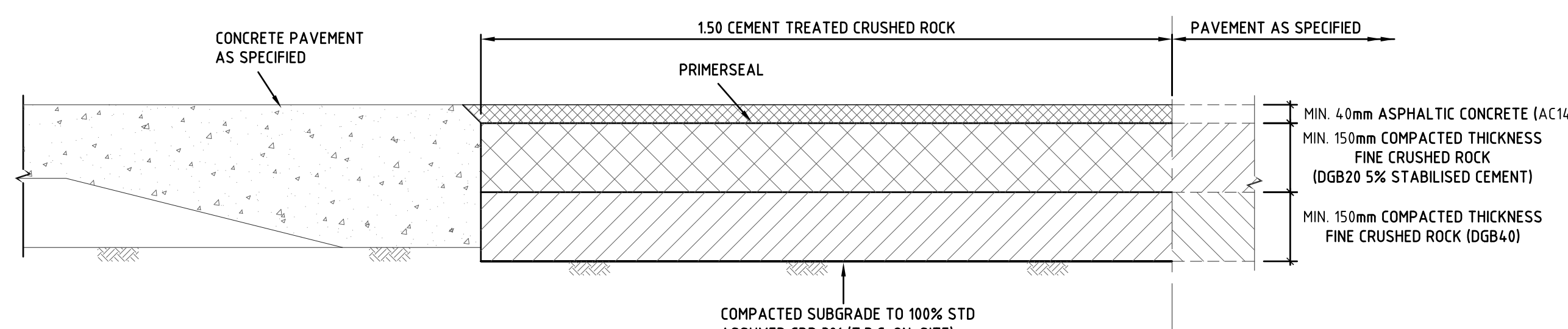
LONGITUDINAL WARPING JOINT (LWJ)
SCALE 1:10



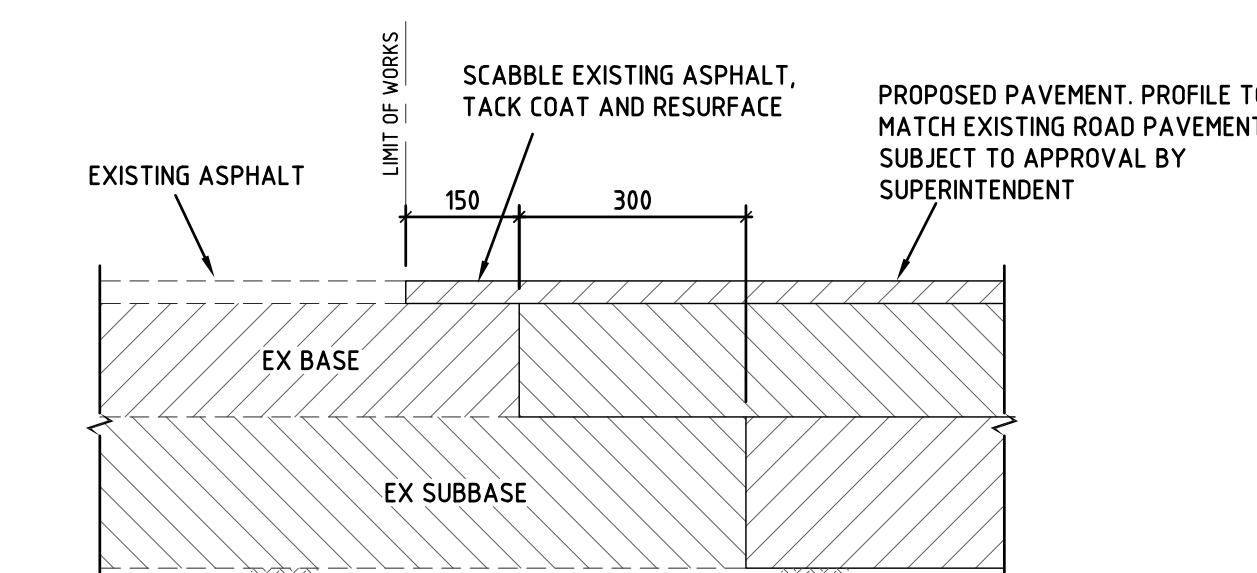
ISOLATION JOINT (IJ) WITH SUBGRADE BEAM
SCALE 1:20



MILL RE-SHEET/SCRABBLE AND FILL DETAIL
SCALE 1:10



CONCRETE CONNECTION TO ASPHALT PAVEMENT
SCALE 1:10



ASPHALT CONNECTION TO EXISTING PAVEMENT
SCALE 1:10

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Rev	Description	Date	By	App	Rev	Description	Date	By	App
1	DOCUMENT UPDATED FOR SCHEMATIC DESIGN	10.09.21	JHW	-	1	DOCUMENT UPDATED FOR SCHEMATIC DESIGN	28.09.21	JHW	-
2	SCHEMATIC DESIGN ISSUE	02.05.21	JHW	-					
3	SCHEMATIC DESIGN ISSUE	07.05.21	JHW	-					
4	SCHEMATIC DESIGN ISSUE	16.04.21	JHW	-					
5	DRAFT SCHEMATIC DESIGN ISSUE	24.03.21	JHW	-					

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Project Name NEW HIGH SCHOOL IN JERRABOMBERRA		SCHEMATIC DESIGN			
Drawing Title SITEWORKS DETAILS	Designed GK	Approved	Date	 North	
	Drawn HM				
	Scale AS SHOWN	Project Ref	Drawing No	Rev	
	Date MAR 2021	20095 CE-SD-HS-2091 F			
	Sheet A0				