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24th March 2022

TSA
Level 15
207 Kent Street
Sydney NSW 2000

Attention: Mr Robert McKnight

By email:
<Robert.mcknight@tsamgt.com>

Dear Sir,

Re. New High School in Jerrabomberra SSD RFI
Our Ref. 5555

Reference is made to the response submissions from the Department of Planning, Industry and Environment (DPIE), - Queanbeyan - Palerang Regional Council and Transport for NSW (TfNSW) with respect to SSDA submission for the New High School in Jerrabomberra (Reference SSD – 24461956).

For any queries regarding this correspondence, please contact Nick Nishijima or the undersigned on (02) 8666 7888.

Yours sincerely

M+G Consulting



Simon Matthews

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Table 1 DPIE RtS Letter

DPIE Submissions		
No.	DPIE RtS Letter	Response
5	<p>Water quality</p> <p>As per the EPA advice, further information must be provided to demonstrate the capacity, sizing, design rain event, catchment, and management of the sediment for the proposed temporary sediment basin.</p>	<p>A conceptual Soil & Water Management Plan (SWMP), in accordance with the “Blue Book”, providing preliminary details of the sediment control measures, has been prepared and is detailed on M+G drawings JHS-CE-2005 & 2006, attached to this response in Appendix A.</p> <p>A detailed SWMP containing detailed design of the Sediment Control, Erosion Control and Site Stabilisation practices, including staging of the earthworks and these practices, will be prepared by the earthwork contractor, subsequently reviewed and approved by Hindmarsh/M+G prior to civil works commencing.</p>
EPA – Appendix A	<p><u>Construction</u></p> <p>The receiving waterway for the proposal is the Jerrabomberra Creek, which ultimately flows into Lake Burley Griffin which forms part of the high conservation value Murrumbidgee Catchment. The EIS does not consider the NSW Water Quality Objectives (WQOs) for the receiving waters. The WQOs and the Australian and New Zealand Guidelines for Fresh and Marine Water Quality provide the general framework to assess the potential impact of discharge on the environmental values of the receiving waters.</p> <p>The EPA recommends consideration of the receiving environment and the relevant WQOs in relation to the proposal and how any discharge from the site will meet or improve the environmental values of the receiving waters.</p>	<p>To ensure that the receiving waters (Jerrabomberra Creek) are not polluted or significantly affected in terms of Water Quality during construction works for the proposed development, all civil works are to be undertaken in accordance with NSW Government Requirements <i>“Managing Urban Stormwater: Soils and Construction”</i> referred to as the “Blue Book”.</p> <p>The stormwater drainage system for the proposed development has been designed to incorporate Water Sensitive Urban Design (WSUD) elements; bioretention swale/basin and stormwater treatment system in the On-Site Detention (OSD) tank, to reduce the pollution load of the receiving waters to levels to acceptable Water Quality levels. MUSIC modelling of the pollutant loads has been undertaken to design these WSUD elements.</p>
EPA – Appendix A	<p><u>Construction</u></p> <p>The EIS identifies that, prior to any earthworks commencing onsite, soil and water management control measures that comply with the Managing Urban Stormwater – Soils and Construction will need to be</p>	<p>A conceptual Soil & Water Management Plan (SWMP), in accordance with the “Blue Book” has been prepared and is detailed on M+G drawings JHS-CE-2005 & 2006, attached to this response in the Appendix A.</p>

	<p>in place. The EPA acknowledges that a range of sediment and erosion control measures are discussed in the EIS, including the installation of a temporary sediment basin to capture site runoff. Details on the capacity, sizing, design rain event, catchment, and management of the sediment basin has not been provided. The EPA recommends further information to demonstrate the capacity, sizing, design rain event, catchment and management of the sediment be provided.</p> <p>The EPA recommends that a detailed Sediment and Erosion Control Management Plan is developed for the proposed construction prior to the commencement of works.</p>	<p>A detailed SWMP containing detailed design of the Sediment Control, Erosion Control and Site Stabilisation practices, including staging of the earthworks and these practices, will be prepared by the earthwork contractor and reviewed and approved by Hindmarsh/M+G prior to civil works commencing.</p> <p>This plan will include monitoring provisions that will allow the SWMP to be changed/modified during the works to ensure that the required Water Quality Objective are achieved during the construction stage.</p>
EPA – Appendix A	<p><u>Pre-rainfall Procedures</u></p> <p>The EPA notes that the EIS and supporting documents outline that additional sediment and erosion controls are to be implemented during wet weather events. The EPA recommends that these additional controls are developed and implemented at a high standard to protect the receiving environment. Typical measures that can be implemented include covering high risk areas with geotechnical material and maintaining site traps and check dams.</p> <p>The EPA recommends these additional measures are captured as formal procedures and all relevant team members are aware of the procedures.</p>	<p>The SWMP requires, at times of wet weather, windy events and or extended dry periods that appropriate additional measures are taken to ensure that Water Quality Objectives of the SWMP are achieved.</p> <p>The SWMP will reference that prior to these significant high risk events which may lead to soil erosion across soil stockpiles, steep disturbed slopes etc. such areas will be covered with geotechnical material to reduce potential soil erosion.</p> <p>Sediment traps and check dams etc will be inspected and maintained as required prior to storm events.</p> <p>All erosion and sediment control measures will be required to be regularly inspected, particularly prior to and following wet weather events, repaired and/or maintained to ensure functionality across the system is not compromised.</p>
EPA – Appendix A	<p><u>Use of Flocculant</u></p> <p>The EPA notes that the EIS and associated document identify the potential use of flocculants as a means to manage prior to discharge from the site. All feasible and reasonable alternatives to the discharge of water collected onsite to the environment should be investigated with discharge to the environment used as a last resort.</p> <p>The EPA reminds the proponent the Section 120 of the Protection of</p>	<p>To ensure that the discharging waters from the site meet Water Quality requirements in terms of suspended solids, sediment basins will be detailed in the SWMP. These sediment basins will be sized so that the use of flocculants will not be required, or use minimised.</p> <p>Should flocculants be used to treat the water captured onsite, information on the product and details on the proposed chemicals to be used and potential impacts will be provided to the EPA for consideration and assessment.</p>

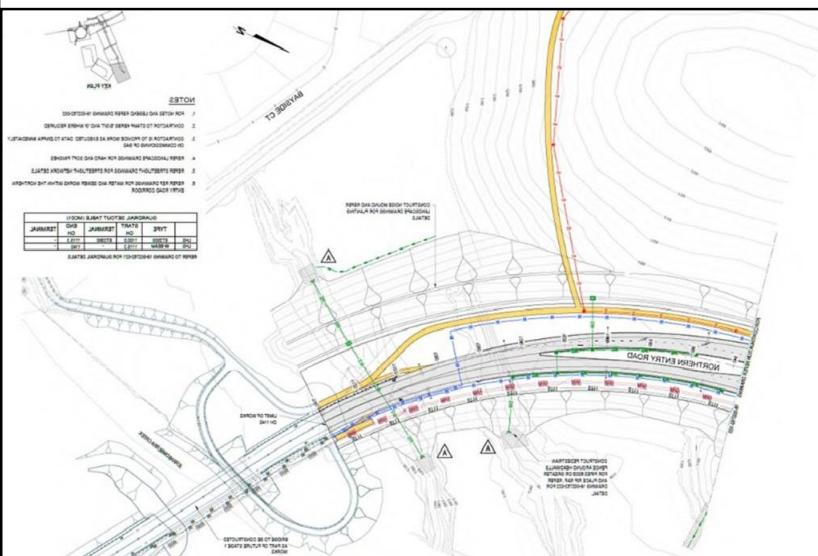
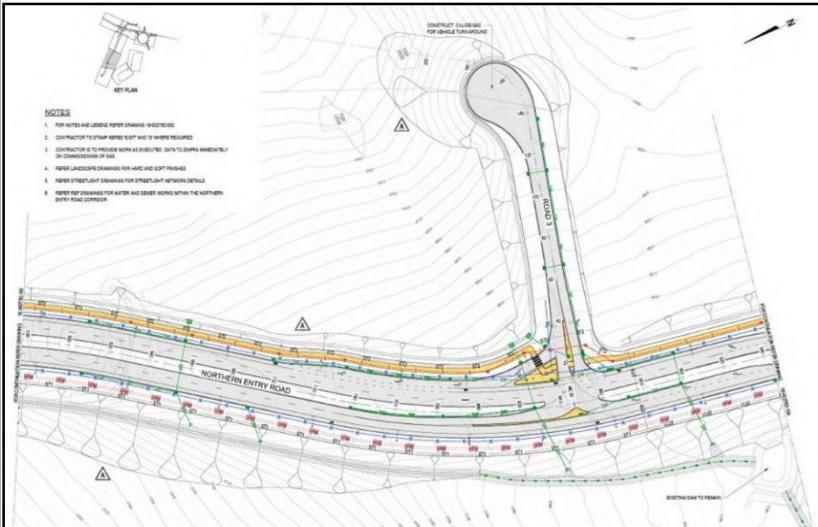
	<p>the Environment Operations Act 1997 (POEO Act) applies to any discharges from the proposal site, as such the proponent must ensure that any discharge does not pollute the receiving waterway. The EPA also notes that the receiving waters for the proposal flow into the Lake George catchment, as such the EPA considers a high standard of planning and implementation of sediment and erosion controls, including the use of flocculants will be required to protect the WQOs of the receiving environment.</p> <p>Where a chemical has the potential to have non-trivial impacts to the environment, it is the responsibility of the person using the chemical to ensure that the potential impacts are fully identified, managed and mitigated. Considering the potential water pollution risks associate with the use of flocculants, all components of a potential discharge from the sediment dam that may impact receiving waters assessed. This will include any chemical used to treat water captured onsite prior to discharge. Should flocculants be used to treat the water captured onsite, information on the product and details on the proposed chemicals to be used and potential impacts must be provided to the EPA for consideration and assessment. Such details should include, but need not be limited to:</p> <ul style="list-style-type: none"> • The dose concentration(s) of the proposed flocculant • A characterisation of the expected quality in terms of all pollutants present that pose a risk of non-trivial harm to the environment should they enter the receiving water • An assessment of the potential impact of discharges on the environmental values of the receiving waterway with reference to the Australian and New Zealand Guideline for Fresh and Marine Water Quality and the NSW Water Quality objectives • The degradation rate of the flocculant and the potential for accumulation in bed sediment of the receiving waterways. 	

Table 2 TfNSW RtS Letter

TfNSW Submissions		
No.	TfNSW RtS Letter	Response
1	No comments Received	
2	No comments Received	

Table 3 QPRC RtS Letter

QPRC Submissions		
No.	QPRC RtS Letter	Response
2	<p>Utilities</p> <p>Further definition and coordination of water services required with Council</p>	Noted
2.1	<p>Comments</p> <p>The main Council facilities impacted by the development are shown in the extract image below.</p> <p>Red – Sewer “S”</p> <p>Blue – Water “W”</p> <p>Green – Stormwater “SW”</p>	Noted



	Services Plans (not WAE) – 300 Lanyon Drive (to become 101 Environa Drive) Jerrabomberra	
2.1.1	<p><u>Water</u></p> <p>The high school development site is within the Jerrabomberra pressure zone and has connectivity to recently constructed 300mmØ DICL potable water main in the eastern verge of Environa Drive and northern verge of the north road, associated with the Environa Drive project in 2021.</p>	Refer to NDY response
2.1.2	<p><u>Sewer</u></p> <p>The high school development site will be serviced by a recently constructed 225mmØ PVC local sewer main in the eastern verge of Environa Drive, associated with the Environa Drive project in 2021.</p> <p>Figure 4 in the plan shows sewer connection to manhole S112 near the Bus Zone. The sewer connection should be through a standard connection to the sewer main running towards the rear of the school block.</p>	Refer to NDY response
2.1.3	<p><u>Storm Water</u></p> <p>The high school development site can be serviced by a storm water connection to the recently constructed pit (G02) adjacent to the Bus Lane with a 600mmØ RCP drainage pipe connecting to the new infrastructure line in Environa Drive.</p> <p>The proposed development of the site will increase runoff, thus a stormwater management plan demonstrating the proposed development will not exceed pre-development runoff flow for both 20% and 1% storm events is required in accordance with Council's D5 Stormwater Drainage Design specification, and water quality in accordance with Council's D7 Erosion Control and Stormwater Management Design specification and corresponding computer modelling.</p>	Refer to response provided in Table 3, item 2.2

2.2	Recommendations	
	<p>That the consent authority imposes conditions requiring:</p> <ul style="list-style-type: none"> Preparation of a hydraulic design plan providing details of the required sizing for all water, sewer and stormwater services required for the site. The preparation of an on-site detention design to limit stormwater discharge from the site to pre-development flows. That all connections and alterations to Council's utility services are inspected by Council staff prior to backfilling. 	<p>The stormwater disposal system, as detailed on M+G Consulting drawings is designed in accordance with Council's D5 Stormwater Drainage Design specification for both the 20% AEP and 1% AEP storm events using "Drains" computer modelling software.</p> <p>Water quality in accordance with Council's D7 Erosion Control and Stormwater Management Design specification.</p> <p>A SWEP has been prepared in accordance Landcom publication "<i>Managing Urban Stormwater: Soils and Construction</i>" ("Blue Book") as required specification D7.</p> <p>Water quality devices been incorporated into the stormwater disposal system using WSUD principles. "MUSIC" computer modelling software. Has been used to model these devices.</p> <p>An on-site detention (OSD) tank has been incorporated into the stormwater disposal system to accept stormwater from impermeable areas to reduce the peak flows as required for this development. Details of this are shown on M+G drawings JHS-CE-2032 & 2056, attached to this response in the Appendix A.</p> <p>All connections and alterations to Council's utility services will be inspected by Council staff prior to backfilling.</p>
3	Erosion and Sediment Control	
3.1	<p><i>Comment</i></p> <p>An Erosion and Sediment Control Plan (ESCP) will be required for any works causing surface cover disturbance. An ESCP will be required to be submitted prior to commencement. A Soil and Water Management Plan (SWMP) will be required to be implemented by the</p>	Noted

	property owner for any works causing surface cover disturbance. This requirement applies for all stages of development.	
3.2	<p><i>Recommendation</i></p> <p>That the consent authority imposes conditions requiring the preparation, implementation and maintenance of an erosion and sedimentation plan throughout the construction of the development.</p>	<p>As this site is more than 2500m² a SWMP is required in lieu of a ESCP as per Council Specification D7.</p> <p>A Soil & Water Management Plan (SWMP), in accordance with the "Blue Book" has been prepared and is detailed on M+G drawings JHS- CE-2005 & 2006, attached to this response in the Appendix A.</p>
10	Entrance and Access	
10.1	<p><i>Comments</i></p> <p>In accordance with the <i>Queanbeyan DCP 2012 Section 2.2</i>, the car park appears to demonstrate two way or separate access and egress allowing all vehicles to enter and leave in a forward direction.</p> <p>Vehicular access into the site will be provided via the north road. Only teachers, staff and waste collection/delivery vehicles will have access to the new access road that will be controlled via a boom gate with a security reader and intercom.</p> <p>The internal access has been designed based on passenger vehicle manoeuvrability and car park functionality for a standard B99 vehicle. The access off the north road must be designed for heavy rigid 10.5m vehicle manoeuvrability for garbage service.</p>	Noted
10.2	<p><i>Recommendation</i></p> <p>That the consent authority be requested to impose a condition requiring the carparking area to be designed in accordance with the appropriate Australian Standard.</p>	<p>All carparking areas have been designed in accordance with the appropriate Australian Standards including:</p> <ul style="list-style-type: none"> • AS2890.1-2004 - Off-street car parking • AS2890.2-2002 - Off-street commercial vehicle facilities • AS2890.6-2009 – Off-street parking for people with disabilities

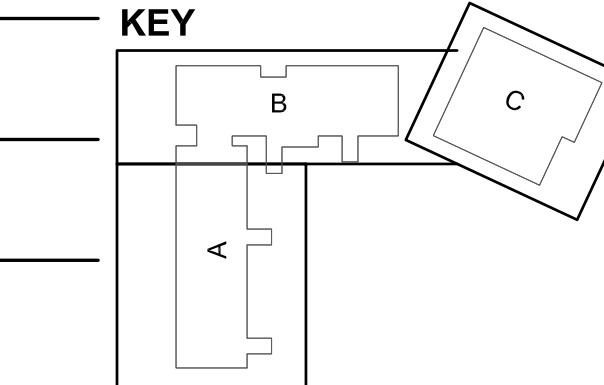
Appendix A

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

DRAWING No.	DESCRIPTION
JHS-CE-2001	DRAWING REGISTER AND LOCALITY PLAN
JHS-CE-2002	CONSTRUCTION NOTES
JHS-CE-2005	SEDIMENT & EROSION CONTROL PLAN
JHS-CE-2006	SEDIMENT & EROSION CONTROL PLAN - DETAILS
JHS-CE-2007	STORMWATER PRE DEVELOPMENT CATCHMENT PLAN
JHS-CE-2008	STORMWATER POST DEVELOPMENT CATCHMENT PLAN
JHS-CE-2009	BULK EARTHWORKS DETAIL PLAN
JHS-CE-2010	BULK EARTHWORKS LONGITUDINAL SECTIONS - SHEET 1
JHS-CE-2030	STORMWATER DRAINAGE GENERAL ARRANGEMENT PLAN
JHS-CE-2031	STORMWATER DRAINAGE PLAN - SHEET 1
JHS-CE-2032	STORMWATER DRAINAGE PLAN - SHEET 2
JHS-CE-2033	STORMWATER PIT SCHEDULE
JHS-CE-2051	STORMWATER DRAINAGE DETAILS - SHEET 1
JHS-CE-2052	STORMWATER DRAINAGE DETAILS - SHEET 2
JHS-CE-2053	STORMWATER DRAINAGE DETAILS - SHEET 3
JHS-CE-2054	STORMWATER DRAINAGE DETAILS - SHEET 4
JHS-CE-2061	SITEWORKS AND PAVEMENT PLAN - SHEET 1
JHS-CE-2062	SITEWORKS AND PAVEMENT PLAN - SHEET 2
JHS-CE-2063	SITEWORKS AND PAVEMENT DETAILS
JHS-CE-2065	RETAINING WALL DETAILS
JHS-CE-2071	SITEWORKS DETAILS - SHEET 1
JHS-CE-2091	PAVEMENT DETAILS



DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR



NOT FOR CONSTRUCTION

CIVIL NOTES

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 OVER 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 COMPACTION TO A MINIMUM OF 98% STANDARD COMPACTION IN ACCORDANCE WITH TEST E1-1 OF A.S. 1269 FOR THE TOP 30mm. ANY EXISTING SURFACE CONTOURS, WHERE SHOWN, ARE INTERPOLATED AND NOT TO THE ENGINEER'S APPROVAL AND COMPACTION 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 COMPACTION IN ACCORDANCE WITH GEOTECHNICAL REPORT BY 'DOUGLAS PARTNERS' ISSUED 23rd APRIL 2021. MOISTURE CONTENT TO BE MAINTAINED AT +/- 2% OMC. 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 50mm 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 1.5 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 LAID 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 > 225mm. SEVER CLASS SEE UPVC IN ACCORDANCE WITH AS1269 SHALL BE USED FOR < 225mm OR SMALLER.
- SW3 ALL PIPE 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 > 1.2m 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 CLEANED. 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 15mm 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 COMPRESSED 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 LAID - 600mm WIDE U.N.O.
 - EXISTING KERBS ARE TO BE COMPLETELY REMOVED WHERE NEW KERBS ARE SHOWN.

OSD/INFILTRATION TANK SIGNAGE



CONFINED SPACE DANGER SIGN

A CONFINED SPACE DANGER SIGN SHALL BE POSITIONED IN A LOCATION AT ALL ACCESS POINTS, SUCH THAT IT IS CLEARLY VISIBLE TO PERSONS PROPOSING TO ENTER THE BELOW GROUND TANKS/ CONFINED SPACE.

COLOURS: 'DANGER' AND BACKGROUND - WHITE
 ELLIPTICAL AREA - RED
 RECTANGLE CONTAINING ELLIPSE - BLACK
 OTHER LETTERING AND BORDER - BLACK

MINIMUM DIMENSIONS: 300mm x 450mm (LARGE ENTRIES, SUCH AS DOORS)
 - 250mm x 180mm (SMALL ENTRIES SUCH AS GRATES & MANHOLES)

MATERIAL: COLOUR BONDED ALUMINUM OR POLYPROPYLENE.

FIXING: USE SCREWS AT EACH CORNER AND/OR SUITABLE EPOXY GLUE/CEMENT.

SEDIMENT AND EROSION CONTROL NOTES

1. IT HAS BEEN ASSUMED THAT HOARDING/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".
3. SEDIMENT FENCES WILL BE INSTALLED AS SHOWN AND ELSEWHERE AT THE DISCRETION OF THE SITE MANAGER TO CONTAIN COARSER SEDIMENT FRACTION INCLUDING AGGREGATED FINES) AS NEAR AS POSSIBLE TO THEIR SOURCE.
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 ON SITE & MADE AVAILABLE TO ANY AUTHORISED PERSON ON REQUEST. IT WILL BE GIVEN TO THE PROJECT MANAGER AT THE CONCLUSION OF WORKS.

JOINTING NOTES

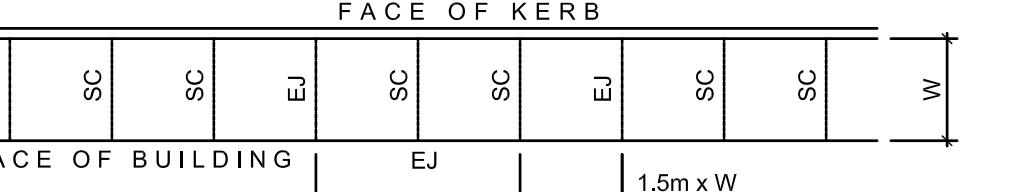
PEDESTRIAN FOOTPATH JOINTS

- J1 EXPANSION JOINTS (EJ) ARE TO BE LOCATED WHERE POSSIBLE AT TANGENT POINTS OF CURVES AND ELSEWHERE AT 6m CENTRES.
- J2 SAWCUT JOINTS (SC) ARE TO BE LOCATED AT A MAX 1.5m 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 5m TO 4.5m MAX CENTERS. ALL LWJ'S SHOULD BE TIED UP TO A MAXIMUM TOTAL WIDTH OF 30m.

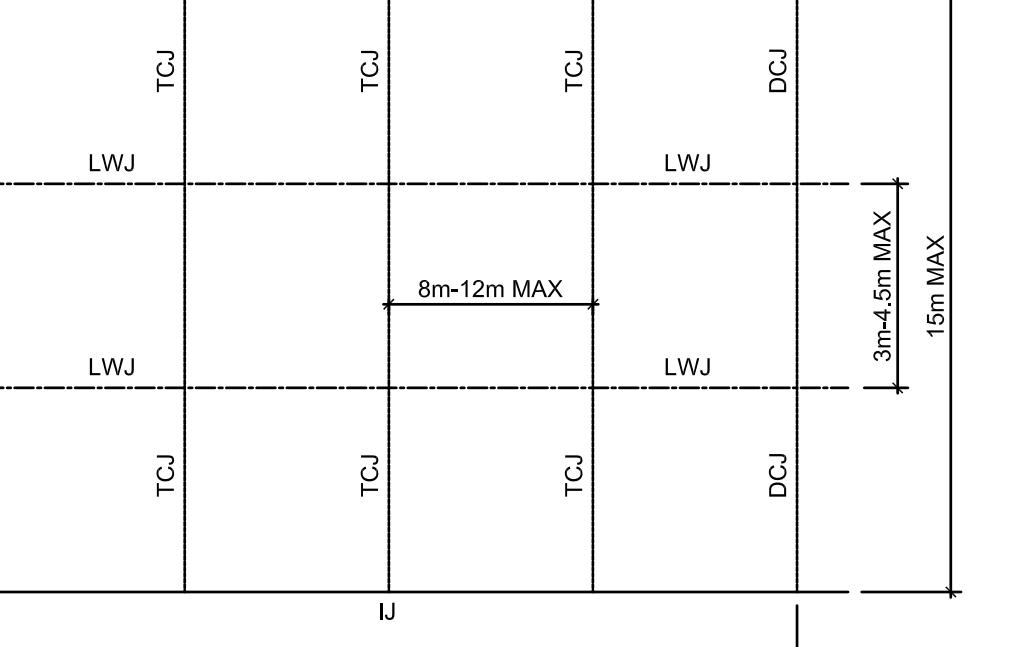
- J8 TRANSVERSE CONTRACTION JOINTS (TCJ) SHOULD GENERALLY BE LOCATED AT A MAXIMUM OF 8m TO 12m MAX CENTERS. TCJ's CAN BE SPACED AT SUITABLE INTERVALS UP TO A RECOMMENDED MAXIMUM LENGTH OF 15m.

- 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 (U) TO BE PROVIDED AT INTERSECTIONS OR AT THE JUNCTION OF A POOR BREAK.

- J11 ALL VEHICULAR PAVEMENTS TO BE JOINTED IN ACCORDANCE WITH AUSTRROADS AGP02-12 GUIDE TO PAVEMENT TECHNOLOGY PART 2 STRUCTURAL PAVEMENT DESIGN AND SUPPLEMENT AP-T36-06 PAVEMENT DESIGN FOR LIGHT TRAFFIC

- J12 VEHICULAR PAVEMENT JOINTING AS FOLLOWS (U.N.O.)



- PH 5.5 - 7 AS SPECIFIED FOR "NATURAL SOILS AND BLENDS" (PH : IN WATER)

- ELECTRICAL CONDUCTIVITY +1.2 DSI AS SPECIFIED FOR "NATURAL SOILS AND BLENDS"

- NUTRIENT CONTENT LOW NUTRIENT CONTENT TOTAL NITROGEN (TN) 1000 mg/kg NITROGEN DRAWDOWN < 0.5 (NDI) AVAILABLE PHOSPHATE (COLWELL) < 80mg/kg ORTHOPHOSPHATE < 40 mg/kg (IN BOTH STANDARD OR SATURATED SYSTEMS)

- GRADING OF PARTICLES SMOOTH GRADING - ALL PARTICLE SIZE CLASSES SHOULD BE REPRESENTED ACROSS SIEVE SIZES FROM THE 0.05mm TO THE 3.4mm SIEVE AS PER ASTM F 1632-03 (2010).

- ACCEPTABLE RANGE (%WATER RETAINED)

- CLAY & SILT < 3% (< 0.05mm) RETAINED

- VERY FINE SAND 5-30% (0.05 - 0.15mm)

- FINE SAND 10-30% (0.15 - 0.25mm)

- MEDIUM SAND 40-60% (0.25 - 0.5mm)

- COURSE SAND < 25% (0.5 - 1.0mm)

- VERY COARSE SAND 0-10% (1.0 - 2.0mm)

- FINE GRAVEL < 3% (2.0 - 3.4mm)

- ORGANIC CONTENT < 5% (≤ 5%)

- IMMEDIATELY PRIOR TO DELIVERY TO SITE A PSD TEST (AS1141) SHALL BE UNDERTAKEN. AFTER COMPLETION OF SEEDING/PLANTING UNTIL THE VEGETATION IS ESTABLISHED. IN THE FIRST YEAR OF OPERATION INSPECTIONS SHOULD OCCUR ON A MONTHLY BASIS AND FOLLOWING SIGNIFICANT STORM EVENTS. AN APPROPRIATE INSPECTION FREQUENCY FOR A PARTICULAR SITE

- TYPICALLY AN AVERAGE INSPECTION FREQUENCY OF 1 TO 2 MONTHS FOLLOWING STABILISATION OF VEGETATION WOULD BE APPROPRIATE. THE INSPECTIONS COULD COINCIDE WITH A REGULAR MAINTENANCE ACTIVITY (E.G. GRASS CUTTING, WEEDING, TELLER REMOVAL, ETC).

- QUARTERLY INSPECTIONS ARE RECOMMENDED FOR ESTABLISHED SYSTEMS.

- ALL MAINTENANCE OF THE BIORETENTION BASINS/SWALES ARE TO BE IN ACCORDANCE WITH STORMWATER NEW SOUTH WALES GUIDELINES FOR THE MAINTENANCE OF STORMWATER TREATMENT MEASURES' JANUARY 2020, WATER BY DESIGN - BIORETENTION TECHNICAL DESIGN GUIDELINES VERSION 1.1 OCT 2014.

BIORETENTION BASIN/SWALE NOTES

B1. GENERAL

- THE FOLLOWING NOTES ARE INTENDED AS A SUMMARY ONLY TO ASSIST WITH THE CONSTRUCTION AND MAINTENANCE OF A BIORETENTION BASIN/SWALE. ALL WORKS ARE TO BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE RELEVANT INDUSTRY STANDARDS OR GUIDELINES FOR THE MAINTENANCE OF STORMWATER TREATMENT MEASURES' JANUARY 2020, WATER BY DESIGN - BIORETENTION TECHNICAL DESIGN GUIDELINES VERSION 1.1 OCT 2014.

- ALL PLANTING TO BIOFILTRATION BASIN/SWALE TO BE A CORE FUNCTIONAL BIORETENTION PLANT SPECIES WITH EFFECTIVE NUTRIENT REMOVAL PROPERTIES.

- THE BIOFILTRATION BASIN SHALL BE INSTALLED ONLY AFTER ALL CONSTRUCTION AND LANDSCAPE UPFRONT HAS BEEN COMPLETED. IF THE FILTER MEDIA IS INSLOTTED FOR LANDSCAPE, IT IS RECOMMENDED THAT THE BIOFILTRATION BASIN MUST BE COVERED WITH A LAYER OF GEOFABRIC UNTIL ALL BARE SOFT SURFACES UPSTREAM HAVE BEEN TURFED OR APPROPRIATELY COVERED AND CONSTRUCTION DEBRIS/SEDIMENT IS NO LONGER EXPECTED TO ENTER THE STORMWATER SYSTEM.

- DEBRIS/SEDIMENT WILL REQUIRE AN ESTABLISHMENT PERIOD OF APPROXIMATELY TWO YEARS TO ALLOW THE FILTER MEDIA TO SETTLE AND THE VEGETATION TO REACH ITS DESIGN CONDITIONS. REGULAR MAINTENANCE OF THE BASIN IS ESPECIALLY IMPORTANT DURING THIS INITIAL PERIOD TO ENSURE THE VEGETATION PAVES HOLD AND DOES NOT CHOKES FROM DEBRIS OR PERIODS OF MINIMAL RAINFALL.

- ADEQUATE SCOUR PROTECTION IS TO BE PROVIDED AROUND ANY INLET ZONE(S), WITH CONSIDERATION GIVEN TO MINIMISING THE REQUIRED ON-GOING SYSTEM MAINTENANCE FOR THE END-CLIENT AND THE DAM

SOIL AND WATER MANAGEMENT NOTES

INTRODUCTORY NOTES

1. THIS IS A CONCEPTUAL SOIL AND WATER MANAGEMENT PLAN (SWMP). IT IS INTENDED TO INDICATE THAT THE CIVIL WORKS REQUIRED FOR THE DEVELOPMENT OF THE SITE CAN BE UNDERTAKEN WITHOUT POLLUTION TO RECEIVING WATERS DURING THE CONSTRUCTION PHASE. THE LOCATIONS, SIZES AND TYPES OF CONTROL MEASURES SHOWN ARE SUGGESTED OPTIONS ONLY.
2. ALL REFERENCES OF DETAILS, TESTING AND PROCEDURES ARE TO BE FOLLOWED AS SPECIFIED IN THE DEPARTMENT OF HOUSING "MANAGING URBAN STORMWATER SOILS CONSTRUCTION" MANUAL, MARCH 2004. HEREIN REFERRED TO AS THE "BLUE BOOK".
3. THESE CONCEPT PLANS ARE TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS AND OTHER PLANS OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED AND RELATING TO THE DEVELOPMENT OF THE SITE.
4. ALL CONTRACTORS SHALL FULLY RESEARCH AND UNDERSTAND THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSTREAM LANDS AND WATERWAYS. PROVIDE A DETAILED SWMP IN ACCORDANCE WITH "BLUE BOOK" INCLUDING STAGING OF WORKS.

EROSION CONTROL

1. CLEARLY VISIBLE BARRIER FENCING SHALL BE INSTALLED AT THE DISCRETION OF THE SUPERINTENDENT TO ENSURE TRAFFIC CONTROL AND PROHIBIT UNNECESSARY SITE DISTURBANCE. VEHICULAR ACCESS TO THE SITE SHALL BE LIMITED TO ONLY THOSE ESSENTIAL FOR CONSTRUCTION WORK AND THEY SHALL ENTER SITE ONLY THROUGH THE STABILISED ACCESS POINTS.
2. WHERE PRACTICAL, FOOT AND VEHICULAR TRAFFIC WILL BE KEPT AWAY FROM ALL RECENTLY STABILISED AREAS.
3. 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.

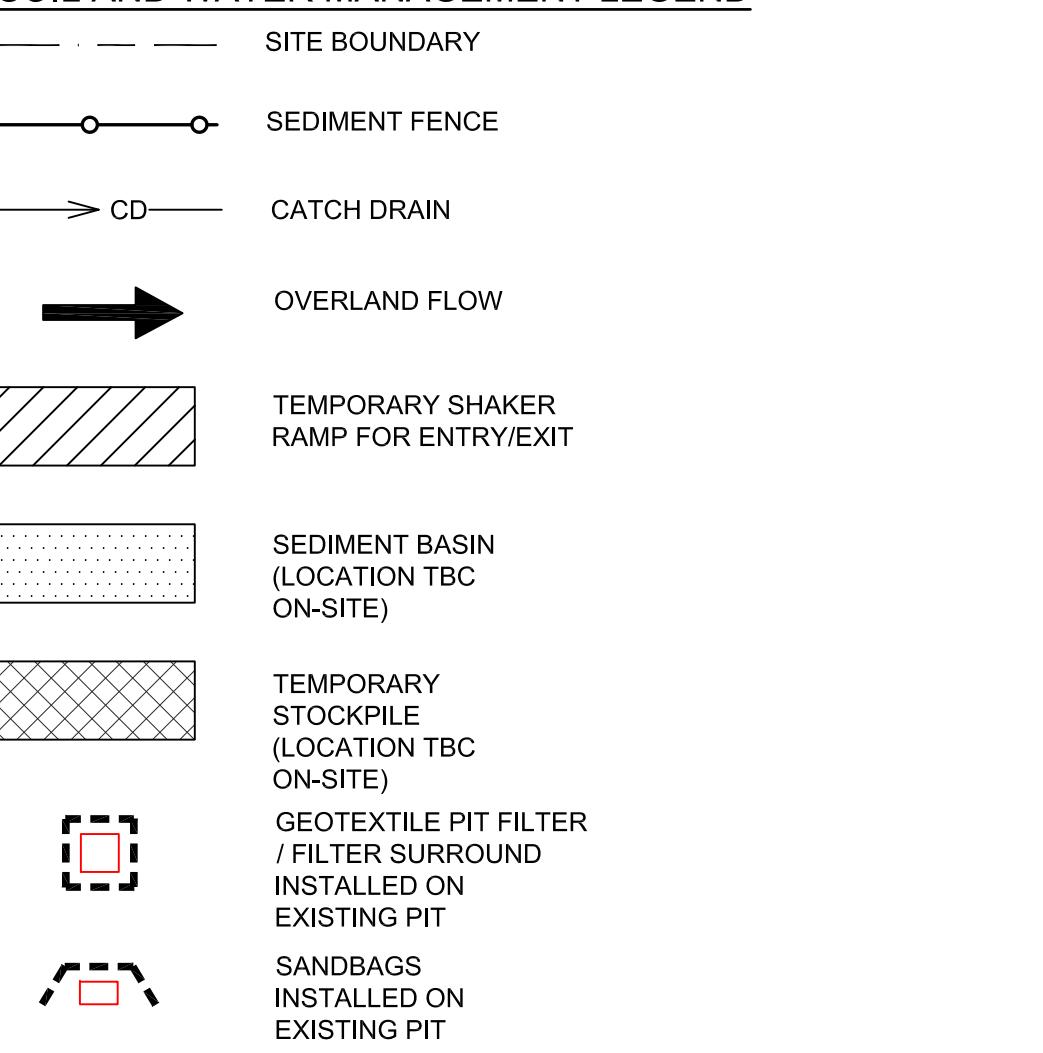
SEDIMENT CONTROL

1. WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE (I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED/STABILISED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE). PROVIDE FLOCULANT TO EARTH BASIN AS REQ'D.
2. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE STABILISED/REHABILITATED.
3. THE USE OF FLOCULANTS SHALL BE MINIMISED. SHOULD FLOCULANTS BE USED INFORMATION ON THE PRODUCT AND DETAILS ON THE PROPOSED CHEMICAL TO BE USED AND POTENTIAL IMPACTS TO BE PROVIDED TO THE EPA FOR CONSIDERATION AND ASSESSMENT.

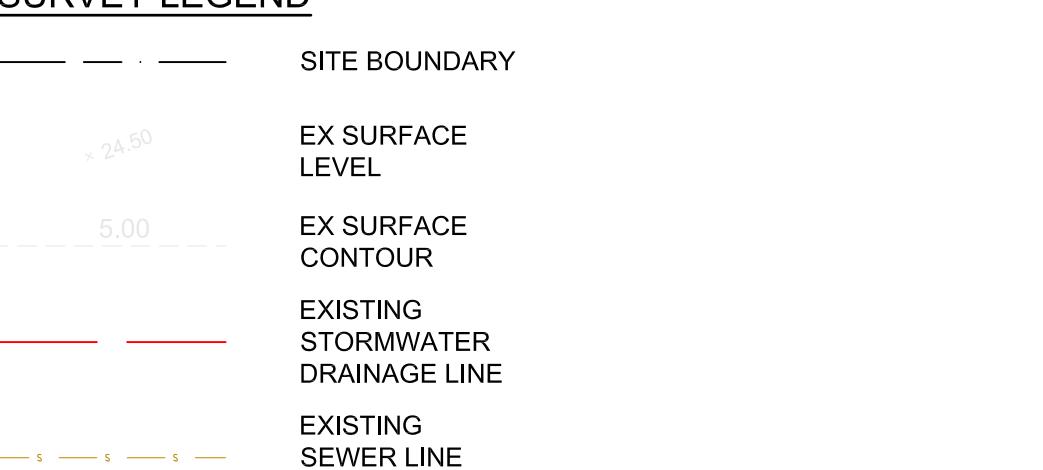
OTHER MATTERS

1. ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY:
 - (A) PROTECTING THEM WITH BARRIER FENCING OR SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE.
 - (B) ENSURING THAT NOTHING IS NAILED TO THEM.
 - (C) PROHIBITING PAVING, GRADING, SEDIMENT WASH OR PLACING OF STOCKPILES WITHIN THE DRIP LINE.
2. 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 STORM EVENTS.
3. THE CONTRACTOR SHALL PROVIDE ALL MONITORING CONTROLS & TESTING.
4. SITE REVEGETATION AND REHABILITATION SHALL BE UNDERTAKEN AS SOON AS PRACTICABLE THROUGHOUT CONSTRUCTION OPERATIONS.
5. CONSTRUCTION SHALL BE PROGRAMMED SO THAT THE TIME OF EXPOSURE OF WORKING SURFACES IS MINIMISED.
6. ALL SPOIL DEPOSITED DURING CARTAGE OF MATERIALS FROM OR TO THE SITE SHALL BE REMOVED IMMEDIATELY TO THE SATISFACTION OF COUNCIL (PUBLIC ROADS) AND THE OWNER (PRIVATE ROADS).
7. WHERE REQUIRED GUTTERS AND ROADWORKS SHALL BE SWEEPED REGULARLY TO MAINTAIN THEM FREE FROM SEDIMENT.

SOIL AND WATER MANAGEMENT LEGEND



SURVEY LEGEND

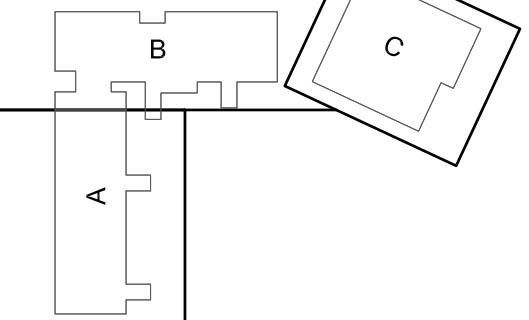


NOTE:
REFER DRAWING JHS-CE-2005 FOR SEDIMENT CONTROL DETAILS.

SEDIMENT AND EROSION CONTROL PLAN

SCALE 1:500

KEY



Project

High School in Jerrabomberra

Designed MW Reviewed SCM Drawn MW Sheet B1

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M+G Consulting

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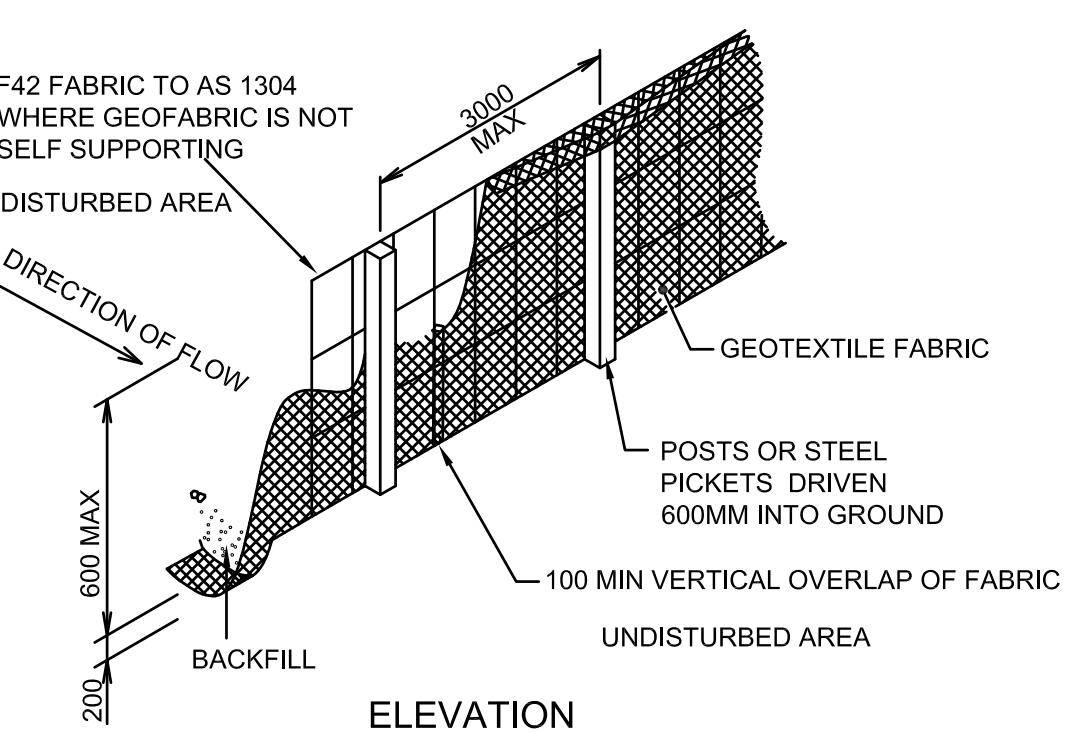
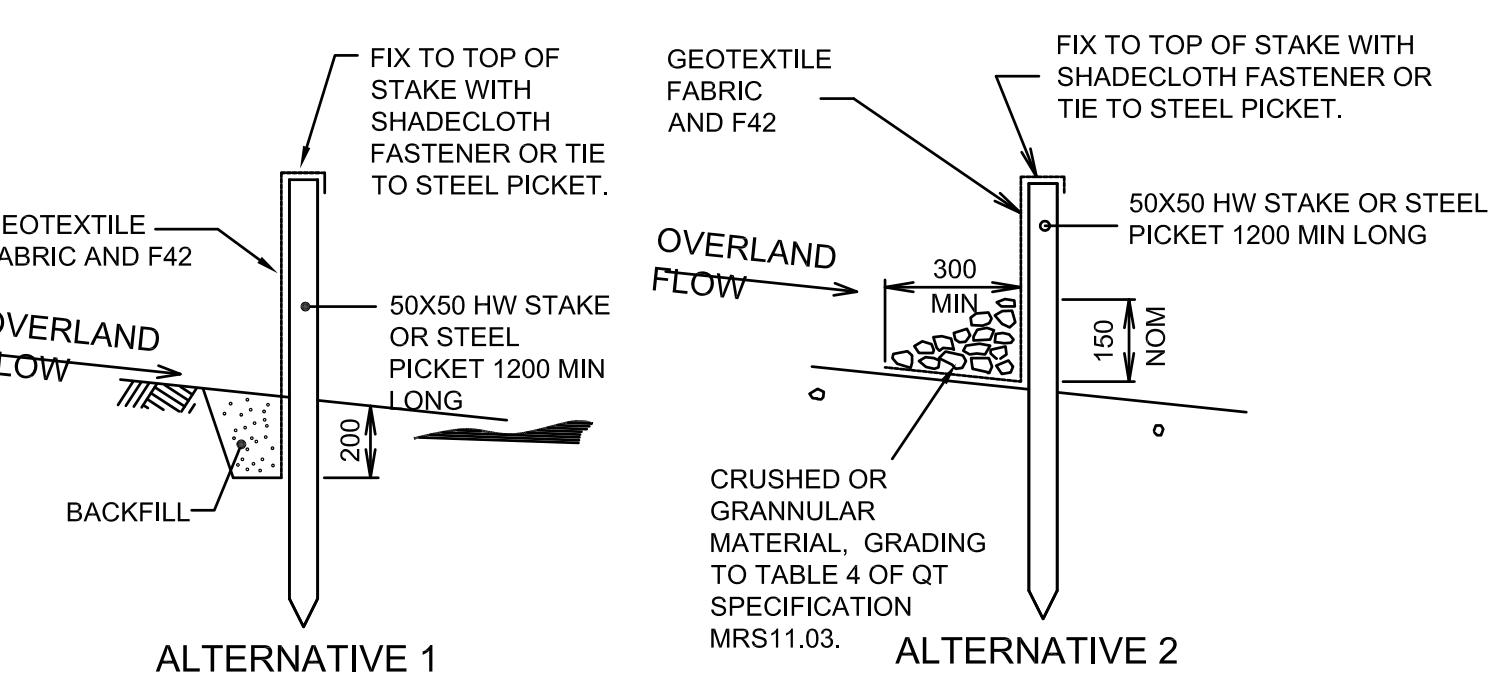
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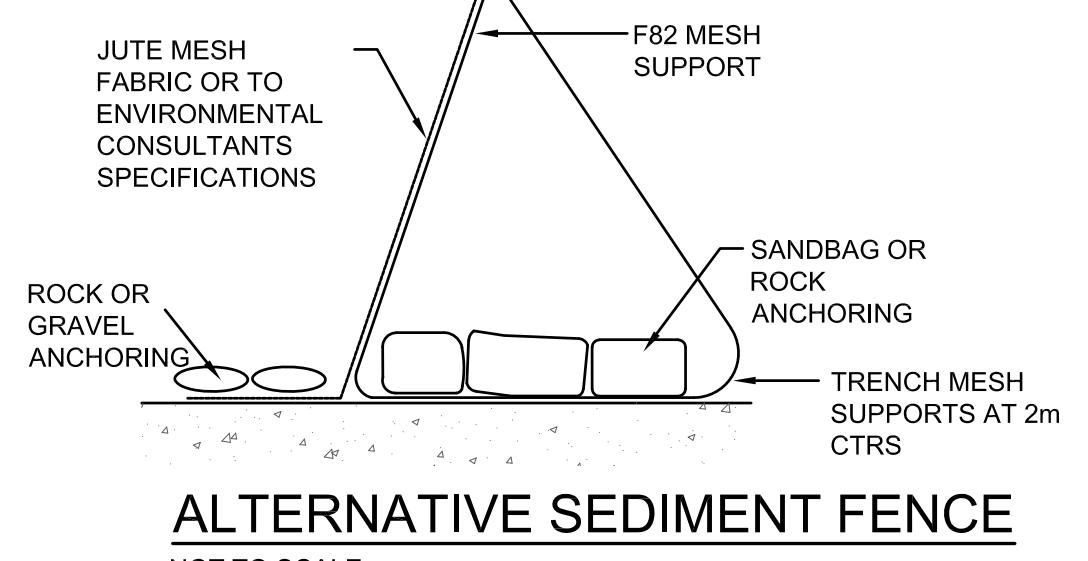
Member of

Rev	Date	Description	Chkd Auth.
A	24.03.21	DRAFT SCHEMATIC DESIGN ISSUE	
B	16.04.21	SCHEMATIC DESIGN ISSUE	
C	07.05.21	SCHEMATIC DESIGN ISSUE	
D	12.05.21	SCHEMATIC DESIGN ISSUE	
E	15.10.21	PRELIMINARY FOR DD	
F	12.10.21	ISSUED FOR DD	
G	24.03.22	ISSUED FOR RESPONSE TO SUBMISSIONS	

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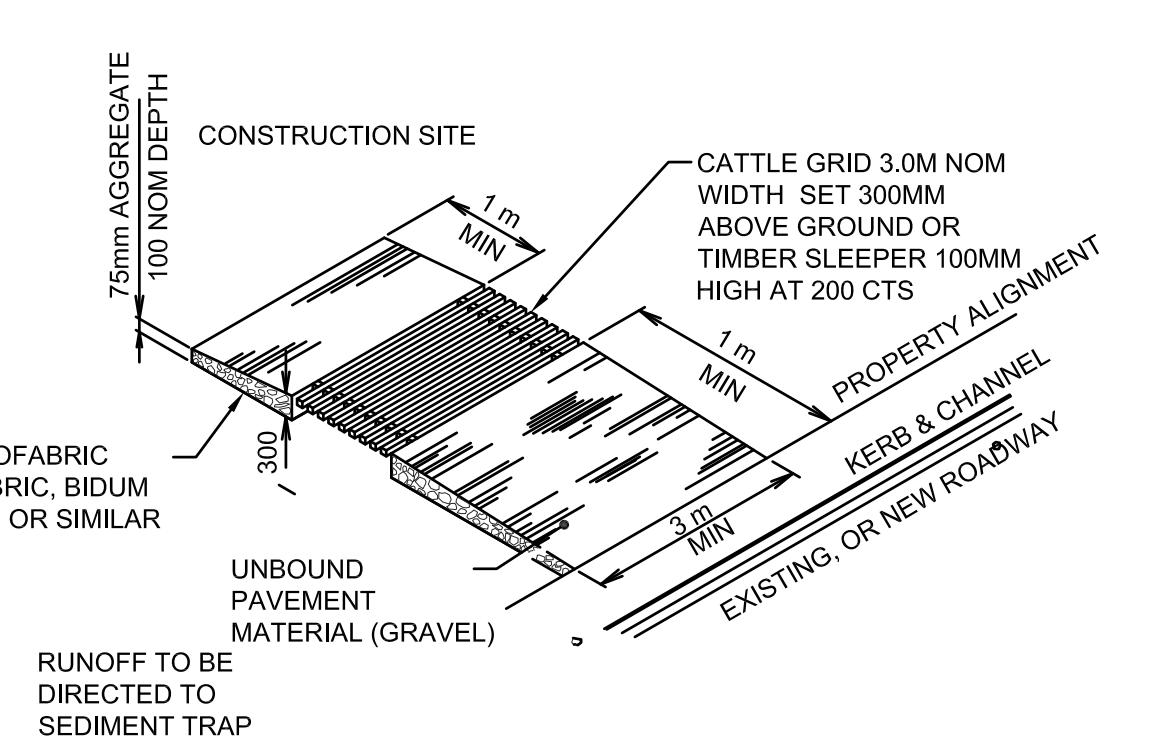
SEDIMENT FENCE
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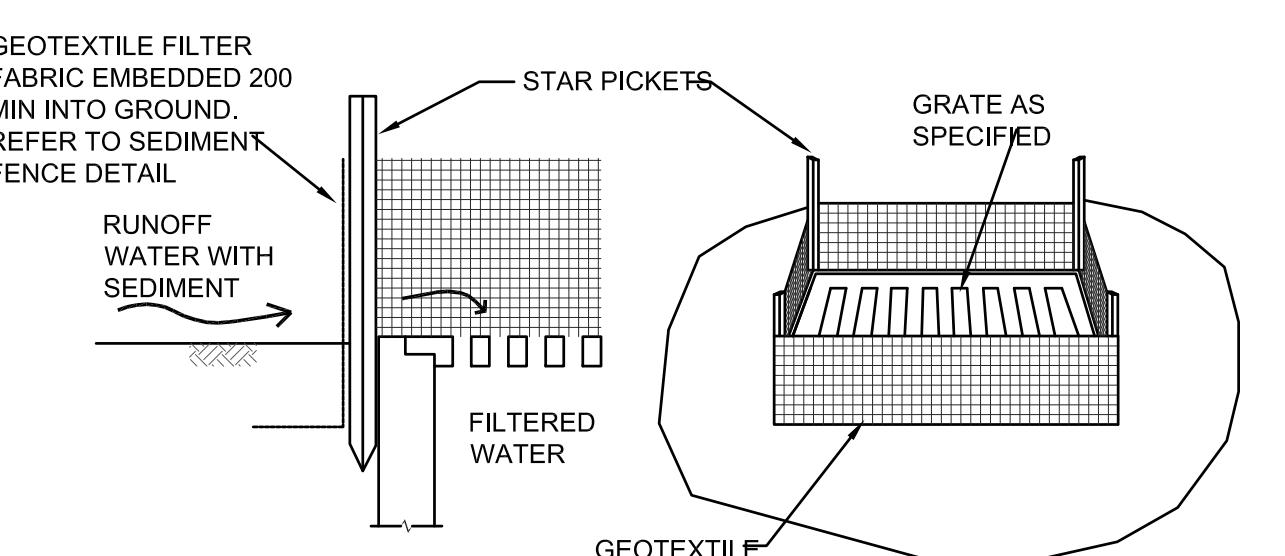
ALTERNATIVE SEDIMENT FENCE
NOT TO SCALE

ALTERNATIVE SEDIMENT FENCE NOTES

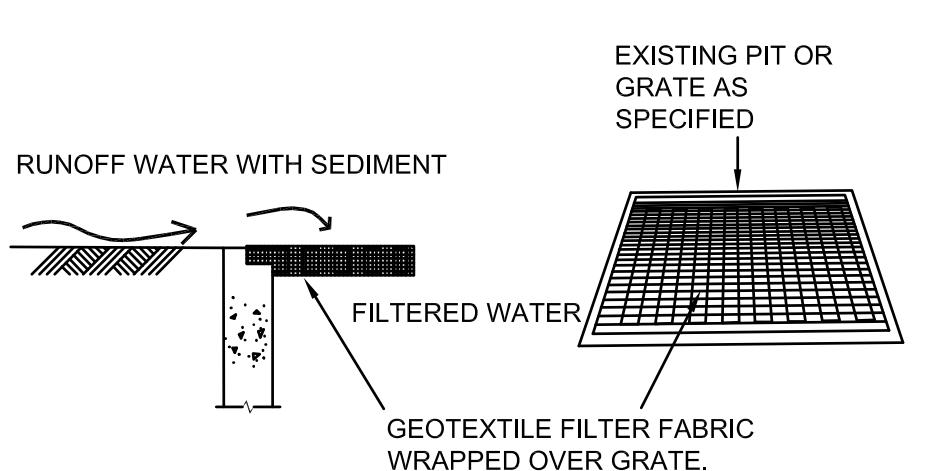
1. INSTALL THIS TYPE OF SEDIMENT FENCE WHEN USE OF SUPPORT POSTS IS NOT DESIRABLE OR NOT POSSIBLE. SUCH CONDITIONS MIGHT APPLY, FOR EXAMPLE, WHERE APPROVAL IS GRANTED FROM THE APPROPRIATE AUTHORITIES TO PLACE THESE FENCES IN HIGHLY SENSITIVE ESTUARINE AREAS.
2. USE BENT TRENCH MESH SUPPORT THE F82 WELDED 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 MESH 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.



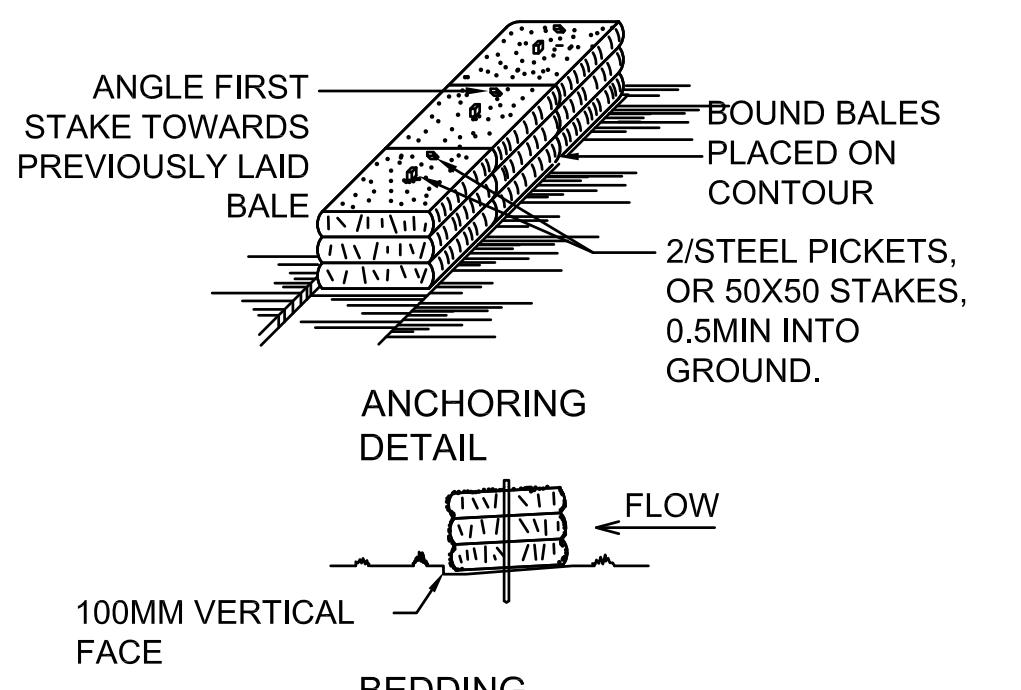
**TEMPORARY CONSTRUCTION VEHICLE
ENTRY/EXIT SEDIMENT TRAP**
NOT TO SCALE



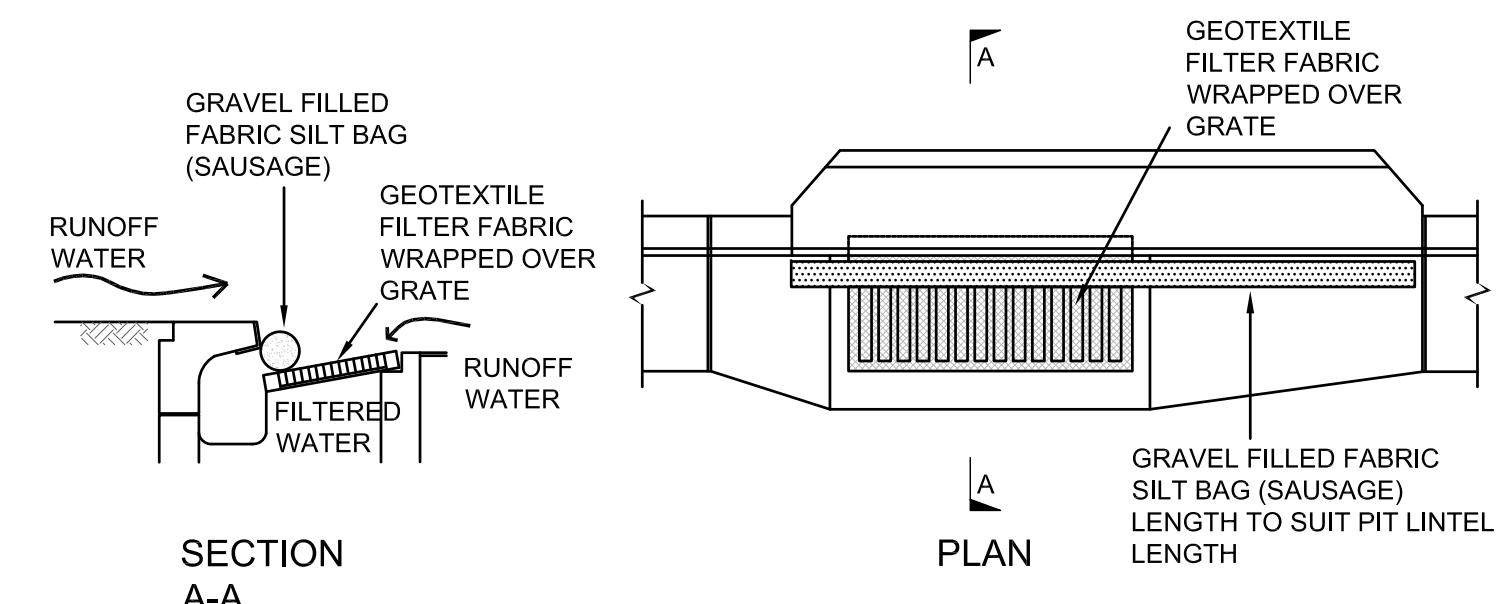
GEOTEXTILE PIT FILTER 1
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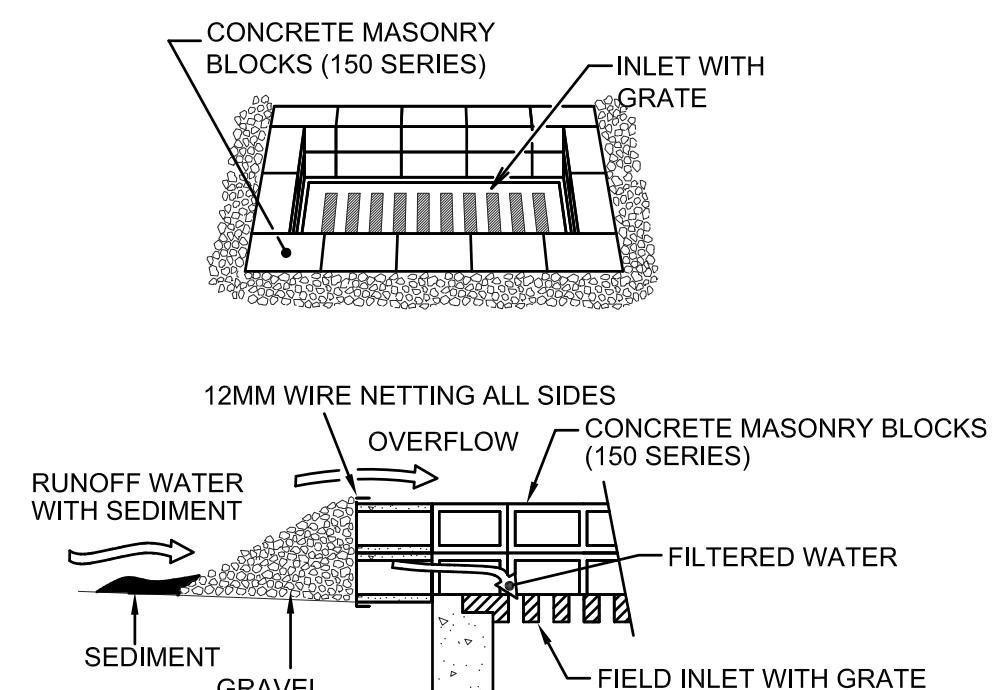
GEOTEXTILE PIT FILTER 2
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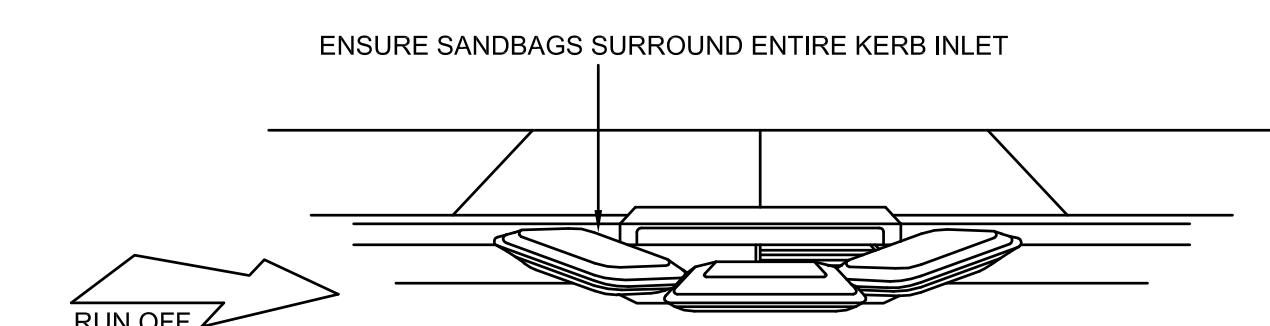
**STRAW BALE BANK SEDIMENT
CONTROL**
NOT TO SCALE



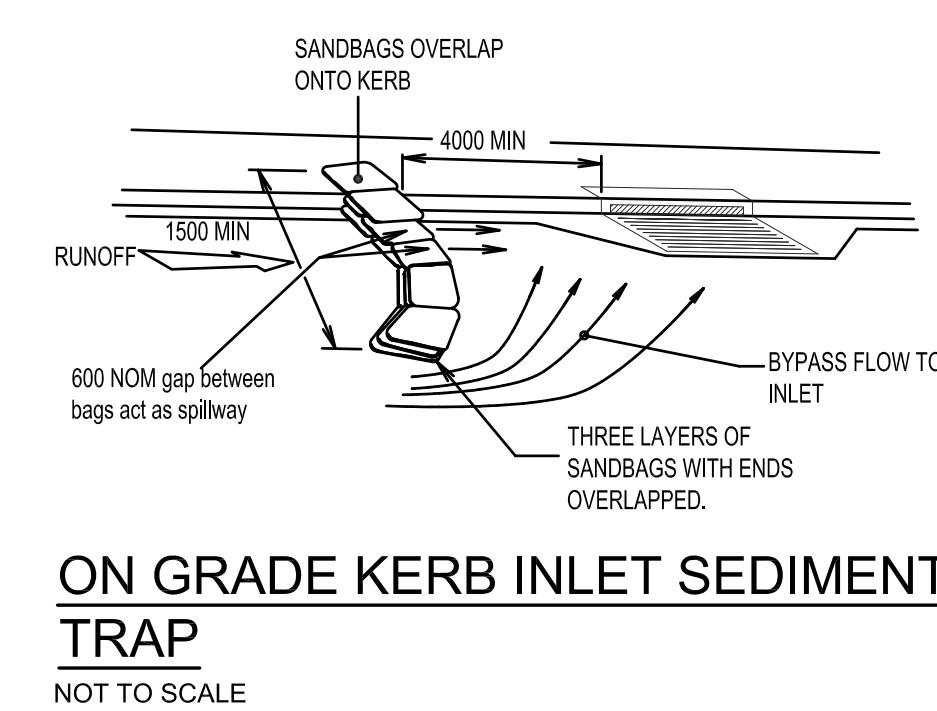
KERB INLET SEDIMENT TRAP
NOT TO SCALE



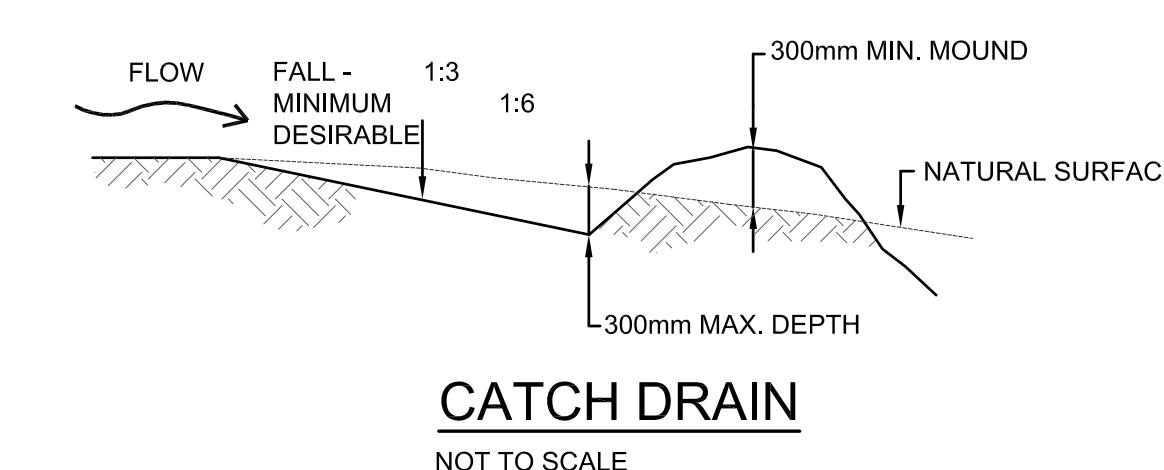
FIELD INLET SEDIMENT TRAP
NOT TO SCALE



SANDBAG KERB INLET SEDIMENT TRAP
NOT TO SCALE



**ON GRADE KERB INLET SEDIMENT
TRAP**
NOT TO SCALE



CATCH DRAIN
NOT TO SCALE

Do not scale drawings. Verify all dimensions on site.
Rev Date Description Chkd Auth.
A 24/03/21 DRAFT SCHEMATIC DESIGN ISSUE
B 16/04/21 SCHEMATIC DESIGN
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Project
High School in Jerrabomberra

ENvirona Drive,
JERRABOMBERRA NSW 2619

Designed
MW
Reviewed
SCM
Drawn
MW
Sheet
B1

Job No.
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Status
DD
Date
OCT '21
Scale
AS NOTED AT B1

Drawing No.
JHS-CE-2006
Revision
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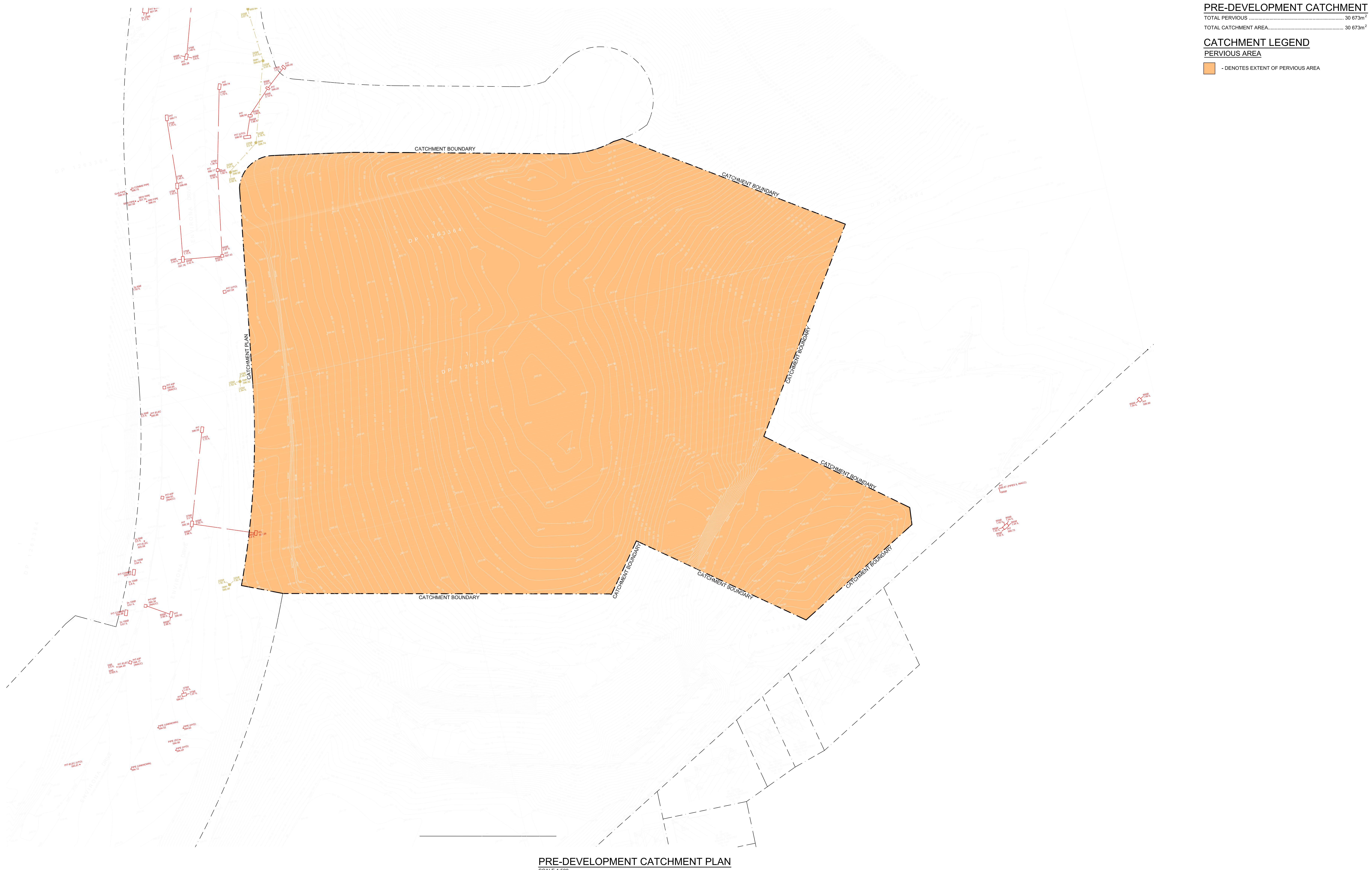
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POST-DEVELOPMENT CATCHMENT PLAN
SCALE 1:500

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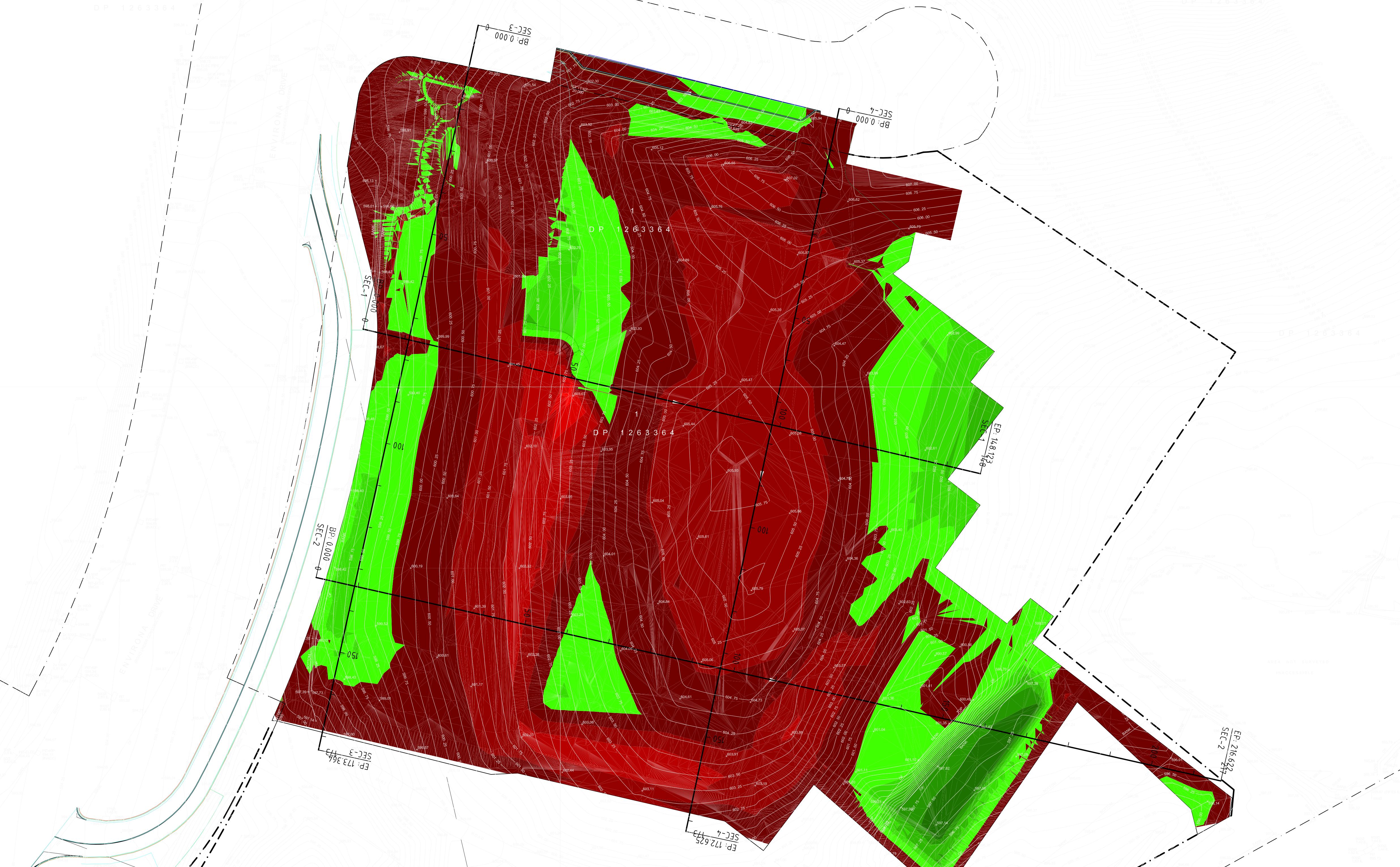
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POST DEVELOPMENT CATCHMENT		
IMPERVIOUS HARDSTAND AREA	11 689m ²	
IMPERVIOUS ROOF AREA	5125m ²	
TOTAL IMPERVIOUS AREA	16 814m ²	
PERVIOUS AREA	13 859m ²	
TOTAL CATCHMENT AREA	30 673m ²	
TOTAL PERVIOUS AREA BYPASSING NEW	6916m ²	
STORMWATER DRAINAGE SYSTEM		
TOTAL IMPERVIOUS AREA BYPASSING NEW	1879m ²	
STORMWATER DRAINAGE SYSTEM		
TOTAL AREA BYPASSING NEW	8795m ²	
STORMWATER DRAINAGE SYSTEM		

CATCHMENT LEGEND

PERVIOUS AREAS
■ - DENOTES EXTENT OF PERVIOUS AREA
IMPERVIOUS AREAS
■ - DENOTES EXTENT OF IMPERVIOUS HARDSTAND AREA
■ - DENOTES EXTENT OF IMPERVIOUS ROOF CATCHMENT AREA
PERVIOUS AND IMPERVIOUS AREAS
■ - DENOTES EXTENT OF PERVIOUS AND IMPERVIOUS AREAS BYPASSING NEW STORMWATER DRAINAGE SYSTEM

Surface Analysis: Elevation Ranges			
Number	Color	Minimum Elevation (m)	Maximum Elevation (m)
1	Red	-5.000	-4.000
2	Red	-4.000	-3.000
3	Red	-3.000	-2.000
4	Red	-2.000	-1.000
5	Red	-1.000	0.000
6	Green	0.000	1.000
7	Green	1.000	2.000
8	Green	2.000	3.000
9	Green	3.000	4.000
10	Green	4.000	5.000



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 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 (IGNORING 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 U.N.O. 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. B04901 DRAWING No. B04901-JPS-1 REVISION B DATED 8/7/21.

NOTE:
EXCESS FILL TO BE REUSED ON SITE

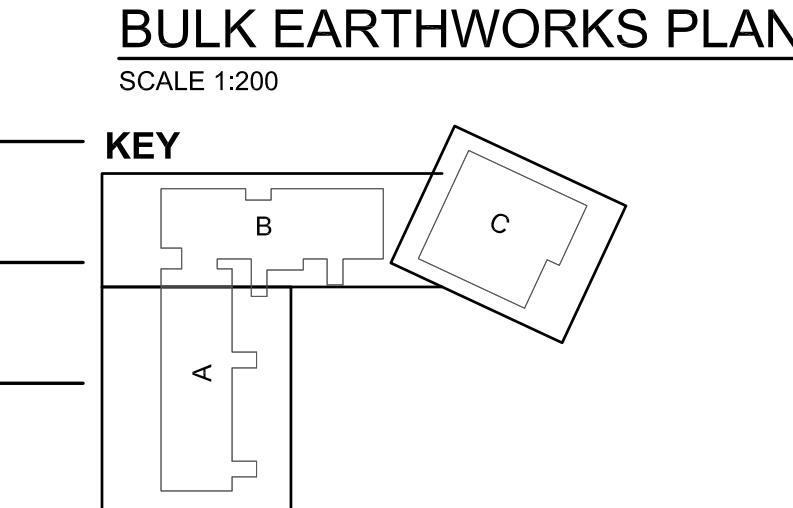
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Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net	
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Totals				24673.739sq.m	16762.388 Cu. M.	5650.673 Cu. M.	11111.716 Cu. M. <Cut>

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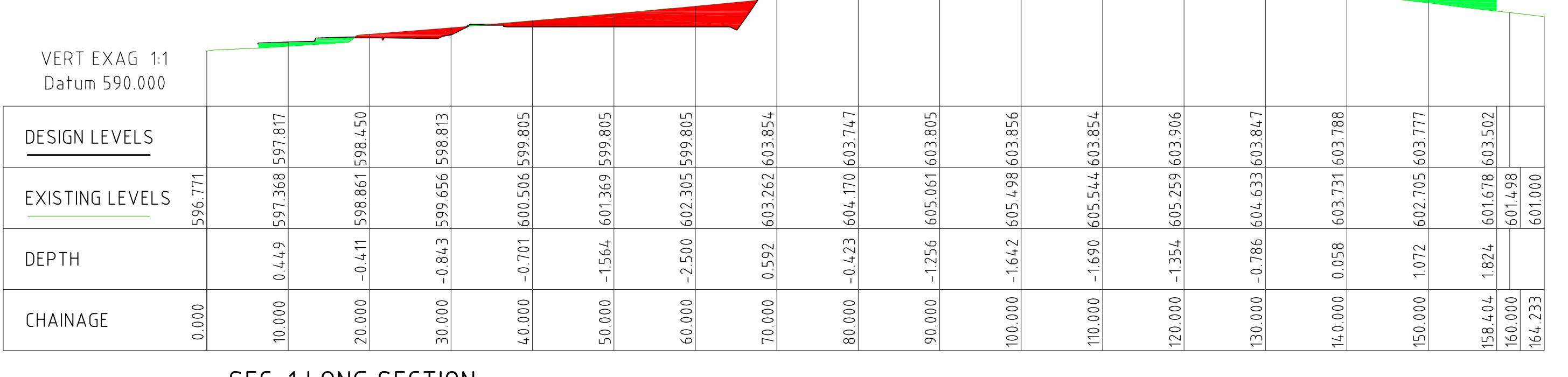
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Acoustic
Acoustic Logic
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Mechanical, Electrical, Hydraulic, ESD
Norman Disney & Young
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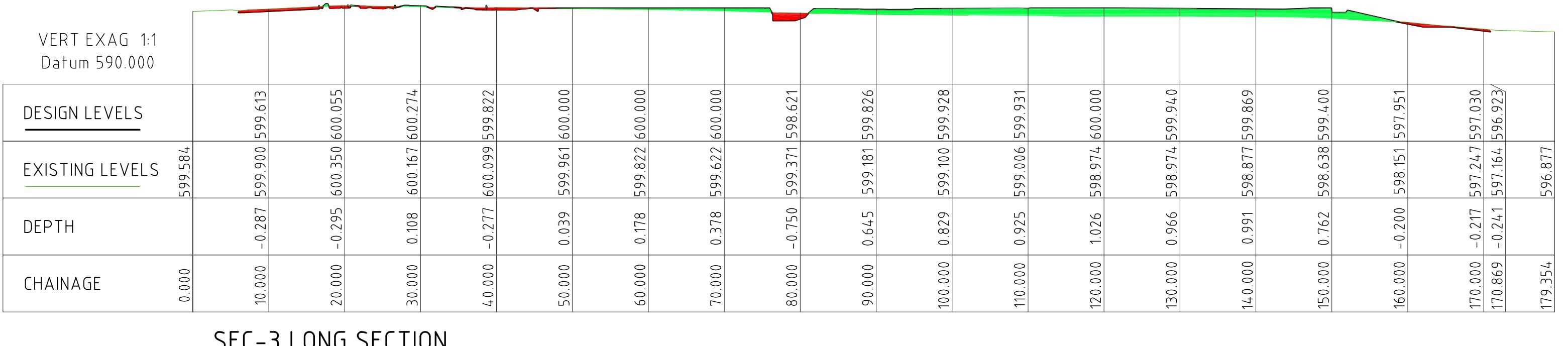
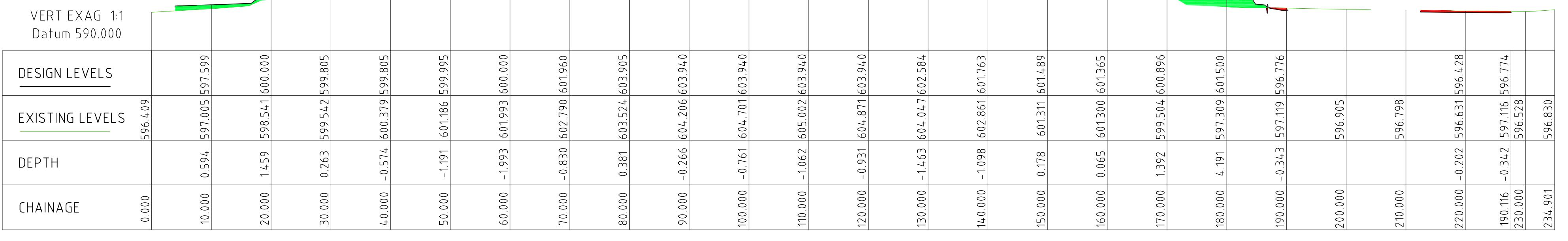
Do not scale drawings. Verify all dimensions on site.
Rev **Date** **Description** **Chkd Auth.**
A 24/03/21 DRAFT SCHEMATIC DESIGN ISSUE
B 16/05/21 SCHEMATIC DESIGN ISSUE
C 07/05/21 SCHEMATIC DESIGN ISSUE
D 11/05/21 SCHEMATIC DESIGN ISSUE
E 15/05/21 SCHEMATIC DESIGN ISSUE
F 12/11/21 ISSUED FOR DD
G 19/11/21 KISS & DROP BAY ADDED, BUS BAY
H 23/11/21 BE NEAR BUS BAY REVISED
I 02/12/21 SECTION NUMBERS ADDED
J 23/03/22 ISSUED FOR RESPONSE TO SUBMISSIONS

Project
High School in Jerrabomberra
Address
ENVIRONA DRIVE, JERRABOMBERRA NSW 2619
Drawing Title
BULK EARTHWORKS PLAN

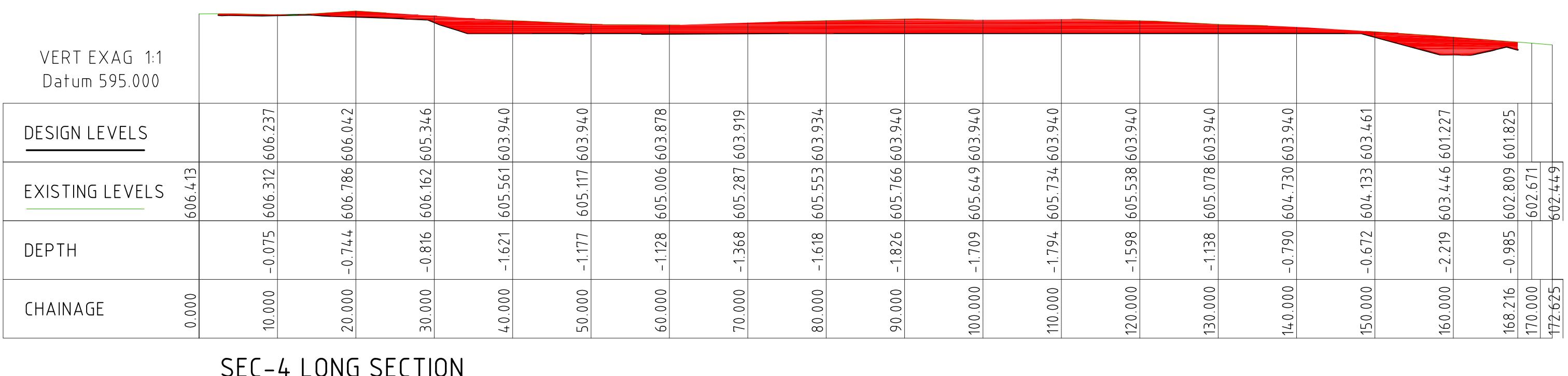
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M+G Consulting
M & G CONSULTING ENGINEERS PTY LTD ABN 65 094 064 990
Tel: +61 (02) 8666 7888
L3, 50 Berry Street
North Sydney NSW 2060 (PO Box 1656, NSW 2059)
Member of
CONTRACTORS AUSTRALIA
Member Fim
Member of
AUSTRALIAN STEEL INSTITUTE
J



Surface Analysis: Elevation Ranges			
Number	Color	Minimum Elevation (m)	Maximum Elevation (m)
1		-5.000	-4.000
2		-4.000	-3.000
3		-3.000	-2.000
4		-2.000	-1.000
5		-1.000	0.000
6		0.000	1.000
7		1.000	2.000
8		2.000	3.000
9		3.000	4.000
10		4.000	5.000



SEC-3 LONG SECTION



SEC-4 LONG SECTION

NOTE: EXCESS FILL TO BE REUSED ON SITE

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The logo for the NSW Department of Education School Infrastructure. It features a stylized red lotus flower icon above the text 'NSW GOVERNMENT' in a bold, blue, sans-serif font. To the right of a vertical line, the word 'Education' is written in a large, blue, bold font, with 'School Infrastructure' in a smaller, blue, bold font below it.

NSW Department of Education
School Infrastructure NSW

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Architect
TKD Architects
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Acoustic
Acoustic Logic
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The diagram shows a cross-section of a stepped structure. The left side features a vertical wall with a stepped profile, labeled 'B' in a bold, italicized font. To the right, a larger rectangular block is shown at an angle, labeled 'C' in a bold, italicized font. The block 'C' has a stepped base that matches the profile of the wall 'B', indicating a precise fit or connection between the two components.

Do not scale drawings. Verify all dimensions on site.

Rev	Date	Description	Chkd	Au
A	24.03.21	DRAFT SCHEMATIC DESIGN ISSUE		
B	16.04.21	SCHEMATIC DESIGN ISSUE		
C	07.05.21	SCHEMATIC DESIGN ISSUE		
D	11.05.21	SCHEMATIC DESIGN ISSUE		
E	15.10.21	PRELIMINARY FOR DD		
F	12.11.21	ISSUED FOR DD		
G	24-03-22	ISSUED FOR RESPONSE TO SUBMISSIONS		

Project
High School in Jerrabomberra

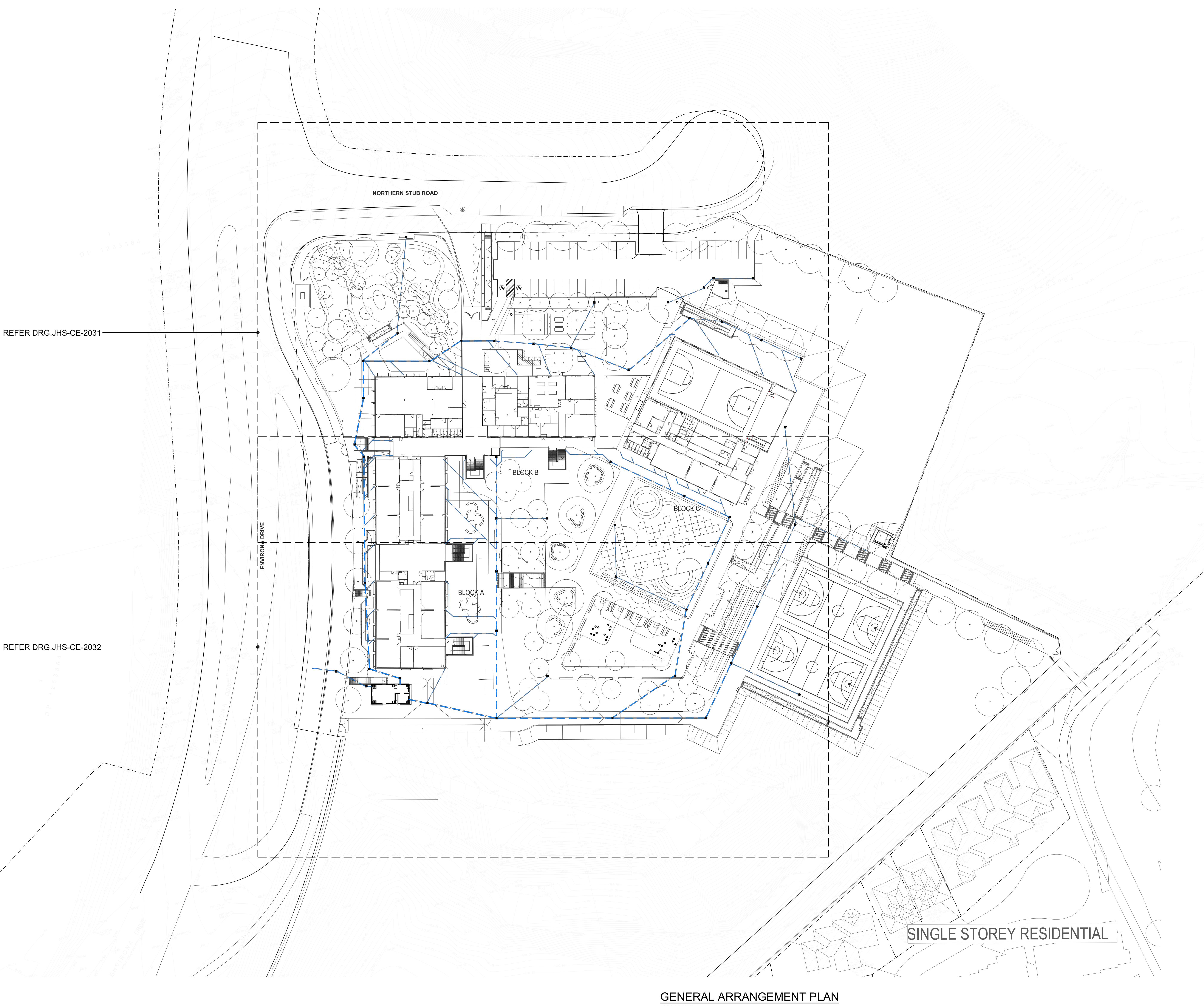
ENVIRONA DRIVE,
JERRABOMBERRA NSW 2619

Drawing Title **BULK EARTHWORKS PL**
LONGITUDINAL SECTION
SHEET 1

Designed MW	Reviewed SCM	Drawn MW	Sheet B1
Job No. 5555	Status DD	Date OCT '21	Scale 1:500
Drawing No. JHS-CE-2010	Revision G		

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DRAINAGE LEGEND



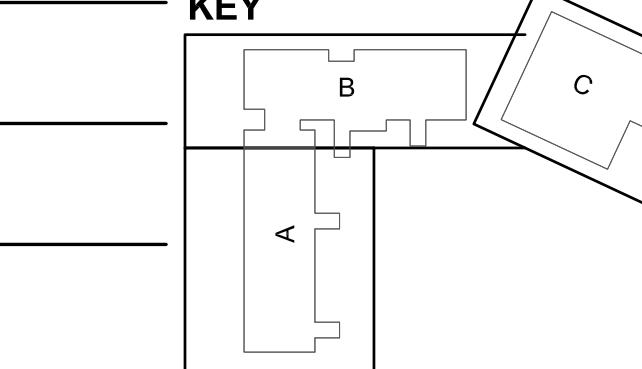
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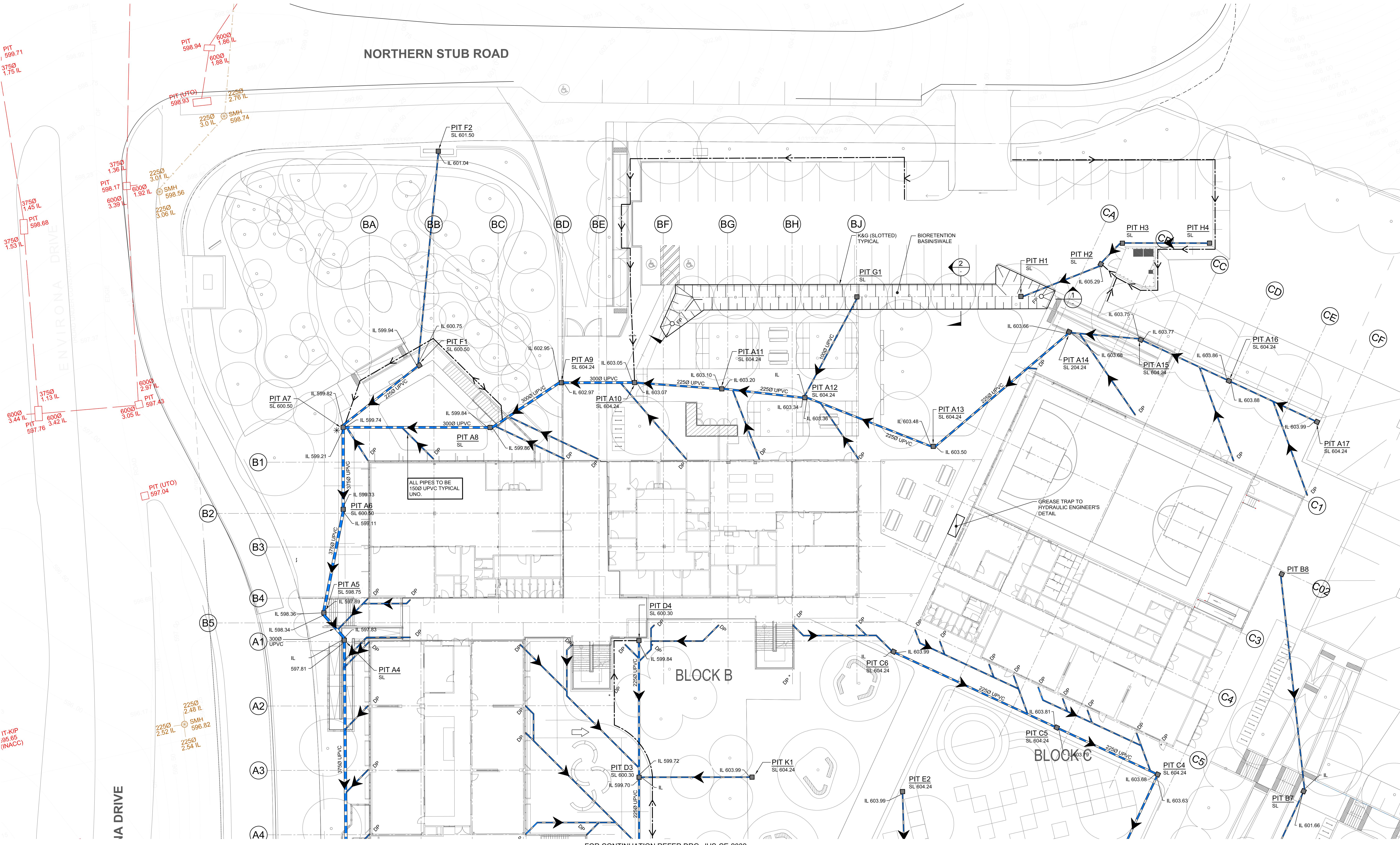
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Rev Date Description Chkd Auth.
A 24.03.21 DRAFT SCHEMATIC DESIGN ISSUE
B 16.04.21 SCHEMATIC DESIGN ISSUE
C 07.05.21 SCHEMATIC DESIGN ISSUE
D 12.05.21 SCHEMATIC DESIGN
E 15.10.21 PRELIMINARY FOR DD
F 12.11.21 ISSUED FOR DD
G 23.03.22 ISSUED FOR RESPONSE TO SUBMISSIONS

Project
High School in Jerrabomberra
ENVIRONA DRIVE, JERRABOMBERRA NSW 2619
Drawing Title
STORMWATER DRAINAGE GENERAL ARRANGEMENT PLAN
Drawing No.
JHS-CE-2030

Designed
Reviewed
Drawn
Sheet
MW SCM MW B1
Job No. 5555 Status DD Date OCT '21 Scale 1:500
Revision G

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 B 16.04.21 SCHEMATIC DESIGN ISSUE
 C 07.05.21 SCHEMATIC DESIGN ISSUE
 D 12.05.21 SCHEMATIC DESIGN
 E 15.10.21 PRELIMINARY FOR DD
 F 12.11.21 ISSUED FOR DD
 G 23.03.22 ISSUED FOR RESPONSE TO SUBMISSIONS

Project
 High School in Jerrabomberra
 ENVIRONA DRIVE,
 JERRABOMBERRA NSW 2619
 Drawing Title
 STORMWATER DRAINAGE
 PLAN - SHEET 1

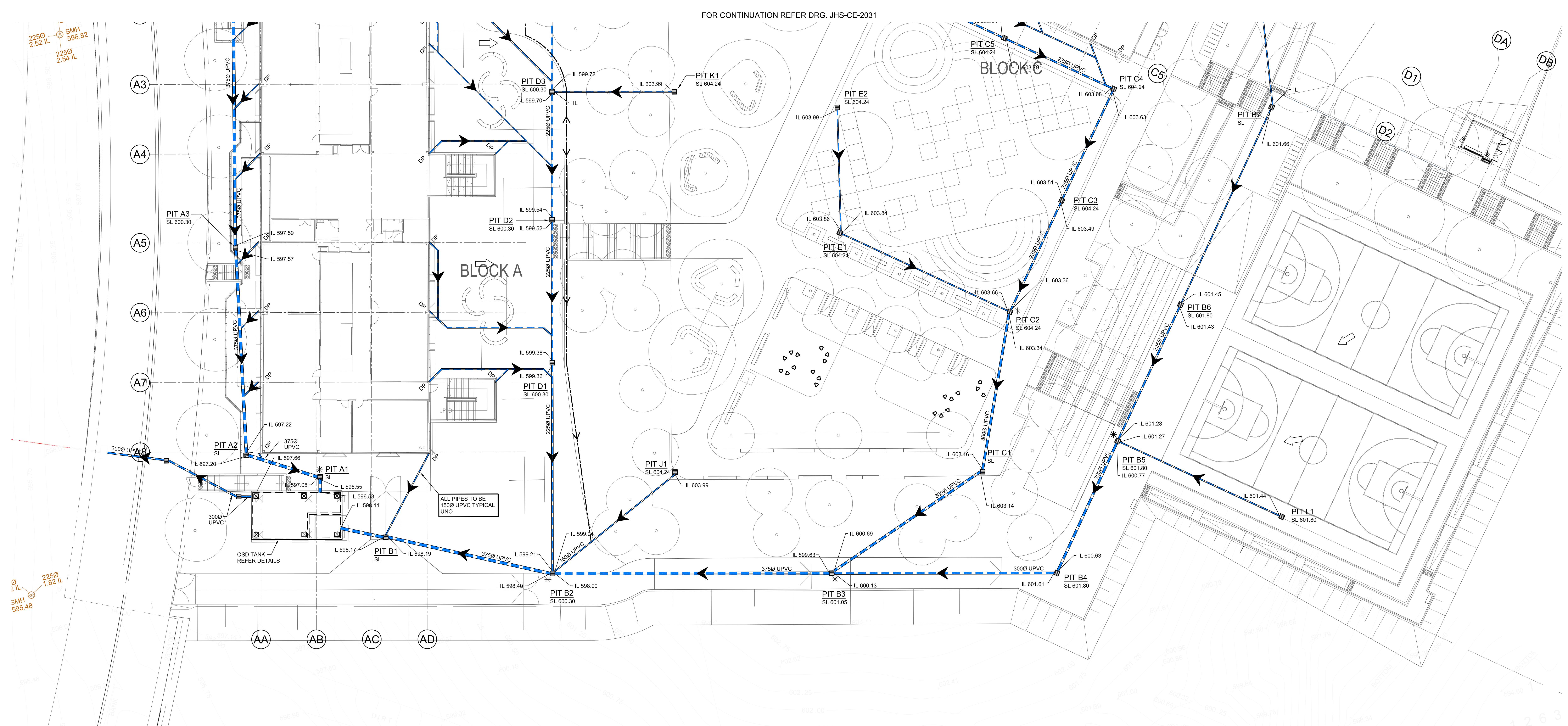
Designed
Reviewed
Drawn
Sheet
MW SCM MW B1
 Job No. 5555 Status DD Date OCT '21 Scale 1:200
 Drawing No. JHS-CE-2031 Revision G

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STORMWATER DRAINAGE PART PLAN

STC
SCALE

SCALE 1:200

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School Infrastructure

NSW Department of Education |
School Infrastructure NSW

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Project Managers
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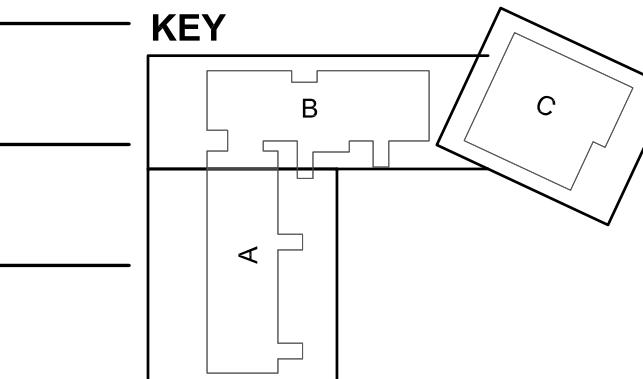
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**Landscape
Context**

**Acoustic
Acoustic**

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Rev	Date	Description
A	24.03.21	DRAFT SCHEMATIC DESIGN ISSUE
B	16.04.21	SCHEMATIC DESIGN ISSUE
C	07.05.21	SCHEMATIC DESIGN ISSUE
D	12.05.21	SCHEMATIC DESIGN
E	15.10.21	PRELIMINARY FOR DD
F	12.11.21	ISSUED FOR DD
G	23-03-22	ISSUED FOR RESPONSE TO SUBMISSIONS

Project
High School in Jerrabomberra

Auth.

ENVIRONA DRIVE,
JERRABOMBERRA NSW 2619

Drawing Title **STORMWATER DRAIN
PLAN - SHEET 2**

Designed MW	Reviewed SCM	Drawn MW	Sheet B1
Job No. 5555	Status DD	Date OCT '21	Scale 1:200
Drawing No. JHS-CE-2032		Revision G	

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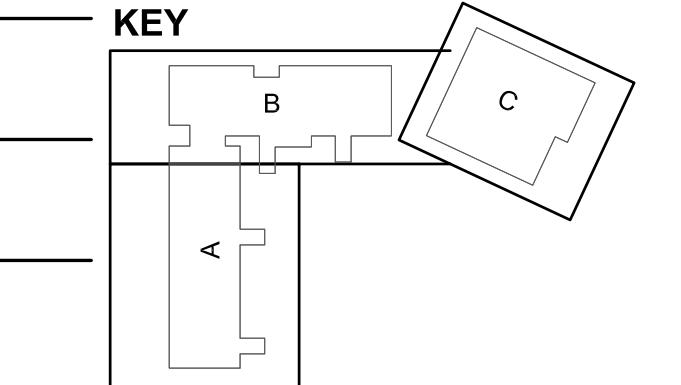
M+G Consulting



PIT SCHEDULE		
PIT No.	SIZE	LID TYPE (TO AS 3996)
A1	900 x 900	SURFACE INLET PIT FLUSH GRATE CLASS 'A' WITH 'OCEAN GUARD' FILTRATION BAG BY OCEAN PROTECT
A2	900 x 900	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
A3	900 x 900	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
A4	900 x 900	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
A5	900 x 900	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
A6	900 x 900	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
A7	900 x 900	SURFACE INLET PIT FLUSH GRATE CLASS 'B' WITH 'OCEAN GUARD' FILTRATION BAG BY OCEAN PROTECT
A8	600 x 600	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
A9	600 x 600	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
A10	600 x 600	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
A11	600 x 600	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
A12	600 x 600	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
A13	600 x 600	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
A14	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
A15	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
A16	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
A17	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
B1	900 x 900	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
B2	900 x 900	SURFACE INLET PIT FLUSH GRATE CLASS 'B' WITH 'OCEAN GUARD' FILTRATION BAG BY OCEAN PROTECT
B3	900 x 900	SURFACE INLET PIT FLUSH GRATE CLASS 'B' WITH 'OCEAN GUARD' FILTRATION BAG BY OCEAN PROTECT
B4	900 x 900	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
B5	900 x 900	SURFACE INLET PIT FLUSH GRATE CLASS 'B' WITH 'OCEAN GUARD' FILTRATION BAG BY OCEAN PROTECT
B6	600 x 600	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
B7	600 x 600	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
B8	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
C1	900 x 900	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
C2	900 x 900	SURFACE INLET PIT FLUSH GRATE CLASS 'B' WITH 'OCEAN GUARD' FILTRATION BAG BY OCEAN PROTECT
C3	600 x 600	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
C4	600 x 600	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
C5	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
C6	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
D1	900 x 900	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
D2	600 x 600	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
D3	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
D4	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
E1	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
E2	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
F1	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
F2	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
G1	900 x 900	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
H1	600 x 600	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
H2	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'D'
H3	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'D'
H4	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'D'
J1	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
K1	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'B'
L1	450 x 450	SURFACE INLET PIT FLUSH GRATE CLASS 'B'

PIT NOTES:

1. PITS DEEPER THAN 1000 TO HAVE STEP IRONS.
2. ALL GRATES TO BE CAST INTO NEW SLABS.
3. ALL OSD/PIT/TRENCH DRAIN LIDS AND GRATES TO BE TO AS 3996. REFER TO PLANS/SECTIONS FOR CLASS OF PIT/GRATE.
4. ALL GRATED TRENCH DRAINS TO BE 250mm (W) x 150mm (D) MIN (CLEAR DIMENSIONS UNO.) & HAVE A STEEL TROWELLED FINISH.
5. ALL SURFACE LEVELS TO BE CONFIRMED ON SITE. ANY SIGNIFICANT VARIATIONS FROM PROVIDED SURFACE LEVELS, ENGINEER TO BE ADVISED FOR ANY CHANGES TO THE PIPE INVERT LEVELS.



Do not scale drawings. Verify all dimensions on site.

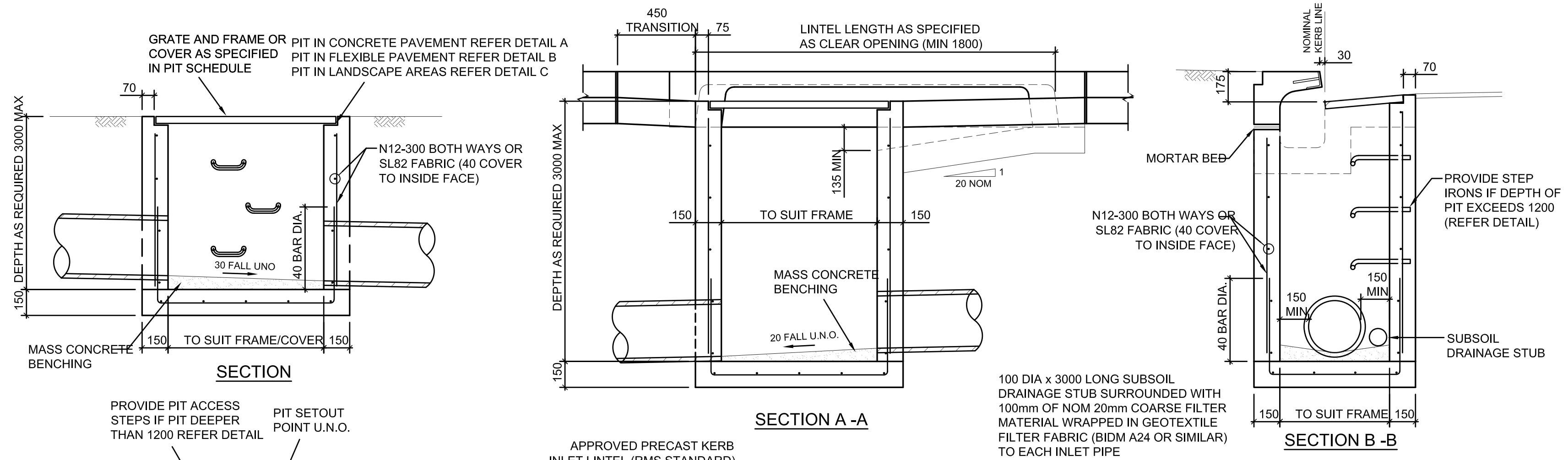
Rev	Date	Description	Chkd Auth.
A	12.11.21	ISSUED FOR DD	
B	24-03-22	ISSUED FOR RESPONSE TO SUBMISSIONS	

Project: **High School in Jerrabomberra**
Designed by: **MW**
Reviewed by: **SCM**
Drawn by: **MW**
Sheet: **B1**

ENvirona Drive, JERRABOMBERRA NSW 2619
Drawing Title: **STORMWATER DRAINAGE PIT SCHEDULE**
Drawing No.: **JHS-CE-2033**

Reviewed by: **B**
Drawn by: **MW**
Sheet: **B1**

Job No.: **5555**
Status: **DD**
Date: **OCT '21**
Scale: **1:500**



SURFACE INLET/JUNCTION PIT DETAIL

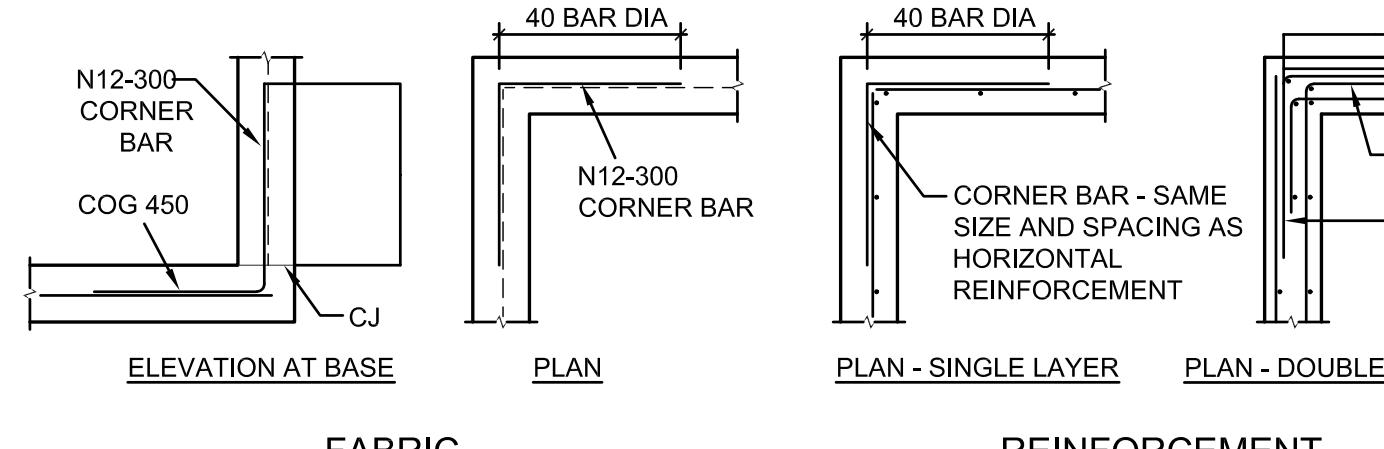
SCALE 1:20

STORMWATER PIT NOTES

1. CONCRETE TO HAVE A MIN. COMpressive STRENGTH (F_c) of 25 MPa AT 28 DAYS.
2. REINFORCEMENT NOT REQUIRED IF DEPTH OF PIT IS LESS THAN 1000mm. PITS GREATER THAN 3000mm DEEP TO HAVE WALL AND BASE 200mm THICK REINFORCED WITH N12-250 EACH WAY EACH FACE WITH CONCRETE STRENGTH F_c = 40 MPa.
3. 100mm OF NOM 20mm COARSE FILTER MATERIAL WRAPPED IN GEOTEXTILE FILTER FABRIC (BIDM A24 OR SIMILAR) TO EACH INLET PIPE.
4. IF REINFORCING FABRIC IS TO BE USED REFER TO WALL AND CORNER DETAILS.
5. PRECAST PITS ARE TO GENERALLY COMPLY WITH THESE DETAILS.
6. PRECAST PIT MAY BE USED SUBJECT TO ENGINEERS APPROVAL.
7. ALL PITS TO BE LOCKABLE.
8. FINAL INTERNAL PIT DIMENSIONS ARE TO COMPLY WITH AS 3500.

DETAIL OF SLAB REINFORCEMENT AT PITS IN CONCRETE PAVEMENT

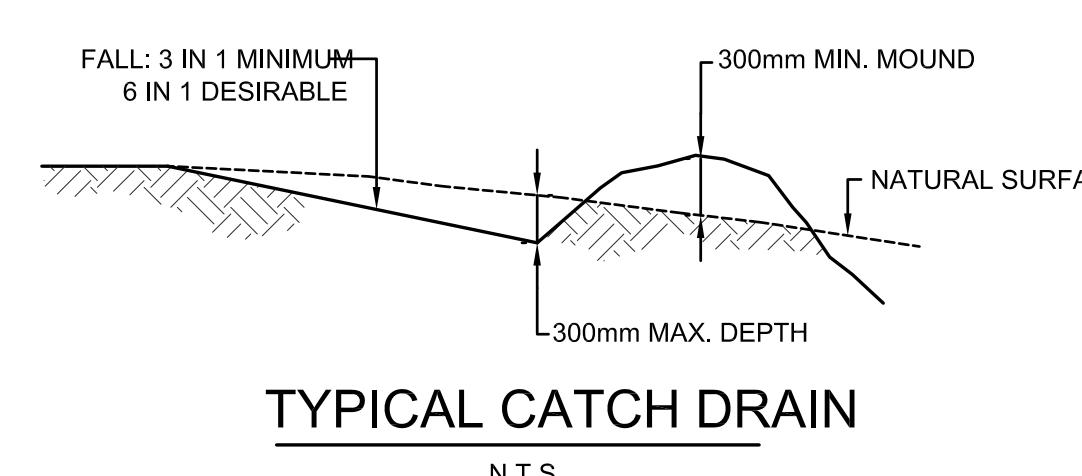
N.T.S.



PIT CORNER DETAILS

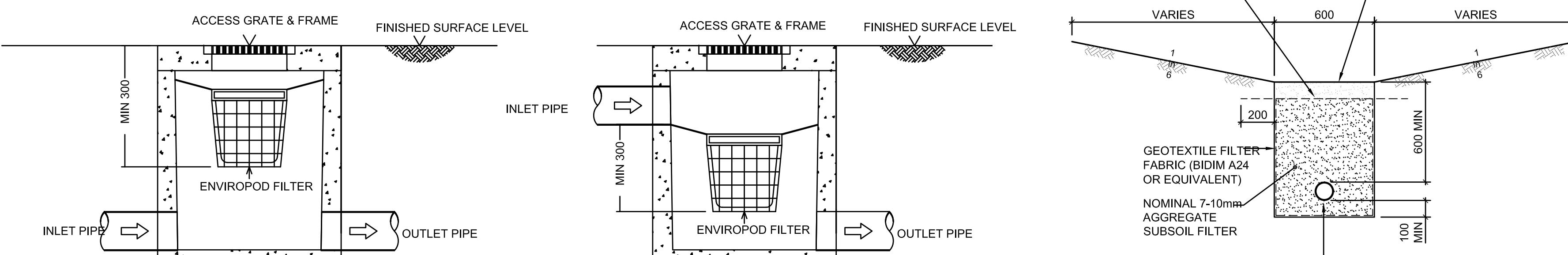
SCALE 1:20

NOTE: DESIGNER TO VERIFY EXTENT OF DETAILING



TYPICAL CATCH DRAIN

N.T.S.



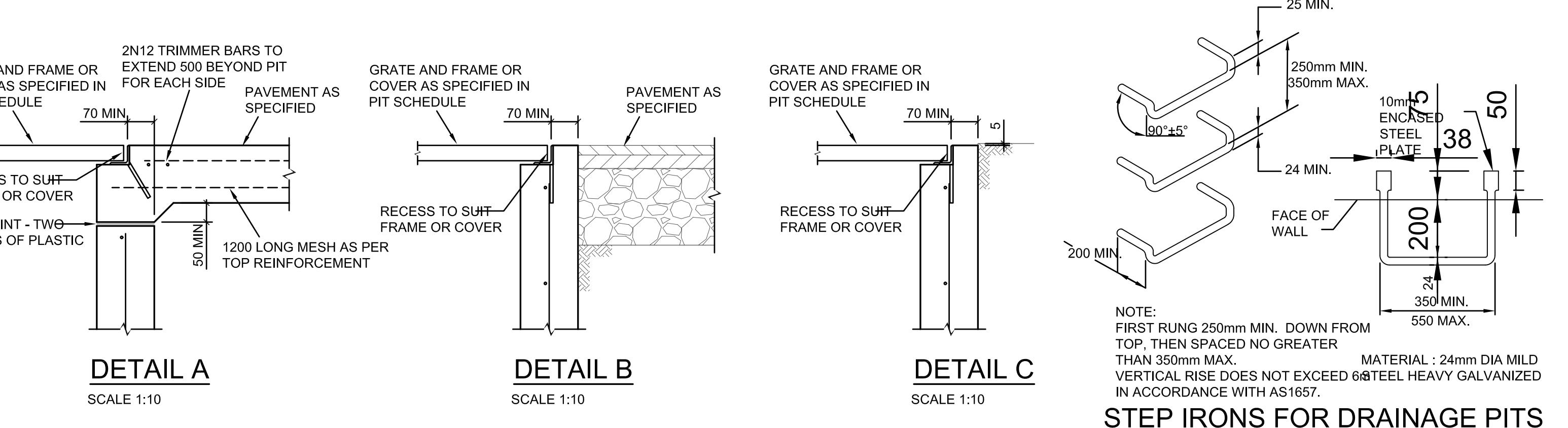
STANDARD ENVIROPOD CONFIGURATION SECTION

DROP PIPE ENVIROPOD CONFIGURATION SECTION

TYPICAL ENVIROPOD OCEAN PROTECT PIT DETAILS

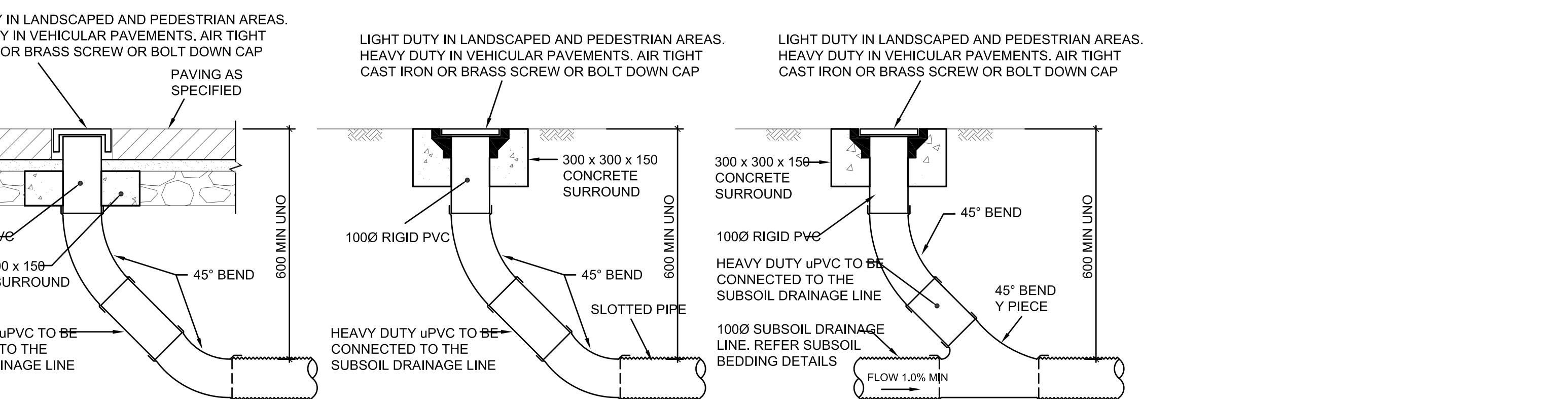
TURFED SWALE DETAIL

SCALE 1:20



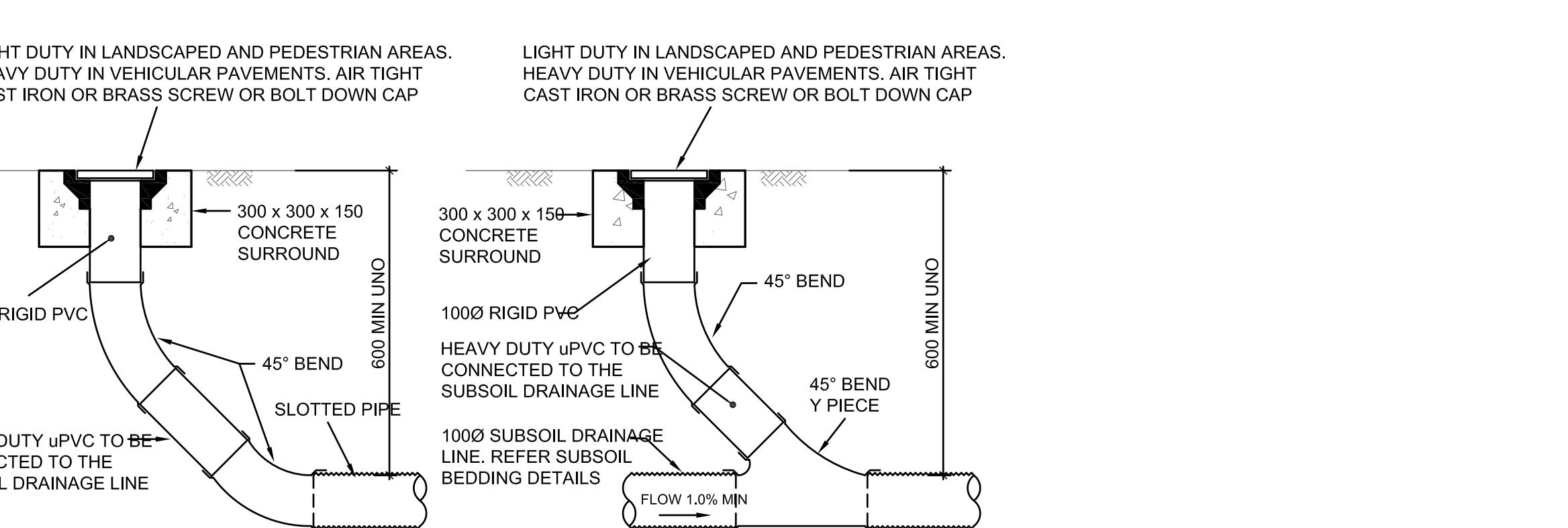
STEP IRONS FOR DRAINAGE PITS

N.T.S.



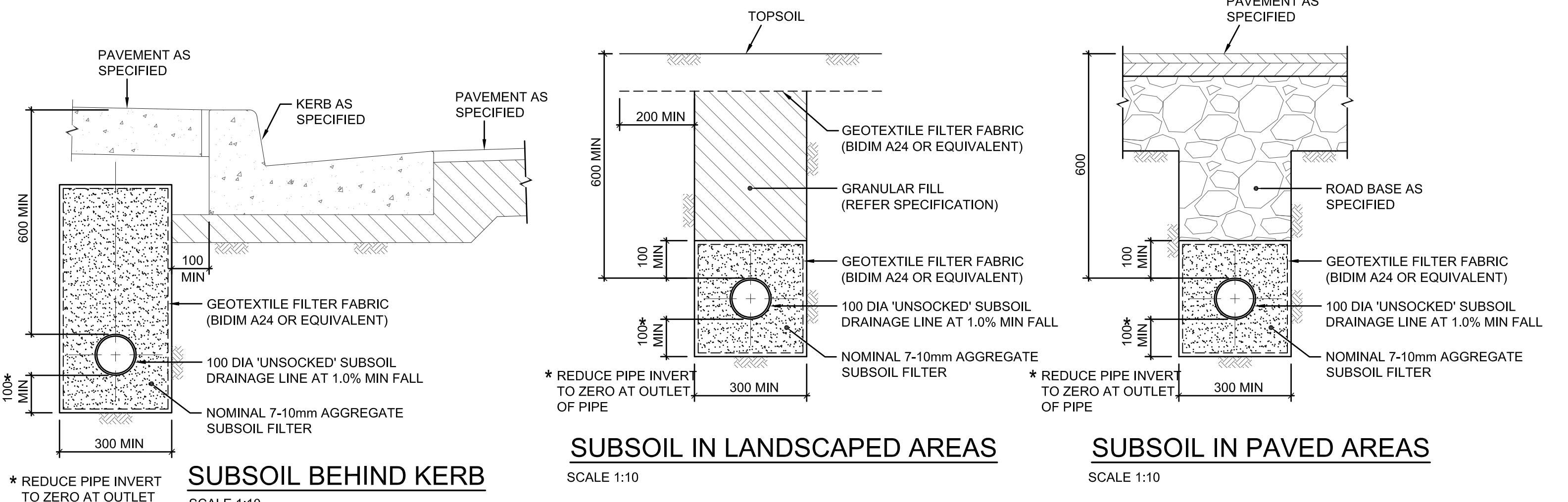
FLUSHOUT RISER (FOR) IN PAVING BRICKS

SCALE 1:10



INTERMEDIATE RISER

SCALE 1:10



SUBSOIL IN LANDSCAPED AREAS

SCALE 1:10

SUBSOIL IN PAVED AREAS

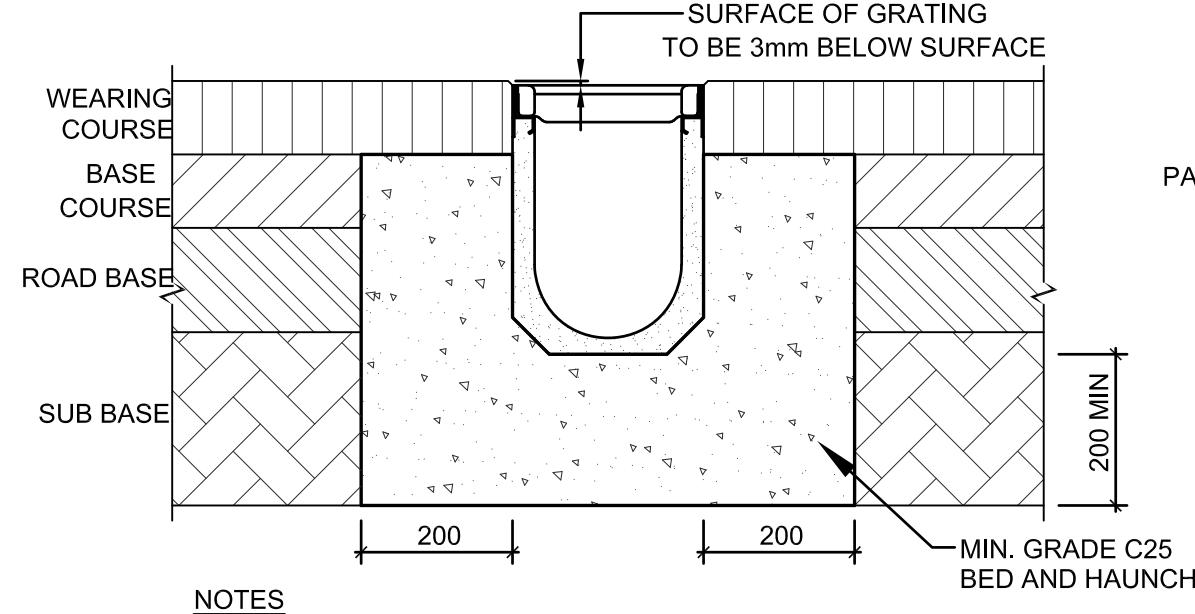
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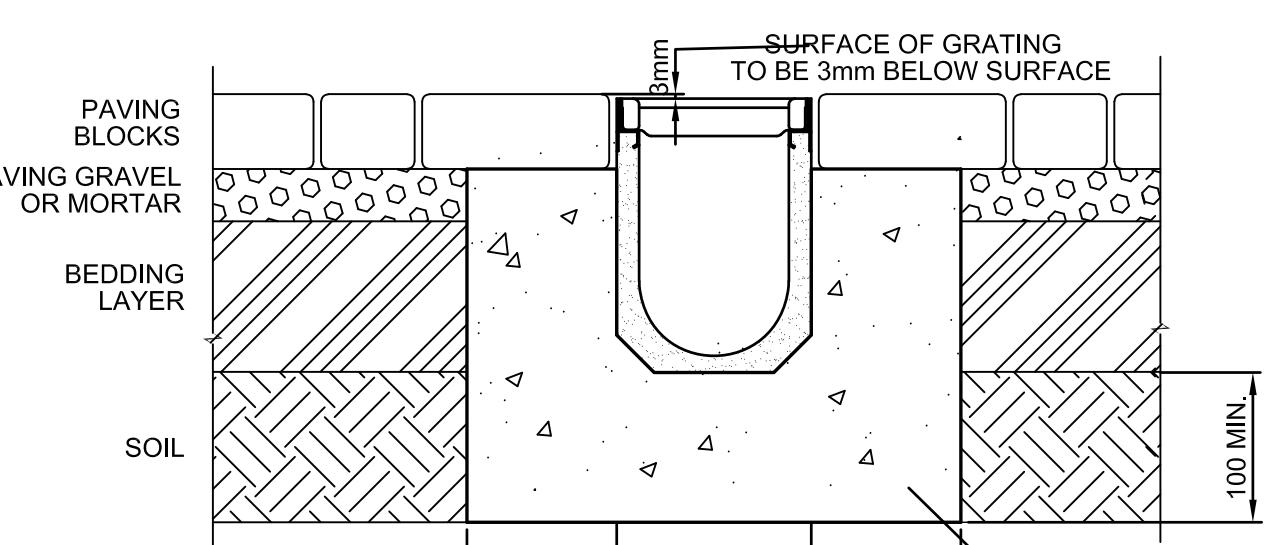
M+G CONSULTING ENGINEERS PTY LTD ABN 65 094 064 990

Tel: +61 (02) 8666 7888



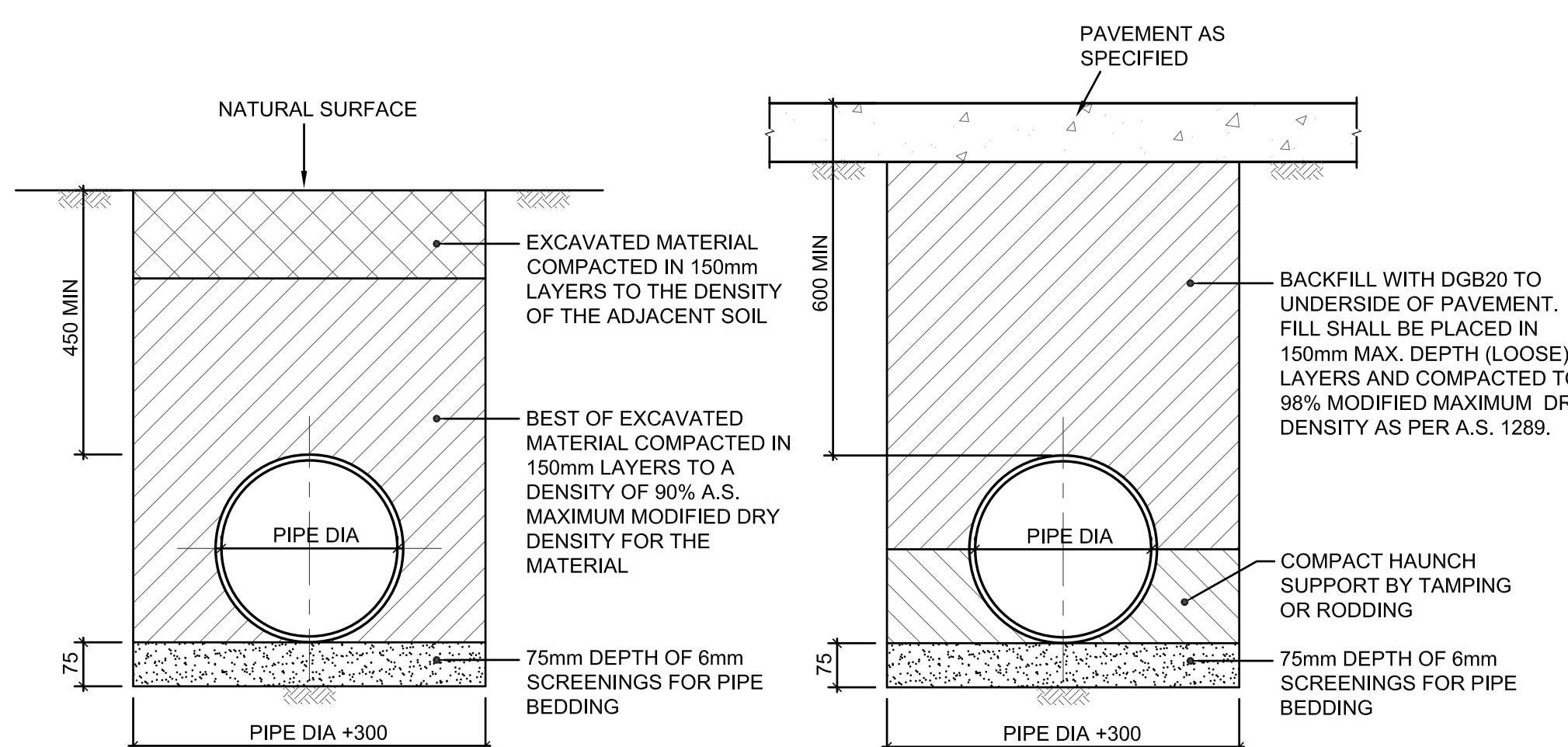
**HEAVY DUTY ACO DRAIN DETAIL
(FLEXIBLE PAVEMENT)**

N.T.S.



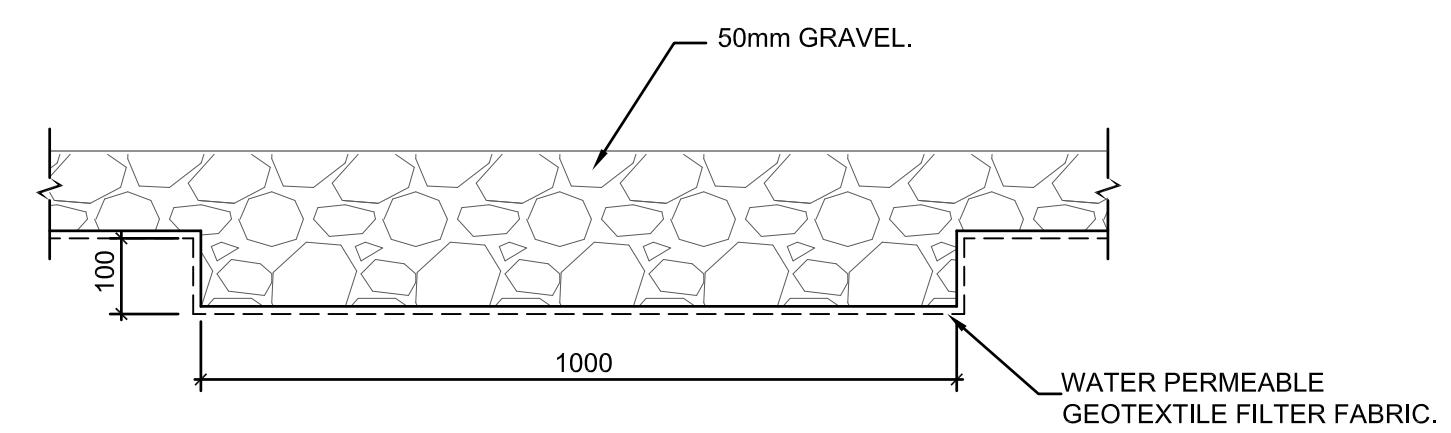
ACO DRAIN DETAIL (PAVING)

N.T.S.



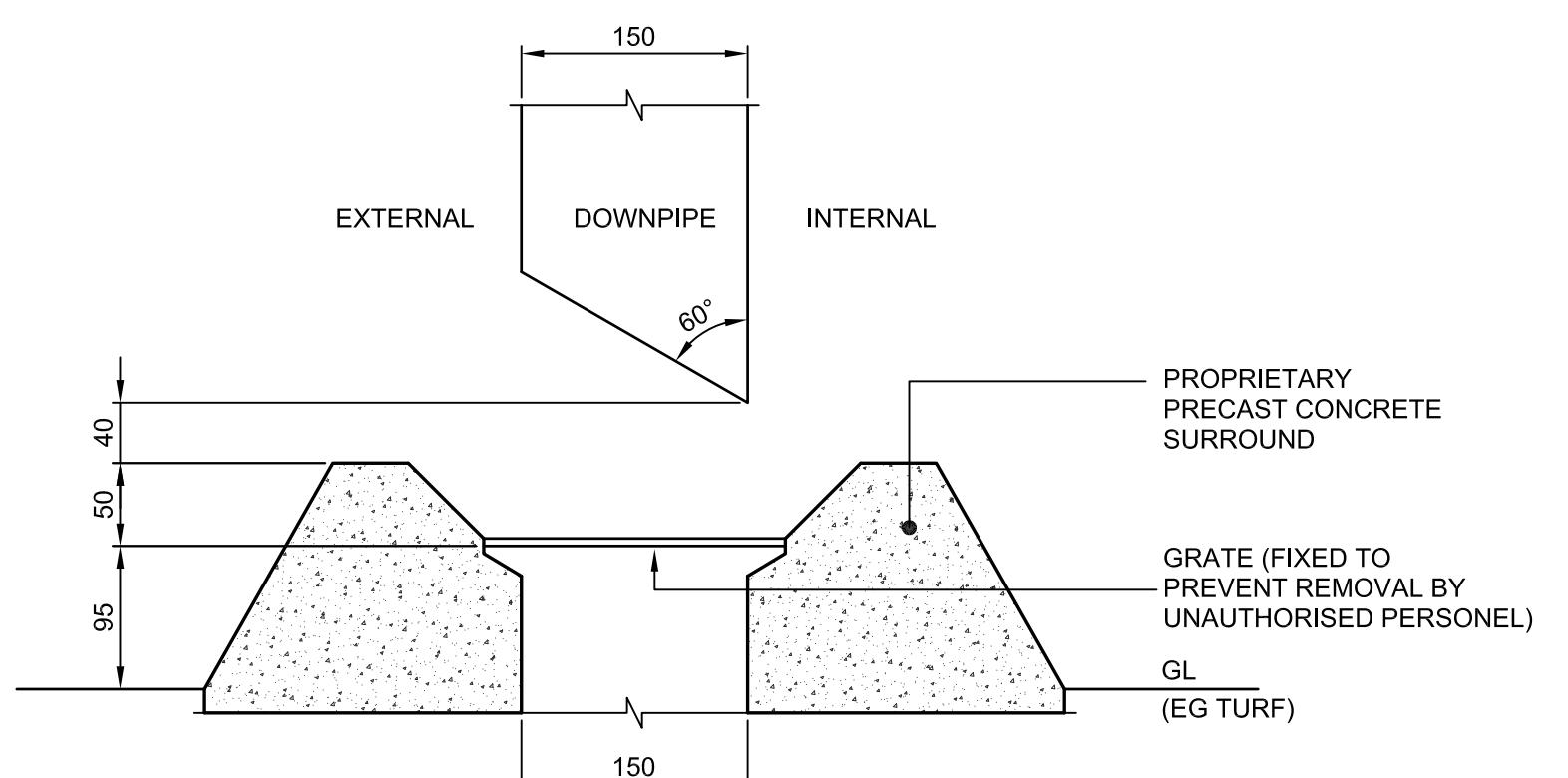
**PIPE LAYING DETAIL (ALL PIPES)
UNDER LANDSCAPED AREAS**

SCALE 1:10



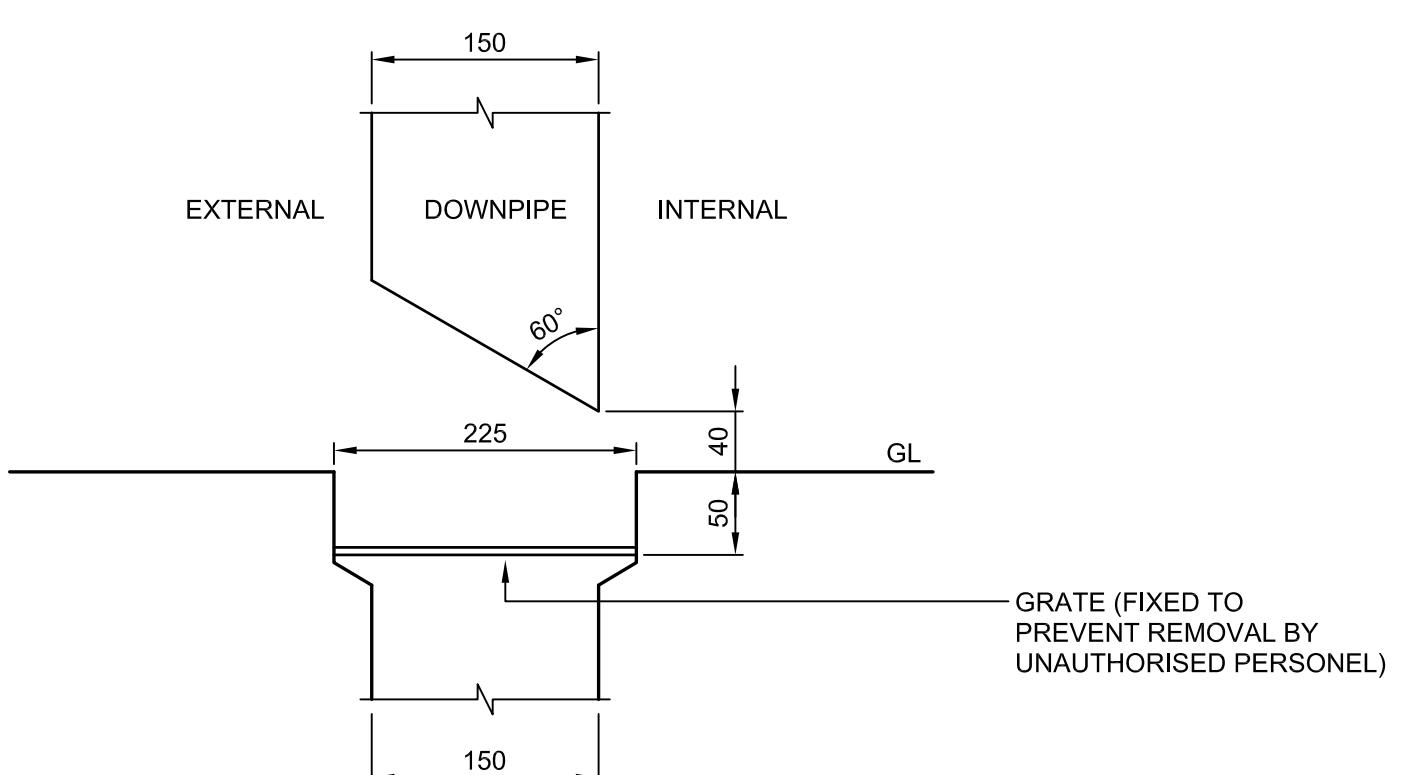
DRAINAGE GRAVEL STRIP DETAIL

SCALE 1:10



SECTION

WHERE DOWNPIPE IS LOCATED OVER
A LANDSCAPED AREA

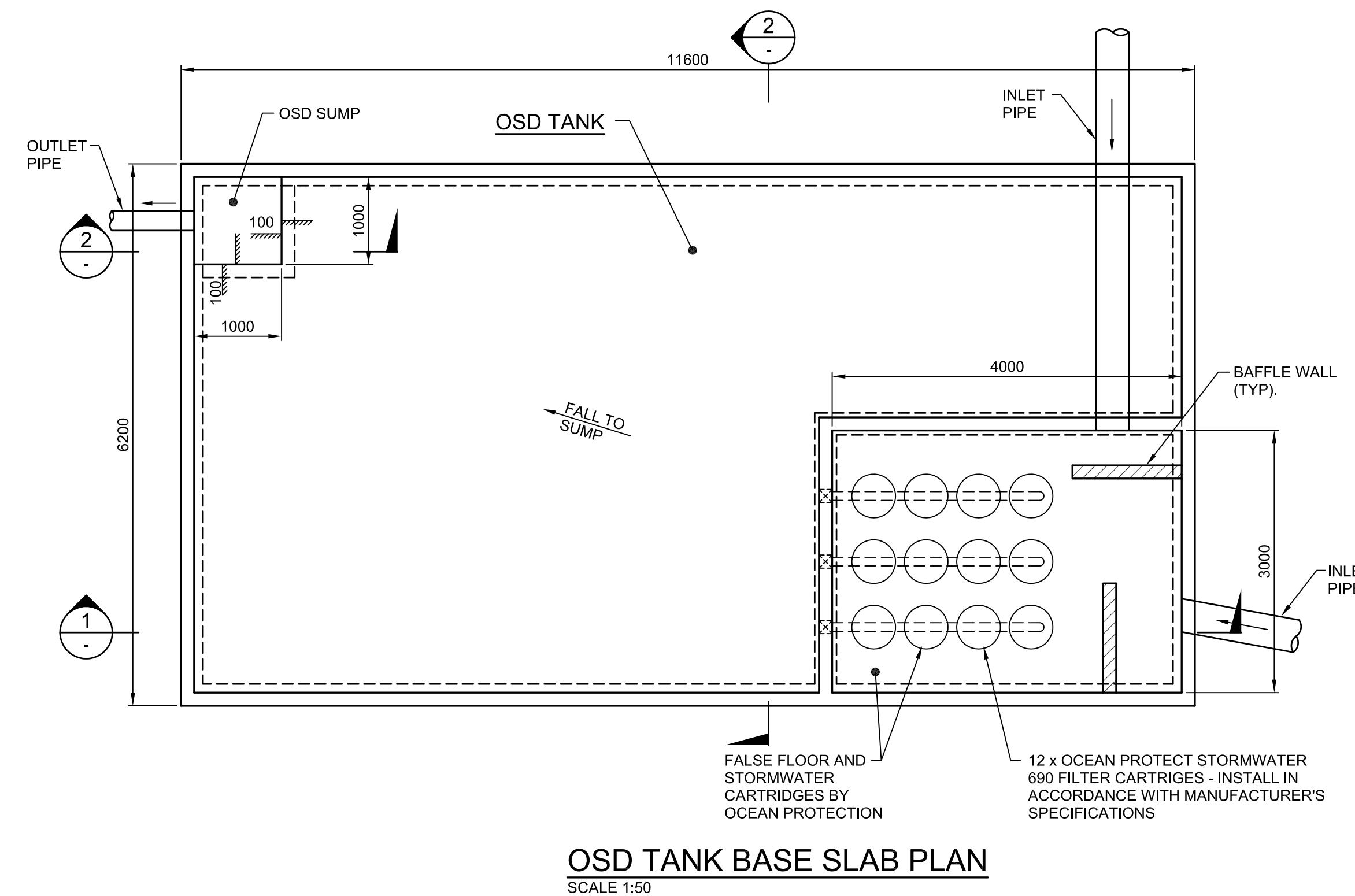


SECTION

WHERE DOWNPIPE IS LOCATED OVER
A LANDSCAPED AREA

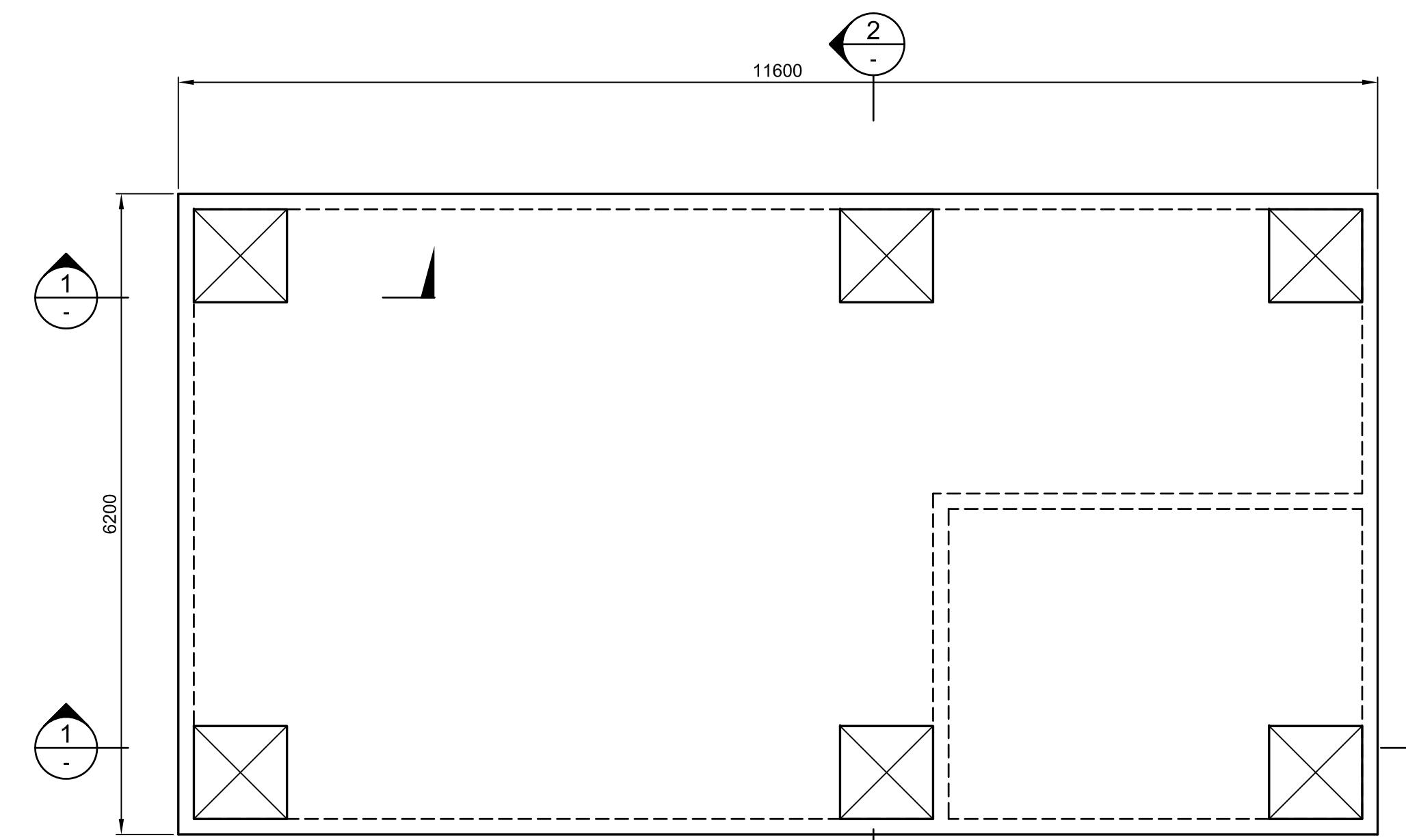
DOWNPIPE OUTLET DETAILS

NOT TO SCALE



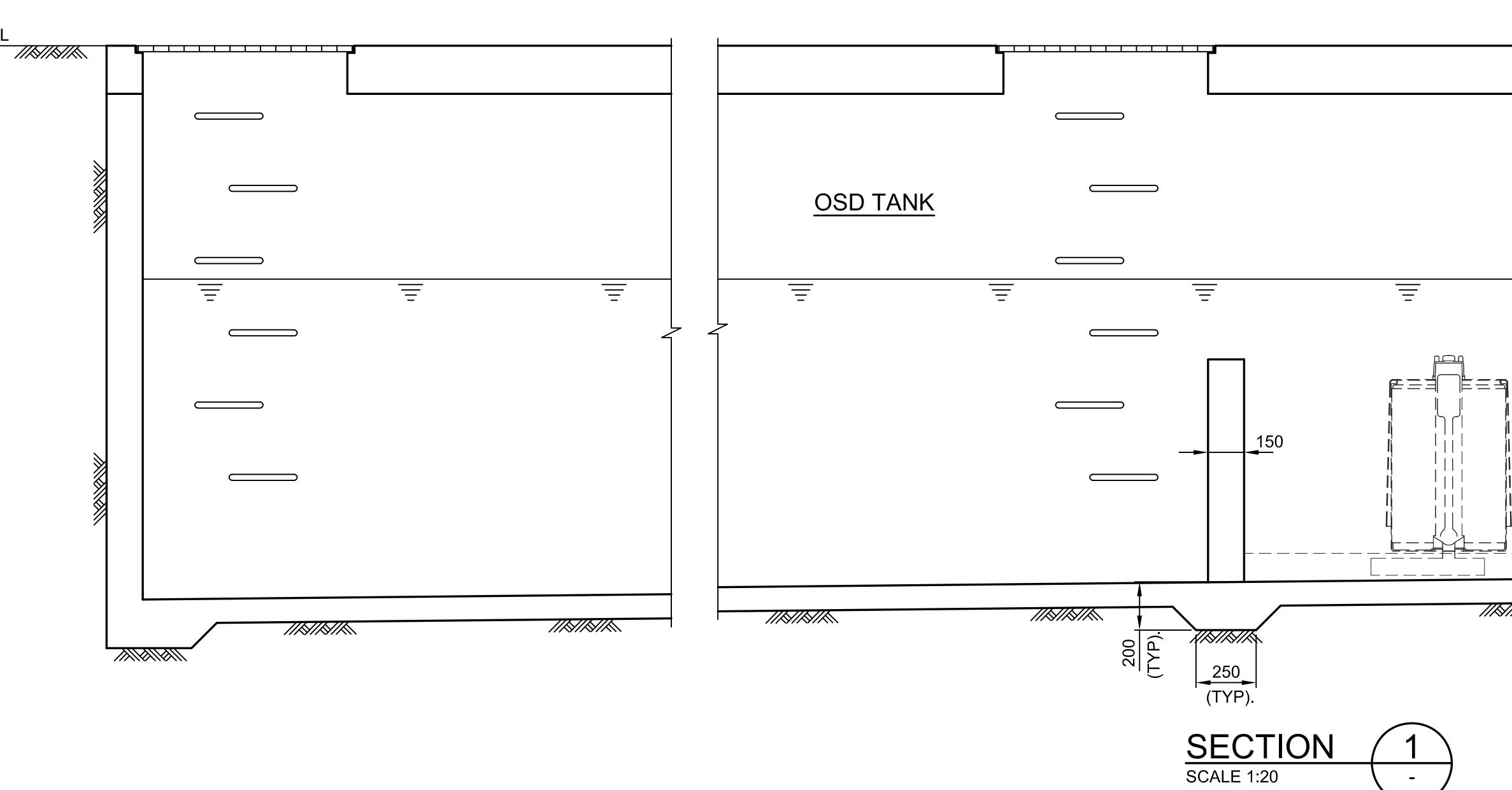
OSD TANK BASE SLAB PLAN

SCALE 1:



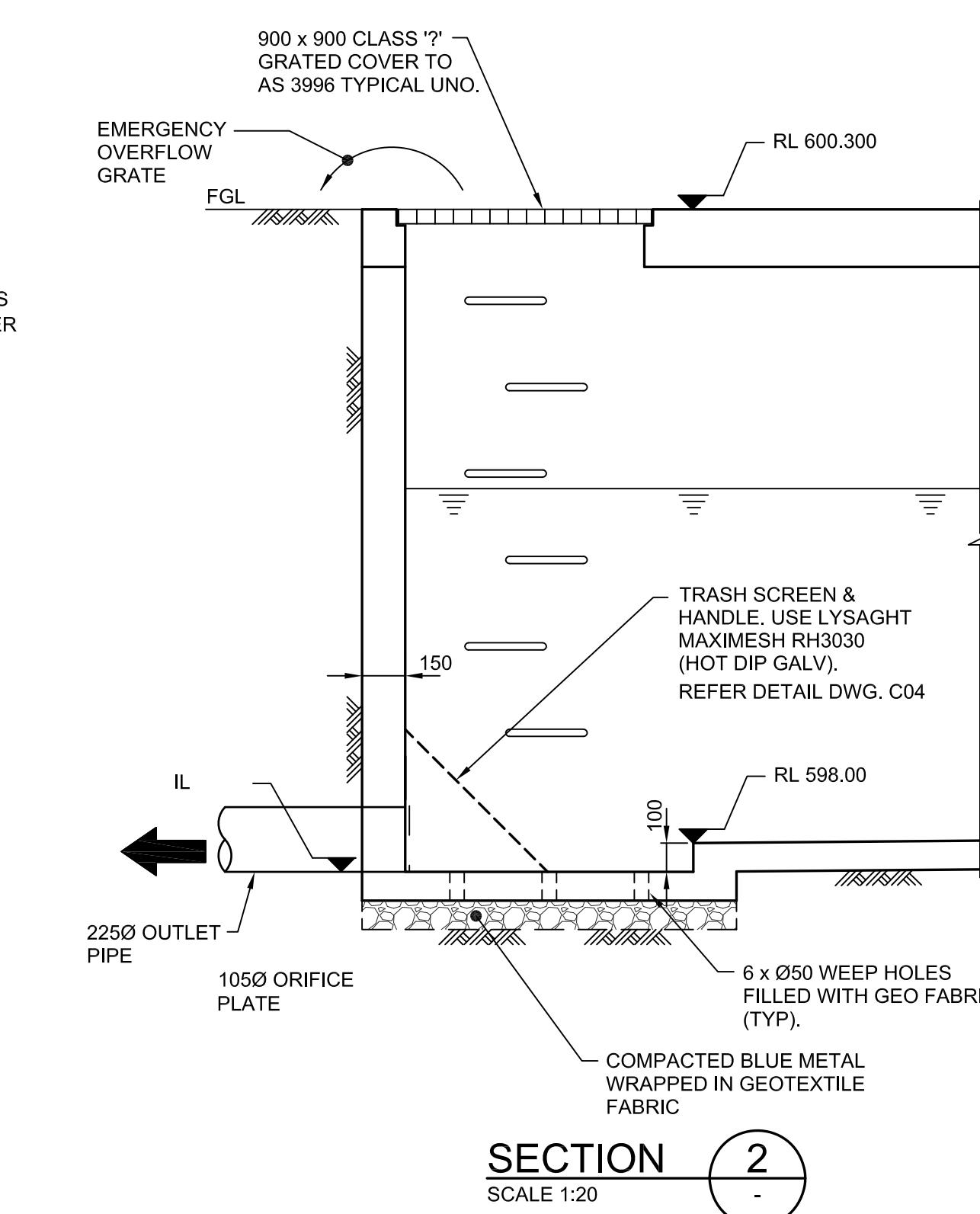
OSD TANK ROOF SLAB PLAN

SCALE 1:50



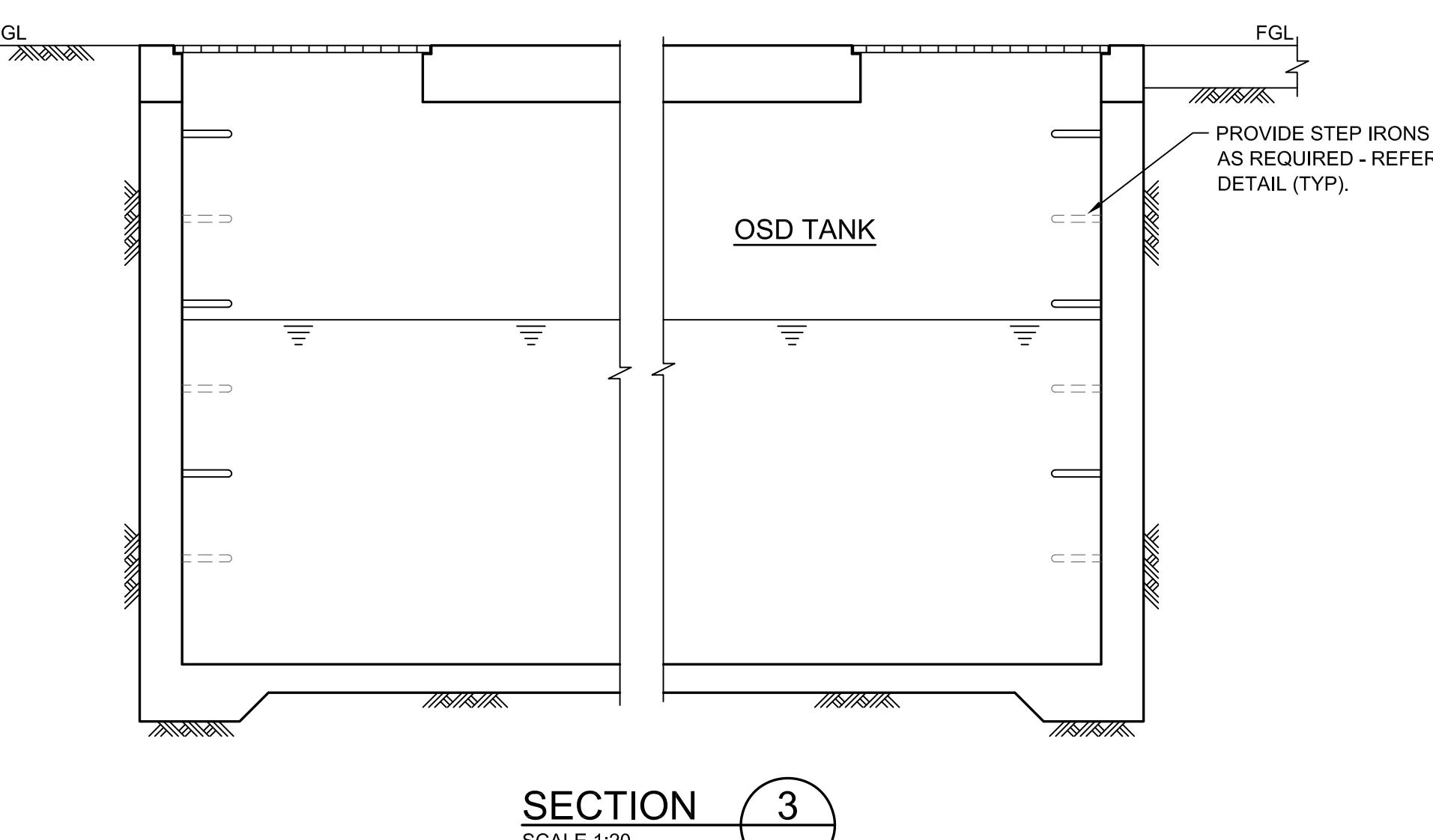
SECTION 1
SCALE 1:20

5



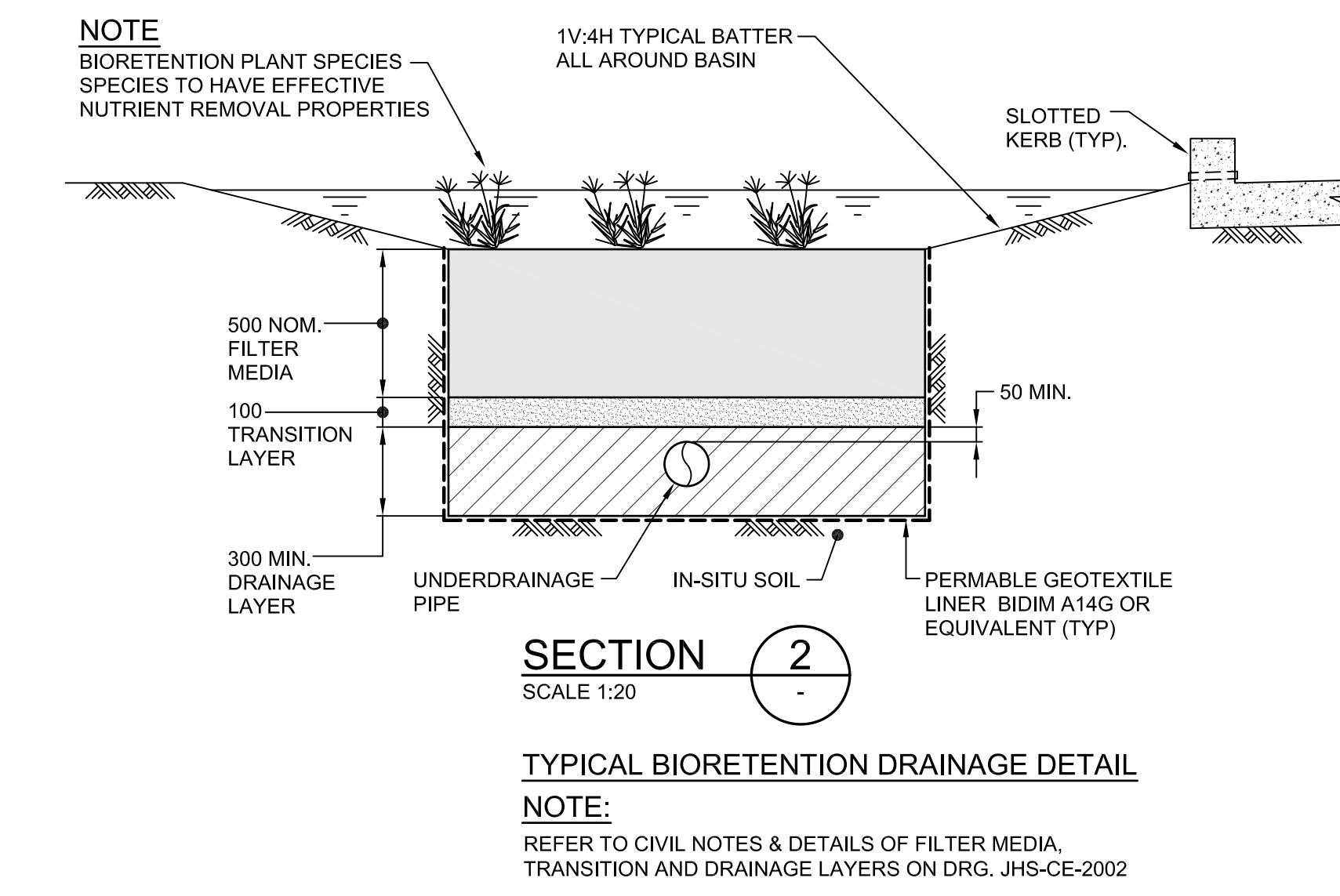
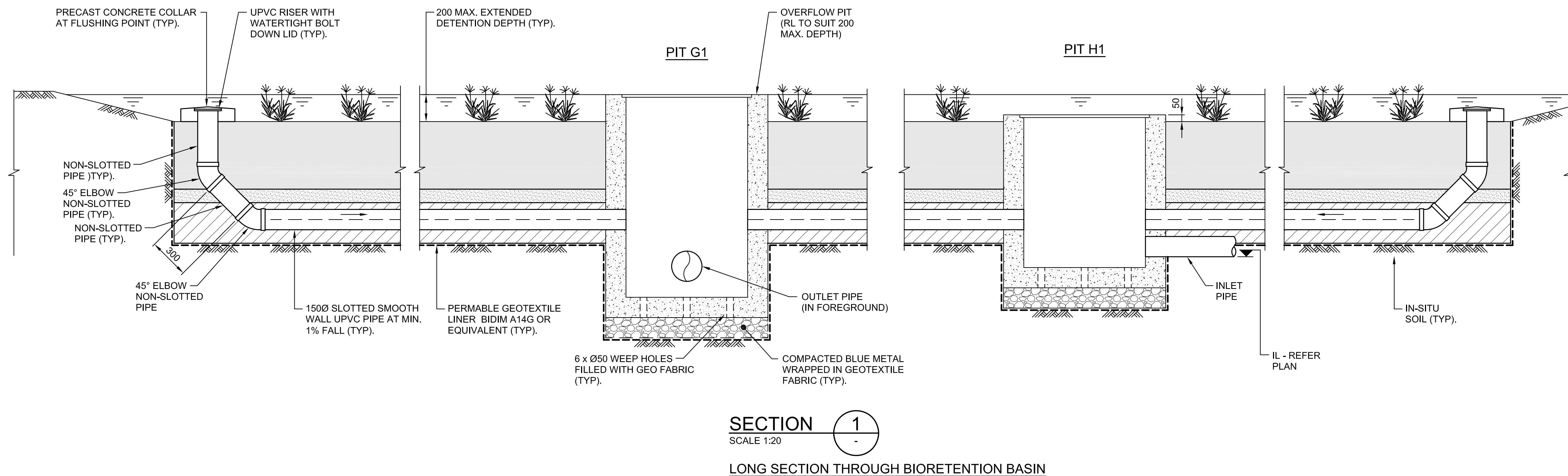
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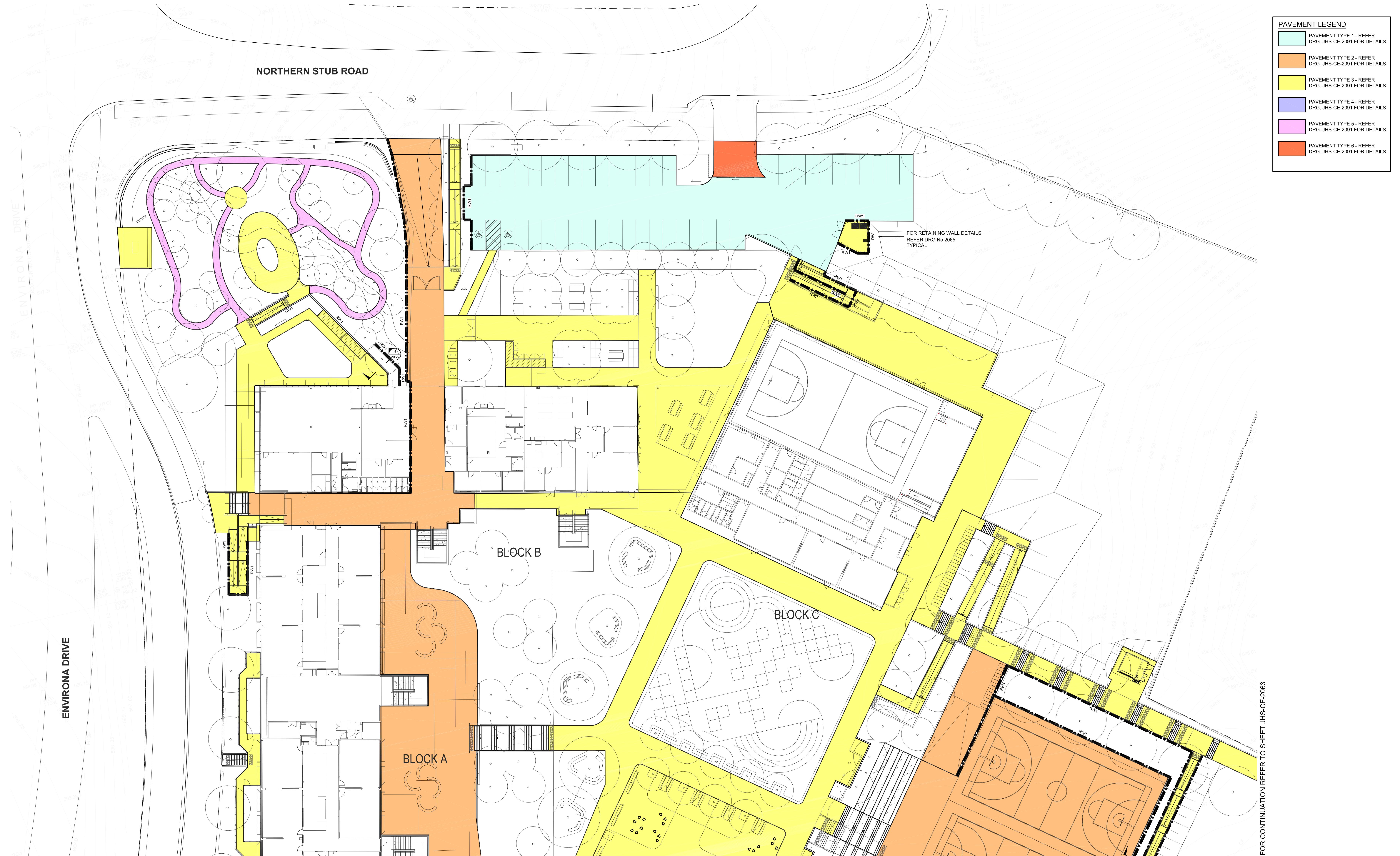
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SECTION 3

SEC
SCALE 1





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The image is a composite of several logos and text elements. At the top left is the word 'CLIENT' in a black sans-serif font. To its right is the NSW Government logo, featuring a red stylized flower above the letters 'NSW' in a bold blue font, with 'GOVERNMENT' in smaller blue text below. A vertical grey line runs down the center. To the right of the line is the 'Education School Infrastructure' logo, with 'Education' in a large blue serif font and 'School Infrastructure' in a smaller blue sans-serif font below it. At the bottom left is the text 'NSW Department of Education | School Infrastructure NSW' in a large black sans-serif font. At the very bottom left is the phone number 'T+ 02 9561 8287' in a smaller black sans-serif font.

Project Managers
TSA Management
T+ 61 2 9276 1400

Architect
TKD Architects
T+ 61 2 9281 4399

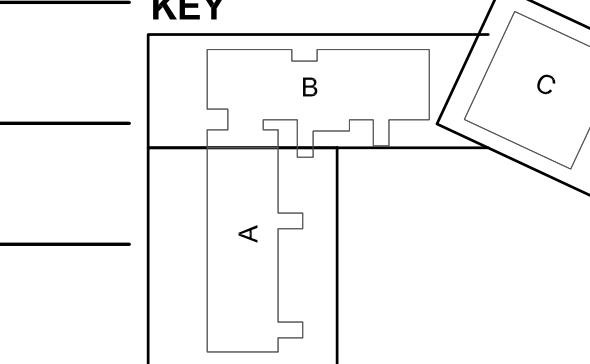
Mechanical, Electrical, Hydraulic, ESD
Norman Disney & Young
T+ 61 2 9928 6800

Landscape A
Context
T+ 61 2 8244 89
Acoustic
Acoustic Lo
T+ 61 2 8339 80

FOR CONTINUATION REFER TO SHEET JHS-CE-20

PAVEMENT PART PLAN

SCALE 1:250



Do not scale drawings. Verify all dimensions on site.			
Rev	Date	Description	Chkd
A	24.03.21	DRAFT SCHEMATIC DESIGN ISSUE	
B	16.04.21	SCHEMATIC DESIGN ISSUE	
C	07.05.21	SCHEMATIC DESIGN ISSUE	
D	11.05.21	SCHEMATIC DESIGN ISSUE	
E	15.10.21	PRELIMINARY FOR DD	
F	12.11.21	ISSUED FOR DD	
G	02.12.21	PAVEMENT EXTENTS REVISED	
H	23-03-22	ISSUED FOR RESPONSE TO SUBMISSIONS	

Project
High School in Jerrabomberra

ENVIRONA DRIVE,
JERRABOMBERRA NSW 2619

Drawing Title **SITE WORK AND PAV**
PLAN - SHEET 1

Designed MW	Reviewed SCM	Drawn MW	Sheet B1
Job No. 5555	Status DD	Date OCT '21	Scale 1:250
Drawing No. IHS CE 2061		R	

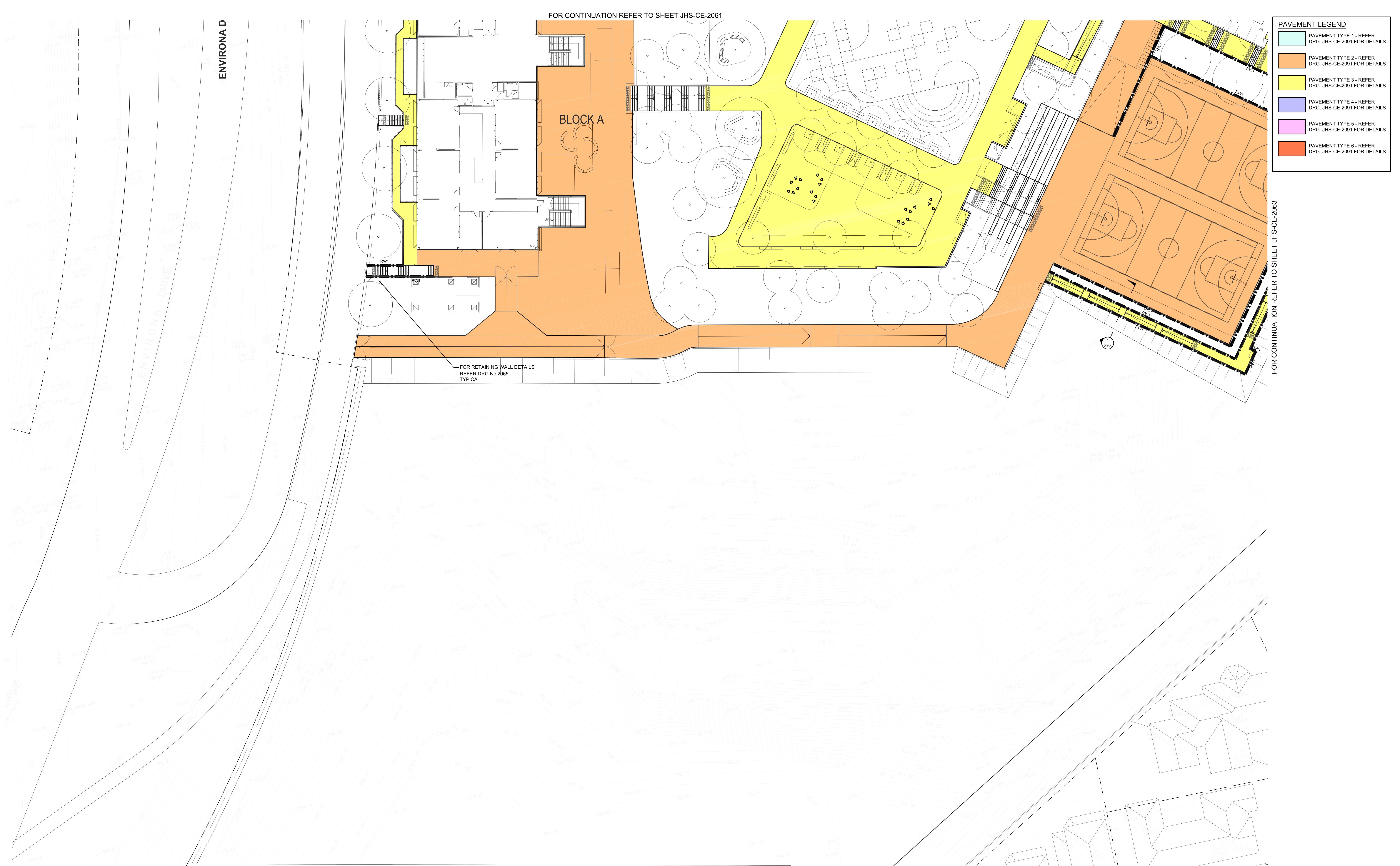
M+G Consulting

M & G CONSULTING ENGINEERS PTY LTD ABN 65 094 064 990

Tel: +61 (0)2 8666 7888

L3, 50 Berry Street
North Sydney NSW 2060
(PO Box 1656, NSW 2059)





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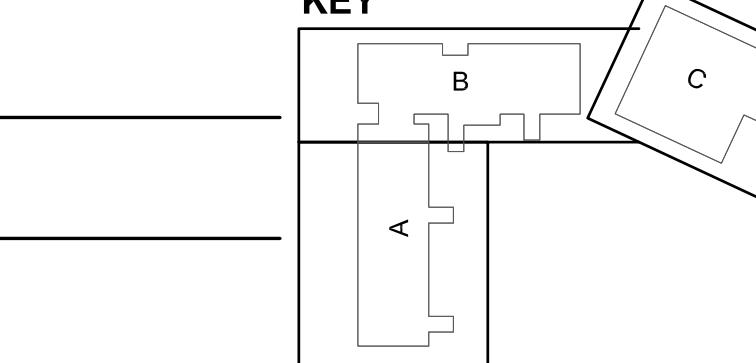
BUILDER
HINDMARSH
Hindmarsh Construction Australia Pty Ltd
Level 2, 100 Miller Street
North Sydney NSW 2060
T +61 2 8274 1100
F +61 2 8274 8898
www.hindmarsh.com.au

CLIENT
NSW GOVERNMENT Education
School Infrastructure
NSW Department of Education
School Infrastructure NSW
T +02 9561 8287

Project Managers
TSA Management
T +61 2 9276 1400
Architect
TKD Architects
T +61 2 9281 3399
Landscape Architecture
Context
T +61 2 8244 8900
Acoustic
Acoustic Logic
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Mechanical, Electrical, Hydraulic, ESD
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Acoustic
Acoustic Logic
T +61 2 8339 8000



PAVEMENT PART PLAN
SCALE 1:250

Do not scale drawings. Verify all dimensions on site.
Rev Date Description Chkd Auth.
A 24/03/21 DRAFT SCHEMATIC DESIGN ISSUE
B 16/04/21 SCHEMATIC DESIGN ISSUE
C 07/05/21 SCHEMATIC DESIGN ISSUE
D 11/05/21 SCHEMATIC DESIGN ISSUE
E 15/10/21 PRELIMINARY FOR DD
F 12/11/21 PAVING EXTENTS REVISED
G 24/12/21 PAVING EXTENTS REVISED
H 23-03-22 ISSUED FOR RESPONSE TO SUBMISSIONS

Project
High School in Jerrabomberra
ENvirona DRIVE,
JERRABOMBERRA NSW 2619
Drawing Title
SITE WORK AND PAVEMENT
PLAN - SHEET 2
Drawing No.
JHS-CE-2062

Designed
Reviewed
Drawn
Sheet
MW SCM MW B1
Job No. 5555 Status DD Date OCT '21 Scale 1:250
Revision H

NOT FOR CONSTRUCTION

M+G Consulting
M & G CONSULTING ENGINEERS PTY LTD ABN 65 094 064 990
Tel: +61 (02) 8666 7888
L3, 50 Berry Street
North Sydney NSW 2060
(PO Box 656, NSW 2059)
Member of
CONSULTANT AUSTRALIA
Member Firm
Member of
AUSTRALIAN STEEL INSTITUTE

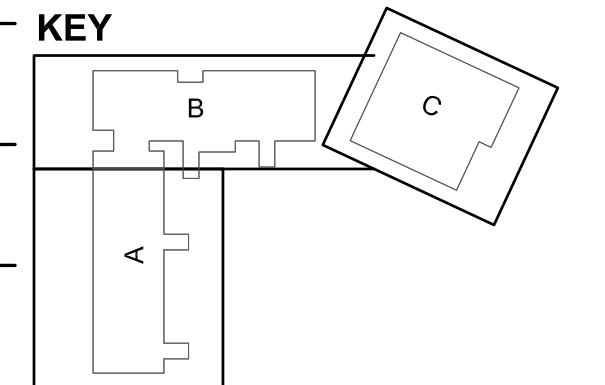
FOR CONTINUATION REFER TO SHEET JHS-CE-2061

FOR CONTINUATION REFER TO SHEET JHS-CE-2062

PAVEMENT PART PLAN

SCALE 1

Landscape Archit





The logo for the NSW Department of Education School Infrastructure NSW. It features a red stylized flower icon above the text 'NSW GOVERNMENT'. To the right, a vertical line separates the flower from the text 'Education School Infrastructure' in blue. Below this, the full name 'NSW Department of Education | School Infrastructure NSW' is written in a large, bold, black font.

Project Managers
TSA Management

T+ 61 2 9276 1400

Architect
TKD Architects

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Mechanical, Electrical, Hydraulic, ESD

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T+ 61 2 9928 6800

Landscape Architect
Context
T+ 61 2 8244 8900

Acoustic
Acoustic Logic
T+ 61 2 8339 8000

Do not scale drawings. Verify all dimensions on site.			
Rev	Date	Description	Chkd Auth.
A	12.11.21	ISSUED FOR DD	
B	23-03-22	ISSUED FOR RESPONSE TO SUBMISSIONS	

Project
High School in Jerrabomberra

ENVIRONA DRIVE,
JERRABOMBERRA NSW 2619

Drawing Title **SITE WORK AND PAVEMENTS
PLAN - SHEET 2**

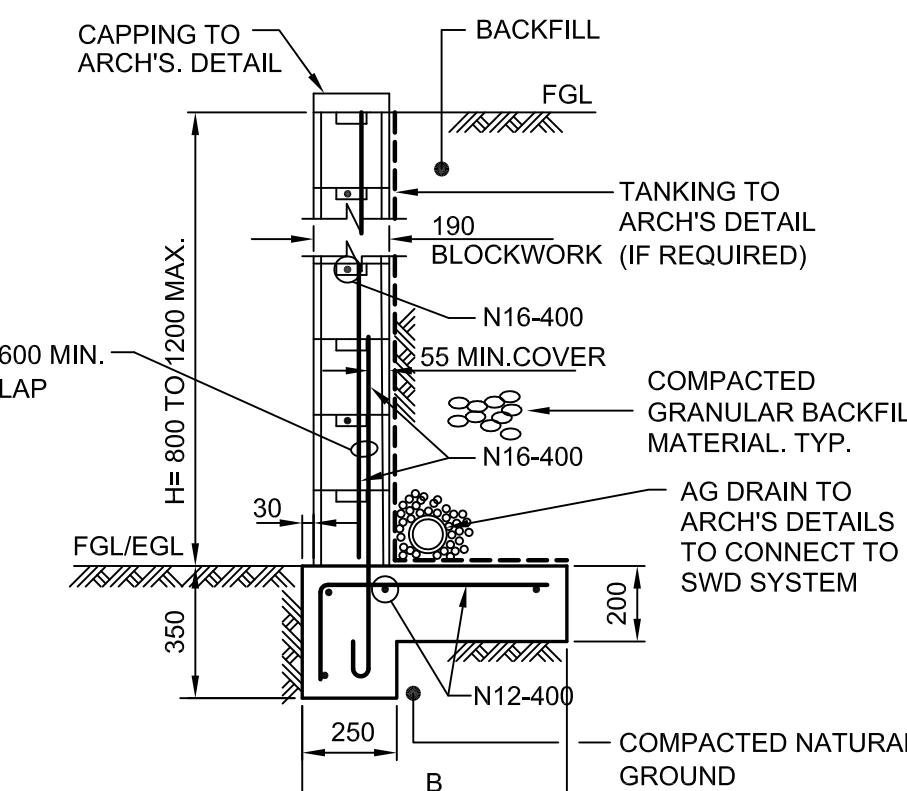
Designed IW	Reviewed SCM	Drawn MW	Sheet B1	
Job No. 555	Status DD	Date OCT '21	Scale 1:250	
Drawing No. HS-CE-2063			Revision B	

NOT FOR CONSTRUCTION

M+G Consulting

BLOCKWORK NOTES:

1. ALL BLOCKS TO BE 140 OR 190 DOUBLE "U" BLOCKS. PROVIDE CLEAN OUT HOLES TO BTM. COURSE. FILL ALL CORES WITH CONCRETE: 10mm AGG, 15 MPa 225 SLUMP
2. 50 MIN. COVER TO ALL BASE REINFORCEMENT, BACKFILL TO BE COMPACTED CLEAN GRANULAR FREE DRAINING MATERIAL.

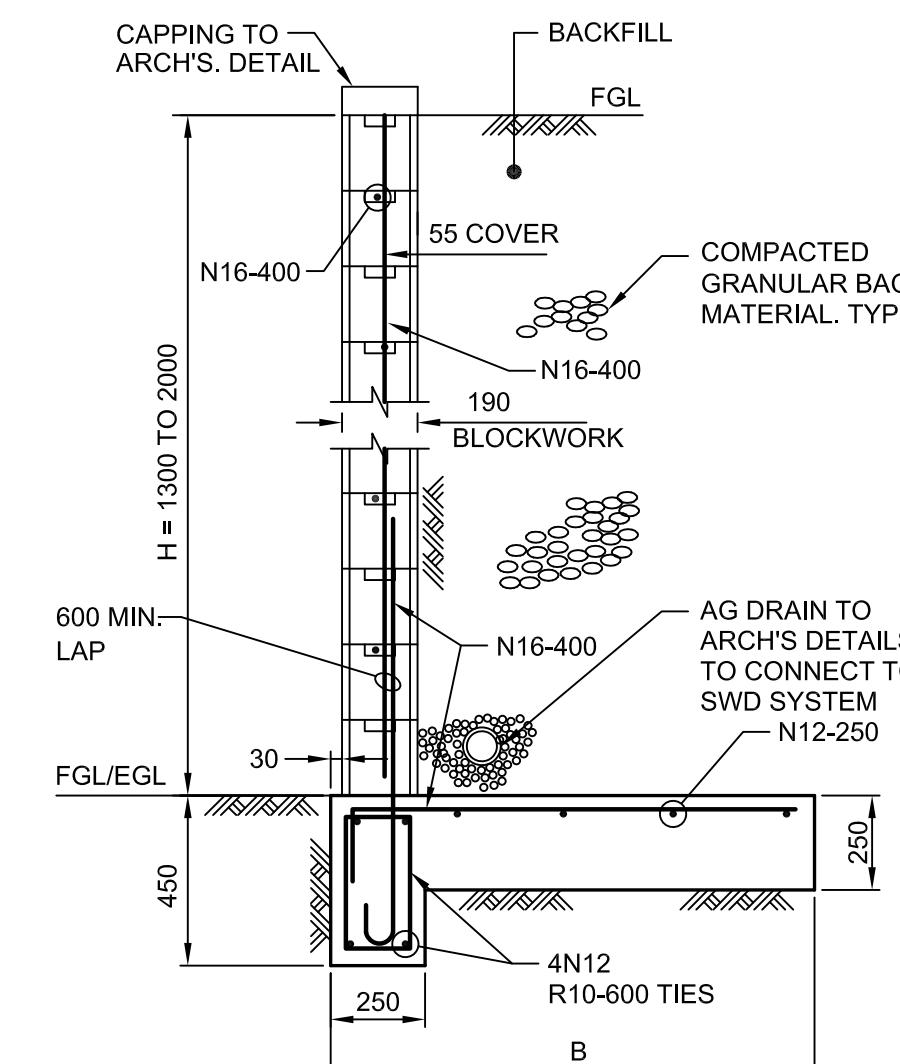


TYPICAL RETAINING WALL DETAIL

H = 800 TO 1200 MAX

SCALE 1:20

BASE DIMENSIONS	
H	B
800	600
1000	700
1200	800

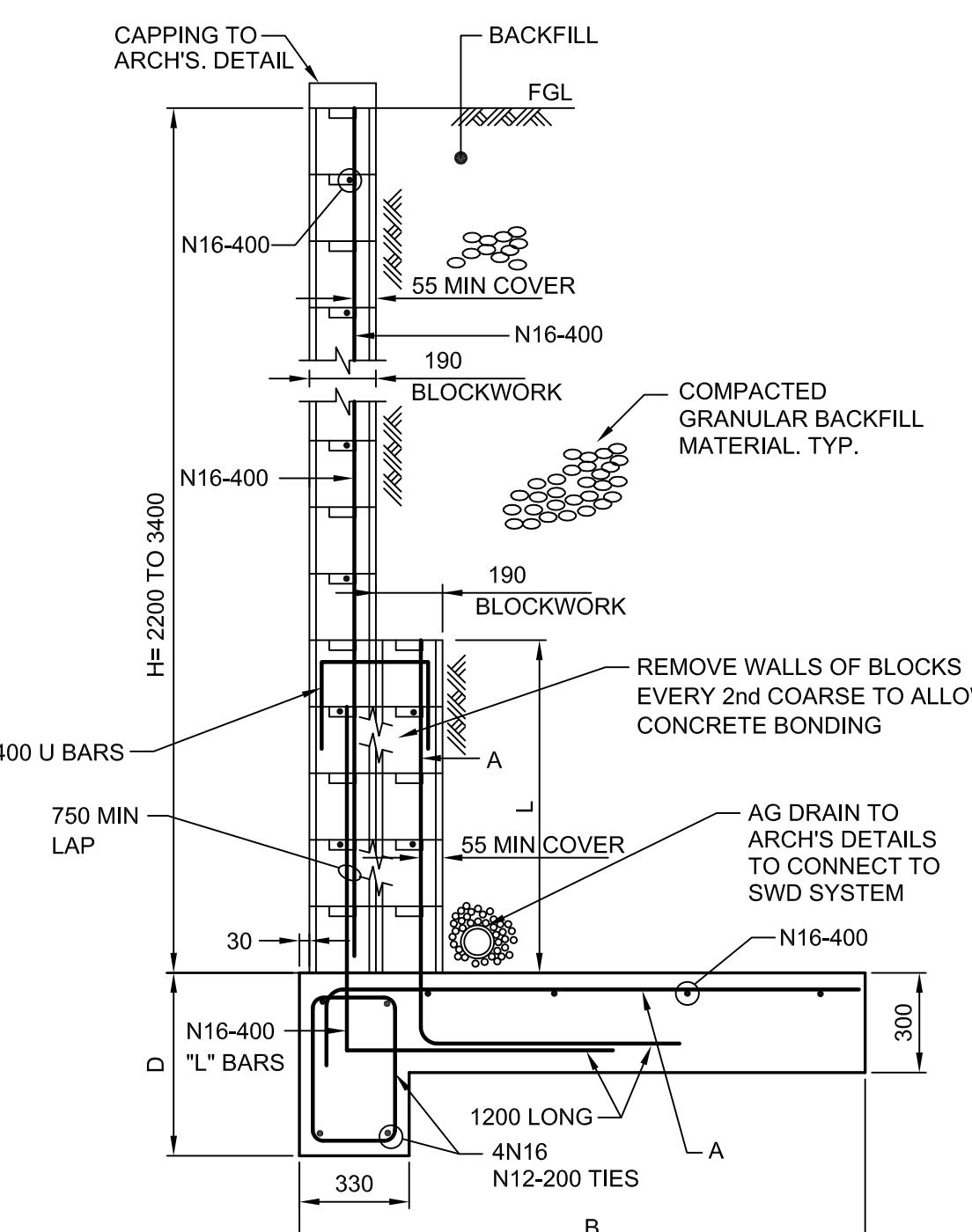


TYPICAL RETAINING WALL DETAIL

H = 1300 TO 1600 MAX

SCALE 1:20

BASE DIMENSIONS	
H	B
1400	1000
1600	1100
1800	1200

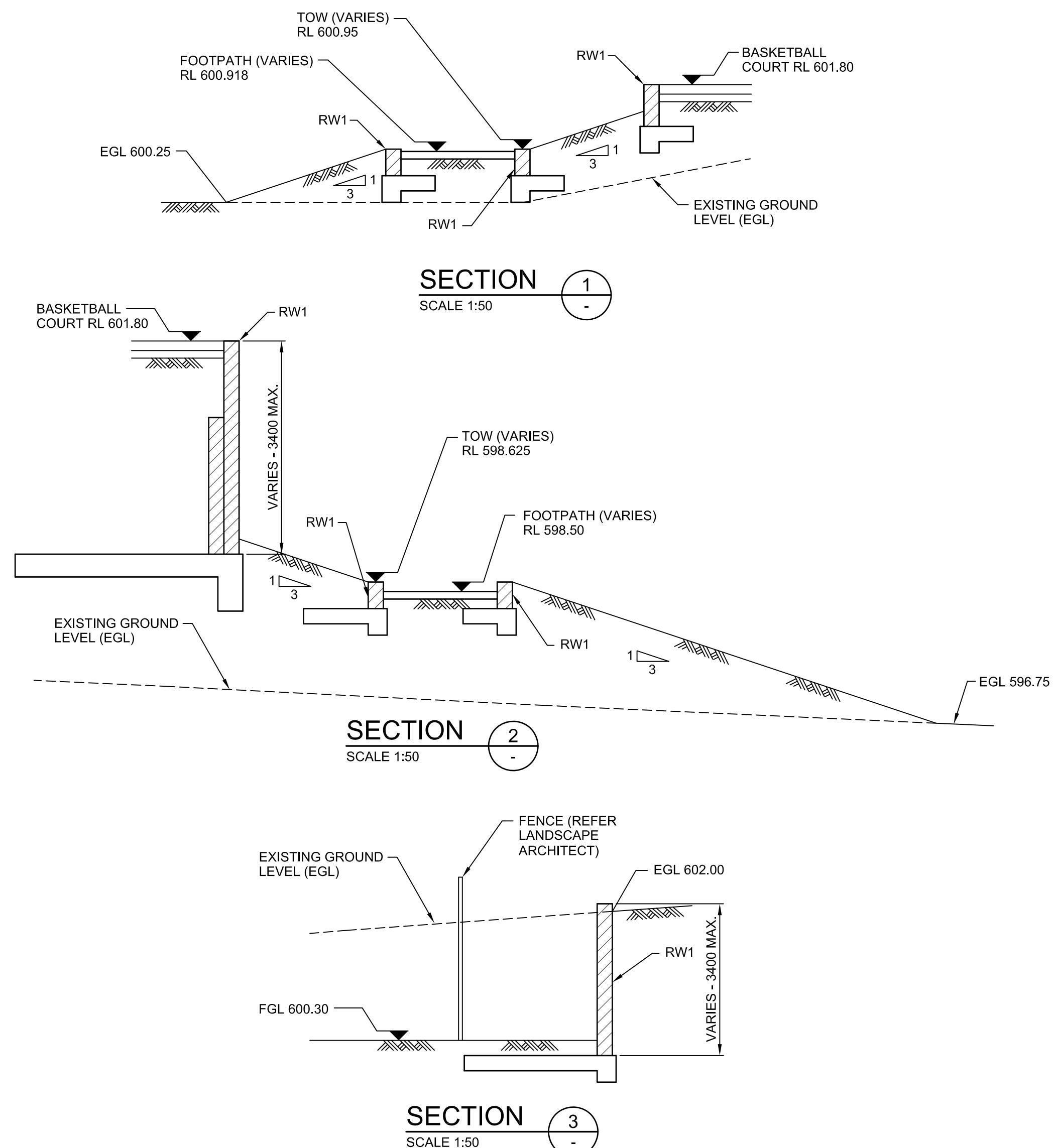


TYPICAL RETAINING WALL DETAIL

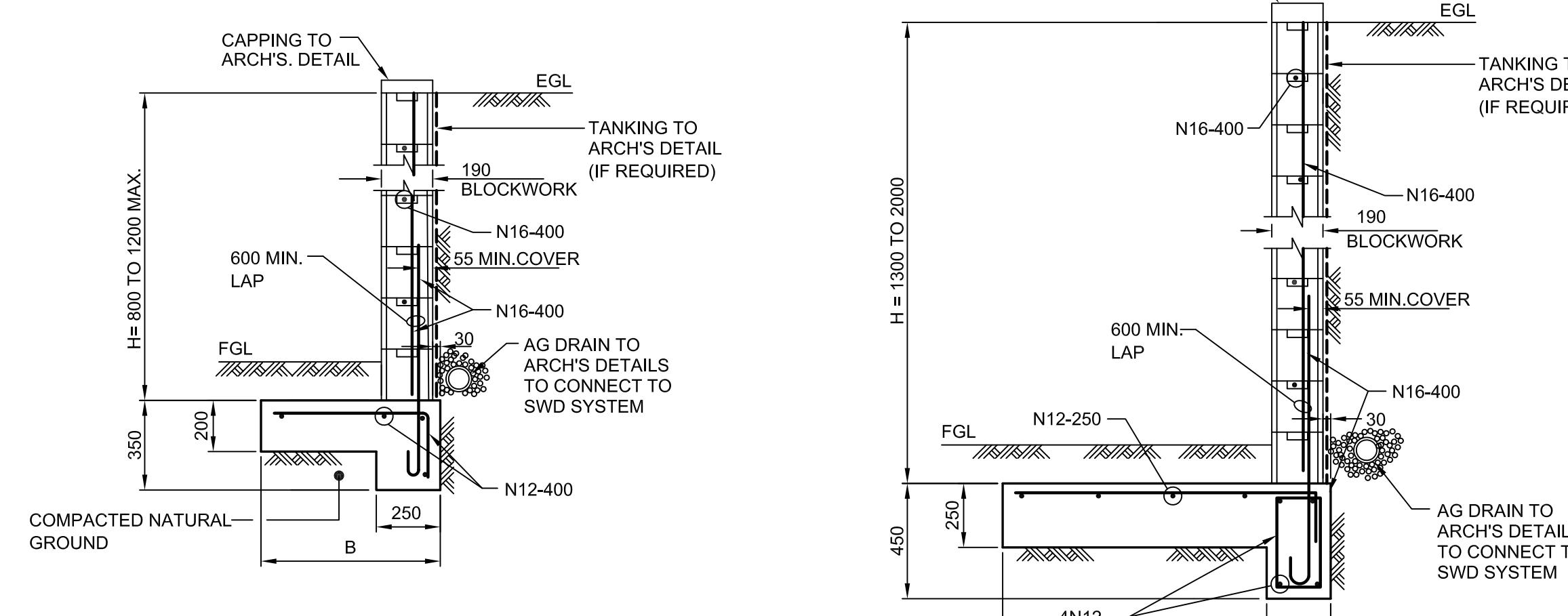
H = 2200 TO 3400 MAX

SCALE 1:20

BASE DIMENSIONS				
H	B	L	A	D
2200	1400	600	N16-400	550
2400	1600	800	N16-400	550
2600	1800	1000	N16-400	550
2800	2000	1200	N16-400	550
3000	2300	1400	N20-400	750
3200	2600	1600	N20-400	750
3400	3000	1800	N20-400	750



**TYPICAL RETAINING WALL DETAILS IN FILL
DENOTED RW1 ON PLANS**

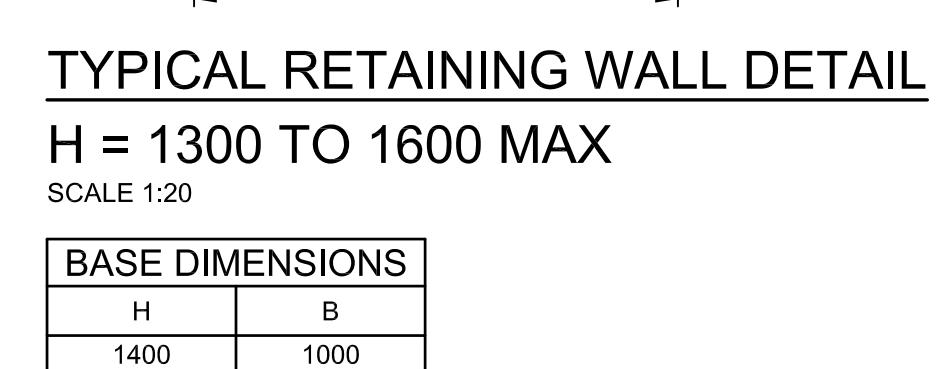


TYPICAL RETAINING WALL DETAIL

H = 800 TO 1200 MAX

SCALE 1:20

BASE DIMENSIONS	
H	B
800	600
1000	700
1200	800

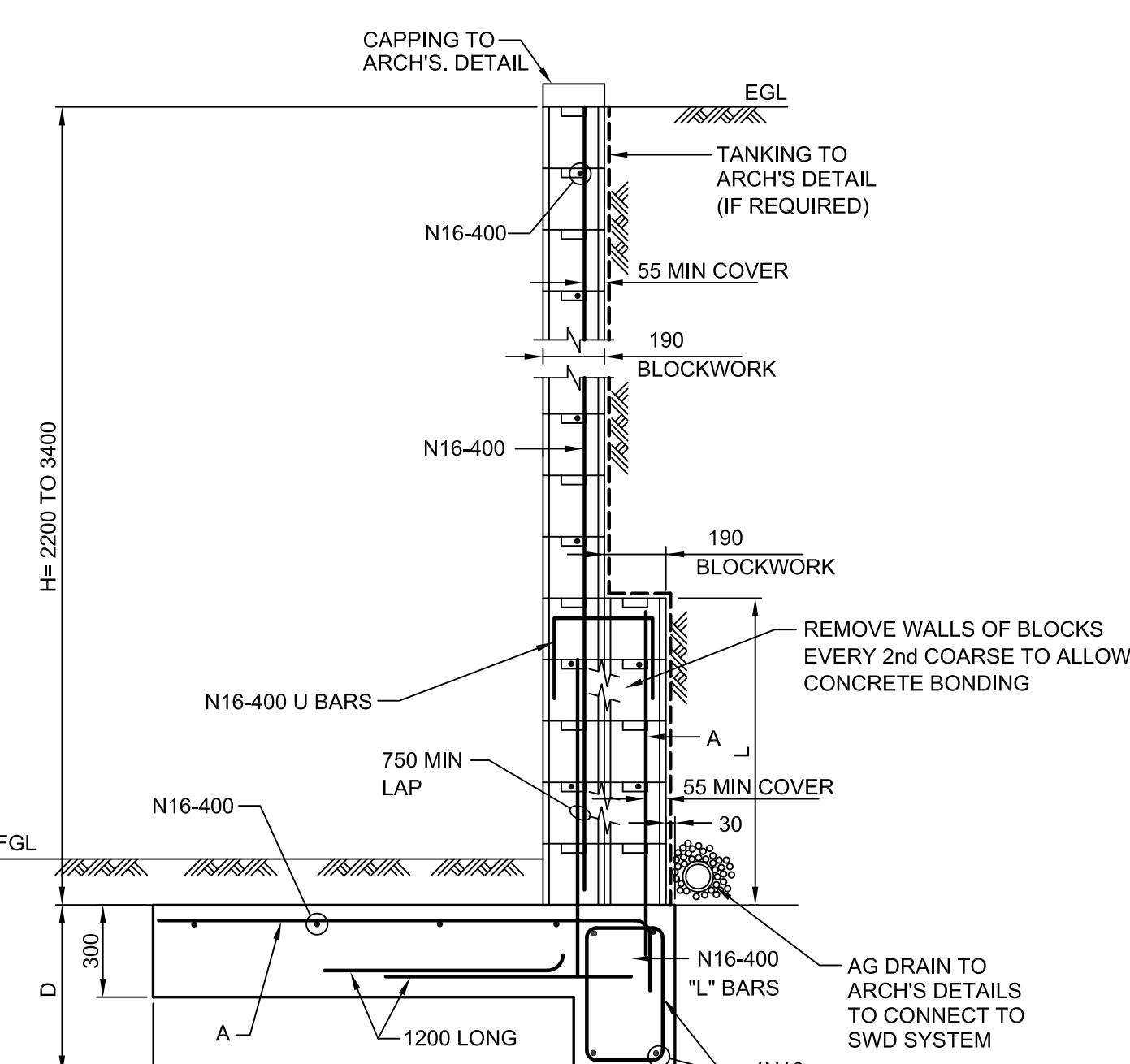


TYPICAL RETAINING WALL DETAIL

H = 1300 TO 1600 MAX

SCALE 1:20

BASE DIMENSIONS	
H	B
1400	1000
1600	1100
1800	1200



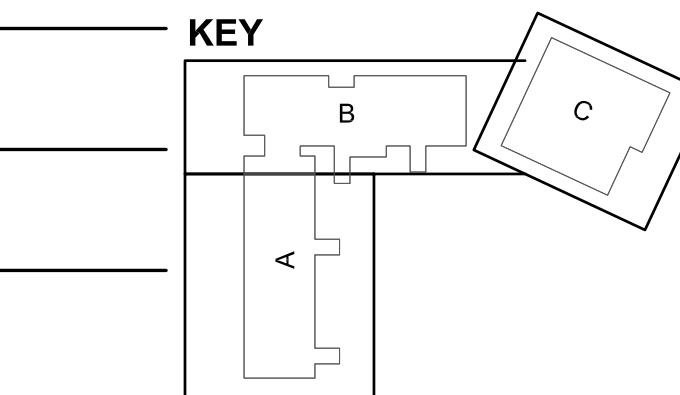
TYPICAL RETAINING WALL DETAIL

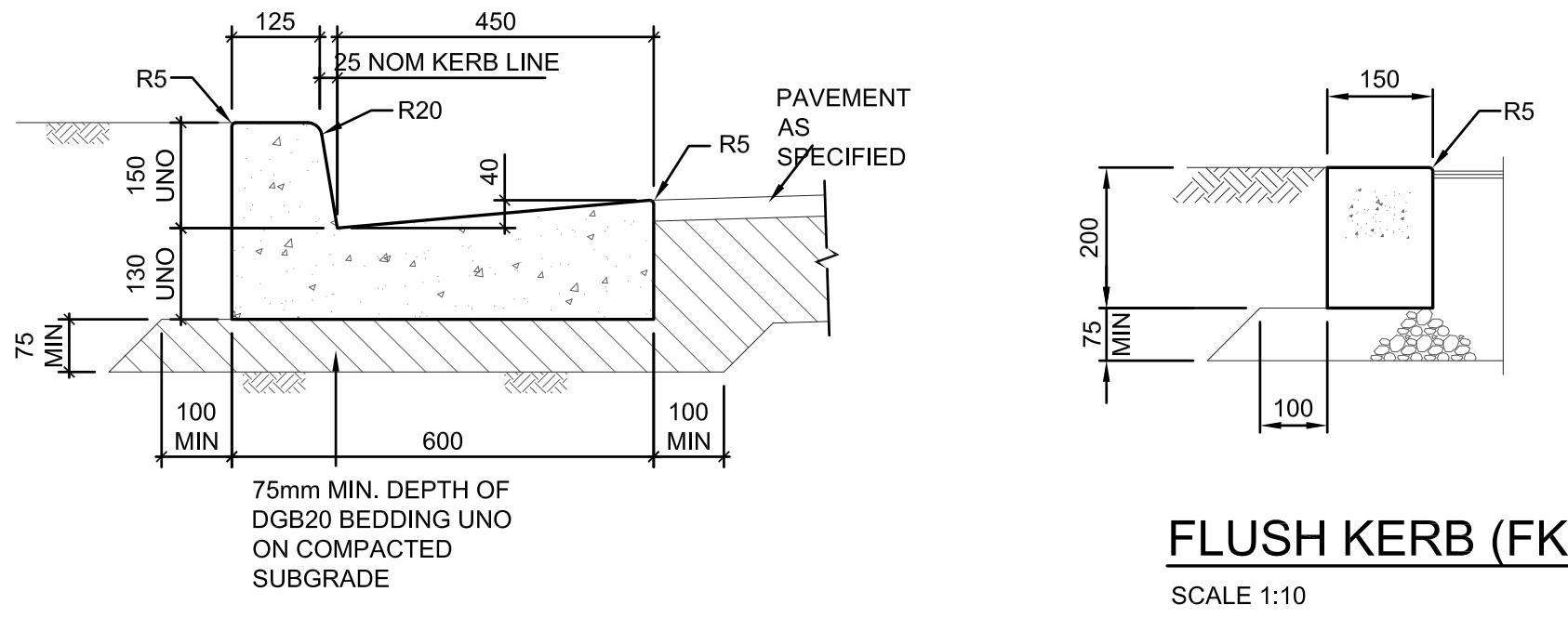
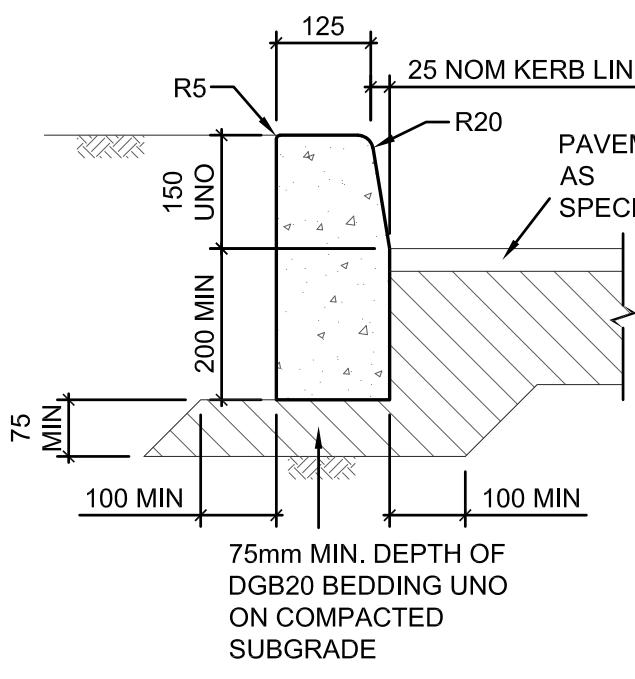
H = 2200 TO 3400 MAX

SCALE 1:20

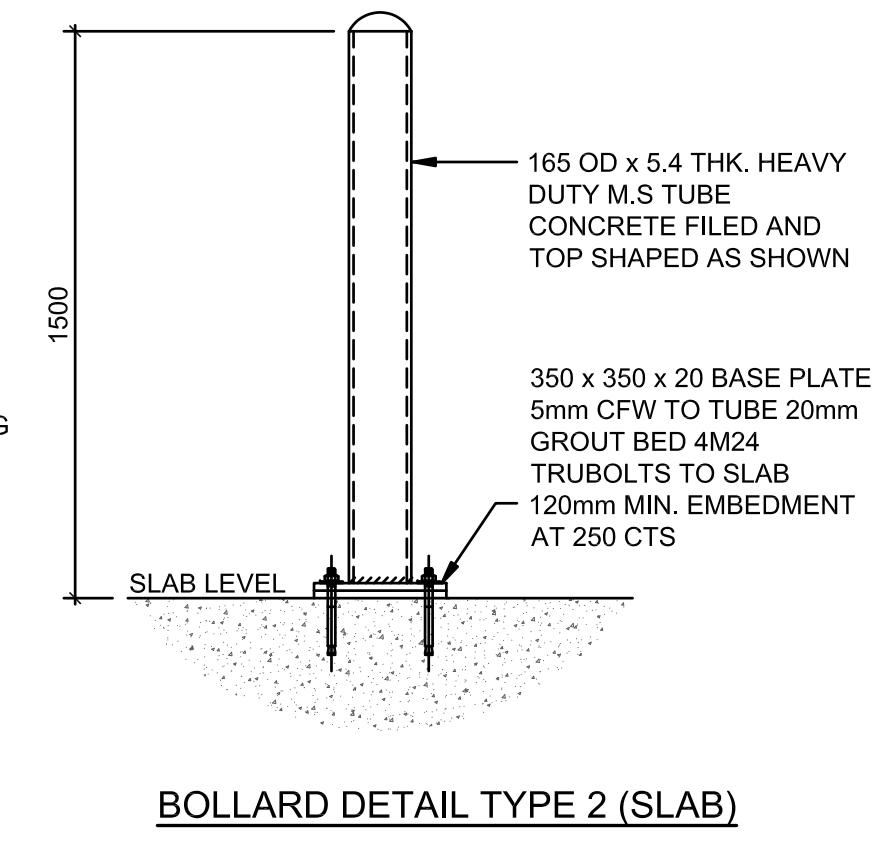
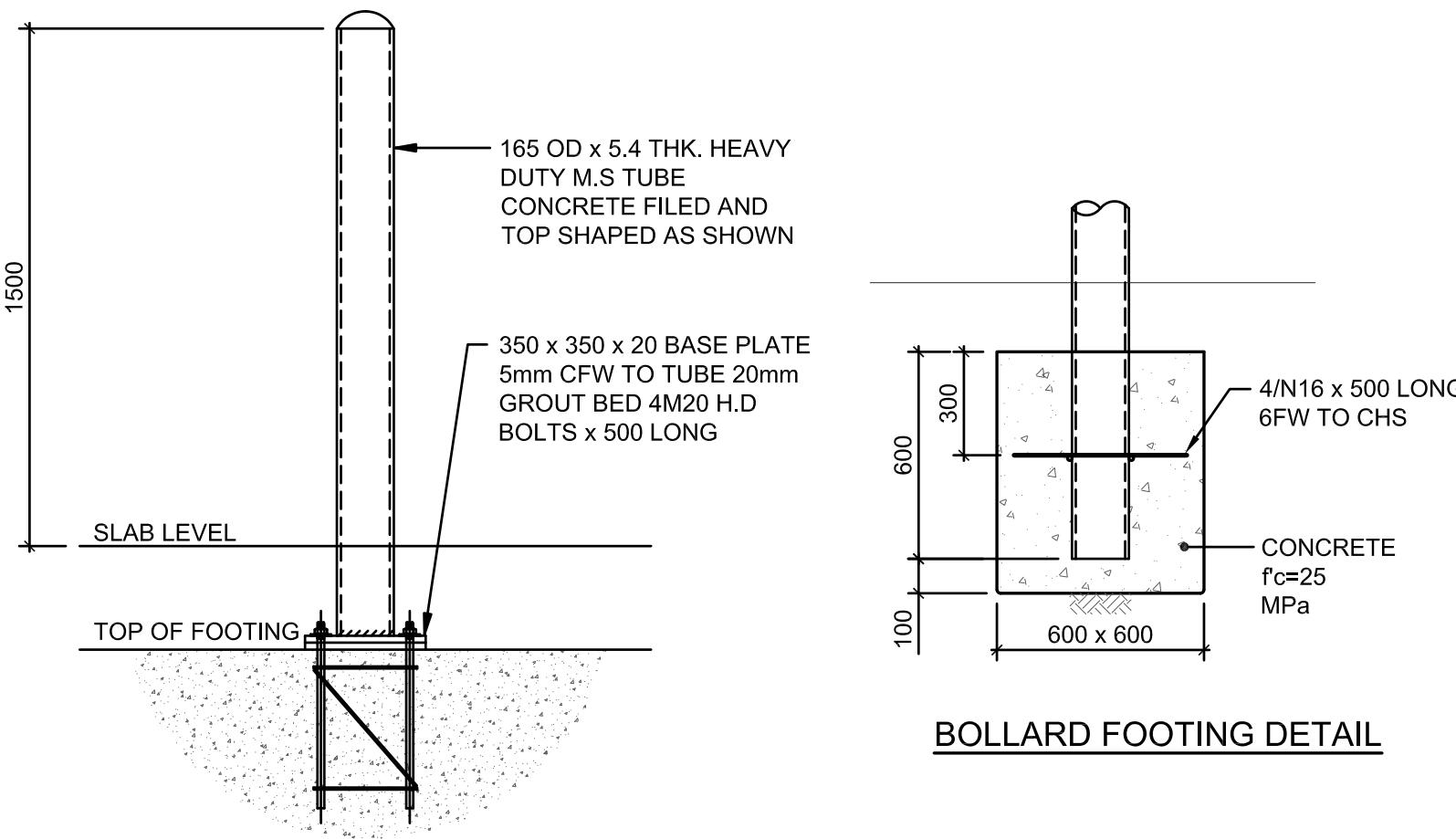
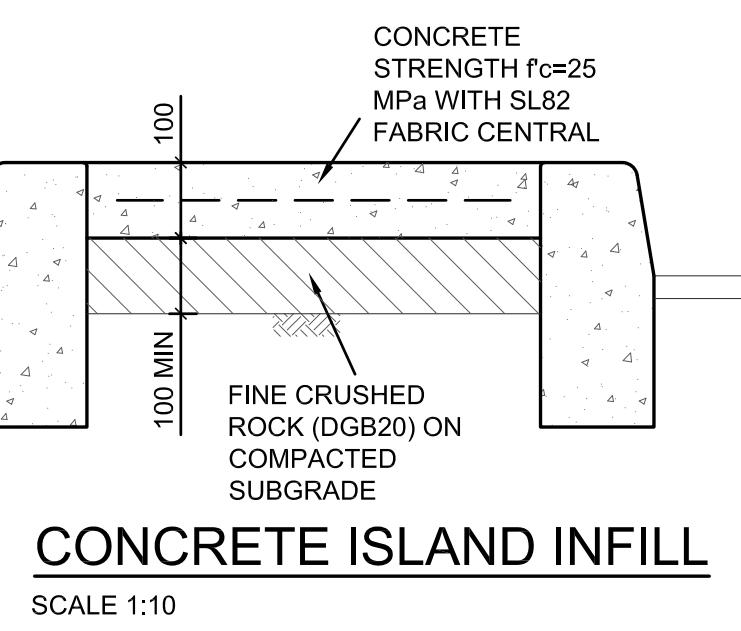
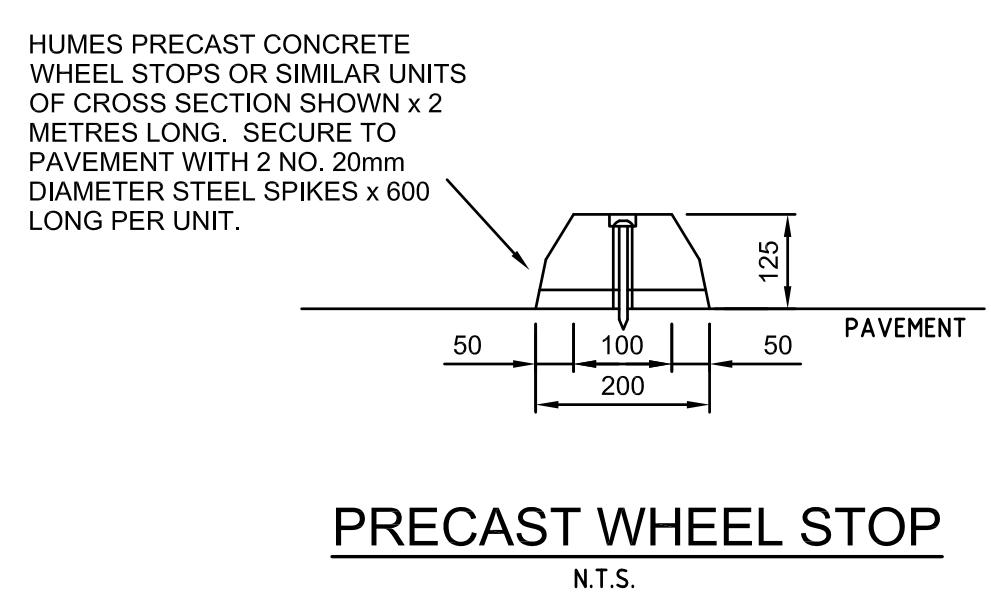
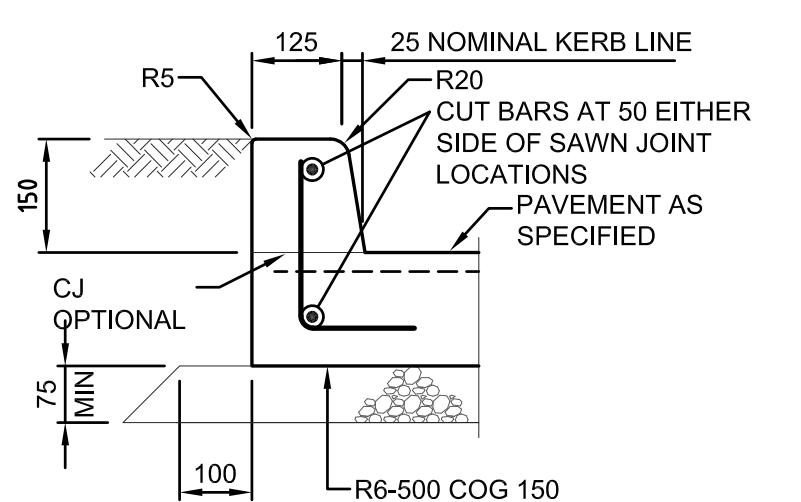
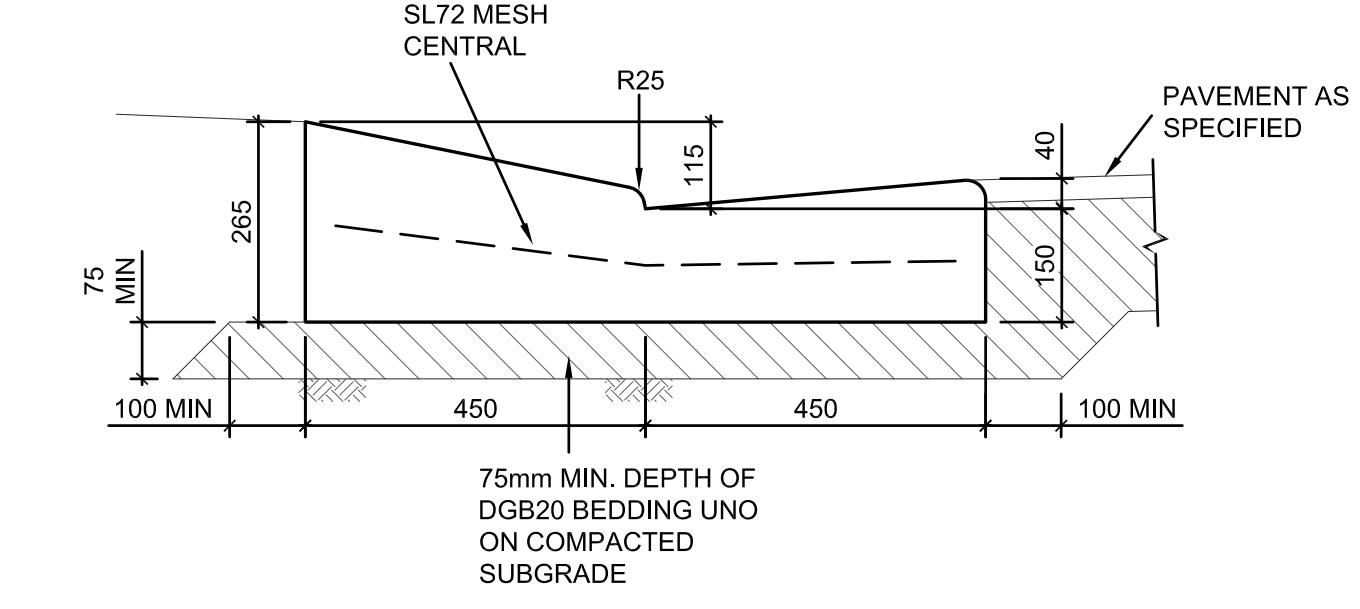
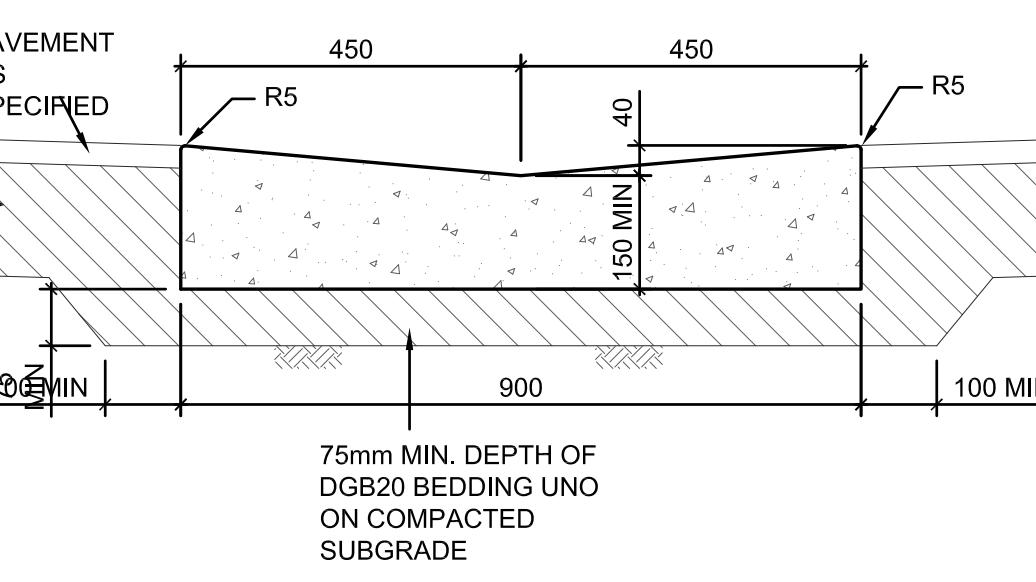
BASE DIMENSIONS				
H	B	L	A	D
2200	1400	600	N16-400	550
2400	1600	800	N16-400	550
2600	1800	1000	N16-400	550
2800	2000	1200	N16-400	550
3000	2300	1400	N20-400	750
3200	2600	1600	N20-400	750
3400	3000	1800	N20-400	750

**TYPICAL RETAINING WALL DETAILS IN CUT
DENOTED RW1 ON PLANS**



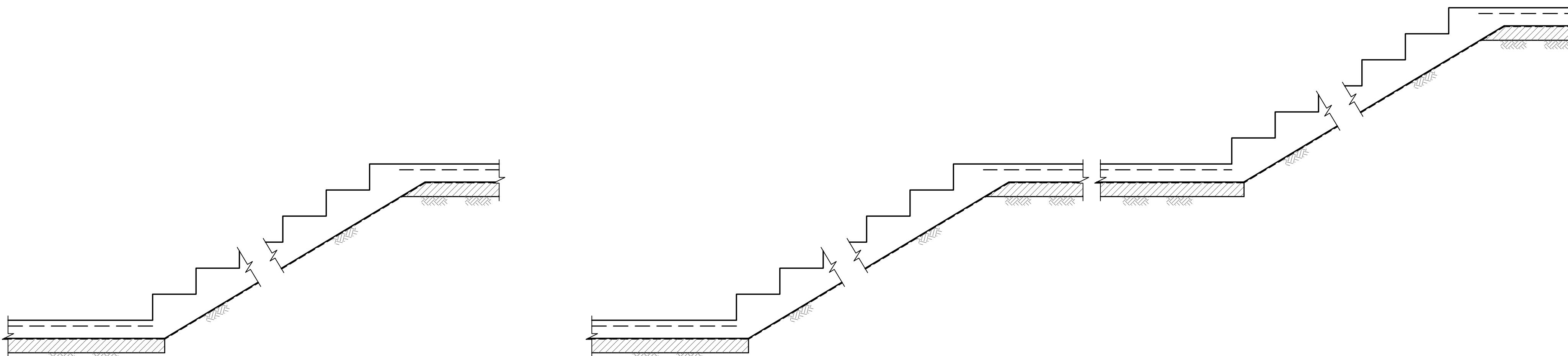
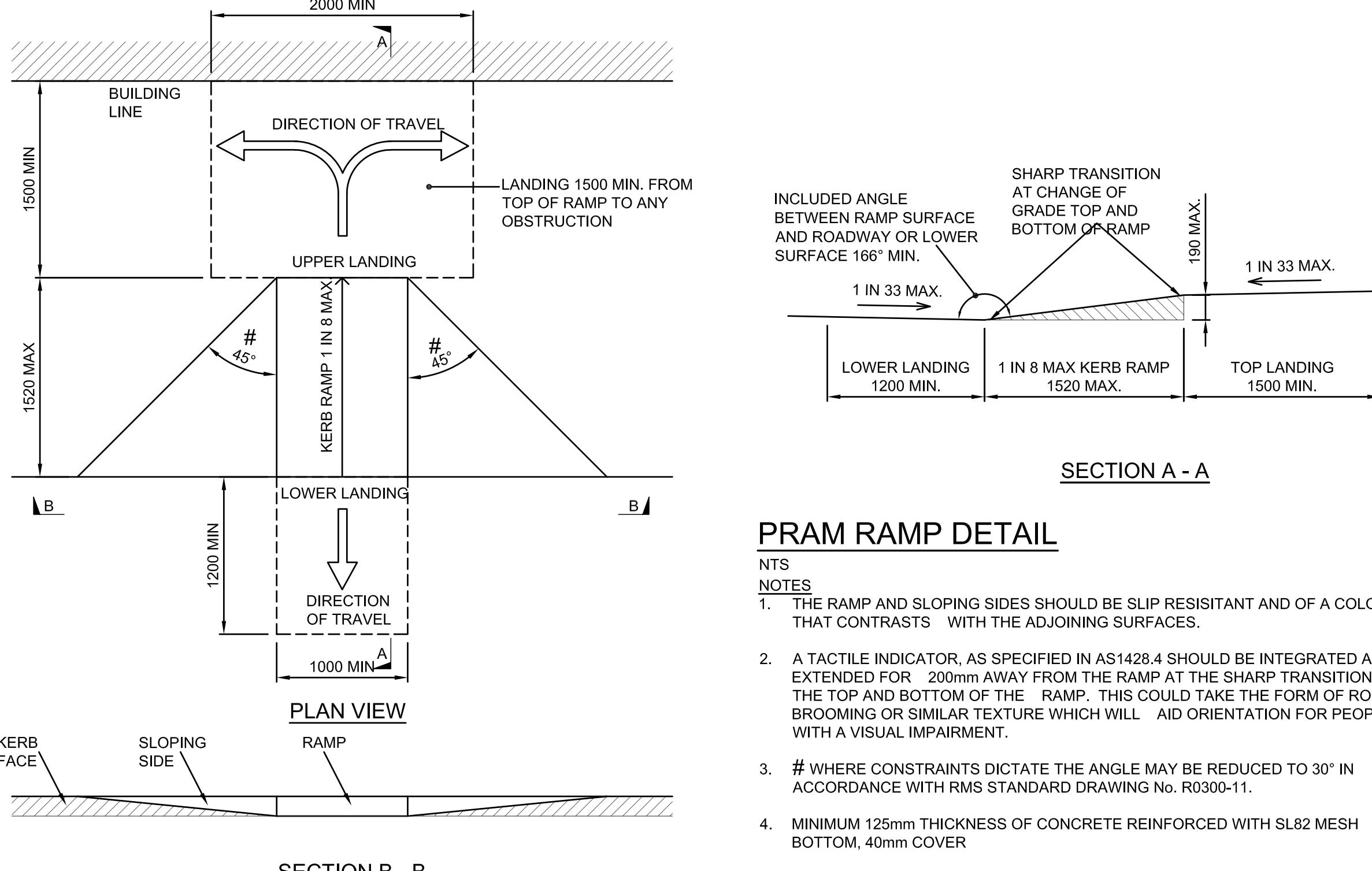


FLUSH KERB (FK)



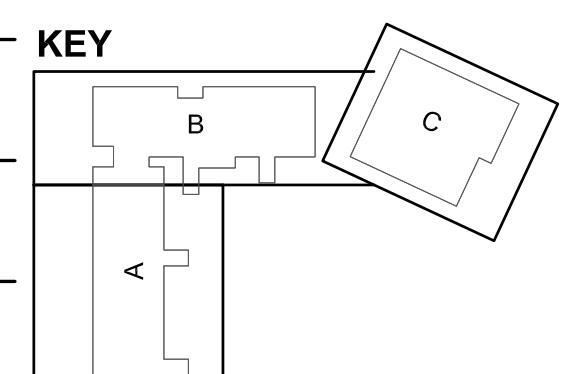
TYPICAL BOLLARD DETAILS

SCALE 1:20



TYPICAL EXTERNAL STAIR DETAILS

SCALE 1:20



Do not scale drawings. Verify all dimensions on site.		
Rev	Date	Description
A	24.03.21	DRAFT SCHEMATIC DESIGN ISSUE
B	16.04.21	SCHEMATIC DESIGN
C	07.05.21	SCHEMATIC DESIGN
D	12.05.21	SCHEMATIC DESIGN
E	15.10.21	PRELIMINARY FOR DD
F	12.11.21	ISSUED FOR DD
G	24.03.22	ISSUED FOR RESPONSE TO SUBMISSIONS

Project		
High School in Jerrabomberra	Designed MW	Reviewed SCM
ENVIRON DRIVE, JERRABOMBERRA NSW 2619	Drawn MW	Sheet B1
Drawing Title		
SITE WORK DETAILS		

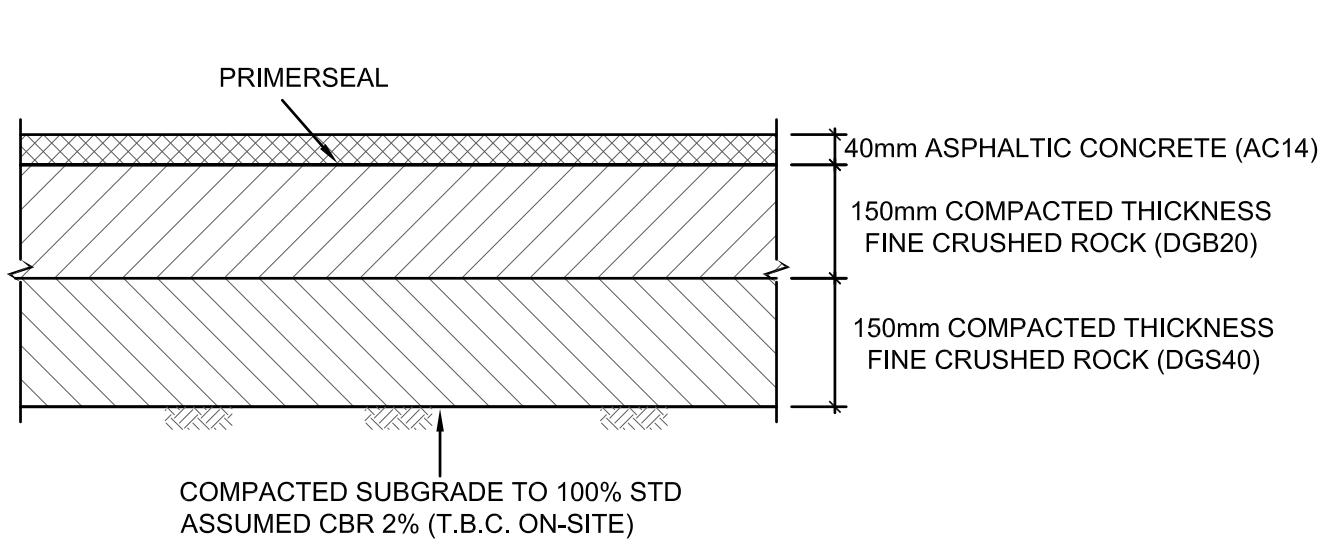
Designed MW	Reviewed SCM	Drawn MW	Sheet B1
Job No. 5555	Status DD	Date OCT '21	Scale AS NOTED AT B1
Drawing No. JHS-CE-2071	Revision G		

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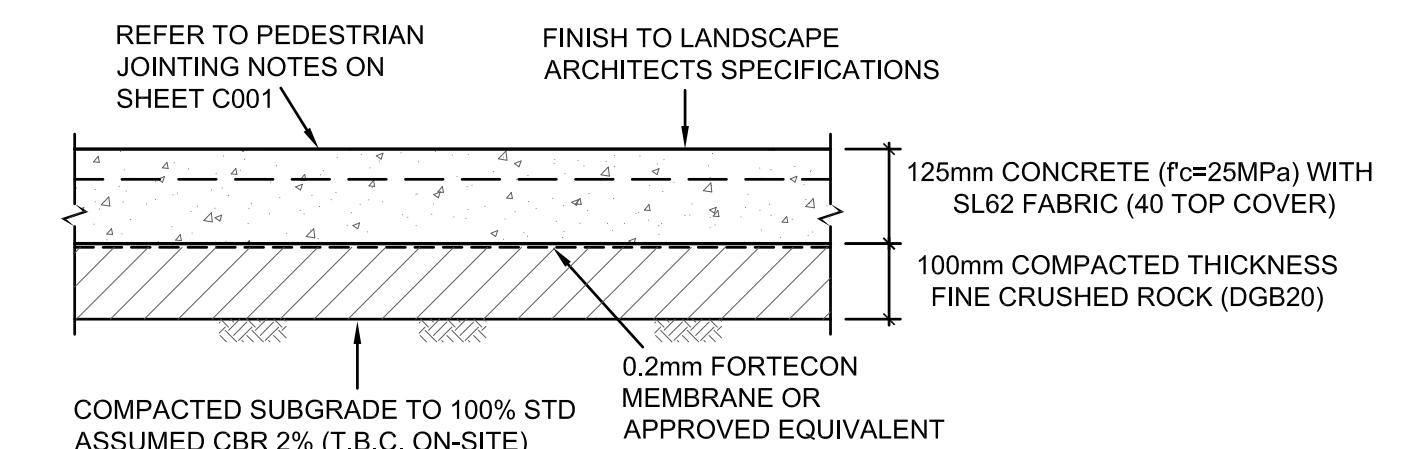
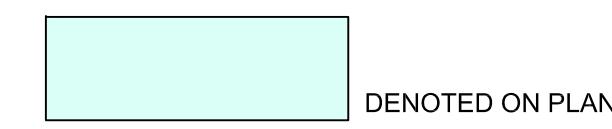
M+G CONSULTING ENGINEERS PTY LTD ABN 65 094 064 990
Tel: +61 (02) 8666 7888





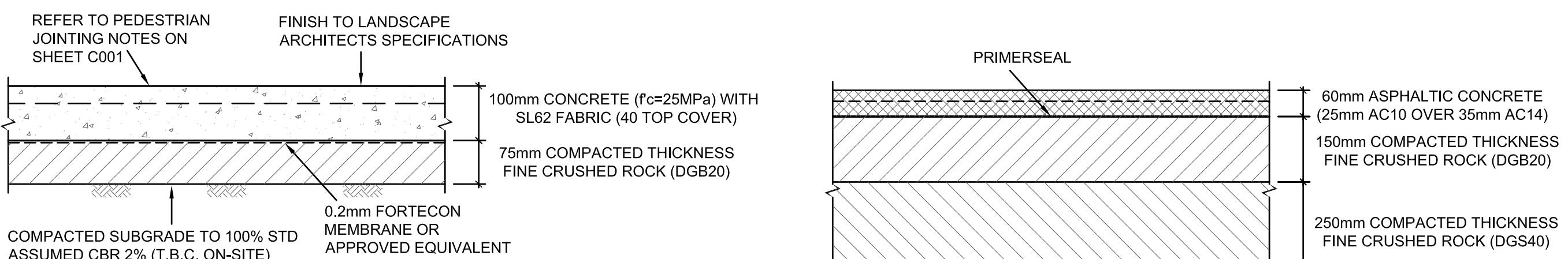
PAVEMENT TYPE 1
MEDIUM DUTY ASPHALT PAVEMENT

SCALE 1:10



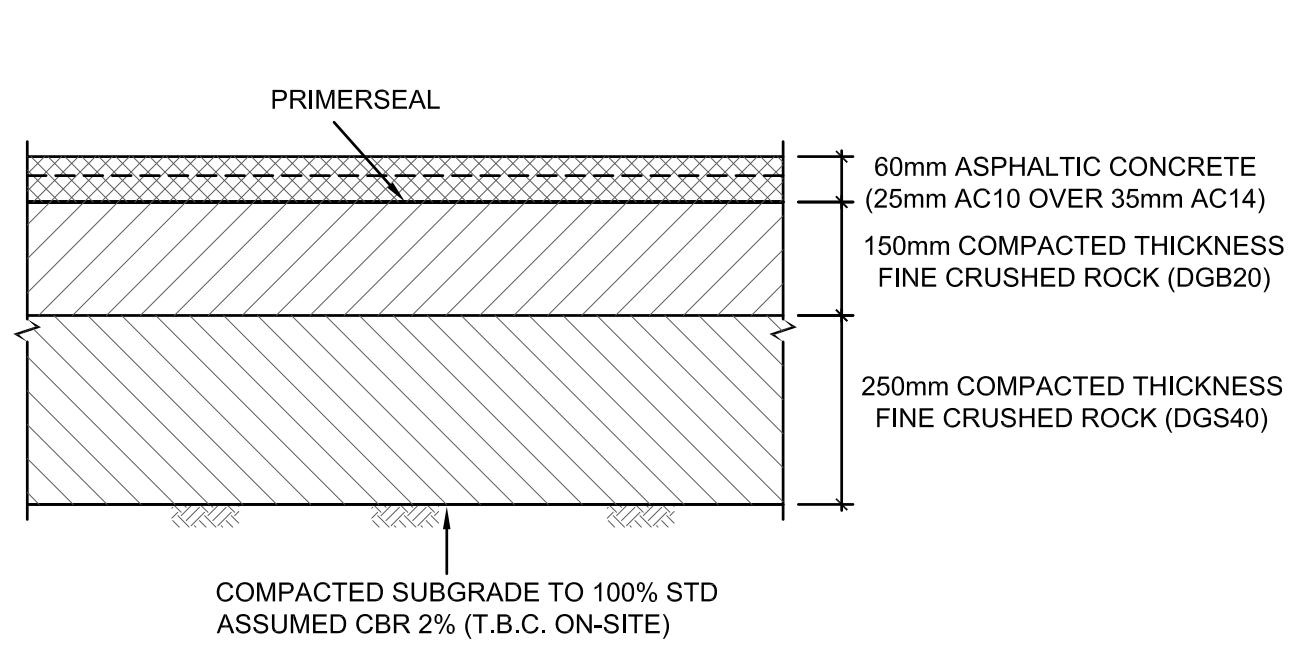
PAVEMENT TYPE 2
HEAVY DUTY CONCRETE PAVEMENT
PEDESTRAIN AND LIGHT VEHICLE

SCALE 1:10



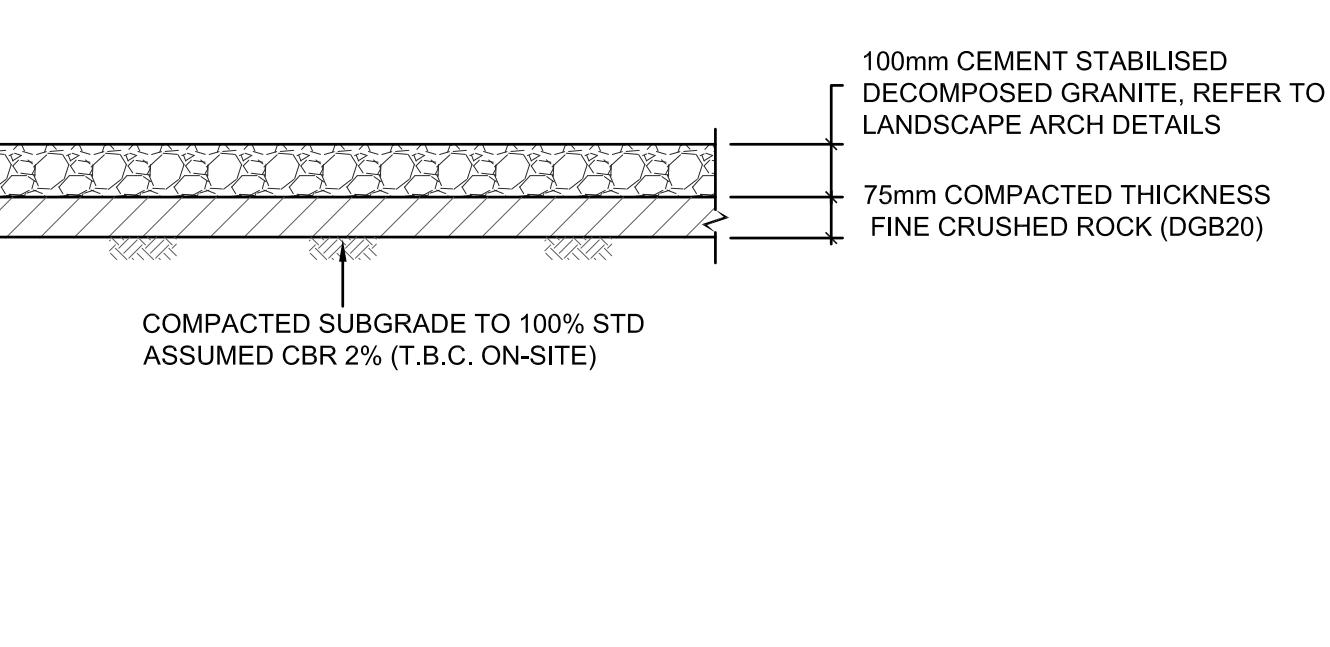
PAVEMENT TYPE 3
CONCRETE FOOTPATH PAVEMENT
PEDESTRAIN ONLY

SCALE 1:10



PAVEMENT TYPE 4
HEAVY DUTY ASPHALT PAVEMENT

SCALE 1:10

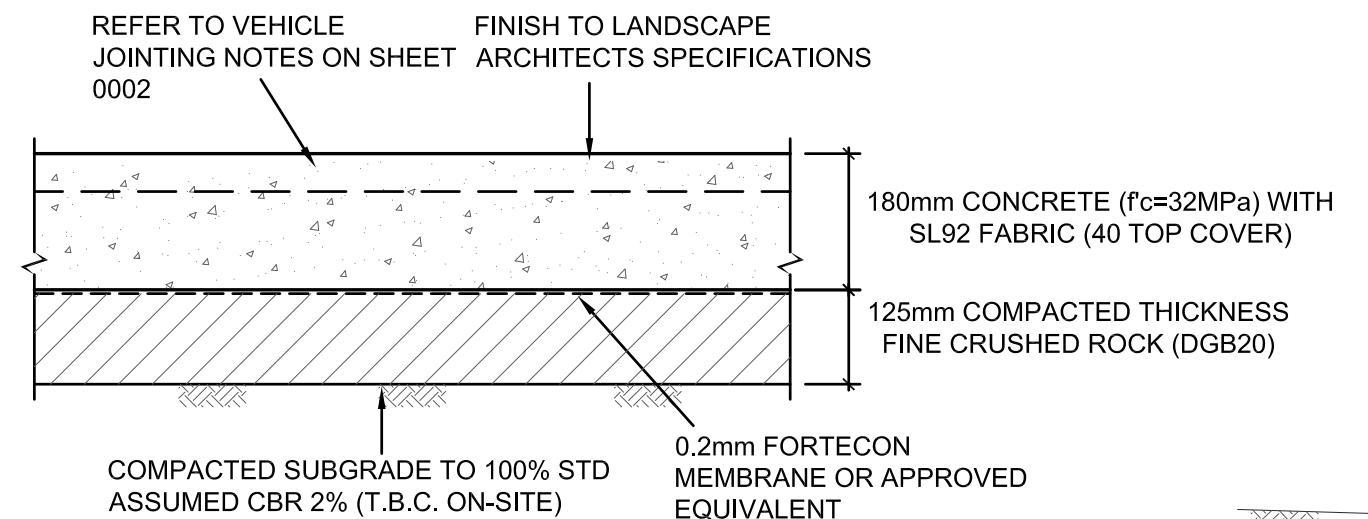


PAVEMENT TYPE 5

SCALE 1:10

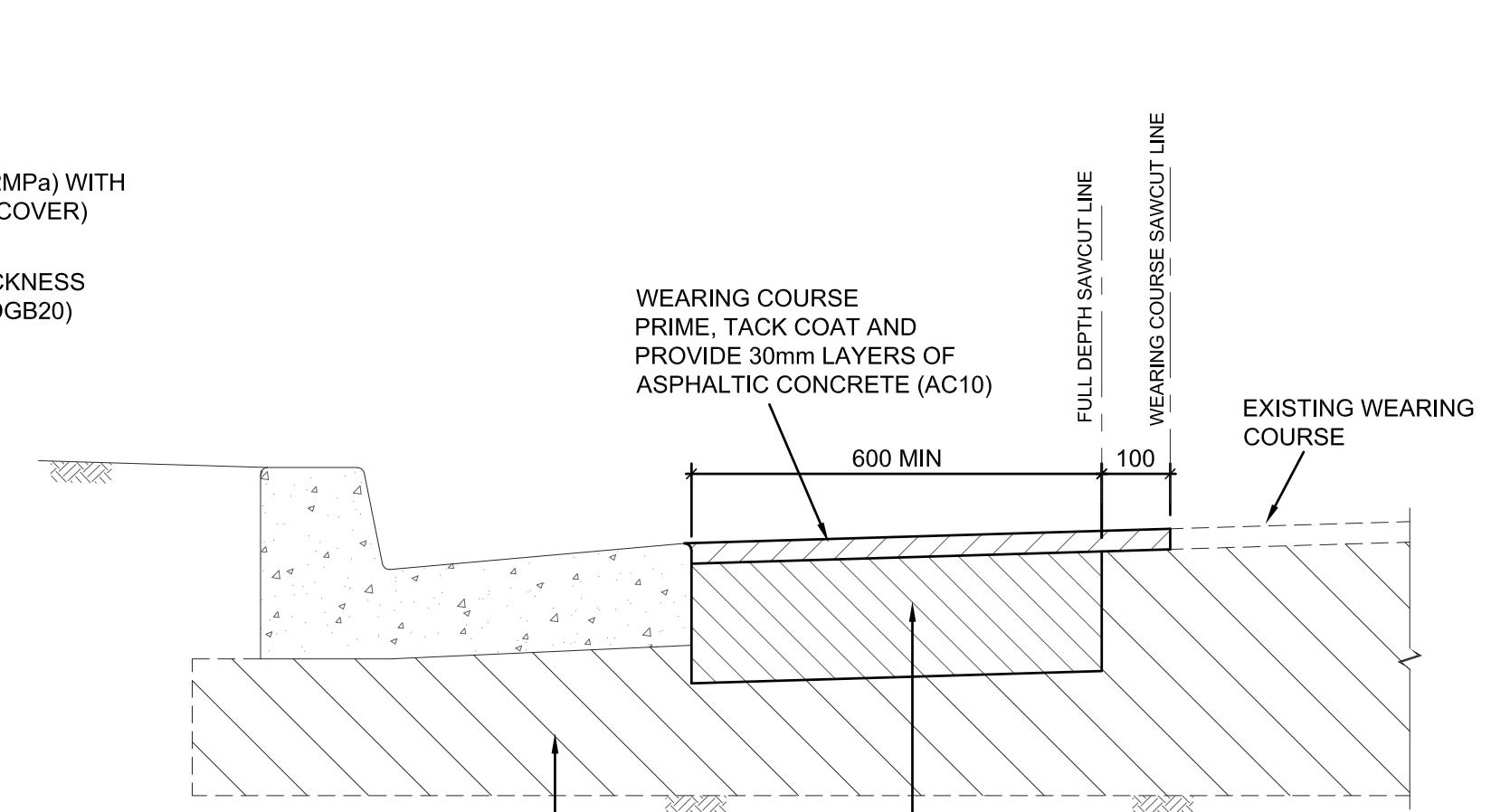


REFER TO VEHICLE JOINTING NOTES ON SHEET 0002
FINISH TO LANDSCAPE ARCHITECTS SPECIFICATIONS



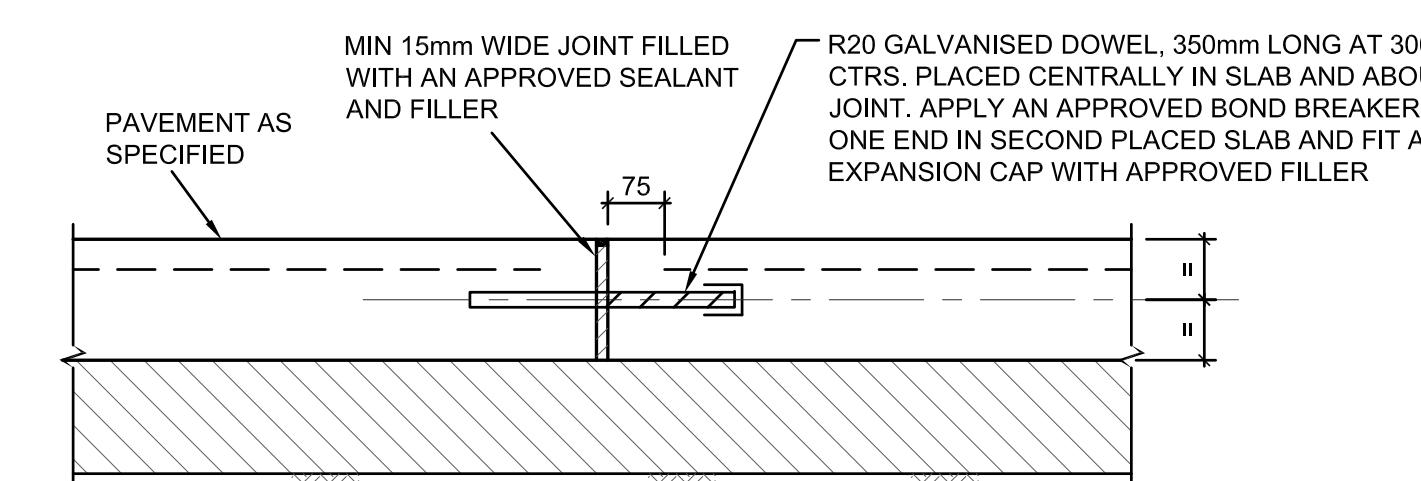
PAVEMENT TYPE 6
HEAVY DUTY CONCRETE PAVEMENT

SCALE 1:10



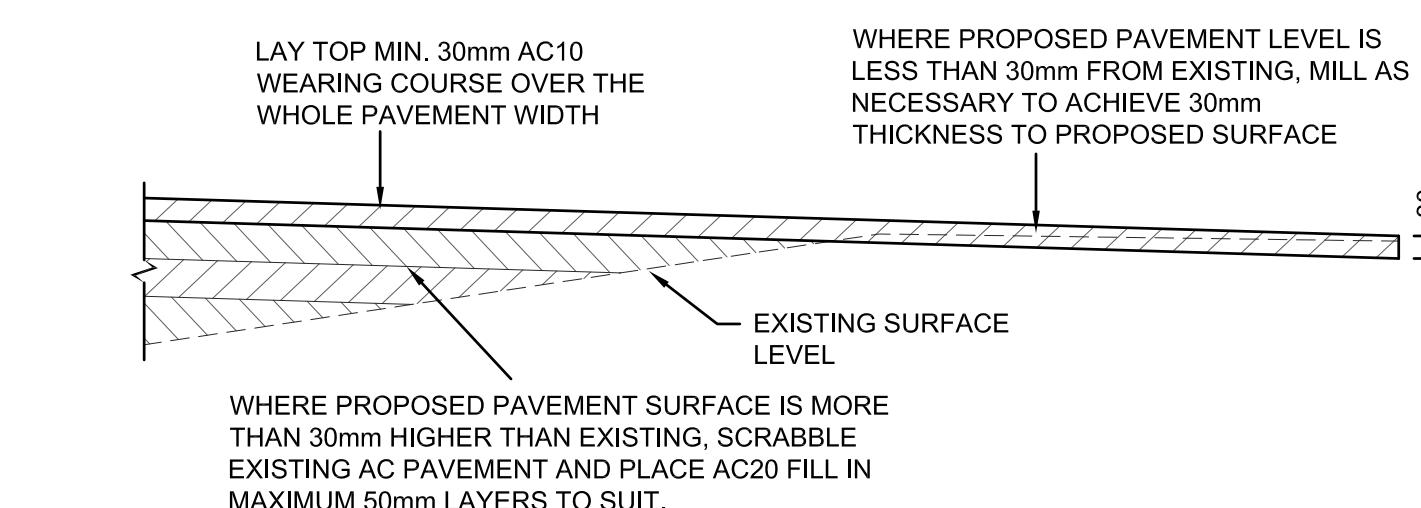
PAVEMENT - DEEPLIFT

SCALE 1:10



DOWELLED EXPANSION JOINT (DEJ)

SCALE 1:10



MILL RE-SHEET/SCRABBLE AND FILL DETAIL

SCALE 1:10

COMPACTED SUBGRADE TO 100% STD
ASSUMED CBR 2% (T.B.C. ON-SITE)

0.2mm FORTECON MEMBRANE OR APPROVED EQUIVALENT

150mm COMPACTED THICKNESS FINE CRUSHED ROCK (DGB20)

150mm COMPACTED THICKNESS FINE CRUSHED ROCK (DGS40)

40mm ASPHALTIC CONCRETE (AC14)

PRIMERSEAL

DENOTED ON PLAN

COMPACTED SUBGRADE TO 100% STD
ASSUMED CBR 2% (T.B.C. ON-SITE)

0.2mm FORTECON MEMBRANE OR APPROVED EQUIVALENT

150mm COMPACTED THICKNESS FINE CRUSHED ROCK (DGB20)

180mm CONCRETE (f'c=32MPa) WITH SL92 FABRIC (40 TOP COVER)

PRIMERSEAL

DENOTED ON PLAN

COMPACTED SUBGRADE TO 100% STD
ASSUMED CBR 2% (T.B.C. ON-SITE)

0.2mm FORTECON MEMBRANE OR APPROVED EQUIVALENT

125mm COMPACTED THICKNESS FINE CRUSHED ROCK (DGB20)

100mm CONCRETE (f'c=25MPa) WITH SL62 FABRIC (40 TOP COVER)

PRIMERSEAL

DENOTED ON PLAN

COMPACTED SUBGRADE TO 100% STD
ASSUMED CBR 2% (T.B.C. ON-SITE)

0.2mm FORTECON MEMBRANE OR APPROVED EQUIVALENT

75mm COMPACTED THICKNESS FINE CRUSHED ROCK (DGB20)

100mm CONCRETE (f'c=25MPa) WITH SL62 FABRIC (40 TOP COVER)

PRIMERSEAL

DENOTED ON PLAN

COMPACTED SUBGRADE TO 100% STD
ASSUMED CBR 2% (T.B.C. ON-SITE)

0.2mm FORTECON MEMBRANE OR APPROVED EQUIVALENT

250mm COMPACTED THICKNESS FINE CRUSHED ROCK (DGS40)

60mm ASPHALTIC CONCRETE (25mm AC10 over 35mm AC14)

PRIMERSEAL

DENOTED ON PLAN

COMPACTED SUBGRADE TO 100% STD
ASSUMED CBR 2% (T.B.C. ON-SITE)

0.2mm FORTECON MEMBRANE OR APPROVED EQUIVALENT

75mm COMPACTED THICKNESS FINE CRUSHED ROCK (DGB20)

100mm CEMENT STABILISED DECOMPOSED GRANITE, REFER TO LANDSCAPE ARCH DETAILS

PRIMERSEAL

DENOTED ON PLAN

COMPACTED SUBGRADE TO 100% STD
ASSUMED CBR 2% (T.B.C. ON-SITE)

0.2mm FORTECON MEMBRANE OR APPROVED EQUIVALENT

75mm COMPACTED THICKNESS FINE CRUSHED ROCK (DGB20)

100mm CEMENT STABILISED DECOMPOSED GRANITE, REFER TO LANDSCAPE ARCH DETAILS

PRIMERSEAL

DENOTED ON PLAN

COMPACTED SUBGRADE TO 100% STD
ASSUMED CBR 2% (T.B.C. ON-SITE)

0.2mm FORTECON MEMBRANE OR APPROVED EQUIVALENT

250mm COMPACTED THICKNESS FINE CRUSHED ROCK (DGS40)

60mm ASPHALTIC CONCRETE (25mm AC10 over 35mm AC14)

PRIMERSEAL

DENOTED ON PLAN

COMPACTED SUBGRADE TO 100% STD
ASSUMED CBR 2% (T.B.C. ON-SITE)

0.2mm FORTECON MEMBRANE OR APPROVED EQUIVALENT

75mm COMPACTED THICKNESS FINE CRUSHED ROCK (DGB20)

100mm CEMENT STABILISED DECOMPOSED GRANITE, REFER TO LANDSCAPE ARCH DETAILS

PRIMERSEAL

DENOTED ON PLAN

COMPACTED SUBGRADE TO 100% STD
ASSUMED CBR 2% (T.B.C. ON-SITE)

0.2mm FORTECON MEMBRANE OR APPROVED EQUIVALENT

75mm COMPACTED THICKNESS FINE CRUSHED ROCK (DGB20)

100mm CEMENT STABILISED DECOMPOSED GRANITE, REFER TO LANDSCAPE ARCH DETAILS

PRIMERSEAL

DENOTED ON PLAN

COMPACTED SUBGRADE TO 100% STD
ASSUMED CBR 2% (T.B.C. ON-SITE)

0.2mm FORTECON MEMBRANE OR APPROVED EQUIVALENT

75mm COMPACTED THICKNESS FINE CRUSHED ROCK (DGB20)

100mm CEMENT STABILISED DECOMPOSED GRANITE, REFER TO LANDSCAPE ARCH DETAILS

PRIMERSEAL

DENOTED ON PLAN

COMPACTED SUBGRADE TO 100% STD
ASSUMED CBR 2% (T.B.C. ON-SITE)

0.2mm FORTECON MEMBRANE OR APPROVED EQUIVALENT

75mm COMPACTED THICKNESS FINE CRUSHED ROCK (DGB20)

100mm CEMENT STABILISED DECOMPOSED GRANITE, REFER TO LANDSCAPE ARCH DETAILS

PRIMERSEAL

DENOTED ON PLAN

COMPACTED SUBGRADE TO 100% STD
ASSUMED CBR 2% (T.B.C. ON-SITE)

0.2mm FORTECON MEMBRANE OR APPROVED EQUIVALENT

75mm COMPACTED THICKNESS FINE CRUSHED ROCK (DGB20)

100mm CEMENT STABILISED DECOMPOSED GRANITE, REFER TO LANDSCAPE ARCH DETAILS

PRIMERSEAL

DENOTED ON PLAN

COMPACTED SUBGRADE TO 100% STD
ASSUMED CBR 2% (T.B.C. ON-SITE)

0.2mm FORTECON MEMBRANE OR APPROVED EQUIVALENT

75mm COMPACTED THICKNESS FINE CRUSHED ROCK (DGB20)

100mm CEMENT STABILISED DECOMPOSED GRANITE, REFER TO LANDSCAPE ARCH DETAILS

PRIMERSEAL

DENOTED ON PLAN

COMPACTED SUBGRADE TO 100% STD
ASSUMED CBR 2% (T.B.C. ON-SITE)

0.2mm FORTECON MEMBRANE OR APPROVED EQUIVALENT

75mm COMPACTED THICKNESS FINE CRUSHED ROCK (DGB20)

100mm CEMENT STABILISED DECOMPOSED GRANITE, REFER TO LANDSCAPE ARCH DETAILS

PRIMERSEAL

DENOTED ON PLAN

COMPACTED SUBGRADE TO 100% STD
ASSUMED CBR 2% (T.B.C. ON-SITE)

0.2mm FORTECON MEMBRANE OR APPROVED EQUIVALENT

75mm COMPACTED THICKNESS FINE CRUSHED ROCK (DGB20)

100mm CEMENT STABILISED DECOMPOSED GRANITE, REFER TO LANDSCAPE ARCH DETAILS

PRIMERSEAL

DENOTED ON PLAN

COMPACTED SUBGRADE TO 100% STD
ASSUMED CBR 2% (T.B.C. ON-SITE)

0.2mm FORTECON MEMBRANE OR APPROVED EQUIVALENT

75mm COMPACTED THICKNESS FINE CRUSHED ROCK (DGB20)

100mm CEMENT STABILISED DECOMPOSED GRANITE, REFER TO LANDSCAPE ARCH DETAILS

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