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SMGS

HYDRAULIC, WET FIRE AND CILVIL SERVICES Return Services Brief



Issue	Date	Purpose	Ву	Reviewed	Approved
P1	29/9/20	Preliminary Draft Issue	SH	JM	SH
P2	26/11/20	50% PSP	SH	JM	SH
Р3	27/11/20	Incorporating Fire Hydrant servicing provision details	SH	JM	SH
Р3	12/01/21	95% PSP	SH	JM	SH
P4	4/2/21	100% PSP	SH	JM	SH

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1 Executive Summary

Scott Harris and Associates P/L (SHA) are engaged to provide building Civil, Hydraulics and Wet Fire services engineering design for the proposed Senior School Learning hub development works at SMGs

The purpose of this document is to confirm the preliminary servicing provisions for the proposed development for building works and nominate the design strategies for the design and documentation of the hydraulic and wet fire services discipline.

2 Introduction

Scott Harris and Associates p/L (SHA) are engaged to provide building Civil, Hydraulics and Fire services engineering for the proposed development.

SHA 's scope will cover the following:

- Sewer / Sanitary plumbing, drainage, and venting
- Stormwater Drainage
- Potable cold-water reticulation
- Potable hot water reticulation (and assoc. HW generation plant)
- Fire hose reel system
- Fire hydrant system
- Gas services
- Civil Works

This Brief shall be read on conjunction with current design 100% PSP development drawings as listed below

- H1-01 Site Services
- H2-01 Ground Floor drainage Services
- H2-02 Level 1 drainage Services
- H2-03 Roof Drainage Services
- H3-01 Ground Floor Water Services
- H3-03 Level 1 Water Services
- H4-01 Sedimentation Control Plan
- H4-02 Sedimentation Control Plan Specification and Details
- C-01 Civil Services Cover Sheet, Notes and drawing Index.
- C-02 Standards and details
- C-03 Bulk earthworks benching Plan.
- C-04 Bulk earthworks cut and fill diagram.
- C-05 Bulk earth works site sections.



3 Site Description

The subject site consists of an existing educational facility, the proposed works area currently contains an existing building as per photo 1 below



Photo 1

4 Exiting Supply Infrastructure Assessments

4.1 Sewerage Systems

Existing site sewer infrastructure is currently located within the proposed building area/zone as per Figure 1 below. (Magenta line)

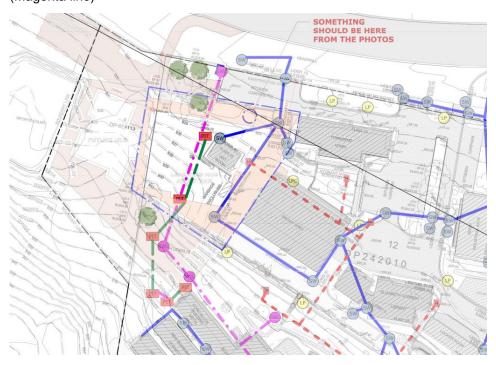


Figure 1 – Existing drainage provisions



Due to the proposed location of the new building, site investigation and design development currently details the Sewer diversion as per Drawing H1-01 - Site Services [Rev P3]

New sewer provisions for the new works shall be provided by a dedicated sewer junction provision incorporated into the proposed sewer diversion works.

Existing Site sewer drainage makes discharge connection to the existing authority provisions within Kosciuszko Road as per mark A within figure 3 below.

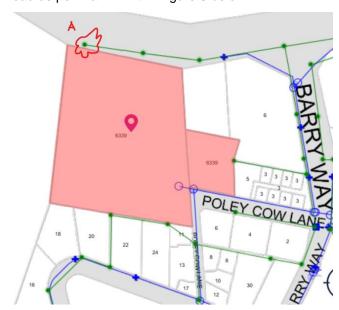


Figure 3 – Existing Authority sewer infrastructure

Project specific Sewer drainage is proposed as per current design documentation Drawings

- H1-01 Site Services
- H2-01 Ground Floor drainage Services
- H2-02 Level 1 drainage Services



4.2 Stormwater Drainage

Existing site Stormwater infrastructure is currently located within the proposed building area/zone as per Figure 1. (Blue line)

Due to the proposed location of the new building, site investigation and design development currently details the proposed Stormwater diversion as per Drawing H1-01 - Site Services [Rev P3]

New Stormwater provisions for the new works shall be provided by a new stormwater connection provision incorporated into the proposed drainage diversion works.

Due to the location of the site being at the end of the local area stormwater catchment, stormwater On Site Detention has not been considered as it is assumed that the existing downstream drainage of the site is designed for the 5% AEP standard (1 in 20 year), detention storage in the SMGS site sized for the 10% AEP standard (1 in 10 year) will have minimal impact on the drainage performance downstream therefore we believe that providing detention for a property some 250m away from lake Jindabyne (catchment end node) will not benefit any downstream provision.

Project specific Stormwater drainage is proposed as per current design documentation Drawings

- H1-01 Site Services
- H2-01 Ground Floor drainage Services
- H2-02 Level 1 drainage Services

4.3 Water Supply

Existing potable water supply to the site is via connection to the Authority water supply infrastructure within Poley Cow Lane as per mark B within figure 5 below.

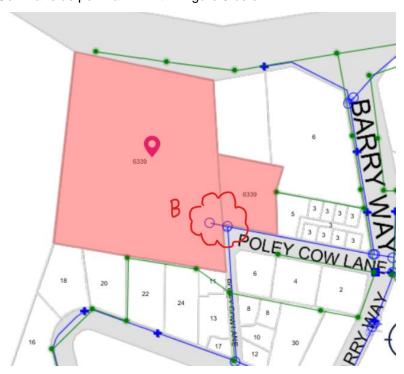




Figure 5 – Existing Authority Water supply infrastructure

Water supply is currently available to the existing art building. Although the existing supply provision is inadequate for the proposed new development works. New water supply provision shall be extended from the existing site infrastructure.

4.4 Gas Supply services

Authority reticulated gas is currently unavailable to the existing site, LPG gas supply to existing buildings is via localised on-site storage cylinder provisions

4.5 Fire Hydrant services

The existing site Fire Hydrant service consists of a number of external single head Fire hydrant lading valve provisions located across the site as per figure 6 (red line) and photos 2, 3 and 4 below.

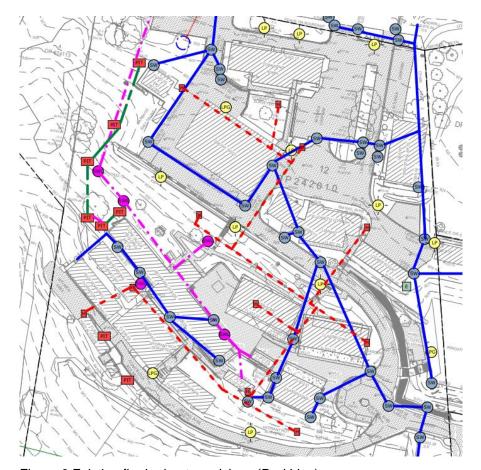


Figure 6 Existing fire hydrant provisions (Red Line)







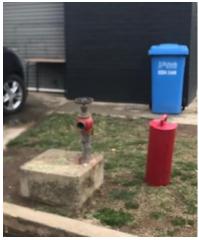


Photo 2 Photo 3 Photo 4

Note: The existing Fire hydrant infrastructure does not meet the requirements of AS2419-2017 (Fire Hydrant installations). As per details with section 4.5.1 (below)

4.5.1 Details of non-compliance

AS 2419-2017 specific requirements	Current / existing site non-compliant provisions
External Fire hydrants shall consist of Dual Headed landing valves	Existing Hydrants consist of single head landing valves (as per photos 2.3 and 4
Sites incorporating more than 6 external Hydrants shall incorporate an onsite booster assembly	The existing site incorporates an estimated 11 external fire hydrant provisions (as per Figure 6) Booster valve required

5 Hydraulic / Wet Fire Protection Design Strategy

5.1 Design Standards

All hydraulic services will be designed in full compliance with the National Construction Code of Australia (prescriptive or performance-based requirements), relevant Australian Standards and Local Authority requirements as listed below (but not limited to):

- Locale Council / Authority requirements
- AS3500 National Plumbing and Drainage Code
- AS5601 Gas Installations
- AS2419 Fire Hydrant Protection Code
- Council requirements
- NSW Fire and Rescue
- National Construction Code of Australia
- Workcover Authority



5.2 Sanitary Plumbing and Drainage Systems

All Sanitary / Trade waste Plumbing and Drainage Systems shall be designed in accordance with the requirements of the AS3500 and be fully compliant.

Project specific Sewer drainage is proposed as per current design documentation Drawings

- H1-01 Site Services
- H2-01 Ground Floor drainage Services
- H2-02 Level 1 drainage Services

5.3 Roof Drainage

Rainwater collection systems shall be designed in accordance with AS3500 and Australian Rainfall and Runoff, and based on the following minimum criteria:

- Eaves Gutters 1 in 20-year event
- Box Gutters are not recommended

It is proposed that all roof drainage and downpipe provisions will have connection to inground drainage as modified to allow connection

Rainwater re-use is currently not incorporated into the current design.

Roof water drainage is proposed as per current design documentation Drawings

H2-03 Roof drainage Services

5.4 Domestic Cold-Water Supply

Domestic cold water for the site will be designed in accordance with AS3500 to achieve the following criteria:

- Minimum Pressure of sanitary outlet

 50 kPa
- Minimum Pressure at equipment To manufacturer's requirements
- Maximum Pressure of Outlet 500 kPa
- Maximum Velocity in Pipework 1.6 m/sec

Backflow prevention shall be provided as per NSW Health and AS3500

Due to the age and unknown condition of the existing site wide water supply infrastruction, The School has agreed to proceed with site wide infrastructure upgrade works of the potable water services reticulation, including new water supply connection to existing water meter provisions within Poly Cow Lane and site wide piping reticulation

Cold water supply and reticulation is proposed as per current design documentation Drawings

- H1-01 Site Services
- H3-01 Ground Floor Water Services
- H3-02 Level 1 Water Services



5.5 Domestic Hot Water Supply

Domestic hot and warm water will be designed in accordance with AS3500 requirements.

Reticulation throughout the building will be via a combination of

1) A dedicated flow and return ring main with connection to a Hot water plant currently proposed to be located within the Ground floor mechanical plant room for supply to the Level 1 amenities.

And

2) Single point of use electric hot water units for the ground floor sink provisions and the level 1 Tea area sink provision

Water temperature shall be controlled via thermostatic mixing valves as per NSW health and AS3500

5.6 Liquid Petroleum Gas

LPG is currently unavailable, LPG supply to Science lap provisions to be provided buy Bulk on site storage provisions located external to the building equal to 2 x 210kg Bulk LPG cylinders

Gas supply to the building shall be via a reticulated gas supply main at 2.75kPa – 5kPa operating pressures.

Gas supply shut off to each classroom shall be provided via a manual isolation valve located at each classroom teacher station.

Gas Services are proposed as per current design documentation Drawings

- H1-01 Site Services
- H3-01 Ground Floor Water Services
- H3-02 Level 1 Water Services

5.7 Fire Hose Reels

Current (2019) NCC / BCA legislation (section E1.4 a (iv) nominates that Fire Hose Reel (FHR) provisions are not required for buildings consisting of "Classrooms and associated corridors in a primary or secondary school;"

5.8 Fire Hydrants

Current NCC /BCA and AS2419-2017 nominates that complaint Fire hydrant provisions shall be provided for buildings greater than 500m2 (floor area) therefore, Fire Hydrant provisions are required for the proposed development works.

As nominated within section 4.5, The existing site hydrant provisions do not meet current code compliance as require to permit compliant coverage for the new works.

The School has agreed to proceed with site wide infrastructure upgrade works of the fire Hydrant services reticulation, including new water supply connection to existing authority point of connection, new Fire Hydrant booster valve provisions and site wide piping reticulation.



5.8.1 External Hydrant protection

AS2419 nominates that Fire Hydrants shall be located as required to provide either internal Fire Hydrants and or external Fire Hydrants to provide protection coverage.

The proposed access to the new building is considered to adequately address provisions of the code to permit the use of external Fire Hydrant provisions.

External hydrants will be positioned as required to permit fire brigade access. Appendix E of AS 2419.1:2017 provides informative guidance on the required locations of fire hydrants as shown in Figure 7. The hydrant system will be required to be extended from the existing system incorporating a booster assembly as per section 5.8.1 (above)

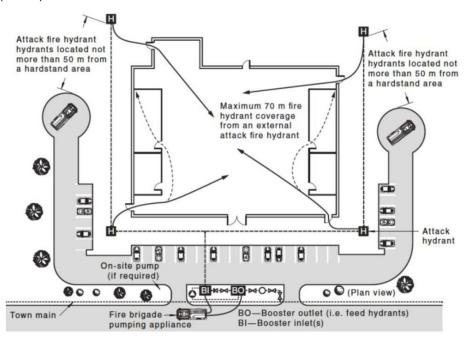


Figure 7 AS2419 -2017 Example of external attack hydrant coverage

Fire hydrant protection shall be provided via 4 x new external Fire hydrant provisions as required to provided compliant coverage with connection to the above-mentioned site water infrastructure upgrade works, providing the project with a fully compliant Fire Hydrant Installation in accordance with AS2419

Fire Hydrant Services are proposed as per current design documentation drawings

- H1-01 Site services
- H3-01 Ground Floor Water Services
- H3-03 Level 1 Water Services



5.9 Fixtures, Fittings and Tapware

Sanitary fixtures, fittings and tapware are to be nominated by the architectural team.

5.10 Construction Materials

Materials used for construction of hydraulic and fire protection services have been selected based on whole of life cost, ease of installation, durability, and ease of maintenance.

Generally, the materials proposed for hydraulic service piping shall be as follows. Other material selection options will be per AS3500 requirements:

Sanitary Systems PVC-U DWV

Stormwater Drainage PVC-U DWV & Reinforced Concrete

Domestic Cold-Water Copper Type B

Domestic Hot Water Copper Type B (Thermally insulated)

Gas supply Copper Type B

5.11 Environmentally Sustainable Design

The design and installation of the hydraulic and fire protection services will be designed to ensure:

- Effective use of energy and resources
- Water consumption efficiency
- Waste minimization
- Recyclable construction materials with low embodied energy and environmentally friendly manufacture
 Reduction in ongoing life cycle costs



6 Civil Bulk Earth Works Breif

- The Learning Lab building has been divided into pad areas based on the levels shown on the architectural plans received.
- Based on advice given by the Structural Engineer (nom 120mm slab thickness + footings) we have provided a bulk earthworks pad level (bottom of building slab) nominally at 150mm below the FFL's nominated on the architectural plans
- The apron area surrounding the learning lab has been treated in the same way, currently as flat pads extending to garden beds and stair top and bottoms.
- We have allowed for 1:1 (45 degree slope) interface between the pad levels.
- Off the edge of the surrounding area modelled, we have interfaced to the existing levels again at 1:1 slope.
- A comparison has been run between the existing surface and the proposed pad level surface on drawing C-01. The red area is to be cut, and the green is to be filled, to re-shape the land to suit the pad model as described above.
- Using approximate test pit locations provided in the site geotech report, we have created a surface (only for the area tested) which represents the rock levels in ground. A comparison between the rock surface and the pad design surface has been run on C-02 in the same fashion as C-01
- As noted in the Geotech report, the subsurface on site generally comprises of silty / clayey sand (average nominal depth 0.6m), over highly weathered tonalite which increases in density and strength with depth. The 14T excavator used for testing refused at an average nominal depth of 2.1m. Generally, it would be safe to assume larger machinery would be able to cut to greater depth before experiencing refusal. An experienced contractor who has worked in the area previously may also have a reasonable understanding of the subsurface material on site.
- As outlined in both the Geotech and Geophys reports, there are a number of floaters / boulders on site. Some of these boulders are visible on the surface, and may extend far beneath the surface also. There are also subsurface boulders which were struck on 2 of 8 test pits at an average of 1.3-1.6m depth, with an inferred size varying 2.2-3.5m in width.
- These floating boulders throughout the site are unknown in size and frequency, and will need to be removed wholly in cut areas to provide a suitable compacted pad for building construction. Method to remove boulders is subject to superintendent approval, with a suggestion being chemical splitting.

Refer to current design documentation drawings.

- C-01 Civil Services Cover Sheet, Notes and drawing Index.
- C-02 Standards and details
- C-03 Bulk earthworks benching Plan.
- C-04 Bulk earthworks cut and fill diagram.
- C-05 Bulk earth works site sections.

SNOWY MOUNTAINS GRAMMAR SCHOOL SENIOR SCHOOL

HYDRAULIC SERVICES

AUTHORITIES AND PAY ALL ASSOCIATED FEES

DRAWING LIST

H1-01 SITE SERVICES

COVER SHEET / SITE LAYOUT

ROOF DRAINAGE SERVICES

LEVEL 1 WATER SERVICES

GROUND FLOOR WATER SERVICES

SEDIMENTATION CONTROL PLAN

H2-02 LEVEL 1 DRAINAGE SERVICES

GROUND FLOOR DRAINAGE SERVICES

8 GIVE SUFFICIENT NOTICE SO THAT INSPECTIONS MAY

BE MADE BY THE OWNER'S REPRESENTATIVE AND/OR

RELEVANT AUTHORITIES AFTER COMPLETION OF THE

PIPE WORK AND PRIOR TO PLACING THE PIPE OVERLAY.

PIPE DIAMETER AAV AIR ADMITTANCE VALVE IPMF INDUCT PIPE MICA FLAP CLEAR OUT INSPECTION OPENING FLOOR WASTE BTH BATH LAUNDRY TUB HOSE TAP BT BOUNDARY TRAP MEGAJOULE STOP VALVE BTFW BASKET TRAP FLOOR WASTE OVER FLOW BWU BOILING WATER UNIT OFG OVER FLOW GULLY STOP VALVE IN PATH BOX CLEAR OUT RFS RIM FLUSHING SINK CLEANERS SINK REDUCED LEVEL BALL VALVE CV CONTROL VALVE RPZD REDUCED PRESSURE ZONE DEVICE RWO RAIN WATER OUTLET SOLENOID VALVE CW COLD WATER DP DOWN PIPE RWH RAIN WATER HEAD PRESSURE RELIEF VALVE STRAINER DTU DRAINAGE TURN UP

FLOOR WASTE

GO GUTTER OUTLET

GAS TURRET

HIGH LEVEL

HT HOSE TAP

HW HOT WATER

HWU HOT WATER UNIT

IL INVERT LEVEL

GREASE VENT PIPE

GAPO GREASE ARRESTOR PUMP OUT

SEW SEWER DRAINAGE DW DISH WASHER SWF SEALED FLOOR WASTE SEWER INSPECTION PIT FHR FIRE HOSE REEL SMH SEWER MANHOLE FS FLUSHERETTE SERVICE STACK

> SV STOP VALVE SWP STORMWATER PIT SWRM STORMWATER RISING MAIN THERMOSTATIC MIXING VALVE TRADE WASTE

VENT PIPE WC WATER CLOSET WM WASHING MACHINE WT WATER TURRET

WVP WASTE VENT PIPE

DRAINAGE LINE

TO EXISTING METERING PROVISION

(NOT WITHIN SCOPE / SEPARATE CONTRACT

SPECIFICATION NOTES

1. AUTHORITIES AND STANDARD; THE WHOLE OF THE HYDRAULIC SERVICES INSTALLATION SHALL BE CARRIED DESIGN INTENT OF HYDRAULIC SERVICES. THE CONTRACTOR WILL SET OUT ALL WORK TO SUIT AS OUT UNDER THE DIRECT SUPERVISION OF A FULLY REQUIRED FOR SITE CONDITIONS. LICENSED PLUMBER AND DRAINER IN STRICT 2. SERVICES POSITIONS ARE INDICATIVE AND ACCORDANCE WITH THE N.S.W. CODES AND TO THE ALLOWANCES TO BE MADE ON SITE AS REQUIRED. SATISFACTION OF SYDNEY WATER CORPORATION. IN 3 ALL LEVELS AND SET OUT INFORMATION TO BE ACCORDANCE WITH HYDRAULICS DESIGN DRAWINGS CONFIRMED PRIOR TO COMMENCEMENT OF WORKS AND SPECIFICATION AS ISSUED. THESE DOCUMENTS TO BE READ IN CONJUNCTION WITH 2. FEES AND CHARGES; THE CONTRACTOR SHALL ARCHITECTURAL INFORMATION. MAKE ALL NECESSARY APPLICATIONS, PAY ALL FEES, 4. ALL PIPE WORK TO BE INSTALLED AS PER AS3500 OBTAIN AND ISSUE TO THE SUPERINTENDENT ALL AG601 AND LOCAL AUTHORITY REQUIREMENTS. REQUIRED CERTIFICATES INDICATING THAT THE WORKS 5. ALLOW TO SUPPLY AND INSTALL MATERIAL EQUAL TO IN THEIR ENTIRETY COMPLY WITH THE CURRENT YPE B COPPER TUBE AND FITTINGS. REGULATIONS AND REQUIREMENTS OF ALL RELEVANT OPTION 2 = BLUE LINE POLY PN18 AUTHORITIES. 3. SITE VISIT AND FAMILIARISATION; THE CONTRACTOR 6. FIRE HYDRANT PROVISIONS VIA EXISTING STREET HYDRANT ADJACENT SITE AS PER AS2419. SHALL EXAMINE THE SITE AND REFER TO CURRENT CONTRACT DRAWINGS SO AS TO UNDERSTAND AND TO 7. PROVIDE ALL NECESSARY CONNECTIONS AS REQUIRED, AND ALLOW TO MAKE APPLICATIONS TO HAVE SATISFIED HIMSELF AS TO THE VISIBLE EXISTING

> 4. MATERIALS; SUPPLY AND FIX ALL MATERIALS REQUIRED TO COMPLETE THE WORKS. ALL MATERIALS SHALL BE FIRST QUALITY AND ANY INFERIOR MATERIALS SHALL BE REJECTED. ALL COSTS ASSOCIATED WITH THE REPLACEMENT OF REJECTED MATERIALS SHALL BE BORNE BY THE CONTRACTOR. ALL MATERIALS SHALL CONFORM WITH THE LATEST AUSTRALIAN STANDARD, SPECIFICATION, CODE OR INTERIM CODE. IF NO AUSTRALIAN STANDARD EXISTS THEY SHALL CONFIRM TO THE LATEST BRITISH STANDARD OR THE REQUIREMENTS IF THE AMERICAN SOCIETY FOR THE TESTING AND MATERIALS IN THAT ORDER. MAKE APPLICATIONS TO AND PAY TO THE RELEVANT AUTHORITIES ALL APPLICABLE FEES AND CHARGES. 5. SET OUT; ALL PIPE WORK SHALL BE CONCEALED WHEREVER POSSIBLE) IN CEILING SPACES AND WALLS OR CHASED IN WALLS. THE PLUMBER SHALL BE RESPONSIBLE FOR SETTING OUT ALL PIPE RUNS BEFORE THE POURING OF CONCRETE, COVERING UP AND

PROVIDING ALL SLEEVES, FIRE COLLARS WHICH MAY BE

CONDITIONS UNDER WHICH HE WILL BE OBLIGED TO

6. PENETRATIONS; FLOORS AND BEAMS SHALL BE CORED SI FEVED IN A METHOD APPROVED BY THE STRUCTURAL ENGINEER, BUILDING MANAGEMENT, SEAL ALL PENETRATIONS WITH FIRE RATED MATERIAL AND SEAL WITH AN APPROVED EPOXY SEALANT AS REQUIRED TO MAINTAIN THE REQUIRED FRL. PROVIDE FIRE STOP COLLARS AS REQUIRED. ALL CORE HOLES AND PENETRATIONS SHALL BE MADE GOOD AND WATER TIGHT AS REQUIRED. ALL FINAL CORE HOLE LOCATIONS SHALL BE CO-ORDINATED AND APPROVED BY THE STRUCTURAL ENGINEER, BUILDING MANAGEMENT. 7. HOT AND COLD WATER SERVICES: ALL PIPE WORK SHALL BE COPPER TYPE B WITH COPPER AND/OR BRASS FITTINGS. PIPE WORK BUILT INTO WALLS SHALL BE

SEDIENTATION SPECIFICATION AND DETAILS SECURELY FIXED AND LAGGED WITH "KEMLAG" INSULATION. ALL PIPE WORK SHALL BE SECURELY FIXED. ALL PIPE WORK SHALL BE FREE OF WATER HAMMER ALL HOT WARM WATER PIPE WORK SHALL BE INSULATED WITH "KEMLAG" INSULATION. COPPER PIPES AND FITTINGS SHALL; a BE APPROVED BY RELEVANT AUTHORITIES.

c BE TYPE B FOR HOT, WARM AND COLD WATER AND

b CONFIRM WITH AUSTRALIAN STANDARDS

d BE JOINTED WITH SILVER BRAZE CONTAINING NOT

e BE TYPE D FOR VENTS

f FITTINGS SHALL HAVE A MINIMUM WALL THICKNESS NOT LESS THAN THE TUBE THICKNESS THEY SURVEY. 8 EXCAVATION: EXCAVATION LINES AND LEVELS SHALL BE AS REQUIRED FOR SITE CONDITIONS ALL TRENCHING SHALL BE STRAIGHT AND GRADED AS REQUIRED FOR SERVICES INSTALLATION, EXCAVATE TRENCHES IN SECTIONS OF SUITABLE LENGTH, LAY AND BED SERVICE PIPE WORK AND BACK FILL TRENCH SECTION, WITH MINIMUM DELAY AND IF POSSIBLE ON THE SAME WORKING DAY, UNLESS OTHERWISE 9. IDENTIFICATION: SERVICES WARNING, IDENTIFICATION TAPE TO BE INSTALLED ABOVE EACH INDIVIDUAL SERVICE PIPE INSTALLED WITHIN TRENCH

(FULL LENGTH OF INSTALLATION) 10 TESTING: TEST ALL SERVICES DURING INSTALLATION AND PRIOR TO CONCEALING. A MINIMUM 24 HOUR TEST PERIOD WITHOUT EVIDENCE OF LEAKS. ANY LEAKS SHALL BE RECTIFIED AND A RE TEST AS PER TEST REQUIREMENTS. FLOW TESTING SHALL BE CARRIED OUT AT COMPLETION OF WORKS TO PROVIDE ACTUATE FLOW CAPACITY AVAILABLE. CERTIFICATION INFORMATION TO BE FORWARDED TO SUPERINTENDENT

11. CERTIFICATION; A PLUMBERS CERTIFICATE SHALL BE PROVIDED TO SYDNEY WATER AND FORWARDED TO THE SUPERINTENDENT WITH ELECTRONIC FORMAT, "AS INSTALLED" DRAWINGS OBTAIN CERTIFICATES FROM AUTHORITIES INDICATING SATISFACTORY COMPLETION OF SERVICES AND HAND OVER TO ARCHITECT BEFORE APPLICATION FOR FINAL PAYMENT AND CERTIFICATES OF PRACTICAL COMPLETION. 12. WARRANTY AND MAINTENANCE PERIOD; PROVIDE 12 MONTHS WARRANTY AND MAINTENANCE PERIOD FOR ALL WORK COVERED BY THIS CONTRACT, RETAIN ALL MANUFACTURER WARRANTIES AND GUARANTEES AND HAND OVER TO ARCHITECT WITH MAINTENANCE MANUALS WHEN INSTALLATION IS COMPLETE. 12 MONTH WARRANTY PERIOD TO COMMENCE FROM FINAL OCCUPANCY DATE 13. A SET OF WORK AS EXECUTED DRAWINGS SHALL BE

CONTRACTOR AS THE WORK PROCEEDS TO RECORD THE LOCATIONS. INVERTS, FINAL LEVELS AND DETAILS OF ALL INSTALLED SERVICES. EQUIPMENT AND VALVES THESE SHALL BE MADE AVAILABLE ON REASONABLE NOTICE FROM THE SUPERINTENDENT. 14. HYDRAULIC SERVICES WORK AS EXECUTED CAD DRAFTED DRAWINGS AND MAINTENANCE MANUALS TO BE PROVIDED PRIOR TO COMPLETION. 15. CHECK ALL DIMENSIONS ON SITE PRIOR TO ANY PURCHASE OF EQUIPMENT OR INSTALLATION OF ANY PIPE WORK AND ACCESSORIES. NO CLAIMS WILL BE CONSIDERED REGARDING ITEMS WHICH CANNOT BE INSTALLED DUE TO ERROR RESULTING FROM FAILURE

KEPT ON SITE AND PROGRESSIVELY MARKED UP BY THE

TO CONFIRM DESIGN INTENT ON SITE. 16 WALL CHASING: WRITTEN CONFIRMATION SHALL BE OBTAINED FROM STRUCTURAL ENGINEER PRIOR TO ANY CHASING OF CONCRETE AND/OR BRICK WALLS AS REQUIRED FOR SERVICES INSTALLATION. PRIOR TO 17. ALL SANITARY DRAINAGE PIPE WORK ADJACENT TO OFFICE AREAS SHALL BE INSULATED WITH ACOUSTIC INSULATION EQUAL TO SOUNDGUARD SOUNDLAG 4525L

MANUFACTURERS RECOMMENDATIONS DISTRIBUTED BY

ACOUSTIC PIPE WRAP INSTALLED AS PER

PYROTEK 9631 1333.

NEW SITE WIDE MASTER PLANING NEW SITE WIDE MASTER PLANING UPGRADE **UPGRADE WORKS - NOT WITHIN** WORKS - SUPPLY PROVISION FOR LEANING SCOPE / SEPARATE CONTRACT HUB PROJECT WORKS REFER TO DRAWING **WORKS** MASTER PLANING UPGRADE WORKS - NEW COMPLIANT FIRE BOOSTER VALE ASSEMBLY WITH BACKFLOW PREVENTION AS PER LOCAL AUTHORITY REQUIREMENTS REFER DETAIL (NOT WITHIN SCOPE / SEPARATE CONTRACT NEW SITE WIDE MASTER PLANING UPGRADE WORKS - NEW POTABLE WATER CONNECTION

SITE SERVICES

TEE RISER / DROPPER

INSPECTION OPENING

DIRECTION OF SERVICE

DETAIL NUMBER

CONTINUATION

WATER CLOSET

CLEANERS SINK

SEWER MANHOLE

STORMWATER INSPECTION PIT

STORMWATER GATIC PIT

NOTE THIS IS A STANDARD LEGEND. ALL

SYMBOLS MAY NOT NECESSARILY BE USED

IN THESE DRAWINGS.

STORMWATER MANHOLE

SEWER INSPECTION PIT

STORMWATER CLEARING PIT

DRAWING REFERENCE

OVERFLOW GULLY

FIRE HOSE REEL

FIRE HYDRANT

INDUCT PIPE MICA FLAF

Ø-Ø DOUBLE HEADED PILLAR HYDRANT

THERMOSTATIC MIXING VALVE

REDUCED PRESSURE ZONE DEVICE

NODE POINT FOR CALCULATIONS

BASKET TRAP FLOOR WASTE

GAMMAD FIRE HYDRANT BOOSTER VALVE

HOT WATER UNIT

RO RAINWATER OUTLET

Ø DD DUCT DRAIN

Ø PFW PLANT ROOM FLOOR WASTE

OVERLAND FLOW PATH

LEGEND

EXISTING SERVICE

COLD WATER

HOT WATER

NON POTABLE COLD WATER

SOLAR FLOW

SEWER

— — — FIRE DRENCHER

---- AIR

— — — — — FILIF

— — — — CONDENSATE

SEWER RISING MAIN

TRADE WASTE

STORMWATER RISING MAIN

SEDIMENTATION FENCE

FILTERED COLD WATER

FIRE HOSE REEL

FIRE HYDRAN

DRAINAGE CEL

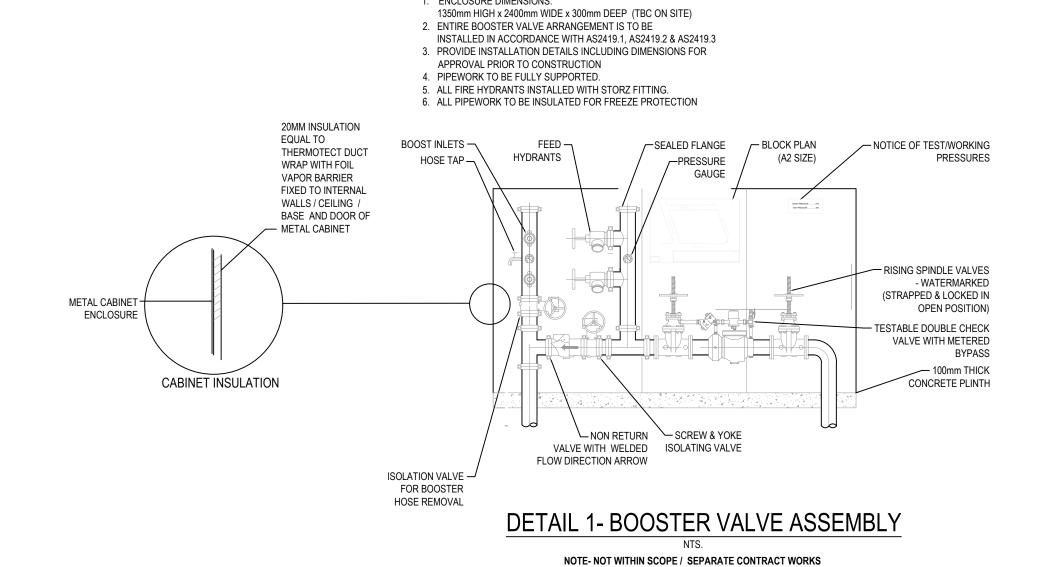
SOLAR RETURN

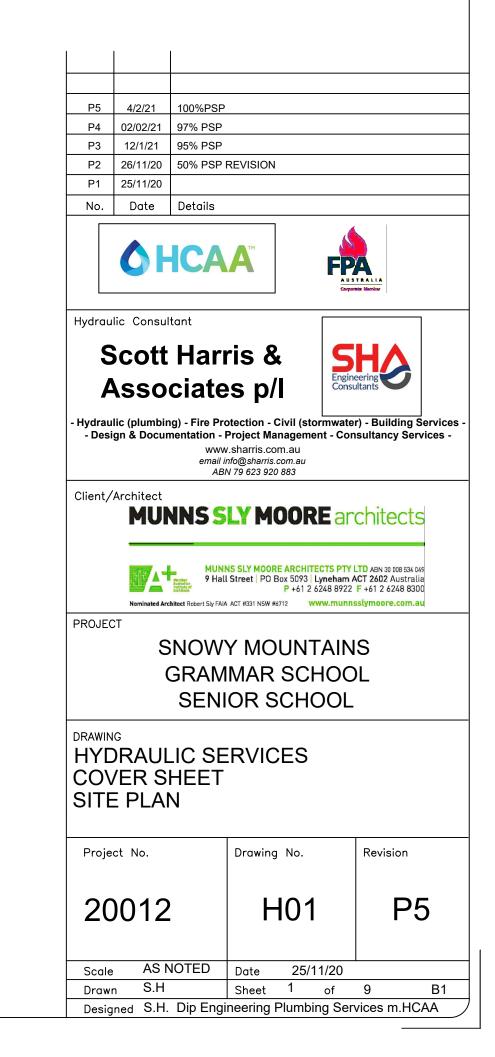
HOT WATER RETURN

MEDICAL OXYGEN (GAS)

NON POTABLE HOT WATER

NON POTABLE HOT WATER RETURN



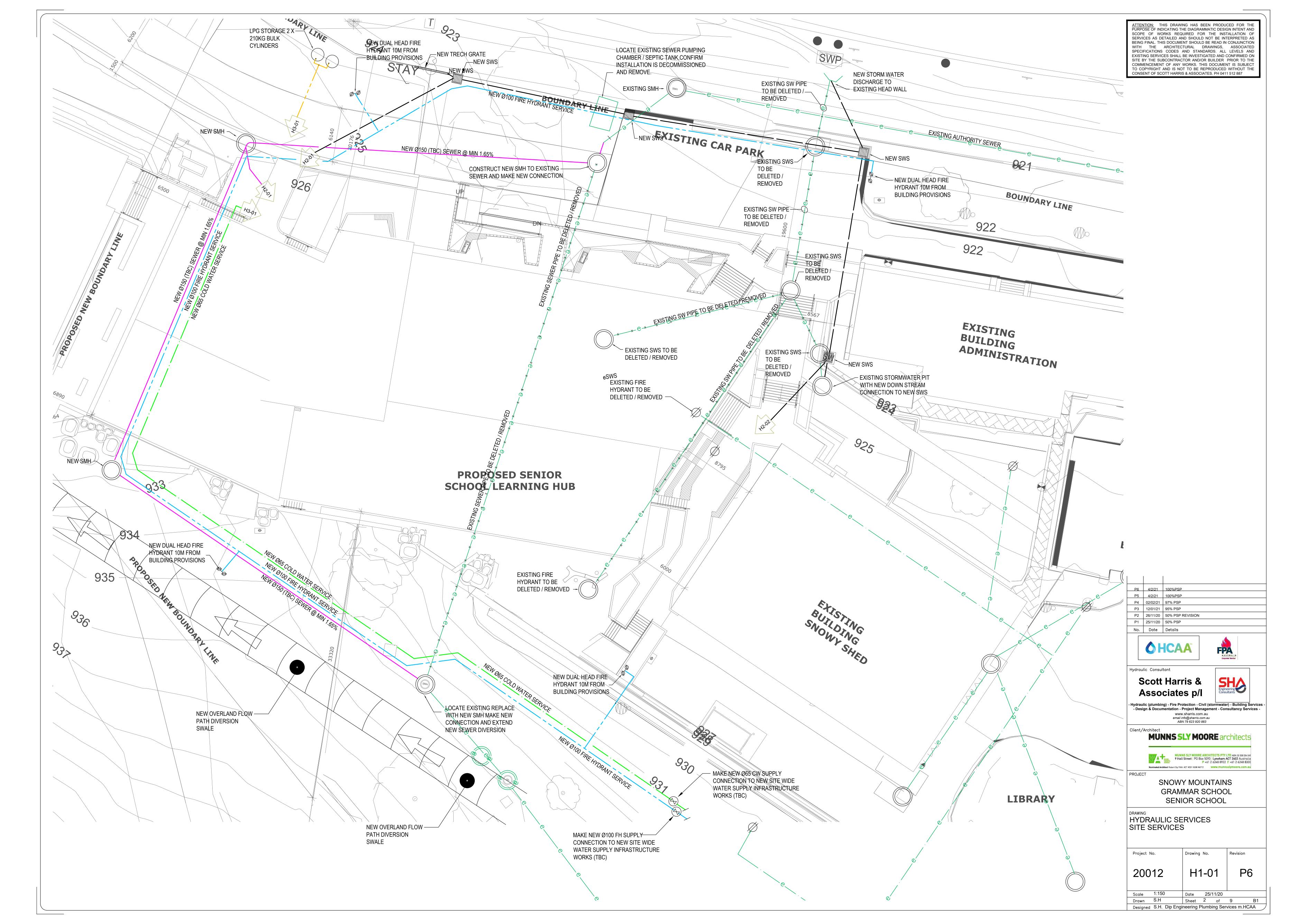


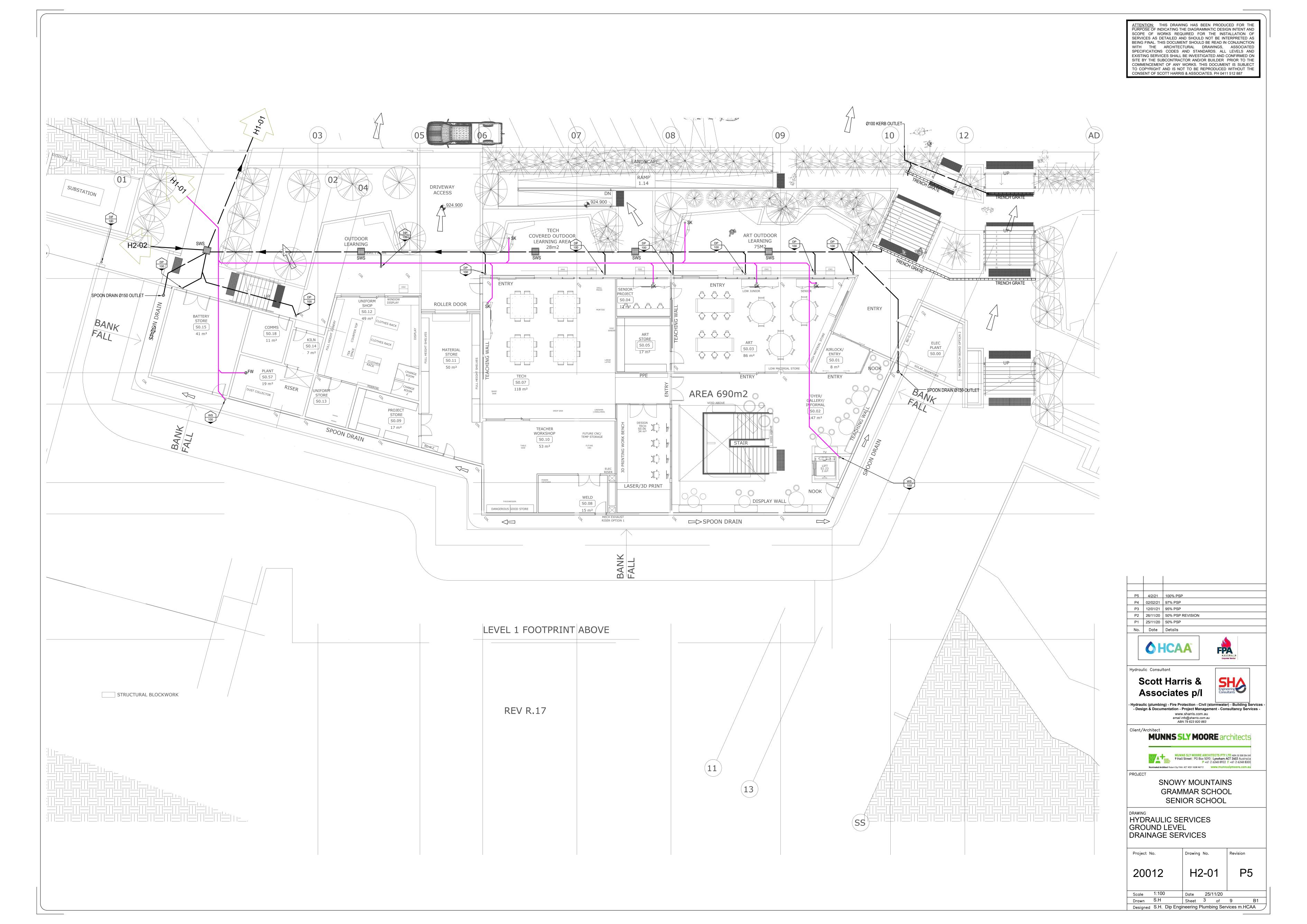
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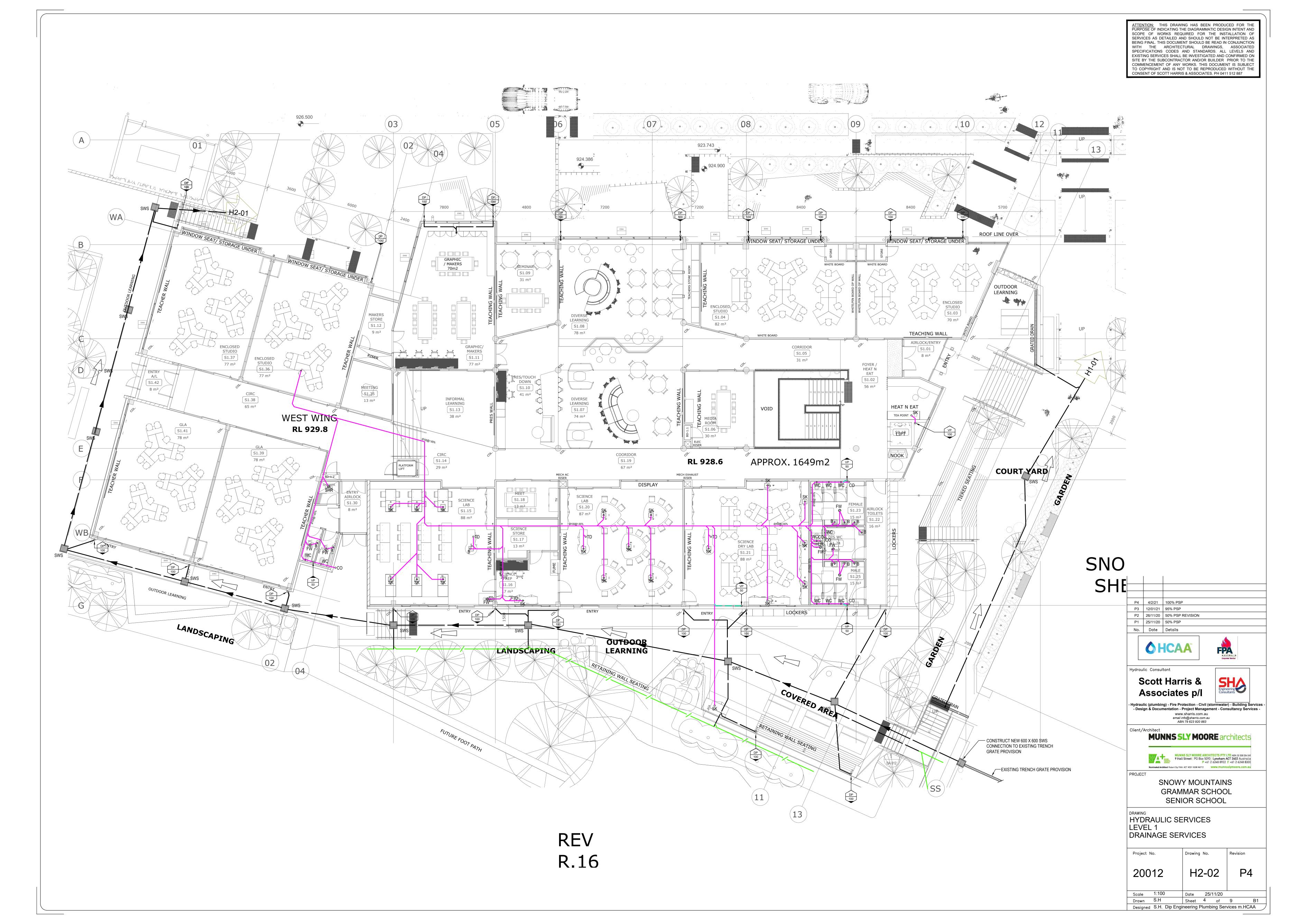
PURPOSE OF INDICATING THE DIAGRAMMATIC DESIGN INTENT AND SCOPE OF WORKS REQUIRED FOR THE INSTALLATION OF

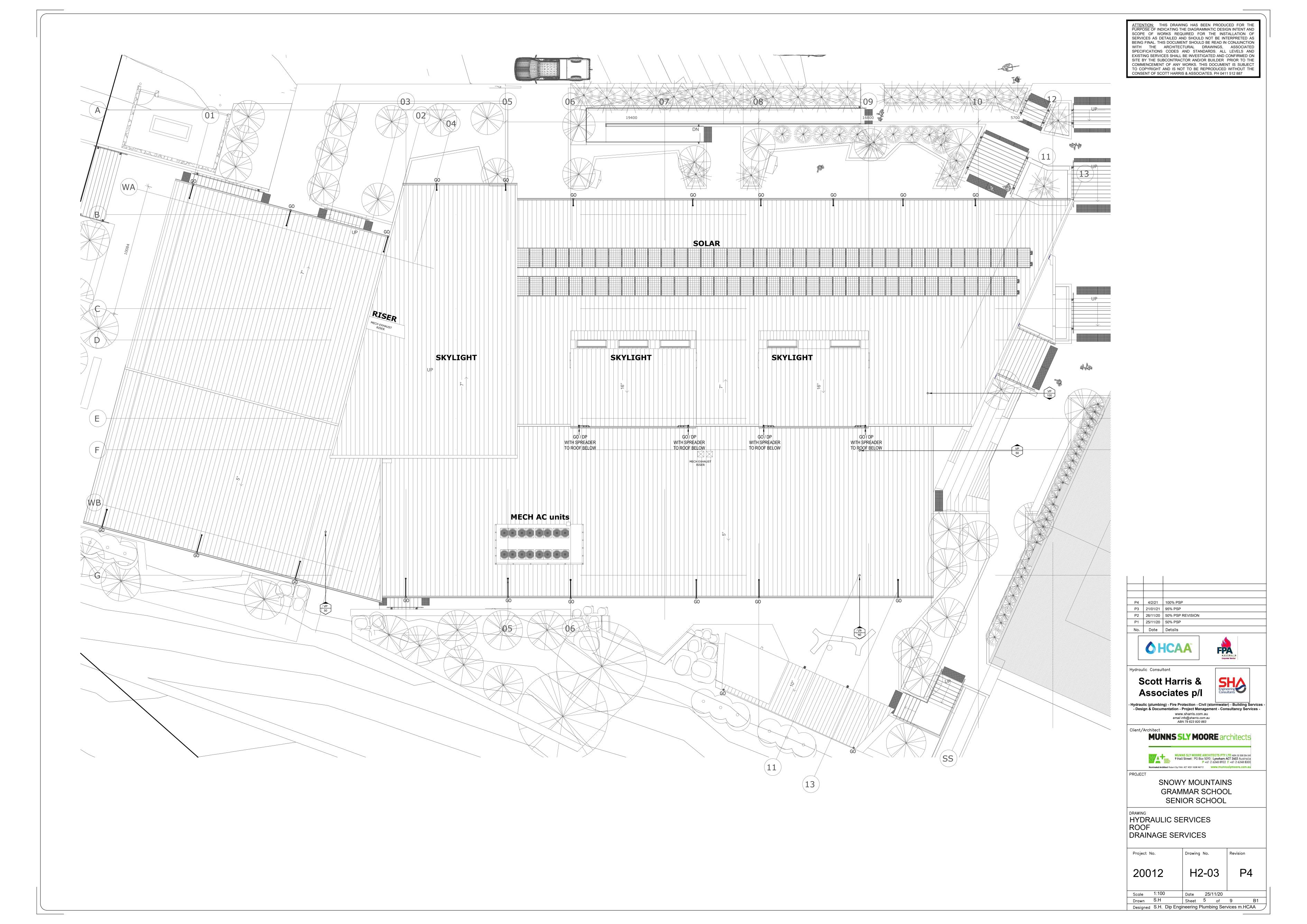
SERVICES AS DETAILED AND SHOULD NOT BE INTERPRETED AS BEING FINAL. THIS DOCUMENT SHOULD BE READ IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS, ASSOCIATED SPECIFICATIONS CODES AND STANDARDS. ALL LEVELS AND EXISTING SERVICES SHALL BE INVESTIGATED AND CONFIRMED ON SITE BY THE SUBCONTRACTOR AND/OR BUILDER PRIOR TO THE

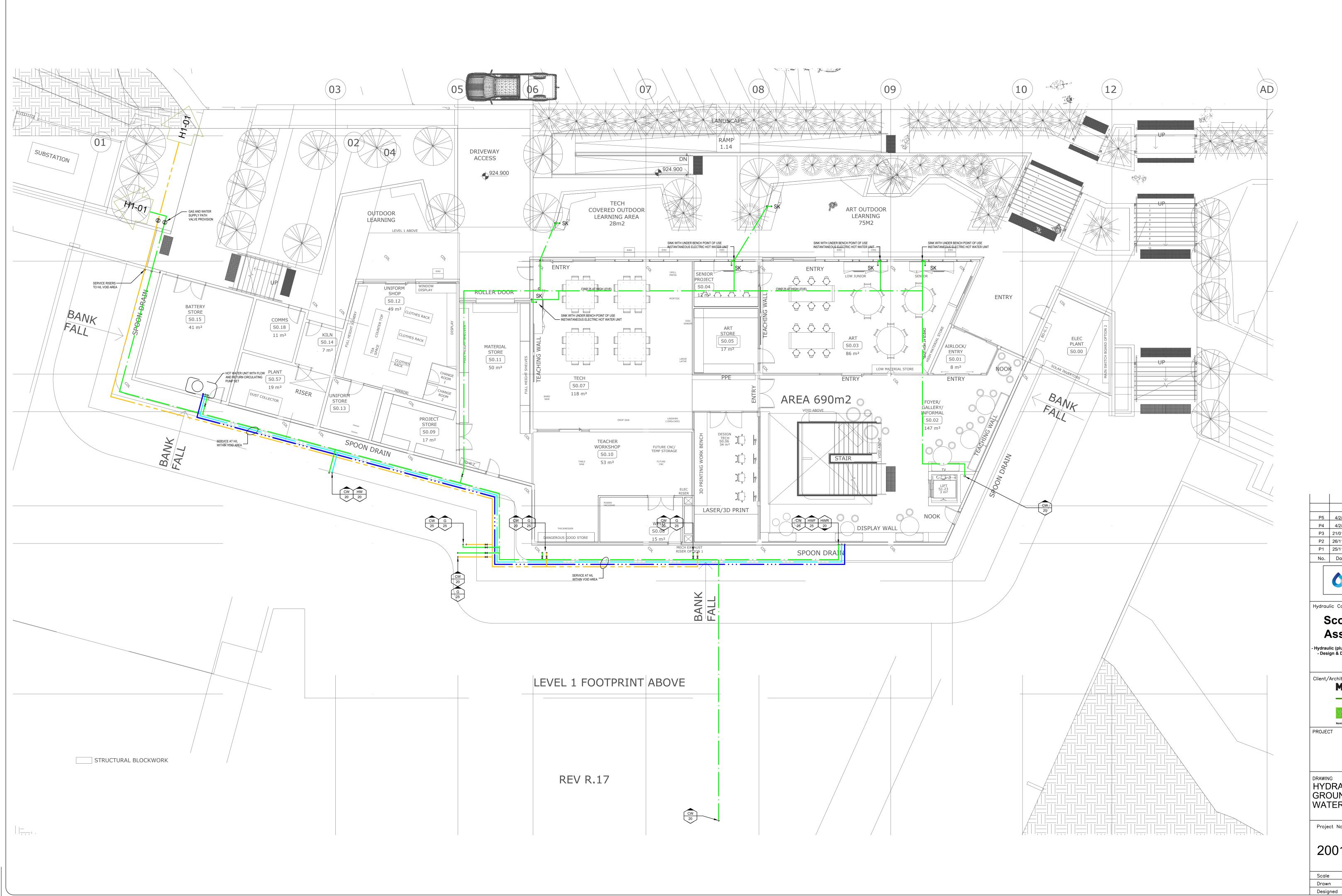
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ATTENTION: THIS DRAWING HAS BEEN PRODUCED FOR THE PURPOSE OF INDICATING THE DIAGRAMMATIC DESIGN INTENT AND SCOPE OF WORKS REQUIRED FOR THE INSTALLATION OF SERVICES AS DETAILED AND SHOULD NOT BE INTERPRETED AS BEING FINAL. THIS DOCUMENT SHOULD BE READ IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS, ASSOCIATED SPECIFICATIONS CODES AND STANDARDS. ALL LEVELS AND EXISTING SERVICES SHALL BE INVESTIGATED AND CONFIRMED ON SITE BY THE SUBCONTRACTOR AND/OR BUILDER PRIOR TO THE COMMENCEMENT OF ANY WORKS. THIS DOCUMENT IS SUBJECT TO COPYRIGHT AND IS NOT TO BE REPRODUCED WITHOUT THE CONSENT OF SCOTT HARRIS & ASSOCIATES. PH 0411 512 887 926.500 .(10) A 923.743 **•** 1//------P 9 9 WINDOW SEAT/ STORAGE UNDER ROOF LINE OVER WINDOW SEAT/ STORAGE UNDER WINDOW SEAT/ STORAGE UNDER E 7 GRAPHIC / MAKERS S1.09 31 m² OUTDOOR LEARNING STUDIO S1.03 TEACHING WALL WHITE BOARD AIRLOCK/ENTRY S1.01 HEAT N EAT S1.02 56 m² MEETING S1,35 13 m² CIRC S1.38 65 m² 4 HEAT N EAT S1.13 38 m² VOID WEST WING TEA POINT GLA S1.41 78 m² RL 929.8 \$9,<u>18</u> GLA S1.39 78 m² NOOK COORIDOR
S1.19
67 m² PIPEWORK @ H/L
WITHIN CEILING SPACE S1.14 29 m² **RL 928.6** APPROX. 1649m2 COURT YARD SERVICE RISERS
FROM BELOW SERVICE RISERS — FROM BELOW SERVICE RISERS FROM BELOW DISPLAY S1.18 13 m² SUPPLY PIPEWORK WITHIN WITH WATER SUPPLY BACK FLOW PREVENTION DEVICE BELOW BENCH P4 4/2/21 100% PSP - TEACHER GAS / WATER ISOLATION STATION P2 26/11/20 50% PSP REVISION P1 25/11/20 50% PSP SHE Date Details WATER SUPPLY BACK FLOW PREVENTION DEVICE BELOW BENCH LOCKERS Hydraulic Consultant LANDSCAPING Scott Harris & **OUTDOOR** Associates p/l **LEARNING** LANDSCAPING Hydraulic (plumbing) - Fire Protection - Civil (stormwater) - Building Services - Design & Documentation - Project Management - Consultancy Services www.sharris.com.au email info@sharris.com.au ABN 79 623 920 883 MUNNS SLY MOORE architects COVERED AREA MUNNS SLY MOORE ARCHITECTS PTY LTD ABN 30 008 534 045
9 Hall Street | PO Box 5093 | Lyneham ACT 2602 Australia
P +61 2 6248 8922 F +61 2 6248 8300 Nominated Architect Robert Sly FAIA ACT #331 NSW #6712 WWW.munnss **SNOWY MOUNTAINS GRAMMAR SCHOOL** SENIOR SCHOOL HYDRAULIC SERVICES LEVEL 1 WATER SERVICES Drawing No. H3-02 20012 Scale1:100Date25/11/20DrawnS.HSheet7 of9B1DesignedS.H. Dip Engineering Plumbing Services m.HCAA

ATTENTION: THIS DRAWING HAS BEEN PRODUCED FOR THE PURPOSE OF INDICATING THE DIAGRAMMATIC DESIGN INTENT AND SCOPE OF WORKS REQUIRED FOR THE INSTALLATION OF SERVICES AS DETAILED AND SHOULD NOT BE INTERPRETED AS BEING FINAL. THIS DOCUMENT SHOULD BE READ IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS, ASSOCIATED SPECIFICATIONS CODES AND STANDARDS. ALL LEVELS AND EXISTING SERVICES SHALL BE INVESTIGATED AND CONFIRMED ON SITE BY THE SUBCONTRACTOR AND/OR BUILDER PRIOR TO THE COMMENCEMENT OF ANY WORKS. THIS DOCUMENT IS SUBJECT TO COPYRIGHT AND IS NOT TO BE REPRODUCED WITHOUT THE CONSENT OF SCOTT HARRIS & ASSOCIATES. PH 0411 512 887 SILT / SEDIMENTATION FENCE AS PER DETAIL PROPOSED TEMPORARY CONSTRUCTION ACCESS AND PARKING SILT / SEDIMENTATION FENCE TO BE INSTALLED AT EXISTING HEAD WALL OUTLET SILT / SEDIMENTATION FENCE AS PER DETAIL TEMPORARY DRAINAGE CULVERT— BELOW VEHICLE SHAKE DOWN PAD - PROPOSED STOCKPILE ZONE (TO BE PROPOSED CONSTRUCTION CONFIRMED ON SITE) ENTRANCE / VEHICLE SHAKE DOWN (TO BE CONFIRMED ON SITE) BOUNDARY LINE SILT / SEDIMENTATION FENCE TO BE INSTALLED TO EXISTING STORMWATER OF DEOLIRED UNTIL FULLY SILT / SEDIMENTATION FENCE TO BE — INSTALLED TO EXISTING STORMWATER SUMP AS REQUIRED UNTIL FULLY DECOMMISSIONED SILT / SEDIMENTATION FENCE TO BE INSTALLED TO EXISTING STORMWATER SUMP AS REQUIRED UNTIL FULLY SILT / SEDIMENTATION FENCE TO BE ——INSTALLED TO EXISTING STORMWATER SUMP AS REQUIRED UNTIL FULPY EXISTIN BUILDIN ADMINIS DECOMMISIONED SILT / SEDIMENTATION FENCE TO BE INSTALLED TO EXISTING STORMWATER SUMP AS REQUIRED UNTIL FULLY DECOMMISSIONED
 P4
 4/2/21
 100% PSP

 P3
 21/01/21
 95% PSP

 P2
 26/11/20
 50% PSP REVISION

 P1
 25/11/20
 50% PSP
 No. Date Details PROPOSED SENIOR SCHOOL LEARNING HUB Scott Harris & Associates p/l - Hydraulic (plumbing) - Fire Protection - Civil (stormwater) - Building Services - Design & Documentation - Project Management - Consultancy Services www.sharris.com.au email info@sharris.com.au ABN 79 623 920 883 MUNNS SLY MOORE architects MUNNS SLY MOORE ARCHITECTS PTY LTD ABN 30 008 534 045 9 Hall Street | PO Box 5093 | Lyneham ACT 2602 Australia P +61 2 6248 8922 F +61 2 6248 8300 SNOWY MOUNTAINS **GRAMMAR SCHOOL** SENIOR SCHOOL HYDRAULIC SERVICES SEDIMENTATION CONTROL PLAN H4-01 Scale 1:150 Date 25/11/20

Drawn S.H Sheet 8 of 9 B1

Designed S.H. Dip Engineering Plumbing Services m.HCAA

EROSION AND SEDIMENT CONTROL NOTES

GENERAL INSTRUCTIONS

- THIS SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH OTHER ENGINEERING PLANS RELATING TO THIS DEVELOPMENT.
- CONTRACTORS WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS INSTRUCTED IN THIS SPECIFICATION AND CONSTRUCTED FOLLOWING THE GUIDELINES OF "MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION", DEPT OF HOUSING, 1998 (BLUE BOOK).
- ALL SUBCONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN REDUCING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE AREAS.

LAND DISTURBANCE INSTRUCTIONS

- DISTURBANCE TO BE NO FURTHER THAN 5 (PREFERABLY 2) METRES FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON APPROVED PLANS. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.
- ACCESS AREAS ARE TO BE LIMITED TO A MAXIMUM WIDTH OF 10 METRES THE SITE MANAGER WILL DETERMINE AND MARK THE LOCATION OF THESE ZONES ON-SITE. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE BOUNDARIES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR
- ENTRY TO LANDS NOT REQUIRED FOR CONSTRUCTION OR ACCESS IS PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH.
- WORKS ARE TO PROCEED IN THE FOLLOWING SEQUENCE:
- a. INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE PLAN.
- b. CONSTRUCT THE STABILISED SITE ACCESS.

LANDSCAPING HAS BEEN COMPLETED.

- CONSTRUCT DIVERSION DRAINS AS REQUIRED. INSTALL MESH AND GRAVEL INLETS FOR ANY ADJACENT KERB INLETS.
- INSTALL GEOTEXTILE INLET FILTERS AROUND ANY ON-SITE DROP INLET PITS. CLEAR SITE AND STRIP AND STOCKPILE TOPSOIL IN LOCATIONS SHOWN ON THE PLAN.
- UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS ENSURING THAT ROOF AND/OR PAVED AREA STORMWATER SYSTEMS ARE CONNECTED TO PERMANENT DRAINAGE AS
- SOON AS PRACTICABLE h. GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 20 DAYS OF COMPLETION OF CONSTRUCTION WORKS. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT
- ENSURE THAT SLOPE LENGTHS DO NOT EXCEED 80 METRES WHERE PRACTICABLE. SLOPE LENGTHS ARE DETERMINED BY SILTATION FENCING AND CATCH DRAIN SPACING. 6. ON COMPLETION OF MAJOR WORKS LEAVE DISTURBED LANDS WITH A SCARIFIED SURFACE TO
- CONTRACTOR TO MANAGE THE ALIGNMENT OF CATCH DRAINS ON SITE AND TO ENSURE THAT CATCH DRAINS INTERCEPT THE SITE SURFACE RUNOFF AND DIRECT THE RUNOFF TOWARDS THE SEDIMENTATION BASINS.

ENCOURAGE WATER INFILTRATION AND ASSIST WITH KEYING TOPSOIL LATER.

SITE INSPECTION AND MAINTENANCE INSTRUCTIONS

- THE SITE SUPERINTENDENT WILL INSPECT THE SITE AT LEAST WEEKLY AND AT THE CONCLUSION OF EVERY STORM EVENT TO:
- a. ENSURE THAT DRAINS OPERATE PROPERLY AND TO EFFECT ANY NECESSARY
- REMOVE SPILLED SAND OR OTHER MATERIALS FROM HAZARD AREAS, INCLUDING LANDS CLOSER THAN 5 METRES FROM AREAS OF LIKELY CONCENTRATED OR HIGH VELOCITY FLOWS ESPECIALLY WATERWAYS AND PAVED AREAS.
- c. REMOVE TRAPPED SEDIMENT WHENEVER THE DESIGN CAPACITY OF THAT
- STRUCTURE HAS BEEN EXCEEDED. d. ENSURE REHABILITATED LANDS HAVE EFFECTIVELY REDUCED THE EROSION
- HAZARD AND TO INITIATE UPGRADING OR REPAIR AS NECESSARY. e. CONSTRUCT ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS. MAKE ONGOING CHANGES TO THE PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN
- CONDITIONS ON THE WORK-SITE OR ELSEWHERE IN THE CATCHMENT. MAINTAIN EROSION AND SEDIMENT CONTROL STRUCTURES IN A FULLY FUNCTIONING CONDITION UNTIL ALL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS REHABILITATED.
- THE SITE SUPERINTENDENT WILL KEEP A LOGBOOK MAKING ENTRIES AT LEAST WEEKLY. IMMEDIATELY BEFORE FORECAST RAIN AND AFTER RAINFALL. ENTRIES WILL INCLUDE:
- THE VOLUME AND INTENSITY OF ANY RAINFALL EVENTS.
- THE CONDITION OF ANY SOIL AND WATER MANAGEMENT WORKS.
- THE CONDITION OF VEGETATION AND ANY NEED TO IRRIGATE. THE NEED FOR DUST PREVENTION STRATEGIES.
- e. ANY REMEDIAL WORKS TO BE UNDERTAKEN. THE LOGBOOK WILL BE KEPT ON-SITE AND MADE AVAILABLE TO ANY AUTHORISED PERSON UPON REQUEST. IT WILL BE

GIVEN TO THE PROJECT MANAGER AT THE CONCLUSION OF THE WORKS.

EROSION AND SEDIMENT CONTROL NOTES

SEDIMENT CONTROL INSTRUCTIONS

- SEDIMENT FENCES WILL BE INSTALLED AS SHOWN ON THE PLAN AND ELSEWHERE AT THE DISCRETION OF THE SITE SUPERINTENDENT TO CONTAIN SOIL AS NEAR AS POSSIBLE TO
- SEDIMENT FENCES WILL NOT HAVE CATCHMENT AREAS EXCEEDING 900 SQUARE METRES AND HAVE A STORAGE DEPTH OF AT LEAST 0.6 METRES.
- SEDIMENT REMOVED FROM ANY TRAPPING DEVICES WILL BE RELOCATED WHERE FURTHER POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS CANNOT OCCUR.
- STOCKPILES ARE NOT TO BE LOCATED WITHIN 5 METRES OF HAZARD AREAS INCLUDING AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS AND DRIVEWAYS.
- WATER WILL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR WATER HAS BEEN TREATED BY AN APPROVED DEVICE. 6. TEMPORARY SEDIMENT TRAPS WILL REMAIN IN PLACE UNTIL AFTER THE LANDS THEY ARE PROTECTING ARE COMPLETELY REHABILITATED.
- ACCESS TO SITES SHOULD BE STABILISED TO REDUCE THE LIKELIHOOD OF VEHICLES TRACKING SOIL MATERIALS ONTO PUBLIC ROADS AND ENSURE ALL-WEATHER ENTRY/EXIT.

SOIL EROSION CONTROL INSTRUCTIONS

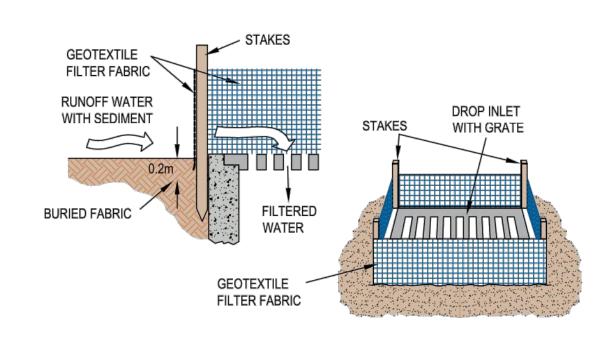
- EARTH BATTERS WILL BE CONSTRUCTED WITH AS LOW A GRADIENT AS PRACTICABLE BUT NO STEEPER, UNLESS OTHERWISE NOTED, THAN:
- a. 2(H):1(V) WHERE SLOPE LENGTH LESS THAN 12 METRES b. 2.5(H):1(V) WHERE SLOPE LENGTH BETWEEN 12 AND 16 METRES.
- a(H):1(V) WHERE SLOPE LENGTH BETWEEN 16 AND 20 METRES. d. 4(H):1(V) WHERE SLOPE LENGTH GREATER THAN 20 METRES.
- ALL WATERWAYS, DRAINS, SPILLWAYS AND THEIR OUTLETS WILL BE CONSTRUCTED TO BE STABLE IN AT LEAST THE 1:20 YEAR ARI, TIME OF CONCENTRATION STORM EVENT.
- WATERWAYS AND OTHER AREAS SUBJECT TO CONCENTRATED FLOWS AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUNDCOVER C-FACTOR OF 0.05 (70% GROUND COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION. FLOW VELOCITIES ARE TO BE LIMITED TO THOSE SHOWN IN TABLE 5-1 OF "MANAGING URBAN STORMWATER -SOILS AND CONSTRUCTION", DEPT OF HOUSING 1998 (BLUE BOOK). FOOT AND VEHICULAR TRAFFIC WILL BE PROHIBITED IN THESE AREAS.
- STOCKPILES AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND-COVER C-FACTOR OF 0.1 (60% GROUND-COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION.
- ALL LANDS, INCLUDING WATERWAYS AND STOCKPILES, DURING CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND-COVER C-FACTOR OF 0.15 (50% GROUND COVER) WITHIN 20 WORKING DAYS FROM INACTIVITY EVEN THOUGH WORKS MAY CONTINUE LATER.
- 6. FOR AREAS OF SHEET FLOW USE THE FOLLOWING GROUND COVER PLANT SPECIES FOR TEMPORARY COVER: JAPANESE MILLET 20 KG/HA AND OATS 20 KG/HA.
- PERMANENT REHABILITATION OF LANDS AFTER CONSTRUCTION WILL ACHIEVE A GROUND-COVER C-FACTOR OF LESS THAN 0.1 AND LESS THAN 0.05 WITHIN 60 DAYS. NEWLY PLANTED LANDS WILL BE WATERED REGULARLY UNTIL AN EFFECTIVE COVER IS ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. FOLLOW-UP SEED AND FERTILISER WILL BE APPLIED AS NECESSARY.
- RE-VEGETATION SHOULD BE AIMED AT RE-ESTABLISHING NATURAL SPECIES. NATURAL SURFACE SOILS SHOULD BE REPLACED AND NON-PERSISTANT ANNUAL COVER CROPS SHOULD BE USED.

WASTE CONTROL INSTRUCTIONS

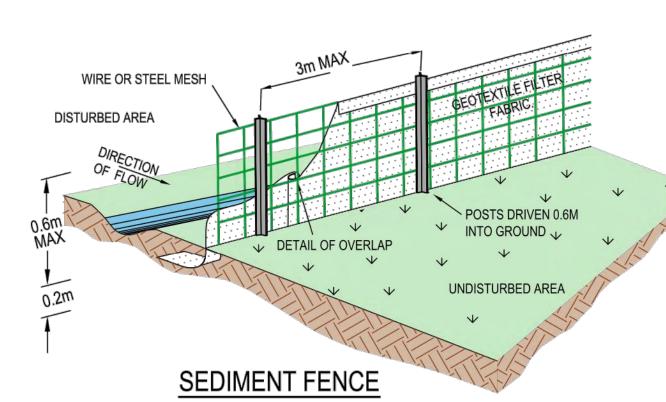
- ACCEPTABLE BINS WILL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES. PAINTS. ACID WASHING, LIGHTWEIGHT WASTE MATERIALS AND LITTER, CLEARANCE SERVICES WILL BE PROVIDED AT LEAST WEEKLY. DISPOSAL OF WASTE WILL BE IN A MANNER APPROVED BT THE SITE SUPERINTENDENT.
- ALL POSSIBLE POLLUTANT MATERIALS ARE TO BE STORED WELL CLEAR OF ANY POORLY DRAINED AREAS, FLOOD PRONE AREAS, STREAMBANKS, CHANNELS AND STORMWATER DRAINAGE AREAS. STORE SUCH MATERIALS IN A DESIGNATED AREA UNDER COVER WHERE POSSIBLE AND WITHIN CONTAINMENT BUNDS.
- ALL SITE STAFF AND SUB-CONTACTORS ARE TO BE INFORMED OF THEIR OBLIGATION TO USE WASTE CONTROL FACILITIES PROVIDED.
- 4. 4. ANY DE-WATERING ACTIVITIES ARE TO BE CLOSELY MONITORED TO ENSURE THAT WATER IS NOT POLLUTED BY SEDIMENT, TOXIC MATERIALS OR PETROLEUM PRODUCTS.
- PROVIDE DESIGNATED VEHICULAR WASHDOWN AND MAINTENANCE AREAS WHICH ARE TO HAVE CONTAINMENT BUNDS.

SANDBAGS OVERLAP ONTO KERB RUNOFF GAP BETWEEN BAGS ACT THREE LAYERS OF SANDBAGS WITH AS SPILLWAY ENDS OVERLAPPED

SANDBAG KERB INLET SEDIMENT TRAP

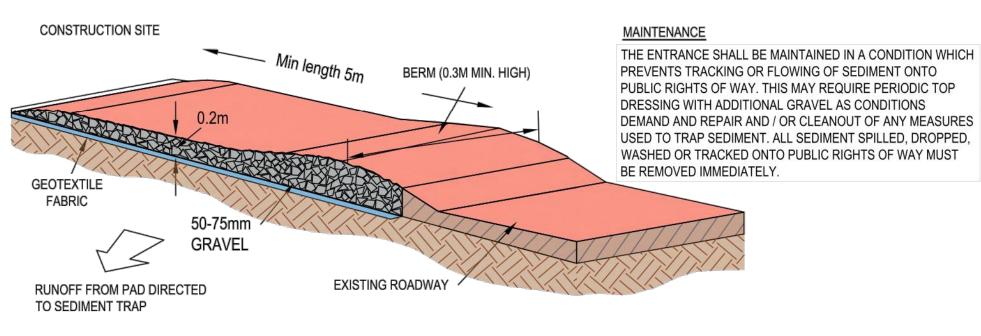


GEOTEXTILE FILTER FABRIC DROP **INLET SEDIMENT TRAP**

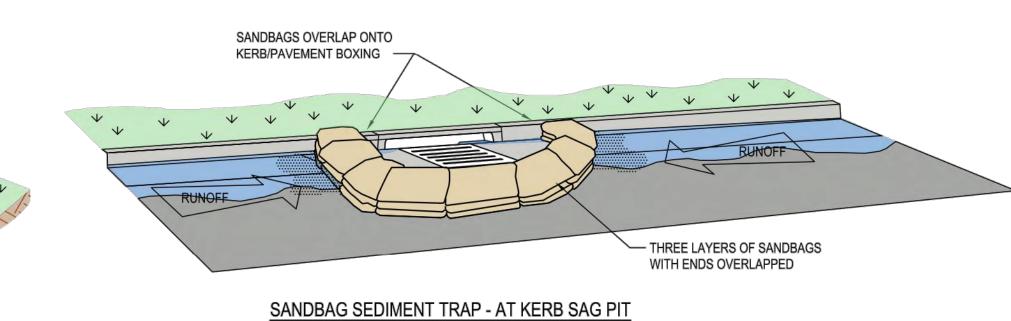


ANGLE FIRST STAKE TOWARDS PREVIOUSLY LAID STRAW BALE STAKES DRIVEN 0.6M INTO THE GROUND DISTURBED AREA DIRECTION OF FLOW 0.1m DEEP

STRAW BALE SEDIMENT FILTER (ALTERNATE)



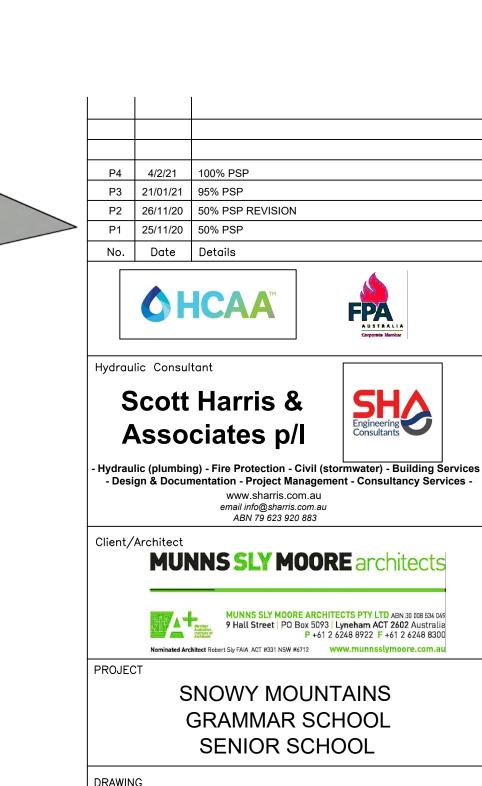
TEMPORARY CONSTRUCTION EXIT



GAP BETWEEN BAGS ACT AS SPILLWAY RUNOFF THREE LAYERS OF SANDBAGS WITH ENDS OVERLAPPED

SANDBAG SEDIMENT TRAP - AT OTHER THAN KERB SAG PIT

SANDBAG SEDIMENT TRAP DETAILS



HYDRAULIC SERVICES

SEDIMENTATION CONTROL

SPECIFICATION AND DETAILS

Drawing No. H4-02 20012 Scale N:T:S Date 25/11/20 Drawn S.H Sheet 9 of 9 Designed S.H. Dip Engineering Plumbing Services m.HCAA

EROSION AND SEDIMENT CONTROL NOTES

- **IMPORTANT NOTES:** 1. THIS DRAWINGS IS FOR GUIDANCE PURPOSES ONLY - THE SOIL AND EROSION CONTROLS ARE INDICATIVE AND REMAIN SUBJECT TO CONSTRUCTION METHODOLOGY - THE CONTRACTOR SHALL AT ALL TIMES REMAIN RESPONSIBLE FOR COMPLIANCE WITH ALL LAWS AND REGULATIONS PERTAINING TO SAFETY AND PROTECTION OF ENVIRONMENT
- ALL SOIL AND EROSION CONTROLS TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH COUNCIL GUIDELINES AND CONDITIONS AND THE CURRENT NSW DEPT OF CONSERVATION AND LAND MANAGEMENT "URBAN EROSION AND SEDIMENT CONTROL" HANDBOOK
- CONTRACTOR TO ENSURE THAT SEDIMENT IS NOT ALLOWED TO ENTER ADJACENT LOTS TO DOWNSTREAM STOMRWATER SYSTEMS. ANY DAMAGE WHATSOEVER CAUSED THROUGH BREACH OF THIS CONDITION BY THE CONTRACTOR SHALL BE RECTIFIED SOLELY AT THE CONTRACTORS COST