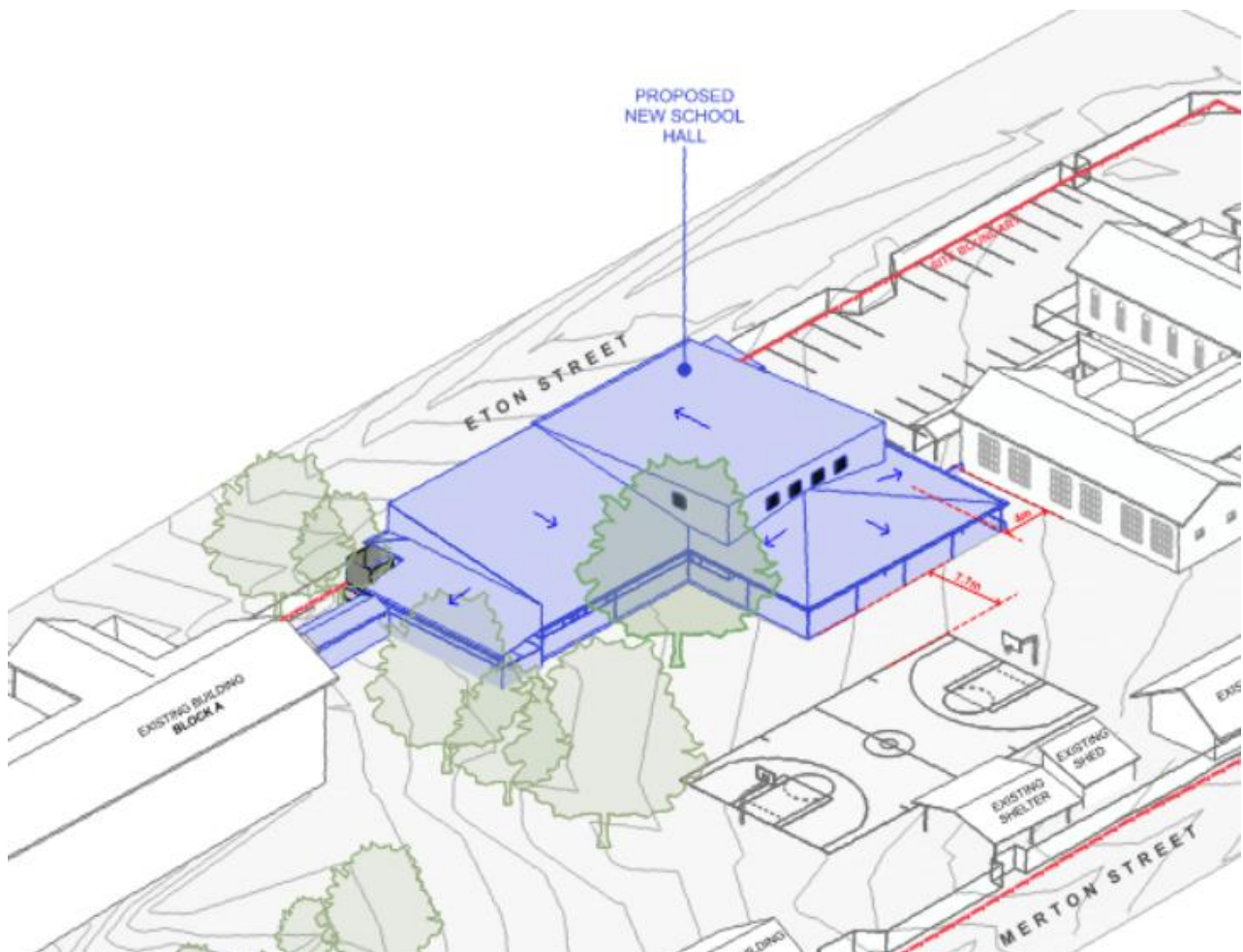


SUTHERLAND PUBLIC SCHOOL- PROPOSED NEW HALL HYDRAULIC AND FIRE SERVICES SCHEMATIC DESIGN REPORT

Prepared for: Department of Education (DoE)

Issue no: C



Revision	Date	Purpose	Prepared By	Reviewed By
A	29/11/24	1 ST Draft Issue	R Gruber	D. Hansen
B	10/12/24	REF Submission	R Gruber	D. Hansen
C	20/12/24	3.1.2 Rainwater Re-Use section updated for REF Submission	R Gruber	D. Hansen

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1 Introduction

ENTEC Consultants Pty Ltd have been engaged by School Infrastructure NSW (SINSW) via Steensen Varming as the hydraulic and fire services consultant for the proposed new hall for Sutherland Public School.

This report has been prepared to confirm the Schematic Design for the project.

This report encompasses all hydraulic and fire Services, as briefed.

Mechanical, electrical, communications and civil stormwater are not included as being delivered by separate reports.

This report supports a Review of Environmental Factors for a new school hall, pursuant to Part 5 of the Environmental Planning and Assessment Act (EP&A Act).

1.1 Purpose of the REF

The purpose of this Review of Environmental Factors (REF) is to assess the proposed works to demolish the existing school Block J, car parking spaces and structures, removal of six (6) trees, and the construction of a new school hall and Covered Outdoor Learning Area (COLA), and document the likely environmental impacts and mitigation measures to be implemented. The proposed activity is located at 38-54 Eton Street, Sutherland NSW 2232 (the site), known as the Sutherland Public School (the school).

The REF has been prepared in accordance with the requirements of all potentially relevant NSW and Commonwealth legislation. The REF has been prepared in accordance with Section 3 of the Guidelines for Division 5.1 Assessments – June 2022 (the Guidelines) and section 171A and 171(2) of the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation).

In doing so, it satisfies sections 1.7 and 5.5 of the Environmental Planning and Assessment Act 1979 (EP&A Act), which requires a public authority to examine and take into account to the fullest extent possible, all matters affecting, or likely to affect, the environment by reason of the activity.

The assessment contained within this REF has been prepared having regard to:

- whether the proposed activity is likely to have a significant impact on the environment and therefore the necessity for an EIS to be prepared and approval sought from the Minister for Planning and Public Spaces under Part 5 Division 5.1 of the EP&A Act
- whether the proposed activity is likely to have a significant impact on the environment and therefore the necessity for a Species Impact Statement (SIS) and Biodiversity Development Assessment Report (BDAR) to be prepared
- the potential for the proposal to significantly impact Matters of National Environmental Significance (MNES) on Commonwealth land
- the need to refer the activity to the Australian Government Department of Environment and Energy for a decision by the Commonwealth Minister for the Environment on whether assessment and approval is required under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

1.2 Proposal Background

The proposed construction of a new school hall at the school is in alignment with the NSW Government's 2023–24 Budget, which has allocated \$8.8 billion to fund the development and upgrading of schools across the state. This funding initiative reflects the government's commitment to investing in educational infrastructure to support growing communities and provide access to world-class public education. As part of this broader strategy, the proposed upgrades at the school aim to cater to the evolving needs of its student population and the wider school community.

1.3 Basis of Report

This building hydraulics and fire services report has been prepared in accordance with the following requirements:

General

- NSW Department of Education Educational Facilities Standards and Guidelines
- SafeWork NSW
- Sydney Water Requirements
- NSW Fire and Rescue Requirements
- Sutherland Shire Council
- NSW Environment Protection Authority.

Building Hydraulic Services

- AS 3500.1-2021 Water Services
- AS 3500.2-2021 Sanitary Plumbing and Drainage
- AS 3500.3-2021 Section 3 Roof Drainage Systems -Design
- AS 3500.4-2021 Section 3 Heated Water Services
- NCC-2022 Volume 1 J9D3 - Energy Monitoring for Hot Water
- NCC2022 Volume 1 J8D2 - Heated Water Supply
- NCC-2022 Volume 3 – Plumbing Code of Australia
- NCC-2022 Volume 1 A5G1
- AS2419.1 2021 Fire Hydrant Installations – System Design and Commissioning
- NCC-2022 Volume 1 E1D2 – Fire Hydrants
- AS 2441.3-2005 Installation of Fire Hose Reels
- NCC-2022 Volume 1 E1D3 – Fire Hose Reels

Building Fire Services

- AS 1670.1 -2018 (Amdt 1) Fire Detection, Warning, Control and Intercom Systems
- NCC 2022 Specification 20 Smoke Detection and Alarm System. NSW E2D16, NSW S20C8, E2D3
- AS 2444-2001 Portable Fire Extinguishers and Fire Blankets
- NCC 2022 E1D14

This report is based on: _

- Dial before you dig application.
- Sydney Water supplied information,
- Jemena supplied information.
- Site visit attended by R Gruber on 8th August 2024 and 9th October 2024
- Schematic design plans developed by BKA Architects.

1.4 Scope

The hydraulic and fire services scope include: _

- Potable water supply,
- Sanitary drainage,
- Fire water supply
- Natural Gas Supply
- Roof Water Collection and Re-use
- Fire hydrant protection
- Fire hose reel protection
- Portable fire extinguishers and fire blankets
- Fire detection and occupant warning system

1.5 Hydraulic and Fire Services Document List

This report is to be read in conjunction with the following hydraulics and fire services drawings, and as included in the Appendix B and C of this report.

Hydraulic Services

Document Reference	Document Title	Revision	Date
240078_H000	COVER SHEET LEGEND & DRAWING LIST	C	17/01//2025
240078_H010	SITE PLAN	C	17/01//2025
240078_H100	DEMOLITON & DIVERSION PLAN	C	17/01/2025
240078_H101	IN-GROUND SERVICES PLAN	C	17/01/2025
240078_H200	GROUND FLOOR PRESSURE SERVICES	C	17/01/2025
240078_H300	ROOF PLAN	C	17/01/2025
230078_H400	FIIRE HYDRANT COVERAGE PLAN	C	17/01/2025
230078_H500	FIIRE HOSE REEL COVERAGE PLAN	C	17/01/2025
SPSNH_HY_SPEC_ENTEC_TENDER DOCUMENT ISSUE	HYDRAULIC SERVICES SPECIFICATION	B	17/01/2025

Fire Services

Document Reference	Document Title	Revision	Date
240078_F000	COVER SHEET LEGEND & DRAWING LIST	C	17/01//2025
240078_F100	GROUND FLOOR FIRE DETECTION	C	17/01//2025

1.6 Mitigation Measures

The hydraulic and fire services design risks identified in the design phases and the mitigation measures include:

Risk Number	Risk Identified	Mitigation Measure Options	Risk Mitigation Option Adopted	Risk Resolved (yes / no / comments)
H-1	New building fire hydrant coverage shortfall from external street main hydrant.	1. Construct new hydrant in Sydney Water watermain, 2. Add additional external stair from new building to reduce travel path	Option 2 adopted into design	Yes. Existing Building A (Outside proposed works scope) does not have compliant fire hydrant coverage
H-2	Limited spatial opportunity to construct rainwater re-use tank for rainwater re-use in accordance with EFSG's	1. Co-locate inground ground water collection tank with stormwater onsite detention system. 2. Relocate and repurpose existing rainwater collection tanks system, located within proposed construction zones, to Building K for existing greenhouse irrigation supply	Option 2 adopted into design	Yes. Proposed to and accepted by Stakeholders

2 The Site

2.1 Site Description

The site accommodates the Sutherland Public School which is located at 38-54 Eton Street, Sutherland, NSW 2232. The Sutherland Public School is approximately 1.35 hectares in area and is made up of the following 16 allotments:

- Lot 1 DP6600
- Lot 2 DP6600
- Lot 3 DP6600
- Lot 4 DP6600
- Lot 5 DP6600
- Lot 6 DP6600
- Lot 7 DP6600
- Lot 8 DP6600
- Lot 9 DP6600.
- Lot 10 DP6600
- Lot 5 Section 45 DP802
- Lot 6 Section 45 DP802
- Lot 7 Section 45 DP802
- Lot 8 Section 45 DP802
- Lot 9 Section 45 DP802
- Lot 10 Section 45 DP802

The proposed school hall is located within Lot 6, 7 and 8 DP 802 and has an area of approximately 957 sqm. Refer to Figure 1.

Vehicular access to the site is provided from Eton Street, Flora Street, and Merton Street, with parking spaces available along the northern and western sides of the site. Service vehicles and waste collection access the site through the Merton Street gate, which is located near the existing toilet block.

The site is currently zoned as SP2 Infrastructure (Educational Establishment) in the Sutherland Shire Local Environmental Plan 2015 (SSLEP 2015). The site has a street frontage to Flora Street to the north, Merton Street to the east, President Avenue to the south and Eton Street to the west. These local roads include footpaths, street lighting and street trees along all frontages.

The area of works currently includes Block J, steel awning for existing COLA, a garden bed, trees, four car parking spaces and covered walkway structures which are proposed to be demolished to accommodate the new school hall.



Figure 1: School boundary in green, and the site in red

Source: Mecone MOSAIC

2.2 Site Locality

The site is within close proximity to Sutherland Town Centre, surrounding high density residential development and also within 400 metres to Sutherland Railway Station. The school is also located within proximity to childcare and early learning facilities, which includes an existing childcare facility at the Minerva School, Moore Street Early Education Centre, St Patricks Catholic Church, Sutherland Presbyterian Church, Sutherland Shire Council Family Day Care, and Sutherland Child Care Centre. There are also two schools located directly adjacent to Sutherland Public School, which are Minerva School to the south and St Patricks Catholic School to the east.

There are multiple bus stops located along President Avenue and East Parade, in proximity to the Sutherland Railway Station. Public bus routes operating within 400m vicinity of the site include 961, 962, 965, 969, 976, 991 and M92

The proposed works involve upgrades to the existing Sutherland Public School. This will include demolition of existing Block J, garden bed, car parking spaces, and associated structures, construction of a new single-storey school hall, and associated civil works. The proposal retains the existing student capacity at the Sutherland Public School.

The project will be carried out over one continuous construction period for the demolition and construction works.

3 The Site Existing Services Infrastructure Authorities

Dial Before You Dig (DBYD) information has been provided by the following supply authorities that may affect the proposed development: -

- Sydney Water
- Ausgrid
- Telstra
- NBN
- Jemena
- NBN
- Water NSW

3.1 Sydney Water Sewer Mains

Dial Before You Dig (DBYD) information shows that Sydney Water sewer connection point for the school is located on President Avenue.

Refer Figures 1 and 2

Upon receipt of “Approved DA Conditions of Consent” or similar planning approval, a Section 73 certificate application will need to be issued to Sydney Water to ascertain their specific project requirements regarding sewer.

However, based on the proposed development works, the size and location(s) of sewer mains, augmentation or upgrade of sewer main infrastructure is highly unlikely,

3.2 Sydney Water Water Mains

Dial Before You Dig (DBYD) information shows that Sydney Water potable water mains are located around the proposed works site(s).

Refer Figure 1

Sydney Water potable water infrastructure is located as follows: -

- Eton Street – 100mm C/CL watermain on eastern side of street adjacent to school lot western boundary. Site water meter located in north parking area.
- President Avenue 300mm C/CL trunk watermain (not available for connection) on northern side of President Avenue adjacent to school lot Southern boundary
- President Avenue 150mm C/CL watermain on southern side of President Avenue.
- Merton – 100mm C/CL watermain on eastern side of street adjacent to school lot eastern boundary.
- Flora Avenue – 150mm uPVC watermain on southern side of avenue, adjacent to school lot northern boundary

Sydney Water “Statements of Available Pressure and Flow” received (Refer Appendix A), based on application 1753030, indicating: -

■ Eton Street 100mm water main

Maximum supply pressure under normal conditions is 57m head pressure.
Minimum supply pressure under normal conditions is 32m head pressure.
Expected pressure for fire protection systems @ 10l/sec is 33m head pressure.

Maximum permissible flow is 26l/sec at 4m head pressure

■ Flora Street 150mm water main

Maximum supply pressure under normal conditions is 54m head pressure.
Minimum supply pressure under normal conditions is 28m head pressure.
Expected pressure for fire protection systems @ 10l/sec is 33m head pressure.

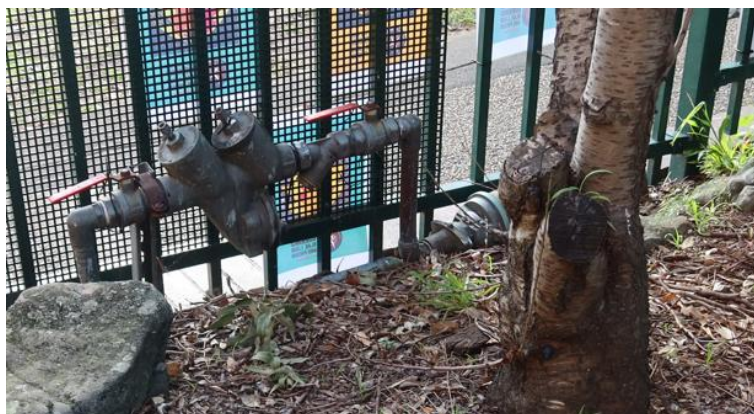
Maximum permissible flow is 30l/sec at 12m head pressure

Based on site investigation there are two (2) x water main connections, for the school site.

1 x 50mm connection with 40mm meter, for potable water supply on Eton Street, adjacent to the proposed building works site and existing staff carpark.



1 x 50mm connection with 40mm water meter for potable water supply on Eton Street adjacent to the Building A entry gate.



Upon receipt of “Approved DA Conditions of Consent” or similar planning approval, a Section 73 certificate application will be issued to Sydney Water to ascertain their specific project requirements regarding the water main requirements.

However, based on the proposed development works, the size and location(s) of water mains should not require augmentation or relocation.

Note 1: Available Pressure and flow information has been received from Sydney Water and is deemed suitable for the proposed project, without the need of pumps and / or storage tanks for potable water supply.

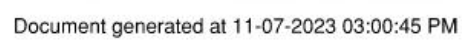
Note 2: There were no fire hydrants or fire hose reels sighted within school property boundary during site investigations

Figure 1 Sydney Water Assets Map



Sewer Service Diagram

Application Number: 1687912



3.3 Jemena Natural Gas Mains

Dial Before You Dig (DBYD) information shows that natural gas mains are located around the proposed works site(s).

Jemena natural gas infrastructure is located as follows: -

- 40Ø NY 210Kpa gas main located on the west side of Eton Street,
- 40Ø NY 210Kpa gas main located on the south side of President Avenue.
- 32Ø NY 210Kpa gas main located on the east side of Merton Street
- 32Ø NY 210Kpa gas main located on the north side of Flora Street.

Refer Figure 3

Based on site investigation there is only one (1) x gas main connection, for the school site.

1 x 25Ø on Eton St to site gas meter and regulator set. (outlet pressure not stipulated- assumed 7kpa)

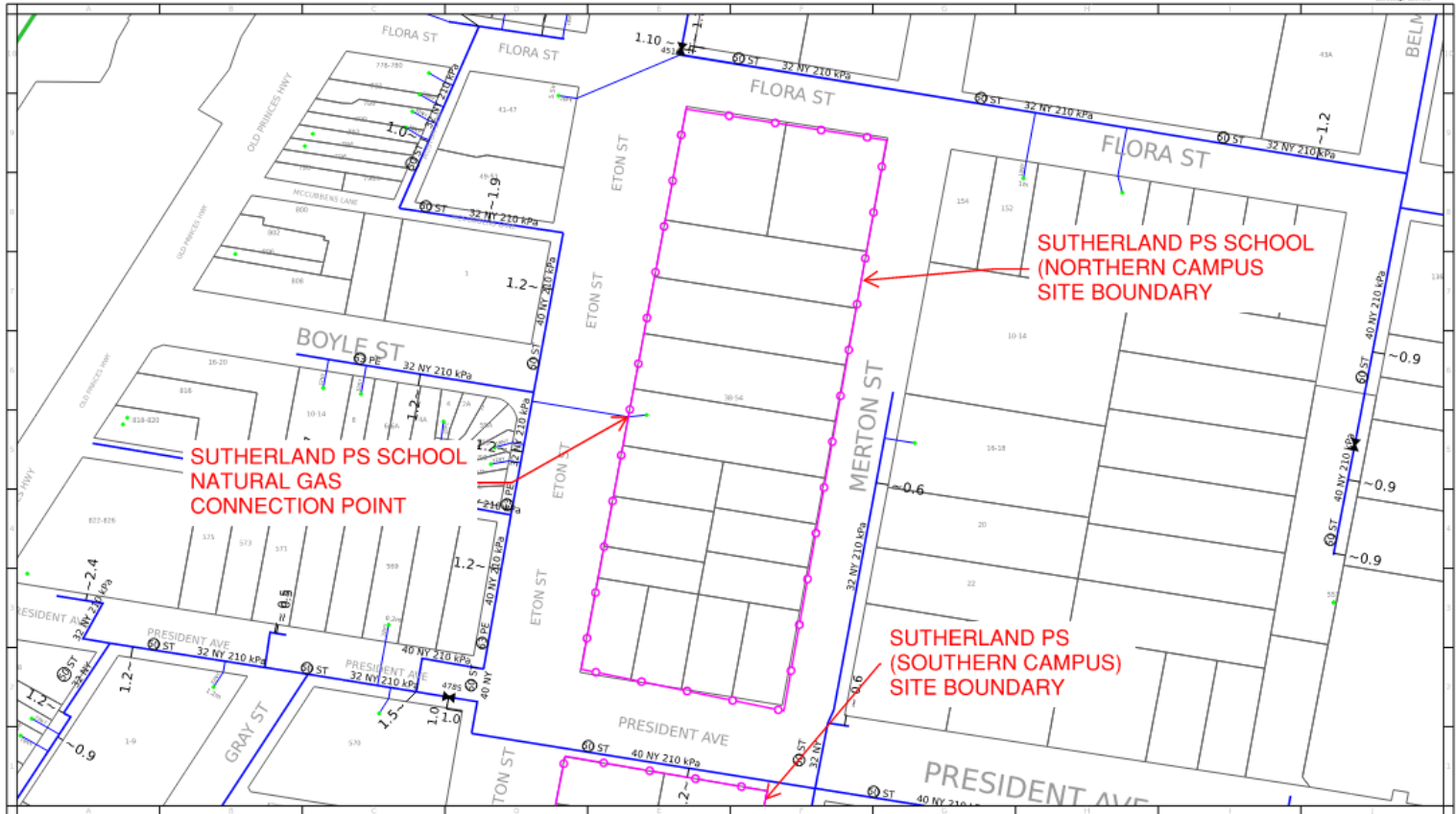
Based on discussions with School Principal, during site investigations it was advised the gas supplies various existing buildings for space heating will be required to be retained and operational outside summer months.

Based on the proposed new hall development works, gas supply for the proposed hall is not required for space heating or domestic hot water heating.

Figures 3 – Jemena Natural Gas Assets Map

BYDA Authority: Jemena Gas Networks (NSW)

BYDA Location: 38-54 Eton Street Sutherland NSW, 2232



For legend details, please refer to the Coversheet attachment provided as part of this BYDA response.



Issue Date: 11/10/2023
BYDA Seq No: 230715656
BYDA Job No: 35231072

WARNING: This is a representation of Jemena Gas Networks underground assets and does not indicate all assets in the area. It must not be used for the purpose of construction or other activities without the assistance of a qualified person.

4 Existing Internal Site Services (Compliance, Capacity & Condition)

Hydraulic Services Drawings

Existing hydraulic service drawings have not been sighted.

Fire Services Drawings

No existing fire services drawings were made available or viewed.

Survey Drawings

Drawing References	Description	Revision or Date
Astrea Digital Survey Solutions Utility Mapping A4050 Sheets 1 to 5	Due Diligence Design -Survey Numerous CCTV sewer inspection footage videos	Date of Plan: 08/10/24

Based on site inspections and available information provided, the existing hydraulic services are adequately sized and compliant for connections for the proposed new hall.

Existing water, sewer and gas services located with the proposed construction zone and building footprint will require demolition and diversions as documented on hydraulic service drawing 240078 H-100.

5 Proposed Hydraulics and Fire Services

5.1 Potable Water

Based on hydraulic loading unit calculations (Ref AS3500.1 2021 Table 3.2.1) the proposed new building works will increase total loading units by Thirty-Eight (38) equivalent to approximately 0.45litres/sec

Based on site inspection and assessment of available water pressure and flows, water meter assembly and existing buildings and expected diversity of usage, the existing water supply capacity is considered adequate.

The existing water supply is assumed to be in fair and maintainable condition and suitable for connection to the proposed new Hall building.

Two (2) water meters were identified during the site inspection, both located adjacent to Eton Street.

Existing domestic water pipes are currently located under the proposed hall building footprint and will need to be diverted prior to building construction. Refer Appendix B – Hydraulic Services Demolition and Diversion Plan.

All new potable cold-water works will comply with AS3500.1 2021.

5.2 Domestic Hot Water

New hot water plant will be provided for the new building fixtures and fittings.

The hot water plant will utilize electric heat pump technology to ensure industry best practice energy usage.

Hot water plant will be located externally within services enclosure adjacent to the new building.

Temperature outlet control for basins and showers will be controlled by approved thermostatic mixing valves within stainless steel recessed vandal proof box.

The canteen / kitchenette room will incorporate “3 in 1 “chilled / boiling / hot water to the outlet dispenser and the sink.

All new domestic hot water supply works will fully comply with AS3500.4 2021.

5.3 Non-Potable Water - Rainwater Reuse

Based on site inspection, small individual gravity feed rainwater re-use systems are installed within the site for irrigation and some toilet flushing.

Roof water collection and re-use for this project is not being adopted due to the site constraints of the proposed school hall building.

These site constraints include:-

1. Capital and ongoing maintenance cost prohibitive to construct inground rainwater collection tanks.
2. Insufficient space between western boundary and building façade to cater for rainwater tanks installation and ongoing maintenance.
3. No opportunity to install rainwater tanks on northern façade due to encroachment onto proposed entry and existing car parking.
4. No opportunity on eastern and southern facades due to negative impact on proposed circulation routes.

5. Minimal soft landscaping in the immediate area to utilize collected water for irrigation.
6. Rainwater re-use is not recommended for pupil and staff toilet flushing due to water risk management assessment considering level of filtration / disinfection / pumping and ongoing maintenance and testing.

In lieu, it is proposed to relocate existing rainwater tanks and associated equipment and repurpose at Block K on the school site adjacent to the existing greenhouse and re-use collected rainwater for irrigation purposes.

5.4 Sewer

Based on hydraulic fixture unit calculations (Ref AS3500.2 2021 Table 6.3) the proposed new building works will increase total fixture units by approximately fifty-eight (58)

Based on site investigations and CCTV survey it is considered the existing internal sewer system has sufficient capacity for the proposed future development

Based on available survey information there is an existing sewer drainpipe located directly under the proposed building and will require diversion prior to construction. Refer Appendix B – Hydraulic Services Demolition and Diversion Plan.

Based on site investigations, it is assumed to be in fair and maintainable condition.

CCTV sewer inspection videos received have been assessed in detail and based on initial review, replacement works due to required sewer diversions are the only capital works required for this project.

All new proposed sewer drainage works will comply with AS3500.2 2021.

5.5 Natural Gas

The existing gas meter and regulator assembly is located within a masonry enclosure immediately outside the proposed building works.

Reconfiguration of gas meter and diversion of existing gas piping will be required. Refer Appendix B –Hydraulic Services Demolition and Diversion Plan.

Insufficient information provided to confirm current capacity.

Considering proposed space heating and domestic hot water heating will use electric power, there will be no impact on the existing natural gas system.

Based on site inspection, it is assumed to be in fair and maintainable condition.

Proposed gas diversion works required will determine current pipe condition and expected design life.

All new gas services works will comply with AS5601 2014

5.6 Fire Hydrant Protection

A Fire Brigade Booster assembly for the existing school site was not identified during site investigations.

Based on site investigations the school relies on external “street hydrants” for fire hydrant protection system.

Additional investigations and studies will be required to ascertain compliant protection for each existing building. Existing three (3) storey building A, appears to be the only building on the site that would not comply with AS2419 (2021)

The proposed new hall would achieve compliant hydrant coverage from existing street hydrant in Eton Street. (Refer Appendix D – Ground Floor Fire Hydrant Coverage Plan)

Based on Sydney Water pressure and flow information received (refer Appendix A), the available flow and pressure will be adequate without the need of storage tanks or pumps.

5.7 Fire Hose Reel Protection

Existing fire hose reel protection was not sighted for existing buildings.

Due to the use and classification of the new school hall building fire hose reel protection will be required as part of the new development works.

Proposed fire hose reel protection will comply with AS2441-2005 and NCC 2022.

Based on Sydney Water pressure and flow information received (refer Appendix A), the available flow and pressure will be adequate without the need of storage tanks or pumps.

5.8 Portable Fire Extinguishers and Fire Blankets

The proposed new hall will require portable fire extinguishers and/or fire blankets in accordance with AS2444 and NCC2022

5.9 Smoke Detection and Occupant Warning

The proposed new hall will incorporate smoke detection and occupant warning system in accordance with AS1670 and NCC 2022 requirements. It is expected to be mechanical shutdown only system which falls under AS1670.1-2018 Amendment 1 Section 7.

6.0 Conclusion

Based on available authority infrastructure supplied information and site investigations, it is considered that the proposed Sutherland Public School New School Hall works, can be connected to internal house sewer, water supplies without the need of major hydraulic and fire services authority infrastructure works and cost.

Existing internal water, sewer and natural gas services will require diversion around the proposed building and reconnect to existing and have been included in cost plans for business case.

All other Hydraulic and Fire services can be constructed, for the new Hall, without any major unknown cost impost.

Appendix A – Pressure and Flow Advice

Statement of Available Pressure and Flow



Dakota Masters
277 Clarence Street
Sydney, 2000

Attention: Dakota Masters

Date: 24/11/2023

Pressure & Flow Application Number: 1770723
Your Pressure Inquiry Dated: 2023-11-06
Property Address: Eton Street, Sutherland 2232

The expected maximum and minimum pressures available in the water main given below relate to modelled existing demand conditions, either with or without extra flows for emergency fire fighting, and are not to be construed as availability for normal domestic supply for any proposed development.

ASSUMED CONNECTION DETAILS

Street Name: Flora Street	Side of Street: South
Distance & Direction from Nearest Cross Street	19 metres West from Merton Street
Approximate Ground Level (AHD):	113 metres
Nominal Size of Water Main (DN):	150 mm

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	54 metre head
Minimum Pressure	28 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	28
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	10	33
	15	31
	20	29
	25	26
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	10	25
	15	22
	20	19
	25	16
Maximum Permissible Flow	30	12

(Please refer to reverse side for Notes)

For any further inquiries regarding this application please email :

hydraulicassessment@sydneywater.com.au



Statement of Available Pressure and Flow

Dakota Masters
277 Clarence
SYDNEY, 2000

Attention: Dakota Masters

Date: 26/10/2023

Pressure & Flow Application Number: 1753030
Your Pressure Inquiry Dated: 2023-10-11
Property Address: Eton Street, Sutherland 2232

The expected maximum and minimum pressures available in the water main given below relate to modelled existing demand conditions, either with or without extra flows for emergency fire fighting, and are not to be construed as availability for normal domestic supply for any proposed development.

ASSUMED CONNECTION DETAILS

Street Name: Eton Street	Side of Street: East
Distance & Direction from Nearest Cross Street	10 metres South from Boyle Street
Approximate Ground Level (AHD):	110 metres
Nominal Size of Water Main (DN):	100 mm

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	57 metre head
Minimum Pressure	32 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	32
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	10	33
	15	29
	20	23
	25	16
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	10	25
	15	20
	20	14
	25	6
Maximum Permissible Flow	26	4

(Please refer to reverse side for Notes)

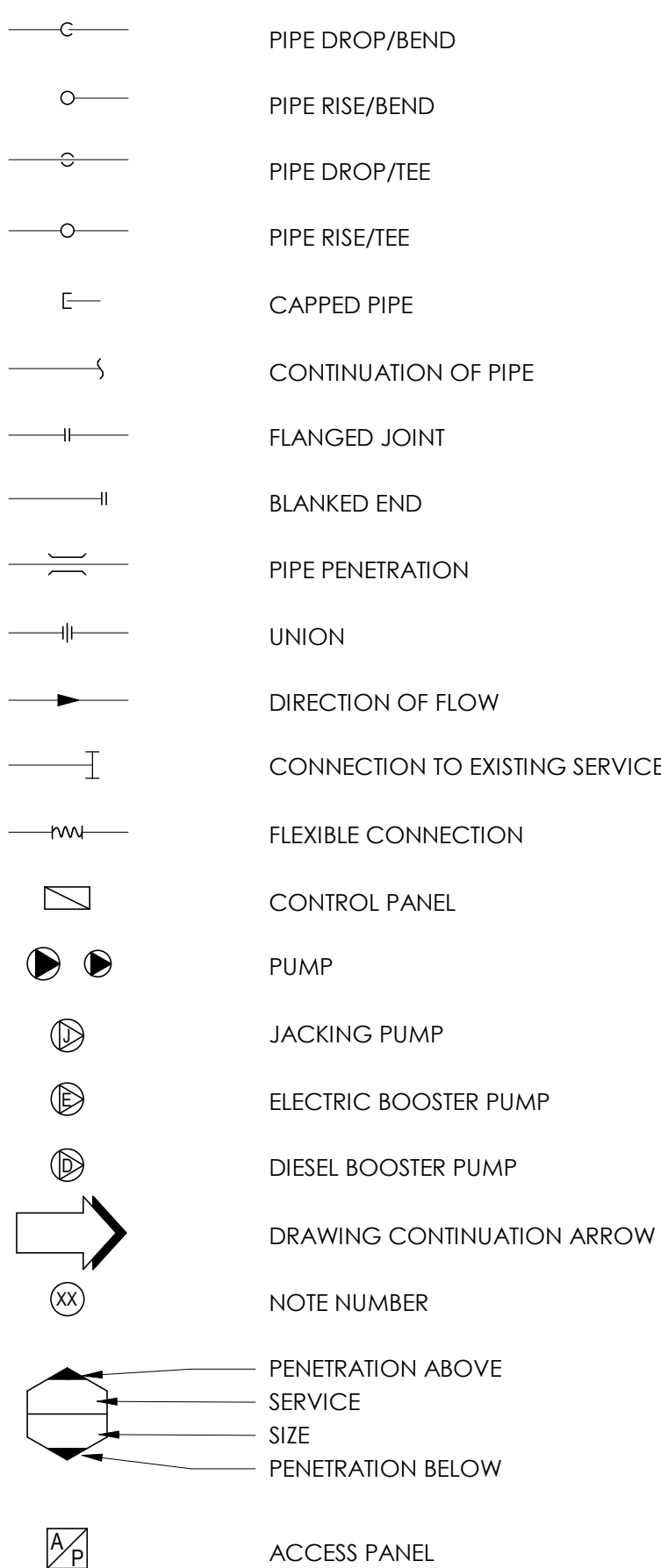
Appendix B – Hydraulic Services Drawings

SUTHERLAND PUBLIC SCHOOL - NEW HALL

38-54 ETON STREET, SUTHERLAND NSW 2232

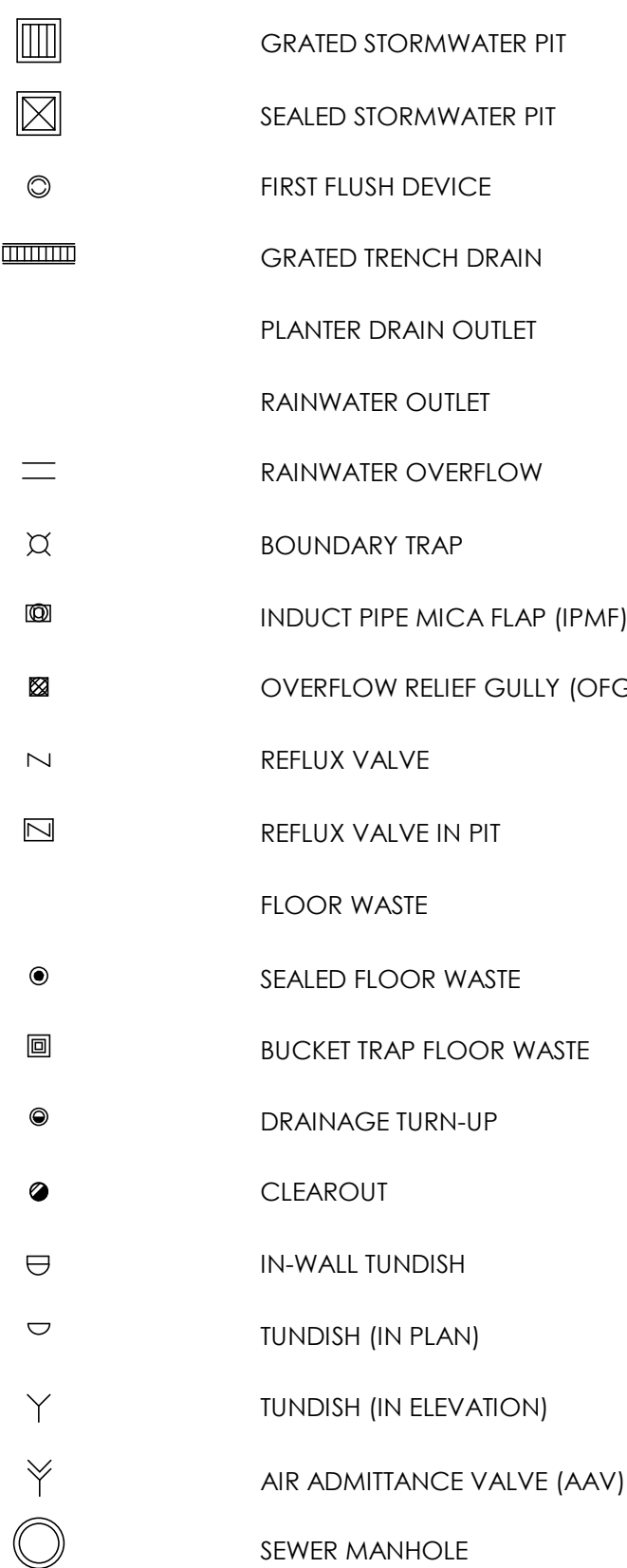
HYDRAULIC SERVICES

GENERAL



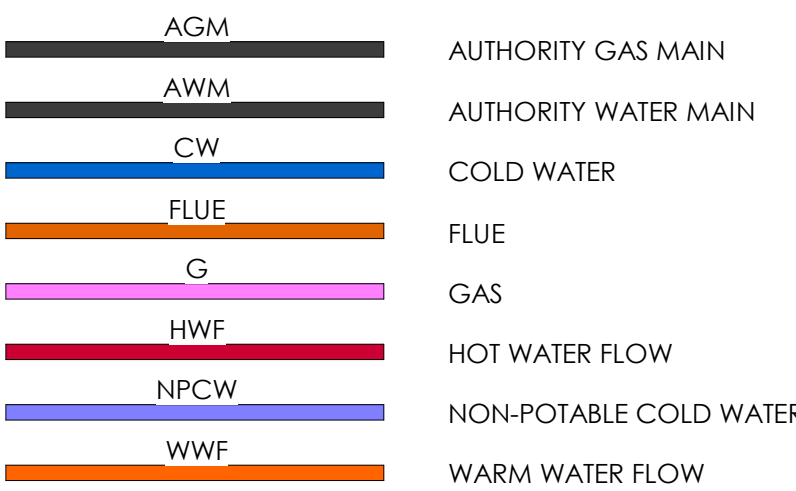
DRAWING LIST HYDRAULIC	
DRAWING No.	DRAWING NAME
H000	COVER SHEET, LEGEND & DRAWING LIST
H010	SITE PLAN
H100	DEMOLITION & DIVERSION PLAN
H101	IN-GROUND SERVICES PLAN
H200	GROUND FLOOR PRESSURE SERVICES
H300	ROOF PLAN
H400	FIRE HYDRANT COVERAGE PLAN
H500	FIRE HOSE REEL COVERAGE PLAN

DRAINAGE

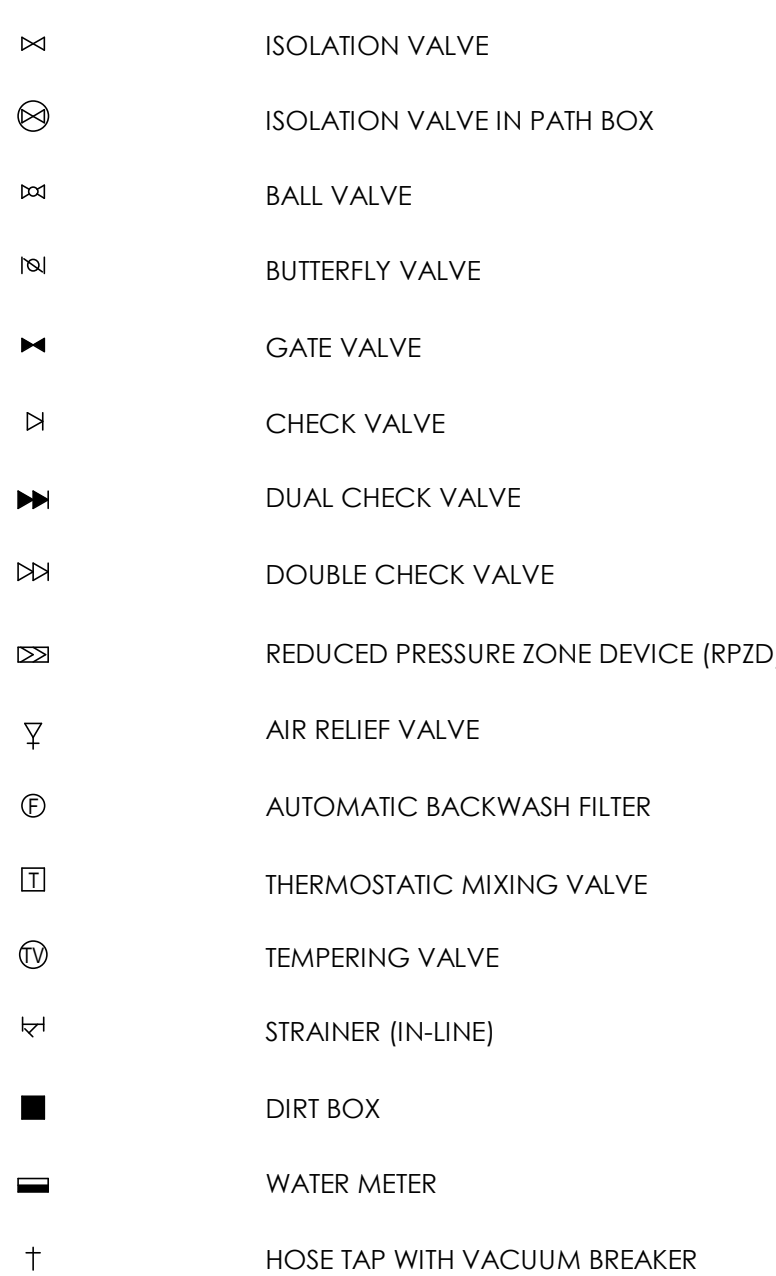


PIPEWORK LEGEND

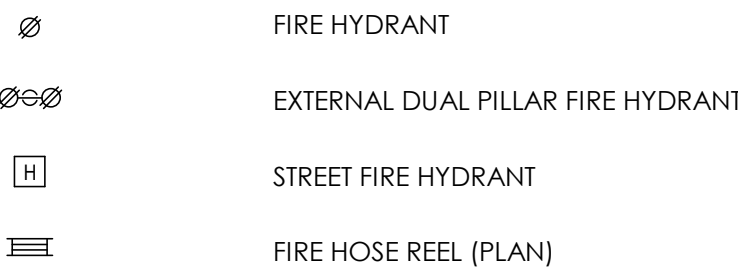
WATER & GAS



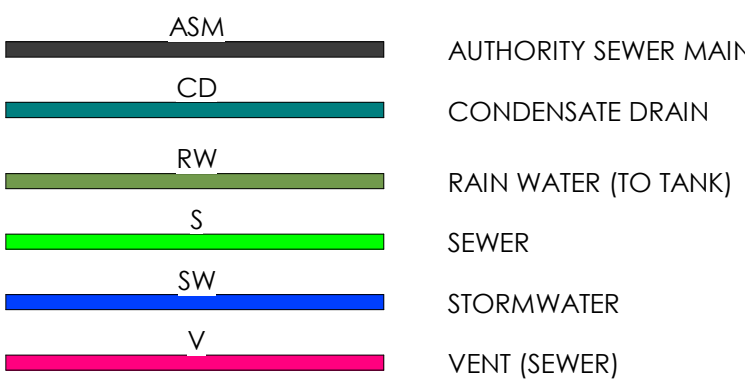
WATER



FIRE HYDRANTS, HOSE REELS & EXTINGUISHERS



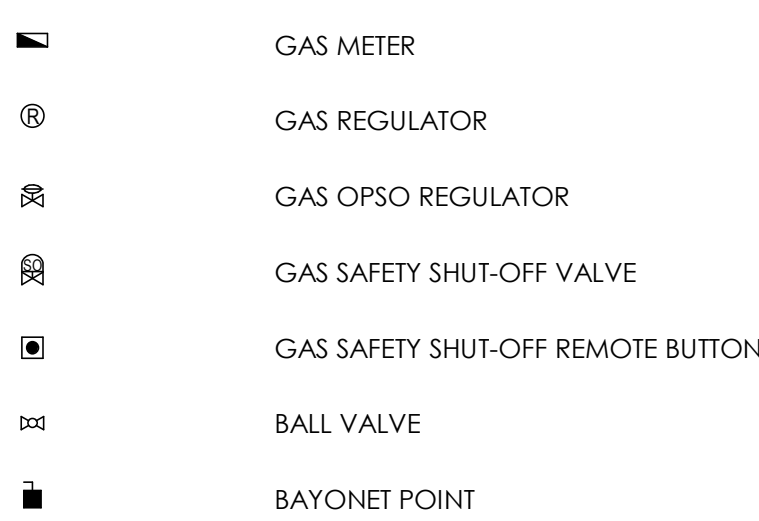
DRAINAGE



EXISTING & DEMOLISHED SERVICES



GAS



GENERAL HYDRAULIC NOTES

- CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS, SERVICES AND STRUCTURES ON SITE PRIOR TO COMMENCEMENT OF WORK.
- CONTRACTOR SHALL ARRANGE FOR ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR.
- ON COMPLETION OF PROPOSED WORKS ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AND GRASSED AREAS AND ROAD PAVEMENTS UNLESS NOTED OTHERWISE.
- MAKE SMOOTH TRANSITION TO EXISTING SERVICES AND MAKE GOOD WHERE REQUIRED.
- WHERE NEW WORKS ABUT EXISTING THE SUB CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED.
- CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS ARE TO BE UNDERTAKEN OVER OR IN CLOSE PROXIMITY TO THESE SERVICES. HAND EXCAVATE IN THESE AREAS.

GENERAL HYDRAULIC NOTES

- THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED ARCHITECTURAL, CIVIL, STRUCTURAL, MECHANICAL, ELECTRICAL AND COMMUNICATION/SECURITY DRAWINGS AND ALL PROJECT SPECIFICATIONS.
- CONTRACTOR TO SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER NON CORROSIVE CONNECTION BETWEEN DISSIMILAR PIPEWORK.
- ALL ELEVATED SERVICES PIPEWORK SHALL BE CLEARLY LABELED IN ACCORDANCE WITH REQUIREMENTS OF AS3500:2003 AND AS1345:1995.
- ALL ELEVATED SERVICES SHALL BE CHARGED AND TESTED PRIOR TO CONCEALMENT.
- ALL SERVICE CONDUITS SHOWN ARE INDICATIVE ONLY AND FINAL PIPE AND CONDUIT DETAILS AND LOCATIONS ARE TO BE OBTAINED BY THE SUB CONTRACTOR COORDINATING WITH AND GAINING CONFIRMATION FROM THE RELEVANT SERVICES.
- ELECTRICAL CONDUITS FOR HYDRAULIC SERVICES PLANT AND EQUIPMENT SHALL BE ORANGE HEAVY DUTY RIGID TYPE IN ACCORDANCE WITH CATEGORY 'A' OF AS3000 AND AS DESCRIBED IN THE ELECTRICAL SPECIFICATION AND DOCUMENTATION.
- CONCRETE THRUST BLOCKS SHALL BE CONSTRUCTED TO ALL BENDS, TEES, END POINTS AND ALL OTHER FITTINGS THAT MAY IMPART LOADS INTO THE ADJACENT GROUND. THRUST BLOCKS SHALL BE CONSTRUCTED TO AS3500 REQUIREMENTS AND LOCAL WATER AUTHORITY STANDARDS AND TO SUIT THE BEARING OF THE SOILS IN WHICH THEY ARE CONSTRUCTED.
- ON COMPLETION, ALL PIPEWORK SHALL BE SUBJECT TO A PRESSURE TEST REQUIRED BY MANAGING CONTRACTOR. ANY DEFECTS FOUND IN THE SYSTEM SHALL BE REMEDIED AND THE TEST RE-APPLIED.
- PIPEWORK RETICULATING / PASSING THROUGH CLASSROOMS, CONFERENCE ROOMS, ENCLOSED AREAS AND AREAS NOMINATED BY THE ACOUSTIC CONSULTANT SHALL BE ACOUSTICALLY INSULATED TO SATISFY THE NATIONAL CONSTRUCTION CODE (NCC) AND ACOUSTIC ENGINEER'S REQUIREMENTS.
- TRENCHES THROUGH EXISTING ROAD AND CONCRETE AREAS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE AND A MINIMUM OF 50mm IN BITUMINOUS PAVING. REINSTATE WITH ADDITIONAL REINFORCEMENT AND DOWELING AS REQUIRED BY STRUCTURAL ENGINEERS.
- CONTRACTOR SHALL PROVIDE ALL TIMBERING, SHORING AND SHUTTERING AS NECESSARY TO CONSTRUCT PIPEWORK INCLUDING THE REMOVAL OF SAME UPON COMPLETION OF PIPEWORK.
- CONTRACTOR SHALL OBTAIN ALL AUTHORITY APPROVALS AND PAY ALL FEES.
- ALL WORK TO BE IN ACCORDANCE WITH THE RELEVANT WATER AUTHORITY, FIRE AND RESCUE NSW, AS3500, AS2118, AS2444, AS2419 AND RELATED STANDARDS AS APPROPRIATE.
- CONTRACTOR TO PROVIDE 'AS BUILT' DOCUMENTATION UPON PRACTICAL COMPLETION OF THE PROJECT AND SHALL BE IN CAD FORMAT (AUTOCAD) AND REVIT 3D MODELING.
- ORIGIN OF LEVELS: AUSTRALIAN HEIGHT DATUM.
- ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.
- ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACKFILLED WITH SAND OR AN APPROVED GRANULAR MATERIAL AND COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS1289 E1.1.
- ALL SERVICES THAT CROSS FOOTINGS ETC. SHALL BE BACKFILLED WITH GRANULAR MATERIAL TO SUBGRADE LEVEL AND COMPACTED TO 95% M.M.D.D.

Statement of Available Pressure and Flow



Dakota Masters
277 Clarence
SYDNEY, 2000

Attention: Dakota Masters

Date: 26/10/2023

Pressure & Flow Application Number: 1753030

Your Pressure Inquiry Dated: 2023-10-11

Property Address: Eton Street, Sutherland 2232

The expected maximum and minimum pressures available in the water main given below relate to modelled existing demand conditions, either with or without extra flows for emergency fire fighting, and are not to be construed as availability for normal domestic supply for any proposed development.

ASSUMED CONNECTION DETAILS

Street Name: Eton Street	Side of Street: East
Distance & Direction from Nearest Cross Street	10 metres South from Boyle Street
Approximate Ground Level (AHD):	110 metres
Nominal Size of Water Main (DN):	100 mm

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	57 metre head
Minimum Pressure	32 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	32
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	10	33
	15	29
	20	23
	25	16
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	10	25
	15	20
	20	14
	25	6
Maximum Permissible Flow	26	4

(Please refer to reverse side for Notes)

For any further inquiries regarding this application please email :

hydraulicassessment@sydneywater.com.au

Sydney Water Corporation ABN 49 776 225 038
1 Smith St Parramatta 2150 | PO Box 399 Parramatta 2124 | DX 14 Sydney | T 13 20 92 | www.sydneywater.com.au
Delivering essential and sustainable water services for the benefit of the community

REF SUBMISSION

B	REF SUBMISSION	11.12.24	SF	RRG	
A	WORK IN PROGRESS ISSUE	27.11.24	SF	RRG	
ISSUE	DESCRIPTION	DATE	DRAWN	APP	
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Client
SINSW
SUTHERLAND PUBLIC HIGH SCHOOL



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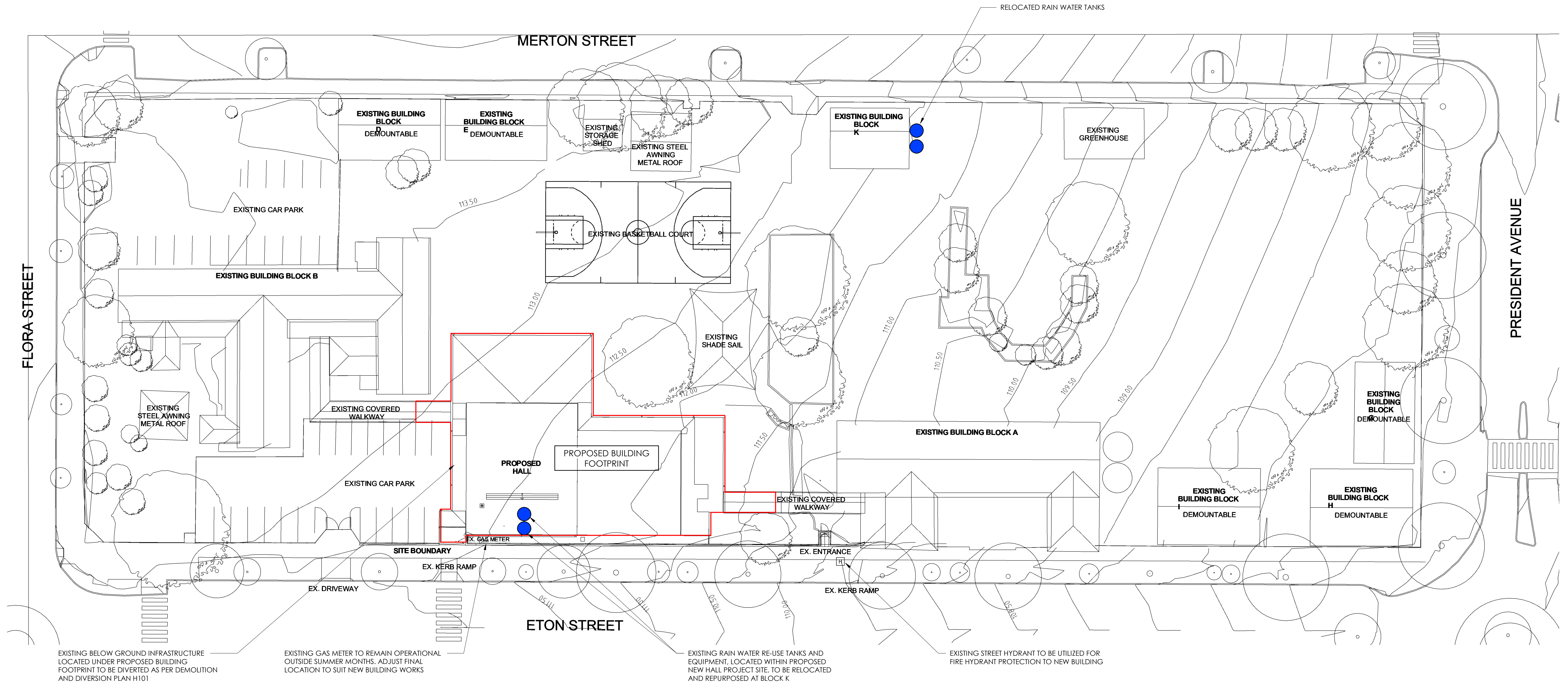
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PROJECT
SUTHERLAND PUBLIC SCHOOL -
NEW HALL
38-54 Eton Street,
Sutherland NSW 2232

DRAWING TITLE
HYDRAULIC SERVICES
COVER SHEET, LEGEND & DRAWING LIST

Drawn SF	Date DEC 2024	Scale As indicated	A1	Q.A. Check	Date
Designed RRG	Project No. 240078	Dwg No. H000	Issue B		

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 **Education**
School Infrastructure

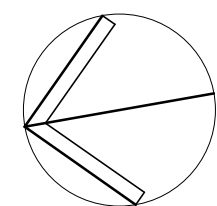
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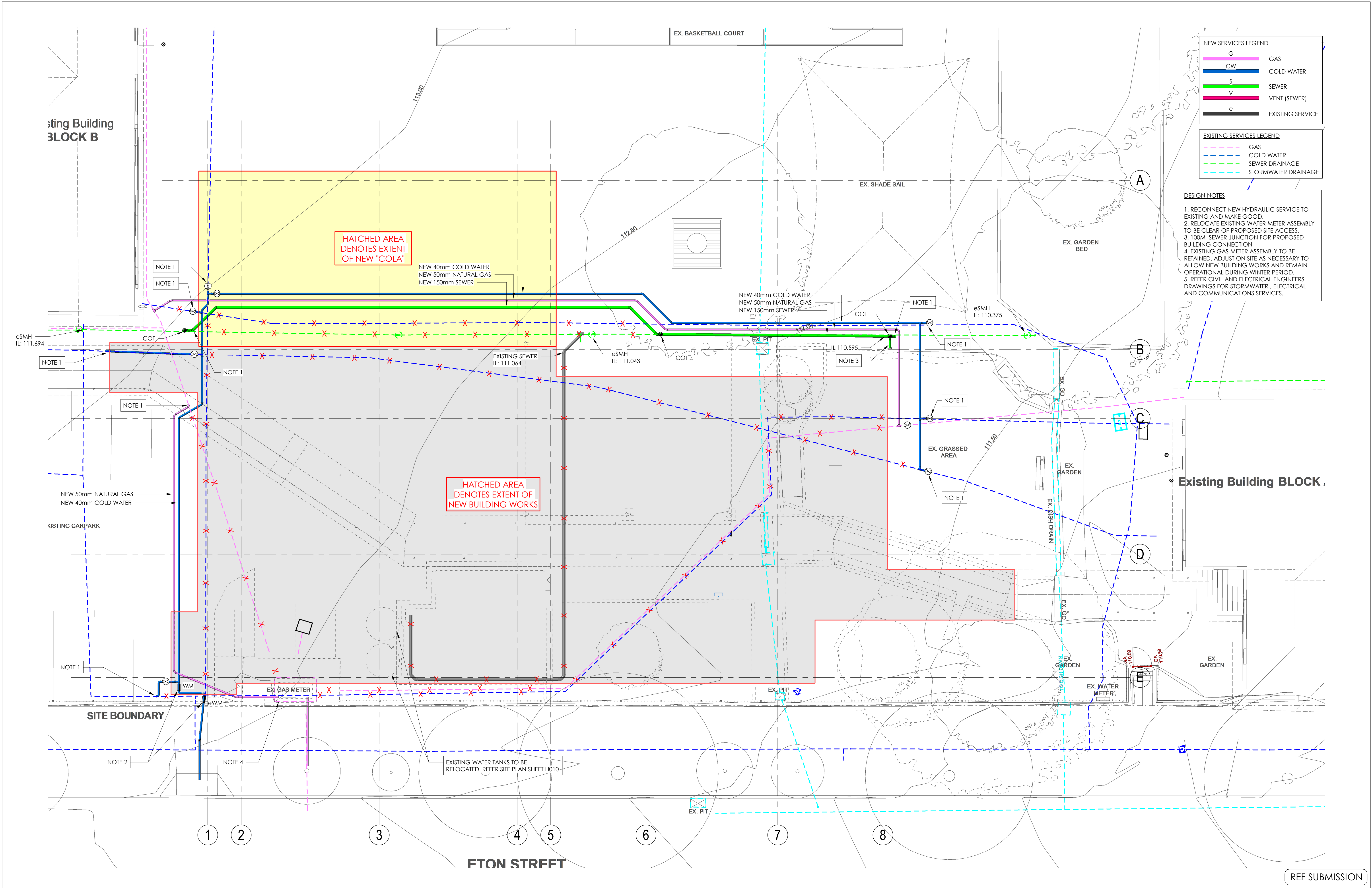
PROJECT
SUTHERLAND PUBLIC SCHOOL -
NEW HALL

38-54 Eton Street,
Sutherland NSW 2232



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Designed RRG	Project No. 240078	Dwg No. H010	Issue B		

REF SUBMISSION



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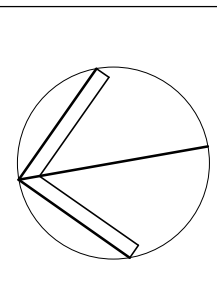
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SUTHERLAND PUBLIC SCHOOL -
NEW HALL

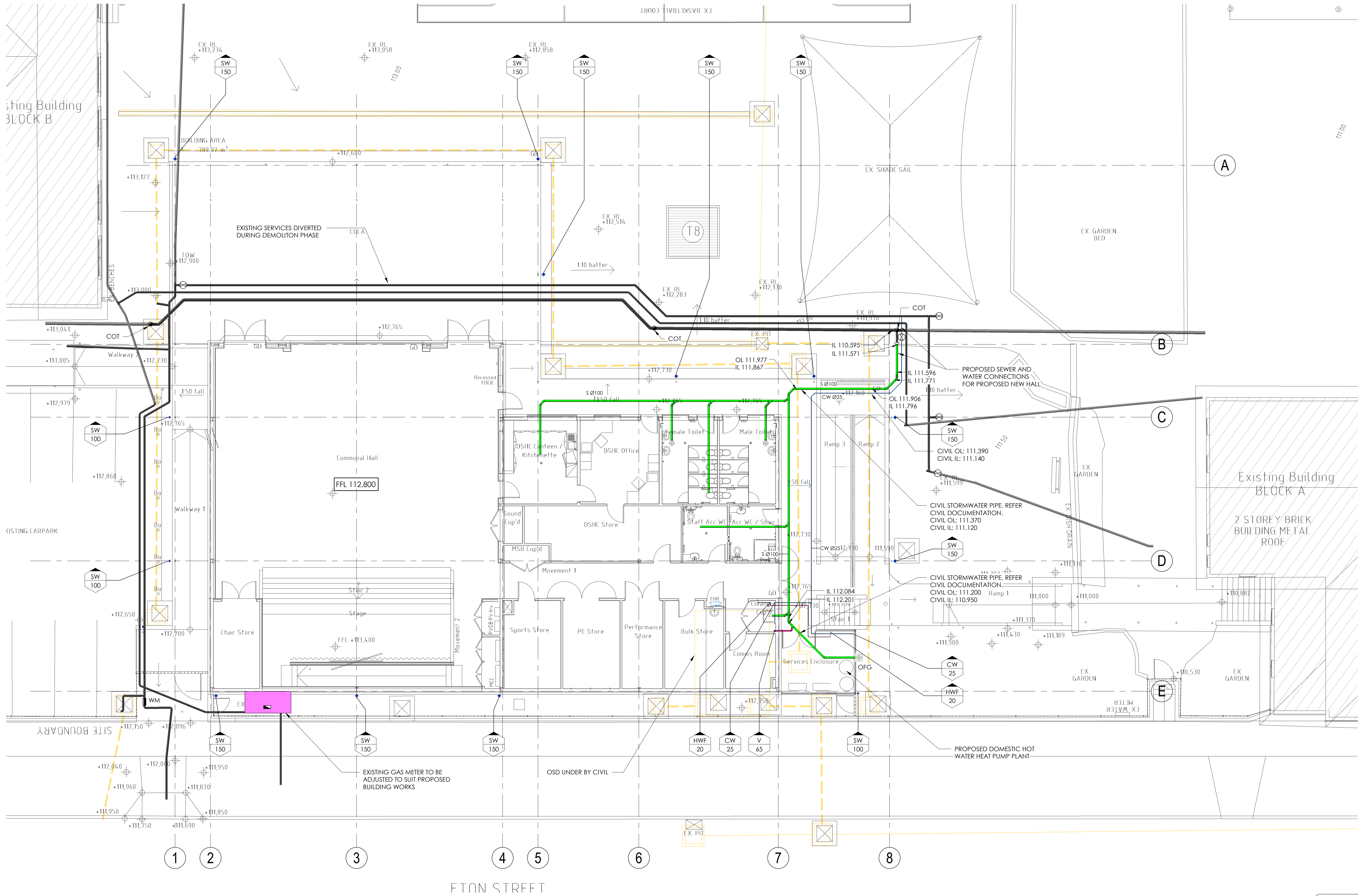
38-54 Eton Street,
Sutherland NSW 2232



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ISSUE	DESCRIPTION	DATE	DRAWN	APP
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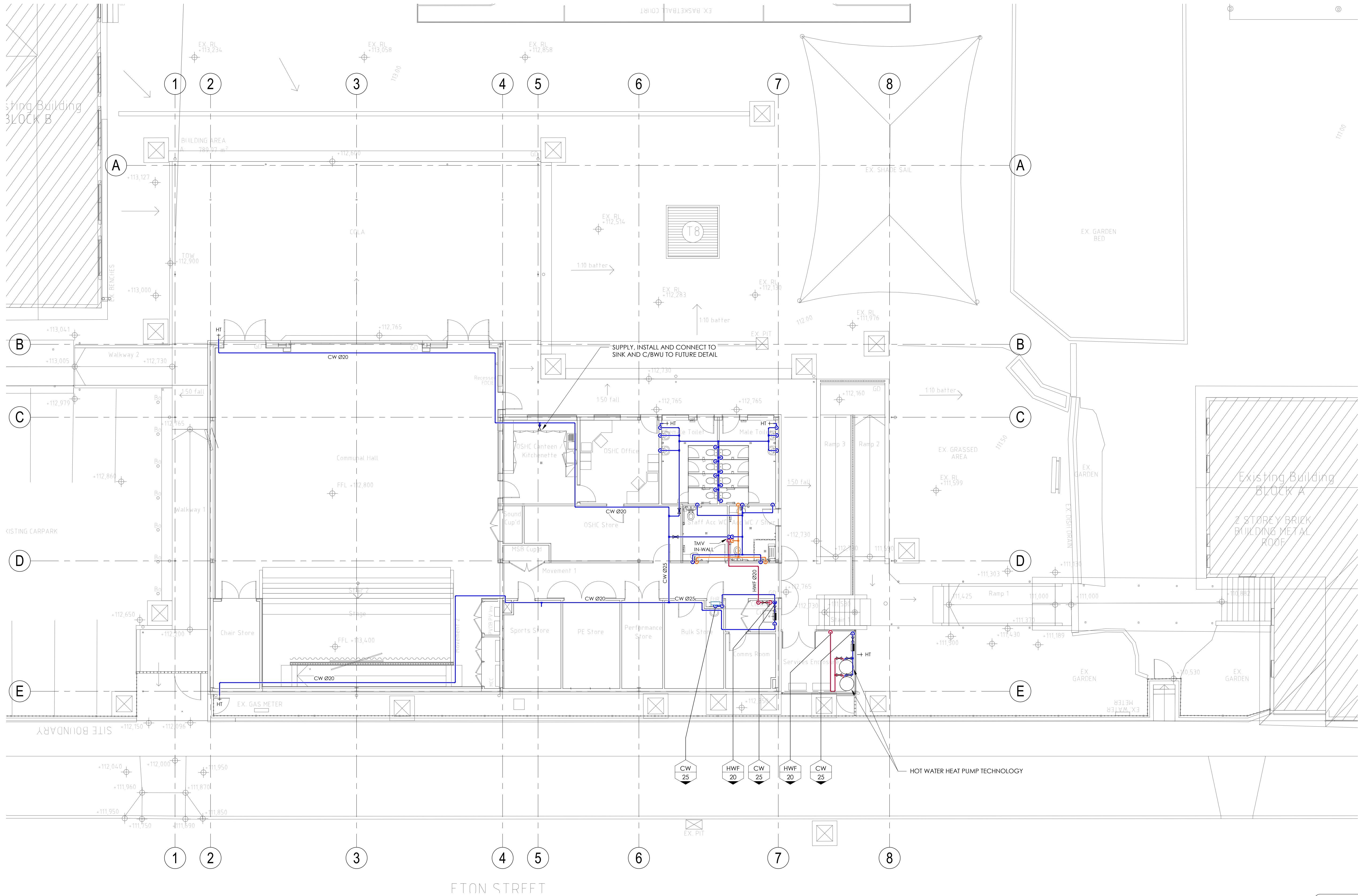
PROJECT
SUTHERLAND PUBLIC SCHOOL -
NEW HALL

38-54 Eton Street,
Sutherland NSW 2232

DRAWING TITLE
HYDRAULIC SERVICES
IN-GROUND SERVICES PLAN

Drawn SF	Date DEC 2024	Scale 1 : 100	AI	Q.A. Check	Date
Designed RRG	Project No. 240078	Dwg No. H101			Issue B

REF SUBMISSION



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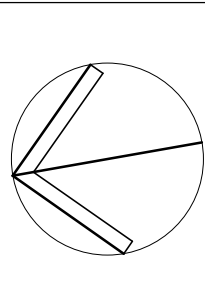
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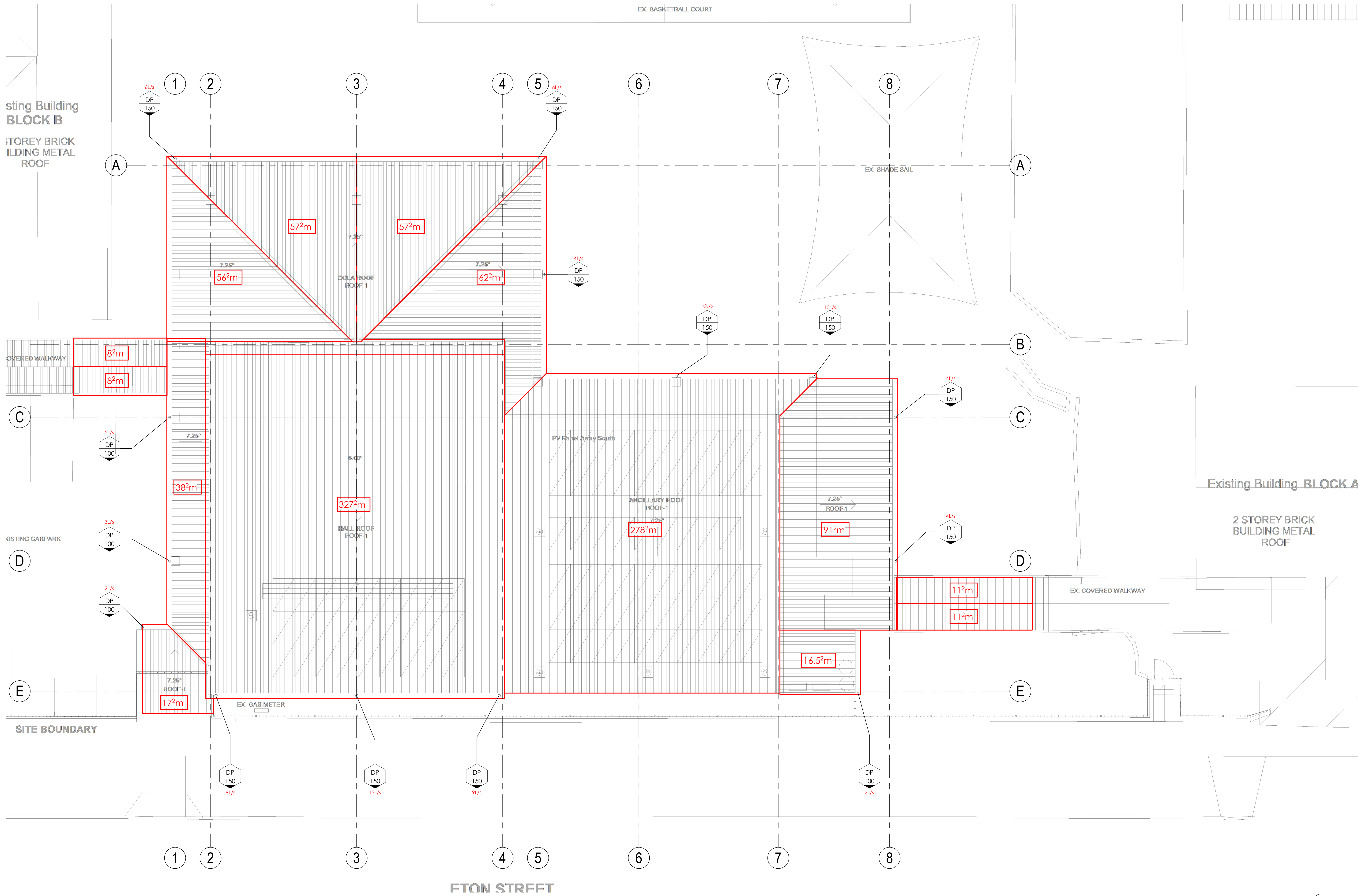
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DRAWING TITLE HYDRAULIC SERVICES GROUND FLOOR PRESSURE SERVICES					
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REF SUBMISSION



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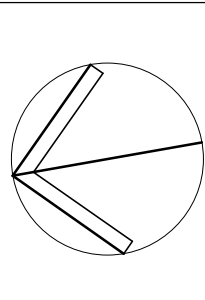
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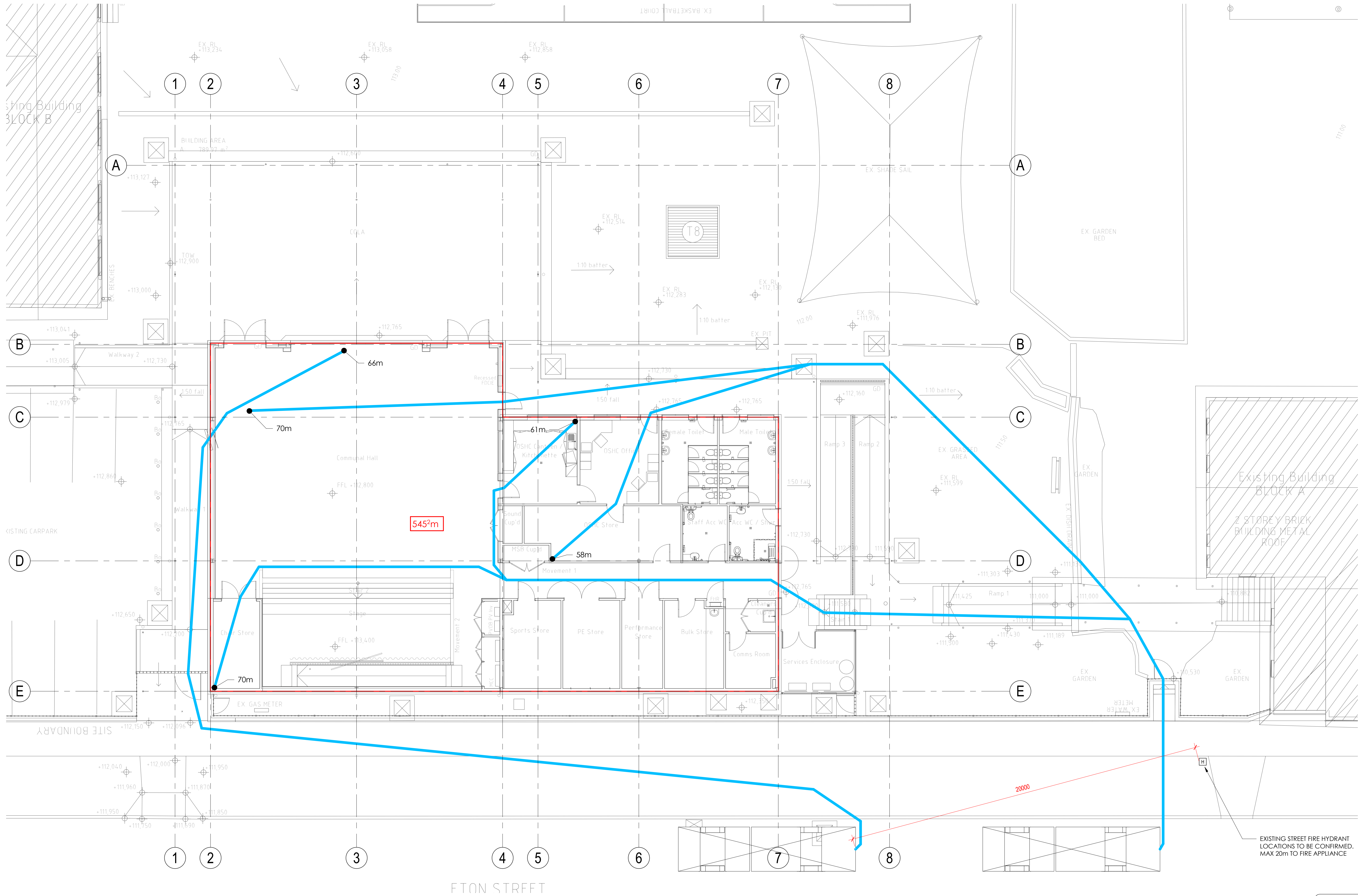
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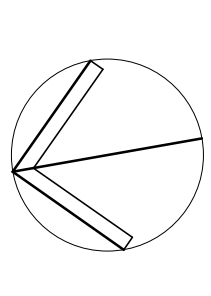
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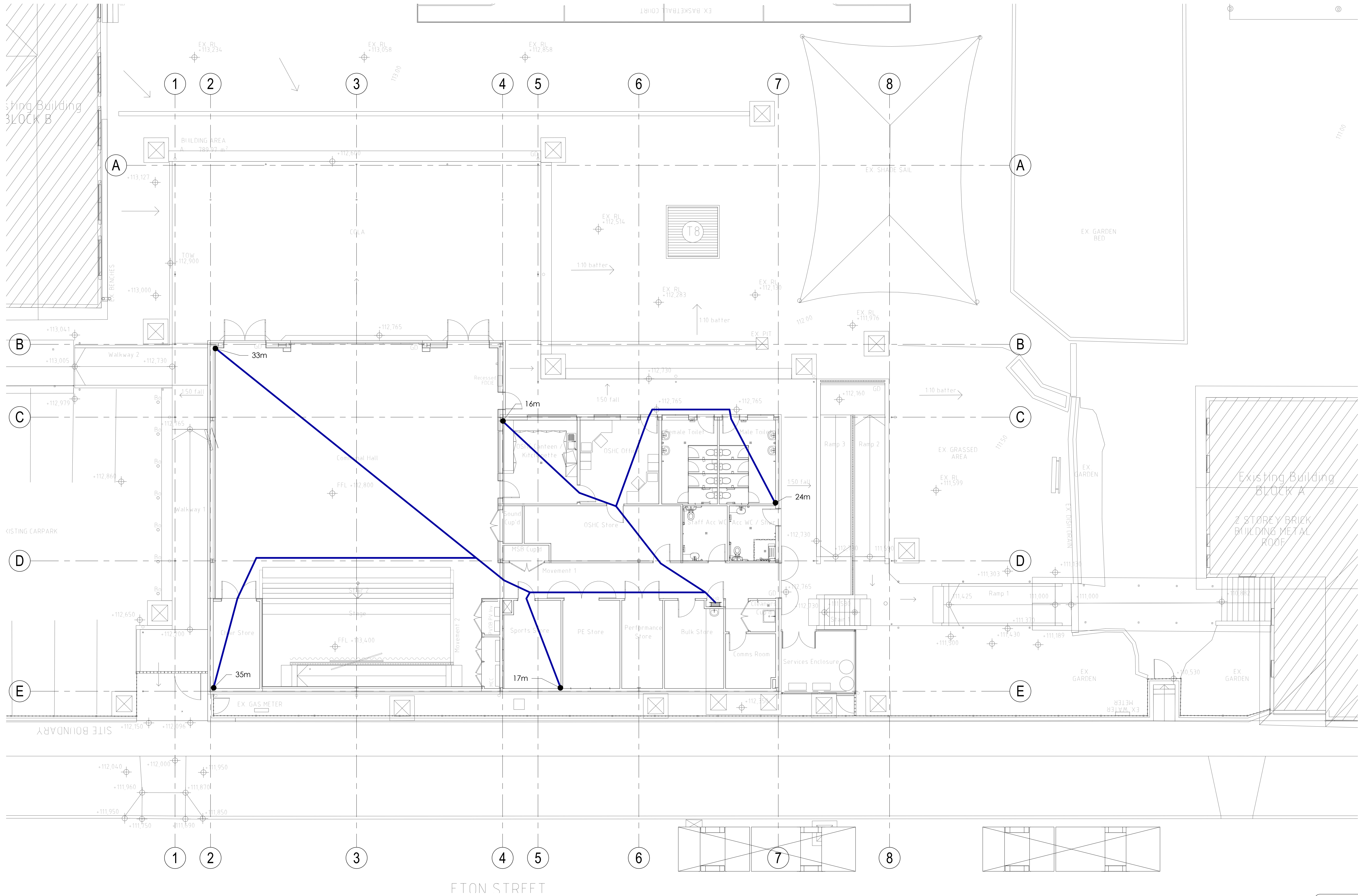
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DRAWING TITLE HYDRAULIC SERVICES FIRE HYDRANT COVERAGE PLAN					
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Designed RRG	Project No. 240078	Dwg No. H400	Issue B		

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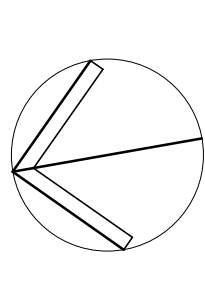
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DRAWING TITLE HYDRAULIC SERVICES FIRE HOSE REEL COVERAGE PLAN					
Drawn SF	Date DEC 2024	Scale 1 : 100	AI	Q.A. Check	Date
Designed RRG	Project No. 240078	Dwg No. H500		Issue B	

REF SUBMISSION

Appendix C – Fire Services Drawings

SUTHERLAND PUBLIC SCHOOL - NEW HALL

38-54 ETON STREET, SUTHERLAND NSW 2232

FIRE SERVICES

SPECIFICATION NOTES

CODES, RULES, PERMITS, FEES

ALL MATERIALS, SUPPLIES, WORKMANSHIP AND ALL INSTALLED WORKS SHALL COMPLY WITH CODES, RULES AND REGULATIONS OF ALL STATUTORY AUTHORITIES HAVING JURISDICTION OVER THE WORKS.

GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS, PERFORM ALL TESTS AND PAY ALL FEES AND CHARGES RENDERED BY THE RESPECTIVE STATUTORY AND LOCAL AUTHORITIES IN REFERENCE TO THE WORKS.

SITE VISIT

TENDERERS FOR THE FIRE SERVICES CONTRACT ARE TO BECOME FULLY INFORMED OF THE SCOPE OF THE CONTRACT WORK, EXISTING INSTALLATIONS AND SITE CONDITIONS BY INSPECTION OF THE SITE AND BY ALL OTHER MEANS CONSIDERED NECESSARY.

UNFORESEEN DIFFICULTIES DUE TO NEGLECT OF THIS PRECAUTION SHALL IN NO WAY RELIEVE THE CONTRACTOR'S RESPONSIBILITY FOR THE FULL AND PROPER EXECUTION OF THE WORKS. NO CLAIM FOR ADDITIONAL COSTS ARISING FROM NEGLECT OF A THOROUGH INSPECTION WILL BE CONSIDERED.

CO-ORDINATION

THE FIRE SERVICES CONTRACTOR SHALL FULLY LIAISE AND CO-ORDINATE WITH THE BUILDER AND OTHER TRADES, IN A TIMELY MANNER, TO ENSURE PROPER CO-ORDINATION WITH ALL OTHER SERVICES.

FINAL TESTS AND COMMISSIONING

THE FIRE SERVICES CONTRACTOR SHALL PERFORM ALL COMMISSIONING AND TESTING TO LOCAL AUTHORITY, MANUFACTURER AND CODE REQUIREMENTS, PROVIDE A COPY OF ALL CERTIFICATES AND TEST RESULTS TO THE SUPERINTENDENT PRIOR TO PRACTICAL COMPLETION.

DEFECTS LIABILITY

THE FIRE SERVICES CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST ALL DEFECTS FOR A PERIOD OF TWELVE (12) MONTHS FROM DATE OF ISSUE OF PRACTICAL COMPLETION.

DURING THIS PERIOD, REPLACEMENT OF DEFECTIVE EQUIPMENT, FIXTURES AND MATERIALS SHALL BE PROMPTLY CARRIED OUT AT NO ADDITIONAL COST TO THE CLIENT.

AS-BUILT DRAWINGS

SUPPLY TWO (2) SETS OF AS-BUILT DRAWINGS TO THE SUPERINTENDENT FOR APPROVAL, 30 DAYS PRIOR TO PRACTICAL COMPLETION.

THESE DRAWINGS SHALL BE A TRUE RECORD OF THE INSTALLATION AS IT WAS INSTALLED, FOLLOWING APPROVAL OF THE INITIAL SUBMISSION, PROVIDE FOUR (4) SETS OF PRINTS, NEATLY BOUND, TO THE SUPERINTENDENT.

ALL DRAWINGS SHALL BE OF EQUAL STANDARD TO THE DESIGN DRAWINGS AND BE IN AUTOCAD FORMAT. PROVIDE ONE ELECTRONIC FORMAT FILE OF THE COMPLETED AS-BUILT DRAWINGS TO THE SUPERINTENDENT.

INSTALLATION

THE COMPLETE INSTALLATION SHALL BE OF FIRST QUALITY WORKMANSHIP AND TO THE APPROVAL OF THE SUPERINTENDENT, FIRE SERVICES ENGINEER AND REGULATORY AUTHORITY. ALLOW FOR OUT OF HOURS WORK AS REQUIRED.

ALL WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS AND REGULATIONS.

GENERAL

- FIRE SERVICES DESIGN DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE FIRE SERVICES SPECIFICATION DOCUMENT.
- DRAWINGS ARE TO BE READ IN-CONJUNCTION WITH THE LATEST ARCHITECTURAL, STRUCTURAL AND OTHER BUILDING SERVICES.
- CONTRACTORS ARE ADVISED TO COMPLETE A THOROUGH SITE INSPECTION PRIOR TO TENDER SUBMISSION AND MAKE ALLOWANCE TO CARRY OUT THE FULL INTENT OF THE WORKS AS SHOWN ON THE DRAWINGS. NO VARIATIONS WILL BE APPROVED IF AN INSPECTION HAS NOT TAKEN PLACE.
- CONTRACTOR TO CHECK ALL DIMENSIONS ON SITE BEFORE COMMENCING DESIGN. DRAWINGS ARE INDICATIVE ONLY.
- FIRE SERVICES CONTRACTOR TO CO-ORDINATE WITH STRUCTURAL AND ARCHITECTURAL FEATURES, AND OTHER BUILDING SERVICES.
- HYDRANT AND HOSE REEL SERVICES ARE UNDERTAKEN BY OTHERS.
- ALL PENETRATIONS THROUGH FIRE / SMOKE WALLS ARE TO BE SEALED WITH AUSTRALIAN STANDARD APPROVED MATERIAL AND METHOD OF SEALING.
- LIAISE WITH THE BUILDER TO CO-ORDINATE ALL BUILDER'S WORK REQUIRED UNDER THIS CONTRACT.
- PROVIDE WORK SHOP DRAWINGS TO THE CONSULTING ENGINEER FOR REVIEW PRIOR TO COMMENCING WORKS ON SITE INCLUDING HYDRAULIC CALCULATIONS.
- PROVIDE FULL TESTING AND COMMISSIONING OF INSTALLED FIRE SYSTEMS PRIOR TO PRACTICAL COMPLETION, AND FULL TRAINING FOR BUILDING MANAGEMENT REPRESENTATIVES.
- PROVIDE 12 MONTHS WARRANTY OF ALL INSTALLED FIRE SYSTEMS, AND SERVICING AND MAINTENANCE OVER THE 12 MONTH DEFECTS LIABILITY PERIOD FOLLOWING PRACTICAL COMPLETION.
- PROVIDE "AS INSTALLED" DRAWINGS AND A SCHEDULE OF EQUIPMENT INSTALLED UNDER THE CONTRACT. ELECTRONIC DRAWINGS ARE TO BE IN CAD FORMAT (AUTOCAD) AND/OR REVIT 3D MODELING AND PROVIDED ELECTRONICALLY TO THE CONSULTING ENGINEER WITHIN TWO WEEKS OF PRACTICAL COMPLETION FOR REVIEW AND APPROVAL.
- PROVIDE OPERATION AND MAINTENANCE MANUAL (O&MM) FOR THE SERVICES INSTALLED. O&MM TO BE PROVIDED IN BOTH HARD AND SOFT COPIES (SOFT COPY TO BE ON USB).
- THE FIRE CONTRACTOR IS TO ALLOW FOR ADDITIONAL FIRE SERVICES IN ADDITION TO THAT SHOWN ON THE DRAWINGS FOR COORDINATION WITH ARCHITECTURAL, STRUCTURAL OR OTHER SERVICES DRAWINGS AS FOLLOWS:
 - XX OFF CONCEALED SPACE SPRINKLERS.
 - XX OFF CEILING SPRINKLERS
 - XX OFF CONCEALED SPACE DETECTORS
 - XX OFF CEILING DETECTORS
 - XX OFF OWS SPEAKERS
 - XX OFF EWS SPEAKERS
- CONTRACTOR TO ALLOW TO PAY ALL FEES AND CHARGES.

FIRE DETECTION

- CONTRACTOR TO SUPPLY, INSTALL, PROVIDE WORKSHOP DRAWINGS, TEST AND MAINTAIN A FULLY ADDRESSABLE NON-PROPRIETARY FIRE DETECTION SYSTEM TO COMPLY WITH:
 - NCC 2022
 - AS 1670.1-2018 AMENDMENT 1 SECTION 7 FOR MECHANICAL UNIT SHUTDOWN
 - CONSTRUCTION DOCUMENTATION
- SMOKE DETECTORS TO BE SPACED AS REQUIRED BY AS1670.1:
 - 10m MAXIMUM BETWEEN DETECTORS
 - 5m MAXIMUM FROM WALLS OR PARTITIONS
 - 900mm MINIMUM FROM SUPPLY AIR OUTLETS
 - 300mm MINIMUM FROM WALLS OR PARTITIONS
 - 600mm MINIMUM CLEARANCE BELOW DETECTORS
 - DETECTORS TO BE PROVIDED IN CONCEALED SPACES OF 800mm AND GREATER
 - DETECTORS TO BE PROVIDED WITHIN 1.5m OF LIFT OPENINGS
- THERMAL DETECTORS TO BE SPACED AS REQUIRED BY AS1670.1:
 - 7.0m MAXIMUM BETWEEN DETECTORS
 - 3.5m MAXIMUM FROM WALLS OR PARTITIONS
 - 400mm MINIMUM FROM SUPPLY AIR OUTLETS
 - 300mm MINIMUM FROM WALLS OR PARTITIONS
 - 600mm MINIMUM CLEARANCE BELOW DETECTORS
- ALL NEW DETECTORS TO BE CONSISTENT IN TYPE AND FINISH.
- FIRE CONTRACTOR TO PROVIDE FIRE TRIP INCLUDING WIRING TO MECHANICAL AND ELECTRICAL SERVICES SWITCHBOARDS FOR ISOLATION OF SERVICES IN FIRE CONDITION. FINAL TERMINATION AT THE SWITCHBOARD BY MECHANICAL OR ELECTRICAL CONTRACTOR.

PORTABLE EXTINGUISHERS

- PROVIDE PORTABLE EXTINGUISHERS AND FIRE BLANKETS TO COMPLY WITH
 - NCC 2022
 - AS 2444-2001 CONSTRUCTION DOCUMENTATION
 - PERFORMANCE BASED SOLUTION REPORT (REF XXXX, DATE XXXX)
- PROVIDE ASSOCIATED SIGNAGE WITH NEW UNITS IN ACCORDANCE WITH AS2444-2001.
- ALL NEW EXTINGUISHERS TO BE CONSISTENT IN TYPE AND FINISH.
- PROVIDE 5KG CARBON DIOXIDE FIRE EXTINGUISHERS BETWEEN 2 TO 20M FROM SIGNIFICANT SWITCHBOARDS.

OCCUPANT WARNING SYSTEM

- PROVIDE EMERGENCY WARNING SYSTEM TO COMPLY WITH:
 - NCC 2022
 - AS 1670.1-2018 AMENDMENT 1
 - CONSTRUCTION DOCUMENTATION
 - PERFORMANCE BASED SOLUTION REPORT (REF XXXX, DATE XXXX)
- OCCUPANT WARNING SPEAKERS TO BE LOCATED TO ENSURE THE SPECIFIED REQUIRED LEVELS OF SPEECH INTELLIGIBILITY (STI) AND SOUND PRESSURE LEVELS (DBA) WILL BE ACHIEVED AS PER AS1670.1-2018 AMENDMENT 1.
- ALL NEW SPEAKERS TO BE CONSISTENT IN TYPE AND FINISH.
- IN AREAS OF EXCESSIVE AMBIENT NOISE, VISIBLE ALARM DEVICES SHALL BE INSTALLED WITH COVERAGE IN LINE WITH APPROVED MANUFACTURER INSTALLATION GUIDELINES.

FIRE EXTINGUISHERS

	FIRE EXTINGUISHER - WATER
	FIRE EXTINGUISHER - FOAM
	FIRE EXTINGUISHER - CO2
	FIRE EXTINGUISHER - WET CHEMICAL
	FIRE EXTINGUISHER - DRY CHEMICAL (ABE)
	FIRE EXTINGUISHER - DRY CHEMICAL (BE)
	FIRE BLANKET

FIRE PANELS / EQUIPMENT

	FIRE DETECTION CONTROL INDICATING EQUIPMENT (FDCE)
---	--

FIRE DETECTION

	SMOKE DETECTOR
	IONISING SMOKE DETECTOR
	SMOKE DETECTOR WITH REMOTE INDICATOR
	CONCEALED SPACE SMOKE DETECTOR
	SMOKE ALARM
	RECESSED OCCUPANT WARNING SPEAKER
	SURFACE MOUNTED OCCUPANT WARNING SPEAKER
	WALL MOUNTED OCCUPANT WARNING SPEAKER
	HORN SPEAKER
	FIRE ALARM RED STROBE (EXTERNAL)
	MANUAL CALL POINT (MCP)

DRAWING LIST FIRE	
DRAWING No.	DRAWING NAME
F000	COVER SHEET, LEGEND & DRAWING LIST
F100	GROUND FLOOR FIRE DETECTION

B	REF SUBMISSION	11.12.24	SF	DH	
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ISSUE	DESCRIPTION	DATE	DRAWN	APP	
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Client
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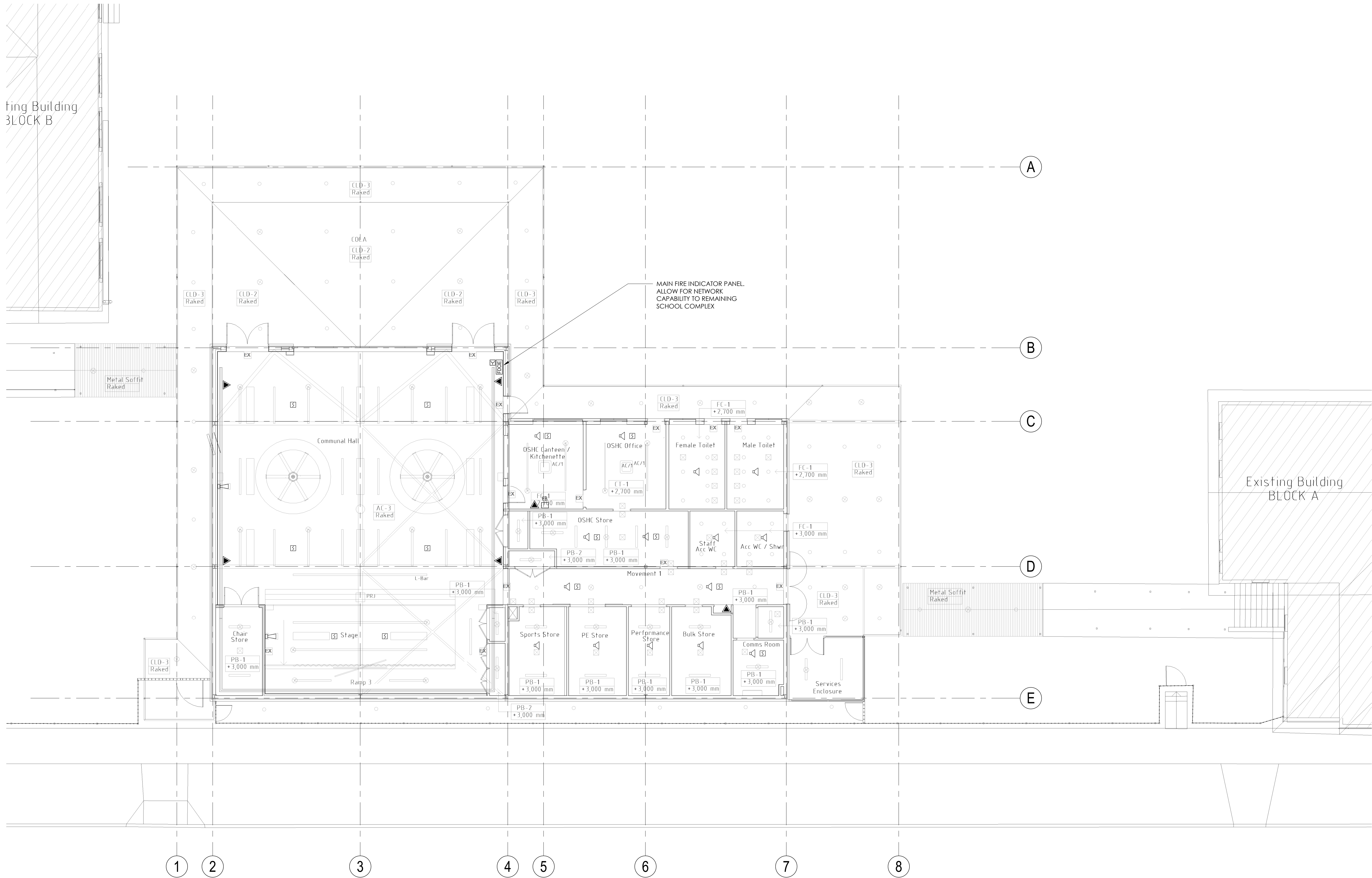
PROJECT
SUTHERLAND PUBLIC SCHOOL -
NEW HALL

38-54 Eton Street,
Sutherland NSW 2232

DRAWING TITLE
HYDRAULIC SERVICES
COVER SHEET, LEGEND & DRAWING LIST

Drawn SF	Date DEC 2024	Scale N.T.S.	A1	Q.A. Check	Date
Designed DH	Project No. 240078	Dwg No. F000	Issue B		

REF SUBMISSION



B	REF SUBMISSION	11.12.24	SF	DH
A	WORK IN PROGRESS ISSUE	27.11.24	SH	DH
ISSUE	DESCRIPTION	DATE	DRAWN	APP
1	0	1 cm at full size	10cm	20cm

Client
SINSW
SUTHERLAND PUBLIC HIGH SCHOOL

ARCHITECT
BKA ARCHITECTURE

SUITE 1.04, 77 DUNNING AVE
ROSEBERY NSW 2018
PHONE: +61 2 9318 9200 W: www.bka.com.au

NSW Education School Infrastructure

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PROJECT
SUTHERLAND PUBLIC SCHOOL -
NEW HALL

38-54 Eton Street,
Sutherland NSW 2232

DRAWING TITLE
HYDRAULIC SERVICES
GROUND FLOOR FIRE DETECTION

Drawn SF	Date DEC 2024	Scale 1 : 100	AI	Q.A. Check	Date
Designed DH	Project No. 240078	Dwg No. F100	Issue B		

REF SUBMISSION