

The background of the cover page is a photograph of a building's internal steel framework, showing a complex network of beams and trusses. The left half of the image is covered by a semi-transparent orange overlay, which serves as a background for the title text.

SSD Report

St Matthews High School, Mudgee – Building Services

PREPARED FOR CATHOLIC EDUCATION DIOCESE OF
BATHURST

DOCUMENT CONTROL

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1 Introduction

1.1 Project Description

The SSD DA seeks consent for the construction of a new multi-purpose secondary education facility within the Mudgee Region that meets future demands for the developing region.

The new secondary school to be known as St Matthews Catholic High School Mudgee School will cater for 680 secondary school students (4-Stream Year 7-12) and will comprise of a cluster of five low-rise school buildings (1-2 storeys) including;

- Block A - Professional Hub (office and administration)
- Block B - Spiritual Hub (Chapel)
- Block C - Community Hub (Multi purpose hall, Music/Dance Studio and canteen)
- Block D – STEM Research Hub (teaching spaces)
- Block E - Knowledge and Learning Hubs (General Teaching spaces)
- Yarning Circle (Outdoor learning area)
- Outdoor Student Assembly Area and COLA
- Student free play area
- Staff and student amenities
- Associated site landscaping and public domain improvements
- On-site parking and access arrangements off Bruce Road, including:
 - On-grade car park for staff, students and visitors (75 spaces – including 2 accessible spaces)
 - A 12 bay student drop-off and pick-up area
 - A 3-bay bus drop-off and layover area
 - Bus turning area and servicing access
 - Dedicated separate driveway for service vehicles
 - Bicycle parking for 30 bicycles
- Associated earthworks, civil works, perimeter roadworks, fencing, services and utilities connections and augmentation, including:
 - Roadworks to Broadhead Road and Bruce Road to the full extent of the site frontages
 - Roadworks to the Broadhead Road and Bruce Road intersection to cater for bus movements
 - Footpath along the site frontage of Broadhead Road and suitable pedestrian crossing to connect to existing footpath.
 - Stormwater infrastructure upgrades adjacent to and within the site, including new culverts and drains, levee, and bioswale.
 - Connection to existing sewer line within the site
 - Electrical and water connections into the site

1.2 Purpose and SEARS

The purpose of this report is to inform the design and planning team of the likely required building services infrastructure relating to the connection and continued operation of the electrical and hydraulics services.

This report addressed components of the following SEAR's:

- Item 8 Ecological Sustainable Design; detailing proposed servicing options, in the areas of:
 - Renewable energy
 - Water efficiency
- Item 13 Utilities; detailing information on capacity and augmentation required, in the areas of:
 - Electrical supply
 - Telecommunications supply

- Sanitary plumbing and drainage supply
- Portable water supply and usage
- Non-potable water usage

1.3 Limitations

This report has been prepared by Calibre Professional Services Pty Ltd (Calibre) for Catholic Education Diocese of Bathurst (Client) for the purposes agreed between the Client and Calibre (Purpose). Calibre accepts no responsibility for the validity, appropriateness, sufficiency or consequences of the Client using the report for any Purpose other than that stated. This report is not intended for general publication or circulation, nor is it intended for use by third parties and may not be used by third parties.

The information presented in this report is not based on detailed design, but on a concept planning and desktop assessment using preliminary, assumed and selective data to enable the assessment to be undertaken for planning approval. Where information has been sourced from third parties, Calibre is unable to verify the accuracy of the source material.

Any supply authority and utility information shown is a potential outcome only. Each supply authority and utility will nominate their own final connection locations and methods during the detailed design phase where connections are required. No confirmation or certified designs have been received due to the preliminary nature of a planning application.

2 Infrastructure Management Plan

2.1 Power

The site does not currently have an established electricity supply suitable for use as part of the development and will require a new Essential Energy electricity service to be provided. Submissions have been made to Essential Energy and Design Information Pack (DIP) received to determine the extent of network augmentation required.

There is an existing overhead high voltage network reticulating adjacent the site on Bruce Road and Broadhead Road. Electricity will be supplied from the overhead lines on Bruce road to a pad mounted substation within the site via underground high voltage cables.

From the pad mounted substation, low voltage consumer mains will reticulate to a site main switch board which will then distribute power to individual school blocks and services. The internal reticulation will be capable of connecting a decentralised photovoltaic system as part of the renewable energy initiatives.

2.1.1 Demand Calculations

The electrical maximum demand has been estimated based on engineering experience and AS/NZS 3000:2018 methods as can best be applied with the architectural and planning information on hand. Design assumptions are made in providing these figures which need to be reviewed and updated as detailed design occurs for each block on the school site.

The estimated maximum demand for the secondary school is approximately 700kVA with future expansion allowance of 200kVA. This maximum capacity calculated is within the standard size of a single pad mounted transformer of 1000kVA which has been applied for from Essential Energy. For the purposes of planning, the proposed maximum current draw is based on standard National Construction Code (NCC), Building Code of Australia (BCA) 2019 edition and AS/NZS 3000:2018 requirements.

In producing the maximum demand as shown in Table 1, the following general allowances have been applied:

- An average of 100VA/m² for air-conditioned, general use building areas
- An average of 120VA/m² for technology and science orientated building areas
- An average of 220VA/m² for special purpose buildings/area power such as catering and hospitality

It is anticipated that the actual maximum demand will be further reduced through GBCA Star Green Star approaches, renewable energy sources and energy efficient building design. As future development occurs, the collected metering data will inform the schools actual demand profile to inform any addition spare capacity available.

Table 1 - Estimated Electrical Maximum Demand

Area	Estimated Maximum Demand (kVA)	Estimated Maximum Demand (A/Phase at PF=1)
Block A	90	130
Block B	20	29
Block C	127	184
Block D	136	197
Block E	250	361
Site Infrastructure	50	72

Site Total	673	973
Future allowance	200	289
Estimated Site Capacity (Rounded)	873	1262

2.1.2 Reticulation Plan

The existing and proposed incoming services are shown in Appendix A and B respectively.

2.1.3 Metering and Building Management

The site will include provision of a single, integrated site wide network (as required to support the ICT systems) with building services integration which will allow smart monitoring and reporting of connected systems which can be expanded to include:

- Electrical and energy systems (metering data)
- Heating, Ventilation and Air Conditioning (HVAC) systems (metering data)
- Hot and cold water systems (metering data)
- Renewable energy systems (generation data)
- Electric car charging systems (future metering data and control)
- Information, wayfinding and display systems

2.1.4 Renewable Energy

It is proposed to install a 99kWp rooftop photovoltaic solar system on the site to provide renewable energy generation and peak load reduction. This system has allowance to be split over north facing roof area on Blocks C and E for maximum impact. The system is estimated to provide an annual energy yield of 163MWh as shown in Figure 2.2.

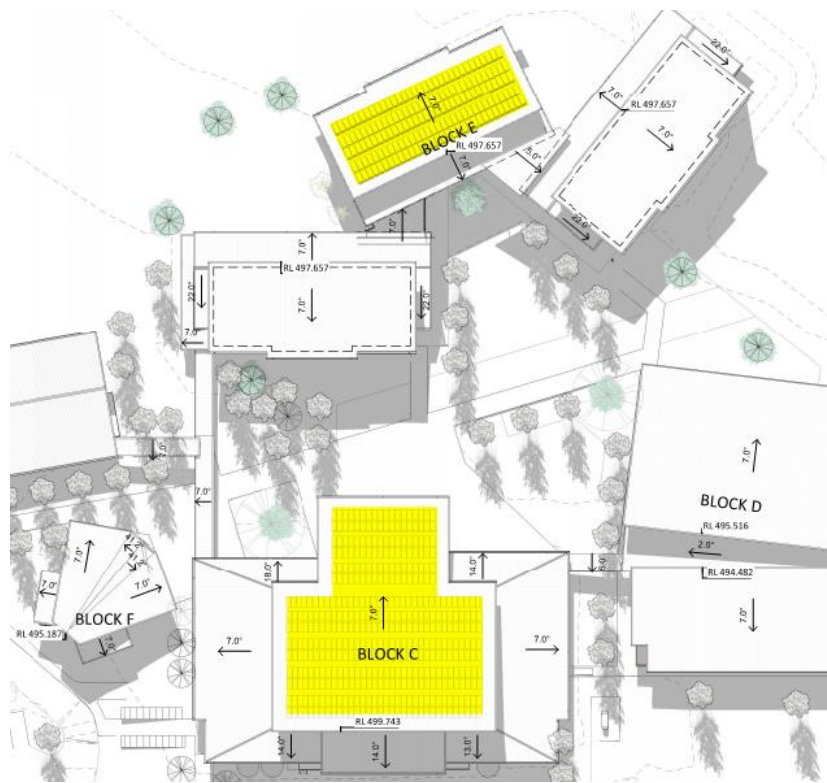


Figure 2.1 - Area Identified for Potential Solar Panels (Highlighted Yellow)

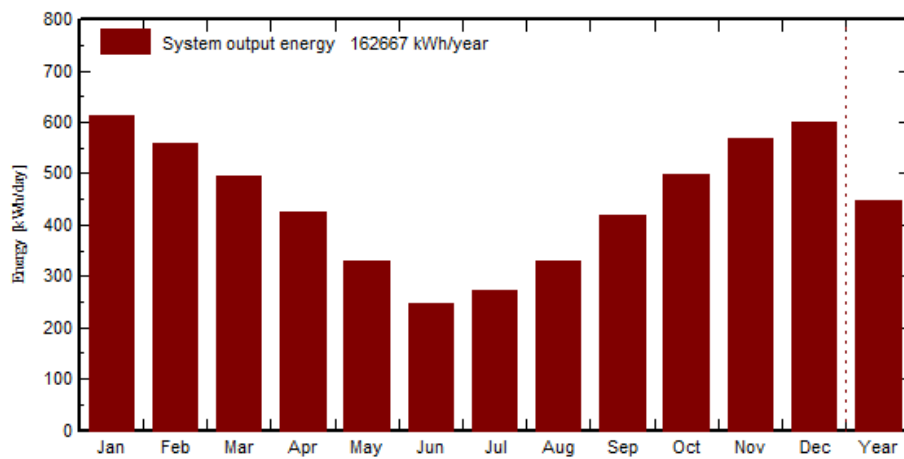


Figure 2.2 - Estimated Monthly Energy Yield (99kWp and Local Weather Data)

2.2 Telecommunications

The site does not currently have an established telecommunication supply suitable for use as part of the development and will require new services to be provided. This will need to be considered from the aspect of:

- Commercial business fibre connection
- NBN connection as service provider of last resort
- Mobile coverage (3G and 4G) for general amenity and dual GSM dialling systems (such as lifts and security systems)

2.2.1 Commercial Business Fibre

The school will make application to their existing telecommunications services provider to reticulate a commercial fibre service to the site which is expected to operate the following services:

- Telephony systems (VoIP)
- Internet (TCP-IP)
- Wide Area Network (WAN) to the existing school

As this is a private dedicated service, the telecommunications service provider will undertake all backhaul works relating to the reticulation of services to the site via existing and new underground pit and pipe networks.

An NBN connection will be utilised as a 'backup' service for base level connectivity should the commercial service experience down time.

2.2.2 NBN Services

The site is not currently within range of the existing NBN fixed service connections and has wireless NBN access readily available. A build has commenced with fixed line NBN being reticulated down Broadhead Road to another development, therefore in the future there is potential for this to be extended into the proposed site should the school have preference for fixed line over wireless connection.

Sufficient conduits will be reticulated to the property boundary to enable connection of both commercial and NBN services for current or future use.

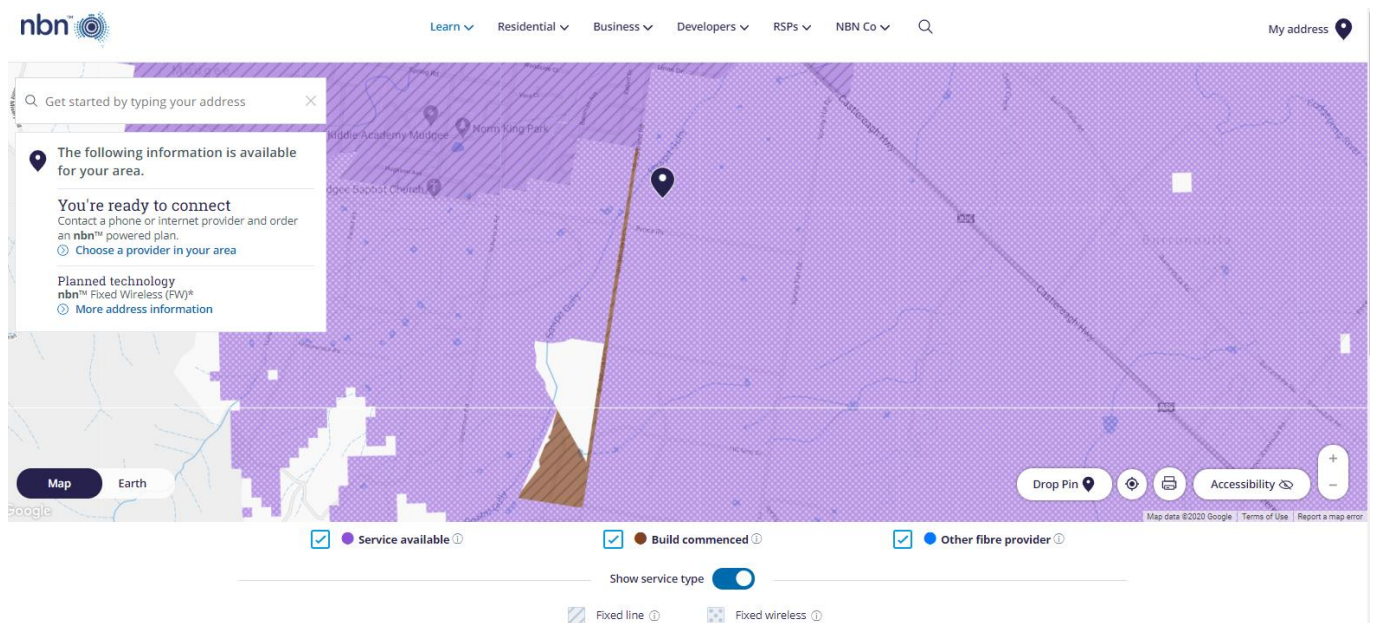


Figure 2.3 - NBN Coverage Map 14 April 2020

2.2.3 Mobile Coverage

The school is expected to have existing mobile coverage with at least one major service provider based on an ACMA network search. It is recommended during later phases in the project that the signal strength is surveyed so any local booster/distributed antenna system can be accommodated within the built form as required.

There are several other Local Council or privately owned ACMA registered transmitters around the site which will not impact the development.

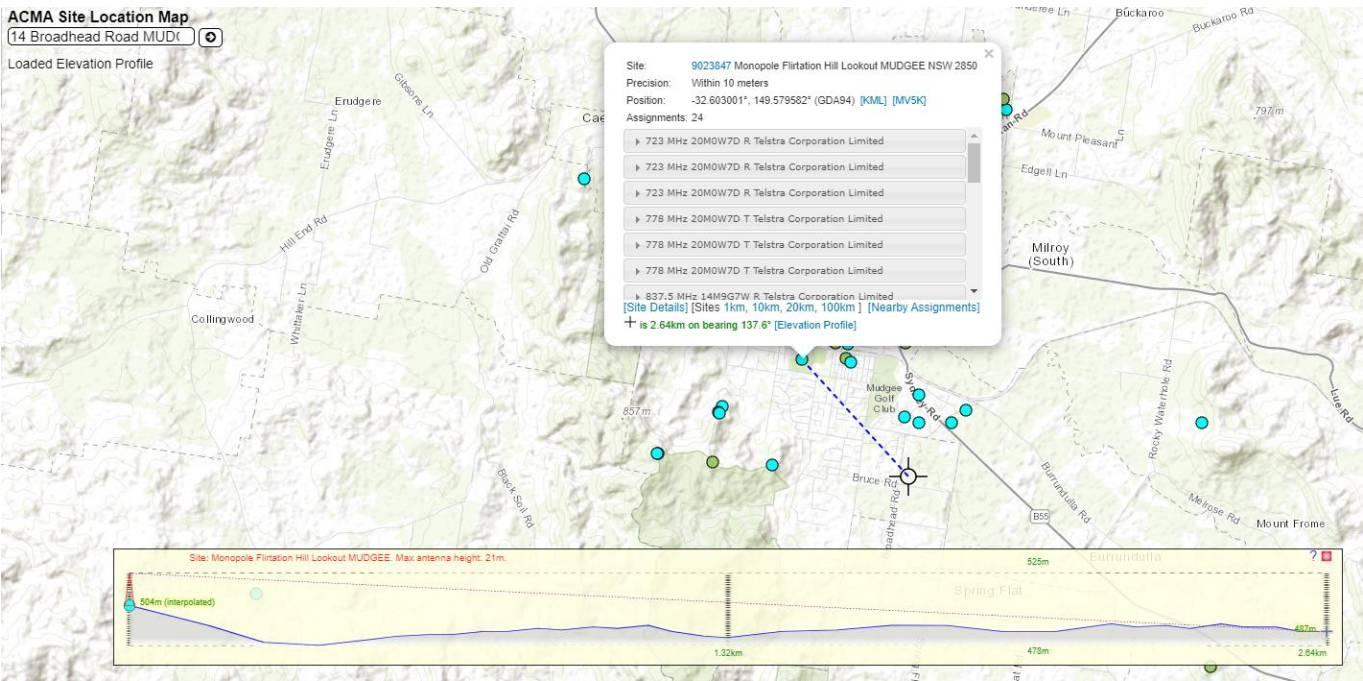


Figure 2.4 - ACMA Mobile Coverage Search 14 April 2020 (Town Centre)

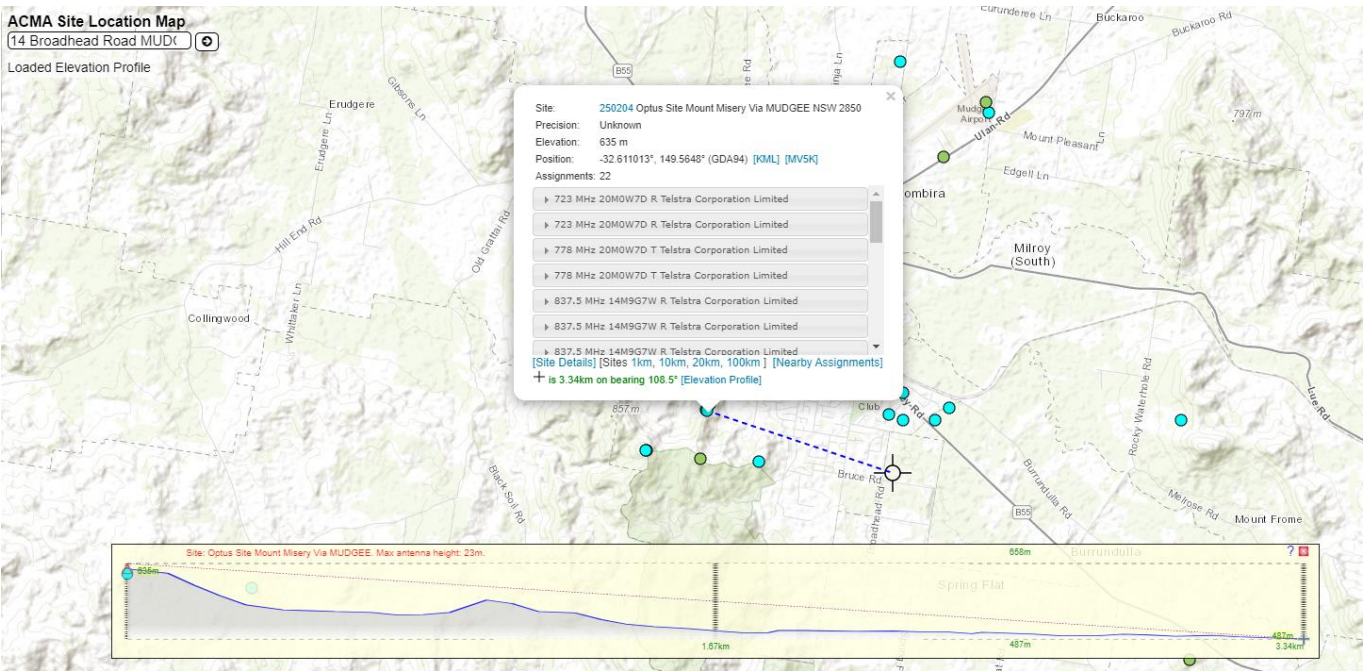


Figure 2.5 - ACMA Mobile Coverage Search 14 April 2020 (Mount Misery)

2.3 Sanitary Plumbing and Drainage

The Mid-Western Regional Council are responsible for the sewer mains, and information has been requested to confirm the existing sewer information available to date.

A report undertaken by Abel & Brown Pty Ltd in 2017, indicates that the property is serviced by a 225mm diameter Local Authority sewer main that is located in Broadhead Road and gravitates north through the property, adjacent a swale. The sewer has been found to be approximately 1.5m deep at the manhole.

The sewer main is shown in Appendix B to this report and comprises of a 225mm diameter gravity main.

2.3.1 Demand Calculations

The internal sanitary drainage demand and size shall be determined in accordance with the requirements set out in the Australian Standard AS/NZS 3500.2 – Sanitary plumbing and Drainage.

The sanitary drainage demand and service size within the property boundary is calculated based on the total number of sanitary drainage fixture unit ratings. Each sanitary fixture proposed to be installed on site has been assigned a fixture unit rating, and the sum total will determine the overall size of the property sanitary drainage size.

The maximum fixture unit loading for each size drain is also determined by the minimum grade of the pipework allowed as shown in Table 2.

Table 2 – Maximum Fixture Unit Loading for Vented Drains

Nominal Size of Drain	Minimum Grade	Maximum Fixture Units
100mm	1 in 60 (1.65%)	165
150mm	1 in 100 (1.00%)	855
225mm	1 in 150 (0.65%)	3250

The preliminary fixture unit Loading count, as shown in the Table 3, indicates even with a 50% allowance for future growth, that a 150mm internal sanitary drain, connected from the Local Authority Sewer, will be adequate to service the requirements of the new development.

Table 3 - Estimated Sewer Demand

Area	Fixture Units	Estimated sanitary drainage size
Block A	53	100mm
Block B	8	100mm
Block C	104	100mm
Block D	36	100mm
Block E	64	100mm

Site Infrastructure		
Site Total	265	150mm
Future allowance (+50%)	133	
Minimum Site Capacity	398	150mm

2.3.2 Reticulation Plan

Waste outlets from all Sanitary fixtures in each building shall connect to an in-ground sanitary drainage system.

The in-ground sanitary drainage system shall connect to the Local Authority Sewer at existing manhole X8 as marked on the Works As Executed plan MX 10270.01 C01. The sewer is located on the low side of the property which means the internal sanitary drainage can be gravity drained to the connection point.

Refer to Hydraulic services sketch plan layout BR-H5510 in Appendix B.

2.4 Trade and Laboratory Waste Drainage

The canteen and laboratory areas will have activities within that will generate liquid waste other than sewerage of a domestic nature, this waste shall be classified as trade waste. The trade waste requirements shall be in accordance with the Mid Western Regional Council Liquid Trade Waste Regulation Policy.

2.4.1 Site Requirements

Table 4 - Trade Waste Minimum Requirements

Area	Trade waste discharge	Minimum Pre-treatment Requirement
Block C - Kitchen	Greasy waste from cooking and dishwashing	2,000 Litre Grease Interceptor Trap installed externally in ground
Block D - Laboratory	Chemical waste	2,000 Litre dilution chamber installed externally in ground with a remote pump out point located within 40m of a hardstand area

2.5 Domestic Cold and Hot Water

The Mid-Western Regional Council are responsible for the water mains.

The survey drawing, 307060-L07, produced by Barnson Pty Ltd, indicates that the Local Authority water main servicing the property is located at the intersection of Bruce and Broadhead Road.

Mid-Western Regional Council have undertaken a flow and pressure test on the street water main. The information received indicates that the water main size is 250mm.

Table 5 - Water Pressure and Flow Test Results

Test Location	Flow Rate (L/s)	Residual pressure at hydrant (kPa)	Comments
Street hydrant located in Broadhead Road	No Flow	500	
	10L/s	500	
	20L/s	500	
	22L/s (Max)	490	

The test results indicate that the proposed development can be serviced without the requirement for on-site booster pumps or water storage.

2.5.1 Demand Calculations

Table 6 - Estimated Potable Water Demand

Area	Loading Units	Probable Simultaneous Flow Required	Potable Water Service Required
Block A	40	0.45L/s	25mm
Block B	6	0.23L/s	20mm
Block C	107	1.10L/s	32mm
Block D	116	1.20L/s	40mm
Block E	56	0.55L/s	25mm
Site Infrastructure			
Site Total	325	2.42L/s	50mm
Future allowance (+50%)	163		
Minimum Site Capacity	488	3.10L/s	50mm

The preliminary potable water demand calculation below indicates that the school will require a probable simultaneous demand of 3.10L/s. This will require a 50mm domestic service.

2.5.2 Reticulation Plan

A new water service shall be provided to the property via a Local Authority Water Meter, connected from the Local Authority Water main. Refer to Civil drawing TX134843.00-C9.0. The potable water service shall then reticulate through the property by means of a ring main, with suitably sized service take-offs to each building.

Each branch connection to the buildings shall have a main isolating valve and sub-water meter installed.

The potable water service shall rise to high level within each building and reticulate out to service each fixture.

The system shall be designed to provide the necessary fixtures with the minimum flow rates and pressures as required by the Australian Standards. The minimum flow and pressure requirements shall be provided as a minimum;

- Water velocity within pipework shall be 1.2m/s to 1.8m/s
- Maximum operational pressure at fixtures and fittings shall be 450kPa
- Minimum operational pressure at fixtures and fittings shall be 200kPa

Fixtures and fittings shall be supplied with the following minimum flow rates;

- WC Cistern 6/3 dual flush 3 star WELS, target 5 star WELS for Greenstar
- Basins 6L/min 4 star WELS rating, target 6 star WELS for Greenstar
- Sinks 6L/min 4 star WELS rating, target 6 star WELS for Greenstar
- Showers 9L/min 3 star WELS rating.

The cold water system shall designed and supplied to comply with AS/NZS 3500.1 and local authority requirements.

The cold water system shall be provided with isolation valves for, shut down and maintenance, at the following locations, as a minimum;

- In-coming water supply
- At each fixture or fitting.

RPZD valve assemblies shall provide backflow protection to the relevant areas. The following areas shall be provided with RPZD valve assemblies;

- Water supply to laboratory sinks
- Landscape irrigation supply
- Hose taps in plant rooms.
- Dishwasher to Canteen.
- Hose taps within 18m of Grease Interceptor trap/ Dilution Chamber

2.5.3 Hot Water Services

The hot water system shall be designed to the most economical energy efficient for its use and peak demand requirements, complying with AS/NZS 3500.1 & 4 and local authority requirements. Proposed system configuration and arranged is shown in Table 7.

The system shall avoid dead legs where possible but shall not exceed 12m length. Full temperature hot water shall be delivered within 10-15 seconds of operation of the fixtures.

Table 7 - Estimated Hot Water Demand

Area	Hot Water Usage	Peak Demand	Proposed Hot Water System
Block A	Hand washing	Spread over school day	Heat Pump
Block B	Hand washing	Spread over school day	Heat Pump
Block C	Hand Washing	1h over break times	Heat Pump
	Canteen Cooking	2 hours over lunch	Heat Pump
Block D	Hand washing	Spread over school day	Heat Pump
	Art Sinks	Spread over school day	Heat Pump

2.6 Fire Hydrant and Hose Reel

2.6.1 Site Requirements

Table 8 - Estimated Fire Service Demand

Area	Gross Floor Area (m2)	Service Requirement	Minimum Flow and Pressure Required
Block A	730	Hydrants and Hose Reels	10L/s @ 250kPa
Block B	200	No requirement	
Block C	1,450	Hydrants and Hose Reels	20L/s @ 250kPa
Block D	1,206	Hydrants and Hose Reels	20L/s @ 250kPa
Block E	2,264	Hydrants, fire hydrant booster assembly required as GFA exceeds 2,000sqm.	20L/s @ 250kPa
Site Overall	Largest fire compartment is Block E	Hydrants and Hose Reels, as above. Fire hydrant booster assembly required for building exceeding 2,000sqm	20L/s @ 250kPa maximum flow required based on largest fire compartment.

2.6.2 Hydrants

The minimum flow and pressure requirements for the property are as follows;

- Fire hydrants: 20L/s @ 250kPa at the most dis-advantaged hydrant.

A new fire service connection shall be provided to the property, with a backflow prevention & by-pass metering device installed in accordance with Mid-Western Regional Council requirements. The new service will be a 150mm diameter supply.

A fire service ring main shall reticulate through the property, connecting several dual outlet pillar fire hydrants, located adjacent the buildings to provide fire-fighting coverage in accordance with AS 2419.1.

The fire hydrants shall not all be able to be located within 20m of a suitable hard stand for the fire brigade appliance, so shall be attack hydrants. A fire hydrant booster assembly is required to be located adjacent the principle site entrance, to enable the fire brigade to boost the fire system from the fire appliance.

The Local Authority water main will not be able to provide a water supply with adequate water pressure to maintain the minimum fire-fighting pressure on-site. A fire hydrant pressure boosting pump will be required. This shall be installed adjacent the fire hydrant booster assembly in a locked enclosure.

2.6.3 Hose Reels

Fire hose reels shall be provided to all buildings with a fire compartment/ GFA that exceeds 500sqm, except for the classrooms or associated corridors in the school.

The fire hose reel service shall be connected from the fire service.

Fire hose reels shall be provided throughout each required building so that all parts of the building will be within 40m of a hose reel.

Fire hose reels shall be located within 4m of fire isolated stairs/ exits.

Areas where compliant coverage is not achieved shall be provided with additional fire hose reels.

3 Building Integrated Water Management

3.1 Town Water Supply

All potable water to the property is to be supplied from the Local Authority water main, located at the intersection of Bruce and Broadhead Road.

The Mid-Western Regional Council are responsible for the water mains.

The survey drawing, 307060-L07, produced by Barnson Pty Ltd, indicates that the Local Authority water main servicing the property is located at the intersection of Bruce and Broadhead Road.

Mid-Western Regional Council have undertaken a flow and pressure test on the street water main. The information received indicates that the water main size is 250mm.

3.2 Storage Tanks (Domestic and Fire)

On-site water storage tanks are not required at this stage.

3.3 Rainwater Collection and Reuse

It is proposed that above ground rainwater tanks shall be installed adjacent to the toilet areas of the relevant buildings, to harvest rainwater from the roof catchment, and re-use it for toilet flushing. The rainwater tanks shall be sized based on the available roof catchment area, and calculated rainwater collection versus the usage within the building.

The rainwater re-use shall have a mains water by-pass system that will switch to mains potable water supply in the event of the rainwater tanks being empty.

Where possible, the rainwater tanks will overflow into a central underground water tank used for irrigation. This underground tank and overflow connection is documented on the Stormwater Management Plan.

3.4 Fixtures and Fittings

Water efficient fixtures and fittings are to be selected using the Water Efficiency Labelling and Standards (WELS) scheme.

ST MATTHEWS HIGH SCHOOL, MUDGEES – BUILDING SERVICES

Appendix A Existing Site Services

CATHOLIC EDUCATION DIOCESE OF BATHURST

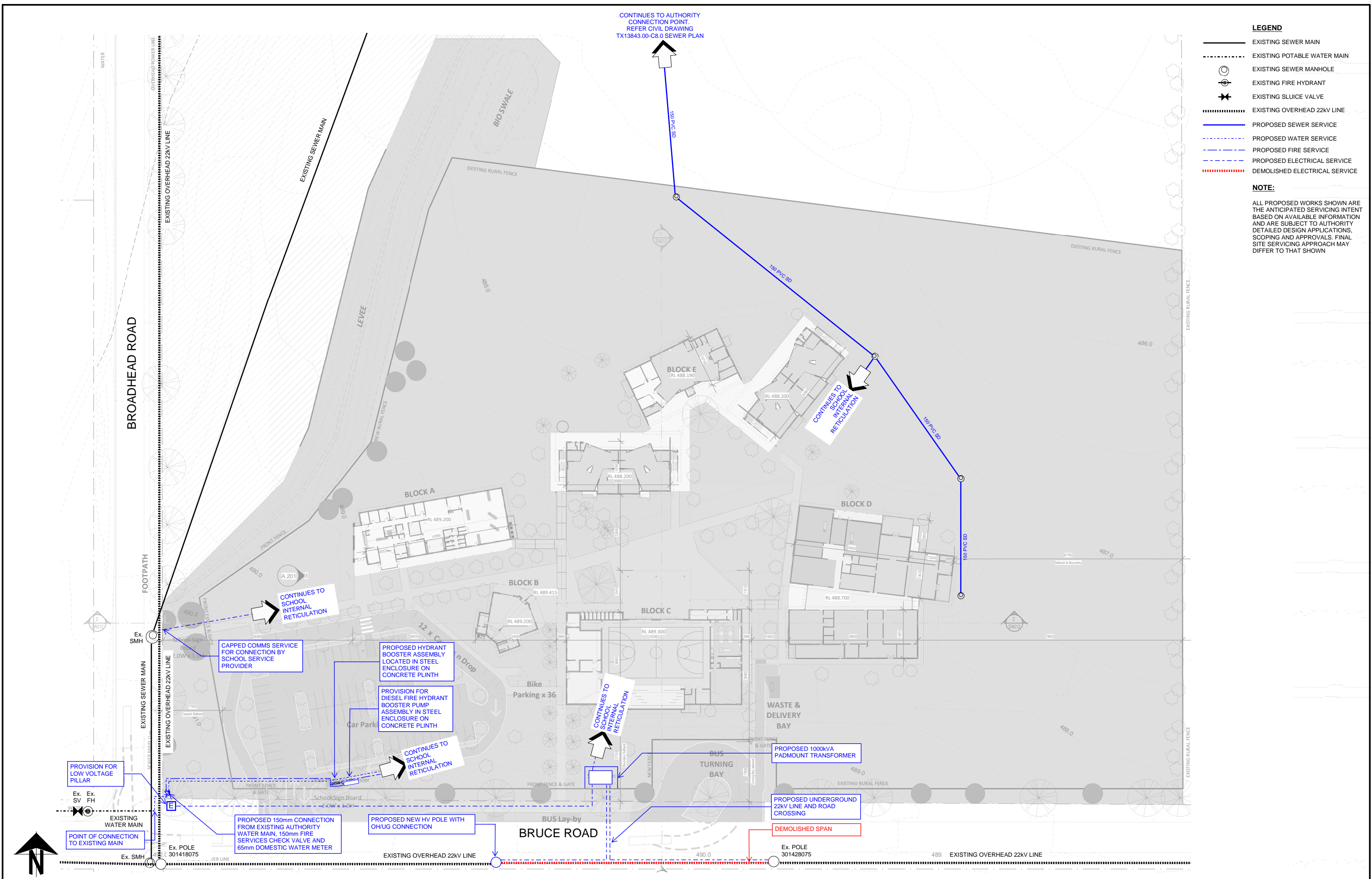


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ST MATTHEWS HIGH SCHOOL, MUDGEES – BUILDING SERVICES

Appendix B Proposed Site Services

CATHOLIC EDUCATION DIOCESE OF BATHURST



LEGEND

- EXISTING SEWER MAIN
- EXISTING POTABLE WATER MAIN
- EXISTING SEWER MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING SLUICE VALVE
- EXISTING OVERHEAD 22kV LINE
- PROPOSED SEWER SERVICE
- PROPOSED WATER SERVICE
- PROPOSED FIRE SERVICE
- PROPOSED ELECTRICAL SERVICE
- DEMOLISHED ELECTRICAL SERVICE

NOTE:

ALL PROPOSED WORKS SHOWN ARE THE ANTICIPATED SERVICING INTENT BASED ON AVAILABLE INFORMATION AND ARE SUBJECT TO AUTHORITY DETAILED DESIGN APPLICATIONS, SCOPING AND APPROVALS. FINAL SITE SERVICING APPROACH MAY DIFFER TO THAT SHOWN

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A	24.05.19	SSDA INITIAL ISSUE					JW / CM	JW	CM					SSDA PROPOSED SERVICES LAYOUT		
B	14.04.20	SSDA ISSUE					JW / CM	JW	CM			ARCHITECT		PROJECT No.	DRAWING No.	REVISION
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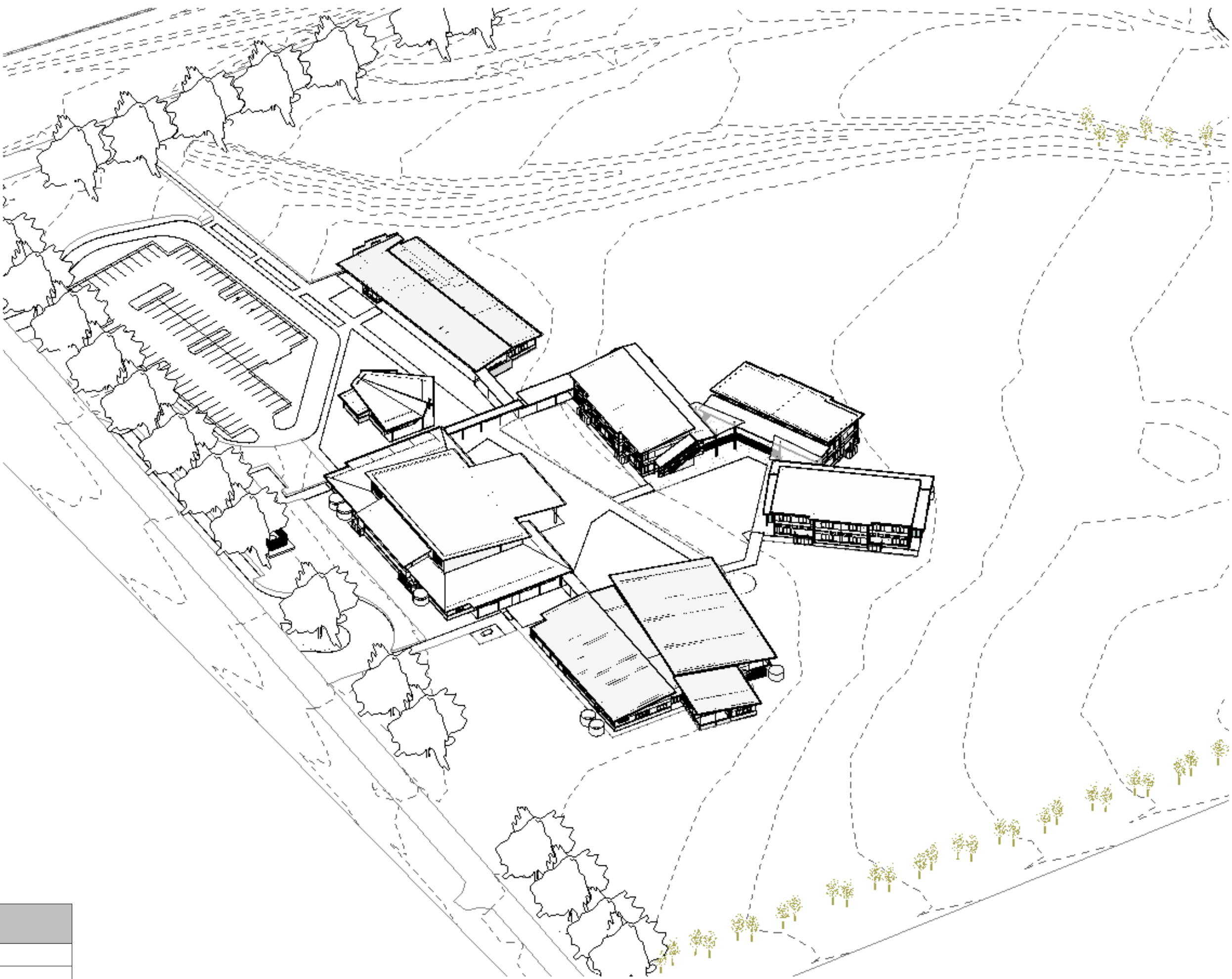
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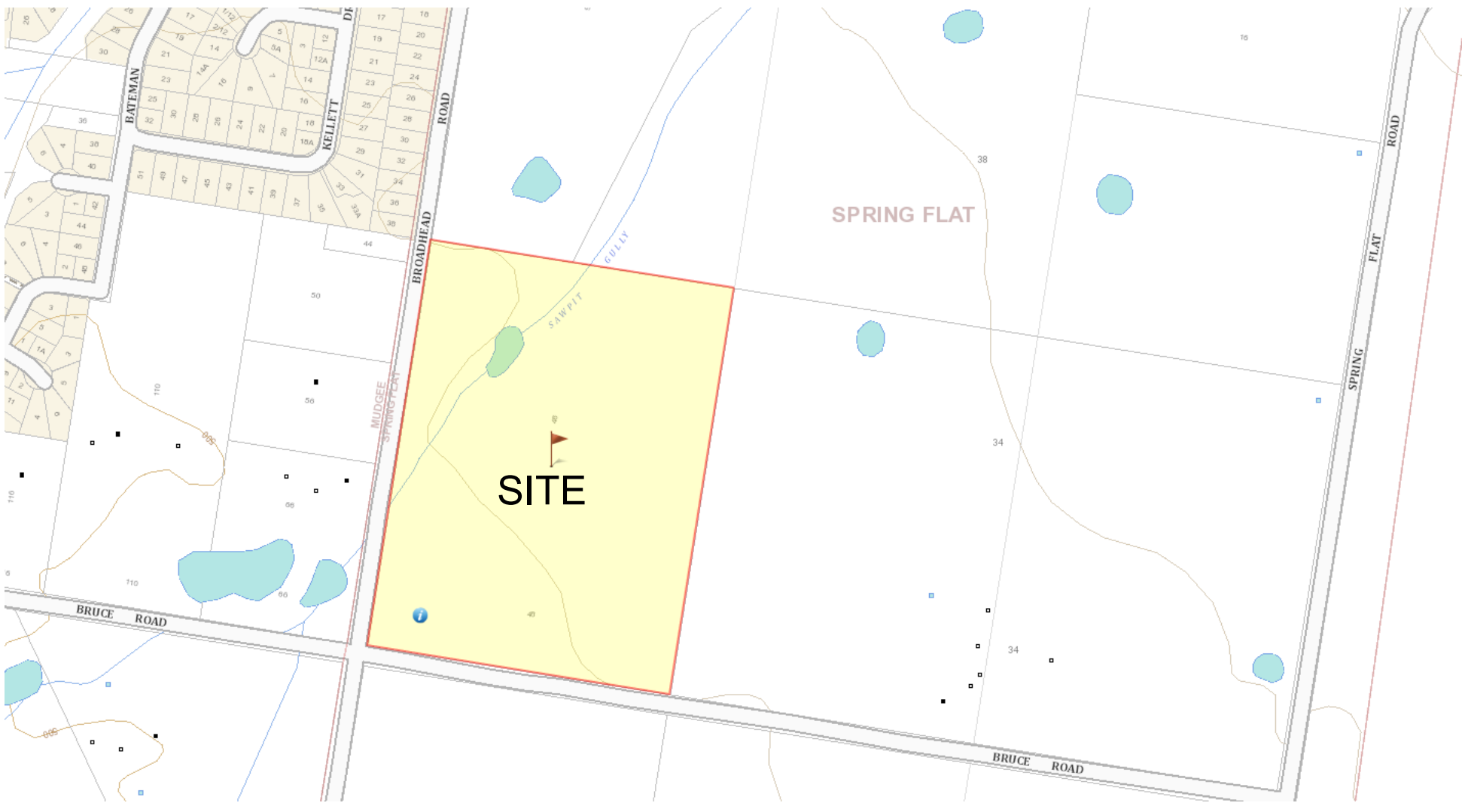
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ELECTRICAL SERVICES

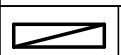













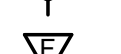
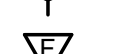


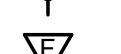
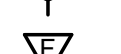





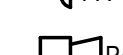
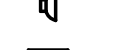

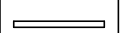

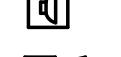

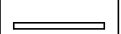



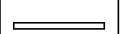




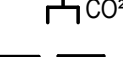


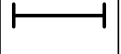



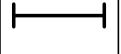



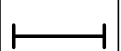



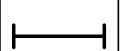






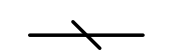


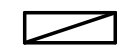

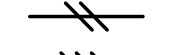
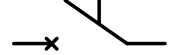


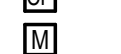


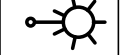


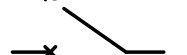

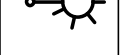


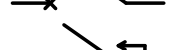

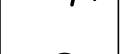









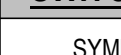








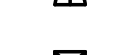







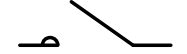




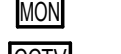
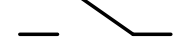










DRAWING LIST ELECTRICAL	
BR-E5250	SITE_BR-E5250_COVER SHEET & DRAWING LIST
BR-E5251	SITE_BR-E5251_LEGEND
BR-E5261	SITE_BR-E5261_SITE PLAN
BR-E5262	SITE_BR-E5262_PART SITE PLAN
BR-E5300	BLOCK A_BR-E5300_POWER, COMMS & SECURITY LAYOUT
BR-E5302	BLOCK C_BR-E5302_POWER, COMMS & SECURITY LAYOUT
BR-E5303	BLOCK D_BR-E5303_POWER, COMMS & SECURITY LAYOUT
BR-E5304	BLOCK E_BR-E5304_OVERALL POWER, COMMS & SECURITY LAYOUT
BR-E5305	BLOCK E_BR-E5305_BUILDING 1 POWER, COMMS & SECURITY LAYOUT
BR-E5306	BLOCK E_BR-E5306_BUILDING 2 POWER, COMMS & SECURITY LAYOUT
BR-E5307	BLOCK E_BR-E5307_BUILDING 3 POWER, COMMS & SECURITY LAYOUT
BR-E5308	BLOCK F_BR-E5308_POWER, COMMS & SECURITY LAYOUT
BR-E5400	BLOCK A_BR-E5400_LIGHTING LAYOUT
BR-E5402	BLOCK C_BR-E5402_LIGHTING LAYOUT
BR-E5403	BLOCK D_BR-E5403_LIGHTING LAYOUT
BR-E5404	BLOCK E_BR-E5404_OVERALL LIGHTING LAYOUT
BR-E5405	BLOCK E_BR-E5405_BUILDING 1 LIGHTING LAYOUT
BR-E5406	BLOCK E_BR-E5406_BUILDING 2 LIGHTING LAYOUT
BR-E5407	BLOCK E_BR-E5407_BUILDING 3 LIGHTING LAYOUT
BR-E5408	BLOCK F_BR-E5408_LIGHTING LAYOUT
BR-E5450	SITE_BR-E5450_DETAIL SHEET 1
BR-E5451	SITE_BR-E5451_DETAIL SHEET 2
BR-E5452	SITE_BR-E5452_DETAIL SHEET 3
BR-E5453	SITE_BR-E5453_DETAIL SHEET 4
BR-E5454	SITE_BR-E5454_DETAIL SHEET 5



LOCALITY PLAN

REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	15.11.19	60% DESIGN ISSUE	JW	JC	JW
B	28.02.20	60% ISSUE CP2A	JW	JC	JW
STATUS					
PRELIMINARY NOT FOR CONSTRUCTION					
SCALE @ A1 NOT TO SCALE					
CLIENT					
CATHOLIC EDUCATION DIOCESE OF BATHURST					
TSA MANAGEMENT					
ARCHITECT					
ALLEANZA ARCHITECTURE					
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PROJECT					
ST MATTHEW'S CATHOLIC SCHOOL					
CORNER OF BROADHEAD & BRUCE RD MUDGEEE, NSW 2850					
DRAWING TITLE					
SITE_BR-E5250_COVER SHEET & DRAWING LIST					
PROJECT No. 19-000307			DRAWING No. BR-E5250		REVISION B

LIGHTING			COMMUNICATIONS			FIRE ALARMS			SITE WORKS, CABLE SUPPORTS AND EARTHING			ABBREVIATIONS		
SYMBOL		DESCRIPTION	SYMBOL		DESCRIPTION	SYMBOL		DESCRIPTION	SYMBOL		DESCRIPTION	GENERAL LOCATION		
	1R	TROFFER			RJ45 CAT 6A COMMUNICATIONS OUTLET, MOUNT AT 300 AFL UNO			ADDRESSABLE FIRE INDICATOR PANEL, RECESS MOUNTED			COMMUNICATIONS CABLE TRAY, SIZE AS SHOWN	GENERAL LOCATION	+1200	HEIGHT ABOVE FINISHED FLOOR LEVEL
	2R	DOWNLIGHT - GENERAL			DOUBLE RJ45 CAT 6A COMMUNICATIONS OUTLET, MOUNT AT 300 AFL UNO			FIRE SUB INDICATOR PANEL, RECESS MOUNTED			ELECTRICAL CABLE LADDER, SIZE AS SHOWN		ab	ABOVE BENCH
	3R	DOWNLIGHT - WET AREA			TRIPLE RJ45 CAT 6A COMMUNICATIONS OUTLET, MOUNT AT 300 AFL U.N.O			MANUAL CALL POINT/BREAK GLASS AT 1500			ELECTRICAL PILLAR		b6	BELOW BENCH
	3R	DOWNLIGHT - WET AREA			CEILING MOUNTED RJ45 CAT 6A COMMUNICATIONS OUTLET FOR WIRELESS ACCESS POINT (WAP)			EXTERNAL ALARM INDICATOR (AUDIO/VISUAL)			VISUAL INDICATING LIGHT (AMBER/RED) CEILING MOUNTED	AFL	ABOVE FLOOR LEVEL	
	4R	DOWNLIGHT - OUTDOOR			COMMUNICATIONS CABINET/RACK			VISUAL INDICATING LIGHT (AMBER/RED) CEILING MOUNTED			REMOTE VISUAL INDICATOR	CM	ABOVE FINISHED FLOOR LEVEL	
	4R	DOWNLIGHT - OUTDOOR			AUDIO AMPLIFIER RACK LOCATION			FIRE ALARM SHUTDOWN SIGNAL			PACKAGE SUBSTATION	IC	MOUNTED TO UNDERSIDE OF CEILING OR STRUCTURE	
	5R	LED PANEL			PA EQUIPMENT AS NOTED ON LAYOUTS			ELECTROMAGNETIC DOOR HOLDER WITH MANUAL OVERRIDE PUSH BUTTON AND DOOR RELEASE FACILITY			POLE	IJ	MOUNTED IN JOINERY	
	6R	RECESSED LINEAR			PA SPEAKER - CEILING RECESSED			FIRE ALARM DOOR RELEASE SIGNAL			POLE MOUNTED SUBSTATION	WM	MOUNTED TO WALL OR STRUCTURE	
	6R	RECESSED LINEAR			PA SPEAKER - HORN			LOUD SPEAKER, FLUSH MOUNTED			TERMINATION HV - SWITCH/LINK	ABBREVIATIONS		
	1P	SUSPENDED LINEAR PENDENT			LOCKDOWN AND EVAC PANEL			LOUD SPEAKER, SURFACE MOUNTED			STREET LIGHT AND BRACKET	EQUIPMENT SPECIFIC	AC	AIR CONDITIONING UNIT. LOCATE ISOLATOR FOR CONNECTION BY MECHANIC CONTRACTOR. COORDINATE FINAL LOCATION WITH MECHANICAL CONTRACTOR.
	2P	ACOUSTIC PENDENT			THEATRE PROJECTOR			ALARM SOUNDER, SURFACE MOUNTED			AIR TERMINAL		BSB	BRANCH SELECTOR BOX. COORDINATE AND LOCATE ISOLATOR FOR CONNECTION BY MECHANICAL CONTRACTOR.
	1S	1200 INDOOR BATTEN			AUDIO SYSTEM SPEAKER			ADDRESSABLE HEAT DETECTOR (EXPOSED OR SURFACE MOUNTED)			EARTH ROD PIT		CBWU	CHILLED/BOILING WATER UNIT. COORDINATE FINAL LOCATION WITH HYDRAULICS CONTRACTOR AND LOCATE OUTLET IN ACCESSIBLE LOCATION TO EQUIPMENT SPECIFICATIONS. UNIT COMPLETE WITH TIMER TO BCA J6 REQUIREMENTS
	2S	600 INDOOR BATTEN			CARBON DIOXIDE SENSOR			HEAT DETECTOR IN CONCEALED SPACE			EARTHING BOND - CADWELD JOINT		CT	COOKTOP. LOCATE OUTLET WITH ISOLATOR SWITCH IN ACCESSIBLE LOCATION COMPLYING WITH AS3000
	3S	1200 OUTDOOR BATTEN			NOTE: WHERE DUPLICATE ANNOTATION OPTIONS ARE SHOWN THEY REFER TO THE SAME ITEM			SMOKE DETECTOR IN CONCEALED SPACE			CONDUIT IN WALL CAVITY TO ASSESSIBLE CEILING SPACE		DW	DISHWASHER. LOCATE OUTLET IN ACCESSIBLE LOCATION WITHIN ADJACENT JOINERY
	4S	1200 OUTDOOR BATTEN HIGH OUTPUT	POWER		SECURITY		SWITCHBOARD SCHEMATICS				2x CONDUIT IN WALL CAVITY TO ASSESSIBLE CEILING SPACE		EF	EXHAUST FAN (BY MECHANICAL SERVICES). COORDINATE AND LOCATE ISOLATOR FOR CONNECTION BY MECHANICAL CONTRACTOR
	5S	LOWBAY	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION			3x CONDUIT IN WALL CAVITY TO ASSESSIBLE CEILING SPACE		HD	HAND DRYER. HAND DRYER. LOCATE ISOLATOR AT HIGH LEVEL WITH HARDWIRED CONNECTION TO APPLIANCE
	6S	HIGHBAY		SWITCHBOARD		SECURITY ALARM PANEL		ONE PHASE			4x CONDUIT IN WALL CAVITY TO ASSESSIBLE CEILING SPACE		HWU	HOT WATER UNIT. COORDINATE AND LOCATE ISOLATOR FOR CONNECTION BY HYDRAULICS CONTRACTOR
	7S	600 OUTDOOR BATTEN		SWITCHBOARD BY OTHER TRADE		DATA GATHERING PANEL		TWO PHASE			WITHDRAWABLE CIRCUIT BREAKER		INV	SOLAR INVERTER
	1T	TRACK SPOTLIGHT		10A SINGLE SWITCHED SOCKET OUTLET (SSO), MOUNTED 300 AFFL UNO		ELECTROMAGNETIC DOOR LOCK		THREE PHASE			FUSE COMBINATION UNIT (FCU)		NW	MICROWAVE. LOCATE OUTLET IN ACCESSIBLE LOCATION WITH APPLIANCE IN PLACE
	1X	BOLLARD		15A = 15 AMP OUTLET		ELECTRIC DOOR STRIKE		ON LOAD ISOLATOR			SUPPLY AUTHORITY / RETAILER ENERGY METER	OAF	OUTSIDE AIR FAN. COORDINATE AND LOCATE ISOLATOR FOR CONNECTION BY MECHANICAL CONTRACTOR	
	2X	STREET LIGHT WITH POLE (SINGLE OUTREACH)		20A = 20 AMP OUTLET		BREAK GLASS TO EXIT (FAIL SAFE)		CIRCUIT BREAKER			PRIVATE METER. REFER ESPEC FOR TIERS	OV	OVEN. LOCATE ISOLATOR IN ACCESSIBLE LOCATION WITHIN ADJACENT JOINERY WITH HARDWIRED CONNECTION TO OVEN REFRIGERATOR. LOCATION OUTLET IN ACCESSIBLE LOCATION WITH APPLIANCE IN PLACE	
	3X	STREET LIGHT WITH POLE (DOUBLE OUTREACH)		CM = CEILING MOUNTED		INTERNAL PIEZO SOUNDER		COMBINED RESIDUAL CURRENT DEVICE/CIRCUIT BREAKER (30mA SENSITIVITY UNO)			COIL	REF	RANGE HOOD. LOCATE OUTLET IN ACCESSIBLE LOCATION WITHIN ADJACENT JOINERY WHERE POSSIBLE	
	4X	STREET LIGHT WITH POLE (SINGLE OUTREACH)		CL = CLEANER DESIGNATED OUTPUT		MOTION DETECTOR		MOTOR DRIVEN CIRCUIT BREAKER			LINK	RH	WITH APPLIANCE IN PLACE	
	1W	WALL LIGHT		WP = WEATHERPROOF IP RATED CLIPSAL 56 SERIES		360 DEGREE CEILING MOUNT MOTION DETECTOR		WITHDRAWABLE CIRCUIT BREAKER			HRC FUSE BASE CARTRIDGE	WM	WASHING MACHINE	
SWITCHING				RCD = RCD PROTECTED. CLIPSAL C202SRC OR APPROVED EQUAL		DOOR SENSOR (REED SWITCH)		FUSE COMBINATION UNIT (FCU)			SURGE DIVERTER WITH FUSE	GENERAL	15A	CURRENT RATING (15 AMP EXAMPLE)
SYMBOL	DESCRIPTION		L = KEY LOCKABLE IN OFF POSITION		DURESS BUTTON		NORMALLY CLOSED CONTACT				LINK		3PH	THREE PHASE (400V LINE-LINE)
	ISOLATING SWITCH MOUNTED AT 1000 AFL UNO		SP = SURGE PROTECTED OUTLET (CLIPSAL 25SF)		VIDEO DISPLAY MONITOR		NORMALLY OPEN CONTACT				CURRENT TRANSFORMER		ACC	LIGHTING: SWITCHED ON ACCESS CONTROL CIRCUIT
	ISOLATING SWITCH WITH DALI PRESS DIMMER MOUNTED AT 1000 AFL UNO		EMERGENCY MUSHROOM HEAD STOP BUTTON		CCTV		SWITCH				SURGE DIVERTER WITH FUSE		P	AUDIO VISUAL
	LIGHTING CONTROL PANEL (7" TOUCH SCREEN)		SINGLE PHASE ISOLATOR, RATING AS SHOWN		IP VIDEO INTERCOM ENTRANCE STATION		AUTO/OFF/MANUAL SWITCH				LINK		SEC	PENDENT

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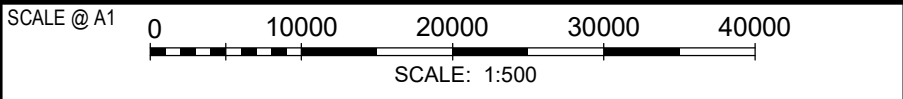


- NOTES**
1. ALL POWER SUPPLY UPGRADE WORKS ARE SUBJECT TO ESSENTIAL ENERGY DIP AND REQUIREMENTS
 2. ALL COMMERCIAL FIBRE WORKS SUBJECT TO CEDB SERVICE PROVIDER REQUIREMENTS AND BACKHAUL WORKS
 3. REFER TO E5260 FOR SITE INTERNAL PIT AND PIPE LAYOUT
 4. REFER TO L3 ASP DESIGN FOR ALL ESSENTIAL ENERGY WORKS. SHOWN FOR COORDINATION ONLY.
 5. ONLY MAJOR SERVICE RUNS ARE SHOWN. ALLOW FOR ALL MINOR CONDUIT RETICULATIONS TO FINAL CONNECTIONS AND DEVICES AS PER DOCUMENTATION AND ESPEC

REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	15.11.19	60% DESIGN ISSUE	JW	JC	JW
B	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS

PRELIMINARY
NOT FOR CONSTRUCTION



CLIENT

CATHOLIC
EDUCATION

DIocese of Bathurst

TSA
MANAGEMENT

ARCHITECT

ALLEANZA
ARCHITECTURE

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PROJECT

ST MATTHEW'S CATHOLIC SCHOOL

**CORNER OF BROADHEAD & BRUCE RD
MUDGEE, NSW 2850**

DRAWING TITLE

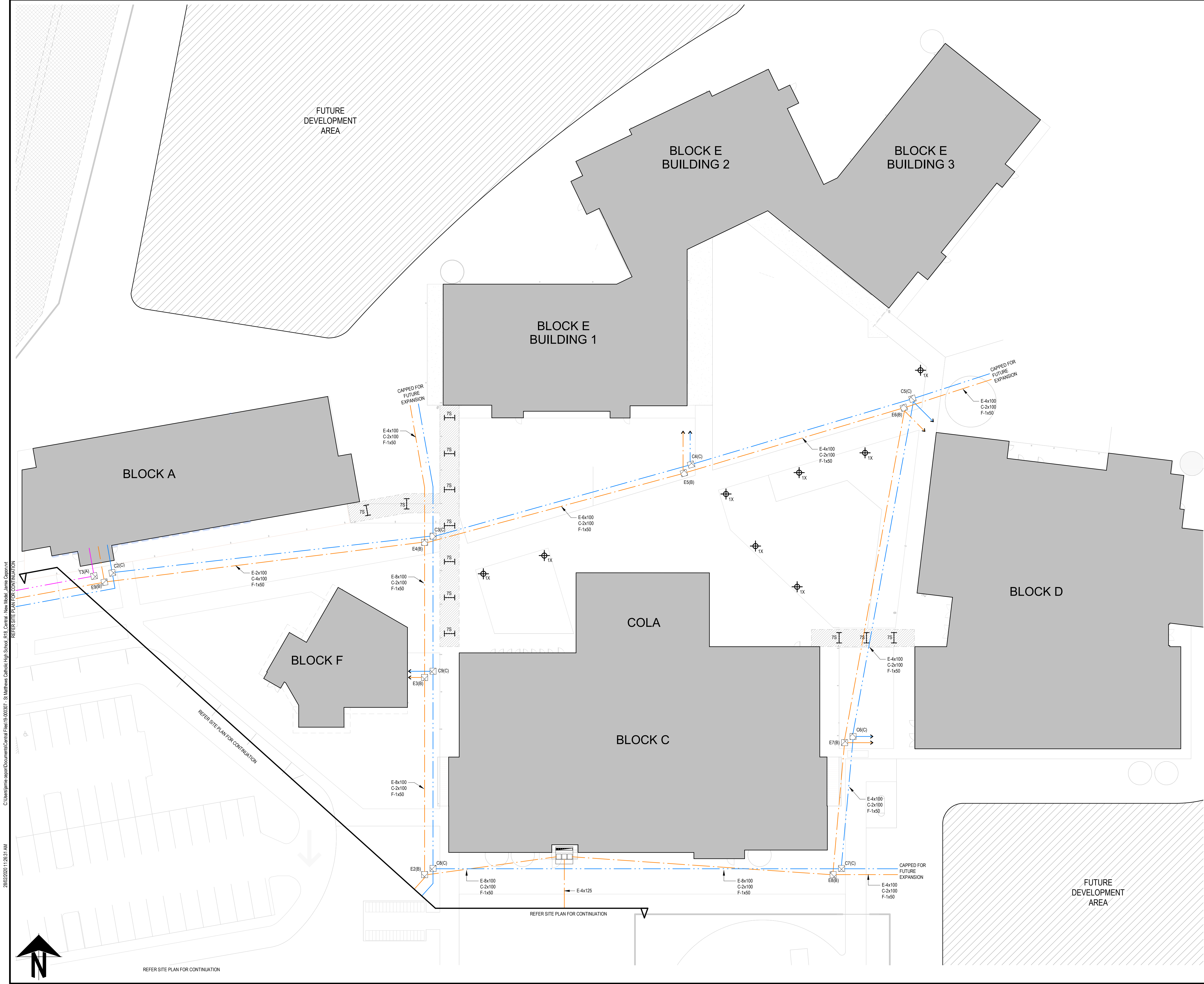
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PROJECT No.	DRAWING No.	REVISION
19-000307	BR-E5261	B

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NOTES

1. UNDERGROUND FIRE SERVICES TO BE SLEEVED THROUGH COMMUNICATIONS PITS, PROTECTED, SEGREGATED AND LABELED.
2. ONLY MAJOR SERVICE RUNS ARE SHOWN. ALLOW FOR ALL MINOR CONDUIT RETICULATIONS TO FINAL CONNECTIONS AND DEVICES AS PER DOCUMENTATION AND ESPEC.

REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	15.11.19	60% DESIGN ISSUE	JW	JC	JW
B	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE @ A1
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SCALE: 1:250

CLIENT

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EDUCATION
DIOCESE OF BATHURST

TSA
MANAGEMENT

ARCHITECT

ALLEANZA
ARCHITECTURE

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PROJECT

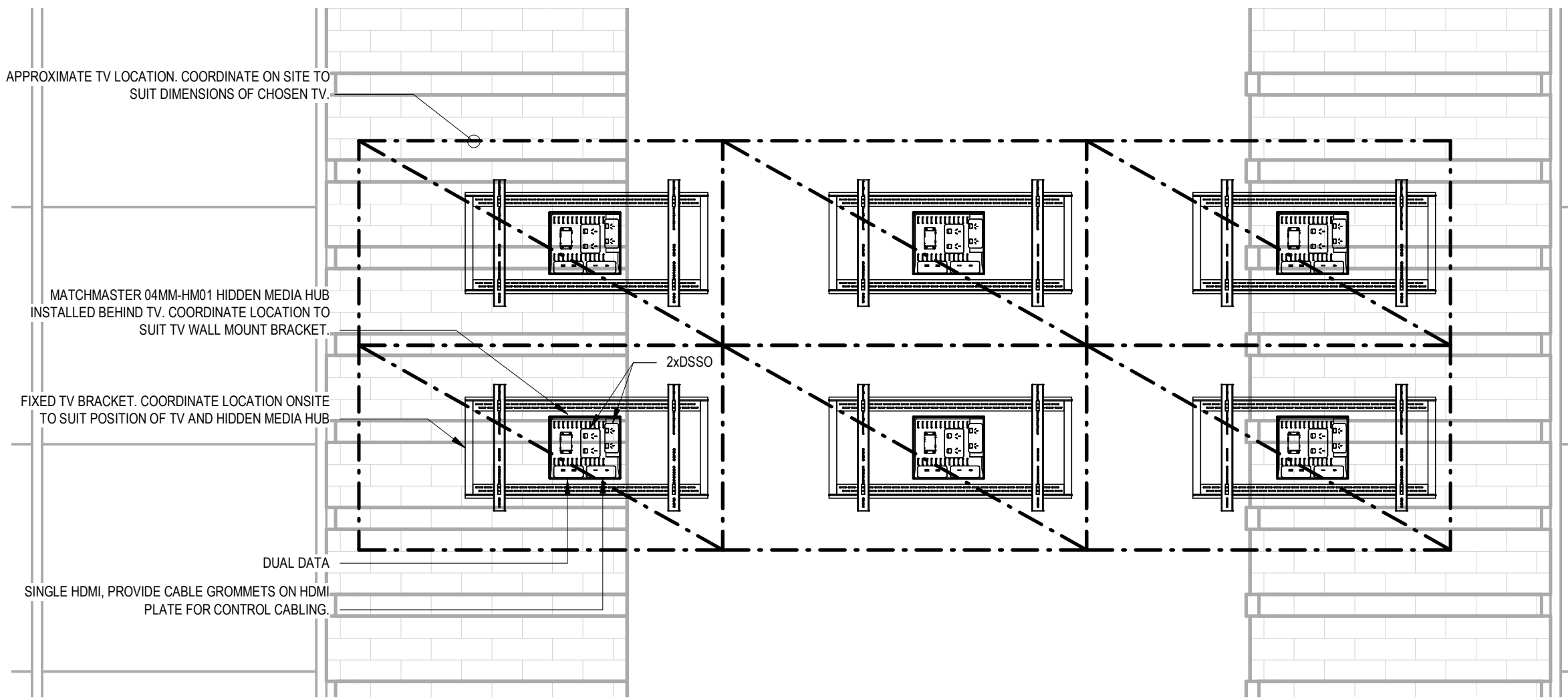
ST MATTHEW'S CATHOLIC SCHOOL

CORNER OF BROADHEAD & BRUCE RD
MUDGEE, NSW 2850

DRAWING TITLE

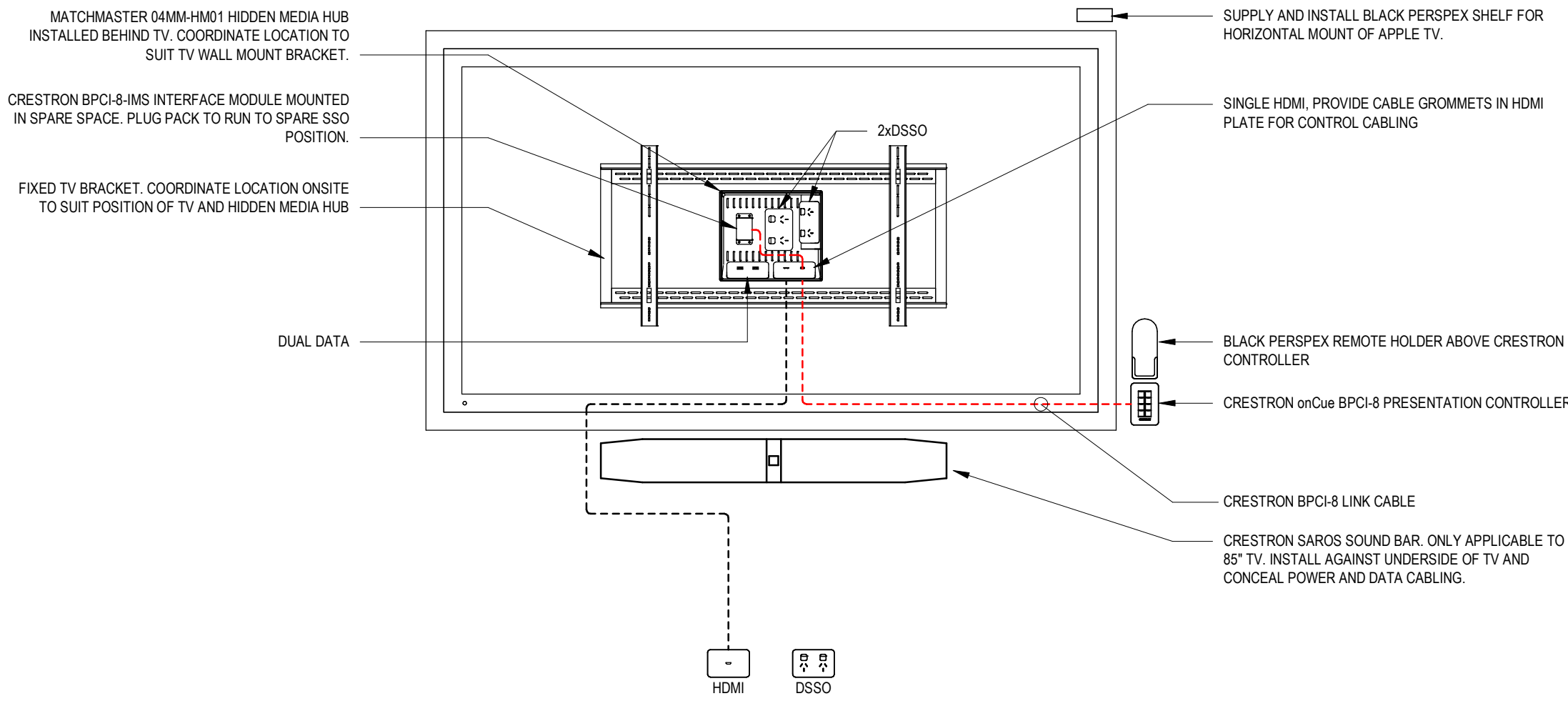
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PROJECT No.	DRAWING No.	REVISION
19-000307	BR-E5262	B



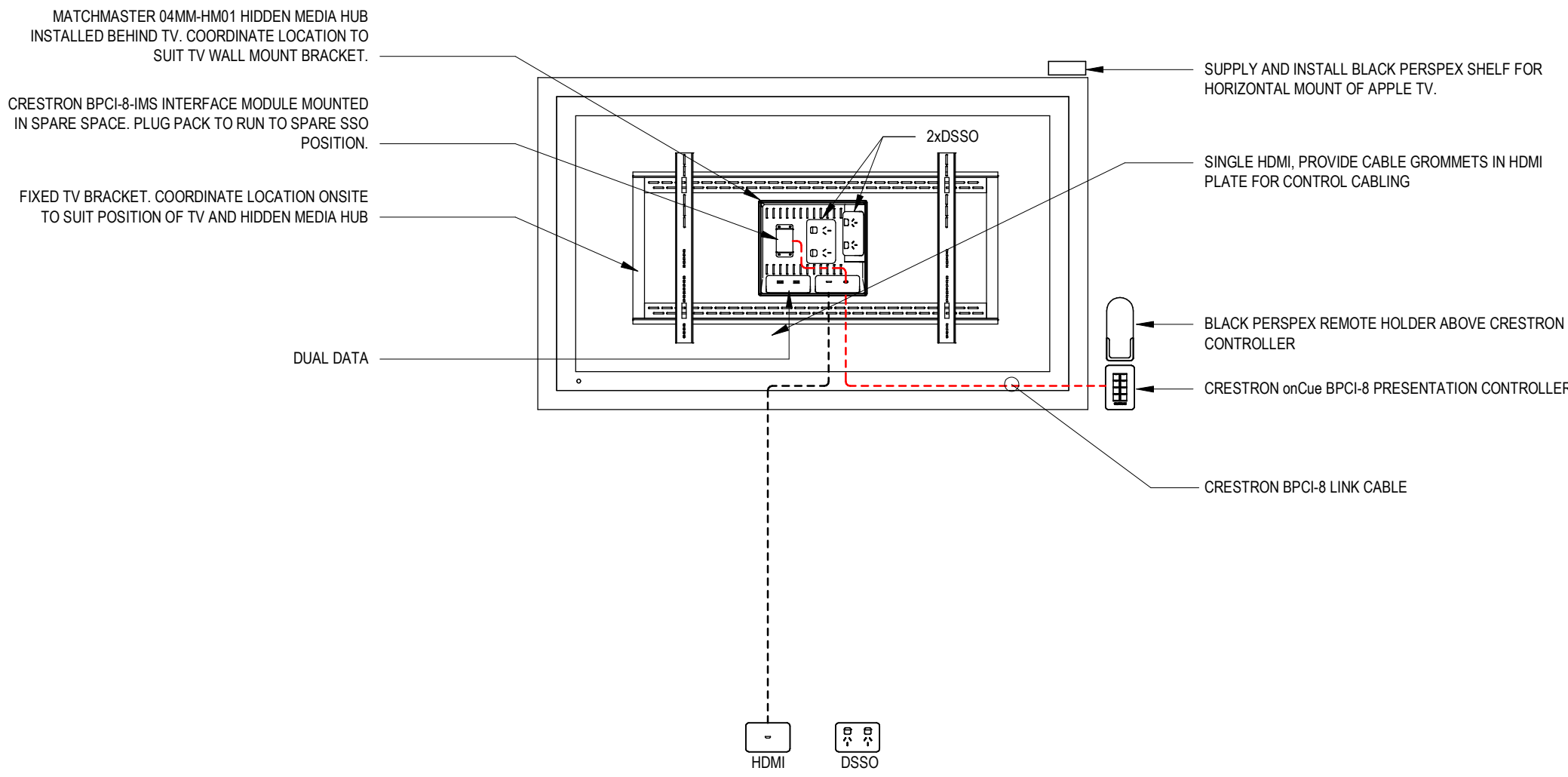
TYPICAL COMBINED TV LAYOUT

- NOTES:
- 1. REFER ARCHITECTURAL SCHEDULES, LAYOUTS AND ELEVATIONS FOR QUANTITIES AND DETAILS OF ALL TELEVISIONS. ALL ARCHITECTURAL DOCUMENTATION SHALL TAKE PRECEDENCE IN THIS REGARD.
 - 2. TYPICAL LAYOUT DISPLAYED. ADJUST MOUNTING HEIGHTS AND LOCATIONS TO SUIT TV LOCATIONS.
 - 3. SUPPLY & INSTALL COMPLETE AV SYSTEM. REFER ESPEC.



TYPICAL 85" TV LAYOUT

- NOTES:
- 1. REFER ARCHITECTURAL SCHEDULES, LAYOUTS AND ELEVATIONS FOR QUANTITIES AND DETAILS OF ALL TELEVISIONS. ALL ARCHITECTURAL DOCUMENTATION SHALL TAKE PRECEDENCE IN THIS REGARD.
 - 2. TYPICAL LAYOUT DISPLAYED. ADJUST MOUNTING HEIGHTS AND LOCATIONS TO SUIT TV LOCATIONS.
 - 3. SUPPLY & INSTALL COMPLETE AV SYSTEM. REFER ESPEC.



TYPICAL 55", 65" & 75" TV LAYOUT

- NOTES:
- 1. REFER ARCHITECTURAL SCHEDULES, LAYOUTS AND ELEVATIONS FOR QUANTITIES AND DETAILS OF ALL TELEVISIONS. ALL ARCHITECTURAL DOCUMENTATION SHALL TAKE PRECEDENCE IN THIS REGARD.
 - 2. TYPICAL LAYOUT DISPLAYED. ADJUST MOUNTING HEIGHTS AND LOCATIONS TO SUIT TV LOCATIONS.
 - 3. SUPPLY & INSTALL COMPLETE AV SYSTEM. REFER ESPEC.

REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	15.11.19	60% DESIGN ISSUE	JW	JC	JW
B	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS	PRELIMINARY NOT FOR CONSTRUCTION
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SCALE @ A1	NOT TO SCALE
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CLIENT	<div>CATHOLIC EDUCATION DIOCESE OF BATHURST</div> <div>TSA MANAGEMENT</div>
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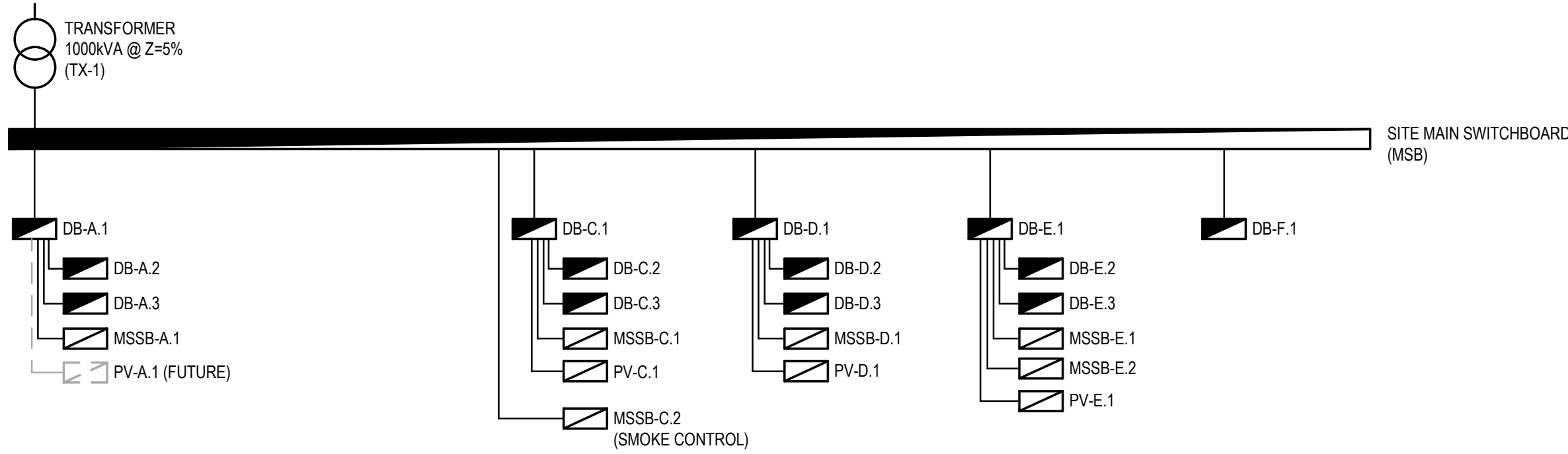
ARCHITECT	ALLEANZA ARCHITECTURE
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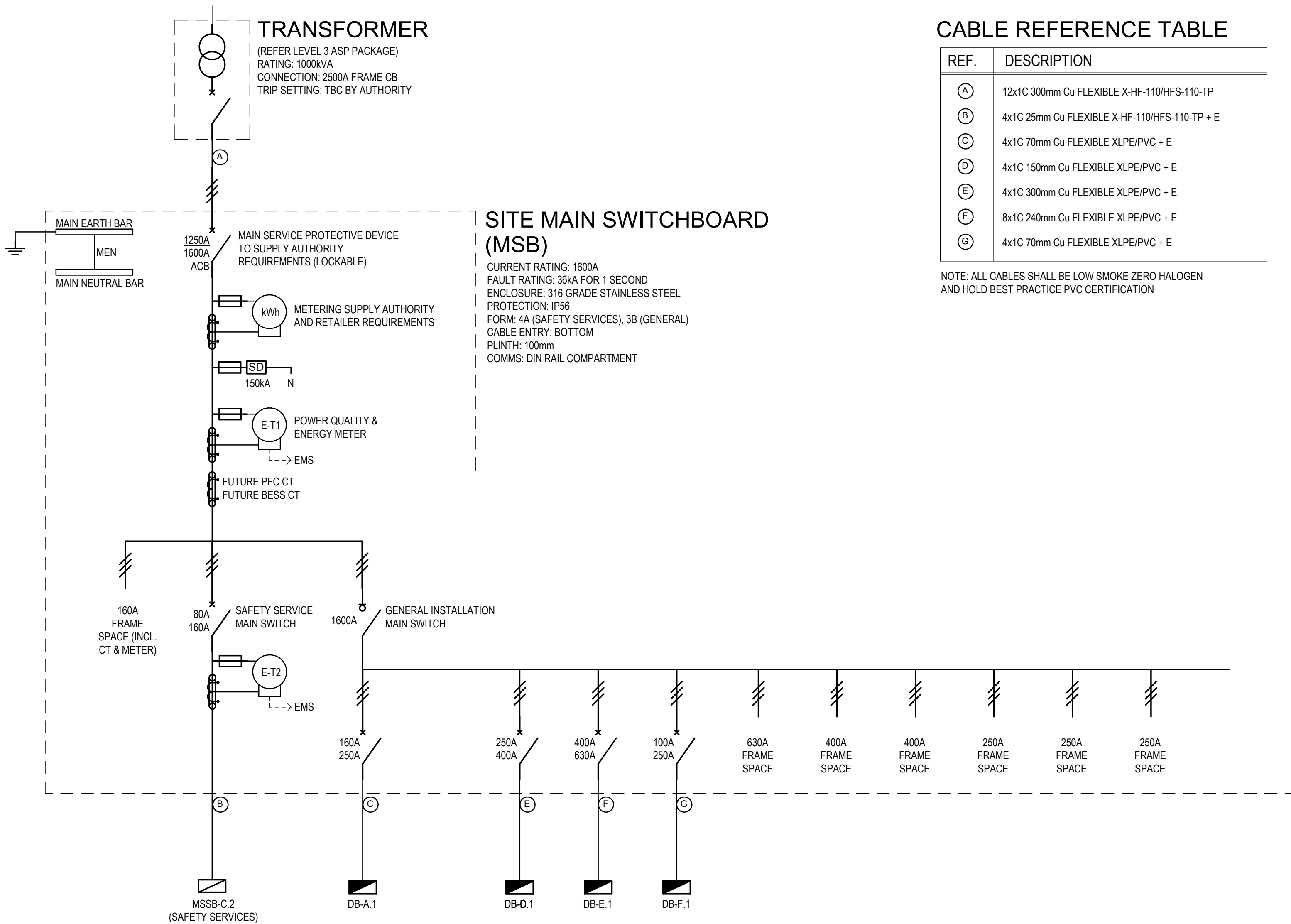
PROJECT	ST MATTHEW'S CATHOLIC SCHOOL
	CORNER OF BROADHEAD & BRUCE RD MUDGEE, NSW 2850

DRAWING TITLE	SITE_BR-E5450_DETAIL SHEET 1
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PROJECT No.	DRAWING No.	REVISION
19-000307	BR-E5450	B



POWER DISTRIBUTION BLOCK DIAGRAM
SCALE NTS



CABLE REFERENCE TABLE

REF.	DESCRIPTION
(A)	12x1C 300mm Cu FLEXIBLE X-HF-110/HFS-110-TP
(B)	4x1C 25mm Cu FLEXIBLE X-HF-110/HFS-110-TP + E
(C)	4x1C 70mm Cu FLEXIBLE XLPE/PVC + E
(D)	4x1C 150mm Cu FLEXIBLE XLPE/PVC + E
(E)	4x1C 300mm Cu FLEXIBLE XLPE/PVC + E
(F)	8x1C 240mm Cu FLEXIBLE XLPE/PVC + E
(G)	4x1C 70mm Cu FLEXIBLE XLPE/PVC + E

NOTE: ALL CABLES SHALL BE LOW SMOKE ZERO HALOGEN
AND HOLD BEST PRACTICE PVC CERTIFICATION

REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	15.11.19	60% DESIGN ISSUE	JW	JC	JW
B	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE @ A1

NOT TO SCALE

CLIENT

CATHOLIC EDUCATION
DIOCESE OF BATHURST

TSA
MANAGEMENT

ARCHITECT

ALLEANZA
ARCHITECTURE


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PROJECT

ST MATTHEW'S CATHOLIC SCHOOL

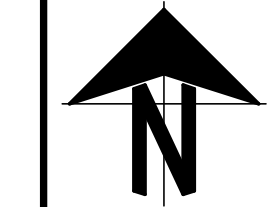
CORNER OF BROADHEAD & BRUCE RD
MUDGEE, NSW 2850

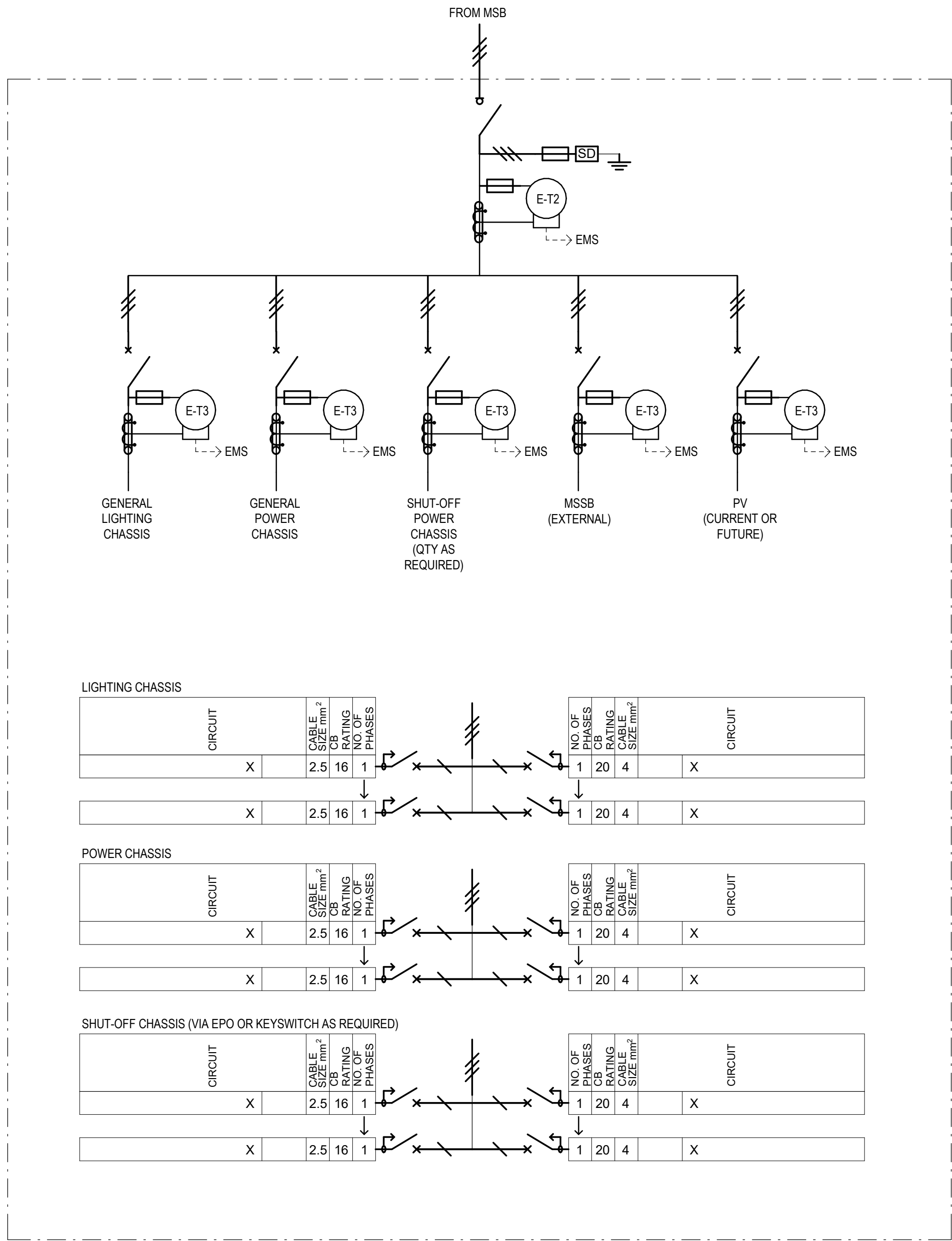
DRAWING TITLE

SITE_BR-E5451_DETAIL SHEET 2

PROJECT No.	DRAWING No.	REVISION
19-000307	BR-E5451	B

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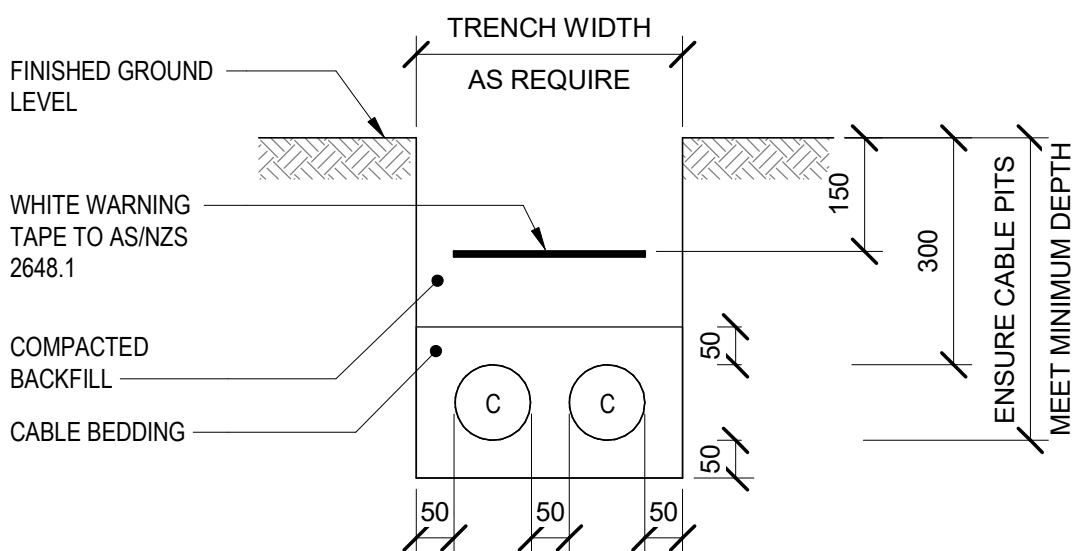


LOCATION	EDP CUPBOARDS
FAULT LEVEL	15kA FOR 1 SEC
IP RATING	IP42
FORM	1
MIN. POLES	USED + 30% SPARE
DIN SPACE	USED + 25% SPARE
CURRENT RATING	250A/400A/630A
MOUNTING	WALL OR FLOOR
SPD	40KA 8/20us MOV
SWITCHGEAR	SCHNEIDER, NHP OR ABB

NOTES:

- CIRCUIT BREAKERS SHALL HAVE MINIMUM FAULT CURRENT RATING OF 6kA. PROVIDE HIGHER AS REQUIRED FOR ACTUAL FAULT CURRENTS OR CASCADING AND SELECTIVITY
- CABLE SIZES SHOWN ARE MINIMUM SIZES ONLY. INCREASE AS REQUIRED TO ACCOMMODATE DERATING DUE TO INSTALLATION CONDITIONS, VOLTAGE DROP AND EARTH FAULT LOOP IMPEDANCE
- PROVIDE SUITABLE COMPARTMENTS FOR CONTACTORS AND CONTROL SYSTEMS COMPONENTS AS REQUIRED FOR EACH LOCATIONS

TYPICAL DB ARRANGEMENT SINGLE LINE SCHEMATIC

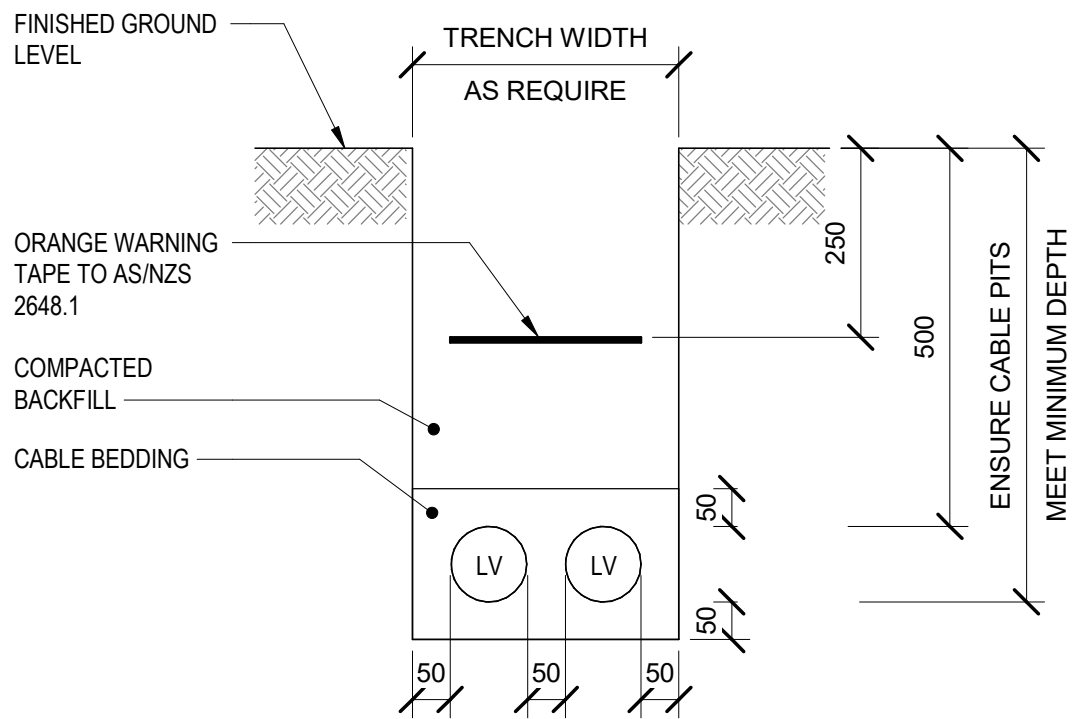


TYPICAL COMMUNICATIONS TRENCH DETAIL

SCALE: 1:10

NOTES

- CONDUIT COVER AND BEDDING CLEARANCES SHOWN ARE MINIMUM DIMENSIONS ONLY. INCREASE AS REQUIRED TO MEET INSTALLATION REQUIREMENTS AND CLEARANCE OF OTHER SERVICES. WHITE WARNING TAPE SHALL BE LOCATED HALF WAY BETWEEN FINISHED GROUND LEVEL AND TOP OF CONDUIT
- ARRANGE CONDUIT BANKS TO BEST SUIT CONNECTING CABLE PIT CUT-OUTS AND DEPTHS
- MAINTAIN MINIMUM CLEARANCE IN ACCORDANCE WITH TELECOMMUNICATIONS, GAS, WATER AND ELECTRICITY DISTRIBUTOR REQUIREMENTS. NOMINALLY MAINTAIN 100mm SEPARATION FROM ALL SERVICES AND 300mm SEPARATION FROM ELECTRICAL CABLES ABOVE 1kV

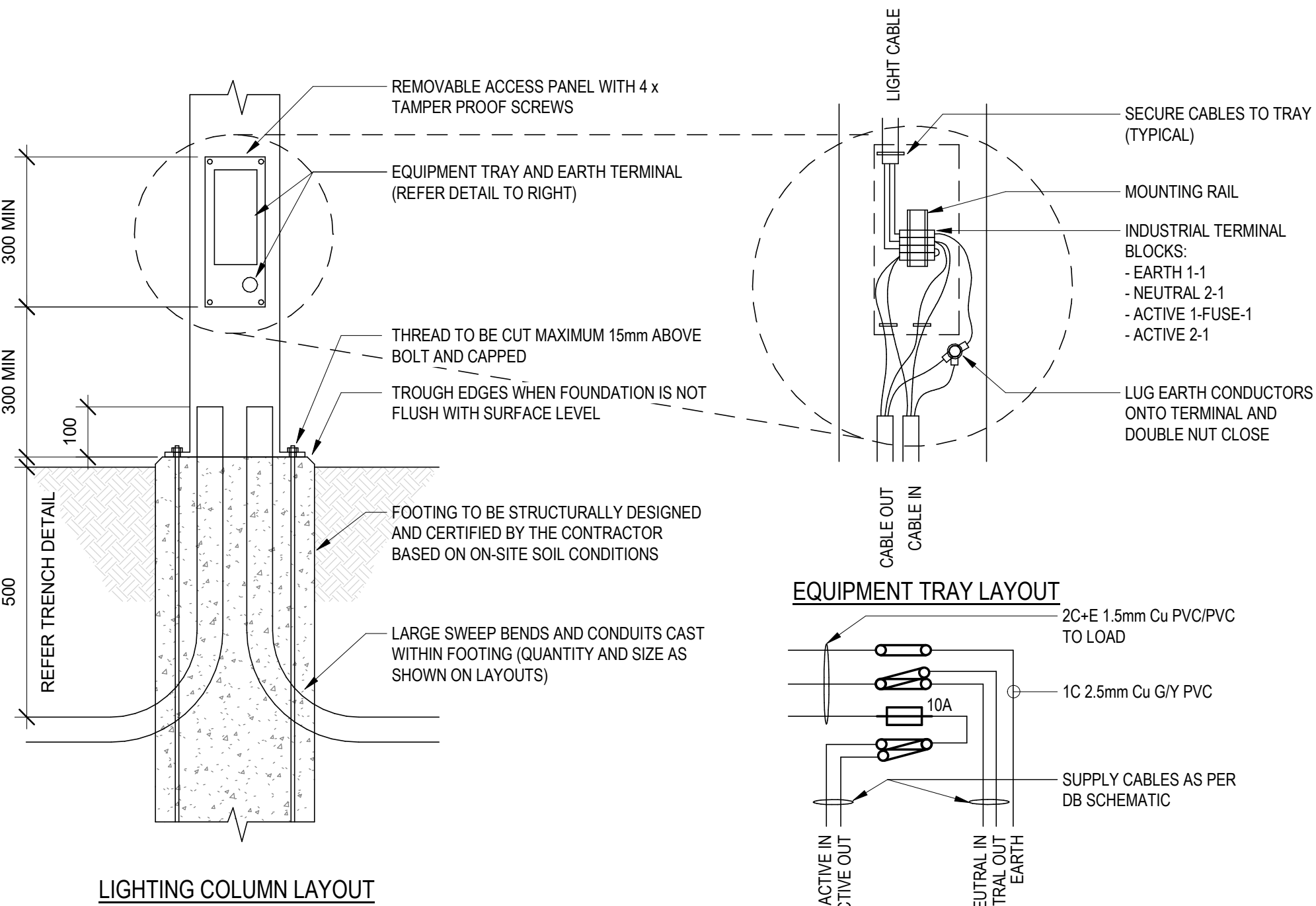


TYPICAL ELECTRICAL TRENCH DETAIL

SCALE: 1:10

NOTES

- TYPICAL DETAIL BASED ON AS/NZS 3000 CATEGORY A CABLE WIRING ENCLOSURE
- CONDUIT COVER AND BEDDING CLEARANCES SHOWN ARE MINIMUM DIMENSIONS ONLY. INCREASE AS REQUIRED TO MEET INSTALLATION REQUIREMENTS AND CLEARANCE OF OTHER SERVICES. ORANGE WARNING TAPE SHALL BE LOCATED HALF WAY BETWEEN FINISHED GROUND LEVEL AND TOP OF CONDUIT
- ARRANGE CONDUIT BANKS TO BEST SUIT CONNECTING CABLE PIT CUT-OUTS AND DEPTHS
- MAINTAIN MINIMUM CLEARANCE IN ACCORDANCE WITH AS/NZS 3000 TABLE 3.7 AND TELECOMMUNICATIONS, GAS, WATER AND ELECTRICITY DISTRIBUTOR REQUIREMENTS



LIGHTING COLUMN LAYOUT

TYPICAL LIGHT POLE ARRANGEMENT

SCALE: NTS

NOTES

- EQUIPMENT TRAY ACCESS PANEL IS TO BE INSTALLED ON THE POLE FACE ADJACENT ACCESSIBLE AREA
- POLE TO BE POWDERCOATED BLACK

REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	15.11.19	60% DESIGN ISSUE	JW	JC	JW
B	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS	PRELIMINARY NOT FOR CONSTRUCTION
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SCALE @ A1	NOT TO SCALE
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CLIENT	CATHOLIC EDUCATION DIOCESE OF BATHURST
	TSA MANAGEMENT

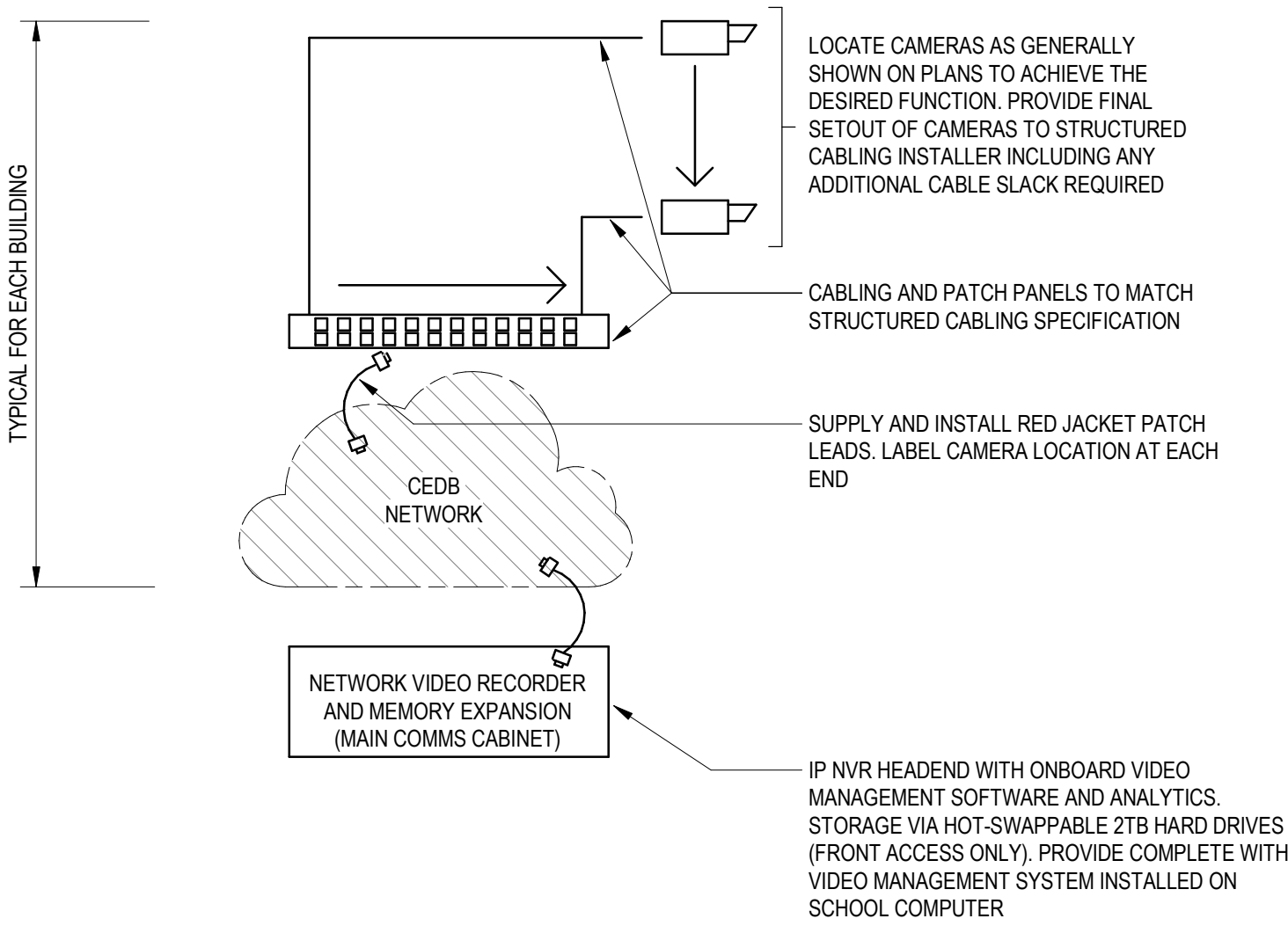
ARCHITECT	ALLEANZA ARCHITECTURE
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PROJECT	ST MATTHEW'S CATHOLIC SCHOOL
	CORNER OF BROADHEAD & BRUCE RD MUDGEE, NSW 2850

DRAWING TITLE	SITE_BR-E5452_DETAIL SHEET 3
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PROJECT No.	DRAWING No.	REVISION
19-000307	BR-E5452	B

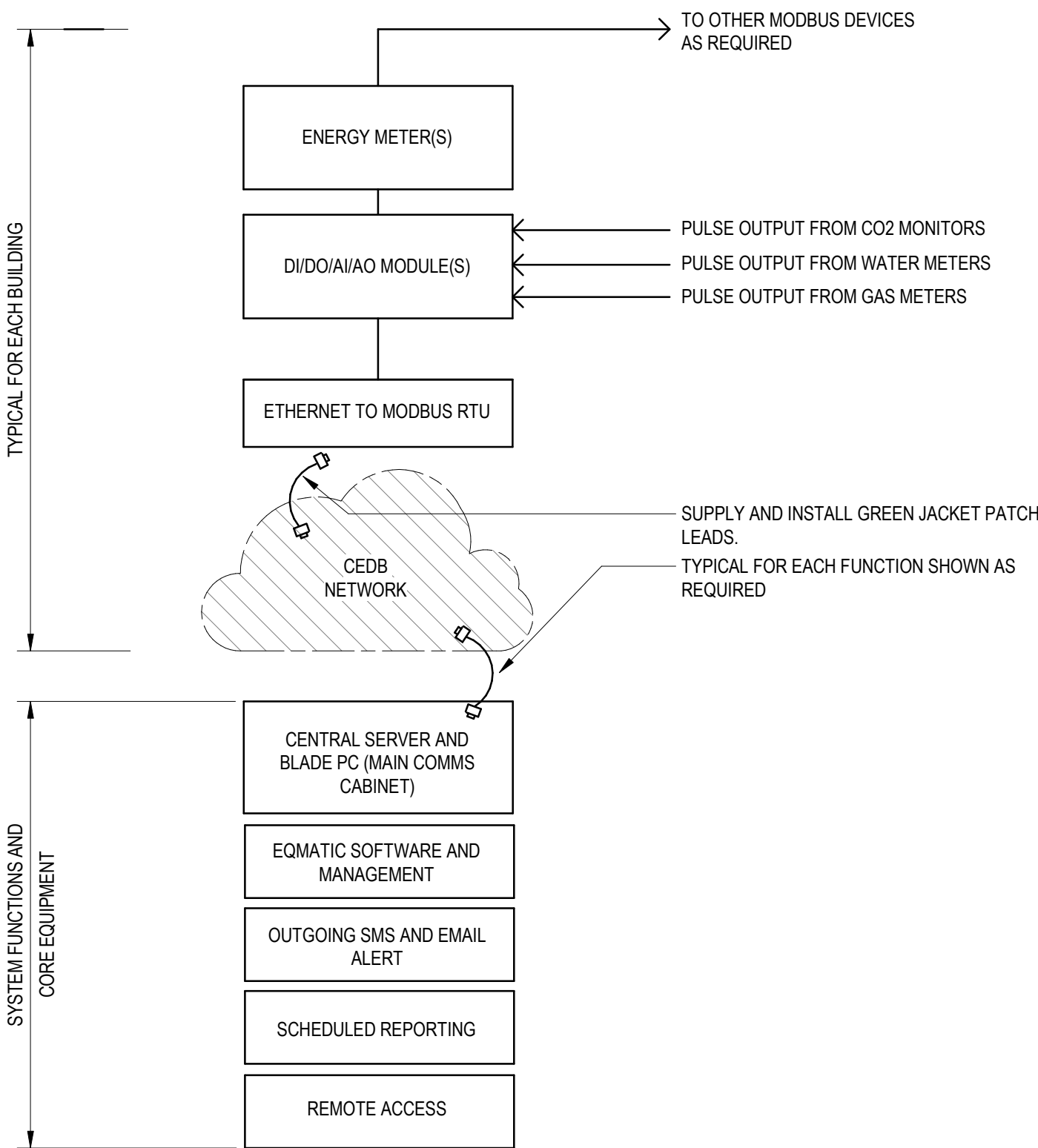


CCTV BLOCK DIAGRAM

SCALE: NTS

NOTES

1. THE ELECTRICAL CONTRACTOR SHALL ENGAGE A SPECIALIST SECURITY SERVICES SUBCONTRACTOR TO DESIGN, SUPPLY AND INSTALL SECURITY SERVICES.
2. SCHEMATIC SHOWN IS DIAGRAMMATIC ONLY TO DEMONSTRATE DESIGN INTENT. PROVIDE COMPLETE SYSTEM DESIGN, SCHEMATICS, LAYOUTS AND EQUIPMENT SCHEDULES FOR A FUNCTIONAL SYSTEM.
3. SELECT LENS AND LOCAL LENGTHS TO ACHIEVE OPTIMAL SITE COVERAGE, SPECIFICALLY THOSE AREAS MENTIONED WITHIN THE CAMERA SCHEDULE. WHERE COVERAGE WOULD BEST BE PROVIDED BY A SECONDARY CAMERA, ALLOW FOR ONE WITHIN TENDER SUBMISSION.
4. PROVIDE WALL BRACKETS, SURFACE MOUNT KITS, BACKING PLATES AND POLE CLAMPS ETC. AS REQUIRED TO MOUNT CAMERAS IN EACH LOCATION, AT HEIGHTS AND IN SITUATIONS SUITABLE FOR ONGOING MAINTENANCE

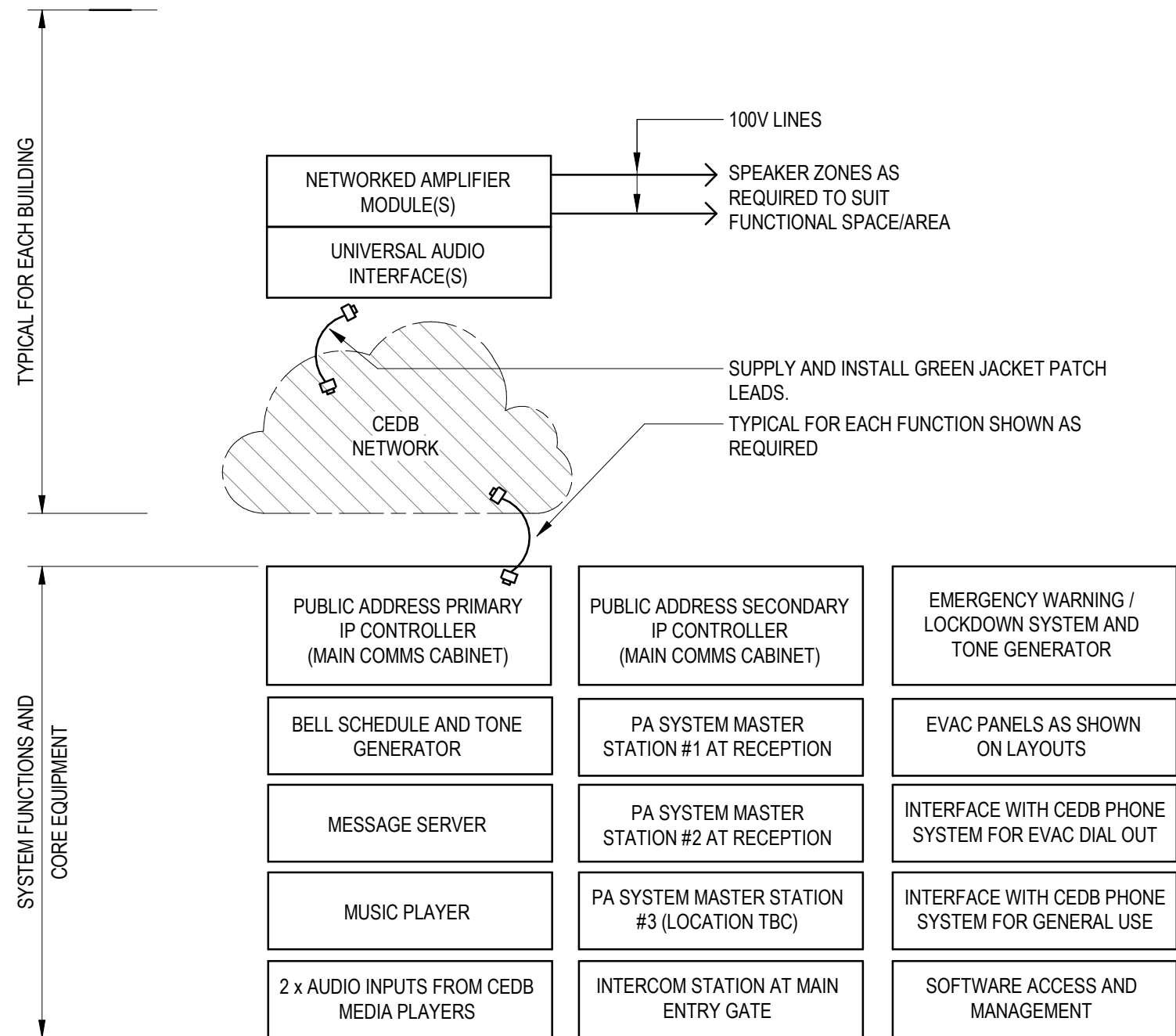


ENERGY MANAGEMENT SYSTEM SYSTEM BLOCK DIAGRAM

SCALE: NTS

NOTES

1. THE ELECTRICAL CONTRACTOR SHALL ENGAGE A SPECIALIST BMS/AUTOMATION SUBCONTRACTOR TO DESIGN, SUPPLY AND INSTALL THE IP BASED KNX ENERGY MANAGEMENT SYSTEM
2. SCHEMATIC SHOWN IS DIAGRAMMATIC ONLY TO DEMONSTRATE DESIGN INTENT. PROVIDE COMPLETE SYSTEM DESIGN, SCHEMATICS, LAYOUTS AND EQUIPMENT SCHEDULES FOR A FUNCTIONAL SYSTEM.
3. INCLUDE ALL EQUIPMENT, COMPONENTS, DEVICES, INTERFACES AND CONVERTERS TO PROVIDE A COMPLETE SOLUTION, INCLUDING INTEGRATION OF ANALOGUE SERVICES OVER THE IP SYSTEM
4. SYSTEM TO BE KNX PLATFORM USING ABB DEVICES AND EQMATIC ENERGY ANALYSER (OR EQUAL)
5. ALLOW TO CONFIGURE THE SOFTWARE AND SETUP ALL DASHBOARDS AND AUTOMATIC REPORTING TO GREENSTAR REQUIREMENTS

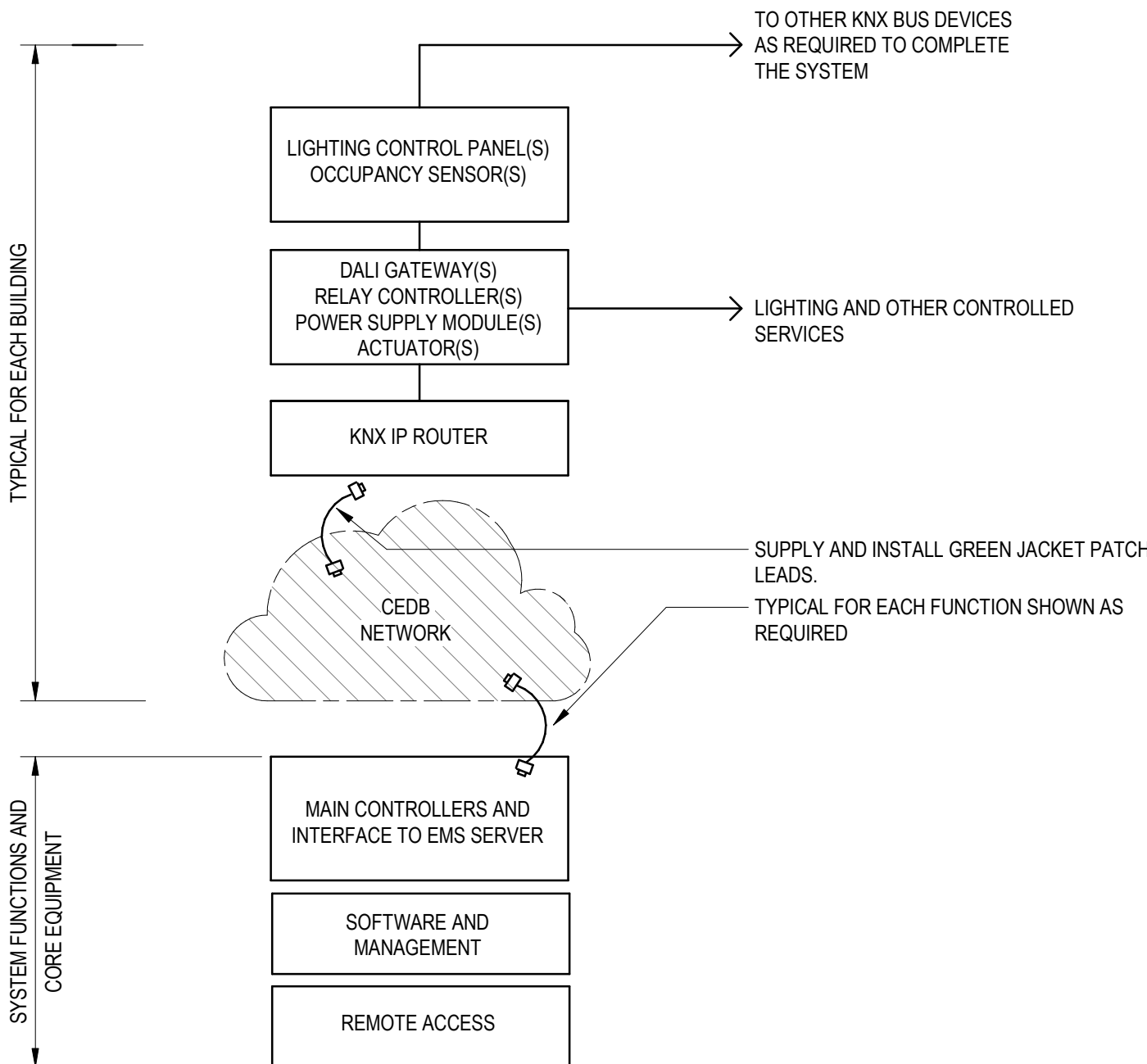


PUBLIC ADDRESS AND INTERCOM SYSTEM BLOCK DIAGRAM

SCALE: NTS

NOTES

1. THE ELECTRICAL CONTRACTOR SHALL ENGAGE A SPECIALIST PUBLIC ADDRESS SUBCONTRACTOR TO DESIGN, SUPPLY AND INSTALL THE IP BASED PUBLIC ADDRESS SERVICES.
2. SCHEMATIC SHOWN IS DIAGRAMMATIC ONLY TO DEMONSTRATE DESIGN INTENT. PROVIDE COMPLETE SYSTEM DESIGN, SCHEMATICS, LAYOUTS AND EQUIPMENT SCHEDULES FOR A FUNCTIONAL SYSTEM.
3. INCLUDE ALL EQUIPMENT, COMPONENTS, DEVICES, INTERFACES AND CONVERTERS TO PROVIDE A COMPLETE SOLUTION, INCLUDING INTEGRATION OF ANALOGUE SERVICES OVER THE IP SYSTEM
4. SYSTEM TO BE JACQUES OR EQUAL

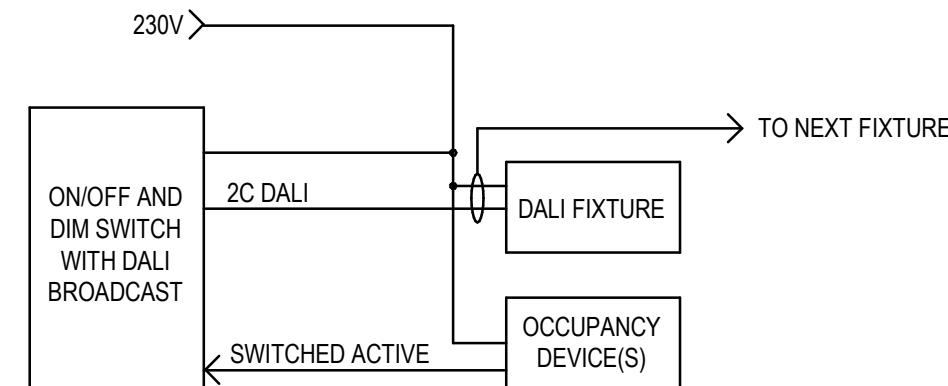


LIGHTING CONTROL SYSTEM (BLOCK C & OPTION 1 BLOCKS A, B, D AND E)

SCALE: NTS

NOTES

1. THE ELECTRICAL CONTRACTOR SHALL ENGAGE A SPECIALIST LIGHTING AUTOMATION SUBCONTRACTOR TO DESIGN, SUPPLY AND INSTALL THE IP BASED KNX ENERGY MANAGEMENT SYSTEM
2. SCHEMATIC SHOWN IS DIAGRAMMATIC ONLY TO DEMONSTRATE DESIGN INTENT. PROVIDE COMPLETE SYSTEM DESIGN, SCHEMATICS, LAYOUTS AND EQUIPMENT SCHEDULES FOR A FUNCTIONAL SYSTEM.
3. INCLUDE ALL EQUIPMENT, COMPONENTS, DEVICES, INTERFACES AND CONVERTERS TO PROVIDE A COMPLETE SOLUTION, INCLUDING INTEGRATION OF ANALOGUE SERVICES OVER THE IP SYSTEM
4. SYSTEM TO BE KNX PLATFORM USING ABB DEVICES AND EQMATIC ENERGY ANALYSER (OR EQUAL)
5. ALLOW TO CONFIGURE THE SOFTWARE AND SETUP ALL DASHBOARDS AND AUTOMATIC REPORTING TO GREENSTAR REQUIREMENTS



LIGHTING CONTROL SYSTEM (OPTION 2 BLOCKS A, B, D AND E)

SCALE: NTS

NOTES

1. BASED ON STANDALONE DALI BROADCAST DIMMING SWITCHES FOR INDIVIDUAL ZONES AND SPACES
2. INTEGRATE WITH STANDARD 230V OCCUPANCY SENSOR SYSTEM (BEG (AUTOMATION) WIRED IN MASTER/SLAVE ARRANGEMENT WHERE MULTIPLE SENSORS ARE WITHIN A ZONE
3. BUTTON SHALL BE ON/OFF WITH MOMENTARY PUSH, AND DIMMING EITHER VIA HOLD OR ROTARY ACTION

REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	15.11.19	60% DESIGN ISSUE	JW	JC	JW
B	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS	PRELIMINARY NOT FOR CONSTRUCTION
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SCALE @ A1	NOT TO SCALE
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CLIENT	CATHOLIC EDUCATION DIOCESE OF BATHURST	TSA MANAGEMENT
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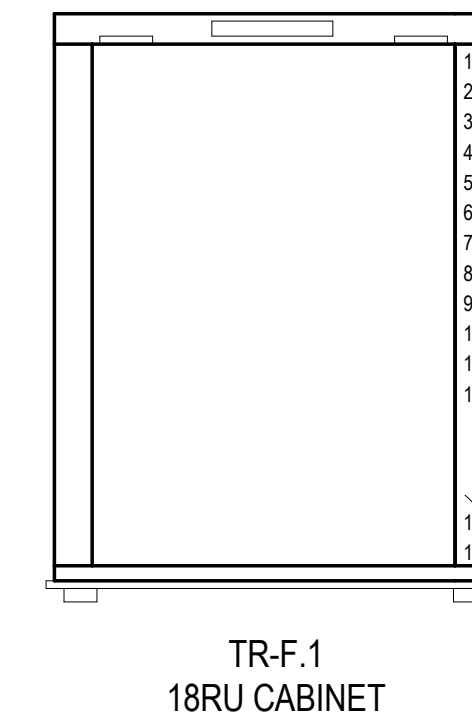
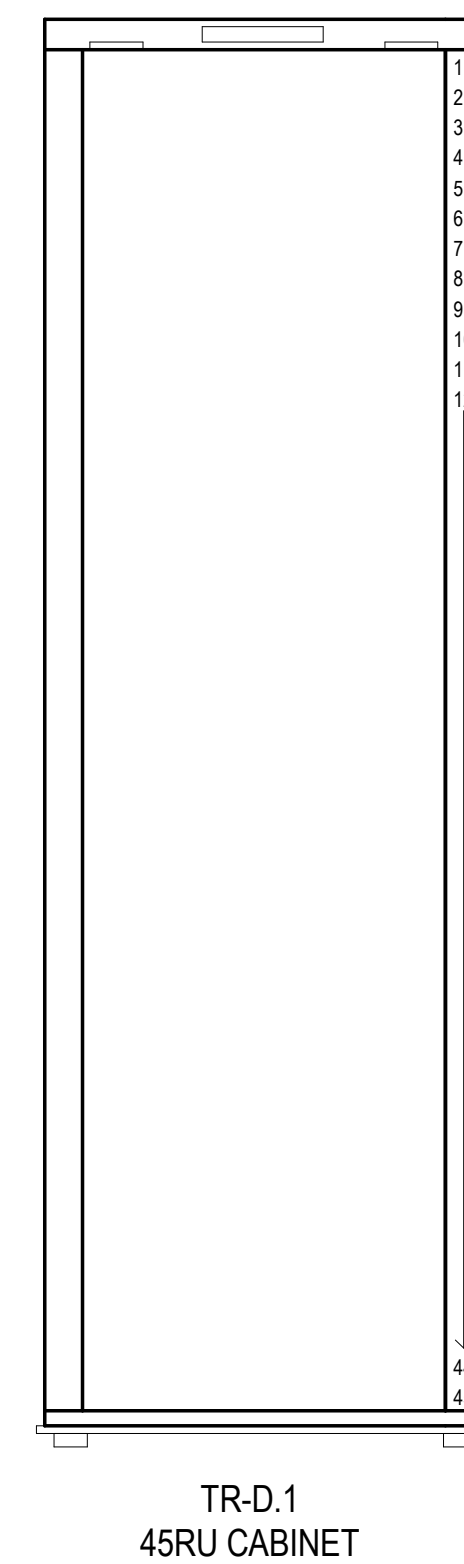
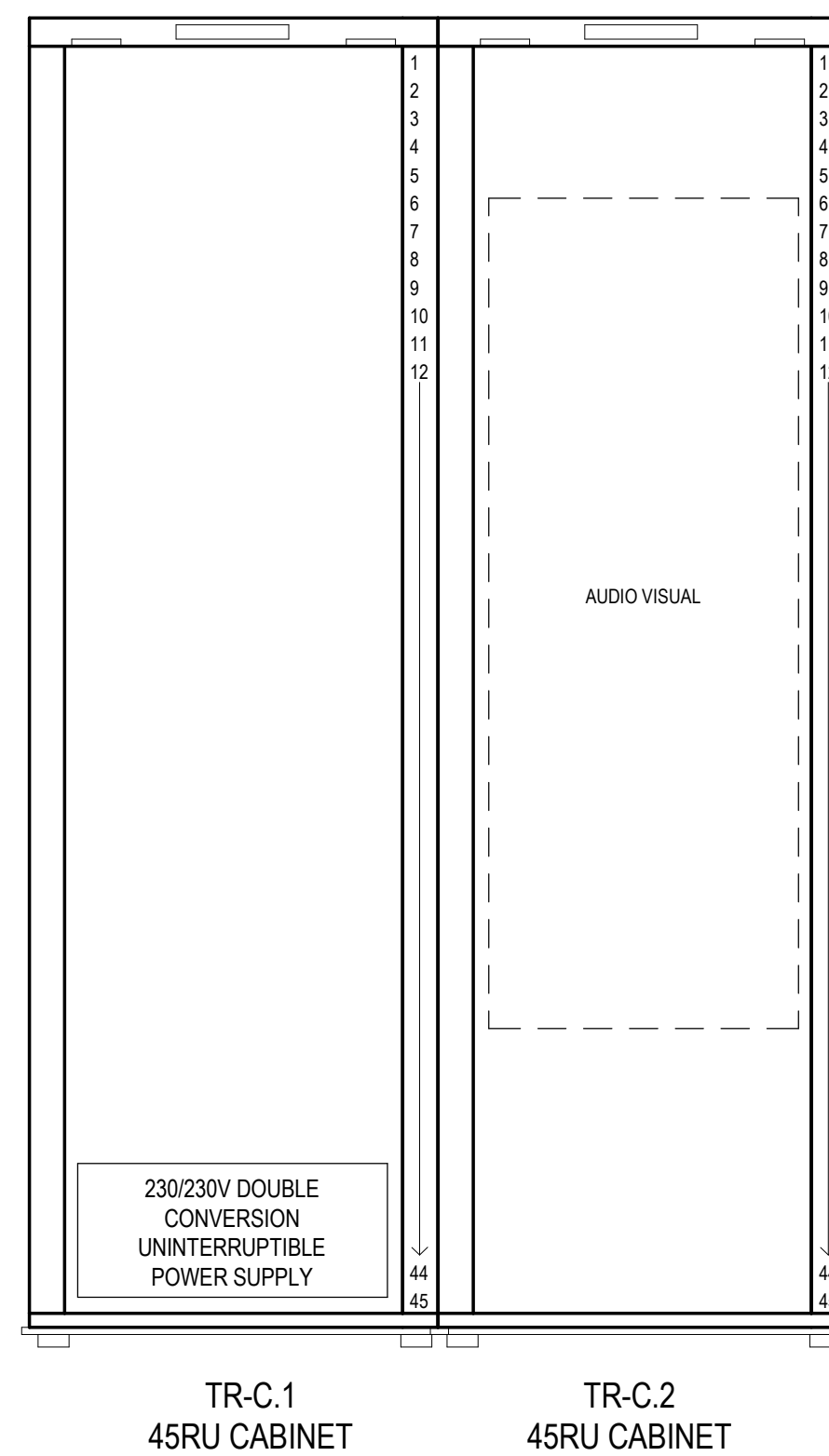
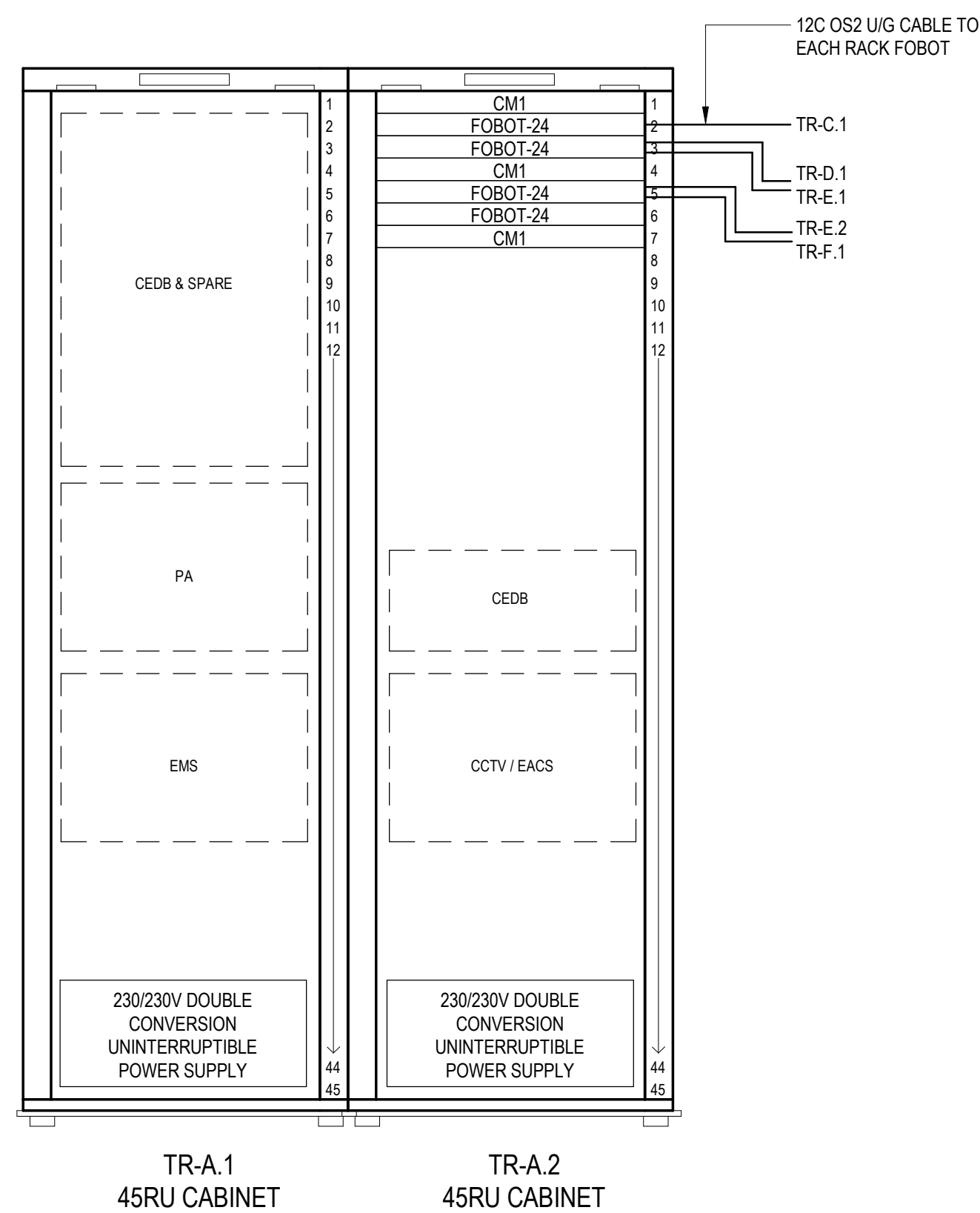
ARCHITECT	ALLEANZA ARCHITECTURE
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PROJECT	ST MATTHEW'S CATHOLIC SCHOOL CORNER OF BROADHEAD & BRUCE RD MUDGEE, NSW 2850
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DRAWING TITLE	SITE_BR-E5453_DETAIL SHEET 4
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PROJECT No.	19-000307	DRAWING No.	BR-E5453	REVISION	B
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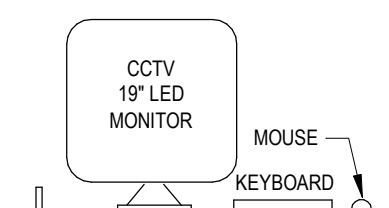
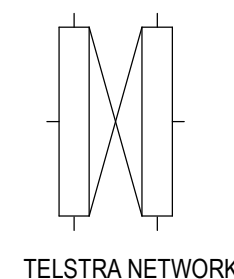
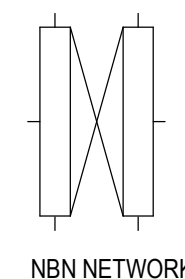
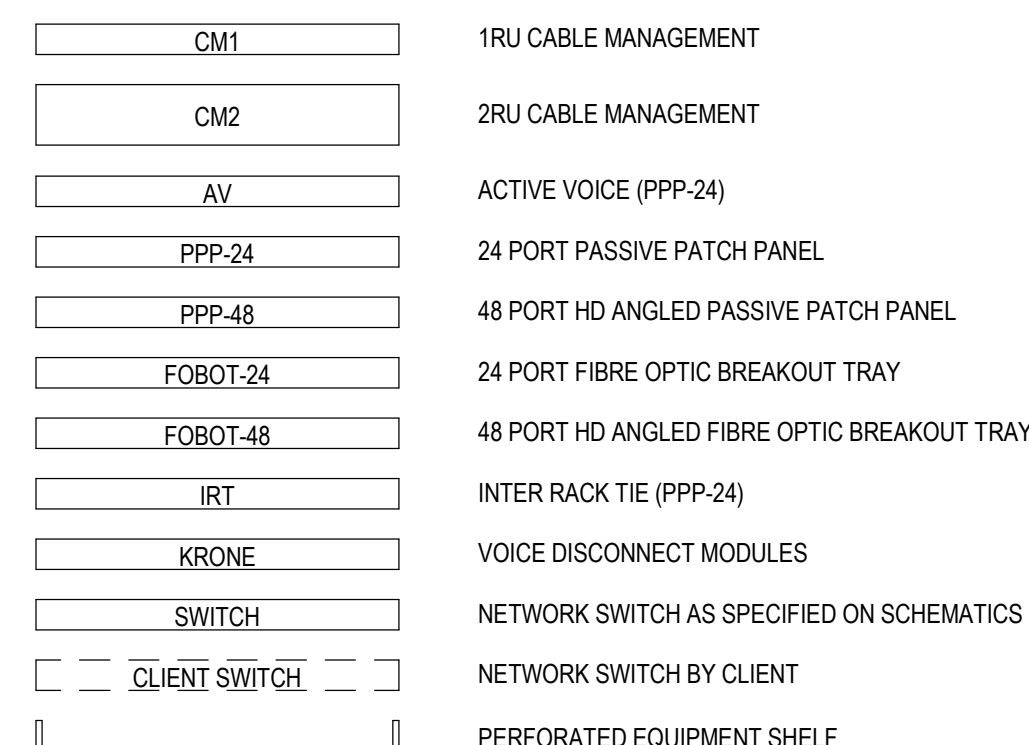
COMMUNICATIONS SINGLE LINE SCHEMATIC/ARRANGEMENT

SCALE: NTS

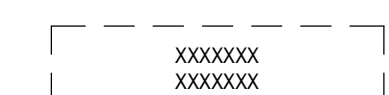
NOTES:

1. PROVIDE HORIZONTAL CABLING AND PLUG TO EACH ANCILLARY IP DEVICE (E.G. CCTV CAMERA) TESTED AND CERTIFIED UNDER THE STRUCTURED CABLING INSTALLATION. COORDINATE FINAL LOCATION AND REQUIREMENTS WITH EACH SPECIFIC SERVICE. ALLOW TO LEAVE 2m CABLE COIL AT EACH LOCATION WITHIN CEILING SPACE.

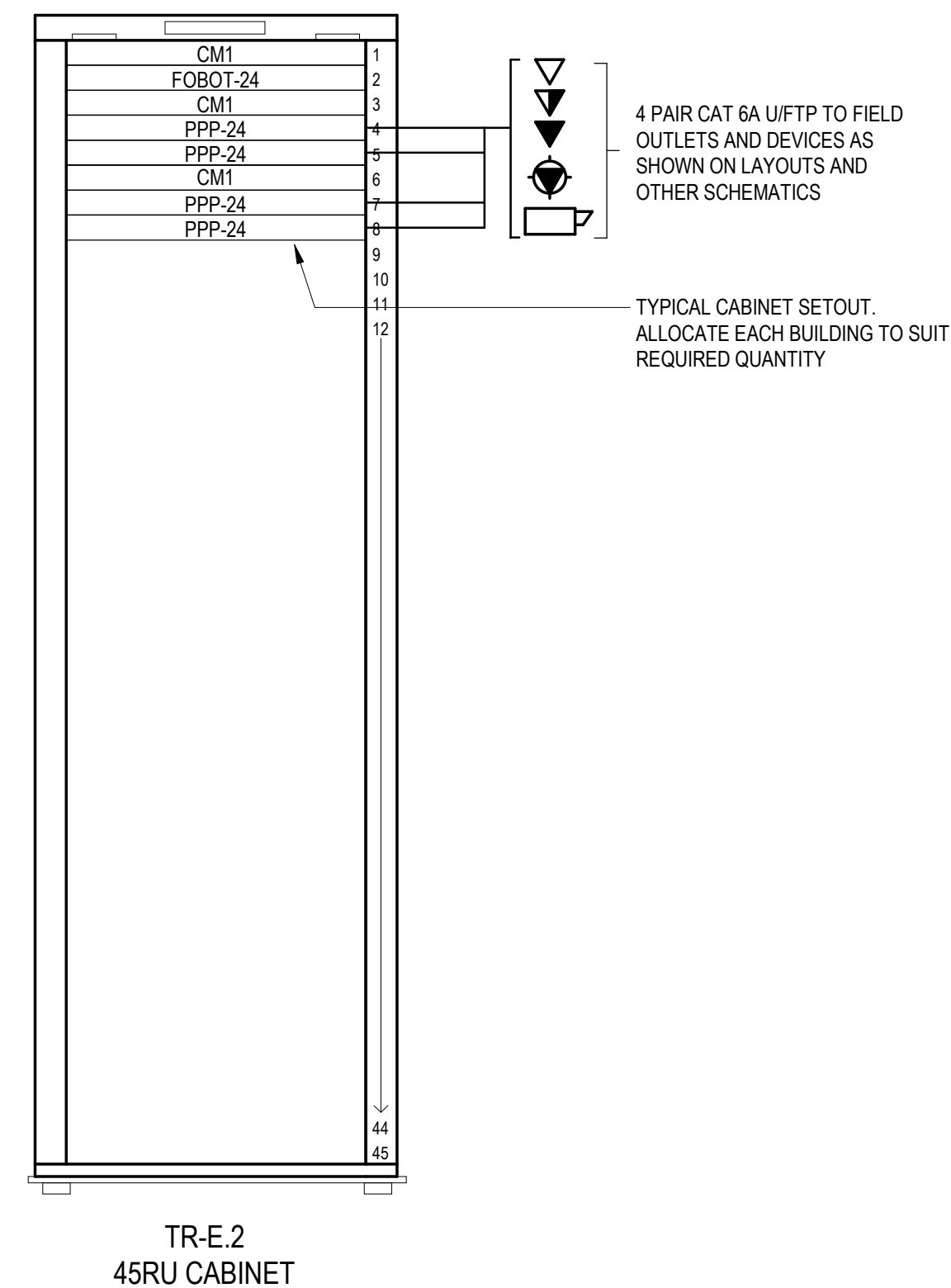
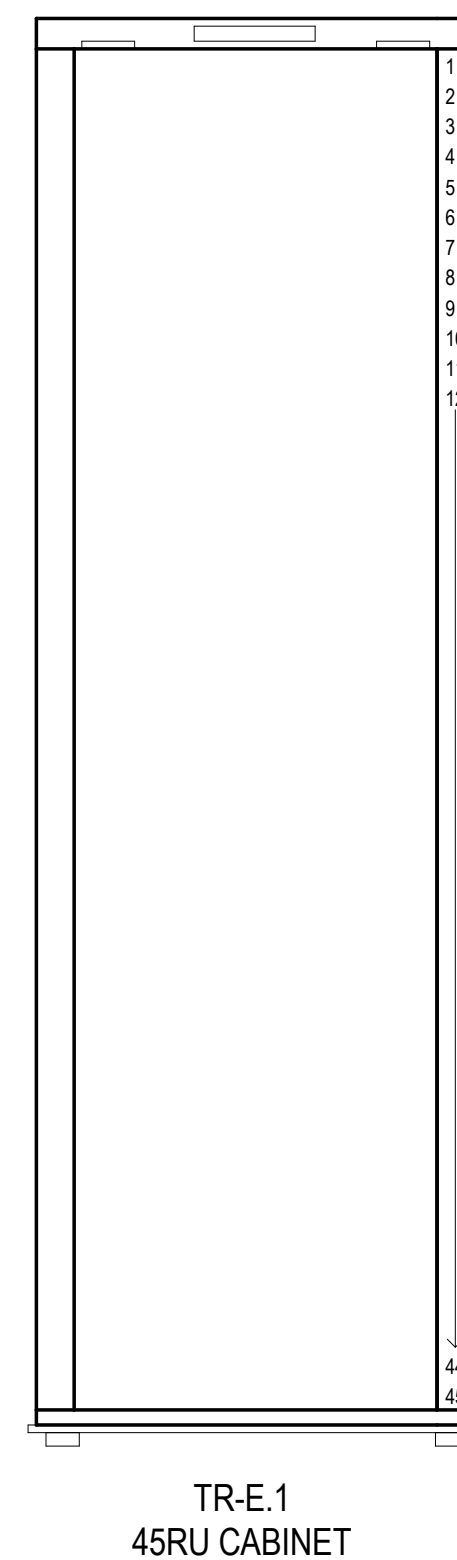
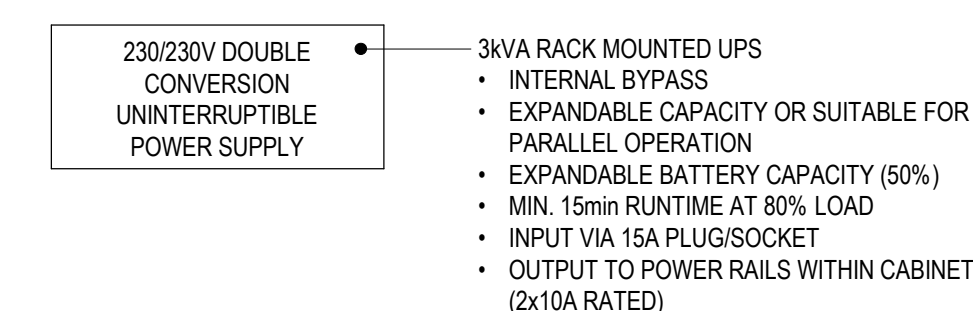
LEGEND



CCTV MANAGEMENT EQUIPMENT



SPACE FOR EQUIPMENT AS INDICATED

[illegible]

STATUS

PRELIMINARY

NOT FOR CONSTRUCTION

SCALE @ A1

NOT TO SCALE

CLIENT

**CATHOLIC
EDUCATION**
DIOCESE OF BATHURST



TSA
MANAGEMENT

ARCHITECT

ALLEANZA
ARCHITECTURE



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PROJECT

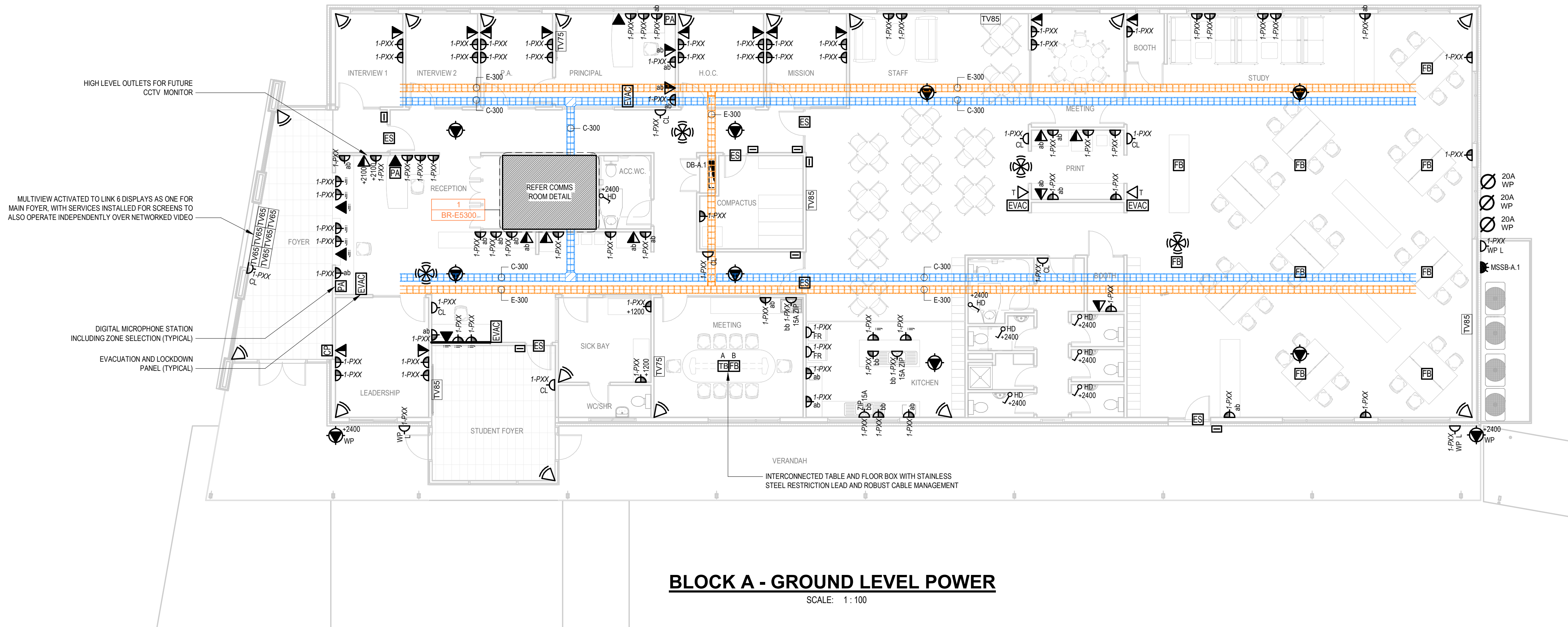
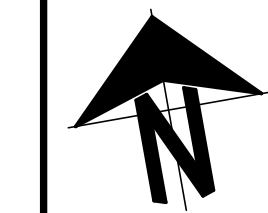
ST MATTHEW'S CATHOLIC SCHOOL

**CORNER OF BROADHEAD & BRUCE RD
MUDGEE, NSW 2850**

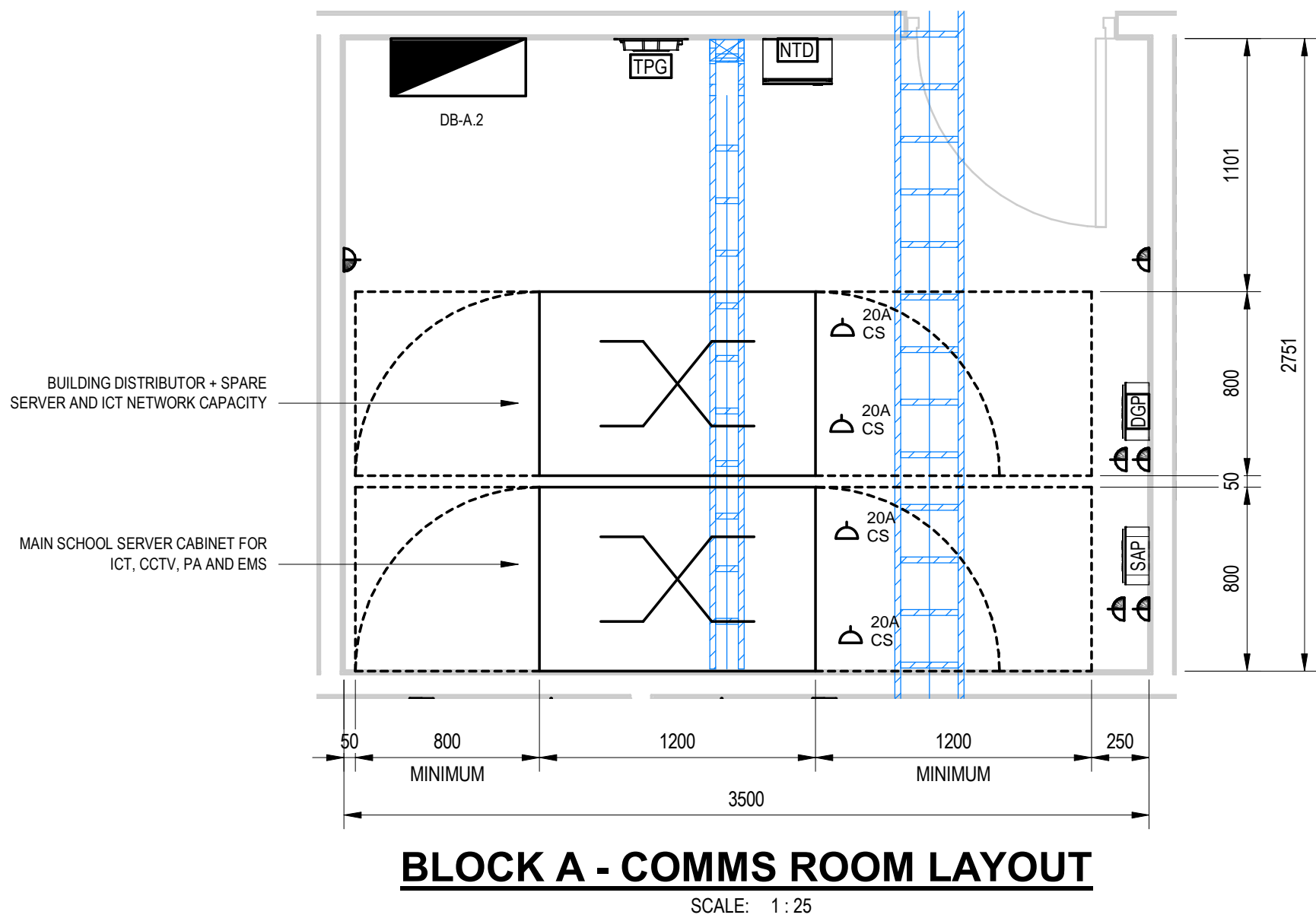
DRAWING TITLE

SITE BR-E5454 DETAIL SHEET 5

PROJECT No.	DRAWING No.	REVISION
19-000307	BR-E5454	B



BLOCK A - GROUND LEVEL POWER
SCALE: 1 : 100



BLOCK A - COMMS ROOM LAYOUT
SCALE: 1 : 25

REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	15.11.19	60% DESIGN ISSUE	JW	JC	JW
B	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE @ A1 0 2000 4000 6000 8000
SCALE: 1:100

CLIENT

CATHOLIC EDUCATION
DIOCESE OF BATHURST

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PROJECT

ST MATTHEW'S CATHOLIC SCHOOL

CORNER OF BROADHEAD & BRUCE RD
MUDGEE, NSW 2850

DRAWING TITLE

BLOCK A_BR-E5300_POWER, COMMS & SECURITY LAYOUT

PROJECT No.	DRAWING No.	REVISION
19-000307	BR-E5300	B

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28/02/2020 11:27:17 AM

A1



REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	15.11.19	60% DESIGN ISSUE	JW	JC	JW
B	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE @ A1 0 2000 4000 6000 8000
SCALE: 1:100

CLIENT

CATHOLIC EDUCATION
DIOCESE OF BATHURST

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ARCHITECT

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PROJECT

ST MATTHEW'S CATHOLIC SCHOOL

**CORNER OF BROADHEAD & BRUCE RD
MUDGEE, NSW 2850**

DRAWING TITLE

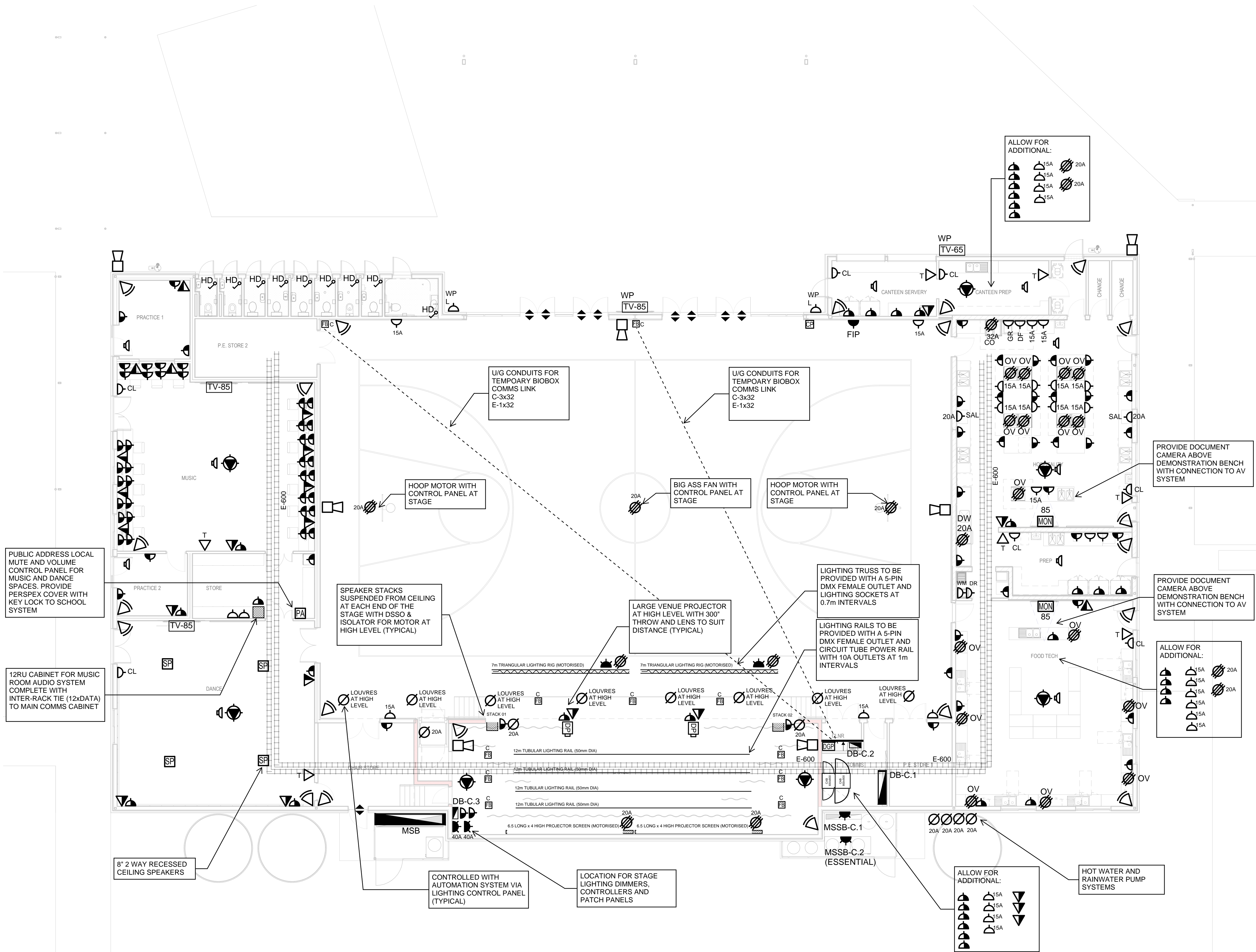
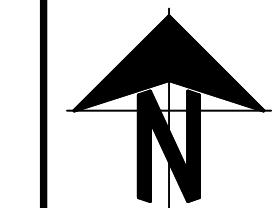
BLOCK A_BR-E5400_LIGHTING LAYOUT

PROJECT No.	DRAWING No.	REVISION
19-000307	BR-E5400	B

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A1



REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	15.11.19	60% DESIGN ISSUE	JW	JC	JW
B	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE @ A1
0 2000 4000 6000 8000
SCALE: 1:100

CLIENT

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EDUCATION

TSA
MANAGEMENT

DIocese of Bathurst

ARCHITECT

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PROJECT

ST MATTHEW'S CATHOLIC SCHOOL

CORNER OF BROADHEAD & BRUCE RD
MUDGEE, NSW 2850

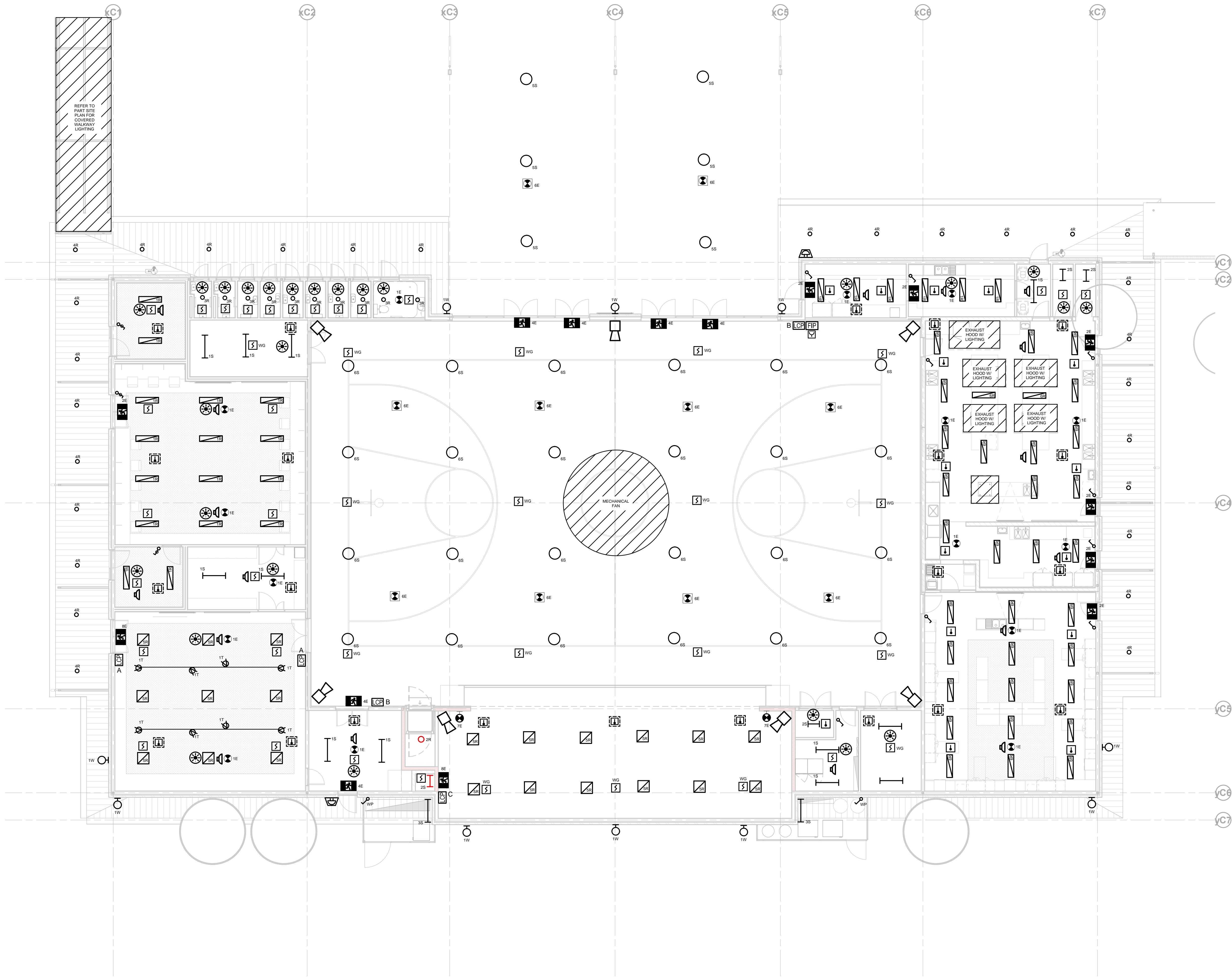
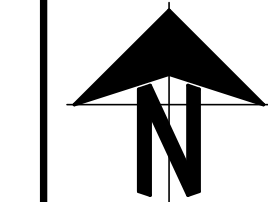
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DRAWING TITLE		
BLOCK C_BR-E5302_POWER, COMMS & SECURITY LAYOUT		
PROJECT No.	DRAWING No.	REVISION
19-000307	BR-E5302	B

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A1



REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
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B	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS					
PRELIMINARY					
NOT FOR CONSTRUCTION					

SCALE @ A1	0	2000	4000	6000	8000
SCALE: 1:100					

CLIENT					
 					

ARCHITECT					
					

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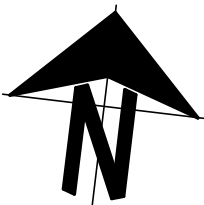
PROJECT					
ST MATTHEW'S CATHOLIC SCHOOL					
CORNER OF BROADHEAD & BRUCE RD MUDGEE, NSW 2850					

DRAWING TITLE					
BLOCK C_BR-E5402_LIGHTING LAYOUT					
PROJECT No.	19-000307	DRAWING No.	BR-E5402	REVISION	B

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A1



PROVIDE DOCUMENT CAMERA ABOVE DEMONSTRATION BENCH WITH CONNECTION TO AV SYSTEM

PROVIDE DOCUMENT CAMERA ABOVE DEMONSTRATION BENCH WITH CONNECTION TO AV SYSTEM

MULTIVIEW ACTIVATED TO LINK 4 DISPLAYS AS ONE FOR COLLABORATIVE LEARNING

ALLOW FOR ADDITIONAL:
15A
15A

TEACHER KEY LOCKOUT SWITCH AND EMERGENCY POWER OFF MUSHROOM BUTTON TO DROP OUT ROOM CHASSIS OR CIRCUIT VIA CONTACTORS IN THE SWITCHBOARD (TYPICAL)

CHAIN SUSPENDED PENDANT OUTLETS WITH LENGTH TO 1000AFL AND RIDIG HOOKS TO STOW AT 2100AFL (TYPICAL)

REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	15.11.19	60% DESIGN ISSUE	JW	JC	JW
B	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS					
PRELIMINARY NOT FOR CONSTRUCTION					
SCALE @ A1 0 2000 4000 6000 8000 SCALE: 1:100					

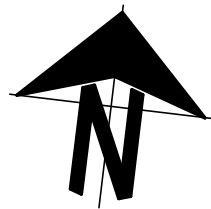
CLIENT					
CATHOLIC EDUCATION DIOCESE OF BATHURST					
TSA MANAGEMENT					

ARCHITECT					
ALLEANZA ARCHITECTURE					

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PROJECT					
ST MATTHEW'S CATHOLIC SCHOOL					
CORNER OF BROADHEAD & BRUCE RD MUDGEE, NSW 2850					

DRAWING TITLE					
BLOCK D_BR-E5303_POWER, COMMS & SECURITY LAYOUT					
PROJECT No.	19-000307	DRAWING No.	BR-E5303	REVISION	B

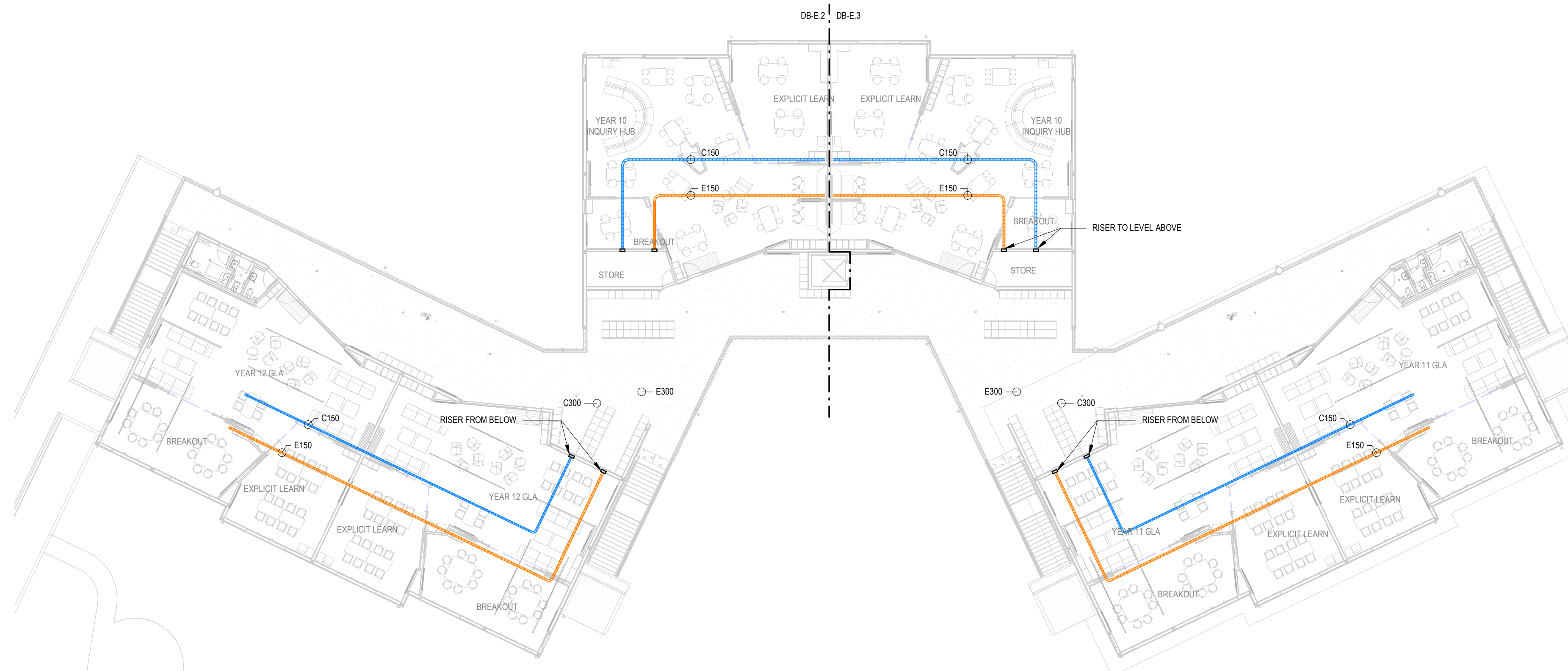
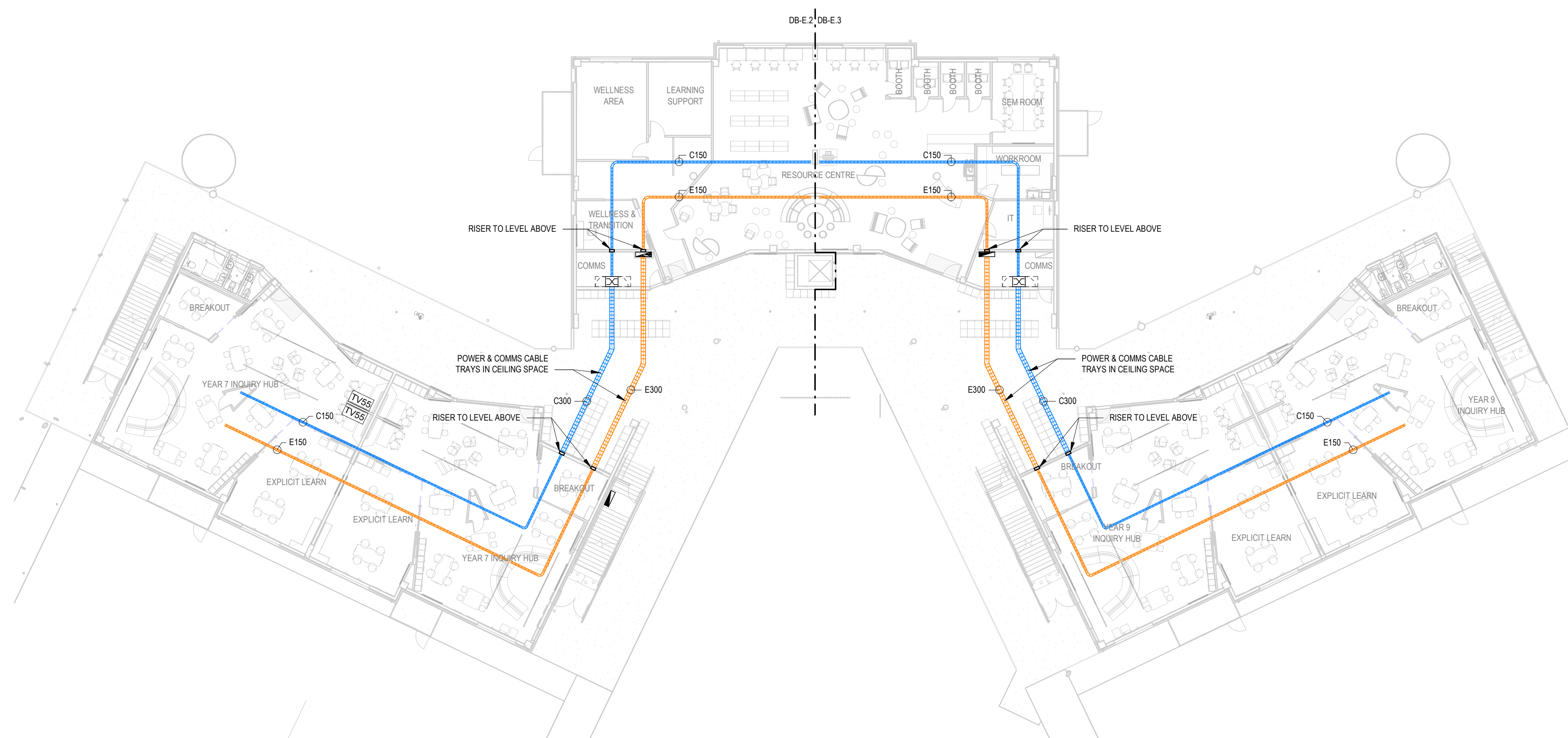


BLOCK D_BR-E5403_LIGHTING LAYOUT		
PROJECT No. 19-000307	DRAWING No. BR-E5403	REVISION B



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ARCHITECTURE

[illegible]

STATUS

PRELIMINARY

NOT FOR CONSTRUCTION

SCALE @ A1

0 4000 8000 12000 16000

SCALE: 1:200

CLIENT

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EDUCATION**
DIOCESE OF BATHURST



TSA
MANAGEMENT



ARCHITECT

ALLEANZA
ARCHITECTURE



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PROJECT

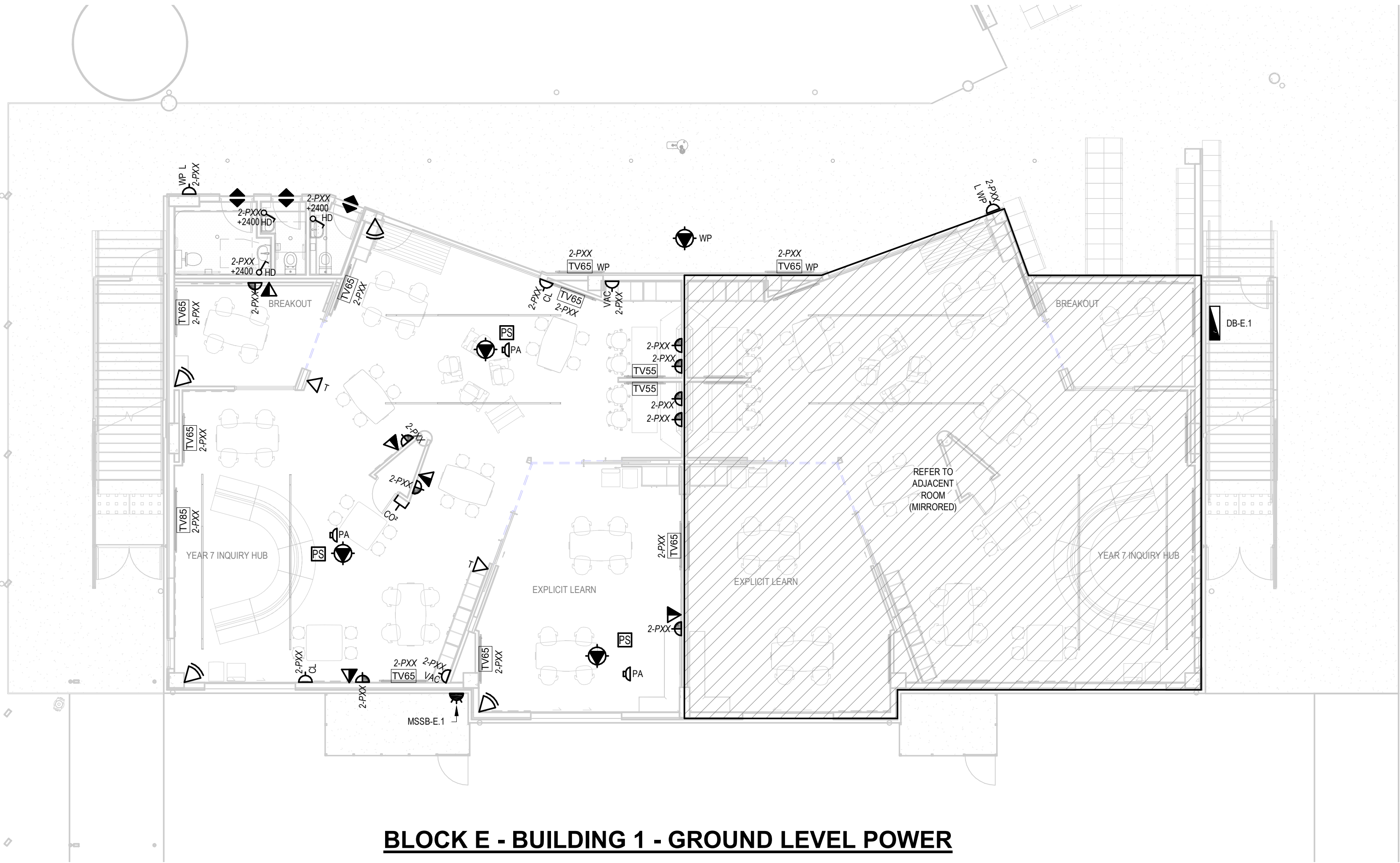
ST MATTHEW'S CATHOLIC SCHOOL

**CORNER OF BROADHEAD & BRUCE RD
MUDGEE, NSW 2850**

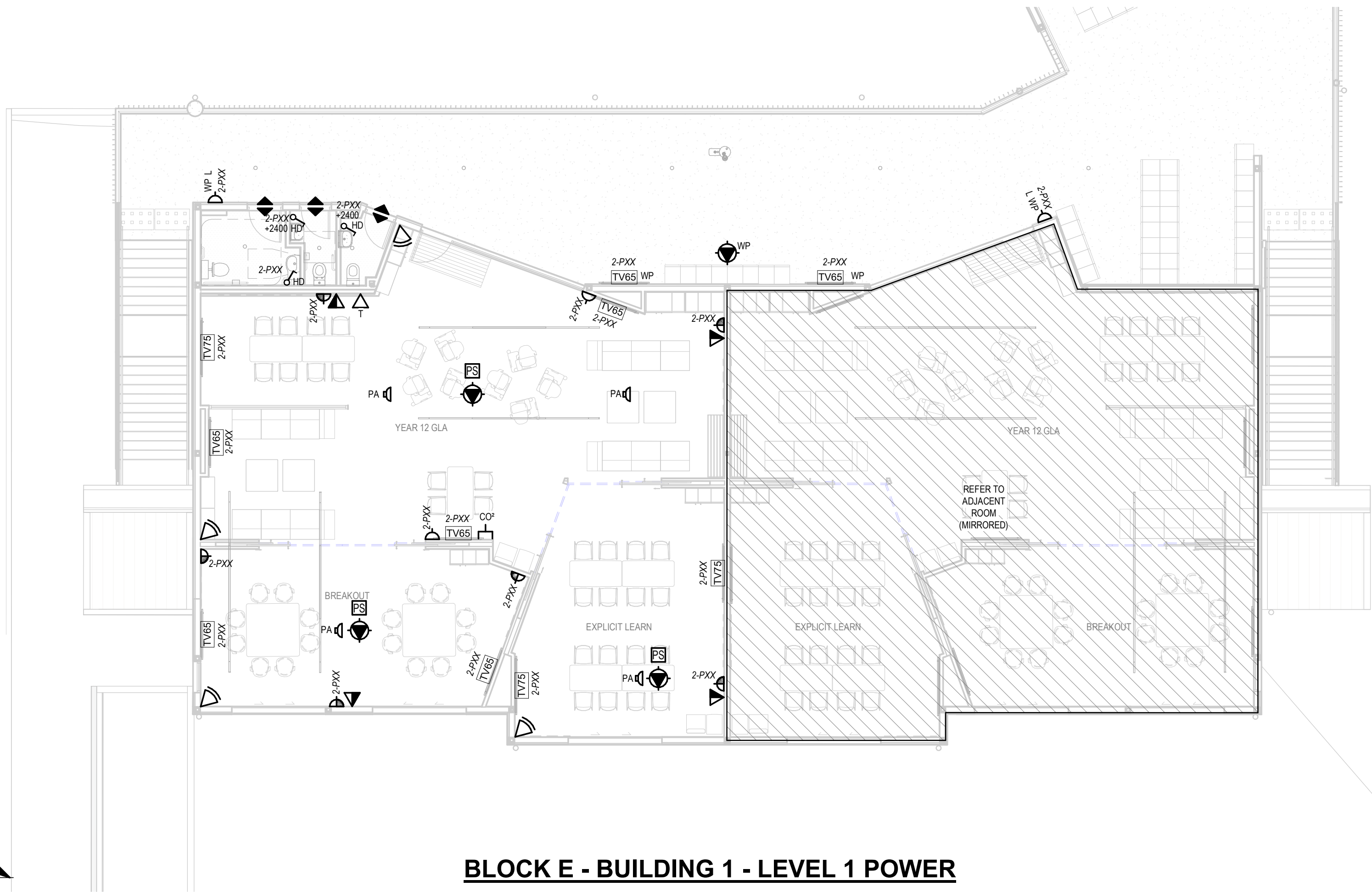
DRAWING TITLE

**BLOCK E_BR-E5304_OVERALL POWER,
COMMS & SECURITY LAYOUT**

PROJECT No.	DRAWING No.	REVISION
19-000307	BR-E5304	B



BLOCK E - BUILDING 1 - GROUND LEVEL POWER



BLOCK E - BUILDING 1 - LEVEL 1 POWER

REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	15.11.19	60% DESIGN ISSUE	JW	JC	JW
B	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS	<div>PRELIMINARY</div> <div>NOT FOR CONSTRUCTION</div>
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SCALE @ A1	<div><div>02000400060008000</div><div>SCALE: 1:100</div></div>
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CLIENT	<div><div><div>CATHOLIC EDUCATION</div><div>DIocese of Bathurst</div></div><div><div>TSA</div><div>MANAGEMENT</div></div></div>
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ARCHITECT	<div><div>ALLEANZA</div><div>ARCHITECTURE</div></div>
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<div><div><div>calibre</div><div>calibregroup.com</div></div></div>

PROJECT	<div>ST MATTHEW'S CATHOLIC SCHOOL</div> <div>CORNER OF BROADHEAD & BRUCE RD</div> <div>MUDGEE, NSW 2850</div>
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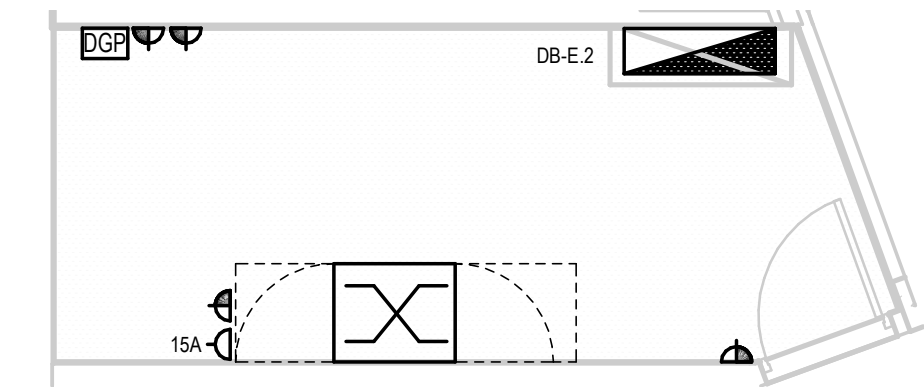
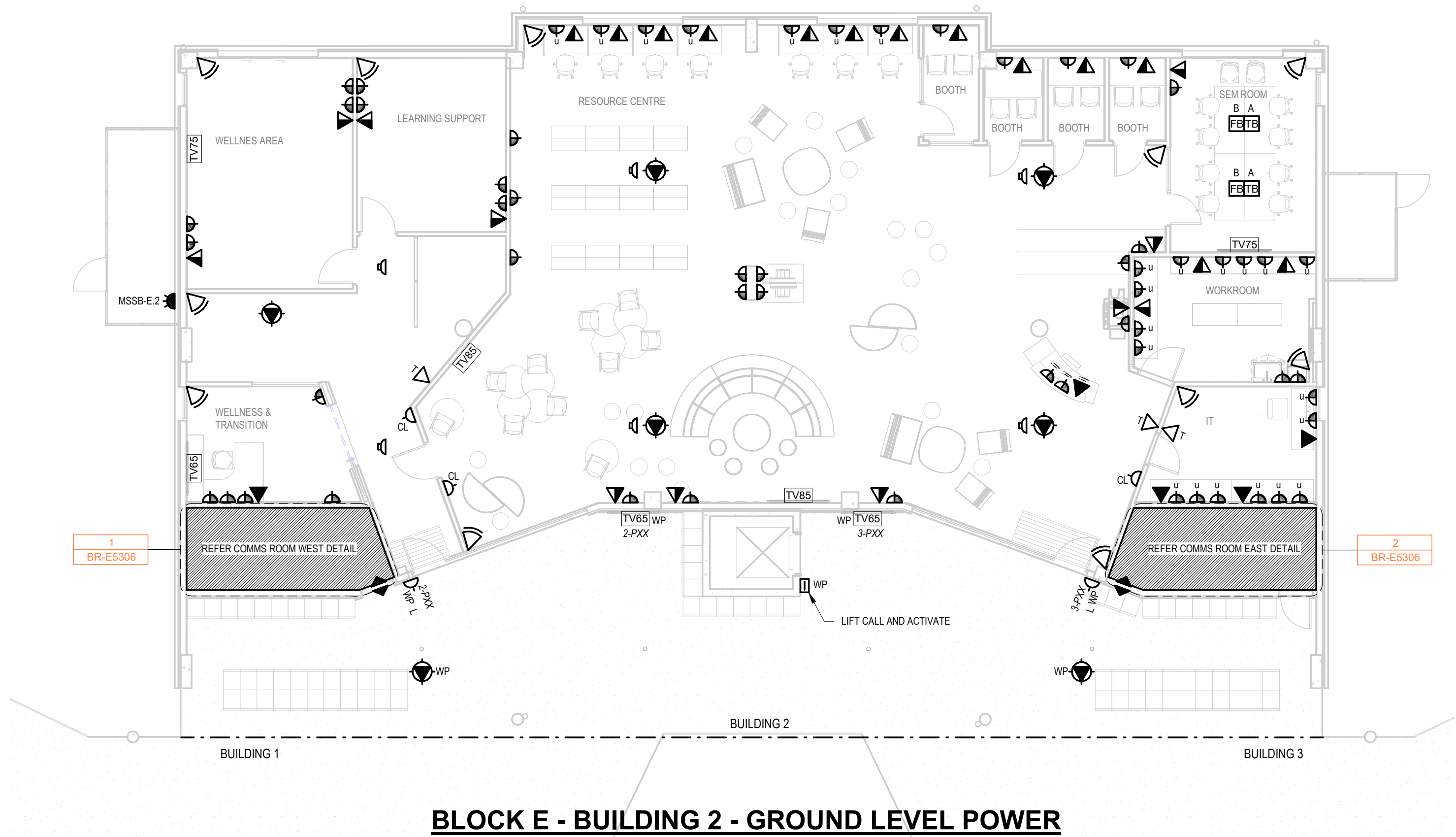
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PROJECT No.	DRAWING No.	REVISION
19-000307	BR-E5305	B

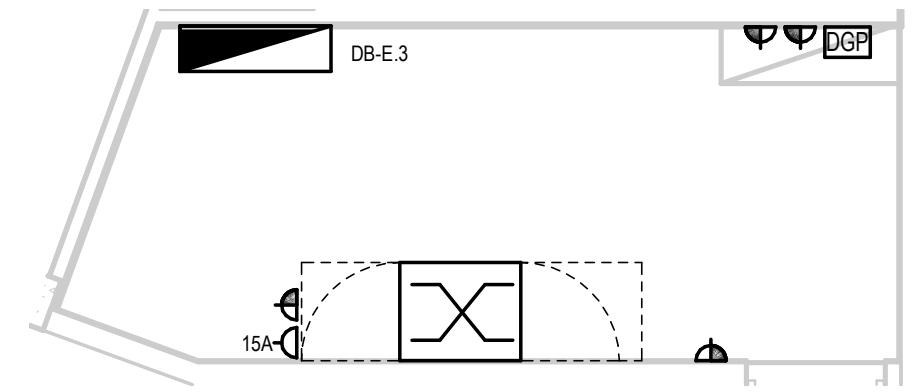
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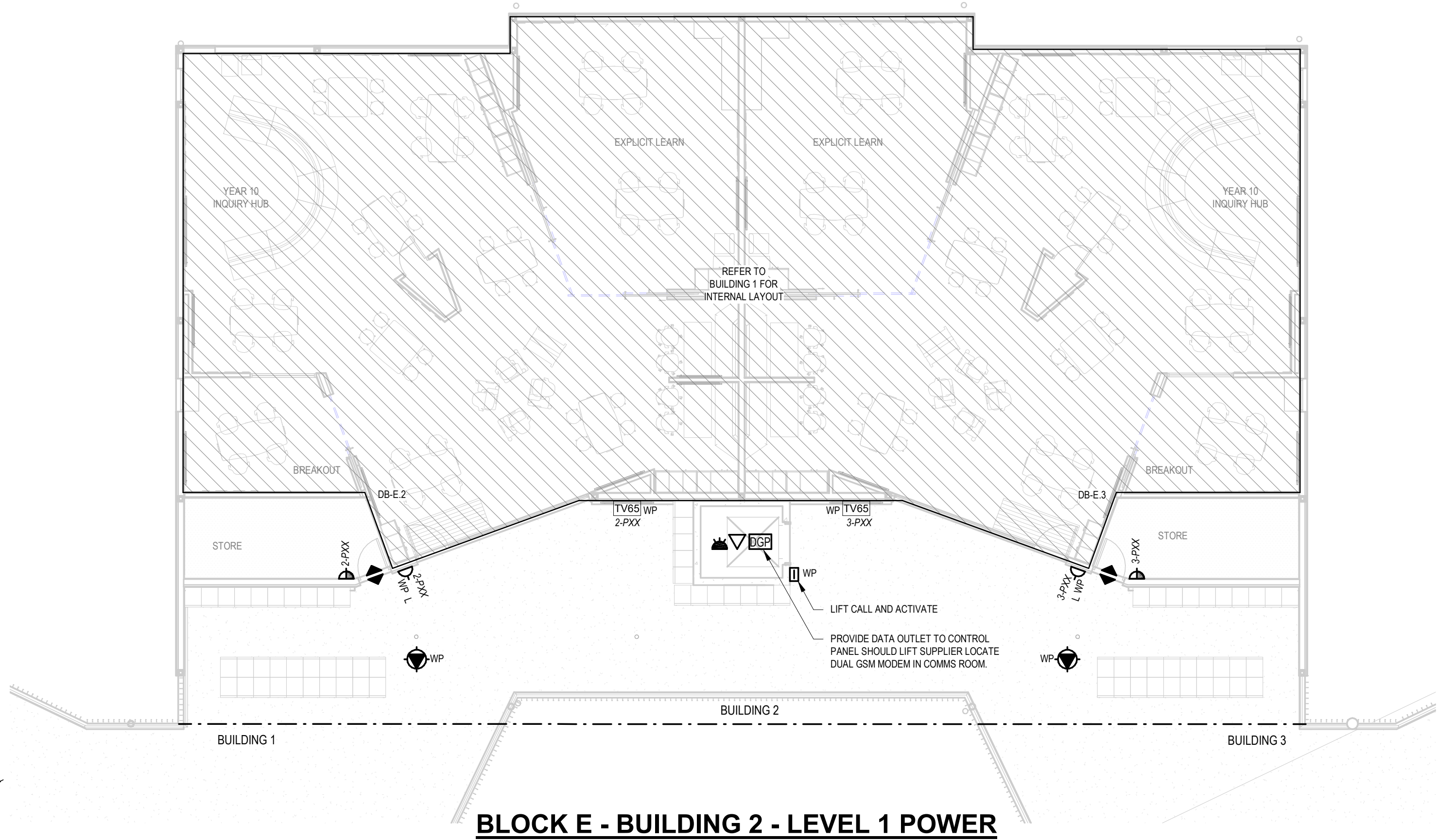
A1



BLOCK E COMMS ROOM WEST
SCALE: 1:50



BLOCK E COMMS ROOM EAST
SCALE: 1:50



REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	15.11.19	60% DESIGN ISSUE	JW	JC	JW
B	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE @ A1
0 2000 4000 6000 8000
SCALE: 1:100

CLIENT

CATHOLIC
EDUCATION
DIOCESE OF BATHURST

TSA
MANAGEMENT

ARCHITECT

ALLEANZA
ARCHITECTURE

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PROJECT

ST MATTHEW'S CATHOLIC SCHOOL

CORNER OF BROADHEAD & BRUCE RD
MUDGEE, NSW 2850

DRAWING TITLE

BLOCK E_BR-E5306_BUILDING 2 POWER,
COMMS & SECURITY LAYOUT

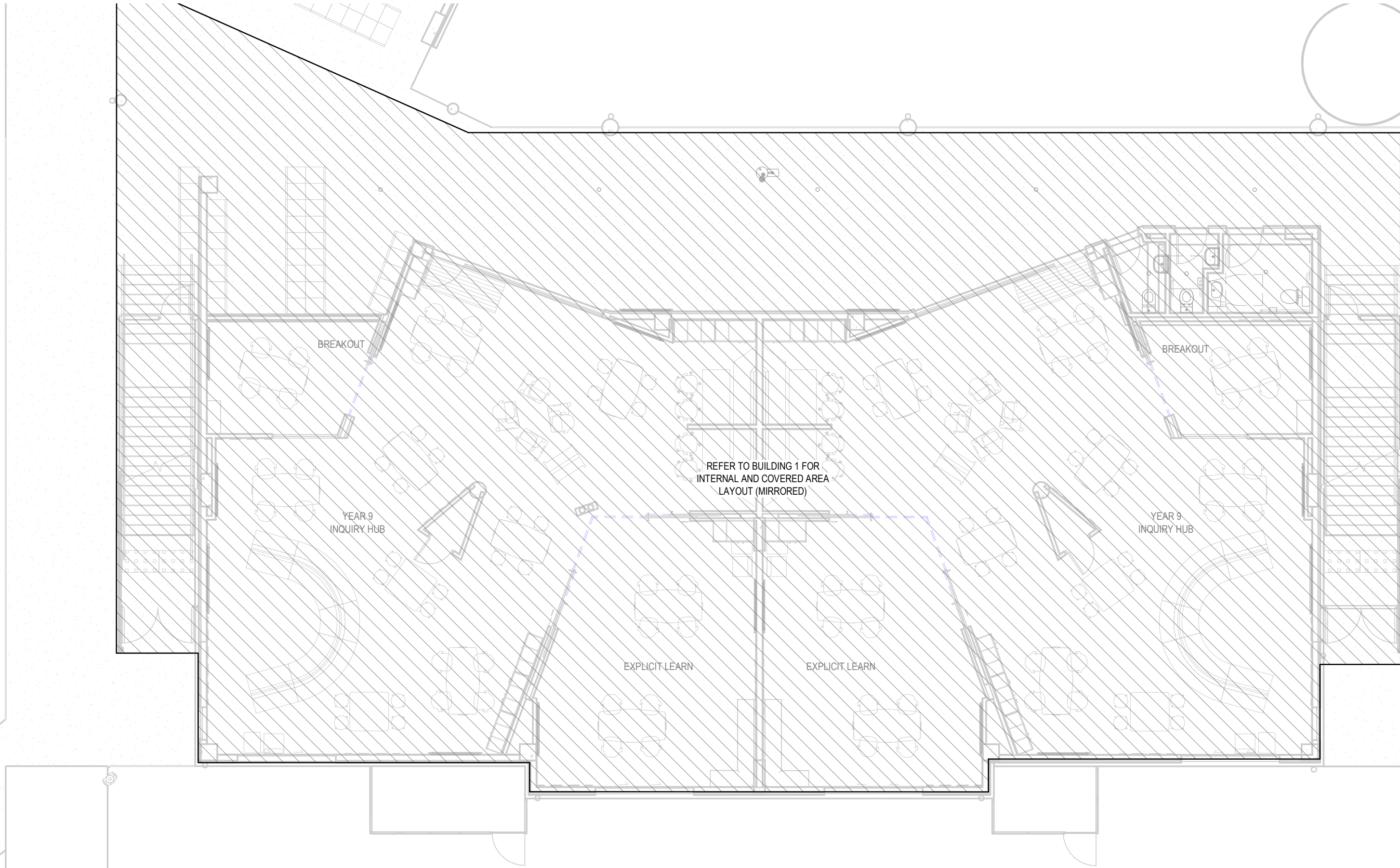
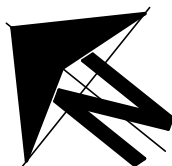
PROJECT No.
19-000307

DRAWING No.
BR-E5306

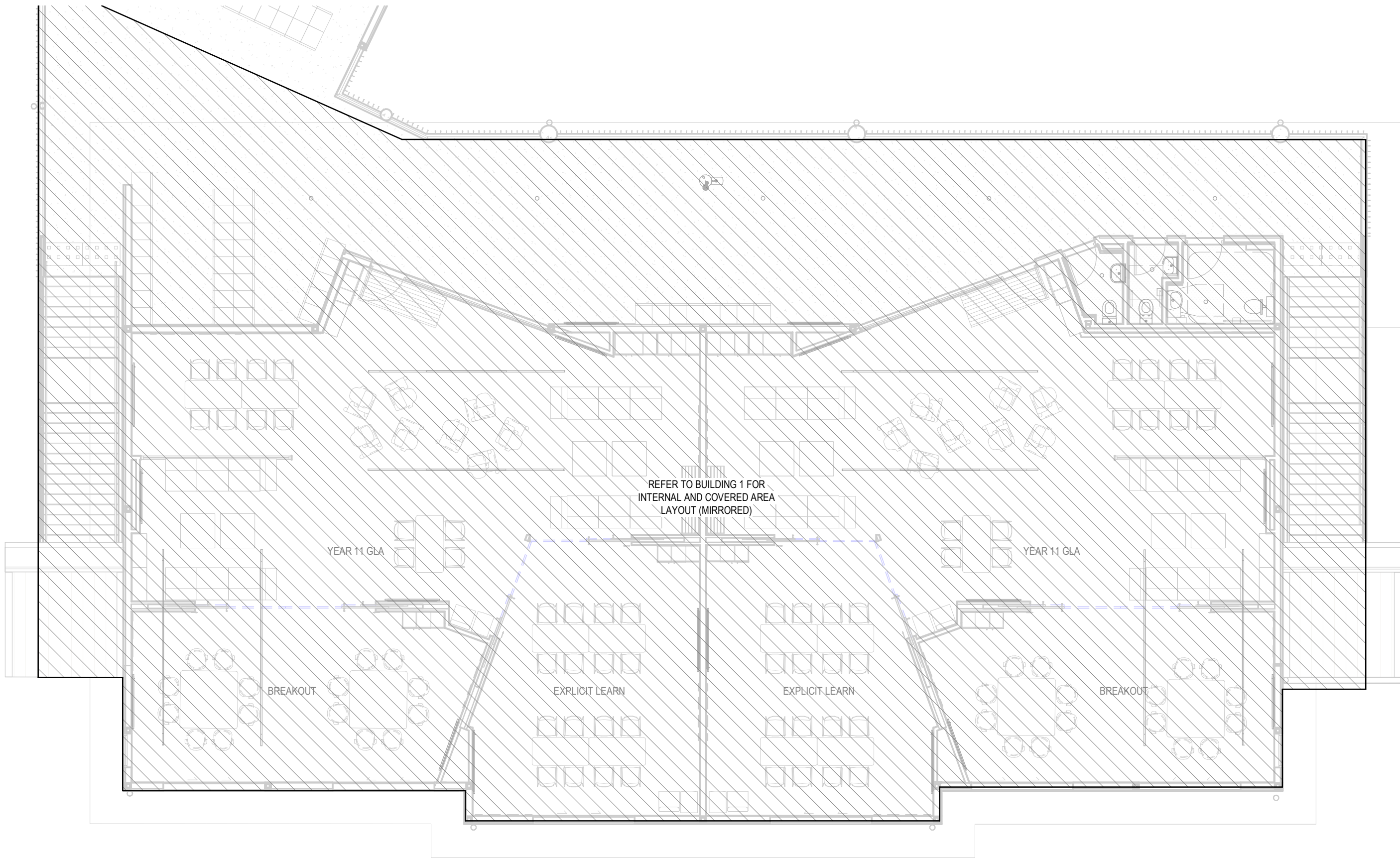
REVISION
B

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28/02/2020 11:27:09 AM



BLOCK E - BUILDING 3 - GROUND LEVEL POWER



BLOCK E - BUILDING 3 - LEVEL 1 POWER

REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	15.11.19	60% DESIGN ISSUE	JW	JC	JW
B	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS
<div>PRELIMINARY</div> <div>NOT FOR CONSTRUCTION</div>

SCALE @ A1	0	2000	4000	6000	8000
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CLIENT
<div><div>CATHOLIC EDUCATION</div><div>DIOCESE OF BATHURST</div></div> <div></div>

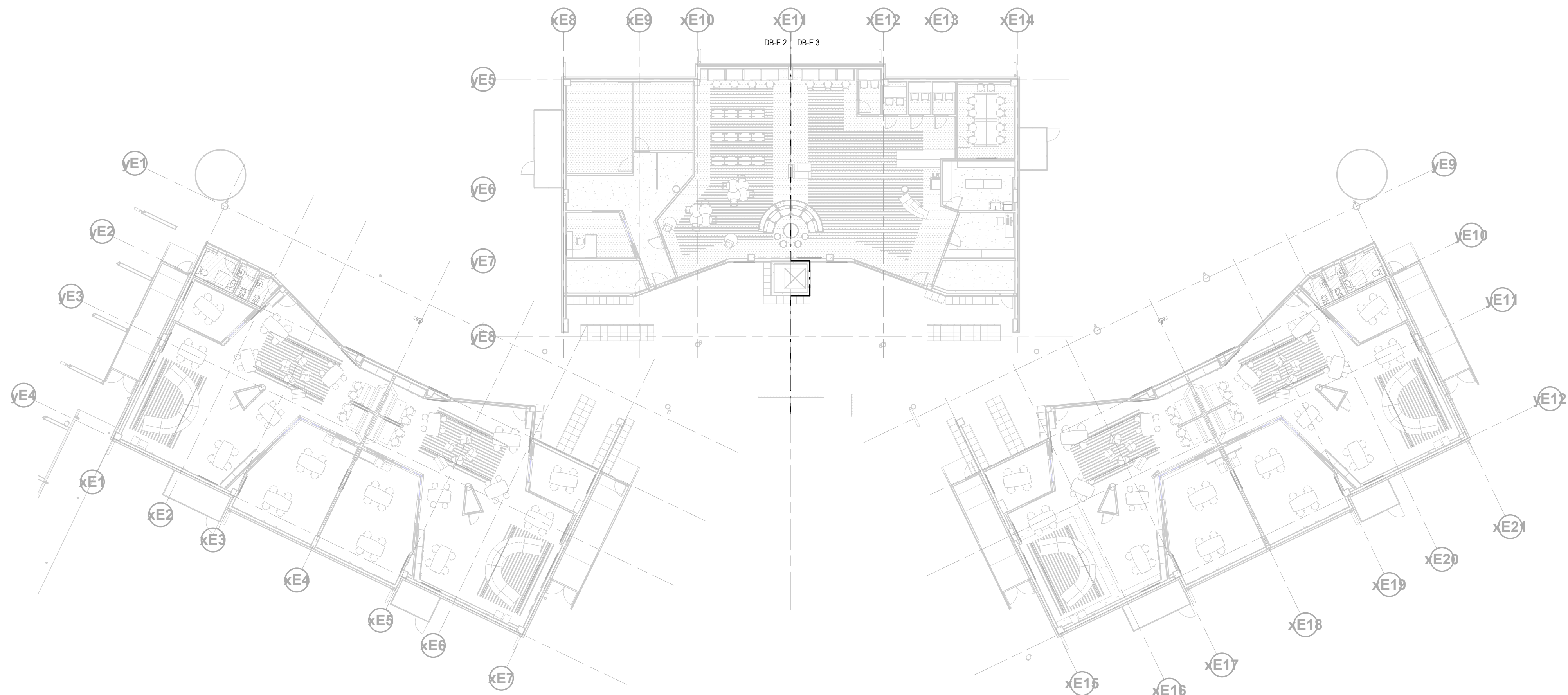
ARCHITECT
<div>ALLEANZA</div> <div>ARCHITECTURE</div>

<div></div> <div>© calibregroup.com</div>

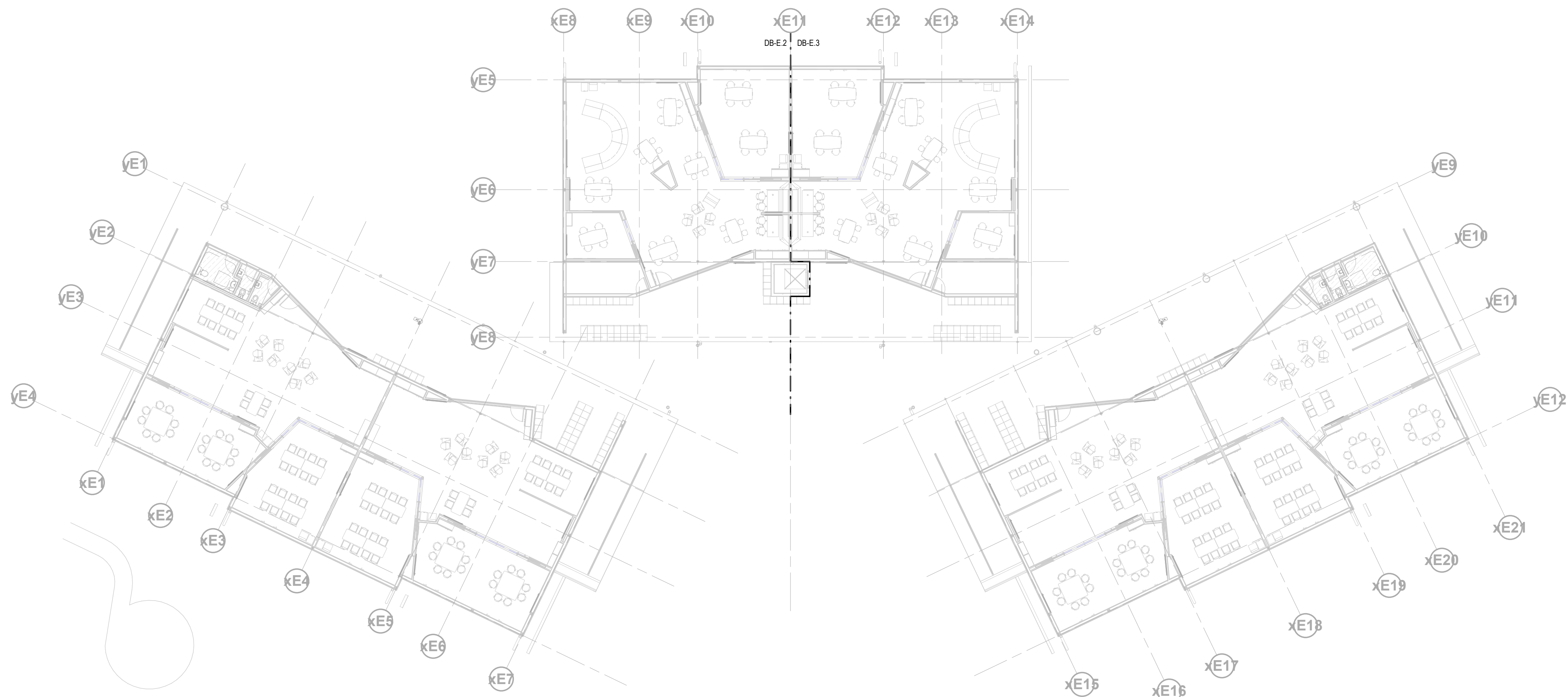
PROJECT
<div>ST MATTHEW'S CATHOLIC SCHOOL</div> <div>CORNER OF BROADHEAD & BRUCE RD</div> <div>MUDGEE, NSW 2850</div>

DRAWING TITLE
<div>BLOCK E_BR-E5307_BUILDING 3 POWER,</div> <div>COMMS & SECURITY LAYOUT</div>

PROJECT No.	DRAWING No.	REVISION
19-000307	BR-E5307	B



BLOCK E - OVERALL RCP - GROUND



BLOCK E - OVERALL RCP - LEVEL 1

REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	15.11.19	60% DESIGN ISSUE	JW	JC	JW
B	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE @ A1
0 4000 8000 12000 16000
SCALE: 1:200

CLIENT

CATHOLIC
EDUCATION
DIOCESE OF BATHURST

TSA
MANAGEMENT

ARCHITECT

ALLEANZA
ARCHITECTURE


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PROJECT

ST MATTHEW'S CATHOLIC SCHOOL

CORNER OF BROADHEAD & BRUCE RD
MUDGEE, NSW 2850

DRAWING TITLE

BLOCK E_BR-E5404_OVERALL LIGHTING
LAYOUT

PROJECT No.
19-000307

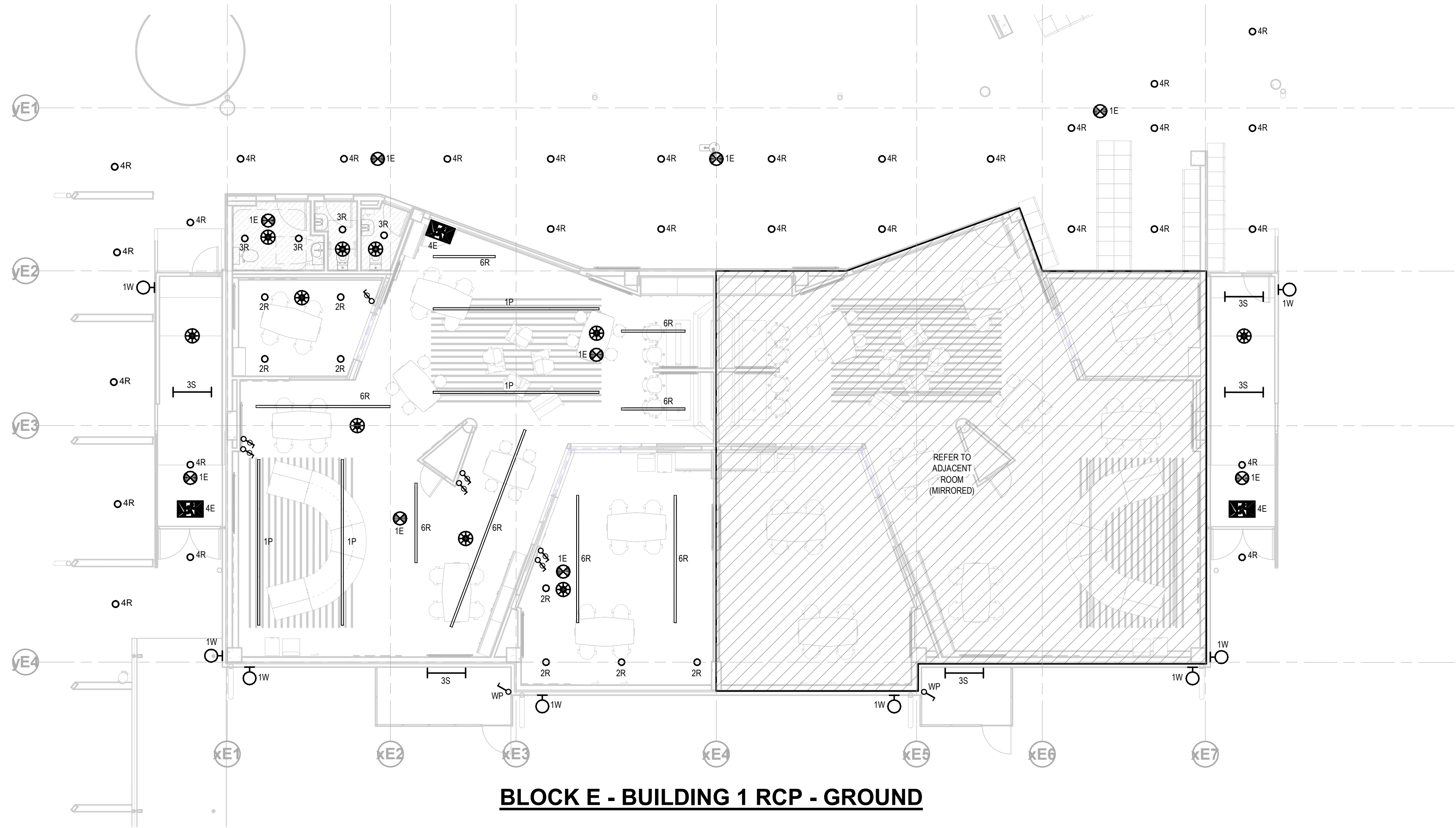
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BR-E5404

REVISION
B

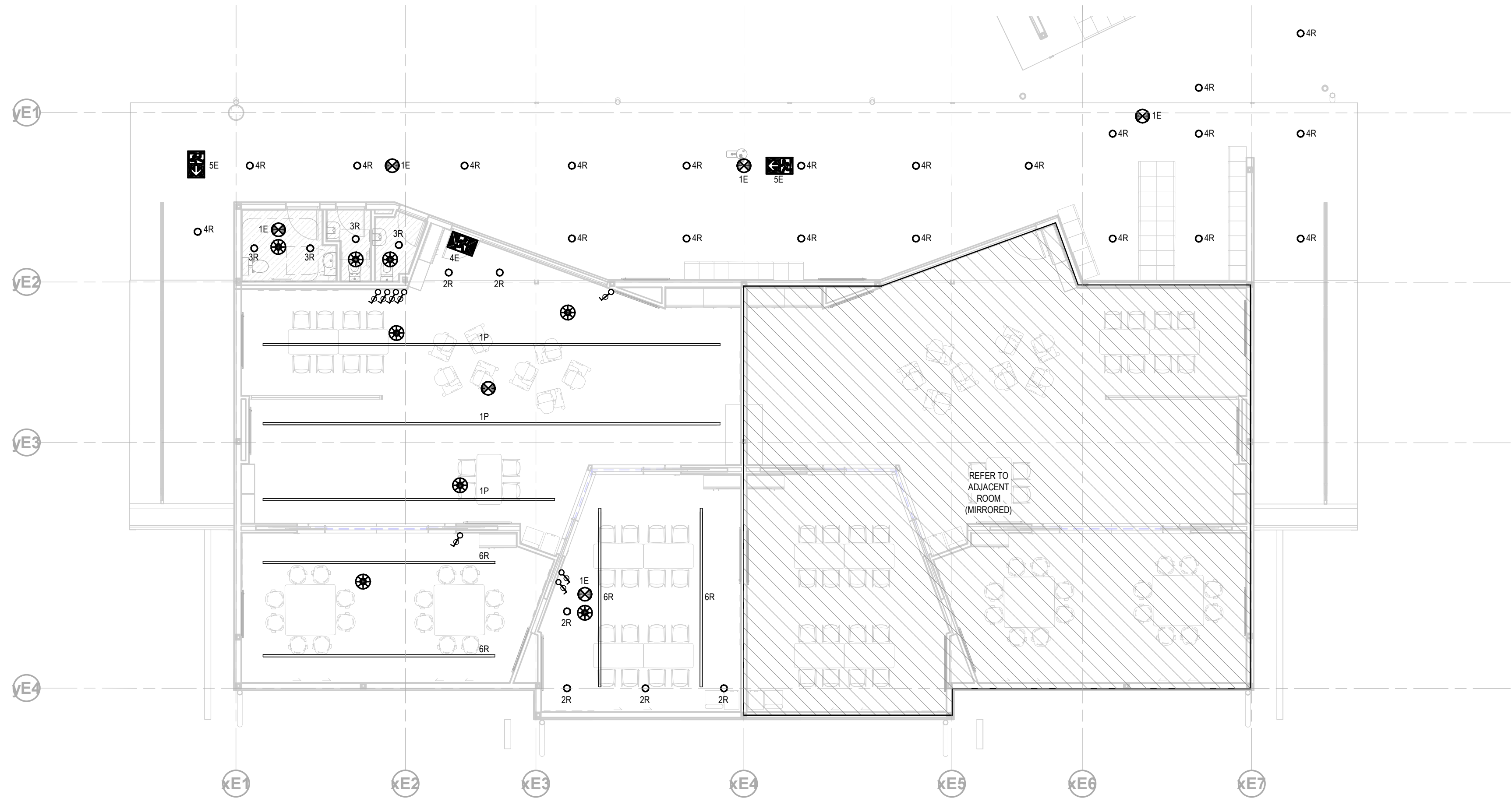
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2020/02/24 2:20 PM

A1



BLOCK E - BUILDING 1 RCP - GROUND



BLOCK E - BUILDING 1 RCP - LEVEL 1

REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	15.11.19	60% DESIGN ISSUE	JW	JC	JW
B	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS
PRELIMINARY NOT FOR CONSTRUCTION
SCALE @ A1 0 2000 4000 6000 8000 SCALE: 1:100

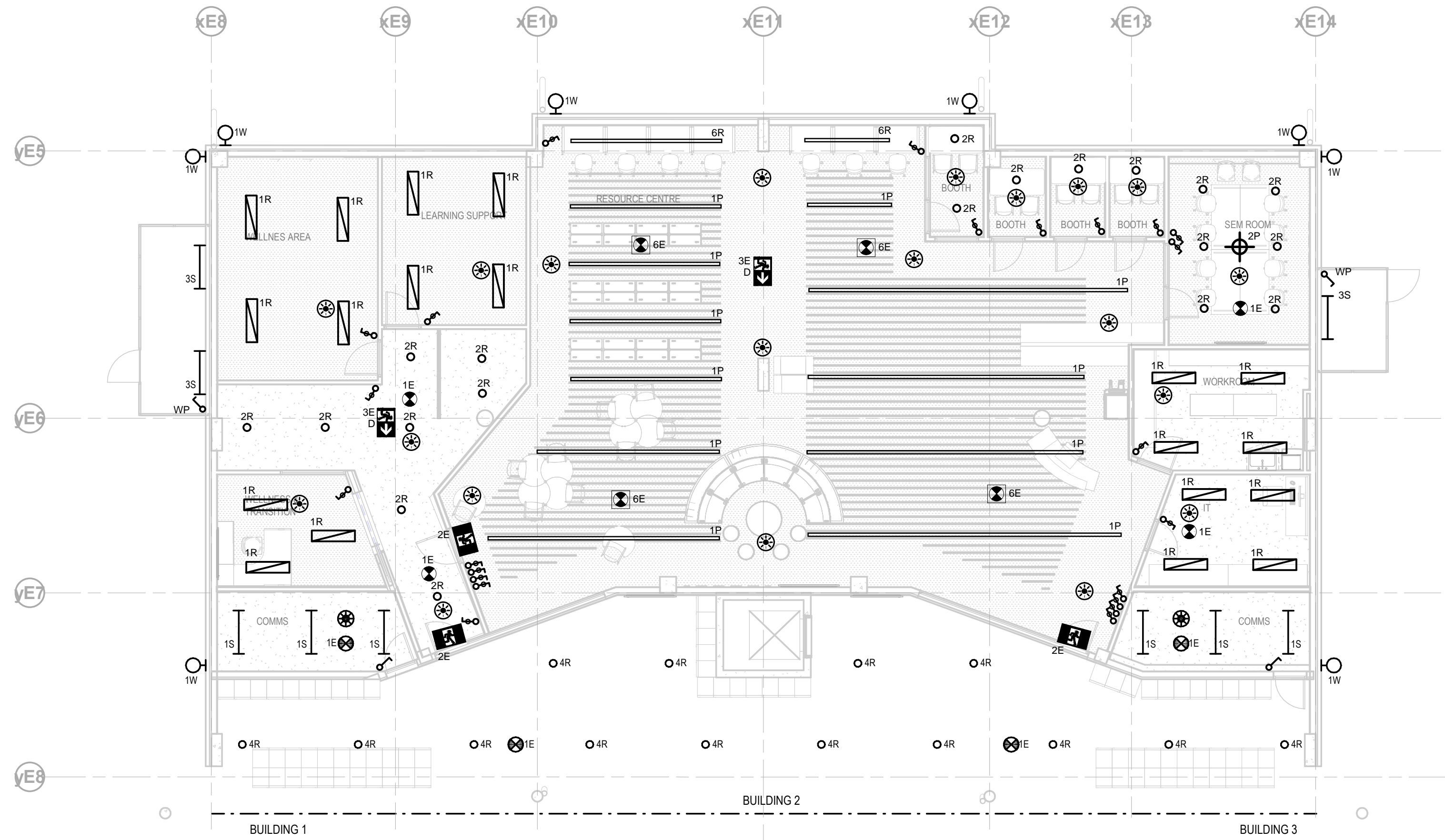
CLIENT
CATHOLIC EDUCATION DIOCESE OF BATHURST
TSA MANAGEMENT

ARCHITECT
ALLEANZA ARCHITECTURE

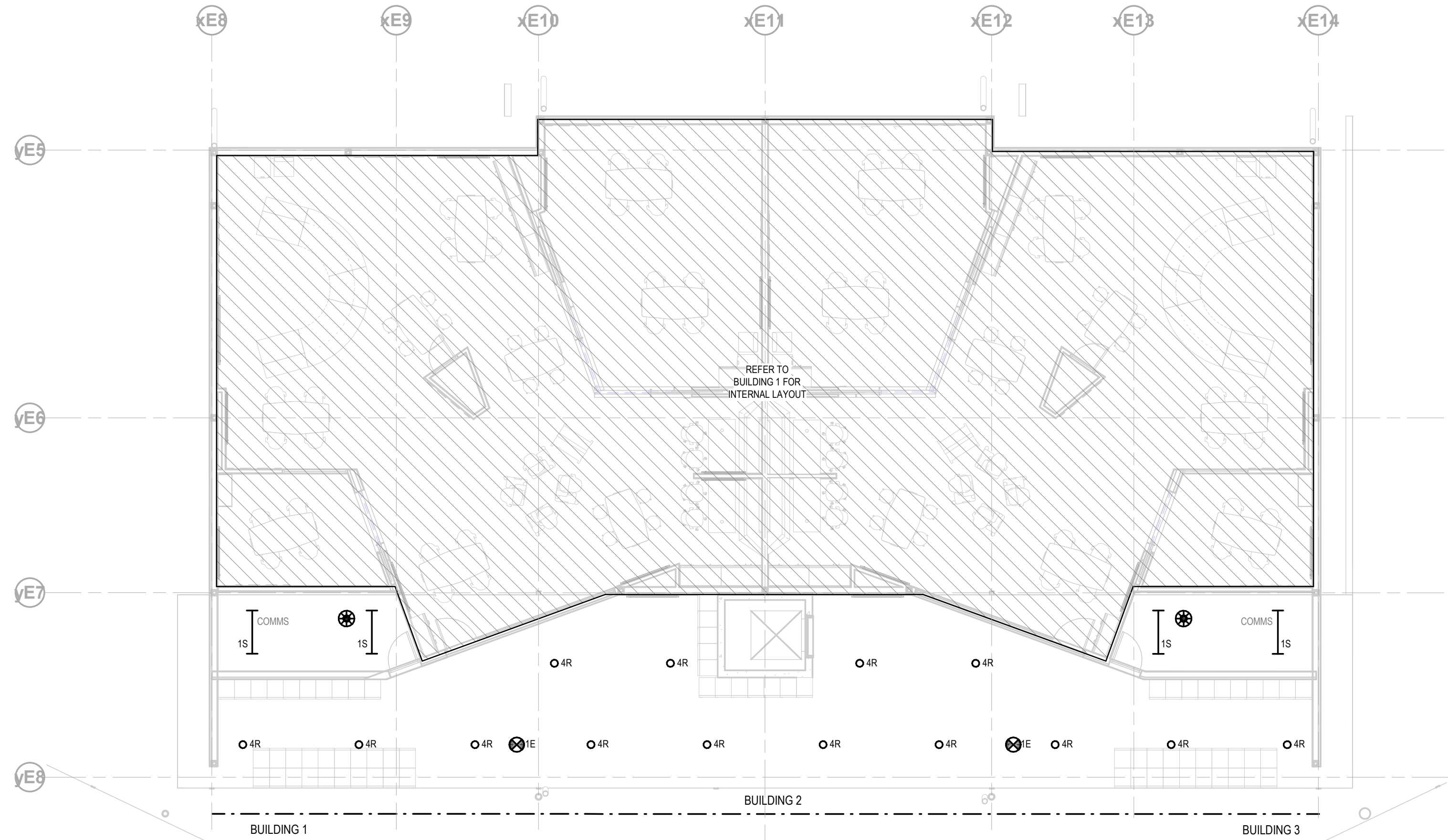
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PROJECT
ST MATTHEW'S CATHOLIC SCHOOL
CORNER OF BROADHEAD & BRUCE RD MUDGEE, NSW 2850

DRAWING TITLE		
BLOCK E_BR-E5405_BUILDING 1 LIGHTING LAYOUT		
PROJECT No. 19-000307	DRAWING No. BR-E5405	REVISION B



BLOCK E - BUILDING 2 RCP - GROUND

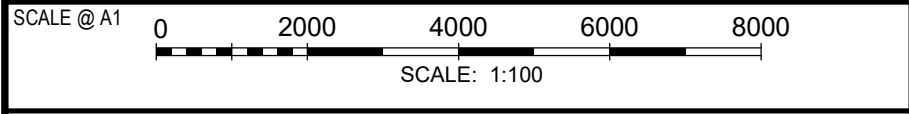


BLOCK E - BUILDING 2 RCP - LEVEL 1

REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	15.11.19	60% DESIGN ISSUE	JW	JC	JW
B	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS

PRELIMINARY
NOT FOR CONSTRUCTION



CLIENT

CATHOLIC
EDUCATION
DIOCESE OF BATHURST

TSA
MANAGEMENT

ARCHITECT

ALLEANZA
ARCHITECTURE

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PROJECT

ST MATTHEW'S CATHOLIC SCHOOL

CORNER OF BROADHEAD & BRUCE RD
MUDGEE, NSW 2850

DRAWING TITLE

BLOCK E_BR-E5406_BUILDING 2 LIGHTING
LAYOUT

PROJECT No.
19-000307

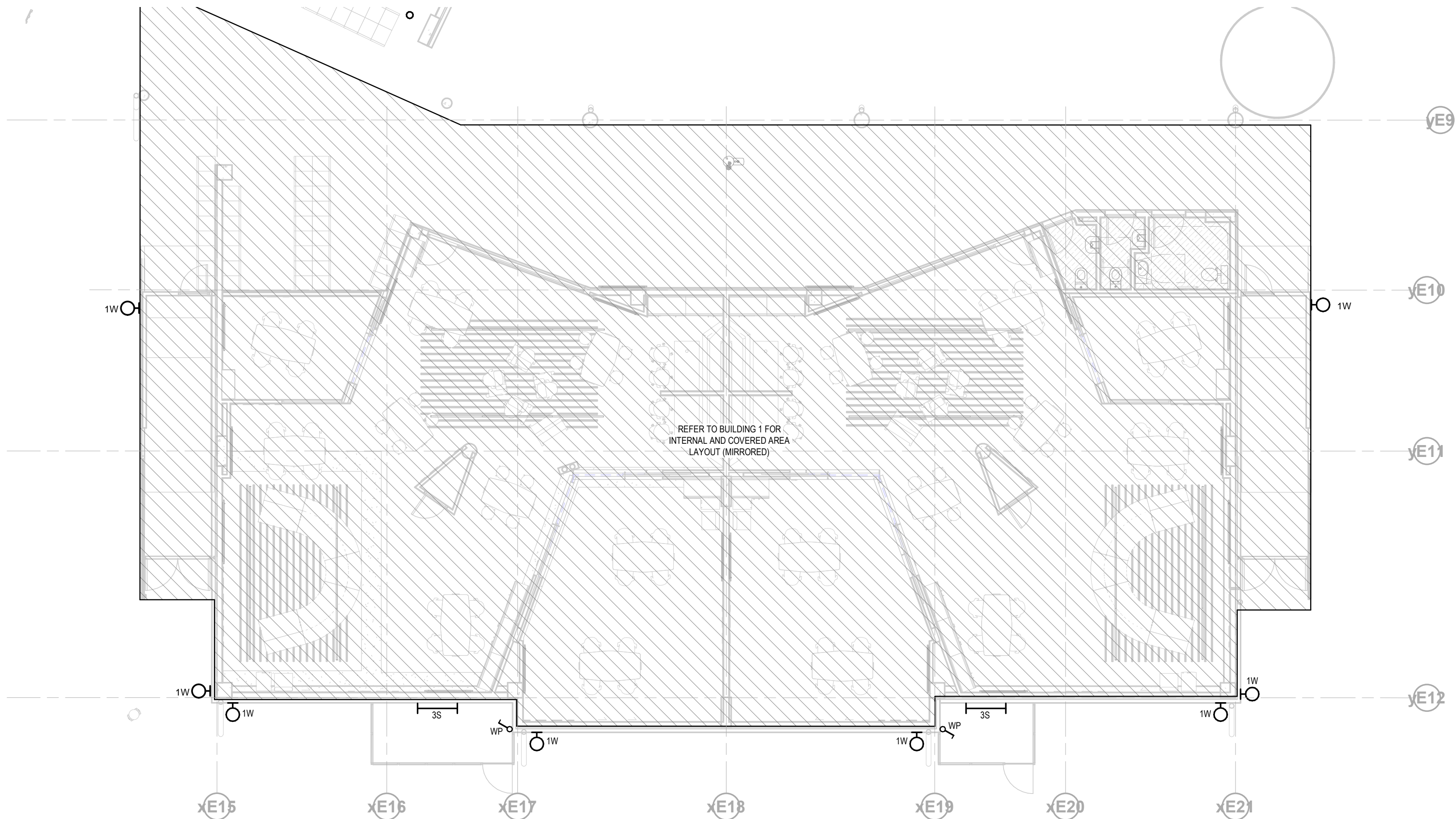
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BR-E5406

REVISION
B

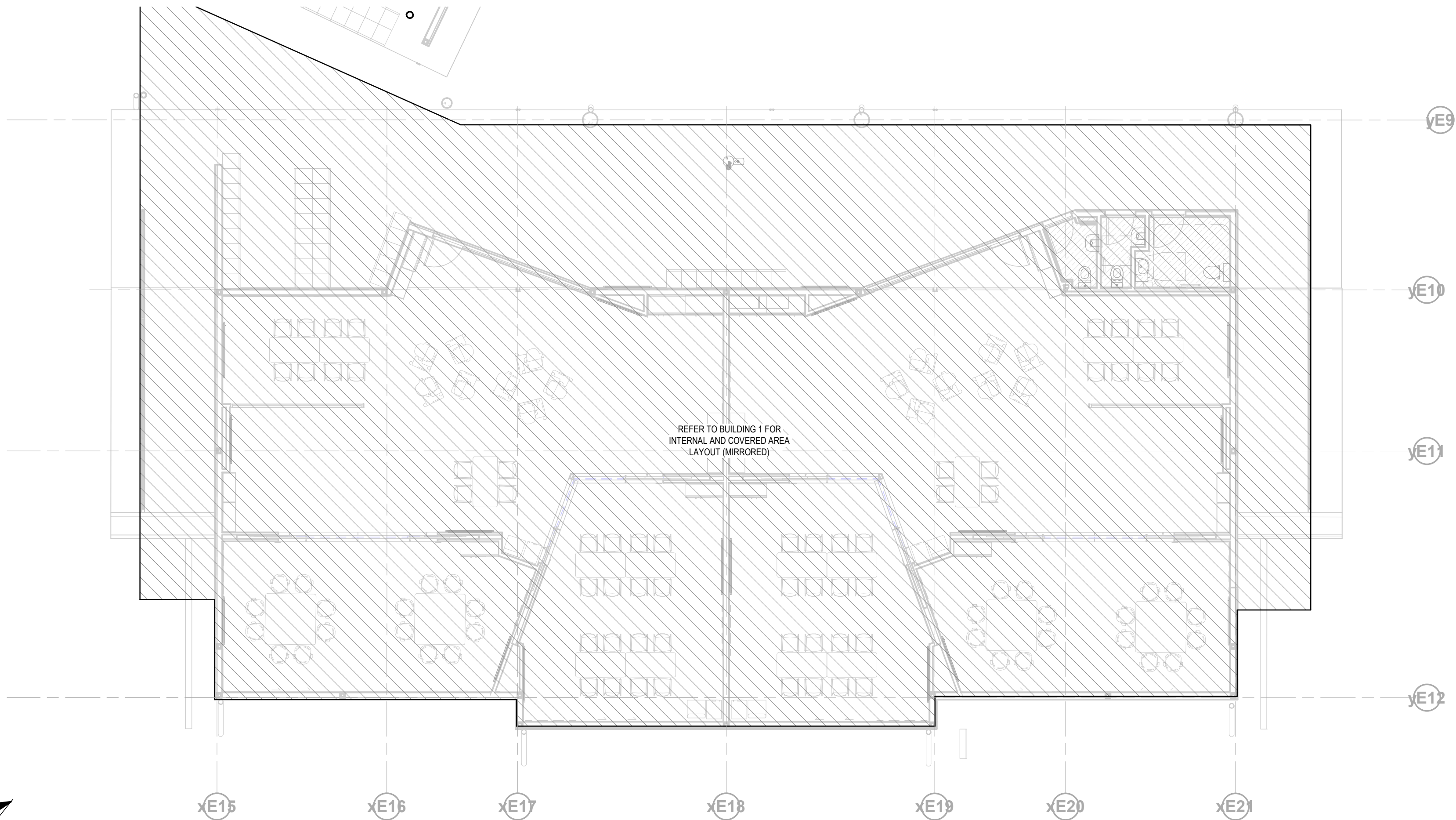
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28/02/2020 11:27:49 AM

A1



BLOCK E - BUILDING 3 RCP - GROUND



BLOCK E - BUILDING 3 RCP - LEVEL 1

REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	15.11.19	60% DESIGN ISSUE	JW	JC	JW
B	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS
PRELIMINARY
NOT FOR CONSTRUCTION

SCALE @ A1	0	2000	4000	6000	8000
	SCALE: 1:100				

CLIENT
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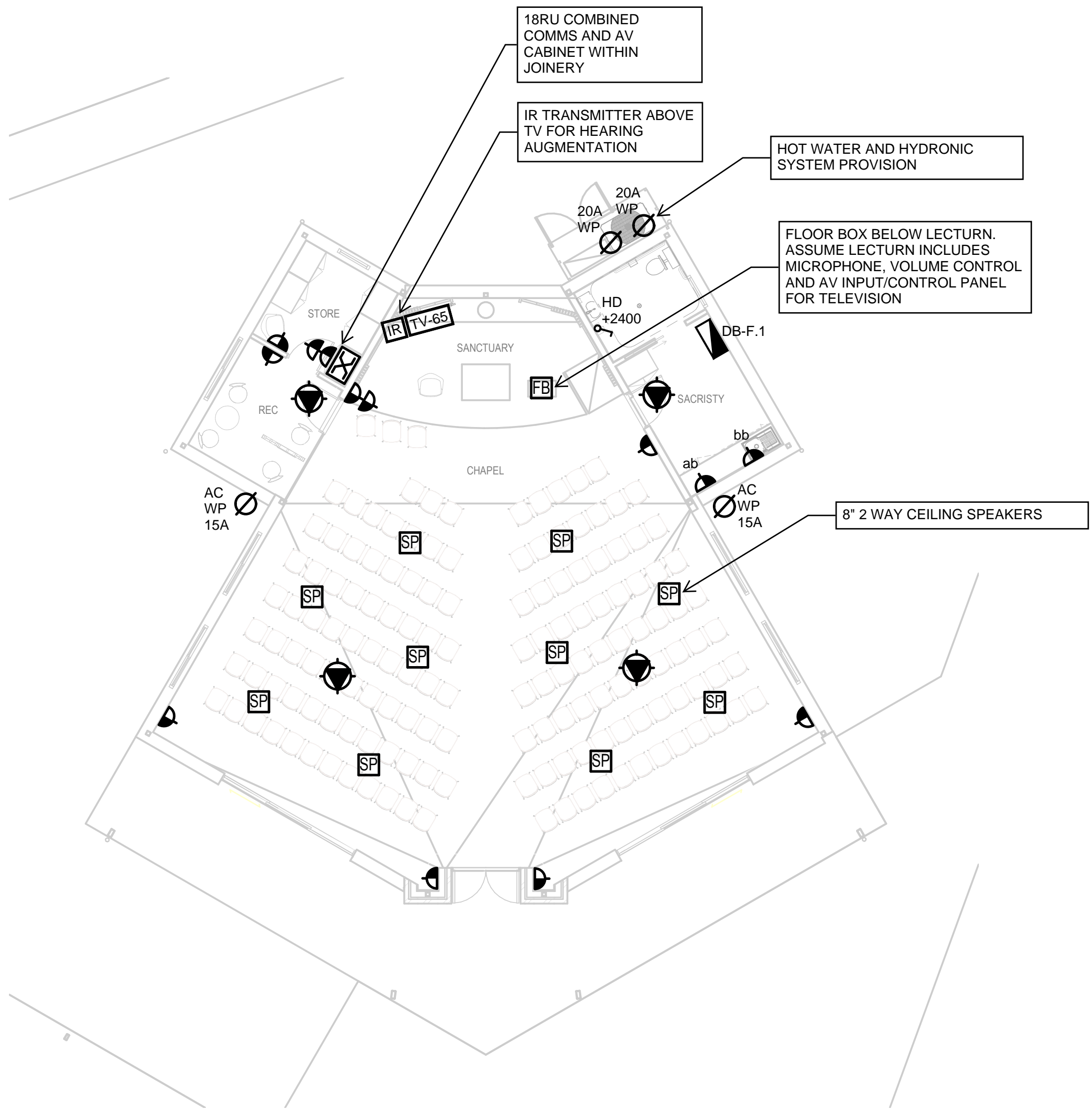
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ALLEANZA ARCHITECTURE

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PROJECT
ST MATTHEW'S CATHOLIC SCHOOL
CORNER OF BROADHEAD & BRUCE RD MUDGEE, NSW 2850

DRAWING TITLE
BLOCK E_BR-E5407_BUILDING 3 LIGHTING LAYOUT

PROJECT No.	DRAWING No.	REVISION
19-000307	BR-E5407	B



REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE @ A1

NOT TO SCALE

CLIENT

CATHOLIC
EDUCATION
DIOCESE OF BATHURST

TSA
MANAGEMENT

ARCHITECT

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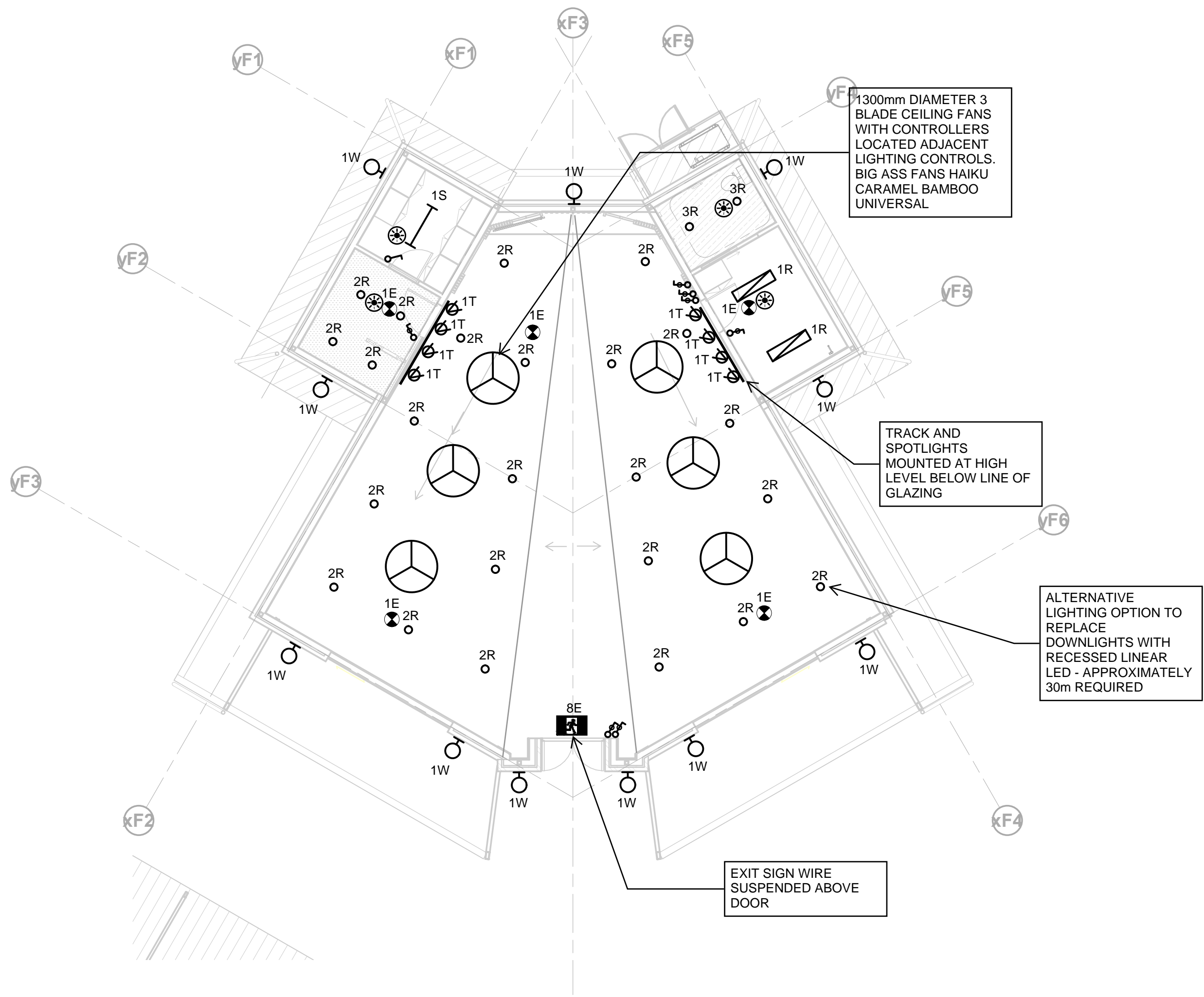
ST MATTHEW'S CATHOLIC SCHOOL

CORNER OF BROADHEAD & BRUCE RD
MUDGEE, NSW 2850

DRAWING TITLE

BLOCK F_BR-E5308_ POWER, COMMS &
SECURITY LAYOUT

PROJECT No.	DRAWING No.	REVISION
19-000307	BR-E5308	A



REV	DATE	ISSUE DETAILS	DSN	DRW	CHK
A	28.02.20	60% ISSUE CP2A	JW	JC	JW

STATUS	PRELIMINARY NOT FOR CONSTRUCTION
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SCALE @ A1	NOT TO SCALE
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CLIENT

CATHOLIC
EDUCATION
DIOCESE OF BATHURST

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PROJECT

ST MATTHEW'S CATHOLIC SCHOOL

**CORNER OF BROADHEAD & BRUCE RD
MUDGEE, NSW 2850**

DRAWING TITLE

BLOCK F_BR-E5408_LIGHTING LAYOUT

PROJECT No.	DRAWING No.	REVISION
19-000307	BR-E5408	A

