

Upgrades to Northmead Public School

DoE Group 2 Structural and Civil Schematic Design Report

Project Reference: 132567

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1. EXECUTIVE SUMMARY

Meinhardt (MHT) has been engaged by Department of Education (DoE) as the Civil & Structural Engineering Consultants for the DoE Group 2 Metro North, Metro South, and South Coast schools.

This Schematic Design Report has been prepared to accompany a Review of Environmental Factors (REF) prepared for the Department of Education (DoE) relating to upgrades to Northmead Public School (the activity) under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act) and State Environmental Planning Policy (Transport and Infrastructure) 2021 (SEPP TI).

This document has been prepared in accordance with the Guidelines for Division 5.1 assessments (the Guidelines) by the Department of Planning, Housing and Infrastructure.

This report examines and takes into account the relevant environmental factors in the Guidelines and Environmental Planning and Assessment Regulations 2021 under Section 170, Section 171 and Section 171A of the EP&A Regulation.

The proposed activity for upgrades to Northmead Public School includes:

- One (1) new single storey classroom building comprising of four (4) general learning spaces (GLS), two (2) special program spaces, a singular learning commons space and a singular multi-purpose space.
- Minor internal alterations to an existing Admin Building (known as Building A); and
- Removal of existing portable classroom buildings containing six (6) classrooms.

The purpose of this report is to:

- Outline the proposed Schematic design of the structural and civil engineering requirements for the new building works.
- Confirm adequacy of the relevant Masterplan due diligence reports &/ documentation of the existing site conditions for the proposed building works.
- Ensure compliance with SINSW Pattern Book Rev. 2 dated 19/09/2024, Educational Facilities Standards and Guidelines (EFSG), local authority requirements, statutory building codes and industry best practice. Establish structural and civil design principles for the preferred development option based on: .
 - Architectural drawings prepared by Fulton Trotter Architects (FTA).
 - School Infrastructure Pattern Book Rev. 2 dated 19/09/2024.
 - EFSG guidelines.
 - Design team meetings (DTM).
 - o Site attendance was carried out by our Structural & Civil engineers in July 2024

1.1. Civil

City of Parramatta Council have recently adopted a new flood study of this area released on the 11th June 2024. This shows that the school is partially affected by shallow overland flows in the southern section during flood events as frequent as the 20% AEP. Available flood maps suggest that overland flows from Thomas Street and Kleins Road east of the site converge at a low point at the intersection of Thomas Street and Kleins Road. These flows then overlap the southeastern site boundary, partially moving southward towards Moss Street and westward towards Allambie Avenue. The flood affected section of the site falls within low to medium flood hazard precinct and is considered within the Flood Planning Area. It should be noted that the proposed works area is to the north-east and not in the flood extents. However, floor levels (AHD37.55m) are located above the PMF flood level and adequate flood measures were provided at the site to mitigate flood impact.

Due to the increase in impervious area of the proposed buildings an OSD Tank is required

1.2. Structural

The School Infrastructure Pattern Book has recently replaced the Modern Method of Construction Integrator scope for the 'above' ground building structure. At present, the Pattern Book designs focus on 3 storey new schools which are the most prevalent typology. Other school building typologies including halls, COLAs, pre-schools, single and double storey buildings will be progressively added to the 2025 Pattern Book. The Pattern Book should be read in conjunction with the EFSG and Technical Standards. The Pattern Book is essentially "the box" which is situated above ground. The "box" is agnostic of structure and requires adaptation to meet specific project Schedules of Accommodation and site requirements.

During the Schematic Design Phase, Meinhardt presented a reverse structural scope brief for the building structure situated above ground (refer to Appendix C). This reverse brief is based on the design philosophy considerations outlined in EFSG 2.0: DGN007 Structural Design Criteria (2023), Section 7.4 of the building B15 - Technical Brief (Final - 25.01.22) and industry best practice. The following structural form for the permanent teaching buildings was supported by DoE:

- One-storey structures: Ground floor reinforced concrete slab with a proprietary D&C light-weight steel modular frame structure incl. roof.
- . Two & three storey structures: A concrete braced frame structure with post-tensioned suspended slabs; concrete columns typically placed on a regular grid of 7.5m x 9.0m; and concrete shear walls & /cores located to meet the specific project site requirements. The uppermost storey (incl. roof) is to be a proprietary D&C light-weight steel modular frame structure, subject to a Fire Performance Solution, if required by BCA/PCA.



2. SITE DUE DILIGENCE

2.1. Location and Occupancy

The project site is located at 52A Moxhams Road, Northmead and is legally described as:

- Lot 1 DP 366405;

- Lot 1 DP 176742; Lot 1 DP 20061; and
- Lot 1 DP 209810.

Northmead Public School is located on the southern side of Moxhams Road and on the western side of Kleins Road.

Refer to Figure 1 for a locality map of the proposed redevelopment.



Figure 1: Aerial Photograph





Arborist

The new proposed building location has been positioned to minimize encroachment on the Tree Protection Zones (TPZ) of the existing trees that are to be retained at the north & southern ends of the proposed building site. Refer to Figure 2 below.

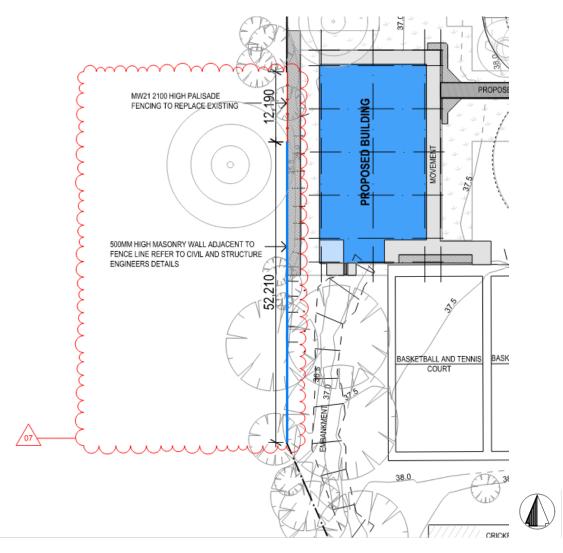


Figure 2: Proposed Site Plan – Fulton Trotter Architects

2.2. Contamination

Based on the Geotechnique's Contamination report, 'Site Contamination DD DSI-Northmead PS-2763-Geotechnique-DDWO05135-23', the results of sampling and testing identified contaminant being bonded asbestos containing material (ACM) in **one borehole location BH5** which is located within the proposed building site. According to the environmental engineer, the site can be made suitable for the proposed school upgrade by implementing their recommendations, in line with the SINSW GGN008 guideline inground contamination. Further investigations have been carried out using Test Pits within the proposed building site. As per the Laboratory test results, asbestos contamination indicated at a few locations which present a risk of harm to human health, as indicated on figure 3. Environmental engineer recommended to put a temporary fence around the contaminated locations, to avoid any disturbance of the soil in that area prior to remediation.

Also, Environmental engineer will provide a remedial action plan (RAP) to devise strategies for remediation / management of the asbestos impacted fill.



Location of Contamination	Depth (m)	Contaminant	Concentration
BH5	0 - 0.15	Asbestos (Bonded ACM) in 500 soil sample	0.01 % w/w
TP-BH5a	0 - 0.15	Asbestos (<7mm AF)	0.004 %w/w
TP-BH5a	0.5-0.8	Asbestos (bonded ACM fragme in 10L sample	ents) 0.075 %w/w
TP-BH5c	0.0 - 0.5	Asbestos (bonded ACM fragme	ents) 0.018 %w/w
TP2	0.0 - 0.15	in 10L sample Asbestos (<7mm AF)	0.003 %w/w
TP2	0.5-0.8	Asbestos (Bonded ACM) in 500 soil sample	0.16 % w/w
Assessment Criteria		for ACM in soil for residential with public primary school us 0.001% w/w for AF in so 0.001% w/w for FA in so No visual asbestos (ACM) for su	se sil sil
Notes: ACMt	Asbestos Co	ntaining Material	
AGM:	Asbestos Fin	a de la competencia d	
FA:	Fibrous Asbe	estos	
14			
			nagery © NearMa
LEGEND			
	Boundary	Borel	hole (September 20
	1	In	nagery © Near

Figure 3: borehole and test pits for Northmead PS contamination investigation



2.3. Geotechnical Investigations

Boreholes 2, 3 & 4 are close to sandstone bedrock ~ 0.5 to 1.5m from natural ground while Boreholes 1 & 5 results show sandy clay at ~ 4m. This is a significant variance in bedrock levels. The building foundations should be founded on the same material to avoid differential settlement. The proposed building footprint is positioned south of the BH2 & BH3 and therefore we recommend further geotechnical testing with subsurface profile sections to inform the estimated depth of the bedrock. Based on the new test results, we request Geotech to provide a recommendation for foundation type i.e. shallow pad footings vs deep bored pier foundations.

Refer to Figure 4 for additional borehole tests within the building footprint. Note: BH1 to BH5 have already been completed in previous Geotechnical DSI.

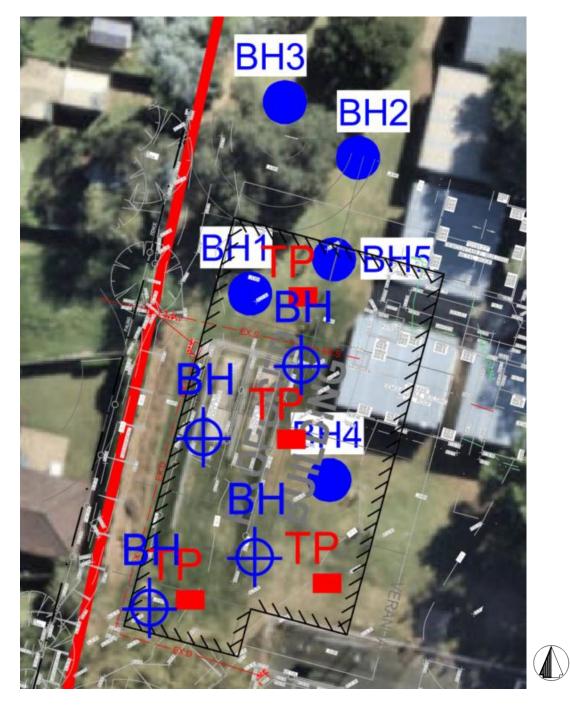


Figure 4: Proposed borehole and test pits for Northmead PS



2.4. Flooding and Overland Flow

City of Parramatta Council have recently adopted a new flood study of this area released on the 11^{th of} June 2024. This shows that the school is partially affected by shallow overland flows in the southern section during flood events as frequent as the 20% AEP. Available flood maps suggest that overland flows from Thomas Street and Kleins Road east of the site converge at a low point at the intersection of Thomas Street and Kleins Road. These flows then overtop the southeastern site boundary, partially moving southward towards Moss Street and westward towards Allambie Avenue. The flood affected section of the site falls within low to medium flood hazard precinct and is considered within the Flood Planning Area. It should be noted that the proposed works area is to the north-east and not in the flood extents. However, floor levels should be located above the PMF flood level, and in order to mitigate flood impact at the site, the civil plan shows a minimum of 500mm masonry walls at the rear of the proposed building and a minimum of 500mm high open space with 0.1m mesh or any approved product by SINSW or the builder to divert the water flow quickly and improve overland flow path with less blockage.

To mitigate and improve site conditions, we suggest adequate excavation and earthwork along the boundary to mitigate flood impact and drain out quickly during PMF events

2.5. Existing Documentation

The following due diligence reports &/ documentation has been relied upon to develop the Phase 2 Schematic Design:

- L&Co24018_SINSW Northmead Park Public School_Preliminary Arboricultural Report_v1
- 230299 Northmead PS_Combined Report P2
- Geotechnical IGI Report-Northmead PS-2763-Geotechnique-DDW005135-23
- SINSW EFSG DGN007 Structural Design Criteria
- Site Contamination DD DSI-Northmead PS-2763-Geotechnique-DDW005135-23
- Fulton Trotter Architectural drawings Issued 100% Schematic Design



•	NMPS-100%-ARCH-COMBO
0	NPS-FTA-00-00-DR-A-1001 EXISTING SITE PLAN [04]
	NPS-FTA-00-00-DR-A-1002 DEMOLITION PLAN [03]
	NPS-FTA-00-00-DR-A-1003 SITE ANALYSIS PLAN [03]
	NPS-FTA-00-00-DR-A-1101 PROPOSED SITE PLAN [04]
0	NPS-FTA-00-00-DR-A-1201 SITE SECTIONS [02]
0	NPS-FTA-00-00-DR-A-1401 EXTERNAL WORKS PLAN [03]
	NPS-FTA-00-00-DR-A-1402 PROPOSED COVERED WALKWAY [02]
0	NPS-FTA-00-00-DR-A-1403 PROPOSED COVERED WALKWAY - ROOF [02]
0	NPS-FTA-00-00-DR-A-1501 PROPOSED STAGING PLAN 01 [03]
0	NPS-FTA-00-00-DR-A-1502 PROPOSED STAGING PLAN 02 [03]
0	NPS-FTA-00-00-DR-A-1503 PROPOSED STAGING PLAN 03 [03]
0	NPS-FTA-00-00-DR-A-1601 PLAYSCAPE CALCULATION [02]
	NPS-FTA-00-00-DR-A-1602 AMENETIES STRATEGY [02]
	NPS-FTA-00-00-DR-A-1603 ACCESS STRATEGY [01]
	NPS-FTA-00-00-DR-A-1604 TREE REMOVAL PLAN [02]
	NPS-FTA-00-00-DR-A-1610 INDIGENOUS ARTWORK STRATEGY [03]
0	NPS-FTA-00-00-DR-A-1630 EXTERNAL MATERIAL AND FINISHES [03]
	NPS-FTA-00-00-DR-A-1640 SHADOW DIAGRAMS [02]
0	NPS-FTA-00-00-DR-A-1650 CONSTRUCTION MANAGEMENT STRATEGY [01]
0	NPS-FTA-B00A-GF-DR-A-2100 BUILDING A - EXISTING GROUND FLOOR PLAN [04]
0	NPS-FTA-B00A-GF-DR-A-2101 BUILDING A - PROPOSED GROUND FLOOR PLAN [03]
0	NPS-FTA-B00A-ZZ-DR-A-5001 BUILDING A - TECH HUB _ PRIINCIPAL ROOM [02]
0	NPS-FTA-B00A-ZZ-DR-A-5002 BUILDING A - DEPUTY PRINCIPAL _ AP OFFICE [02]
	NPS-FTA-B00A-ZZ-DR-A-5003 BUILDING A - STAFF ROOM [02]
0	NPS-FTA-B00R-GF-DR-A-2101 BUILDING R - EXISTING AND PROPOSED GROUND FLOOR PLAN [04]
0	NPS-FTA-B00T-GF-DR-A-2101 BUILDING T - GROUND FLOOR PLAN [04]
0	NPS-FTA-B00T-GF-DR-A-2201 BUILDING T - GROUND FLOOR RCP [04]
٥	NPS-FTA-B00T-LR-DR-A-2102 BUILDING T - ROOF PLAN [04]
٥	NPS-FTA-B00T-ZZ-DR-A-3201 BUILDING T - ELEVATIONS [04]
٥	NPS-FTA-B00T-ZZ-DR-A-3202 BUILDING T - ELEVATIONS [04]
٥	NPS-FTA-B00T-ZZ-DR-A-3303 BUILDING T - SECTIONS [04]
٥	NPS-FTA-B00T-ZZ-DR-A-4001 BUILDING T - WALL TYPE DETAILS _ PARTITION DETAILS [04]
٥	NPS-FTA-B00T-ZZ-DR-A-4201 BUILDING T - WALL SECTIONS 01 [04]
۵	NPS-FTA-B00T-ZZ-DR-A-4202 BUILDING T - WALL SECTIONS 02 [04]
۵	NPS-FTA-B00T-ZZ-DR-A-4401 BUILDING T - STAIR AND RAMP DETAILS [02]
_	NPS-FTA-B00T-ZZ-DR-A-4501 BALUSTRADE AND HANDRAIL DETAILS [02]
_	NPS-FTA-B00T-ZZ-DR-A-4801 COVERED WALKWAY DETAILS [03]
	NPS-FTA-B00T-ZZ-DR-A-4901 TYPICAL FASCIA DETAILS [03]

•	NPS-FTA-B00T-ZZ-DR-A-6001 EXTERNAL DOOR & WINDOW SCHEDULE
•	NPS-FTA-B00T-ZZ-DR-A-6002 INTERNAL DOOR & WINDOW SCHEDULE
•	NPS-FTA-B00T-ZZ-DR-A-9001 BUILDING T - PERSPECTIVES 1 [03]
•	NPS-FTA-B00T-ZZ-DR-A-9002 BUILDING T - PERSPECTIVES 2 [03]
•	NPS-FTA-XX-XX-DR-A-0000 COVER SHEET + DRAWING LIST [04]
•	NPS-FTA-XX-XX-DR-A-0001 SPECIFICATIONS SCHEDULE & MATERIAL SI
•	NPS-FTA-XX-XX-RP-A-0001 - SCHEMATIC DESIGN REPORT
•	NPS-FTA-XX-XX-SP-A-0001 - ARCHITECTURAL SPECIFICATION - VOLUM
•	NPS-FTA-XX-XX-SP-A-0002 -ARCHITECTURAL SPECIFICATION - VOLUM
•	NPS-FTA-XX-XX-TR-A-0001[03]



E [03] E [03]

SELECTIONS [03]

ME 1 (Group 2 Schools-Master Spec) ME 2 - NORTHMEAD PS

3. PROPOSED DEVELOPMENT

3.1. General Description

The proposed development includes:

- A new One-storey building with 4 new teaching spaces.
 New covered walkways connecting the new buildings to the existing school network.
 Landscaping and external works around the new buildings.
 Refurbishment works to existing Admin Bld.

Refer to Figure 5 for the proposed 100% Schematic Plan for Northmead Public School by Fulton Trotter Architects.



Figure 5: Proposed 100% Schematic Plan for Northmead Public School – Fulton Trotter Architects



3.2. Civil Engineering Works

3.2.1. Stormwater Drainage

A pit and pipe system within the site area to convey minor flows (in accordance with the Major/Minor stormwater strategy approach defined in Australian Rainfall and Runoff). Roof drainage system has been designed, and documented by the Hydraulic Engineer, and is directly discharged to OSD tank near the proposed building after filter treatment on Moxhams Road.

Due to the increase in impervious area, Meinhardt's preliminary recommendation is that an underground detention storage of approx. 46 m3 be provided in the north-eastern corner of the building. This is to ensure peak discharge flows draining from the proposed development can be managed by the downstream drainage systems from the developed site. The Upper Parramatta River Catchment Trust (UPRCT) "On-site Stormwater Detention Handbook-Fourth Edition" in Page 3-3 sets out the steps in determining the applicable permissible site discharge (PSD) to the proposed development and the size of the OSD tank to be required. A summary of the Schematic stormwater drainage Schematic design has been presented in Figure 6 below.

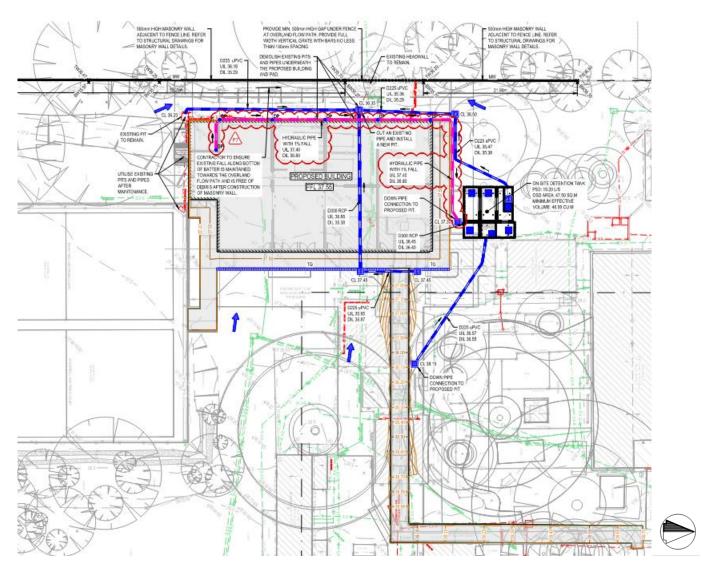


Figure 6: Proposed Option Stormwater Drainage Plan

3.2.2. On Site Detention

Council requires the provision of an on-site detention system to ensure that new developments do not increase peak stormwater flows in any downstream area during major storms up to and including 100-year ARI events. The Upper Parramatta River Catchment Trust (UPRCT) "On-site Stormwater Detention Handbook-Fourth Edition" in Page 3-3 sets out the steps in determining the applicable permissible site discharge (PSD) to the proposed development and the size of the OSD tank to be required.



PSD & SSR – Building Catchment

- PSD:
 - Primary Orifice Outlet (SRD_L): 40 L/s/ha x 0.101 ha = 4.04 L/s
 - Secondary Orifice Outlet (SRD_U): 150 L/s/ha x 0.101 ha = 15.15 L/s
- SSR:
 - Primary Orifice Outlet (EDD): 300 m³/ha x 0.101 ha = 30.3 m³
 - Secondary Orifice Outlet (Total): 455 m³/ha x 0.101 ha = 45.96 m³

Storm event	PSD	SSR	
Primary Orifice Outlet (SRDL)	40 L/s/ha	300 m ³ /ha	
Secondary Orifice Outlet (SRD _U)	150 L/s/ha	455 m³/ha	

Table 1. PSD and SSR from On-site Stormwater Detention Handbook-Fourth Edition by UPRCT

Storm event	OSD Post-Development Flow (L/s)	OSD Bypass Flow(L/s)
1.5-year ARI	4.04	0
100-year ARI	19.19	0

Table 2. Peak Discharge Results in UPRCT Calculation Sheet.

The OSD requirement for the development was calculated using the URPCT Calculation Sheet to determine the size of the proposed piped network and the respective OSD in order to satisfy major/minor system requirements in accordance with the UPRCT requirements and shown on Table 1.

These parameters were used in determining the PSD and SSR applicable to the proposed development.

The total catchment areas proposed to drain into the OSD is 0.101 hectare. The required OSD tank volume calculated using UPRCT calculation spreadsheet is 45.96 m³. All roof and covered walkway are proposed to drain into the OSD tank as per the catchment plan. Most of this runoff will drain into the storm filter chamber first to undergo treatment (further discussed in Stormwater Quality). Water shall flow above the access hatch (RL 36.95m and 35.60mAHD) when it reaches the maximum volume of the storage.

OSD TANK	Diameter (mm)
Primary Orifice Outlet (SRDL)	49
Secondary Orifice Outlet (SRD _U)	95
	* · · · · · · · · · · · · · · · · · · ·

Table 3. Orifice Plate Diameter

3.2.3. Stormwater Quality

All proposed buildings, impervious areas and adjoining pervious areas will need to be treated using industry standard Water Sensitive Urban Design (WSUD) practices. Generated stormwater pollutants will need to treat to the below Council targets. MUSIC modelling is the industry standard stormwater quality software which assesses reduction in pollutant runoff on typical WSUD practices. This development will implement WSUD measures implementing a Filtration System to achieve the stormwater quality treatment targets set by UPRCT "On-site Stormwater Detention Handbook-Fourth Edition" and Parramatta DCP (2023).

To meet UPRCT requirements for stormwater management, the water quality strategy will need to include treatment of the stormwater prior to discharge to the nominated point of connection, reducing water borne pollutants as per all relevant quidelines.

Treating and reducing stormwater has multiple environmental benefits including improving urban amenity, reducing pollutant loadings downstream in receiving waters, retarding peak stormwater flow rates and reducing irrigation demands from potable water supply.

All roof catchments are required to discharge to the point of connection via the 5,000L rainwater harvesting tank for a flushing toilet, a laundry for washing and landscape irrigation purposes.

Water Quality Treatment Train

Modelling of the pollutant loads for the proposed development has been carried out using MUSIC. Diagrammatic illustrations of the model setup are presented in Figure 7 below.



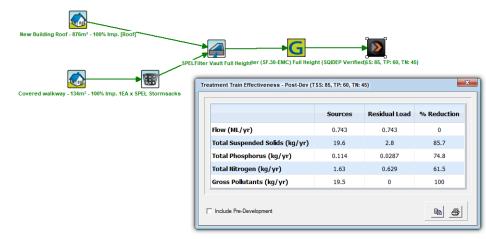


Figure 7. Music Modelling Treatment Train (OSD).

The model has been set up to inclusively incorporate all relevant catchments of the development to represent realistic site conditions for pollutant generation and treatment.

Stormwater Quality Treatment Devices

The stormwater management requirements for the development are dependent on the adequate treatment measures to mitigate and exceed stormwater borne pollutant reduction targets as per the relevant guidelines. The treatment systems have been nominated in the table below (or approved equivalents):

Treatment System	Capacity/Area	Quantity
Atlanfilter (SF 30 EMC-M, 850mm tall)	0.006cu.m./s high flow by-pass	3
Atlan StormSack	0.011cu.m./s high flow by-pass	1

Table 4. WSUD Treatment System

Treatment Device Specifications

The Atlanfilter shown in Figure 10 below is a proprietary treatment device that acts as a filter removing pollutants. This system is generally used to filter to storm water from various pollutants prior to entering waterways. 3EA for OSD which is 850mm in height will be installed in the OSD tank. Figure 8 shows a diagram of how an Atlanfilter works.

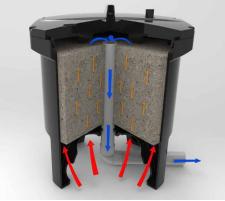


Figure 8. Atlanfilter by Atlan

The stormsack is installed inside inlet pits that act as Gross Pollutant Traps. This 200-micron filter system shown in Figure 9 below is generally used to remove trash, debris and other pollutants from runoff prior to entering waterways. 1 Stormsack will be installed inside the drainage pit adjacent to the proposed covered walkway to the southeast.





Figure 9. Stormsack by Atlan

MUSIC Modelling Results

The results from the MUSIC model validate that the proposed treatment measures reduce Total Suspend Solids by more than 85% and nutrients, Phosphorus by more than 60%, and Nitrogen by more than 45% for the proposed development. The results are summarised in the figure below.

Target Guideline		Water-Borne Pollutant	Reduction Target	Result	Target Met
WSUD Be	st	Total Suspended Solids	85% Reduction	85.7% Reduction	Yes
Practice Guiding		Total Phosphorous	60% Reduction	74.8% Reduction	Yes
Principles		Total Nitrogen	45% Reduction	61.5% Reduction	Yes
		Gross Pollutants	90% Reduction	100% Reduction	Yes

Table 5. MUSIC Modelling Results Summary (OSD)

3.2.4. Bulk Earthworks

The new one-storey building ground floor level has been set to achieve minimum cut and fill volumes. A summary of the concept bulk earthwork cut & fill volumes has been presented in Figure 10 below.



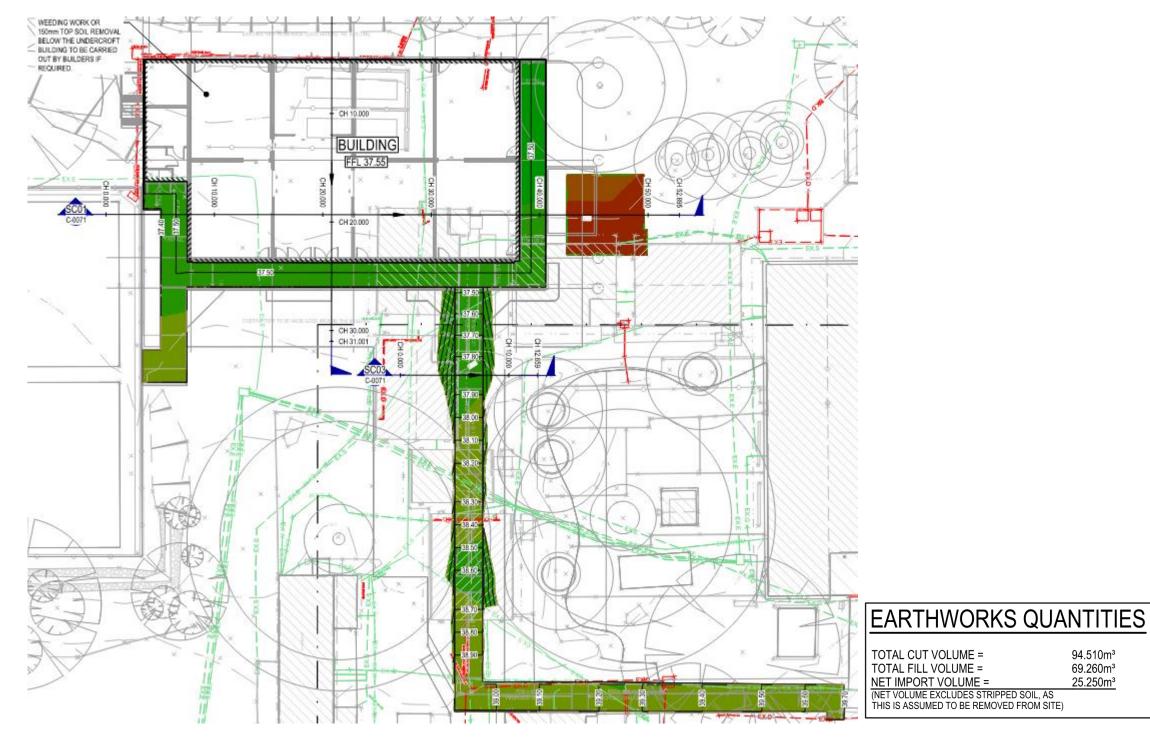


Figure 10: Preliminary Bulk Earthwork Volumes







3.3. Structural Works

3.3.1. Foundations

Boreholes 2, 3 & 4 are close to sandstone bedrock ~ 0.5 to 1.5m from natural ground while Boreholes 1 & 5 results show sandy clay at ~ 4m. This is a significant variance in bedrock levels. The building foundations should be founded on the same material to avoid differential settlement. The proposed building footprint is positioned south of the BH2 & BH3 and therefore we recommend further geotechnical testing with subsurface profile sections to inform the estimated depth of the bedrock. Based on the new test results, we requested Geotech to provide a recommendation for foundation type i.e. shallow pad footings vs deep bored pier foundations. As per their advice, screw piles or bored piers as well as pad/strip footings can be considered depend on the bedrock depth. Therefore, we proposed a screw pile/bored pier system in our design, providing pile loads to allow the D&C contractor to select the most feasible and cost-effective solution.

3.3.2. School Infrastructure Pattern Book

The School Infrastructure Pattern Book has recently replaced the Modern Method of Construction Integrator scope for the 'above' ground building structure. At present, the Pattern Book designs focus on 3 storey new schools which are the most prevalent typology. Other school building typologies including halls, COLAs, pre-schools, single and double storey buildings will be progressively added to the 2025 Pattern Book. The Pattern Book should be read in conjunction with the EFSG and Technical Standards. The Pattern Book is essentially "the box" which is situated above ground. The "box" is agnostic of structure and requires adaptation to meet specific project Schedules of Accommodation and site requirements.

During the Schematic Design Phase, Meinhardt presented a reverse structural scope brief for the building structure situated above ground (refer to Appendix C). This reverse brief is based on the design philosophy considerations outlined in EFSG 2.0: DGN007 Structural Design Criteria (2023), Section 7.4 of the building B15 - Technical Brief (Final - 25.01.22) and industry best practice. The structural design will be in accordance with the latest revision of all relevant Australian Design Standards, Codes and other statutory requirements & EFSG Guidelines.

The following structural form for the permanent teaching buildings was supported by DoE:

- One-storey structures: Ground floor reinforced concrete slab with a proprietary D&C light-weight steel modular frame structure incl. roof.
- Two & three storey structures: A concrete braced frame structure with post-tensioned suspended slabs; concrete columns typically placed on a regular grid of 7.5m x 9.0m; and concrete shear walls & /cores located to meet the specific project site requirements. The uppermost storey (incl. roof) is to be a proprietary D&C light-weight steel modular frame structure, subject to a Fire Performance Solution, if required by BCA/PCA.

3.3.3. Fire Resistance Level for Structural Elements

- Fire resistance level for structural elements will be in accordance with the requirements of the BCA.
- A Fire Performance Solution is likely required by the D&C contractor for the modular lightweight steel structure for the upper most storey including the roof structure.

3.3.4. Refurbishment Works to ex. Admin Bld.

- We have reviewed the ex. drawings and provided structural design as required for: New doorway into the new Principal's office - A lintel beam as the ex. wall is structural load bearing.
- Structural certification is limited to the new structural works only and not the entire ex. building e.g. seismic upgrade of entire building.

3.4. Mitigation Measures

Based on the Geotechnique's Contamination report, 'Site Contamination DD DSI-Northmead PS-2763-Geotechnique-DDWO05135-23', the results of sampling and testing identified contaminant being bonded asbestos containing material (ACM) in **one borehole location BH5** which is located within the proposed building site. According to the environmental engineer, the site can be made suitable for the proposed school upgrade by implementing their recommendations, in line with the SINSW GGN008 guideline inground contamination. Further investigations have been carried out using Test Pits within the proposed building site. As per the Laboratory test results, asbestos contamination indicated at a few locations which present a risk of harm to human health, as indicated on figure 4. Environmental engineer recommended to put a temporary fence around the contaminated locations, to avoid any disturbance of the soil in that area prior to remediation and validation.

Also, Environmental engineer will provide a remedial action plan (RAP) to devise strategies for remediation / management of the asbestos impacted fill.

Furthermore, according to the updated Geotech report, the soils likely to be disturbed or excavated during the proposed upgrade works are non-saline and not acid sulphate soils. Therefore, earthworks for proposed upgrade may be carried out without a Saline Soil Management Plan and Acid Sulphate Soil Management Plan. However, a Soil Management Plan should be implemented to minimise impacts from erodible soils.

Table 1 – Mitigation Measures						
Mitigation Number/ Name	When is Mitigation Measure to be complied with	Mitigation Measure	Reason for Mitig			
Asbestos contamination	Prior to commencement of any works	Environmental Engineer to provide a remedial action plan (RAP) to devise strategies for remediation / management of the asbestos impacted fill.	to avoid any remediation a to human he			
Soil Excavation	Prior to commencement of any works	A Soil Management Plan should be implemented	to minimise i			



itigation Measure

ny disturbance of the soil in that area prior to on and validation and to mitigate any risk of harm health

e impacts from erodible soils.

4.1 EVALUATION of Environmental Impacts

The proposed development can be adequately mitigated or minimized through the required mitigation measures. As a result, the activity will not have a significant impact on the environment. According to the Environmental Engineer's report, the site can be made suitable for the proposed school upgrade by implementing their recommendations, in line with the SINSW GGN008 guideline for inground contamination.

To mitigate the risk, the Environmental Engineer will provide a Remedial Action Plan (RAP) to devise strategies for the remediation or management of the asbestos-impacted fill.

3.5. Structural & Civil Actions/Recommendations for Phase 4 Tender Design

- 1. Geotech & Contamination remedial action plan (RAP) to devise strategies for remediation / management of the asbestos impacted fill.
- 2. Survey: A detailed survey has been requested.



Appendix A – Civil Schematic Design Drawings



Appendix B – Structural Schematic Design Drawings



NORTHMEAD PUBLIC SCHOOL 52A MOXHAMS RD, NORTHMEAD NSW 2152 **CIVIL DRAWINGS**

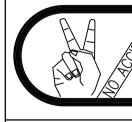


ENVIRONMENTAL MANAGEMENT PLAN PRIOR TO THE COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL PREPARE A SITE MANAGEMENT PLAN FOR APPROVAL BY THE SUPERINTENDENT. ITEMS TO BE ADDRESSED INCLUDE:

- EROSION AND SEDIMENT CONTROL
- FLORA AND FAUNA CONSERVATION
- WATER QUALITY MANAGEMENT
- DUST CONTROL
- NOISE CONTROL
- ACCESS MANAGEMENT WASTE MANAGEMENT
- POLLUTION CONTROL
- MONITORING AND REPORTING
- CORRECTIVE ACTION

ATTENTION TO CONTRACTOR **OH & S REQUIREMENTS**

- IN ACCORDANCE WITH CLAUSE 15 OF AS2124-1992, THE CONTRACTOR MUST ENSURE THE SAFETY OF THE CONTRACTOR'S EMPLOYEES AND ALL OTHER PEOPLE WHO ARE ON OR ADJACENT TO THE SITE. THE CONTRACTOR MUST COMPLY WITH THE NSW WHS ACT OF 2011.
- 2. THE CONTRACTOR MUST ENSURE THAT ALL PEOPLE EMPLOYED ON THE SITE WEAR APPROVED SAFETY APPAREL. THIS INCLUDES SAFETY HELMETS, SAFETY BOOTS, EAR AND EYE PROTECTION, WHERE APPROPRIATE.
- . THE CONTRACTOR IS NOT PERMITTED TO BREAK-IN TO AN EXISTING LIVE PIPELINE. ENTER A LIVE ACCESS CHAMBER OR REMOVE THE COVER TO A LIVE ACCESS CHAMBER.
- 4. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES IN WORKS AFFECTED AREAS PRIOR TO COMMENCING ANY WORKS.



AT ALL TIMES PROVIDE A SAFE WORKING ENVIRONMENT IN THE VICINITY OF THE SITE OF WORKS IN FULL COMPLIANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY REGULATIONS.

IMPORTANT NOTES

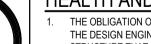
PRIOR TO THE COMMENCEMENT OF BUILDING WORKS ON SITE, THE CONTRACTOR MUST VERIFY THE FEASIBILITY OF THE OUTFALL STORMWATER DRAINAGE SYSTEM/S TO THE LEGAL POINT OF DISCHARGE AS DOCUMENTED BY: - VERIFICATION OF THE INVERT LEVEL OF THE DRAIN FORMING THE LEGAL POINT OF DISCHARGE - VERIFICATION THAT THE ROUTE FROM THE SITE TO THE LEGAL POINT/S OF DISCHARGE IS CLEAR OF ALL OTHER AUTHORITY SERVICES. IF EITHER OF THE ABOVE CANNOT BE VERIFIED. THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE SUPERINTENDENT. PRIOR TO THE COMMENCEMENT OF ANY WORKS, THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND SERVICES, NOTIFY THE AUTHORITIES RESPONSIBLE FOR THOSE SERVICES AND COMPLY WITH ALL OF THE REQUIREMENTS OF THOSE AUTHORITIES. 75% SCHEMATIC DESIGN ISSUE B.K 28.11. 95% SCHEMATIC DESIGN ISSUE A.N B.K 13.12.24 100% SCHEMATIC DESIGN ISSUE A.M B.K 20.12.24



AREA OF WORKS -









HEALTH AND SAFETY

THE OBLIGATION OF MEINHARDT [OR OTHER RELEVANT MEINHARDT ENTITY] (MEINHARDT) AS THE DESIGN ENGINEER IS LIMITED TO ENSURING THAT THOSE PARTS OF THE BUILDING OR STRUCTURE THAT ARE TO BE USED AS A WORKPLACE ARE, AS FAR AS REASONABLY PRACTICABLE, DESIGNED TO BE SAFE AND WITHOUT RISKS TO THE HEALTH OF THOSE PERSONS USING THE BUILDING OR STRUCTURE AS A WORKPLACE FOR THE PURPOSE FOR WHICH IT WAS DESIGNED IN ACCORDANCE WITH SECTION 22 OF THE NSW WHS ACT 2011.

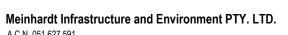
MEINHARDT IS NOT RESPONSIBLE FOR THE OCCUPATIONAL HEALTH AND SAFETY OF PERSONS AT THE SITE AS THOSE OBLIGATIONS RESIDE WITH THE CONTRACTORS AND/OR SUB-CONTRACTORS WHO OCCUPY OR HAVE CONTROL OF THE SITE IN ACCORDANCE WITH APPLICABLE OCCUPATIONAL HEALTH AND SAFETY LEGISLATION, CODES OR PRACTICE, GUIDANCE NOTES, AUSTRALIAN STANDARDS AND OTHER RELEVANT DOCUMENTATION.

ANY ADVICE OR GUIDANCE CONCERNING OCCUPATIONAL HEALTH AND SAFETY ISSUES ARISING AT THE SITE SHOULD BE DIRECTED TO THE HEALTH AND SAFETY EXECUTIVE OR OFFICER NOMINATED FOR THE PROJECT.

NOTE: THIS PROJECT SHOULD BE READ IN CONJUNCTION WITH ALL OTHER SERVICES CONSULTANTS ASSOCIATED WITH THIS PROJECT BEFORE COMMENCEMENT OF ANY WORKS.

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





NSW

School Infrastructure NSW

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DRAWING REGISTER			
No.	DRAWING TITLE		
NPS-MHT-00-00-DR-C-0010	COVER SHEET, DRAWING INDEX AND LOCALITY PLAN		
NPS-MHT-00-00-DR-C-0020	STANDARD NOTES		
NPS-MHT-00-00-DR-C-0060	EROSION AND SEDIMENT CONTROL PLAN		
NPS-MHT-00-00-DR-C-0065	EROSION AND SEDIMENT CONTROL DETAILS		
NPS-MHT-00-00-DR-C-0070	BULK EARTHWORKS SITE PLAN		
NPS-MHT-00-00-DR-C-0071	BULK EARTHWORKS SITE SECTIONS		
NPS-MHT-00-00-DR-C-0101	CIVIL SITEWORKS PLAN		
NPS-MHT-00-00-DR-C-0110	PAVEMENT PLAN		
NPS-MHT-00-00-DR-C-0200	CIVIL DETAILS		
NPS-MHT-00-00-DR-C-0300	OSD DETAILS		

GEOTECHNICAL DESIGN COMPLIANCE AND SITE INSPECTION ATTENDANCE

THESE DESIGN PLANS SHALL BE READ IN CONJUNCTION WITH GEOTECHNICAL REPORT No. 20429/5-AA DATED 24 OCTOBER 2023 PREPARED BY GEOTECHNIQUE PTY LTD. THE PROVISIONS AND RECOMMENDATION CONTAINED WITHIN THE REPORT ARE TO BE STRICTLY COMPLIED WITH.

ALL COMPACTION REQUIREMENT RESULTS SHALL BE CARRIED OUT IN ACCORDANCE WITH GEOTECHNICAL REPORT RECOMMENDATIONS.

LATENT CONDITIONS (SUBGRADE IMPROVEMENTS)

ANY ADDITIONAL WORKS WHICH MAY LEAD TO A VARIATION SHALL BE APPROVED BY THE SUPERINTENDENT PRIOR TO THE COMMENCEMENT OF ANY WORKS AND INCLUDE THE FOLLOWING PROVISIONS:

a) NOTIFICATIONS FOR INSPECTIONS TO SUPPORT POTENTIAL VARIATION CLAIMS REQUIRE MINIMUM 48 HOUR NOTICE PERIOD. (SITE REPRESENTATION WILL BE AT THE DISCRETION OF THE SUPERINTENDENT).

) SUBGRADE IMPROVEMENTS ARE TO BE MANAGED BY THE PROJECT GEOTECHNICAL ENGINEER WITH INPUT FROM THE SUPERINTENDENT.

c) CONSULTANT COSTS FOR GEOTECHNICAL REPRESENTATION AND REPORTING TO BE BORNE BY THE CONTRACTOR d) ADDITIONAL INSPECTIONS BY THE SUPERINTENDENT TO SUPPORT VARIATION CLAIMS FOR LATENT CONDITIONS SHALL BE BORNE BY CONTRACTOR



WARNING

PROPOSED SERVICES THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING

BEWARE OF UNDERGROUND SERVICES THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

STATUS

NORTHMEAD PUBLIC SCHOOL 52A MOXHAMS RD, NORTHMEAD NSW 2152

SCHEMATIC DESIGN NOT TO BE USED FOR CONSTRUCTION

N.T.S J.G B.K B.L A.N PROJECT No DRAWING No 132567 NPS-MHT-00-00-DR-C-0010 | P3

DRAWN DESIGNED CHECKED APPROVED DATE SCALE @ A*

1. GENERAL

1.1 THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS, AND SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE SUPERINTENDENT BEFORE PROCEEDING WITH THE WORK. THESE PLANS ARE BASED UPON THE EXISTING CONDITION SURVEY PREPARED BY OTHERS. WHERE SITE CONDITIONS DIFFER TO THE SURVEY OR DESIGN DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT PRIOR TO PROCEEDING WITH WORKS.

1.2 IF ANY DISCREPANCY OCCURS ON THE DRAWINGS OR BETWEEN THE DRAWINGS AND SPECIFICATION. THE TENDERER SHALL DURING TENDER REFER THE DISCREPANCY TO THE SUPERINDENDENT. OR ASSUME THAT THE DRAWINGS TAKE PRECEDENCE OVER THE SPECIFICATION. ANY DISCREPANCY SHALL BE REFERRED TO THE SUPERINTENDENT FOR WRITTEN CLARIFICATION BEFORE PROCEEDING WITH THE WORK.

1.3 THESE DRAWINGS MUST NOT BE SCALED.

1.4 ALL DIMENSIONS AND REDUCED LEVELS MUST BE VERIFIED ON SITE BEFORE THE COMMENCEMENT OF ANY WORK.

1.5 THE CONTRACTOR SHALL SET OUT THE WORKS FROM THE NOMINATED DESIGN LINES, SURVEY BENCHMARKS AND CONTROL POINTS SHOWN ON THE PLANS AND TO THE SPECIFIED DETAILS. UPON REQUEST AN ELECTRONIC BASE PLAN OF THE CIVIL DRAWING CAN BE SUPPLIED FOR INFORMATION, MEINHARDT HOLDS NO LIABILITY TO THE ACCURACY OF ELECTRONIC FILES.

1.6 ALL LEVELS SHOWN ARE TO THE AUSTRALIAN HEIGHT DATUM AND ALL COORDINATES ARE TO MAP GRID OF AUSTRALIA (MGA 2020).

1.7 ALL SPOT LEVELS SHOWN ARE TO INVERT (FACE) OF KERB OR EDGE OF PAVEMENT WHERE APPLICABLE, UNLESS SHOWN OTHERWISE.

1.8 EXISTING SURFACE CONTOURS, WHERE SHOWN, ARE INTERPOLATED AND MAY NOT BE ACCURATE

1.9 GRADE EVENLY BETWEEN FINISHED SURFACE SPOT LEVELS. FINISHED SURFACE CONTOURS ARE SHOWN FOR CLARITY. WHERE FINISHED SURFACE LEVELS ARE NOT SHOWN, THE SURFACE SHALL BE GRADED SMOOTHLY SO THAT IT WILL DRAIN AND MATCH ADJACENT SURFACES OR STRUCTURES.

1.10 MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN AND RESPONSIBLE AUTHORITY STANDARDS.

1.11 THE CONTRACTOR SHALL COMPLY WITH ALL REGULATIONS OF AUTHORITIES HAVING JURISDICTION OVER THE WORKS.

1.12 ONLY SUBSTITUTIONS APPROVED IN WRITING BY THE SUPERINTENDENT SHALL BE ACCEPTED.

1.13 ALL WORKS WITHIN THE ROAD RESERVE SHALL BE IN ACCORDANCE WITH THE RESPONSIBLE ROAD AUTHORITY SPECIFICATIONS AND DRAWINGS AND ENGINEERING, DESIGN AND CONSTRUCTION MANUAL/S.

1.14 SERVICE INFORMATION SHOWN IS BASED ON PLANS SUPPLIED BY AUTHORITIES AND IS APPROXIMATELY ONLY. PRIOR TO COMMENCEMENT OF ANY WORKS, THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND SERVICES AND COMPLY WITH ALL REQUIREMENTS OF THOSE AUTHORITIES.

1.15 WHERE CIVIL DRAWINGS HAVE BEEN PROVIDED IN AUTOCAD OR DIGITAL FORMAT, THE CONTRACTOR SHALL UTILISE THESE FOR INFORMATION ONLY. DESIGN DRAWINGS ARE TO BE REFERENCED FOR SURFACE LEVELS AND WILL TAKE PRECEDENCE FOR SETOUT OVER 3D MODELS. ANY INFORMATION EXTRACTED FROM 3D MODELS ARE TO BE CROSSCHECKED WITH FORMALLY ISSUED PDF FILES AND SITE CONDITIONS. IF ANY DISCREPANCIES EXIST, THE SUPERINTENDENT IS TO BE CONSULTED FOR REVIEW.

1.16 SHOP DRAWING REVIEW OF SUBCONTRACTOR DRAWINGS ARE NOT WITHIN THE CIVIL SCOPE. WHERE SHOP DRAWINGS ARE PRODUCED, MEINHARDT DOES NOT TAKE ANY RESPONSIBILITY TO THE SUITABILITY OF ACCURACY OF THESE DRAWINGS.

1.17 THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF ALL TEMPORARY WORKS.

2. EARTHWORKS AND GEOTECHNICAL

2.1 THE CONTRACTOR SHALL COMPLY WITH THE CURRENT EDITIONS OF THE FOLLOWING ROAD AUTHORITY AND AUSTRALIAN STANDARDS: - AS 1289 TESTING SOILS FOR ENGINEERING PURPOSES - AS 3798 GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS

- ROAD AUTHORITY SPECIFICATION - SITE CLEARING

2.2 GRANULAR MATERIAL SPECIFIED AS PER GEOTECHNICAL REPORT SUBJECT TO SUPERINTENDENT'S APPROVAL.

2.3 THE CONTRACTOR SHALL BE RESPONSIBLE FOR CARRYING OUT ALL CONTROL AND COMPLIANCE EXAMINATION AND TESTING OF MATERIALS AND WORK. UNLESS OTHERWISE SPECIFIED, ALL TESTS SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE APPROPRIATE AUSTRALIAN STANDARD TEST METHOD. WHERE THERE IS NO RELEVANT AUSTRALIAN STANDARD TEST METHOD THEN THE CURRENT APPROPRIATE ROAD AUTHORITY TEST METHOD OR OTHER SPECIFIED TEST METHOD SHALL BE USED. ALL TESTS SHALL BE CONDUCTED BY EXPERIENCED TESTING OFFICERS IN A LABORATORY ACCREDITED BY THE NATIONAL ASSOCIATION OF TESTING AUTHORITIES (NATA).

2.4 DETERMINATION OF THE NATURE AND QUANTITY(IES) OF THE EXISTING SITE MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR (GEOTECHNICAL REPORT PREPARED BY OTHERS).

THE GEOTECHNICAL REPORT WAS USED AS THE BASIS OF DESIGN. INTERPRETATION OF THE REPORT/S SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL ENGAGE THEIR OWN GEOTECHNICAL ENGINEER DURING CONSTRUCTION TO VERIFY ACTUAL SITE CONDITIONS.

2.5 THE CONTRACTOR SHALL BE DEEMED TO HAVE ALLOWED IN THE CONTRACT SUM FOR EXCAVATION IN ALL MATERIAL. NO ADDITIONAL PAYMENT SHALL BE MADE FOR EXCAVATION IN ROCK NOR ANY HARD OR SOFT MATERIAL

SUITABLE MATERIAL EXCAVATED FROM THE SITE MAY BE USED AS FILL ONLY WHERE APPROVED IN WRITING BY THE SUPERINTENDENT. OR WHERE SHOWN ON THE DRAWINGS

IMPORTED FILL SHALL BE APPROVED MATERIALS COMPRISING GRANULAR IGNEOUS WEATHERED ROCK OR QUARRY WASTE (SUCH AS 40mm CLASS 3 OR CLASS 4), SANDY CLAY OR WEATHERED SEDIMENTARY ROCK. THE FILL MATERIAL MAXIMUM PARTICLE SIZE AFTER COMPACTION SHALL NOT EXCEED 40mm, NOT LESS THAN 50% OF THE MATERIAL SHALL BE COARSER THAN 75 MICRON AND IT SHALL HAVE A LIQUID LIMIT NOT EXCEEDING 35%. GRANULAR MATERIAL SHALL BE WELL GRADED.

UNSUITABLE MATERIAL SHALL MEAN ANY MATERIAL WHICH CONTAINS VEGETABLE MATTER, ROOTS, STUMPS AND OR ANY OTHER PERISHABLE, FOREIGN OR DELETERIOUS MATTER, OR CONTAINS CLAY HAVING A LIQUID LIMIT EXCEEDING 80% AND OR A PLASTICITY INDEX EXCEEDING 50% OR CONTAINS ROCK. GRAVEL OR OTHER PIECES WHOSE LEAST DIMENSION EXCEEDS 100mm, OR IS SILTY MATERIAL OR IS OTHERWISE CONSIDERED AS BEING UNSUITABLE.

2.6 WHEN A SURFACE IS UNABLE TO SUPPORT CONSTRUCTION EQUIPMENT OR IT IS NOT POSSIBLE TO COMPACT THE OVERLYING MATERIALS BECAUSE OF HIGH MOISTURE CONTENT, THEN ONE OR MORE OF THE FOLLOWING ALTERNATIVE ACTIONS MAY BE TAKEN: A) ALLOW THE MATERIAL TO DRY TO A MOISTURE CONTENT WHICH ALLOW IT TO BE COMPACTED AND ALLOW THE PLACEMENT AND COMPACTION OF OVERLYING MATERIAL

B) SCARIFY THE MATERIAL TO A DEPTH OF 200mm AND WORK AS NECESSARY TO ACCELERATE DRYING. RECOMPACT AS SPECIFIED WHEN MOISTURE CONTENT APPROXIMATES OPTIMUM EXCAVATE AND REPLACE THE SOFT MATERIAL THE ACTION TO BE ADOPTED SHALL BE AT THE CONTRACTOR'S DISCRETION AND EXPENSE, BUT SHALL BE ADVISED TO THE SUPERINTENDENT BEFORE ACTION COMMENCES. IF THE CONTRACTOR ELECTS PURSUANT TO (A) ABOVE TO ALLOW THE MATERIAL TO DRY, RESULTING DELAYS, IF ANY, SHALL NOT CONSTITUTE GROUNDS FOR AN EXTENSION OF CONTRACT PERIOD OR DATE OF PRACTICAL COMPLETION.

2.7 THE NATURAL SUBGRADE SHALL BE MOISTURE CONDITIONED TO WITHIN THE RANGE 98% TO 102% OF STANDARD OPTIMUM MOISTURE CONTENT AND COMPACTED TO ACHIEVE A MINIMUM STANDARD DRY DENSITY RATIO TO A MINIMUM DEPTH OF 200mm. IF REQUIRED THE AREA SHOULD BE TYNED AND SCARIFIED FULL DEPTH TO FACILITATE THIS PROCESS.

2.8 ANY SOFT, WEAK OR UNSTABLE AREAS EXPOSED BY THE COMPACTION PROCESS, OR DURING TEST ROLLING, AND WHICH DO NOT RESPOND TO FURTHER COMPACTION OR MOISTURE CONDITIONING SHALL BE EXCAVATED AND REPLACED. THE CONTRACTOR SHALL BE DEEMED TO HAVE ASSESSED THE EXTENT OF UNSTABLE AREAS AND SHALL BE DEEMED TO HAVE INCLUDED IN THE CONTRACT SUM FOR ALL ACTIVITIES REQUIRED FOR UNSTABLE AREA RECTIFICATION INCLUDING THE DELIVERY PLACING AND COMPACTING OF APPROVED MATERIAL AS WELL AS THE EXCAVATION AND DISPOSAL OF REPLACED MATERIAL

2.9 THE FINISHED SUBGRADE SHALL NOT BE DISTURBED BY TRAFFIC OR OTHER OPERATIONS, AND SHALL BE PROTECTED AND MAINTAINED BY THE CONTRACTOR UNTIL THE FIRST LAYER OF FILL OR SUB-BASE IS PLACED THEREON. THE SUBGRADE SHALL BE KEPT DRAINED AND COMPLETELY FREE OF STANDING WATER AT ALL TIMES. THE CONTRACTOR SHALL PLAN AND CARRY OUT THE WHOLE OF THE WORKS TO MINIMISE THE EFFECTS OF RUN-OFF AND EROSION ON THE SITE AND ON DOWNSTREAM AREAS. THE CONTRACTOR SHALL AVOID UNNECESSARY GROUND DISTURBANCE AND PROVIDE AS NECESSARY FOR THE PROPER CONTROL OF STORMWATER RUN-OFF AT EVERY STAGE OF THE WORKS.

2.10 ALL FILL AND PAVEMENT MATERIALS SHALL BE COMPACTED IN LAYERS NOT EXCEEDING A MAXIMUM LOOSE THICKNESS OF 250mm TO THE DENSITIES SPECIFIED BELOW:

A) LANDSCAPED AREAS 95% STANDARD DRY DENSITY B) FILL UNDER ANY FOOTINGS AND FLOOR SLABS FOR ANY STRUCTURE

- FINE CRUSHED ROCK 98% MODIFIED DRY DENSITY C) FILL UNDER ROAD PAVEMENTS

- FINE CRUSHED ROCK 98% MODIFIED DRY DENSITY D) ROAD PAVEMENT MATERIALS

- SUBBASE AND BASE COURSE 98% MODIFIED DRY DENSITY

2.11 WHERE EXCAVATED MATERIAL IS NOT SUITABLE FOR FILLING. "IMPORTED FILL" SHALL BE USED. COMPACT IMPORTED BULK FILL IN LAYERS OF 150mm MAXIMUM COMPACTED DEPTH AND AT OPTIMUM MOISTURE CONTENT. THE CONTRACTOR SHALL CARRY OUT TESTING AT A FREQUENCY WHICH IS SUFFICIENT TO ENSURE THAT THE MATERIALS AND WORK SUPPLIED UNDER THE CONTRACT COMPLIES WITH THE SPECIFIED REQUIREMENTS AND CONFORMING TO AS3798 TABLE 8.1 (ADOPTING WHICHEVER GIVES THE MOST TEST RESULTS). NO FILL SHALL BE PLACED OVER LAYERS NOT TESTED AND HAVING UNSATISFACTORY RESULTS.

2.12 EXCAVATION TO THE LINES, LEVELS AND GRADES AS REQUIRED FOR UNDERGROUND SERVICES SPECIFIED IN THE RELEVANT SERVICES SECTIONS, INCLUDING DRAINAGE, HYDRAULIC, ELECTRICAL AND THE LIKE. UNLESS OTHERWISE SPECIFIED MAKE THE TRENCHES STRAIGHT BETWEEN MANHOLES. INSPECTION POINTS, JUNCTIONS AND THE LIKE, WITH VERTICAL SIDES AND UNIFORM GRADES. DEPTH SHALL BE AS REQUIRED BY THE RELEVANT SERVICES AND ITS BEDDING. CUT BACK ROOTS ENCOUNTERED IN TRENCHES TO LESS THAN 600mm CLEAR OF THE RELEVANT SERVICE. REMOVE SUCH OTHER OBSTRUCTIONS INCLUDING ROOTS, STUMPS, BOULDERS, REDUNDANT SERVICES AND THE LIKE WHICH MAY, IN THE

OPINION OF THE SUPERINTENDENT, INTERFERE WITH THE PROPER FUNCTIONING OF THE SERVICE. LAY AND BED SERVICES IN ACCORDANCE WITH THE RELEVANT SERVICES SPECIFICATION SECTION.

2.13 BACKFILL AND COMPACT SERVICE TRENCHES AS SOON AS POSSIBLE AFTER APPROVAL OF LAID AND BEDDED SERVICE. COMPACT BACKFILL IN PIPE TRENCHES SO THAT THE PIPE IS BUTTRESSED BY THE WALLS OF THE TRENCH.

2.14 WHERE FILLING IS DESIGNATED BY THE CONTRACT OR IS SHOWN ON THE DRAWINGS AS STRUCTURAL OR CONTROLLED FILL THE CONTRACTOR SHALL ENGAGE AN INDEPENDENT GEOTECHNICAI TESTING AUTHORITY TO SUPERVISE SUBGRADE PREPARATION, FILL PLACEMENT, COMPACTION AND TO UNDERTAKE SAMPLING AND TESTING AND REPORTING TO SATISFY THE REQUIREMENTS OF THIS SPECIFICATION AND THOSE OF AS 2870 AND AS 3798, FOR CONTROLLED FILL.

2.15 UNLESS OTHERWISE PERMITTED, NO FILLING SHALL BE PLACED AGAINST ANY STRUCTURES, WING WALLS OR RETAINING WALLS WITHIN FOURTEEN DAYS OF CASTING. STRUT WALLS AS NECESSARY TO PREVENT MOVEMENT DURING PLACING AND COMPACTION. PLACE AND COMPACT FILLING OVER AND AROUND PIPES, CULVERTS, BRIDGES AND OTHER STRUCTURES SO AS TO AVOID UNBALANCED LOADING OR MOVEMENT. UNLESS OTHERWISE DETAILED BACKFILL AT STRUCTURES SHALL BE FILLED AS FOLLOWS: A) WHERE THE GAP BETWEEN THE STRUCTURE AND UNDISTURBED GROUND EXCEEDS 2m, BACKFILL THE ZONE WITHIN 2m OF THE STRUCTURE WITH CLASS 3 FINE CRUSHED ROCK AND BACKFILL IN THE ZONE BEYOND 2m OF THE STRUCTURE WITH SELECT FILL TO THE APPROVAL OF THE SUPERINTENDENT OR CLASS 3 FINE CRUSHED ROCK. UNLESS OTHERWISE DETAILED, MATERIAL WITHIN 300mm OF WEEPHOLES SHALL BE AN APPROVED GRANULAR FILTER MEDIUM OF COARSE SAND OR CRUSHED STONE WRAPPED AND SURROUNDED WITH AN APPROVED GEOTEXTILE SEPARATION LAYER.

2.16 AREAS UPON WHICH FILL IS TO BE CONSTRUCTED, ALL LAYERS OF FILLING, AND MATERIALS LESS THAN 150mm BELOW PERMANENT SUBGRADE LEVEL IN CUT, SHALL BE COMPACTED SO AS TO BE CAPABLE OF WITHSTANDING TEST ROLLING, WITHOUT VISIBLE DEFORMATION OR SPRINGING, WITH A PNEUMATIC TYRED ROLLER OR HIGHWAY TRUCK BALLASTED TO COMPLY WITH THE FOLLOWING: A) PNEUMATIC TYRED - NOT LESS THAN 3t PER TYRE WITH TYRES INFLATED TO 550 kPa. B) HIGHWAY TRUCK - WITH REAR AXLE OR AXLES LOADED TO NOT LESS THAN 8t EACH WITH TYRES INFLATED TO 550 kPa TEST ROLLING SHALL BE CARRIED OUT IMMEDIATELY BEFORE OVERLYING LAYERS ARE PLACED. WHERE TEST ROLLING IS REQUIRED AT SOME LATER DATE, THE SURFACE SHALL BE MOISTURE CONDITIONED AS REQUIRED AND GIVEN NOT LESS THAN FOUR COVERAGES OF THE TEST ROLLER BEFORE TEST ROLLING COMMENCES.

2.17 THE WORK SHALL NOT BE ACCEPTED AS COMPLETE UNLESS ALL TEST RESULTS ARE PROVIDED TO THE SUPERINTENDENT AND APPROVED. THE CONTRACTOR SHALL PROVIDE ALL MATERIAL PROPERTY AND QUALITY TEST RESULTS TO THE SUPERINTENDENT

3. SITE CLEAN UP

3.1 ALL EXISTING REDUNDANT CONCRETE, PAVEMENT, SOIL, RUBBISH AND CONSTRUCTION DEBRIS SHALL BE TAKEN UP AND REMOVED FROM SITE.

3.2 PRIOR TO COMPLETION. THE CONTRACTOR SHALL ENSURE THE SITE OF WORKS IS TIDIED AND OBTAIN A CLEARANCE FROM THE SUPERINTENDENT.

3.3 APPROPRIATE CLEANING FACILITIES WILL BE INSTALLED ON SITE TO ENSURE THERE IS NO MUD. SOIL OR DEBRIS DEPOSITED BY VEHICLES ON ABUTTING PUBLIC ROADS.

3.4 SITE ACCESS ROADS AND ABUTTING PUBLIC ROADS TO BE REGULARLY SWEPT TO KEEP THEM CLEAN AND DEBRIS FREE.

4. STORMWATER DRAINAGE

4.1 ALL WORKMANSHIP AND MATERIALS SHALL COMPLY WITH THE CURRENT EDITIONS OF THE FOLLOWING AUSTRALIAN STANDARDS. - AS 1260 UNPLASTICISED PVC (UPVC) PIPES AND FITTINGS FOR SEWERAGE APPLICATIONS.

- AS 1597 PRECAST REINFORCED CONCRETE BOX CULVERTS PART 1, SMALL CULVERTS (NOT EXCEEDING 1200mm WIDTH AND 900mm

DEPTH). - AS 1631 CAST IRON NON-PRESSURE PIPES AND PIPE FITTINGS

- AS 1650 GALVANISED COATINGS
- AS 2032 CODE OF PRACTICE FOR INSTALLATION OF UPVC PIPE
- SYSTEMS - AS 2439 PERFORATED PLASTICS DRAINAGE AND EFFLUENT PIPE
- FITTINGS. PART 1, PERFORATED DRAINAGE PIPE AND ASSOCIATED FITTINGS
- AS 3500.3 NATIONAL PLUMBING AND DRAINAGE CODE, PART 3, STORMWATER DRAINAGE
- AS 3725 LOADS ON BURIED CONCRETE PIPES
- AS 4058 PRECAST CONCRETE PIPES (PRESSURE AND NON-PRESSURE)

4.2 ALL BEDDING TO BE TYPE H2 IN ACCORDANCE WITH AS3725 UNLESS NOTED OTHERWISE.

4.3 THE CONTRACTOR SHALL COMPLY WITH THE 'MINES (TRENCHES) REGULATIONS 1982' FOR ALL SHORING, SUPPORT OF TRENCHES, QUALIFICATIONS OF PERSONNEL AND NOTIFICATION TO THE **RESPONSIBLE AUTHORITY.**

4.4 TRENCHES MUST BE KEPT CLEAR OF WATER AT ALL TIMES AND TIMBERED >1m DEPTH WHERE NECESSARY TO PREVENT COLLAPSE.

4.5 SUITABLE SAFETY BARRIERS SHALL BE PROVIDED AROUND THE EXCAVATION AT ALL TIMES. THE BARRIERS SHALL BE SUITABLY ILLUMINATED OVERNIGHT TO THE SATISFACTION OF THE SUPERINTENDENT.

REV	DESCRIPTION	BY	DES	CHKD	DATE
P1	75% SCHEMATIC DESIGN ISSUE	D.H	A.N	B.K	28.11.2
P2	95% SCHEMATIC DESIGN ISSUE	J.G	A.N	B.K	13.12.2
P3	100% SCHEMATIC DESIGN ISSUE	J.G	A.M	B.K	20.12.2

STANDARD CIVIL NOTES

- AS 1657 FIXED PLATFORMS, WALKWAYS, STAIRWAYS AND LADDERS

- AS 3996 METAL ACCESS COVERS, ROAD GRATES AND FRAMES - AS 4139 FIBRE REINFORCED CONCRETE PIPES AND FITTINGS

4.6 PIPES SHALL BEAR EVENLY ON THE BED PREPARED AS SPECIFIED ABOVE AND LAID WITH THE SOCKETS POINTED UPGRADE. ALL PIPES SHALL BE LAID IN STRAIGHT LINES, TO TRUE INVERT LEVELS AND GRADES AS SHOWN ON PLANS. EACH PIPE SHALL BE SEPARATELY LEVELLED BETWEEN ACCURATELY ESTABLISHED GRADE POINTS. THE CONTRACTOR SHALL ADHERE TO THE DRAWINGS AND SHALL NOT BE PERMITTED TO VARY THE LINE, LEVELS OR LOCATION OF THE DRAIN WITHOUT THE SUPERINTENDENT'S WRITTEN APPROVAL.

4.7 ALL PIPE JOINTING SHALL BE CARRIED OUT IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN SPECIFICATIONS FOR THE TYPE OF PIPE BEING USED.

4.8 FOR REACTIVE CLAY SITES, ALL STORMWATER DRAINAGE CONNECTIONS SHALL BE PROVIDED WITH A MECHANICAL FLEXIBLE JOINT AT THE INTERFACE BETWEEN THE STRUCTURE AND IN-GROUND PIPE INSTALLATION.

4.9 WHERE ANY PIPE IS CUT INTO A LARGER PIPE, SUCH CONNECTION SHALL BE NEATLY MADE AND NO PART OF THE PIPE OR DOWNPIPE SHALL BE ALLOWED TO PROJECT. ANY CUT-IN JUNCTION SHALL BE MADE IN THE TOP HALF OF THE LARGER PIPE. SUCH JUNCTION TO CONCRETE PIPES SHALL BE SURROUNDED WITH A NEAT COLLAR OF CEMENT MORTAR AS DIRECTED BY THE SUPERINTENDENT OR AS DETAILED ON THE DRAWINGS. JUNCTIONS BETWEEN PVC PIPES SHALL USE PROPRIETY FITTINGS INTENDED FOR THE PURPOSE.

4.10 THE ENDS OF PIPES WHICH CONNECT WITH SIDE ENTRY, JUNCTION OR OTHER PITS SHALL BE NEATLY CUT TO FIT THE INNER FACE OF THE CONCRETE. WHERE UPVC PIPES ENTER/LEAVE PITS A RUBBER RING JOINT MANHOLE COUPLING SHALL BE CAST INTO THE PIT WALL.

4.11 ALL PITS AND ENDWALLS SHALL BE CONSTRUCTED IN THE POSITIONS AND TO THE LEVELS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE SUPERINTENDENT.

PIT COVERS SHALL BE PLACED IN ACCORDANCE WITH THE DETAIL SITE PLANS AND PIT SCHEDULE (IF PROVIDED) IN REGARD TO TYPE, SIZE, LOCATION AND LEVEL.

THE BASE OF EACH PIT SHALL BE INFILLED AND SHAPED WITH CONCRETE OR CEMENT MORTAR TO PROVIDE A SMOOTH FLOW PATH PIT COVER LEVELS ARE SHOWN FOR GUIDANCE ONLY. THE

CONTRACTOR SHALL ALLOW TO CONSTRUCT THE COVERS ON A SLOPE AS REQUIRED TO SUIT THE FINAL SURFACE SHAPES AND GRADES.

4.12 ALL DRAINAGE TO BE SETOUT A MINIMUM OF 1000mm FROM ADJACENT BUILDINGS UNLESS NOTED OTHERWISE.

4.13 ALL DRAINAGE PITS TO BE EITHER CAST IN-SITU CONCRETE PITS AS DETAILED OR AN APPROVED PRECAST PIT COMPLYING WITH THE RELEVANT AUSTRALIAN STANDARDS. CONTRACTOR TO OBTAIN APPROVAL FROM THE MAINTAINING AUTHORITY TO INSTALL PRECAST PITS. PITS LOCATED IN GROUND WATER OR COASTAL AREAS SHALL HAVE MINIMUM 80mm COVER TO REINFORCEMENT AT ALL FACES.

4.14 UNLESS NOTED OTHERWISE, ALL DRAINAGE PITS SHALL BE FITTED WITH BOLT-DOWN CONCRETE INFILL COVERS AND/OR FABRICATED STEEL GRATES COMPLYING WITH AS 3996 AS REQUIRED. OR AS DIRECTED BY SUPERINTENDENT.

4.15 UNLESS NOTED OTHERWISE, ALL PIT COVERS SHALL MEET THE FOLLOWING MINIMUM CLASS:

CLASS B FOR PITS WITHIN LANDSCAPING OR AREAS NOT SUBJECT TO VEHICLE TRAFFIC

CLASS C FOR PITS WITHIN LIGHT-VEHICLE TRAFFICKED AREAS AND PRIVATE ROADWAYS CLASS D FOR PITS WITHIN HEAVY-VEHICLE TRAFFICKED AREAS

AND/OR PUBLIC ROADWAYS IF ANY DISCREPANCY EXISTS BETWEEN THE ABOVE AND THE PIT SCHEDULE DRAWING, THE DISCREPANCY SHALL BE REFERRED TO THE SUPERINTENDENT FOR REVIEW AND DIRECTION.

4.16 CONTRACTOR TO ALLOW TO FINISH PITS FLUSH WITH SURROUNDING LEVELS ON COMPLETION. COVER LEVELS ON THE DRAWINGS AND PIT SCHEDULE ARE TO THE CENTER OF THE PIT AND MAY BE MODIFIED ONSITE ± 20mm TO MEET CONSTRUCTION TOLERANCES AND FINISHED PAVEMENT LEVELS.

4.17 ALL DOWNPIPES SHALL BE CONNECTED TO THE END OF A PIPE OR ELBOW AND WHICH THEY SHALL ENTER CENTRALLY. WHERE PVC DOWNPIPES AND UNDERGROUND DRAINAGE ARE USED. THE DOWNPIPES SHALL BE CONNECTED TO THE UNDERGROUND DRAINS WITH SUITABLE STANDARD FITTINGS, BENDS ETC AND WITH SOLVENT JOINTS. THE CONTRACTOR SHALL LAY AND GRADE DRAINS FROM DOWNPIPES TO COMPLY WITH THE REQUIREMENTS FOR PIPE MATERIAL AND COVER REQUIRED BY AS3500.3. WHERE THE REQUIREMENTS OF AS3500.3 CANNOT BE MET THE CONTRACTOR SHALL REFER THE MATTER TO THE SUPERINTENDENT.

4.18 UNLESS NOTED OTHERWISE, ALL DOWNPIPES & GRATED INLETS SHALL BE CONNECTED TO PITS OR MAIN STORMWATER DRAINS WITH PVC SN8 OR SN10 OF THE FOLLOWING SIZES LAID AT MINIMUM GRADE OF 1 IN 100:

A) 100Ø SN10 FOR DOMESTIC CONSTRUCTION

B) 150Ø SN8 FOR COMMERCIAL/INDUSTRIAL CONSTRUCTION C) 100Ø SN10 FOR BASEMENT GRATED INLETS

D) IF U.P.V.C. OR OTHER PIPES ARE TO BE USED, APPROVAL MUST **BE GIVEN BY THE SUPERINTENDENT**

E) GREEN STAR PROJECTS SHALL SUBSTITUTE PVC WITH APPROVED EQUIVALENT HDPE OR PP PIPES.

4.19 ALL IN GROUND DOWNPIPE CONNECTIONS ARE TO BE 150Ø UPVC OR EQUAL TO THE DOWNPIPE SIZE, WHICHEVER IS GREATER, UNLESS SHOWN OTHERWISE. DOWNPIPE CONNECTIONS TO THE MAIN STORMWATER DRAINAGE SHALL BE VIA A 45° OBLIQUE JUNCTION OR BANDAGE JOINT AS DETAILED OR DIRECT TO A STORMWATER PIT. SUSPENDED DOWNPIPE CONNECTIONS WITHIN THE BUILDING ARE TO BE SUPPORTED WITH APPROVED HANGERS AT 1.2m CENTRES. THE ALIGNMENT OF SUSPENDED DRAINS IS SCHEMATIC ONLY. THE FINAL

ALIGNMENT IS TO COMPLY WITH THE ARCHITECTURAL PLANS.

4.20 ALL MAIN STORMWATER DRAINS SHALL BE CONSTRUCTED USING ONE OF THE FOLLOWING TYPES OF PIPES WITH RUBBER RING JOINTS:

A) 300Ø AND ABOVE, MIN. CLASS 2 RCP OR SHOWN OTHERWISE ON PLAN IN ACCORDANCE WITH AS4058

B) 100Ø STIFFNESS SN10. 150Ø AND ABOVE STIFFNESS SN8 P.V.C. IN ACCORDANCE WITH AS1260 C) CLASS 2 F.R.C. OR SHOWN OTHERWISE ON PLAN TO AS4139

D) IF U.P.V.C. OR OTHER PIPES ARE TO BE USED, APPROVAL MUST BE GIVEN BY THE SUPERINTENDENT. E) ALL STORMWATER DRAINAGE PIPES 225Ø AND LESS TO BE SEWER QUALITY UPVC WITH SOLVENT WELDED JOINTS, UNLESS NOTED

4.21 FOR SYPHONIC ROOF DRAINAGE SYSTEMS, REFER TO HYDRAULIC DRAWINGS FOR SIZE OF ALL CONNECTIONS BETWEEN DOWNPIPES AND MAIN STORMWATER DRAINS. THE CONNECTOR TO THE STORMWATER SYSTEM SHALL HAVE THREE TIMES THE CAPACITY OF THE FLOW RATE FROM THE SYPHONIC SYSTEM.

OTHERWISE.

4.22 FOR SUBSOIL DRAINAGE, 100Ø CLASS 1000 IN THE ROAD RESERVE AND CLASS 400 UPVC AGI (AG) DRAINS ELSEWHERE WITH 20mm N.S. SCREENINGS BACKFILL SHALL BE INSTALLED BEHIND ALL KERBING AND RETAINING WALLS UNLESS OTHERWISE NOTED, AT MINIMUM GRADE OF 1 IN 250 AND CONNECTED TO THE NEAREST DRAIN OR PIT. WHERE AGI DRAINS PASS UNDER SLABS OR PAVEMENTS, UNSLOTTED SECTIONS OF PIPE ARE TO BE USED.

4.23 THE CONTRACTOR SHALL ENSURE THAT CONSTRUCTION MACHINERY DOES NOT TRAFFIC DIRECTLY OVER STORMWATER DRAINAGE. WHERE THIS IS NOT POSSIBLE. ENSURE THAT MINIMUM 300mm COVER IS PROVIDED OVER THE STORMWATER DRAINAGE FOR THE DURATION OF THE WORKS. WHERE MINIMUM COVER OVER STORMWATER DRAINAGE IS NOT AVAILABLE. THE CONTRACTOR SHALL USE APPROPRIATE MEASURES TO PROTECT THE INTEGRITY OF THE PIPE OR INCREASE THE CLASS OF THE PIPE.

4.24 FOR BASEMENTS WITHIN THE GROUNDWATER TABLE, ALL STORMWATER DRAINAGE CONNECTIONS ARE TO BE SEALED WITH AN APPROVED SEALANT TO PREVENT GROUNDWATER INGRESS INTO THE DRAINAGE SYSTEM, AND FIXED IN PLACE TO PREVENT FLOTATION DUE TO BUOYANCY, UNLESS NOTED OTHERWISE.

4.25 UNLESS NOTED OTHERWISE, GROUNDWATER IS NOT TO BE DISCHARGED INTO THE LOCAL STORMWATER SYSTEM IN THE PERMANENT CONDITION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A TRADE WASTE AGREEMENT WITH THE RELEVANT AUTHORITY FOR THE TEMPORARY DISCHARGE OF GROUNDWATER DURING CONSTRUCTION.

4.26 IN CIRCUMSTANCES WHERE FIRE TEST DRAINS HAVE BEEN CONNECTED TO THE STORMWATER SYSTEM, TESTS CANNOT BE CARRIED OUT WITHIN ONE HOUR OF A STORM EVENT.

4.27 OUTFALL DRAINAGE CONNECTION INVERT LEVELS ARE TO BE VERIFIED & CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF ANY WORKS ON SITE. ANY DISCREPANCIES TO BE NOTIFIED TO THE SUPERINTENDENT.

4.28 SUPPLY APPARATUS AND MATERIALS NECESSARY FOR, AND CARRY OUT THE TESTS REQUIRED BY THE SPECIFICATION OR REGULATORY AUTHORITIES, IN THE PRESENCE OF THE SUPERINTENDENT AND THE RELEVANT AUTHORITY. LEAVE PIPE JOINTS EXPOSED TO ENABLE OBSERVATION DURING THE TESTS. ENSURE PVC SOLVENT CEMENT JOINTS HAVE BEEN CURED FOR AT LEAST 24 HOURS BEFORE TESTING.

4.29 THE CONTRACTOR SHALL PRESSURE TEST WITH WATER, ALL STORMWATER PIPEWORK IN OR UNDER THE STRUCTURE, IN ACCORDANCE WITH AS 3500.3.

4.30 WHERE WATER TANKS ARE SPECIFIED, APPROPRIATE FILTERS ARE TO BE INCORPORATED TO ENSURE GROSS POLLUTANTS AND LITTER ARE PREVENTED FROM ENTERING THE TANKS. NOMINAL APERTURE SIZE OF 5mm IS RECOMMENDED. AN EFFECTIVE MAINTENANCE PROGRAM INCLUDING REGULAR CLEANING OF FILTERS IS TO BE ADOPTED TO ENSURE SYSTEM REMAINS FULLY FUNCTIONAL.

4.31 PROPRIETARY STORMWATER FILTRATION/TREATMENT SYSTEMS AND PUMPS ARE TO BE INSTALLED AND CONSTRUCTED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.

4.32 FOR SITES WHERE STORMWATER INFRASTRUCTURE IS CONSIDERED A LIGATURE RISK. THE CONTRACTOR IS RESPONSIBLE FOR PROCURING SUITABLE ANTI-LIGATURE PRODUCTS FOR PIT LIDS, GRATES. ETC.

5. CONCRETE

5.1 ALL WORKMANSHIP AND CONCRETE MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE FOLLOWING AUSTRALIAN STANDARDS AS APPLICABLE, THE SPECIFICATION AND DETAILS ON THE DRAWINGS UNLESS INSTRUCTED OTHERWISE BY THE

- SUPERINTENDENT: - AS 1012 METHODS OF TESTING CONCRETE
- AS 2758.1 DENSE NATURAL AGGREGATES
- AS 1478 CHEMICAL ADMIXTURES FOR USE IN CONCRETE
- AS 1379 READY MIXED CONCRETE - AS 3972 PORTLAND AND BLENDED CEMENTS
- AS 1302 STEEL REINFORCING BARS FOR CONCRETE
- AS 1303 HARD DRAWN STEEL REINFORCING WIRE FOR CONCRETE - AS 1304 HARD DRAWN STEEL WIRE REINFORCING FABRIC FOR
- CONCRETE
- AS 3600 CONCRETE STRUCTURES

 AS 3610 FORMWORK FOR CONCRETE THE WATER USED SHALL BE FREE OF ALL SUBSTANCES HARMFUL TO CONCRETE AND ITS REINFORCEMENT. ADMIXTURES SHALL NOT BE USED WITHOUT WRITTEN PERMISSION FROM THE SUPERINTENDENT, ALL CONCRETE SHALL BE READY MIXED

5.2 UNLESS OTHERWISE SPECIFIED, SHOWN ON THE DRAWINGS, OR DIRECTED BY THE SUPERINTENDENT, REINFORCEMENT FOR CONCRETE SHALL BE FREE FROM ANY COATING WHICH WILL REDUCE, OR PREVENT BONDING OF THE CONCRETE TO THE STEEL.

5.3 UNLESS OTHERWISE SHOWN ON THE DRAWINGS, THE MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 1.5 TIMES THE DIAMETER OF THE BARS OR 40mm, WHICHEVER IS GREATER, AND 80mm COVER IN GROUNDWATER OR COASTAL AREAS.

5.4 ALL KERBS, KERB & CHANNEL, SPOON DRAINS ETC, SHALL BE LAID OVER 75mm MINIMUM DEPTH OF COMPACTED CLASS 2 CRUSHED ROCK, UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

5.5 WHERE REQUIRED MATCH ALL NEW KERBS TO EXISTING LEVEL NEATLY, ENSURING MINIMUM 1 IN 200 GRADE, SAW CUTTING AND REINSTATING PAVEMENT IN FRONT OF KERB TO FALL TOWARDS OR AWAY FROM NEW KERB LEVEL.

5.6 SCHEDULE OF CONCRETE PROPERTIES TO BE USED FOR THE PARTICULAR SECTION OF WORK SHALL BE AS FOLLOWS UNLESS STATED OTHERWISE INSTRUCTED OR SHOWN ON THE DRAWINGS: (MIX DESIGNS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE SUPERINTENDENT FOR INSPECTION 28 DAYS PRIOR TO POUR).

LOCATION	GRADE (MPa)	MAX. AGGREGATE (mm)	SLUMP (mm)
KERBS, PITS, HEADWALLS	N25	20	80±15
FOOTPATHS, RETAINING WALLS	N32	20	80±15
		20	80 + 15

VEHICULAR PAVEMENT [N32 TYPE 1] 20 TYPE 1 CONCRETE SHALL HAVE THE PROPERTIES OF NORMAL N32 CONCRETE WITH A FLEXURAL STRENGTH OF F't=4.4MPa

5.7 ALL REINFORCEMENT IN SLABS AND BEAMS SHALL BE SUPPORTED ON CHAIRS TO GIVE THE REQUIRED COVER. SPACING OF REINFORCEMENT CHAIRS SHALL NOT EXCEED 800mm IN ANY DIRECTION.

.8 MINIMUM LAPS FOR REINFORCEMENT SHALL BE AS FOLLOWS, INLESS NOTED OTHERWISE:									
FABRIC	 2 CROSS WIRES + 25	mm							
			1100						
N12:	400mm.		1100mm						
N16:	600mm.	N28:	1350mm						
N20:	800mm.	N32:	1500mm						
COG AND HOOK PIN	I DIAMETERS AND OV	ERALL	DIMENSIONS						
SHALL BE AS PER T	HE REQUIREMENTS C	F AS 3	3600 UNLESS						
NOTED OTHERWISE									

5.9 ALL BAR CRANKS SHALL BE NO GREATER THAN 1 IN 6, UNLESS NOTED OTHERWISE. REINFORCEMENT GRADES SHALL BE AS FOLLOWS:

BARS:	GRA
FABRIC:	HAR
4671.	
LIGS & TIES:	HAR

AS/NZS 4671. ANY STEELWORK SOURCED FROM MILLS LOCATED OUTSIDE AUSTRALIA ARE TO BE PROVIDED WITH CERTIFICATES PROVING ABOVE REQUIREMENTS VERIFIED BY NATA REGISTERED ORGANISATIONS.

5.10 CONSTRUCTION JOINTS, WHERE NOT SHOWN ON THE DRAWINGS, SHALL BE LOCATED TO THE APPROVAL OF THE SUPERINTENDENT.

5.11 THE MINIMUM CLEAR SPACING BETWEEN CONDUITS, CABLES, PIPES AND BARS SHALL BE AS REQUIRED BY AS 3600 BUT NOT LESS THAN THREE DIAMETERS HORIZONTALLY FOR HORIZONTAL CONDUITS, ETC. IN SLABS, WALLS AND FOOTINGS AND NOT LESS THAN ONE DIAMETER FOR ALL OTHER CONDUITS. ETC. ALL PRIMARY REINFORCEMENT SHALL BE PLACED OUTERMOST.

5.12 CONCRETE SHALL NOT BE PLACED UNTIL THE SUPERINTENDENT HAS EXAMINED BOTH FORMWORK AND REINFORCEMENT IN PLACE AND GIVEN THEIR CONSENT TO PROCEED. 48 HOURS NOTICE SHALL BE GIVEN TO THE SUPERINTENDENT BEFORE PLACEMENT OF ANY CONCRETE HAS COMMENCED. CONCRETE SHALL NOT BE PLACED UNDER WATER OR DROPPED THROUGH A DISTANCE GREATER THAN 1.5M WITHOUT THE CONSENT OF THE SUPERINTENDENT. DURING AND IMMEDIATELY AFTER THE PLACING OPERATION CONCRETE SHALL BE THOROUGHLY COMPACTED BY TAMPING, VIBRATION OR OTHER MEANS APPROVED BY THE SUPERINTENDENT. THE CONCRETE SHALL BE SPRAYED WITH AN APPROVED CURING MEMBRANE SUCH AS CONCURE WB. IN STRICT ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION.

6. CONCRETE JOINTING

6.1 THE JOINTS IN THE NEW WORK SHALL COINCIDE WITH THOSE IN ABUTTING CONCRETE PAVING, OR OTHER JOINTED WORK, WHICH IS EITHER EXISTING OR PROPOSED. IF THE SPACING OF THE JOINTS IN EXISTING OR PROPOSED WORK IS VERY MUCH GREATER THAN THAT SPECIFIED FOR THE NEW WORK THEN ONE OR MORE EQUALLY SPACED JOINTS SHALL BE MADE IN THE NEW WORK BETWEEN EXISTING OR PROPOSED JOINTS SUCH THAT THE SPECIFIED SPACING WILL BE RETAINED AS NEATLY AS POSSIBLE.

6.2 N12 DIAGONAL CORNER BARS 1200 LONG ARE REQUIRED AT ALL RE-ENTRANT CORNERS OF OPENINGS IN FOOTPATHS.

6.3 EDGINGS

NSW

STANDARD NOTES

School Infrastructure

WHEN USING AN EXTRUSION MACHINE THE JOINTS SHALL BE MADE BY A METHOD APPROVED BY THE SUPERINTENDENT. WHEN USING FORMWORK, THEY SHALL CONSIST OF 3mm THICK STEEL PLATE PROFILED TO MATCH THE ITEM BEING CONSTRUCTED AND SHALL

MEIN-ARDT

CONCRETE.

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ADE 500N TO AS/NZS 4671. RD DRAWN WIRE FABRIC TO AS/NZS

RD DRAWN WIRE, GRADE 450W, TO

HAVE AN AREA NOT LESS THAN 75% OF THE SECTION BEING CONSTRUCTED. AS SOON AS IT IS PRACTICABLE AFTER THE FINISHING OF ANY WORK, THE TEMPLATES SHALL BE REMOVED AND THE RESULTANT GAP FINISHED WITH A GROOVING TOOL TO A DEPTH OF NOT LESS THAN 25mm TO PRODUCE A NEAT GROOVE WITH ROUNDED ARISES. JOINTS SHALL BE AT REGULAR INTERVALS AND THE SPACING BETWEEN JOINTS SHALL NOT EXCEED 3 METRES WITHOUT THE APPROVAL OF THE SUPERINTENDENT.

6.4 PROVIDE EXPANSION JOINTS AT 30m MAXIMUM CENTRES AND OR COINCIDE WITH THE JOINT SPACING IN THE ADJACENT ROADS OR FOOTPATHS. EXPANSION JOINTS SHALL ALSO BE PLACED AT EACH TANGENT POINT (START AND END OF HORIZONTAL CURVES) AND EACH SIDE OF LAYBACKS OR THE LIKE. THE EXPANSION JOINTS SHALL CONSIST OF 15mm THICK PREFORMED CORK OF THE FULL SHAPE OF THE ABUTTING KERB OR KERB AND CHANNEL ETC. NO EXPANSION OR OTHER CONSTRUCTION JOINT SHALL BE MADE WITHIN A DISTANCE OF 3m OF ANY RETURN IN THE KERBS OR FINISHING POINT OF THE CHANNEL.

6.5 FOOTPATHS AND SURFACING

EXPANSION JOINTS SHALL BE PLACED AT INTERVALS NOT EXCEEDING 15m, ON EITHER SIDE OF VEHICLE CROSSINGS, AT CHANGES IN DIRECTION, AND AT JUNCTIONS WITH BRIDGES. THEY SHALL BE 15mm WIDE AND FILLED WITH AN APPROVED CORK FILLER EXTENDING FOR THE FULL WIDTH AND FULL DEPTH OF THE PAVING. THE FILLER SHALL BE PLACED IN POSITION BEFORE

CONCRETE IS PLACED, AND SHALL BE HELD FIRMLY IN POSITION DURING THE PLACING OF THE CONCRETE. WHERE POSSIBLE IT SHALL BE GLUED WITH AN APPROVED WATERPROOF GLUE TO THE EXISTING FACE OF THE JOINT.

TOOLED OR SAWCUT JOINTS AT LEAST 30mm DEEP AND 5mm WIDE SHALL BE FORMED WITH A CUTTING TOOL AT INTERVALS NOT EXCEEDING 2.5m OR AS DIRECTED BY THE SUPERINTENDENT.

6.6 JOINTS BETWEEN EDGINGS/FOOTPATHS/SURFACING/STRUCTURES: EXCEPT ON NARROW MEDIANS (LESS THAN 0.6m WIDE) SURFACED FULL WIDTH, BOND BETWEEN THE CONCRETE ELEMENT AND OTHER STRUCTURE SHALL BE PREVENTED BY USING A STRIP OF 12mm PREFORMED CORK FILLER OR OTHER APPROVED MATERIAL BETWEEN THEM.

6.7 VEHICULAR PAVEMENT JOINTS JOINTING SHALL BE CONSTRUCTED AS DOCUMENTED. WHERE AN ALTERNATIVE JOINTING SOLUTION HAS BEEN ADOPTED WITHOUT THE

SUPERINTENDENT'S APPROVAL, THE CONTRACTOR IS RESPONSIBLE FOR ANY LIABILITY ARISING FROM THE PERFORMANCE OF THE PAVEMENTS.

6.8 DOWELLED SAWCUT, EXPANSION AND CONSTRUCTION JOINTS SHALL BE PROVIDED AS SPECIFIED TO ALL VEHICULAR PAVEMENTS NOT EXCEEDING 6.0m INTERVALS. JOINT SPACING SHALL ENSURE SLAB LENGTH IS NO GREATER THAN 1.5 TIMES SLAB WIDTH. EXPANSION JOINTS SHALL BE NO GREATER THAN 25m INTERVALS.

6.9 ALTERNATIVE DOWEL SYSTEMS MUST NOT BE USED WITHOUT THE PRIOR CONSENT OF THE SUPERINTENDENT. THE SUBCONTRACTOR SHALL SUBMIT A MANUFACTURER SPECIFICATION AND TESTING DATA OF THE PROPOSED SAMPLE FOR APPROVAL.

6.10 EXPOSED SURFACES

ALL EDGINGS SHALL BE RENDERED WITH A STEEL TROWEL FINISH UNLESS SPECIFIED OTHERWISE BY THE LANDSCAPE ARCHITECT. FRESH FOOTPATH AND SURFACING CONCRETE SHALL BE COMPACTED AND WORKED UNTIL ALL OF THE COARSE AGGREGATE IS BELOW THE SURFACE THE MORTAR COMES TO THE TOP. IT SHALL THEN BE STRUCK OFF AND FINISHED WITH A WOODEN FLOAT. AS SOON AS THE CONCRETE HAS SET SUFFICIENTLY. SUITABLE FILLING SHALL BE PLACED AND THOROUGHLY COMPACTED BEHIND AND UP TO THE LEVEL OF THE TOP OF THE KERB.

7. PAVEMENTS

7.1 ALL PAVEMENT MATERIALS SHALL COMPLY WITH THE RESPONSIBLE STATE/ROAD AUTHORITY STANDARD SPECIFICATIONS AND BE OF CONSISTENT QUALITY.

7.2 ALL BASE COURSE AND SUB-BASE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL UNLESS SPECIFIED OTHERWISE AND COMPLY WITH THE RESPONSIBLE STATE/ROAD AUTHORITY STANDARD SPECIFICATIONS.

7.3 AS AN ALTERNATIVE TO THE USE OF IGNEOUS ROCK AS A SUB-BASE MATERIAL, A CERTIFIED RECYCLED CRUSHED CONCRETE MATERIAL COMPLYING WITH STATE/ROAD AUTHORITY STANDARDS WILL BE CONSIDERED SUBJECT TO MATERIAL SAMPLES AND APPROPRIATE CERTIFICATIONS BEING PROVIDED TO THE SATISFACTION OF THE SUPERINTENDENT.

7.4 CONCRETE PAVEMENT

N16 DIAGONAL CORNER BARS 1200mm LONG ARE REQUIRED AT ALL RE-ENTRANT CORNERS OF OPENINGS IN PAVEMENT SLABS.

7.5 ALL EXISTING PAVEMENT ADJACENT TO THE PROPOSED KERB OR PROPOSED JOINTS SHALL BE SAWCUT IN A NEAT LINE TO THE SATISFACTION OF THE SUPERINTENDENT AND HAVE 300mm OVERLAP.

7.6 ALL TRENCHING WORKS IN EXISTING PAVEMENTS SHALL BE NEATLY SAWCUT, NEW PAVEMENT REINSTATED WITH DOWELS AND TO NEATLY MATCH EXISTING LEVELS.

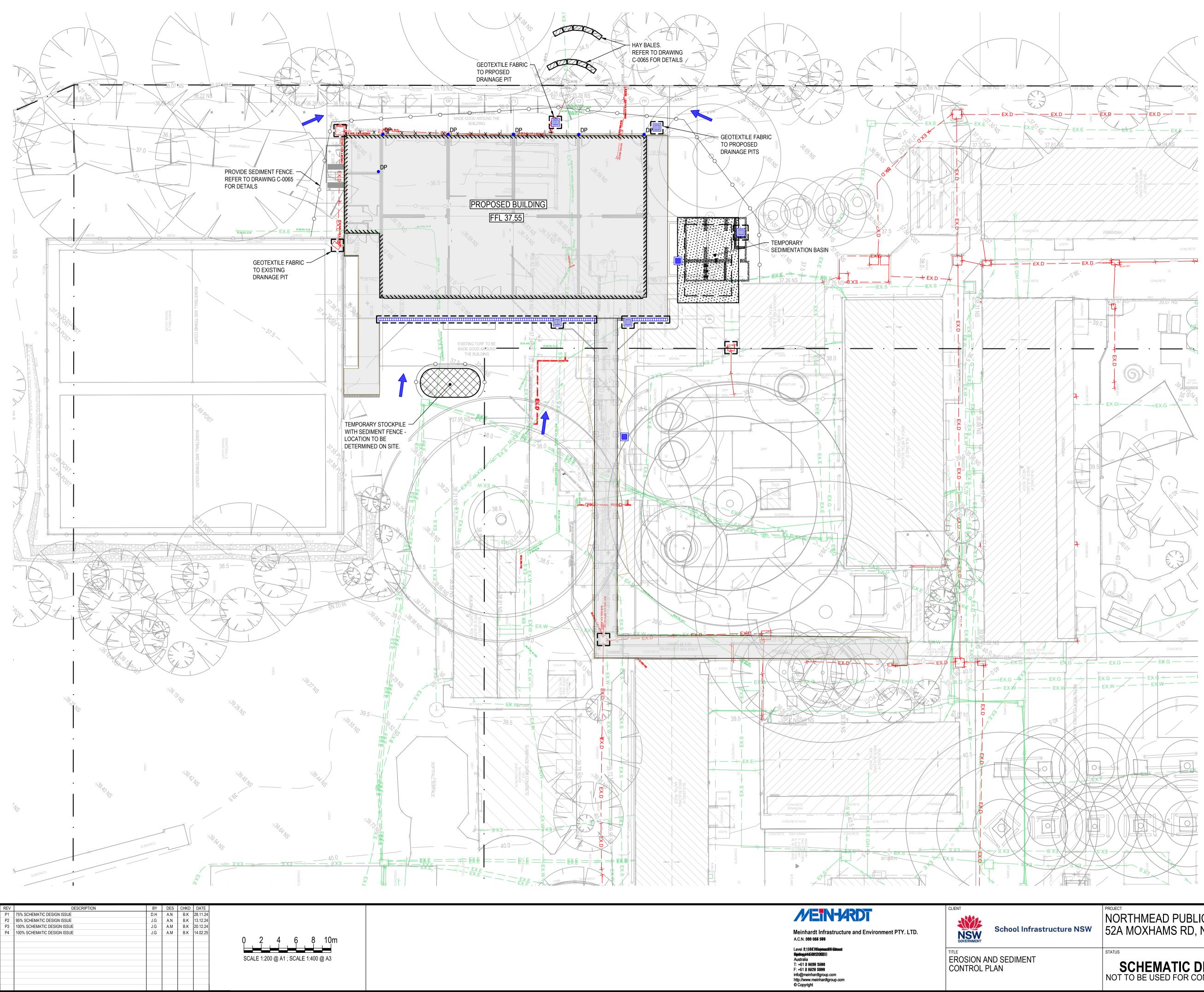
7.7 ASPHALT PAVEMENT

ASPHALT LAYERS UP TO 50mm THICKNESS SHALL BE COMPACTED TO 94% CHARACTERISTIC VALUE OF DENSITY RATIO

ASPHALT LAYERS GREATER THAN 50mm THICKNESS SHALL BE COMPACTED TO 96% CHARACTERISTIC VALUE OF DENSITY RATIO. ASPHALT WEARING COURSE SHALL NOT BE LAID IN THE RAIN, AND THE PREPARED PAVEMENT BASE LAYERS SHALL BE DRY AND FREE OF EXCESS MOISTURE PRIOR TO THE LAYING OF ASPHALT.

7.8 THE SURFACE FINISH OF THE ASPHALT LAYERS SHALL BE OF UNIFORM COMPOSITION AND OF CONSISTENT DENSITY, ANY 'BONEY' OR UNEVEN AREAS THAT ARE EVIDENT SHALL BE FULLY REWORKED TO THE SUPERINTENDENT'S SATISFACTION.

NSW	NORTHMEAD PUBLIC SCHOOL 52A MOXHAMS RD, NORTHMEAI	D NSV	V 2152	2			
	STATUS	DRAWN	DESIGNED	CHECKED	APPROVED	DATE	SCALE @ A1
	SCHEMATIC DESIGN	J.G	A.N	B.K	B.L		N.T.S
	NOT TO BE USED FOR CONSTRUCTION	PROJECT No		DRAWING No			REV
		132567		NPS-MH	P3		





	LEGEND
ITEM	DESCRIPTION
— — 37.00· — —	EXISTING SURFACE CONTOURS
· ·	TITLE BOUNDARY
— — EX.D —	EXISTING STORMWATER DRAIN
	EXISTING STORMWATER PIT
— — EX.S —	EXISTING SEWER
— — EX.G —	EXISTING GAS
— — EX.W —	EXISTING WATER
— — EX.W(R) —	EXISTING RECYCLED WATER
— — EX.E —	EXISTING ELECTRICITY
— — EX.E O/H —	EXISTING OVERHEAD ELECTRICITY
— — EX.E L/V —	EXISTING LOW VOLTAGE ELECTRICITY
— — EX.E H/V —	EXISTING HIGH VOLTAGE ELECTRICITY
— — EX.T —	EXISTING TELECOM CABLE
— — EX.FO—	EXISTING FIBRE OPTIC CABLE
— — EX.NBN —	EXISTING NBN COMMS CABLE
—X— —X—	EXISTING FEATURES TO BE REMOVED
	EXISTING TREE
/	HOARDING/SECURITY FENCE
O	SEDIMENT FENCE
	STABILISED SITE ACCESS
	SEDIMENT BASIN (LOCATION TBC ON-SITE)
	TEMPORARY STOCKPILE (LOCATION TBC ON-SITE)
	TEMPORARY STORMWATER DIVERSION GRAVEL TRENCH
	TEMPORARY GRAVEL DIVERSION BASIN WITH STRAW BALES AND GEOFABRIC FILTER SURROUND (LOCATION TBC ON-SITE)
	GEOTEXTILE PIT FILTER / FILTER SURROUND INSTALLED ON EXISTING PIT
	SANDBAGS INSTALLED ON EXISTING PIT
	ON-GRADE KERB INLET SEDIMENT TRAP
	OVERLAND FLOW
	HAY BALES



WARNING

BEWARE OF UNDERGROUND SERVICES THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

NORTHMEAD PUBLIC SCHOOL 52A MOXHAMS RD, NORTHMEAD NSW 2152

SCHEMATIC DESIGN

DRAWN	DESIGNED	CHECKED APPROVED DATE		SCALE @ A1	
J.G	A.N	B.K B.L			1:200
PROJECT No		DRAWING No	REV		
132	567	NPS-MH	P4		

SOIL AND WATER MANAGEMENT NOTES

- IT HAS BEEN ASSUMED THAT HOARDINGS/SILT FENCING WILL BE PROVIDED TO THE STAGE BOUNDARY SUFFICIENT TO PREVENT SEDIMENT RUNOFF FROM LEAVING SITE (EXCEPT IN THE CASE OF ENTRY/EXIT LOCATIONS WHERE TEMPORARY CONSTRUCTION ENTRY/EXIT SEDIMENT TRAP ARE PROVIDED). IF THIS IS NOT THE CASE, PROVIDE SEDIMENT FENCE TO STANDARD DETAIL BELOW AS REQUIRED TO PREVENT SEDIMENT FROM LEAVING SITE, DIRECT RUNOFF TO SEDIMENT BASIN.
- ALL SEDIMENT CONTROL MEASURES TO BE INSTALLED IN ACCORDANCE WITH LANDCOM MANAGING URBAN STORMWATER "BLUE BOOK".
- MINIMISE CLEARING OUTSIDE BASEMENT EXTENT AND IN ACCORDANCE WITH THE ARBORIST REPORT.
- SEDIMENT CONTROL FOR LANDSCAPED WORKS DOWNSTREAM OF THE BUILDING TO INCLUDE A SILTFENCE AND SANDBAGS AS REQUIRED. INSTALL BUND TO DIVERT UPSTREAM CATCHMENT AWAY FROM DISTURBED SOIL AREA. TO BE MANAGED AT A RATE OF 166L/S PER HA BY THE CONTRACTOR ON SITE.

SEDIMENT CONTROL CONDITIONS

- SEDIMENT FENCES WILL BE INSTALLED AS SHOWN AND ELSEWHERE AT THE DISCRETION OF THE SITE MANAGER TO CONTAIN COARSER SEDIMENT FRACTIONS INCLUDING AGGREGATED FINES) AS NEAR AS POSSIBLE TO THEIR SOURCE.
- SEDIMENT REMOVED FROM ANY TRAPPING DEVICE WILL BE RELOCATED WHERE FURTHER POLLUTION TO DOWNSLOPE LANDS & WATERWAYS CANNOT OCCUR.
- STOCKPILES WILL BE PLACED WHERE SHOWN ON DRAWING OR ELSEWHERE AT THE DISCRETION OF THE SITE MANAGER AND NOT WITHIN 5m OF HAZARD AREAS INCLUDING LIKELY AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS & DRIVEWAYS.
- WATER WILL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM WITH INLET FILTERS (SEE DETAILS) UNLESS IT IS SEDIMENT FREE.
- TEMPORARY SEDIMENT TRAPS WILL BE RETAINED UNTIL AFTER THE LANDS THEY ARE PROTECTING ARE COMPLETELY REHABILITATED.
- CONTRACTOR TO DESIGN/SIZE/CONSTRUCT TEMPORARY SEDIMENT BASIN, WATER SHOULD BE ALLOWED TO SETTLE BEFORE DISCHARGE. CONTRACTOR MUST VERIFY THAT WATER QUALITY MEETS AUTHORITIES REQUIREMENTS PRIOR TO DISCHARGE . ACCUMULATED SEDIMENT SHOULD THEN BE REMOVED & DISPOSED OF IN ACCORDANCE WITH ENVIRONMENTAL MANAGEMENT PROCEDURES

SITE INSPECTION & MAINTENANCE CONDITIONS THE SITE MANAGER WILL INSPECT THE SITE AT LEAST WEEKLY AND WILL:

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

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

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

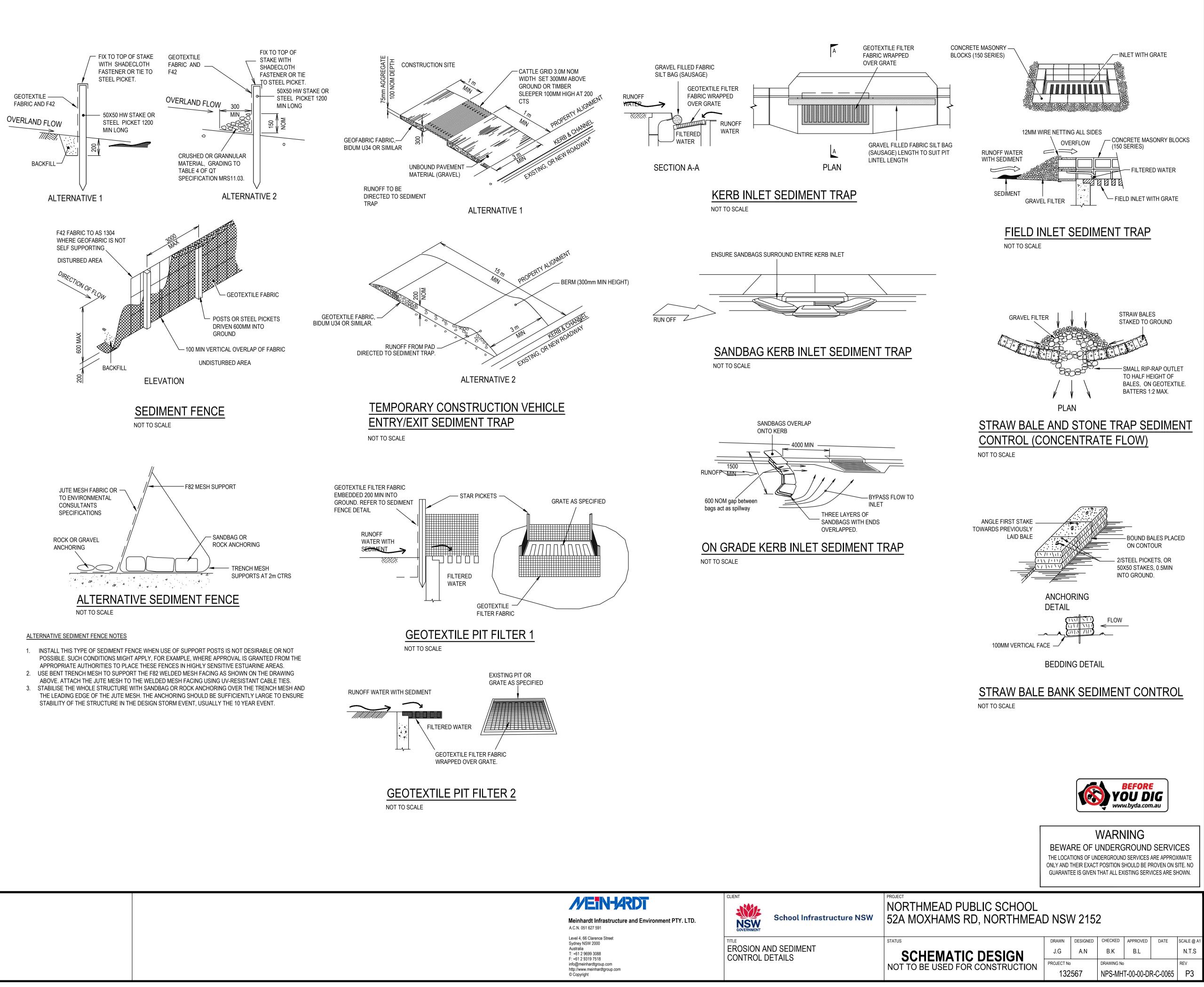
THE BOOK WILL BE KEPT ONSITE & MADE AVAILABLE TO ANY AUTHORISED PERSON ON REQUEST. IT WILL BE GIVEN TO THE PROJECT MANAGER AT THE CONCLUSION OF WORKS.

TREE PROTECTION

REFER TO ARBORIST REPORT FOR THE EXTENT OF TREES PROTECTION ZONE AND THE PROTECTION MEASURES REQUIRED.

RAILCORP

ALL SURFACE WATER TO BE EITHER DIVERTED INTO SWALE OR DIRECTED TOWARDS SEDIMENTATION TANK TO PREVENT ATER INFILTRATION TOWARDS TUNNELS AS DOCUMENTED ON THIS SHEET.



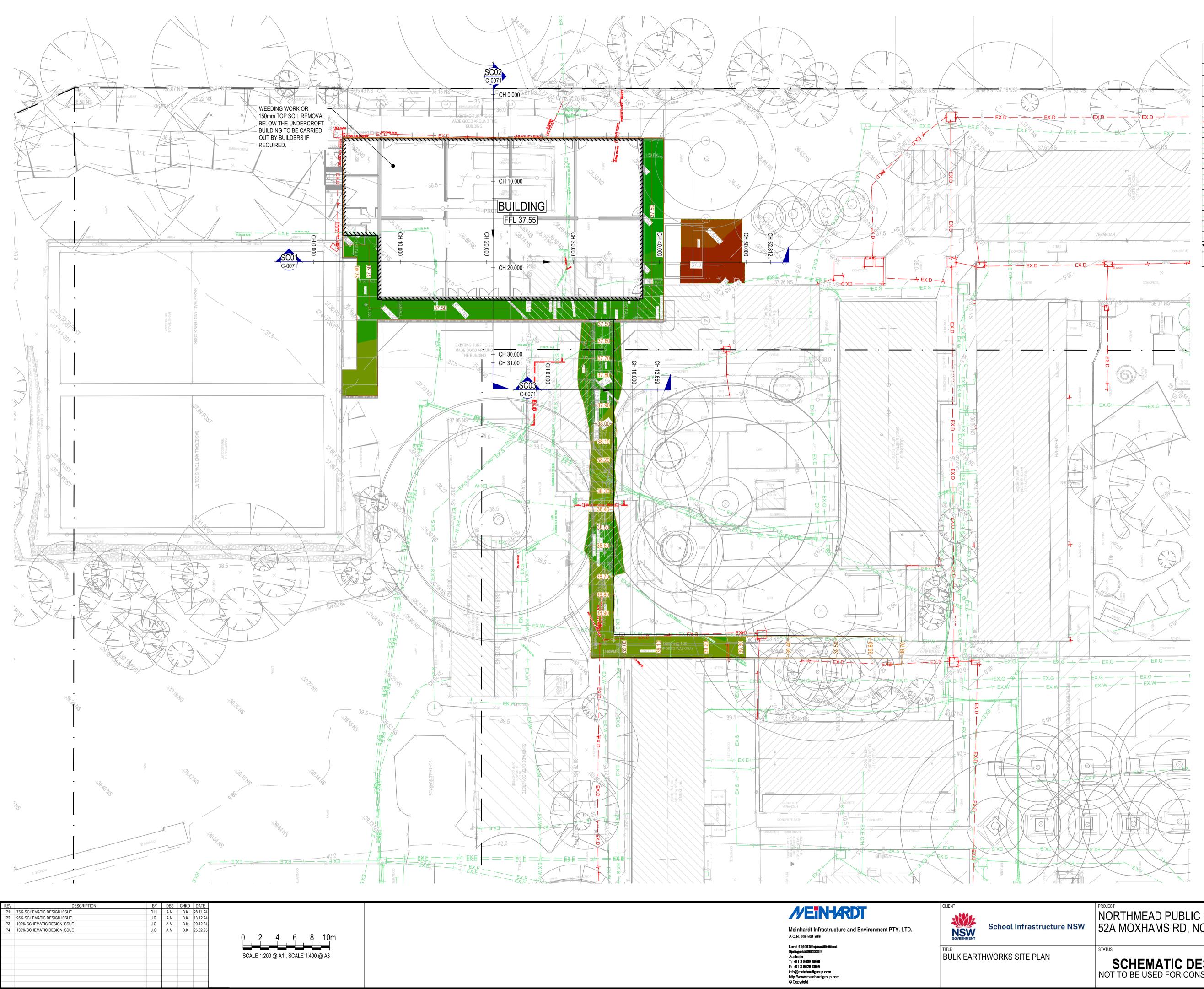
ALTERNATIVE SEDIMENT FENCE NOTES

- 1. INSTALL THIS TYPE OF SEDIMENT FENCE WHEN USE OF SUPPORT POSTS IS NOT DESIRABLE OR NOT APPROPRIATE AUTHORITIES TO PLACE THESE FENCES IN HIGHLY SENSITIVE ESTUARINE AREAS.
- 2. USE BENT TRENCH MESH TO SUPPORT THE F82 WELDED MESH FACING AS SHOWN ON THE DRAWING
- STABILITY OF THE STRUCTURE IN THE DESIGN STORM EVENT, USUALLY THE 10 YEAR EVENT.

EV	DESCRIPTION	BY	DES	CHKD	DATE
P1	75% SCHEMATIC DESIGN ISSUE	D.H	A.N	B.K	28.11.24
P2	95% SCHEMATIC DESIGN ISSUE	J.G	A.N	B.K	13.12.24
-3	100% SCHEMATIC DESIGN ISSUE	J.G	A.M	B.K	20.12.24
5	21 2	1 75% SCHEMATIC DESIGN ISSUE 12 95% SCHEMATIC DESIGN ISSUE	11 75% SCHEMATIC DESIGN ISSUE D.H 12 95% SCHEMATIC DESIGN ISSUE J.G	1 75% SCHEMATIC DESIGN ISSUE D.H A.N 12 95% SCHEMATIC DESIGN ISSUE J.G A.N	11 75% SCHEMATIC DESIGN ISSUE D.H A.N B.K 12 95% SCHEMATIC DESIGN ISSUE J.G A.N B.K







LEGEND							
ITEM	DESCRIPTION						
37.00	EXISTING SURFACE CONTOURS						
37.50	PROPOSED SURFACE CONTOURS						
+38.00	EXISTING SURFACE SPOT LEVELS						
·	TITLE BOUNDARY						
— — EX.D —	EXISTING STORMWATER DRAIN						
— — EX.S —	EXISTING SEWER						
— — EX.G —	EXISTING GAS						
— — EX.W —	EXISTING WATER						
— — EX.W(R) —	EXISTING RECYCLED WATER						
— — EX.E —	EXISTING ELECTRICITY						
— — EX.E O/H —	EXISTING OVERHEAD ELECTRICITY						
— — EX.E L/V —	EXISTING LOW VOLTAGE ELECTRICITY						
— — EX.E H/V —	EXISTING HIGH VOLTAGE ELECTRICITY						
— — EX.T —	EXISTING TELECOM CABLE						
— — EX.FO	EXISTING FIBRE OPTIC CABLE						
· EX.COMM ·	EXISTING COMMS CABLE						
	BUILDING OUTLINE						
	SECTION MARK						

	BULK EARTHWORKS									
I.D	MIN. ELEVATION	MAX. ELEVATION	COLOUR							
1	-2.000m	-1.500m								
2	-1.500m	-1.000m								
3	-1.000m	-0.500m								
4	-0.500m	0.000m								
5	0.000m	0.500m								
6	0.500m	1.000m								

EARTHWORKS QUANTITIES

TOTAL CUT VOLUME = TOTAL FILL VOLUME = <u>NET FILL VOLUME =</u> (NET VOLUME EXCLUDES STRIPPED SOIL, AS THIS IS ASSUMED TO BE REMOVED FROM SITE)

60.11m³ 69.26m³ 9.15m³

EARTHWORKS SUMMARY

NOTES: BULK EARTHWORKS SURFACE IS DESIGN SURFACE MINUS THE FOLLOWING:
 NATURAL SURFACE (150mm)
 EXCLUDES COMPACTION FACTORS.

- ALL BATTERS TO BE 1 IN 4 MAX UNLESS NOTED OTHERWISE. THE ABOVE VOLUMES ARE APPROXIMATE ONLY. IT IS RESPONSIBILITY OF THE TENDERERS TO CONFIRM THE SCOPE OF WORKS, CONDUCT
- OWN EARTHWORK CHECK AND CONFIRM ACCURACY. BULK EARTHWORKS ARE TO FFL AND NO ALLOWANCE FOR SLAB THICKNESS.



WARNING

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WARNING

BEWARE OF UNDERGROUND SERVICES THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

NORTHMEAD PUBLIC SCHOOL 52A MOXHAMS RD, NORTHMEAD NSW 2152

SCHEMATIC DESIGN

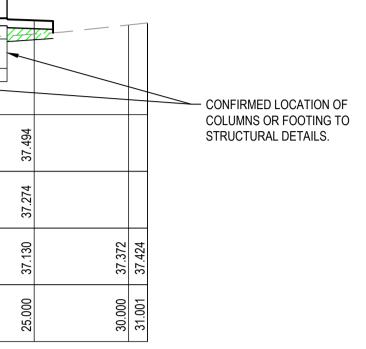
DRAWN	DESIGNED	CHECKED	APPROVED	DATE	SCALE @ A1
J.G	A.N	B.K	B.L		1:200
PROJECT No		DRAWING No	REV		
132	567	NPS-MH	P4		

BRICKWALLS TO		[PROPOSED I	BUILDING	
DETAILS.					
DESIGN SURFACE	37.550	37.550	37.550	37.550	
BULK EARTHWORK <u>SURFACE LEVEL</u>					
	36.388	36.541	36.633	36.943	
CHAINAGE	5.000	10.000	15.000	20.000	

SECTION SC01 1:200 (H) 1:100 (V) C-0070

			PROPOSED BUILDING							ED LOCATION OF S OR FOOTING TO IRAL DETAILS.	
DATUM 35.000	2										
DESIGN SURFACE	37.475	37.550	37.550	37.550	37.550	37.550	37.550	37.484			
BULK EARTHWORK <u>SURFACE LEVEL</u>	37.255							37.264	35.250		
EXISTING SURFACE		37.077	36.918	36.895	36.940	36.965	37.084	36.988	36.984	37.075	37.201
CHAINAGE 8	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	52.812

REV	DESCRIPTION	BY	DES	CHKD	DATE	
P1	75% SCHEMATIC DESIGN ISSUE	D.H	A.N	B.K	28.11.24	
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P3	100% SCHEMATIC DESIGN ISSUE	J.G	A.M	B.K	20.12.24	
						1:200 H 0 2 4 6 8 10m
						1:100 V 0 1 2 3 4 5m
						SCALE 1:200 HORIZONTAL
						1:100 VERTICAL
						AT ORIGINAL SIZE (A1)



00C.15
000.0

SECTION SC02 1:200 (H) 1:100 (V)



CLIENT



A.C.N. 051 627 591 Level 4, 66 Clarence Street Sydney NSW 2000 Australia T: +61 2 9699 3088 F: +61 2 9319 7518 info@meinhardtgroup.com http://www.meinhardtgroup.com © Copyright

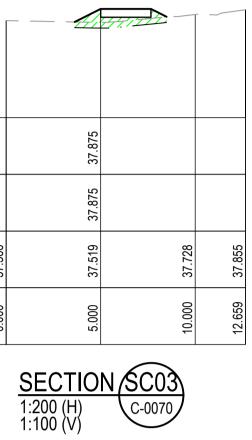
TITLE BULK EARTHWORKS SITE SECTIONS

<u>LEGEND</u>

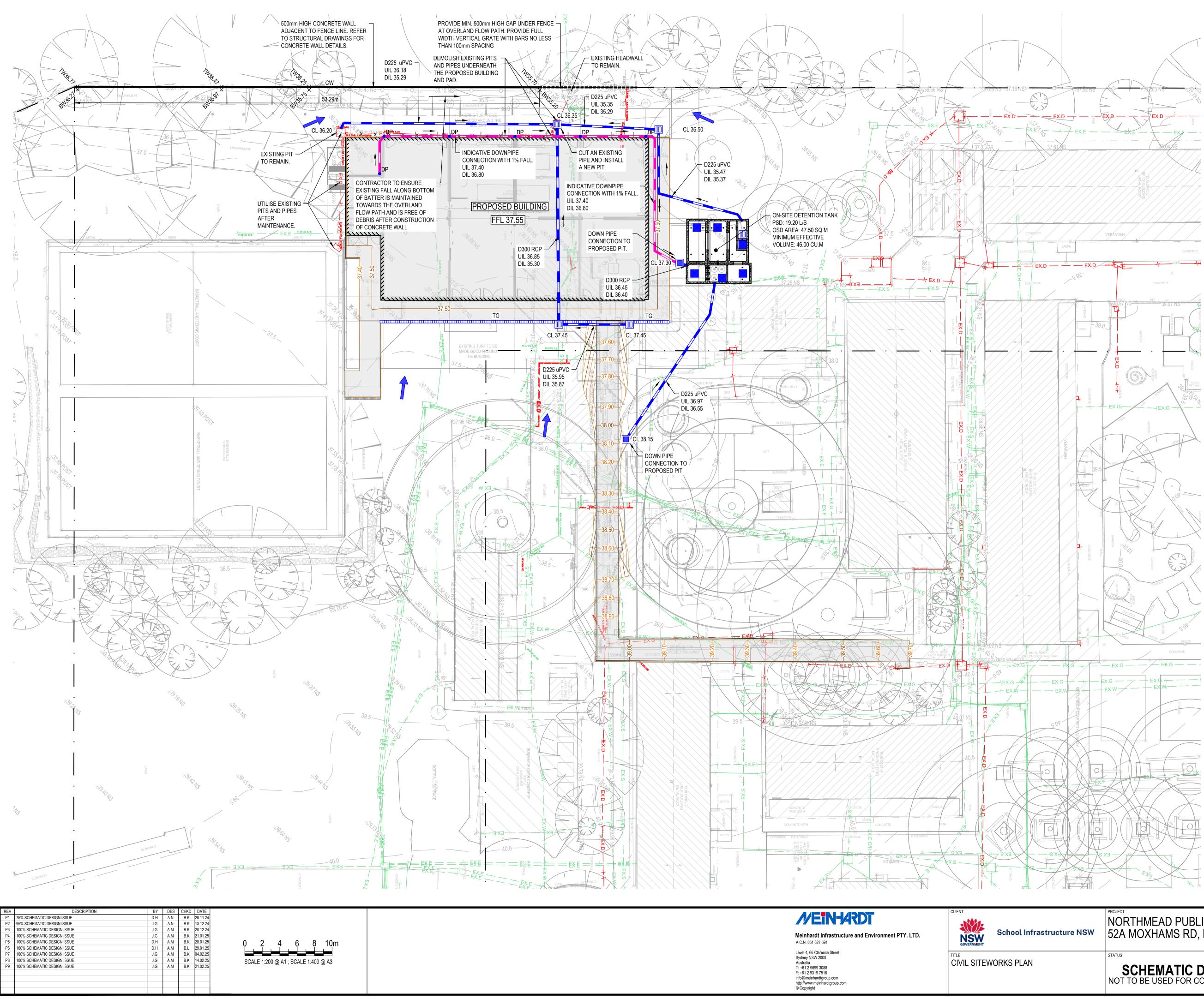


FILL FROM STRIPPING SURFACE TO BULK EARTHWORKS SURFACE

CUT FROM STRIPPING SURFACE TO BULK EARTHWORKS SURFACE



NSW	NORTHMEAD PUBLIC SCHOOL 52A MOXHAMS RD, NORTHMEAI	D NSV	V 215	2			
	STATUS	DRAWN	DESIGNED	CHECKED	APPROVED	DATE	SCALE @ A1
5	SCHEMATIC DESIGN		A.N	B.K	B.L		AS SHOWN
	NOT TO BE USED FOR CONSTRUCTION	PROJECT No		DRAWING No			REV
		132	567	NPS-MH	T-00-00-DF	R-C-0071	P3





		LEGEND		
ITEN	Л	DESCRIPTION		
37.0	0	EXISTING SURFACE CONTOURS		
37.5	50 ——	PROPOSED SURFACE CONTOURS		
+38.00		EXISTING SURFACE SPOT LEVELS		
+38.000		PROPOSED SURFACE SPOT LEVELS		
+ TW 38.000		TOP OF WALL LEVEL		
+ BW 37.500		BOTTOM OF WALL AT GROUND LEVEL		
CL 38.000		PIT COVER LEVEL		
<u> </u>		TITLE BOUNDARY		
<u>B2</u>	<u>B3</u>	PROPOSED CONCRETE KERB AND CHANNEL		
CE	CE	PROPOSED CONCRETE EDGE STRIP		
<u></u>	<u>M2</u>	PROPOSED CONCRETE SPOONDRAIN		
SM2	SM3	PROPOSED CONCRETE KERB AND CHANNEL		
CW	/	PROPOSED CONCRETE WALL		
	- EX.D	EXISTING STORMWATER DRAIN		
RM	1	PROPOSED RISING MAIN PIPE		
225Ø -		PROPOSED STORMWATER DRAIN AND FLOW DIRECTION		
•		SYPHONIC CONNECTION (REFER HYDRAULIC ENGINEERS DRG'S)		
AG		PROPOSED 100Ø UPVC AGRICULTURAL DRAIN CLASS 400		
		EXISTING STORMWATER PIT		
		EXISTING STORMWATER PIT TO BE MODIFIED		
		PROPOSED STORMWATER PIT		
GI		100Ø GRATED INLET (UNLESS NOTED OTHERWISE)		
DP		DOWNPIPE		
0 0		INSPECTION OPENING		
TG		TRENCH GRATE		
		OVERLAND FLOW ARROW		
	- EX.S	EXISTING SEWER		
	- EX.G —	EXISTING GAS		
	- EX.W	EXISTING WATER		
— — E	EX.W(R) —	EXISTING RECYCLED WATER		
	- EX.E	EXISTING ELECTRICITY		
— — E	EX.E O/H —	EXISTING OVERHEAD ELECTRICITY		
— — E	EX.E L/V —	EXISTING LOW VOLTAGE ELECTRICITY		
— — EX.E L/V — EX.E H/V —		EXISTING HIGH VOLTAGE ELECTRICITY		
	- EX.T	EXISTING TELECOM CABLE		
	EX.FO	EXISTING FIBRE OPTIC CABLE		
— — — E	EX.NBN —	EXISTING NBN COMMS CABLE		
—X—	-X	EXISTING FEATURES TO BE REMOVED		
////	///	BUILDING OUTLINE		
		PROPOSED INDICATIVE DOWNPIPE		

THESE PLANS ARE BASED UPON THE EXISTING CONDITIONS SURVEY PREPARED BY CMS SURVEYORS PTY LTD., REFERENCE No. 6482B DETAIL NORTHMEAD PS (2763) DATED 25-28 SEPTEMBER 2023.

THESE DESIGN PLANS SHALL BE READ IN CONJUNCTION WITH GEOTECHNICAL REPORT No. 20429/5-AA DATED 24 OCTOBER 2023 PREPARED BY GEOTECHNIQUE PTY LTD. THE PROVISIONS AND RECOMMENDATIONS CONTAINED WITHIN THE REPORT ARE TO BE STRICTLY COMPLIED WITH. ALL COMPACTION REQUIREMENT RESULTS SHALL BE CARRIED OUT IN ACCORDANCE WITH GEOTECHNICAL REPORT RECOMMENDATIONS.



WARNING

PROPOSED SERVICES THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

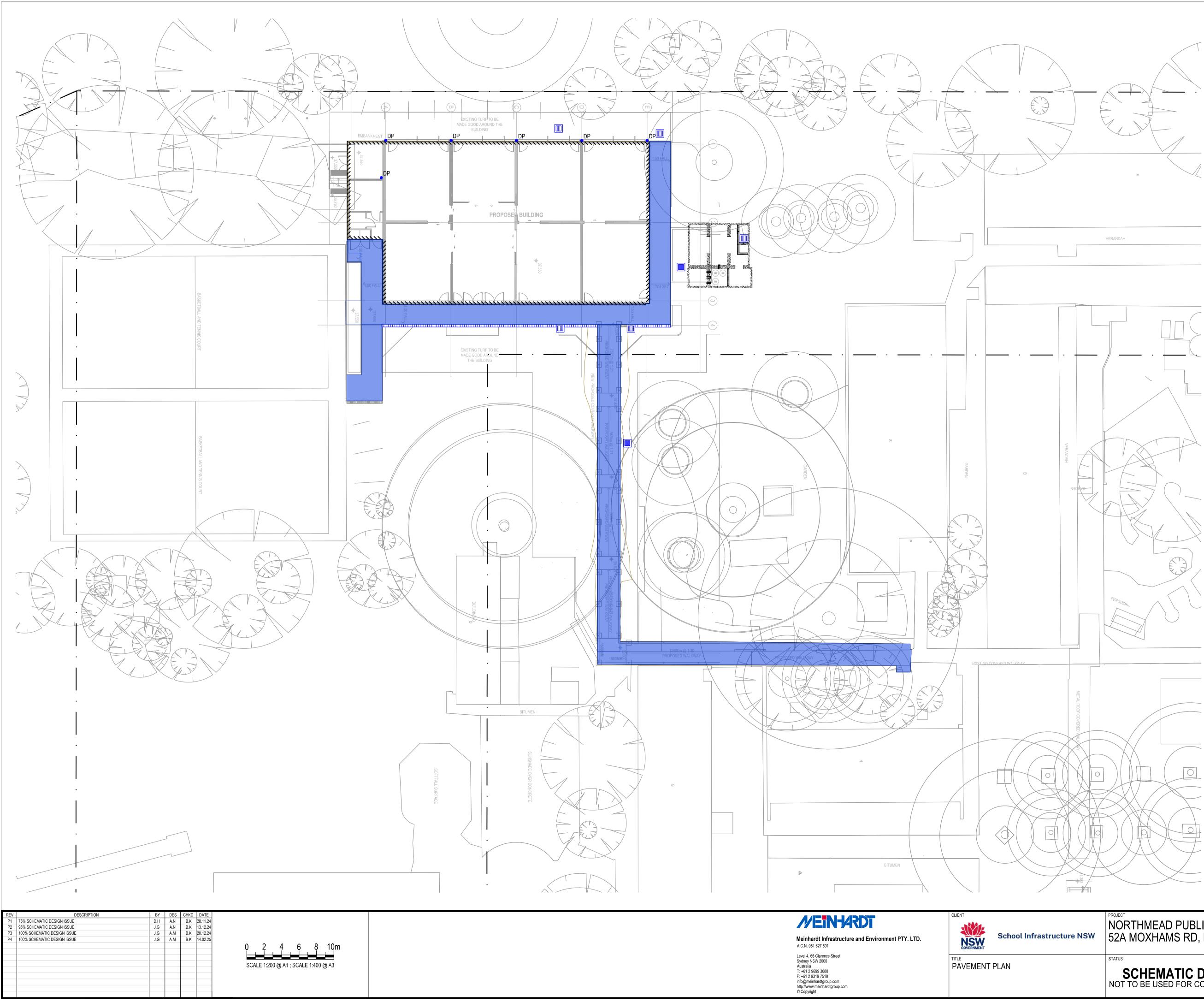
WARNING

BEWARE OF UNDERGROUND SERVICES THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

NORTHMEAD PUBLIC SCHOOL 52A MOXHAMS RD, NORTHMEAD NSW 2152

SCHEMATIC DESIGN NOT TO BE USED FOR CONSTRUCTION

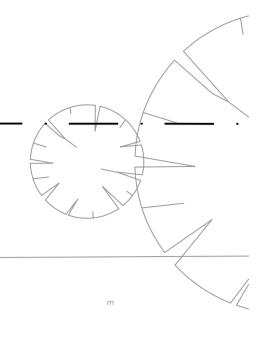
DRAWN	DESIGNED	CHECKED	APPROVED	DATE	SCALE @ A1
J.G A.N		B.K B.L			1:200
PROJECT No		DRAWING No	REV		
132567		NPS-MH	P9		





PAVEMENT LEGEND

LIGHT DUTY CONCRETE PAVEMENT-PEDESTRIAN





WARNING

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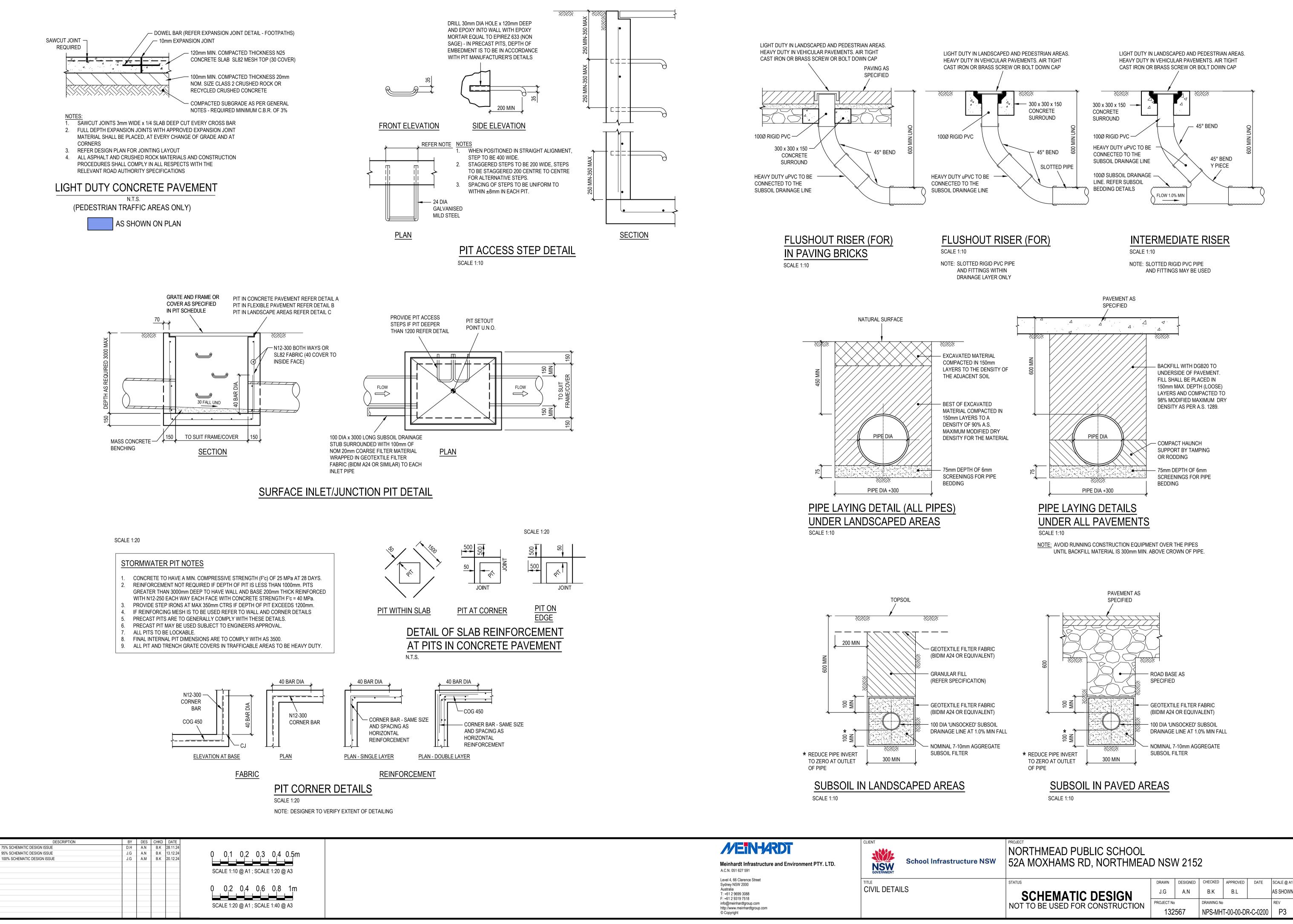
WARNING

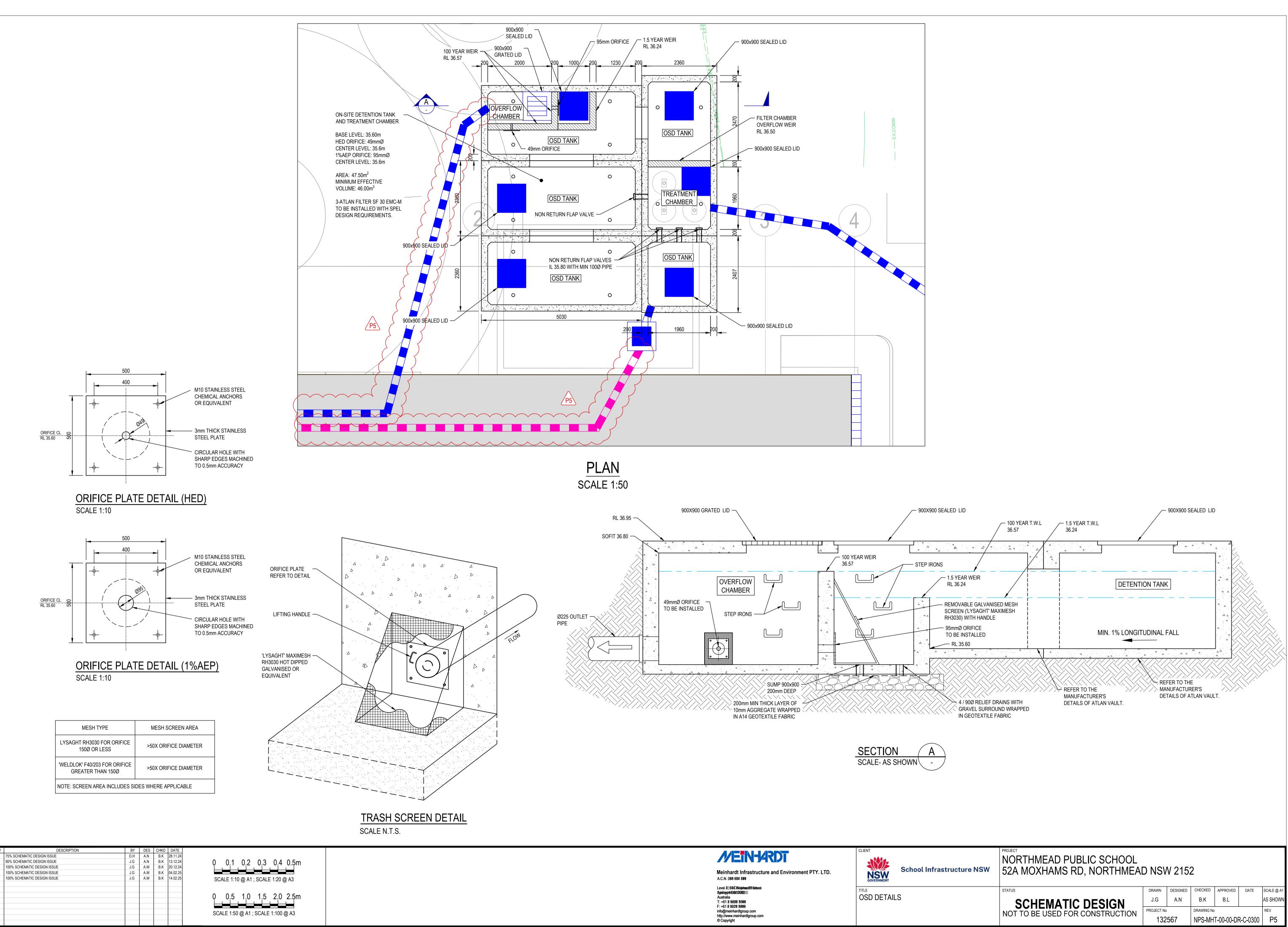
BEWARE OF UNDERGROUND SERVICES THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

NORTHMEAD PUBLIC SCHOOL 52A MOXHAMS RD, NORTHMEAD NSW 2152

SCHEMATIC DESIGN

DRAWN DESIGNED CHECKED APPROVED DATE SCALE @ A1 J.G B.K B.L 1:200 A.N PROJECT No DRAWING No REV 132567 NPS-MHT-00-00-DR-C-0110 P4

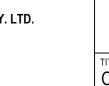


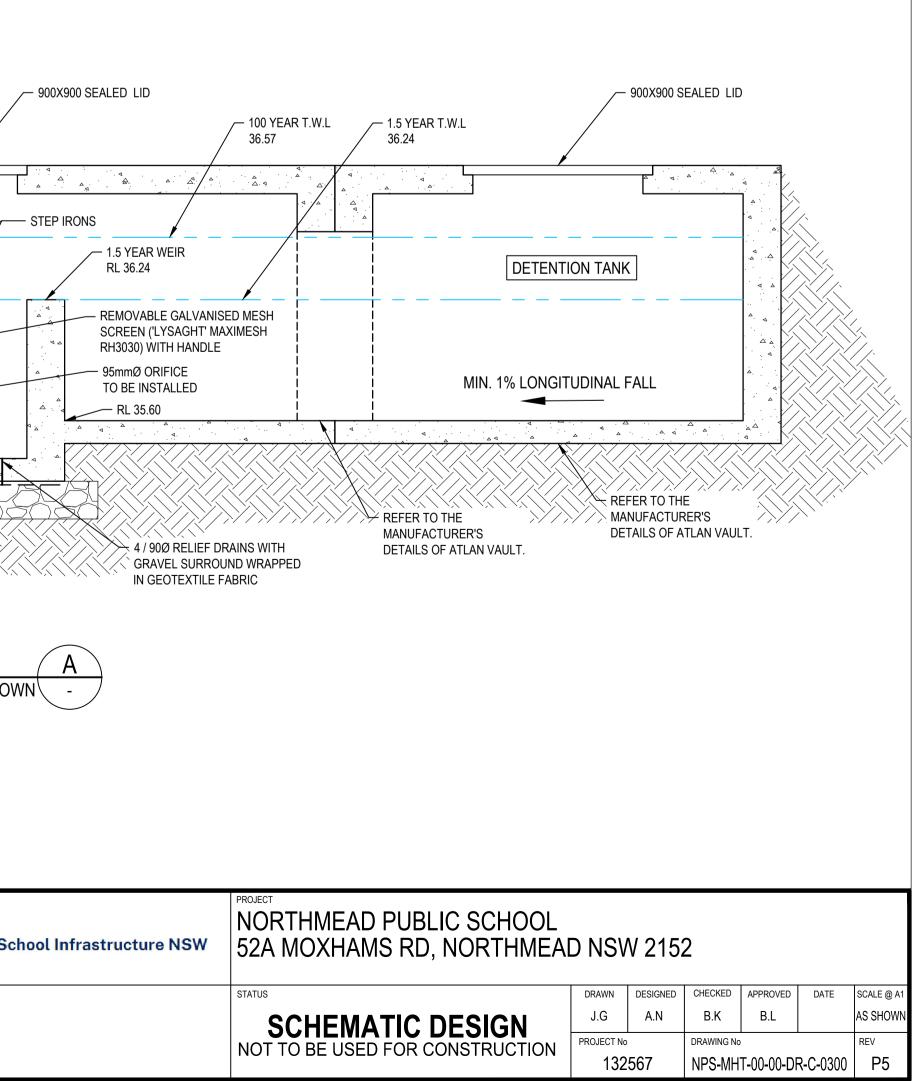


REV	DESCRIPTION	BY	DES	CHKD	DATE
P1	75% SCHEMATIC DESIGN ISSUE	D.H	A.N	B.K	28.11.24
P2	95% SCHEMATIC DESIGN ISSUE	J.G	A.N	B.K	13.12.24
P3	100% SCHEMATIC DESIGN ISSUE	J.G	A.M	B.K	20.12.24
P4	100% SCHEMATIC DESIGN ISSUE	J.G	A.M	B.K	04.02.25
P5	100% SCHEMATIC DESIGN ISSUE	J.G	A.M	B.K	14.02.25











STRUCTURAL DRAWING LIST					
SHEET NUMBER	SHEET NAME				
S-0000	COVER SHEET				
S-0001	STRUCTURAL NOTES SHEET 1				
S-0002	STRUCTURAL NOTES SHEET 2				
S-0200	STANDARD DETAILS MASONRY RETAINING WALLS				
S-0205	TYPICAL MASONRY DETAILS SHEET 1				
S-0206	TYPICAL MASONRY STIFFENERS DETAILS				
S-0210	TYPICAL FOOTING DETAILS SHEET 1				
S-0211	TYPICAL FOOTING DETAILS SHEET 2				
S-0220	TYPICAL STAIR DETAILS				
S-0230	TYPICAL COLUMN DETAILS				
S-0250	TYPICAL STEELWORK DETAILS				
S-0260	TYPICAL SLAB ON GROUND DETAILS SHEET 1				
S-1010	GROUND FLOOR LOADING PLAN				
S-1011	GROUND FLOOR WALKWAY - LOADING PLAN				
S-1020	ROOF LOADING PLAN				
S-1021	ROOF WALKWAY - LOADING PLAN				
S-2000	FOOTING PLAN				
S-2001	FOOTING PLAN - WALKWAY				
S-2010	GROUND FLOOR STRUCTURAL PLAN				
S-2011	GROUND FLOOR WALKWAY - STRUCTURAL PLAN				
S-2020	ROOF STRUCTURAL PLAN				
S-2021	ROOF PLAN - WALKWAY				

REV	DESCRIPTION	BY	APP	DATE
P01,01	CONCEPT DESIGN DEVELOPMENT	AA	JB	13.11.2
P02	75% SCHEMATIC DESIGN	DT	EA	22.11.2
P03	95% SCHEMATIC DESIGN	DT	EA	13.12.2
P04	100% SCHEMATIC DESIGN	DT	EA	20.12.2

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT SITE INSTRUCTIONS, SKETCHES, SHOP DRAWINGS, SUB-CONTRACTOR DRAWINGS AND PROJECT CORRESPONDENCE. ACCURACY AND SET-OUT IS TO BE CONFIRMED BY SITE SURVEY.

NPS-MHT-XX-XX-DR-S-0000

DRAWING No:

CLIENT

132567

MEINHARDT PROJECT No:

COVER SHEET

SHEET TITLE:

MOXHAMS ROAD, NORTHMEAD, NSW 2152

PROJECT ADDRESS:

NORTHMEAD PUBLIC SCHOOL

PROJECT TITLE:



STRUCTURAL DOCUMENTATION

SCHOOL INFRASTRUCTURE NSW

REVISION

P04

STANDARD NOTES:

GENERAL

G1	THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL AND
	OTHER CONSULTANTS DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER
	WRITTEN INSTRUCTIONS OR SKETCHES AS MAY BE ISSUED DURING THE COURSE
	OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE
	SUPERINTENDENT BEFORE PROCEEDING WITH WORK.
G2	MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE
	SPECIFICATION, CURRENT SAA CODES, BUILDING REGULATIONS AND THE
	REQUIREMENTS OF ANY OTHER RELEVANT STATUTORY AUTHORITIES.
G3	THESE DRAWINGS MUST NOT BE SCALED. ALL DIMENSIONS ARE IN mm. ALL SET OU
	DIMENSIONS AND LEVELS, INCLUDING THOSE SHOWN ON THESE DRAWINGS SHALL
	BE IN ACCORDANCE WITH THE ARCHITECT'S DRAWINGS AND VERIFIED ON SITE.

- THE CONSULTING ENGINEER HAS DESIGNED THE PERMANENT STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, IMPLEMENTATION AND CERTIFICATION OF ALL TEMPORARY WORKS, PROPPING, NEEDLING, FALSE WORK BRACING, BACK-PROPPING, AND SO FORTH, NECESSARY TO COMPLETE THE WORK. DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE
- CONDITION AND NO PART SHALL BE OVERSTRESSED. THE CONTRACTOR SHALL ALLOW TO ENGAGE A CHARTERED (NPER-3) ENGINEER TO DESIGN, INSPECT THE TEMPORARY WORKS AND VERIFY THE TEMPORARY STABILITY OF THE STRUCTURE. THE APPROVAL OF A SUBSTITUTION SHALL BE SOUGHT FROM THE SUPERINTENDENT
- BUT IS NOT AN AUTHORIZATION OF A COST VARIATION. THE SUPERINTENDENT MUST APPROVE ANY COST VARIATION INVOLVED BEFORE ANY WORK STARTS. THESE DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION UNTIL ISSUED AS
- "FOR CONSTRUCTION" BY THIS OFFICE
- THE CONTRACTOR RETAINS RESPONSIBILITY OF THE WORKS EVEN IF THE ENGINEER HAS INSPECTED THE WORKS DURING CONSTRUCTION. WHERE ADDITIONAL CONSTRUCTION LOADS, SUCH AS TEMPORARY SHORING, MOBILE CRANES. ETC. ARE TO BE IMPOSED ON THE STRUCTURE. THE CONTRACTOR SHALL SUBMIT FULL DETAILS OF THE PROPOSED TEMPORARY SUPPORTS TO THE ENGINEER FOR REVIEW. SUCH INFORMATION MUST BE PROVIDED A MINIMUM OF 7 WORKING DAYS PRIOR TO THE PROPOSED WORKS COMMENCING.
- IF THE CONTRACTOR INTENDS TO VARY THE SCOPE OR METHOD OF WORKS OR G10 MATERIALS USED, THE CONTRACTOR SHALL SUBMIT FULL DETAILS OF THE PROPOSAL TO THE DESIGN SUPERINTENDENT FOR DESIGN CHECK. ALL PROPRIETARY PRODUCTS SHALL BE INSTALLED STRICTLY IN ACCORDANCE
- WITH MANUFACTURER'S RECOMMENDATIONS ALL REQUIRED TESTS TO COMPLETE THE WORKS SHALL BE AT THE CONTRACTOR'S G12 **EXPENSE**

HEALTH AND SAFETY

- THE OBLIGATION OF MEINHARDT GROUP PTY LTD JOR OTHER RELEVANT MEINHARDT ENTITYI AS THE DESIGN ENGINEER IS LIMITED TO ENSURING THAT THOSE PARTS OF THE STRUCTURE THAT ARE TO BE USED AS A WORKPLACE ARE, AS FAR AS REASONABLY PRACTICABLE, DESIGNED TO BE SAFE AND WITHOUT RISKS TO THE HEALTH OF THOSE PERSONS USING THE STRUCTURE AS A WORKPLACE FOR THE PURPOSE FOR WHICH IT WAS DESIGNED IN ACCORDANCE
- WITH SECT. 28 OF THE OCCUPATIONAL HEALTH AND SAFETY ACT 2004 (VIC). MEINHARDT IS NOT RESPONSIBLE FOR THE OCCUPATIONAL HEALTH AND SAFETY OF PERSONS AT THE SITE AS THOSE OBLIGATIONS RESIDE WITH THE CONTRACTORS AND/OR SUBCONTRACTORS WHO OCCUPY OR HAVE CONTROL OF THE SITE IN ACCORDANCE WITH APPLICABLE OCCUPATIONAL HEALTH AND SAFETY LEGISLATION, CODES OR PRACTICE, GUIDANCE NOTES, AUSTRALIAN STANDARDS AND OTHER RELEVANT DOCUMENTATION.
- ANY ADVICE OR GUIDANCE CONCERNING OCCUPATIONAL HEALTH AND SAFETY ISSUES ARISING AT THE SITE SHOULD BE DIRECTED TO THE HEALTH AND SAFETY EXECUTIVE OR OFFICER NOMINATED FOR THE PROJECT.

FOUNDATIONS

- REFER TO THE GEOTECHNICAL REPORT FOR A DESCRIPTION OF THE ANTICIPATED SITE CONDITIONS. THE BUILDER IS TO STUDY THE REPORT AND MAKE HIS OWN EVALUATION ON THE SITE CONDITIONS. ANY ADDITIONAL COSTS INCURRED SHALL BE BORNE BY THE BUILDER
- ALL FOOTINGS SHALL BE FOUNDED AT THE RECOMMENDED DEPTH AND INTO THE F2 APPROPRIATE MATERIAL AS SPECIFIED IN THE GEOTECHNICAL REPORT. THE ALLOWABLE BEARING CAPACITY SHALL BE AS SPECIFIED IN THE FOOTING SCHEDULE. THE TOPS OF FOOTINGS SHALL BE A MINIMUM OF 300mm BELOW THE LOWEST ADJACENT STRUCTURAL FLOOR LEVEL UNLESS NOTED OTHERWISE.
- F3 THE ALLOWABLE BEARING CAPACITY SHALL BE VERIFIED BY GEOTECHNICAL ENGINEER, WHO SHALL BE EMPLOYED BY THE BUILDER, BEFORE ANY CONCRETE IS PLACED, WHEREVER THE BEARING CAPACITY AT THE FOOTING BASE IS INADEQUATE EXCAVATION SHALL CONTINUE UNTIL SUITABLE MATERIAL IS FOUND OR THE FOOTING IS ENLARGED TO THE ENGINEER DETAILS.
- BASES OF ALL FOOTINGS SHALL BE CLEANED OF ALL LOOSE MATERIAL PRIOR TO F4 POURING OF CONCRETE, IN WET CONDITIONS, A 300 x 300 x 300 PIT SHALL BE DUG AT THE CORNER OF THE FOOTING FOR DEWATERING THE EXCAVATION BEFORE CONCRETING A 50mm MINIMUM BLINDING LAYER OF N15 GRADE CONCRETE SHALL BE USED. UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- WHENEVER A FOOTING IS LOCATED CLOSE TO A BATTER , AN EXISTING FOOTING. F5 EXISTING OR NEW SERVICES A LINE DRAWN AT THE BOTTOM OF THE FOOTING AT 40 DEGREES TO THE HORIZONTAL SHALL FALL BELOW THE BATTER. EXISTING FOOTING OR SERVICES. IF THIS DOES NOT HAPPEN THE FOOTING BASE SHALL BE DEEPENED AS REQUIRED TO ACHIEVE THE FORMER.
- THE OVER BREAK BETWEEN THE APPROVED FOUNDING LEVEL AND THE UNDERSIDE OF THE FOOTING SHALL BE FILLED WITH GRADE N15 CONCRETE. ANY OVER BREAK AT THE SIDES OF THE FOOTING SHALL BE FILLED WHEN CONCRETING THE FOOTING.
- THE BUILDER SHALL REMOVE ALL SPOIL FROM THE SITE, AND DEWATER THE EXCAVATION AS REQUIRED.

CONCRETE GRADE PAD AND STRIP FOOTINGS: N40

STRUCTURAL DESIGN BASED ON GEOTECHNICAL INVESTIGATION REPORT REFERENCE: DDWO05135/23REFERENCE: DDWO05135/23

GEOTECHNIQUE PTY LTD, REPORT 20429/5-AA DATED: 24 October 2023

SLAB ON GROUND NOTES

- SOG1 ALL CONCRETE WORK TO COMPLY WITH AS 3600 CONCRETE CODE, AND BCA SECTIONS 3.1 AND 3.2
- CONCRETE GRADE N20 MINIMUM (SOG) SOG2 CONCRETE GRADE N40 MINIMUM (ALL OTHER STRUCTURES)
- SOG3 ALL VEGETATION SHALL BE STRIPPED TO A MINIMUM DEPTH OF 150mm. ANY SOFT SPOTS OR DELETERIOUS MATERIAL SHALL BE REMOVED AND REPLACED WITH APPROVED GRANULAR FILLING COMPACTED TO 100% AS, STANDARD COMPACTION MINOR FILLING (800 MAXIMUM) SHALL BE PROVIDED WHERE REQUIRED TO BRING SUB GRADE TO REQUIRED LEVEL IN ACCORDANCE WITH LIMITS STATED IN AS 2870 AND BCA. FILLING SHALL BE APPROVED GRANULAR MATERIAL PLACED IN 150mm AND COMPACTED TO 100% AS, STANDARD COMPACTION.
- SOG4 A 0.2mm VAPOUR BARRIER SHALL BE USED, LAPPED A MINIMUM OF 200mm AT JOINTS AND TAPED AROUND SERVICES FITTINGS WITH ADHESIVE TAPE NOT INFERIOR TO DOUBLE SIDED BUTYL ADHESIVE TAPE. THE VAPOUR BARRIER SHALL BE PLACED ON A 50mm MINIMUM SAND BED OR SIMILAR APPROVED MATERIAL PROTECT MEMBRANE FROM DAMAGE
- SOG5 TRENCH MESH IN BEAMS SHALL BE OVERLAPPED BY THE WIDTH OF FABRIC AT 'T' AND 'L' INTERSECTIONS AND SPLICED WITH A LAP OF 500mm. RANDOM LAP N12 BARS BY 500mm STAGGERED. THE OUTER BAR AT 'L' INTERSECTION MUST BE BENT AND CONTINUED FOR 500mm AROUND THE CORNER
- SOG6 SLAB FABRIC TO BE LAPPED SUCH THAT THE TWO OUTERMOST TRANSVERSE WIRE OF ONE SHEET OF MESH OVERLAP THE TWO OUTERMOST TRANSVERSE WIRES OF THE SHEET BEING LAPPED BY A MINIMUM OF 25mm AND BE SUPPORTED ON BAR CHAIRS AT 800mm MAXIMUM CENTERS.
- SOG7 THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE SITE INVESTIGATION REPORT TO DETERMINE FOUNDING DEPTHS. SOG8 SITE CLASSIFICATION TO AS 2870 CLASS H ENGINEERING PRINCIPLES TO SECTIONS
- 4 OF AS 2870. LOAD BEARING EXTERNAL AND INTERNAL BEAMS AND LOAD SUPPORT THICKENINGS SOG9 ARE TO BE FOUNDED ON NATURAL SOIL WITH AN ALLOWABLE BEARING PRESSURE OF NOT LESS THAN 100 kPa.
- SOG10 SLAB PANELS ARE TO BE FOUNDED ON NATURAL SOIL WITH AN ALLOWABLE BEARING PRESSURE OF NOT LESS THAN 50 kPa.
- TOP OF SLAB SHALL BE 150mm MINIMUM ABOVE THE FINAL GROUND LEVEL. SOG12 DRAINAGE AND GRADING AWAY FROM SLAB SHALL BE PROVIDED TO PREVENT WATER COLLECTING ADJACENT TO SLAB. TREATMENT OF AREAS SURROUNDING
- SLAB SHALL ALSO BE IN ACCORDANCE WITH RECOMMENDATIONS BY THE HOUSING GUARANTEE FUND AND THE OWNER/OCCUPIER SHALL BE PROVIDED WITH A COPY OF CSIRO INFORMATION SHEET No. 10-19. SOG13 BRICKWORK CONTROL JOINTS ARE TO BE PROVIDED ON SIDES EXCEEDING 6000mm
- IN LENGTH OR THROUGH LARGE OPENINGS FROM EAVES TO SLAB OR THROUGH FULL HEIGHT WINDOWS AND DOORS. SOG14 WHERE REQUIRED BY COUNCIL PROTECT THE STRUCTURE FROM SUBTERRANEAN
- TERMITES IN ACCORDANCE WITH AS 3660 AND BCA

SUSPENDED SLAB ON GROUND NOTES

- SSG1 ALL CONCRETE WORK TO COMPLY WITH AS 3600 CONCRETE CODE, AND BCA VOLUME 1. SECTIONS 3.1 AND 3.2
- CONCRETE GRADE N40 MINIMUM
- ALL VEGETATION SHALL BE STRIPPED TO A MINIMUM DEPTH OF 150mm. SSG3 ALLOW FOR COMPACTION OF EXISTING GROUND SURFACE OR FILL SUFFICIENT TO SSG4 SUPPORT WET WEIGHT OF SUSPENDED SLAB ON GROUND PLUS FORMWORK AND
- PROPPED STRUCTURE ABOVE, AS ADVISED BY GEOTECHNICAL CONSULTANT ANY SOFT SPOTS OR DELETERIOUS MATERIAL SHALL BE REMOVED AND REPLACED SSG5
- WITH SELECTED FILL COMPACTED IN ACCORDANCE WITH NOTE SSG4. SSG6 PROVIDE SELECTED FILL TO ACHIEVE REQUIRED SUB-GRADE R.L., COMPACTED IN ACCORDANCE WITH NOTE SSG4.
- A 0.2mm VAPOUR BARRIER SHALL BE USED, LAPPED A MINIMUM OF 200mm AT JOINTS AND TAPED AROUND SERVICES FITTINGS WITH ADHESIVE TAPE NOT INFERIOR TO DOUBLE SIDED BUTYL ADHESIVE TAPE. THE VAPOUR BARRIER SHALL BE PLACED ON A 50mm MINIMUM SAND BED OR SIMILAR APPROVED MATERIAL TO PROTECT MEMBRANE FROM DAMAGE.
- TOP OF SLAB SHALL BE 150mm MINIMUM ABOVE THE FINAL GROUND LEVEL. SSG8 DRAINAGE AND GRADING AWAY FROM SLAB SHALL BE PROVIDED TO PREVENT SSG9 WATER COLLECTING ADJACENT TO SLAB.
- WHERE REQUIRED BY COUNCIL PROTECT THE STRUCTURE FROM SUBTERRANEAN SSG10 TERMITES IN ACCORDANCE WITH AS 3660 AND BCA.
- BAR CHAIR BASES ARE TO BE PROVIDED BENEATH ALL REINFORCING BAR CHAIRS SSG11 O ENSURE NO SETTLEMENT TO REINFORCEMENT OR DAMAGE TO VAPOUR BARRIER.
- SUB-GRADE AND SAND LAYER TO BE PREPARED SUCH THAT A STABLE AND LEVEL SSG12 PLATFORM IS CONSTRUCTED ENSURING UNIFORM COVER TO REINFORCEMENT IS ACHIEVED ACROSS THE ENTIRE EXTENT OF THE SLAB.

BORED PILES

- BP1 REFER TO THE GEOTECHNICAL REPORT FOR A DESCRIPTION OF THE ANTICIPATED SITE CONDITIONS. THE PILING CONTRACTOR IS TO STUDY THE REPORT AND MAKE HIS OWN EVALUATION OF THE SITE CONDITIONS. ANY ADDITIONAL COSTS INCURRED SHALL BE BORNE BY THE PILING CONTRACTOR.
- BP2 THE BORED PILES ARE PROPORTIONED FOR THE SCHEDULED LOADS WITH ALLOWABLE SOCKET SKIN FRICTION AND END BEARING CAPACITY AS INDICATED IN THE REPORT. THE DEPTHS AND LENGTHS NOMINATED IN THE SCHEDULE ARE INDICATIVE ONLY. THEY MAY NEED TO BE VARIED DEPENDING ON THE SITE CONDITIONS ENCOUNTERED. THE PILING CONTRACTOR NEEDS TO INCORPORATE ANY DESIGN CHANGES REQUIRED
- BP3 THE BORED PILES SHALL BE INSTALLED TO A MAXIMUM TOLERANCE OF ±75mm FROM THAT REQUIRED IN PLAN AND INCLINED AT NOT MORE THAN 1 IN 75 FROM THE VERTICAL OR SPECIFIED RAKE
- BP4 ALL WORKMANSHIP AND MATERIAL SHALL BE IN ACCORDANCE WITH AS 2159. BP5 THE BORED PILES SHALL BE LOCATED CONCENTRIC WITH THE COLUMNS AND WALLS UNLESS NOTED OTHERWISE
- BP6 DRILL AND INSTALL THE BORED PILES IN THE LOCATIONS SHOWN ON THE DRAWINGS AND THE ABOVE REQUIREMENTS. BP7 BEFORE ANY CONCRETE IS POURED, ALL ROCK SOCKETS SHALL BE DEWATERED
- AND INSPECTED BY THE GEOTECHNICAL ENGINEER , WHO SHALL BE EMPLOYED BY THE BUILDER. TO VERIEV THE SOIL PARAMETERS. THE SOCKET BASE AND WALLS MUST BE CLEAN AND FREE FROM CLAY. BP8 IF THE CONCRETE NEEDS TO BE TREMIED, SUPER PLASTICIZER MUST BE ADDED TO
- THE MIX AND THE CONCRETE GRADE INCREASED BY 30% REFER TO THE SPECIFICATIONS FOR THE INSPECTION OF THE HOLE PRIOR TO CONCRETING BP9 THE PILING CONTRACTOR SHALL ALLOW FOR THE COST OF INTEGRITY TESTING FOR
- A MINIMUM OF 10% OF ALL BORED PILES IN ACCORDANCE TO THE PILING CODE A.S. 2159. BP10 ANY ALTERNATIVE DESIGN SHALL MEET THE ABOVE REQUIREMENTS AND THE SCHEDULED LOADS. THE PILING CONTRACTOR SHALL OBTAIN CERTIFICATION FOR THE CALCULATIONS OF THE ALTERNATIVE SYSTEM. THE DETAILS AND CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE PERFORMANCE OF THE ALTERNATIVE BORED PILES.

PROJECT NORTH

6000

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT SITE INSTRUCTIONS, SKETCHES, SHOP DRAWINGS, SUB-CONTRACTOR DRAWINGS AND PROJECT CORRESPONDENCE ACCURACY AND SET-OUT IS TO BE CONFIRMED BY SITE SURVEY.

REV	DESCRIPTION	BY	APP	DATE
1,01	CONCEPT DESIGN DEVELOPMENT	AA	JB	13.11.24
02	75% SCHEMATIC DESIGN	DT	EA	22.11.24
03	95% SCHEMATIC DESIGN	DT	EA	13.12.24
04	100% SCHEMATIC DESIGN	DT	EA	20.12.24

0	1000	2000	4000	
		SCALE (n	nm) 1:100	



STRUCTURAL NOTES

CONCRETE	SHALL COMP	PLY TO AS3600 AND AS 3	610	STRU	CTURAL MASONRY	
	ES DO NOT INCLUDE I	FINISHES. IS OTHER THAN THOSE S	SHOWN ON DRAWINGS	M1	ALL BLOCKWORK WALLS SHALL BE CONSTRUCTED IN UNITS WITH A MINIMUM CHARACTERISTIC UNCONFINED COMPRESSIVE STRENGTH fcu = 15 MPa.	
SHALL BE MADE	E IN CONCRETE ELEM	IENTS WITHOUT ENGINE	ER'S APPROVAL.		ALL BRICKS SHALL HAVE A MINIMUM CHARACTERISTIC UNCONFINED COMPRESSIVE	
		T AND INCLUDE SLAB TH JNLESS OTHERWISE NO			STRENGTH f'cu = 25 MPa. THE MAXIMUM UNRESTRAINED FIVE YEAR EXPANSION OF BRICKS SHALL BE	
C4 CONCRETE SHA	ALL BE KEPT FREE OF	SUPPORTING MASONR	Y WITH TWO LAYERS	10	0.7mm/m IN ACCORDANCE WITH NATA REGISTERED TEST BO1.	
		D OR EQUAL). VERTICAL CANEITE. ALL NON - LOAI		M2	UNLESS NOTED OTHERWISE THE NOMINAL PROPORTIONS BY VOLUME OF MORTAR SHALL BE CLASS M3 AND HAVE NOMINAL PROPERTIES OF 1 : 1 : 6 OF CEMENT.	
SHALL BE KEPT	20 mm CLEAR OF TH	E UNDERSIDE OF SLABS			LIME, SAND. NO PLASTICISERS SHALL BE USED IN THE MIX.	
C5 NOTED OTHERV		ROPERLY FORMED AND	LOCATED TO THE	M3	GROUT USED TO FILL CAVITIES AND CORES IN REINFORCED MASONRY SHALL HAVE A MINIMUM 28 COMPRESSIVE STRENGTH fc OF 20 MPa AND A SLUMP OF	
SATISFACTION	OF THE ENGINEER. B	UILDER SHALL ALLOW F			225 ±25mm. MAXIMUM AGGREGATE SHALL BE OF 10mm ROUNDED GRAVEL. NOMINAL	
CONSTRUCTION C6 WHERE NOTED		ER TO SUSPENDED SLA	BS AND BEAMS SHALL		PROPORTIONS SHALL BE 1 : 0.1 : 3 : 2 OF CEMENT, LIME, SAND, AGGREGATE AND 3 WITH A MINIMUM CEMENT CONTENT OF 300 kg/m3/ . PROVIDE CLEAN OUT HOLES AT	
BE 5 FOR EVER	Y 2500 OF SPAN UNLE	ESS OTHERWISE NOTED). WHERE THE		BASE OF PILASTERS AND EVERY CORE OF REINFORCED WALLS. CLEAN OUT AND	
		D, THE UPPER SURFACE BE USED TO VERIFY THE			WET DOWN CORES BEFORE GROUTING. ALL CORES CONTAINING VERTICAL AND HORIZONTAL REINFORCEMENT ARE TO BE GROUTED.	
C7 REINFORCEMEN	NT IS SHOWN DIAGRA	MATICALLY AND IS NOT	NECESSARILY IN TRUE	M4	HORIZONTAL JOINT REINFORCEMENT CONSISTING OF GALVANISED WOVEN WIRE	
		CEMENT SHALL BE MADE			MESH OR WELDED WIRE SHALL BE PROVIDED. THE WIDTH SHALL BE SUCH THAT 15mm COVER FROM THE MORTAR FACE IS PROVIDED. THE MESH SHALL BE PLACED	
			VELDER IN ACCORDANCE		IN THE FIRST THREE COURSES AT THE TOP AND BOTTOM OF THE WALL AND AT A	
		RCEMENT SUPPLIER REC E LESS THAN 200 DEGRI			MAXIMUM 600 mm VERTICAL SPACING IN BETWEEN, FOR ALL CONCRETE BLOCKWORK, CONCRETE BRICKWORK AND CALCIUM SILICATE BRICKWORK. THE	
WITH AS/NZS 15					MESH SHALL BE LAPPED 450mm AT SPLICES AND FOLDED AND BENDED AT THE CORNERS SO THAT THE LONGITUDINAL WIRES ARE CONTINUOUS. THE MESH IS	
	EMENT SYMBOLS ARE		BARS WITH fsy = 500 MPa.		STOPPED 100mm SHORT OF CONTROL JOINTS OR ENDS OF WALLS.	
R NORMAL DUC	TILITY CLASS 250N P	LAIN ROUND BARS WITH	l fsy = 250 MPa.	M5	FULLY BED FACE SHELLS AND CROSS WEBS IN HOLLOW BLOCK WALLS. SOLID OR	
fsy = 500MPa.				M6	CORED UNITS SHALL BE LAID ON A FULL BED OF MORTAR. HOLLOW BLOCKWORK OPENINGS GREATER THAN 600mm VERTICALLY OR	
DO NOT USE LO DRAWINGS.	W DUCTILITY CLASS	L REINFORCEMENT UNL	ESS SHOWN ON THE		HORIZONTALLY SHALL BE TRIMMED AT THE SIDES AND BOTTOM BY FILLING ONE CORE AND REINFORCED WITH 1N12 EXTENDING 600mm PAST OPENING. THE TOP	
THE NUMBER FO		FORCEMENT SYMBOL IS			OF THE OPENING SHALL HAVE A REINFORCED LINTEL BEAM, ARCH BAR OR STEEL	
		NFORCEMENT SHALL CO IR CONCRETE SHALL CO	OMPLY WITH AS/NZS 4671. MPLY WITH	М7	ANGLE SUPPORT AS DETAILED. ALL TIES AND REINFORCEMENT SHALL HAVE MINIMUM CLEAR COVER OF 50mm TO	
AS/NZS 4671. W	HERE APPLICABLE, N	MATERIALS SHALL BE CU		1017	EXTERNAL FACE OF MASONRY. TIES SHALL CONFORM TO AS 2699. ALL TIES SHALL	
	WITH AS 3600, AS 510 IANUEACTURERS AND	0 OR AS 2870. D PROCESSORS OF STEE			BE BY "CERRA METALWORKS" OR APPROVED EQUIVALENT. THE TIES SHALL BE FIXED TO THE MANUFACTURER'S RECOMMENDATIONS BUT WITH A MINIMUM OF	
PRESTRESSING	G MATERIALS MUST A	LSO HOLD A VALID CERT	TIFICATE OF APPROVAL,		2 No. RAMSET 3.8mm DIAMETER DRIVE PINS. ALL TIES SHALL BE AT 400mm	
		ICATION AUTHORITY FO		M8	MAXIMUM CENTRES UNLESS NOTED OTHERWISE. NO CAVITY OR CORE SHALL BE FILLED TO A HEIGHT GREATER THAN 1200mm	
NOT BE USED W	VITHOUT DEMONSTRA	ATED EQUIVALENCE AND			WITHOUT SUITABLE SHORING.	
	OVAL FROM THE SPE	CIFIER. IIS CLAUSE MUST BE OB	TAINED WHEN	M9	NO CHASES OR HOLES SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE ENGINEER. CONDUITS AND THE LIKE SHALL NOT BE PLACED INSIDE CORES	
CONTRACT BIDS	S ARE RECEIVED.				CONTAINING REINFORCEMENT.	
		VITH AS3600 UNLESS NO RE BARS OR APPROVED		M10	VERTICAL JOINTS SHALL BE AT THE LESSER OF 6000mm OR TWICE THE HEIGHT OF THE WALL AND AT THE FOLLOWING LOCATIONS:	
BENDING AND R	REBENDING OF BARS	SHALL BE CARRIED OUT	IN ACCORDANCE WITH		- AT MAJOR CHANGES IN WALL HEIGHT	
		ATIONS AND THE REINFO	ORCEMENT SUPPLIER 400 DEGREES WITHOUT		- AT CHANGES IN WALL THICKNESSES OTHER THAN PIERS OR BUTTRESSES - AT CONTROL JOINTS IN THE ADJACENT STRUCTURAL ELEMENTS	
THE ENGINEER'	'S WRITTEN APPROVA	AL. THERMAL CRAYONS			- AT CHASES AND RECESSES FOR PIPING, COLUMNS FIXTURES ETC.	
	LIANCE WITH THIS TE NFORCEMENT (IN mm)	MPERATURE LIMIT. AND CONCRETE GRADE	ES SHALL BE AS		- AT ONE OR BOTH SIDES OF WALL OPENINGS - NEAR WALL INTERSECTIONS	
FOLLOWS UNLE	ESS NOTED OTHERWI	SE: THE COVER SHALL N			- NEAR RETURN ANGLES IN L, T AND U SHAPED STRUCTURES	
THE BAR DIAME					- WHERE SHOWN IN THE ARCHITECTURAL DRAWINGS THE CONTRACTOR IS TO OBTAIN APPROVED DRAWINGS SHOWING THE CONTROL	
ELEMENT	FORMED	FORMED AND EXPOSED TO	NOT INFORMED CAST AGAINST	M11	JOINTS PRIOR TO BUILDING ANY WALLS. ALL INTERSECTIONS THAT DON'T HAVE A CONTROL JOINT SHALL BE OF BONDED	
	INTERNAL	WEATHER (1.)	GROUND (2.)	IVI I I	CONSTRUCTION OR TIED WITH HEAVY DUTY TIES AT 400mm MAXIMUM VERTICAL	
FOOTINGS, PILE CAPS	-	60	75	M12	CENTRES. ALL CAVITY WALLS ARE TO BE CONSTRUCTED USING MEDIUM DUTY MASONRY	
				IVI I Z	TIES AT 600mm MAXIMUM CENTRES BOTH WAYS AND 300mm AVERAGE CENTRES	
COLUMNS, PEDESTALS	20	50	75		EACH SIDE OF OPENINGS. THE TIES SHALL BE EMBEDDED 50mm MINIMUM INTO EACH LEAF, WITH A 30mm COVER TO THE EXPOSED FACES.	
SLABS, BAND BEAMS	20(3.)	40	60	M13	WHERE A CONCRETE SLAB IS SUPPORTED ON MASONRY WALLS, THE TOP COURSE	
BEAMS	20	40	60		OF BLOCKS SHALL BE SOLID OR HOLLOW BLOCKS WITH CAVITIES FILLED TO A SMOOTH SURFACE OR A REINFORCED BOND BEAM. IN THE CASE OF BRICKS THE	
					UPPER COURSE SHALL BE FROGS DOWN, OR HOLES FILLED WITH MORTAR TO A	
WALLS HORIZONTAL	20	40	60		SMOOTH SURFACE. FOR NON-LOAD BEARING WALLS, LEAVE A 20mm GAP TO THE UNDERSIDE OF THE STRUCTURE.	
VERTICAL	30	50	60	M14	BONDING SHALL BE STRETCHER BOND UNLESS NOTED OTHERWISE.	
MINIMUM CONCRETE GRAD	DE N40	N40	N40	M15	WHEN CONSTRUCTING MASONRY WALLS ON SUSPENDED SLABS, ALL MASONRY UNITS SHALL BE STACKED NEAR THE FINAL LOCATION BEFORE BUILDING THE	
	-	-			WALL. THE SUPPORTING ELEMENT MUST NOT BE PROPPED AND MUST HAVE	
	E CLASSIFICATION B2 BE N40 MINIMUM.	ADD 5mm TO THE COVE	R AND THE CONCRETE	M16	ACHIEVED ITS DESIGN STRENGTH. FOR AREAS OF THE STRUCTURAL FLOOR SYSTEM WHICH SUPPORT MASONRY	
(2) IF THE ELEMEN		P PROOF MEMBRANE, DE	ECREASE THE COVER		WALLS/ PARTITIONS OR OTHER SENSITIVE ATTACHMENTS AT THE TIME OF THE	
(3) BY 20mm. FOR PRESTRES	SING TENDONS THE	MINIMUM COVER SHALL	BE 25mm.		INITIAL DESIGN, THE FLOOR SYSTEM HAS BEEN DESIGNED FOR NOT LESS THAN THE REQUIREMENTS OF AS 3600 TABLE 2.4.2 " WHERE PROVISION IS MADE TO	
(-)	SOILS AND WATER: N				MINIMISE THE EFFECT OF MOVEMENT".	
NOTES:				M17	GENERIC JOINT DETAILS ARE INDICATED ON THESE DRAWINGS FOR INFORMATION, BUT IT IS THE ARCHITECT'S RESPONSIBILITY TO IDENTIFY JOINT LOCATIONS AND	
(i) COVER IS THE C					TYPES WHERE APPROPRIATE ON ARCHITECTURAL DRAWINGS, AND TO PROVIDE	
	/	CE OF THE STRUCTURAL			DETAILS OF NON-STANDARD ELEMENTS TO ACCOMMODATE ANTICIPATED MOVEMENTS.	
SHALL NOT BE N	NAILED TO THE FORM	IS, REINFORCING BARS	SHALL NOT BE USED	M18	OBSERVATION OF CONSTRUCTION OF NON-LOAD BEARING MASONRY	
		DUGH TIE SYSTEM SHALI \RRIER FOR SLABS, BEA	L BE USED TO TIE FORMS. MS AND THICKENING		WALLS/PARTITIONS AND OTHER NON-LOAD BEARING ELEMENTS IS NOT INCLUDED IN THE STRUCTURAL ENGINEER'S SCOPE OF WORKS.	
CAST AGAINST	THE GROUND.	,		M19	STACKING OF BLOCKWORK:	
\ /		USING APPROVED BAR 0 x 800mm MAXIMUM CEN			GENERALLY, ON SUSPENDED SLABS AND SLABS ON GROUND, BLOCKS SHALL BE STACKED ONE PALLET HIGH (MAXIMUM PALLET MASS 1300kg) WITH 1200mm	
SUPPORTING B	ARS SHALL BE AT 60	BAR DIAMETERS OR 150	00 MAXIMUM CENTRES		CLEARANCE BETWEEN ADJACENT PALLETS ON ALL SIDES. THE WEIGHT OF	
		IAIRS SHALL BE PROVID	ED ALONG THE EDGES USED TO MAINTAIN THE		STACKED BLOCKS SHALL NOT EXCEED THE DESIGN LIVE LOAD FOR THE FLOOR. REFER PLANS FOR DESIGN LOADS.	
COVERS. CONS		TOP ENDS SHALL NOT B		M20	MASONRY UNDER CONSTRUCTION SHALL BE BRACED OR OTHERWISE STABILIZED AS	
(v) THE COVERS.	MENTS ARE THOSE F	XPOSED TO WEATHER,	RAIN AND WATER		NECESSARY TO RESIST WIND AND OTHER LATERAL FORCES, IN SUCH A MANNER THAT THE STRUCTURAL INTEGRITY OF THE MEMBER OR STRUCTURE IS NOT IMPAIRED, IN	
		B1 UNLESS NOTED OTH		· ·- ·	ACCORDANCE WITH AS3700	
C11 EXTERNAL CON	CRETE ELEMENTS A	BOVE GROUND SHALL M	IEET THE FOLLOWING	M21	MASONRY CORES SHALL BE CONCRETE FILLED WHERE MASONRY ANCHORS ARE REQUIRED	

- EXTERNAL CONCRETE ELEMENTS ABOVE GROUND SHALL MEET THE FOLLOWING C11 REQUIREMENTS: MINIMUM PORTLAND CEMENT CONTENT 330 kg/m3/. MAXIMUM WATER/CEMENT RATIO 0.5, AND THE CHLORIDE CONTENT RESTRICTED AS PER CLAUSE 4.9 OF AS3600.
- C12 ALL CONCRETE SUPPLIED SHALL HAVE A SLUMP OF 80mm AND A MAXIMUM NOMINAL AGGREGATE SIZE OF 20mm. VARIATIONS FROM THESE SHALL BE APPROVED BY THE ENGINEER THE MIX DESIGN WITH THE 7 AND 28 DAYS TARGET STRENGTHS AND THE BASIC C13
- SHRINKAGE STRAIN AT 56 DAYS SHALL BE SUBMITTED FOR REVIEW PRIOR TO POURING ANY CONCRETE. ALL CONCRETE IN CONTACT WITH AGGRESSIVE SOIL SHALL HAVE SULPHATE RESISTING CEMENT. THE C3A CONTENT OF THE CEMENT SHALL BE LESS THAN 5%. CONDUITS AND PIPES WHEN CAST IN SLABS OR WALLS ARE TO BE PLACED C14
- BETWEEN THE TWO REINFORCEMENT LAYERS. WHERE THERE IS ONLY ONE LAYER OF REINFORCEMENT, PROVIDE 50mm COVER TO CONDUIT. THE CONDUIT LOCATIONS ARE TO BE APPROVED BY THE ENGINEER. WHERE DISTRIBUTION BARS TO MAIN REINFORCEMENT ARE NOT SHOWN ON C15
- DRAWINGS PROVIDE MINIMUM N16 AT 400 CENTRES, LAPPED 500mm AT SPLICES. C16 FORMWORK SHALL BE DESIGNED, CONSTRUCTED AND SUPPLIED IN ACCORDANCE WITH AS 3610. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR CLASSES OF SURFACE FINISHES.
- C17 STRIPPING AND BACKPROPPING OF SOFFITS SHALL NOT OCCUR UNTIL CONCRETE HAS REACHED 75% OF SPECIFIED STRENGTH. BACK PROPPING (OR A SECOND SET OF TABLE FORMS) IS TO EXTEND DOWN SO THAT EACH NEW FLOOR IS SUPPORTED BY AT LEAST 3 FINISHED FLOORS OR AS CALCULATED. DO NOT STRIP BAYS ADJACENT CONSTRUCTION JOINTS UNTIL THE ADJACENT BAYS ARE AT LEAST 3 DAYS OLD. CALCULATIONS ON THE BACKPROPPING REQUIREMENTS SHALL BE SUBMITTED FOR APPROVAL.
- CURING OF THE CONCRETE ELEMENTS SHALL BE STARTED AS SOON AS THE C18 CONCRETE HAS HARDENED AND SHALL COMPLY WITH THE SPECIFICATIONS. C19 PROVIDE A 25mm x 25mm CHAMFER TO ALL CORBELS, UNLESS OTHERWISE INDICATED ON THE DRAWING. ENSURE THAT POLYSTYRENE IS PLACED AROUND THEBEARING SO THAT THE CONCRETE SURFACES ARE NOT IN CONTACT. SUBMIT CONFIRMATION OF THE SPECIFICATIONS OF ALL BEARING MATERIALS TO THE ENGINEER.
- ENSURE ALL MOVEMENT JOINTS ARE INSTALLED WITH THE SPECIFIED C20 ARCHITECTURAL FINISH, INCLUDING SEALANT, FILLERS, EXPANSION MATERIALS AND REBATES AS REQUIRED.

DRAWINGS

CONCRETE TESTING METHOD SHALL BE PREPARED IN ACCORDANCE WITH AS1379 AND C21 CONCRETE SPECIFICATION. MINIMUM FORMWORK STRIPPING TIME FOR IN-SITU CONCRETE FORMWORK SHALL C22 COMPLY WITH AS3610.1:2018 APPENDIX C UNLESS SPECIFIED OTHERWISE IN THE



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BLOCKS

SPECIFICATION.

A1

A3

SS1

SS2

SS6

AUTOCLAVED AERATED CONCRETE BLOCKWORK

WHERE SPECIFIED, ALL BLOCKS ARE TO CONSIST OF THERMOBLOCK GRADE 1

INSTALLATION OF ALL AAC WALLS SHALL BE IN STRICT ACCORDANCE WITH THE

ATTACHMENT OF FIXINGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S

WHERE AAC BLOCKWORK IS CONSTRUCTED ADJACENT TO PRECAST / CONCRETE

BLOCKWORK OR CONCRETE SLABS THEY SHALL BE FIXED IN ACCORDANCE TO

MANUFACTURERS RECOMMENDATIONS. THE MINIMUM REQUIREMENTS SHALL BE

SECONDARY STEELWORK IS ALL STEELWORK THAT IS NOT REQUIRED TO SUPPORT THE

MAIN BUILDING STRUCTURE, SECONDARY STEELWORK SHALL INCLUDE, BUT NOT BE

LIMITED TO STEELWORK ASSOCIATED WITH; CEILING SYSTEMS, CLADDING SYSTEMS,

INTERNAL PARTITIONS, DOOR AND GLAZING SYSTEMS, FURNITURE AND FIXTURES,

LIGHTING SYSTEMS, FALL ARREST / RESTRAINT SYSTEMS, ACCESS SYSTEMS AND

SECONDARY STEELWORK IS NOT INCLUDED IN THE STRUCTURAL DOCUMENTATION

THE CONTRACTOR SHALL REFER TO THE OTHER CONSULTANTS DOCUMENTATION FOR

THE CONTRACTOR SHALL ALLOW TO DESIGN, SUPPLY AND INSTALL ALL SECONDARY

STEELWORK AS REQUIRED ON THE OTHER CONSULTANTS DOCUMENTATION.

THE CONTRACTOR SHALL ALLOW PROVISION FOR THE COST OF ADDITIONAL

WITH THE DESIGN AND/OR DOCUMENTATION OF THE SECONDARY STEELWOR

PLEASE REFER TO STANDARD STEEL CONNECTION DETAIL SHEETS FOR TYPICAL

CONNECTION DETAILS. STEELWORK CONNECTION DETAILS ARE LIMITED TO MAJOR

CONNECTIONS ONLY. FURTHTER DETAILING MAY BE REQUIRED DURING DEVELOPING

ENGINEERING SERVICES SHOULD THEY REQUEST MEINHARDT TO ASSIST

IRRESPECTIVE OF WHETHER THE OTHER CONSULTANTS DOCUMENTATION MAKE

REFERENCE TO THE STRUCTURAL DOCUMENTATION FOR THE SAME.

EQUIPMENT SUPPORT SYSTEMS, SIGNAGE, HANDRAIL SYSTEMS, BARRIER SYSTEMS,

AS PER THE TYPICAL BLOCKWORK DETAILS WITH TIES AT 600mm MAX. CTRS

MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATION.

INTERNALLY AND AT 400mm MAX. CTRS EXTERNALLY

ALL SECONDARY STEELWORK REQUIREMENTS.

SECONDARY STEELWORK NOTES

PROPRIETARY PRODUCTS.

FOR CONSTRUCTION DRAWINGS

SCHOOL INFRASTRUCTURE NSW

STRUCTURAL NOTES SHEET '

School Infrastructure NSW

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TEELWORK SHALL COMPLY TO AS 4100, AS/NZS 4600 AND AS/NZS 3828

WHICH SHALL COMPLY WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS, FOR REVIEW BEFORE FABRICATION IS STARTED, REVIEW DOES NOT INCLUDE CHECKING OF DIMENSIONS, NOR TAKE RESPONSIBILITY FOR CONTRACTORS OBLIGATIONS. ALLOW 3 WORKING DAYS MINIMUM FOR REVIEW. WHERE CONNECTION FORCES (IN KILONEWTONS) ARE SHOWN ON THE DRAWINGS, CONNECTIONS SHALL BE PROVIDED TO TRANSMIT THESE FORCES. CONNECTIONS SHALL PROVIDE FOR A MINIMUM FORCE OF 40kN. ALL DETAILS, GAUGE LINES, ETC. WHERE NOT SPECIFICALLY SHOWN SHALL BE IN ACCORDANCE WITH AISC DESIGN CAPACITY TABLES FOR STRUCTURAL STEEL AND AISC STANDARDIZED STRUCTURAL CONNECTIONS. UNLESS OTHERWISE NOTED: WELDS TO BE 6mm CONTINUOUS FILLETS LAID DOWN WITH APPROVED COVERED ELECTRODES. ALL WELDS SHALL BE CATEGORY SP UNLESS OTHERWISE NOTED. WELDS SHALL CONFORM TO AS/NZS 1554 AND

THE FABRICATOR SHALL BE RESPONSIBLE FOR SUBMITTING SHOP DRAWINGS,

ELECTRODES TO AS/NZS 1553, GUSSET PLATES TO BE 10mm THICK, BOLTS TO BE M20-8.8/S IN 22mm DIAMETER HOLES. PROVIDE A MINIMUM OF TWO BOLTS PER CONNECTION. FABRICATOR SHALL PROVIDE ALL FIXINGS FOR ARCHITECTURAL ELEMENTS ETC. WITHOUT WEAKENING STRUCTURAL MEMBER IN ANY WAY.

CAMBER SHALL BE PROVIDED TO ALL ROOF BEAMS, TRUSSES, AND PORTALS ETC. AT 5 PER 2000 OF SPAN UNLESS OTHERWISE NOTED, FOR ALL MEMBERS SPANNING IN EXCESS OF 6m. NO MEMBER SHALL BE ERECTED WITH NEGATIVE CAMBER, UNLESS SPECIFICALLY NOTED FOR CONCRETE SLABS ON TOP OF STEELWORK DEPTH GAUGES SHALL BE USED TO VERIFY THE SLAB THICKNESS. ALL STEELWORK BELOW GROUND SHALL BE ENCASED BY CONCRETE WITH MIN. COVER OF 75mm. CONCRETE ENCASED STRUCTURAL STEEL TO BE WRAPPED WITH PRE-GALVANIZED G444HS MESH PLACED 25mm CLEAR OF STEEL. PROVIDE 50mm

MINIMUM COVER. ALL STEELWORK NOT TO BE ENCASED IN CONCRETE OR GALVANIZED SHALL BE GIVEN ONE SHOP COAT OF AN APPROVED PRIMER UNLESS OTHERWISE NOTED. FACES OF ERICTION GRIP CONNECTIONS SHALL NOT BE PAINTED THE BOLTING PROCEDURE IS DESIGNATED AS FOLLOWS:

4.6/S REFERS TO COMMERCIAL BOLTS OF STRENGTH GRADE 4.6 TO AS/NZS 1111 TIGHTENED USING A STANDARD WRENCH TO A SNUG-TIGHT CONDITION. 8.8/S REFERS TO HIGH STRENGTH BOLTS OF STRENGTH GRADE 8.8 TO

AS/NZS 1252 TIGHTENED USING A STANDARD WRENCH TO A SNUG-TIGHT CONDITION 8.8/TF REFERS TO HIGH STRENGTH BOLTS OF STRENGTH GRADE 8.8 TO AS/NZS 1252 FULLY TENSIONED TO AS 1511, DESIGNED AS A FRICTION TYPE JOINT 8.8/TB REFERS TO HIGH STRENGTH BOLTS OF STRENGTH GRADE 8.8 TO AS/NZS 1252 FULLY TENSIONED TO AS 1511, DESIGNED AS A BEARING TYPE JOINT LOAD INDICATING WASHERS SHALL BE USED TO VERIFY TIGHTENING OF BOLTS IN TF AND TB CONNECTIONS. A HARDENED WASHER SHALL BE USED UNDER THE BOLT HEAD OR NUT, WHICHEVER IS ROTATED, FULLY TENSIONED BOLTS SHALL NOT BE RE-USED. WELDING OF CAPTIVE NUTS TO STEELWORK SHALL BE GRADE 4.6S. CLASS 5 NUTS. THE ELECTRODES USED SHALL BE COMPATIBLE WITH THE CHEMISTRY OF THE STEEL INVOLVED (MEMBER OR CONNECTION COMPONENT AND NUT), ALL SUCH WELDS SHALL HAVE 100% VISUAL INSPECTION. GRADE 4.6S BOLTS TO BE USED.

ALL BOLTS SHALL BE OF SUCH LENGTH THAT AT LEAST ONE FULL THREAD IS EXPOSED BEYOND THE NUT AFTER THE NUT HAS BEEN TIGHTENED. MINIMUM ONE WASHER SHALL BE USED UNDER THE NUT IN ALL SITUATIONS IF TIGHTENING IS CARRIED OUT AT THE HEAD. AN ADDITIONAL WASHER SHALL BE USED UNDER THE HEAD. FOR SLOTTED HOLES, SHORTER THAN THE LESSER OF 1.33 TIMES THE BOLT DIAMETER OR (BOLT DIAMETER + 10mm) AND NOT WIDER THAN THE BOLT DIAMETER PLUS 2mm, USE HARDENED WASHER UNDER THE NUT AND BOLT HEAD.

UNLESS NOTED OTHERWISE, ALL MATERIAL TO BE: GRADE 250 HOT ROLLED PLATES, FLATS GRADE 300PLUS UB, UC, PFC, TFB AND ANGLES

GRADE 300 WB, WC:

GRADE 350 RHS, CHS.

STRUCTURAL STEEL SHALL COMPLY WITH AS/NZS 1163, AS/NZS 3678, AS/NZS 3679.1 OR AS/NZS 3679.2. TEST CERTIFICATES RELATING TO THE STRUCTURAL STEEL SUPPLIED. SHALL BE MADE AVAILABLE TO THE SPECIFIER. ACCEPTABLE MANUFACTURERS OF STRUCTURAL STEEL MUST ALSO HOLD A VALID CERTIFICATE OF APPROVAL, ISSUED BY THE AUSTRALIAN CERTIFICATION AUTHORITY FOR REINFORCING STEELS LTD (ACRS), MATERIALS CERTIFIED TO AN ALTERNATIVE SYSTEM SHALL NOT BE USED WITHOUT DEMONSTRATED EQUIVALENCE AND SUBSEQUENT WRITTEN APPROVAL FROM THE SPECIFIER. EVIDENCE OF COMPLIANCE WITH THIS CLAUSE MUST BE OBTAINED WHEN

CONTRACT BIDS ARE RECEIVED. HOT DIPPED GALVANIZING SHALL BE IN ACCORDANCE WITH AS 4680 MINIMUM COATING THICKNESS OF 85 MICRONS. PROVIDE MEMBERS TO BE GALVANIZED WITH VENT AND DRAINAGE HOLES IN ACCORDANCE TO THE GALVANISER'S RECOMMENDATIONS AND THE ACCEPTANCE OF THE ENGINEER

THE ENDS OF TUBULAR MEMBERS SHALL BE SEALED WITH NOMINAL THICKNESS PLATES AND CONTINUOUS FILLET WELDED UNLESS NOTED OTHERWISE. WHERE MEMBERS SHOWN ON THE STRUCTURAL OR ARCHITECTURAL DRAWINGS ARE REQUIRED TO BE CURVED, BENT OR ROLLED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE METHODS REQUIRED TO ACHIEVE THE REQUIRED SHAPES WITHOUT LOCALIZED DISTORTION OF THE MEMBERS THE CONTRACTOR SHALL PROVIDE AND LEAVE IN PLACE. UNTIL PERMANENT

BRACING ELEMENTS ARE CONSTRUCTED. SUCH TEMPORARY BRACING AS IS NECESSARY TO STABILIZE THE STRUCTURE DURING ERECTION. REFER TO NOTES G4 AND G5 SUBMIT DETAILS OF THE MANUFACTURER, MATERIAL AND SECTION PROPERTIES

OF THE PURLINS AND GIRTS TO BE USED FOR APPROVAL. PURLIN AND GIRT BOLTS AND BRIDGING SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S DETAILS UNLESS SHOWN OTHERWISE. TRIMMING MEMBERS FOR MECHANICAL/HYDRAULIC PENETRATIONS, DRAINAGE

GUTTERS, SUMPS ETC., ARE NOT NECESSARILY SHOWN, SUPPORT OF HEAVY PIPES AND DUCTS IS TO BE APPROVED BY THE ENGINEER. SERVICES SHALL BE HUNG FROM THE WEB OF PURLINS NOT FLANGES. THE DESIGN, SUPPLY AND INSTALLATION OF SECONDARY STEELWORK REQUIRED

TO SUPPORT/CONNECT THE FACADE TO BASE STRUCTURE IS THE RESPONSIBILITY OF THE CONTRACTOR. CERTIFICATION OF ARCHITECTURAL FIXINGS/BRACING OF CEILINGS AND NON-

STRUCTURAL WALLS TO THE BASE STRUCTURE IS THE RESPONSIBILITY OF THE CONTRACTOR FORWARD TO THE ENGINEER & CERTIFICATE OF SUFFICIENCY BY THE SUPPLIER FOR THE ARCHITECTURAL FIXTURES/PANELS/DRY-WALL TO RESIST THE PRESSURES DESIGNATED IN THE DESIGN DOCUMENTS.

DEFLECTION LIMITS APPLICABLE TO STEEL FRAMED ROOFS PROPOSED DEFLECTION CRITERIA FOR STEEL FRAMED

MAXIMUM DEFLECTION LIMITS									
ТҮРЕ	DEAD (G)	IMPOSED (ΨsQ)	WIND	LONG TERM DEAD + IMPOSED (G+ΨLQ)					
NO CEILINGS WITH ROOF PITCH > 3°	SPAN/360	SPAN/250	SPAN/150	SPAN/150					
NO CEILINGS WITH ROOF PITCH <3°	SPAN/500	SPAN/250	SPAN/150	SPAN/150					
LIGHTWEIGHT CEILINGS WITH ROOF PITCH > 3°	SPAN/360 25 mm MAX.	SPAN/300	SPAN/250	SPAN/250					
LIGHTWEIGHT CEILINGS WITH ROOF PITCH < 3°	SPAN/500	SPAN/300	SPAN/250	SPAN/250					
COMMERCIAL PLASTERBOARD AND ACOUSTIC CEILINGS	SPAN/500 25 mm MAX.	SPAN/600	SPAN/600	SPAN/250					

STATUS

ENSURE PONDING DOES NOT OCCUR AND MINIMUM PITCH OF ROOF IS MAINTAINED FOR FALLS TO DRAINAGE OUTLETS.

PRELIMINARY

NORTHMEAD PUBLIC SCHOOL

MOXHAMS ROAD, NORTHMEAD, NSW 2152

SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISIO
TG	AA	JB	23.09.24	1:100	D/
PROJECT No	132567				
DRAWING No					
		$\nabla \nabla \nabla V$			1

NPS-MH1-XX-XX-DR-S-0001

POST TENSIONED CONCRETE BY PT CONTRACTOR GNED AND CERTIFIED BY PT CONTRACTOR HALL COMPLY TO AS3600 AND AS3610

- SCOPE OF WORKS: THE SCOPE OF WORKS SHALL CONSIST OF THE DESIGN, PTC1 INSTALLATION AND CERTIFICATION OF THE POST-TENSIONED PRESTRESSING AND THE NON-TENSIONED REINFORCEMENT, FOR THE FLOOR SLABS SHOWN. THE POST-TENSIONED PRESTRESSING AND THE NON-TENSIONED REINFORCEMENT SHALL EXTEND FOR THE FULL PLAN AREA, INCLUDING ALL STRUCTURAL HOBS, FOLDS, SETDOWNS FORMING PART OF THE FLOOR SLAB OTHER THAN HATCHED AREAS DENOTED AS DESIGNED BY MEINHARDT-BONACCI GROUP IT IS THE SUB-CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE POST-TENSIONED PRESTRESSING AND THE NON-TENSIONED REINFORCEMENT IS DESIGNED, INSTALLED AND CERTIFIED IN ACCORDANCE WITH THESE NOTES AND THE REQUIREMENTS OF AS3600 AND AS1170. THE NON-TENSIONED REINFORCEMENT INCLUDES ANCHORAGE ZONE BURSTING/SPALLING REINFORCEMENT, THE REINFORCEMENT OF ANY SLAB AREAS NOT INCLUDED IN THE PRESTRESSED AREAS AND, ANY ADDITIONAL REINFORCEMENT USED TO COMPLIMENT THE PRESTRESS IN THE SLABS.
- PTC2 COLUMN STIFFNESS CONTRIBUTION OF THE COLUMNS IN THE FLOOR SLAB DESIGN SHALL BE BASED ON MAX. 20% EQUIVALENT COLUMN STIFFENESS. PTC3
- APPROVAL: THE SUB-CONTRACTOR MUST SUBMIT ONE COPY OF THE TENDON AND REINFORCEMENT LAYOUT PLANS, FOR APPROVAL AT LEAST 3 WEEKS PRIOR TO THE COMMENCEMENT OF ANY INSTALLATION WORK. THESE PLANS MUST SHOW EACH TENDON LOCATION AND SIZE, THE DRAPE POINTS AND, ANY NON-TENSIONED REINFORCEMENT. NO INSTALLATION WORK MAY COMMENCE UNTIL THE APPROVED I AYOUT PLAN INCORPORATING ANY BUILDER'S REQUIREMENTS IS RETURNED TO THE SUB-CONTRACTOR. THIS APPROVAL PERIOD WILL NORMALLY TAKE 7 DAYS.
- DESIGN CERTIFICATION: A CPENG STRUCTURAL ENGINEER (WITH NER) SHALL CERTIFY THE SLAB DESIGN. THE CERTIFICATION MUST STATE THAT THE SLAB IS STRUCTURALLY PTC4 ADEQUATE TO RESIST THE DESIGN LOADS IN ACCORDANCE WITH ALL RELEVANT AUSTRALIAN STANDARDS. THE CERTIFYING ENGINEER SHALL MAINTAIN PROFESSIONAL INDEMNITY INSURANCE \$20 MILLION AND PROVIDE A COPY OF THEIR CERTIFICATE OF INSURANCE CURRENCY.
- CONSTRUCTION CERTIFICATION: A CPENG STRUCTURAL ENGINEER (WITH NER) SHALL PTC5 CERTIFY THAT THE PRESTRESSING AND REINFORCEMENT AS INSTALLED IN THE SLAB, COMPLIES WITH THE APPROVED CONSTRUCTION DESIGN PLAN AND, IN PARTICULAR, THAT ALL TENDONS AND REINFORCEMENT WAS ACCURATELY POSITIONED WITH THE CORRECT COVER AND THAT ALL TENDONS HAVE BEEN CORRECTLY STRESSED AND GROUTED. THE CERTIFYING ENGINEER SHALL MAINTAIN PROFESSIONAL INDEMNITY INSURANCE OF \$20 MILLION AND PROVIDE A COPY OF THEIR CERTIFICATE OF INSURANCE CURRENCY.
- DESIGN NOTES FOR SERVICEABILITY: PTC6

GENERAL DEFLECTION CRITERIA FOR ALL FLOORS.

MAXIMUM DEFLECTION LIMITS									
TYPE	DEAD (G)	INCREMENTAL	IMPOSED (ΨsQ)	LONG TERM DEAD + IMPOSED (G+ΨLQ)					
SUPPORTING NON- MASONRY PARTITIONS	SPAN/360 25 mm MAX.	-	L/500	SPAN/300 30 mm MAX.					
SUPPORTING MASONRY PARTITIONS	SPAN/360 25 mm MAX.	SPAN/1000 OR; SPAN/750 IF MASONRY ARTICULATED	L/500	SPAN/360 25 mm MAX.					
COMPACTUS AREAS	SPAN/360 25 mm MAX.	SPAN/750 10 mm MAX.	L/500	SPAN/360 25 mm MAX.					

NOTES INCREMENTAL DEFLECTION IS DEFINED AS LONG-TERM DEFLECTION MINUS SHORT-TERM DEFLECTION, AND OCCURS AFTER THE ADDITION OR ATTACHMENT OF THE FINISH, WALL OR PARTITION ELEMENTS LONG-TERM CREEP, WHEN PRESENT, NEEDS TO BE INCLUDED IN ASSESSING THE LONG-TERM DEFLECTION OF MEMBERS THAT ATE

PRONE TO CREEP. NATURAL FLOOR FREQUENCY : 4 HERTZ MINIMUM PTC7

- PTC8 COVER ALL TENDONS AND REINFORCEMENT SHALL HAVE COVER SUFFICIENT TO ACHIEVE THE
- REQUIREMENTS FOR: EXPOSURE CLASSIFICATION - INTERIOR AREAS - A1
- BALCONIES AND EXTERIOR AREAS A2 FIRE RESISTANCE - REFER TO BUILDING REGULATORY ADVICE FOR REQUIRED FIRE RESISTANCE LEVEL (FRL) OF DIFFERENT BUILDING ELEMENTS
- PTC9 MINIMUM PRESTRESS: EACH SLAB SHALL HAVE AN AVERAGE P/A > 1.4 MPa PODIUMS, COURTYARDS AND TERRACES FORMING ROOFS ARE TO BE DESIGNED TO BE WATERTIGHT AND WITH A MINIMUM P/A > 1.8 MPa.
- PTC10 CONCRETE: THE CONCRETE STRENGTH SHALL BE THE SAME AS THAT SHOWN ON GENERAL ARRANGEMENT PLANS. SHOULD A HIGHER STRENGTH BE REQUIRED, THE SUB-CONTRACTOR MUST SEEK APPROVAL FROM THE ENGINEER PRIOR TO COMPLETION OF THE DESIGN. THE TRANSFER STRENGTH MUST BE NOTED ON THE SUB-CONTRACTOR'S PLAN. THE SLAB THICKNESS SHALL BE AS INDICATED ON THE PLAN AND SECTIONS.
- PTC11 CONSTRUCTION NOTES: ANCHORAGES SHALL NOT BE EXPOSED ON ANY EXTERIOR FACE OF THE BUILDING. ALL TENDONS AND REINFORCEMENT MUST BE SECURELY POSITIONED AND FIXED PRIOR TO CONCRETE PLACEMENT.
- STRESSING RECORDS OF THE PRESSURE GAUGE AND EXTENSIONS SHALL BE PTC12 ACCURATELY MADE AND SUBMITTED TO THE ENGINEER FOR APPROVAL. ALL TENDONS MUST BE GROUTED IN THEIR DUCTS WITH PORTLAND CEMENT BASED GROUT, AFTER APPROVAL OF THE STRESSING RECORDS.
- PTC13 ALL ANCHORAGE RECESSES AND ANY PANS (USED TO ACCESS INTERNAL LIVE ANCHORAGES) MUST BE FILLED WITH 30 MPa GROUT, FINISHED TO A SMOOTH AND LEVEL SURFACE. THE CONTRACTOR IS TO ALLOW FOR THE DRILLING OF EDGE BOARDS TO ALLOW FOR THE FIXING OF ANCHORS.
- PTC14 WHERE SLAB THICKNESS EXCEEDS 270mm THE SUBCONTRACTOR SHALL ALLOW FOR SL72 MESH TOP AND HEAVY DUTY BAR CHAIRS PTC15 THE SUBCONTRACTOR IS RESPONSIBLE FOR DETAILING ALL POST-TENSIONED

STAGING METHODS AND/OR DETAILING TO ACCOUNT FOR ABOVE EFFECTS.

SLABS/BEAMS TO RESIST THE EFFECTS OF ANY SHRINKAGE OR RESTRAINT THAT MAY OCCUR FROM SURROUNDING WALLS, MULTIPLE LIFT CORES, GROUND WORKS UNBALANCED P/A STRESSES ETC THAT MAY LEAD TO CONCRETE ELEMENTS BOTH HORIZONTALLY AND VERTICALLY CRACKING. SUBCONTRACTOR TO SUPPLY REINFORCEMENT WHERE REQUIRED AND CONSTRUCT SLAB USING APPROPRIATE

ITEM / MATERIAL	
CONCRETE	- USE MATERIALS COM - DO NOT USE BRECCI - FLY ASH IS A MANUF LIMITED TO A MAXIMU - PORTLAND CEMENT ALL CONCRETE USED - THE MIX WATER FOR WATER (MEASURED A EITHER OF THE FOLLO 1- AT LEAST 40% OF C ALTERNATIVE MATERI THE USE OF SUCH MA PER CUBIC METRE OF 2- AT LEAST 25% OF F ALTERNATIVE MATERI USE OF SUCH MATERI USE OF SUCH MATERI CUBIC METRE OF CON
TIMBER	- EITHER NO NEW ENG ENGINEERED WOOD P DESIGN & AS BUILT V1 - ALL ENGINEERED WO FORMALDEHYDE EMIS - "NO RAINFOREST TIM PLANTATION GROWN. TIMBER FROM PLANTA CERTIFIED. ALL TIMBE TO THE APPROPRIATE - 95% (BY COST) OF AL - CERTIFIED BY A FOR CERTIFICATION; OR IS
STEEL	- 95% OF ALL STEEL IS STRUCTURAL STEELW REINFORCING BAR AN
RISK	- ALL RISK ITEMS IDEN BY SPECIFIC DESIGN F DESIGN.

DESIGN LOADS:

DESIGN LOADS:		
LOCATION	DEAD LOAD ^{kPa}	LIVE LOAD ^{kPa}
CLASSROOMS (GENERAL)	1.5	3.0
BASEMENT STORAGE, BULK STORAGE, STAGE, KILN DRY	0.5	7.5
OTHER STORES, TECHNOLOGY, FOOD PREPARATION AREAS, APPLIED STUDIES, COMPUTER AREAS, ARTS, PLANTS, LEARNING SPACE, WORKSHOPS	0.5	5.0
LIBRARY	1.5	4.0
GYM	2.0	5.0
COMMUNITY FACILITIES	2.0	5.0
LOBBIES, CORRIDORS AND STAIRS etc	1.5	4.0
KITCHEN, PANTRY	1.5	5.0
FIRE STAIRS	0.5	4.0
WOOD & METAL STORE	0.5	10.0
CEILING & SERVICES	0.5	-
ARTHOUAKE		

EARTHQUAKE PROJECT WILL BE DESIGNED IN ACCORDANCE WITH AS1170.4-2024. HAZARD FACTOR: Z = 0.08 LIFE SPAN: 50 YEARS SITE SUBSOIL: CLASS Ce PROBABILITY OF EXCEEDANCE KP = 1.3 IMPORTANCE LEVEL; 3

WIND REGION: A2 DESIGN REGIONAL WIND SPEED: 46 m/s TC = 3

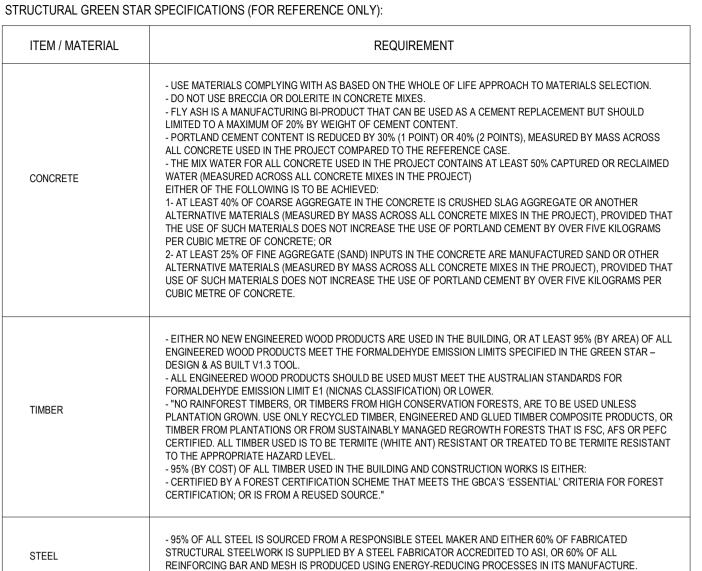
Mt = 1.0 Md = AS PER AS1170.2 Mz,cat = 0.9

NOTE: IT IS RECOMMENDED TO KEEP THE AREAS WITH LIVE LOADS BEYOND 7.5 KPA IN GROUND LEVEL.

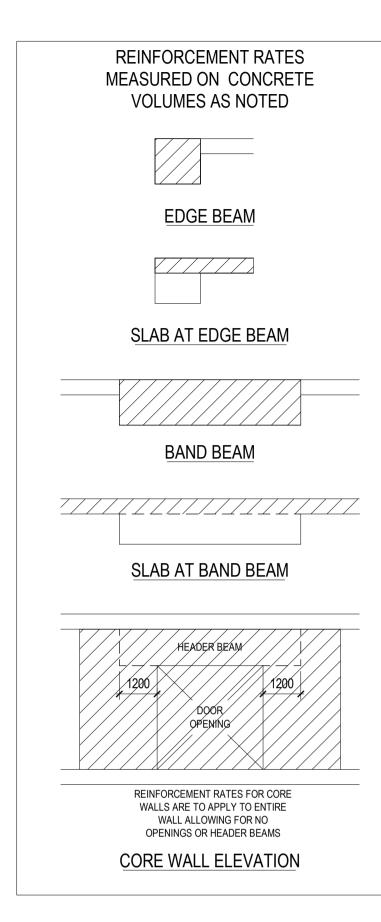
THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT SITE INSTRUCTIONS, SKETCHES, SHOP DRAWINGS, SUB-CONTRACTOR DRAWINGS AND PROJECT CORRESPONDENCE. ACCURACY AND SET-OUT IS TO BE CONFIRMED BY SITE SURVEY.

REV DESCRIPTION	BY	APP	DATE						PROJECT NORTH	
1,01 CONCEPT DESIGN DEVELOPMENT	AA	JB	13.11.24							
P02 75% SCHEMATIC DESIGN	DT	EA	22.11.24							
P03 95% SCHEMATIC DESIGN	DT	EA	13.12.24							
P04 100% SCHEMATIC DESIGN	DT	EA	20.12.24							
				0	1000	2000	4000	6000		
										NICI
						SCALE (m	ım) 1:100			N S V
										GOVERNM

STRUCTURAL NOTES



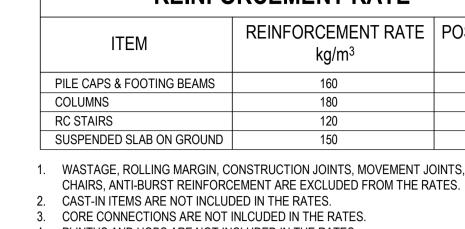
ENTIFIED AS 'HIGH' OR 'EXTREME' FROM THE CLIMATE RISK WORKSHOP MUST BE ADDRESSED NRESPONSES. AT LEAST TWO RISK ITEMS IDENTIFIED MUST ALSO BE ADDRESSED IN THE



ANCHORAGE / SPLICE LENGTH TABLE									
SPLICE LENGTHS of TENSION BARS in SLABS and BEAMS (mm)									
		in 300mm of ar or vertical			More than 300mm of concrete below bar				
		CONCRE	TE GRADE			CONCRET	LE GRADE		
Bar Size	N	32	>=	N40	N	32	>=	N40	
	SLAB	BEAM	SLAB	BEAM	SLAB	BEAM	SLAB	BEAM	
N10	400	400	400	400	500	450	500	400	
N12	500	500	500	500	650	550	600	500	
N16	750	650	700	650	1000	850	900	750	
N20	1000	900	900	800	1300	1150	1150	1050	
N24	1250	1150	1100	1050	1600	1500	1450	1350	
N28	1500	1450	1350	1300	2000	1900	1750	1700	
N32	1800	1750	1600	1600	2300	2300	2050	2050	
N36	2100	2100	1900	1900	2700	2700	2400	2400	
Approximate Splice Rule	55	db	50 db		75 db		65 db		
Approximate Anchorage Rule	45	db	40	db	60	db	55	db	

These lengths apply for all bars in beams and slabs.

- 2. The minimum cover to the bar under consideration is to be the greater of 20mm for slabs, 35mm for beams, or the bar diameter.
- The clear spacing between spliced bars must be less than one bar diameter.
- For N25 concrete, multiply the lengths of N32 concrete by 1.15 5.
- Unless shown on the drawings the splice locations must be approved by the engineer. 6. For Anchorage lengths of bars, multiply the Splice lengths by 0.8
- db denotes bar diameter . 7.
- The minimum clear spacing of bars to be 120mm. 8



- PLINTHS AND HOBS ARE NOT INCLUDED IN THE RATES.
- HOISTS, SAFETY MESH, CRANE CONNECTIONS, SCREENS AND TEMPORARY LOADINGS UNO.

BAR COG SCHEDULE						
Ø BAR	MINIMUM COG LENGTH					
N12	180mm					
N16	210mm					
N20	260mm					
N24	310mm					
N28	360mm					
N32	400mm					
N36	450mm					
COG						
NOTE: COG LENGTHS TO BE AS PER SCHEDULE UNLESS NOTED OTHERWISE						

		CONCRE	TE GRADE			
BAR DIAMETER	N32	N40	N50	N65-N100		
12	500	500	500	500		
16	650	650	650	650		
20	850	800	800	800		
24	1100	1000	1000	1000		
28	1400	1250	1150	1150		
32	1700	1550	1400	1300		
36	2050	1850	1650	1450		
MAXIMUM CLEAR GAP BETWEEN BARS ONE BAR DIAMETER. MINIMUM COVER 40mm NOTE: ADJACENT SHUTTERS VERTICAL BARS MAY BE PLACED IN OUTER LAYER MINIMUM CLEAR SPACING 120mm						

HORIZONTAL

BAR DIAMETER





School Infrastructure NSW



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SCHOOL INFRASTRUCTURE NSW

STRUCTURAL NOTES SHEET 2

TITLE

REINFORCEMENT RATE

DRCEMENT RATE kg/m ³	POST-TENSIONING RATE kg/m ²
160	N/A
180	N/A
120	N/A
150	N/A

1. WASTAGE, ROLLING MARGIN, CONSTRUCTION JOINTS, MOVEMENT JOINTS, DISTRIBUTION BARS,

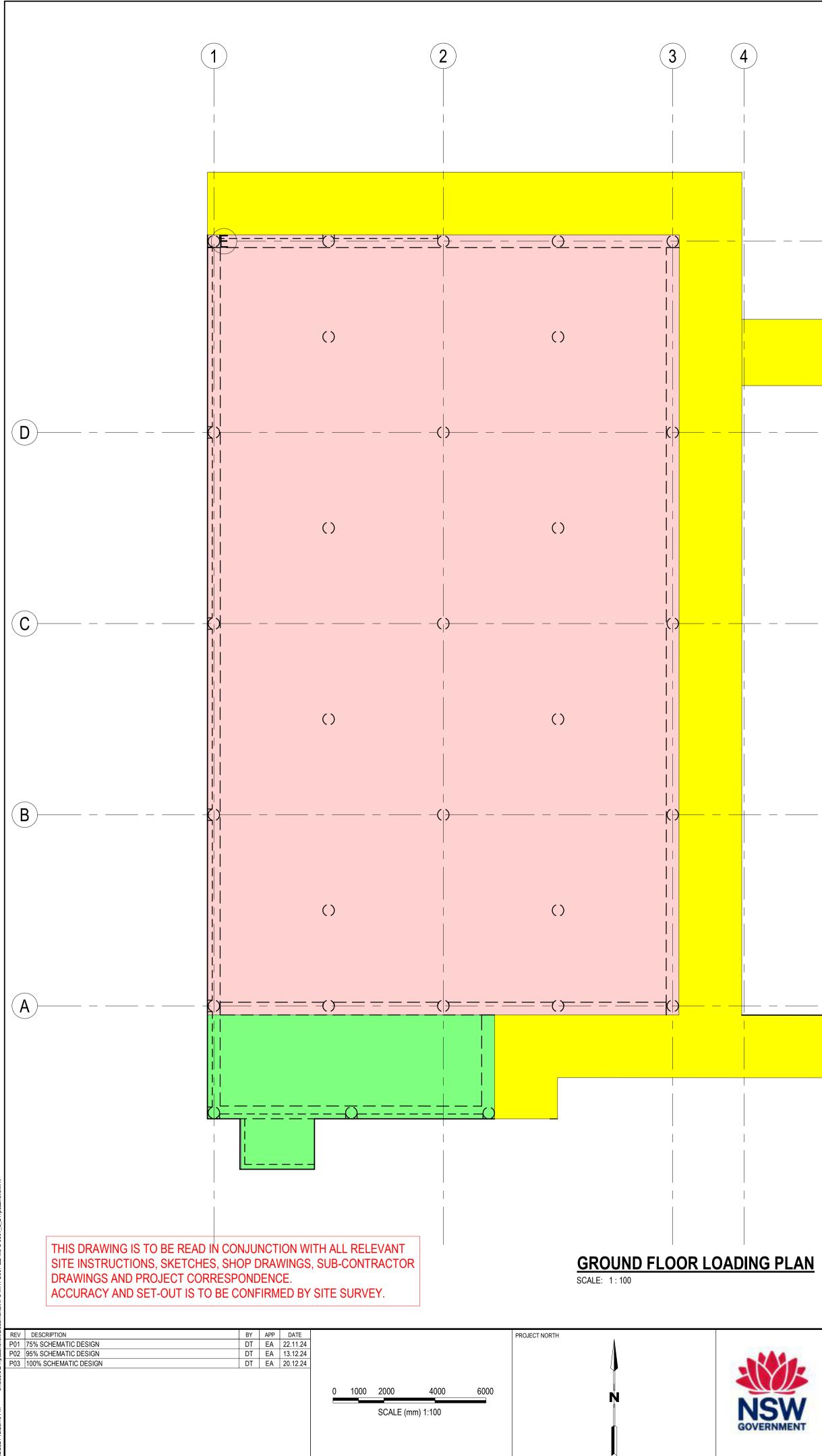
RATES DO NOT INCLUDE ANY ALLOWANCE FOR CONSTRUCTION-RELATED REQUIREMENTS SUCH AS

SPLICE LENGTHS IN WALLS (mm)								
	CONCRETE GRADE							
	N32 N40 N50 N65-N100							
	650	600	550	500				
	1000	900	800	700				
	1300	1150	1050	900				
WE	WEEN BARS ONE BAR DIAMETER.							

NOTE: FOR WALLS EXPOSED TO WEATHER REFER GENERAL NOTES.

PRELIMINARY

NORTHMEAD PUBLIC SCHOOL							
MOXHAMS ROAD, NORTHMEAD, NSW 2152							
STATUS	DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION	
	TG	AA	JB	23.09.24	As	P04	
SCHEMATIC DESIGN	PROJECT No	132567			indicated	107	
	DRAWING No						
	NPS-	MHT-	XX-X>	K-DR-	S-000	2	





School Infrastructure NSW



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GROUND FLOOR LOADING PLAN

TITLE

FLOOR DESIGN	LOADS	(UNLESS NOTED OTHERWISE)		
	SUPERIMPOSED DEAD LOAD (kPa)	<u>LIVE LOAD</u> (kPa)	<u>AREA</u>	
	1.5 + 0.5*	3.0	CLASSROOM (GENERAL) & OFFICES	
	1.5	4.0	LOBBIES, CORRIDOR & STAIRS	
	2.0 + 0.5*	2.0	STUDENT AMENITIES	
	0.5	2.5	PARKING AREA	
	1.5	4.0	LIBRARY	
	0.5 + 0.5*	5.0	GENERAL STORAGE	
	0.5	7.5	BULK MATERIAL STORAGE / KILN AREA	
	0.5	10.0	WOOD + METAL STORAGE	
	2.0	5.0	DANCE HALL, STUDIOS & GYMNASIUM	
	0.5	5.0	WORKSHOP	
	0.25	0.25	SOLAR PANELS	
	0.25	0.25	WALKWAY ROOF	

* ADDITIONAL DEAD LOAD DUE TO LIGHT FRAME STEEL STRUCTURE.

PRELIMINARY

PROJECT			
NORTH	IMEAD PL	JBLIC SC	HOOL

MOXHAMS ROAD, NORTHMEAD, NSW 2152

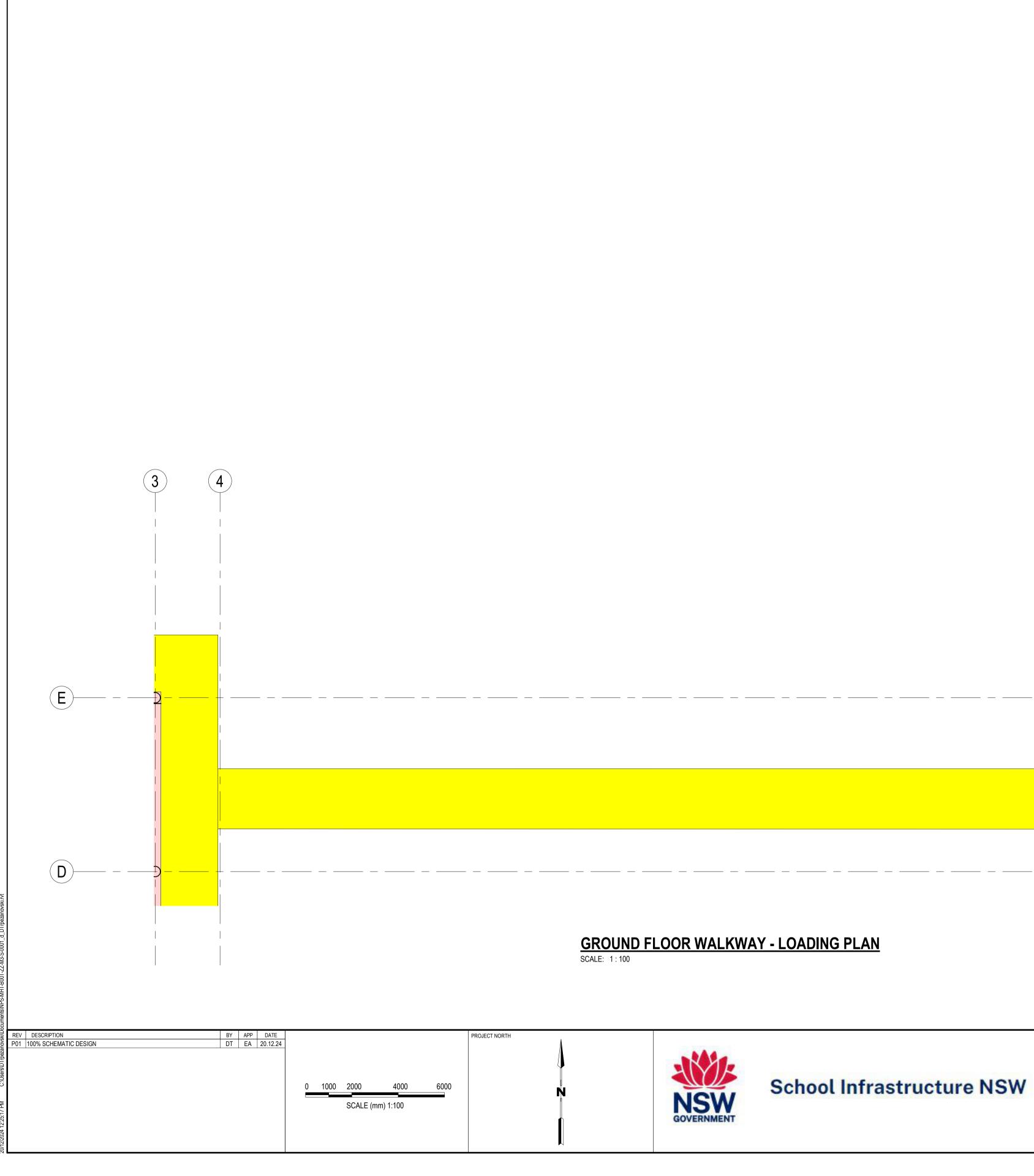
STATUS

SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
TG	AA	Approver	23.09.24	1:100	DUS
PROJECT No	132567	1.1			F UJ
DRAWING No					

P03

NPS-MHT-B00T-GF-DR-S-1010





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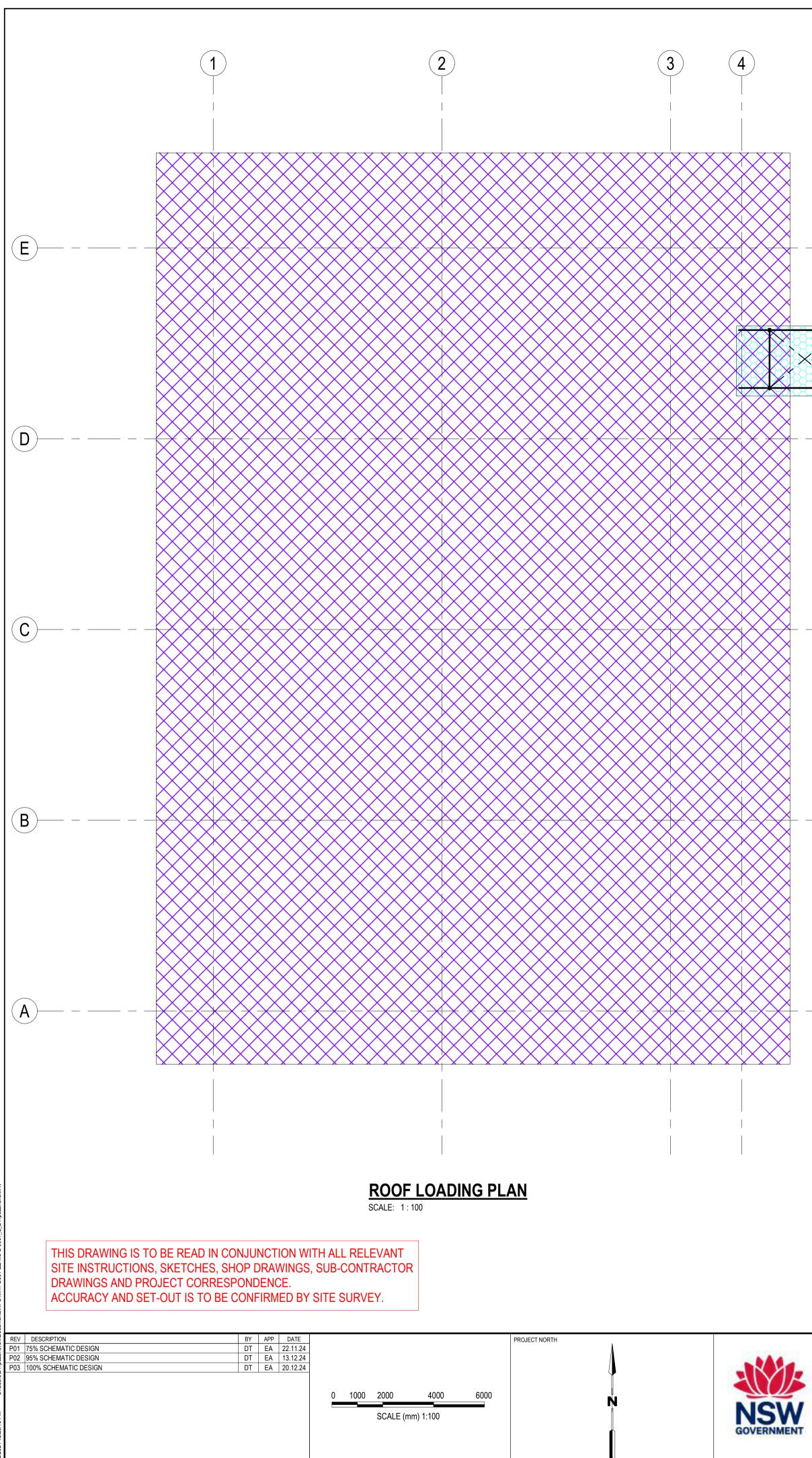
TITLE GROUND FLOOR WALKWAY - LOADING PLAN

FLOOR DESIGN	LOADS	(UNLESS NOTED OTHERWISE)		
	SUPERIMPOSED DEAD LOAD (kPa)	<u>LIVE LOAD</u> (kPa)	AREA	
	1.5 + 0.5*	3.0	CLASSROOM (GENERAL) & OFFICES	
	1.5	4.0	LOBBIES, CORRIDOR & STAIRS	
	2.0 + 0.5*	2.0	STUDENT AMENITIES	
	0.5	2.5	PARKING AREA	
	1.5	4.0	LIBRARY	
	0.5 + 0.5*	5.0	GENERAL STORAGE	
	0.5	7.5	BULK MATERIAL STORAGE / KILN AREA	
	0.5	10.0	WOOD + METAL STORAGE	
	2.0	5.0	DANCE HALL, STUDIOS & GYMNASIUM	
	0.5	5.0	WORKSHOP	
	0.25	0.25	SOLAR PANELS	
	0.25	0.25	WALKWAY ROOF	

* ADDITIONAL DEAD LOAD DUE TO LIGHT FRAME STEEL STRUCTURE.

PRELIMINARY

	NORTHMEAD PUBLIC SCHOOL						
	MOXHAMS ROAD, NORTHMEAD, NSW 2152						
IG	SCHEMATIC DESIGN	DESIGNED TG PROJECT No	DRAWN AA 132567	APPROVED Approver	DATE 23.09.24	SCALE @ A1 1 : 100	REVISION
		DRAWING NO	MHT-	B00T-	GF-D	R-S-1	011



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School Infrastructure NSW



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ROOF LOADING PLAN

TITLE

FLOOR DESIGN	LOADS	(UNLESS NOTED OTHERWISE)	
	SUPERIMPOSED DEAD LOAD (kPa)	<u>LIVE LOAD</u> (kPa)	AREA
	1.5 + 0.5*	3.0	CLASSROOM (GENERAL) & OFFICES
	1.5	4.0	LOBBIES, CORRIDOR & STAIRS
	2.0 + 0.5*	2.0	STUDENT AMENITIES
	0.5	2.5	PARKING AREA
	1.5	4.0	LIBRARY
	0.5 + 0.5*	5.0	GENERAL STORAGE
	0.5	7.5	BULK MATERIAL STORAGE / KILN AREA
	0.5	10.0	WOOD + METAL STORAGE
	2.0	5.0	DANCE HALL, STUDIOS & GYMNASIUM
	0.5	5.0	WORKSHOP
	0.25	0.25	SOLAR PANELS
	0.25	0.25	WALKWAY ROOF

* ADDITIONAL DEAD LOAD DUE TO LIGHT FRAME STEEL STRUCTURE.

PRELIMINARY

PROJECT		
NORTHMEA	D PUBLIC	SCHOOL

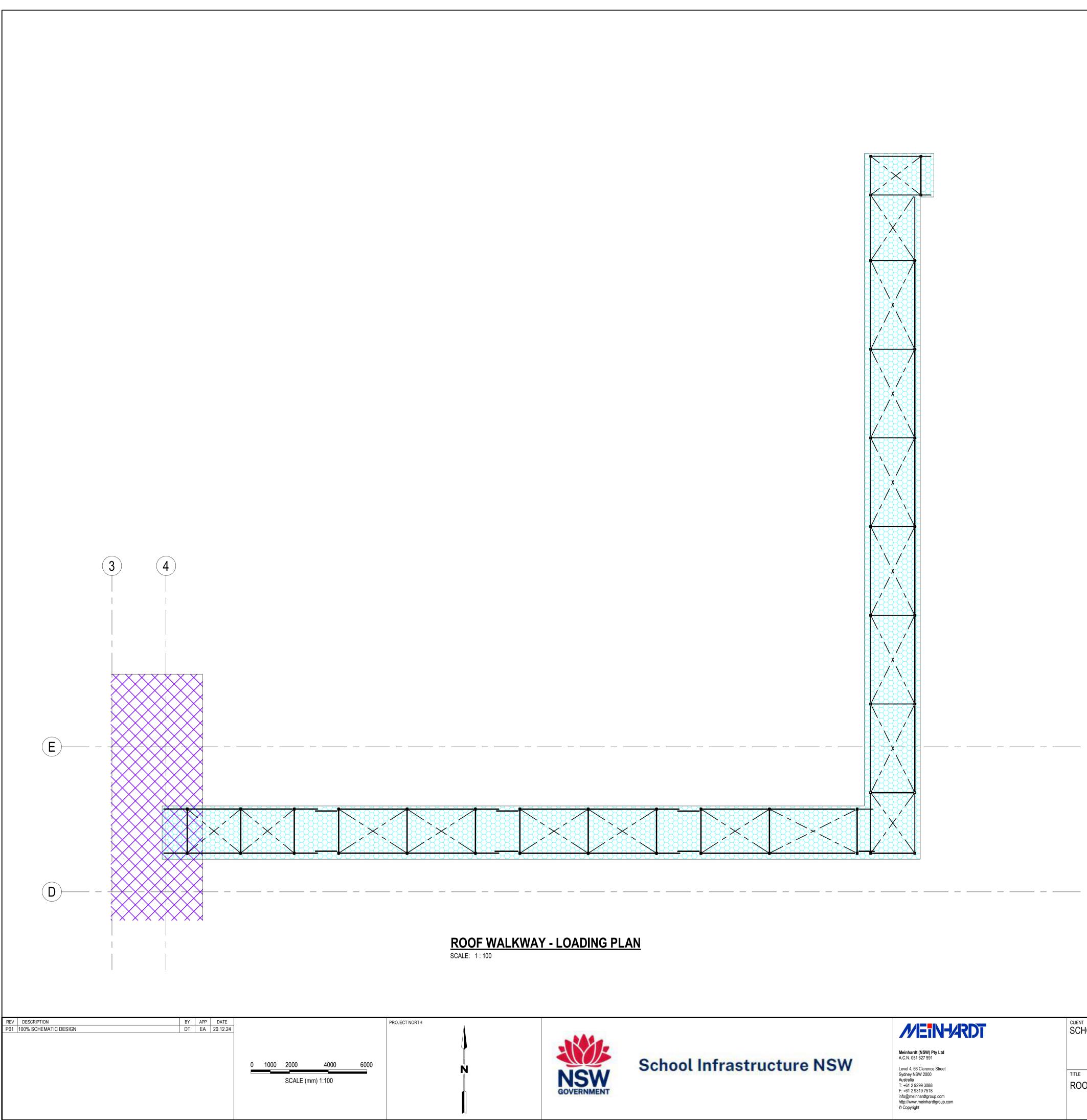
MOXHAMS ROAD, NORTHMEAD, NSW 2152

STATUS

SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
TG	AA	Approver	23.09.24	1:100	DU3
PROJECT No	132567				r UJ
DRAWING No					
					~ ~ ~

NPS-MHT-B00T-LR-DR-S-1020



ROOF WALKWAY - LOADING PLAN

SUPERIMPOSED DEAD LOAD (kPa) 1.5 + 0.5* 1.5	LIVE LOAD (kPa) 3.0 4.0	AREA CLASSROOM (GENERAL) & OFFICES
		CLASSROOM (GENERAL) & OFFICES
1.5	4.0	
	4.0	LOBBIES, CORRIDOR & STAIRS
2.0 + 0.5*	2.0	STUDENT AMENITIES
0.5	2.5	PARKING AREA
1.5	4.0	LIBRARY
0.5 + 0.5*	5.0	GENERAL STORAGE
0.5	7.5	BULK MATERIAL STORAGE / KILN AREA
0.5	10.0	WOOD + METAL STORAGE
2.0	5.0	DANCE HALL, STUDIOS & GYMNASIUM
0.5	5.0	WORKSHOP
0.25	0.25	SOLAR PANELS
0.25	0.25	WALKWAY ROOF

* ADDITIONAL DEAD LOAD DUE TO LIGHT FRAME STEEL STRUCTURE.

PRELIMINARY

PROJECT	
NORTHMEAD	PUBLIC SCHOOL

MOXHAMS ROAD, NORTHMEAD, NSW 2152

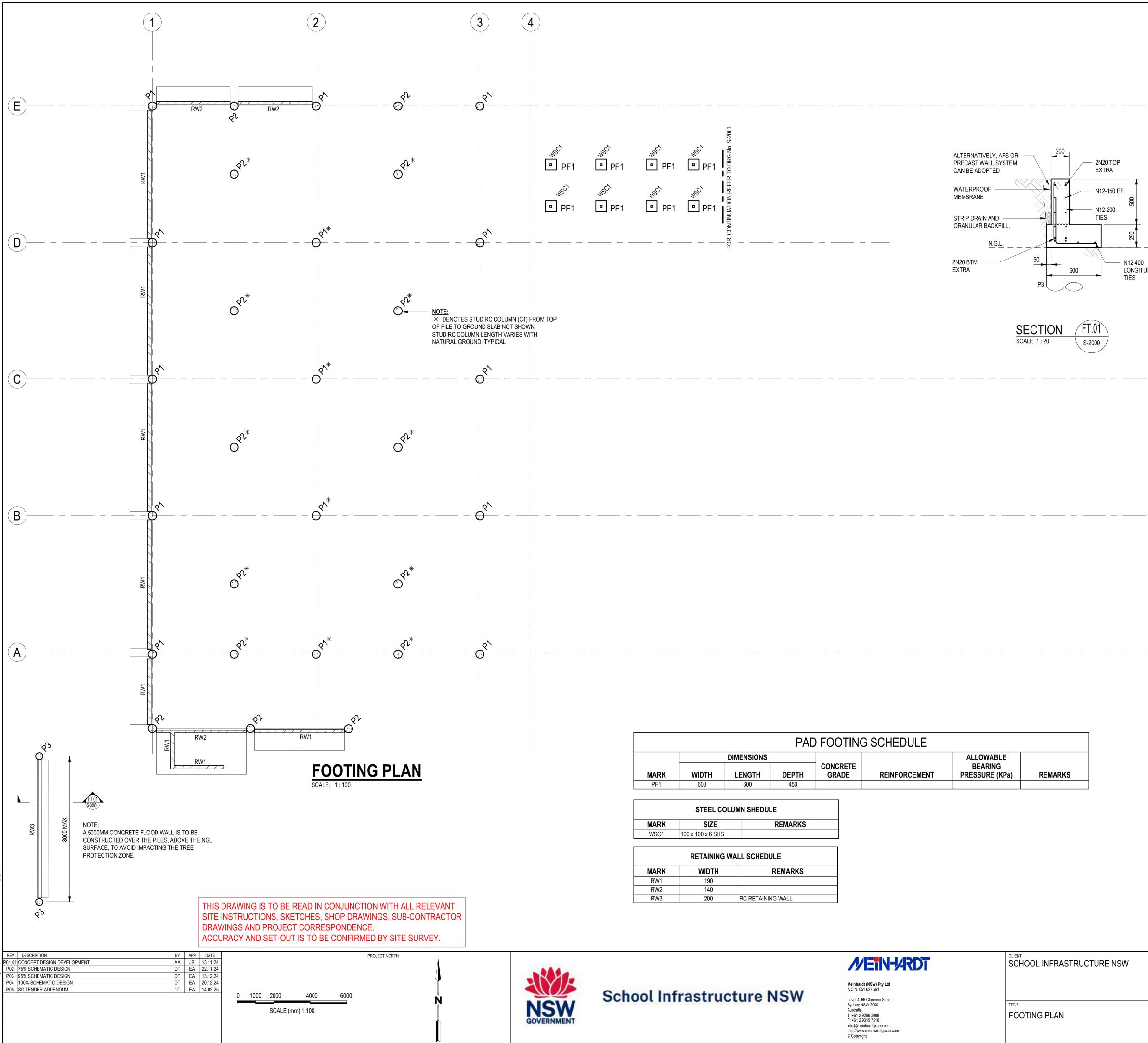
STATUS

SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	F
TG	AA	Approver	23.09.24	1 : 100	
PROJECT No	132567	111			
DRAWING No					

1 REVISION

NPS-MHT-B00T-LR-DR-S-1021



			PAE	D FOOTING	G SCHEDULE		
		DIMENSIONS	1			ALLOWABLE	
MARK	WIDTH	LENGTH	DEPTH	CONCRETE GRADE	REINFORCEMENT	BEARING PRESSURE (KPa)	REMARKS
PF1	600	600	450				
MARK	SIZE		REMARKS				
	STEEL CO	LUMN SHEDU	LE				
WSC1	100 x 100 x 6 SHS		KEIWIAKNO				
	RETAINING	WALL SCHED	JLE				
MARK	WIDTH		REMARKS				
RW1	190						
RW2	140						
RW3	200	RC RETAINI					

STRUCTURAL SIZES

(UNLESS OTHERWISE NOTED)

STAIRS RC COLUMNS

CORE WALLS

REFER TO DWG -- & -- FOR DETAILS REFER TO COLUMN SCHEDULE

REFER TO WALL SCHEDULE

CONCRETE GRADE

ALL FLOOR ELEMENTS N40 (DENSEWEIGHT)

3.

PILE DESIGN NOTE

- A D+C PILING CONTRACTOR MAY TO IMPROVE ON THESE PARAMETERS IF 1. PROVIDED WITH DETAILED TEST RESULTS OR THROUGH CARRYING OUT ADDITIONAL ON SITE TESTING.
- ALL PILES (EXCLUDING CAPPING BEAMS AND PILE CAPS) SHALL BE DELIVERED 2. ON A DESIGN AND CONSTRUCT BASIS, BY A SPECIALIST PILING CONTRACTOR. THE ENGAGEMENT OF THE SPECIALIST PILING CONTRACTOR SHALL BE TO THE SATISFACTION OF THE SUPERINTENDENT.
- REFER GEOTECHNICAL REPORT BY GEOTECHNIQUE PTY LTD. 4
- THE SPECIALIST PILING CONTRACTOR SHALL DESIGN, CERTIFY AND CONSTRUCT THE PILES TO MEET THE SCHEDULED LOADS, SETTLEMENT LIMITS AND MINIMUM REQUIREMENTS. 5
- UNLESS NOTED OTHERWISE, ALL PILES LENGTH, REINFORCEMENT AND CONCRETE STRENGTH SHOWN ARE FOR COSTING ONLY. DURING INSTALLATION. ANY PILE CONSTRUCTED BEYOND THE SPECIFIED
- TOLERANCES SHALL BE IMMEDIATELY REPORTED TO THE SUPERINTENDENT WITH ALL RELEVANT AS-BUILT INFORMATION IN DIGITAL FORMAT (CAD) TO ENABLE REVIEW. ANY ASSOCIATED ENGINEERING COSTS INCURRENT BY NON-COMPLIANT CONSTRUCTION SHALL BE BORNE BY THE PILING CONTRACTOR. SUFFICIENT TIME SHALL BE ALLOWED FOR THE REVIEWS, ANY ASSOCIATED **RE-DESIGN AND RE-DOCUMENTATION WORKS.**
- THE BUILDER / PILING CONTRACTOR SHALL PROVIDE WRITTEN CONFIRMATION TO THE SUPERINTENDENT THAT THE AS-BUILT PILES COMPLY FULLY WITH PERFORMANCE SPECIFICATIONS.
- THE BUILDER SHALL EMPLOY A SUITABLY QUALIFIED GEOTECHNICAL 8. ENGINEER TO VALIDATE ALL ADOPTED GEOTECHNICAL PARAMETERS SPECIFIED ON THE STRUCTURAL, CIVIL AND GEOTECHNICAL ENGINEERING
- REPORTS AND PROVIDE NOTIFICATION OF ANY DISCREPANCIES. THIS SHALL INCLUDE, BUT NOT LIMITED TO, SUB-GRADE PREPARATION, BATTER SLOPES AND STABILITY AND BEARING CAPACITY. THE SCHEDULED LOADS DO NOT INCLUDE PILES SELF WEIGHT. THE PILING
- 9 CONTRACTOR SHALL ALLOW AS APPROPRIATE.

NOTES

1. STEEL STRUCTURES TO BE FIRE RATED TO ACHIEVE REQUIRED FRL.

LEGEND	(UNLESS OTHERWISE NOTED)
250	DENOTES THICKNESS OF SLAB
an de la calendaria de la calendaria. A companya de la calendaria	DENOTES CONCRETE ELEMENT OVER
	DENOTES BLOCKWORK WALL OVER
\otimes	PILE LOAD CENTROID. REFER DWG S2001 FOR PILE LOAD TABLE.

Note:

1. REFER RELATED DRAWING FOR REINFORCEMENT ARRANGEMENT. 2. STRUCTURAL ENGINEER NEED TO BE NOTIFIED IF ANY DISCREPANCY IN PILE DIAMETER .

PRELIMINARY PILE LOAD:

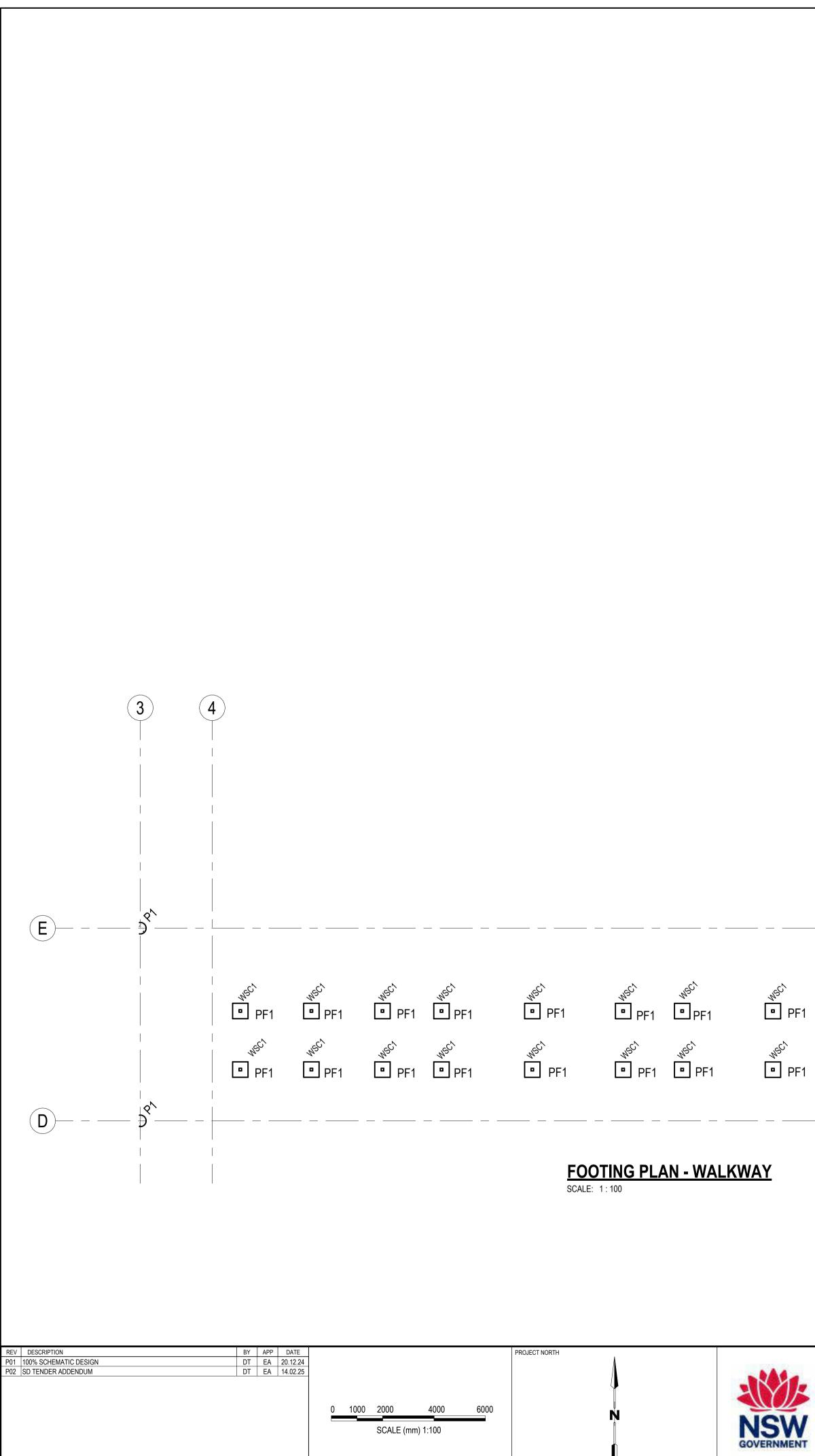
- ULS COMPRESSION 400kN, ULS TENSION 0kN, ULS SHEAR 50kN. P1: ULS COMPRESSION 300kN, ULS TENSION 0kN, ULS SHEAR 30kN. P2:
- ULS COMPRESSION 50kN, ULS TENSION 0kN, ULS SHEAR 40kN. P3:
- NOTE: PILE SIZE TO BE D&C BY PILING SPECIALITY TO ACHIEVE THE NOMINATED LOADS. 1. LOADS ARE PRELIMINARY AND SUBJECT TO CHANGE AS DESIGN DEVELOPS.
- PILE ARRANGEMENT ARE SHOWN INDICATIVE ONLY. EXACT NUMBER OF PILES TO BE CONFIRMED BY D&C CONTRACTOR BASED ON LOADING ON PILES.
- REQUIRED SOCKET LENGTH IN UNIT 5 SANDSTONE: TO BE CONFIRMED BY D&C PILING CONTRACTOR.

PRELIMINARY

NORTHMEAD PUBLIC SCHOOL MOXHAMS ROAD, NORTHMEAD, NSW 2152 STATUS DESIGNED DRAWN APPROVED DATE SCALE @ A1 REVISION ______JB 23.09.24 As P05 TG AA PROJECT No 132567 SCHEMATIC DESIGN indicated DRAWING No

NPS-MHT-B00T-FF-DR-S-2000

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			N ^{SCY} PF1	Or*			DIMENSIONS	6
	NOTE:				MARK	WIDTH	LENGTH	
	* DENOTES HIGHLIGHTED CONSTRUCTED IN THE SAM EXISTING RAISED WALKWAY	IE LOCATION AS THE $-$			PF1	600	600	
	IMPACTING THE TREE PROT					STEEL CO	LUMN SHED	JLE
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School Infrastructure NSW

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CLIENT SCHOOL INFRASTRUCTURE NSW

FOOTING PLAN - WALKWAY

TITLE

NOTE:

1. FOR GENERAL AND CONSTRUCTION NOTES REFER TO DRAWING No. S-2000

PAD FOOTING SCHEDULE					
			ALLOWABLE		
DEPTH	CONCRETE GRADE	REINFORCEMENT	BEARING PRESSURE (KPa)	REMARKS	
450					

REMARKS

Note:

REFER RELATED DRAWING FOR REINFORCEMENT ARRANGEMENT.
 STRUCTURAL ENGINEER NEED TO BE NOTIFIED IF ANY DISCREPANCY IN PILE DIAMETER .

PRELIMINARY PILE LOAD:

P1:	ULS COMPRESSION 400kN, ULS TENSION 0kN, ULS SHEAR 50kN.
P2:	ULS COMPRESSION 300kN, ULS TENSION 0kN, ULS SHEAR 30kN.
P3:	ULS COMPRESSION 50kN, ULS TENSION 0kN, ULS SHEAR 40kN.

NOTE:

PILE SIZE TO BE D&C BY PILING SPECIALITY TO ACHIEVE THE NOMINATED LOADS.

- LOADS ARE PRELIMINARY AND SUBJECT TO CHANGE AS DESIGN DEVELOPS. PILE ARRANGEMENT ARE SHOWN INDICATIVE ONLY. EXACT NUMBER OF PILES TO BE CONFIRMED BY D&C CONTRACTOR BASED ON LOADING ON PILES.
- REQUIRED SOCKET LENGTH IN UNIT 5 SANDSTONE: TO BE CONFIRMED BY 4 D&C PILING CONTRACTOR.

PRELIMINARY

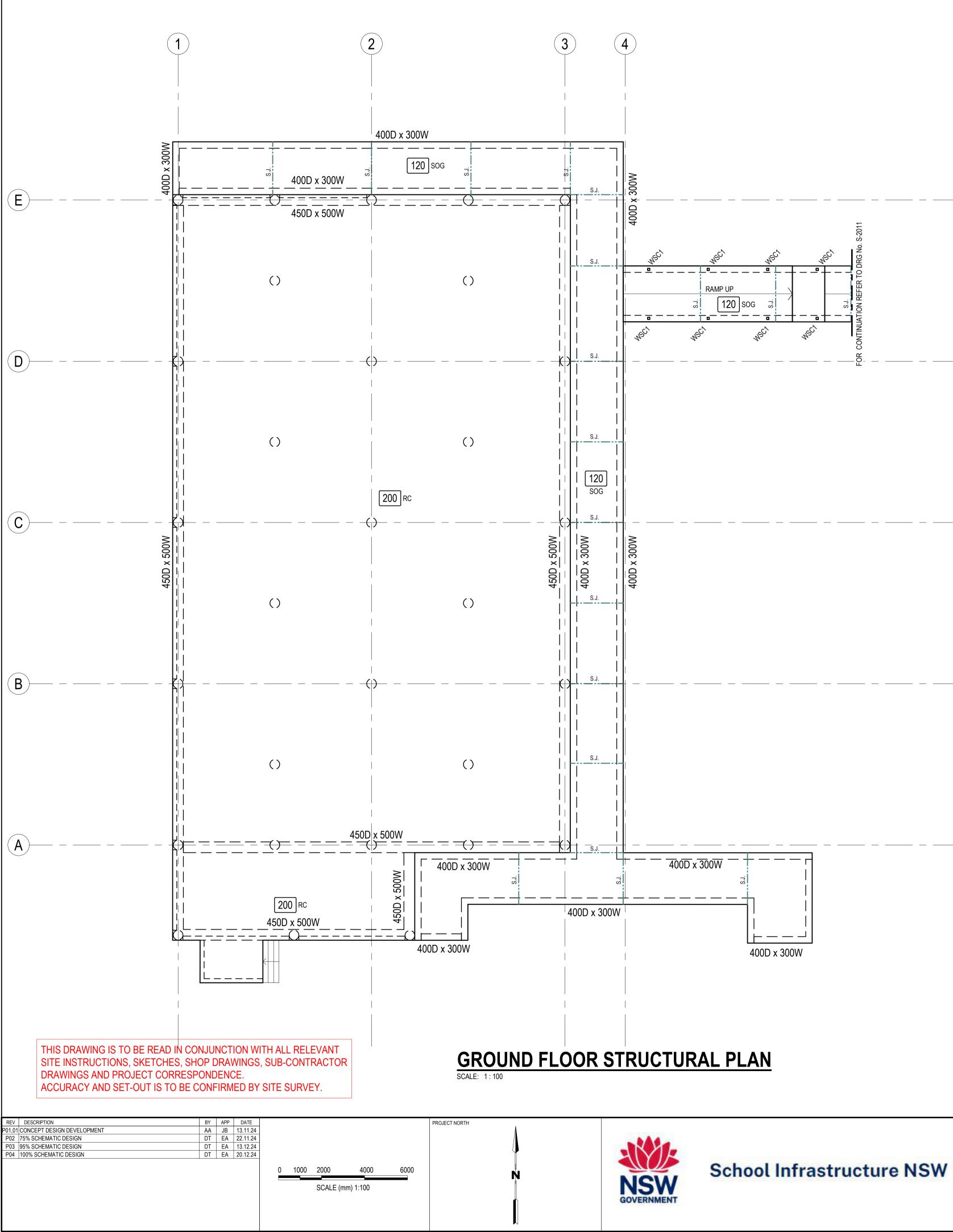
NORTHMEAD PUBLIC SCHOOL MOXHAMS ROAD, NORTHMEAD, NSW 2152 DESIGNED DRAWN APPROVED DATE STATUS

SCHEMATIC DESIGN

TG	AA	Approver	23.09.24	
PROJECT No	132567			i
DRAWING No				

SCALE @ A1 REVISION As P02 indicated

NPS-MHT-B00T-FF-DR-S-2001



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GROUND FLOOR STRUCTURAL PLAN

TITLE

STRUCTURAL SIZES

SLAB

GENERALLY 200mm THICK S.S.O.G, U.N.O. ON WATERPROOFING MEMBRANE OVER 120mm DRAINAGE LAYER. THICKNESS OF DRAINAGE LAYER TO BE CONFIRMED BY HYDRAULIC ENGINEER.

STAIRS RC COLUMNS

WALLS

REFER TO DWG -- FOR COLUMNS DETAILS

REFER TO DWG -- & -- FOR DETAILS

REFER TO DWG -- & -- FOR WALL ELEVATIONS AND DETAILS

CONCRETE GRADE

ALL FLOOR ELEMENTS N40 (DENSEWEIGHT)

NOTES

1. ALL STEPS, REBATES AND HOBS LOCATIONS AND EXTENT REFER TO ARCHITECTURAL SET OUT PLANS. REFER STRUCTURAL DRAWINGS FOR TYPICAL HOB AND SET DOWN DETAILS.

(UNLESS OTHERWISE NOTED)

2. STEEL STRUCTURES TO BE FIRE RATED TO ACHIEVE REQUIRED FRL.

LEGEND

XXX	DENOTES THICKNESS OF SLAB
CJ	DENOTES CONSTRUCTION JOINT
T.M.J	DENOTES TEMPORARY MOVEMENT JOINT
P.M.J	DENOTES PERMANENT MOVEMENT JOINT
S.J	DENOTES SAW CUT JOINT
STEP	DENOTES SLAB STEP REFER TO ARCHITECTUAL DRAWINGS FOR SETOUT AND DIMENSIONS
	DENOTES CONCRETE ELEMENT OVER
	DENOTES LOAD-BEARING ELEMENT UNDER
	DENOTES LOAD-BEARING ELEMENT UNDER AND CONCRETE ELEMENT OVER
	VOID FORMER NOT REQUIRED ,USE 50mm BLINDING INSTEAD
NLBW	DENOTES NON LOAD BEARING WALL, 200TK RC 40MPA CONCRETE, N12-250 EF/EW.
	DENOTES S.O.G, WITH 300x300 EDGE BEAM (ET1) U.N.O. REFER CIVIL DRAWINGS FOR DETAIL.

STEEL COLUMN SHEDULE				
MARK	SIZE	REMARKS		
WSC1	100 x 100 x 6 SHS			

PRELIMINARY

PROJECT	
NORTHMEA	D PUBLIC SCHOOL

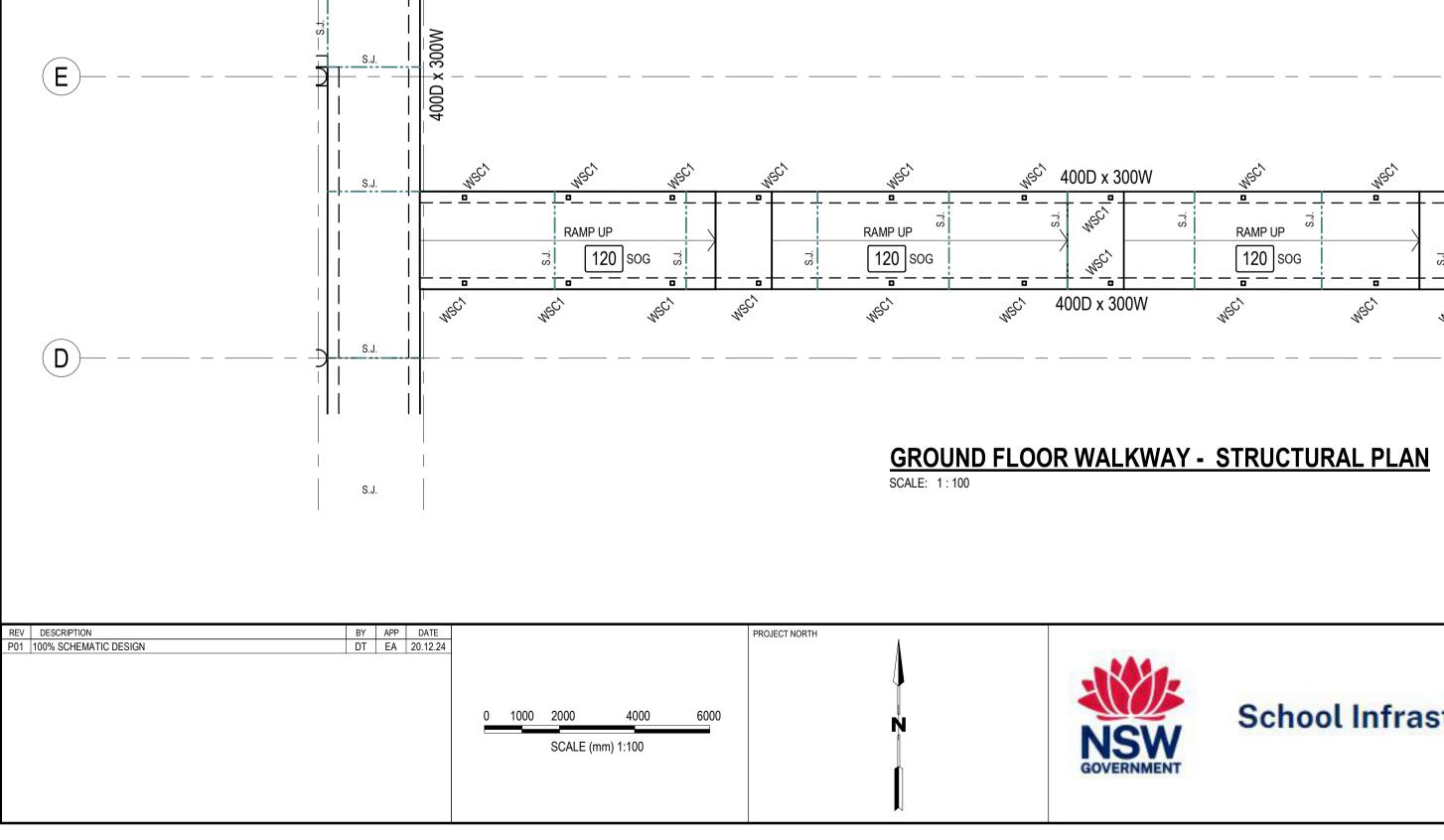
MOXHAMS ROAD, NORTHMEAD, NSW 2152

STATUS

SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
TG	AA	JB	23.09.24	1:100	P04
PROJECT No	132567				IUT
DRAWING No					

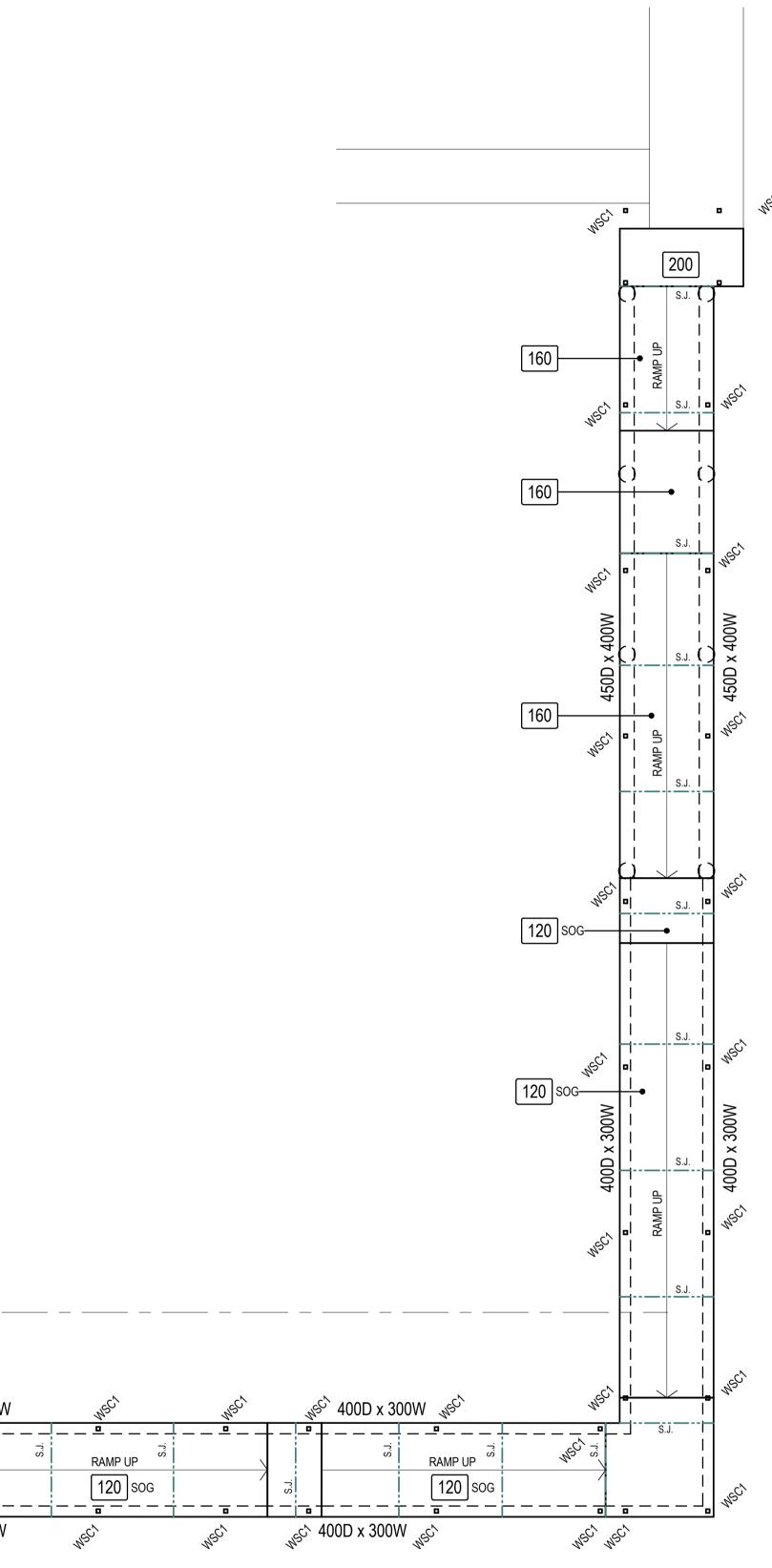
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TITLE GROUND FLOOR WALKWAY - STRUCTU PLAN

STRUCTURAL SIZES

(UNLESS OTHERWISE NOTED)

SLAB	GENERALLY 200mm THICK S.S.O.G, U.N.O. ON WATERPROOFING MEMBRANE OVER 120mm DRAINAGE LAYER. THICKNESS OF DRAINAGE LAYER TO BE CONFIRMED BY HYDRAULIC ENGINEER.
STAIRS	REFER TO DWG & FOR DETAILS
RC COLUMNS	REFER TO DWG FOR COLUMNS DETAILS
WALLS	REFER TO DWG & FOR WALL ELEVATIONS AND DETAILS

CONCRETE GRADE

ALL FLOOR ELEMENTS N40 (DENSEWEIGHT)

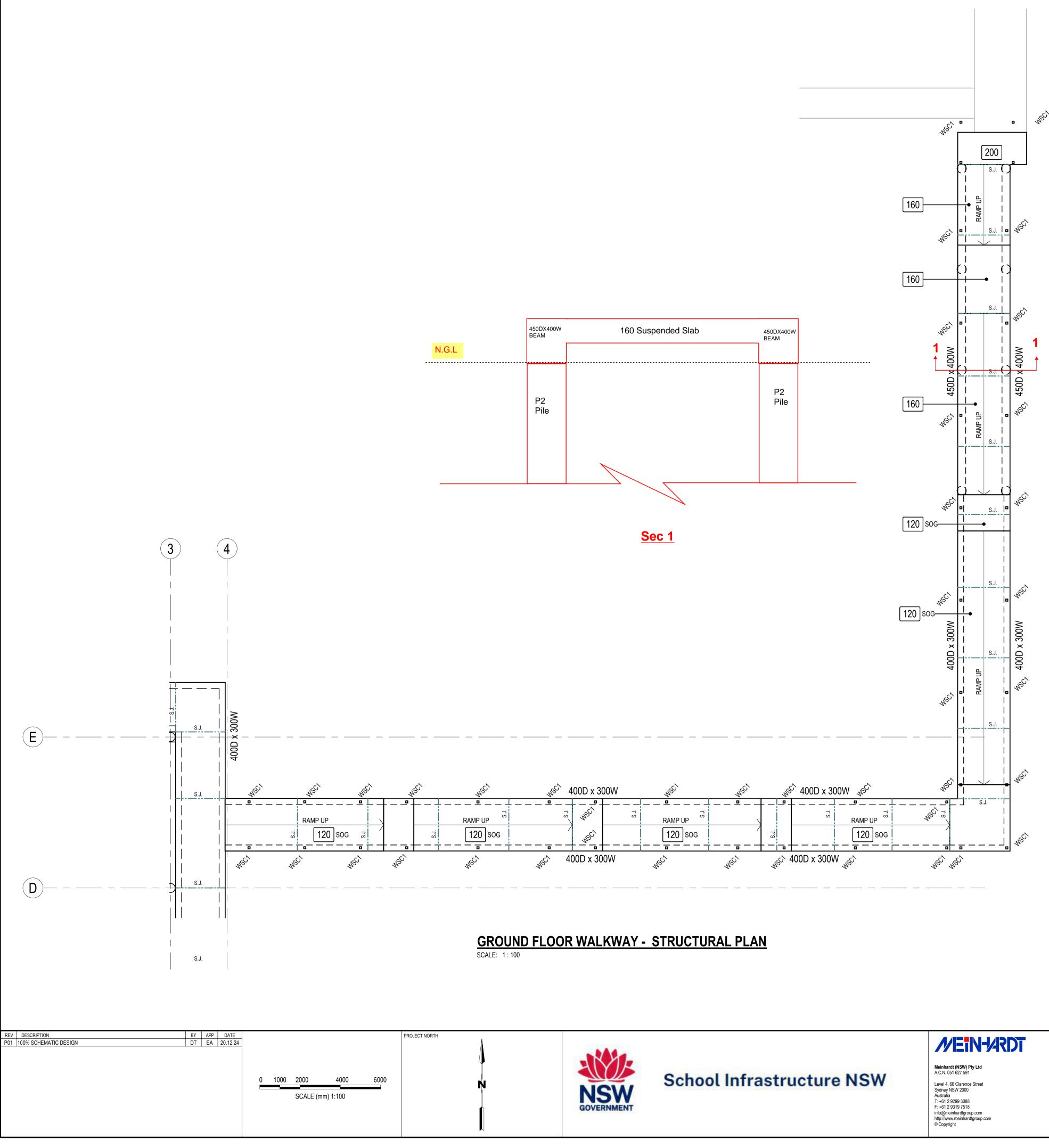
NOTES

- 1. ALL STEPS, REBATES AND HOBS LOCATIONS AND EXTENT REFER TO ARCHITECTURAL SET OUT PLANS. REFER STRUCTURAL DRAWINGS FOR TYPICAL
- HOB AND SET DOWN DETAILS.STEEL STRUCTURES TO BE FIRE RATED TO ACHIEVE REQUIRED FRL.

LEGEND	(UNLESS OTHERWISE NOTED)
XXX	DENOTES THICKNESS OF SLAB
CJ	DENOTES CONSTRUCTION JOINT
T.M.J	DENOTES TEMPORARY MOVEMENT JOINT
P.M.J	DENOTES PERMANENT MOVEMENT JOINT
S.J	DENOTES SAW CUT JOINT
STEP	DENOTES SLAB STEP REFER TO ARCHITECTUAL DRAWINGS FOR SETOUT AND DIMENSIONS
	DENOTES CONCRETE ELEMENT OVER
	DENOTES LOAD-BEARING ELEMENT UNDER
2223	DENOTES LOAD-BEARING ELEMENT UNDER AND CONCRETE ELEMENT OVER
	VOID FORMER NOT REQUIRED ,USE 50mm BLINDING INSTEAD
NLBW	DENOTES NON LOAD BEARING WALL, 200TK RC, 40MPA CONCRETE, N12-250 EF/EW.
	DENOTES S.O.G, WITH 300x300 EDGE BEAM (ET1) U.N.O. REFER CIVIL DRAWINGS FOR DETAIL.

STEEL COLUMN SHEDULE					
MARK	SIZE	REMARKS			
WSC1	100 x 100 x 6 SHS				

	NORTHMEAD PUBLIC SCHOOL						
	MOXHAMS ROAD, NORTHMEAD, NSW 2152						
	STATUS	DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
URAL		TG	AA	Approver	23.09.24	1 : 100	P∩1
	SCHEMATIC DESIGN	PROJECT No	132567				
		DRAWING No			•		•
		NPS-	MHT-	B00T-	GF-D	R-S-2	011



TITLE GROUND FLOOR WALKWAY - STRUCTU PLAN

STRUCTURAL SIZES

(UNLESS OTHERWISE NOTED)

SLAB	GENERALLY 200mm THICK S.S.O.G, U.N.O. ON WATERPROOFING MEMBRANE OVER 120mm DRAINAGE LAYER. THICKNESS OF DRAINAGE LAYER TO BE CONFIRMED BY HYDRAULIC ENGINEER.
STAIRS	REFER TO DWG & FOR DETAILS
RC COLUMNS	REFER TO DWG FOR COLUMNS DETAILS
WALLS	REFER TO DWG & FOR WALL ELEVATIONS AND DETAILS

CONCRETE GRADE

ALL FLOOR ELEMENTS N40 (DENSEWEIGHT)

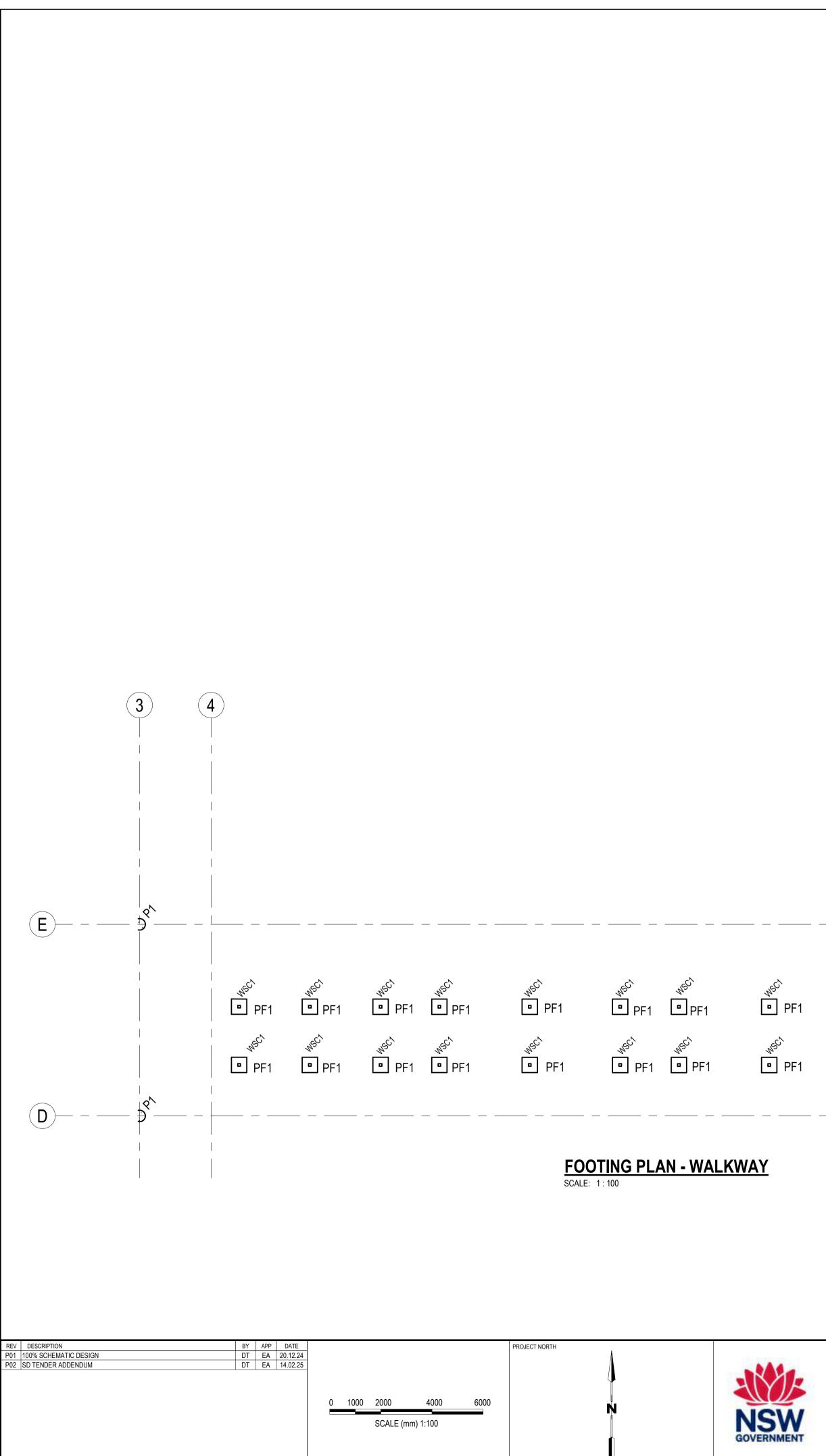
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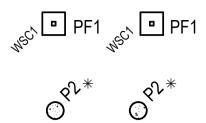
- 1. ALL STEPS, REBATES AND HOBS LOCATIONS AND EXTENT REFER TO ARCHITECTURAL SET OUT PLANS. REFER STRUCTURAL DRAWINGS FOR TYPICAL HOB AND SET DOWN DETAILS.
- 2. STEEL STRUCTURES TO BE FIRE RATED TO ACHIEVE REQUIRED FRL.

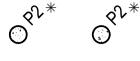
LEGEND	(UNLESS OTHERWISE NOTED)
XXX	DENOTES THICKNESS OF SLAB
CJ	DENOTES CONSTRUCTION JOINT
T.M.J	DENOTES TEMPORARY MOVEMENT JOINT
P.M.J	DENOTES PERMANENT MOVEMENT JOINT
S.J	DENOTES SAW CUT JOINT
STEP	DENOTES SLAB STEP REFER TO ARCHITECTUAL DRAWINGS FOR SETOUT AND DIMENSIONS
	DENOTES CONCRETE ELEMENT OVER
	DENOTES LOAD-BEARING ELEMENT UNDER
2223	DENOTES LOAD-BEARING ELEMENT UNDER AND CONCRETE ELEMENT OVER
	VOID FORMER NOT REQUIRED ,USE 50mm BLINDING INSTEAD
NLBW	DENOTES NON LOAD BEARING WALL, 200TK RC, 40MPA CONCRETE, N12-250 EF/EW.
	DENOTES S.O.G, WITH 300x300 EDGE BEAM (ET1) U.N.O. REFER CIVIL DRAWINGS FOR DETAIL.

STEEL COLUMN SHEDULE					
MARK	SIZE	REMARKS			
WSC1	100 x 100 x 6 SHS				

	NORTHMEAD PUBLIC SCHOOL						
	MOXHAMS ROAD, NORTHMEAD, NSW 2152						
	STATUS	DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
URAL		TG	AA	Approver	23.09.24	1 : 100	P∩1
	SCHEMATIC DESIGN	PROJECT No	132567				
		DRAWING No			•		•
		NPS-	MHT-	B00T-	GF-D	R-S-2	011

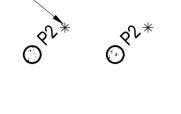




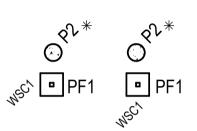


		PAE) FOOTING	SCHEDULE		
DIMENSIONS					ALLOWABLE	
WIDTH	LENGTH	DEPTH	GRADE	REINFORCEMENT	BEARING PRESSURE (KPa)	REMARKS
600	600	450				
-		WIDTH LENGTH	DIMENSIONS WIDTH LENGTH DEPTH	DIMENSIONS WIDTH LENGTH DEPTH GRADE	DIMENSIONS CONCRETE WIDTH LENGTH DEPTH GRADE REINFORCEMENT	DIMENSIONS ALLOWABLE WIDTH LENGTH DEPTH CONCRETE BEARING WIDTH LENGTH DEPTH GRADE REINFORCEMENT PRESSURE (KPa)

NOTE: * DENOTES HIGHLIGHTED PILES ARE TO BE CONSTRUCTED IN THE SAME LOCATION AS THE EXISTING RAISED WALKWAY FOOTINGS TO AVOID IMPACTING THE TREE PROTECTION ZONE (TPZ). CONFIRMATION REQUIRED FROM THE ARCHITECT AND ARBORIST.



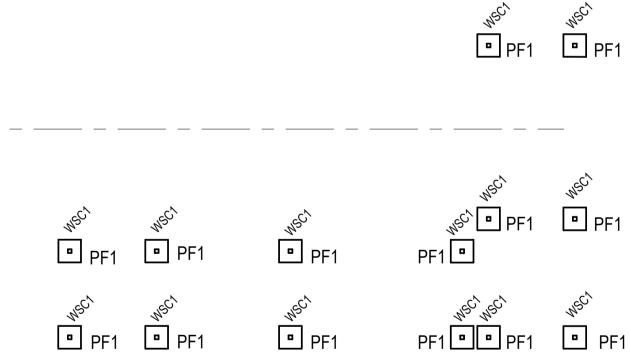






PF1 ••• PF1 •• PF1





School Infrastructure NSW



Meinhardt (NSW) Pty Ltd A.C.N. 051 627 591 Level 4, 66 Clarence Street Sydney NSW 2000 Australia T: +61 2 9299 3088 F: +61 2 9319 7518 info@meinhardtgroup.com http://www.meinhardtgroup.com © Copyright SCHOOL INFRASTRUCTURE NSW

FOOTING PLAN - WALKWAY

TITLE

NOTE:

1. FOR GENERAL AND CONSTRUCTION NOTES REFER TO DRAWING No. S-2000

WSC1 100 x 100 x 6 SHS

Note:

REFER RELATED DRAWING FOR REINFORCEMENT ARRANGEMENT.
 STRUCTURAL ENGINEER NEED TO BE NOTIFIED IF ANY DISCREPANCY IN PILE DIAMETER .

PRELIMINARY

DRAWING No

 DESIGNED
 DRAWN
 APPROVED
 DATE
 SCALE @ A1
 REVISION

 TG
 AA
 Approver
 23.09.24
 As indicated
 P02

NPS-MHT-B00T-FF-DR-S-2001

PRELIMINARY PILE LOAD:

NORTHMEAD PUBLIC SCHOOL

MOXHAMS ROAD, NORTHMEAD, NSW 2152

SCHEMATIC DESIGN

STATUS

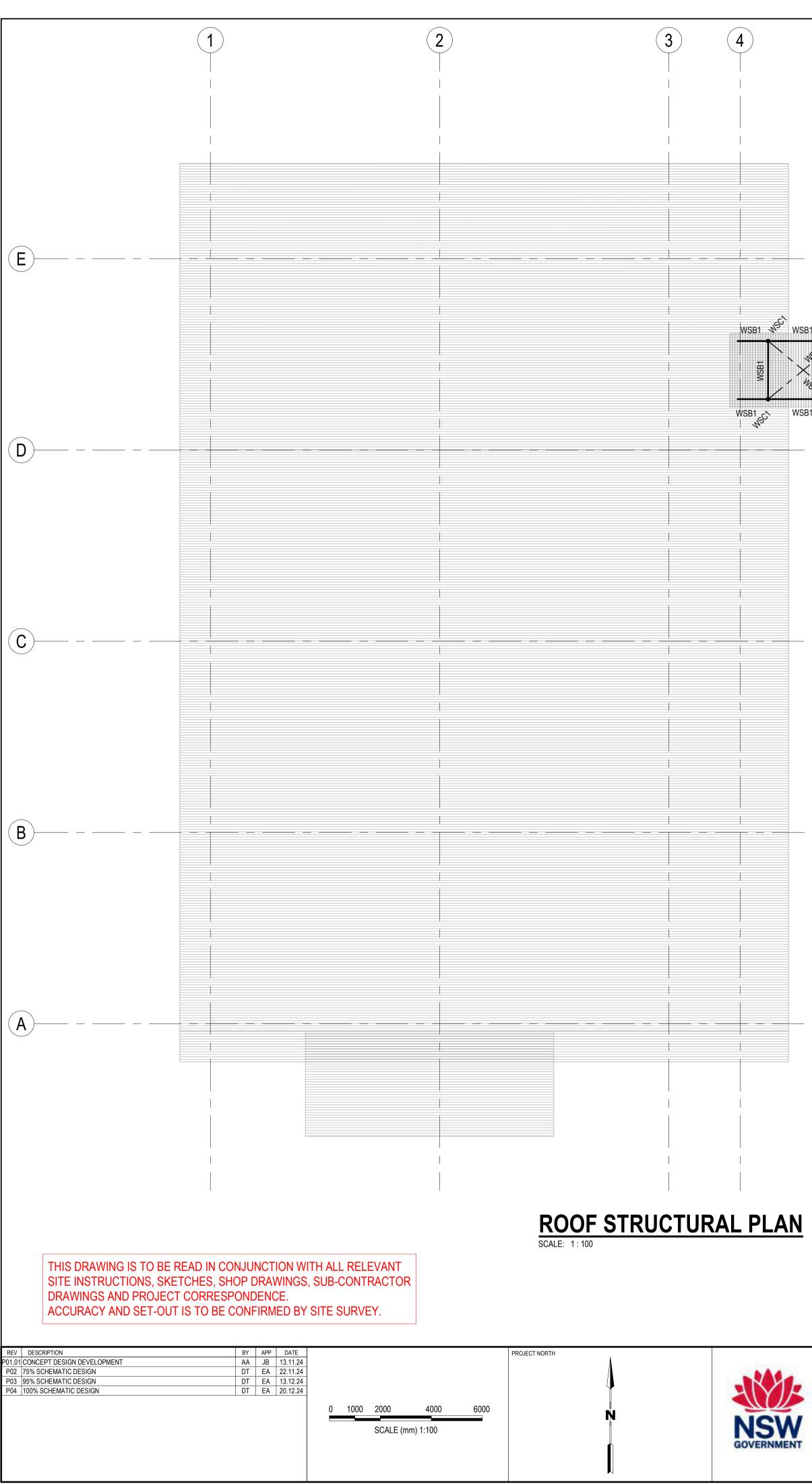
P1:	ULS COMPRESSION 400kN, ULS TENSION 0kN, ULS SHEAR 50kN.
P2:	ULS COMPRESSION 300kN, ULS TENSION 0kN, ULS SHEAR 30kN.
P3:	ULS COMPRESSION 50kN, ULS TENSION 0kN, ULS SHEAR 40kN.

P3:

NOTE: PILE SIZE TO BE D&C BY PILING SPECIALITY TO ACHIEVE THE NOMINATED LOADS. 1.

- LOADS ARE PRELIMINARY AND SUBJECT TO CHANGE AS DESIGN DEVELOPS. PILE ARRANGEMENT ARE SHOWN INDICATIVE ONLY. EXACT NUMBER OF PILES TO
- 4.

- D&C PILING CONTRACTOR.
- BE CONFIRMED BY D&C CONTRACTOR BASED ON LOADING ON PILES. REQUIRED SOCKET LENGTH IN UNIT 5 SANDSTONE: TO BE CONFIRMED BY



WSB1 WSB1 WSB1 WSB1 WSB1 WSB1 WSB1 WSB1		
<u> </u>		

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CLIENT SCHOOL INFRASTRUCTURE NSW

ROOF STRUCTURAL PLAN

TITLE

ROOF FRAMING NOTES:

(UNLESS OTHERWISE NOTED)

1. THE DRAWING TO BE READ TOGETHER WITH SPECIFICATIONS AND GENERAL

- NOTES 2. MECHANICAL PENETRATIONS IN ROOF ARE SHOWN INDICATIVELY ONLY
- REFER MECHANICAL ENGINEERS DRAWINGS FOR SIZE AND EXACT LOCATIONS 3
- ALL EXPOSED STEEL TO BE HOT DIPPED GALVANISED ALLOWANCE FOR THE SUPPORT OF MECHANICAL SERVICES SHOULD BE MADE BY 4 THE CONTRACTOR AS FOLLOWS:
 - FULL HEIGHT VERTICAL DUCTS ARE TO BE SUPPORTED FROM THE CONCRETE FLOOR SLAB BELOW
 - SERVICES ARE TO BE SUPPORTED FROM THE PURLIN WEBS ONLY -DUCTS, PIPES, CABLE TRAYS ETC. PERPENDICULAR TO PURLINS ARE TO -
 - BE SUPPORTED FROM EVERY PURLIN (1500 MAX. CTS.) DUCTS, PIPES, CABLE TRAYS ETC. PARALLEL TO PURLINS ARE TO BE -
 - SUPPORTED FROM 3 No. PURLINS USING 75 x 75 x 6 EA SPREADERS AT 1500 MAX. CTS.
 - ALL HEAVY LOAD SUPPORTS ARE TO BE APPROVED BY THE ENGINEER. -LOADS GREATER THAN 300kg TO BE SUPPORTED BY STEELWORK PROVIDED BY THE SUB-CONTRACTOR AND APPROVED BY T HE ENGINEER

5. ALLOW FOR AN ADDITIONAL 2 No. 250 UB 31 TRIMMER BEAMS TO MECHANICAL ROOF VENTS. LOCATIONS TO ARCHITECT AND MECHANICAL DRAWINGS (TYPICALLY)

ÀLLOW FOR 50 x 50 x 3 EA FLY BRACES TO ROOF BEAMS AT 1/3 POINTS 6. (TYPICALLY)

PURLIN NOTES:

(UNLESS OTHERWISE NOTED)

- REFER MEMBER SCHEDULE FOR PURLIN SIZE AND CENTRES PURLINS TO BE LAPPED AT 900mm MAX. CTS. AT SUPPORTS (UNO).
- REFER ARCHITECTURAL DRAWINGS FOR ADDITIONAL PURLINS REQUIRED TO 3.
- SUPPORT FLASHING, GUTTERS AND OTHER NON-STRUCTURAL ITEMS PROVIDE BRIDGING AS INDICATED IN MEMBER SCHEDULE, FIXED IN ACCORDANCE
- WITH MANUFACTURERS SPECIFICATIONS
- PROVIDE TRIMMING ANGLE TO END OF PURLINS TO SUPPORT END OF SHEETING PURLIN SETOUT SHOWN ON PLAN INDICATIVE ONLY, SHOP DETAILER TO CONFIRM ACTUAL NUMBER OF PURLINS REQUIRED

LEGEND:

FB _ _ M.S.

4.

DENOTES 'FLY BRACING'

DENOTES 'BEAM MOMENT SPLICE CONNECTION'

	STEEL FRAMING SCHEDULE								
MARK SIZE REMARKS									
WBR1	M16 ROD	ROD BRACING WITH TURNBUCKLE							
WSB1	100 x 100 x 5.0 SHS								
WSB2	100 x 100 x 6.0 SHS								
WSC1 100 x 100 x 6 SHS									

PRELIMINARY

PROJECT		
NORTHMEAD	PUBLIC	SCHOOL

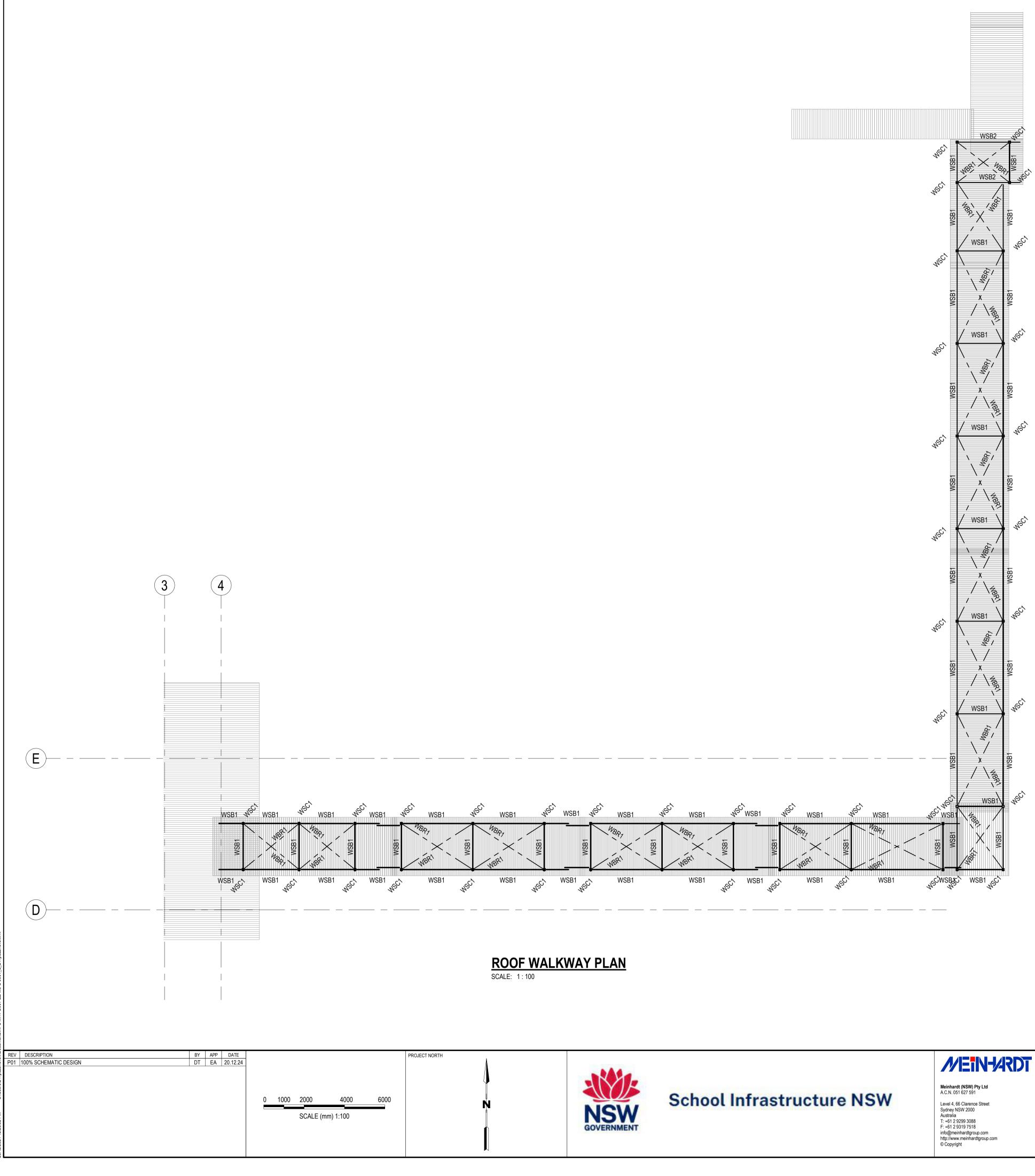
MOXHAMS ROAD, NORTHMEAD, NSW 2152

SCHEMATIC DESIGN

STATUS

DESIGNED TG	drawn AA	APPROVED	DATE 23.09.24	SCALE @ A1 1:100	
PROJECT No	132567				F 04
DRAWING No					

NPS-MHT-B00T-LR-DR-S-2020



ROOF PLAN - WALKWAY

TITLE

ROOF FRAMING NOTES:

(UNLESS OTHERWISE NOTED)

- 1. THE DRAWING TO BE READ TOGETHER WITH SPECIFICATIONS AND GENERAL NOTES
- MECHANICAL PENETRATIONS IN ROOF ARE SHOWN INDICATIVELY ONLY 2 REFER MECHANICAL ENGINEERS DRAWINGS FOR SIZE AND EXACT LOCATIONS
 - ALL EXPOSED STEEL TO BE HOT DIPPED GALVANISED ALLOWANCE FOR THE SUPPORT OF MECHANICAL SERVICES SHOULD BE MADE BY THE CONTRACTOR AS FOLLOWS:
 - FULL HEIGHT VERTICAL DUCTS ARE TO BE SUPPORTED FROM THE CONCRETE FLOOR SLAB BELOW
 - SERVICES ARE TO BE SUPPORTED FROM THE PURLIN WEBS ONLY
 - DUCTS, PIPES, CABLE TRAYS ETC. PERPENDICULAR TO PURLINS ARE TO -BE SUPPORTED FROM EVERY PURLIN (1500 MAX. CTS.)
 - DUCTS, PIPES, CABLE TRAYS ETC. PARALLEL TO PURLINS ARE TO BE SUPPORTED FROM 3 No. PURLINS USING 75 x 75 x 6 EA
 - SPREADERS AT 1500 MAX. CTS.
 - ALL HEAVY LOAD SUPPORTS ARE TO BE APPROVED BY THE ENGINEER. -LOADS GREATER THAN 300kg TO BE SUPPORTED BY STEELWORK PROVIDED BY THE SUB-CONTRACTOR AND APPROVED BY T HE ENGINEER
- ALLOW FOR AN ADDITIONAL 2 No. 250 UB 31 TRIMMER BEAMS TO MECHANICAL 5. ROOF VENTS. LOCATIONS TO ARCHITECT AND MECHANICAL DRAWINGS (TYPICALLY)
- ÀLLOW FOR 50 x 50 x 3 EA FLY BRACES TO ROOF BEAMS AT 1/3 POINTS 6. (TYPICALLY)

PURLIN NOTES:

(UNLESS OTHERWISE NOTED)

- REFER MEMBER SCHEDULE FOR PURLIN SIZE AND CENTRES
- PURLINS TO BE LAPPED AT 900mm MAX. CTS. AT SUPPORTS (UNO). REFER ARCHITECTURAL DRAWINGS FOR ADDITIONAL PURLINS REQUIRED TO
- SUPPORT FLASHING, GUTTERS AND OTHER NON-STRUCTURAL ITEMS PROVIDE BRIDGING AS INDICATED IN MEMBER SCHEDULE, FIXED IN ACCORDANCE 4
- WITH MANUFACTURERS SPECIFICATIONS PROVIDE TRIMMING ANGLE TO END OF PURLINS TO SUPPORT END OF SHEETING
- PURLIN SETOUT SHOWN ON PLAN INDICATIVE ONLY, SHOP DETAILER TO CONFIRM ACTUAL NUMBER OF PURLINS REQUIRED

LEGEND:

FB — — **—**M.S.

4.

-

DENOTES 'FLY BRACING'

DENOTES 'BEAM MOMENT SPLICE CONNECTION'

STEEL FRAMING SCHEDULE								
MARK SIZE REMARKS								
WBR1	M16 ROD	ROD BRACING WITH TURNBUCKLE						
WSB1	100 x 100 x 5.0 SHS							
WSB2	100 x 100 x 6.0 SHS							
WSC1 100 x 100 x 6 SHS								

PRELIMINARY

PROJECT NORTHMEAD PUBLIC SCHOOL

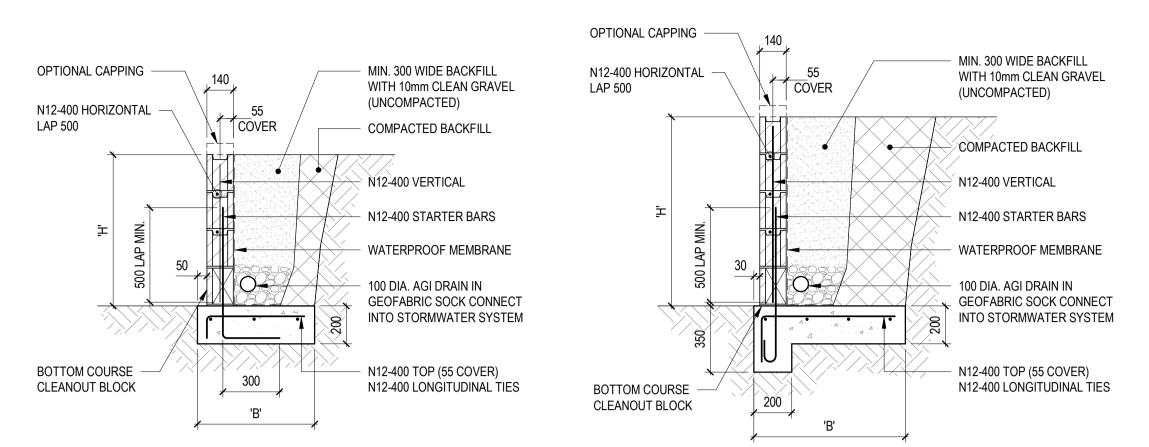
MOXHAMS ROAD, NORTHMEAD, NSW 2152

STATUS

SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
TG	AA	Approver	23.09.24	1:100	
PROJECT No	132567				FUI
DRAWING No					

NPS-MHT-B00T-LR-DR-S-2021



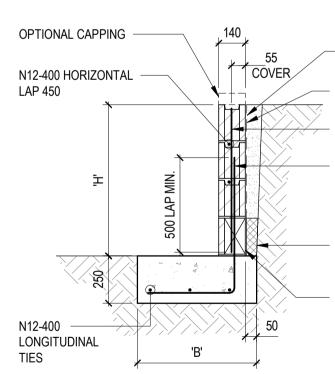
RETAINING WALL - 1.0m HIGH MAX. (ALTERATION) RETAINING WALL - 1.2m HIGH MAX. (ALTERATION)

WALLS TO BE CONSTRUCTED USING 140 'H' BLOCKS SCALE 1:20 ALL BLOCKWORK TO BE CONCRETE CORE FILLED AS PER NOTES

BASE DIMENSIONS						
'H' (HEIGHT mm)	'B' (BASE mm)					
600	600					

WALLS TO BE CONSTRUCTED USING 140 'H' BLOCKS	SCALE 1:20
ALL BLOCKWORK TO BE CONCRETE CORE FILLED AS PER NOTES	

BASE DIMENSIONS									
'H' (HEIGHT mm)	NO SURCHARGE 'B' (BASE mm)	5 kPa SURCHARGE 'B' (BASE mm)							
800	600	800							
1000	700	1000							
1200	800	1000							



RETAINING WALL - 1.0m HIGH MAX. (RW1)

BASE DIMENSIONS

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT SITE INSTRUCTIONS, SKETCHES, SHOP DRAWINGS, SUB-CONTRACTOR

ACCURACY AND SET-OUT IS TO BE CONFIRMED BY SITE SURVEY.

'B' (BASE mm)

600

WALLS TO BE CONSTRUCTED USING 140 'H' BLOCKS

BLOCKWORK RETAINING WALL NOTES

'H' (HEIGHT mm)

600

DRAWINGS AND PROJECT CORRESPONDENCE.

ALL BLOCKWORK TO BE CONCRETE CORE FILLED AS PER

ALTERNATIVELY, AFS OR PRECAST WALL SYSTEM CAN BE ADOPTED WATERPROOF

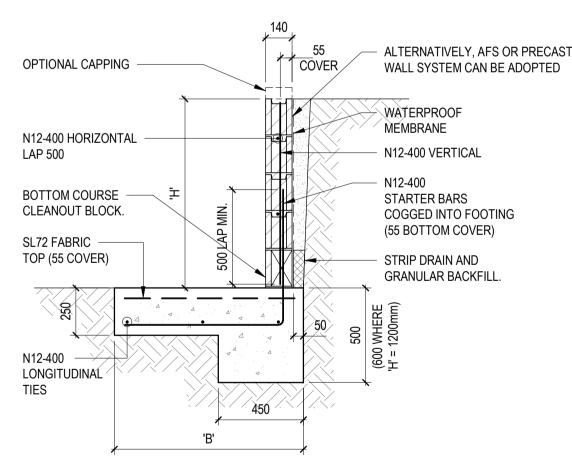
MEMBRANE N12-400 VERTICAL

N12-400 STARTER BARS COGGED INTO FOOTING (55 BOTTOM COVER)

STRIP DRAIN AND GRANULAR BACKFILL.

BOTTOM COURSE CLEANOUT BLOCK.

SCALE 1:20

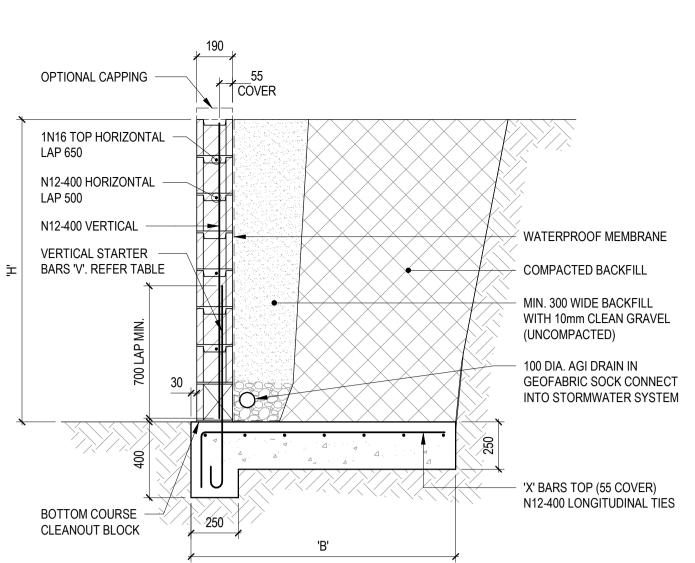


RETAINING WALL - 1.2m HIGH MAX. (RW2)

WALLS TO BE CONSTRUCTED USING 140 'H' BLOCKS ALL BLOCKWORK TO BE CONCRETE CORE FILLED AS PER BLOCKWORK RETAINING WALL NOTES

BASE DIMENSIONS								
'H' (HEIGHT mm)	NO SURCHARGE 'B' (BASE mm)	5 kPa SURCHARGE 'B' (BASE mm)						
800	800	800						
1000	800	1000						
1200	1000	1200						

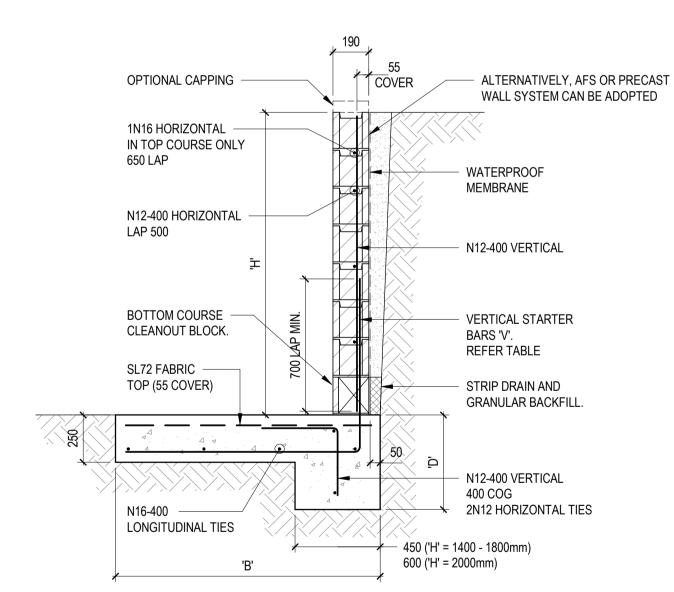
1	DESCRIPTION	BY	APP	DATE						PROJECT NORTH	
)1	CONCEPT DESIGN DEVELOPMENT	AA	JB	13.11.24							
	75% SCHEMATIC DESIGN	DT	EA	22.11.24							
	95% SCHEMATIC DESIGN	DT	EA	13.12.24							
	100% SCHEMATIC DESIGN	DT	EA	20.12.24							
					0	1000	2000	4000	6000		
											NIC
							SCALE (n	ım) 1:100			
							,	,			GOVER
											GOVER



RETAINING WALL - 2.0m HIGH MAX. (ALTERATION)

WALLS TO BE CONSTRUCTED USING 190 'H' BLOCKS SCALE 1:20 ALL BLOCKWORK TO BE CONCRETE CORE FILLED AS PER NOTES

BASE DIMENSIONS									
'H' (HEIGHT mm)	NO SURCHARGE 'B' (BASE mm)	5 kPa SURCHARGE 'B' (BASE mm)	REINFORCEMENT 'V' AND 'X' BARS						
1400	1300	1700	N12-400						
1600	1400	2000	N16-400						
1800	1600	2200	N16-400						
2000	1700	2500	N16-400						



RETAINING WALL - 2.0m HIGH MAX. (RW3)

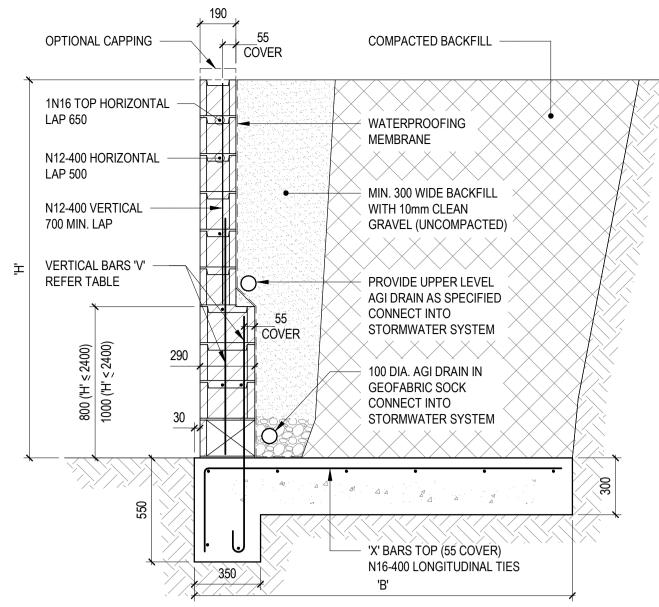
WALLS TO BE CONSTRUCTED USING 190 'H' BLOCKS SCALE 1:20 ALL BLOCKWORK TO BE CONCRETE CORE FILLED AS PER BLOCKWORK RETAINING WALL NOTES

BASE DIMENSIONS									
'H' (HEIGHT mm)	NO SUR	CHARGE	5 kPa SUF	RCHARGE					
	'B' (mm)	'D' (mm)	'B' (mm)	'D' (mm)	'V' BARS				
1400	1200	500	1400	600	N16-400				
1600	1400 600		1600	700	N16-400				
1800	1600	700	1800	800	N16-400				
2000	1800	700	2000	800	N16-200				



SCALE 1:20

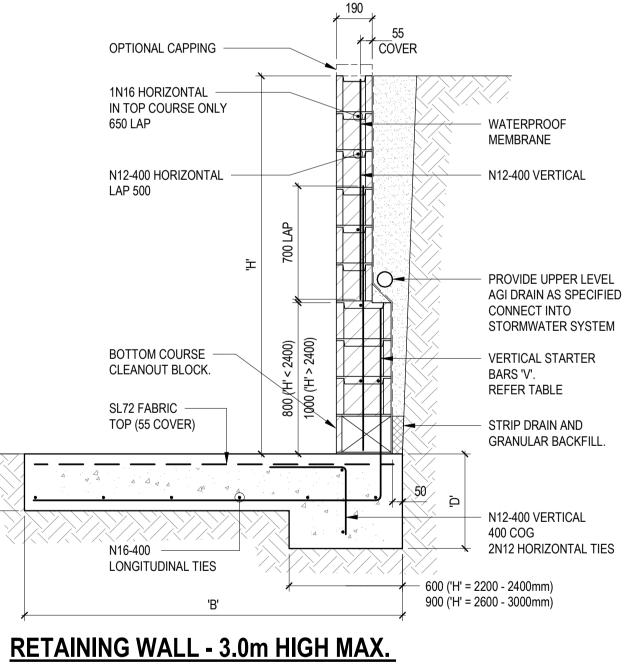
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RETAINING WALL - 3.0m HIGH MAX. (ALTERATION)

WALLS TO BE CONSTRUCTED USING 190 + 240 'H' BLOCKS ALL BLOCKWORK TO BE CONCRETE CORE FILLED AS PER NOTES

BASE DIMENSIONS								
'H' (HEIGHT mm)	NO SURCHARGE 'B' (BASE mm)	5 kPa SURCHARGE 'B' (BASE mm)	REINFORCEMENT 'V' AND 'X' BARS					
2200	1900	2800	N16-400					
2400	2000	3100	N16-400					
2600	2200	3300	N20-400					
2800	2400	3600	N20-400					
3000	2600	3900	N16-200					



WALLS TO BE CONSTRUCTED USING 190 + 240 'H' BLOCKS ALL BLOCKWORK TO BE CONCRETE CORE FILLED AS PER

BLOCKWORK RETAINING WALL NOTES BASE DIMENSIONS

B/ GE BINE NOIO							
'H' (HEIGHT mm)	NO SUR	CHARGE	GE 5 kPa SURCHARGE		REINFORCEMENT		
	'B' (mm)	'D' (mm)	'B' (mm)	'D' (mm)	'V' BARS		
2200	2200	800	2200	900	N16-400		
2400	2200	900	2400	1000	N16-400		
2600	2400	900	2600	1000	N20-400		
2800	2600	900	2800	1100	N20-400		
3000	2800	1000	3000	1200	N16-200		
-			•				

MEIN-MRDT

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SCHOOL INFRASTRUCTURE NSW

TITI F STANDARD DETAILS MASONRY RETAINING WALLS

SCALE 1:20

SCALE 1:20

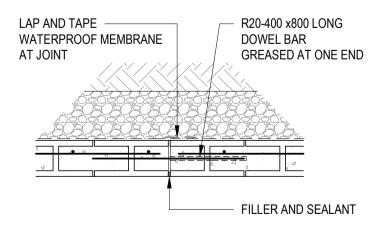
BLOCK RETAINING WALL NOTES

- ALL BLOCK/CAVITY CORES TO BE CONCRETE FILLED. CONCRETE F'c = 20 MPa. 10mm MAX. AGGREGATE SIZE, 250mm SLUMP
- FOOTING CONCRETE GRADE N25 U.N.O.
- COVER TO FOOTING REINFORCEMENT = 55mm U.N.O. FOOTING DESIGNED FOR AN ALLOWABLE BEARING CAPACITY OF 100kPa. ALL FOOTINGS TO BE FOUNDED IN FIRM NATURAL GROUND AND CONFIRMED ON SITE BY THE GEOTECHNICAL ENGINEER
- RETAINING WALLS TO HAVE NO SURCHARGE, UNLESS NOTED IN TABLE PROVIDE VERTICAL CONTROL JOINTS AT 6000 CTS. MAX.
- PROVIDE N12 CORNER BARS AT 600 CTS. LAP 600 EACH WAY FOR WALL RETURNS BLOCKS F'uc = 15 MPa
- MORTAR CEMENT 1 : LIME 0.5 : SAND 4.5
- BUILDER IS TO MAINTAIN STABILITY OF WALL DURING 7. **BACKFILLING PROCEDURE** INTERNAL WALL TO HABITABLE AREAS TO BE TANKED 8.
- TO PREVENT MOISTURE PENETRATION. REFER TANKING SUPPLIERS FOR DETAILS IF OTHER RETAINING WALLS EXIST OR ARE TO BE 9. CONSTRUCTED ADJACENT TO OR EITHER ABOVE OR BELOW THE RETAINING WALLS DETAILED, THEN THE ENGINEER SHOULD BE CONTACTED IMMEDIATELY FOR
- REVISED DESIGN. IF OTHER RETAINING WALLS EXIST OR ARE TO BE 10 CONSTRUCTED ADJACENT TO OR EITHER ABOVE OR BELOW THE RETAINING WALLS DETAILED, THEN THE CONTRACTOR TO ENSURE STABILITY OF THE EXISTING RETAINING STRUCTURE.

BLOCK RETAINING WALL NOTES

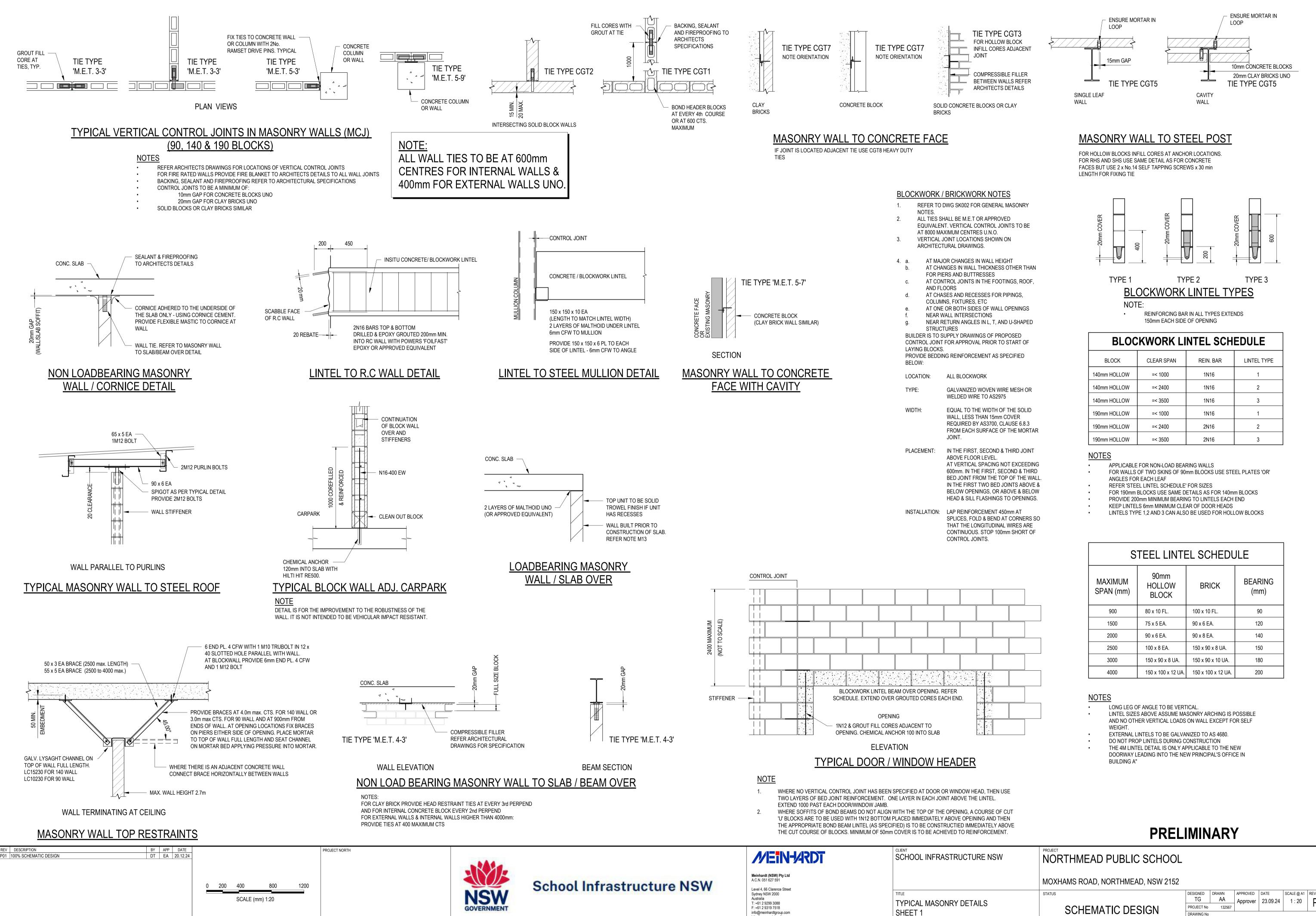
- THIS RETAINING WALL HAS BEEN DESIGNED USING TYPICAL SITE PARAMETERS. FINAL CONFIRMATION OF THE ADEQUACY OF THE DESIGN MUST BE VERIFIED FOLLOWING RECEIPT OF A SITE SPECIFIC GEOTECHNICAL INVESTIGATION REPORT.
- STIFF CLAY SITES WITH SHALE OR STONE INCLUSIONS ARE NOT COVERED IN THIS DESIGN ALL BLOCK/CAVITY CORES TO BE CONCRETE FILLED.
- CONCRETE F'c = 20 MPa. 10mm MAX. AGGREGATE SIZE, 250mm SLUMP
- FOOTING CONCRETE GRADE N25 U.N.O.
- COVER TO FOOTING REINFORCEMENT = 55mm U.N.O. FOOTING DESIGNED FOR AN ALLOWABLE BEARING CAPACITY OF 100kPa. ALL FOOTINGS TO BE FOUNDED IN FIRM NATURAL GROUND AND CONFIRMED ON SITE BY THE GEOTECHNICAL ENGINEER.
- RETAINING WALLS TO HAVE NO SURCHARGE, UNLESS NOTED IN TABLE PROVIDE VERTICAL CONTROL JOINTS AT 6000 CTS. MAX.
- PROVIDE N12 CORNER BARS AT 600 CTS. LAP 600 EACH WAY FOR WALL RETURNS BLOCKS F'uc = 15 MPa
- MORTAR CEMENT 1 : LIME 0.5 : SAND 4.5
- BUILDER IS TO MAINTAIN STABILITY OF WALL DURING **BACKFILLING PROCEDURE**
- INTERNAL WALL TO HABITABLE AREAS TO BE TANKED 10. TO PREVENT MOISTURE PENETRATION. REFER TANKING SUPPLIERS FOR DETAILS.
- IF OTHER RETAINING WALLS EXIST OR ARE TO BE 11. CONSTRUCTED ADJACENT TO OR EITHER ABOVE OF BELOW THE RETAINING WALLS DETAILED, THEN THE ENGINEER SHOULD BE CONTACTED IMMEDIATELY FOR REVISED DESIGN.
- IF OTHER RETAINING WALLS EXIST OR ARE TO BE 12. CONSTRUCTED ADJACENT TO OR EITHER ABOVE OR BELOW THE RETAINING WALLS DETAILED, THEN THE CONTRACTOR TO ENSURE STABILITY OF THE EXISTING RETAINING STRUCTURE

USE THE ABOVE NOTES IF NO SOIL TEST AVAILABLE



RETAINING WALL JOINT DETAIL JOINTS AT 6m MAX CTS SCALE 1:20

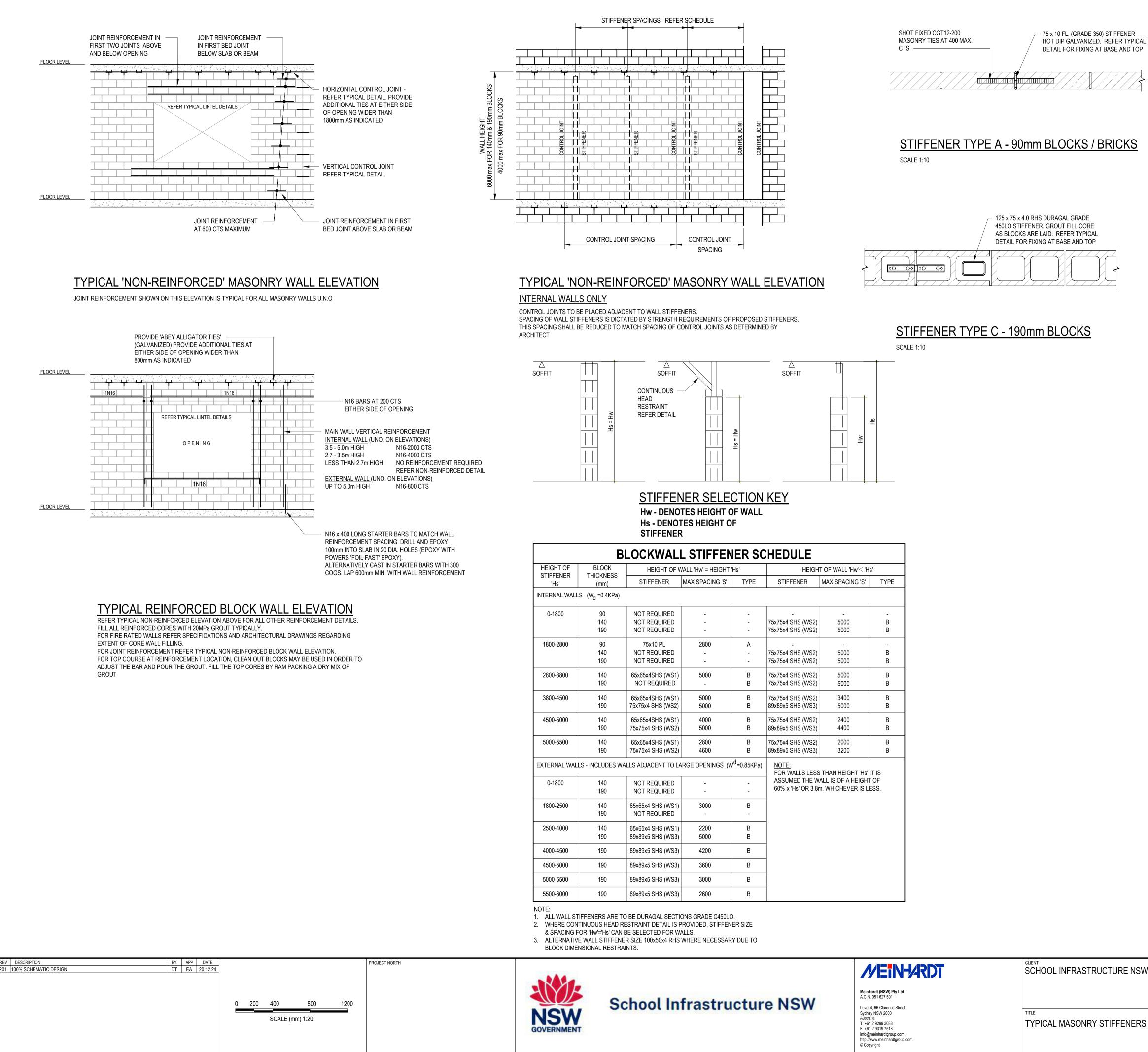
	DRAWING NO	MHT-	XX-XX	K-DR-	S-020	0
SCHEMATIC DESIGN	PROJECT No	132567		23.09.24	indicated	P04
	TG	AA	Approver	23.09.24	As	
STATUS	DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
MOXHAMS ROAD, NORTHMEAD, NSW 2152						
NORTHMEAD PUBLIC SCHOOL						



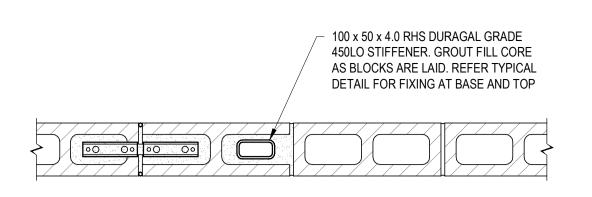
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NORTHMEAD PUBLIC SCHOOL						
MOXHAMS ROAD, NORTHMEAD, NSW 2152						
STATUS	DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
	TG	AA	Approver	23.09.24	1:20	P01
SCHEMATIC DESIGN	PROJECT No	132567				FVI
				•	<u>.</u>	
	NPS-	MHT-	ΧΧ-Χ〉	K-DR-	S-020	5



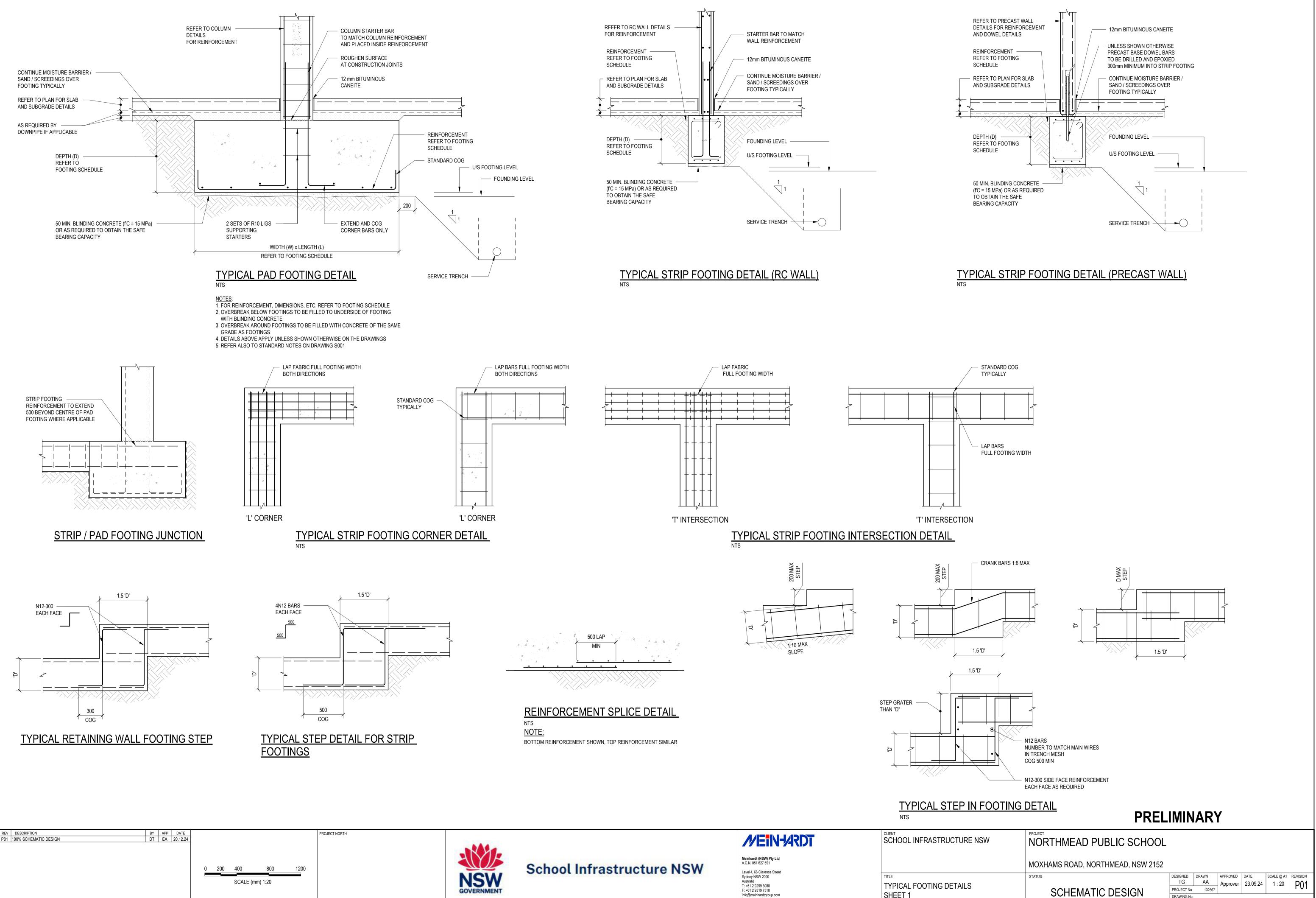
TYPICAL MASONRY STIFFENERS DE



STIFFENER TYPE B - 140mm BLOCKS

SCALE 1:10

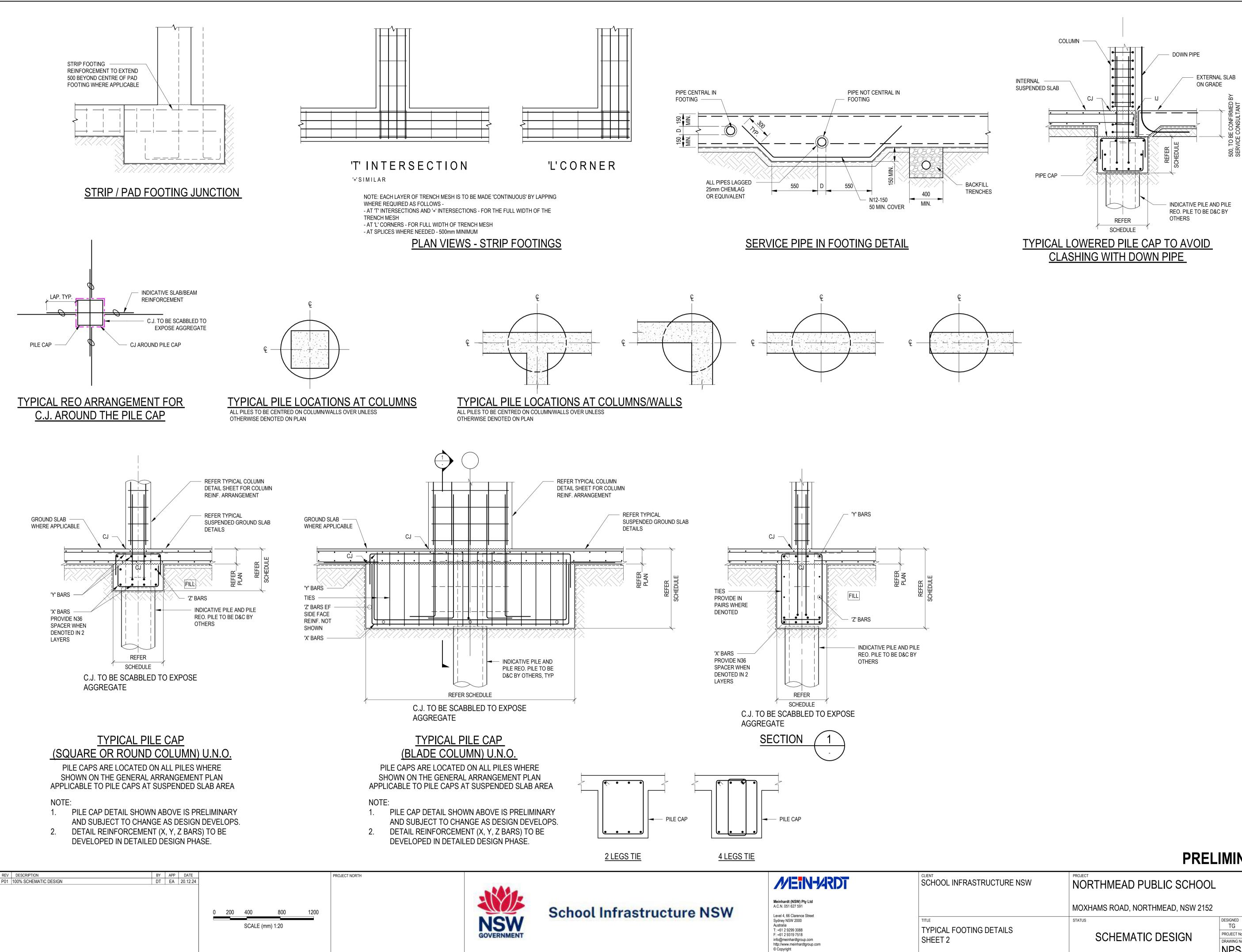
TAILS	SCHEMATIC DESIGN	IG AA Approver 23.09.24 1 : 50 P01 PROJECT No 132567 DRAWING NO DRAWING NO P01 P01					P01 6
	STATUS	DESIGNED TG	DRAWN AA	APPROVED	DATE	SCALE @ A1	
	NORTHMEAD PUBLIC SCHOOL MOXHAMS ROAD, NORTHMEAD, NSW 2152						
	PROJECT						



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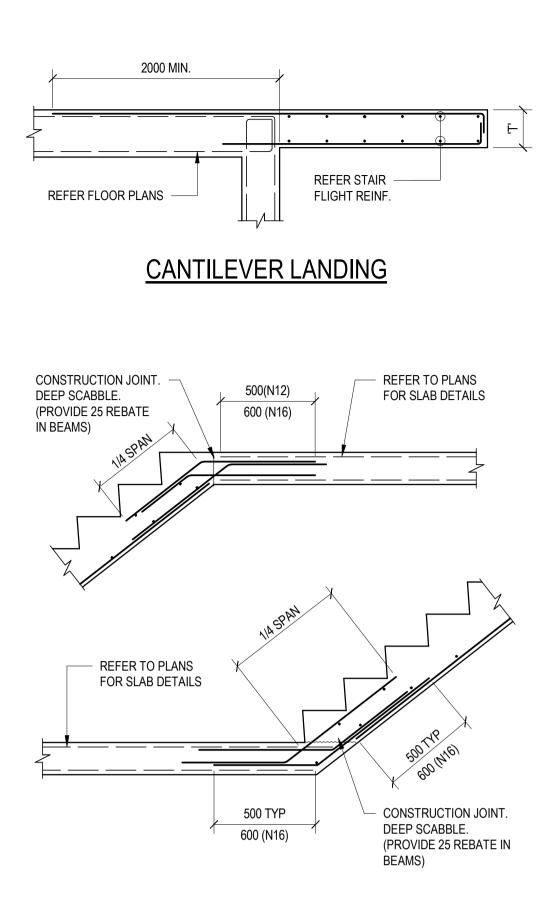
SHEET 1

NPS-MHT-XX-XX-DR-S-0210

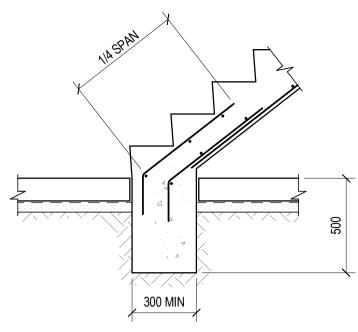


NORTHMEAD	PUBLIC	SCHOOL

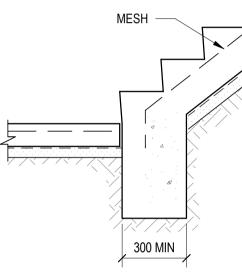
	DRAWN AA	APPROVED Approver	DATE 23.09.24	SCALE @ A1 1 : 20	REVISION				
PROJECT No	132567				. • .				
DRAWING No									
NPS-MHT-XX-XX-DR-S-0211									







AT SLAB ON GROUND



 REV
 DESCRIPTION

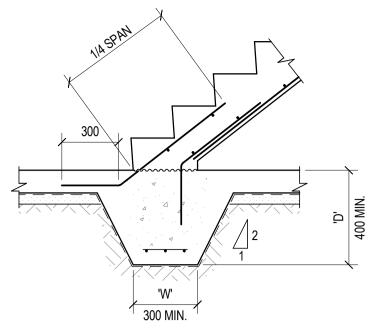
 P01
 100% SCHEMATIC DESIGN

 BY
 APP
 DATE

 E.A.
 20.12.24
 0 200 400 800 1200 SCALE (mm) 1:20

PROJECT NORTH

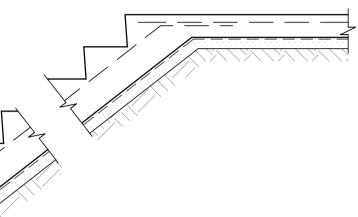




AT SLAB ON GROUND

<u>NOTE</u>: 'D' AND 'W' - DEPEND ON SOIL CONDITIONS REFER TO SLAB ON GROUND NOTES PROVIDE 3 L12TM BOTTOM 'OR' EQUIVALENT (65 COVER)

BASE VARIATIONS



STAIR ON GROUND



School Infrastructure NSW



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TYPICAL STAIR DETAILS

TITLE

PRELIMINARY

NORTHMEAD PUBLIC SCHOOL

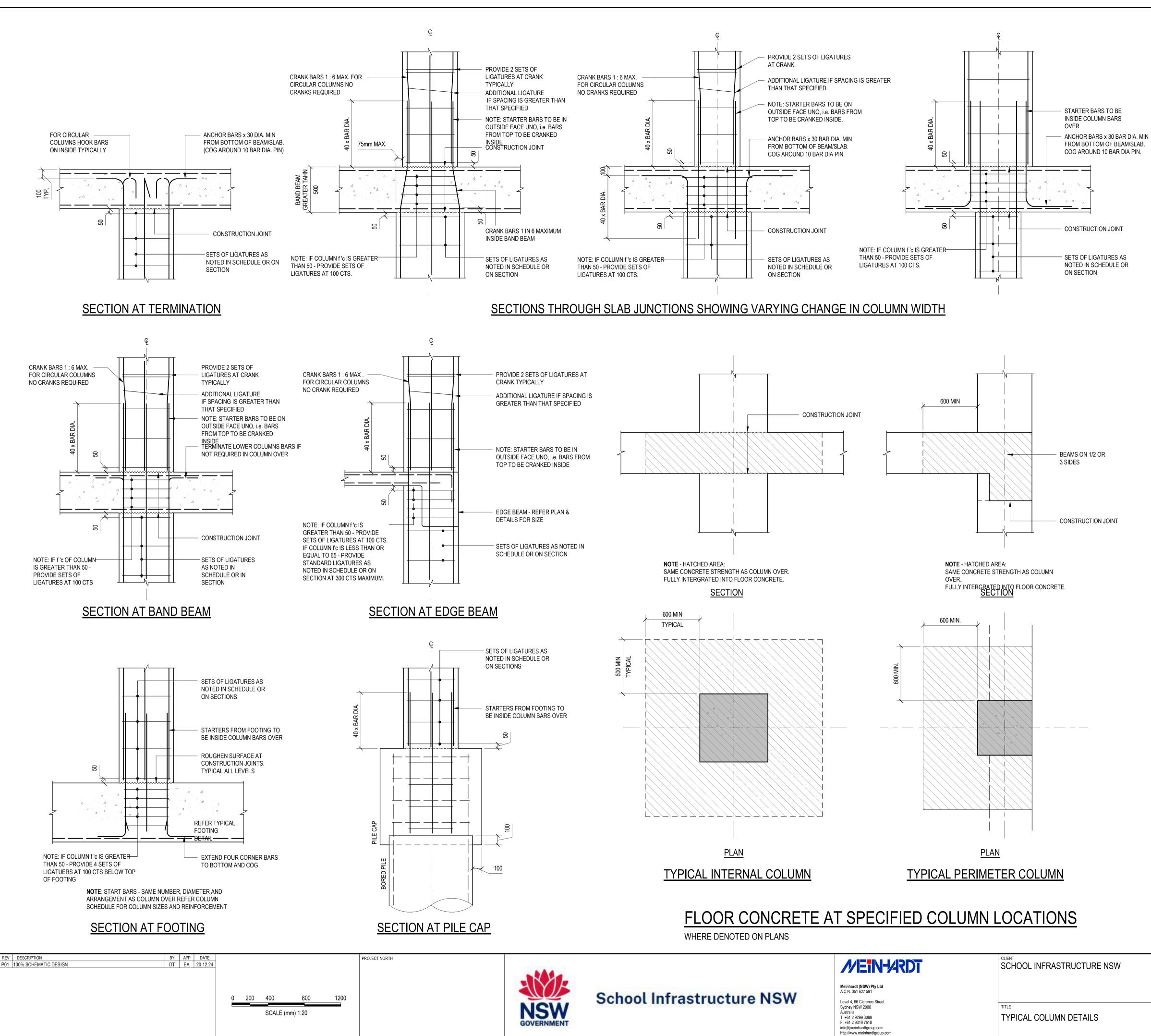
MOXHAMS ROAD, NORTHMEAD, NSW 2152

SCHEMATIC DESIGN

STATUS

DESIGNED TG PROJECT No	DRAWN AA 132567	APPROVED Approver	DATE 23.09.24	SCALE @ A1 1 : 20	revision P01
DRAWING No		XX-XX	(-DR-	S-022	0

vision P01



TYPICAL	COL	.UMN	DET	AILS
	001			/

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PRFI IMINARY

PROJECT		
NORTHMEAD	PUBLIC	SCHOOL

MOXHAMS ROAD, NORTHMEAD, NSW 2152

SCHEMATIC DESIGN

STATUS

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
TG	AA	Approver	23.09.24	1:20	DN1
PROJECT No	132567			-	FUI
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NPS-MHT-XX-XX-DR-S-0230

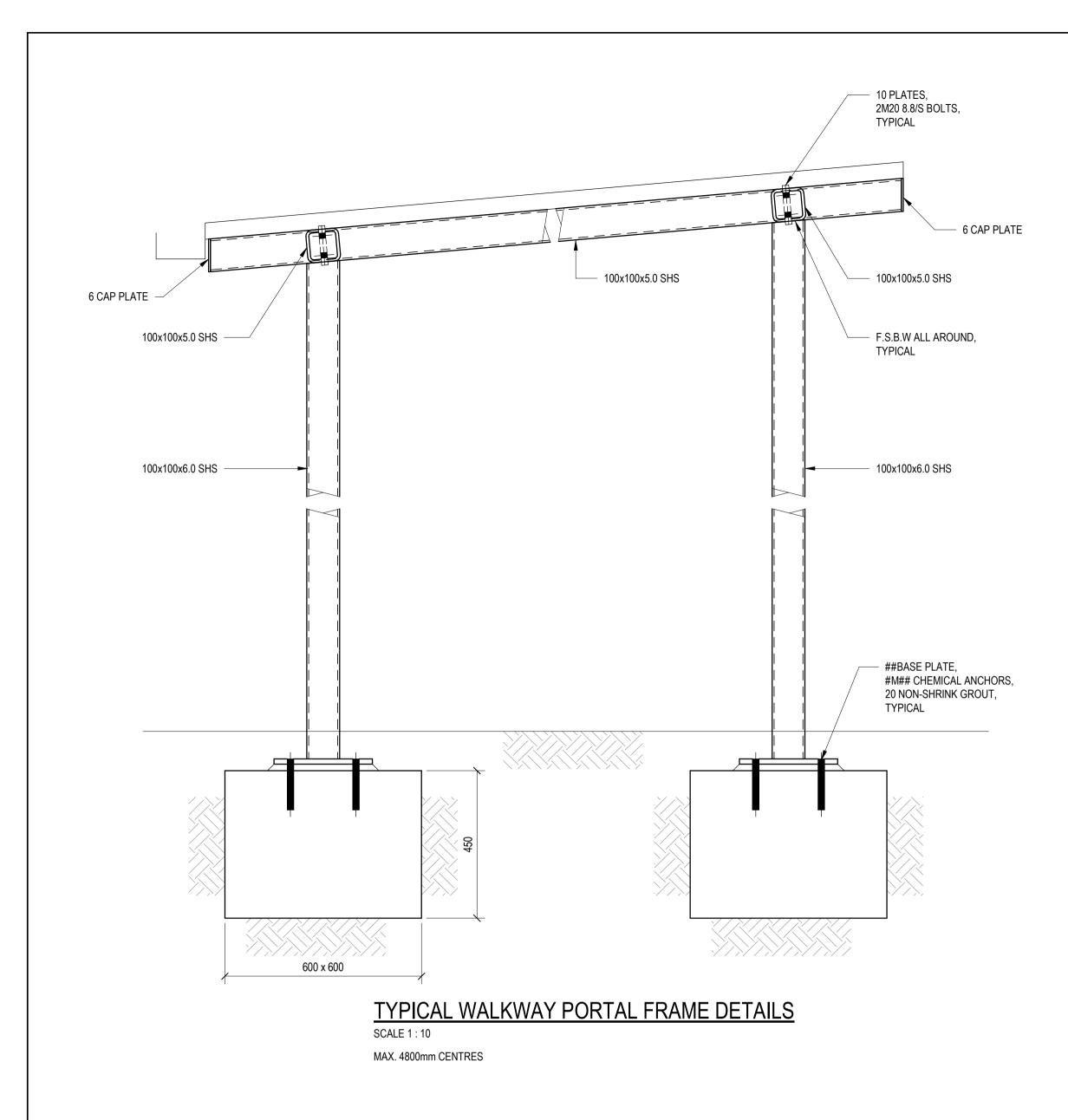
REFER COLUMN SCHEDULE FOR SIZES **COLUMN SECTIONS AT SPLICE**

LOWER COLUMN BARS

CRANKED UPPER COLUMN BARS

LOWER COLUMN BARS

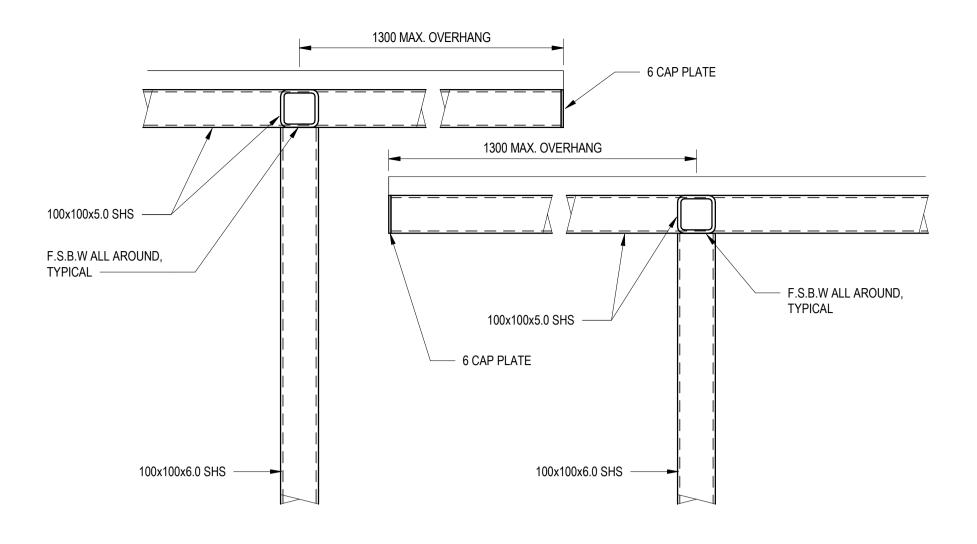
CRANKED UPPER COLUMN BARS



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REV	DESCRIPTION	BY	APP	DATE						PROJECT NORTH
01	75% SCHEMATIC DESIGN	DT	EA	22.11.24						
02	95% SCHEMATIC DESIGN	DT	EA	13.12.24						
03	100% SCHEMATIC DESIGN	DT	EA	20.12.24						
					0	1000	2000	4000	6000	
					SCALE (mm) 1:100			1:100		





TYPICAL STEP IN ROOF WALKWAY PORTAL FRAME DETAILS SCALE 1 : 10



School Infrastructure NSW



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TYPICAL STEELWORK DETAILS

TITLE

PRELIMINARY

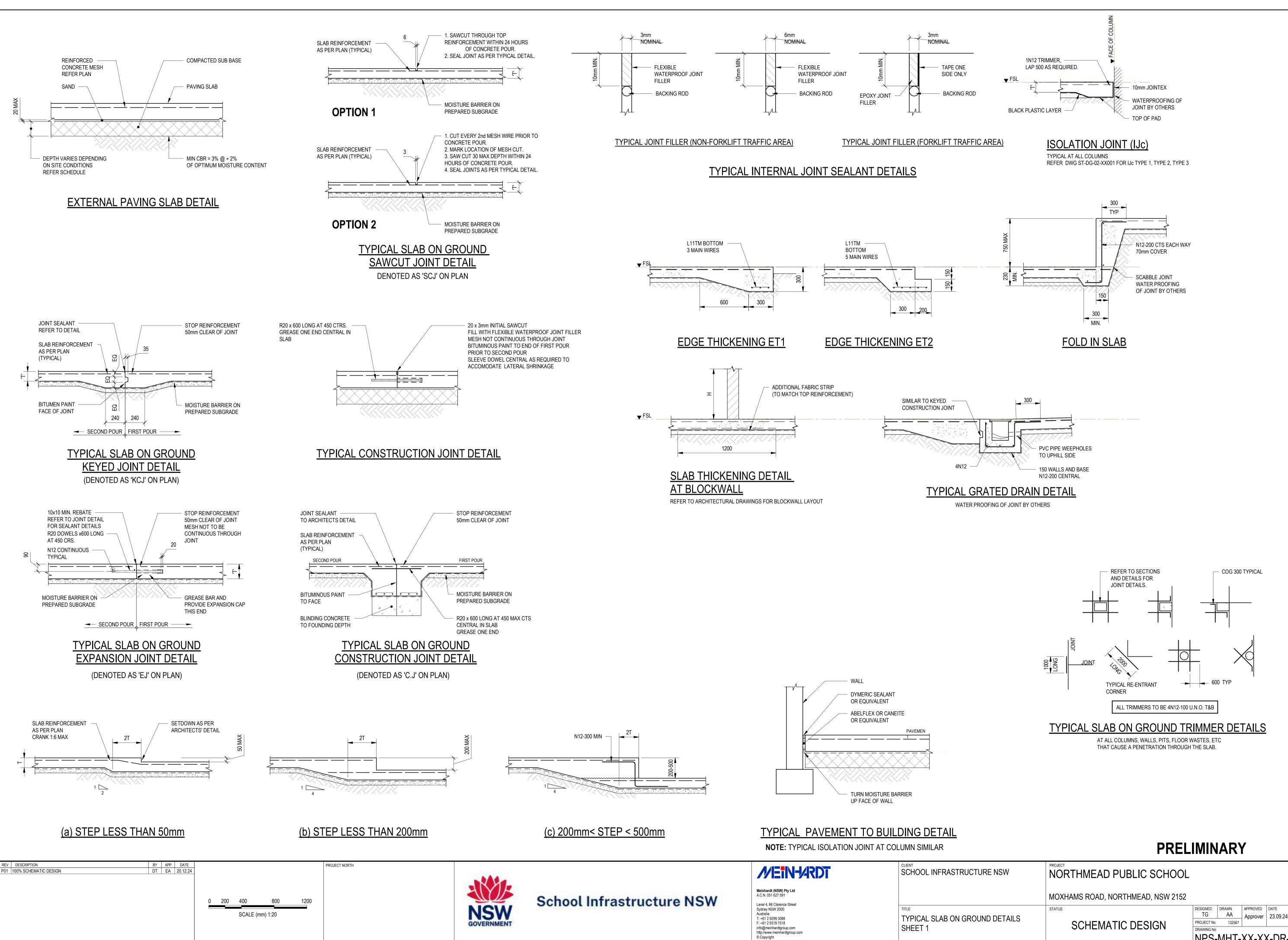
NORTHMEAD PUBLIC SCHOOL

MOXHAMS ROAD, NORTHMEAD, NSW 2152

SCHEMATIC DESIGN

STATUS

DESIGNED TG PROJECT No	DRAWN AA 132567	APPROVED Approver	DATE 23.09.24	SCALE @ A1 1 : 10	REVISION P03
DRAWING NO	MHT-	XX-XX	(-DR-	S-025	0



DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION			
TG	AA	Approver	23.09.24	As	₽ ∩1			
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