Upgrade to Cammeray Public School

Structural and Civil

Schematic Design Report

Project Reference: 132562

Document Reference: 250218- CAMMERAY PS 132562 - SCHEMATIC DESIGN REPORT - STRUCTURAL AND CIVIL - REV.D

Revision	Date	Description	Status
A	20TH December 2024	Schematic Design	80%
B	15TH January 2025	Schematic Design	100%
C	18TH February 2025	Schematic Design	100%
D	12th March 2025	Schematic Design – Arborist Updates	100%

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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.

The proposed activity involves upgrades to the existing CPS, including the following:

- Construction of 4 new permanent teaching spaces in a two-storey building incorporating 2 general learning spaces and 2 practical activity areas
- New egress lift and stairs for access to all building levels
- External covered walkways connecting the new building to the existing school network
- Landscaping and external works including compensatory planting
- Upgrades to site infrastructure and services to support the new buildings
- 50 bicycle parking spaces

The intent of the activity is to provide 4 permanent teaching spaces (PTS) plus 2 practical activity areas (PAA) across a two-storey addition, adjoining Building E. This will result in CPS retaining the capacity of a 'large' school (553-1,000 students) under EFSG (SINSW Education Facilities Standards and Guidelines).

Figure 1 below shows the scope of works for the proposed activity.

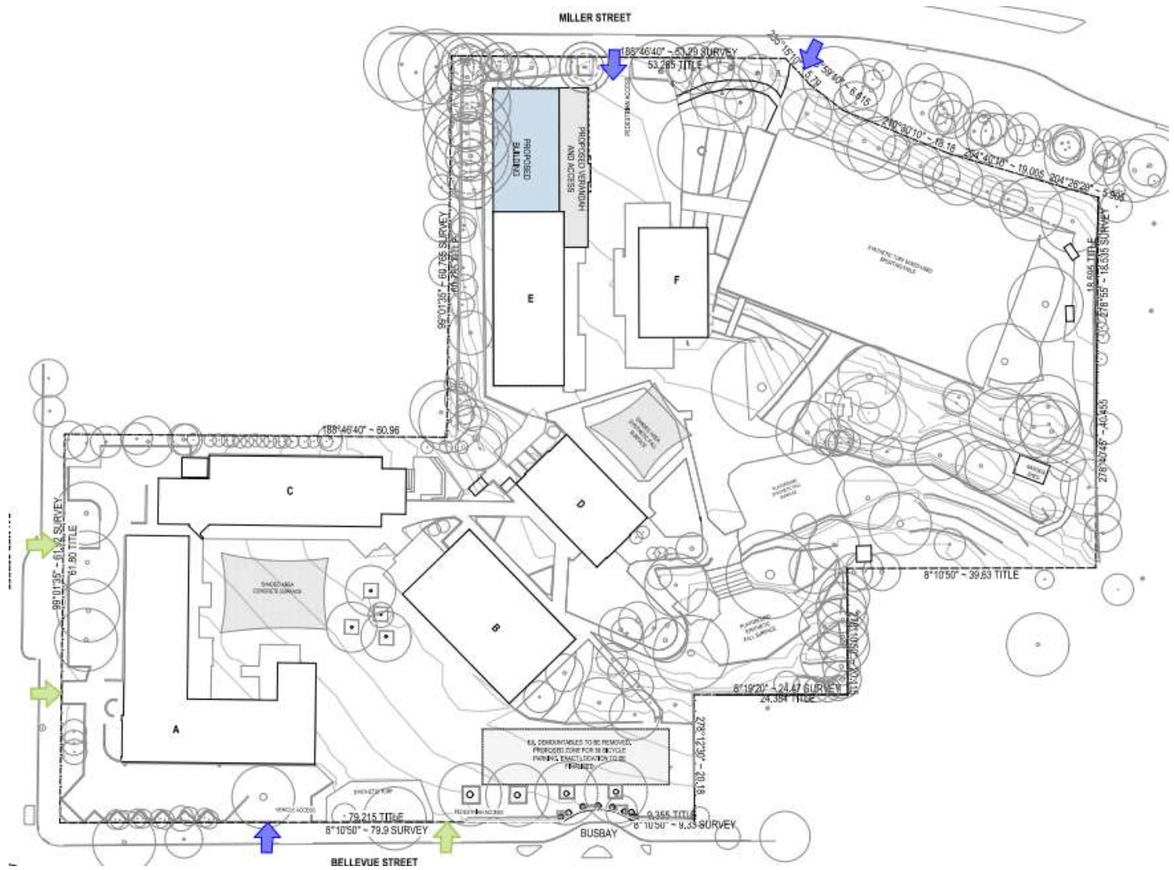

Figure 1: Proposed Scope of Works (Source: Fulton Trotter Architects, Proposed Site Plan (Rev P5))

1.1. Civil

North Sydney Council's Floodplain Risk Management Study and Plan indicates that the immediately surrounding areas are subject to flooding, it, however, indicates that the subject school site is 'flood free'. Based on the City of North Sydney's Stormwater Management plan (ref: nsdcp_B_18_Stormwater_Management), an OSD tank is not required for the proposed building based on the following reasons:

- This playground in 2009 was the site of 6 demountable classrooms and since that year two permanent buildings were constructed in 2012 and 2014 to the east of the proposed building.
- No on-site stormwater detention (OSD) has been identified as being provided as part of those buildings.
- Council's nsdcp_B_18_Stormwater_Management does not identify the need for OSD as part of new developments.
- No increase impervious area.

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

CPS is located at 68 Palmer Street, Cammeray on the northern side of Palmer Road, bound by Palmer Street to the south, Bellevue Street to the east and Miller Street to the west. The site has an area of 1.36 ha and comprises 11 allotments, legally described as:

- Lot 11 DP 837836
- Lot 1 DP 316130
- Lot 1 DP 316706
- Lot 1 DP 123406
- Lot 2 DP 174370
- Lot 1 DP 174370
- Lot 4 Sec 35 DP 758790
- Lot 5 Sec 35 DP 758790
- Lot 66 DP 1049613
- Lot 3 DP 571310
- Lot 4 DP 571310

The site currently comprises an existing co-education primary (K-6) public school with 6 permanent buildings, 3 demountable structures, covered walkways linked at multiple levels, play areas, on-grade parking, sports court, covered outdoor learning area (COLA) and vegetation/green spaces with mature trees.

The existing school buildings are clustered towards the southern portion of the site and comprise both single and 2 storey buildings. The northern portion of the site contains the sports court, vegetable garden and play equipment. The north-western portion of the site is heavily vegetated with trees of high landscape significance that are protected with fencing.

The site is identified as a locally listed heritage item (I0019) under Schedule 5 Environmental Heritage pursuant to the North Sydney Local Environmental Plan 2013 (NSLEP). The school is also identified in the Plateau Heritage Conservation Area (HCA) (Part 2 Schedule 5 of the NSLEP). The school is listed on the Department of Education (DoE) Section 170 Heritage Conservation Register as 'Cammeray Public School". The site is approximately 115m from a State heritage item (I0004) being the electricity substation at 143 Bellevue Street and in close proximity to locally heritage listed items.

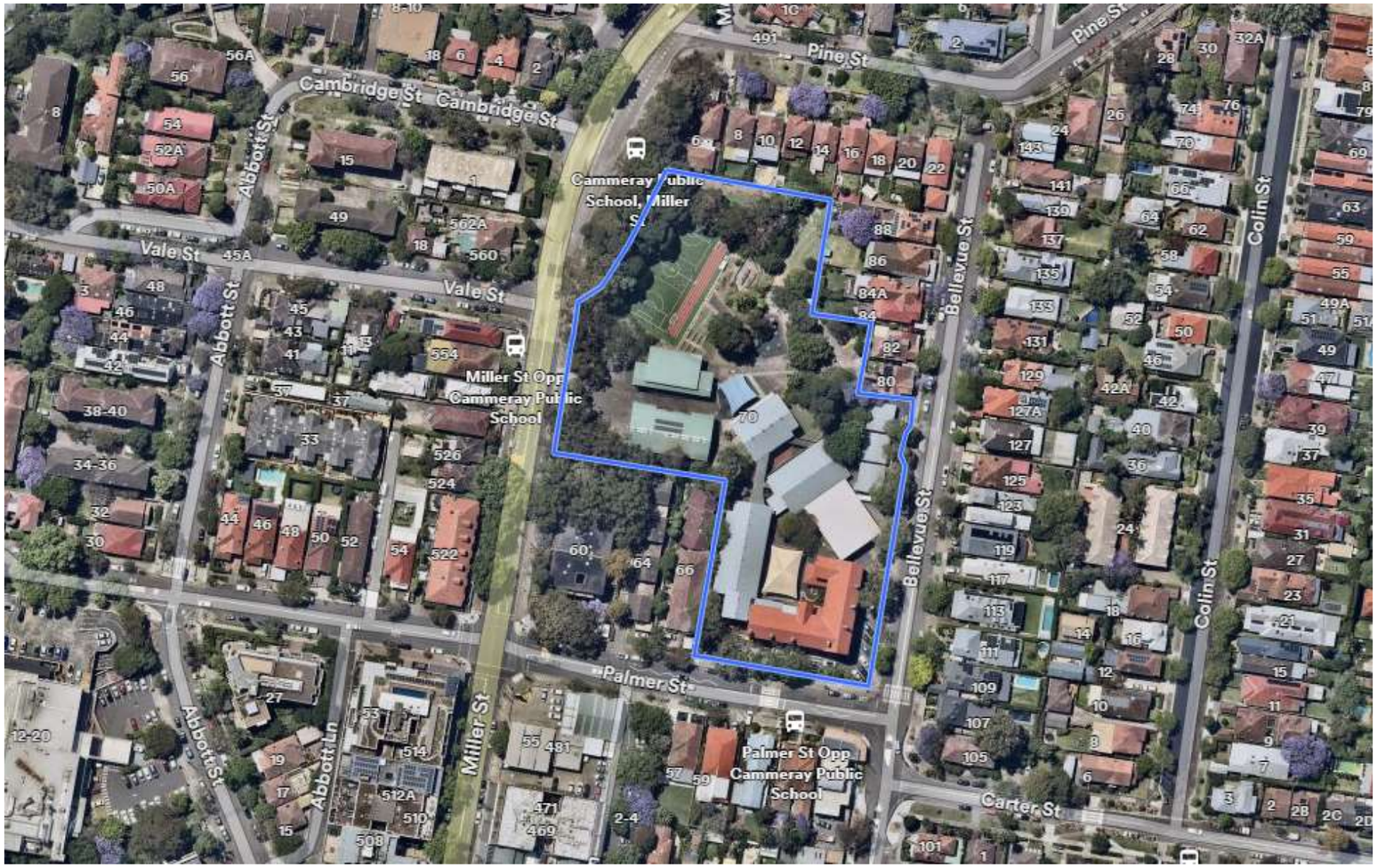

Figure 2: Aerial image of the site, outlined in blue (Source: NearMap, taken 30 October 2024)

2.2. 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 southern end of the proposed building site. Refer to Figure 3 below.

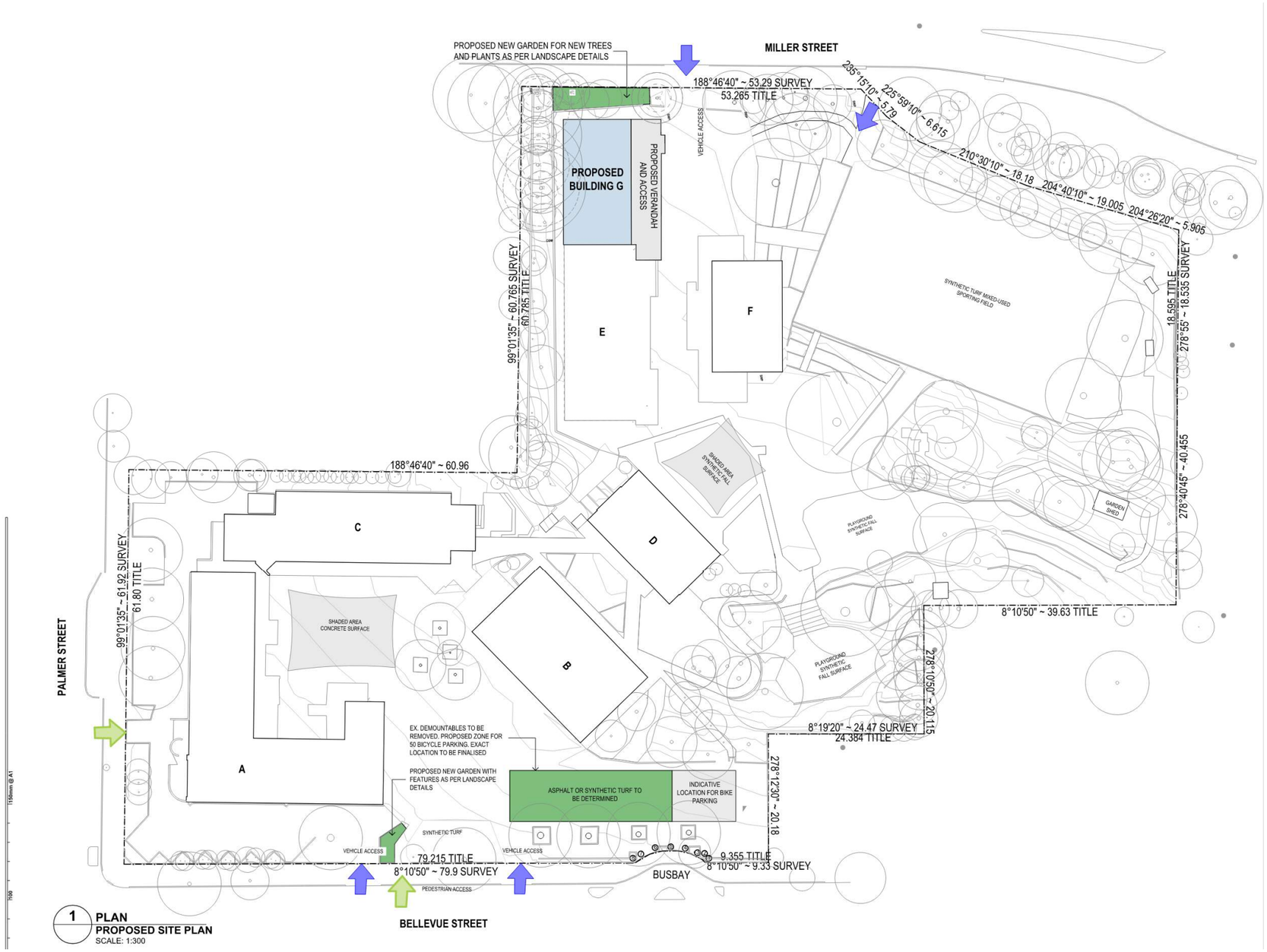

Figure 3: Existing Site Plan – Fulton Trotter Architects

2.3. Contamination

Based on ADE's detailed DSI, A101023.0722.DSI.Cammeray_v1, the contamination risk at the proposed development is Low. The site is suitable for planned development.

2.4. Geotechnical Investigations

Based on ADE's Geotech report, A201023.0722.01_A_v1f_IGI SINSW Cammeray, considering the existing extremely weathered bedrock was inferred to be at shallow depth, likely less than/at around 1m below the existing ground surface, shallow foundation systems, such as pad and /or strip foundations systems being directly founded on Unit 4 weathered bedrock materials. Refer to Figure 4.

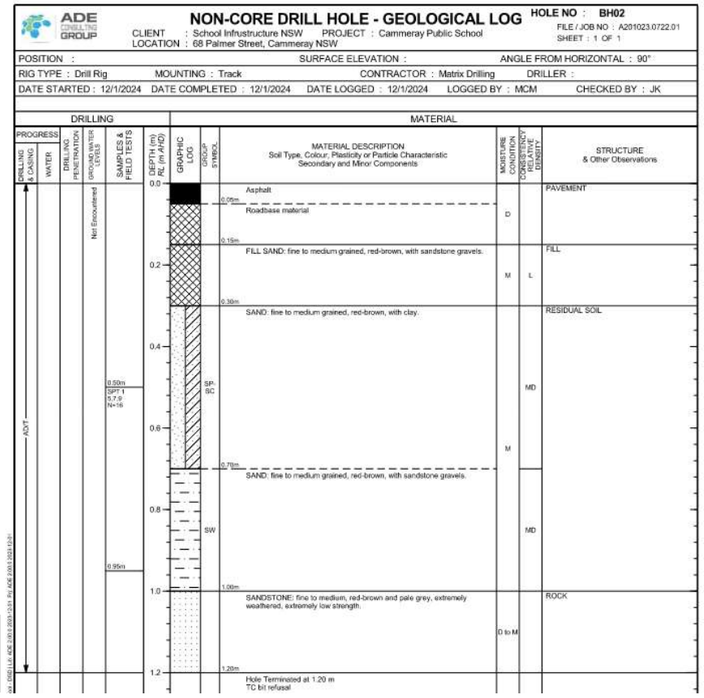

Figure 4: Borehole Locations & BH02 Log for Cammeray PS

2.5. Flooding and Overland Flow

North Sydney Council's Floodplain Risk Management Study and Plan indicates that the immediately surrounding areas are subject to flooding, it, however, indicates that the subject school site is 'flood free'.

2.6. Existing Documentation

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

- L&Co24004_Cammeray Public School Preliminary Arboricultural Report_v2
- A101023.0722.DSI.Cammeray_v1d
- SINSW EFSG DGN007 Structural Design Criteria
- A201023.0722.01_A_v1f_IGI SINSW Cammeray
- Fulton Trotter Architectural drawings – Issued 100% Schematic Design

Arch-Cammeray-100%
ARCHITECTURAL SPECIFICATION - VOLUME 1 (Group 2 Schools-Master Spec)
ARCHITECTURAL SPECIFICATION - VOLUME 2 - CAMMERAY PS
CPS-FTA-00-00-DR-A-1001 EXISTING SITE PLAN [03]
CPS-FTA-00-00-DR-A-1002 DEMOLITION SITE PLAN [03]
CPS-FTA-00-00-DR-A-1003 SITE ANALYSIS PLAN [03]
CPS-FTA-00-00-DR-A-1101 PROPOSED SITE PLAN [03]
CPS-FTA-00-00-DR-A-1201 SITE SECTIONS [03]
CPS-FTA-00-00-DR-A-1401 EXTERNAL WORKS PLAN [03]
CPS-FTA-00-00-DR-A-1501 STAGING PLAN [03]
CPS-FTA-00-00-DR-A-1601 PLAYSCAPE CALCULATION [01]
CPS-FTA-00-00-DR-A-1602 AMENITIES STRATEGY [01]
CPS-FTA-00-00-DR-A-1603 ACCESS STRATEGY [01]
CPS-FTA-00-00-DR-A-1604 TREE REMOVAL PLAN [01]
CPS-FTA-00-00-DR-A-1610 INDIGENOUS ARTWORK STRATEGY [02]
CPS-FTA-00-00-DR-A-1630 EXTERNAL MATERIAL AND FINISHES [02]
CPS-FTA-00-00-DR-A-1640 SHADOW DIAGRAM [02]
CPS-FTA-00-00-DR-A-1650 CONSTRUCTION MANAGEMENT STRATEGY [01]
CPS-FTA-B00E-GF-DR-A-2001 BUILDING E - EXISTING_DEMOLITION GROUND FLOOR PLAN [05]
CPS-FTA-B00E-L1-DR-A-2002 BUILDING E - EXISTING_DEMOLITION LEVEL 1 PLAN [04]
CPS-FTA-B00E-LR-DR-A-2003 BUILDING E - EXISTING_DEMOLITION ROOF PLAN [03]
CPS-FTA-B00G-GF-DR-A-2102 BUILDING G - GROUND FLOOR PLAN [04]
CPS-FTA-B00G-GF-DR-A-2201 CEILING PLAN - GROUND FLOOR [03]
CPS-FTA-B00G-GF-DR-A-2301 GROUND FLOOR FINISHES PLAN [01]
CPS-FTA-B00G-L1-DR-A-2103 BUILDING G - LEVEL 1 FLOOR PLAN [04]
CPS-FTA-B00G-L1-DR-A-2202 CEILING PLAN - LEVEL 1 [03]
CPS-FTA-B00G-L1-DR-A-2302 FIRST FLOOR FINISHES PLAN [01]
CPS-FTA-B00G-LG-DR-A-2100 BUILDING G - UNDERCROFT LEVEL [04]
CPS-FTA-B00G-LR-DR-A-2104 BUILDING G - ROOF PLAN [04]
CPS-FTA-B00G-ZZ-DR-A-3001 BUILDING G - ELEVATIONS 01 [04]
CPS-FTA-B00G-ZZ-DR-A-3101 BUILDING G - SECTIONS 01 [04]
CPS-FTA-B00G-ZZ-DR-A-4001 WALL TYPES 01 [03]
CPS-FTA-B00G-ZZ-DR-A-4201 SECTION DETAILS 01 [03]
CPS-FTA-B00G-ZZ-DR-A-4202 SECTION DETAILS 02 [03]
CPS-FTA-B00G-ZZ-DR-A-4203 SECTION DETAILS 03 [03]
CPS-FTA-B00G-ZZ-DR-A-4401 STAIR DETAILS [02]
CPS-FTA-B00G-ZZ-DR-A-4501 BALUSTRADE AND HANDRAIL DETAILS [03]
CPS-FTA-B00G-ZZ-DR-A-4701 LIFT DETAILS [02]
CPS-FTA-B00G-ZZ-DR-A-4901 TYPICAL FASCIA DETAILS [03]
CPS-FTA-B00G-ZZ-DR-A-5001 ROOM ELEVATIONS 01 [02]
CPS-FTA-B00G-ZZ-DR-A-5002 ROOM ELEVATIONS 02 [02]
CPS-FTA-B00G-ZZ-DR-A-6001 EXTERNAL DOOR & WINDOW SCHEDULE [P2]
CPS-FTA-B00G-ZZ-DR-A-6002 INTERNAL DOOR & WINDOW SCHEDULE [01]
CPS-FTA-B00G-ZZ-DR-A-9001 PERSPECTIVES 1 [02]
CPS-FTA-B00G-ZZ-DR-A-9002 PERSPECTIVES 2 [02]
CPS-FTA-XX-XX-DR-A-0000 COVER SHEET + DRAWING LIST [03]
CPS-FTA-XX-XX-DR-A-0001 SPECIFICATION SCHEDULE & MATERIAL SELECTIONS [02]
CPS-FTA-XX-XX-TR-A-0001[03]

3. PROPOSED DEVELOPMENT

3.1. Civil Engineering Works

3.1.1. Stormwater Drainage

North Sydney Council's Floodplain Risk Management Study and Plan indicates that the immediately surrounding areas are subject to flooding, it, however, indicates that the subject school site is 'flood free'. Based on the City of North Sydney's Stormwater Management plan (ref: nsdcp_B_18_Stormwater_Management), an OSD tank is not required for the proposed building based on the following reasons:

- This playground in 2009 was the site of 6 demountable classrooms and since that year two permanent buildings were constructed in 2012 and 2014 to the east of the proposed building.
- No on-site stormwater detention (OSD) has been identified as being provided as part of those buildings.
- Council's nsdcp_B_18_Stormwater_Management does not identify the need for OSD as part of new developments.
- No increase impervious area.

A summary of the schematic stormwater drainage design connecting to the existing stormwater system has been presented in Figure 5 below.

All roof drainage pipes to connect into the proposed stormwater system underground. Great care should be taken while installing the stormwater system on the southern side of the building to ensure that the existing retaining wall is not impacted. Any pad foundations near the stormwater pits should extend to below the stormwater pit and pipe system.

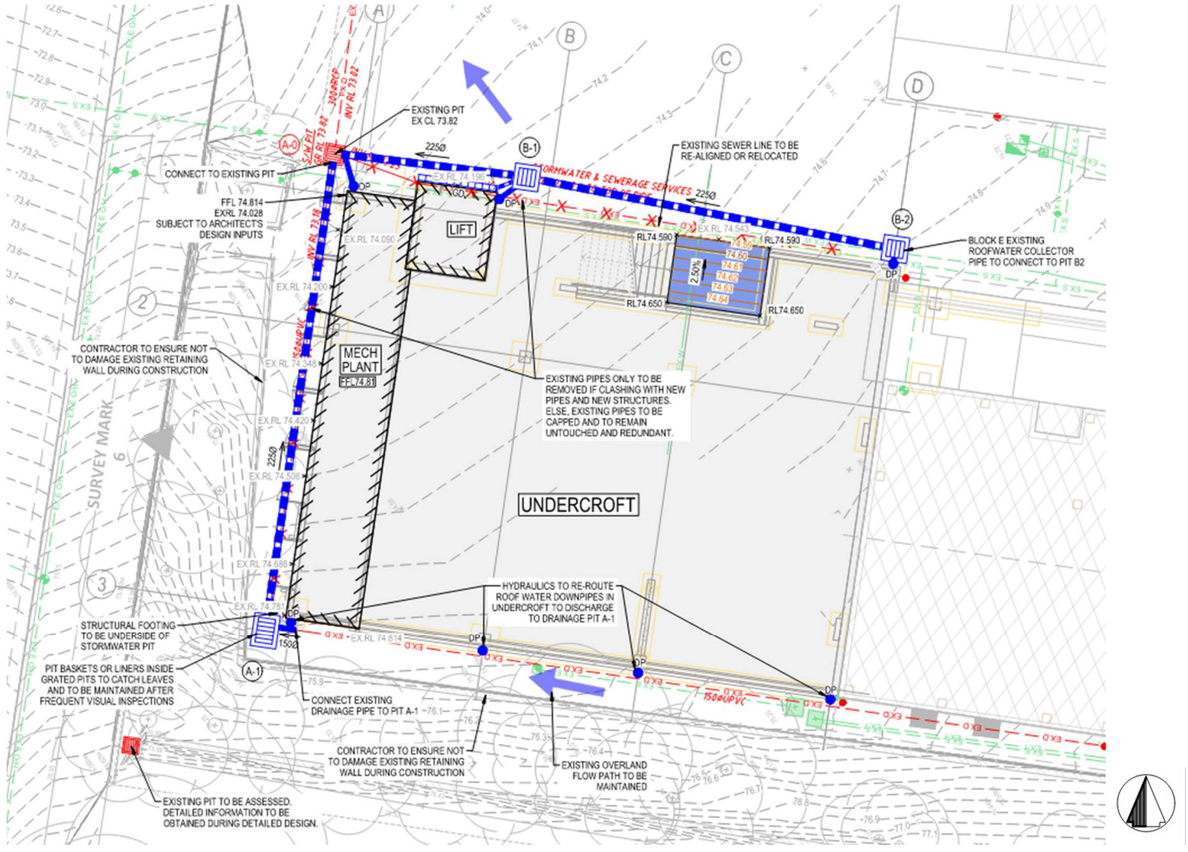

Figure 5: Proposed Option Stormwater Drainage Plan

3.1.2. Bulk Earthworks

The new two-storey building ground floor level has been set based on the elevated existing Building E ground floor. Other than pad footings / strip footings we anticipate minimum cut and fill volumes. A summary of the concept bulk earthworks estimated cut & fill volumes has been presented in Figure 06 below.

EARTHWORKS QUANTITIES

150mm STRIPPED VOLUME = (BUILDING AREA ONLY)	34m³
TOTAL CUT VOLUME =	17m³
TOTAL FILL VOLUME =	9m³
NET EXPORT VOLUME =	8m³

(NO BULK EARTHWORKS - EXISTING ASPHALT)

EARTHWORKS SUMMARY

NOTES:
1. BULK EARTHWORKS SURFACE IS DESIGN SURFACE MINUS THE FOLLOWING:
   - NATURAL SURFACE (0mm)
2. EXCLUDES COMPACTION FACTORS.
3. ALL BATTERS TO BE 1 IN 2 MAX UNLESS NOTED OTHERWISE.
4. 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.
5. ASSUMED BULK EARTHWORKS DEPTH FOR BUILDING IS 250mm (BUILDING SLAB THICKNESS PLUS BEDDING THICKNESS).

THESE PLANS ARE BASED UPON THE EXISTING CONDITIONS SURVEY PREPARED BY SDG PTY LTD, REFERENCE No 9009 REV A DATED 21 MAY 2024.

THESE DESIGN PLANS SHALL BE READ IN CONJUNCTION WITH GEOTECHNICAL REPORT No. A201023.0772.00_A_v1f DATED 14 FEBRUARY 2024 PREPARED BY ADE CONSULTING GROUP. 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.

Figure 6: Preliminary Bulk Earthwork Volumes

3.2. Structural Works

3.2.1. Foundations

Based on ADE's Geotech report, A201023.0722.01_A_v1f_IGI SINSW Cammeray, considering the existing extremely weathered bedrock was inferred to be at shallow depth, likely less than/at around 1m below the existing ground surface, shallow foundation systems, such as pad and /or strip foundations systems being directly founded on Unit 4 weathered bedrock materials. Consequently, we propose a 500mm deep pad footing for columns and 600mm deep strip and core wall footings. Refer to Figure 7 for the proposed Footing Plan.

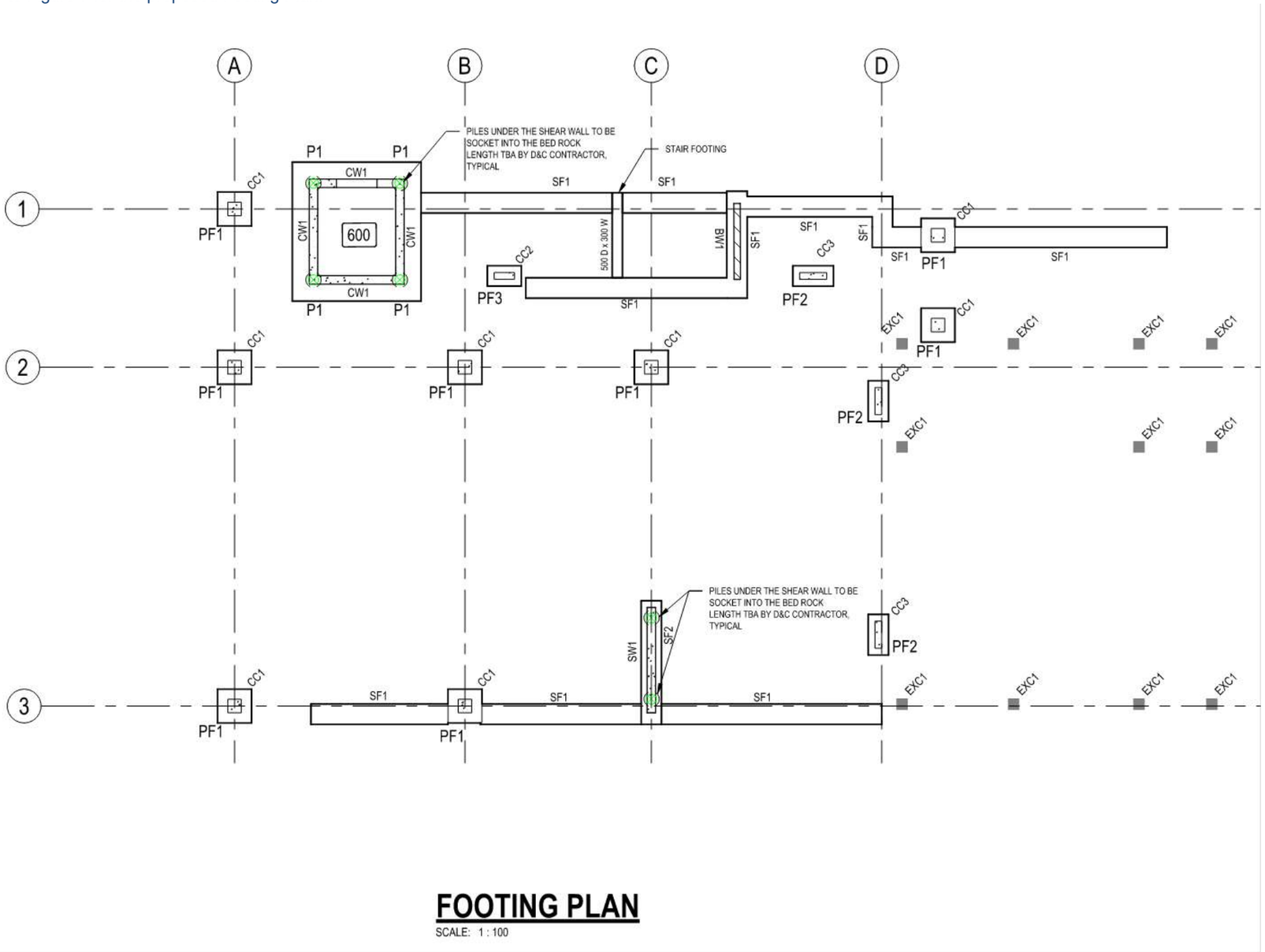

Figure 7: Proposed Footing Plan

3.2.2. Department of Education Pattern Book

The Department of Education 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.

3.2.3. 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. Structural & Civil Actions/Recommendations for Phase 3 Schematic Design

1. Survey: A detailed survey has been requested.
2. Stormwater: Council to confirm no OSD requirement.

Appendix A – Civil Schematic Design Drawings

CAMMERAY PUBLIC SCHOOL
68 PALMER STREET, CAMMERAY NSW 2062
CIVIL DRAWINGS

LOCALITY PLAN
N.T.S

DRAWING LIST	
DRAWING NUMBER	**DRAWING TITLE**
CPS-MHT-00-00-DR-C-0010	COVER SHEET, DRAWING INDEX AND LOCALITY PLAN
CPS-MHT-00-00-DR-C-0020	STANDARD NOTES
CPS-MHT-00-00-DR-C-0060	EROSION AND SEDIMENT CONTROL PLAN
CPS-MHT-00-00-DR-C-0065	EROSION AND SEDIMENT CONTROL DETAILS
CPS-MHT-00-00-DR-C-0070	BULK EARTHWORKS PLAN
CPS-MHT-00-00-DR-C-0080	BULK EARTHWORKS LONGITUDINAL SECTIONS
CPS-MHT-00-00-DR-C-0101	CIVIL SITEWORKS PLAN
CPS-MHT-00-00-DR-C-0200	CIVIL DETAILS
CPS-MHT-00-00-DR-C-0710	STORMWATER DRAINAGE PIT SCHEDULE

IMPORTANT NOTES

1. 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.
2. 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.

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

1. 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.
3. 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.

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.

THE CONTRACTOR SHALL BE TOTALLY RESPONSIBLE FOR AND 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.

HEALTH AND SAFETY

H1. 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.

H2. 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.

H3. 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.

GEOTECHNICAL DESIGN COMPLIANCE AND SITE INSPECTION ATTENDANCE

THESE DESIGN PLANS SHALL BE READ IN CONJUNCTION WITH GEOTECHNICAL REPORT No. A201023.0772.00_A_v1f DATED 14 FEBRUARY 2024 PREPARED BY ADE CONSULTING GROUP. 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).
b) 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

BEFORE YOU DIG
www.byda.com.au

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.

REV	DESCRIPTION	BY	DES	CHKD	DATE
P1	80% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	06.12.24
P2	95% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	18.12.24
P3	100% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	14.01.25

MEINHARDT
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Australia
T: +61 2 9699 3088
F: +61 2 9319 7518
info@meinhardtgroup.com
http://www.meinhardtgroup.com

CLIENT: NSW GOVERNMENT School Infrastructure NSW

PROJECT: CAMMERAY PUBLIC SCHOOL
68 PALMER STREET, CAMMERAY NSW 2062

TITLE: COVER SHEET, DRAWING INDEX AND LOCALITY PLAN

STATUS: **SCHEMATIC DESIGN**
NOT TO BE USED FOR CONSTRUCTION

DRAWN	DESIGNED	CHECKED	APPROVED	DATE	SCALE @ A1
M.D	M.D	Y.C			N.T.S

PROJECT No: 132582S
DRAWING No: CPS-MHT-00-00-DR-C-0010
REV: P3

DWG FILE: X:\132582_SINSW Cammeray PDS_BIM3_CIVD_Drafting - MH PLOT TIME: 14 Jan 2026, 3:45pm

STANDARD CIVIL NOTES

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 GEOTECHNICAL 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 1657 FIXED PLATFORMS, WALKWAYS, STAIRWAYS AND LADDERS
- 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 3996 METAL ACCESS COVERS, ROAD GRATES AND FRAMES
- AS 4058 PRECAST CONCRETE PIPES (PRESSURE AND NON-PRESSURE)
- AS 4139 FIBRE REINFORCED CONCRETE PIPES AND FITTINGS

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.

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 OTHERWISE.

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.

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 CONCRETE.

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
VEHICULAR PAVEMENT	N32 TYPE 1	20	80 ± 15

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.

5.8 MINIMUM LAPS FOR REINFORCEMENT SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:

FABRIC	2 CROSS WIRES + 25mm.		
N12:	400mm.	N24:	1100mm
N16:	600mm.	N28:	1350mm
N20:	800mm.	N32:	1500mm

COG AND HOOK PIN DIAMETERS AND OVERALL DIMENSIONS SHALL BE AS PER THE REQUIREMENTS OF AS 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:	GRADE 500N TO AS/NZS 4671.
FABRIC:	HARD DRAWN WIRE FABRIC TO AS/NZS 4671.
LIGS & TIES:	HARD DRAWN WIRE, GRADE 450W, TO 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 2 X N12 DIAGONAL CORNER BARS 1200 LONG ARE REQUIRED AT ALL RE-ENTRANT CORNERS OF OPENINGS IN FOOTPATHS.

6.3 EDGINGS
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 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.

REV	DESCRIPTION	BY	DES	CHKD	DATE
P1	80% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	06.12.24
P2	95% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	18.12.24
P3	100% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	14.01.25

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CLIENT
NSW GOVERNMENT
School Infrastructure NSW

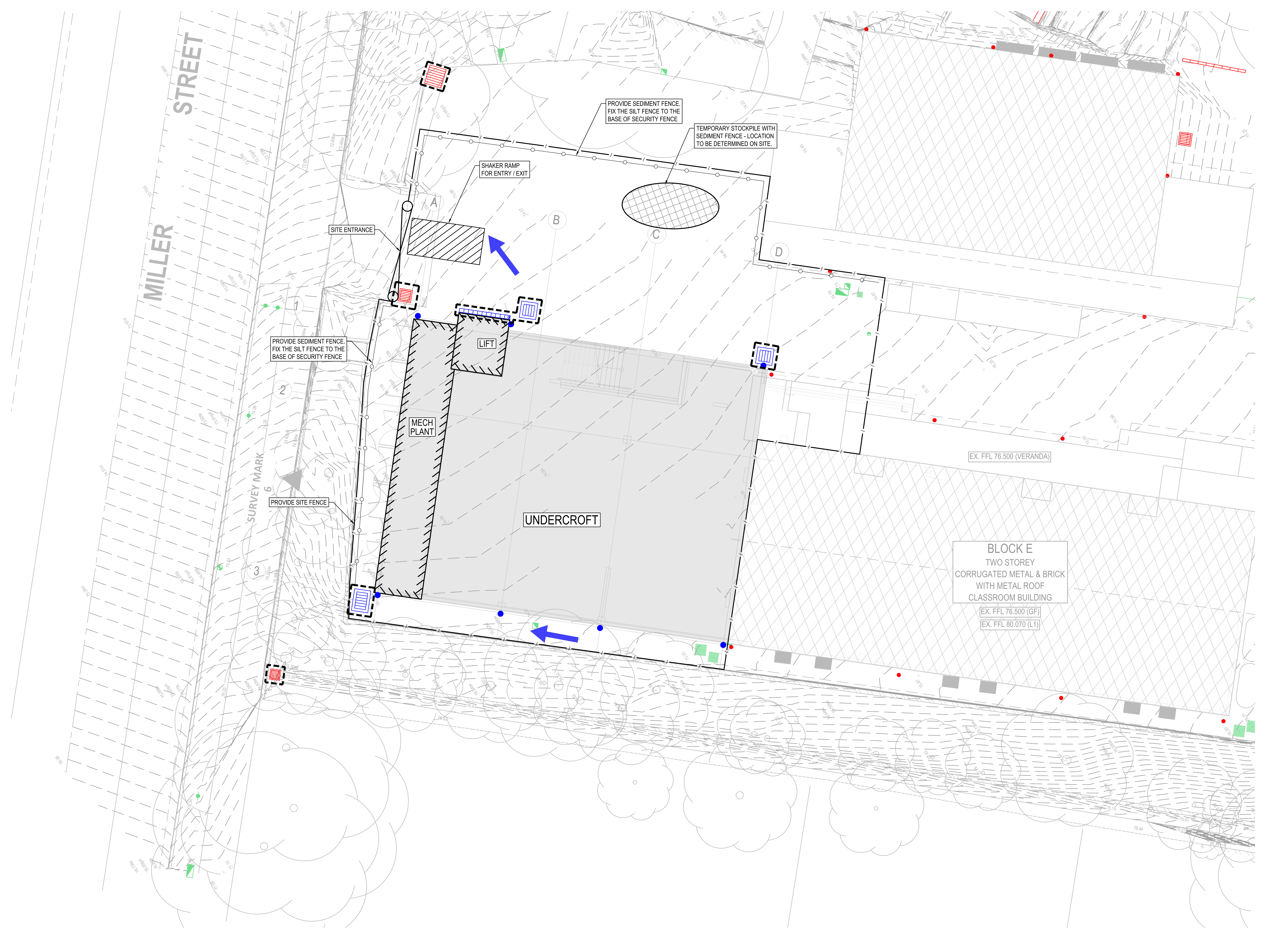
PROJECT
CAMMERAY PUBLIC SCHOOL
68 PALMER STREET, CAMMERAY NSW 2062

TITLE
STANDARD NOTES

STATUS
SCHEMATIC DESIGN
NOT TO BE USED FOR CONSTRUCTION

DRAWN	DESIGNED	CHECKED	APPROVED	DATE	SCALE @ A1
M.D	M.D	Y.C			N.T.S

PROJECT No	DRAWING No	REV
132562	CPS-MHT-00-00-DR-C-0020	P3



LEGEND

ITEM	DESCRIPTION
156.6	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.RU	EXISTING RECYCLED WATER
EX.E	EXISTING ELECTRICITY
EX.E.OH	EXISTING OVERHEAD ELECTRICITY
EX.E.LV	EXISTING LOW VOLTAGE ELECTRICITY
EX.E.HV	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
	SEDIMENT FENCE
	BUILDING OUTLINE
	SITE ACCESS GATE
	SHAKER RAMP FOR ENTRY/EXIT
	TEMPORARY STOCKPILE (LOCATION TBC ON-SITE)
	GEOTEXTILE PIT FILTER / FILTER SURROUND INSTALLED ON EXISTING PIT
	SANDBAGS INSTALLED ON EXISTING PIT
	OVERLAND FLOW ARROW

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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.

DWG FILE: X:\132562 - SINSW Cammeray PS\5_BIM\3_CIV\2_Drafting - MH PLOT TIME: 25 Feb 2025, 4:07pm

REV	DESCRIPTION	BY	DES	CHKD	DATE
P1	80% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	06.12.24
P2	95% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	18.12.24
P3	100% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	14.01.25
P4	CHANGE DUE TO EXISTING ELECTRICAL AND COMMS PITS	M.D	M.D	Y.C	25.02.25

0 1 2 3 4 5m
SCALE 1:100 AT ORIGINAL SIZE (A1)

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CLIENT: NSW GOVERNMENT School Infrastructure NSW

PROJECT: CAMMERAY PUBLIC SCHOOL
68 PALMER STREET, CAMMERAY NSW 2062

TITLE: EROSION AND SEDIMENT CONTROL PLAN

STATUS: **SCHEMATIC DESIGN**
NOT TO BE USED FOR CONSTRUCTION

DRAWN	DESIGNED	CHECKED	APPROVED	DATE	SCALE @ A1
M.D	M.D	Y.C			1:100

PROJECT No	DRAWING No	REV
132562	CPS-MHT-00-00-DR-C-0060	P4

SOIL AND WATER MANAGEMENT NOTES

1. 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.
2. ALL SEDIMENT CONTROL MEASURES TO BE INSTALLED IN ACCORDANCE WITH LANDCOM MANAGING URBAN STORMWATER "BLUE BOOK".
3. MINIMISE CLEARING OUTSIDE BASEMENT EXTENT AND IN ACCORDANCE WITH THE ARBORIST REPORT.
4. 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

1. 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.
2. SEDIMENT REMOVED FROM ANY TRAPPING DEVICE WILL BE RELOCATED WHERE FURTHER POLLUTION TO DOWNSLOPE LANDS & WATERWAYS CANNOT OCCUR.
3. 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.
4. WATER WILL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM WITH INLET FILTERS (SEE DETAILS) UNLESS IT IS SEDIMENT FREE.
5. TEMPORARY SEDIMENT TRAPS WILL BE RETAINED UNTIL AFTER THE LANDS THEY ARE PROTECTING ARE COMPLETELY REHABILITATED.
6. CONTRACTOR TO DESIGN/SIZE/CONSTRUCT TEMPORARY SEDIMENT BASIN, WATER SHOULD BE ALLOWED TO SETTLE BEFORE DISCHARGE. CONTRACTOR MUST VERIFY THAT WATER QUALITY MEETS AUTHORITIES REQUIREMENTS PRIOR TO DISCHARGE . ACCUMULATED SEDIMENT SHOULD THEN BE REMOVED & DISPOSED OF IN ACCORDANCE WITH ENVIRONMENTAL MANAGEMENT PROCEDURES.

SITE INSPECTION & MAINTENANCE CONDITIONS

THE SITE MANAGER WILL INSPECT THE SITE AT LEAST WEEKLY AND WILL:

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

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

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

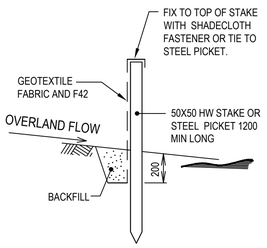
THE BOOK WILL BE KEPT ONSITE & MADE AVAILABLE TO ANY AUTHORISED PERSON ON REQUEST. IT WILL BE GIVEN TO THE PROJECT MANAGER AT THE CONCLUSION OF WORKS.

TREE PROTECTION

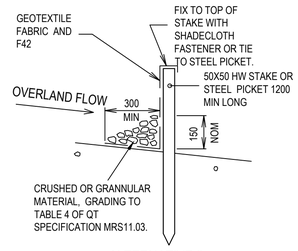
REFER TO ARBORIST REPORT FOR THE EXTENT OF TREES PROTECTION ZONE AND THE PROTECTION MEASURES REQUIRED.

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 1



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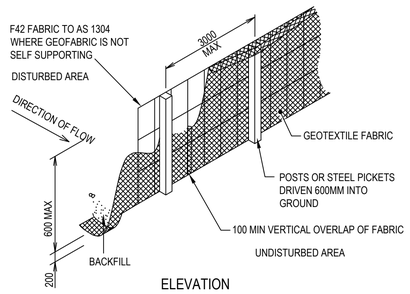
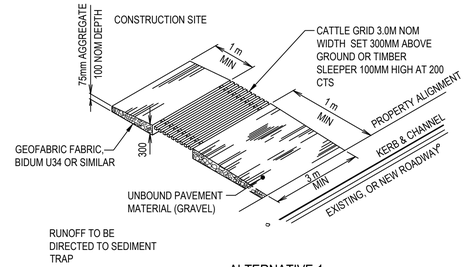


ELEVATION

SEDIMENT FENCE

NOT TO SCALE



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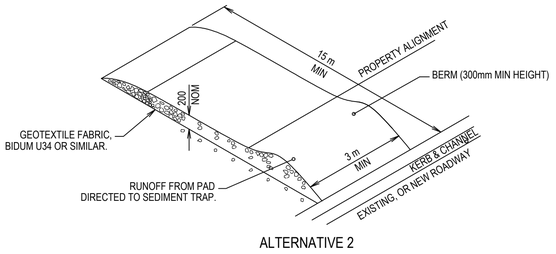
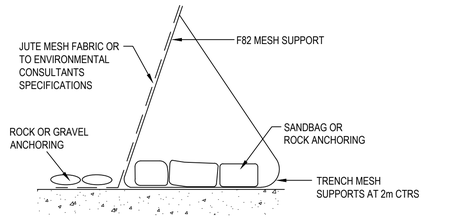


ALTERNATIVE 2

TEMPORARY CONSTRUCTION VEHICLE ENTRY/EXIT SEDIMENT TRAP

NOT TO SCALE

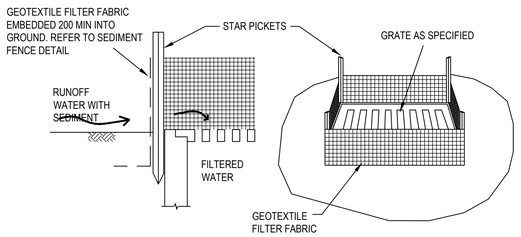


ALTERNATIVE SEDIMENT FENCE

NOT TO SCALE

ALTERNATIVE SEDIMENT FENCE NOTES

1. INSTALL THIS TYPE OF SEDIMENT FENCE WHEN USE OF SUPPORT POSTS IS NOT DESIRABLE OR NOT POSSIBLE. SUCH CONDITIONS MIGHT APPLY, FOR EXAMPLE, WHERE APPROVAL IS GRANTED FROM THE APPROPRIATE AUTHORITIES TO PLACE THESE FENCES IN HIGHLY SENSITIVE ESTUARINE AREAS.
2. USE BENT TRENCH MESH TO SUPPORT THE F82 WELDED MESH FACING AS SHOWN ON THE DRAWING ABOVE. ATTACH THE JUTE MESH TO THE WELDED MESH FACING USING UV-RESISTANT CABLE TIES.
3. STABILISE THE WHOLE STRUCTURE WITH SANDBAG OR ROCK ANCHORING OVER THE TRENCH MESH AND THE LEADING EDGE OF THE JUTE MESH. THE ANCHORING SHOULD BE SUFFICIENTLY LARGE TO ENSURE STABILITY OF THE STRUCTURE IN THE DESIGN STORM EVENT, USUALLY THE 10 YEAR EVENT.



GEOTEXTILE PIT FILTER 1

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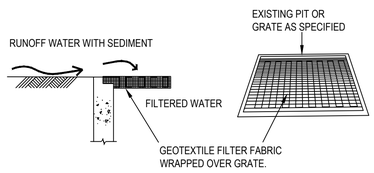
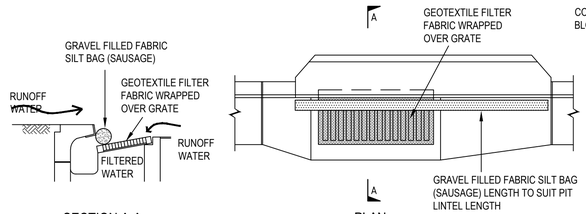


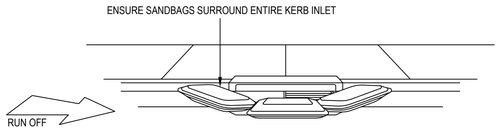
GEOTEXTILE PIT FILTER 2

NOT TO SCALE



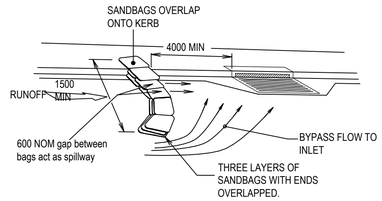
KERB INLET SEDIMENT TRAP

NOT TO SCALE



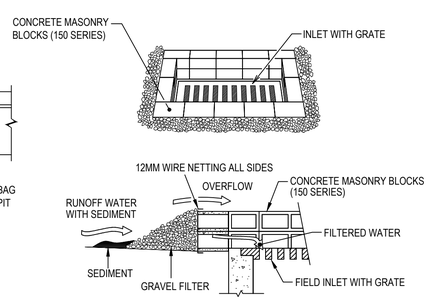
SANDBAG KERB INLET SEDIMENT TRAP

NOT TO SCALE



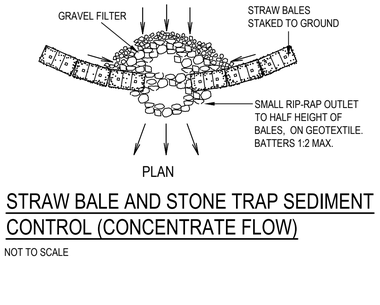
ON GRADE KERB INLET SEDIMENT TRAP

NOT TO SCALE



FIELD INLET SEDIMENT TRAP

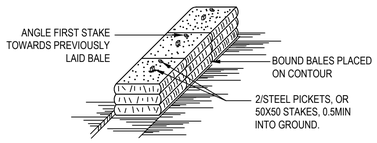
NOT TO SCALE



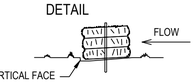
PLAN

STRAW BALE AND STONE TRAP SEDIMENT CONTROL (CONCENTRATE FLOW)

NOT TO SCALE



ANCHORING DETAIL



BEDDING DETAIL

STRAW BALE BANK SEDIMENT CONTROL

NOT TO SCALE

BEFORE YOU DIG www.byda.com.au

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.

REV	DESCRIPTION	BY	DES	CHKD	DATE
P1	80% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	06.12.24
P2	95% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	18.12.24
P3	100% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	14.01.25

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info@meinhardtgroup.com
http://www.meinhardtgroup.com

CLIENT: NSW GOVERNMENT School Infrastructure NSW

PROJECT: CAMMERAY PUBLIC SCHOOL
68 PALMER STREET, CAMMERAY NSW 2062

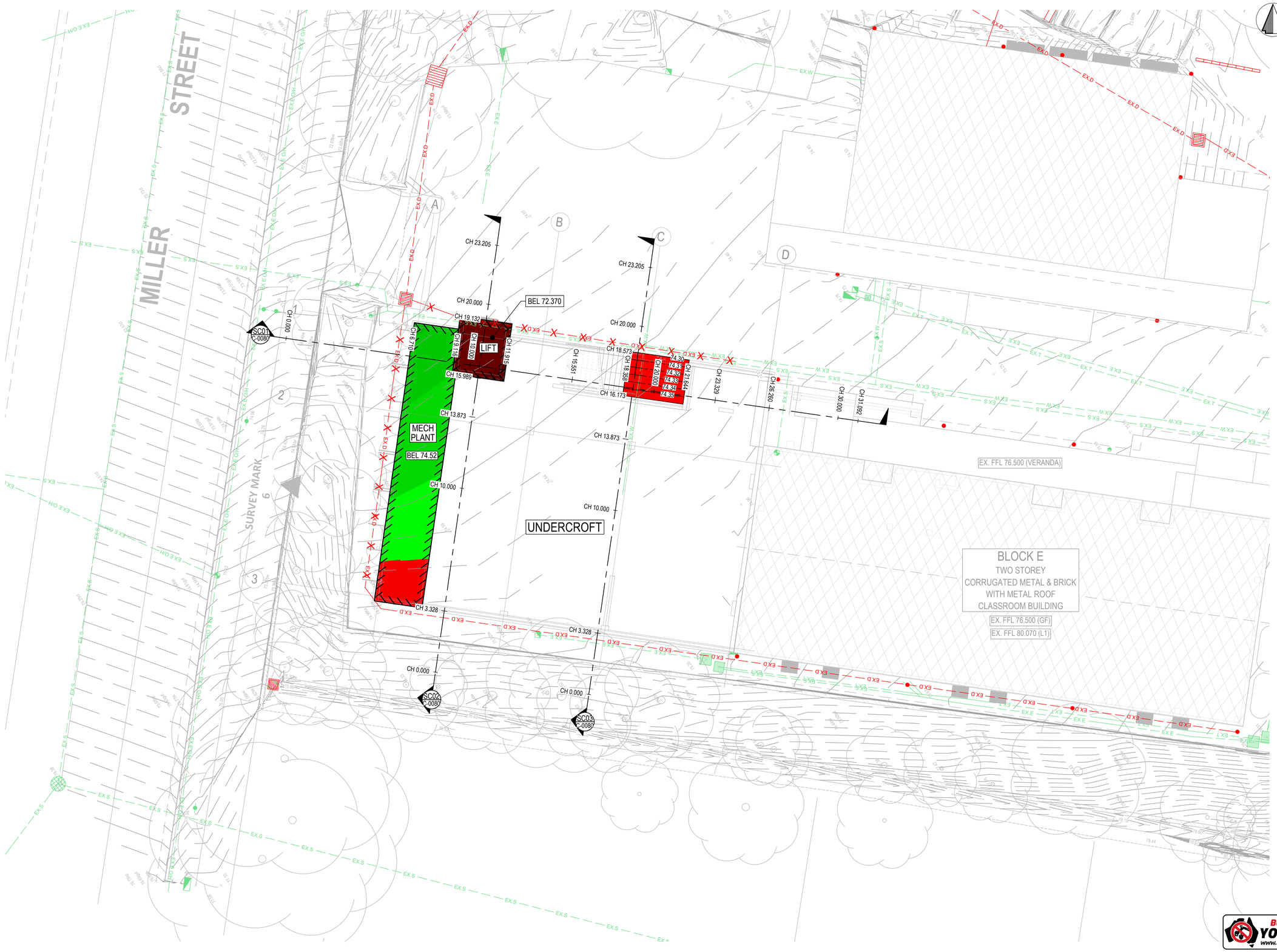
TITLE: EROSION AND SEDIMENT CONTROL DETAILS

STATUS: SCHEMATIC DESIGN
NOT TO BE USED FOR CONSTRUCTION

DRAWN	DESIGNED	CHECKED	APPROVED	DATE	SCALE @ A1
M.D	M.D	Y.C			N.T.S

PROJECT No: 132562
DRAWING No: CPS-MHT-00-00-DR-C-0065
REV: P3

M:\PLOT TIME: 14 Jan 2025, 3:48pm



BULK EARTHWORKS

I.D	MIN. ELEVATION	MAX. ELEVATION	COLOUR
1	-2.000m	-1.800m	
2	-1.800m	-1.600m	
3	-1.600m	-1.400m	
4	-1.400m	-1.200m	
5	-1.200m	-1.000m	
6	-1.000m	-0.800m	
7	-0.800m	-0.600m	
8	-0.600m	-0.400m	
9	-0.400m	-0.200m	
10	-0.200m	0.000m	
11	0.000m	0.200m	
12	0.200m	0.400m	
13	0.400m	0.600m	
14	0.600m	0.800m	

LEGEND

ITEM	DESCRIPTION
70.00	EXISTING SURFACE CONTOURS
70.00	PROPOSED SURFACE CONTOURS
+156.60	EXISTING SURFACE SPOT LEVELS
	TITLE BOUNDARY
	PROPOSED CUTOFF SWALE
EX.D	EXISTING STORMWATER DRAIN
	EXISTING STORMWATER PIT
	EXISTING STORMWATER PIT TO BE MODIFIED
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 IF CLASHING WITH NEW PIPES AND NEW STRUCTURES. ELSE, EXISTING PIPES TO BE CAPPED AND TO REMAIN UNTOUCHED AND REDUNDANT.

EARTHWORKS QUANTITIES

150mm STRIPPED VOLUME = (BUILDING AREA ONLY)	34m³
TOTAL CUT VOLUME =	17m³
TOTAL FILL VOLUME =	9m³
NET EXPORT VOLUME = (NO BULK EARTHWORKS - EXISTING ASPHALT)	8m³

EARTHWORKS SUMMARY

NOTES:
1. BULK EARTHWORKS SURFACE IS DESIGN SURFACE MINUS THE FOLLOWING:
   - NATURAL SURFACE (0mm)
2. EXCLUDES COMPACTION FACTORS.
3. ALL BATTERS TO BE 1 IN 2 MAX UNLESS NOTED OTHERWISE.
4. 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.
5. ASSUMED BULK EARTHWORKS DEPTH FOR BUILDING IS 250mm (BUILDING SLAB THICKNESS PLUS BEDDING THICKNESS).

THESE PLANS ARE BASED UPON THE EXISTING CONDITIONS SURVEY PREPARED BY SDG PTY LTD, REFERENCE No 9009 REV A DATED 21 MAY 2024.

THESE DESIGN PLANS SHALL BE READ IN CONJUNCTION WITH GEOTECHNICAL REPORT No. A201023.0772.00_A_v1f DATED 14 FEBRUARY 2024 PREPARED BY ADE CONSULTING GROUP. 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

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WARNING
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REV	DESCRIPTION	BY	DES	CHKD	DATE
P1	80% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	06.12.24
P2	95% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	18.12.24
P3	100% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	14.01.25
P4	CHANGE DUE TO EXISTING ELECTRICAL AND COMMS PITS	M.D	M.D	Y.C	25.02.25

0 1 2 3 4 5m
SCALE 1:100 AT ORIGINAL SIZE (A1)

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info@meinhardtgroup.com
http://www.meinhardtgroup.com

CLIENT: NSW GOVERNMENT School Infrastructure NSW

TITLE: BULK EARTHWORKS PLAN

PROJECT: CAMMERAY PUBLIC SCHOOL
68 PALMER STREET, CAMMERAY NSW 2062

STATUS: SCHEMATIC DESIGN
NOT TO BE USED FOR CONSTRUCTION

DRAWN	DESIGNED	CHECKED	APPROVED	DATE	SCALE @ A1
M.D	M.D	Y.C			1:100

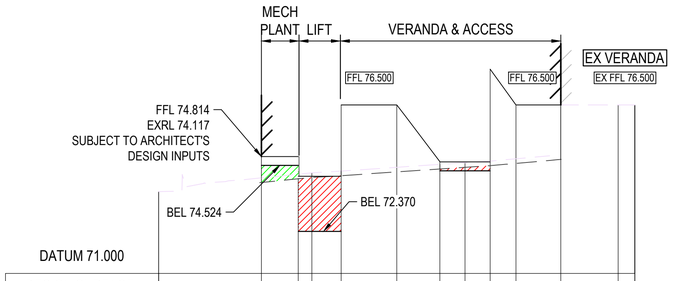
PROJECT No: 132562
DRAWING No: CPS-MHT-00-00-DR-C-0070
REV: P4

DWG FILE: X:\132562 - SNSW Cammeray PS\5_BIM\3_CP\2_Drafting - MH PLOT TIME: 25 Feb 2025, 1:47pm

LEGEND

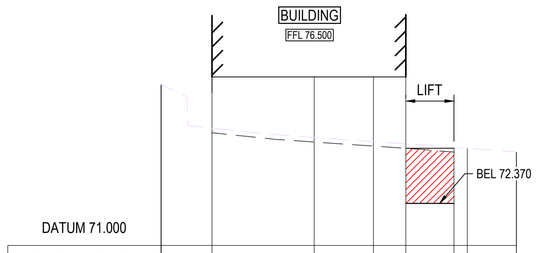
FILL FROM STRIPPED SURFACE TO BULK EARTHWORKS SURFACE

CUT FROM STRIPPED SURFACE TO BULK EARTHWORKS SURFACE



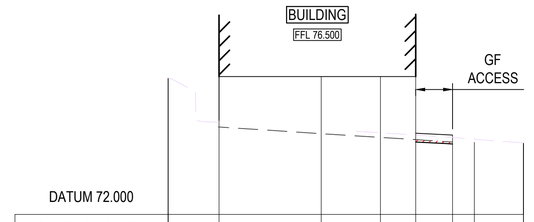
DATUM 71.000												
DESIGN SURFACE LEVEL		74.814	74.170	74.170	74.170	76.500	74.639	74.639	74.639	76.500		
BULK EARTHWORK SURFACE LEVEL		74.524	72.370	72.370	72.370		74.349	74.349	74.349			
EXISTING SURFACE LEVEL	73.670	74.117	74.239	74.284	74.339	74.463	74.559	74.613	74.665	74.740	76.500	76.500
STRIPPED SURFACE LEVEL (150mm)		73.967	74.089	74.134	74.189	74.313	74.409	74.463	74.515	74.590	74.719	
CHAINAGE	0.000	6.710	9.116	10.000	11.915	15.551	18.358	20.000	21.644	23.329	26.260	30.000	31.092

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



DATUM 71.000												
DESIGN SURFACE LEVEL		76.500	76.500	76.500	74.170	74.170						
BULK EARTHWORK SURFACE LEVEL					72.370	72.370						
EXISTING SURFACE LEVEL	76.255	74.828	74.525	74.391	74.319	74.198	74.167	74.052				
STRIPPED SURFACE LEVEL (150mm)		74.678	74.375	74.241	74.169	74.048						
CHAINAGE	0.000	3.328	10.000	13.873	15.989	19.132	20.000	23.205				

SECTION SC02
1:200 (H)
1:100 (V)
C-0070



DATUM 72.000												
DESIGN SURFACE LEVEL		76.500	76.500	76.500	74.650	74.590						
BULK EARTHWORK SURFACE LEVEL					74.360	74.300						
EXISTING SURFACE LEVEL	76.456			74.662	74.591	74.511	74.454	74.338				
STRIPPED SURFACE LEVEL (150mm)		74.851	74.635	74.512	74.441	74.361						
CHAINAGE	0.000	3.328	10.000	13.873	16.173	18.573	20.000	23.205				

SECTION SC03
1:200 (H)
1:100 (V)
C-0070

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WARNING

PROPOSED SERVICES

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WARNING

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REV	DESCRIPTION	BY	DES	CHKD	DATE
P1	80% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	06.12.24
P2	95% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	18.12.24
P3	100% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	14.01.25
P4	CHANGE DUE TO EXISTING ELECTRICAL AND COMMS PITS	M.D	M.D	Y.C	25.02.25

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)

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F: +61 2 9319 7518
info@meinhardtgroup.com
http://www.meinhardtgroup.com

CLIENT
NSW GOVERNMENT School Infrastructure NSW

PROJECT
CAMMERAY PUBLIC SCHOOL
68 PALMER STREET, CAMMERAY NSW 2062

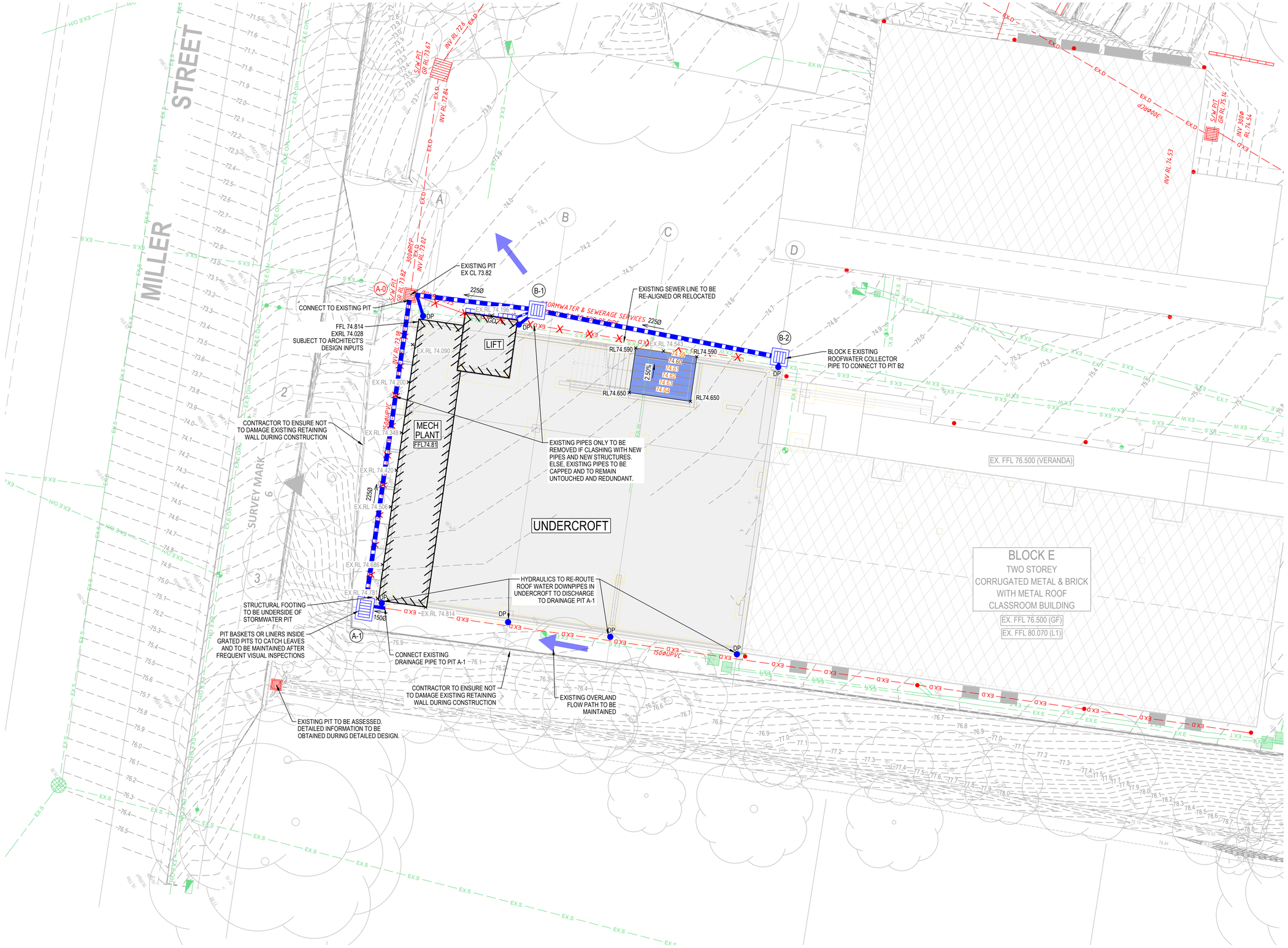
TITLE
BULK EARTHWORKS
LONGITUDINAL SECTIONS

STATUS
SCHEMATIC DESIGN
NOT TO BE USED FOR CONSTRUCTION

DRAWN	DESIGNED	CHECKED	APPROVED	DATE	SCALE @ A1
M.D	M.D	Y.C			AS SHOWN

PROJECT No 132562
DRAWING No CPS-MHT-00-00-DR-C-0080
REV P4

DWG FILE: X:\132562_SNSW\Cammeray\PDS_BIM3_CIV\2_Drafting _ MH PLOT TIME: 25 Feb 2025, 4:00pm



LEGEND

ITEM	DESCRIPTION
156.6	EXISTING SURFACE CONTOURS
156.6	PROPOSED SURFACE CONTOURS
+156.60	EXISTING SURFACE SPOT LEVELS
+156.600	PROPOSED SURFACE SPOT LEVELS
	TITLE BOUNDARY
RW	PROPOSED RETAINING WALL
EX.D	EXISTING STORMWATER DRAIN
225Ø	PROPOSED STORMWATER DRAIN AND FLOW DIRECTION
	SYPHONIC CONNECTION (REFER HYDRAULIC ENGINEERS DRG'S)
AG	PROPOSED 100Ø UPVC AGRICULTURAL DRAIN CLASS 400
EX1	EXISTING STORMWATER PIT
EX2	EXISTING STORMWATER PIT TO BE MODIFIED
1	PROPOSED STORMWATER PIT
GI	100Ø GRATED INLET (UNLESS NOTED OTHERWISE)
DP	DOWNPIPE
IO	INSPECTION OPENING
GD	GRATED TRENCH DRAIN
	OVERLAND FLOW ARROW
	LIGHT DUTY CONCRETE PAVEMENT-PEDESTRIAN
>	PROPOSED CUTOFF SWALE
	STRUCTURAL FOOTING LAYOUT.
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 IF CLASHING WITH NEW PIPES AND NEW STRUCTURES. ELSE, EXISTING PIPES TO BE CAPPED AND TO REMAIN UNTOUCHED AND REDUNDANT.
	STRUCTURAL FOOTINGS. REFER TO STRUCTURAL DRAWINGS FOR DETAILS

THESE PLANS ARE BASED UPON THE EXISTING CONDITIONS SURVEY PREPARED BY SDG PTY LTD, REFERENCE No 9009 REV A DATED 21 MAY 2024.

THESE DESIGN PLANS SHALL BE READ IN CONJUNCTION WITH GEOTECHNICAL REPORT No. A201023.0772.00_A_v1f DATED 14 FEBRUARY 2024 PREPARED BY ADE CONSULTING GROUP. 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.

BEFORE YOU DIG www.byda.com.au

WARNING
PROPOSED SERVICES

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REV	DESCRIPTION	BY	DES	CHKD	DATE
P1	80% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	06.12.24
P2	95% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	18.12.24
P3	100% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	14.01.25
P4	CHANGE DUE TO EXISTING ELECTRICAL AND COMMS PITS	M.D	M.D	Y.C	19.02.25
P5	CHANGE DUE TO EXISTING ELECTRICAL AND COMMS PITS	M.D	M.D	Y.C	25.02.25

0 1 2 3 4 5m
SCALE 1:100 AT ORIGINAL SIZE (A1)

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F: +61 2 9319 7518
info@meinhardtgroup.com
http://www.meinhardtgroup.com

CLIENT: NSW GOVERNMENT School Infrastructure NSW

TITLE: CIVIL SITEWORKS PLAN

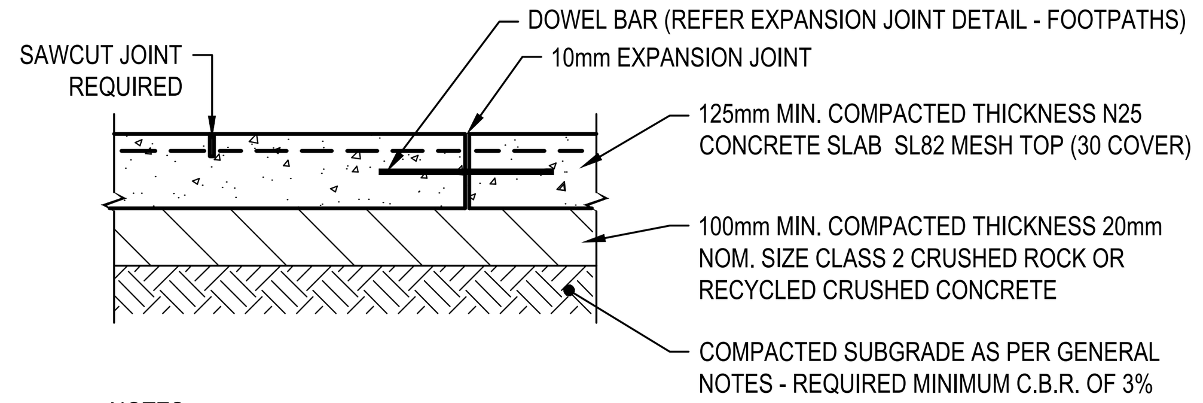
PROJECT: CAMMERAY PUBLIC SCHOOL
68 PALMER STREET, CAMMERAY NSW 2062

STATUS: SCHEMATIC DESIGN
NOT TO BE USED FOR CONSTRUCTION

DRAWN	DESIGNED	CHECKED	APPROVED	DATE	SCALE @ A1
M.D	M.D	Y.C			1:100

PROJECT No: 132562
DRAWING No: CPS-MHT-00-00-DR-C-0101
REV: P5

DWG FILE: X:\132562 - SNSW\Cammeray PBS_BIM\3_CAD\2_Drafting - MH PLOT TIME: 25 Feb 2025, 4:44pm



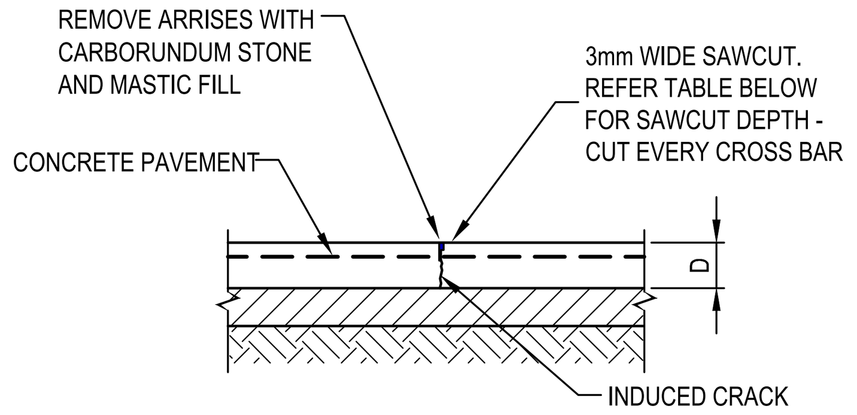
NOTES:
1. SAWCUT JOINTS 3mm WIDE x 1/4 SLAB DEEP CUT EVERY CROSS BAR
2. FULL DEPTH EXPANSION JOINTS WITH APPROVED EXPANSION JOINT MATERIAL SHALL BE PLACED, AT EVERY CHANGE OF GRADE AND AT CORNERS
3. REFER DESIGN PLAN FOR JOINTING LAYOUT
4. ALL ASPHALT AND CRUSHED ROCK MATERIALS AND CONSTRUCTION PROCEDURES SHALL COMPLY IN ALL RESPECTS WITH THE RELEVANT ROAD AUTHORITY SPECIFICATIONS

LIGHT DUTY CONCRETE PAVEMENT

N.T.S.

(PEDESTRIAN TRAFFIC AREAS ONLY)

AS SHOWN ON PLAN

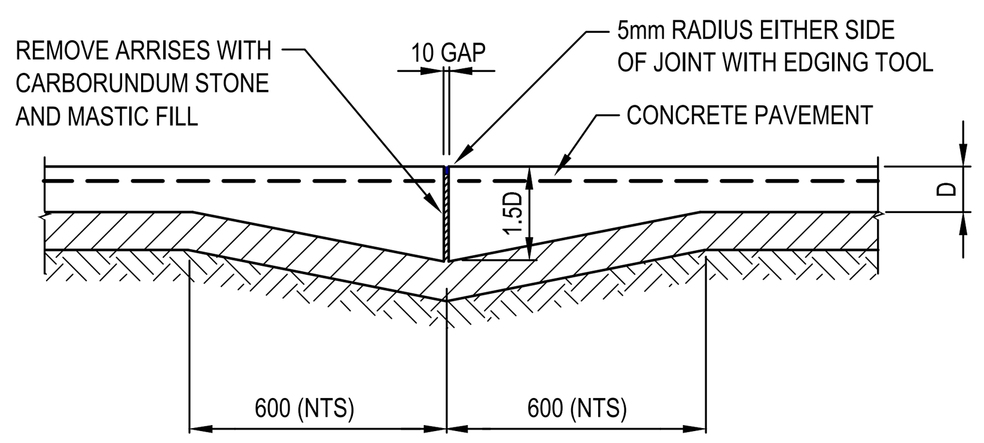


NOTE: MAKE SAWCUT AS SOON AS PRACTICABLE AFTER POURING OF SLAB WITHOUT CAUSING DAMAGE TO THE EDGE OF THE SAWCUT (REFER SAWCUTTING NOTE DETAILS FORE REQUIREMENTS)

SLAB THICKNESS (D)	MESH DEPTH	SAWCUT DEPTH
120	30	35
150	40	45
170	40	45
200	40	50

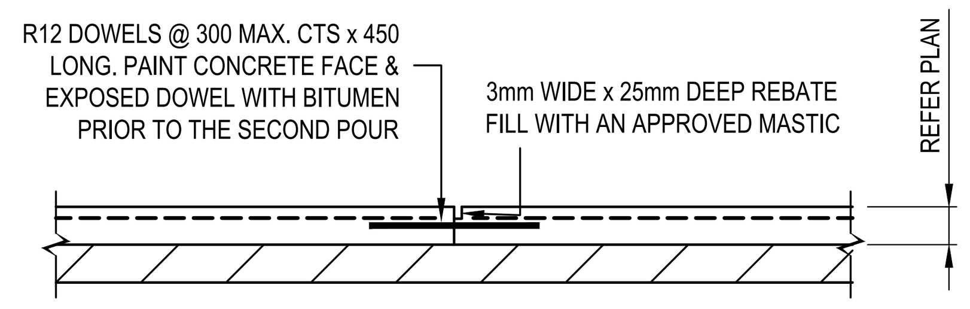
CONTRACTION (SAWCUT) JOINT

(SHOWN SJ ON PLAN)



EXPANSION JOINT

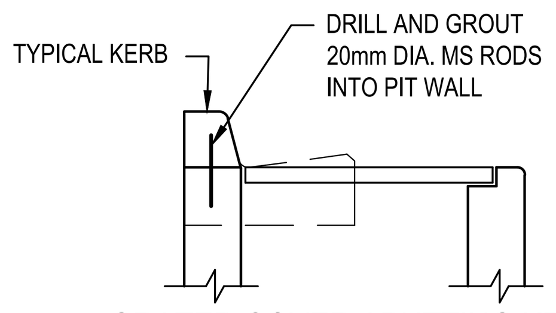
N.T.S.



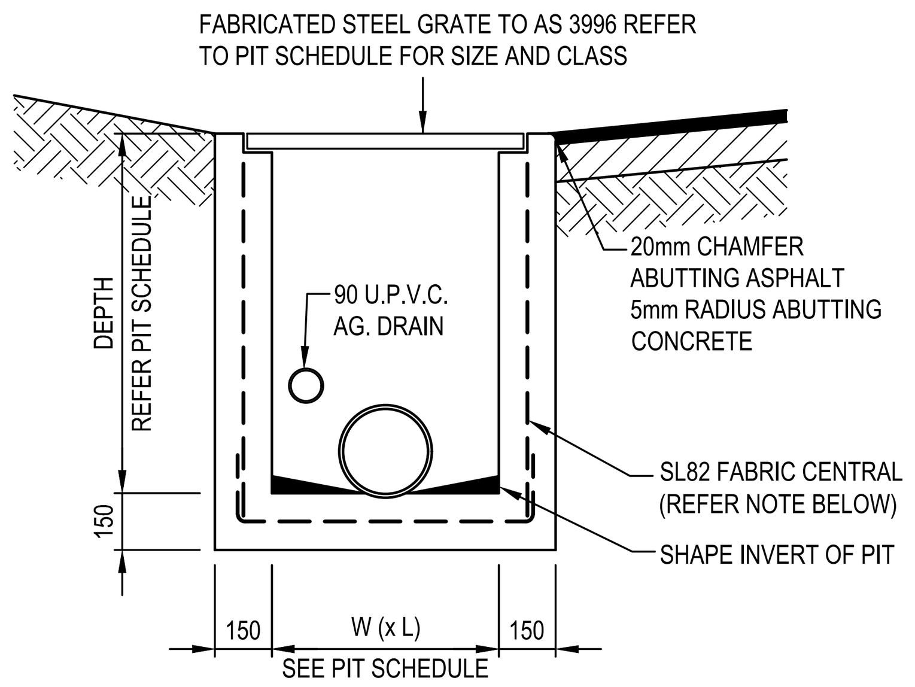
CONSTRUCTION JOINT DETAIL.

FOR FOOTPATHS ONLY

(SHOWN CJ ON PLAN)



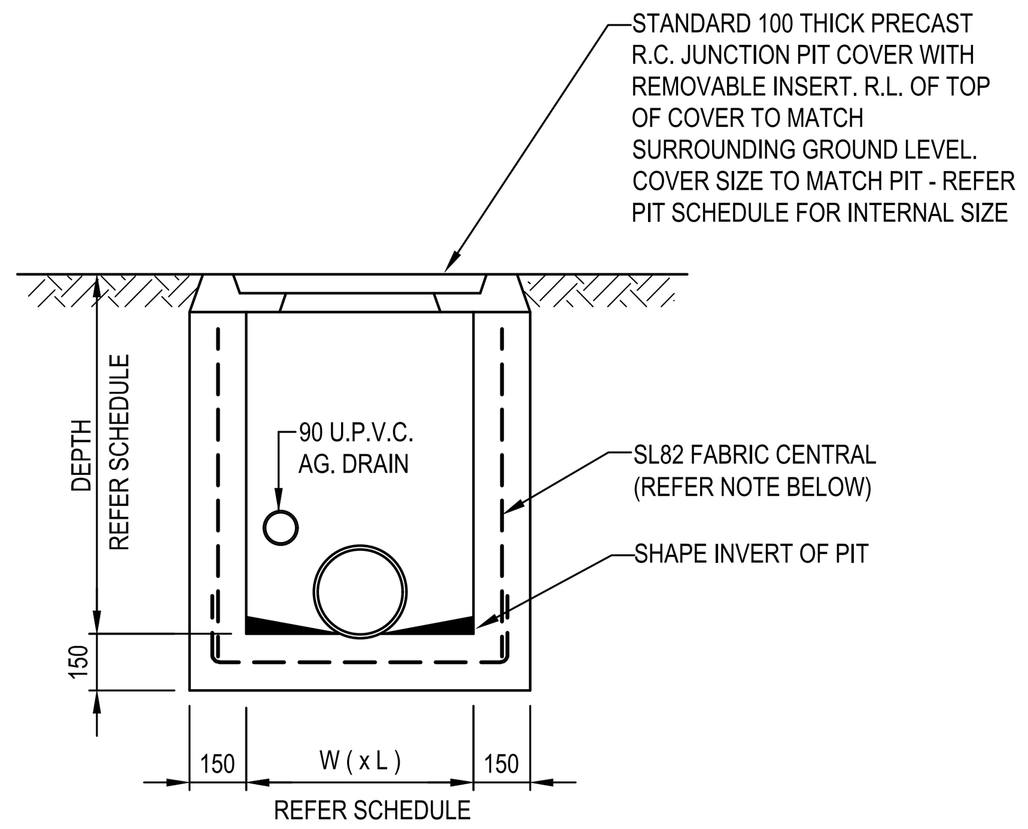
GRATED COVER ABUTTING KERB



NOTES:
1. PROVIDE 600mm LENGTH OF 90mm DIA. AGRICULTURAL PIPE CAST THROUGH UPSTREAM WALL OF PIT WITH GEOTEXTILE OR SIMILAR FILTER OVER.
2. REINFORCEMENT NOT REQUIRED IF DEPTH OF PIT IS LESS THAN 1000mm.
3. PROVIDE STEP IRONS AT 300mm MAX. CTS. IF DEPTH OF PIT EXCEEDS 1000mm
4. PRECAST PITS ARE TO GENERALLY COMPLY WITH THESE DETAILS.

GRATED PIT DETAIL

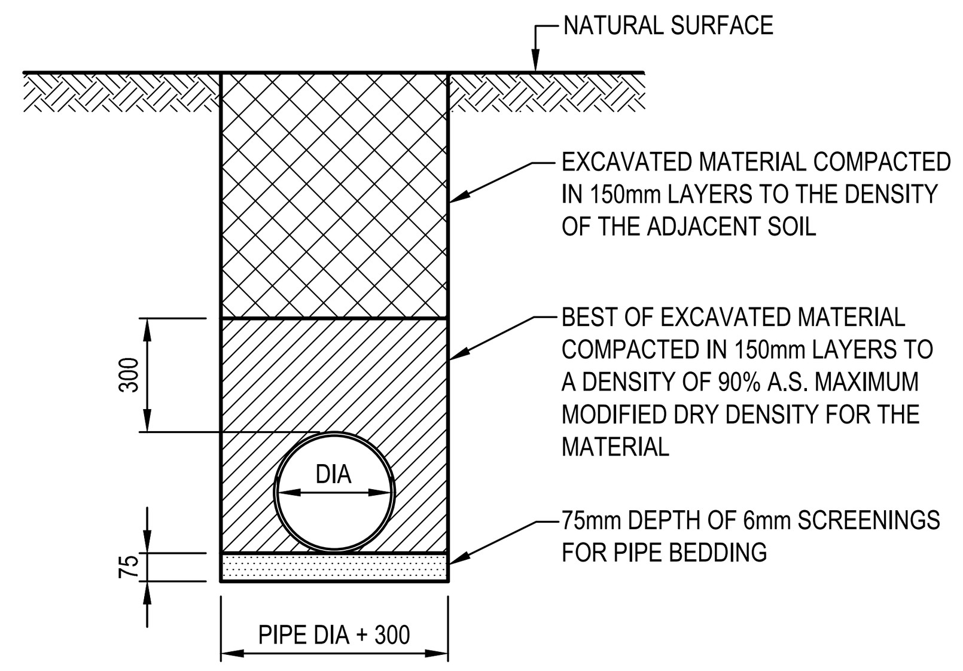
N.T.S.



NOTES:
1. PROVIDE 600mm LENGTH OF 90mm DIA. AGRICULTURAL PIPE CAST THROUGH UPSTREAM WALL OF PIT WITH GEOTEXTILE OR SIMILAR FILTER OVER.
2. REINFORCEMENT NOT REQUIRED IF DEPTH OF PIT IS LESS THAN 1000mm.
3. PROVIDE STEP IRONS AT 300mm MAX. CTS. IF DEPTH OF PIT EXCEEDS 1000mm
4. PRECAST PITS ARE TO GENERALLY COMPLY WITH THESE DETAILS.

JUNCTION PIT (R.C. COVER)

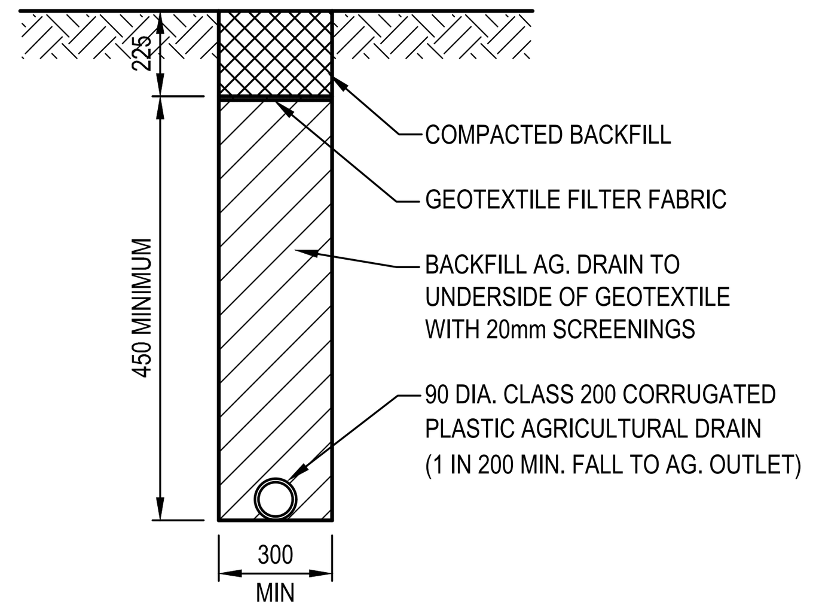
N.T.S.



PIPE LAYING DETAILS (ALL PIPES)

UNDER LANDSCAPED AREAS

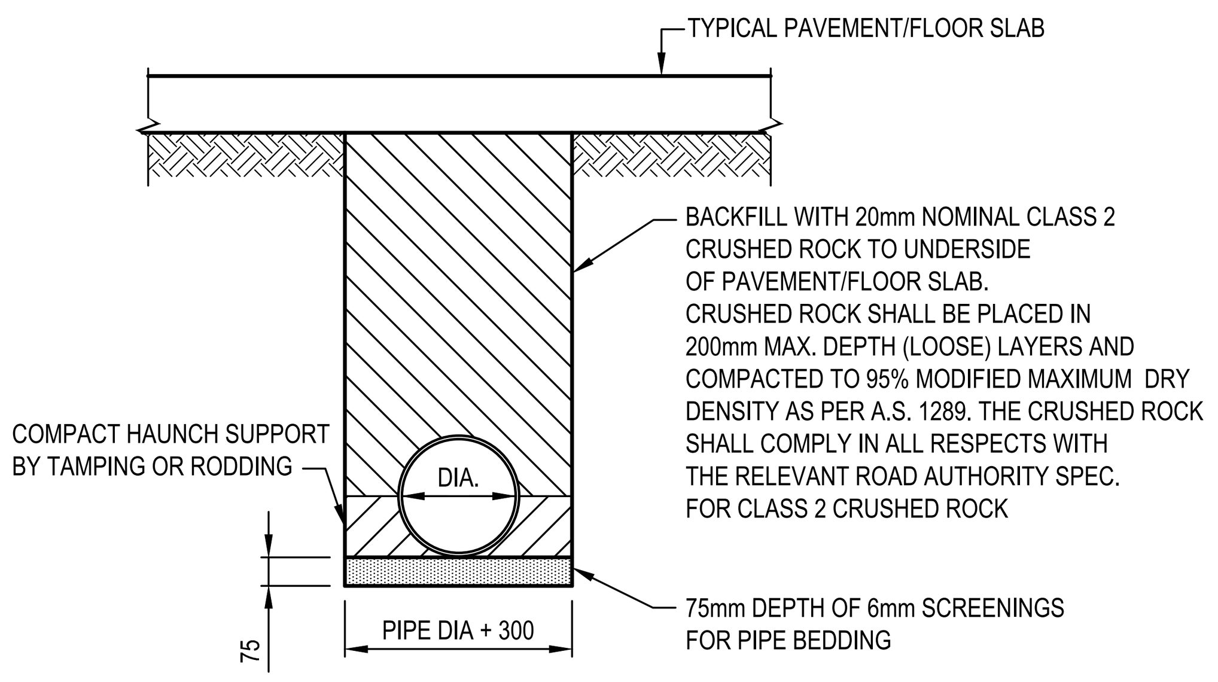
N.T.S.



AG. PIPE LAYING DETAILS

UNDER LANDSCAPED AREAS

N.T.S.

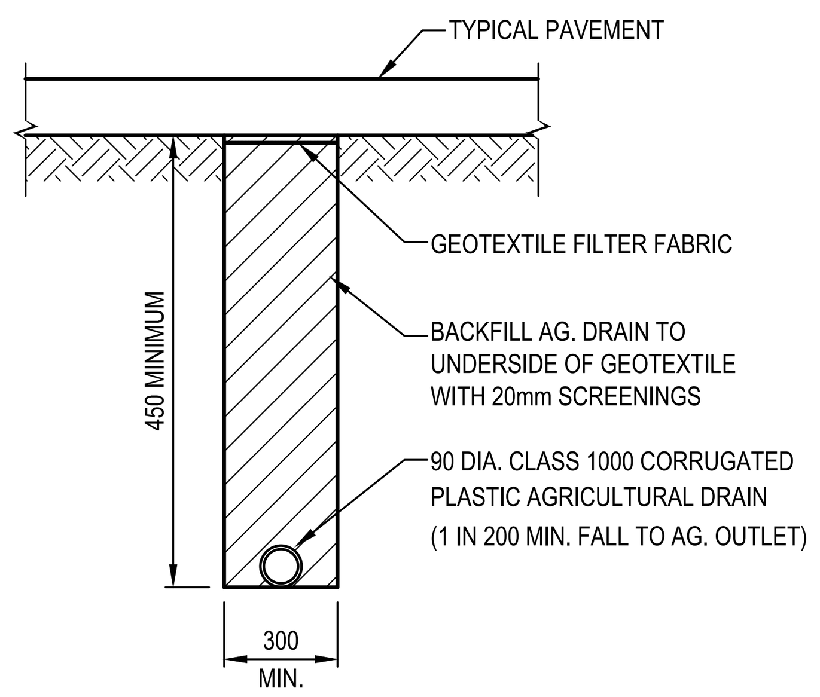


NOTE:
AVOID RUNNING CONSTRUCTION EQUIPMENT OVER THE PIPES UNTIL BACKFILL MATERIAL IS 300mm MIN. ABOVE CROWN OF PIPE.

PIPE LAYING DETAILS

UNDER ALL PAVEMENTS/FLOORS

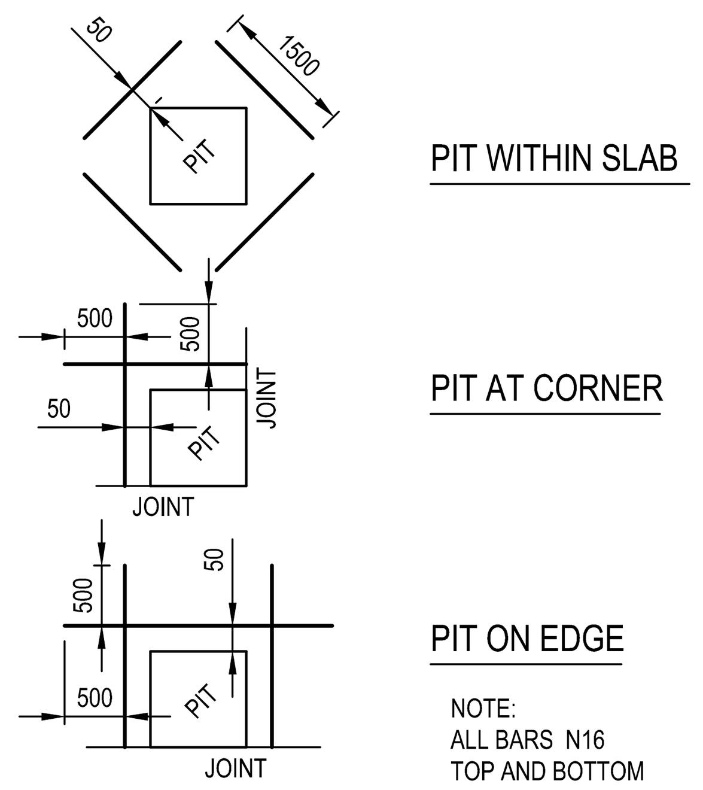
N.T.S.



AG. PIPE LAYING DETAILS

UNDER PAVED AREAS

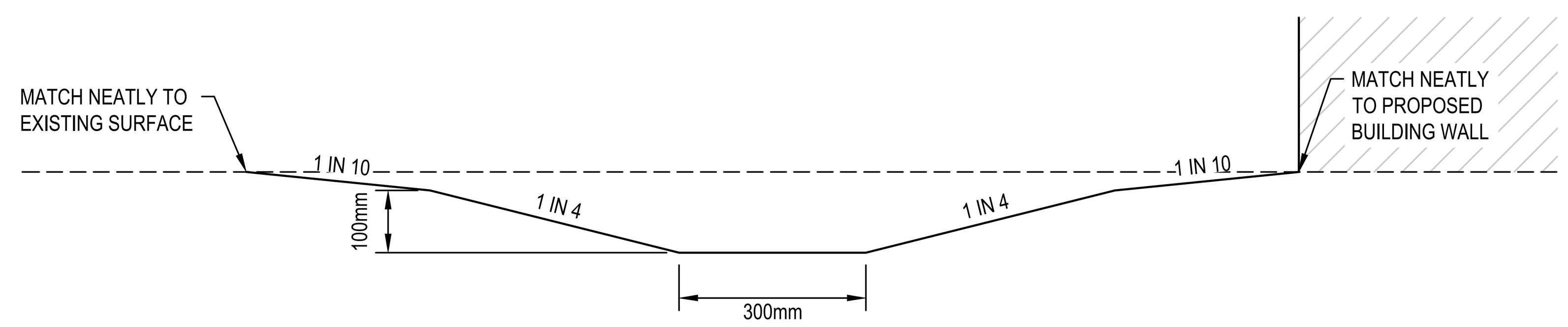
N.T.S.



NOTE:
ALL BARS N16
TOP AND BOTTOM
25mm COVER

DETAIL OF SLAB REINFORCEMENT AT PITS IN CONCRETE PAVEMENT

N.T.S



TYPICAL CUT-OFF SWALE DETAIL

SCALE 1:20

DWG FILE: X:\132562 - SINSW Cammeray PS\5_BIM\3_CIV\2_Drafting - MH PLOT TIME: 14 Jan 2025, 4:09pm

REV	DESCRIPTION	BY	DES	CHKD	DATE
P1	95% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	18.12.24
P2	100% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	14.01.25

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CLIENT: NSW GOVERNMENT School Infrastructure NSW

PROJECT: CAMMERAY PUBLIC SCHOOL
68 PALMER STREET, CAMMERAY NSW 2062

TITLE: CIVIL DETAILS

STATUS: SCHEMATIC DESIGN
NOT TO BE USED FOR CONSTRUCTION

DRAWN	DESIGNED	CHECKED	APPROVED	DATE	SCALE @ A1
M.D	M.D	Y.C			AS SHOWN

PROJECT No	DRAWING No	REV
132562	CPS-MHT-00-00-DR-C-0200	P2

PIT SCHEDULE

PIT DATA							OUTGOING PIPE			
PIT NAME	PIT TYPE	PIT SIZE	EASTING	NORTHING	SETOUT RL	PIT DEPTH	PIPE US-IL	PIPE DS-IL	PIPE SIZE	DS PIT
A1	SURFACE INLET PIT	600x900	334424.217	6256313.568	74.82	0.82	74.00	73.16	225	EX A0
B1	SURFACE INLET PIT	600x600	334433.399	6256329.600	74.26	0.74	73.52	73.18	225	EX A0
B2	SURFACE INLET PIT	600x600	334446.319	6256327.095	74.80	0.73	74.07	73.54	225	B1

REV	DESCRIPTION	BY	DES	CHKD	DATE
P1	95% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	18.12.24
P2	100% SCHEMATIC DESIGN ISSUE	M.D	M.D	Y.C	14.01.25
P3	CHANGE DUE TO EXISTING ELECTRICAL AND COMMS PITS	M.D	M.D	Y.C	25.02.25

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CLIENT
NSW GOVERNMENT School Infrastructure NSW

PROJECT
CAMMERAY PUBLIC SCHOOL
68 PALMER STREET, CAMMERAY NSW 2062

TITLE
STORMWATER DRAINAGE
PIT SCHEDULE

STATUS
TENDER ISSUE
NOT TO BE USED FOR CONSTRUCTION

DRAWN	DESIGNED	CHECKED	APPROVED	DATE	SCALE @ A1
M.D	M.D	Y.C			N.T.S

PROJECT No	DRAWING No	REV
132562	CPS-MHT-00-00-DR-C-0710	P3

DWG FILE: X:\132562 - SNSW\Cammeray\PDS_BIM3_CV12_Drafting - MH\ PLOT TIME: 26 Feb 2025, 12:36pm

Appendix B – Structural Schematic Design Drawings

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
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-0240	TYPICAL WALL DETAILS
S-0245	TYPICAL HEADER BEAM DETAILS
S-0260	TYPICAL SLAB ON GROUND DETAILS
S-0265	TYPICAL SUSPENDED SLAB DETAILS
S-1010	UNDERCROFT LOADING PLAN
S-1020	GROUND FLOOR LOADING PLAN
S-1030	LEVEL 1 LOADING PLAN
S-1040	ROOF LOADING PLAN
S-2000	FOOTING PLAN
S-2010	UNDERCROFT STRUCTURAL PLAN
S-2020	GROUND FLOOR STRUCTURAL PLAN
S-2030	LEVEL 1 STRUCTURAL PLAN
S-2040	ROOF STRUCTURAL PLAN

14/01/2025 2:25:36 PM C:\Users\RMyat\Documents\CPS-MHT-B00G-ZZ-M3-S-0001_Ron.MyatRWMD2.rvt

REV	DESCRIPTION	BY	APP	DATE
P01,01	CONCEPT DESIGN DEVELOPMENT	RM	JB	25.10.24
P02	50% SCHEMATIC DESIGN	RM	JB	06.12.24
P03	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P04	100% SCHEMATIC DESIGN	RM	JB	14.01.25

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.

MEINHARDT

STRUCTURAL DOCUMENTATION

PROJECT TITLE:

CAMMERAY PUBLIC SCHOOL

PROJECT ADDRESS:

PALMER STREET, CAMMERAY, NSW

SHEET TITLE:

COVER SHEET

MEINHARDT PROJECT No:

132562

CLIENT

SCHOOL INFRASTRUCTURE NSW

DRAWING No:

CPS-MHT-XX-XX-DR-0000

REVISION

P04

STRUCTURAL NOTES

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 OUT DIMENSIONS AND LEVELS, INCLUDING THOSE SHOWN ON THESE DRAWINGS SHALL BE IN ACCORDANCE WITH THE ARCHITECT'S DRAWINGS AND VERIFIED ON SITE.
G4 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.
G5 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.
G6 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.
G7 THESE DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION UNTIL ISSUED AS "FOR CONSTRUCTION" BY THIS OFFICE.
G8 THE CONTRACTOR RETAINS RESPONSIBILITY OF THE WORKS EVEN IF THE ENGINEER HAS INSPECTED THE WORKS DURING CONSTRUCTION.
G9 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.
G10 IF THE CONTRACTOR INTENDS TO VARY THE SCOPE OR METHOD OF WORKS OR MATERIALS USED, THE CONTRACTOR SHALL SUBMIT FULL DETAILS OF THE PROPOSAL TO THE DESIGN SUPERINTENDENT FOR DESIGN CHECK.
G11 ALL PROPRIETARY PRODUCTS SHALL BE INSTALLED STRICTLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
G12 ALL REQUIRED TESTS TO COMPLETE THE WORKS SHALL BE AT THE CONTRACTOR'S EXPENSE.
G13 GENERALLY, FOR BALUSTRADES AND SCREENS DESIGN, THE D&C CONTRACTOR IS TO COMPLY WITH APPROPRIATE CROWD LOADING CLASSIFICATIONS STATED IN AS1170.1 AND IS TO BE BASED ON THE SCHOOL PEDESTRIAN TRAFFIC FLOW.

HEALTH AND SAFETY

H1 THE OBLIGATION OF MEINHARDT GROUP PTY LTD [OR OTHER RELEVANT MEINHARDT ENTITY] 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).
H2 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.
H3 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

F1 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.
F2 ALL FOOTINGS SHALL BE FOUNDED AT THE RECOMMENDED DEPTH AND INTO THE 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.
F4 BASES OF ALL FOOTINGS SHALL BE CLEANED OF ALL LOOSE MATERIAL PRIOR TO 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.
F5 WHENEVER A FOOTING IS LOCATED CLOSE TO A BATTER , AN EXISTING FOOTING, 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.
F6 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.
F7 THE BUILDER SHALL REMOVE ALL SPOIL FROM THE SITE, AND DEWATER THE EXCAVATION AS REQUIRED.

CONCRETE GRADE

PAD AND STRIP FOOTINGS: N40

FOUNDATION DESIGN CRITERIA

STRUCTURAL DESIGN BASED ON GEOTECHNICAL INVESTIGATION REPORT

BY: ADE CONSULTING GROUP, A201023.0772.01_A_v1f
DATED: 14 February 2024

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.

SLAB ON GROUND NOTES

SOG1 ALL CONCRETE WORK TO COMPLY WITH AS 3600 CONCRETE CODE, AND BCA SECTIONS 3.1 AND 3.2
SOG2 CONCRETE GRADE N20 MINIMUM (SOG)
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.
SOG9 LOAD BEARING EXTERNAL AND INTERNAL BEAMS AND LOAD SUPPORT THICKENINGS 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.
SOG11 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
SSG2 CONCRETE GRADE N40 MINIMUM
SSG3 ALL VEGETATION SHALL BE STRIPPED TO A MINIMUM DEPTH OF 150mm.
SSG4 ALLOW FOR COMPACTION OF EXISTING GROUND SURFACE OR FILL SUFFICIENT TO SUPPORT WET WEIGHT OF SUSPENDED SLAB ON GROUND PLUS FORMWORK AND PROPPED STRUCTURE ABOVE, AS ADVISED BY GEOTECHNICAL CONSULTANT
SSG5 ANY SOFT SPOTS OR DELETERIOUS MATERIAL SHALL BE REMOVED AND REPLACED 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.
SSG7 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.
SSG8 TOP OF SLAB SHALL BE 150mm MINIMUM ABOVE THE FINAL GROUND LEVEL.
SSG9 DRAINAGE AND GRADING AWAY FROM SLAB SHALL BE PROVIDED TO PREVENT WATER COLLECTING ADJACENT TO SLAB.
SSG10 WHERE REQUIRED BY COUNCIL PROTECT THE STRUCTURE FROM SUBTERRANEAN TERMITES IN ACCORDANCE WITH AS 3660 AND BCA.
SSG11 BAR CHAIR BASES ARE TO BE PROVIDED BENEATH ALL REINFORCING BAR CHAIRS TO ENSURE NO SETTLEMENT TO REINFORCEMENT OR DAMAGE TO VAPOUR BARRIER.
SSG12 SUB-GRADE AND SAND LAYER TO BE PREPARED SUCH THAT A STABLE AND LEVEL PLATFORM IS CONSTRUCTED ENSURING UNIFORM COVER TO REINFORCEMENT IS ACHIEVED ACROSS THE ENTIRE EXTENT OF THE SLAB.

CONCRETE

SHALL COMPLY TO AS3600 AND AS 3610

C1 CONCRETE SIZES DO NOT INCLUDE FINISHES.
C2 NO HOLES, CHASES OR EMBEDMENTS OTHER THAN THOSE SHOWN ON DRAWINGS SHALL BE MADE IN CONCRETE ELEMENTS WITHOUT ENGINEER'S APPROVAL.
C3 DEPTHS OF BEAMS ARE GIVEN FIRST AND INCLUDE SLAB THICKNESS, SLABS AND BEAMS SHALL BE CAST TOGETHER UNLESS OTHERWISE NOTED.
C4 CONCRETE SHALL BE KEPT FREE OF SUPPORTING MASONRY WITH TWO LAYERS OF SUITABLE MEMBRANE (MALTHOID OR EQUAL). VERTICAL FACES SHALL BE SEPARATED BY 12mm BITUMINOUS CANEITE. ALL NON - LOAD BEARING WALLS SHALL BE KEPT 20 mm CLEAR OF THE UNDERSIDE OF SLABS AND BEAMS UNLESS NOTED OTHERWISE.
C5 CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED AND LOCATED TO THE SATISFACTION OF THE ENGINEER. BUILDER SHALL ALLOW FOR ALL NECESSARY CONSTRUCTION JOINTS.
C6 WHERE NOTED ON DRAWINGS CAMBER TO SUSPENDED SLABS AND BEAMS SHALL BE 5 FOR EVERY 2500 OF SPAN UNLESS OTHERWISE NOTED. WHERE THE CONCRETE SOFFITS ARE CAMBERED, THE UPPER SURFACE SHALL BE SIMILARLY CAMBERED. DEPTH GAUGES SHALL BE USED TO VERIFY THE SLAB THICKNESS.
C7 REINFORCEMENT IS SHOWN DIAGRAMATICALLY AND IS NOT NECESSARILY IN TRUE PROJECTION. SPLICES TO REINFORCEMENT SHALL BE MADE ONLY AT THE LOCATION SHOWN OR AS OTHERWISE APPROVED BY THE ENGINEER. WELDING OF REINFORCEMENT SHALL BE CARRIED OUT BY A QUALIFIED WELDER IN ACCORDANCE WITH AS/NZS 1554 AND THE REINFORCEMENT SUPPLIER RECOMMENDATIONS. THE INTERPASS TEMPERATURE SHALL BE LESS THAN 200 DEGREES IN ACCORDANCE WITH AS/NZS 1554 PART 3.
C8 THE REINFORCEMENT SYMBOLS ARE:
N NORMAL DUCTILITY CLASS HOT ROLLED 500N DEFORMED BARS WITH fsy = 500 MPa.
R NORMAL DUCTILITY CLASS 250N PLAIN ROUND BARS WITH fsy = 250 MPa.
L LOW DUCTILITY CLASS HARD DRAWN 500L WIRE REINFORCING MESH WITH fsy = 5OOMPa.
DO NOT USE LOW DUCTILITY CLASS L REINFORCEMENT UNLESS SHOWN ON THE DRAWINGS.
THE NUMBER FOLLOWING THE REINFORCEMENT SYMBOL IS THE NOMINAL BAR DIAMETER IN MILLIMETERS. ALL REINFORCEMENT SHALL COMPLY WITH AS/NZS 4671. STEEL REINFORCING MATERIALS FOR CONCRETE SHALL COMPLY WITH AS/NZS 4671. WHERE APPLICABLE, MATERIALS SHALL BE CUT AND BENT IN ACCORDANCE WITH AS 3600, AS 5100 OR AS 2870.
ACCEPTABLE MANUFACTURERS AND PROCESSORS OF STEEL REINFORCING AND PRESTRESSING MATERIALS 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.
C9 HOOKS AND COGS SHALL COMPLY WITH AS3600 UNLESS NOTED OTHERWISE. ALL PULL OUT BARS SHALL BE TEMPCORE BARS OR APPROVED EQUIVALENT. BENDING AND REBENDING OF BARS SHALL BE CARRIED OUT IN ACCORDANCE WITH AS3600, AS/NZS 4671, THE SPECIFICATIONS AND THE REINFORCEMENT SUPPLIER RECOMMENDATIONS. BARS SHALL NOT BE HEATED ABOVE 400 DEGREES WITHOUT THE ENGINEER'S WRITTEN APPROVAL. THERMAL CRAYONS SHALL BE USED TO ENSURE COMPLIANCE WITH THIS TEMPERATURE LIMIT.
C10 COVER TO REINFORCEMENT (IN mm) AND CONCRETE GRADES SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE: THE COVER SHALL NOT BE LESS THAN THE BAR DIAMETER AND:

ELEMENT	FORMED INTERNAL	FORMED AND EXPOSED TO WEATHER (1.)	NOT INFORMED CAST AGAINST GROUND (2.)
FOOTINGS, PILE CAPS	-	60	75
COLUMNS, PEDESTALS	40	50	75
SLABS, BAND BEAMS	20(3.)	40	60
BEAMS	20	40	60
WALLS			
HORIZONTAL	20	40	60
VERTICAL	30	50	60
MINIMUM CONCRETE GRADE	N40	N40	N40

(1) FOR EXPOSURE CLASSIFICATION B2 ADD 5mm TO THE COVER AND THE CONCRETE GRADE SHALL BE N40 MINIMUM.
(2) IF THE ELEMENT IS CAST ON A DAMP PROOF MEMBRANE, DECREASE THE COVER BY 20mm.
(3) FOR PRESTRESSING TENDONS THE MINIMUM COVER SHALL BE 25mm.
(4) IN CORROSIVE SOILS AND WATER: N50

NOTES:
(i) COVER IS THE CLEAR DISTANCE BETWEEN ANY REINFORCING (INCLUDING FITMENTS) AND THE FACE OF THE STRUCTURAL ELEMENT.
(ii) FOR ALL EXTERNAL SURFACES, PROVIDE FULLY PLASTIC BAR CHAIRS. TIE WIRE SHALL NOT BE NAILED TO THE FORMS, REINFORCING BARS SHALL NOT BE USED TO KEEP FORMS APART AND A THROUGH TIE SYSTEM SHALL BE USED TO TIE FORMS.
(iii) PROVIDE AN APPROVED VAPOUR BARRIER FOR SLABS, BEAMS AND THICKENING CAST AGAINST THE GROUND.
(iv) THE COVERS SHALL BE MAINTAINED USING APPROVED BAR CHAIRS. BAR CHAIRS SUPPORTING MESH SHALL BE AT 800 x 800mm MAXIMUM CENTRES. BAR CHAIRS SUPPORTING BARS SHALL BE AT 60 BAR DIAMETERS OR 1500 MAXIMUM CENTRES WHICHEVER IS THE LESSER. BAR CHAIRS SHALL BE PROVIDED ALONG THE EDGES OF ALL CONSTRUCTION JOINTS. STOP ENDS SHALL NOT BE USED TO MAINTAIN THE COVERS. CONSTRUCTION JOINTS. STOP ENDS SHALL NOT BE USED TO MAINTAIN THE COVERS.
(v) EXTERNAL ELEMENTS ARE THOSE EXPOSED TO WEATHER, RAIN AND WATER PENETRATION AND ARE CLASSIFIED B1 UNLESS NOTED OTHERWISE.

C11 EXTERNAL CONCRETE ELEMENTS ABOVE GROUND SHALL MEET THE FOLLOWING 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.
C13 THE MIX DESIGN WITH THE 7 AND 28 DAYS TARGET STRENGTHS AND THE BASIC 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%.
C14 CONDUITS AND PIPES WHEN CAST IN SLABS OR WALLS ARE TO BE PLACED 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.
C15 WHERE DISTRIBUTION BARS TO MAIN REINFORCEMENT ARE NOT SHOWN ON 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.
C18 CURING OF THE CONCRETE ELEMENTS SHALL BE STARTED AS SOON AS THE 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.
C20 ENSURE ALL MOVEMENT JOINTS ARE INSTALLED WITH THE SPECIFIED ARCHITECTURAL FINISH, INCLUDING SEALANT, FILLERS, EXPANSION MATERIALS AND REBATES AS REQUIRED.
C21 CONCRETE TESTING METHOD SHALL BE PREPARED IN ACCORDANCE WITH AS1379 AND CONCRETE SPECIFICATION.
C22 MINIMUM FORMWORK STRIPPING TIME FOR IN-SITU CONCRETE FORMWORK SHALL COMPLY WITH AS3610.1:2018 APPENDIX C UNLESS SPECIFIED OTHERWISE IN THE DRAWINGS

STRUCTURAL MASONRY

M1 ALL BLOCKWORK WALLS SHALL BE CONSTRUCTED IN UNITS WITH A MINIMUM CHARACTERISTIC UNCONFINED COMPRESSIVE STRENGTH f'cu = 15 MPa.
ALL BRICKS SHALL HAVE A MINIMUM CHARACTERISTIC UNCONFINED COMPRESSIVE STRENGTH f'cu = 25 MPa.
THE MAXIMUM UNRESTRAINED FIVE YEAR EXPANSION OF BRICKS SHALL BE 0.7mm/m IN ACCORDANCE WITH NATA REGISTERED TEST BO1.
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, LIME, SAND. NO PLASTICISERS SHALL BE USED IN THE MIX.
M3 GROUT USED TO FILL CAVITIES AND CORES IN REINFORCED MASONRY SHALL HAVE A MINIMUM 28 COMPRESSIVE STRENGTH f'c OF 20 MPa AND A SLUMP OF 225 ±25mm. MAXIMUM AGGREGATE SHALL BE OF 10mm ROUNDED GRAVEL. NOMINAL 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 BASE OF PILASTERS AND EVERY CORE OF REINFORCED WALLS. CLEAN OUT AND WET DOWN CORES BEFORE GROUTING. ALL CORES CONTAINING VERTICAL AND HORIZONTAL REINFORCEMENT ARE TO BE GROUTED.
M4 HORIZONTAL JOINT REINFORCEMENT CONSISTING OF GALVANISED WOVEN WIRE 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 IN THE FIRST THREE COURSES AT THE TOP AND BOTTOM OF THE WALL AND AT A MAXIMUM 600 mm VERTICAL SPACING IN BETWEEN, FOR ALL CONCRETE BLOCKWORK, CONCRETE BRICKWORK AND CALCIUM SILICATE BRICKWORK. THE MESH SHALL BE LAPPED 450mm AT SPLICES AND FOLDED AND BENDED AT THE CORNERS SO THAT THE LONGITUDINAL WIRES ARE CONTINUOUS. THE MESH IS STOPPED 100mm SHORT OF CONTROL JOINTS OR ENDS OF WALLS.
M5 FULLY BED FACE SHELLS AND CROSS WEBS IN HOLLOW BLOCK WALLS. SOLID OR CORED UNITS SHALL BE LAID ON A FULL BED OF MORTAR.
M6 HOLLOW BLOCKWORK OPENINGS GREATER THAN 600mm VERTICALLY OR HORIZONTALLY SHALL BE TRIMMED AT THE SIDES AND BOTTOM BY FILLING ONE CORE AND REINFORCED WITH 1N12 EXTENDING 600mm PAST OPENING. THE TOP OF THE OPENING SHALL HAVE A REINFORCED LINTEL BEAM, ARCH BAR OR STEEL ANGLE SUPPORT AS DETAILED.
M7 ALL TIES AND REINFORCEMENT SHALL HAVE MINIMUM CLEAR COVER OF 50mm TO EXTERNAL FACE OF MASONRY. TIES SHALL CONFORM TO AS 2699. ALL TIES SHALL BE BY "CERRA METALWORKS" OR APPROVED EQUIVALENT. THE TIES SHALL BE FIXED TO THE MANUFACTURER'S RECOMMENDATIONS BUT WITH A MINIMUM OF 2 No. RAMSET 3.8mm DIAMETER DRIVE PINS. ALL TIES SHALL BE AT 400mm MAXIMUM CENTRES UNLESS NOTED OTHERWISE.
M8 NO CAVITY OR CORE SHALL BE FILLED TO A HEIGHT GREATER THAN 12OOmm WITHOUT SUITABLE SHORING.
M9 NO CHASES OR HOLES SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE ENGINEER. CONDUITS AND THE LIKE SHALL NOT BE PLACED INSIDE CORES CONTAINING REINFORCEMENT.
M10 VERTICAL JOINTS SHALL BE AT THE LESSER OF 6000mm OR TWICE THE HEIGHT OF THE WALL AND AT THE FOLLOWING LOCATIONS:
- AT MAJOR CHANGES IN WALL HEIGHT
- AT CHANGES IN WALL THICKNESSES OTHER THAN PIERS OR BUTTRESSES
- AT CONTROL JOINTS IN THE ADJACENT STRUCTURAL ELEMENTS
- AT CHASES AND RECESSES FOR PIPING, COLUMNS FIXTURES ETC.
- AT ONE OR BOTH SIDES OF WALL OPENINGS
- NEAR WALL INTERSECTIONS
- NEAR RETURN ANGLES IN L, T AND U SHAPED STRUCTURES
- WHERE SHOWN IN THE ARCHITECTURAL DRAWINGS

THE CONTRACTOR IS TO OBTAIN APPROVED DRAWINGS SHOWING THE CONTROL JOINTS PRIOR TO BUILDING ANY WALLS.
M11 ALL INTERSECTIONS THAT DON'T HAVE A CONTROL JOINT SHALL BE OF BONDED CONSTRUCTION OR TIED WITH HEAVY DUTY TIES AT 400mm MAXIMUM VERTICAL CENTRES.
M12 ALL CAVITY WALLS ARE TO BE CONSTRUCTED USING MEDIUM DUTY MASONRY TIES AT 600mm MAXIMUM CENTRES BOTH WAYS AND 300mm AVERAGE CENTRES EACH SIDE OF OPENINGS. THE TIES SHALL BE EMBEDDED 50mm MINIMUM INTO EACH LEAF, WITH A 30mm COVER TO THE EXPOSED FACES.
M13 WHERE A CONCRETE SLAB IS SUPPORTED ON MASONRY WALLS, THE TOP COURSE 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 SMOOTH SURFACE. FOR NON-LOAD BEARING WALLS, LEAVE A 20mm GAP TO THE UNDERSIDE OF THE STRUCTURE.
M14 BONDING SHALL BE STRETCHER BOND UNLESS NOTED OTHERWISE.
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 ACHIEVED ITS DESIGN STRENGTH.
M16 FOR AREAS OF THE STRUCTURAL FLOOR SYSTEM WHICH SUPPORT MASONRY WALLS/ PARTITIONS OR OTHER SENSITIVE ATTACHMENTS AT THE TIME OF THE 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 MINIMISE THE EFFECT OF MOVEMENT".
M17 GENERIC JOINT DETAILS ARE INDICATED ON THESE DRAWINGS FOR INFORMATION, BUT IT IS THE ARCHITECT'S RESPONSIBILITY TO IDENTIFY JOINT LOCATIONS AND TYPES WHERE APPROPRIATE ON ARCHITECTURAL DRAWINGS, AND TO PROVIDE DETAILS OF NON-STANDARD ELEMENTS TO ACCOMMODATE ANTICIPATED MOVEMENTS.
M18 OBSERVATION OF CONSTRUCTION OF NON-LOAD BEARING MASONRY WALLS/PARTITIONS AND OTHER NON-LOAD BEARING ELEMENTS IS NOT INCLUDED IN THE STRUCTURAL ENGINEER'S SCOPE OF WORKS.
M19 STACKING OF BLOCKWORK:
GENERALLY, ON SUSPENDED SLABS AND SLABS ON GROUND, BLOCKS SHALL BE STACKED ONE PALLET HIGH (MAXIMUM PALLET MASS 1300kg) WITH 1200mm CLEARANCE BETWEEN ADJACENT PALLETS ON ALL SIDES. THE WEIGHT OF STACKED BLOCKS SHALL NOT EXCEED THE DESIGN LIVE LOAD FOR THE FLOOR. REFER PLANS FOR DESIGN LOADS.
M20 MASONRY UNDER CONSTRUCTION SHALL BE BRACED OR OTHERWISE STABILIZED AS 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 ACCORDANCE WITH AS3700
M21 MASONRY CORES SHALL BE CONCRETE FILLED WHERE MASONRY ANCHORS ARE REQUIRED

AUTOCLAVED AERATED CONCRETE BLOCKWORK

A1 WHERE SPECIFIED, ALL BLOCKS ARE TO CONSIST OF THERMOBLOCK GRADE 1 BLOCKS.
A2 INSTALLATION OF ALL AAC WALLS SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATION.
A3 ATTACHMENT OF FIXINGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION.
A4 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 AS PER THE TYPICAL BLOCKWORK DETAILS WITH TIES AT 600mm MAX. CTRS INTERNALLY AND AT 400mm MAX. CTRS EXTERNALLY

SECONDARY STEELWORK NOTES

SS1 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, EQUIPMENT SUPPORT SYSTEMS, SIGNAGE, HANDRAIL SYSTEMS, BARRIER SYSTEMS, LIGHTING SYSTEMS, FALL ARREST / RESTRAINT SYSTEMS, ACCESS SYSTEMS AND PROPRIETARY PRODUCTS.
SS2 SECONDARY STEELWORK IS NOT INCLUDED IN THE STRUCTURAL DOCUMENTATION IRRESPECTIVE OF WHETHER THE OTHER CONSULTANTS DOCUMENTATION MAKE REFERENCE TO THE STRUCTURAL DOCUMENTATION FOR THE SAME.
SS3 THE CONTRACTOR SHALL REFER TO THE OTHER CONSULTANTS DOCUMENTATION FOR ALL SECONDARY STEELWORK REQUIREMENTS.
SS4 THE CONTRACTOR SHALL ALLOW TO DESIGN, SUPPLY AND INSTALL ALL SECONDARY STEELWORK AS REQUIRED ON THE OTHER CONSULTANTS DOCUMENTATION.
SS5 THE CONTRACTOR SHALL ALLOW PROVISION FOR THE COST OF ADDITIONAL ENGINEERING SERVICES SHOULD THEY REQUEST MEINHARDT TO ASSIST WITH THE DESIGN AND/OR DOCUMENTATION OF THE SECONDARY STEELWORK.
SS6 PLEASE REFER TO STANDARD STEEL CONNECTION DETAIL SHEETS FOR TYPICAL CONNECTION DETAILS. STEELWORK CONNECTION DETAILS ARE LIMITED TO MAJOR CONNECTIONS ONLY. FURTHER DETAILING MAY BE REQUIRED DURING THE DEVELOPMENT OF CONSTRUCTION DRAWINGS

STEELWORK

SHALL COMPLY T0 AS 4100, AS/NZS 4600 AND AS/NZS 3828

S1 THE FABRICATOR SHALL BE RESPONSIBLE FOR SUBMITTING SHOP DRAWINGS, 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.
S2 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.
S3 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.
S4 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 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.
S5 FABRICATOR SHALL PROVIDE ALL FIXINGS FOR ARCHITECTURAL ELEMENTS ETC. WITHOUT WEAKENING STRUCTURAL MEMBER IN ANY WAY.
S6 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.
S7 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.
S8 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 FRICTION GRIP CONNECTIONS SHALL NOT BE PAINTED.
S9 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.

S10 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.
S11 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.
S12 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.

S13 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.
S14 THE ENDS OF TUBULAR MEMBERS SHALL BE SEALED WITH NOMINAL THICKNESS PLATES AND CONTINUOUS FILLET WELDED UNLESS NOTED OTHERWISE.
S15 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.
S16 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.
S17 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.
S18 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.
S19 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 A 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 ROOFS

MAXIMUM DEFLECTION LIMITS				
TYPE	**DEAD (G)**	**IMPOSED ($\psi_s Q$)**	**WIND**	**LONG TERM DEAD + IMPOSED ($G+\psi_L Q$)**
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

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

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01.01	CONCEPT DESIGN DEVELOPMENT	RM	JB	25.10.24
P02	50% SCHEMATIC DESIGN	RM	JB	06.12.24
P03	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P04	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 1000 2000 4000 6000
SCALE (mm) 1:100

PROJECT NORTH

School Infrastructure NSW

NSW GOVERNMENT

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CLIENT
SCHOOL INFRASTRUCTURE NSW

PROJECT
CAMMERAY PUBLIC SCHOOL

PALMER STREET, CAMMERAY, NSW

TITLE
STRUCTURAL NOTES
SHEET 1

STATUS
SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	JB	23.09.24	1 : 100	P04

PROJECT No 132562
DRAWING No
CPS-MHT-XX-XX-DR-S-0001

STRUCTURAL NOTES

POST TENSIONED CONCRETE BY PT CONTRACTOR

DESIGNED AND CERTIFIED BY PT CONTRACTOR — SHALL COMPLY TO AS3600 AND AS3610

PTC1 SCOPE OF WORKS: THE SCOPE OF WORKS SHALL CONSIST OF THE DESIGN, 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 STIFFNESS.

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 LAYOUT PLAN INCORPORATING ANY BUILDER'S REQUIREMENTS IS RETURNED TO THE SUB-CONTRACTOR. THIS APPROVAL PERIOD WILL NORMALLY TAKE 7 DAYS.

PTC4 DESIGN CERTIFICATION: A CPENG STRUCTURAL ENGINEER (WITH NER) SHALL CERTIFY THE SLAB DESIGN. THE CERTIFICATION MUST STATE THAT THE SLAB IS STRUCTURALLY ADEQUATE TO RESIST THE DESIGN LOADS IN ACCORDANCE WITH ALL RELEVANT AUSTRALIAN STANDARDS. THE CERTIFYING ENGINEER SHALL MAINTAIN PROFESSIONAL INDEMNITY INSURANCE OF $20 MILLION AND PROVIDE A COPY OF THEIR CERTIFICATE OF INSURANCE CURRENCY.

PTC5 CONSTRUCTION CERTIFICATION: A CPENG STRUCTURAL ENGINEER (WITH NER) SHALL 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.

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:
1. 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
2. LONG-TERM CREEP, WHEN PRESENT, NEEDS TO BE INCLUDED IN ASSESSING THE LONG-TERM DEFLECTION OF MEMBERS THAT ARE PRONE TO CREEP.

PTC7 NATURAL FLOOR FREQUENCY : 4 HERTZ MINIMUM

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.

PTC12 STRESSING RECORDS OF THE PRESSURE GAUGE AND EXTENSIONS SHALL BE 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 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 STAGING METHODS AND/OR DETAILING TO ACCOUNT FOR ABOVE EFFECTS.

STRUCTURAL GREEN STAR SPECIFICATIONS (FOR REFERENCE ONLY):

ITEM / MATERIAL	REQUIREMENT
CONCRETE	- USE MATERIALS COMPLYING WITH AS BASED ON THE WHOLE OF LIFE APPROACH TO MATERIALS SELECTION. - DO NOT USE BRECCIA OR DOLERITE IN CONCRETE MIXES. - FLY ASH IS A MANUFACTURING BI-PRODUCT THAT CAN BE USED AS A CEMENT REPLACEMENT BUT SHOULD LIMITED TO A MAXIMUM OF 20% BY WEIGHT OF CEMENT CONTENT. - PORTLAND CEMENT CONTENT IS REDUCED BY 30% (1 POINT) OR 40% (2 POINTS), MEASURED BY MASS ACROSS ALL CONCRETE USED IN THE PROJECT COMPARED TO THE REFERENCE CASE. - THE MIX WATER FOR ALL CONCRETE USED IN THE PROJECT CONTAINS AT LEAST 50% CAPTURED OR RECLAIMED WATER (MEASURED ACROSS ALL CONCRETE MIXES IN THE PROJECT) EITHER OF THE FOLLOWING IS TO BE ACHIEVED: 1- AT LEAST 40% OF COARSE AGGREGATE IN THE CONCRETE IS CRUSHED SLAG AGGREGATE OR ANOTHER ALTERNATIVE MATERIALS (MEASURED BY MASS ACROSS ALL CONCRETE MIXES IN THE PROJECT), PROVIDED THAT THE USE OF SUCH MATERIALS DOES NOT INCREASE THE USE OF PORTLAND CEMENT BY OVER FIVE KILOGRAMS PER CUBIC METRE OF CONCRETE; OR 2- AT LEAST 25% OF FINE AGGREGATE (SAND) INPUTS IN THE CONCRETE ARE MANUFACTURED SAND OR OTHER ALTERNATIVE MATERIALS (MEASURED BY MASS ACROSS ALL CONCRETE MIXES IN THE PROJECT), PROVIDED THAT USE OF SUCH MATERIALS DOES NOT INCREASE THE USE OF PORTLAND CEMENT BY OVER FIVE KILOGRAMS PER CUBIC METRE OF CONCRETE.
TIMBER	- EITHER NO NEW ENGINEERED WOOD PRODUCTS ARE USED IN THE BUILDING, OR AT LEAST 95% (BY AREA) OF ALL ENGINEERED WOOD PRODUCTS MEET THE FORMALDEHYDE EMISSION LIMITS SPECIFIED IN THE GREEN STAR – DESIGN & AS BUILT V1.3 TOOL. - ALL ENGINEERED WOOD PRODUCTS SHOULD BE USED MUST MEET THE AUSTRALIAN STANDARDS FOR FORMALDEHYDE EMISSION LIMIT E1 (NICNAS CLASSIFICATION) OR LOWER. - "NO RAINFOREST TIMBERS, OR TIMBERS FROM HIGH CONSERVATION FORESTS, ARE TO BE USED UNLESS PLANTATION GROWN. USE ONLY RECYCLED TIMBER, ENGINEERED AND GLUED TIMBER COMPOSITE PRODUCTS, OR TIMBER FROM PLANTATIONS OR FROM SUSTAINABLY MANAGED REGROWTH FORESTS THAT IS FSC, AFS OR PEFC CERTIFIED. ALL TIMBER USED IS TO BE TERMITE (WHITE ANT) RESISTANT OR TREATED TO BE TERMITE RESISTANT TO THE APPROPRIATE HAZARD LEVEL. - 95% (BY COST) OF ALL TIMBER USED IN THE BUILDING AND CONSTRUCTION WORKS IS EITHER: - CERTIFIED BY A FOREST CERTIFICATION SCHEME THAT MEETS THE GBCA 'S 'ESSENTIAL' CRITERIA FOR FOREST CERTIFICATION; OR IS FROM A REUSED SOURCE."
STEEL	- 95% OF ALL STEEL IS SOURCED FROM A RESPONSIBLE STEEL MAKER AND EITHER 60% OF FABRICATED STRUCTURAL STEELWORK IS SUPPLIED BY A STEEL FABRICATOR ACCREDITED TO ASI, OR 60% OF ALL REINFORCING BAR AND MESH IS PRODUCED USING ENERGY-REDUCING PROCESSES IN ITS MANUFACTURE.
RISK	- ALL RISK ITEMS IDENTIFIED AS 'HIGH' OR 'EXTREME' FROM THE CLIMATE RISK WORKSHOP MUST BE ADDRESSED BY SPECIFIC DESIGN RESPONSES. AT LEAST TWO RISK ITEMS IDENTIFIED MUST ALSO BE ADDRESSED IN THE DESIGN.

DESIGN LOADS:

EARTHQUAKE
PROJECT WILL BE DESIGNED IN ACCORDANCE WITH AS1170.4-2024.
HAZARD FACTOR: Z = 0.08
LIFE SPAN: 50 YEARS
SITE SUBSOIL: BE-ROCK SITE
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 = AS PER AS1170.2

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

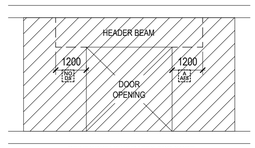
REINFORCEMENT RATES MEASURED ON CONCRETE VOLUMES AS NOTED

EDGE BEAM

SLAB AT EDGE BEAM

BAND BEAM

SLAB AT BAND BEAM



REINFORCEMENT RATES FOR CORE WALLS ARE TO APPLY TO ENTIRE WALL ALLOWING FOR NO OPENINGS OR HEADER BEAMS

CORE WALL ELEVATION

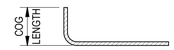
REINFORCEMENT RATE

ITEM	REINFORCEMENT RATE kg/m³	POST-TENSIONING RATE kg/m²
PILE CAPS & FOOTING BEAMS	160	N/A
CORE BASES	170	N/A
CORE WALLS	190	N/A
COLUMNS	165	N/A
RC STAIRS	150	N/A
SUSPENDED SLAB ON GROUND	170	N/A
SUSPENDED PT SLAB	55	5.5
PT TRANSFER BEAMS	N/A	N/A

1. WASTAGE, ROLLING MARGIN, CONSTRUCTION JOINTS, MOVEMENT JOINTS, DISTRIBUTION BARS, CHAIRS, ANTI-BURST REINFORCEMENT ARE EXCLUDED FROM THE RATES.
2. CAST-IN ITEMS ARE NOT INCLUDED IN THE RATES.
3. CORE CONNECTIONS ARE NOT INLCUDED IN THE RATES.
4. PLINTHS AND HOBS ARE NOT INCLUDED IN THE RATES.
5. RATES DO NOT INCLUDE ANY ALLOWANCE FOR CONSTRUCTION-RELATED REQUIREMENTS SUCH AS 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



NOTE:
COG LENGTHS TO BE AS PER SCHEDULE UNLESS NOTED OTHERWISE

ANCHORAGE / SPLICE LENGTH TABLE

SPLICE LENGTHS of TENSION BARS in SLABS and BEAMS (mm)

Bar Size	Less than 300mm of concrete below bar or vertical bar				More than 300mm of concrete below bar			
	CONCRETE GRADE				CONCRETE GRADE			
	N32		>= N40		N32		>= 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	

1. 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.
3. The clear spacing between spliced bars must be less than one bar diameter.
4. 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
7. db denotes bar diameter .
8. The minimum clear spacing of bars to be 120mm.

VERTICAL SPLICE LENGTHS IN WALLS (mm)

BAR DIAMETER	CONCRETE GRADE			
	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 SPLICE LENGTHS IN WALLS (mm)

BAR DIAMETER	CONCRETE GRADE			
	N32	N40	N50	N65-N100
12	650	600	550	500
16	1000	900	800	700
20	1300	1150	1050	900

MAXIMUM CLEAR GAP BETWEEN BARS ONE BAR DIAMETER.
MINIMUM COVER 20mm
NOTE: FOR WALLS EXPOSED TO WEATHER REFER GENERAL NOTES.
MINIMUM CLEAR SPACING 120mm

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.

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01.01	CONCEPT DESIGN DEVELOPMENT	RM	JB	25.10.24
P02	50% SCHEMATIC DESIGN	RM	JB	06.12.24
P03	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P04	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 1000 2000 4000 6000
SCALE (mm) 1:100

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: CAMMERAY PUBLIC SCHOOL
PALMER STREET, CAMMERAY, NSW

TITLE: STRUCTURAL NOTES SHEET 2

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	JB	23.09.24	As indicated	P04

PROJECT No 13256
DRAWING No CPS-MHT-XX-XX-DR-S-0002

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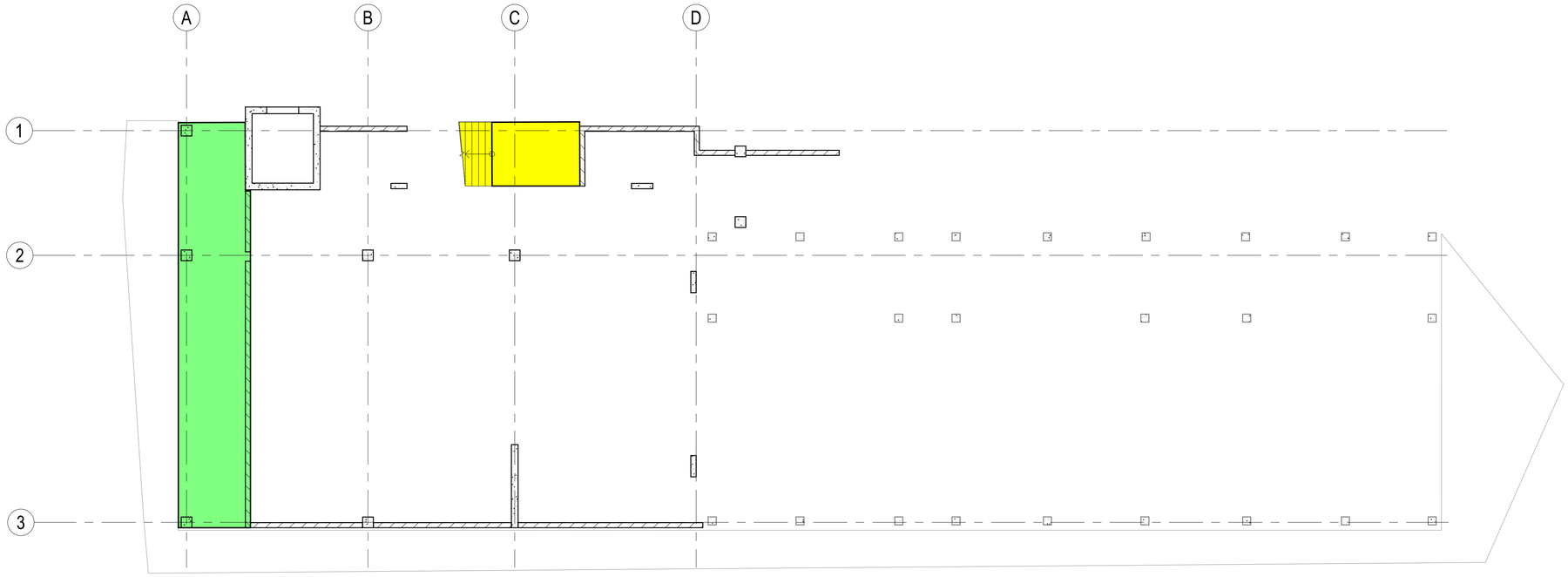

UNDERCROFT LOADING PLAN

SCALE: 1 : 100

FLOOR DESIGN LOADS

(UNLESS NOTED OTHERWISE)

	SUPERIMPOSED DEAD LOAD (kPa)	LIVE LOAD (kPa)	AREA
	1.5	3.0	CLASSROOM (GENERAL) & OFFICES
	1.5	4.0	LOBBIES, CORRIDOR & STAIRS
	2.0	2.0	STUDENT AMENITIES
	0.5	2.5	PARKING AREA
	1.5	4.0	LIBRARY
	0.5	5.0	GENERAL STORAGE / PLANT ROOM
	0.5	7.5	BULK MATERIAL STORAGE / KILN AREA
	0.5	10.0	WOOD + METAL STORAGE
	2.0	5.0	DANCE HALL, STUDIOS & GYMNASIA
	0.5	5.0	WORKSHOP
	0.25	0.25	ROOF
	0.25	0.25	WALK WAY ROOF
	0.5	0.5	STAIR ROOF
	0.5	0.25	TRANSFER LOAD FROM LIGHT-WEIGHT WALL AND ROOF FRAMING

LOADING NOTES

1. LL DENOTES LIVE LOAD, SDL DENOTES SUPERIMPOSED DEAD LOAD WL DENOTES WIND LOADS. WL NOTED ARE ULTIMATE.
2. ALL LL AND SDL LOADS NOTED ARE UNFACTORED WORKING LOADS.
3. U.N.O SDL LOADS NOTED INCLUDE FOR LIGHTWEIGHT PARTITIONS AND DISCRETE BLOCK WALLS AROUND SERVICES RISERS ONLY.
4. LOADS PROVIDED DO NOT ALLOW FOR ADDITIONAL SLAB THICKNESS FOR EXTERNAL STRUCTURE SLABS POURED TO FALLS. AN ADDITIONAL ALLOWANCE OF AN AVERAGE OF 50mm EXTRA CONCRETE WEIGHT SHOULD BE ALLOWED FOR IN SUCH SLABS.
5. SDL LOADS PROVIDED DO NOT ALLOW FOR NON-LOAD BEARING BLOCKWORK. REFER TO ARCHITECTURAL DRAWINGS FOR WALL SIZE AND LAYOUT OF ADDITIONAL SDL BLOCKWORK LOADS.

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.

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	50% SCHEMATIC DESIGN	RM	JB	06.12.24
P02	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P03	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 1000 2000 4000 6000
SCALE (mm) 1:100

PROJECT NORTH

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: CAMMERAY PUBLIC SCHOOL

PALMER STREET, CAMMERAY, NSW

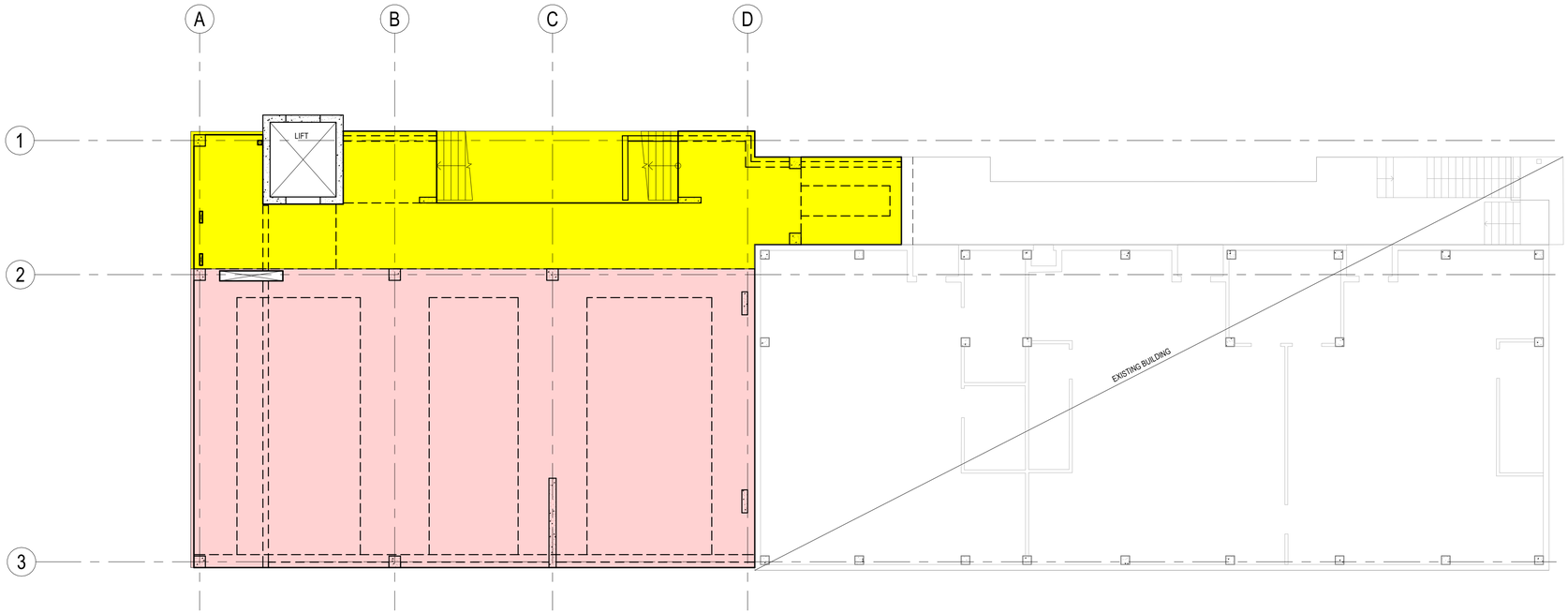
TITLE: UNDERCROFT LOADING PLAN

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	Approver	23.09.24	1 : 100	P03

PROJECT No 132562

DRAWING No CPS-MHT-B00G-LG-DR-S-1010



FLOOR DESIGN LOADS

(UNLESS NOTED OTHERWISE)

	SUPERIMPOSED DEAD LOAD (kPa)	LIVE LOAD (kPa)	AREA
	1.5	3.0	CLASSROOM (GENERAL) & OFFICES
	1.5	4.0	LOBBIES, CORRIDOR & STAIRS
	2.0	2.0	STUDENT AMENITIES
	0.5	2.5	PARKING AREA
	1.5	4.0	LIBRARY
	0.5	5.0	GENERAL STORAGE / PLANT ROOM
	0.5	7.5	BULK MATERIAL STORAGE / KILN AREA
	0.5	10.0	WOOD + METAL STORAGE
	2.0	5.0	DANCE HALL, STUDIOS & GYMNASIA
	0.5	5.0	WORKSHOP
	0.25	0.25	ROOF
	0.25	0.25	WALK WAY ROOF
	0.5	0.5	STAIR ROOF
	0.5	0.25	TRANSFER LOAD FROM LIGHT-WEIGHT WALL AND ROOF FRAMING

GROUND FLOOR LOADING PLAN

SCALE: 1 : 100

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.

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	50% SCHEMATIC DESIGN	RM	JB	06.12.24
P02	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P03	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 1000 2000 4000 6000
SCALE (mm) 1:100

PROJECT NORTH

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CLIENT
SCHOOL INFRASTRUCTURE NSW

PROJECT
CAMMERAY PUBLIC SCHOOL

PALMER STREET, CAMMERAY, NSW

TITLE
GROUND FLOOR LOADING PLAN

STATUS
SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	Approver	23.09.24	1 : 100	P03

PROJECT No 132562

DRAWING No
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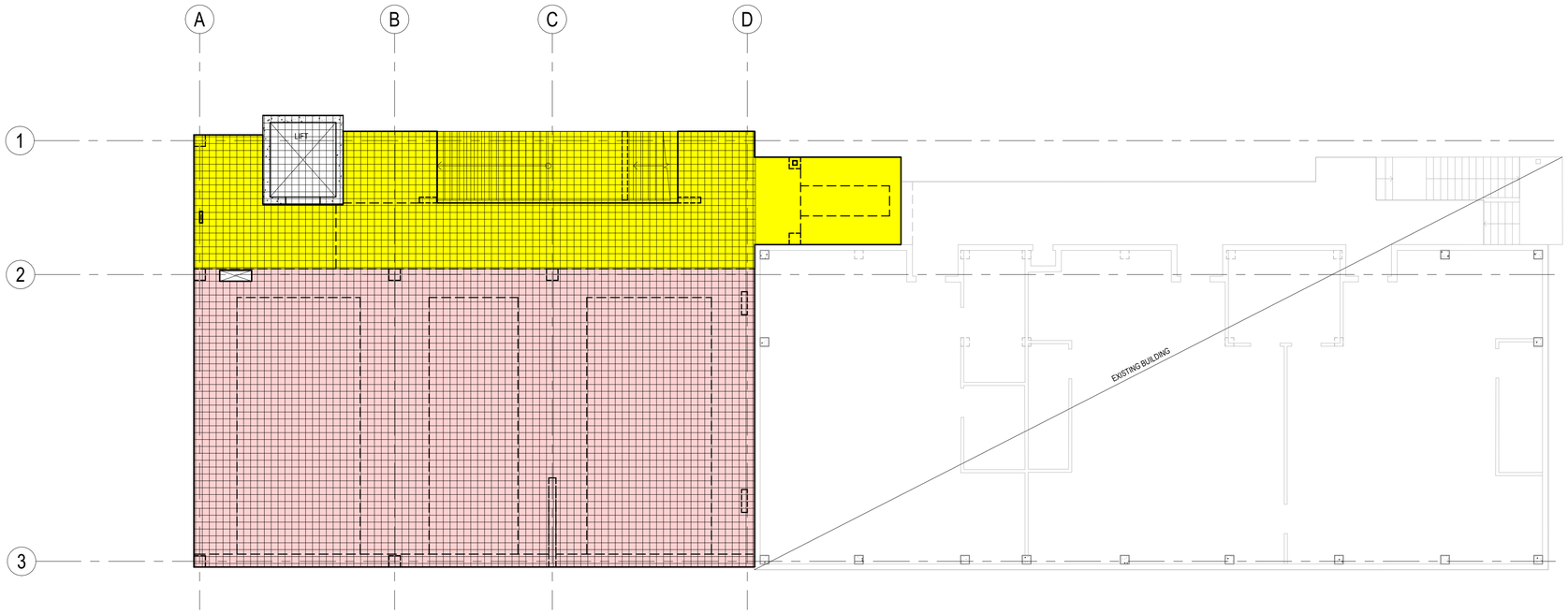

FLOOR DESIGN LOADS

(UNLESS NOTED OTHERWISE)

	SUPERIMPOSED DEAD LOAD (kPa)	LIVE LOAD (kPa)	AREA
	1.5	3.0	CLASSROOM (GENERAL) & OFFICES
	1.5	4.0	LOBBIES, CORRIDOR & STAIRS
	2.0	2.0	STUDENT AMENITIES
	0.5	2.5	PARKING AREA
	1.5	4.0	LIBRARY
	0.5	5.0	GENERAL STORAGE / PLANT ROOM
	0.5	7.5	BULK MATERIAL STORAGE / KILN AREA
	0.5	10.0	WOOD + METAL STORAGE
	2.0	5.0	DANCE HALL, STUDIOS & GYMNASIA
	0.5	5.0	WORKSHOP
	0.25	0.25	ROOF
	0.25	0.25	WALK WAY ROOF
	0.5	0.5	STAIR ROOF
	0.5	0.25	TRANSFER LOAD FROM LIGHT-WEIGHT WALL AND ROOF FRAMING

LEVEL 1 LOADING PLAN

SCALE: 1 : 100

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.

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	50% SCHEMATIC DESIGN	RM	JB	06.12.24
P02	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P03	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 1000 2000 4000 6000
SCALE (mm) 1:100

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PROJECT
CAMMERAY PUBLIC SCHOOL

PALMER STREET, CAMMERAY, NSW

TITLE
LEVEL 1 LOADING PLAN

STATUS
SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	Approver	23.09.24	1 : 100	P03

PROJECT No 132562

DRAWING No
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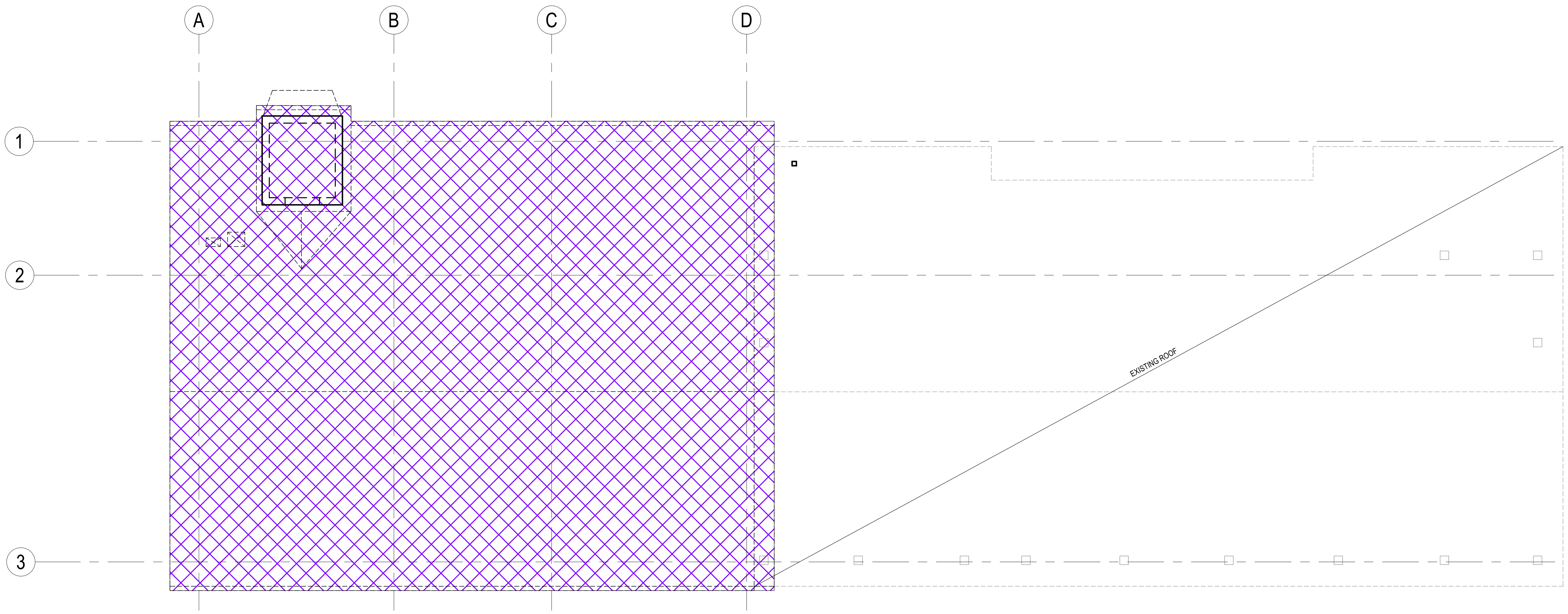

ROOF LOADING PLAN

SCALE: 1 : 100

FLOOR DESIGN LOADS (UNLESS NOTED OTHERWISE)

	SUPERIMPOSED DEAD LOAD (kPa)	LIVE LOAD (kPa)	AREA
(pink)	1.5	3.0	CLASSROOM (GENERAL) & OFFICES
(yellow)	1.5	4.0	LOBBIES, CORRIDOR & STAIRS
(purple)	2.0	2.0	STUDENT AMENITIES
(cyan)	0.5	2.5	PARKING AREA
(magenta)	1.5	4.0	LIBRARY
(green)	0.5	5.0	GENERAL STORAGE / PLANT ROOM
(orange)	0.5	7.5	BULK MATERIAL STORAGE / KILN AREA
(teal)	0.5	10.0	WOOD + METAL STORAGE
(dark red)	2.0	5.0	DANCE HALL, STUDIOS & GYMNASIA
(red)	0.5	5.0	WORKSHOP
(purple cross-hatch)	0.25	0.25	ROOF
(cyan pattern)	0.25	0.25	WALK WAY ROOF
(red cross-hatch)	0.5	0.5	STAIR ROOF
(grid)	0.5	0.25	TRANSFER LOAD FROM LIGHT-WEIGHT WALL AND ROOF FRAMING

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.

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	50% SCHEMATIC DESIGN	RM	JB	06.12.24
P02	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P03	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 1000 2000 4000 6000
SCALE (mm) 1:100

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PROJECT: CAMMERAY PUBLIC SCHOOL
PALMER STREET, CAMMERAY, NSW

TITLE: ROOF LOADING PLAN

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	Approver	23.09.24	1 : 100	P03

PROJECT No 132562

DRAWING No CPS-MHT-B00G-LR-DR-S-1040

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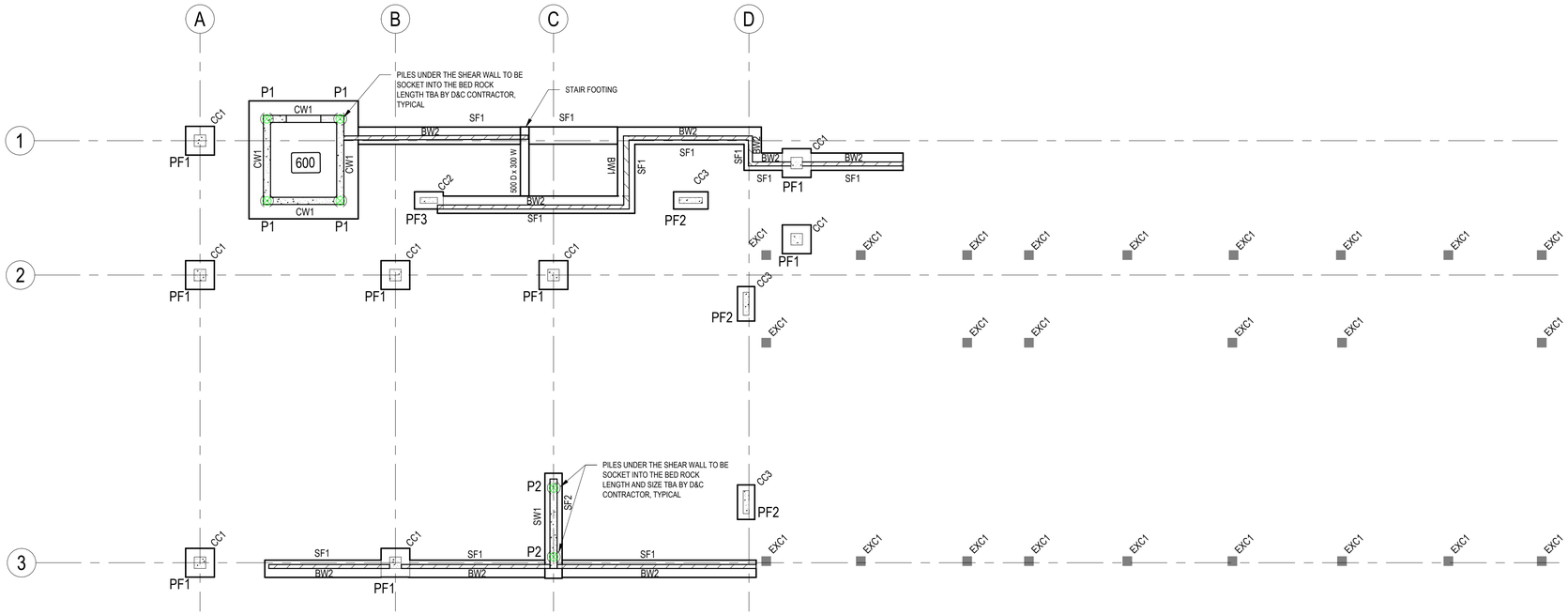

FOOTING PLAN

SCALE: 1 : 100

STRUCTURAL SIZES (UNLESS OTHERWISE NOTED)

FOOTINGS	REFER TO DWG S-0210 & S-0211 FOR DETAILS
STAIRS	REFER TO DWG S-0220 FOR DETAILS
EXC1	DENOTES EXISTING CONCRETE COLUMN
RC COLUMNS	REFER TO DWG S-0230 FOR DETAILS
WALLS	REFER TO DWG S-0205, S-0206 & S-0240 FOR DETAILS

CONCRETE GRADE

ALL FLOOR ELEMENTS	N40 (DENSEWEIGHT)

PILE DESIGN NOTE

1. A D+C PILING CONTRACTOR MAY TO IMPROVE ON THESE PARAMETERS IF PROVIDED WITH DETAILED TEST RESULTS OR THROUGH CARRYING OUT ADDITIONAL ON SITE TESTING.
2. ALL PILES (EXCLUDING CAPPING BEAMS AND PILE CAPS) SHALL BE DELIVERED 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.
3. REFER GEOTECHNICAL REPORT BY ADE CONSULTING GROUP.
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.
6. 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.
7. THE BUILDER / PILING CONTRACTOR SHALL PROVIDE WRITTEN CONFIRMATION TO THE SUPERINTENDENT THAT THE AS-BUILT PILES COMPLY FULLY WITH PERFORMANCE SPECIFICATIONS.
8. THE BUILDER SHALL EMPLOY A SUITABLY QUALIFIED GEOTECHNICAL 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.
9. THE SCHEDULED LOADS DO NOT INCLUDE PILES SELF WEIGHT. THE PILING CONTRACTOR SHALL ALLOW AS APPROPRIATE.

LEGEND (UNLESS OTHERWISE NOTED)

250	DENOTES THICKNESS OF SLAB
	DENOTES CONCRETE ELEMENT OVER
	DENOTES BLOCKWORK WALL OVER
⊗	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 .
3. CORE FOOTING AND STRIP FOOTING TO BE EMBEDDED INTO TYPE 4 ROCK TO BE CONFIRMED BY GEOTECH ENGINEER.

D & C PILING SCHEDULE

MARK	SIZE	WORKING LOADS (kN)			NOTES
		COMPRESSION	TENSION	SHEAR	
P1		1100	800	250	
P2		1300	300	300	

WALL SCHEDULE

MARK	WIDTH	CONCRETE GRADE	REMARKS
BW1	190		MASONRY
BW2	140		MASONRY
CW1	250		INSITU
SW1	250		INSITU

RC COLUMN SHEDULE

MARK	SIZE	REINFORCEMENT
CC1	400 x 400	
CC2	200 x 600	
CC3	200 x 800	

PAD FOOTING SCHEDULE

MARK	DIMENSIONS			CONCRETE GRADE	REINFORCEMENT	ALLOWABLE BEARING PRESSURE (KPa)	REMARKS
	WIDTH	LENGTH	DEPTH				
PF1	1000	1000	500			1000	
PF2	1200	600	500			1000	
PF3	1000	600	500			1000	

STRIP FOOTING & GROUND BEAM SCHEDULE

MARK	DIMENSIONS		REINFORCEMENT			CONCRETE GRADE
	WIDTH	DEPTH	BOTTOM	TOP	TIES	
SF1	600	400				
SF2	600	600				

NOTE:
1. PILE SIZE TO BE D&C BY PILING SPECIALITY TO ACHIEVE THE NOMINATED LOADS.LOADS.
2. LOADS ARE PRELIMINARY AND SUBJECT TO CHANGE AS DESIGN DEVELOPS.
3. PILE ARRANGEMENT ARE SHOWN INDICATIVE ONLY. EXACT NUMBER OF PILES TO BE CONFIRMED BY D&C CONTRACTOR BASED ON LOADING ON PILES.

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.

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01.01	CONCEPT DESIGN DEVELOPMENT	RM	JB	25.10.24
P02	50% SCHEMATIC DESIGN	RM	JB	06.12.24
P03	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P04	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 1000 2000 4000 6000
SCALE (mm) 1:100

PROJECT NORTH

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: CAMMERAY PUBLIC SCHOOL
PALMER STREET, CAMMERAY, NSW

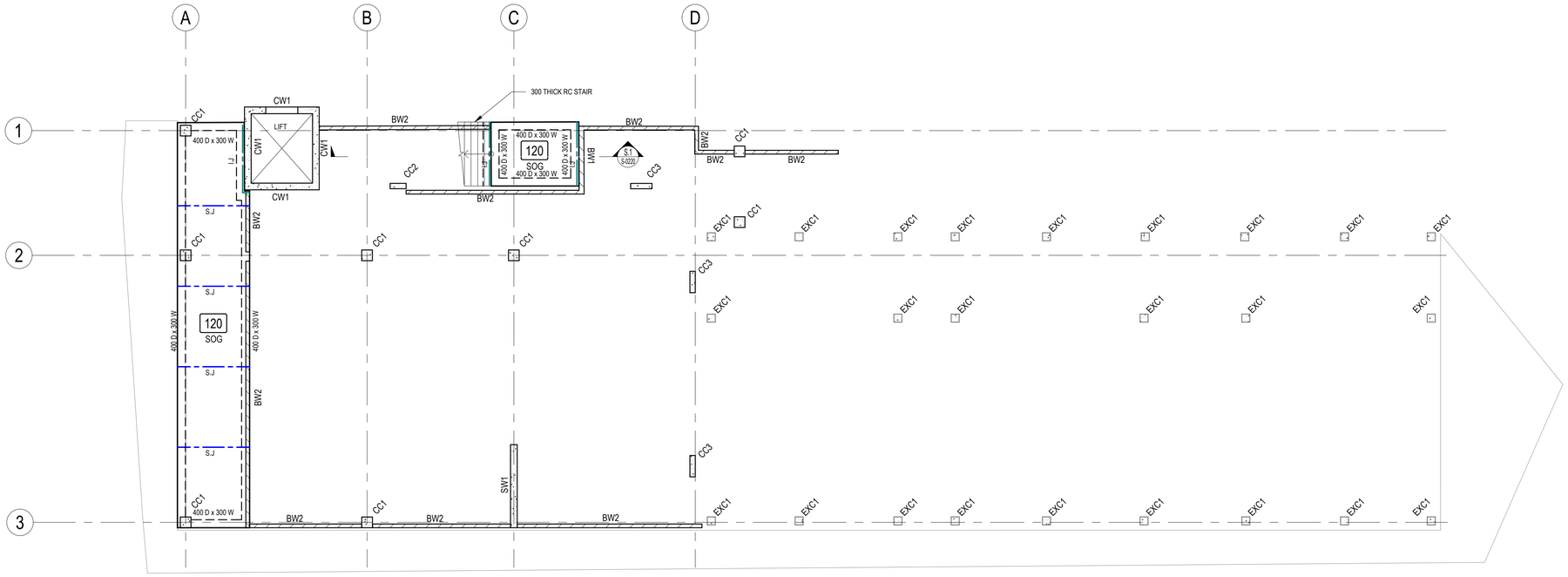
TITLE: FOOTING PLAN

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	JB	23.09.24	As indicated	P04

PROJECT No 132562

DRAWING No CPS-MHT-B00G-FF-DR-S-2000



UNDERCROFT STRUCTURAL PLAN

SCALE: 1 : 100

NOTE:
1. HOT DIP GALVANISED DOWELS IN JOINTS TO BOTH INTERNAL AND EXTERNAL CONCRETE SLABS.
2. COST ALLOWANCE SHOULD BE MADE FOR SECONDARY STEEL WORK.
3. STEEL STRUCTURES TO BE FIRE RATED TO ACHIEVE REQUIRED FRL.

WALL SCHEDULE

MARK	WIDTH	CONCRETE GRADE	REMARKS
BW1	190		MASONRY
BW2	140		MASONRY
CW1	250		INSITU
SW1	250		INSITU

RC COLUMN SHEDULE

MARK	SIZE	REINFORCEMENT
CC1	400 x 400	
CC2	200 x 600	
CC3	200 x 800	

STRUCTURAL SIZES (UNLESS OTHERWISE NOTED)

SLAB	GENERALLY 120mm THICK 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 S-0220 FOR DETAILS
RC COLUMNS	REFER TO DWG S-0230 FOR DETAILS
WALLS	REFER TO DWG S-0205, S-0206 & S-0240 FOR 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.

LEGEND (UNLESS OTHERWISE NOTED)

250	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
I.J	DENOTES ISOLATION 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.
EXC1	DENOTES EXISTING CONCRTE COLUMN.

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.

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	50% SCHEMATIC DESIGN	RM	JB	06.12.24
P02	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P03	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 1000 2000 4000 6000
SCALE (mm) 1:100

PROJECT NORTH

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: CAMMERAY PUBLIC SCHOOL

PALMER STREET, CAMMERAY, NSW

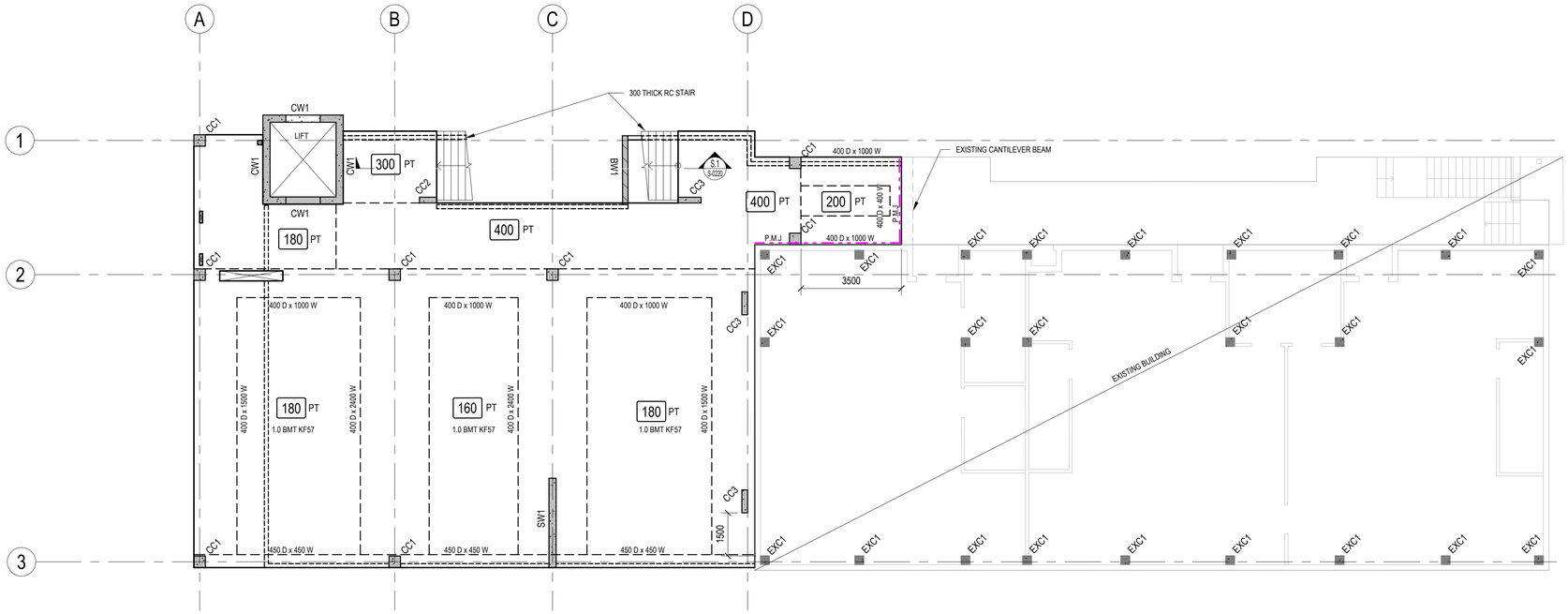
TITLE: UNDERCROFT STRUCTURAL PLAN

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	Approver	23.09.24	1 : 100	P03

PROJECT No 132562

DRAWING No CPS-MHT-B00G-LG-DR-S-2010



GROUND FLOOR STRUCTURAL PLAN

SCALE: 1 : 100

NOTE:
1. HOT DIP GALVANISED DOWELS IN JOINTS TO BOTH INTERNAL AND EXTERNAL CONCRETE SLABS.
2. COST ALLOWANCE SHOULD BE MADE FOR SECONDARY STEEL WORK.
3. STEEL STRUCTURES TO BE FIRE RATED TO ACHIEVE REQUIRED FRL.

WALL SCHEDULE

MARK	WIDTH	CONCRETE GRADE	REMARKS
BW1	190		MASONRY
BW2	140		MASONRY
CW1	250		INSITU
SW1	250		INSITU

RC COLUMN SHEDULE

MARK	SIZE	REINFORCEMENT
CC1	400 x 400	
CC2	200 x 600	
CC3	200 x 800	

STRUCTURAL SIZES (UNLESS OTHERWISE NOTED)

SLAB	GENERALLY 180 THICK PT SLAB. U.N.O.
STAIRS	REFER TO DWG S-0220 FOR DETAILS
RC COLUMNS	REFER TO DWG S-0230 FOR DETAILS
WALLS	REFER TO DWG S-0205, S-0206 & S-0240 FOR 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.

LEGEND (UNLESS OTHERWISE NOTED)

250	DENOTES THICKNESS OF SLAB
C.J	DENOTES CONSTRUCTION JOINT
T.M.J	DENOTES TEMPORARY MOVEMENT JOINT
P.M.J	DENOTES PERMANENT MOVEMENT JOINT
S.J	DENOTES SAW CUT JOINT
I.J	DENOTES ISOLATION 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.
EXC1	DENOTES EXISTING CONCRTE COLUMN.

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.

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01.01	CONCEPT DESIGN DEVELOPMENT	RM	JB	25.10.24
P02	50% SCHEMATIC DESIGN	RM	JB	06.12.24
P03	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P04	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 1000 2000 4000 6000
SCALE (mm) 1:100

PROJECT NORTH

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: CAMMERAY PUBLIC SCHOOL
PALMER STREET, CAMMERAY, NSW

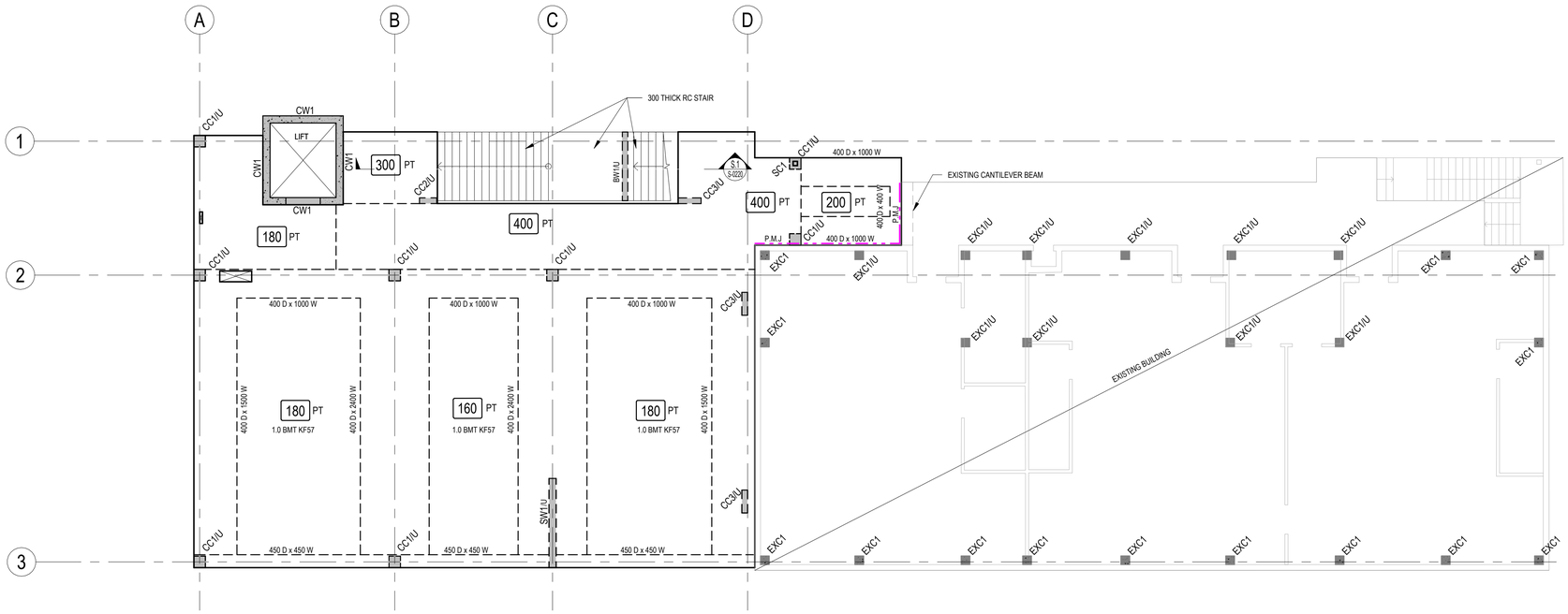
TITLE: GROUND FLOOR STRUCTURAL PLAN

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	JB	23.09.24	1 : 100	P04

PROJECT No 132562

DRAWING No CPS-MHT-B00G-GF-DR-S-2020



LEVEL 1 STRUCTURAL PLAN

SCALE: 1 : 100

NOTE:
1. HOT DIP GALVANISED DOWELS IN JOINTS TO BOTH INTERNAL AND EXTERNAL CONCRETE SLABS.
2. COST ALLOWANCE SHOULD BE MADE FOR SECONDARY STEEL WORK.
3. STEEL STRUCTURES TO BE FIRE RATED TO ACHIEVE REQUIRED FRL.

STRUCTURAL SIZES (UNLESS OTHERWISE NOTED)

SLAB	GENERALLY 180mm THICK PT SLAB, U.N.O
STAIRS	REFER TO DWG S-0220 FOR DETAILS
RC COLUMNS	REFER TO DWG S-0230 FOR DETAILS
WALLS	REFER TO DWG S-0205, S-0206 & S-0240 FOR DETAILS

CONCRETE GRADE

ALL FLOOR ELEMENTS	N40 (DENSEWEIGHT)

NOTES

1. CONCRETE GRADE FOR COLUMN, WALL AND SLAB TO BE C40.
2. T.M.J LOCATIONS ARE SHOW INDICATIVELY AND SUBJECT TO COORDINATION.
3. PT D&C CONTRACTOR TO DESIGN SLAB/WALL CONNECTIONS TO ACCOMMODATE LATERAL LOAD (NOMINATED ON THE DRAWINGS) + GRAVITY LOAD AS PER RELEVANT AUSTRALIAN STANDARDS.
4. LATERAL HORIZONTAL TRANSFER LOAD COULD BE IN ANY DIRECTION.
5. LIGHTWEIGHT STEEL CONNECTION TO RC SLAB TO BE D&C BY LIGHTWEIGHT STEEL CONTRACTOR.
6. SLAB SETDOWN TO ACCOMMODATE LIGHTWEIGHT STEEL TO BE COORDINATED BY ARCHITECT, PT CONTRACTOR AND LIGHTWEIGHT STEEL CONTRACTOR.

LEGEND (UNLESS OTHERWISE NOTED)

180 PT	DENOTES THICKNESS OF SLAB PT - DENOTES PT SLAB
C.J	DENOTES CONSTRUCTION JOINT
T.M.J	DENOTES TEMPORARY MOVEMENT JOINT
P.M.J	DENOTES PERMANENT MOVEMENT JOINT
STEP	DENOTES SLAB STEP REFER TO ARCHITECTUAL DRAWINGS FOR SETOUT AND DIMENSIONS
	DENOTES CONCRETE ELEMENT OVER
	DENOTES LOAD-BEARING ELEMENT UNDER
	DENOTES BLOCKWORK WALL OVER
EXC1	DENOTES EXISTING CONCRETE COLUMN

WALL SCHEDULE

MARK	WIDTH	CONCRETE GRADE	REMARKS
BW1	190		MASONRY
BW2	140		MASONRY
CW1	250		INSITU
SW1	250		INSITU

RC COLUMN SHEDULE

MARK	SIZE	REINFORCEMENT
CC1	400 x 400	
CC2	200 x 600	
CC3	200 x 800	

STEEL COLUMN SHEDULE

MARK	SIZE	REMARKS
SC1	150 x 150 x 6 SHS	

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.

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01.01	CONCEPT DESIGN DEVELOPMENT	RM	JB	25.10.24
P02	50% SCHEMATIC DESIGN	RM	JB	06.12.24
P03	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P04	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 1000 2000 4000 6000
SCALE (mm) 1:100

PROJECT NORTH

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: CAMMERAY PUBLIC SCHOOL
PALMER STREET, CAMMERAY, NSW

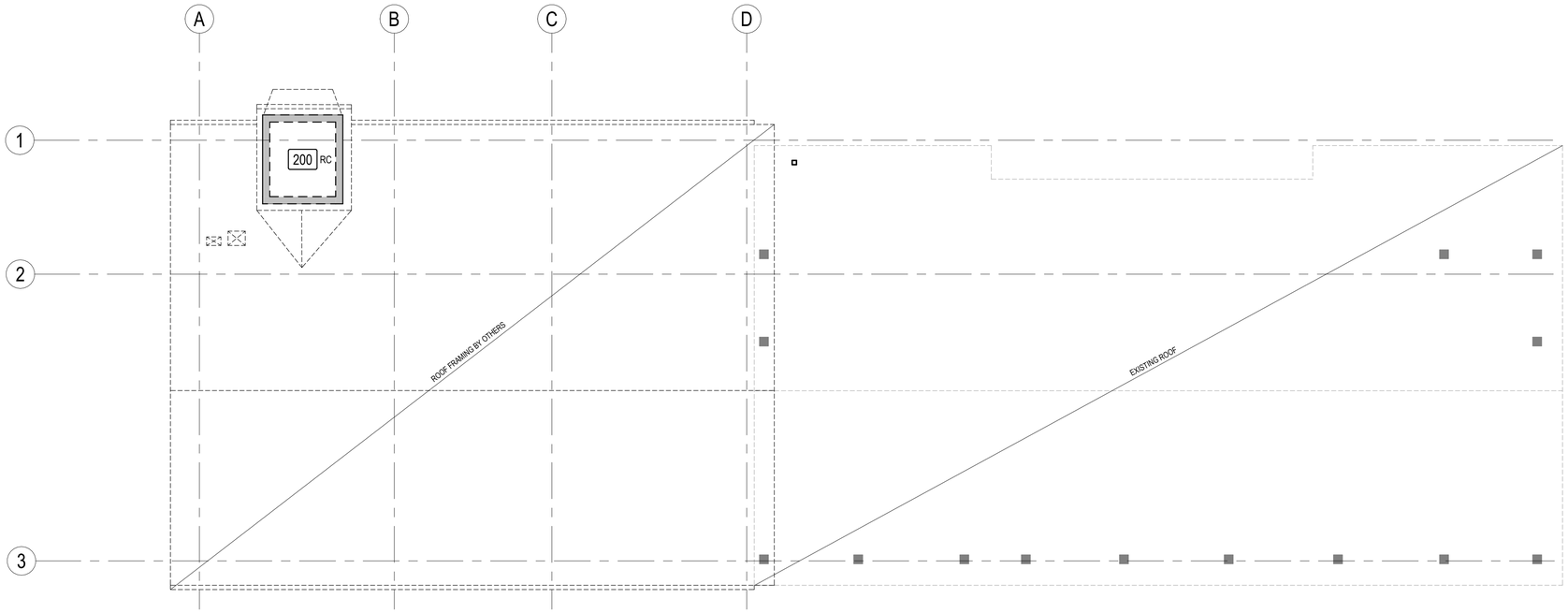
TITLE: LEVEL 1 STRUCTURAL PLAN

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	JB	23.09.24	1 : 100	P04

PROJECT No 132562

DRAWING No CPS-MHT-B00G-L1-DR-S-2030



ROOF STRUCTURAL PLAN

SCALE: 1 : 100

NOTE:
1. HOT DIP GALVANISED DOWELS IN JOINTS TO BOTH INTERNAL AND EXTERNAL CONCRETE SLABS.
2. COST ALLOWANCE SHOULD BE MADE FOR SECONDARY STEEL WORK.
3. STEEL STRUCTURES TO BE FIRE RATED TO ACHIEVE REQUIRED FRL.

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
4. 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 THE ENGINEER
5. ALLOW FOR AN ADDITIONAL 2 No. 250 UB 31 TRIMMER BEAMS TO MECHANICAL ROOF VENTS. LOCATIONS TO ARCHITECT AND MECHANICAL DRAWINGS (TYPICALLY)
6. ALLOW FOR 50 x 50 x 3 EA FLY BRACES TO ROOF BEAMS AT 1/3 POINTS (TYPICALLY)

PURLIN NOTES:

(UNLESS OTHERWISE NOTED)

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

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.

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	50% SCHEMATIC DESIGN	RM	JB	06.12.24
P02	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P03	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 1000 2000 4000 6000
SCALE (mm) 1:100

PROJECT NORTH

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: CAMMERAY PUBLIC SCHOOL
PALMER STREET, CAMMERAY, NSW

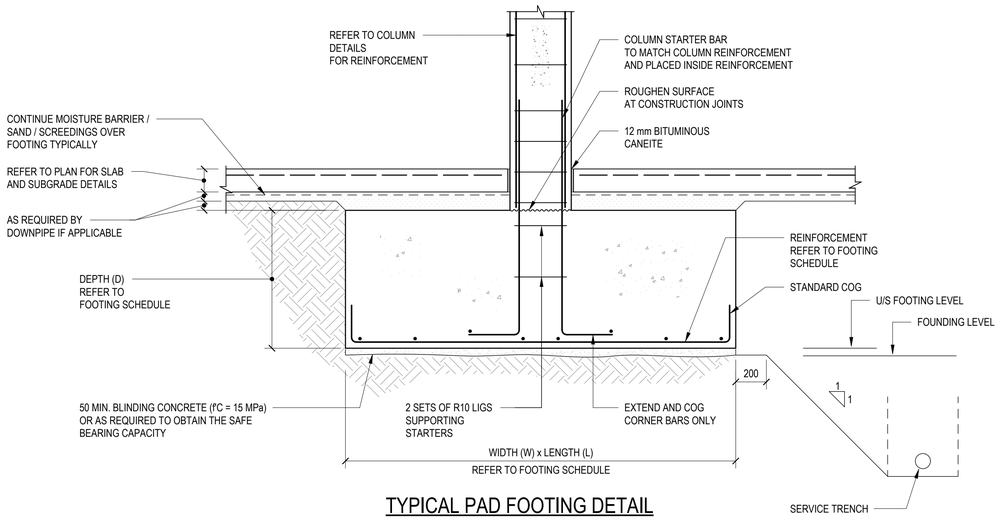
TITLE: ROOF STRUCTURAL PLAN

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	JB	23.09.24	1 : 100	P03

PROJECT No 132562

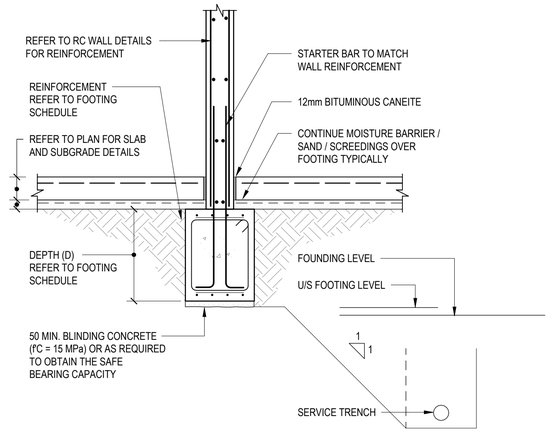
DRAWING No CPS-MHT-B00G-LR-DR-S-2040



TYPICAL PAD FOOTING DETAIL

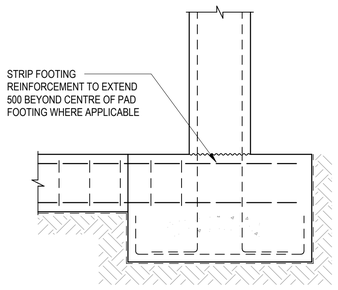
NTS

NOTES:
1. FOR REINFORCEMENT, DIMENSIONS, ETC. REFER TO FOOTING SCHEDULE
2. OVERBREAK BELOW FOOTINGS TO BE FILLED TO UNDERSIDE OF FOOTING WITH BLINDING CONCRETE
3. OVERBREAK AROUND FOOTINGS TO BE FILLED WITH CONCRETE OF THE SAME GRADE AS FOOTINGS
4. DETAILS ABOVE APPLY UNLESS SHOWN OTHERWISE ON THE DRAWINGS
5. REFER ALSO TO STANDARD NOTES ON DRAWING S001

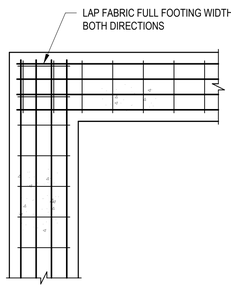


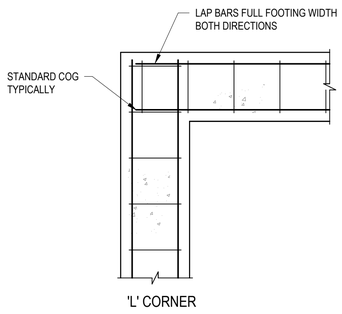
TYPICAL STRIP FOOTING DETAIL (RC WALL)

NTS



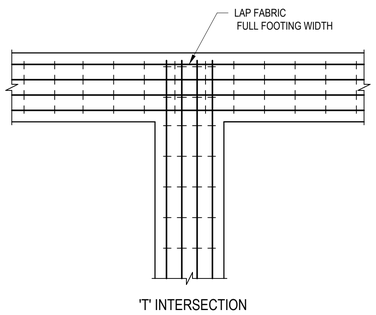
STRIP / PAD FOOTING JUNCTION

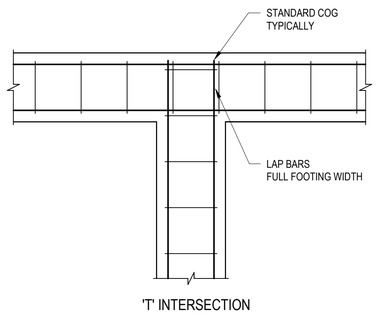




TYPICAL STRIP FOOTING CORNER DETAIL

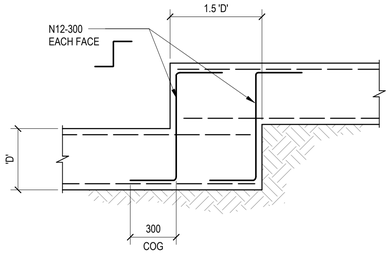
NTS



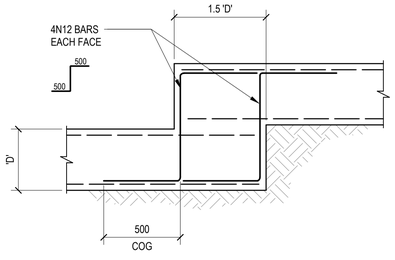


TYPICAL STRIP FOOTING INTERSECTION DETAIL

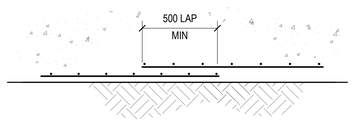
NTS



TYPICAL RETAINING WALL FOOTING STEP



TYPICAL STEP DETAIL FOR STRIP FOOTINGS

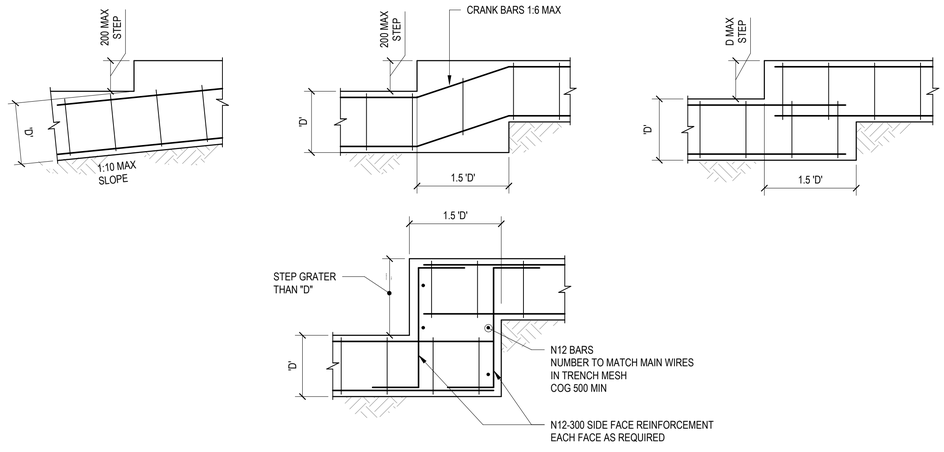


REINFORCEMENT SPLICE DETAIL

NTS

NOTE:

BOTTOM REINFORCEMENT SHOWN, TOP REINFORCEMENT SIMILAR



TYPICAL STEP IN FOOTING DETAIL

NTS

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P02	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 200 400 800 1200
SCALE (mm) 1:20

PROJECT NORTH

School Infrastructure NSW

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info@meinhardtgroup.com
http://www.meinhardtgroup.com

CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: CAMMERAY PUBLIC SCHOOL

PALMER STREET, CAMMERAY, NSW

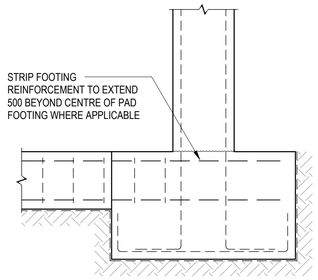
TITLE: TYPICAL FOOTING DETAILS SHEET 1

STATUS: SCHEMATIC DESIGN

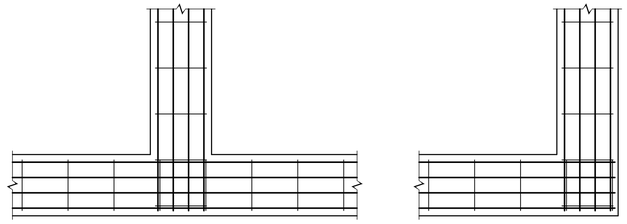
DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	Approver	23.09.24	1 : 20	P02

PROJECT No 132562

DRAWING No CPS-MHT-XX-XX-DR-S-0210



STRIP / PAD FOOTING JUNCTION



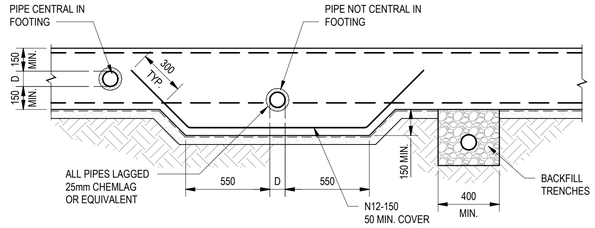
'T' INTERSECTION

'+' SIMILAR

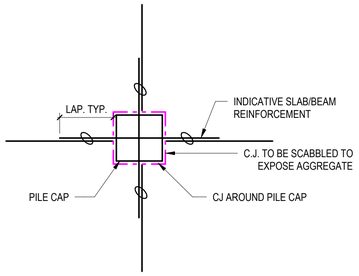
'L' CORNER

NOTE: EACH LAYER OF TRENCH MESH IS TO BE MADE 'CONTINUOUS' BY LAPPING WHERE REQUIRED AS FOLLOWS -
- AT 'T' INTERSECTIONS AND '+' INTERSECTIONS - FOR THE FULL WIDTH OF THE TRENCH MESH
- AT 'L' CORNERS - FOR FULL WIDTH OF TRENCH MESH
- AT SPLICES WHERE NEEDED - 500mm MINIMUM

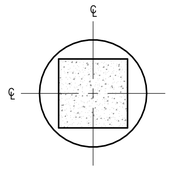
PLAN VIEWS - STRIP FOOTINGS



SERVICE PIPE IN FOOTING DETAIL

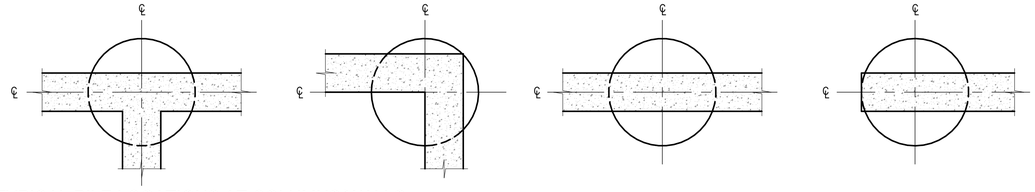


TYPICAL REO ARRANGEMENT FOR C.J. AROUND THE PILE CAP



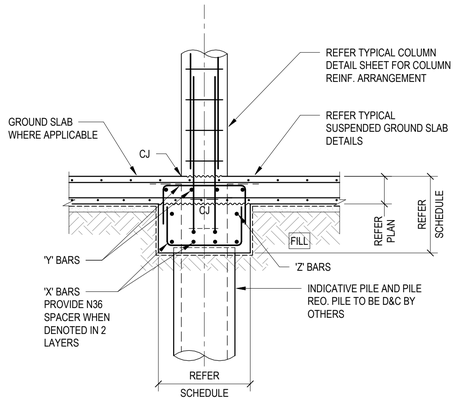
TYPICAL PILE LOCATIONS AT COLUMNS

ALL PILES TO BE CENTRED ON COLUMN/WALLS OVER UNLESS OTHERWISE DENOTED ON PLAN



TYPICAL PILE LOCATIONS AT COLUMNS/WALLS

ALL PILES TO BE CENTRED ON COLUMN/WALLS OVER UNLESS OTHERWISE DENOTED ON PLAN

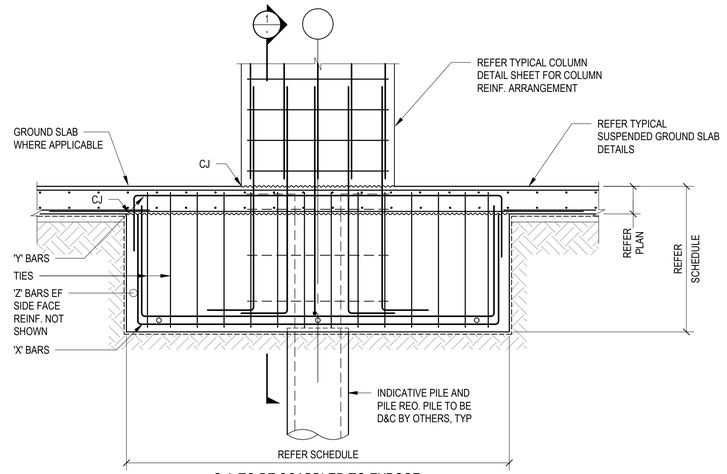


C.J. TO BE SCABBLED TO EXPOSE AGGREGATE

TYPICAL PILE CAP (SQUARE OR ROUND COLUMN) U.N.O.

PILE CAPS ARE LOCATED ON ALL PILES WHERE SHOWN ON THE GENERAL ARRANGEMENT PLAN APPLICABLE TO PILE CAPS AT SUSPENDED SLAB AREA

NOTE:
1. PILE CAP DETAIL SHOWN ABOVE IS PRELIMINARY AND SUBJECT TO CHANGE AS DESIGN DEVELOPS.
2. DETAIL REINFORCEMENT (X, Y, Z BARS) TO BE DEVELOPED IN DETAILED DESIGN PHASE.

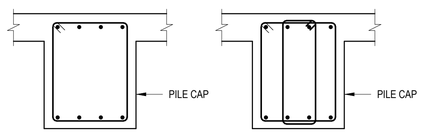


C.J. TO BE SCABBLED TO EXPOSE AGGREGATE

TYPICAL PILE CAP (BLADE COLUMN) U.N.O.

PILE CAPS ARE LOCATED ON ALL PILES WHERE SHOWN ON THE GENERAL ARRANGEMENT PLAN APPLICABLE TO PILE CAPS AT SUSPENDED SLAB AREA

NOTE:
1. PILE CAP DETAIL SHOWN ABOVE IS PRELIMINARY AND SUBJECT TO CHANGE AS DESIGN DEVELOPS.
2. DETAIL REINFORCEMENT (X, Y, Z BARS) TO BE DEVELOPED IN DETAILED DESIGN PHASE.



2 LEGS TIE

4 LEGS TIE

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P02	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 200 400 800 1200
SCALE (mm) 1:20

PROJECT NORTH

NSW GOVERNMENT School Infrastructure NSW

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: CAMMERAY PUBLIC SCHOOL
PALMER STREET, CAMMERAY, NSW

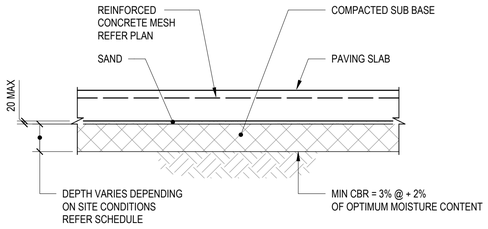
TITLE: TYPICAL FOOTING DETAILS SHEET 2

STATUS: SCHEMATIC DESIGN

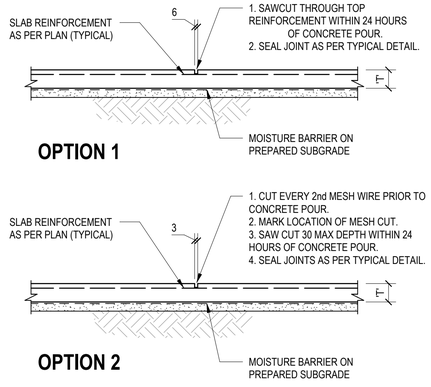
DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	Approver	23.09.24	1 : 20	P02

PROJECT No 132562

DRAWING No CPS-MHT-XX-XX-DR-S-0211

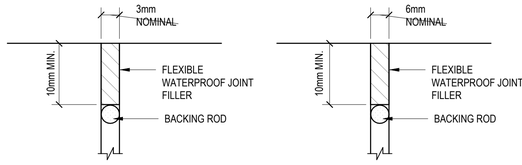


EXTERNAL PAVING SLAB DETAIL



TYPICAL SLAB ON GROUND SAWCUT JOINT DETAIL

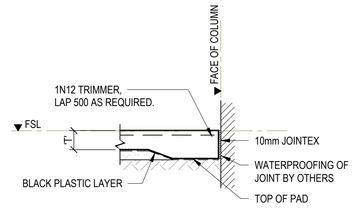
DENOTED AS 'SCJ' ON PLAN



TYPICAL JOINT FILLER (NON-FORKLIFT TRAFFIC AREA)

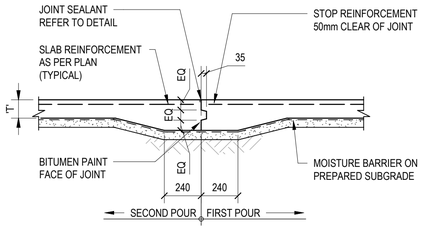
TYPICAL JOINT FILLER (FORKLIFT TRAFFIC AREA)

TYPICAL INTERNAL JOINT SEALANT DETAILS



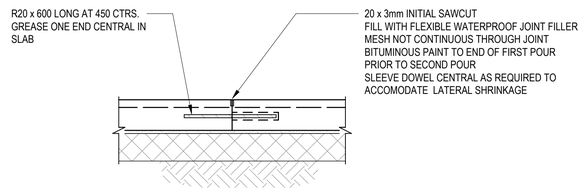
ISOLATION JOINT (IJc)

TYPICAL AT ALL COLUMNS
REFER DWG ST-DG-02-XX001 FOR IJc TYPE 1, TYPE 2, TYPE 3

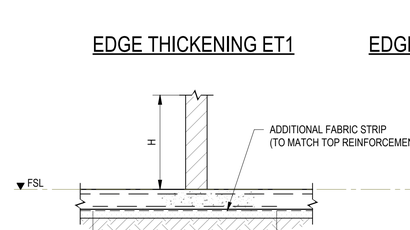


TYPICAL SLAB ON GROUND KEYED JOINT DETAIL

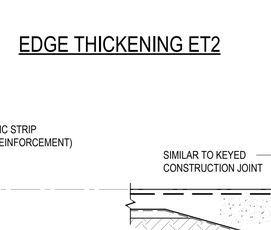
(DENOTED AS 'KCJ' ON PLAN)



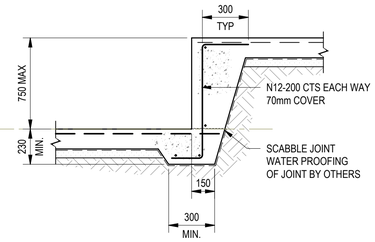
TYPICAL CONSTRUCTION JOINT DETAIL



EDGE THICKENING ET1



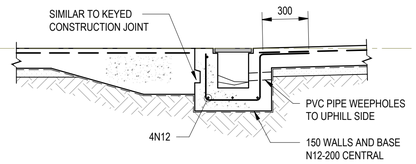
EDGE THICKENING ET2



FOLD IN SLAB

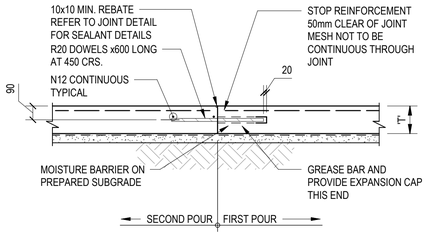
SLAB THICKENING DETAIL AT BLOCKWALL

REFER TO ARCHITECTURAL DRAWINGS FOR BLOCKWALL LAYOUT



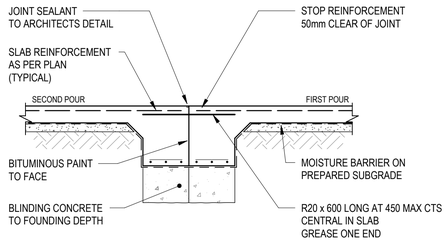
TYPICAL GRATED DRAIN DETAIL

WATER PROOFING OF JOINT BY OTHERS



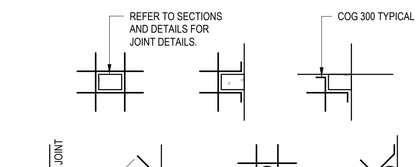
TYPICAL SLAB ON GROUND EXPANSION JOINT DETAIL

(DENOTED AS 'EJ' ON PLAN)



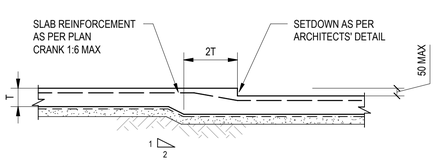
TYPICAL SLAB ON GROUND CONSTRUCTION JOINT DETAIL

(DENOTED AS 'C.J' ON PLAN)

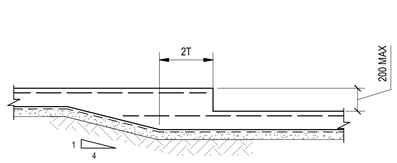


TYPICAL SLAB ON GROUND TRIMMER DETAILS

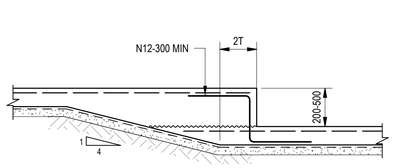
AT ALL COLUMNS, WALLS, PITS, FLOOR WASTES, ETC
THAT CAUSE A PENETRATION THROUGH THE SLAB.



(a) STEP LESS THAN 50mm



(b) STEP LESS THAN 200mm



(c) 200mm< STEP < 500mm

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P02	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 200 400 800 1200
SCALE (mm) 1:20

PROJECT NORTH

NSW GOVERNMENT School Infrastructure NSW

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: CAMMERAY PUBLIC SCHOOL
PALMER STREET, CAMMERAY, NSW

TITLE: TYPICAL SLAB ON GROUND DETAILS

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	Approver	23.09.24	As indicated	P02

PROJECT No 132562
DRAWING No CPS-MHT-XX-XX-DR-S-0260

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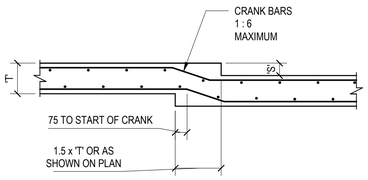
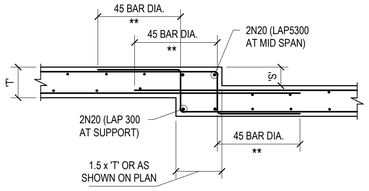
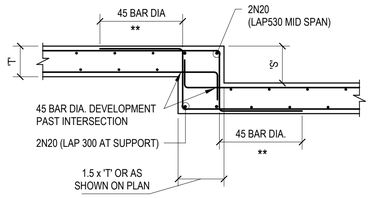
14/01/2025 2:26:32 PM



SETDOWN : 'S' IS LESS THAN 0.2 x 'T'



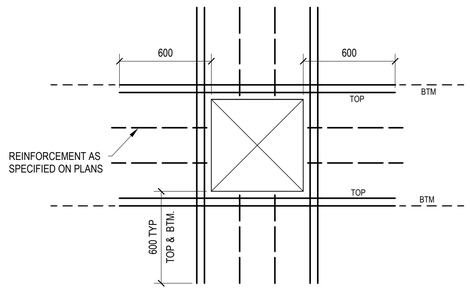
SETDOWN : 'S' IS LESS THAN 0.8 x 'T'



**SETDOWN : 'S' IS GREATER THAN 0.8 x 'T'
BUT LESS THAN 1.5 x 'T'**

TYPICAL FOLDS IN SLAB

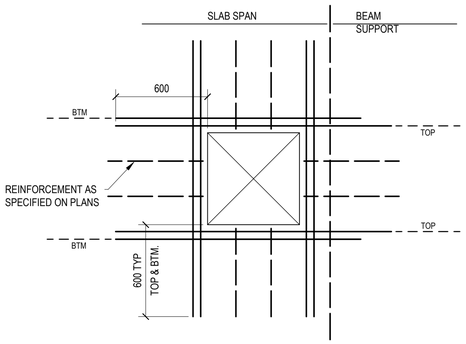
** ALTERNATIVELY REFER ANCHORAGE TABLE
MINIMUM INTERNAL DIAMETER OF BENDS TO BE 10 BAR DIA.
SETDOWNS GREATER THAN 1.5 'T' ARE TO ENGINEERS DETAILS
BARS TO BE NO GREATER THAN N28



PRIMARY TOP BARS : FOR EVERY TWO BARS STOPPED BY PENETRATION ADD ONE BAR EACH SIDE OF SAME GRADE AND SIZE.
SECONDARY TOP BARS : ADD 2N16 EACH SIDE x LENGTH AS SHOWN.

PRIMARY BOTTOM BARS : FOR EVERY TWO BARS STOPPED BY PENETRATION ADD ONE BAR EACH SIDE OF SAME GRADE, SIZE AND LENGTH.
SECONDARY BOTTOM BARS : ADD 2N16 EACH SIDE x LENGTH AS SHOWN.

NEAR MID SPAN



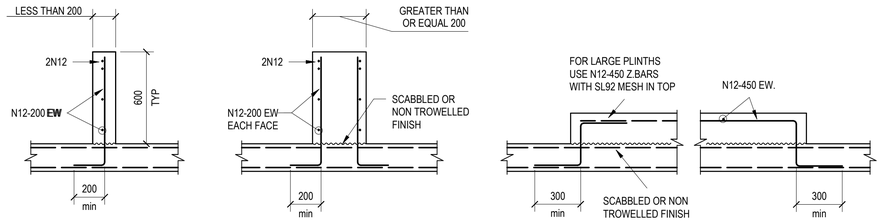
PRIMARY TOP BARS : FOR EVERY TWO BARS STOPPED BY PENETRATION ADD ONE BAR EACH SIDE OF SAME GRADE AND SIZE.
SECONDARY TOP BARS : ADD 2N16 EACH SIDE x LENGTH AS SHOWN.

PRIMARY BOTTOM BARS : FOR EVERY TWO BARS STOPPED BY PENETRATION ADD ONE BAR EACH SIDE OF SAME GRADE, SIZE AND LENGTH.
SECONDARY BOTTOM BARS : ADD 2N16 EACH SIDE x LENGTH AS SHOWN.

NEAR BEAM SUPPORT

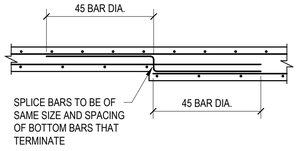
TYPICAL SLAB PENETRATION DETAILS

FOR PENETRATIONS LESS THAN 300 x 300 - BARS TO BE REARRANGED AROUND HOLE.
FOR PENETRATIONS GREATER THAN 300 x 300 BUT LESS THAN 1000 x 1000 - USE ABOVE DETAILS.
FOR PENETRATIONS GREATER THAN 1000 x 1000 - REFER TO ENGINEERS PLANS.
LOCATION OF ALL PENETRATIONS TO BE APPROVED BY THE STRUCTURAL ENGINEER.

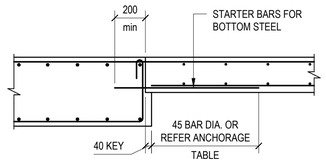


UPSTANDS AND PLINTH DETAILS

UNLESS NOTED OTHERWISE ON PLANS AND DETAILS

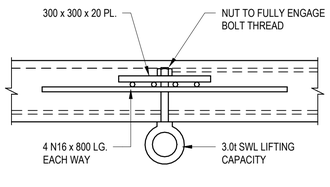


TYPICAL CHANGE IN SLAB THICKNESS



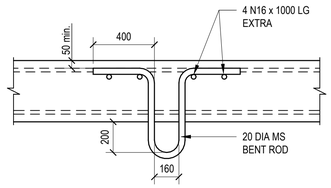
SLAB CONSTRUCTION JOINT

NOT RECOMMENDED FOR WET AREAS



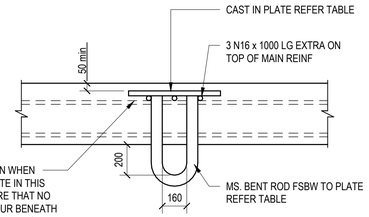
TYPICAL LIFTING EYE

SCALE 1:10



0.5t SWL LIFTING HOOK

SCALE 1:10



TYPICAL LIFTING HOOK

SWL	ROD	PLATE
2.5 t	24 DIA	250 sq x 16
3.5 t	32 DIA	300 sq x 16
5.5 t	36 DIA	300 sq x 16
7.0 t	40 DIA	300 sq x 20

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P02	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 200 400 800 1200
SCALE (mm) 1:20

PROJECT NORTH

NSW GOVERNMENT School Infrastructure NSW

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: CAMMERAY PUBLIC SCHOOL
PALMER STREET, CAMMERAY, NSW

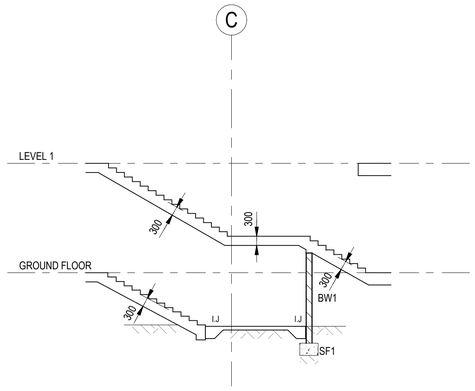
TITLE: TYPICAL SUSPENDED SLAB DETAILS

STATUS: SCHEMATIC DESIGN

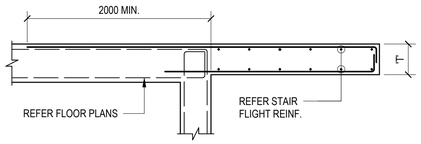
DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	Approver	23.09.24	1 : 20	P02

PROJECT No 13256

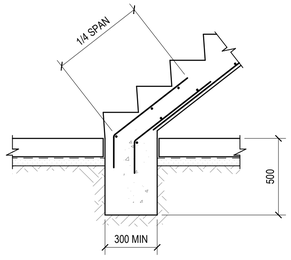
DRAWING No CPS-MHT-XX-XX-DR-S-0265



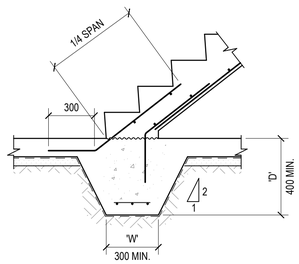
SECTION S.1
SCALE 1 : 100 S-2010



CANTILEVER LANDING



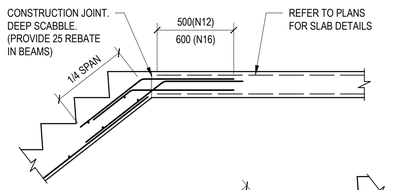
AT SLAB ON GROUND

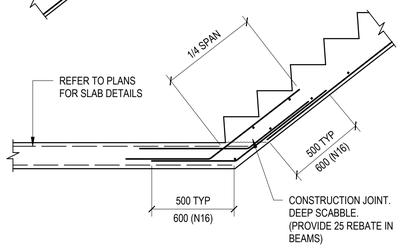


AT SLAB ON GROUND

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

BASE VARIATIONS





TYPICAL STAIR FLIGHT TO SLAB / BEAM

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P02	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 1000 2000 4000 6000
SCALE (mm) 1:100

PROJECT NORTH

NSW GOVERNMENT School Infrastructure NSW

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CLIENT
SCHOOL INFRASTRUCTURE NSW

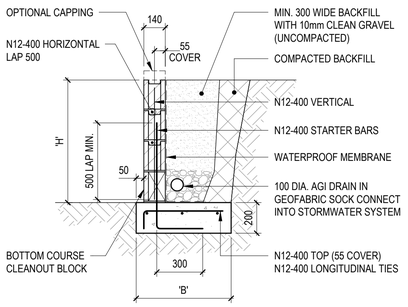
PROJECT
CAMMERAY PUBLIC SCHOOL
PALMER STREET, CAMMERAY, NSW

TITLE
TYPICAL STAIR DETAILS

STATUS
SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	Approver	23.09.24	As indicated	P02

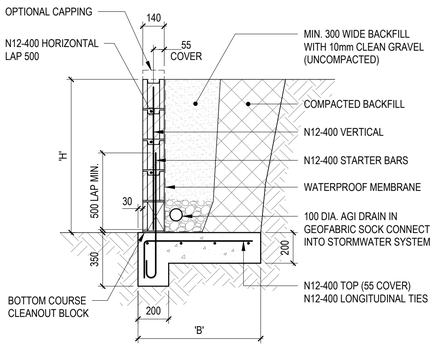
PROJECT No 132562
DRAWING No CPS-MHT-XX-XX-DR-S-0220



RETAINING WALL - 1.0m HIGH MAX. (ALTERATION)

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

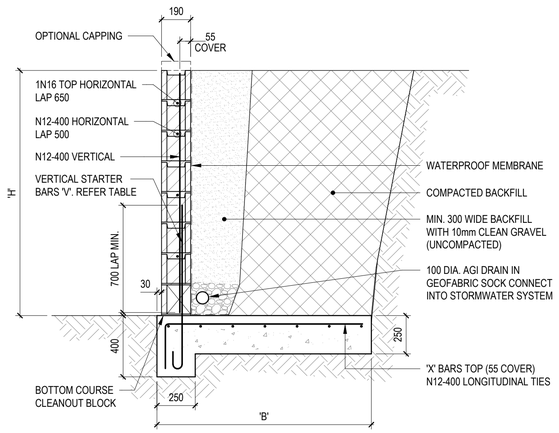
BASE DIMENSIONS	
'H' (HEIGHT mm)	'B' (BASE mm)
600	600



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

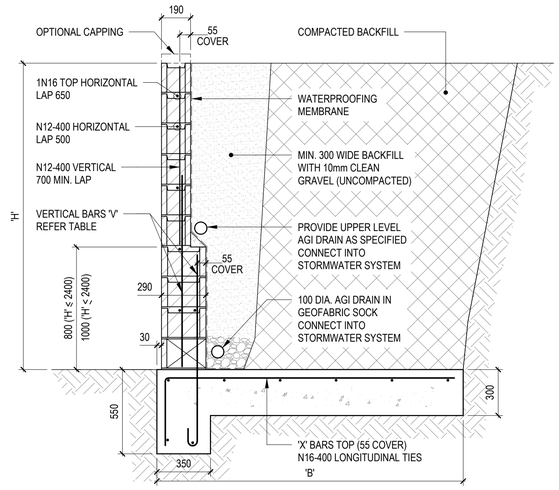
BASE DIMENSIONS		
'H' (HEIGHT mm)	NO SURCHARGE 'B' (BASE mm)	5 kPa SURCHARGE 'B' (BASE mm)
800	600	800
1000	700	1000
1200	800	1000



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



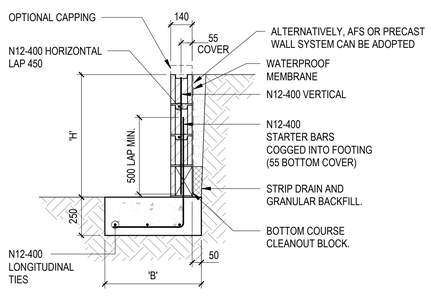
RETAINING WALL - 3.0m HIGH MAX. (ALTERATION)

- WALLS TO BE CONSTRUCTED USING 190 + 240 '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
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

BLOCK RETAINING WALL NOTES

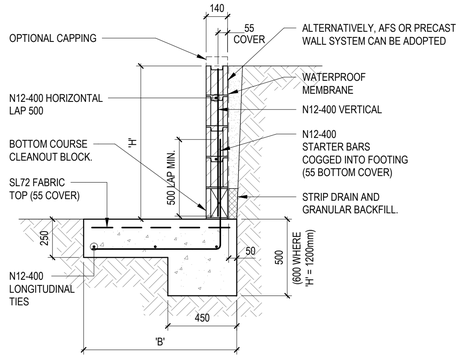
1. ALL BLOCK/CAVITY CORES TO BE CONCRETE FILLED. CONCRETE F'c = 20 MPa. 10mm MAX. AGGREGATE SIZE, 250mm SLUMP
2. FOOTING CONCRETE GRADE N25 U.N.O. COVER TO FOOTING REINFORCEMENT = 55mm U.N.O.
3. FOOTING DESIGNED FOR AN ALLOWABLE BEARING CAPACITY OF 100kPa. ALL FOOTINGS TO BE FOUNDED IN FIRM NATURAL GROUND AND CONFIRMED ON SITE BY THE GEOTECHNICAL ENGINEER
4. RETAINING WALLS TO HAVE NO SURCHARGE, UNLESS NOTED IN TABLE
5. PROVIDE VERTICAL CONTROL JOINTS AT 6000 CTS. MAX.
6. 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
7. BUILDER IS TO MAINTAIN STABILITY OF WALL DURING BACKFILLING PROCEDURE
8. INTERNAL WALL TO HABITABLE AREAS TO BE TANKED TO PREVENT MOISTURE PENETRATION. REFER TANKING SUPPLIERS FOR DETAILS
9. IF OTHER RETAINING WALLS EXIST OR ARE TO BE CONSTRUCTED ADJACENT TO OR EITHER ABOVE OR BELOW THE RETAINING WALLS DETAILED, THEN THE ENGINEER SHOULD BE CONTACTED IMMEDIATELY FOR REVISED DESIGN.
10. IF OTHER RETAINING WALLS EXIST OR ARE TO BE CONSTRUCTED ADJACENT TO OR EITHER ABOVE OR BELOW THE RETAINING WALLS DETAILED, THEN THE CONTRACTOR TO ENSURE STABILITY OF THE EXISTING RETAINING STRUCTURE.



RETAINING WALL - 1.0m HIGH MAX. (RW1)

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

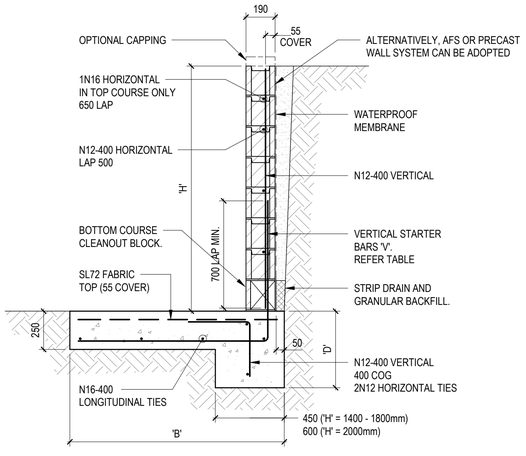
BASE DIMENSIONS	
'H' (HEIGHT mm)	'B' (BASE mm)
600	600



RETAINING WALL - 1.2m HIGH MAX. (RW2)

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

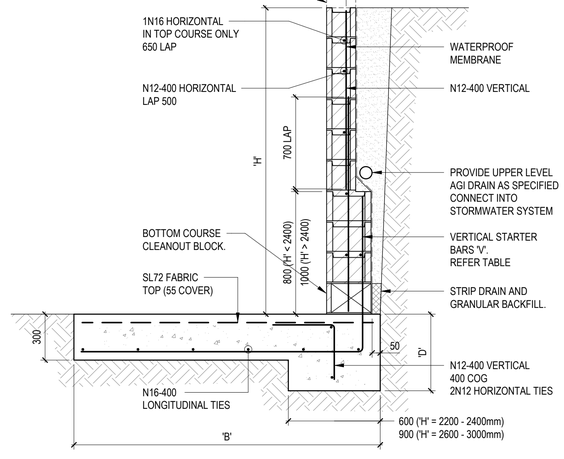
BASE DIMENSIONS		
'H' (HEIGHT mm)	NO SURCHARGE 'B' (BASE mm)	5 kPa SURCHARGE 'B' (BASE mm)
800	800	800
1000	800	1000
1200	1000	1200



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 SURCHARGE		5 kPa SURCHARGE		REINFORCEMENT 'V' BARS
	'B' (mm)	'D' (mm)	'B' (mm)	'D' (mm)	
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



RETAINING WALL - 3.0m HIGH MAX.

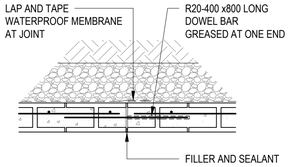
- WALLS TO BE CONSTRUCTED USING 190 + 240 'H' BLOCKS SCALE 1:20
- ALL BLOCKWORK TO BE CONCRETE CORE FILLED AS PER BLOCKWORK RETAINING WALL NOTES

BASE DIMENSIONS					
'H' (HEIGHT mm)	NO SURCHARGE		5 kPa SURCHARGE		REINFORCEMENT 'V' BARS
	'B' (mm)	'D' (mm)	'B' (mm)	'D' (mm)	
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

BLOCK RETAINING WALL NOTES

1. 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.
2. STIFF CLAY SITES WITH SHALE OR STONE INCLUSIONS ARE NOT COVERED IN THIS DESIGN
3. ALL BLOCK/CAVITY CORES TO BE CONCRETE FILLED. CONCRETE F'c = 20 MPa. 10mm MAX. AGGREGATE SIZE, 250mm SLUMP
4. FOOTING CONCRETE GRADE N25 U.N.O. COVER TO FOOTING REINFORCEMENT = 55mm U.N.O.
5. 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.
6. RETAINING WALLS TO HAVE NO SURCHARGE, UNLESS NOTED IN TABLE
7. PROVIDE VERTICAL CONTROL JOINTS AT 6000 CTS. MAX.
8. 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
9. BUILDER IS TO MAINTAIN STABILITY OF WALL DURING BACKFILLING PROCEDURE
10. INTERNAL WALL TO HABITABLE AREAS TO BE TANKED TO PREVENT MOISTURE PENETRATION. REFER TANKING SUPPLIERS FOR DETAILS.
11. IF OTHER RETAINING WALLS EXIST OR ARE TO BE CONSTRUCTED ADJACENT TO OR EITHER ABOVE OR BELOW THE RETAINING WALLS DETAILED, THEN THE ENGINEER SHOULD BE CONTACTED IMMEDIATELY FOR REVISED DESIGN.
12. IF OTHER RETAINING WALLS EXIST OR ARE TO BE 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

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.

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01.01	CONCEPT DESIGN DEVELOPMENT	RM	JB	25.10.24
P02	50% SCHEMATIC DESIGN	RM	JB	06.12.24
P03	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P04	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 1000 2000 4000 6000
SCALE (mm) 1:100

PROJECT NORTH

NSW GOVERNMENT
School Infrastructure NSW

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info@meinhardtgroup.com
http://www.meinhardtgroup.com

CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: CAMMERAY PUBLIC SCHOOL
PALMER STREET, CAMMERAY, NSW

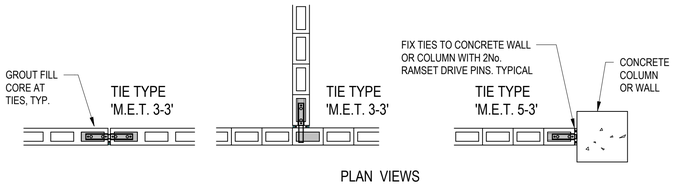
TITLE: STANDARD DETAILS
MASONRY RETAINING WALLS

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	Approver	23.09.24	As indicated	P04

PROJECT No 132562

DRAWING No CPS-MHT-XX-XX-DR-S-0200



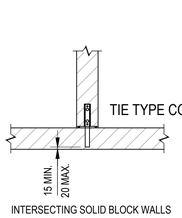
PLAN VIEWS

TYPICAL VERTICAL CONTROL JOINTS IN MASONRY WALLS (MCJ) (90, 140 & 190 BLOCKS)

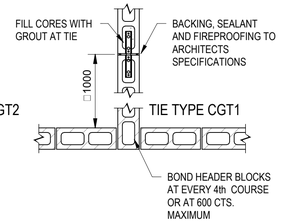
NOTES

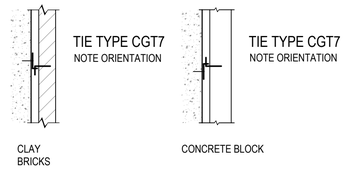
- REFER ARCHITECTS DRAWINGS FOR LOCATIONS OF VERTICAL CONTROL JOINTS
- FOR FIRE RATED WALLS PROVIDE FIRE BLANKET TO ARCHITECTS DETAILS TO ALL WALL JOINTS
- BACKING, SEALANT AND FIREPROOFING REFER TO ARCHITECTURAL SPECIFICATIONS
- CONTROL JOINTS TO BE A MINIMUM OF:
  - 10mm GAP FOR CONCRETE BLOCKS UNO
  - 20mm GAP FOR CLAY BRICKS UNO
- SOLID BLOCKS OR CLAY BRICKS SIMILAR

NOTE:
ALL WALL TIES TO BE AT 600mm CENTRES FOR INTERNAL WALLS & 400mm FOR EXTERNAL WALLS UNO.



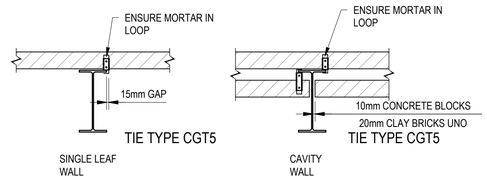
INTERSECTING SOLID BLOCK WALLS





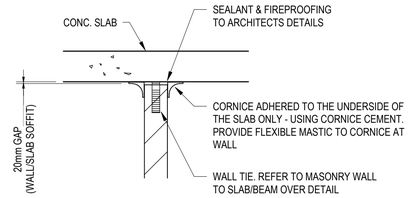
MASONRY WALL TO CONCRETE FACE

IF JOINT IS LOCATED ADJACENT TIE USE CGT8 HEAVY DUTY TIES

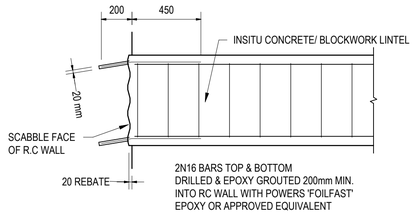


MASONRY WALL TO STEEL POST

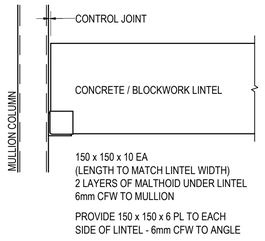
FOR HOLLOW BLOCKS INFILL CORES AT ANCHOR LOCATIONS.
FOR RHS AND SHS USE SAME DETAIL AS FOR CONCRETE FACES BUT USE 2 x No.14 SELF TAPPING SCREWS x 30 min LENGTH FOR FIXING TIE



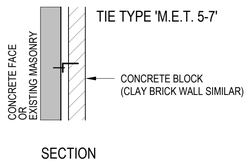
NON LOADBEARING MASONRY WALL / CORNICE DETAIL



LINTEL TO R.C WALL DETAIL



LINTEL TO STEEL MULLION DETAIL



SECTION

MASONRY WALL TO CONCRETE FACE WITH CAVITY

BLOCKWORK / BRICKWORK NOTES

1. REFER TO DWG SK002 FOR GENERAL MASONRY NOTES.
2. ALL TIES SHALL BE M.E.T OR APPROVED EQUIVALENT. VERTICAL CONTROL JOINTS TO BE AT 8000 MAXIMUM CENTRES U.N.O.
3. VERTICAL JOINT LOCATIONS SHOWN ON ARCHITECTURAL DRAWINGS.
4. a. AT MAJOR CHANGES IN WALL HEIGHT
   b. AT CHANGES IN WALL THICKNESS OTHER THAN FOR PIERS AND BUTTRESSES
   c. AT CONTROL JOINTS IN THE FOOTINGS, ROOF, AND FLOORS
   d. AT CHASES AND RECESSES FOR PIPINGS, COLUMNS, FIXTURES, ETC
   e. AT ONE OR BOTH SIDES OF WALL OPENINGS
   f. NEAR WALL INTERSECTIONS
   g. NEAR RETURN ANGLES IN L, T, AND U-SHAPED STRUCTURES

BUILDER IS TO SUPPLY DRAWINGS OF PROPOSED CONTROL JOINT FOR APPROVAL PRIOR TO START OF LAYING BLOCKS.
PROVIDE BEDDING REINFORCEMENT AS SPECIFIED BELOW:

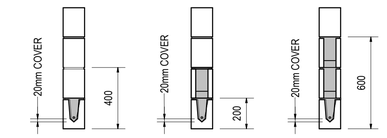
LOCATION: ALL BLOCKWORK

TYPE: GALVANIZED WOVEN WIRE MESH OR WELDED WIRE TO AS2975

WIDTH: EQUAL TO THE WIDTH OF THE SOLID WALL, LESS THAN 15mm COVER REQUIRED BY AS3700, CLAUSE 6.8.3 FROM EACH SURFACE OF THE MORTAR JOINT.

PLACEMENT: IN THE FIRST, SECOND & THIRD JOINT ABOVE FLOOR LEVEL.
AT VERTICAL SPACING NOT EXCEEDING 600mm. IN THE FIRST, SECOND & THIRD BED JOINT FROM THE TOP OF THE WALL. IN THE FIRST TWO BED JOINTS ABOVE & BELOW OPENINGS, OR ABOVE & BELOW HEAD & SILL FLASHINGS TO OPENINGS.

INSTALLATION: LAP REINFORCEMENT 450mm AT SPLICES, FOLD & BEND AT CORNERS SO THAT THE LONGITUDINAL WIRES ARE CONTINUOUS. STOP 100mm SHORT OF CONTROL JOINTS.



TYPE 1 TYPE 2 TYPE 3

BLOCKWORK LINTEL TYPES

NOTE:
- REINFORCING BAR IN ALL TYPES EXTENDS 150mm EACH SIDE OF OPENING

BLOCKWORK LINTEL SCHEDULE

BLOCK	CLEAR SPAN	REIN. BAR	LINTEL TYPE
140mm HOLLOW	=< 1000	1N16	1
140mm HOLLOW	=< 2400	1N16	2
140mm HOLLOW	=< 3500	1N16	3
190mm HOLLOW	=< 1000	1N16	1
190mm HOLLOW	=< 2400	2N16	2
190mm HOLLOW	=< 3500	2N16	3

NOTES
- APPLICABLE FOR NON-LOAD BEARING WALLS
- FOR WALLS OF TWO SKINS OF 90mm BLOCKS USE STEEL PLATES 'OR' ANGLES FOR EACH LEAF
- REFER 'STEEL LINTEL SCHEDULE' FOR SIZES
- FOR 190mm BLOCKS USE SAME DETAILS AS FOR 140mm BLOCKS
- PROVIDE 200mm MINIMUM BEARING TO LINTELS EACH END
- KEEP LINTELS 6mm MINIMUM CLEAR OF DOOR HEADS
- LINTELS TYPE 1,2 AND 3 CAN ALSO BE USED FOR HOLLOW BLOCKS

STEEL LINTEL SCHEDULE

MAXIMUM SPAN (mm)	90mm HOLLOW BLOCK	BRICK	BEARING (mm)
900	80 x 10 FL.	100 x 10 FL.	90
1500	75 x 5 EA.	90 x 6 EA.	120
2000	90 x 6 EA.	90 x 8 EA.	140
2500	100 x 8 EA.	150 x 90 x 8 UA.	150
3000	150 x 90 x 8 UA.	150 x 90 x 10 UA	180

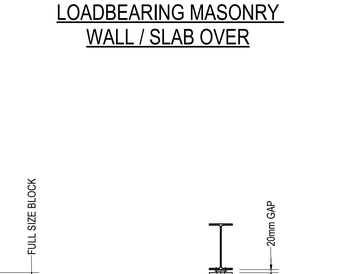
NOTES
- LONG LEG OF ANGLE TO BE VERTICAL.
- LINTEL SIZES ABOVE ASSUME MASONRY ARCHING IS POSSIBLE AND NO OTHER VERTICAL LOADS ON WALL EXCEPT FOR SELF WEIGHT.
- EXTERNAL LINTELS TO BE GALVANIZED TO AS 4680.
- DO NOT PROP LINTELS DURING CONSTRUCTION

WALL PARALLEL TO PURLINS

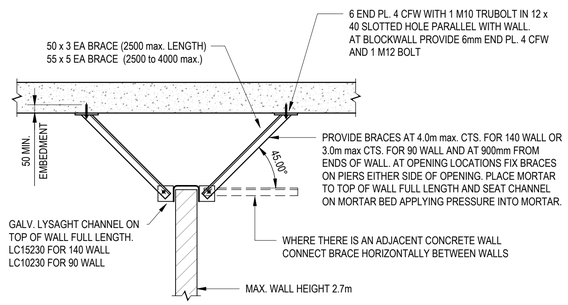
TYPICAL MASONRY WALL TO STEEL ROOF

TYPICAL BLOCK WALL ADJ. CARPARK

NOTE
DETAIL IS FOR THE IMPROVEMENT TO THE ROBUSTNESS OF THE WALL. IT IS NOT INTENDED TO BE VEHICULAR IMPACT RESISTANT.

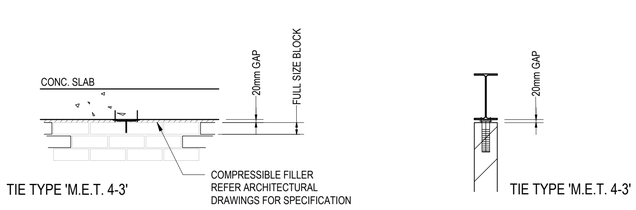


LOADBEARING MASONRY WALL / SLAB OVER



WALL TERMINATING AT CEILING

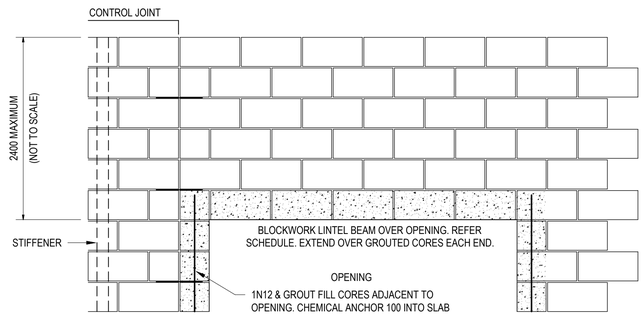
MASONRY WALL TOP RESTRAINTS



WALL ELEVATION BEAM SECTION

NON LOAD BEARING MASONRY WALL TO SLAB / BEAM OVER

NOTES:
FOR CLAY BRICK PROVIDE HEAD RESTRAINT TIES AT EVERY 3rd PERPEND AND FOR INTERNAL CONCRETE BLOCK EVERY 2nd PERPEND
FOR EXTERNAL WALLS & INTERNAL WALLS HIGHER THAN 4000mm: PROVIDE TIES AT 400 MAXIMUM CTS



ELEVATION

TYPICAL DOOR / WINDOW HEADER

NOTE

1. WHERE NO VERTICAL CONTROL JOINT HAS BEEN SPECIFIED AT DOOR OR WINDOW HEAD, THEN USE TWO LAYERS OF BED JOINT REINFORCEMENT. ONE LAYER IN EACH JOINT ABOVE THE LINTEL. EXTEND 1000 PAST EACH DOOR/WINDOW JAMB.
2. WHERE SOFFITS OF BOND BEAMS DO NOT ALIGN WITH THE TOP OF THE OPENING, A COURSE OF CUT 'U' BLOCKS ARE TO BE USED WITH 1N12 BOTTOM PLACED IMMEDIATELY ABOVE OPEINING AND THEN THE APPROPRIATE BOND BEAM LINTEL (AS SPECIFIED) IS TO BE CONSTRUCTIED IMMEDIATELY ABOVE THE CUT COURSE OF BLOCKS. MINIMUM OF 50mm COVER IS TO BE ACHIEVED TO REINFORCEMENT.

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P02	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 200 400 800 1200
SCALE (mm) 1:20

PROJECT NORTH

NSW GOVERNMENT School Infrastructure NSW

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: CAMMERAY PUBLIC SCHOOL
PALMER STREET, CAMMERAY, NSW

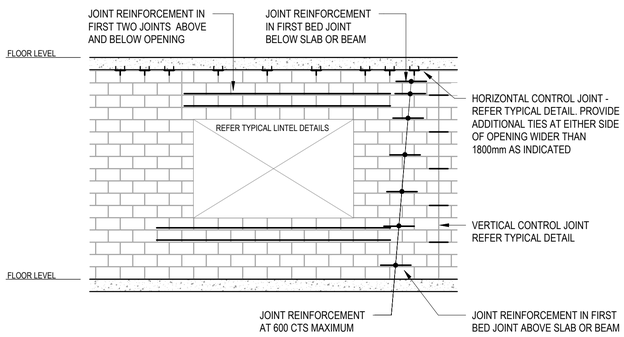
TITLE: TYPICAL MASONRY DETAILS

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	Approver	23.09.24	1 : 20	P02

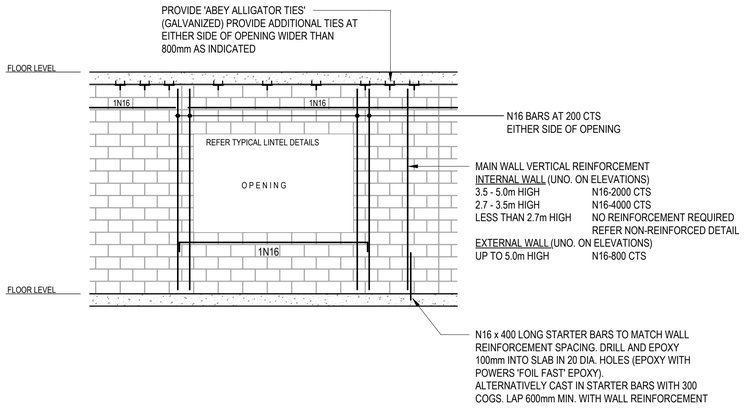
PROJECT No 132562

DRAWING No CPS-MHT-XX-XX-DR-S-0205



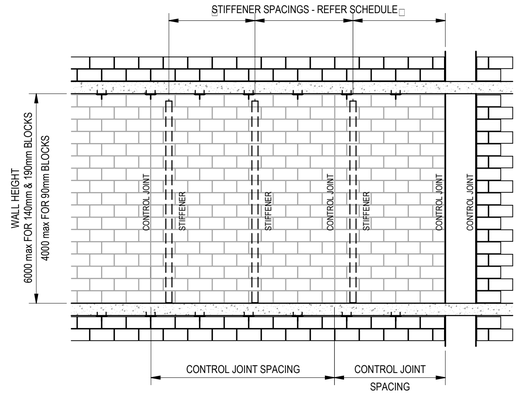
TYPICAL 'NON-REINFORCED' MASONRY WALL ELEVATION

JOINT REINFORCEMENT SHOWN ON THIS ELEVATION IS TYPICAL FOR ALL MASONRY WALLS U.N.O



TYPICAL REINFORCED BLOCK WALL ELEVATION

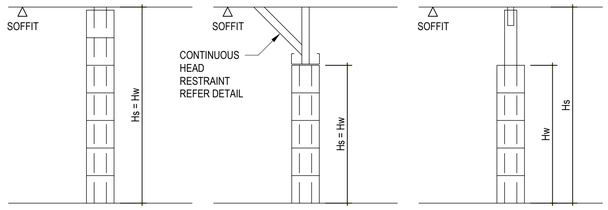
REFER TYPICAL NON-REINFORCED ELEVATION ABOVE FOR ALL OTHER REINFORCEMENT DETAILS.
FILL ALL REINFORCED CORES WITH 20MPa GROUT TYPICALLY.
FOR FIRE RATED WALLS REFER SPECIFICATIONS AND ARCHITECTURAL DRAWINGS REGARDING EXTENT OF CORE WALL FILLING.
FOR JOINT REINFORCEMENT REFER TYPICAL NON-REINFORCED BLOCK WALL ELEVATION.
FOR TOP COURSE AT REINFORCEMENT LOCATION, CLEAN OUT BLOCKS MAY BE USED IN ORDER TO ADJUST THE BAR AND POUR THE GROUT. FILL THE TOP CORES BY RAM PACKING A DRY MIX OF GROUT



TYPICAL 'NON-REINFORCED' MASONRY WALL ELEVATION

INTERNAL WALLS ONLY

CONTROL JOINTS TO BE PLACED ADJACENT TO WALL STIFFENERS.
SPACING OF WALL STIFFENERS IS DICTATED BY STRENGTH REQUIREMENTS OF PROPOSED STIFFENERS. THIS SPACING SHALL BE REDUCED TO MATCH SPACING OF CONTROL JOINTS AS DETERMINED BY ARCHITECT



STIFFENER SELECTION KEY

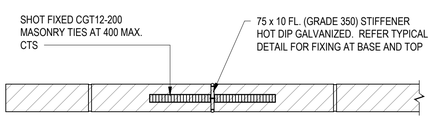
Hw - DENOTES HEIGHT OF WALL
Hs - DENOTES HEIGHT OF STIFFENER

BLOCKWALL STIFFENER SCHEDULE

HEIGHT OF STIFFENER 'Hs'	BLOCK THICKNESS (mm)	HEIGHT OF WALL 'Hw' = HEIGHT 'Hs'			HEIGHT OF WALL 'Hw'< 'Hs'		
		STIFFENER	MAX SPACING 'S'	TYPE	STIFFENER	MAX SPACING 'S'	TYPE
INTERNAL WALLS (W_d =0.4KPa)							
0-1800	90	NOT REQUIRED	-	-	-	-	-
	140	NOT REQUIRED	-	-	75x75x4 SHS (WS2)	5000	B
	190	NOT REQUIRED	-	-	75x75x4 SHS (WS2)	5000	B
1800-2800	90	75x10 PL	2800	A	-	-	-
	140	NOT REQUIRED	-	-	75x75x4 SHS (WS2)	5000	B
	190	NOT REQUIRED	-	-	75x75x4 SHS (WS2)	5000	B
2800-3800	140	65x65x4SHS (WS1)	5000	B	75x75x4 SHS (WS2)	5000	B
	190	NOT REQUIRED	-	B	75x75x4 SHS (WS2)	5000	B
3800-4500	140	65x65x4SHS (WS1)	5000	B	75x75x4 SHS (WS2)	3400	B
	190	75x75x4 SHS (WS2)	5000	B	89x89x5 SHS (WS3)	5000	B
4500-5000	140	65x65x4SHS (WS1)	4000	B	75x75x4 SHS (WS2)	2400	B
	190	75x75x4 SHS (WS2)	5000	B	89x89x5 SHS (WS3)	4400	B
5000-5500	140	65x65x4SHS (WS1)	2800	B	75x75x4 SHS (WS2)	2000	B
	190	75x75x4 SHS (WS2)	4600	B	89x89x5 SHS (WS3)	3200	B
EXTERNAL WALLS - INCLUDES WALLS ADJACENT TO LARGE OPENINGS (W^d=0.85KPa)							
0-1800	140	NOT REQUIRED	-	-			
	190	NOT REQUIRED	-	-			
1800-2500	140	65x65x4 SHS (WS1)	3000	B			
	190	NOT REQUIRED	-	-			
2500-4000	140	65x65x4 SHS (WS1)	2200	B			
	190	89x89x5 SHS (WS3)	5000	B			
4000-4500	190	89x89x5 SHS (WS3)	4200	B			
4500-5000	190	89x89x5 SHS (WS3)	3600	B			
5000-5500	190	89x89x5 SHS (WS3)	3000	B			
5500-6000	190	89x89x5 SHS (WS3)	2600	B			

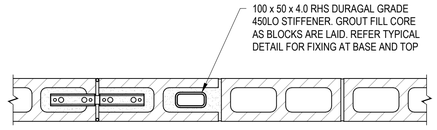
NOTE:
FOR WALLS LESS THAN HEIGHT 'Hs' IT IS ASSUMED THE WALL IS OF A HEIGHT OF 60% x 'Hs' OR 3.8m, WHICHEVER IS LESS.

NOTE:
1. ALL WALL STIFFENERS ARE TO BE DURAGAL SECTIONS GRADE C450LO.
2. WHERE CONTINUOUS HEAD RESTRAINT DETAIL IS PROVIDED, STIFFENER SIZE & SPACING FOR 'Hw'='Hs' CAN BE SELECTED FOR WALLS.
3. ALTERNATIVE WALL STIFFENER SIZE 100x50x4 RHS WHERE NECESSARY DUE TO BLOCK DIMENSIONAL RESTRAINTS.



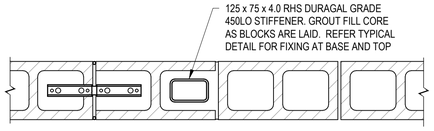
STIFFENER TYPE A - 90mm BLOCKS / BRICKS

SCALE 1:10



STIFFENER TYPE B - 140mm BLOCKS

SCALE 1:10



STIFFENER TYPE C - 190mm BLOCKS

SCALE 1:10

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P02	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 200 400 800 1200
SCALE (mm) 1:20

PROJECT NORTH

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: CAMMERAY PUBLIC SCHOOL
PALMER STREET, CAMMERAY, NSW

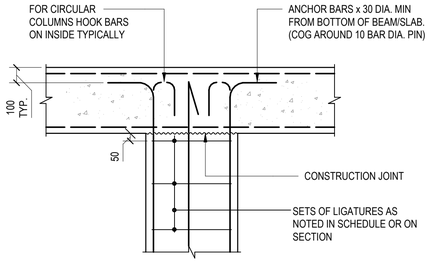
TITLE: TYPICAL MASONRY STIFFENERS DETAILS

STATUS: SCHEMATIC DESIGN

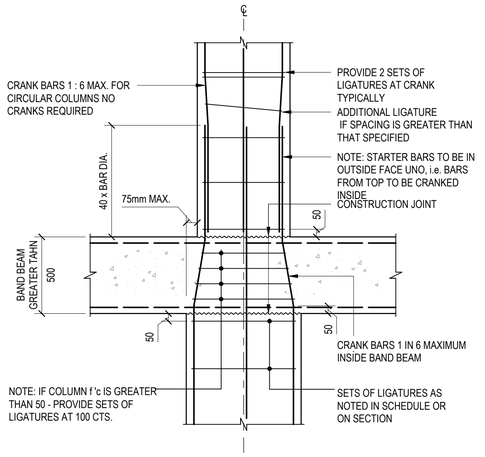
DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	Approver	23.09.24	1 : 50	P02

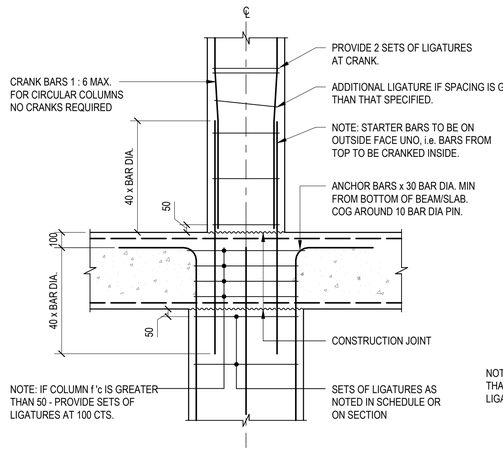
PROJECT No 132562

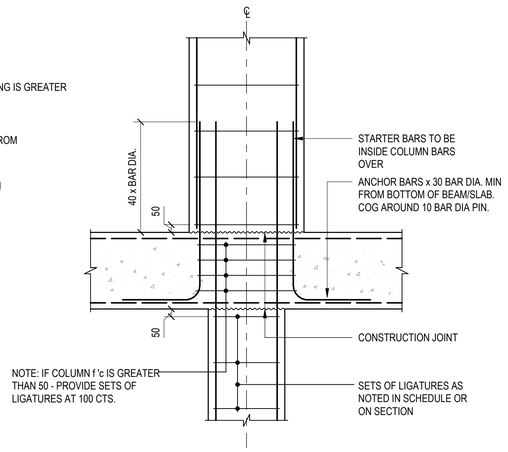
DRAWING No CPS-MHT-XX-XX-DR-S-0206



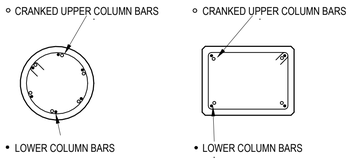
SECTION AT TERMINATION





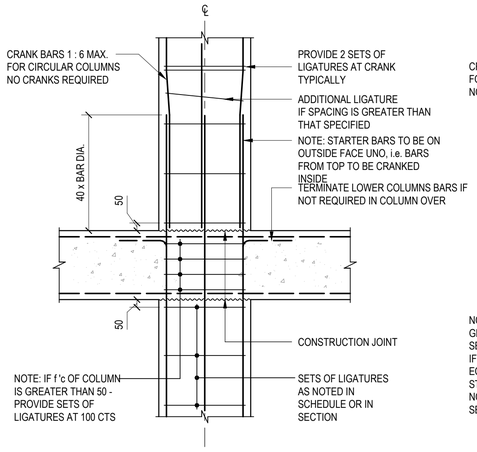


SECTIONS THROUGH SLAB JUNCTIONS SHOWING VARYING CHANGE IN COLUMN WIDTH

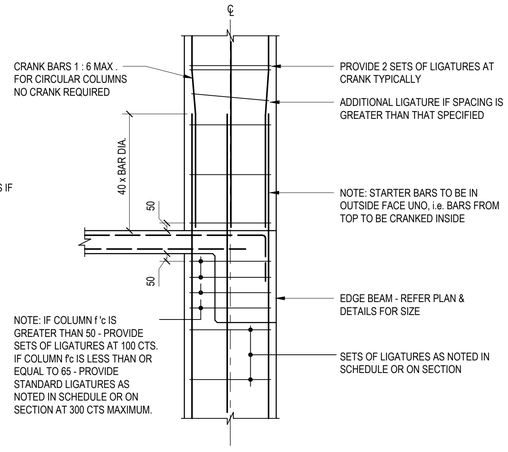


REFER COLUMN SCHEDULE FOR SIZES

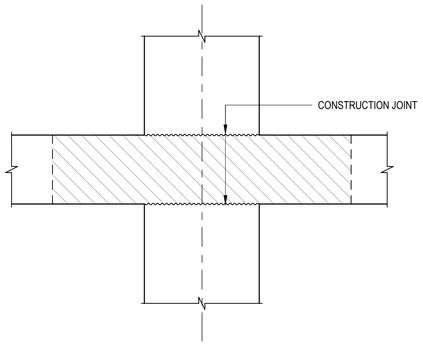
COLUMN SECTIONS AT SPLICE



SECTION AT BAND BEAM

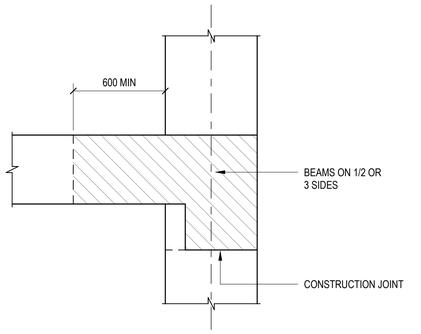


SECTION AT EDGE BEAM



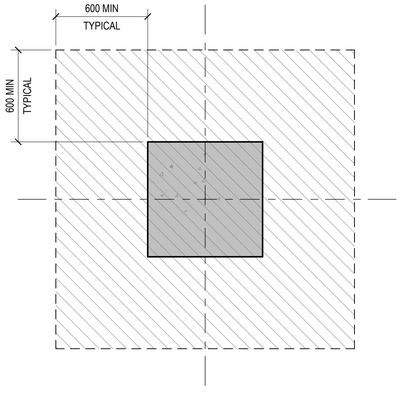
NOTE - HATCHED AREA:
SAME CONCRETE STRENGTH AS COLUMN OVER.
FULLY INTERGRATED INTO FLOOR CONCRETE.

SECTION



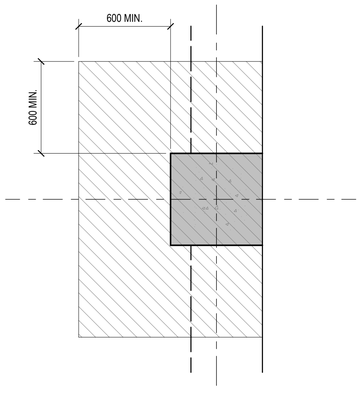
NOTE - HATCHED AREA:
SAME CONCRETE STRENGTH AS COLUMN OVER.
FULLY INTERGRATED INTO FLOOR CONCRETE.

SECTION



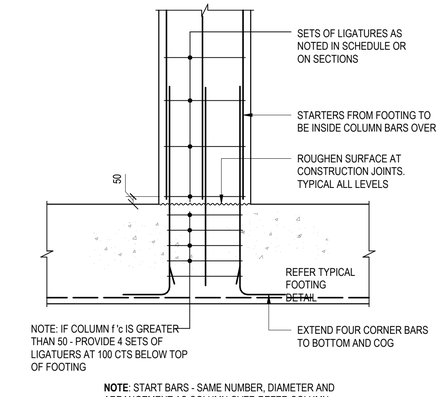
PLAN

TYPICAL INTERNAL COLUMN



PLAN

TYPICAL PERIMETER COLUMN



NOTE: START BARS - SAME NUMBER, DIAMETER AND ARRANGEMENT AS COLUMN OVER REFER COLUMN SCHEDULE FOR COLUMN SIZES AND REINFORCEMENT

SECTION AT FOOTING

FLOOR CONCRETE AT SPECIFIED COLUMN LOCATIONS

WHERE DENOTED ON PLANS

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P02	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 200 400 800 1200
SCALE (mm) 1:20

PROJECT NORTH

NSW GOVERNMENT School Infrastructure NSW

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: CAMMERAY PUBLIC SCHOOL
PALMER STREET, CAMMERAY, NSW

TITLE: TYPICAL COLUMN DETAILS

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	Approver	23.09.24	1 : 20	P02

PROJECT No 132562

DRAWING No CPS-MHT-XX-XX-DR-S-0230

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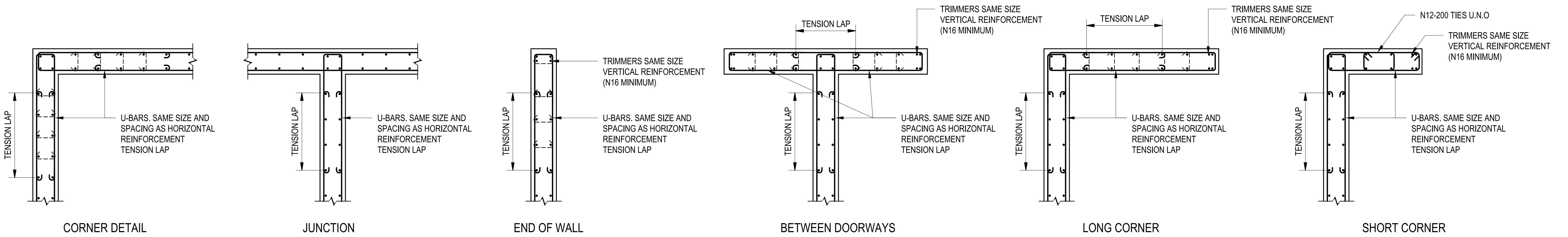
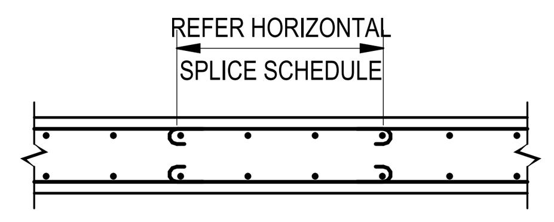




TYPICAL HORIZONTAL LAP DETAIL

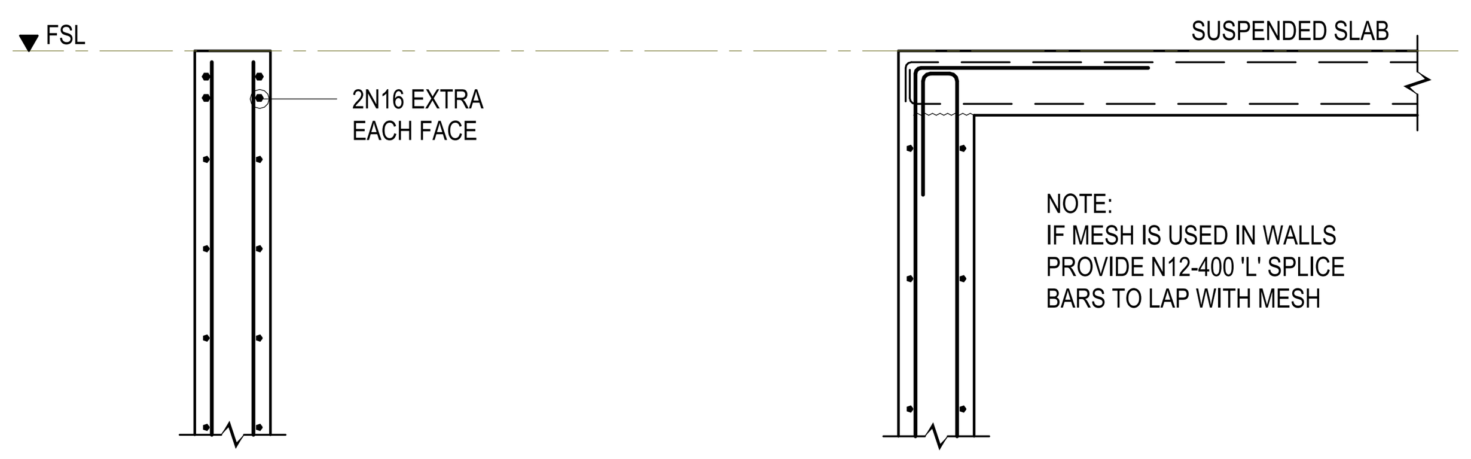
ALL LAPS IN HORIZONTAL BARS ARE TO HAVE FULL TENSION LAP WITH 135 HOOKED ENDS IN ACCORDANCE WITH AS3600:2018 14.6.7 (A)

TYPICAL WALL PLAN DETAILS

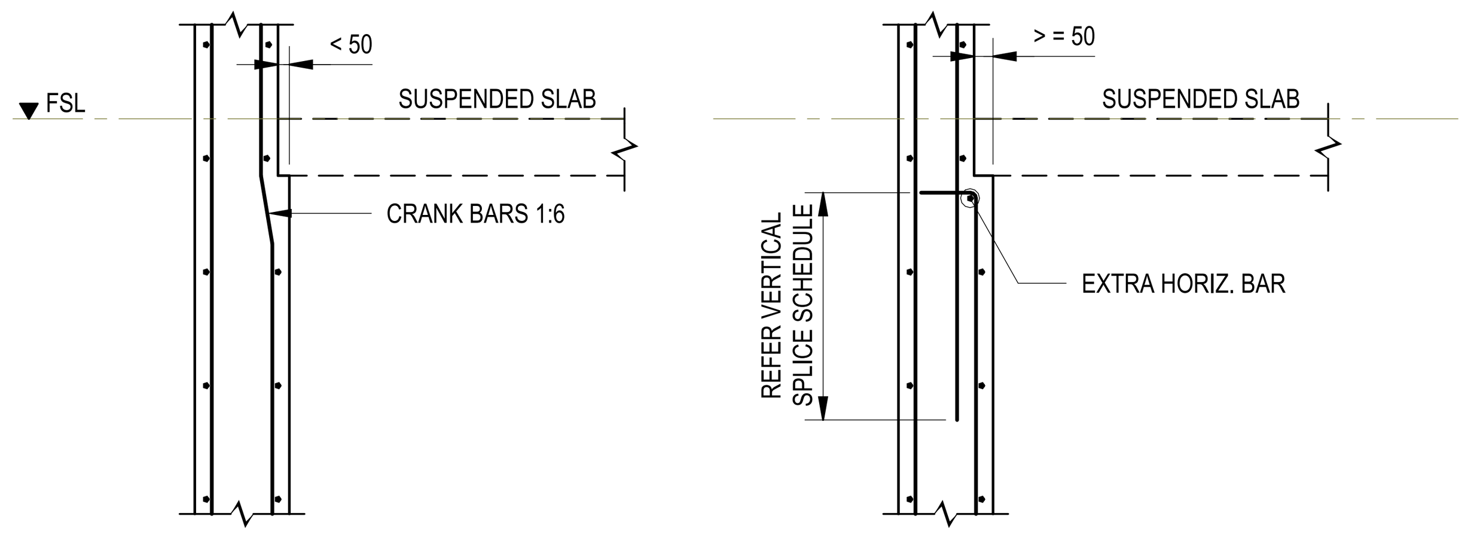
NOTE:
CONFINEMENT TIES WITH 135° HOOKS EACH END SHOWN INDICATIVELY AT ENDS OF WALLS, EITHER SIDES OF OPENINGS & WALL CORNERS. EXTENT TO BE CONFIRMED DURING DETAILED DESIGN. CONTRACTOR TO MAKE ALLOWANCE ACCORDINGLY.

REFER TO WALL DETAIL DRAWINGS FOR ADDITIONAL DETAILS ON CONFINEMENT TIES.

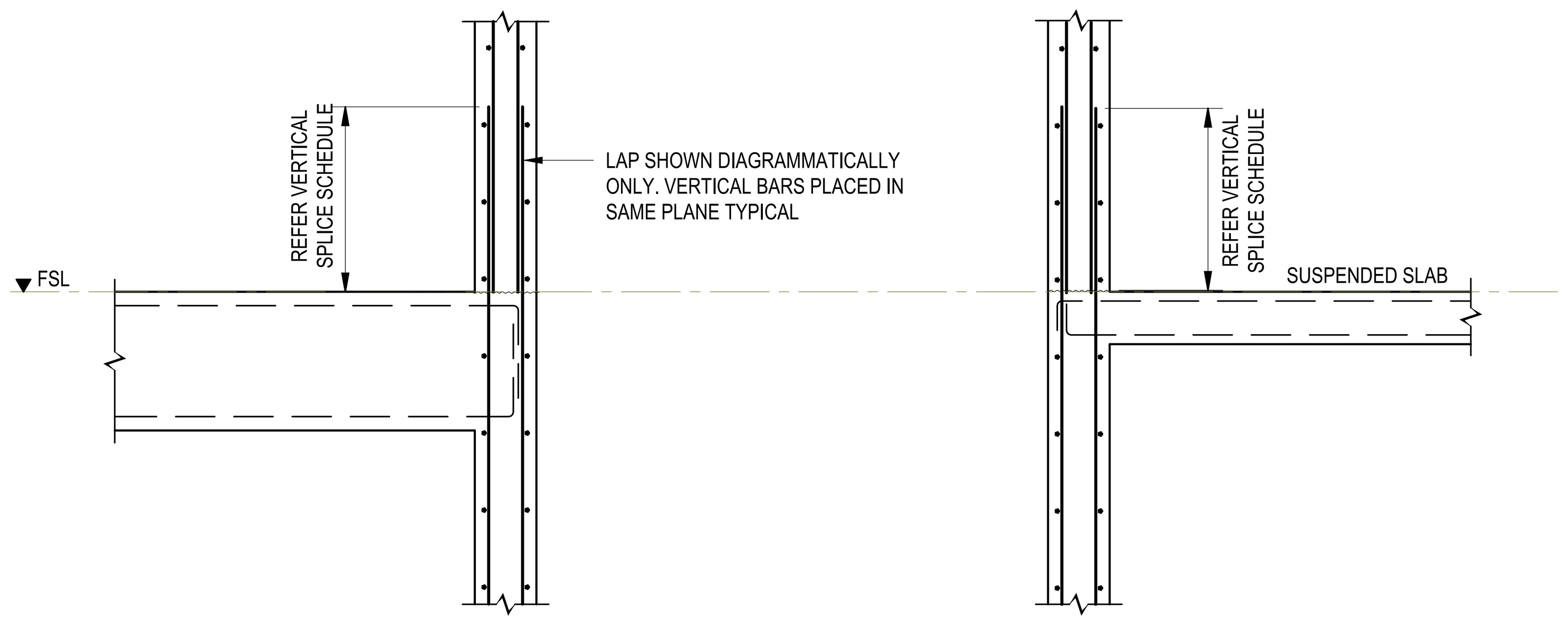
ALTERNATIVE TIE ARRANGEMENT



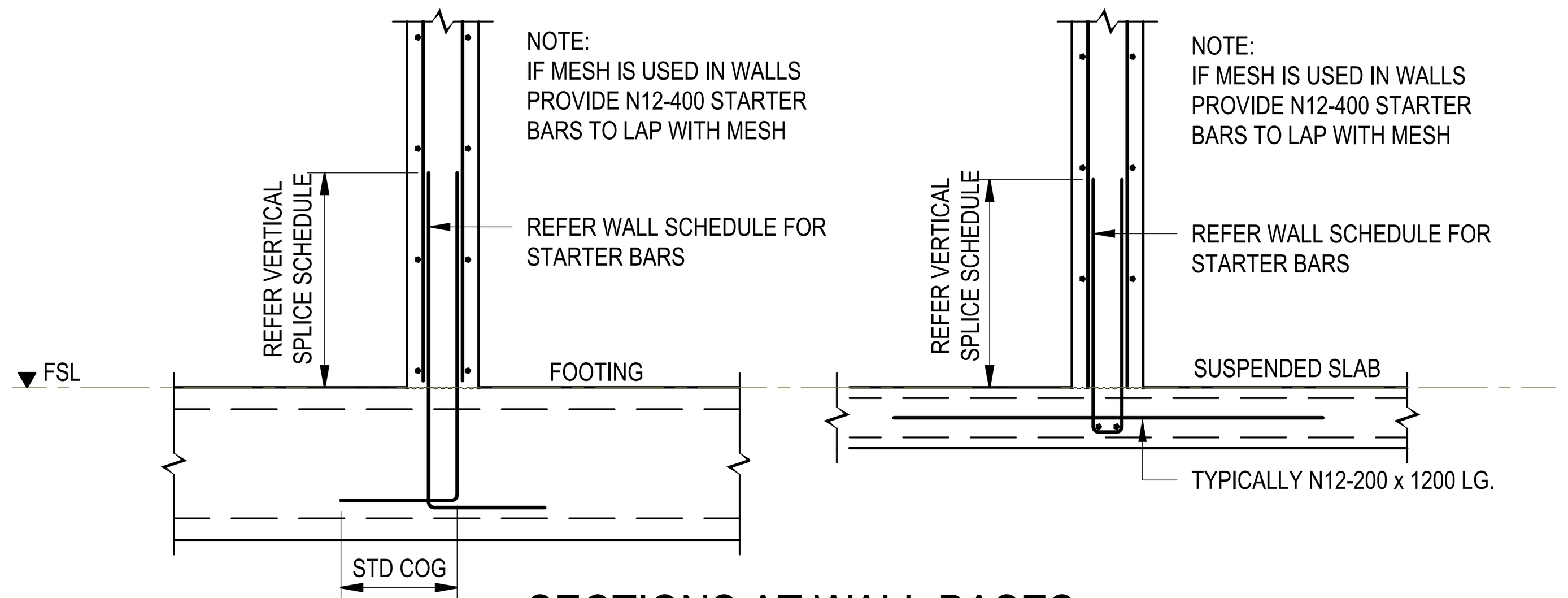
SECTIONS AT TOP OF WALL (TERMINATION)



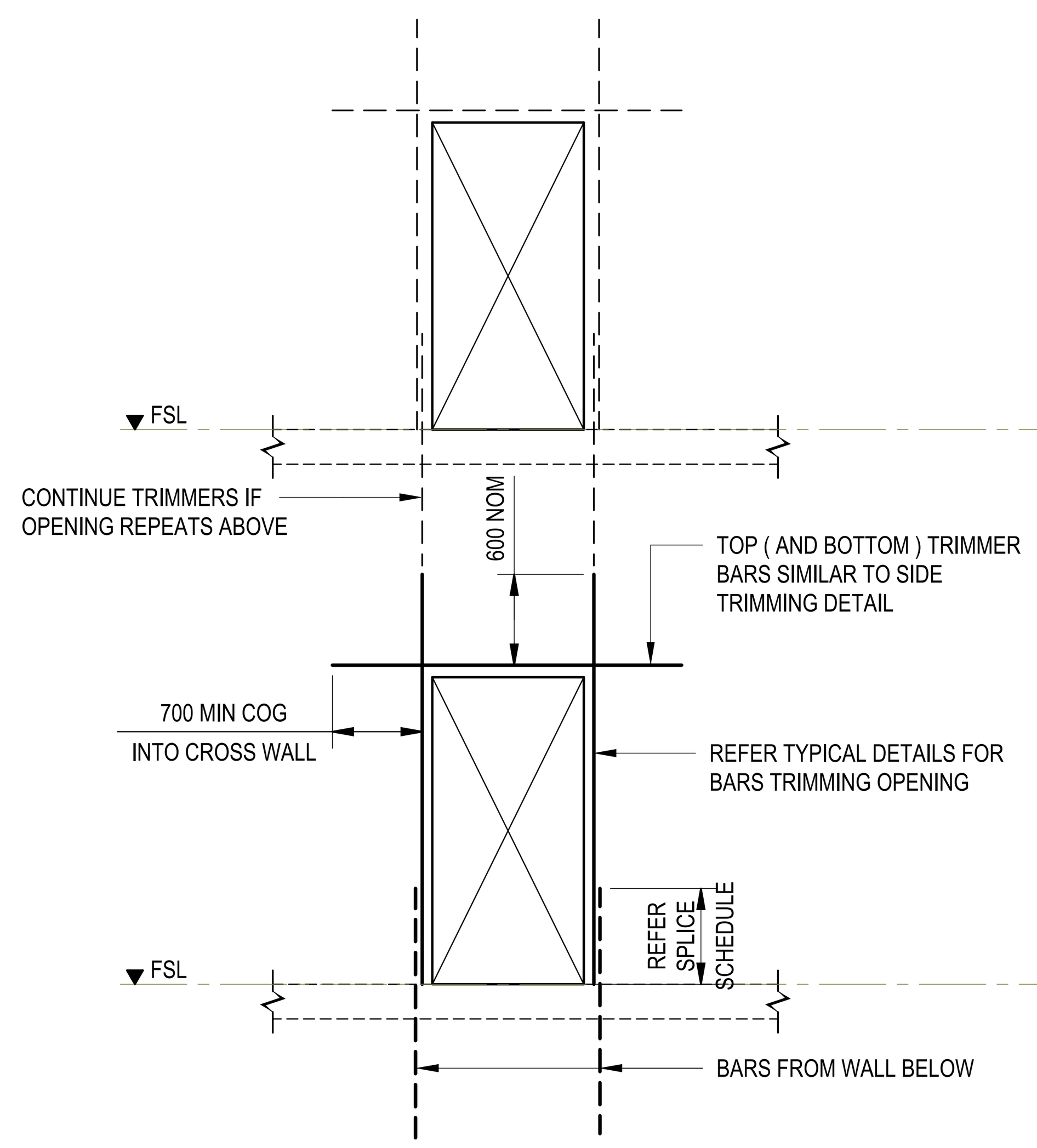
CHANGE IN WALL THICKNESS SECTIONS



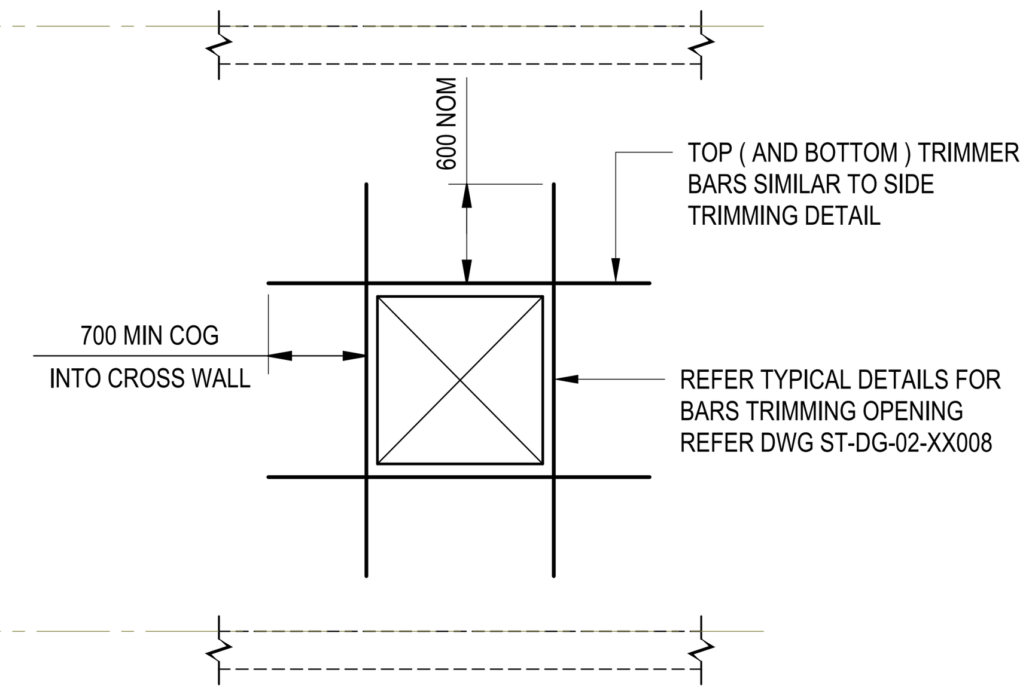
SECTIONS AT FLOOR JUNCTIONS



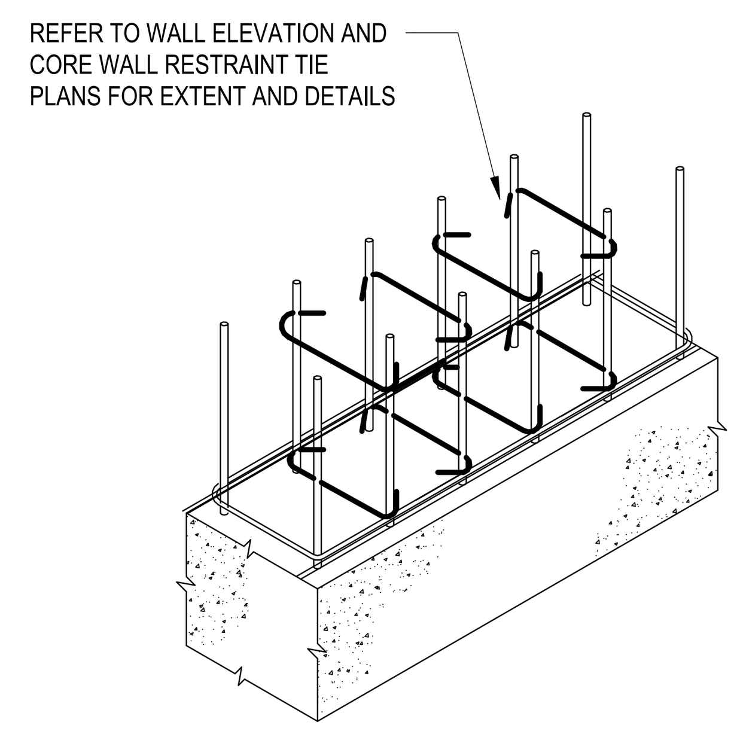
SECTIONS AT WALL BASES



TYPICAL DOOR OPENING TRIMMING



TYPICAL WALL OPENING TRIMMING



WALL RESTRAINT TIES ISOMETRIC

TYPICAL SINGLE TIE ALTERNATION DETAIL

DENOTES R10-125 RESTRAINT TIES TO WALL. REFER TO DRG 16-XX0001 TO 5 FOR DETAILS. REFER TO WALL ELEVATIONS FOR LOCATIONS

DENOTES R10-200 RESTRAINT TIES TO WALL. REFER TO DRG 16-XX0001 TO 5 FOR DETAILS. REFER TO WALL ELEVATIONS FOR LOCATIONS

VERTICAL SPLICE LENGTHS IN WALLS (mm)

BAR DIAMETER	CONCRETE GRADE			
	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 SPLICE LENGTHS IN WALLS (mm)

BAR DIAMETER	CONCRETE GRADE			
	N32	N40	N50	N65-N100
12	650	600	550	500
16	1000	900	800	700
20	1300	1150	1050	900

MAXIMUM CLEAR GAP BETWEEN BARS ONE BAR DIAMETER.
MINIMUM COVER 20mm
NOTE: FOR WALLS EXPOSED TO WEATHER REFER GENERAL NOTES.
MINIMUM CLEAR SPACING 120mm

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P02	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 200 400 800 1200
SCALE (mm) 1:20

PROJECT NORTH

NSW GOVERNMENT
School Infrastructure NSW

MEINHARDT

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CLIENT
SCHOOL INFRASTRUCTURE NSW

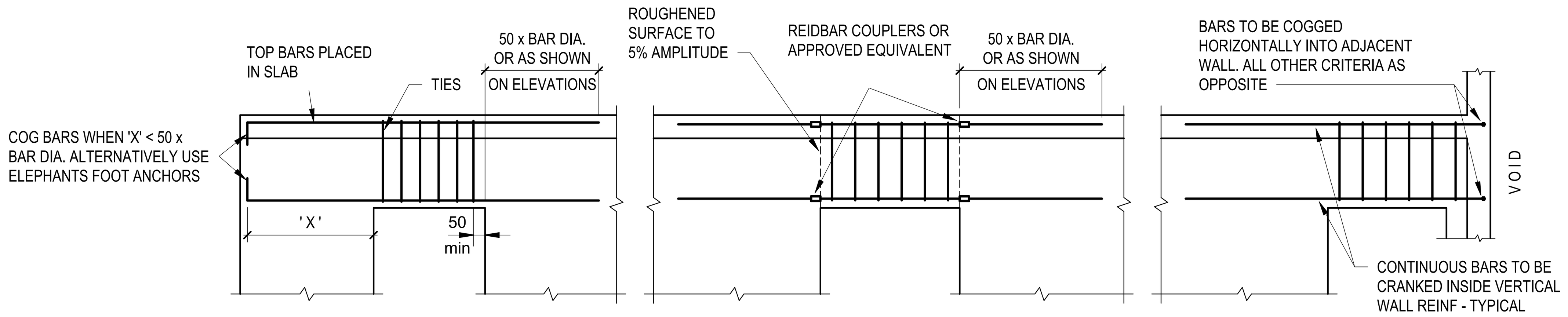
PROJECT
CAMMERAY PUBLIC SCHOOL
PALMER STREET, CAMMERAY, NSW

TITLE
TYPICAL WALL DETAILS

STATUS
SCHEMATIC DESIGN

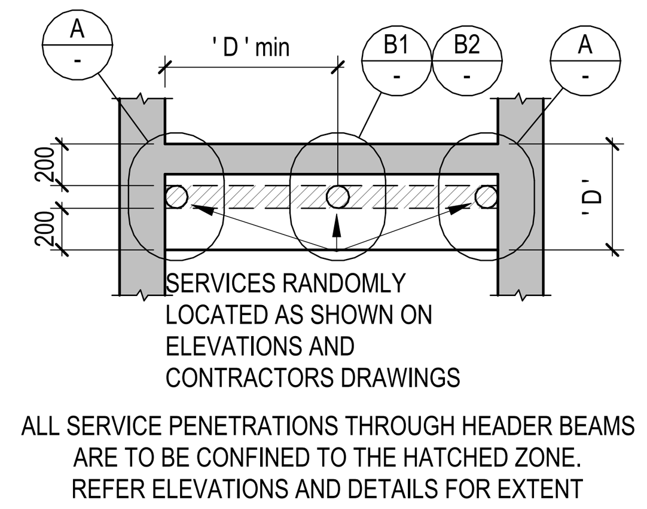
DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
VC	AA	Approver	23.09.24	As indicated	P02

PROJECT No 132562
DRAWING No
CPS-MHT-XX-XX-DR-S-0240



TYPICAL HEADER BEAM MAIN BAR ANCHORAGE DETAILS

SCALE 1:50



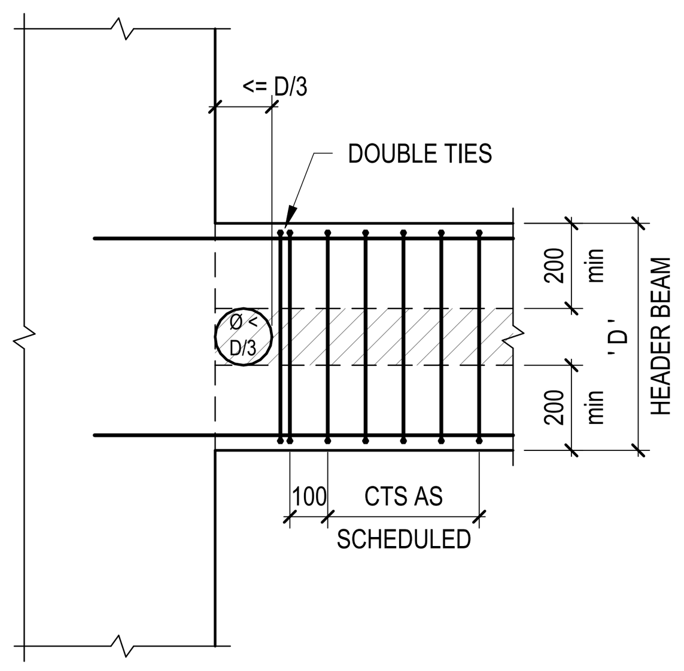
REFER CORE WALL ELEVATIONS FOR SERVICE PENETRATIONS

SCALE 1:50

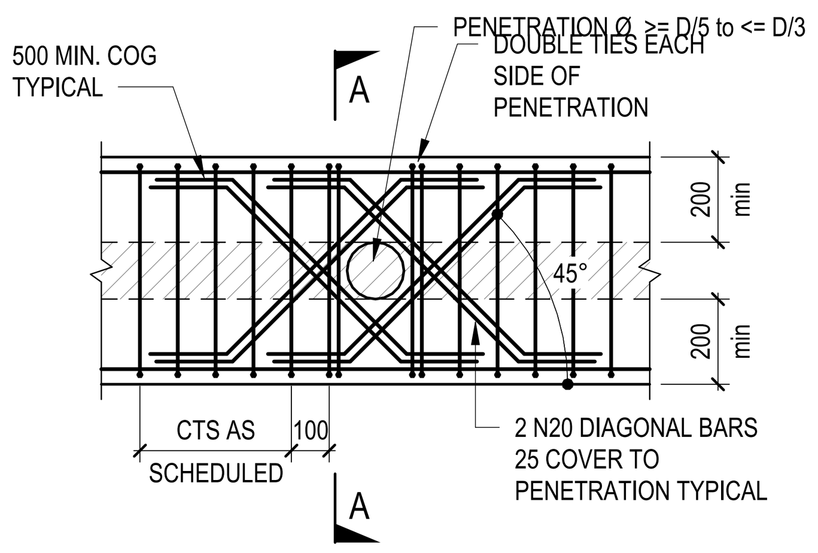
HEADER BEAM SCHEDULE

TAG	BTM BARS	TOP BARS	TIES	TYPE
HB1				
HB2				
HB3				
HB4				

NOTES: HEADER BEAMS CLOSED TIES CAN BE REPLACED WITH 'U' BARS,UNO , REFER TO HEADER BEAM CLOSED TIES ALTERNATIVE FORDETAIL
* DENOTES CLOSED SHEAR TIES TO BE USED IN THE HEADER BEAMS

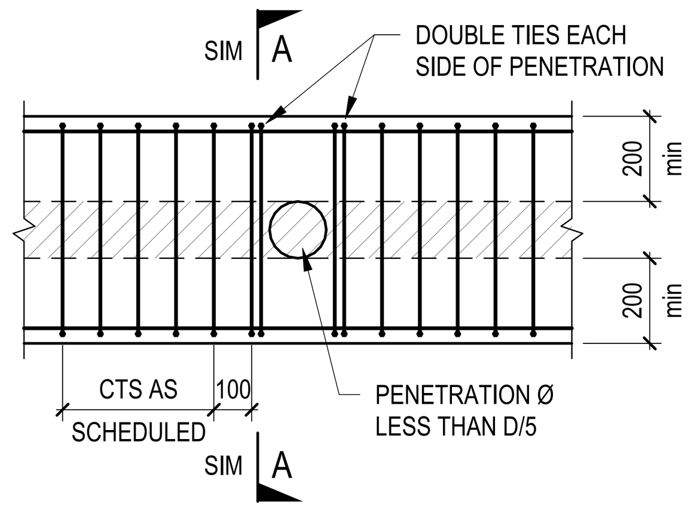


SERVICE PENO DETAIL A



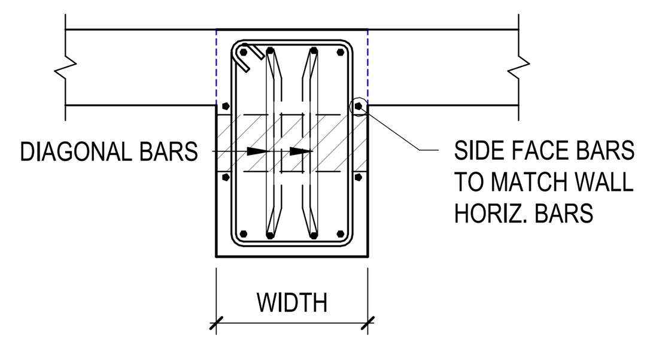
SERVICE PENO DETAIL B1

REQUIRED WHERE PENETRATION Ø IS GREATER THAN OR EQUAL TO D/5 BUT LESS THAN OR EQUAL TO D/3

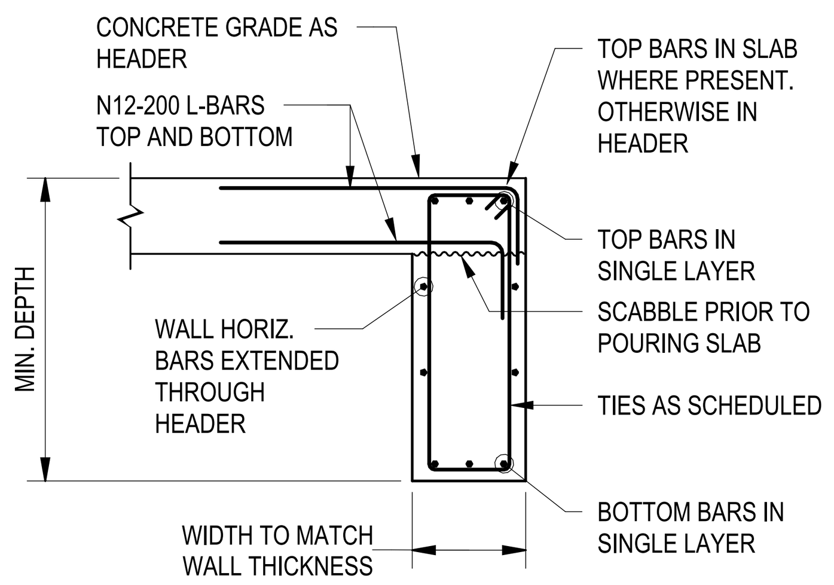


SERVICE PENO DETAIL B2

REQUIRED WHERE PENETRATION Ø IS LESS THAN D/5



SECTION A - A



HEADER BEAM TYPE A

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	80% SCHEMATIC DESIGN	RM	JB	19.12.24
P02	100% SCHEMATIC DESIGN	RM	JB	14.01.25

0 200 400 800 1200
SCALE (mm) 1:20

PROJECT NORTH

NSW GOVERNMENT
School Infrastructure NSW

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TYPICAL HEADER BEAM DETAILS

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VC	AA	Approver	23.09.24	1 : 20	P02

PROJECT No 132562
DRAWING No
CPS-MHT-XX-XX-DR-S-0245

14/01/2025 2:26:27 PM C:\Users\RMyat\Documents\CPS-MHT-B00G-ZZ-M3-S-0001_Ron.MyatRWMD2.rvt