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-0250	TYPICAL STEELWORK DETAILS
S-0260	TYPICAL SLAB ON GROUND DETAILS
S-0265	TYPICAL SUSPENDED SLAB DETAILS
S-1010	GROUND FLOOR LOADING PLAN
S-1020	ROOF LOADING PLAN
S-2000	FOOTING PLAN
S-2010	GROUND FLOOR STRUCTURAL PLAN
S-2020	ROOF STRUCTURAL PLAN

REV	DESCRIPTION	BY	APP	DATE
P01.01	CONCEPT DESIGN DEVELOPMENT	RM	JB	12.11.24
P02	50% SCHEMATIC DESIGN	RM	JB	22.11.24
P03	100% SCHEMATIC DESIGN	RM	JB	20.12.24

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.

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STRUCTURAL DOCUMENTATION

PROJECT TITLE:

KINGSWOOD PUBLIC SCHOOL

PROJECT ADDRESS:

46-54 SECOND AVENUE, KINGSWOOD, NSW

SHEET TITLE:

COVER SHEET

MEINHARDT PROJECT No:

132566

CLIENT

SCHOOL INFRASTRUCTURE NSW

DRAWING No:

KIPS-MHT-XX-XX-DR-S-0000

REVISION

P03

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.

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

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

BY: GEOTECHNIQUE PTY LTD, REPORT 20429/7-AA
DATED: 24 October 2023

SLAB ON GROUND NOTES

SOG1 ALL CONCRETE WORK TO COMPLY WITH AS 3600 CONCRETE CODE, AND BCA SECTIONS 3.1 AND 3.2
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.

BORED PILES

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

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	20	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. FURTHTER DETAILING MAY BE REQUIRED DURING DEVELOPING FOR 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.

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	12.11.24
P02	50% SCHEMATIC DESIGN	RM	JB	22.11.24
P03	100% SCHEMATIC DESIGN	RM	JB	20.12.24

PROJECT NORTH

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

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CLIENT
SCHOOL INFRASTRUCTURE NSW

PROJECT
KINGSWOOD PUBLIC SCHOOL

46-54 SECOND AVENUE, KINGSWOOD, NSW

TITLE
STRUCTURAL NOTES
SHEET 1

STATUS
SCHEMATIC DESIGN

DESIGNED TG
DRAWN AA
APPROVED JB
DATE 30.09.24
SCALE @ A1 1 : 100
REVISION P03
PROJECT No 132566
DRAWING No
KIPS-MHT-XX-XX-DR-S-0001

20/12/2024 11:36:40 AM

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-CONTRACTORS 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 ATE 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 AS1, 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:

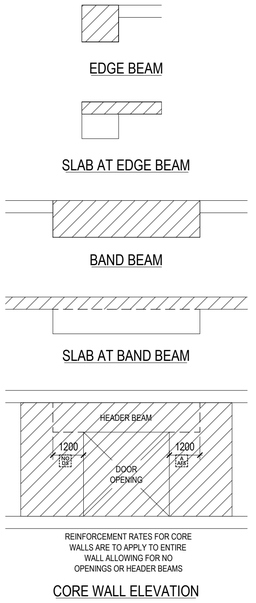
LOCATION	DEAD LOAD kPa	LIVE LOAD kPa
CLASSROOMS (GENERAL)	1.5	3.0
BASEMENT STORAGE, BULK STORAGE, STAGE, KILN DRY	0.5	7.5
OTHER STORES, TECHNOLOGY, FOOD PREPARATION AREAS, APPLIED STUDIES, COMPUTER AREAS, ARTS, PLANTS, LEARNING SPACE, WORKSHOPS	0.5	5.0
LIBRARY	1.5	4.0
GYM	2.0	5.0
COMMUNITY FACILITIES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

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

WIND
REGION: A2
DESIGN REGIONAL WIND SPEED: 46 m/s
TC = 3
Mt = 1.0
Md = AS PER AS1170.2
Mz,cat = 0.9

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

REINFORCEMENT RATES MEASURED ON CONCRETE VOLUMES AS NOTED



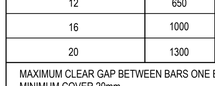
REINFORCEMENT RATE

ITEM	REINFORCEMENT RATE kg/m³	POST-TENSIONING RATE kg/m²
PILE CAPS & FOOTING BEAMS	160	N/A
SUSPENDED SLAB ON GROUND	150	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	12.11.24
P02	50% SCHEMATIC DESIGN	RM	JB	22.11.24
P03	100% SCHEMATIC DESIGN	RM	JB	20.12.24

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: KINGSWOOD PUBLIC SCHOOL
46-54 SECOND AVENUE, KINGSWOOD, NSW

TITLE: STRUCTURAL NOTES SHEET 2

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
TG	AA	JB	30.09.24	As indicated	P03

PROJECT No 132566

DRAWING No KIPS-MHT-XX-XX-DR-S-0002

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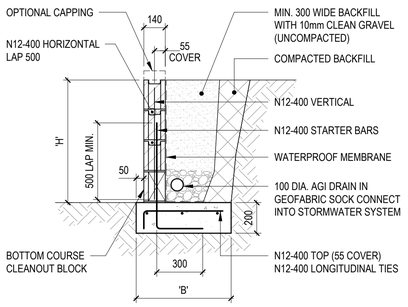
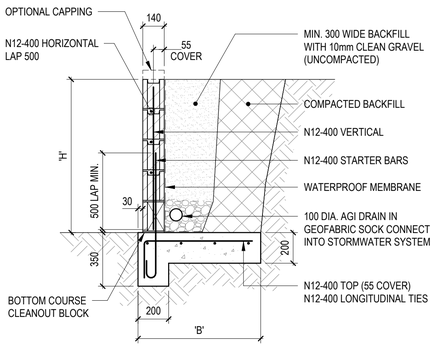


RETAINING WALL - 1.0m HIGH MAX. (ALTERATION)

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

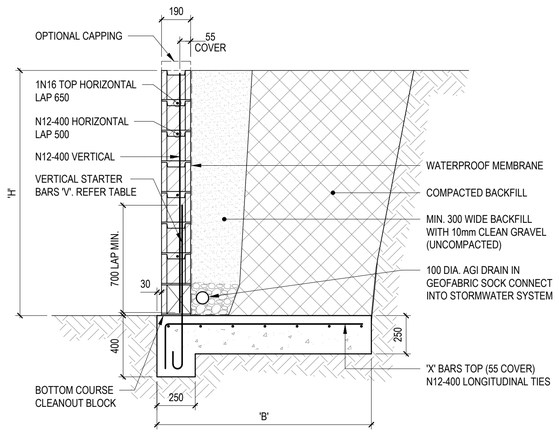
BASE DIMENSIONS	
'H' (HEIGHT mm)	'B' (BASE mm)
600	600



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

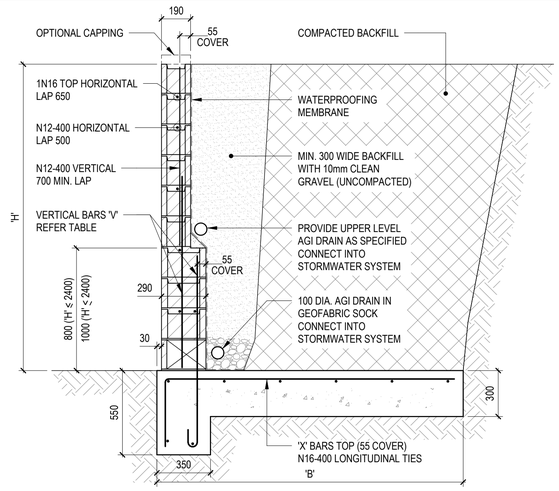
BASE DIMENSIONS		
'H' (HEIGHT mm)	NO SURCHARGE 'B' (BASE mm)	5 kPa SURCHARGE 'B' (BASE mm)
800	600	800
1000	700	1000
1200	800	1000



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



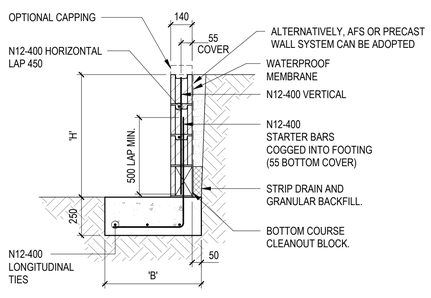
RETAINING WALL - 3.0m HIGH MAX. (ALTERATION)

- 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.

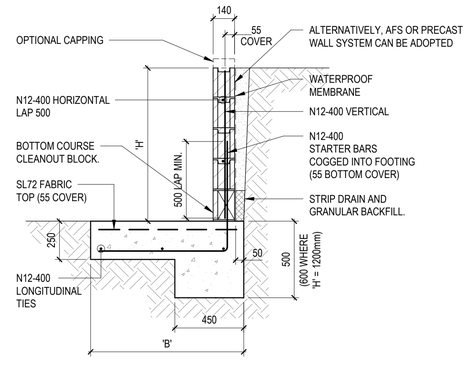


RETAINING WALL - 1.0m HIGH MAX. (RW1)

- 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

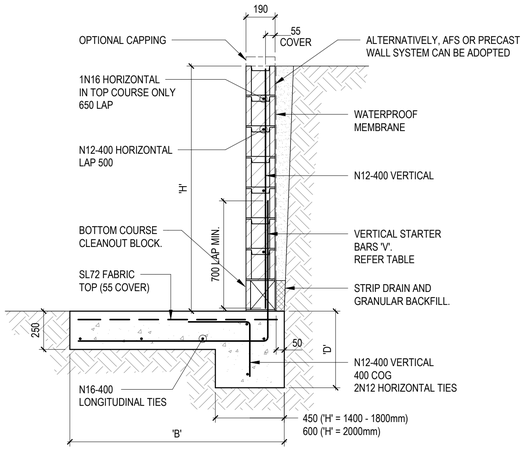
THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT SITE INSTRUCTIONS, SKETCHES, SHOP DRAWINGS, SUB-CONTRACTOR DRAWINGS AND PROJECT CORRESPONDENCE.
ACCURACY AND SET-OUT IS TO BE CONFIRMED BY SITE SURVEY.



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

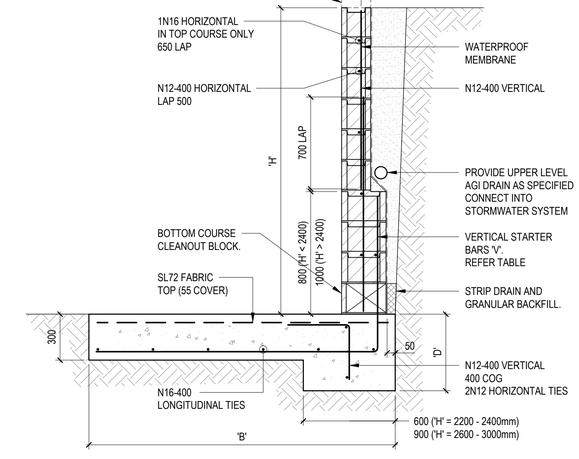
BASE DIMENSIONS		
'H' (HEIGHT mm)	NO SURCHARGE 'B' (BASE mm)	5 kPa SURCHARGE 'B' (BASE mm)
800	800	800
1000	800	1000
1200	1000	1200



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.

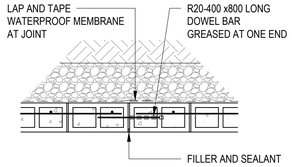
- WALLS TO BE CONSTRUCTED USING 190 + 240 'H' BLOCKS SCALE 1:20
- ALL BLOCKWORK TO BE CONCRETE CORE FILLED AS PER BLOCKWORK RETAINING WALL NOTES

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

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01.01	CONCEPT DESIGN DEVELOPMENT	RM	JB	12.11.24
P02	50% SCHEMATIC DESIGN	RM	JB	22.11.24
P03	100% SCHEMATIC DESIGN	RM	JB	20.12.24

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

PROJECT NORTH

School Infrastructure NSW

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: KINGSWOOD PUBLIC SCHOOL
46-54 SECOND AVENUE, KINGSWOOD, NSW

TITLE: STANDARD DETAILS MASONRY RETAINING WALLS

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
TG	AA	Approver	30.09.24	As indicated	P03

PROJECT No 132566

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

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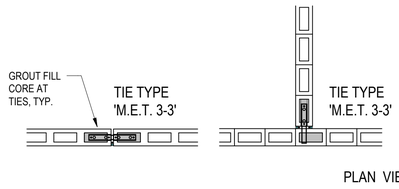
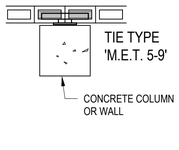
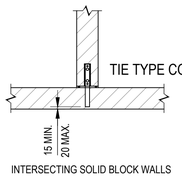
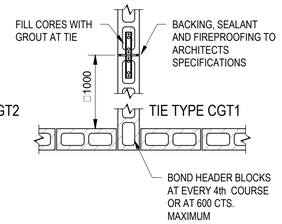


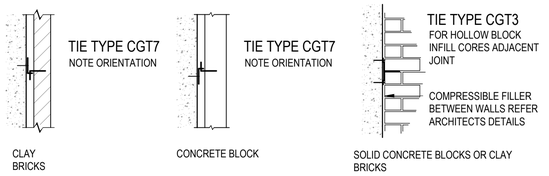
PLAN VIEWS

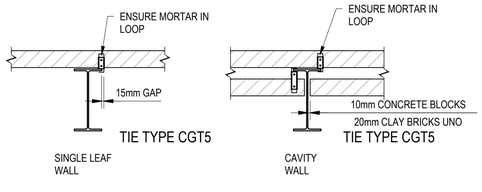




INTERSECTING SOLID BLOCK WALLS







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

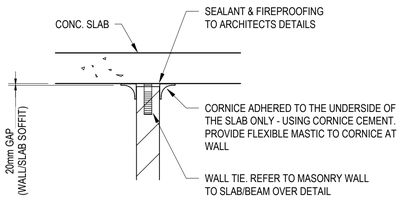
NOTE:
ALL WALL TIES TO BE AT 600mm CENTRES FOR INTERNAL WALLS & 400mm FOR EXTERNAL WALLS UNO.

MASONRY WALL TO CONCRETE FACE

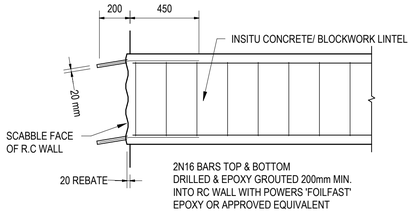
IF JOINT IS LOCATED ADJACENT TIE USE CGT8 HEAVY DUTY TIES

MASONRY WALL TO STEEL POST

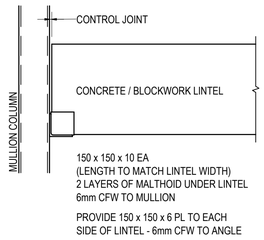
FOR HOLLOW BLOCKS INFILL CORES AT ANCHOR LOCATIONS.
FOR RHS AND SHS USE SAME DETAIL AS FOR CONCRETE FACES BUT USE 2 x No.14 SELF TAPPING SCREWS x 30 min LENGTH FOR FIXING TIE



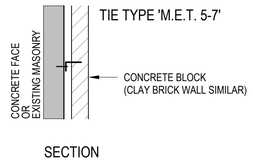
NON LOADBEARING MASONRY WALL / CORNICE DETAIL



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:

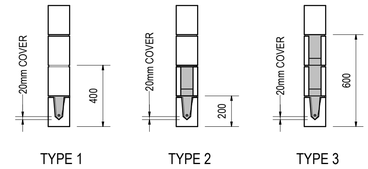
LOCATION: ALL BLOCKWORK

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

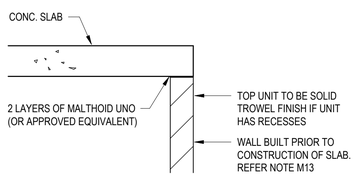
NOTES
- LONG LEG OF ANGLE TO BE VERTICAL.
- LINTEL SIZES ABOVE ASSUME MASONRY ARCHING IS POSSIBLE AND NO OTHER VERTICAL LOADS ON WALL EXCEPT FOR SELF WEIGHT.
- EXTERNAL LINTELS TO BE GALVANIZED TO AS 4680.
- DO NOT PROP LINTELS DURING CONSTRUCTION

WALL PARALLEL TO PURLINS

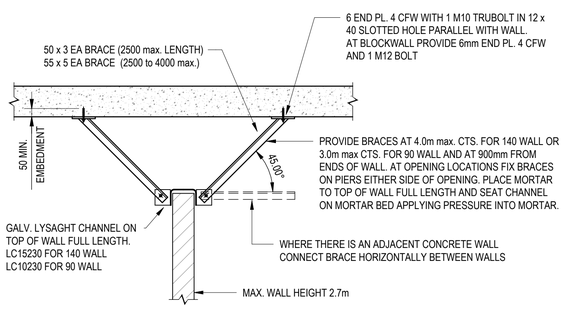
TYPICAL MASONRY WALL TO STEEL ROOF

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.

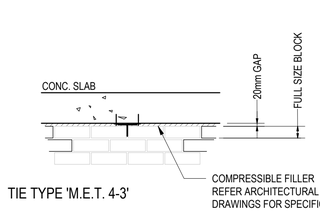


LOADBEARING MASONRY WALL / SLAB OVER

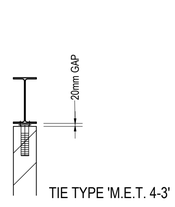


WALL TERMINATING AT CEILING

MASONRY WALL TOP RESTRAINTS



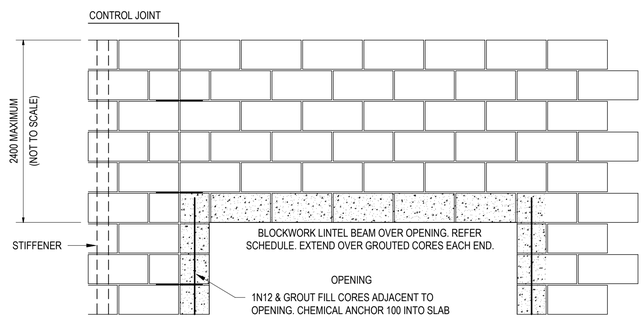
WALL ELEVATION



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	100% SCHEMATIC DESIGN	RM	JB	20.12.24

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

PROJECT NORTH

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: KINGSWOOD PUBLIC SCHOOL
46-54 SECOND AVENUE, KINGSWOOD, NSW

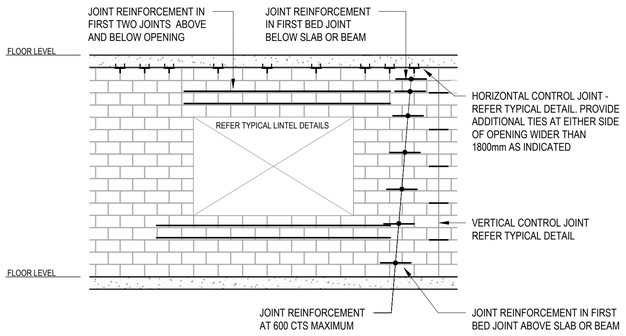
TITLE: TYPICAL MASONRY DETAILS

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
EA	AA	Approver	30.09.24	1 : 20	P01

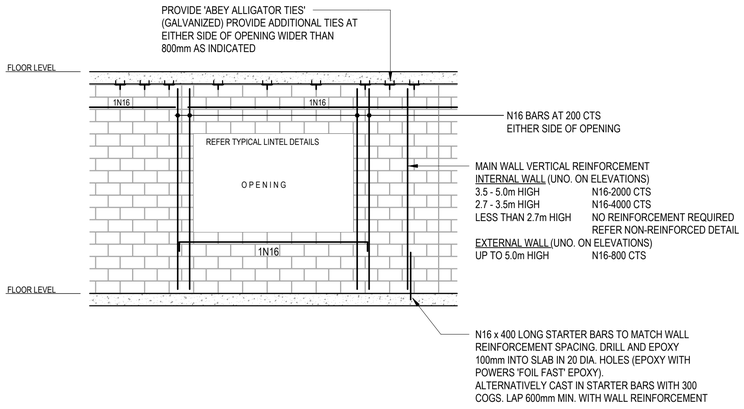
PROJECT No 132566

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



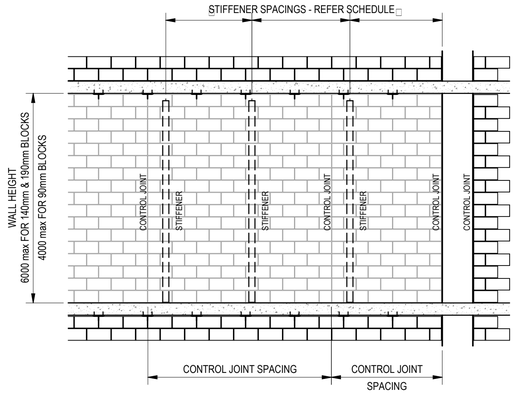
TYPICAL 'NON-REINFORCED' MASONRY WALL ELEVATION

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



TYPICAL REINFORCED BLOCK WALL ELEVATION

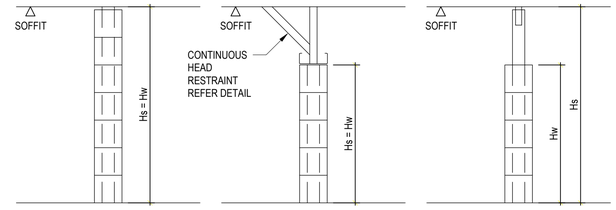
REFER TYPICAL NON-REINFORCED ELEVATION ABOVE FOR ALL OTHER REINFORCEMENT DETAILS.
FILL ALL REINFORCED CORES WITH 20MPa GROUT TYPICALLY.
FOR FIRE RATED WALLS REFER SPECIFICATIONS AND ARCHITECTURAL DRAWINGS REGARDING EXTENT OF CORE WALL FILLING.
FOR JOINT REINFORCEMENT REFER TYPICAL NON-REINFORCED BLOCK 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

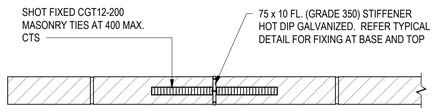
Hw - DENOTES HEIGHT OF WALL
Hs - DENOTES HEIGHT OF STIFFENER

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			

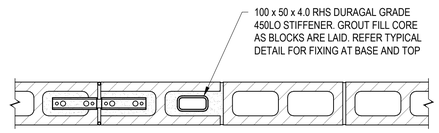
NOTE:
FOR WALLS LESS THAN HEIGHT 'Hs' IT IS ASSUMED THE WALL IS OF A HEIGHT OF 60% x 'Hs' OR 3.8m, WHICHEVER IS LESS.

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.



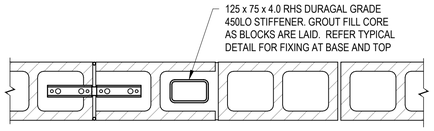
STIFFENER TYPE A - 90mm BLOCKS / BRICKS

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	100% SCHEMATIC DESIGN	RM	JB	20.12.24

0 500 1000 2000 3000
SCALE (mm) 1:50

PROJECT NORTH

School Infrastructure NSW

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: KINGSWOOD PUBLIC SCHOOL
46-54 SECOND AVENUE, KINGSWOOD, NSW

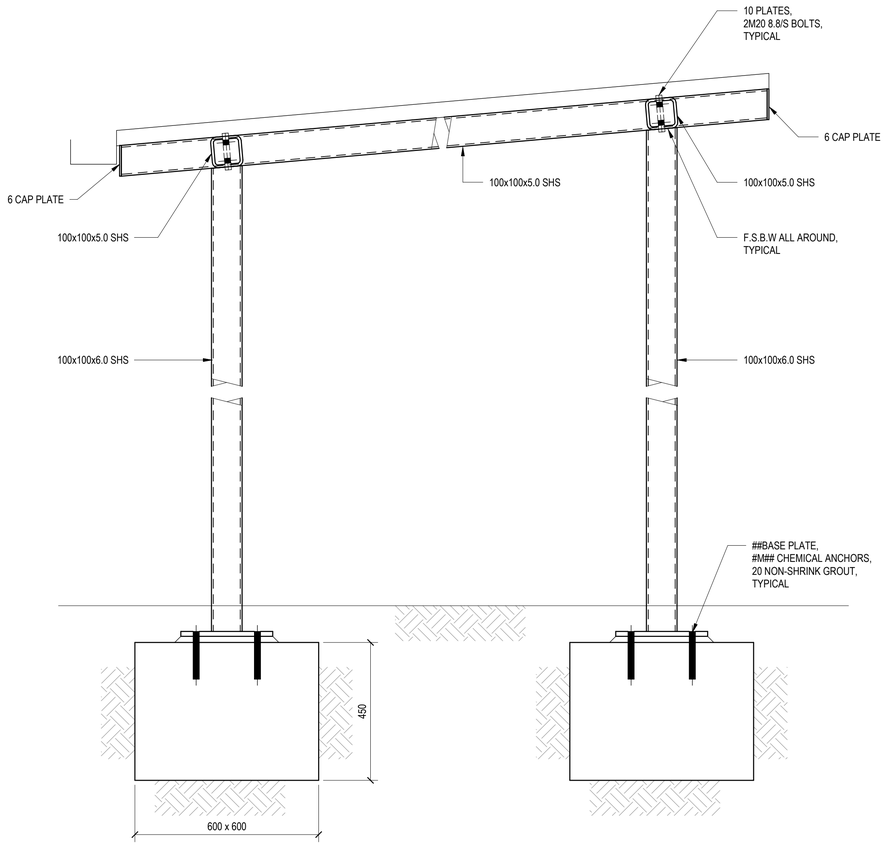
TITLE: TYPICAL MASONRY STIFFENERS DETAILS

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
TG	AA	Approver	30.09.24	1 : 50	P01

PROJECT No 132566

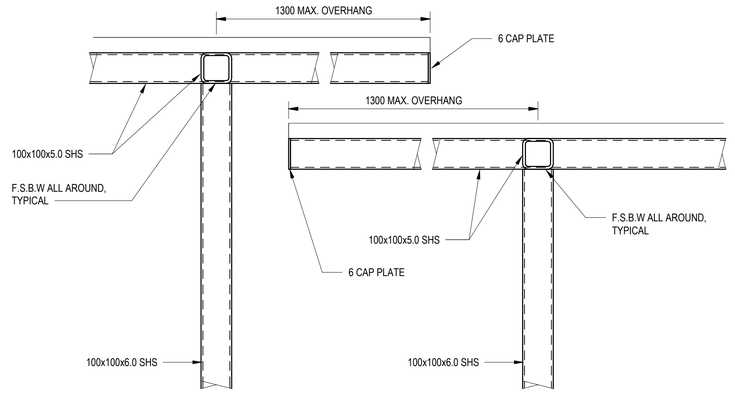
DRAWING No KIPS-MHT-XX-XX-DR-S-0206



TYPICAL WALKWAY PORTAL FRAME DETAILS

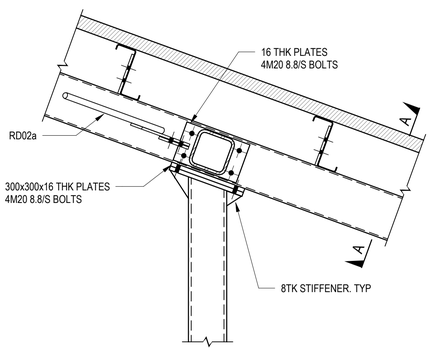
SCALE 1 : 10

MAX. 4800mm CENTRES

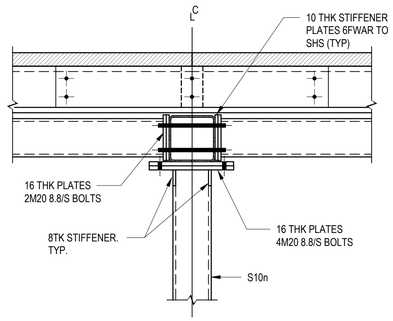


TYPICAL STEP IN ROOF WALKWAY PORTAL FRAME DETAILS

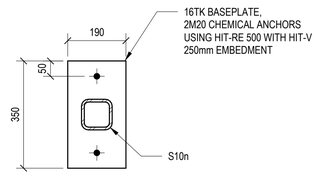
SCALE 1 : 10



TYPICAL BEAM/COLUMN CONNECTION FOR ALL



SECTION A-A



TYPICAL BASEPLATE

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	22.11.24
P02	100% SCHEMATIC DESIGN	RM	JB	20.12.24

0 100 200 400 600
SCALE (mm) 1:10

PROJECT NORTH

NSW GOVERNMENT School Infrastructure NSW

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: KINGSWOOD PUBLIC SCHOOL
46-54 SECOND AVENUE, KINGSWOOD, NSW

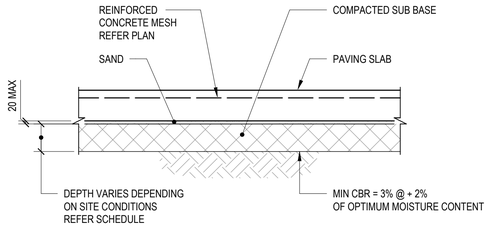
TITLE: TYPICAL STEELWORK DETAILS

STATUS: SCHEMATIC DESIGN

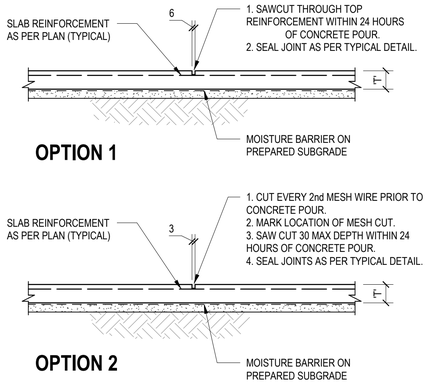
DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
TC	AA	Approver	30.09.24	1 : 10	P02

PROJECT No 132566

DRAWING No: KIPS-MHT-XX-XX-DR-S-0250

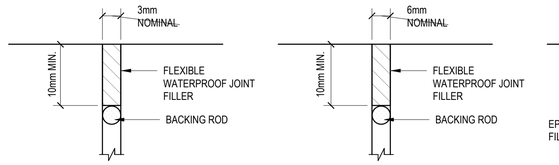


EXTERNAL PAVING SLAB DETAIL



TYPICAL SLAB ON GROUND SAWCUT JOINT DETAIL

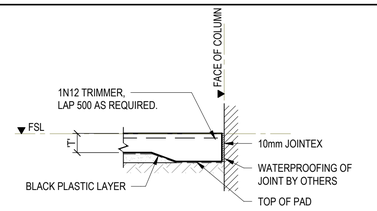
DENOTED AS 'SCJ' ON PLAN



TYPICAL JOINT FILLER (NON-FORKLIFT TRAFFIC AREA)

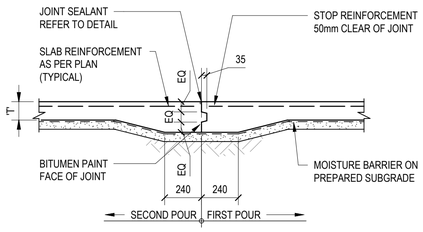
TYPICAL JOINT FILLER (FORKLIFT TRAFFIC AREA)

TYPICAL INTERNAL JOINT SEALANT DETAILS



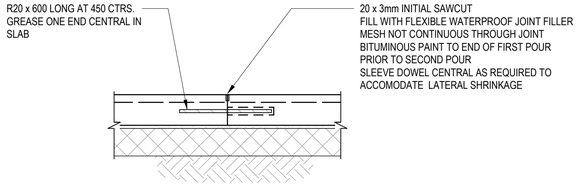
ISOLATION JOINT (IJc)

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

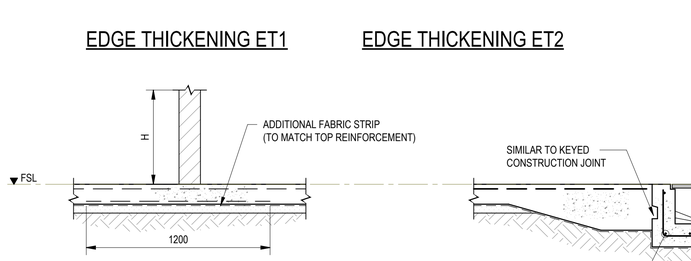


TYPICAL SLAB ON GROUND KEYED JOINT DETAIL

(DENOTED AS 'KCJ' ON PLAN)



TYPICAL CONSTRUCTION JOINT DETAIL



EDGE THICKENING ET1

EDGE THICKENING ET2

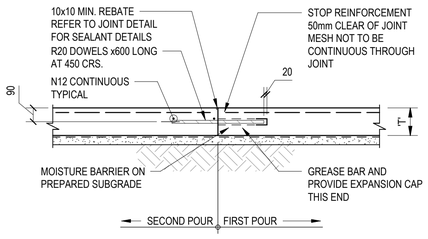
FOLD IN SLAB

SLAB THICKENING DETAIL AT BLOCKWALL

REFER TO ARCHITECTURAL DRAWINGS FOR BLOCKWALL LAYOUT

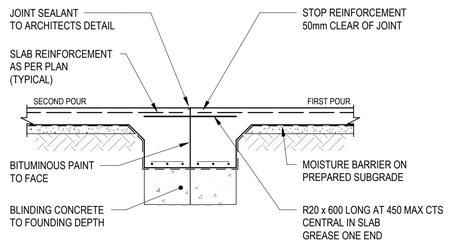
TYPICAL GRATED DRAIN DETAIL

WATER PROOFING OF JOINT BY OTHERS



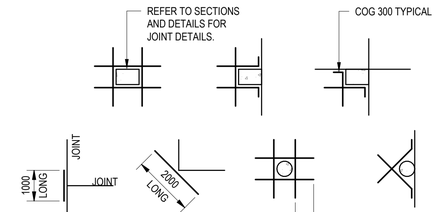
TYPICAL SLAB ON GROUND EXPANSION JOINT DETAIL

(DENOTED AS 'EJ' ON PLAN)



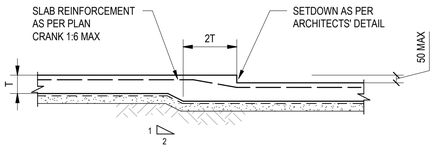
TYPICAL SLAB ON GROUND CONSTRUCTION JOINT DETAIL

(DENOTED AS 'C.J' ON PLAN)

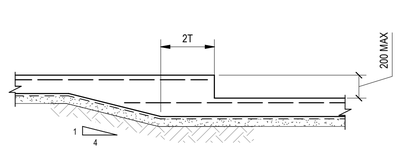


TYPICAL SLAB ON GROUND TRIMMER DETAILS

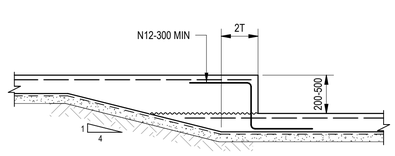
AT ALL COLUMNS, WALLS, PITS, FLOOR WASTES, ETC
THAT CAUSE A PENETRATION THROUGH THE SLAB.



(a) STEP LESS THAN 50mm



(b) STEP LESS THAN 200mm



(c) 200mm< STEP < 500mm

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	100% SCHEMATIC DESIGN	RM	JB	20.12.24

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

PROJECT NORTH

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: KINGSWOOD PUBLIC SCHOOL
46-54 SECOND AVENUE, KINGSWOOD, NSW

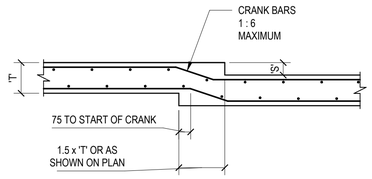
TITLE: TYPICAL SLAB ON GROUND DETAILS

STATUS: SCHEMATIC DESIGN

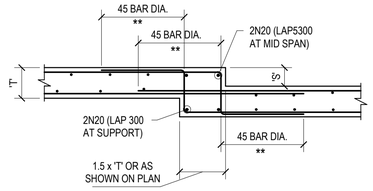
DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
TG	AA	Approver	30.09.24	As indicated	P01

PROJECT No 132566

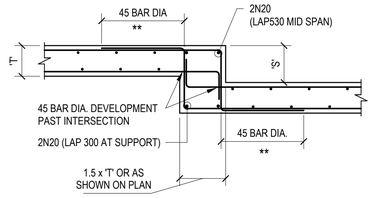
DRAWING No KIPS-MHT-XX-XX-DR-S-0260



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



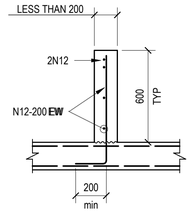
SETDOWN : 'S' IS LESS THAN 0.8 x 'T'

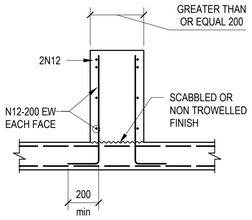


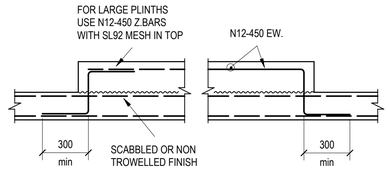
**SETDOWN : 'S' IS GREATER THAN 0.8 x 'T'
BUT LESS THAN 1.5 x 'T'**

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

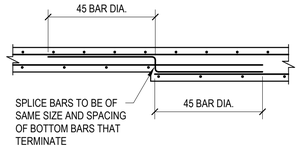




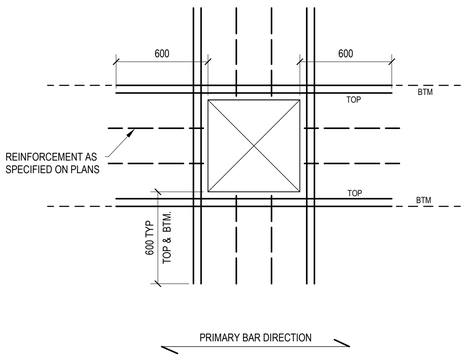


UPSTANDS AND PLINTH DETAILS

UNLESS NOTED OTHERWISE ON PLANS AND DETAILS



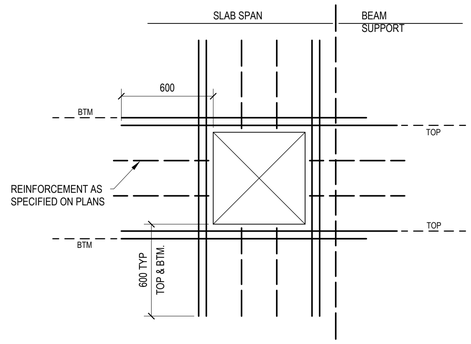
TYPICAL CHANGE IN SLAB THICKNESS



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



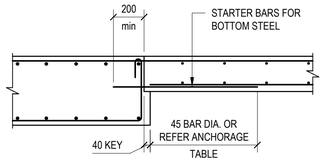
PRIMARY TOP BARS : FOR EVERY TWO BARS STOPPED BY PENETRATION ADD ONE BAR EACH SIDE OF SAME GRADE AND SIZE.
SECONDARY TOP BARS : ADD 2N16 EACH SIDE x LENGTH AS SHOWN.

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.



SLAB CONSTRUCTION JOINT

NOT RECOMMENDED FOR WET AREAS

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	100% SCHEMATIC DESIGN	RM	JB	20.12.24

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

PROJECT NORTH

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CLIENT
SCHOOL INFRASTRUCTURE NSW

TITLE
TYPICAL SUSPENDED SLAB DETAILS

PROJECT
KINGSWOOD PUBLIC SCHOOL

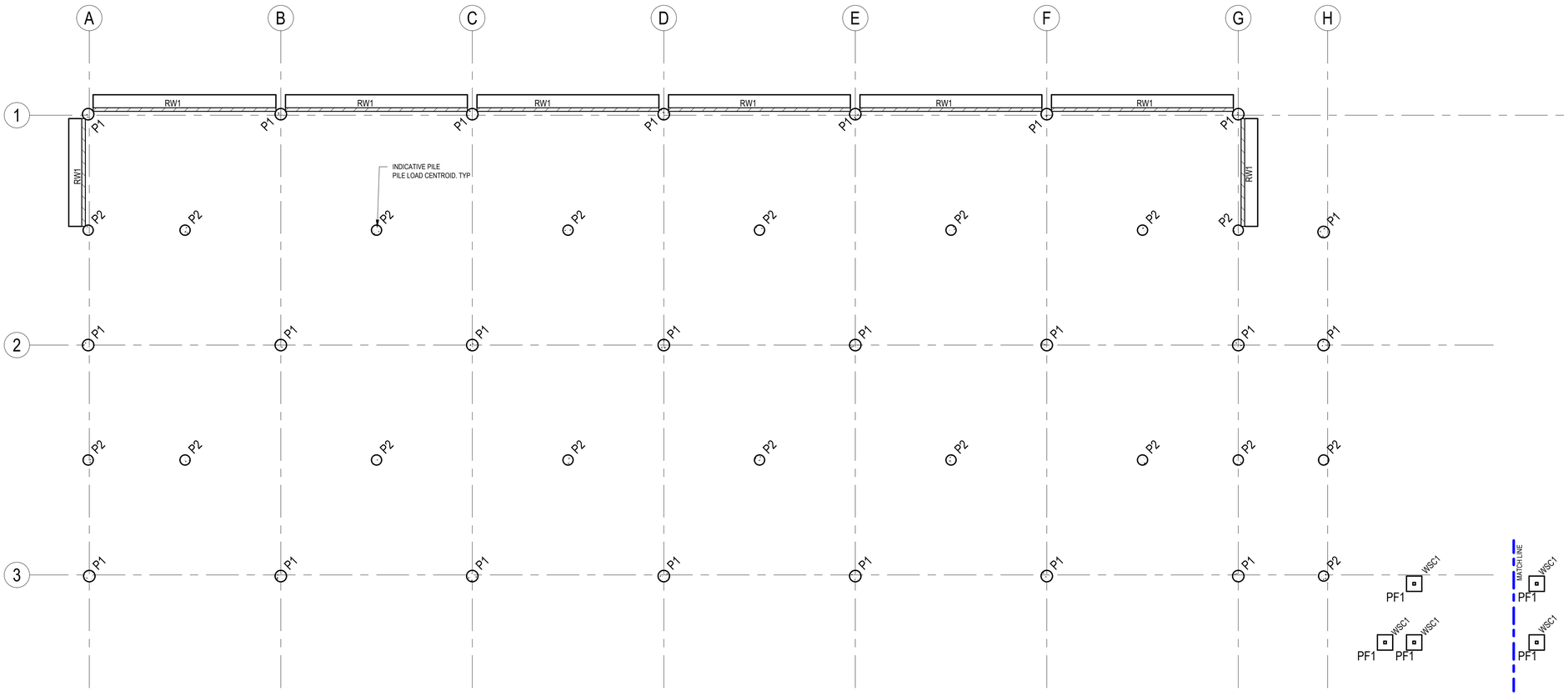
46-54 SECOND AVENUE, KINGSWOOD, NSW

STATUS
SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
TG	AA	Approver	30.09.24	1 : 20	P01

PROJECT No 132566

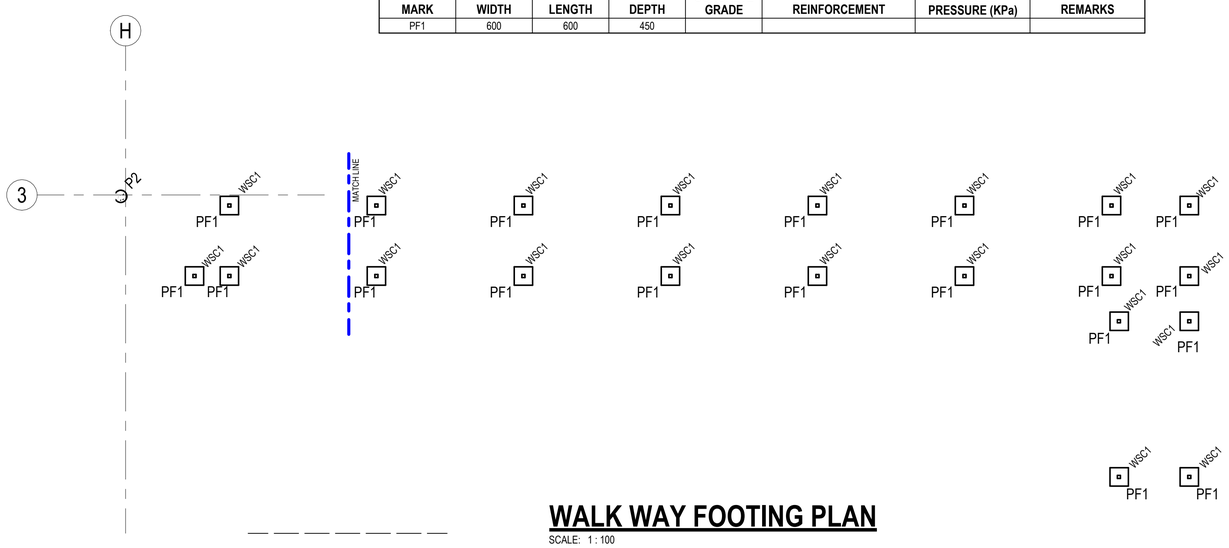
DRAWING No
KIPS-MHT-XX-XX-DR-S-0265



FOOTING PLAN

SCALE: 1 : 100

PAD FOOTING SCHEDULE							
MARK	DIMENSIONS			CONCRETE GRADE	REINFORCEMENT	ALLOWABLE BEARING PRESSURE (KPa)	REMARKS
	WIDTH	LENGTH	DEPTH				
PF1	600	600	450				



D & C PILING SCHEDULE.					
MARK	SIZE	WORKING LOADS (kN)			NOTES
		COMPRESSION	TENSION	SHEAR	

PRELIMINARY PILE LOAD:

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

NOTES:
1, PILE SIZE TO BE D&C BY PILING SPECIALITY TO ACHIEVE THE NOMINATED LOADS.
2, LOADS ARE PRELIMINARY AND SUBJECT TO CHANGE AS DESIGN DEVELOPS.
3.PILE SETOUT TO BE DOCUMENTED BY PROJECT ARCHITECT
4.PILE ARRANGEMENT ARE SHOWN INDICATIVE ONLY. EXACT NUMBER OF PILES TO BE CONFIRMED BY D&C CONTRACTOR BASED ON LOADING ON PILES
5.REQUIRED SOCKET LENGTH IN UNIT 5 SANDSTONE, TO BE CONFIRMED BY D&C PILING CONTACTOR.

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.

WALK WAY FOOTING PLAN

SCALE: 1 : 100

STRUCTURAL SIZES

(UNLESS OTHERWISE NOTED)

RETAINING WALLS	REFER TO DRAWINGS S-0200, S-0205 & S-0206 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 GEOTECHNIQUE PTY LTD
4. THE SPECIALIST PILING CONTRACTOR SHALL DESIGN, CERTIFY AND CONSTRUCT THE PILES TO MEET THE SCHEDULED LOADS, SETTLEMENT LIMITS AND MINIMUM REQUIREMENTS.
5. UNLESS NOTED OTHERWISE, ALL PILES LENGTH, REINFORCEMENT AND CONCRETE STRENGTH SHOWN ARE FOR COSTING ONLY.
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.

NOTES

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

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 .

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

RETAINING WALL SCHEDULE		
MARK	WIDTH	REMARKS
RW1	140	BLOCKWORK

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01.01	CONCEPT DESIGN DEVELOPMENT	RM	JB	12.11.24
P02	50% SCHEMATIC DESIGN	RM	JB	22.11.24
P03	100% SCHEMATIC DESIGN	RM	JB	20.12.24

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: KINGSWOOD PUBLIC SCHOOL
46-54 SECOND AVENUE, KINGSWOOD, NSW

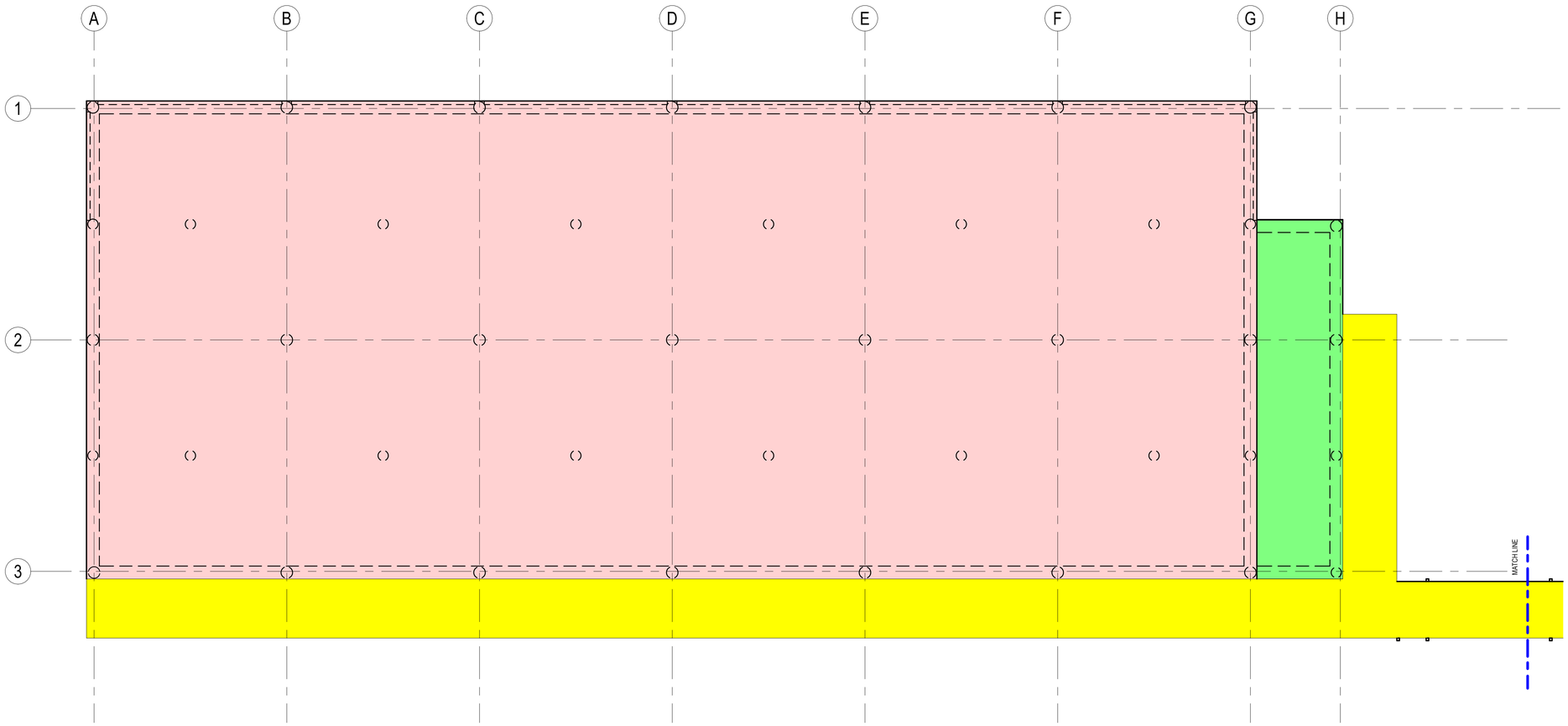
TITLE: FOOTING PLAN

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
TG	AA	JB	30.09.24	As indicated	P03

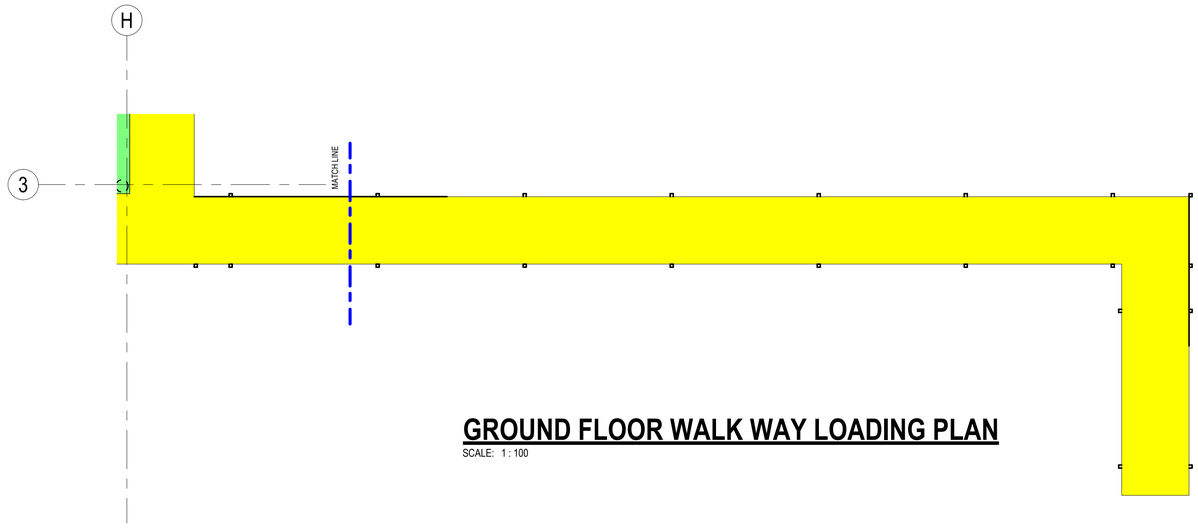
PROJECT No 132566

DRAWING No KIPS-MHT-B00M-FF-DR-S-2000



GROUND FLOOR LOADING PLAN

SCALE: 1 : 100



GROUND FLOOR WALK WAY LOADING PLAN

SCALE: 1 : 100

FLOOR DESIGN LOADS

(UNLESS NOTED OTHERWISE)

	SUPERIMPOSED DEAD LOAD (kPa)	LIVE LOAD (kPa)	AREA
	1.5 + 0.5*	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 + 0.5*	5.0	GENERAL STORAGE
	0.5	7.5	BULK MATERIAL STORAGE / KILN AREA
	0.5	10.0	WOOD + METAL STORAGE
	2.0	5.0	DANCE HALL, STUDIOS & GYMNASIA
	0.5	5.0	WORKSHOP
	0.25	0.25	SOLAR PANEL
	0.25	0.25	WALK WAY ROOF

* ADDITIONAL DEAD LOAD DUE TO THE LIGHT FRAME STEEL STRUCTURE.

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	22.11.24
P02	100% SCHEMATIC DESIGN	RM	JB	20.12.24

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

PROJECT NORTH

NSW GOVERNMENT School Infrastructure NSW

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http://www.meinhardtgroup.com

CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: KINGSWOOD PUBLIC SCHOOL
46-54 SECOND AVENUE, KINGSWOOD, NSW

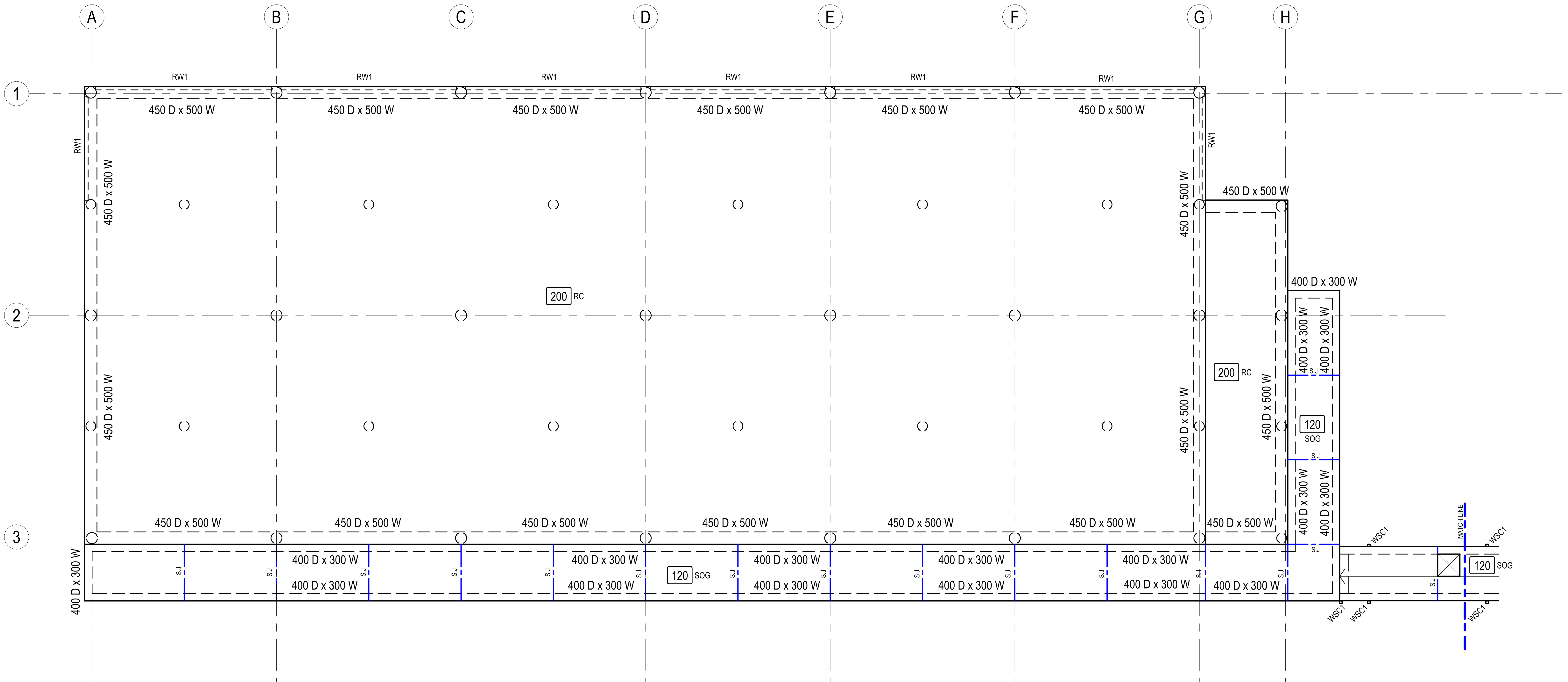
TITLE: GROUND FLOOR LOADING PLAN

STATUS: SCHEMATIC DESIGN

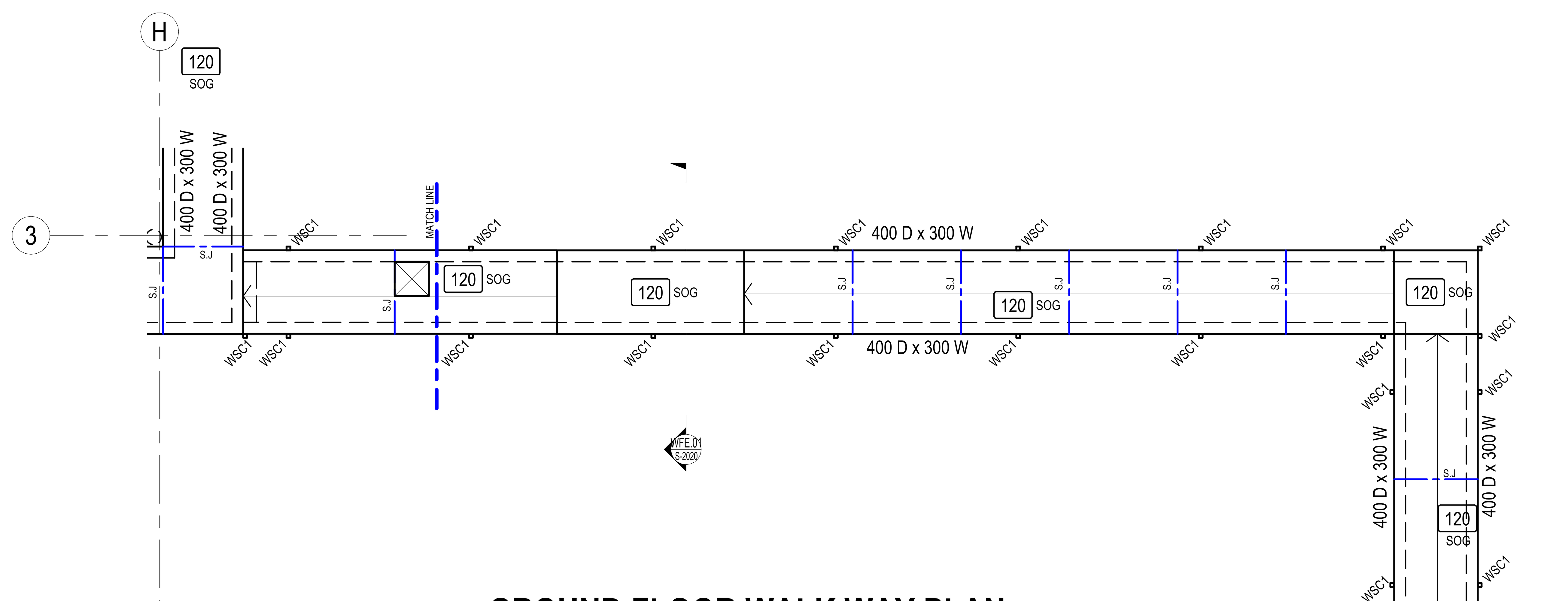
DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
TG	AA	Approver	30.09.24	1 : 100	P02

PROJECT No 132566

DRAWING No KIPS-MHT-B00M-GF-DR-S-1010



GROUND FLOOR STRUCTURAL PLAN



GROUND FLOOR WALK WAY PLAN

SCALE: 1 : 100

STRUCTURAL SIZES

(UNLESS OTHERWISE NOTED)

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

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

LEGEND

(UNLESS OTHERWISE NOTED)

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

STEEL FRAMING SCHEDULE

MARK	SIZE	REMARKS
WBR1	M16 ROD	CROSS BRACING WITH TURNBUCKLE
WSB1	100 x 100 x 5.0 SHS	
WSC1	100 x 100 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	12.11.24
P02	50% SCHEMATIC DESIGN	RM	JB	22.11.24
P03	100% SCHEMATIC DESIGN	RM	JB	20.12.24

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

PROJECT NORTH

NSW GOVERNMENT — School Infrastructure NSW

MEINHARDT

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CLIENT: SCHOOL INFRASTRUCTURE NSW

PROJECT: KINGSWOOD PUBLIC SCHOOL
46-54 SECOND AVENUE, KINGSWOOD, NSW

TITLE: GROUND FLOOR STRUCTURAL PLAN

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
TG	AA	JB	30.09.24	1 : 100	P03

PROJECT No: 132566

DRAWING No: KIPS-MHT-B00M-GF-DR-S-2010

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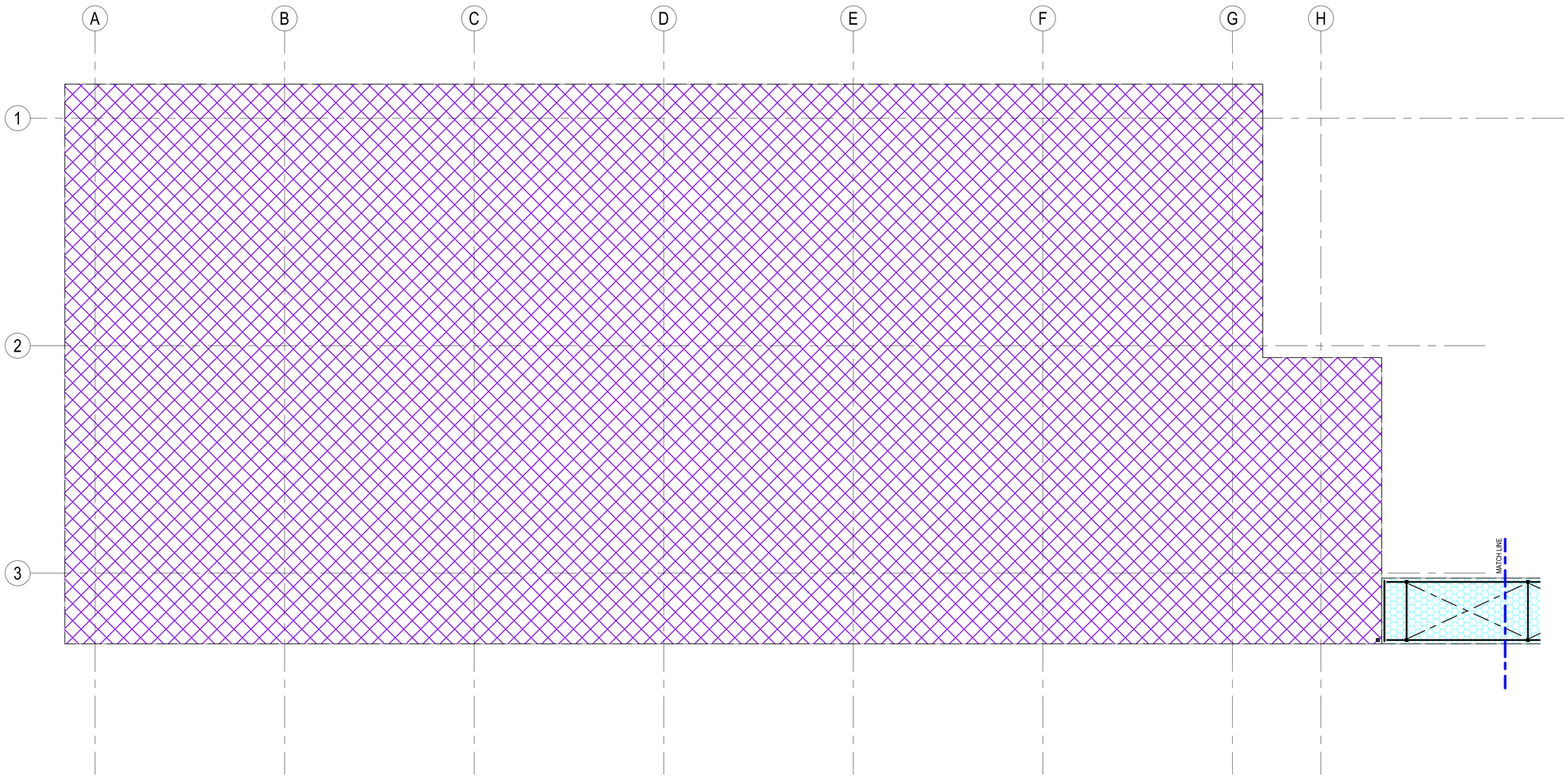
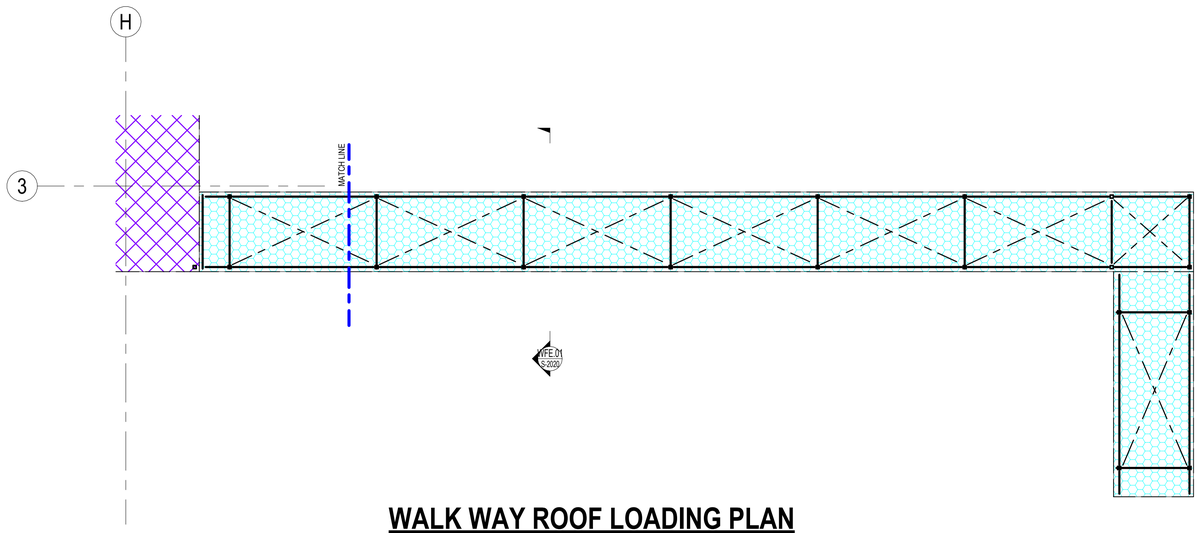


ROOF LOADING PLAN

SCALE: 1 : 100



WALK WAY ROOF LOADING PLAN

SCALE: 1 : 100

FLOOR DESIGN LOADS

(UNLESS NOTED OTHERWISE)

	SUPERIMPOSED DEAD LOAD (kPa)	LIVE LOAD (kPa)	AREA
	1.5 + 0.5*	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 + 0.5*	5.0	GENERAL STORAGE
	0.5	7.5	BULK MATERIAL STORAGE / KILN AREA
	0.5	10.0	WOOD + METAL STORAGE
	2.0	5.0	DANCE HALL, STUDIOS & GYMNASIA
	0.5	5.0	WORKSHOP
	0.25	0.25	SOLAR PANEL
	0.25	0.25	WALK WAY ROOF

* ADDITIONAL DEAD LOAD DUE TO THE LIGHT FRAME STEEL STRUCTURE.

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

PRELIMINARY

REV	DESCRIPTION	BY	APP	DATE
P01	50% SCHEMATIC DESIGN	RM	JB	22.11.24
P02	100% SCHEMATIC DESIGN	RM	JB	20.12.24

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

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PROJECT: KINGSWOOD PUBLIC SCHOOL
46-54 SECOND AVENUE, KINGSWOOD, NSW

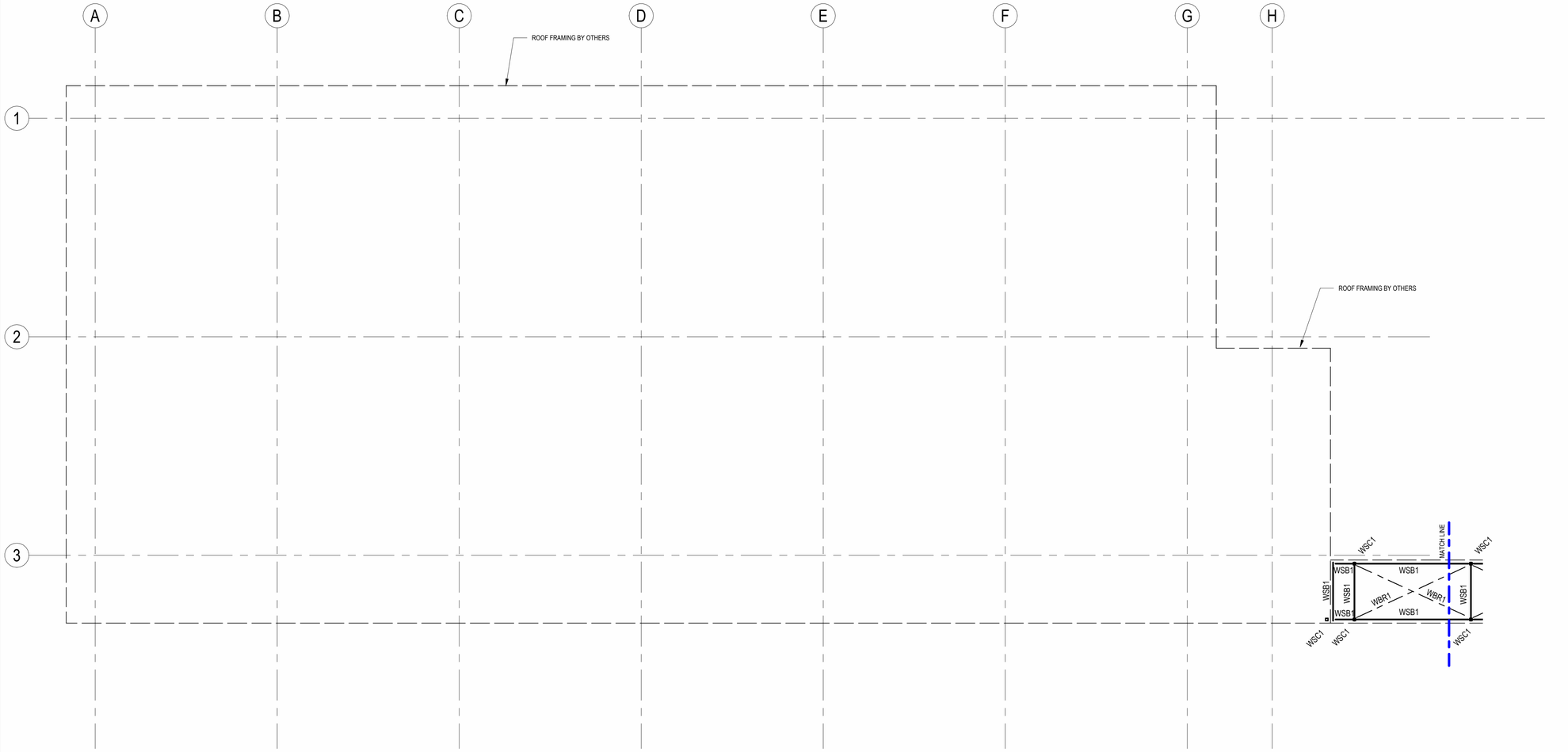
TITLE: ROOF LOADING PLAN

STATUS: SCHEMATIC DESIGN

DESIGNED	DRAWN	APPROVED	DATE	SCALE @ A1	REVISION
TG	AA	Approver	30.09.24	1 : 100	P02

PROJECT No 132566

DRAWING No KIPS-MHT-B00M-LR-DR-S-1020



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

LEGEND:

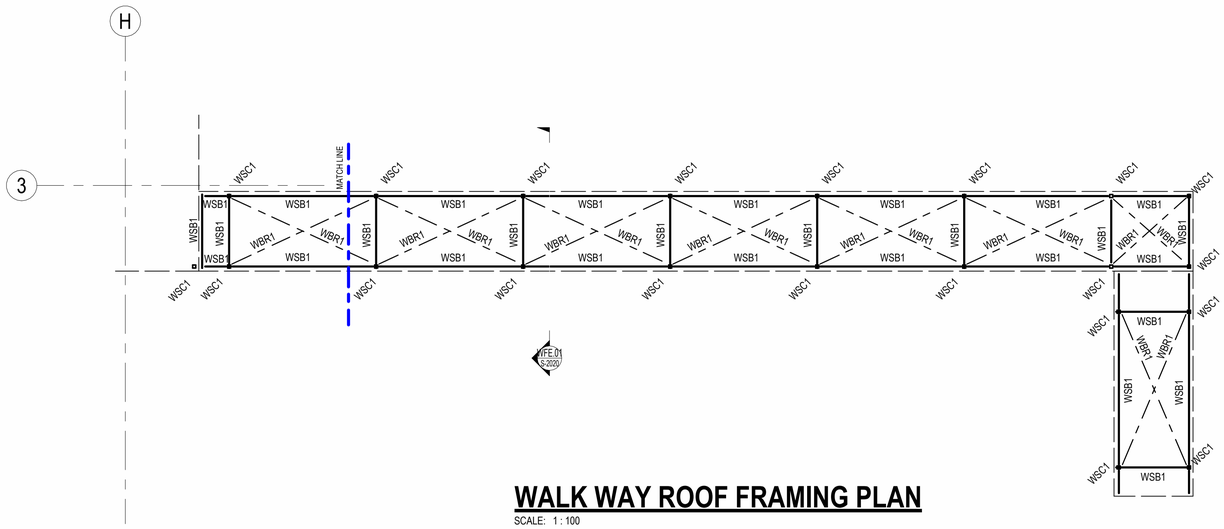
FB — DENOTES 'FLY BRACING'

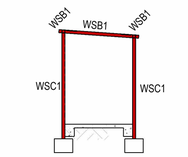
M.S. — DENOTES 'BEAM MOMENT SPLICE CONNECTION'

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

ROOF FRAMING PLAN

SCALE: 1 : 100





ELEVATION WFE.01 — S-1020

SCALE 1 : 100

WALK WAY ROOF FRAMING PLAN

SCALE: 1 : 100

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