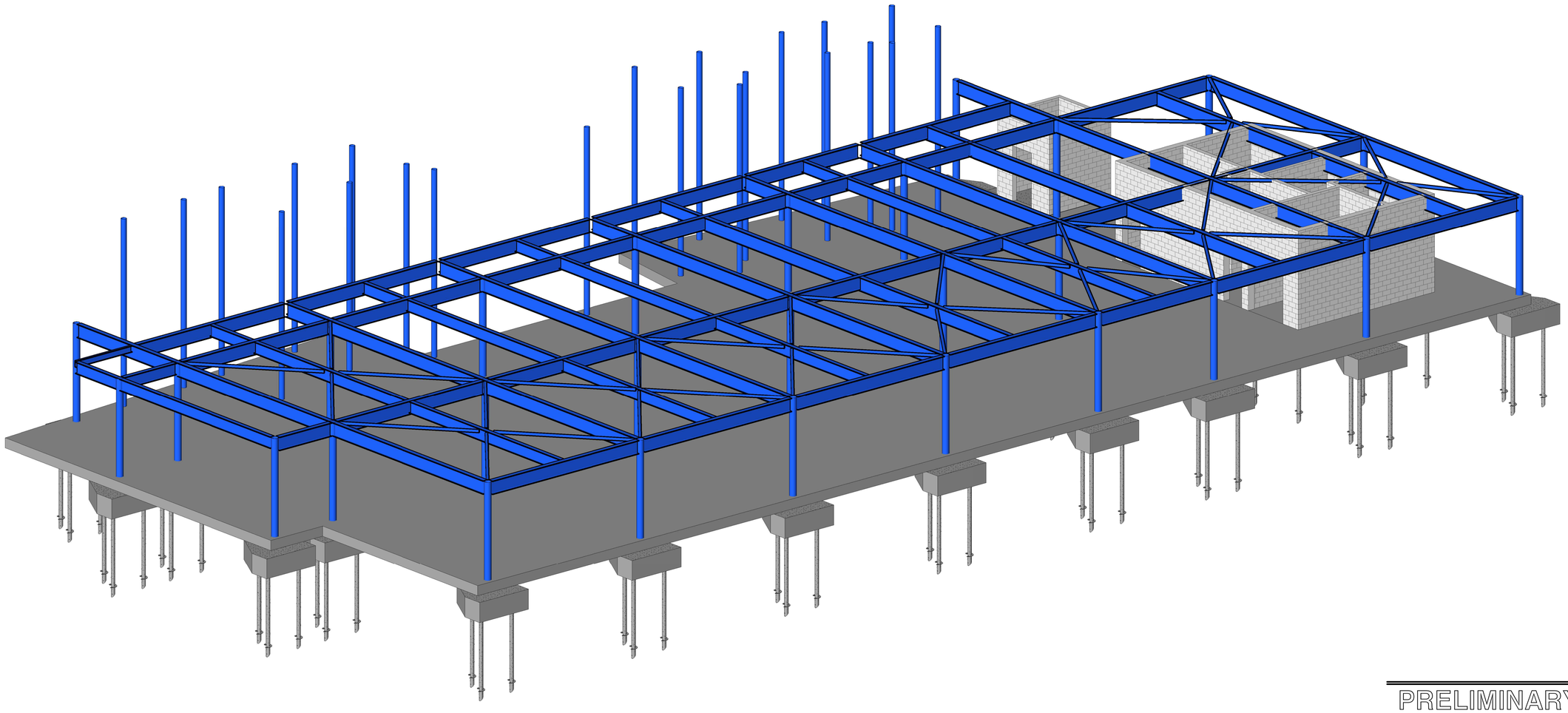
A1

BLAKEBROOK PUBLIC SCHOOL
417 ROSEHILL ROAD BLAKEBROOK NSW 2480

DRAWING LIST

DRAWING No.	DRAWING TITLE
BLA-STR-PP-DWG-0100	TITLE SHEET & DRAWING LIST
BLA-STR-PP-DWG-0101	CONSTRUCTION NOTES - SHEET 1
BLA-STR-PP-DWG-0102	CONSTRUCTION NOTES - SHEET 2
BLA-STR-PP-DWG-0200	FOOTING PLAN
BLA-STR-PP-DWG-0300	UNDERCROFT LEVEL SLAB ON GROUND PLAN
BLA-STR-PP-DWG-0400	RAISED LEVEL GANTRY FRAMING PLAN
BLA-STR-PP-DWG-0501	FOOTING, SLAB ON GROUND & GANTRY FRAMING DETAILS - SHEET 1
BLA-STR-PP-DWG-0502	FOOTING, SLAB ON GROUND & GANTRY FRAMING DETAILS - SHEET 2



PRELIMINARY

NOT FOR CONSTRUCTION

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
1	ISSUED FOR INFORMATION	S.J.K.	P.R.	09.10.23

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Project
BLAKEBROOK PUBLIC SCHOOL
417 ROSEHILL ROAD BLAKEBROOK NSW 2480

Drawn: S.J.K. | Designed: A.M. | Date: 06/12/13
Checked: P.R. | Approved: P.R. | Scale:

Title
TITLE SHEET & DRAWING LIST

Drawing number: BLA-STR-PP-DWG-0100

Revision: 1

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GENERAL NOTES:

G1 THESE DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION UNTIL THEY ARE MARKED 'FOR CONSTRUCTION' AND APPROVED BY THE RELEVANT AUTHORITIES.

G2 THE WORD 'ENGINEER' AS USED IN THESE NOTES REFERS TO AN EMPLOYEE OR NOMINATED REPRESENTATIVE OF H & H CONSULTING ENGINEERS P/L (TRADING AS HENRY & HYMAS)

G3 STRUCTURAL DRAWINGS AND NOTES SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS, REPORTS, SPECIFICATIONS AND ANY OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORKS.

G4 UNLESS NOTED OTHERWISE, ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES. UNDIMENSIONED DISTANCES SHALL NOT BE OBTAINED BY SCALING OFF THE STRUCTURAL DRAWINGS OR MEASURING FROM THE ELECTRONIC DRAWINGS. DIMENSIONED SIZES OF ALL STRUCTURAL ELEMENTS AS SHOWN ON HENRY & HYMAS DRAWINGS SHALL TAKE PRECEDENCE OVER THOSE SHOWN ON OTHER CONSULTANTS' DRAWINGS. IT IS THE BUILDING CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS PRIOR TO SETTING-OUT ON SITE.

G5 STRUCTURAL ELEMENTS INDICATED ON THESE DRAWINGS ARE SHOWN IN THEIR INTENDED COMPLETED STATE. IF ANY BUILDING ELEMENT PRESENTS A DIFFICULTY IN RESPECT OF CONSTRUCTABILITY OR SAFETY, THE MATTER SHALL BE REFERRED TO THE ENGINEER FOR RESOLUTION BEFORE PROCEEDING WITH THE WORKS.

THE METHOD OF CONSTRUCTION AND THE MAINTENANCE OF SAFETY DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE BUILDING CONTRACTOR. UNLESS NOTED OTHERWISE ON THE DRAWINGS, THE BUILDING CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND ERECTION OF TEMPORARY WORKS INCLUDING PROPPING, BRACING AND SHORING AS NECESSARY TO MAINTAIN THE STRUCTURE OR ANY PART OF IT IN A STABLE CONDITION DURING CONSTRUCTION. ADVICE FROM APPROPRIATELY QUALIFIED PROFESSIONALS SHALL BE OBTAINED FOR THIS PURPOSE.

G6 NO PART OF THE STRUCTURE SHALL BE CONSTRUCTED ON OR ADJACENT TO ANY OF THE FOLLOWING UNLESS THE HAZARDS AND MITIGATION MEASURES, IF REQUIRED, ARE INDICATED ON THE STRUCTURAL DRAWINGS:

- EMBANKMENTS, BATTERS, WATER RETAINING STRUCTURES, RETAINING WALLS, PITS, SEWERS, SERVICE TRENCHES, DRAINAGE CANALS, CREEKS OR ANY OTHER POTENTIAL SOURCE OF DAMAGE TO THE STRUCTURE. IF ANY SUCH HAZARDS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED AND APPROVAL OBTAINED PRIOR TO PROCEEDING.

G7 THE BUILDING CONTRACTOR SHALL LOCATE ALL EXISTING AND PROPOSED SERVICES AND EASEMENTS ON AND ADJACENT TO THE SITE. APPROVALS FROM THE RELEVANT STATUTORY AUTHORITIES AND THE ENGINEER SHALL BE OBTAINED PRIOR TO BUILDING ON OR OVER ANY SERVICES OR EASEMENTS.

G8 EXCAVATION WORK SHALL NOT BE CARRIED OUT BELOW THE LEVEL OF ANY ADJOINING BUILDING FOOTING WITHOUT EXCLUSIVE APPROVAL OF THE ENGINEER. THE BUILDING CONTRACTOR MUST OBTAIN WRITTEN CONSENT FROM THE ADJOINING PROPERTY OWNER(S) PRIOR TO THE INSTALLATION OF UNDERPINNING, GROUND ANCHORS, DRAINAGE LINES OR ANY OTHER WORK BEYOND THE PROPERTY BOUNDARY.

G9 NO HOLES OR CHASES SHALL BE MADE IN ANY STRUCTURAL ELEMENT, UNLESS SHOWN ON THE DRAWINGS OR WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER.

G10 A FULL DEPTH 'V' JOINT SHALL BE PROVIDED IN RENDER WHERE TWO DIFFERING STRUCTURAL MATERIALS MEET. EG. AT THE JUNCTION OF MASONRY WITH CONCRETE.

G11 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARDS, THE NATIONAL CONSTRUCTION CODE (FORMERLY BCA), AND THE REQUIREMENTS OF THE RELEVANT STATUTORY AUTHORITIES. ALL WORKMANSHIP SHALL CONFORM TO GOOD TRADE PRACTICE.

G12 WATERPROOFING REQUIREMENTS SHALL BE AS SPECIFIED BY THE ARCHITECT AND ARE NOT NECESSARILY INDICATED ON THE STRUCTURAL DRAWINGS.

G13 ONLY THE LATEST REVISIONS OF THE NOMINATED AUSTRALIAN STANDARDS SHALL APPLY WHERE REFERENCED ON THE DRAWINGS.

G14 IT MUST BE NOTED THAT THE APPROVAL OF A SUBSTITUTION OR AN ALTERNATIVE FROM THE ENGINEER IS NOT, IN ITSELF, AN AUTHORISATION FOR A VARIATION.

G15 THE ENGINEER SHALL BE GIVEN AT LEAST 48 HOURS NOTICE FOR SITE INSPECTIONS.

DESIGN LOADS:

L1 SUPERIMPOSED FLOOR SLAB DESIGN LOADS ARE GENERALLY IN ACCORDANCE WITH AS1170.1 AND AS NOTED BELOW, UNLESS MORE STRINGENT REQUIREMENTS ARE SPECIFIED ELSEWHERE IN THE DOCUMENTATION.

LOCATION		SUPERIMPOSED DEAD LOAD (SDL) - kPa	LIVE LOAD (LL) - kPa
SCHOOLS	- CLASSROOMS	1.0	3.0
	- GENERAL OFFICE	1.0	3.0
	- STEEL ROOF	0.15	0.25 / 0.45 (WITH SOLAR PANELS)
	- FIRE STAIRS	0.5	4.0
	- ACCESS STAIRS	0.5	4.0
	- AMENITIES	1.5	2.0
	- CORRIDORS & LOBBIES	1.0	4.0
	- TERRACES / BALCONIES	2.0	4.0
	- LIBRARY	1.0	4.0
	- PLANT ROOM	0.5	5.0
	- STOREROOM	1.0	10.0

L2 WIND LOADS ARE IN ACCORDANCE WITH AS1170.2 AND AS FOLLOWS:

- WIND REGION - B1
- TERRAIN CATEGORY - 2
- IMPORTANCE LEVEL - 3
- ANNUAL PROBABILITY OF EXCEEDANCE - 1:1000
- REGIONAL WIND SPEED (VR) - 59.9 m/s

L3 EARTHQUAKE LOADS ARE IN ACCORDANCE WITH AS1170.4 AND AS FOLLOWS:

- IMPORTANCE LEVEL - 3
- ANNUAL PROBABILITY OF EXCEEDANCE - 1:1000
- SUBSOIL CLASS - Ee
- HAZARD FACTOR - 0.09
- PROBABILITY FACTOR - 1.3
- EARTHQUAKE DESIGN CATEGORY - EDC II

GROUND WORKS & BULK EXCAVATION:

GW1 ALL GROUND WORKS AND EXCAVATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS AND AS DIRECTED ON SITE.

ALL FILLING SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH THE LEVEL 1 REQUIREMENTS CONFORMING TO AS3798 UNO.

GW2 UNLESS STATED OTHERWISE IN THE GEOTECHNICAL REPORT, STRIPPED SURFACES SHALL BE PROOF-ROLLED IN THE PRESENCE OF A GEOTECHNICAL ENGINEER WITH A MINIMUM OF 8 PASSES WITH AN 8 TONNE ROLLER. ANY SOFT AREAS SHALL BE REPLACED WITH APPROVED MATERIAL AND RE-COMPACTED.

GW3 EARTHWORKS CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE EXCAVATIONS IN A STABLE CONDITION WITHOUT AFFECTING THE ADJACENT PROPERTIES OR SERVICES. ALL EXCAVATIONS SHALL BE FINISHED CLEAN AND TO THE SPECIFIED LEVELS.

GW4 WHERE REQUIRED, TEMPORARY SHORING SHALL BE PROVIDED TO THE SIDES OF THE EXCAVATION.

GW5 FILL SHALL BE PLACED AND COMPACTED IN LAYERS OF 250 mm MAXIMUM LOOSE THICKNESS. UNLESS NOTED OTHERWISE IN THE GEOTECHNICAL REPORT OR THE CIVIL ENGINEER'S SPECIFICATIONS, THE TOP TWO LAYERS IN THE PAVED AREAS SHALL BE COMPACTED TO 100% OF STANDARD MAXIMUM DRY DENSITY (SMDD). LOWER LAYERS MAY BE COMPACTED TO 95% OF SMDD.

GW6 WHERE A CONCRETE PAVEMENT OR SLAB IS TO BE BUILT OVER THE SUBGRADE, THE COMPACTED SUBGRADE SHALL ACHIEVE A MINIMUM CBR OF 4%, UNLESS VARIED BY THE ENGINEER.

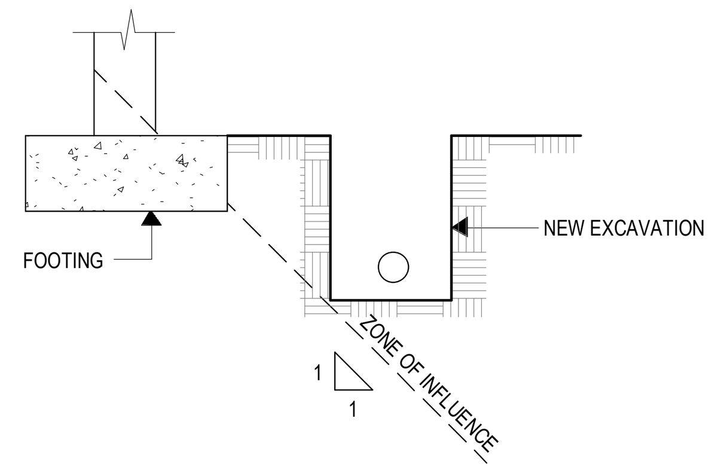
GW7 UNLESS STATED OTHERWISE IN THE GEOTECHNICAL REPORT, ALL GROUND WORKS SHALL BE TESTED AND APPROVED BY THE GEOTECHNICAL ENGINEER IN ACCORDANCE WITH AS3798.

GW8 LEVELS WHERE SHOWN ARE ONLY BULK EXCAVATION LEVELS. DETAILED EXCAVATION, INCLUDING EXCAVATION FOR LIFT PITS, FOOTINGS, TEMPORARY SHORING, UNDERPINNING AND DRAINAGE TRENCHES & SUMPS ETC., ARE NOT INCLUDED AND SHALL BE CARRIED OUT SEPARATELY.

GW9 BULK EXCAVATION LEVELS ARE BASED ON SLAB AND BASE COURSE THICKNESSES AS SPECIFIED ON THE DRAWINGS UNO. THE BUILDING CONTRACTOR SHALL ALLOW FOR ANY ADDITIONAL BASE IF REQUIRED DURING CONSTRUCTION (E.G. RECYCLED CONCRETE FOR ACCESS WAYS AND WORK PLATFORM FOR DRILLING RIG ETC.). BULK EXCAVATION LEVELS SHALL BE ADJUSTED TO SUIT.

GW10 ROCK LEVELS IF SHOWN ON STRUCTURAL DRAWINGS ARE INDICATIVE ONLY. THE CONTRACTOR SHALL MAKE THEIR OWN ASSESSMENT OF ROCK LEVELS AND ESTIMATE ACCORDINGLY.

GW11 NO EXCAVATION SHALL FALL WITHIN THE ZONE OF INFLUENCE OF ANY ADJACENT FOUNDATION WITHOUT PRIOR APPROVAL OF THE ENGINEER.



FOUNDATIONS:

F1 FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS GIVEN IN THE GEOTECHNICAL REPORT No. SYDGE319200AF Rev.2 DATED 2 August 2023 PREPARED BY TETRA TECH COFFEY.

F2 FOOTINGS AND FOUNDATIONS HAVE BEEN DESIGNED FOR THE FOLLOWING ALLOWABLE BEARING PRESSURES:

PAD FOOTINGS - 50 kPa
STRIP FOOTINGS - 50 kPa
BORED PILES - 1000 kPa
SCREW PILES - 1000 kPa

FOUNDATION MATERIAL SHALL BE APPROVED BY THE CONSULTING GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF CONCRETE.

F3 EXCAVATE FOR FOOTINGS TO THE NOMINATED SIZE AND DEPTH. FOOTING FOUNDING LEVELS ARE PROVISIONAL SUBJECT TO ACTUAL SITE CONDITIONS AND APPROVAL BY THE GEOTECHNICAL ENGINEER.

F4 FOOTINGS SHALL BE LOCATED CENTRALLY UNDER THE COLUMNS AND WALLS UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.

F5 FOOTINGS SHALL BE CONSTRUCTED AND BACKFILLED AS SOON AS POSSIBLE FOLLOWING EXCAVATION TO AVOID SOFTENING OR DRYING OF THE FOUNDING MATERIAL DUE TO EXPOSURE.

F6 UNDERCROFT SLABS HAVE BEEN DESIGNED BASED ON A SITE REACTIVITY CLASSIFICATION "CLASS M" IN ACCORDANCE WITH AS2870. SOIL STABILISATION IS TO BE CARRIED OUT TO A DEPTH OF 1.0m MIN. IN ACCRDANCE WITH THE GEOTECH ENGINEER'S RECOMMENDATIONS.

SCREW PILES:

SP1 THE PILING CONTRACTOR SHALL DESIGN AND INSTALL THE PILES IN ACCORDANCE WITH AS2159 AND THE PROJECT SPECIFICATIONS ON A 'DESIGN & CONSTRUCT' BASIS. IT IS PERMISSIBLE TO DETERMINE THE ULTIMATE LOADS BY MULTIPLYING THE SAFE WORKING LOADS BY A FACTOR OF 1.4 OR VICE VERSA.

THE PROJECT SPECIFIC GEOTECHNICAL REPORT SHALL BE MADE AVAILABLE TO THE PILING CONTRACTOR TO ASSIST WITH THE DESIGN. IT IS THE PILING CONTRACTOR'S RESPONSIBILITY TO GATHER ANY FURTHER INFORMATION AS REQUIRED, THAT MAY NOT BE INCLUDED IN THE GEOTECHNICAL REPORT.

SP2 SCREW PILES SHALL BE DESIGNED, INSTALLED AND TESTED IN ACCORDANCE WITH AS2159, AS4100, OTHER RELEVANT AUSTRALIAN STANDARDS AND THE FOLLOWING CONDITIONS:

- PILES TO BE COATED OR HAVE A SACRIFICIAL THICKNESS OF STEEL CONSISTENT WITH AN EXPECTED LIFE OF 50 TO 100 YEARS IN ACCORDANCE WITH AS2159.
- MAXIMUM SETTLEMENT OF 15 mm AT WORKING LOADS UNLESS DIFFERENT CRITERIA ARE SPECIFIED ELSEWHERE IN THE DOCUMENTATION.
- PILES TO BE DESIGNED FOR AXIAL LOADS COMBINED WITH A BENDING MOMENT FROM A 75 mm ECCENTRICITY.
- PILE TO STRUCTURE CONNECTION SHALL BE ASSUMED AS 'HINGED', I.E. NO BENDING MOMENT IS TO BE TRANSFERRED TO THE STRUCTURE.

DESIGN CALCULATIONS AND THE INSTALLATION METHODOLOGY SHALL BE SUBMITTED FOR THE ENGINEER'S REVIEW PRIOR TO INSTALLATION.

SP3 PILES SHALL BE INSTALLED WITHIN 75 mm OF THE LOCATIONS SHOWN ON PLAN. THE SCREW PILE CONTRACTOR SHALL REVIEW THE SET OUT WITH RESPECT TO THE DESIGN FLIGHT AUGER SIZE AND INSTALLATION REQUIREMENTS TO VERIFY THAT THE SPECIFIED PILE SPACINGS ARE ACHIEVABLE. THE ENGINEER SHALL BE NOTIFIED PROMPTLY OF ANY REQUIRED CHANGES TO THE DESIGN.

SP4 EACH PILE SHALL BE TRIMMED TO ± 25 mm OF THE CUT-OFF LEVEL. ANY DAMAGE CAUSED TO THE PILES DURING TRIMMING MUST BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

SP5 UPON COMPLETION OF PILING, THE PILING CONTRACTOR SHALL FURNISH THE FOLLOWING DOCUMENTS TO THE BUILDING CONTRACTOR AND THE ENGINEER:

i) A WORK-AS-EXECUTED SURVEY OF THE PLAN POSITIONS OF ALL PILES PREPARED BY A QUALIFIED SURVEYOR.
ii) A CERTIFICATE FROM A REGISTERED PROFESSIONAL ENGINEER STATING THAT ALL PILES HAVE BEEN DESIGNED, INSTALLED AND TESTED AS NECESSARY IN ACCORDANCE WITH AS2159 TO SAFELY CARRY THE LOADS INDICATED ON THE DRAWINGS.

THE PILING CONTRACTOR SHALL NOT DEMOBILISE THE PILING RIG FROM SITE UNTIL THE ENGINEER HAS ISSUED THE FINAL SIGN-OFF OF ALL PILES.

BORED OR DRIVEN PILES:

BP1 BORED PILES HAVE BEEN DESIGNED FOR THE SAFE WORKING LOADS AS INDICATED ON THE PLANS BASED ON THE RECOMMENDED ALLOWABLE BEARING PRESSURE AND SHAFT ADHESION VALUES. REFER TO THE GEOTECHNICAL REPORT FOR SITE SPECIFIC GEOTECHNICAL INFORMATION.

DRIVEN PILES SHALL BE INSTALLED ON A 'DESIGN & CONSTRUCT' BASIS.

BP2 WHERE THE PILES ARE INSTALLED ON A 'DESIGN & CONSTRUCT' BASIS, THE PILING CONTRACTOR SHALL DESIGN AND INSTALL THE PILES IN ACCORDANCE WITH AS2159 AND OTHER PROJECT SPECIFICATIONS. ULTIMATE LOADS MAY BE DETERMINED BY MULTIPLYING THE WORKING LOADS BY A FACTOR OF 1.4 OR VICE VERSA. IT IS THE PILING CONTRACTOR'S RESPONSIBILITY TO GATHER FURTHER INFORMATION AS REQUIRED, THAT MAY NOT BE INCLUDED IN THE GEOTECHNICAL REPORT.

PILE TO STRUCTURE CONNECTION SHALL BE ASSUMED AS 'HINGED', I.E. NO BENDING MOMENT IS TO BE TRANSFERRED TO THE STRUCTURE.

DESIGN CALCULATIONS AND THE INSTALLATION METHODOLOGY SHALL BE SUBMITTED FOR THE ENGINEER'S REVIEW PRIOR TO THE INSTALLATION OF PILES.

BP3 BORED PILES MAY HAVE TO BE LINED IN WEAK SOILS TO PREVENT COLLAPSE. CONTINUOUS FLIGHT AUGER (CFA) PILES OR 'TREMIE' METHOD OF CONCRETING MAY BE USED IF GROUND WATER IS ENCOUNTERED.

IT IS THE PILING CONTRACTOR'S RESPONSIBILITY TO USE APPROPRIATE PILING TECHNIQUES BASED ON THE RECOMMENDATIONS GIVEN IN THE GEOTECHNICAL REPORT.

BP4 CENTRELINE OF THE PILES SHALL ALIGN WITH THE CENTRELINE OF THE COLUMNS ABOVE OR SYMMETRICALLY LOCATED UNDER THE PILECAPS AS APPLICABLE, UNO ON THE DRAWINGS. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE COLUMN SETOUT.

BP5 THE PILING CONTRACTOR SHALL VERIFY THE FOUNDING MATERIAL AND THE DEPTH OF PILES PRIOR TO PLACING REINFORCEMENT AND POURING CONCRETE.

BP6 ALL PILES HAVE BEEN DESIGNED TO CARRY THE DESIGN LOADS AT A MAXIMUM OUT-OF-POSITION TOLERANCE OF 75 mm IN ACCORDANCE WITH AS2159. UNLESS THE PILING CONTRACTOR CAN DEMONSTRATE OTHERWISE, ANY PILES WHICH ARE OUT OF POSITION BY MORE THAN 75 mm WOULD REQUIRE APPROPRIATE RECTIFICATION SYSTEMS.

ALL PILES SHALL BE INSTALLED USING A RIG CAPABLE OF MAINTAINING A MAXIMUM VERTICAL TOLERANCE OF ± 20 mm PER METRE LENGTH.

BP7 NOTIFY THE ENGINEER IMMEDIATELY IF ANY OBSTRUCTIONS ARE ENCOUNTERED OTHER THAN THOSE INDICATED IN THE GEOTECHNICAL REPORT.

BP8 CONCRETE SHALL BE PLACED IN BORED PILES TO ENSURE A SOUND AND MONOLITHIC COMPACTED CONCRETE SHAFT UP TO THE CUT-OFF LEVEL. TAKE APPROPRIATE MEASURES TO AVOID SEGREGATION, BLEEDING AND GROUT DEFICIENCY OF THE PILE.

BP9 EACH PILE SHALL BE TRIMMED TO ± 25 mm OF THE CUT-OFF LEVEL. ANY DAMAGE CAUSED TO THE PILES DURING TRIMMING MUST BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

BP10 UPON COMPLETION OF PILING, THE PILING CONTRACTOR SHALL FURNISH THE FOLLOWING DOCUMENTS TO THE BUILDING CONTRACTOR AND THE ENGINEER.

i) A WORK-AS-EXECUTED SURVEY OF THE PLAN POSITIONS OF ALL PILES PREPARED BY A QUALIFIED SURVEYOR.
ii) A CERTIFICATE FROM THE PILING CONTRACTOR STATING THAT ALL PILES HAVE BEEN INSTALLED AND TESTED AS NECESSARY IN ACCORDANCE WITH AS2159 TO SAFELY CARRY THE LOADS AS INDICATED ON THE DRAWINGS.
iii) A CERTIFICATE FROM A REGISTERED PROFESSIONAL ENGINEER STATING THAT THE PILE DESIGN COMPLIES WITH THE PROJECT SPECIFICATIONS, IF THE PILES ARE INSTALLED ON A 'DESIGN & CONSTRUCT' BASIS.

THE PILING RIG SHALL NOT BE DEMOBILISED FROM SITE UNTIL THE ENGINEER AND THE GEOTECHNICAL CONSULTANT HAVE ISSUED THE FINAL SIGN-OFF OF ALL PILES.

SLAB ON GROUND:

SG1 REFER TO 'GROUND WORKS & BULK EXCAVATION' NOTES FOR SUBGRADE PREPARATION.

SG2 PLACE A 100 mm THICK LAYER OF DGB20 AS SUB-BASE OVER THE PREPARED SUBGRADE AND COMPACT TO 98% OF MODIFIED MAXIMUM DRY DENSITY UNO. THE SUB-BASE SHALL BE COMPACTED WITH A SMOOTH DRUM ROLLER AND FINISHED TO A TOLERANCE OF + OR –10 mm.

SG3 WHERE A VAPOUR BARRIER IS SPECIFIED BENEATH THE SLAB, PROVIDE A 0.2 mm POLYETHYLENE MEMBRANE OF MEDIUM IMPACT RESISTANCE IN ACCORDANCE WITH THE PROVISIONS OF AS2870. THE SHEETING SHALL BE LAPPED AND TAPED AT THE JOINTS BY A MINIMUM OF 200 mm AND CONTINUOUS UNDER THE SIDE FORMS.

THE VAPOUR BARRIER SHALL BE PLACED DIRECTLY ON THE SUB-BASE, BUT IF THE SURFACE IS ROUGH AND LIKELY TO DAMAGE THE PLASTIC SHEETING, A BLINDING LAYER OF FINE MATERIAL SUCH AS QUARRY DUST NOT EXCEEING 30 mm IN THICKNESS SHALL BE PROVIDED AND ROLLED TO A SMOOTH FINISH.

SPECIAL CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE VAPOUR BARRIER PRIOR TO AND DURING CONCRETING, AND ANY TEARS OR PERFORATIONS SHALL BE PATCHED PROMPTLY.

SG4 PLACE THE REINFORCEMENT MESH AT THE SPECIFIED DEPTH SUPPORTED ON BAR CHAIRS SPACED ON A 0.8 - 1.0 m GRID FOR MESH SIZES SL82 OR LARGER AND 0.6 m SPACING FOR LIGHTER MESH. INDEPENDENT SUPPORTS NOT RESTING ON THE REINFORCEMENT OR SIDE FORMS SHALL BE USED TO CARRY OTHER CONSTRUCTION LOADINGS SUCH AS PLANT OR EQUIPMENT.

BAR CHAIRS SHALL BE FITTED WITH A PLATE SUPPORT UNDER THE LEGS TO PREVENT THEM FROM PUNCTURING THE VAPOUR BARRIER AND SINKING INTO THE SUB-BASE.

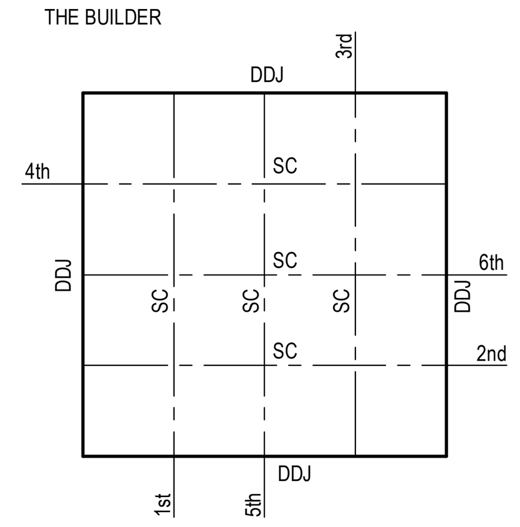
THE PRACTICE OF LAYING THE REINFORCING MESH ON THE SUB-BASE BEFORE CONCRETE IS PLACED AND LIFTING IT INTO POSITION AFTER PLACING, OR PLACING IT ON THE FINISHED SURFACE OF CONCRETE AND 'WALKING IT IN', ARE STRICTLY NOT PERMITTED.

SG5 REFER TO 'CONCRETE NOTES' FOR SPECIFICATIONS ON CONCRETE SUPPLY, PLACING, FINISHING AND CURING.

FOR THE CONCRETE SUPPLY TRUCKS TO BE ABLE TO DISCHARGE THEIR LOADS CLOSER TO THE FINAL POSITION, THE SITE SHALL BE PLANNED WITHOUT ANY OBSTACLES SUCH AS EXCAVATED SOIL, BUILDING MATERIALS AND CONSTRUCTION SHEDS/ OFFICES. IF CONCRETE HAS TO BE MOVED BY MANUAL METHODS DURING THE CONCRETE POUR, IT SHALL BE DONE WITH SHOVELS. POKER VIBRATORS SHALL NOT BE USED TO MOVE CONCRETE.

SG6 SAW CUTTING CONCRETE PAVEMENTS SHALL BE COMPLETED WITHIN 4 - 12 HOURS AFTER CONCRETE HAS SET IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

- MARK OUT THE SAW CUT LOCATIONS ACCURATELY USING A CHALK LINE
- COMMENCE SAW CUTTING WITH THE 1ST CUT FROM THE OUTSIDE EDGE AND CONTINUE IN A ROTATIONAL ORDER TOWARDS THE MIDDLE OF THE SLAB PANEL, AS SHOWN IN THE FIGURE BELOW.
- SAW CUT IN ONE PASS TO THE CORRECT DEPTH.
- RECORD THE START AND FINISH TIME OF SAW CUTTING AND LOG WITH THE BUILDER



SAW CUT SEQUENCE EXAMPLE

SAFETY IN DESIGN:

SD1 'SAFETY IN DESIGN' IS THE INTEGRATION OF CONTROL MEASURES EARLY IN THE DESIGN PROCESS TO ELIMINATE OR, IF NOT REASONABLY PRACTICABLE, MINIMISE RISKS TO HEALTH AND SAFETY THROUGHOUT THE LIFE OF THE STRUCTURE BEING DESIGNED.

SAFETY IN DESIGN APPLIES TO THE DESIGN AND CONSTRUCTION PHASES AND ALSO TO THE OPERATION, MAINTENANCE AND RENOVATION OF THE BUILDING OR FACILITY AS A WORKPLACE, AND FINALLY DEMOLITION OF THE STRUCTURE AT THE END OF ITS USEFUL LIFE.

SD2 ALL THE DESIGNERS INVOLVED IN THIS PROJECT MUST COMPLY WITH THE *'SAFE DESIGN OF STRUCTURES - 'CODE OF PRACTICE 2019'* PUBLISHED BY SAFEWORK NSW UNDER THE *'WORK HEALTH AND SAFETY ACT OF 2011'*. COMPLIANCE WITH THE FOLLOWING DOCUMENTS WILL ALSO BE REQUIRED IF RELEVANT.

- PRACTICAL GUIDE TO PLANNING THE SAFE ERECTION OF STEEL STRUCTURES (2016) - STEEL AUSTRALIA
- EXCAVATION WORK CODE OF PRACTICE (2020) – SAFEWORK NSW
- DEMOLITION WORK CODE OF PRACTICE (2019) – SAFEWORK NSW

SD3 REFER TO THE SAFETY IN DESIGN (SID) REPORT DATED *TBA* THE PROJECT MANAGER / SUPERINTENDENT SHALL PROVIDE A COMPLETED COPY OF THE SID REPORT TO THE BUILDING CONTRACTOR AND THE PROJECT OWNER / DEVELOPER FOR IMPLEMENTATION.

SD4 IF ANY FURTHER ISSUES ARE IDENTIFIED BY ANY PARTY INVOLVED IN THIS PROJECT THAT ARE NOT INCLUDED IN THE SAFETY IN DESIGN REPORT, SUCH ISSUES SHALL BE BROUGHT TO THE NOTICE OF THE PROJECT MANAGER/ SUPERINTENDENT IMMEDIATELY.

SD5 NORMAL HAZARDS AND RISKS DURING ALL LIFE CYCLE STAGES ARE THE RESPONSIBILITY OF THE RELEVANT PARTIES DURING THE STAGE CONCERNED, AS NOTED BELOW;

LIFE CYCLE STAGE	RESPONSIBILITY
CONSTRUCTION	PRINCIPAL BUILDING CONTRACTOR
OCCUPATION	OWNER / OPERATOR
MAINTENANCE	OWNER / OPERATOR / MAINTENANCE CONTRACTOR
DECONSTRUCTION (DECOMMISSIONING OF SERVICES / UTILITIES, STABILITY OF THE STRUCTURE DURING DEMOLITION AND SAFE DISPOSAL / RECYCLING OF MATERIALS ETC.)	DEMOLITION CONTRACTOR

FORMWORK:

F1 FORMWORK AND FALSEWORK SHALL BE DESIGNED, CONSTRUCTED AND STRIPPED IN ACCORDANCE WITH AS3610.

THE BUILDING CONTRACTOR SHALL ENGAGE A QUALIFIED PROFESSIONAL FOR THE DESIGN, CONSTRUCTION AND CERTIFICATION OF FORMWORK, FALSEWORK AND THEIR SUPPORTS.

DESIGN INFORMATION REGARDING THE GROUND SUPPORT FOR FORMWORK AND FALSEWORK SHALL BE DETERMINED FROM THE CONDITIONS EXISTING ON SITE AT THE TIME OF CONSTRUCTION.

THE FORMWORK SHALL NOT BE DESIGNED TO RELY ON RESTRAINT OR STABILITY FROM THE PERMANENT STRUCTURE WITHOUT PRIOR APPROVAL OF THE ENGINEER.

F2 WHERE APPLICABLE, FORMWORK SHALL BE DESIGNED TO ACCOMMODATE MOVEMENT AND LOAD REDISTRIBUTION FROM POST-TENSIONING. THE FORMWORK DESIGNER SHALL CONSULT WITH THE POST-TENSIONING CONTRACTOR ON THE DESIGN REQUIREMENTS.

F3 DURING CONSTRUCTION, SUPPORT PROPPING WILL BE REQUIRED WHERE LOADS FROM STACKED MATERIALS, FORMWORK AND OTHER SUPPORTED SLABS INDUCE LOADS ON A SLAB OR BEAM THAT EXCEED THE DESIGN CAPACITY FOR STRENGTH OR SERVICEABILITY LIMIT STATES AT THAT AGE. ONCE THE NOMINATED 28 DAY STRENGTH HAS BEEN ATTAINED, THESE LOADS SHALL NOT EXCEED THE DESIGN SUPERIMPOSED LOADS SET OUT IN THESE GENERAL NOTES.

F4 SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THE APPLIED FINISHES. BEAM DEPTHS ARE USUALLY NOTED FIRST AND INCLUDE THE SLAB THICKNESS. FOR CHAMFERS, DRIP GROOVES, REGLETS ETC., REFER TO THE ARCHITECT'S DRAWINGS AND/ OR SPECIFICATIONS.

PROVIDE UPWARD CAMBER OR PRESET IN FORMWORK TO SLABS AND BEAMS WHERE NOTED ON THE DRAWINGS.

THE FORMWORKER SHALL MAKE THE BUILDING CONTRACTOR AND CONCRETOR FULLY AWARE OF THE LOCATIONS WHERE FORMWORK IS CAMBERED OR PRE-SET IN ORDER THAT THE FULL DEPTHS OF THE MEMBERS ARE ACHIEVED DURING CONCRETING.

F5 REFER TO THE ARCHITECT'S SPECIFICATIONS FOR THE REQUIRED CLASS OF SURFACE FINISH TO THE FORMED SURFACES.

F6 PROVIDE 20 mm CHAMFERS AT ALL CORNERS UNO.

F7 THE FORMWORKER SHALL PROVIDE CLEANOUTS TO ALL COLUMNS AND WALLS AND LEAVE THEM OPEN FOR THE ENGINEER'S INSPECTION, AND CLOSE OFF IMMEDIATELY PRIOR TO POURING.

F8 IN MULTI STOREY CONSTRUCTION, PROPPING SHALL BE PROVIDED FOR AT LEAST 3 LEVELS BELOW THE FLOOR BEING CAST. PROP REMOVAL SHALL BE SUBJECT TO THE ENGINEER'S APPROVAL TO AVOID OVER-STRESSING THE PREVIOUSLY CAST FLOORS.

F9 BEFORE PLACING CONCRETE, REMOVE ALL WATER, DUST, AND DEBRIS FROM THE FORMWORK.

F10 VERTICAL FORMS TO BEAM SIDES, COLUMNS AND WALLS MAY BE STRIPPED AFTER 3 DAYS WHEN THE FORMWORKER IS SATISFIED THAT STRIPPING WILL NOT DAMAGE THE GREEN CONCRETE.

F11 FOR HORIZONTAL CONVENTIONALLY REINFORCED ELEMENTS, FORMWORK MAY BE STRIPPED WHEN THE CONCRETE HAS REACHED 80% OF ITS SPECIFIED 28 DAY STRENGTH UNO ON THE DRAWINGS.

ALTERNATIVELY, FORMWORK MAY BE STRIPPED AND PROGRESSIVELY BACK-PROPPED AFTER 5 DAYS MINIMUM, SUBJECT TO ENGINEER'S APPROVAL. BACK-PROPPING SHALL REMAIN IN PLACE UNTIL THE CONCRETE HAS REACHED 80% OF THE SPECIFIED 28 DAY STRENGTH. ADDITIONAL CONDITIONS MAY APPLY IF THE SLAB IS TRANSFERRING A STRUCTURE ABOVE OR SUBJECT TO EXCESSIVE CONSTRUCTION LOADING.

STRIPPING AND BACK PROPPING TO POST-TENSIONED SLABS SHALL BE AS DIRECTED BY THE POST-TENSIONING CONTRACTOR.

F12 DO NOT PLACE PERMANENT LOADS ON THE CONCRETE STRUCTURE UNTIL AFTER FORMWORK AND PROPPING IS COMPLETELY REMOVED.

F13 FILL ALL HOLES LEFT BY FORM TIE BOLTS WITH MORTAR MATCHING THE SURFACE COLOUR OF THE FINISHED SURFACE.

CONCRETE:

C1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600 AND OTHER RELEVANT AUSTRALIAN STANDARDS UNLESS VARIED BY THE ENGINEER.

C2 BEFORE THE COMMENCEMENT OF CONCRETING, THE BUILDING CONTRACTOR SHALL ENSURE THAT THE CONCRETOR IS FULLY AWARE OF ANY AREAS OF FORMWORK THAT HAVE BEEN PRE-CAMBERED OR PRE-SET. EXTREME CARE SHALL BE TAKEN TO ENSURE THAT THE SPECIFIED DEPTHS OF BEAMS AND SLABS ARE ACHIEVED OVER THE PRE-CAMBERED OR PRE-SET FORMWORK.

C3 THE BUILDING CONTRACTOR SHALL PROVIDE CONSTANT SUPERVISION OF CONCRETE POURS AND ENSURE THAT:

- ALL APPROVALS ARE OBTAINED FROM THE ENGINEER, PT CONTRACTOR, FORMWORK ENGINEER AND OTHER RELEVANT CONSULTANTS,
- REINFORCEMENT IS INSTALLED IN ACCORDANCE WITH THE DESIGN DRAWINGS AND SECURED TO PREVENT DISPLACEMENT DURING CONCRETING,
- NO SITE WATER IS ADDED TO CONCRETE BEING POURED OR THE CONCRETE IN WAITING TRUCKS,
- ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS SHALL BE FULLY VIBRATED USING A HIGH FREQUENCY MECHANICAL VIBRATOR TO ACHIEVE FULL COMPACTION BY COMPLETELY FILLING THE FORMWORK AND SHALL BE FREE OF STONE POCKETS THOROUGHLY EMBEDDING THE REINFORCEMENT,
- NO CONCRETE IS POURED WHEN THE AMBIENT TEMPERATURE EXCEEDS 35°C,
- POURED CONCRETE IS PROTECTED FROM RAIN, WARM DRYING WINDS OR OTHER EXTREME WEATHER EVENTS,
- COLUMNS AND WALLS SHALL NOT BE POURED TOGETHER WITH THE SLAB OVER. A MINIMUM OF A 6 HOUR GAP SHALL BE MAINTAINED BETWEEN THE POURS OF VERTICAL AND HORIZONTAL ELEMENTS,
- FORMED CONCRETE SURFACES SHALL HAVE FORMWORK CLASS AND SURFACE FINISHES IN ACCORDANCE WITH AS3610, OR AS SPECIFIED BY THE PROJECT ARCHITECT.

C4 CONDUITS, PIPES AND THE LIKE SHALL BE PLACED WITHIN THE MIDDLE THIRD OF THE SLAB DEPTH AND AT A MINIMUM SPACING OF NOT LESS THAN 3 DIAMETERS. CONDUITS AND PIPES SHALL NOT BE PLACED WITHIN THE CONCRETE COVER. CONDUITS SHALL NOT BE TIED TO THE POST-TENSIONING DUCTS.

C5 SLABS AND BEAMS SHALL BE CONSTRUCTED TO BEAR ONLY ON THE BEAMS, WALLS, COLUMNS, ETC. SHOWN ON THE STRUCTURAL DRAWINGS. ALL OTHER BUILDING ELEMENTS SHALL BE KEPT 20 mm MINIMUM CLEAR FROM THE SOFFIT OF THE STRUCTURE.

C6 NO HOLES, PENETRATIONS, CHASES AND CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT PRIOR APPROVAL OF THE ENGINEER.

C7 CONCRETE PLACEMENT SHALL BE PLANNED IN SUCH A WAY THAT SUFFICIENT TIME IS ALLOWED FOR THE FINISHING OPERATIONS TO BE COMPLETED WITHIN NORMAL WORKING HOURS. WHERE THE SLAB OR PAVEMENT IS CONSTRUCTED IN THE OPEN OR ON SITES EXPOSED TO WINDS, RAPID DRYING OF THE CONCRETE SURFACE RESULTING IN INCREASED RATE OF HARDENING MAY LEAVE INSUFFICIENT TIME TO TROWEL THE SURFACE. CONSTRUCTION OF THE BUILDING SHALL BE PROGRAMMED TO MINIMISE THESE PROBLEMS. FOR INTERIOR FLOORS, WHERE POSSIBLE, COMPLETE THE ROOF AND PREFERABLY THE WALLS BEFORE THE FLOOR SLAB CONCRETE IS PLACED.

C8 THE FOLLOWING PRACTICES SHALL BE AVOIDED WHILE FINISHING AND TROWELLING THE SURFACE;

- EXCESSIVE WORKING OF THE CONCRETE SURFACE DURING COMPACTING, LEVELING AND POWER-FLOATING OF A PAVEMENT. EXCESSIVE WORKING WOULD RESULT IN A LAYER OF CEMENT RICH MORTAR BEING BROUGHT TO THE SURFACE THAT IS PRONE TO RAPID WEARING, POSSIBLY CRAZING AND DUSTING BADLY.
- FLOATING OR TROWELLING WHILE BLEED WATER CONTINUES TO RISE OR REMAINS ON THE SURFACE. RE-WORKING OF BLEED WATER INTO THE SURFACE LAYER WOULD SIGNIFICANTLY INCREASE THE WATER-CEMENT RATIO OF THE CONCRETE IN THE SURFACE LAYER RESULTING IN A WEAKENED SURFACE PRONE TO DUSTING AND DELAMINATION.
- USING A MIXTURE OF CEMENT AND STONE DUST (KNOWN AS DRIERS) TO ABSORB BLEED WATER THAT WOULD PRODUCE A VERY POOR WEARING SURFACE.

C9 VERTICAL CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED WITH AN EDGE BOARD. THOROUGHLY SCABBLE AND CLEAN THE FIRST POUR OF ALL LOOSE AND POORLY COMPACTED CONCRETE AND LAITANCE, THEN SOAK AND APPLY 1 CEMENT : 2 SAND SLURRY OR AN APPROVED BONDING AGENT IMMEDIATELY PRIOR TO PLACING THE SECOND POUR. THE SECOND POUR SHALL BE THOROUGHLY COMPACTED AGAINST THE FIRST POUR.

C10 ALL CONCRETE SHALL BE PROPERLY CURED. CURING SHALL COMMENCE WITHIN 2 HOURS OF POURING AND SHALL CONTINUE FOR A MINIMUM OF 7 DAYS, USING AT LEAST ONE OF THE METHODS BELOW FOLLOWED BY GRADUAL DRYING OUT. WHEN THE AMBIENT TEMPERATURE EXCEEDS 32°C, CURING SHALL BE ACHIEVED USING METHODS a) OR b) ONLY.

a) PONDING OR CONTINUOUS SPRINKLING WITH POTABLE WATER.

b) USE AN ABSORBENT COVER KEPT CONSTANTLY WET.

c) USE AN IMPERMEABLE SHEET MEMBRANE OVER A MOISTENED SURFACE. THE MEMBRANE SHALL BE FIXED AND LAPPED SO THAT NO AIR CIRCULATION CAN OCCUR AT THE CONCRETE SURFACE.

d) USE A CURING COMPOUND COMPLYING WITH AS3799, APPLIED UNIFORMLY IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHEN DRY, THE COATING SHOULD BE CONTINUOUS, FLEXIBLE AND WITHOUT VISIBLE BREAKS OR PIN HOLES FOR AT LEAST SEVEN DAYS. THE COMPATIBILITY OF CURING COMPOUNDS WITH THE PROPOSED APPLIED FINISHES SHALL BE VERIFIED PRIOR TO APPLICATION.

FORMED SURFACES EXPOSED WITHIN 14 DAYS OF CASTING SHALL BE SPRAYED WITH AN APPROPRIATE CURING AGENT IMMEDIATELY UPON EXPOSURE.

C11 NO MASONRY OR PARTITION WALLS SHALL BE CONSTRUCTED ON SUSPENDED FLOORS UNTIL 7 DAYS AFTER PROPPING HAS BEEN REMOVED AND ONLY WITH THE APPROVAL OF THE ENGINEER.

CONCRETE (CONTINUED):

C12 **SPECIFICATIONS FOR CONCRETE:**

THE FOLLOWING SPECIFICATIONS SHALL APPLY UNLESS MORE STRINGENT REQUIREMENTS ARE NOTED ELSEWHERE IN THE DOCUMENTATION.

Element	Slump	Max. Agg. Size	Cement Type	Exposure Classif'n	Min. Conc. Grade (f'c) MPa UNO	Conc. Cover (UNO)	Comments
Mass Conc. Footings / Piers	80	20	GP	A2	25	-	
Reinforced Footings / Piers	80	20	GP	B2 (In High Sulphate or Saline Soils)	40	55	
Core Filling Grout	230±30	10	GP	-	20	-	
Internal Suspended Slabs / Beams	80	20	GP	A2	Refer to Plans - 32 Min.	25	Greater Cover May Be Req'd for Fire. Refer to Note C12.
External Suspended Slabs / Beams	80	20	SL	B2	Refer to Plans - 40 UNO	45	Greater Cover May Be Req'd for Fire. Refer to Note C12.
External Slab On Ground (Top Cover Only, Refer to Reinf'd Ftgs / Piers For Btm Cover)	80	20	SL	B2	40	50	

NOTE:
1. READYMIX CONCRETE SUPPLY AND TESTING SHALL COMPLY WITH AS1379.
2. ALL CONCRETE WITH SHRINKAGE LIMITED (SL) CEMENT SHALL HAVE A MAXIMUM SHRINKAGE STRAIN OF 650 MICROSTRAINS AS DETERMINED BY TESTS IN ACCORDANCE WITH AS1012.13 AFTER 8 WEEKS OF DRYING.
3. WATER CEMENT RATIO OF CONCRETE SHALL NOT EXCEED 0.55 (EXCEPT FOR CORE FILLING GROUT IN BLOCK WALLS).

C13 CONCRETE COVERS FOR FIRE

UNLESS MORE STRINGENT CRITERIA ARE SPECIFIED ELSEWHERE IN THE DOCUMENTATION, THE FOLLOWING CONCRETE COVERS SHALL BE USED FOR CONVENTIONALLY REINFORCED ELEMENTS ONLY. FOR POST-TENSIONED SLABS, REFER TO PT CONTRACTOR'S SHOP DRAWINGS.

Fire Resistance Level (Minutes)	Element Type					
	Flat Slab	Banded / Ribbed Slab			Column	Wall
		Simply Supported		Continuous (One & Two Way)		
		One Way	Two Way			
30	25	25	25	25	25	25

ABBREVIATIONS:

ALT - ALTERNATELY
BJ - BUILDING JOINT
BS - BOTH SIDES
BTM - BOTTOM
CFW - CONTINUOUS FILLET WELD
FPBW - FULL PENETRATION BUTT WELD
CJ - CONSTRUCTION JOINT
C/S - BRICK OR BLOCKWORK COURSE
CTS - CENTRES
EF - EACH FACE
EW - EACH WAY
FF - FAR FACE
FGL - FINISHED GROUND LEVEL
HORIZ - HORIZONTAL
IJ - ISOLATION JOINT
LV - LENGTH VARIES
MJ - MOVEMENT JOINT
NF - NEAR FACE
NGL - NATURAL GROUND LEVEL
NOM - NOMINAL
NSOE - NOT SHOWN ON ELEVATION
NSOP - NOT SHOWN ON PLAN
NTS - NOT TO SCALE
PT - POST-TENSIONED
RC - REINFORCED CONCRETE
S/S - STAINLESS STEEL
TMJ - TEMPORARY MOVEMENT JOINT
TOK - TOP OF KERB
TOW - TOP OF WALL
U/S - UNDERSIDE
VERT - VERTICAL
UNO - UNLESS NOTED OTHERWISE
(o) - OVER
(u) - UNDER
(b) - BEHIND

PRELIMINARY

NOT FOR CONSTRUCTION

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
1	ISSUED FOR INFORMATION	S.J.K.	P.R.	09.10.23

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H&H Job No: 230050

Project: BLAKEBROOK PUBLIC SCHOOL
417 ROSEHILL ROAD BLAKEBROOK NSW 2480

Title: CONSTRUCTION NOTES - SHEET 1

Drawn	Designed	Date
S.J.K.	A.M.	-
Checked	Approved	Scale
P.R.	P.R.	1 : 1

Drawing number: BLA-STR-PP-DWG-0101
Revision: 1

A1

BLAKEBROOK PUBLIC SCHOOL
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COMPOSITE SLABS:

CS1 COMPOSITE SLABS CONSIST OF A STRUCTURAL STEEL PROFILED DECKING SYSTEM SUPPORTED ON CONTINUOUS LOAD BEARING ELEMENTS SUCH AS WALLS OR BEAMS AS DETAILED ON THE DRAWINGS. THE BUILDER SHALL NOT REPLACE THE TYPE OF DECKING PRODUCT SPECIFIED ON THE DRAWINGS WITHOUT PRIOR APPROVAL OF THE ENGINEER.

CS2 COMPOSITE SLAB DESIGNS ARE BASED ON THE FOLLOWING MAXIMUM CONSTRUCTION LOADS. THE BUILDING CONTRACTOR SHALL MAKE SURE THAT THE BELOW LOAD LIMITS ARE STRICTLY ADHERED TO BY THE SUB-CONTRACTORS.

- WORKMEN AND EQUIPMENT = 100 kg/m²
- MOUNDING OF CONCRETE NOT TO EXCEED 300 kg/m² OVER AN AREA OF 1.6 x1.6 m AND ZERO OVER THE REMAINDER.

CS3 SUPPORTING BEAMS SHALL BE PRECAMBERED IF SPECIFIED ON THE DRAWINGS TO CONTROL DEFLECTIONS.

CS4 JOINTS IN THE STEEL SHEETING SHALL BE LOCATED ONLY AT THE PERMANENT SUPPORTS WHEN THE SHEETING IS TERMINATED.

DECKING SHALL BE SECURELY FIXED TO SUPPORTS BY SPOT WELDING, SCREW FIXING OR SIMILAR METHODS AGAINST WIND UPLIFT AND PROVIDE SIDE LAP FASTENERS TO MANUFACTURER'S SPECIFICATIONS.

CS5 PROPPING TO METAL DECKING SHALL BE PROVIDED STRICTLY AS NOTED ON THE DRAWINGS.

THE LINES OF SUPPORT SHALL EXTEND ACROSS THE FULL WIDTH OF THE SHEETING AND HAVE A MINIMUM BEARING OF 50 mm AT THE ENDS OF THE SHEETS AND 100 mm AT INTERMEDIATE SUPPORTS OVER WHICH DECKING IS CONTINUOUS.

BEAMS SHALL NOT BE PROPPED UNLESS NOTED ON THE DRAWINGS.

SUPPORTS SHALL BE EFFECTIVELY RIGID AND STRONG TO SUPPORT CONSTRUCTION LOADS.

IF THE UNDERSIDE OF THE DECK IS LEFT EXPOSED, PROVIDE A 300 mm WIDE FORM-PLY ON TOP OF THE PROP BEARER TO MINIMISE PROP MARKS.

PROPS SHALL REMAIN IN PLACE UNTIL THE CONCRETE HAS REACHED 80% OF ITS 28 DAY STRENGTH (f'c). PROPS MAY NEED TO BE LEFT LONGER IF THE SLAB IS SUBJECTED TO STACKING OF CONSTRUCTION MATERIALS. CONSULT THE ENGINEER FOR ADVICE.

CS6 COMPOSITE DECKING SYSTEMS SHALL NOT BE USED WHEN THE GROUND CLEARANCE IS LESS THAN 500 mm OR WHERE THE UNDERSLAB SPACE IS ENCLOSED WITHOUT ADEQUATE VENTILATION.

CS7 SERVICE PENETRATIONS SHALL BE LOCATED ONLY WITHIN THE CENTRAL PAN OF THE DECKING WITH A MAXIMUM DIAMETER OF 150 mm. CONSULT THE ENGINEER IF ADDITIONAL PENETRATIONS ARE REQUIRED THAT ARE NOT DOCUMENTED ON THE DRAWINGS.

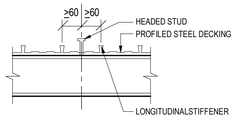
CS8 CONCRETING A COMPOSITE SLAB SHALL BE CARRIED OUT TO A CONSTANT THICKNESS. THIS CAN BE ACHIEVED BY USING EDGE BOARDS OF CONSTANT HEIGHT, AND A DEPTH GAUGE.

NOTE THAT STEEL DECKING WILL UNDERGO DEFLECTIONS AS THE CONCRETE IS BEING POURED. IT SHOULD NOT BE ATTEMPTED TO LEVEL THE TOP SURFACE BY POURING MORE CONCRETE.

THE BUILDING CONTRACTOR SHALL COMMUNICATE THIS CLEARLY TO THE CONCRETOR TO AVOID OVERLOADING THE DECKING AND THE SUPPORTING STEELWORK WHILST CONCRETE IS BEING POURED. THIS IS PARTICULARLY IMPORTANT IF LASER LEVELS OR SCREEDS ARE USED.

CS9 SHEAR STUDS

1. SHEAR STUDS SHALL BE PROVIDED AS SPECIFIED ON THE DRAWINGS WHERE THE STEEL DECKING IS SUPPORTED BY STEEL BEAMS AND ARE PART OF THE COMPOSITE SLAB DESIGN.
2. ALL SHEAR STUDS SHALL BE PLACED DIRECTLY OVER THE WEBS OF THE STEEL BEAMS IN THE CENTRAL FLAT AREA OF THE PROFILED STEEL DECKING AS SHOWN IN THE FIGURE BELOW AND WELDED THROUGH USING A STUD WELDER IN ACCORDANCE WITH AS1554.2.



SHEAR STUDS SHALL NOT BE MANUALLY ARC WELDED WITHOUT PRIOR APPROVAL OF THE ENGINEER.

3. THE MINIMUM CLEARANCE BETWEEN THE SHEAR STUDS AND THE NEAREST PART OF A STEEL MEMBER SHALL BE 30 mm.
4. SURFACE OF THE PARENT MATERIAL, IN THE AREAS TO WHICH THE SHEAR STUDS ARE WELDED SHALL BE PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF AS1554.2, AND BE FREE OF SCALE, RUST MOISTURE, PAINT, MUD, GREASE OR OTHER INJURIOUS MATERIAL.

REINFORCEMENT:

R1 REFER TO THE CONCRETE NOTES FOR SPECIFIED COVERS TO REINFORCEMENT. COVERS SHALL BE MAINTAINED AT ALL CHAMFERS, DRIP GROOVES AND RECESSES OR AS NOTED ON THE DRAWINGS.

R2 REINFORCEMENT IS SHOWN DIAGRAMMATICALLY, IT IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.

R3 REINFORCEMENT SHALL NOT BE CUT OR WELDED ON SITE WITHOUT PRIOR APPROVAL OF THE ENGINEER. AT SMALL PENETRATIONS LESS THAN 300 mm IN SIZE IN A WALL OR A SLAB, BARS SHALL BE DISPLACED TO EITHER SIDE.

R4 SITE BENDING OF REINFORCEMENT SHALL BE AVOIDED WHERE POSSIBLE. WHERE SITE BENDING IS SPECIFIED OR UNAVOIDABLE, IT SHALL BE CARRIED OUT COLD, WITHOUT THE APPLICATION OF HEAT, AND IN ACCORDANCE WITH THE 'PRACTICE NOTE RPN1' OF THE STEEL REINFORCEMENT INSTITUTE OF AUSTRALIA (SRIA).

R5 SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN ON THE DRAWINGS. WRITTEN APPROVAL OF THE ENGINEER SHALL BE OBTAINED FOR ANY OTHER SPLICES. WHERE LAP LENGTHS ARE NOT SHOWN THEY SHALL BE AS INDICATED BELOW:

BAR SIZE	MINIMUM LAP LENGTH (mm)	
R10 / N10	400	(500)
N12	500	(650)
N16	750	(950)
N20	1000	(1300)
N24	1250	(1600)
N28	1500	(1900)
N32	1750	(2200)
N36	2050	(2650)

NOTES : LENGTHS SHOWN IN BRACKETS APPLY TO HORIZONTAL BARS WITH MORE THAN 300 mm OF CONCRETE CAST BELOW THE BAR.

R6 REINFORCEMENT SYMBOLS:
N - DENOTES D500N DEFORMED BAR TO AS4671
R - DENOTES 250R HOT ROLLED PLAIN BAR TO AS4671
SL/ RL - DENOTES HARD DRAWN WIRE REINFORCEMENT FABRIC TO AS4671
W - DENOTES R500L HARD DRAWN PLAIN WIRE TO AS4671

R7 FABRIC REINFORCEMENT SHALL BE LAPPED WITH TWO TRANSVERSE WIRES PLUS 50 mm.

JOGGLES TO BARS SHALL CONSIST OF A LENGTH OF 12 BAR DIAMETERS BETWEEN THE BEGINNING AND THE END AND AN OFFSET OF ONE BAR DIAMETER.

HOOKS, BENDS AND COGS SHALL BE IN ACCORDANCE WITH AS3600, UNO ON THE DRAWINGS.

R8 ALL REINFORCEMENT BARS SHALL BE CHAIRED AT MAXIMUM CENTRES AS FOLLOWS:

BARS - 800 mm
FABRIC - 600 mm BOTH WAYS FOR MESH SL72 OR LOWER AND 800 mm FOR LARGER MESH.

EXTRA CHAIRS MAY BE REQUIRED ADJACENT TO THE SLAB EDGES AND JOINTS TO PREVENT UPWARD DEFLECTION OF THE FABRIC WHEN STOOD ON.

R9 PLASTIC TIPPED STEEL CHAIRS MAY BE USED ONLY FOR EXPOSURE CATEGORIES 'A1' AND 'A2'. FULL PLASTIC CHAIRS SHALL BE USED AT ALL ELEMENT FACES HAVING AN EXTERNAL EXPOSURE IN THE COMPLETED STRUCTURE. WHERE REINFORCEMENT IS SUPPORTED ON GROUND, PROVIDE PLATES UNDER ALL BAR CHAIRS.

ALL REINFORCEMENT SHALL BE SECURELY SUPPORTED AND MAINTAINED IN CORRECT POSITIONS DURING CONCRETING.

R10 AT THE END SUPPORT OF A SLAB ON A MASONRY WALL, ALL BOTTOM REINFORCEMENT SHALL EXTEND OVER THE MASONRY WALL BY 75 mm FOR N12 BARS OR 95 mm FOR N16 BARS. ALL BARS SHALL BE COGGED IF COVER REQUIREMENTS PREVENT THIS.

AT LEAST 50% OF THE BOTTOM REINFORCEMENT SHALL BE COGGED TO ACHIEVE ANCHORAGE AT SIMPLY SUPPORTED ENDS.

MASONRY CONSTRUCTION:

B1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3700 AND AS NOTED ON THE DRAWINGS.

B2 BRICK AND BLOCK COMPRESSIVE STRENGTH (f'uc) SHALL BE 15 MPa MINIMUM UNO. STRENGTH GRADE SHALL BE CLEARLY INDICATED ON THE DELIVERY DOCKETS.

B3 JOINT MORTAR SHALL BE OF CLASS M3 WITH 1:1:6 (CEMENT: LIME: SAND) PROPORTIONED BY VOLUME AND COMPLYING WITH AS3700. MORTAR JOINTS SHALL BE 10 mm THICK AND HAVE A MAXIMUM TOOLED DEPTH OF 3 mm UNO.

B4 NON-LOAD BEARING WALLS SHALL BE SEPARATED FROM THE LOAD-BEARING ELEMENTS BY 20 mm THICK BITUMEN BOARD OR EXPANDED POLYSTYRENE UNO AT BOTH HORIZONTAL AND VERTICAL FACES.

NON-LOAD BEARING WALLS SHALL BE TIED TO THE SOFFITS OF BEAMS OR SLABS OVER BY USING 'MET 4-1' TIES (OR APPROVED EQUIVALENT), AT 800 mm MAX. CENTRES, UNO ON THE DRAWINGS.

B5 WHERE CONCRETE SLABS BEAR ON UNREINFORCED MASONRY, INCLUDING CLAY BRICKS, RENDER THE BEARING SURFACE OF THE MASONRY WALL WITH 1:3 (CEMENT : SAND) MORTAR TO ACHIEVE A LEVEL SURFACE AND PLACE A PRE-GREASED METAL SLIP JOINT PROTECTED BY 0.2 mm POLYETHYLENE SHEET TAPED TO THE FORMWORK BEFORE PLACING CONCRETE. SPECIAL DETAILS SUCH AS WATER-PROOFING MAY APPLY FOR ROOF SLABS OR SIMILARLY EXPOSED ELEMENTS.

B6 CONTROL JOINTS

1. CONTROL JOINTS SHALL BE PROVIDED IN MASONRY WALLS AS PER THE TABLE BELOW UNLESS CLOSER SPACING IS SPECIFIED ELSEWHERE IN THE DOCUMENTATION.

MASONRY TYPE	LOCATION	JOINT SIZE (mm)	SPACING (m)
CONCRETE MASONRY	EXTERNAL	10	7.0
	EXTERNAL (WITH OPENINGS > 900 mm IN HEIGHT)	10	5.0
	INTERNAL (FACE FINISHED)	10	6.0
	INTERNAL (RENDERED)	10	5.0
LIGHT-WEIGHT MASONRY	INTERNAL / EXTERNAL	10	6.0
CLAY MASONRY	INTERNAL / EXTERNAL	15	6.0 (•)
	PARAPET WALLS	15	4.0

(•) - FOR REACTIVE 'CLASS M' SITES ONLY. REFER TO TABLE 4.3 OF AS3700 FOR ARTICULATION JOINTS IN CLAY MASONRY FOR OTHER REACTIVE CLASSES.

2. CONTROL JOINTS SHALL BE PLACED AT HALF THE SPECIFIED SPACING FROM A CORNER. PROVIDE JOINTS TO MATCH JOINTS IN THE SUPPORTING STRUCTURE.
3. CONTROL JOINTS MUST BE KEPT FREE OF MORTAR AND SEALED WITH A POLYETHYLENE FOAM BACKING ROD SQUEEZED INTO THE GAP AND A GUNNED-IN MASTIC SEALANT. IF THE WALL IS TO BE FIRE-RATED, A FIRE-RATED SEALING SYSTEM WILL BE REQUIRED INSTEAD.

B7 NO CHASES SHALL BE CUT INTO LOAD-BEARING MASONRY WITHOUT PRIOR APPROVAL OF THE ENGINEER.

B8 BLOCKWORK

1. IN CORE-FILLED BLOCKWORK, EXCESS MORTAR PROTRUDING INTO THE CORES SHALL BE REMOVED BY RODDING AFTER EACH COURSE IS LAID. EVERY CORE FILLED WITH GROUT SHALL HAVE A CLEANOUT BLOCK IN THE BOTTOM COURSE.
2. REINFORCEMENT SHALL BE PLACED AND SECURELY TIED IN POSITION AS SHOWN ON THE DRAWINGS. STARTER BARS SHALL BE HELD IN PLACE BY TYING TO HORIZONTAL BARS AT THE CLEANOUTS BLOCKS. PROVIDE COVER TO REINFORCEMENT AS SHOWN IN THE DETAILS.
3. CORE FILLING GROUT SHALL BE AS NOTED IN THE 'CONCRETE NOTES' IN LIFTS NO MORE THAN 1200 mm IN HEIGHT.

STRUCTURAL STEEL:

S1 ALL STRUCTURAL STEEL, MATERIALS, FABRICATION AND ERECTION SHALL COMPLY WITH AS4100.

S2 STRUCTURAL STEEL SHALL BE OF GRADE 350 MINIMUM FOR HOLLOW SECTIONS AND GRADE 300 MINIMUM FOR ALL ROLLED SECTIONS UNO.

S3 BOLTS ARE DESIGNATED ON THE DRAWINGS BY THE NUMBER, DIAMETER, GRADE AND TIGHTENING PROCEDURE IN ACCORDANCE WITH AS4100 AND THE 'HANDBOOK 1: DESIGN OF STRUCTURAL STEEL CONNECTIONS' PUBLISHED BY ASI.

S4 BOLTS SHALL BE OF SIZE M20, GRADE 8.8/ S AND A MINIMUM OF 2 BOLTS PER CONNECTION UNO. CLEATS AND GUSSETS SHALL BE 10 mm THICK UNO.

ALL CLEATS AND DRILLINGS FOR FIXING OF TIMBER MEMBERS ETC. SHALL BE PROVIDED BY THE FABRICATOR.

S5 ALL PLATES INCLUDING BUT NOT LIMITED TO CAP, BASE AND GUSSET PLATES TO BE FULLY WELDED TO THE STEEL MEMBERS UNO.

S6 WELDING AND TESTING

UNLESS NOTED OTHERWISE, ALL WELDS SHALL BE 6 mm CATEGORY 'SP' CONTINUOUS FILLET WELDS WITH APPROVED COVERED ELECTRODES.

WHERE STAINLESS STEEL IS WELDED TO MILD STEEL, USE A SUITABLE LOW ALLOY ELECTRODE.

THE EXTENT OF NON-DESTRUCTIVE WELD EXAMINATION SHALL BE AS NOTED BELOW. RADIOGRAPHIC OR ULTRASONIC EXAMINATION SHALL CONFORM TO AS1554.1, AS2177.1 AND AS2307.

TYPE OF WELD AND CATEGORY	EXAMINATION METHOD	EXTENT (% TOTAL LENGTH OF WELD)
FILLET WELDS, GP-SP	VISUAL INSPECTION	100%
BUTT WELDS, GP	VISUAL INSPECTION	100%
BUTT WELD, SP	VISUAL INSPECTION	100%
BUTT WELD SP	RADIOGRAPHIC OR ULTRASONIC INSPECTION	10%

FLASH WELDING AND TESTING OF ALL STUDS SHALL COMPLY WITH AS1554.2

S7 ALL CORNERS AND EDGES OF ALL EXTERNAL STEEL PLATES AND SECTIONS ARE TO BE ROUNDED TO A RADIUS OF NOT LESS THAN 2 mm PRIOR TO SURFACE PREPARATION.

S8 INTERNAL STEELWORK SHALL BE GRIT BLASTED TO CLASS 2.5 AND PAINTED WITH BLUE ZINC PHOSPHATE AND 75 µm DRY FILM THICKNESS UNLESS OTHERWISE NOTED IN THE ARCHITECTURAL SPECIFICATIONS.

ALL EXTERNAL STEELWORK AND THE STEEL MEMBERS SPECIFIED ON THE DRAWINGS OR OTHER RELATED CONTRACT DOCUMENTS AS GALVANISED SHALL CONFORM TO THE REQUIREMENTS OF AS4680 AND AS/ NZS 2312.2. THE CONTINUOUS AVERAGE ZINC COATING MASS SHALL BE 600 g/ sqm (550 g/ sqm MINIMUM).

PROVIDE 6 mm SEAL PLATES WITH "BREATHER" HOLES TO ALL GALVANISED HOLLOW SECTIONS.

S9 PROVIDE CAMBER OR PRESET TO STRUCTURAL STEEL ROOF BEAMS, TRUSSES, PORTALS ETC., AS NOTED ON THE DRAWINGS.

S10 ALL STRUCTURAL STEELWORK BELOW GROUND SHALL BE PAINTED WITH 2 COATS OF APPROVED BITUMEN PAINT.

S11 ALL PROPRIETARY CHEMICAL AND MECHANICAL ANCHORS SHALL BE INSTALLED AT SPACINGS, EDGE DISTANCES AND DEPTHS AS INDICATED ON THE DRAWINGS. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS INCLUDING THE DRILLING METHOD, HOLE DIAMETER, CLEANING, CURING, TIGHTENING AND TESTING.

S12 USE NON-SHRINK GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 40 MPa, TIGHTLY PACKED UNDER ALL BEARING AND BASE PLATES.

S13 IF ANY TRANSLUCENT ROOF SHEETING IS SPECIFIED ON THE ARCHITECTURAL DRAWINGS, THEY SHALL BE OF A GAUGE COMPATIBLE WITH THE SPECIFIED PURLIN SPACING. ALTERNATIVELY, PROVIDE ADDITIONAL C10012 PURLIN TRIMMERS AS REQUIRED TO SUPPORT THE SHEETING.

SAFETY MESH UNDER TRANSLUCENT SHEETING, IF REQUIRED, SHALL CONFORM TO WORKCOVER REQUIREMENTS.

S14 SUSPENDED CEILINGS AND BULKHEADS, WHERE SUPPORTED BY PURLINS, SHALL BE SUPPORTED BY WEB CONNECTIONS ONLY AND NOT HOOKED FROM THE BOTTOM LIP. *THE BUILDING CONTRACTOR SHALL ENSURE THAT ALL SUB-CONTRACTORS COMPLY WITH THIS REQUIREMENT.*

S15 ELECTRONIC OR HARD COPIES OF SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER AND APPROVAL OBTAINED PRIOR TO COMMENCING FABRICATION.

ENGINEER'S APPROVAL WILL ONLY COVER THE SECTION SIZES AND CONNECTIONS, NOT THE MEMBER LENGTHS OR DIMENSIONAL SET OUT.

S16 STABILITY OF THE STRUCTURE DURING STEEL ERECTION IS THE STEEL ERECTOR'S RESPONSIBILITY. PROVIDE TEMPORARY BRACING AND/ OR GUY ROPES AS REQUIRED.

REFER TO THE 'STEEL WORK ERECTION GUIDE' FOR HENRY & HYMAS' RECOMMENDATIONS.

STRUCTURAL STEEL (CONTINUED):

S17 STEELWORK ERECTION GUIDE

1. THIS GUIDE IS ONLY INTENDED TO PROVIDE THE STEEL ERECTOR WITH A RECOMMENDED PROCEDURE FOR ERECTING THE STEELWORK SAFELY AND EFFICIENTLY. THE FABRICATION AND ERECTION OF THE STRUCTURAL STEELWORK SHALL BE SUPERVISED BY A COMPETENT PERSON IN ORDER TO ENSURE THAT ALL REQUIREMENTS OF THE DESIGN ARE MET. HENRY & HYMAS WILL NOT BE LIABLE FOR THE QUALITY OF ERECTION NOR ASSUME ANY RESPONSIBILITY FOR ANY CONSTRUCTION DEFECTS RESULTING FROM IMPROPER ERECTION TECHNIQUES OR NEGLIGENCE OF OTHER PARTIES.
2. THE STEEL ERECTOR SHALL BE A COMPETENT PERSON FAMILIAR WITH THE FOLLOWING STANDARDS/ MANUALS AND OTHER INDUSTRY PRACTICES & GUIDELINES.
   I) AS/NZS5131 : STRUCTURAL STEELWORK - FABRICATION AND ERECTION
   II) AS4100 : STEEL STRUCTURES
   III) PRACTICAL GUIDE TO PLANNING THE SAFE ERECTION OF STEEL STRUCTURES - AUSTRALIAN STEEL INSTITUTE
   IV) SAFE DESIGN OF STRUCTURES CODE OF PRACTICE – SAFEWORK NSW
3. THE CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTORS ON SITE. CONTRACTORS ARE RESPONSIBLE FOR FULL COMPLIANCE WITH ALL THE SAFETY REQUIREMENTS OF THE GOVERNING REGULATORY AUTHORITY AS WELL AS ANY ADDITIONAL REQUIREMENTS IMPOSED BY THE DEVELOPER.
4. THE STRUCTURE SHALL NOT BE SUBJECT TO EXCESSIVE CONSTRUCTION LOADING SUCH AS MATERIAL STACKING UNLESS EXPLICITLY NOTED ON THE DESIGN DRAWINGS.
5. ALL GUY ROPES AND PROPS SHALL BE DESIGNED BY A COMPETENT PERSON FOR AN OUT-OF-PLANE LOAD EQUAL TO 2.5% OF GRAVITY LOADS PLUS THE WIND LOADS ARISING FROM A 100 YEAR RETURN PERIOD. LONG SPAN RAFTERS / TRUSSES SHALL BE BRACED AGAINST TWISTING AND BUCKLING.
6. OUTLINED BELOW IS THE HENRY & HYMAS' RECOMMENDED PROCEDURE FOR STEEL ERECTION. THE STEEL ERECTOR SHALL SUBMIT A DETAILED ERECTION SEQUENCE METHODOLOGY INCLUDING THE 'WITNESS AND HOLD POINTS' AND ANY DEVIATIONS FROM THE RECOMMENDED PROCEDURE FOR REVIEW BY HENRY & HYMAS PRIOR TO ERECTING ANY STEELWORK.

   STEELWORK ERECTION SEQUENCE – STEEL FRAMED STRUCTURE *(DELETE IF NOT RELEVANT)*

   STEP 1 - ERECT COLUMNS ALONG *GRID X* FROM *GRID A TO B* AND BRACE THEM WITH GUY ROPES OR PROPS TO RESTRAIN AGAINST POTENTIAL SWAY IN ANY DIRECTION. ERECT RAFTERS ALONG THE SAME GRID LINE STARTING FROM *GRID A* .

   STEP 2 - ERECT COLUMNS AND RAFTERS ALONG *GRID X+1* AND PROGRESSIVELY ATTACH LEAD PURLINS / STRUTS AND DIAGONAL BRACINGS BACK TO THE FRAME ALREADY ERECTED. SQUARE AND PLUMB BRACED BAYS BEFORE MOVING TO STEP 3.

   STEP 3 - PROCEED WITH THE ERECTION OF THE REMAINING FRAMES ALONG *GRIDS X+2 TO X+N* INCLUDING ANY VERTICAL BRACING.

   STEP 4 - TEMPORARY BRACING CAN BE REMOVED AFTER ALL THE PRIMARY MEMBERS SUCH AS COLUMNS, RAFTERS AND WALL / ROOF BRACING ELEMENTS HAVE BEEN ERECTED, OR WHEN SUFFICIENT LATERAL STABILITY HAS BEEN ACHIEVED AND SIGNED OFF BY THE ENGINEER. INSTALLATION OF SECONDARY COMPONENTS SUCH AS PURLINS, GIRTS, FLY BRACING, FASCIA TRUSSES ETC. SHOULD FOLLOW.
7. AFTER THE COMPLETION OF STEEL ERECTION, THE STEEL FABRICATOR / ERECTOR SHALL ISSUE A CERTIFICATE TO THE BUILDING CONTRACTOR CONFIRMING THAT;
   1. ALL HOLD DOWN BOLTS HAVE BEEN TIGHTENED AND BASE PLATES FULLY GROUTED.
   2. ALL BOLTED CONNECTIONS ARE FASTENED TO COMPLY WITH HENRY & HYMAS DETAILS AND THE AUSTRALIAN STANDARDS, REFER TO NOTE 'S3'.

PRELIMINARY

NOT FOR CONSTRUCTION

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
1	ISSUED FOR INFORMATION	S.J.K.	P.R.	09.10.23

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Title
CONSTRUCTION NOTES - SHEET 2

Drawn	Designed	Date
S.J.K.	A.M.	08/28/23
Checked	Approved	Scale
P.R.	P.R.	1 : 20

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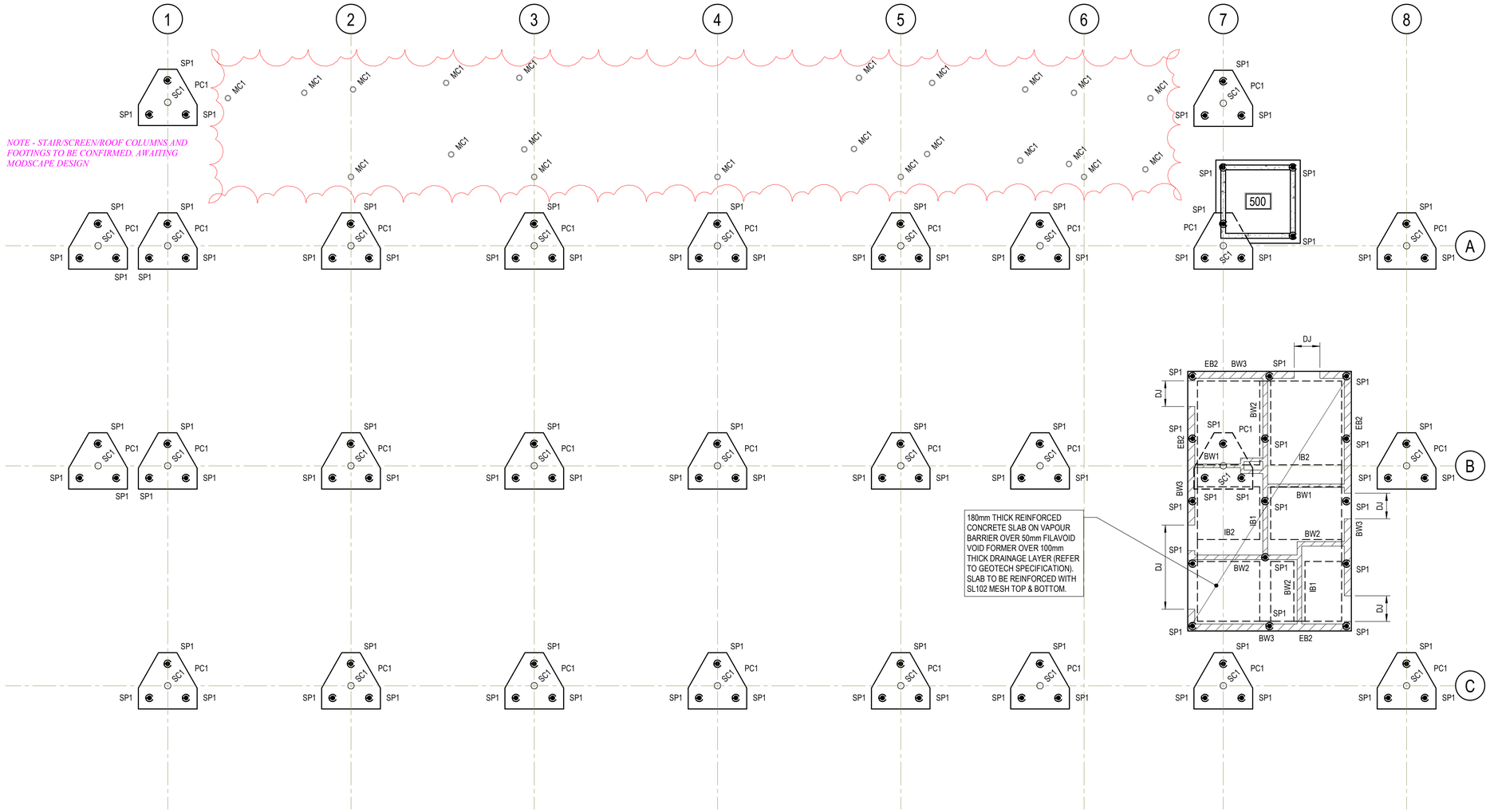
BLA-STR-PP-DWG-0102

Revision
1



FOOTING PLAN

SCALE 1 : 100

NOTES:

1. ALL PILE CAPS TO BE 400mm MINIMUM BELOW FLOOR SLAB LEVEL.
2. PRECAST CONCRETE DRIVEN PILES MAY BE CONSIDERED ALTERNATIVE TO SCREW PILES.
3. ADDITIONAL GEOTECH INVESTIGATIONS TO BE CARRIED OUT AS RECOMMENDED BY THE GEOTECH ENGINEER. REFER TO GEOTECH REPORT.

PILE SCHEDULE			
	WORKING LOAD (kN)		
MARK No.	DEAD	LIVE	LATERAL (DL + LL)
SP1	130	130	25

NOTE: MAXIMUM LATERAL SWAY AT PILE CAP LEVEL SHALL BE LIMITED TO 10mm.

TO BE CONFIRMED.

SLAB ON GROUND LEGEND:

- +++ — DENOTES SLAB THICKNESS
- ++ — DENOTES LOCAL SLAB SETDOWN
- +++ — DENOTES SLAB STEPDOWN
- DENOTES 2-N12 TRIMMERS TOP x 1200 LONG

SLAB JOINTS DENOTED THUS:

- TKJ — DENOTES TIED KEYED JOINT
- DJ — DENOTED DOWELED JOINT
- SC — DENOTES SAW CUT JOINT
- TG — DENOTES TOOLED GROOVE
- IJ — DENOTES ISOLATION JOINT

WALL LEGEND:

- BW1 — DENOTES 140 THICK REINFORCED & CORE-FILLED BLOCKWORK WALL. N16-200 EACH WAY CENTRAL.
- BW2 — DENOTES 190 THICK REINFORCED & CORE-FILLED BLOCKWORK WALL. N16-200 VERTICAL CENTRAL, N16-400 HORIZONTAL CENTRAL
- BW3 — DENOTES 290 THICK REINFORCED & CORE-FILLED BLOCKWORK WALL. N20-400 EACH WAY EACH FACE.

REFERENCE DRAWINGS:

1. FOR TITLE SHEET & DRAWING LIST REFER TO DRG No. -0100.
2. FOR CONSTRUCTION NOTES REFER TO DRG No. -0101.

PRELIMINARY

NOT FOR CONSTRUCTION

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
1	ISSUED FOR INFORMATION	S.J.K.	P.R.	09.10.23

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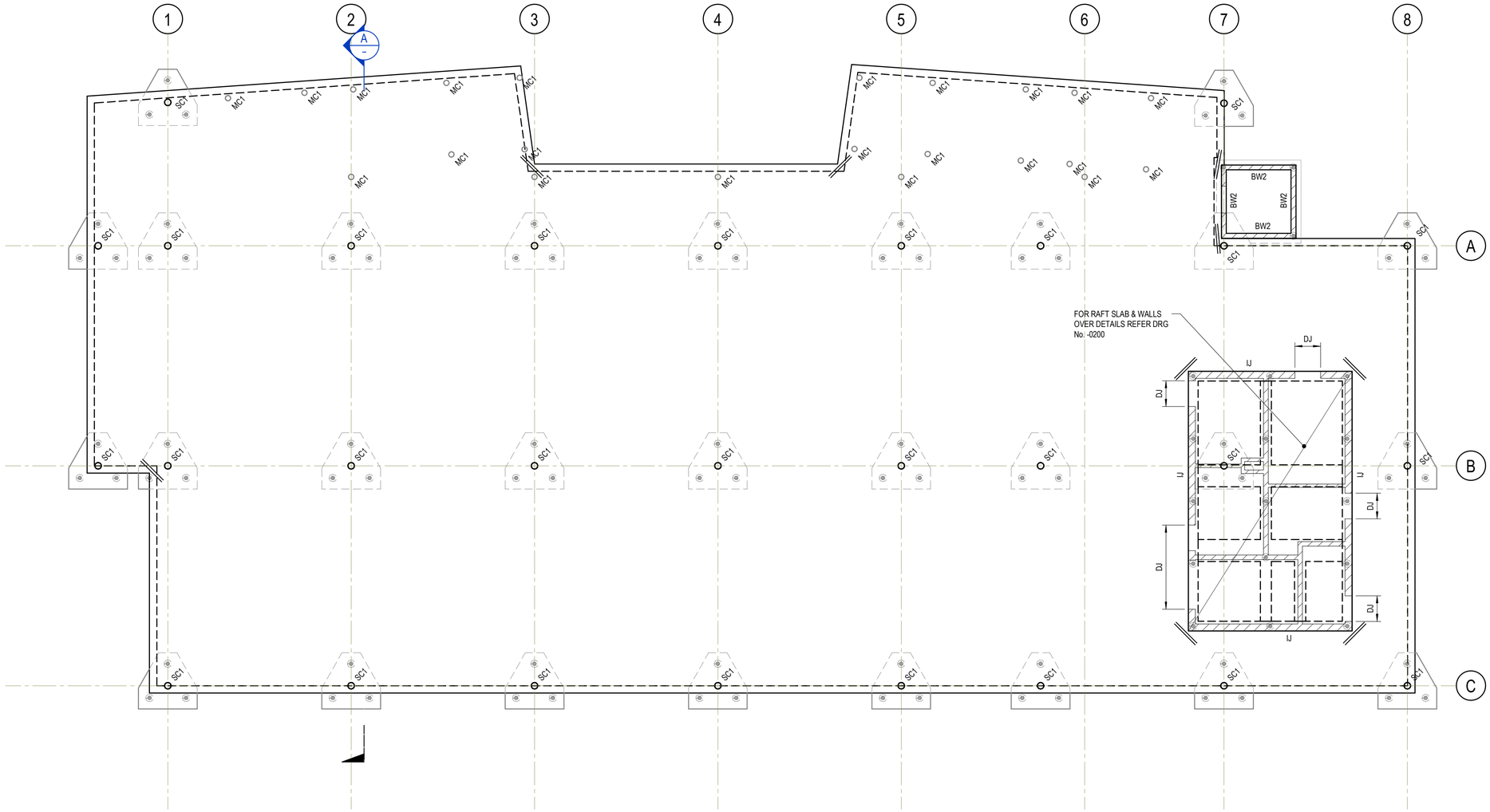
Title
FOOTING PLAN

Drawn	Designed	Date
S.J.K.	A.M.	06/12/13
Checked	Approved	Scale
P.R.	P.R.	As indicated

Drawing number
BLA-STR-PP-DWG-0200

Revision
1



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UNDERCROFT LEVEL SLAB ON GROUND PLAN

SCALE 1 : 100

NOTES:
1. SLAB TO BE 120mm THICK WITH SL82 MESH TOP u.n.o. PLACED ON VAPOUR BARRIER OVER 100mm THICK DRAINAGE LAYER u.n.o. REFER TO GEOTECH SPECIFICATION.
2. LIME STABILISATION REQUIRED UP TO 1.0m DEPTH. REFER TO GEOTECH SPECIFICATIONS.

REFERENCE DRAWINGS:

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2. FOR CONSTRUCTION NOTES REFER TO DRG No. -0101.

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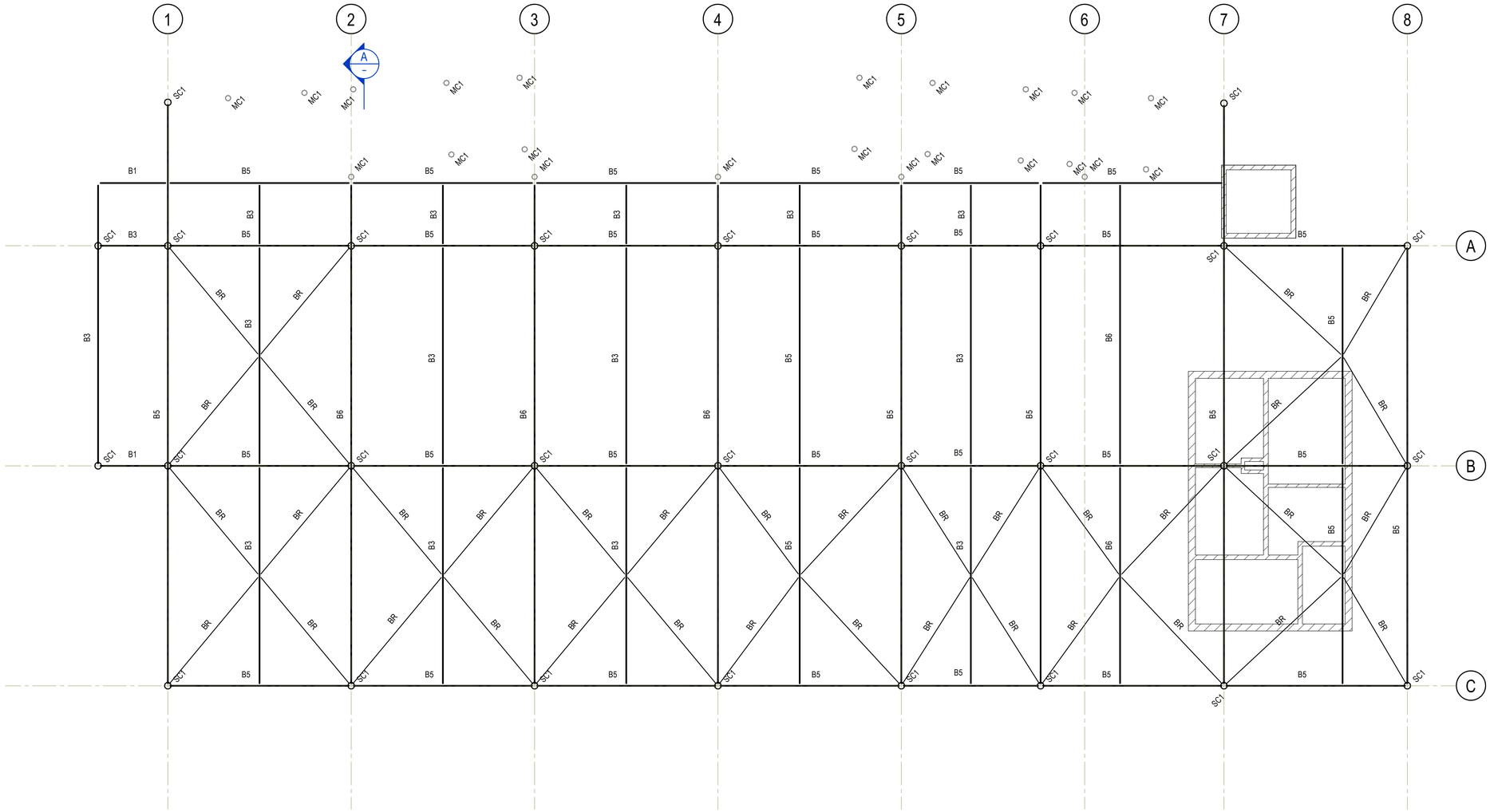
Title
UNDERCROFT LEVEL SLAB ON GROUND PLAN

Drawn	Designed	Date
S.J.K.	A.M.	08/28/23
Checked	**Approved**	**Scale**
P.R.	P.R.	As indicated

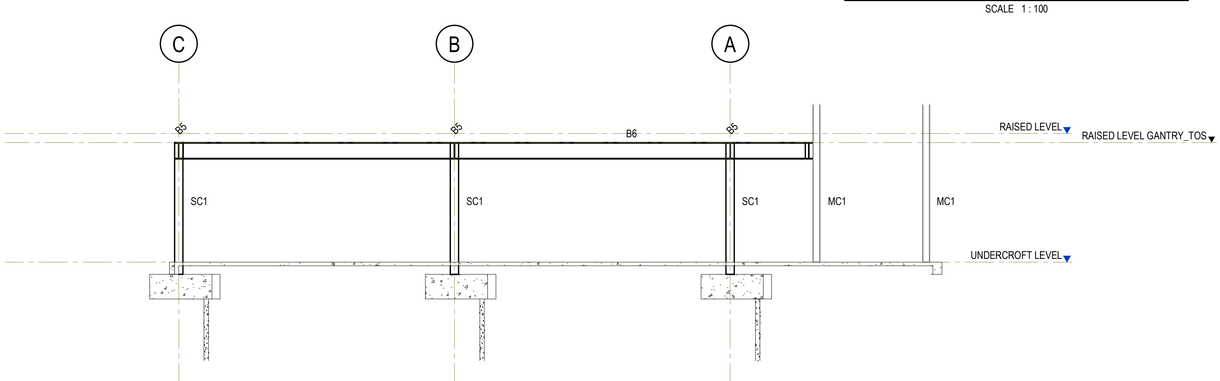
Drawing number
BLA-STR-PP-DWG-0300

Revision
1



RAISED LEVEL GANTRY FRAMING PLAN

SCALE 1 : 100



SECTION A

SCALE 1 : 100

STEEL MEMBER SCHEDULE	
MEMBER TAG	MEMBER SIZE
B1	250 PFC
B3	460 UB 67
B5	530 UB 82
B6	530 UB 92
MC1	COLUMN BY OTHERS
SC1	273.1 x 12.7 CHS
BR	100 x 100 x 5.0 SHS

NOTES:

1. UNLESS NOTED OTHERWISE ALL EXTERNAL STRUCTURAL STEEL SHALL BE HOT DIPPED GALVANISED.
2. PROVIDE FIRE PROTECTION TO ALL STRUCTURAL STEEL ELEMENTS AS REQUIRED (REFER ARCHITECT'S DRAWING FOR FIRE RATING REQUIREMENTS).

LEGEND:

- SP — DENOTES SPLICE CONNECTION. REFER DETAILS.
- DENOTES FULLY SHOP WELDED RIGID CONNECTION. REFER BEAM TO BEAM CONNECTION DETAILS.
- DENOTES BOLTED END PLATE RIGID CONNECTION. REFER BEAM TO BEAM CONNECTION DETAILS.
- (1) DENOTES RIGID CONNECTION TYPE. REFER BEAM TO BEAM CONNECTION DETAILS.
- DENOTES CLEAT PLATE SIMPLE CONNECTION. REFER TYPICAL DETAILS.
- DENOTES SERVICES PENETRATION THROUGH BEAM. REFER TYPICAL BEAM PENETRATION DETAILS.

NOTE: RIGID CONNECTION LOCATIONS & DETAILS TO BE CONFIRMED.

REFERENCE DRAWINGS:

1. FOR TITLE SHEET & DRAWING LIST REFER TO DRG No. -0100.
2. FOR CONSTRUCTION NOTES REFER TO DRG No. -0101.

PRELIMINARY

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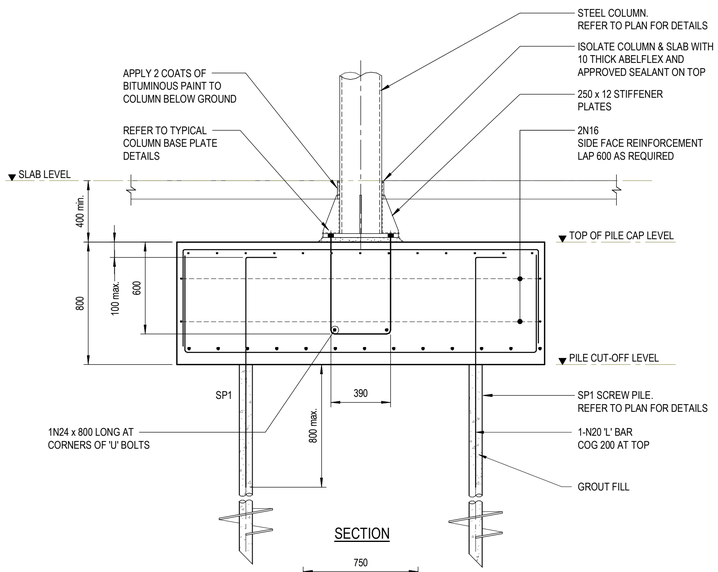
Title
RAISED LEVEL GANTRY FRAMING PLAN

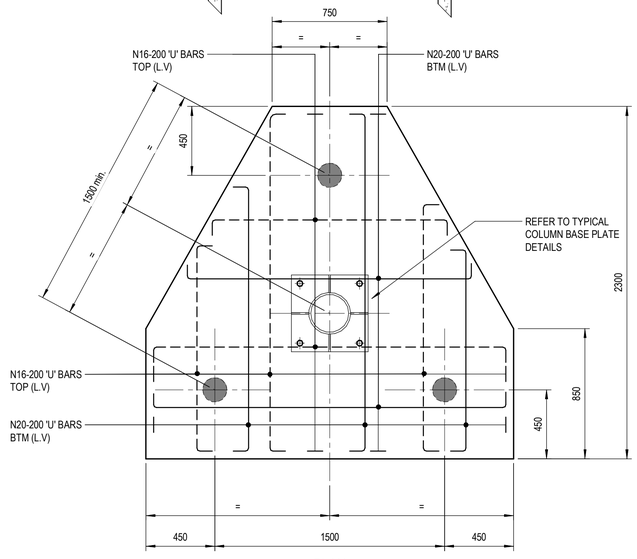
Drawn	Designed	Date
S.J.K.	A.M.	08/28/23
Checked	**Approved**	**Scale**
P.R.	P.R.	As indicated

Drawing number: BLA-STR-PP-DWG-0400

Revision: 1



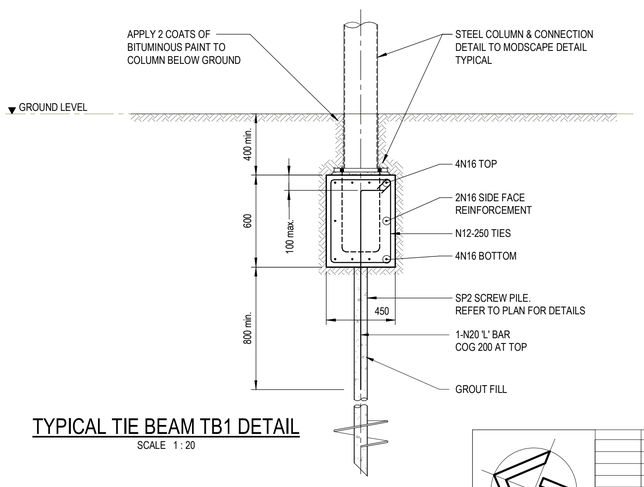
SECTION



PLAN

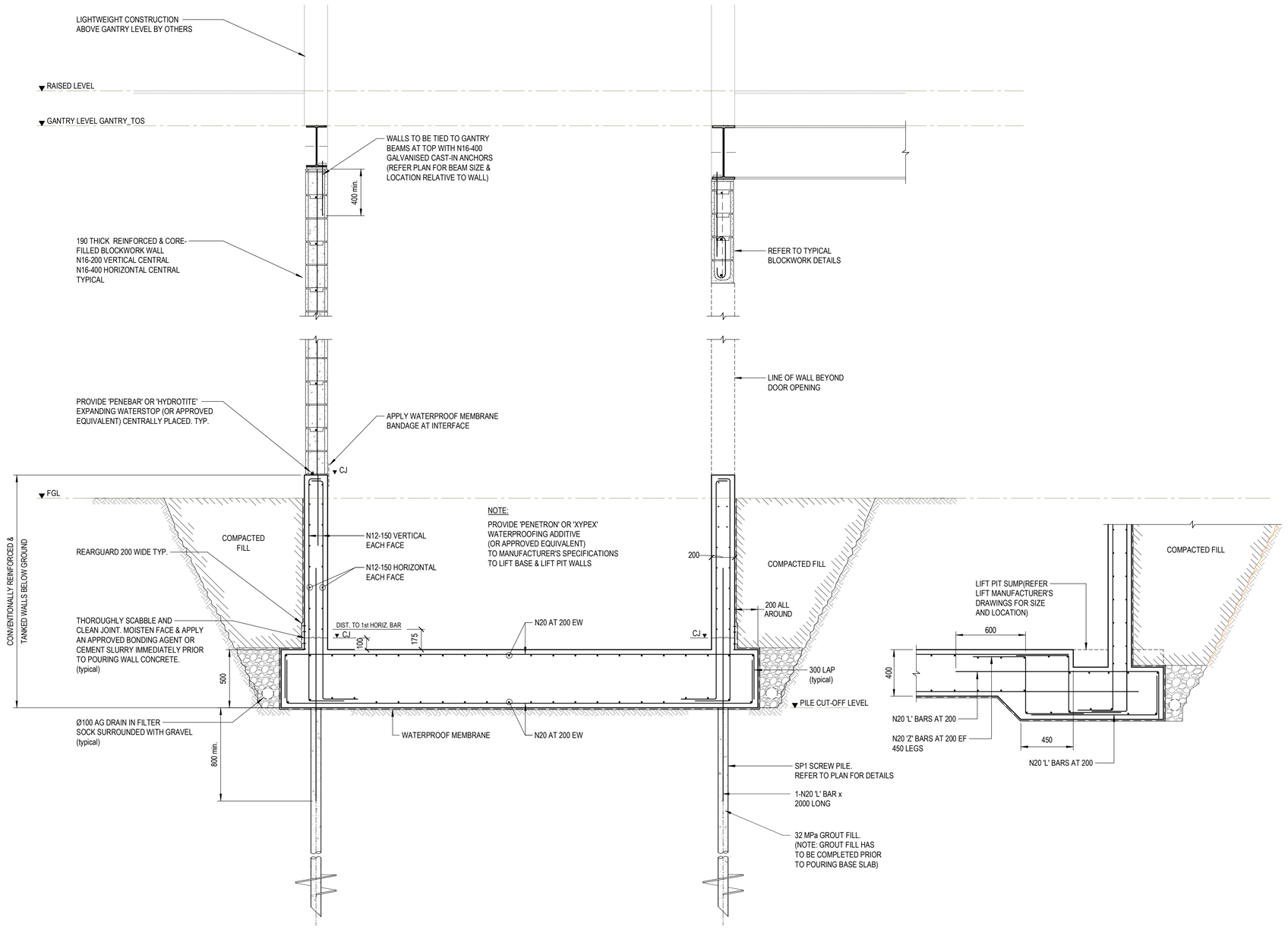
PILE CAP PC1 DETAIL

NOTE:
CONCRETE STRENGTH f'c = 40 MPa.



TYPICAL TIE BEAM TB1 DETAIL

SCALE 1 : 20



TYPICAL LIFT PIT SECTION

REFERENCE DRAWINGS:

1. FOR TITLE SHEET & DRAWING LIST REFER TO DRG No. -0100.
2. FOR CONSTRUCTION NOTES REFER TO DRG No. -0101.

PRELIMINARY

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Title
FOOTING, SLAB ON GROUND & GANTRY FRAMING DETAILS - SHEET 1

Drawn	Designed	Date
S.J.K.	A.M.	08/28/23
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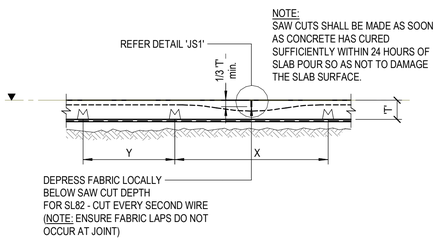
BLA-STR-PP-DWG-0501

Revision
1

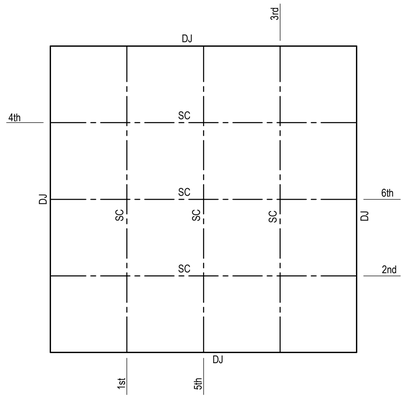


SAW CUT JOINT
NOTED 'SC' ON PLAN

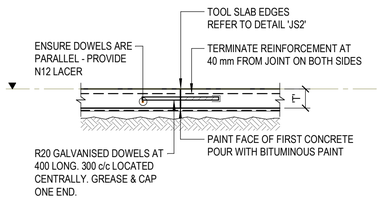
NOTE:

1. X = INDICATES CHAIR SPACING AT SAW CUT
   SL82 = 1200

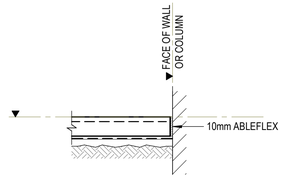
   Y = INDICATES CHAIR SPACING TYPICALLY THROUGHOUT
   SL82 = 800 c/c
2. SAW CUT LOCATIONS SHALL BE ACCURATELY MARKED OUT USING CHALK LINE
3. SAW CUTS SHALL BE MADE IN ONE PASS TO CORRECT DEPTH
4. TIME OF SAW CUT TO BE RECORDED AND LOGGED BY BUILDER
5. SAW CUT ORDER SHALL COMMENCE WITH 1ST CUT FROM OUTSIDE EDGE AND CONTINUE IN A ROTATIONAL ORDER TOWARDS MIDDLE OF SLAB PANEL. REFER EXAMPLE BAYS BELOW:



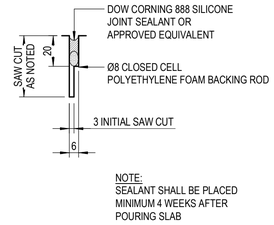
EXAMPLE SAW CUT SEQUENCE



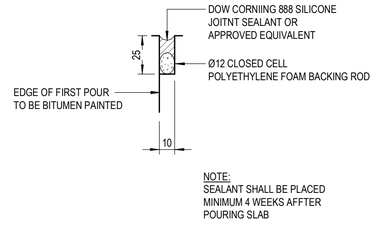
DOWEL JOINT
SCALE 1:20
NOTED 'DJ' ON PLAN



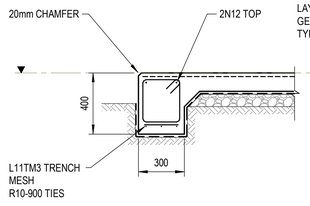
ISOLATION JOINT
SCALE 1:20
TYPICAL AT ALL WALLS AND COLUMNS
NOTED 'IJ' ON PLAN



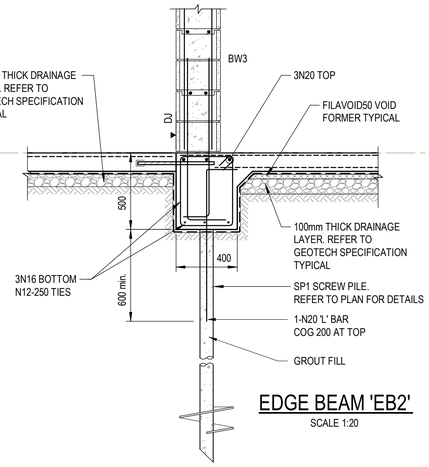
TYPICAL SAW CUT JOINT SEALANT DETAIL 'JS1'
SCALE 1:2



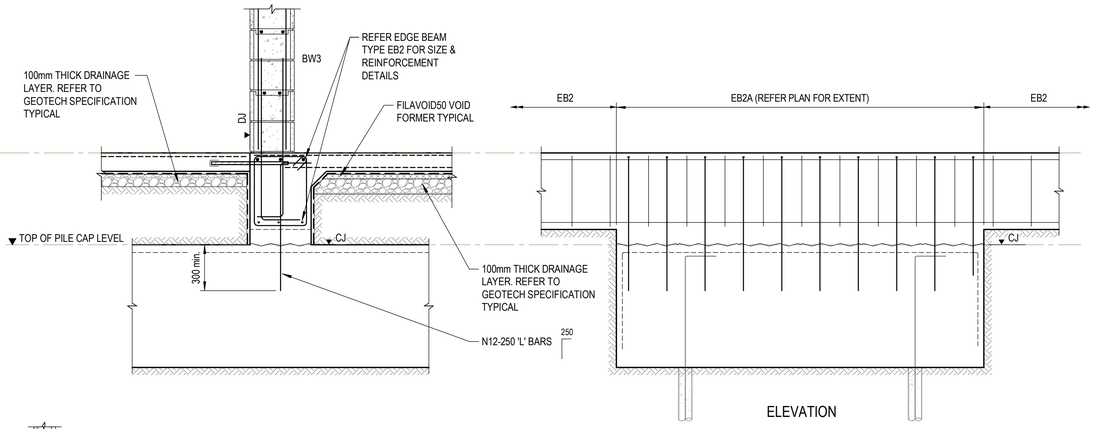
TYPICAL CONTINUOUS POUR DOWEL JOINT DETAIL 'JS2'
SCALE 1:2



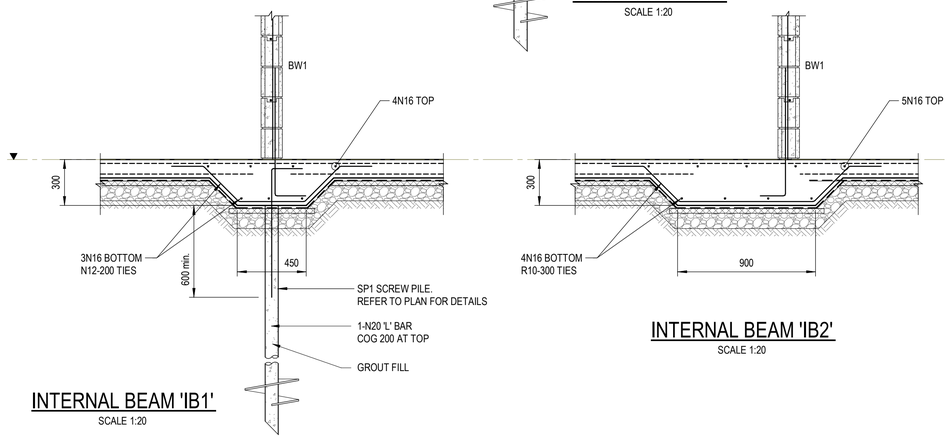
EDGE BEAM 'EB1'
SCALE 1:20



EDGE BEAM 'EB2'
SCALE 1:20

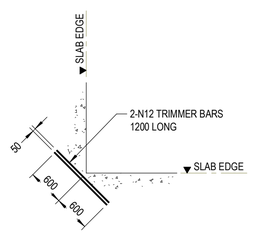


EDGE BEAM 'EB2A'
SCALE 1:20

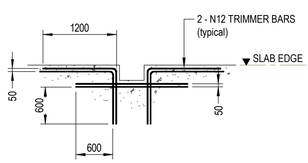


INTERNAL BEAM 'IB1'
SCALE 1:20

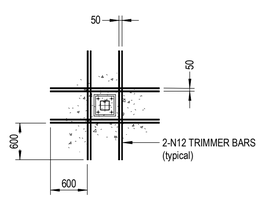
INTERNAL BEAM 'IB2'
SCALE 1:20



RE-ENTRANT CORNER - INTERNAL



EDGE PENETRATION



COLUMN RECESS
FOR COLUMN RECESS DETAILS REFER PLAN

TYPICAL SLAB TRIMMING DETAILS
SCALE 1 : 50

REFERENCE DRAWINGS:

1. FOR TITLE SHEET & DRAWING LIST REFER TO DRG No. -0100.
2. FOR CONSTRUCTION NOTES REFER TO DRG No. -0101.

PRELIMINARY

NOT FOR CONSTRUCTION

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
1	ISSUED FOR INFORMATION	S.J.K.	P.R.	09.10.23

Client

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Title
FOOTING, SLAB ON GROUND & GANTRY FRAMING DETAILS - SHEET 2

Drawn	Designed	Date
S.J.K.	A.M.	08/28/23
Checked	Approved	Scale
P.R.	P.R.	As indicated

Drawing number
BLA-STR-PP-DWG-0502

Revision
1