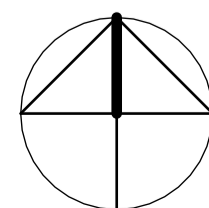


**GENERAL NOTES**

- THE CONTRACTOR SHALL READ THESE DRAWINGS IN CONJUNCTION WITH ALL OTHER CONTRACT DOCUMENTS INCLUDING ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS, INCLUDING ANY WRITTEN INSTRUCTIONS ISSUED DURING THE COURSE OF THE CONTRACT.
- THE CONTRACTOR SHALL SEEK CLARIFICATION FROM THE SUPERINTENDENT IN RELATION TO ANY DISCREPANCIES OR AMBIGUITIES PRIOR TO TENDERING AND PROCEEDING WITH WORKS. IN THE EVENT WHERE AN ITEM IS SHOWN ON ONE SET OF CONSULTANTS DRAWINGS BUT NOT ON ANOTHER, IT IS DEEMED THAT THE ITEM HAS BEEN ALLOWED FOR AND WILL NOT CONSTITUTE GROUNDS FOR A VARIATION.
- THE CONTRACTOR SHALL ENSURE ALL MATERIALS AND WORKMANSHIP COMPLIES WITH THE CONTRACT DOCUMENTS, CURRENT AUSTRALIAN STANDARDS, BUILDING REGULATIONS AND THE REQUIREMENTS OF ANY OTHER RELEVANT STATUTORY AUTHORITIES.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONAL AND SET OUT INFORMATION. DO NOT SCALE FROM THESE DRAWINGS.
- ALL COST VARIATIONS SHALL BE APPROVED BY THE SUPERINTENDENT PRIOR TO THE WORK COMMENCING, INCLUDING ENGINEER ACCEPTANCE OF PROPOSED SUBSTITUTIONS.
- THE STRUCTURE HAS BEEN DESIGNED FOR THE FINAL CONDITION WHEN ALL WORKS HAVE BEEN COMPLETED ONLY. THE CONTRACTOR SHALL MAINTAIN THE INTEGRITY AND OVERALL STABILITY OF THE STRUCTURE, GROUND AND ALL EXISTING STRUCTURES IN THE VICINITY OF THE WORKS DURING CONSTRUCTION AND ENGAGE A QUALIFIED ENGINEER TO DESIGN ALL TEMPORARY WORKS IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARDS.
- THE CONTRACTOR SHALL RECORD ALL VARIATIONS TO THE DRAWINGS AND BE RESPONSIBLE FOR PRODUCING AS-CONSTRUCTED DRAWINGS IN ELECTRONIC FORMAT AT THE COMPLETION OF THE WORKS.
- THE ENGINEER HAS NOT DESIGNED AND IS NOT RESPONSIBLE FOR STRUCTURAL ELEMENTS OTHER THAN THOSE SHOWN ON THE ENGINEERING DRAWINGS.
- THE STRUCTURAL DOCUMENTS DO NOT SPECIFY ALL FIXTURES, INSERTS, SLEEVES, OPENINGS, ETC. REQUIRED BY THE VARIOUS TRADES. ALL SUCH DETAILS, INCLUDING OPENINGS FOR CONSTRUCTION OPENINGS SHALL BE OBTAINED FROM THE ARCHITECT OR OTHER CONSULTANTS DRAWINGS AND SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
- NO STRUCTURAL ELEMENTS ARE TO BE PENETRATED, NOTCHED OR CHASED WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL CURRENT OCCUPATIONAL HEALTH AND SAFETY REGULATIONS ON SITE AND PROVIDING SAFE ACCESS FOR THE ENGINEER.
- ALL PROPRIETARY ITEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ANY SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.
- THE CONTRACTOR SHALL CO-ORDINATE ALL SERVICES AND ENSURE THE FINAL LOCATION AND SIZE OF PENETRATIONS ARE CONFIRMED BY THE APPROPRIATE SUB-CONTRACTOR. FINAL DETAILS ARE TO BE SUBMITTED TO THE ENGINEER FOR REVIEW.
- INSPECTIONS BY THE ENGINEER DO NOT CONSTITUTE FULL TIME SUPERVISION OF THE WORKS WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THEIR SUB-CONTRACTORS. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 24 HOURS NOTICE TO THE ENGINEER FOR ANY REQUIRED INSPECTIONS.
- THE CONTRACTOR SHALL DEVELOP, IMPLEMENT AND ADMINISTER A WORKPLACE HEALTH AND SAFETY PROGRAM THAT COMPLIES WITH THE RELEVANT STATUTORY WORKPLACE HEALTH AND SAFETY REQUIREMENTS AND ALL OTHER RELEVANT AUTHORITY REQUIREMENTS.
- THE ENGINEER HAS COMPLETED A SAFETY IN DESIGN RISK REGISTER FOR THIS PROJECT. REFER TO THE RISK REGISTER FOR THE ENGINEERS ASSESSMENT OF POTENTIAL HAZARDS AND PROPOSED MITIGATION MEASURES.

REV.	DATE	DESCRIPTION	BY
01	04/10/2024	PRELIMINARY ISSUE	DP
02	18/10/2024	PRELIMINARY ISSUE	DP
03	18/10/2024	PRELIMINARY ISSUE	DP



18/10/2024 5:24:45 PM

**DESIGN LOADS AND CRITERIA**

- THE STRUCTURAL DESIGN HAS BEEN UNDERTAKEN BASED ON THE FOLLOWING DEAD, LIVE, EARTHQUAKE AND WIND LOADS:

LOCATION	DESIGN LIVE LOAD (kPa)	SUPERIMPOSED DEAD LOAD (kPa)
LIGHTWEIGHT ROOF	0.25	0
PLANT PLATFORM	2.5	0
GENERAL FLOOR	3	1

REFER ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FLOOR ZONES INDICATED ABOVE. FOR POST-TENSIONED SLAB DESIGN, THE POST-TENSIONING SUB-CONTRACTOR SHALL REFER TO THE PLANS FOR TRANSFER POINT AND LINE LOADS ONLY. NON-TRANSFER LOADS AND LOADS FROM NON-LOAD BEARING ELEMENTS INCLUDING MASONRY, CONCRETE SCREEDS/UPSTANDS/BALUSTRADES AND FACADES ARE NOT SHOWN ON THESE DRAWINGS AND SHALL BE CALCULATED BY THE POST-TENSION SLAB DESIGNER.

**EARTHQUAKE LOADS**

- IMPORTANCE LEVEL: 2
- ANNUAL PROBABILITY OF EXCEEDENCE (ULT) 500
- HAZARD FACTOR: 0.08
- SUB-SOIL CLASS: Ce
- EARTHQUAKE DESIGN CATEGORY: 1
- NON-STRUCTURAL COMPONENT LATERAL LOADS: 0.1 Wc

**WIND LOADS**

- IMPORTANCE LEVEL: 2
- ANNUAL PROBABILITY OF EXCEEDENCE (ULT) 500
- ANNUAL PROBABILITY OF EXCEEDENCE (SERV) 25

WIND DIRECTION	ULTIMATE LIMIT STATE DESIGN WIND SPEED (m/s)	SERVICEABILITY LIMIT STATE DESIGN WIND SPEED (m/s)
NORTH	35.48	29.17
NORTH EAST	29.88	24.57
EAST	29.88	24.57
SOUTH EAST	29.88	24.57
SOUTH	29.88	24.57
SOUTH WEST	35.48	29.17
WEST	37.35	30.71
NORTH WEST	35.48	29.17

- THE STRUCTURAL DESIGN HAS BEEN UNDERTAKEN BASED ON THE FOLLOWING DEFLECTION CRITERIA:

ELEMENT	DEFLECTION TO BE CONSIDERED	DEFLECTION LIMIT
FLOOR MEMBERS	TOTAL VERTICAL DEFLECTION	SPAN / 250 FOR SPANS AND +/- 25mm MAX. SPAN / 125 FOR CANTILEVERS AND +/- 20mm MAX.
	INCREMENTAL VERTICAL DEFLECTION	SPAN / 300 FOR SPANS AND +/- 20mm MAX. SPAN / 150 FOR CANTILEVERS AND +/- 20mm MAX.
MEMBERS SUPPORTING MASONRY PARTITIONS OR OTHER BRITTLE FACADE FINISHES	TOTAL VERTICAL DEFLECTION	SPAN / 250 FOR SPANS AND +/- 25mm MAX. SPAN / 125 FOR CANTILEVERS AND +/- 20mm MAX.
	VERTICAL DEFLECTION THAT OCCURS AFTER THE ADDITION OR ATTACHMENT OF PARTITIONS	SPAN / 500 FOR SPANS AND +/- 12.5mm MAX. SPAN / 250 FOR CANTILEVERS AND +/- 12.5mm MAX.
MEMBERS SUBJECT TO VEHICULAR OR PEDESTRIAN TRAFFIC	VERTICAL/HORIZONTAL DEFLECTION DUE TO IMPOSED ACTION (LIVE LOAD/DYNAMIC IMPACT)	SPAN / 800 FOR SPANS SPAN / 400 FOR CANTILEVERS
	TOTAL VERTICAL DEFLECTION - DEAD LOAD ONLY	SPAN / 360
ROOF MEMBERS	TOTAL VERTICAL DEFLECTION - DEAD AND SHORT-TERM LIVE LOAD	SPAN / 300
	TOTAL VERTICAL DEFLECTION - SERVICE WIND LOAD	SPAN / 360
TRANSFER MEMBERS	TOTAL VERTICAL DEFLECTION	SPAN / 500 FOR SPANS AND +/- 25mm MAX. SPAN / 250 FOR CANTILEVERS AND +/- 20mm MAX.
	INCREMENTAL VERTICAL DEFLECTION	SPAN / 500 FOR SPANS AND +/- 12.5mm MAX. SPAN / 250 FOR CANTILEVERS AND +/- 12.5mm MAX.
WALL MEMBERS	TOTAL HORIZONTAL DEFLECTION	HEIGHT / 200 AND +/-12mm MAX.
COLUMNS	TOTAL HORIZONTAL DEFLECTION	HEIGHT / 500
PORTAL FRAMES	TOTAL HORIZONTAL DEFLECTION	SPACING / 200
STOREY DRIFTS	NET HORIZONTAL DEFLECTION (BETWEEN LEVELS) - EARTHQUAKE LOAD	1.5% STOREY HEIGHT (HEIGHT / 67) OR HEIGHT / 500 (IMPORTANCE LEVEL 4)
	NET HORIZONTAL DEFLECTION (BETWEEN LEVELS) - SERVICE WIND LOAD	HEIGHT / 500

**NOTE:** CONTRACTOR TO ENSURE THAT ALL FLOORS ARE UNPROPPED PRIOR TO CONSTRUCTION OF BRITTLE FINISHES OR TRANSFER ELEMENTS ABOVE. CONTACT OUR OFFICE IF PROPOSED CONSTRUCTION SEQUENCE PRECLUDES THIS.

**FOUNDATIONS**

- THE CONTRACTOR AND SUB-CONTRACTORS ASSOCIATED WITH THE IN-GROUND WORKS SHALL REFER TO THE GEOTECHNICAL REPORT:
  - REPORT NO: 30280-1
  - DATE: 27/03/2024
  - PREPARED BY: STATEWIDE GEOTECHNICAL
  - SITE CLASS: IN ACCORDANCE WITH AS2870: H2
- THE STRUCTURAL DESIGN HAS BEEN UNDERTAKEN ON THE BASIS OF THE FOLLOWING ALLOWABLE BEARING PRESSURES WHICH SHALL BE VERIFIED BY TESTING AT THE CONTRACTOR'S EXPENSE AND SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF MEMBRANE, REINFORCEMENT OR CONCRETE:

FOUNDATION TYPE	FOUNDING MATERIAL	SAFE ALLOWABLE BEARING CAPACITY (kPa)	ULTIMATE BEARING CAPACITY (kPa)
BORED PIERS	2500 MIN. BELOW N.S.L.	250	N/A
PAD FOOTINGS	200mm INTO CLAY 1200 MIN. BELOW N.S.L.	150	N/A
STRIP FOOTINGS	100mm INTO XX, XXX MIN. BELOW N.S.L.	N/A	N/A
EDGE BEAMS	100mm INTO XX, XXX MIN. BELOW N.S.L.	N/A	N/A
INTERNAL BEAMS	100mm INTO XX, XXX MIN. BELOW N.S.L.	N/A	N/A

- PROVIDE BLINDING CONCRETE UNDER ALL FOUNDATIONS TO APPROVED FOUNDING LEVEL AS SPECIFIED ABOVE. FOUNDING DEPTHS NOMINATED ON THE STRUCTURAL DOCUMENTATION ARE MINIMUM FOUNDING DEPTHS AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSESS THE EXISTING SITE CONDITIONS AND MAKE SUFFICIENT ALLOWANCE FOR BLINDING TO ACHIEVE THE REQUIRED FOUNDING DEPTHS.
- THE SITE SHALL BE STRIPPED, TRIMMED AND GENERALLY PREPARED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. NO ORGANIC MATERIAL SHALL EXIST IN THE SOIL STRATA BELOW THE BUILDING STRUCTURE.
- SURVEY POINTS SHALL BE ESTABLISHED AROUND THE SITE AND MONITORED BY A LICENSED SURVEYOR AT MAXIMUM FOUR WEEK INTERVALS. DATE AND RESULTS SHALL BE PROGRESSIVELY FORWARDED TO THE ENGINEER AND ANY MOVEMENT SHALL BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER.
- ALL EXCAVATIONS SHALL BE ADEQUATELY DRAINED INTO SUMPS FITTED WITH A SILT TRAP. NO FINES OR OTHER MATERIALS SHALL BE PUMPED INTO COUNCIL DRAINS. DISCHARGE SHALL COMPLY WITH EPA GUIDELINES.
- DO NOT USE COMPACTION METHODS WHICH MAY CAUSE DAMAGE TO ADJACENT STRUCTURES. SELECTION OF APPROPRIATE METHODS SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- REMOVE REDUNDANT SERVICES AND BACKFILL SERVICES TRENCHES WITH SUITABLE IMPERMEABLE MATERIAL IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
- LOWEST LEVEL FOOTINGS SHALL BE POURED FIRST, WITH THE DIFFERENCE IN ADJACENT FOOTING LEVELS NOT TO EXCEED HALF THE CLEAR HORIZONTAL DISTANCE BETWEEN THEM.
- LOCATE FOOTINGS CENTRALLY UNDER WALLS AND COLUMNS UNLESS NOTED OTHERWISE.
- DURING CONSTRUCTION AND THE LIFE OF THE BUILDING THE CONTRACTOR AND BUILDING OWNER SHALL IMPLEMENT THE RECOMMENDATIONS OUTLINED IN THE GEOTECHNICAL REPORT TO MAINTAIN A STABLE MOISTURE CONTENT IN FOUNDING MATERIAL PROVIDING SUPPORT TO THE BUILDING.
- WHERE NEW FOUNDATIONS ARE FOUNDED CLOSE TO DISTURBED GROUND DUE TO AN EXCAVATION, TRENCH, EXISTING FOOTING, NEW OR EXISTING IN-GROUND SERVICE WHICH IS DEEPER THAN THE FOUNDING LEVEL OF THE NEW FOOTING, DEEPEN THE EXCAVATION AND BACK FILL WITH BLINDING CONCRETE TO BELOW THE ANGLE OF REPOSE FROM THE BASE OF THE DISTURBED GROUND.
- WHERE NEW STRUCTURE IS FOUNDED CLOSE TO AN EXISTING FOOTING OR IN-GROUND SERVICE WHICH IS HIGHER THAN THE ANGLE OF REPOSE FROM THE FOUNDING LEVEL OF THE NEW STRUCTURE, TEMPORARY SHORING SHALL BE PROVIDED TO MAKE SAFE THE EXCAVATION AND ENSURE THE EXISTING FOOTING OR IN-GROUND SERVICE IS NOT UNDERMINED.
- THE ENGINEER SHALL BE NOTIFIED OF THE PRESENCE OF ANY TREES LOCATED CLOSER THAN THEIR MATURE HEIGHT FROM ANY NEW STRUCTURAL WORKS.
- ALL BORED PIERS SHALL BE INSTALLED IN COMPLIANCE WITH AS 2159. BORED PIERS SHALL BE POSITIONED WITHIN 50MM OF THE DESIGN CENTRE WITH MAXIMUM OUT OF PLUMB TO BE 1:150. STRESSING OF GROUND ANCHORS IN BORED PIERS SHALL COMMENCE ONLY ONCE BORED PIER CONCRETE REACHES FULL STRENGTH.
- WHERE EXISTING VEGETATION IS PRESENT IN THE VICINITY OF THE PROPOSED BUILDING WORKS, CONSULT THE GEOTECHNICAL ENGINEER TO MAKE SUITABLE ALLOWANCE FOR THE REQUIRED TIMEFRAME BETWEEN REMOVING EXISTING VEGETATION AND CONSTRUCTING NEW BUILDING FOOTINGS.

**EARTHWORKS**

- THE PROPOSED CONSTRUCTION SEQUENCES AND PROCEDURES REPRESENTED ON THE STRUCTURAL DRAWINGS ARE INDICATIVE ONLY. ALL EARTHWORKS SHALL BE IN ACCORDANCE WITH THE RELEVANT ACTS, REGULATIONS, CODES OF PRACTICE AND RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
- ALL LEVELS SHOWN ON THE STRUCTURAL DRAWINGS ARE APPROXIMATE ONLY AND ARE TO BE VERIFIED BY THE ARCHITECT AND CONTRACTOR PRIOR TO CONSTRUCTION.
- BULK EXCAVATION SHALL BE GRADED/DRAINED TO SUMPS AND PUMPED AS REQUIRED TO MAINTAIN THE EXCAVATION FREE OF SURFACE WATER.
- INITIAL EXCAVATION MAY BE CARRIED OUT TO LEVELS ABOVE THOSE SHOWN ON THESE DRAWINGS WITH THE FINAL TRIMMING TO DESIGN LEVELS JUST PRIOR TO CASTING OF BASEMENT SLAB.
- ALL REQUIRED ENVIRONMENTAL TREATMENT OF RUN OFF FROM THE CONSTRUCTION SITE SHALL BE PROVIDED BY THE CONTRACTOR.
- DESIGN AND IMPLEMENTATION OF ALL TEMPORARY WORKS REQUIRED TO FACILITATE THE CONSTRUCTION OF THE STRUCTURE SO AS NOT TO UNDERMINE ADJOINING PROPERTIES OR SERVICES (E.G. SHEET PILE WALLS, TEMPORARY BATTERS, TEMPORARY DEWATERING, ETC) IS THE RESPONSIBILITY OF THE CONTRACTOR.
- SURPLUS SPOILT/POISSOL, ORGANIC MATERIAL AND DELETERIOUS MATERIAL SHALL BE STRIPPED TO A MINIMUM DEPTH OF 150mm OR TO DESIGN SUBGRADE LEVELS, WHICHEVER IS LOWER TO EXPOSE THE NATURAL SITE SUB-SOILS, AS PER THE GEOTECHNICAL ENGINEERS RECOMMENDATIONS.
- PROOF ROLL THE EXPOSED SUBGRADE WITH A STATIC SMOOTH STEEL WHEELED ROLLER CAPABLE OF EXERTING A MINIMUM MASS OF 10 TONNES OF COMPACTION EFFORT TO REVEAL SOFT, WET, LOOSE OR UNSTABLE AREAS. EXCAVATE ALL REMAINING SOFT SPOTS AND REPLACE WITH APPROVED MATERIAL COMPACTED TO THE SAME REQUIREMENT AS THE SUBGRADE.
- COMPACT SUBBASE/SUBGRADE TO 98% OF STANDARD MAXIMUM DRY DENSITY AT ±2% OF OPTIMUM MOISTURE CONTENT.
- REMOVE EXISTING REDUNDANT SERVICES AND REINSTATE TRENCH WITH APPROVED MATERIAL, COMPACTED TO THE REQUIRED SPECIFICATION FOR THE SUBGRADE. PIPES PASSING UNDER THE PERIMETER OF BUILDING FOOTINGS, SLABS OR EDGE OF PAVEMENTS SHALL BE BACKFILLED WITH CLAY, CONCRETE OR OTHER SUITABLE IMPERMEABLE MATERIAL TO RESTRICT THE TRAVEL OF MOISTURE.
- BENEATH PAVEMENTS A NON-EXPANSIVE APPROVED SELECT FILL SHALL BE PLACED, WHERE REQUIRED, IN UNIFORM LAYERS NOT EXCEEDING 150mm LOOSE THICKNESS AND COMPACTED TO ACHIEVE A MINIMUM DRY DENSITY RATIO OF 98% AT +/-2% OF OPTIMUM MOISTURE CONTENT.
- GRADE AND COMPACT THE FINISHED SUBGRADE TO THE REQUIRED LEVELS, PROFILE AND TOLERANCES SO THAT THE FINISHED SURFACE IS SELF-DRAINING AND FREE FROM PONDING.
- APPROVED FILL MATERIAL MAY INCLUDE RECYCLED CONCRETE, CRUSHED MUDSTONE, NDCR OR CLEAN, WELL GRADED SAND SUBJECT TO APPROVAL BY THE GEOTECHNICAL ENGINEER AND IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
- EXISTING SITE SOIL MATERIALS SHALL NOT BE USED AS ENGINEERING FILL WITHOUT APPROVAL FROM THE SUPERINTENDENT.
- SUBGRADE PREPARATION, FILL REPLACEMENT AND COMPACTION SHALL BE SUPERVISED BY A GEOTECHNICAL ENGINEER ENGAGED BY THE CONTRACTOR. THE FREQUENCY OF FIELD DENSITY TESTING SHALL BE IN ACCORDANCE WITH TYPE 1 EARTHWORKS AS NOTED IN TABLE 8.1 OF AS3798.
- UNDERGROUND SERVICES TO BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF ANY EXCAVATION WORK. EXISTING SERVICES SHOWN ON THE ENGINEERING DOCUMENTS ARE PROVIDED FOR INFORMATION ONLY AND ARE BASED ON AVAILABLE SURVEY AND AUTHORITY INFORMATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ESTABLISH THE LOCATION AND DEPTH OF ALL SERVICES AND ENSURE THAT NO SERVICES ARE DAMAGED DURING THE CONSTRUCTION WORKS, AND NOTIFY THE SUPERINTENDENT AND ENGINEER ACCORDINGLY.
- THE CONTRACTOR IS TO DEDUCE THEIR OWN EARTHWORKS QUANTITIES NOTING THE SURVEY INFORMATION PROVIDED AND THE PROPOSED ARCHITECTURE/LANDSCAPE DRAWINGS. RETAINING WALLS TO BE PROVIDED AT THE LOCATIONS DOCUMENTED ON CIVIL DRAWINGS AND ALLOWED FOR IN ANY OTHER EXTENTS AS NECESSARY TO ACCOMMODATE SURFACE LEVEL CHANGES

**PILE DESIGN**

- PILES ARE TO BE DESIGNED BY THE PILING CONTRACTOR IN ACCORDANCE WITH AS2159 AND AS1170 FOR LOADS SPECIFIED ON THE STRUCTURAL DRAWINGS.
- PILE NUMBERS AND SIZES SHOWN ON THE PLAN ARE INDICATIVE ONLY. THE CONTRACTOR SHALL ASSESS THE NUMBER AND SIZE OF PILES REQUIRED BASED ON THE NOMINATED DESIGN LOADS ON THE DRAWINGS.
- LOADS ON PILES SHOWN ON DRAWINGS ARE APPLIED LOADS TO PILE CAPS ONLY AND DO NOT INCLUDE THE SELF-WEIGHT OF THE PILE, PILE CAPS OR OTHER SKIN FRICTION EFFECTS.
- PILES SHALL BE DESIGNED FOR BENDING MOMENTS INDUCED BY ECCENTRIC LOADING DUE TO CONSTRUCTION TOLERANCES AND PILE CONNECTION. THE DESIGNER SHALL ADOPT A MINIMUM ECCENTRICITY OF 75mm AND A REALISTIC ALLOWANCE FOR EFFECTIVE LENGTH FOR THE PARTICULAR SOIL CONDITIONS.
- UNLESS NOTED OTHERWISE, LOADS ON DRAWINGS ARE UNFACTORED AND SHALL BE COMBINED FOR DESIGN OF THE PILES IN ACCORDANCE WITH THE REQUIREMENTS OF AS1170 FOR STRENGTH, STABILITY AND SERVICEABILITY LIMIT STATES.
- THE CONTRACTOR SHALL ASSESS THE SITE CONDITIONS AND GEOLOGY WHEN PREPARING THE PILING DESIGN. INFORMATION CONTAINED IN THE GEOTECHNICAL REPORT IS PROVIDED FOR INFORMATION ONLY.
- PILES SHALL BE DESIGNED AND INSTALLED TO ACHIEVE THE FOLLOWING PERFORMANCE REQUIREMENT:
  - 25mm MAXIMUM LONG TERM SETTLEMENT AT TOP OF PILE
  - 5mm MAXIMUM SETTLEMENT AT TOE OF PILE
  - L/2500 MAXIMUM DIFFERENTIAL SETTLEMENT BETWEEN INDIVIDUAL PILE CAPS/GROUPS WITH L BEING THE DISTANCE BETWEEN INDIVIDUAL PILE CAPS/GROUPS
  - LATERAL DISPLACEMENT AT TOP OF PILE SHALL NOT EXCEED 2mm
  - 50 YEAR DESIGN LIFE
  - 75mm MAXIMUM POSITIONAL TOLERANCE
  - VERTICAL PLUMBNESS OF 1:150
- THE CONTRACTOR SHALL SUBMIT CALCULATIONS AND CERTIFICATION IN ACCORDANCE WITH THE RELEVANT BUILDING REGULATIONS TO THE SUPERINTENDENT AND ENGINEER FOR REVIEW AND APPROVAL.
- THE CONTRACTOR SHALL SUBMIT A WORK METHOD STATEMENT OUTLINING ESTIMATED GROUND MOVEMENTS AND MONITORING METHODS TO BE EMPLOYED TO ELIMINATE THE RISK OF DAMAGE TO ADJACENT STRUCTURES AND SERVICES.

**CONCRETE**

- ALL CONCRETE SHALL BE 'N' NORMAL CLASS IN ACCORDANCE WITH AS1379 AND AS3600 UNLESS NOTED OTHERWISE.
- UNLESS NOTED OTHERWISE CONCRETE STRENGTHS AND COVER TO REINFORCING BARS AND MESH, INCLUDING LIGATURES AND TIES, SHALL BE AS FOLLOWS:

CONCRETE ELEMENT	MIN F'c AT 28 DAYS (MPa)	COVER TO EXTERNAL FACE OR SOIL (mm)	COVER TO INTERNAL FACE (mm)
BLINDING	15	N/A	N/A
PAD FOOTINGS	25	50	50
SLAB ON GROUND	25	50	30
SUSPENDED SLABS AND BEAMS	32	40*	25

\* REFER COVER TO INTERNAL FACE IF SURFACE IS PROTECTED BY A WATERPROOF MEMBRANE. CONCRETE ELEMENTS NOT LISTED ABOVE SHALL BE GRADE N32 U.N.O.

- ALL MATERIALS, WORKMANSHIP, HANDLING, PLACEMENT AND CURING OF CONCRETE, REINFORCEMENT AND OTHER ASSOCIATED COMPOUNDS AND COMPONENTS SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS AND THE SPECIFICATION.
- CONVENTIONALLY REINFORCED CONCRETE AND POST-TENSIONED CONCRETE FOR SUSPENDED SLABS SHALL HAVE A MAXIMUM DESIGN SHRINKAGE STRAIN NOT EXCEEDING 750 MICROSTRAIN AND 650 MICROSTRAIN, RESPECTIVELY, AT 56 DAYS WHEN DETERMINED IN ACCORDANCE WITH AS1379 AND TESTED TO AS1012.13.
- ADMIXTURES SHALL NOT ADVERSELY AFFECT SPECIFIED CONCRETE PROPERTIES. ADMIXTURES ARE NOT TO BE USED WITHOUT EXPRESSED APPROVAL OF THE ENGINEER.
- CONCRETE MIX DESIGNS SHALL BE SUBMITTED TO THE SUPERINTENDENT AND ENGINEER FOR REVIEW.
- CONCRETE SAMPLING AND TESTING SHALL COMPLY WITH AS1379 AND AS1012 AND TEST RESULTS FORWARDED TO THE ENGINEER.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL CONCRETE ELEMENTS ARE CONSTRUCTED TO THE MINIMUM SIZE SHOWN ON DRAWINGS. SPECIFIED SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.
- CAST CONCRETE IN ACCORDANCE WITH JOINTS SHOWN ON DRAWINGS IN A HIT AND MISS SEQUENCE, OR OTHERWISE SUBMIT PROPOSED JOINT ARRANGEMENT TO ENGINEER FOR REVIEW AND APPROVAL.
- THE QUALITY OF CONCRETE SURFACES SHALL BE IN ACCORDANCE WITH AS3610.1. CLASS 2 SURFACE FINISH IN ACCORDANCE WITH AS3610.1 SHALL APPLY UNLESS THE ARCHITECT SPECIFIES OTHERWISE.
- ALL STRUCTURAL CONCRETE SHALL BE CURED FOR A MINIMUM OF 7 DAYS COMMENCING AS SOON AS THE SURFACE OF THE CONCRETE HAS HARDENED SUFFICIENTLY TO PREVENT DAMAGE. CURING SHALL BE IN ACCORDANCE WITH AS3600. THE CONTRACTOR SHALL SUBMIT PROPOSED CURING METHOD TO THE ENGINEER FOR APPROVAL PRIOR TO ANY CONCRETE POUR. CURING COMPOUNDS SHALL COMPLY WITH AS3799.
- ALL CAST IN BOLTS OR ANCHORS SHALL BE SET OUT USING TEMPLATES.
- ALL SURFACE EXPOSED, CAST-IN COMPONENTS SHALL BE HOT DIP GALVANISED TO 600g/m<sup>2</sup>.
- SLABS ON GROUND TO BE UNDERLAIN WITH A CONTINUOUS 0.2mm POLYTHENE SHEET VAPOUR MEMBRANE, TAPED AT ALL JOINTS AND TURNED UP AGAINST WALLS AND AT EDGES FOR FULL DEPTH OF SLAB. PROVIDE NOM. 20mm THICK SAND BLINDING ON COMPACTED SUBGRADE/SUBBASE UNDER VAPOUR MEMBRANE.
- NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT APPROVAL FROM THE ENGINEER.
- WATER PROOFING OF ALL STRUCTURAL CONCRETE SURFACES EXPOSED TO WEATHER OR WETTING, INCLUDING CONCRETE BELOW THE WATER TABLE SHALL BE IN ACCORDANCE WITH THE ARCHITECTS DETAILS AND SPECIFICATIONS, UNLESS NOTED OTHERWISE.
- DESIGN OF FORMWORK AND SUPPORTING STRUCTURES SHALL BE THE CONTRACTORS RESPONSIBILITY.
- REFER TO ARCHITECTS AND OTHER CONSULTANT DRAWINGS FOR SIZE AND POSITION OF PLUMBING PIPES, RECESSES, SET DOWN AREAS, DRIP GROOVES, FALLS, CHAMFERS, REGLETS, BUILT IN FIXINGS AND THE LIKE. BUILD FORMWORK TO SUIT.
- NO MASONRY SHALL BE CONSTRUCTED ON SUSPENDED SLABS UNTIL THE SLAB HAS REACHED FULL STRENGTH AND IS FULLY UNPROPPED.
- WHERE GROUT IS SPECIFIED FOR BEARING CONNECTIONS FOR WALLS OR COLUMNS THE GROUT SHALL BE A PROPRIETARY DRY PACK HIGH STRENGTH NON-SHRINK GROUT SYSTEM WITH MINIMUM CHARACTERISTIC CYLINDER COMPRESSIVE STRENGTH MATCH THE WALL OR CONCRETE ELEMENT IT INTERFACES WITH, AS A MINIMUM, THE CHARACTERISTIC CUBE COMPRESSIVE STRENGTH OF GROUT SHALL ALWAYS EXCEED THE CHARACTERISTIC CYLINDER COMPRESSIVE STRENGTH OF ANY ADJOINING CONCRETE WALL OR COLUMN ELEMENT BY AT LEAST 30% IN ACCORDANCE WITH TABLE 3.1.1.1 OF AS3600.
- ENSURE ALL DEBRIS IS REMOVED FROM FORMWORK PRIOR TO CONCRETING.

<p>CLIENT <b>FOREGROUND ARCHITECTURE</b></p> <p>PROJECT <b>CARLTON NORTH PRIMARY SCHOOL</b></p>	<p><b>M A T T E R</b></p> <p>CONSULTING STRUCTURAL ENGINEERS</p> <p>Level 8/550 Bourke Street Melbourne VIC 3000 T (03) 8692 7262 matterconsulting.com.au</p>	<p>SHEET TITLE <b>GENERAL NOTES SHEET 1</b></p> <p>DRAWN BY: CHECKED BY: APPROVED BY: SCALE: as AT <b>1:1, 1:10</b> DRAWN DATE: <b>1/10/2024</b></p> <p>PROJECT NO: <b>23059</b> SHEET NO: <b>S00.001</b> REVISION NO: <b>03</b></p>
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SHEET TITLE

**GENERAL NOTES SHEET 1**

**PRELIMINARY**

DRAWN BY: CHECKED BY: APPROVED BY: SCALE: as AT  
**1:1, 1:10** DRAWN DATE:  
**1/10/2024**

PROJECT NO: **23059** SHEET NO: **S00.001** REVISION NO: **03**

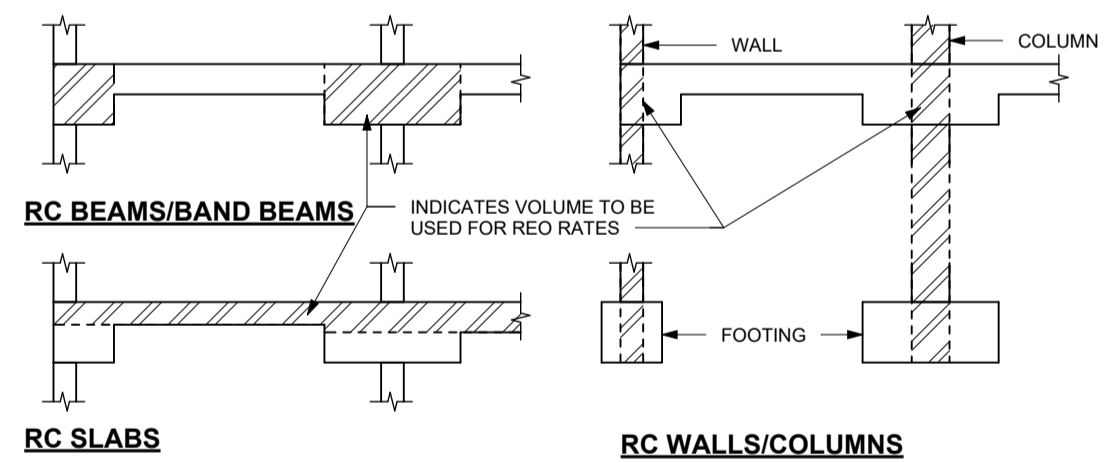


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**REINFORCEMENT**

- REINFORCEMENT PREFIXES ARE AS FOLLOWS:
  - 'W' DENOTES HOT ROLLED DEFORMED BARS OF GRADE 500 (D500L) COMPLYING WITH AS/NZS4671.
  - 'L' DENOTES LOW DUCTILITY TRENCH MESH OF GRADE 500 (D500L) COMPLYING WITH AS/NZS 4671.
  - 'SL' AND 'RL' DENOTES LOW DUCTILITY SQUARE AND RECTANGULAR WELDED WIRE MESH OF GRADE 500 (D500L) COMPLYING WITH AS/NZS 4671.
  - 'R' DENOTES ROUND BAR BARS OF GRADE 250 (R250N) COMPLYING WITH AS/NZS4671.
- REINFORCEMENT RATES NOMINATED ON THE STRUCTURAL DRAWINGS DO NOT INCLUDE WASTAGE AND ROLLING MARGINS AND ARE FOR MAIN REINFORCEMENT ONLY. TRIMMING REINFORCEMENT TO PENETRATIONS, STARTERS, PULL OUT BARS, LACER BARS, SPACER BARS, OR OTHER TEMPORARY CONSTRUCTION COMPONENTS HAVE NOT BEEN INCLUDED IN THE REINFORCEMENT RATES UNLESS NOTED OTHERWISE.
- REINFORCEMENT IS SHOWN DIAGRAMMATICALLY ONLY AND NOT NECESSARILY IN TRUE PROJECTION.
- THE MINIMUM LAPS SHALL APPLY, UNLESS NOTED OTHERWISE ON DRAWINGS:
  - 'SL' AND 'RL' MESH – OVERLAP 2 OUTERMOST TRANSVERSE BARS AND NO LESS THAN 200mm.
  - 'L' TRENCH MESH – 500mm.
  - 'W' AND 'R' BARS – 50 x BAR DIAMETERS'.
- SLOPES OF REINFORCEMENT CRANKS SHALL NOT EXCEED 1 IN 6.
- ALL REINFORCEMENT SHALL BE SECURELY SUPPORTED IN ITS CORRECT POSITION DURING CONCRETING BY APPROVED MEANS AND IN COMPLIANCE WITH AS3600 AND AS3610. NON-CORROSIVE BAR CHAIRS SHALL BE USED FOR ALL OFF FORM FINISHED SURFACES.
- HOOKS AND COGS SHALL BE FABRICATED IN ACCORDANCE WITH THE REQUIREMENTS OF AS3600, INCLUDING REQUIRED BEND RADIUS AND STRAIGHT BAR EXTENSIONS, UNLESS SPECIFIED OTHERWISE
- WELDING OR CUTTING OF REINFORCEMENT SHALL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
- REINFORCE ALL SLAB RE-ENTRANT CORNERS WITH 2N12 x 1500 LONG BARS PLACED AT 45 DEGREES, TIED TO THE INSIDE OF THE REINFORCEMENT.
- ABBREVIATIONS USED ON DRAWINGS FOR REINFORCEMENT ARE AS FOLLOWS:
  - EW – EACH WAY
  - EF – EACH FACE
  - NF – NEAR FACE
  - FF – FAR FACE
  - C – CENTRAL
  - T – TOP
  - B – BOTTOM
- REINFORCEMENT LAYERS ON PLANS ARE MARKED WITH THE FOLLOWING SUFFIXES
  - (1) – BOTTOM MOST REINFORCEMENT LAYER WITH MINIMUM SPECIFIED COVER
  - (4) – TOP MOST REINFORCEMENT LAYER WITH MINIMUM SPECIFIED COVER
  - (2) – BOTTOM REINFORCEMENT LAYER PLACED JUST ABOVE (1)
  - (3) – TOP REINFORCEMENT LAYER PLACED JUST BELOW (4)
- ALL CONDUITS TO BE PLACED ABOVE BOTTOM REINFORCEMENT AND BELOW TOP REINFORCEMENT. CONDUITS TO BE PLACED A MINIMUM OF 20mm APART.
- POST-INSTALLED BARS INTO CONCRETE STRUCTURE SHALL BE EMBEDDED WITH EITHER RAMSET REO 502 OR HILTI HIT-RE500 ADHESIVE INSTALLED STRICTLY IN ACCORDANCE WITH THE ADHESIVE MANUFACTURERS INSTRUCTIONS.
- MOVE REINFORCEMENT TO EITHER SIDE OF HOLES IN SLAB UNLESS OTHERWISE NOTED.
- ALL REINFORCEMENT COUPLERS, THREADED INSERTS OR FERRULES SHALL BE ANCON AND ACHIEVE FULL BAR BREAK CAPACITY FOR THE SPECIFIED REINFORCEMENT BAR OR APPROVED EQUIVALENT.
- REINFORCEMENT RATE DIAGRAM:



**STRUCTURAL STEEL**

- ALL STEELWORK SHALL BE NEW AND COMPLYING WITH THE FOLLOWING MINIMUM GRADES UNLESS NOTED OTHERWISE:
  - HOT-ROLLED BARS AND SECTIONS GRADE 300 TO AS/NZS3679.1
  - WELDED I SECTIONS GRADE 300 TO AS/NZS3679.1
  - HOT-ROLLED STEEL FLATS GRADE 300 TO AS/NZS3678
  - HOLLOW SECTIONS GRADE 350 TO AS/NZS1163
  - COLD-ROLLED STEEL SHEET, STRIP, AND PURLINS GRADE 450MPa TO AS1397 AND AS4600

ALL STEELWORK SHALL BE CERTIFIED BY A NATA ACCREDITED LABORATORY AS BEING COMPLIANT WITH THE RELEVANT AUSTRALIAN STANDARDS.
- CONSTRUCTION CATEGORY IN ACCORDANCE WITH ASS131:
  - IMPORTANCE FACTOR 2
  - SERVICE CATEGORY SC1
  - FABRICATION CATEGORY FC1
  - CONSTRUCTION CATEGORY CC2
- COATING QUALITY LEVEL IN ACCORDANCE WITH ASS131:
  - ATMOSPHERIC CORROSIVITY CATEGORY (AS2312) C1
  - COATING QUALITY LEVEL PC1
- ALL CEILINGS AND SERVICES HUNG FROM PURLINS SHALL BE FIXED TO PURLIN WEBS.
- SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR A COURTESY REVIEW OF COMPLIANCE WITH THE DOCUMENTED DESIGN INTENT PRIOR TO FABRICATION. THIS REVIEW SHALL NOT RELIEVE OTHER PARTIES OF THEIR CONTRACTUAL RESPONSIBILITIES. ALLOW 5 WORKING DAYS FOR THE ENGINEER TO REVIEW.
- MEMBERS TO DEVELOP FULL STRENGTH AT ALL WELDED CONNECTIONS UNLESS DETAILED OTHERWISE.
- ALL WELDS SHALL COMPLY WITH THE FOLLOWING:
  - ALL BUTT WELDS SHALL BE FULL STRENGTH BUTT WELDS TO AS1554.
  - ALL FILLET WELDS SHALL BE A MINIMUM 6mm E49XX CATEGORY SP CONTINUOUS FILLET WELD.
- ALL WELDS SHALL BE SHOP WELDED UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- ALL WELDS SHALL BE TESTED TO THE FOLLOWING REQUIREMENTS:
  - VISUAL SCANNING: 100% OF WELDS
  - VISUAL EXAMINATION: 50% OF BUTT WELDS AND 25% OF ALL OTHER WELDS
  - MAGNETIC PARTICLE INSPECTION: 5% OF ALL WELDS GENERALLY AND 10% OF ALL SITE FILLET WELDS 25% OF ALL SITE BUTT WELDS.
- FULLY SEAL ALL HOLLOW SECTIONS USING 4mm PLATES UNLESS NOTED OTHERWISE. PROVIDE VENTING HOLES TO ALL GALVANISED SECTIONS.
- ALL PRE-CAMBERS TO BE UNIFORM CURVE. NATURAL CAMBERS IN STEELWORK TO BE UPWARDS UNLESS NOTED OTHERWISE.
- MEMBERS TO BE IN ONE LENGTH UNLESS OTHERWISE APPROVED. REFER TO DRAWINGS FOR ALL SPLICE LOCATIONS.
- ALL SPLICES SHALL BE FULL PENETRATION BUTT WELDED SPLICES UNLESS DETAILED OTHERWISE.
- DRILL ALL HOLES 2mm GREATER THAN BOLT DIAMETERS IN CLEATS AND 6mm GREATER FOR HOLD DOWN BOLT DIAMETER IN BASE PLATES. PROVIDE 50x50x6mm WASHERS ON HOLD DOWN BOLTS.
- ALL BOLTS SHALL BE CATEGORY 8.8/S REFERRING TO BOLTS OF GRADE 8.8 TO AS/NZS1252. SNUG-TIGHTENED IN ACCORDANCE WITH AS4100 UNLESS NOTED OTHERWISE. WELDING OF BOLTS IS NOT PERMITTED UNLESS APPROVED BY THE ENGINEER.
- ERECT ALL MEMBERS FREE FROM TWISTS AND DISTORTIONS.
- GROUT ALL SEATING AND BASE PLATES WITH A PROPRIETARY DRY PACK HIGH STRENGTH (MIN. 50MPa) NON-SHRINK GROUT SYSTEM. ENSURE SPACE UNDER PLATE IS COMPLETELY FILLED TO ACHIEVE AN EVEN BEARING SURFACE ACROSS THE BASE PLATE AREA.
- ALL COLD FORMED STEEL ELEMENTS INCLUDING CONNECTIONS AND BRACING SHALL COMPLY WITH THE REQUIREMENTS OF AS/NZS4600 AND THE PROPRIETARY MANUFACTURERS INSTRUCTIONS.
- UNLESS NOTED OTHERWISE, PURLIN CLEATS SHALL BE 8mm THICK PLATES FOR A 50mm MAXIMUM GAP BETWEEN UNDERSIDE OF PURLIN AND TOP OF BEAM. WHERE THE GAP BETWEEN UNDERSIDE OF PURLIN AND TOP OF BEAM EXCEEDS 50mm, ADOPT 10mm THICK PLATE CLEATS. WHERE THE GAP BETWEEN UNDERSIDE OF PURLIN AND TOP OF BEAM EXCEEDS 100mm, ADOPT 75 x 5 EA CLEATS.
- THE CONTRACTOR SHALL ALLOW AND PROVIDE FOR ALL ROOFING EDGE TRIMMERS, CLEATS, BOLTS, HOLES, LUGS, ETC. NECESSARY FOR COMPLETION OF THE BUILDING INCLUDING ARCHITECTURAL OR OTHER SERVICES STEEL WORK NOT SHOWN ON THE STRUCTURAL DRAWINGS. REFERENCE SHALL BE MADE TO THE RELEVANT CONSULTANT DRAWINGS FOR ANCILLARY STEEL WORK AS REQUIRED.
- ALL ROOF BRACING SHALL BE HOOK BOLTED WITH 10mm DIAMETER HOOK BOLTS TO THE WEB OF PURLINS UNLESS NOTED OTHERWISE.
- ALL WALL AND ROOF BRACING SHALL BE INSTALLED TAUGHT, FREE FROM SLACK, DISTORTIONS AND DEVIATIONS. SUITABLE TENSIONING MECHANISMS SUCH AS TURNBUCKLES FOR RODS, ETC. SHALL BE ALLOWED FOR AS REQUIRED.
- CONCRETE ENCASEMENT TO STEELWORK SHALL BE N25 GRADE AND REINFORCED WITH SL41 MESH WITH 30mm COVER UNLESS NOTED OTHERWISE.
- UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS, MINIMUM BRIDGING FOR ALL STEEL PURLINS SHALL BE 2 ROWS FOR END SPANS AND MID-SPAN IN INTERNAL SPANS FOR SPANS GREATER THAN 3000mm.
- MINIMUM STEEL CLEATED CONNECTIONS, UNLESS NOTED OTHERWISE, SHALL BE AS FOLLOWS:
  - BEAMS UP TO 200 DEEP – 10PL CLEAT, 2M20 8.8/S BOLTS
  - BEAMS BETWEEN 201 AND 360 DEEP – 10PL CLEAT, 3M20 8.8/S BOLTS
  - BEAMS BETWEEN 361 AND 610 DEEP – 10PL CLEAT, 4M24 8.8/S BOLTS
- MINIMUM PLATE THICKNESS, UNLESS NOTED OTHERWISE, SHALL BE AS FOLLOWS:
  - STIFFENERS – 8mm THICK
  - CAP PLATES – 10mm THICK
  - BASE PLATES – 16mm THICK
  - END PLATES – 20mm THICK
- POST-INSTALLED FIXINGS SHALL BE EMBEDDED WITH EITHER RAMSET REO 502 OR HILTI HIT-RE500 ADHESIVE INSTALLED STRICTLY IN ACCORDANCE WITH THE ADHESIVE MANUFACTURERS INSTRUCTIONS. UNLESS NOTED OTHERWISE, MINIMUM EMBEDMENT OF POST-INSTALLED FIXINGS SHALL BE AS FOLLOWS:
  - ANCHORS UP TO M12 – 110mm
  - M16 – 125mm
  - M20 – 170mm
  - M24 – 210mm
  - M30 – 270mm

**STRUCTURAL STEEL, CONTINUED**

- UNLESS NOTED OTHERWISE, COLUMN TO FOOTINGS CONNECTIONS SHALL BE A MINIMUM 4-M20 8.8/S 'U' BOLTS WITH A CONCRETE EMBEDMENT OF 300mm.
- ALL STEELWORK SHALL BE TREATED AS FOLLOWS UNLESS NOTED OTHERWISE:
  - EXTERNAL (PAINT) – ABRASIVE BLAST CLEAN TO CLASS 2.5 IN ACCORDANCE WITH AS1627 AND INORGANIC ZINC SILICATE TO 75 MICRONS DFT.
  - EXTERNAL (GALVANISED) – ABRASIVE BLAST CLEAN TO CLASS 2.5 IN ACCORDANCE WITH AS1627 AND HOT DIP GALVANISED TO 600g/m<sup>2</sup>.
  - INTERNAL – ABRASIVE BLAST CLEAN TO CLASS 2.5 IN ACCORDANCE WITH AS1627 ZINC PHOSPHATE TO 75 MICRONS DFT.
  - BELOW GROUND – IN ADDITION TO THE ABOVE, 2 COATS OF BITUMEN BASED PRIMAISTIC TO 400 MICRONS DFT.
  - SITE WELD – POWER TOOL CLEAN TO CLASS 2 IN ACCORDANCE WITH AS1627 AND SURFACE TOLERANT EPOXY MASTIC TO 400 MICRONS DFT.
  - STITCH WELD – AS PER ABOVE. SEAL UNWELDED SECTIONS WITH AN APPROVED SEALANT PRIOR TO PAINTING.
  - BOLTS AND ALL ASSOCIATED COMPONENTS – HOT DIP GALVANISED TO 600g/m<sup>2</sup>.

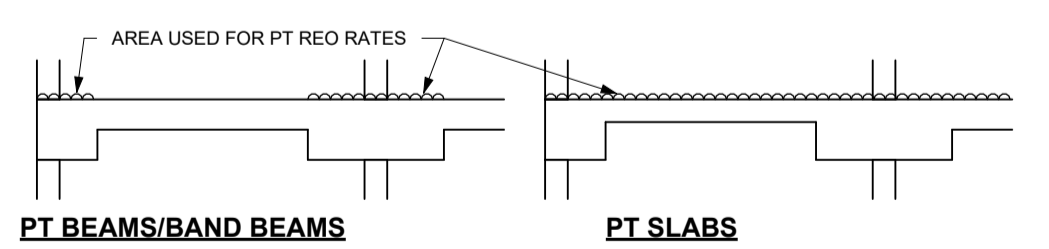
ANY SURFACE TREATMENT DAMAGED DURING THE WORKS SHALL BE REINSTATE WITH POWER TOOL CLEANING TO CLASS 2 IN ACCORDANCE WITH AS1627 AND TREATED WITH A SURFACE TOLERANT EPOXY MASTIC TO 400 MICRONS DFT.
- ALL DISSIMILAR METALS SHALL BE SEPARATED BY ELECTROLYTIC ISOLATION WITH RUBBER GROMMETS/WASHERS OR OTHER APPROVED MEANS OF SEPARATION.
- PROVIDE SAG RODS OR GIRT FEET TO ALL GIRTS TO ENSURE THAT THEY ARE INSTALLED FREE OF SAG

**MASONRY NOTES**

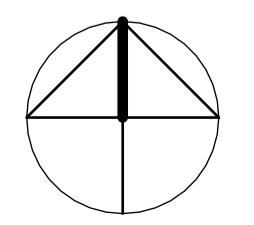
- ALL MASONRY MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH AS3700. ALL TIES, CONNECTORS, ACCESSORIES AND STEEL LINTELS SHALL BE IN ACCORDANCE WITH AS/NZS2699.1, AS/NZS2699.2, AS/NZS2699.3 AND AS4100 UNLESS NOTED OTHERWISE.
- MINIMUM UNCONFINED COMPRESSIVE STRENGTHS OF MASONRY SHALL BE AS FOLLOWS:
  - BRICKWORK – 15MPa
  - BLOCKWORK – 15MPa
- UNLESS NOTED OTHERWISE, ALL MASONRY TO BE BONDED WITH MORTAR CLASS AS FOLLOWS:
  - WITHIN 1KM OF COAST – M4 CLASS MORTAR (1 CEMENT : 0.5 LIME : 4.5 SAND)
  - OTHERWISE – M3 CLASS MORTAR (1 CEMENT : 1 LIME : 6 SAND)
- UNLESS NOTED OTHERWISE, BONDING OF MASONRY SHALL BE STRETCHER BOND WITH ALL BED JOINTS AND PERPENDS TO BE FULLY BEDDED MORTAR.
- TIE MASONRY TO STRUCTURAL WALLS AND COLUMNS WITH APPROVED PROPRIETARY TIES AT 300 MAXIMUM CENTRES VERTICALLY AND 600 MAXIMUM CENTRES HORIZONTALLY.
- TIE THE OUTER LEAF TO THE INNER LEAF OF CAVITY CONSTRUCTION WITH GALVANISED, TYPE 'A', MEDIUM DUTY WALL TIES IN ACCORDANCE WITH THE FOLLOWING MINIMUM REQUIREMENTS:
  - UP TO 75 CAVITY – 600 HORIZONTALLY AND 520 VERTICALLY
  - OVER 75 CAVITY – 600 HORIZONTALLY AND 350 VERTICALLY
  - WITHIN 300 OF LATERAL SUPPORTS OR VERTICAL JOINTS – 300 VERTICALLY.
- CONFIRM ACOUSTIC REQUIREMENTS IN RELATION TO TIES WITH ARCHITECT AND OTHER CONSULTANT DOCUMENTATION PRIOR TO WORKS. TREATMENT OF WALL TIES TO BE AS FOLLOWS:
  - WITHIN 1KM OF COAST – STAINLESS STEEL
  - OTHERWISE – GALVANISED
- UNLESS NOTED OTHERWISE, MAXIMUM VERTICAL WALL JOINT SPACING TO COMPLY WITH THE FOLLOWING (REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS):

SITE CLASS	WALL CONSTRUCTION	JOINT SPACING (m)
A & S	ANY	9.0
M, M-D	EXTERNAL FACE FINISH MASONRY	6.0
	EXTERNAL RENDERED AND/OR PAINTED MASONRY	5.5
	INTERNAL FACE FINISH OR SHEETED MASONRY	6.0
	INTERNAL RENDERED AND/OR PAINTED MASONRY	5.5
H, H-D	EXTERNAL FACE FINISH MASONRY	5.5
	EXTERNAL RENDERED AND/OR PAINTED MASONRY	5.0
	INTERNAL FACE FINISH OR SHEETED MASONRY	5.5
	INTERNAL RENDERED AND/OR PAINTED MASONRY	5.0

- VERTICAL WALL JOINTS ARE TO BE 15MM BRIDGED WITH PROPRIETARY MASONRY FLEXIBLE ANCHORS AT 400 MAXIMUM CENTRES. JOINTS SHALL BE FILLED WITH A COMPRESSIBLE MASTIC SEALANT ON A BACKING ROD.
- UNLESS NOTED OTHERWISE, ARTICULATION JOINTS SHALL BE PROVIDED AT THE FOLLOWING LOCATIONS AND IN ACCORDANCE WITH TECHNICAL NOTE 61 PUBLISHED BY THE CEMENT CONCRETE & AGGREGATES AUSTRALIA:
  - CONTROL OR CONSTRUCTION JOINTS IN SLABS OR FOOTINGS.
  - WINDOW AND DOOR OPENINGS.
  - WHERE THE HEIGHT OF THE WALL CHANGES ABRUPTLY BY MORE THAN 20% OF ITS LESSER HEIGHT.
  - CHANGES IN WALL THICKNESS EXCLUDING ENGAGED PIERS.
  - JUNCTIONS OF WALLS BUILT OF DIFFERENT MASONRY MATERIALS.
  - JOINTS BETWEEN MASONRY WALLS AND STRUCTURAL CONCRETE OR STEEL ELEMENTS.
  - DEEP CHASES OR REBATES FOR SERVICE PIPES.
  - AT OFFSETS IN WALLS.
  - AT CHANGES IN PLAN GEOMETRY WHERE DIFFERENCES IN MOVEMENT MAY OCCUR.
- UNLESS NOTED OTHERWISE PROVIDE 15mm HORIZONTAL JOINTS AT 8.5m MAXIMUM CENTRES FOR CONTINUOUS VERTICAL LENGTHS OF EXTERNAL WALLS, UNLESS NOTED OTHERWISE.
- PROVIDE A MINIMUM OF 200mm BEARING LENGTH UNDER ALL STEEL LINTELS AND SHELF ANGLES.
- SUSPENDED SLABS SHALL BE EVENLY LOADED WITH ALL BRICKS NEEDED FOR WALLS ON FLOOR IMMEDIATELY PRIOR TO CONSTRUCTION OF BRICK WALLS. BRICKWORK ON THE SLAB SHALL ONLY BE CONSTRUCTED AFTER FORMWORK HAS BEEN STRIPPED AND ALL PROPS REMOVED.
- VERTICAL CHASING IS ACCEPTABLE WITHIN INTERNAL WALLS AND TO A MAXIMUM DEPTH OF 20mm ON ONE FACE ONLY. NO HORIZONTAL OR DIAGONAL CHASING OF WALLS IS PERMITTED WITHOUT PRIOR APPROVAL FROM THIS OFFICE.
- PT RATE DIAGRAM:
- CLEAN OUT BLOCKS SHALL BE USED FOR THE BASE COURSE IN REINFORCED BLOCK WALLS. ALL EXCESS AND LOOSE MORTAR IS TO BE REMOVED PRIOR TO CORE FILLING.
- WHERE WALLS OVER SLABS ARE NOT SITUATED DIRECTLY OVER WALLS UNDER, REINFORCE WALLS OVER WITH 2 NO. RW7 RIBBED WIRE RODS (GRADE 500RW) FOR FIRST THREE BED JOINTS ABOVE SLABS. USE GALVANISED RODS IN EXTERNAL WALLS. LAP BED JOINT REINFORCEMENT 450mm AT FACES. FOLDS AND BEND AT CORNERS SO THAT LONGITUDINAL WIRES ARE CONTINUOUS. STOP 50mm SHORT OF CONTROL JOINTS.
- BLOCK WALLS SUPPORTING CONCRETE SLABS SHALL HAVE A SOLID OR BOND BEAM TOP COURSE FILLED TO PROVIDE A SMOOTH SURFACE. SEPARATE UNREINFORCED MASONRY FROM CONCRETE SLABS WITH AN APPROVED PROPRIETARY 3 PLY BOND BREAKER.
- CONCRETE FOR CORE FILL SHALL HAVE A MAXIMUM COARSE AGGREGATE SIZE OF 10MM, SLUMP OF 230mm AND A MINIMUM CEMENT CONTENT OF 300kg/m<sup>3</sup>.
- PROVIDE SOLID BLOCKS OR CORE FILL CORES WHERE POST-FIXED ANCHORS OR REINFORCEMENT BAR IS EMBEDDED INTO MASONRY.



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02	18/10/2024	PRELIMINARY ISSUE	DP
03	18/10/2024	PRELIMINARY ISSUE	DP



CLIENT  
**FOREGROUND ARCHITECTURE**

PROJECT  
**CARLTON NORTH PRIMARY SCHOOL**

**M A T T E R**

CONSULTING STRUCTURAL ENGINEERS

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SHEET TITLE  
**GENERAL NOTES SHEET 2**

**PRELIMINARY**

DRAWN BY: CHECKED BY: APPROVED BY: SCALE: @A1  
1:1, 1:10  
DRAWN DATE: 1/10/2024

PROJECT NO: SHEET NO: REVISION NO:  
**23059 S00.002 03**

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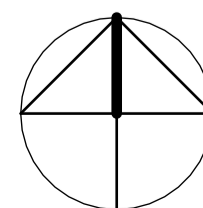
### TIMBER NOTES

1. THE CONTRACTOR SHALL ENSURE ALL TIMBER FRAMING INCLUDING ROOF TIE DOWNS, BRACING, FIXING AND SUPPORT DETAILS, ETC. IS IN ACCORDANCE WITH AS1684 UNLESS SPECIFIED OTHERWISE ON THESE DRAWINGS.
2. ALL TIMBER SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. DEFECTS SUCH AS SPRINGS, SPLITS, KNOTS, HEARTWOOD, UNTREATED SAPWOOD AND EXCESSIVE TWISTS AND WARPS MAY BE CAUSE FOR REJECTION.
3. UNLESS SPECIFIED OTHERWISE ON THE STRUCTURAL DRAWINGS, ALL TIMBER SHALL BE SEASONED.
4. ALL FRAMING SHALL BE TRUE AND EXACT AND AT LEAST THE SPECIFIED FINISHED SIZE AS SHOWN ON THE STRUCTURAL DRAWINGS. TIMBER SHALL BE CUT AND ASSEMBLED TO A CLOSE FIT AND BEAR EVENLY ON ENTIRE CONTACT SURFACES. OPEN OR SHIMMED JOINTS ARE UNACCEPTABLE UNLESS SPECIFIED ON THE STRUCTURAL DRAWINGS.
5. ALL TIMBER MEMBERS SHALL HAVE A LEVEL OF DURABILITY APPROPRIATE FOR THEIR EXPOSURE ENVIRONMENT. ALL PRESERVATIVE TREATMENT IS TO BE IN ACCORDANCE WITH AS1684. UNLESS NOTED OTHERWISE, AS A MINIMUM, ALL EXTERNAL ABOVE GROUND TIMBER SHALL BE LOSP OR CCA TREATED TO H3 LEVEL AND ALL EXTERNAL IN-GROUND TIMBER SHALL BE CCA TREATED TO H5 LEVEL. ALL SUBFLOOR TIMBER SHALL BE TREATED TO H3 LEVEL WHERE THE SUBFLOOR IS PRONE TO EXCESSIVE DAMP OR WETTING.
6. ALL TIMBER EXPOSED AND IN DIRECT CONTACT TO THE GROUND SHALL BE TREATED WITH A PROPRIETARY PRISMATIC BITUMEN BASED COATING.
7. ALL BOLTS IN CONTACT WITH CCA PRESERVATIVE TREATED TIMBER SHALL BE ISOLATED FROM THE INSULATED TREATED TIMBER.
8. ALL STRAPS, NAILS, SCREWS, BOLTS, COACH SCREWS AND FRAMING ANCHORS SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
9. WASHERS SHALL BE USED IN CONTACT WITH ALL BOLT HEADS AND NUTS. WASHER SIZES SHALL BE IN ACCORDANCE WITH AS1720.
10. MINIMUM TIMBER TO STEEL CONNECTION TO BE VIA 10MM THICK PLATE CLEAT AND 2-M16 BOLTS UNLESS NOTED OTHERWISE.
11. ALL TIMBER SHALL BE STRESS GRADED IN ACCORDANCE WITH AS 2082, AS 2858, AS 1748 OR AS 3519, AS APPROPRIATE AND MARKED AS SUCH. UNLESS NOTED OTHERWISE, TIMBER STRESS GRADES SHALL BE A MINIMUM OF MGP10 FOR MACHINE GRADED PINE, F8 FOR CYPRESS PINE AND F17 FOR ALL HARDWOOD.
12. FOR STUMPED FLOORS, PROVIDE STUMP FOOTINGS UNDER ALL DOUBLE STUDS.
13. UNLESS SPECIFIED OTHERWISE, SOLID NOGGINGS SHALL BE PROVIDED BETWEEN FLOOR JOISTS AT 1800 MAXIMUM CENTRES AND 600 MAXIMUM CENTRES UNDER WALLS OVER.
14. UNLESS SPECIFIED OTHERWISE, SOLID NOGGINGS SHALL BE PROVIDED BETWEEN WALL STUDS AT 1350 MAXIMUM CENTRES.
15. PROVIDE NOGGINGS OR BRIDGING TO PURLINS OR RAFTERS AT 1800 CENTRES MAXIMUM WHERE CEILING FRAMING IS NOT FIXED TO THE BOTTOM ROOF PURLINS OR RAFTERS.
16. UNLESS SPECIFIED OTHERWISE, WALL PLATE STIFFENING SHALL BE PROVIDED IN ACCORDANCE WITH AS1684 WHERE FLOOR JOISTS DO NOT ALIGN WITH WALL STUDS BELOW.
17. MULTIPLE TIMBER MEMBERS SHALL BE LAMINATED TOGETHER BY M12 4.6/S BOLTS CENTRAL AT 1000 MAXIMUM CENTRES UNLESS NOTED OTHERWISE.
18. WHERE TIMBER IS POTENTIALLY EXPOSED TO WATER A SUITABLE NATURALLY DURABLE TIMBER SPECIES SHALL BE SELECTED AND THE TIMBER SHALL BE TREATED IN SUCH A WAY TO MAINTAIN THE MOISTURE CONTENT OF THE TIMBER TO 15% OR LESS.
19. ALL TIMBER BEAM CONNECTIONS TO OTHER TIMBER OR STEEL BEAMS SHALL BE VIA PRYDA HEAVY DUTY JOIST HANGERS OR APPROVED EQUIVALENT INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS.
20. POST-INSTALLED FIXINGS SHALL BE EMBEDDED WITH EITHER RAMSET REO 502 OR HILTI HIT-RE500 ADHESIVE INSTALLED STRICTLY IN ACCORDANCE WITH THE ADHESIVE MANUFACTURERS INSTRUCTIONS. UNLESS NOTED OTHERWISE, MINIMUM EMBEDMENT OF POST-INSTALLED FIXINGS SHALL BE AS FOLLOWS:
  - ANCHORS UP TO M12 – 110mm
  - M16 – 125mm
  - M20 – 170mm
  - M24 – 210mm
  - M30 – 270mm
21. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWING FOR THE BUILDING'S TERMITE PROTECTION SPECIFICATION TO AS3660.1 AS REQUIRED TO COMPLY WITH NCC REQUIREMENTS.

### PREFABRICATED LIGHT GAUGE STEEL WALL FRAMES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, CERTIFICATION, FABRICATION, ERECTION, CERTIFICATION AND PERFORMANCE OF LIGHT GAUGE STEEL WALL FRAMES TO THE RELEVANT AUSTRALIAN STANDARDS AND NASH STANDARD FOR COLD-FORMED STEEL FRAMING. THE DESIGN OF THE PROPRIETARY WALL FRAMING SYSTEM COMPRISES THE STUDS, TRACKS, DEFLECTION HEADS, CONNECTOR PLATES, BRACING AND ALL CONNECTIONS NOT SHOWN ON THESE DRAWINGS.
2. THE CONTRACTOR IS RESPONSIBLE FOR INFORMING THEMSELVES OF ALL LOADS LIKELY TO BE IMPOSED ON THE WALL FRAMES. NON-TRANSFER LOADS AND LOADS FROM NON-LOAD BEARING ELEMENTS INCLUDING MASONRY, CONCRETE SCREEDS/UPSTANDS/BALUSTRADES AND FACADES ARE NOT SHOWN ON THESE DRAWINGS AND SHALL BE CALCULATED BY CONTRACTOR. REFER TO LOADS SPECIFIED IN DESIGN LOADS AND CRITERIA NOTES.
3. ALL LIGHT-WEIGHT WALL FRAMES SHALL BE DESIGNED BY THE CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF BCA VOLUME 1 SPECIFICATION C1.8.
4. BRACED WALL FRAMES SHALL BE DESIGNED TRANSMIT OF HORIZONTAL WIND LOADS AND EARTHQUAKE LOADS TO THE SPECIFIED DESIGN ACTIONS ON PLANS.
5. THE MANUFACTURER SHALL SUBMIT FOR COMMENT AND REVIEW, AT LEAST 14 DAYS PRIOR TO COMMENCEMENT OF MANUFACTURE THE FOLLOWING:
  - GENERAL ARRANGEMENT PLAN SHOWING LAYOUT OF WALL FRAMES AND LATERAL SUPPORT LINES.
  - STEEL MEMBER OVERALL DIMENSIONS, SECTION PROFILE, GAUGE, STEEL GRADE AND CONNECTIONS.
  - LOCATION OF CONNECTIONS RELATIVE TO MEMBERS.
  - ALL DETAILS, FIXINGS, BRACING AND ERECTION PROCEDURES.
  - SUPPORT POINT REACTIONS INCLUDING WIND UPLIFT.
  - TIE DOWN LOCATIONS.
6. WALL FRAMING STUDS SHALL BE SPACED AT 450MM MAXIMUM CENTRES UNLESS SPECIFIED OTHERWISE.
7. MAXIMUM MID-SPAN DEFLECTION OF WALL FRAMING SHALL BE HEIGHT / 500 FOR SERVICEABILITY WIND AND LIVE LOADING UNLESS NOTED OTHERWISE.
8. THE CONTRACTOR SHALL INSPECT THE WALL FRAMING STRUCTURE AT THE COMPLETION OF WALL FRAME ERECTION AND PROVIDE THE ARCHITECT WITH WRITTEN CERTIFICATION THAT THE WALL FRAMING IS IN ACCORDANCE WITH THE DESIGN AND CONTRACT DOCUMENTS.

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CLIENT  
**FOREGROUND  
ARCHITECTURE**

PROJECT  
**CARLTON NORTH PRIMARY  
SCHOOL**

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SHEET TITLE

**GENERAL NOTES SHEET 3**

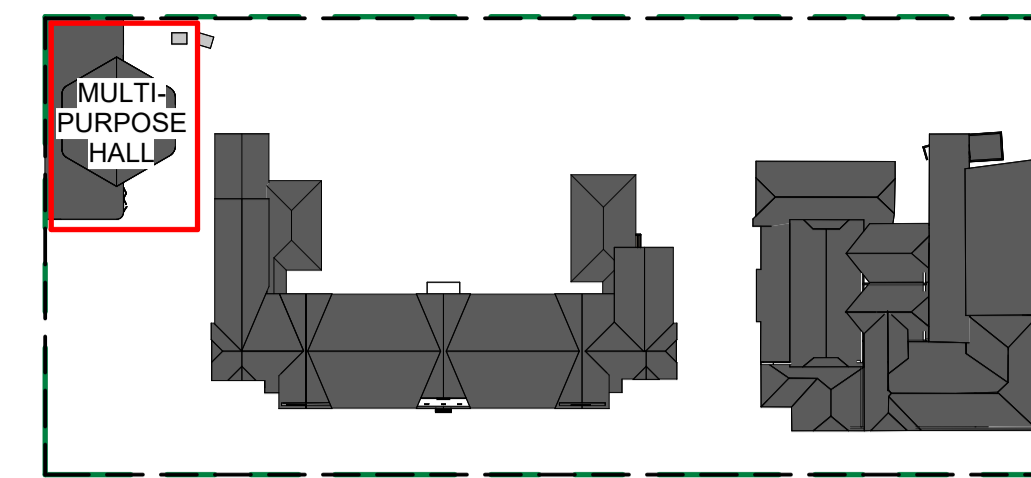
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**STRUCTURAL LEGEND:**

- XXX DENOTES XXX THICK SLAB/BEAM ON CONVENTIONAL FORMWORK
- XXXPT DENOTES XXX THICK PT SLAB/BEAM ON CONVENTIONAL FORMWORK
- DENOTES METAL DECK FORMWORK SPAN DIRECTION
- DENOTES STEEL COLUMN UNDER
- DENOTES PRECAST WALL / COLUMN OVER
- DENOTES RC WALL / COLUMN OVER
- DENOTES LOADBEARING BLOCK WALL OVER
- DENOTES LOAD BEARING WALL/COLUMN UNDER
- DENOTES CONSTRUCTION JOINT REFER TYPICAL DETAIL
- DENOTES SAW CUT JOINT REFER TYPICAL DETAIL
- DENOTES SLAB/BEAM STEP
- DENOTES WET AREA SETDOWN 50mm MAX
- DENOTES PENETRATION, LOCATIONS AND SIZES TO BE COORDINATED WITH ARCHITECTS AND SERVICES ENGINEERS DRAWINGS

**STRUCTURAL STEPS, FOLDS AND HOBS:**  
 ALLOWANCES TO BE MADE FOR HOBS AND FOLDS IN THE STRUCTURE TO ACCOMMODATE ARCHITECTURAL SETDOWNS. REFER TO S06.100 FOR DETAILS.

**RC COLUMNS:**  
 REFER TO S03.100 AND S03.101 FOR COLUMN SCHEDULE AND DETAILS. CC\*\* DENOTES CONCRETE COLUMN TYPE.

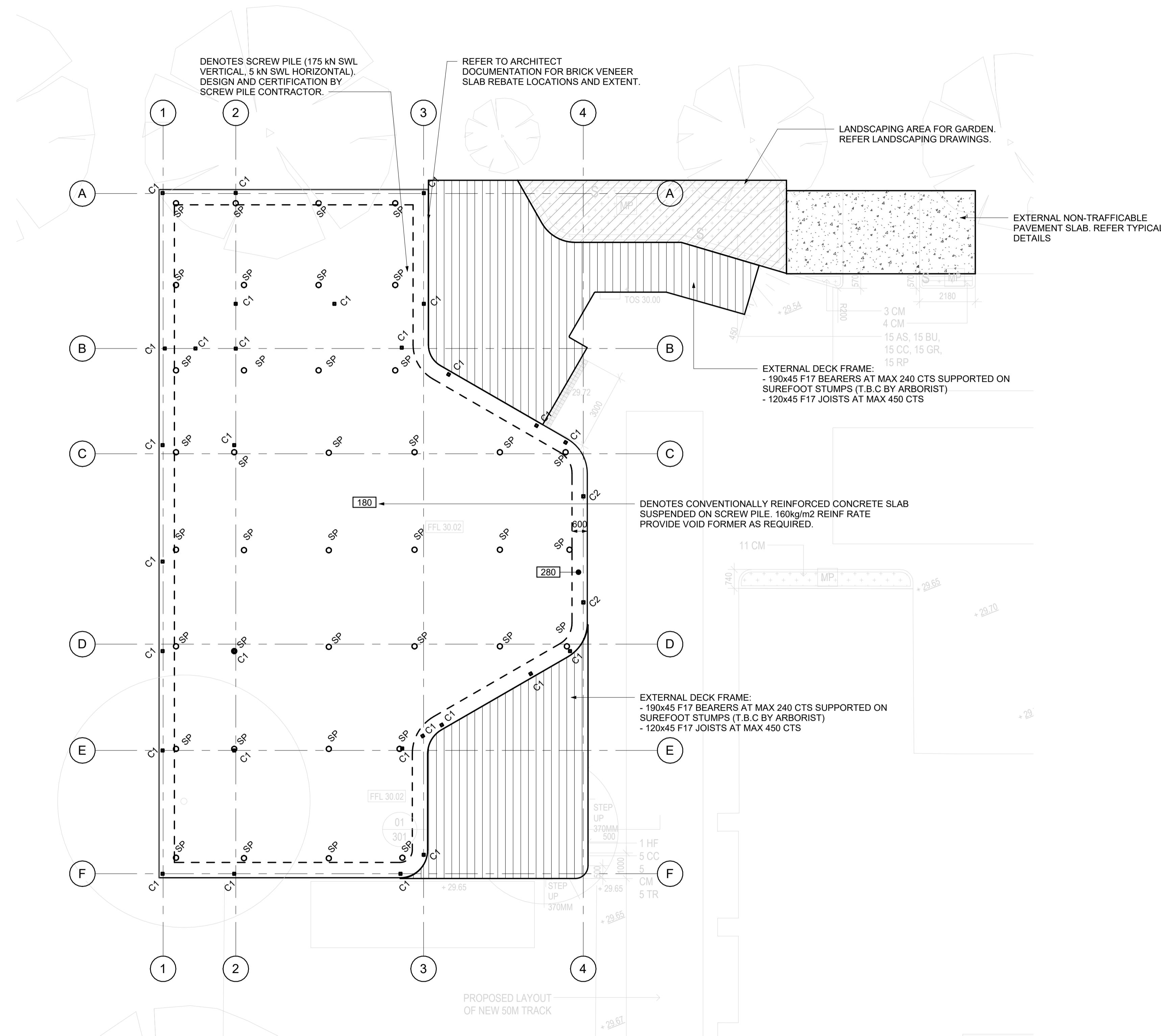
**PRECAST WALLS:**  
 REFER TO S04.000 SERIES FOR PRECAST ELEVATIONS AND DETAILS. P\*\*\*-1 DENOTES PRECAST WALL TYPE.

**STAIRS:**  
 REFER TO S11.100 FOR R.C. STAIR DETAILS.

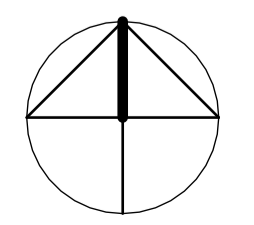
**WET AREAS:**  
 REFER TO ARCHITECTS DRAWINGS FOR WATER PROOFING, FALLS AND DRAINAGE OF WET AREAS.

**MASONRY:**  
 REFER TO S12.000 SERIES FOR MASONRY DETAILS.

**STEEL:**  
 REFER TO S10.000 SERIES FOR STEEL DETAILS. ALL STEELWORK TO BE GRADE 300 AND 6 CFW U.N.O.



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**FOREGROUND ARCHITECTURE**

PROJECT  
**CARLTON NORTH PRIMARY SCHOOL**

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SHEET TITLE  
**MPH - GROUND FLOOR GA PLAN**

**PRELIMINARY**

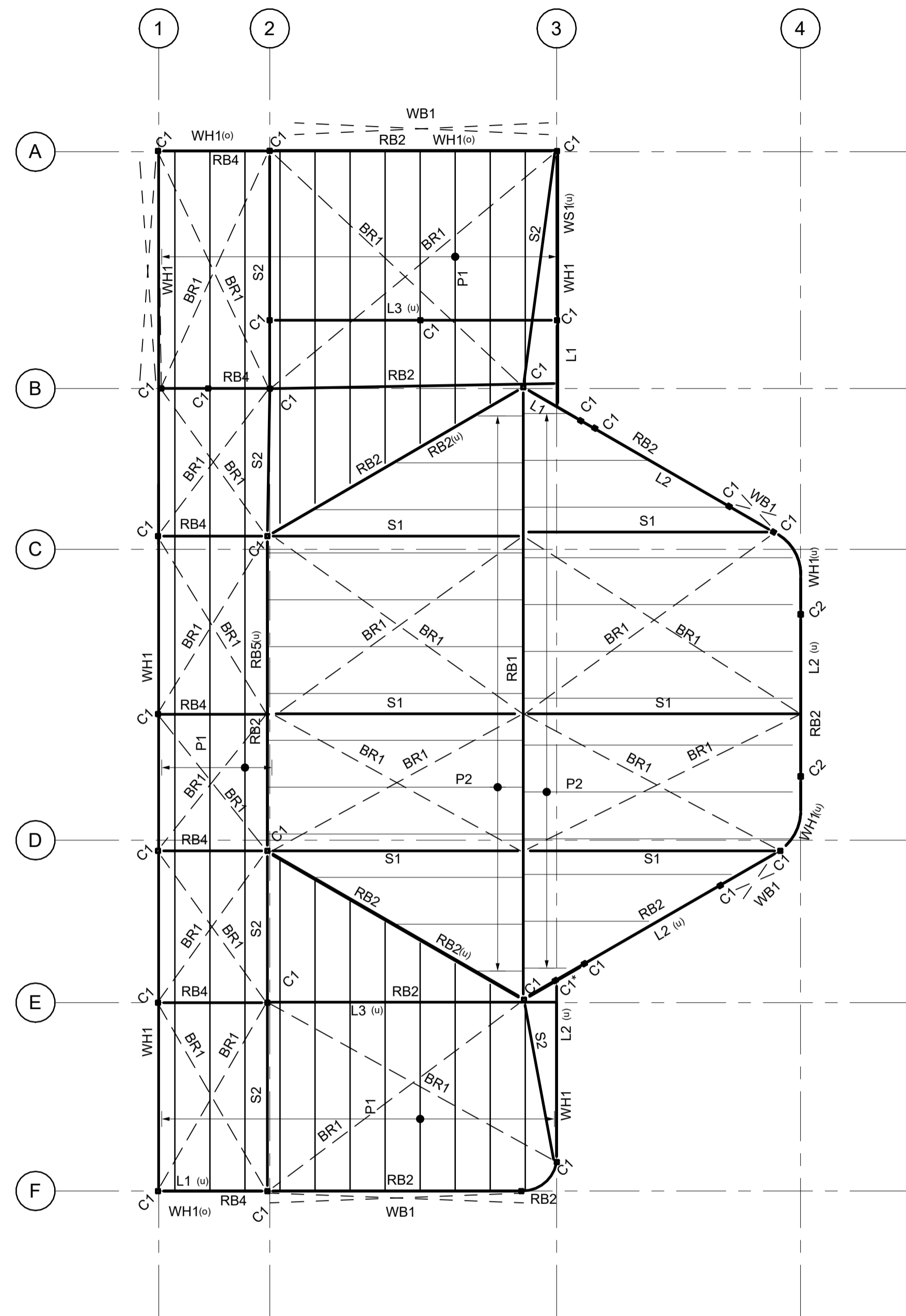
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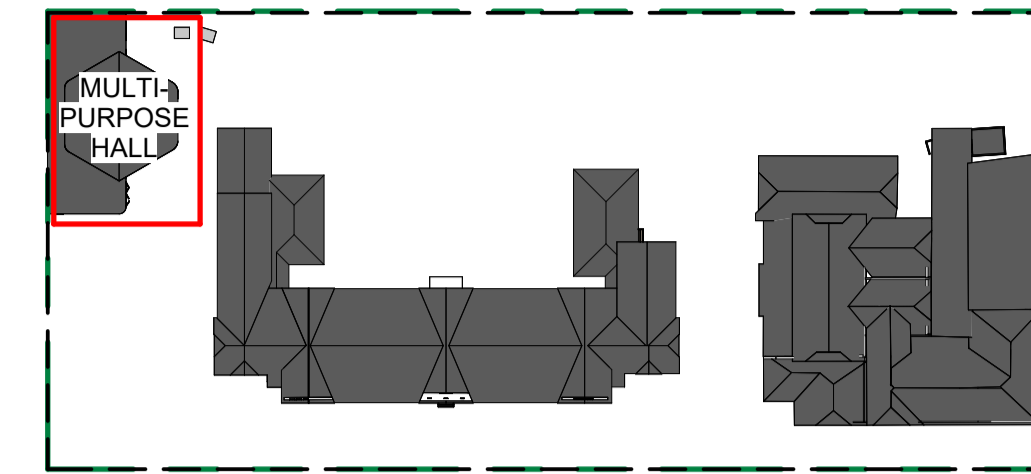
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**MPH ROOF PLAN**  
1:100



**STRUCTURAL LEGEND:**

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- XXXPT DENOTES XXX THICK PT SLAB/BEAM ON CONVENTIONAL FORMWORK
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- DENOTES SAW CUT JOINT REFER TYPICAL DETAIL
- DENOTES SLAB/BEAM STEP
- DENOTES WET AREA SETDOWN 50mm MAX
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**RC COLUMNS:**

REFER TO S03.100 AND S03.101 FOR COLUMN SCHEDULE AND DETAILS. CC\*\* DENOTES CONCRETE COLUMN TYPE.

**PRECAST WALLS:**

REFER TO S04.000 SERIES FOR PRECAST ELEVATIONS AND DETAILS. P\*\*\*-1 DENOTES PRECAST WALL TYPE.

**STAIRS:**

REFER TO S11.100 FOR R.C. STAIR DETAILS.

**WET AREAS:**

REFER TO ARCHITECTS DRAWINGS FOR WATER PROOFING, FALLS AND DRAINAGE OF WET AREAS.

**MASONRY:**

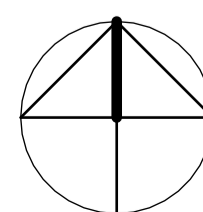
REFER TO S12.000 SERIES FOR MASONRY DETAILS.

**STEEL:**

REFER TO S10.000 SERIES FOR STEEL DETAILS. ALL STEELWORK TO BE GRADE 300 AND 6 CFW U.N.O.

MEMBER SCHEDULE - MPH		
MARK	SIZE	NOTES
BR1	16mm ROD	ROOF BRACING
C1	89x89x5.0SHS	STEEL COLUMN
C2	100x100x9.0SHS	STEEL COLUMN
L1	89x89x3.5SHS	STEEL BEAM
L2	200x100x6.0RHS	STEEL BEAM
L3	200PFC	STEEL BEAM
P1	Z20015 AT 900 CTS. MAX.	PURLIN
P2	400x42 LVL AT 1200 CTS. MAX. BLOCKING AT MIDSPAN	TIMBER BEAM
RB1	610UB113	STEEL BEAM SPLICED AT THIRD POINTS
RB2	200PFC	STEEL BEAM
RB4	150UB18.0	STEEL BEAM
RB5	360UB44.7	STEEL BEAM
S1	100x100x9.0SHS	STEEL BEAM
S2	89x89x3.5SHS	STEEL BEAM
WB1	16mm ROD	WALL BRACING
WH1	150PFC	STEEL BEAM
WS1	89x89x5.0SHS	STEEL BEAM

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SHEET TITLE  
**MPH - ROOF PLAN**

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# RECTIFICATION OF EXISTING MASONRY

REFER TO REPORT 23059M-RE001 FOR LOCATION AND EXTENT OF THE DAMAGED MASONRY. IN ADDITION TO WHAT RECOMMENDED IN THE REPORT, THE FOLLOWING RECTIFICATION WORKS SHOULD BE UNDERTAKEN:

1. ANY LOOSE AND BROKEN MASONRY UNITS SHALL BE FULLY REPLACED WITH NEW MASONRY UNITS TO MATCH THE EXISTING, AND FULLY BEDDED INTO THE WALL WITH MORTAR COMPATIBLE WITH THE EXISTING MORTAR.

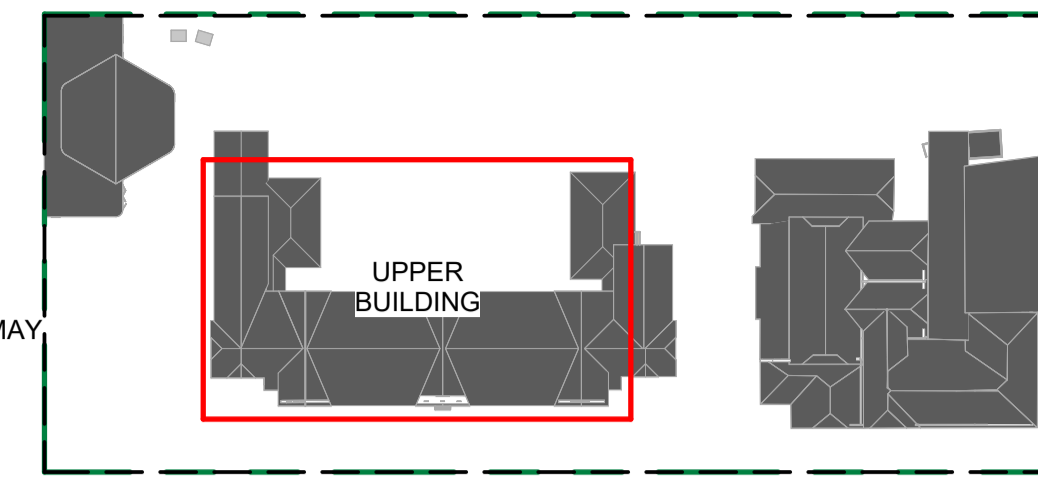
2. REPAIR OF EXISTING CRACKS:

• FOR CRACKS <1mm IN WIDTH; NO STRUCTURAL RECTIFICATION WORKS ARE REQUIRED. INSTALL TELL TALES PERPENDICULAR TO THE CRACK AND SET A MONITORING SCHEDULE AND RECORD THE CRACK WIDTH IN A LOGBOOK EVERY SIX MONTHS. PLEASE CONTACT THIS OFFICE IF THE CRACK WIDTH INCREASES TO MORE THAN 5mm.

• FOR CRACKS >1mm BUT <5mm IN WIDTH: FILL CRACK WITH A MASONRY REPAIR MORTAR INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS. WIDENING OF THE CRACK TO A NOMINAL 3mm WIDTH MAY BE REQUIRED TO ENSURE FULL BEDDING OF REPAIR MORTAR WITHIN THE WALL

• FOR CRACKS >5mm IN WIDTH; THE FOLLOWING WORKS SHALL BE UNDERTAKEN.

1. SLOT MORTAR JOINT TO ALLOW FOR INSTALLATION OF 4.5mm HELIBAR ACROSS CRACK AT EVERY 4 VERTICAL COURSES (APPROX 344mm). DEPTH OF SLOT TO BE 30mm.
2. INSTALL 4.5mm HELIBAR WITH 500mm EMBEDMENT EACH SIDE OF CRACK. WITH HELIBOND GROUT INSTALLED STRICTLY IN ACCORDANCE WITH HELIFIX INSTALLATION INSTRUCTIONS.
3. ONCE HELIFIX BARS HAVE BEEN INSTALLED AND GROUT HAS FULLY CURED, FILL CRACK WITH A COMPATIBLE BRICKWORK REPAIR MORTAR INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS.



## STRUCTURAL LEGEND:

- XXX** DENOTES XXX THICK SLAB/BEAM ON CONVENTIONAL FORMWORK
- XXXPT** DENOTES XXX THICK PT SLAB/BEAM ON CONVENTIONAL FORMWORK
- DENOTES METAL DECK FORMWORK SPAN DIRECTION
- CH\*** DENOTES STEEL COLUMN UNDER
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- DENOTES RC WALL / COLUMN OVER
- DENOTES LOADBEARING BLOCK WALL OVER
- DENOTES LOAD BEARING WALL/COLUMN UNDER
- CJ** DENOTES CONSTRUCTION JOINT REFER TYPICAL DETAIL
- SC** DENOTES SAW CUT JOINT REFER TYPICAL DETAIL
- DENOTES SLAB/BEAM STEP
- DENOTES WET AREA SETDOWN 50mm MAX
- DENOTES PENETRATION, LOCATIONS AND SIZES TO BE COORDINATED WITH ARCHITECTS AND SERVICES ENGINEERS DRAWINGS

## STRUCTURAL STEPS, FOLDS AND HOBS:

ALLOWANCES TO BE MADE FOR HOBS AND FOLDS IN THE STRUCTURE TO ACCOMMODATE ARCHITECTURAL SETDOWNS. REFER TO S06.100 FOR DETAILS.

## RC COLUMNS:

REFER TO S03.100 AND S03.101 FOR COLUMN SCHEDULE AND DETAILS. CC\*\* DENOTES CONCRETE COLUMN TYPE.

## PRECAST WALLS:

REFER TO S04.000 SERIES FOR PRECAST ELEVATIONS AND DETAILS. P\*\*\*-1 DENOTES PRECAST WALL TYPE.

## STAIRS:

REFER TO S11.100 FOR R.C. STAIR DETAILS.

## WET AREAS:

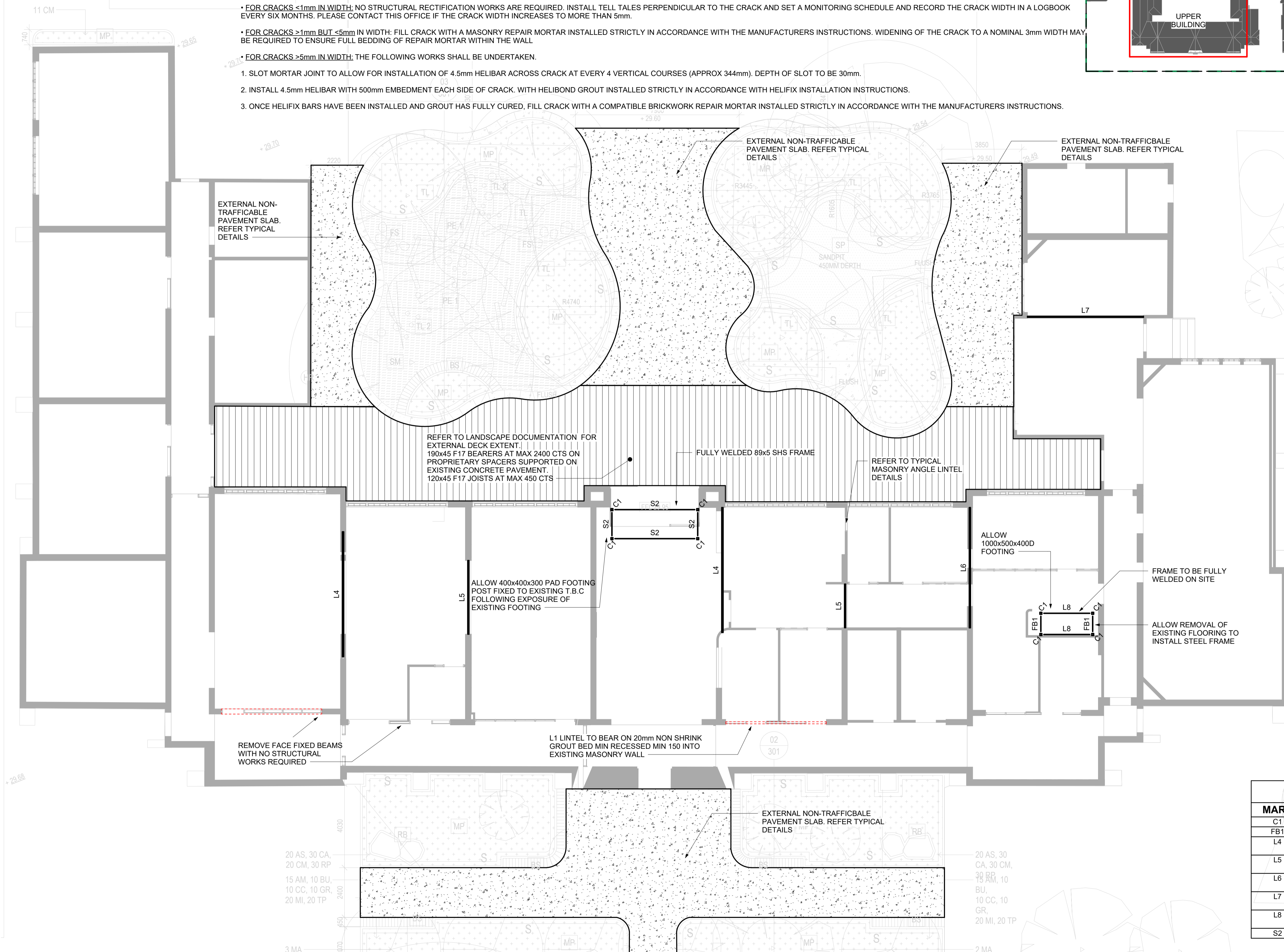
REFER TO ARCHITECTS DRAWINGS FOR WATER PROOFING, FALLS AND DRAINAGE OF WET AREAS.

## MASONRY:

REFER TO S12.000 SERIES FOR MASONRY DETAILS.

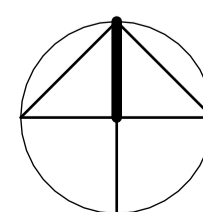
## STEEL:

REFER TO S10.000 SERIES FOR STEEL DETAILS. ALL STEELWORK TO BE GRADE 300 AND 6 CFW U.N.O.



MEMBER SCHEDULE - UPPER BUILDING		
MARK	SIZE	NOTES
C1	89x89x5.0SHS	STEEL COLUMN
FB1	150UB14.0	STEEL BEAM
L4	2/250PFC	BACK TO BACK BOLTED AT MAX 1000 CTS. REF TO TYPICAL DETAILS
L5	2/150PFC	BACK TO BACK BOLTED AT MAX 1000 CTS. REF TO TYPICAL DETAILS
L6	2/180PFC	BACK TO BACK BOLTED AT MAX 1000 CTS. REF TO TYPICAL DETAILS
L7	2/230PFC	BACK TO BACK BOLTED AT MAX 1000 CTS. REF TO TYPICAL DETAILS
L8	180PFC	BACK TO BACK BOLTED AT MAX 1000 CTS. REF TO TYPICAL DETAILS
S2	89x89x3.5SHS	STEEL BEAM

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SHEET TITLE  
**UPPER BUILDING - GROUND  
FLOOR STRUCTURAL  
WORKS**

**PRELIMINARY**

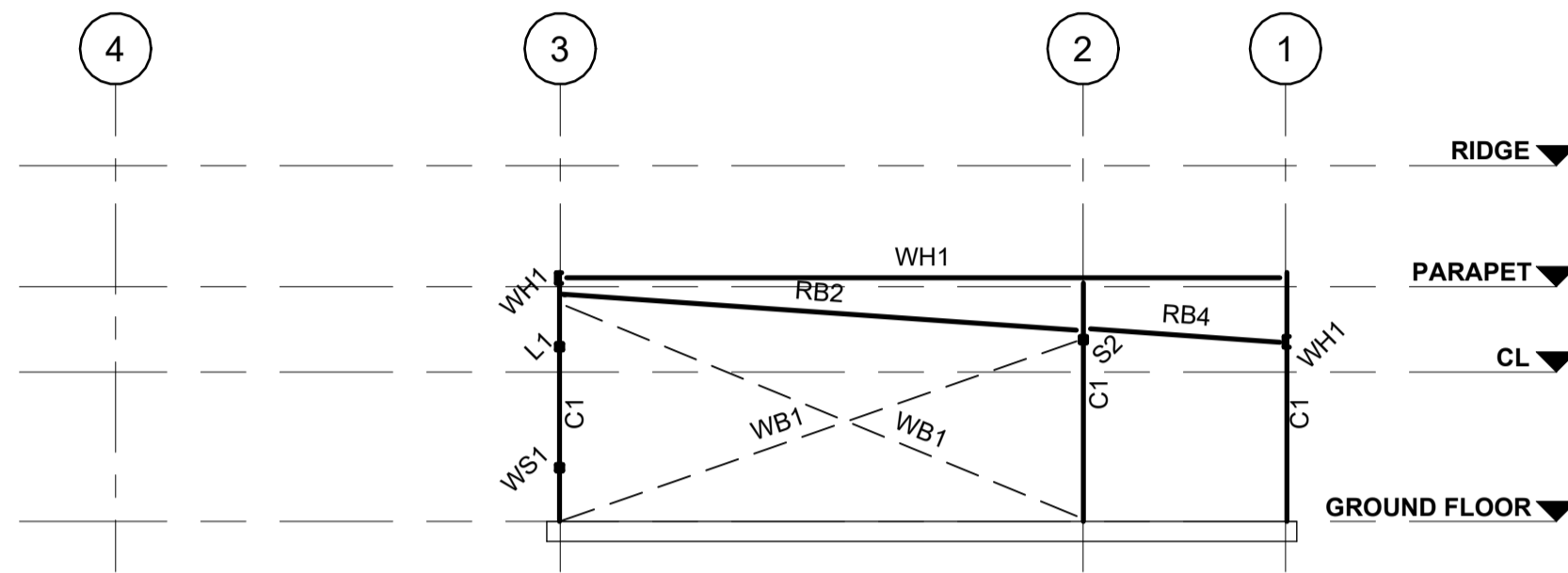
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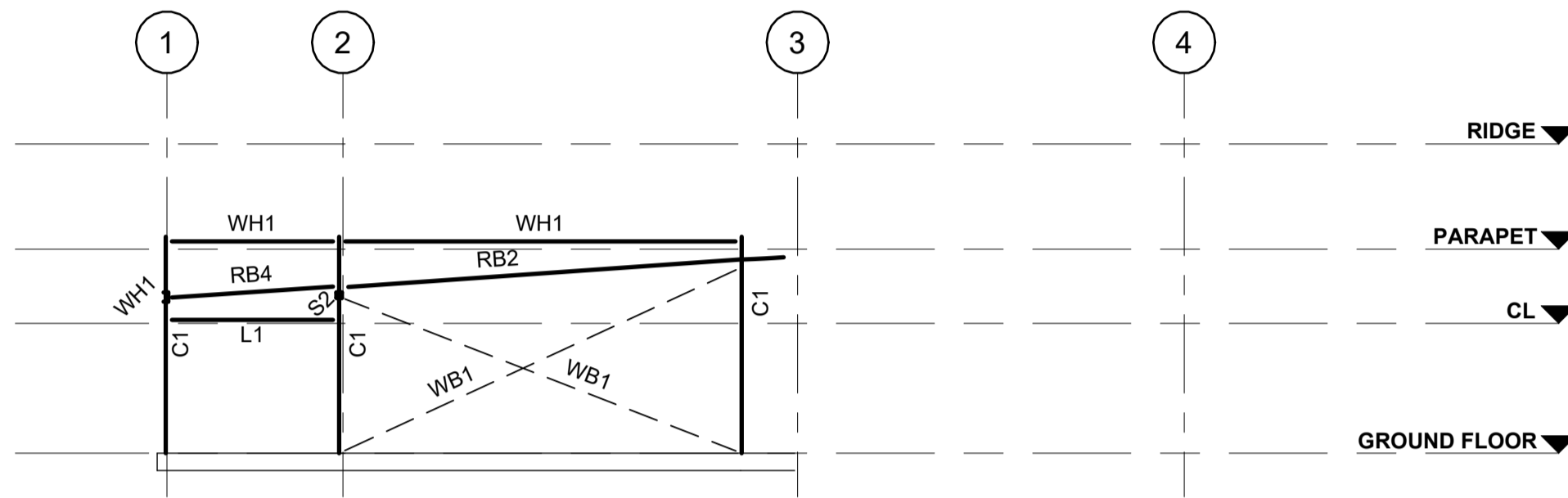
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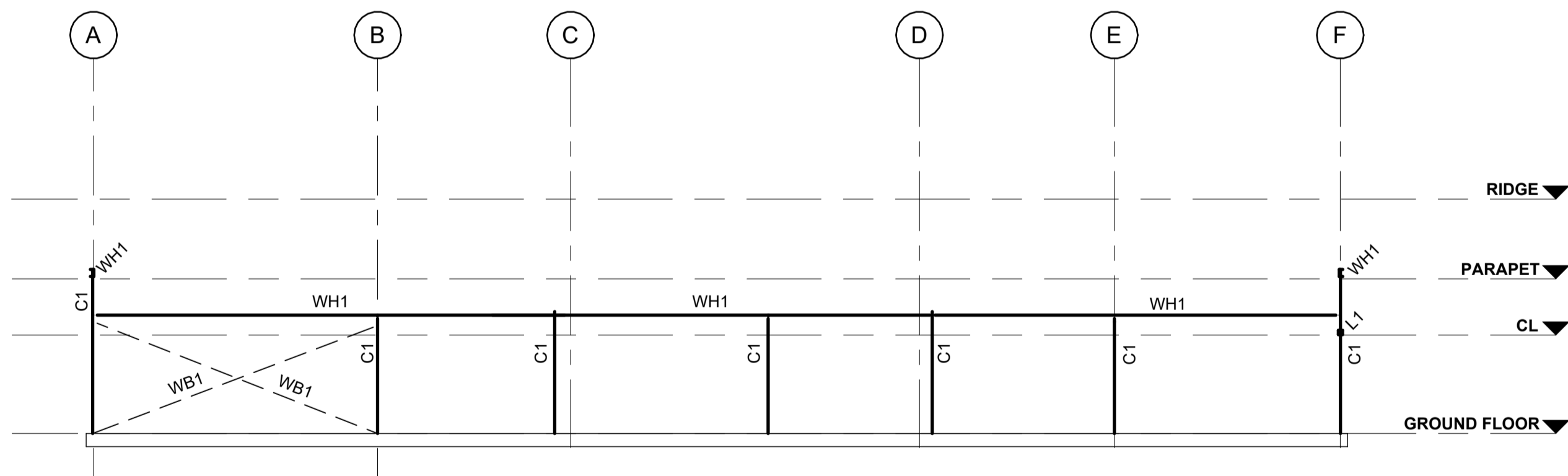


**NORTH ELEVATION**  
1:100

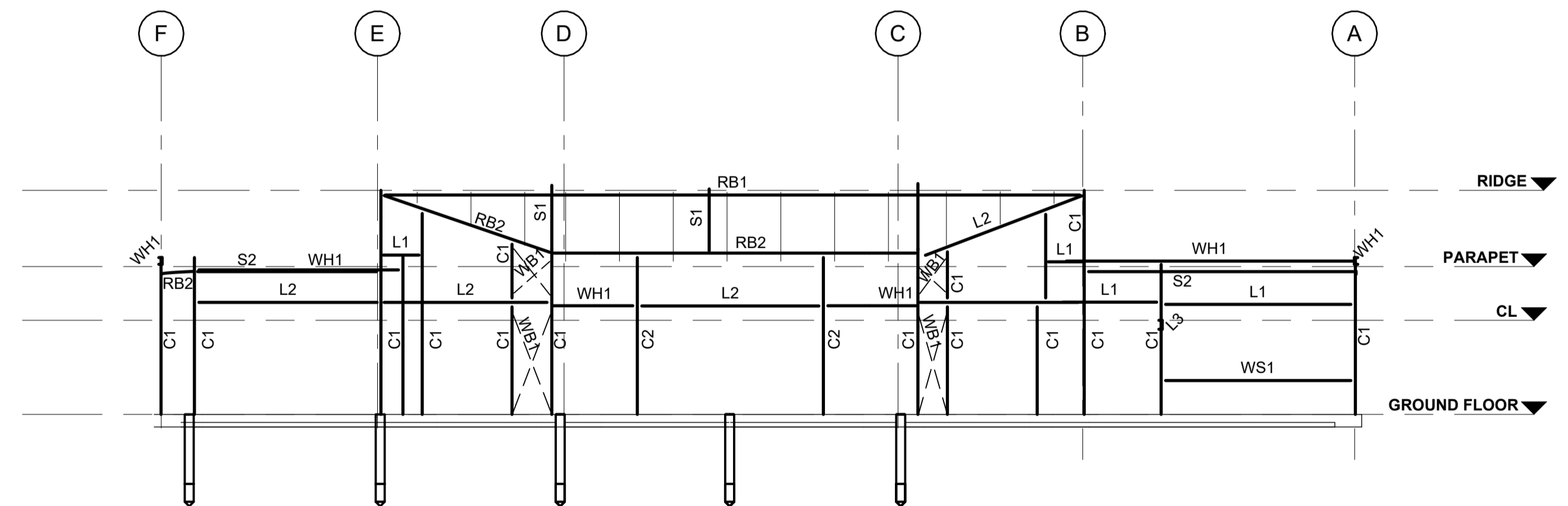


**SOUTH ELEVATION**  
1:100

MEMBER SCHEDULE - MPH		
MARK	SIZE	NOTES
BR1	16mm ROD	ROOF BRACING
C1	89x89x5.0SHS	STEEL COLUMN
C2	100x100x9.0SHS	STEEL COLUMN
L1	89x89x3.5SHS	STEEL BEAM
L2	200x100x6.0RHS	STEEL BEAM
L3	200PFC	STEEL BEAM
P1	Z20015 AT 900 CTS. MAX.	PURLIN
P2	400x42 LVL AT 1200 CTS. MAX. BLOCKING AT MIDSPAN	TIMBER BEAM
RB1	610UB113	STEEL BEAM SPLICED AT THIRD POINTS
RB2	200PFC	STEEL BEAM
RB4	150UB18.0	STEEL BEAM
RB5	360UB44.7	STEEL BEAM
S1	100x100x9.0SHS	STEEL BEAM
S2	89x89x3.5SHS	STEEL BEAM
WB1	16mm ROD	WALL BRACING
WH1	150PFC	STEEL BEAM
WS1	89x89x5.0SHS	STEEL BEAM

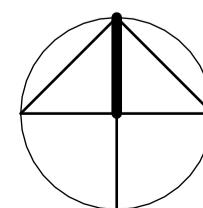


**WEST ELEVATION**  
1:100



**EAST ELEVATION**  
1:100

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**FOREGROUND ARCHITECTURE**

PROJECT  
**CARLTON NORTH PRIMARY SCHOOL**

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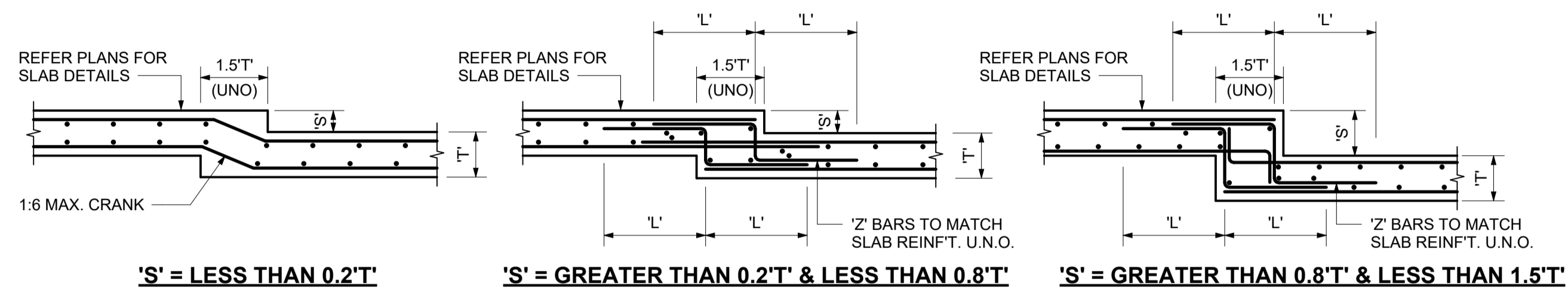
SHEET TITLE  
**FRAMING ELEVATIONS**

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'S' = LESS THAN 0.2'T

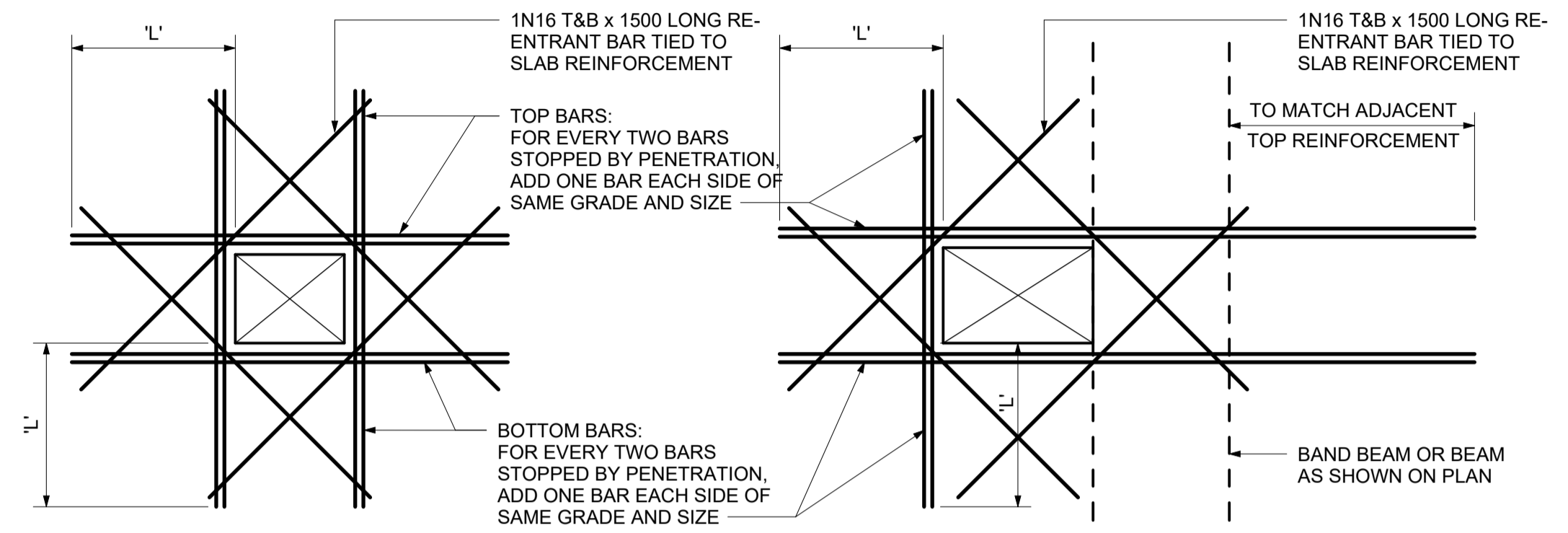
'S' = GREATER THAN 0.2'T & LESS THAN 0.8'T

'S' = GREATER THAN 0.8'T & LESS THAN 1.5'T

NOTE:  
'L' DENOTES STANDARD BAR LAP. REFER SCHEDULE.

**TYPICAL SUSPENDED FLOOR STEP DETAILS**

1:20



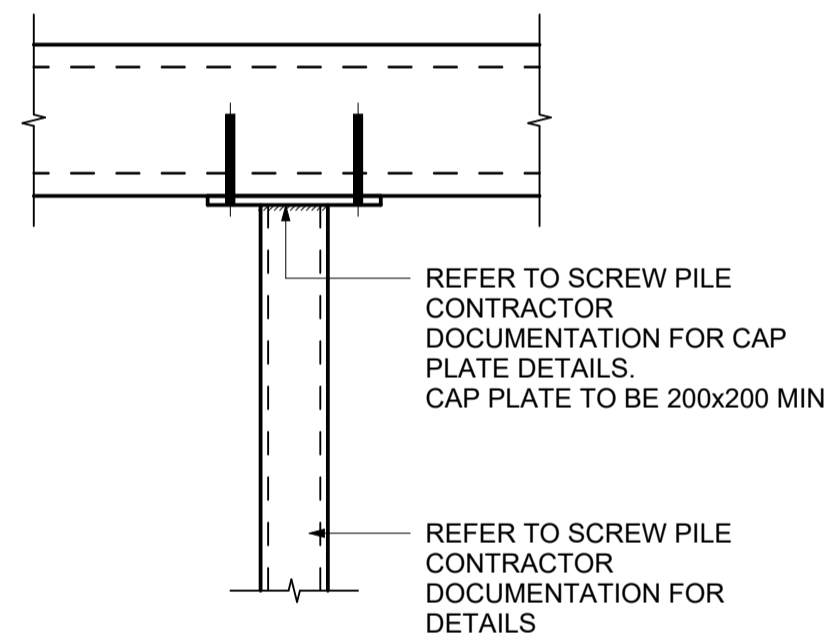
NEAR MID SPAN

NEAR BEAM

- NOTES:
- FOR PENETRATIONS LESS THAN OR EQUAL TO 250 x 250, BARS TO BE RE-ARRANGED AROUND PENETRATION
  - FOR PENETRATIONS GREATER THAN 250 x 250, BUT LESS THAN 500 x 500 USE ABOVE DETAILS
  - FOR PENETRATIONS GREATER THAN 500 x 500, USE ABOVE DETAILS U.N.O. ON STRUCTURAL PLANS
  - LOCATION OF PENETRATIONS TO BE TO THE APPROVAL OF THE STRUCTURAL ENGINEER
  - IF METAL DECK FORMWORK IS USED DO NOT CUT UNTIL AFTER SLAB HAS BEEN POURED AND REACHED ITS DESIGN COMPRESSIVE STRENGTH
  - REFER ALSO TO GENERAL NOTES
  - 'L' DENOTES STANDARD BAR LAP. REFER SCHEDULE.

**TYPICAL SLAB PENETRATION DETAIL**

1:20

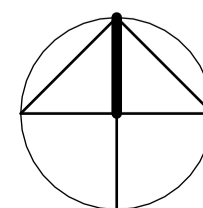


**TYPICAL SCREW PILE TO RC SLAB DETAIL**

1:10

BAR LAP SCHEDULE - SLABS						
BAR DIA.	f'c = 32MPa		f'c = 40MPa		f'c = ≥50MPa	
	MIN. COVER	LAP LENGTH	MIN. COVER	LAP LENGTH	MIN. COVER	LAP LENGTH
12	25	400	20	400	20	350
16	25	600	20	550	20	500
20	25	800	20	750	20	650
24	25	1000	20	900	20	800
28	25	1200	20	1100	20	950
32	25	1450	20	1300	20	1150
36	25	1700	20	1500	20	1350

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**FOREGROUND ARCHITECTURE**

PROJECT  
**CARLTON NORTH PRIMARY SCHOOL**

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SHEET TITLE  
**TYPICAL SUSPENDED SLAB DETAILS SHEET 1**

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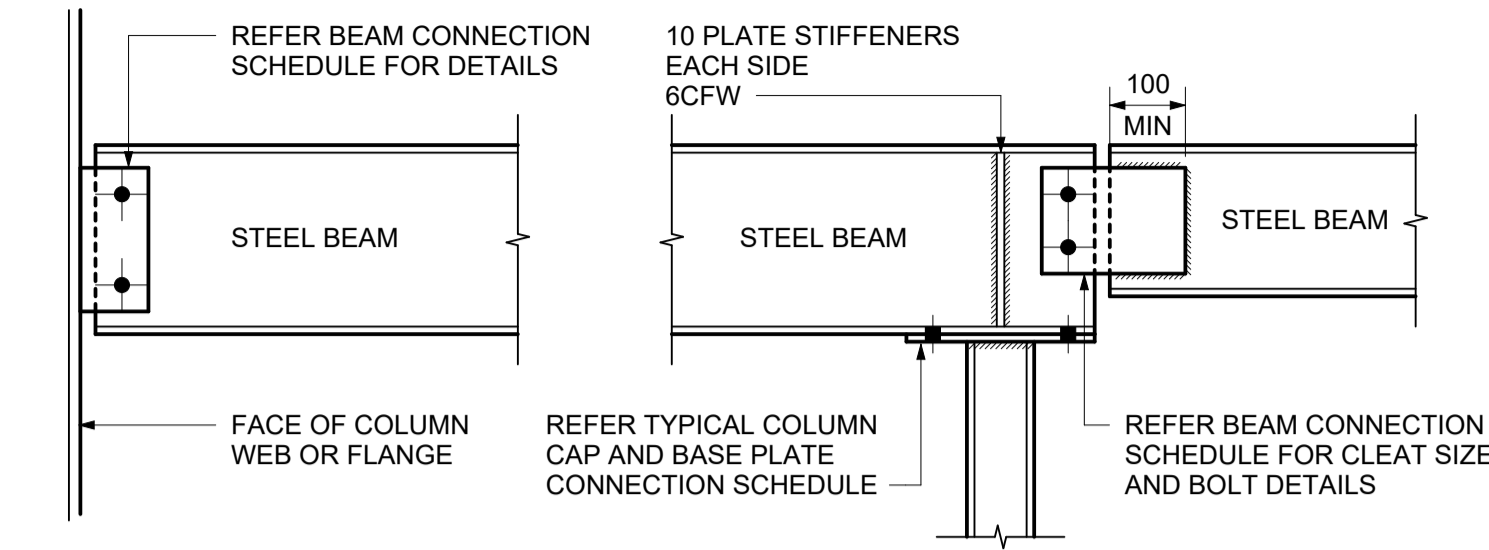
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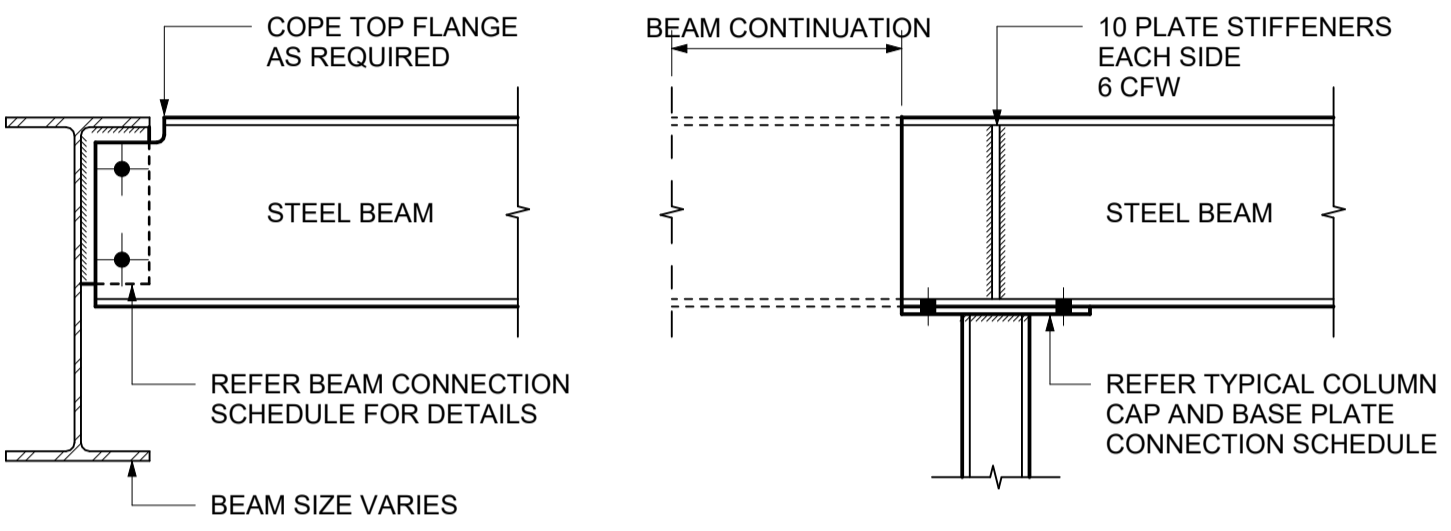
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**NOTE:**  
FOR BEAM CONNECTION TO FACE OF SHS/RHS COLUMNS PROVIDE CLEAT AS TEE SECTION WELDED DOWN EACH SIDE OF SHS/RHS



**BEAM TO CONTINUOUS COLUMN**      **SMALLER BEAM TO BEAM ON COLUMN**



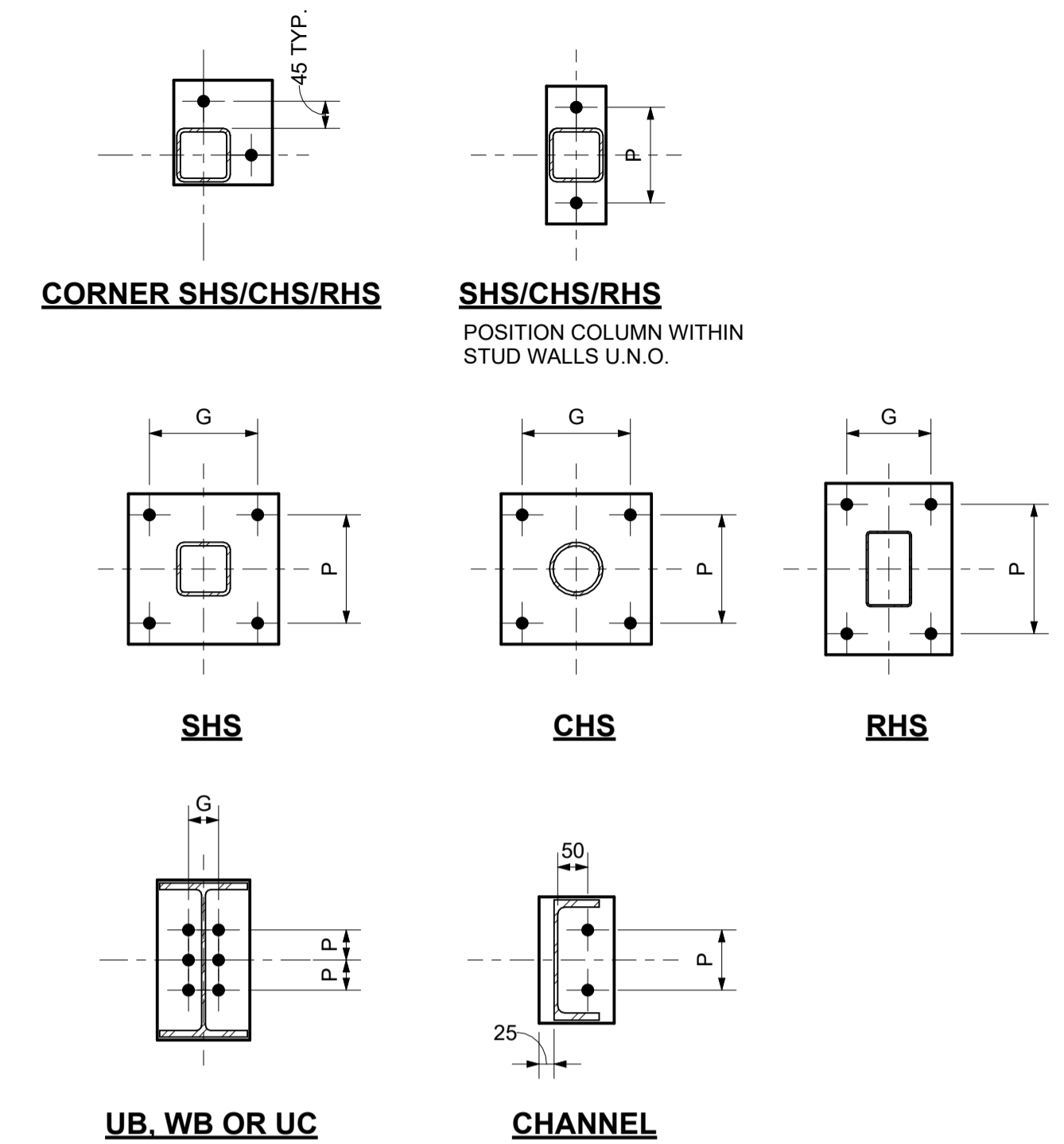
**BEAM TO PERPENDICULAR BEAM**      **BEAM ON COLUMN DETAIL**      **BEAM TO PRECAST CONCRETE**

**TYPICAL STEEL BEAM CONNECTION DETAILS**

1:10

BEAM CONNECTION SCHEDULE (50% BEAM WEB SHEAR CAPACITY)			
BEAM SIZE	CLEAT PLATE	WELD	BOLTS
150 UB	8 THK x 90 DEEP	6 CFW	2M16 8.8/S
180 UB	8 THK x 130 DEEP	6 CFW	2M20 8.8/S
200 UB	8 THK x 150 DEEP	6 CFW	2M20 8.8/S
250 UB	8 THK x 180 DEEP	6 CFW	2M20 8.8/S
310 UB	8 THK x 250 DEEP	6 CFW	3M24 8.8/S
360 UB	8 THK x 250 DEEP	6 CFW	3M20 8.8/S
410 UB	10 THK x 300 DEEP	6 CFW	4M20 8.8/S
460 UB	10 THK x 370 DEEP	6 CFW	5M20 8.8/S
530 UB	10 THK x 430 DEEP	6 CFW	6M20 8.8/S
610 UB	10 THK x 510 DEEP	6 CFW	7M20 8.8/S
150 PFC	8 THK x 90 DEEP	6 CFW	2M16 8.8/S
180 PFC	8 THK x 110 DEEP	6 CFW	2M20 8.8/S
200 PFC	8 THK x 130 DEEP	6 CFW	2M20 8.8/S
230 PFC	8 THK x 150 DEEP	6 CFW	2M20 8.8/S
250 PFC	8 THK x 180 DEEP	6 CFW	2M20 8.8/S
300 PFC	8 THK x 200 DEEP	6 CFW	3M20 8.8/S
380 PFC	10 THK x 250 DEEP	6 CFW	4M20 8.8/S
150 UC	10 THK x 110 DEEP	6 CFW	2M20 8.8/S
200 UC	10 THK x 150 DEEP	6 CFW	2M20 8.8/S
250 UC	10 THK x 180 DEEP	6 CFW	3M24 8.8/S
310 UC	12 THK x 220 DEEP	6 CFW	3M24 8.8/S

BEAM CONNECTION SCHEDULE (FULL BEAM WEB SHEAR CAPACITY)			
BEAM SIZE	CLEAT PLATE	WELD	BOLTS
150 UB	10 THK x 110 DEEP	6 CFW	2M20 8.8/S
180 UB	10 THK x 130 DEEP	6 CFW	2M20 8.8/S
200 UB	10 THK x 150 DEEP	6 CFW	2M24 8.8/S
250 UB	10 THK x 200 DEEP	6 CFW	3M24 8.8/S
310 UB	10 THK x 250 DEEP	6 CFW	3M24 8.8/S
360 UB	12 THK x 270 DEEP	6 CFW	4M24 8.8/S
410 UB	12 THK x 300 DEEP	6 CFW	6M20 8.8/S IN 2 ROWS
460 UB	16 THK x 370 DEEP	6 CFW	6M24 8.8/S IN 2 ROWS
530 UB	16 THK x 430 DEEP	6 CFW	8M24 8.8/S IN 2 ROWS
610 UB	16 THK x 510 DEEP	6 CFW	10M24 8.8/S IN 2 ROWS
150 PFC	10 THK x 110 DEEP	6 CFW	2M20 8.8/S
180 PFC	12 THK x 110 DEEP	6 CFW	2M20 8.8/S
200 PFC	10 THK x 140 DEEP	6 CFW	2M24 8.8/S
230 PFC	12 THK x 150 DEEP	6 CFW	2M24 8.8/S
250 PFC	12 THK x 195 DEEP	6 CFW	3M24 8.8/S
300 PFC	16 THK x 220 DEEP	8 CFW	6M20 8.8/S IN 2 ROWS
380 PFC	16 THK x 270 DEEP	8 CFW	8M20 8.8/S IN 2 ROWS
150 UC	16 THK x 110 DEEP	8 CFW	4M16 8.8/S IN 2 ROWS
200 UC	16 THK x 150 DEEP	8 CFW	4M20 8.8/S IN 2 ROWS
250 UC	20 THK x 180 DEEP	10 CFW	4M24 8.8/S IN 2 ROWS
310 UC	25 THK x 220 DEEP	FSBW	6M24 8.8/S IN 2 ROWS

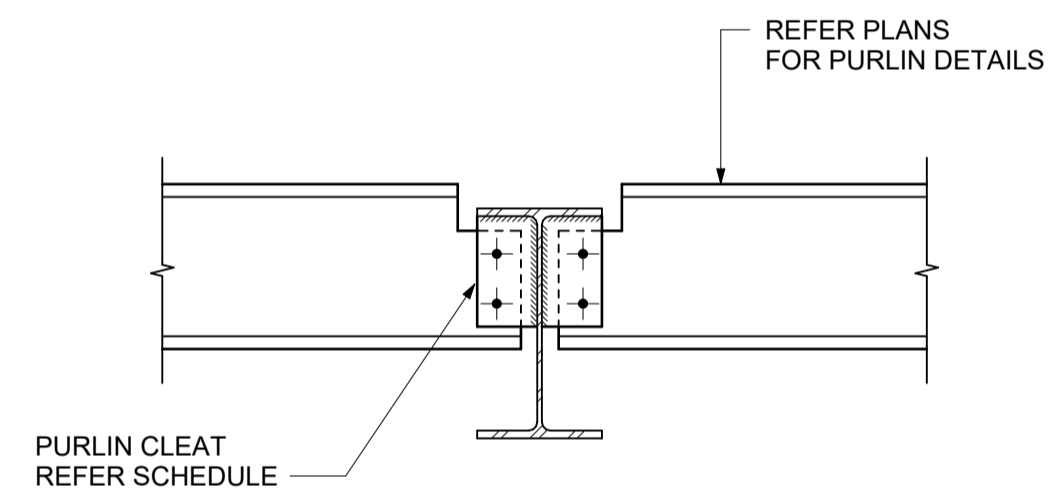


**TYPICAL COLUMN CAP AND BASE PLATE DETAILS**

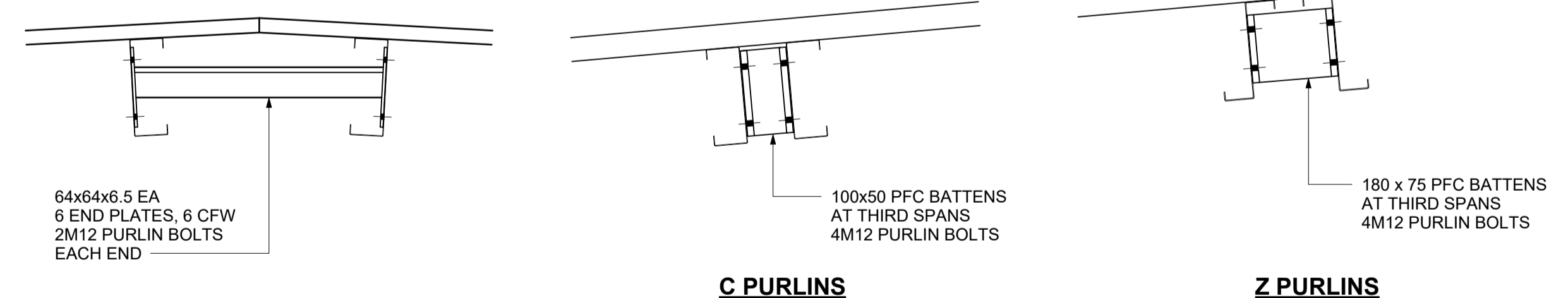
1:10

COLUMN CAP AND BASE PLATE CONNECTION SCHEDULE						
COLUMN SIZE	P	G	BOLT		PLATE THICKNESS	GROUT
			No	DIA.		
75 SHS	160	160	2/4	16	10	25
89 SHS	180	180	2/4	16	10	25
100 SHS/101 CHS	190	190	2/4	20	10	25
125 SHS/114 CHS	215	215	2/4	20	16	25
150 SHS/139 CHS	240	240	4	20	20	25
200 SHS/168 CHS	290	290	4	20	20	25
250 SHS/219 CHS	350	350	4	20	25	25
100x50 RHS	190	140	2	16	10	25
102x76 RHS	190	165	2	16	10	25
127x51 RHS	215	140	2	16	16	25
125x75 RHS	215	165	2	16	16	25
150x100 RHS	240	190	4	20	20	25
200x100 RHS	290	190	4	20	20	25
200x150 RHS	290	240	4	20	20	25
250x150 RHS	340	240	4	20	20	25
150 PFC	70	-	2	16	12	25
180 PFC	70	-	2	16	12	25
200 PFC	100	-	2	20	16	25
230 PFC	100	-	2	20	16	25
250 PFC	100	-	2	20	20	25
300 PFC	150	-	2	20	20	25
380 PFC	250	-	2	20	20	25
100 UC	-	100	2	16	10	25
150 UC	-	100	2	20	20	25
200 UC	-	150	2	20	20	25
250 UC	100	150	4	20	20	25
310 UC	150	250	4	24	25	25
200 UB	100	70	4	16	16	25
250 UB	100	70	4	20	20	25
310 UB	150	70	4	20	20	25
360 UB	200	90	4	24	25	25
410 UB	250	90	4	24	25	25
460 UB	300	120	4	24	25	30
530 UB	180	140	6	24	25	30
610 UB	225	150	6	30	28	50
700 UB	250	150	6	30	28	50

**NOTE:**  
1. ALL WELDS TO BE 6mm E48 CONTINUOUS (FOR COLUMNS 610 UB & 700 WB 8mm CFW) UNLESS DETAILED OTHERWISE.  
2. REFER TYPICAL HOLD DOWN BOLT DETAILS.  
3. COLUMN SHAFTS WITH COLD-SAWN ENDS PROVIDE FULL STRENGTH BUTT WELD.  
4. ALL DIMENSIONS ARE IN MILLIMETRES.



**PURLINS SPANNING BETWEEN BEAMS**



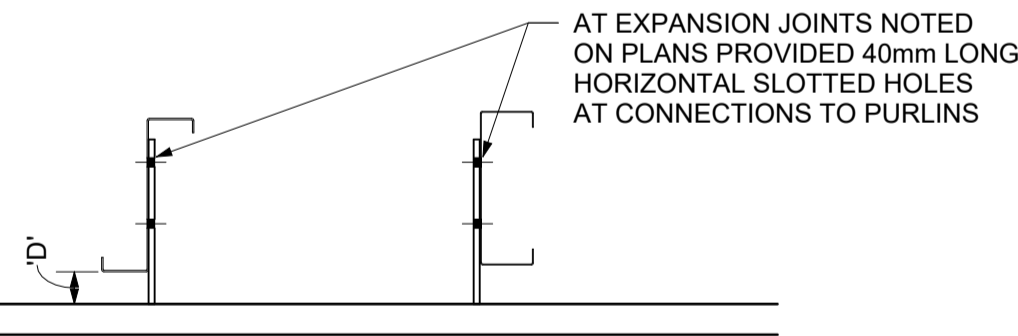
**RIDGE DETAIL**

**DOUBLE PURLIN DETAILS**

**NOTE:** ADDITIONAL PURLIN ON UP SIDE

**TYPICAL PURLIN DETAILS**

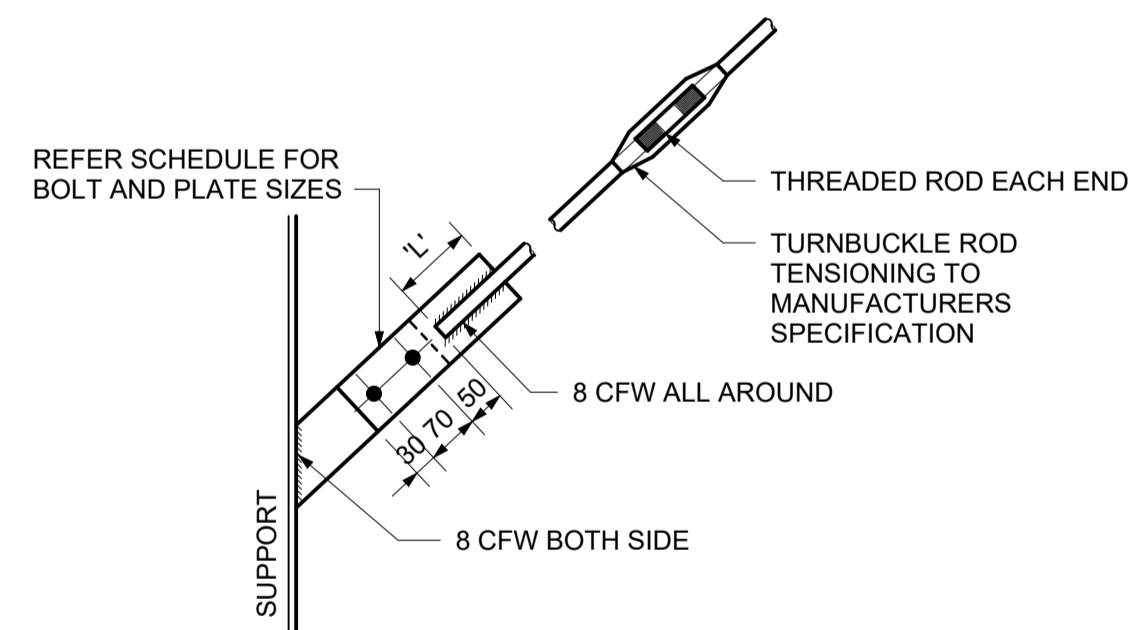
1:10



**NOTE:**  
CEILING SUSPENDED HANGERS TO BE SUPPORTED OFF PURLIN WEB, NOT FLANGES

PURLIN SUPPORT SCHEDULE		
DISTANCE 'D'	CLEAT	BOLTS U.N.O.
≤50	75 W x 8mm THK PLATE	2M12 4.6/S
50 TO 100	75 W x 10mm THK PLATE	2M12 4.6/S
≥100	75 x 75 x 5 EA	2M12 4.6/S

**TYPICAL PURLIN CLEAT DETAIL**

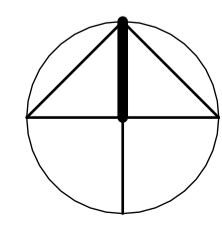


ROD SIZE	BOLTS	CLEATS (MIN)	MINIMUM WELD 'L'
16 DIA	2M16 8.8/S	75 x 10 PLATE	50
20 DIA	2M16 8.8/S	75 x 10 PLATE	80
24 DIA	2M20 8.8/S	75 x 10 PLATE	100
30 DIA	2M24 8.8/S	100 x 10 PLATE	130

**TYPICAL ROD BRACE DETAIL**

1:10

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SHEET TITLE  
**TYPICAL STEEL DETAILS SHEET 1**

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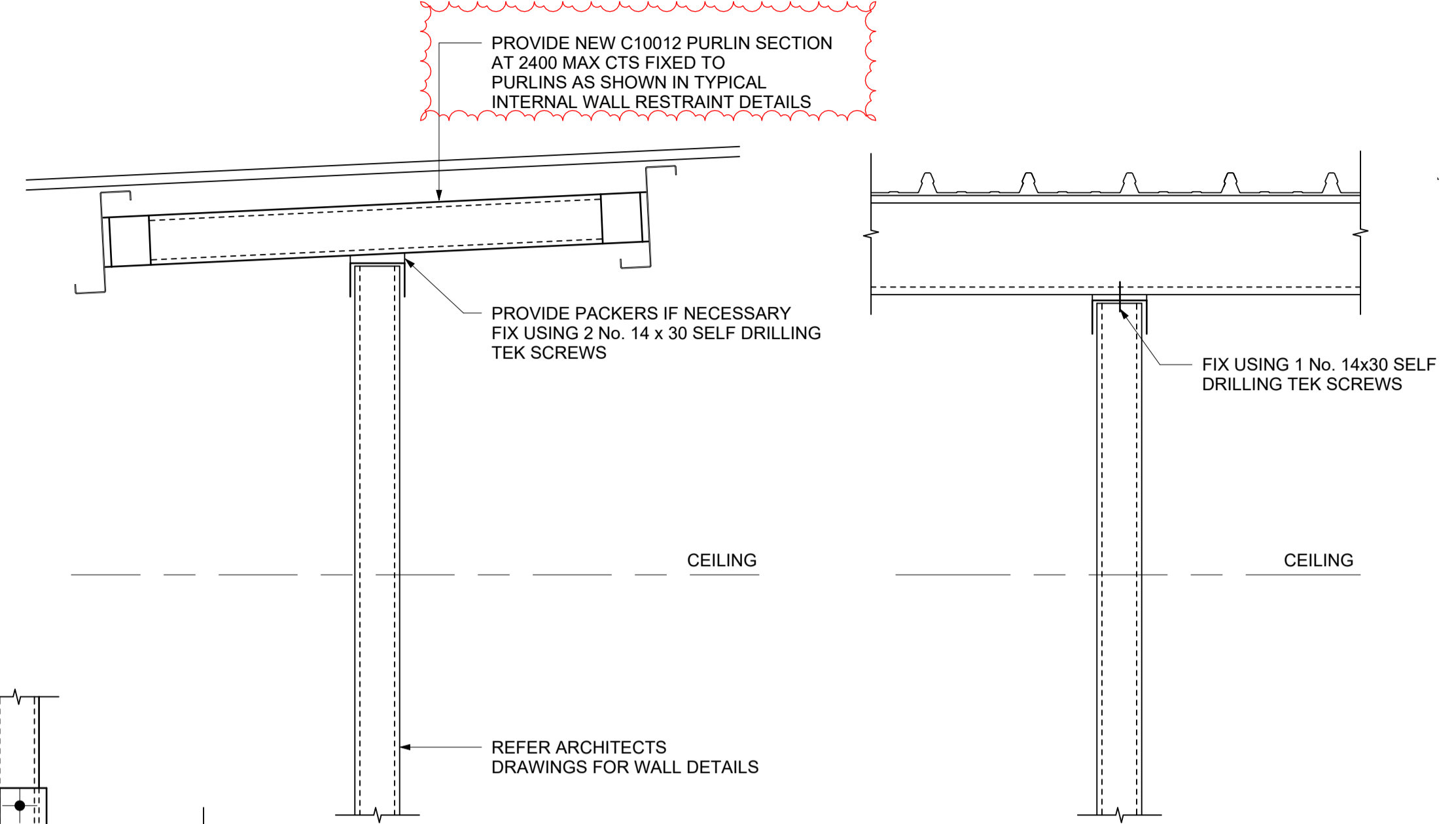
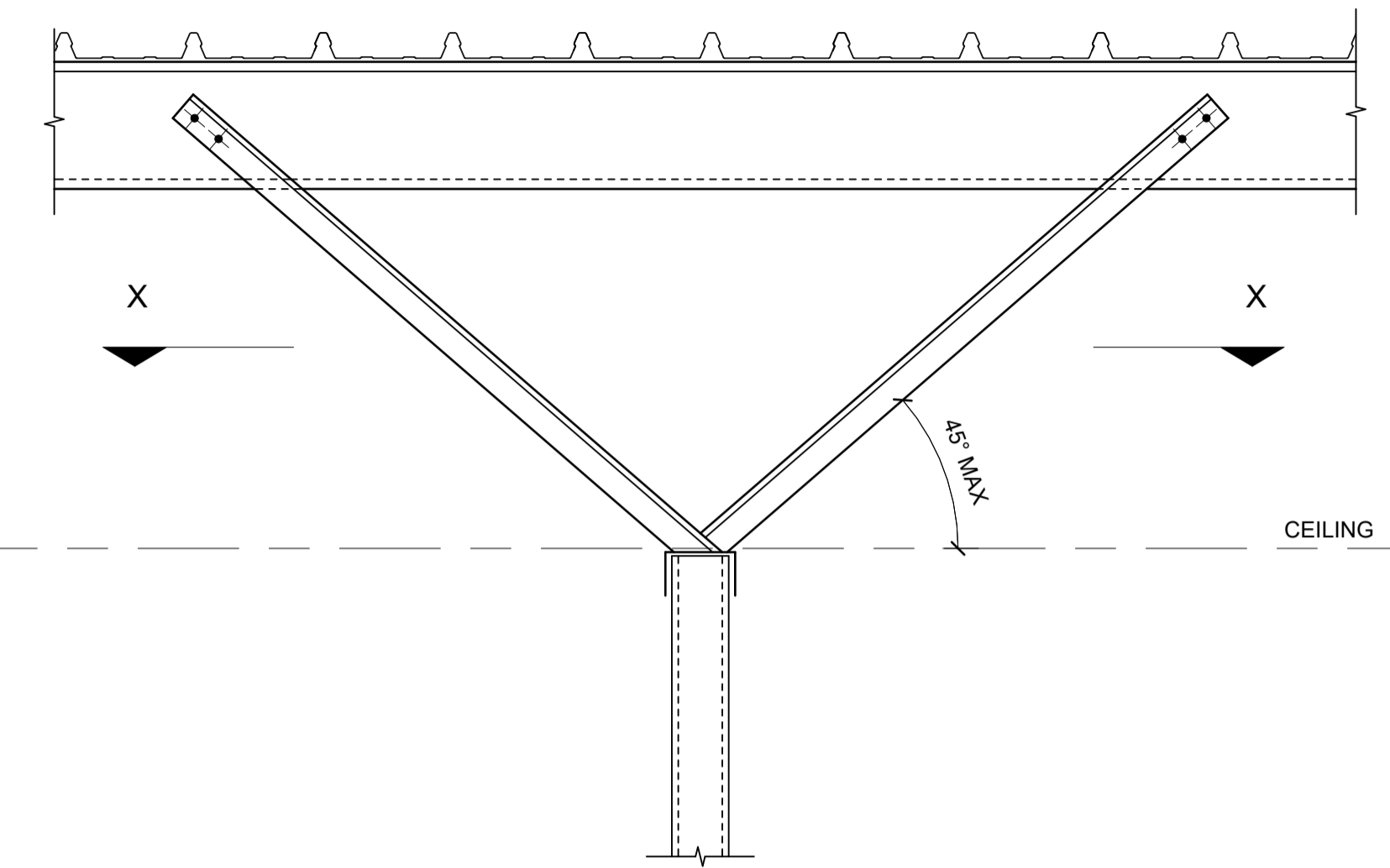
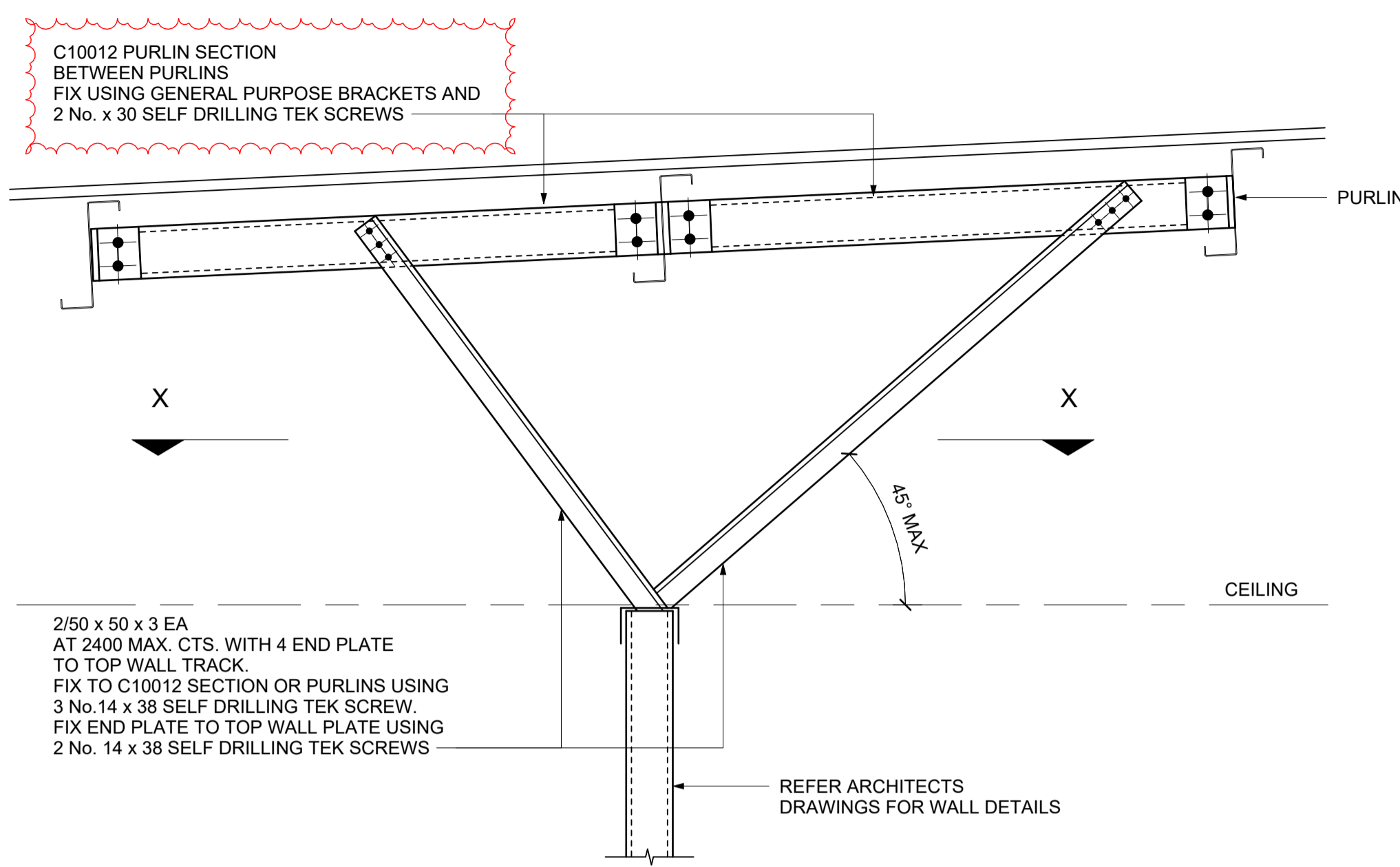
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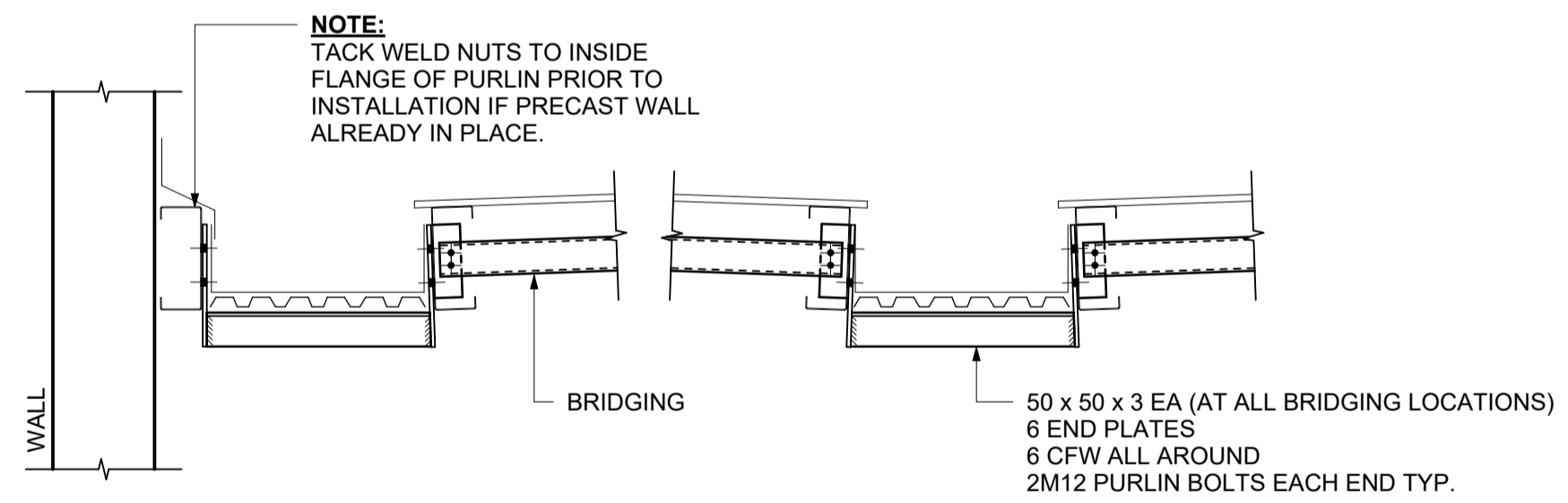




**NOTE:**  
THESE DETAILS ARE APPLICABLE TO ALL WALLS WHICH ARE NOT RESTRAINED AT TOP  
POSITION OF RESTRAINTS TO BE COORDINATED WITH MECHANICAL EQUIPMENT

**TYPICAL INTERNAL WALL RESTRAINT DETAILS SECTION X-X**

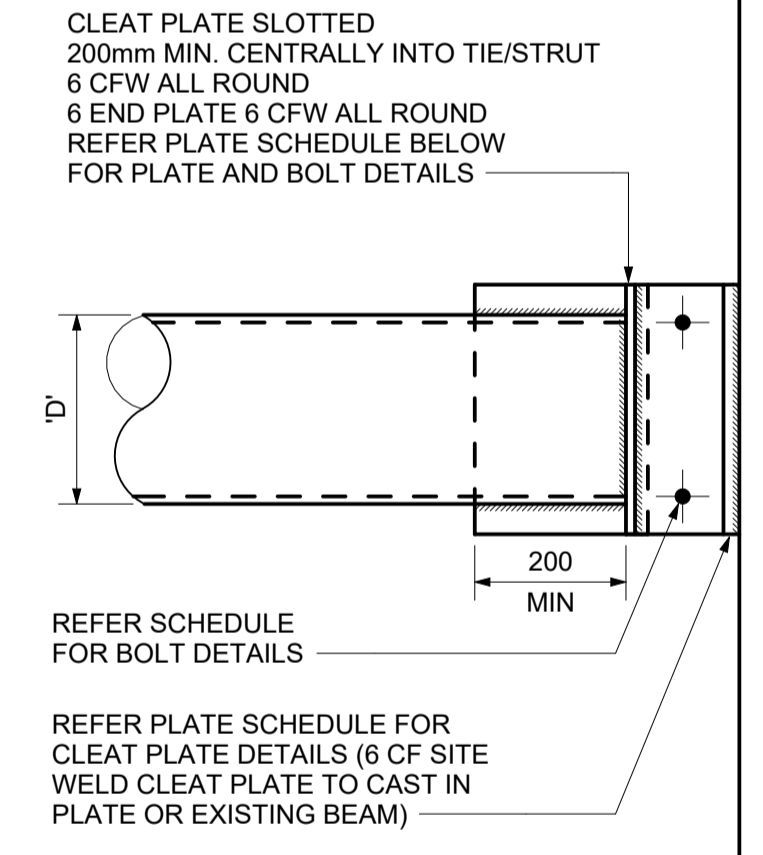
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**NOTE:**  
LEVEL OF ANGLE TO CLEAR GUTTER AT LOWEST POINT  
REFER ARCHITECTS DRAWINGS FOR DETAILS

**TYPICAL BOX GUTTER DETAIL**

1:10

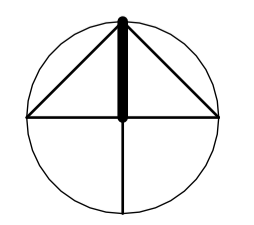


STRUT SIZE (D)			CLEAT PL.	BOLTS
75 SHS	75 RHS	76 CHS	10 PL.	2M20 8.8/S
90 SHS	100 RHS	89 CHS	10 PL.	2M20 8.8/S
100 SHS	125 RHS	102/114 CHS	10 PL.	2M20 8.8/S
125 SHS	127 RHS	127/139 CHS	10 PL.	2M20 8.8/S
150 SHS	150 RHS	152/165 CHS	16 PL.	3M24 8.8/S
200/250 SHS	200 RHS	168/219 CHS	16 PL.	3M24 8.8/S

**TYPICAL STRUT/TIE CONNECTION DETAIL**

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SHEET TITLE  
**TYPICAL STEEL DETAILS  
SHEET 3**

**PRELIMINARY**

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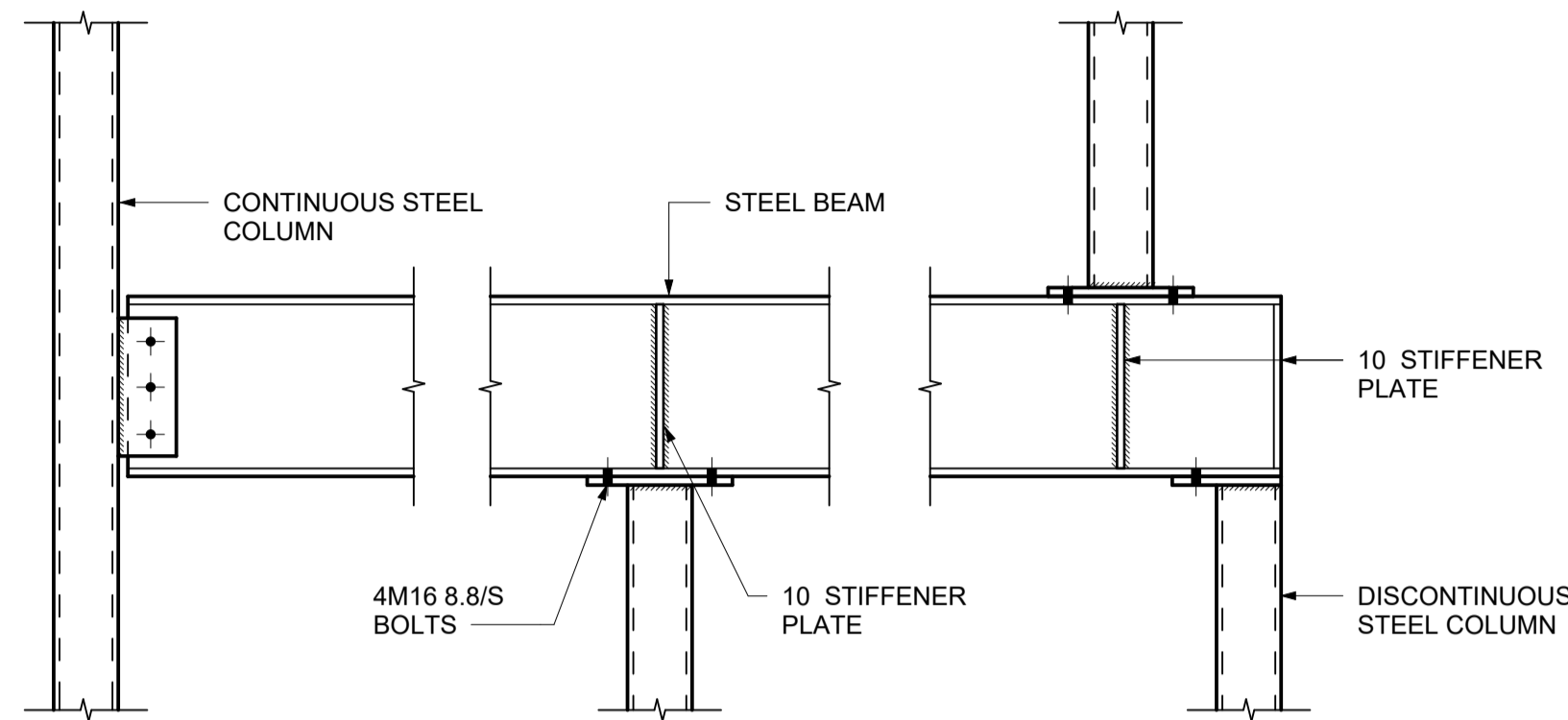
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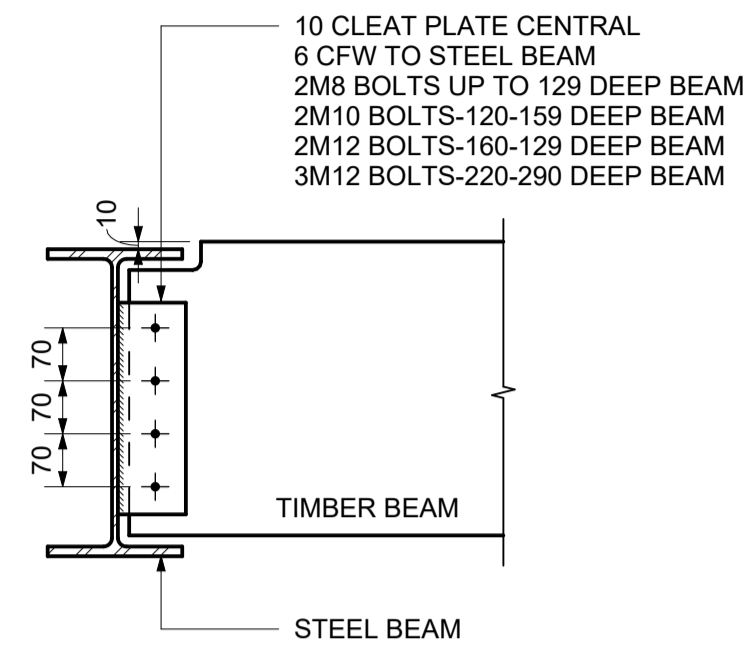
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**TYPICAL SHS COLUMN TO STEEL BEAM CONNECTION DETAILS**

1:10



**TYPICAL DOUBLE TIMBER BEAM TO STEEL BEAM DETAIL**

1:10

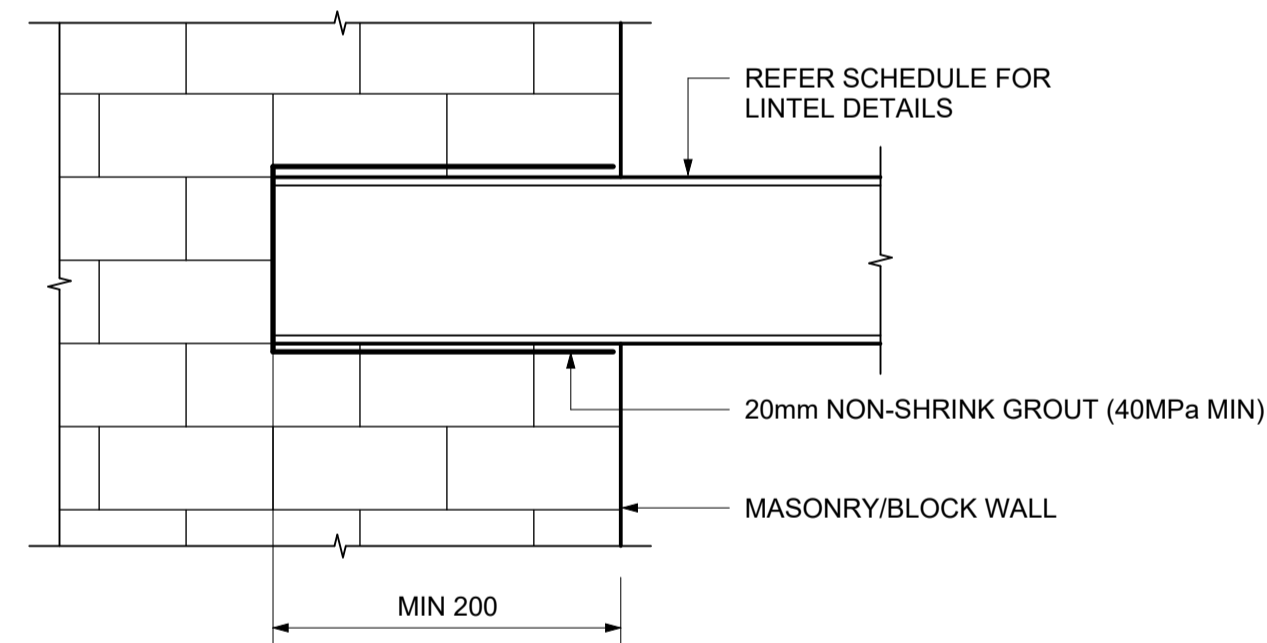
MAXIMUM OPENING WIDTH FOR STEEL LINTELS (mm) U.N.O.					
STEEL SECTION ANGLES	LOAD TYPE				
	A MASONRY ONLY (<600)	B TILED ROOF	C METAL ROOF	D TIMBER FLOOR	E MASONRY ONLY (>600)
75 x 8 FLAT PLATE	700	700	700	700	700
100 x 10 FLAT PLATE	900	900	900	900	900
90 x 90 x 6 EA	3000	1950	2200	2050	2650
90 x 90 x 8 EA	3200	2050	2350	2200	2800
100 x 100 x 6 EA	3350	2100	2400	2250	2900
100 x 100 x 8 EA	3600	2250	2550	2400	3040
150 x 90 x 8 UA	4200	3000	3450	3150	3850
150 UB 14.0	4200	3400	3840	3500	4150
150 UB 18.0	4200	3650	4000	3700	4200
180 UB 22.2	4200	4000	4200	4050	4200

**NOTE:** THE LINTEL SIZES ARE SUITABLE FOR GRAVITY LOADS ONLY AND MAY NOT BE SUITABLE FOR UPLIFT IN HIGH WIND AREAS.

MINIMUM BEARING LENGTH OF STEEL LINTELS	
OPENING (mm)	MINIMUM BEARING LENGTH (mm)
UP TO 1000	100
OVER 1000	150

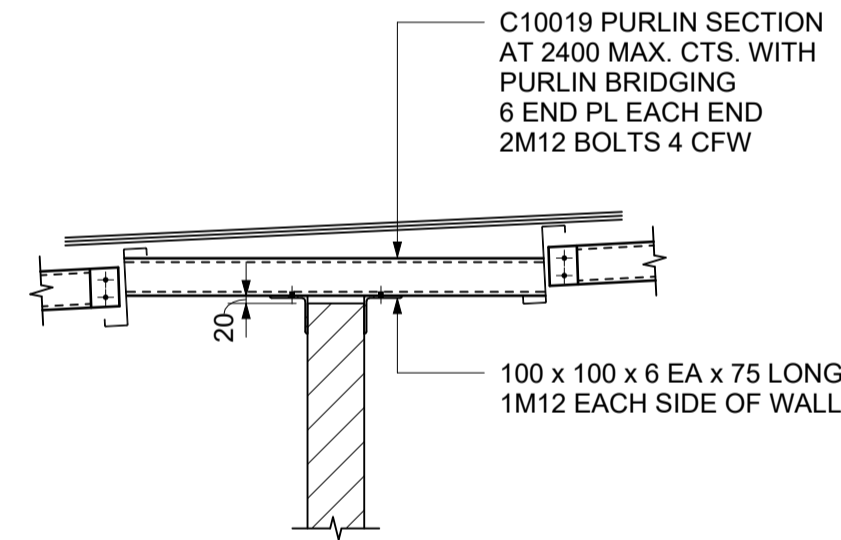
- NOTE:**
- WHERE STEEL LINTELS ARE USED, THEY SHALL BE IN ACCORDANCE WITH "MAXIMUM OPENING WIDTH FOR STEEL LINTELS (mm)" FOR LOAD WIDTH 'A' UP TO 6.6m (INCLUDING EAVES OVERHANG) FOR ROOF LOADS AND UP TO 3.0m FOR FLOOR LOADS. THE WIDTHS IN "MAXIMUM OPENING WIDTH FOR STEEL LINTELS (mm)" ARE APPLICABLE TO ALL HEIGHTS OF MASONRY UP TO 600mm FOR LOAD TYPES A,B AND C.FOR LOAD TYPE 'D', THERE MUST BE A MASONRY HEIGHT OF AT LEAST 2 100mm ABOVE THE LINTEL.
  - LINTELS SHALL BE WIDE ENOUGH TO PROVIDE ADEQUATE SUPPORT TO THE WALLING ABOVE. MASONRY SHALL NOT OVERHANG THE LINTEL SUPPORT BY MORE THAN 25mm. A LINTEL SHALL EXTEND BEYOND THE OPENING AT EACH END BY AT LEAST THE LENGTHS SHOWN IN "MINIMUM BEARING LENGTH OF STEEL LINTELS".
  - THE MINIMUM WALL THICKNESS FOR USE OF A LINTEL SUPPORTING LOAD TYPE D SHALL BE 140mm.
  - WHERE STEEL UNEQUAL ANGLE LINTELS ARE USED, THE LONGER LEG OF THE ANGLE SHALL BE VERTICAL. ANY GAP BETWEEN THE VERTICAL LEG OF A STEEL ANGLE LINTEL AND THE MASONRY SHALL BE PACKED WITH MORTAR.

STEEL LINTELS ARE DESIGNED FOR VERTICAL DOWN LOADS ONLY AND MAY NOT BE SUITABLE FOR UPLIFT OR EARTHQUAKE LOADS.

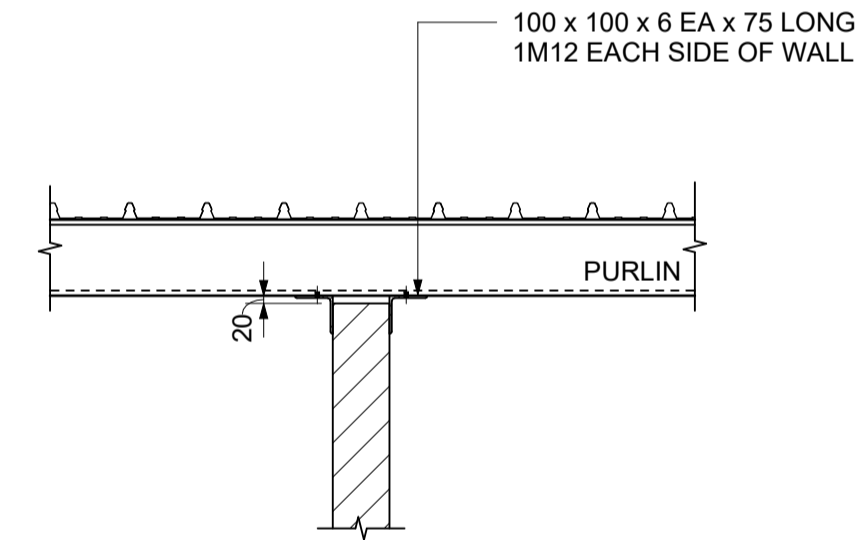


**TYPICAL STEEL LINTEL BEARING DETAIL**

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**WALL PARALLEL TO PURLINS**

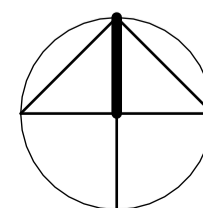


**WALL PERPENDICULAR TO PURLINS**

**TYPICAL BRICK WALL TO PURLINS**

1:20

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SHEET TITLE  
**TYPICAL RESIDENTIAL STEEL AND MASONRY DETAILS**

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