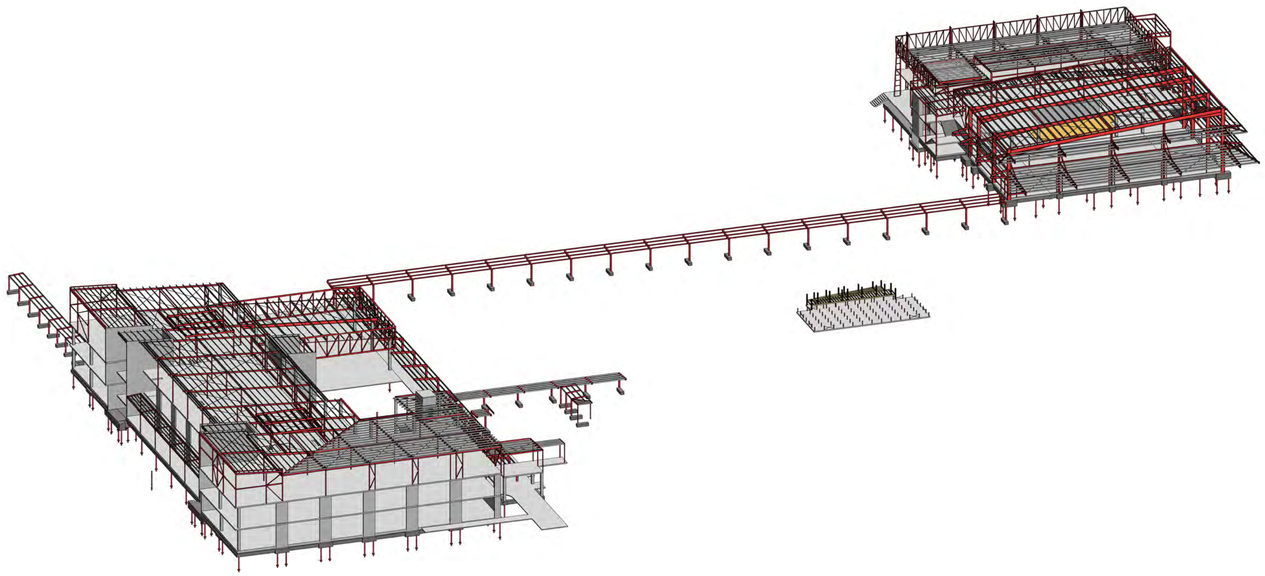
NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE HAMILTON SOUTH
STRUCTURAL SERVICES



- DRAWING LIST - OVERALL

DRAWING №	DRAWING TITLE
S-0000	COVER SHEET
S-0001	SPECIFICATION NOTES SHEET 1
S-0002	SPECIFICATION NOTES SHEET 2
S-0003	SPECIFICATION NOTES SHEET 3
S-0005	TYPICAL RETAINING WALL DETAILS
S-0010	TYPICAL FOUNDATION DETAILS
S-0020	TYPICAL SUSPENDED SLAB DETAILS
S-0050	TYPICAL CONCRETE COLUMN DETAILS
S-0060	TYPICAL REINFORCED CONCRETE WALL DETAILS
S-0070	TYPICAL STEEL DETAILS SHEET 1
S-0071	TYPICAL STEEL DETAILS SHEET 2
S-0072	TYPICAL STEEL DETAILS SHEET 3
S-0073	TYPICAL STEEL DETAILS SHEET 4
S-0090	TYPICAL CONCRETE STAIR DETAILS
S-0100	OVERALL SITE PLAN
S-0500	NEW LEARNING HUB - LEVEL 1- LOADING PLAN
S-0501	NEW LEARNING HUB - LEVEL 2 - LOADING PLAN
S-0600	MULTIPURPOSE FACILITY - LEVEL 1 - LOADING PLAN

- DRAWING LIST - NEW LEARNING HUB

DRAWING №	DRAWING TITLE
S-1000	NEW LEARNING HUB - FOUNDATION OVERALL PLAN
S-1001	NEW LEARNING HUB - FOUNDATION - GA PLAN - ZONE A
S-1002	NEW LEARNING HUB - FOUNDATION - GA PLAN - ZONE B
S-1003	NEW LEARNING HUB - FOUNDATION - GA PLAN - ZONE C
S-1100	NEW LEARNING HUB - GROUND OVERALL PLAN
S-1101	NEW LEARNING HUB - GROUND - GA PLAN - ZONE A
S-1102	NEW LEARNING HUB - GROUND - GA PLAN - ZONE B
S-1103	NEW LEARNING HUB - GROUND - GA PLAN - ZONE C
S-1110	NEW LEARNING HUB - GROUND - SECTIONS SHEET 1
S-1111	NEW LEARNING HUB - GROUND - SECTIONS SHEET 2
S-1112	NEW LEARNING HUB - GROUND - SECTIONS SHEET 3
S-1113	NEW LEARNING HUB - GROUND - SECTIONS SHEET 4
S-1200	NEW LEARNING HUB - LEVEL 1 OVERALL PLAN
S-1201	NEW LEARNING HUB - LEVEL 1 - GA PLAN - ZONE A
S-1202	NEW LEARNING HUB - LEVEL 1 - GA PLAN - ZONE B
S-1203	NEW LEARNING HUB - LEVEL 1 - GA PLAN - ZONE C
S-1210	NEW LEARNING HUB - LEVEL 1 - SECTIONS SHEET 1
S-1211	NEW LEARNING HUB - LEVEL 1 - SECTIONS SHEET 2
S-1300	NEW LEARNING HUB - LEVEL 2 OVERALL PLAN
S-1301	NEW LEARNING HUB - LEVEL 2 - GA PLAN - ZONE A
S-1302	NEW LEARNING HUB - LEVEL 2 - GA PLAN - ZONE B
S-1303	NEW LEARNING HUB - LEVEL 2 - GA PLAN - ZONE C
S-1310	NEW LEARNING HUB - LEVEL 2 - SECTIONS
S-1400	NEW LEARNING HUB - ROOF OVERALL PLAN
S-1401	NEW LEARNING HUB - ROOF - GA PLAN - ZONE A
S-1402	NEW LEARNING HUB - ROOF - GA PLAN - ZONE B
S-1403	NEW LEARNING HUB - ROOF - GA PLAN - ZONE C
S-1404	NEW LEARNING HUB - ROOF - GA PLAN - PLANT PLATFORM
S-1410	NEW LEARNING HUB - ROOF - SECTIONS
S-1500	NEW LEARNING HUB - SECTION SHEET 1
S-1501	NEW LEARNING HUB - SECTION SHEET 2
S-1502	NEW LEARNING HUB - SECTION SHEET 3
S-1503	NEW LEARNING HUB - SECTION SHEET 4
S-1504	NEW LEARNING HUB - SECTION SHEET 5
S-1505	NEW LEARNING HUB - SECTION SHEET 6
S-1506	NEW LEARNING HUB - SECTION SHEET 7
S-1507	NEW LEARNING HUB - SECTION SHEET 8
S-1508	NEW LEARNING HUB - SECTION SHEET 9
S-1600	NEW LEARNING HUB - WALL ELEVATIONS SHEET 1
S-1601	NEW LEARNING HUB - WALL ELEVATIONS SHEET 2
S-1602	NEW LEARNING HUB - WALL ELEVATIONS SHEET 3
S-1999	NEW LEARNING HUB - SCHEDULES

- DRAWING LIST - MULTIPURPOSE FACILITY

DRAWING №	DRAWING TITLE
S-2000	MULTIPURPOSE FACILITY - FOUNDATION OVERALL PLAN
S-2001	MULTIPURPOSE FACILITY - FOUNDATION - GA PLAN - ZONE A
S-2002	MULTIPURPOSE FACILITY - FOUNDATION - GA PLAN - ZONE B
S-2100	MULTIPURPOSE FACILITY - GROUND OVERALL PLAN
S-2101	MULTIPURPOSE FACILITY - GROUND - GA PLAN - ZONE A
S-2102	MULTIPURPOSE FACILITY - GROUND - GA PLAN - ZONE B
S-2103	MULTIPURPOSE FACILITY - GROUND - GA PLAN - UPPER STAGE
S-2110	MULTIPURPOSE FACILITY - GROUND - SECTIONS SHEET 1
S-2111	MULTIPURPOSE FACILITY - GROUND - SECTIONS SHEET 2
S-2200	MULTIPURPOSE FACILITY - LEVEL 1 OVERALL PLAN
S-2201	MULTIPURPOSE FACILITY - LEVEL 1 - GA PLAN - ZONE A
S-2202	MULTIPURPOSE FACILITY - LEVEL 1 - GA PLAN - ZONE B
S-2210	MULTIPURPOSE FACILITY - LEVEL 1 - SECTIONS SHEET 1
S-2211	MULTIPURPOSE FACILITY - LEVEL 1 - SECTIONS SHEET 2
S-2300	MULTIPURPOSE FACILITY - ROOF OVERALL PLAN
S-2301	MULTIPURPOSE FACILITY - ROOF - GA PLAN - ZONE A
S-2302	MULTIPURPOSE FACILITY - ROOF - GA PLAN - ZONE B
S-2310	MULTIPURPOSE FACILITY - ROOF - SECTIONS SHEET 1
S-2311	MULTIPURPOSE FACILITY - ROOF - SECTIONS SHEET 2
S-2312	MULTIPURPOSE FACILITY - ROOF - SECTIONS SHEET 3
S-2500	MULTIPURPOSE FACILITY - SECTION SHEET 1
S-2501	MULTIPURPOSE FACILITY - SECTION SHEET 2
S-2502	MULTIPURPOSE FACILITY - SECTION SHEET 3
S-2503	MULTIPURPOSE FACILITY - SECTION SHEET 4
S-2504	MULTIPURPOSE FACILITY - SECTION SHEET 5
S-2505	MULTIPURPOSE FACILITY - SECTION SHEET 6
S-2600	MULTI PURPOSE FACILITY - WALL ELEVATIONS SHEET 1
S-2601	MULTI PURPOSE FACILITY - WALL ELEVATIONS SHEET 2
S-2999	MULTI PURPOSE FACILITY - SCHEDULES

- DRAWING LIST - WALKWAYS

DRAWING №	DRAWING TITLE
S-3000	WALKWAYS - FOUNDATION OVERALL
S-3001	WALKWAYS - 1 FOUNDATION - GA PLAN - ZONE A & B
S-3002	WALKWAYS - 1 & 2 FOUNDATION - GA PLAN - ZONE D & E
S-3003	WALKWAYS - 3 FOUNDATION - GA PLAN
S-3100	WALKWAYS - GROUND OVERALL PLAN
S-3101	WALKWAYS - 1 GROUND - GA PLAN - ZONE A & B
S-3102	WALKWAYS - 1 & 2 GROUND - GA PLAN - ZONE C & D
S-3103	WALKWAYS - 3 GROUND - GA PLAN
S-3200	WALKWAYS - ROOF OVERALL PLAN
S-3201	WALKWAYS - 1 ROOF - GA PLAN - ZONE A & B
S-3202	WALKWAYS - 1 & 2 ROOF - GA PLAN - ZONE D & E
S-3203	WALKWAYS - 3 ROOF - GA PLAN
S-3999	WALKWAYS - SCHEDULES

- DRAWING LIST - BUILDING H

DRAWING №	DRAWING TITLE
S-4000	BUILDING H - FOUNDATION - GA PLAN
S-4100	BUILDING H - GROUND - GA PLAN
S-4110	BUILDING H - GROUND - SECTIONS

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale

Client

NSW GOVERNMENT

Architect

EJE architecture

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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
COVER SHEET

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	XX	XX	S-0000	1

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GENERAL NOTES

G1. THE WORD 'ENGINEER' USED IN THESE NOTES REFERS TO AN EMPLOYEE OR NOMINATED REPRESENTATIVE OF ACOR CONSULTANTS PTY.LTD.

G2. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS, SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER AND ARCHITECT.

G3. DO NOT COMMENCE CONSTRUCTION USING THESE STRUCTURAL DRAWINGS UNTIL A CONSTRUCTION CERTIFICATE IS ISSUED BY THE PRINCIPLE AUTHORITY.

G4. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT CURRENT STANDARDS AUSTRALIA CODES AND WITH THE BUILDING CODE OF AUSTRALIA INCLUDING, BUT NOT LIMITED TO:
- AS1554-SAA WELDING CODE (ALL PARTS)
- AS1684-SAA NATIONAL TIMBER FRAMING CODE (ALL PARTS)
- AS1720-SAA TIMBER CODE (ALL PARTS)
- AS2870-SAA RESIDENTIAL SLABS AND FOOTINGS
- AS3600-SAA CONCRETE STRUCTURE CODE
- AS3610-SAA FORMWORK FOR CONCRETE CODE
- AS3700-SAA MASONRY STRUCTURE CODE
- AS3798-GUIDLINES FOR EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENT
- AS4100-SAA STEEL STRUCTURES CODE

G5. ALL DIMENSIONS RELEVANT TO SETTING OUT AND OFF-SITE WORK SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION AND FABRICATION IS COMMENCED

G6. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE STRUCTURAL DRAWINGS.

G7. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS STATED OTHERWISE. ALL LEVELS ARE EXPRESSED IN METERS. THE RL'S SHOWN ON THESE DRAWINGS ARE FOR THE SOLE PURPOSE OF ASSISTING THE STRUCTURAL DOCUMENTATION. THEY MUST NOT BE USED FOR CONSTRUCTION. ALL SET-OUT DIMENSIONS AND LEVELS, INCLUDING ANY SHOWN ON THESE DRAWINGS SHALL BE IN ACCORDANCE WITH THE ARCHITECT'S DRAWINGS. ANY DISCREPANCIES IN THE DOCUMENTS MUST BE RESOLVED BEFORE ORDERING OR PLACING ANY MATERIALS.

G8. DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE IN A STABLE CONDITION AND ENSURING NO PART SHALL BE OVER STRESSED UNDER CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACING, SHORING AND PROPPING IN ORDER TO KEEP THE BUILDING WORKS AND EXCAVATIONS STABLE AT ALL TIMES.TEMPORARY WORKS ELEMENTS NOTED IN THESE DRAWINGS ARE INTENDED AS A NOMINAL ALLOWANCE FOR TENDERING PURPOSES ONLY AND DOES NOT CONSTITUTE A CERTIFIED STRUCTURAL DESIGN.

G9. THE BUILDER IS RESPONSIBLE FOR THE ADEQUACY OF ALL TEMPORARY WORKS INCLUDING SHORING, PROPPING AND BRACING. WHERE NECESSARY THE CONTRACTOR IS TO ENGAGE A STRUCTURAL ENGINEER TO PROVIDE DESIGN, CERTIFICATION AND DEVELOP A SAFE WORKS METHODOLOGY FOR THE TEMPORARY WORKS. APPROPRIATE ALLOWANCE SHALL BE MADE DURING TENDERING.

G10. THE METHOD OF CONSTRUCTION AND THE MAINTENANCE OF SAFETY DURING CONSTRUCTION ARE THE RESPONSIBILITY OF THE BUILDER. IF ANY STRUCTURAL ELEMENT PRESENTS DIFFICULTY IN RESPECT OF CONSTRUCTABILITY OR SAFETY, THE MATTER SHALL BE REFERRED TO THE STRUCTURAL ENGINEER FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.

G11. IF THERE IS A DISCREPANCY IN MEMBER SIZES FOR ANY COMPONENT, ASSUME FOR PRICING PURPOSE ONLY THAT THE LARGER OR MORE EXPENSIVE SIZE IS CORRECT. REFER TO STRUCTURAL ENGINEER FOR DECISION BEFORE DETAILING OR CONSTRUCTION.

G12. THE APPROVAL OF A SUBSTITUTION SHALL BE SOUGHT FROM THE ENGINEER BUT IS NOT AN AUTHORISATION FOR A VARIATION. ANY VARIATIONS INVOLVED MUST BE TAKEN UP WITH THE ARCHITECT OR PROJECT MANAGER BEFORE THE WORK COMMENCES.

G13. THE WRITTEN CONSENT OF ADJOINING PROPERTY OWNERS SHALL BE OBTAINED BEFORE INSTALLATION OF UNDERPINNING, ANCHORING WORKS, DRAINAGE LINES OR ANY OTHER WORKS BEYOND THE PROPERTY BOUNDARY.

G14. UNLESS AGREED OR SPECIFIED OTHERWISE, THE BUILDER IS REQUIRED TO NOTIFY AND ALLOW TIME FOR THE STRUCTURAL ENGINEER TO INSPECT THE WORKS AT THE FOLLOWING POINTS, COMPLETED EXCAVATION, FORMWORK, REINFORCEMENT, MEMBRANES AND EMBEDMENT'S PRIOR TO PLACEMENT OF CONCRETE, COMPLETED ERECTED STRUCTURAL ELEMENTS PRIOR TO COVERING

G15. THE BUILDER SHALL GIVE 48 HOURS OR AT LEAST 2 BUSINESS DAYS NOTICE FOR ALL ENGINEERING INSPECTIONS. NOTICE OF 5 WORKING DAYS SHALL BE GIVEN WHERE A CERTIFICATE OF INSPECTION IS REQUIRED UNDERTAKEN BY THE ENGINEER. WHERE INSPECTION CERTIFICATES ARE REQUIRED FOLLOWING EACH INSPECTION. A PRELIMINARY INSPECTION WILL BE UNDERTAKEN BY THE PROJECT ENGINEER AND A REGISTERED ENGINEER WILL CONDUCT AN ADDITIONAL FOLLOW-UP INSPECTION ONCE ALL DEFECTS ARE CONFIRMED BY THE BUILDER AS HAVING BEEN RECTIFIED. IT IS THE RESPONSIBILITY OF THE BUILDER TO ENSURE SUFFICIENT TIME IS ALLOWED FOR IN PROGRAMME TO FACILITATE THE ABOVE.

G16. SITE INSPECTIONS DO NOT RELIEVE THE BUILDER OF RESPONSIBILITY FOR THE COMPLETENESS AND CORRECTNESS OF THEIR WORK.

G17. WHERE STRUCTURAL ELEMENTS ARE DESIGNED AND CERTIFIED BY OTHER PARTIES, THE CONTRACTOR SHALL OBTAIN WRITTEN CERTIFICATION PRIOR TO PROCEEDING WITH ANY CONSTRUCTION WORK WHICH WOULD PREVENT INSPECTION OR REMEDIAL WORKS TO BE UNDERTAKEN. ALL CERTIFICATIONS ARE TO BE ISSUED TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO WORK PROCEEDING.

G18. THE CONTRACTOR SHALL ENSURE THAT ALL STRUCTURAL MEMBERS ARE PROTECTED FROM THE WEATHER AND THAT STRUCTURAL PROPERTIES ARE NOT IMPAIRED IN ANY WAY DURING THE CONSTRUCTION PERIOD.

G19. THE STRUCTURAL DRAWINGS DO NOT SHOW DETAILS OF ALL FIXTURES, INSERTS, SLEEVES, OPENINGS, ETC., REQUIRED BY THE VARIOUS TRADES. ALL SUCH DETAILS, INCLUDING OPENINGS FOR CONSTRUCTION FROM THE VARIOUS TRADES AND SHALL BE APPROVED BY THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.

G20. ALL PENETRATIONS AND SET DOWNS SHOWN ON STRUCTURAL DRAWINGS ARE INDICATIVE ONLY. THE PENETRATIONS ARE CONFIRMED BY THE APPROPRIATE SUB-CONTRACTOR. FINAL DETAILS TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL.

G21. ALL PROPRIETARY PRODUCTS SPECIFIED ON THESE DRAWINGS SHALL BE USED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION. ALTERNATIVE PRODUCTS MAY ONLY BE USED WITH THE APPROVAL OF THE ENGINEER, FOLLOWING SUBMISSION OF EVIDENCE OF EQUIVALENCE.

GENERAL NOTES CONTINUED

G22. DETAILED SET OUT OF NEW WORKS ON SITE MUST BE UNDERTAKEN PRIOR TO DEMOLITION OF ANY EXISTING ASSETS. SITE MEASUREMENTS MUST BE UNDERTAKEN PRIOR TO DEMOLITION OF ANY EXISTING ASSETS TO VERIFY THAT THE DOCUMENTED EXTENT OF THE EXISTING ASSETS MATCHES THE ACTUAL EXTENT.

G23. THE BUILDER SHALL MAKE ALLOWANCE IN THEIR CONSTRUCTION PROGRAMME FOR ACOR TO RESPOND TO ALL REASONABLE GENERAL REQUESTS FOR INFORMATION WITHIN 5 WORKING DAYS.

G24. THE BUILDER SHALL MAKE ALLOWANCE IN THEIR CONSTRUCTION PROGRAMME FOR ACOR TO RESPOND TO SHOP DRAWING REVIEWS WITHIN 10 WORKING DAYS. ALL SUBMITTED SHOP DRAWINGS SHALL BE COMPLETE (I.E. NO OUTSTANDING QUERIES, DESIGN CHANGES PENDING ETC.), AND SHALL INCLUDE A 3D MODEL (IFC OR RVT FORMAT) IN THE SUBMISSION. ACOR HAS AN ALLOWANCE FOR A SINGLE REVIEW OF SHOP DRAWINGS FOR EACH OF STEELWORK AND PRECAST ELEMENTS, AND THE BUILDER SHALL BE LIABLE FOR ADDITIONAL COSTS ARISING FROM INCOMPLETE OR MULTIPLE SHOP DRAWING REVIEWS.

G25. THE FOLLOWING ABBREVIATIONS USED IN THESE DRAWINGS ARE:
- ALT_ALTERNATIVE BARS
- C/S_BRICKWORK COURSE
- BTM_BOTTOM
- BJ_BLOCK JOINT
- CEN_CENTRAL
- CTS_CENTRES
- DJ_DOWEL JOINT
- EF_EACH FACE
- F'c=CONCRETE STRENGTH
- EW_EACH WAY
- FF_FAR FACE
- NF_NEAR FACE
- FFL_FINISH FLOOR LEVEL
- GALV_GALVANISED
- GD_GRATED DRAIN
- GL_GROUND LINE
- LV_LENGTH VARIES
- LVL_LAMINATED VENEER LUMBER
- MC_MASS CONCRETE
- NSOE_NOT SHOWN ON ELEVATION
- NSOP_NOT SHOWN ON PLAN
- RL_REDUCED LEVEL
- RC_REINFORCED CONCRETE
- (1) REINFORCEMENT LAID FIRST
- (2) REINFORCEMENT LAID SECOND
- (3) REINFORCEMENT LAID THIRD
- (4) REINFORCEMENT LAID FOURTH
- S/S_STAINLESS STEEL
- STAG_STAGGERED BARS
- SSL_STRUCTURAL SLAB LEVEL
- TYP_TYPICAL
- T_TOP
- U/S_UNDERSIDE
- UNO_UNLESS NOTED OTHERWISE
- (U&O)_UNDER AND OVER
- FSBW_FULL STRENGTH BUT WELD
- PL_PLATE
- CFW_CONTINUOUS FILLET WELD
- FW_FILLET WELD
- BW_BOTH WAYS

STRUCTURAL DESIGN LOAD NOTES

L1. THE STRUCTURAL COMPONENTS DETAILED ON THESE DRAWINGS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RELEVANT STANDARDS AUSTRALIA CODE AND THE BUILDING CODE OF AUSTRALIA FOR THE LOADINGS SHOWN ON THE LOADING PLANS. REFER TO ARCHITECTURAL DRAWINGS FOR PROPOSED FLOOR USAGE WHERE LOADING PLANS ARE NOT PRESENT.

L2. WIND LOADS IN ACCORDANCE WITH AS1170.2

DIRECTION	TERRAIN CATEGORY	ULTIMATE WIND VELOCITY V des θ	SERVICEABILITY WIND VELOCITY V des θ
NORTH	3	33m/s	27m/s
SOUTH	3	37m/s	30m/s
EAST	3	34m/s	28m/s
WEST	3	39m/s	31m/s

REGION		A
STRUCTURAL IMPORTANCE LEVEL		3
REGIONAL WIND SPEED	Vr (ULTIMATE)	45 m/s
	Vr (SERVICEABILITY)	37 m/s
AVERAGE TERRAIN CATEGORY		3
AVERAGE TERRAIN/ HEIGHT MULTIPLIER		2.8
AVERAGE SHIELDING MULTIPLIER		1.0
AVERAGE TOPOGRAPHIC MULTIPLIER		1.0
AVERAGE HILL-SHAPE MULTIPLIER		1.0

L3. EARTHQUAKE DESIGN PARAMETERS TO AS1170.4

STRUCTURAL IMPORTANCE LEVEL	3
PROBABILITY FACTOR (KP)	1.3
HAZARD FACTOR (Z)	0.11
SITE SUB SOIL CLASS	Ce
EARTHQUAKE DESIGN CATEGORY	II

L4. RETAINING WALLS

RETAINING WALL TAG	STRUCTURAL CLASSIFICATION	DESIGN SURCHARGE BACKFILL SLOPE	
		STEEPER THAN 4:1	4:1 OR FLATTER
RW1	B	5kPa	5kPa
RW2	B	5kPa	5kPa

RETAINING WALL STRUCTURE CLASSIFICATION TO AS4678

EARTHWORKS

E1. THE CONTRACTOR SHALL MAKE PROVISION FOR THE EFFECTIVE DIVERSION OR REMOVAL OF ALL SURFACE WATER FROM THE PREPARED SUBGRADE, FROM ANY SOURCE. TEMPORARY DRAINS AND EFFICIENT PUMPING EQUIPMENT OR OTHER MEANS TO DEWATER THE EARTHWORKS SHALL BE PROVIDED BY THE CONTRACTOR.

E2. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED ENVIRONMENTAL TREATMENT OF RUNOFF FROM THE CONSTRUCTION SITE.

E3. STRIP THE AREA OF THE BUILDING FOOTPRINT OF ANY GRASS, ROOT AFFECTED SOIL OR ANY OTHER DELETERIOUS MATERIAL TO A MINIMUM DEPTH OF 150mm, UNLESS NOTED OTHERWISE.

E4. PROOF ROLL THE EXPOSED SUBGRADE WITH A STATIC SMOOTH STEEL WHEELED ROLLER WITH A MINIMUM MASS OF 12 TONNES, TO REVEAL SOFT, WET, LOOSE, OR UNSTABLE AREAS. ALL SUCH AREAS WHICH DO NOT IMPROVE WITH ROLLING SHALL BE EXCAVATED AND REPLACED WITH APPROVED MATERIAL COMPACTED TO 98% OF STANDARD MAX DRY DENSITY. RAISE THE SUBGRADE LEVEL FOR THE BUILDING FOOTPRINT TO THE DESIGN LEVEL USING APPROVED FILL MATERIAL, PLACED IN LAYERS NOT EXCEEDING 150mm AND COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY BEFORE PLACING THE NEXT LAYER.

E5. MATERIAL WON FROM SITE SHALL NOT BE USED AS ENGINEERING FILL MATERIAL WITHOUT APPROVAL FROM THE ENGINEER.

E6. SUBGRADE PREPARATION, FILL REPLACEMENT AND COMPACTION SHALL BE SUPERVISED BY A GEOTECHNICAL ENGINEER. THE FREQUENCY OF FIELD DENSITY TESTING SHALL BE IN ACCORDANCE WITH TYPE 1 EARTHWORKS AS NOTED IN TABLE 8.1 OF AS 3798.

E7. ALLOWANCE IS TO BE MADE FOR SOFT SPOTS - AT A MINIMUM, TO REPLACE 10% OF THE SURFACE AREA BELOW ALL CONCRETE AND ASPHALT PAVEMENTS, AND ALL CONCRETE SLABS/RAFT SLABS ON GROUND. TENDERER IS TO MAKE ALLOWANCE FOR THIS REPLACEMENT TO A DEPTH OF 600mm AND TO PROVIDE A RATE TO VARY ACTUAL QUANTITY.

E8. ONLY HANDHELD COMPACTION EQUIPMENT PERMITTED FOR USE OVER INSTALLED UNDERGROUND SERVICES UNLESS OTHERWISE APPROVED BY THE ENGINEER.

FOUNDATION NOTES

F1. REFER TO THE GEOTECHNICAL REPORT NUMBER 21361801BY DOUGLAS PARTNERS DATED SEPTEMBER 2022.

FOUNDATION TYPE	SAFE BEARING CAPACITIES (kPa)
STRIP FOOTINGS WHERE SHOWN ON PLAN	**100** kPa
PAD FOOTINGS WHERE SHOWN ON PLAN	**100** kPa

FOUNDATION MATERIAL SHALL BE APPROVED FOR THIS BEARING PRESSURE BEFORE PLACING MEMBRANE, REINFORCEMENT OR CONCRETE.

F3. THE BUILDER IS TO ENGAGE A GEOTECHNICAL CONSULTANT OR SUITABLY QUALIFIED PERSONNEL TO ASSESS THE SUITABILITY OF THE FOUNDATION MATERIAL PRIOR TO PLACING CONCRETE.

F4. THE BUILDER IS TO IMPLEMENT ALL RECOMMENDATIONS OUTLINED IN THE GEOTECHNICAL REPORT AND RELEVANT RECOMMENDATIONS FROM BUILDING TECHNOLOGY FILE 18 (FORMERLY KNOWN AS CSIRO NOTE 10-91)

F5. THE BASE OF ALL SERVICE TRENCHES SHALL BE SLOPED AWAY FROM THE BUILDING. TRENCHES SHALL BE BACKFILLED WITH CLAY IN THE TOP 300mm WITHIN 1.5m OF THE BUILDING. THE CLAY USED FOR BACKFILLING SHALL BE COMPACTED.

F6. WHERE PIPES PASS UNDER THE FOOTING SYSTEM, THE TRENCH SHALL BE BACKFILLED FULL DEPTH WITH CLAY OR CONCRETE TO RESTRICT THE INGRESS OF WATER BENEATH THE FOOTING SYSTEM.

F7. BUILDER TO COMPLY WITH ADDITIONAL REQUIREMENTS FOR CLASSES M, H1, H2 AND E SITES AS SET OUT IN AS 2870 CL 5.6 INCLUDING MASONRY DETAILING, VARIATIONS IN FOUNDATION MATERIAL, DRAINAGE AND PLUMBING REQUIREMENTS.

F8. ALL FOOTINGS SHALL BE LOCATED CENTRALLY UNDER WALLS AND COLUMNS UNLESS NOTED OTHERWISE

F9. DO NOT BACKFILL RETAINING WALLS (OTHER THAN CANTILEVER WALLS) UNTIL FLOOR CONSTRUCTION AT TOP AND BOTTOM IS COMPLETED.

F10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ANY EXCAVATION IN A STABLE CONDITION WITHOUT ADVERSELY AFFECTING SURROUNDING PROPERTY INCLUDING SERVICES. THIS INCLUDES OBTAINING ALL NECESSARY APPROVALS FOR SHORING AND ANCHOR SYSTEMS.

F11. ANY OVER EXCAVATION SHALL BE BACKFILLED WITH CONCRETE GRADE N15. FOUNDATIONS ADJACENT TO SERVICES ETC. SHALL BE EXTENDED DOWN SUCH THAT THE INFLUENCE LINE OF THE FOUNDATION IS BELOW THE ADJACENT SERVICE.

CONCRETE NOTES

C1. ALL WORKMANSHIP AND MATERIALS SHALL COMPLY WITH AS 3600 CURRENT EDITIONS WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.

C2. ALL CONCRETE SUPPLY SHALL COMPLY WITH AS1379. CONCRETE PROPERTIES AND COVER TO REINFORCING:

ELEMENTS		COVER (mm)		f'c (MPa) (28 DAYS)	MAX 56 DAY SHRINKAGE
SLAB ON GROUND	EXTERNAL	T 40	B 50	32	800
	INTERNAL	T 20	B 50		
STRIP FOOTINGS		50		40	800
PAD FOOTINGS		50		40	800
SUSPENDED SLABS	EXTERNAL	T 40	B 40	40	650
	INTERNAL	T 30	B 30		
COLUMN	EXTERNAL	40	40	40	800
	INTERNAL	40	40		
CONCRETE WALLS	EXTERNAL	40	40	40	800
	INTERNAL	30	40		

MAXIMUM AGGREGATE SIZE = 20
SLUMP DURING PLACEMENT = 80
EXPOSURE CLASSIFICATION AS PER STRUCTURAL DESIGN LOAD NOTE L7.

C3. SIDE COVER TO BEAMS TO BE 50mm.

C4. CEMENT TO BE TYPE SL TO AS 3972 UNLESS NOTED OTHERWISE THIS IS A MODIFIED TYPE 'GP' CEMENT. SEE ACSE CONCRETE SPECIFICATION.

C5. NO 'BRECCIA' TYPE AGGREGATE IS TO BE USED.

C6. NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING BY THE ENGINEER.

C7. PROJECT ASSESSMENT OF CONCRETE SHALL BE CARRIED OUT IN ACCORDANCE WITH AS1379.

C8. PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS1379 BY A NATA REGISTERED TESTING LABORATORY. SAMPLES SHALL BE TAKEN FOR TESTING OF SLUMP, COMPRESSIVE STRENGTH AND ANY OTHER TEST SPECIFIED.

SLUMP SHALL BE SAMPLED FOR EACH TRUCK AT THE TIME OF POURING.

THE MINIMUM FREQUENCY OF SAMPLING FOR COMPRESSIVE TESTING OF EACH TYPE AND GRADE SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE:

NUMBERS OF BATCHED PER DAY	NUMBERS OF SAMPLES 1 SAMPLE = 3 CYLINDERS (4 CYLINDERS FOR POST TENSIONED CONCRETE)
1	1 SAMPLE
1 TO 5	2 SAMPLES
6 TO 10	3 SAMPLES
11 TO 20	4 SAMPLES
FOR EACH ADDITIONAL 10	1 ADDITIONAL SAMPLE

SAMPLES SHALL BE TESTED FOR COMPRESSIVE STRENGTH AS FOLLOWS:
ONE CYLINDER AT 3 DAYS (POST TENSIONED CONCRETE ONLY)
ONE CYLINDER AT 7 DAYS
TWO CYLINDERS AT 28 DAYS

C9. BEAM DEPTHS ARE WRITTEN FIRST AND INCLUDE SLAB THICKNESS. UNLESS NOTED/ DETAILED OTHERWISE ON DRAWINGS.

C10. SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.

C11. NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT PRIOR APPROVAL OF THE ENGINEER.

C12. CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED AND USE ONLY WHERE SHOWN OR SPECIFICALLY APPROVED BY THE ENGINEER.

C13. ALL CONCRETE COLUMNS ARE TO BE POURED A MINIMUM OF 4 HOURS PRIOR TO SLAB OR BEAM OVER.

C14. DRIP GROOVES ARE TO BE PROVIDED AT ALL EXPOSED EDGES. COVER TO REINFORCEMENT IS TO BE MAINTAINED.

C15. CONDUITS, PIPES AND THE LIKE SHALL NOT BE PLACED WITHIN THE CONCRETE COVER.

C16. ALL CONCRETE (INCLUDING FOOTINGS AND SLABS ON GROUND) SHALL BE MECHANICALLY VIBRATED TO ACHIEVE FULL COMPACTION.

C17. SAWN CUT JOINTS ARE TO BE CUT AFTER THE CONCRETE HAS SUFFICIENTLY HARDENED THAT WILL NOT BE DAMAGED BY THE SAWING BUT BEFORE SHRINKAGE CRACKING CAN OCCUR.

C18. CURING OF ALL CONCRETE SHALL BE IN ACCORDANCE WITH AS3600 AND SHALL COMMENCE WITHIN 2 HOURS OF FINISHING OPERATIONS. CURING SHALL BE BY CONTINUAL SATURATION WITH POTABLE WATER FOR 3 DAYS FOLLOWED BY PREVENTION OF MOISTURE LOSS FOR THE NEXT 4 DAYS USING POLYTHENE SHEETING OR WET HESSIAN PROTECTED FROM WIND OR TRAFFIC AND THEN ALLOWING GRADUAL DRYING OUT. CURING COMPOUNDS MAY BE USED PROVIDED THAT THEY COMPLY WITH AS3799 AND DO NOT AFFECT FLOOR FINISHES. THE COMPATIBILITY OF CURING COMPOUNDS WITH PROPOSED APPLIED FINISHES SHALL BE VERIFIED PRIOR TO APPLICATION. CURING COMPOUNDS ARE TO BE APPLIED UNIFORMLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION. PVA BASED CURING COMPOUNDS ARE NOT ACCEPTABLE.

C19. ALIPHATIC ALCOHOL:WHEN SHADE TEMPERATURE EXCEEDS 35° C SPRAY THE EXPOSED SURFACE OF CONCRETE SLAB DURING THE PLACING AND FINISHING OPERATION WITH A FINE FILM OF APPROVED ALIPHATIC ALCOHOL. REPEAT THE SPRAY IF THE SPRAYED SURFACE HAS BEEN RE-WORKED.

C20. ENSURE ADEQUATE SUPPLY OF ALIPHATIC ALCOHOL ON SITE BEFORE COMMENCING CONCRETE WORK.

C21. SLIP JOINTS ARE TO BE USED ON ALL LOAD BEARING MASONRY WALLS. USE TWO LAYERS OF GALVANIZED FLAT STEEL WITH GRAPHITE GREASE BETWEEN IN INTERNAL SKIN & TWO LAYERS OF STAINLESS STEEL WITH GRAPHIC GREASE BETWEEN IN EXTERNAL SKINS. PROVIDE MORTAR LEVELLING STRIP AS REQUIRED.

C22. NON LOAD BEARING MASONRY SHALL BE SEPARATED FROM THE SOFFIT OF SLABS AND BEAMS BY 20mm.

CONCRETE NOTES CONTINUED

C23. MASONRY WALLS MUST NOT BE CONSTRUCTED ON SUSPENDED CONCRETE UNTIL ALL TEMPORARY SUPPORTS ARE REMOVED AND ALL MASONRY TO BE LAID HAS BEEN STACKED ADJACENT TO PROPOSED POSITION.

C24. CEMENT STABILISED BACKFILL MATERIAL SHALL CONSIST OF BASE COURSE MATERIAL, OR OTHER SUITABLE MATERIAL APPROVED BY THE ENGINEER, STABILISED IN THE PROPORTION OF 100KG OF TYPE GP PORTLAND CEMENT TO ONE CUBIC METER OF UNCOMPACTED BACKFILL MATERIAL. WATER FOR CEMENT STABILISATION SHALL BE CLEAN AND POTABLE.

TYPICAL OPENINGS IN SLABS

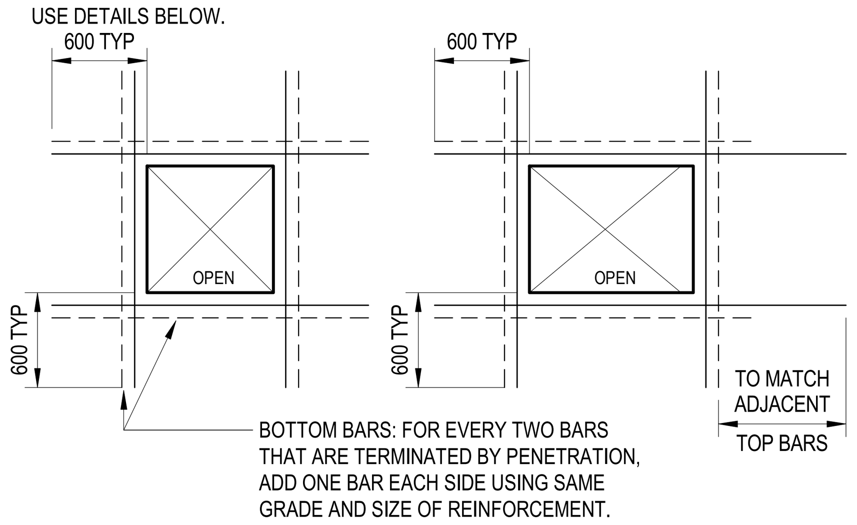
C25. LOCATION OF ALL OPENINGS TO BE TO THE APPROVAL OF ACOR.

C26. FOR OPENINGS LESS THAN 300 x 300mm BARS TO BE RE-ARRANGED AROUND HOLE.

C27. FOR PENETRATIONS GREATER THAN 1000 x 1000mm REFER TO ENGINEER'S PLANS. WHERE OPENINGS ARE NOT DETAILED, CONTACT ENGINEER IMMEDIATELY.

C28. TOP BARS:FOR EVERY TWO BARS THAT ARE TERMINATED BY OPENINGS, ADD ONE BAR EACH SIDE USING SAME GRADE AND SIZE OF REINFORCEMENT. WHERE NO TOP BARS ARE SHOWN, ADD 1-N16 TOP EACH SIDE OF OPENING.

C29. FOR PENETRATIONS GREATER THAN 300 x 300mm BUT LESS THAN 1000 x 1000mm USE DETAILS BELOW.



PIPE PENETRATIONS THROUGH BEAM

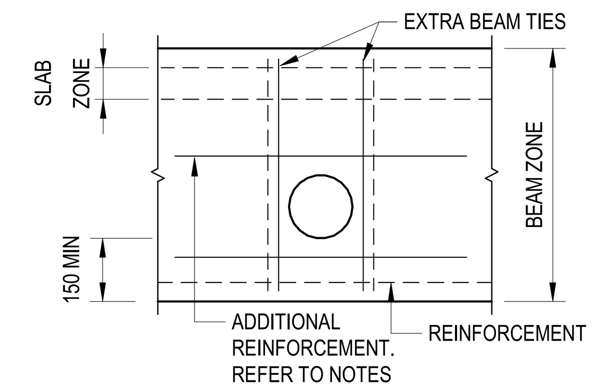
C30. LOCATION OF HOLES TO BE TO THE APPROVAL OF THE STRUCTURAL ENGINEER.

C31. FOR PIPES UPTO 90 DIAMETER, ADD ONE ROW OF TIES EACH SIDE OF PIPE.

C32. FOR PIPES 90 DIAMETER TO 150 DIAMETER, ADD TWO ROWS OF TIES EACH SIDE OF PIPE AND 1-N16 HORIZONTAL BAR 1200 LONG TOP AND BOTTOM OF PIPE AT EVERY VERTICAL TIE LEG.

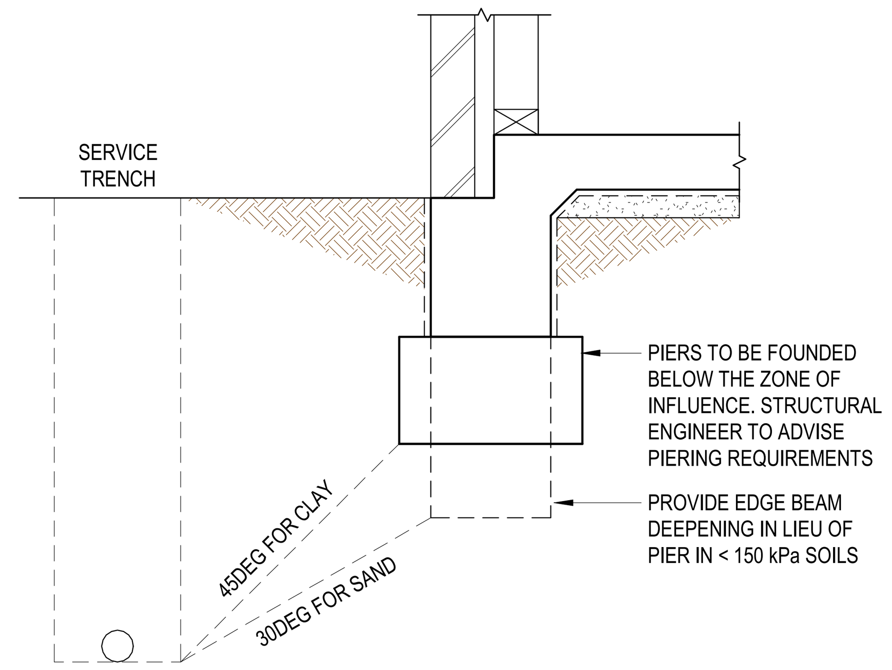
C33. FOR HOLES GREATER THAN Ø150 REFER TO ENGINEER'S DETAILS. WHERE PENETRATIONS ARE NOT DETAILED, CONTACT STRUCTURAL ENGINEER IMMEDIATELY.

C34. LOCATION OF HOLES TO BE TO THE APPROVAL OF THE STRUCTURAL ENGINEER.



PIERING REQUIREMENT

C35. WHERE A SERVICE TRENCH IS PARALLEL TO A SIDE OF THE SLAB, WHETHER THE SLAB BE IN AN EXCAVATED OR FILLED AREA, THEN PIERING TO SUPPORT THE SLAB BESIDE THE SERVICE TRENCH IS ONLY REQUIRED IF THE SERVICE LINE IS BELOW A LINE OF INFLUENCE DRAWN FROM THE BOTTOM OF THE EDGE BEAM. REFER TO DIAGRAM BELOW.



C36. THESE NOTES ARE INTENDED AS A GUIDE. THERE IS ALWAYS A POSSIBILITY OF SITE CONDITIONS REQUIRING VARIATION TO THESE PROCEDURES. IN SUCH CASES, THE STRUCTURAL ENGINEER MUST BE CONSULTED.

Issue.	Description	Date	Drawn	Approved
4	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
3	CROWN CERTIFICATE ISSUE 1	29.04.2024	RT	AB
2	CROWN CERTIFICATE ISSUE 1	09.04.2024	RT	MG
1	CROWN CERTIFICATE ISSUE 1	28.03.2024	RT	AB

North

Scale

Client

NSW GOVERNMENT

Architect

EJE architecture

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NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
SPECIFICATION NOTES SHEET 1

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 1

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	XX	XX	S-0001	4

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REINFORCEMENT NOTES

R1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600, AS4671 AND OTHER RELEVANT AUSTRALIAN CODES.

R2. REINFORCEMENT TYPE AND GRADE.

SYMBOL	TYPE	MPa	DUCTILITY CLASS
N	HOT ROLLED DEFORMED BARS	500	NORMAL
R	HOT ROLLED PLAIN BARS	250	NORMAL
W	COLD DRAWN PLAIN ROUND WIRE	500	LOW
SL	SQUARE WELDED MESH	500	LOW
RL	RECTANGULAR WELDED MESH	500	LOW
LTM	RECTANGULAR WELDED MESH	500	LOW

R3. ALL REINFORCEMENT TO CONFORM TO AS4671, CURRENT EDITIONS WITH AMENDMENTS. REINFORCEMENT NOTATION GIVES THE FOLLOWING INFORMATION: NO. OF BARS, TYPE, SIZE (MM), SPACING (MM), LAYER. FOR EXAMPLE 17N16 -250 T.FABRIC OR MESH NOTATION GIVES THE FOLLOWING INFORMATION: "RL"OR "SL", PRODUCT CODE, LAYER. FOR EXAMPLE SL82 T.

R4. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY SHOWN IN TRUE PROJECTION.

R5. COVER TO REINFORCEMENT -CLEAR COVER TO TO ALL REINFORCEMENT FOR DURABILITY SHALL BE AS INDICATED IN THE CONCRETE NOTES. COVER SHALL NOT BE LESS THAN THE SIZE OF THE AGGREGATE OR THE MAIN BAR. PIPES OR CONDUITS SHALL NOT BE PLACED WITHIN THE COVER TO REINFORCEMENT. ADDITIONAL COVER MAY BE REQUIRED TO ACHIEVE FIRE RATING -REFER TO DESIGN DRAWINGS. SUPPORT REINFORCEMENT ON MILD STEEL PLASTIC TIPPED CHAIRS, PLASTIC CHAIRS OR CONCRETE CHAIRS AT NOT GREATER THAN 1 METRE CENTRES BOTH WAYS. IN EXPOSED CONDITIONS B2 OR C (TO AS3600)

R6. ALL REINFORCEMENT SHALL BE HELD RIGIDLY IN POSITION WITHIN THE SPECIFIED TOLLERANCES BEFORE AND DURING CONCRETE PLACING WITH APPROVED BAR CHAIRS, NON CORROSIVE BAR CHAIRS SHALL BE USED FOR ALL OFF FORM SURFACES.

R7. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED WITHOUT THE APPROVAL OF THE ENGINEER.

R8. WELDING OF REINFORCING BARS MAY BE CARRIED OUT IF APPROVED, PROVIDED THAT THE FOLLOWING IS COMPLIED WITH:

A) THE STEEL IS PREHEATED UNIFORMLY THROUGH AND BEYOND THE PORTION TO BE WELDED

B) THE TEMPERATURE OF THE STEEL DOES NOT EXCEED 450ºC

C) THE BAR IS NOT COOLED BY QUENCHING

SHOULD THE BAR BE HEATED TO ABOVE 450ºC, THE CHARACTERISTIC YIELD STRESS WILL BE REDUCED TO 250MPa AND THE ENGINEER SHOULD BE CONTACTED IMMEDIATELY FOR ASSESSMENT. THE BAR MAY NOT BE HEATED TO MORE THAN 600ºC AS A MAXIMUM LIMIT. PRE-HEATING IS NOT REQUIRED WHEN BARS ARE WELDED IN ACCORDANCE WITH AS/NZS 1554.3: 2014 STRUCTURAL STEEL WELDING PART 3: WELDING OF REINFORCING STEELS. HYDROGEN CONTROLLED ELECTRODES ARE REQUIRED FOR ALL WELD TYPES, AND MATCHING STRENGTH ELECTRODES ARE REQUIRED FOR BUTT WELDS

R9. PROVIDE DISTRIBUTION REINFORCEMENT OR TIE BARS IF NOT SHOWN. WHERE NECESSARY PROVIDE N12-400 CENTRES (SPLICE 450).

R10. SITE BENDING OF N BARS SHALL BE DONE COLD WITH POWER OR MECHANICAL BENDING TOOLS AND A MANDREL OR FORMER WITH A BAR DIAMETER OF 5 TIMES THE BAR SIZE. NOTE: IF N BARS ARE HEATED ABOVE 450°C (LESS THAN RED HEAT) THEY LOSE STRENGTH.

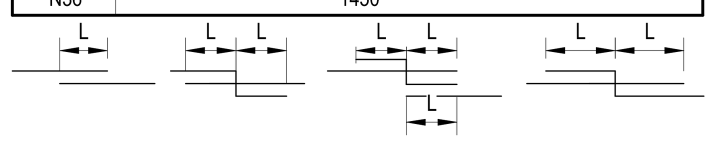
R11. CONDUITS AND OTHER CAST IN ITEMS SHALL BE FABRICATED AND INSTALLED SO THAT NO CUTTING, BENDING OR DISPLACEMENT OF THE REINFORCEMENT FROM ITS PROPER POSITION WILL BE REQUIRED.

R12. REINFORCEMENT LAPS:
LAP REINFORCEMENT ONLY AT LOCATIONS SHOWN ON THE STRUCTURAL DRAWINGS OR AS OTHERWISE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.

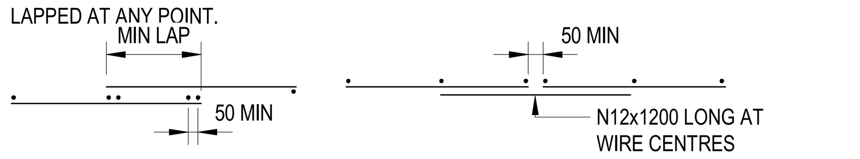
SLAB REINFORCEMENT - LAP LENGTH (mm)			
BAR DIA.	CONCRETE GRADE		
	25 MPa	32 MPa	40 MPa
N12	600	500	450
N16	850	750	650
N20	1100	1000	900

BEAM REINFORCEMENT - LAP LENGTH (mm)						
BAR DIA.	<300mm CONCRETE CAST BELOW THE BAR			>300mm CONCRETE CAST BELOW THE BAR		
	CONCRETE GRADE			CONCRETE GRADE		
	25MPa	32MPa	40MPa	25MPa	32MPa	40MPa
N12	600	500	450	750	650	600
N16	850	750	650	1100	950	850
N20	1100	1000	900	1450	1300	1150
N24	1400	1250	1100	1800	1600	1400
N28	1700	1500	1350	2200	1950	1700
N32	2000	1800	1600	2600	2300	2050
N36	2400	2100	1850	3050	2700	2400

BAR DIA.	COLUMN AND WALL REINFORCEMENT - LAP LENGTH (mm)
N12	500
N16	650
N20	800
N24	950
N28	1150
N32	1300
N36	1450



R13. LAPS IN MESH (FABRIC) SHALL COMPLY WITH AS3600. THE TWO OUTERMOST TRANSVERSE WIRES OF ONE SHEET SHALL OVERLAP THE TWO OUTERMOST TRANSVERSE WIRES OF THE SHEET BEING LAPPED BY 25MM. A MAXIMUM OF 3 SHEETS OF MESH SHALL BE LAPPED AT ANY POINT.



ALTERNATIVE FABRIC SPLICE DETAIL

R14. SLAB REINFORCEMENT SHALL EXTEND 70mm ONTO SUPPORTING WALLS, WITH 50% OF BOTTOM BARS COGGED TO ACHIEVE ANCHORAGE AT SIMPLY SUPPORTED ENDS. MESH IN SLABS SHALL EXTEND 70mm ONTO SUPPORTING WALLS WITH A CROSS WIRE.

R15. ALL BEAM TIES ARE TO HAVE BAR ANCHORAGES LOCATED ON THE TOP FACE OF THE BEAM UNO.

R16. REINFORCEMENT BAR JOGGLES SHALL BE 1 BAR DIA. OVER A LENGTH OF12 BAR DIA.

DRILLED IN CHEMICAL AND MECHANICAL ANCHOR NOTES

DA1. DRILLED ANCHORS SHALL BE USED WHERE SHOWN ON THE DRAWINGS, OR WHERE PERMITTED IN WRITING BY THE ENGINEER. SUBMIT DETAILS OF PROPOSED ANCHORS, BEFORE USE, IN WRITING, TO THE ENGINEER FOR REVIEW. INSTALL ANCHORS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN DIRECTIONS. TEST ANCHORS AS SPECIFIED BELOW.

DA2. SPACING AND EDGE DISTANCES SHALL BE AS SHOWN, OR IN ACCORDANCE WITH THE MANUFACTURERS DIRECTIONS, AND SHALL BE APPROPRIATE FOR THE LOAD ON THE ANCHOR. UNLESS SHOWN OTHERWISE OR ALLOWED BY THE MANUFACTURER, THE FOLLOWING MINIMUMS SHALL BE USED FOR M20 CHEMICAL ANCHORS IN CONCRETE:

A) SPACING=150mm

B) EDGE DISTANCE=150mm.

DA3. FOR ATTACHMENT TO HOLLOW MASONRY OR CONCRETE PANELS, USE HILTI HIT HY270 OR EQUIVALENT.

DA4. HOLES IN STEELWORK SHALL BE:
2mm OVERSIZE WHEN THE STEEL IS TO BE USED AS A DRILLING TEMPLATE, OR 6mm MAXIMUM OVERSIZE WHERE THE BOLTS ARE INSTALLED BEFOREHAND.

ANCHOR BOLT NOTES

AB1. ANCHOR BOLT MATERAIL TO BE GRADE 250 TO AS3678 U.N.O.

AB2. ALL ANCHOR BOLTS SHALL HAVE MIN ONE FLAT WASHER AND ONE NUT U.N.O.

AB3. ALL CHEMICAL ANCHOR BOLTS SHALL BE M20 RAMSET, HILTI OR APPROVED EQUIVALENT, U.N.O.

AB4. ALL ANCHOR BOLTS SHALL BE TIGHTENED TO THE SNUG TIGHT CONDITION.

AB5. RESIN GROUTING OF ANCHOR BOLTS ARE AND/OR DOWEL BARS INTO PREFORMED/DRILLED HOLES SHALL BE CARRIED OUT USING HILTI HIT-HY 200-R EPOXY ADHESIVE INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN PROCEDURE, UNLESS NOTES OTHERWISE.

AB6. ALL ANCHOR BOLTS SHALL BE INSTALLED WITH EXPANDED POLYSTYRENE BLOCKOUTS.

A) WIDTH = 3 x BOLT DIAMETER

B) LENGTH = 7 x BOLT DIAMETER

CONSTRUCTION LOADING ON SLABS

CL1. U.N.O. ON PLANS, SLABS ON GRADE AND SUSPENDED SLABS HAVE BEEN DESIGNED TO SUIT THE END USE AS SHOWN ON THE LOADING NOTES AND HAVE NOTBEEN DESIGNED TO CARRY EXCESS LOADS (EITHER DISTRIBUTED OR POINT LOADS) FROM BUILDERS EQUIPMENT, MATERIALS OR TEMPORARY WORKS.

CL2. IF THE BUILDER WISHES TO STORE MATERIALS OR RUN EQUIPMENT / VEHICLES ON SLABS WHICH ARE IN EXCESS OF THE END USERS REQUIREMENTS THE BUILDER MAY, AT THEIR OWN EXPENSE, EITHER:

A) HAVE THE SLAB DESIGN REVISED TO SUIT THEIR REQUIREMENTS,

B) BRIDGE OVER THE SLAB, OR

C) DELAY INSTALLATION OF THE SLAB UNTIL LATER IN THE CONSTRUCTION PROGRAMME WITH APPROPRIATE JOINTING AND SLAB BACK-PROPPING.

DESIGN AND DOCUMENTATION, & DELAY COSTS ASSOCIATED WITH SUCH WORK SHALL BE BORNE BY THE BUILDER.

STRUCTURAL INSPECTION DURING CONSTRUCTION

SIN1. UNLESS AGREED OR SPECIFIED OTHERWISE, THE BUILDER IS REQUIRED TO HOLD CONSTRUCTION AND NOTIFY THE STRUCTURAL ENGINEER FOR INSPECTION AT THE FOLLOWING POINTS:

A) COMPLETED EXCAVATION, FORMWORK, REINFORCEMENT, MEMBRANES AND EMBEDMENTS PRIOR TO PLACING CONCRETE.

B) COMPLETED ERECTED STRUCTURAL, TIMBER FRAMING PRIOR TO COVERING (UNLESS COVERED BY AS1684 NATIONAL TIMBER FRAMING CODE).

C) COMPLETED ERECTED STRUCTURAL STEELWORK PRIOR TO COVERING.

SIN2. 48 HOURS OR AT LEAST 2 BUISNESS DAYS NOTICE IS REQUIRED FOR INSPECTION. ALL WORK TO BE INSPECTED MUST BE COMPLETED PRIOR TO THE TIME OF INSPECTION.

SIN3. SITE INSPECTIONS DO NOT RELIEVE THE BUILDER OF RESPONSIBILITY FOR THE COMPLETENESS AND CORRECTNESS OF HIS WORK.

SIN4. INSPECTIONS WILL BE PERIODIC AND REPRESENTATIVE AND WILL NOT NECESSARILY BE MADE OF ALL WORKS. ELECTION TO INSPECT OR OTHERWISE WILL BE AT THE ENGINEER'S DISCRETION. THE BUILDER IS TO ALLOW TIME AND PROVIDE SITE ACCESS FOR THE INSPECTION TO TAKE PLACE AND IS TO HAVE A RESPONSIBLE SITE FOREMAN AVAILABLE TO RECEIVE ANY COMMENT OR DIRECTION FROM THE ENGINEER.

SIN5. WHERE STRUCTURAL ELEMENTS ARE DESIGNED AND CERTIFIED BY OTHER PARTIES, THE BUILDER SHALL OBTAIN WRITTEN CERTIFICATION, PRIOR TO PROCEEDING WITH ANY CONSTRUCTION WHICH MAY PREVENT INSPECTION OR REMEDIAL WORKS BEING UNDERTAKEN TO THESE ITEMS.

SIN6. WHERE INSPECTION CERTIFICATES ARE REQUIRED FOLLOWING EACH INSPECTION, A PRELIMINARY INSPECTION WILL BE UNDERTAKEN BY THE PROJECT ENGINEER AND A REGISTERED ENGINEER WILL CONDUCT AN ADDITINAL FOLLOW-UP INSPECTION ONCE ALL DEFECTS ARE CONFIRMED BY THE BUILDER AS HAVING BEEN RECTIFIED. IT IS THE RESPNSIBLILITY OF THE BUILDER TO ENSURE SUFFICIENT TIME IS ALLOWED FOR IN THE PROGRAMME TO FACILITATE THE ABOVE.

STRUCTURAL STEELWORK NOTES

S1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH STEEL STRUCTURE -AS 4100 AND WELDING -AS 1554 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENT.

S2. STEEL COMPONENTS SHALL CONFORM TO THE FOLLOWING TABLE U.N.O

COMPONENT	AUS. STANDARD	GRADE
PLATE	3678	250
HOT ROLLED SECTIONS	3679	300
CHS > 80mm DIA.	1163	C350
CHS < 80mm DIA.	1163	C250
RHS & SHS	1163	C350
PURLINS AND GIRTS	1397	450
WELDED BEAMS & COLUMNS	3679	300
FLAT BARS & RODS	3679	250

S3. BOLT DESIGNATION:
ALL BOLTS TO BE 8.8/S UNLESS NOTED OTHERWISE

A) 4.6/S COMMERCIAL BOLTS OF GRADE 4.6 TO AS 1111 SNUG TIGHTENED.

B) 8.8/S HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1252 SNUG TIGHTENED.

C) 8.8/TB HIGH STRENGTH BOLTS OF GRADE 8.8 TO AS 1252 FULLY TENSIONED TO AS 4100 AS A BEARING JOINT.

D) 8.8/TF HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1252 FULLY TENSIONED TO AS 4100 AS A FRICTION JOINT WITH CONTACT SURFACES LEFT UNCOATED.

S4. ALL BOLTS SHALL BE M20 GRADE 8.8/S U.N.O.
ALL STUDS, PURLINS & GIRTS SHALL HAVE M20 GRADE 4.6/S BOLTS U.N.O.
NO STEEL TO STEEL CONNECTION TO HAVE LESS THAN 2 BOLTS

S5. ALL PLATES TO BE 10 mm THICK U.N.O. ALL BASEPLATES TO BE 20mm THICK U.N.O.

S6. UNLESS NOTED OTHERWISE, ALL FILLET WELDS SHALL BE:

A) 6mm CONTINUOUS FOR PLATES LESS THAN OR EQUAL TO 12 PL

B) 8mm CONTINUOUS FOR 16 PL

C) 10mm CONTINUOUS FOR 20 PL AND ABOVE.

ELEMENT	WELD CATEGORY
ALL	SP

ALL BUTT WELDS TO BE COMPLETE PENETRATION BUTT WELDS. ELECTRODES TO BE E49XX U.N.O. WELD CATEGORY AS TABULATED ABOVE. ALL WELDS SHALL BE IN ACCORDANCE WITH AS1554.

S7. QUALITY MANAGEMENT OF WELDING SHALL BE IN ACCORDANCE WITH AS1554.1 AND AS/NZS ISO 3834. THE QUALITY ASSURANCE SYSTEM SHALL INCLUDE THAT ALL WELDS SHALL BE UNDERTAKEN BY A SUITABLY QUALIFIED WELDER UNDER THE SUPERVISION OF AND SIGN-OFF OF A QUALIFIED WELDING INSPECTOR USING VISUAL INSPECTION (VT).

S8. WHERE SPECIFICALLY CALLED UP ON THE DRAWINGS OR IN THE SPECIFICATIONS, IN ADDITION TO THE REQUIREMENTS OF THE QUALITY ASSURANCE SYSTEM, THE INSPECTION REGIME SHALL BE EXPANDED TO INCLUDE NON-DESTRUCTIVE TESTING OF A REPRESENTATIVE SAMPLE OF WELDS. AT A MINIMUM THE GREATER OF 5% OR 2No. TESTS OF EACH SPECIFIED WELD SHALL UNDERGO NON-DESTRUCTIVE TESTING OTHER THAN VISUAL INSPECTION (VT) TO VERIFY COMPLIANCE WITH THE STRUCTURAL SPECIFICATION. SUCH NON-DESTRUCTIVE TESTING SHALL BE EITHER RADIOGRAPHY INSPECTION (RT) OR ULTRASONIC INSPECTION (UT). FOR THE ELIMINATION OF DOUBT, WELDS OF VARYING THROAT THICKNESS SHALL BE CONSIDERED AS SEPARATE WELD SPECIFICATIONS AND SHALL EACH MEET THE MINIMUM TESTING REQUIREMENT. IN THE EVENT THAT ANY WELD IS FOUND DEFICIENT OF THE SPECIFICATION, THAT WELD SHALL BE RECTIFIED TO MEET THE MINIMUM REQUIREMENTS. ADDITIONALLY, A FURTHER 5% (OR 2No. TESTS, WHICHEVER IS GREATER) OF THE NON-CONFORMING WELD TYPE SHALL UNDERGO FURTHER NON-VISUAL NON-DESTRUCTIVE TESTING; THIS PROCESS SHALL BE REPEATED UNTIL SUCH TIME AS ZERO NON-CONFORMANCES ARE FOUND. ALL TESTING SHALL BE PERFORMED BY A SUITABLY QUALIFIED TECHNICIAN WORKING UNDER AN APPROVED QUALITY ASSURANCE SYSTEM, AND ALL TESTS INCLUDING RE-TESTING REQUIRED AS A RESULT OF A NON CONFORMING RESULTS SHALL BE UNDERTAKEN AT THE EXPENSE OF THE CONTRACTOR.

S9. THE CONTRACTOR SHALL MAKE THE NECESSARY ALLOWANCES FOR COORDINATING ALL ARCHITECTURAL & STRUCTURAL ELEMENTS IN THE PREPARATION OF STRUCTURAL STEELWORK SHOP DRAWINGS & SUBSEQUENT FABRICATION & ERECTION. CONNECTION DETAILS SHOWN ON STRUCTURAL DRAWINGS ARE TYPICAL ONLY. WHERE A DETAIL IS NOT SHOWN THE FABRICATOR / SHOP DETAILER SHALL PREPARE DETAILS IN ACCORDANCE WITH
AS4100 & THE AISC PUBLICATIONS `DESIGN OF STRUCTURAL CONNECTIONS' & `STANDARDISED STRUCTURAL CONNECTIONS'. THESE DETAILS SHALL TAKE DUE ACCOUNT OF ARCHITECTURAL & SERVICE REQUIREMENTS & SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. THE ENGINEER WILL SUPPLY LOADS AS REQUIRED. ALL COSTS & TIME IMPLICATIONS ASSOCIATED WITH THESE WORKS ARE TO BE ALLOWED FOR BY THE CONTRACTOR.

S10. NOT ALL SECONDARY STEELWORK IS SHOWN ON THE STRUCTURAL DRAWINGS. CLEATS, CONNECTIONS, HOLES, LINTELS AND OTHER MISCELLANEOUS STEELWORK SHALL BE PROVIDED AS REQUIRED BY THE ARCHITECTURAL OR OTHER CONSULTANT'S DRAWINGS OR SPECIFICATIONS. IN PARTICULAR ADDITIONAL PLATES OR ANGLES WELDED TO LINTELS AS REQUIRED TO SUPPORT DOOR TRACKS. U.N.O., ALLOW FOR PURLINS EACH SIDE OF EACH BOX GUTTER AND 75 X 5 DURAGAL TRIMMERS TO SUPPORT EDGES OF ROOF SHEETS AT HIPS, VALLEYS, PENETRATIONS AND ANY OTHER UNSUPPORTED EDGES.

S11. STEELWORK EXPOSURE CLASSIFICATIONS TO AS2312 AS SPECIFIED IN STRUCTURAL DESIGN LOAD NOTE L7.

S12. STRUCTURAL STEELWORK SHALL HAVE THE FOLLOWING TREATMENT U.N.O:

ELEMENT	SURFACE PREPERATION	PROTECTIVE COATING
INTERIOR MEMBERS	BLAST CLEAN TO CLASS 2 (AS 1627)	ZINC PHOSPHATE PRIMER FILM THICKNESS 0.075mm
EXPOSED TO WEATHER INCLUDING ALL STIFFENERS	PICKLE (AS 1627 PART 5)	HOT DIP GALVANISED AS2312.2 HDG600

S13. ALL STRUCTURAL STEELWORK WHICH IS EXPOSED, STEELWORK IN CONTACT WITH EXTERNAL CAVITY BRICKWORK & ALL LINTELS SHALL BE HOT DIP GALVANISED OR STAINLESS STEEL -REFER TO DRAWINGS. GALVANISING OF STRUCTURAL SECTIONS SHALL BE IN ACCORDANCE WITH AS 4680 AND THE GALVANISING OF THREADED FASTENERS SHALL BE IN ACCORDANCE WITH AS 1214.

S14. AFTER FABRICATION ALL EXPOSED STEELWORK AND STEELWORK BUILT IN EXTERNAL WALLS INCLUDING FITMENTS, NUTS, BOLTS, WASHERS AND HOLDING DOWN BOLTS TO BE HOT DIP GALVANISED.

S15. GALVANIZED STEELWORK THAT IS SITE WELDED OR SUSTAINS ANY OTHER KIND OF SURFACE DAMAGE IS TO BE PREPARED TO AS1627:2 CLASS 3 AND PRIMED WITH 2 COATS OF GALVANITE (MANUFACTURED BY JOTUN) TO MANUFACTURERS SPECIFICATION.

STRUCTURAL STEELWORK NOTES CONTINUED

S16. FOR PAINT COATING, REPAIR FIELD DAMAGE AND SITE WELDS USING THE SAME PARENT COATING SYSTEM. SUCCESSIVE PAINT LAYERS SHALL BE ABRADED TO A FEATHERED EDGE OF APPROXIMATLEY 25mm WIDTH PER LAYER. MECHANICALLY GRIND SURFACES TO ACHIEVE SMOOTH AND BRIGHT METAL COMPARABLE TO CLASS 2.5 PAINT REINSTATEMENT SHALL FULLT COVER THE FEATHERED PART OF THE SAME LAYER.

S17. ALL STEELWORK BELOW GROUND OR FINISHED SURFACE LEVEL SHALL BE ENCASED IN 75mm MINIMUM CONCRETE ALL ROUND.

S18. THE ENDS OF ALL TUBULAR MEMBERS ARE TO BE SEALED WITH NOMINAL THICKNESS PLATES AND CONTINUOUS FILLET WELD UNLESS OTHERWISE SHOWN ON THE DRAWINGS. GALVANISED TUBULAR MEMBERS ARE TO BE PROVIDED WITH THE APPROPRIATE PROVISION FOR VENTING DURING GALVANISING.

S19. THE SUB-CONTRACTOR SHALL PROVIDE ALL CLEATS AND DRILL ALL HOLES NECESSARY FOR ALL ATTACHMENTS WHETHER OR NOT DETAILED ON THE DRAWINGS.

S20. PROVIDE HOOK BOLTS AT EVERY THIRD PURLIN TO CONTROL BRACE SAG.

S21. ALL STEELWORK IS TO BE TEMPORARILY BUT SECURELY BRACED UNTIL ALL FINAL BRACING, CLADDING & STABILISING BRICK OR BLOCKWORK HAVE BEEN COMPLETED.

S22. GRAVITY &/OR GAUGE LINES TO INTERSECT U.N.O.

S23. CONCRETE ENCASED STEELWORK TO BE WRAPPED WITH F41 MESH & TO HAVE 50mm MIN. COVER OF CONCRETE GRADE 25 TO AS3600.

S24. ALL BASEPLATES ARE TO BE FULLY GROUTED WITH CONBEXTRA GP CEMENTITIOUS NON-SHRINK GROUT, OR SIMILAR, WITH A MINIMUM COMPRESSIVE STRENGTH OF 50 MPa.

S25. SHOP DRAWINGS SHALL BE PREPARED BY THE FABRICATOR FOR ALL STRUCTURAL STEELWORK. SUBMIT COPIES OF ALL WORKSHOP DRAWINGS TO ACOR CONSULTANTS FOR STRUCTURAL APPROVAL AT LEAST 14 DAYS PRIOR TO FABRICATION. DO NOT FABRICATE STEELWORK UNTIL WORKSHOP DRAWINGS ARE APPROVED.

S26. ALL EXISTING DIMENSIONS AND LEVELS (INCLUDING HOLDING DOWN BOLTS AS CONSTRUCTED) AFFECTING NEW STEELWORK SHALL BE CHECKED ON SITE AND INCORPORATED IN WORKSHOP DRAWINGS.

S27. ALL BOLT HOLES SHALL BE 2mm LARGER THAN THE NOMINAL BOLT DIAMETER, UNLESS OTHERWISE NOTED.

S28. THE CONTRACTOR SHALL ENGAGE A FIRM EXPERIENCED IN SUPERVISION OF STRUCTURAL STEEL FABRICATION AND ERECTION, AND APPROVED BY THE ENGINEER. A MINIMUM OF 20% OF THE STEELWORK IS TO BE INSPECTED. ERECTION TOLERANCES SHALL COMPLY WITH AS4100 UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.

S29. THE CONTRACTOR SHALL ENSURE THAT THE ERECTION OF THE STEELWORK COMPLIES WITH THE WORK SAFE, INDUSTRY STANDARD, SAFE ERECTION OF STRUCTURAL STEEL FOR BUILDINGS. THE CONTRACTOR SHALL ENGAGE AND PAY FOR THE SERVICES OF AN APPROPRIATELY QUALIFIED AND EXPERIENCED STRUCTURAL STEELWORK ERECTION ENGINEER AS DEFINED IN THE ABOVE MENTIONED WORK SAFE INDUSTRY STANDARD.

PURLINS AND GIRTS:

S30. ALL PURLINS AND GIRTS TO BE COLD FORMED LIGHT-GAUGE STEEL SECTIONS CONFORMING TO ANZ4600 FOR DESIGN AND TO AS1397 FOR MATERIAL PROPERTIES.

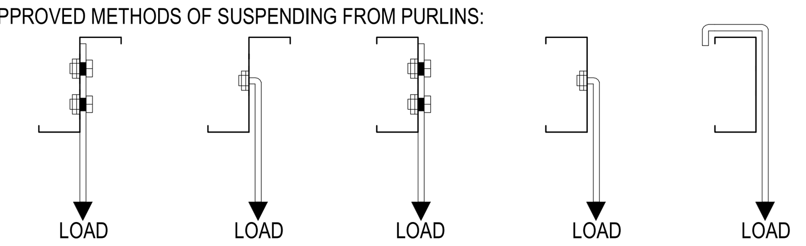
S31. THE OVERALL DIMENSIONS OF PURLINS AND GIRTS SHALL NOT BE LESS THAN THE NOMINAL SIZE GIVEN, BOTH FLANGES SHALL BE LIPPED.

S32. SETOUT OF PURLINS & GIRTS TO BE OBTAINED FROM ARCHITECT'S DRAWINGS OR ROOFING CONTRACTOR.

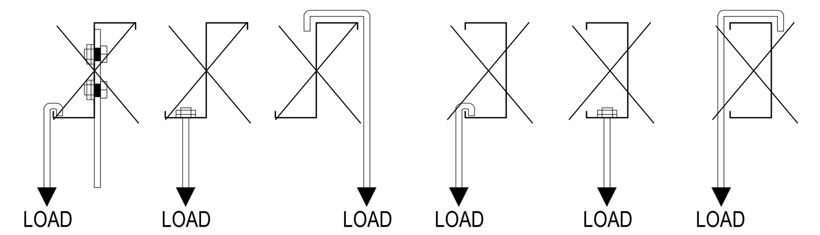
S33. PROVIDE TRIMMER PURLINS BETWEEN MAIN PURLINS TO SUIT ROOF PROFILE(HIPS, VALLEYS, RIDGE LINES ETC.) AND CONNECT WITH PROPRIETARY CLEATS AS RECOMMENDED BY MANUFACTURER.

S34. WHERE NECESSARY TO HANG CEILING, SERVICE PIPES, DUCTWORK ETC. FROM PURLINS, THE BUILDER SHALL ONLY USE THE FOLLOWING APPROVED METHODS.

APPROVED METHODS OF SUSPENDING FROM PURLINS:



NON-APPROVED METHODS OF SUSPENDING FROM PURLINS:



IF IN DOUBT OBTAIN APPROVAL FROM ENGINEER PRIOR TO PROCEEDING WITH INSTALLATION.

S35. PURLINS & GIRTS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS, WITH PARTICULAR REGARD TO BOLT LOCATIONS AND LAP SIZES.

S36. THE CONTRACTOR SHALL ALLOW FOR BRIDGING & SAG RODS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. BRIDGING & SAG RODS TO EXTEND AND FIX TO SLABS, WALL TIES, DOOR & WINDOW HEADERS, WINDOW SILLS, EAVE BEAMS AND RIDGE BEAMS TO ENSURE CORRECT ALIGNMENT.

S37. A MINIMUM OF 1 ROW OF BRIDGING / SAG RODS SHALL BE PROVIDED TO ALL PURLINS & GIRTS, ADEQUATELY TERMINATED AT A SUPPORT TO ENSURE CORRECT ALIGNMENT.

WEB PENETRATIONS:

S38. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE ALL STRUCTURAL ELEMENTS WITH ANY RELEVANT SERVICES DOCUMENTATION AND / OR ARCHITECTURAL REQUIREMENTS.

S39. ANY PROPOSED PENETRATIONS THROUGH STRUCTURAL STEEL MEMBERS ARE TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR INSTALLATION.

S40. THE ENGINEER WILL SUPPLY LOADS OR ADDITIONAL DESIGN AS REQUIRED. ALL COSTS & TIME IMPLICATIONS ASSOCIATED WITH THESE WORKS ARE TO BE ALLOWED FOR BY THE CONTRACTOR.

S41. HAND FLAME CUTTING WILL NOT BE PERMITTED FOR ANY PENETRATION.

STRUCTURAL STEELWORK NOTES CONTINUED

S42. FIRE PROTECTION:
FIRE PROTECTION REQUIREMENTS TO STEELWORK ARE TO BE AS PER FIRE ENGINEERS DETAILS OR ARCHITECTURAL SPECIFICATIONS.

S43. LIGHT WEIGHT STEEL FRAMING:
UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS, ALL STEEL STUD WALL FRAMING AND FIXINGS SHALL BE AS MANUFACTURED BY 'RONDO BUILDING SERVICES PTY. LTD.' OR EQUIVALENT, ALL TO BE IN ACCORDANCE WITH THEIR DESIGN MANUAL AND INSTALLATION MANUALS FOR STEEL STUD WALL SYSTEMS. STEEL STUDS ARE TO BE DESIGNED, CERTIFIED AND CONSTRUCTED BY THE BUILDER.

S44. THE DESIGN SHALL COMPLY WITH AS4600, TO SUIT THE LOADS SPECIFIED IN THE GENERAL NOTES AND THE SPECIFICATION. A REGISTERED STRUCTURAL ENGINEER SHALL CERTIFY THE DESIGN. PROVIDE ALL TRIMMERS, HEADS, NOGGINGS ETC.

GROUTING OF BASE PLATE NOTES

GB1. ALL GROUT SHALL BE CURED BY THE APPLICATION OF 'MBT AUSTRALIA' 'FLOORSEAL' APPLIED TO THE GROUT STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN PROCEDURE.

GB2. THE THICKNESS OF THE GROUT BED SHALL BE 50mm UNLESS NOTES OTHERWISE.

GB3. GROUT ALL STEEL BASES BY DRY PACKING USING GROUT WHICH IS NON-SHRINK AND HAS A MINIMUM COMPRESSIVE STRENGTH AT 7 DAYS OF 40 Mpa

SCREW PILE NOTES

SP1. STEEL SCREW PILES SHALL COMPLY WITH AS2159 -PILING DESIGN AND INSTALLATION. PILES ARE TO BE DESIGNED, CERTIFIED AND INSTALLED BY BUILDER OR SPECIALIST SUB-CONTRACTOR.

SP2. THE PILE DESIGN SHALL INCLUDE FLEXURE INDUCED IN THE PILE AS OUTLINED IN SECTION 5 OF AS2159, THAT RESULT FROM ALLOWABLE INSTALLATION TOLERANCES IN SECTION 7 OF AS2159.

SP3. THE SCREW PILES ARE TO BE DESIGNED FOR BOTH THE LOADS AS SHOWN ON THE DRAWINGS, AND ANY LOADS DUE TO INSTALLATION. LOADS SHOWN ON DRAWINGS ARE WORKING LOADS UNO.

SP4. THE GEOTECHNICAL REPORT FOR THE SITE IS TO BE REFERRED TO FOR GUIDANCE ON PILE DESIGN / FOUNDING DEPTH.

SP5. CALCULATIONS AND PILE LOAD TEST RESULTS TO BE SUBMITTED TO THE GEOTECHNICAL AND STRUCTURAL ENGINEERS FOR APPROVAL PRIOR TO INSTALLING PILES. THIS SHALL NOT RELIEVE THE PILING CONTRACTOR FOR ANY OBLIGATIONS. THE PILING CONTRACTOR SHALL REMAIN COMPLETELY LIABLE FOR THE PILE WORKS.

SP6. THE SAFE WORKING CAPACITY OF PILES SHALL BE ASSESSED BASED ON ENSURING THAT THE DESIGN STRENGTH OF THE PILE (USING APPROPRIATE STRENGTH REDUCTION FACTOR) IS GREATER THAN THE ULTIMATE LIMIT STATE LOAD (EQUAL TO 1.35 x S.W.L. UNLESS OTHERWISE STATED)

SP7. FOR LIMIT STATE GEOTECHNICAL STRENGTH REDUCTION FACTOR VALUE SHALL NOT EXCEED 0.40 UNLESS OTHERWISE STATED IN THE GEOTECHNICAL REPORT, WITHOUT LOAD TESTING AND PRIOR APPROVAL OF THE GEOTECHNICAL ENGINEERS.

SP8. THE DESIGN STRENGTH OF THE PILE IS TO BE TAKEN AS THE LESSER OF THE STRUCTURAL CAPACITY AND THE GEOTECHNICAL CAPACITY.DESIGN STRENGTH OF THE PILE MAY BE EVALUATED USING EITHER OF THE METHODS OUTLINED BELOW:

A) DESIGN GEOTECHNICAL STRENGTH ASSESSED USING ANALYSIS IN ACCORDANCE WITH CHAPTER 4 OF AS2159-2009.

B) DESIGN GEOTECHNICAL STRENGTH ASSESSED USING TESTING IN ACCORDANCE WITH CHAPTER 8 OF AS2159-2009.

SP9. IF THE DESIGN GEOTECHNICAL STRENGTH IS ASSESSED USING TESTING, THE CONTRACTOR SHALL SUBMIT PILING LOGS SPECIFYING PILE SIZE, INSTALLATION TORQUE AND INSTALLATION DEPTH TO THE ENGINEER FOR APPROVAL PRIOR TO PLACING CONCRETE/INSTALLING FLOOR FRAMING.

SP10. TORQUE TO LOAD CORRELATIONS ARE NOT DEEMED SUITABLE FOR PILE CAPACITY CALCULATIONS AND THE PILING CONTRACTOR MUST SUBMIT STATIC ANALYSIS OF THE PILE DESIGN TO PROVE CAPACITY. FOR ALL RELEVANT LOAD CASES STATIC LOAD TESTS SHALL BE UNDERTAKEN. THE GEOTECHNICAL REDUCTION FACTOR IN LIMIT STATE DESIGN BEING APPLIED TO THE MAXIMUM TEST LOAD, IF THE TEST IS NOT TAKEN TO FAILURE -AS SPECIFIED BY THE CODE. THE GEOTECHNICAL REDUCTION FACTOR WILL BE INCREASED DEPENDING ON THE PERCENTAGE OF THE STATIC LOAD TESTS CONDUCTED AS SUGGESTED IN AS2159-2009

SP11. CORROSION ALLOWANCE FOR STEEL PILES TO APPLY TO ALL EXPOSED STEEL SURFACES FOR A DESIGN LIFE OF 50 YEARS UNLESS STATED OTHERWISE. ANY SURFACE COATING APPLIED TO THE PILE SHALL BE IGNORED WHEN CALCULATING CORROSION ALLOWANCE AS THE INTEGRITY OF THE COATING CANNOT BE GUARANTEED DURING THE INSTALLATION PROCESS.ALLOW FOR INCREASED WALL THICKNESS AS NECESSARY TO COMPENSATE FOR CORROSION IN ACCORDANCE WITH SECTION 6 OF AS2159. CONTRACTOR TO INCLUDE COST OF PILING IN TENDER.

SP12. INSTALLATION TORQUES TO BE MONITORED TO RECONCILE EXPECTED GEOTECHNICAL CONDITIONS AND THOSE ACTUALLY ENCOUNTERED DURING INSTALLATION.

SP13. PERMISSIBLE POSITION DEVIATION FOR A PILE AT CUTOFF LEVEL SHALL BE ±75mm IN PLAN POSITION FROM THAT SHOWN ON THE DRAWINGS AND WITHIN 4% OF THE SPECIFIED INCLINATION FOR PILES RAKED UP TO 1 IN 5, AND 7% FOR PILES RAKED MORE THAN 1 IN 5. THE PILE AND ITS CONNECTION TO THE FOOTING MUST BE DESIGNED FOR THESE CONSTRUCTION TOLERANCES AND ANY ECCENTRICITIES AS A RESULT. THE STRUCTURAL ENGINEER IS TO BE NOTIFIED OF ANY SCREW PILES WHICH DO NOT SATISFY THE ABOVE CRITERIA, FOR ANY POSSIBLE FOOTING RECTIFICATION DESIGN. THE CONTRACTOR SHALL PAY FOR ANY COSTS FOR THIS REASSESSMENT, REDESIGN AND CONSTRUCTION.

SP14. PILES SHALL BE TRIMMED TO A LEVEL ±25mm FROM THAT SHOWN ON THE DRAWINGS.

SP15. SCREW PILES TO BE CENTRAL IN FOOTING/BEAM WHERE NOT DIMENSIONED ON GRID.

SP16. TOP OF SCREW PILE TO EXTEND MIN 150 INTO BEAM. ALLOW FOR 10MM CAP PLATE SITE WELDED TO EACH PILE AND MINIMUM 1No. N20 x 600 LONG CROSS BAR THROUGH EACH PILE TO ANCHOR PILE IN BEAM.

SP17. WHERE TOP OF SCREW PILE IS NOT CENTRAL ON FOOTING/BEAM, REFER TO TYPICAL DETAILS FOR REQUIRED MODIFICATIONS TO BEAMS.

SP18. PILE SHAFTS ARE TO BE COMPLETELY FILLED WITH 40 MPa BLOCK CORE FILLING GROUT AS PER REINFORCED BLOCKWORK NOTES, AS SOON AS PRACTICABLE AFTER INSTALLATION, IF FILLING IS DELAYED. THE TOP OF THE PILE IS TO BE TEMPORARILY CAPPED UNTIL THE PILE IS FILLED.

SP19. AT THE COMPLETION FOR THE PILE WORKS THE PILING CONTRACTOR IS TO ISSUE A CERTIFICATION THAT THE PILES HAVE BEEN DESIGNED AND INSTALLED TO CARRY THE LOADS AS DETAILED ON THE STRUCTURAL DRAWINGS AND FOR THE NOMINATED DESIGN LIFE. CERTIFICATION IS TO BE ISSUED BY A CERTIFIED PRACTICING ENGINEER COMPETENT IN PILE DESIGN, APPROVED BY ACOR PRIOR TO FABRICATION OF THE PILES.

SCREW PILES AS AN ALTERNATIVE FOOTING SYSTEM

SP20. THE USE OF STEEL SCREW PILES AS AN ALTERNATIVE FOOTING SYSTEM MAY REQUIRE ALTERATIONS TO THE CONCRETE FOOTINGS SHOWN ON THE DRAWINGS, TO RECTIFY ECCENTRICITIES IN THE PILES. CONSULT ACOR CONSULTANTS REGARDING THE USE OF SCREW PILES BEFORE SUBMITTING ALTERNATIVE TENDERS. ALTERNATIVE TENDERS SHALL ALLOW FOR :THE COST OF ADDITIONAL CONCRETE FOOTINGS THAT MAY BE REQUIRED, AND THE COSTS OF CHANGING THE FOOTING DESIGN AND DRAWINGS.

Issue	Description	Date	Drawn	Approved
3	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
2	CROWN CERTIFICATE ISSUE 1	09.04.2024	RT	MG
1	CROWN CERTIFICATE ISSUE 1	28.03.2024	RT	AB

North

Scale

Client

Architect

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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON ...

TYPICAL SCREW PILE NOTE

SCALE: NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
SPECIFICATION NOTES SHEET 2

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 1

Project No.	Building ID.	Level No.	Drawing No.	Issue
NS230761	XX	XX	S-0002	3

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FORMWORK NOTES

FW1. THE DESIGN, CERTIFICATION, CONSTRUCTION, INSPECTION AND PERFORMANCE OF THE FORMWORK AND FALSE WORK SHALL BE CERTIFIED BY A REGISTERED STRUCTURAL ENGINEER AND IS THE RESPONSIBILITY OF THE BUILDER, EXCEPT TO THE EXTENT THAT FORMWORK DESIGN IS SHOWN ON THE STRUCTURAL DRAWINGS.

FW2. FORMWORK DESIGN, CONSTRUCTION, TOLERANCES AND STRIPPING TIMES SHALL COMPLY WITH AS3610 AND AS3600 UNLESS OTHERWISE APPROVED BY THE STRUCTURAL ENGINEER.

FW3. CONCRETE FORMED SURFACE FINISHES SHALL COMPLY WITH AS3610 AS SPECIFIED BY THE PROJECT ARCHITECT.

FW4. DIMENSIONAL TOLERANCES SHALL COMPLY WITH AS3610 FOR APPROPRIATE FINISH CLASS.

FW5. FORMWORK SHALL BE DESIGNED TO ACCOMMODATE MOVEMENTS AND LOAD REDISTRIBUTION DUE TO POST-TENSIONING.

FW6. FORMWORK SHALL NOT BE DESIGNED TO RELY ON RESTRAINT OR SUPPORT FROM THE PERMANENT STRUCTURE WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

FW7. WHERE METAL FORMWORK IS SHOWN IE BONDEK, CONDEK, KINGFLOOR ETC, THE CONTRACTOR SHALL INSTALL AND PROP THE WORKS IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS

FW8. DESIGN INFORMATION CONCERNING THE FOUNDATIONS FOR FORMWORK SHALL BE DETERMINED FROM THE CONDITIONS EXISTING ON SITE AT THE TIME OF CONSTRUCTION. REFER TO THE GEOTECHNICAL REPORT FOR THE SITE.

FW9. DURING CONSTRUCTION PROVIDE PROPPING WHERE LOADS FROM STACKED MATERIALS, FORMWORK AND OTHER SUPPORTED SLABS INDUCE LOADS IN THE SLAB OR BEAM WHICH EXCEED THE DESIGN LOAD FOR STRENGTH OR SERVICEABILITY AT THAT AGE. ONCE THE NOMINATED 28 DAY STRENGTH HAS BEEN ATTAINED, THESE LOADS SHALL NOT EXCEED THE DESIGN SUPERIMPOSED LOADS SET-OUT IN THE STRUCTURAL DESIGN LOADS.

FW10. IN MULTI-STOREY CONSTRUCTION PROPPING MAY NEED TO EXTEND A NUMBER OF FLOORS LEVELS BELOW THE FLOOR BEING CAST. PROP REMOVAL IS TO BE PROGRAMMED TO AVOID DISTRESS TO PREVIOUSLY CAST FLOORS, RE-SHORING OR BACK-PROPPING IS SUBJECT TO THE STRUCTURAL ENGINEER.

FW11. DO NOT PLACE PERMANENT LOADS ON THE CONCRETE STRUCTURE UNTIL AFTER FORMWORK AND PROPPING IS REMOVED.

FW12. REFER TO ARCHITECTS DRAWINGS FOR TEST PANEL DETAILS. REINFORCEMENT FOR TEST PANELS SHALL BE SIMILAR TO THAT IN THE PERMANENT STRUCTURE BEING REPRESENTED

FW13. BEFORE PLACING REINFORCEMENT IN FORMWORK, APPLY A RELEASE AGENT TO THE FACE OF THE FORMWORK COMPATIBLE WITH THE REQUIRED SURFACE FINISH.

FW14. CHAMFER RE-ENTRANT ANGLES AND FILLETS AT CORNERS BY 25MM UNO.

FW15. BEFORE PLACING CONCRETE, REMOVE ALL WATER, DUST AND DEBRIS FROM THE FORMWORK.

FW16. FILL ALL HOLES LEFT BY FORM TIE BOLTS WITH MORTAR MATCHING THE SURFACE COLOUR OF THE FINISHED SURFACE.

FW17. CONCRETE FORMED SURFACES TO HAVE THE FOLLOWING FINISHES IN ACCORDANCE WITH AS 3610, UNLESS NOTES OTHERWISE BY THE ARCHITECT.

FW18. ELEMENT SURFACE FINISH CRITICAL FACE FOOTING BEAMS CLASS 3 EXPOSED FACE SLABS AND BEAMS REFER TO ARCHITECTS SPECIFICATIONS

ELEMENT	SURFACE FINISH	CRITICAL FACE
FOOTING BEAMS, SLABS AND BEAMS	CLASS 3 REFER TO ARCHITECTS SPCIFICATIONS (MINIMUM OF CLASS 3)	EXPOSED FACE

LEAVE IN PLACE VERTICAL FORMWORK SYSTEM NOTES

LIP1. ACOR ACCEPTS NO RESPONSIBILITY FOR THE PERFORMANCE / DURABILITY OF ANY CHOSEN LEAVE IN PLACE (LIP) FORMWORK SYSTEM -THE BUILDER AND CLIENT ARE RESPONSIBLE FOR THIS SELECTION.

LIP2. THE BUILDER / CLIENT IS TO REVIEW ALL THE LATEST MANUFACTURERS PUBLISHED DATA, WARRANTIES AND NCC COMPLIANCE BEFORE NOMINATING A CHOSEN SYSTEM.

LIP3. THE (LIP) FORMWORK IS NOT TO AFFECT THE STRUCTURAL ADEQUACY OF THE BUILDING IN ANY WAY FOR THE NOMINATED DESIGN LIFE OF THE STRUCTURE.

LIP4. THE BUILDER IS TO REFER TO ALL THE LATEST MANUFACTURERS PUBLISHED DATA FOR DETAILS IN RELATION TO CONSTRUCTABILITY OF THE SYSTEM / EDGE FORMS / WATERPROOFING / FLASHING. THESE SYSTEM SPECIFIC DETAILS ARE NOT SHOWN ON ACOR DOCUMENTATION.

LIP5. WHERE A (LIP) SYSTEM IS NOMINATED ON THE DESIGN DRAWINGS, ACOR HAS CONFIRMED ITS PERFORMANCE IN ACCORDANCE WITH THE RELEVANT PROJECT DESIGN LOADS ONLY.

LIP6. AS CONCRETE WITHIN THE (LIP) FORMWORK CANNOT BE INSPECTED POST POUR ACOR IS NOT IN A POSITION TO ACCESS POOR WORKMANSHIP E.G. HONEYCOMBING / VOIDS ETC. AND AS SUCH CANNOT BE HELD LIABLE FOR ANY ISSUES THAT MAY ARISE AS A RESULT OF THIS.

LIP7. ACOR DOES NOT REVIEW SHOP DRAWINGS OF (LIP) SYSTEMS IN TERMS OF SET OUT - SHOP DRAWINGS WILL ONLY BE REVIEWED IN REFERENCE TO THE DESIGN THICKNESS AS NOMINATED ON THE DRAWINGS.

LIP8. SITE INSPECTIONS WILL BE LIMITED TO WALL THICKNESS AND REINFORCEMENT ONLY - SIMILAR TO THAT OF A CAST INSTITUTE CONCRETE WALL.

TIMBER NOTES

T1. ALL TIMBER DESIGN, MATERIAL AND CONSTRUCTION SHALL COMPLY WITH AS1720, AS1684, AS2082 AND AS2858 AS APPROPRIATE.

T2. SOFTWOOD TO BE A MINIMUM STRESS GRADE F7 (OREGON) OR MGP10/F5 (PINE), STRENGTH GROUP SD5. HARDWOOD TO BE A MINIMUM OF F17 (SEASONED). SUBMIT SUPPLIERS CERTIFICATES AS TO STRESS GRADE OF TIMBER MEMBERS IF REQUESTED. ALL TIMBER SHALL BE BRANDED.

T3. PRESERVATIVE TREATMENT:
ALL TIMBERS TO HAVE THE NECESSARY PRESERVATIVE TREATMENT APPROPRIATE TO THE SPECIES AND USAGE AS SPECIFIED IN AS1604-1997. ALL TREATED TIMBERS TO HAVE VISIBLE MARKS THAT ARE ABLE TO BE SEEN DURING THE FRAMING INSPECTION.

T4. TERMITE PROTECTION:
ALL CONSTRUCTION WORK SHOULD BE IN ACCORDANCE WITH AS3660.1-2000 PROTECTION OF BUILDINGS FROM SUBTERRANEAN TERMITES PART 1: NEW BUILDING WORK.

T5. TIMBER TREATED IN ACCORDANCE WITH AS1604 SHALL HAVE THE FOLLOWING HAZARD
- A) LEVEL: ENVIRONMENT CLASS
- B) INTERIOR ABOVE GROUND HAZARD LEVEL H2
- C) EXTERIOR ABOVE GROUND HAZARD LEVEL H3
- D) EXTERIOR IN GROUND HAZARD LEVEL H5
- E) SUBJECT TO EXTREME WETTING AND LEACHING IN FRESH WATER LEVEL H5
- F) SUBJECT TO IMMERSION IN SALT WATER LEVEL H6

T6. EXTERNAL TIMBER SHALL BE EITHER DURABILITY CLASS 1 OR 2 HARDWOOD TO AS1720.2 OR IMPREGNATED PINE PRESSURE TREATED TO AS1604 AND RE-DRIED PRIOR TO USE. SUPPLEMENTARY TREATMENT SHALL BE APPLIED TO ALL CUT SURFACES. SUPPLY SUPPORTING DOCUMENTATION REGARDING PRESERVATIVE TREATMENT IF REQUESTED.

T7. ALL BOLTS IN TIMBER CONSTRUCTION SHALL BE MINIMUM M12. ALL BOLTED CONNECTIONS SHALL USE WASHERS UNDER HEADS AND NUTS WHICH ARE TO BE AT LEAST 3 TIMES THE BOLT DIAMETER. ALL EXTERNAL BOLTS AND WASHERS SHALL BE HOT DIP GALVANISED.

T8. UNLESS NOTED OTHERWISE USE:
M12 4.6/S GALVANISED BOLTS WITH 55 DIA x 3.0 GALVANISED WASHERS UNDER HEAD AND NUT. M12 4.6/S GALVANISED COACH SCREWS WITH 55 DIA x 3.0 GALVANISED WASHERS. MINIMUM EMBEDMENT 75mm EMBEDMENT INTO SECOND MEMBER. 3.15mm GALVANISED NAILS WITH MINIMUM 35mm EMBEDMENT INTO SECOND MEMBER. 14 GAUGE (6.4mm THREAD DIAMETER) GALVANISED, BUGLE HEADED SCREWS WITH MINIMUM 50mm EMBEDMENT IN TO SECOND MEMBER. 12 GAUGE (5.6mm THREAD DIAMETER) TYPE 17 POINT GALVANISED TIMBER TEK SCREWS, MINIMUM 50mm EMBEDMENT INTO SECOND MEMBER. GALVANISED CONNECTOR PLATES COMPLYING WITH AS1649. MAINTAIN TIMBER EDGE DISTANCES AS PER AS1720.

T9. TIMBER TOLERANCES ON THE FINISHED WIDTH AND THICKNESS TO BE IN ACCORDANCE WITH AS2082, AS1748, AS APPROPRIATE. MINIMUM ACTUAL DIMENSIONS FOR TIMBER MEMBERS ARE AS FOLLOWS: NOMINAL DIMENSION 50 100 150 200 250 >250 MINIMUM ACTUAL 45 90 140 187 235 MINUS 6% HYSPAN AND MGP MEMBERS ARE ACTUAL SIZES.

T10. ALL TIMBER JOINTS AND NOTCHES ARE TO BE A 100mm MINIMUM AWAY FROM LOOSE KNOTS, SEVERE SLOPING GRAIN, GUM VEINS OR OTHER DEFECTS.

T11. GLUE LAMINATED TIMBER SHALL BE MANUFACTURED IN ACCORDANCE WITH AS1328. MEMBERS FOR EXTERNAL USE SHALL BE FABRICATED USING RESORCINOL OR PHENOLIC ADHESIVE.

T12. CAMBER IN BEAMS OR RAFTERS SHALL BE AS NOTED ON THESE STRUCTURAL DRAWINGS OR BEAMS/RAFTERS SHALL BE INSTALLED WITH NATURAL HOG UP.

T13. ALL PROPRIETARY FIXINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS WRITTEN INSTRUCTIONS. ALL METAL FIXINGS SHALL BE COMPATIBLE WITH TIMBER GLUES AND PRESERVATIVE TREATMENTS.

T14. NO PENETRATIONS OR NOTCHES OTHER THAN THOSE SHOWN ON THESE STRUCTURAL DRAWINGS SHALL BE MADE IN ANY TIMBER MEMBERS WITHOUT APPROVAL BY THE ENGINEER.

T15. ALL TIMBER SHALL BE PROTECTED FROM THE ELEMENTS DURING FABRICATION AND CONSTRUCTION BY THE APPLICATION OF AN APPROVED WATERPROOF TIMBER PRESERVATIVE, PROPOSALS SHALL BE SUBMITTED TO THE ENGINEER.

T16. ALL EXPOSED LINES OF BOLTS SHALL BE EVENLY AND EQUALLY SPACED U.N.O. AND SHALL ALIGN WITH ADJACENT EXPOSED BOLT GROUPS.

T17. ALL ACCESSIBLE BOLTS ARE TO BE RETIGHTENED AND ALL NAILS REDRIVEN AS CLOSE TO COMPLETION OF CONTRACT AS POSSIBLE AND AGAIN AT THE END OF THE DEFECTS LIABILITY PERIOD. ALL OTHER BOLTS SHALL BE RE-TIGHTENED IMMEDIATELY PRIOR TO BEING BUILT-IN.

T18. WE SUPPORT THE ENVIRONMENT AND RECOMMEND THE USE OF SUSTAINABLE FOREST TIMBER OR RECYCLED TIMBER.

T19. NON-LOADBEARING TIMBER FRAMED WALLS SHALL FINISH 10mm SHORT OF THE ROOF FRAMING AND SHALL BE LATERALLY RESTRAINED USING 'PRYDA PHL' BRACKETS WITH SLOTTED HOLES AT 1800 CTS IN ACCORDANCE WITH AS1684.

T20. TIMBER TRUSSES ARE TO BE PRE-CAMBERED AN AMOUNT EQUAL TO THE CALCULATED INITIAL DEAD LOAD DEFLECTION. SUBMIT THREE COPIES OF SHOP DRAWINGS TO THE STRUCTURAL ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL CLEARLY SHOW:
THE DESIGN LOADS ON THE ROOF AND CEILING AND TRUSS NODE POINT LOADS AND THE PRECAMBER, MEMBER SIZES AND LOCATIONS, TIMBER SPECIES, STRESS GRADE, STRENGTH GROUP AND JOINT DETAILS. MEMBER RESTRAINT LOCATIONS.

T21. ALL TIMBER MEMBERS ARE TO BE NATURALLY ONE PIECE, NOT LAMINATED OR FINGER JOINTED , UNLESS APPROVED BY THE ENGINEER.

T22. NO PENETRATIONS ARE ALLOWED IN TIMBER MEMBERS UNLESS APPROVED BY THE ENGINEER.

T23. TIMBER JOINTS SHALL BE FREE OF DEFECTS.

T24. ALL TIMBER ROOF CONSTRUCTION IS TO BE SECURELY TIED DOWN. AS A MINIMUM PROVIDE 30mm X 1.0mm STRAPS X 900 LONG AT 1200 CTS MAX UNLESS NOTED OTHERWISE.

T25. ALL LOAD BEARING STUD WALLS UP TO 2700 HIGH ARE TO BE 90 X 45 MGP10 KD AT 450 MAX CTS WITH NOGGINGS AT 1350 VERTICAL CENTRES, UNLESS NOTED OTHERWISE.

T26. TOP PLATES ARE TO BE 2/90 X 45 MGP10 KD. BOTTOM PLATES ARE TO BE 90 X 45 MGP10 KD.

T27. ALL NON LOAD BEARING STUD WALLS ARE TO BE TIED AT TOP AND BOTTOM INTO FLOORING AND ROOF FRAME.

T28. FIX STUD WALLS TO TIMBER AND STEEL POSTS OR COLUMNS, CROSS MASONRY OR CONCRETE WALLS WITH M10 MASONRY ANCHORS AT 900 CRS UNLESS NOTED OTHERWISE.

T29. ALL TIMBER BEAMS AND LINTELS ARE TO BE SUPPORTED EACH END ON 2/90 X 45MGP10 STUDS SECURELY NAILED TOGETHER, UNLESS NOTED OTHERWISE.

T30. PROVIDE DOUBLE JOISTS UNDER WALLS AND DOUBLE STUDS SUPPORTING ROOF BEAMS.

TIMBER NOTES CONTINUED

T31. PROVIDE APPROVED GIRDER BRACKETS TO CONNECT ROOF BEAMS TO BEAMS UNLESS NOTED OTHERWISE.

T32. PROVIDE TIMBER BLOCKING AT 1800 CTS TO ALL TIMBER FLOORS UNLESS NOTED OTHERWISE.

T33. ALL STEEL LINTELS ARE TO HAVE 230mm MINIMUM BEARING EACH END, UNLESS NOTED OTHERWISE.

T34. PROVIDE DOUBLE PURLINS EITHER SIDE OF ROOF PENETRATIONS, UNLESS NOTED OTHERWISE.

T35. ALL BOLTED CONNECTIONS IN TIMBER SHALL HAVE WASHERS PROVIDED TO BEARING SURFACES AS PER AS1720.1 REQUIREMENTS.

A) M12 4.6/S BOLTS, 50x50x3 WASHERS.

B) M16 4.6/S BOLTS, 65x65x4 WASHERS.

T36. LVL IS NOT TO BE USED IN EXPOSED CONDITIONS WITHOUT PRIOR PERMISSION FROM THE ENGINEER. CONSIDERATION MAY BE GIVEN WHERE THE MEMBER IS ENTIRELY ENCLOSED OR FOR DECKS NEAR GROUND LEVEL IF ENTIRE LENGTH OF MEMBER IS COVERED WITH A CONTINUOUS DAMP PROOF TAPE/CAP IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION.

T37. WHERE BRACING IS SPECIFIED AS ANY OF THE FOLLOWING (OR SIMILAR):

A) SPEED BRACE OR APPROVED EQUIVALENT.

B) TYPE A OR TYPE B BRACING IN ACCORDANCE WITH AS 1684.

C) MITEK BRACING STRAP OR APPROVED EQUIVALENT.

D)NOMINATED BRACING IS TO BE APPLIED TO ENTIRE ROOF AREA, WITH LINE OF NOMINATED
BRACING AT 2000 CTS.

E) EACH WAY NOMINALLY 90 DEGREES TO EACH OTHER WITH 45 x 90 MGP10 BATTENS AT 900 CTS CONTINUOUS U.N.O.

F) FIX STRAP ENDS WITH 6 NAILS & 2 NAILS AT INTERMEDIATE TRUSSES / RAFTERS.

T38. WHERE STUD FRAMES ABUT STEEL, TIMBER OR CONCRETE POSTS OR COLUMNS, FIX STUD FRAMING TO THE POST OF COLUMN WITH TWO POWER DRIVEN NAILS AT EACH WALL PLATE AND AT EACH NOGGING.

T39. WHERE BRACED STUD FRAMES ABUT STEEL, TIMBER OR CONCRETE POSTS OR COLUMNS, CONNECT TOP PLATES TO THE POST WITH 10MM THICK CLEAT AND 2M12 BOLTS INTO EACH MEMBER, U.N.O.

COMPOSITE DECK SLAB NOTES

CDS1. ALL SLABS TO BE MINIMUM 120mm THICK UNLESS NOTED OTHERWISE AND POURED ON LYSAGHT 1mm BONDECK OR APPROVED EQUIVALENT.

CDS2. DIRECTION OF SPAN SHOWN THUS

CDS3. BONDECK PANELS ARE TO BE SECURELY FIXED OR HELD DOWN TO PREVENT DISPLACEMENT DUE TO CONSTRUCTION LOADING OR WIND UPLIFT PRIOR TO CONCRETING.

CDS4. FIX BONDECK PANELS TO STEELWORK BY PUDDLE WELDING, DRIVE PINS OR OTHER SUITABLE METHODS. SLIP JOINTS SHALL BE LOCATED AS SHOWN.

CDS5. BONDECK TO HAVE 50 MINIMUM END BEARING ON SUPPORTING WALLS. FIXING TO WALLS IS NOT NECESSARY, PROVIDED CONCRETE IS PLACED IMMEDIATELY AFTER PANELS ARE LAID. TOP OF WALL IS TO BE STRAIGHT AND LEVEL. IF REQUIRED PROVIDE LAYER OF SMOOTH HARD MORTAR. SLIP JOINTS SHALL BE PROVIDED UNLESS NOTED OTHERWISE.

CDS6. PROVIDE MINIMUM SL102 MESH UNLESS NOTES OTHERWISE PLACED WITH MAIN BARS IN TOP AND AT RIGHT ANGLES TO DIRECTION OF BONDECK. WHERE SPAN DIRECTION OF BONDECK CHANGES. LAP MESH 450 MINIMUM IN DIRECTION OF MAIN BARS.

CDS7. BEFORE CONCRETE IS PLACED, REMOVE ANY ACCUMULATED DEBRIS, GREASE OR ANY OTHER SUBSTANCE TO ENSURE CLEAN BONDING SURFACE. ANY PONDED RAIN WATER SHALL BE REMOVED.

CDS8. FASTENING OF SIDE LAP JOINTS OF BONDECK SHALL BE IN ACCORDANCE WITH LYSAGHT PUBLICATIONS, AND GENERALLY ONE NO. 10-24 x 16mm SELF-DRILLING TAPPING SCREW IS REQUIRED MID-SPAN FOR SUPPORT SPACING OF 2750mm OR GREATER. FOR POINT LOAD RATINGS OR EXPOSED SOFFITS ADDITIONAL FIXINGS MAY BE REQUIRED.

CDS9. UNLESS NOTED OTHERWISE PROPPING OF THE BONDECK SHALL BE IN ACCORDANCE WITH LYSAGHT PUBLICATIONS.

CD10. PROPS SHOULD NOT BE REMOVED UNTIL CONCRETE HAS REACHED SUFFICIENT STRENGTH.

CD11. THE SHEETS SHALL NOT BE SPLICED OR LAPPED.

CD12. NO LOADS FROM STACKED MATERIALS ARE ALLOWED UNTIL THE CONCRETE IS SET.

CD13. ALL PENETRATIONS THROUGH METAL DECKING ARE TO BE AT THE EXPRESS APPROVAL OF THE ENGINEER AND WITHIN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

POST TENSIONED CONCRETE DESIGN AND CONSTRUCT NOTES

SCOPE OF WORKS:
PTD&C1. THE SCOPE OF WORKS SHALL CONSIST OF THE DESIGN, INSTALLATION AND CERTIFICATION OF THE POST-TENSIONED PRESTRESSING AND NON-TENSIONED REINFORCEMENT, FOR ALL SUSPENDED FLOOR SLABS SHOWN.

PTD&C2. THE POST TENSIONED PRESTRESSING AND NON-TENSIONED REINFORCEMENT SHALL EXTEND FOR THE FULL PLAN AREA, INCLUDING ALL STRUCTURAL HOBS, FOLDS, SET-DOWNS FORMING PART OF THE FLOOR SLAB.

PTD&C3. IT IS THE SUB-CONTRACTORS RESPONSIBILITY TO ENSURE THAT THE POST-TENSIONED PRESTRESSING AND NON-TENSIONED REINFORCEMENT IS DESIGNED, INSTALLED AND CERTIFIED IN ACCORDANCE WITH THESE NOTES AND THE REQUIREMENTS OF AS3600. THE NON-TENSIONED REINFORCEMENT INCLUDES ALL ANCHORAGE ZONES ANTI BURSTING REINFORCEMENT, THE REINFORCEMENT OF ANY SLAB AREAS NOT INCLUDED IN THE PRESTRESSED AREAS.

DESIGN- DESIGN LOADS:
PTD&C4. ALL LOADS ARE TO BE IN ACCORDANCE WITH THE LOADS NOMINATED ON THE STRUCTURAL DRAWINGS, DESIGN BRIEF AND AS1170.

PTD&C5. WHERE COLUMN LOADS ARE NOT NOMINATED ON THE STRUCTURAL DRAWINGS IT IS THE SUB-CONTRACTORS RESPONSIBILITY TO CALCULATE LOADS. WHERE LOADS ARE CALCULATED BY THE SUB-CONTRACTOR LOADS ARE TO BE ISSUED TO ACOR FOR REVIEW PRIOR TO COMMENCEMENT OF DESIGN.

SERVICEABILITY:

AREA	DEFLECTION CRITERIA	
	INCREMENTAL DEFLECTION	LONG TERM DEFLECTION
ALL	LESS THAN SPAN/750 UNDER ALL MASONRY WALL	LESS THAN SPAN/500 OR 25mm

PTD&C6. COLUMN STIFFNESS:
ANY CONTRIBUTION OF THE COLUMNS IN THE FLOOR SLAB / BEAM DESIGN SHALL BE LIMITED TO A MAXIMUM OF 20% OF THE GROSS COLUMN STIFFNESS.

PTD&C7. MINIMUM PRESTRESS:
ALL SLABS SHALL HAVE AN AVERAGE RESIDUAL PRESTRESS IN EACH DIRECTION AFTER ALL LOSSES OF:
A) P/A > 1.5MPA FOR ALL INTERNAL AREAS FULLY ENCLOSED
B) P/A > 1.8MPA FOR ALL EXTERNAL AREAS

PTD&C8. PROVIDE MINIMUM SL82 MESH (TOP) TO ALL EXTERNAL AREAS.

PTD&C9. ALL TENDONS AND REINFORCEMENT SHALL HAVE CONCRETE COVER IN ACCORDANCE WITH AS3600 TO PROVIDE THE FIRE RESISTANCE PERIOD SHOWN ON THE RELEVANT PLAN UNLESS NOTES OTHERWISE.

PTD&C10. UNDER ALL PRECAST & MASONRY WALLS ENSURE CONCRETE ZONE IMMEDIATELY BELOW THE WALLS DOES NOT HAVE POST TENSIONING DUCTS PARALLEL TO THE WALL.

PTD&C11. THE CONCRETE STRENGTH SHALL BE THE SAME AS THAT SHOWN ON THE STRUCTURAL DRAWINGS.

PTD&C12. THE SUB-CONTRACTOR IS TO ALLOW TO COORDINATE DESIGN WITH ALL OTHER CONSULTANTS AND SUB-CONTRACTORS DRAWINGS.

PTD&C13. THE SUB-CONTRACTOR MUST SUBMIT ONE COPY OF THE TENDON AND REINFORCEMENT PLANS FOR APPROVAL 14 DAYS PRIOR TO COMMENCEMENT OF ANY INSTALLATION WORK. PLANS MUST SHOW ALL TENDONS -LOCATION, SIZE AND DRAPE, AND ALL NON-TENSIONED REINFORCEMENT. INSTALLATION WORK MAY NOT COMMENCE UNTIL THE APPROVED LAYOUT PLANS, INCORPORATING ANY REQUIREMENTS, ARE RETURNED TO THE SUB-CONTRACTOR. ALLOW 7 DAYS FOR THE REVIEW AND APPROVAL OF DRAWINGS. THE REVIEW AND APPROVAL OF THE DRAWINGS DOES NOT RELIEVE THE SUBCONTRACTOR OF THEIR RESPONSIBILITY.

PTD&C14. ALL DESIGNS ARE TO BE PREPARED AND CERTIFIED BY A REGISTERED PROFESSIONAL STRUCTURAL ENGINEER. CERTIFICATION IS TO BE PROVIDED PRIOR TO COMMENCEMENT OF INSTALLATION THAT THE FLOOR STRUCTURE IS STRUCTURALLY ADEQUATE TO RESIST THE DESIGN LOADS IN ACCORDANCE WITH ALL RELEVANT AUSTRALIAN STANDARDS. THE CERTIFYING ENGINEER SHALL MAINTAIN PROFESSIONAL INDEMNITY INSURANCE OF AT LEAST $5.0 MILLION AND PROVIDE A COPY OF THEIR INSURANCE CURRENCY.

CONSTRUCTION:
PTD&C15. ALL WORKMANSHIP AND MATERIALS MUST COMPLY WITH AS3600.

PTD&C16. PRESTRESSING STRANDS SHALL BE STRESS RELIVED SUPER GRADE AND COMPLY WITH AS4672.

PTD&C17. ALL TENDONS SHALL BE PLACED IN A GALVANIZED DUCT.

PTD&C18. ALL TENDONS AND REINFORCEMENT MUST BE SECURELY POSITIONED AND FIXED PRIOR TO PLACEMENT OF CONCRETE.

PTD&C19. STRESSING RECORDS OF THE PRESSURE GAUGE AND EXTENSIONS SHALL BE ACCURATELY MADE.

PTD&C20. ALL TENDONS MUST BE GROUTED IN THEIR DUCTS AFTER APPROVAL OF THE STRESSING RECORDS.

PTD&C21. ALL ANCHORAGE RECESSES AND PANS MUST BE FILLED WITH 40MPA GROUT, FINISHED TO A SMOOTH AND LEVEL SURFACE.

PTD&C22. UPON COMPLETION PROVIDE AN AS BUILT DRAWING OF ALL DUCT LOCATIONS FOR CO-ORDINATION BY OTHER SUB-CONTRACTORS.

PTD&C23. A REGISTERED PROFESSIONAL ENGINEER SHALL INSPECT ALL WORKS AND CERTIFY THAT THE PRESTRESSING AND REINFORCEMENT AS INSTALLED IN THE SLAB COMPLIES WITH THE APPROVED CONSTRUCTION DRAWINGS, IN PARTICULAR, THAT ALL TENDONS AND REINFORCEMENT WERE ACCURATELY POSITIONED WITH THE CORRECT COVER AND THAT ALL TENDONS HAVE BEEN CORRECTLY STRESSED AND GROUTED. THE CERTIFYING ENGINEER SHALL MAINTAIN PROFESSIONAL INDEMNITY INSURANCE OF AT LEAST $5.0 MILLION AND PROVIDE A COPY OF THEIR INSURANCE CURRENCY.

FIRE PROTECTION NOTES

FP1. FIRE PROTECTION TO STRUCTURAL ELEMENTS IS TO COMPLY WITH THE NATIONAL CONSTRUCTION CODE (NCC).

FP2. FIRE RATINGS REFERRED TO ON THE STRUCTURAL DRAWINGS REFER ONLY TO THE REQUIREMENTS FOR STRUCTURAL ADEQUACY OF STRUCTURAL ELEMENTS. FOR FIRE RATINGS OF CEILINGS, WALLS AND OTHER NON-STRUCTURAL ELEMENTS REFER TO THE ARCHITECTS DRAWINGS AND SPECIFICATIONS.

FP3. U.N.O. ON DRAWINGS FIRE PROTECTION MAY BE ACHIEVED BY APPLIED BOARDS, COATINGS OR ENCASEMENT THAT COMPLY WITH THE ARCHITECTS REQUIREMENTS.

FP4. FIRE RESISTANCE LEVELS ARE EXPRESSED IN MINUTES AS DEFINED IN THE NCC I.E. STRUCTURAL ADEQUACY/INTEGRITY/INSULATION.

FP5. WHERE CLASSIFICATION, TYPE OF CONSTRUCTION OR RESISTANCE LEVELS ARE NOT CONSISTENT WITH THE SPECIFICATION OF THE CERTIFIER OR ARCHITECT REFER TO THE CERTIFIER FOR DIRECTION.

Issue.	Description	Date	Drawn	Approved
3	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
2	CROWN CERTIFICATE ISSUE 1	09.04.2024	RT	MG
1	CROWN CERTIFICATE ISSUE 1	28.03.2024	RT	AB

North

Scale

Client

NSW GOVERNMENT

Architect

EJE architecture

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Project
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160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
SPECIFICATION NOTES SHEET 3

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 1

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	XX	XX	S-0003	3

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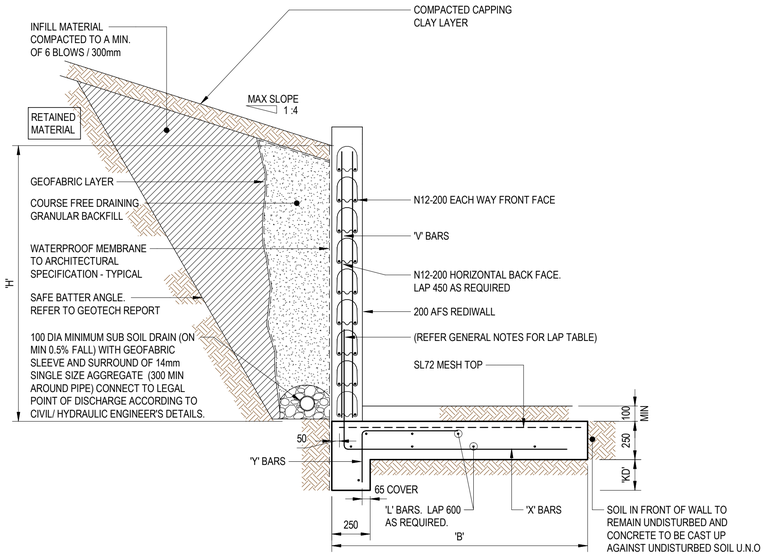

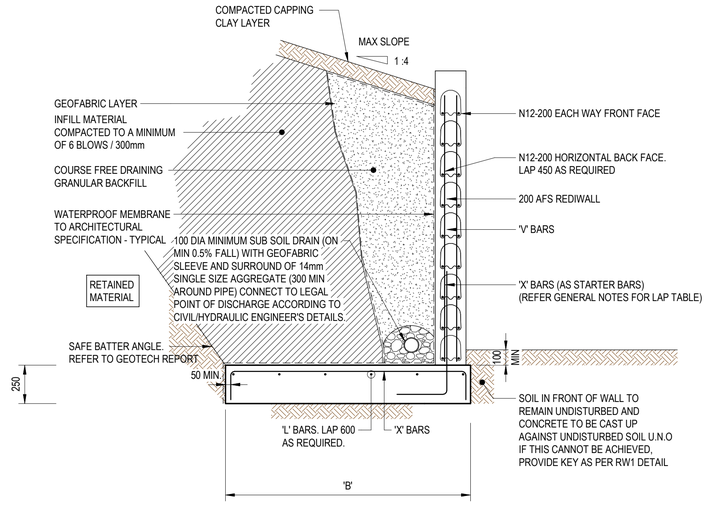

PROPERTIES AND COMPOSITION OF THE RETAINED MATERIAL AND INFILL MATERIAL MUST BE INSPECTED / CONFIRMED BY A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER AND ALL OTHER DESIGN ASSUMPTIONS CONFIRMED IN WRITING PRIOR TO CONSTRUCTION OF ANY RETAINING WALLS. WALL DESIGN ONLY APPLICABLE TO EARTHQUAKE DESIGN CATEGORY A AND B (AS4678), EQ DESIGN CATEGORY C TO E REQUIRES A SITE SPECIFIC DESIGN. WALL IS ASSUMED TO BE FULLY DRAINED, NO ALLOWANCE FOR HYDROSTATIC PRESSURE.

ASSUMED RETAINED MATERIAL- 150 kPa ALLOWABLE BEARING PRESSURE, INTERNAL FRICTION ANGLE Φ = 35°, COHESION = 0
ASSUMED INFILL MATERIAL - CONTROLLED FILL CLASS 1, INTERNAL FRICTION ANGLE Φ =35° EXTERNAL FRICTION ANGLE δ = 0°, SOIL WEIGHT = 19kN/m3
DESIGN SURCHARGE - 5.0kPa
RISK CLASS - CLASS B: MODERATE DAMAGE AND LOSS OF SERVICE

RW1 RETAINING WALL SCHEDULE

WALL HEIGHT	WALL THICKNESS	BACKFILL CONDITION AT TOP OF WALL											
		NO SLOPE						MAX 1:4 SLOPE					
		FOOTING		REINFORCEMENT				FOOTING		REINFORCEMENT			
'H'	'T'	'B'	'KD'	'V' BARS	'X' BARS	'Y' BARS	'L' BARS	'B'	'KD'	'V' BARS	'X' BARS	'Y' BARS	'L' BARS
800	140	700	100	N12-400	N12-400	N12-400	N12-400	700	150	N12-400	N12-400	N12-400	N12-400
1000	140	800	150	N12-400	N12-400	N12-400	N12-400	800	250	N12-400	N12-400	N12-400	N12-400
1200	140	1000	200	N12-400	N12-400	N12-400	N16-400	1000	300	N12-400	N12-400	N12-400	N16-400
1400	190	1200	250	N16-400	N16-400	N16-400	N16-400	1200	350	N16-400	N16-400	N16-400	N16-400
1600	190	1400	350	N16-400	N16-400	N16-400	N16-400	1400	450	N16-400	N16-400	N16-400	N16-400

TYPICAL RETAINING WALL DETAIL - RW (800 TO 1600 HIGH)

SCALE: 1:20
NOTES:
PLEASE ADOPT THE FOLLOWING U.N.O:
- FOOTING CONCRETE COMPRESSIVE STRENGTH AS PER GENERAL NOTES, GRADE N25 MINIMUM.
- CONCRETE COVER AS SHOWN, WHERE NOT SPECIFICALLY SHOWN, CONCRETE EXPOSED TO SOIL SHALL HAVE 50mm MINIMUM COVER.
- WALL AND FOUNDATION IS ASSUMED TO HAVE A2 EXPOSURE CLASSIFICATION.
- ALL FOOTINGS TO BE FOUNDED ON WELL COMPACTED FIRM GROUND, 150kPa MINIMUM SOIL BEARING CAPACITY TO BE CONFIRMED ON SITE BY GEOTECHINCAL ENGINEER
- VERTICAL JOINT AT 6000mm CTS AS PER PROVIDED DETAIL.
- UNDERMINING EXISTING FOUNDATION IS NOT ALLOWED, STRUCTURAL ENGINEER TO BE CONSULTED IF ANY EXISTING STRUCTURE FOUNDED IN THE VICINITY OF THE RETAINING WALL FOUNDATION.
- BLOCKWALLS TO BE ADEQUATELY PROPPED DURING BACKFILLING AND SITE COMPACTION.
- REFER TO GENERAL CONCRETE, MASONRY, AND FOUNDATION GENERAL NOTES FOR FURTHER INFORMATION.

PROPERTIES AND COMPOSITION OF THE RETAINED MATERIAL AND INFILL MATERIAL MUST BE INSPECTED / CONFIRMED BY A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER AND ALL OTHER DESIGN ASSUMPTIONS CONFIRMED IN WRITING PRIOR TO CONSTRUCTION OF ANY RETAINING WALLS. WALL DESIGN ONLY APPLICABLE TO EARTHQUAKE DESIGN CATEGORY A AND B (AS4678), EQ DESIGN CATEGORY C TO E REQUIRES A SITE SPECIFIC DESIGN. WALL IS ASSUMED TO BE FULLY DRAINED, NO ALLOWANCE FOR HYDROSTATIC PRESSURE.

ASSUMED RETAINED MATERIAL- 100 kPa ALLOWABLE BEARING PRESSURE, INTERNAL FRICTION ANGLE Φ = 35°, COHESION = 0
ASSUMED INFILL MATERIAL - CONTROLLED FILL CLASS 1, INTERNAL FRICTION ANGLE Φ =35° EXTERNAL FRICTION ANGLE δ = 0°, SOIL WEIGHT = 19kN/m3
DESIGN SURCHARGE - 5.0kPa
RISK CLASS - CLASS B: MODERATE DAMAGE AND LOSS OF SERVICE

RW2 RETAINING WALL SCHEDULE

WALL HEIGHT	WALL THICKNESS	BACKFILL CONDITION AT TOP OF WALL							
		NO SLOPE				MAX 1:4 SLOPE			
		FOOTING	REINFORCEMENT			FOOTING	REINFORCEMENT		
'H'	'T'	'B'	'V' BARS	'X' BARS	'L' BARS	'B'	'V' BARS	'X' BARS	'L' BARS
800	140	700	N12-400	N12-400	N12-400	800	N12-400	N12-400	N12-400
1000	140	800	N12-400	N12-400	N12-400	1000	N12-400	N12-400	N12-400
1200	140	1000	N12-400	N12-400	N16-400	1200	N12-400	N12-400	N16-400
1400	190	1100	N16-400	N16-400	N16-400	1500	N16-400	N16-400	N16-400
1600	190	1200	N16-400	N16-400	N16-400	1600	N16-400	N16-400	N16-400

TYPICAL RETAINING WALL DETAIL - RW (800 TO 1600 HIGH)

SCALE: 1:20
NOTES:
PLEASE ADOPT THE FOLLOWING U.N.O:
- FOOTING CONCRETE COMPRESSIVE STRENGTH AS PER GENERAL NOTES, GRADE N25 MINIMUM.
- CONCRETE COVER AS SHOWN, WHERE NOT SPECIFICALLY SHOWN, CONCRETE EXPOSED TO SOIL SHALL HAVE 50mm MINIMUM COVER.
- WALL AND FOUNDATION IS ASSUMED TO HAVE A2 EXPOSURE CLASSIFICATION.
- ALL FOOTINGS TO BE FOUNDED ON WELL COMPACTED FIRM GROUND, 150kPa MINIMUM SOIL BEARING CAPACITY TO BE CONFIRMED ON SITE BY GEOTECHINCAL ENGINEER
- VERTICAL JOINT AT 6000mm CTS AS PER PROVIDED DETAIL.
- UNDERMINING EXISTING FOUNDATION IS NOT ALLOWED, STRUCTURAL ENGINEER TO BE CONSULTED IF ANY EXISTING STRUCTURE FOUNDED IN THE VICINITY OF THE RETAINING WALL FOUNDATION.
- BLOCKWALLS TO BE ADEQUATELY PROPPED DURING BACKFILLING AND SITE COMPACTION.
- REFER TO GENERAL CONCRETE, MASONRY, AND FOUNDATION GENERAL NOTES FOR FURTHER INFORMATION.

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 0.2 0 0.2 0.4 0.6 0.8 1m — SCALE BAR 1:20

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

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HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
TYPICAL RETAINING WALL DETAILS

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 20

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	00	XX	S-0005	1

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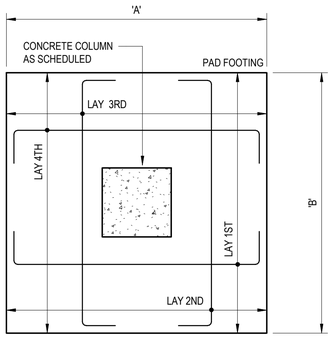
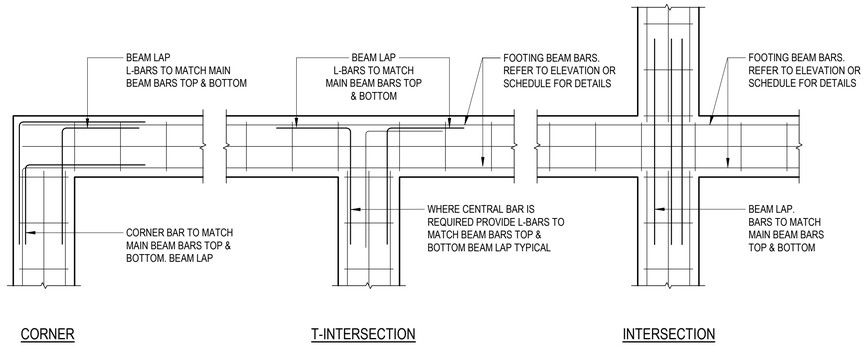


TYPICAL DIAGRAMMATIC PAD FOOTING DETAIL (PLAN VIEW)

SCALE: 1:20

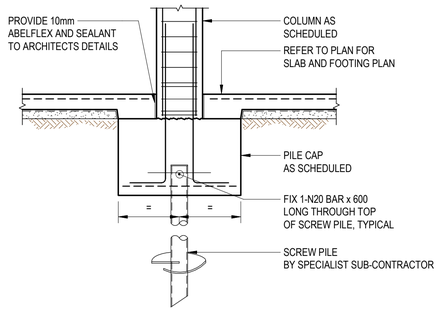
NOTE:

- REFER TO PAD FOOTING SCHEDULE FOR PAD DIMENSIONS AND REINFORCEMENT DETAILS
- REFER TO GENERAL NOTES FOR MIN BEARING CAPACITY UNDER FOOTINGS
- REFER TO GENERAL NOTES FOR CONCRETE STRENGTH GRADE



TYPICAL GROUND BEAM/ STRIP FOOTING INTERSECTION DETAILS (REINF. BAR)

SCALE: 1:20

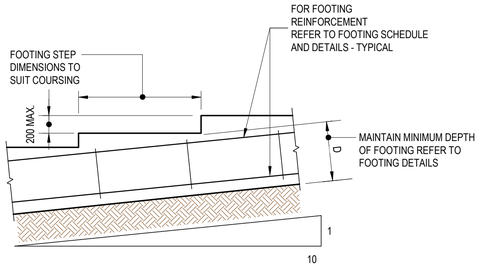


TYPICAL SCREW PILE AT PAD FOOTING LOCATION

SCALE: 1:20

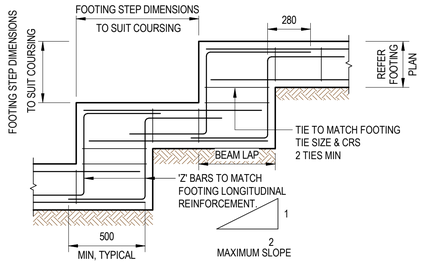
NOTE:

- SCREW PILES SAFE WORKING LOAD UP TO **XX**kN
- WHERE SWL OF PILE IS GREATER THAN 275kN, FILL THE PILE SHAFT.
- FILL THE PILE SHAFT WITH FLOWABLE NO-SHRINK 40MPA GROUT, AND/OR WELD ON A 10MM CAP PLATE TO THE SHAFT.



TYPICAL FOOTING STEP FOR SLIGHT SLOPES

SCALE: 1:20

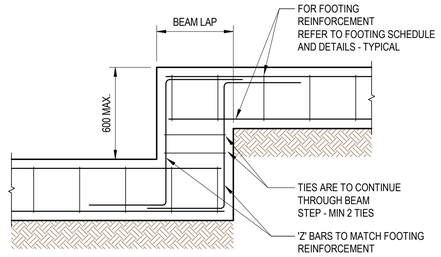


TYPICAL FOOTING STEP FOR ABRUPT SLOPES

SCALE: 1:20

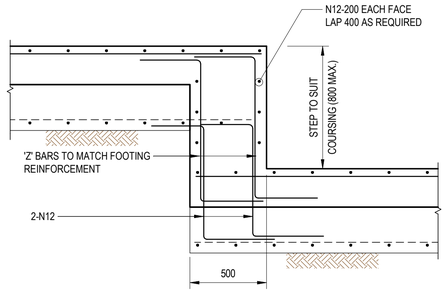
NOTE:

STEP FOOTING TO SUIT COURSING



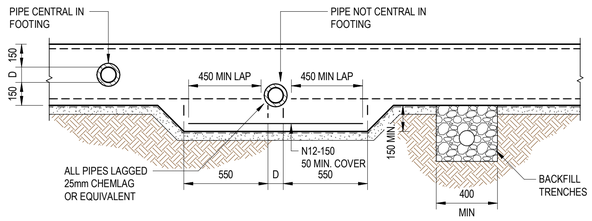
TYPICAL FOOTING BEAM STEP

SCALE: 1:20



TYPICAL RETAINING WALL FOOTING STEP DETAIL

SCALE: 1:20



TYPICAL SERVICE PIPE IN FOOTING DETAIL

SCALE: 1:20

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB

North

Scale: 0.2 0 0.2 0.4 0.6 0.8 1m — SCALE BAR 1:20

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

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ACOR Consultants Pty Ltd
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Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
TYPICAL FOUNDATION DETAILS

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 20

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	00	XX	S-0010	1

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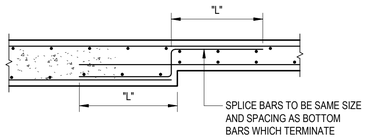
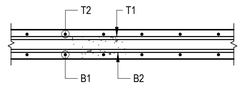


TYPICAL SUSPENDED SLAB CHANGE IN THICKNESS DETAIL WHERE NOT POST-TENSIONED

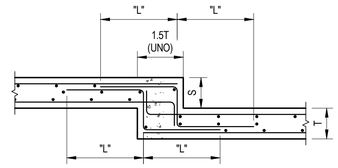
SCALE: 1:20



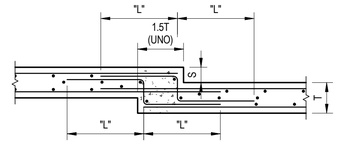
TYPICAL SUSPENDED SLAB REINFORCEMENT LAYOUT WHERE NOT POST-TENSIONED

SCALE: 1:20

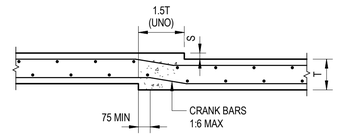
NOTE:
- UNLESS NOTES OTHERWISE.
- REFER TO GENERAL ARRANGEMENT AND REINFORCMENT PLANS FOR SLAB THICKNESS AND REINFORCMENT SIZE AND SPACINGS.



S = GREATER THAN 0.8T
LESS THAN 1.5T



S = LESS THAN 0.8T

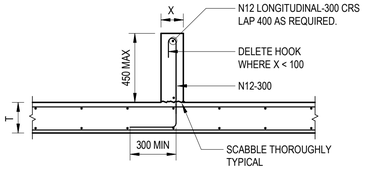


S = LESS THAN 0.2T

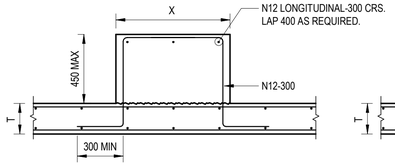
TYPICAL SUSPENDED FLOOR SETDOWN WHERE NOT POST-TENSIONED

SCALE: 1:20

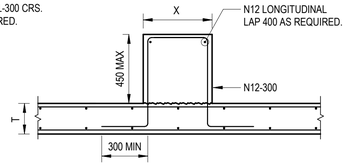
NOTE:
- UNLESS NOTES OTHERWISE.
- SETDOWNS GREATER THAN 1.5T TO ENGINEERS DETAIL.
- ALSO REFER TO GENERAL NOTES SHEET.
- ALL COGS SHALL HAVE AN INTERNAL RADIUS OF 5 BAR DIAMETERS.
- FOR DEVELOPMENT LENGTH 'L' REFER TO LAP SPLICE STANDARD SCHEDULE.



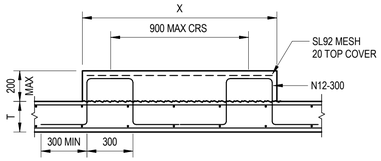
X = OR < 150



X = 451 TO 750



X = 151 TO 450



X = 751 TO 1200 MAX.

TYPICAL SUSPENDED SLAB PLINTH AND HOB DETAILS

SCALE: 1:20

NOTES:
- DETAILS APPLY UNLESS SHOWN OTHERWISE ON THE DRAWINGS
- 'T' REFERS THE SLAB THICKNESS
- 'X' REFERS TO THE PLINTH OR HOB WIDTH
- FOR PLINTHS OR HOBS OTHER THAN SHOWN ON THESE DETAILS REFER TO SPECIFIC DETAILS ON THE DRAWINGS

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB

North

Scale: 0.2 0 0.2 0.4 0.6 0.8 1m
SCALE BAR 1:20

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

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Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

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Drawing Title: STRUCTURAL
TYPICAL SUSPENDED SLAB DETAILS

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 20

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	00	XX	S-0020	1

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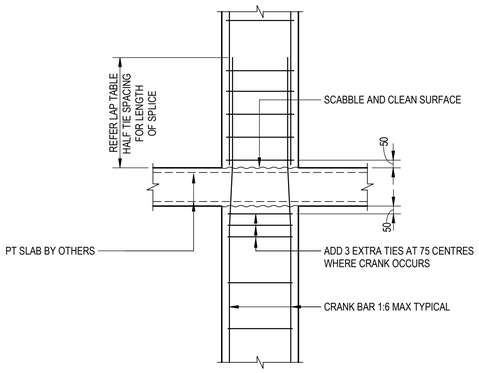
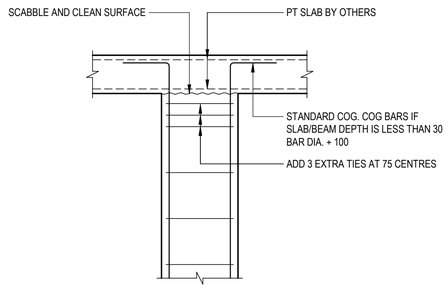


JUNCTION TYPE - ?

SCALE 1:20



JUNCTION TYPE - ?

SCALE 1:20

COLUMN TYPE NCTA

COLUMN TYPE NCTB

TYPICAL TIE ARRANGEMENT DETAILS

SCALE 1:20

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB

North

Scale

0.2 0 0.2 0.4 0.6 0.8 1m

SCALE BAR 1:20

Client

NSW GOVERNMENT

Architect

EJE architecture

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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

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Drawing Title
STRUCTURAL
TYPICAL CONCRETE COLUMN DETAILS

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
Author	MG	AB	15.05.2024	1 : 20

Project No.	Building ID.	Level No:	Drawing No.	Issue
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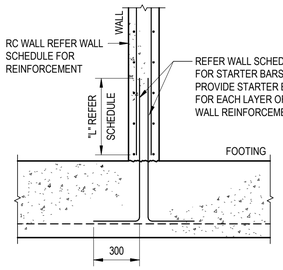
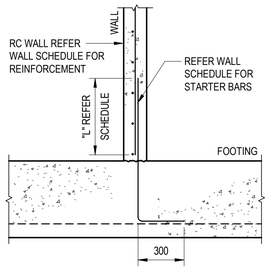


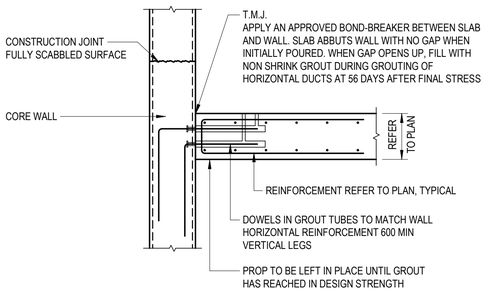
REINFORCEMENT EACH FACE



REINFORCEMENT CENTRAL

TYPICAL RC WALL TO FOOTING DETAIL

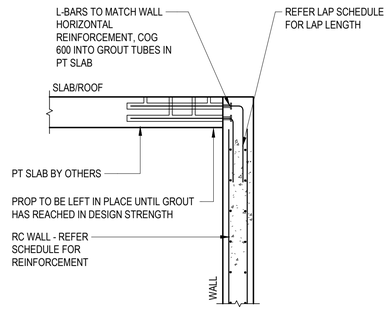
SCALE: 1:20



TYPICAL RC WALL TO PT SLAB EDGE DETAIL

SCALE: 1:20

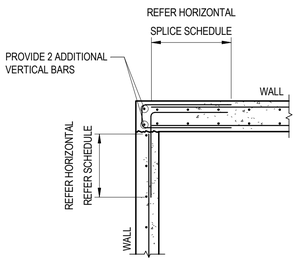
NOTE:
TO BE CONFIRMED WITH POST-TENSIONING SUBCONTRACTOR



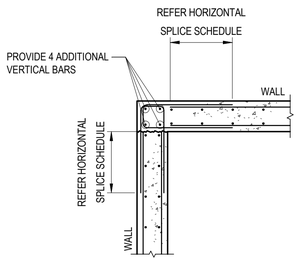
WALL TO PT SLAB REINFORCEMENT EACH FACE

TYPICAL RC WALL TERMINATION DETAILS

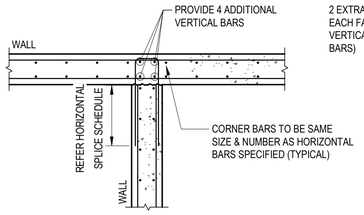
SCALE: 1:20



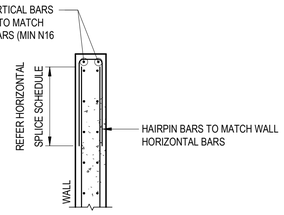
CORNER REINFORCEMENT EACH FACE (PLAN VIEW)



CORNER REINFORCEMENT EACH FACE (PLAN VIEW)



T INTERSECTION REINFORCEMENT EACH FACE (PLAN VIEW)



END OF WALLS AND OPENINGS

HORIZONTAL SPLICE LENGTHS IN WALL (mm)

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

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

TYPICAL WALL JUNCTION DETAIL ALTERNATIVES

SCALE: 1:20

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB

North

Scale: 0.2 0 0.2 0.4 0.6 0.8 1m — SCALE BAR 1:20

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

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Project: NEWCASTLE HIGH SCHOOL
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HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
TYPICAL REINFORCED CONCRETE WALL DETAILS

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 20

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	00	XX	S-0060	1

15/05/2024 1:29:58 PM

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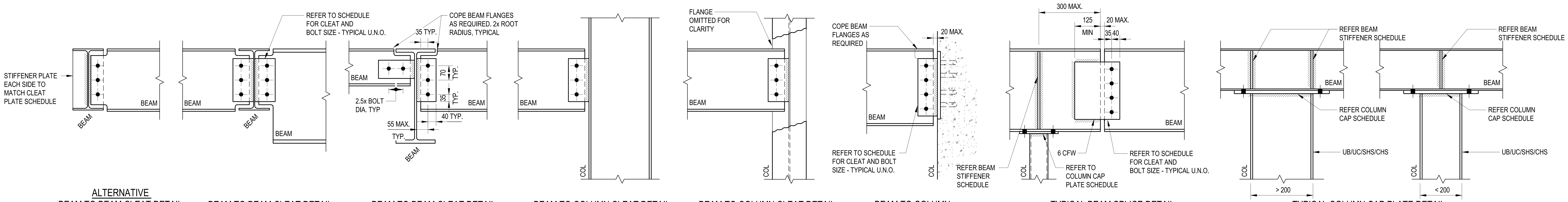


ALTERNATIVE BEAM TO BEAM CLEAT DETAIL | BEAM TO BEAM CLEAT DETAIL | BEAM TO BEAM CLEAT DETAIL | BEAM TO COLUMN CLEAT DETAIL | BEAM TO COLUMN CLEAT DETAIL | BEAM TO COLUMN CAST-IN PLATE DETAIL (REFER CAST IN PLATE SCHEDULE FOR CAST IN PLATE DETAILS) | TYPICAL BEAM SPLICE DETAIL | TYPICAL COLUMN CAP PLATE DETAIL

WEB CLEAT SCHEDULE

BEAM SIZE	No. BOLTS	CLEAT
150UB, 180UB, 200UB, 250UB	2-M20	10PL 6CFW
150PFC, 180PFC, 200PFC 230PFC, 250PFC	2-M20	10PL 6CFW
300PFC, 380PFC	3-M20	12PL 6CFW
310UB, 360UB	3-M20	12PL 6CFW
410UB	4-M20	12PL 6CFW
460UB	5-M20	16PL 6CFW
530UB	6-M20	16PL 6CFW
610UB	7-M20	20PL 6CFW

COLUMN CAP PLATE SCHEDULE

BEAM SIZE	CAP PLATE
150UB, 180UB, 200UB, 250UB	10PL 6CFW + 4M16 (150UB, 180UB, 200UB) 12PL 6CFW + 4M20 (250UB)
150PFC, 180PFC, 200PFC 230PFC, 250PFC	12PL 6CFW +2-M20
300PFC, 380PFC	16PL 6CFW +2-M20
310UB, 360UB	12PL 6CFW +4-M20
410UB	16PL 6CFW +4-M20
460UB	16PL 6CFW +4-M20
530UB	16PL 6CFW +4-M20
610UB	20PL 6CFW +4-M20

ALL BOLT GRADE 8.8/S

BEAM STIFFENER SCHEDULE

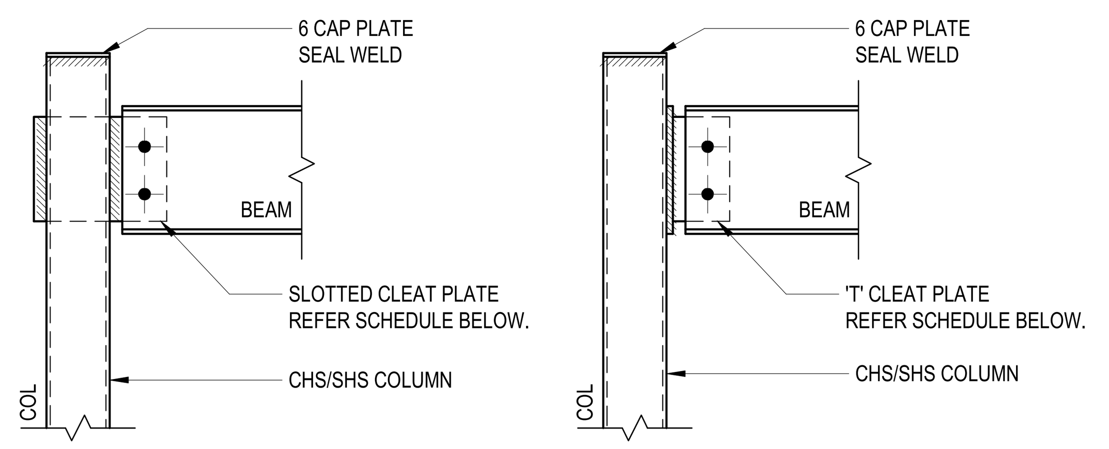
BEAM SIZE	STIFFENER
150UB, 180UB, 200UB, 250UB	8PL
150PFC, 180PFC, 200PFC 230PFC, 250PFC	8PL
300PFC, 380PFC	10PL
310UB, 360UB	10PL
410UB	10PL
460UB	12PL
530UB	12PL
610UB	16PL

6 CFW ALL AROUND TO WEB & FLANGE FOR 8, 10, 12 &16 PLATE
8 CFW ALL AROUND TO WEB AND FLANGE FOR 20 PLATE

TYPICAL WEB SIDE CLEAT PLATE AND COLUMN CONNECTIONS

SCALE: 1:10

NOTE:
- TYPICAL DETAIL UNLESS NOTED OTHERWISE.
- MAXIMUM SIZE OF BOLT HOLES SHALL BE BOLT DIAMETER + 2mm. IF HOLES TO WEB ARE SLOTTED PROVIDE 6CFW SITE ALL ROUND CLEAT TO BEAM (SLOTTED HOLES MUST BE APPROVED BY ENGINEER PRIOR TO FABRICATION).
- ALL BOLTS GRADE 8.8/S, ALL WELDS 'SP' GRADE MIN 490MPa, ALL PLATES G300+
- BOLT CENTRES 70mm FOR M20 BOLTS.



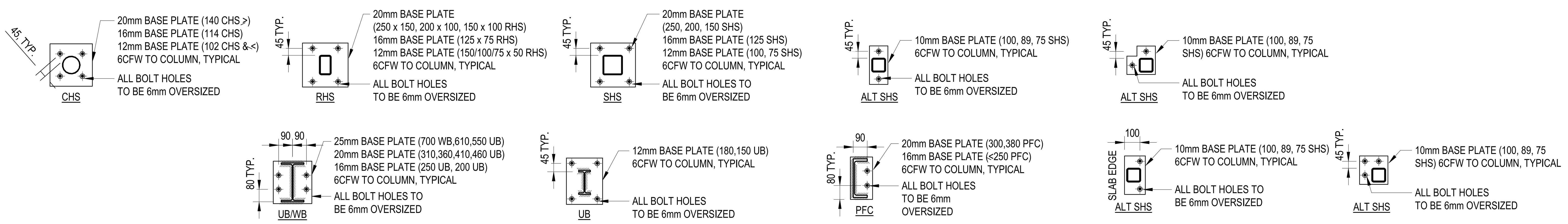
SLOTTED CLEAT CONNECTION | 'T' CLEAT CONNECTION

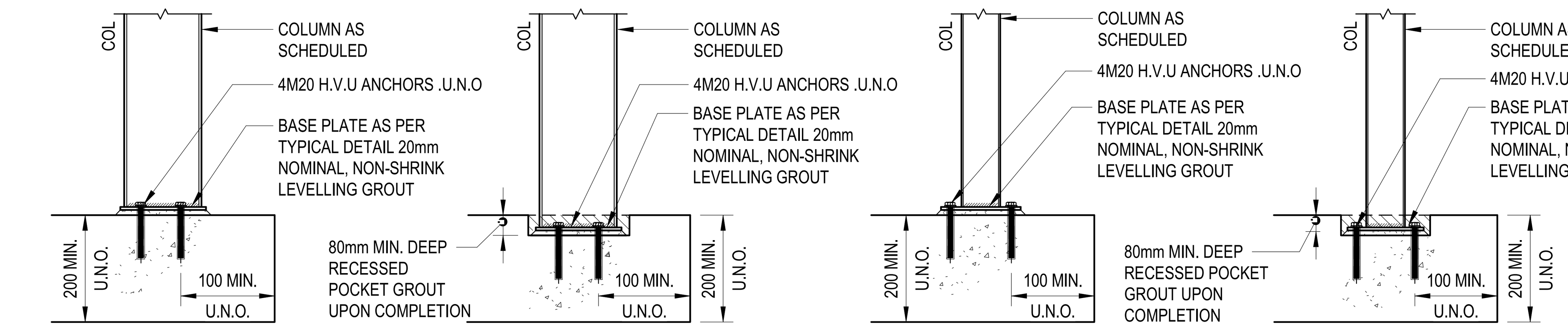
CHS/ SHS CLEAT SCHEDULE

BEAM SIZE	COLUMN WALL THICKNESS	CLEAT PLATE	BOLTS
150UB, 180UB	MIN. 4mm WALL	10mm THICK PLATE	2M20
150PFC, 180PFC, 200PFC, 250PFC	MIN. 6mm WALL	10mm THICK PLATE	2M20
200UB, 250UB	MIN. 5mm WALL	10mm THICK PLATE	3M20
300PFC, 380PFC	MIN. 6mm WALL	12mm THICK PLATE	3M20
310UB TO 360UB	MIN. 6mm WALL	12mm THICK PLATE	3M20
410UB	MIN. 6mm WALL	12mm THICK PLATE	4M20
460UB	MIN. 6mm WALL	16mm THICK PLATE	5M20
530UB	MIN. 9mm WALL	16mm THICK PLATE	6M20
610UB	MIN. 9mm WALL	20mm THICK PLATE	7M20

TYPICAL COLUMN CHS/ SHS TO BEAM

SCALE: 1:10





H.V.U ANCHORS ≥180 UB,UC NOTE: PFC SIMILAR EXCEPT 2No BOLTS | H.V.U ANCHORS RECESSED ≥180 UB,UC NOTE: PFC SIMILAR EXCEPT 2No BOLTS | H.V.U ANCHORS ≤180 UB,UC NOTE: CHS-RHS-SHS SIMILAR | H.V.U ANCHORS RECESSED ≤180 UB,UC NOTE: CHS-RHS-SHS SIMILAR

TYPICAL BASE PLATE AND HOLD DOWN BOLT DETAILS

SCALE: 1:20

NOTE:
- 150mm MINIMUM EMBEDMENT U.N.O
- ALTERNATIVE EPOXY TO BE MIN RAMSET CHEMSET REO 502 PLUS OR HILTI HIT HY 500
- BRACED COLUMNS OR MULLIONS TO BE HOLD DOWN BOLT (CHEMICAL OR POST FIX ANCHORS NOT PERMITTED)
- MIN 100mm DISTANCE TO CONCRETE EDGE OR STEP

Issue	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB

North

Scale: 0.1 0 0.1 0.2 0.3 0.4 0.5m SCALE BAR 1:10

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

ACOR CONSULTANTS

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The Forum, Level 1, Suite 1
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T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL TYPICAL STEEL DETAILS SHEET 1

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	As indicated

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	00	XX	S-0070	1

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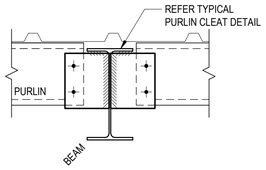
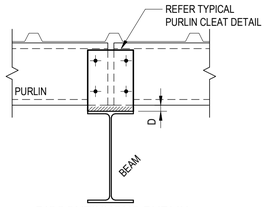


BEAM AND PURLIN ON SAME PLAN



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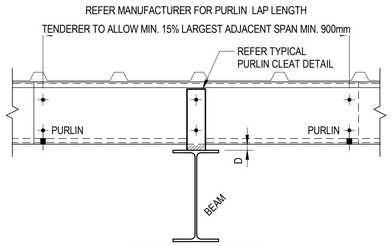

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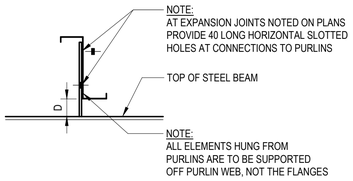


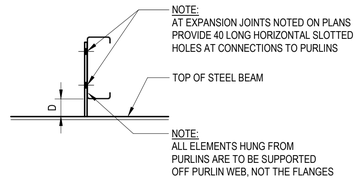
PURLIN CLEAT SCHEDULE			
DISTANCE (D)	SUPPORT (DISCONTINUOUS)	SUPPORT (CONTINUOUS)	PURLIN BOLTS
< 50	130x8 PL.	75x8 PL.	2M12 4.6/S
50 TO 100	130x10 PL.	75x10 PL.	2M12 4.6/S
100 TO 150	130x12 PL.	75x12 PL.	2M12 4.6/S
150 TO 500	150x90x8UA	75x75x6.0 EA	2M12 4.6/S

TYPICAL 'Z' PURLIN CLEAT DETAIL

SCALE: 1:10

NOTES:

- ALL CLEATS TO BE 6 CFW TO BEAM U.N.O.
- GIRT CLEAT CONNECTIONS SIMILAR.



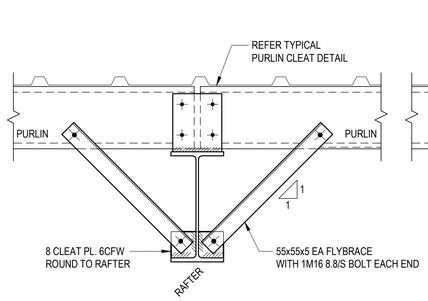
PURLIN CLEAT SCHEDULE			
DISTANCE (D)	SUPPORT (DISCONTINUOUS)	SUPPORT (CONTINUOUS)	PURLIN BOLTS
< 50	130x8 PL.	75x8 PL.	2M12 4.6/S
50 TO 100	130x10 PL.	75x10 PL.	2M12 4.6/S
100 TO 150	130x12 PL.	75x12 PL.	2M12 4.6/S
150 TO 500	150x90x8UA	75x75x6.0 EA	2M12 4.6/S

TYPICAL 'C' PURLIN CLEAT DETAIL

SCALE: 1:10

NOTES:

- ALL CLEATS TO BE 6 CFW TO BEAM U.N.O.
- GIRT CLEAT CONNECTIONS SIMILAR.



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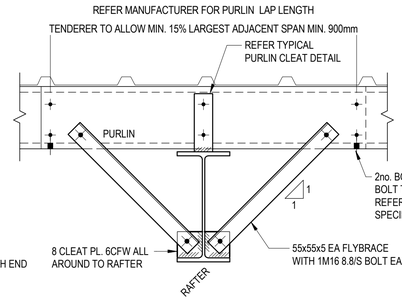

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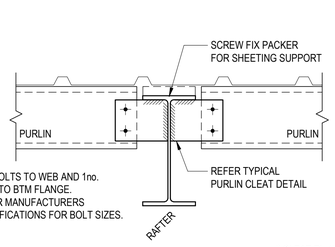
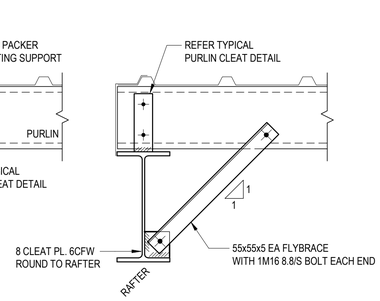


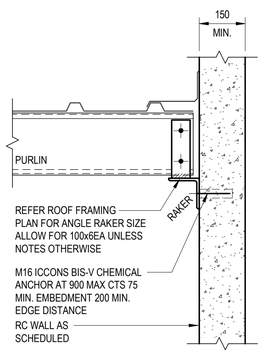
PURLINS SPANNING BETWEEN BEAMS



PURLIN AT END BAY

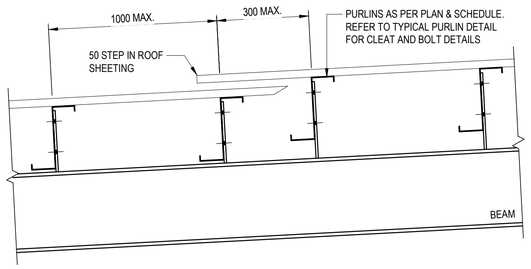
TYPICAL PURLIN AND FLYBRACE DETAIL

SCALE: 1:10



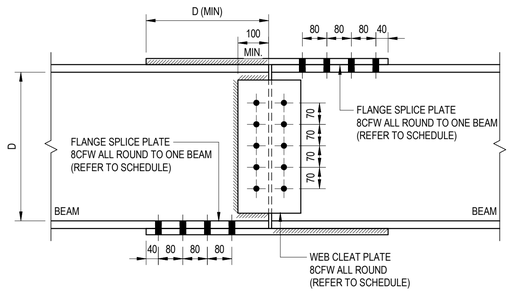
TYPICAL ANGLE RAKER DETAIL

SCALE: 1:10

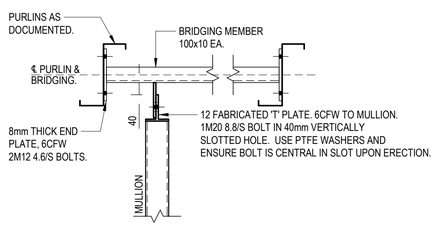


TYPICAL STEP TO ROOF SHEETING

SCALE: 1:10



TYPICAL STEEL SPLICE CONNECTION SCHEDULE						
BEAM SIZE	WEB CLEAT PLATE	FLANGE PLATE TOP & BOTTOM	No. OFF WEB BOLTS	BOLT SIZE WEB	No. OFF FLANGE BOLTS	BOLT SIZE FLANGE
200UB	10mm THICK	12mm THICK	2	M20 8.8/S	4	M20 8.8/TF
200UC	10mm THICK	12mm THICK	2	M20 8.8/S	4	M20 8.8/TF
250UB	10mm THICK	12mm THICK	2	M20 8.8/S	4	M20 8.8/TF
250UC	10mm THICK	20mm THICK	2	M20 8.8/S	6	M24 8.8/TF
310UB	10mm THICK	12mm THICK	3	M20 8.8/S	4	M20 8.8/TF
310UC (REFER NOTE 6)	10mm THICK	25mm THICK	3	M20 8.8/S	8	M24 8.8/TF
360UB	10mm THICK	16mm THICK	3	M20 8.8/S	6	M20 8.8/TF
410UB	10mm THICK	16mm THICK	4	M20 8.8/S	6	M20 8.8/TF
460UB	10mm THICK	16mm THICK	5	M20 8.8/S	6	M20 8.8/TF
530UB	10mm THICK	16mm THICK	5	M20 8.8/S	6	M24 8.8/TF
610UB	10mm THICK	20mm THICK	6	M20 8.8/S	6	M24 8.8/TF



TYPICAL MULLION RESTRAINT DETAIL BETWEEN ROOF PURLINS

SCALE: 1:10

TYPICAL BEAM SPLICE (SP)

SCALE: 1:10

NOTES:

- ALL STEELWORK TO BE GRADE 300 PLUS.
- ALL EXTERNAL STEELWORK TO BE HOT DIPPED GALVANISED.
- ALL BOLTS TO BE M20 8.8/S, UNLESS NOTED OTHERWISE.
- ALL WELDS (SP) 6mm CONTINUOUS FILLET WELD (C.F.W.) ALL ROUND, UNLESS NOTED OTHERWISE.
- FLANGE PLATE WIDTH TO MATCH BEAM FLANGE WIDTH (LESS 20mm FOR WELDING) MIN. UNO.
- 310 UC TO BE SP 8mm CONTINIOUS FILLET WELD C.F.W ALL ROUND (TYP), UNLESS NOTED OTHERWISE
- DETAIL NOT APPLICABLE TO 150UB AND 180UB BEAMS.
- No. OF WEB BOLTS DENOTES NUMBER OF BOLTS EACH SIDE OF SPLICE
- No. OF FLANGE BOLTS DENOTES NUMBER OF BOLTS EACH SIDE OF SPLICE FOR EACH FLANGE.

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB

North

Scale: 0.1 0 0.1 0.2 0.3 0.4 0.5m — SCALE BAR 1:10

Client: NSW GOVERNMENT

Architect: EJE architecture

ACOR CONSULTANTS

ACOR Consultants Pty Ltd
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Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
TYPICAL STEEL DETAILS SHEET 2

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
Author	MG	AB	15.05.2024	1 : 10

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	00	XX	S-0071	1

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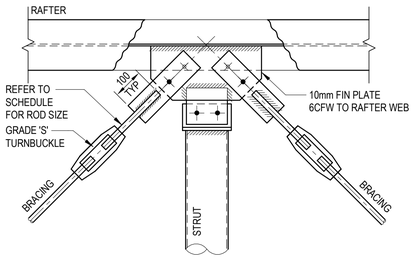
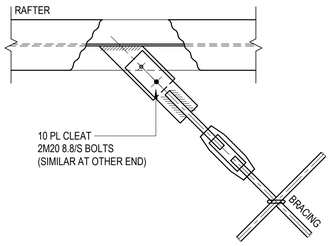
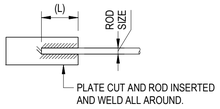




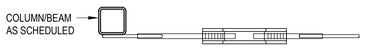
TYPICAL ROOF BRACING DETAIL - ROD AND TURNBUCKLE

SCALE: 1:10
NOTE:
DENOTED BR ON PLAN

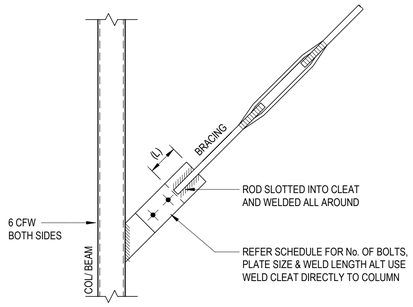


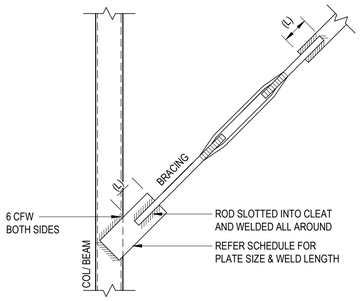
TYPICAL PLATE AND ROD JUNCTION

TYPICAL PLATE SECTION OPTION A



TYPICAL PLATE SECTION OPTION B





TYPICAL ROD / PLATE BRACING END CONNECTION DETAIL

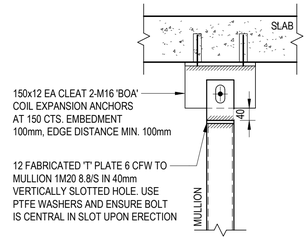
TYPICAL WALL BRACING DETAILS

SCALE: 1:10

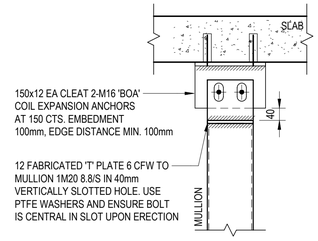
TYPICAL ROD PLATE BRACING SCHEDULE

PLATE SIZE	ROD SIZE	ANGLE SIZE	BOLTS	MINIMUM CLEATS	TURNBUCKLE CAPACITY (MIN)	MINIMUM WELD (L)
50x6 PLATE	16 DIA	50x4 EA	2M16 8.8/S	50x10 PLATE	60kN	50mm
65x8 PLATE	20 DIA	50x6 EA	2M16 8.8/S	65x10 PLATE	70kN	80mm
75x8 PLATE	24 DIA	65x6 EA	2M16 8.8/S	75x10 PLATE	100kN	100mm
120x8 PLATE	30 DIA	75x8 EA	2M20 8.8/S	120x10 PLATE	155kN	130mm

NOTES:
- TURNBUCKLE TO BE SUPPLIED WITH CERTIFICATION TO ENSURE CAPACITY IS GREATER THAN SCHEDULED.
- FIXED END OF FLAT BRACE SIMILAR.
- BRACING IS TO BE TENSIONED FOLLOWING FINAL ALIGNMENT OF BEAM AND PLUMBING OF COLUMNS, PRIOR TO INSTALLATION OF CLADDING AND LININGS



89 SHS MULLION TO SLAB OVER



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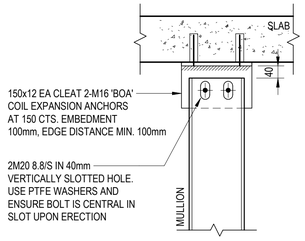
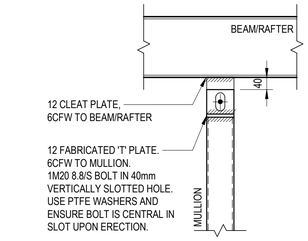
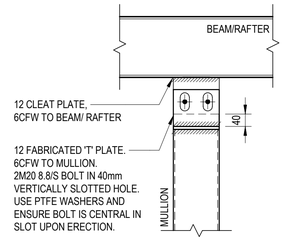


180 PFC MULLION TO SLAB OVER



89 SHS MULLION TO STEEL BEAM



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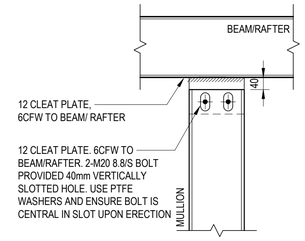
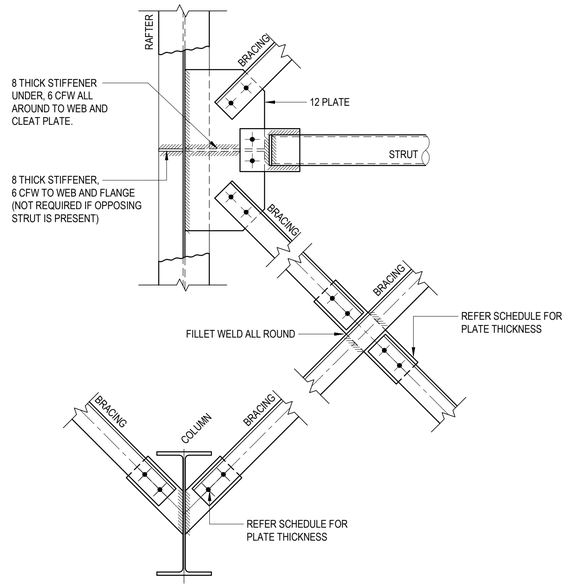


180 PFC MULLION TO STEEL BEAM

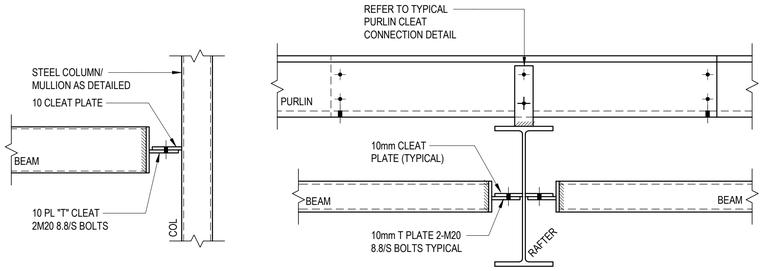
TYPICAL NON-LOADBEARING MULLION DETAILS

SCALE: 1:10



TYPICAL ROOF BRACING DETAIL - ANGLE

SCALE: 1:10
NOTE:
(DENOTED BR ON PLAN)
BRACING TO BE HUNG FROM PURLINS AS INDICATED IN SCHEDULE



TYPICAL RHS/CHS/SHS BEAM TO RAFTER DETAIL

SCALE: 1:10

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB

North

Scale: 0.1 0 0.1 0.2 0.3 0.4 0.5m — SCALE BAR 1:10

Client: NSW GOVERNMENT

Architect: EJE architecture

ACOR CONSULTANTS

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Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
TYPICAL STEEL DETAILS SHEET 3

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
Author	MG	AB	15.05.2024	1 : 10

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	00	XX	S-0072	1

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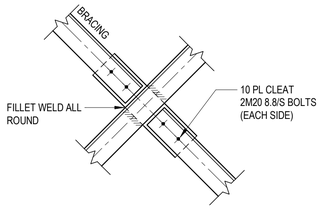
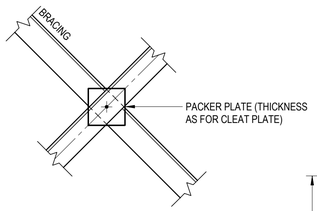
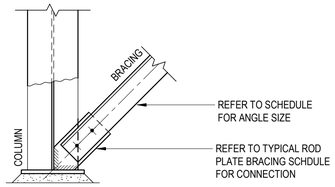


ANGLE CROSS BRACE JUNCTION OPTION 1



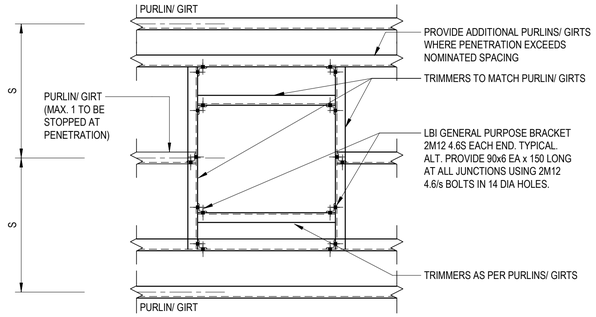
ANGLE CROSS BRACE JUNCTION OPTION 2



TYPICAL WALL BRACING DETAIL - ANGLE

SCALE: 1:10

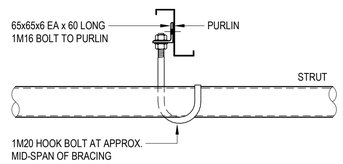
NOTE:
(DENOTED WB ON PLAN)



TYPICAL PURLIN/ GIRT PENETRATION TRIMMER DETAIL

SCALE: 1:10

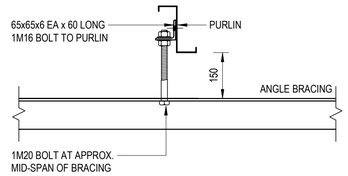
NOTES:
- IF ROOF PENETRATION EXCEEDS NOMINATED PURLIN/ GIRT SPACING, PROVIDE DOUBLE PURLINS GIRTS EACH SIDE OF PENETRATION.
- S - DENOTES PURLIN SPACING NOMINATED IN SCHEDULE



TYPICAL ROOF STRUT SUPPORT DETAIL

SCALE: 1:10

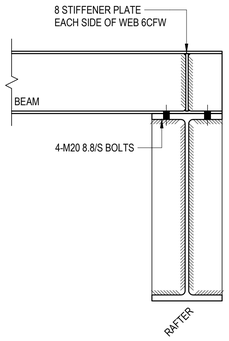
NOTES:
- CENTRELINE OF BRACING TO BE 75 MINIMUM BELOW TOP FLANGE OF ROOF BEAMS.
- TYPICAL BRACING CONNECTION 2M16 8.8/S BOLTS 10mm CLEAT PLATE



TYPICAL ANGLE/ STRAP ROOF BRACE SUPPORT DETAIL

SCALE: 1:10

NOTE:
- TOP ANGLE TO LINE UP WITH TOP OF ROOF BEAMS
- TYPICAL BRACING CONNECTION 2M16 8.8/S BOLTS 10mm CLEAT PLATE

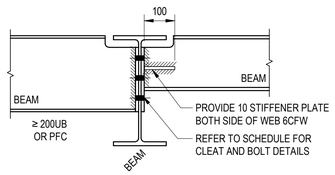


TYPICAL STEEL BEAM TO STEEL BEAM DETAIL

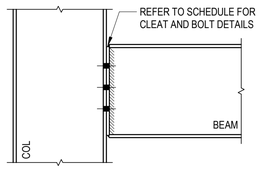
SCALE: 1:10

FIN/ END PLATE SCHEDULE

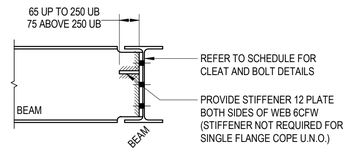
BEAM SIZE	END PLATE THICKNESS 6CFW	NUMBER 8.8/S BOLTS
150UB	10	4M20
180UB	10	4M20
200UB	10	4M20
250UB	10	4M20
310UB	10	6M20
360UB	10	6M20
410UB	12	8M20
460UB	12	10M20
530UB	16	12M20
610UB	16	14M20
700WB	20	16M20



DISSIMILAR BEAM END PLATE DETAIL



TYPICAL END PLATE DETAIL



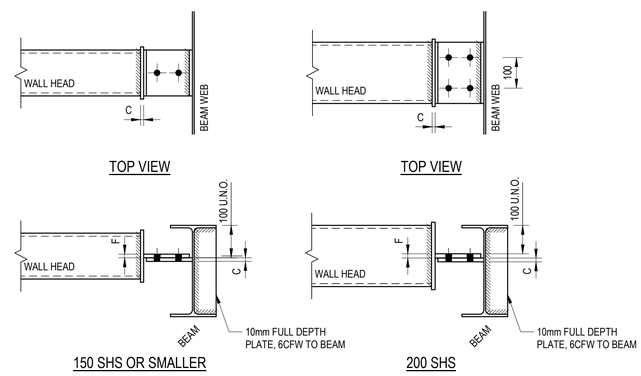
TYPICAL END PLATE DETAIL DOUBLE COPE

TYPICAL FIN/END PLATE DETAIL COLUMN TO RAFTER / BEAM

SCALE: 1:10

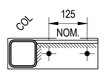
CHS/ SHS CONNECTION SCHEDULE

BEAM SIZE	F	C	NUMBER 8.8/S BOLTS
75 SHS	10	10	2M20
89 SHS	10	10	2M20
100 SHS	10	10	2M20
125 SHS	10	10	2M20
150 SHS	10	10	2M20
200 SHS	12	12	4M20

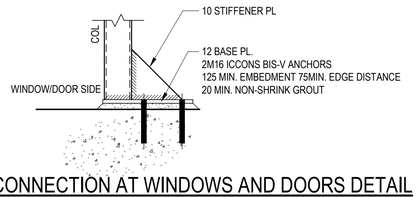


TYPICAL CHS/ SHS WALL HEAD CONNECTION DETAILS

SCALE: 1:10

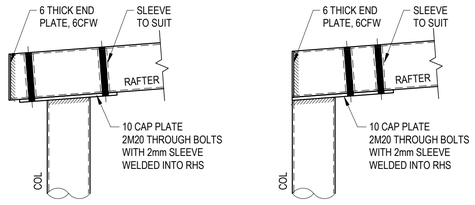


PLAN



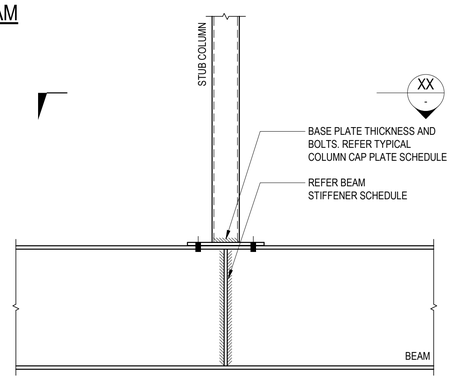
TYPICAL SHS CONNECTION AT WINDOWS AND DOORS DETAIL

SCALE: 1:10



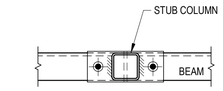
TYPICAL RHS RAFTER TO CHS/ SHS COLUMN DETAILS

SCALE: 1:10

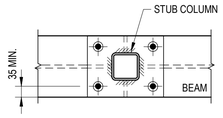


TYPICAL STUB COLUMN TO STEEL BEAM CONNECTION DETAIL

SCALE: 1:10



PLAN VIEW PFC BEAM



PLAN VIEW UB AND UC BEAM

SECTION XX
SCALE = 10

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB

North

Scale
1 0 1 2 3 4 5m
SCALE BAR 1:100

Client
NSW GOVERNMENT

Architect
EJE architecture

ACOR CONSULTANTS

ACOR Consultants Pty Ltd
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T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
TYPICAL STEEL DETAILS SHEET 4

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
Author	MG	AB	15.05.2024	1 : 10

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	00	XX	S-0073	1

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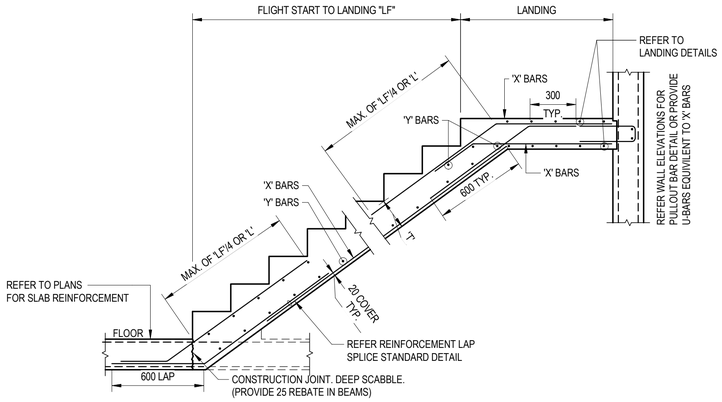
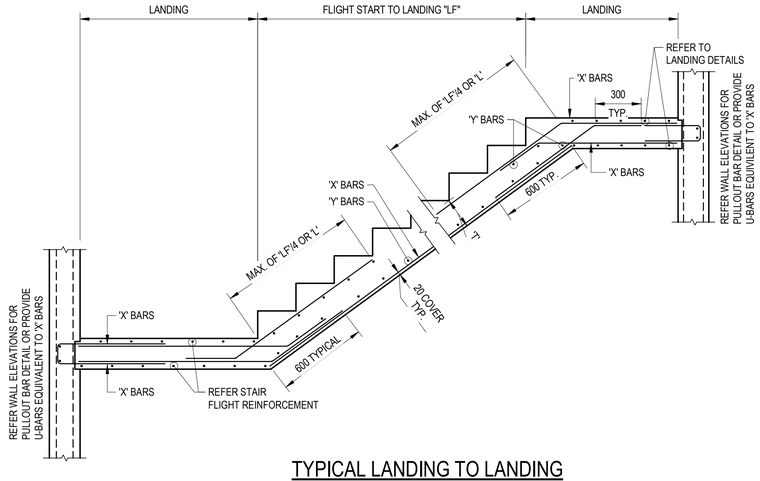


TYPICAL STAIR FLIGHT WITH CONSTRUCTION JOINT

SCALE: 1:20

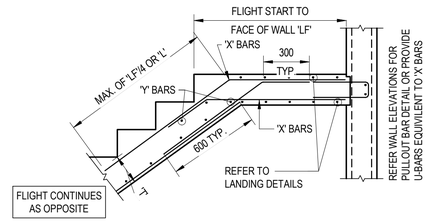
STAIR FLIGHT SCHEDULE					
FLIGHT TAG	THICKNESS 'T'	LAP 'L'	REINFORCEMENT		MAX SPAN 'LF'
			'X' BARS	'Y' BARS	
F1	150	1000	N16-250	N12-300	2100
F2	200	1000	N16-250	N12-300	3000
F3	220	1000	N16-200	N12-300	4200
F4	250	1000	N16-200	N12-300	5000
F5	300	1000	N16-200	N12-300	6000



TYPICAL LANDING TO LANDING

SCALE: 1:20

STAIR FLIGHT SCHEDULE					
FLIGHT TAG	THICKNESS 'T'	LAP 'L'	REINFORCEMENT		MAX SPAN 'LF'
			'X' BARS	'Y' BARS	
F16	150	1000	N16-250	N12-300	2100
F17	200	1000	N16-250	N12-300	3000
F18	220	1000	N16-200	N12-300	4200
F19	250	1000	N16-200	N12-300	5000
F20	300	1000	N16-200	N12-300	6000



TYPICAL STAIR FLIGHT TO WALL

SCALE: 1:20

STAIR FLIGHT SCHEDULE					
FLIGHT TAG	THICKNESS 'T'	LAP 'L'	REINFORCEMENT		MAX SPAN 'LF'
			'X' BARS	'Y' BARS	
F6	150	1000	N16-250	N12-300	2100
F7	200	1000	N16-250	N12-300	3000
F8	220	1000	N16-200	N12-300	4200
F9	250	1000	N16-200	N12-300	5000
F10	300	1000	N16-200	N12-300	6000

CONCRETE STAIR NOTES

SCHEDULES ON THIS DRAWING ARE TO BE READ IN CONJUNCTION WITH STAIR FLIGHT ELEVATIONS. STAIRMASTER FORMWORK OR EQUIVALENT MAY BE USED IN CONJUNCTION WITH THE REINFORCEMENT ON THIS DRAWING UNLESS NOTED OTHERWISE ON SHOP DRAWING ENGINEERING COMMENTS.
NOTE THAT IF FABRIC REINFORCEMENT IS USED INSTEAD OF BARS, THE EQUIVALENT LAPS AS INDICATED ON THESE FLIGHT DETAILS MUST STILL BE MAINTAINED AT CRANKS.

CONCRETE GRADE N32 UNO.

STAIR MASTER STAIRS:

MAIN WIRES OF BOTTOM MESH TO BE CONTINUOUS ie. NO LAPS OR WELDS. WELDING OF MESH IS NOT PERMITTED UNLESS PROCESS USED DOES NOT ALTER MESH STRENGTH PROPERTIES OF AS4671. DO NOT WELD TO MAIN WIRES OF MESH. MAIN WIRES OF MESH TO BE LOWER MOST WITH 20mm COVER TO TRAY FORMWORK.
LANDING REINFORCEMENT MUST NOT BE INTERRUPTED BY SIDES OF FLIGHTS CONTINUING INTO LANDING. MESH TO HAVE AT LEAST THE EQUIVALENT CROSS SECTIONAL AREA OF THE BARS CALLED UP IN THE SCHEDULES.
REINFORCEMENT SHOWN IN SCHEDULES IS INDICATIVE UNLESS NOTED OTHERWISE ON SHOP DRAWING ENGINEER COMMENTS.

DESIGN LOADS

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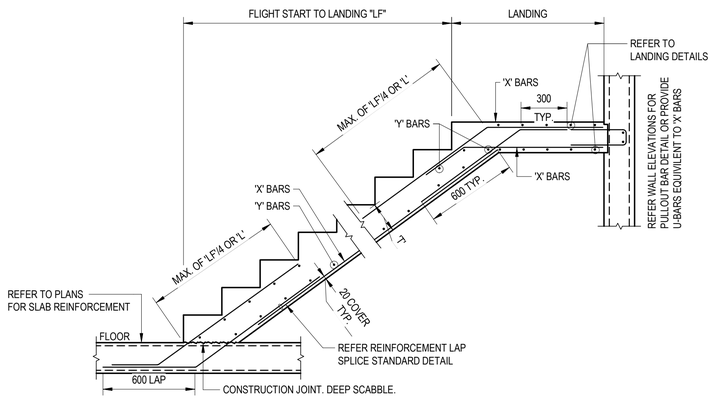
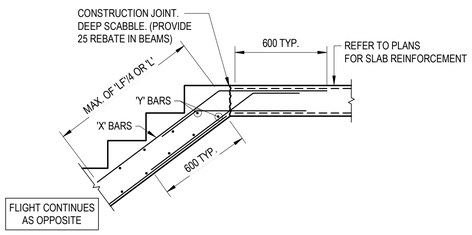
LL: 4.0 kPa



TYPICAL STAIR FLIGHT TO SUSPENDED SLAB

SCALE: 1:20

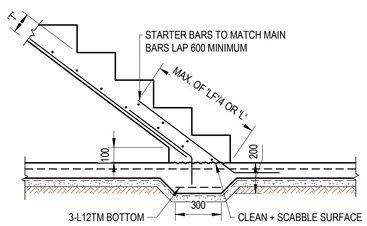
STAIR FLIGHT SCHEDULE					
FLIGHT TAG	THICKNESS 'T'	LAP 'L'	REINFORCEMENT		MAX SPAN 'LF'
			'X' BARS	'Y' BARS	
F1	150	1000	N16-250	N12-300	2100
F2	200	1000	N16-250	N12-300	3000
F3	220	1000	N16-200	N12-300	4200
F4	250	1000	N16-200	N12-300	5000
F5	300	1000	N16-200	N12-300	6000



TYPICAL STAIR FLIGHT TO LANDING WITH CONSTRUCTION JOINT

SCALE: 1:20

STAIR FLIGHT SCHEDULE					
FLIGHT TAG	THICKNESS 'T'	LAP 'L'	REINFORCEMENT		MAX SPAN 'LF'
			'X' BARS	'Y' BARS	
F11	150	1000	N16-250	N12-300	2100
F12	200	1000	N16-250	N12-300	3000
F13	220	1000	N16-200	N12-300	4200
F14	250	1000	N16-200	N12-300	5000
F15	300	1000	N16-200	N12-300	6000

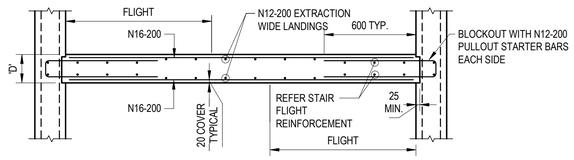


TYPICAL THICKENING BASE DETAIL

SCALE: 1:20

NOTES:

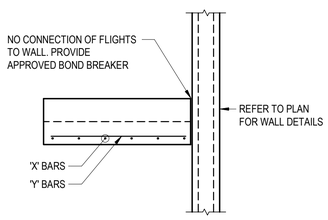
- ALL MAIN BARS TO BE N16-200 UNLESS NOTED OTHERWISE.
- ALL CROSS RODS TO BE N12-300 UNLESS NOTED OTHERWISE.
- ALL LAPS TO BE 400 MINIMUM UNLESS NOTED OTHERWISE.



TYPICAL WALL TO WALL LANDING

SCALE: 1:20

NOTE:
LANDING DEPTH 'D' TO MATCH LARGER OF INCOMING FLIGHTS ('T') OR 200mm WHICHEVER IS GREATER



TYPICAL SECTION THROUGH STAIR FLIGHT

SCALE: 1:20

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB

North

Scale: 0.2 0 0.2 0.4 0.6 0.8 1m — SCALE BAR 1:20

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

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T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
TYPICAL CONCRETE STAIR DETAILS

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 20

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	00	XX	S-0090	1

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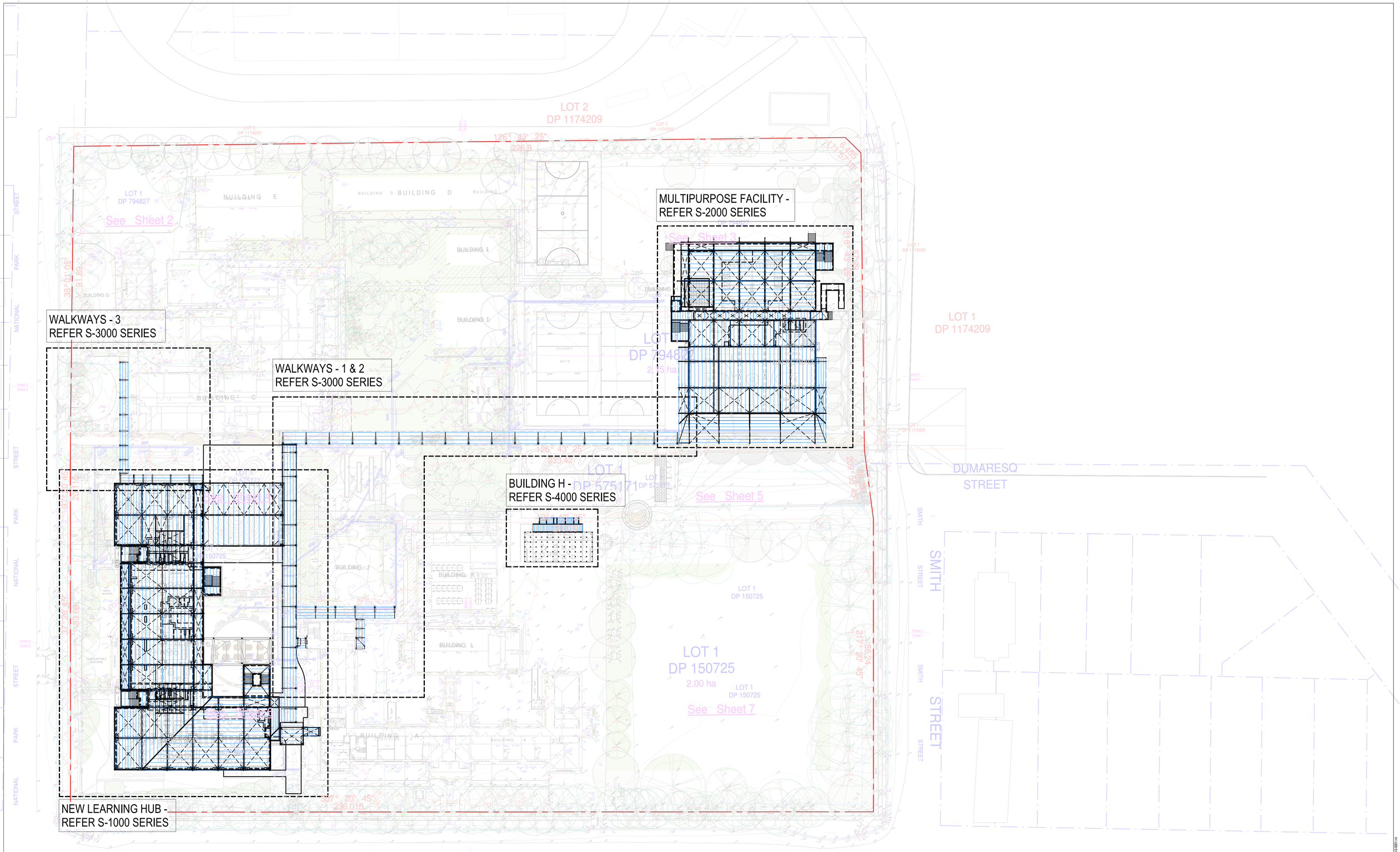

SITE PLAN

SCALE: 1 : 500

Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

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The Forum, Level 1, Suite 1
240-244 Pacific Highway
Charlestown NSW 2290
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Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL OVERALL SITE PLAN

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 500

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	00	ZZ	S-0100	1

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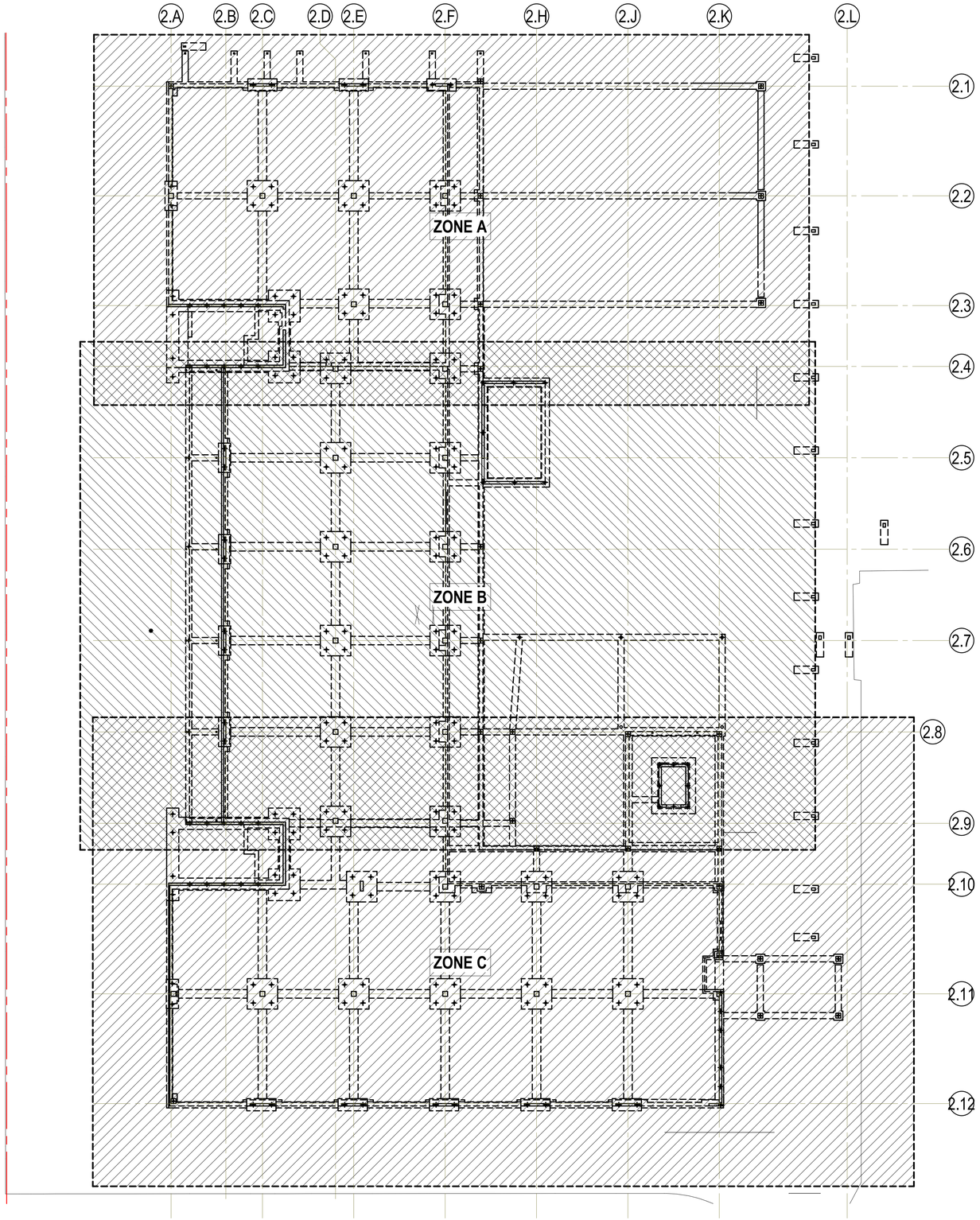

NEW LEARNING HUB - FOUNDATION OVERALL PLAN

SCALE: 1 : 200

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale

2 0 2 4 6 8 10m

SCALE BAR 1:200

PRINT IN COLOUR

Client

NSW GOVERNMENT

Architect

EJE architecture

ACOR CONSULTANTS

ACOR Consultants Pty Ltd
The Forum, Level 1, Suite 1
240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - FOUNDATION OVERALL PLAN

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 200

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	GF	S-1000	1

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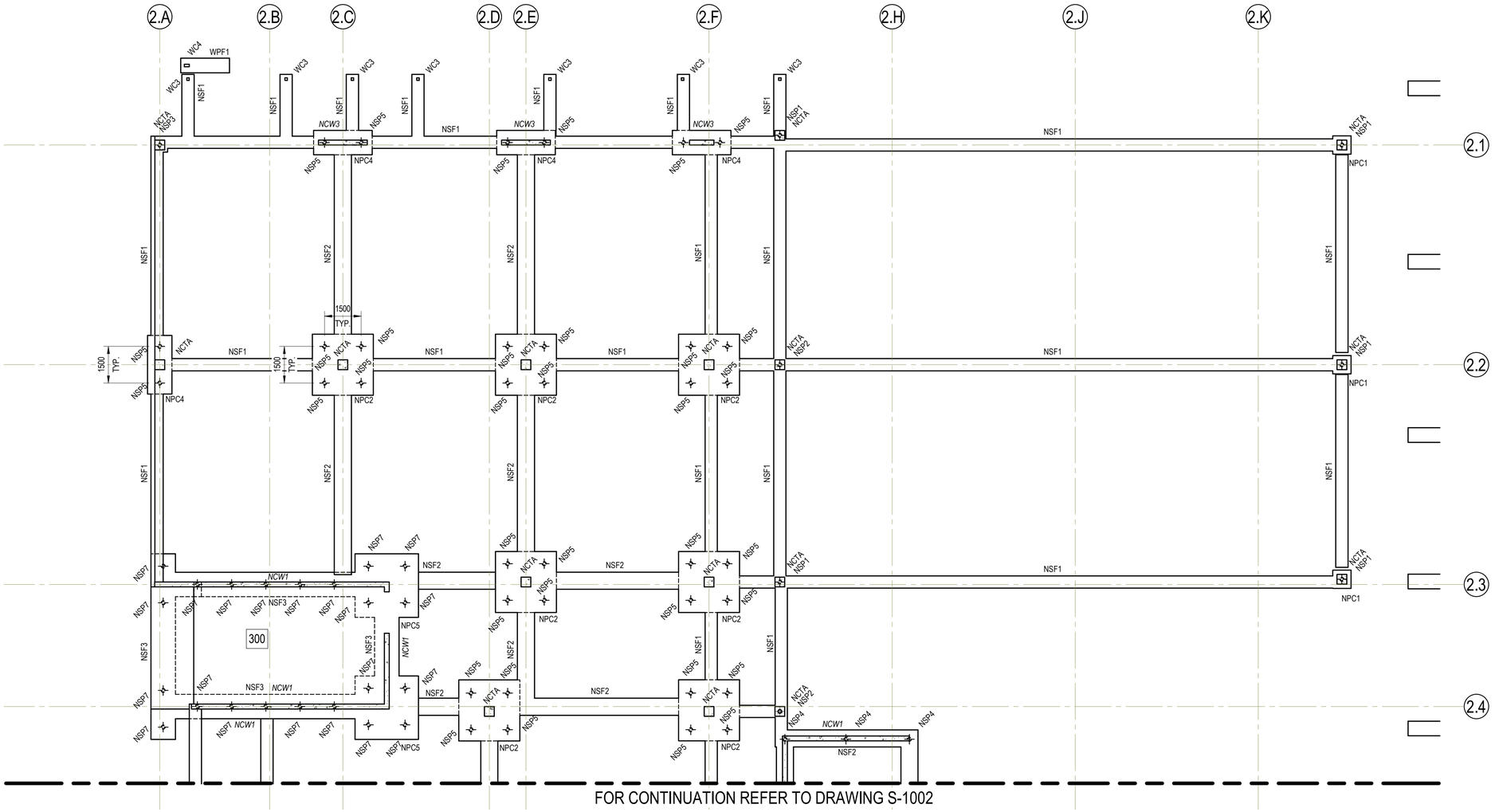
15/05/2024 3:34:43 PM



NEW LEARNING HUB - FOUNDATION - GA PLAN - ZONE A

SCALE: 1 : 100

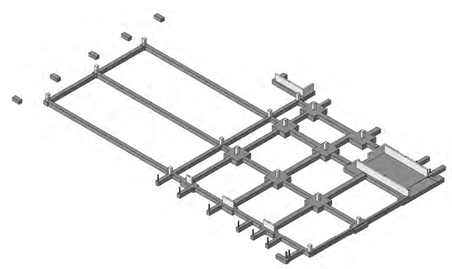
LEGEND

300	DENOTES 300 THICK SLAB. REINFORCE SLAB WITH N16-200 TOP AND BOTTOM.
1000	DENOTES 1000 THICK SLAB.

NOTES:

- REFER TO DRAWINGS S-0001 TO S-0003 FOR ALL STRUCTURAL GENERAL NOTES.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
- ALL FALLS, SETDOWNS & WATERPROOFING ARE TO ARCHITECTS DETAILS U.N.O.

REFER TO S-1999 FOR STRUCTURAL MEMBER SCHEDULES



Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

ACOR CONSULTANTS

ACOR Consultants Pty Ltd
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240-244 Pacific Highway
Charlestown NSW 2290
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Project: NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - FOUNDATION - GA PLAN - ZONE A

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	GF	S-1001	1

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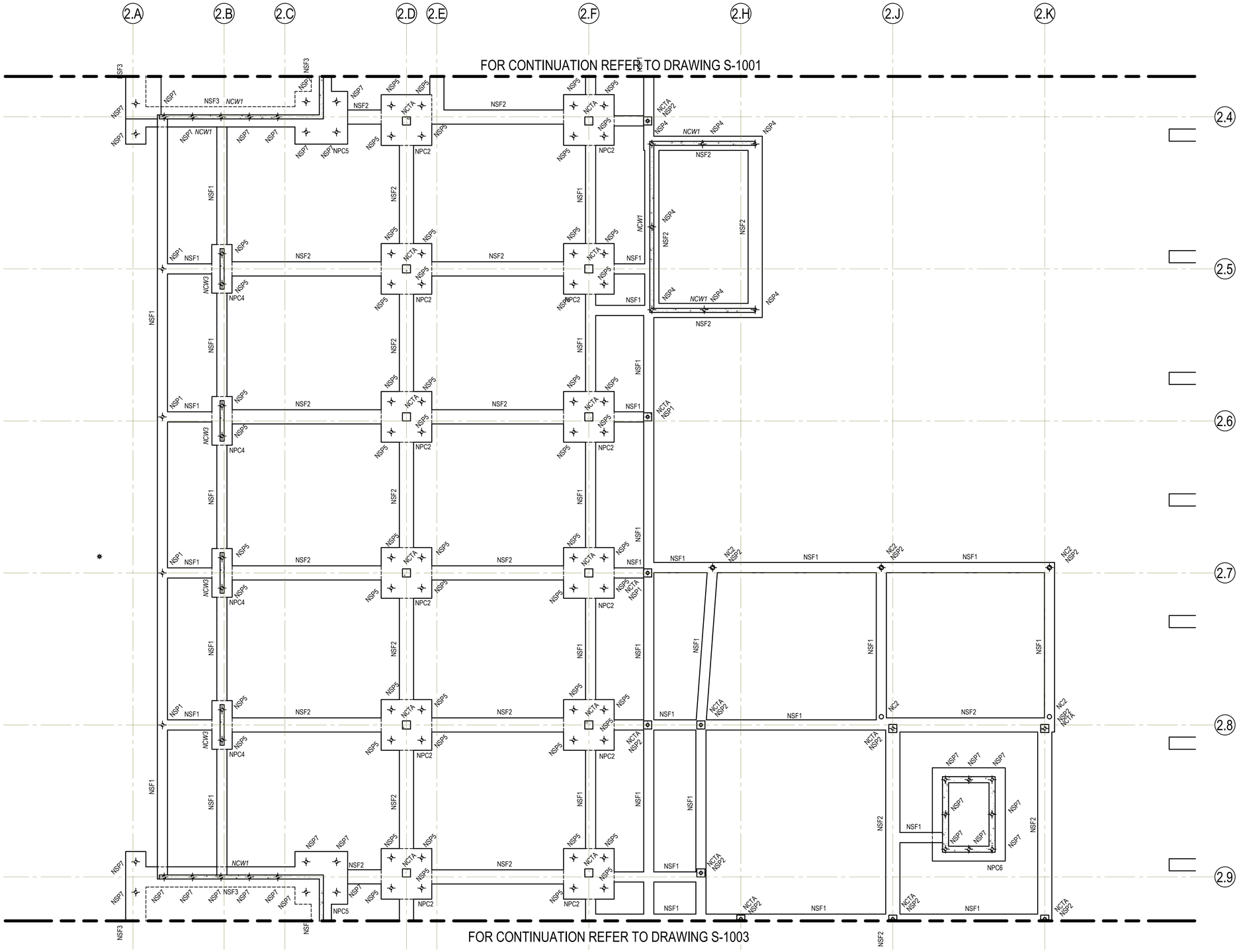


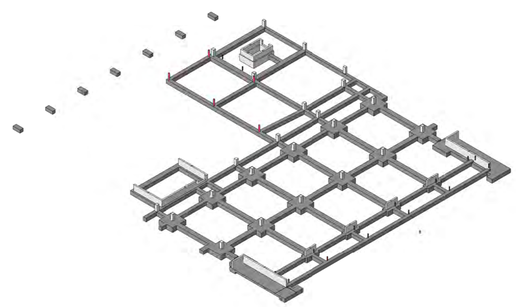
LEGEND

300	DENOTES 300 THICK SLAB. REINFORCE SLAB WITH N16-200 TOP AND BOTTOM.
1000	DENOTES 1000 THICK SLAB.

NOTES:

- REFER TO DRAWINGS S-0001 TO S-0003 FOR ALL STRUCTURAL GENERAL NOTES.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
- ALL FALLS, SETDOWNS & WATERPROOFING ARE TO ARCHITECTS DETAILS U.N.O.

REFER TO S-1999 FOR STRUCTURAL MEMBER SCHEDULES



NEW LEARNING HUB - FOUNDATION - GA - ZONE B

SCALE: 1 : 100

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

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240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - FOUNDATION - GA PLAN - ZONE B

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	GF	S-1002	1

Autodesk Docs://NS230761/NSW HIGH SCHOOL - ACOR - ZZ - ZZ - M3 - S - 0001.rvt
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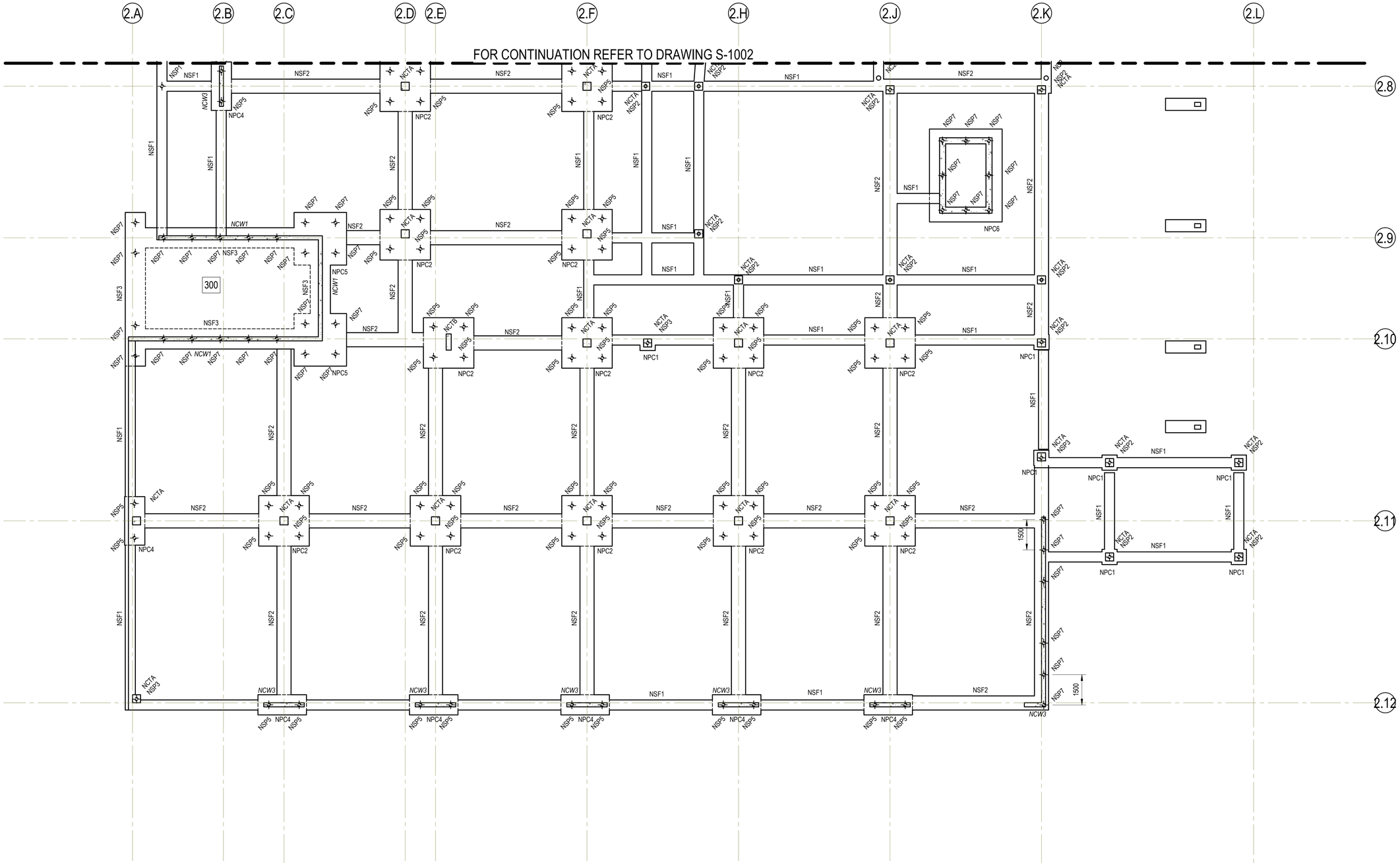


LEGEND

300	DENOTES 300 THICK SLAB. REINFORCE SLAB WITH N16-200 TOP AND BOTTOM.
1000	DENOTES 1000 THICK SLAB.

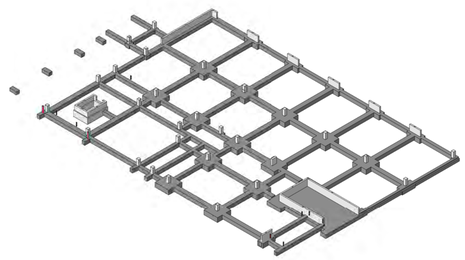
NOTES:

- REFER TO DRAWINGS S-0001 TO S-0003 FOR ALL STRUCTURAL GENERAL NOTES.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
- ALL FALLS, SETDOWNS & WATERPROOFING ARE TO ARCHITECTS DETAILS U.N.O.

REFER TO S-1999 FOR STRUCTURAL MEMBER SCHEDULES

NEW LEARNING HUB - FOUNDATION - GA - ZONE C

SCALE: 1 : 100



Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

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Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - FOUNDATION - GA PLAN - ZONE C

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	GF	S-1003	1

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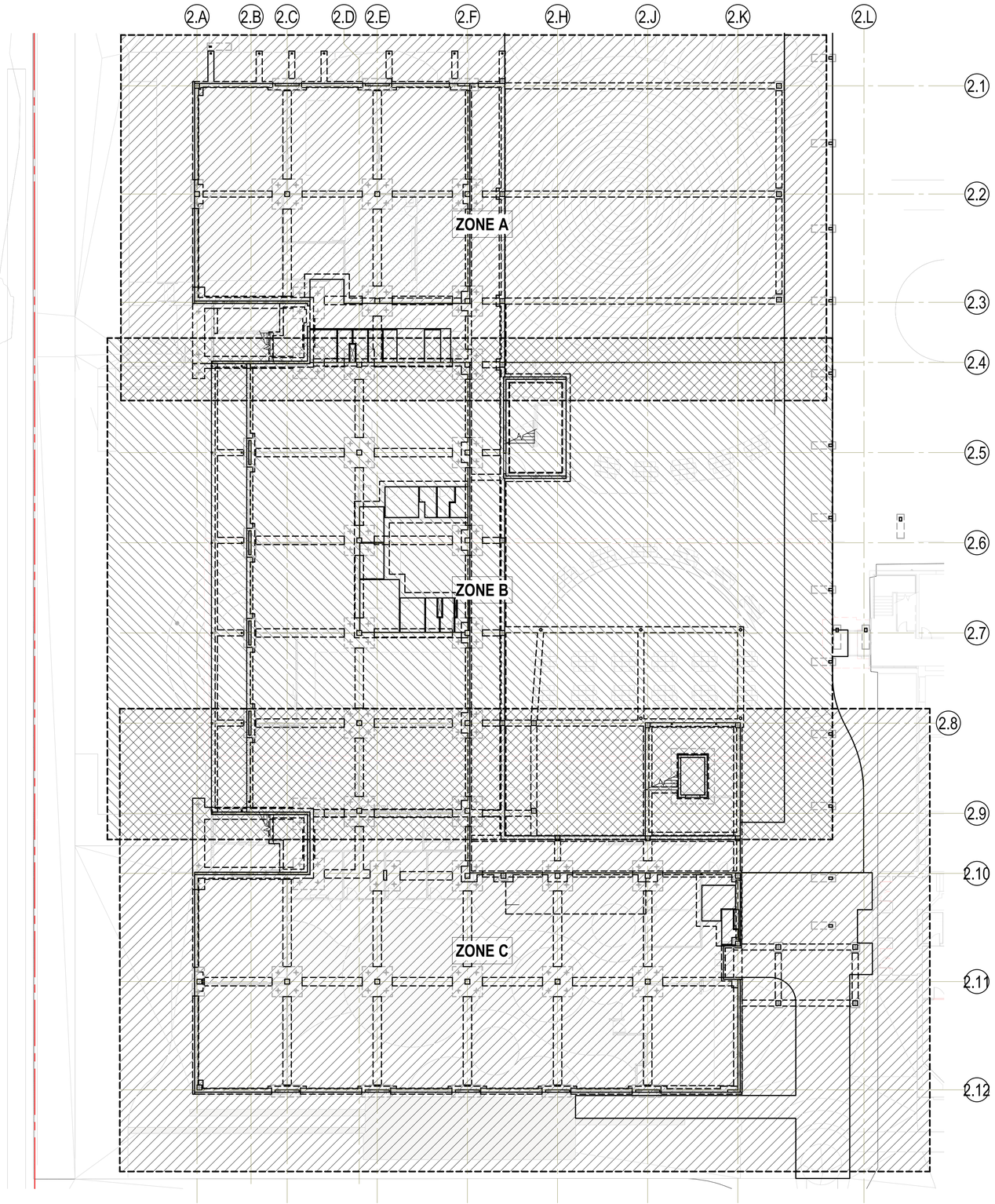

NEW LEARNING HUB - GROUND OVERALL PLAN

SCALE: 1 : 200

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale

2 0 2 4 6 8 10m

SCALE BAR 1:200

PRINT IN COLOUR

Client

NSW GOVERNMENT

Architect

EJE architecture

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Charlestown NSW 2290
T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - GROUND OVERALL PLAN

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 200

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	GF	S-1100	1

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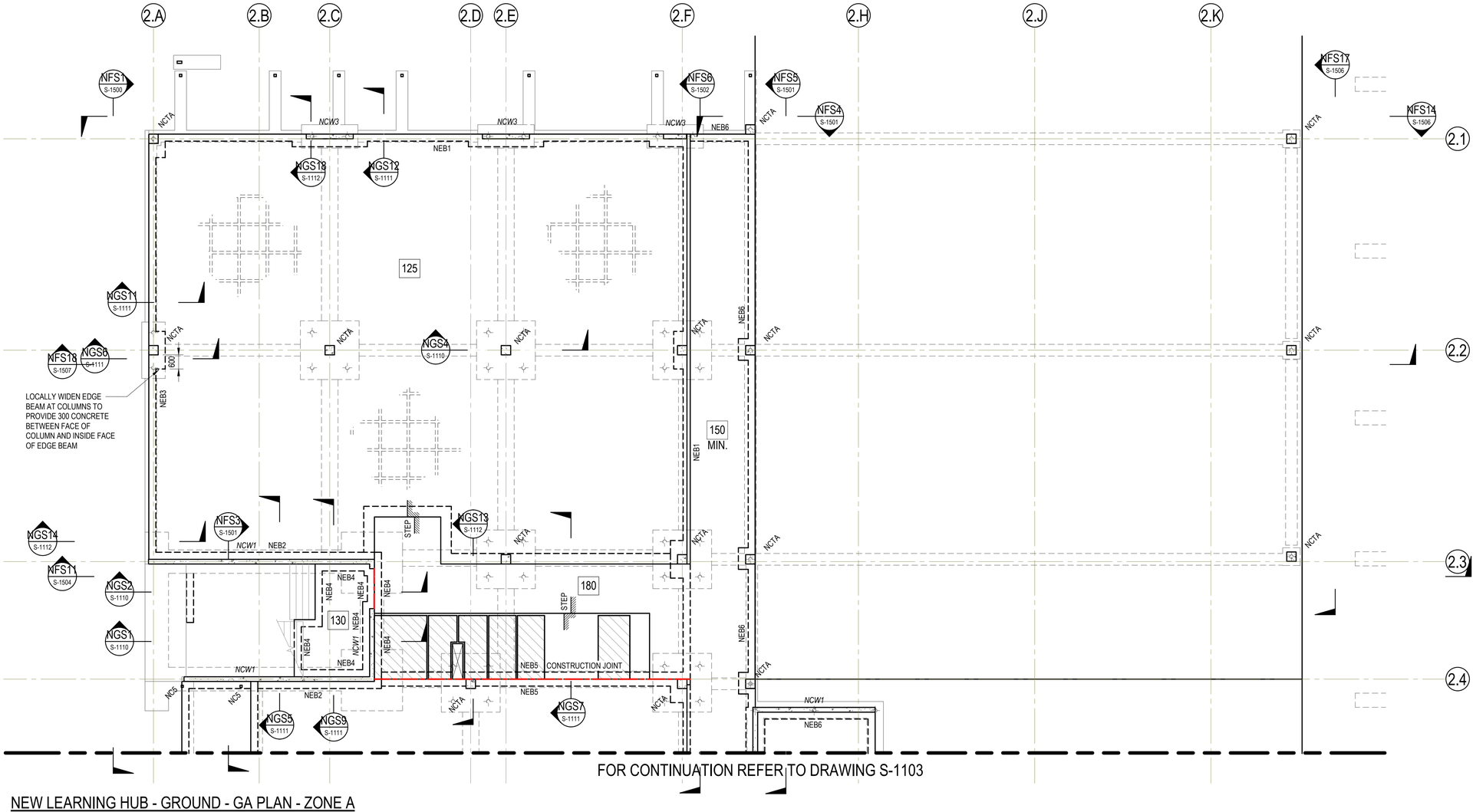
15/05/2024 3:38:10 PM
Autodesk Docs://NS230761 NEWCASTLE HIGH SCHOOL/S-1100 S-1100 - GF.rvt



NEW LEARNING HUB - GROUND - GA PLAN - ZONE A

SCALE: 1 : 100

LEGEND

125	DENOTES 125 THICK SLAB OVER 300 DEEP WAFFLE PODS. REINFORCE SLAB WITH SL92 MESH TOP. 150 THICK RIBS. 2N20 BARS TOP AND BOTTOM IN RIBS.
150 MIN.	DENOTES MINIMUM 150 THICK SLAB OVER 225 DEEP WAFFLE PODS. REINFORCE SLAB WITH SL92 MESH TOP. 150 THICK RIBS. 2N20 BARS TOP AND BOTTOM IN RIBS.
180	DENOTES 180 THICK SLAB OVER 225 DEEP WAFFLE PODS. REINFORCE SLAB WITH SL82 MESH TOP AND BOTTOM. 150 THICK RIBS. 2N20 BARS TOP AND BOTTOM.
STEP	DENOTES SLAB STEP. REFER TO PLAN FOR VARIATION.
CJ	DENOTES CONSTRUCTION JOINT

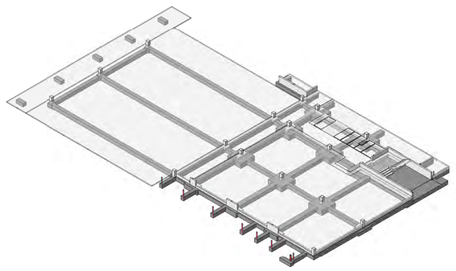
NOTES:

- REFER TO DRAWINGS S-0001 TO S-0003 FOR ALL STRUCTURAL GENERAL NOTES.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
- ALL FALLS, SETDOWNS & WATERPROOFING ARE TO ARCHITECTS DETAILS U.N.O.
- UNLESS NOTED OTHERWISE ALL WET AREA SETDOWNS ARE TO BE A MINIMUM =##mm
- NON STRUCTURAL KERBS AND HOBS ARE NOT SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT AND LOCATIONS.

FRL & COVER NOTE:

FIRE RESISTANCE LEVEL (FRL) =			120/120/120
CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-1999 FOR STRUCTURAL MEMBER SCHEDULES



Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

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Project: NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - GROUND - GA PLAN - ZONE A

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	GF	S-1101	1

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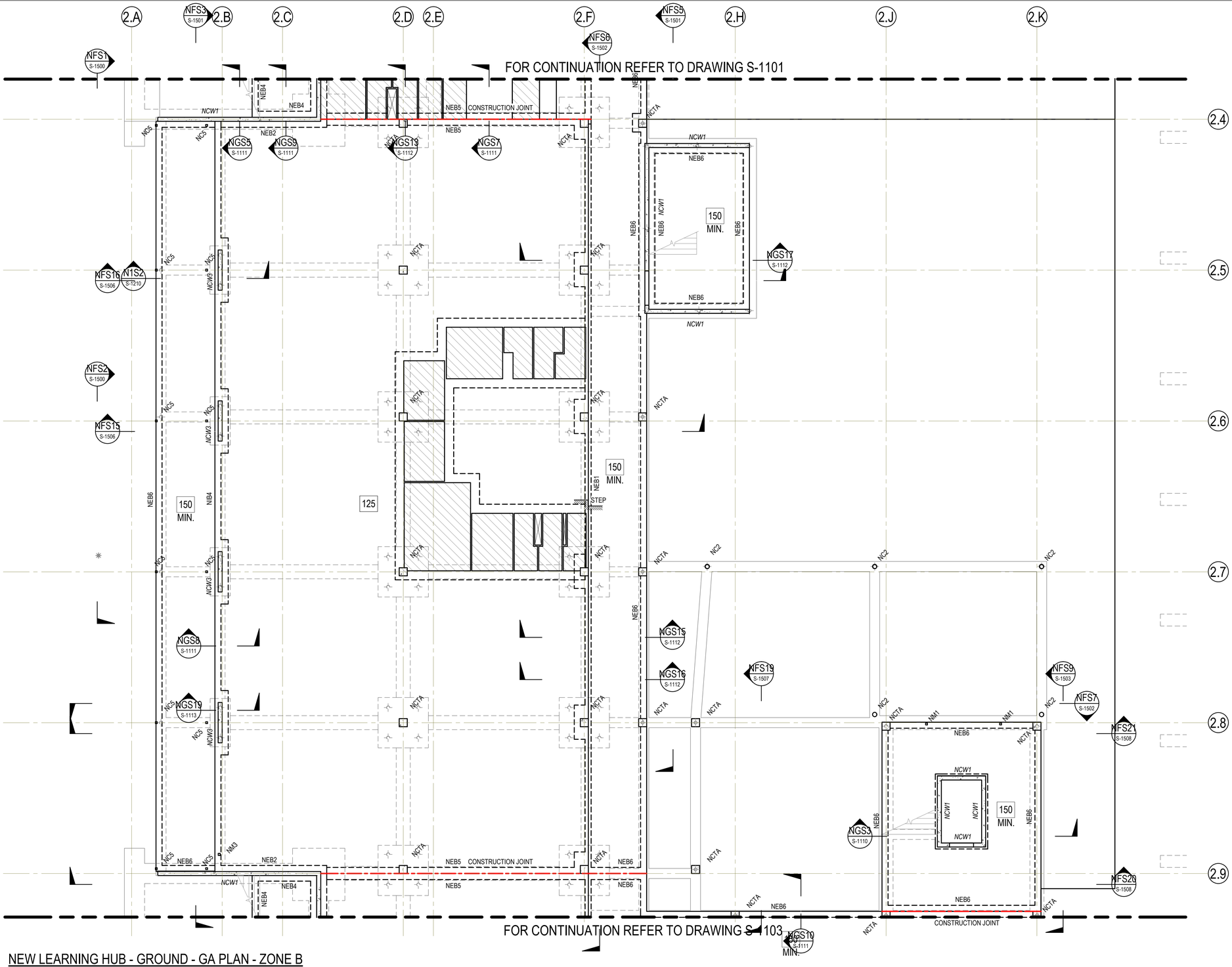

NEW LEARNING HUB - GROUND - GA PLAN - ZONE B

SCALE: 1 : 100

LEGEND

125	DENOTES 125 THICK SLAB OVER 300 DEEP WAFFLE PODS. REINFORCE SLAB WITH SL92 MESH TOP. 150 THICK RIBS. 2N20 BARS TOP AND BOTTOM IN RIBS.
150 MIN.	DENOTES MINIMUM 150 THICK SLAB OVER 225 DEEP WAFFLE PODS. REINFORCE SLAB WITH SL92 MESH TOP. 150 THICK RIBS. 2N20 BARS TOP AND BOTTOM IN RIBS.
180	DENOTES 180 THICK SLAB OVER 225 DEEP WAFFLE PODS. REINFORCE SLAB WITH SL82 MESH TOP AND BOTTOM. 150 THICK RIBS. 2N20 BARS TOP AND BOTTOM.
STEP	DENOTES SLAB STEP. REFER TO PLAN FOR VARIATION.
CJ	DENOTES CONSTRUCTION JOINT

NOTES:

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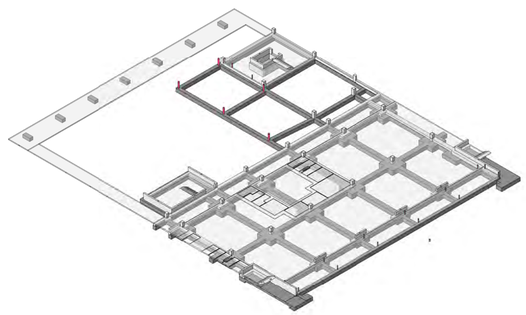
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
- ALL FALLS, SETDOWNS & WATERPROOFING ARE TO ARCHITECTS DETAILS U.N.O.
- UNLESS NOTED OTHERWISE ALL WET AREA SETDOWNS ARE TO BE A MINIMUM =##mm
- NON STRUCTURAL KERBS AND HOBS ARE NOT SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT AND LOCATIONS.

FRL & COVER NOTE:

FIRE RESISTANCE LEVEL (FRL) =			120/120/120
CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-1999 FOR STRUCTURAL MEMBER SCHEDULES



Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

ACOR CONSULTANTS

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240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - GROUND - GA PLAN - ZONE B

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	GF	S-1102	1

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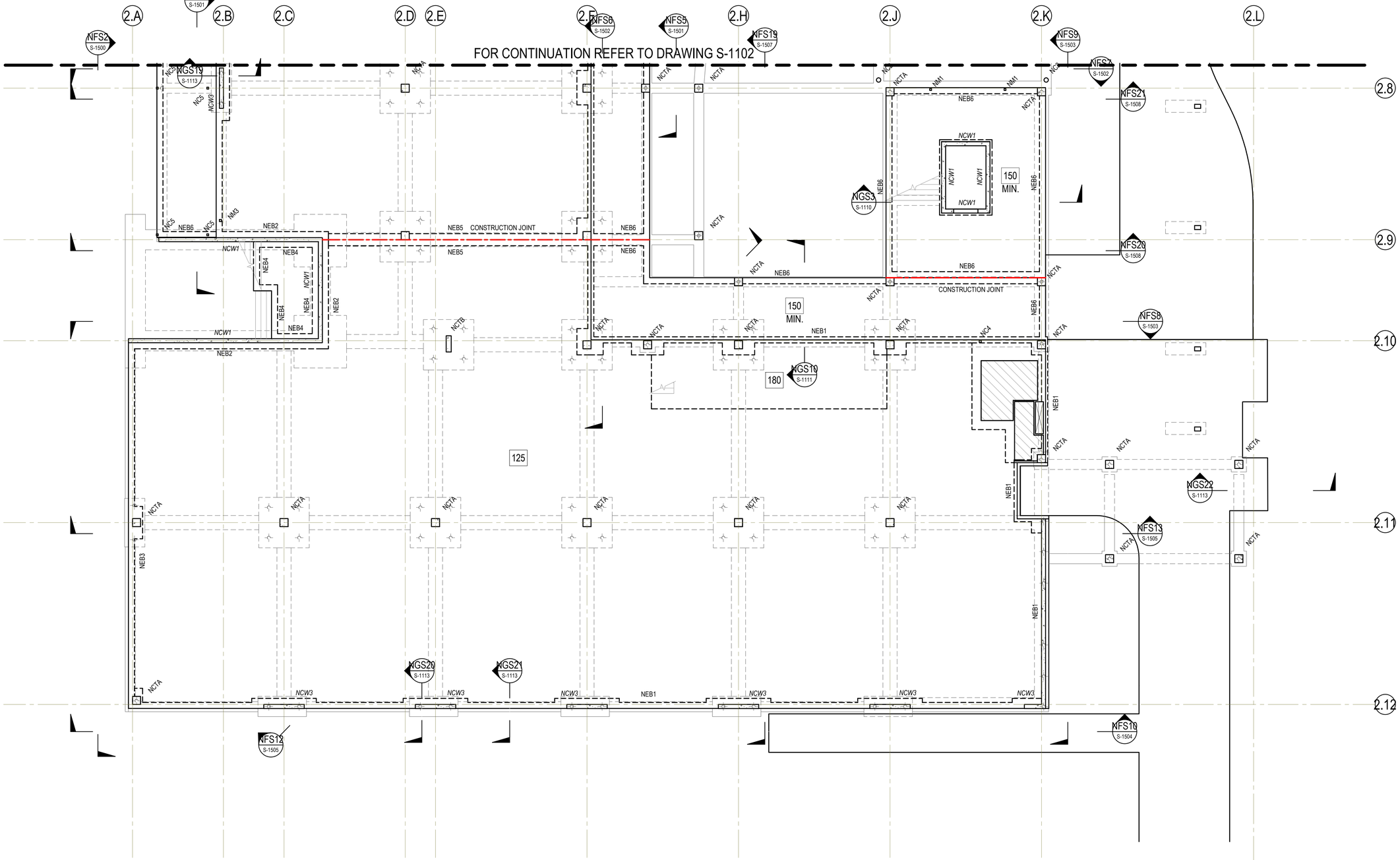


LEGEND

125	DENOTES 125 THICK SLAB OVER 300 DEEP WAFFLE PODS. REINFORCE SLAB WITH SL92 MESH TOP. 150 THICK RIBS. 2N20 BARS TOP AND BOTTOM IN RIBS.
150 MIN.	DENOTES MINIMUM 150 THICK SLAB OVER 225 DEEP WAFFLE PODS. REINFORCE SLAB WITH SL92 MESH TOP. 150 THICK RIBS. 2N20 BARS TOP AND BOTTOM IN RIBS.
180	DENOTES 180 THICK SLAB OVER 225 DEEP WAFFLE PODS. REINFORCE SLAB WITH SL82 MESH TOP AND BOTTOM. 150 THICK RIBS. 2N20 BARS TOP AND BOTTOM.
STEP	DENOTES SLAB STEP. REFER TO PLAN FOR VARIATION.
CJ	DENOTES CONSTRUCTION JOINT

NOTES:

- REFER TO DRAWINGS S-0001 TO S-0003 FOR ALL STRUCTURAL GENERAL NOTES.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
- ALL FALLS, SETDOWNS & WATERPROOFING ARE TO ARCHITECTS DETAILS U.N.O.
- UNLESS NOTED OTHERWISE ALL WET AREA SETDOWNS ARE TO BE A MINIMUM =##mm
- NON STRUCTURAL KERBS AND HOBS ARE NOT SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT AND LOCATIONS.

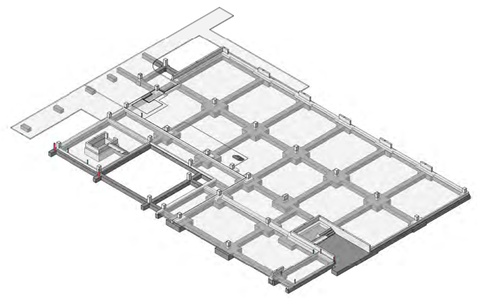
FRL & COVER NOTE:

FIRE RESISTANCE LEVEL (FRL) =			120/120/120
CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-1999 FOR STRUCTURAL MEMBER SCHEDULES

NEW LEARNING HUB - GROUND - GA PLAN - ZONE C

SCALE: 1 : 100



Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

ACOR CONSULTANTS

ACOR Consultants Pty Ltd
The Forum, Level 1, Suite 1
240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - GROUND - GA PLAN - ZONE C

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	GF	S-1103	1

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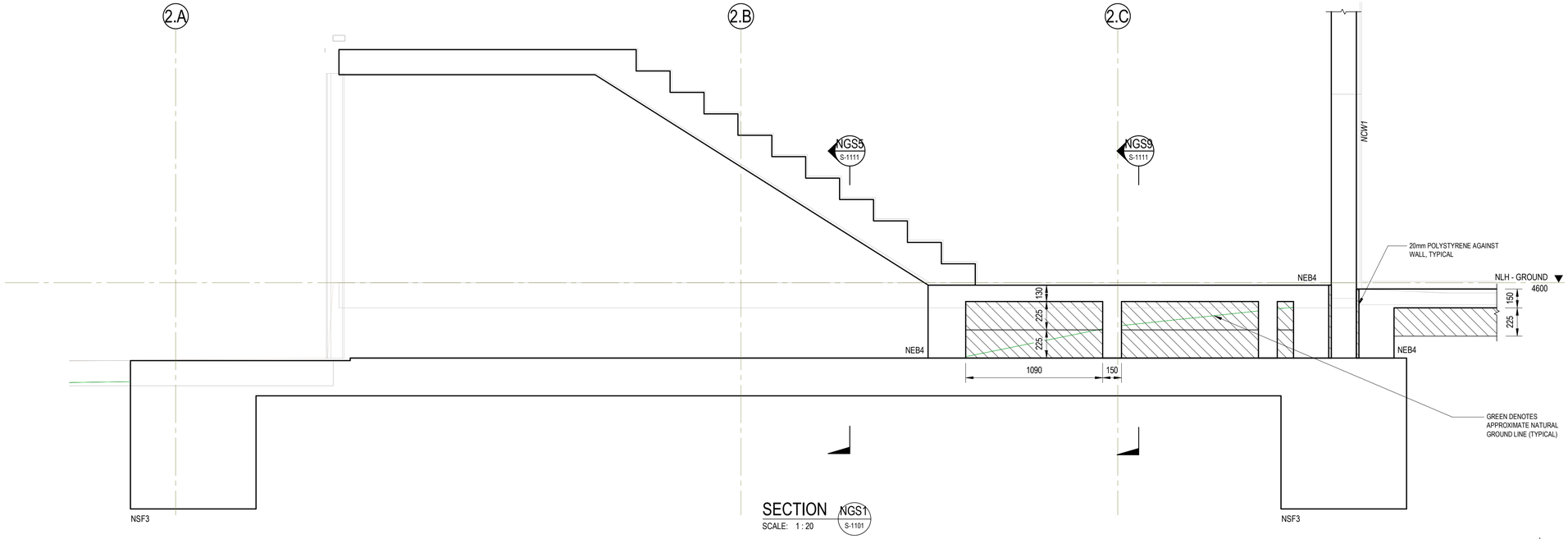

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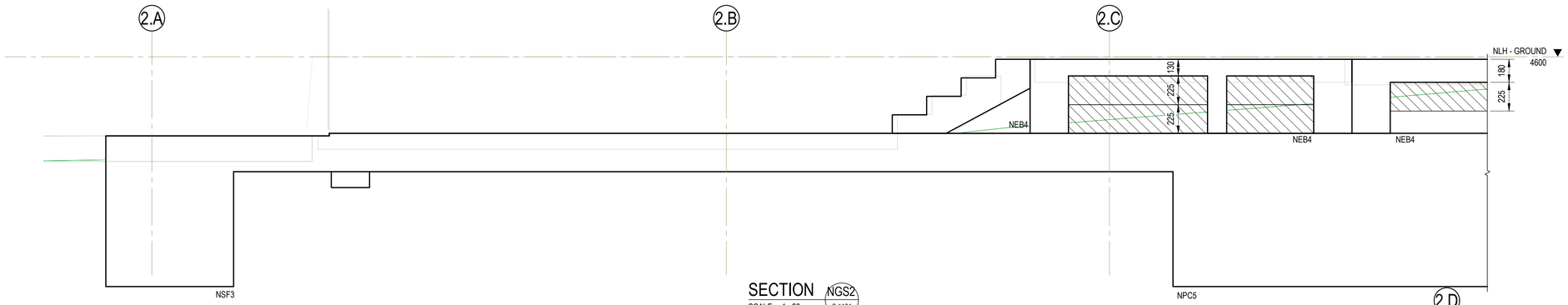

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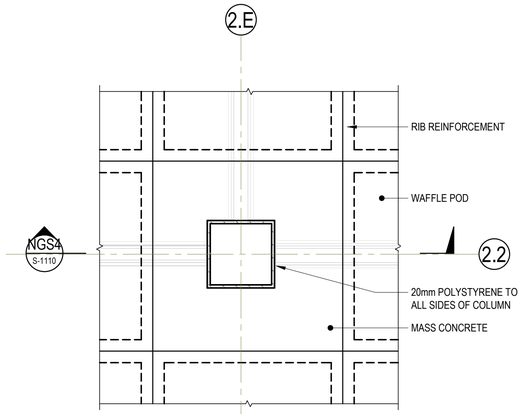

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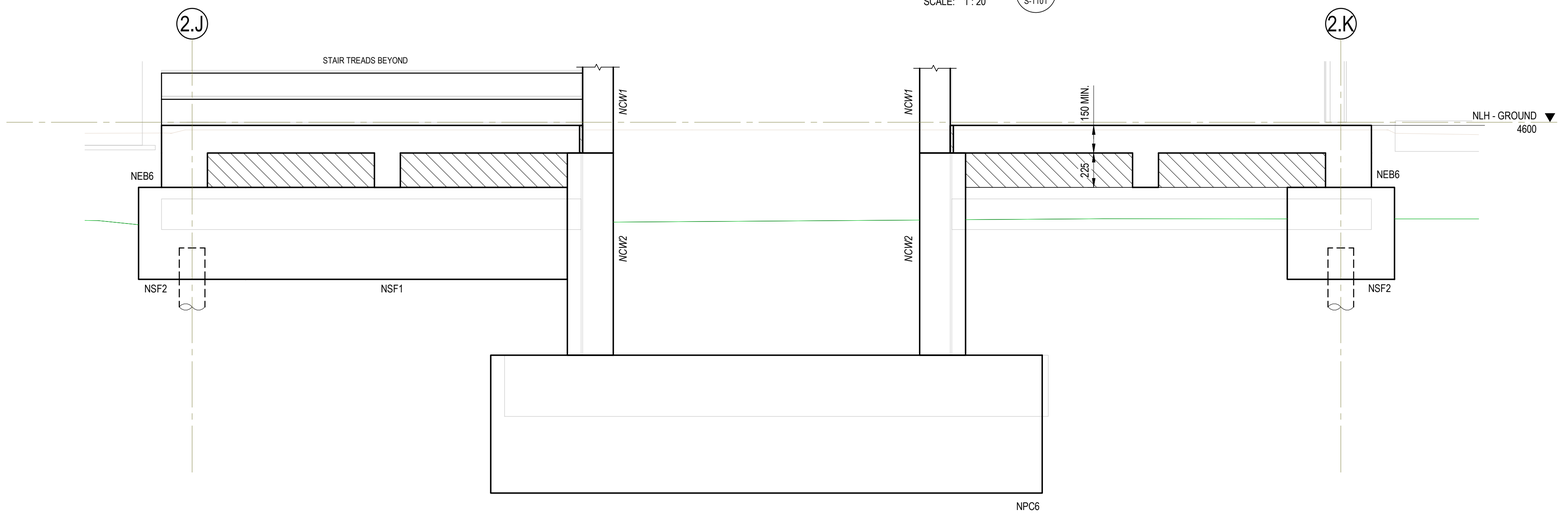

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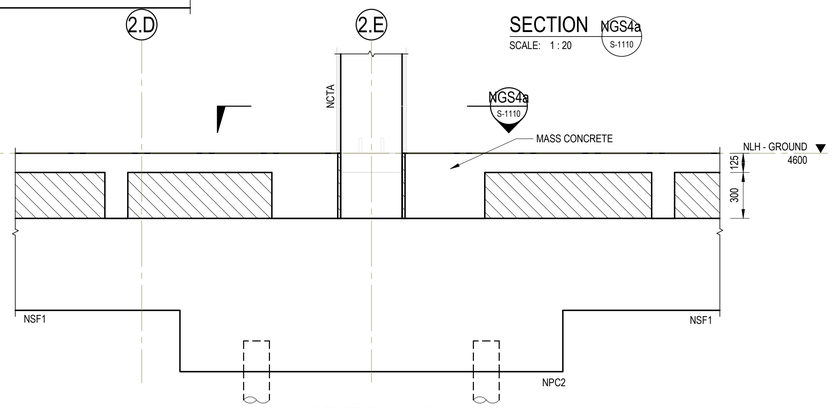

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SCALE: 1 : 20

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
0.2 0 0.2 0.4 0.6 0.8 1m
SCALE BAR 1:20

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

ACOR CONSULTANTS

ACOR Consultants Pty Ltd
The Forum, Level 1, Suite 1
240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - GROUND - SECTIONS SHEET 1

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 20

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	GF	S-1110	1

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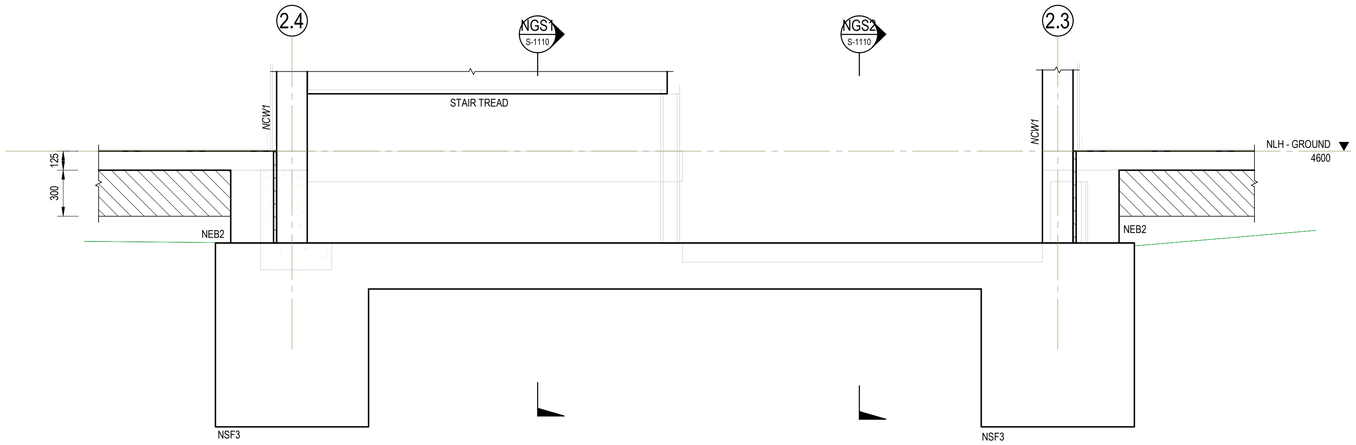

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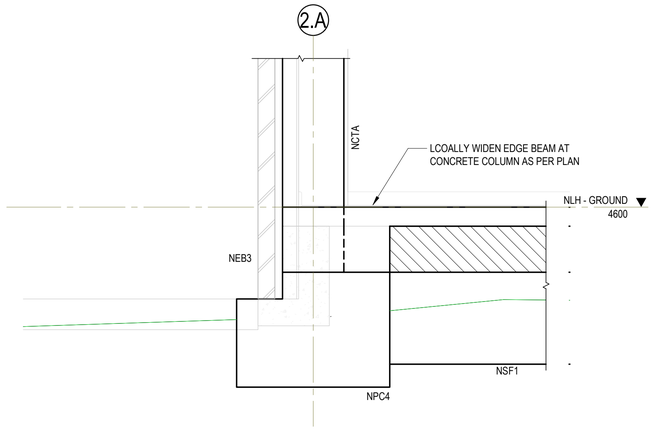

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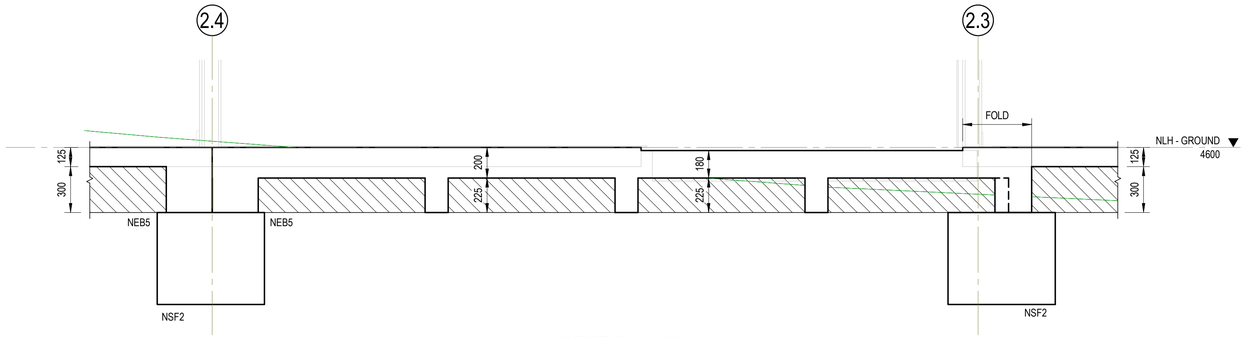

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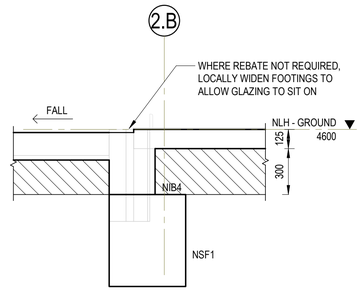

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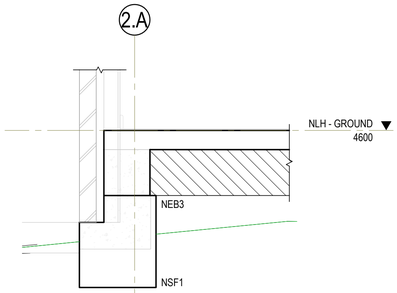

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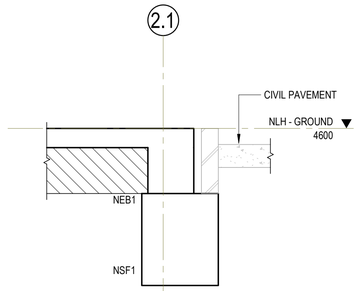

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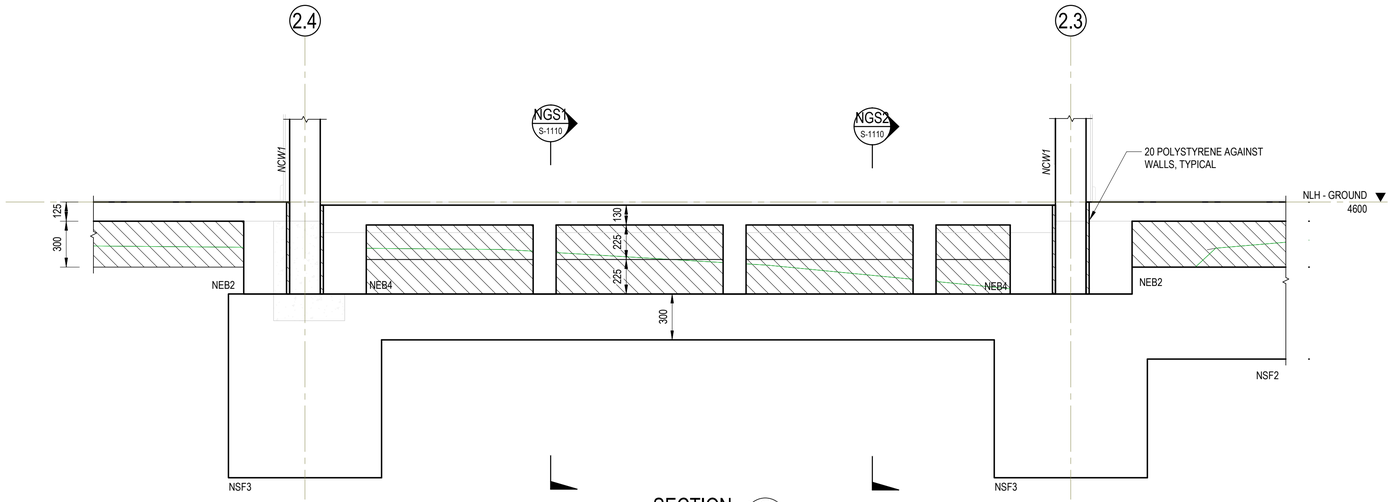

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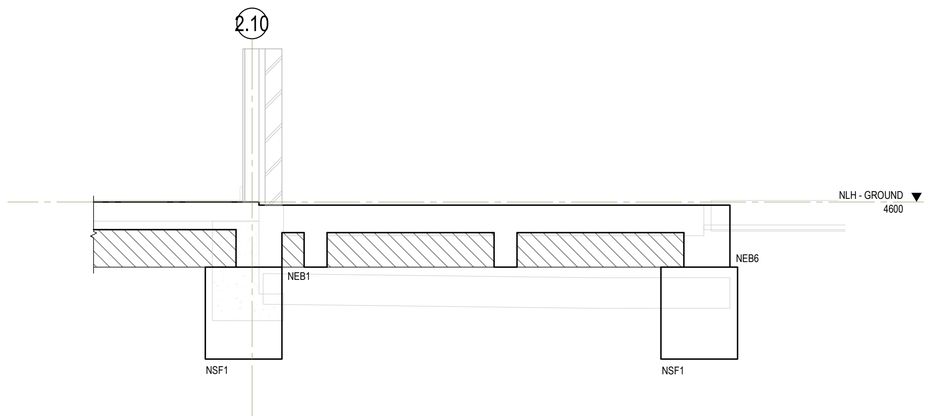

SECTION NGS10
SCALE: 1 : 20 S-1102

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
0.2 0 0.2 0.4 0.6 0.8 1m
SCALE BAR 1:20

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

ACOR CONSULTANTS

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Charlestown NSW 2290
T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - GROUND - SECTIONS SHEET 2

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 20

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	GF	S-1111	1

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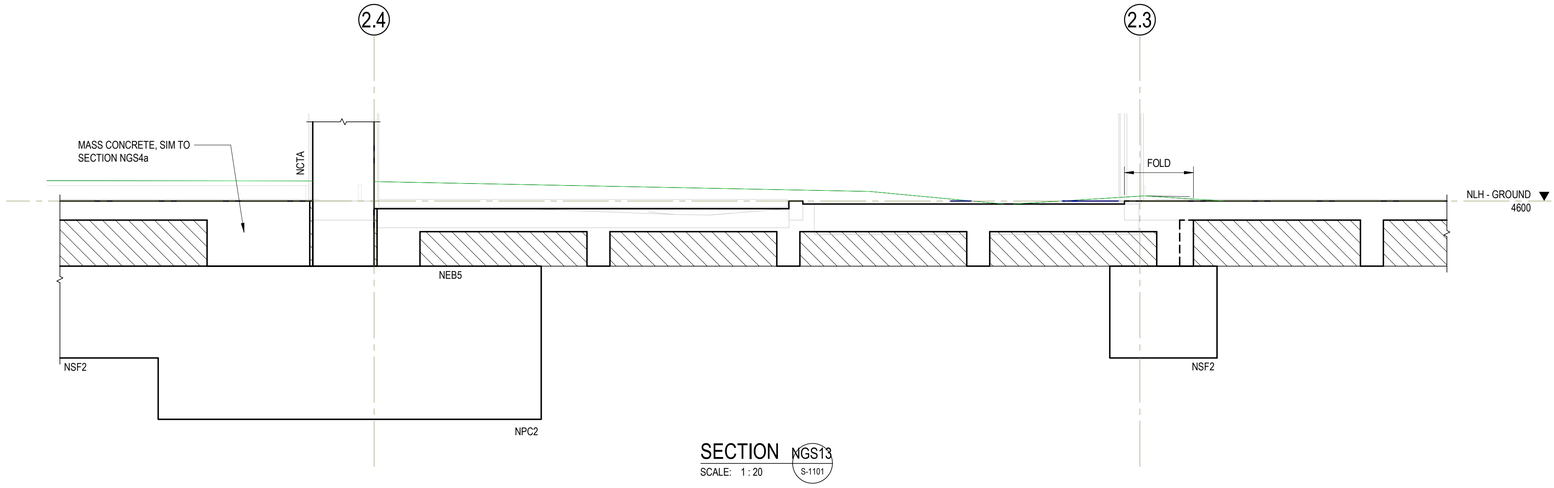

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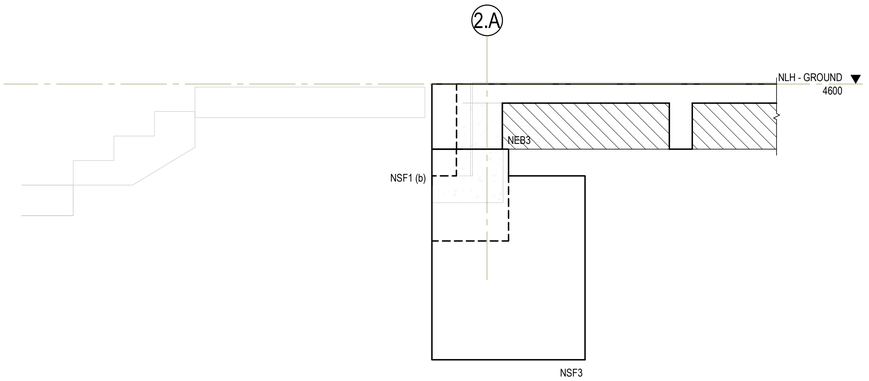

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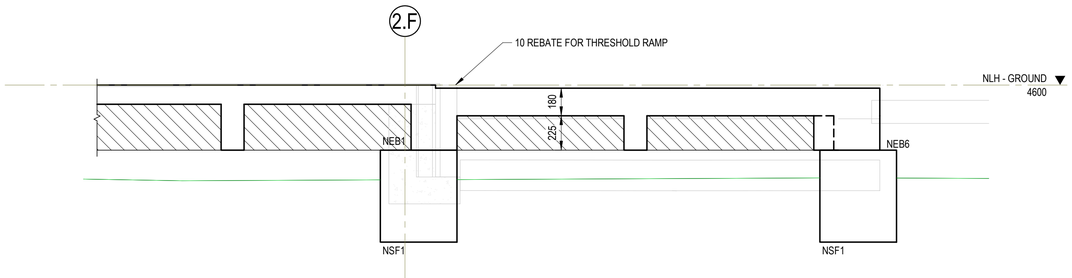

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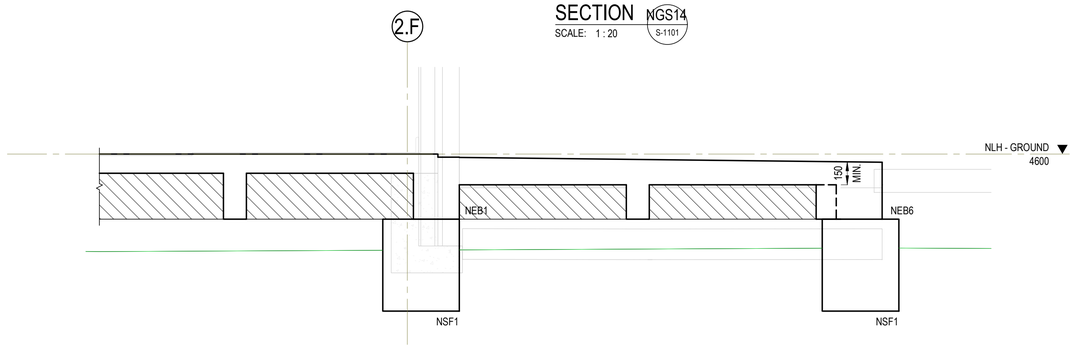

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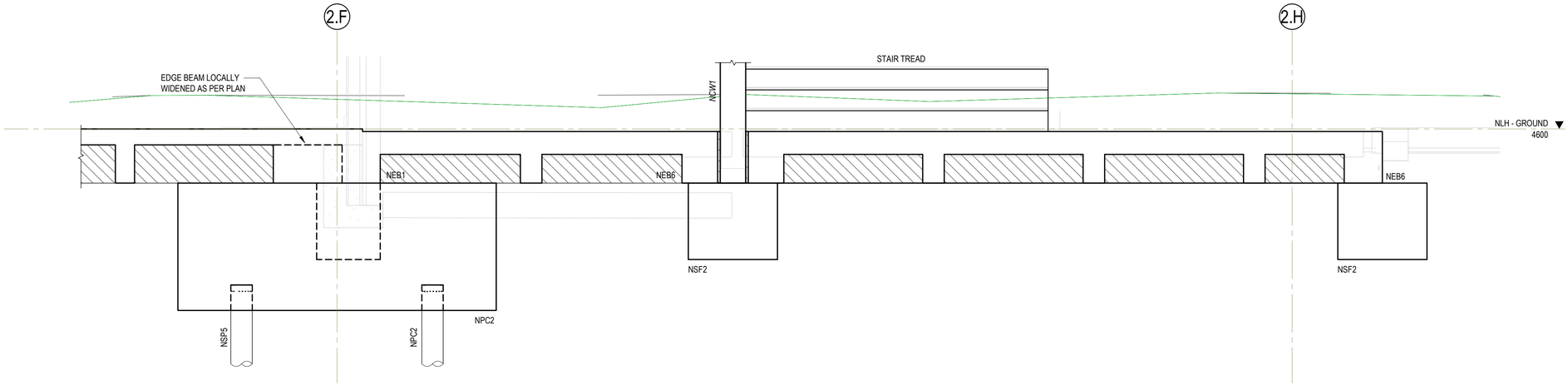

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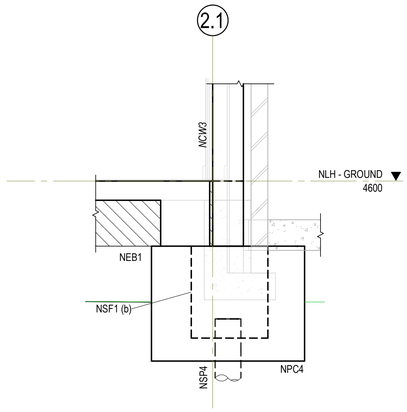

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Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
0.2 0 0.2 0.4 0.6 0.8 1m
SCALE BAR 1:20

Client
NSW GOVERNMENT

Architect
EJE architecture

ACOR CONSULTANTS

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Charlestown NSW 2290
T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - GROUND - SECTIONS SHEET 3

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 20

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	GF	S-1112	1

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Autodesk Docs://NS230761 NHSH NHSS ACO ZZ ZZ M3-S-0001.rvt
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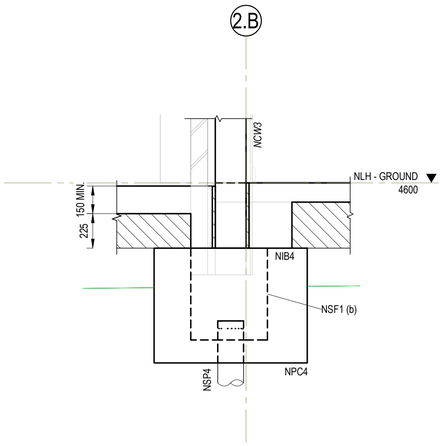

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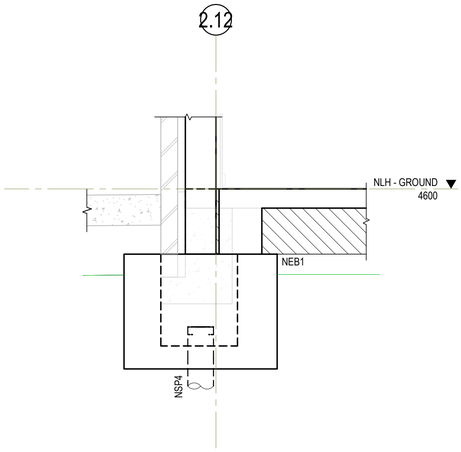

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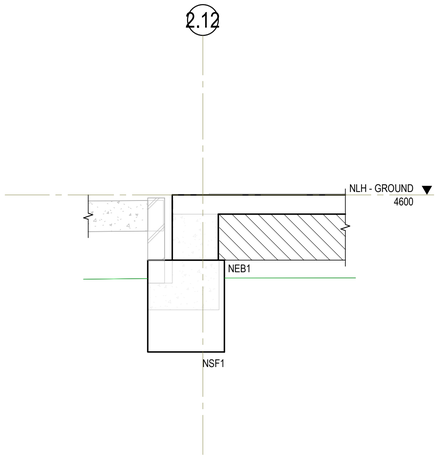

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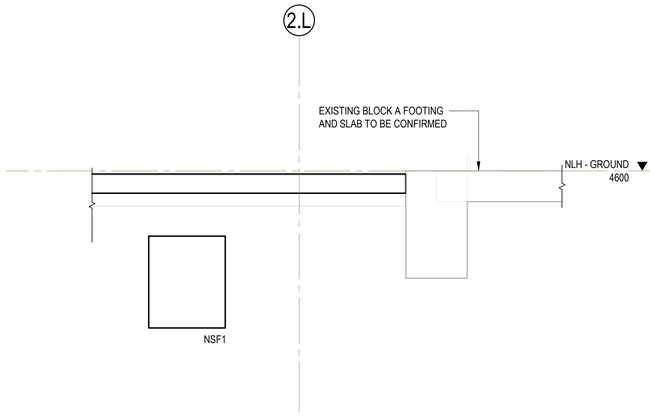
SCALE: 1 : 20 S-1103



SECTION NGS22
SCALE: 1 : 20 S-1103

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB

North

Scale

0.2 0 0.2 0.4 0.6 0.8 1m

SCALE BAR 1:20

PRINT IN COLOUR

Client

NSW GOVERNMENT

Architect

EJE architecture

ACOR CONSULTANTS

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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - GROUND - SECTIONS SHEET 4

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 20

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	GF	S-1113	1

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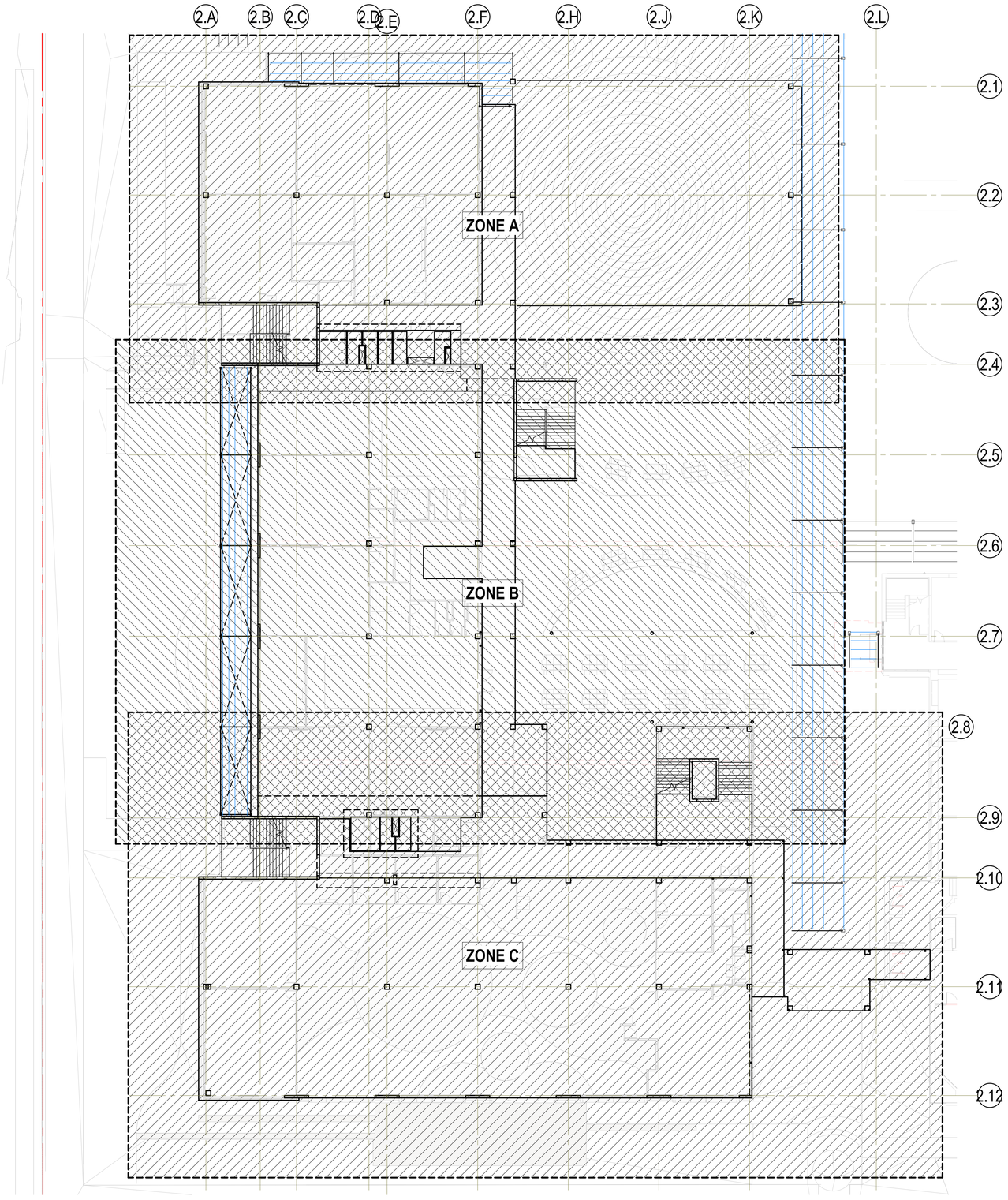

NEW LEARNING HUB - LEVEL 2 OVERALL PLAN

SCALE: 1 : 200

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale

1 0 1 2 3 4 5m

SCALE BAR 1:100

PRINT IN COLOUR

Client

NSW GOVERNMENT

Architect

EJE architecture

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Charlestown NSW 2290
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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - LEVEL 1 OVERALL PLAN

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 200

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	L1	S-1200	1

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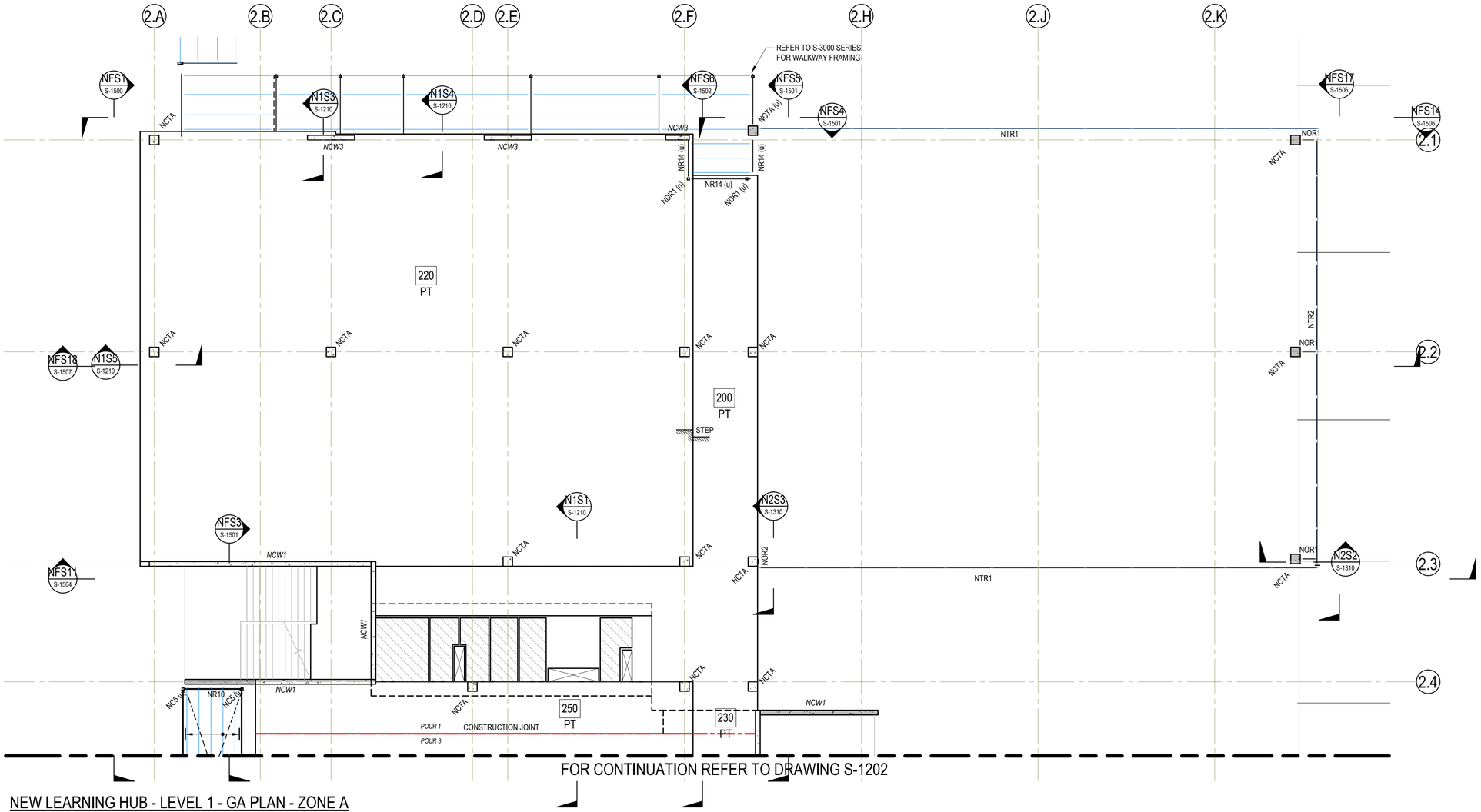


NEW LEARNING HUB - LEVEL 1 - GA PLAN - ZONE A

SCALE: 1 : 100

LEGEND

200 PT	DENOTES 200 THICK POST TENSIONED SLAB. REFER TO PLAN FOR VARIATION IN DEPTH.
200	DENOTES 200 THICK SLAB.
STEP	DENOTES SLAB STEP. REFER TO PLAN FOR VARIATION.
CJ	DENOTES CONSTRUCTION JOINT

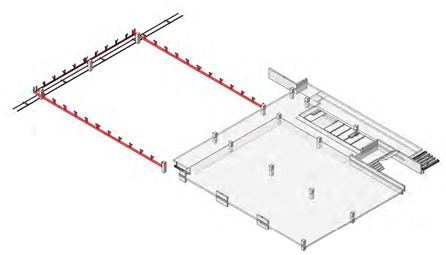
NOTES:

- REFER TO DRAWINGS S-0001 TO S-0003 FOR ALL STRUCTURAL GENERAL NOTES.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
- ALL FALLS, SETDOWNS & WATERPROOFING ARE TO ARCHITECTS DETAILS U.N.O.
- UNLESS NOTED OTHERWISE ALL WET AREA SETDOWNS ARE TO BE A MINIMUM =##mm
- NON STRUCTURAL KERBS AND HOBS ARE NOT SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT AND LOCATIONS.

FRL & COVER NOTE:

FIRE RESISTANCE LEVEL (FRL) =			120/120/120
CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-1999 FOR STRUCTURAL MEMBER SCHEDULES



Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

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The Forum, Level 1, Suite 1
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T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - LEVEL 1 - GA PLAN - ZONE A

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	L1	S-1201	1

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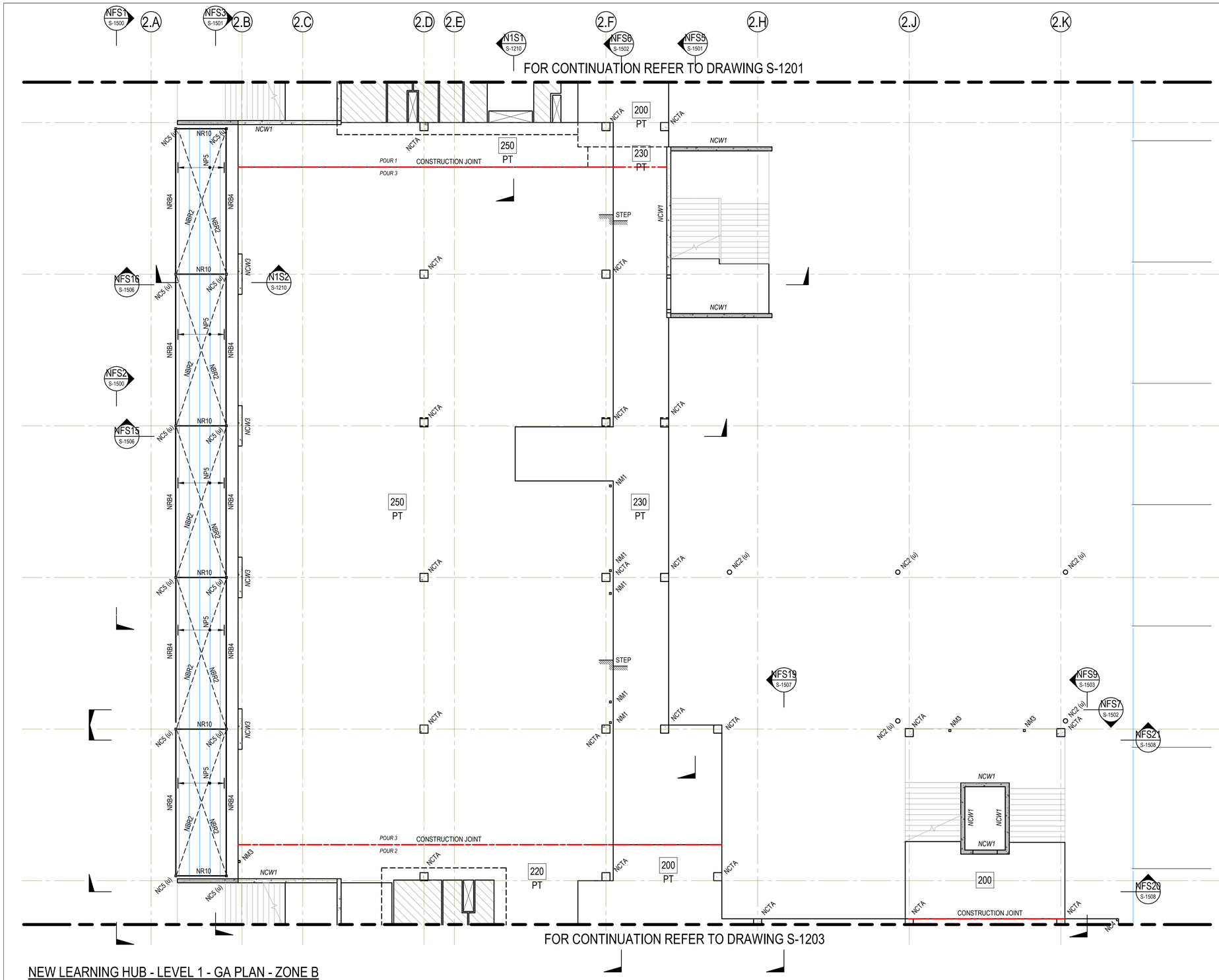

LEGEND

200 PT	DENOTES 200 THICK POST TENSIONED SLAB. REFER TO PLAN FOR VARIATION IN DEPTH.
200	DENOTES 200 THICK SLAB.
STEP	DENOTES SLAB STEP. REFER TO PLAN FOR VARIATION.
CJ	DENOTES CONSTRUCTION JOINT

NOTES:

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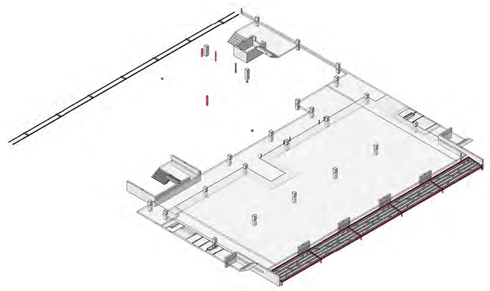
FRL & COVER NOTE:

FIRE RESISTANCE LEVEL (FRL) =			120/120/120
CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-1999 FOR STRUCTURAL MEMBER SCHEDULES



NEW LEARNING HUB - LEVEL 1 - GA PLAN - ZONE B

SCALE: 1 : 100

Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

ACOR CONSULTANTS

ACOR Consultants Pty Ltd
The Forum, Level 1, Suite 1
240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - LEVEL 1 - GA PLAN - ZONE B

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	L1	S-1202	1

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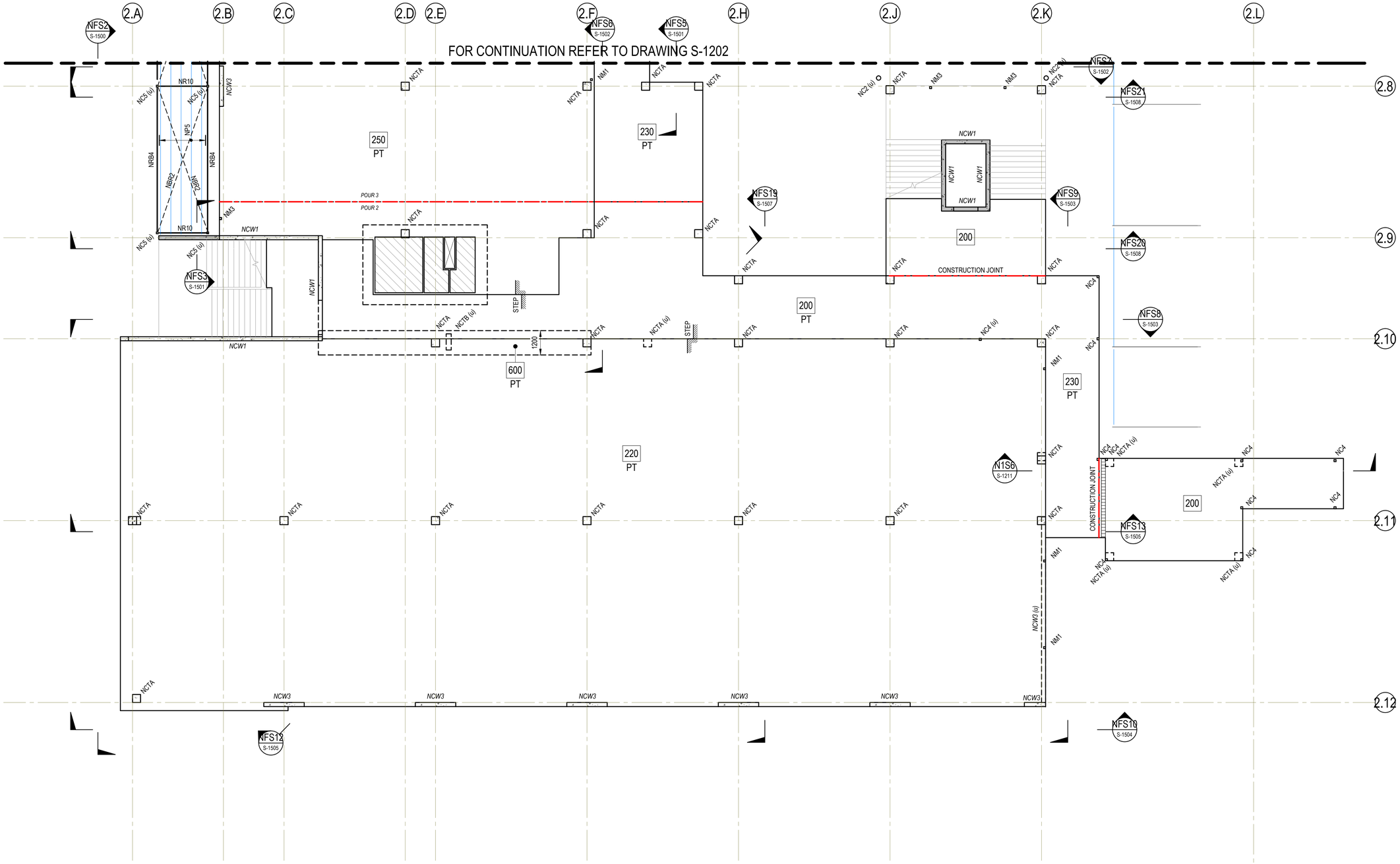

LEGEND

200 PT	DENOTES 200 THICK POST TENSIONED SLAB. REFER TO PLAN FOR VARIATION IN DEPTH.
200	DENOTES 200 THICK SLAB.
STEP	DENOTES SLAB STEP. REFER TO PLAN FOR VARIATION.
CJ	DENOTES CONSTRUCTION JOINT

NOTES:

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- UNLESS NOTED OTHERWISE ALL WET AREA SETDOWNS ARE TO BE A MINIMUM =##mm
- NON STRUCTURAL KERBS AND HOBS ARE NOT SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT AND LOCATIONS.

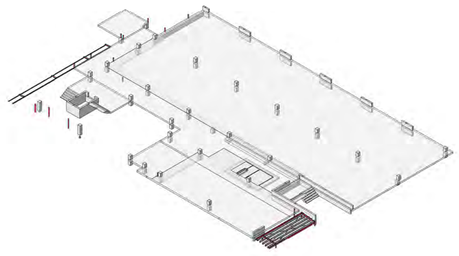
FRL & COVER NOTE:

FIRE RESISTANCE LEVEL (FRL) =			120/120/120
CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-1999 FOR STRUCTURAL MEMBER SCHEDULES

NEW LEARNING HUB - LEVEL 1 - GA PLAN- ZONE C

SCALE: 1 : 100



Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1 : 100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

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The Forum, Level 1, Suite 1
240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - LEVEL 1 - GA PLAN - ZONE C

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	L1	S-1203	1

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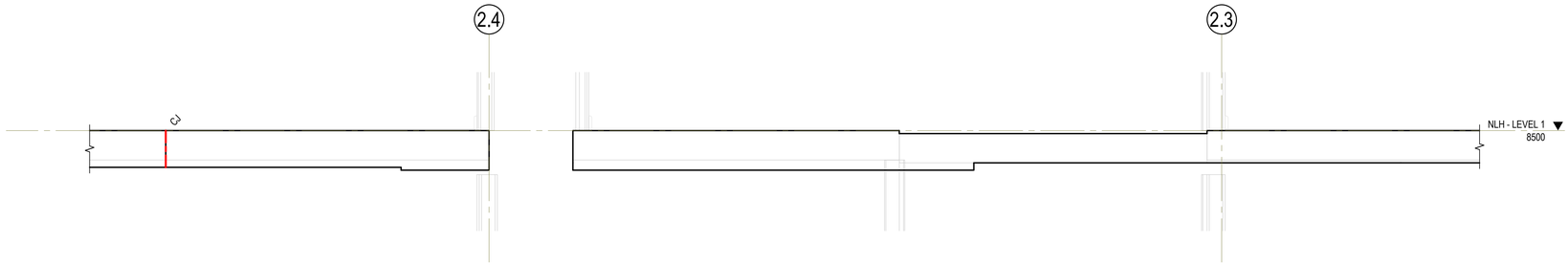

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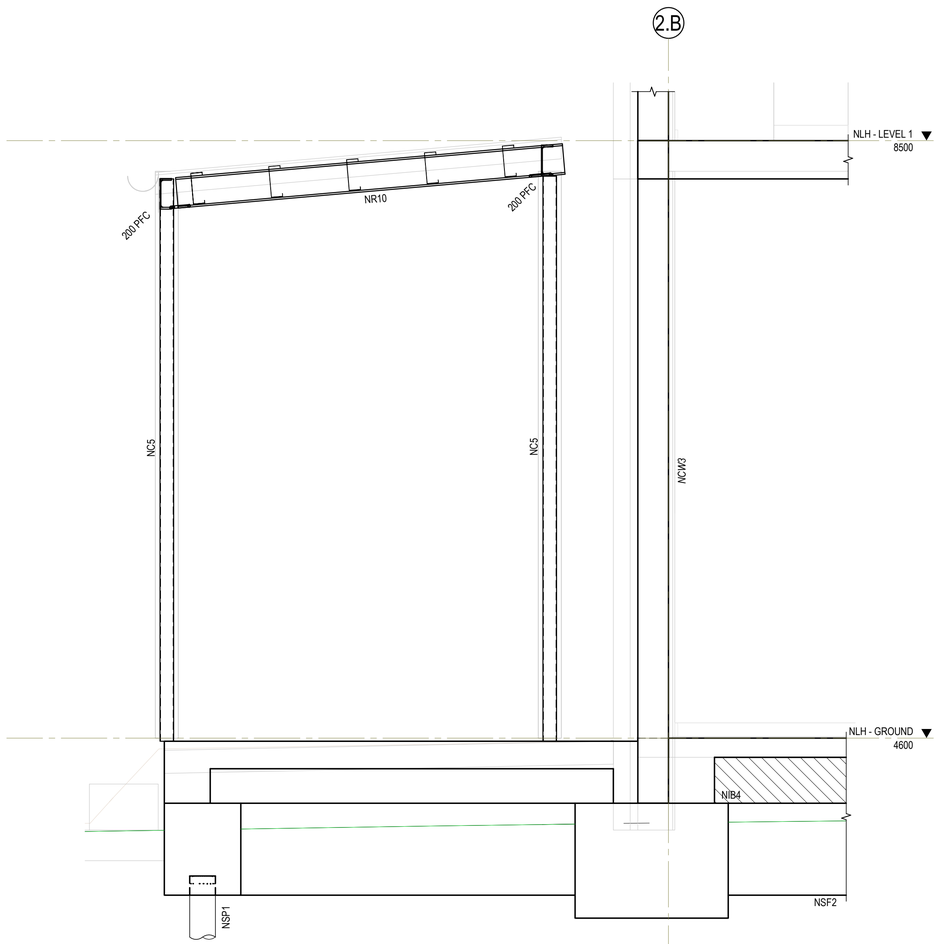

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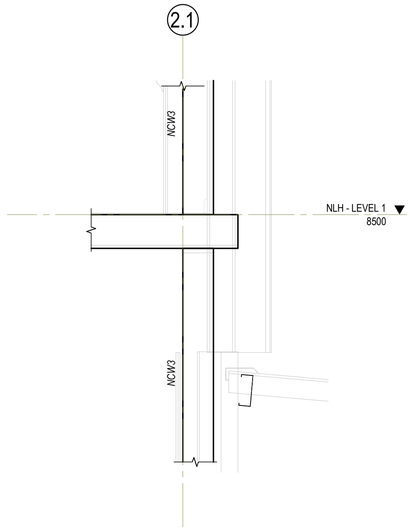

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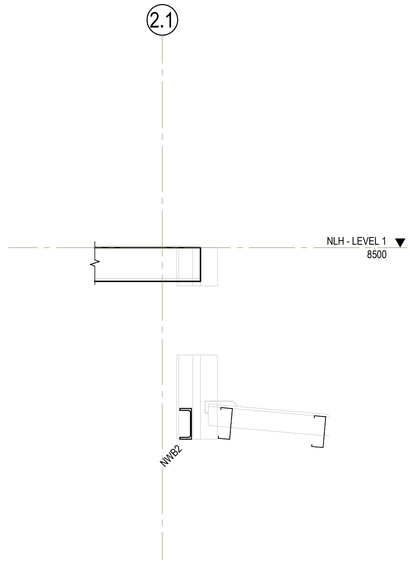
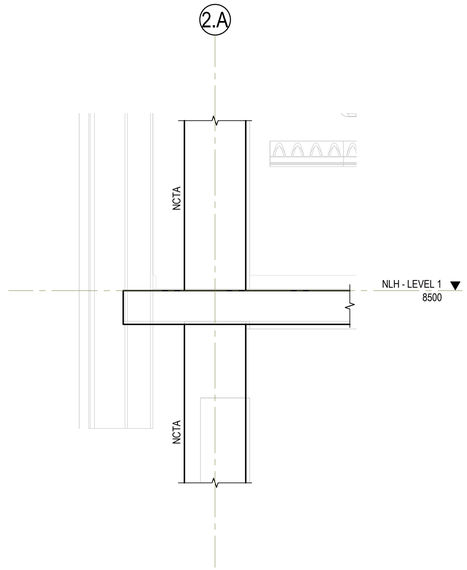


SECTION N1S4 S-1201
SCALE: 1 : 20



SECTION N1S5 S-1201
SCALE: 1 : 20

Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
1 0 1 2 3 4 5m
SCALE BAR 1:100

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

ACOR CONSULTANTS

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T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - LEVEL 1 - SECTIONS SHEET 1

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 20

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	L1	S-1210	1

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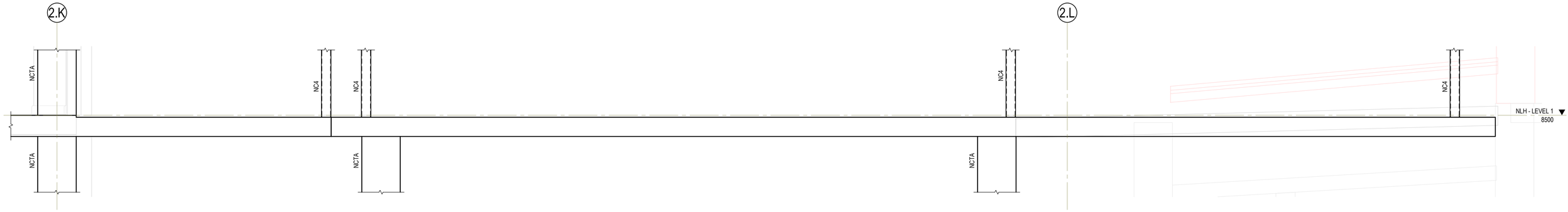

SECTION N1S6 S-1203

SCALE: 1 : 20

Issue.	Description	Date	Drawn	Approved
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North

Scale

0.2 0 0.2 0.4 0.6 0.8 1m

SCALE BAR 1:20

PRINT IN COLOUR

Client

NSW GOVERNMENT

Architect

EJE architecture

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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - LEVEL 1 - SECTIONS SHEET 2

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 20

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	L1	S-1211	1

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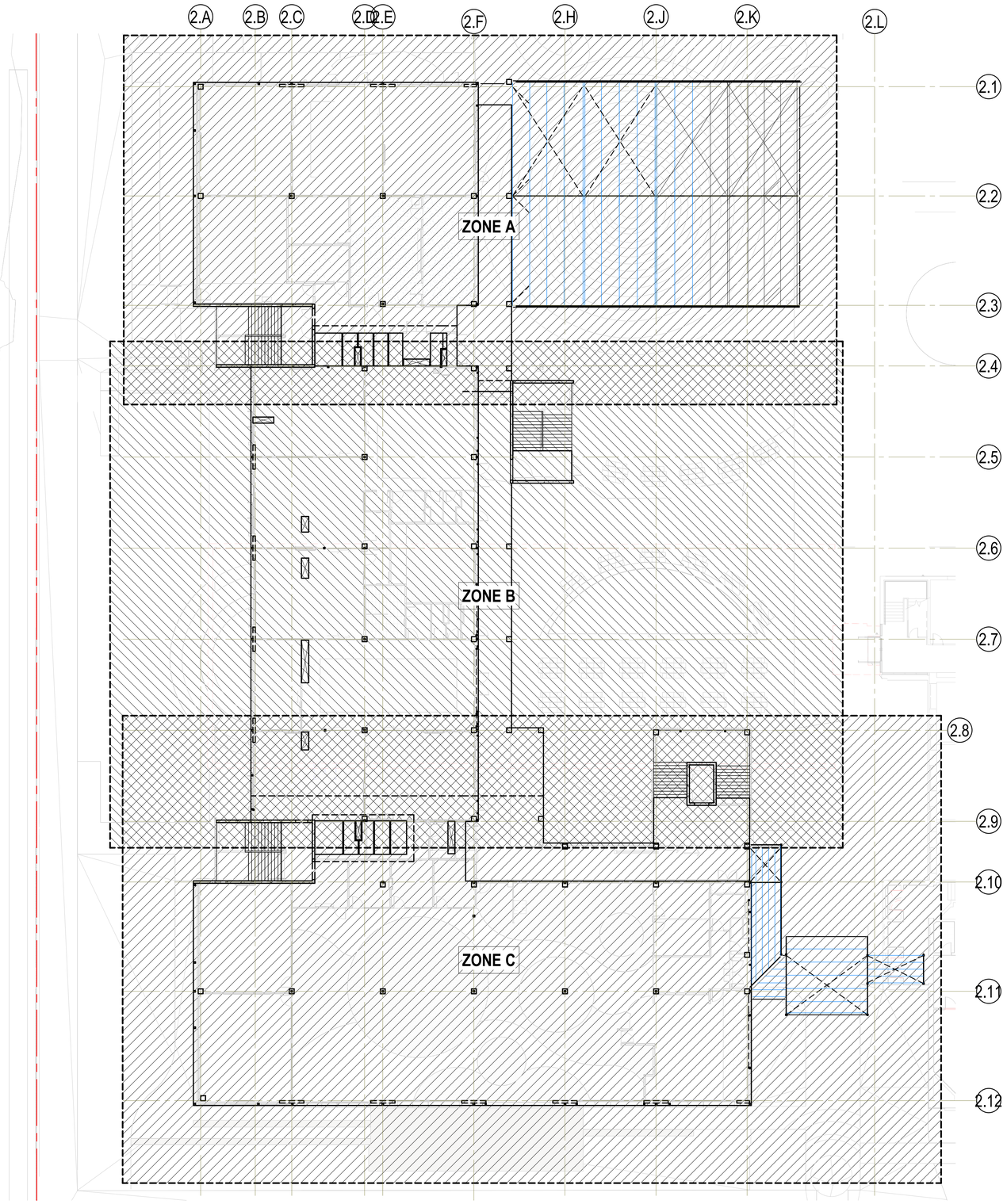

NEW LEARNING HUB - LEVEL 2 OVERALL PLAN

SCALE: 1 : 200

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale

1 0 1 2 3 4 5m

SCALE BAR 1:100

PRINT IN COLOUR

Client

NSW GOVERNMENT

Architect

EJE architecture

ACOR CONSULTANTS

ACOR Consultants Pty Ltd
The Forum, Level 1, Suite 1
240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - LEVEL 2 OVERALL PLAN

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 200

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	L2	S-1300	1

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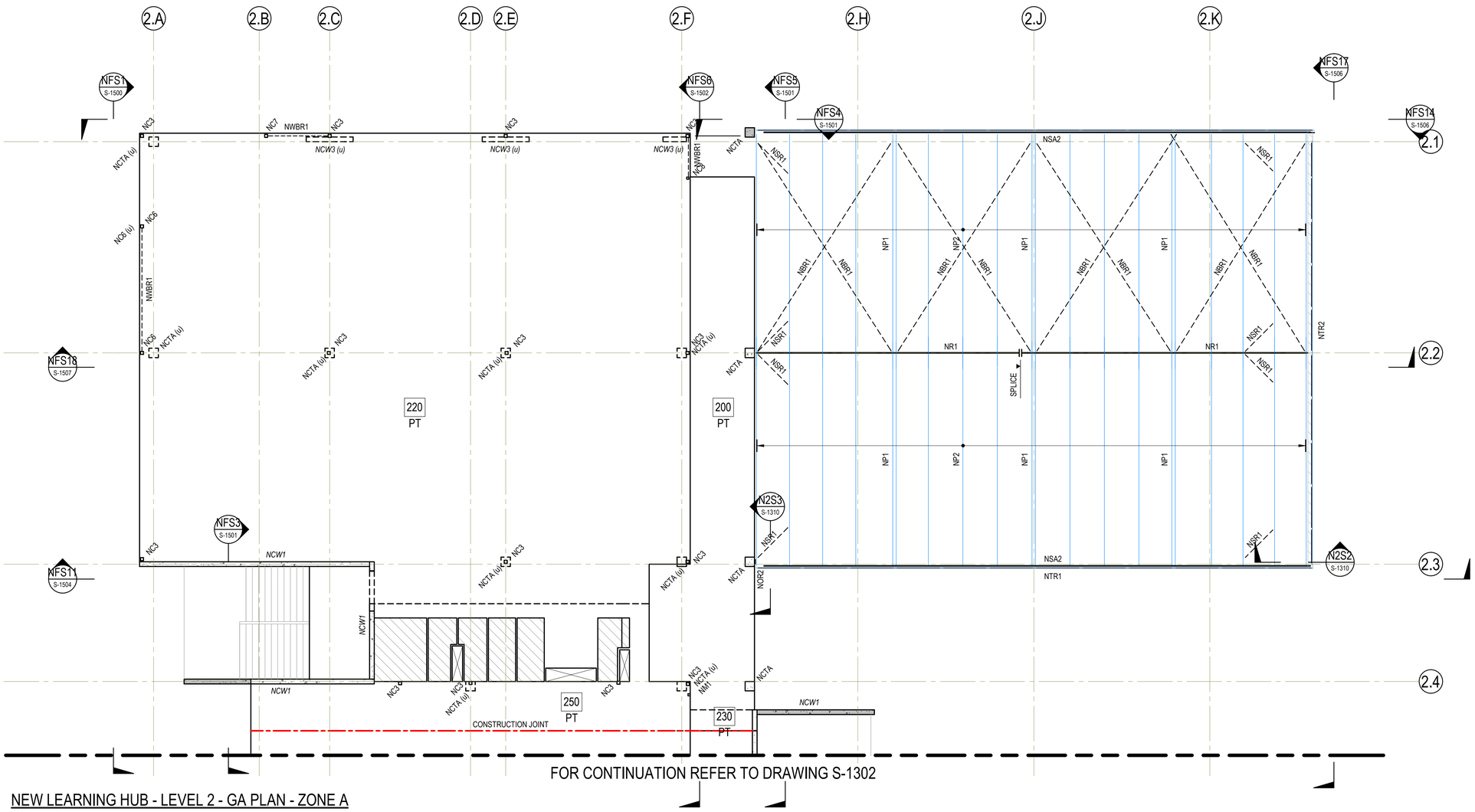


NEW LEARNING HUB - LEVEL 2 - GA PLAN - ZONE A

SCALE: 1 : 100

LEGEND

200 PT	DENOTES 200 THICK POST TENSIONED SLAB. REFER TO PLAN FOR VARIATION IN DEPTH.
STEP	DENOTES SLAB STEP. REFER TO PLAN FOR VARIATION.
CJ	DENOTES CONSTRUCTION JOINT

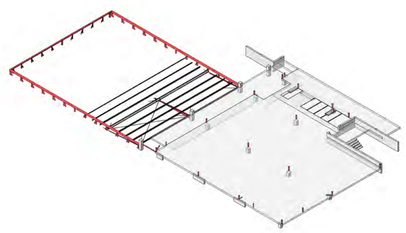
NOTES:

- REFER TO DRAWINGS S-0001 TO S-0003 FOR ALL STRUCTURAL GENERAL NOTES.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
- ALL FALLS, SETDOWNS & WATERPROOFING ARE TO ARCHITECTS DETAILS U.N.O.
- UNLESS NOTED OTHERWISE ALL WET AREA SETDOWNS ARE TO BE A MINIMUM =##mm
- NON STRUCTURAL KERBS AND HOBS ARE NOT SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT AND LOCATIONS.

FRL & COVER NOTE:

FIRE RESISTANCE LEVEL (FRL) =			120/120/120
CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-1999 FOR STRUCTURAL MEMBER SCHEDULES



Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

ACOR CONSULTANTS

ACOR Consultants Pty Ltd
The Forum, Level 1, Suite 1
240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - LEVEL 2 - GA PLAN - ZONE A

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	L2	S-1301	1

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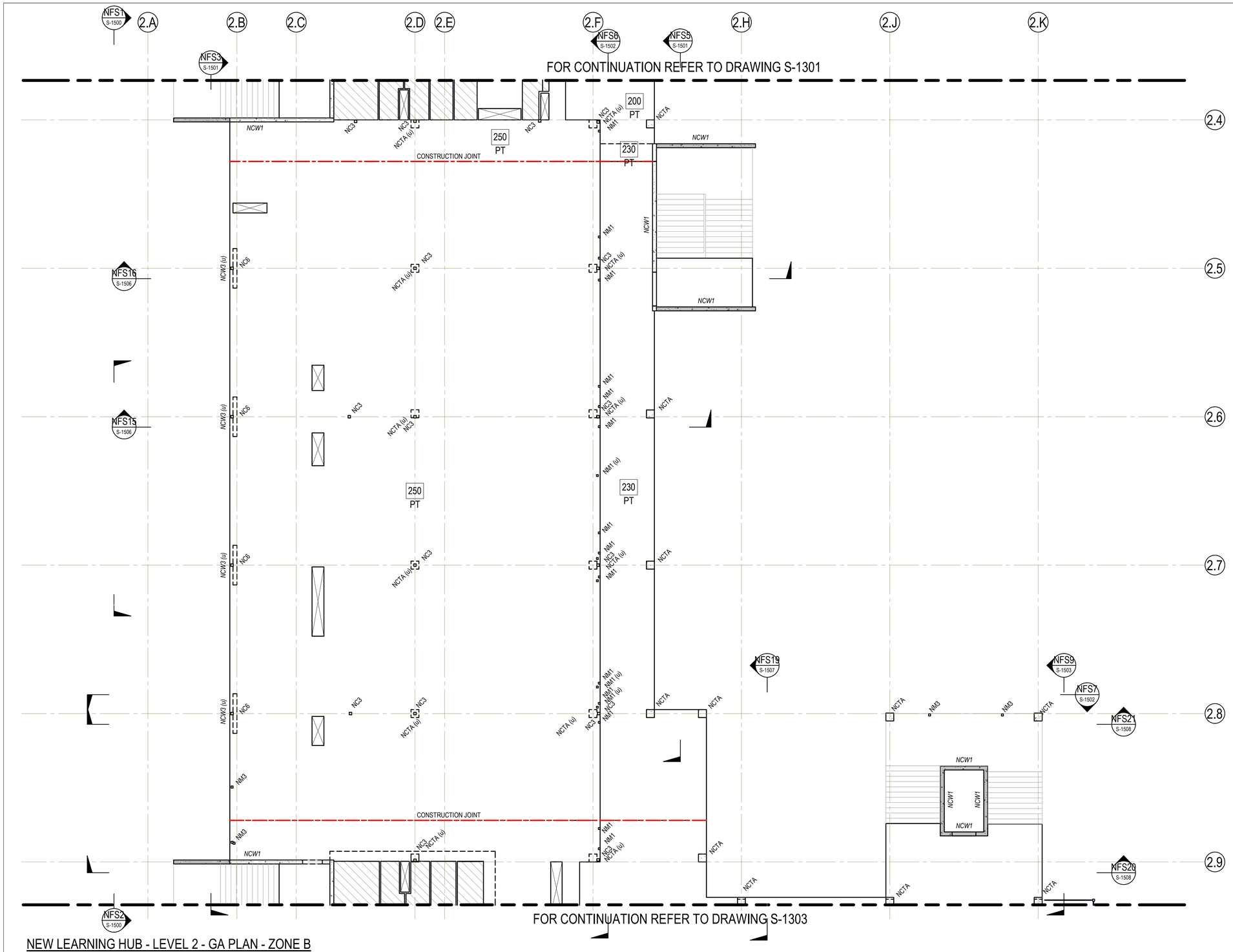

NEW LEARNING HUB - LEVEL 2 - GA PLAN - ZONE B

SCALE: 1 : 100

LEGEND

200 / PT	DENOTES 200 THICK POST TENSIONED SLAB. REFER TO PLAN FOR VARIATION IN DEPTH.
STEP	DENOTES SLAB STEP. REFER TO PLAN FOR VARIATION.
CJ	DENOTES CONSTRUCTION JOINT

NOTES:

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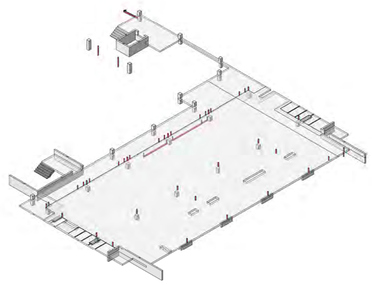
CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-1999 FOR STRUCTURAL MEMBER SCHEDULES



Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

ACOR CONSULTANTS

ACOR Consultants Pty Ltd
The Forum, Level 1, Suite 1
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Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - LEVEL 2 - GA PLAN - ZONE B

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	L2	S-1302	1

Autodesk Docs://NS230761/NEW LEARNING HUB-ACOR-ZZ-ZZ-M3-S-0001.rvt

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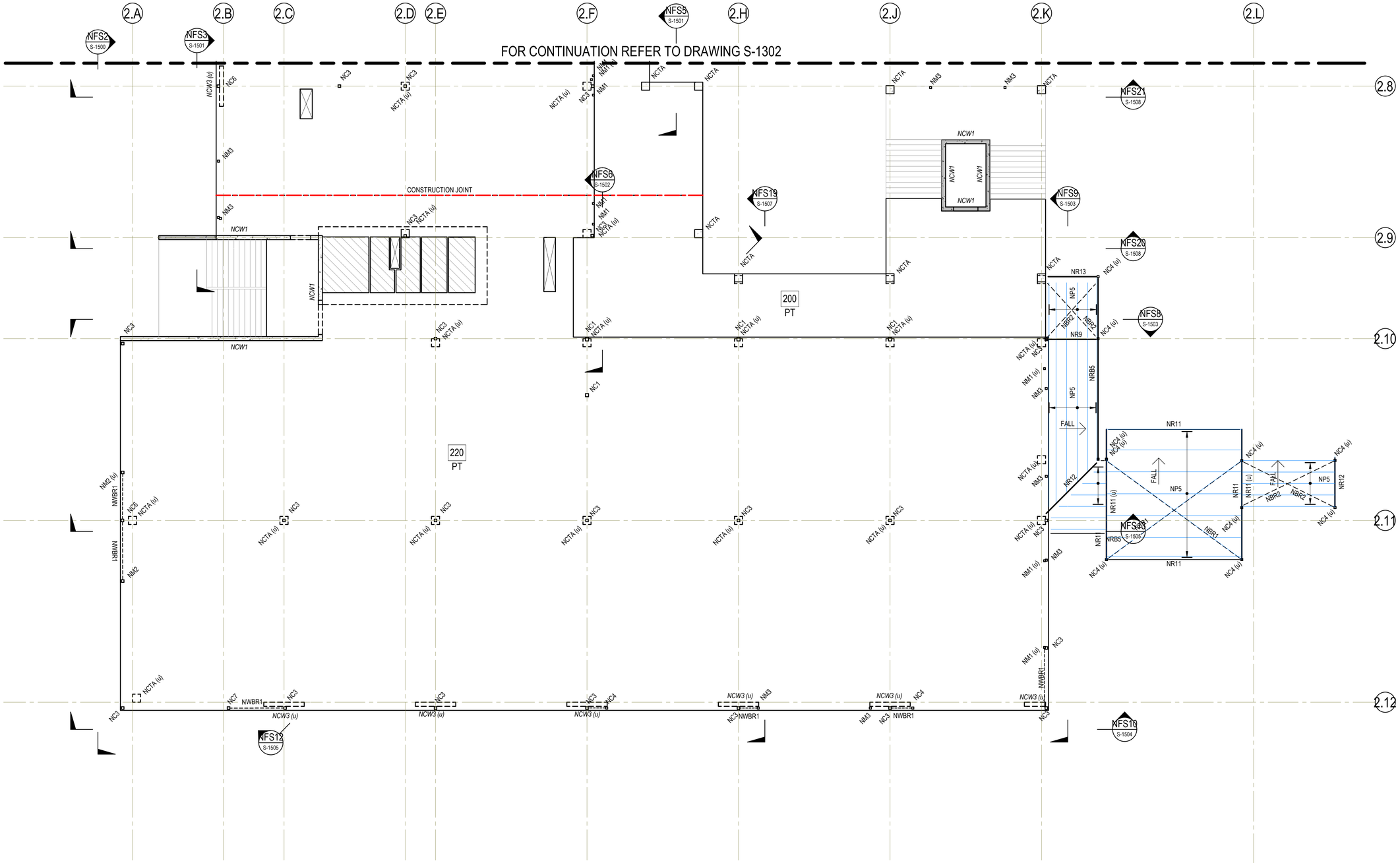

LEGEND

200 PT	DENOTES 200 THICK POST TENSIONED SLAB. REFER TO PLAN FOR VARIATION IN DEPTH.
STEP	DENOTES SLAB STEP. REFER TO PLAN FOR VARIATION.
CJ	DENOTES CONSTRUCTION JOINT

NOTES:

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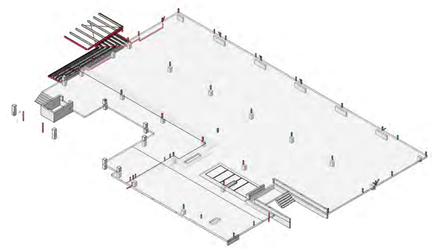
FRL & COVER NOTE:

FIRE RESISTANCE LEVEL (FRL) =			120/120/120
CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-1999 FOR STRUCTURAL MEMBER SCHEDULES

NEW LEARNING HUB - LEVEL 2 - GA PLAN - ZONE C

SCALE: 1 : 100



Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

ACOR CONSULTANTS

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The Forum, Level 1, Suite 1
240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - LEVEL 2 - GA PLAN - ZONE C

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	L2	S-1303	1

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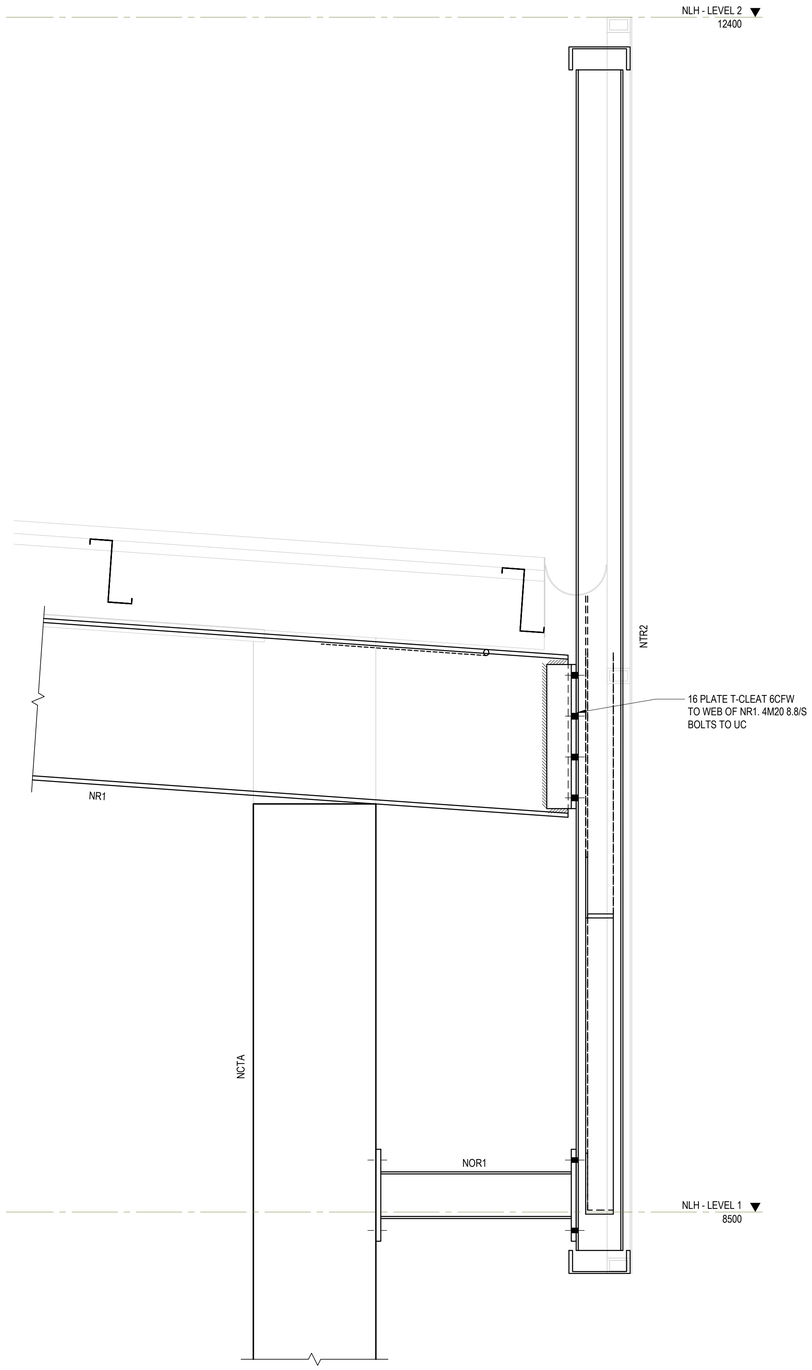

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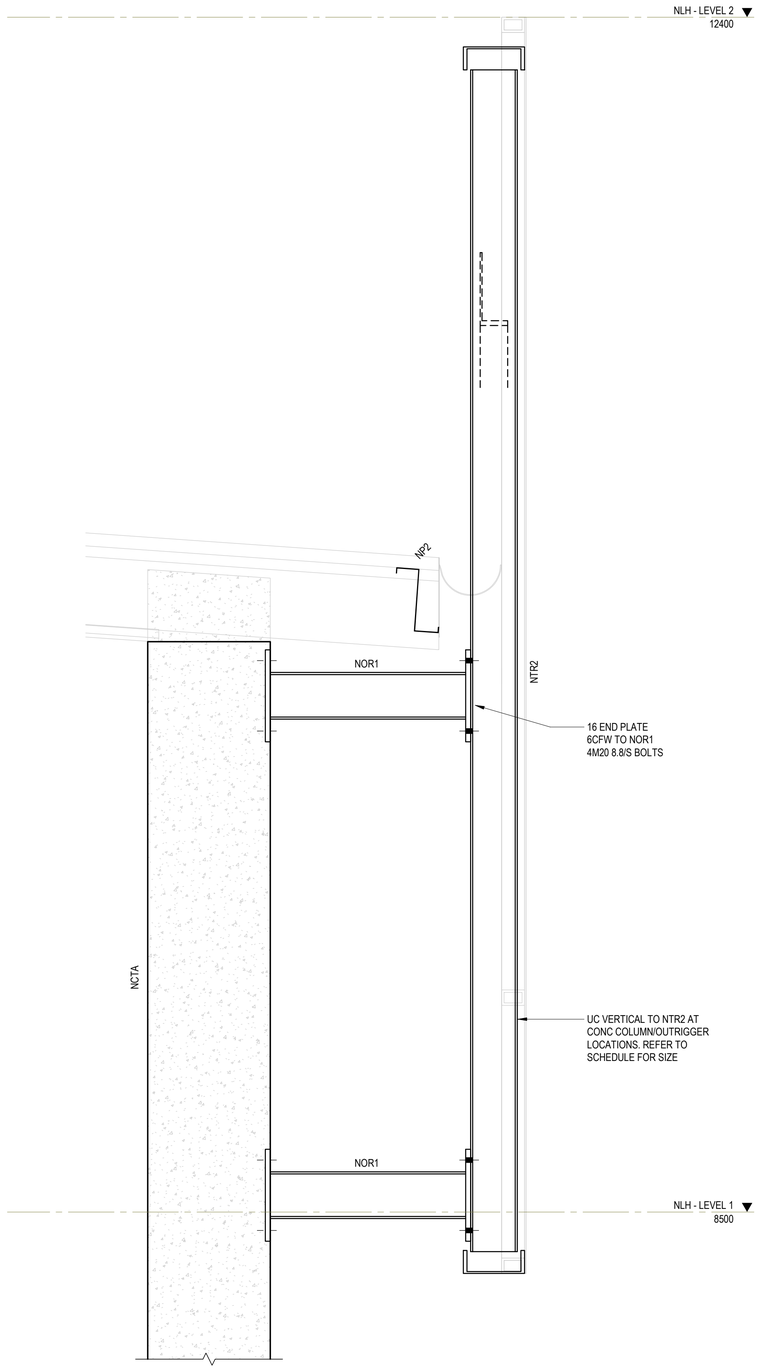

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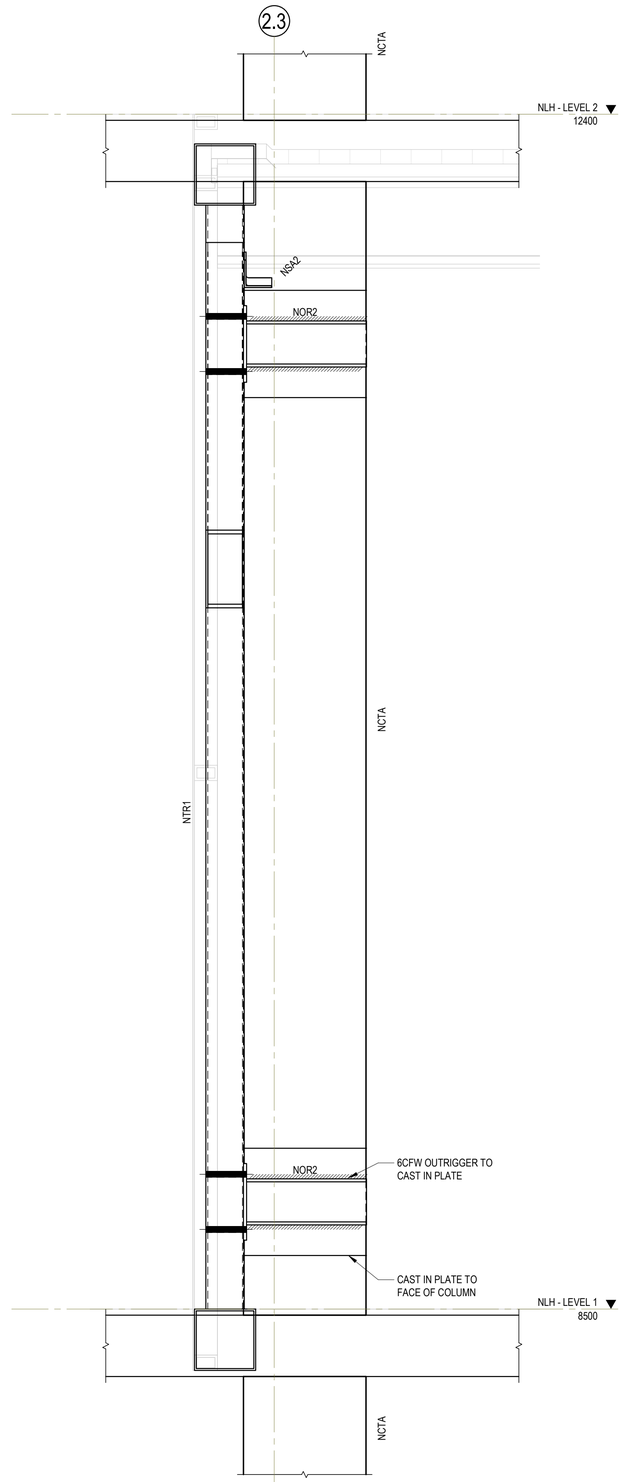

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SCALE: 1 : 10

Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
0.1 0 0.1 0.2 0.3 0.4 0.5m
SCALE BAR 1:10

PRINT IN COLOUR

Client
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Architect
EJE architecture

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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - LEVEL 2 - SECTIONS

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 10

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	L2	S-1310	1

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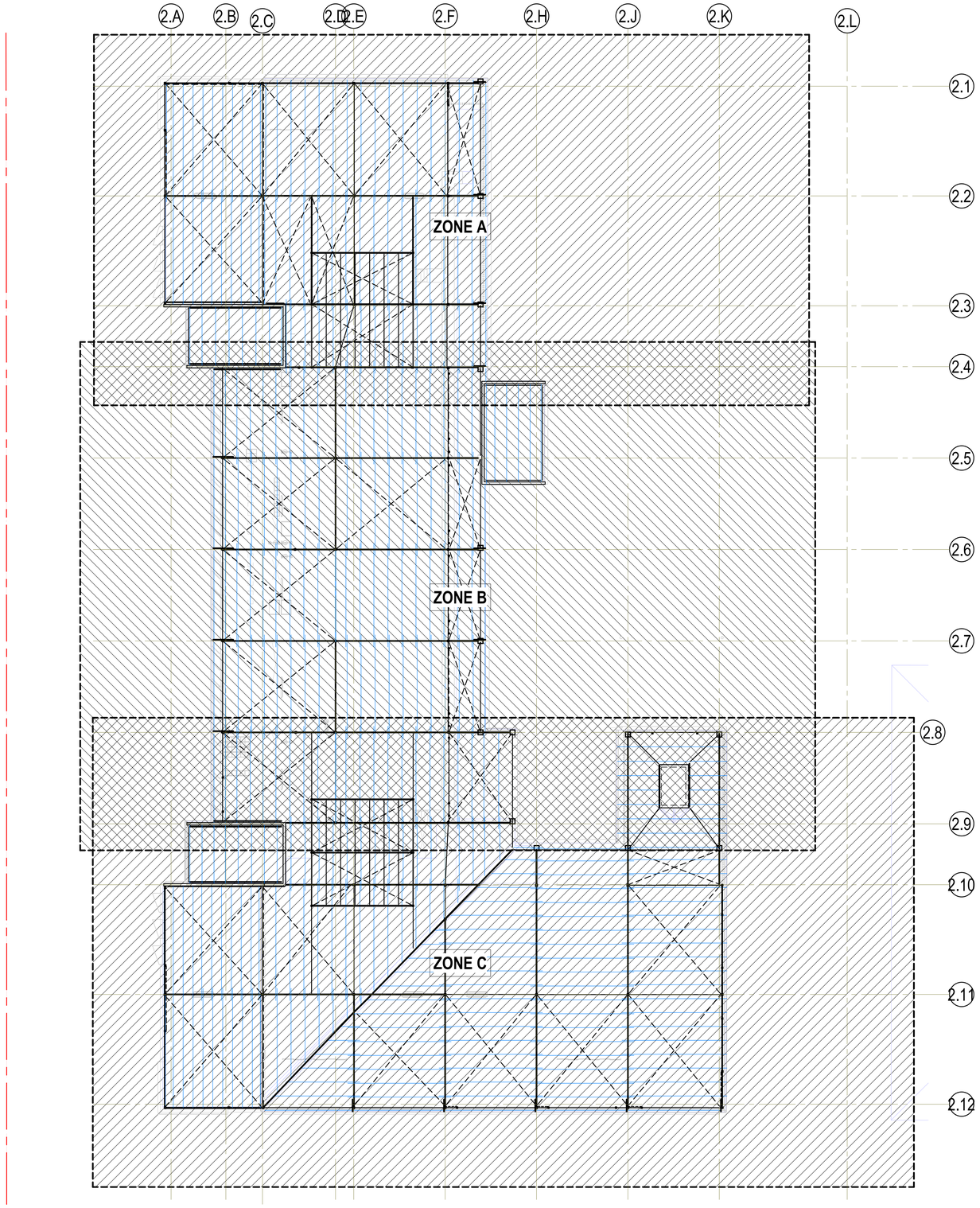

NEW LEARNING HUB - ROOF OVERALL PLAN

SCALE: 1 : 200

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale

1 0 1 2 3 4 5m

SCALE BAR 1:100

PRINT IN COLOUR

Client

NSW GOVERNMENT

Architect

EJE architecture

ACOR CONSULTANTS

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The Forum, Level 1, Suite 1
240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - ROOF OVERALL PLAN

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 200

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	RF	S-1400	1

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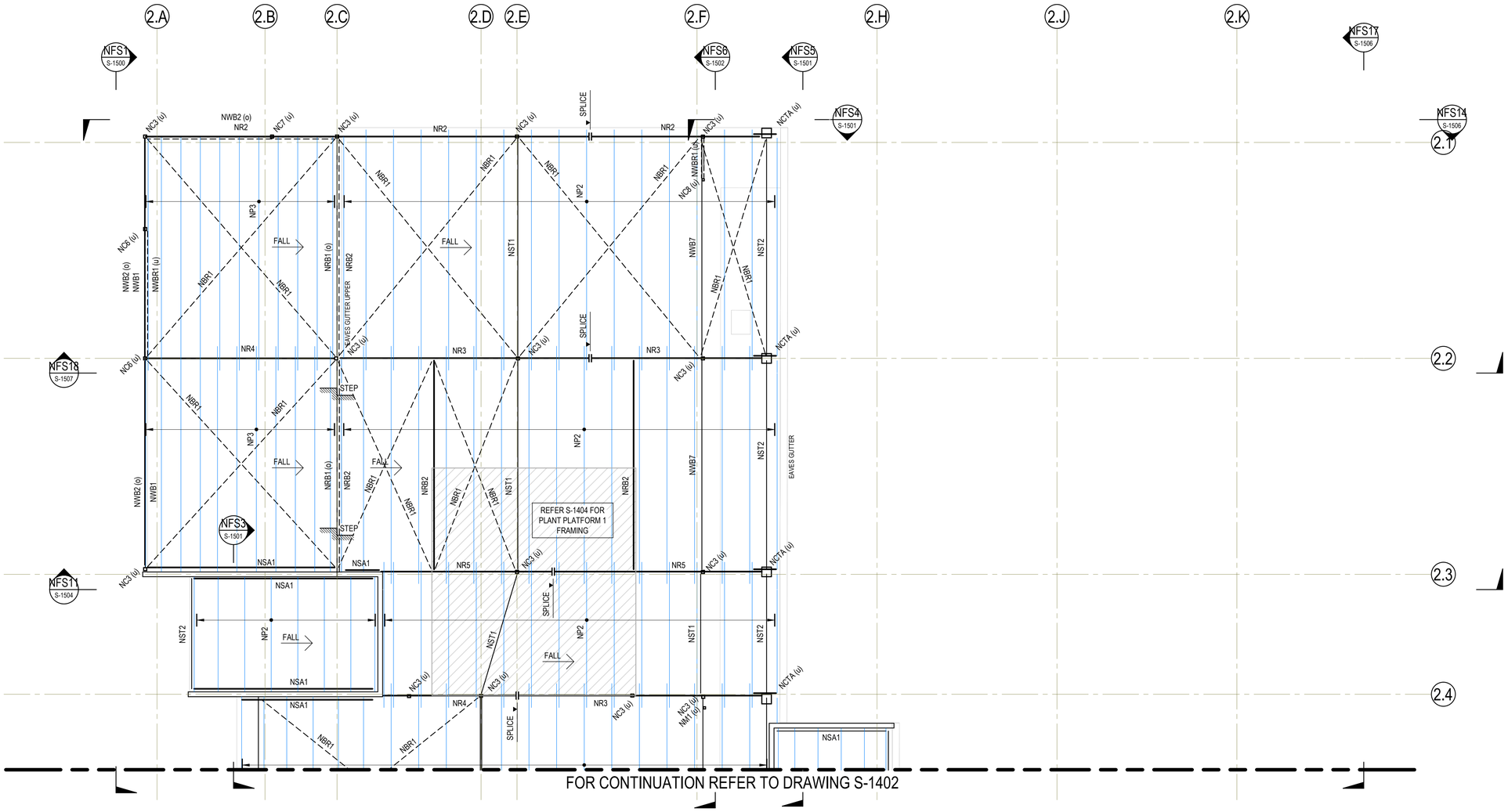

NEW LEARNING HUB - ROOF - GA PLAN - ZONE A

SCALE: 1 : 100

LEGEND

STEP — DENOTES STEP IN ROOF STRUCTURE.

NOTES:

- REFER TO DRAWINGS S-0001 TO S-0003 FOR ALL STRUCTURAL GENERAL NOTES.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
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FRL & COVER NOTE:

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CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-1999 FOR STRUCTURAL MEMBER SCHEDULES

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

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The Forum, Level 1, Suite 1
240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - ROOF - GA PLAN - ZONE A

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	RF	S-1401	1

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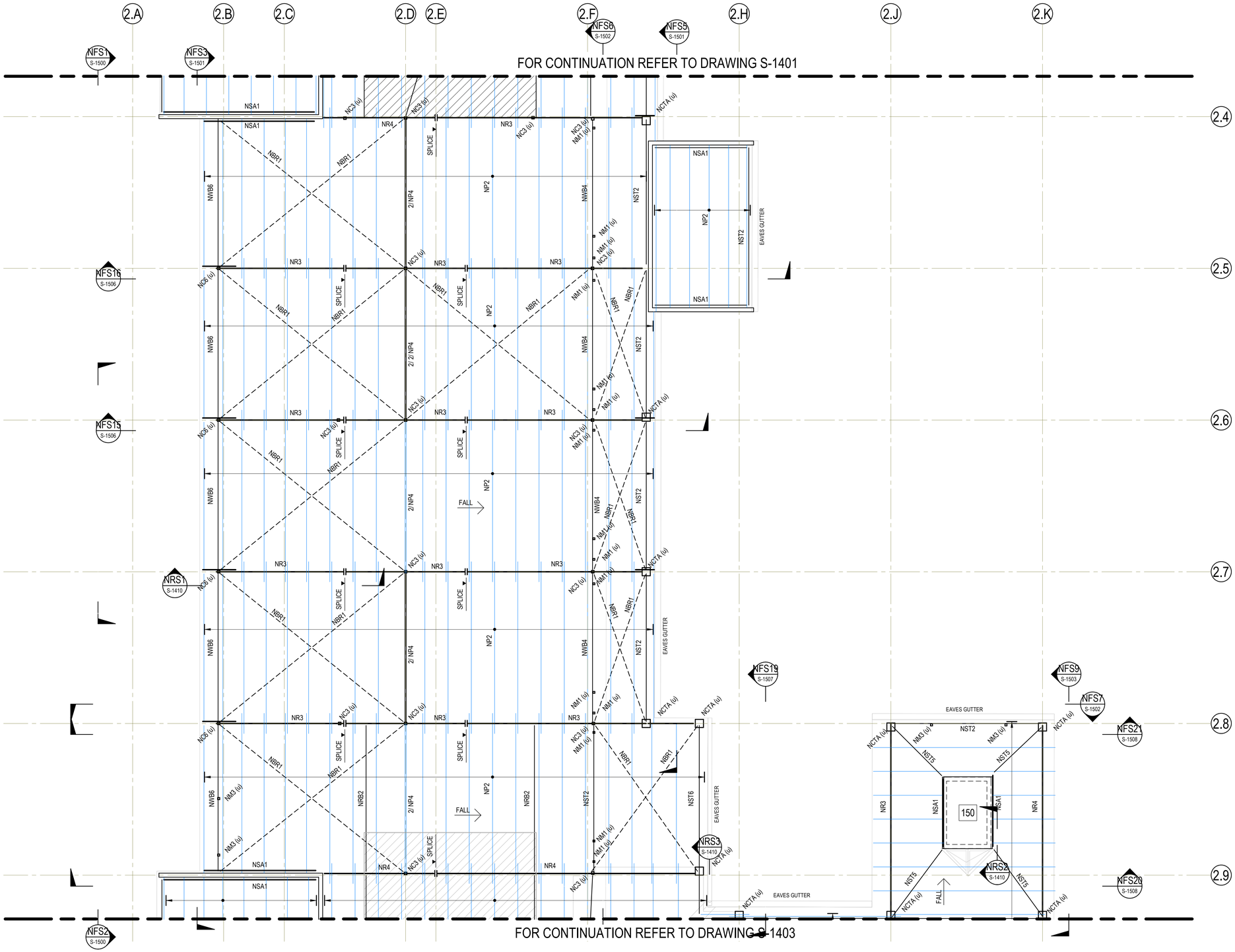

LEGEND

STEP — DENOTES STEP IN ROOF STRUCTURE.

NOTES:

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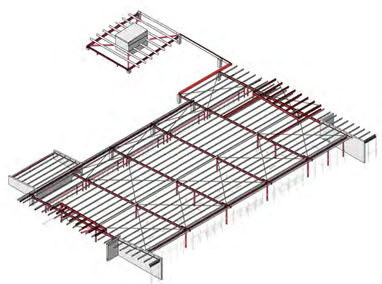
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-1999 FOR STRUCTURAL MEMBER SCHEDULES

NEW LEARNING HUB - ROOF - GA PLAN - ZONE B

SCALE: 1 : 100



Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

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The Forum, Level 1, Suite 1
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Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - ROOF - GA PLAN - ZONE B

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	RF	S-1402	1

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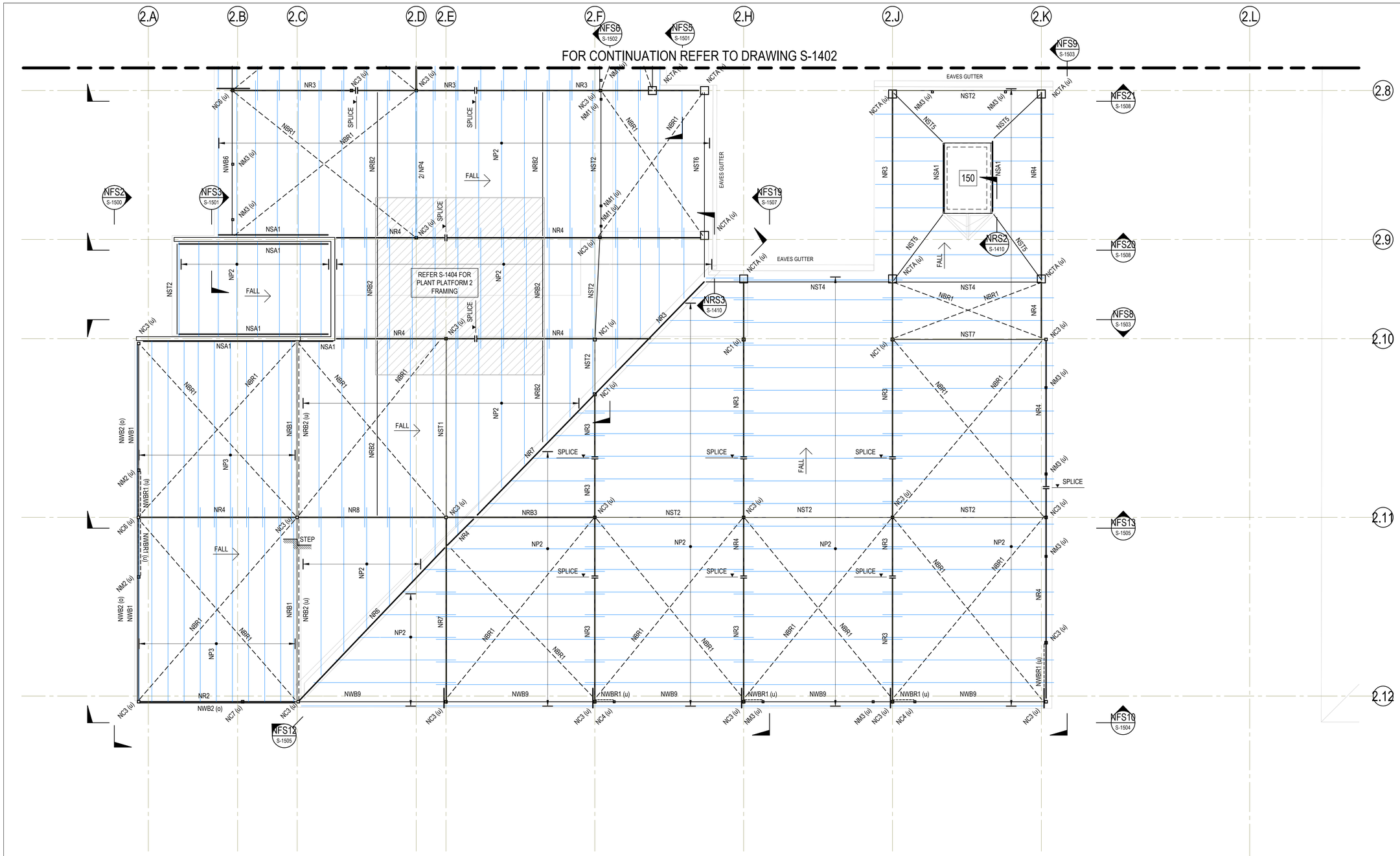

LEGEND

STEP — DENOTES STEP IN ROOF STRUCTURE.

NOTES:

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FRL & COVER NOTE:

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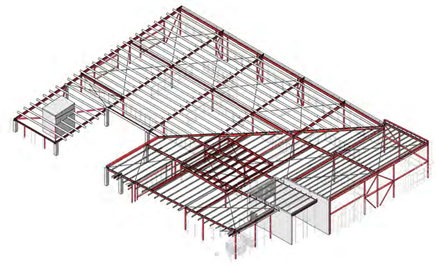
CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-1999 FOR STRUCTURAL MEMBER SCHEDULES

NEW LEARNING HUB - ROOF - GA PLAN - ZONE C

SCALE: 1 : 100



Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

ACOR CONSULTANTS

ACOR Consultants Pty Ltd
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T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - ROOF - GA PLAN - ZONE C

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	RF	S-1403	1

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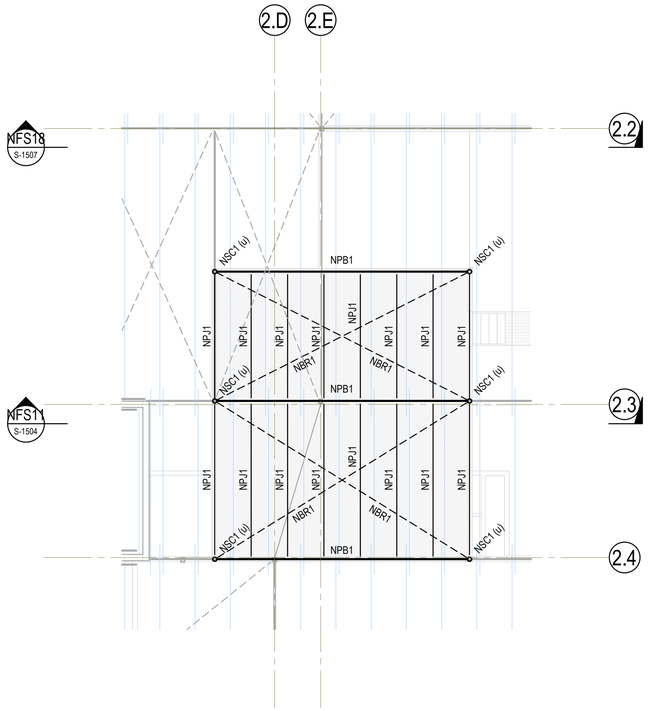
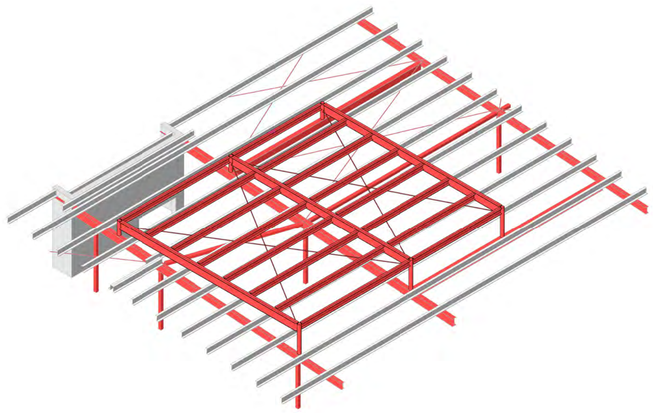
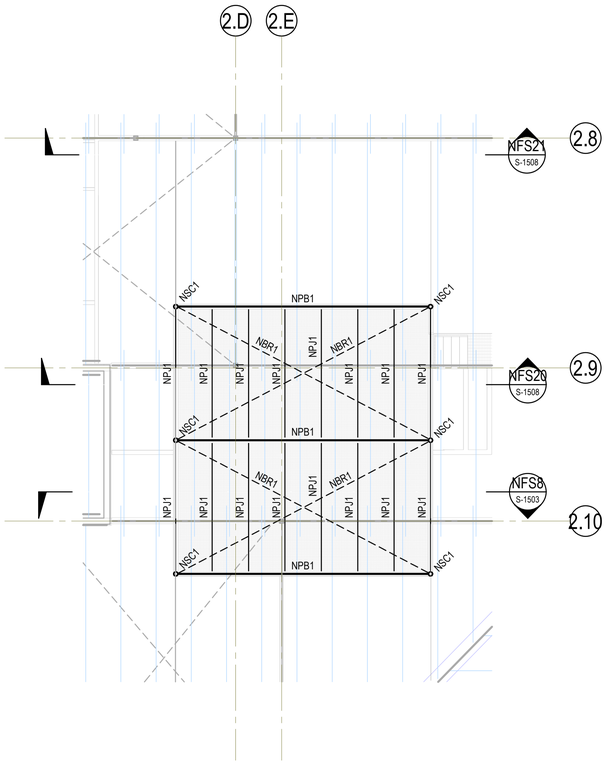


NEW LEARNING HUB - ROOF - GA PLAN - PLANT PLATFORM 1

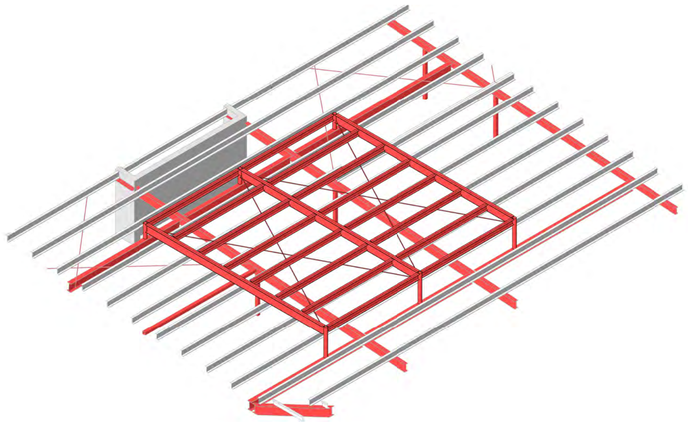
SCALE: 1 : 100





NEW LEARNING HUB - ROOF - GA PLAN - PLANT PLATFORM 2

SCALE: 1 : 100



LEGEND

STEP — DENOTES STEP IN ROOF STRUCTURE.

NOTES:

- REFER TO DRAWINGS S#.## FOR ALL STRUCTURAL GENERAL NOTES.
- REFER TO DRAWINGS S#.## FOR CONCRETE COLUMN SCHEDULE.
- REFER TO DRAWINGS S#.## FOR LOADING DIAGRAMS.
- REFER TO DRAWINGS S#.## FOR CONCRETE WALL ELEVATIONS & WALL SCHEDULE.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
- ALL FALLS, SETDOWNS & WATERPROOFING ARE TO ARCHITECTS DETAILS U.N.O.
- UNLESS NOTED OTHERWISE ALL WET AREA SETDOWNS ARE TO BE A MINIMUM =##mm
- NON STRUCTURAL KERBS AND HOBS ARE NOT SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT AND LOCATIONS.

UNLESS NOTED OTHERWISE ALL PURLINS TO BE Z20019 AT 1200 MAX CTS (1000 AT END SPANS)

FRL & COVER NOTE:

FIRE RESISTANCE LEVEL (FRL) =			120/120/120
CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-9999 FOR ALL STRUCTURAL MEMBER SCHEDULES

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

ACOR CONSULTANTS

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Project: NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - ROOF - GA PLAN - PLANT PLATFORM

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	RF	S-1404	1

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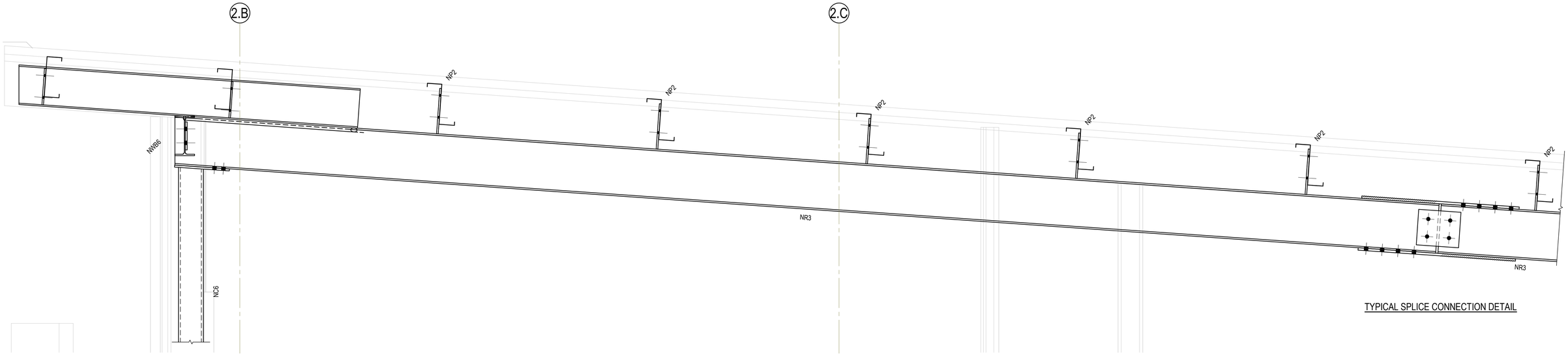
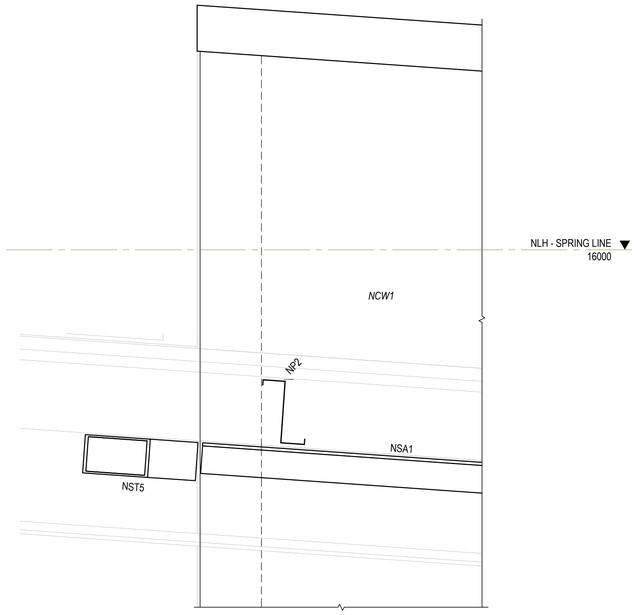


TYPICAL SPLICE CONNECTION DETAIL

SECTION NRS1
SCALE: 1 : 10 S-1402



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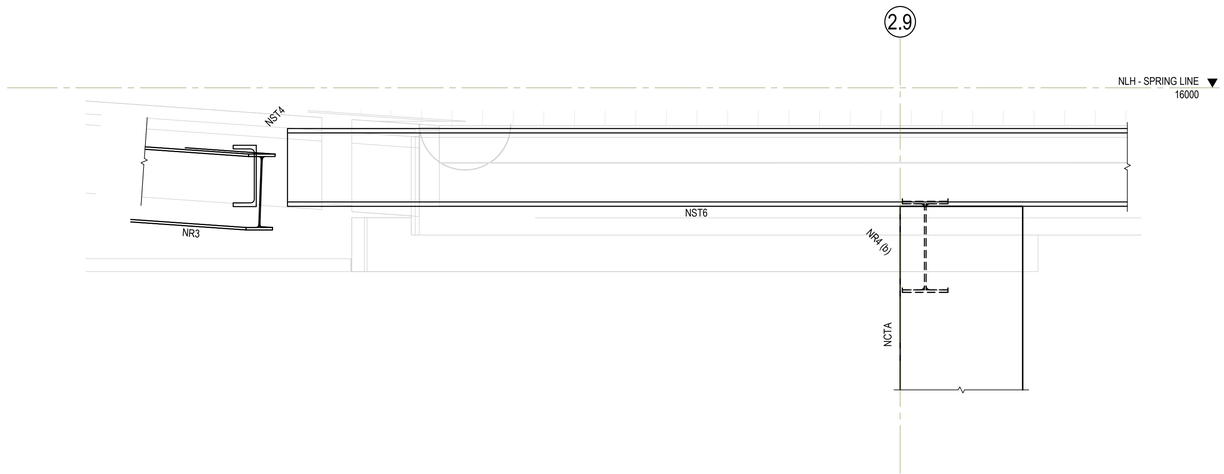

SECTION NRS3
SCALE: 1 : 10 S-1402

NOTE: PURLINS NOT SHOWN FOR CLARITY

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
0.1 0 0.1 0.2 0.3 0.4 0.5m
SCALE BAR 1:10

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - ROOF - SECTIONS

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 10

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	RF	S-1410	1

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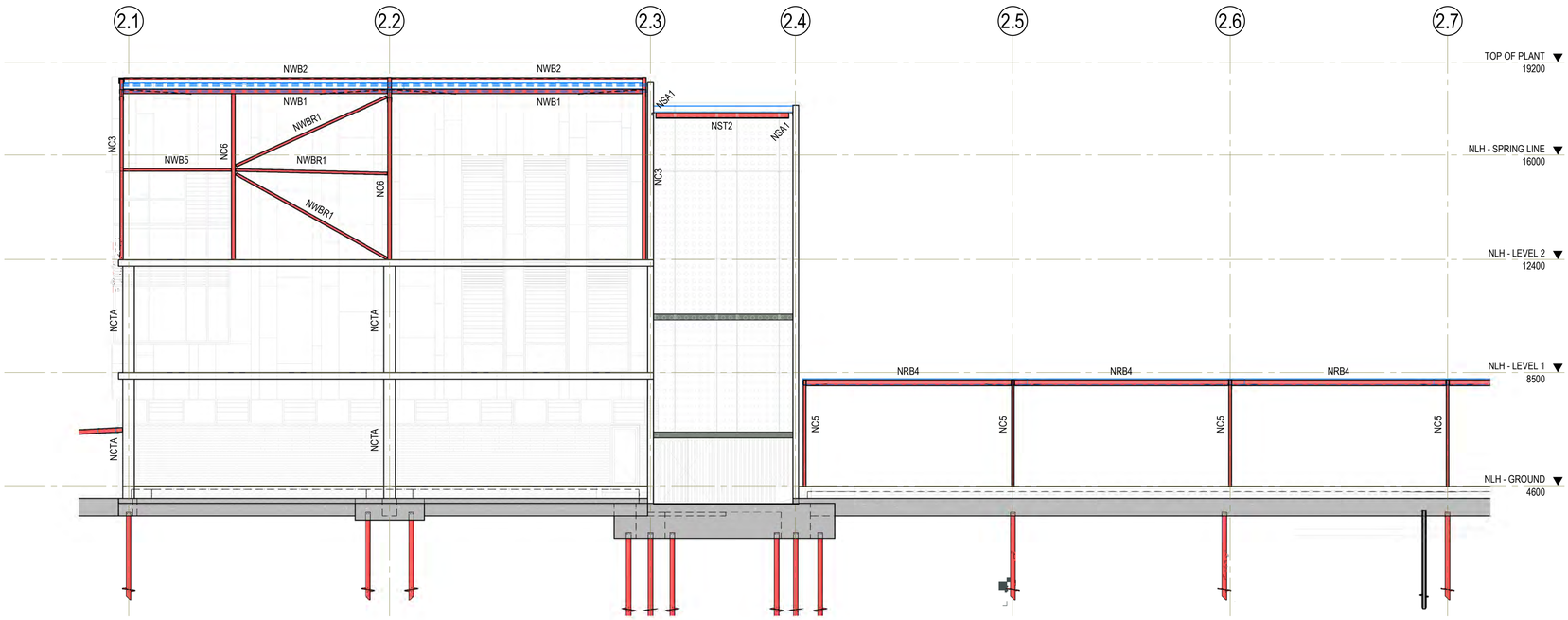

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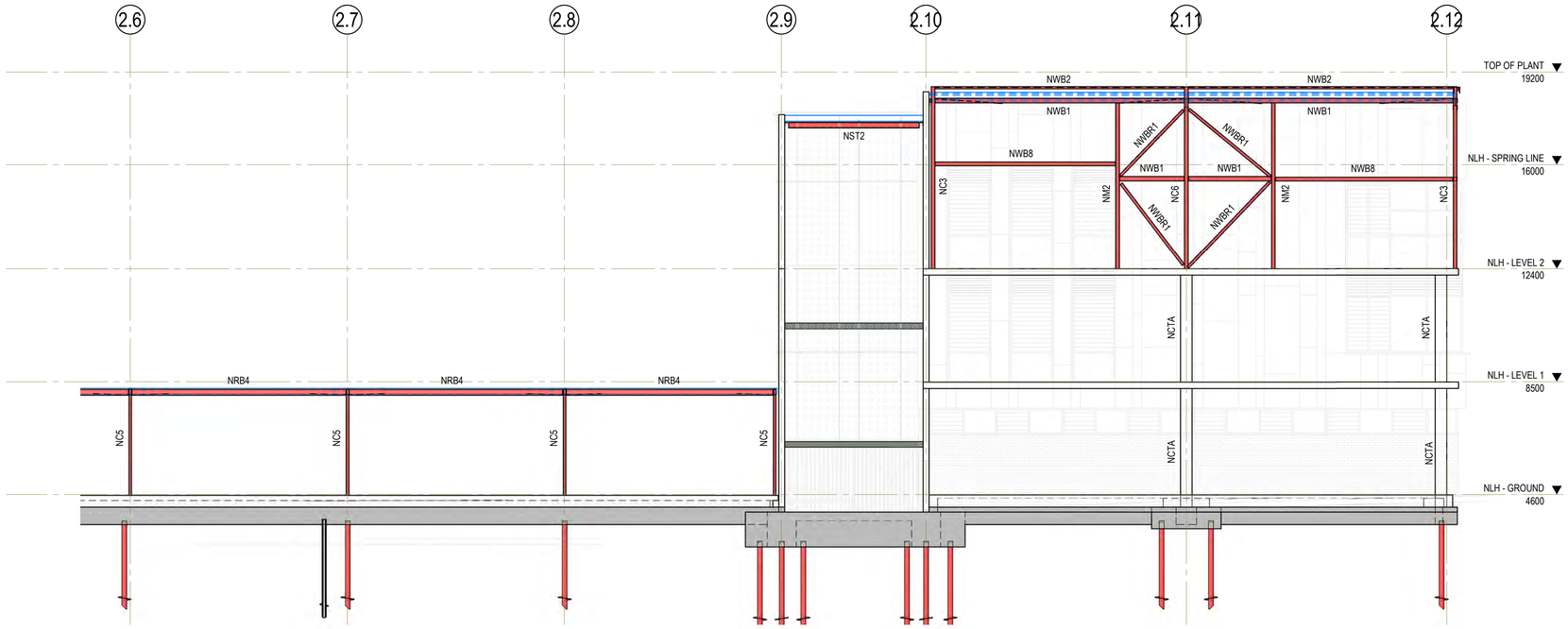

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SCALE: 1 : 100

Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
1 0 1 2 3 4 5m
SCALE BAR 1:100

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

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Drawing Title
STRUCTURAL
NEW LEARNING HUB - SECTION SHEET 1

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	ZZ	S-1500	1

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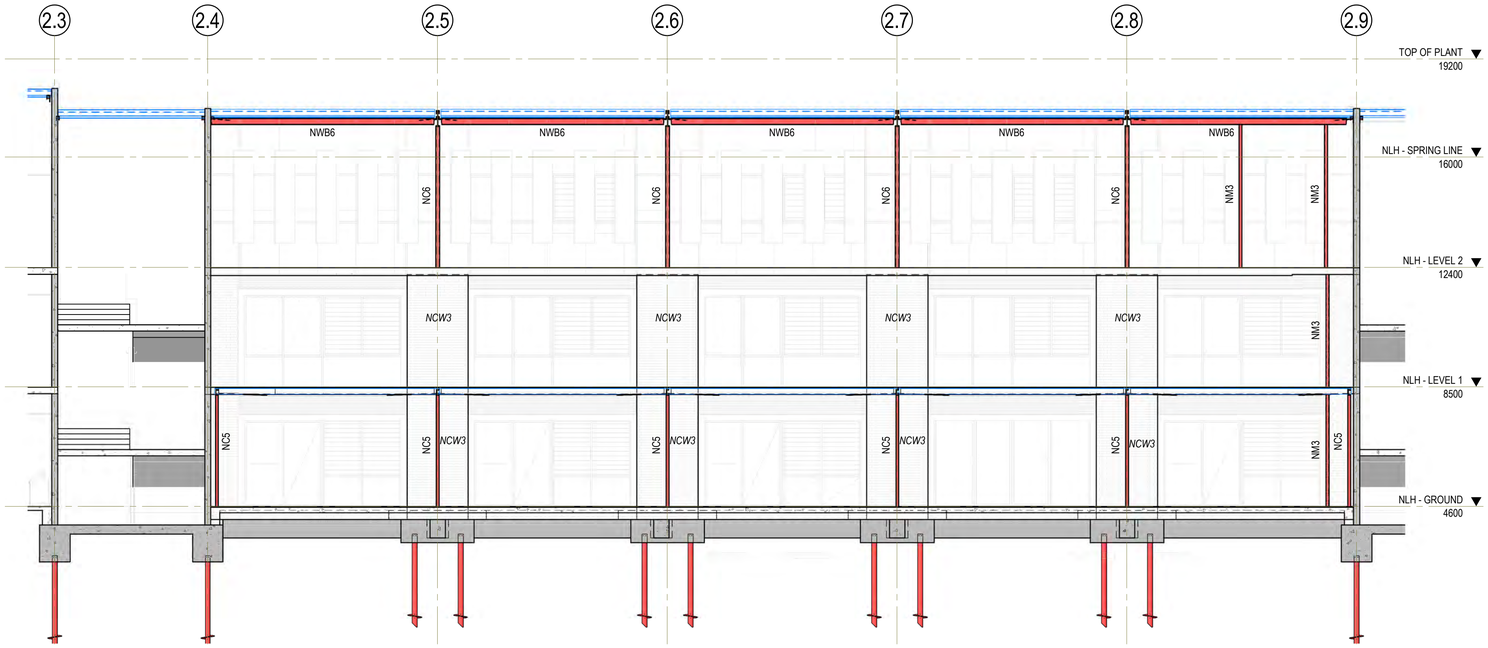

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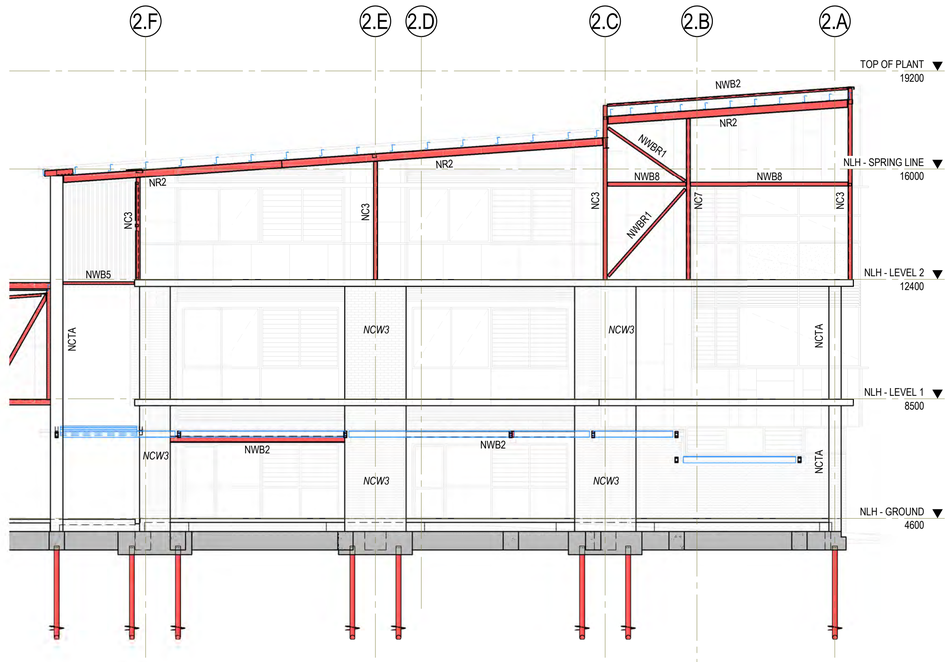

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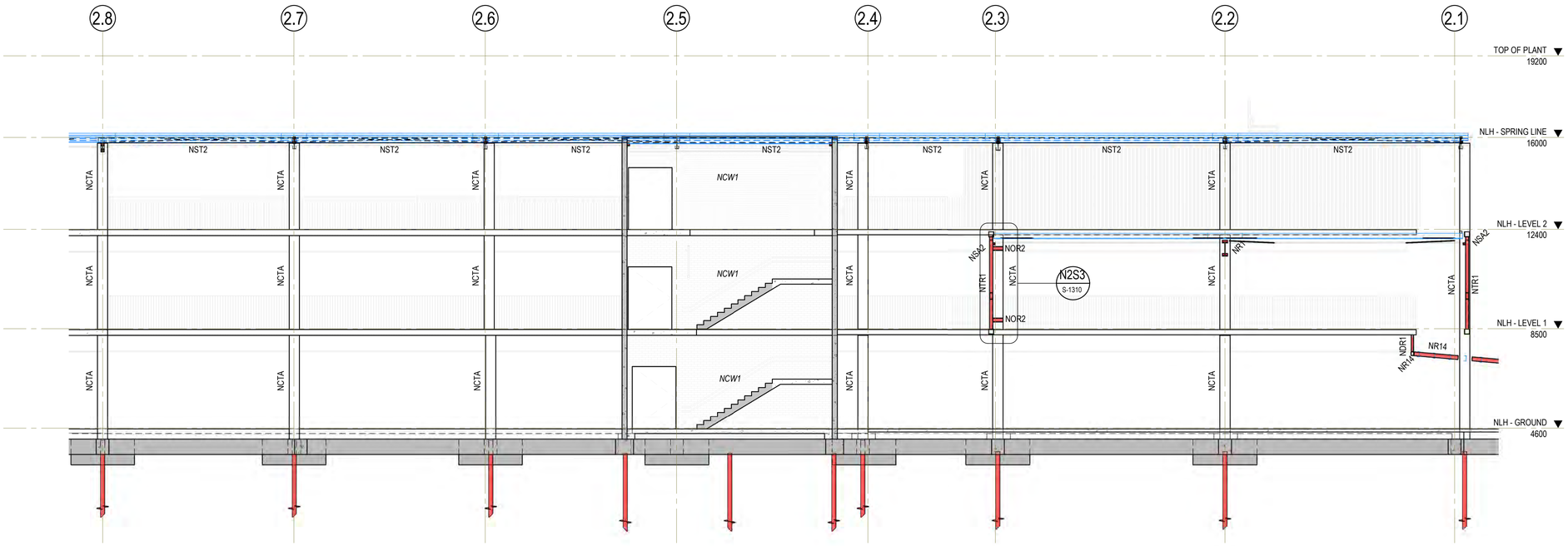

SECTION NFS5 S-1101
SCALE: 1 : 100

Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
1 0 1 2 3 4 5m
SCALE BAR 1:100

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - SECTION SHEET 2

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	ZZ	S-1501	1

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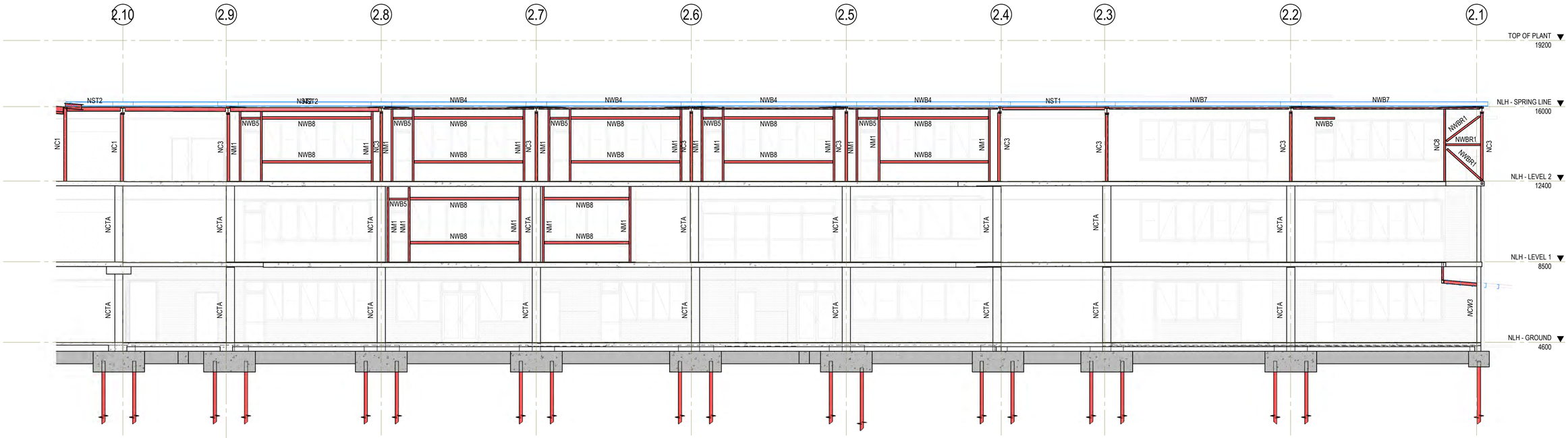

SECTION NFS6

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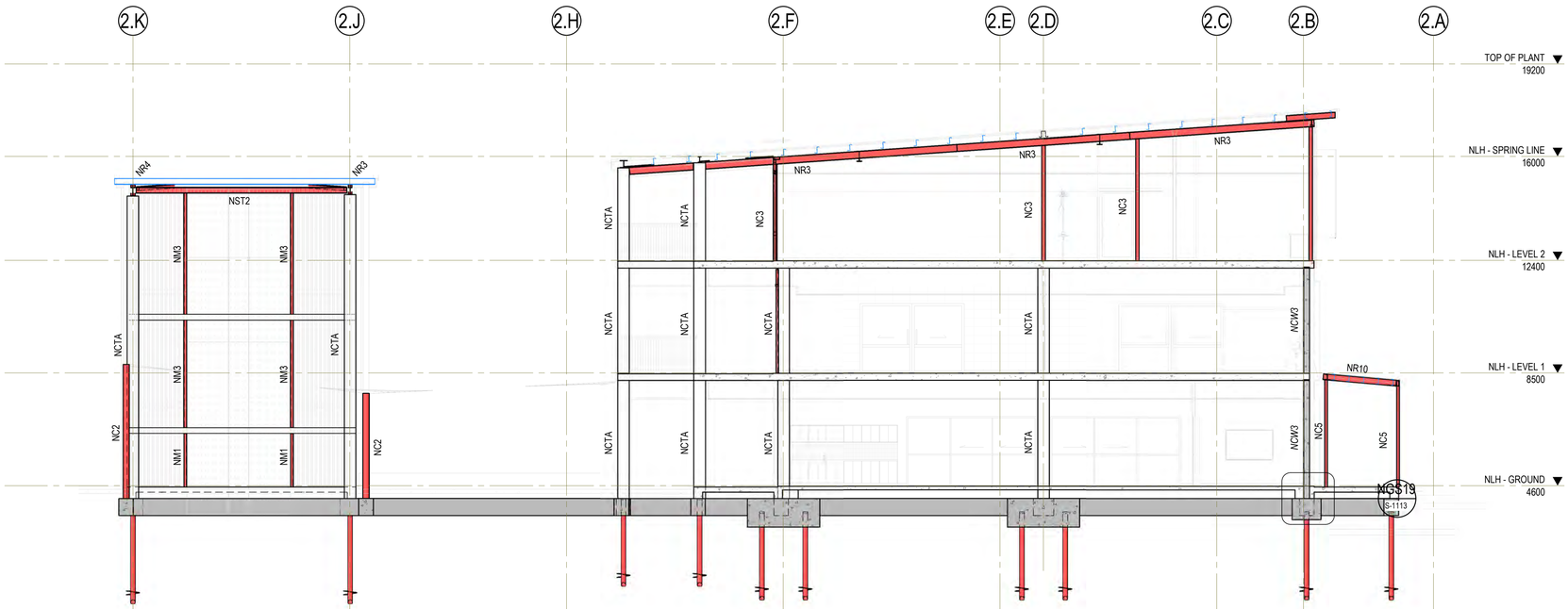

SECTION NFS7

SCALE: 1 : 100 S-1102

Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale

1 0 1 2 3 4 5m

SCALE BAR 1:100

PRINT IN COLOUR

Client

NSW GOVERNMENT

Architect

EJE architecture

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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - SECTION SHEET 3

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	ZZ	S-1502	1

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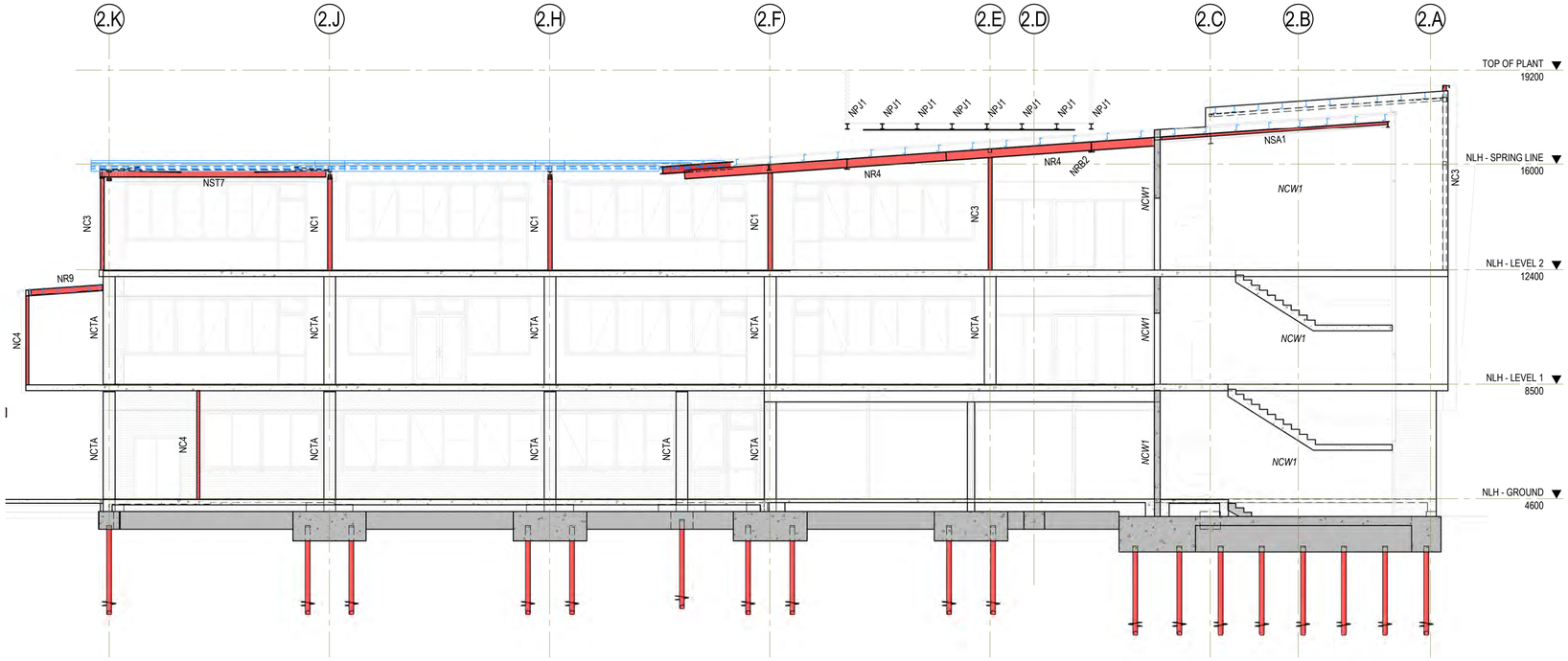

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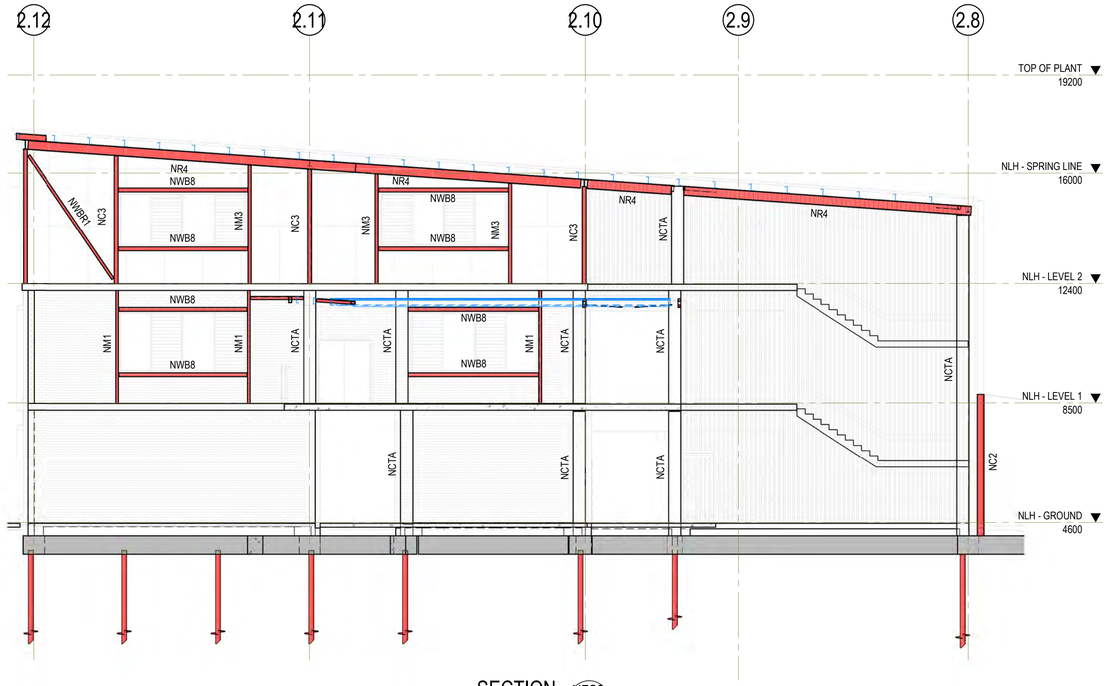

SECTION NFS9 S-1102
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Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
1 0 1 2 3 4 5m
SCALE BAR 1:100

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - SECTION SHEET 4

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	ZZ	S-1503	1

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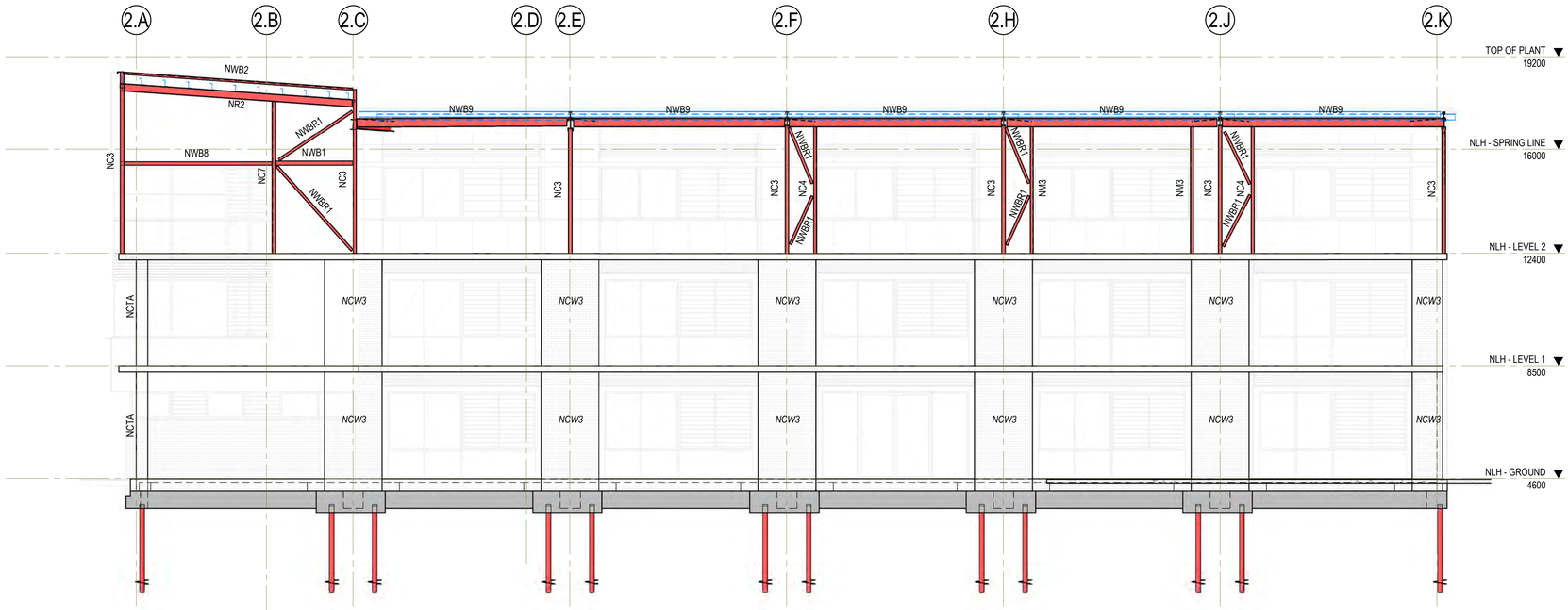

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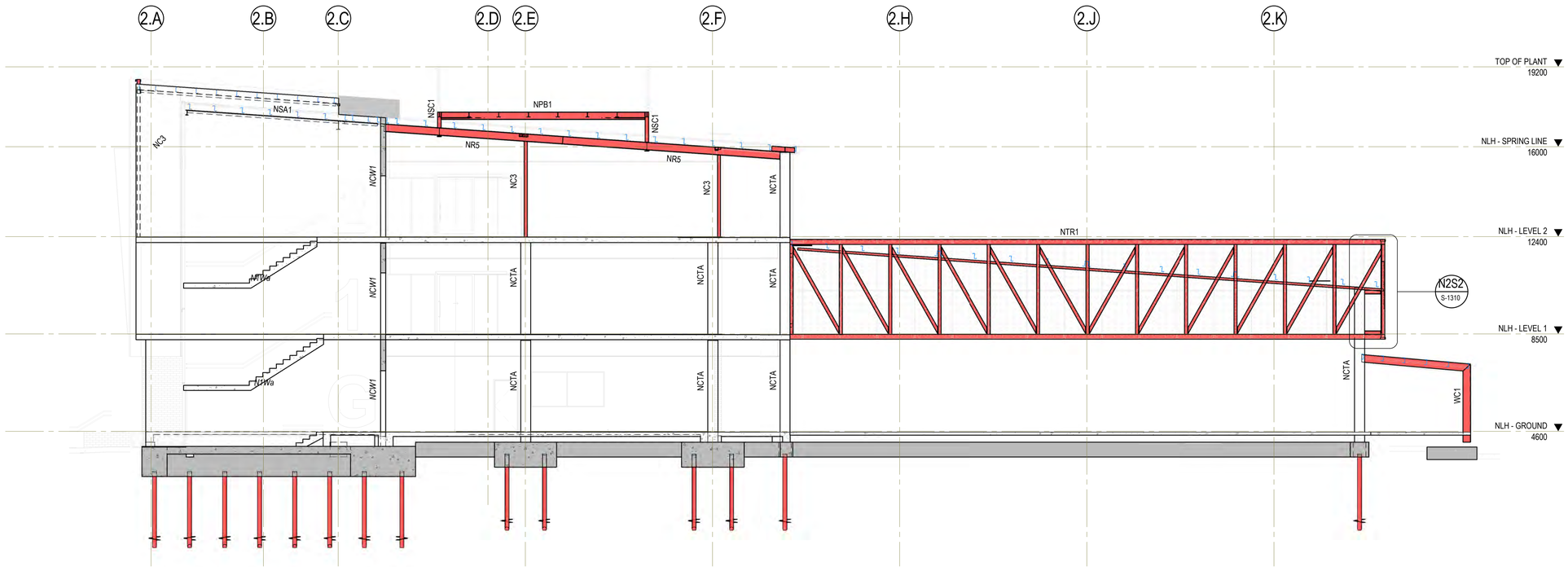

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Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
1 0 1 2 3 4 5m
SCALE BAR 1:100

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

ACOR CONSULTANTS

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Charlestown NSW 2290
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Project
NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - SECTION SHEET 5

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	ZZ	S-1504	1

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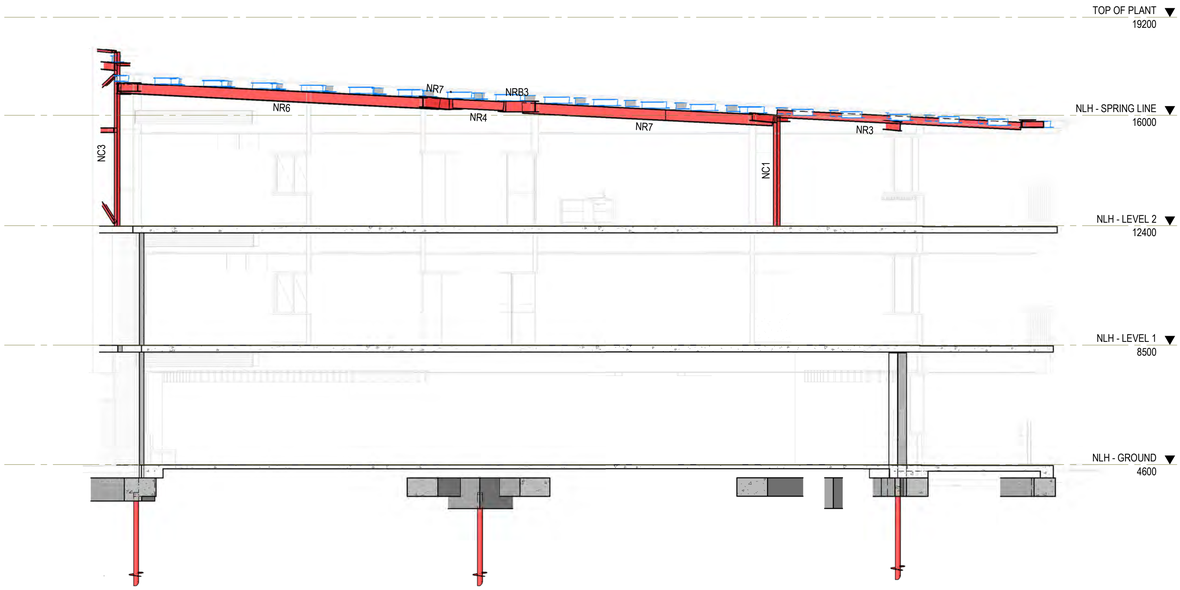

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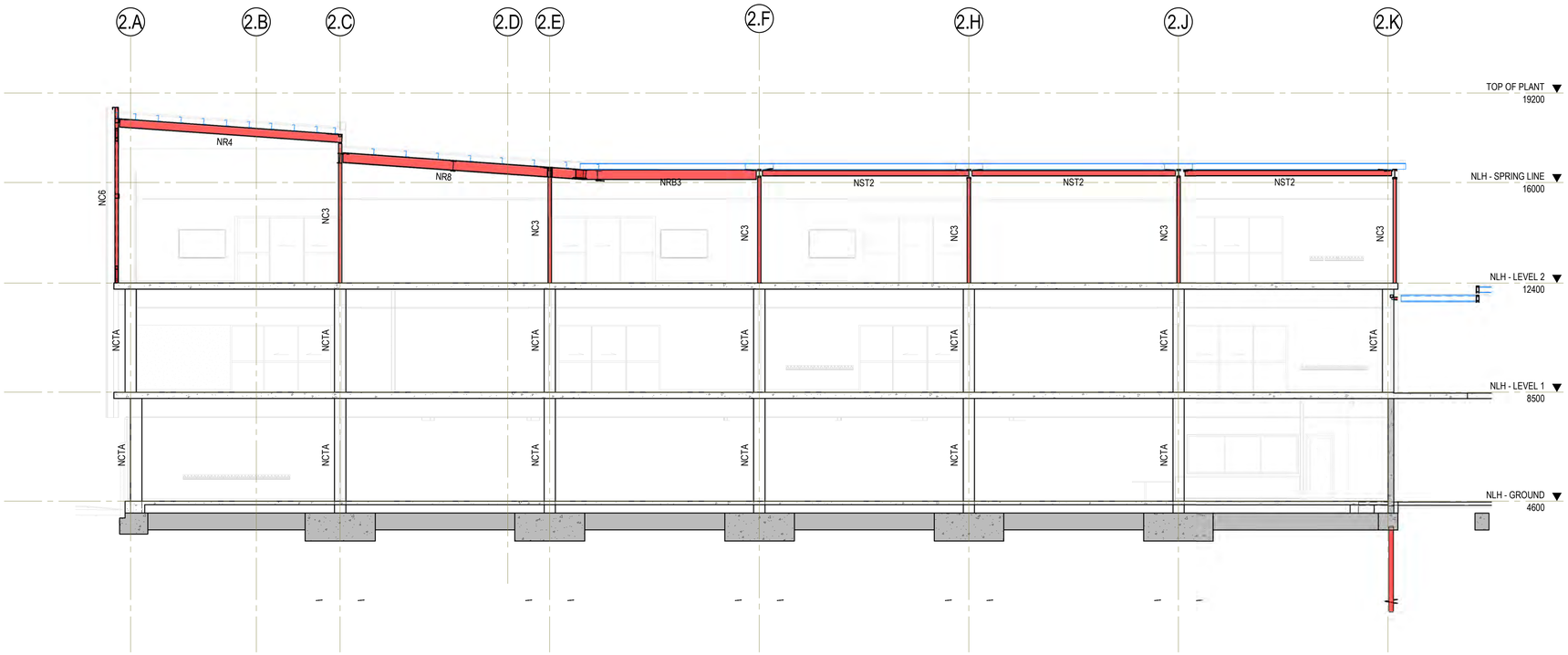

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Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
1 0 1 2 3 4 5m
SCALE BAR 1:100

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - SECTION SHEET 6

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	ZZ	S-1505	1

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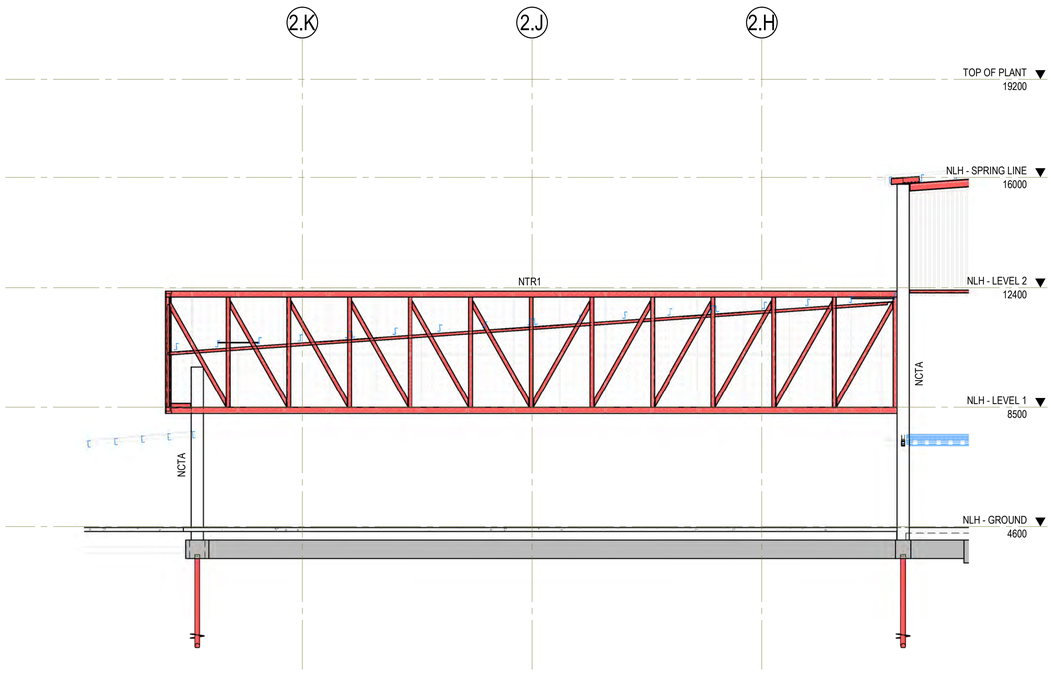

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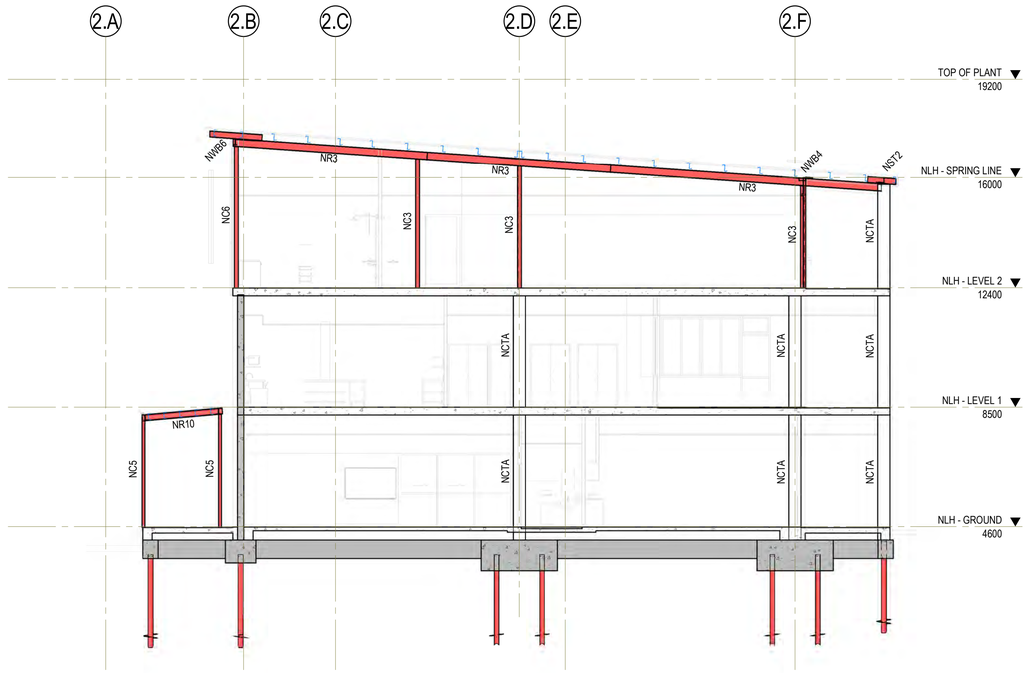

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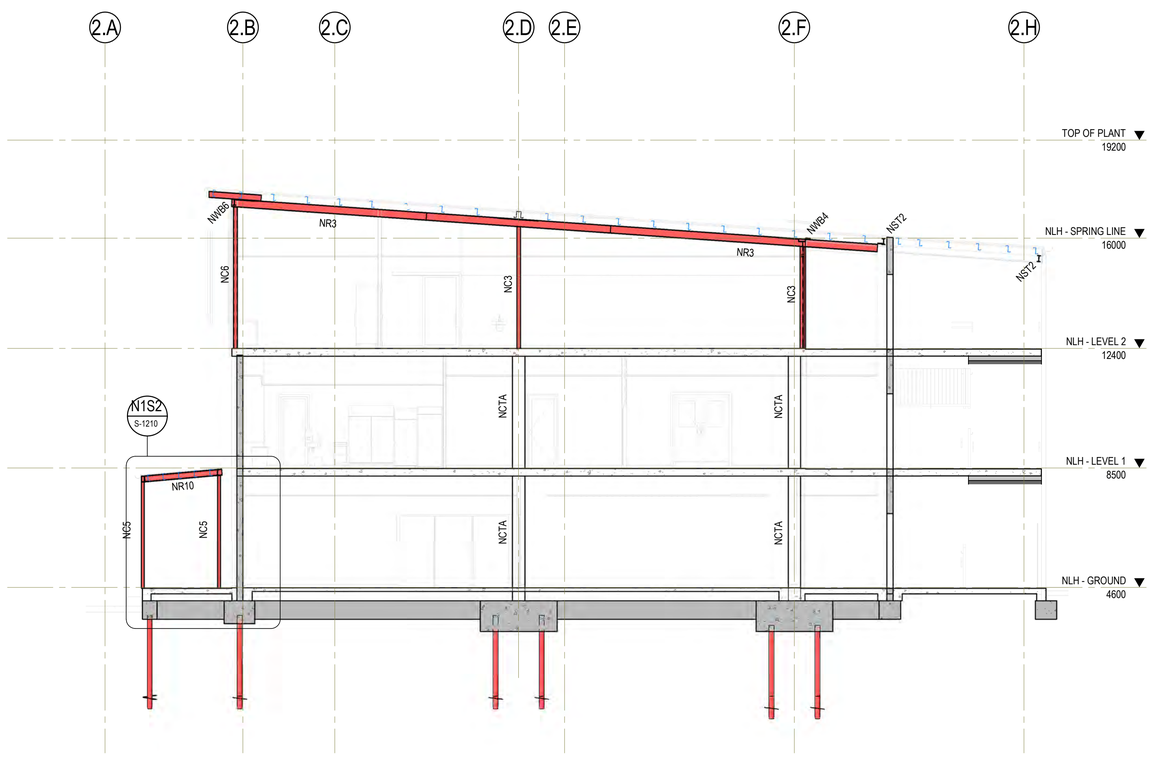

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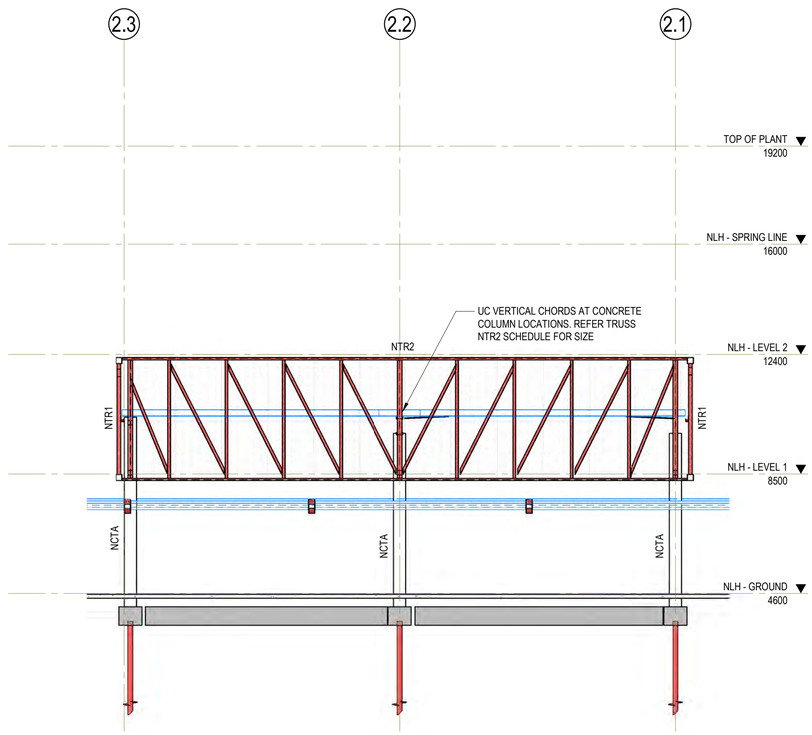

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SCALE: 1 : 100

Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

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240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - SECTION SHEET 7

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	ZZ	S-1506	1

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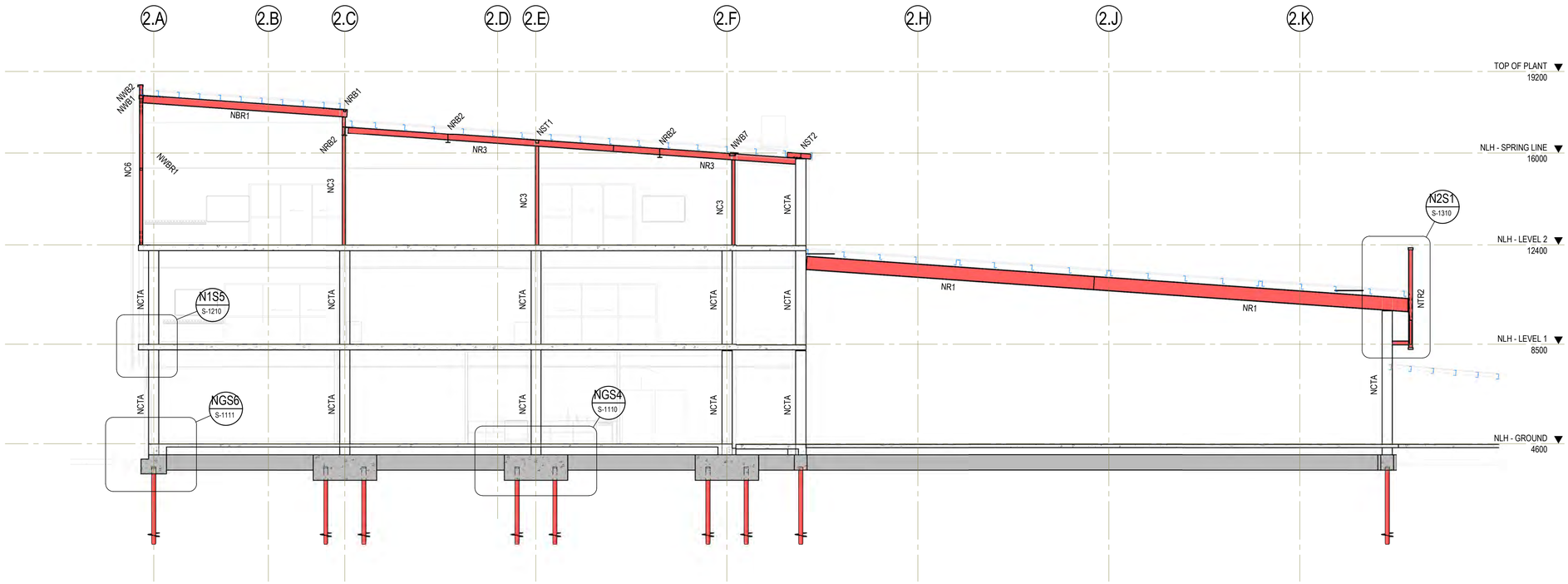

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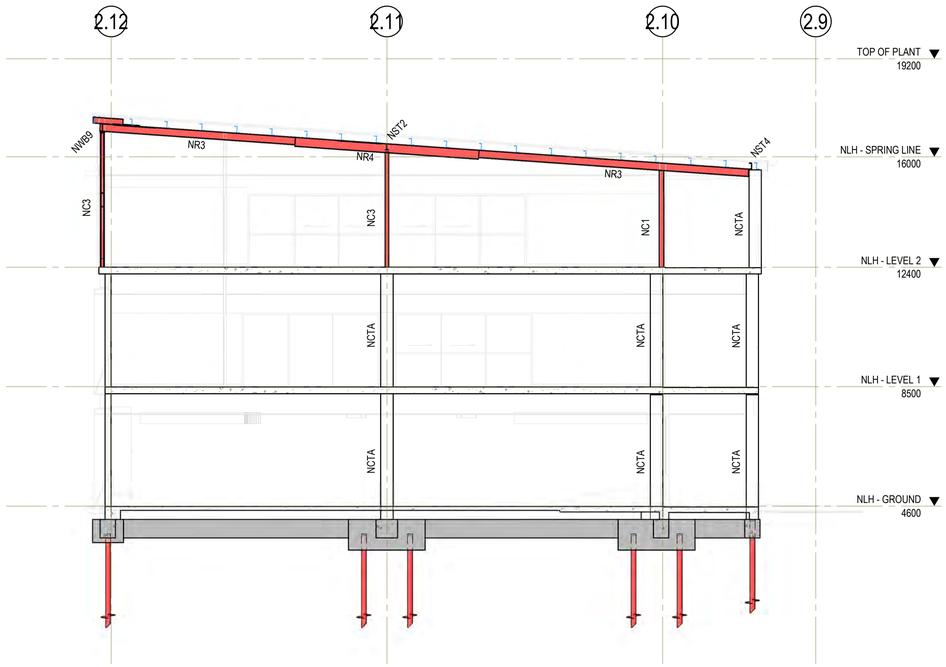

SECTION NFS19 S-1102
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Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
1 0 1 2 3 4 5m
SCALE BAR 1:100

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

ACOR CONSULTANTS

ACOR Consultants Pty Ltd
The Forum, Level 1, Suite 1
240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - SECTION SHEET 8

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	ZZ	S-1507	1

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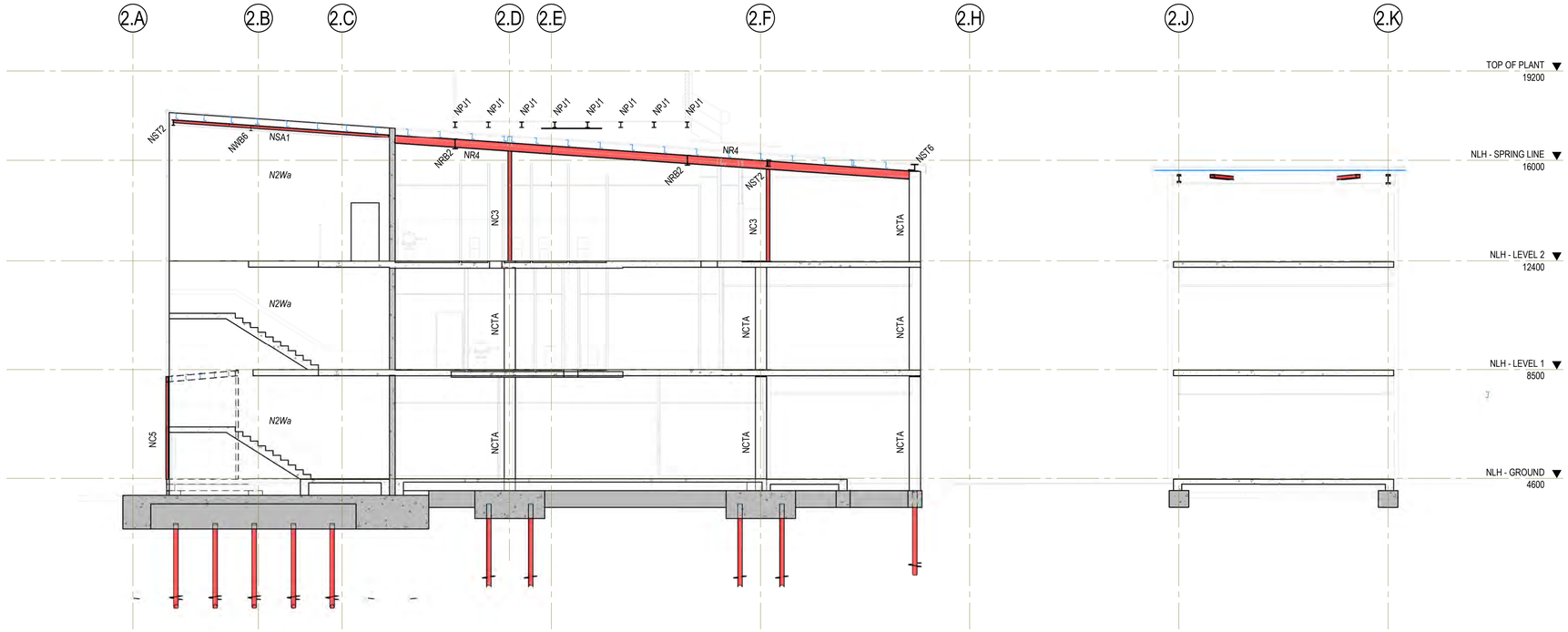

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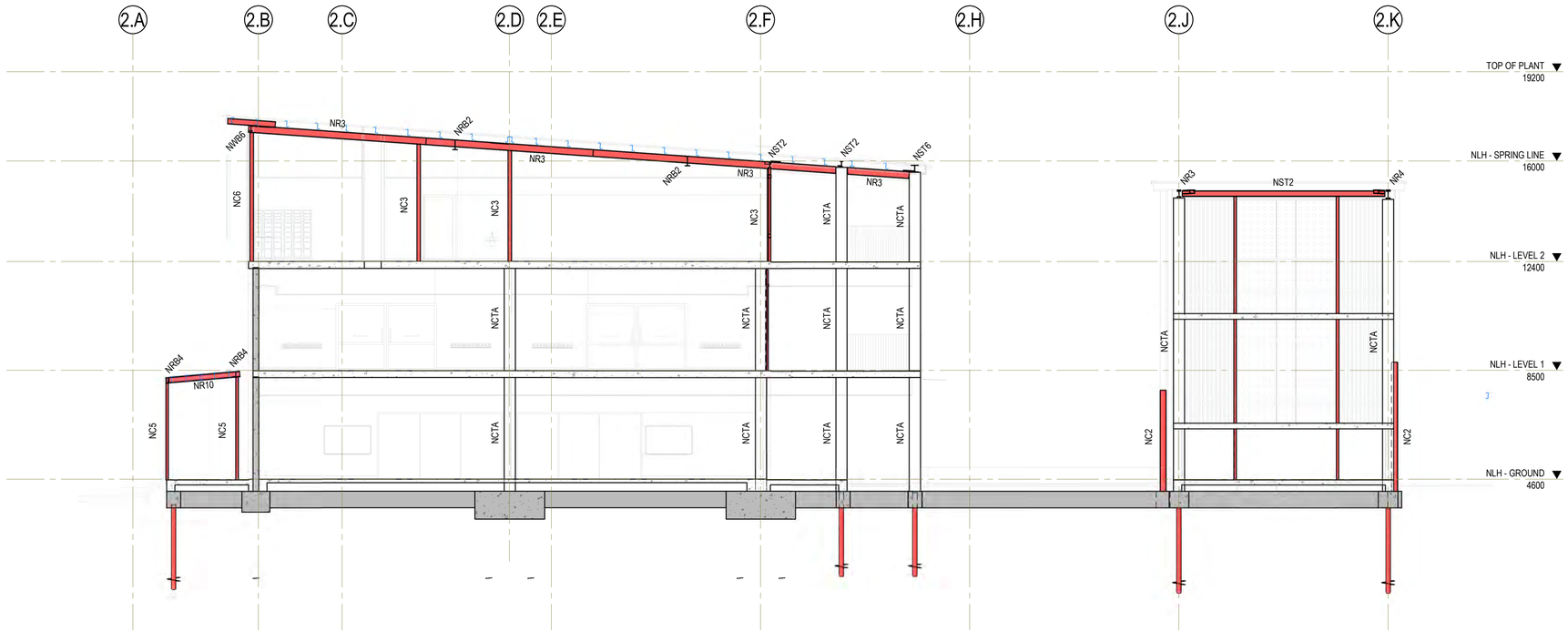

SECTION NFS21 S-1102
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Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
1 0 1 2 3 4 5m
SCALE BAR 1:100

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

ACOR CONSULTANTS

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The Forum, Level 1, Suite 1
240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - SECTION SHEET 9

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	ZZ	S-1508	1

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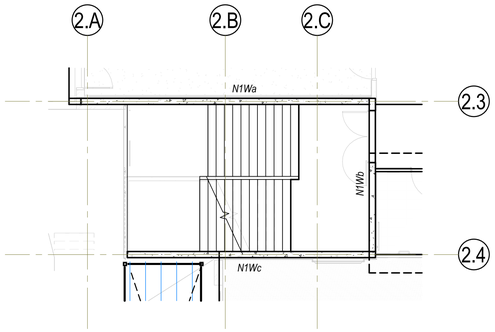
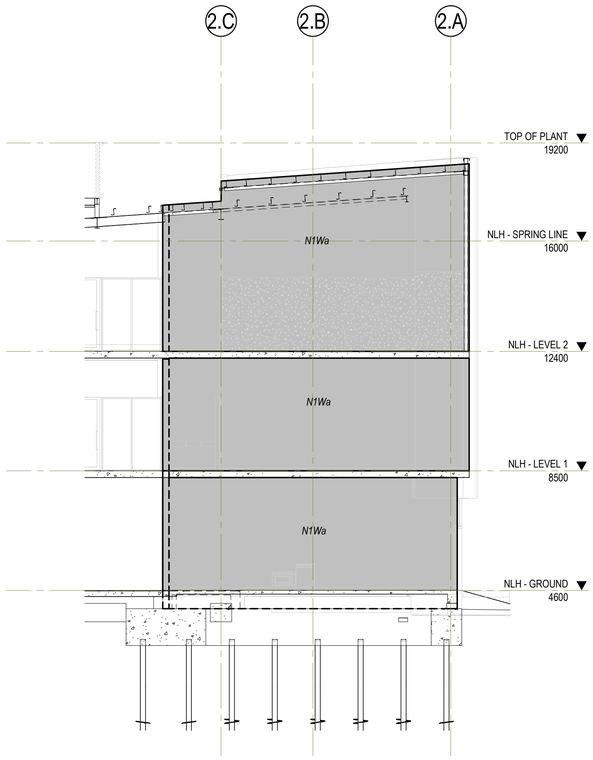


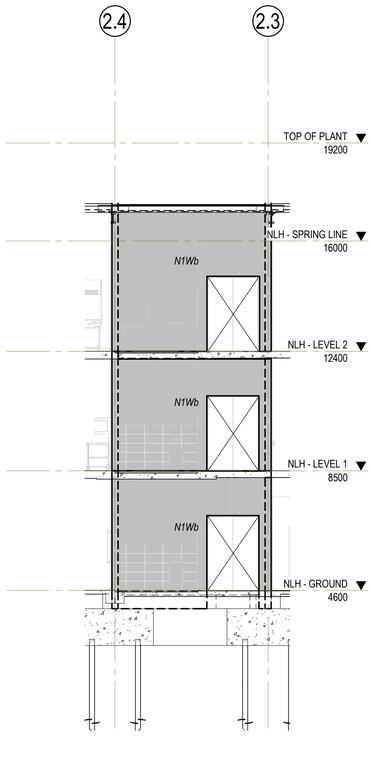
NEW LEARNING HUB - LEVEL 1 - KEY PLAN - STAIR CORE 1

SCALE: 1 : 100



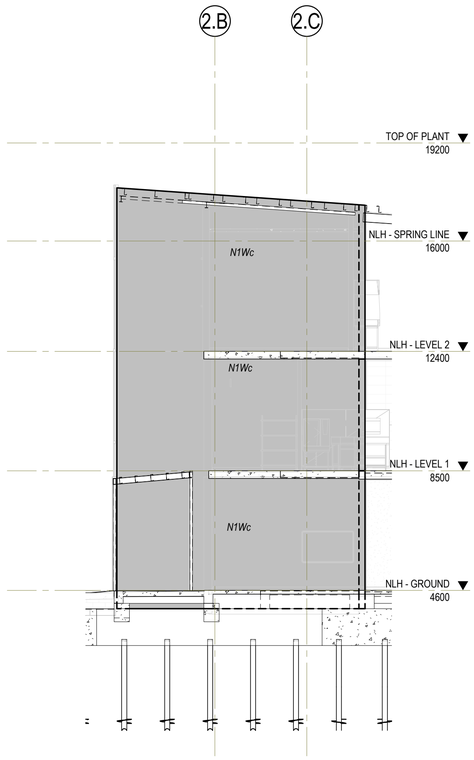
NEW LEARNING HUB - NORTH WALL ELEVATION - STAIR CORE 1

SCALE: 1 : 100



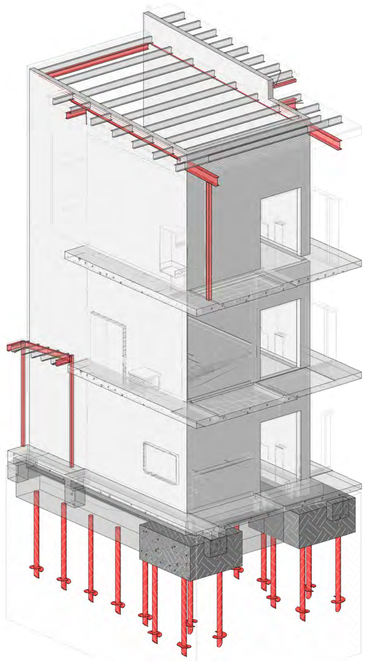
NEW LEARNING HUB - EAST WALL ELEVATION - STAIR CORE 1

SCALE: 1 : 100



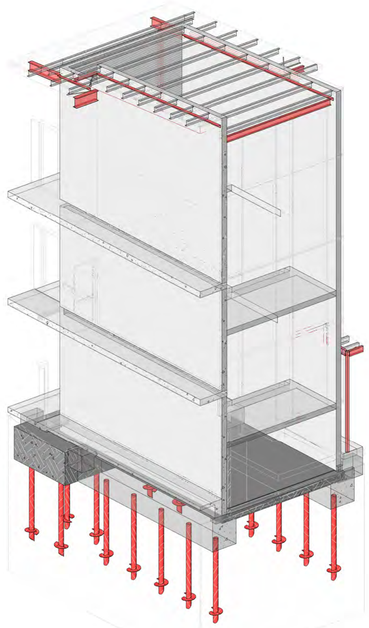
NEW LEARNING HUB - SOUTH WALL ELEVATION - STAIR CORE 1

SCALE: 1 : 100



NEW LEARNING HUB - STAIR CORE 1 - 3D VIEW 1

SCALE:

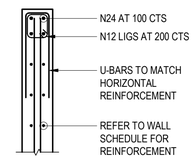


NEW LEARNING HUB - STAIR CORE 1 - 3D VIEW 2

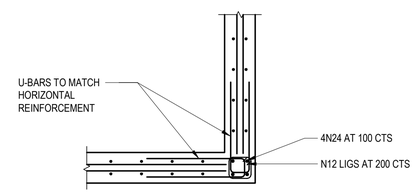
SCALE:

NEW LEARNING HUB - STAIR CORE 1 - WALL REINFORCEMENT SCHEDULE

MARK	WALL THICKNESS	BASE OF THE WALL	TOP OF THE WALL	REINFORCEMENT			CONCRETE STRENGTH	COVER
				STARTER BARS	VERTICAL	HORIZONTAL		
N1Wa	200	NLH - GROUND	Up to level: NLH - LEVEL 1					
N1Wb	200	NLH - GROUND	Up to level: NLH - LEVEL 1					
N1Wc	200	NLH - GROUND	Up to level: NLH - LEVEL 1					
N1Wa	200	NLH - LEVEL 1	Up to level: NLH - LEVEL 2					
N1Wb	200	NLH - LEVEL 1	Up to level: NLH - LEVEL 2					
N1Wc	200	NLH - LEVEL 1	Up to level: NLH - LEVEL 2					
N1Wa	200	NLH - LEVEL 2	Up to level: TOP OF PLANT					
N1Wc	200	NLH - LEVEL 2	Up to level: TOP OF PLANT					
N1Wb	200	NLH - LEVEL 2	Up to level: TOP OF PLANT					



WALL END DETAIL



WALL CORNER DETAIL

WALL END AND CORNER DETAIL

SCALE: 1 : 20

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

ACOR CONSULTANTS

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Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - WALL ELEVATIONS SHEET 1

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	As indicated

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	ZZ	S-1600	1

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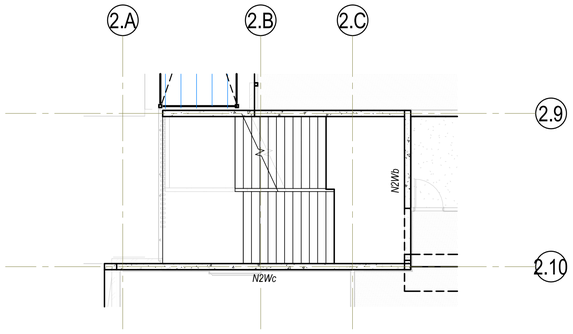
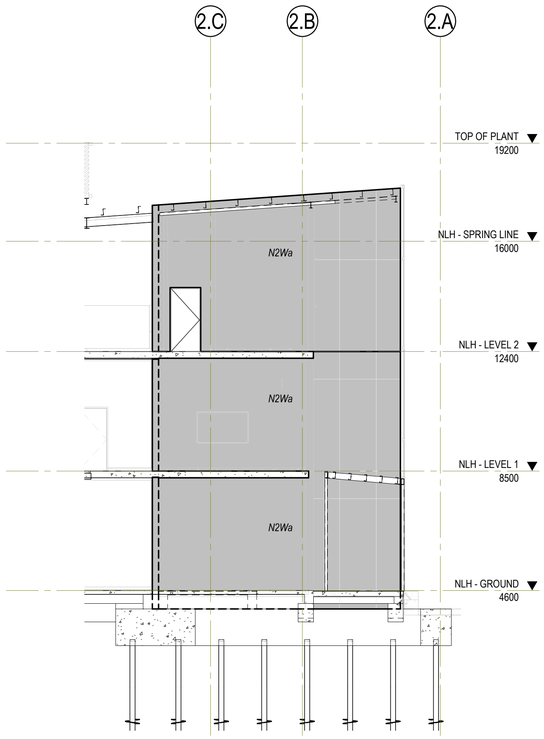


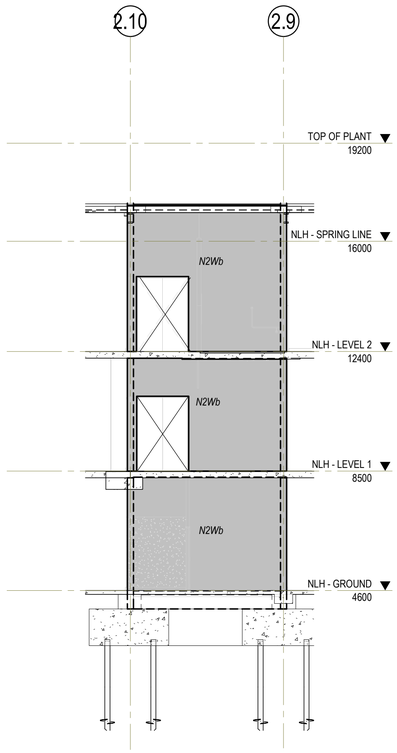
NEW LEARNING HUB - LEVEL 1 - KEY PLAN - STAIR CORE 2

SCALE: 1 : 100



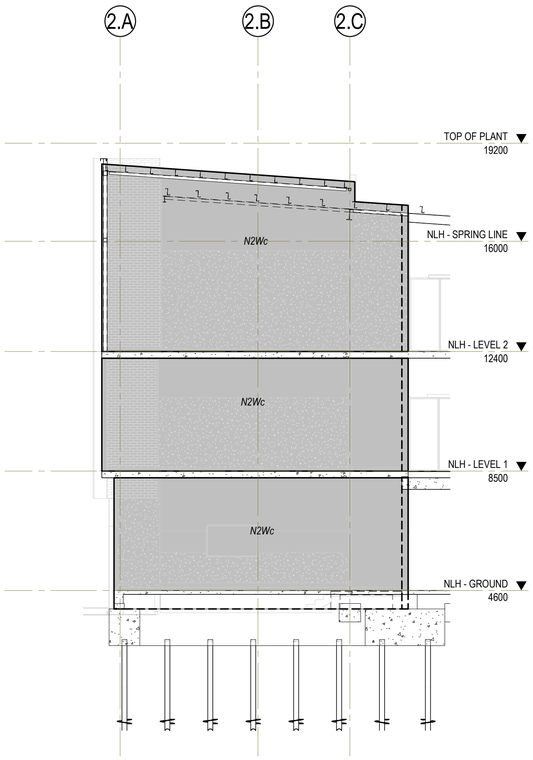
NEW LEARNING HUB - NORTH WALL ELEVATION - STAIR CORE 2

SCALE: 1 : 100



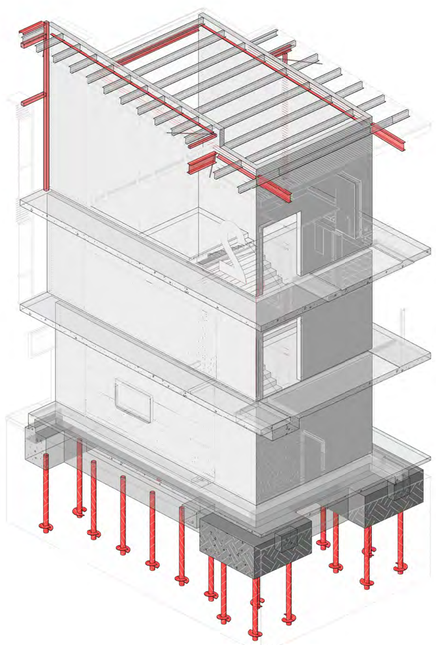
NEW LEARNING HUB - EAST ELEVATION - STAIR CORE 2

SCALE: 1 : 100



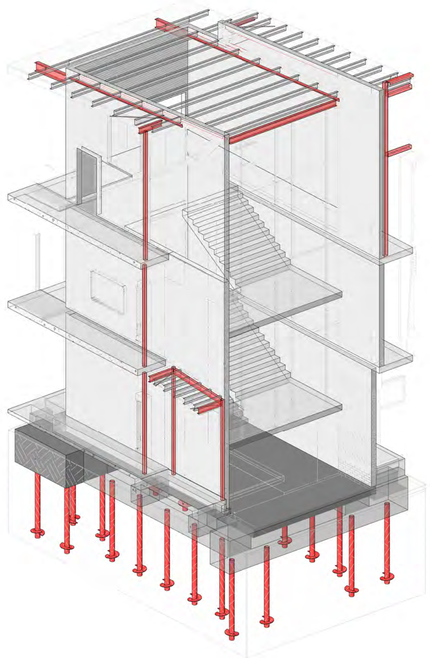
NEW LEARNING HUB - SOUTH ELEVATION - STAIR CORE 1

SCALE: 1 : 100



NEW LEARNING HUB - STAIR CORE 2 - 3D VIEW 1

SCALE:



NEW LEARNING HUB - STAIR CORE 2 - 3D VIEW 2

SCALE:

NEW LEARNING HUB - STAIR CORE 2 - WALL REINFORCEMENT SCHEDULE

MARK	WALL THICKNESS	BASE OF THE WALL	TOP OF THE WALL	REINFORCEMENT			CONCRETE STRENGTH	COVER
				STARTER BARS	VERTICAL	HORIZONTAL		
N2Wc	200	NLH - GROUND	Up to level: NLH - LEVEL 1					
N2Wb	200	NLH - GROUND	Up to level: NLH - LEVEL 1					
N2Wa	200	NLH - GROUND	Up to level: NLH - LEVEL 1					
N2Wc	200	NLH - LEVEL 1	Up to level: NLH - LEVEL 2					
N2Wb	200	NLH - LEVEL 1	Up to level: NLH - LEVEL 2					
N2Wa	200	NLH - LEVEL 1	Up to level: NLH - LEVEL 2					
N2Wc	200	NLH - LEVEL 2	Up to level: TOP OF PLANT					
N2Wb	200	NLH - LEVEL 2	Up to level: TOP OF PLANT					
N2Wa	200	NLH - LEVEL 2	Up to level: TOP OF PLANT					

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

ACOR CONSULTANTS

ACOR Consultants Pty Ltd
The Forum, Level 1, Suite 1
240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
NEW LEARNING HUB - WALL ELEVATIONS SHEET 2

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	ZZ	S-1601	1

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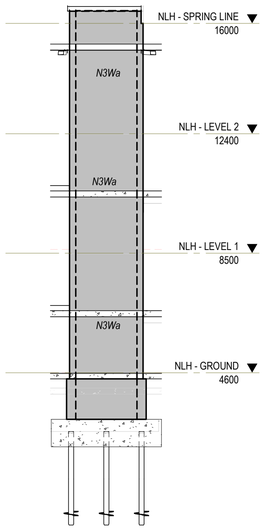
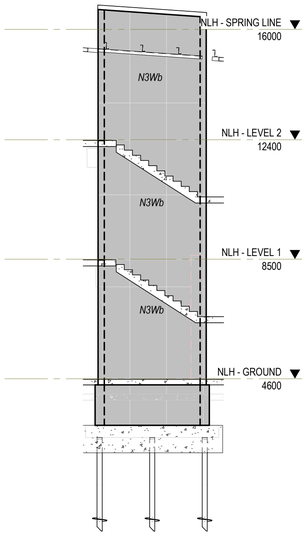


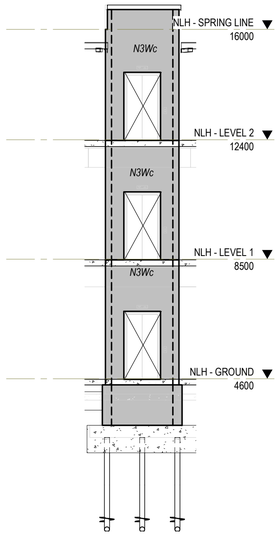
NEW LEARNING HUB - NORTH WALL ELEVATION - LIFT CORE

SCALE: 1 : 100



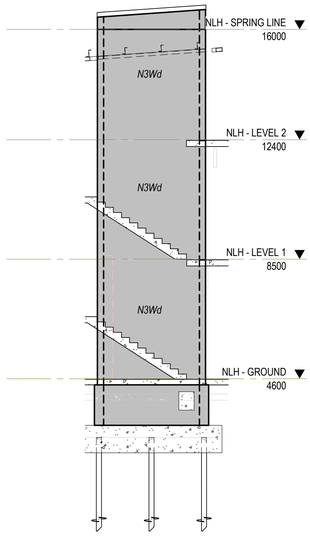
NEW LEARNING HUB - EAST WALL ELEVATION - LIFT CORE

SCALE: 1 : 100



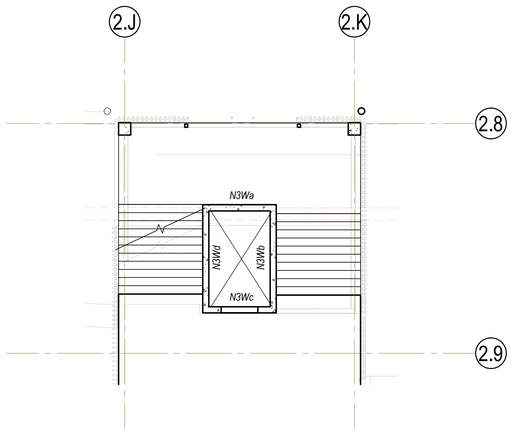
NEW LEARNING HUB - SOUTH WALL ELEVATION - LIFT CORE

SCALE: 1 : 100



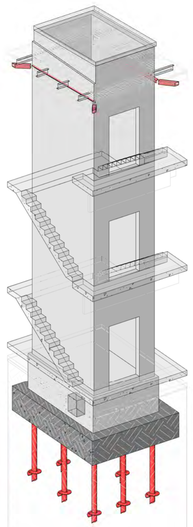
NEW LEARNING HUB - WEST WALL ELEVATION - LIFT CORE

SCALE: 1 : 100



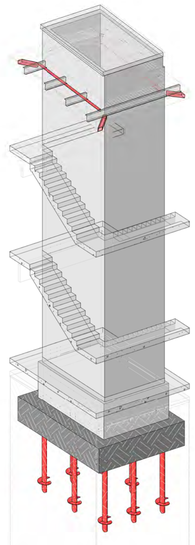
NEW LEARNING HUB - LEVEL 1 - KEY PLAN - LIFT CORE

SCALE: 1 : 100



NEW LEARNING HUB - LIFT CORE - 3D VIEW 1

SCALE:



NEW LEARNING HUB - LIFT CORE - 3D VIEW 2

SCALE:

NEW LEARNING HUB - LIFT CORE - WALL REINFORCEMENT SCHEDULE

MARK	WALL THICKNESS	BASE OF THE WALL	TOP OF THE WALL	REINFORCEMENT			CONCRETE STRENGTH	COVER
				STARTER BARS	VERTICAL	HORIZONTAL		
N3Wd	200	NLH - GROUND	Up to level: NLH - LEVEL 1					
N3Wa	200	NLH - GROUND	Up to level: NLH - LEVEL 1					
N3Wb	200	NLH - GROUND	Up to level: NLH - LEVEL 1					
N3Wc	200	NLH - GROUND	Up to level: NLH - LEVEL 1					
N3Wd	300	NLH - GROUND	Up to level: NLH - GROUND					
N3Wa	300	NLH - GROUND	Up to level: NLH - GROUND					
N3Wb	300	NLH - GROUND	Up to level: NLH - GROUND					
N3Wc	300	NLH - GROUND	Up to level: NLH - GROUND					
N3Wd	200	NLH - LEVEL 1	Up to level: NLH - LEVEL 2					
N3Wa	200	NLH - LEVEL 1	Up to level: NLH - LEVEL 2					
N3Wb	200	NLH - LEVEL 1	Up to level: NLH - LEVEL 2					
N3Wc	200	NLH - LEVEL 1	Up to level: NLH - LEVEL 2					
N3Wd	200	NLH - LEVEL 2	Up to level: NLH - SPRING LINE					
N3Wa	200	NLH - LEVEL 2	Up to level: NLH - SPRING LINE					
N3Wb	200	NLH - LEVEL 2	Up to level: NLH - SPRING LINE					
N3Wc	200	NLH - LEVEL 2	Up to level: NLH - SPRING LINE					

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale

1 0 1 2 3 4 5m

SCALE BAR 1:100

PRINT IN COLOUR

Client

NSW GOVERNMENT

Architect

EJE architecture

ACOR CONSULTANTS

ACOR Consultants Pty Ltd
The Forum, Level 1, Suite 1
240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - WALL ELEVATIONS SHEET 3

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	ZZ	S-1602	1

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15/05/2024 3:42:18 PM

NLH - STRIP FOOTING SCHEDULE

MARK	DEPTH (A) x WIDTH (B)		REINFORCEMENT			CONCRETE STRENGTH (MPa)	COMMENTS
	A	B	TOP	BOTTOM	TIES		
STRIP FOOTING							
NSF1	600	500	4N20	4N20	N12-250		
NSF2	600	700	7N20	7N20	N12-250		
NSF3	1200	1000	N20-200	N20-200	3N12-300		

NLH - PILE CAP SCHEDULE

MARK	LENGTH (A) x WIDTH (B) x DEPTH (C)			REINFORCEMENT			COMMENTS
	A	B	C	BOTTOM	TOP	TIES	
NPC1	750	750	600	N16-200 EW	N16-200 EW		
NPC2	2500	2500	1000	N24-150 EW	N24-150 EW		
NPC4	2400	1000	750	8N20	8N20	N12-200	3 SETS OF STIRRUPS (I.E. 6 LEGS TOTAL)
NPC5	2600	2600	1200	N24-150 EW	N24-150 EW	N12-200	3 SETS OF STIRRUPS (I.E. 6 LEGS TOTAL)
NPC6	3600	4600	900	N24-150 EW	N24-150 EW		

NLH - WALL TYPE SCHEDULE

MARK	SIZE & TYPE	WALL REINFORCEMENT		CONCRETE STRENGTH (MPa)	COMMENTS
		HORIZONTAL	VERTICAL		
CONCRETE					
NCW1	200 CONCRETE WALL	N12-200 EACH FACE	4N24-100 CTS AT ENDS + N20-200 CTS	40	
NCW2	300 CONCRETE WALL				
NCW3	200 CONCRETE WALL	N12-200 EACH FACE	N20-150 EACH FACE	40	

NLH - STEEL FRAMING SCHEDULE

MARK	SIZE	COMMENTS
BRACING		
NBR1	20 ROD + TURNBUCKLE	
NBR2	16 ROD + TURNBUCKLE	
OUTRIGGER		
NOR1	150 UC 23	
NOR2	150 PFC	
PLANT BEAM		
NPB1	310UB32.0	
NPJ1	200UB22.3	
PURLIN		
NP1	2/Z20024	
NP2	Z20019	
NP3	Z20019	AT 900 CTS
NP4	Z20024	
NP5	C20019	AT 600 CTS
RAFTER		
NR1	530UB82.0	
NR2	250UB31.4	
NR3	250UB25.7	
NR4	310UB32.0	
NR5	310UB40.4	
NR6	360UB56.7	
NR7	360UB44.7	
NR8	360UB50.7	
NR9	200 x 100 x 4 RHS	
NR10	200 PFC	
NR11	200 x 100 x 5 RHS	
NR12	100 x 100 x 6 SHS	
NR13	200 x 100 x 4 RHS	
NR14	150 x 100 x 6 RHS	
ROOF BEAM		
NRB1	89 x 89 x 5 SHS	
NRB2	360UB44.7	
NRB3	360UB50.7	
NRB4	200 PFC	
NRB5	200 x 100 x 4 RHS	
SAG ROD		
NSR1	12 ROD	
SHELF ANGLE		
NSA1	100 x 10 EA	
NSA2	90 x 6 EA	
STRUT		
NST1	125 x 125 x 5 SHS	
NST2	200UB18.2	
NST4	200 PFC	
NST5	125 x 125 x 6 SHS	
NST6	250 UC 73	
NST7	250UB25.7	
WALL BEAM		
NWB1	150 x 150 x 5 SHS	
NWB2	200 PFC	
NWB4	230 PFC	TOES UP
NWB5	89 x 89 x 6 SHS	
NWB6	200UB18.2	
NWB7	230 PFC	
NWB8	125 x 125 x 5 SHS	
NWB9	310UB32.0	
NWB10	100 x 100 x 6 SHS	
WALL BRACING		
NWBR1	89 x 89 x 6 SHS	
NWBR2	89 x 89 x 6 SHS	K-BRACE

NLH - SCREW PILE SCHEDULE

MARK	ULTIMATE LOAD CAPACITY (kN)	COMMENTS
NSP1	195 kN	
NSP2	263 kN	
NSP3	450 kN	
NSP4	585 kN	
NSP5	900 kN	
NSP7	1275 kN	-975kN TENSION

NLH - CONCRETE BEAM SCHEDULE

MARK	DEPTH (A) x WIDTH (B)		REINFORCEMENT			COMMENTS
	A	B	TOP	BOTTOM	TIES	
EDGE BEAM						
NEB1	425	300	3N12	3N12	R10-300	
NEB2	600	300	3N12	3N12	R10-300	
NEB3	425	300	3N12	3N12	R10-300	
NEB4	580	300	3N12	3N12	R10-300	
NEB5	425	300	3N12	3N12	R10-300	
NEB6	405	300	3N12	3N12	R10-300	
NIB4	425	300	3N12	3N12	R10-300	

NLH - STEEL COLUMN SCHEDULE

MARK	SIZE	COMMENTS
DROPPER		
NDR1	89 x 89 x 6 SHS	
MULLION		
NM1	89 x 89 x 6 SHS	
NM2	125 x 125 x 9 SHS	
NM3	100 x 100 x 6 SHS	
STEEL COLUMN		
NC1	150 x 150 x 5 SHS	
NC2	219.1 x 4.8 CHS	
NC3	125 x 125 x 6 SHS	
NC4	100 x 100 x 6 SHS	
NC5	89 x 89 x 3.5 SHS	
NC6	125 x 125 x 10 SHS	
NC7	125 x 125 x 9 SHS	
NC8	89 x 89 x 6 SHS	
STUB COLUMN		
NSC1	139.7 x 3.5 CHS	

NLH - TRUSS SCHEDULE

MARK	SIZE	COMMENTS
TRUSS NTR1		
NTR1	125 x 125 x 6 SHS	DIAGONAL CHORD
NTR1	200 x 200 x 6 SHS	TOP AND BOTTOM CHORD
NTR1	125 x 125 x 6 SHS	VERTICAL CHORD. 2000 CTS MAX.
TRUSS NTR2		
NTR2	150 UC 23	VERTICAL CHORD. LOCATED AT RAFTERS
NTR2	200 PFC	BOTTOM CHORD. TOES UP
NTR2	90 x 6 EA	DIAGONAL CHORD
NTR2	200 PFC	TOP CHORD. TOES DOWN
NTR2	90 x 6 EA	VERTICAL CHORD. 1800 CTS MAX.

NLH - CONCRETE COLUMN TYPE SCHEDULE

MARK	SIZE	REINFORCEMENT		CONCRETE STRENGTH (MPa)	COMMENTS
		VERTICAL BARS	TIES		
NCTA	400 x 400	8N24 (3 PER FACE)	R10-200	40	
NCTB	800 x 250	12N20	R10-125	40	

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale

Client

Architect

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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
NEW LEARNING HUB - SCHEDULES

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00R	ZZ	S-1999	1

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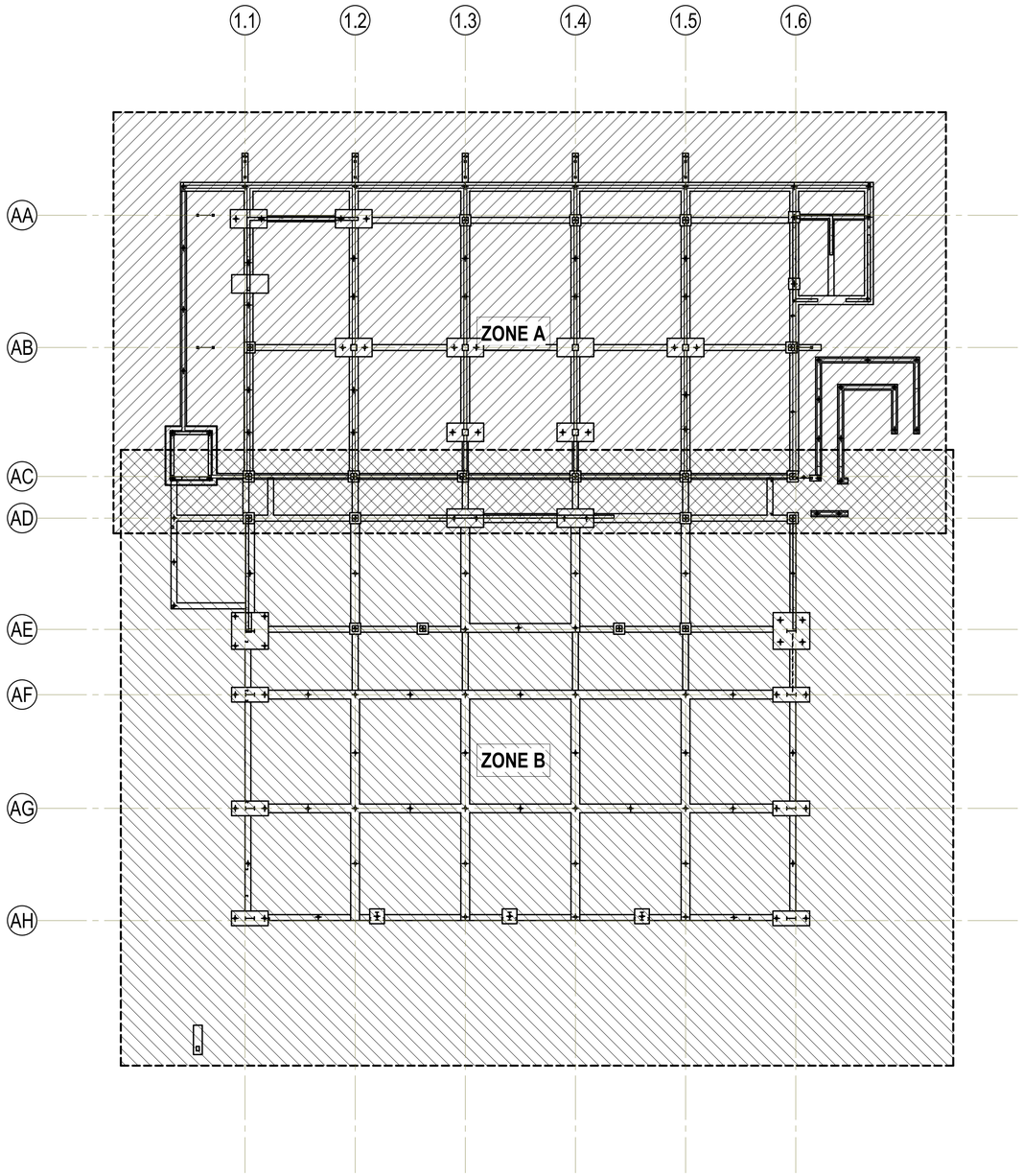

MULTIPURPOSE FACILITY - FOUNDATION OVERALL PLAN

SCALE: 1 : 200

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale

1 0 1 2 3 4 5m

SCALE BAR 1:100

PRINT IN COLOUR

Client

NSW GOVERNMENT

Architect

EJE architecture

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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTIPURPOSE FACILITY - FOUNDATION OVERALL PLAN

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 200

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	GF	S-2000	1

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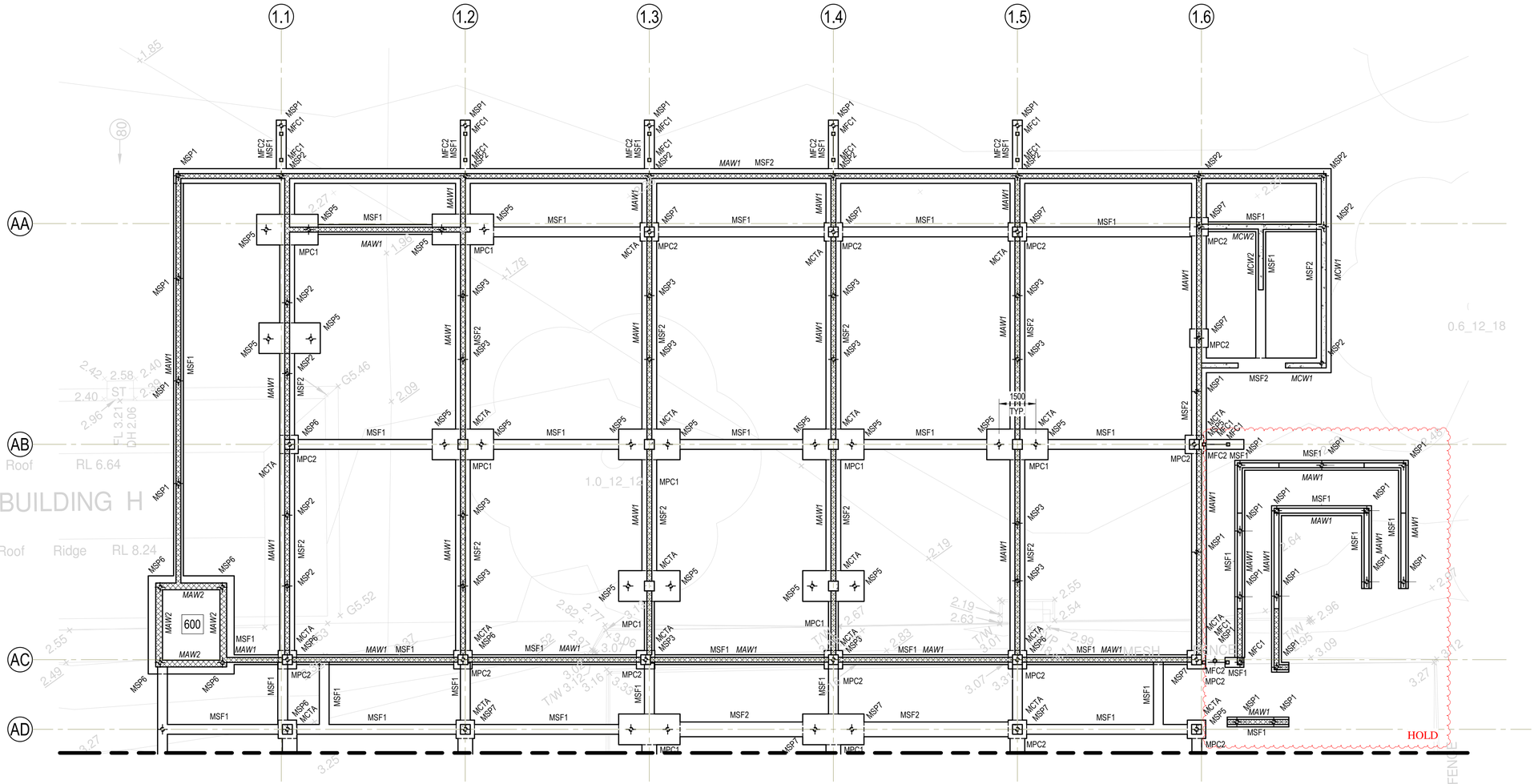


MULTIPURPOSE FACILITY - FOUNDATION - GA PLAN - ZONE A

SCALE: 1 : 100

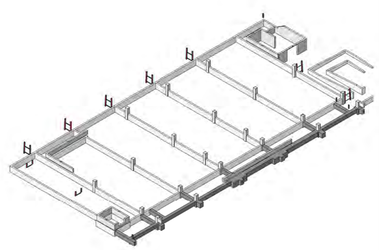
LEGEND

600 DENOTES 600 THICK SLAB.

NOTES:

- REFER TO DRAWINGS S-0001 TO S-0003 FOR ALL STRUCTURAL GENERAL NOTES.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
- ALL FALLS, SETDOWNS & WATERPROOFING ARE TO ARCHITECTS DETAILS U.N.O.
- UNLESS NOTED OTHERWISE ALL WET AREA SETDOWNS ARE TO BE A MINIMUM =##mm
- NON STRUCTURAL KERBS AND HOBS ARE NOT SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT AND LOCATIONS.

REFER TO S-2999 FOR STRUCTURAL MEMBER SCHEDULES



Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

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Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
MULTIPURPOSE FACILITY - FOUNDATION - GA PLAN - ZONE A

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	GF	S-2001	1

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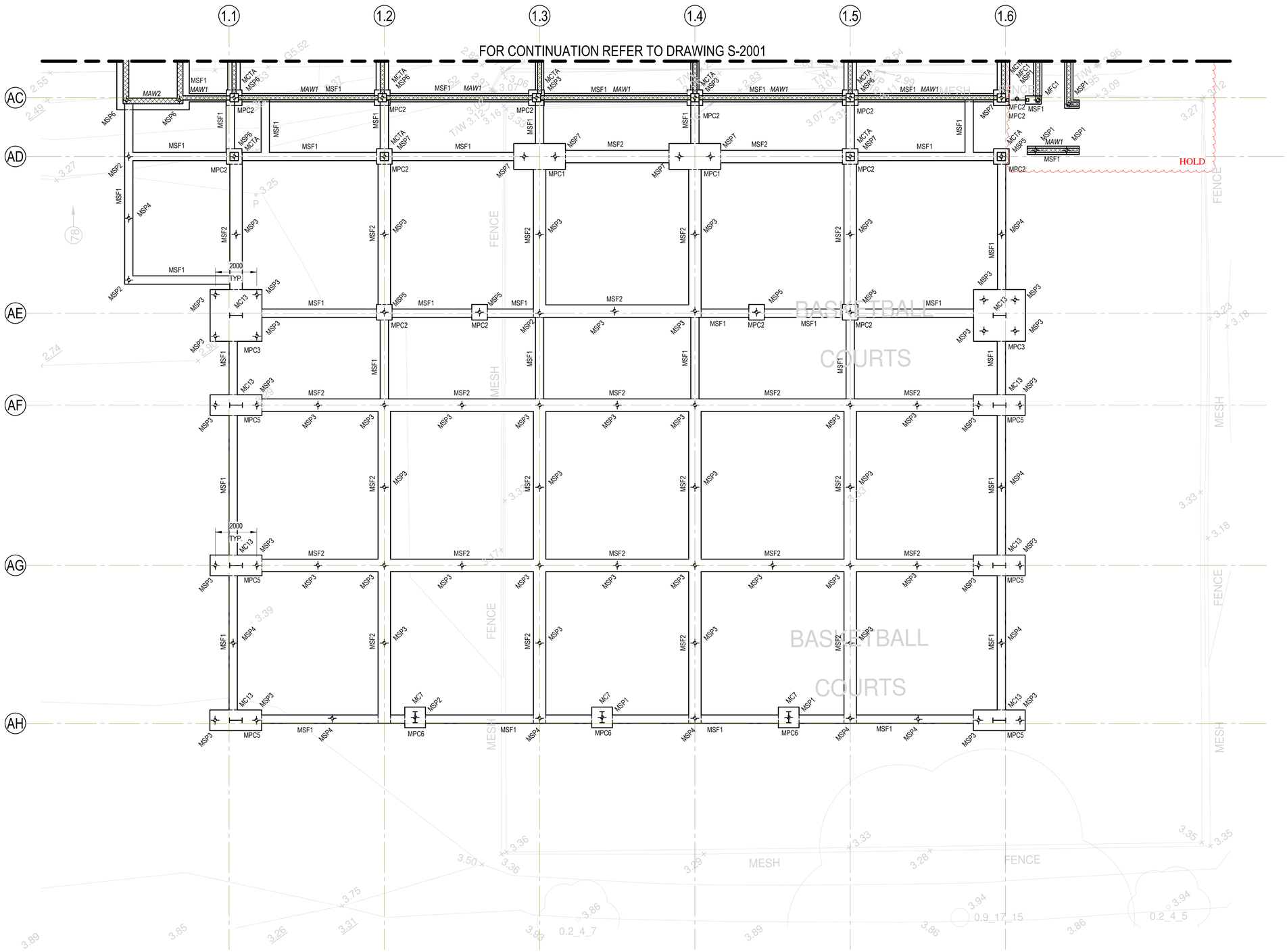

LEGEND

600 DENOTES 600 THICK SLAB.

NOTES:

- REFER TO DRAWINGS S-0001 TO S-0003 FOR ALL STRUCTURAL GENERAL NOTES.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
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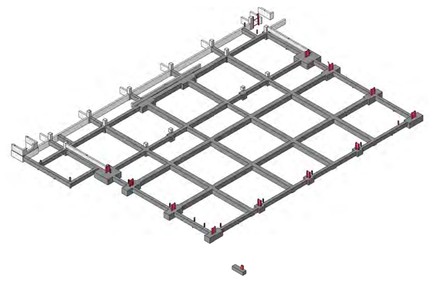
- UNLESS NOTED OTHERWISE ALL WET AREA SETDOWNS ARE TO BE A MINIMUM ##mm
- NON STRUCTURAL KERBS AND HOBS ARE NOT SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT AND LOCATIONS.

REFER TO S-2999 FOR STRUCTURAL MEMBER SCHEDULES

MULTIPURPOSE FACILITY - FOUNDATION - GA PLAN - ZONE A

SCALE: 1 : 100



Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

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240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
MULTIPURPOSE FACILITY - FOUNDATION - GA PLAN - ZONE B

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	GF	S-2002	1

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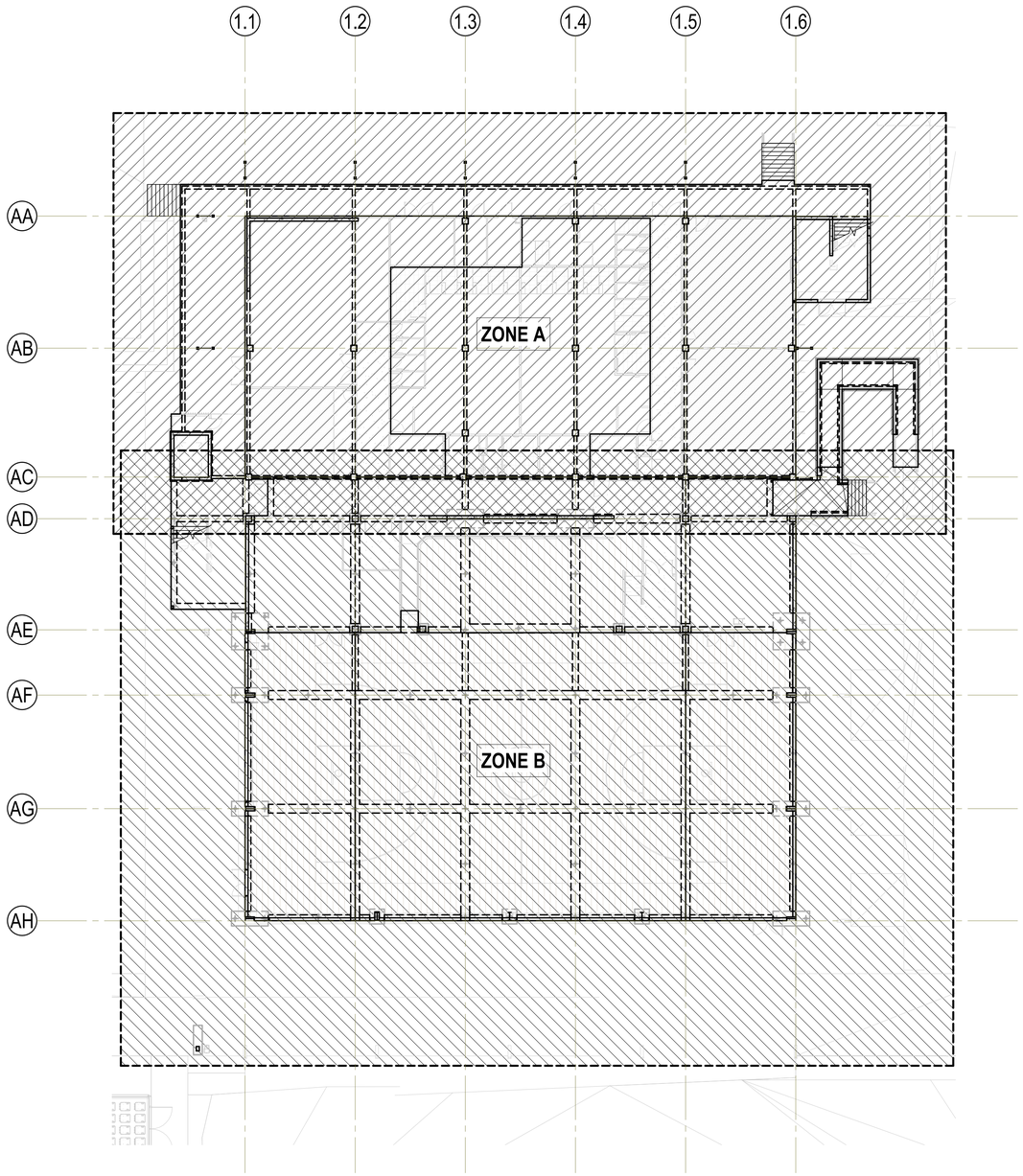

MULTIPURPOSE FACILITY - GROUND OVERALL PLAN

SCALE: 1 : 200

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale

1 0 1 2 3 4 5m

SCALE BAR 1:100

PRINT IN COLOUR

Client

NSW GOVERNMENT

Architect

EJE architecture

ACOR CONSULTANTS

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240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTIPURPOSE FACILITY - GROUND OVERALL PLAN

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 200

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	GF	S-2100	1

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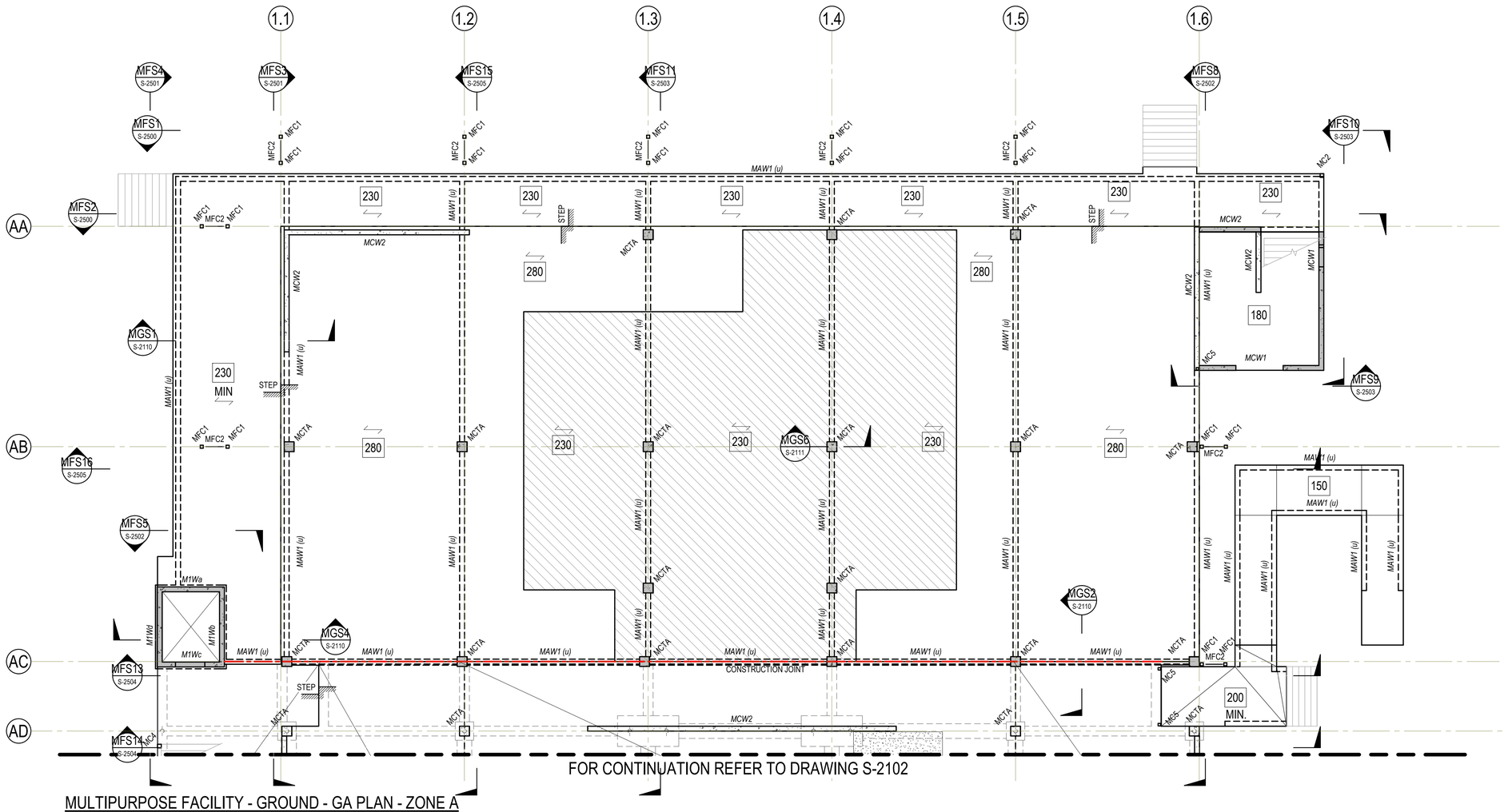


MULTIPURPOSE FACILITY - GROUND - GA PLAN - ZONE A

SCALE: 1 : 100

LEGEND

220	DENOTES 220 THICK 32 MPa SUSPENDED SLAB. N16-200 BOTH WAYS TOP AND BOTTOM 30 COVER
250	DENOTES 250 THICK 32 MPa SUSPENDED SLAB. N16-200 BOTH WAYS TOP AND BOTTOM 30 COVER
230	DENOTES 230 THICK 32MPa CONCRETE SLAB SUPPORTED ON 1mm BMT BONDEK SHEETING. APPROVED ALTERNATIVE MAY BE USED. ARROW DIRECTION INDICATES STEEL SHEET SPAN DIRECTION. 50mm MIN BEARING AT SUPPORTS. TOP REINFORCEMENT TO BE N10-300 BOTH WAYS THROUGHOUT, REFER TO PLANS FOR ADDITIONAL REINFORCEMENT. NOTE THAT A 'LOW' LEVEL OF CRACK CONTROL OVER SHRINKAGE CRACKING FOR EXPOSURE CONDITIONS A1 AS PER AS3600 HAS BEEN ADOPTED TYPICALLY. IF A 'MODERATE' LEVEL IS DESIRED, ENGINEER IS TO BE ADVISED. CONTRACTOR TO ENSURE NO BRUISING OR DAMAGE TO UNDERSIDE OF SHEETING DUE TO PROPPING. NO FIXING MAY PUNCTURE THE DECK IN THIS REGION, ANY FIXINGS ARE TO BE TO RIBS.
280	DENOTES 280 THICK 32MPa CONCRETE SLAB SUPPORTED ON 1mm BMT BONDEK SHEETING. APPROVED ALTERNATIVE MAY BE USED. ARROW DIRECTION INDICATES STEEL SHEET SPAN DIRECTION. 50mm MIN BEARING AT SUPPORTS. TOP REINFORCEMENT TO BE N16-200 PARALLEL AND N12-300 PERPENDICULAR TO SHEET RIBS THROUGHOUT, REFER TO PLANS FOR ADDITIONAL REINFORCEMENT. NOTE THAT A 'LOW' LEVEL OF CRACK CONTROL OVER SHRINKAGE CRACKING FOR EXPOSURE CONDITIONS A1 AS PER AS3600 HAS BEEN ADOPTED TYPICALLY. IF A 'MODERATE' LEVEL IS DESIRED, ENGINEER IS TO BE ADVISED. CONTRACTOR TO ENSURE NO BRUISING OR DAMAGE TO UNDERSIDE OF SHEETING DUE TO PROPPING. NO FIXING MAY PUNCTURE THE DECK IN THIS REGION, ANY FIXINGS ARE TO BE TO RIBS.
	DENOTES SPAN AND DIRECTION OF 1.0mm BMT LYSAGHT BONDEK PERMANENT FORMWORK.
	DENOTES WET AREA SLAB SETDOWN. REFER ARCH DRAWINGS FOR DEPTH
STEP	DENOTES SLAB STEP. REFER TO PLAN FOR VARIATION.
CJ	DENOTES CONSTRUCTION JOINT

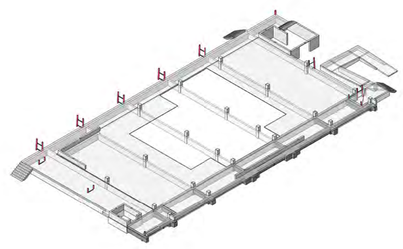
NOTES:

- REFER TO DRAWINGS S-0001 TO S-0003 FOR ALL STRUCTURAL GENERAL NOTES.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
- ALL FALLS, SETDOWNS & WATERPROOFING ARE TO ARCHITECTS DETAILS U.N.O.
- UNLESS NOTED OTHERWISE ALL WET AREA SETDOWNS ARE TO BE A MINIMUM =##mm
- NON STRUCTURAL KERBS AND HOBS ARE NOT SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT AND LOCATIONS.

FRL & COVER NOTE:

FIRE RESISTANCE LEVEL (FRL) =			120/120/120
CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-2999 FOR STRUCTURAL MEMBER SCHEDULES



Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

ACOR CONSULTANTS

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240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
MULTIPURPOSE FACILITY - GROUND - GA PLAN - ZONE A

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	GF	S-2101	1

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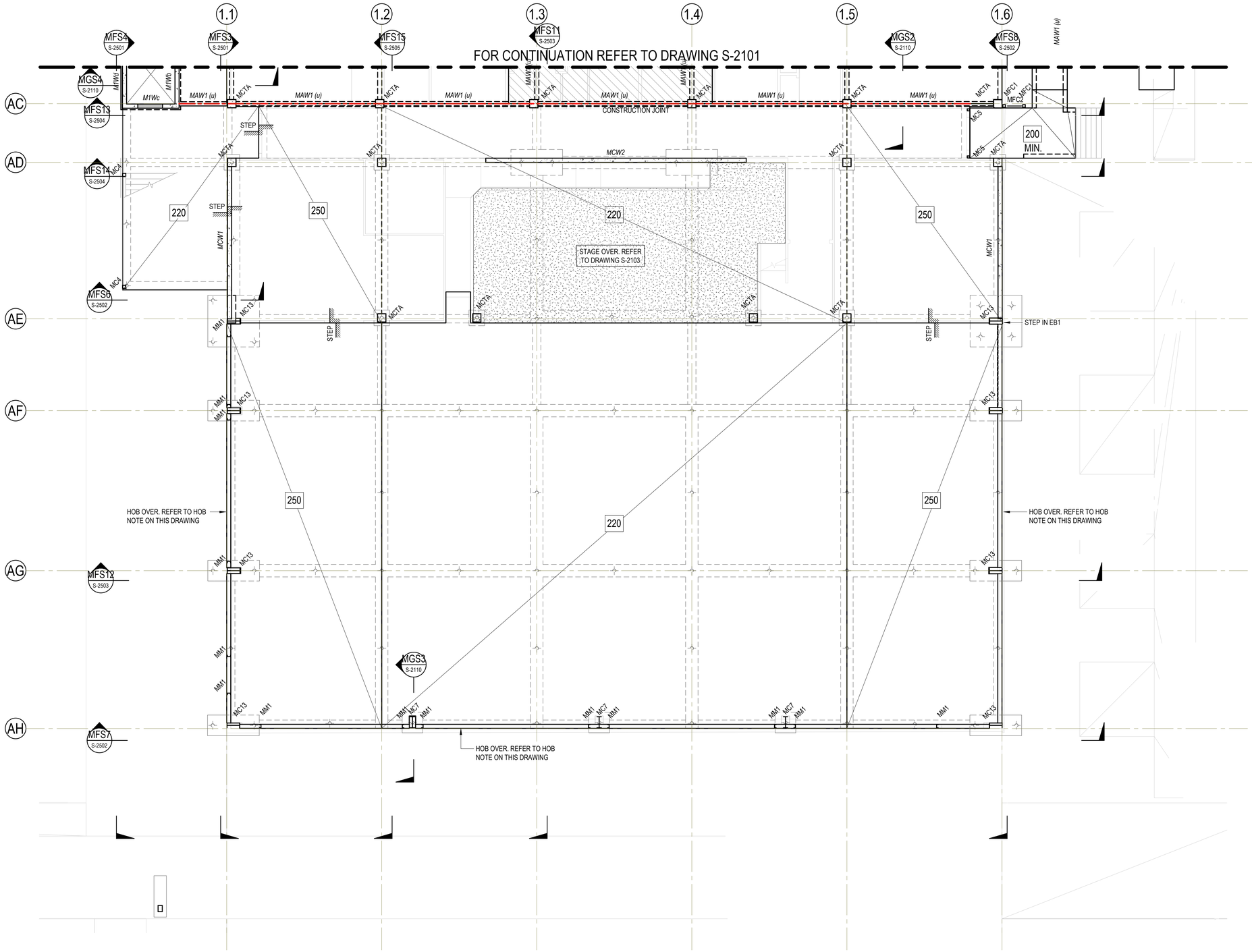

LEGEND

220	DENOTES 220 THICK 32 MPa SUSPENDED SLAB. N16-200 BOTH WAYS TOP AND BOTTOM 30 COVER
250	DENOTES 250 THICK 32 MPa SUSPENDED SLAB. N16-200 BOTH WAYS TOP AND BOTTOM 30 COVER
230	DENOTES 230 THICK 32MPa CONCRETE SLAB SUPPORTED ON 1mm BMT BONDEK SHEETING. APPROVED ALTERNATIVE MAY BE USED. ARROW DIRECTION INDICATES STEEL SHEET SPAN DIRECTION. 50mm MIN BEARING AT SUPPORTS. TOP REINFORCEMENT TO BE N10-300 BOTH WAYS THROUGHOUT, REFER TO PLANS FOR ADDITIONAL REINFORCEMENT. NOTE THAT A 'LOW' LEVEL OF CRACK CONTROL OVER SHRINKAGE CRACKING FOR EXPOSURE CONDITIONS A1 AS PER AS3600 HAS BEEN ADOPTED TYPICALLY. IF A 'MODERATE' LEVEL IS DESIRED, ENGINEER IS TO BE ADVISED. CONTRACTOR TO ENSURE NO BRUISING OR DAMAGE TO UNDERSIDE OF SHEETING DUE TO PROPPING. NO FIXING MAY PUNCTURE THE DECK IN THIS REGION, ANY FIXINGS ARE TO BE TO RIBS.
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	DENOTES SPAN AND DIRECTION OF 1.0mm BMT LYSAGHT BONDEK PERMANENT FORMWORK.
	DENOTES WET AREA SLAB SETDOWN. REFER ARCH DRAWINGS FOR DEPTH
STEP	DENOTES SLAB STEP. REFER TO PLAN FOR VARIATION.
CJ	DENOTES CONSTRUCTION JOINT

NOTES:

- REFER TO DRAWINGS S-0001 TO S-0003 FOR ALL STRUCTURAL GENERAL NOTES.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
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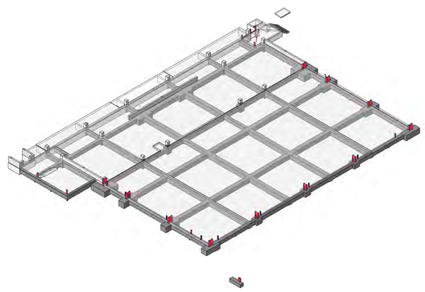
- UNLESS NOTED OTHERWISE ALL WET AREA SETDOWNS ARE TO BE A MINIMUM =##mm
- NON STRUCTURAL KERBS AND HOBS ARE NOT SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT AND LOCATIONS.

FRL & COVER NOTE:

FIRE RESISTANCE LEVEL (FRL) =			120/120/120
CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-2999 FOR STRUCTURAL MEMBER SCHEDULES



MULTIPURPOSE FACILITY - GROUND - GA PLAN - ZONE B

SCALE: 1 : 100

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

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240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
MULTIPURPOSE FACILITY - GROUND - GA PLAN - ZONE B

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	GF	S-2102	1

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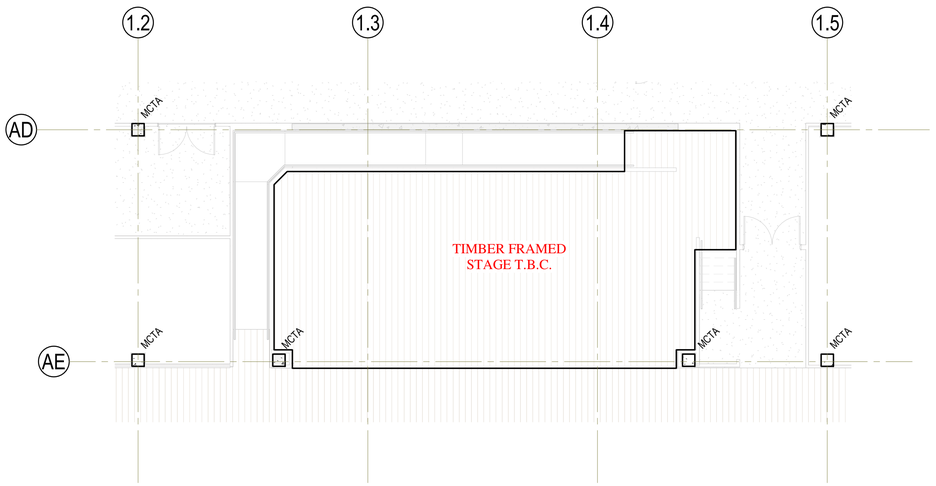

MULTIPURPOSE FACILITY - GROUND - GA PLAN - UPPER STAGE

SCALE: 1 : 100

LEGEND

220	DENOTES 220 THICK 32 MPa SUSPENDED SLAB. N16-200 BOTH WAYS TOP AND BOTTOM 30 COVER
250	DENOTES 250 THICK 32 MPa SUSPENDED SLAB. N16-200 BOTH WAYS TOP AND BOTTOM 30 COVER
230	DENOTES 230 THICK 32MPa CONCRETE SLAB SUPPORTED ON 1mm BMT BONDEK SHEETING. APPROVED ALTERNATIVE MAY BE USED. ARROW DIRECTION INDICATES STEEL SHEET SPAN DIRECTION. 50mm MIN BEARING AT SUPPORTS. TOP REINFORCEMENT TO BE N10-300 BOTH WAYS THROUGHOUT, REFER TO PLANS FOR ADDITIONAL REINFORCEMENT. NOTE THAT A 'LOW' LEVEL OF CRACK CONTROL OVER SHRINKAGE CRACKING FOR EXPOSURE CONDITIONS A1 AS PER AS3600 HAS BEEN ADOPTED TYPICALLY. IF A 'MODERATE' LEVEL IS DESIRED, ENGINEER IS TO BE ADVISED. CONTRACTOR TO ENSURE NO BRUISING OR DAMAGE TO UNDERSIDE OF SHEETING DUE TO PROPPING. NO FIXING MAY PUNCTURE THE DECK IN THIS REGION, ANY FIXINGS ARE TO BE TO RIBS.
280	DENOTES 280 THICK 32MPa CONCRETE SLAB SUPPORTED ON 1mm BMT BONDEK SHEETING. APPROVED ALTERNATIVE MAY BE USED. ARROW DIRECTION INDICATES STEEL SHEET SPAN DIRECTION. 50mm MIN BEARING AT SUPPORTS. TOP REINFORCEMENT TO BE N16-200 PARALLEL AND N12-300 PERPENDICULAR TO SHEET RIBS THROUGHOUT, REFER TO PLANS FOR ADDITIONAL REINFORCEMENT. NOTE THAT A 'LOW' LEVEL OF CRACK CONTROL OVER SHRINKAGE CRACKING FOR EXPOSURE CONDITIONS A1 AS PER AS3600 HAS BEEN ADOPTED TYPICALLY. IF A 'MODERATE' LEVEL IS DESIRED, ENGINEER IS TO BE ADVISED. CONTRACTOR TO ENSURE NO BRUISING OR DAMAGE TO UNDERSIDE OF SHEETING DUE TO PROPPING. NO FIXING MAY PUNCTURE THE DECK IN THIS REGION, ANY FIXINGS ARE TO BE TO RIBS.
	DENOTES SPAN AND DIRECTION OF 1.0mm BMT LYSAGHT BONDEK PERMANENT FORMWORK.
	DENOTES WET AREA SLAB SETDOWN. REFER ARCH DRAWINGS FOR DEPTH
STEP	DENOTES SLAB STEP. REFER TO PLAN FOR VARIATION.
CJ	DENOTES CONSTRUCTION JOINT

NOTES:

- REFER TO DRAWINGS S-0001 TO S-0003 FOR ALL STRUCTURAL GENERAL NOTES.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
- ALL FALLS, SETDOWNS & WATERPROOFING ARE TO ARCHITECTS DETAILS U.N.O.
- UNLESS NOTED OTHERWISE ALL WET AREA SETDOWNS ARE TO BE A MINIMUM =##mm
- NON STRUCTURAL KERBS AND HOBS ARE NOT SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT AND LOCATIONS.

FRL & COVER NOTE:

FIRE RESISTANCE LEVEL (FRL) =			120/120/120
CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-2999 FOR STRUCTURAL MEMBER SCHEDULES

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale

1 0 1 2 3 4 5m

SCALE BAR 1:100

PRINT IN COLOUR

Client

NSW GOVERNMENT

Architect

EJE architecture

ACOR CONSULTANTS

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Charlestown NSW 2290
T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTIPURPOSE FACILITY - GROUND - GA PLAN - UPPER STAGE

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	GF	S-2103	1

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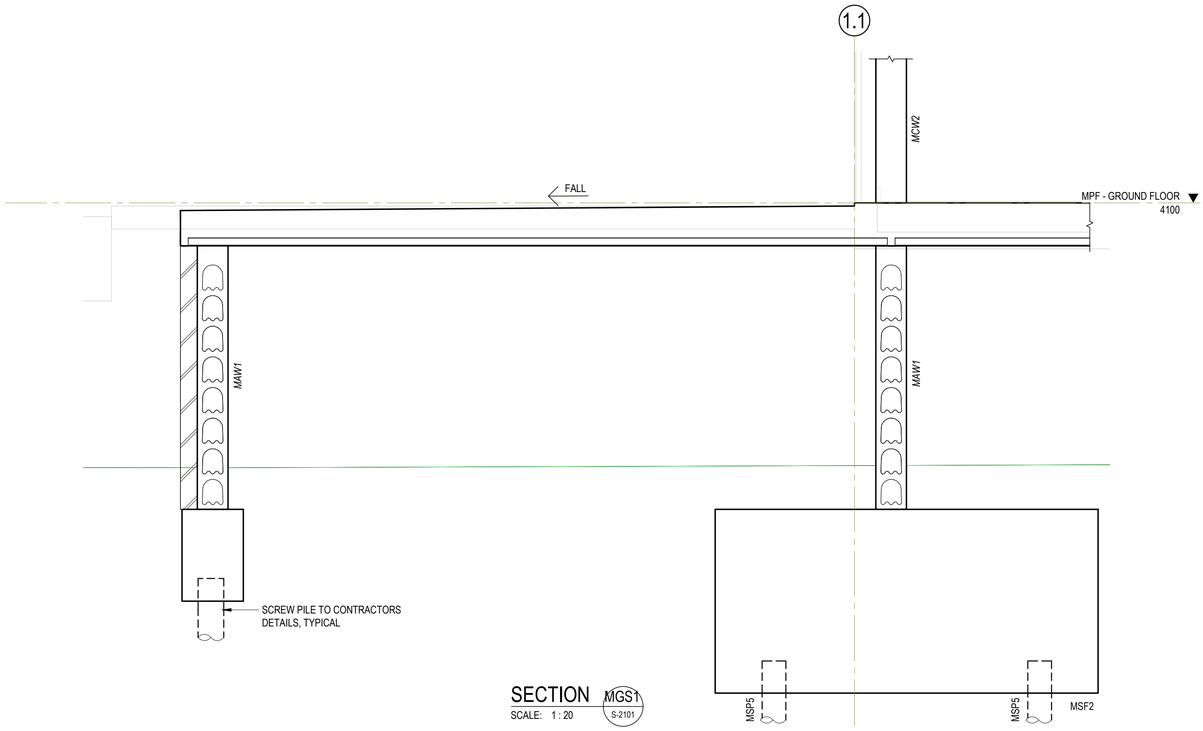

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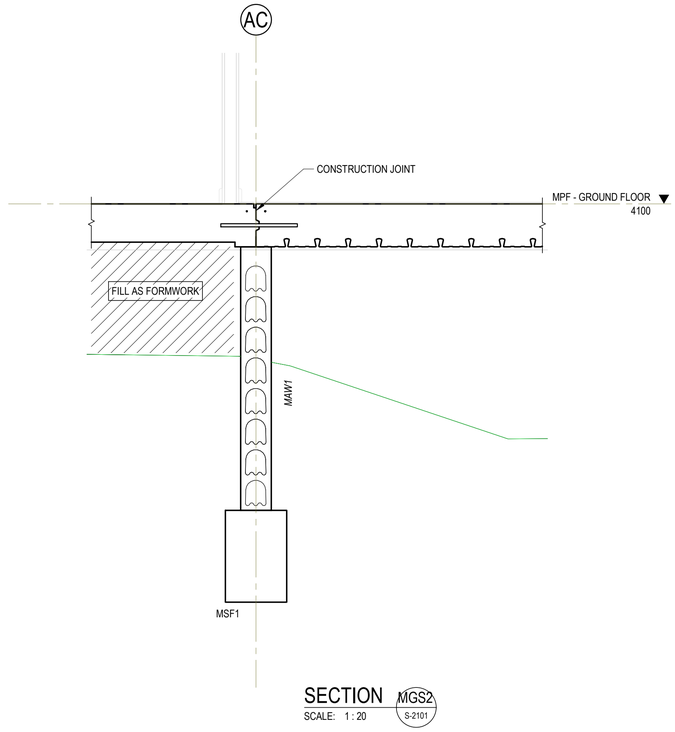
SCALE: 1 : 20



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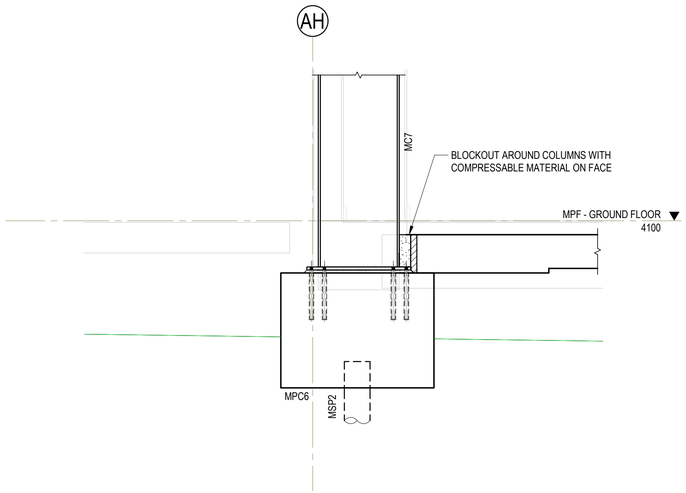

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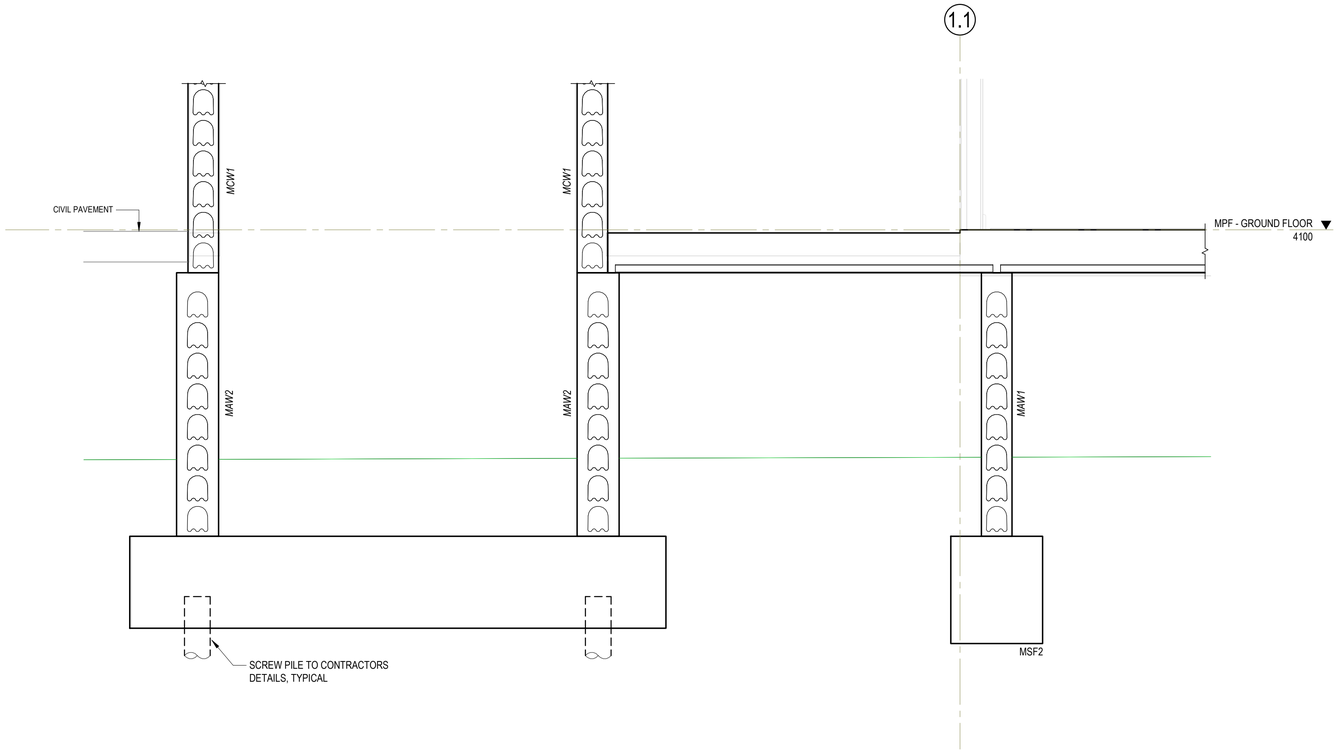

SECTION MGS4 S-2101
SCALE: 1 : 20

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
0.2 0 0.2 0.4 0.6 0.8 1m
SCALE BAR 1:20

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTIPURPOSE FACILITY - GROUND - SECTIONS SHEET 1

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 20

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	GF	S-2110	1

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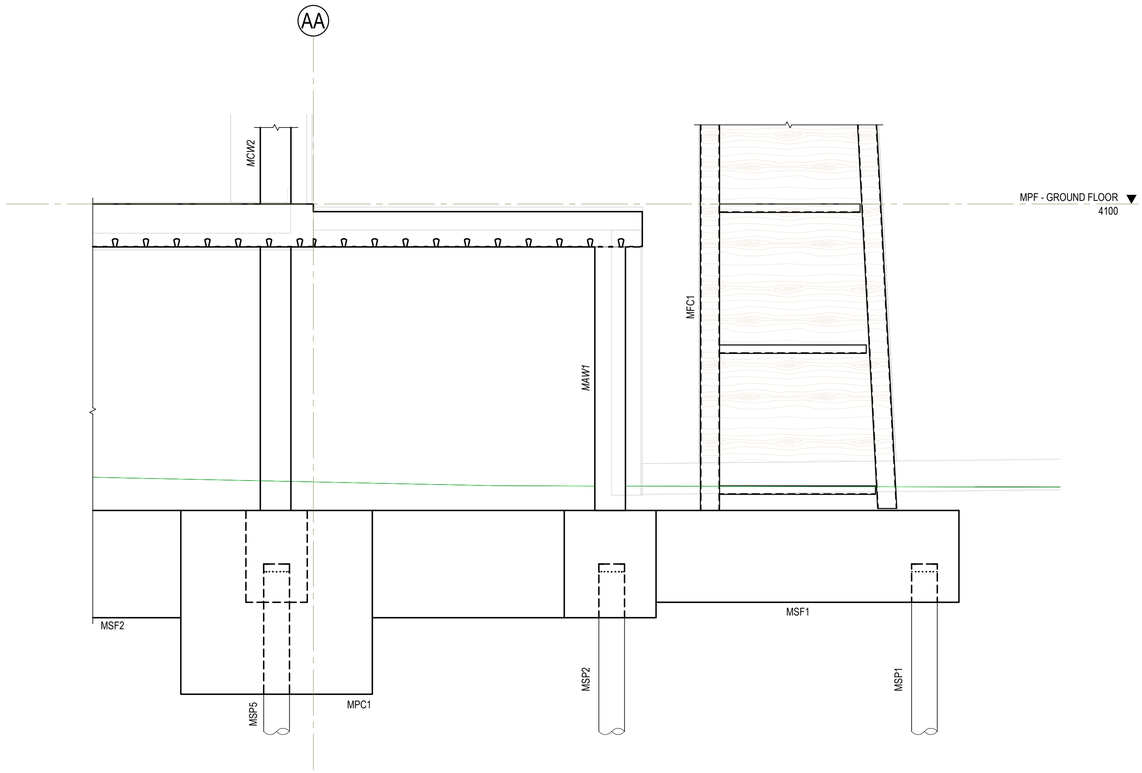

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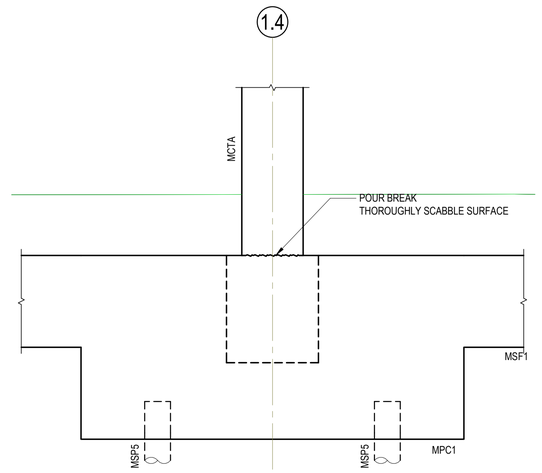
SCALE: 1 : 20 S-2505



SECTION MGS6
SCALE: 1 : 20 S-2101

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB

North

Scale
0.2 0 0.2 0.4 0.6 0.8 1m
SCALE BAR 1:20

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

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Charlestown NSW 2290
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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTIPURPOSE FACILITY - GROUND - SECTIONS SHEET 2

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 20

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	GF	S-2111	1

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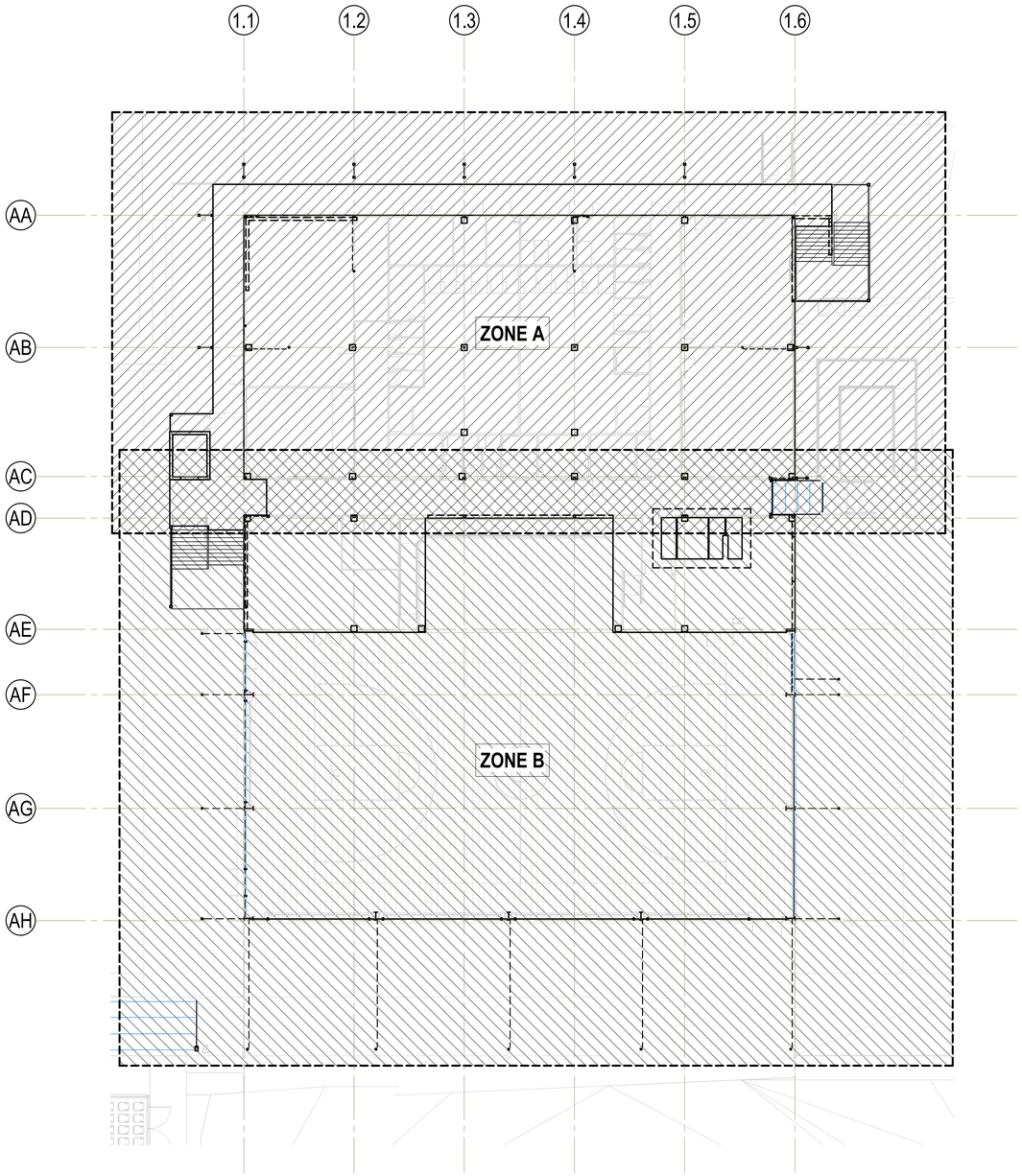

MULTIPURPOSE FACILITY - LEVEL 1 OVERALL PLAN

SCALE: 1 : 200

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale

1 0 1 2 3 4 5m

SCALE BAR 1:100

PRINT IN COLOUR

Client

NSW GOVERNMENT

Architect

EJE architecture

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Charlestown NSW 2290
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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTIPURPOSE FACILITY - LEVEL 1 OVERALL PLAN

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 200

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	L1	S-2200	1

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Plot Plot Plot
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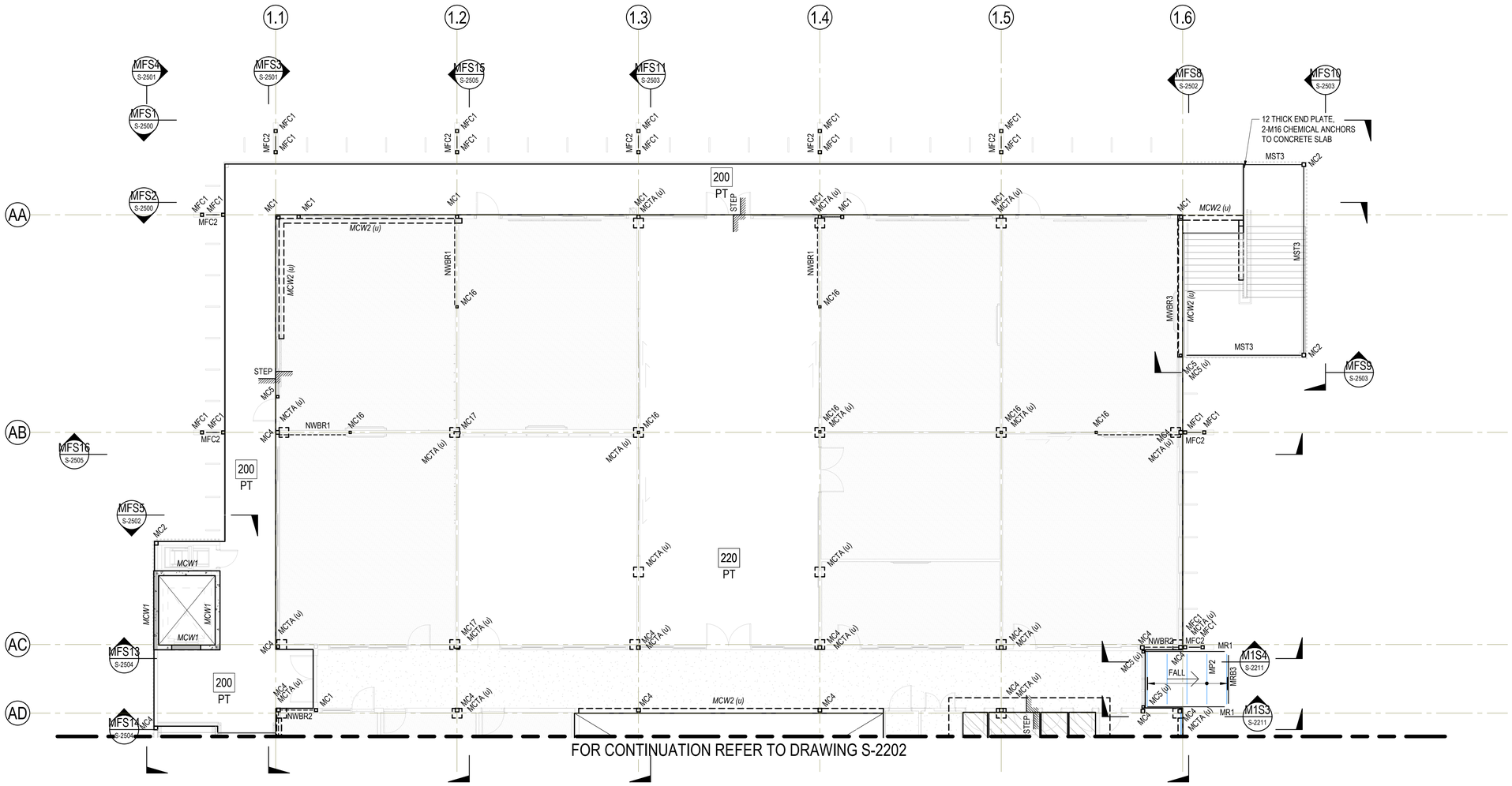

MULTIPURPOSE FACILITY - LEVEL 1 - GA PLAN - ZONE A

SCALE: 1 : 100

LEGEND

200 PT	DENOTES 200 THICK POST TENSIONED SLAB. REFER TO PLAN FOR VARIATION IN DEPTH.
	DENOTES WET AREA SLAB SETDOWN. REFER ARCH DRAWINGS FOR DEPTH
STEP	DENOTES SLAB STEP. REFER TO PLAN FOR VARIATION.
CJ	DENOTES CONSTRUCTION JOINT

NOTES:

- REFER TO DRAWINGS S-0001 TO S-0003 FOR ALL STRUCTURAL GENERAL NOTES.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
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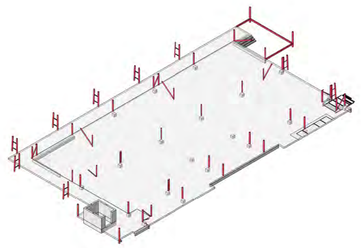
FRL & COVER NOTE:

FIRE RESISTANCE LEVEL (FRL) =			120/120/120
CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-2999 FOR STRUCTURAL MEMBER SCHEDULES



Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

ACOR CONSULTANTS

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The Forum, Level 1, Suite 1
240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
MULTIPURPOSE FACILITY - LEVEL 1 - GA PLAN - ZONE A

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	L1	S-2201	1

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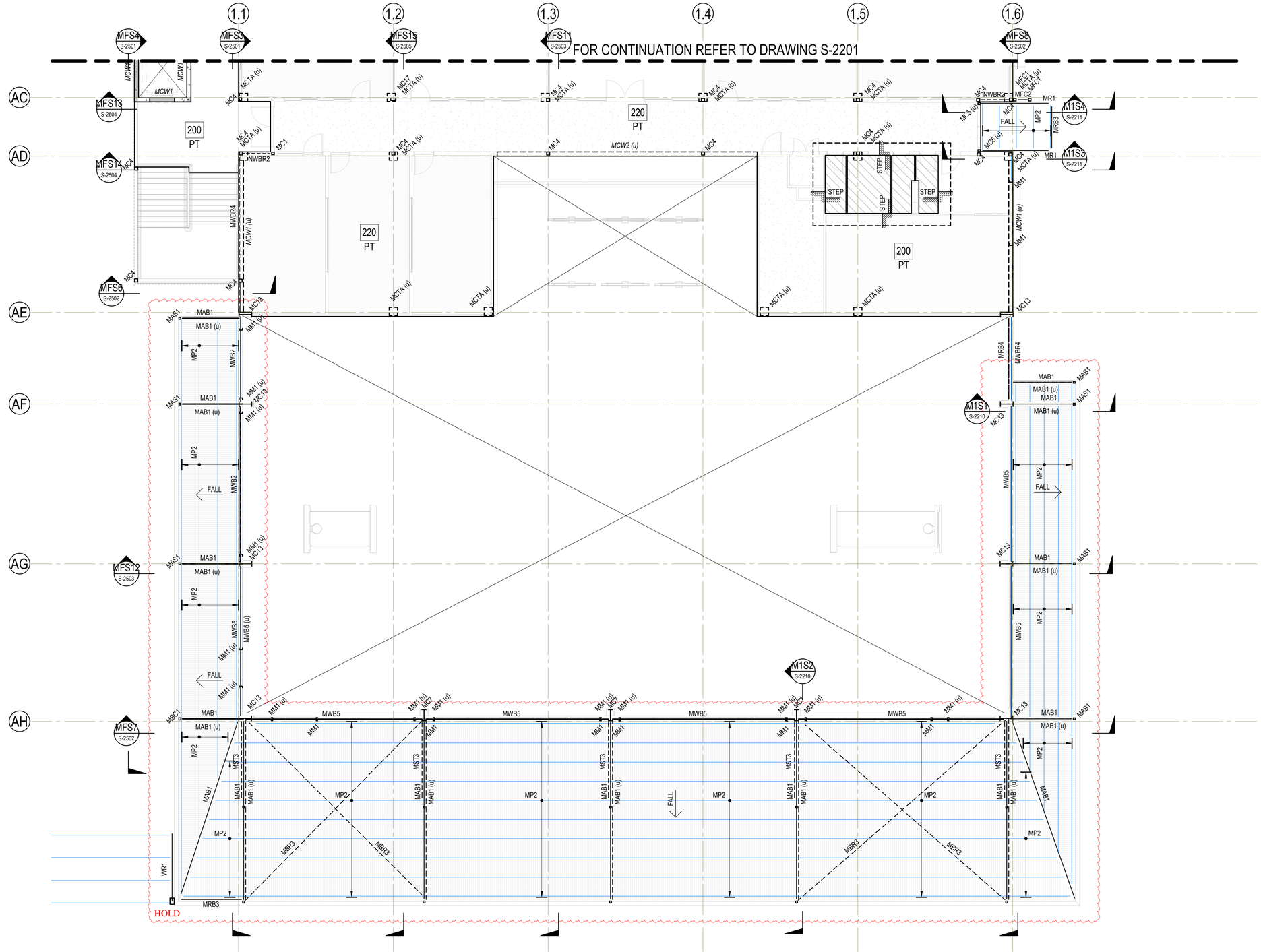

LEGEND

200 PT	DENOTES 200 THICK POST TENSIONED SLAB. REFER TO PLAN FOR VARIATION IN DEPTH.
	DENOTES WET AREA SLAB SETDOWN. REFER ARCH DRAWINGS FOR DEPTH
STEP	DENOTES SLAB STEP. REFER TO PLAN FOR VARIATION.
CJ	DENOTES CONSTRUCTION JOINT

NOTES:

- REFER TO DRAWINGS S-0001 TO S-0003 FOR ALL STRUCTURAL GENERAL NOTES.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
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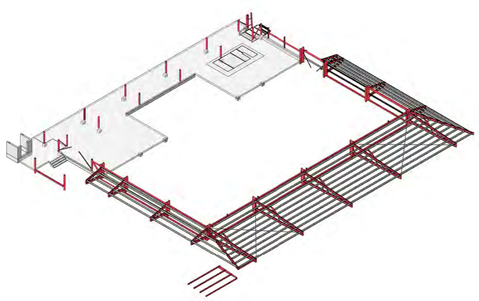
- UNLESS NOTED OTHERWISE ALL WET AREA SETDOWNS ARE TO BE A MINIMUM =##mm
- NON STRUCTURAL KERBS AND HOBS ARE NOT SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT AND LOCATIONS.

FRL & COVER NOTE:

FIRE RESISTANCE LEVEL (FRL) =			120/120/120
CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-2999 FOR STRUCTURAL MEMBER SCHEDULES



MULTIPURPOSE FACILITY - LEVEL 1 - GA PLAN - ZONE B

SCALE: 1 : 100

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

ACOR CONSULTANTS

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The Forum, Level 1, Suite 1
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Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
MULTIPURPOSE FACILITY - LEVEL 1 - GA PLAN - ZONE B

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	L1	S-2202	1

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HOLD

SECTION M1S1 S-2202
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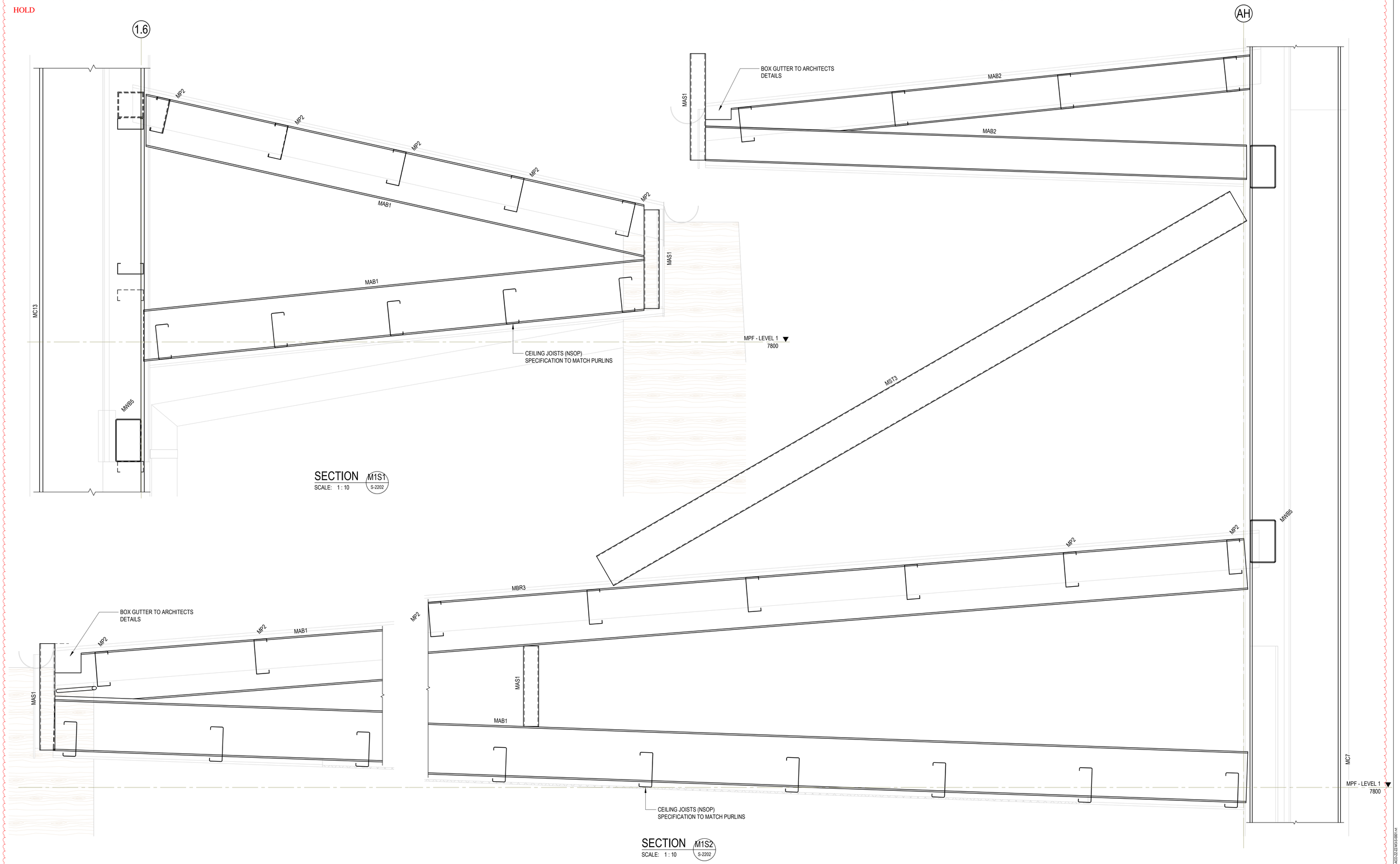

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SCALE: 1 : 10

Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
1 0 1 2 3 4 5m
SCALE BAR 1:100

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

ACOR CONSULTANTS

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The Forum, Level 1, Suite 1
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Charlestown NSW 2290
T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTIPURPOSE FACILITY - LEVEL 1 - SECTIONS SHEET 1

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 10

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	L1	S-2210	1

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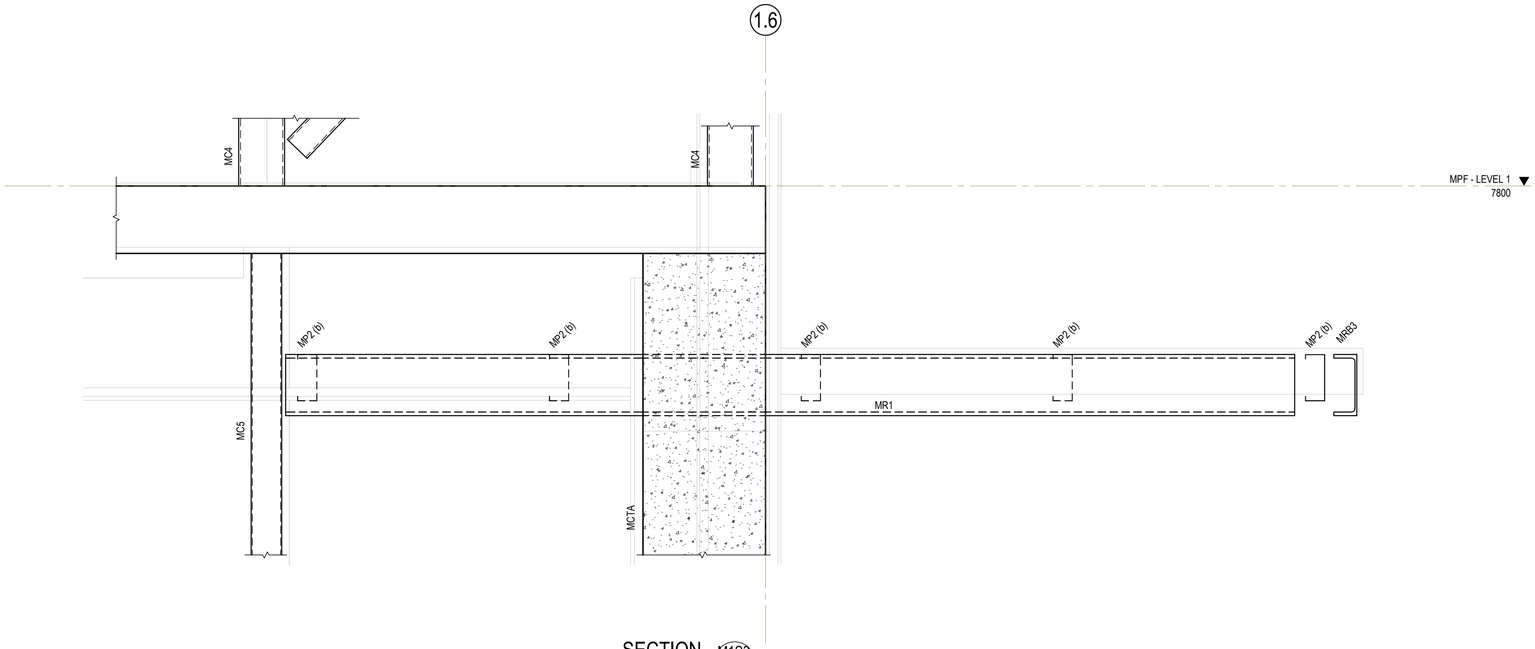

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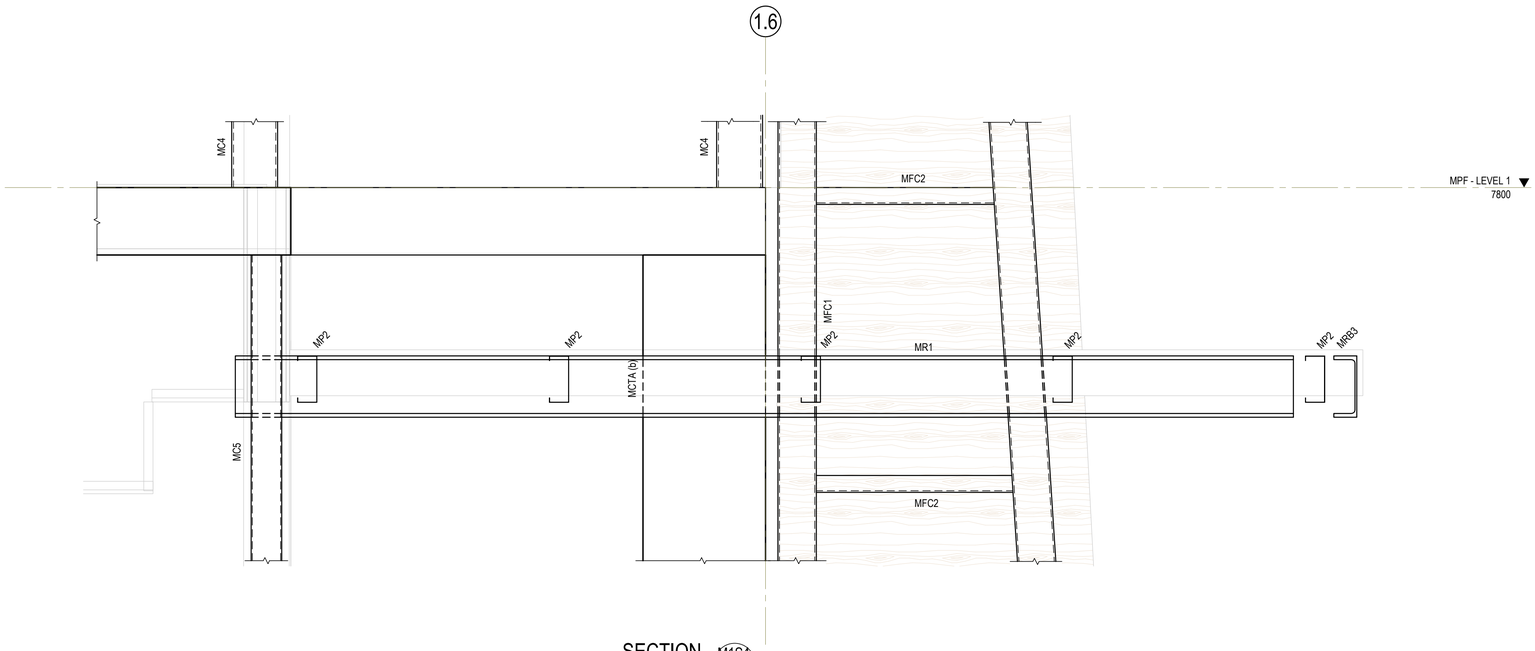

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SCALE: 1 : 10

Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
1 0 1 2 3 4 5m
SCALE BAR 1:100

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

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Charlestown NSW 2290
T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTIPURPOSE FACILITY - LEVEL 1 - SECTIONS SHEET 2

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 10

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	L1	S-2211	1

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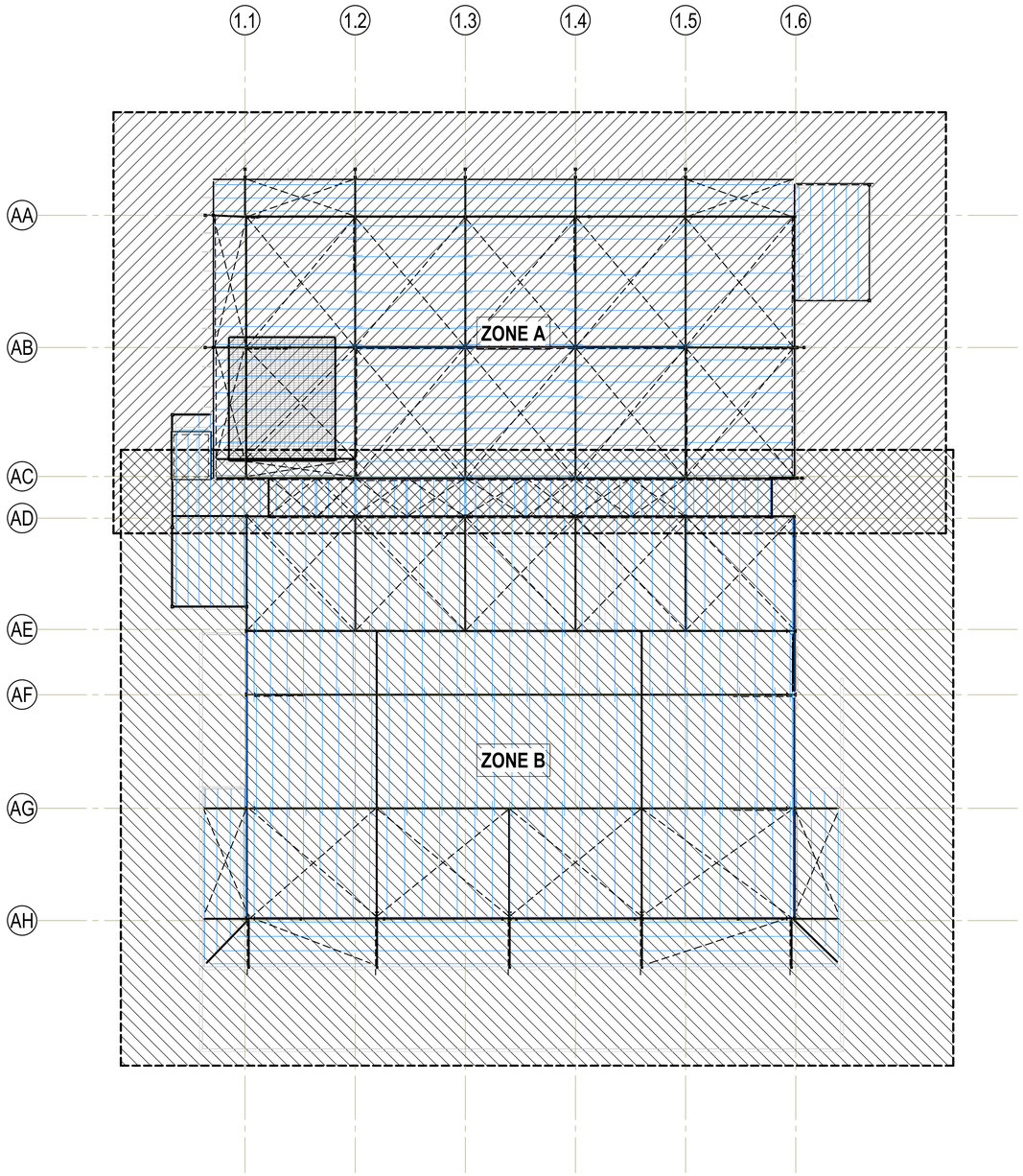

MULTIPURPOSE FACILITY - ROOF OVERALL PLAN

SCALE: 1 : 200

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale

1 0 1 2 3 4 5m

SCALE BAR 1:100

PRINT IN COLOUR

Client

NSW GOVERNMENT

Architect

EJE architecture

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Charlestown NSW 2290
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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTIPURPOSE FACILITY - ROOF OVERALL PLAN

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 200

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	RF	S-2300	1

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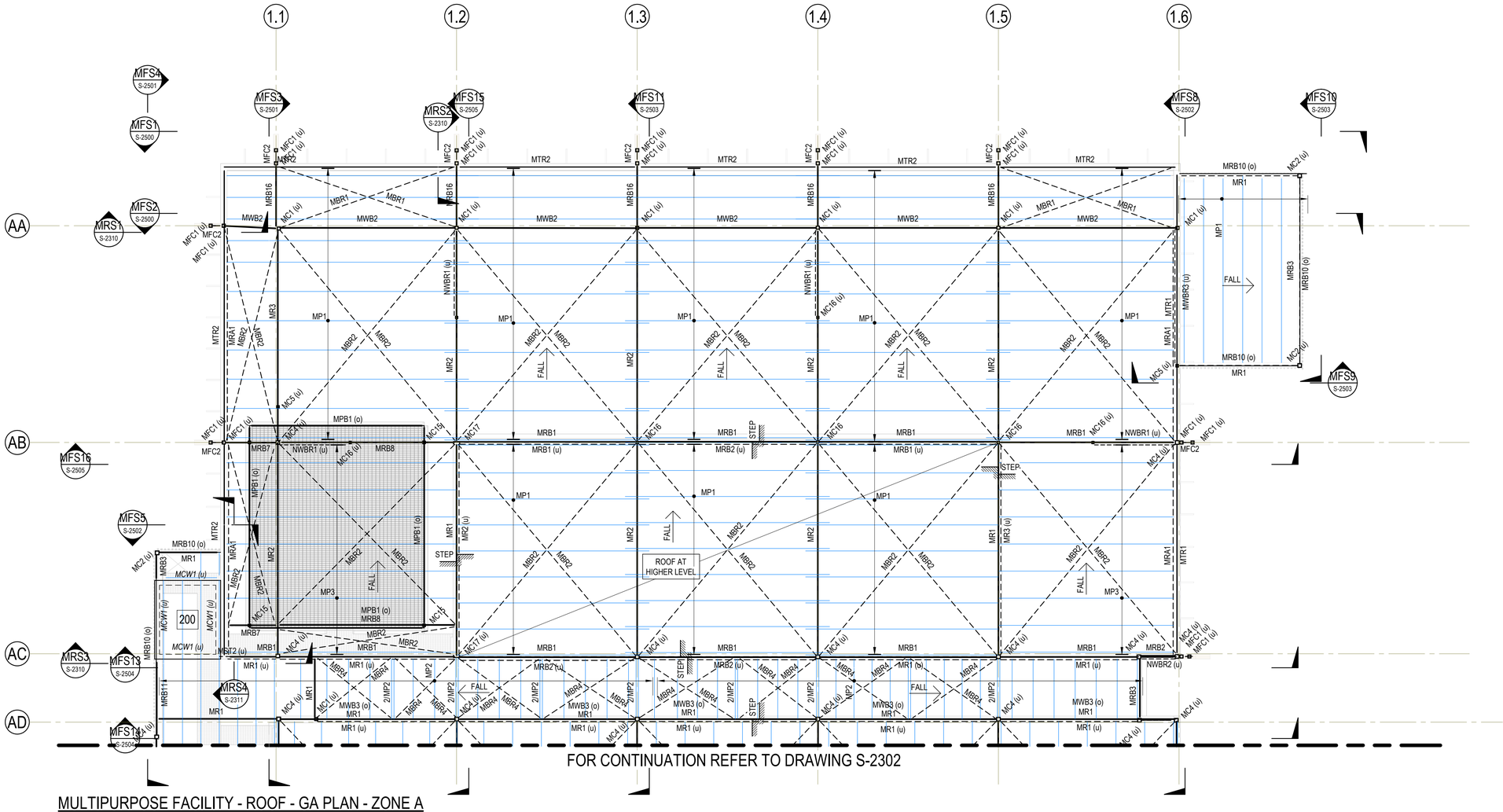


FOR CONTINUATION REFER TO DRAWING S-2302

MULTIPURPOSE FACILITY - ROOF - GA PLAN - ZONE A

SCALE: 1 : 100

LEGEND

STEP — DENOTES STEP IN ROOF STRUCTURE.

200 — DENOTES 200 LIFT LID.

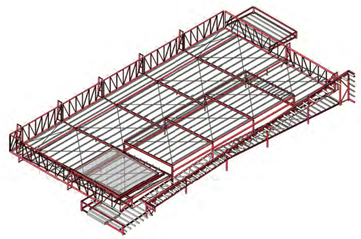
NOTES:

- REFER TO DRAWINGS S-0001 TO S-0003 FOR ALL STRUCTURAL GENERAL NOTES.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
- ALL FALLS, SETDOWNS & WATERPROOFING ARE TO ARCHITECTS DETAILS U.N.O.
- UNLESS NOTED OTHERWISE ALL WET AREA SETDOWNS ARE TO BE A MINIMUM =##mm
- NON STRUCTURAL KERBS AND HOBS ARE NOT SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT AND LOCATIONS.

FRL & COVER NOTE:

FIRE RESISTANCE LEVEL (FRL) =			120/120/120
CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-2999 FOR STRUCTURAL MEMBER SCHEDULES



Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

ACOR CONSULTANTS

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The Forum, Level 1, Suite 1
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Charlestown NSW 2290
T: +61 2 4926 4811

Project: NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
MULTIPURPOSE FACILITY - ROOF - GA PLAN - ZONE A

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	RF	S-2301	1

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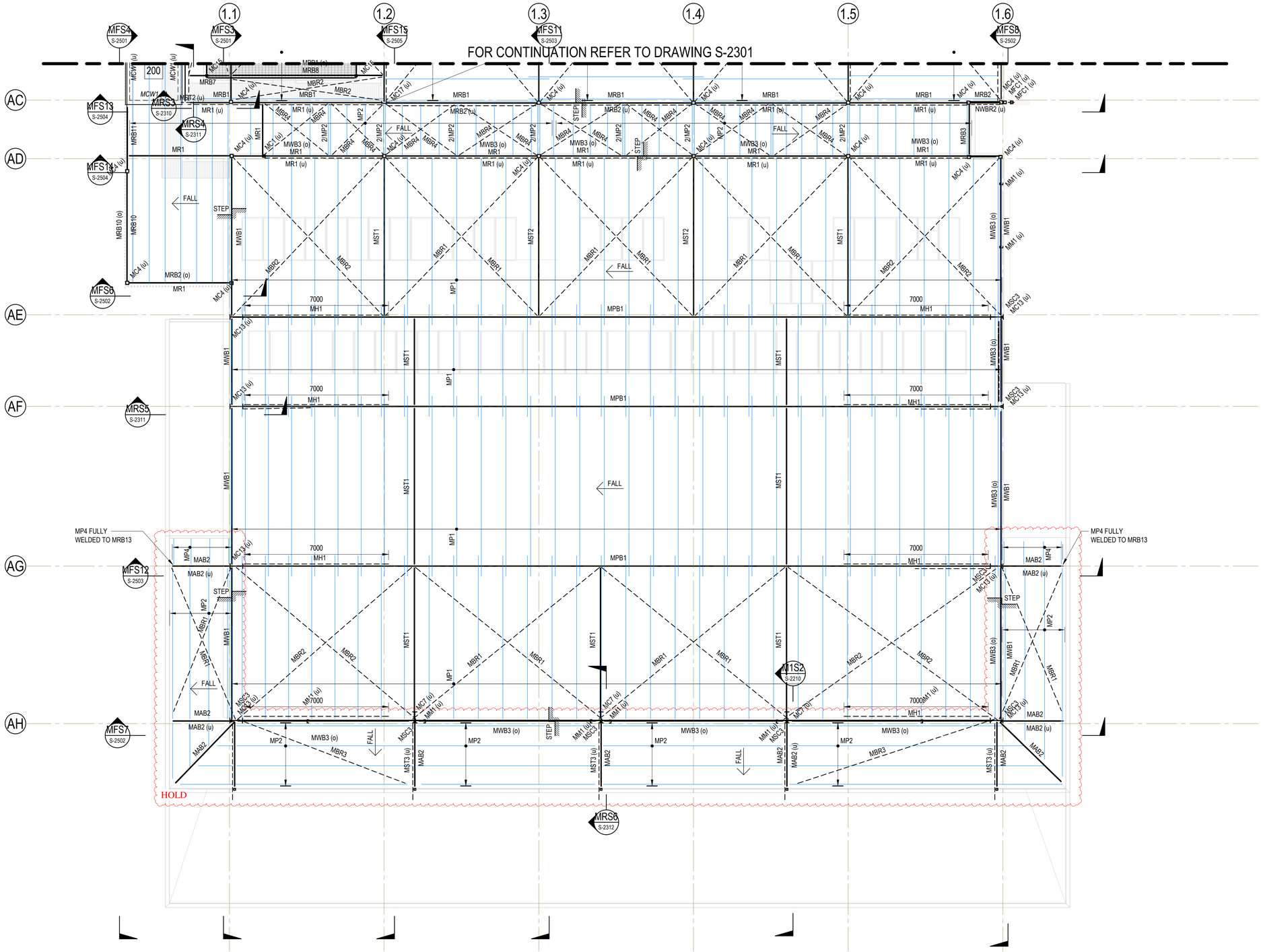

LEGEND

STEP — DENOTES STEP IN ROOF STRUCTURE.

200 — DENOTES 200 LIFT LID.

NOTES:

- REFER TO DRAWINGS S-0001 TO S-0003 FOR ALL STRUCTURAL GENERAL NOTES.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CONCRETE SETOUT INFORMATION.
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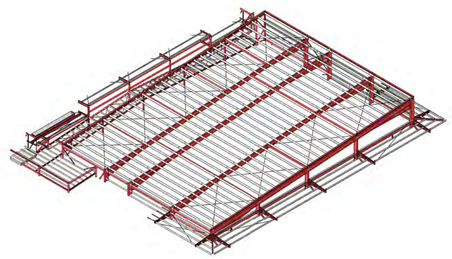
FRL & COVER NOTE:

FIRE RESISTANCE LEVEL (FRL) =			120/120/120
CONCRETE COVER TO REINFORCEMENT U.N.O.			
INTERNAL	TOP	=	40mm
	BTM	=	40mm
EXTERNAL	TOP	=	40mm
	BTM	=	40mm

REFER TO S-2999 FOR STRUCTURAL MEMBER SCHEDULES

MULTIPURPOSE FACILITY - ROOF - GA PLAN - ZONE B

SCALE: 1 : 100



Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale: 1 0 1 2 3 4 5m — SCALE BAR 1:100

PRINT IN COLOUR

Client: NSW GOVERNMENT

Architect: EJE architecture

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The Forum, Level 1, Suite 1
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Project: NEWCASTLE HIGH SCHOOL
160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title: STRUCTURAL
MULTIPURPOSE FACILITY - ROOF - GA PLAN - ZONE B

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	RF	S-2302	1

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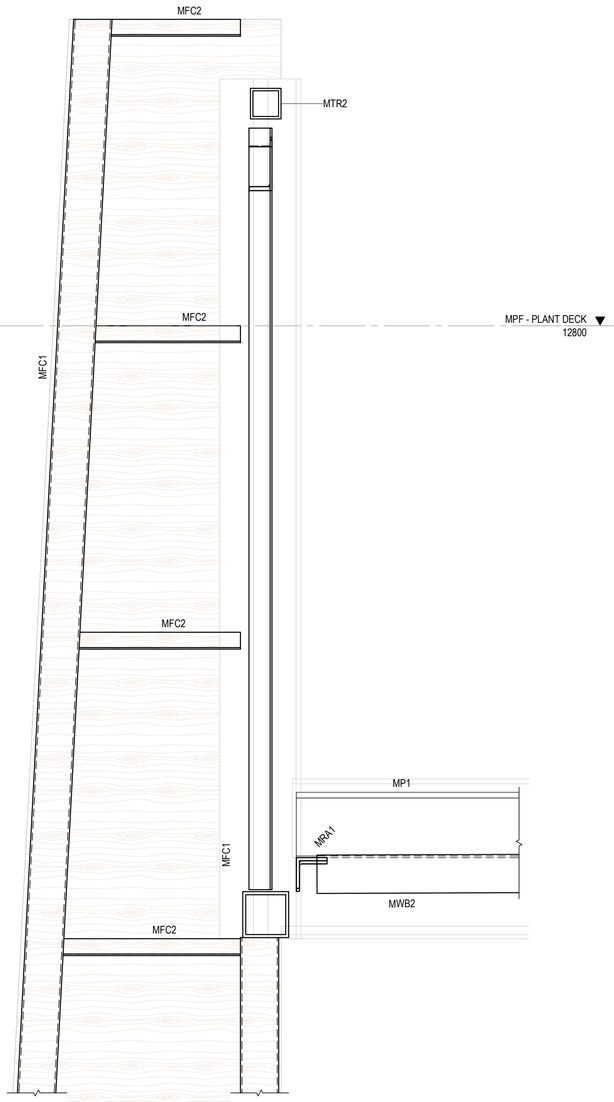

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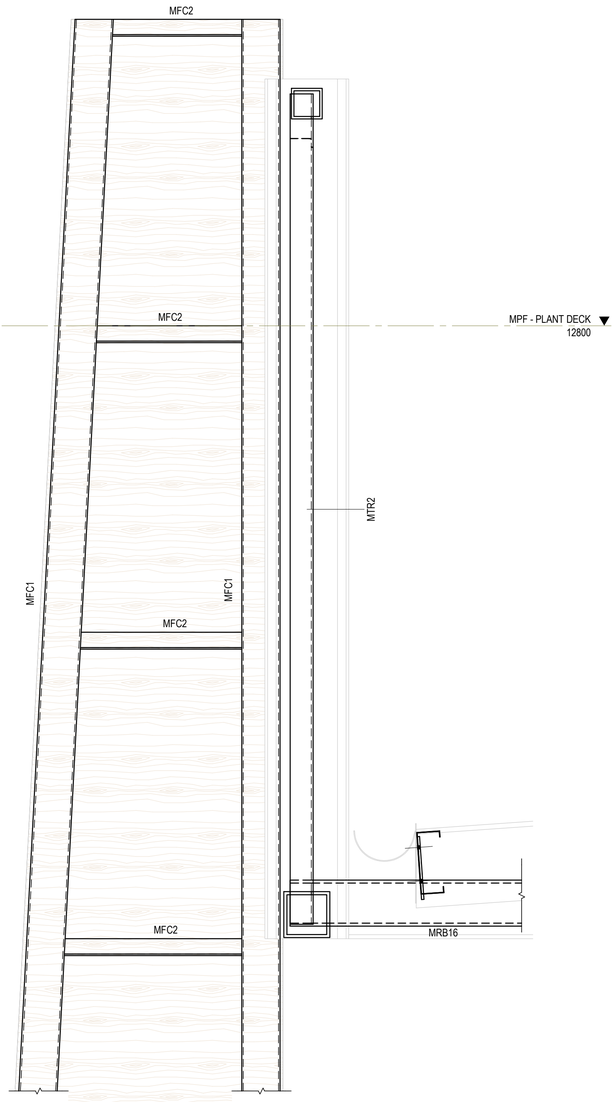

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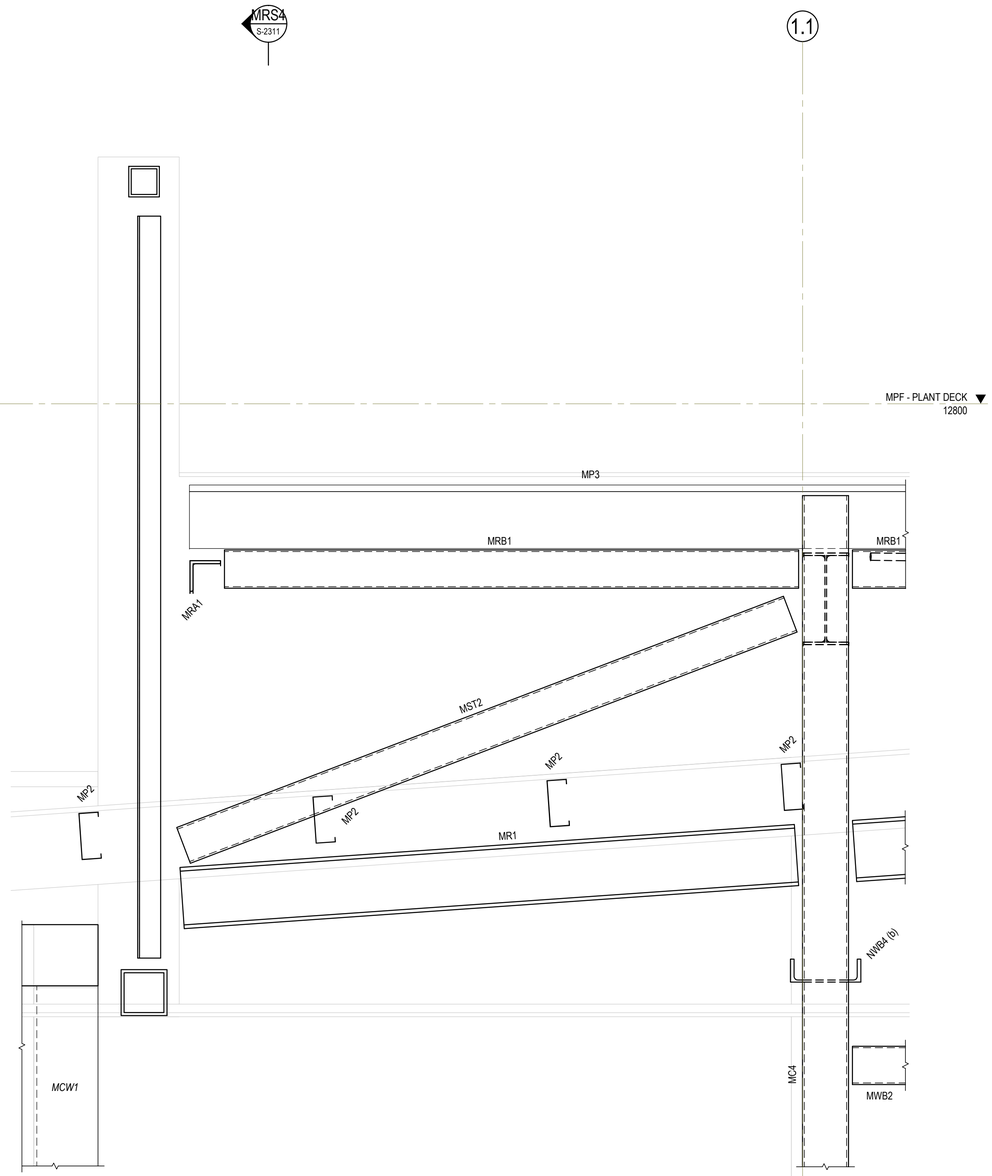

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SCALE: 1 : 10

Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
1 0 1 2 3 4 5m
SCALE BAR 1:100

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

ACOR CONSULTANTS

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The Forum, Level 1, Suite 1
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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTIPURPOSE FACILITY - ROOF - SECTIONS SHEET 1

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 10

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S		S-2310	1

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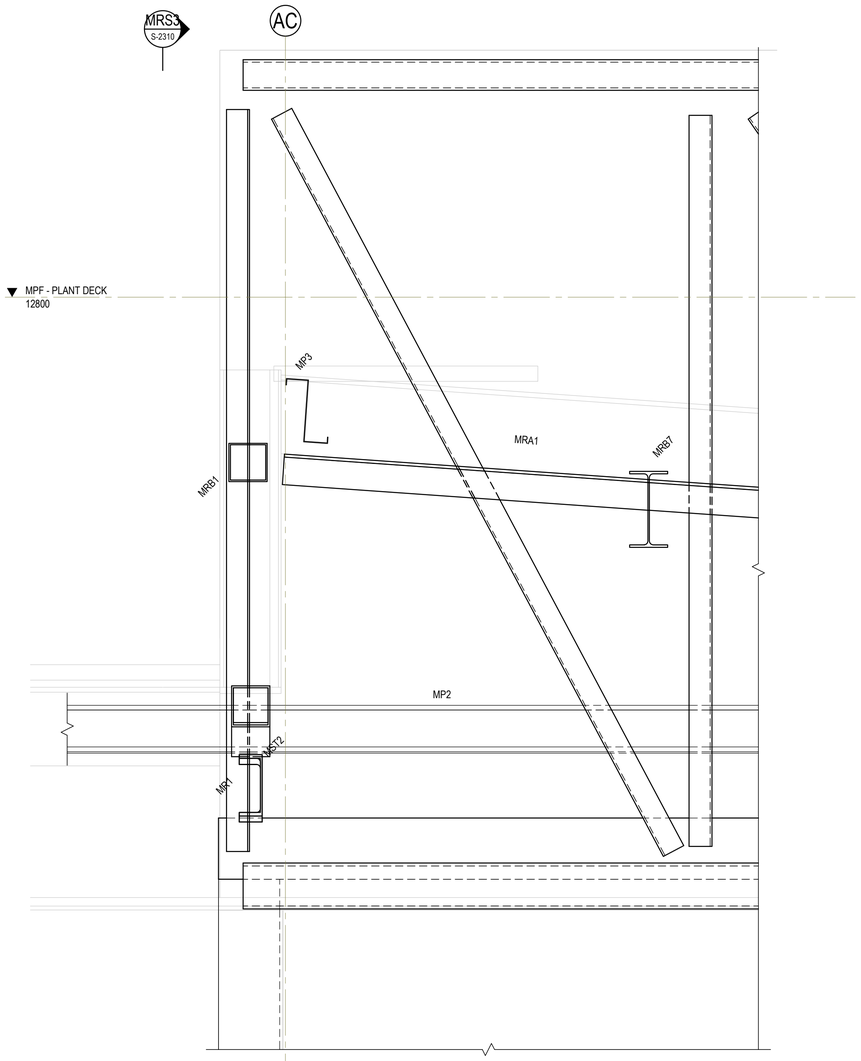

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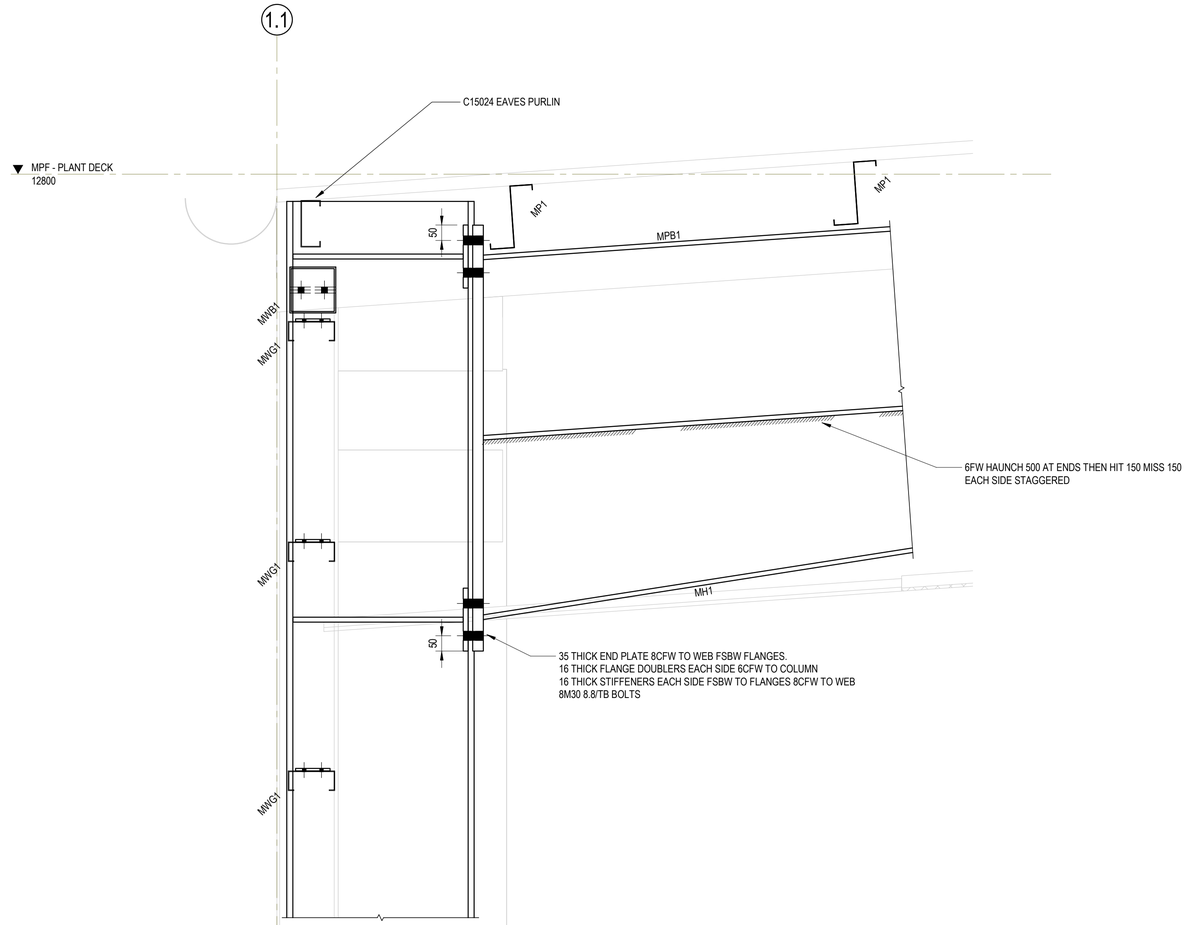

SECTION MRS5 S-2302
SCALE: 1 : 10

Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
1 0 1 2 3 4 5m
SCALE BAR 1:100

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTIPURPOSE FACILITY - ROOF - SECTIONS SHEET 2

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 10

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S		S-2311	1

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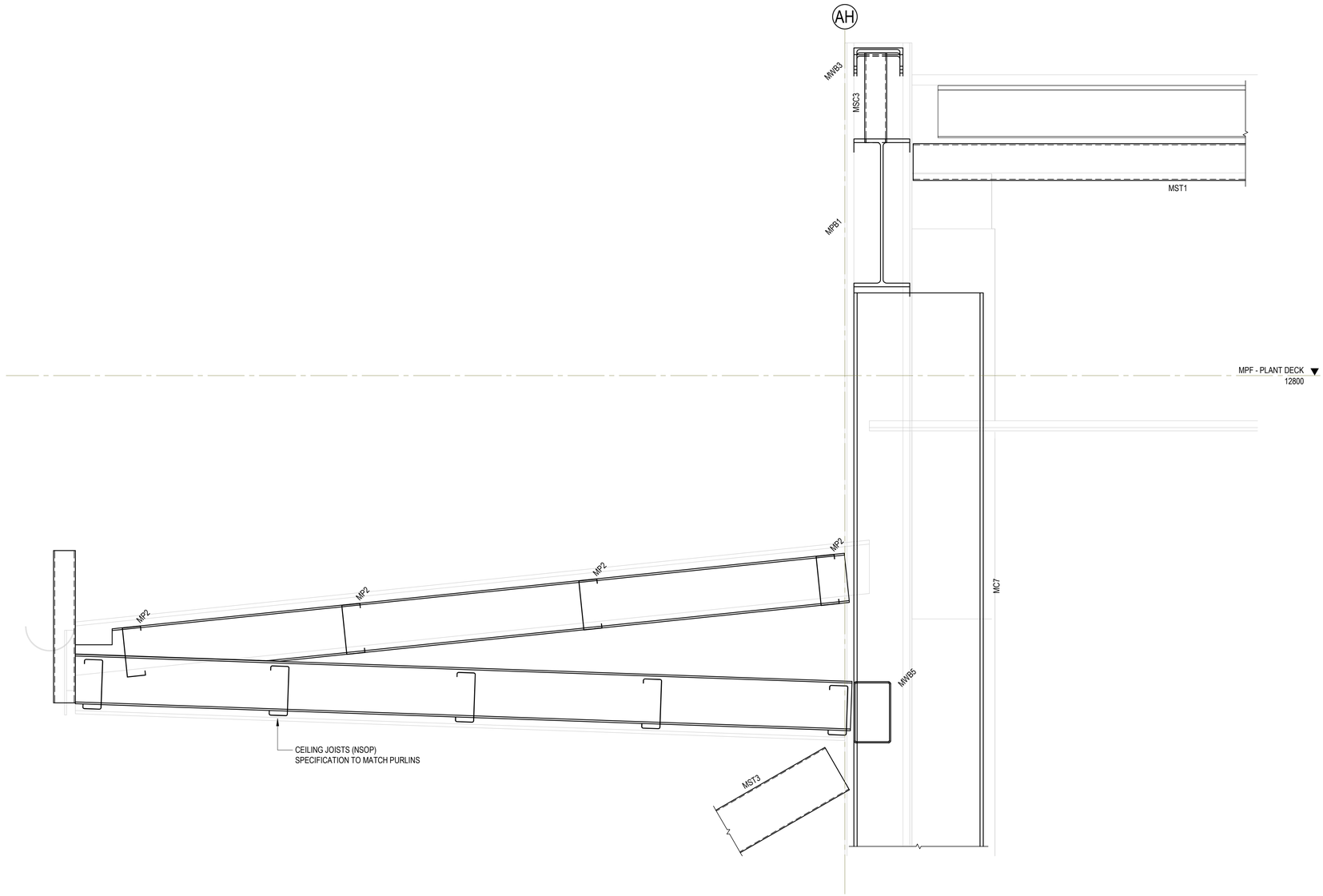

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SCALE: 1 : 10

Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale

0.1 0 0.1 0.2 0.3 0.4 0.5m

SCALE BAR 1:10

Client

NSW GOVERNMENT

Architect

EJE architecture

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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTIPURPOSE FACILITY - ROOF - SECTIONS SHEET 3

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 10

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	RF	S-2312	1

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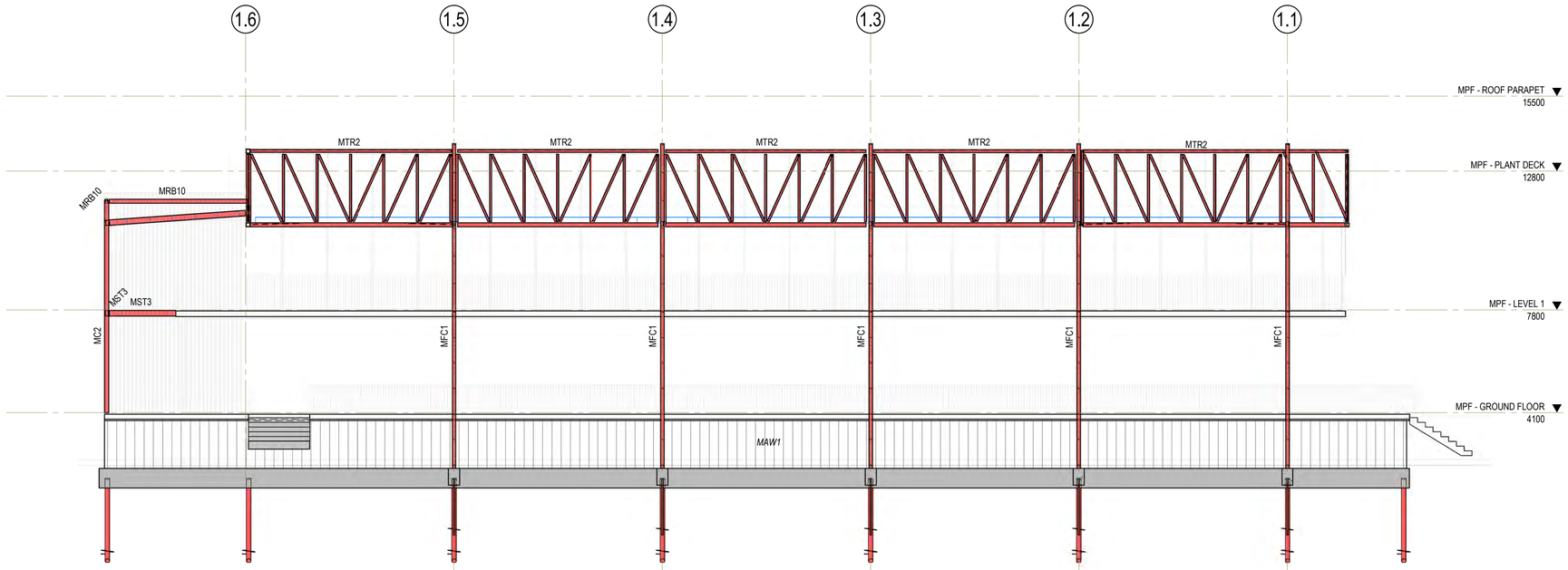

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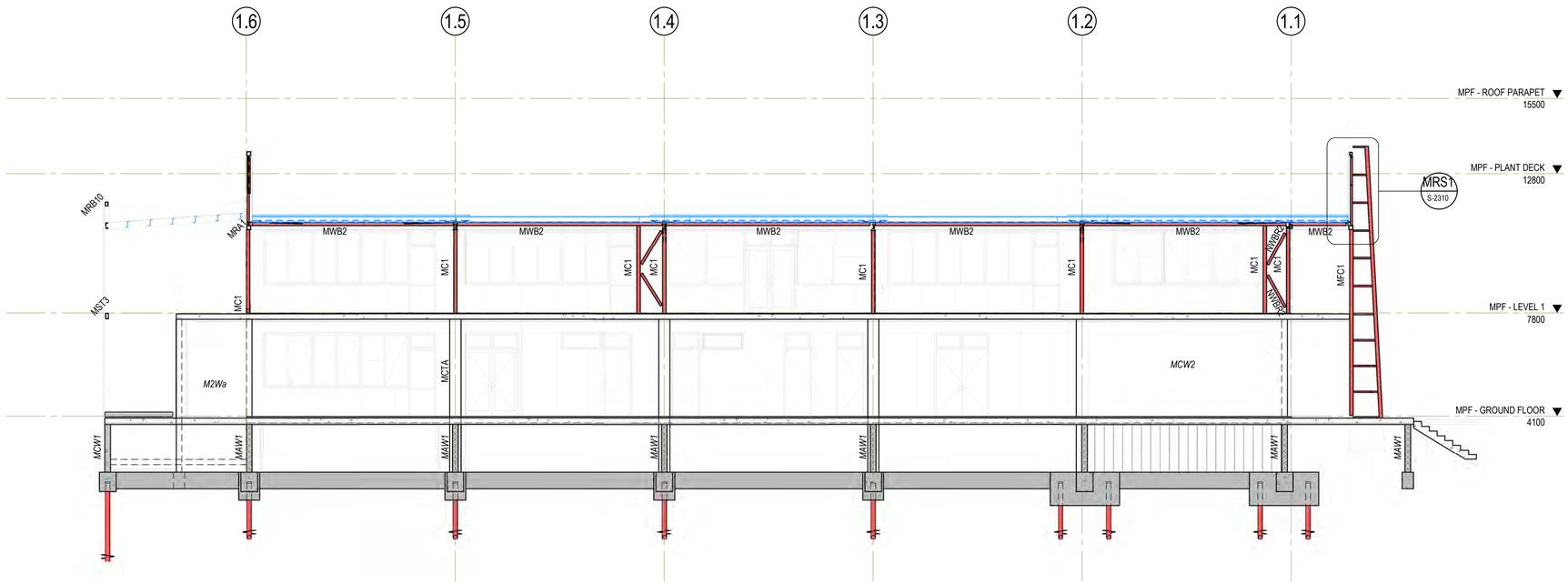

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Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
1 0 1 2 3 4 5m
SCALE BAR 1:100

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

ACOR CONSULTANTS

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240-244 Pacific Highway
Charlestown NSW 2290
T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTIPURPOSE FACILITY - SECTION SHEET 1

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	ZZ	S-2500	1

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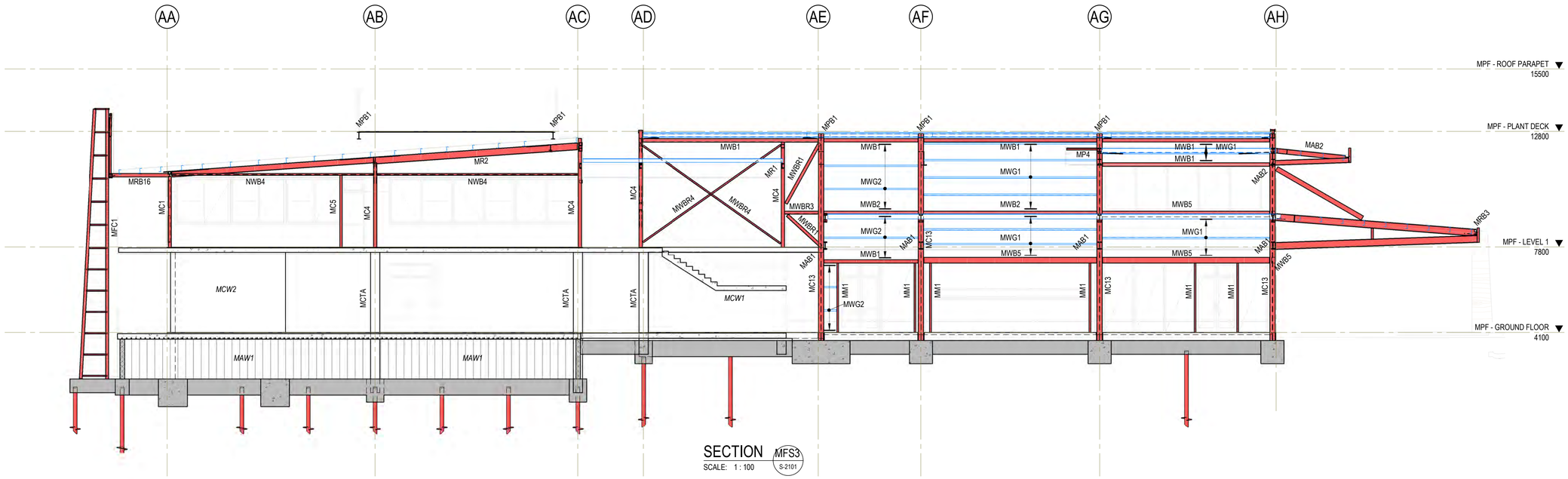

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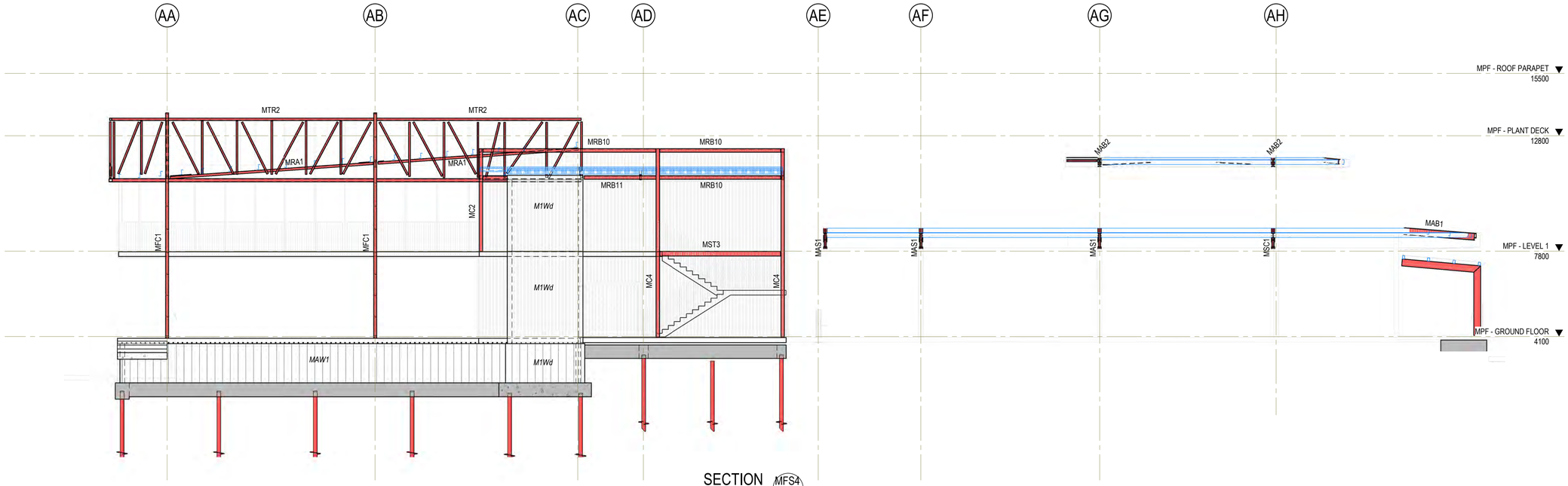

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Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale

1 0 1 2 3 4 5m
SCALE BAR 1:100

PRINT IN COLOUR

Client

NSW GOVERNMENT

Architect

EJE architecture

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Charlestown NSW 2290
T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTIPURPOSE FACILITY - SECTION SHEET 2

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	ZZ	S-2501	1

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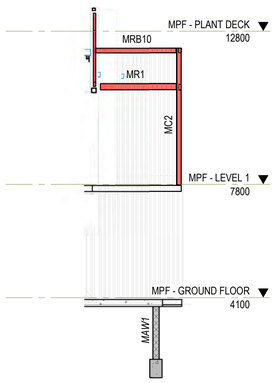

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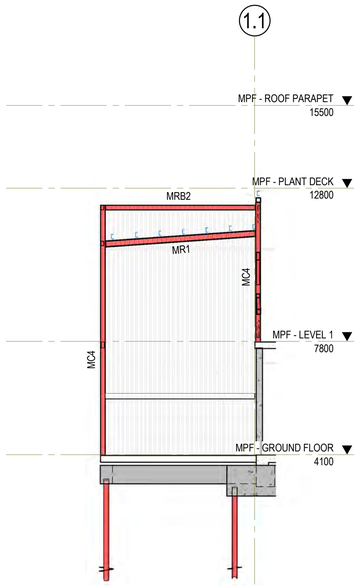

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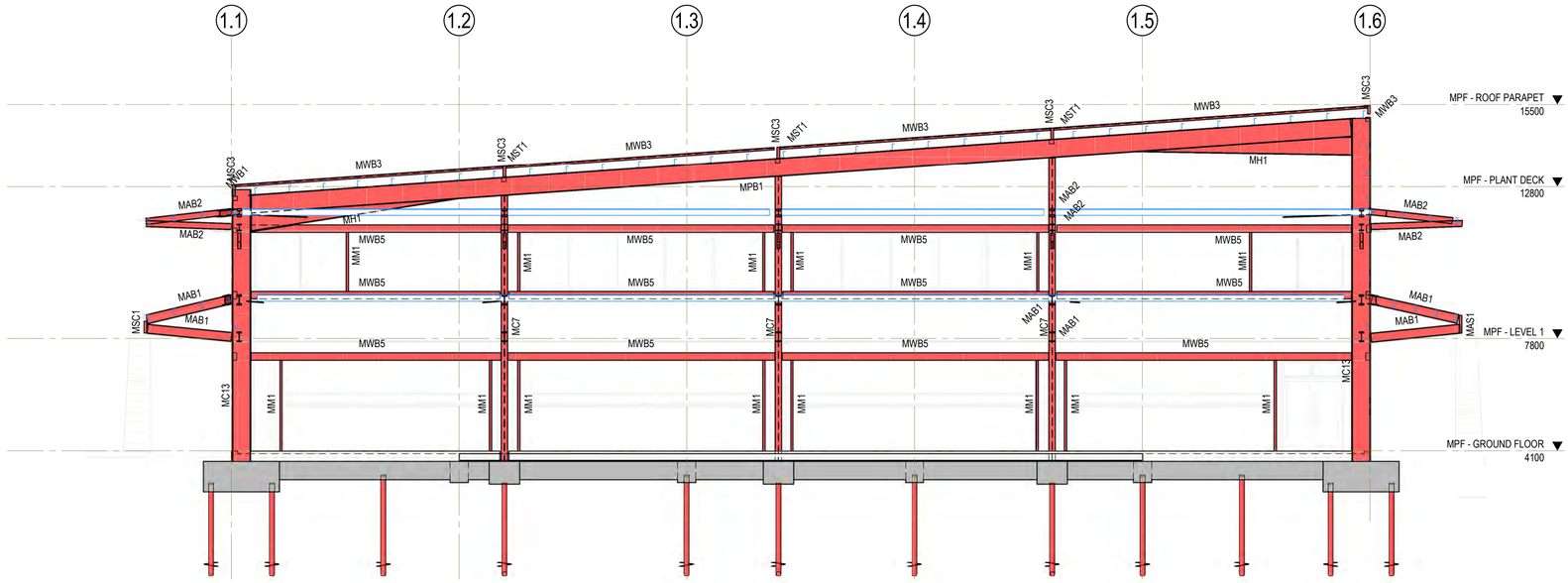

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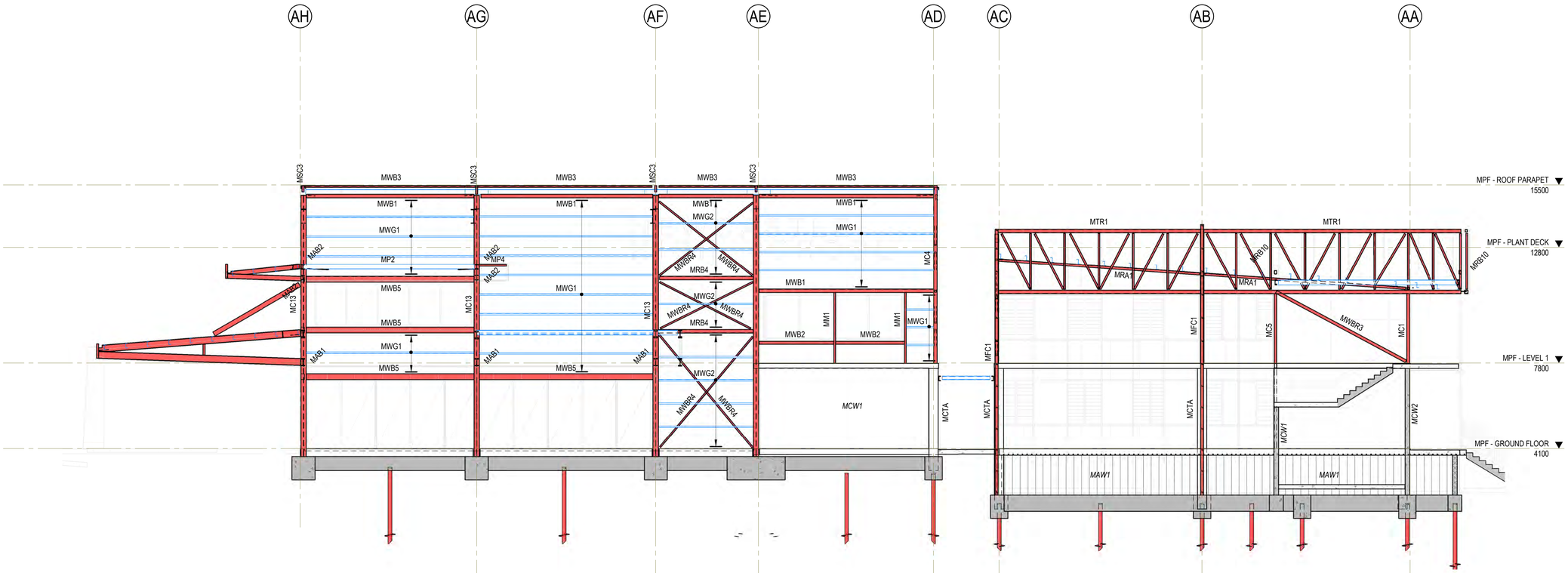

SECTION MFS8 S-2101
SCALE: 1 : 100

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
1 0 1 2 3 4 5m
SCALE BAR 1:100

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

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Charlestown NSW 2290
T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTIPURPOSE FACILITY - SECTION SHEET 3

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	ZZ	S-2502	1

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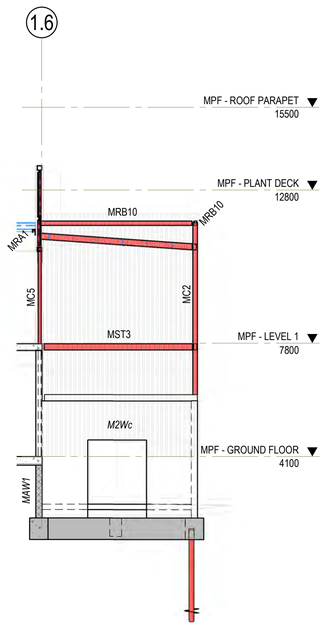

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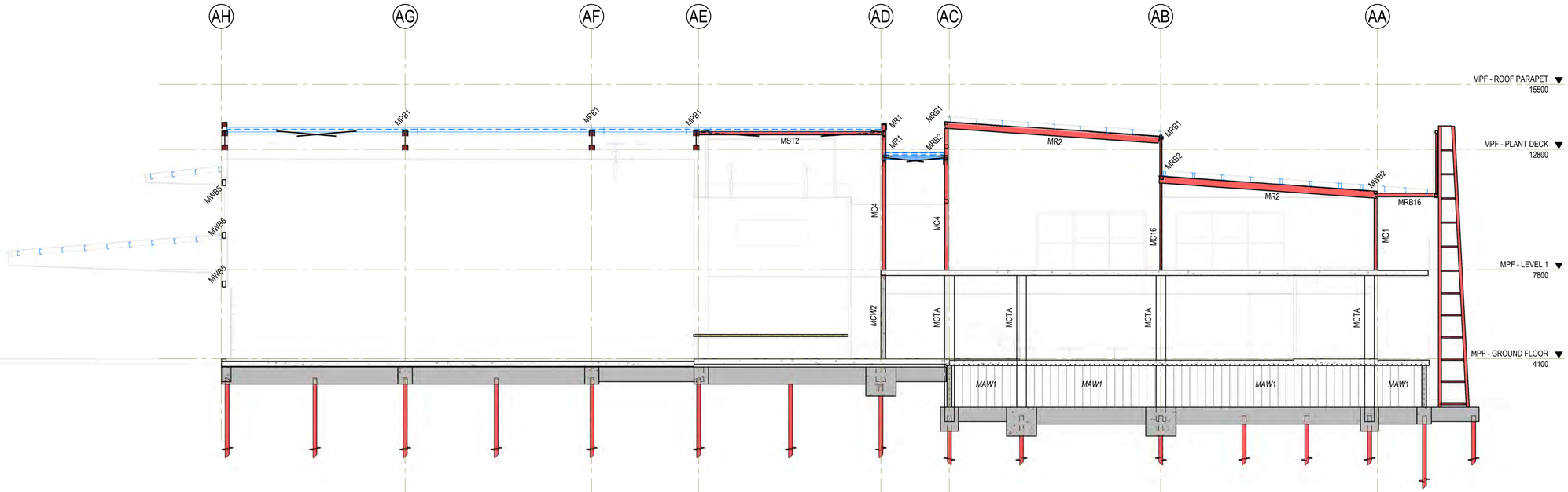

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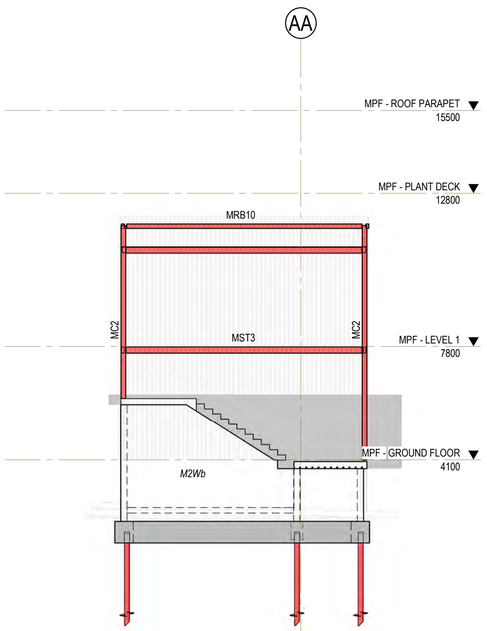

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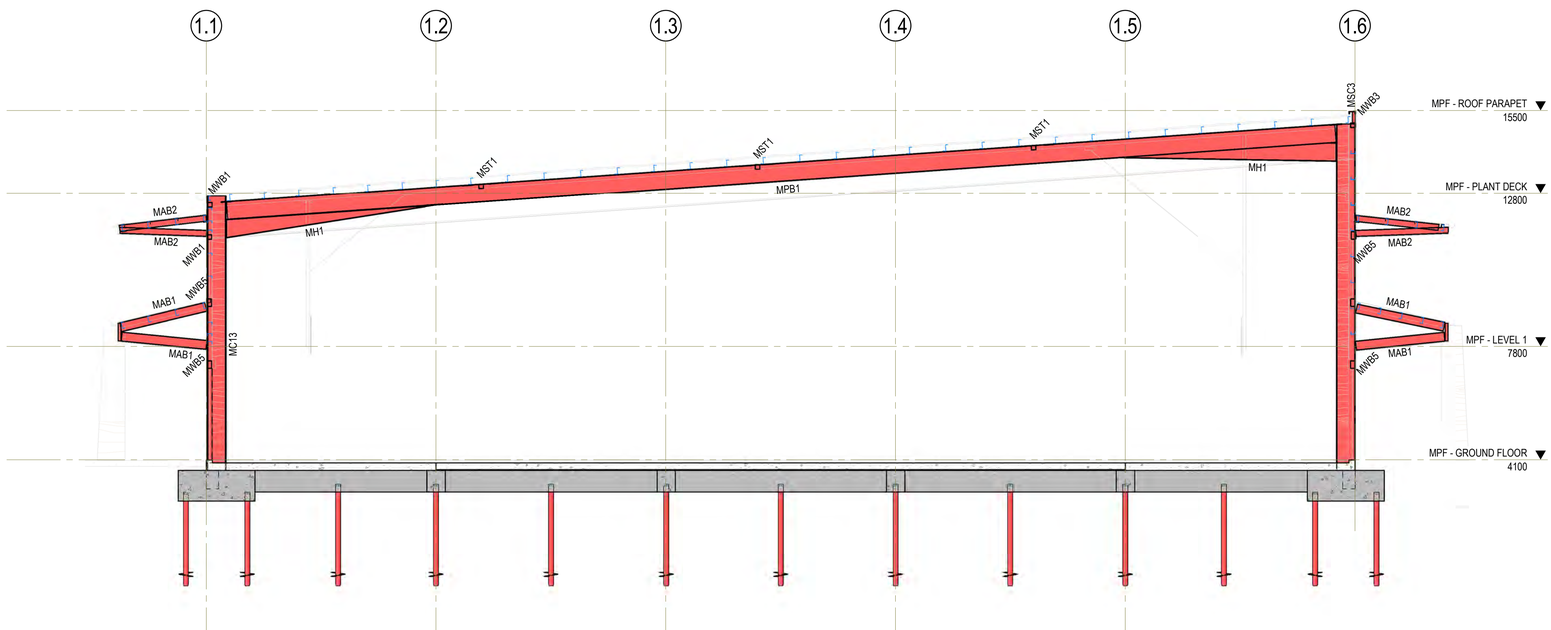

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SCALE: 1 : 100

Issue.	Description	Date	Drawn	Approved
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A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
1 0 1 2 3 4 5m
SCALE BAR 1:100

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

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T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTIPURPOSE FACILITY - SECTION SHEET 4

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	ZZ	S-2503	1

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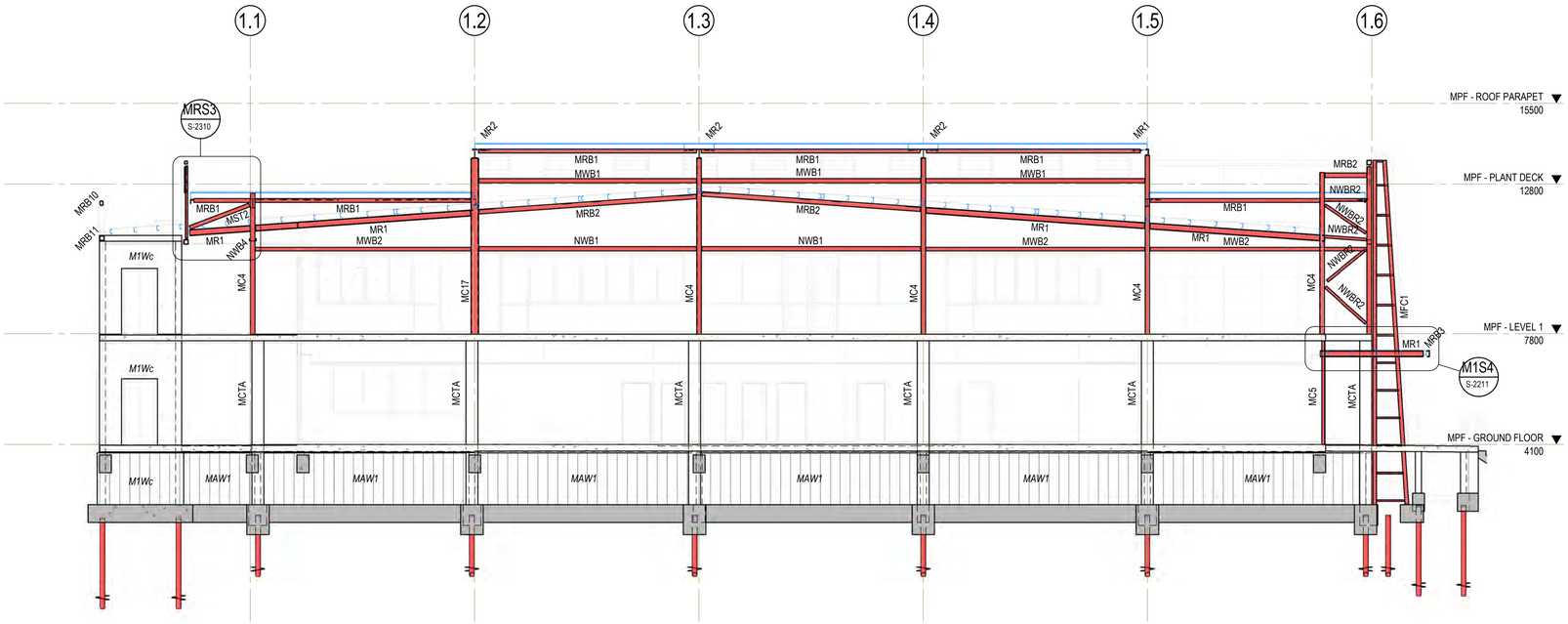

SECTION MFS13
SCALE: 1 : 100 S-2101

SECTION MFS14
SCALE: 1 : 100 S-2101

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
1 0 1 2 3 4 5m
SCALE BAR 1:100

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

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Charlestown NSW 2290
T: +61 2 4926 4811

Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTIPURPOSE FACILITY - SECTION SHEET 5

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	ZZ	S-2504	1

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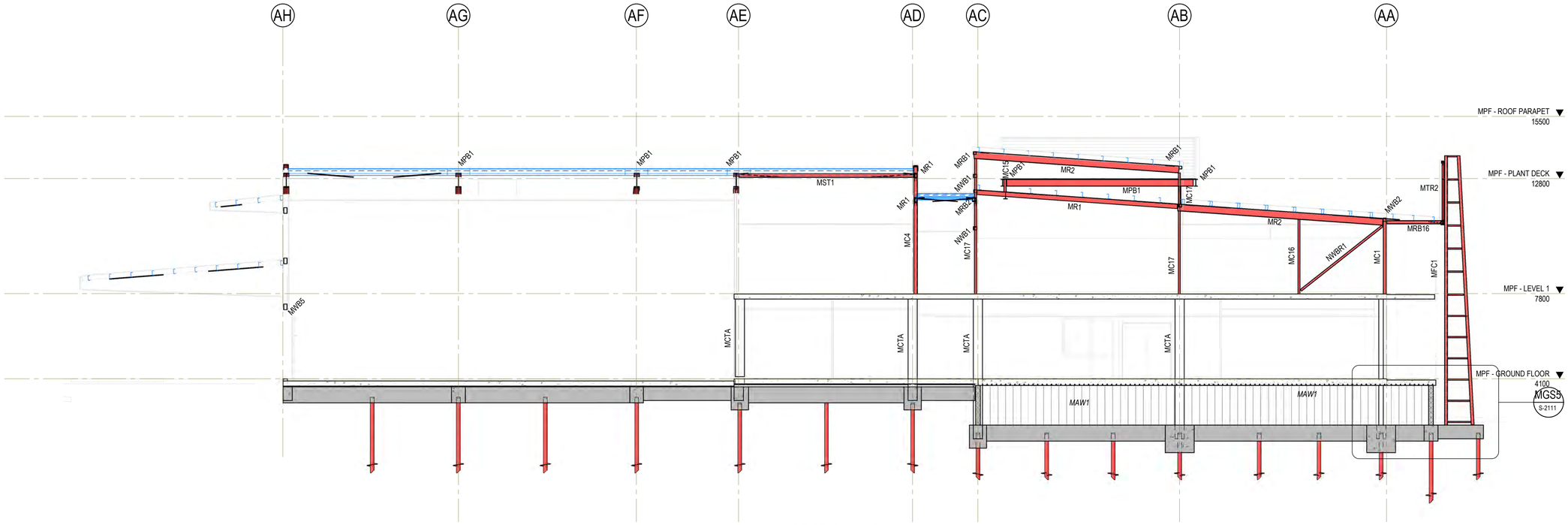

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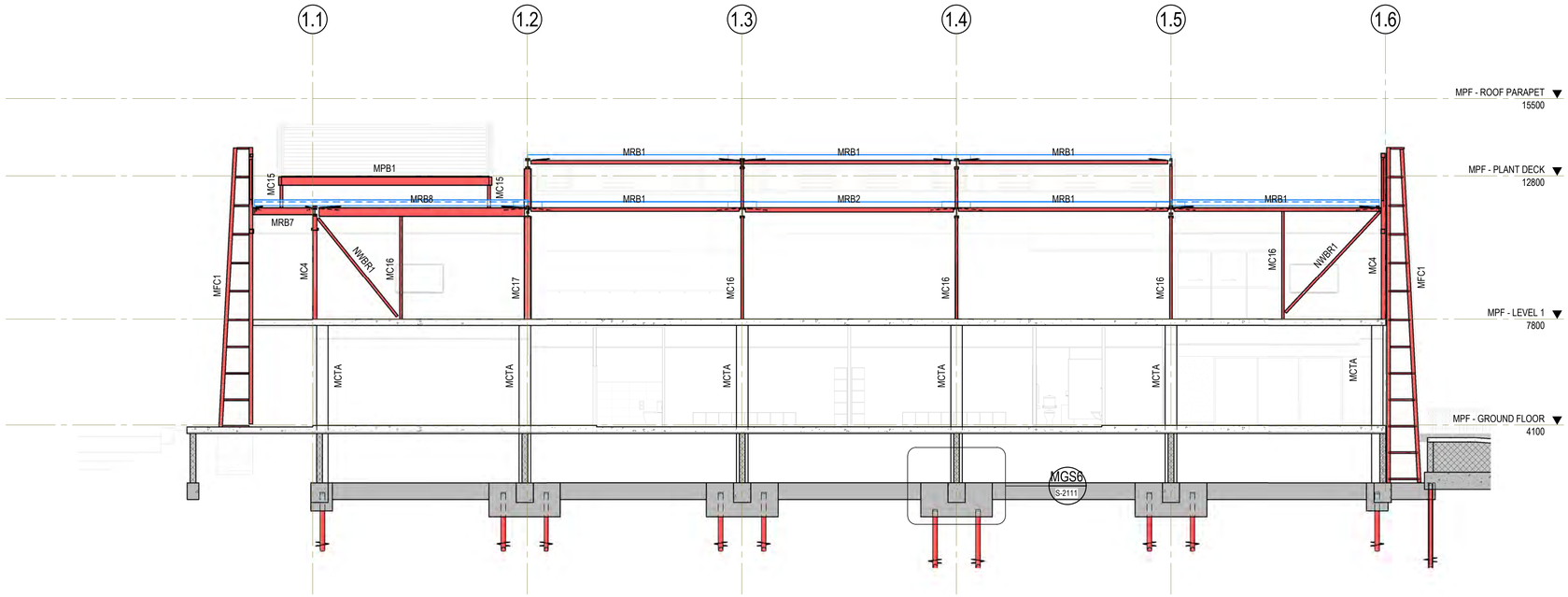

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Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale
1 0 1 2 3 4 5m
SCALE BAR 1:100

PRINT IN COLOUR

Client
NSW GOVERNMENT

Architect
EJE architecture

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Project
NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTIPURPOSE FACILITY - SECTION SHEET 6

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	ZZ	S-2505	1

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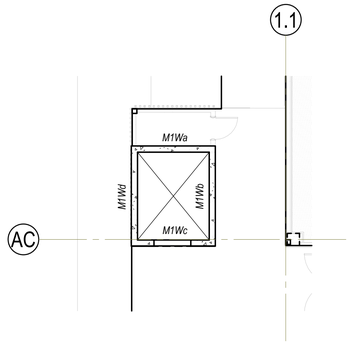
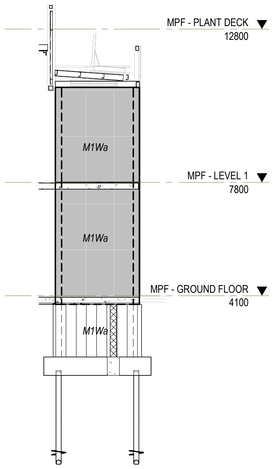


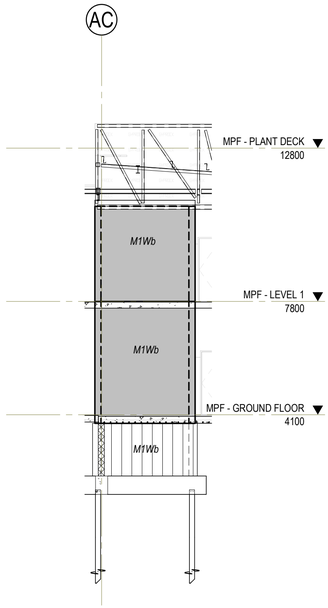
MULTIPURPOSE FACILITY - LEVEL 1 - KEY PLAN - LIFT CORE

SCALE: 1 : 100



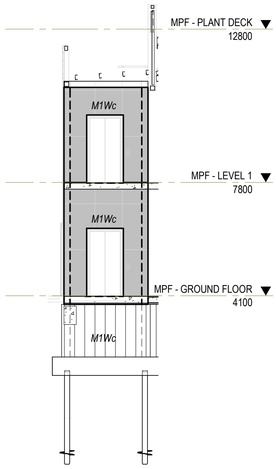
MULTIPURPOSE FACILITY - NORTH WALL ELEVATION - LIFT CORE

SCALE: 1 : 100



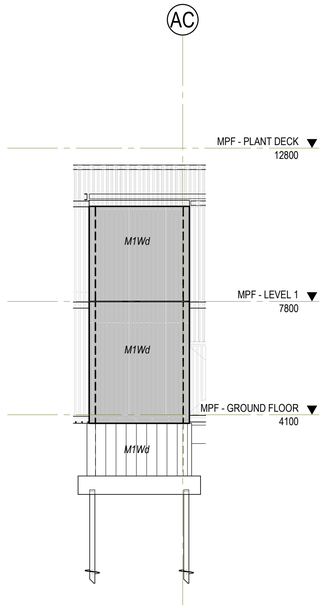
MULTIPURPOSE FACILITY - EAST WALL ELEVATION - LIFT CORE

SCALE: 1 : 100



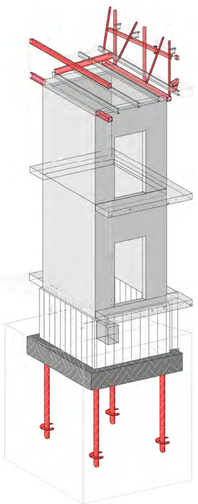
MULTIPURPOSE FACILITY - SOUTH WALL ELEVATION - LIFT CORE

SCALE: 1 : 100



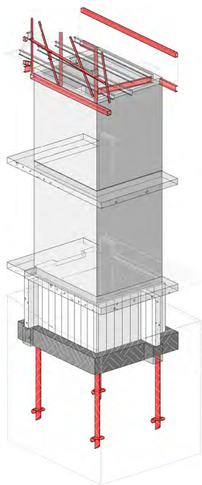
MULTIPURPOSE FACILITY - WEST WALL ELEVATION - LIFT CORE

SCALE: 1 : 100



MULTIPURPOSE FACILITY - LIFT CORE - 3D VIEW 1

SCALE:



MULTIPURPOSE FACILITY - LIFT CORE - 3D VIEW 2

SCALE:

MPF - LIFT CORE - WALL REINFORCEMENT SCHEDULE

MARK	WALL THICKNESS	BASE OF THE WALL	TOP OF THE WALL	REINFORCEMENT			CONCRETE STRENGTH	COVER
				STARTER BARS	VERTICAL	HORIZONTAL		
M1Wc	200	MPF - GROUND FLOOR	Up to level: MPF - LEVEL 1					
M1Wd	200	MPF - GROUND FLOOR	Up to level: MPF - LEVEL 1					
M1Wb	200	MPF - GROUND FLOOR	Up to level: MPF - LEVEL 1					
M1Wa	200	MPF - GROUND FLOOR	Up to level: MPF - LEVEL 1					
M1Wc	275	MPF - GROUND FLOOR	Up to level: MPF - GROUND FLOOR					
M1Wd	275	MPF - GROUND FLOOR	Up to level: MPF - GROUND FLOOR					
M1Wb	275	MPF - GROUND FLOOR	Up to level: MPF - GROUND FLOOR					
M1Wa	275	MPF - GROUND FLOOR	Up to level: MPF - GROUND FLOOR					
M1Wc	200	MPF - LEVEL 1	Up to level: MPF - PLANT DECK					
M1Wd	200	MPF - LEVEL 1	Up to level: MPF - PLANT DECK					
M1Wa	200	MPF - LEVEL 1	Up to level: MPF - PLANT DECK					
M1Wb	200	MPF - LEVEL 1	Up to level: MPF - PLANT DECK					

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale

1 0 1 2 3 4 5m

SCALE BAR 1:100

PRINT IN COLOUR

Client

NSW GOVERNMENT

Architect

EJE architecture

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Project

NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title

STRUCTURAL
MULTI PURPOSE FACILITY - WALL ELEVATIONS SHEET 1

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	ZZ	S-2600	1

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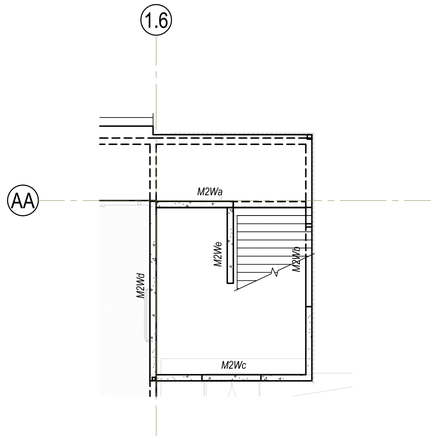
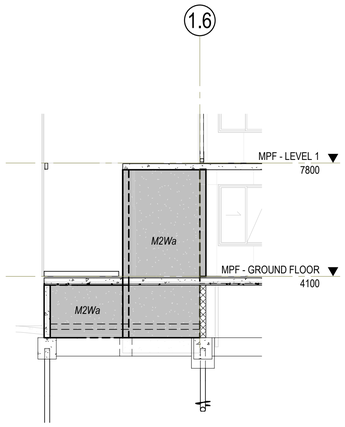


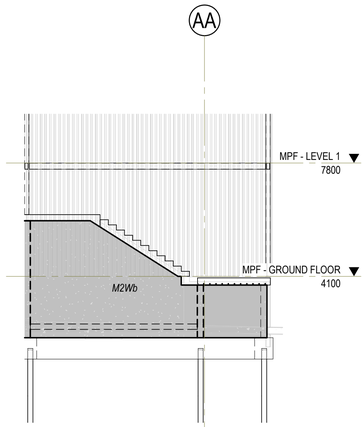
MULTIPURPOSE FACILITY - GROUND FLOOR - KEY PLAN - STAIR CORE 2

SCALE: 1 : 100



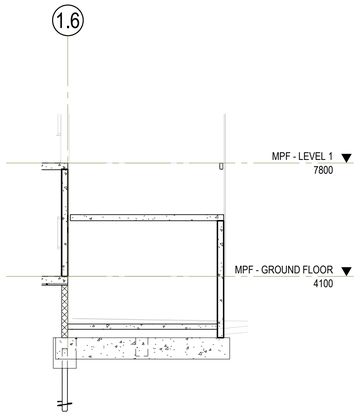
MULTIPURPOSE FACILITY - NORTH WALL ELEVATION - STAIR CORE

SCALE: 1 : 100



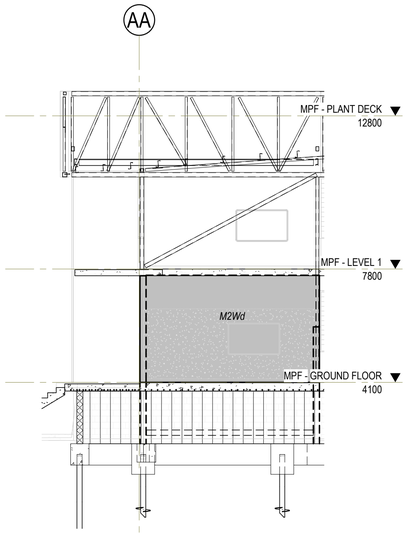
MULTIPURPOSE FACILITY - EAST WALL ELEVATION - STAIR CORE

SCALE: 1 : 100



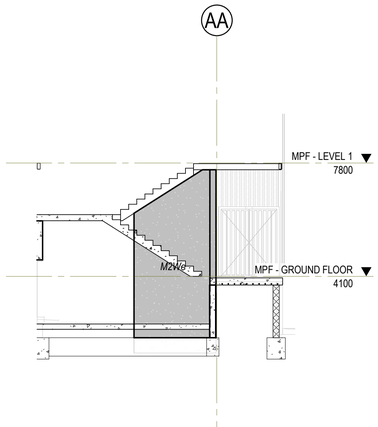
MULTIPURPOSE FACILITY - SOUTH WALL ELEVATION - STAIR CORE

SCALE: 1 : 100



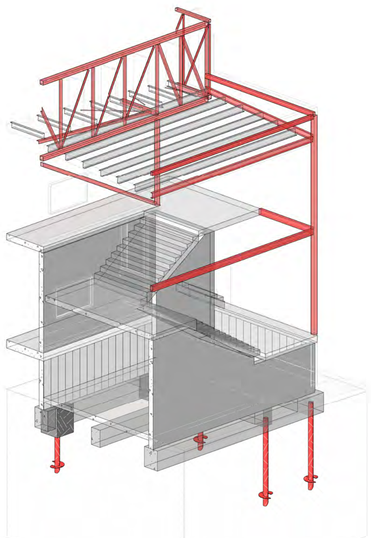
MULTIPURPOSE FACILITY - WEST WALL ELEVATION - STAIR CORE

SCALE: 1 : 100



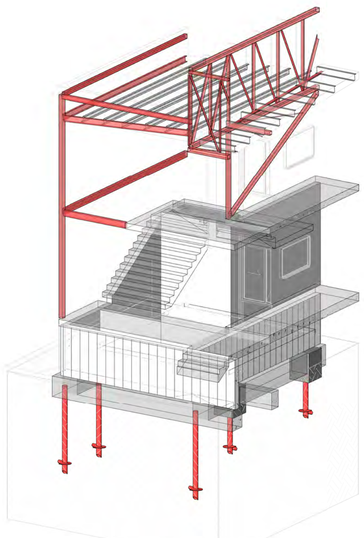
MULTIPURPOSE FACILITY - CENTRAL WALL ELEVATION - STAIR CORE

SCALE: 1 : 100



MULTIPURPOSE FACILITY - STAIR CORE - 3D VIEW 1

SCALE:



MULTIPURPOSE FACILITY - STAIR CORE - 3D VIEW 2

SCALE:

MPF - STAIR CORE - WALL REINFORCEMENT SCHEDULE

MARK	WALL THICKNESS	BASE OF THE WALL	TOP OF THE WALL	REINFORCEMENT			CONCRETE STRENGTH	COVER
				STARTER BARS	VERTICAL	HORIZONTAL		
M2Wb	200	MPF - GROUND FLOOR	Up to level: MPF - LEVEL 1					
M2Wc	200	MPF - GROUND FLOOR	Up to level: MPF - GROUND FLOOR					
M2We	200	MPF - GROUND FLOOR	Up to level: MPF - LEVEL 1					
M2Wa	200	MPF - GROUND FLOOR	Up to level: MPF - LEVEL 1					
M2Wa	200	MPF - GROUND FLOOR	Up to level: MPF - GROUND FLOOR					
M2Wd	200	MPF - GROUND FLOOR	Up to level: MPF - LEVEL 1					

Issue.	Description	Date	Drawn	Approved
1	CROWN CERTIFICATE ISSUE 2	15.05.2024	RT	AB
A	PRELIMINARY ISSUE	01.05.2024	RT	AB

North

Scale

1 0 1 2 3 4 5m

SCALE BAR 1:100

PRINT IN COLOUR

Client

NSW GOVERNMENT

Architect

EJE architecture

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Charlestown NSW 2290
T: +61 2 4926 4811

Project

NEWCASTLE HIGH SCHOOL

160/200 PARKWAY AVE
HAMILTON SOUTH, NSW 2303

NOT FOR CONSTRUCTION

Drawing Title

STRUCTURAL
MULTI PURPOSE FACILITY - WALL ELEVATIONS SHEET 2

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	1 : 100

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	ZZ	S-2601	1

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MPF - FOOTING SCHEDULE

MARK	DEPTH (A) x WIDTH (B)		REINFORCEMENT			CONCRETE STRENGTH (MPa)	COMMENTS
	A	B	TOP	BOTTOM	TIES		
STRIP FOOTING							
MSF1	600	400	3N16	3N16	N12-200	32	
MSF2	700	600	4N16	4N16	N12-200	32	

MPF - PILE CAP SCHEDULE

MARK	LENGTH (A) x WIDTH (B) x DEPTH (C)			REINFORCEMENT			COMMENTS
	A	B	C	BOTTOM	TOP	TIES	
MPC1	2500	1250	1200	N20-200 EW	N20-200 EW		PILE CAP TO BE PROTECTED BY 50mm POLYSTYRENE OR SIMILAR COMPRESSIBLE MATERIAL ON VERTICAL SURFACES
MPC2	750	750	1000	4N20	4N20	N12-200, 4 LEGS	PILE CAP TO BE PROTECTED BY 50mm POLYSTYRENE OR SIMILAR COMPRESSIBLE MATERIAL ON VERTICAL SURFACES
MPC3	2500	2500	1000	4N24	4N20		PILE CAP TO BE PROTECTED BY 50mm POLYSTYRENE OR SIMILAR COMPRESSIBLE MATERIAL ON VERTICAL SURFACES
MPC5	1000	2500	1000	4N24	4N20	N12-200, 4 LEGS	PILE CAP TO BE PROTECTED BY 50mm POLYSTYRENE OR SIMILAR COMPRESSIBLE MATERIAL ON VERTICAL SURFACES
MPC6	1000	1000	750	N20-100	N20-100		PILE CAP TO BE PROTECTED BY 50mm POLYSTYRENE OR SIMILAR COMPRESSIBLE MATERIAL ON VERTICAL SURFACES

MPF - SCREW PILE SCHEDULE

MARK	ULTIMATE LOAD CAPACITY (kN)	COMMENTS
MSP1	195 kN	
MSP2	263 kN	
MSP3	450 kN	
MSP4	585 kN	
MSP5	855 kN	
MSP6	1140 kN	
MSP7	1275 kN	

MPF - STEEL FRAMING SCHEDULE

MARK	SIZE	COMMENTS
AWNING BEAM		
MAB1	310UB32.0	
MAB2	200UB22.3	
BRACING		
MBR1	20 ROD + TURNBUCKLE	
MBR2	24 ROD + TURNBUCKLE	
MBR3	20 ROD + TURNBUCKLE	
MBR4	16 ROD + TURNBUCKLE	
HAUNCH		
MH1	610UB101	
PLANT BEAM		
MPB1	310UB32.0	
PORTAL BEAM		
MPB1	610UB101	
PURLIN		
MP1	Z20019	
MP2	C15015	
MP2	C20019	
MP3	Z20024	AT 1200CTS
MP4	90 x 8 EA	PURLINS AT 900CTS
MP5	C20024	
RAFTER		
MR1	200 PFC	
MR2	310UB32.0	
MR3	250UB25.7	
ROOF BEAM		
MRB1	125 x 125 x 5 SHS	
MRB2	150 x 150 x 5 SHS	
MRB3	200 PFC	
MRB4	150 x 150 x 5 SHS	
MRB7	250UB25.7	
MRB8	310UB46	
MRB10	150 x 100 x 6 RHS	
MRB11	150 x 150 x 8 SHS	
MRB16	150 PFC	
SHELF ANGLE		
MRA1	100 x 10 EA	
STRUT		
MST1	150 x 150 x 5 SHS	
MST2	125 x 125 x 6 SHS	
MST3	200 x 100 x 6 RHS	
TRUSS MTR1		
MTR1	150 x 150 x 8 SHS	TOP AND BOTTOM CHORD
TRUSS MTR2		
MTR2	150 x 150 x 8 SHS	TOP CHORD
MTR2	150 x 150 x 10 SHS	TRUSS BOTTOM CHORD
WALL BEAM		
MWB1	150 x 150 x 5 SHS	
MWB2	125 x 125 x 5 SHS	
MWB3	200 PFC	TOES DOWN
MWB5	250 x 150 x 5 RHS	
WALL BRACING		
MWBR1	125 x 125 x 5 SHS	DIAGONAL BRACE
MWBR3	125 x 125 x 5 SHS	DIAGONAL BRACE
MWBR4	65 x 5 EA	WALL BRACING
WALL GIRT		
MWG1	C15024	AT 900 CTS. 3 ROWS OF BRIDGING
MWG2	C15015	AT 1200 CTS. 2 ROWS OF BRIDGING

MPF - STEEL COLUMN SCHEDULE

MARK	SIZE	COMMENTS
AWNING STUB COLUMN		
MAS1	89 x 89 x 5 SHS	
MULLION		
MM1	150 PFC	
MM3	150 x 150 x 6 SHS	
MM4	100 x 100 x 4 SHS	
STEEL COLUMN		
MC1	125 x 125 x 5 SHS	
MC2	150 x 150 x 5 SHS	
MC4	150 x 150 x 6 SHS	
MC5	100 x 100 x 4 SHS	
MC7	530UB82.0	
MC13	610UB125	
MC15	100 x 100 x 6 SHS	
MC16	89 x 89 x 6 SHS	
MC17	250 PFC	
MSC1	100 x 100 x 4 SHS	STEEL STUB COLUMN
STUB COLUMN		
MSC3	89 x 89 x 5 SHS	

MPF - CONCRETE COLUMN TYPE SCHEDULE

MARK	SIZE	REINFORCEMENT		CONCRETE STRENGTH (MPa)	COMMENTS
		VERTICAL BARS	TIES		
MCTA	400 x 400	8N16	N12-300	40	

MPF - FACADE FRAME SCHEDULE

MARK	SIZE	COMMENTS
MFC1	125 x 125 x 5 SHS	FACADE FRAME VERTICAL
MFC2	55 x 5 EA	FACADE FRAME HORIZONTAL

MPF - TRUSS SCHEDULE

MARK	SIZE	COMMENTS
TRUSS MTR1		
MTR1	75 x 6 EA	DIAGONAL AND VERTICALS
MTR1	150 x 150 x 8 SHS	TOP AND BOTTOM CHORD
TRUSS MTR2		
MTR2	75 x 6 EA	DIAGONAL AND VERTICALS
MTR2	150 x 150 x 8 SHS	TOP CHORD
MTR2	150 x 150 x 10 SHS	TRUSS BOTTOM CHORD

MPF - WALL TYPE SCHEDULE

MARK	SIZE & TYPE	WALL REINFORCEMENT		COMMENTS
		HORIZONTAL	VERTICAL	
AFS WALL SYSTEMS				
MAW1	200 AFS	N12-200 EACH FACE	N12-200 EACH FACE	
MAW2	275 AFS			
CONCRETE				
MCW1	200 CONCRETE WALL	N12-200 EACH FACE	N16-200 EACH FACE	4-N16 VERTICAL BARS 200 FROM EACH END
MCW2	200 CONCRETE WALL	N12-200 EACH FACE	N16-200 EACH FACE	

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NOT FOR CONSTRUCTION

Drawing Title
STRUCTURAL
MULTI PURPOSE FACILITY - SCHEDULES

Drawn	Designed	Q.A. Check	Q.A. Date	Scale @ A1
RT	MG	AB	15.05.2024	

Project No.	Building ID.	Level No:	Drawing No.	Issue
NS230761	B00S	ZZ	S-2999	1

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