

PROPOSED DEVELOPMENT

43 ACCOLADE AVENUE, MORRISET NSW 2264
STRUCTURAL DOCUMENTATION



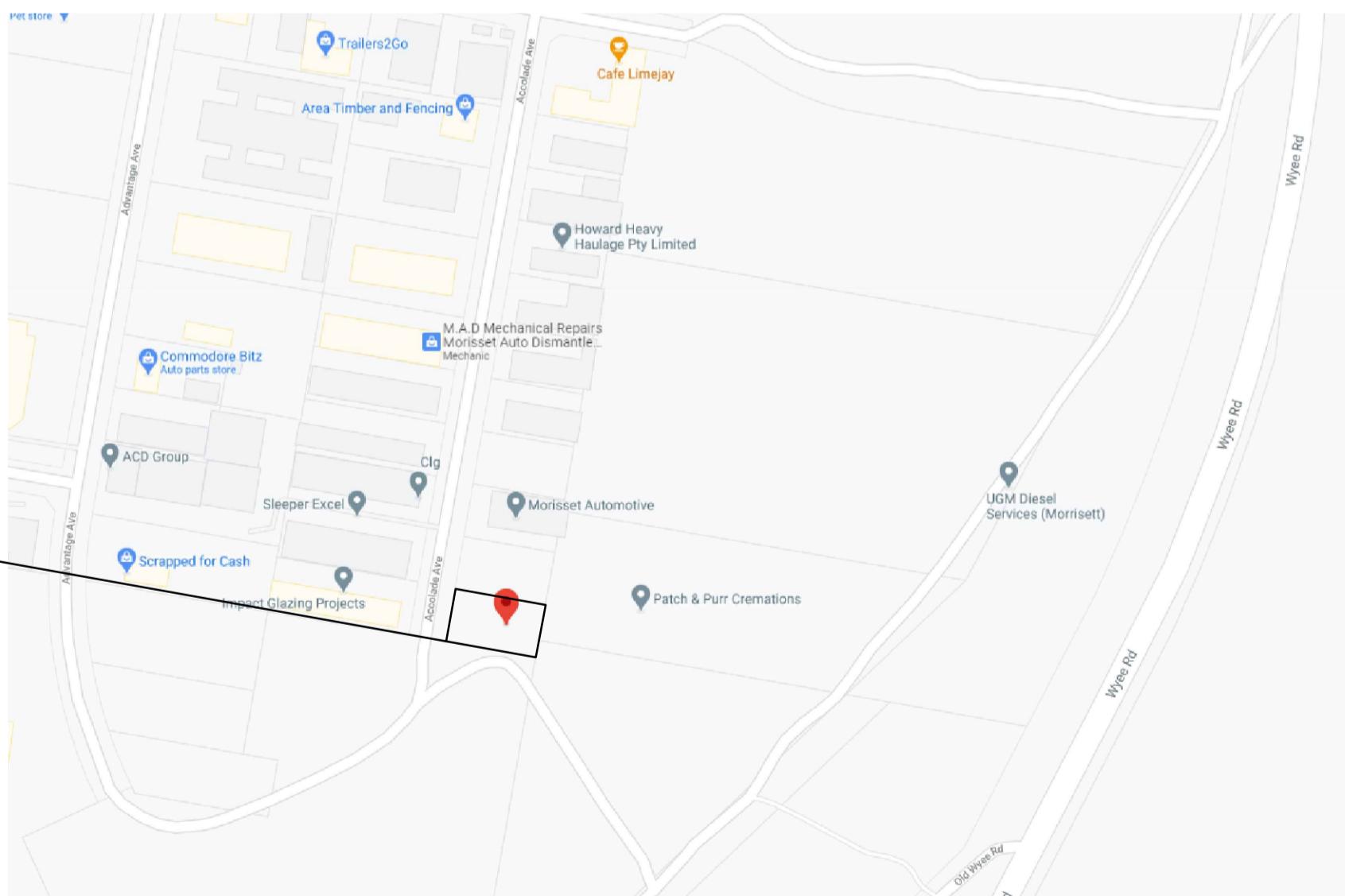
DRAWING LIST

DRG No. DRAWING TITLE

S01.1	COVER SHEET
S01.2	STRUCTURAL NOTES - SHEET 1
S01.3	STRUCTURAL NOTES - SHEET 2
S05.1	SITE PLAN
S10.1	EAST BUILDING - FOUNDATION PLAN
S10.2	WEST BUILDING - FOUNDATION PLAN
S20.1	EAST BUILDING - GROUND FLOOR SLAB PLAN
S20.2	WEST BUILDING - GROUND FLOOR SLAB PLAN
S30.1	EAST BUILDING - MEZZANINE FRAMING PLAN
S30.2	WEST BUILDING - MEZZANINE FRAMING PLAN
S40.1	EAST BUILDING - ROOF FRAMING PLAN
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S50.1	EAST BUILDING - PRECAST ELEVATIONS
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S51.1	PRECAST DETAILS - SHEET 1
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S60.1	FOUNDATION DETAILS - SHEET 1
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S60.3	FOUNDATION DETAILS - SHEET 3
S60.4	FOUNDATION DETAILS - SHEET 4
S70.1	GROUND FLOOR DETAILS - SHEET 1
S70.2	GROUND FLOOR DETAILS - SHEET 2
S70.3	GROUND FLOOR DETAILS - SHEET 3
S80.1	MEZZANINE DETAILS - SHEET 1
S80.2	MEZZANINE DETAILS - SHEET 2
S90.1	ROOF DETAILS - SHEET 1
S90.2	ROOF DETAILS - SHEET 2
S90.3	ROOF DETAILS - SHEET 3

DRAWN: JOSHUA DICK
DESIGNED: ALEX FOSTER
JOB MANAGER: TREVOR CLACK
VERIFIER: TREVOR CLACK

APPROXIMATE LOCATION OF SITE



LOCALITY PLAN

DRAWN:

DESIGNED:

JOB MANAGER:

VERIFIER:

REVISION:

DATE:

CLIENT:

ISSUED:

VER'D:

APP'D:

DATE:

REVISION:

DATE

GENERAL

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH SPECIFICATIONS AND OTHER CONSULTANT'S DRAWINGS.
2. THE WEATHER PROOFING OF THE BUILDING IS THE ARCHITECT'S/BUILDER'S RESPONSIBILITY. THIS INCLUDES (BUT IS NOT LIMITED TO) THE SPECIFICATION AND FIXING DETAILS OF CLADDINGS, SHEETING, FLASHING, MEMBRANES, STEPS, SETDOWNS & RECESSES.
3. ALL DISCREPANCIES SHALL BE REFERRED TO THE PROJECT MANAGER AND RESOLVED BEFORE PROCEEDING WITH THE WORK.
4. ALL DIMENSIONS SHOWN SHALL BE VERIFIED BY THE BUILDER ON SITE. THESE STRUCTURAL DRAWINGS SHALL NOT BE SCALLED FOR DIMENSIONS. THE RL'S SHOWN ON THESE DRAWINGS ARE APPROXIMATE AND ARE FOR THE SOLE PURPOSE OF ASSISTING THE STRUCTURAL DOCUMENTATION THEY ARE NOT TO BE USED FOR CONSTRUCTION PURPOSES. REFER TO ARCHITECTURAL DRAWINGS FOR CONFIRMATION OF ALL RL's, ALL LEVELS ARE IN METRES (m) AND DIMENSIONS ARE IN MILLIMETRES (mm).
5. ALL WORKMANSHIP, TESTING, MATERIALS AND SUPERVISION ARE TO BE IN ACCORDANCE WITH THESE SPECIFICATIONS, THE WORK HEALTH AND SAFETY ACT 2011, ENFORCED BY THE WORKCOVER AUTHORITY AND CURRENT RELEVANT AUSTRALIAN STANDARDS.
6. PROPRIETARY SPECIFIED SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN RECOMMENDATIONS. DO NOT VARY SPECIFIED PROPRIETARY PRODUCTS WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.
7. THESE DRAWINGS AND ISSUED WRITTEN INSTRUCTIONS DURING THE COURSE OF THE CONTRACT DEPICT THE COMPLETE STRUCTURE. THEY DO NOT DESCRIBE A WORK METHOD. THE ARRANGEMENT, DESIGN AND INSTALLATION OF TEMPORARY WORKS REMAINS THE RESPONSIBILITY OF THE CONTRACTOR.
8. THE DETERMINATION OF A SAFE WORK METHOD REMAINS THE RESPONSIBILITY OF THE CONTRACTOR. ANY ELEMENT WHICH POSES AN UNACCEPTABLE LEVEL OF SAFETY RISK TO CONSTRUCT SHALL BE REFERRED TO THE STRUCTURAL ENGINEER. TEMPORARY BRACING AND SUPPORT OF STRUCTURE IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE MAINTAINED DURING ALL STAGES OF CONSTRUCTION.
9. NOTES ON ANY DRAWING APPLY TO ALL DRAWINGS IN THE SET UNLESS NOTED OTHERWISE.
10. ALL ARCHITECTURAL FITMENTS SUCH AS GLAZING, PARTITIONS, CEILINGS ETC. SHOULD ALLOW FOR THE SHORT AND LONG TERM MOVEMENT OF STRUCTURAL ELEMENTS. FOR BEAMS AND SLABS SPANNING LESS THAN 8m AN ALLOWANCE OF AT LEAST 20mm SHOULD BE MADE (CONSULT ENGINEER WHERE SPANS EXCEED 8m).
11. THE BUILDER SHALL PROVIDE CERTIFICATION ON ANY DESIGN AND CONSTRUCT COMPONENT BY A CHARTERED PROFESSIONAL ENGINEER (NPER).
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL SERVICES IN THE VICINITY OF THE WORKS. ANY SERVICES SHOWN ARE PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL SERVICES PRIOR TO COMMENCING AND SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE CAUSED TO SERVICES, AS WELL AS ANY LOSS INCURRED AS A RESULT OF THE DAMAGE TO ANY SERVICE.
13. THE STRUCTURAL COMPONENTS DETAILED ON THESE STRUCTURAL DRAWINGS ARE JOB SPECIFIC AND HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARDS AND BUILDING CODE OF AUSTRALIA FOR THE FOLLOWING FIRE RATINGS, WIND LOADS, FLOOR USAGE AND EARTHQUAKE LOADS.
- FIRE RATING LEVELS:**
- EXTERNAL WALLS = 90/90/90
 - COMMON WALLS = 90/90/90
- WIND LOADS:**
- IMPORTANCE LEVEL = 2
 - REGION = A2
 - ANNUAL PROBABILITY OF EXCEDENCE = 1:500
 - REGIONAL WIND SPEED V = 45 m/s
 - TERRAIN CATEGORY = TC3
 - TERRAIN MULTIPLIER Mz_cat = 0.83
 - WIND DIRECTION MULTIPLIER Md = 1.0
 - SHIELDING MULTIPLIER Ms = 1.0
 - TOPOGRAPHIC MULTIPLIER Mi = 1.0
 - SITE WIND SPEED = 37.4 m/s
- FLOOR LIVE LOADS:**
- GENERAL GROUND FLOOR = 10.0 kPa
 - MEZZANINE = 3.0 kPa
 - ROOF = 0.25 kPa
 - DESIGN STRUCTURE TO COMPLY WITH THE REQUIREMENTS OF AS3959-2018
- G14.** THE METHOD OF CONSTRUCTION AND THE MAINTENANCE OF SAFETY DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE BUILDER. IF ANY STRUCTURAL ELEMENT PRESENTS DIFFICULTY IN RESPECT TO SAFETY THE MATTER SHALL BE REFERRED TO NORTHRUP CONSULTING ENGINEERS FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.
- G15.** NO CHANGES IN ANY STRUCTURAL ELEMENT SHALL BE MADE WITHOUT WRITTEN APPROVAL FROM NORTHRUP CONSULTING ENGINEERS. IF THERE IS A DISCREPANCY THEN FOR TENDER PURPOSES ALLOW FOR THE MOST EXPENSIVE OPTION. NORTHRUP CONSULTING ENGINEERS SHALL BE CONTACTED TO CONFIRM PRIOR TO CONSTRUCTION.
- G16.** CONSTRUCTION USING THESE DRAWINGS SHALL NOT COMMENCE UNTIL A CONSTRUCTION CERTIFICATE HAS BEEN ISSUED AND ONLY IF THE DRAWINGS ARE DESIGNATED "ISSUED FOR CONSTRUCTION".
- G17.** NORTHRUP CONSULTING ENGINEERS ACCEPTS NO RESPONSIBILITY FOR ANY WORK NOT INSPECTED OR NOT APPROVED BY NORTHRUP CONSULTING ENGINEERS DURING CONSTRUCTION.
- G20.** ANY PRODUCTS SPECIFIED OR USED ARE TO BE VERIFIED BY THE CONTRACTOR AS BEING SAFE AND APPROPRIATE FOR USE. NORTHRUP CONSULTING ENGINEERS DO NOT TAKE ANY RESPONSIBILITY FOR THE USE OF UNSAFE PRODUCTS.

CONSTRUCTION PHASE SERVICES (WITNESS POINTS)

- WP1.** OBTAIN NORTHRUP CONSULTING ENGINEERS WRITTEN INSTRUCTION AT THE FOLLOWING HOLD POINTS:
- PREPARATION OF FOUNDING MATERIAL, INCLUDING PIER BORE HOLES.
 - REINFORCEMENT PRIOR TO PLACEMENT OF CONCRETE OR COREFILLING OF BLOCKWORK.
 - STEEL AND TIMBER FRAME INSPECTION PRIOR TO SHEETING.
- WP2.** PROVIDE MINIMUM 48 HOURS NOTICE FOR ANY REQUIRED INSPECTIONS.

TEMPORARY WORKS

- TW1.** THESE DRAWINGS DEPICT THE "PERMANENT" STRUCTURE. TEMPORARY WORKS REMAIN THE RESPONSIBILITY OF THE CONTRACTOR.
- TW2.** BUILDER MUST ENGAGE (NPER) QUALIFIED STRUCTURAL ENGINEER FOR THE DESIGN OF ALL TEMPORARY WORKS NECESSARY TO SAFELY ERECT THIS STRUCTURE. AS A MINIMUM THE FOLLOWING WORKS REQUIRE ATTENTION:
- FORMWORK / TEMPORARY PROPPING / NEEDLE BEAMS / SCAFFOLDING / UNDERPINNING
- TW3.** BUILDER SHALL CONTACT NORTHRUP CONSULTING ENGINEERS IF THEY CONSIDER ANY PART OF THIS STRUCTURE IS UNSAFE TO ERECT.

CONCRETE

- C1. CARRY OUT ALL CONCRETE WORK IN ACCORDANCE WITH AS3600-2018 AND NATSPEC CONCRETE STANDARDS.

- C2. CONCRETE PROPERTIES AND COVER TO REINFORCING:

COVER TO REINFORCEMENT				
ELEMENT	CONCRETE STRENGTH f'c (MPa)	MAXIMUM 56 DAY DRY SHRINKAGE	COVER (mm)	
SLABS ON GROUND	EXTERNAL (NO MEMBRANE) 32 INTERNAL (WITH MEMBRANE) 32	650um	TOP 40 TOP 25	BTM 50 BTM 30
STRIP FOOTINGS	25	850um		50
PAD FOOTINGS	25	850um		50
RETAINING WALL FOOTINGS	25	850um		50
CONCRETE RETAINING WALLS	32	650um		40

MAXIMUM AGGREGATE SIZE = 20mm U.N.O.
 SLUMP DURING PLACING = 80mm ±10mm.
 EXPOSURE CLASSIFICATION = A2 (INTERNAL CONCRETE ELEMENTS).
 = B1 (EXTERNAL CONCRETE ELEMENTS).

NO ADMIXTURES SHALL BE USED IN THE CONCRETE MIX UNLESS APPROVED BY NORTHRUP CONSULTING ENGINEERS IN WRITING.

EARTHWORKS UNDER GROUND SLAB

- E1. REMOVE ALL TOPSOIL, ORGANIC MATERIAL AND FILL BENEATH BUILDING PLATFORM. ALSO EXCAVATE TO THIS DEPTH FOR A DISTANCE OF D + 0.5m AROUND THE PERIMETER OF THE BUILDING, WHERE D IS THE DEPTH OF EXCAVATION.
- E2. SOIL AND BUILDING MATERIAL REMOVED OFF SITE MUST BE DONE SO IN ACCORDANCE WITH THE NSW EPA GUIDELINES.
- E3. IMPORTED FILL PROPERTIES:
 - PASSING 50mm SIEVE = - 100%
 - PASSING 75micron SIEVE = - LESS THAN 25%
 - PLASTICITY INDEX = - LESS THAN 15% BUT MORE THAN 2%
- E4. ONLY IMPORTED MATERIAL CLASSIFIED AS "INERT" UNDER NSW EPA GUIDELINES TO BE USED.
- E5. FILL WITHIN BUILDING PLATFORMS SHOULD BE PLACED AND COMPAKTED AS FOLLOWS:
 - IN LAYERS OF 300MM MAXIMUM LOOSE THICKNESS.
 - TO A DRY DENSITY RATIO OF: 98% STANDARD DRY DENSITY FOR COMMERCIAL BUILDINGS
 - WITH A MOISTURE CONTENT BETWEEN 12% DRY & 2% WET OF OM.
 - THE FINAL SURFACE COVERED WITH EITHER A TEMPORARY LOOSE SOIL LAYER OR A GRANULAR SUB-BASE LAYER TO PREVENT DRYING OUT PRIOR TO SLAB CONSTRUCTION.
 - EARTHWORKS TO BE CARRIED OUT WITH GEOTECHNICAL INSPECTION AT LEVEL 1 RESPONSIBILITY (AS DEFINED IN SECTION 8 OF AS3798-2007) DUE TO THE TIGHT LIMITS RECOMMENDED ABOVE.
- E6. IF SUBGRADE OR FILL IS TOO WET TO ACHIEVE COMPACTION, SCARIFY AND WORK MATERIAL UNTIL IT HAS DRIED.
- E7. ALLOW FOR AT LEAST 1 SUCCESSFUL COMPACTION TESTS PER LAYER. ALLOW FOR ONE ADDITIONAL TEST PER 50m³ OF FILL WHERE PLACED VOLUME EXCEEDS 50m³ TESTING TO BE UNDERTAKEN BY A NATA REGISTERED LABORATORY.
- E8. NORTHRUP CONSULTING ENGINEERS SUPPORT THE USE OF CONTAMINANT FREE, RECYCLED CONCRETE OR BRICK IN LIEU OF CRUSHED ROCK IN APPROPRIATE CIRCUMSTANCES.

SLAB ON GROUND - COMMERCIAL

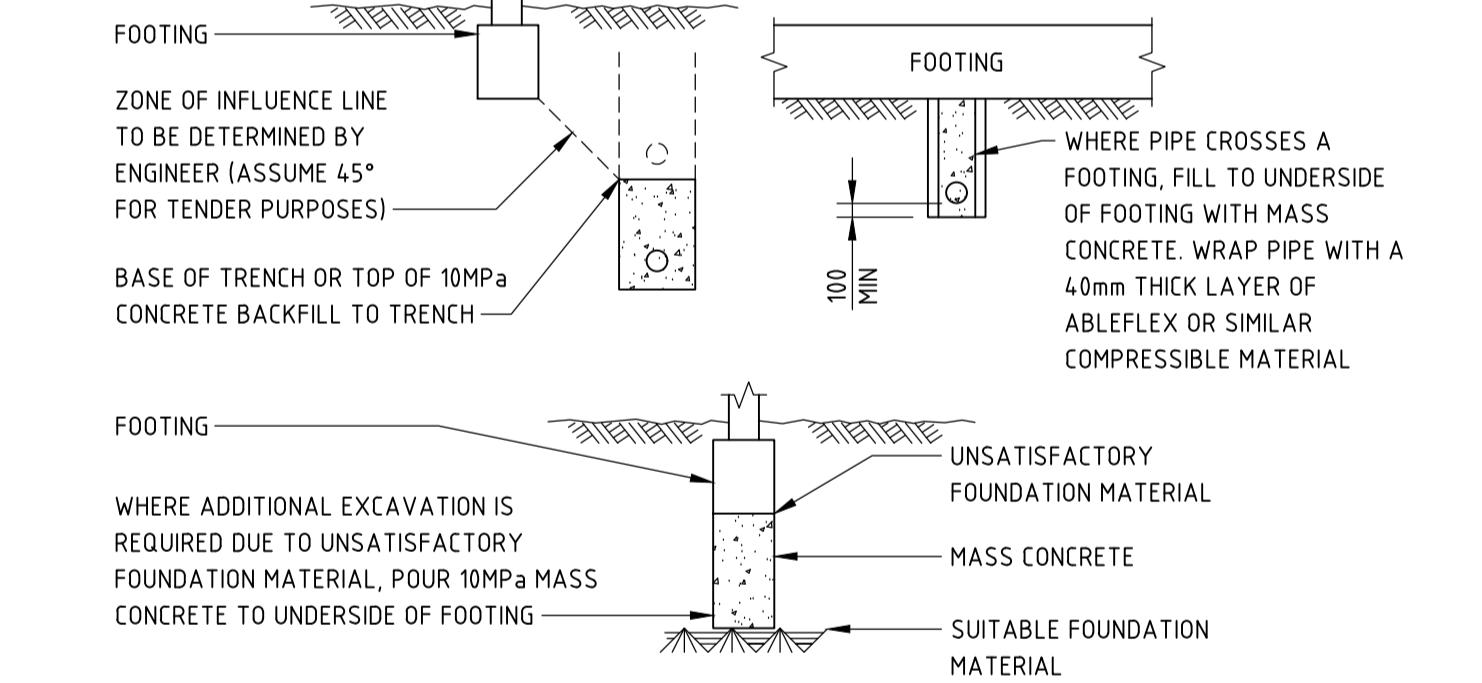
- CSG1. REFER TO PLANS FOR SLAB THICKNESS AND REINFORCEMENT. CAST SLABS ON A 0.2mm POLYTHENE MEMBRANE, CONTINUOUS, LAPPED 20mm MINIMUM AND TAPE AT JOINTS, PUNCTURES AND SERVICE PIPE PENETRATIONS, ON FIRM CUIT ORIGINAL GROUND OR COMPACTED FILL AS SPECIFIED.
- CSG2. EXTERNAL PAVING SLABS FOR PEDESTRIAN USE ONLY TO BE 100mm THICK WITH SL72 FABRIC THROUGHOUT TOP, NO POLYTHENE OR SAND REQUIRED, UNLESS NOTED OTHERWISE.
- CSG3. TERMIT PROTECTION SHALL BE PROVIDED AS REQUIRED BY AS3600.1-2000 AND THE LOCAL STATUTORY AUTHORITY.
- CSG4. PROVIDE 3-N12 TRIMMER BARS 2000mm LONG TIED TO U/S OF FABRIC AT ALL RE-ENTRANT CORNERS.
- CSG5. ALL CONCRETE IS TO BE PLACED USING A VIBRATOR. CURING METHODOLOGY TO BE APPROVED IN WRITING BY THE ENGINEER PRIOR TO CONCRETE BEING PLACED.
- CSG6. BEAM AND STRIP FOOTING REINFORCEMENT SHALL ACHIEVE THE REQUIRED COVER AS NOTED IN CONCRETE SPECIFICATIONS.
- CSG7. TRENCH MESH SHALL BE LAID CONTINUOUSLY AND SHALL BE SPLICED WHERE NECESSARY WITH A LAP OF 600mm.
- CSG8. TRENCH MESH SHALL BE OVERLAPPED BY THE WIDTH OF MESH AT CORNERS AND INTERSECTIONS AND THE ENDS OF TRENCH MESH SHALL TERMINATE WITH A CROSSBAR.
- CSG9. MESH SHALL BE PLACED NEAR THE TOP OF THE SLAB AND SHALL ACHIEVE THE REQUIRED COVER. MESH SHALL BE LAPPED A MINIMUM OF TWO WIRES PLUS 25mm AND SHALL BE SET OUT SUCH THAT NO MORE THAN THREE THICKNESSES OF MESH OCCUR AT ANY LOCATION.



- CSG10. HOT WATER HEATING PIPES MAY BE EMBEDDED IN THE SLAB IF THE THICKNESS IS INCREASED BY 25mm AND LAID ON SL2 MESH, OR IF THE SLAB THICKNESS IS INCREASED BY 25mm AND THE MESH SIZE IS INCREASED BY ONE SIZE (eg FROM SL82 MESH TO SL92 MESH).

FOUNDATIONS

- F1. ASSUMED ALLOWABLE BEARING CAPACITY:
 - PAD FOOTINGS = 150 kPa
 - STRIP FOOTINGS = 150 kPa
 - SLABS ON GROUND = 150 kPa
- F2. A GEOTECHNICAL REPORT HAS /HAS NOT BEEN CARRIED OUT, REFER TO REPORT No E20053-A. PREPARED BY SANKO. THIS REPORT IS FOR INFORMATION ONLY, IT IS NOT A COMPLETE DESCRIPTION OF CONDITIONS AT OR BELOW GROUND LEVEL.
- F3. THE SLAB AND FOOTINGS HAVE BEEN DESIGNED IN ACCORDANCE WITH AS2870-2011 FOR CLASS H2 SITE. A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER TO BE CONTACTED DURING EXCAVATION TO CONFIRM THE SITE CLASSIFICATION.
- F4. THE CONTRACTOR SHALL ALLOW TO ENGAGE A QUALIFIED (NPER) GEOTECHNICAL ENGINEER TO APPROVE THE FOUNDATION MATERIAL, OBTAIN GEOTECHNICAL ENGINEERS APPROVAL AND SUBMIT CERTIFICATE IN WRITING TO NORTHRUP CONSULTING ENGINEERS PRIOR TO CONCRETING FOUNDATIONS.
- F5. ENSURE STABILITY OF ADJACENT BUILDINGS AND PATHS IS MAINTAINED DURING ALL STAGES OF CONSTRUCTION.
- F6. DO NOT ALLOW EXCAVATED MATERIAL TO BE STOCKPILED WITHIN 1500mm OF FOOTING TRENCHES OR PITS. NO EARTH OR DETRITUS IS TO FALL INTO THE FOOTING TRENCHES BEFORE OR DURING CONCRETE PLACEMENT.
- F7. THE UNDERSIDE OF FOUNDATIONS SHALL CONFORM TO THE FOLLOWING REGARDLESS OF NOMINATED LEVELS:



- F8. FOOTINGS SHALL BE CENTRALLY LOCATED UNDER WALLS AND COLUMNS UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.
- F9. FOOTINGS SHALL BE EXCAVATED TO THE DETAILED DEPTH AND WIDTH. FOOTINGS SHALL BE INSPECTED AND FILLED WITH CONCRETE AS SOON AS POSSIBLE TO AVOID EITHER SOFTENING OF THE FOUNDATION MATERIAL OR DRYING OUT BY EXPOSURE.
- F10. THE BASE OF ALL PIER HOLES SHALL BE FREE OF WATER AND CLEANED OF LOOSE MATERIAL OR DEBRIS PRIOR TO PLACEMENT OF CONCRETE. ALLOW TO PROVIDE TEMPORARY LINERS AS DEEMED NECESSARY.

CONCRETE

- C1. CARRY OUT ALL CONCRETE WORK IN ACCORDANCE WITH AS3600-2018 AND NATSPEC CONCRETE STANDARDS.

- C2. CONCRETE PROPERTIES AND COVER TO REINFORCING:

CONCRETE CONTINUED

- C3. CONCRETE PROPERTIES FOR SLABS AND BEAMS SHALL BE VARIED FROM NORMAL CLASS AS FOLLOWS:
 - MINIMUM CEMENT CONTENT 250kg/m³.
 - MAXIMUM 56 DAY SHRINKAGE STRAIN = AS NOMINATED ABOVE.
 - PRIOR TO COMMENCEMENT CONCRETE SUPPLIER TO PROVIDE DRYING SHRINKAGE TEST RESULTS FROM PRODUCTION ASSESSMENT AS EVIDENCE THAT SPECIFIED DRYING SHRINKAGE LIMITS CAN BE ACHIEVED USING NORMAL MIX DESIGN.
 - PERCENTAGE OF ENTRAPPED AIR TO BE AS FOLLOWS: FOR AGGREGATE 10mm-20mm NORMAL SIZE 8-4% IN ACCORDANCE WITH AS3600-2018 AND AS1012.4-2014 (SUBMIT TEST RESULTS) FOR ALPINE OR SUB-ALPINE AREAS.
- C4. SUBMIT FOR APPROVAL THE FOLLOWING TO THE ENGINEER:
 - CURING PROCEDURE (PVA MEMBRANES NOT PERMITTED).
 - STRIPPING AND BACK PROPPING PROCEDURE.
 - DETAILS AND LOCATION OF CONDUITS AND PENETRATIONS.
 - CONSTRUCTION JOINT LOCATIONS.
- C5. FOR TENDER PURPOSES ASSUME MINIMUM STRIPPING TIMES AND EXTENT OF BACK PROPPING AS PER AS3600-2018 & AS3610.1-2018 AND AS1012.4-2014 AS PER GENERAL NOTES FOR FORMWORK AND PROPPING.

FORMWORK FINISH CLASSIFICATION TO AS3610.1-2018:

ELEMENT	CLASS
- IN-GROUND FOOTINGS	5
- RETAINING WALLS	5 EARTH FACE
- RETAINING WALLS	2 EXPOSED FACE
- BEAMS & SLABS	2
- GRANITE TREATED SURFACES	2

SURFACE FINISHES

- FLOOR SLABS (U.N.O.)	MACHINE FLOAT
- SLABS TO BE TILED	WOOD FLOAT

- C8. COMPACT ALL CONCRETE, INCLUDING FOOTINGS AND SLABS USING MECHANICAL VIBRATORS.

- C9. PLACE CONCRETE CONTINUOUSLY BETWEEN CONSTRUCTION JOINTS SHOWN ON PLAN. DO NOT BREAK OR INTERRUPT SUCCESSIVE POURS SUCH THAT COLD JOINTS OCCUR. ANY REVISIONS OR ADDITIONS TO CONSTRUCTION JOINTS SHOWN ON PLAN REQUIRE APPROVAL FROM THE NORTHRUP CONSULTING ENGINEERS.

CONCRETE PROFILES:

- BEAM DEPTHS ARE WRITTEN FIRST AND INCLUDE THE SLAB THICKNESS.
- SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.
- NO HOLES, CHASSES OR EMBODIMENT OF PIPES OTHER THAN SHOWN IN THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF NORTHRUP CONSULTING ENGINEERS.

- PROVIDE DRIP GROOVES AT ALL EXPOSED EDGES. CHAMfers, DRIP GROOVES, REGlets ETC TO ARCHITECT'S DETAILS.

- C11. ALL PENETRATIONS TO HAVE 2/N16 TRIMMER BARS TOP AND BOTTOM TO EACH FACE. U.N.O. EXTEND TRIMMERS 600 BEYOND PENETRATION.

- C12. SETDOWNS OR FALLS IN FLOOR SURFACES ARE NOT PERMITTED UNLESS SHOWN ON DRAWINGS. MAINTAIN MINIMUM SLAB THICKNESS SHOWN ON PLAN WHERE FALLS OCCUR.

REINFORCEMENT QUALITY AND NOTATION:

REINFORCEMENT NOTATION				
SYMBOL	BAR TYPE	STRENGTH GRADE (MPa)	DUCTILITY CLASS	TO COMPLY WITH AUSTRALIAN STANDARD
N	HOT ROLLED DEFORMED RIB BAR	500	NORMAL	AS/NZS 4671-2001
R	PLAIN ROUND BAR	250	NORMAL	AS/NZS 4671-2001
SL	SQUARE MESH OF DEFORMED RIB BAR	500	LOW	AS/NZS

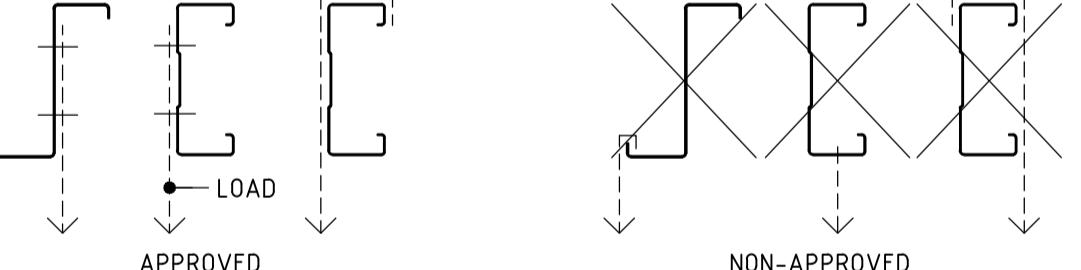
CONCRETE MASONRY

- CM1.** MASONRY CONSTRUCTION IS TO CONFORM TO AS3700-2011.
 - MORTAR CLASSIFICATION = M3
 - DURABILITY CLASSIFICATION OF BUILT IN COMPONENTS = R3
 - DURABILITY GRADE OF EXTERNAL MASONRY UNITS = GENERAL PURPOSE
- CM2.** THE CHARACTERISTIC UNCONFINED COMPRESSIVE STRENGTH OF THE MASONRY UNITS SHALL BE 15MPa OR GREATER.
- CM3.** BED UNITS IN FRESHLY PREPARED MORTAR, UNIFORMLY MIXED CEMENT, LIME AND SAND IN THE RATIO OF 1:1:6 OR 1:0.5 CONFORMING TO AS3700-2011.
- CM4.** GROUT FILL FOR BLOCKWORK:
 - COMPRESSIVE STRENGTH = N20MPa
 - MAXIMUM AGGREGATE SIZE = 10mm
 - SLUMP = 225mm
 - MINIMUM PORTLAND CEMENT CONTENT = 300kg/m³
- CM5.** CONTROL JOINTS IN REINFORCED WALLS SHALL BE PROVIDED AT 6.0m CENTRES, PROVIDE R16-400 (600 LONG) DOWELS, PAINT ONE END WITH BITUMEN & PROVIDED EXPANSION CAP.
- CM6.** THE BOTTOM COURSE OF ALL REINFORCED BLOCKWORK SHALL CONSIST OF E-SHAPED BLOCKS TO ENABLE CLEANOUT AND TYING OF STEEL.
 - FULLY BED FACE SHELLS ONLY.
 - CLEAN OUT ALL CORES AFTER EACH DAY'S LAYING.
 - ENSURE STARTER BARS ARE CORRECTLY LOCATED IN FOOTINGS.
- CM7.** MASONRY TIES SHALL GRADE 316 STAINLESS STEEL AND MEDIUM DUTY CLASSIFICATION FOR CAVITIES UP TO 60mm WIDE & HEAVY DUTY FOR CAVITIES OVER 60mm WIDE. ANY FACE FIXED TIES SHALL BE FIXED USING A SCREW FIXING AND SHALL NOT BE NAILED.
- CM8.** THE TOP COURSE OF ALL FREESTANDING HOLLOW BLOCK MASONRY SHALL CONSIST OF SOLID CAPPING BLOCKS.
- CM9.** SPACING OF MASONRY TIES:
 - ADJACENT TO WINDOWS AND RETURN WALLS = 400mm VERTICAL AND HORIZONTAL.
 - SOLID MASONRY = 400mm VERTICAL AND HORIZONTAL.
 - OTHERWISE = 800mm VERTICAL AND HORIZONTAL.
- CM10.** WHERE MASONRY ADJOINS STRUCTURAL STEEL OR PASSES A RETURN WALL ON THE INNER SKIN, INSTALL MEDIUM DUTY TIES AT 400 MAXIMUM CTS. SHOT FIX TIES TO STEELWORK.
- CM11.** MINIMUM COVER TO REINFORCEMENT FROM THE INSIDE FACE OF THE FACE SHELL IS TO BE 25mm.
- CM12.** NO AIR ENTRAINING AGENTS (BYCOL, ETC) ARE TO BE USED WITHOUT PRIOR WRITTEN PERMISSION FROM NORTHRUP CONSULTING ENGINEERS.
- CM13.** MATERIALS INCLUDING MORTAR, CONCRETE, GROUT SHALL COMPLY WITH SECTION 10 OF AS3700-2011. MASONRY UNITS SHALL COMPLY WITH AS/NZS 4551-2008. WALL TIES SHALL COMPLY WITH AS/NZS 2699.1-2000.
- CM14.** MASONRY SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 11 OF AS3700-2011.
- CM15.** ALL LINTELS SUPPORTING BLOCKWORK ARE TO BE HOT DIP GALVANISED WITH MINIMUM COATING MASS OF 600g/m². PROVIDE 1 LINTEL TO EACH WALL LEAF. DO NOT CUT ON SITE. KEEP LINTELS 6mm CLEAR OF DOOR HEADS AND WINDOW FRAMES. PACK MORTAR BETWEEN THE ANGLE UPSTAND AND SUPPORT MASONRY UNITS.
- MINIMUM BEARING EACH END OF LINTELS:**
 - SPANS 0mm to 1800mm = 200mm BEARING EACH END.
 - SPANS 1801mm to 3000mm = 400mm BEARING EACH END.
- PROPPING OF LINTELS:**
 TO PREVENT DEFLECTION OR EXCESSIVE ROTATION, TEMPORARILY PROP PROPRIETARY COLD-FORMED LINTELS UNTIL THE MASONRY REACHES ITS REQUIRED STRENGTH. MINIMUM PROPPING PERIOD IS TO BE 7 DAYS.

REPAIR OF FIELD WELDS IN HOT DIP GALVANISING

- HD1.** ALL REPAIR SHOULD BE CARRIED OUT IN ACCORDANCE WITH AS4680.
- HD2.** 8.2 REPAIR REQUIREMENTS
 SURFACES THAT REMAIN UNCOATED DURING THE GALVANIZING PROCESS AS OUTLINED ABOVE AND REQUIRE REPAIR, SHALL BE REPAIRED BY THE APPLICATION OF ONE OF THE FOLLOWING COATINGS:
 (A) ORGANIC ZINC RICH EPOXY PAINT COMPLYING WITH AS/NZS 3750.9. THIS IS TO BE APPLIED TO THE REPAIR AREAS TO TWO COATS. EACH COAT SHALL HAVE A MINIMUM DRY FILM THICKNESS OF 50μm.
 (B) INORGANIC ZINC SILICATE PAINT COMPLYING TO AS/NZS 3750.15. THIS SHALL HAVE A MINIMUM DRY FILM THICKNESS OF 100μm.
- NOTE: FOR SUBSEQUENT POWDER COATING, THESE TWO COATING REPAIR SYSTEMS SHOULD BE CAPABLE OF PASSING 1000 HOUR NEUTRAL SALT SPRAY PERFORMANCE WHEN TESTED IN ACCORDANCE WITH AS 2313.1 AND SHOULD BE STABLE UNDER POWDER COATING CURING CONDITIONS.
 (C) ZINC METAL SPRAY TO ISO 2603 OR AS/NZS 2312.
 (D) ZINC ALLOY SOLDER STICK.
- ALL OF THE ABOVE TREATMENTS SHALL BE APPLIED AS PER MANUFACTURER'S REQUIREMENTS AND SHALL INCLUDE ANY NECESSARY PRE-TREATMENT TO ENSURE GOOD ADHESION TO THE SUBSTRATE. THE COATING THICKNESS ON THE RENOVATED AREA SHALL BE A MINIMUM OF 30μm MORE THAN THE LOCAL COATING THICKNESS REQUIREMENTS IN TABLES 1 AND 2 FOR THE RELEVANT HOT DIP GALVANIZED COATING UNLESS THE PURCHASER ADVISES THE GALVANISER OTHERWISE EG. WHEN THE GALVANIZED SURFACE IS TO BE OVER COATED AND THE THICKNESS FOR RENOVATED AREAS IS TO BE THE SAME AS FOR THE HOT DIP GALVANIZED COATING.
- HD3.** THE SELECTED COATING ON THE RENOVATED AREAS SHALL BE CAPABLE OF GIVING SACRIFICIAL PROTECTION TO THE STEEL TO WHICH IT IS APPLIED.
- HD4.** IF A FURTHER COATING HAS BEEN SPECIFIED BY THE PURCHASER FOR AESTHETIC OR FURTHER PROTECTIVE PURPOSES, THE PURCHASER AND APPLICATOR OF SUCH COATINGS SHALL ASSURE THEMSELVES THAT THEY ARE COMPATIBLE WITH THE REPAIR METHODS AND MATERIALS USED IN THE REPAIR OF UNCOATED AREAS.

PURLINS AND GIRTS

- PG1.** THE SUSPENSION OF CEILINGS, SERVICES ETC FROM PURLINS AND GIRTS SHALL BE IN ACCORDANCE WITH THE APPROVED METHODS DETAILED BELOW:
- 
- PG2.** MINIMUM YIELD STRESSES OF PURLINS AND GIRTS TO BE 450MPa. SURFACE TREATMENT OF ALL PURLINS AND GIRTS TO BE 350g/m² IN ACCORDANCE WITH AS1397-2001 U.N.O. LAPS, BRIDGING, BRACKETS AND PURLIN BOLTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- PG3.** UNLESS OTHERWISE DETAILED FABRICATOR SHALL PROVIDE C10015 TRIMMER PURLINS ALONG WITH GENERAL PURPOSE BRACKETS TO SUPPORT EDGE OF ROOF SHEETING AT ALL HIPS, VALLEYS AND PENETRATIONS.
- PG4.** UNLESS OTHERWISE DETAILED, FABRICATOR SHALL ALLOW TO PROVIDE ONE ROW OF BRIDGING FOR PURLINS SPANNING UP TO 4.0m, TWO ROWS FOR PURLINS SPANNING BETWEEN 4.0m AND 8.0m AND THREE ROWS FOR SPANS GREATER THAN 8.0m INSTALLED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
- PG5.** PURLIN CLEATS SHALL GENERALLY BE MINIMUM 75mm WIDE x 8 PLATE U.N.O. WHERE THE DISTANCE BETWEEN THE UNDERSIDE OF PURLIN AND THE TOP OF THE BEAM EXCEEDS 150mm THE CLEATS SHALL BE MINIMUM 75 x 6 EA. UP TO A MAXIMUM HEIGHT OF 800mm.
- PG6.** PURLINS SHALL BE LAPPED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SHOWN ON THE DRAWINGS.

VERIFIER: TREVOR CLACK

JOB MANAGER: TREVOR CLACK

DESIGNED: ALEX FOSTER

DRAWN: JOSHUA DICK

STEEL WORK

- S1.** FABRICATE AND ERECT STRUCTURAL STEELWORK IN ACCORDANCE WITH AS4100-1998.
- S2.** PROVIDE HOLES, CLEATS AND FIXING FOR LIGHT STEEL/TIMBER FRAMING, FINISHES, ETC. SHOWN ON ARCHITECTURAL DRAWINGS.
- S3.** THESE DRAWINGS HAVE BEEN PREPARED TO INDICATE THE STRUCTURAL INTENT. THE SHOP DETAILER IS TO USE THESE DRAWINGS AS A BASIS FOR DIMENSIONAL COORDINATION WITH OTHER CONSULTANT'S DRAWINGS AND IS TO PREPARE DETAILED SHOP DRAWINGS. WHERE NECESSARY, THE SHOP DETAILER IS TO MAKE ASSUMPTIONS AND SUBMIT TO NORTHRUP CONSULTING ENGINEERS FOR RESOLUTION. SHOP DETAILER IS TO ALLOW TO RE-WORK SHOP DRAWINGS AS NECESSARY. FABRICATOR SHALL PREPARE SHOP DRAWINGS AND SUBMIT THEM TO THE BUILDER FOR THEIR APPROVAL. BUILDER SHALL LODGE TWO HARD COPIES OF APPROVED DRAWINGS TO NORTHRUP CONSULTING ENGINEERS FOR REVIEW PRIOR TO FABRICATION (ALLOW 5 WORKING DAYS FOR REVIEW).
- S4.** **TYPICAL STEELWORK CONNECTIONS (UNLESS NOTED OTHERWISE):**
- COLUMN BASE PLATES: 10 BASE PLATE, 4/M16 HILTI HIT-HY200-R CHEMICAL INJECTION ANCHORS.
 - BEAM TO TOP OF COLUMN: CAP PLATE, 2 BOLTS TO CHANNELS, 4 BOLTS TO RHS/CHS/UB/UC.
 - BEAM TO SIDE OF COLUMN: FIN PLATE, 2 BOLTS.
 - BEAM TO SIDE OF BEAM: END OR FIN PLATE, 2 BOLTS.
 - COLUMNS TO TOP OF BEAM: BASE PLATE, 2 BOLTS TO CHANNELS, 4 BOLTS TO UB/UC SECTIONS.
 - ALL ROOF & WALL BRAIDING: CLEAT PLATES, 2 BOLTS.
 - PURLINS/WALL GIRTS: 8 CLEAT PLATES, 2 PURLIN BOLTS.
- UNLESS NOTED OTHERWISE, USE:**
- 10mm BASE, GUSSET, FIN AND END PLATES
 - M20 8.8/S BOLTS, 14.6/8 GRADE TO BE USED FOR HOLD DOWN BOLTS)
 - 6mm CONTINUOUS FILLET WELDS MADE WITH E4191 MILD STEEL ELECTRODES.
 - ALL WELDS SP CATEGORY.
- S5.** NO PAINT ON MATING SURFACES WITH TF OR TB BOLTING UNLESS APPROVED BY NORTHRUP CONSULTING ENGINEERS.
- S6.** TF OR TB BOLTS TO BE INSTALLED WITH ONE HARDENED WASHER UNDER THE TURNED PART.
- S7.** USE LOAD INDICATING WASHERS FOR ALL TF AND TB CONNECTIONS.
- S8.** ALL BOLTS, SCREWS, HOLD DOWN BOLTS, MASONRY ANCHORS SHALL BE HOT DIP GALVANISED TO AS1214-1983, AS/NZS 4534-2006, AS/NZS 4680-2006 & AS/NZS 4792-2006. NO CONNECTION SHALL HAVE LESS THAN 2 BOLTS. ALL BOLTS AND WASHERS SHALL BE GALVANISED. ALL HOLES SHALL BE 2mm LARGER THAN THE BOLT DIAMETER UNLESS NOTED OTHERWISE.

S9. **MINIMUM YIELD STRESS:**

- HOT ROLLED SECTIONS = 300MPa.
- SQUARE HOLLOW SECTIONS = 350MPa.
- RECTANGULAR HOLLOW SECTIONS = 350MPa.
- CIRCULAR HOLLOW SECTION = 250MPa.
- HOT ROLLED PLATE = 250MPa.

S10. COLD FORMED SECTIONS TO CONFORM WITH:

- AS/NZS 1594-2002, AS/NZS 1595-1998, AS/NZS 4600-2005 AND AS1397-2001, AS1397, AS/NZS1594 AND AS/NZS1595.
- MINIMUM YIELD STRESSES SECTIONS 450MPa.

S11. **SURFACE TREATMENT UNLESS NOTED OTHERWISE:**

- PROTECTED FROM WEATHER = AS/NZS 2312-I2S2.
- EXPOSED TO WEATHER = AS/NZS 2312-HDG600.
- BUILT INTO THE INTERNAL SKIN OF EXTERNAL WALLS = AS/NZS 2312-HDG600.

S12. UNLESS OTHERWISE DETAILED, FABRICATOR SHALL PROVIDE 100 15 TRIMMER PURLINS ALONG WITH GENERAL PURPOSE BRACKETS TO SUPPORT EDGE OF ROOF SHEETING AT ALL HIPS, VALLEYS AND PENETRATIONS.

- S13.** FIX CROSS BRACING TO PURLINS AT 3000 MAX CENTRES WITH M10 BOLTS OR M6 HOOKS. BOLTS ARE TO BE MECHANICALLY FIXED TO PURLINS, WITH HOOKS TO BE LOOSED THROUGH THE WEB OF THE PURLINS AND SECURED USING A NUT TO ENSURE THEY WILL NOT BECOME LOOSE DURING MOVEMENT OF THE ROOF. ALTERNATIVELY, GALVANISED STRAP MAY BE USED TO SECURE THE BRACING. THE STRAP IS TO BE INSTALLED TO LIFT THE BRACE SUCH THAT IT IS PLUMB, WITH THE BRACE SCREW FIXED TO THE WEB OF THE PURLIN AT BOTH ENDS USING 2/12-16 TEKS SCREWS.

S14. ALL BURIED STEELWORK TO BE TREATED BY:

- THE APPLICATION OF A SINGLE COAT OF INTERNATIONAL PROTECTIVE COATINGS INTERZONE 954 APPLIED TO BARE CLEAN STEEL (THICKNESS 300-400 MICRONS). APPLY TO WHOLE OF RELEVANT MEMBER, TOP COAT IF REQUIRED BY ARCHITECT FOR VISUAL APPEARANCE.
- THE APPLICATION OF HDG AS SPECIFIED IN S11 ABOVE FOLLOWED BY AN APPLICATION OF TWO COATS OF INTERNATIONAL PROTECTIVE COATINGS INTERPLUS 1180 (EACH COAT 150-250 MICRONS) WHERE BURIED IN THE GROUND.

THEN

- S15.** STEELWORK TO BE CONCRETE ENCAUSED FOR FIRE RATING PURPOSES SHALL BE FREE FROM ALL LOOSE RUST, LOOSE MILL SCALE, DIRT, OIL, GREASE, ETC. AND REINFORCED WITH SL14 FABRIC OR EQUIVALENT BLACK IRON WIRE, 3mm DIA.

S16. **BOLT SYMBOLS:**

- 4.6/S = GRADE 4.6 BOLT / SNUG TIGHTENED.
- 8.8/S = GRADE 8.8 BOLT / SNUG TIGHTENED.
- 8.8/TB = GRADE 8.8 BOLT / FULLY TENSIONED BEARING TYPE (USE LOAD INDICATOR WASHERS).
- 8.8/TB = GRADE 8.8 BOLT / FULLY TENSIONED BEARING TYPE (USE LOAD INDICATOR WASHERS).

S17. THE CONTRACTOR SHALL SUPPLY WRITTEN CERTIFICATION TO THE STRUCTURAL ENGINEER PRIOR TO THE ERECTION OF ANY STRUCTURAL STEEL STATING THAT THE BOLTS PROPOSED TO BE USED COMPLY WITH AS/NZS 1252-1996. HIGH STRENGTH BOLTS (8.8) ARE NOT TO BE WELDED.

S18. THE FABRICATION AND ERECTION OF THE STRUCTURAL STEEL WORK SHALL BE SUPERVISED BY A QUALIFIED PERSON EXPERIENCED IN SUCH SUPERVISION, IN ORDER TO ENSURE THAT ALL REQUIREMENTS OF THE DESIGN ARE MET.

S19. ALL MEMBERS SHALL BE SUPPLIED IN SINGLE LENGTHS. SPLICES SHALL ONLY BE PERMITTED IN LOCATIONS SHOWN ON THE STRUCTURAL DRAWINGS.

S20. ALL BUTT WELDS SHALL BE COMPLETE PENETRATION BUTT WELDS CATEGORY SP TO AS1554.1-2004 U.N.O. THE EXTENT ON NON-DESTRUCTIVE WELD EXAMINATION SHALL BE AS NOTED BELOW:

- RADIOGRAPHIC OR ULTRASONIC EXAMINATION SHALL BE TO AS/NZS 1554.1-2004, AS 2177-2006 AND AS2207-2007 AS APPROPRIATE.

S21. GROUT ALL STEEL BASES BY DRY PACKING USING GROUT WHICH IS NON-SHRINK AND HAS A MINIMUM COMPRESSIVE STRENGTH AT 7 DAYS OF 40MPa.

S22. PROVIDE SEAL PLATES TO THE ENDS OF ALL HOLLOW SECTIONS, WITH 'BREATHER' HOLES IF MEMBERS ARE TO BE HOT DIP GALVANISED.

S23. THESE DRAWINGS MAY NOT IDENTIFY ALL SECONDARY STEELWORK ELEMENTS THAT ARE REQUIRED FOR SUPPORT, FIXING AND FINISHING OF GLAZING, CLADDING AND LINING. THE TENDERER IS RESPONSIBLE FOR THE INCLUSION OF SUCH STEELWORK ELEMENTS TO THE EXTENT REQUIRED ON THE ARCHITECT'S DRAWINGS.

S24. **IMPORTED STRUCTURAL STEEL MATERIAL:**

- ALL STRUCTURAL STEELWORK USED ON THIS PROJECT SHALL BE COMPLIANT WITH AS4100, AND IN PARTICULAR:

- CERTIFIED MILL TEST REPORTS, OR TEST CERTIFICATES SHALL BE PROVIDED AS EVIDENCE OF COMPLIANCE WITH THE STANDARDS REFERRED TO IN AS4100. THESE CERTIFICATES SHALL BE SUBMITTED TO NORTHRUP CONSULTING ENGINEERS FOR APPROVAL PRIOR TO COMMENCEMENT OF FABRICATION.
- PROVIDE TEST CERTIFICATE FOR COMPLIANCE FOR ALL FASTENERS. THESE CERTIFICATES SHALL BE SUBMITTED TO NORTHRUP CONSULTING ENGINEERS FOR APPROVAL PRIOR TO FABRICATION.
- FOR COLD FORMED SECTION A 'CERTIFICATE OF CONFORMITY TO AS163-1997' SHALL BE SUBMITTED TO NORTHRUP CONSULTING ENGINEERS FOR APPROVAL PRIOR TO FABRICATION.

- CERTIFICATES SHALL ONLY BE ACCEPTED FROM TESTING COMPANIES ACCREDITED BY A TESTING AUTHORITY RECOGNISED IN AUSTRALIA, EG NATA OR JAS-ANZ CERTIFIED.
- UNIDENTIFIED STEEL IS ANY STEEL THAT IS NOT ACCOMPANIED WITH EVIDENCE STATING COMPLIANCE WITH THE REQUIREMENT OF AS4100 SHALL ONLY BE USED STRICTLY IN ACCORDANCE WITH CLAUSE 2.2.3 OF AS4100.

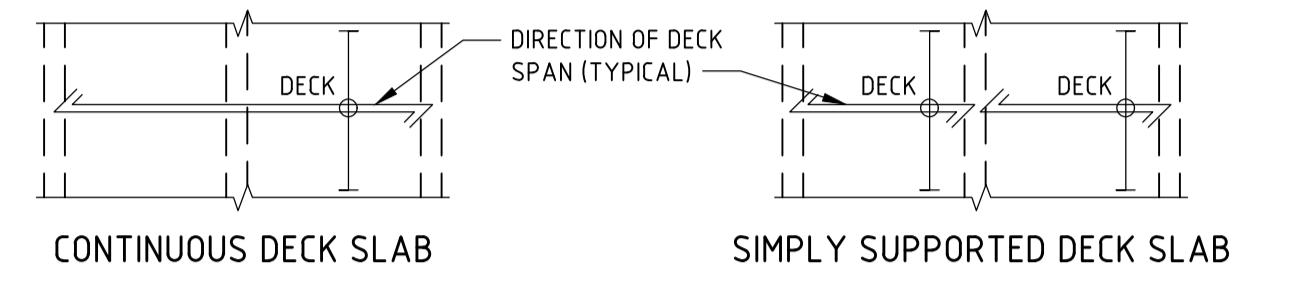
- IF MATERIALS SUPPLIED AND INSTALLED ARE SUBSEQUENTLY PROVEN TO BE NON-COMPLIANT WITH THE SPECIFIED AUSTRALIAN STANDARDS IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND COST TO UNDERTAKE NATA OR EQUIVALENT CERTIFIED TESTING TO PROVE CONFORMANCE TO THE AUSTRALIAN STANDARDS AND DESIGN SPECIFICATIONS. SIMILARLY ANY RECTIFICATION WORKS THAT MAY SUBSEQUENTLY BE REQUIRED TO SATISFY AUSTRALIAN CODE REQUIREMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

METAL DECK ROOF

- M1.** OBSERVE MANUFACTURER'S RECOMMENDATIONS FOR APPROPRIATE NUMBER AND TYPE OF ROOF SCREWS.
- M2.** SHEETS PLACED ADJACENT TO GABLE ENDS ARE TO BE TREATED AS END SHEETS FOR THE REQUIREMENT FOR ADDITIONAL FIXINGS AS PER MANUFACTURER'S RECOMMENDATIONS.
- M3.** WHERE BATTENS ARE TO BE USED THE NUMBER OF FIXINGS BETWEEN THE SHEETING & BATTENS ON AN AREA BASIS IS TO BE MATCHED FOR THE CONNECTION BETWEEN THE BATTENS & PURLINS. IF THE ROOF BATTEN IS UNABLE TO TAKE THE SAME CAPACITY OF FIXINGS PROVIDE ADDITIONAL SUPPLEMENTARY HOLD DOWNS.
- M4.** PROVIDE EXPANSION JOINTS IN THE ROOF SHEETING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

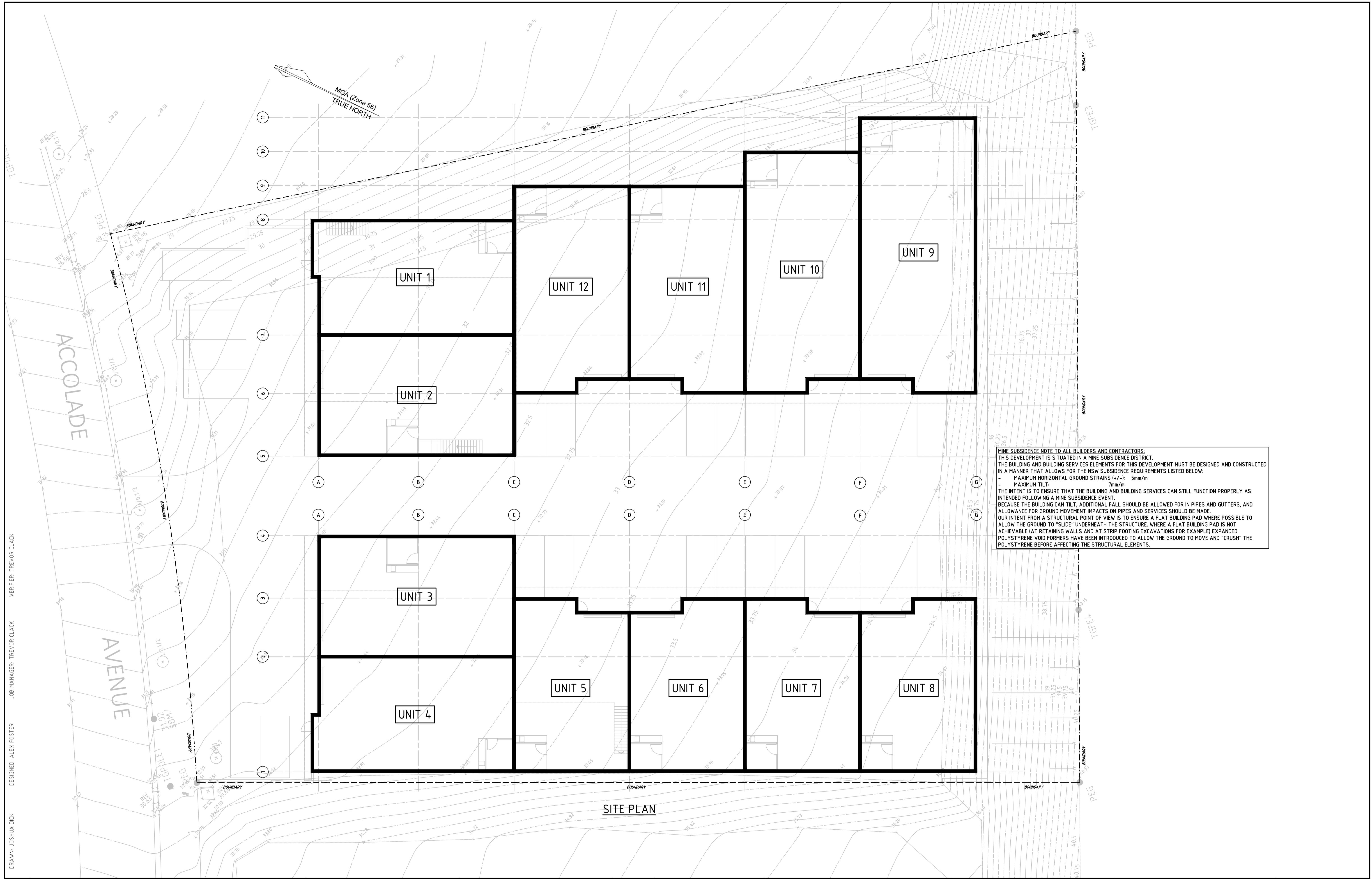
STEEL DECK FORMWORK (BONDEK or CONDECK)

- B1.** STEEL DECKING TO BE INSTALLED STRICTLY IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
- B2.** REFER TO PLAN FOR STEEL DECKING SPECIFICATION. CONTRACTOR MAY SUBMIT FOR APPROVAL EQUIVALENT DECKING PRODUCTS.
- B3.** PROVIDE 50mm MINIMUM BEARING AT SUPPORTS.
- B4.** AT ALL RE-ENTRANT CORNERS PROVIDE 3/N12 TRIMMERS 2000 LONG TIED TO UNDERSIDE OF MESH.
- B5.** UNLESS NOTED OTHERWISE, PROVIDE TEMPORARY PROPPING OF DECK IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.



WORKPLACE HEALTH AND SAFETY

- WHS1.** THE CONTRACTOR AND ALL SUBCONTRACTORS ARE RESPONSIBLE FOR CONSTRUCTING THE WORK IN ACCORDANCE WITH THE WORK HEALTH AND SAFETY (WHS) ACT 2011, WHS REGULATIONS 2017, RELEVANT CODES OF PRACTICE, AUSTRALIAN STANDARDS AND OTHER REGULATORY REQUIREMENTS. THE PRINCIPLE CONTRACTOR MUST INFORM ALL STAKEHOLDERS, INCLUDING NORTHRUP, OF NEW HAZARDS IDENTIFIED IN THE COURSE OF PLANNING AND UNDERTAKING THE WORKS.
- WHS2.** DURING THE DESIGN OF THE STRUCTURE NORTHRUP HAS IDENTIFIED RESIDUAL HAZARDS RELATING TO THE DESIGN OF THE STRUCTURAL WORKS THAT WE CONSIDER TO BE UNUSUAL OR NON-TYPICAL. HAZARDS WHICH ARE NORMAL WORKPLACE HAZARDS, ARE TO BE MANAGED BY PERSONS IN CONTROL OF THE WORKPLACE THROUGH A WHS SYSTEM TO MANAGE THE NORMAL HAZARDS ASSOCIATED WITH CONSTRUCTION, USE AND MAINTENANCE OF THE STRUCTURE. THE RESIDUAL HAZARDS IDENTIFIED ON THE NORTHRUP DRAWINGS ARE NOT AN ENTIRE ASSESSMENT OF HAZARDS, AND DO NOT RELIEVE OTHER PARTIES OR STAKEHOLDERS OF THEIR RESPONSIBILITY UNDER THE WHS ACT 2011, WHS REGULATIONS 2017, AND THE CODE OF PRACT

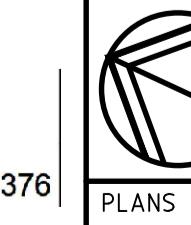


REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	PRELIMINARY	JD		AF	14.05.21
A	FOR CONSTRUCTION	JD	TC	AF	25.06.21
B	FOR CONSTRUCTION	JD	TC	AF	06.07.21
C	REVISED FOR CONSTRUCTION	JD	TC	AF	21.09.21

AIQUA

MJC
M.J.CASSIDY & ASSOC. PTY LTD. 0437291376

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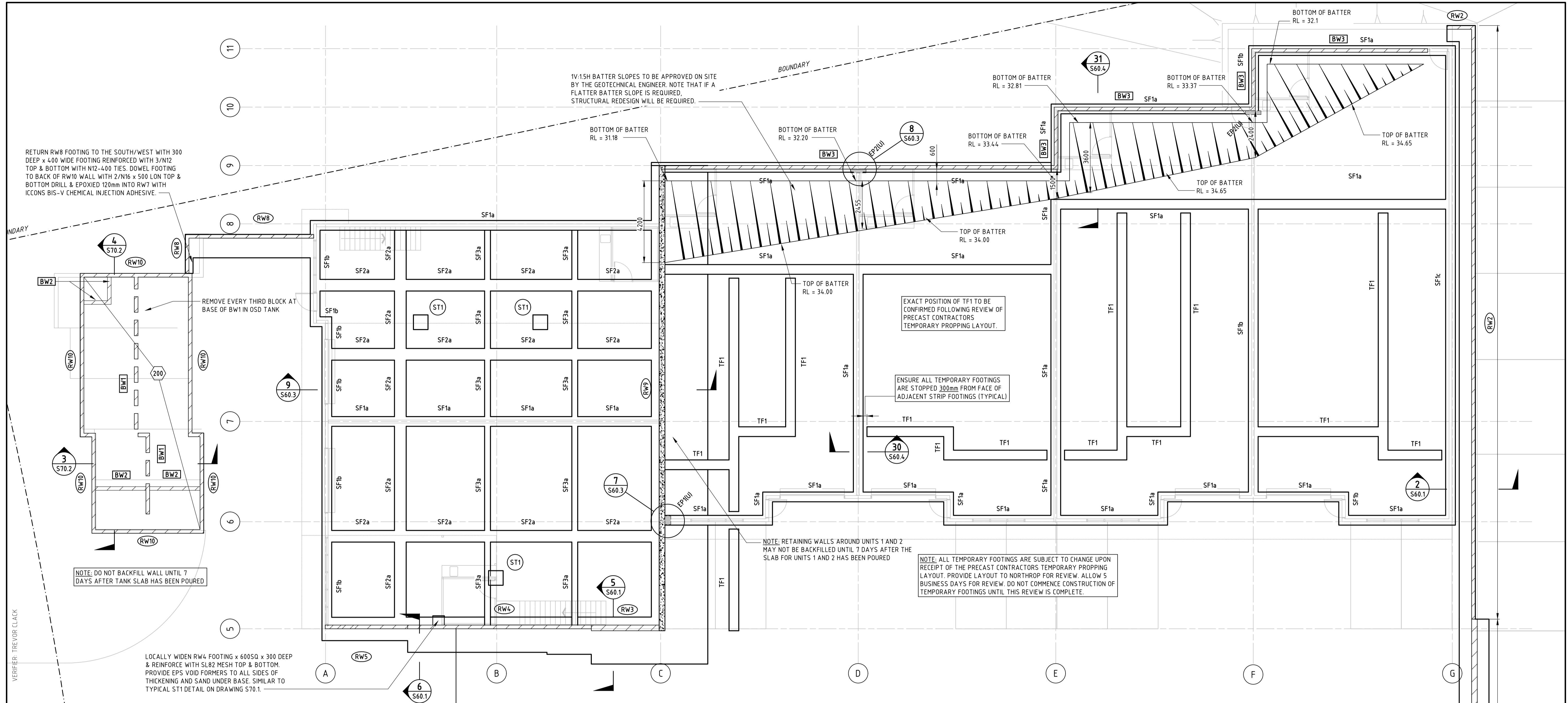
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PROJECT
PROPOSED DEVELOPMENT
43 ACCOLADE AVENUE
MORRISET, NSW 2264

SITE PLAN

JOB NUMBER
NL202902
DRAWING NUMBER
S05.1 | REVISION
C
DRAWING SHEET SIZE = A1



EAST BUILDING FOUNDATION PLAN

THE BUILDER IS TO ENGAGE A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER TO CONFIRM THAT FOUNDING MATERIALS MEET THE FOLLOWING REQUIREMENTS PRIOR TO PLACING OF REINFORCEMENT:

- SITE CLASSIFICATION = CLASS H2
- COMPACTION LEVEL = 98% STANDARD
- BEARING CAPACITY OF FOUNDING MATERIAL = 150kPa
- RETAINING WALL PARAMETERS OUTLINED ON DRAWING S60.1.

DENOTES ARCHITECTURAL WALLS OVER

DENOTES CORE FILLED REINFORCED RETAINING WALL (& WALL TYPE)

DENOTES OFF-FORM CONCRETE RETAINING WALL (& WALL TYPE)

DENOTES CORE FILLED REINFORCED BLOCKWORK WALL (& WALL TYPE)

DENOTES EXTENT OF 200 THICK SLAB, REINFORCED WITH SL92 MESH TOP & BOTTOM. REFER TO DRAWING S70.2 FOR DETAILS.

DENOTES PROPOSED 1.5 HORIZONTAL : 1.0 VERTICAL MAXIMUM PERMANENT BATTER

MEMBER SCHEDULE		
MARK	SIZE	COMMENTS
RETAINING WALL		
RW1	190/290 BLOCKWORK WALL	REFER TO DRAWING S60.2 FOR DETAILS
RW2	190 BLOCKWORK WALL	REFER TO DRAWING S60.2 FOR DETAILS
RW3	190/290 BLOCKWORK WALL	REFER TO DRAWING S60.1 FOR DETAILS
RW4	190 BLOCKWORK WALL	REFER TO DRAWING S60.1 FOR DETAILS
RW5	190 BLOCKWORK WALL	REFER TO DRAWING S60.1 FOR DETAILS
RW6	190 BLOCKWORK WALL	REFER TO DRAWING S60.2 FOR DETAILS
RW7	190 BLOCKWORK WALL	REFER TO DRAWING S60.2 FOR DETAILS
RW8	190 BLOCKWORK WALL	REFER TO DRAWING S60.3 FOR DETAILS
RW9	300 THICK OFF-FORM CONCRETE	REFER TO DRAWING S60.3 FOR DETAILS
RW10	190 BLOCKWORK WALL	REFER TO DRAWING S70.2 FOR DETAILS
RW11	190/290 BLOCKWORK WALL	REFER TO DRAWING S60.4 FOR DETAILS
BLOCKWORK WALL		
BW1	FULL HEIGHT 190 BLOCKWORK WALL	REFER TO SECTION 3 ON DRAWING S70.2 FOR DETAILS
BW2	LOW HEIGHT 190 BLOCKWORK WALL	REFER TO SECTION 4 ON DRAWING S70.2 FOR DETAILS
BW3	FULL HEIGHT 190 BLOCKWORK WALL	REFER TO SECTION 31 ON DRAWING S60.4 FOR DETAILS
ENGAGED PIERS		
EP1	300x450 OFF FORM CONCRETE	REFER TO DETAIL 7 ON DRAWING S60.3 FOR DETAILS
EP2	190x400 BLOCKWORK	REFER TO DETAIL 8 ON DRAWING S60.3 FOR DETAILS

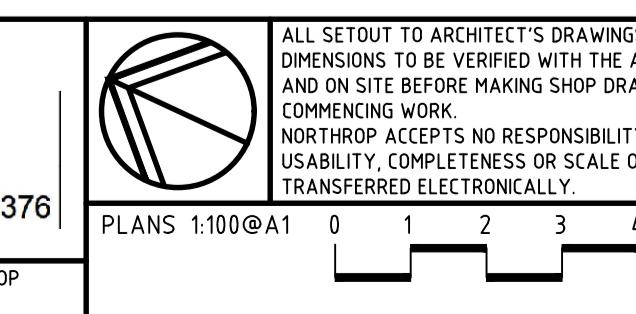
MEMBER SCHEDULE		
MARK	SIZE	COMMENTS
STRIP FOOTING		
SF1a	400 DEEP x 500 WIDE	REFER TO SECTION 9 ON DRAWING S60.3 FOR DETAILS. PROVIDE 100mm THICK EPS VOID FORMERS TO SIDES OF FOOTINGS.
SF1b	400 DEEP x 500 WIDE	SIMILAR TO SF1a. PROVIDE 200mm THICK EPS VOID FORMERS TO SIDES OF FOOTINGS.
SF1c	400 DEEP x 500 WIDE	SIMILAR TO SF1a. PROVIDE 200mm THICK EPS VOID FORMERS TO SIDES OF FOOTINGS.
SF2a	400 DEEP x 600 WIDE	REFER TO SECTION 9 ON DRAWING S60.3 FOR DETAILS. PROVIDE 100mm THICK EPS VOID FORMERS TO SIDES OF FOOTINGS.
SF3a	400 DEEP x 300 WIDE	REFER TO SECTION 9 ON DRAWING S60.3 FOR DETAILS. PROVIDE 100mm THICK EPS VOID FORMERS TO SIDES OF FOOTINGS.
TEMPORARY FOOTING		
TF1	600 DEEP x 600 WIDE	REINFORCED WITH 3/N12 TOP & BOTTOM WITH R10-300 CLOSED TIES
SLAB THICKENING		
ST1	300 DEEP x 750 SQUARE	

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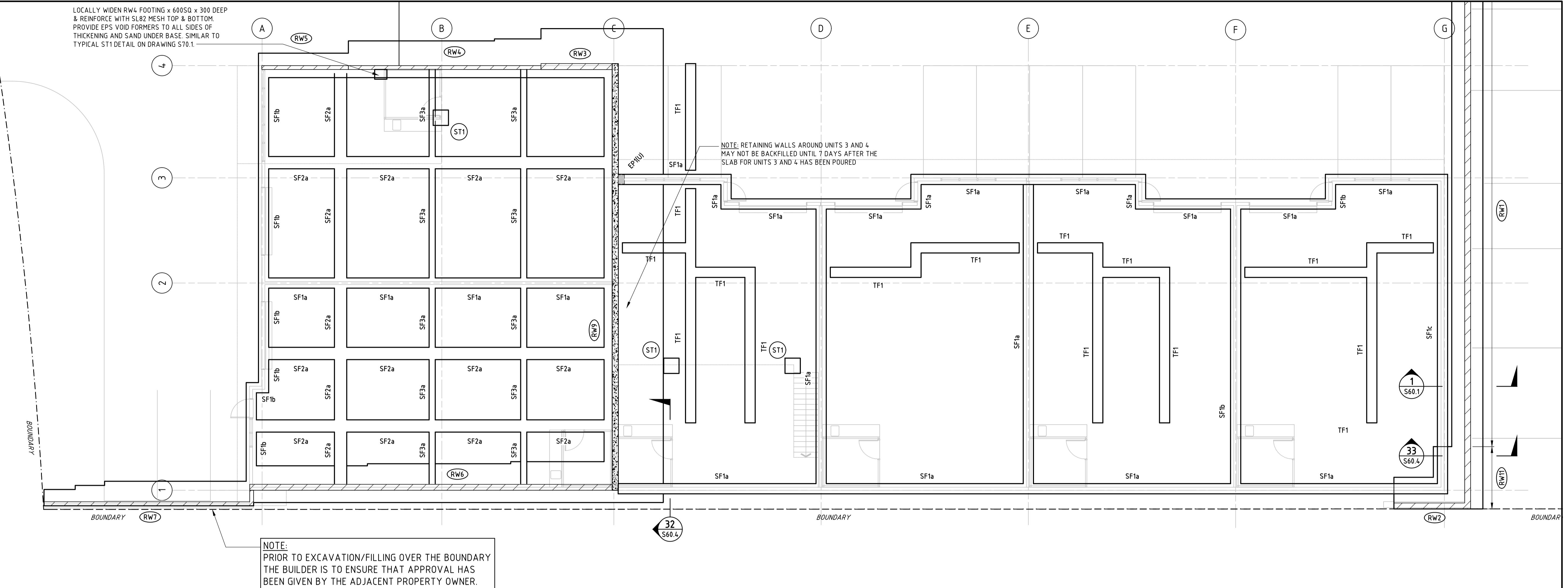
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PROJECT
PROPOSED DEVELOPMENT
43 ACCOLADE AVENUE
MORRISET, NSW 2264

DRAWING TITLE
EAST BUILDING FOUNDATION PLAN

JOB NUMBER
NL202902
DRAWING NUMBER
S10.1
REVISION
C
DRAWING SHEET SIZE = A1



WEST BUILDING FOUNDATION PLAN

REFER TO DRAWING S20.1 FOR LEGEND & SCHEDULE

VERIFIER: TREVOR CLACK

JOB MANAGER: TREVOR CLACK

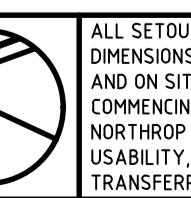
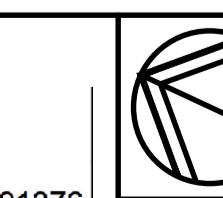
DESIGNED: ALEX FOSTER

DRAWN: JOSHUA DICK

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	BUILDING DESIGNER	ALL SETOUT TO ARCHITECT'S DRAWINGS, DRAUGHTS AND SPECIFICATIONS ARE TO BE VERIFIED WITH THE ARCHITECT AND ON SITE BEFORE MAKING SHOP DRAWINGS OR COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.	PLANS 1:100@A1	PROJECT	DRAWING TITLE	JOB NUMBER	
1	PRELIMINARY	JD		AF	14.05.21					0 1 2 3 4 5m			NL202902
A	FOR CONSTRUCTION	JD	TC	AF	25.06.21	AIQUA	M.J.CASSIDY & ASSOC. PTY.LTD. 0437291376						
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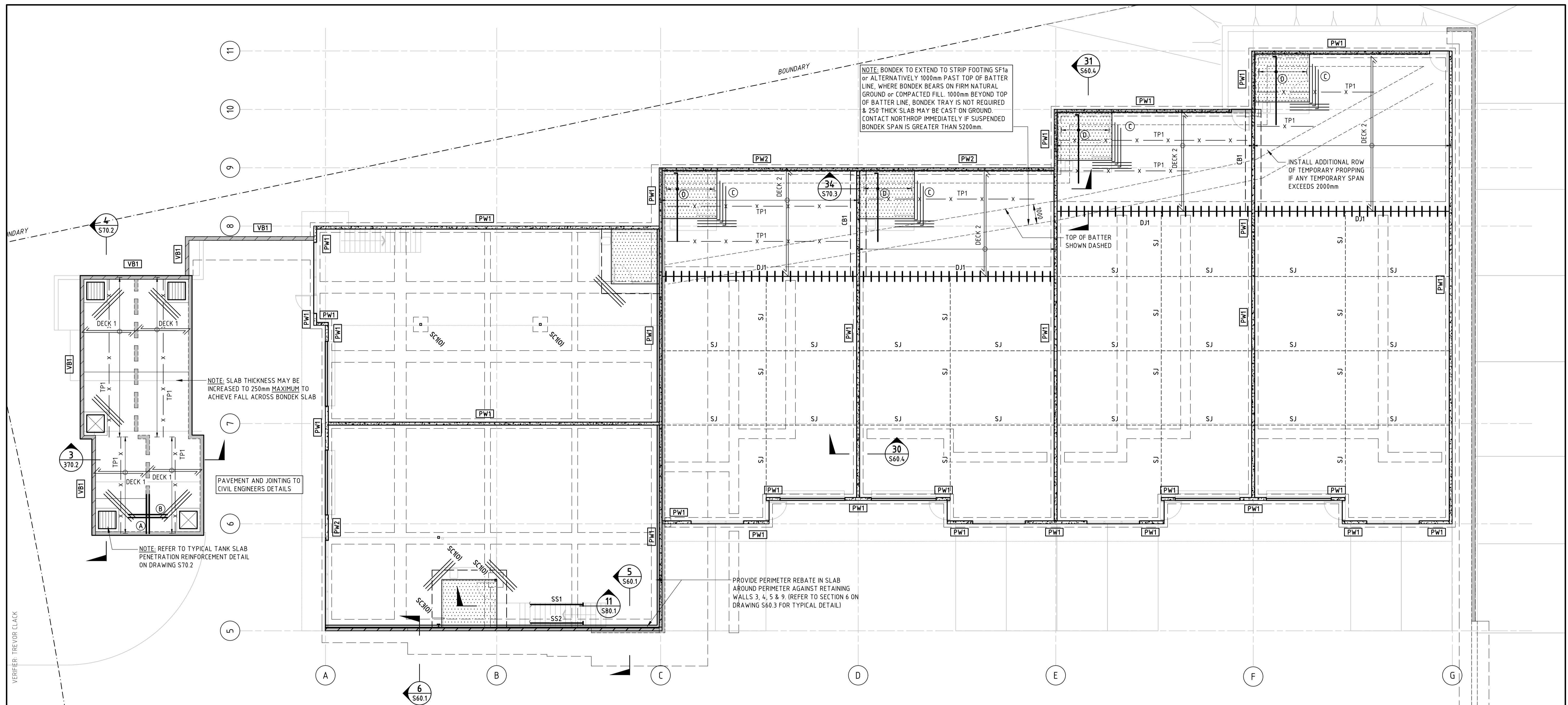


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PROPOSED DEVELOPMENT
43 ACCOLADE AVENUE
MORRISET, NSW 2264

WEST BUILDING
FOUNDATION PLAN

S10.2 C
DRAWING NUMBER
REVISION
DRAWING SHEET SIZE = A1



EAST BUILDING GROUND FLOOR SLAB PLAN

ALL SLABS (UNLESS NOTED OTHERWISE) TO BE 150 THICK, REINFORCED WITH SL92 MESH TOP, EAST SLABS ON 0.2mm POLYTHENE MEMBRANE LAID OVER A 100mm LAYER OF FINE GRAINED SAND OVER FIRM NATURAL GROUND or COMPACTED FILL. FILL TO BE COMPACTED TO 98% STANDARD.

THE BUILDER IS TO ENGAGE A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER TO CONFIRM THAT FOUNDING MATERIALS MEET THE FOLLOWING REQUIREMENTS PRIOR TO PLACING OF REINFORCEMENT:

- SITE CLASSIFICATION = CLASS H2
- COMPACTION LEVEL = 98% STANDARD
- BEARING CAPACITY OF FOUNDING MATERIAL = 150kPa

DENOTES EXTENT OF 190 THICK SLAB ON GROUND REINFORCED WITH SL92 MESH TOP & BOTTOM, CAST SLABS ON 0.2mm POLYTHENE MEMBRANE LAID OVER 100mm LAYER OF FINE GRAINED SAND OVER FIRM NATURAL GROUND or COMPACTED FILL.

DENOTES 40mm SET DOWN IN FLOOR FOR WET AREAS.

DENOTES 3-L11TM 2000 LONG or 3N12 2000 LONG TRIMMER BARS TIED TO UNDERSIDE OF MESH AT ALL RE-ENTRANT CORNERS

DENOTES STEEL COLUMNS OVER

DENOTES ARCHITECTURAL WALLS OVER

DENOTES LOADBEARING CONCRETE WALL OVER (& WALL TYPE)

DENOTES CORE FILLED REINFORCED 190 BLOCKWORK VEHICLE BARRIER

DENOTES LOADBEARING WALL UNDER

DENOTES EXTENT OF 200 THICK SUSPENDED 10mm BONDEK SLAB WITH N12-300 EACH WAY TOP, N12-400 EACH WAY BOTTOM AND ADDITIONAL REINFORCEMENT AS NOTED ON PLAN. PROVIDE 1 ROW OF PROPPING AT MID SPAN.

DENOTES EXTENT OF 250 THICK SUSPENDED 10mm BONDEK SLAB WITH N12-200 EACH WAY TOP, N16-200 BOTTOM PARALLEL WITH BONDEK RIBS, N12-400 BOTTOM PERPENDICULAR WITH BONDEK RIBS AND ADDITIONAL REINFORCEMENT AS NOTED ON PLAN. SLAB TO BE REDUCED TO 210 THICK AT WET AREAS AS SHOWN.

DENOTES EXTENT OF TEMPORARY PROPPING FOR BONDEK SLABS

DENOTES 2/N16 x 2000 LONG EXTRA BOTTOM. ENSURE BOTTOM BARS WHICH ARE PERPENDICULAR TO BONDEK RIBS HAVE 30mm COVER TO TOP OF RIBS.

DENOTES 2/N16 x 2000 LONG EXTRA TOP

DENOTES 3/N12 x 2000 LONG EXTRA TIED TO UNDERSIDE OF TOP MESH WITH 150 LONG COG AT SLAB EDGE

DENOTES N16-400 ADDITIONAL BARS BOTTOM PARALLEL WITH BONDEK RIBS

DENOTES SAWN JOINT (REFER TO DRAWING S70.1 FOR DETAILS)

DENOTES DOWEL JOINT DJ1. REFER TO TYPICAL DETAIL ON DRAWING S70.1 FOR DETAILS.

DENOTES DOWEL JOINT DJ2. N16-400 x 500 LONG INTO CAST-IN FERRULES INTO PRECAST PANELS.

MEMBER SCHEDULE		
MARK	SIZE	COMMENTS
VEHICLE BARRIER		
VB1	190 CORE FILLED REINFORCED BLOCKWORK	REFER TO SECTION 4 ON DRAWING S70.2 FOR DETAILS
STAIR STRINGER		
SS1	230 PFC	
SS2	230 WIDE x 10mm THICK PLATE	FIXED TO FACE OF WALL WITH 2M12 BOLTS @ 900 CTS INTO FERRULES CAST INTO PRECAST WALL PANELS
STEEL COLUMN		
SC1	100x100x5.0 SHS	
SC3	150 UC 30.0	PROVIDE M16 BOLTS EACH SIDE. DRILL & EPOXY 120mm INTO BLOCKWORK @ 400 VERTICAL CTS
CONCRETE BEAM		
CB1	350/390 THICK x 800 WIDE SUSPENDED 10mm BONDEK BEAM.	REFER TO SECTION 34 ON DRAWING S70.3 FOR DETAILS

DRAWN: JOSHUA DICK

DESIGNED: ALEX FOSTER

VERIFIED: TREVOR CLACK

JOB MANAGER: TREVOR CLACK

NOTE: BONDEK TO EXTEND TO STRIP FOOTING SF1a OR ALTERNATIVELY 1000mm PAST TOP OF BATTER LINE, WHERE BONDEK BEARS ON FIRM NATURAL GROUND or COMPACTED FILL. 1000mm BEYOND TOP OF BATTER LINE, BONDEK TRAY IS NOT REQUIRED & 250 THICK SLAB MAY BE CAST ON GROUND. CONTACT NORTHROP IMMEDIATELY IF SUSPENDED BONDEK SPAN IS GREATER THAN 5200mm.

REVISION DESCRIPTION ISSUED VER'D APP'D DATE

1	PRELIMINARY	JD	AF	14.05.21
A	FOR CONSTRUCTION	JD	TC	AF 25.06.21
B	REVISED FOR CONSTRUCTION	JD	TC	AF 06.07.21
C	REVISED FOR CONSTRUCTION	JD	TC	AF 21.09.21

AIQUA
BUILDING DESIGNER
M.J.CASSIDY & ASSOC. PTY.LTD. 0437291376

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M.J.C
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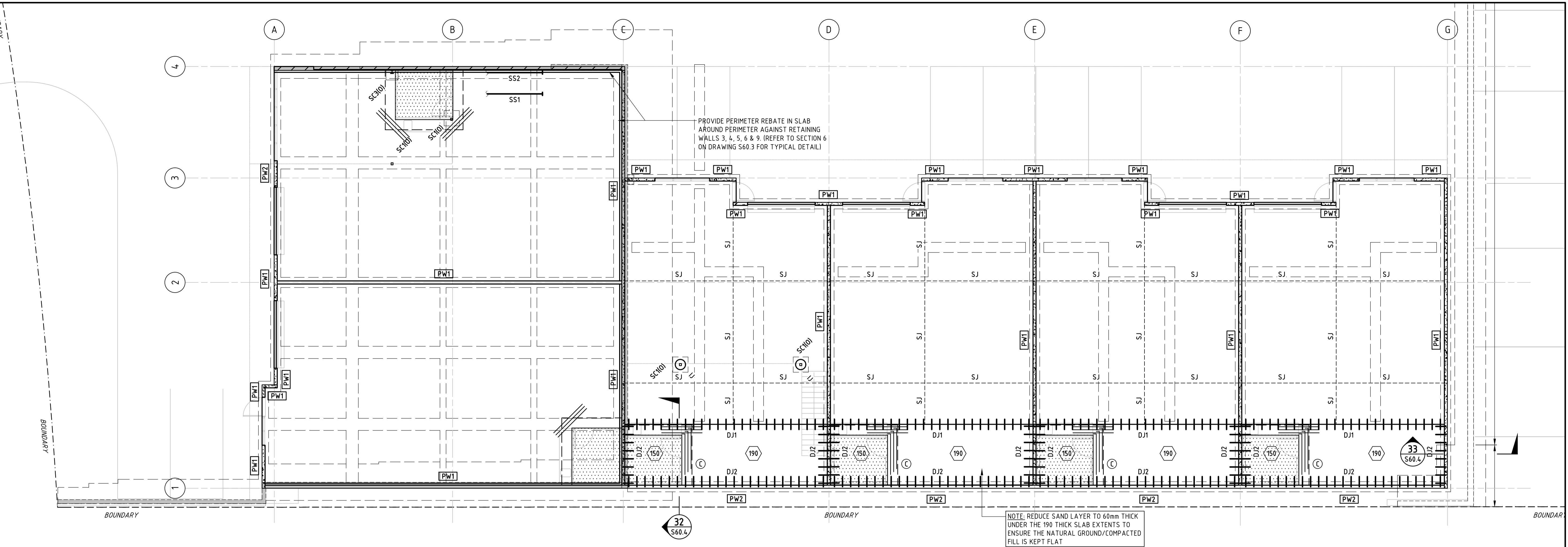
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Suite 4, 257-259 Central Coast Hwy, Erina, NSW 2250
Ph (02) 4365 1668
Email centralcoast@northrop.com.au ABN 81 094 433 100

PROJECT
PROPOSED DEVELOPMENT
43 ACCOLADE AVENUE
MORRISET, NSW 2264

DRAWING TITLE
EAST BUILDING
GROUND FLOOR SLAB PLAN

JOB NUMBER
NL202902
DRAWING NUMBER
S20.1
REVISION
C
DRAWING SHEET SIZE = A1



WEST BUILDING GROUND FLOOR SLAB PLAN

REFER TO DRAWING S20.1 FOR LEGEND & SCHEDULE

VERIFIER: TREVOR CLACK

3 MANAGER: TREVOR CLACK

DESIGNED: ALEX FOSTER

DRAWN: JOSHUA DICK

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT
1	PRELIMINARY	JD		AF	14.05.21	
A	FOR CONSTRUCTION	JD	TC	AF	25.06.21	
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C	REVISED FOR CONSTRUCTION	JD	TC	AF	21.09.21	
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BUILDING DESIGNER

291376		<p>ALL SETOUT TO ARCHITECT'S DRAWINGS, DIMENSIONS TO BE VERIFIED WITH THE ARCHITECT AND ON SITE BEFORE MAKING SHOP DRAWINGS COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.</p>
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The logo consists of a dark grey circular graphic on the left, which has a bright white inner circle and a thin white outline. To the right of this graphic, the word "NORTHROP" is written in a bold, white, sans-serif font. The letter "O" in "NORTHROP" is partially obscured by the circular graphic. The entire logo is set against a solid red rectangular background.

PROJECT

PROPOSED DEVELOPMENT

43 ACCOLADE AVENUE

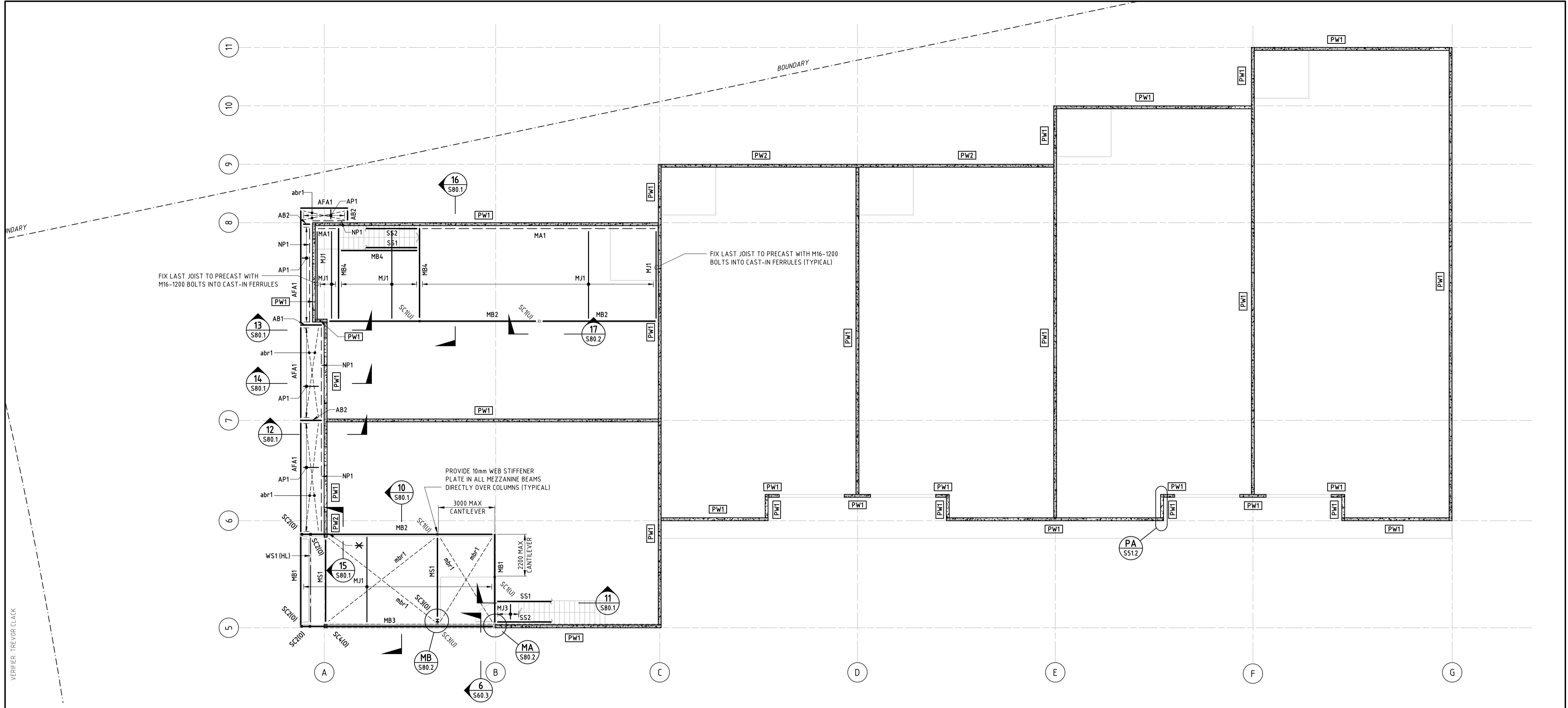
MORRISET, NSW 2264

WING TITLE

WEST BUILDING

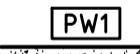
GROUND FLOOR SLAB PLAN

JOB NUMBER	
NL202902	
DRAWING NUMBER	REVISION
S20.2	C
DRAWING SHEET SIZE = A1	

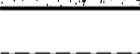


EAST BUILDING MEZZANINE FRAMING PLAN

DENOTES ARCHITECTURAL WALLS OVER



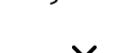
DENOTES LOADBEARING CONCRETE WALL OVER (& WALL TYPE)



DENOTES LOADBEARING WALL UNDER



DENOTES STEEL COLUMN OVER



DENOTES STEEL COLUMN UNDER

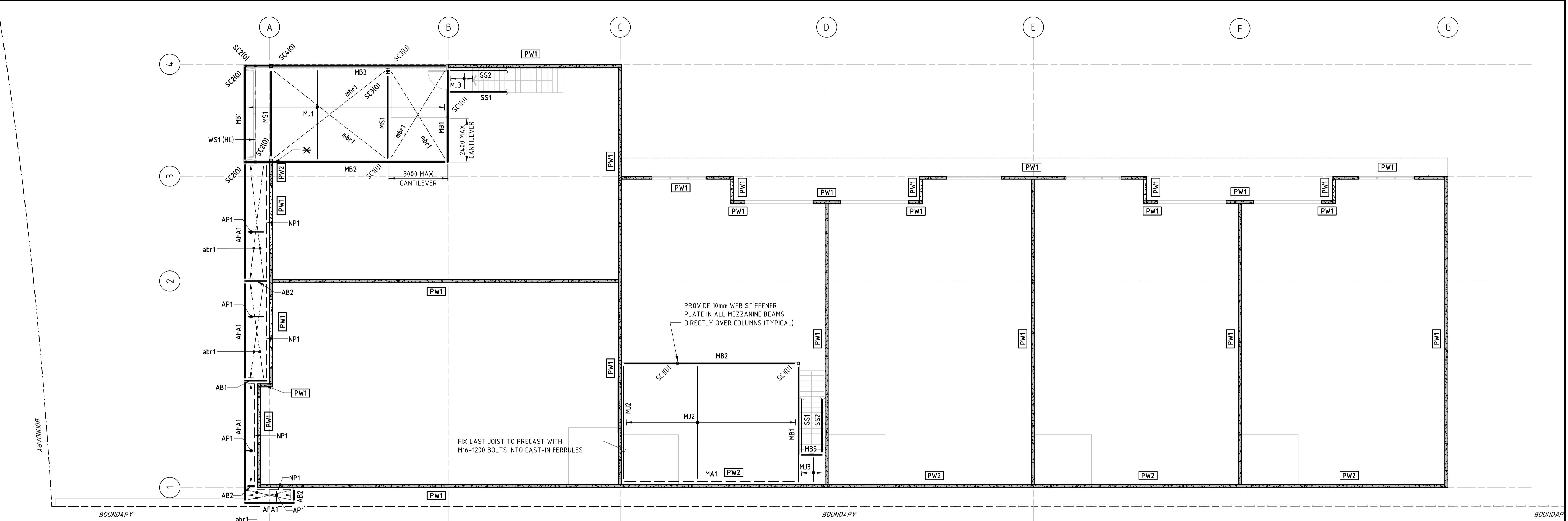


* DENOTES LOCATIONS WHERE PRECAST CONTRACTOR IS TO PROVIDE NOTCHES IN PANELS FOR OUTRIGGERS. REFER TO SECTION 15 ON DRAWING S80.1 FOR DETAILS.

MEMBER SCHEDULE		
MARK	SIZE	COMMENTS
MEZZANINE JOISTS		
MJ1	C200-19 @ 450 CTS	PROVIDE 1 ROW OF BRIDGING
MJ2	C250-19 @ 450 CTS	PROVIDE 1 ROW OF BRIDGING
MJ3	C150-12 @ 450 CTS	
MEZZANINE BEAM		
MB1	250 PFC	REFER TO DETAIL MA ON DRAWING S80.2
MB2	250 PFC	
MB3	250 PFC	
MB4	200 PFC	
MB5	200 PFC	INCREASE TO 250 PFC IF IT MAKES FABRICATION/FIXING EASIER
MEZZANINE SEATING ANGLE		
MA1	150x90x8 UA	
MEZZANINE STRUT		
MS1	76.1x5.9 CHS	
MEZZANINE BRACING		
mbr1	16Ø ROD BRACE BELOW MEZZANINE JOISTS	FIXED EACH END WITH 10mm CLEAT PLATE & 2/M16 BOLTS
STEEL COLUMNS		
SC2	89x89x6.0 SHS	
SC4	89x89x6.0 SHS	

MEMBER SCHEDULE		
MARK	SIZE	COMMENTS
WALL STIFFENER		
WS1	100x100x4.0 SHS	POSITIONED AT FIRST FLOOR WINDOW SILL LEVEL. FIX TO COLUMN END WITH 10mm CLEAT PLATE & 2/M16 BOLTS.
NAILING PLATE		
NP1	140x45 MGP10	REFER TO SECTION 14 ON DRAWING S80.1 FOR DETAILS
AWNNG RAFTER		
AP1	90x45 MGP10 @ 600 CTS	
AWNNG FASCIA BEAM		
AFA1	150 PFC	
AWNNG BEAM		
AB1	150 PFC	
AB2	150 PFC	
AWNNG BRAEING		
abr1	32x12mm GALVANISED METAL STRAP	SCREW FIXED TO EACH PURFLIN AFTER TENSIONING

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	BUILDING DESIGNER	ALL SETOUT TO ARCHITECT'S DRAWINGS, DRAWINGS TO BE VERIFIED WITH THE ARCHITECT AND ON SITE BEFORE MAKING SHOP DRAWINGS OR COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.	PLANS 1:100@A1	PROJECT	DRAWING TITLE	JOB NUMBER	
1	PRELIMINARY	JD		AF	14.05.21	AIQUA	MJC M.J.CASSIDY & ASSOC. PTY.LTD. 0437291376		0 1 2 3 4 5m	NORTHROP Central Coast Suite 4, 257-259 Central Coast Hwy, Erina, NSW 2250 Ph (02) 4365 1668 Email centralcoast@northrop.com.au ABN 81 094 433 100	PROPOSED DEVELOPMENT 43 ACCOLADE AVENUE MORRISET, NSW 2264	EAST BUILDING MEZZANINE FRAMING PLAN	NL202902
A	FOR CONSTRUCTION	JD	TC	AF	25.06.21								DRAWING NUMBER
B	REVISED FOR CONSTRUCTION	JD	TC	AF	06.07.21								REVISION
C	REVISED FOR CONSTRUCTION	JD	TC	AF	21.09.21								S30.1 C
													DRAWING SHEET SIZE = A1



WEST BUILDING MEZZANINE FRAMING PLAN

REFER TO DRAWING S30.1 FOR LEGEND & SCHEDULE

VERIFIER: TREVOR CLACK

3 MANAGER: TREVOR CLACK

SIGNED: ALEX FOSTER

DRAWN: JOSHUA DICK

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT
1	PRELIMINARY	JD		AF	14.05.21	
A	FOR CONSTRUCTION	JD	TC	AF	25.06.21	
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C	REVISED FOR CONSTRUCTION	JD	TC	AF	21.09.21	
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BUILDING DESIGNER

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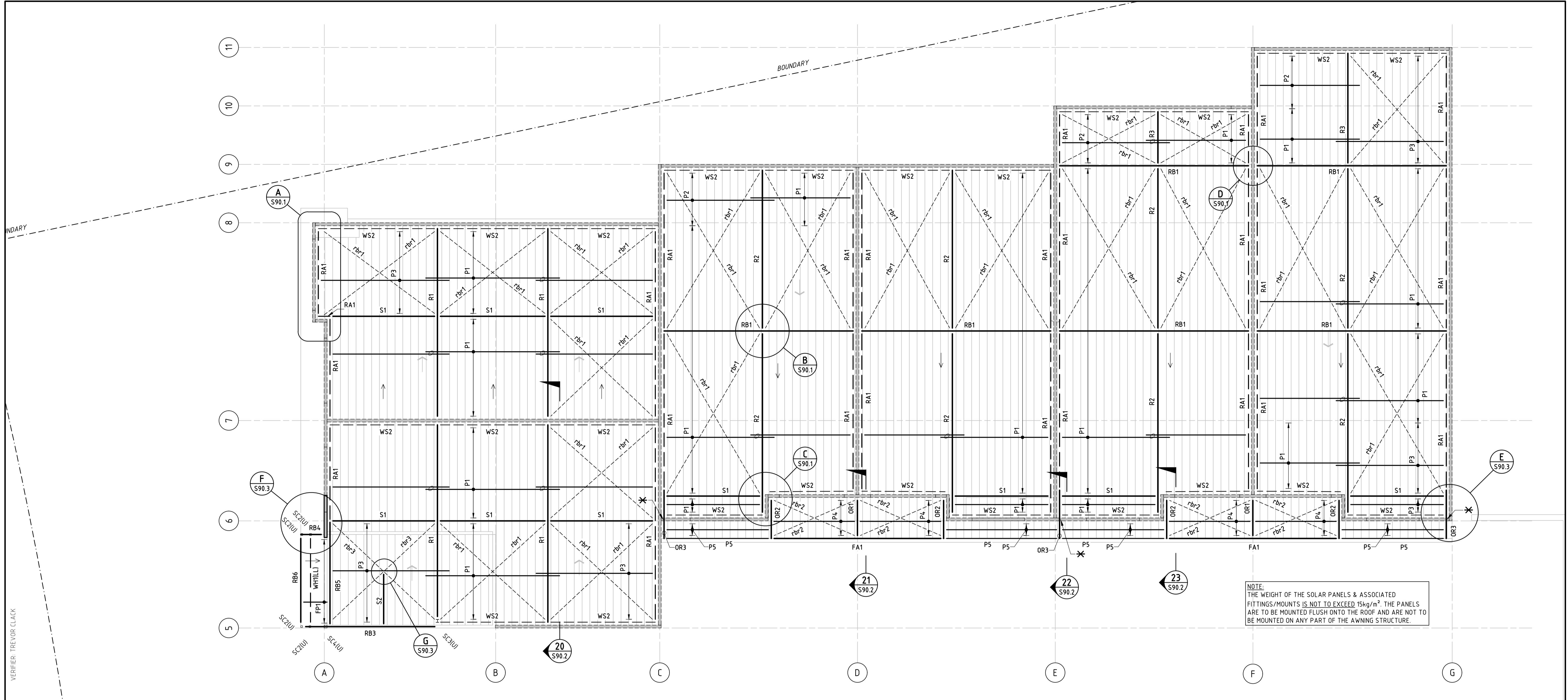
PROJECT

PROPOSED DEVELOPMENT

43 ACCOLADE AVENUE

MORRISET, NSW 2264

DRAWING TITLE	JOB NUMBER
WEST BUILDING MEZZANINE FRAMING PLAN	NL202902
DRAWING NUMBER	REVISION
S30.2	C
DRAWING SHEET SIZE = A1	



EAST BUILDING ROOF FRAMING PLAN

VERIFIER: TREVOR CLACK

JOB MANAGER: TREVOR CLACK

DESIGNED: ALEX FOSTER

DRAWN: JOSHUA DICK

FOR PROJECT TYPICAL STRUCTURAL SPECIFICATION NOTES REFER TO DRAWING S01.3

THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE LATEST BUILDING DESIGNER'S DRAWINGS AND ANY RELEVANT CONSULTANTS / CONTRACTOR'S DRAWINGS. IT IS THE BUILDERS RESPONSIBILITY TO ENSURE THE LATEST REVISION OF ALL DRAWINGS ARE BEING USED ON SITE.

CO-ORDINATE ALL SERVICE PENETRATION SIZES AND LOCATIONS WITH MECHANICAL, ELECTRICAL & HYDRAULIC CONSULTANT'S DRAWINGS.

UNLESS NOTED OTHERWISE, ALL PURLINS & GIRTS SHALL BE LYSAGHT ZEDS AND CEE SECTIONS INSTALLED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN SPECIFICATIONS & USING LYSAGHT ACCESSORIES & FIXINGS.

12-14x2 GAUGE TEK SCREWS TO BE USED TYPICAL (U.N.O)

CLASS 3, 12-14x2 GAUGE TEK SCREWS TO BE USED EXTERNAL (U.N.O)

ALLOW MINIMUM 10% IN TENDER PRICE FOR SMALLS / CONNECTIONS

— DENOTES LOADBEARING PRECAST WALL UNDER & WALL TYPE

— DENOTES STEEL COLUMN UNDER

— FLY BRACE. REFER TO TYPICAL DETAIL ON DRAWING S160.1

→ DENOTES FALL DIRECTION IN ROOF

* DENOTES LOCATIONS WHERE PRECAST CONTRACTOR IS TO PROVIDE NOTCHES IN PANELS FOR OUTRIGGERS. REFER TO SECTION 15 ON DRAWING S01.0 FOR DETAILS.

MEMBER SCHEDULE		
MARK	SIZE	COMMENTS
RAFTERS		
R1	310UB40.4	WITH 1 FLY BRACE MID-WAY BETWEEN S1 LOCATIONS
R2	310UB32.0	WITH 1 FLY BRACE MIDSPAN
R3	250UB25.7	
R4	410UB53.7	
ROOF BEAMS		
RB1	360UB44.7	
RB2	NOT USED	
RB3	200 PFC	
RB4	150 PFC	
RB5	200 PFC	
RB6	150 PFC	
PURLINS		
P1	Z150-12 @ 1200 CTS	WITH 1 ROW OF BRIDGING
P2	Z150-15 @ 1200 CTS	WITH 1 ROW OF BRIDGING
P3	Z150-19 @ 1200 CTS	WITH 1 ROW OF BRIDGING
P4	C150-10 @ 600 CTS	WITH 1 ROW OF BRIDGING
P5	C150-15 @ 600 CTS	WITH 2 ROWS OF BRIDGING
FASCIA PURLINS		
FP2	C100-12 @ 600 CTS	

MEMBER SCHEDULE		
MARK	SIZE	COMMENTS
STRUTS		
S1	1016 x 4.0 CHS	
S2	76.1x3.6 CHS	
WALL STIFFENERS		
WS2	150 PFC	
WS2	180 PFC	
WALL HEADERS		
WH1	J50x100x4.0 RHS	FIX WH1 TO SC1 WITH 10mm CAP & FIN PLATES WITH 2/M20 BOLTS
RAKING ANGLES		
RA1	90x90x6.0 EA	FIX TO PRECAST WALL WITH M20 BOLTS @ 1200 CTS INTO CAST-IN FERRULES
FASCIA BEAMS		
FA1	180 PFC	
OUTRIGGERS		
OR1	200 PFC	
OR2	200 PFC	
OR3	200 PFC	
ROOF BRACING		
rbr1	20Ø THREADED ROD WITH TURNBUCKLE	PRIOR TO COMMENCING FABRICATION THE STEEL SUPPLIER MUST PROVIDE DETAILS OF THE TURNBUCKLES DEMONSTRATING THAT THEIR CAPACITY IS EQUAL TO OR EXCEEDS THE CAPACITY OF THE ROD
rbr2	32x12mm GALVANISED METAL STRAP	SCREW FIXED TO EACH PURLIN AFTER TENSIONING
rbr3	75x75x5.0 EA	

REVISION

1 PRELIMINARY
A FOR CONSTRUCTION
B REVISED FOR CONSTRUCTION
C REVISED FOR CONSTRUCTION

ISSUED VER'D APP'D DATE

JD AF 14.05.21
JD TC AF 25.06.21
JD TC AF 06.07.21
JD TC AF 21.09.21

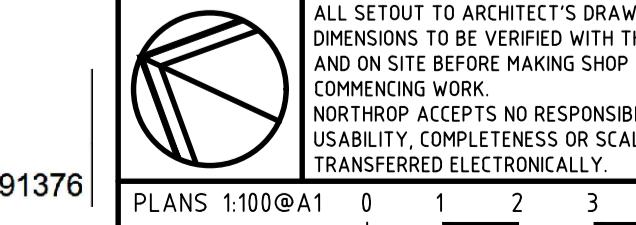
CLIENT

AIQUA

BUILDING DESIGNER
MJC
M.J.CASSIDY & ASSOC. PTY.LTD. 0437291376

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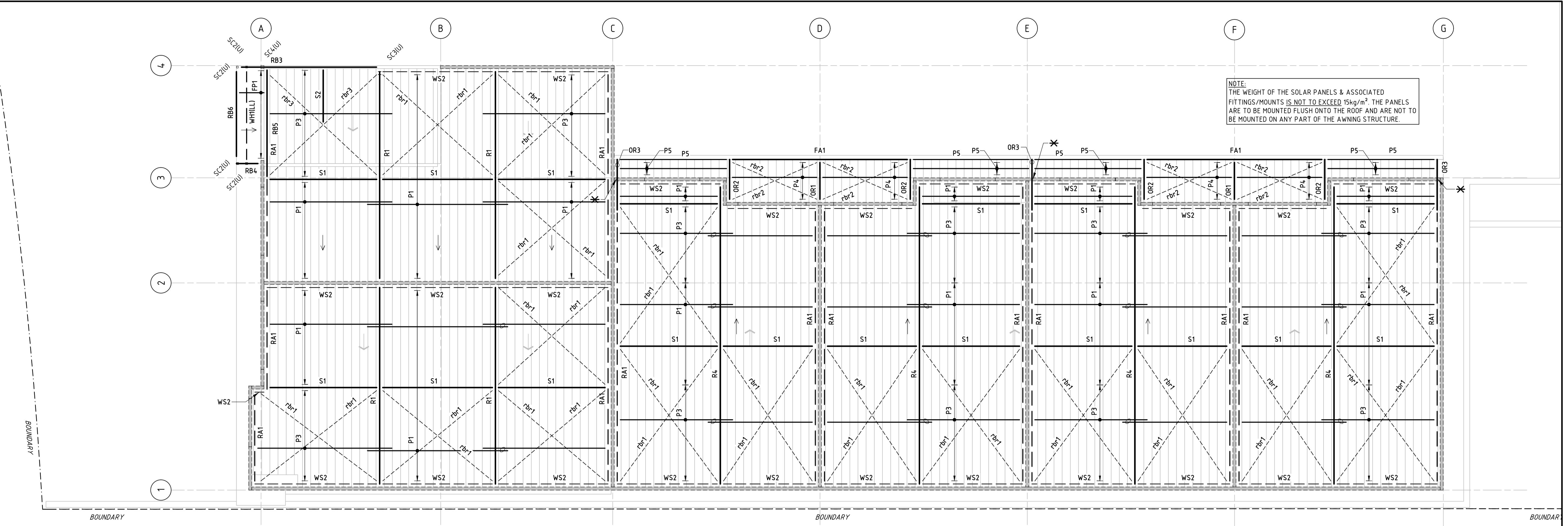
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PROJECT
PROPOSED DEVELOPMENT
43 ACCOLADE AVENUE
MORRISET, NSW 2264

DRAWING TITLE
**EAST BUILDING
ROOF FRAMING PLAN**

JOB NUMBER
NL202902
DRAWING NUMBER
S40.1
REVISION
C
DRAWING SHEET SIZE = A1



WEST BUILDING ROOF FRAMING PLAN

REFER TO DRAWING S40.1 FOR LEGEND & SCHEDULE

DESIGNED: ALEX FOSTER
JOB MANAGER: TREVOR CLACK
VERIFIER: TREVOR CLACK

DRAWN: JOSHUA DICK
DRAWING NUMBER: NL202902
REVISION: C

PLANS 1:100@A1 0 1 2 3 4 5m

REVISION DESCRIPTION ISSUED VER'D APP'D DATE CLIENT BUILDING DESIGNER PROJECT DRAWING TITLE JOB NUMBER

1 PRELIMINARY JD AF 14.05.21 AIQUA M.J.CASSIDY & ASSOC. PTY LTD. 0437291376 PROPOSED DEVELOPMENT 43 ACCOLADE AVENUE MORRISET, NSW 2264 S40.2

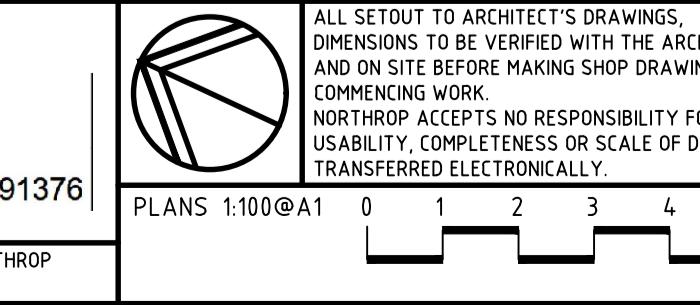
A FOR CONSTRUCTION JD TC AF 25.06.21

B REVISED FOR CONSTRUCTION JD TC AF 06.07.21

C REVISED FOR CONSTRUCTION JD TC AF 21.09.21

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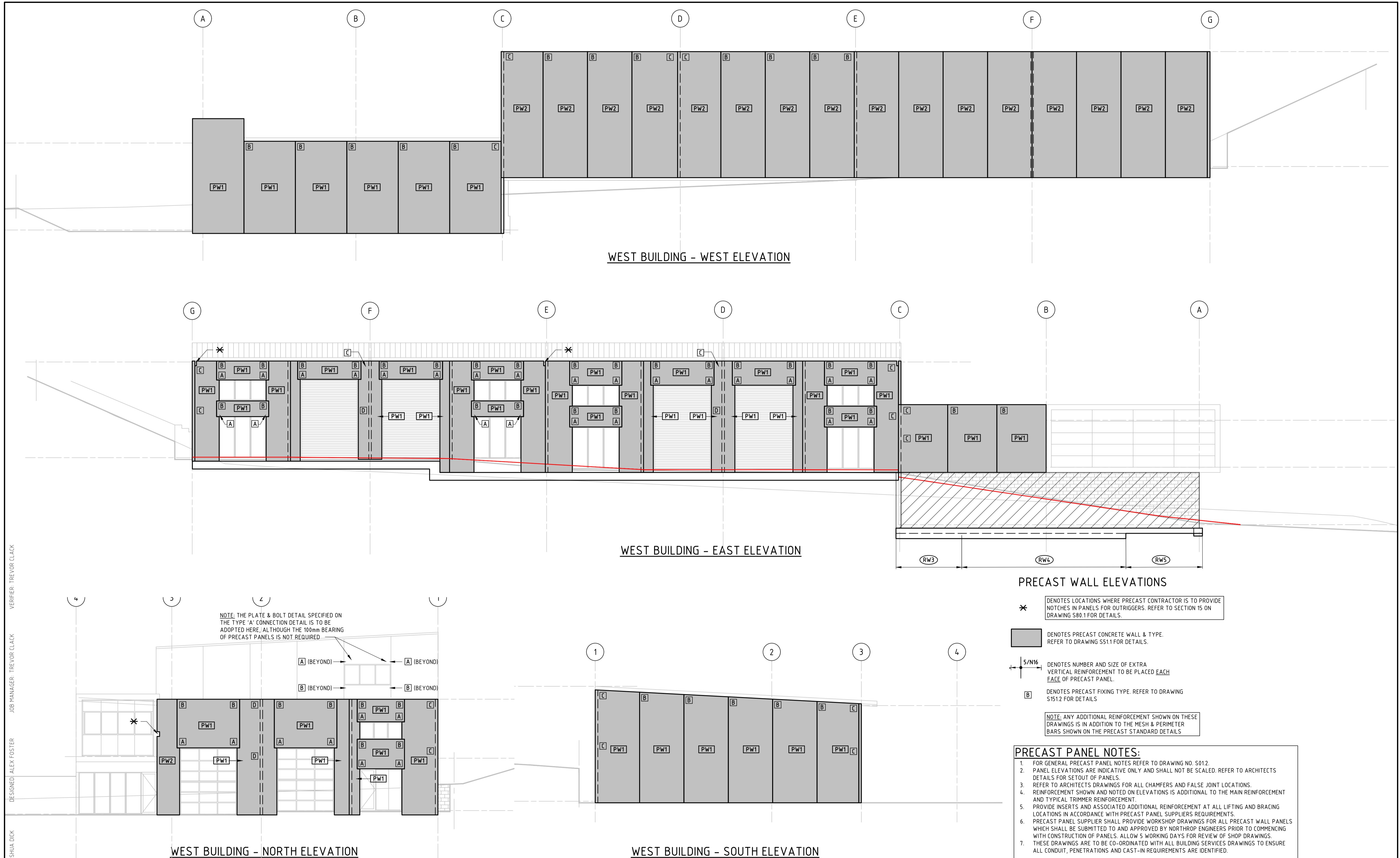
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DRAWING NUMBER NL202902
REVISION C
DRAWING SHEET SIZE = A1



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1	PRELIMINARY FOR CONSTRUCTION	JD		AF	14.05.21	 NORTHROP M.J.CASSIDY & ASSOC. PTY LTD. 0437291376	ALL SETOUT TO ARCHITECT'S DRAWINGS, DIMENSIONS TO BE VERIFIED WITH THE ARCHITECT AND ON SITE BEFORE MAKING SHOP DRAWINGS OR COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.	PROPOSED DEVELOPMENT 43 ACCOLADE AVENUE MORRISET, NSW 2264 Central Coast Suite 4, 257-259 Central Coast Hwy, Erina, NSW 2250 Ph (02) 4365 1668	ELEV 1:100 @ A1	DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	DRAWING SHEET SIZE = A1	NL202902
A	REVISED FOR CONSTRUCTION	JD	TC	AF	25.06.21							S50.1
B	REVISED FOR CONSTRUCTION	JD	TC	AF	06.07.21							C
C	REVISED FOR CONSTRUCTION	JD	TC	AF	21.09.21							



REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT
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PROJECT
PROPOSED DEVELOPMENT
43 ACCOLADE AVENUE
MORRISET, NSW 2264

DRAWING TITLE
WEST BUILDING
PRECAST ELEVATIONS

JOB NUMBER
NL202902

DRAWING NUMBER
S50.2

REVISION
C

DRAWING SHEET SIZE = A1

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
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CLIENT **AIQUA**
M.J.CASSIDY & ASSOC. PTY.LTD. 0437291376

BUILDING DESIGNER **NORTHROP**
Central Coast
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PROJECT **PROPOSED DEVELOPMENT**
43 ACCOLADE AVENUE
MORRISET, NSW 2264

DRAWING TITLE **PRECAST DETAILS**
SHEET 1

JOB NUMBER **NL202902**

DRAWING NUMBER **S51.1** REVISION **C**

DRAWING SHEET SIZE = A1

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT
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B	REVISED FOR CONSTRUCTION	JD	TC	AF	06.07.21	
C	REVISED FOR CONSTRUCTION	JD	TC	AF	21.09.21	

JOSHUA DICK DESIGNER: ALEX FOSTER JOB MANAGER: TREVOR CLACK VERIFIER: TREVOR CLACK

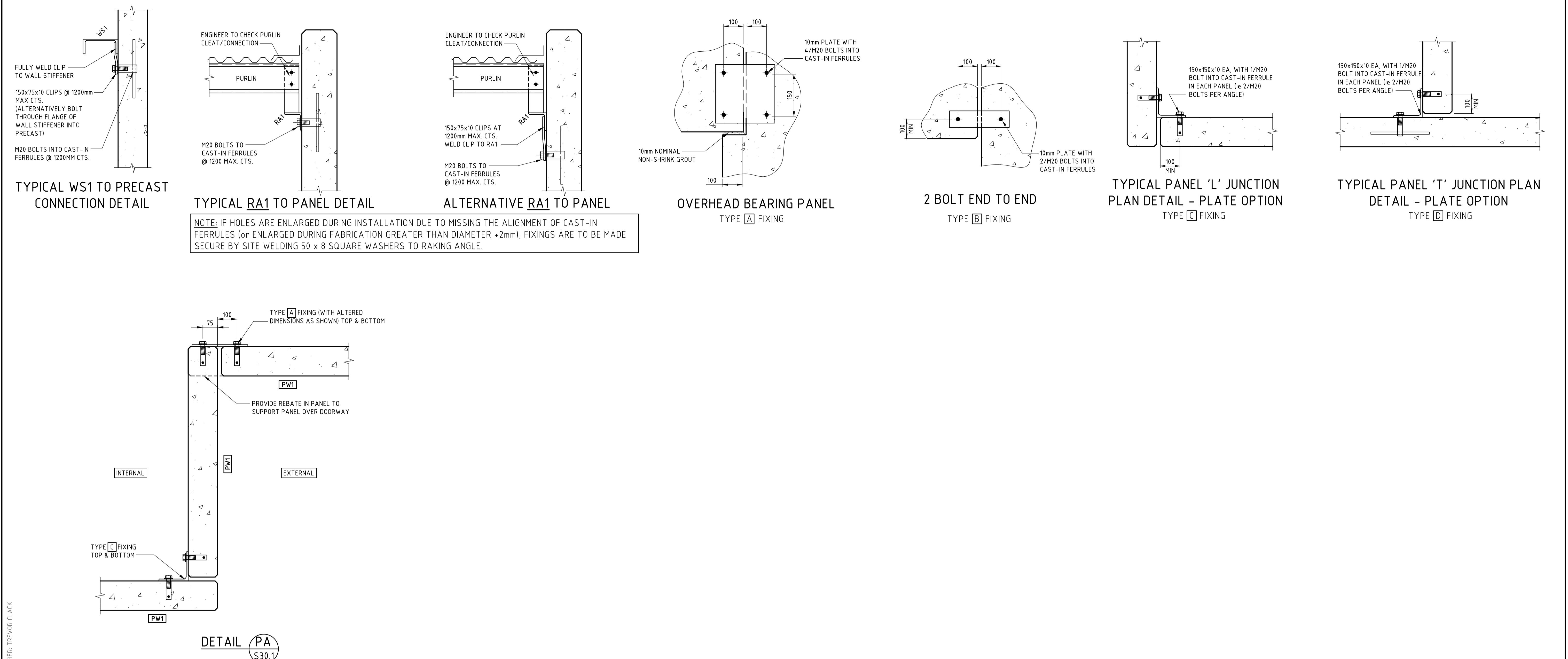
VERIFIER: TREVOR CLACK

JOB MANAGER: TREVOR CLACK

DESIGNED: ALEX FOSTER

RAWN: JOSHUA DICK

TREVOR CLACK



The logo consists of a large, bold, black 'MJC' monogram. Below it, the company name 'M.J. CASSIDY & ASSOC. PTY. LTD.' is printed in a smaller, black, sans-serif font. To the left of the logo is a vertical grey bar containing a large, light blue letter 'A'.

376	DETAILS	1:10@A1	0	100	200	300	400	500
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Central Coast
Suite 4, 257-259 Central Coast Hwy, Erina, NSW 2250
Ph (02) 4365 1668
Email centralcoast@northrop.com.au ABN 81 094 433 100

PROJECT

PROPOSED DEVELOPMENT

43 ACCOLADE AVENUE

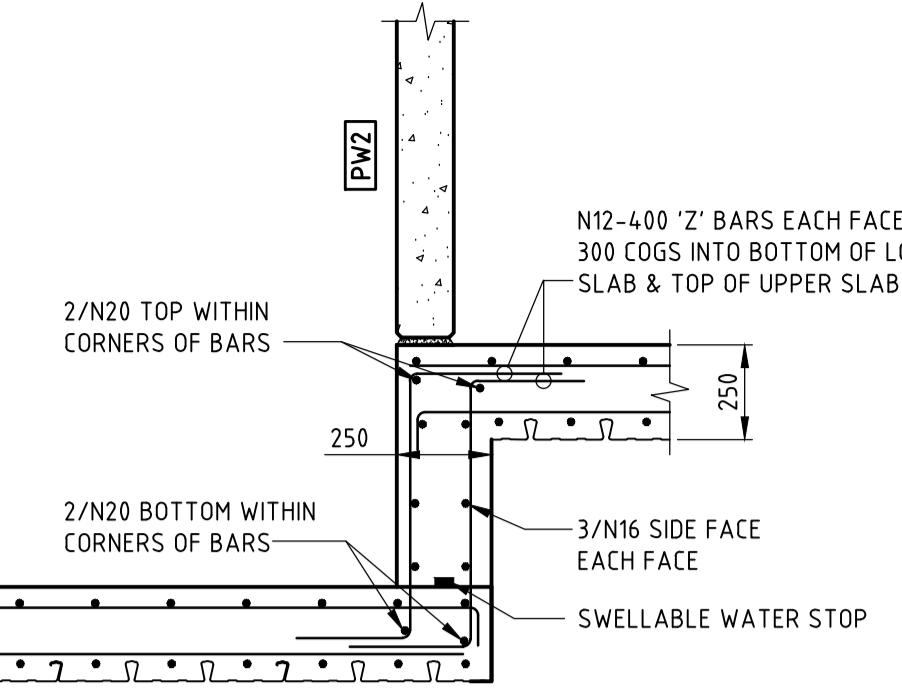
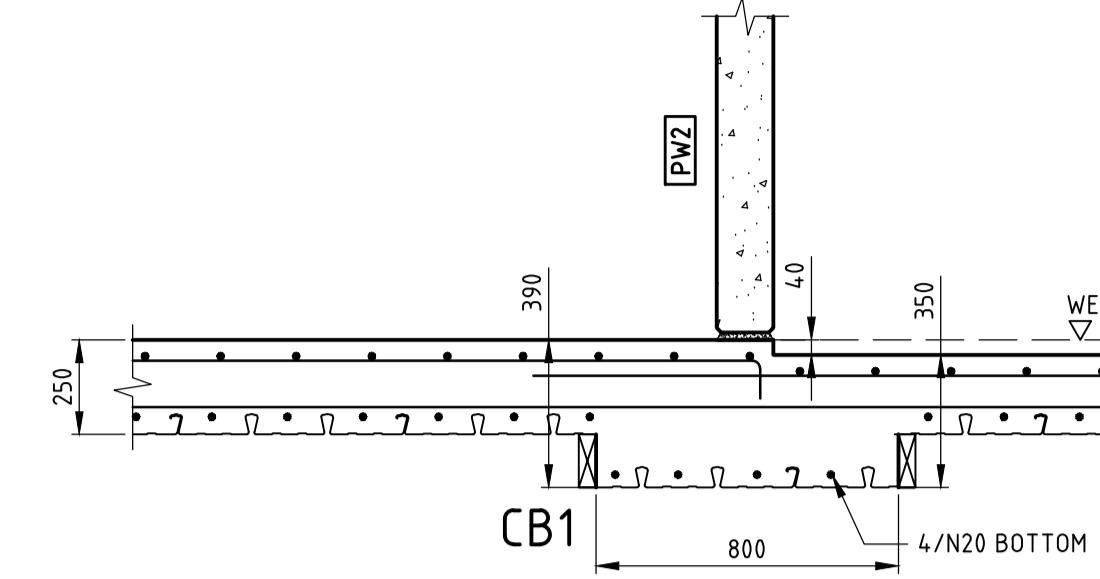
MORRISET, NSW 2264

PRECAST DETAILS

SHEET 2

JOB NUMBER	
NL202902	
DRAWING NUMBER	REVISION
S51.2	C
DRAWING SHEET SIZE = A1	

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	BUILDING DESIGNER	PROJECT	DRAWING TITLE	JOB NUMBER	
A	REVISED FOR CONSTRUCTION	JD	TC	AF	21.09.21	AIQUA M.J.CASSIDY & ASSOC. PTY.LTD. 0437291376	ALL SETOUT TO ARCHITECT'S DRAWINGS, DIMENSIONS TO BE VERIFIED WITH THE ARCHITECT AND ON SITE BEFORE MAKING SHOP DRAWINGS OR COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.	PROPOSED DEVELOPMENT 43 ACCOLADE AVENUE MORRISET, NSW 2264	FOUNDATION DETAILS SHEET 4	NL202902	
									DRAWING NUMBER	REVISION	
									S60.4	A	
									DRAWING SHEET SIZE = A1		
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						DETAILS 1:20@A1 0 200 400 600 800 1000					
						Suite 4, 257-259 Central Coast Hwy, Erina, NSW 2250 Ph (02) 4365 1668 Email centralcoast@northrop.com.au ABN 81 094 433 100					



SECTION 34
S20.1

DRAWN: JOSHUA DICK DESIGNED: ALEX FOSTER JOB MANAGER: TREVOR CLACK VERIFER: TREVOR CLACK

NORTHROP

DRAWN: JOSHUA DICK

DESIGNED: ALEX FOSTER

JOB MANAGER: TREVOR CLACK

VERIFER: TREVOR CLACK

REVISION A

DESCRIPTION REVISED FOR CONSTRUCTION

ISSUED JD 21/09/21 VER'D TC AF

APP'D

DATE

CLIENT

AIQUA

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BUILDING DESIGNER
MJC
M.J.CASSIDY & ASSOC. PTY.LTD. 0437291376

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DETAILS 1:20@A1

0

200

400

600

800

1000

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PROJECT PROPOSED DEVELOPMENT
43 ACCOLADE AVENUE
MORRISET, NSW 2264

DRAWING TITLE GROUND FLOOR DETAILS
SHEET 3

JOB NUMBER
NL202902

DRAWING NUMBER
S70.3

REVISION
A

DRAWING SHEET SIZE = A1

VERIFIER: TREVOR CLACK

JOB MANAGER: TREVOR CLACK

DESIGNED: ALEX FOSTER

DRAWN: JOSHUA DICK

TYPICAL STEEL BEAM to STEEL COLUMN CONNECTIONS
(MEZZANINE BEAM TO SUPPORT COLUMNS TO USE TOP PLATE CONNECTION)

SECTION 10 S30.1

SECTION 11 S20.1, S30.1

SECTION 12 S30.1

SECTION 12a

SECTION 13 S30.1

SECTION 14 S30.1

SECTION 15 S30.1

SECTION 16 S30.1

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	BUILDING DESIGNER	ALL SETOUT TO ARCHITECT'S DRAWINGS, DETAILS 1:10@A1 0 100 200 300 400 500	PROJECT	DRAWING TITLE	JOB NUMBER						
1	PRELIMINARY	JD		AF	14.05.21	AIQUA M.J.CASSIDY & ASSOC. PTY.LTD. 0437291376	MJC THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD.	DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	Drawing not to be used for construction unless verification signature has been added	NORTHROP Central Coast Suite 4, 257-259 Central Coast Hwy, Erina, NSW 2250 Ph (02) 4365 1668 Email centralcoast@northrop.com.au ABN 81 094 433 100	PROPOSED DEVELOPMENT 43 ACCOLADE AVENUE MORRISET, NSW 2264	MEZZANINE DETAILS SHEET 1	NL202902				
A	FOR CONSTRUCTION	JD	TC	AF	25.06.21												
B	REVISED FOR CONSTRUCTION	JD	TC	AF	06.07.21												
C	REVISED FOR CONSTRUCTION	JD	TC	AF	21.09.21												

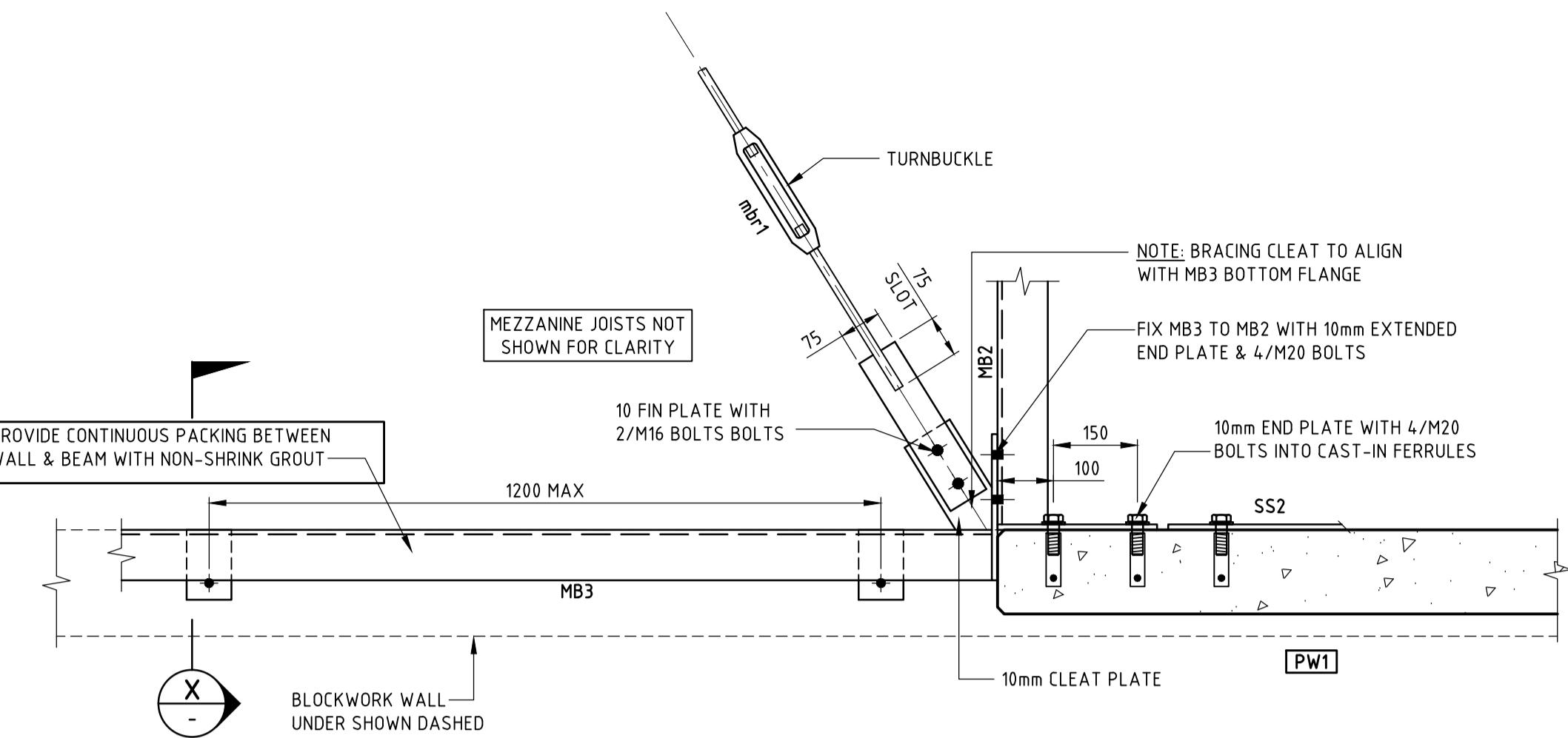
DRAWING SHEET SIZE = A1

VERIFIER: TREVOR CLACK

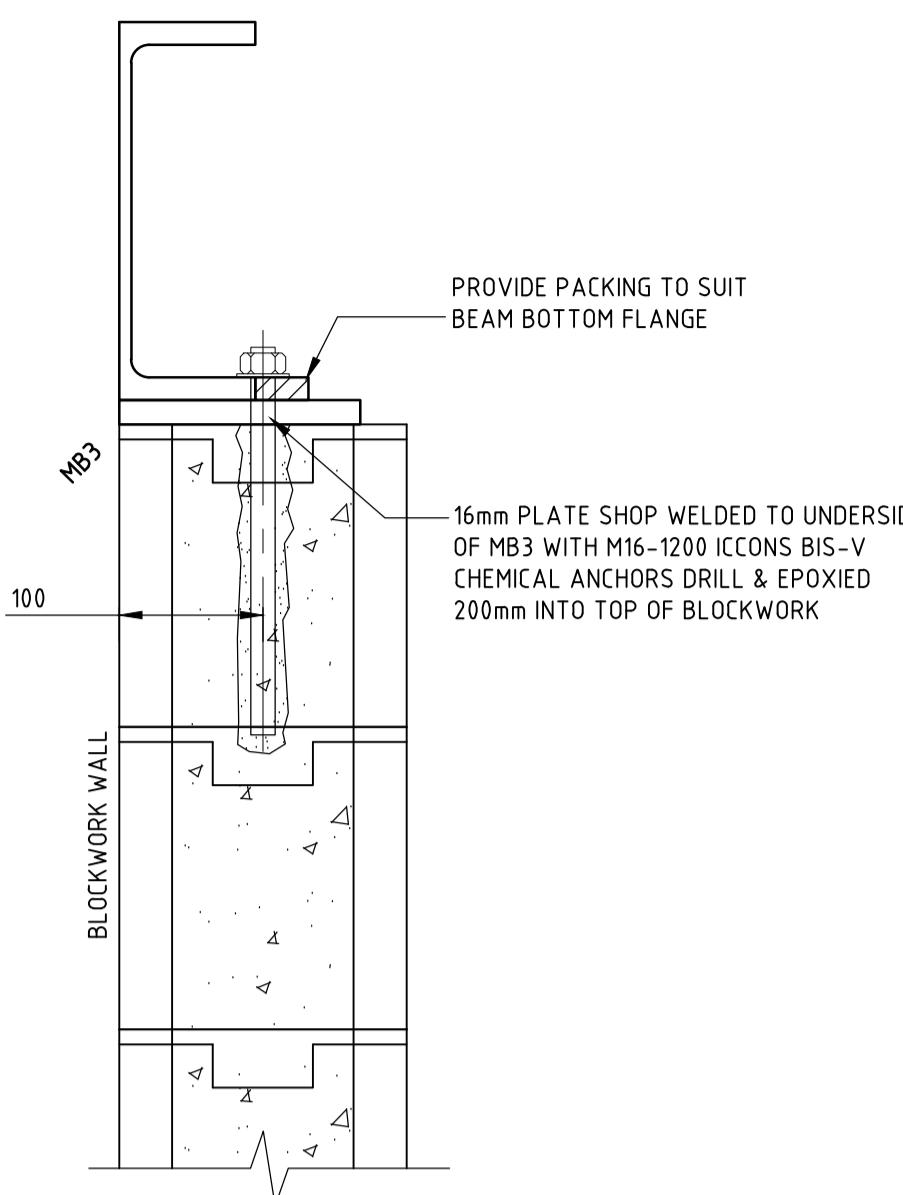
JOB MANAGER: TREVOR CLACK

DESIGNED: ALEX FOSTER

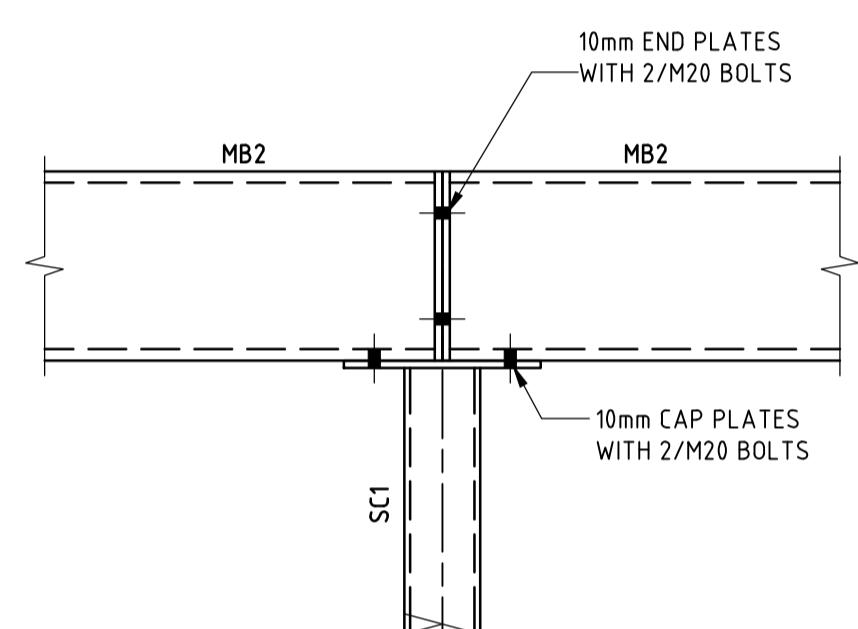
RAWN: JOSHUA DICK



DETAIL MA
S30.1



DETAIL MB
S30.1



SECTION 17
S30.1

SECTION X

SCALE 1:5 @ A



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PROJECT

PROPOSED DEVELOPMENT

43 ACCOLADE AVENUE

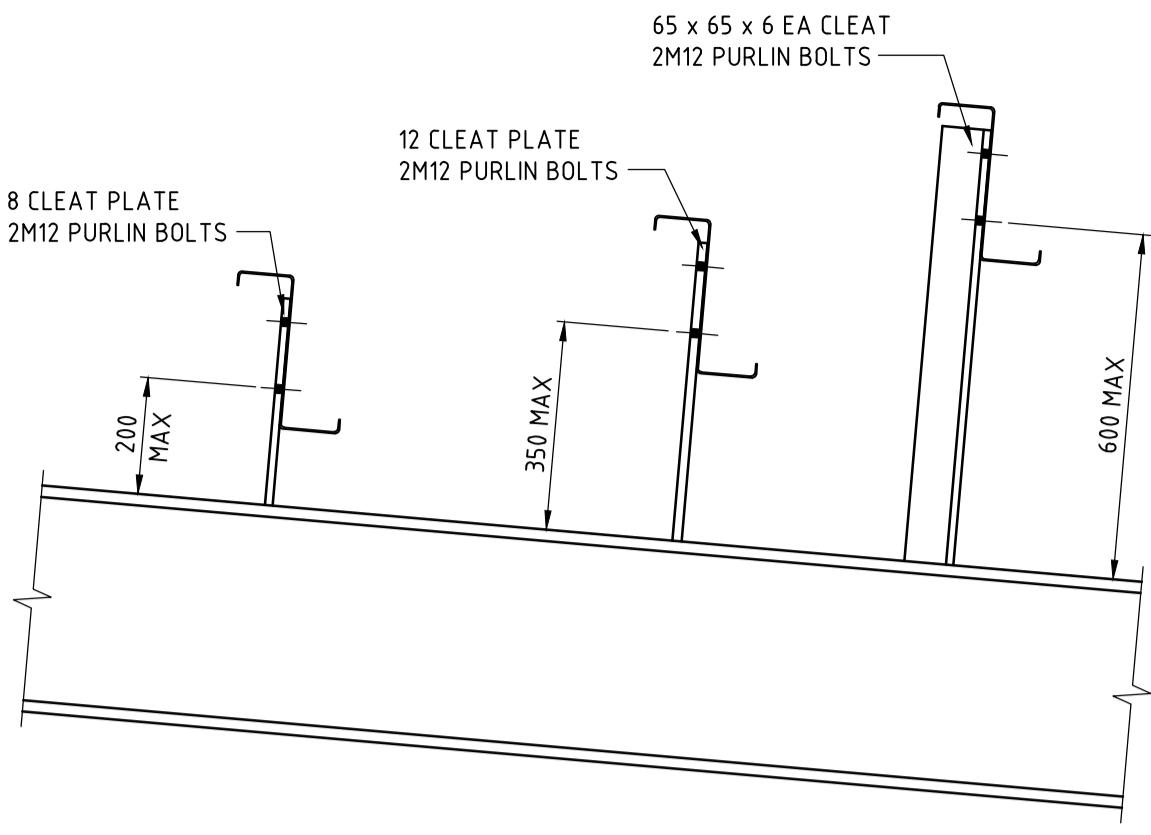
MORRISET, NSW 2264

DRAWING TITLE

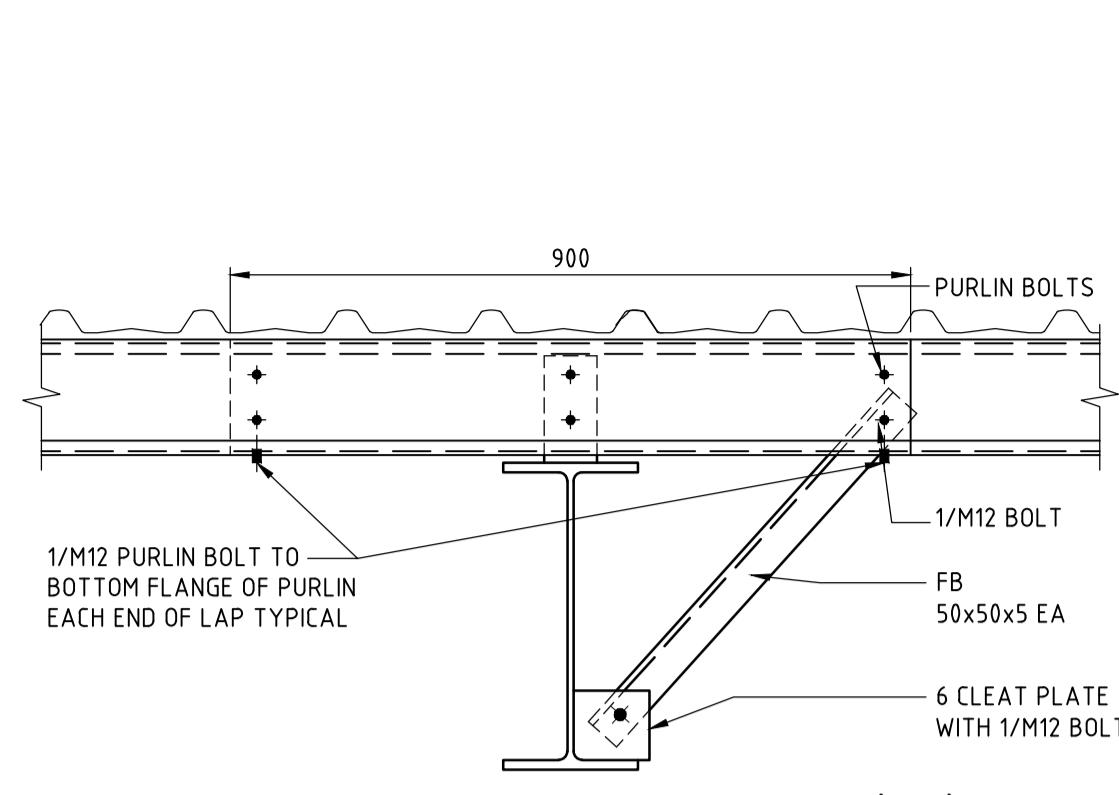
MEZZANINE DETAILS

SHEET 2

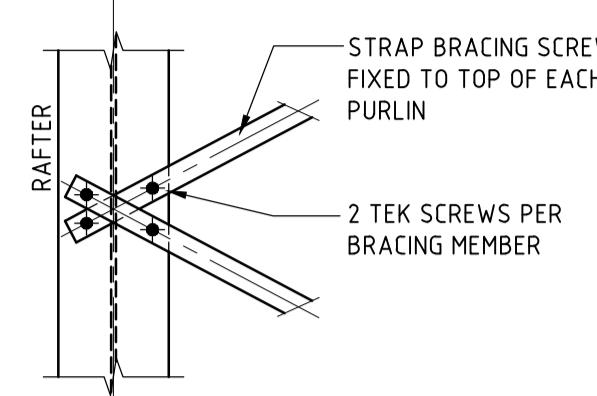
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DRAWING NUMBER	REVISION
S80.2	C
DRAWING SHEET SIZE = A1	



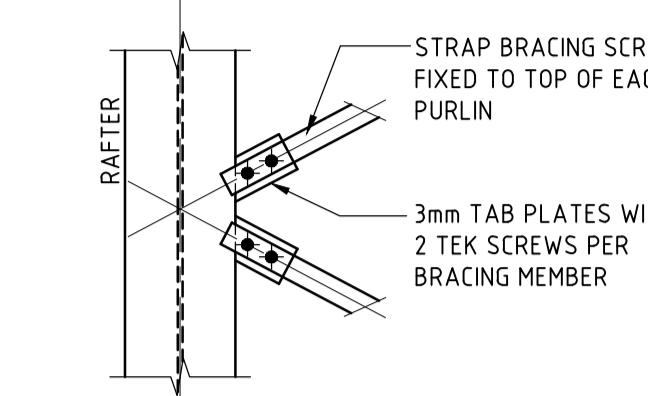
TYPICAL PURFLIN CLEAT DETAIL



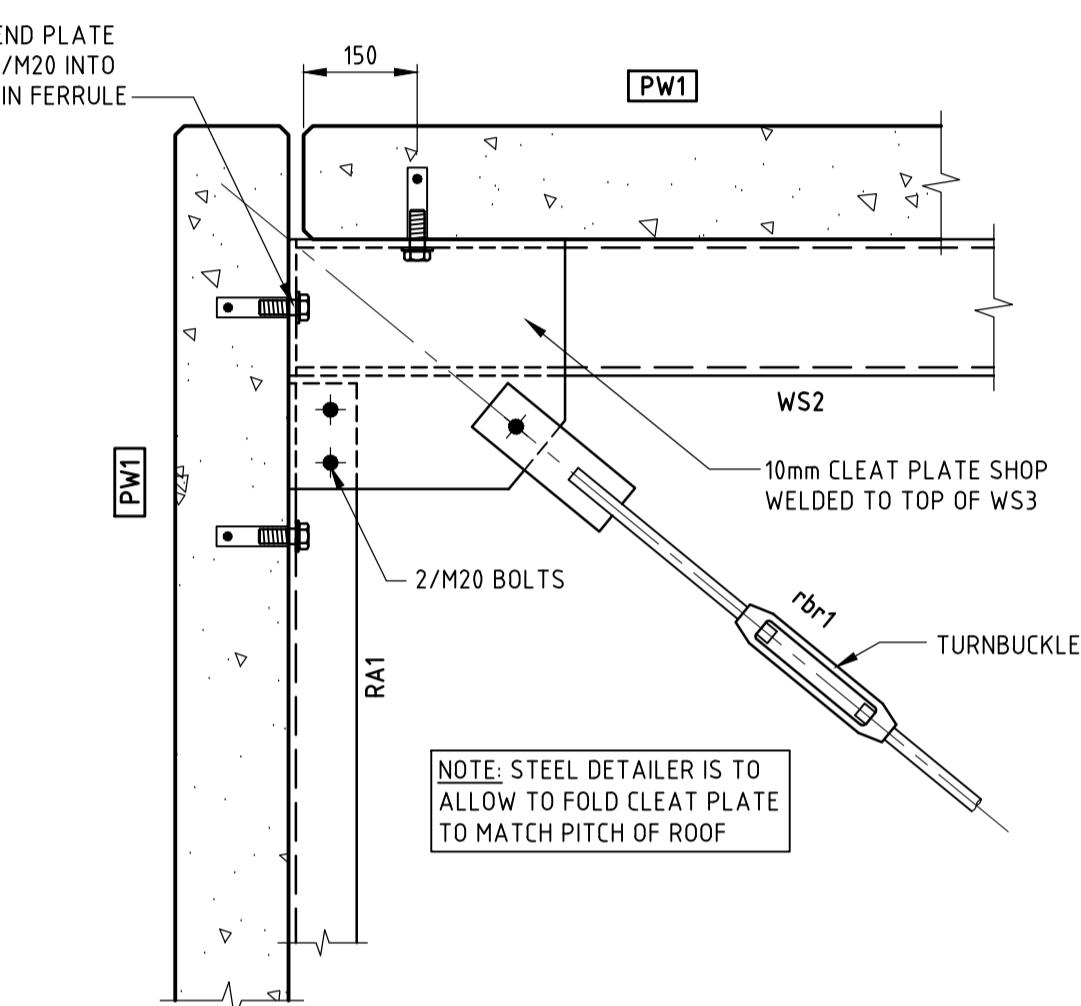
TYPICAL FLYBRACE DETAIL (FB)
'Z' TYPE PURFLIN



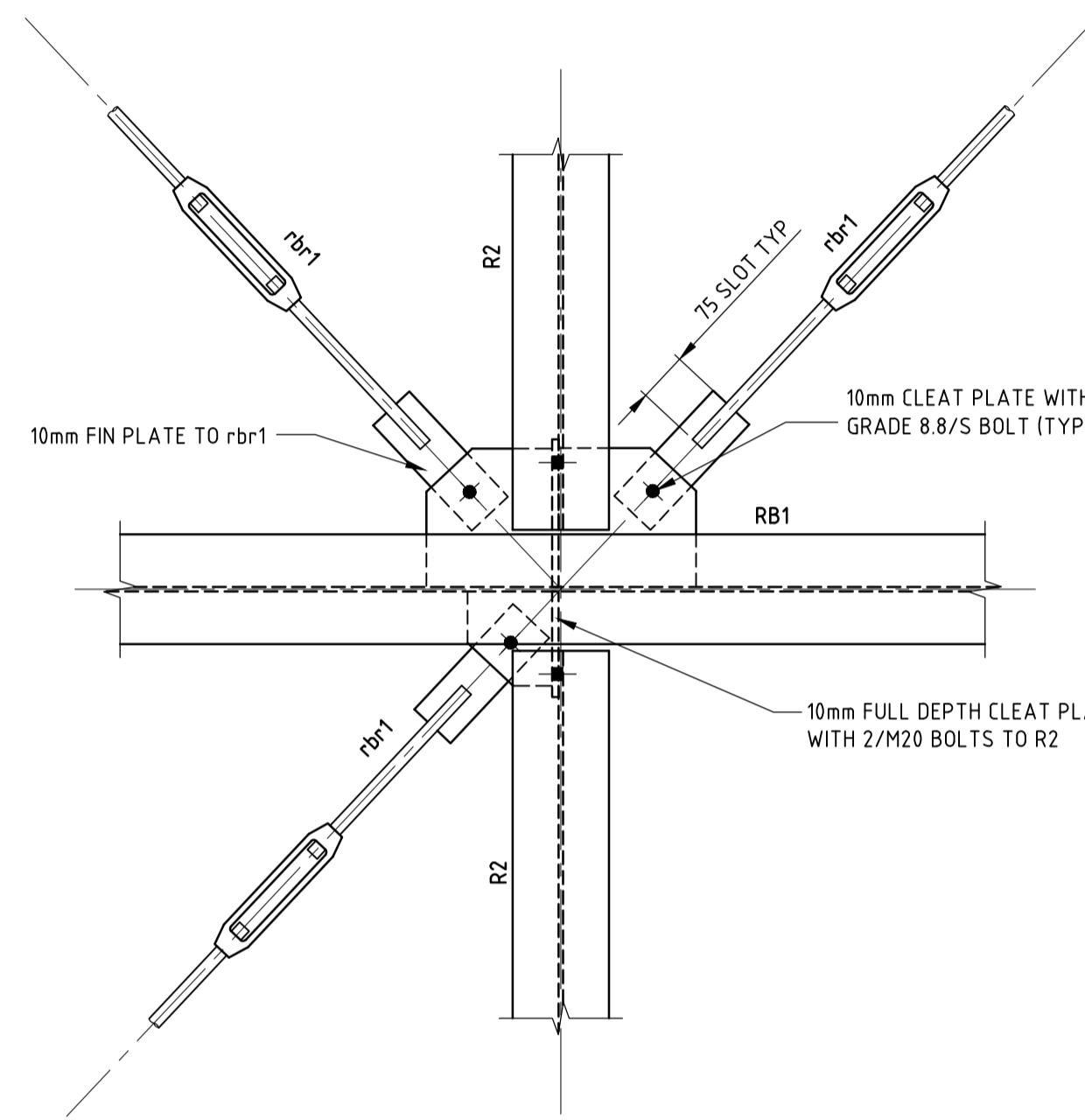
TYPICAL STRAP BRACING
CONNECTION DETAIL



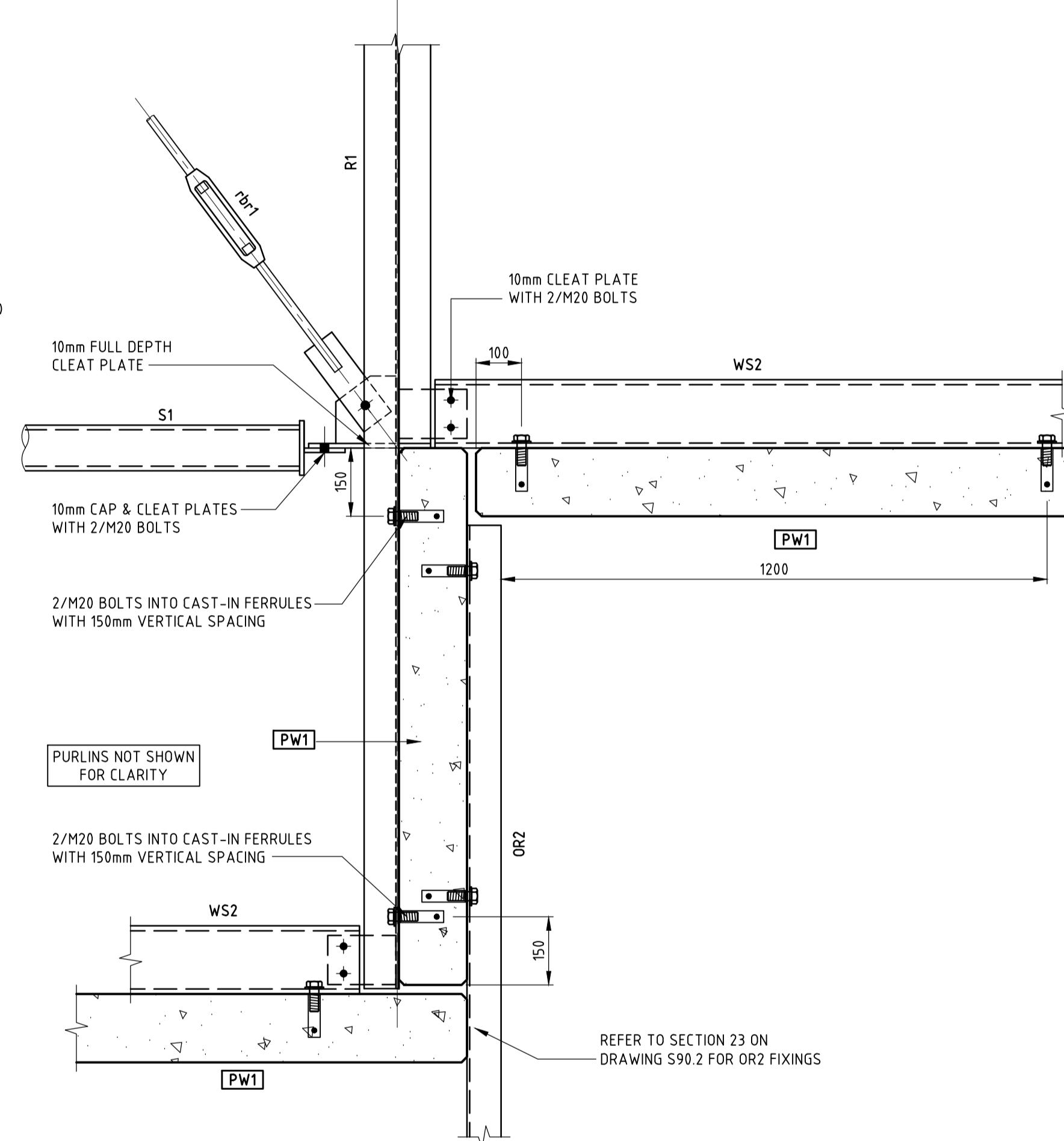
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CONNECTION DETAIL



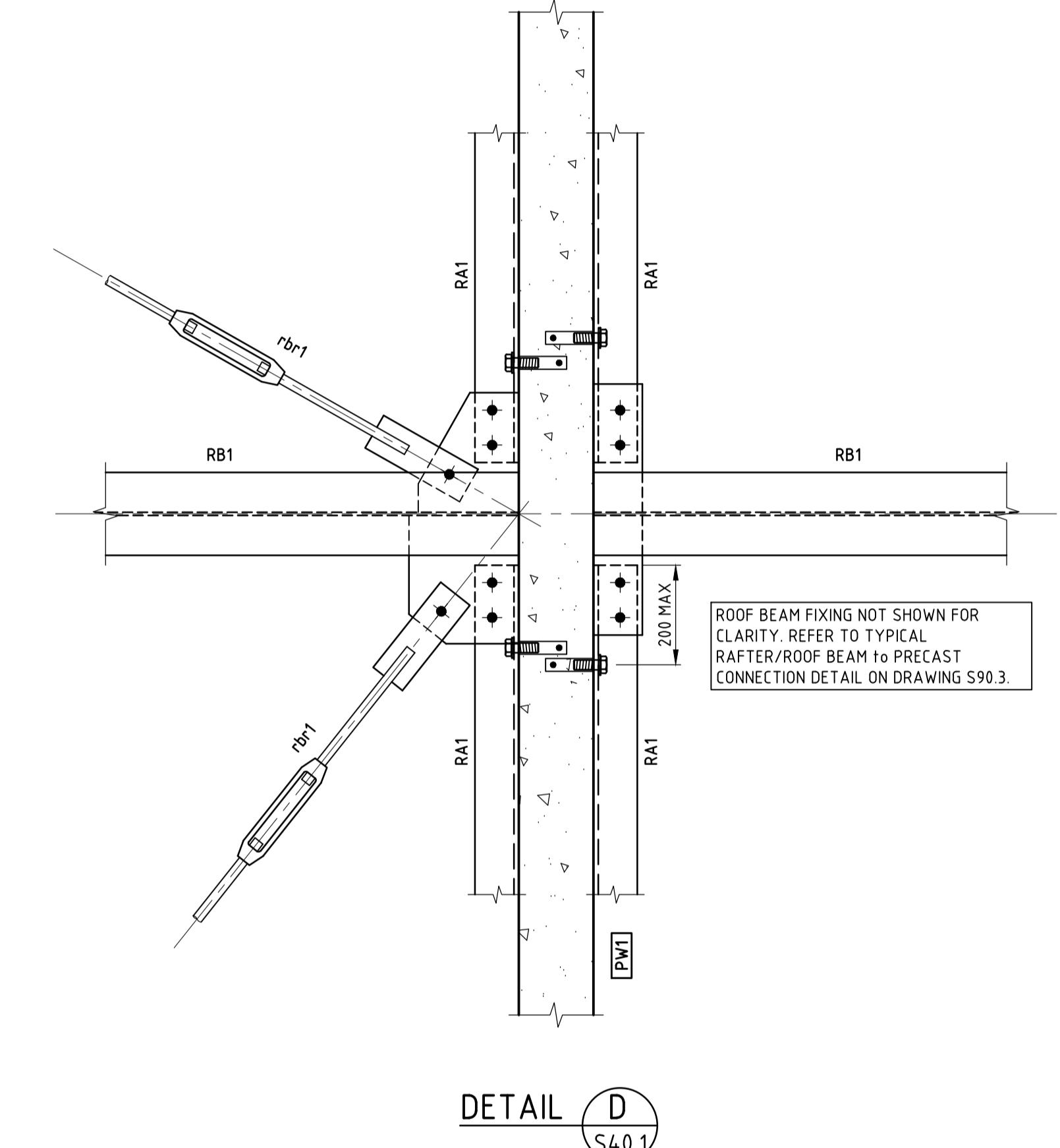
DETAIL
A
S40.1



DETAIL
B
S40.1



DETAIL
C
S40.1



DETAIL
D
S40.1

DRAWN: JOSHUA DICK DESIGNED: ALEX FOSTER JOB MANAGER: TREVOR CLACK VERIFIER: TREVOR CLACK

REVISION: 1 PRELIMINARY FOR CONSTRUCTION REVISED FOR CONSTRUCTION REVISED FOR CONSTRUCTION

ISSUED: JD VER'D: AF APP'D: DATE: 14.05.21 JD TC AF 25.06.21 JD TC AF 06.07.21 JD TC AF 21.09.21

CLIENT: AIQUA

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	BUILDING DESIGNER	NOTES
1	PRELIMINARY	JD	AF	14.05.21				ALL SETOUT TO ARCHITECT'S DRAWINGS, DRAWINGS TO BE VERIFIED WITH THE ARCHITECT AND ON SITE BEFORE MAKING SHOP DRAWINGS OR COMMENCING WORK. NORTHRUP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.
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B	REVISED FOR CONSTRUCTION	JD	TC	AF	06.07.21			
C	REVISED FOR CONSTRUCTION	JD	TC	AF	21.09.21			

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PROJECT
PROPOSED DEVELOPMENT
43 ACCOLADE AVENUE
MORRISET, NSW 2264

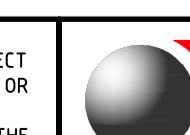
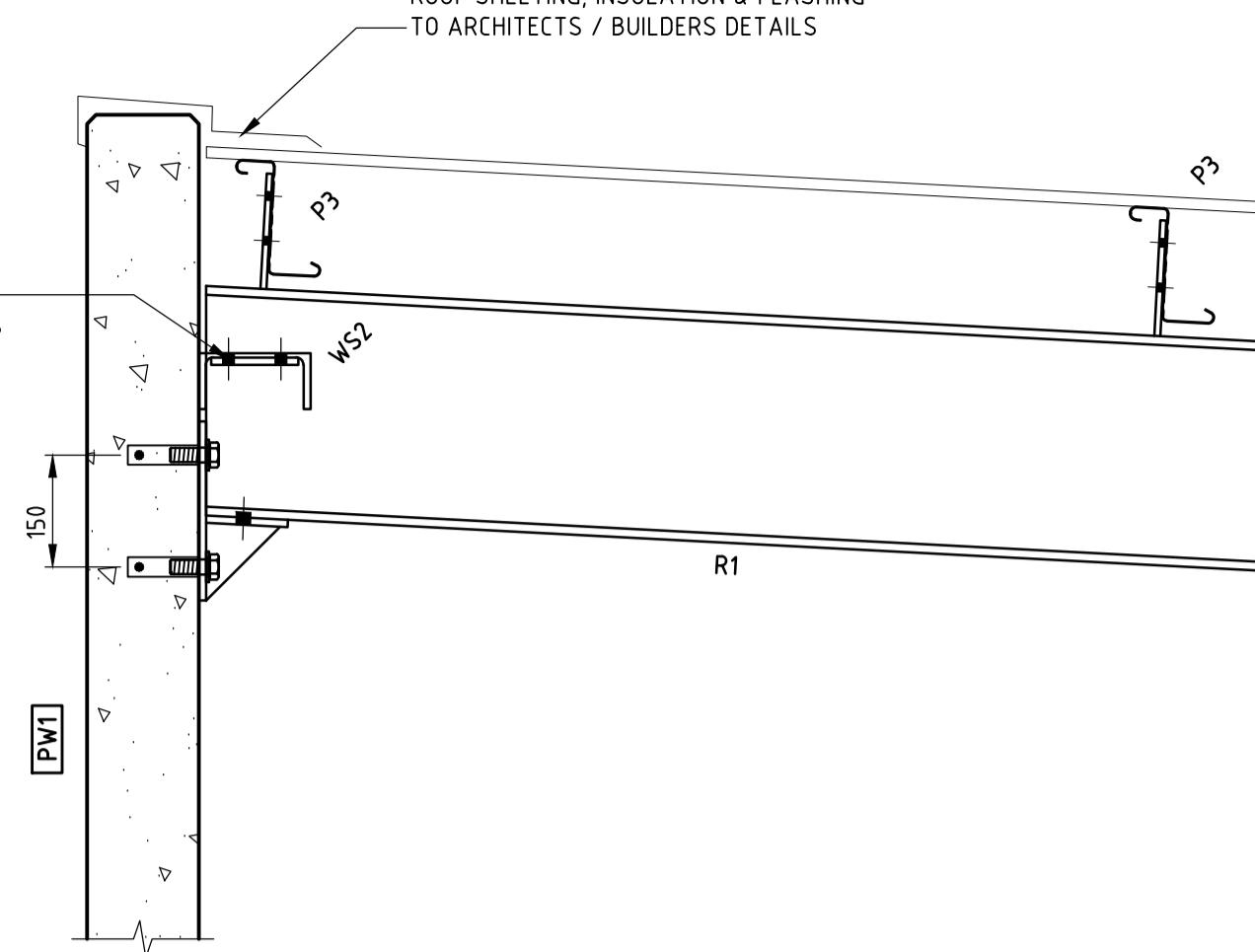
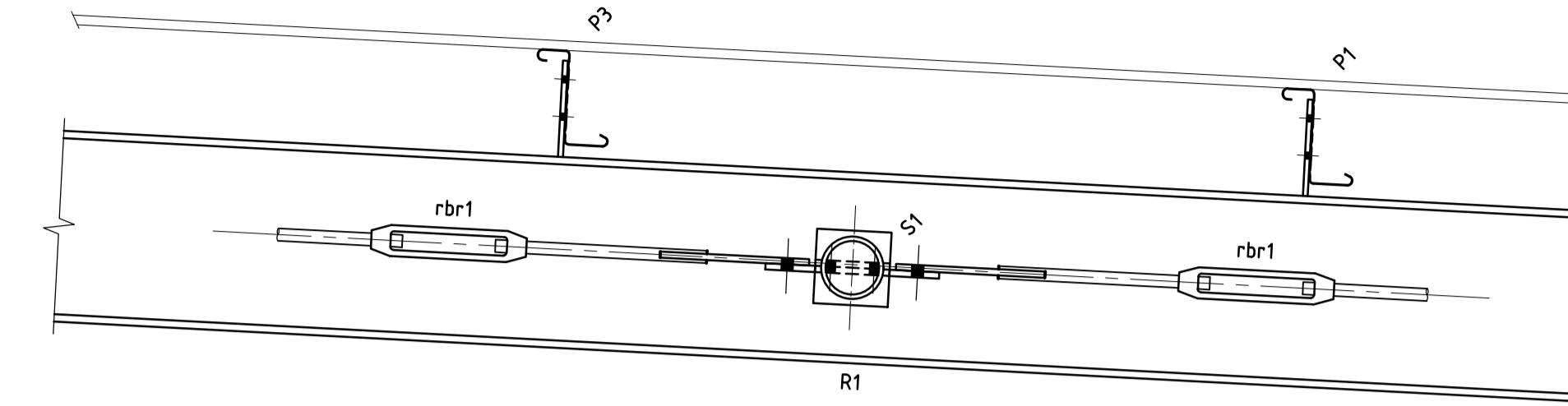
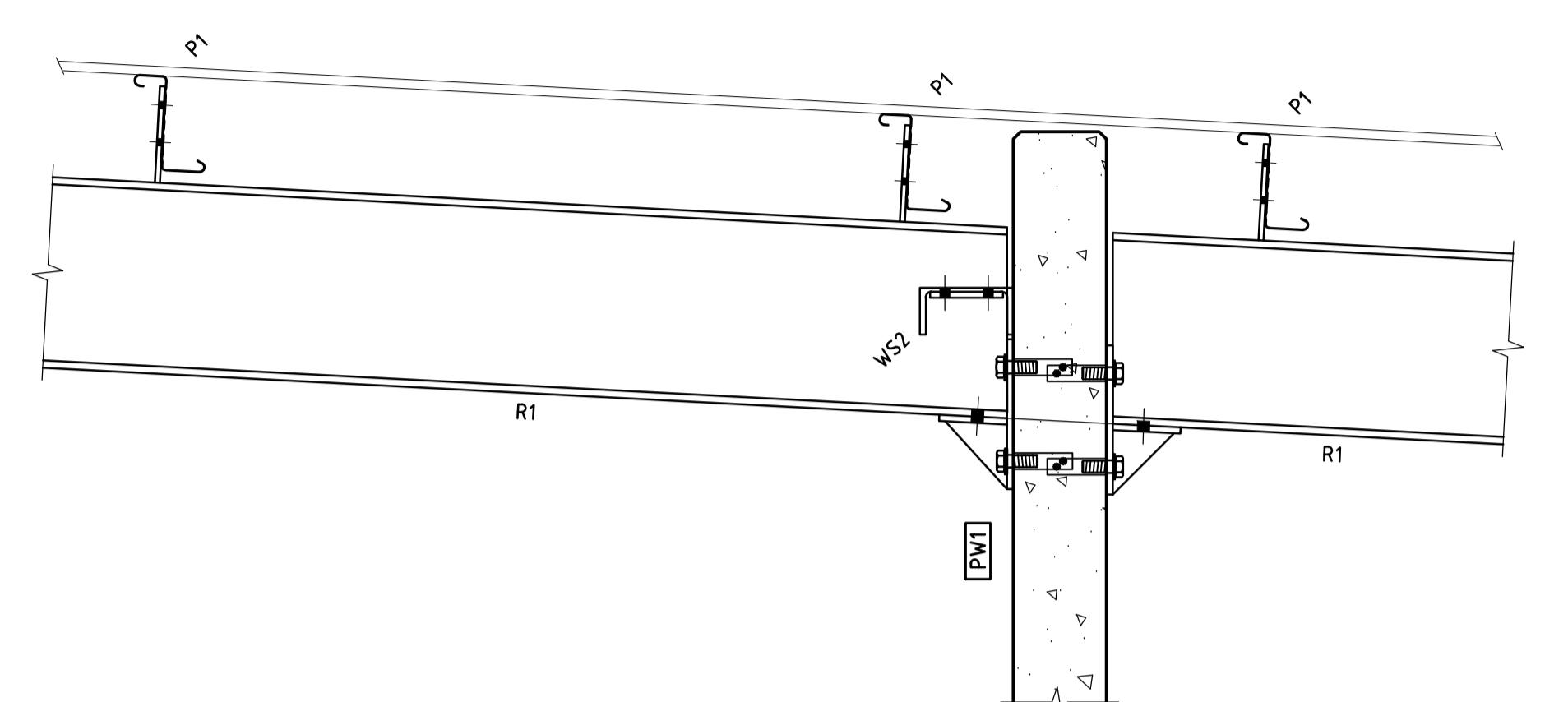
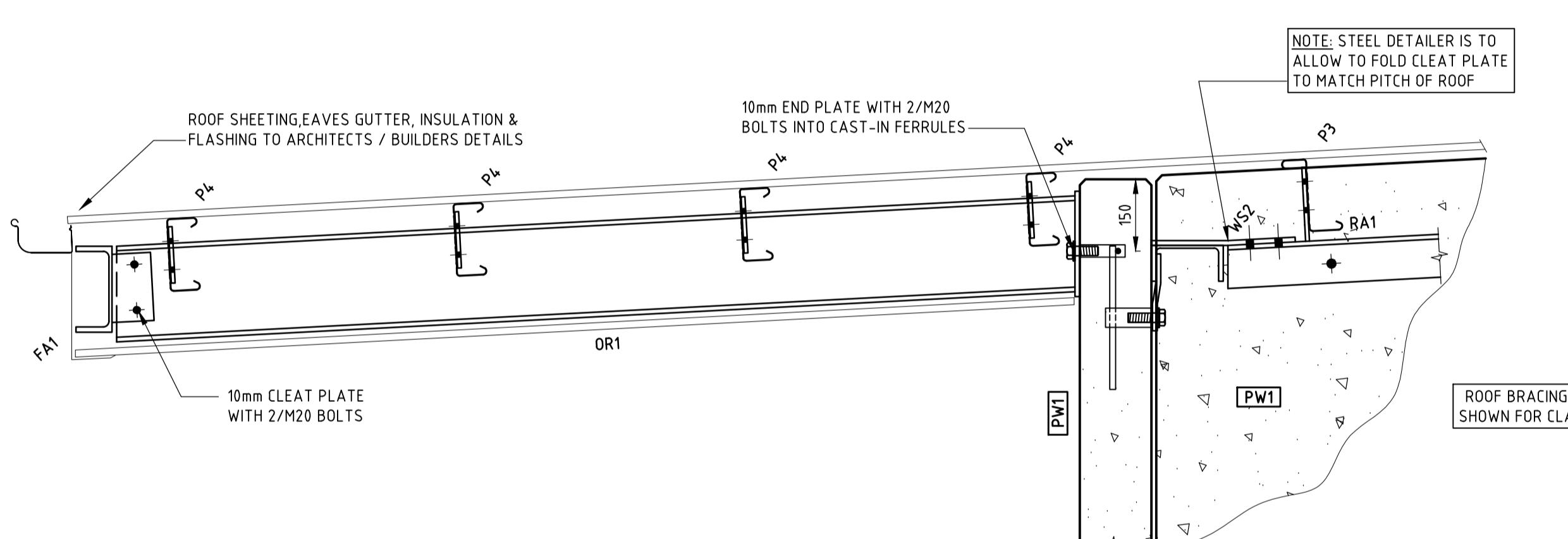
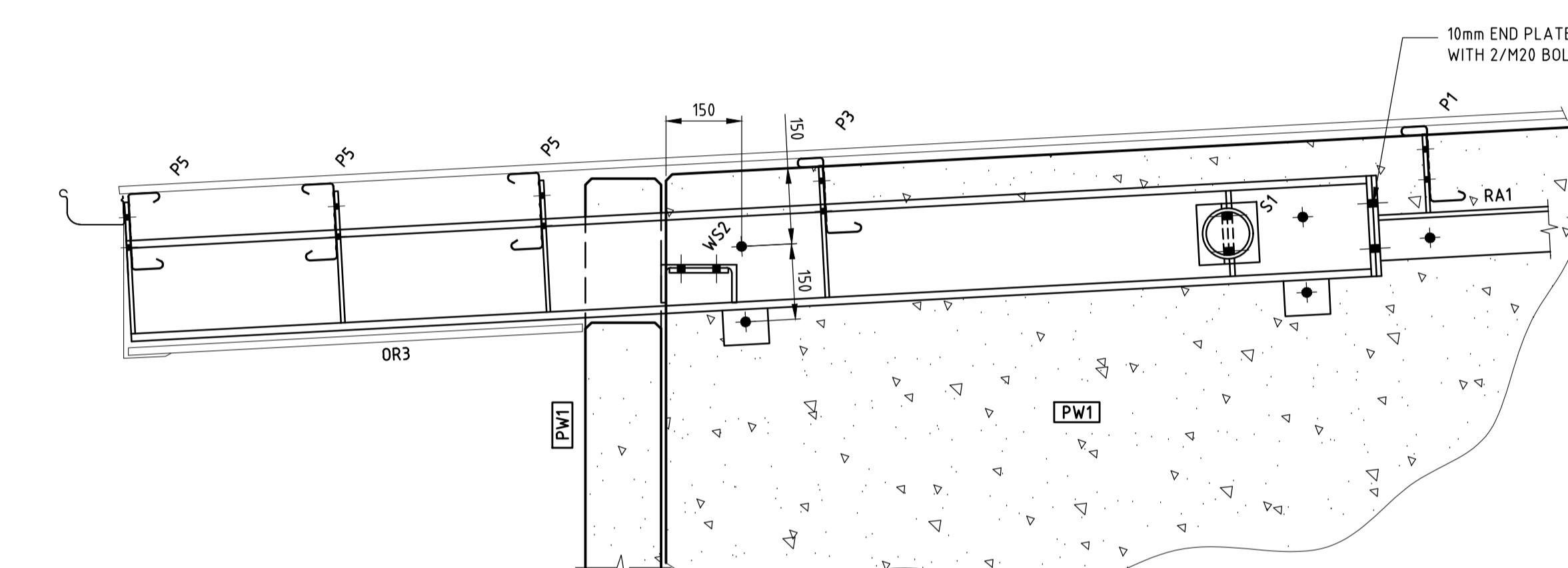
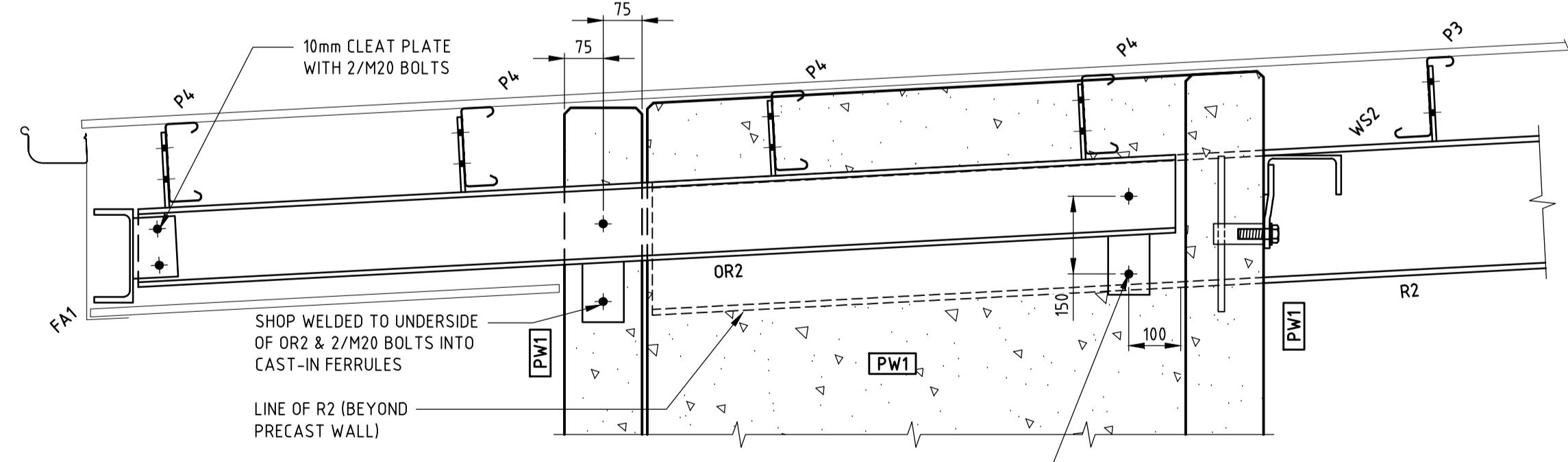
DRAWING TITLE
ROOF DETAILS
SHEET 1

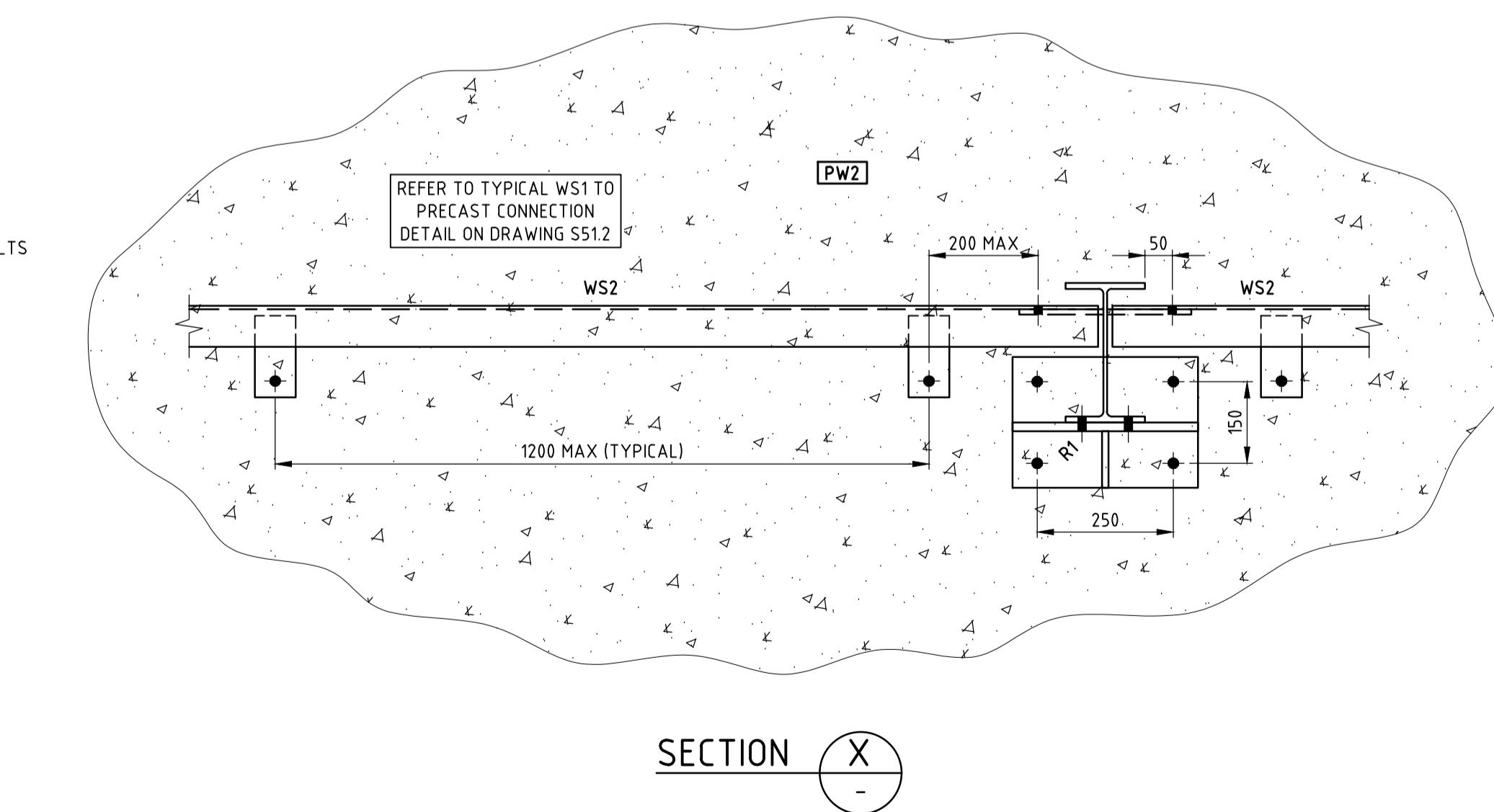
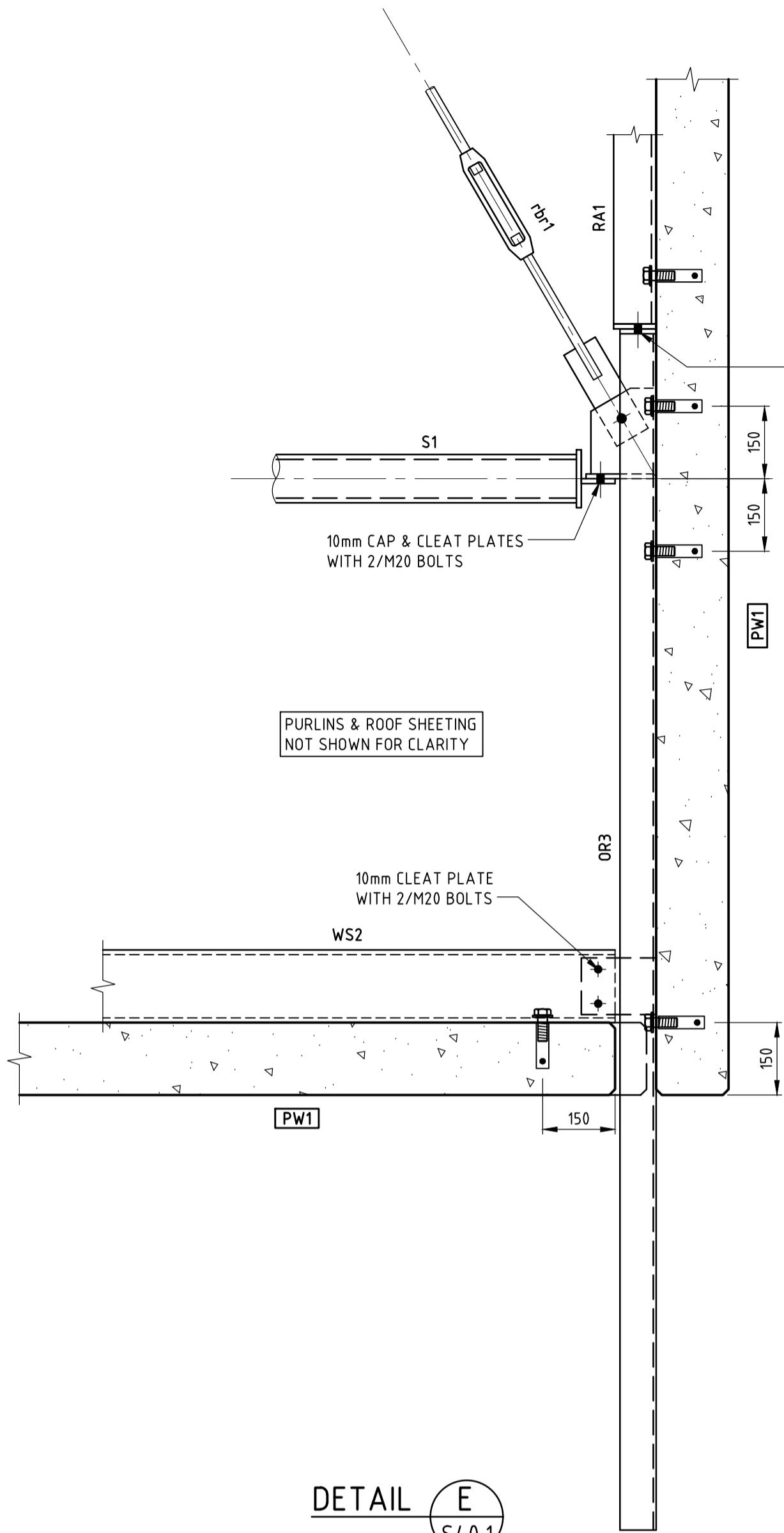
JOB NUMBER
NL202902

DRAWING NUMBER
S90.1

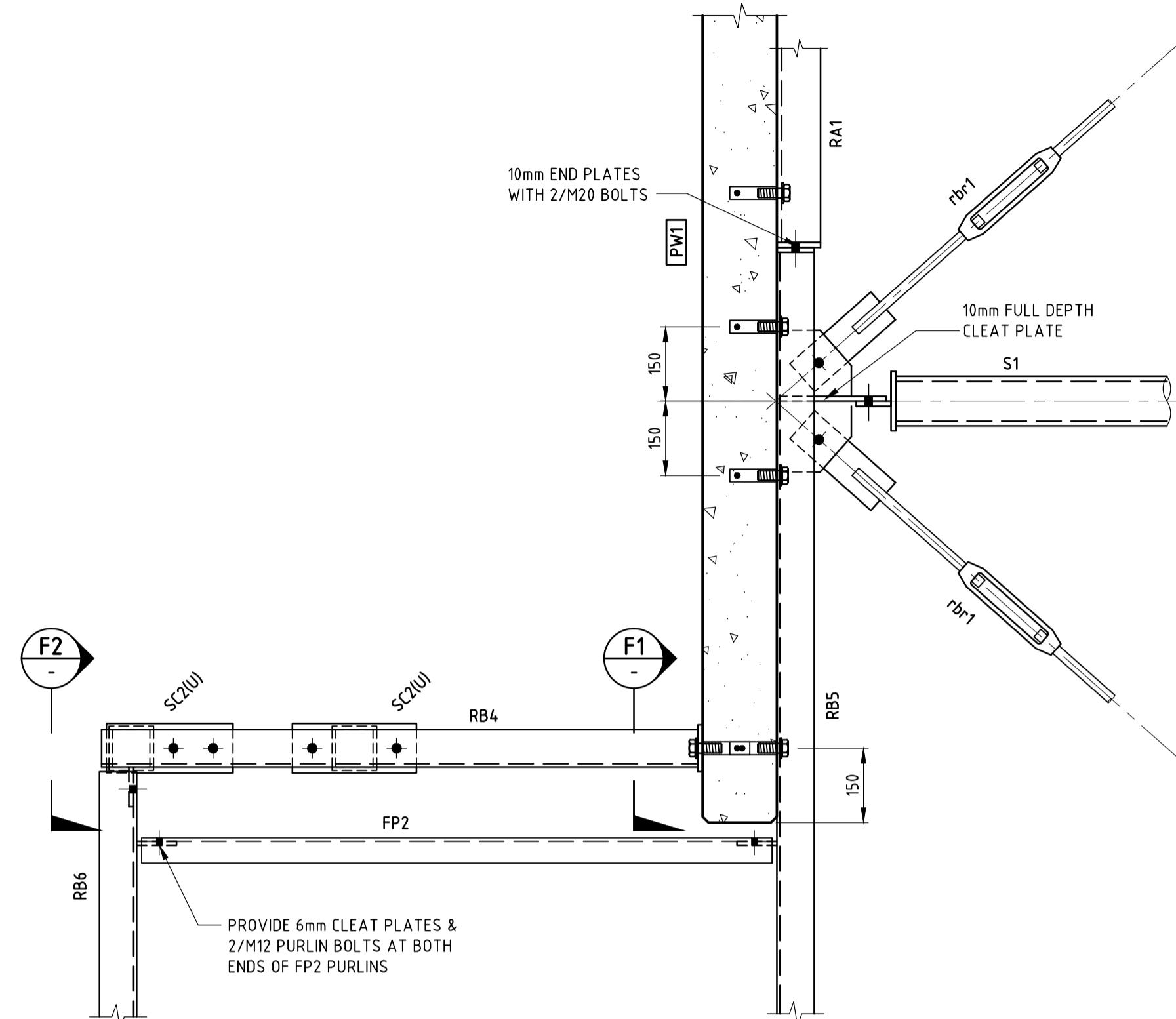
REVISION
C

DRAWING SHEET SIZE = A1

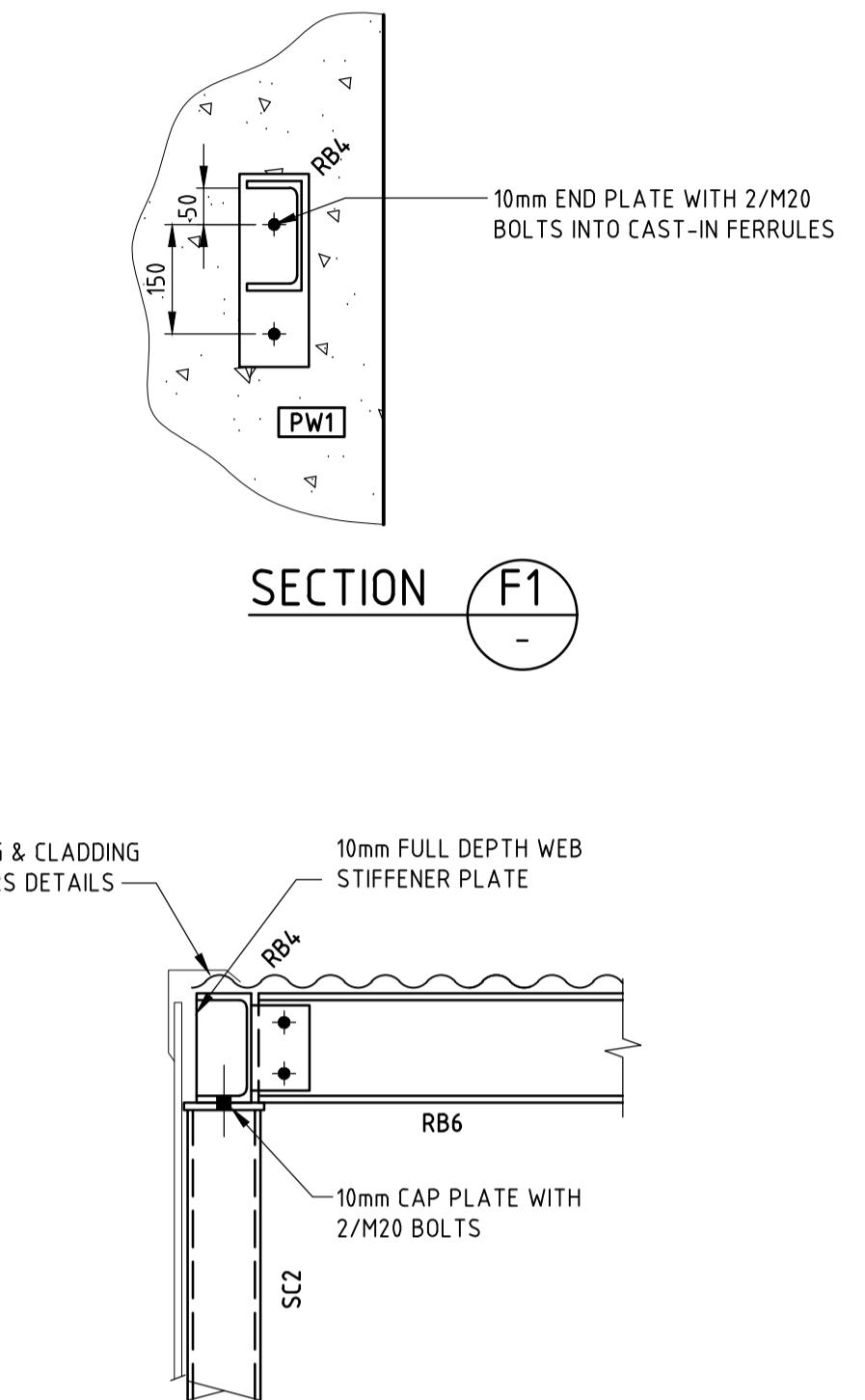
DRAWN: JOSHUA DICK	DESIGNED: ALEX FOSTER	JOB MANAGER: TREVOR CLACK	VERIFER: TREVOR CLACK
ROOF SHEETING, INSULATION & FLASHING TO ARCHITECTS / BUILDERS DETAILS			
1 PRELIMINARY	ISSUED JD	VER'D AF	DATE 14.05.21
A FOR CONSTRUCTION	JD	TC	AF 25.06.21
B REVISED FOR CONSTRUCTION	JD	TC	AF 06.07.21
C REVISED FOR CONSTRUCTION	JD	TC	AF 21.09.21
DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED			
AIQUA <small>M.J.CASSIDY & ASSOC. PTY LTD. 0437291376</small>		BUILDING DESIGNER MJC <small>M.J.CASSIDY & ASSOC. PTY LTD. 0437291376</small>	<small>ALL SETOUT TO ARCHITECT'S DRAWINGS, DIMENSIONS IN MILLIMETRES. NOT DRAWN TO SCALE. NOT DRAWN TO SCALE. NOT DRAWN TO SCALE.</small>
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SECTION 20 S40.1   			
SECTION 21 S40.1 			
SECTION 22 S40.1 			
SECTION 23 S40.1 			
JOHN HANSON PROPOSED DEVELOPMENT 43 ACCOLADE AVENUE MORRISET, NSW 2264			
ROOF DETAILS SHEET 2			
JOB NUMBER NL202902			
DRAWING NUMBER S90.2		REVISION C	
<small>DRAWING SHEET SIZE = A1</small>			



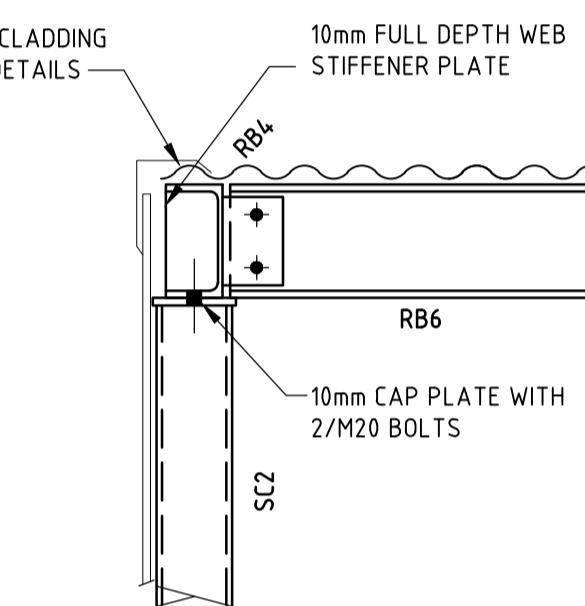
TYPICAL RAFTER/ROOF BEAM to
PRECAST CONNECTION DETAIL



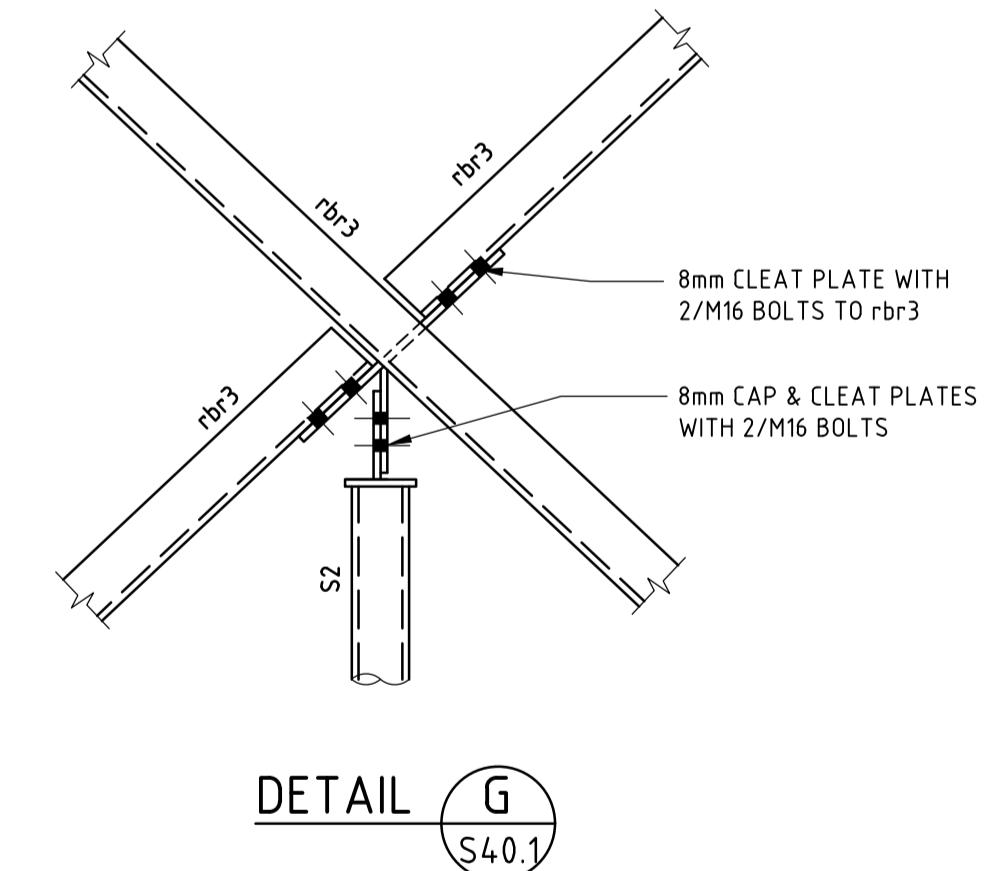
DETAIL F
S40.1



SECTION F1



SECTION F2



DETAIL G
S40.1

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
A	FOR CONSTRUCTION	JD	TC	AF	25.06.21
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C	REVISED FOR CONSTRUCTION	JD	TC	AF	21.09.21

AIQUA

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PROJECT
PROPOSED DEVELOPMENT
43 ACCOLADE AVENUE
MORRISET, NSW 2264

DRAWING TITLE
ROOF DETAILS SHEET 3

JOB NUMBER
NL202902

DRAWING NUMBER
S90.3

REVISION
C

DRAWING SHEET SIZE = A1