

DRAWING LIST	
DRAWING No.	DRAWING TITLE
S1.00	TITLE SHEET & DRAWING LIST
S1.01	CONSTRUCTION NOTES - SHEET 1
S1.02	CONSTRUCTION NOTES - SHEET 2
S2.00	FOOTING PLAN
S2.01	FOOTING DETAILS
S2.10	TYPICAL COLUMN AND WALL DETAILS
S3.00	LOWER GROUND SLAB PLAN
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S4.00	GROUND FLOOR SLAB PLAN
S4.01	GROUND FLOOR SLAB DETAILS
S5.00	FIRST FLOOR SLAB PLAN
S6.00	ROOF STEEL FRAMING PLAN
S6.01	STEEL FRAMING SECTIONS - SHEET 1
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S6.03	STEEL DETAILS - SHEET 1
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S7.00	PRECAST PANEL PLAN
S7.01	PRECAST PANEL ELEVATIONS
S7.02	TYPICAL PRE-CAST PANELS DETAILS
S8.00	STAIR DETAIL S/sk

ISSUED FOR SSDA

				Client WARAKIRRI COLLEGE				Level 5, 79 Victoria Avenue Chatswood NSW 2067				Telephone +61 2 9417 8400 Facsimile +61 2 9417 8337 Email email@hcoonsult.com.au Web www.henryandhymas.com.au				 henry&hymas				Project NEW LEARNING CENTRE 6A WATSFORD ROAD, CAMPBELLTOWN				Drawn H.W.		Designed D.M.		Date DEC. 2019										
				Architect KOTURIC + CO.																Checked D.M.		Approved R.K.		Scale														
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<table><tr><td>REVISION</td><td>AMENDMENT</td><td>DRAWN</td><td>DESIGNED</td><td>DATE</td></tr><tr><td>2</td><td>ISSUED FOR SSDA</td><td>HW</td><td>D.M.</td><td>05-08-2020</td></tr><tr><td>1</td><td>ISSUED FOR TENDER</td><td>K.S.</td><td>N.V.</td><td>19-12-2019</td></tr></table>				REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	2	ISSUED FOR SSDA	HW	D.M.	05-08-2020	1	ISSUED FOR TENDER	K.S.	N.V.	19-12-2019													Title TITLE SHEET & DRAWING LIST							
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GENERAL NOTES:

- G1 THESE DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION UNTIL THEY ARE MARKED FOR CONSTRUCTION AND APPROVED BY THE RELEVANT AUTHORITIES.
- G2 THE WORD 'ENGINEER' AS USED IN THESE NOTES REFERS TO AN EMPLOYEE OR NOMINATED REPRESENTATIVE OF H & H CONSULTING ENGINEERS PT LTD (TRADING AS HENRY & HYMAS)
- G3 STRUCTURAL DRAWINGS AND NOTES SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANT'S DRAWINGS, REPORTS, SPECIFICATIONS AND ANY OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER FOR CLARIFICATION OR DECISION BEFORE PROCEEDING WITH THE WORK.
- G4 UNDIMENSIONED DISTANCES SHALL NOT BE OBTAINED BY SCALING OFF THE STRUCTURAL DRAWINGS OR MEASURING FROM THE ELECTRONIC DRAWINGS. DIMENSIONED SIZES OF ALL STRUCTURAL ELEMENTS AS SHOWN ON HENRY & HYMAS DRAWINGS SHALL TAKE PRECEDENCE OVER THOSE SHOWN ON OTHER CONSULTANT'S DRAWINGS. IT IS THE BUILDING CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS PRIOR TO SETTING-OUT ON SITE.
- G5 STRUCTURAL ELEMENTS INDICATED ON THESE DRAWINGS ARE SHOWN IN THEIR INTENDED COMPLETE STATE. UNLESS NOTED OTHERWISE ON THE DRAWINGS, THE BUILDING CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND ERECTION OF TEMPORARY WORKS INCLUDING PROPPING, BRACING, SHORING AND ANY OTHER REQUIREMENTS THAT ARE NECESSARY TO MAINTAIN THE STRUCTURE, OR ANY PART OF IT, IN A STABLE CONDITION DURING CONSTRUCTION. THE BUILDER SHALL OBTAIN ADVICE FROM APPROPRIATELY QUALIFIED AND EXPERIENCED PERSONNEL FOR THIS PURPOSE.
- G6 NO PART OF THE STRUCTURE SHALL BE CONSTRUCTED ON OR ADJACENT TO ANY OF THE FOLLOWING UNLESS THE HAZARDS AND THE MITIGATION MEASURES IF REQUIRED, ARE INDICATED ON THE STRUCTURAL DRAWINGS;
- EMBANKMENTS, BATTERS, WATER RETAINING STRUCTURES, RETAINING WALLS, PITS, SEWERS, SERVICE TRENCHES, DRAINAGE CANALS, CREEKS OR ANY OTHER POTENTIAL SOURCE OF DAMAGE TO THE STRUCTURE. IF ANY SUCH HAZARDS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED AND APPROVAL OBTAINED PRIOR TO PROCEEDING.
- G7 THE BUILDING CONTRACTOR SHALL LOCATE ALL EXISTING AND PROPOSED SERVICES AND EASEMENTS, ON AND ADJACENT TO THE SITE. APPROVALS FROM THE RELEVANT STATUTORY AUTHORITIES AND THE ENGINEER SHALL BE OBTAINED PRIOR TO BUILDING ON OR OVER ANY SERVICES OR EASEMENTS.
- G8 EXCAVATION WORK SHALL NOT BE CARRIED OUT BELOW THE LEVEL OF ANY ADJOINING BUILDING FOOTINGS WITHOUT EXCLUSIVE APPROVAL FROM THE ENGINEER. THE BUILDING CONTRACTOR MUST OBTAIN WRITTEN CONSENT FROM THE ADJOINING PROPERTY OWNERS PRIOR TO THE INSTALLATION OF UNDERPINNING, GROUND ANCHORS, DRAINAGE LINES OR ANY OTHER WORK BEYOND THE PROPERTY BOUNDARY.
- G9 NO HOLES OR CHASES SHALL BE MADE IN ANY STRUCTURAL ELEMENT, UNLESS SHOWN ON THESE DRAWINGS OR WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER.
- G10 A FULL DEPTH 'V' JOINT SHALL BE PROVIDED IN RENDER WHERE TWO DIFFERING STRUCTURAL MATERIALS MEET. EG. AT THE JUNCTION OF MASONRY WITH CONCRETE.
- G11 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARDS, THE NATIONAL CONSTRUCTION CODE (FORMERLY BCA) AND THE REQUIREMENTS OF THE RELEVANT STATUTORY AUTHORITIES. ALL WORKMANSHIP SHALL CONFORM TO GOOD TRADE PRACTICE.
- G12 WATERPROOFING REQUIREMENTS SHALL BE AS SPECIFIED BY THE ARCHITECT AND ARE NOT NECESSARILY INDICATED ON STRUCTURAL DRAWINGS.
- G13 ONLY THE LATEST REVISIONS OF THE NOMINATED AUSTRALIAN STANDARDS SHALL APPLY WHERE REFERENCED ON THE DRAWINGS.
- G14 IT MUST BE NOTED THAT APPROVAL OF A SUBSTITUTION OR ALTERNATIVE FROM THE ENGINEER IS NOT, IN ITSELF, AN AUTHORISATION FOR A VARIATION.
- G15 THE ENGINEER SHALL BE GIVEN AT LEAST 48 HOURS NOTICE FOR SITE INSPECTIONS.

FLOOR SLAB DESIGN LOADS:

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

LOCATION	SUPERIMPOSED DEAD LOAD (SDL) - kPa	LIVE LOAD (LL) - kPa
PUBLIC SCHOOLS	- GENERAL 1.5	3.0
	- STEEL ROOF 0.4	0.25
OTHER	- FIRE STAIRS 0.1	4.0
	- ACCESS STAIRS 1.5	4.0
	- AMENITIES 0.5	2.0
	- CORRIDORS & LOBBIES 1.5	4.0
	- TERRACES / BALCONIES 1.5	4.0

- L2 WIND LOADS ARE IN ACCORDANCE WITH AS1170.2 AND AS FOLLOWS:
- WIND REGION - A2
 - TERRAIN CATEGORY - 3
 - IMPORTANCE LEVEL - 3
 - ANNUAL PROBABILITY OF EXCEEDANCE - 1/1000
 - REGIONAL WIND VELOCITY(VR) - 46 m/s

- L3 EARTHQUAKE LOADS ARE IN ACCORDANCE WITH AS1170.4 AND AS FOLLOWS:
- IMPORTANCE LEVEL - 3
 - ANNUAL PROBABILITY OF EXCEEDANCE - 1/1000
 - SUBSOIL CLASS - Cc
 - HAZARD FACTOR - 1.3
- EARTHQUAKE DESIGN CATEGORY - EDC II

- L4 SNOW LOADS ARE IN ACCORDANCE WITH AS1170.3 AND AS FOLLOWS:
- SNOW REGION - AC
 - IMPORTANCE LEVEL - 2
 - ANNUAL PROBABILITY OF EXCEEDANCE - 1/200
 - PROBABILITY FACTOR - 1.6

FOUNDATIONS:

- F1 FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT NO. CES180704_ZDC-AB DATED 18/10/2018 PREPARED BY CONSULTING EARTH SCIENTISTS.
- F2 FOOTINGS AND FOUNDATIONS HAVE BEEN DESIGNED FOR THE FOLLOWING BEARING PRESSURES:
- | | |
|----------------|------------|
| PAD FOOTINGS | - 150 kPa |
| STRIP FOOTINGS | - 150 kPa |
| BORED PILES | - 1000 kPa |
- FOUNDATION MATERIAL SHALL BE APPROVED BY THE CONSULTING GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF CONCRETE.

SAFETY IN DESIGN:

1. SAFETY IN DESIGN IS THE INTEGRATION OF CONTROL MEASURES EARLY IN THE DESIGN PROCESS TO ELIMINATE OR, IF NOT REASONABLY PRACTICABLE, MINIMISE RISKS TO HEALTH AND SAFETY THROUGHOUT THE LIFE OF THE STRUCTURE BEING DESIGNED.
- SAFETY IN DESIGN APPLIES TO THE DESIGN AND CONSTRUCTION PHASES, AND ALSO TO OPERATION, MAINTENANCE AND RENOVATION OF THE BUILDING OR FACILITY AS A WORKPLACE, AND FINALLY DEMOLITION OF THE STRUCTURE AT THE END OF ITS USEFUL LIFE.
2. ALL DESIGNERS INVOLVED IN THIS PROJECT MUST COMPLY WITH THE 'SAFE DESIGN OF STRUCTURES - CODE OF PRACTICE (2014)' PUBLISHED BY NSW WORKCOVER UNDER THE 'WORK HEALTH AND SAFETY ACT OF 2011'. SOME OTHER DOCUMENTS RELEVANT TO SAFETY IN DESIGN ARE AS FOLLOWS;
- PRACTICAL GUIDE TO PLANNING THE SAFE ERECTION OF STEEL STRUCTURES (1ST EDITION OCTOBER 2016) - PUBLISHED BY STEEL AUSTRALIA
 - EXCAVATION WORK CODE OF PRACTICE 2015 - SAFESOURCE AUSTRALIA
 - DEMOLITION WORK CODE OF PRACTICE 2016 - SAFESOURCE AUSTRALIA
3. REFERENCE TO THE SAFETY IN DESIGN (SID) REPORT DATED ??? A COMPLETED COPY OF THE SID REPORT MUST BE PROVIDED TO THE DEVELOPER / PROJECT MANAGER / DESIGNER IN THE CO-ORDINATE DOCUMENTATION SO THAT THE HAZARDS ARE BEING IDENTIFIED BY THE DESIGNER / DESIGN TEAM / THE TENDERERS/ THE BUILDING CONTRACTOR AND ADDRESSED IN THEIR SAFETY MANAGEMENT PLAN.
- IF ANY FURTHER ISSUES ARE IDENTIFIED BY AN EARLY INVOLVEMENT IN THIS PROJECT THAT ARE NOT INCLUDED IN THE SAFETY IN DESIGN REPORT, SUCH ISSUES SHALL BE BROUGHT TO THE NOTICE OF THE PROJECT MANAGER/ SUPERINTENDENT IMMEDIATELY.
5. NORMAL HAZARDS AND RISKS DURING ALL LIFE CYCLE STAGES ARE THE RESPONSIBILITY OF THE RELEVANT PARTIES DURING THE STAGE CONCERNED, AS NOTED BELOW;

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

BORED OR DRIVEN PILES:

- BP1 BORED PILES HAVE BEEN DESIGNED FOR THE SAFE WORKING LOADS INDICATED ON THE PLANS BASED ON THE RECOMMENDED ALLOWABLE BEARING PRESSURE AND SHAFT ADHESION VALUES. REFER TO THE GEOTECHNICAL REPORT FOR SITE SPECIFIC GEOTECHNICAL INFORMATION.
- DRIVEN PILES SHALL BE INSTALLED ON A 'DESIGN & CONSTRUCT' BASIS.
- BP2 WHERE PILES ARE INSTALLED ON A DESIGN & CONSTRUCT BASIS, THE PILING CONTRACTOR SHALL DESIGN AND INSTALL THE PILES IN ACCORDANCE WITH AS2159 AND THE PROJECT SPECIFICATIONS. ULTIMATE LOADS MAY BE DETERMINED BY MULTIPLYING THE WORKING LOADS BY A FACTOR OF 1.4. IT IS THE PILING CONTRACTOR'S RESPONSIBILITY TO GATHER FURTHER INFORMATION IF REQUIRED, THAT MAY NOT BE INCLUDED IN THE GEOTECHNICAL REPORT.
- DESIGN CALCULATIONS AND THE INSTALLATION METHODS SHALL BE SUBMITTED FOR THE ENGINEER'S REVIEW PRIOR TO PILE INSTALLATION.
- BP3 BORED PILES MAY HAVE TO BE LINED IN WEAK SOILS TO PREVENT COLLAPSE. CONTINUOUS FLIGHT AUGER (CFA) PILES OR TREMIE METHOD OF CONCRETING MAY BE USED IF GROUND WATER IS ENCOUNTERED.
- IT IS THE PILING CONTRACTOR'S RESPONSIBILITY TO USE APPROPRIATE PILING TECHNIQUES BASED ON THE RECOMMENDATIONS GIVEN IN THE GEOTECHNICAL REPORT.
- BP4 CENTRELINE OF THE PILES SHALL ALIGN WITH THE CENTRELINE OF THE COLUMNS ABOVE OR SYMMETRICALLY LOCATED UNDER THE PILECAPS AS APPLICABLE. UNO. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE COLUMN SETOUT.
- BP5 THE PILING CONTRACTOR SHALL VERIFY THE FOUNDING MATERIAL AND THE DEPTH OF PILES PRIOR TO PLACING REINFORCEMENT AND POURING CONCRETE.
- BP6 ALL PILES HAVE BEEN DESIGNED TO CARRY THE DESIGN LOADS AT A MAXIMUM OUT-OF-POSITION TOLERANCE OF 75 mm IN ACCORDANCE WITH AS2159. UNLESS THE PILING CONTRACTOR CAN DEMONSTRATE OTHERWISE, ANY PILES WHICH ARE OUT OF POSITION BY MORE THAN 75 mm WOULD REQUIRE APPROPRIATE RECTIFICATION SYSTEMS.
- ALL PILES SHALL BE INSTALLED USING A RIG CAPABLE OF MAINTAINING A MAXIMUM VERTICAL TOLERANCE OF ± 20 mm PER METRE LENGTH.
- BP7 NOTIFY THE ENGINEER IMMEDIATELY IF ANY OBSTRUCTIONS ARE ENCOUNTERED OTHER THAN THOSE INDICATED IN THE GEOTECHNICAL REPORT.
- BP8 CONCRETE SHALL BE PLACED IN BORED PILES TO ENSURE A SOUND AND MONOLITHIC COMPACTED CONCRETE SHAFT UP TO THE CUT-OFF LEVEL. TAKE APPROPRIATE MEASURES TO AVOID SEGREGATION, BLEEDING AND GROUT DEFICIENCY OF THE PILE.
- BP9 EACH PILE SHALL BE TRIMMED TO ± 25 mm OF THE CUT-OFF LEVEL. ANY DAMAGE CAUSED TO THE PILES DURING TRIMMING MUST BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.
- BP10 UPON COMPLETION OF PILING, THE PILING CONTRACTOR SHALL FURNISH THE FOLLOWING DOCUMENTS TO THE BUILDING CONTRACTOR AND THE ENGINEER.
- A WORK-AS-EXECUTED SURVEY OF THE PLAN POSITIONS OF ALL PILES PREPARED BY A QUALIFIED SURVEYOR.
 - A CERTIFICATE FROM A QUALIFIED ENGINEER (IN THE CASE OF DESIGN & CONSTRUCT PILES) THAT ALL PILES HAVE BEEN DESIGNED, INSTALLED AND TESTED AS NECESSARY IN ACCORDANCE WITH AS2159 TO SAFELY CARRY THE LOADS AS INDICATED ON THE DRAWINGS.
- BP11 THE PILING RIG SHALL NOT BE DEMOBILISED FROM SITE UNTIL THE ENGINEER AND THE GEOTECHNICAL CONSULTANT HAVE ISSUED THE FINAL SIGN-OFF OF ALL PILES.

REINFORCEMENT:

- R1 REFER TO THE CONCRETE NOTES FOR SPECIFIED COVERS TO REINFORCEMENT. COVERS SHALL BE MAINTAINED AT ALL CHAMFERS, DRIP GROOVES AND RECESSES OR AS NOTED ON THE DRAWINGS.
- R2 REINFORCEMENT IS SHOWN DIAGRAMMATICALLY, IT IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.
- R3 REINFORCEMENT SHALL NOT BE CUT OR WELDED ON SITE WITHOUT PRIOR APPROVAL FROM THE ENGINEER. AT SMALL PENETRATIONS LESS THAN 300 mm IN SIZE IN A WALL OR A SLAB, BARS SHALL BE DISPLACED TO EITHER SIDE.
- R4 SITE BENDING OF REINFORCEMENT SHALL BE AVOIDED WHERE POSSIBLE. WHERE SITE BENDING IS SPECIFIED, OR UNAVOIDABLE, IT SHALL BE CARRIED OUT COLD, WITHOUT THE APPLICATION OF HEAT, AND IN ACCORDANCE WITH THE PRACTICE NOTE RPNV1 OF THE STEEL REINFORCEMENT INSTITUTE OF AUSTRALIA (SRIA).
- R5 SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN ON THE DRAWINGS. WRITTEN APPROVAL OF THE ENGINEER SHALL BE OBTAINED FOR ANY OTHER SPLICES. WHERE LAP LENGTHS ARE NOT SHOWN THEY SHALL BE AS INDICATED BELOW:
- | BAR SIZE | MINIMUM LAP LENGTH (mm) | |
|----------|-------------------------|--------|
| R10/N10 | 400 | (500) |
| N12 | 500 | (650) |
| N16 | 750 | (950) |
| N20 | 1000 | (1300) |
| N24 | 1250 | (1600) |
| N28 | 1500 | (1900) |
| N32 | 1750 | (2200) |
| N36 | 2050 | (2650) |

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

THE ABOVE DEVELOPMENT LENGTHS APPLY ONLY FOR MAIN REINFORCEMENT IN CONCRETE ≥ 32 MPa OR HIGHER WITH A MINIMUM CLEAR COVER OF 20 mm FOR WALLS / SLABS AND 30 mm FOR COLUMNS / BEAMS WITH AT LEAST R10 FITMENTS. LAP LENGTHS FOR ANY OTHER COMBINATIONS SHALL BE CALCULATED IN ACCORDANCE WITH SECTION 13 OF AS3600.

- R6 REINFORCEMENT SYMBOLS:
- N - DENOTES D500 DEFORMED BAR TO AS 4671
 - R - DENOTES 250R HOT ROLLED PLAIN BAR TO AS 4671
 - SU/R - DENOTES HARD DRAWN WIRE REINFORCEMENT FABRIC TO AS4671
 - W - DENOTES R500L HARD DRAWN PLAIN WIRE TO AS4671
- R7 FABRIC REINFORCEMENT SHALL BE LAPPED WITH TWO TRANSVERSE WIRES PLUS 50 mm.
- JOGGLES TO BARS SHALL CONSIST OF A LENGTH OF 12 BAR DIAMETERS BETWEEN THE BEGINNING AND THE END OF AN OFFSET OF ONE BAR DIAMETER.
- HOOKS, BENDS AND COGS SHALL BE IN ACCORDANCE WITH AS3600, UNO ON THE DRAWINGS.
- R8 ALL REINFORCEMENT BARS SHALL BE CHAIRED AT MAXIMUM CENTRES AS FOLLOWS:
- | | |
|--------|--|
| BARS | - 800 mm |
| FABRIC | - 600 mm BOTH WAYS FOR MESH SL72 OR LOWER AND 800 mm FOR LARGER MESH |
- EXTRA CHAIRS MAY BE REQUIRED ADJACENT TO THE SLAB EDGES AND JOINTS TO PREVENT UPWARD DEFLECTION OF THE FABRIC WHEN STOOD ON.
- R9 PLASTIC TIPPED STEEL CHAIRS SHALL ONLY BE USED FOR EXPOSURE CATEGORIES A1 AND A2. FULL PLASTIC CHAIRS SHALL BE USED AT ELEMENT FACES HAVING AN EXTERNAL EXPOSURE IN THE COMPLETED STRUCTURE. WHERE REINFORCEMENT IS SUPPORTED ON GROUND PROVIDE PLATES UNDER ALL BAR CHAIRS.
- ALL REINFORCEMENT SHALL BE SECURELY SUPPORTED AND MAINTAINED IN CORRECT POSITIONS DURING CONCRETING.
- R10 AT THE END SUPPORT OF A SLAB ON A MASONRY WALL, ALL BOTTOM REINFORCEMENT SHALL EXTEND OVER THE MASONRY WALL BY 75 mm FOR N12 BARS OR 95 mm FOR N16 BARS. BARS SHALL BE COGGED IF COVER REQUIREMENTS PROHIBIT THIS.

CONCRETE:

- C1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600 AND OTHER RELEVANT AUSTRALIAN STANDARDS UNLESS VARIED BY THE ENGINEER.
- C2 BEFORE THE COMMENCEMENT OF CONCRETING, THE BUILDING CONTRACTOR SHALL ENSURE THAT THE CONCRETOR IS FULLY AWARE OF ANY AREAS OF FORMWORK THAT HAVE BEEN PRE-CAMBERED OR PRE-SET. EXTREME CARE SHALL BE TAKEN TO ENSURE THAT THE SPECIFIED DEPTHS OF BEAMS AND SLABS ARE ACHIEVED OVER THE PRE-CAMBERED OR PRE-SET FORMWORK.
- C3 THE BUILDING CONTRACTOR SHALL PROVIDE CONSTANT SUPERVISION OF CONCRETE POURS AND ENSURE THAT :
- ALL APPROVALS ARE OBTAINED FROM THE ENGINEER, PT CONTRACTOR, FORMWORK ENGINEER AND OTHER RELEVANT CONSULTANTS.
 - REINFORCEMENT IS INSTALLED ACCORDING TO THE DESIGN DRAWINGS AND SECURED TO PREVENT DISPLACEMENT DURING CONCRETING.
 - NO SITE WATER IS ADDED TO CONCRETE BEING POURED OR THE CONCRETE IN WAITING TRUCKS.
 - ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS, SHALL BE FULLY VIBRATED USING A HIGH FREQUENCY MECHANICAL VIBRATOR TO ACHIEVE FULL COMPACTION BY COMPLETELY FILLING THE FORMWORK, FREE OF STONE POCKETS AND THOROUGHLY EMBEDDING THE REINFORCEMENT.
 - NO CONCRETE IS POURED WHEN THE AMBIENT TEMPERATURE EXCEEDS 35°C.
 - POURED CONCRETE IS PROTECTED FROM RAIN, WARM DRYING WINDS OR OTHER EXTREME WEATHER EVENTS.
 - COLUMNS AND WALLS SHALL NOT BE POURED TOGETHER WITH THE SLAB OVER. A MINIMUM OF 6 HOURS GAP SHALL BE MAINTAINED BETWEEN THE POURS OF VERTICAL AND HORIZONTAL ELEMENTS.
 - FORMED CONCRETE SURFACES SHALL HAVE FORMWORK CLASS AND SURFACE FINISHES IN ACCORDANCE WITH AS3610, OR AS SPECIFIED BY THE PROJECT ARCHITECT.
- C4 CONDUITS, PIPES AND THE LIKE SHALL BE PLACED WITHIN THE MIDDLE THIRD OF THE SLAB DEPTH AND AT A MINIMUM SPACING OF NOT LESS THAN 3 DIAMETERS. CONDUITS AND PIPES SHALL NOT BE PLACED WITHIN THE CONCRETE COVER.
- C5 NO HOLES, PENETRATIONS, CHASES AND CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT PRIOR APPROVAL OF THE ENGINEER.
- C6 CONCRETE PLACEMENT SHALL BE PLANNED IN SUCH A WAY THAT SUFFICIENT TIME IS ALLOWED FOR THE FINISHING OPERATIONS TO BE COMPLETED WITHIN NORMAL WORKING HOURS. WHERE THE SLAB OR PAVEMENT IS CONSTRUCTED IN THE OPEN OR ON SITES EXPOSED TO WINDS, RAPID DRYING OF THE CONCRETE SURFACE RESULTING IN INCREASED RATE OF HARDENING MAY LEAVE INSUFFICIENT TIME TO TROWEL THE SURFACE. CONSTRUCTION OF THE BUILDING SHALL BE PROGRAMMED TO MINIMISE THESE PROBLEMS. FOR INTERIOR FLOORS, WHERE POSSIBLE, COMPLETE THE ROOF AND PREFERABLY THE WALLS BEFORE THE FLOOR SLAB IS PLACED.
- C6 ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS, SHALL BE FULLY VIBRATED USING A HIGH FREQUENCY MECHANICAL VIBRATOR TO ACHIEVE FULL COMPACTION BY COMPLETELY FILLING THE FORMWORK, FREE OF STONE POCKETS (HONEYCOMBS) AND THOROUGHLY EMBEDDING THE REINFORCEMENT.
- C7 THE FOLLOWING PRACTICES SHALL BE AVOIDED WHILE FINISHING AND TROWELLING THE SURFACE;
- EXCESSIVE WORKING OF THE CONCRETE SURFACE DURING COMPACTING, LEVELLING AND POWER-FLOATING OF A PAVEMENT. EXCESSIVE WORKING WOULD RESULT IN A LAYER OF CEMENT RICH MORTAR BEING BROUGHT TO THE SURFACE THAT IS PRONE TO RAPID WEARING, POSSIBLY CRAZE AND DUST BADLY.
 - FLOATING OR TROWELLING WHILE BLEED WATER CONTINUES TO RISE OR REMAINS ON THE SURFACE. RE-WORKING OF BLEED WATER IN TO THE SURFACE LAYER WOULD SIGNIFICANTLY INCREASE THE WATER-CEMENT RATIO OF THE CONCRETE IN THE SURFACE LAYER RESULTING IN A WEAKENED SURFACE PRONE TO DUSTING AND DELAMINATION.
 - USING A MIXTURE OF CEMENT AND STONE DUST (KNOWN AS DRIERS) TO ABSORB BLEED WATER THAT WOULD PRODUCE A VERY POOR WEARING SURFACE.
- C8 VERTICAL CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED WITH AN EDGEBOARD, THOROUGHLY SCABBLE AND CLEAN THE FIRST POUR OF ALL LOOSE AND POORLY COMPACTED CONCRETE AND LAITANCE, SOAK AND APPLY 1 CEMENT : 2 SAND SLURRY OR AN APPROVED BONDING AGENT IMMEDIATELY PRIOR TO PLACING THE SECOND POUR. THE SECOND POUR SHALL BE THOROUGHLY COMPACTED AGAINST THE FIRST POUR.
- C9 ALL CONCRETE SHALL BE PROPERLY CURED. CURING SHALL COMMENCE WITHIN 2 HOURS OF POURING AND SHALL CONTINUE FOR A MINIMUM OF 7 DAYS, USING AT LEAST ONE OF THE METHODS BELOW AND THEN FOLLOWED BY GRADUAL DRYING OUT. WHEN THE AMBIENT TEMPERATURE EXCEEDS 32°C CURING SHALL BE ACHIEVED USING METHODS a) OR b) ONLY.
- PONDING OR CONTINUOUS SPRINKLING WITH POTABLE WATER.
 - USE AN ABSORBENT COVER KEPT CONSTANTLY WET.
 - USE AN IMPERMEABLE SHEET MEMBRANE OVER A MOISTENED SURFACE. THE MEMBRANE SHALL BE FIXED AND LAPPED SO THAT NO AIR CIRCULATION CAN OCCUR AT THE CONCRETE SURFACE.
 - USE A CURING COMPOUND COMPLYING WITH AS3799, APPLIED UNIFORMLY IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHEN DRY THE COATINGS SHOULD BE CONTINUOUS, FLEXIBLE AND WITHOUT VISIBLE BREAKS OR PIN HOLES FOR AT LEAST SEVEN DAYS. THE COMPATIBILITY OF CURING COMPOUNDS WITH PROPOSED APPLIED FINISHES SHALL BE VERIFIED PRIOR TO APPLICATION.
- FORMED SURFACES EXPOSED WITHIN 14 DAYS OF CASTING SHALL BE SPRAYED WITH AN APPROPRIATE CURING AGENT IMMEDIATELY UPON EXPOSURE.
- C10 NO MASONRY OR PARTITION WALLS SHALL BE CONSTRUCTED ON SUSPENDED FLOORS UNTIL 7 DAYS AFTER PROPPING HAS BEEN REMOVED AND ONLY WITH THE APPROVAL OF THE ENGINEER.

CONCRETE (CONTINUED):

C11 SPECIFICATIONS FOR CONCRETE:

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

Element	Slump	Max. Agg. Size	Cement Type	Exposure Class/fin.	Mn. Conc. Grade (f _o) MPa U.N.O.	Conc. Cover (U.N.O.)	Comments
Mass Conc. Footings/Piers	80	20	GP	A2	25	-	
Reinforced Footings/Piers	80	20	GP	A2 (Non-Aggressive Soils)	32	45	
				B1 (Low-Aggressive Soils)	32	50	
				B2 (in High Sulphate or Saline Soils)	40	55	
Columns/Walls (Incl. Tie-Up/Precast Wall Panels)	80	20	GP	A2 - Internal	Refer Column Details - 32 Min.	25	Greater Cover May Be Required for Fire. Refer C12.
				B1 - External (1-50 km from Coast)	Refer Column Details - 40 Min.	40	
Core Filling Grout	230±30	10	GP	-	20	-	
Internal Suspended Slabs/Beams	80	20	Reinft. GP (U.N.O.) Post-Tensioned - SL	A1 - (Residential or > 50 km from Coast Only)	Refer Plans - 32 Min.	20	Greater Cover May Be Req'd for Fire. Refer C12.
				A2		25	
External Suspended Slabs/Beams	80	20	SL	B1 - External (1-50 km from Coast)	Refer Column Details - 40 Min.	30	Greater Cover May Be Req'd for Fire. Refer C12.
				B2 - External (Up to 1 km from Coast)		45	
Internal Slab On Ground (Top Cover Only, Refer Reinft'd. Figs./Piers For Btm. Cover)	80	20	GP	A1 - (Residential or > 50 km from Coast Only)	32	25	With Wearing Allowance Of 5mm
				A2		30	
External Slab On Ground (Top Cover Only, Refer Reinft'd. Figs./Piers For Btm. Cover)	80	20	SL	B1 - External (1-50 km from Coast)	32	45	With Wearing Allowance Of 5mm
				B2 - External (Up to 1 km from Coast)	40	50	

NOTE:

- ALL CONCRETE WITH SHRINKAGE LIMITED (SL) CEMENT SHALL HAVE A MAXIMUM SHRINKAGE STRAIN OF 650 MICROSTRAINS AS DETERMINED BY TESTS IN ACCORDANCE WITH AS 1012.13 AFTER 8 WEEKS OF DRYING.
- WATER CEMENT RATIO OF CONCRETE SHALL NOT EXCEED 0.55 (EXCEPT FOR CORE FILLING GROUT IN BLOCK WALLS).

- C12 UNLESS MORE STRINGENT CRITERIA IS SPECIFIED ELSEWHERE IN THE DOCUMENTATION, THE FOLLOWING CONCRETE COVERS SHALL BE USED FOR CONVENTIONALLY REINFORCED ELEMENTS ONLY. FOR POST-TENSIONED SLABS, REFER PT CONTRACTOR'S SHOP DRAWINGS.



Fire Resistance Level (Minutes)	Element Type				Column	Wall
	Flat Slab	Reinforced Slab	Banded/Ribbed Slab	Continuous (One Two Way)		
30					25	
60	25	25	25	25	30	25
90					35	
120	30	35			40	30
180	40	50	35		50	50
240	45	60	45	35	55	55

ABBREVIATIONS:

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

ISSUED FOR SSDA

					Client
					WARAKIRRI COLLEGE
					Architect
					KOTURIC + CO.
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1	ISSUED FOR TENDER	K.S.	N.V.	19-12-2019	
REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	

Level 5, 79 Victoria Avenue Chatswood NSW 2067	Telephone +61 2 9417 8400 Facsimile +61 2 9417 8337 Email ema@hhyonsult.com.au Web www.henryandhyamas.com.au
	

Project NEW LEARNING CENTRE 6A WATSFORD ROAD, CAMPBELL TOWN
Title CONSTRUCTION NOTES - SHEET 1

Drawn H.W.	Designed D.M.	Date DEC. 2019
Checked D.M.	Approved R.K.	Scale
Drawing number 19712-S1.01		Revision 2

FORMWORK:

- F1 FORMWORK AND FALSEWORK SHALL BE DESIGNED, CONSTRUCTED AND STRIPPED IN ACCORDANCE WITH AS3610.
- THE BUILDING CONTRACTOR SHALL ENGAGE A QUALIFIED PROFESSIONAL FOR THE DESIGN, CONSTRUCTION AND CERTIFICATION OF FORMWORK, FALSEWORK AND THEIR SUPPORTS.
- DESIGN INFORMATION REGARDING THE GROUND SUPPORT FOR FORMWORK AND FALSEWORK SHALL BE DETERMINED FROM THE CONDITIONS EXISTING ON SITE AT THE TIME OF CONSTRUCTION.
- THE FORMWORK SHALL NOT BE DESIGNED TO RELY ON RESTRAINT OR STABILITY FROM THE PERMANENT STRUCTURE WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- F2 WHERE APPLICABLE, FORMWORK SHALL BE DESIGNED TO ACCOMMODATE MOVEMENT AND LOAD REDISTRIBUTION FROM POST-TENSIONING. THE FORMWORK DESIGNER SHALL CONSULT WITH THE POST-TENSIONING CONTRACTOR ON THE DESIGN REQUIREMENTS.
- F3 SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THE APPLIED FINISHES. BEAM DEPTHS ARE USUALLY NOTED FIRST AND INCLUDE THE SLAB THICKNESS. FOR CHAMFERS, DRIP GROOVES, REGLETS ETC., REFER TO THE ARCHITECT'S DRAWINGS AND/OR SPECIFICATIONS.
- F4 PROVIDE UPWARD CAMBER OR PRESET IN FORMWORK TO SLABS AND BEAMS WHERE NOTED ON THE DRAWINGS.
- THE FORMWORKER SHALL MAKE THE BUILDING CONTRACTOR AND CONCRETOR FULLY AWARE OF THE LOCATIONS WHERE FORMWORK IS CAMBERED OR PRE-SET IN ORDER THAT THE FULL DEPTHS OF THE MEMBERS ARE ACHIEVED DURING CONCRETING.
- F5 FOR HORIZONTAL RC ELEMENTS, FORMWORK MAY BE STRIPPED WHEN THE CONCRETE HAS REACHED 80% OF ITS SPECIFIED 28 DAY STRENGTH UNO ON THE DRAWINGS.
- ALTERNATIVELY, FORMWORK MAY BE STRIPPED AND PROGRESSIVELY BACK-PROPPED AFTER 5 DAYS SUBJECT TO APPROVAL FROM THE ENGINEER. THE PROPPING SHALL REMAIN IN PLACE UNTIL THE CONCRETE HAS REACHED 80% OF THE SPECIFIED 28 DAY STRENGTH.
- ADDITIONAL CONDITIONS MAY APPLY IF THE SLAB IS TRANSFERRING A STRUCTURE ABOVE OR SUBJECT TO EXCESSIVE CONSTRUCTION LOADING.
- STRIPPING AND BACK PROPPING TO POST-TENSIONED SLABS SHALL BE AS DIRECTED BY THE POST-TENSION CONTRACTOR.
- F6 VERTICAL FORMS TO BEAM SIDES, COLUMNS AND WALLS MAY BE STRIPPED AFTER 3 DAYS AND WHEN THE FORMWORKER IS SATISFIED THAT STRIPPING WILL NOT DAMAGE THE GREEN CONCRETE.
- F7 THE FORMWORKER SHALL PROVIDE CLEANOUTS TO ALL COLUMNS AND WALLS AND LEAVE THEM OPEN FOR THE ENGINEER'S INSPECTION, AND CLOSE OFF IMMEDIATELY PRIOR TO POURING.
- F8 IN MULTI STOREY CONSTRUCTION, PROPPING SHALL BE PROVIDED FOR AT LEAST 3 LEVELS BELOW THE FLOOR BEING CAST. PROP REMOVAL SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER TO AVOID OVER-STRESSING THE PREVIOUSLY CAST FLOORS.
- F9 REFER TO THE ARCHITECT'S SPECIFICATIONS FOR THE REQUIRED CLASS OF SURFACE FINISH TO THE FORMED SURFACES.

MASONRY CONSTRUCTION:

- B1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3700 AND AS NOTED ON THE DRAWINGS.
- B2 BRICK AND BLOCK COMPRESSIVE STRENGTH (F_{cd}) SHALL BE 15 MPa MINIMUM UNO. STRENGTH GRADE SHALL BE CLEARLY INDICATED ON THE DELIVERY DOCKETS.
- B3 JOINT MORTAR SHALL BE OF CLASS M3 WITH 1:1:6 (CEMENT: LIME: SAND) PROPORTIONS BY VOLUME AND COMPLY WITH AS3700. MORTAR JOINTS SHALL BE 10 mm THICK AND HAVE A MAXIMUM TOOLED DEPTH OF 3 mm UNO.
- B4 NON-LOAD BEARING WALLS SHALL BE SEPARATED FROM THE LOAD-BEARING ELEMENTS BY 15 mm THICK 'CAÑEITE' OR EXPANDED POLYSTYRENE UNO AT BOTH HORIZONTAL AND VERTICAL FACES.
- NON-LOAD BEARING WALLS SHALL BE TIED TO THE SOFFITS OF BEAMS OR SLABS OVER BY USING 'MET 4:1 TIES (OR APPROVED EQUIVALENT)', AT 800 mm MAX. CENTRES, UNO ON THE DRAWINGS, TO MANUFACTURER'S SPECIFICATIONS.
- B5 WHERE CONCRETE SLABS BEAR ON UNREINFORCED MASONRY, INCLUDING CLAY BRICKS, RENDER THE BEARING SURFACE OF THE MASONRY WALL WITH 1:3 (CEMENT : SAND) MORTAR TO ACHIEVE A LEVEL SURFACE AND PLACE A PRE-GREASED METAL SLIP JOINT PROTECTED BY 0.2 mm POLYETHYLENE SHEET TAPED TO THE FORMWORK BEFORE PLACING CONCRETE. SPECIAL DETAILS SUCH AS WATER-PROOFING MAY APPLY FOR ROOF SLABS OR SIMILARLY EXPOSED ELEMENTS.
- B6 CONTROL JOINTS
1. CONTROL JOINTS SHALL BE PROVIDED IN MASONRY WALLS AS PER THE TABLE BELOW UNLESS CLOSER SPACINGS ARE SPECIFIED ELSEWHERE IN THE DOCUMENTATION.
- | MASONRY TYPE | LOCATION | JOINT SIZE (mm) | SPACING (m) |
|-------------------------------------|-----------------------------------|-----------------|-------------|
| CONCRETE MASONRY | -EXTERNAL | 10 | 7.0 |
| | -EXTERNAL | 10 | 5.0 |
| | (WITH OPENINGS > 900mm IN HEIGHT) | | |
| | -INTERNAL (FACE FINISHED) | 10 | 6.0 |
| LIGHT-WEIGHT MASONRY / CLAY MASONRY | -INTERNAL (RENDERED) | 10 | 5.0 |
| | -INTERNAL / EXTERNAL | 10 | 6.0 |
| | -INTERNAL / EXTERNAL | 15 | 6.0 * |
| | -PARAPET WALLS | 15 | 4.0 |
- * - FOR REACTIVE 'CLASS M' SITES ONLY. REFER TABLE 4.3 OF AS3700:2011 FOR ARTICULATION JOINTS IN CLAY MASONRY.
2. CONTROL JOINTS SHALL BE PLACED AT HALF THE SPECIFIED SPACING FROM A CORNER, PROVIDE JOINTS TO MATCH JOINTS IN THE SUPPORTING STRUCTURE.
3. CONTROL JOINTS MUST BE KEPT FREE OF MORTAR AND SEALED WITH A POLYETHYLENE FOAM BACKING ROD SQUEEZED INTO THE GAP AND A GUNNED-IN MASTIC SEALANT. IF THE WALL IS TO BE FIRE-RATED, A FIRE-RATED SEALING SYSTEM WILL BE REQUIRED INSTEAD.
- B7 BRICKWORK
1. BRICKWORK SUPPORTED BY A SUSPENDED FLOOR SLAB SHALL NOT BE ERECTED UNTIL THE CONCRETE HAS GAINED FULL 28 DAY STRENGTH AND THE FORMWORK HAS BEEN REMOVED OR APPROVAL HAS BEEN GIVEN BY THE ENGINEER.
2. FOR CAVITY WALLS, WALL TIES SHALL BE PROVIDED AT 600 mm MAXIMUM CENTRES BOTH VERTICALLY AND HORIZONTALLY AND CONSIST OF 3 mm DIA. 316 GRADE STAINLESS STEEL WIRES UNO.
3. WHERE AN EXTERNAL BRICK LEAF CONTINUES PAST THE SLAB EDGE, IT SHALL BE TIED TO THE SLAB EDGE BY USING 1/8" GRADE STAINLESS STEEL 'MET 6:1 TIES' (OR APPROVED EQUIVALENT) AT 900 mm MAX. CENTRES
4. IN MULTI-STOREY CONSTRUCTION, MASONRY WALLS SHALL BE VERTICALLY SUPPORTED AT EVERY SECOND FLOOR ON A SHELF ANGLE FIXED TO THE SLAB EDGE OR A CORBEL.

BRICK WALL LINTEL SCHEDULE		
MAX. SPAN mm	LINTEL SIZE	END BEARING
1000	90 x 10 BAR	110
1500	90 x 90 x 10 EA	110
2100	100 x 100 x 10 EA	110
2700	150 x 90 x 10 UA	150
3000	150 x 100 x 12 UA	150
NOTE:		
1.	PROVIDE LINTELS, NOT SHOWN ON PLAN, AT ALL OPENINGS TO EACH 110 BRICK SKIN IN ACCORDANCE WITH THE SCHEDULE ABOVE.	
2.	ERECT ANGLES WITH LONGEST LEG VERTICAL.	
3.	HOT DIP GALVANISE ALL LINTELS.	
4.	THERE MUST BE AT LEAST 3 COURSES OF BRICKWORK OVER THE CLEAR SPAN OPENING.	
5.	ALL LINTELS MUST BE PROPPED DURING BRICKWORK CONSTRUCTION.	

- B8 BLOCKWORK
1. IN CORE-FILLED BLOCKWORK, EXCESS MORTAR PROTRUDING INTO THE CORES SHALL BE REMOVED BY RODDING AFTER EACH COURSE IS LAID. EVERY CORE FILLED WITH GROUT SHALL HAVE A CLEANOUT BLOCK IN THE BOTTOM COURSE.
2. REINFORCEMENT SHALL BE PLACED AND SECURELY TIED IN POSITION AS SHOWN ON THE DRAWINGS. STARTER BARS SHALL BE HELD IN PLACE BY TYING TO HORIZONTAL BARS AT CLEANOUT BLOCKS. PROVIDE COVER TO REINFORCEMENT AS SHOWN IN THE DETAILS.
3. CORE FILLING GROUT SHALL BE AS NOTED IN CONCRETE NOTES IN LIFTS NO MORE THAN 1200mm IN HEIGHT.

STRUCTURAL STEEL:

- S1 ALL STRUCTURAL STEEL, MATERIALS, FABRICATION AND ERECTION SHALL COMPLY WITH AS4100.
- S2 STRUCTURAL STEEL SHALL BE GRADE 350 MINIMUM FOR HOLLOW SECTIONS AND GRADE 300 MINIMUM FOR ALL ROLLED SECTIONS UNO. STEEL FABRICATOR SHALL PROVIDE ALL CERTIFICATIONS FOR QUALITY AND GRADE OF STEEL MEMBERS AND STRUCTURAL BOLTS FOR THE ENGINEER'S REVIEW.
- S3 BOLTS ARE DESIGNATED ON THE DRAWINGS BY THE NUMBER, DIAMETER, GRADE AND TIGHTENING PROCEDURE IN ACCORDANCE WITH AS4100 AND THE 'HANDBOOK 1: DESIGN OF STRUCTURAL STEEL CONNECTIONS' PUBLISHED BY ASI.
- S4 BOLTS SHALL BE OF SIZE M20, GRADE 8.8/ S AND A MINIMUM OF 2 BOLTS PER CONNECTION UNO. CLEATS AND GUSSETS SHALL BE 10 mm THICK UNO.
- ALL CLEATS AND DRILLINGS FOR FIXING OF TIMBER MEMBERS ETC. SHALL BE PROVIDED BY THE FABRICATOR.
- S5 ALL PLATES INCLUDING BUT NOT LIMITED TO CAP, BASE AND GUSSET PLATES TO BE FULLY WELDED TO THE STEEL MEMBERS UNO.
- S6 WELDING AND TESTING
- UNLESS NOTED OTHERWISE, WELDS SHALL BE 6 mm CATEGORY 'SP' CONTINUOUS FILLET WELDS WITH APPROVED COVERED ELECTRODES.
- WHERE STAINLESS STEEL IS WELDED TO MILD STEEL, USE A SUITABLE OVER ALLOYED ELECTRODE.
- THE EXTENT OF NON-DESTRUCTIVE WELD EXAMINATION SHALL BE AS NOTED BELOW. RADIOGRAPHIC OR ULTRASONIC EXAMINATION SHALL BE TO AS1554.1, AS2177.1 AND AS2307.

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

- FLASH WELDING AND TESTING OF ALL STUDS SHALL COMPLY WITH AS1554.2
- S7 ALL CORNERS AND EDGES OF ALL EXTERNAL STEEL PLATES AND SECTIONS ARE TO BE ROUNDED TO A RADIUS OF NOT LESS THAN 2 mm PRIOR TO SURFACE PREPARATION.
- S8 INTERNAL STEELWORK SHALL BE GRIT BLASTED TO CLASS 2.5 AND PAINTED WITH BLUE ZINC PHOSPHATE AND 75 mm DRY FILM THICKNESS UNLESS OTHERWISE NOTED IN ARCHITECTURAL SPECIFICATIONS.
- ALL EXTERNAL STEELWORK AND STEEL MEMBERS SPECIFIED ON THE DRAWINGS OR OTHER RELATED CONTRACT DOCUMENTS AS GALVANISED SHALL CONFORM TO THE REQUIREMENTS OF AS4680. THE MINIMUM APPLICATION RATE FOR GALVANISING SHALL BE 550 g/ sqm.
- PROVIDE 6 mm SEAL PLATES TO ALL HOLLOW SECTIONS, WITH 'BREATHER' HOLES IF MEMBERS ARE TO BE HOT DIP GALVANISED.
- S9 CAMBER OR PRESET TO STRUCTURAL STEEL ROOF BEAMS, TRUSSES, PORTALS ETC., SHALL BE PROVIDED AS NOTED ON THE DRAWINGS.
- S10 ALL STRUCTURAL STEELWORK BELOW GROUND SHALL BE ENCASED IN CONCRETE WITH 75 mm COVER ALL AROUND OR PAINTED WITH 2 COATS OF APPROVED BITUMEN PAINT.
- S11 ALL PROPRIETARY CHEMICAL AND MECHANICAL ANCHORS ARE TO BE INSTALLED AT SPACINGS, EDGE DISTANCES AND DEPTHS AS INDICATED ON THE DRAWINGS. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS INCLUDING THE DRILLING METHOD, HOLE DIAMETER, CLEANING, CURING AND TIGHTENING.
- S12 USE NON-SHRINK GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 40 MPa, TIGHTLY PACKED UNDER ALL BEARING AND BASE PLATES.
- S13 IF ANY TRANSLUCENT ROOF SHEETING IS SPECIFIED ON THE ARCHITECTURAL DRAWINGS, THEY SHALL BE OF A GAUGE COMPATIBLE WITH THE SPECIFIED PURLIN SPACING. ALTERNATIVELY, PROVIDE ADDITIONAL C10012 PURLIN TRIMMERS AS REQUIRED TO SUPPORT THE SHEETING.
- SAFETY MESH UNDER TRANSLUCENT SHEETING, IF REQUIRED, SHALL CONFORM TO WORKCOVER REQUIREMENTS.
- S14 SUSPENDED CEILINGS AND BULKHEADS, WHERE SUPPORTED BY PURLINS, SHALL BE SUPPORTED BY WEB CONNECTIONS ONLY AND NOT HOOKED FROM THE BOTTOM LIP. THE BUILDING CONTRACTOR SHALL ENSURE THAT ALL SUB-CONTRACTORS COMPLY WITH THIS REQUIREMENT.
- S15 ELECTRONIC OR HARD COPIES OF SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER AND APPROVAL OBTAINED BEFORE COMMENCING FABRICATION.
- ENGINEER'S APPROVAL WILL ONLY COVER THE SECTION SIZES AND CONNECTIONS, NOT THE MEMBER LENGTHS OR DIMENSIONAL LAYOUT.
- S16 STABILITY OF THE STRUCTURE DURING STEEL ERECTION IS THE STEEL ERECTOR'S RESPONSIBILITY. PROVIDE TEMPORARY BRACING AND/ OR GUY WIRES AS REQUIRED.
- REFER TO THE 'STEEL ERECTION GUIDE' :

STRUCTURAL STEEL (CONTINUED):

- S17 STEELWORK ERECTION GUIDE
- S17.1 THIS GUIDE IS ONLY INTENDED TO PROVIDE THE STEEL ERECTOR WITH A RECOMMENDED PROCEDURE FOR ERECTING THE STEELWORK SAFELY AND EFFICIENTLY. THE FABRICATION AND ERECTION OF THE STRUCTURAL STEELWORK SHALL BE SUPERVISED BY A COMPETENT PERSON IN ORDER TO ENSURE THAT ALL REQUIREMENTS OF THE DESIGN ARE MET. HENRY & HYMAS WILL NOT BE LIABLE FOR THE QUALITY OF ERECTION NOR ASSUME ANY RESPONSIBILITY FOR ANY CONSTRUCTION DEFECTS RESULTING FROM IMPROPER ERECTION TECHNIQUES OR NEGLIGENCE OF OTHER PARTIES.
- S17.2 THE STEEL ERECTOR SHALL BE A COMPETENT PERSON FAMILIAR WITH THE FOLLOWING STANDARDS/ MANUALS AND OTHER INDUSTRY PRACTISES & GUIDELINES.
- I) AS / NZS5131:2016 - STRUCTURAL STEELWORK - FABRICATION AND ERECTION
- II) AS4100:1998 - STEEL STRUCTURES
- III) PRACTICAL GUIDE TO PLANNING THE SAFE ERECTION OF STEEL STRUCTURES (1ST EDITION) - AUSTRALIAN STEEL INSTITUTE (2016)
- IV) SAFE DESIGN OF STRUCTURES CODE OF PRACTICE - SAFEWORK AUSTRALIA (2014)
- 17.3 THE CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTORS ON SITE. CONTRACTORS ARE RESPONSIBLE FOR FULL COMPLIANCE WITH ALL THE SAFETY REQUIREMENTS OF THE GOVERNING REGULATORY AUTHORITY AS WELL AS ANY ADDITIONAL REQUIREMENTS IMPOSED BY THE DEVELOPER.
- 17.4 THE STRUCTURE SHALL NOT BE SUBJECT TO EXCESSIVE CONSTRUCTION LOADING SUCH AS MATERIAL STACKING UNLESS EXPLICITLY NOTED ON THE DESIGN DRAWINGS.
- 17.5 ALL GUY ROPES AND PROPS SHALL BE DESIGNED BY A COMPETENT PERSON FOR AN OUT-OF-PLANE LOAD EQUAL TO 2.5% OF GRAVITY LOADS PLUS WIND LOADS ARISING FROM A 100 YEAR RETURN PERIOD. LONG SPAN RAFTERS/ TRUSSES SHALL BE BRACED AGAINST TWISTING AND BUCKLING.
- 17.6 OUTLINED BELOW IS HENRY & HYMAS' RECOMMENDED PROCEDURE FOR STEEL ERECTION. THE STEEL ERECTOR SHALL SUBMIT A DETAILED ERECTION SEQUENCE METHODOLOGY INCLUDING THE WITNESS AND HOLD POINTS AND ANY DEVIATIONS FROM THE RECOMMENDED PROCEDURE FOR REVIEW BY HENRY & HYMAS PRIOR TO ERECTING ANY STEELWORK.

- STEELWORK ERECTION SEQUENCE - STEEL FRAMED STRUCTURE ~~(DELETE IF NOT RELEVANT)~~
- STEP 1 - ERECT COLUMNS ALONG **GRID x** FROM GRID A TO B AND BRACE THEM WITH GUY ROPES OR PROPS TO RESTRAIN AGAINST POTENTIAL SWAY IN ANY DIRECTION. ERECT RAFTERS ALONG THE SAME GRID LINE STARTING FROM **GRID A**.
- STEP 2 - ERECT COLUMNS AND RAFTERS ALONG **GRID x+1** AND PROGRESSIVELY ATTACH LEAD PURLINS/ STRUTS AND DIAGONAL BRACINGS BACK TO THE FRAME ALREADY ERECTED. SQUARE AND PLUMB BRACED BAYS BEFORE MOVING TO STEP 3.
- STEP 3 - PROCEED WITH THE ERECTION OF THE REMAINING FRAMES ALONG **GRIDS x+2 TO x+N** INCLUDING ANY VERTICAL BRACING.

- STEP 4 - TEMPORARY BRACING MAY BE REMOVED AFTER ALL THE PRIMARY MEMBERS SUCH AS COLUMNS, RAFTERS AND WALL/ ROOF BRACING ELEMENTS HAVE BEEN ERECTED AND SIGNED OFF BY HENRY & HYMAS, OR WHEN SUFFICIENT LATERAL STABILITY HAS BEEN ACHIEVED. INSTALLATION OF SECONDARY COMPONENTS SUCH AS PURLINS, GIRTS, FLY BRACING, FASCIA, TRUSSES ETC. SHOULD FOLLOW.

- STEELWORK ERECTION SEQUENCE - TILT PANEL BUILDING ~~(DELETE IF NOT RELEVANT)~~
- STEP 1 - ERECT TILT PANELS AND PROP TO GROUND AS SHOWN ON THE TILT PANEL SHOP DRAWINGS.
- STEP 2 - ERECT COLUMNS ALONG **GRID x+1** FROM GRID A TO B AND BRACE THEM WITH GUY ROPES OR PROPS TO RESTRAIN AGAINST POTENTIAL SWAY IN ANY DIRECTION. ERECT RAFTERS ALONG THE SAME GRID LINE STARTING FROM GRID A AND PROGRESSIVELY ATTACH LEAD PURLINS/ STRUTS AND DIAGONAL BRACINGS BACK TO THE TILT PANELS ALONG **GRID x**.
- STEP 3 - PROCEED WITH THE ERECTION OF REMAINING FRAMES ALONG **GRIDS x+2 TO x+N**
- STEP 4 - TEMPORARY BRACING MAY BE REMOVED AFTER ALL THE PRIMARY MEMBERS SUCH AS COLUMNS, RAFTERS AND WALL/ ROOF BRACING ELEMENTS HAVE BEEN ERECTED AND SIGNED OFF BY HENRY & HYMAS, OR WHEN SUFFICIENT LATERAL STABILITY HAS BEEN ACHIEVED. INSTALLATION OF SECONDARY COMPONENTS SUCH AS PURLINS, GIRTS, FLY BRACING, FASCIA TRUSSES ETC. SHOULD FOLLOW.

NOTE - WORDS IN RED ITALICS TO BE UPDATED BY H&H ENGINEER

PRECAST & TILT PANELS:

- P1 PRECAST OR TILT PANEL CONSTRUCTION SHALL COMPLY WITH AS3850 AND AS3600. ANY VARIATIONS TO THE DIMENSIONS, SPECIFIED PRODUCTS ETC., SHALL BE APPROVED BY THE ENGINEER.
- P2 ALL REINFORCEMENT SHOWN ON THE STRUCTURAL DRAWINGS ARE FOR IN-SERVICE LOADINGS ONLY. THE PANEL CONTRACTOR SHALL DESIGN ANY ADDITIONAL REINFORCEMENT TO ENSURE THAT THE PANELS HAVE SUFFICIENT STRENGTH FOR LIFTING, TRANSPORT, ERECTION AND TEMPORARY SUPPORT CONDITIONS. ALL BRACINGS AND SUPPORTING STRUCTURES (DEADMAN OR FLOOR SLAB) SHALL BE STRUCTURALLY ADEQUATE TO SUPPORT THE WIND AND OTHER TEMPORARY LOADS.
- P3 FLOOR BRACING INSERTS SHALL NOT BE LESS THAN 600 mm AWAY FROM ANY JOINTS.
- P4 THE PANEL CONTRACTOR SHALL PROVIDE AN ENGINEER'S CERTIFICATE TO THE BUILDING CONTRACTOR AND THE ENGINEER CONFIRMING THAT THE DESIGNS COMPLY WITH AS3850, AS3608 AND AS/NZS1170.2. THIS CERTIFICATE IS AN ESSENTIAL REQUIREMENT FOR THE ENGINEER'S SIGN-OFF OF THE PANEL SHOP DRAWINGS.
- P5 NO WELDING OR APPLICATION OF HEAT ARE PERMITTED TO ANY SPECIFIED INSERTS.
- P6 REFER TO ARCHITECT'S DRAWINGS FOR SILL BEVEL, REBATE AND SPITTER DETAILS.
- P7 ALL CAST-IN FERRULES SHALL BE OF 90 mm MINIMUM LENGTH INSTALLED WITH 300 mm LONG CROSS RODS.
- P8 BASE OF ALL PANELS SHALL BE GROUTED TO PROVIDE A CONTINUOUS BEARING UNDER THE FULL LENGTH AND THICKNESS OF THE PANELS. WHERE PANELS SUPPORT SUSPENDED SLABS, GROUTING SHALL BE ADEQUATELY CURED PRIOR TO REMOVAL OF SLAB FORMWORK. PROVISION OF SHIMS IS PERMITTED ONLY AT THE POSITIONS SHOWN ON THE DRAWINGS.
- P9 SURFACE QUALITY:
- i) DIMENSIONAL TOLERANCES OF PANELS SHALL COMPLY WITH TABLE 3.11(A) OF AS3850 AND SECTION 17.5 OF AS3600. CASTING BEDS (FLOOR SLABS, PAVEMENTS OR TEMPORARY CASTING BEDS) SHALL BE POURED TO THE TOLERANCES WITHIN THE REQUIRED SURFACE FINISHES OF THE PANELS.
- ii) ALL PANELS AND CASTING BEDS SHALL HAVE A STEEL TROWELLED FINISH WITHOUT TROWEL MARKS.
- P10 CASTING - CONCRETE ELEMENTS MAY BE STACK-CAST IN THE REVERSE ORDER OF ERECTION. TILT PANELS SHALL BE CAST WITH THEIR EXTERNAL FACES DOWN TO MINIMISE THE NEED FOR COSMETIC PATCHING AFTER ERECTION.

ISSUED FOR SSDA

					Client
					WARAKIRRI COLLEGE
					Architect
					KOTURIC + CO.
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1	ISSUED FOR TENDER	K.S.	N.V.	19-12-2019	
REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	

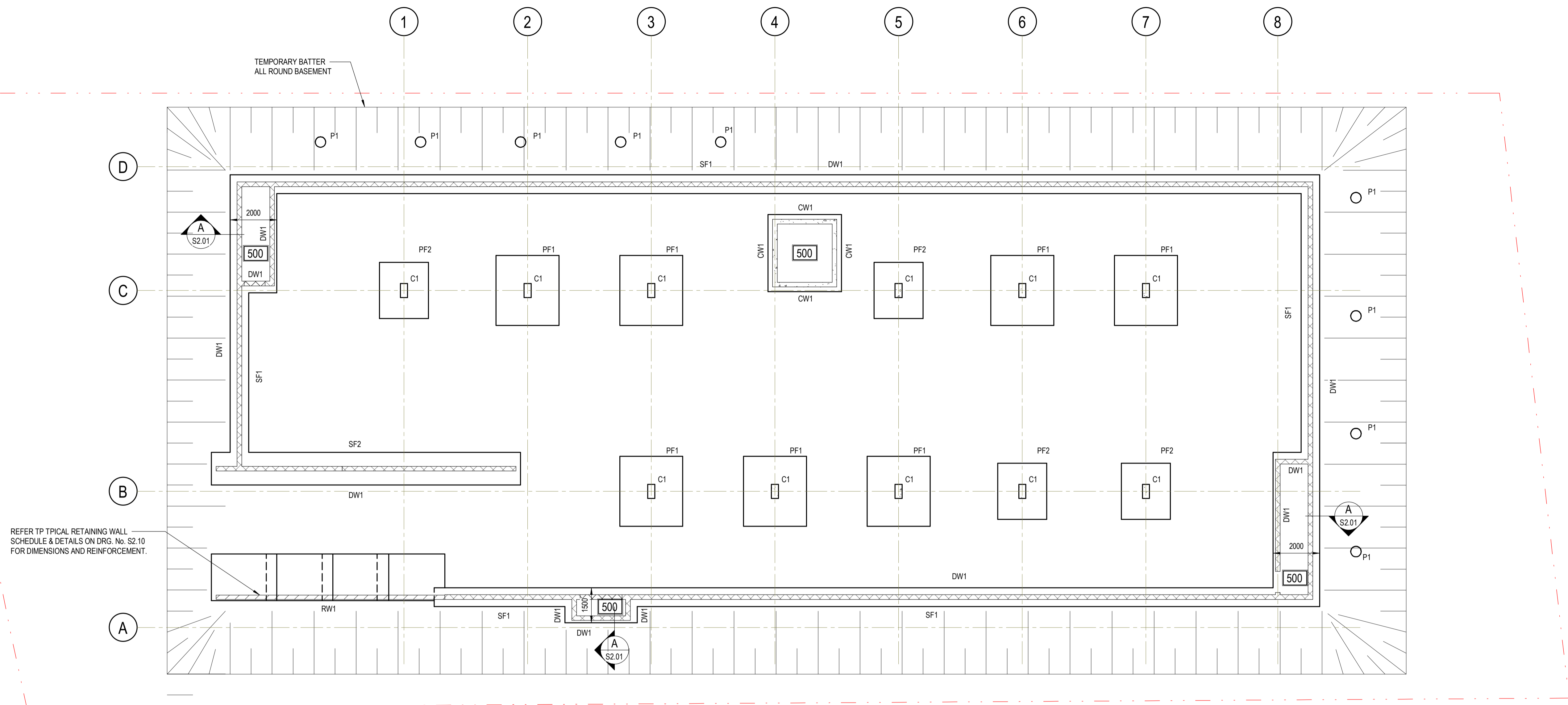
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REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	

Level 5, 79 Victoria Avenue Chatswood NSW 2067	Telephone +61 2 9417 8400 Facsimile +61 2 9417 8337 Email emaill@hhoonsult.com.au Web www.henryandhymas.com.au
	



Project	Drawn	Designed	Date
NEW LEARNING CENTRE 6A WATSFORD ROAD, CAMPBELL TOWN	H.W.	D.M.	DEC. 2019
Title	Checked	Approved	Scale
CONSTRUCTION NOTES - SHEET 2	D.M.	R.K.	
Drawing number	Revision		
19712-S1.02	2		

Drawn	Designed	Date
H.W.	D.M.	DEC. 2019
Checked	Approved	Scale
D.M.	R.K.	
Drawing number	Revision	
19712-S1.02	2	



FOOTING PLAN
SCALE 1 : 100

FOUNDATIONS:

- F1 FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT No. GES180704_ZDC-AB DATED 18/10/2018 PREPARED BY CONSULTING EARTH SCIENTISTS.
- F2 FOOTINGS AND FOUNDATIONS HAVE BEEN DESIGNED FOR THE FOLLOWING BEARING PRESSURES:
- | | |
|----------------|------------|
| PAD FOOTINGS | - 150 kPa |
| STRIP FOOTINGS | - 150 kPa |
| BORED PILES | - 1000 kPa |

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

FOOTING NOTES:

- FOUNDATION MATERIAL SHALL BE INSPECTED BY A QUALIFIED GEOTECHNICAL ENGINEER TO VERIFY THAT THE DESIGN AND SOIL PARAMETERS SCHEDULED HAVE BEEN ACHIEVED ON SITE.
- REFER FOUNDATION NOTES FOR ALLOWABLE BEARING CAPACITY
- ALL PADS TO COLUMNS SHALL BE SET OUT ON COLUMN CENTERLINE (REFER ARCHITECT'S DRAWINGS FOR SET OUT)
- THE PROJECT DATUM AS NOMINATED BELOW SHALL BE ***** (REFER ARCHITECT'S DRAWING FOR FSL.)
- | | |
|----------|----------|
| PF ***** | SF ***** |
|----------|----------|

 (WHERE APPLICABLE)
DENOTES TOP OF FOOTING LEVEL
RELATIVE TO THE PROJECT DATUM LEVEL
(REFER NOTE 5 ABOVE)
- ALL TOP OF FOOTING LEVEL SHALL BE

PF+ -400	SF+ -400
----------	----------

 UNO.
- PAD TAG DEFINITION:
PF+ - (PAD NUMBER / TYPE) WHERE APPLICABLE
SF+ - (STRIP FOOTING TYPE) WHERE APPLICABLE

PAD FOOTING SCHEDULE

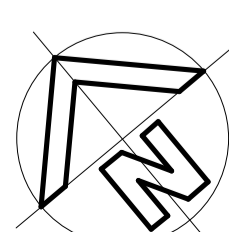
MARK No.	SIZE			REINFORCEMENT		f _c (MPa)	SOIL / ROCK ALLOWABLE BEARING CAPACITY
	DIM 'A'	DIM 'B'	DIM 'C' (DEPTH)	'X' BARS	'Y' BARS		
PF1	3000	2700	500	N16-200	N16-200	32.00	150 kPa
PF2	2400	2100	500	N16-200	N16-200	32.00	150 kPa

PIER SCHEDULE

MARK No.	DIAMETER	f _c (MPa)	REINFORCEMENT		SOCKET LENGTH	FOUNDING STRATA	ALLOWABLE END BEARING (MPa)	ALLOWABLE SKIN FRICTION (MPa)
			BARS	LENGTH				
P1	450	32	6 N24	6000 MIN.	N12-300 HELIX	300	ROCK CLASS IV 1000	150

NOTE:
ALL SHALLOW FOOTINGS (PAD & STRIP FOOTINGS) TO BE SOCKETTED FOR MINIMUM 300mm INTO SOIL WITH ALLOWABLE BEARING CAPACITY OF 150 kPa. GEOTECHNICAL BEGINNER TO CONFIRM.

ISSUED FOR SSDA



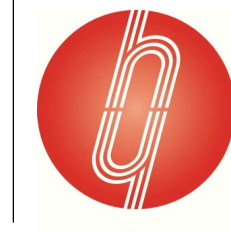
REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
2	ISSUED FOR SSDA	HW	D.M.	05-03-2020
1	ISSUED FOR TENDER	K.S.	N.V.	19-12-2019

Client	WARAKIRRI COLLEGE
Architect	KOTURIC + CO.
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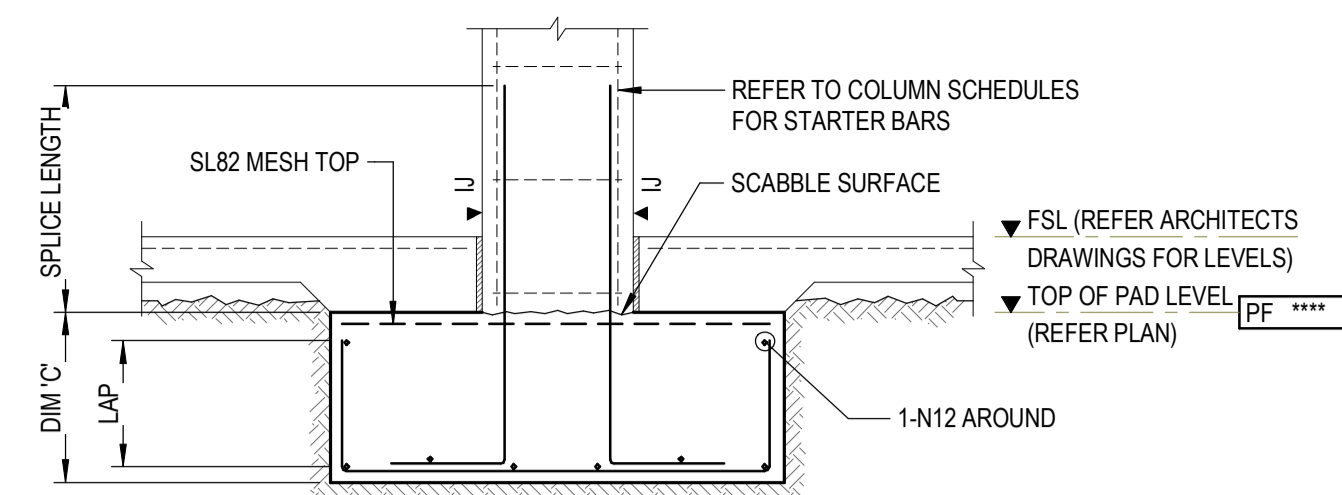
Telephone
+61 2 9417 8400
Facsimile
+61 2 9417 8337
Email
email@hhoonsult.com.au
Web
www.henryandhymas.com.au



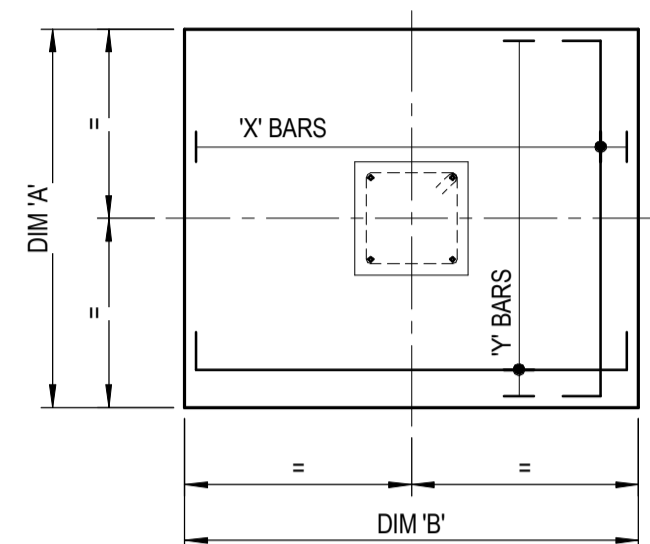
Project
NEW LEARNING CENTRE
6A WATSFORD ROAD, CAMPBELLTOWN

Title
FOOTING PLAN

Drawn H.W.	Designed D.M.	Date DEC. 2019
Checked D.M.	Approved R.K.	Scale As indicated
Drawing number 19712-S2.00		Revision 2



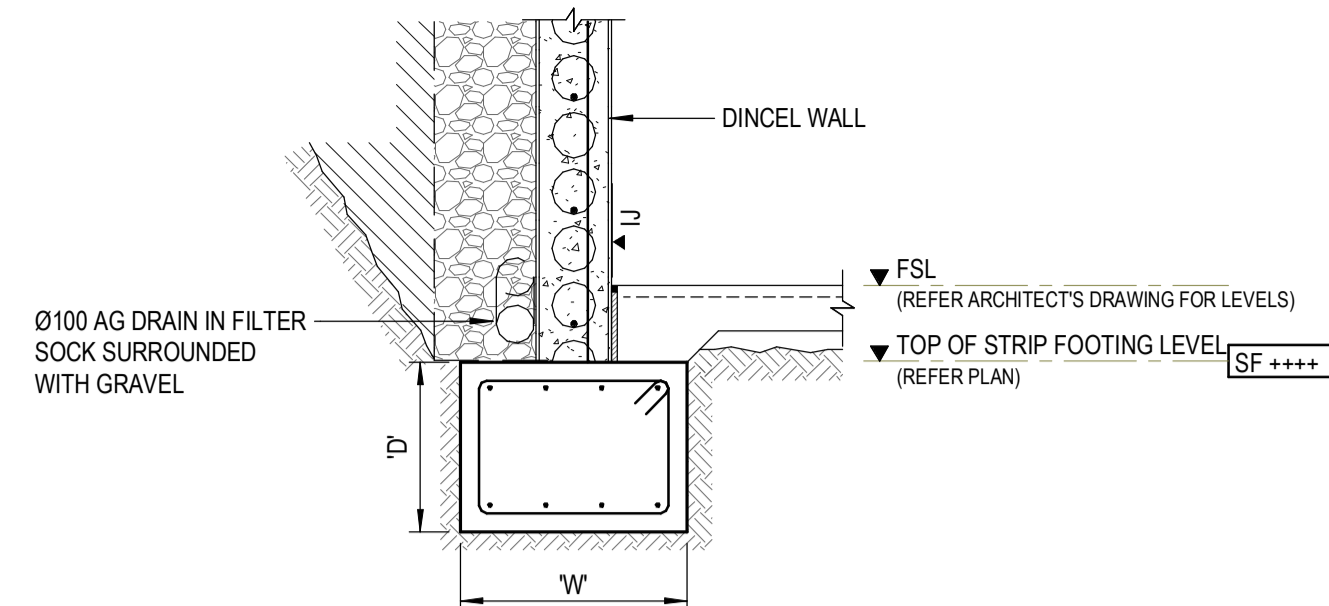
SECTION



PLAN

TYPICAL PAD FOOTING PF1 & PF2 DETAILS

1. 'X' BARS SHALL BE LAID FIRST AND LAST FOR REINFORCEMENT 'X' AND 'Y' VALUES REFER TO THE PAD FOOTING SCHEDULE.
2. FOR DIMENSIONS 'A', 'B' AND 'C' VALUES REFER TO THE PAD FOOTING SCHEDULE

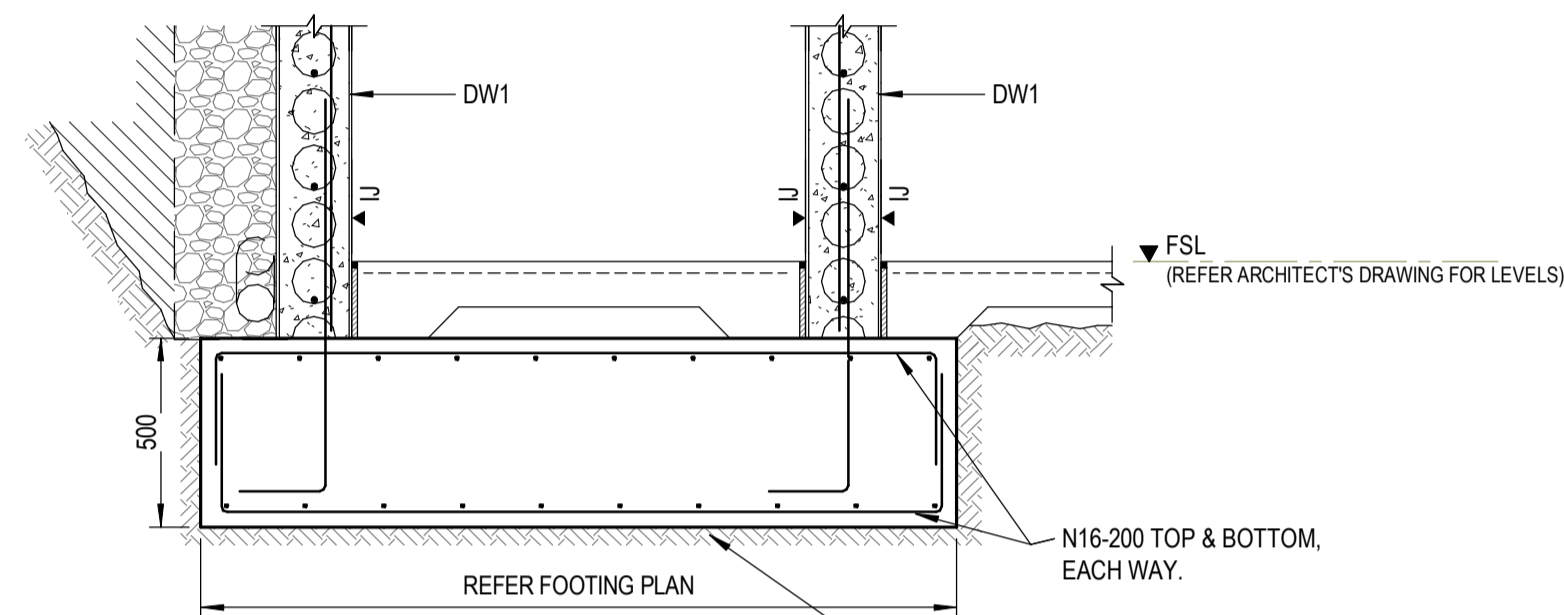


STRIP FOOTING:

- SF1 — 500 D x 800 W, REINFORCED WITH 4 N16 TOP & BOTTOM, R10-300 TIES
 SF2 — 500 D x 1400 W, REINFORCED WITH 7 N16 TOP & BOTTOM, R10-300 TIES

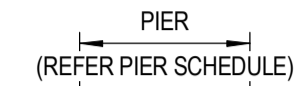
STRIP FOOTING SF1 & SF2 DETAILS

SCALE 1:20

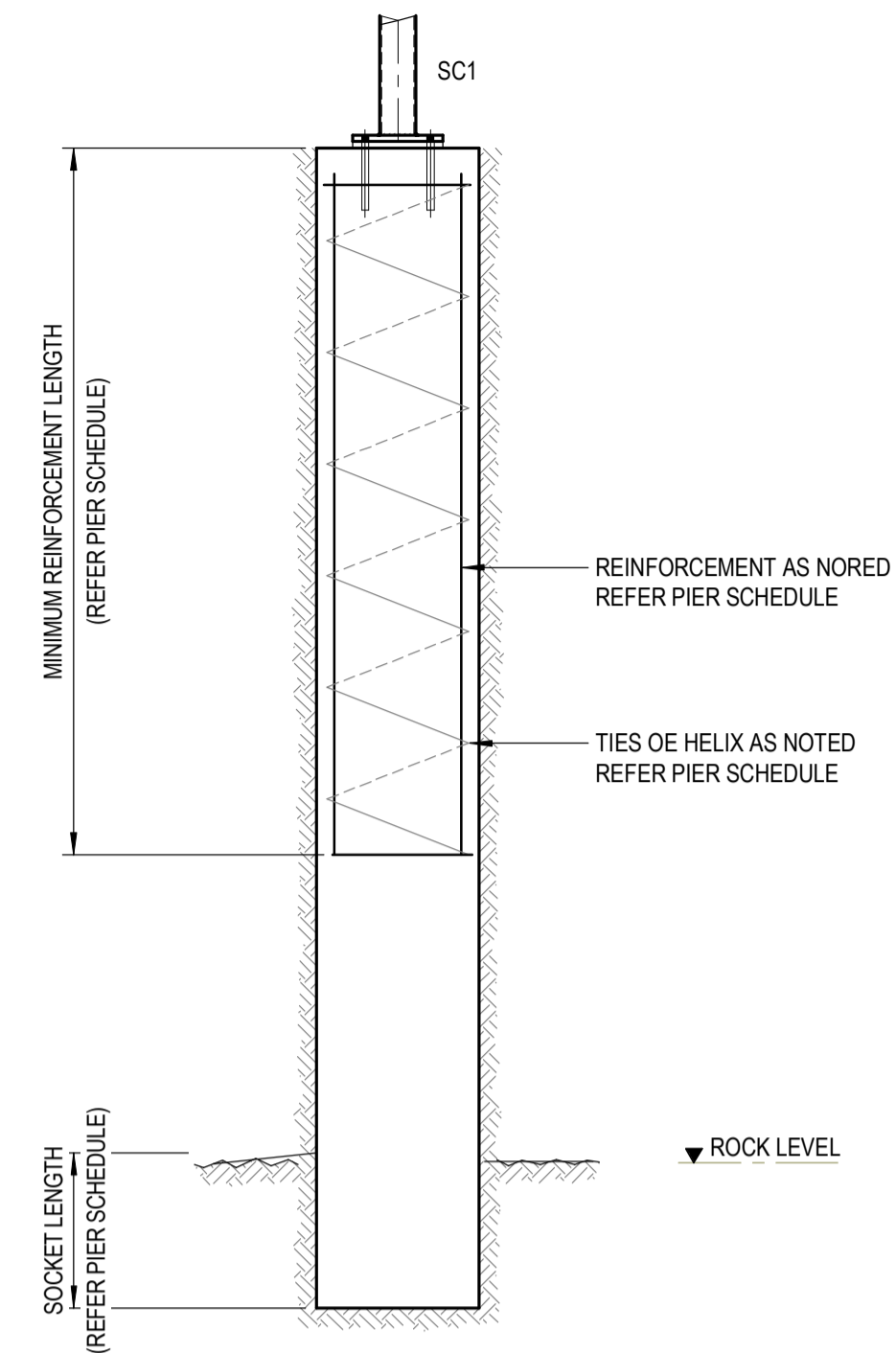


SECTION

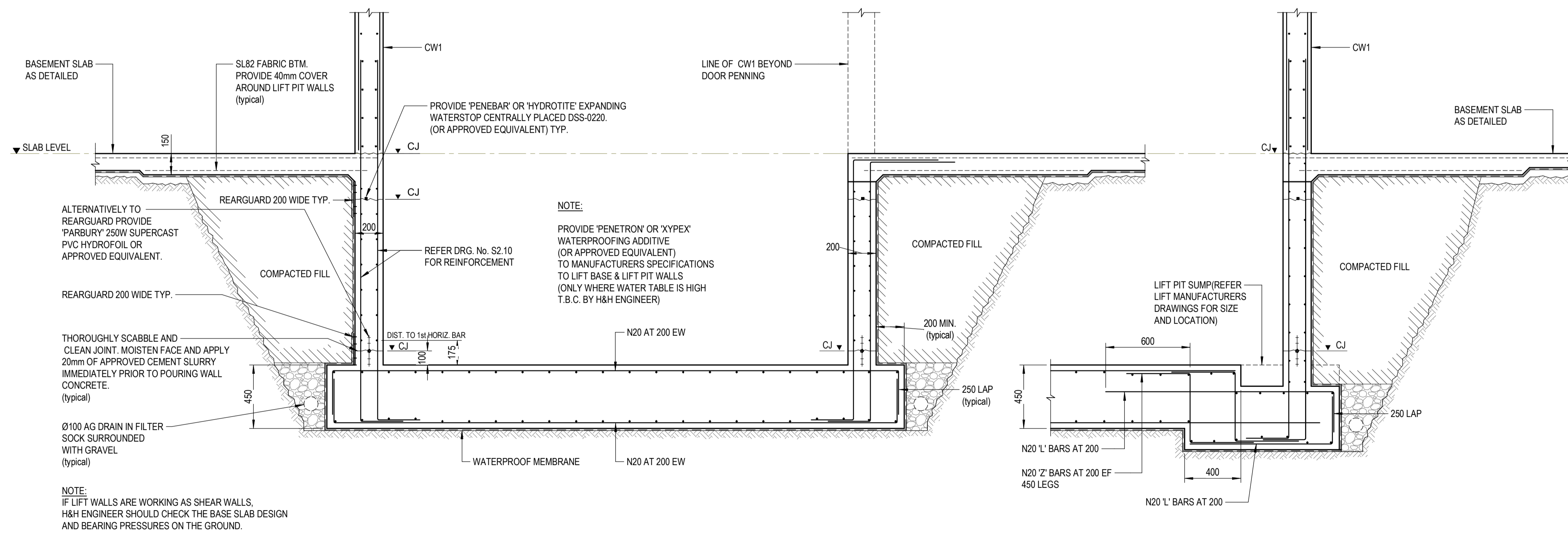
SCALE 1:20

A
S2.00CONCRETE STRENGTH $f_c = 32 \text{ MPa}$ 

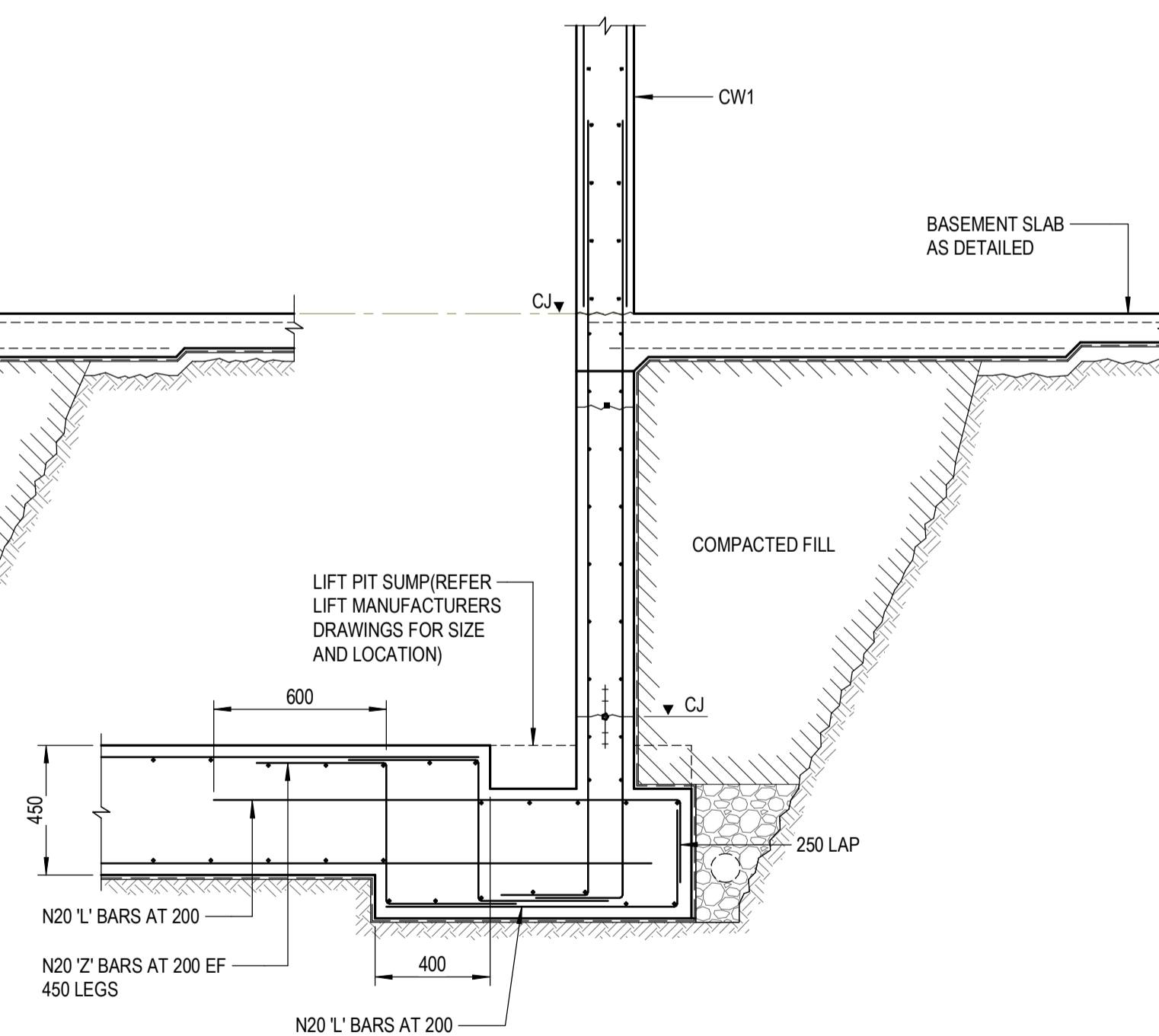
PIER SECTION



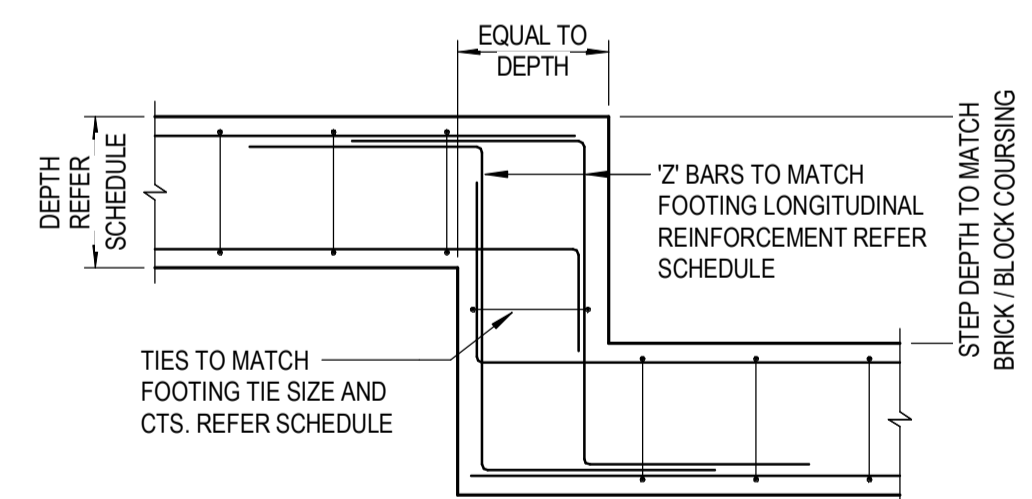
PIER ELEVATIONS



TYPICAL LIFT PIT SECTION



TYPICAL LIFT PIT SUMP DETAIL



TYPICAL FOOTING STEP DETAIL

SCALE 1:20

ISSUED FOR SSDA

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
2	ISSUED FOR SSDA	HW	D.M.	05-03-2020
1	ISSUED FOR TENDER	K.S.	N.V.	19-12-2019

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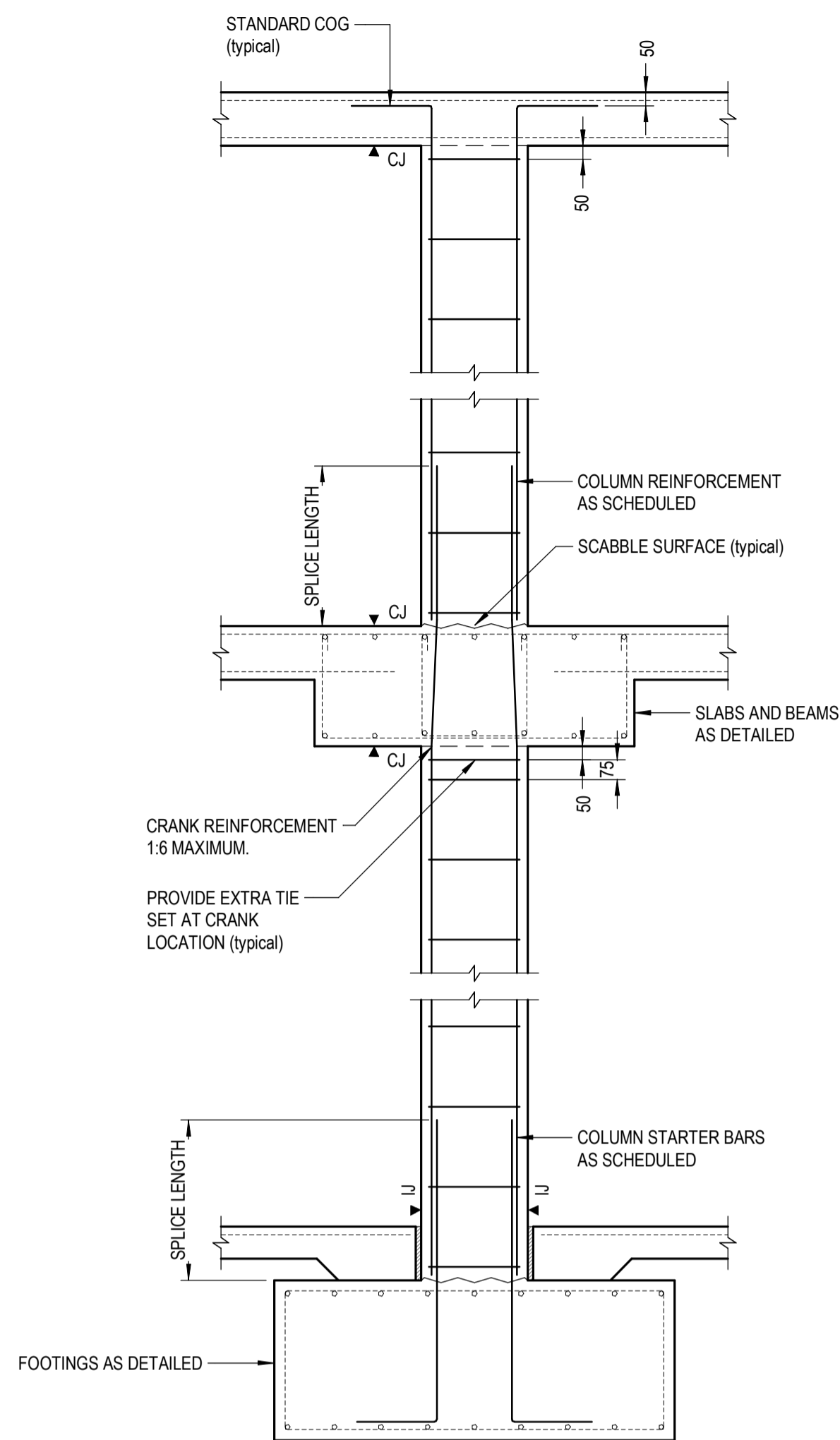


Telephone
+61 2 9417 8400
Facsimile
+61 2 9417 8337
Email
email@hhoonsult.com.au
Web
www.henryandhymas.com.au

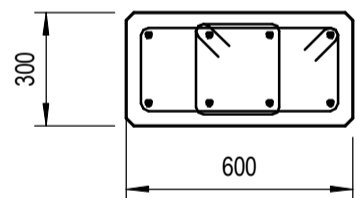


Project	NEW LEARNING CENTRE 6A WATSFORD ROAD, CAMPBELLTOWN
Title	FOOTING DETAILS

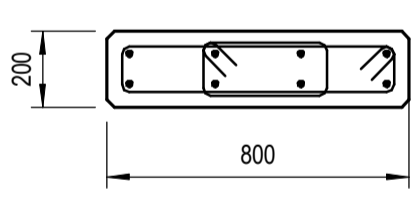
Drawn H.W.	Designed D.M.	Date DEC. 2019
Checked D.M.	Approved R.K.	Scale 1:20
Drawing number	19712-S2.01	Revision 2



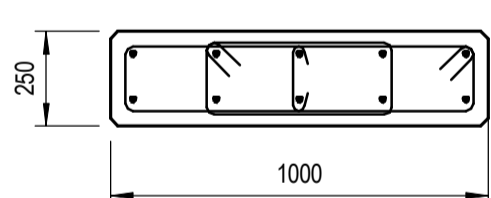
TYPICAL COLUMN ELEVATIONS



COLUMN 'C1' DETAIL

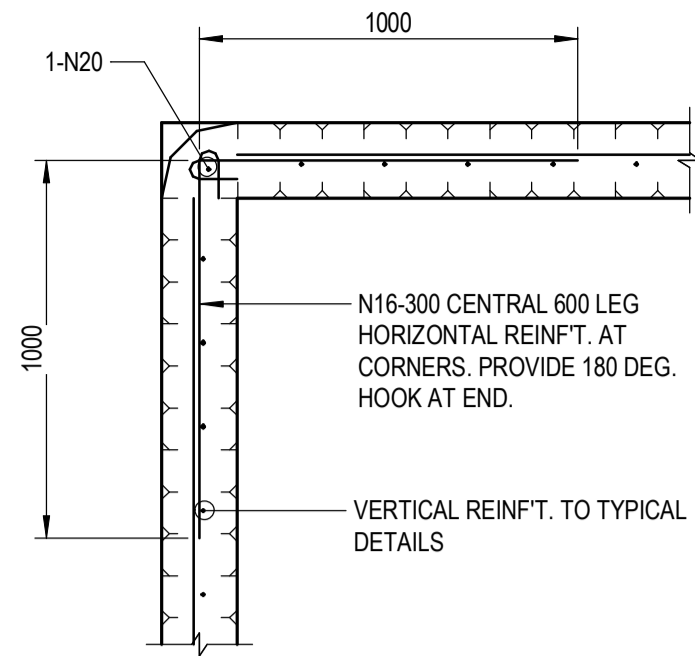
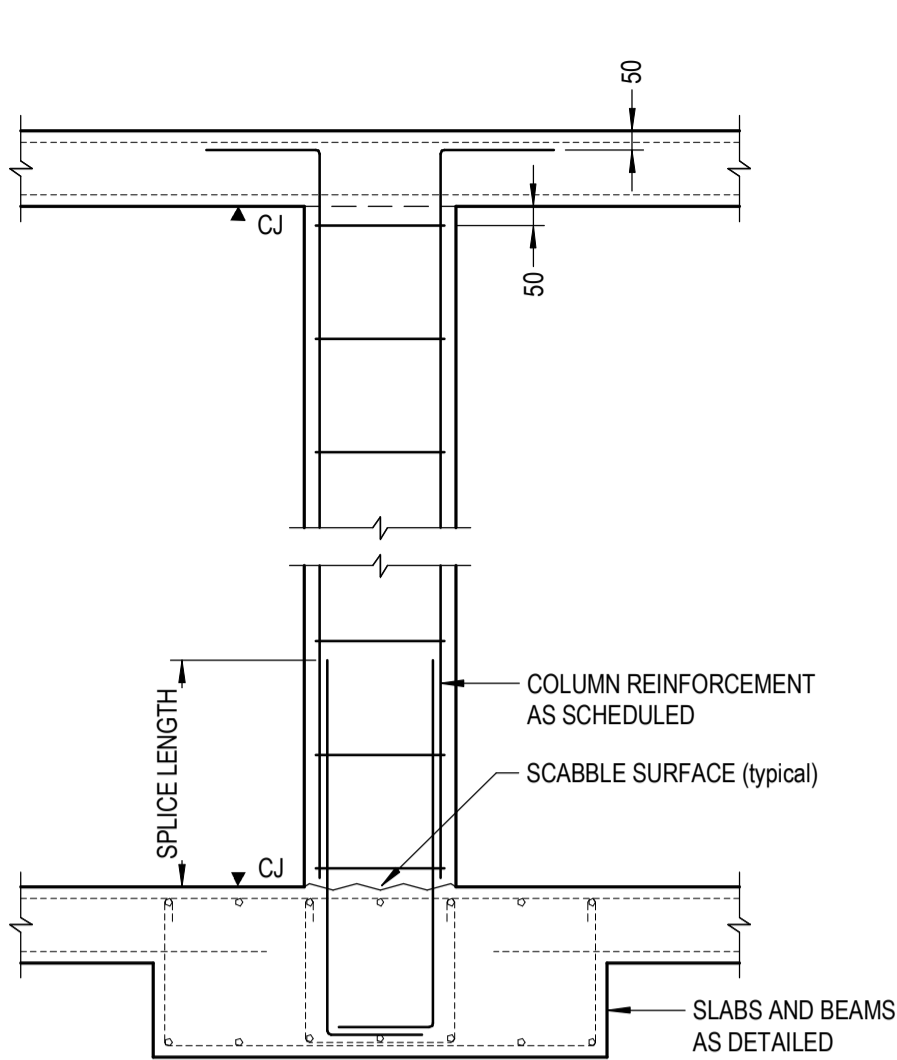


COLUMN 'C2' DETAIL

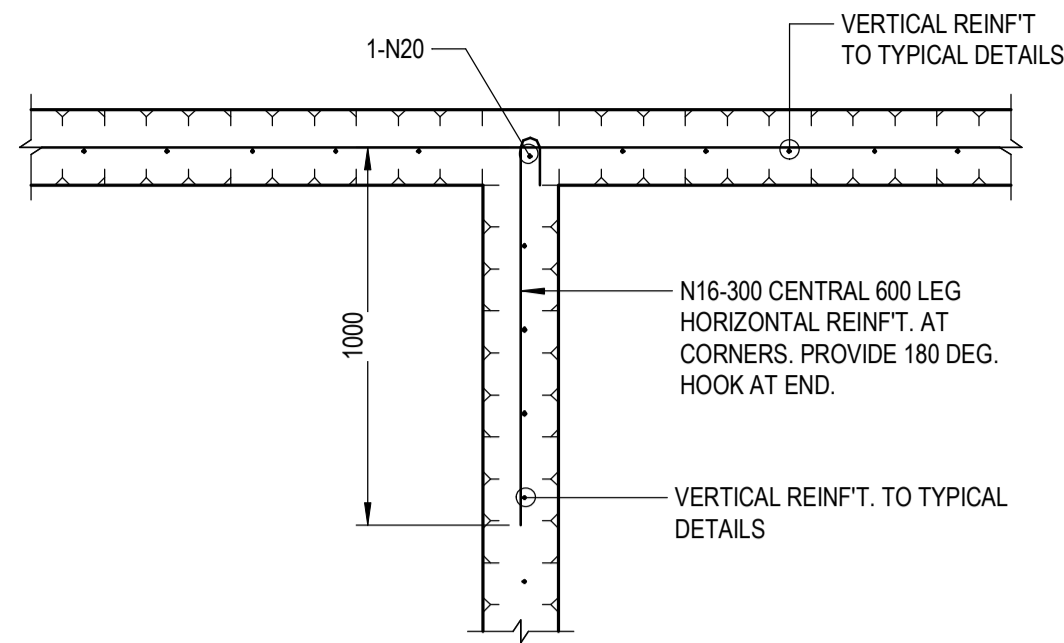


COLUMN 'C3' DETAIL

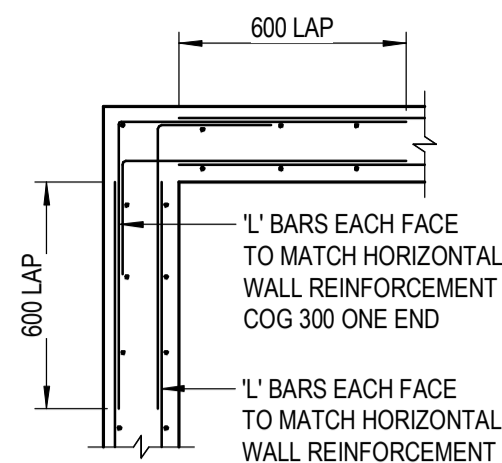
COLUMN SCHEDULE				
COLUMN TYPE	f _c (MPa)	COLUMN REINFT	STARTER BARS	TIES
C1	40	8 N20	8 N20	R10-300
C2	40	8 N20	8 N20	R10-200
C3	40	10 N20	10 N20	R10-250



TYPICAL DINCEL WALL CORNER REINFORCEMENT DETAIL



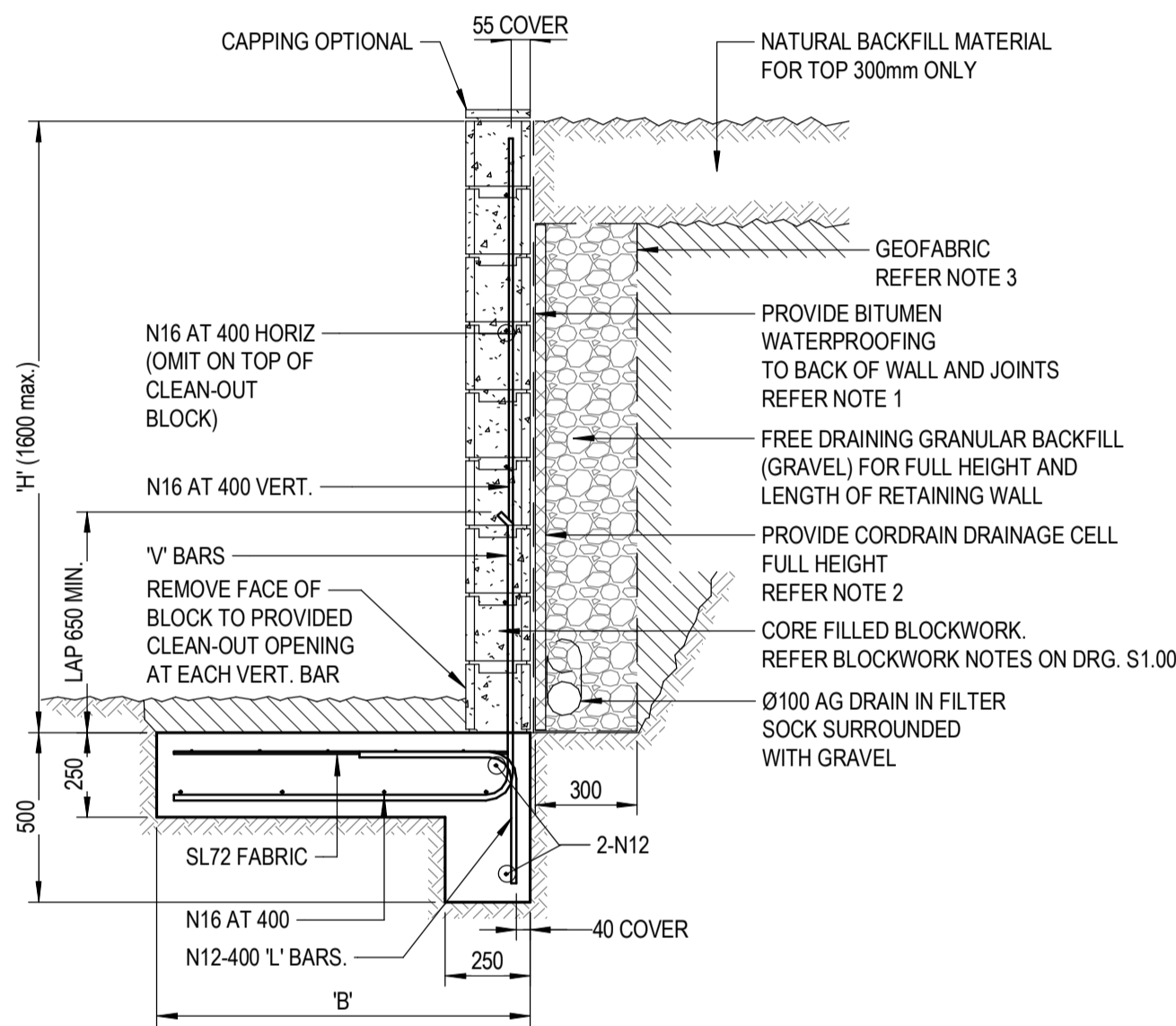
TYPICAL DINCEL WALL 'T' INTERSECTION REINFORCEMENT DETAIL



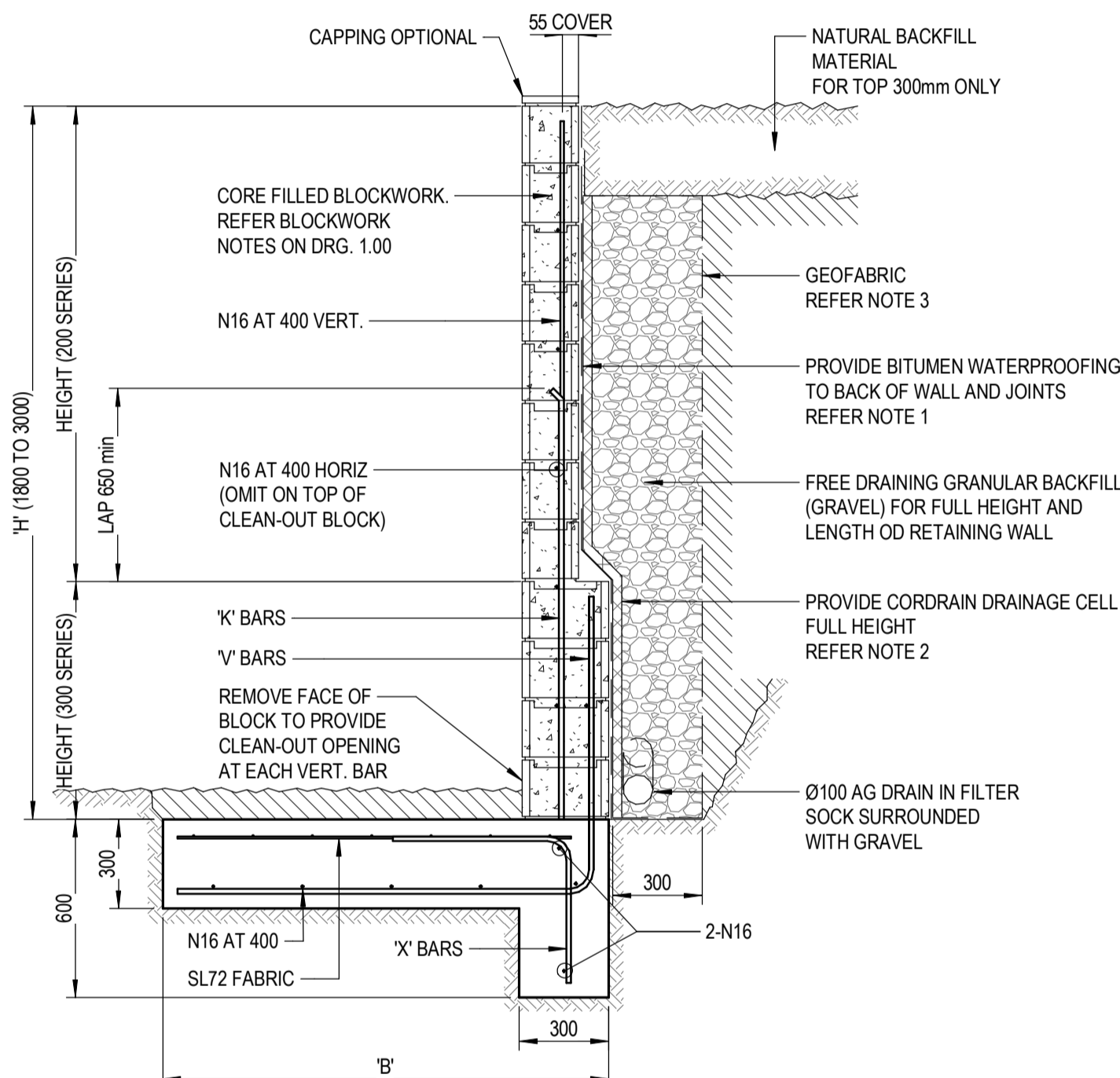
200 WALL - ALTERNATIVE CORNER DETAIL

TYPICAL WALL INTERSECTION PLAN DETAILS

WALL SCHEDULE					
TYPE MARK	WALL TYPE	f _c (MPa)	VERTICAL REINFORCEMENT	STARTER BARS	HORIZONTAL REINFORCEMENT
GW1	200 RC WALL	40	N20-200 EACH FACE	N20-200 EACH FACE	N12-200 EACH FACE
DW1	200 DINCEL WALL	40	N16-300 CENTRAL	N16-300 CENTRAL	N12-300 CENTRAL



150 OR 200 SERIES BLOCK WALL
15.0 kPa SURCHARGE



200 OR 300 SERIES BLOCK WALL
15.0 kPa SURCHARGE

RETAINING WALL - RW1 SCHEDULE					
TOTAL HEIGHT H' (mm)	HEIGHT OF BLOCK TYPE		'B' (mm)	'V' & 'X' BARS	'K' BARS
	200 SERIES	300 SERIES			
800	800	-	800	N16 AT 400	-
1000	1000	-	1200	N16 AT 400	-
1200	1200	-	1500	N16 AT 400	-
1400	1400	-	1800	N16 AT 400	-
1600	1600	-	2100	N16 AT 400	-
1800	1800	-	2300	N16 AT 200	N16 AT 400
2000	1400	600	2500	N16 AT 200	N16 AT 400
2200	1400	800	2700	N16 AT 200	N16 AT 200
2400	1400	1000	3000	N20 AT 200	N16 AT 200
2600	1400	1200	3300	N20 AT 200	N16 AT 200
2800	1400	1400	3500	N20 AT 200	N16 AT 200
3000	1400	1600	3800	N20 AT 200	N16 AT 200

NOTES:

- ENSURE REAR FACE OF RETAINING WALL IS FULLY WATERPROOFED. USE EMER-PROOF ECOFLEX OR APPROVED EQUIVALENT IN ACCORDANCE WITH MANUFACTURERS SPECIFICATION. EG: 2 COATS min. APPLIED IN OPPOSITE DIRECTIONS AND ALLOWED TO CURE FOR 7 DAYS. (TO BE CONFIRMED BY THE ARCHITECT)
- INSTALL FULL HEIGHT DRAINAGE CELL TO REAR OF WALL. USE NYLEX CORDRAIN/18 OR APPROVED EQUIVALENT. AT 1500 CENTRES.
- PROVIDE GEOFABRIC MATERIAL AS SEPARATION BETWEEN GRANULAR BACKFILL (GRAVEL) AND NATURAL BACKFILL MATERIAL. USE BIDIM A24 OR APPROVED EQUIVALENT.
- MINIMUM ALLOWABLE BEARING PRESSURE AT BASE = 100 kPa

RETAINING WALL - B-S15
SCALE 1 : 20

ISSUED FOR SSDA

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
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1	ISSUED FOR TENDER	K.S.	N.V.	19-12-2019

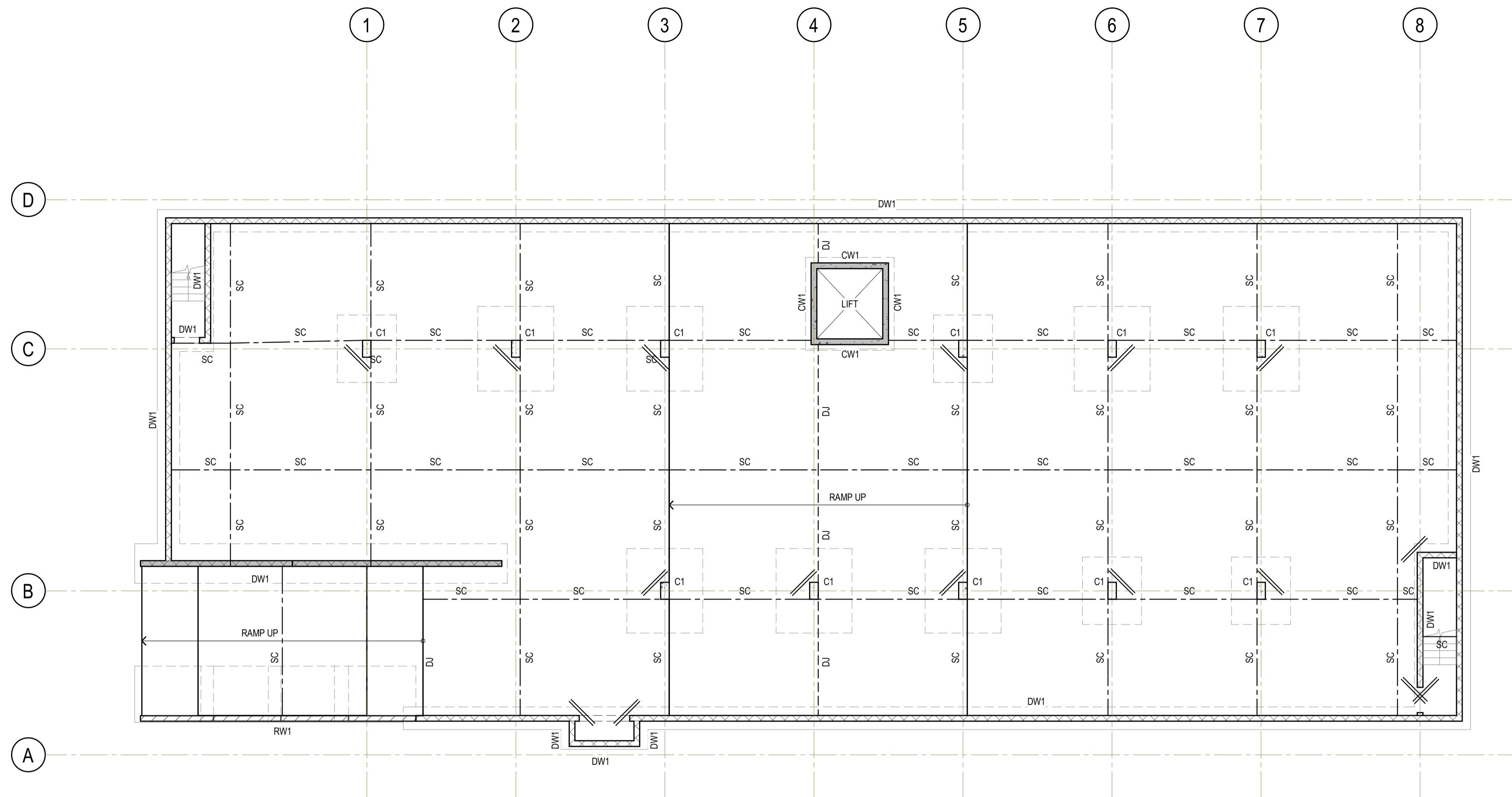
Client	WARAKIRRI COLLEGE
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Level 5, 79 Victoria Avenue Chatswood NSW 2067	Telephone +61 2 9417 8400 Facsimile +61 2 9417 8337 Email email@hhoonsult.com.au Web www.henryandhymas.com.au
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Project	NEW LEARNING CENTRE 6A WATSFORD ROAD, CAMPBELLTOWN
Title	TYPICAL COLUMN AND WALL DETAILS

Drawn H.W.	Designed D.M.	Date DEC. 2019
Checked D.M.	Approved R.K.	Scale 1 : 20
Drawing number 19712-S2.10		Revision 2



LOWER GROUND SLAB PLAN

SCALE 1 : 100

- 120 THICK SLAB ON GROUND ($f_c = 32 \text{ MPa}$) WITH SL82 TOP MESH WITH 30 COVER (U.N.O.) ON 50 mm SAND & 100mm CRUSHED ROAD BASE OR DGB20 COMPACTED TO 98% SDD.
- ALL COLUMNS AND WALLS TO BE ISOLATED FROM SLAB ON GROUND BY ISOLATION JOINTS (IJ) ALL AROUND. REFER TO DRG. No. S3.01 FOR ISOLATION JOINT DETAIL.

SLAB ON GROUND NOTES:

- SG1 REFER 'CONCRETE NOTES' FOR SPECIFICATIONS ON CONCRETE SUPPLY, PLACING, FINISHING AND CURING.
- SG2 FOLLOWING THE COMPLETION OF EARTHWORKS, A SUBBASE OF 100 mm THICKNESS UNO, SHALL BE PLACED OVER THE SUBGRADE AND COMPACTED TO 98% MODIFIED MAXIMUM DRY DENSITY.
- SG3 INSTALL A VAPOUR BARRIER IF SPECIFIED. REINFORCEMENT MESH SHALL BE PLACED AT THE SPECIFIED DEPTH SUPPORTED ON BAR CHAIRS SPACED ON A 0.8 - 1.0 m GRID FOR MESH SIZES SL82 OR LARGER AND 0.6 m SPACING FOR LIGHTER MESH. INDEPENDENT SUPPORTS NOT RESTING ON THE REINFORCEMENT OR SIDE FORMS SHALL BE USED TO CARRY OTHER CONSTRUCTION LOADINGS SUCH AS PLANT OR EQUIPMENT.
- BAR CHAIRS SHALL BE FITTED WITH A PLATE SUPPORT UNDER THE LEGS TO PREVENT THEM PUNCTURING THE VAPOUR BARRIER AND SINKING INTO THE SUBBASE.
- THE PRACTICE OF LAYING REINFORCING MESH ON THE SUBBASE BEFORE CONCRETE IS PLACED AND LIFTING IT INTO POSITION AFTER PLACING, OR PLACING IT ON THE FINISHED SURFACE OF THE CONCRETE AND WALKING IT IN, ARE STRICTLY NOT PERMITTED.
- SG4 WHERE A VAPOUR BARRIER IS SPECIFIED BENEATH A SLAB ON GROUND, PROVIDE A 0.2 mm POLYETHYLENE MEMBRANE OF MEDIUM IMPACT RESISTANCE IN ACCORDANCE WITH THE PROVISIONS OF AS2870. THE SHEETING SHALL BE CONTINUOUS UNDER THE SIDE FORMS AND LAPPED AT THE JOINTS BY A MINIMUM OF 200 mm.
- THE VAPOUR BARRIER SHALL BE PLACED DIRECTLY ON THE SUBBASE, BUT IF THE SURFACE IS ROUGH AND LIKELY TO DAMAGE THE PLASTIC SHEETING, A BLINDING LAYER OF FINE MATERIAL SUCH AS QUARRY DUST SHALL BE PROVIDED.
- SPECIAL CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE VAPOUR BARRIER PRIOR TO AND DURING CONCRETING, AND ANY TEARS OR PERFORATIONS SHALL BE PATCHED IMMEDIATELY.
- SG5 FOR THE CONCRETE SUPPLY TRUCKS TO BE ABLE TO DISCHARGE THEIR LOADS CLOSER TO THE FINAL POSITION, THE SITE SHALL BE PLANNED WITHOUT ANY OBSTACLES SUCH AS EXCAVATED SOIL, BUILDING MATERIALS AND CONSTRUCTION SHEDS/ OFFICES. IF CONCRETE HAS TO BE MOVED BY MANUAL METHODS, IT SHALL BE CARRIED OUT WITH SHOVELS. POKER VIBRATORS SHALL NOT BE USED TO MOVE CONCRETE.
- SG6 SAW CUTTING CONCRETE PAVEMENTS SHALL BE COMPLETED WITHIN 4 TO 12 HOURS AFTER CONCRETE HAS SET ACCORDING TO THE FOLLOWING PROCEDURE:
- MARK OUT SAW CUT LOCATIONS ACCURATELY USING A CHALK LINE
 - SAW CUT IN ONE PASS TO THE CORRECT DEPTH
 - RECORD THE TIME OF SAW CUT TO BE AND LOG WITH THE BUILDER
 - COMMENCE SAW CUTTING WITH THE 1ST CUT FROM THE OUTSIDE EDGE AND CONTINUE IN A ROTATIONAL ORDER TOWARDS THE MIDDLE OF SLAB THE PANEL, REFER SLAB ON GROUND DETAILS.

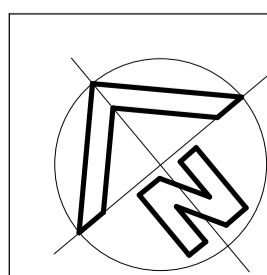
SLAB ON GROUND LEGEND:

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

SLAB JOINTS DENOTED THUS:

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

ISSUED FOR SSDA



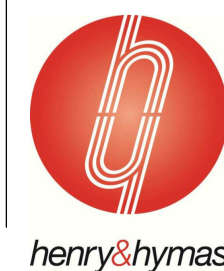
REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
2	ISSUED FOR SSDA	HW	D.M.	05-03-2020
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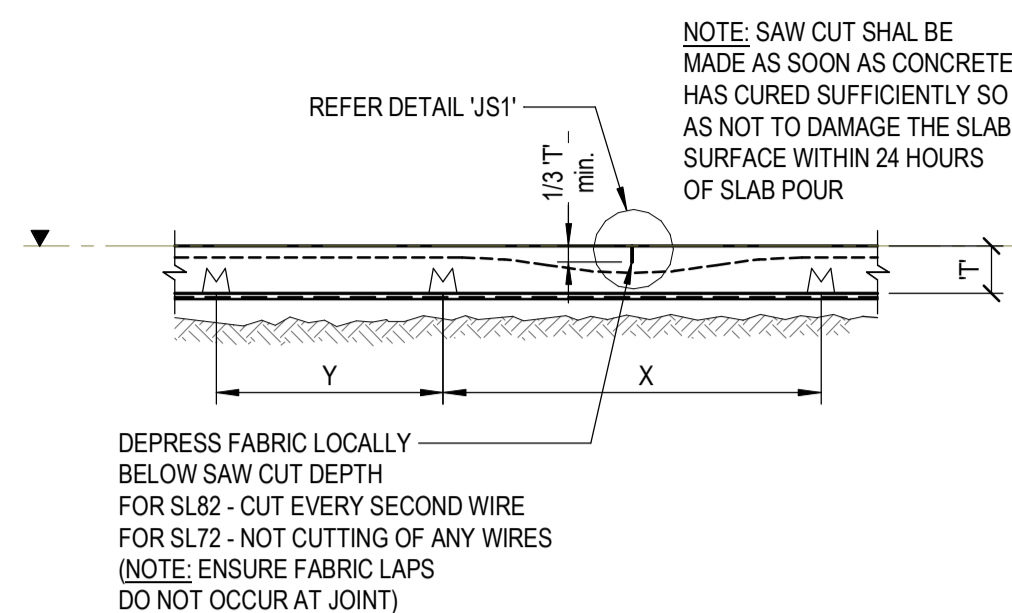
Telephone
+61 2 9417 8400
Facsimile
+61 2 9417 8337
Email
email@hhoonsult.com.au
Web
www.henryandhymas.com.au



Project
NEW LEARNING CENTRE
6A WATSFORD ROAD, CAMPBELLTOWN

Title
LOWER GROUND SLAB PLAN

Drawn H.W.	Designed D.M.	Date DEC. 2019
Checked D.M.	Approved R.K.	Scale As indicated
Drawing number 19712-S3.00		Revision 2



SAW CUT JOINT

NOTED 'SC' ON PLAN

NOTE:

X = INDICATES CHAIR SPACING AT SAW CUT

SL72 = 1000

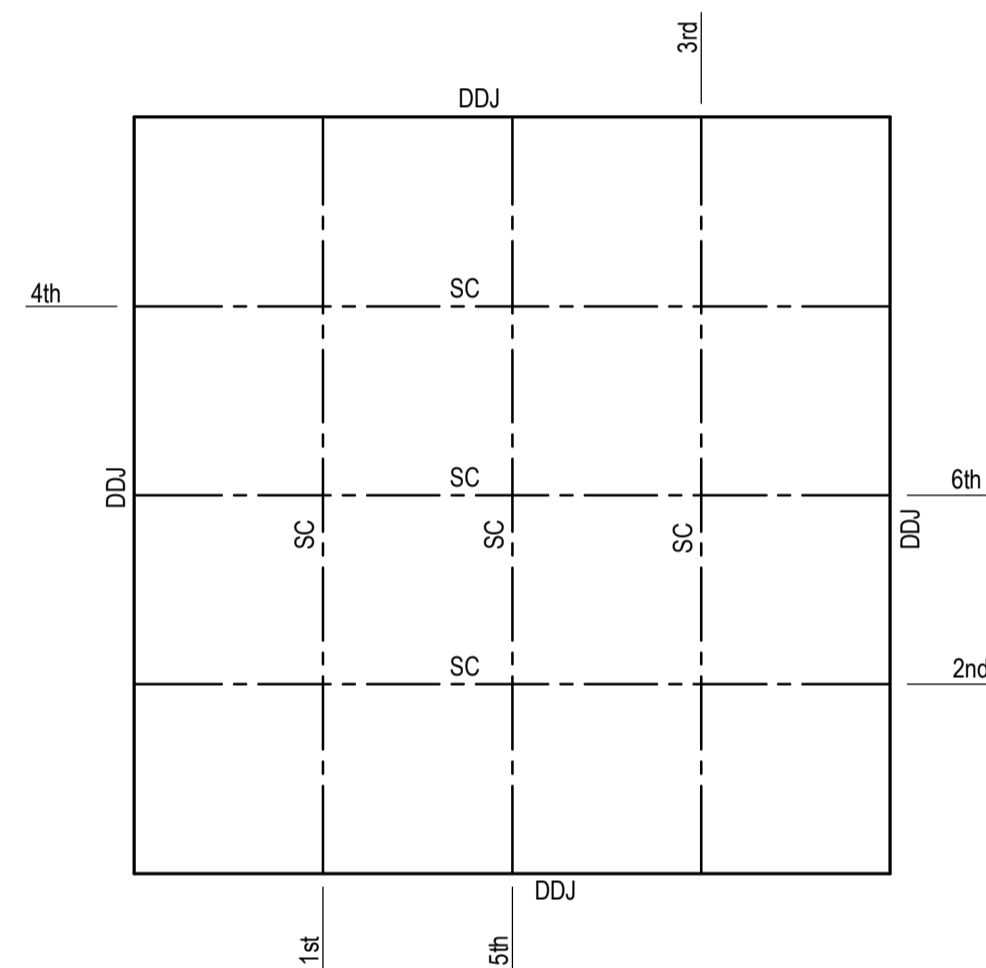
SL82 = 1200

Y = INDICATES CHAIR SPACING TYPICALLY THROUGHOUT

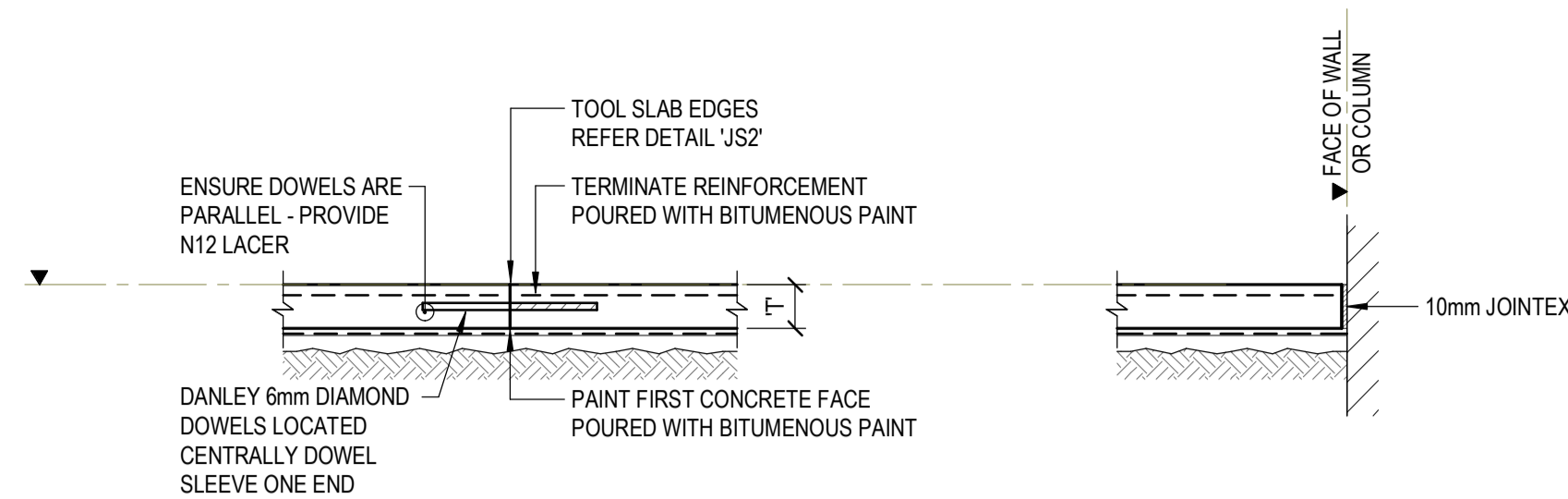
SL72 = 600 c/c

SL82 = 800 c/c

- SAW CUT LOCATIONS SHALL BE ACCURATELY MARKED OUT USING CHALK LINE
- SAW CUTS SHALL BE MADE IN ONE PASS TO CORRECT DEPTH
- TIME OF SAW CUT TO BE RECORDED AND LOGGED WITH BUILDER
- SAW CUT ORDER SHALL COMMENCE AT 1ST CUT FROM OUTSIDE EDGE AND CONTINUE IN A ROTATIONAL ORDER TOWARDS MIDDLE OF SLAB PANEL. REFER EXAMPLE BAYS BELOW:



EXAMPLE SAW CUT SEQUENCE

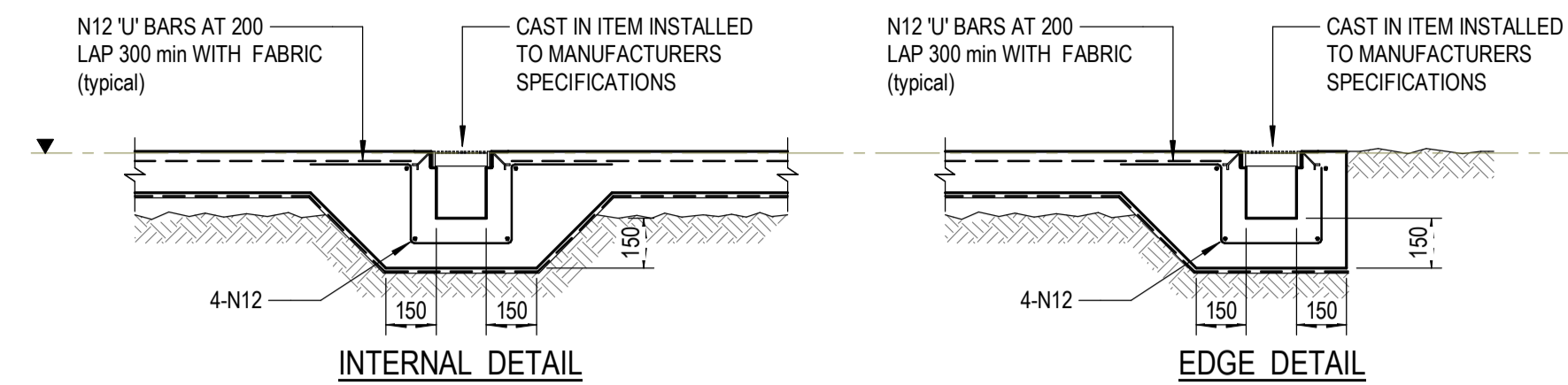


DOWELED JOINT

NOTED DJ ON PLAN

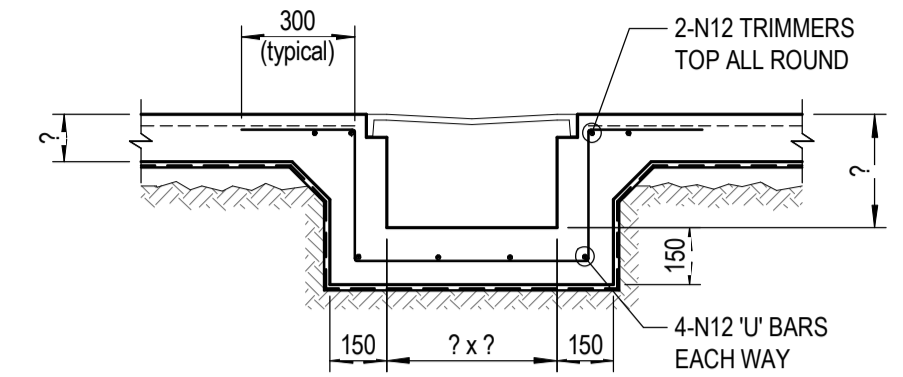
ISOLATION JOINT

TYPICAL AT ALL WALLS AND COLUMNS

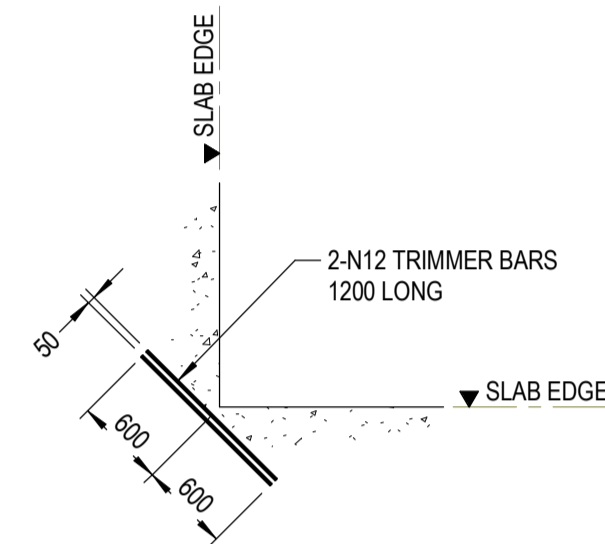


TYPICAL GRATED DRAIN

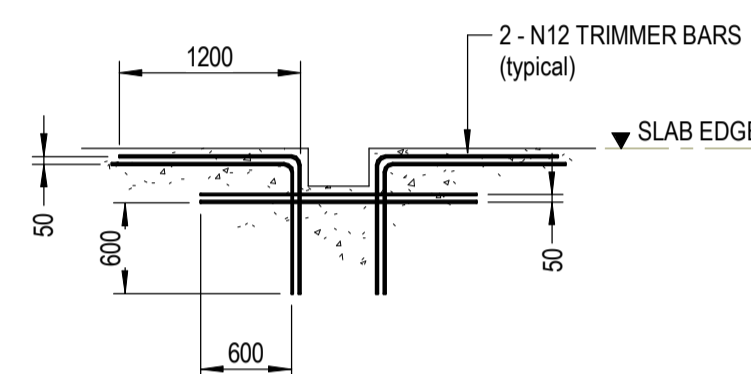
SCALE 1:20



TYPICAL SUMP DETAIL



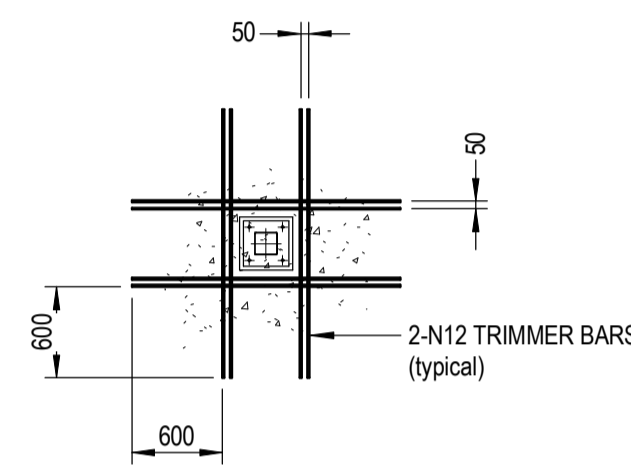
RE-ENRANT CORNER - INTERNAL



EDGE PENETRATION

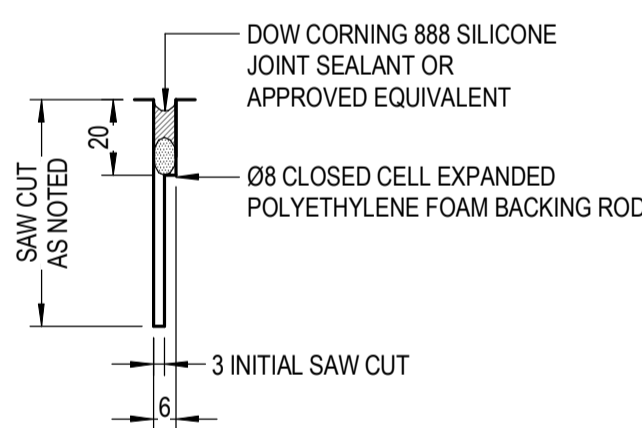
TYPICAL TRIMMING DETAILS

SCALE 1:50



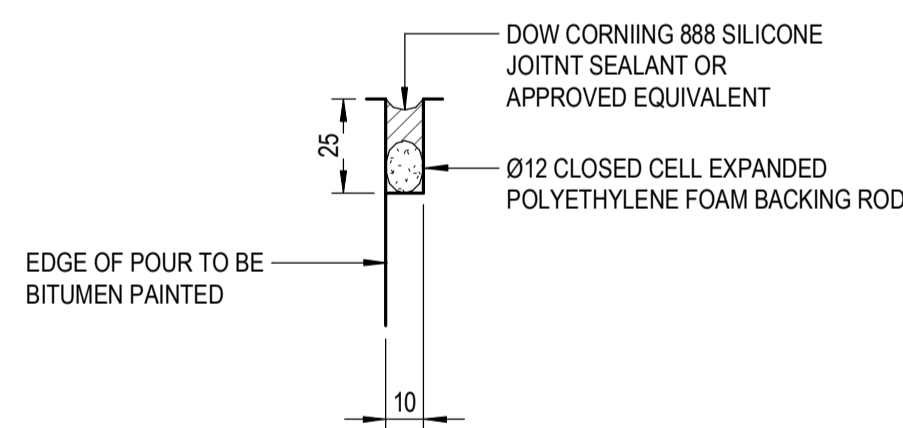
COLUMN RECESS

FOR COLUMN RECESS DETAILS REFER PLAN



NOTE: SEALANT SHALL BE PLACED MINIMUM 4 WEEKS AFTER PUORING OF SLAB

TYPICAL SAW CUT JOINT SEALANT DETAIL 'JS1'



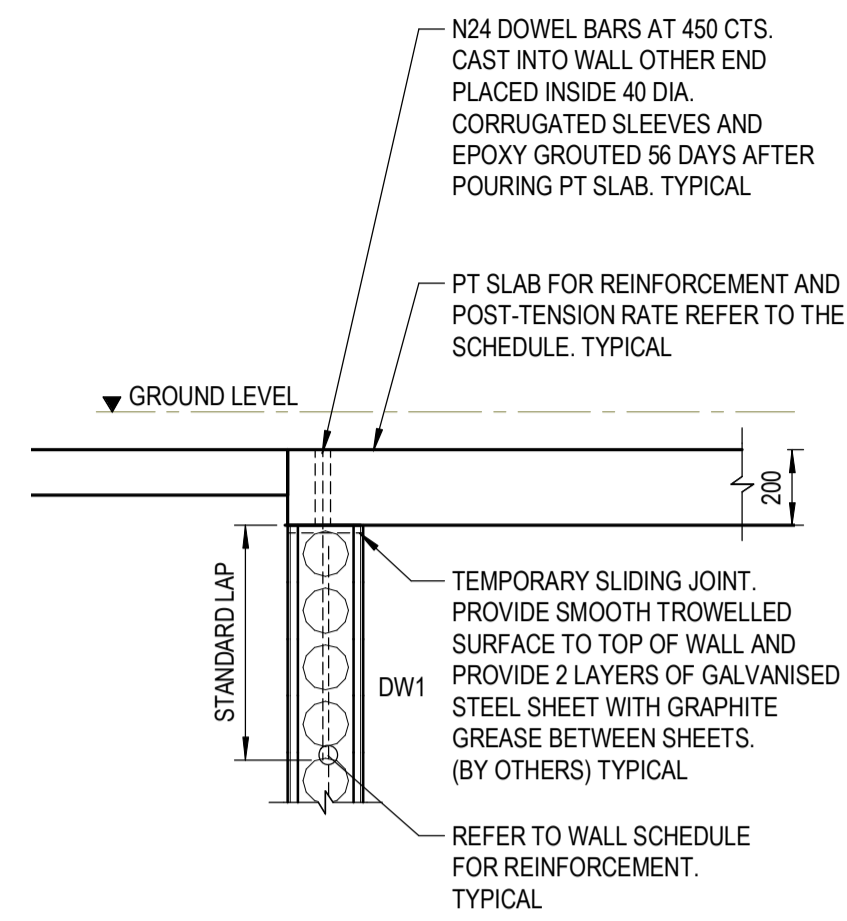
NOTE: SEALANT SHALL BE PLACED MINIMUM 4 WEEKS AFTER PUORING F SLAB

TYPICAL CONTINUOUS POUR DOWELED JOINT DETAIL 'JS2'

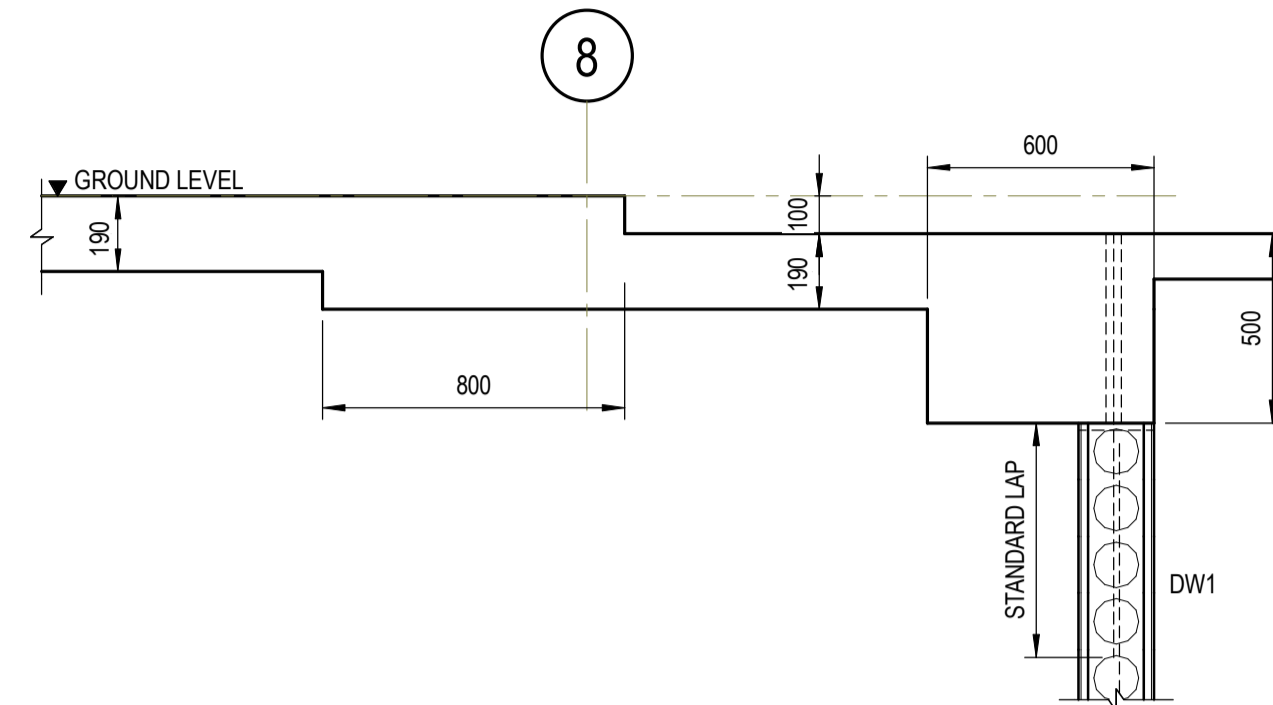
MAXIMUM DOWEL JOINT SPACING 25m. NOTIFY ENGINEER IF JOINT SPACING EXCEEDS 25m

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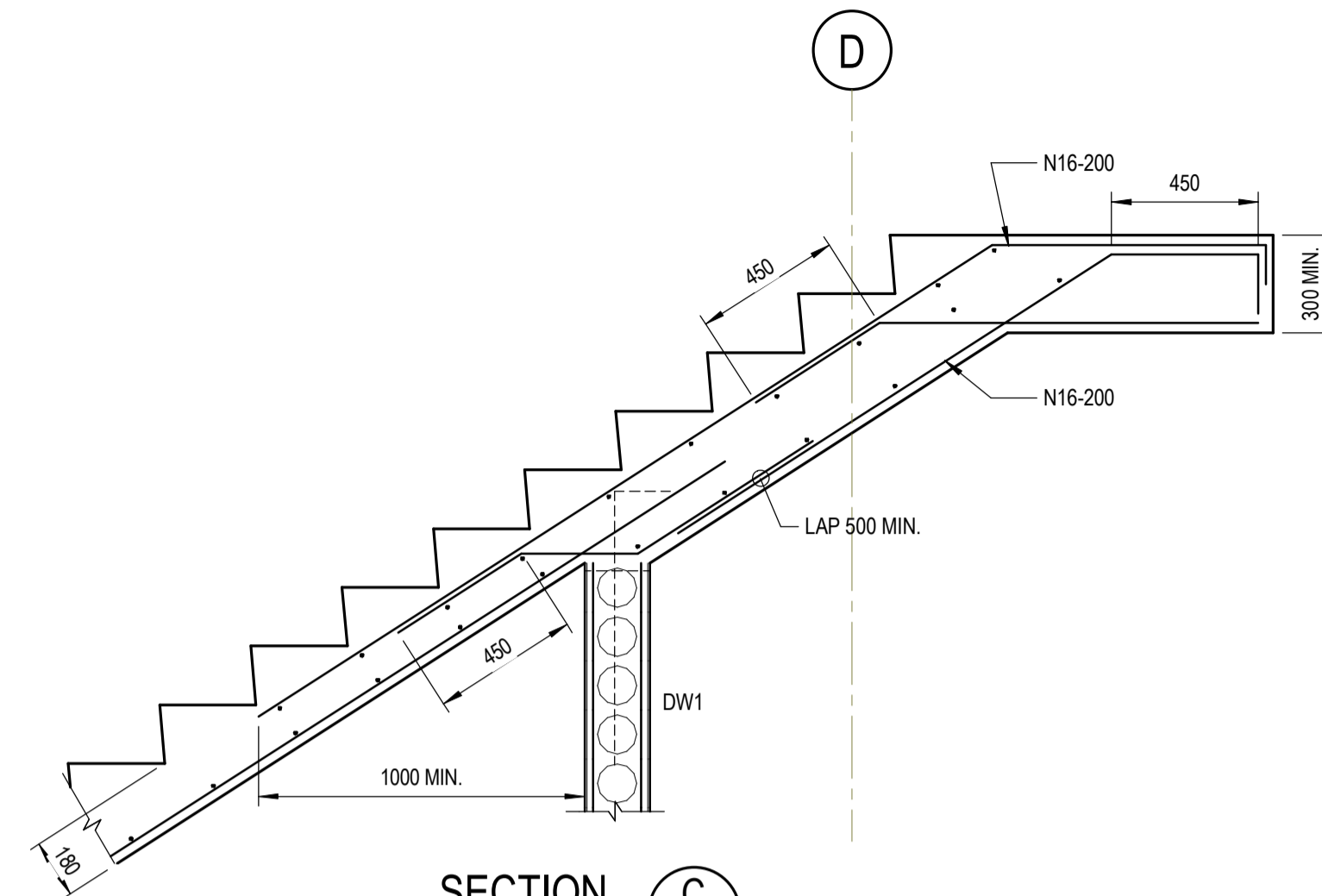
					Client			Level 5, 79 Victoria Avenue Chatswood NSW 2067			Telephone +61 2 9417 8400 Facsimile +61 2 9417 8337 Email email@hhconsult.com.au Web www.henryandhymas.com.au						Project NEW LEARNING CENTRE 6A WATSFORD ROAD, CAMPBELLTOWN			Drawn H.W.		Designed D.M.		Date DEC. 2019		
					Architect			KOTURIC + CO.									Checked D.M.			Approved R.K.		Scale As indicated				
2					ISSUED FOR SSDA			HW			D.M.			05-03-2020												
1					ISSUED FOR TENDER			K.S.			N.V.			19-12-2019												
REVISION					AMENDMENT			DRAWN			DESIGNED			DATE			This drawing and design remains the property of Henry & Hymas and may not be copied in whole or in part without prior written approval of Henry & Hymas									
															Drawing number					19712-S3.01					Revision	
																									2	



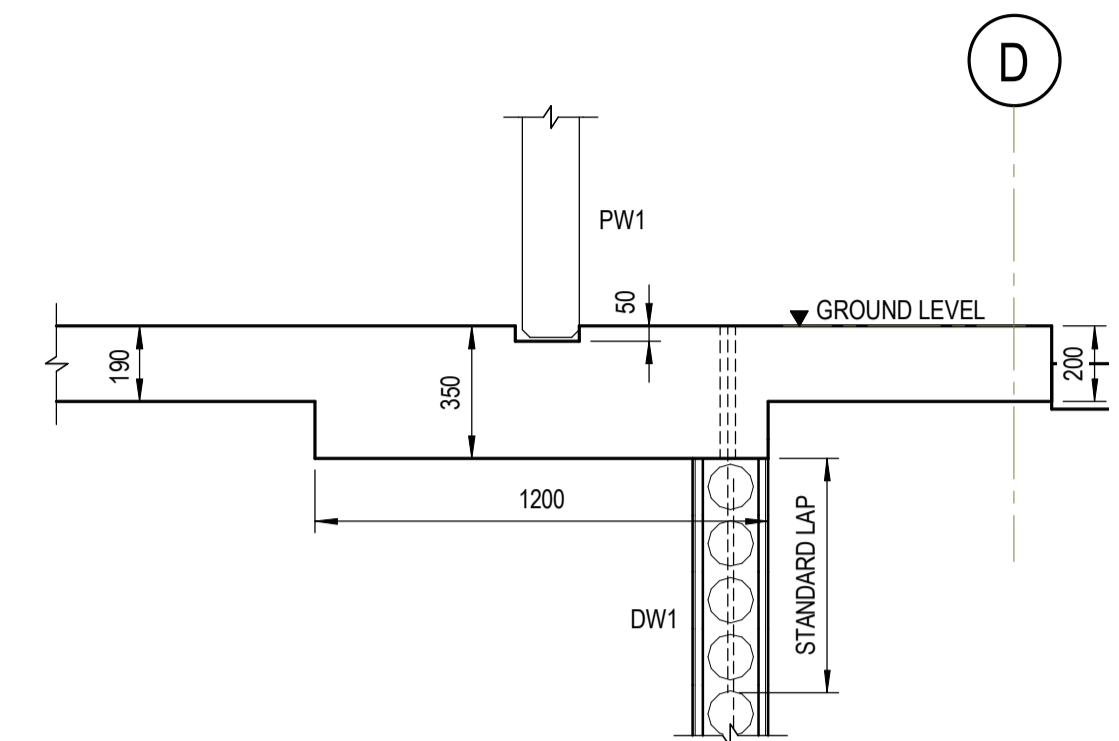
SECTION A
SCALE 1 : 20



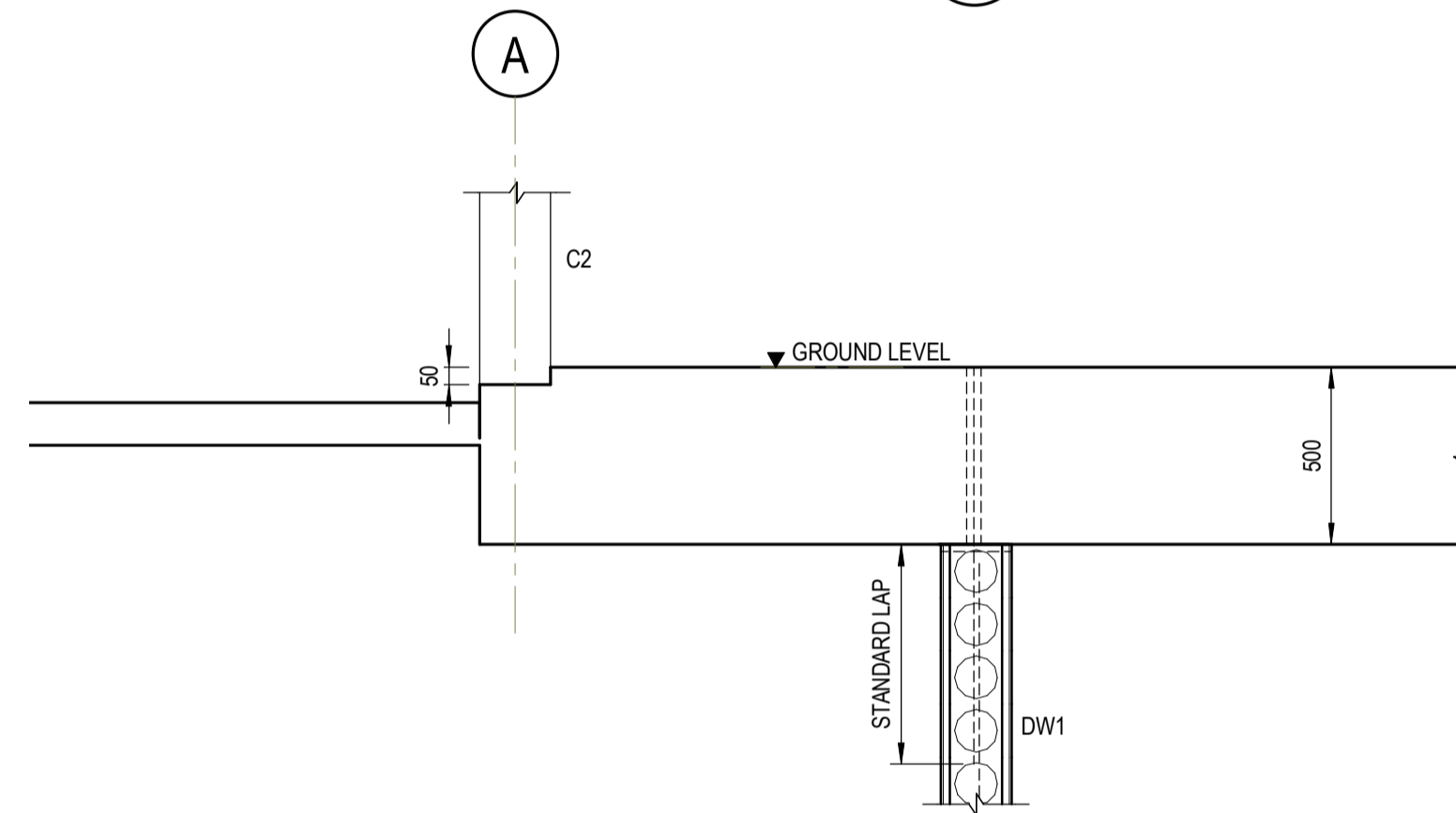
SECTION B
SCALE 1 : 20



SECTION C
SCALE 1 : 20



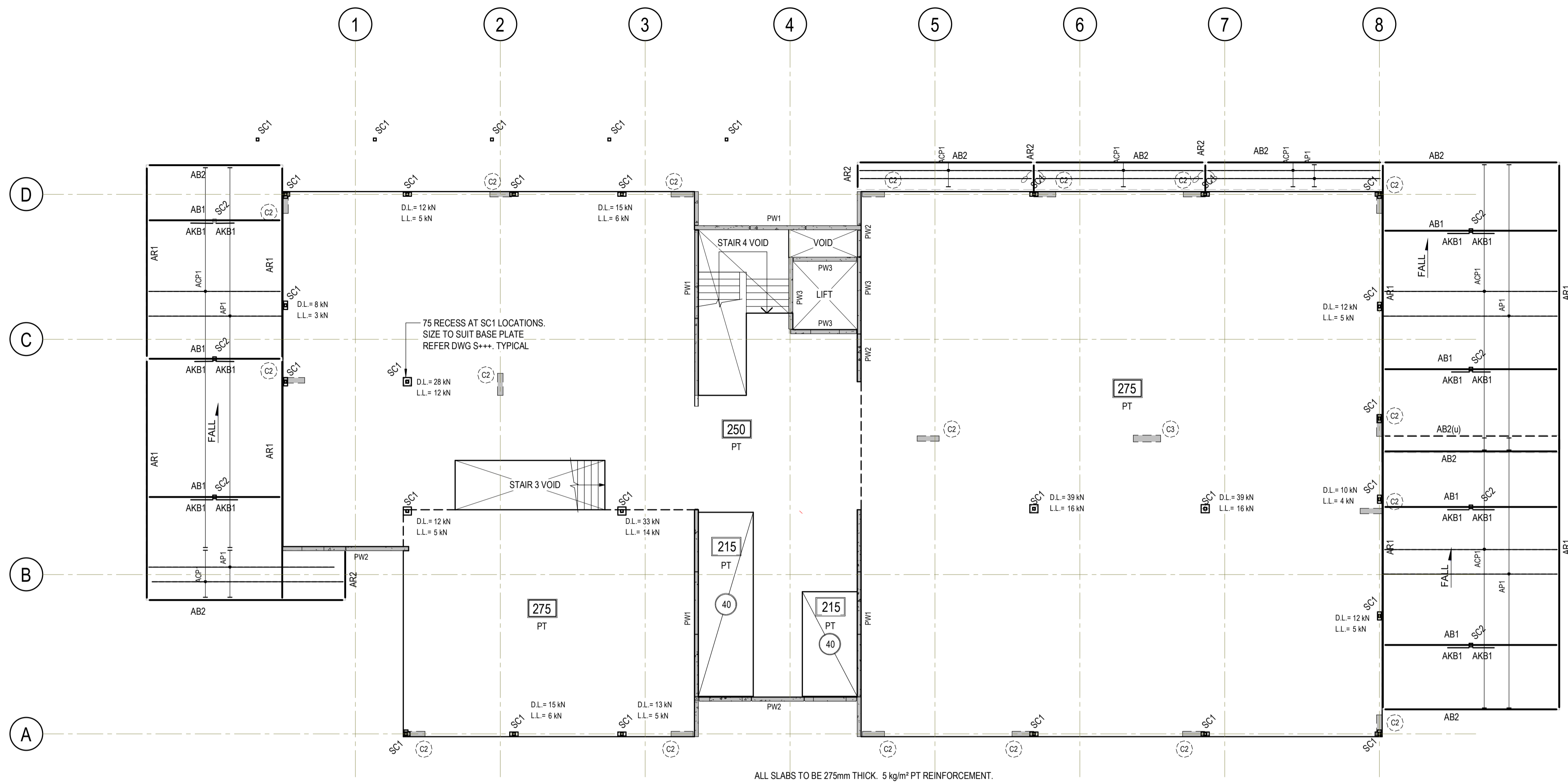
SECTION D
SCALE 1 : 20



SECTION E
SCALE 1 : 20

ISSUED FOR SSDA

					Client		Level 5, 79 Victoria Avenue Chatswood NSW 2067		Telephone +61 2 9417 8400 Facsimile +61 2 9417 8337 Email emas@hnhconsult.com.au Web www.henryandhymas.com.au				Project		Drawn		Designed		Date	
					WARAKIRRI COLLEGE								NEW LEARNING CENTRE 6A WATSFORD ROAD, CAMPBELL TOWN		H.W.		D.M.		DEC. 2019	
					Architect								KOTURIC + CO.		Checked		Approved		Scale	
															D.M.		R.K.		1 : 20	
2		ISSUED FOR SSDA			HW	D.M.							05-03-2020	This drawing and design remains the property of Henry & Hymas and may not be copied in whole or in part without prior written approval of Henry & Hymas						
1		ISSUED FOR TENDER			K.S.	N.V.	19-12-2019	GROUND FLOOR SLAB DETAILS		19712-S4.01		2								
REVISION		AMENDMENT			DRAWN	DESIGNED	DATE													



FIRST FLOOR SLAB PLAN

SCALE 1 : 100

CONCRETE GRADE $f_c = 40\text{MPa}$

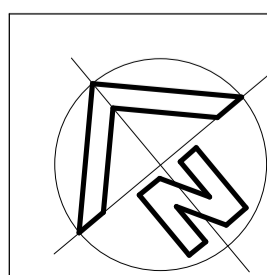
POST - TENSIONED SLAB AND BEAM CONSTRUCTION FLOOR DESIGN PARAMETERS

<u>DESIGN LOADING:</u>		<u>LIVE LOAD REDUCTIONS SHALL NOT BE USED</u>
LIVE LOADS	- GENERALLY:	3.0 kPa
	- CORRIDORS / STAIRS:	4.0 kPa
SUPERIMPOSED DEAD LOAD	- INTERNAL AREAS:	1.5 kPa
	- EXTERNAL AREAS:	3.0 kPa
POINT LOADS	- DL++	- DENOTES DEAD LOAD OF ++kN
	- LL++	- DENOTES LIVE LOAD OF ++kN
LINE LOADS	- DL/m++	- DENOTES DEAD LOAD OF ++kN/m
	- LL/m++	- DENOTES LIVE LOAD OF ++kN/m
<u>CONCRETE STRENGTH:</u>		
UNLESS NOTED OTHERWISE MINIMUM CONCRETE STRENGTH SHALL BE:		
	- GENERALLY	$f_c = 40 \text{ MPa}$
<u>FIRE RATING:</u>		
UNLESS NOTED OTHERWISE FIRE RATING SHALL BE:		2 HOURS
<u>DEFLECTION LIMITATION:</u>		
TOTAL DEFLECTION:		L/250 OR 25mm (typical UNO)
		L/125 (CANTILEVER)
INCREMENTAL DEFLECTION:		L/500
		L/1000 (AT MASONRY WALLS)
<u>COVER:</u>		
INTERNAL:		25mm
EXPOSED SURFACES:		40mm
PROVIDE PLASTIC OR CONCRETE BAR CHAIRS TO ALL EXPOSED SURFACES.		
<u>NOTE:</u>		
1. THE MINIMUM CONCRETE STRENGTH AS NOTED MAY BE INCREASED BY THE POST TENSIONING DESIGNER TO FACILITATE THE STRESSING PROGRAM.		
2. THE POST TENSIONING CONTRACTOR SHALL DESIGN AND DOCUMENTS ALL ELEMENTS CAST INTEGRALLY WITH THE POST TENSIONED FLOOR INCLUDING ALL EDGE BEAMS.		
3. STRUCTURAL SIZES AND FRAMING AS INDICATED ON PLAN ARE INDICATIVE ONLY. THE POST TENSIONING CONTRACTOR MAY VARY THE INDICATED SIZES AS REQUIRED TO COMPLY WITH AUSTRALIAN STANDARDS OR TO PRODUCE A MORE ECONOMICAL DESIGN.		
4. FOR CO-ORDINATION PURPOSES, ANY VARIATIONS TO THIS PLAN/DESIGN MADE BY THE POST TENSIONING CONTRACTOR SHALL BE APPROVED BY HENRY AND HYMAS.		

AWNING STEEL MEMBER SCHEDULE

MEMBER TAG	AWNING MEMBER SIZE
AB1	360 UB 45
AB2	150 PFC
AR1	310 UB 32
AR2	200 PFC
AKB1	100 x 5.0 SHS
ACP1	C15019 AT 1200CTS MAX. 2 ROWS OF BRIDGE. LAP AS NOTED
AP1	Z15019 AT 1200CTS MAX. 3 ROWS OF BRIDGE. LAP AS NOTED

ISSUED FOR SSDA



REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
2	ISSUED FOR SSDA	HW	D.M.	05-03-2020
1	ISSUED FOR TENDER	K.S.	N.V.	19-12-2019

Client
WARAKIRRI COLLEGE

Architect
KOTURIC + CO.

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Chatswood NSW 2067

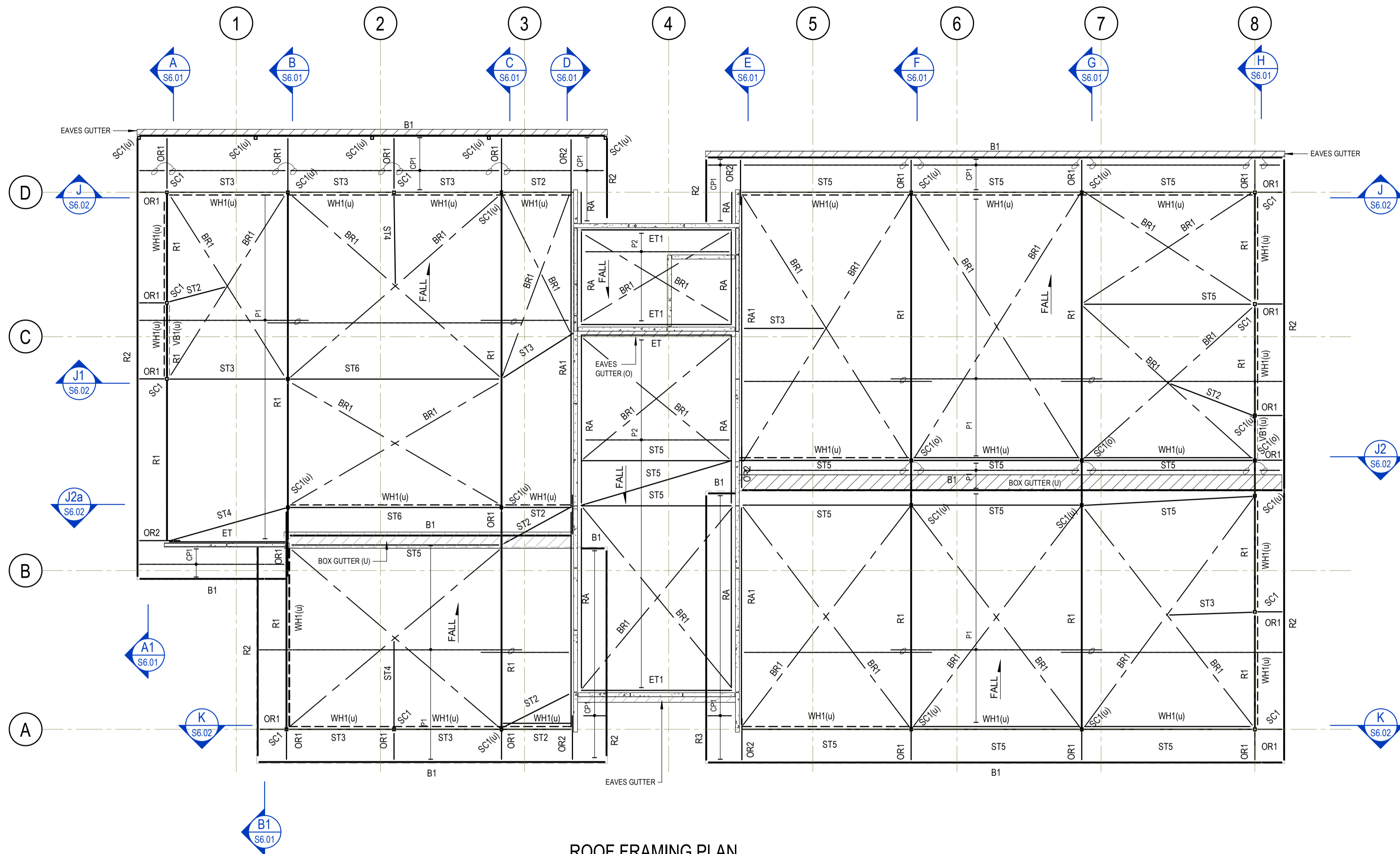


Telephone
+61 2 9417 8400
Facsimile
+61 2 9417 8337
Email
email@hhoonsult.com.au
Web
www.henryandhymas.com.au



Project
NEW LEARNING CENTRE
6A WATSFORD ROAD, CAMPBELLTOWN
Title
FIRST FLOOR SLAB PLAN

Drawn H.W.	Designed D.M.	Date DEC. 2019
Checked D.M.	Approved R.K.	Scale As indicated
Drawing number 19712-S5.00		Revision 2



ROOF FRAMING PLAN
SCALE 1:100

STEEL MEMBER SCHEDULE

MEMBER TAG	MEMBER SIZE
SC1	100 x 5.0 SHS
SC2	125 x 6 SHS
B1	150 PFC (IN PURLIN ZONE)
OR1	150 UB 18
OR2	150 PFC
R1	310 UB 32
R2	150 PFC (IN PURLIN ZONE)
R3	200 PFC
WH1	100 x 5.0 SHS
BR1	75 x 6 FLAT
ET	90 x 6 EA
ET1	150 PFC (WEB HORIZONTAL)
RA	90 x 6 EA
RA1	150 PFC (WEB HORIZONTAL)
VB1	125 x 6.0 SHS
CP1	C15019 AT 1200CTS MAX. 2 ROWS OF BRIDGE. LAP AS NOTED
P1	Z15024 AT 1200CTS MAX. 2 ROWS OF BRIDGE. LAP AS NOTED
P2	Z15019 AT 1200CTS MAX. 2 ROWS OF BRIDGE. LAP AS NOTED
G1	C15019

PURLIN NOTES:

- UNLESS NOTED OTHERWISE ALL PURLINS SHALL BE LAPPED AS FOLLOWS:-
SPAN

< 6000	900
> 6000 < 8000	1200
> 8000 < 12000	1500
> 12000	1800
- PURLINS, GIRTS AND BRIDGING TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATION.
- UNLESS NOTED OTHERWISE PROVIDE PURLIN / GIRT BRIDGING AS FOLLOWS:-

PURLIN SIZE	MAXIMUM PURLIN SPAN		
	0 BRIDGES	1 BRIDGES	2 BRIDGES
100	2000	4000 (3000)	6000 (5000)
150	3000	6000 (5000)	9000 (7000)
200	4000	8000 (7000)	12000 (9000)
250	5000	10000 (8000)	15000 (12000)

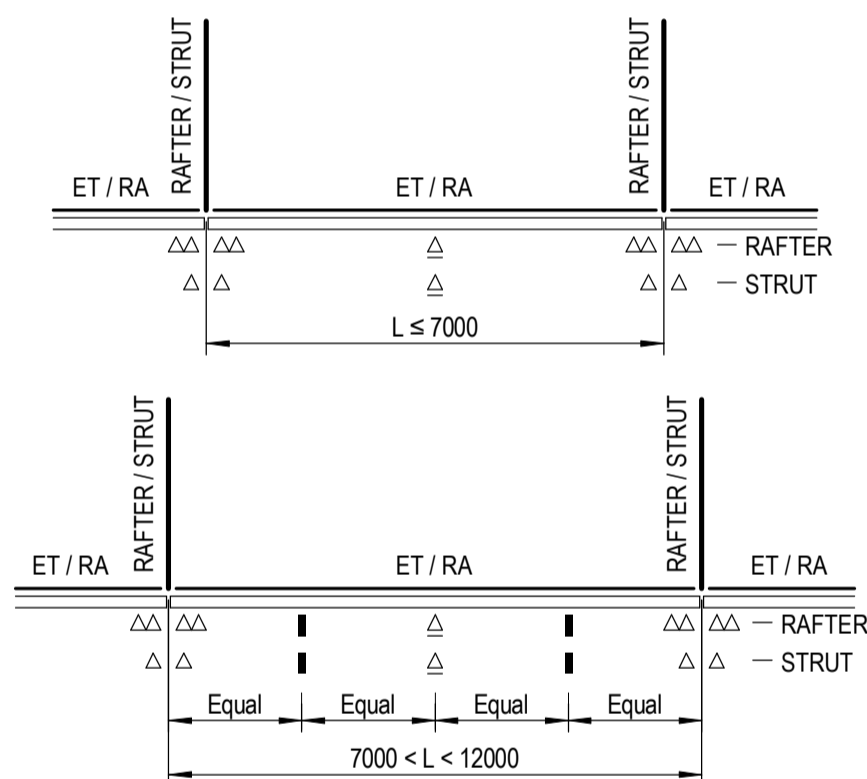
NOTED: FIGURES IN BRACKETS APPLY TO SIMPLY SUPPORTED PURLINS

NOTES:

- FOR ALL GENERAL STEELWORK NOTES REFER CONSTRUCTION NOTES ON DRAWING S1.00
- REFER PANEL ELEVATION FOR FERRULE LOCATIONS.
- ALL BOLTS FOR FERRULE CONNECTION SHALL BE GRADE 8.8S WITH 30mm MINIMUM ENGAGEMENT TO FERRULES
- ALL BOLTS FOR STEEL TO STEEL CONNECTIONS SHALL BE M20 GRADE 8.8S U.N.O
- ALL BRACE MEMBERS SHALL BE TIED TO EVERY SECOND PURLIN CROSSED WITH UNISTRUT STRAP TO PREVENT SAG.
- PRECAMBER TO ALL STRUCTURE STEEL RAFTERS, TRUSSES AND PORTALS SHALL BE 5mm FOR EVERY 2000mm OF SPAN UNLESS NOTED OTHERWISE ON PLAN. (REFER LEGEND BELOW FOR DESIGNATION)
- UNLESS NOTED OTHERWISE ALL EXTERNAL STRUCTURAL STEEL SHALL BE HOT DIPPED GALVANISED.
- UNLESS NOTED OTHERWISE FLY BRACE RAFTERS EVERY 3rd PURLIN.
- PROVIDE FIRE PROTECTION TO ALL STRUCTURAL STEEL ELEMENTS AS REQUIRED (REFER ARCHITECT'S DRAWING FOR FIRE RATING REQUIREMENTS)

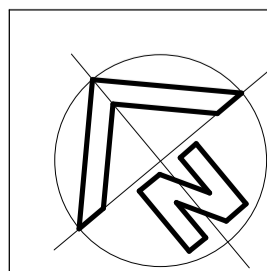
LEGEND:

	DENOTES M20 FERRULE INSERTS PLUS PLATE TO ET AND RA MEMBERS (SITE WELDED AFTER STEEL ERECTION - REFER DETAILS)
	DENOTES M20 FERRULE INSERTS MIN. 95mm LONG INSTALLED WITH 400mm LONG CROSS BAR
	DENOTES M24 FERRULE INSERTS PLUS PLATE TO ET AND RA MEMBERS (SITE WELDED AFTER STEEL ERECTION - REFER DETAILS)
	DENOTES M24 FERRULE INSERTS
	DENOTES M20 TRUBOLT
	WELD PLATE (refer detail for location)
	DENOTES UPWARD PRECAMBRE OF **mm AT MIDSPAN
	DENOTES UPWARD PRESENT OF **mm AT SPLICE



TYPICAL ET / RA FIXING DETAIL

ISSUED FOR SSDA



REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
2	ISSUED FOR SSDA	HW	D.M.	05-03-2020
1	ISSUED FOR TENDER	K.S.	N.V.	19-12-2019

Client
WARAKIRRI COLLEGE

Architect
KOTURIC + CO.

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Level 5,
79 Victoria Avenue
Chatswood NSW 2067



Telephone
+61 2 9417 8400
Facsimile
+61 2 9417 8337
Email
email@hhoonsult.com.au
Web
www.henryandhymas.com.au

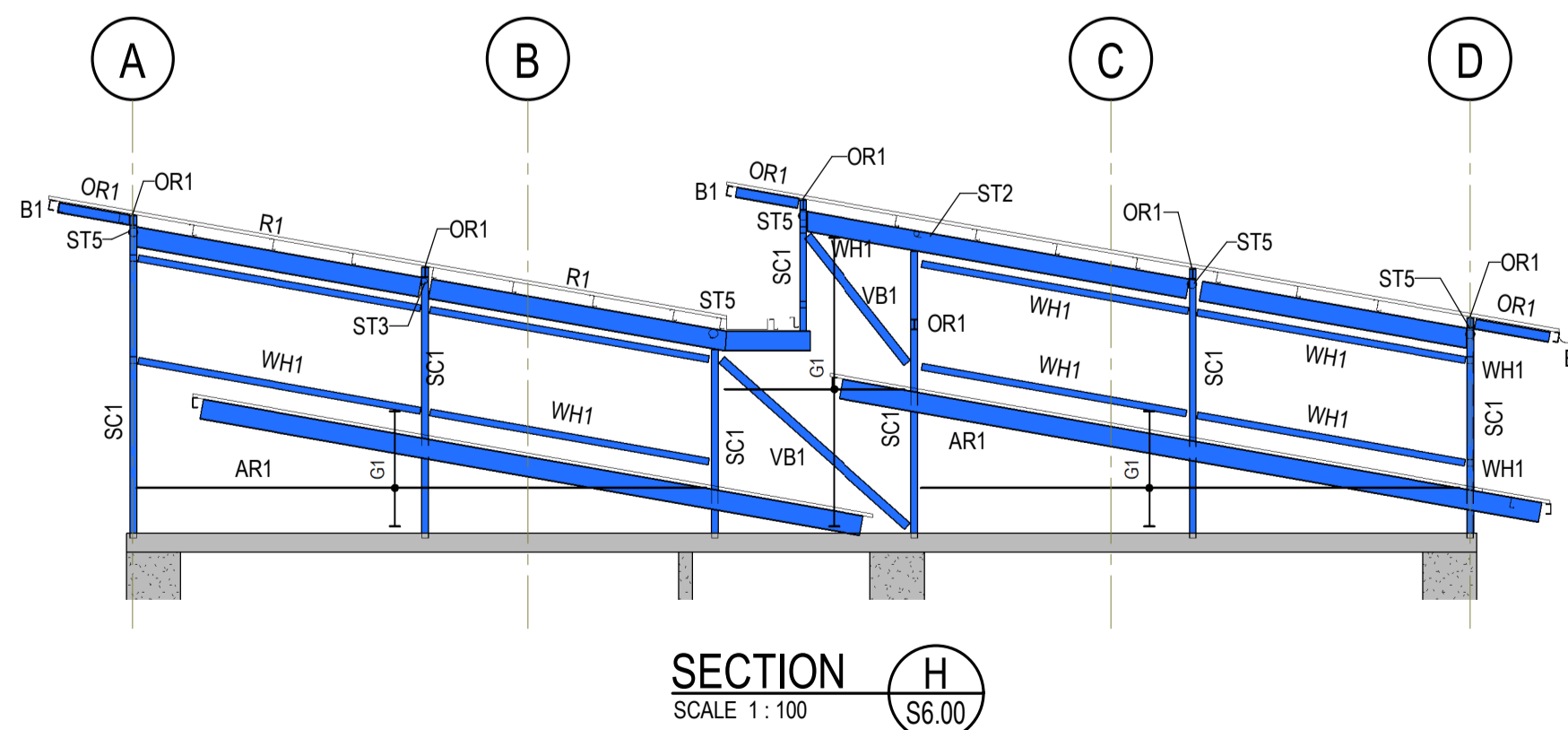
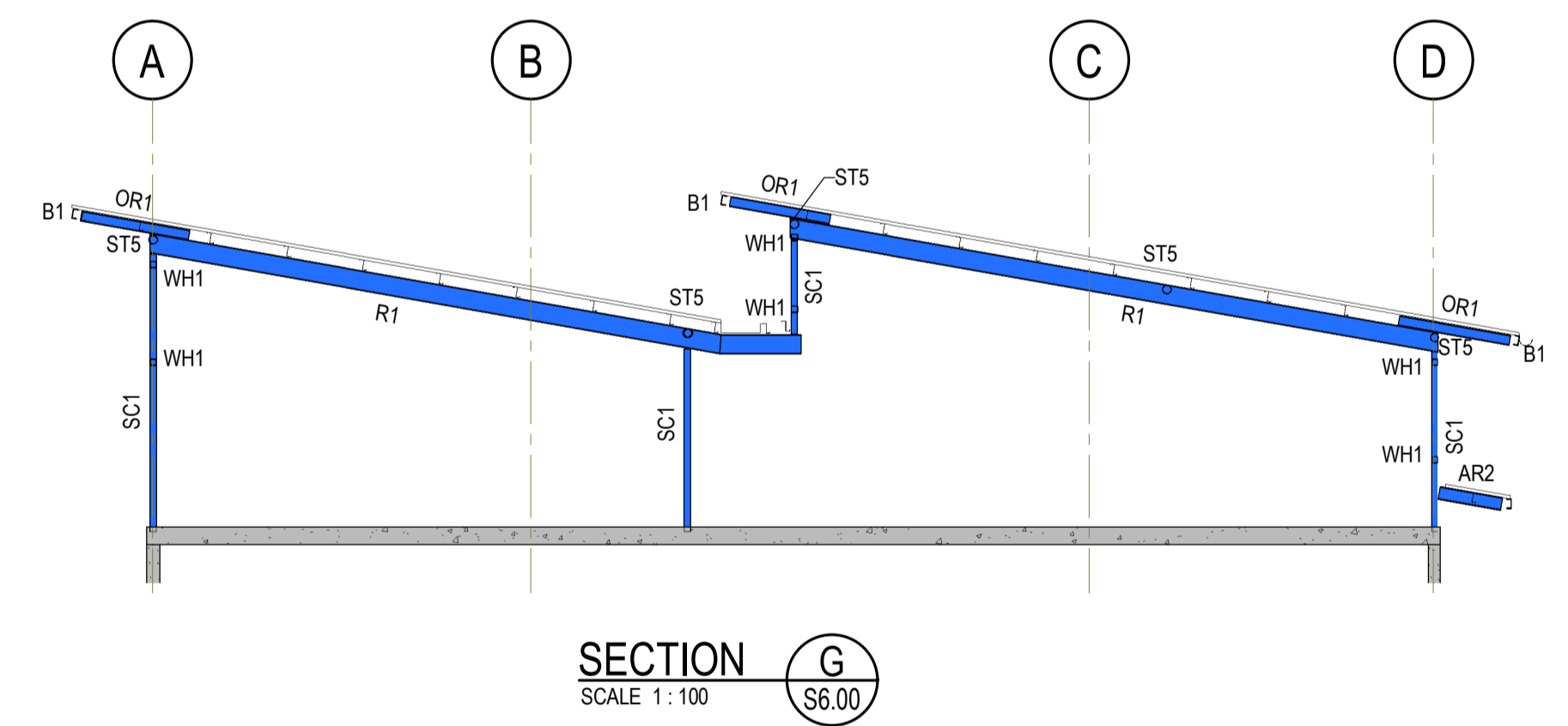
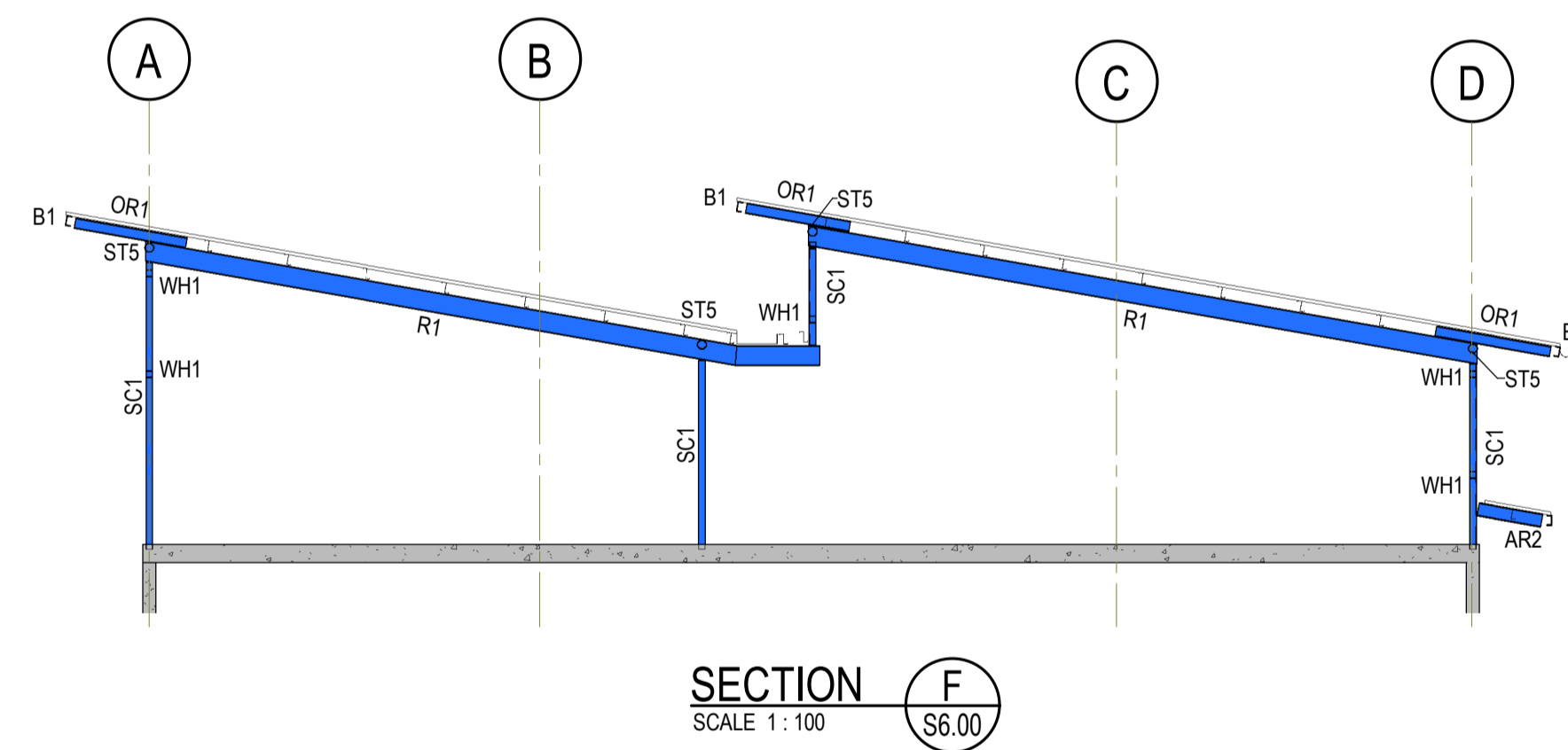
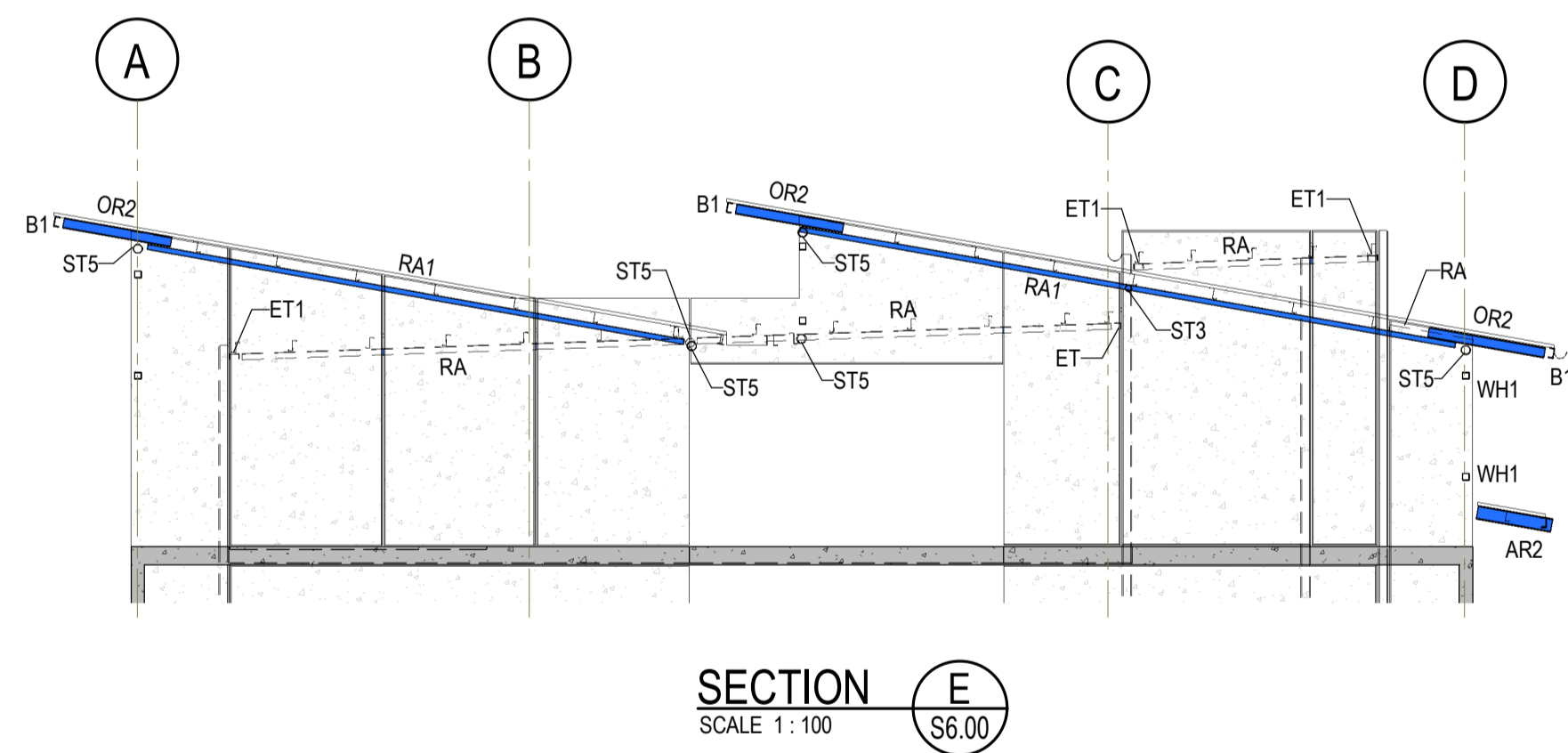
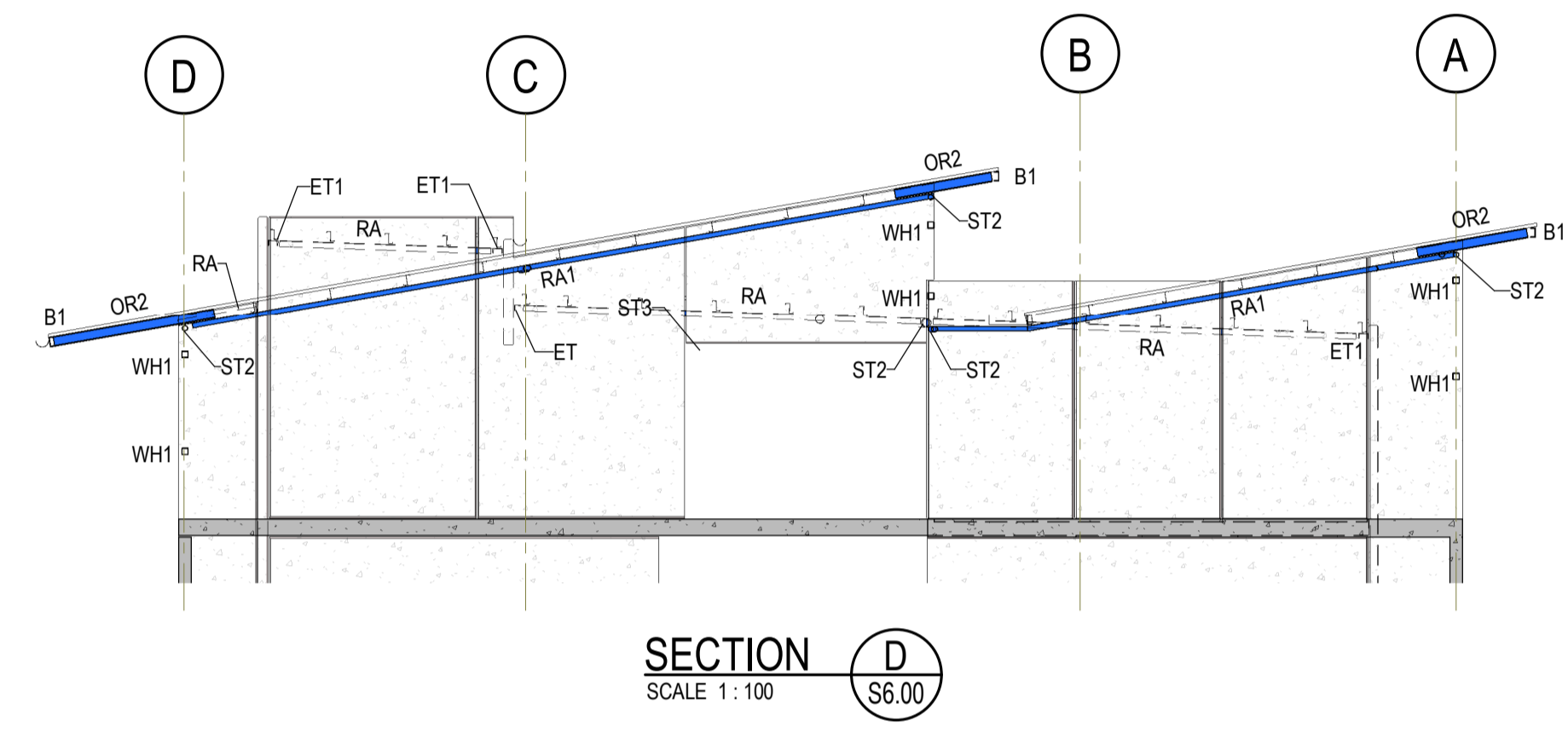
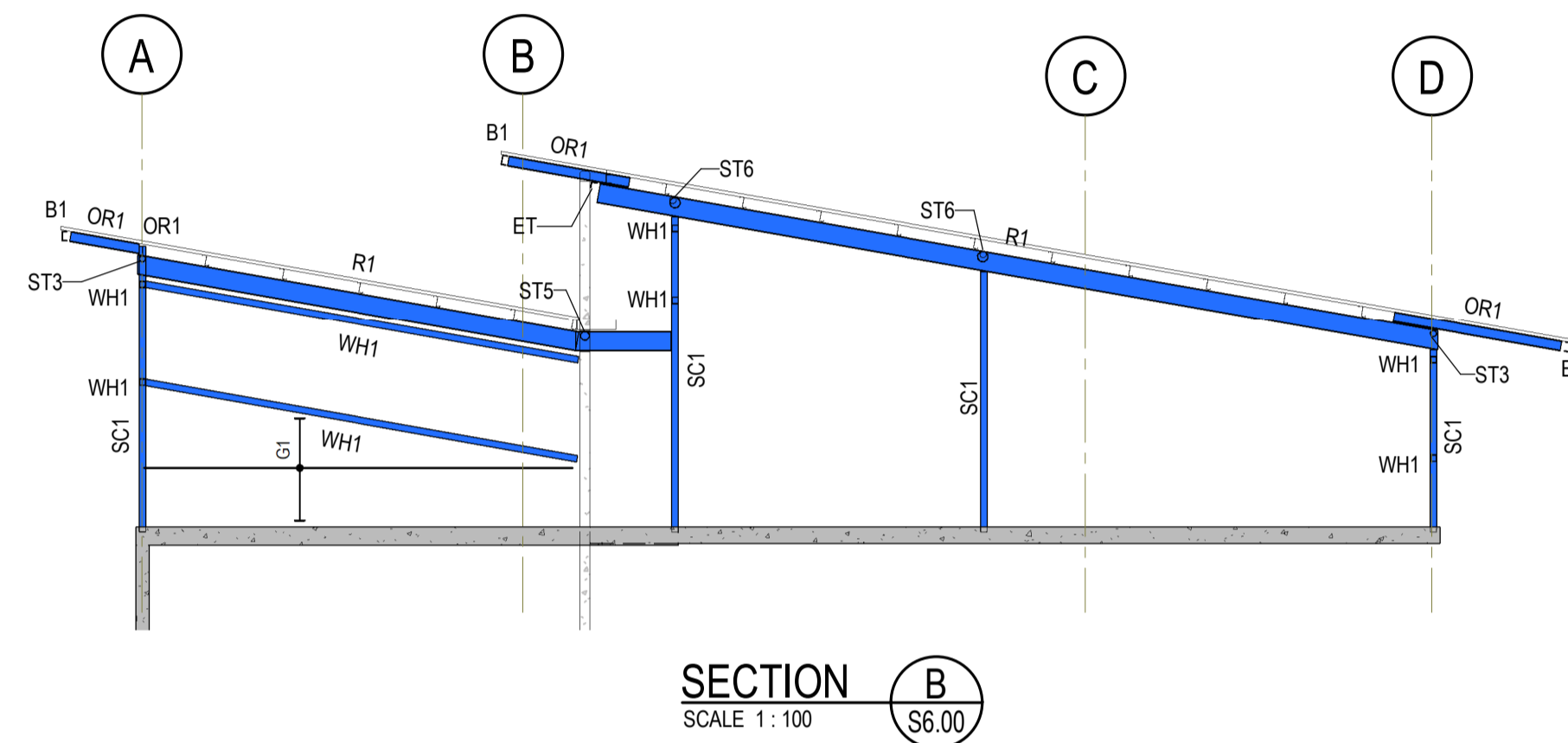
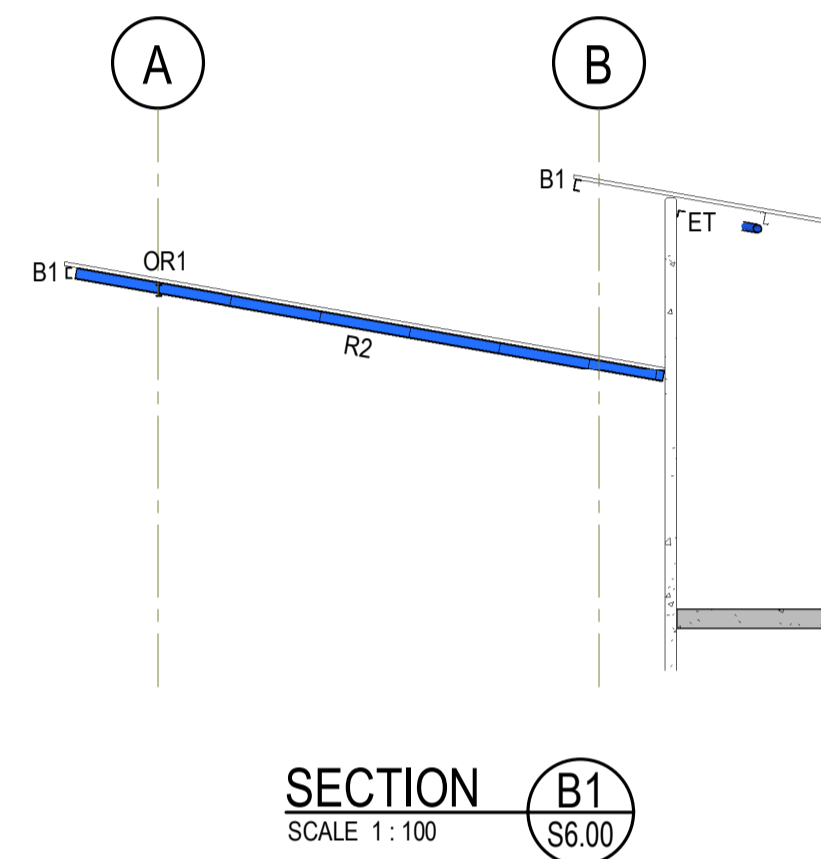
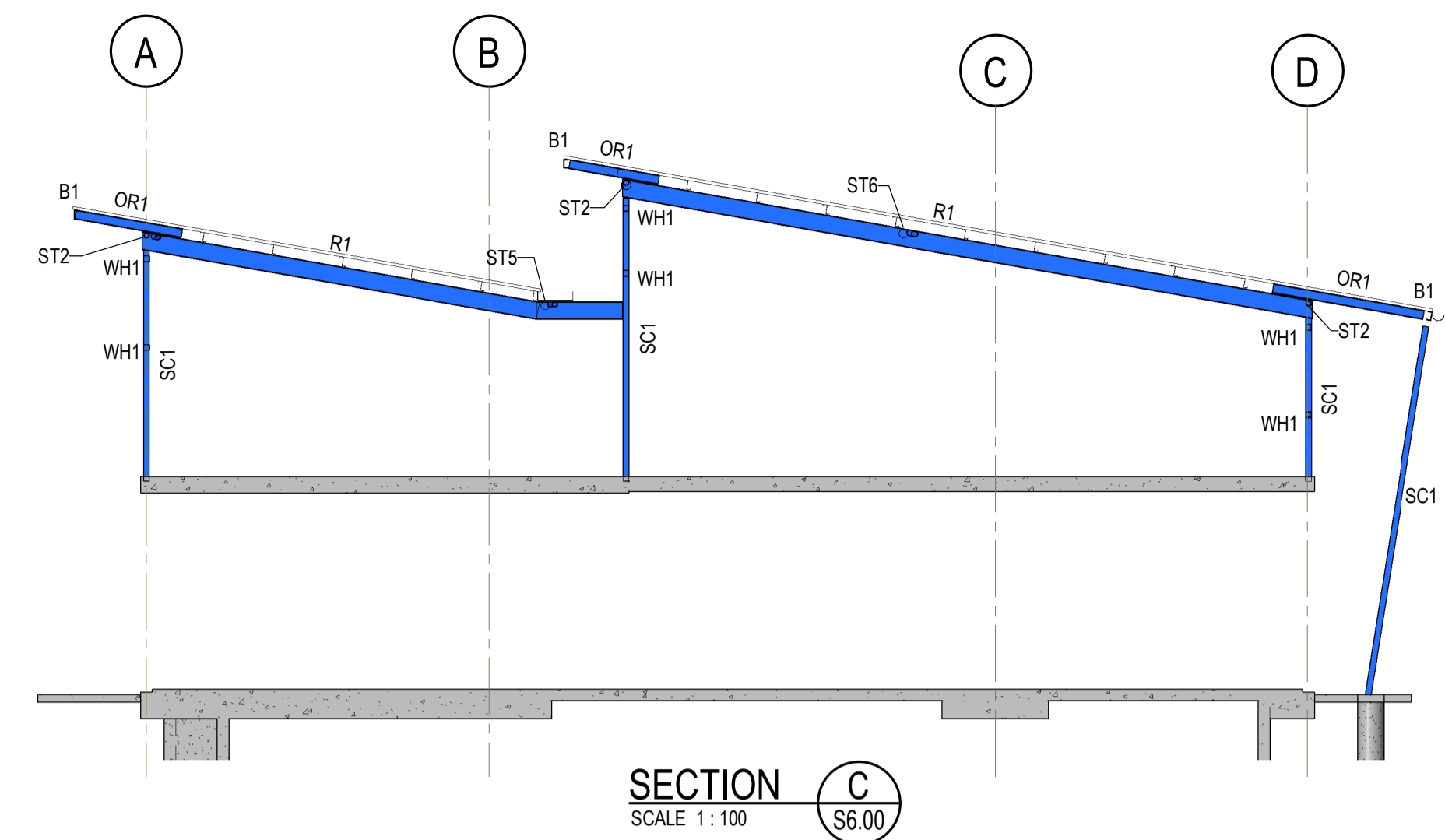
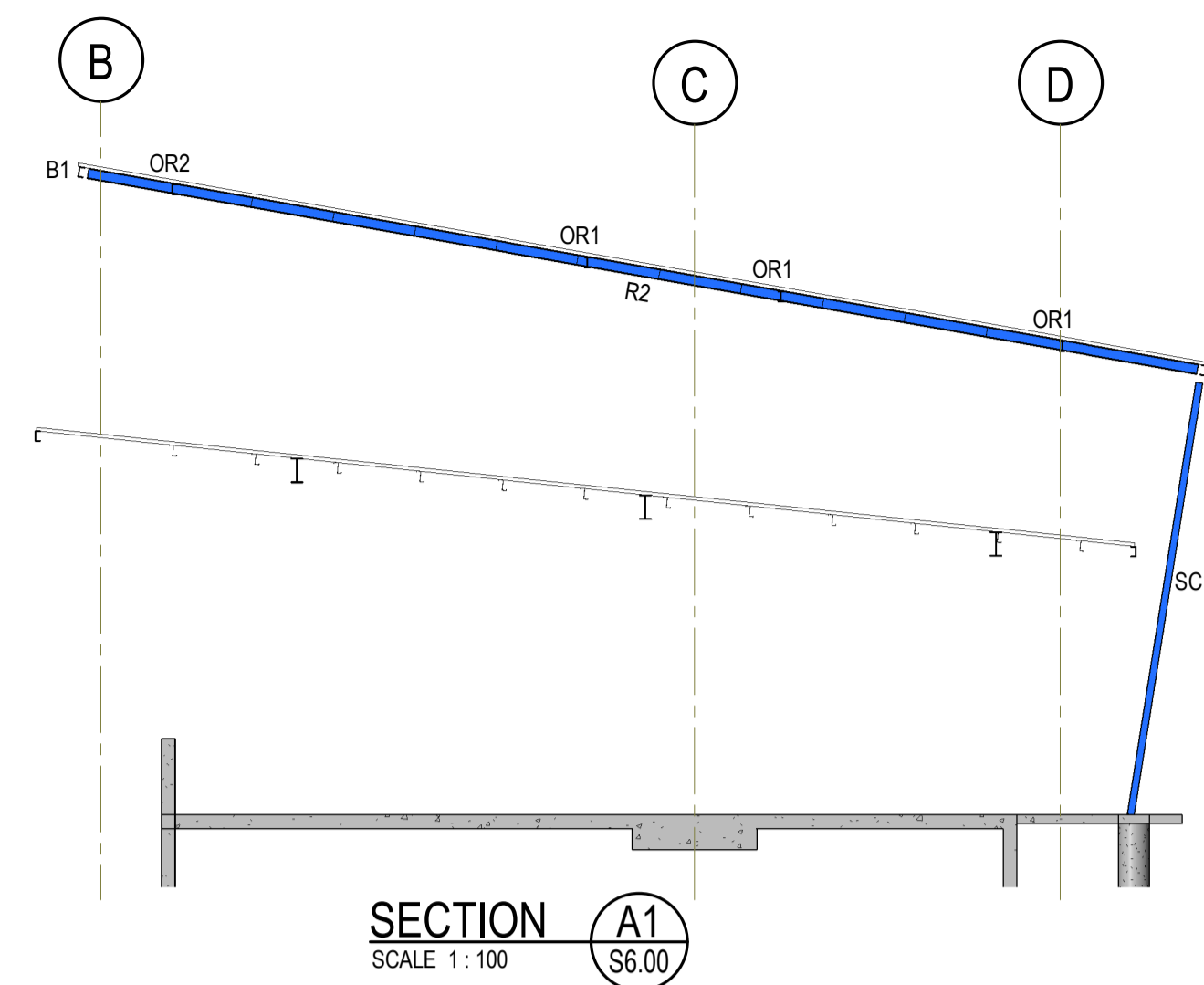
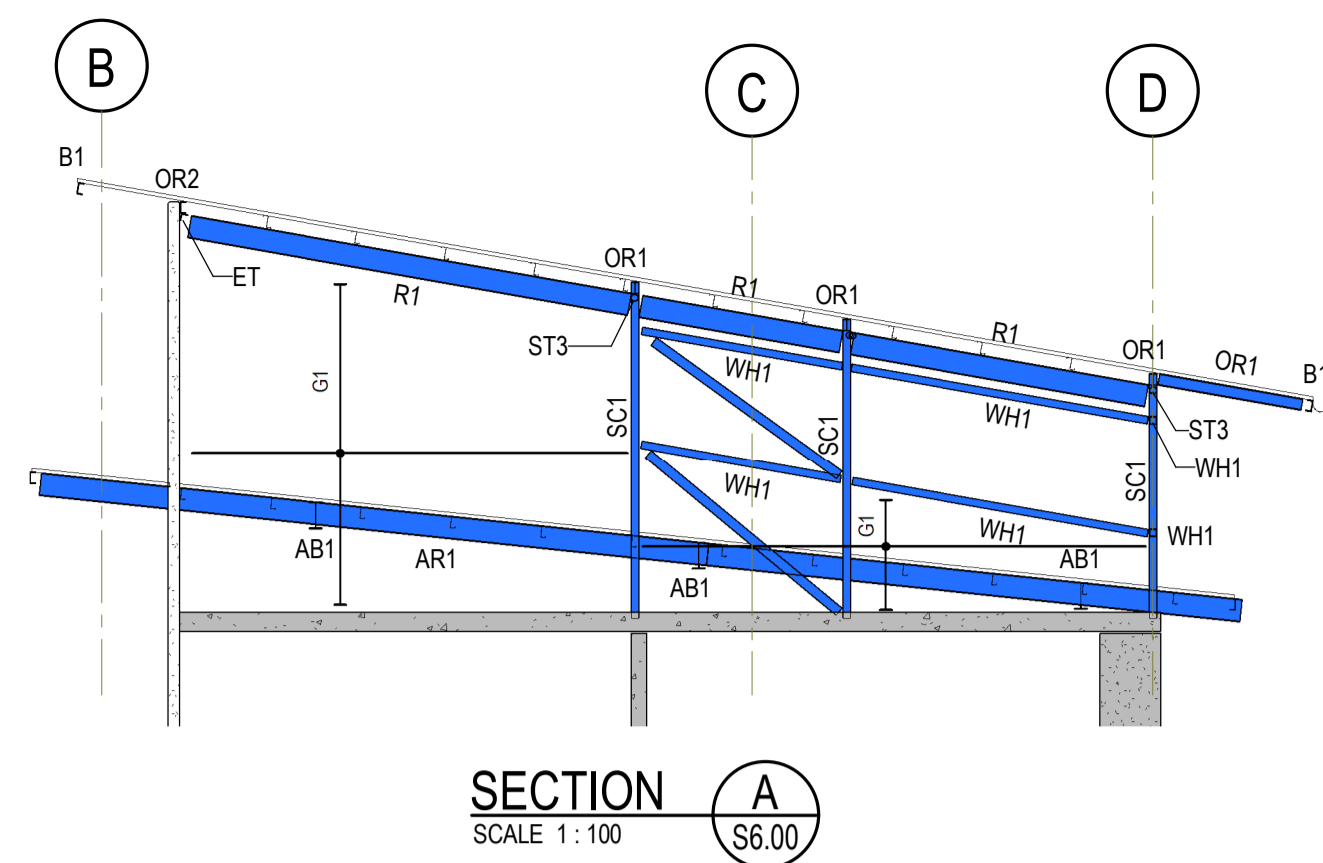


Project
NEW LEARNING CENTRE
6A WATSFORD ROAD, CAMPBELLTOWN
Title
ROOF STEEL FRAMING PLAN

Drawn H.W.	Designed D.M.	Date DEC. 2019
Checked D.M.	Approved R.K.	Scale As indicated

Drawing number
19712-S6.00

Revision
2



ISSUED FOR SSDA

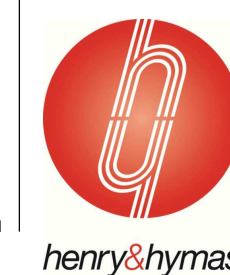
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2	ISSUED FOR SSDA	HW	D.M.	05-03-2020
1	ISSUED FOR TENDER	K.S.	N.V.	19-12-2019

Client	WARAKIRRI COLLEGE
Architect	KOTURIC + CO.
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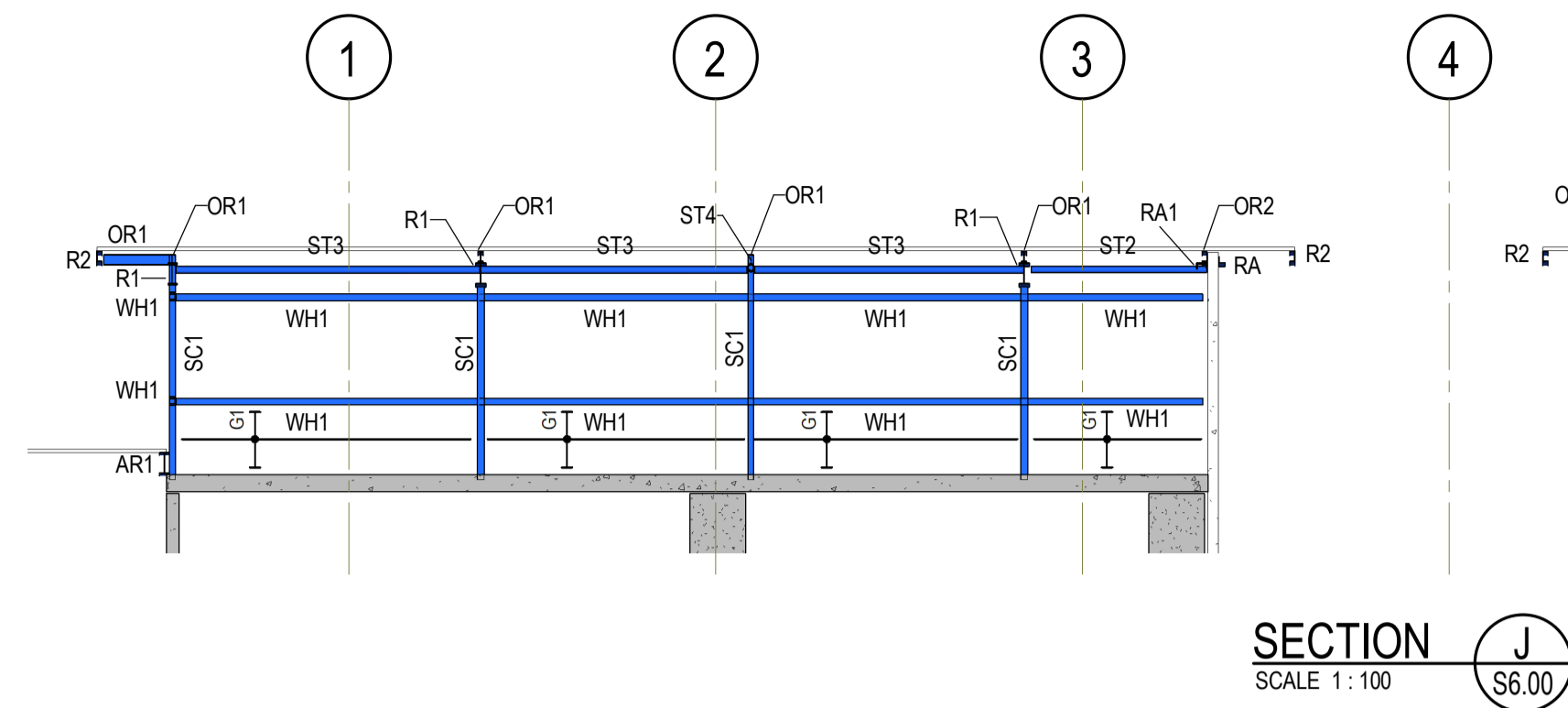


Telephone
+61 2 9417 8400
Facsimile
+61 2 9417 8337
Email
email@hhconsult.com.au
Web
www.henryandhymas.com.au



Project
NEW LEARNING CENTRE
6A WATSFORD ROAD, CAMPBELLTOWN
Title
STEEL FRAMING SECTIONS - SHEET 1

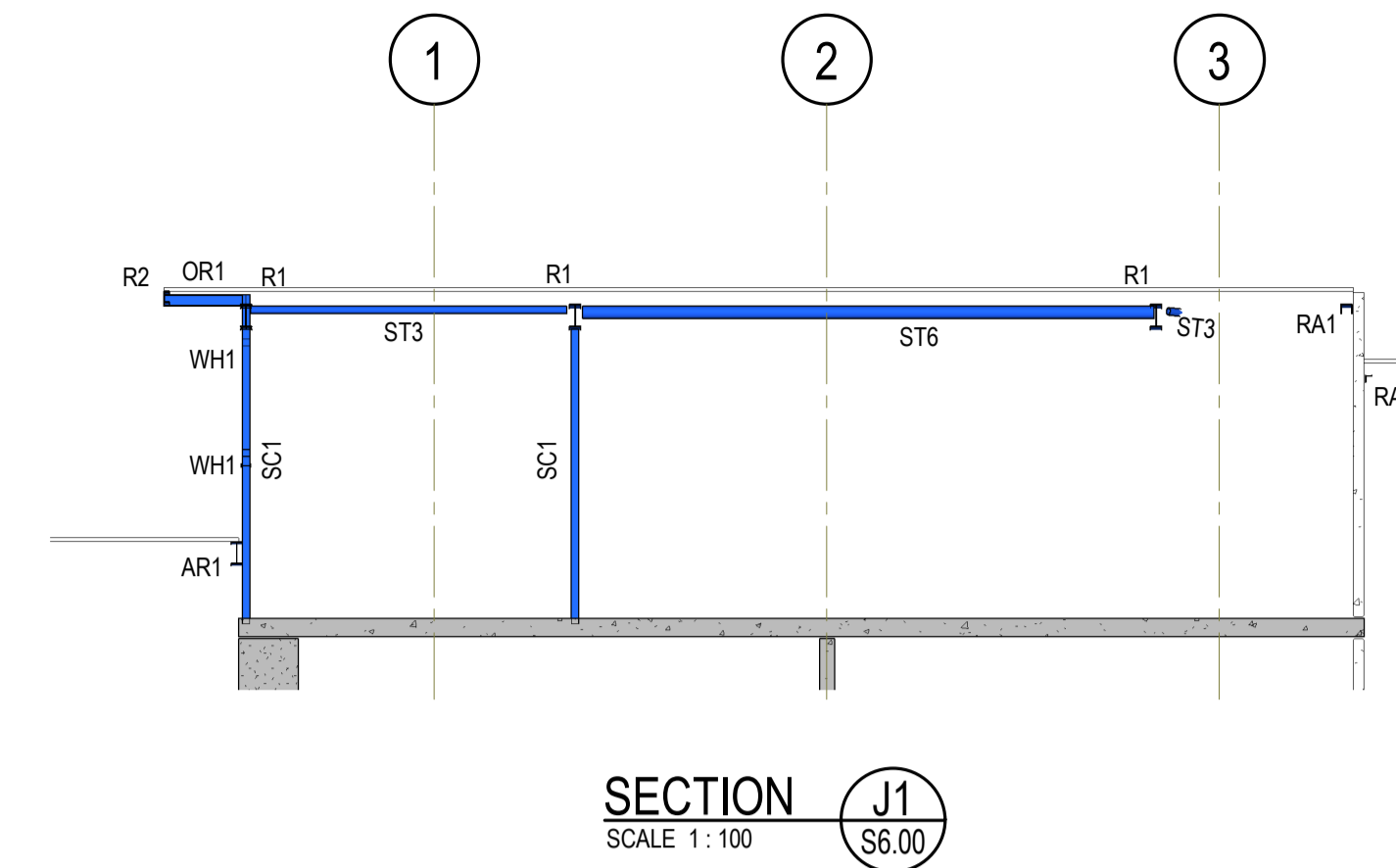
Drawn H.W.	Designed D.M.	Date DEC. 2019
Checked D.M.	Approved R.K.	Scale 1:100
Drawing number 19712-S6.01		Revision 2



S6.00

J

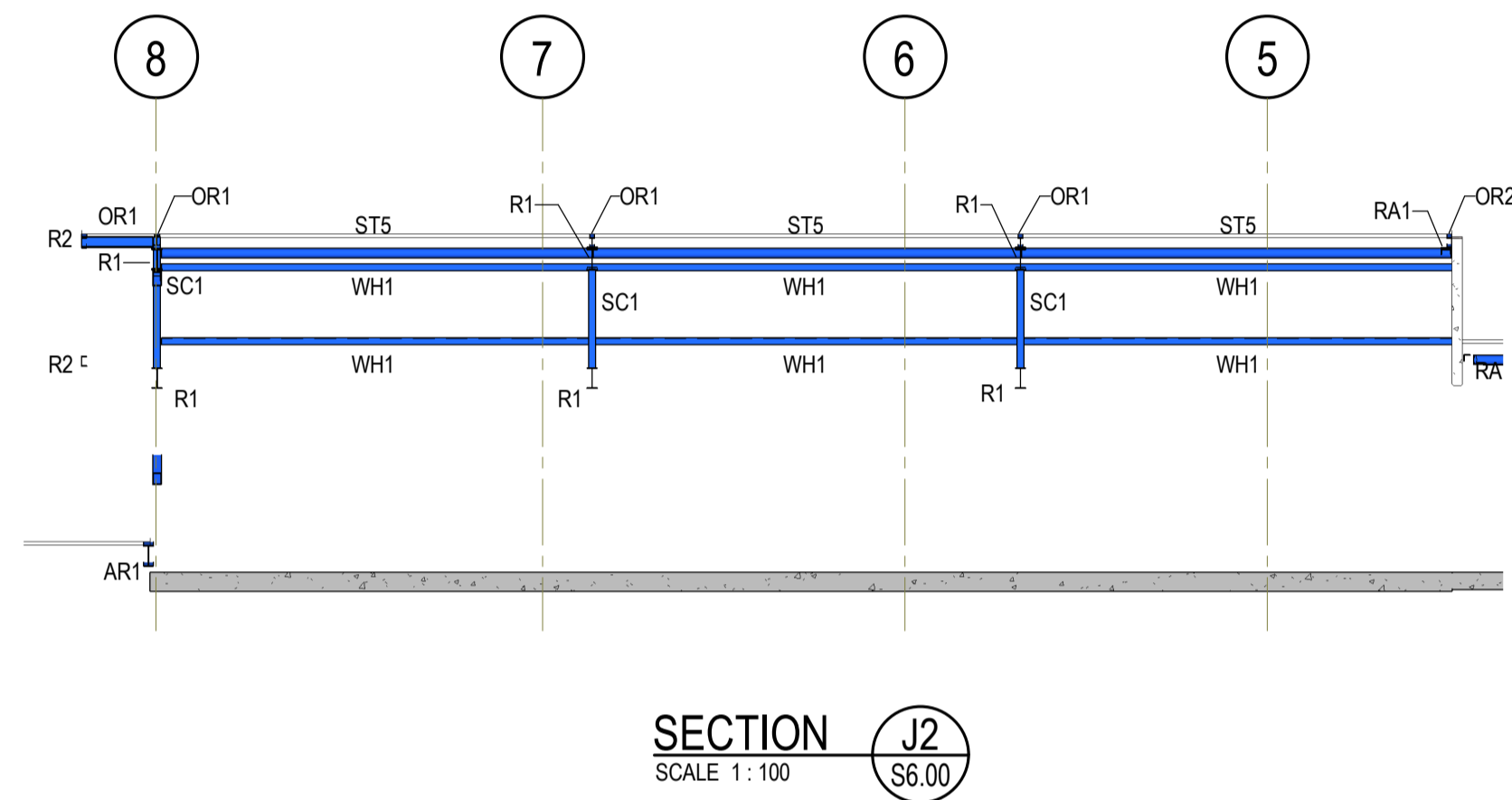
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S6.00

J1

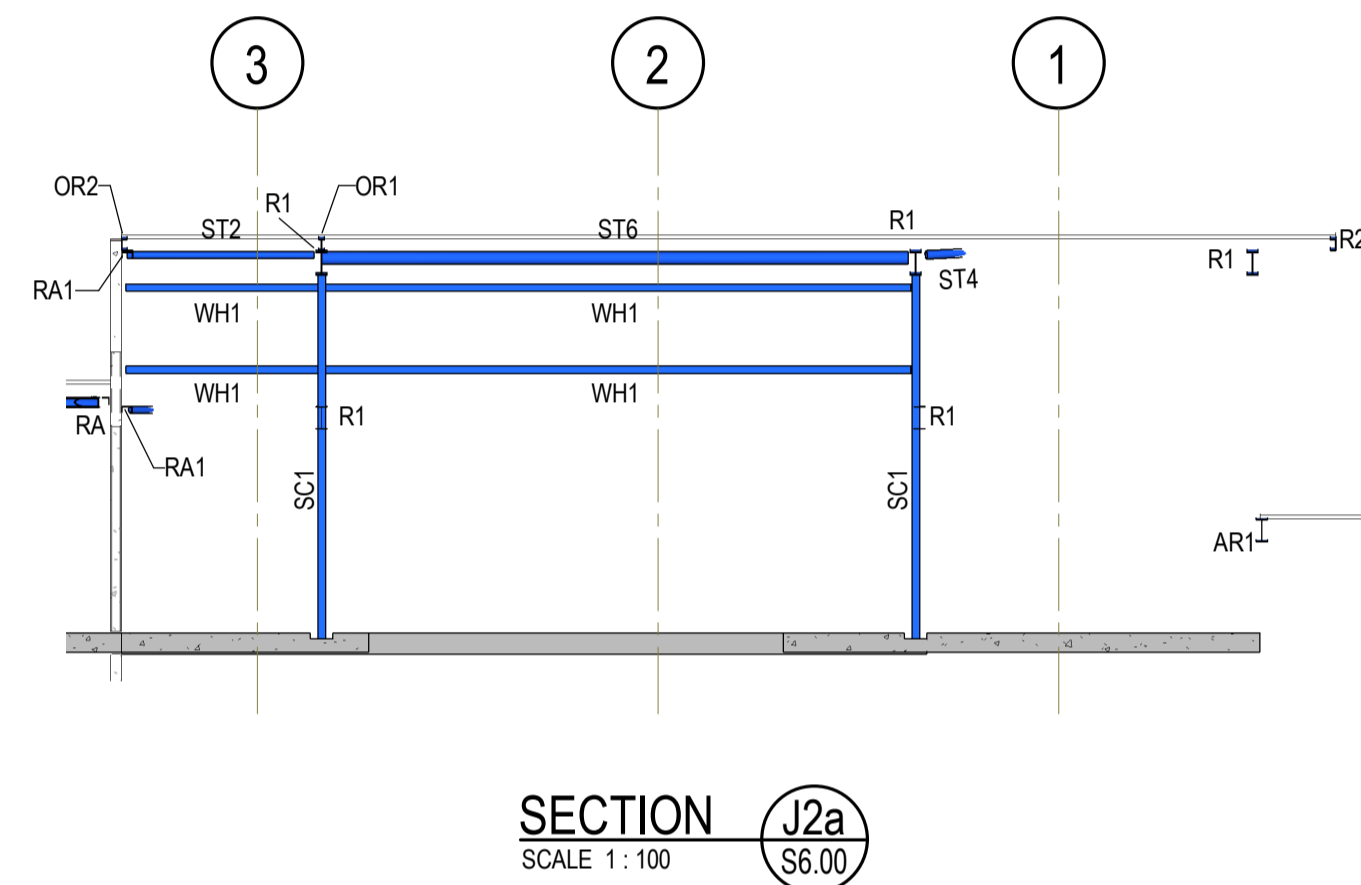
S6.00



S6.00

J2

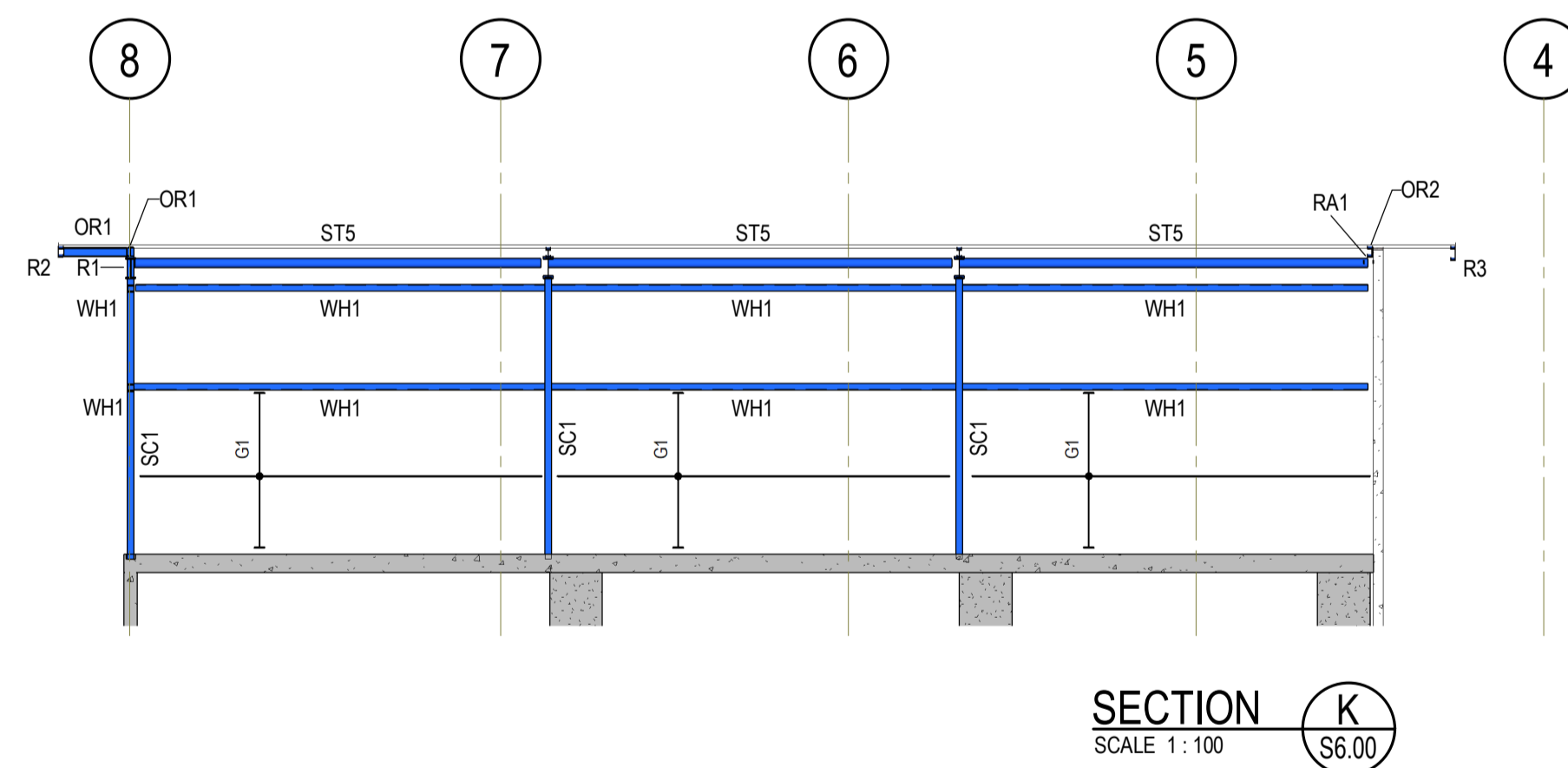
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S6.00

J2a

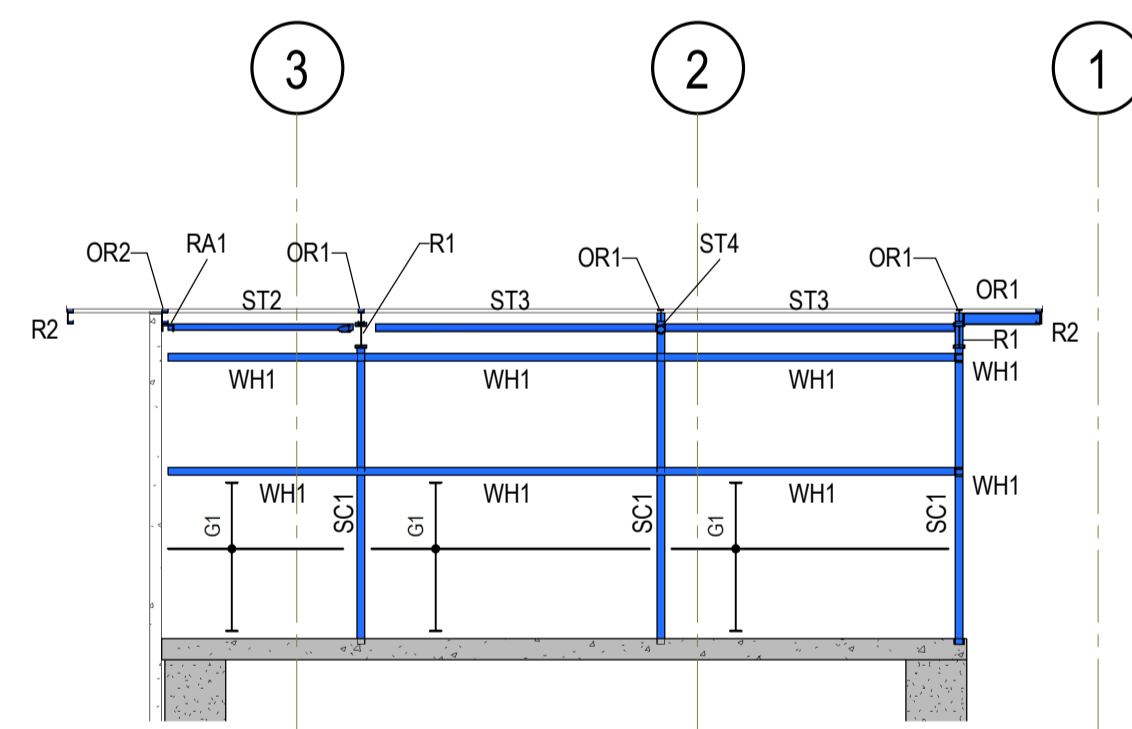
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S6.00

K

S6.00



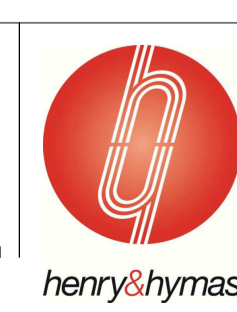
ISSUED FOR SSDA

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
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1	ISSUED FOR TENDER	K.S.	N.V.	19-12-2019

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Architect	KOTURIC + CO.
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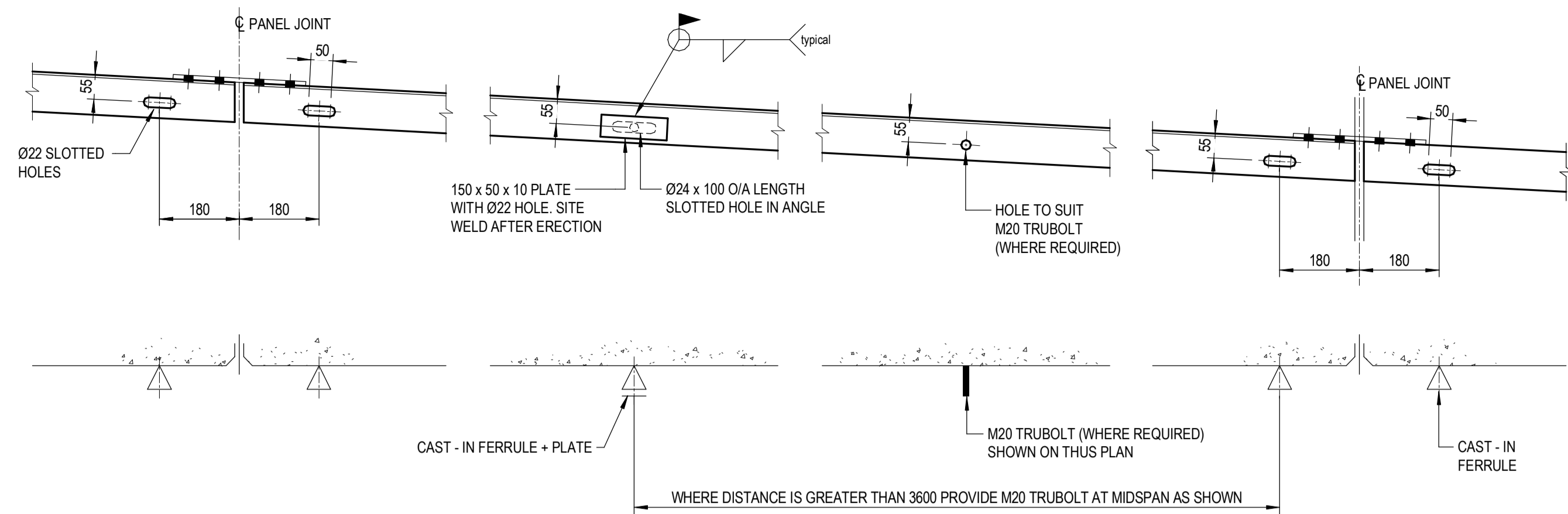
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Telephone +61 2 9417 8400 Facsimile +61 2 9417 8337 Email email@hhconsult.com.au Web www.henryandhymas.com.au

Project NEW LEARNING CENTRE 6A WATSFORD ROAD, CAMPBELLTOWN
Title STEEL FRAMING SECTIONS - SHEET 2

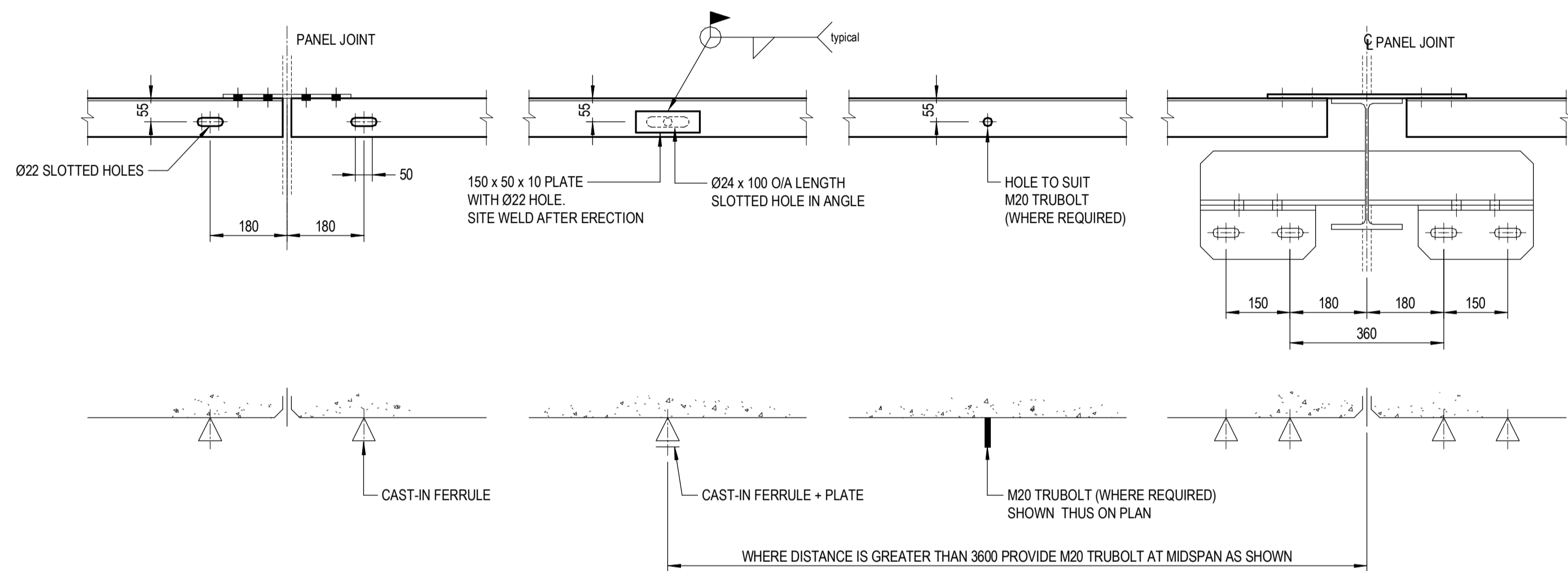


Drawn H.W.	Designed D.M.	Date DEC. 2019
Checked D.M.	Approved R.K.	Scale 1 : 100

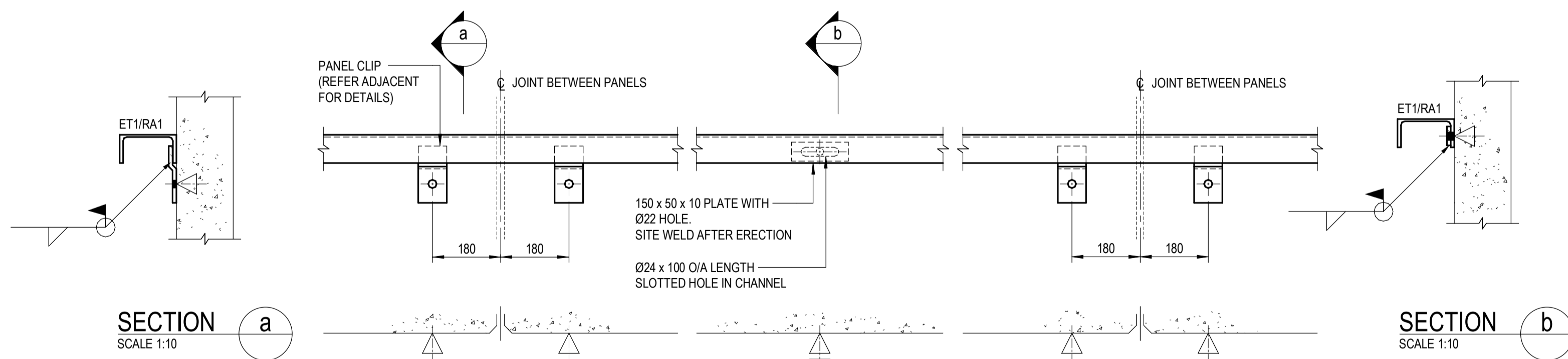
Drawing number 19712-S6.02	Revision 2
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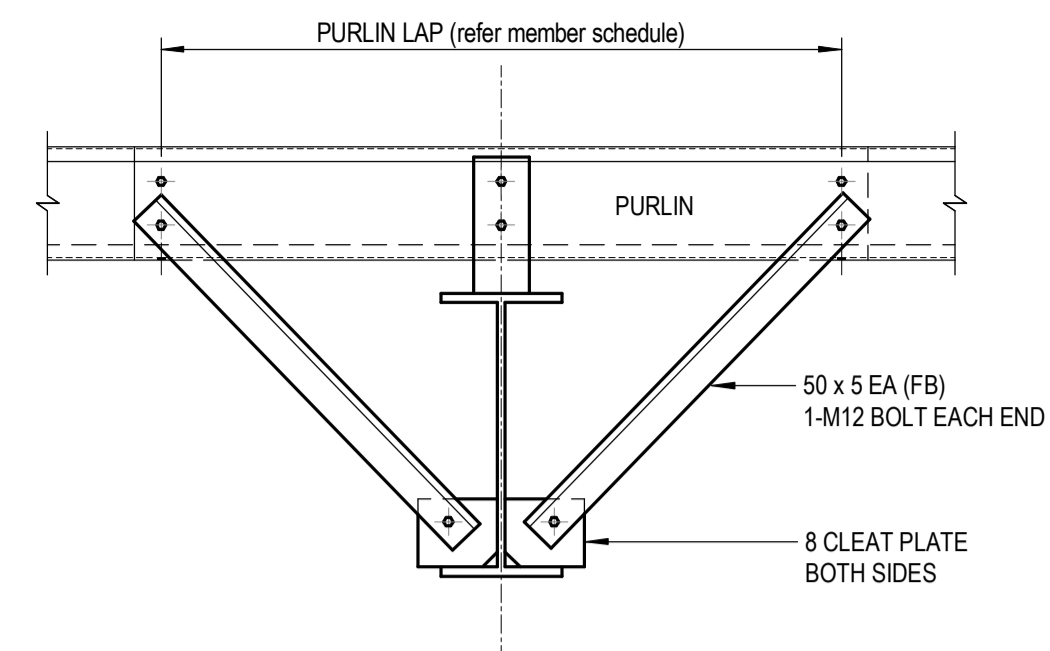
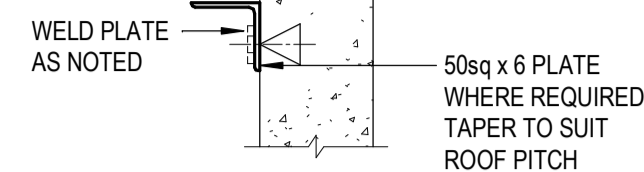
TYPICAL ELEVATION - FERRULE TO 'RA' MEMBERS



TYPICAL ELEVATION - FERRULE TO 'ET' MEMBERS

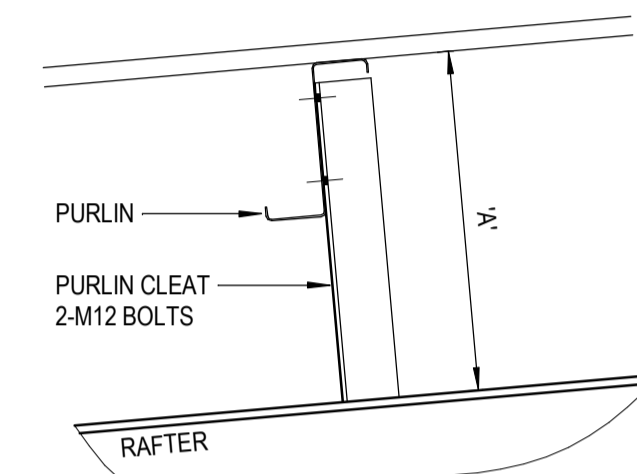


TYPICAL FERRULE TO 'ET1' & 'RA1' MEMBERS



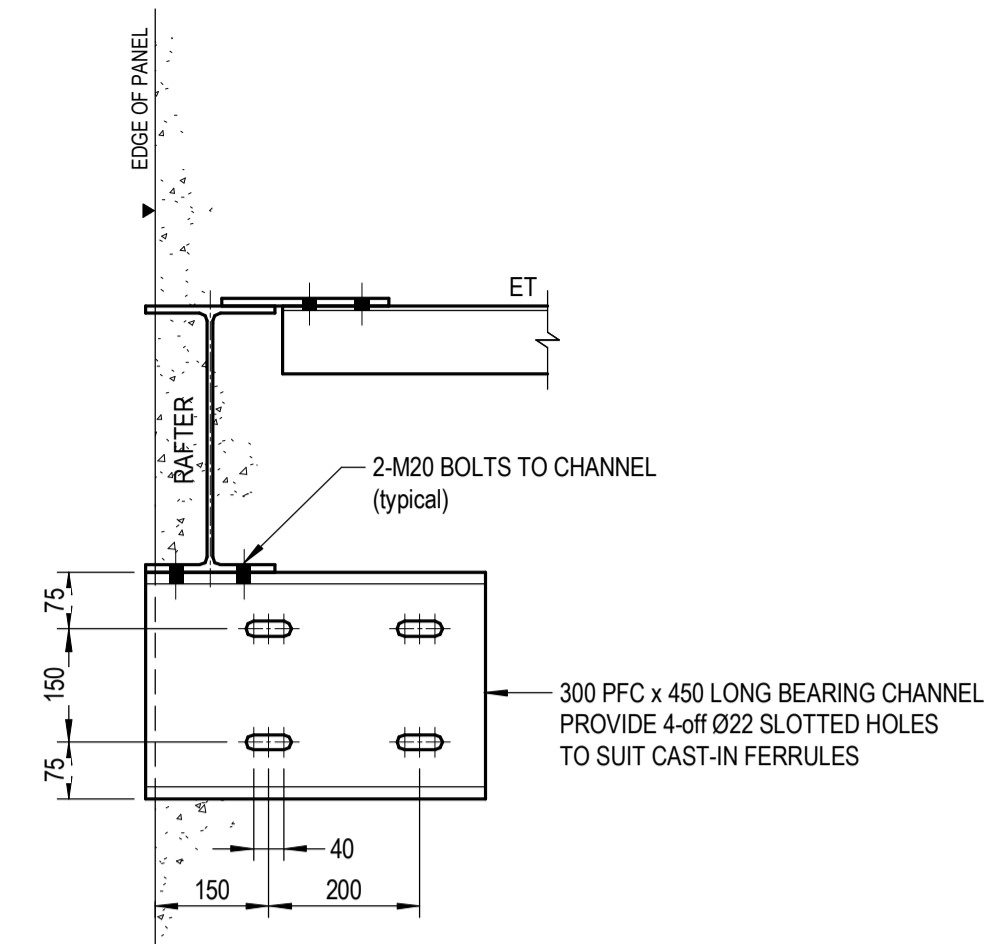
TYPICAL FLYBRACE DETAIL

SCALE 1 : 10
NOTED FB ON PLAN



TYPICAL PURLIN CLEAT DETAIL

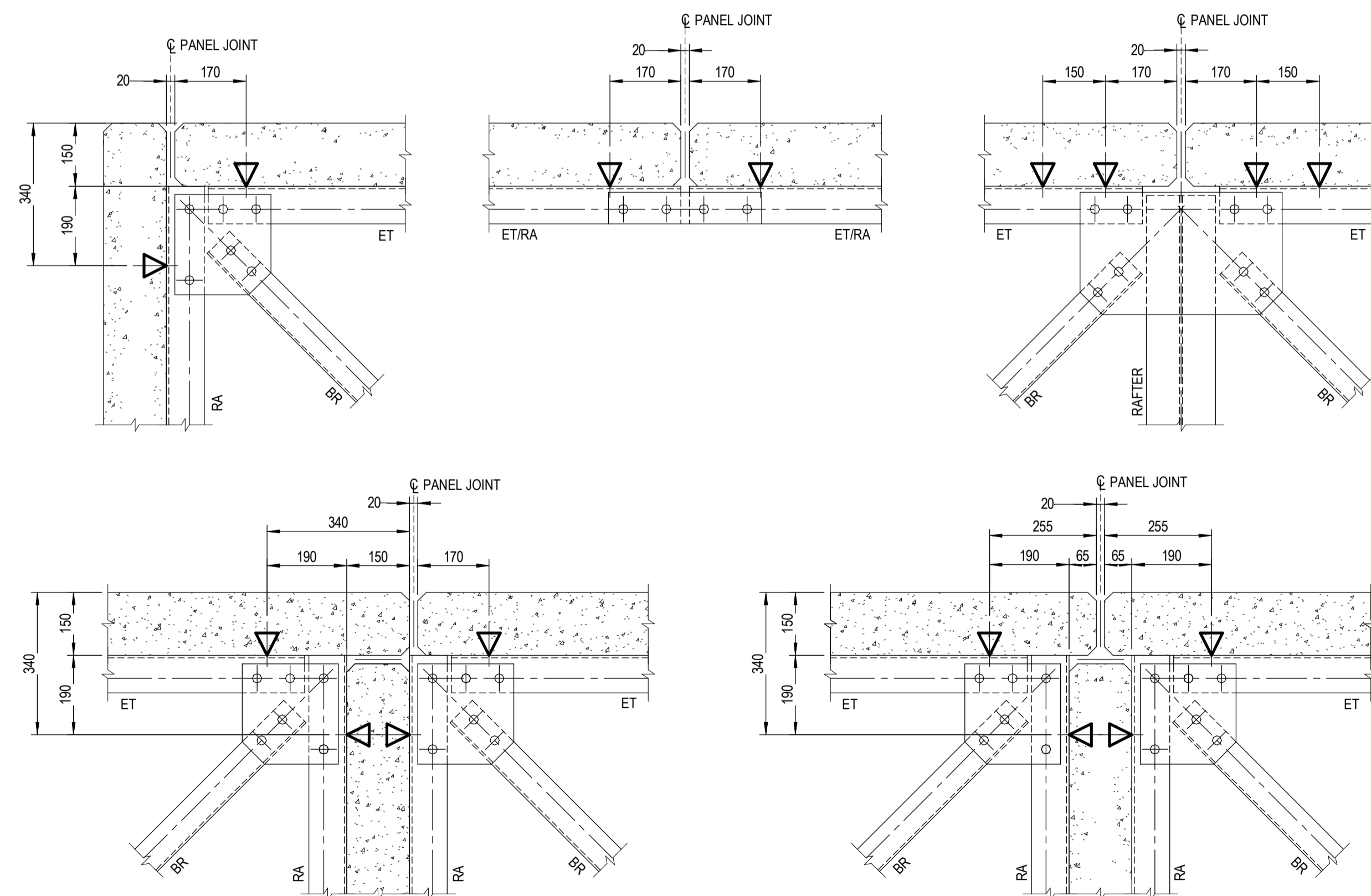
HEIGHT 'A' mm	CLEAT SIZE
0 - 250	8 PLATE
250 - 350	10 PLATE
350 - 450	12 PLATE
450 +	75 x 6 EA



ELEVATION

TYPICAL RAFTER END TO PANEL DETAIL

SCALE 1 : 10



TYPICAL FERRULE SETOUT DETAILS

- FOR MEMBER SIZES AND CONNECTIONS REFER STRUCTURAL STEEL DETAILS
- FERRULE SETOUT DIMENSIONS SHOWN ABOVE ARE INDICATIVE ONLY. REFER PANEL DETAILERS DRAWINGS FOR FINAL FERRULE SETOUT

ISSUED FOR SSDA

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
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1	ISSUED FOR TENDER	K.S.	N.V.	19-12-2019

Client
WARAKIRRI COLLEGE

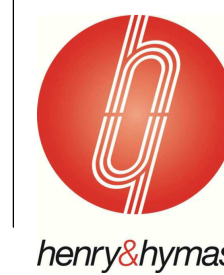
Architect
KOTURIC + CO.

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Level 5,
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Chatswood NSW 2067



Telephone
+61 2 9417 8400
Facsimile
+61 2 9417 8337
Email
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Project
NEW LEARNING CENTRE
6A WATSFORD ROAD, CAMPBELLTOWN

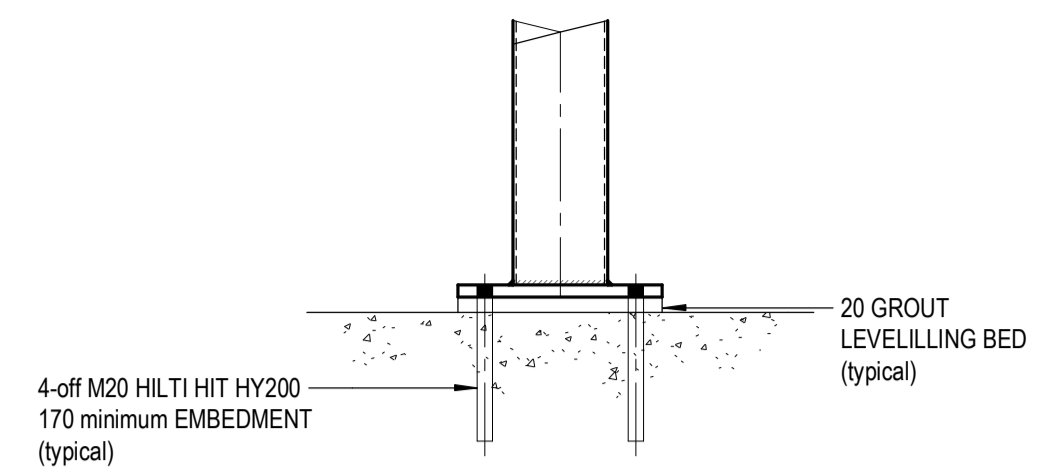
Title
STEEL DETAILS - SHEET 1

Drawn
H.W.
Checked
D.M.
Designed
D.M.
Approved
R.K.

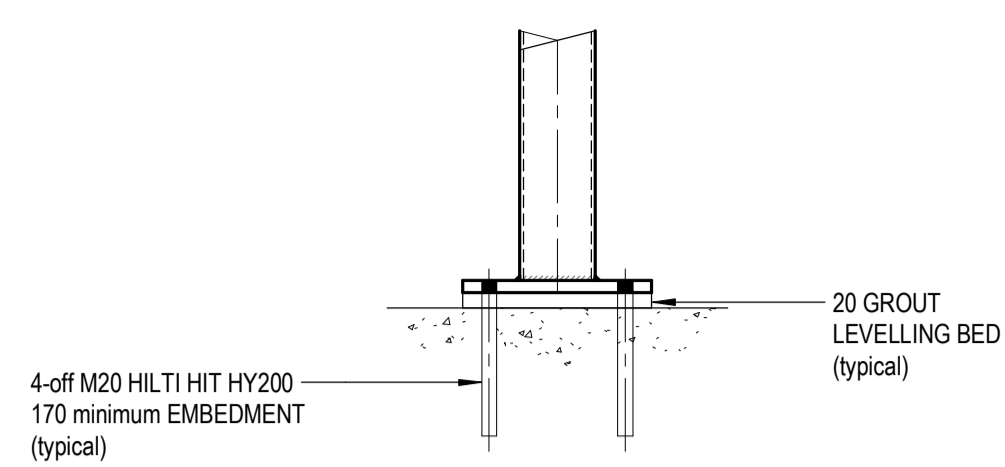
Date
DEC. 2019
Scale
1 : 10

Drawing number
19712-S6.03

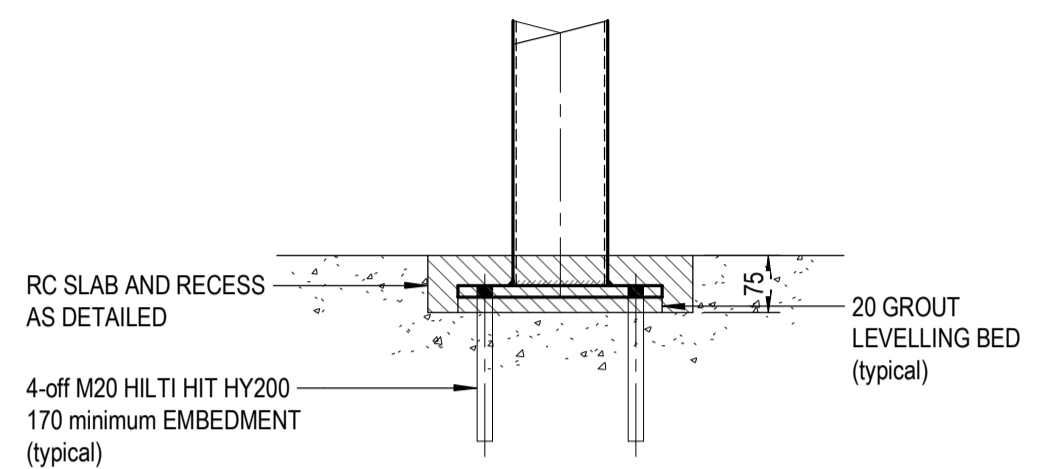
Revision
2



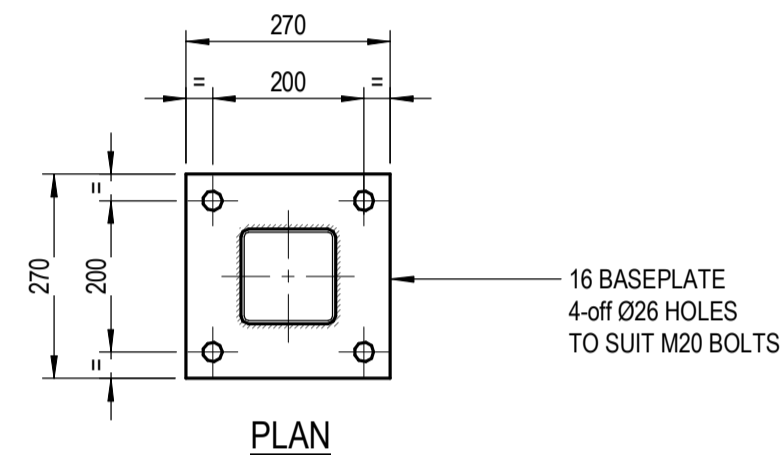
SECTION - FOOTING / SLAB



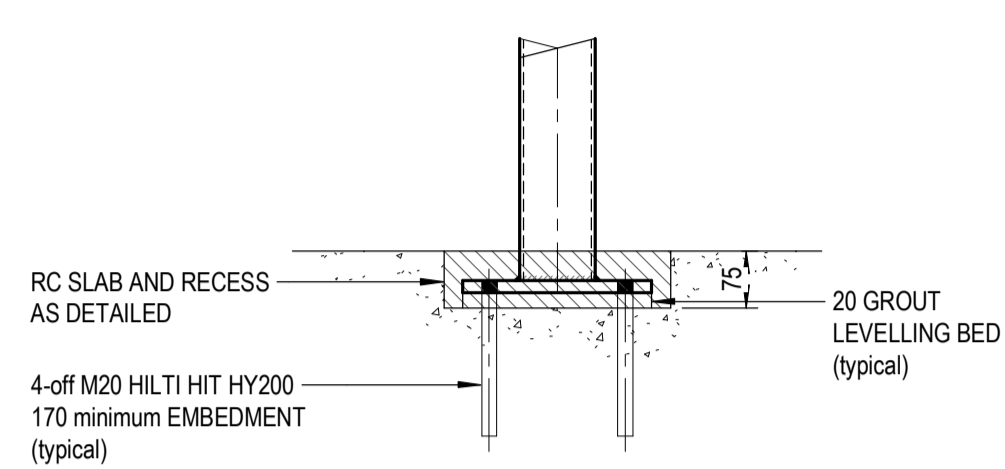
SECTION - FOOTING / SLAB



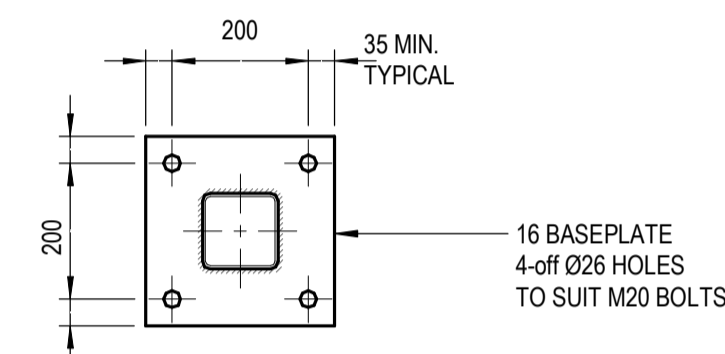
SECTION - SLAB (RECESSED)



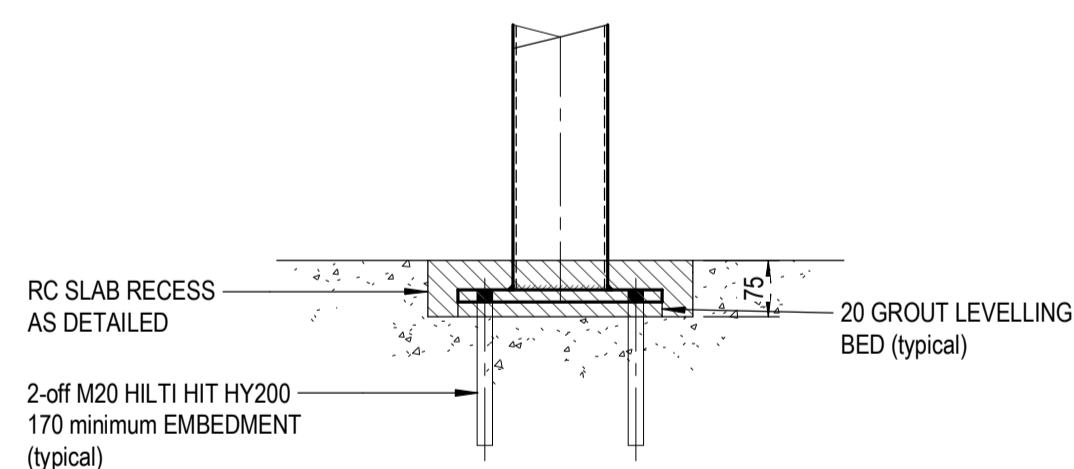
PLAN

TYPICAL COLUMN
BASEPLATE
125 SHS

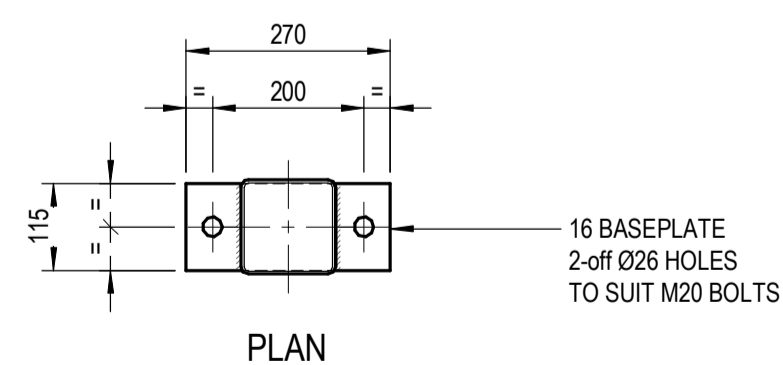
SECTION - SLAB (RECESSED)



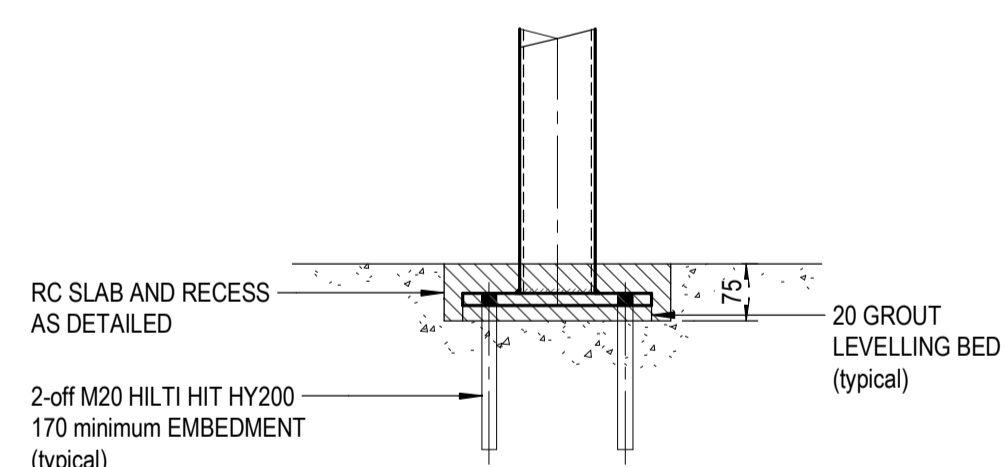
PLAN

TYPICAL COLUMN BASEPLATE
(100 SHS)

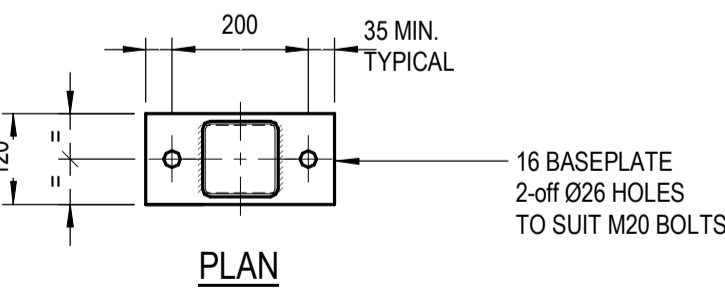
SECTION - SLAB (RECESSED)



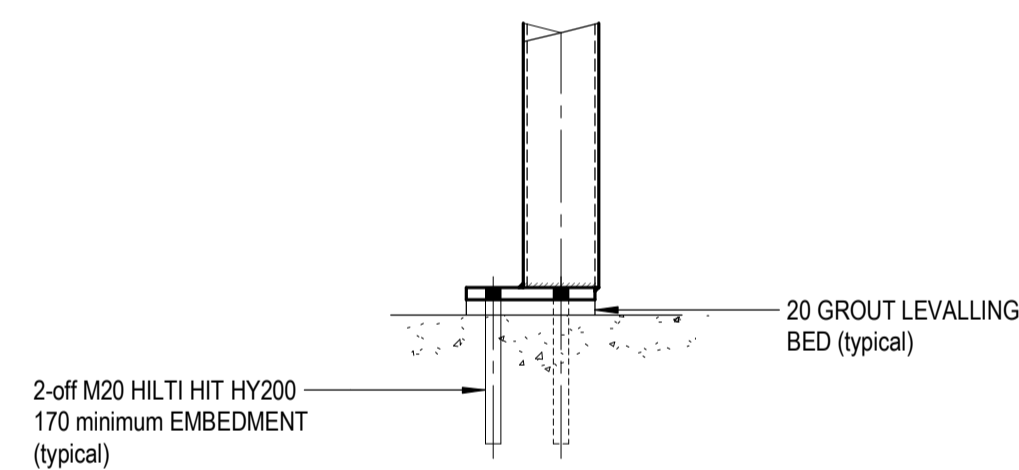
PLAN

TYPICAL COLUMN BASEPLATE
(125 SHS)

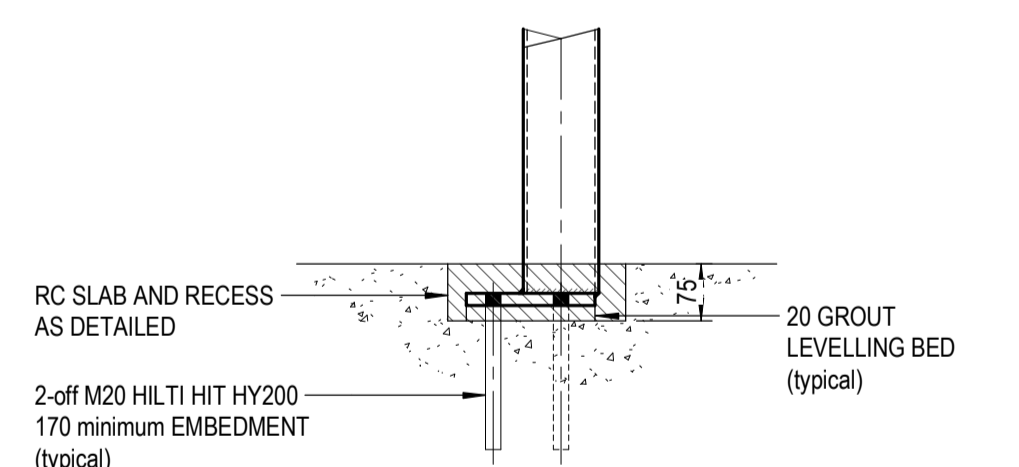
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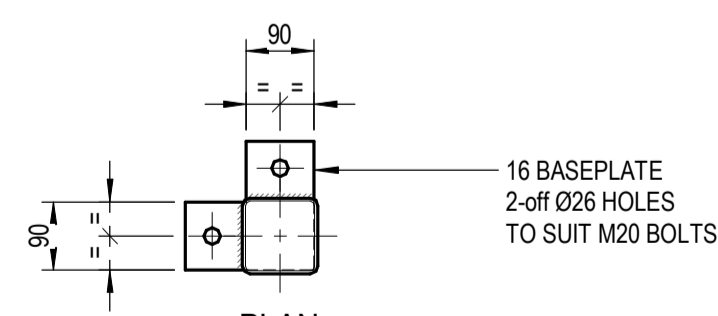
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(100 SHS)

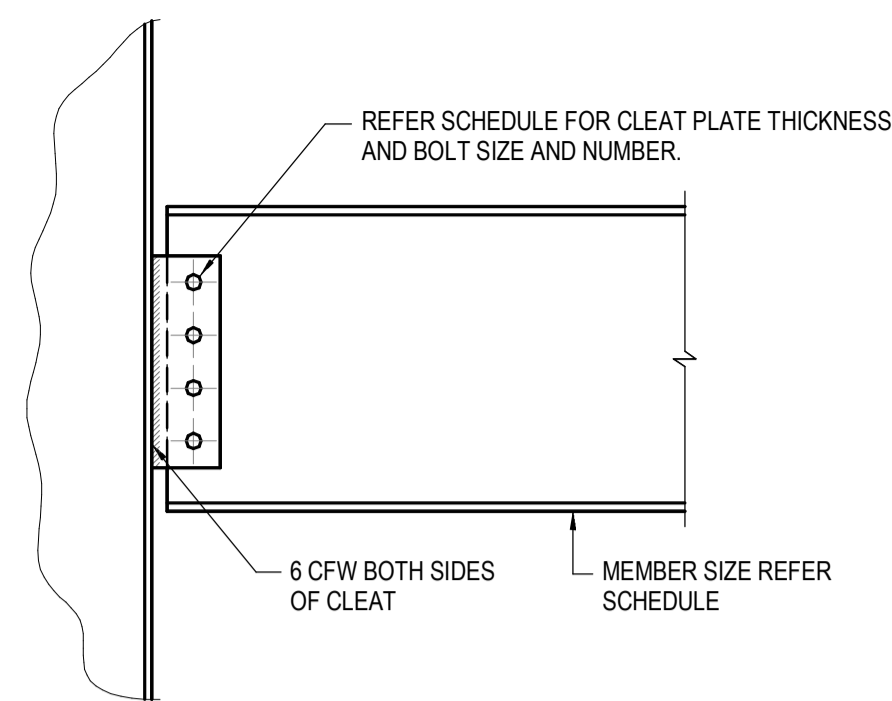
SECTION - FOOTING / SLAB



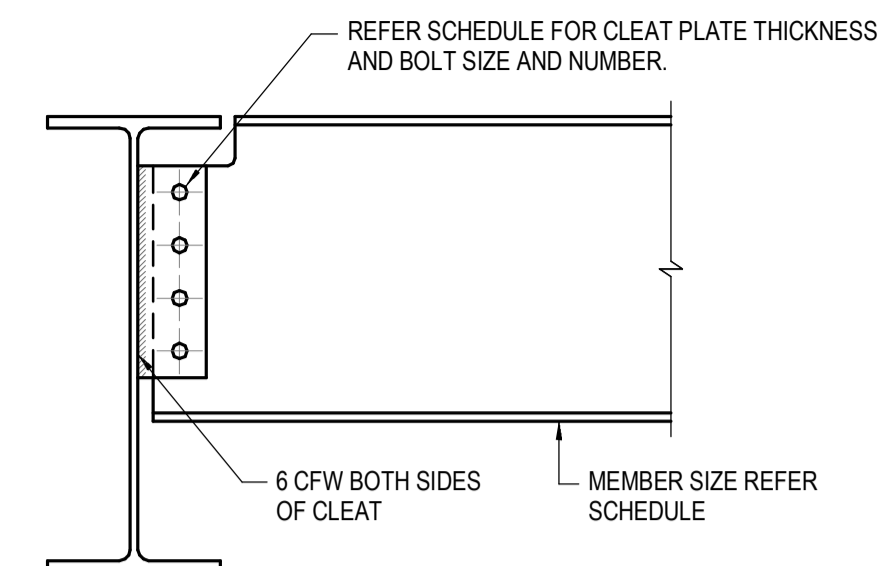
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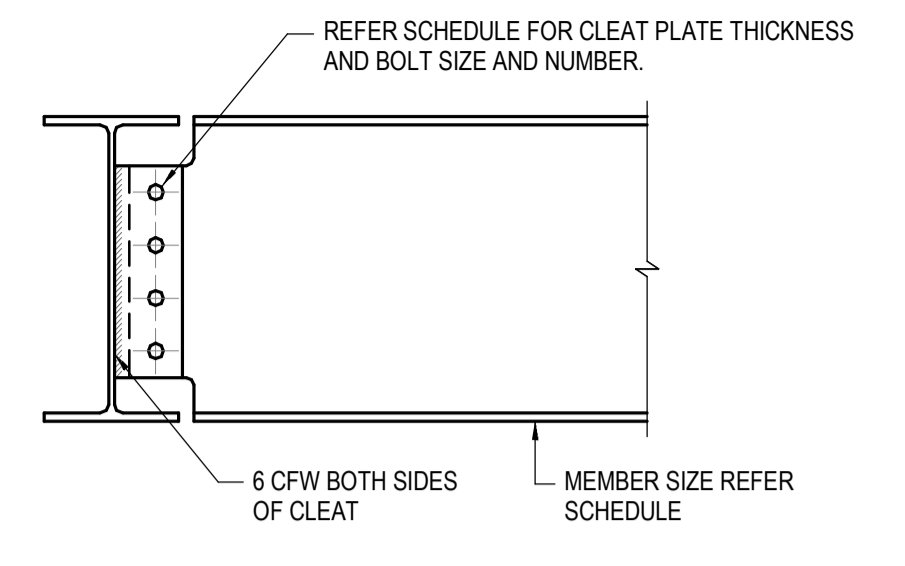
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TYPICAL COLUMN BASEPLATE
(100 SHS)

UNCOPED



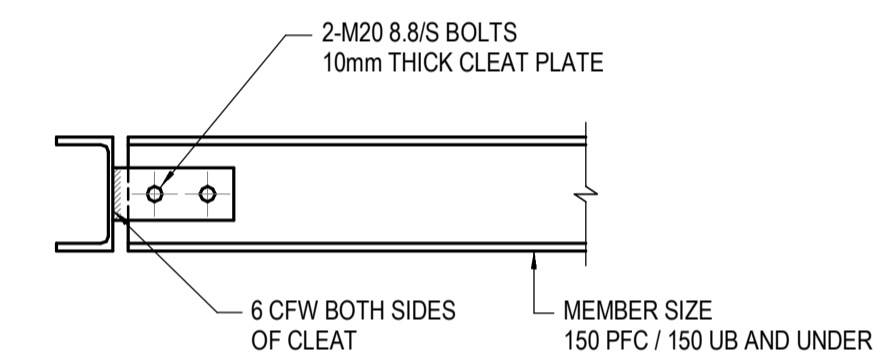
SINGLE WEB COPED



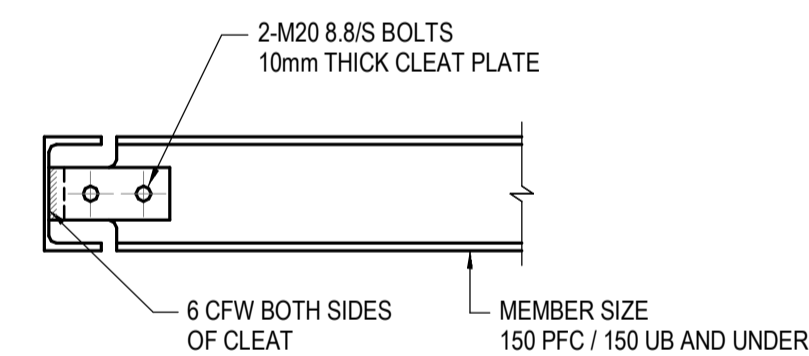
DOUBLE WEB COPED

WEB SIDE PLATE CONNECTION SCHEDULE		
MEMBER SIZE	BOLTS (No. - SIZE, GRADE)	CLEAT PLATE THICKNESS (mm)
CHANNELS		
180 PFC, 200 PFC, 230 PFC	2-M20 8.8/S	10
250 PFC	2-M20 8.8/S	10
300 PFC	3-M20 8.8/S	10
380 PFC	4-M20 8.8/S	10
UNIVERSAL BEAMS / COLUMNS		
180 UB	2-M20 8.8/S	10
200 UB & 200UC	2-M20 8.8/S	10
250 UB & 250 UC	2-M20 8.8/S	10
310 UB & 310 UC	3-M20 8.8/S	10
360 UB	3-M20 8.8/S	10
410 UB	4-M20 8.8/S	10
460 UB	5-M20 8.8/S	10

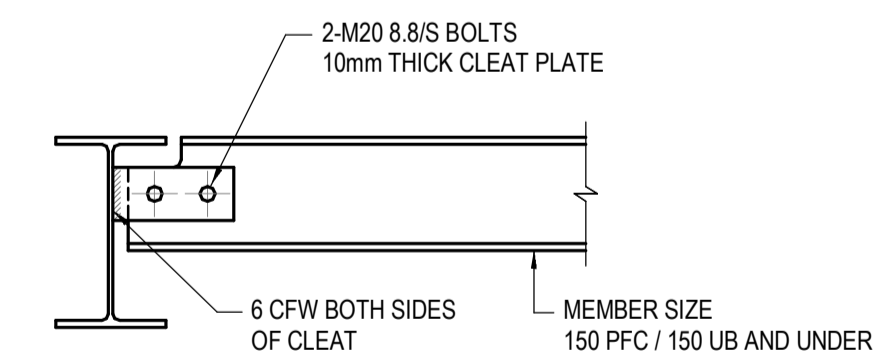
TYPICAL WEB SIDE PLATE CONNECTION DETAILS 180 PFC / 180 UB AND ABOVE



UNCOPED



DOUBLE WEB COPED

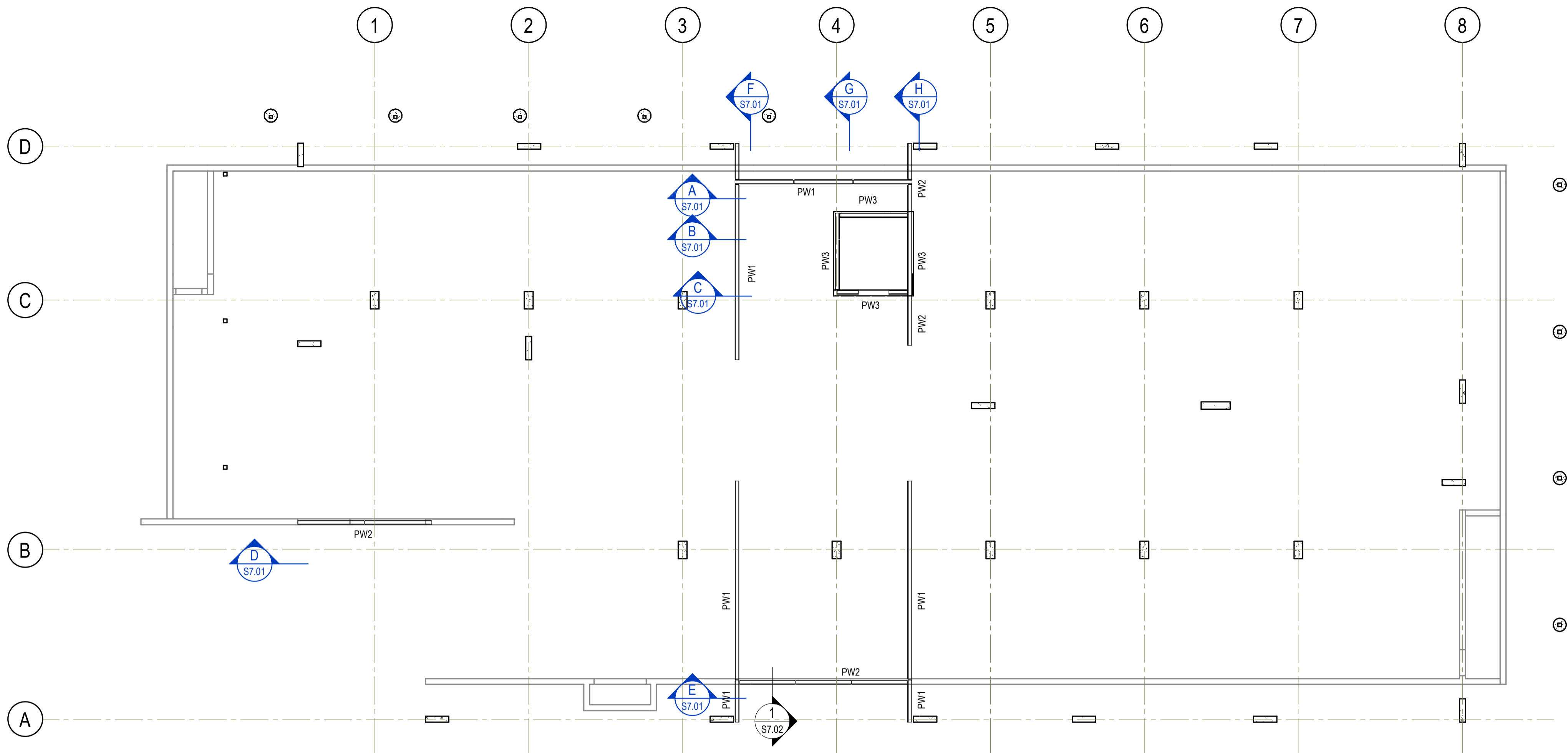


SINGLE WEB COPED

TYPICAL WEB SIDE PLATE CONNECTION DETAILS
150 PFC / 150 UB AND BELOW

ISSUED FOR SSDA

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PRECAST PANEL PLAN

SCALE 1 : 100

- PW1 150 PRECAST PANEL, SL82 MESH CENTRAL (f_c 32 MPa)
PW2 180 PRECAST PANEL, SL82 MESH EACH FACE (f_c 32 MPa)
PW3 200 PRECAST PANEL, SL92 MESH EACH FACE (f_c 32 MPa)

PANEL NOTES:

1. INSIDE FACE SHAL BE THE FACE INTERNAL TO THE STRUCTURAL
2. FOR FERRULE AND RESTRAINT DETAILS REFER DRAWING ++++++

PANEL STRUCTURAL REINFORCEMENT:

1. THESE ELEVATIONS ARE PROVIDED FOR THE PURPOSES OF PANEL DETAILING ONLY AND SHOW THE MINIMUM STRUCTURAL (INSERVICE) REINFORCEMENT TO BE INCLUDED IN THE PANEL DESIGN. THE REINFORCEMENT SHOWN IS NOT NECESSARILY SUFFICIENT FOR LIFTING. PANELS SHALL BE CONSTRUCTED TO THE PANEL ARRANGEMENTS AND DETAIL SHEET PROVIDED SEPARATELY.
2. UNLESS OTHERWISE NOTED ALL PANELS SHALL BE 150 THICK WITH SL82 FABRIC REINFORCEMENT CENTRAL.
3. TWO HARD COPIES OF THE PANEL SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL. THIS APPROVAL SHALL COVER THE IN-SERVICE LOADING CONDITIONS ONLY.
4. THE TILT-UP PANEL CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF ANY ADDITIONAL REINFORCEMENT WHICH MAY BE REQUIRED TO ENSURE LIFTING STRESSES ARE WITHIN THE RELEVANT CODES AND ALL BRACING AND SUPPORTING STRUCTURES (DEADMAN OR FLOOR SLAB) ARE STRUCTURALLY ADEQUATE TO SUPPORT ALL RELEVANT WIND LOADINGS. THE SUB CONTRACTOR SHALL PROVIDE AN ENGINEERS CERTIFICATION (WITH THEIR REGISTRATION NUMBER) FOR ALL THESE ITEMS TO THE BUILDER & FORWARD A COPY TO H & H CERTIFYING THAT THEY COMPLY WITH AS3850, AS3608 AND AS/NZS1170.2 H & H ARE UNABLE TO REVIEW OR SIGN OFF PANEL SHOP DRAWINGS UNTIL WE RECEIVE THIS DESIGN CERTIFICATION

ISSUED FOR SSDA

					Client		WARAKIRRI COLLEGE		Level 5, 79 Victoria Avenue Chatswood NSW 2067		Telephone +61 2 9417 8400 Facsimile +61 2 9417 8337 Email email@hhoonsult.com.au Web www.henryandhymas.com.au			Project NEW LEARNING CENTRE 6A WATSFORD ROAD, CAMPBELLTOWN		Drawn K.S.	Designed D.M.	Date DEC. 2019	
					Architect		KOTURIC + CO.								Checked D.M.	Approved R.K.	Scale As indicated		
					REVISION		AMENDMENT		DRAWN		DESIGNED				Drawing number		Revision		
					2		ISSUED FOR SSDA		HW		D.M.				19712-S7.00		2		
				1		ISSUED FOR TENDER		K.S.		N.V.				05-03-2020 19-12-2019					

SECTION A
SCALE 1:100 S7.00

SECTION B
SCALE 1:100 S7.00

SECTION C
SCALE 1:100

SECTION D
SCALE 1 : 100 S7.00

SECTION E
SCALE 1 : 100 S7.00

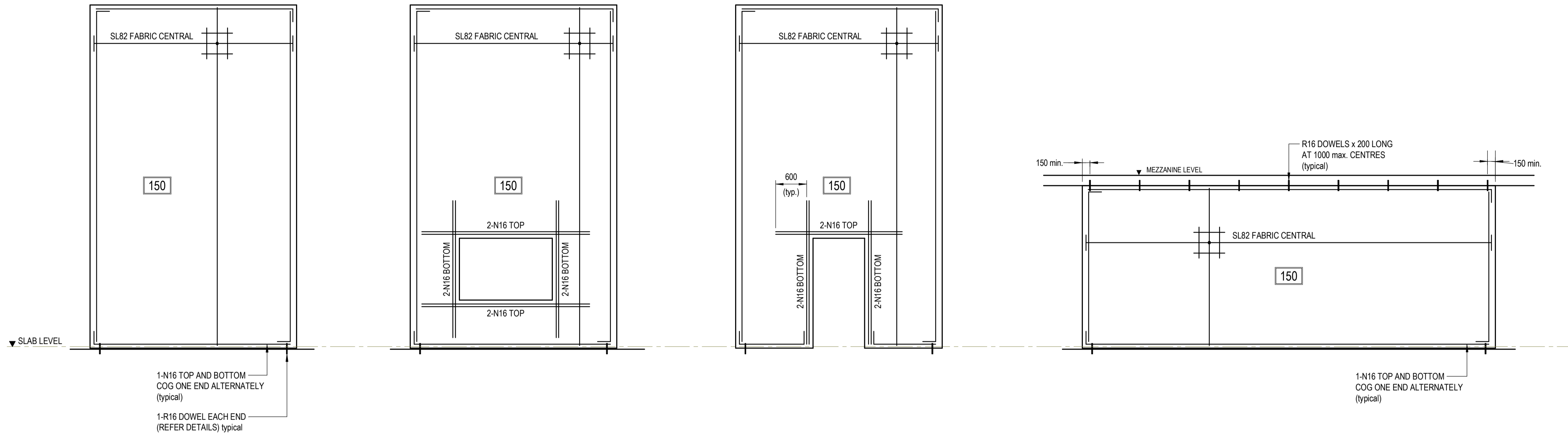
SECTION F
SCALE 1 : 100 S7.00

SECTION G
SCALE 1 : 100 S7.00

SECTION H
SCALE 1 : 100 S7.00

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				WARAKIRRI COLLEGE				NEW LEARNING CENTRE 6A WATSFORD ROAD, CAMPBELL TOWN				Checked D.M.		Approved R.K.		Scale 1 : 100			
				Architect				KOTURIC + CO.					Title		Drawing number		Revision		
								PRECAST PANEL ELEVATIONS					19712-S7.01		2				
2 ISSUED FOR SSDA 1 ISSUED FOR TENDER				HW K.S. D.M. N.V. 05-03-2020 19-12-2019		This drawing and design remains the property of Henry & Hymas and may not be copied or whole or in part without prior written approval of Henry & Hymas													
REVISION AMENDMENT DRAWN DESIGNED DATE																			



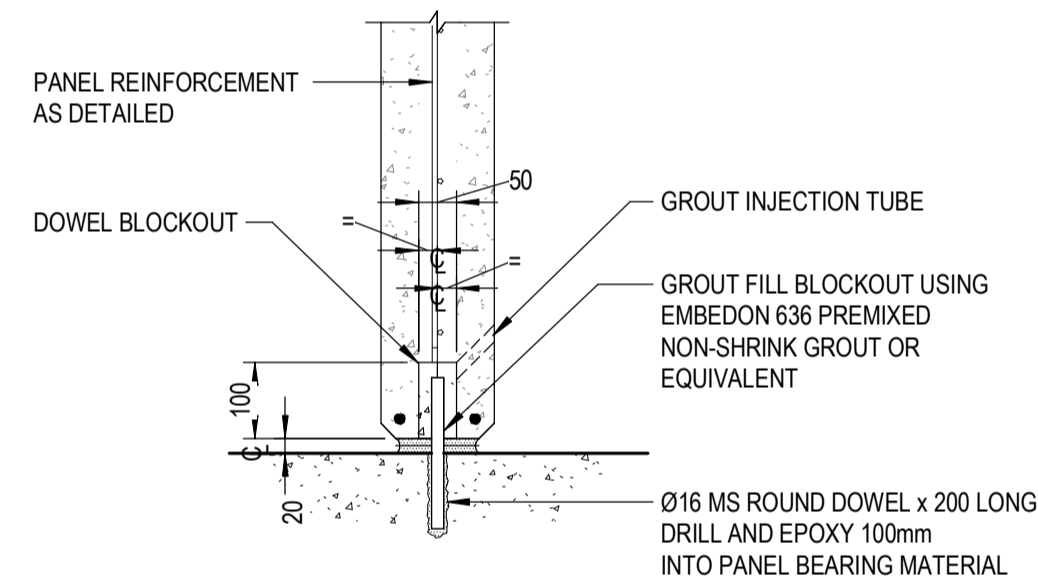
TYPICAL PRECAST PANEL ELEVATIONS

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2. FOR FERRULE AND RESTRAINT DETAILS REFER DRAWING ++++++

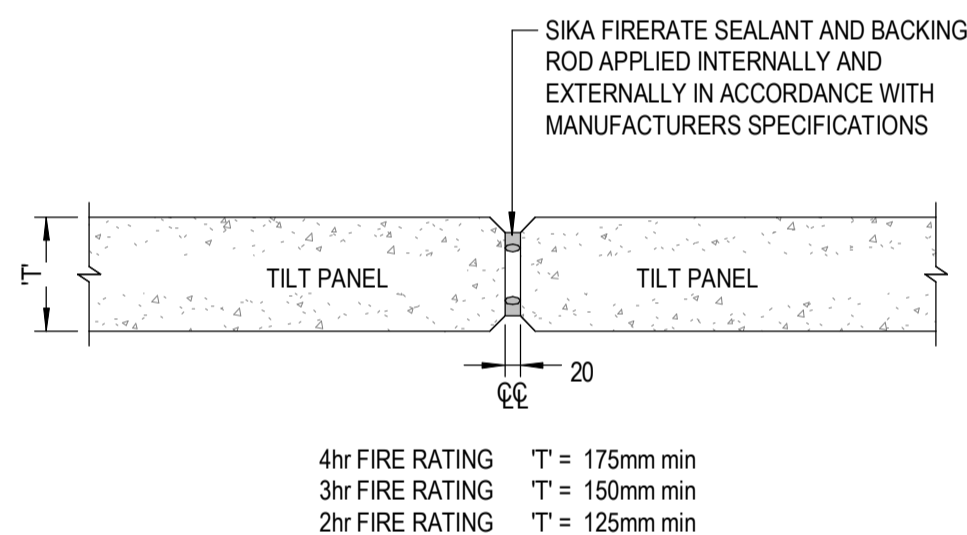
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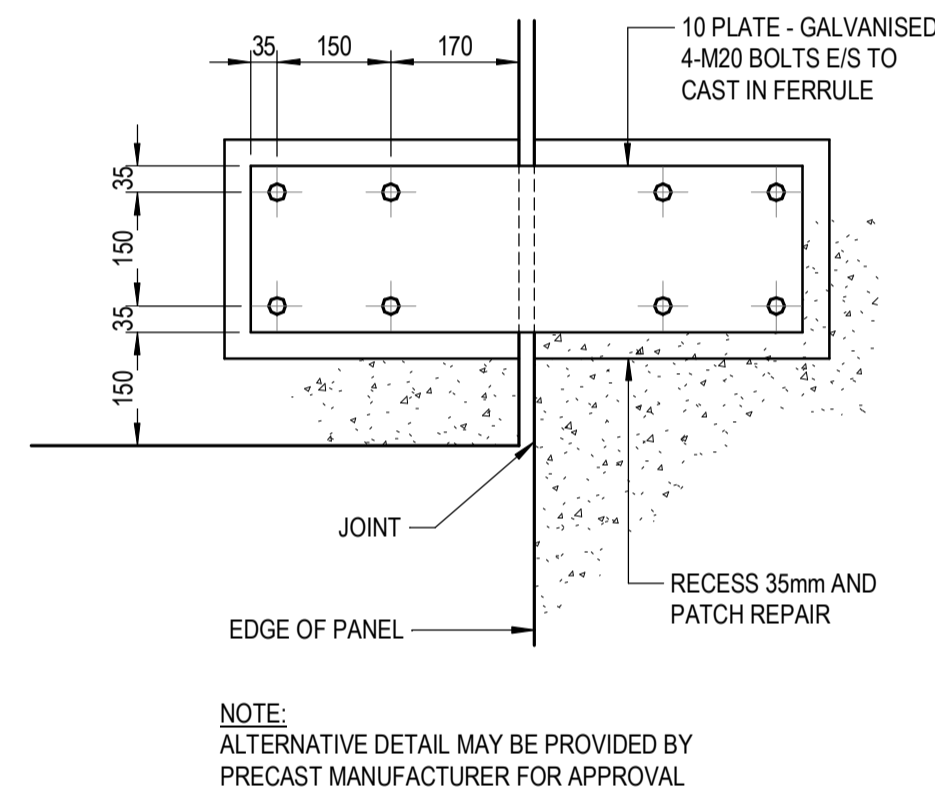
TYPICAL PANEL DOWEL DETAIL

SCALE 1 : 10



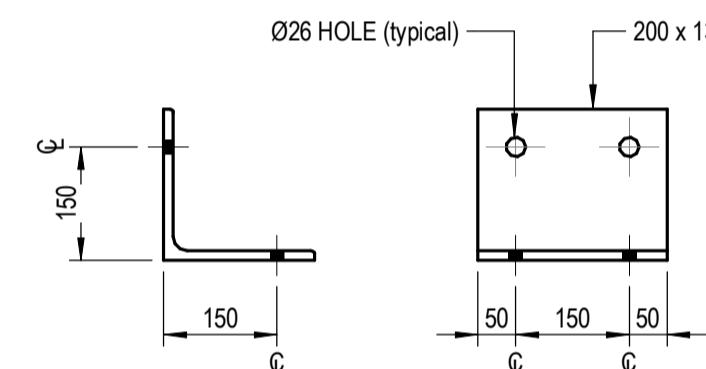
TYPICAL FIRE RATED PANEL JOINT DETAIL

SCALE 1 : 10



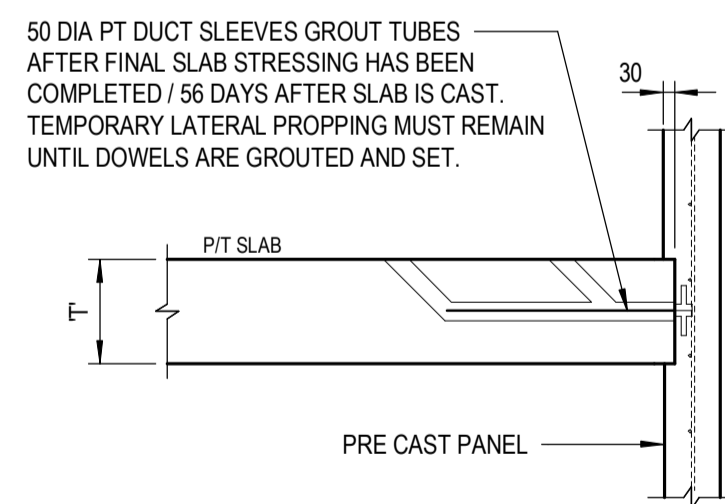
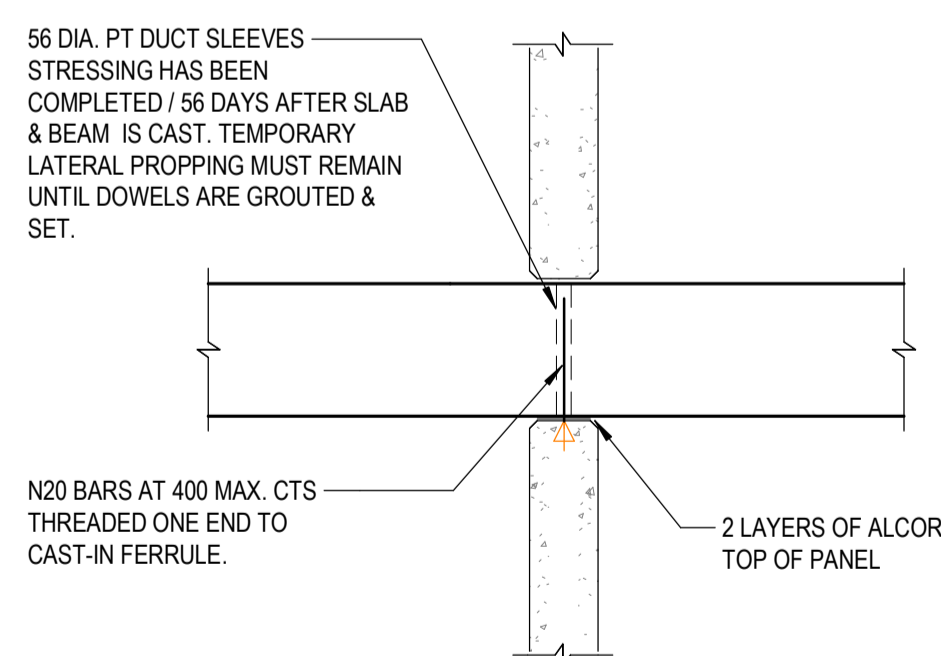
TYPICAL TIED PLATE DETAIL

SCALE 1 : 10



TYPICAL ERECTION ANGLE DETAIL

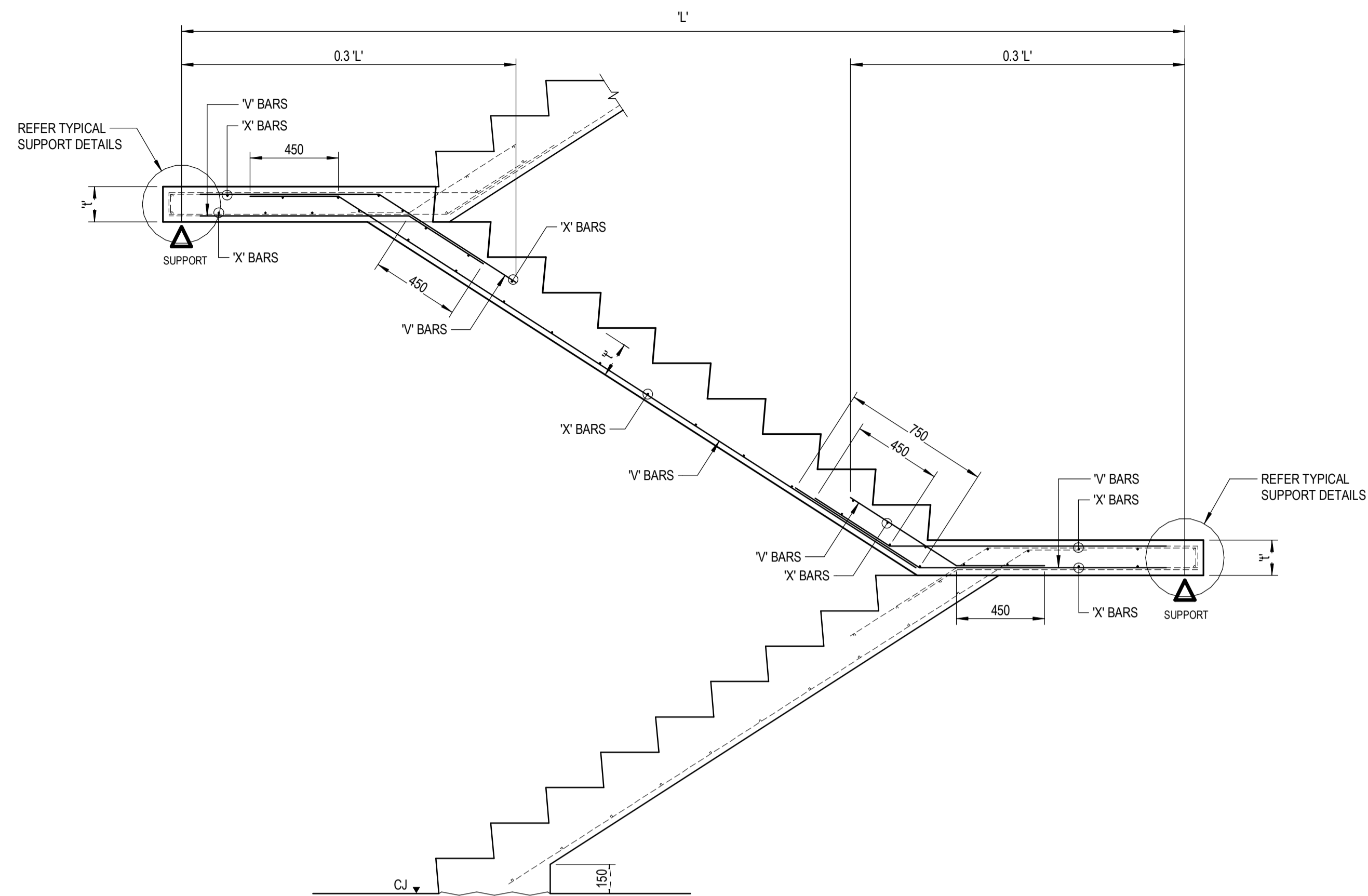
SCALE 1 : 10

SECTION 1
SCALE 1:20

TYPICAL PANEL / SLAB & BEAM CONNECTION DETAIL

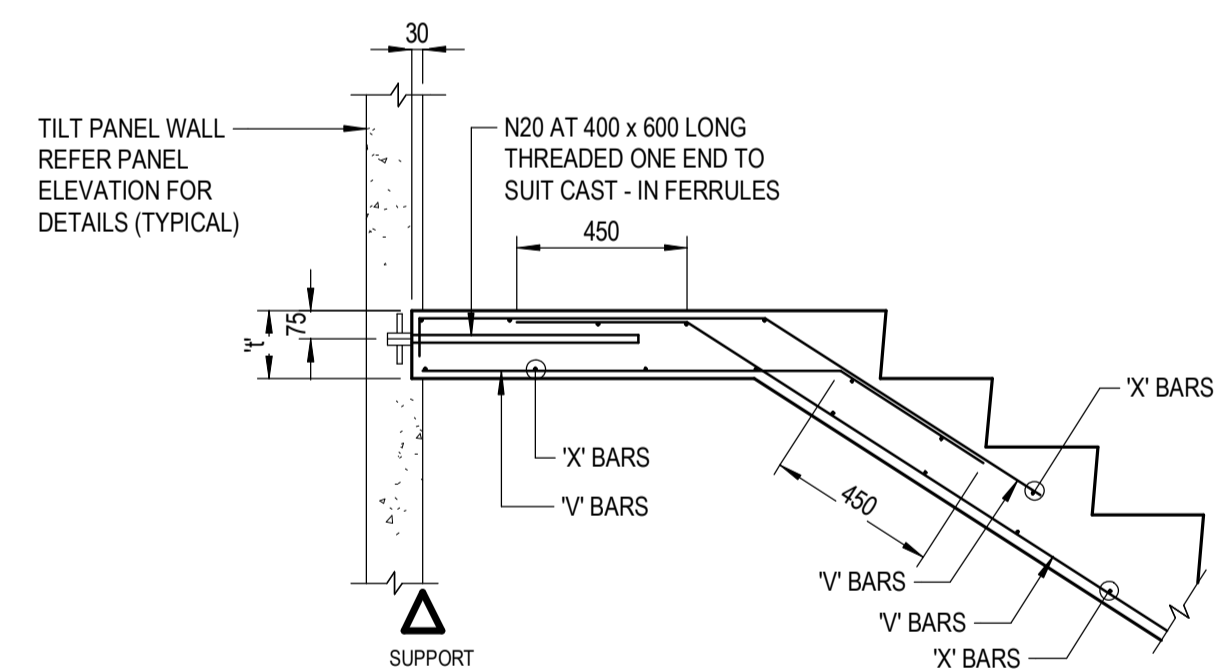
ISSUED FOR SSDA

							Client WARAKIRRI COLLEGE		Level 5, 79 Victoria Avenue Chatswood NSW 2067		Telephone +61 2 9417 8400 Facsimile +61 2 9417 8337 Email email@hhoonsult.com.au Web www.henryandhymas.com.au				Project NEW LEARNING CENTRE 6A WATSFORD ROAD, CAMPBELLTOWN		Drawn H.W.		Designed D.M.		Date DEC. 2019	
							Architect KOTURIC + CO.								Title TYPICAL PRE-CAST PANELS DETAILS		Checked D.M.		Approved R.K.		Scale As indicated	
2		ISSUED FOR SSDA			HW		D.M.		05-03-2020								Drawing number		19712-S7.02		2	
1		ISSUED FOR TENDER			K.S.		N.V.		19-12-2019													
REVISION		AMENDMENT			DRAWN		DESIGNED		DATE		This drawing and design remains the property of Henry & Hymas and may not be copied in whole or in part without prior written approval of Henry & Hymas											
											Drawing number		19712-S7.02		Revision		2					



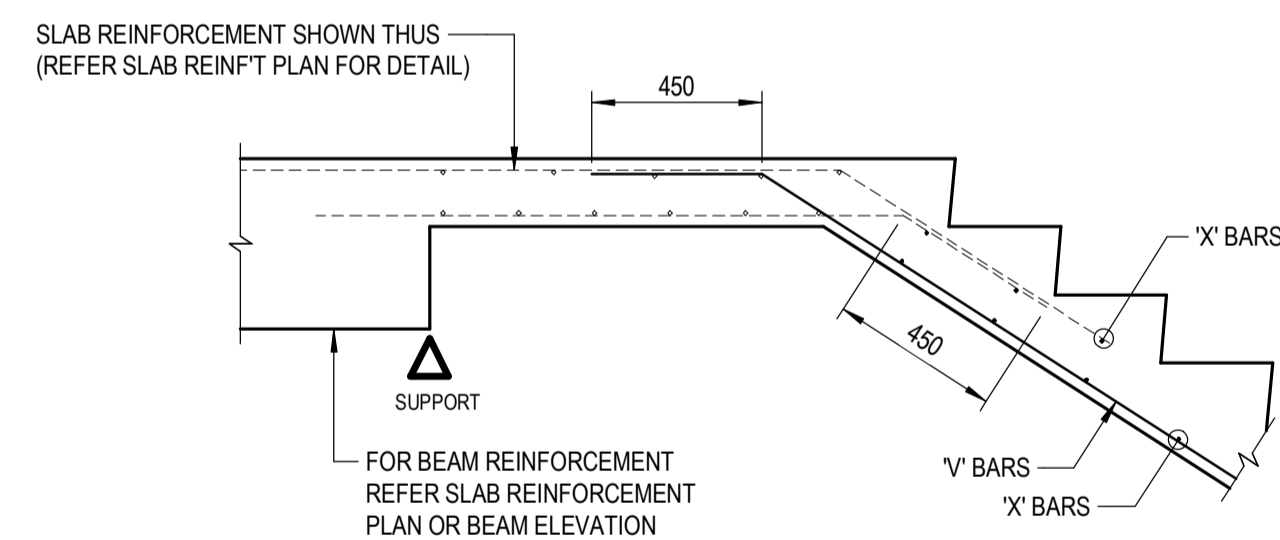
TYPICAL SECTION THROUGH STAIR FLIGHT

FOR REINFORCEMENT DESIGNATIONS i.e. 'X' or 'V' BARS
REFER STAIR SCHEDULES (TYPICAL)

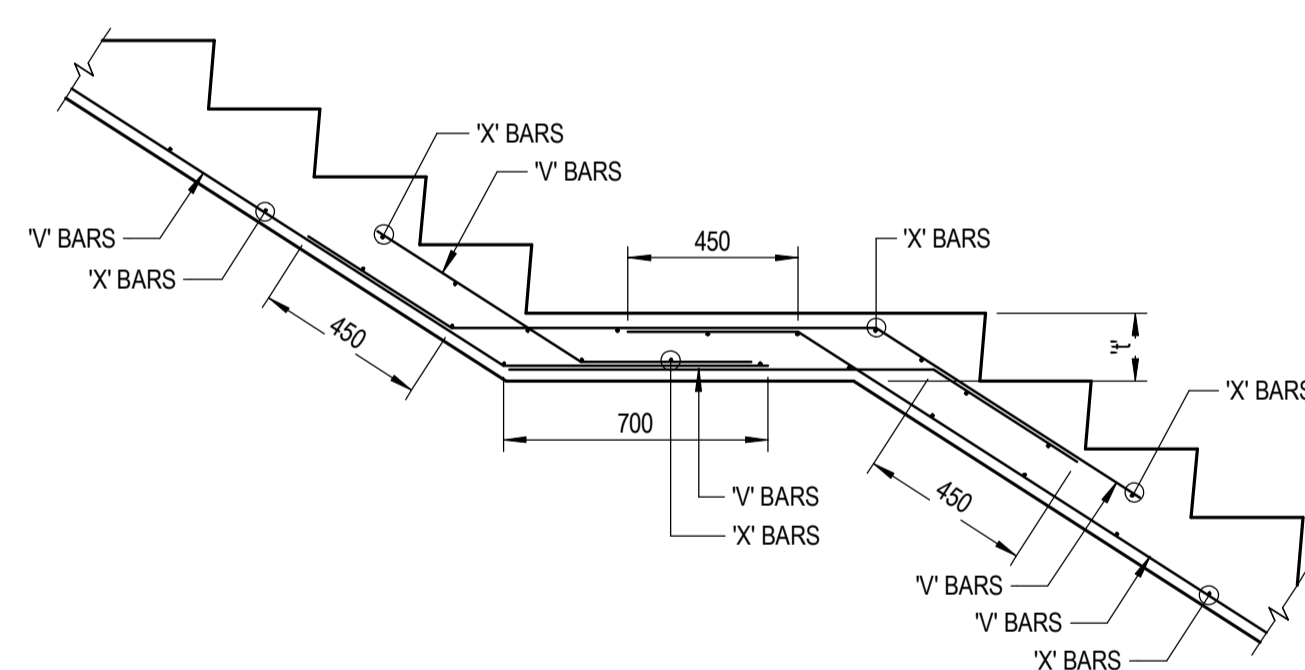


PRE CAST PANEL WALL

TYPICAL STAIR SUPPORT DETAILS

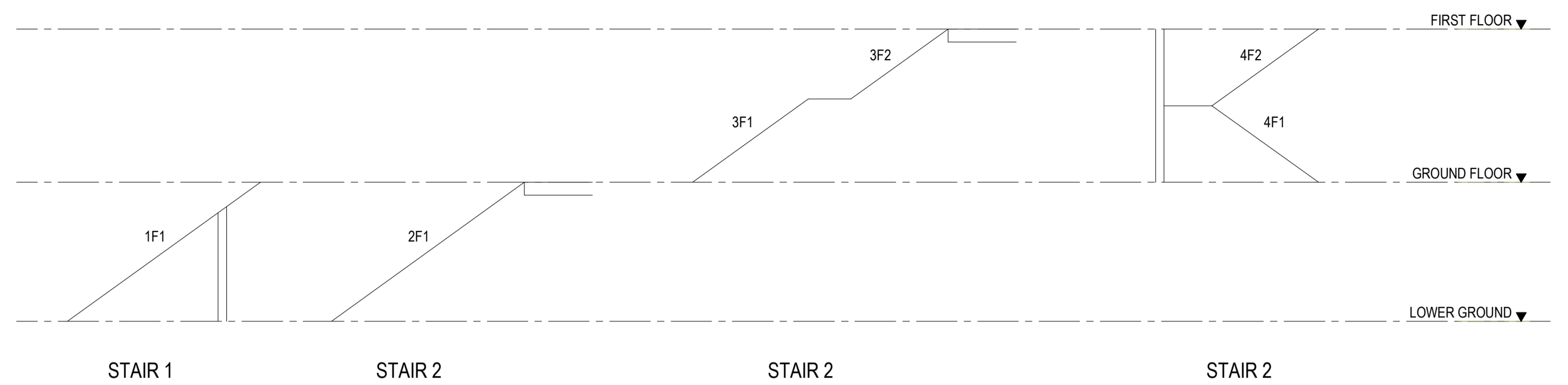


R.C. BEAM



TYPICAL SECTION THROUGH MID-LANDING

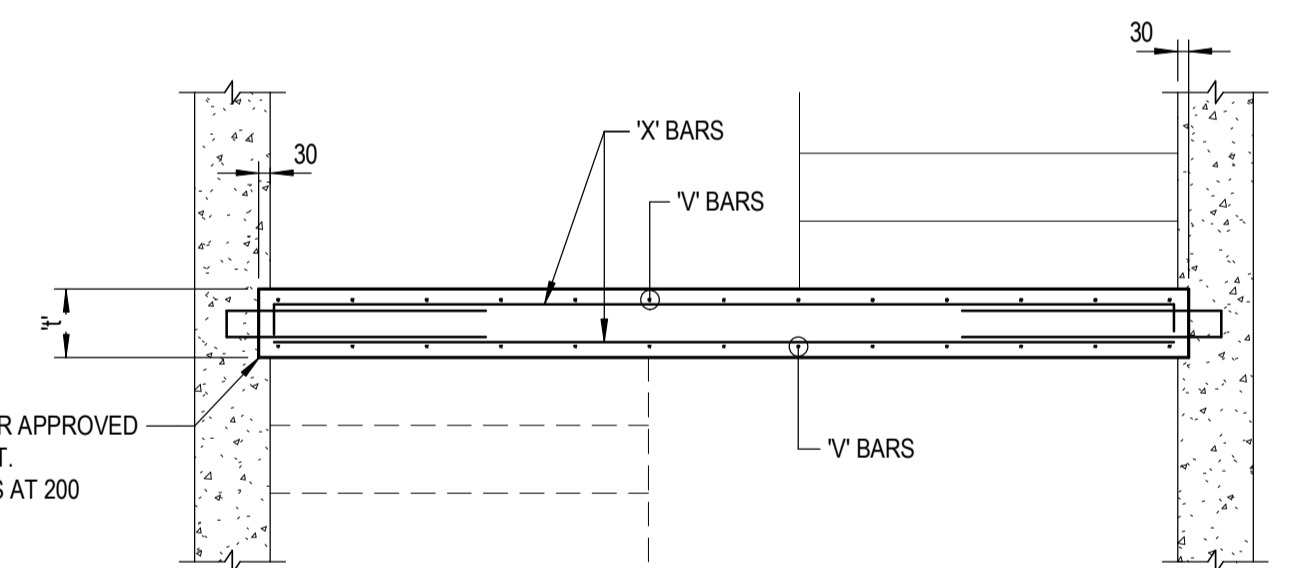
FOR REINFORCEMENT DESIGNATIONS i.e. 'X' or 'V' BARS
REFER STAIR SCHEDULES (TYPICAL)



STAIR KEY ELEVATION

SCALE 1:100

STAIR No.		SCHEDULE	
FLIGHT No.	THROAT THICKNESS	V BARS	X BARS
1F1	180	N16-150	N12-300
2F1	180	N16- 200	N12-300
3F1	200	N20-175	N12-300
3F2	200	N20-175	N12-300
4F1	180	N16-150	N12-300
4F2	200	N20-170	N12-300



RC WALL LANDING

STAIR LANDING TYP DETAIL

SCALE 1:20

ISSUED FOR SSDA

				Client WARAKIRRI COLLEGE		Level 5, 79 Victoria Avenue Chatswood NSW 2067		Telephone +61 2 9417 8400 Facsimile +61 2 9417 8337 Email email@hhoonsult.com.au Web www.henryandhymas.com.au		Project NEW LEARNING CENTRE 6A WATSFORD ROAD, CAMPBELLTOWN		Drawn H.W.	Designed D.M.	Date DEC. 2019
				Architect KOTURIC + CO.		Global Mark logo		Henry & Hymas logo		Title STAIR DETAILS-bak		Checked D.M.	Approved R.K.	Scale As indicated
REVISION				AMENDMENT		DRAWN		DESIGNED		DATE		Drawing number 19712-S8.00		Revision 2
2				ISSUED FOR SSDA		HW		D.M.		05-03-2020				
1				ISSUED FOR TENDER		K.S.		N.V.		19-12-2019				

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