STRUCTURAL NOTES

GENERAL

1. These structural drawings shall be read in conjuction with the Specifications, Architectural, Civil, and Engineering Service documents. Refer to Architectural Drawings for all levels, falls, setouts and dimensions.

2. Unless otherwise noted, all levels are in metres, all dimensions are in millimetres and shall be checked by contractor prior to construction.

3. Dimensions shall not be obtained by scaling from drawings. If in doubt, ask.

4. All discrepencies shall be referred to the Architect or Engineer for resolution before proceeding with the work.

5. The stability of the structure during construction including all temporary works and propping are the responsibility of the contractor / builder.

6. All materials and workmanship shall be in accordance with the current Codes of Practice except where varied by the Specification and/or Drawings.

7. Where proprietary products are specified in the documents, the contractor may submit an alternative product for approval.

8. Temporary work and propping is the responsibility of the Builder.

9. Health and Safety by Design principles acknowledging the users who will interact with the artefact being designed throughout its lifecycle, from the concept through to decommissioning and disposal, have been considered in the design process and should also be embedded throughout the procurement and construction processes.

ABBREVIATIONS

UB Universal Beam
TFB Tapered Flange Beam
UC Universal Column
EA Equal Angle
UA Unequal Angle
CHS Circular Hollow Section
SHS Square Hollow Section
RHS Rectangular Hollow Section
PFC Parallel Flange Channel
P/C Pre-camber
PL Steel Plate
SG Stress Graded timber, available in grade 6, 8, 10, and 12
G Only available in G8, verified green timber, typically used in wet service situations
GL Glulam Timber
c/c Centre to centre distance (also CRS)

DESIGN LOADS

1. All imposed loads have been calculated in accordance with AS / NZS 1170.1, and structural elements designed for the following loads

2. Permanent Loads

ELEMENTS	LOADING kPa (Plan area)
Timber Floors	0.5
Timber Decks	0.5
Heavy Roof	0.85
Light Roof	0.45

ELEMENTS	LOADING kPa (Plan area)
Timber Framed Walls	0.5
Timber Framed Walls + Brick Veneer	2.1
20 Series Masonry	4.1
25 Series Masonry	5.1

3. Imposed Loads

	LOADINGS	
ELEMENTS	UDL Q_b kPa	Pt Loads Q_b kN
Decks	2.0	1.8
Roofs	0.25	1.1
Dom. Floors	1.5	1.8
Comm. Floors	3 - 7	2.7 - 4.5

SITE WORKS

1. Origin of levels is the Lands and Survey (L&S) datum - refer to Survey drawings.

2. All drawings to be read in conjunction with the specification.

3. Existing services are shown indicatively only. Before construction commences, it is the contractor's responsibility to locate the position and depth of all services that could be adversely affected by their operations. Inform Architect of any variations.

4. All work to be in accordance with the Territorial Authority standards.

5. Concrete for site works only to be 10MPa unless noted otherwise.

6. Catchpit positions and grate levels are approximate. Final positions are to suit kerb levels.

7. All work on public drains is to be carried out by an approved & licensed drain layer, to the relevant Territorial Authorities' standards.

8. Temporary batters to have a 1V:1H maximum slope, but also refer to any specific requirements in the geotechnical report.

9. Work to include the stripping of vegetation, topsoil, and any surface deleterious matter. This includes the breaking out of substructures and hard paving where required.

10. Care is to be exercised adjacent to existing trees that are to be retained.

11. The subgrade shall be inspected by the Geotechnical Engineer and proof rolled as necessary. Any soft spots shall be over-excavated and compacted back to level with imported GAP65 material.

12. The Contractor shall ensure the subgrade below reinforced concrete slabs is thoroughly soaked prior to slab construction where required to achieve natural optimum moisture content.

FOUNDATIONS

1. Foundation material shall be approved by the Engineer for safe bearing capacity before construction of Footings. Blinding concrete to be used where necessary, typically not shown on drawings. Foundations are assumed to have a minimum safe bearing capacity of 100kPa unless noted otherwise. This may be deemed satisfied by compliance with NZS 3604 section 3 (ultimate bearing strength of 300kPa). If foundation material is less than 100kPa safe bearing, the Design Engineer is to be contacted for alternative design.

2. Sub grade below Base Course for slabs shall be suitable material compacted to 95% of maximum dry density determined by test NZS 4402: Test 4.1.1. or equivalent, unless otherwise noted.

3. All walls and columns shall be concentric with supporting foundations unless otherwise noted on drawings.

4. No service excavations shall be formed within a 1:1 line of the underside of any foundation unless specifically instructed by the Engineer

5. All backfill behind retaining walls is to be approved free-draining material. Drain coils are to be fitted with geotextile 'filtersok' and drain to approved silt traps.

STRUCTURAL TIMBER

1. Timber beam shall be propped until dry to prevent premature creep.

2. All normal timber sizes given are nominal dimensions unless otherwise stated.

3. All glue laminated timber sizes are actual dimensions.

4. Timber treatment shall be specified and shall comply with the recommendations of the Timber Preservation Authority. Generally all timber to be treated to the requirements of the Building Code. Refer to Architects drawings / specifications.

Hazard	Hazard Class	Examples
Low	H1.2	Interior linings, internal wall
	H1.2	Wall framing, skillion roof framing
Moderate	H3.1	Cladding, fascia
	H3.2	Deck bearers, joists,boards
High	H4	Fence posts, landscaping timber
Severe	H5	House piles, retaining walls
Marine	H6	Marinas, wharf piles

5. All Structural timber to be stress graded SG8 Pinus Radiata unless noted otherwise.

6. Where timber connections are exposed to the weather, all steel connectors shall be galvanised (unless in the sea spray zone which case they are to be stainless steel). Faces and edges of steel elements which rest against tanalised timber shall be painted before positioning. Minimum connections are 5mm plate and 2/M16 bolts unless noted otherwise.

CONCRETE

1. Minimum concrete strengths shall be as shown in the specification.

2. Sizes of concrete elements do not include thickness of applied finishes.

3. No penetrations, chases or embedments of pipes other than those shown on the Structural drawings shall be made in concrete members without prior approval of the Engineer.

4. Finishes to concrete to be as per specification and Architectural drawings.

5. Contractor to submit all shop drawings of Precast Units prior to commencement of work.

6. Proprietary Precast components referred to on these drawings shall be designed and detailed by the supplier and a copy of the documentation submitted to the Engineer.

7. Tolerances to be as per the specification.

8. All penetrations through concrete slabs shall be trimmed by 2-D12 bars to each edge of the penetrations. Trimmer bars to extend 600mm beyond the return of the penetration.

9. All beams to be suitably propped during construction unless other wised noted.

10. Chamfers shall be formed on all exposed corners, generally 15mm x 15mm

11. Ensure adequate gaps maintained between suspended concrete work and all non-structural elements

12. If construction joints are not shown, their location shall be the contractor's responsibility to suit the site conditions of the design. The Contractor is to allow for all construction joints necessary to complete the work, without causing distress to the structure. Location to be agreed with Architect and Engineer. In general, for slabs on grade, saw cuts (25mm deep x 5mm wide) are to be formed to produce a grid of 6.0m x 6.0m maximum, after the initial cure (approximately 24 - 48 hours after concrete pour).

13. All reinforced concrete slabs shall be cured in accordance with CCANZ "Reinforced Concrete Slab-on-Ground Floors"

REINFORCING

1. Steel abbreviations
D12's, D16's etc Deformed grade 300E steel reinforcement to NZS 4671
HD12's, HD16's etc Deformed grade 500E steel reinforcement to NZS 4671
R6's, R10's etc Plain round grade 300MPa steel shear reinforcement to NZS 3679.1
665, 664, etc Mesh to NZS 3421. Grade 485 MPa.

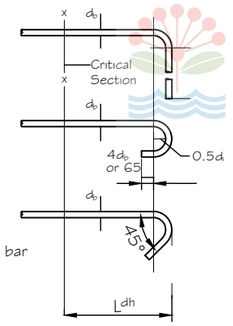
2. Minimum bend diameters of Class E steel bars, with yield strength 300MPa or 500MPa

a. Normal
   i. Bar diameter (d_b) 6-20mm = $5d_b$ (d_i)
   ii. Bar diameter (d_b) 25-32mm = $6d_b$ (d_i)
b. Stirrups or ties
   For deformed bars:
   i. Bar diameter (d_b) 6-20mm = $4d_b$
   ii. Bar diameter (d_b) 25-32mm = $6d_b$
   For plain bars:
   i. Bar diameter (d_b) 6-20mm = $2d_b$
   ii. Bar diameter (d_b) 25-32mm = $3d_b$

For example;

Bar Diameter	Type	Required Bend Diameter
R6	Stirrup or tie	12mm
D10	Stirrup or tie	40mm
D12/HD12	Normal	60mm
D25/HD25	Normal	150mm

3. Hook definitions;
a. A 90° turn plus an extension of at least 12 bar diameters at the free end of the bar.
b. A semi-circular turn plus an extension of at least 4 bar diameters but not less than 65mm at the free end of the bar.
c. A stirrup hook, which is defined as a 135° turn around a longitudinal bar plus an extension of at least 8 stirrup bar diameters for plain bars and 6 stirrup bar diameters for deformed bars at the free end of the bar embedded in the core concrete of the member.



4. Minimum lap length as follows:
   a. Masonry lap lengths;
      Grade 300 reinforcing = 40 x bar diameter
      Grade 500 reinforcing = 70 x bar diameter
   b. Concrete lap lengths;

Concrete Strength	Steel Strength	Lap Length for Straight Bars	Lap Length for Hooked Bars
20 MPa	300 MPa	34 x d_b	17 x d_b
20 MPa	500 MPa	56 x d_b	27 x d_b
25 MPa	300 MPa	30 x d_b	15 x d_b
25 MPa	500 MPa	50 x d_b	24 x d_b
30 MPa	300 MPa	28 x d_b	14 x d_b
30 MPa	500 MPa	46 x d_b	22 x d_b

5. All Concrete Cover to reinforcing steel to be in accordance with drawings and / or referred to Engineer. Code required minimum values as follows.

Exposure Classification	Concrete Strength (MPa)					Masonry
	17.5	20	25	30	40	
	Minimum cover (mm)					
Closed Interior	30	25	25	20	20	35
External (Inland)	50	40	35	30	25	45
Coastal Perimeter	65	50	40	35	30	50
Coastal Frontage*	-	-	50	45	40	60
Cast against Ground	75	75	75	75	75	-
Cast against Ground with DPC	50	50	50	50	50*	-

* Within 100m of high tide mark or within 500mm of high tide mark to the direction of the prevailing wind.

6. Welding and re-bending of reinforcement:

- Do not bend Grade 500E bars to diameters less than those permitted by NZS 3101 and NZS 3109.
- Do not re-bend Grade 500E microalloy bars of 16mm or less, unless the strict conditions of NZS 3109 can be met.
- Do not re-bend Grade 500E microalloy bars more than 16mm diameter.
- Do not weld Grade 500E microalloy bars if it can be avoided.
- No tack welding of reinforcing shall take place without explicit written approval of the Engineer.

7. Minimum distribution steel shall be D12 at 300 centres

8. No Grade 500E QT bars shall be used.

9. Reinforcement laps to be to NZS3109. Mesh lap to be one mesh + 25mm

10. Adequate support to all reinforcement shall be made by the use of spacers, stools and / or the like.

11. Notation used for reinforcement fixing:

B/W	Both ways
B/F	Both faces
E/F	Each face
V	Vertical
H	Horizontal
N/F	Near Face
BOT	Bottom
ABR	Alternative bars reversed

No.	Revision	Drawn	Chk.	Appd.	Date
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THREE BLOKES LTD

Project
PROPOSED SHEDS
362 MATAKANA VALLEY ROAD
MATAKANA

Title
GENERAL STRUCTURAL NOTES

Job No.
24742

Sheet No.
SN1

STRUCTURAL NOTES

STRUCTURAL STEEL

1. Steel members shall be the following grade unless otherwise noted.

Member		Grade
TFCs, TFBs, EAs	≤ 100x100	300
UAs	< 150x90	300
UBs, UCs, PFCs, EAs	> 100x100	300 plus (typ BHP Australia)
UAs	≥ 150x90	300 plus (typ BHP Australia)
RHS, SHS, CHS		350

2. All cold formed sections including cold rolled purlins to conform to AS 1538 and shall have a minimum yield stress of 450 MPa, unless otherwise noted.

3. The ends of all hollow sections shall be sealed with 3mm min. steel plate, seal welded unless otherwise noted.

4. All plates shall be 6mm min. unless otherwise noted.

5. All Holding Down bolts and other fixing devices shall have a minimum yield stress of 250 MPa unless otherwise noted.

6. All dry pack non-shrink mortar / grout shall have a compressive strength of at least 30 MPa.

7. Surface preparation and corrosion protection of steel work shall be in accordance with the Architectural Specifications U.N.O. Any damage to the protective coating of steel work shall be made good. Generally all structural steel to be hot dip galvanised to a minimum of 600g/m².

8. Bolts, unless noted otherwise;
   a. Bolts and nuts shall be Grade 8.8 high strength steel to AS 1252: "ISO Metric High Strength Steel Bolts" unless noted otherwise.
   b. Typically all edge distances to be 30mm U.N.O.
   c. Gauge distances shall be 70, 90 or 140 as per AISC.
   d. All bolts shall have at least one washer which shall be not less than twice the nominal bolt size in diameter.
   e. All bolts shall have a spring washer in addition to the washer located directly above the nut.
   f. The bolt shall be selected so that the projection beyond the nut is not less than two threads and not more than10mm.
   g. Heavy duty square washers to be placed below bolt heads in timber applications.
   h. Heavy duty round washers to be placed below bolt heads in steel applications.
   i. Do not weld bolts under any circumstances

9. Holing:
   a. Holes cut for bolts shall be drilled or punched and not gas cut.
   b. Common detailing components:
      Standard holes - D+2mm
      Standard slotted holes - D+2mm wide and 2.5D long unless noted otherwise.
      H.D. bolts - 1.33D composite simple (standard washer) (fabricated washer).

10. Welds:
   a. All welded connections shall be metal arc welded as shown on the drawings. All welding shall comply with AS 1554:Part 1 "Welding of Steel structures" unless noted otherwise. Welds exposed in the completed building and in particular butt welds of stock lengths shall be neatly finished and ground smooth.
   b. All butt welds shall be full penetration.
   c. Welding of hollow sections shall incorporate internal sections or backing plates as necessary to complete the specified weld.
   d. All welds on drawings unless otherwise noted to be 6mm structural purpose fillet welds all round.

11. Steelwork drawings show the design intent. The Contractor is to prepare shop drawings for review. No fabrication is to commence until shop drawings are reviewed by the Engineer and written notification issued.

12. All reactions shown are in kN.

13. Where the weight of a steel section is omitted, the heaviest commonly available steel section shall be utilized.

14. All bolts shall be a minimum of M12 and all welds shall be a minimum of 6mm continuous fillet (SP)

15. All nuts and turning bolts are to have approved washers. All exposed nuts, bolts and washers to be galvanised and to have protective coatings to match general steelwork, unless noted otherwise.

16. All rod bracing to be a minimum of grade 300 plain reinforcing bar, unless noted otherwise.

17. All sealed sections to be galvanised shall have vent holes. To be shown on shop drawings.

18. Purlin cleats are to be in accordance with the manufacturer's standard details except where the top of the flange of the purlin is more than 300mm above supporting steelwork 75 x 75 x 8 angle cleats shall be used. Purlins shall be fixed using approved flanged bolts and washers.

19. Ceiling systems, ductwork, etc. to be suspended from purlins shall be fixed with hook bolts through purlin web. The flanges of the purlins or girts shall not be holed.

20. All dissimilar metals shall be separated by a DPC layer or other method as approved by the Engineer.

21. All steel elements shall be separated from treated timber by DPC layer or other method as approved by the Engineer.

22. All structural steel fabrication and erection shall be carried out in accordance with the requirements of AS/NZS 5131:2016 for a CC2 Structure.

TIMBER POLE RETAINING WALLS

1. Unless otherwise stated, all round poles shall be "Searle" machine peeled normal density pine complying with the requirements of NZS 3605 "Load Bearing Round Timber Piles" and NZS 3603 "Timber Structures Standard". "Morbark" machine shaved poles may only be used at the approval of the Engineer.

2. All poles are expressed as a minimum "Small End Diameter" (SED) with an average taper of 6 mm per metre length.

3. Unless otherwise stated all square posts shall be visually graded machine stress graded complying with the requirements NZS 3603 "Timber Structures Standard".

4. All poles and posts shall be "tanalised" to a minimum "Tanalith" preservation retention of 16 kg/m³ (H5) or approved equivalent. All poles and posts must be positively identified with their Hazard Class on the butt end of the pole when delivered to site.

5. Poles or posts shall not be rolled or dropped from the delivery vehicle. Any pole with evidence of handling damage shall not be used and shall be removed from the site.

6. Cutting rebates and / or bored holes within the timber shall be avoided wherever possible. If necessary, the exposed surfaces shall be liberally coated with a brush application of either "Ensele", pentachlorophenol, "Tanalith" concentrated solution or copper napthenate or creosote. Re-protected areas shall not be placed within 300 mm of finished ground level.

7. Unless otherwise noted, concrete encased poles shall be installed SED upwards whilst driven timber piles shall be installed SED downwards.

8. Unless otherwise noted, all timber poles and posts shall be installed with a vertical layback of 1H: 20V and spaced at 1200 centres vertically.

9. All timber rails, unless otherwise noted, shall be rough sawn timber, 150 mm deep with a thickness and grade as specified and tanalised to a minimum "Tanalith" preservative retention of 12 kg/m³ (H4) or approved equivalent.

10. Rails shall be installed horizontally and where possible multi-span with staggered butt joints. All rails shall be securely nailed to the rear of the timber poles with 100mm x 4.0mm galvanised flat head nails.

11. The timber face walls shall be continuous both vertically and horizontally. Hit and miss placement and / or galvanised wire netting is not permitted.

12. Excavation shall be carried out immediately prior to constructing the retaining wall. Exposed cut batters shall be protected with a weather-proof polythene cover until the wall has been constructed.

13. Excavations shall be completed in stages to restrict unsupported lengths of cut batters.

14. Excavations in excess of 1.2 m height or within 1.2 m of a property boundary shall be directly supervised by the Engineer. Notification must be given by the Contractor, to the Engineer, prior to commencing the excavation.

15. Excavations for concrete encasement shall be carried out by a machine auger to the dimensions detailed on the drawings. All surplus spoil shall be removed from the site.

16. The augered excavations shall be accurately located, with sufficient allowance for pole back slope and concrete encasement.

17. Unless otherwise noted, all locating dimensions refer to the front face of the poles at the base of the wall.

18. Unless otherwise noted, the ground profile above and below the wall shall be level and free draining.

19. The foundation encasement shall be Ordinary Grade concrete complying with NZS 3109 "Specification for Concrete", having a minimum 28 day compressive strength of 20.0 MPa.

20. A 100 mm concrete punch pad shall be provided at the base of the excavation prior to placing the timber poles.

21. The concrete encasement shall be well compacted by tamping and/or vibrating ensuring an even concrete encasement cover at the base of the wall. The concrete encasement shall be cast to G.L. OR to the finish level of the clay subgrade and shall be sloped down and away from the pole base to prevent water ponding at the base of the pole. All timber poles shall be accurately placed and adequately braced prior to placing the concrete encasement. The pole bracing shall not be removed until 48 hours after the placement of the concrete encasement.

22. A 100 mm perforated draincoil shall be placed at the base of the rear of the wall, prior to placing the 20/7 scoria or 40/20 drainage metal or similar approved. The invert of the 100 mm PVC perforated pipe shall be a minimum of 200 mm below the finished ground level in front of the wall. The 100 mm PVC perforated pipe shall be protected with 'filtersok' and be free draining into a sealed stormwater system.

REINFORCED MASONRY

1. Generally all concrete block masonry construction to be in accordance with NZS 4229:2013, and NZS 4210:2001.

2. Refer to figure 8.1, NZS 4229:2013 for D16 trimmers around openings.

3. The top of all the concrete block walls to be continuous bond beam B1 or B2, as per figure 10.1 and 10.2, NZS 4229:2013. Continuous bond beam type B3 (figure 10.2, NZS 4229:2013) to be provided at mid-floor level of 2 storey walls.

4. Minimum reinforcing to be as follow unless shown otherwise:

	15 SERIES		20 SERIES	
	VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL
RUNNING	D12@800crs	D12@800crs	D12@600crs	D12@600crs
STACK	D10@400crs	D10@400crs	D12@400crs	D12@400crs

5. In general only load bearing masonry is shown on the structural drawings. All non-load bearing masonry is to be separated from structure by a 12mm compressible joint.

6. Concrete blocks shall have a minimum compressive strength of 12.5MPa, to NZS 4210. Density to be greater than 1750kg/m³.

7. Mortar shall comply with the requirements of NZS 4210.

8. All cores with reinforcement to be grout filled as a minimum. Additional covers filled as noted on the drawings. Grout shall have a slump of 230mm and a compressive strength in accordance with NZS 3604:2011 clause 4.5.3.

9. In general, walls to be full height before grouting cores. Washout ports to be provided at bottom course where vertical bars are located for all walls where poured height exceeds 1.2m. Mortar joints to be 10mm thick with blocks fully bedded and perpends filled. Joints to be tooled at exposed or rendered surfaces.

10. Cores are to be cleaned of all mortar fines and droppings through washout ports which shall to be closed until inspected by engineer.

11. Grout to be added to ensure fill of cores with a maximum continuous pour height of 3600mm.

12. No construction of masonry on suspended floors is to take place until floor is fully de-propped.

13. All grade A masonry to be supervised by a registered mason, including grouting. In addition, all grade A & B masonry to be inspected by Engineer prior to grouting, or as required by the local authority.

14. Chasing of load bearing masonry only permitted as shown on the Engineer's drawings.

15. All grout shall be 20 MPa unless otherwise noted.

16. All masonry cells shall be solid filled with grout.

17. Control joints to be provided at no more than 6m centres or to approval of the Engineer, as per NZS4229:2013

REINFORCED MASONRY RETAINING WALLS

1. The rear face of the blockwork shall be protected with three coats of flint-kote, or similar approved waterproofing agent. The waterproofing agent shall be subsequently permanently protected with hardiflex soft board or similar prior to placing scoria backfill. The waterproofing shall extend 200mm above the proposed finished ground level.

2. The drainage blanket behind the wall shall be formed with at least a 300mm thick layer of 20/7 scoria or 40/20 drainage metal or approved equivalent. The 100mm draincoil at the base of the wall shall be free draining to a sealed stormwater system. Filter sock shall be placed between the draincoil and the scoria.

3. All concrete cast against and permanently exposed to the unprotected footing excavation shall provide a 75mm minimum cover to the reinforcing steel.

4. If the masonry retaining wall forms a perimeter foundation wall, the 20/7 scoria / 40/20 drainage metal or approved equivalent shall be completed 200mm below the proposed finished ground level. Filter cloth (Terram 2000 or approved equivalent) shall then be placed over the top level surface of the above mentioned approved drainage media. The filter cloth shall lap 100mm vertically up the wall and 300mm horizontally over the clay/scoria interface. A 200mm compacted depth of topsoil shall then be placed over the filter cloth.

5. The ground profile behind the top of the wall shall direct all overland run-off away from the rear face of the retaining wall.

6. If specified, the lower concrete floor slab shall be poured and cured prior to backfilling behind the masonry retaining wall.

7. Control joints to be adequately waterproofed (Sikadur Combiflex or approved equivalent).

8. Where rear placed reinforcing is specified by the Engineer, reinforcing shall be placed with maximum 60mm cover from the back face of the wall.

No.	Revision	Drawn	Chk.	Appd.	Date
B	FOR BUILDING CONSENT	L.L	P.J	I.H	MAR 2023
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Approved	I. HUTCHINSON	SEPT 2022
Scale	NTS	
Scale vert. exag.		

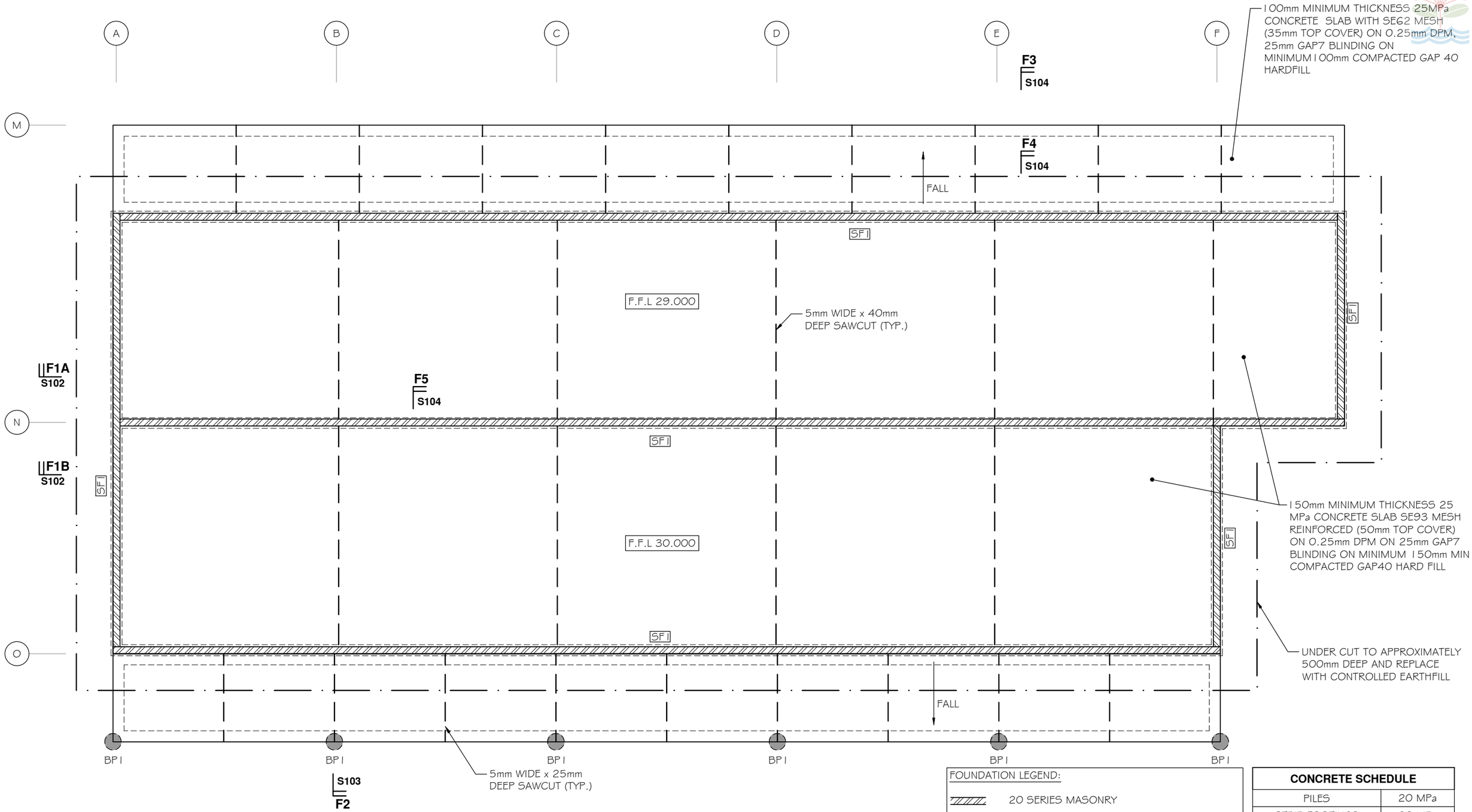
THREE BLOKES LTD

Project
PROPOSED SHEDS
362 MATAKANA VALLEY ROAD
MATAKANA

Title
GENERAL STRUCTURAL NOTES

Job No.
24742

Sheet No.
SN2



FOUNDATION LEGEND:

20 SERIES MASONRY

BP1 - Ø450 x 1200mm CONCRETE BORED PILE w/ 4/HD16 & R6 STIRRUPS @ 300mm CRS (75mm COVER)

SF1 - 300mm WIDE x 450mm DEEP STRIP FOOTING w/ 4/HD12 + R6@600mm CRS (75mm COVER) 600mm BELOW C.G.L

CONCRETE SCHEDULE	
PILES	20 MPa
STRIP FOOTINGS	20 MPa
MASONRY WALLS	20 MPa
SLAB ON GRADE	25 MPa
SHED MESH GRADE	SE93
FOOTPATH MESH GRADE	SE62

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THREE BLOKES LTD

Project
PROPOSED SHEDS
362 MATAKANA VALLEY ROAD
MATAKANA

Title
SHED 1 FOUNDATION PLAN

Job No.
24742

Sheet No.
S100

CONCRETE SCHEDULE	
PILES	20 MPa
STRIP FOOTINGS	20 MPa
MASONRY WALLS	20 MPa
SLAB ON GRADE	25 MPa
SHED MESH GRADE	SE93
FOOTPATH MESH GRADE	SE62

FOUNDATION LEGEND:

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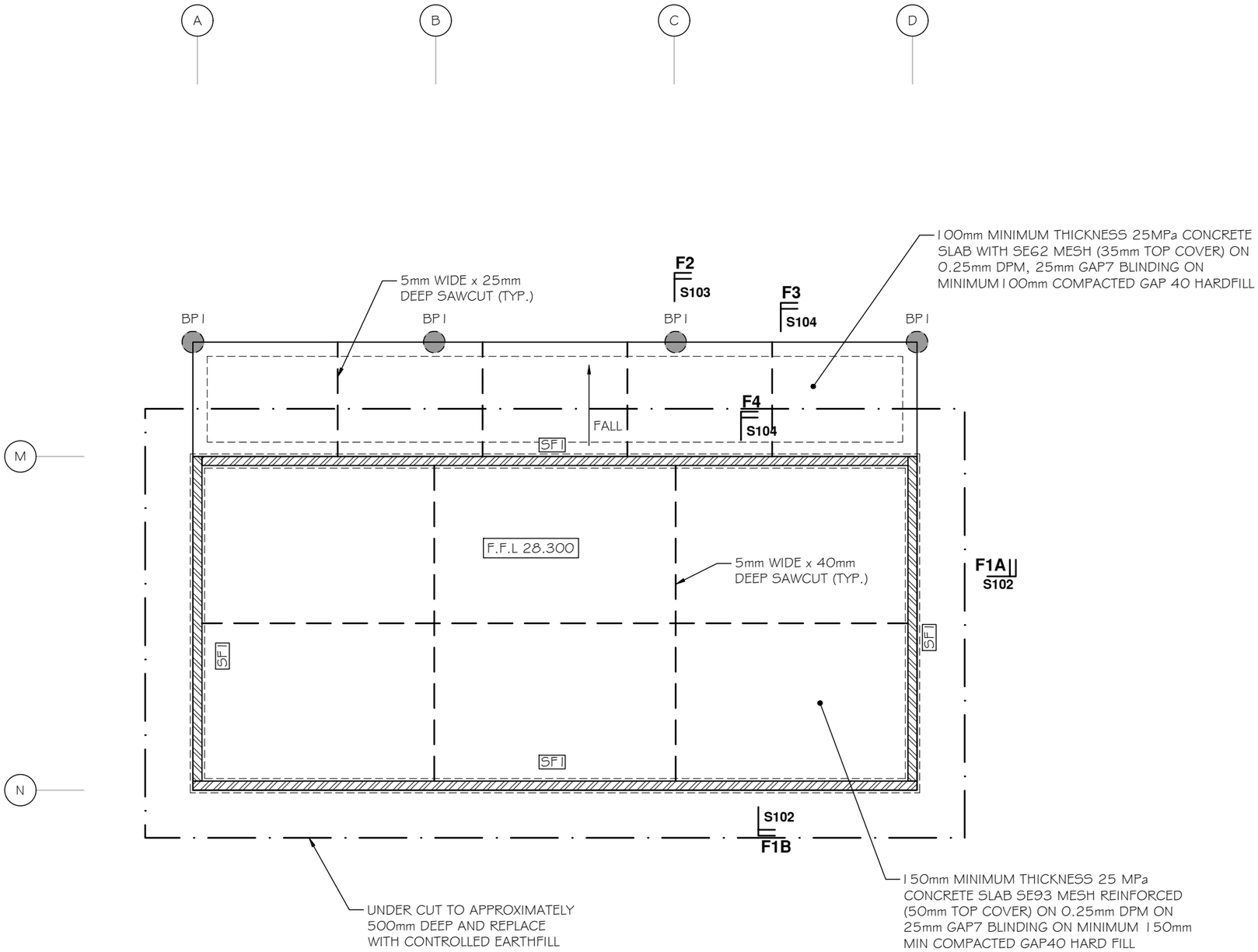

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Design	P. WILSON	SEPT 2022
Drawn	L. LIANG	SEPT 2022
Checked	P. JARVIE	SEPT 2022
Approved	I. HUTCHINSON	SEPT 2022
Scale	SCALE: 1:100	
Scale vert. exag.		

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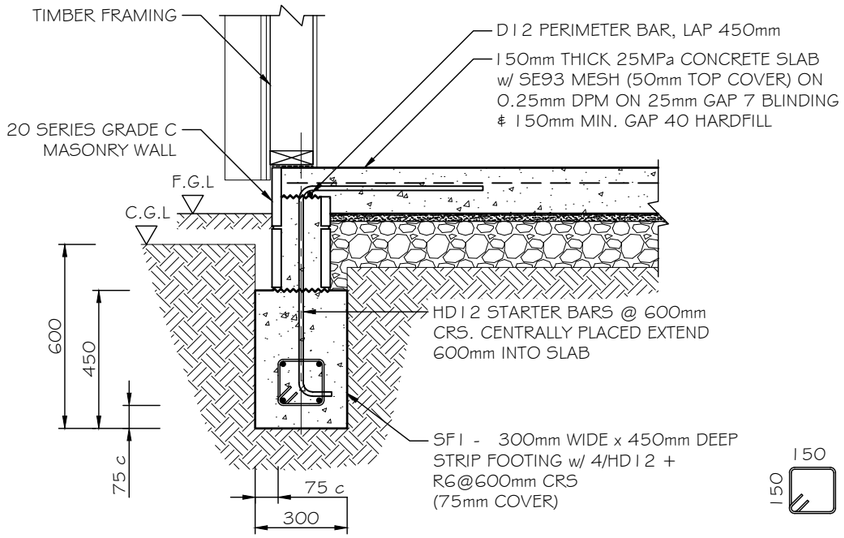
Project
PROPOSED SHEDS
362 MATAKANA VALLEY ROAD
MATAKANA

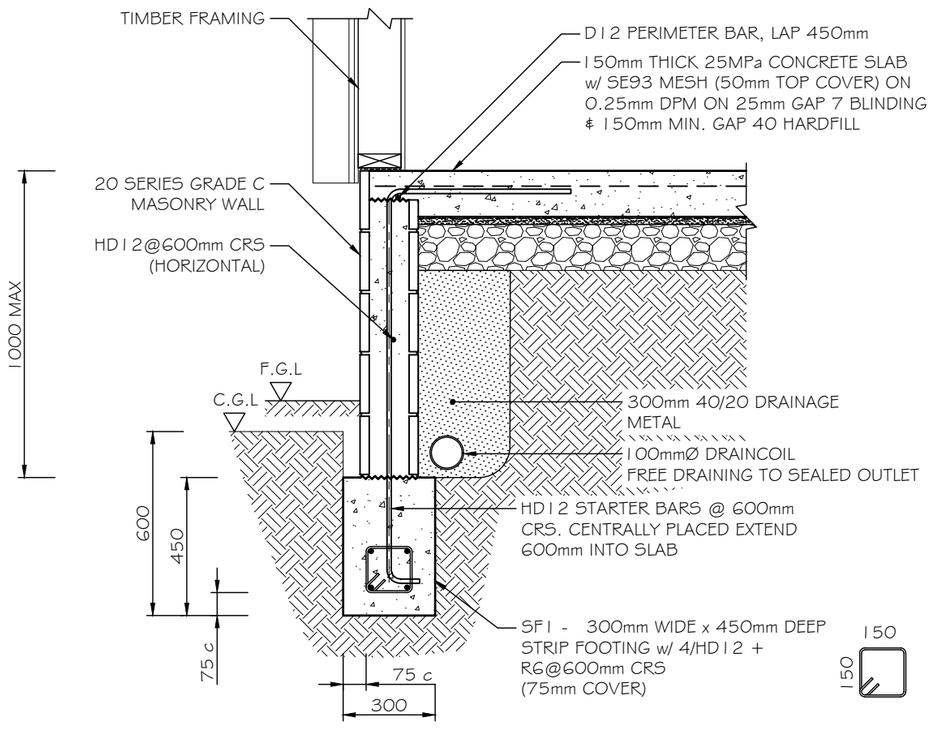
Title
SHED 2 FOUNDATION PLAN

Job No.
24742

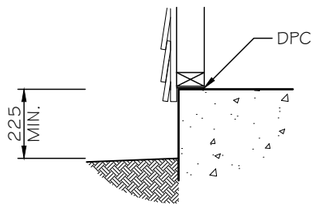
Sheet No.
S101



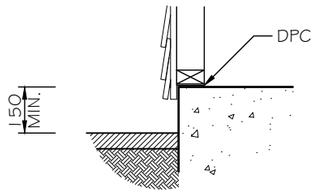
F1A - TYPICAL PERIMETER FOUNDATION DETAIL
SCALE 1:20



F1B - TYPICAL PERIMETER FOUNDATION WALL DETAIL
SCALE 1:20



PART OF NZS3604: 2011 FIGURE 7.11 - MINIMUM HEIGHTS OF FINISHED CONCRETE (RESIDENTIAL, HABITABLE) SLAB-ON-GROUND FLOORS ABOVE ADJOINING FINISHED GROUND LEVEL (SEE 7.5.2.1)



FINISHED GROUND LEVEL TO BE SLOPED AWAY FROM BUILDING 1.0m @ 1:25 (SEE 7.5.2.2)

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Scale	SCALE: 1:20	
Scale vert. exag.		

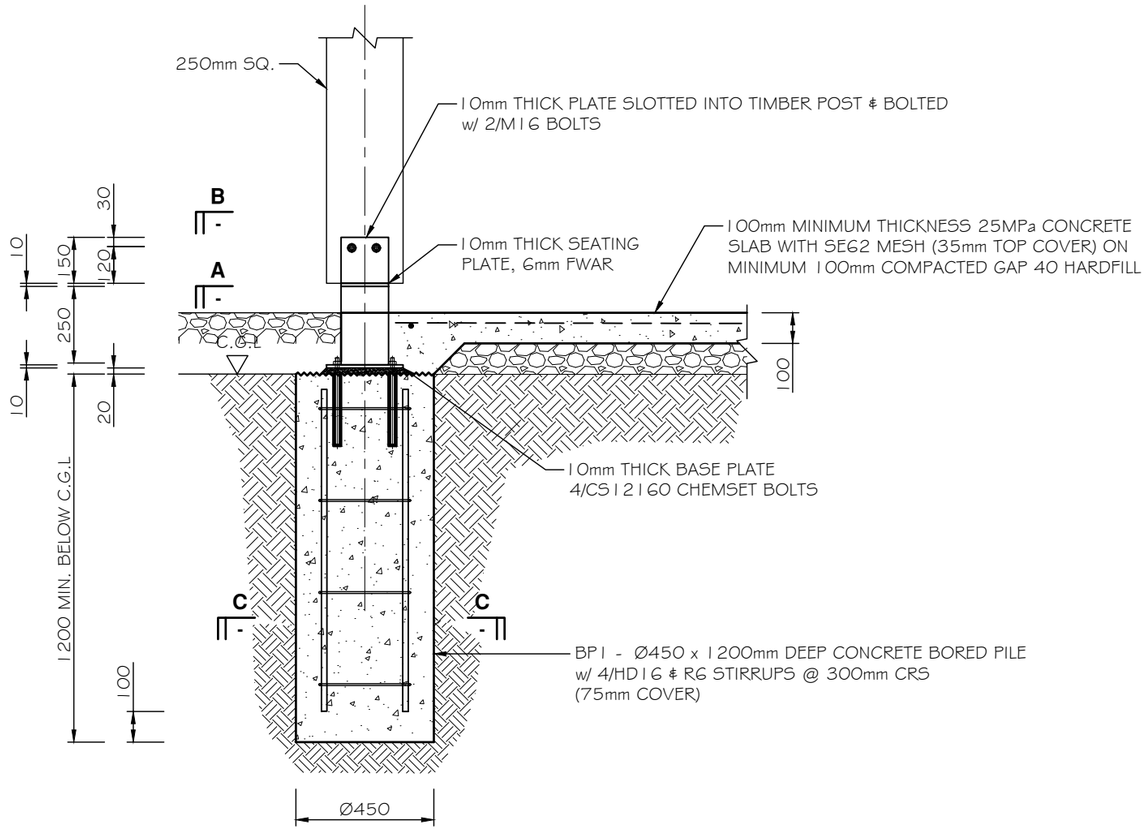
THREE BLOKES LTD

Project
PROPOSED SHEDS
362 MATAKANA VALLEY ROAD
MATAKANA

Title
FOUNDATION DETAIL

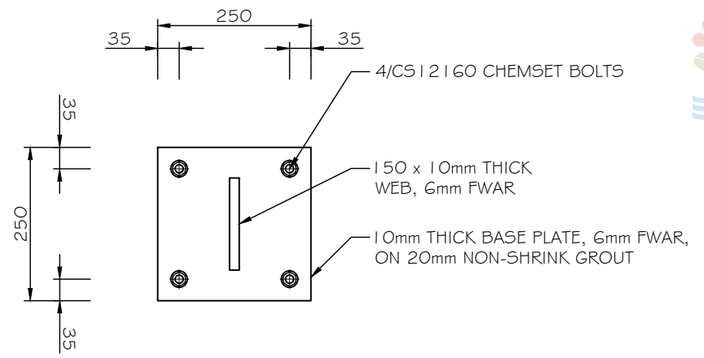
Job No.
24742

Sheet No.
S102

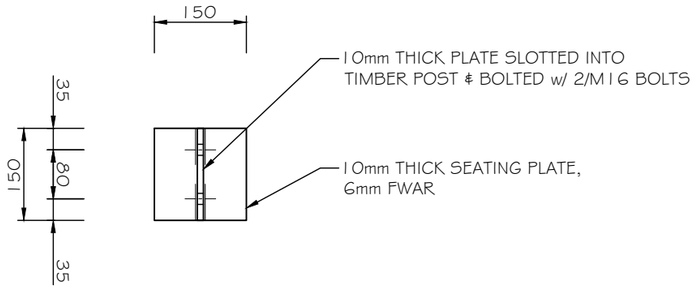


F2 / S100 TYPICAL BORED PILE DETAIL
SCALE 1:20

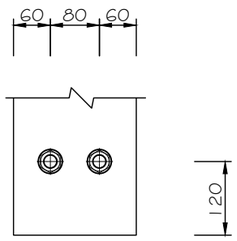
NOTE:
- ALL PLATES ARE 100 x 6mm THICK BOTH SIDES WITH M20 BOLTS U.O.N
- MINIMUM 120mm END EDGE DISTANCE ON ALL TIMBER MEMBERS.
- BRACKETS ARE TO BE GALVANIZED TO HDG600



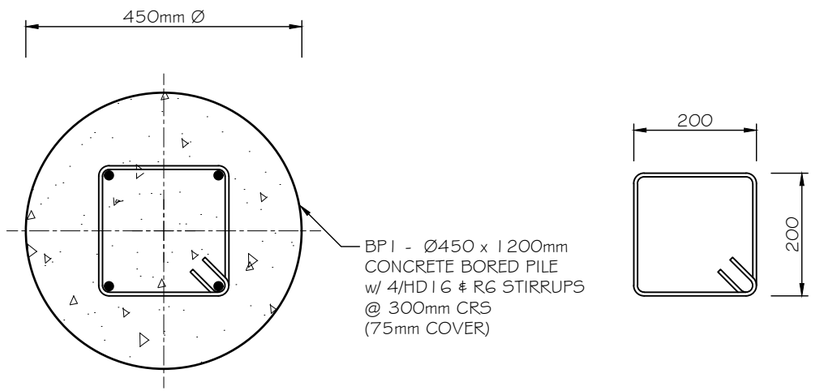
A-A / - BRACKET BASE PLATE DETAIL
SCALE 1:10



B-B / - BRACKET SEATING PLATE DETAIL
SCALE 1:10



D-D / - TIMBER EDGE DISTANCES
SCALE 1:10



C-C / - PILE CROSS SECTION
SCALE 1:10

No.	Revision	Drawn	Chk.	Appd.	Date
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Scale vert. exag.		

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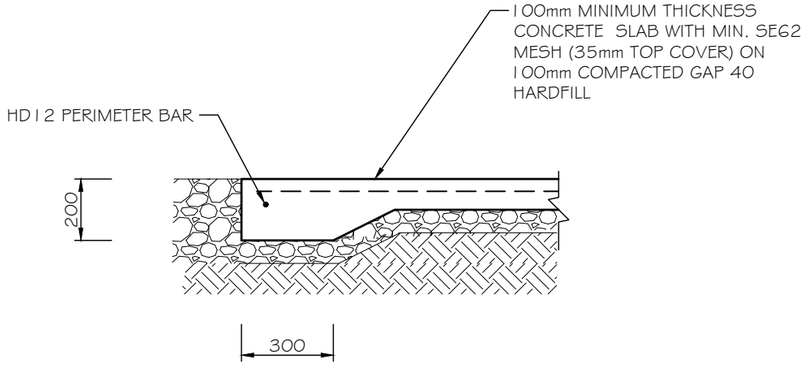
Project
PROPOSED SHEDS
362 MATAKANA VALLEY ROAD
MATAKANA

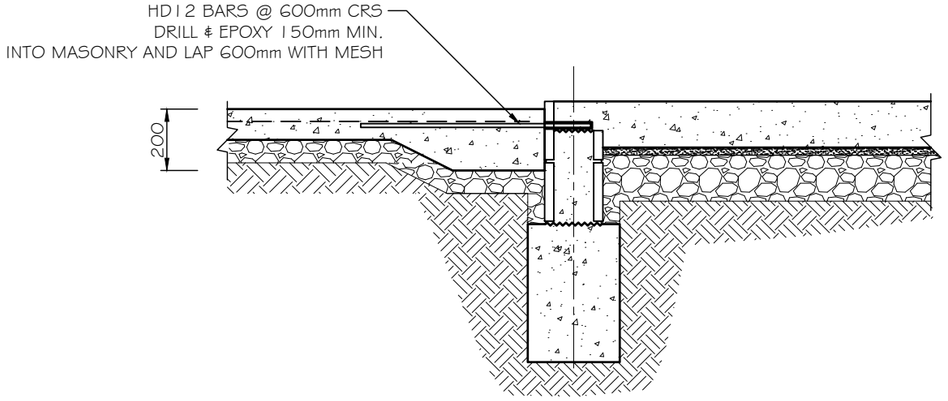
Title
FOUNDATION DETAIL

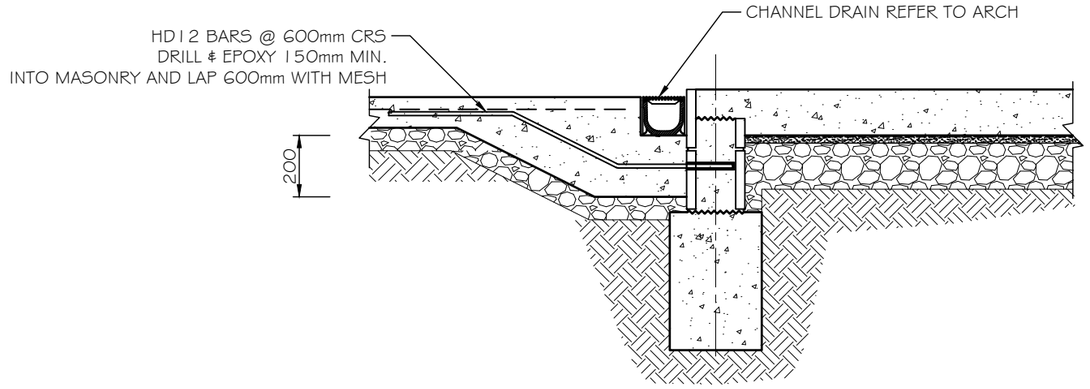
Job No.
24742

Sheet No.
S103

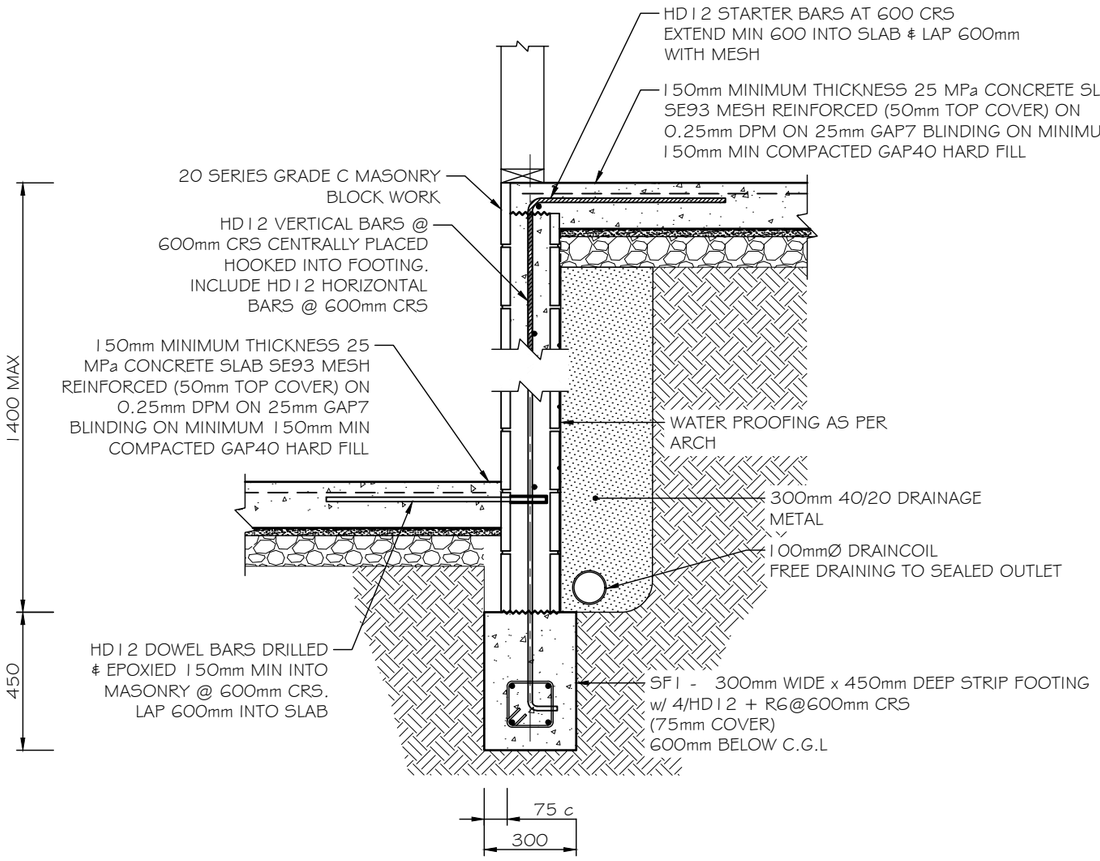


F3 / S100 TYPICAL SLAB EDGE DETAIL
SCALE 1:20





F4 / S100 TYPICAL SLAB DETAIL
SCALE 1:20



F5 / S100 TYPICAL PILED FOOTING DETAIL
SCALE 1:20

No.	Revision	Drawn	Chk.	Appd.	Date
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Scale	SCALE: 1:20	
Scale verf. exap.		

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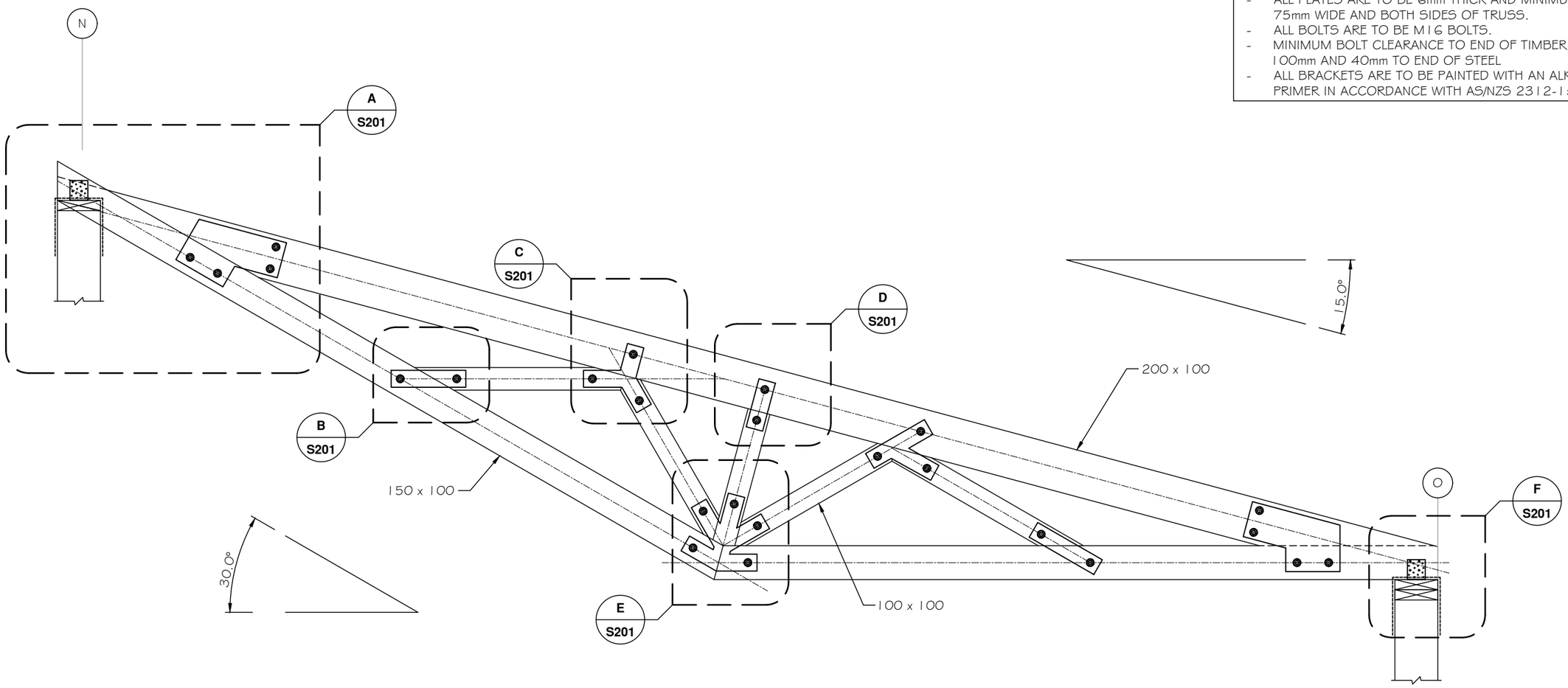
Project
PROPOSED SHEDS
362 MATAKANA VALLEY ROAD
MATAKANA

Title
FOUNDATION DETAIL

Job No.
24742

Sheet No.
S104

NOTE:
- ALL PLATES ARE TO BE 6mm THICK AND MINIMUM 75mm WIDE AND BOTH SIDES OF TRUSS.
- ALL BOLTS ARE TO BE M16 BOLTS.
- MINIMUM BOLT CLEARANCE TO END OF TIMBER IS 100mm AND 40mm TO END OF STEEL
- ALL BRACKETS ARE TO BE PAINTED WITH AN ALKG PRIMER IN ACCORDANCE WITH AS/NZS 2312-1:2014



D1 / - **TYPICAL TYPE "A" TRUSS**
SCALE 1:20

No.	Revision	Drawn	Chk.	Appd.	Date
B	FOR BUILDING CONSENT	L.L	P.J	I.H	MAR 2023
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Scale vert. exag.		

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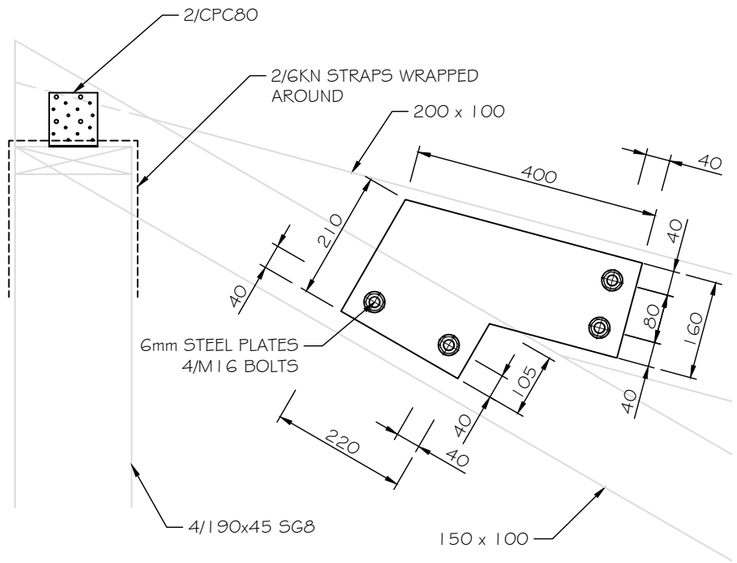
Project
PROPOSED SHEDS
362 MATAKANA VALLEY ROAD
MATAKANA

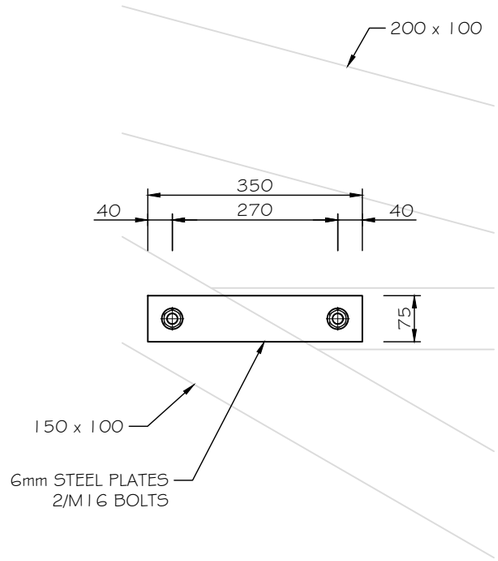
Title
STRUCTURAL CONNECTION DETAIL

Job No.
24742

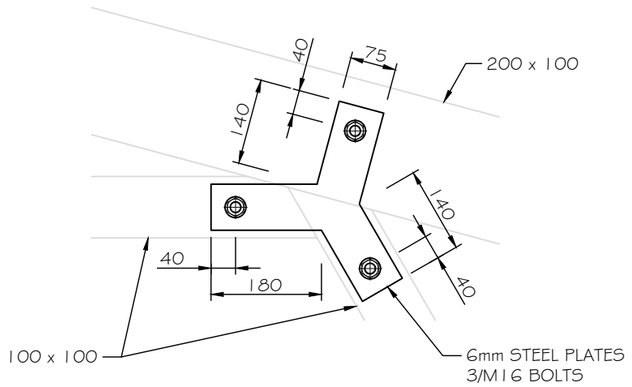
Sheet No.
S200



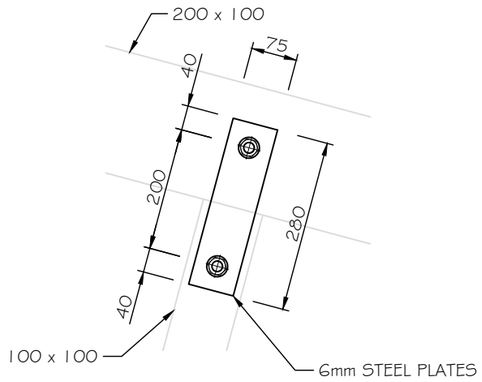
A-A S200 **ENLARGE DETAIL**
SCALE 1:10



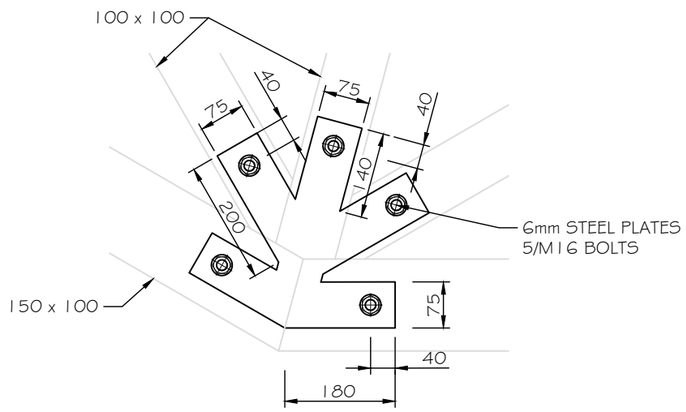
B-B S200 **ENLARGE DETAIL**
SCALE 1:10



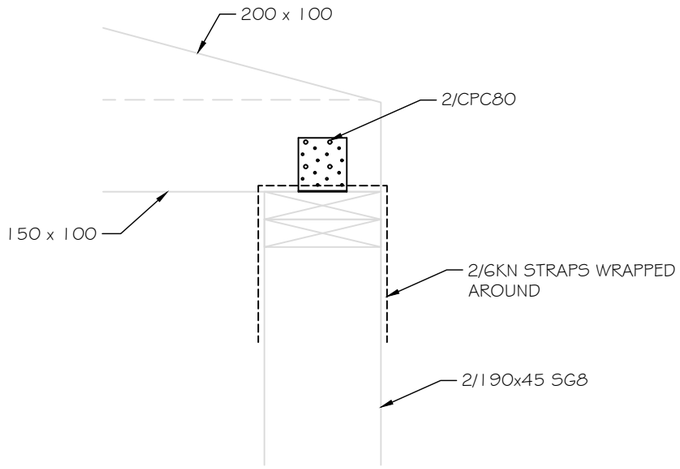
C-C S200 **ENLARGE DETAIL**
SCALE 1:10



D-D S200 **ENLARGE DETAIL**
SCALE 1:10



E-E S200 **ENLARGE DETAIL**
SCALE 1:10



F-F S200 **ENLARGE DETAIL**
SCALE 1:10

No.	Revision	Drawn	Chk.	Appd.	Date
B	FOR BUILDING CONSENT	L.L	P.J	I.H	MAR 2023
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Approved	I. HUTCHINSON	SEPT 2022
Scale	SCALE: 1:10	
Scale vert. exag.		

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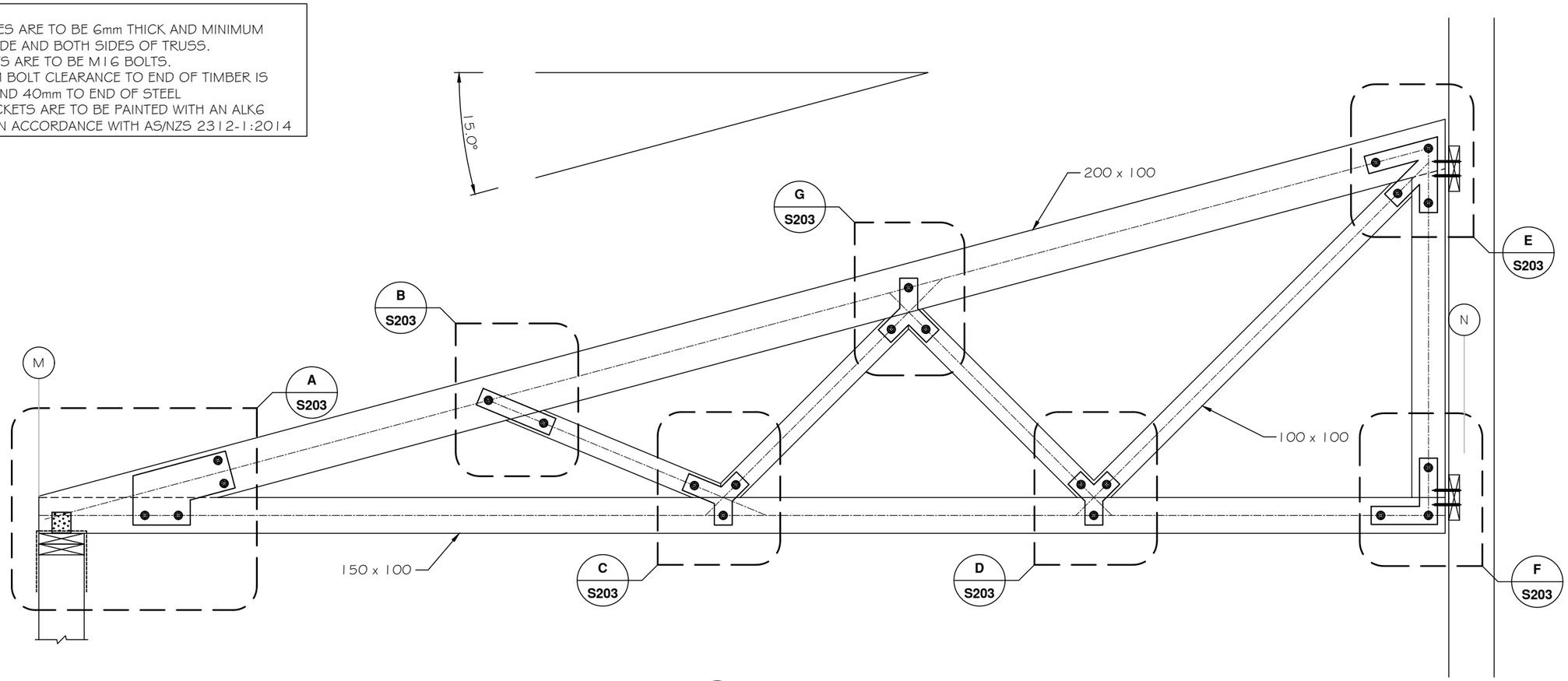
Project
PROPOSED SHEDS
362 MATAKANA VALLEY ROAD
MATAKANA

Title
STRUCTURAL CONNECTION DETAIL

Job No.
24742

Sheet No.
S201

NOTE:
- ALL PLATES ARE TO BE 6mm THICK AND MINIMUM 75mm WIDE AND BOTH SIDES OF TRUSS.
- ALL BOLTS ARE TO BE M16 BOLTS.
- MINIMUM BOLT CLEARANCE TO END OF TIMBER IS 100mm AND 40mm TO END OF STEEL
- ALL BRACKETS ARE TO BE PAINTED WITH AN ALK6 PRIMER IN ACCORDANCE WITH AS/NZS 2312-1:2014



D2 / - **TYPICAL TYPE "B" TRUSS**
SCALE 1:20

No.	Revision	Drawn	Chk.	Appd.	Date
B	FOR BUILDING CONSENT	L.L	P.J	I.H	MAR 2023
A	ISSUED FOR APPROVAL	L.L	P.J	I.H	OCT 2022

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Scale vert. exag.		

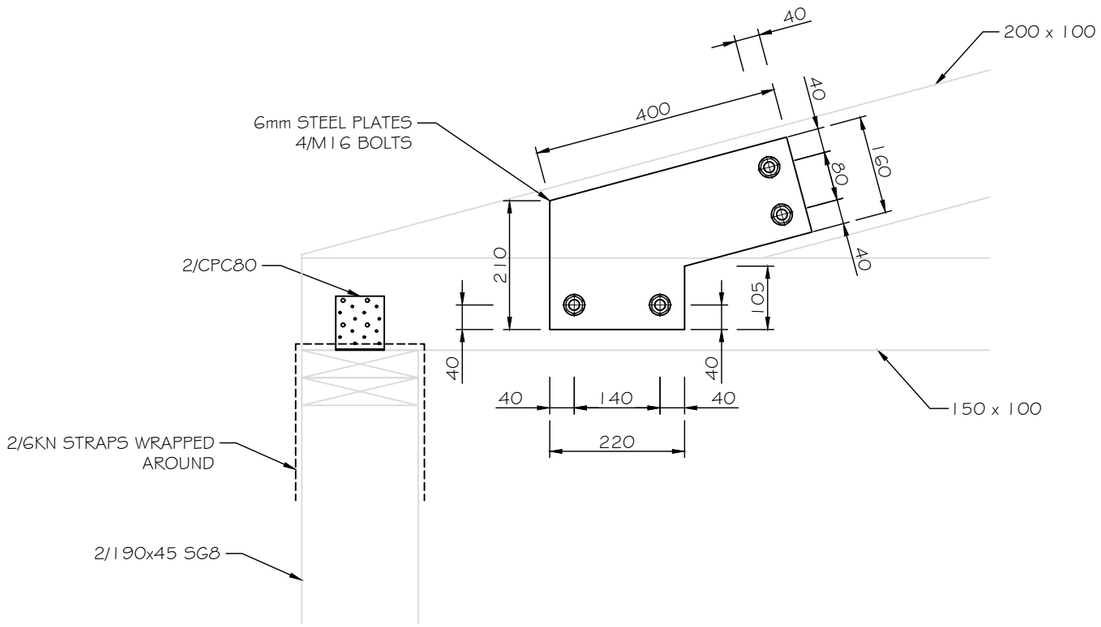
THREE BLOKES LTD

Project
PROPOSED SHEDS
362 MATAKANA VALLEY ROAD
MATAKANA

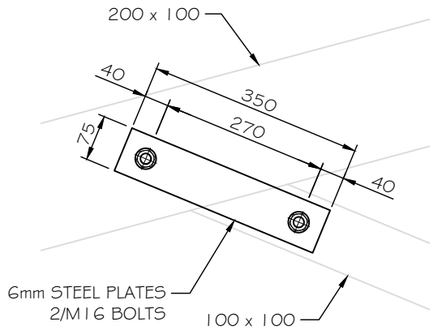
Title
STRUCTURAL CONNECTION DETAIL

Job No.
24742

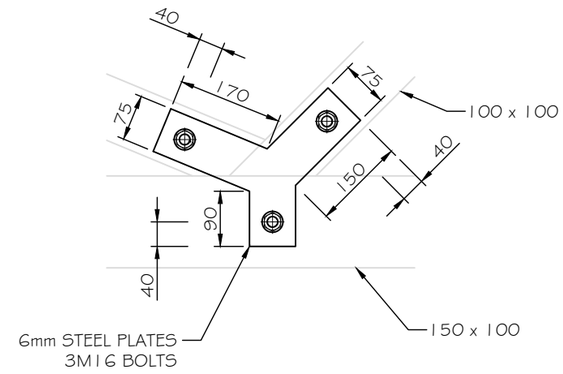
Sheet No.
S202



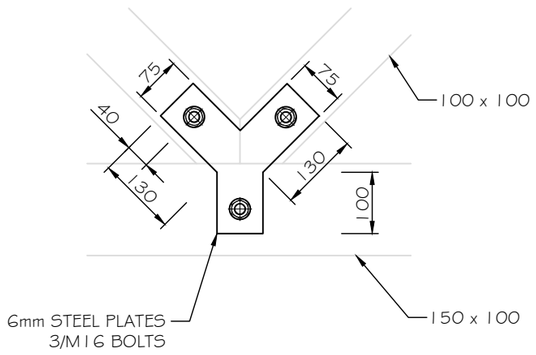
A-A S202 **ENLARGE DETAIL**
SCALE 1:10



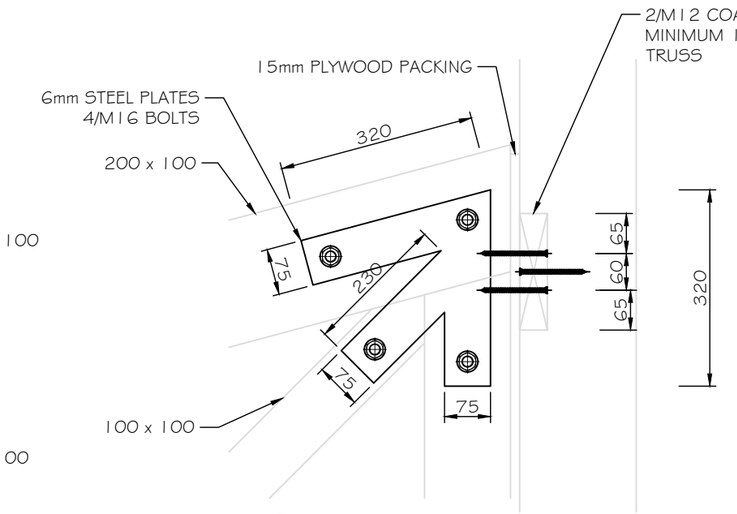
B-B S202 **ENLARGE DETAIL**
SCALE 1:10



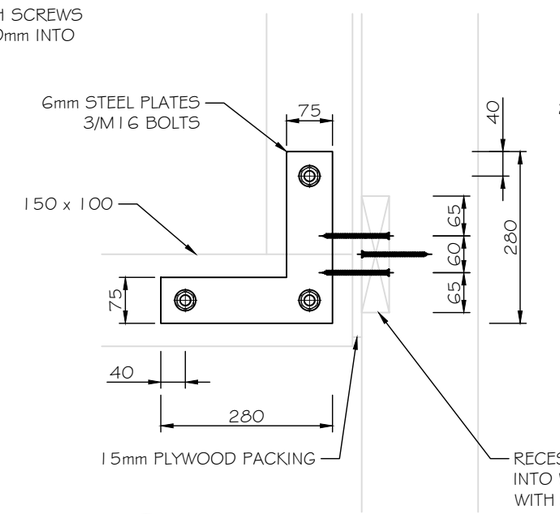
C-C S202 **ENLARGE DETAIL**
SCALE 1:10



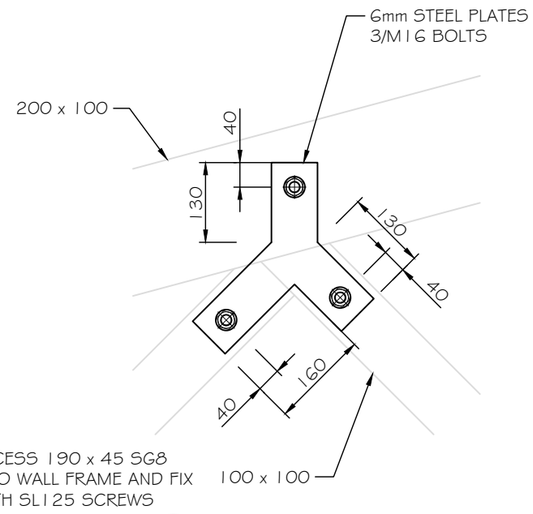
D-D S202 **ENLARGE DETAIL**
SCALE 1:10



E-E S202 **ENLARGE DETAIL**
SCALE 1:10



F-F S202 **ENLARGE DETAIL**
SCALE 1:10



G-G S202 **ENLARGE DETAIL**
SCALE 1:10

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Scale	SCALE: 1:10	
Scale vert. exag.		

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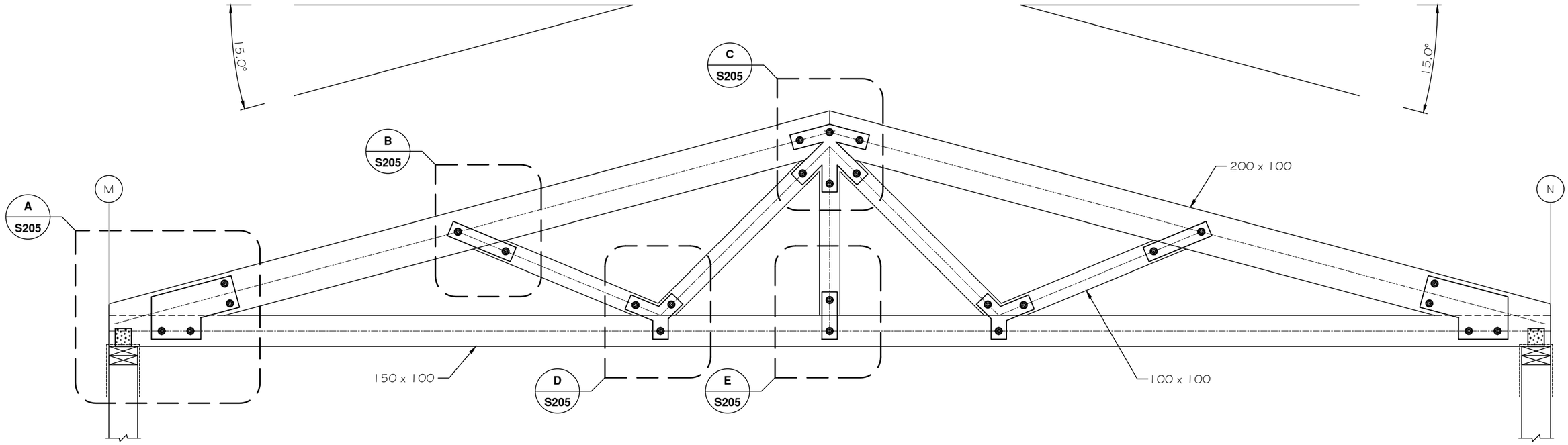
PROPOSED SHEDS
362 MATAKANA VALLEY ROAD
MATAKANA

Title
STRUCTURAL CONNECTION DETAIL

Job No.
24742

Sheet No.
S203

NOTE:
- ALL PLATES ARE TO BE 6mm THICK AND MINIMUM 75mm WIDE AND BOTH SIDES OF TRUSS.
- ALL BOLTS ARE TO BE M16 BOLTS.
- MINIMUM BOLT CLEARANCE TO END OF TIMBER IS 100mm AND 40mm TO END OF STEEL
- ALL BRACKETS ARE TO BE PAINTED WITH AN ALK6 PRIMER IN ACCORDANCE WITH AS/NZS 2312-1:2014



D3 / - **TYPICAL TYPE "C" TRUSS**
SCALE 1:20

No.	Revision	Drawn	Chk.	Appd.	Date
B	FOR BUILDING CONSENT	L.L	P.J	I.H	MAR 2023
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Approved	I. HUTCHINSON	SEPT 2022
Scale	SCALE: 1:20	
Scale vert. exag.		

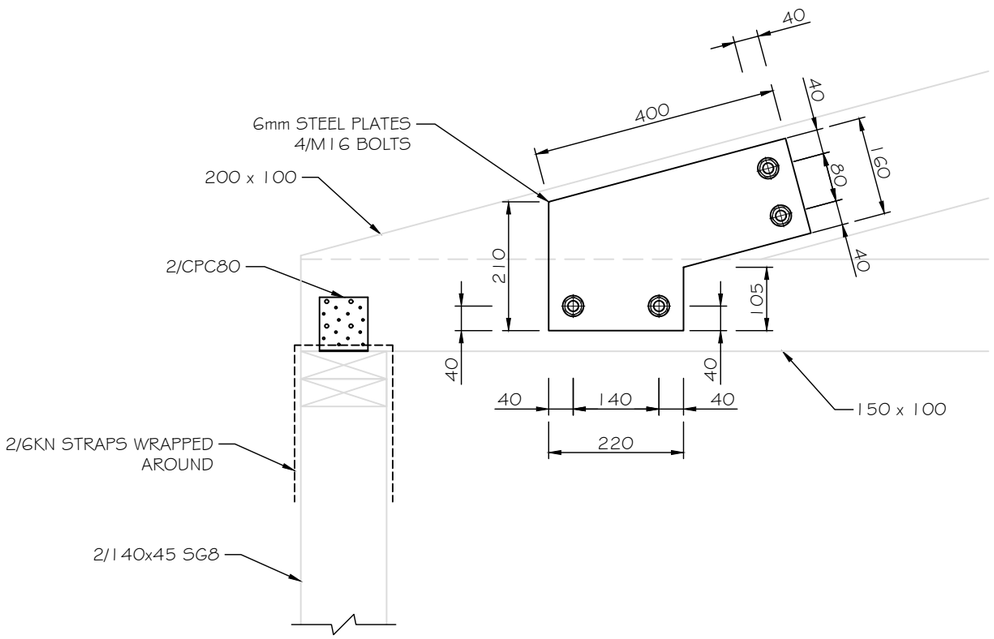
THREE BLOKES LTD

Project
PROPOSED SHEDS
362 MATAKANA VALLEY ROAD
MATAKANA

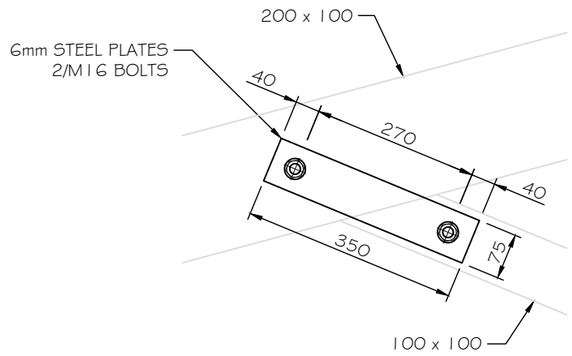
Title
STRUCTURAL CONNECTION DETAIL

Job No.
24742

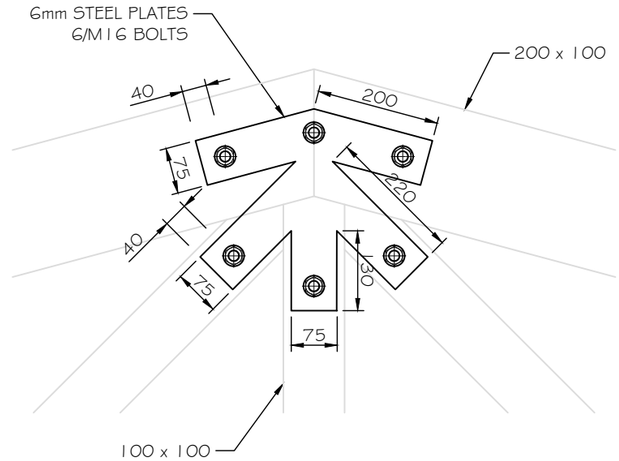
Sheet No.
S204



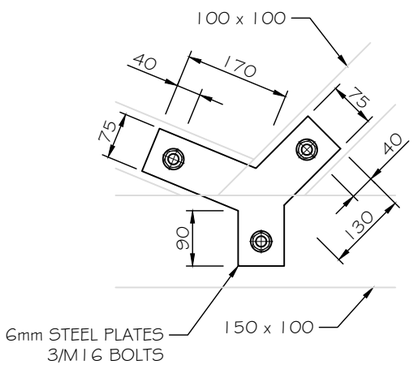
A-A S204 **ENLARGE DETAIL**
SCALE 1:10



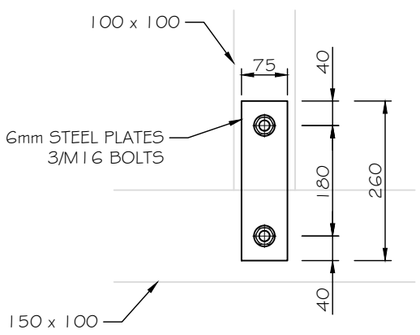
B-B S204 **ENLARGE DETAIL**
SCALE 1:10



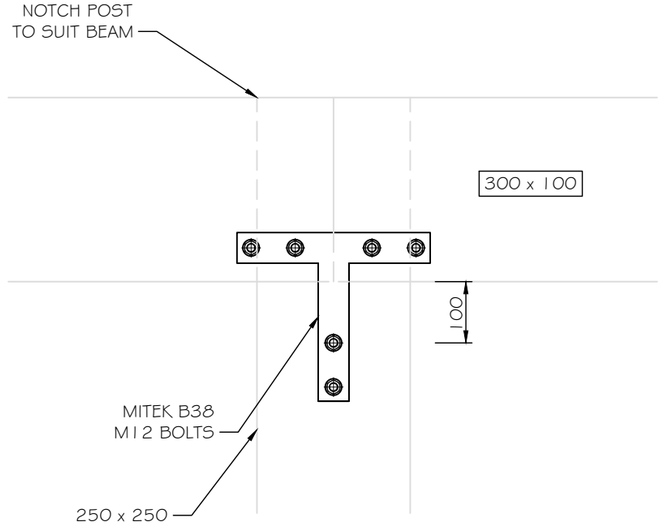
C-C S204 **ENLARGE DETAIL**
SCALE 1:10



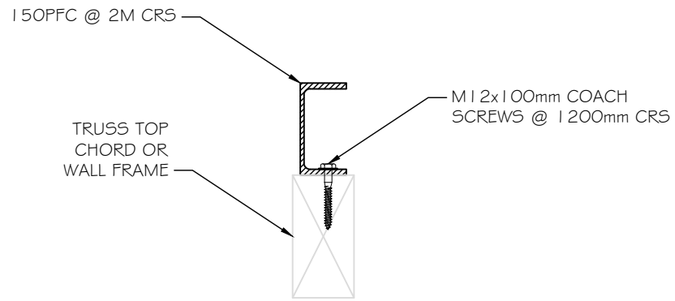
D-D S204 **ENLARGE DETAIL**
SCALE 1:10



E-E S204 **ENLARGE DETAIL**
SCALE 1:10



D4 - **TYPICAL VERANDAH BEAM DETAIL**
SCALE 1:10



D5 - **TYPICAL CANTILEVERED EAVE BEAM DETAIL**
SCALE 1:10

No.	Revision	Drawn	Chk.	Appd.	Date
B	FOR BUILDING CONSENT	L.L	P.J	I.H	MAR 2023
A	ISSUED FOR APPROVAL	L.L	P.J	I.H	OCT 2022

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Design	P. WILSON	SEPT 2022
Drawn	L. LIANG	SEPT 2022
Checked	P. JARVIE	SEPT 2022
Approved	I. HUTCHINSON	SEPT 2022
Scale	SCALE: 1:10	
Scale vert. exag.		

THREE BLOKES LTD

Project
PROPOSED SHEDS
362 MATAKANA VALLEY ROAD
MATAKANA

Title
STRUCTURAL CONNECTION DETAIL

Job No.
24742

Sheet No.
S205