

**1. Design Criteria**

- 1.1 Governing building code  
All building loads are to be in accordance with SANS 10160:2011. Design working life category (table 1).....Cat 3 = 50years
- 1.2 Floor Live Loading  
All floor live loads are in accordance with SANS 10160-2:2011
- 1.3 Roof Live Loading  
All roof live loads are in accordance with SANS 10160-2:2011  
A. Accessible Flat Roof(Category J or the governing occupancy category).....2.0kN/m2  
B. Inaccessible Roof (Category H1 – during construction).....0.75kN/m2<3m2  
.....0.25kN/m2>3m2  
C. Inaccessible Roof (Category H2 – normal maintenance)  
.....0.50kN/m2<3m2 .....0.25kN/m2>3m2
- 1.4 Earthquake Loading  
In accordance with SANS 10160-4:2011 (Figure 1) the site falls outside of any natural or mining induced seismic zones. Seismic loading does not need to be considered.
- 1.5 Wind Loading  
Basic Wind Speed vb ..... 40m/s  
Terrain Category..... B  
Peak wind pressure qp(z) 2m .....0.68kPa  
Peak wind pressure qp(z) 16m .....1.01kPa
- 1.6 Foundations  
B. Geotechnical Reports  
– Geotechnical report to still be completed  
C. Where suitable founding material is not encountered at the depth shown on the drawing, excavation is to proceed to a depth as approved by the engineer on site  
D. Excavations to be backfilled to level with mass concrete of10/19 strength if so ordered by the engineer.  
E. Excavations without the aid of side shutters to not exceed the specifications SANS 1200

**2. General**

- 2.1 All construction to conform to the following codes:  
SANS 1200, SANS 2001 and SANS 10400.
- 2.2 Do not scale these drawings.
- 2.3 Work in figured dimensions only. Any discrepancies on this drawing to be brought to the engineers attention prior to implementation of any work.
- 2.4 Refer to all relevant drawings by:-  
Architects                      Structural Engineers                      Electrical Engineers                      Mechanical Engineers
- 2.5 All columns, beam and walls are centred on grid/centre lines u.n.o.

**3. Concrete**

- 3.1 All construction to conform to the following codes:  
SANS 1200, SANS 2001 and SANS 10400.
- 3.2 Concrete strength at 28 days:-  
All concrete (u.n.o)..... 30 MPa  
Factory Floor Surfacebed..... 35 MPa  
Other Surfacebeds.....30 MPa  
Blinding..... 15 MPa
- 3.3 Concrete finish to-  

Item	Formwork Type	Degree of Accuracy
Foundations	Rough	III
Ground beams	Rough	III
Retaining walls (earth face)	Rough	II
Retaining walls (inside face)	Smooth	II
Columns	Smooth	II
Slab soffits	Smooth	II
Beams	Smooth	II
Facade walls	Smooth	I

Warehouse Floor to meet the tolerance requirements an FM-3 floor in accordance with TR34:2003 (Third Edition)

- 3.4 All concrete sizes do not include finishes u.n.o.
- 3.5 25x25 chamfers to all exposed concrete corners.
- 3.6 All columns, walls and beams to be placed centrally on grid/centre lines unless dimensioned otherwise.
- 3.7 Preference should be given to reinforcing suppliers whose materials contain more than 90%, by mass, post consumer recycled content.
- 3.9 The absolute quantity of Portland cement must be reduced by 40%, as an average across all concrete mixes, when compared to a standard concrete mix of the same grade with 100% Portland cement, by substituting it with industrial waste product(s).

**4. Reinforcement Notes**

- 4.1 Steel reinforcing shal comply with SANS 920
- 4.2 Bending of reinforcing shal comply with SANS 282
- 4.3 Minimum laps in reinforcement to be 50x bar diameter unless shown otherwise
- 4.4 Reinforcement that is too long shall be ' pulled ' into element rather than cutting it.
- 4.5 Slab stools at 1000mm centres both ways are to sit on B1 layer and are to support T2 layer unless shown otherwise
- 4.6 Reinforcing Steel Strengths Y bars fy = 450 N/mm² R bars fy = 250 N/mm²
- 4.7 Cover to Reinforcement  
Foundations.....50mm  
Columns, Beams, Walls (Internal).....40mm  
Slabs.....35mm

**5. Structural Steel**

- 5.1 Structural steelwork shall comply with the requirements of SANS 2001:CSI and the relevant project specifications.
- 5.2 Corrosion protection.  
5.2.1 Cold Rolled Steelwork  
a) Hot dip galvanise to SANS 121 (ISO 1461).  
  
5.2.2 Hot Rolled steel work - Warehouse  
All steel to be hot dipped galvanized - Hot dip galvanise to SANS 121 (ISO 1461), minimum coating thickness of 75 micron and average 85 micron - Clean with a reputable galvanised iron cleaner, such as Phoscoate or equally approved, using methods of cleaning according to HDGASA 01:1990
- 5.2.3 Hot Rolled steel work - Office Building  
All steel to be hot dipped galvanized - Hot dip galvanise to SANS 121 (ISO 1461), minimum coating thickness of 75micron and average 85 micron  
- Clean with a reputable galvanised iron cleaner, such as Phoscoate or equally approved, using methods of cleaning according to HDGASA 01:1990  
- Paint specification as follows:  
i) 1st Coat: Sigma prime 200 primer, 75 µm dry film thickness  
ii) 2nd Coat: Sigmadrur 520, 50 µm dry film thickness.(colour to match Existing, TBC by arch)  
iii) 3rd Coat: Sigmadrur 520, 50 µm dry film thickness.(colour to match Existing, TBC by arch)
- 5.2.4 Where required for fireproofing, Intumescent paint is to be applied as specified by the Architect
- 5.7 All hot rolled steelwork shall be grade S355JR, all hollow tube steelwork shall be grade S355 and all cold formed steelwork shall be to SANS 10162 Part 1 with a minimum yield stress of 200 MPa and a minimum tensile stress of 365 MPa unless noted otherwise.
- 5.8 All fixing bolts for structural steelwork shall be M20 grade 8.8 HDG unless noted otherwise.
- 5.9 All welds shall be 6mm continuous fillet welds unless noted otherwise.
- 5.10 When steelwork connects to existing structures, the steelwork contractor shall check all site dimensions and levels before fabrication and erection.
- 5.11 No flame cutting or site welding shall be carried out without the written approval of the engineer.
- 5.12 Shop drawings shall be submitted in duplicate to the engineer for approval before commencing any fabrication.
- 5.13 Traceability of steel.  
All steel to be marked with the manufacturer's test certificate number to ensure full traceability and to facilitate re-use of the steel members.
- 5.14 Marking steelwork.  
Completed components shall be marked with a durable and distinguishing erection mark, section size, steel grade and manufacturer's test certificate number in such a way so as not to damage the component. Marking shall be in a discrete location. Hardstamping may be used unless noted otherwise.
- 5.15 Testing of welds.  
10% of all fillet welds and 100% of butt welds to be subjected to non-destructive testing.
- 5.16 Roofing  
The design and the responsibility for the sheeting/tiles, it's fixing systems and the flashings are those of the roofing contractor. The roofing contractor must provide a watertight system that can withstand all the necessary wind pressures. Where the requirements of the proprietary roofing system are inconsistent with the primary support structure, this must be brought to the attention of the Structural Engineer.
- 5.17 Temporary bracing is the responsibility of the steelwork contractor.

**6. Brickwork Notes:**

- General
- 6.1 All brickwork to comply with the NBR, SANS10400 and SANS 10164 parts 1 & 2.
  - 6.2 All burnt clay bricks to comply with SANS 227 and all concrete bricks to comply with SANS 1215
  - 6.3 No chases vertical or horizontal (for plumbing /electrical) are permitted without approval from the engineer.
  - 6.4 Mortar shall be class II.
  - 6.5 Brickforce to be used in every 4th course with a minimum lap of 150 mm.
  - 6.6 Wall ties to comply with SANS 28 and to be a minimum 3.5mm thick, galvanized (750g/m2) and provided at not less than 3 no. per sq meter. (Plastic ties do not need to be galvanized)
  - 6.7 Vertical movement joints, burnt clay units  

Cat	Max spacing (10 - 12mm joint)
1	16
2	12
3	8
  - 6.8 Vertical movement joints (10-12mm) in concrete units to not exceed 10m c/c
  - 6.9 Days between firing and laying for burnt clay units  

Cat	Days
1	100
2	200
3	200
  - 6.10 Brick selection to be confirmed by the engineer before procurement
  - 6.11 Placement of movement joints to be confirmed by the engineer prior to construction
- Loadbearing Brickwork
- 6.12 Minimum compressive strength of bricks - 14 MPa.
  - 6.13 Concrete slabs cast onto brickwork to be cast on 2 no. layers of tempered hardboard with the smooth faces together.
  - 6.14 Concrete slabs cast against bwk shall be cast against 13mm thick bitumen impregnated softboard or expanded polyethylene strips.
  - 6.15 Mortar to be independently tested for conformity with SANS 10164
  - 6.16 No holes or chases allowed in brickwall unless indicated on drawing, specifications or approved by the engineer.
  - 6.17 Use 2x38x750mm long galvanised hoop iron ties at the same spacing as brickforce, nailed/shot fired to concrete columns and built into brickwork.
- Cavity walls
- 6.18 Cavity to be kept free of debris and mortar and ties to be cleaned of mortar droppings. Openings to be provided at max 1000mm centers directly above DPC by leaving perpend joints open for approx 50mm
  - 6.19 No crimp ties to be used in cavity wall construction
  - 6.20 Minimum cavity width 50mm, maximum cavity width 110mm
  - 6.21 Wall ties to conform with SANS 10164 - 1: 1980 section 5.2.1.4
- Retaining walls
- 6.22 Minimum compressive strength of bricks - 14 MPa
  - 6.23 No DPC to be used in brickwork retaining walls
  - 6.24 Wall to be constructed of solid units (perforations less than 25% of volume)
  - 6.25 Weepholes to be provided at max 1500mm centers, 300mm above the lower ground level by 50mm plastic pipesbuilt through the wall. The non exposed end of the pipe should protrude 150mm behind the wall into a geofabric wrapped gravel ball Non-Loadbearing Brickwork
  - 6.26 Minimum compressive strength of bricks - 7 MPa 6.25 Infill brickwork to have a 20mm gap at slab soffit level.

**7. Structural Surface Bed Notes:**

- 7.1 The contractor is to provide a detailed method statement outlining the construction of surface beds, size of pours, sequence of pours, position of construction joints, proposed saw-cut joints, curing, proposed achieving of finishes, including floor hardeners, etc for approval by the engineer.
- 7.2 Unless otherwise indicated, a 250 micron damp proof membrane is to be installed below the surface bed. the joints of the membrane are to be lapped and thoroughly sealed.
- 7.3 Isolate all columns and walls from the surface bed using 10mm jointex filled isolation or (expansions) joints (i,j.), once the concrete is set to rake out the top 10mm of jointex and seal with approved polysulphide or similar joint sealant.
- 7.4 Once the concrete is firmly set, 7 to 15 hours after pouring, commence the saw-cut joints. joints in finishes to be placed directly over all joints in the surface beds.

Rev	Amendments	Date

Drawing Status

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Scale	Designed	Drawn	Checked	Date
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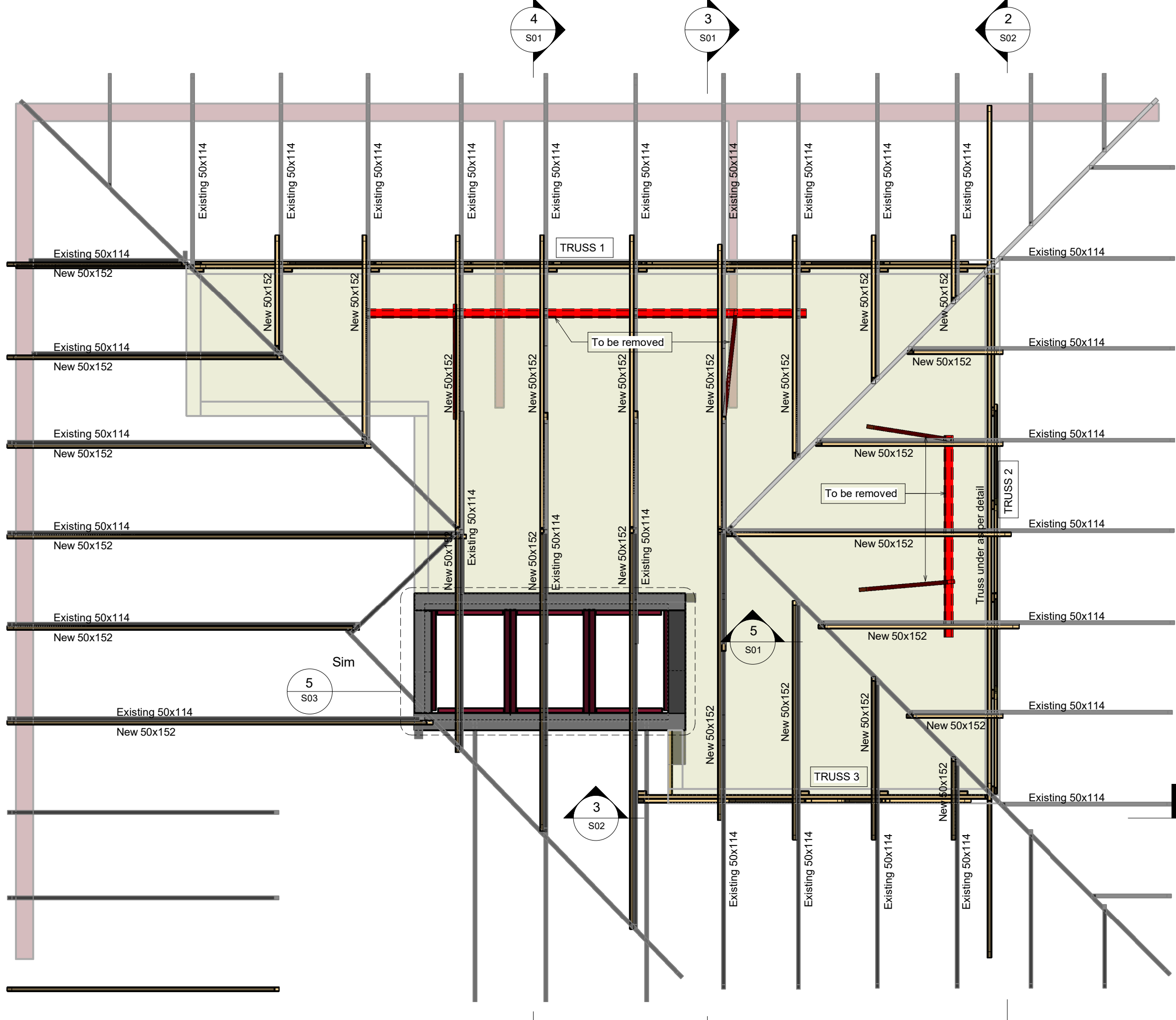
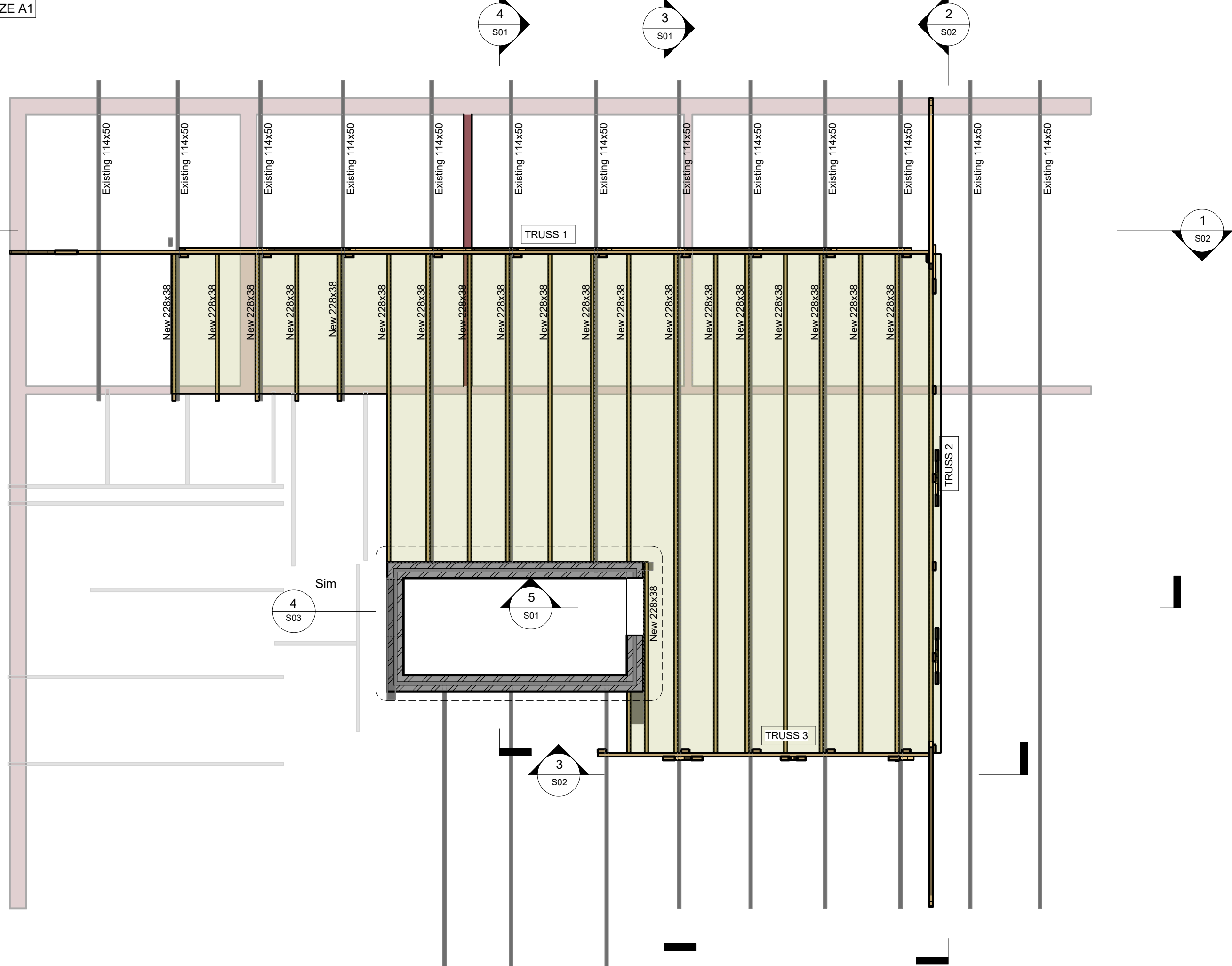
Client  
**258 Florida Road (Pty) Ltd**

Project Title  
**INNES ROAD LOFT**

Drawing Title  
**STRUCTURAL NOTES**



Project No.	Dwg No.	Rev.
<b>P2228 -</b>	<b>S00</b>	

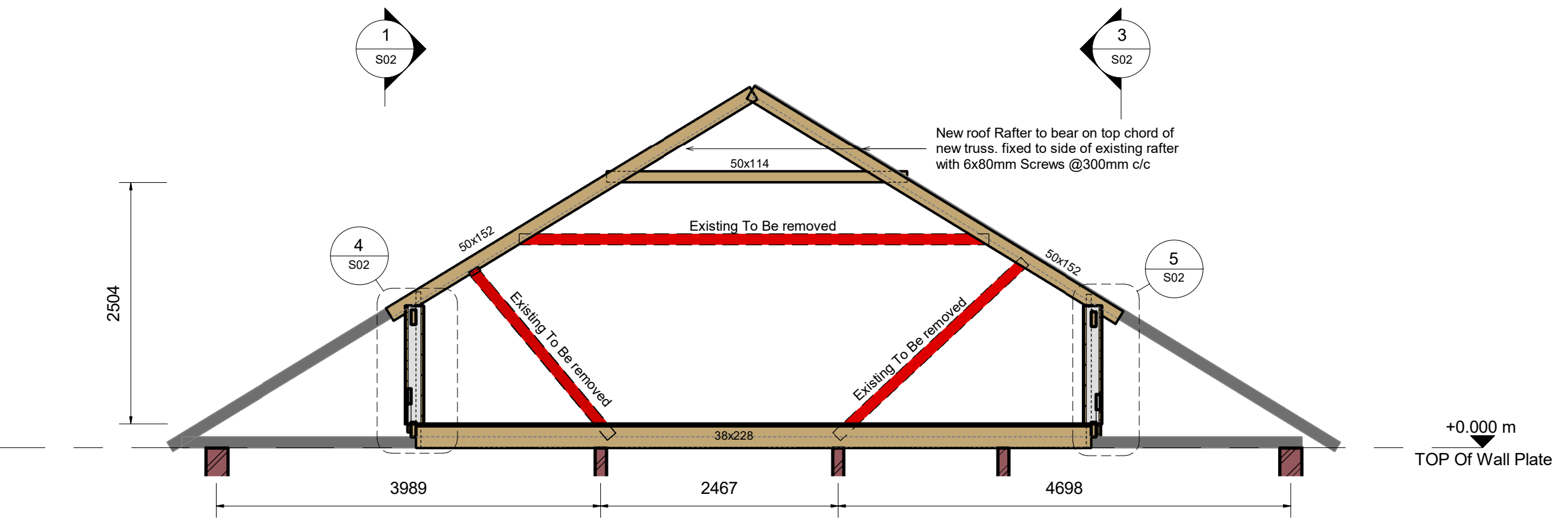


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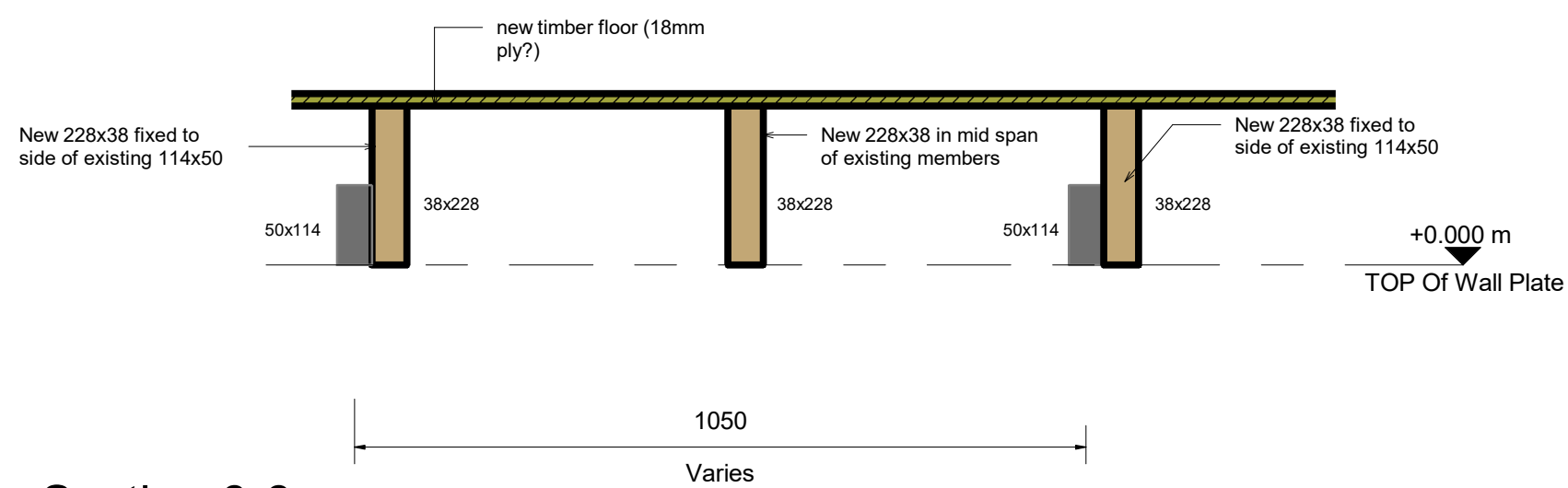
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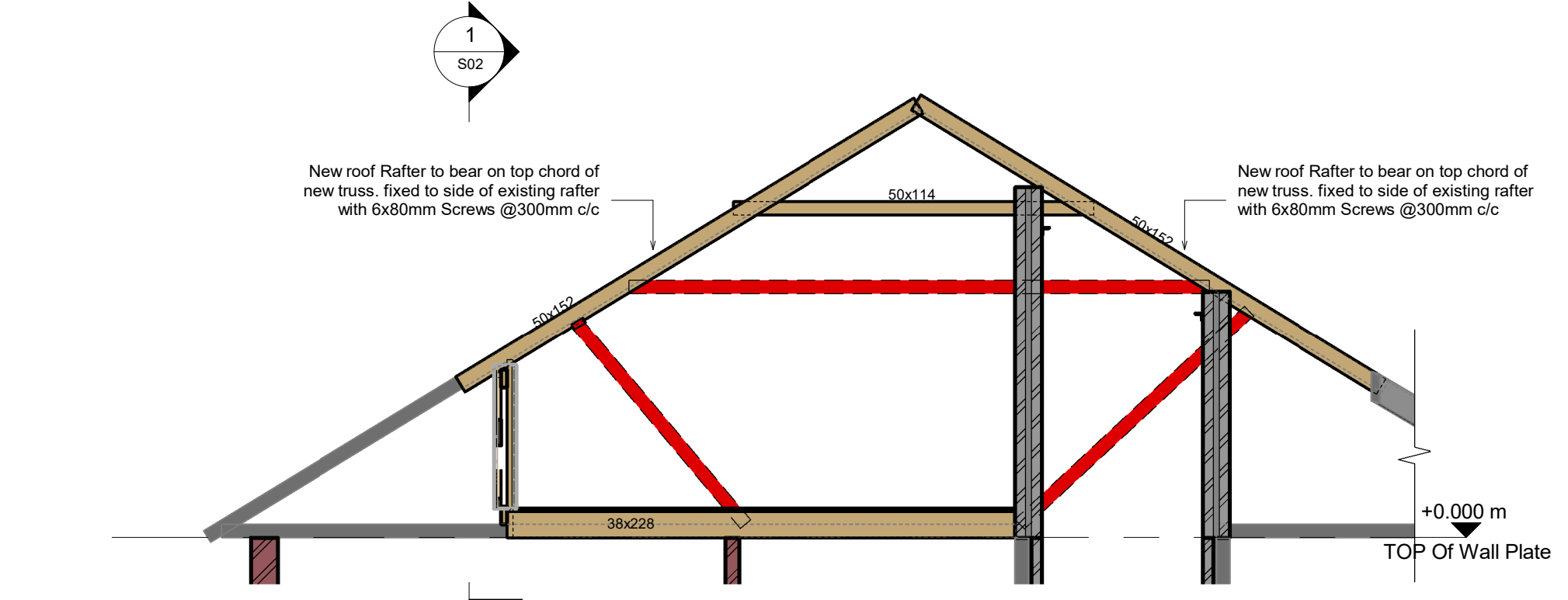
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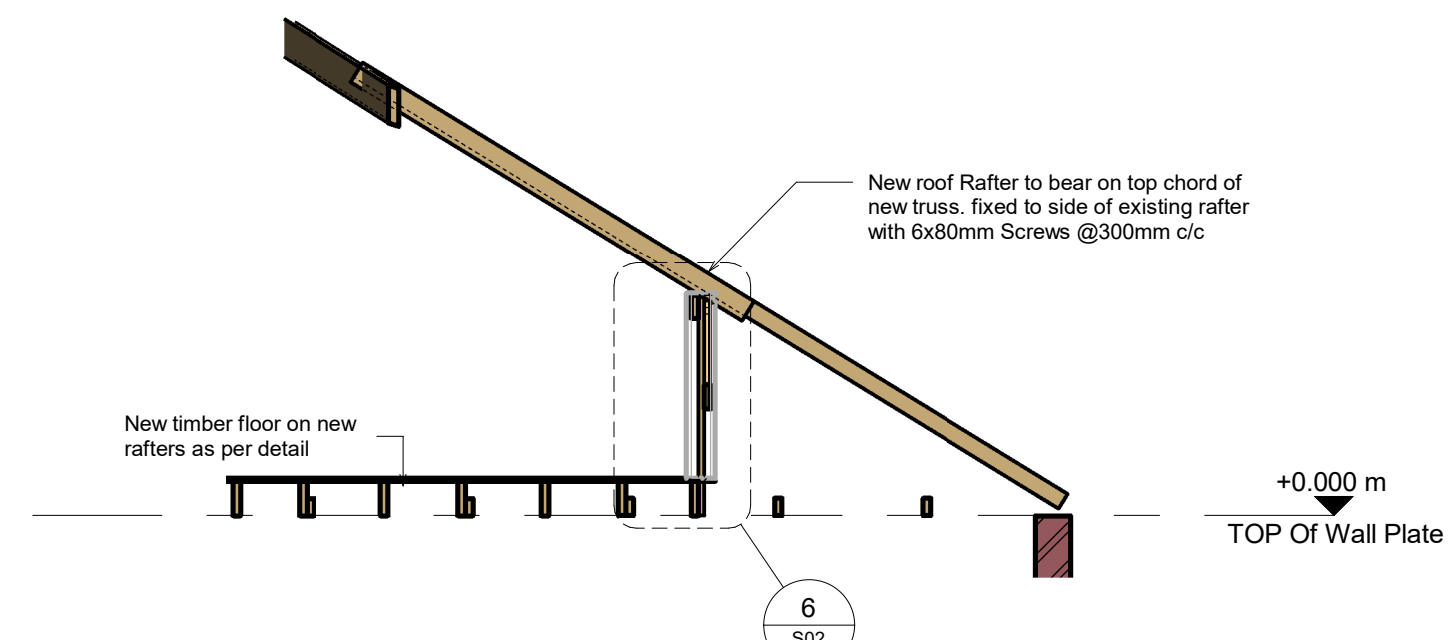
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**Section 4-4**

Scale 1 : 50



**Section 5-5**

Scale 1 : 50

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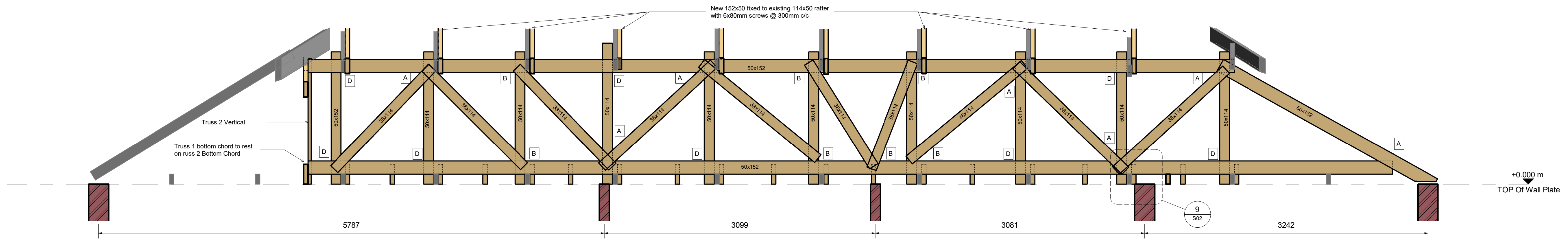
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**INNES ROAD LOFT**

Drawing Title  
**Roof Layouts and Sections**

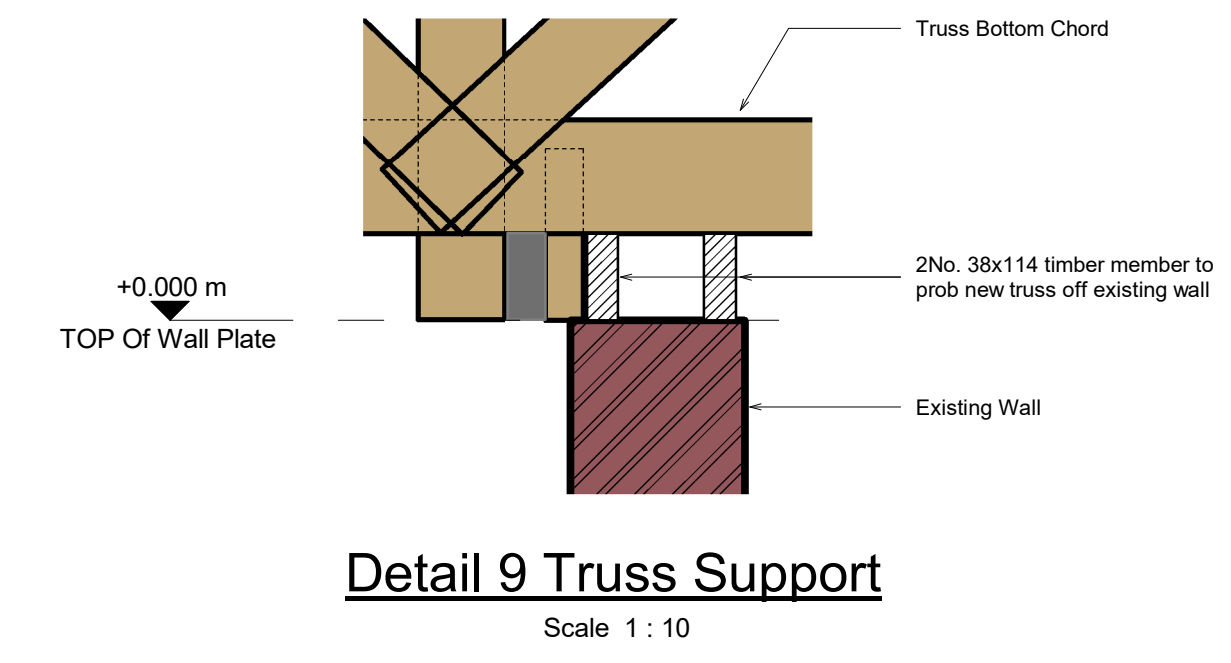


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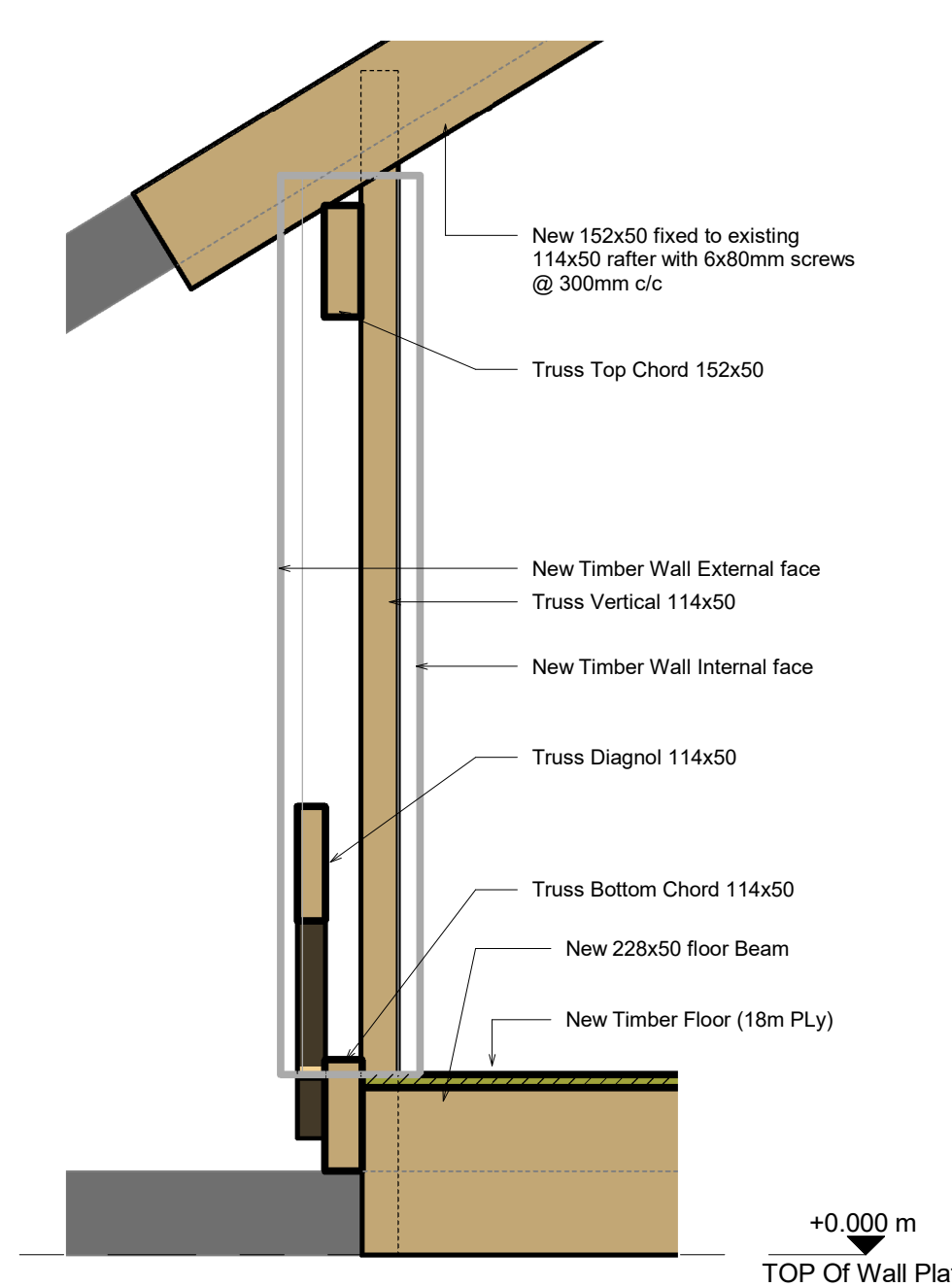
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P2228 -	S01	



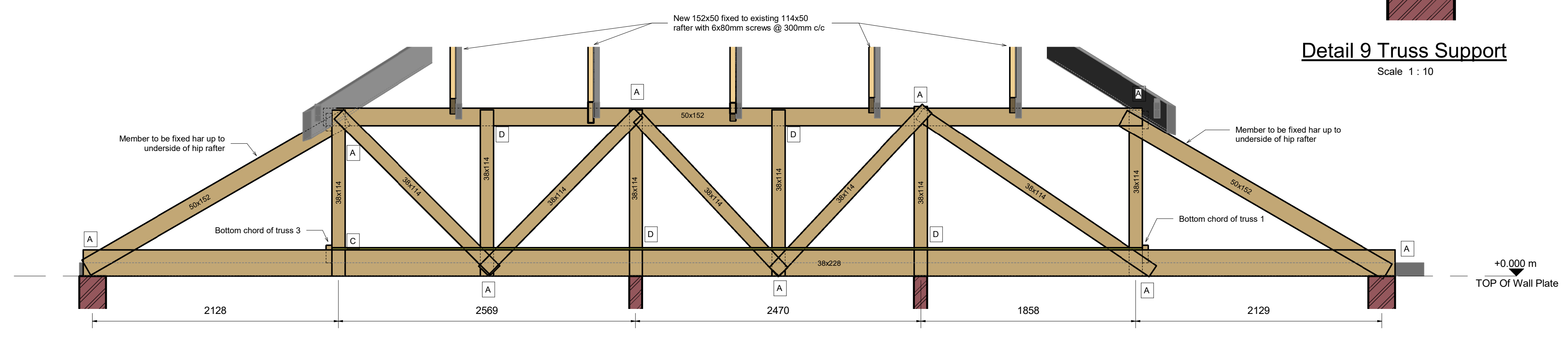
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**Detail 9 Truss Support**  
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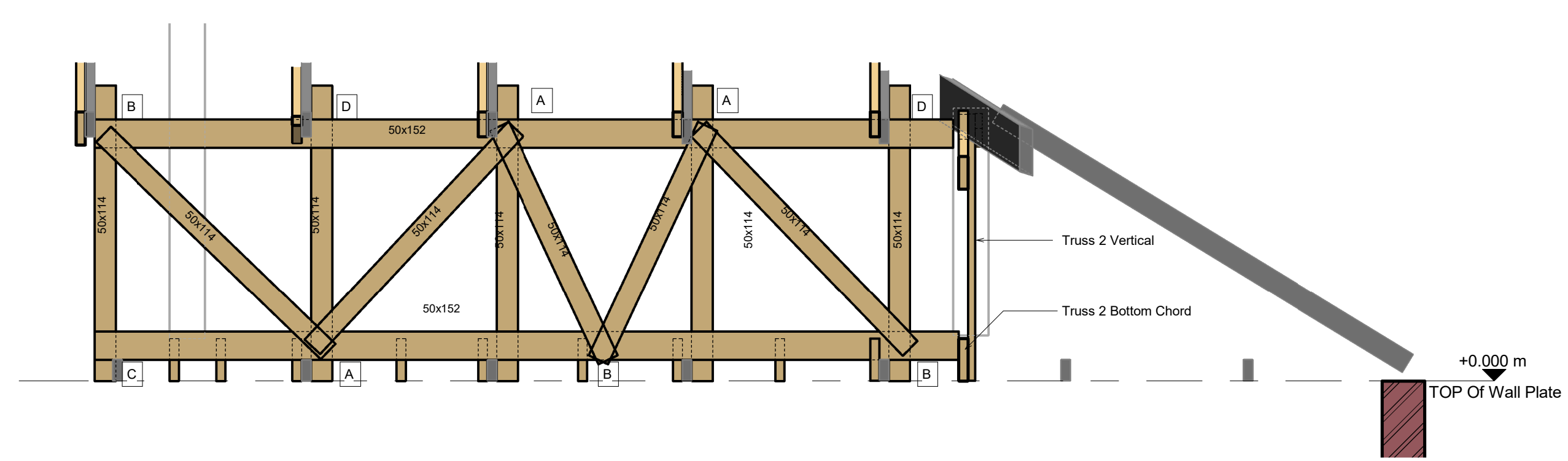
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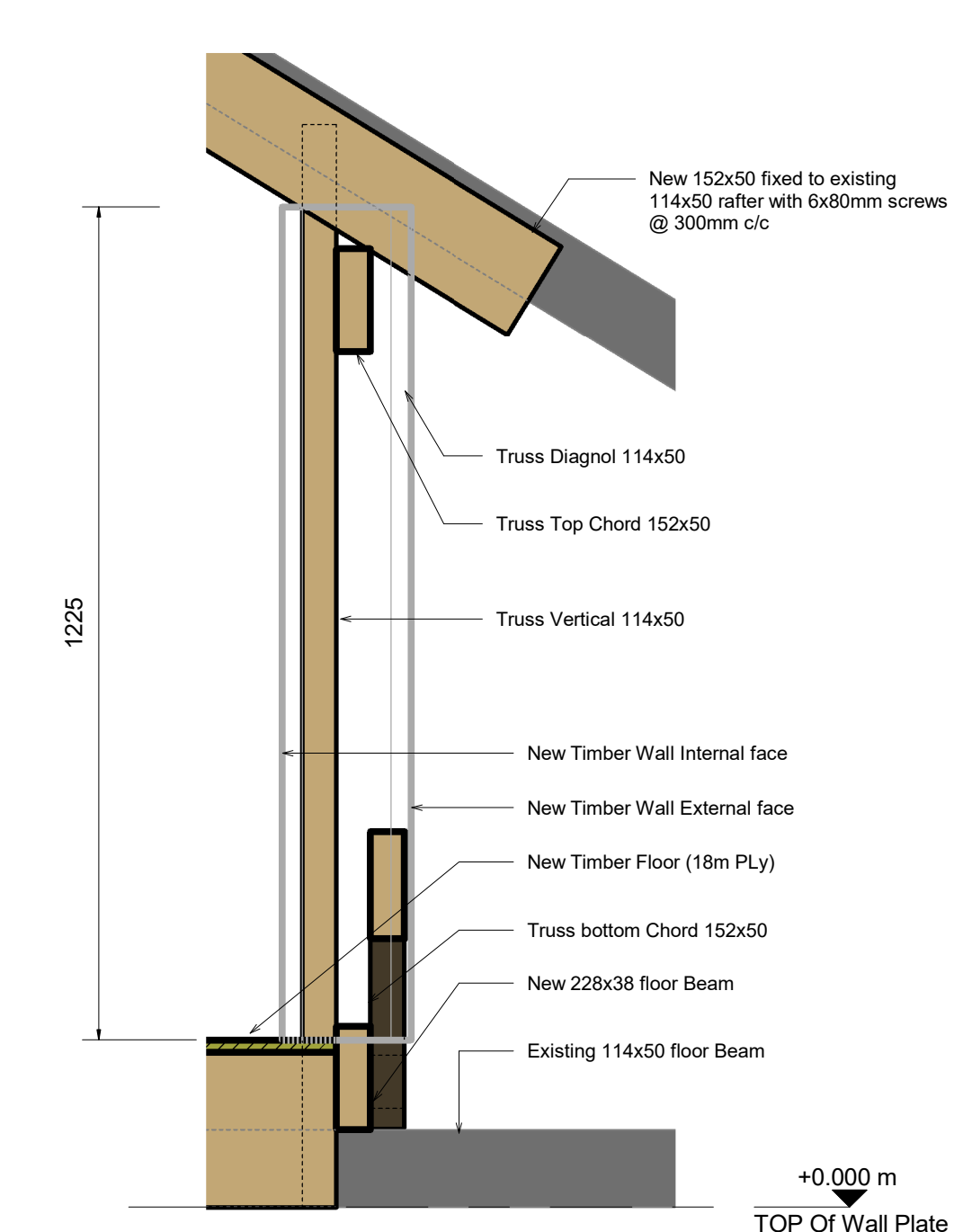
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Connection	Bolt Size	No. Of Bolts
A	M12	6
B	M12	4
C	M12	3
D	M12	2

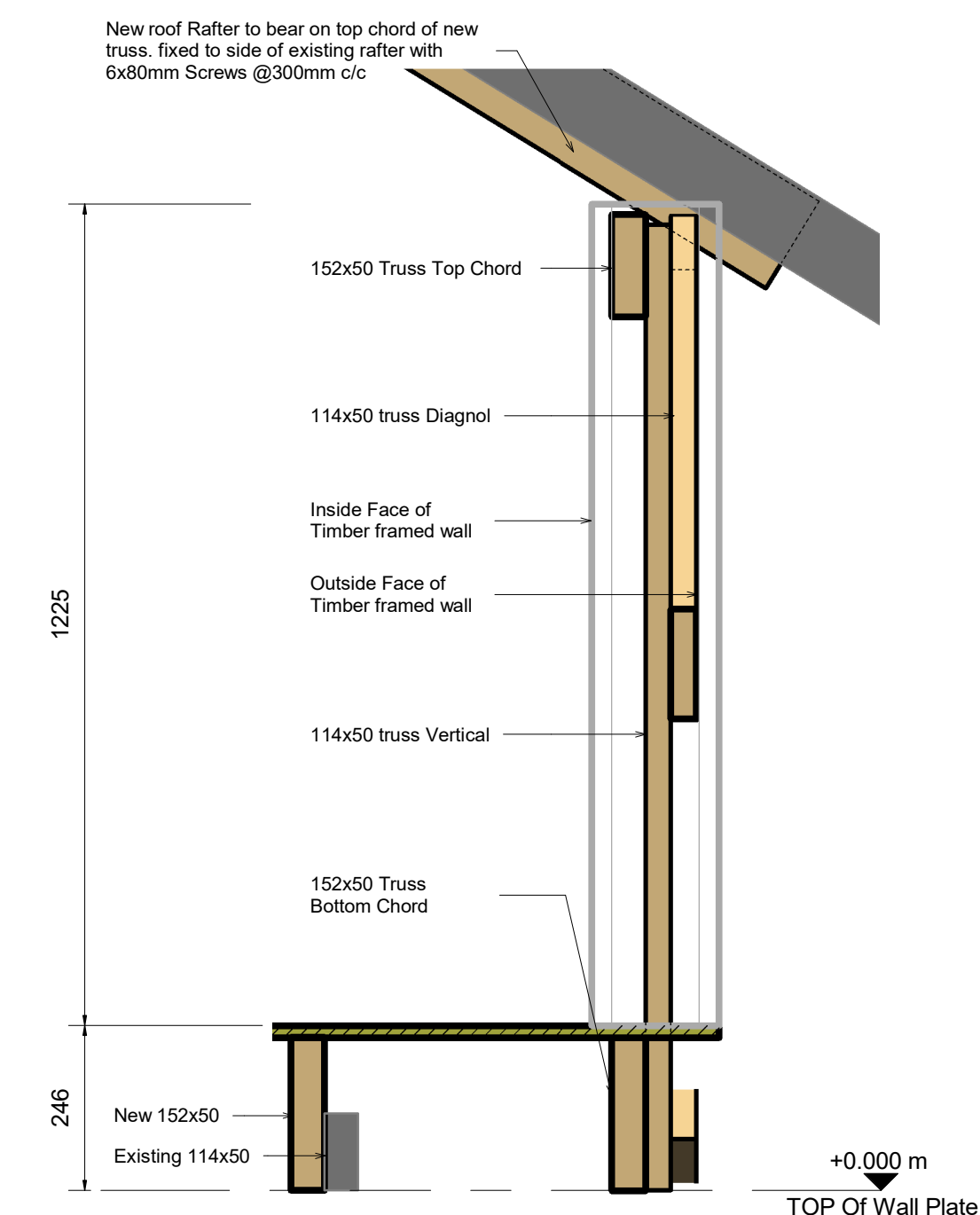
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**Section 3-3**  
**TRUSS 3**  
Scale 1 : 25



**Section 5-5**  
**Truss 3 Detail**  
Scale 1 : 10



**Section 6-6**  
**Truss 2 Detail**  
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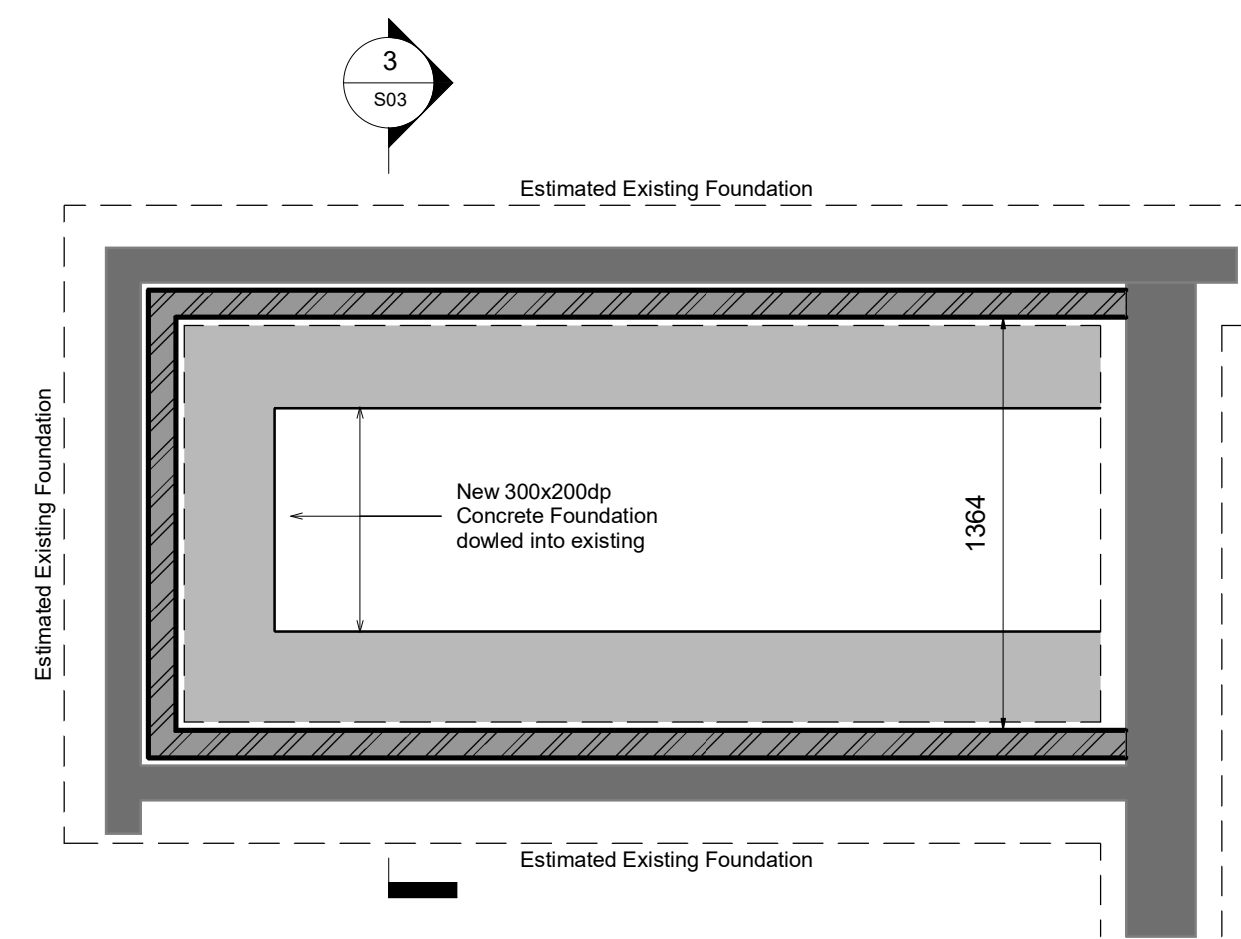
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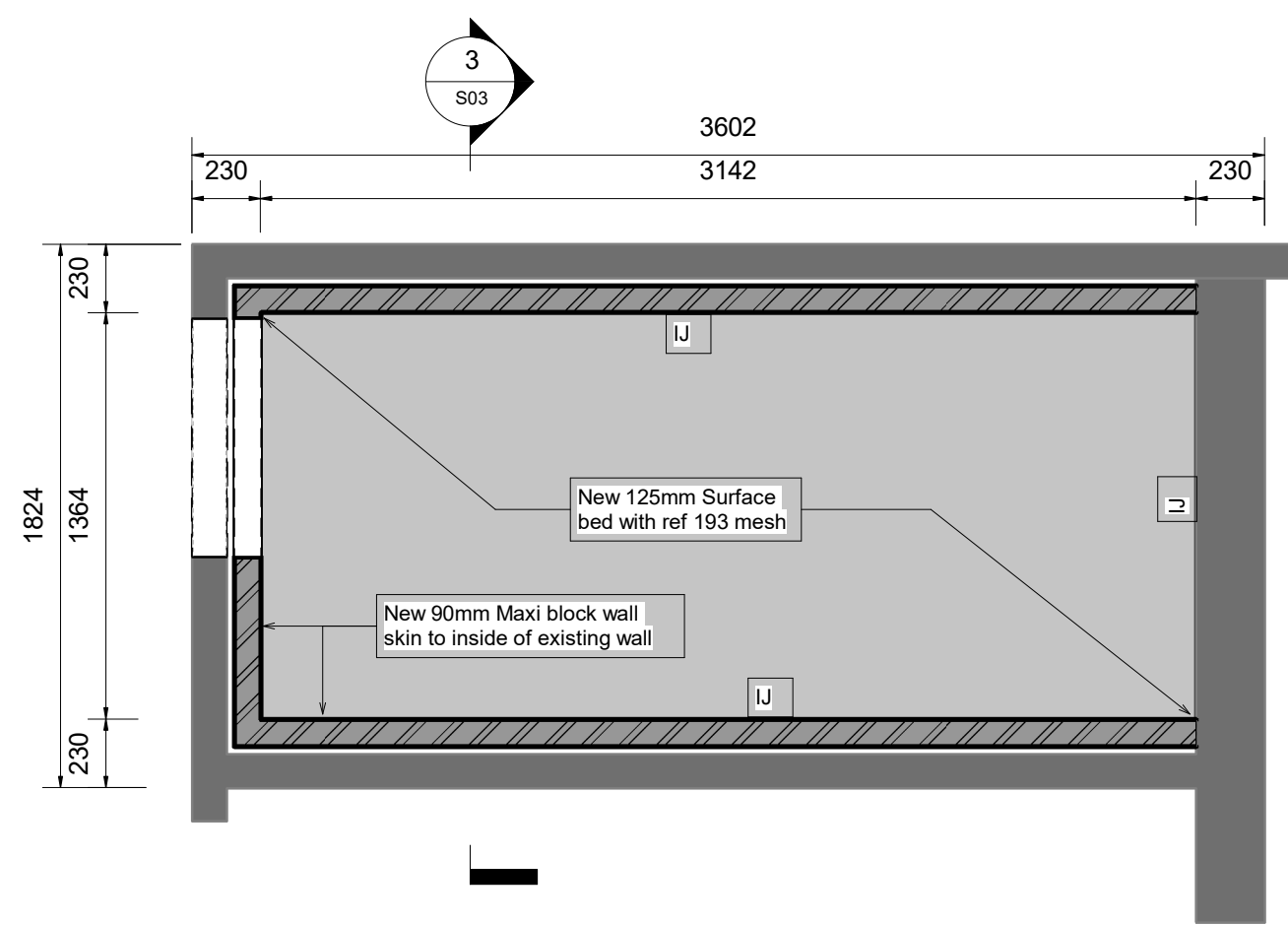
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**INNES ROAD LOFT**

Drawing Title  
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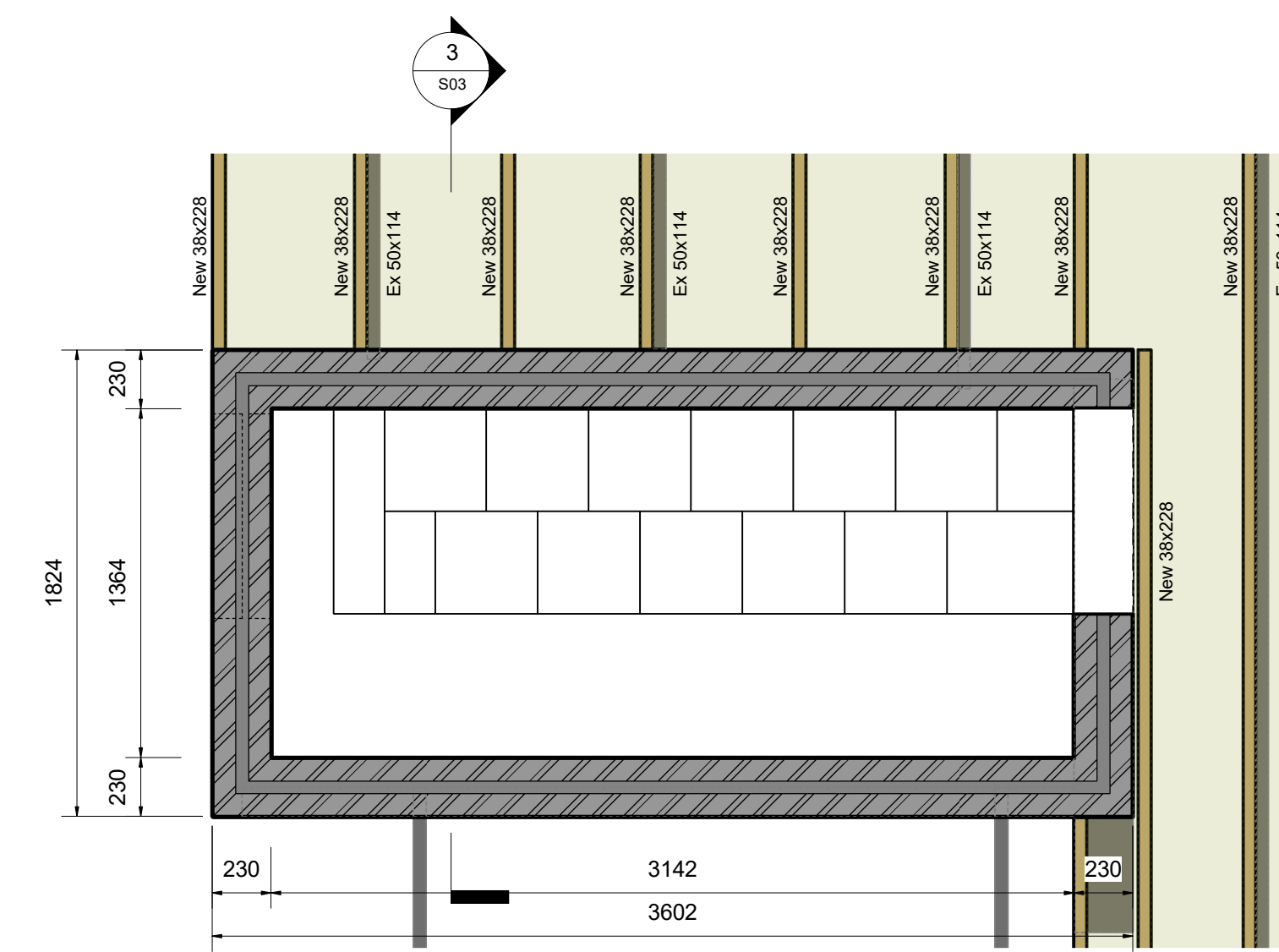
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P2228 -	S02	



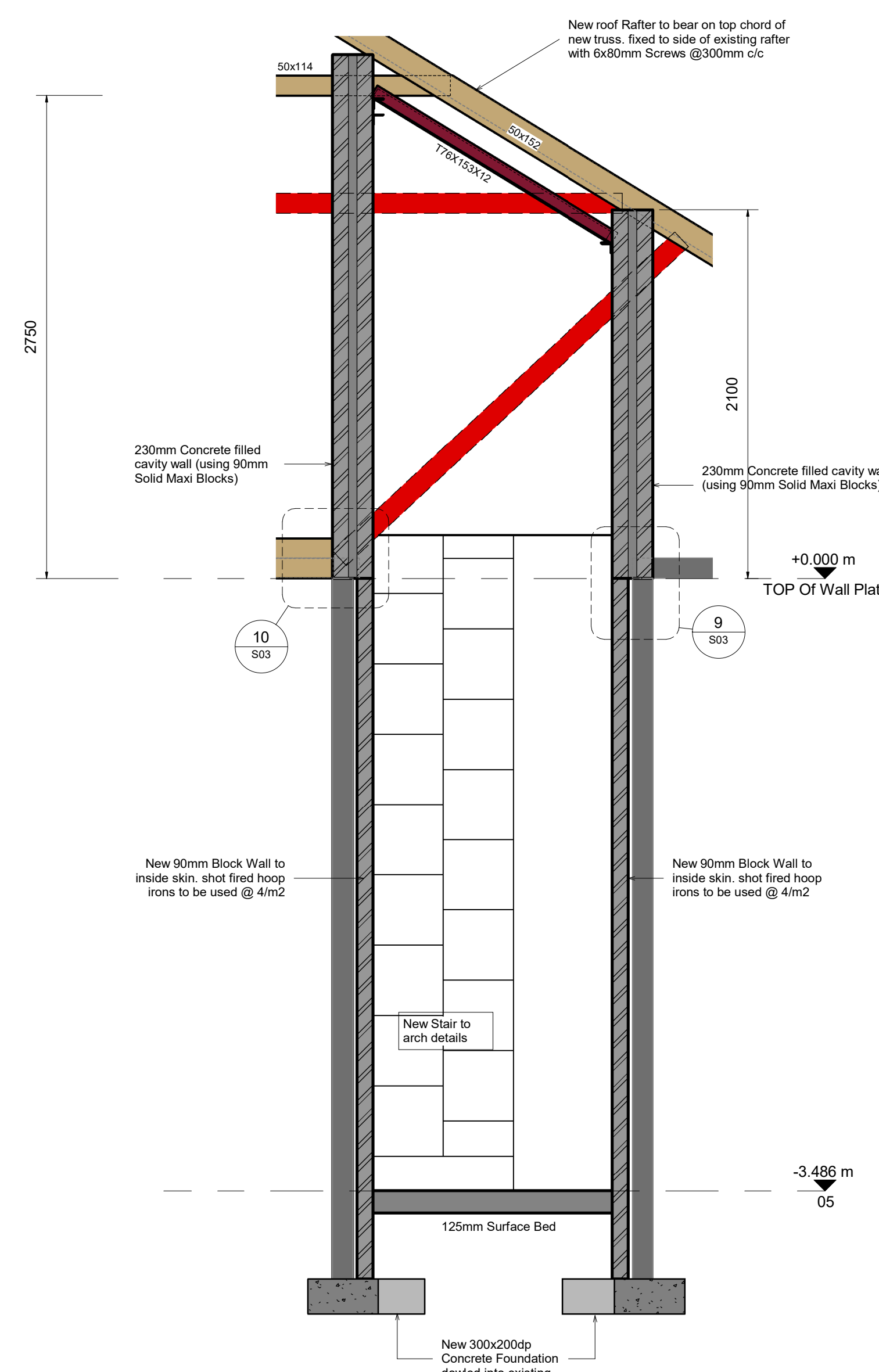
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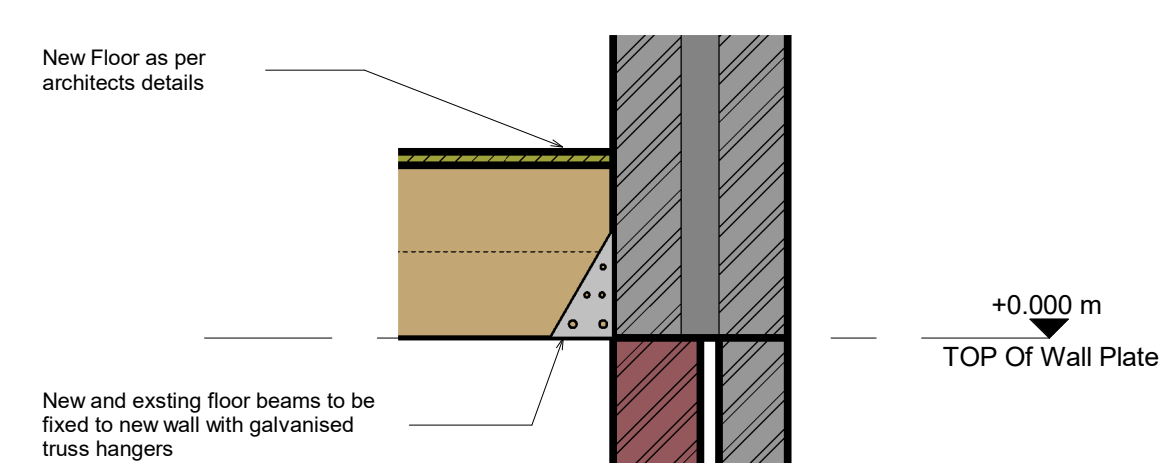
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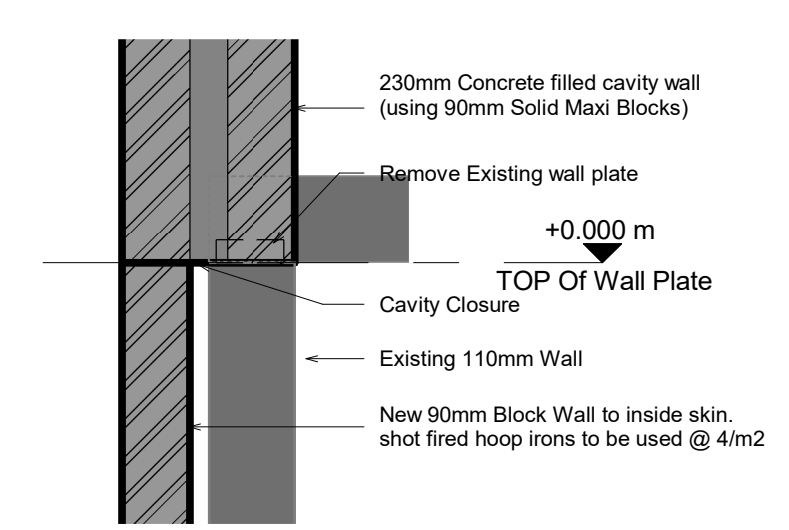
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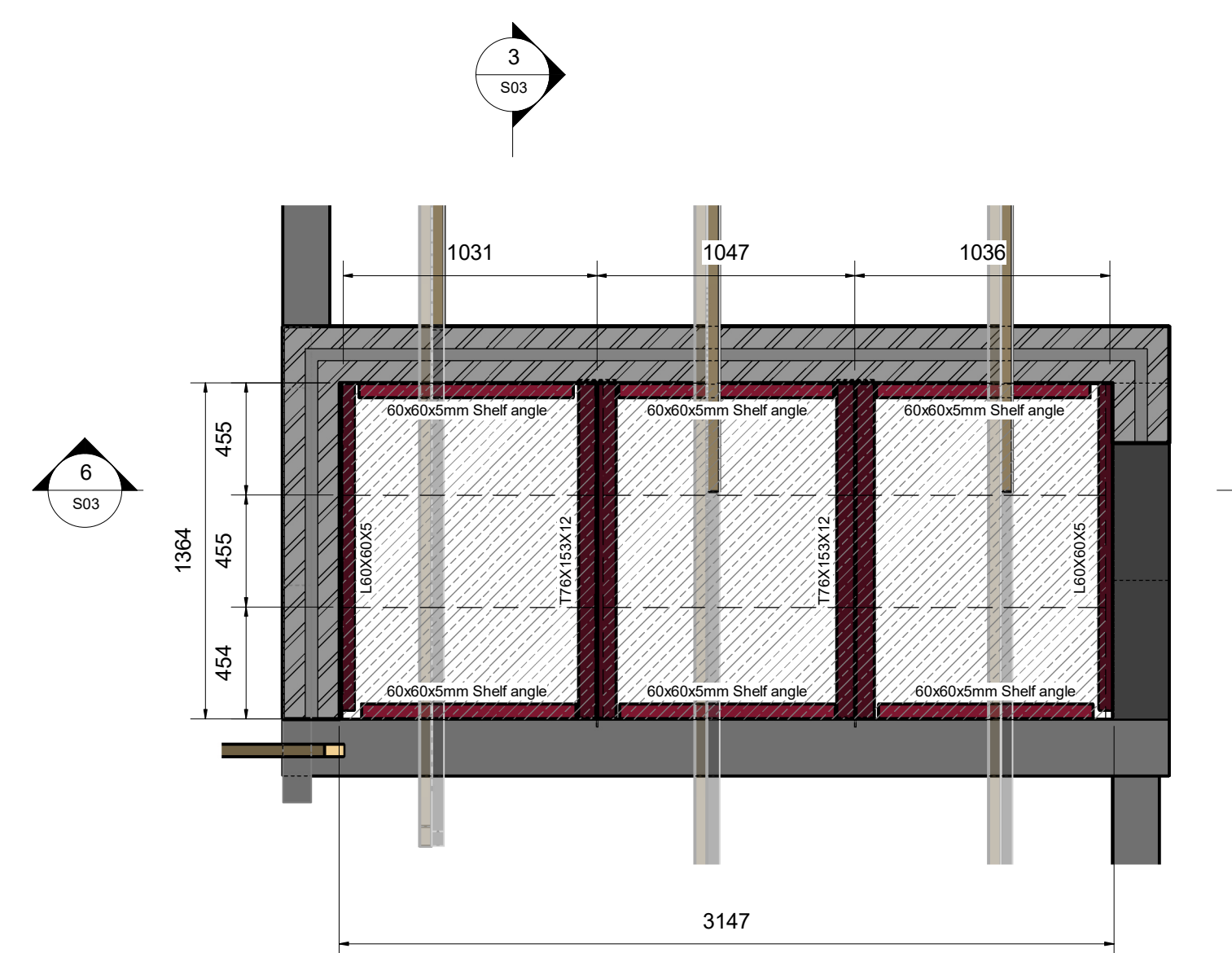
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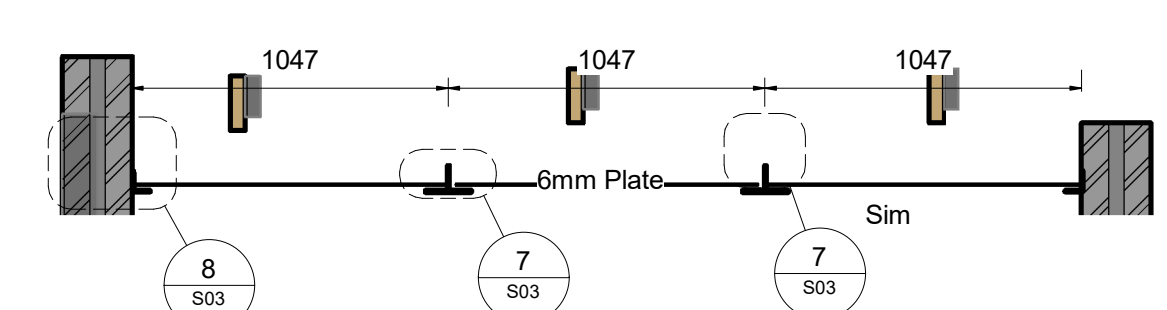
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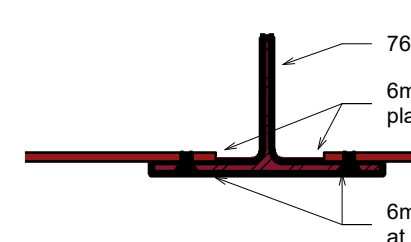
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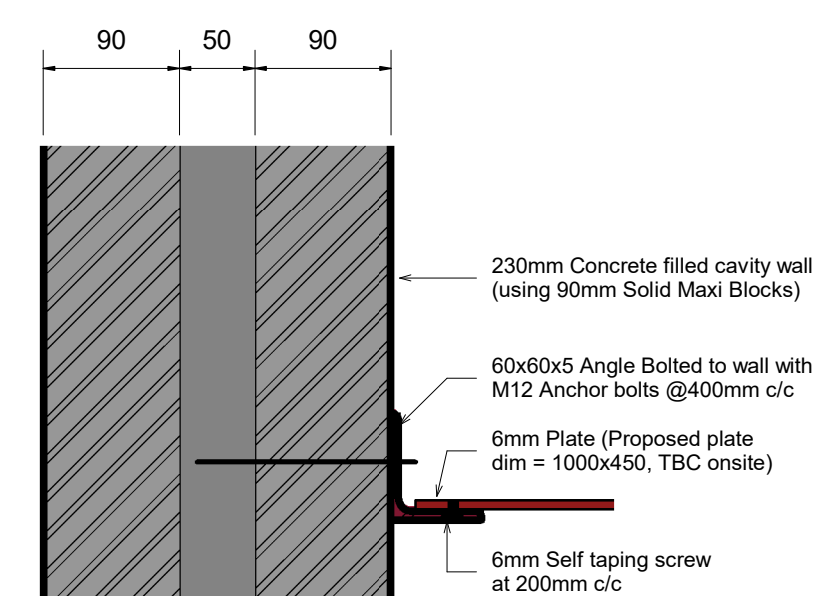
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**Section 6-6**  
Scale 1 : 25



**Detail 7**  
Scale 1 : 5



**Detail 8**  
Scale 1 : 5

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Client  
**258 Florida Road (Pty) Ltd**

Project Title  
**INNES ROAD LOFT**

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Project No.	Dwg No.	Rev.
P2228 -	S03	