Arbor Green Development

2 - 8 Liana Lane, Arbor Green,
Rolleston

Drawing List - Detailed Design		
No.	**Name**	**Rev.**
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A11.01	Site Plan	0
A21.01	Block A - Slab Plan / Plumbing and Drainage	C
A21.02	Block B - Slab Plan / Plumbing and Drainage	D
A21.03	Block C - Slab Plan / Plumbing and Drainage	D
A25.01	Block A - First Floor Framing / Plumbing and Drainage	C
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A31.01	Block A - Ground Floor Plan	C
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A31.03	Block B - Ground Floor Plan	E
A31.04	Block B - First Floor Plan	E
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A36.01	Block A - Reflected Ceiling Plan - Ground Floor	C
A36.02	Block A - Reflected Ceiling Plan - First Floor	C
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A36.06	Block C - Reflected Ceiling Plan - First Floor	D
A38.01	Block A - Roof Plan	C
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A41.01	Block A - Building Sections	C
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A43.01	Block A - Building Elevations	C
A43.02	Block B - Building Elevations	C
A43.03	Block B - Building Elevations	C
A43.04	Block C - Building Elevations	D
A48.01	Construction Details - Sections - Foundation	0
A48.02	Construction Details - Brick Veneer Openings	0
A48.03	Construction Details - JH Stria Openings	0
A48.04	Construction Details - Plan - Brick Veneer & JH Stria	0
A48.05	Construction Details - Section - Roof	0
A48.06	Construction Details - Section - Roof	0
A48.07	Construction Details - Section - Roof	0
A48.07.01	Construction Details - Section - Roof	0
A48.08	Construction Details - Penetrations	0
A48.09	Construction Details - Internal	0
A48.10	Construction Details - Internal	0
A52.01	Typology Floor Plan - Type A & C	B
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A52.03	Typology Reflected Ceiling and Electrical Plan - Type A & C	B
A52.04	Typology Reflected Ceiling and Electrical Plan - Type B	C
A52.05	Typology Reflected Ceiling and Electrical Plan - Type B	C
A52.05	Typology Stair - Type A & C	B
A52.06	Typology Stair and Bedroom - Type B	B
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A58.01	Finishes Schedules	0
A91.01	Block A - Window and Door Schedule	C
A91.02	Block B - Window and Door Schedule	D
A91.03	Block C - Window and Door Schedule	D

Status:
DETAILED DESIGN

Hierarchy Group.

Issue Date: **25/02/2026**

Drawn By: **SB** Checked By: **MP / DR**

Scale: **@ A1** Project No: **H2639**

Sheet Name:
Cover Page

DRAFT - NOT FOR CONSTRUCTION

Sheet No: A00.01 Rev No: 0

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Common Abbreviations

AH	Access Hatch
AP	Access Panel
BOL	Bollard
BH	Bulkhead
BOH	Back of house
B/S	Both Sides
CHS	Circular Hollow Section
CB	Coach Bolt
CS	Coach Screw
C/S	Counter Sunk
COS	Check on site
CJ	Construction Joint
DIA	Diameter
DHS	Dimon Hi-span (Metal purlin)
DIM	Dimension
DPC	Damp Proof Course
DPM	Damp Proof Membrane
DB	Distribution Board
DP	Down Pipe
EJ	Expansion Joint
FHR	Fire Hose Reel
GT	Gulley Trap
HOR	Horizontal
ID	Inside Diameter
IL	Invert Level
IO	Inspection Opening
MAX	Maximum
MIN	Minimum
mm	Millimetre
m	Metre
NB	Nominal Bore
NTS	Not to scale
NZS	New Zealand Standard
O/A	Overall
O/H	Overhead
OD	Outside Diameter
O/F	Overflow
PC	Precast Concrete
PD	Point Drain
PFC	Parallel Flange Channel
R	Radius
RAD	Radiata
RHS	Rectangular Hollow Section
REF	Reference
RC	Reinforced Concrete
RL	Relative Level
RO	Rough Opening
RWH	Rain Water Head
SPEC	Specification
S/S	Stainless Steel
SHS	Square Hollow Section
sq/m	Square Metre
SIM	Similar
TYP	Typical
TV	Terminal Vent
u/s	Underside
UB	Universal Beam
UC	Universal Column
VERT	Vertical

Drawing Conventions

Openings

Door Numbers

DG01

D	Door
G	Ground Level
01	Door number

Window Numbers

W101

W	Window
1	Level 1
01	Window number

Wall Types

WT01 — Wall Type number. Refer to legend on Floor Plan, Partition Plan and Wall Legend on **A03.01 & A03.11**

Floor Types

FL01 — Floor Type number. Refer to legend on Floor Plan and Floor Legend on **A03.01 & A03.11**

Ceiling Types

CL01 — Ceiling Type number. Refer to legend on Reflected Ceiling Plan and Ceiling Legend on **A03.01 & A03.11**

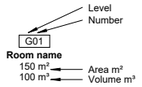
Roof Types

RF01 — Roof Type number. Refer to legend on Roof Plan and Roof Legend on **A03.01 & A03.11**

Finish Types

PT-01 — Finish Type number. Refer to legend on Plans and Elevation and Finishes Legend on **A03.01 & A03.11**

Room Labels



Expression of Levels

Levels as per as 1100.301-1985

Plan Levels - Flat Surface

FFL 10.000 m	Finished Floor Level
SL 10.000 m	Slab Level
CL 10.000 m	Ceiling Level (above floor)

Plan Levels - Spot Level for Falls

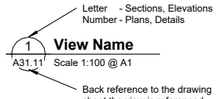
RL 10.000m — Relative Level

Section Levels

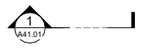
RL 10.000m	Relative Level
FFL 10.000m	
SL 10.000m	Slab Level
CL 10.000m	Ceiling Level (above floor)

Reference Symbols

View Title Reference

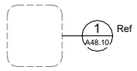


Section Reference



Elevation Reference

Detail Callout



North Symbol

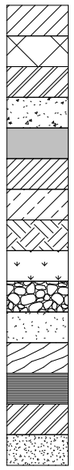
Fire Rating Legend

-60- -30- -90- FRR (60)/60/60

Refer to details & specifications for Detailed Fire Rating Requirements

Representation of Materials

Material Section Hatches



- Ground Fill
- Hardcore
- Brickwork
- Concrete
- Precast Concrete
- Concrete Block
- Cut Stone - Masonry
- Earth
- Grass
- Gravel
- Sand
- Dressed Timber
- Plywood
- Steel
- Plasterboard

Drawing Numbering

Drawing Number Breakdown

Drawing Type

A00.XX	GENERAL
A10.XX	SITE / DEMO
A20.XX	STRUCTURAL SETOUT
A30.XX	PLANS
A40.XX	ENCLOSURE
A50.XX	INTERNAL ARRANGEMENT
A60.XX	INTERIOR FITOUT
A70.XX	SERVICES
A80.XX	EXTERIOR
A90.XX	SCHEDULES

Drawing Sequence

AXX.**01**

For Plans

A31.**00**	Ground Floor GA
A31.**01**	Ground Floor Part Plan 1
A31.**10**	Level 1 GA
A31.**20**	Level 2 GA

All others

A41.**01**	Building Section - Sheet 1

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

SCALE SUMMARY

1000 @ A1	= 2000 @ A3	100 @ A1	= 200 @ A3
500 @ A1	= 1000 @ A3	50 @ A1	= 100 @ A3
250 @ A1	= 500 @ A3	25 @ A1	= 50 @ A3
200 @ A1	= 100 @ A3	10 @ A1	= 20 @ A3
150 @ A1	= 300 @ A3	5 @ A1	= 10 @ A3

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A36.04	Block B - Reflected Ceiling Plan - First Floor	C
A36.05	Block C - Reflected Ceiling Plan - Ground Floor	D
A36.06	Block C - Reflected Ceiling Plan - First Floor	D
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A38.03	Block C - Roof Plan	D
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A41.02	Block B - Building Sections	C

Drawing List - Detailed Design

No.	Name	Rev.
A41.03	Block B - Building Sections	C
A41.04	Block C - Building Sections	D
A43.01	Block A - Building Elevations	C
A43.02	Block B - Building Elevations	C
A43.03	Block B - Building Elevations	C
A43.04	Block C - Building Elevations	D
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A48.07	Construction Details - Section - Roof	0
A48.07.01	Construction Details - Section - Roof	0
A48.08	Construction Details - Penetrations	0
A48.09	Construction Details - Internal	0
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A58.01	Finishes Schedules	0
A91.01	Block A - Window and Door Schedule	C
A91.02	Block B - Window and Door Schedule	D
A91.03	Block C - Window and Door Schedule	D

General Notes

1. All new and altered building / construction works shall comply with the New Zealand Building Code, especially clauses B1 Structure, B2 Durability, E2 External moisture, E3 Internal moisture, as well as NZS3604 for timber framed construction.
2. The handling and disposal of hazardous materials and construction waste shall comply with New Zealand Building Code clause F1, F2, F3 & F5
3. The contractor shall take all necessary measures to ensure the existing elements remaining are protected from damage during construction.
4. Setout dimensions are to centerline of steel stud, and face of timber stud u.n.o. For tenancy walls, setout dimensions are to face of stud or CL gap.
5. Architectural drawings only. Refer to other consultants documents.
6. Contractors are to read all drawings to coordinate fixtures, fittings and dimensions.
7. All shop drawings to be submitted to Designer for review prior to manufacture.
8. All contractors are to check and confirm the exact positions of all existing services on site.
9. Contractor shall verify discrepancies between information on the drawings and conditions on site, Hierarchy Group shall be notified immediately.
10. Contractor shall gain approval from Hierarchy for any substitution or changes proposed in relation to information (be construction method or finishes) on the drawings.
11. All dimensions are in millimeters unless noted otherwise. All dimensions and levels are to be checked on site prior fabrication.
12. Do not scale off drawngs. Use figured dimensions only. Contractor shall verify, check and be responsible for all dimensions on site.
13. If in doubt, ask.

Grid Setout Notes

Typical grid setout to walls is either:

1. To face of SIP Panel
2. To face of Structural Plywood*.
3. To centerline of IT walls.
4. To face of Weatherline for walls featuring step in IT walls.

*refer to wall types for further clarification.

General Door Notes

1. Check all door sizes on site prior to manufacturer.
2. All door dimensions are to leaf only and not rough opening unless noted otherwise
3. All doors 1980 or higher shall have 3 hinges minimum
4. Hinges to be evenly spaced. Unless specifically required as part of proprietary system for door weight
5. All doors shall be undercut subject to floor finishes and bottom seal conditions
6. Erect door units in position, plumb both ways an securly fix frame all round. Take care not to distort.
7. All Glazing shall comply with NZS4223:3:2016
8. All Manifestation shall be installed in accordance with NZS4223:3:2016 (as required)
   a. Any glazed panel that can be mistaken for a doorway or unimpeded path of travel will require a manifestation.
9. All Acoustic doors shall be Pacific Doors AFD300. Substitution will require modification of installation details
10. All Fire Doors shall be either Pacific Doors F0.5 or VP60a where appropriate. Substitution will require modification of installation details
11. All Fire Doors shall comply with NZS4520:2010
12. Refer to Architectural speficiation for full requirements.

General Window Notes

1. All framing shall be aluminium extrusion powdercoated
2. All dimensions are indicative only for pricing purposes
3. All dimensions are to be confirmed on site prior to fabrication or construction
4. All Glazing shall comply with NZS4223:3:2016
5. All Manifestation shall be installed in accordance with NZS4223:3:2016
   a. Any glazed panel that can be mistaken for a doorway or unimpeded path of travel will require a manifestation.
6. Refer to Architectural specification for full requirements.

CB - Colour backed Glass
OP - Opaque Privacy Film Applied

General Fire Protection Notes

1. Refer to Fire Engineer for temporary egress and fire equipment relocation
2. Light fittings in fire rated ceilings shall be either surface mounted or be fire rated recessed light fittings. Refer drawings for specifications.
3. Egress doors shall include keyless hardware in the direction of egress. Any electronic locks shall be fitted with an emergency release system with a battery back-up.
4. All fire stopping of penetrations shall be completed in accordance with the manufacturer's instructions for the materials used. The products used shall maintain the required fire resistance rating of the building element (including both a fire and smoke rating) and comply with AS 4072 and AS 1530.4 and Paragraphs 4.4.2 to 4.4.4 of C/AS6.
5. All fire stopping systems installed shall include labelling of the penetration including the products used and the fire rating achieved by the fire stopping.
6. All light switches, power sockets, etc, in the timber framed or steel framed walls shall include steel flush boxes and intumescent blocks. These shall be provided and installed by the relevant contractor.
7. Any ducts penetrating the fire rated elements shall include fire dampers to maintain the fire resistance rating of the building element and comply with C/AS6 and AS1530.4. This shall be completed by the mechanical trade.
8. The installer shall provide a **PS3** on completion certifying that all penetrations through fire separations have been installed in accordance with the manufacturer's requirements for the situation these are installed.

General Painting Notes

1. All walls generally to be stopped and painted to Level 4 finish.
2. All walls with vinyl graphics applied to be Level 5 finish with Spacecoat sealer applied.
3. Make good and repaint any surfaces affected by demolition.

General Signage Notes

1. All signage to comply with New Zealand Building Code Clause F8 - Signs
2. Refer to Door Schedule for specific signage locations and details
3. Read this drawings in conjunction with the Architectural Specification
4. Centreline of signage to be 1600mm above floor level unless otherwise noted
5. All disabled signage to be in accordance with NZS4121:2001
6. General warning and danger signs to be located in accordance with local authorities and BCA requirements

SLAB LEGEND

R1 — Slab Recess at Slider Doorway
35mm Deep.
Width, refer to details

SANITARY SYSTEMS PROTECTIVE TAPE
All pipes passing through the concrete slabs are to be minimum Ø65 and lagged in protective tape.

NOTES:
1. Waste stubs shall be located within wall framing. Toilet waste stub shall be located offset from wall for S-Trap. Plumber to confirm exact locations on-site.

STRUCTURAL DRAWINGS AND DETAILS
1. Refer to Structural Drawings for details and specifications. Refer to Structural drawings for saw cuts.

Suspended Ceilings

1. To comply with AS/NZS1170. Suspended ceiling bracing design shall be undertaken by the ceiling [sub] contractor who shall provide **PS1** *Design*, **PS3** *Construction* and **PS4** *Construction Review* statements to the main contractor
2. Allowance is to be made for integration with the ceiling services.
3. Refer to Architectural Specification

General Plumbing & Drainage Notes

1. Stormwater drainage system shall be installed in accordance with NZBC E1/AS1
2. Sanitary sewer system shall be installed in accordance ith NZBC G13/AS3 (AS/NZS3500.2)
3. All drains set in slab to be Ø65mm min.
4. Minimum grade of drains

Nom. Size DN	Min. grade %	Ratio
40	2.50	1:40
50	2.50	1:40
65	2.50	1:40
80	1.65	1:60
100	1.65	1:60

Roof Notes

1. All pipe penetrations shall be flashed in accordance with NZBC E2 & Roofing profile technical details.
2. All Mechanical penetrations shall be installed in accordance with NZBC E2 & Roofing profile technical details.
3. All exposed downpipes shall be powdercoated aluminium - to match window joinery.
4. For all downpipe and drainage sizes and reticulation below ground level, refer to Civil Engineers Drawings.
5. Stormwater Design has been assessed under E1 assuming 1–mm/hr rainfall. Rainfall intensity for region expected to be 20-30mm/hr

Stormwater Design

Max roof area per downpipe	=	70m²
Downpipe size	=	80mm Ø
Gutter Profile	=	125 Quad
Gutter depth	=	75mm min.
Gutter slope	=	1:100 internal 1:500 eaves
Gutter width	=	122mm
Gutter Cross Section	=	5670mm²

DOMESTIC SMOKE ALARMS

All smoke alarms are to comply with C/AS1 and F7/AS1

C.2.1 Type 1 – Domestic smoke alarm system
C.2.1.1
A Type 1 is a smoke alarm or multiple interconnected smoke alarm devices, each containing a smoke detector and an alarm sounding feature. The system shall comply with NZS 4514. Smoke alarms shall be installed in every household unit or suite of risk group SH, and risk group SM where a Type 5 is not required by this Acceptable Solution. Connection to a remote receiving centre is not required.

Smoke alarms shall be provided with a 'hush button' to temporarily silence audible alarm signals in the event of nuisance activiation.

Location of smoke alarms:
- General
  - All bedrooms, living spaces, hallways, landings, sleepouts
  - Where a kitchen is separated from the living spaces and hallways by doors that can be closed, an alarm specifed by its manufacturer as suitable for a kitchen shall be located in the kitchen e.g. heat alarm or kitchen rated smoke alarm
  - In a multi-level household unit. there shall be at least one smoke alarm on each level
  - Where more than one smoke alarm is needed, these smoke alarms shall be interconnected (wired or wireless) so that when one activates, all smoke alarm devices in the household unit will sound.
- Spacing
  - The distance from any wall to a smoke alarm shall not exceed 5m; and
  - Smoke alarms shall be within 10m of each other in any direction.
- Ceilings
  - Alarms should ideally be installed on the ceiling, at least 200 mm from a wall or a ceiling beam to avoid dead air space. With sloping ceilings the alarm should be 200–500 mm from the apex.
- Exposed framing members
  - Where there are exposed framing members on the ceiling such as a beam, rafter, purlin, or joist, the requirements in NZS 4514 Table 1 shall be applied.

SMOKE ALARM LEGEND

All smoke alarms shall be interconnected either wired or wireless

SM — Smoke Alarm

HE — Heat Alarm OR;
Kitchen Rated Smoke Alarm

General Electical Notes

1. All electrical work shall conform to the N.Z. Building Code, esp clauses G8 Artificial lighting & G9 Electricity, as well as the NZ electrical and wiring regulations/rules NZS3000:2007.
2. All luminaries shall comply with NZS 60598.2.1:2014.
3. Allow to supply and install 'CA abutted' or 'IC/IC-F abutted and covered' rated recessed light fittings only.
4. All electrical sockets shall be mounted within the recommended heights dictated by NZS3000:2007;
5. At least 500mm in from any corner and Generally 300mm above floor or 225mm above bench top; and 1200mm from the floor washer/dryer and refrigerator, unless otherwise stated.
6. All power outlets in external and wet areas shall be RCD protected.
7. Any power outlets shall be have a minimal clearance of 1.0m radius from gas ignition source.
8. Allow to work with client onsite to finalise layout of power and controls.

Services Legend

- GT — Gully Trap
- ORG — Overflow Relief Gully Trap
- IP — Inspection Point
- RP — Rodding Point
- SS — Sanitary Sewer Stack
- TV — Terminal Vent
- MV — Main Drain Vent
- FWG — Floor Waste Gully
- TD — Tun dish
- Ø65 — Stub Size

- Existing Sanitary Sewer pipe
- New Sanitary Sewer pipe
- Existing Stormwater Pipe
- New Stormwater Pipe
- Existing Water Main Pipe
- New Water Main Pipe
- Existing Cold Water Supply
- New Cold Water Supply
- Existing Tempered Water Supply
- New Tempered Water Supply
- Hose Tap with permanently attached hose connection vacuum breaker

Floor Finishes

- Selected Carpet on Underlay
- Selected Vinyl Plank Flooring on underlay
- Selected Tile Flooring on adhesive

Notes

All internal dimensions are taken to framing line.

GIB Aqualine® Plasterboard to be used in all wet areas (Bathrooms, WC, Laundry and Kitchen). Where wet areas abutt a double layer system, the top layer shall be GIB Aqualine®.

Painted timber 90 x 10mm Single Bevelled edge skirting boards to all rooms and cupboards unless noted otherwise.

Painted timber 60 x 10mm Single Bevelled edge Architrave to all interior doors unless noted otherwise.

All dimensions are nominal and are to be checked on site before commencing work.

Unless noted otherwise all timbers H1.2 SG8 to NZ3604:2011 and NZS3602:2003.

Impervious splashbacks to be provided to bathroom sink, kitchen sink in accordance with NZBC E3/AS1.

All work to comply with the Relevant Sections of the New Zealand Building Code, Local Authority By-laws & regulations, Drainage & Plumbing Regulations, Electrical Wiring Regulations and all current amendments of the above document.

Truss Design Notes:

Refer to truss manufacturers plans and details for layout and fixing of trusses as required

Wall Finishes

- Standard Plasterboard stopped to level 4 and painted.
- Standard Plasterboard stopped to level 4 and painted, to one side. Moisture Resistant Plasterboard stopped to level 4 and painted to Wet Area.
- Standard Plasterboard stopped to level 4 and painted, to one side. Moisture Resistant Plasterboard stopped to level 4 and painted to Wet Area. Install Selected Wall Tiles on adhesive and waterproof membrane.
- Moisture Resistant Plasterboard stopped to level 4 and painted to both sides.
- **GBTLAB 60d** Inter-tenancy Wall Install as per GIB Intertenancy Barrier Systems Manual. Substitute plasterboard with approved moisture resistant plasterboard to Wet Areas.

Joinery Scope Notes

1. Joinery planes, sections, elevations and 3D views illustrate INTENT ONLY and are suitable for co-ordination purposes
2. Refer to Joiners documentation for further information, clarifications and pricing.
3. Refer to Joiners documentation for ALL materials, finishes and selections relating to Kitchen, Laundry, Wardrobes and Stores.
4. Joiner to provide shop drawings for Hierarchy Group / client approval prior to manufacture.
5. Joiner to confirm suitable joinery substrates and finishes during the co-ordination and tender phase.
6. Joiner to allow for colour options as requested to suit owner preferred unit colour palette.
7. Joiner to check all waste points and valve locations on site to ensure sufficient space has been allowed for.
8. All dimensions shall be checked on site prior to shop drawings being produced. Joiner to notify Hierarchy Group / Client as soon as any discrepancies occur on site.
9. Setout dimensions are to face of wall linings / substrates and centerlines of fixtures (where applicable) u.n.o.

Hierarchy Group.

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ORIGINAL DRAWING IN COLOUR

Client:

NORTH

Project: **Arbor Green Development**
Address: **2 - 8 Liana Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **DETAILED DESIGN**
Issue Date: **25/02/2026**
Drawn By: **SB** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Drawing List, Drawing Conventions & General Notes**
Sheet No: **A01.01** Rev No: **0**

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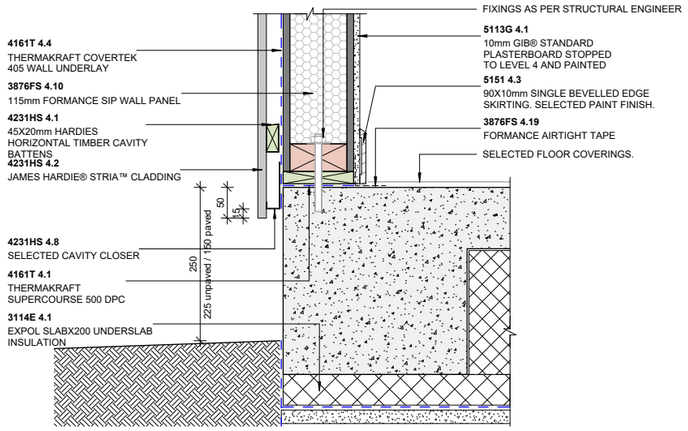
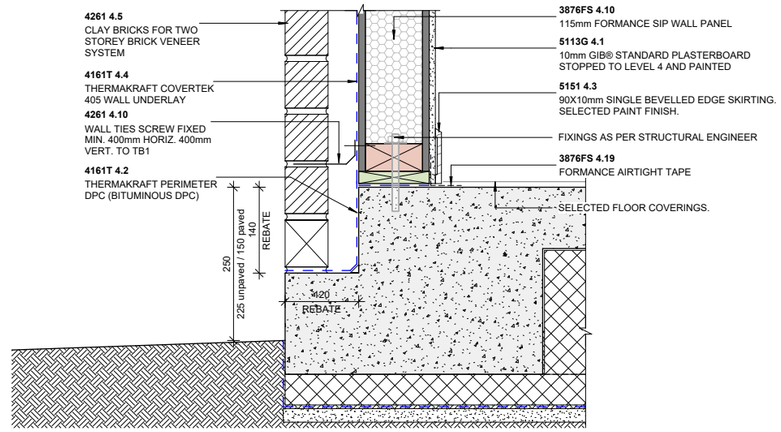
ARBOR GREEN BOULEVARD

| | | |

General Notes

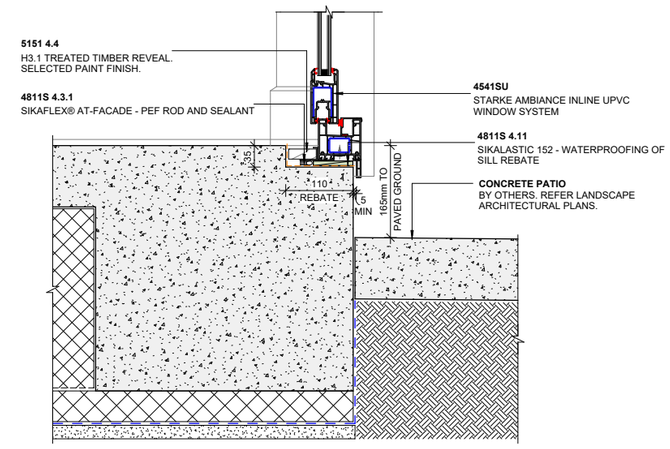
1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule





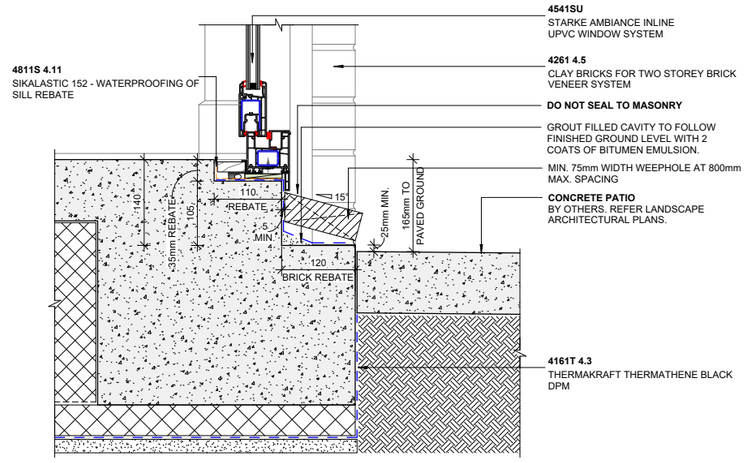
1 - Foundation - JH Stria Typical

Scale 1 : 5 @ A1



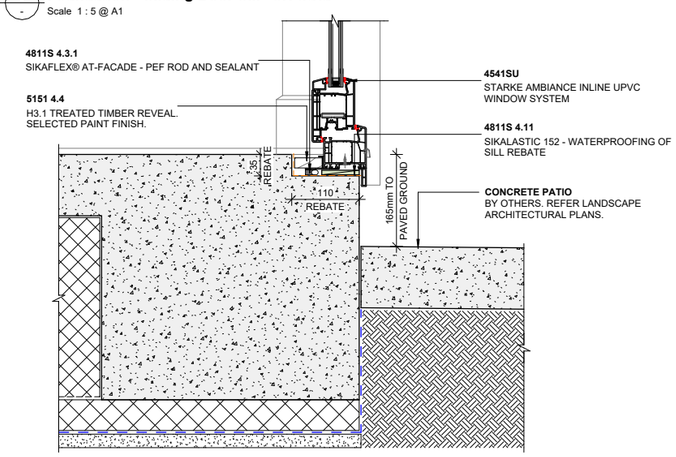
2 - Foundation - Brick Typical

Scale 1 : 5 @ A1



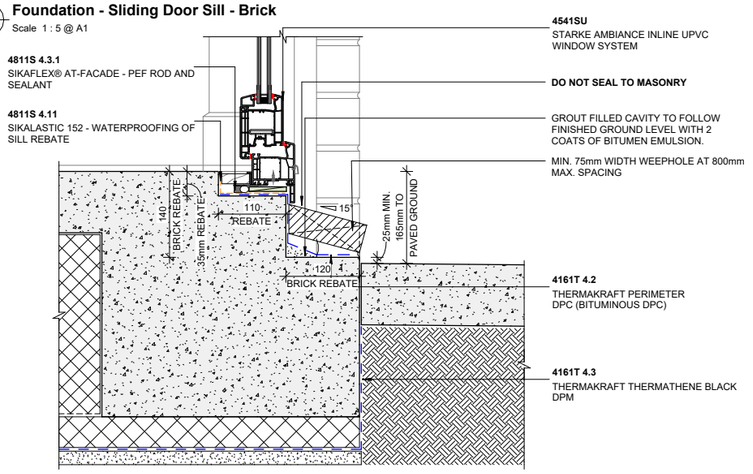
3 - Foundation - Sliding Door Sill - JH Stria

Scale 1 : 5 @ A1



4 - Foundation - Sliding Door Sill - Brick

Scale 1 : 5 @ A1



5 - Foundation - Hinged Door Sill - JH Stria

Scale 1 : 5 @ A1

6 - Foundation - Hinged Door Sill - Brick

Scale 1 : 5 @ A1

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ORIGINAL DRAWING IN COLOUR

Client:

Project: Arbor Green Development
Address: 2 - 8 Liana Lane, Arbor Green, Rolleston
No: H2639

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: DETAILED DESIGN
Issue Date: 25/02/2026
Drawn By: SB / FM
Checked By: MP / DR
Scale: 1 : 5 @ A1

Sheet Name: Construction Details - Sections - Foundation
Sheet No: A48.01
Rev No: 0

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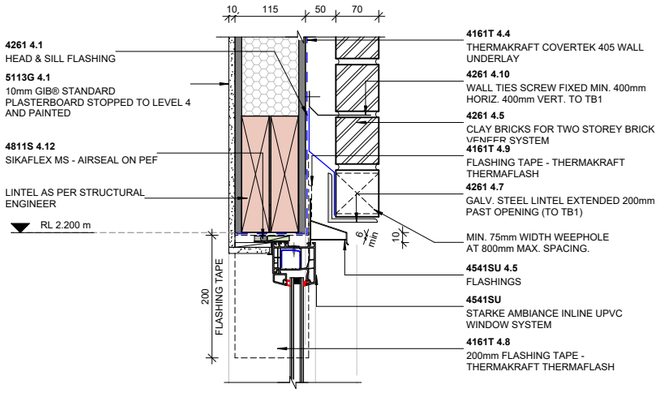
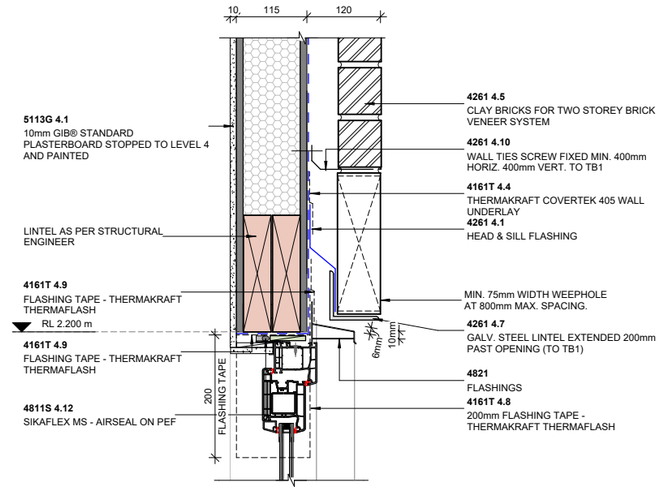
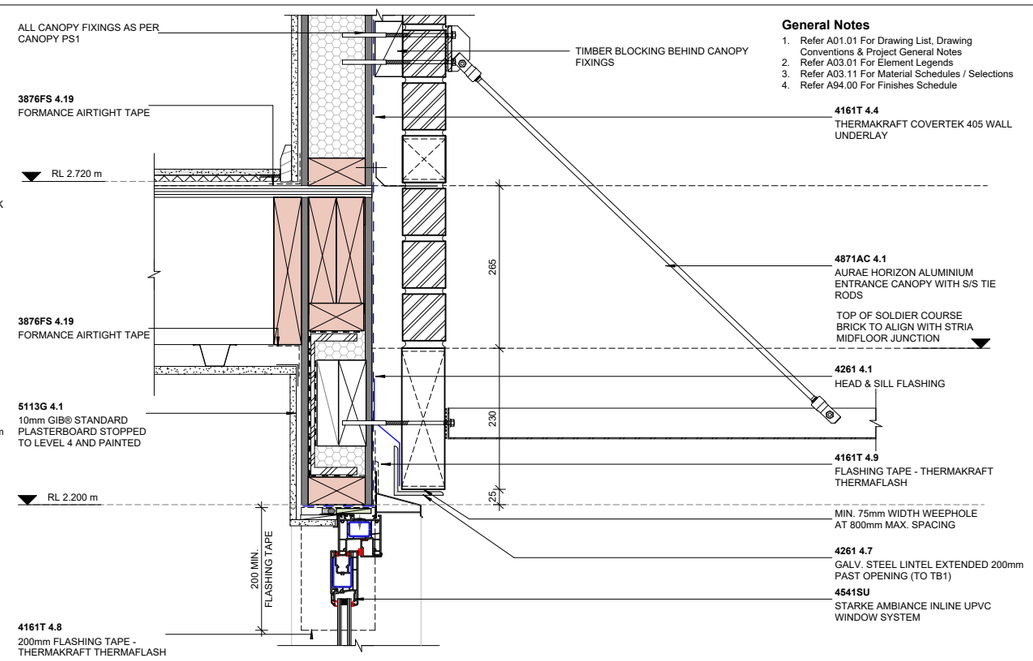


1 **Brick Veneer - Window Head**
Scale 1 : 5 @ A1



4 **Brick Veneer - Hinged Door Head**
Scale 1 : 5 @ A1



General Notes

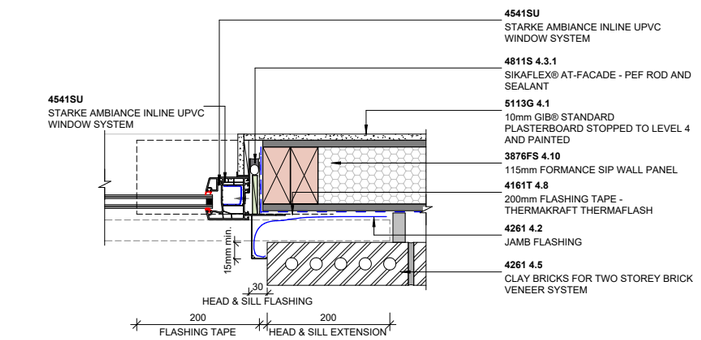
1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

6 **Brick Veneer - Sliding Door Head**
Scale 1 : 5 @ A1

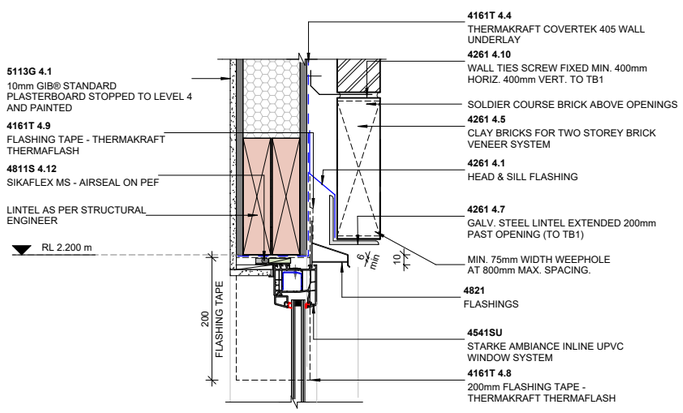
2 **Brick Veneer - Window Sill**
Scale 1 : 5 @ A1

5 **Brick Veneer - Hinged Door Jamb**
Scale 1 : 5 @ A1

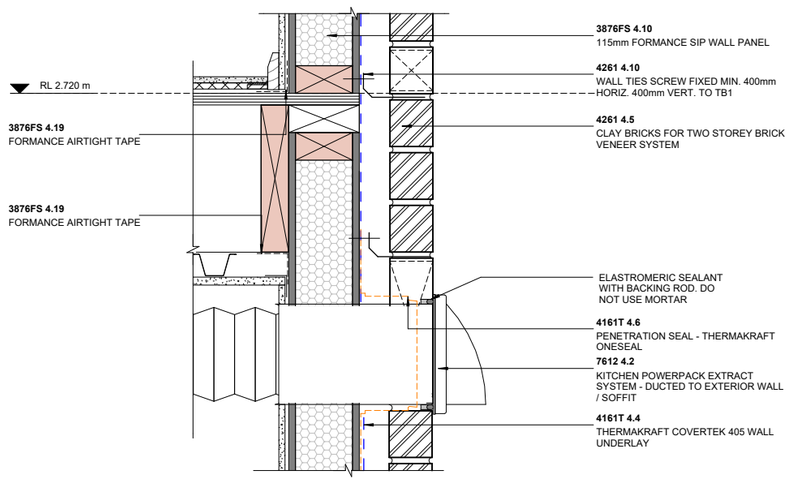
7 **Brick Veneer - Sliding Door Jamb**
Scale 1 : 5 @ A1



3 **Brick Veneer - Window Jamb**
Scale 1 : 5 @ A1



9 **Brick Veneer - Window Head with Soldier Course**
Scale 1 : 5 @ A1



8 **Brick Veneer - Midfloor Brick Shelf**
Scale 1 : 5 @ A1

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ORIGINAL DRAWING IN COLOUR

Client:

Project: **Arbor Green Development** No: **H2639**
Address: **2 - 8 Liana Lane, Arbor Green, Rolleston**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **DETAILED DESIGN**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **1 : 5 @ A1**

Sheet Name: **Construction Details - Brick Veneer Openings**
Sheet No: **A48.02** Rev No: **0**

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General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
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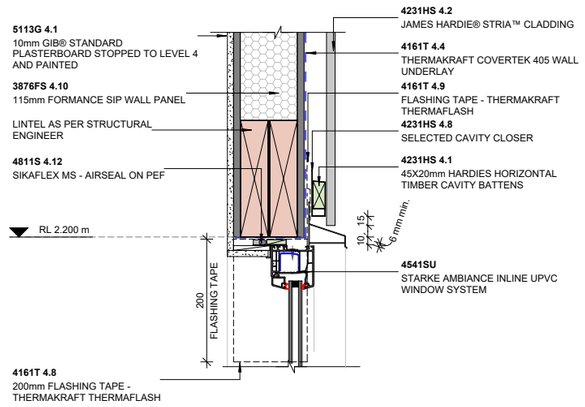
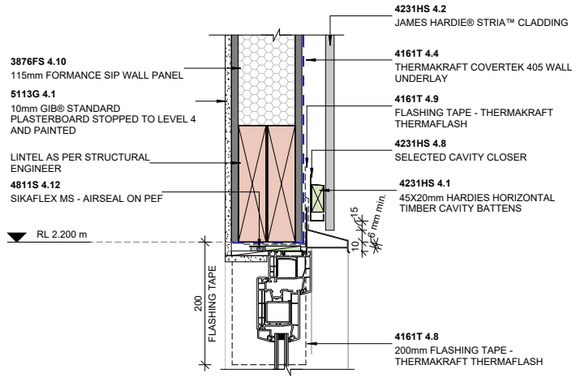
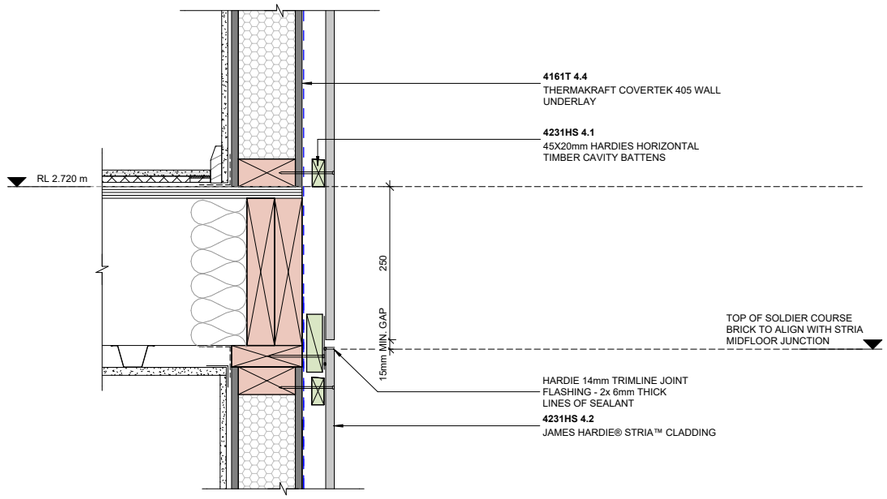


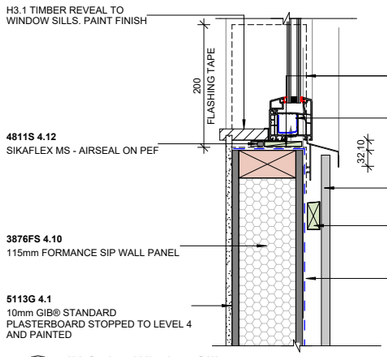
1 **JH Stria - Window Head**
Scale 1 : 5 @ A1



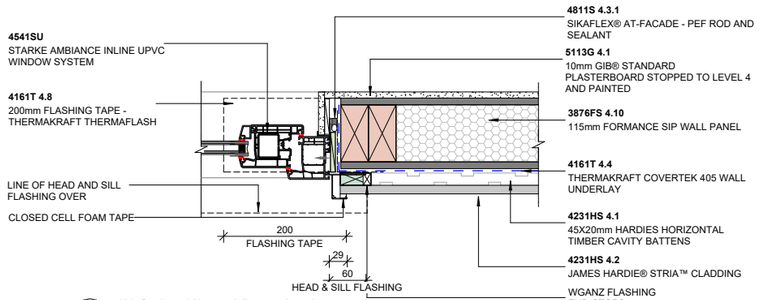
4 **JH Stria - Hinged Door Head**
Scale 1 : 5 @ A1



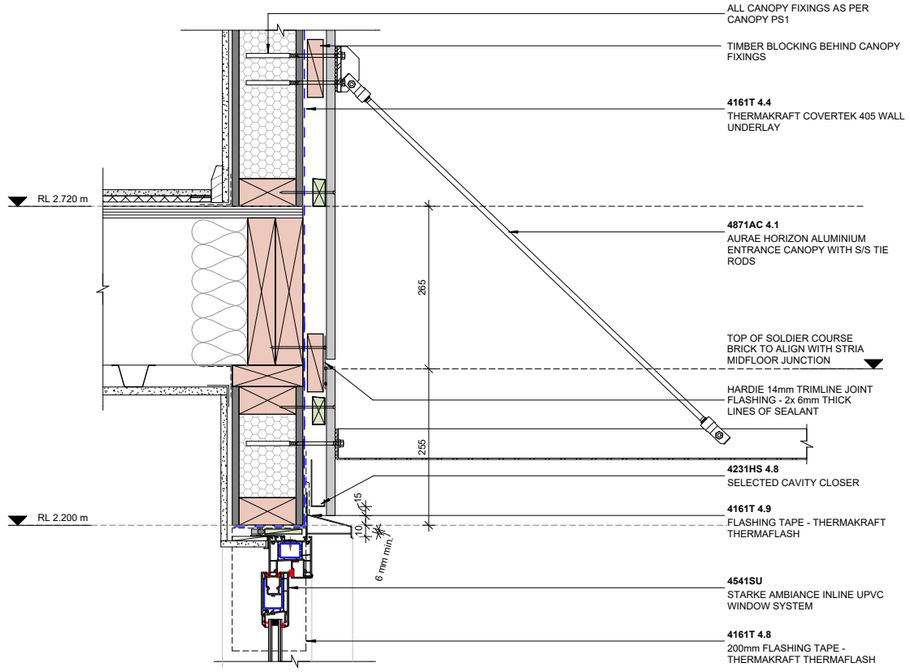
8 **JH Stria - Midfloor Detail**
Scale 1 : 5 @ A1



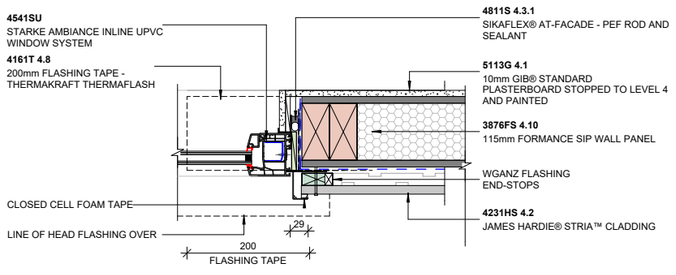
2 **JH Stria - Window Sill**
Scale 1 : 5 @ A1



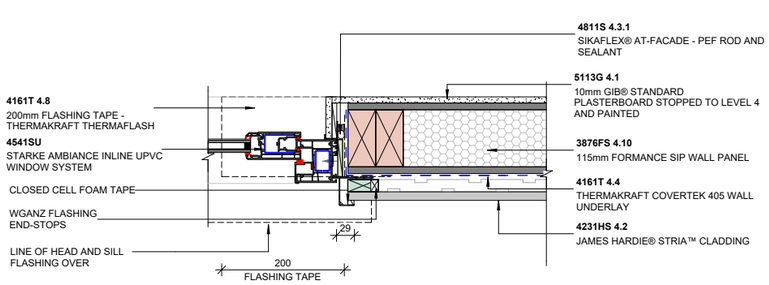
5 **JH Stria - Hinged Door Jamb**
Scale 1 : 5 @ A1



6 **JH Stria - Sliding Door Head**
Scale 1 : 5 @ A1



3 **JH Stria - Window Jamb**
Scale 1 : 5 @ A1



7 **JH Stria - Sliding Door Jamb**
Scale 1 : 5 @ A1

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ORIGINAL DRAWING IN COLOUR

Client:

Project: **Arbor Green Development** No: **H2639**
Address: **2 - 8 Liana Lane, Arbor Green, Rolleston**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **DETAILED DESIGN**
Issue Date: **25/02/2026**
Drawn By: **FM** Checked By: **MP / DR**
Scale: **1 : 5 @ A1**

Sheet Name: **Construction Details - JH Stria Openings**
Sheet No: **A48.03** Rev No: **0**

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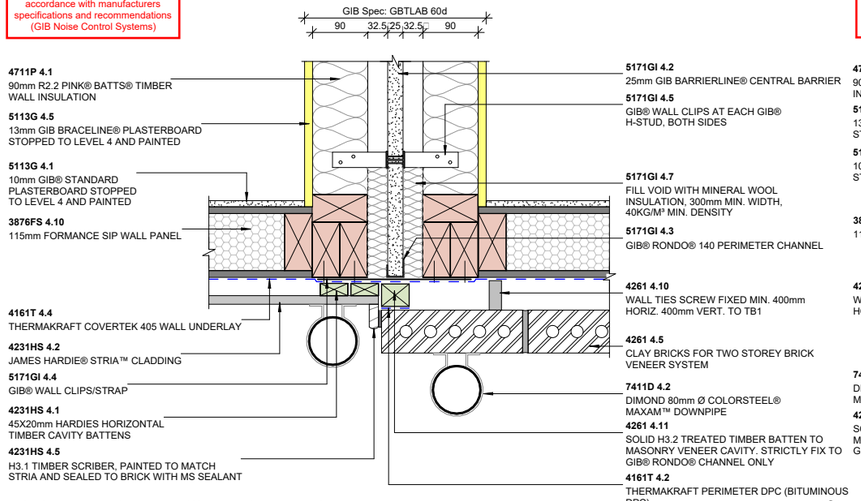
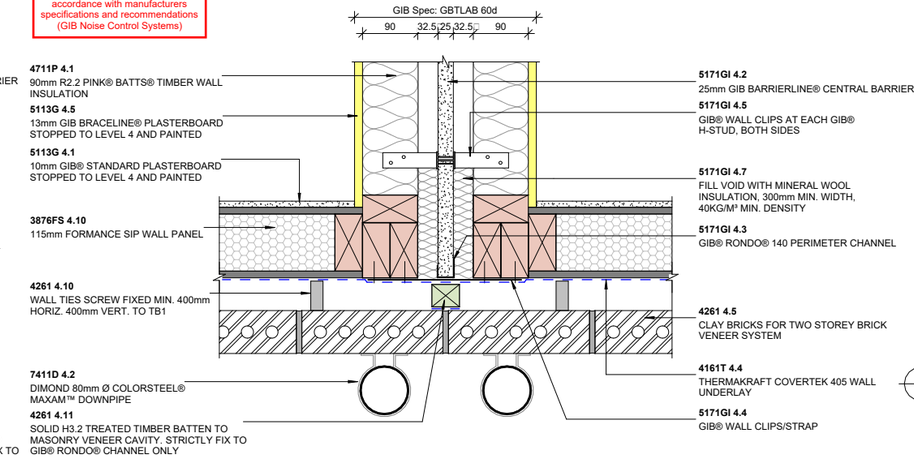
Wall details to be strictly in accordance with manufacturers specifications and recommendations (GIB Noise Control Systems)



5 **Intertenancy - Brick / JH Stria Vertical Junction**
Scale 1 : 5 @ A1

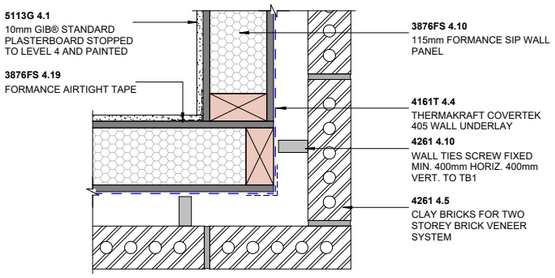
Wall details to be strictly in accordance with manufacturers specifications and recommendations (GIB Noise Control Systems)



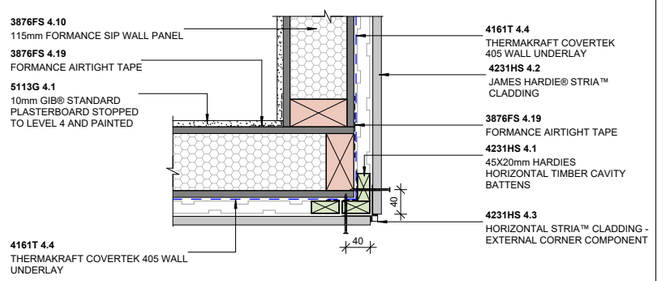
6 **Intertenancy - Brick Vertical Junction**
Scale 1 : 5 @ A1

General Notes

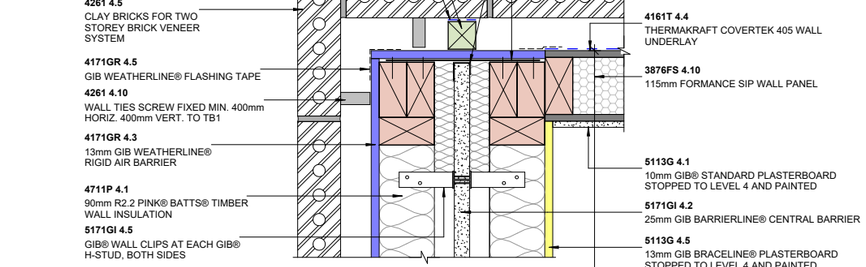
1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

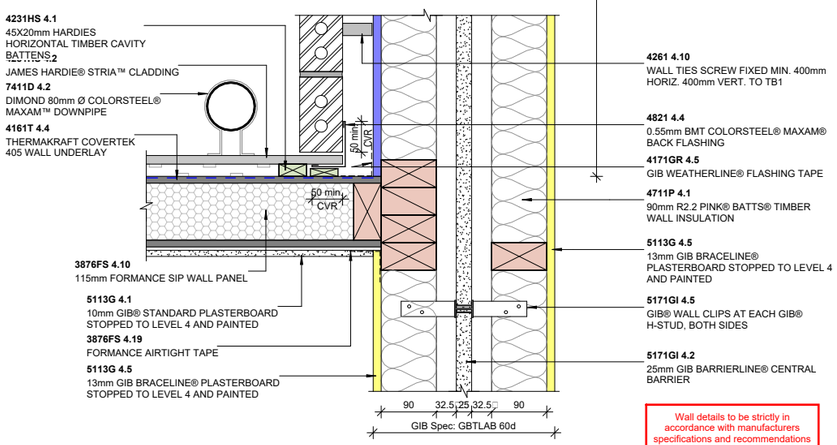


1 **Brick Veneer - External Corner**
Scale 1 : 5 @ A1



2 **JH Stria - External Corner**
Scale 1 : 5 @ A1

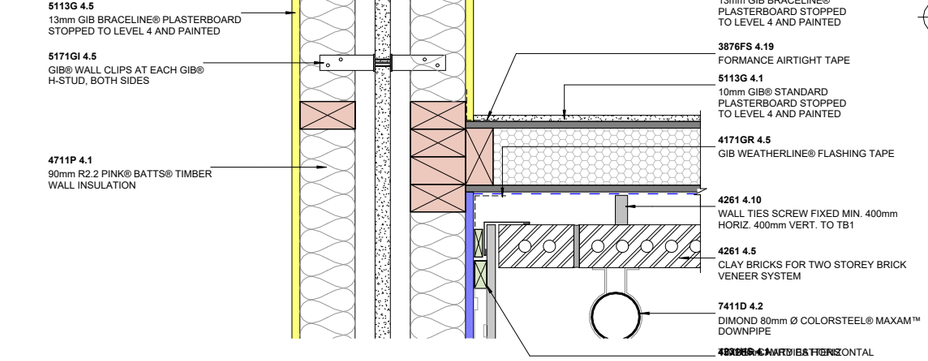


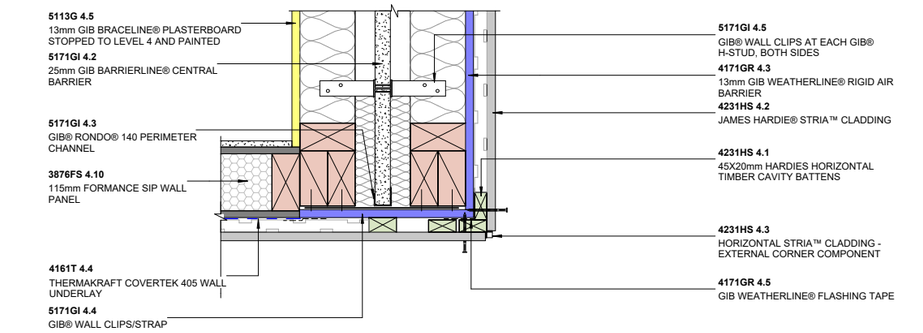


Wall details to be strictly in accordance with manufacturers specifications and recommendations (GIB Noise Control Systems)

7 **Intertenancy - Brick / JH Stria Step in Facade Junction**
Scale 1 : 5 @ A1

Wall details to be strictly in accordance with manufacturers specifications and recommendations (GIB Noise Control Systems)





8 **Intertenancy - Brick / JH Stria Step in Facade Junction**
Scale 1 : 5 @ A1

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ORIGINAL DRAWING IN COLOUR

Client:

Project: **Arbor Green Development**
Address: **2 - 8 Liana Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **DETAILED DESIGN**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **1 : 5 @ A1**

Sheet Name: **Construction Details - Plan - Brick Veneer & JH Stria**
Sheet No: **A48.04** Rev No: **0**

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General Notes

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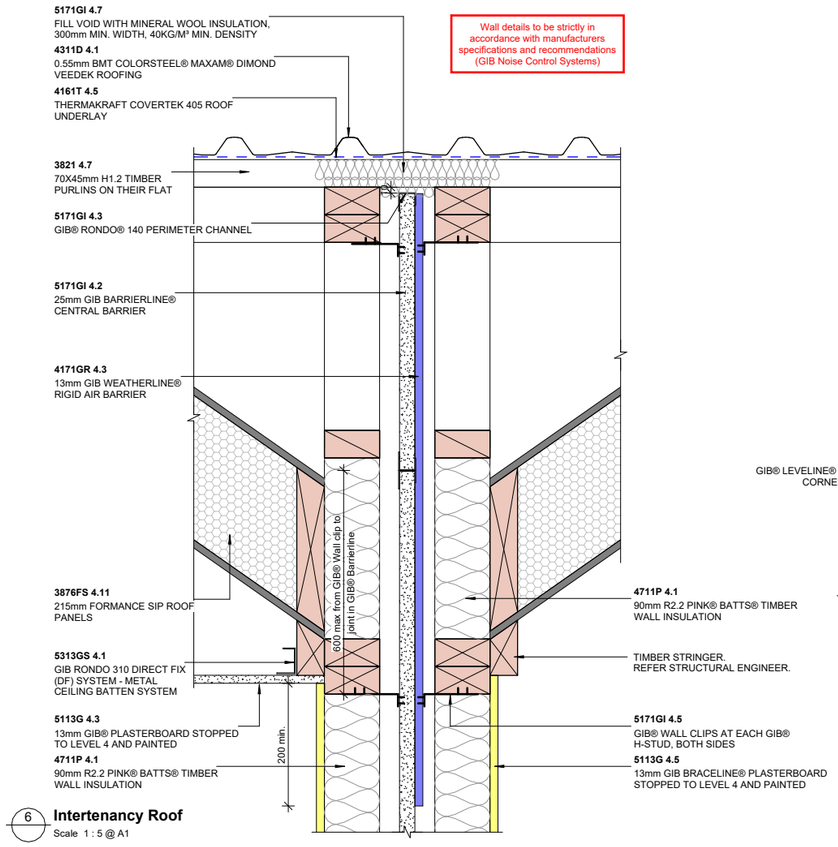
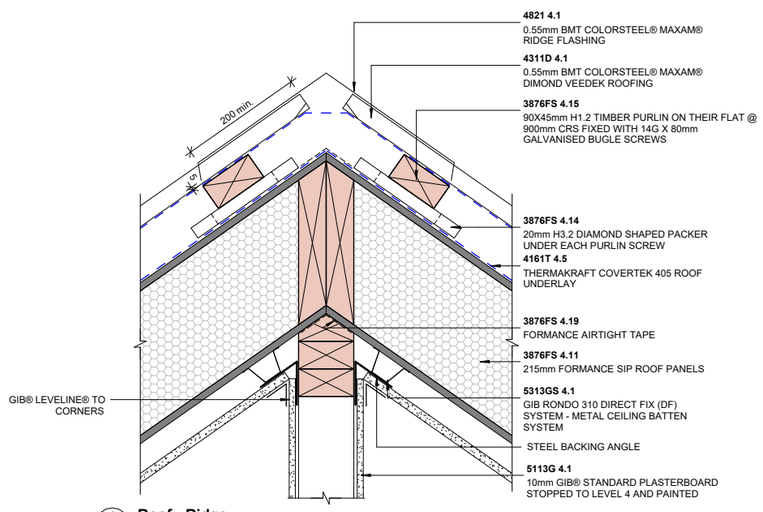
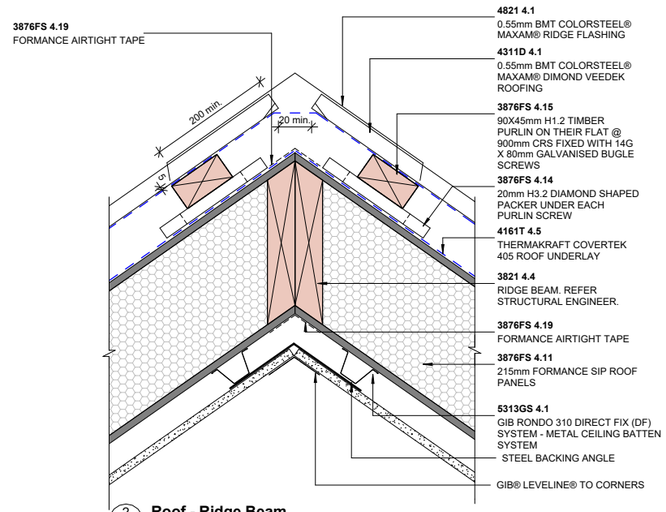
Wall details to be strictly in accordance with manufacturers specifications and recommendations (GIB Noise Control Systems)



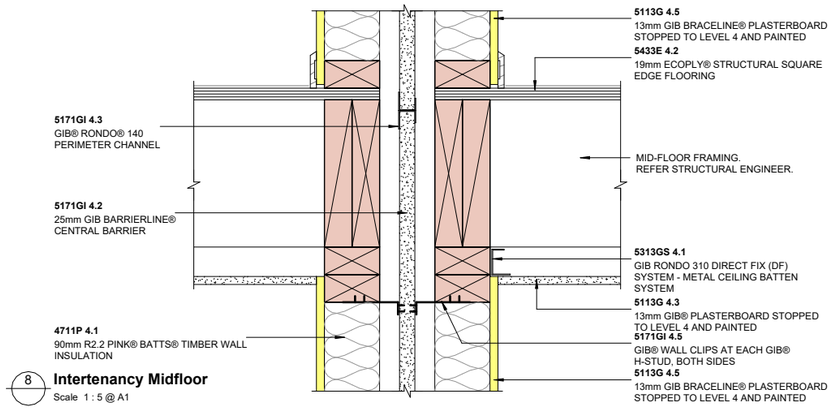
6 **Intertenancy Roof**
Scale 1 : 5 @ A1



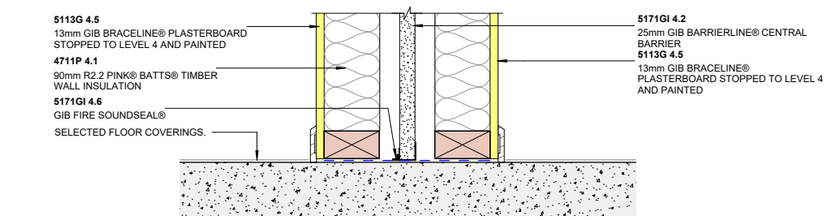
1 **Roof - Ridge**
Scale 1 : 5 @ A1



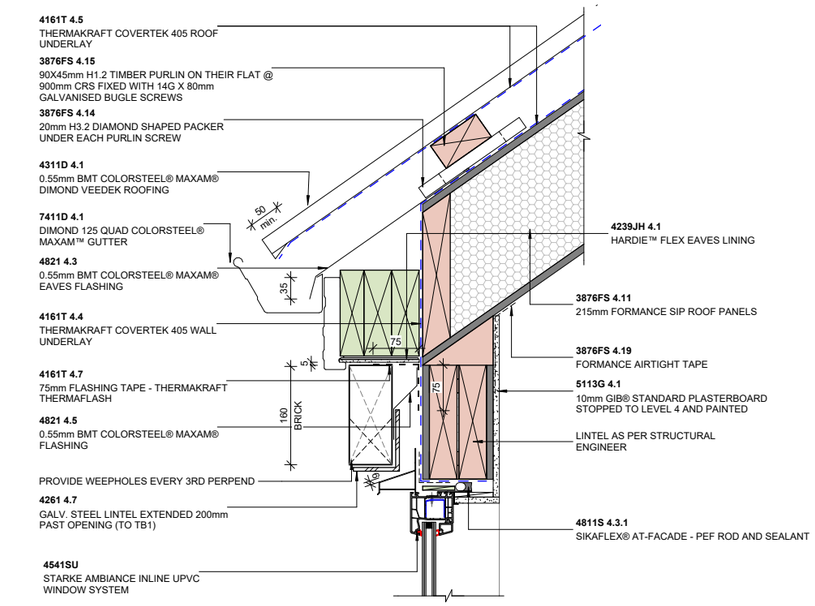
2 **Roof - Ridge Beam**
Scale 1 : 5 @ A1



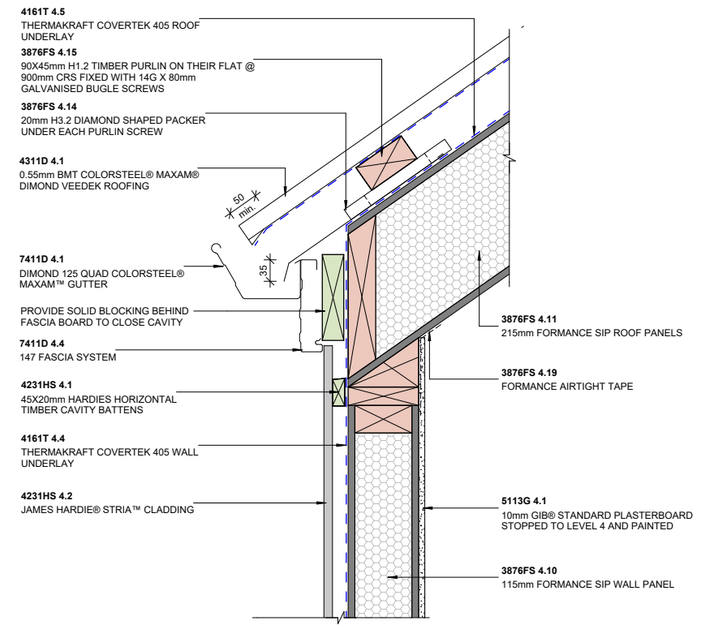
8 **Intertenancy Midfloor**
Scale 1 : 5 @ A1



9 **Intertenancy Base**
0-11.03 Scale 1 : 5 @ A1



10 **Roof - Gutter - Brick**
Scale 1 : 5 @ A1



11 **Roof - Gutter - JH Stria**
Scale 1 : 5 @ A1

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ORIGINAL DRAWING IN COLOUR

Client:

Project: **Arbor Green Development**
Address: **2 - 8 Liana Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **DETAILED DESIGN**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **1 : 5 @ A1**

Sheet Name: **Construction Details - Section - Roof**
Sheet No: A48.05
Rev No: 0

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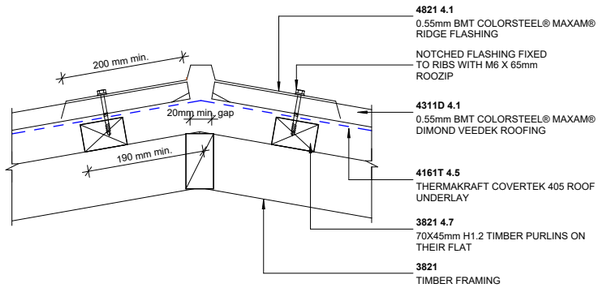
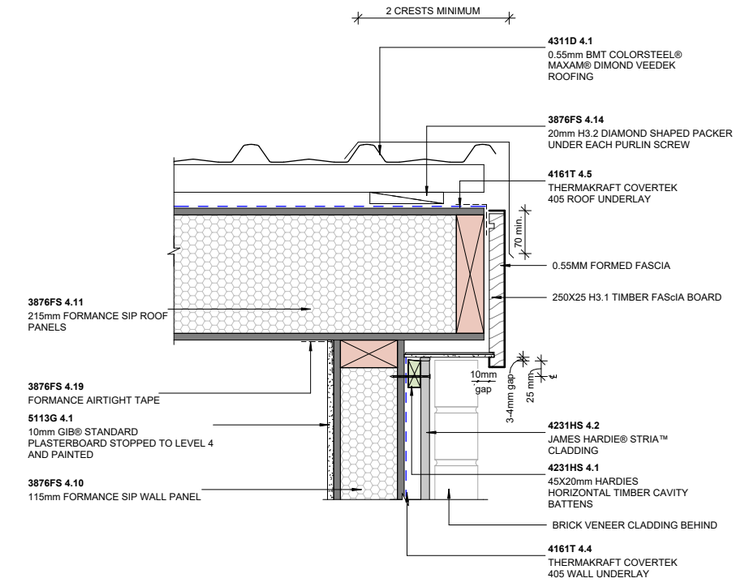


1 **Roof - 10deg Roof Ridge**
Scale 1 : 5 @ A1



2 **Roof - JH Stria Barge**
Scale 1 : 5 @ A1

General Notes

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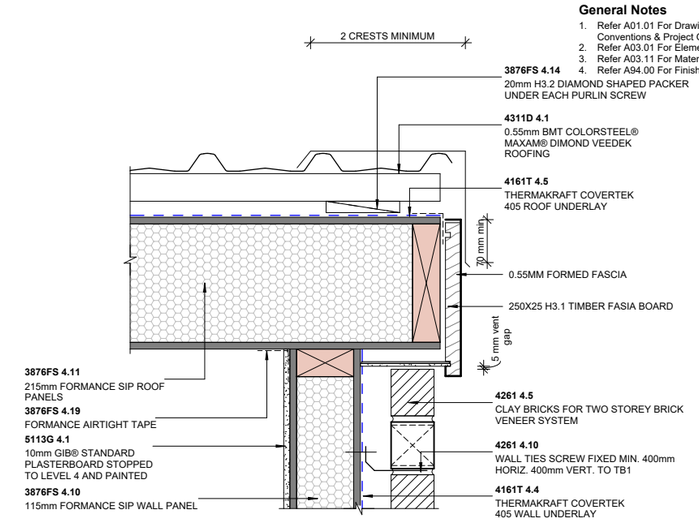


3 **Roof - Brick Veneer Barge**
Scale 1 : 5 @ A1

TYPICAL VALLEY GUTTER CAPACITY CALCULATION

NZ Metal Roof and Wall Cladding Code of Practice

5.5.7 Valley Capacity Calculator

Calculation Date: 27/01/2026, 2:19:11 pm – https://www.metalroofing.org.nz/cop

Project Name

Arbor Green Development

Site Address

2 - 8 Laina Lane, Arbor Green, Rolleston

Note that this site address is used only for convenience if printing calculations to attach to documentation.
*This address is **not** factored into calculations - you must determine intensity from Rainfall Intensity Maps or NIWA's HIRDS tool.*
The address is not recorded or shared with any other parties.

Rainfall Intensity (10 Min Duration, **10 Year** Return Period)	55.7	mm/hr
Rainfall Intensity (10 Min Duration, **50 Year** Return Period)	89	mm/hr
Short-Term Intensity Multiplication Factor	3.1	
Minimum 3.1 for current selections		
Main Roof Pitch	35	°
Minimum 0° for valleys (metal roofs min 3°)		
Secondary Roof Pitch	10	°
Minimum 0° for valleys (metal roofs min 3°)		

Enter Valley Dimensions

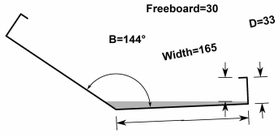


Illustration is for explanatory purposes only.

Valley Width (Each Side)	165	mm
Valley Upstand	33	mm
Freeboard	30	mm
Minimum 20 for current selections		

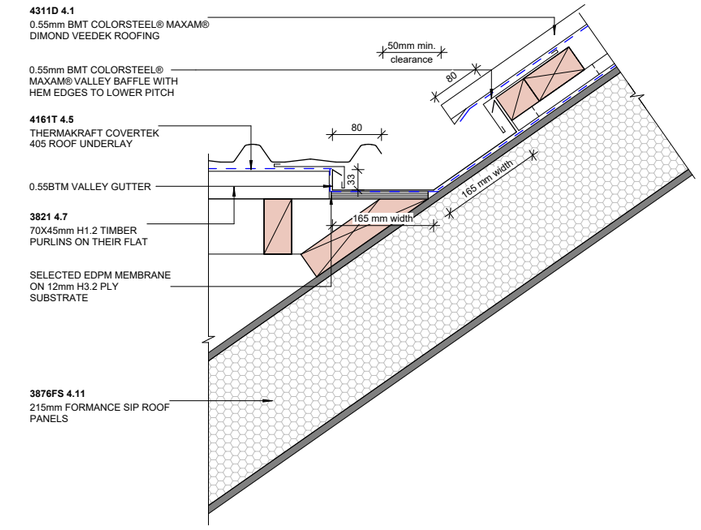
Max Capacity Roof Area **14.73m²**

Conditions and assumptions for valleys:

1. Mannings n assumed to be 0.014 to represent long term friction conditions
2. Minimum height of Type A valley returns to be 16 mm
3. Minimum freeboard of 20mm mm for valleys below 8°
4. Minimum freeboard of 15mm for valleys 8° and steeper

lainfall intensities (mm/hr) :: RCP8.5 for the period 2031-2050

ARI	AEP	10m	20m	30m	1h
1.58	0.633	26.5	17.6	14.1	9.78
2	0.500	30.2	20.0	15.9	11.0
5	0.200	44.1	28.9	22.9	15.7
10	0.100	55.7	36.2	28.6	19.5
20	0.050	68.9	44.5	35.0	23.7
30	0.033	77.4	49.8	39.1	26.4
40	0.025	83.8	53.8	42.2	28.4
50	0.020	89.0	57.0	44.7	30.0
60	0.017	93.4	59.7	46.7	31.3
80	0.013	101	64.2	50.1	33.5
100	0.010	106	67.7	52.9	35.3
250	0.004	132	83.5	64.8	42.9



4 **Roof - Valley to SIP**
Scale 1 : 5 @ A1

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ORIGINAL DRAWING IN COLOUR

Client:

Project: **Arbor Green Development** No: **H2639**
Address: **2 - 8 Liana Lane, Arbor Green, Rolleston**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **DETAILED DESIGN**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **1 : 5 @ A1**

Sheet Name: **Construction Details - Section - Roof**
Sheet No: **A48.06** Rev No: **0**

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TYPICAL GUTTER CAPACITY CALCULATION

NZ Metal Roof and Wall Cladding Code of Practice

5.4.7 Gutter Capacity Calculator

Calculation Date: 27/01/2026, 2:22:43 pm – https://www.metalroofing.org.nz/cop

Project Name

Arbor Green Development

Site Address

2 - 8 Laina Lane, Arbor Green, Rolleston

Note that this site address is used only for convenience if printing calculations to attach to documentation.
*This address is **not** factored into calculations - you must determine intensity from Rainfall Intensity Maps or NIWA's HIRDS tool.*
The address is not recorded or shared with any other parties.

Rainfall Intensity (10 Min Duration, **10 Year** Return Period)	55.7	mm/hr
Rainfall Intensity (10 Min Duration, **50 Year** Return Period)	89	mm/hr

Options

Type of Building	Type of Gutter	Overflow along Gutter	Overflow at Downpipe
○ Commercial	○ External	○ No	○ No
○ Residential	○ Internal	○ Yes	○ Yes
	○ Secret		

Short-Term Intensity Multiplication Factor	3.1	
Minimum 3.1 for current selections		
Gutter Fall	1:500 = 2	mm per metre
90 Degree Bends	2	bends
Gutter Length served by outlet	7	m

Select Gutter Information Source

◉ **Rectangular Gutter** ○ Manufacturer's Data

Gutter Dimensions at outlet

Illustration is for explanatory purposes only and is not to scale.

Product Description: Gutter Product

Describe the product: this does not control the calculation which relies on you entering accurate data

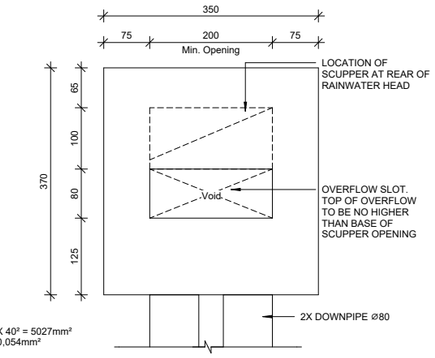
Gutter Width (Entire Width)	350	mm
Gutter Upstand	70	mm
Freeboard	30	mm

Minimum 30 for current selections

Max Capacity Roof Area **44.69m²**

Rainfall intensities (mm/hr) :: RCP8.5 for the period 2031-2050

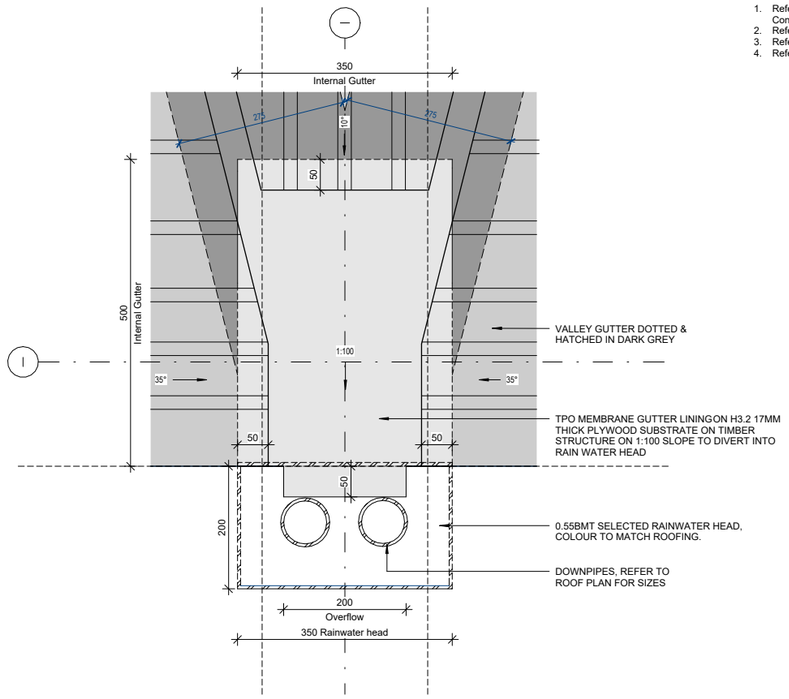
ARI	AEP	10m	20m	30m	1h
1.58	0.633	26.5	17.6	14.1	9.78
2	0.500	30.2	20.0	15.9	11.0
5	0.200	44.1	28.9	22.9	15.7
10	0.100	55.7	36.2	28.6	19.5
20	0.050	68.9	44.5	35.0	23.7
30	0.033	77.4	49.8	39.1	26.4
40	0.025	83.8	53.8	42.2	28.4
50	0.020	89.0	57.0	44.7	30.0
60	0.017	93.4	59.7	46.7	31.3
80	0.013	101	64.2	50.1	33.5
100	0.010	106	67.7	52.9	35.3
250	0.004	132	83.5	64.8	42.9



OVERFLOW CALCULATION:
DOWNPIPE CROSS AREA = π X 40² = 5027mm²
2X DOWNPIPES = 5027 X 2 = 10,054mm²
1.5 x 10,054 = 15,081mm²

OVERFLOW SLOT 200 X 80 = 16,000mm²

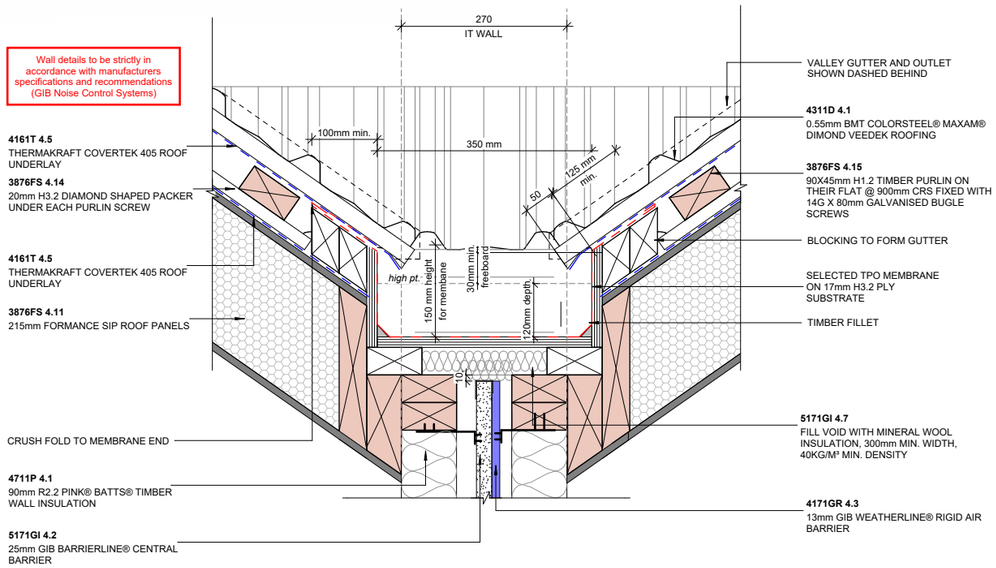
4 **Detail - Elevation - Rainwater Head**
Scale 1 : 5 @ A1



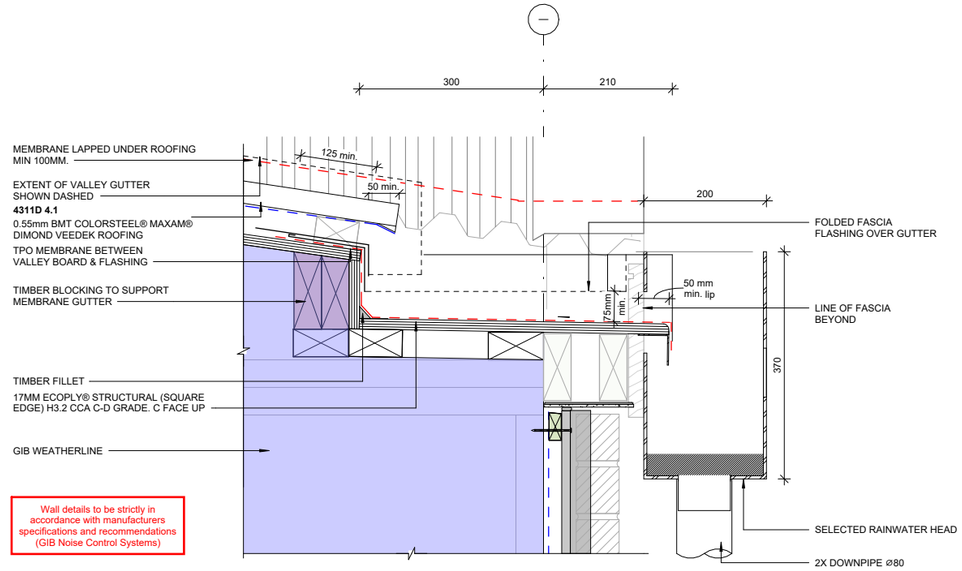
1 **Detail - Plan - Rainwater Head**
Scale 1 : 5 @ A1

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule



2 **Section Thru' Internal Gutter**
Scale 1 : 5 @ A1



3 **Section thru' Internal Gutter at Rain Water Head**
Scale 1 : 5 @ A1

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ORIGINAL DRAWING IN COLOUR

Client:

Project: **Arbor Green Development**
Address: **2 - 8 Liana Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **DETAILED DESIGN**
Issue Date: **25/02/2026**
Drawn By: **FM** Checked By: **MP / DR**
Scale: **1 : 5 @ A1**

Sheet Name: **Construction Details - Section - Roof**
Sheet No: **A48.07**
Rev No: **0**

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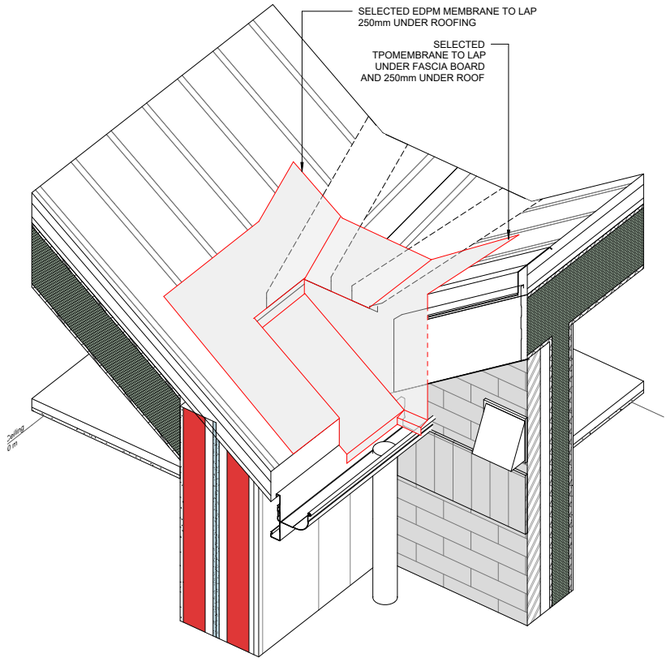
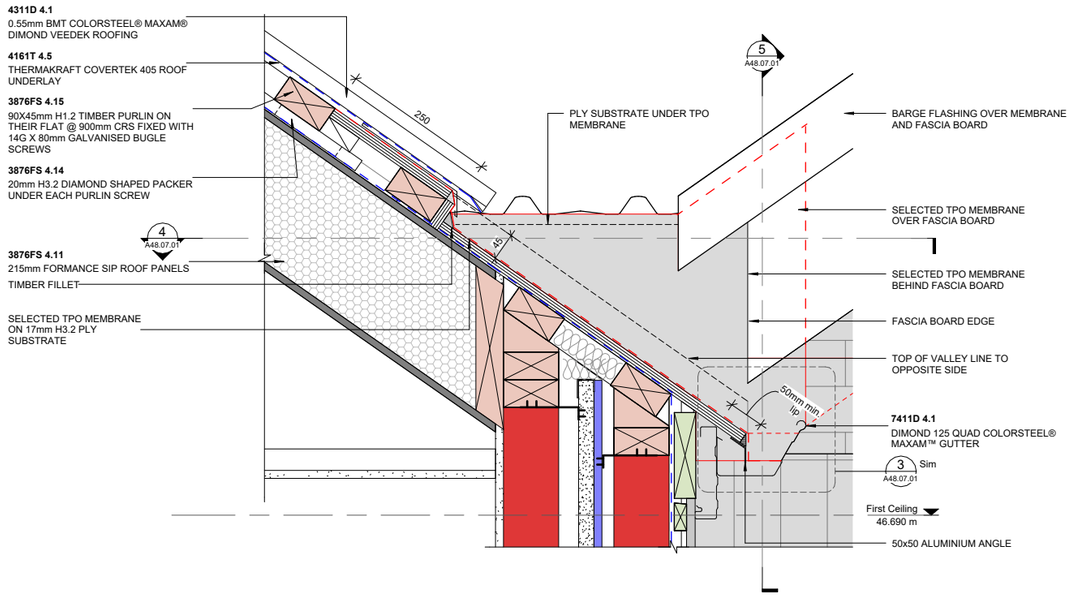
General Notes

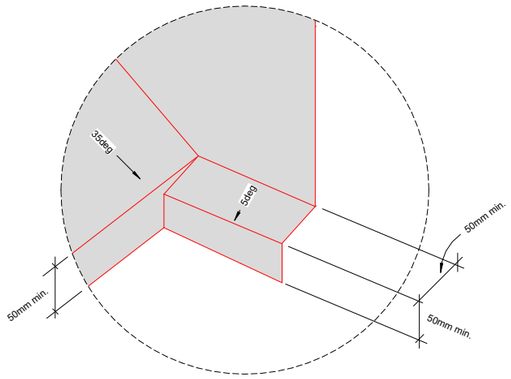
1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule



1 **Detail - Axonometric - 35deg Internal Gutter**
Scale @ A1



6 **Detail - Section - 35deg Internal Gutter**
Scale 1 : 5 @ A1



3 **Membrane Lap**
A48.07.01 Scale 1 : 2 @ A1

NZ Metal Roof and Wall Cladding Code of Practice

5.4.7 Gutter Capacity Calculator

Calculation Date: 30/01/2026, 8:52:40 am – https://www.metalroofing.org.nz/cop

Project Name

Arbor Green Development

Site Address

2 - 8 Laina Lane, Arbor Green, Rolleston

Note that this site address is used only for convenience if printing calculations to attach to documentation.
*This address is **not** factored into calculations - you must determine intensity from Rainfall Intensity Maps or NIWA's HIRDS tool.*
The address is not recorded or shared with any other parties.

Rainfall Intensity (10 Min Duration, **10 Year** Return Period)	55.7	mm/hr
Rainfall Intensity (10 Min Duration, **50 Year** Return Period)	89	mm/hr

Options

Type of Building	Type of Gutter	Overflow along Gutter	Overflow at Downpipe
○ Commercial	○ External	◉ **No**	○ No
◉ **Residential**	◉ **Internal**	○ Yes	◉ **Yes**
	○ Secret		

Short-Term Intensity Multiplication Factor	3.1	
Minimum 3.1 for current selections		
Gutter Fall	1:1.428571 = 700	mm per metre
90 Degree Bends	0	bends
Gutter Length served by outlet	0.60	m

Select Gutter Information Source

◉ **Rectangular Gutter** ○ Manufacturer's Data

Gutter Dimensions at outlet

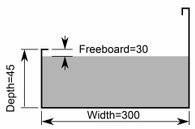


Illustration is for explanatory purposes only and is not to scale.

Product Description: Gutter Product

Describe the product: this does not control the calculation which relies on you entering accurate data

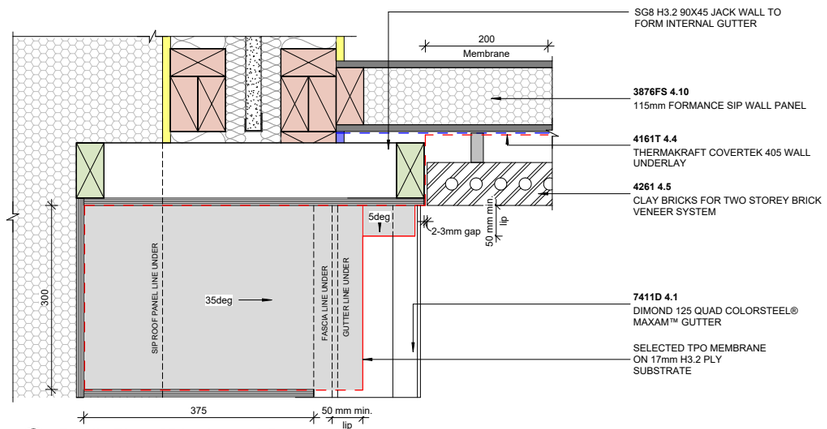
Gutter Width (Entire Width)	300	mm
Gutter Upstand	45	mm
Freeboard	30	mm

Minimum 30 for current selections

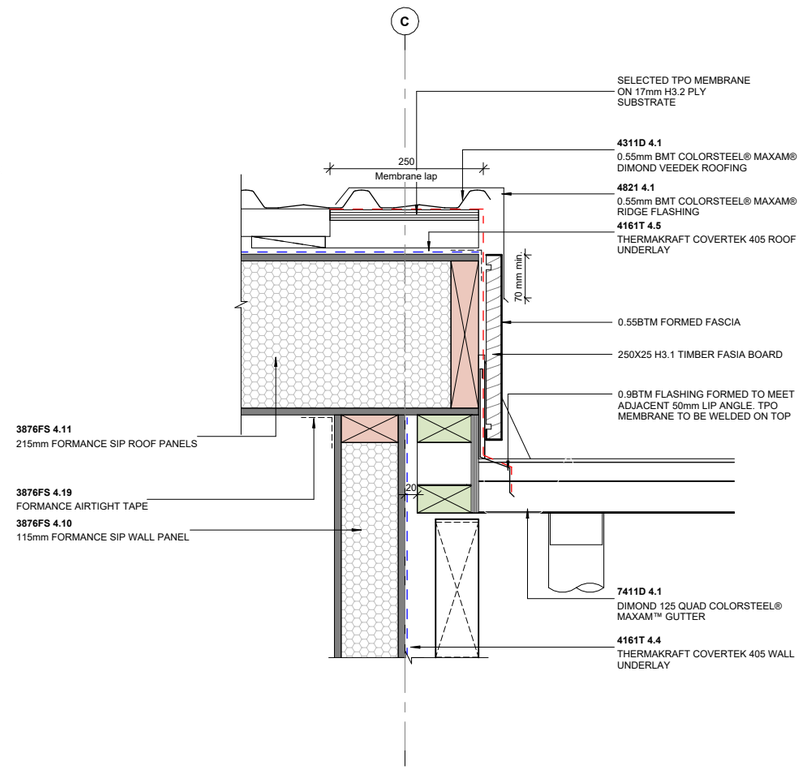
Max Capacity Roof Area **200.29m²**

Rainfall intensities (mm/hr) :: RCP8.5 for the period 2031-2050

ARI	AEP	10m	20m	30m	1h
1.58	0.633	26.5	17.6	14.1	9.78
2	0.500	30.2	20.0	15.9	11.0
5	0.200	44.1	28.9	22.9	15.7
10	0.100	55.7	36.2	28.6	19.5
20	0.050	68.9	44.5	35.0	23.7
30	0.033	77.4	49.8	39.1	26.4
40	0.025	83.8	53.8	42.2	28.4
50	0.020	89.0	57.0	44.7	30.0
60	0.017	93.4	59.7	46.7	31.3
80	0.013	101	64.2	50.1	33.5
100	0.010	106	67.7	52.9	35.3
250	0.004	132	83.5	64.8	42.9



4 **Detail - Plan - 35deg Internal Gutter**
A48.07.01 Scale 1 : 5 @ A1



5 **Detail - Section - Barge at 35deg Internal Gutter**
A48.07.01 Scale 1 : 5 @ A1

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ORIGINAL DRAWING IN COLOUR

Client:

Project: **Arbor Green Development**
Address: **2 - 8 Liana Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **DETAILED DESIGN**
Issue Date: **25/02/2026**
Drawn By: **FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Construction Details - Section - Roof**
Sheet No: **A48.07.01** Rev No: **0**

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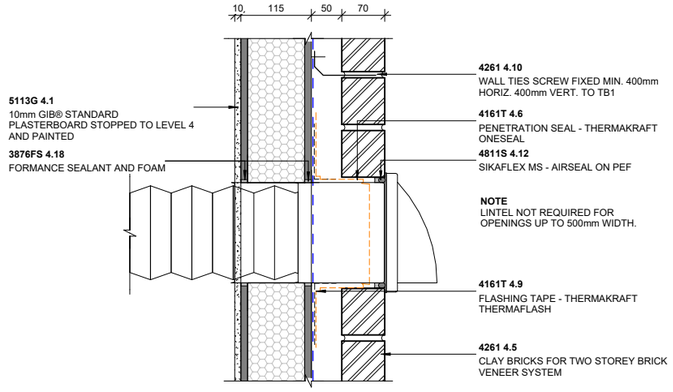
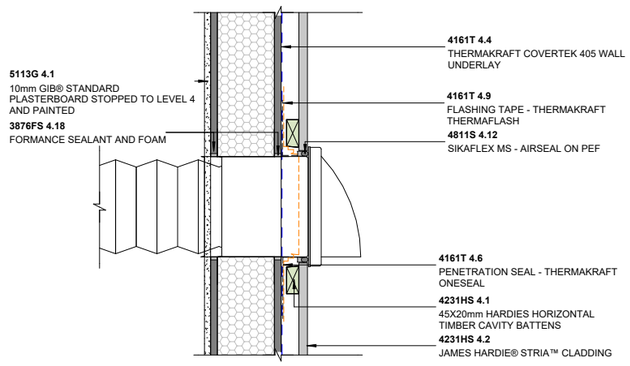
General Notes

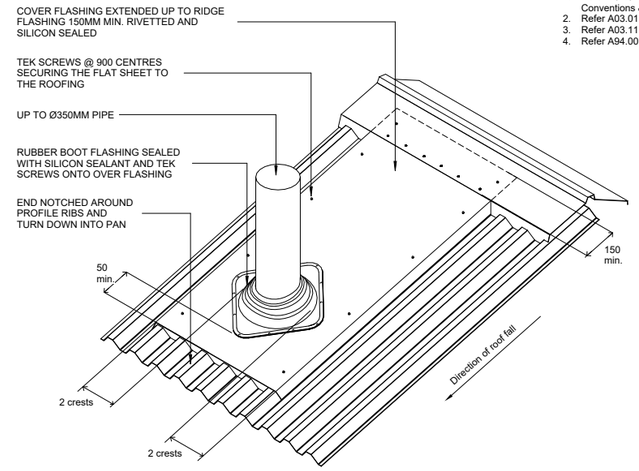
1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule



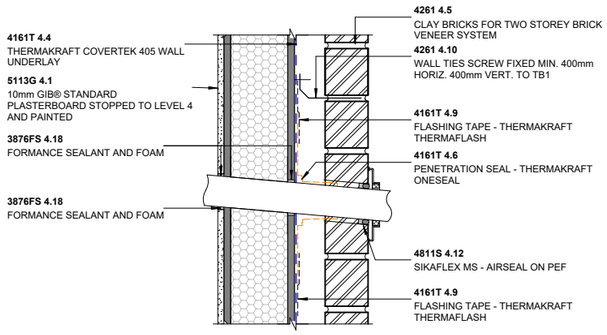
1 **Brick Veneer - Extract Fan Unit**
Scale 1 : 5 @ A1



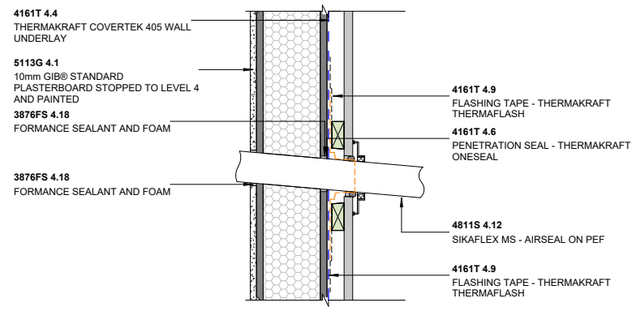
3 **JH Stria - Extract Fan Unit**
Scale 1 : 5 @ A1



5 **Typical Roof Penetration Detail up to Ø350**
Scale 1 : 10 @ A1

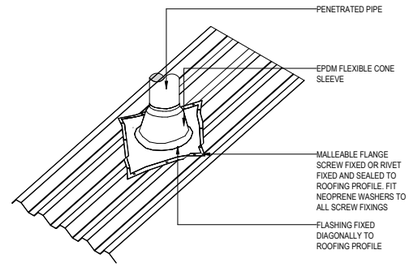


2 **Brick Veneer - Wall Penetration - Pipe/Vents**
Scale 1 : 5 @ A1

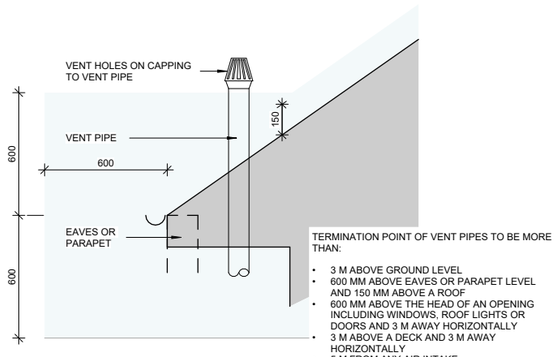


4 **JH Stria - Wall Penetration - Pipe/Vents**
Scale 1 : 5 @ A1

NOTE:
1. MAXIMUM ROOF PITCH 45°, MINIMUM ROOF PITCH 10° IF BASE OF FLANGE COVERS ONE OR MORE COMPLETE TROUGHS.
2. FOR PIPES UP TO 85MM DIAMETER



6 **Typical Roof Penetration Detail (Sleeve) up to Ø85**
Scale NONE @ A1



7 **Termination of Vent Pipes**
Scale 1 : 15 @ A1

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ORIGINAL DRAWING IN COLOUR

Client:

Project: **Arbor Green Development**
Address: **2 - 8 Liana Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **DETAILED DESIGN**
Issue Date: **25/02/2026**
Drawn By: **FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Construction Details - Penetrations**
Sheet No: A48.08
Rev No: 0

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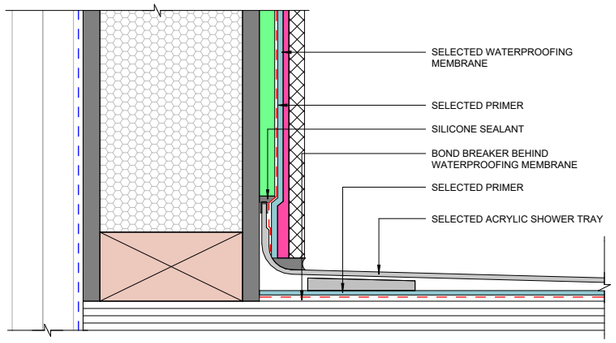
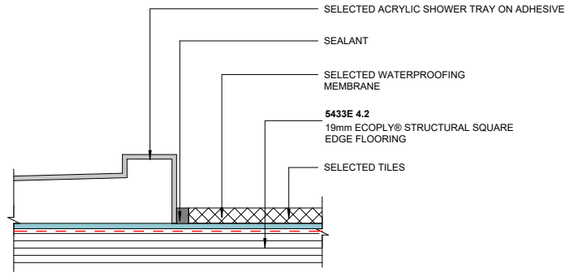
General Notes

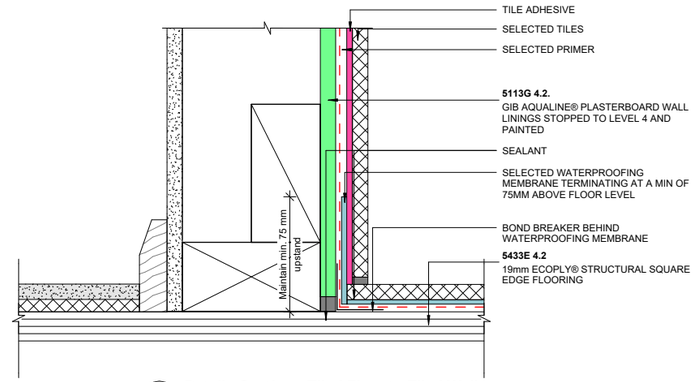
1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule



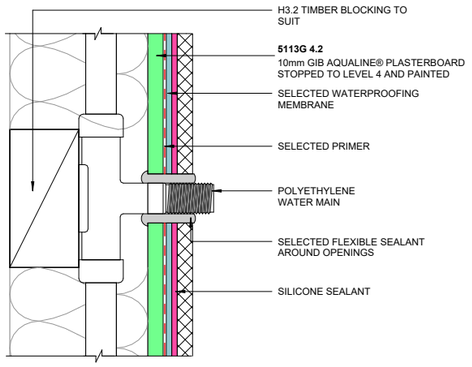
1 **Detail - Section - Acrylic/Tray Liner Junction**
Scale 1 : 2 @ A1



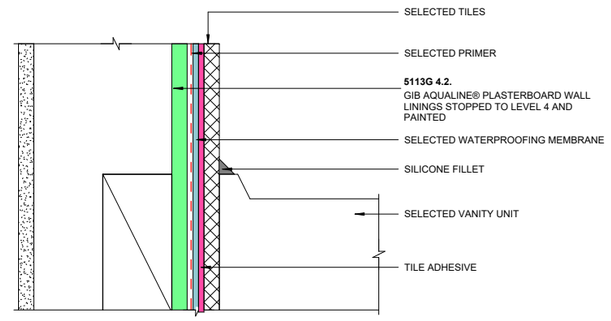
3 **Detail - Section - Acrylic Shower Tray to Tile Floor**
Scale 1 : 2 @ A1



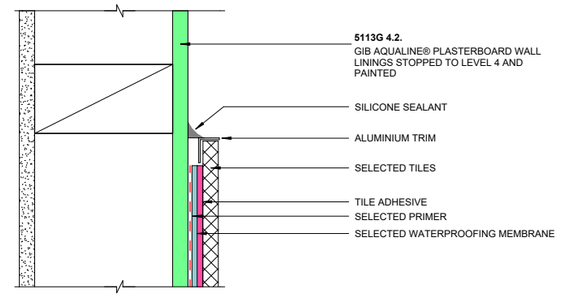
10 **Detail - Section - Tiled Floor to Tiled Wall**
Scale 1 : 2 @ A1



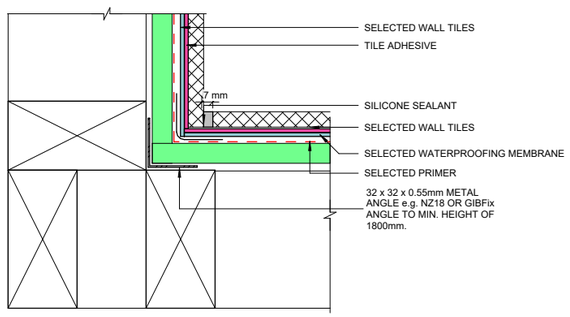
5 **Detail - Section - Tiled Wall Penetration**
Scale 1 : 2 @ A1



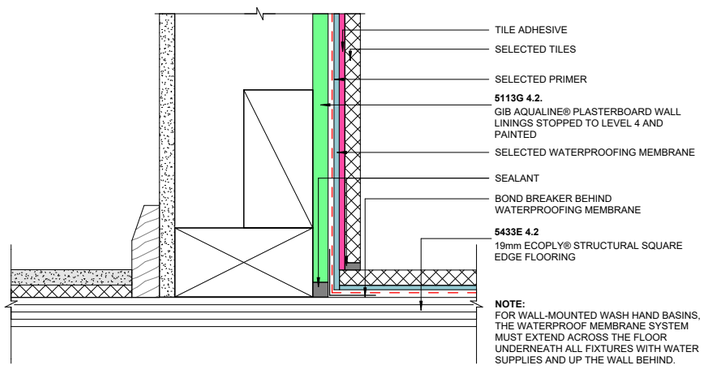
9 **Detail - Section - Tiles Wall/Vanity Unit Junction**
Scale 1 : 2 @ A1



2 **Detail - Section - Tiled Wall to GIB Wall**
Scale 1 : 2 @ A1



8 **Detail - Plan - Tiled Wall Internal Corner**
Scale 1 : 2 @ A1



4 **Detail - Section - Tiled Floor to Tiled Wall behind Vanity**
Scale 1 : 2 @ A1

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ORIGINAL DRAWING IN COLOUR

Client:

Project: **Arbor Green Development** No: **H2639**
Address: **2 - 8 Liana Lane, Arbor Green, Rolleston**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **DETAILED DESIGN**
Issue Date: **25/02/2026**
Drawn By: **FM** Checked By: **MP / DR**
Scale: **1 : 2 @ A1**

Sheet Name: **Construction Details - Internal**
Sheet No: **A48.09** Rev No: **0**

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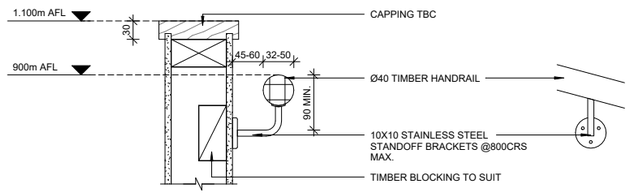
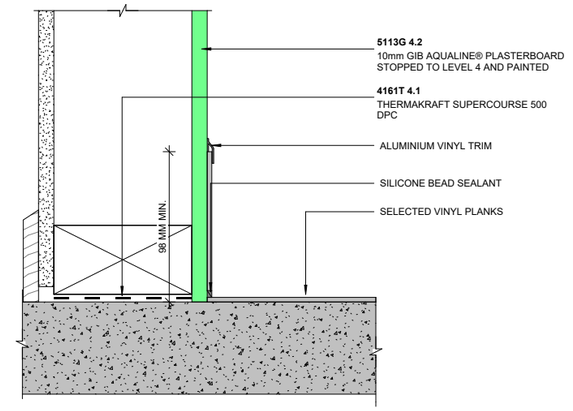
General Notes

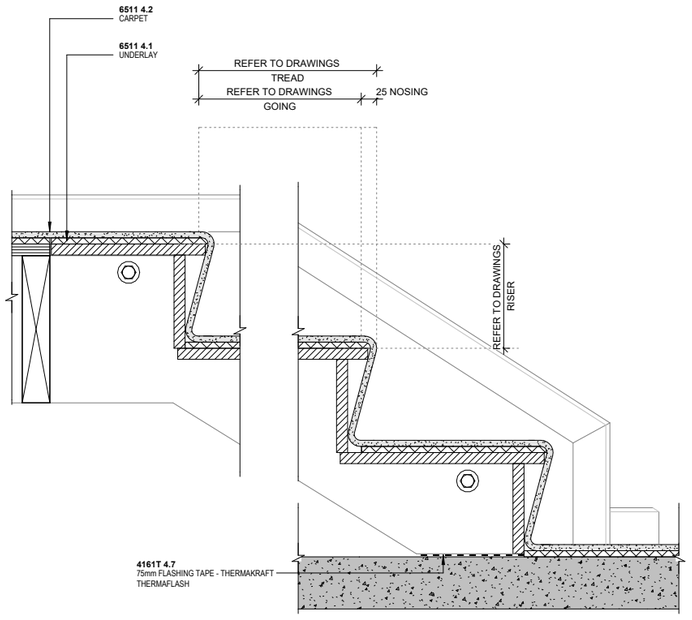
1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule



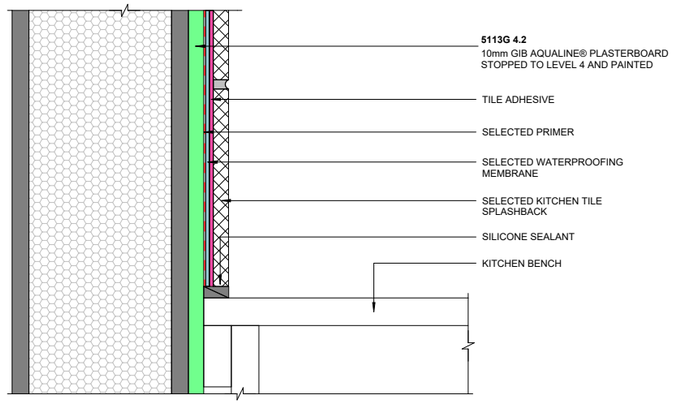
1 **Detail - Stair Handrail**
Scale 1 : 5 @ A1



3 **Detail - Section - Vinyl Upstand in Laundry**
Scale 1 : 2 @ A1



2 **Detail - Stair Section**
Scale 1 : 5 @ A1



4 **Detail - Section - Kitchen Bench to Kitchen Wall**
Scale 1 : 2 @ A1

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ORIGINAL DRAWING IN COLOUR

Client:

Project: **Arbor Green Development**
Address: **2 - 8 Liana Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **DETAILED DESIGN**
Issue Date: **25/02/2026**
Drawn By: **FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Construction Details - Internal**
Sheet No: A48.10
Rev No: 0

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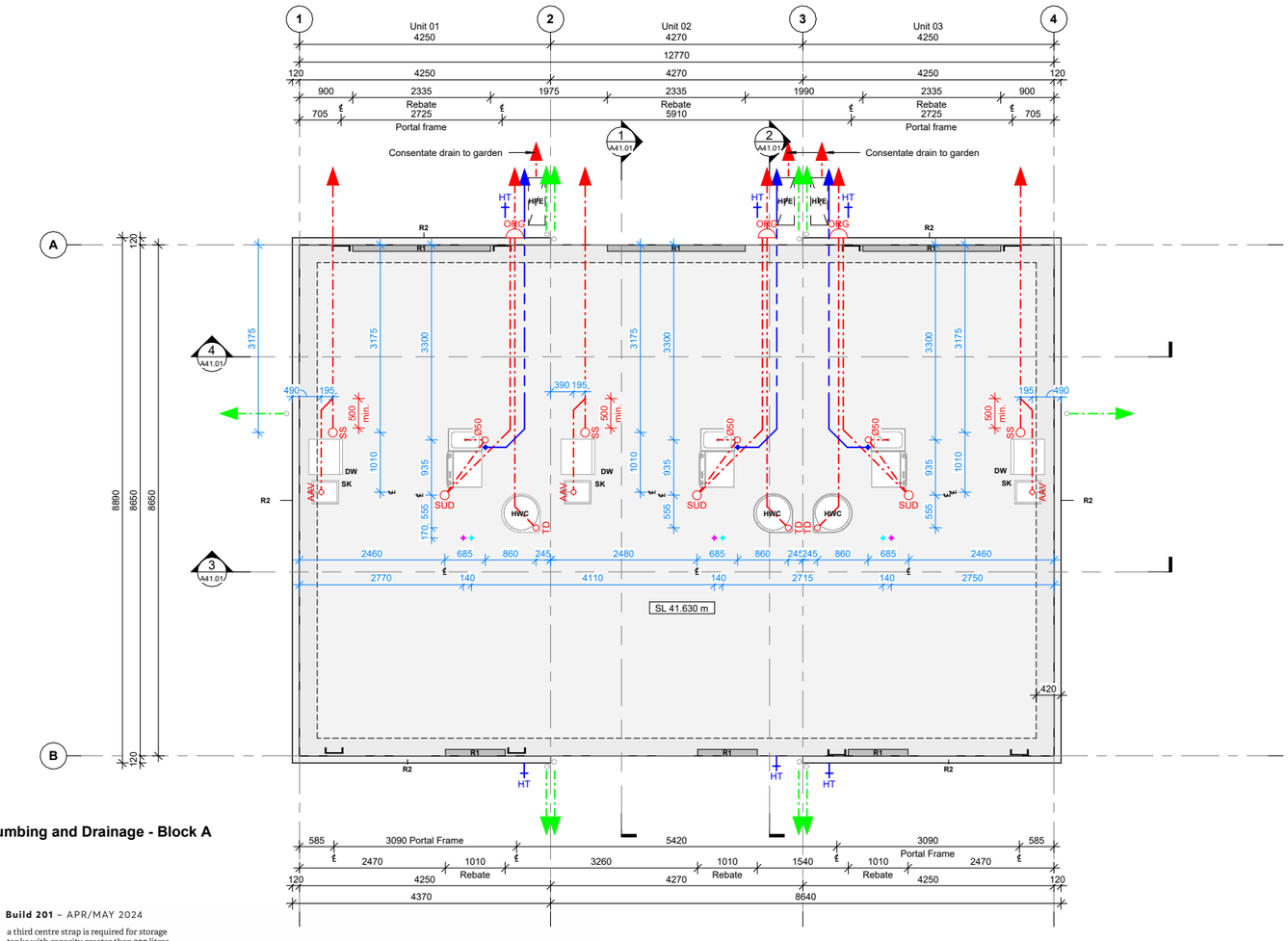
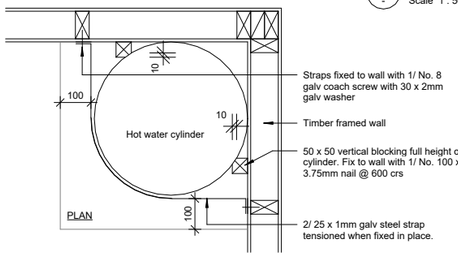


1 - Slab Plan / Plumbing and Drainage - Block A
Scale 1 : 50 @ A1



Hot Water Cylinder Corner Restraint Details

Strapping
Storage water heaters shall be restrained using 25 × 1 mm galvanised steel straps that are tensioned when fixed in place. Each strap should be fixed to the wall framing at both ends using 8 mm coach screws with either a single 30 × 2 mm thick washer or two 20 × 2.5 mm washers. The coach screws must penetrate the framing timber by at least 50 mm. In retrofit situations, additional timber framing may be needed to ensure there is adequate strap fixing.
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Tanks 12m above finished ground
At least three straps are always required, regardless of tank capacity, where the storage water heater is located more than 12 m above finished ground level.

Safety Trays
Safe trays are required for new cylinder installations under G12/AS1 (in 6.11.3) with the specifics explained in 5.2.3: "The safe tray shall incorporate a drain with a minimum diameter of 40 mm. Where the tank overflow discharges into the safe tray, the diameter of the safe tray drain shall be greater than the overflow pipe from the tank."

HWC Plinth
Safety tray to be installed on top of H3.2 framed platform. Platform to extend 100mm passed safety tray. H3.2 19mm ply board to enclose platform on top and sited. Paint finished.

2 - HWC Installation Detail
Scale 1 : 10 @ A1

Build 201 – APR/MAY 2024

a third centre strap is required for storage tanks with capacity greater than 200 litres

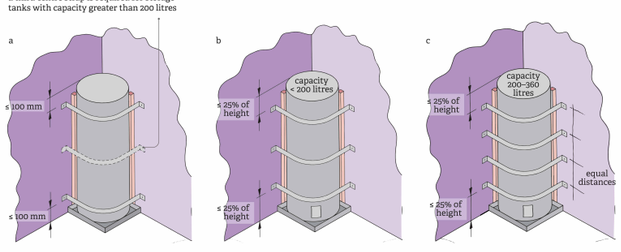
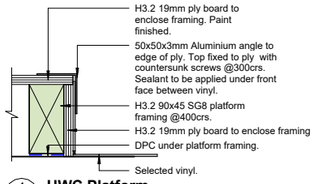


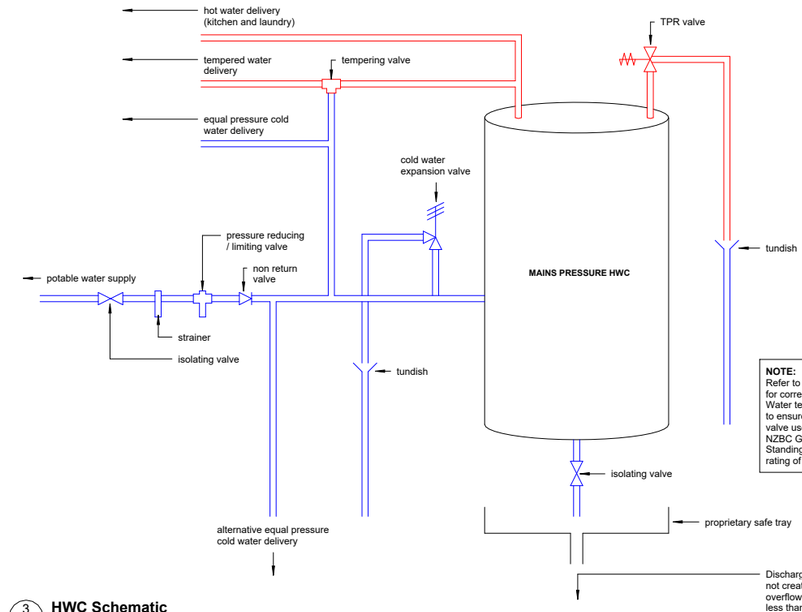
Figure 1: G12/AS1 requires water storage heaters to be restrained with up to four straps depending on the capacity of the storage tank and location of the straps.

TABLE 1: NUMBER OF STRAPS REQUIRED TO SEISMICALLY RESTRAIN WATER STORAGE HEATERS ACCORDING TO G12/AS1.

Capacity (litres)	Top and bottom strap: within 100 mm	Within 25%
0–200	2 straps	3 straps
200–360	3 straps	4 straps
> 360	Outside the scope of G12/AS1	



4 - HWC Platform
Scale NTS @ A1



NOTE:
Refer to valve manufacturer's recommendations for correct sizing and installation.
Water temperature in cylinder to be set at 60°C to ensure Legionella bacteria is killed. Tempering valve used to reduce this to 50°C as required by NZBC G12.
Standing water level no greater than max head rating of water heater

3 - HWC Schematic
Scale 1 : 10 @ A1

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

General Plumbing & Drainage Notes

1. Stormwater drainage system shall be installed in accordance with NZBC E1/AS1
2. Sanitary sewer system shall be installed in accordance ith NZBC G13/AS3 (AS/NZS3500.2)
3. All drains set in slab to be Ø65mm min.
4. Minimum grade of drains

Nom. Size DN	Min. grade %	Ratio
40	2.50	1:40
50	2.50	1:40
65	2.50	1:40
80	1.65	1:60
100	1.65	1:60

Services Legend

- GT — Gully Trap
- ORG — Overflow Relief Gully Trap
- IP — Inspection Point
- RP — Rodding Point
- SS — Sanitary Sewer Stack
- TV — Terminal Vent
- MV — Main Drain Vent
- FWG — Floor Waste Gully
- TD — Tun dish
- Ø65 — Stub Size
- Existing Sanitary Sewer pipe
- New Sanitary Sewer pipe
- Existing Stormwater Pipe
- New Stormwater Pipe
- Existing Water Main Pipe
- New Water Main Pipe
- Existing Cold Water Supply
- New Cold Water Supply
- Existing Tempered Water Supply
- New Tempered Water Supply
- HT — Hose Tap with permanently attached hose connection vacuum breaker

Electrical Installations

- Power Line Conduit
- Telecommunications Line Conduit

Note: Installation according to AS/NZS 3000:2018. Conduit locations to be checked and coordinated on site.

Slab Legend

- R1 — Slab Recess at Slider Doorway and Hinged Doorway 35mm deep. Width, refer to details Length, refer to slab plan
- R2 — Slab Recess at Brick Veneer Cladding 140mm deep. 120mm wide Length, refer to slab plan

SANITARY SYSTEMS PROTECTIVE TAPE
All pipes passing through the concrete slabs are to be minimum Ø65 and lagged in protective tape.

NOTES:
1. Waste stubs shall be located within wall framing. Toilet waste stub shall be located offset from wall for S-Trap. Plumber to confirm exact locations on-site.

STRUCTURAL DRAWINGS AND DETAILS
1. Refer to Structural Drawings for details and specifications. Refer to Structural drawings for saw cuts.

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ORIGINAL DRAWING IN COLOUR

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Client: home. CONSTRUCTION

NORTH

Project: Arbor Green - Lot 1-3 No: H2639
Address: 2 - 8 Laina Lane, Arbor Green, Rolleston

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Block A - Slab Plan / Plumbing and Drainage**
Sheet No: **A21.01** Rev No: **0**

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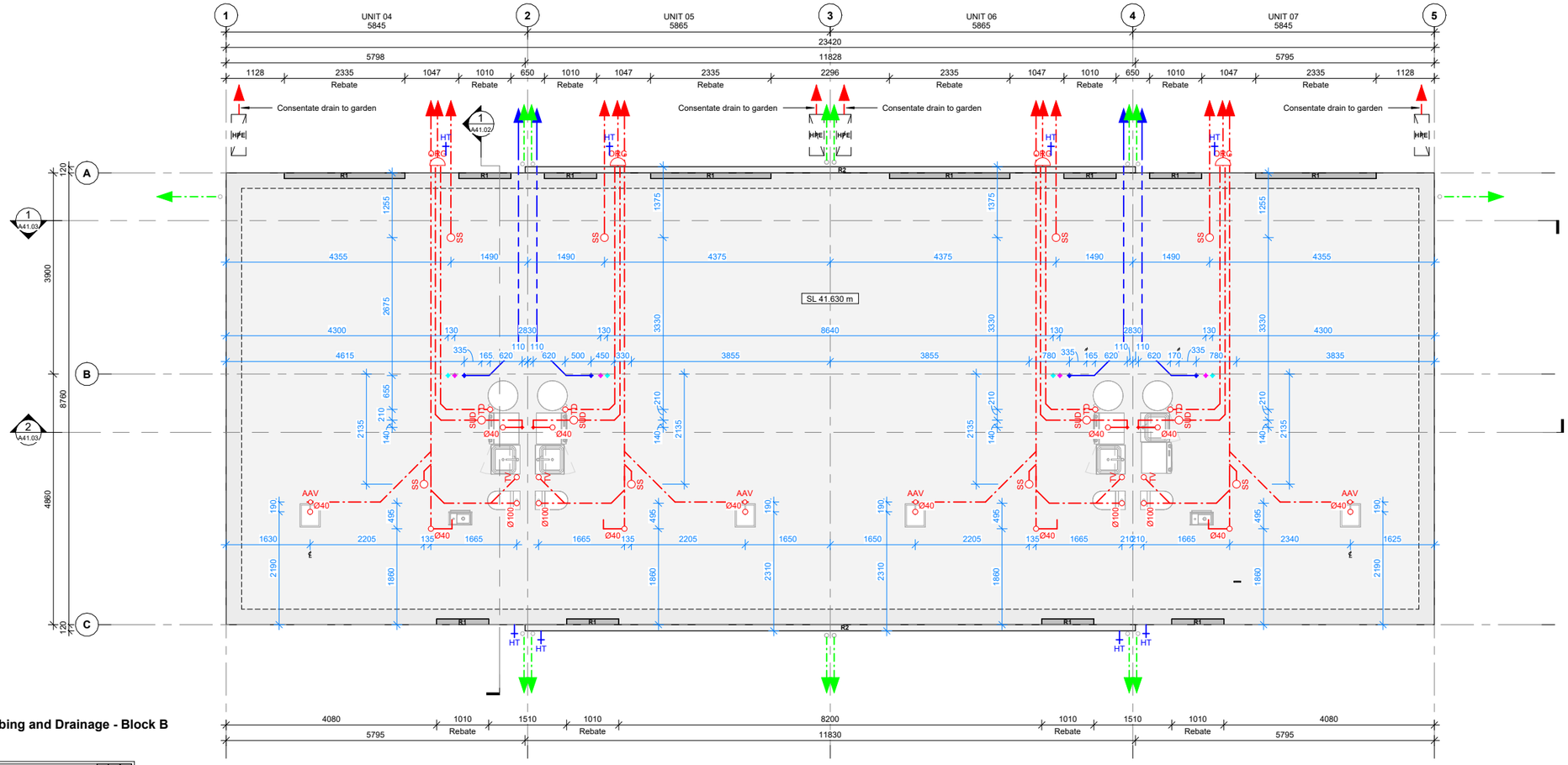

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
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3. Refer A03.11 For Material Schedules / Selections
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General Plumbing & Drainage Notes

1. Stormwater drainage system shall be installed in accordance with NZBC E1/AS1
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4. Minimum grade of drains

Nom. Size DN	Min. grade %	Ratio
40	2.50	1:40
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Services Legend

- GT — Gully Trap
- ORG — Overflow Relief Gully Trap
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- TV — Terminal Vent
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- FWG — Floor Waste Gully
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- New Stormwater Pipe
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- New Water Main Pipe
- Existing Cold Water Supply
- New Cold Water Supply
- Existing Tempered Water Supply
- New Tempered Water Supply
- HT — Hose Tap with permanently attached hose connection vacuum breaker

Electrical Installations

- Power Line Conduit
- Telecommunications Line Conduit

Note: Installation according to AS/NZS 3000:2018. Conduit locations to be checked and coordinated on site.

Slab Legend

- R1 — Slab Recess at Slider Doorway and Hinged Doorway, 35mm deep. Width, refer to details. Length, refer to slab plan
- R2 — Slab Recess at Brick Veneer Cladding, 140mm deep. 120mm wide. Length, refer to slab plan

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NOTES:
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STRUCTURAL DRAWINGS AND DETAILS
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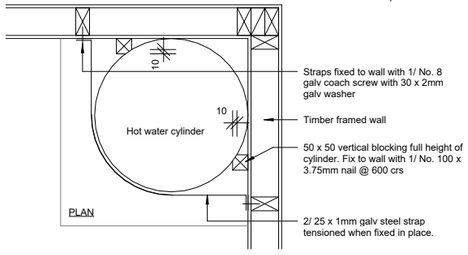
1 A41.02 Slab Plan / Plumbing and Drainage - Block B

Scale 1 : 50 @ A1



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Safety Trays
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HWC Plinth
Safety tray to be installed on top of H3.2 framed platform. Platform to extend 100mm passed safety tray. H3.2 19mm ply board to enclose platform on top and sited. Paint finished.

2 HWC Installation Detail

Scale 1 : 10 @ A1

Build 201 – APR/MAY 2024

a third centre strap is required for storage tanks with capacity greater than 200 litres

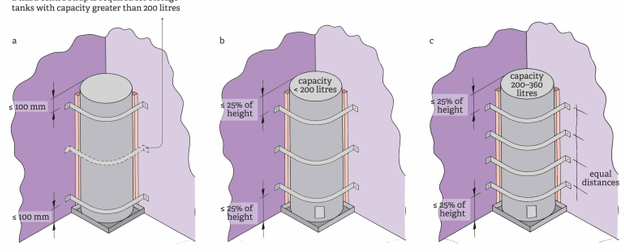

Figure 1: G12/AS1 requires water storage heaters to be restrained with up to four straps depending on the capacity of the storage tank and location of the straps.

TABLE 1: NUMBER OF STRAPS REQUIRED TO SEISMICALLY RESTRAIN WATER STORAGE HEATERS ACCORDING TO G12/AS1.

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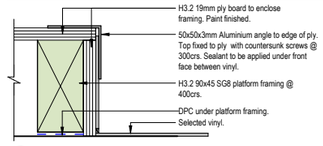
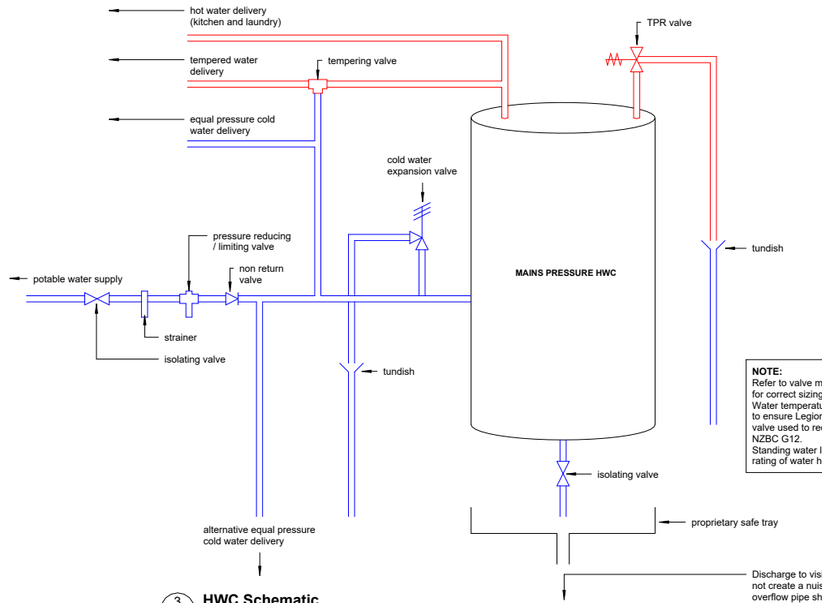


4 HWC Platform

Scale NTS @ A1



NOTE:
Refer to valve manufacturer's recommendations for correct sizing and installation.
Water temperature in cylinder to be set at 60°C to ensure Legionella bacteria is killed. Tempering valve used to reduce this to 50°C as required by NZBC G12.
Standing water level no greater than max head rating of water heater

3 HWC Schematic

Scale 1 : 10 @ A1

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

NORTH

Project: **Arbor Green - Lot 4-7**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **DR**
Scale: **As indicated @ A1**

Sheet Name: **Block B - Slab Plan / Plumbing and Drainage**
Sheet No: **A21.02** Rev No: **0**

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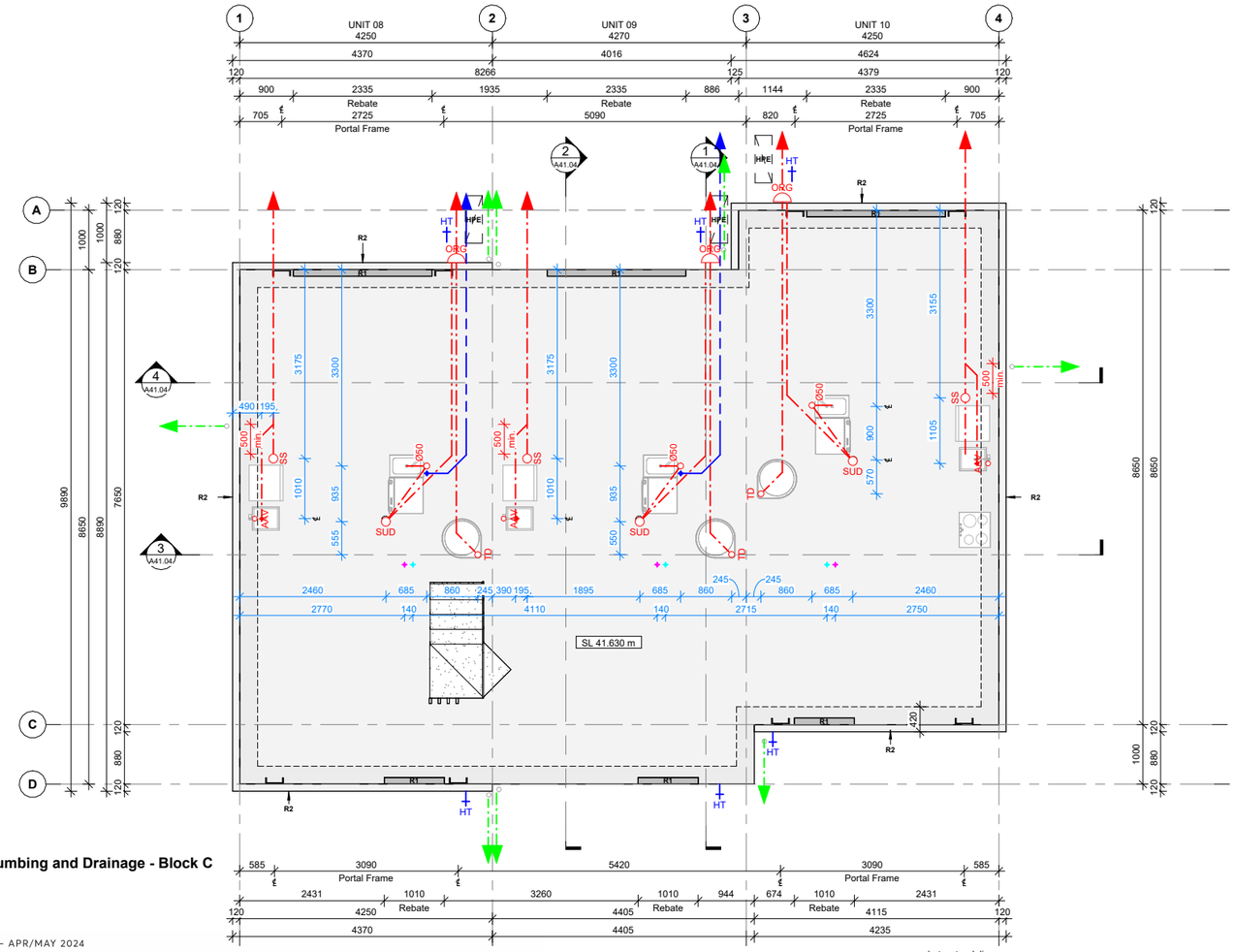

1 A41.04 **Slab Plan / Plumbing and Drainage - Block C**
Scale 1 : 50 @ A1

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
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General Plumbing & Drainage Notes

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- Telecommunications Line Conduit

Note: Installation according to AS/NZS 3000:2018. Conduit locations to be checked and coordinated on site.

Slab Legend

- R1 — Slab Recess at Slider Doorway and Hinged Doorway
  35mm deep.
  Width, refer to details
  Length, refer to slab plan
- R2 — Slab Recess at Brick Veneer Cladding
  140mm deep.
  120mm wide
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SANITARY SYSTEMS PROTECTIVE TAPE
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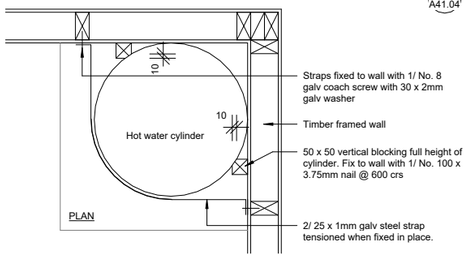

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2 **HWC Installation Detail**
Scale 1 : 10 @ A1

Build 201 – APR/MAY 2024

a third centre strap is required for storage tanks with capacity greater than 200 litres

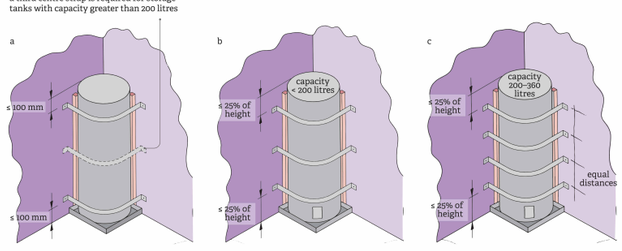

Figure 1: G12/AS1 requires water storage heaters to be restrained with up to four straps depending on the capacity of the storage tank and location of the straps.

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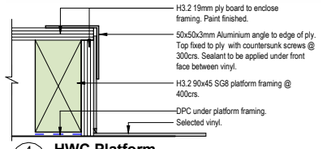
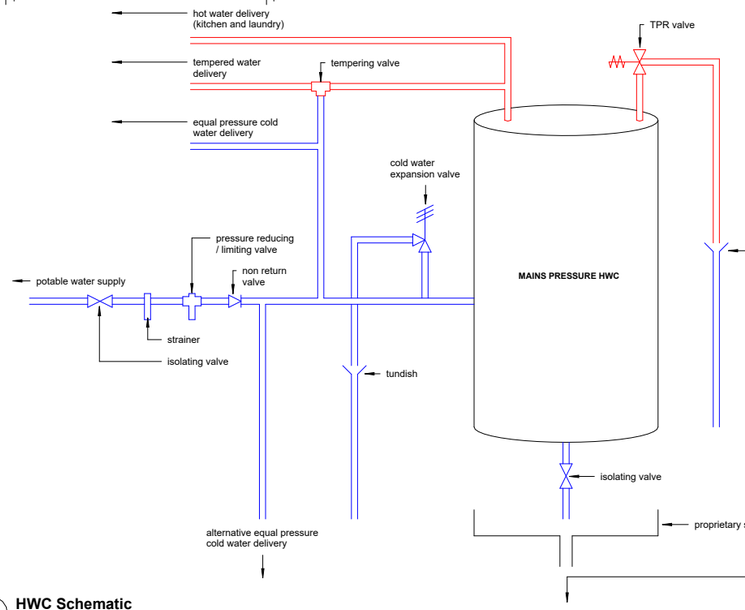


4 **HWC Platform**
Scale NTS @ A1



NOTE:
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Standing water level no greater than max head rating of water heater

3 **HWC Schematic**
Scale 1 : 10 @ A1

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

NORTH

Project: **Arbor Green - Lot 8-10**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
A	Preliminary Design	21/11/2025
B	30% Detailed Design	04/12/2025
C	60% Detailed Design	19/12/2025
D	100% Detailed Design	30/01/2026

Status: **Detailed Design**
Issue Date: **30/01/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Block C - Slab Plan / Plumbing and Drainage**
Sheet No: **A21.03**
Rev No: **D**

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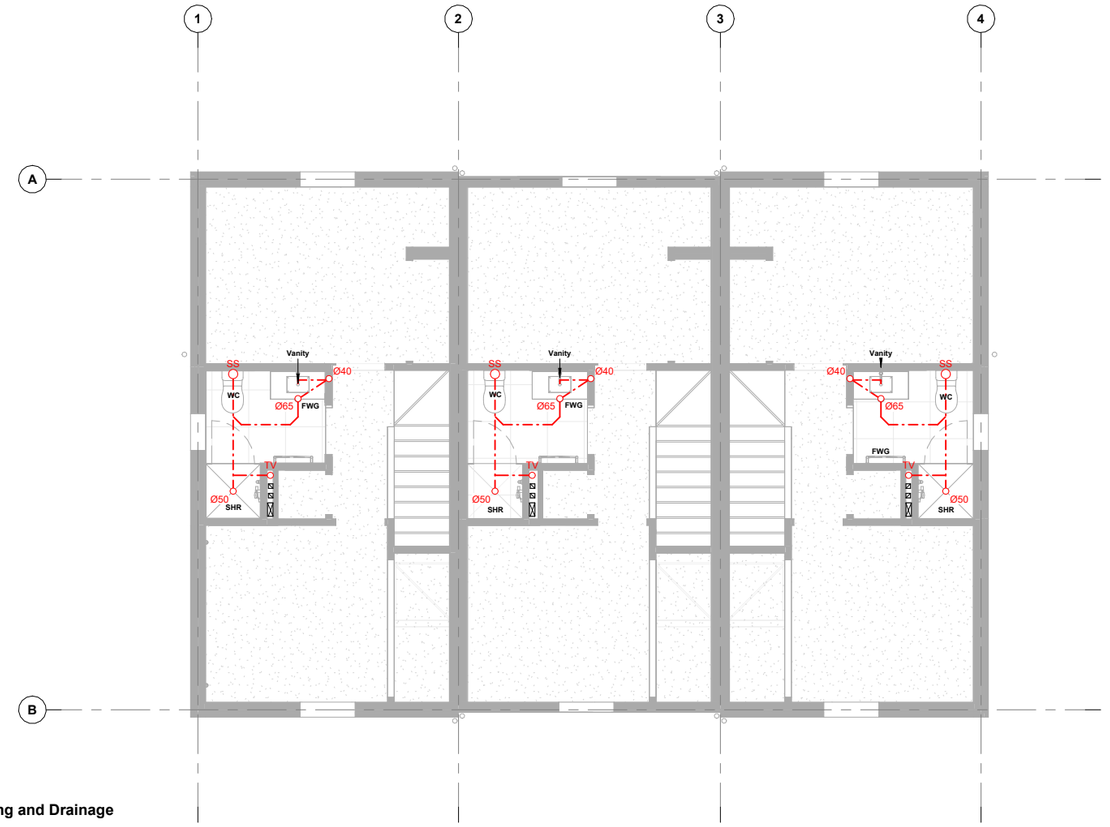


1 - **First Floor Plumbing and Drainage**
Scale 1 : 50 @ A1

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

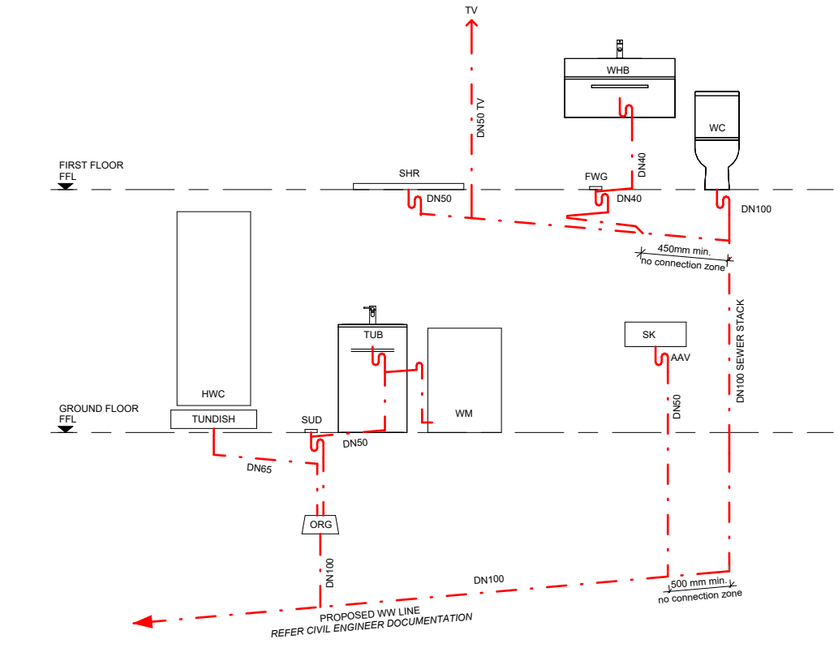
General Plumbing & Drainage Notes

1. Stormwater drainage system shall be installed in accordance with NZBC E1/AS1
2. Sanitary sewer system shall be installed in accordance ith NZBC G13/AS3 (AS/NZS3500.2)
3. All drains set in slab to be Ø65mm min.
4. Minimum grade of drains

Nom. Size DN	Min. grade %	Ratio
40	2.50	1:40
50	2.50	1:40
65	2.50	1:40
80	1.65	1:60
100	1.65	1:60

Services Legend

- GT — Gully Trap
- ORG — Overflow Relief Gully Trap
- IP — Inspection Point
- RP — Rodding Point
- SS — Sanitary Sewer Stack
- TV — Terminal Vent
- MV — Main Drain Vent
- FWG — Floor Waste Gully
- TD Ø65 — Tun dish, Stub Size
- Existing Sanitary Sewer pipe
- New Sanitary Sewer pipe
- Existing Stormwater Pipe
- New Stormwater Pipe
- Existing Water Main Pipe
- New Water Main Pipe
- Existing Cold Water Supply
- New Cold Water Supply
- Existing Tempered Water Supply
- New Tempered Water Supply
- HT — Hose Tap with permanently attached hose connection vacuum breaker



- **Plumbing and Drainage Schematic**
Scale 1 : 25 @ A1

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

Project: **Arbor Green - Lot 1-3** No: **H2639**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Block A - First Floor Framing / Plumbing and Drainage**
Sheet No: A25.01 Rev No: 0

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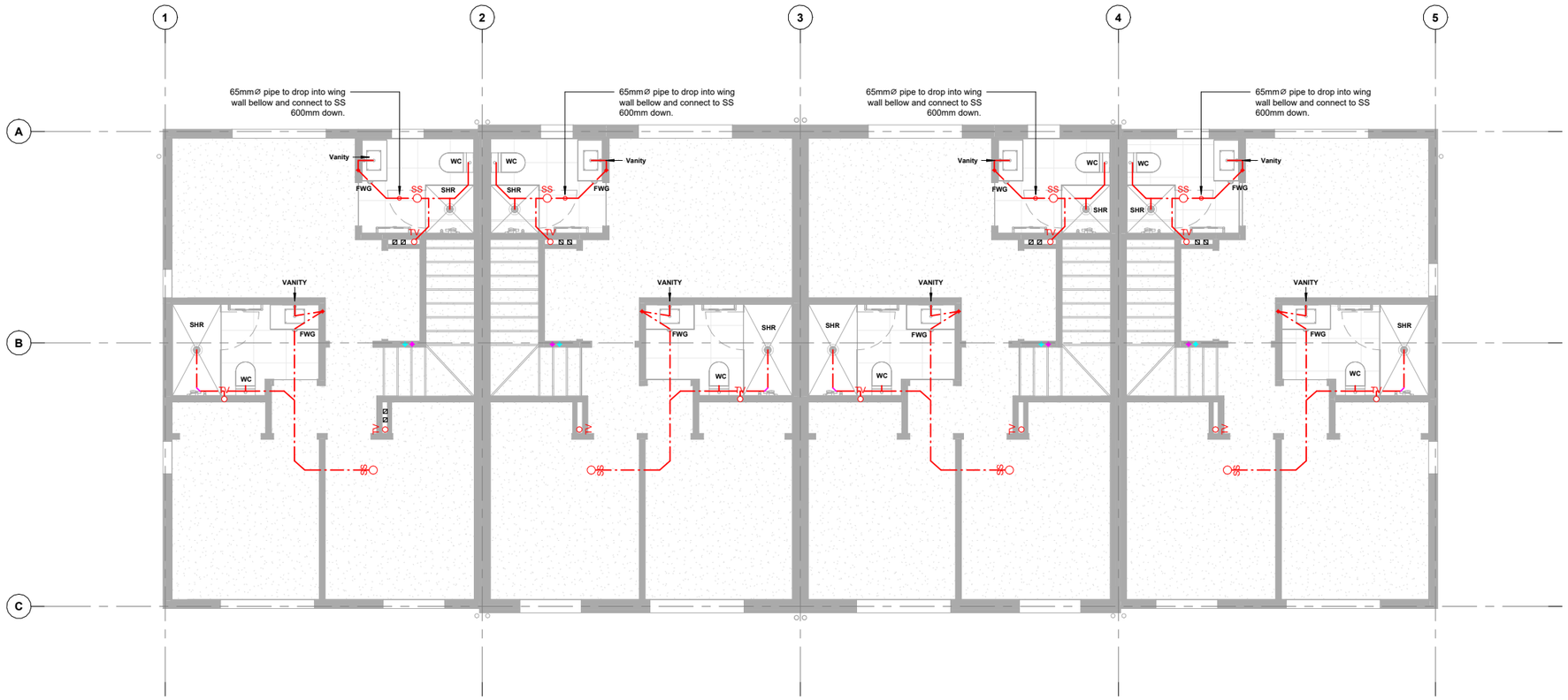
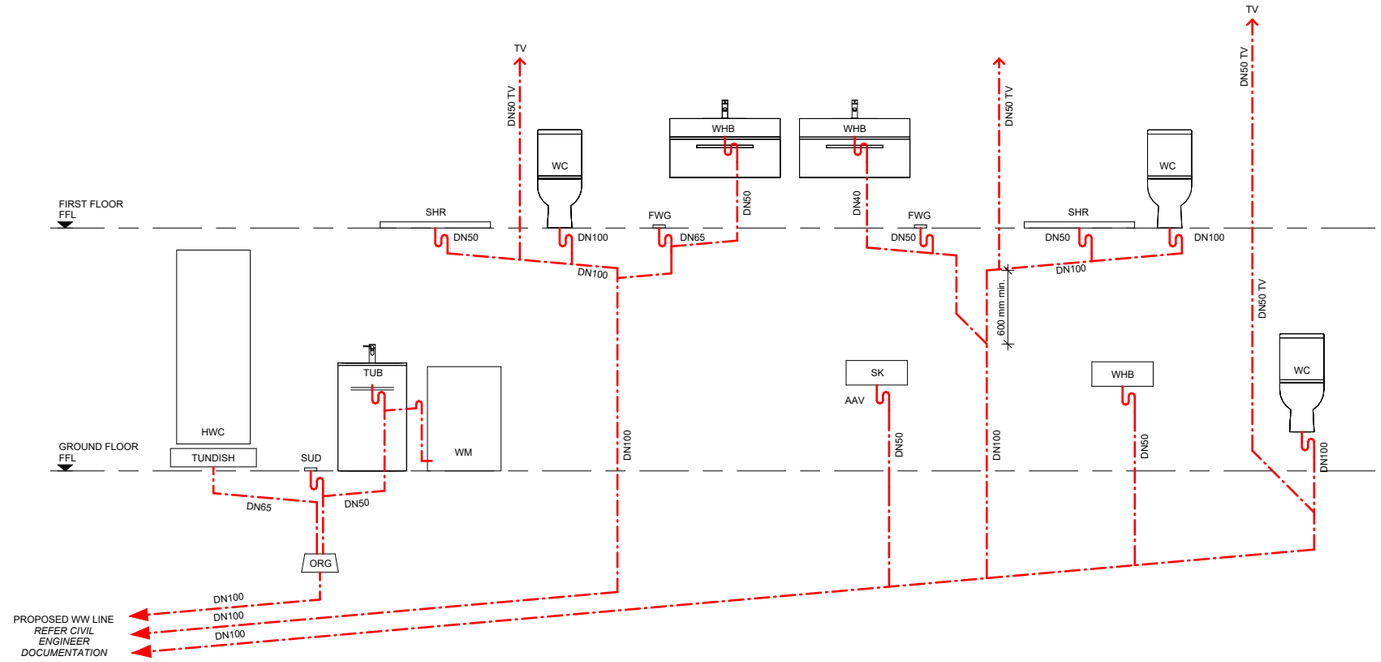


1 A41.02 **First Floor Plumbing and Drainage**
Scale 1 : 50 @ A1



Plumbing and Drainage Schematic
Scale 1 : 25 @ A1

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

General Plumbing & Drainage Notes

1. Stormwater drainage system shall be installed in accordance with NZBC E1/AS1
2. Sanitary sewer system shall be installed in accordance ith NZBC G13/AS3 (AS/NZS3500.2)
3. All drains set in slab to be Ø65mm min.
4. Minimum grade of drains

Nom. Size DN	Min. grade %	Ratio
40	2.50	1:40
50	2.50	1:40
65	2.50	1:40
80	1.65	1:60
100	1.65	1:60

Services Legend

- GT — Gully Trap
- ORG — Overflow Relief Gully Trap
- IP — Inspection Point
- RP — Rodding Point
- SS — Sanitary Sewer Stack
- TV — Terminal Vent
- MV — Main Drain Vent
- FWG — Floor Waste Gully
- TD — Tun dish
- Ø65 — Stub Size
- Existing Sanitary Sewer pipe
- New Sanitary Sewer pipe
- Existing Stormwater Pipe
- New Stormwater Pipe
- Existing Water Main Pipe
- New Water Main Pipe
- Existing Cold Water Supply
- New Cold Water Supply
- Existing Tempered Water Supply
- New Tempered Water Supply
- HT — Hose Tap with permanently attached hose connection vacuum breaker

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

Project: **Arbor Green - Lot 4-7**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **DR**
Scale: **As indicated @ A1**

Sheet Name: **Block B - First Floor Framing / Plumbing and Drainage**
Sheet No: **A25.02** Rev No: **0**

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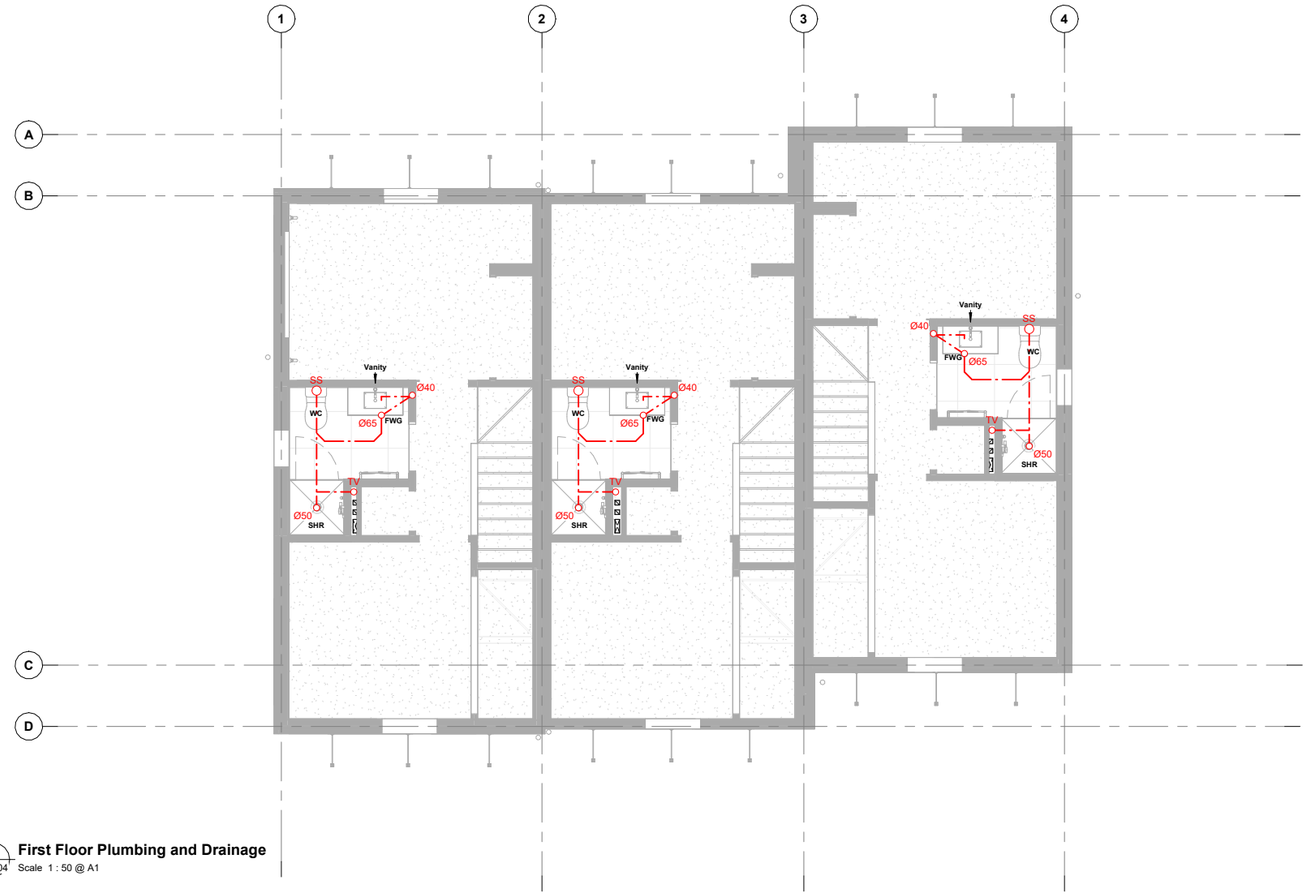


1 A41.04 **First Floor Plumbing and Drainage**
Scale 1 : 50 @ A1

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

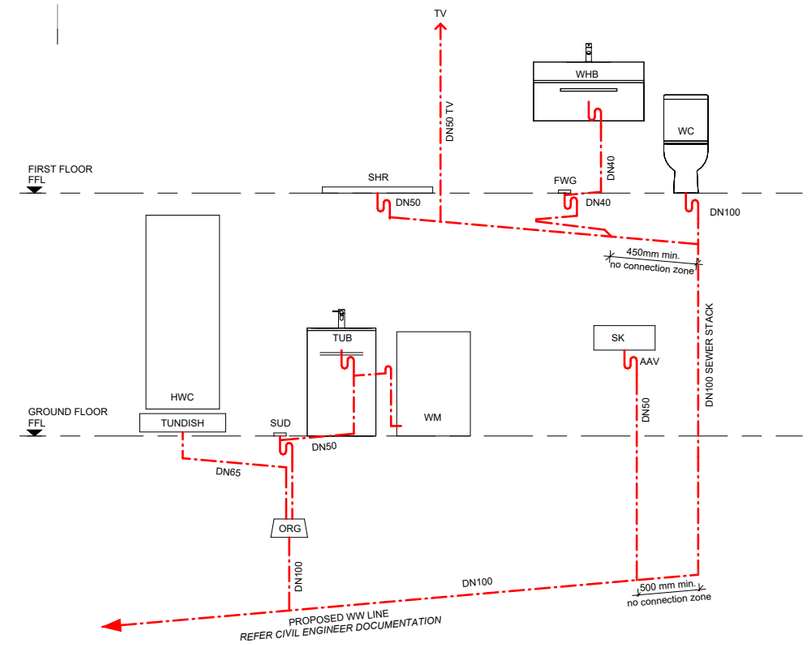
General Plumbing & Drainage Notes

1. Stormwater drainage system shall be installed in accordance with NZBC E1/AS1
2. Sanitary sewer system shall be installed in accordance ith NZBC G13/AS3 (AS/NZS3500.2)
3. All drains set in slab to be Ø65mm min.
4. Minimum grade of drains

Nom. Size DN	Min. grade %	Ratio
40	2.50	1:40
50	2.50	1:40
65	2.50	1:40
80	1.65	1:60
100	1.65	1:60

Services Legend

- GT — Gully Trap
- ORG — Overflow Relief Gully Trap
- IP — Inspection Point
- RP — Rodding Point
- SS — Sanitary Sewer Stack
- TV — Terminal Vent
- MV — Main Drain Vent
- FWG — Floor Waste Gully
- TD — Tun dish
- Ø65 — Stub Size
- Existing Sanitary Sewer pipe
- New Sanitary Sewer pipe
- Existing Stormwater Pipe
- New Stormwater Pipe
- Existing Water Main Pipe
- New Water Main Pipe
- Existing Cold Water Supply
- New Cold Water Supply
- Existing Tempered Water Supply
- New Tempered Water Supply
- HT — Hose Tap with permanently attached hose connection vacuum breaker



Plumbing and Drainage Schematic
Scale 1 : 25 @ A1

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ORIGINAL DRAWING IN COLOUR

Hierarchy Group.

Client: home. CONSTRUCTION

Project: **Arbor Green - Lot 8-10** No: **H2639**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**

Revision Schedule

Rev.	Description	Date
A	Preliminary Design	21/11/2025
B	30% Detailed Design	04/12/2025
C	60% Detailed Design	19/12/2025
D	100% Detailed Design	30/01/2026

Status: **Detailed Design**
Issue Date: **30/01/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Block C - First Floor Framing / Plumbing and Drainage**
Sheet No: A25.03 Rev No: D

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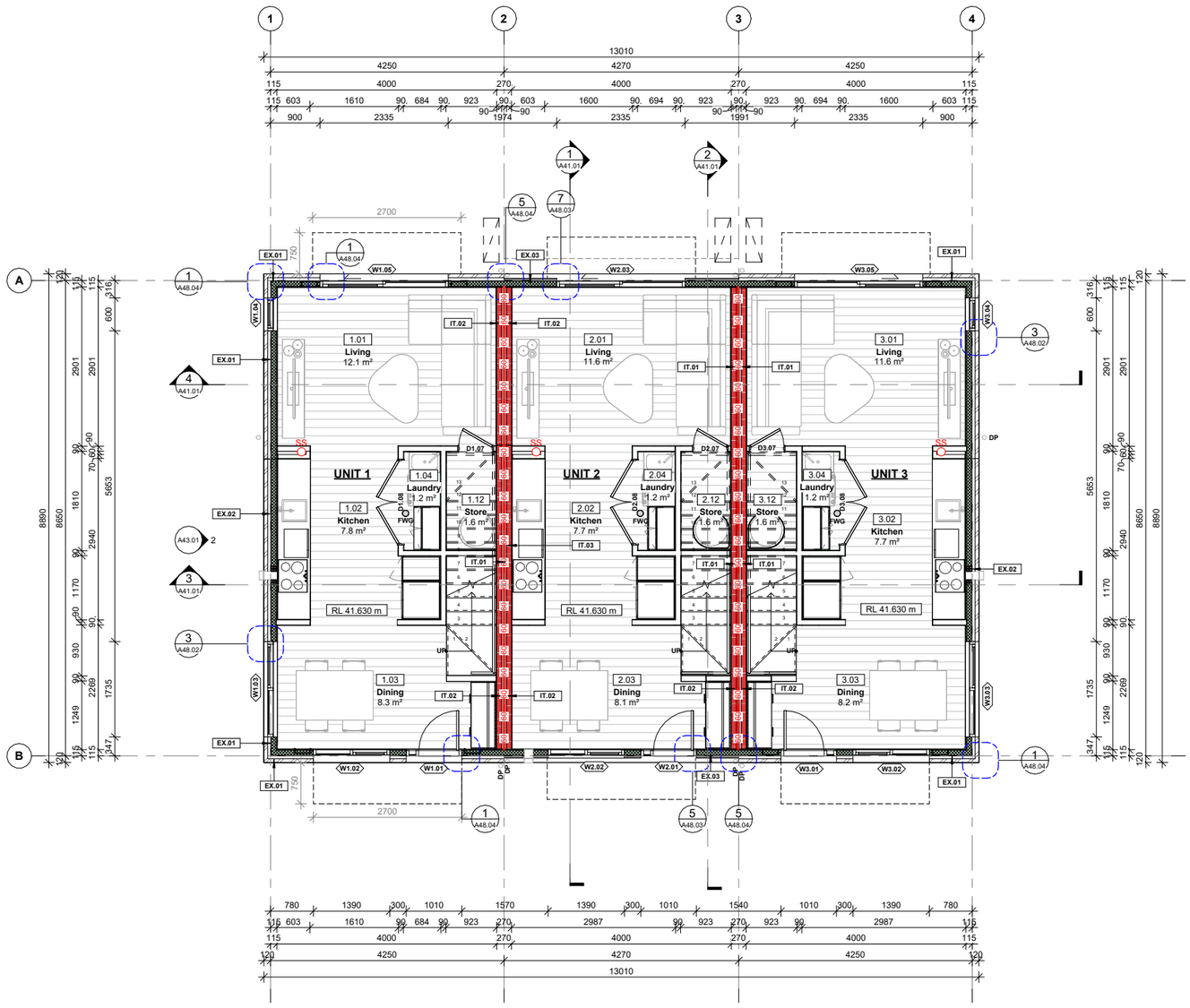

Ground Floor Plan - Block A

Scale 1 : 50 @ A1

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

General Notes

1. All new and altered building / construction works shall comply with the New Zealand Building Code, especially clauses B1 Structure, B2 Durability, E2 External moisture, E3 Internal moisture, as well as NZS3604 for timber framed construction.
2. The handling and disposal of hazardous materials and construction waste shall comply with New Zealand Building Code clause F1, F2, F3 & F5
3. The contractor shall take all necessary measures to ensure the existing elements remaining are protected from damage during construction.
4. Setout dimensions are to centerline of steel stud, and face of timber stud u.n.o. For tenancy walls, setout dimensions are to face of stud or CL gap.
5. Architectural drawings only. Refer to other consultants documents.
6. Contractors are to read all drawings to coordinate fixtures, fittings and dimensions.
7. All shop drawings to be submitted to Designer for review prior to manufacture.
8. All contractors are to check and confirm the exact positions of all existing services on site.
9. Contractor shall verify discrepancies between information on the drawings and conditions on site, Hierarchy Group shall be notified immediately.
10. Contractor shall gain approval from Hierarchy for any substitution or changes proposed in relation to information (be construction method or finishes) on the drawings.
11. All dimensions are in millimeters unless noted otherwise. All dimensions and levels are to be checked on site prior fabrication.
12. Do not scale off drawngs. Use figured dimensions only. Contractor shall verify, check and be responsible for all dimensions on site.
13. If in doubt, ask.

Room Schedule

No.	Area	Name
1.01	12.1 m²	Living
1.02	7.8 m²	Kitchen
1.03	8.3 m²	Dining
1.04	1.2 m²	Laundry
1.05	10.1 m²	Bedroom 1
1.06	1.0 m²	WR-1
1.07	4.9 m²	Hall
1.08	0.6 m²	Cup'D
1.09	8.5 m²	Bedroom 2
1.10	2.2 m²	WR-2
1.11	3.7 m²	Bathroom
1.12	1.6 m²	Store
2.01	11.6 m²	Living
2.02	7.7 m²	Kitchen
2.03	8.1 m²	Dining
2.04	1.2 m²	Laundry
2.05	10.1 m²	Bedroom 1
2.06	1.0 m²	WR-1
2.07	4.9 m²	Hall
2.08	0.6 m²	Cup'D
2.09	8.6 m²	Bedroom 2
2.10	2.2 m²	WR-2
2.11	3.8 m²	Bathroom
2.12	1.6 m²	Store
3.01	11.6 m²	Living
3.02	7.7 m²	Kitchen
3.03	8.2 m²	Dining
3.04	1.2 m²	Laundry
3.05	10.1 m²	Bedroom 1
3.06	1.0 m²	WR-1
3.07	4.9 m²	Hall
3.08	0.6 m²	Cup'D
3.09	8.6 m²	Bedroom 2
3.10	2.2 m²	WR-2
3.11	3.8 m²	Bathroom
3.12	1.6 m²	Store

Wall Schedule - Exterior and IT

Type Mark	Description
Exterior	
EG01	Starke uPVC Standard Size glazing
EG02	Starke uPVC Non-Standard glazing
EX.01	Midland Brick Tipico Range Brick Veneer, running bond pattern, with 50mm drained cavity on 115mm Formance Wall Panel with selected wall underlay. Line internally with 10mm GIB® Standard plasterboard.
EX.02	Midland Brick Tipico Range Brick Veneer, running bond pattern, with 50mm drained cavity on 115mm Formance Wall Panel with selected wall underlay. Line internally with 10mm GIB® Aqualine Plasterboard.
EX.03	James Hardie Stria™ fibre cement cladding on 20mm drained cavity on 115mm Formance Wall Panel with selected wall underlay. Line internally with 10mm GIB® Standard plasterboard.
Interior	
IT.01	GBTLAB 60d - GIB Intertenancy Barrier with 13mm GIB Standard Plasterboard. Refer to Engineer documentation & GIB documentation.
IT.02	GBTLAB 60d - GIB Intertenancy Barrier with 13mm GIB Braceline. Refer to Engineer documentation & GIB documentation.
IT.03	GBTLAB 60d - GIB Intertenancy Barrier with 13mm GIB Aqualine Plasterboard. Refer to Engineer documentation & GIB documentation.

Fire Rating Legend

30 30 60 FRR (60)/60/60

Refer to details & specifications for Detailed Fire Rating Requirements

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

NORTH

Project: **Arbor Green - Lot 1-3**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Block A - Ground Floor Plan**
Sheet No: **A31.01** Rev No: **0**

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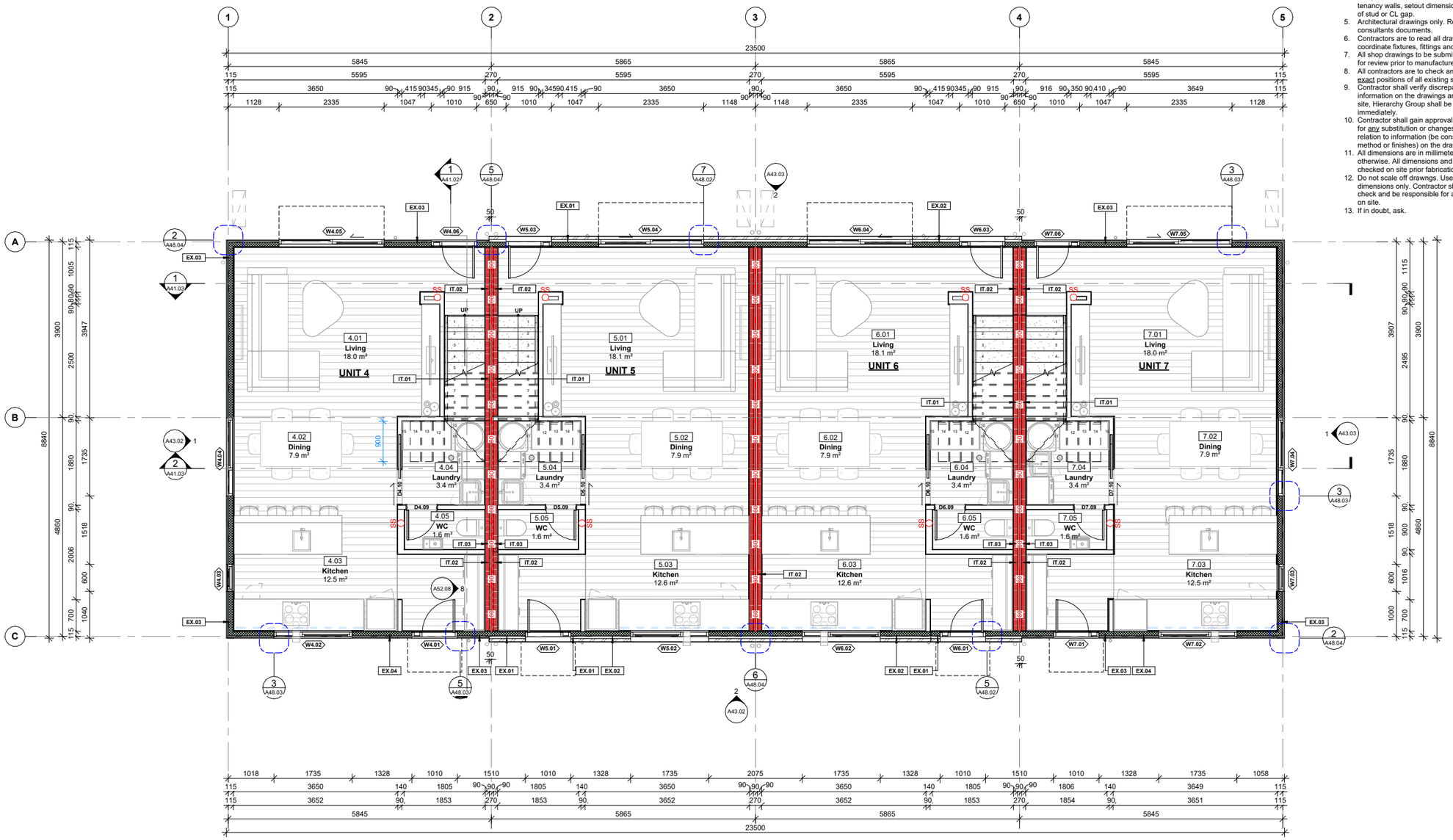

1 A41.02 **Ground Floor**
Scale 1 : 50 @ A1

General Notes

1. All new and altered building / construction works shall comply with the New Zealand Building Code, especially clauses B1 Structure, B2 Durability, E2 External moisture, E3 Internal moisture, as well as NZS3604 for timber framed construction.
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13. If in doubt, ask.

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

Room Schedule

No.	Area	Name
4.01	18.0 m²	Living
4.02	7.9 m²	Dining
4.03	12.5 m²	Kitchen
4.04	3.4 m²	Laundry
4.05	1.6 m²	WC
4.06	11.3 m²	Bedroom 1
4.07	3.6 m²	Ensuite
4.08	1.0 m²	WR-1
4.09	2.5 m²	Hall
4.10	3.3 m²	Stair
4.11	8.0 m²	Bedroom 2
4.12	1.0 m²	WR-2
4.13	8.1 m²	Bedroom 3
4.14	0.9 m²	WR-3
4.15	4.2 m²	Bathroom
5.01	18.1 m²	Living
5.02	7.9 m²	Dining
5.03	12.6 m²	Kitchen
5.04	3.4 m²	Laundry
5.05	1.6 m²	WC
5.06	11.3 m²	Bedroom 1
5.07	3.6 m²	Ensuite
5.08	1.0 m²	WR-1
5.09	2.5 m²	Hall
5.10	3.3 m²	Stair
5.11	8.0 m²	Bedroom 2
5.12	1.0 m²	WR-2
5.13	8.1 m²	Bedroom 3
5.14	0.9 m²	WR-3
5.15	4.2 m²	Bathroom
6.01	18.1 m²	Living
6.02	7.9 m²	Dining
6.03	12.6 m²	Kitchen
6.04	3.4 m²	Laundry
6.05	1.6 m²	WC
6.06	11.3 m²	Bedroom 1
6.07	3.6 m²	Ensuite
6.08	1.0 m²	WR-1
6.09	2.5 m²	Hall
6.10	3.3 m²	Stair
6.11	8.0 m²	Bedroom 2
6.12	1.0 m²	WR-2
6.13	8.1 m²	Bedroom 3
6.14	0.9 m²	WR-3
6.15	4.2 m²	Bathroom
7.01	18.0 m²	Living
7.02	7.9 m²	Dining
7.03	12.5 m²	Kitchen
7.04	3.4 m²	Laundry
7.05	1.6 m²	WC
7.06	11.3 m²	Bedroom 1
7.07	3.6 m²	Ensuite
7.08	1.0 m²	WR-1
7.09	2.5 m²	Hall
7.10	3.3 m²	Stair
7.11	8.0 m²	Bedroom 2
7.12	1.0 m²	WR-2
7.13	8.1 m²	Bedroom 3
7.14	0.9 m²	WR-3
7.15	4.2 m²	Bathroom

Wall Schedule - Exterior and IT

Type Mark	Description
Exterior	
EG01	Starke uPVC Standard Size glazing. C4 L/R
EG02	Starke uPVC Non-Standard glazing
EX.01	Midland Brick Tipico Range Brick Veneer with 50mm drained cavity on 115mm Formance Wall Panel. Line internally with 10mm GIB® Standard plasterboard.
EX.02	Midland Brick Tipico Range Brick Veneer with 50mm drained cavity on 115mm Formance Wall Panel. Line internally with 10mm GIB® Aqualine plasterboard.
EX.03	James Hardie Stria™ fibre cement cladding on 20mm drained cavity on 115mm Formance Wall Panel. Line internally with 10mm GIB® Standard plasterboard.
EX.04	James Hardie Stria™ fibre cement cladding on 20mm drained cavity on 115mm Formance Wall Panel. Line internally with 10mm GIB® Aqualine plasterboard.
Interior	
IT.01	GBTLAB 60d - GIB Intertenancy Barrier with 13mm GIB Standard Plasterboard. Refer to Engineer documentation & GIB documentation.
IT.02	GBTLAB 60d - GIB Intertenancy Barrier with 13mm GIB Braceline. Refer to Engineer documentation & GIB documentation.
IT.03	GBTLAB 60d - GIB Intertenancy Barrier with 13mm GIB Aqualine Plasterboard. Refer to Engineer documentation & GIB documentation.

Fire Rating Legend

30 — 30 — 30 FRR (60)/60/60

Refer to details & specifications for Detailed Fire Rating Requirements

Hierarchy Group.

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

NORTH

Project: **Arbor Green - Lot 4-7**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **DR**
Scale: **As indicated @ A1**

Sheet Name: **Block B - Ground Floor Plan**
Sheet No: **A31.03** Rev No: **0**

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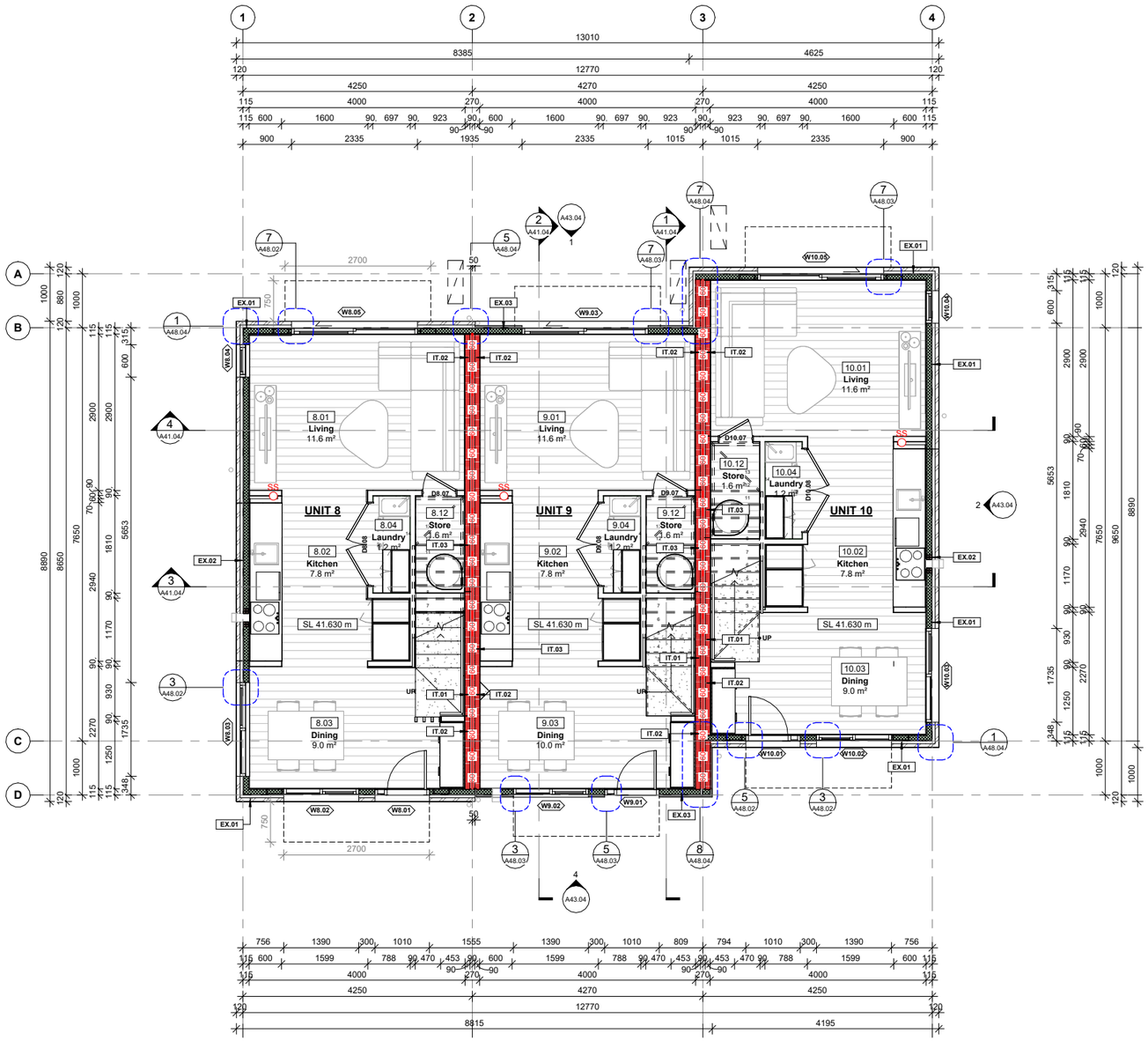

2 Ground Floor Plan - Block C
Scale 1 : 50 @ A1

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

General Notes

1. All new and altered building / construction works shall comply with the New Zealand Building Code, especially clauses B1 Structure, B2 Durability, E2 External moisture, E3 Internal moisture, as well as NZS3604 for timber framed construction.
2. The handling and disposal of hazardous materials and construction waste shall comply with New Zealand Building Code clause F1, F2, F3 & F5
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13. If in doubt, ask.

Room Schedule

No.	Area	Name
8.01	11.6 m²	Living
8.02	7.8 m²	Kitchen
8.03	9.0 m²	Dining
8.04	1.2 m²	Laundry
8.05	10.1 m²	Bedroom 1
8.06	1.0 m²	WR-1
8.07	2.2 m²	Hall
8.08	0.6 m²	Cup'D
8.09	8.7 m²	Bedroom 2
8.10	2.3 m²	WR-2
8.11	3.7 m²	Bathroom
8.12	1.6 m²	Store
9.01	11.6 m²	Living
9.02	7.8 m²	Kitchen
9.03	10.0 m²	Dining
9.04	1.2 m²	Laundry
9.05	10.1 m²	Bedroom 1
9.06	1.0 m²	WR-1
9.07	2.2 m²	Hall
9.08	0.6 m²	Cup'D
9.09	8.6 m²	Bedroom 2
9.10	2.5 m²	WR-2
9.11	3.7 m²	Bathroom
9.12	1.6 m²	Store
10.01	11.6 m²	Living
10.02	7.8 m²	Kitchen
10.03	9.0 m²	Dining
10.04	1.2 m²	Laundry
10.05	10.1 m²	Bedroom 1
10.06	1.0 m²	WR-1
10.07	2.2 m²	Hall
10.08	0.6 m²	Cup'D
10.09	8.6 m²	Bedroom 2
10.10	2.5 m²	WR-2
10.11	3.7 m²	Bathroom
10.12	1.6 m²	Store

Wall Schedule - Exterior and IT

Type Mark	Description
Exterior	
EG01	Starke uPVC Standard size glazing
EG02	Starke uPVC non-standard glazing
EX.01	Midland Brick Tipico Range Brick Veneer, running bond pattern, with 50mm drained cavity on 115mm Formance Wall Panel with selected wall underlay. Line internally with 10mm GIB® Standard plasterboard.
EX.02	Midland Brick Tipico Range Brick Veneer, running bond pattern, with 50mm drained cavity on 115mm Formance Wall Panel with selected wall underlay. Line internally with 10mm GIB® Aqualine Plasterboard.
EX.03	James Hardie Stria™ fibre cement cladding on 20mm drained cavity on 115mm Formance Wall Panel. Line internally with 10mm GIB® Standard plasterboard.
Interior	
IT.01	GBTLAB 60d - GIB Intertenancy Barrier with 13mm GIB Standard Plasterboard. Refer to Engineer documentation & GIB documentation.
IT.02	GBTLAB 60d - GIB Intertenancy Barrier with 13mm GIB Braceline. Refer to Engineer documentation & GIB documentation.
IT.03	GBTLAB 60d - GIB Intertenancy Barrier with 13mm GIB Aqualine Plasterboard. Refer to Engineer documentation & GIB documentation.

Fire Rating Legend

60 — 60 — 60 FRR (60)/60/60

Refer to details & specifications for Detailed Fire Rating Requirements

Hierarchy Group.

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

NORTH

Project: **Arbor Green - Lot 8-10**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Block C - Ground Floor Plan**
Sheet No: **A31.05** Rev No: **0**

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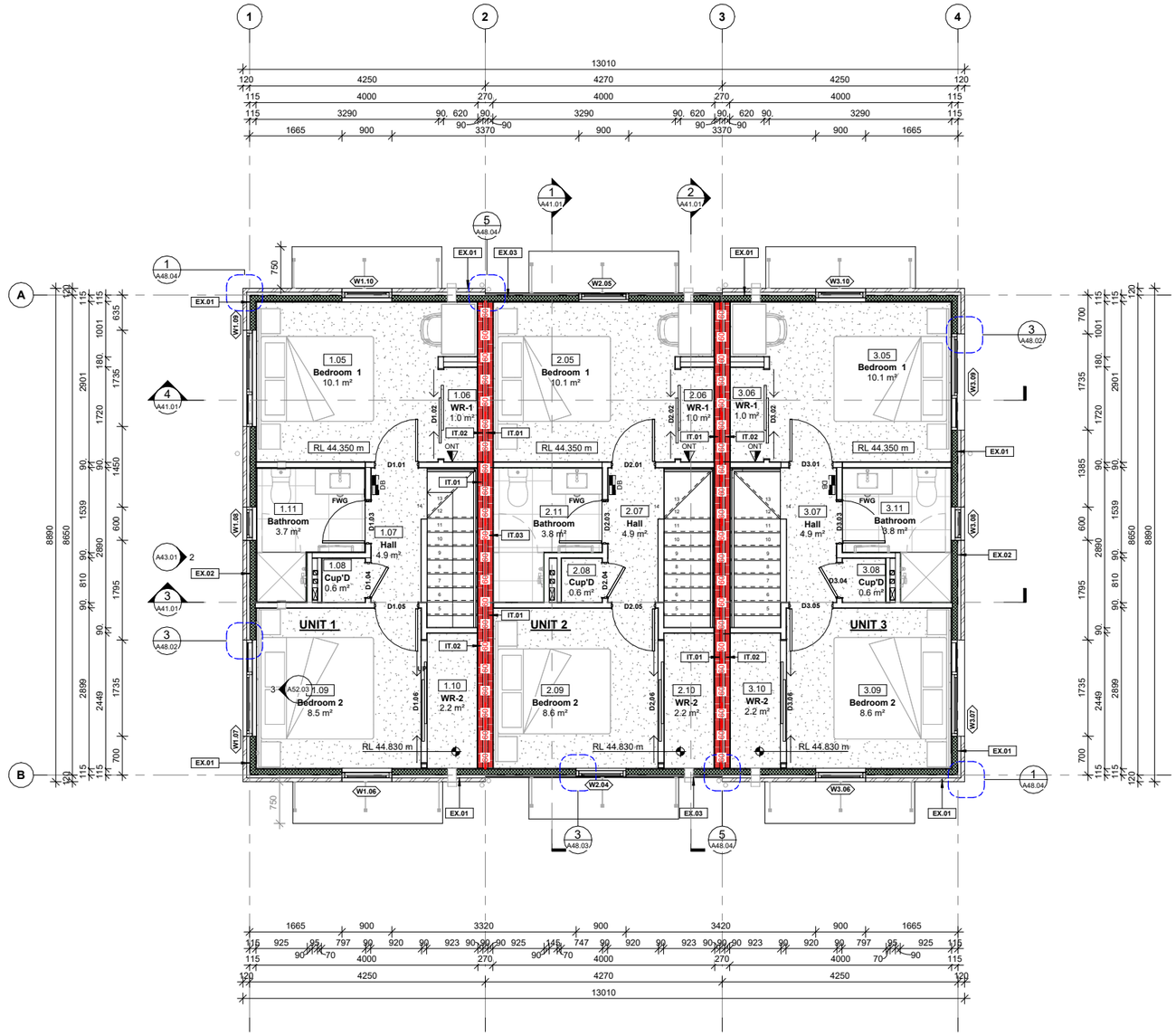

1 - First Floor
Scale 1 : 50 @ A1

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

General Notes

1. All new and altered building / construction works shall comply with the New Zealand Building Code, especially clauses B1 Structure, B2 Durability, E2 External moisture, E3 Internal moisture, as well as NZS3604 for timber framed construction.
2. The handling and disposal of hazardous materials and construction waste shall comply with New Zealand Building Code clause F1, F2, F3 & F5
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6. Contractors are to read all drawings to coordinate fixtures, fittings and dimensions.
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9. Contractor shall verify discrepancies between information on the drawings and conditions on site, Hierarchy Group shall be notified immediately.
10. Contractor shall gain approval from Hierarchy for any substitution or changes proposed in relation to information (be construction method or finishes) on the drawings.
11. All dimensions are in millimeters unless noted otherwise. All dimensions and levels are to be checked on site prior fabrication.
12. Do not scale off drawings. Use figured dimensions only. Contractor shall verify, check and be responsible for all dimensions on site.
13. If in doubt, ask.

Room Schedule

No.	Area	Name
1.01	12.1 m²	Living
1.02	7.8 m²	Kitchen
1.03	8.3 m²	Dining
1.04	1.2 m²	Laundry
1.05	10.1 m²	Bedroom 1
1.06	1.0 m²	WR-1
1.07	4.9 m²	Hall
1.08	0.6 m²	Cup'D
1.09	8.5 m²	Bedroom 2
1.10	2.2 m²	WR-2
1.11	3.7 m²	Bathroom
1.12	1.6 m²	Store
2.01	11.6 m²	Living
2.02	7.7 m²	Kitchen
2.03	8.1 m²	Dining
2.04	1.2 m²	Laundry
2.05	10.1 m²	Bedroom 1
2.06	1.0 m²	WR-1
2.07	4.9 m²	Hall
2.08	0.6 m²	Cup'D
2.09	8.6 m²	Bedroom 2
2.10	2.2 m²	WR-2
2.11	3.8 m²	Bathroom
2.12	1.6 m²	Store
3.01	11.6 m²	Living
3.02	7.7 m²	Kitchen
3.03	8.2 m²	Dining
3.04	1.2 m²	Laundry
3.05	10.1 m²	Bedroom 1
3.06	1.0 m²	WR-1
3.07	4.9 m²	Hall
3.08	0.6 m²	Cup'D
3.09	8.6 m²	Bedroom 2
3.10	2.2 m²	WR-2
3.11	3.8 m²	Bathroom
3.12	1.6 m²	Store

Wall Schedule - Exterior and IT

Type Mark	Description
Exterior	
EG01	Starke uPVC Standard Size glazing
EG02	Starke uPVC Non-Standard glazing
EX.01	Midland Brick Tipico Range Brick Veneer, running bond pattern, with 50mm drained cavity on 115mm Formance Wall Panel with selected wall underlay. Line internally with 10mm GIB® Standard plasterboard.
EX.02	Midland Brick Tipico Range Brick Veneer, running bond pattern, with 50mm drained cavity on 115mm Formance Wall Panel with selected wall underlay. Line internally with 10mm GIB® Aqualine Plasterboard.
EX.03	James Hardie Stria™ fibre cement cladding on 20mm drained cavity on 115mm Formance Wall Panel with selected wall underlay. Line internally with 10mm GIB® Standard plasterboard.
Interior	
IT.01	GBTLAB 60d - GIB Intertenancy Barrier with 13mm GIB Standard Plasterboard. Refer to Engineer documentation & GIB documentation.
IT.02	GBTLAB 60d - GIB Intertenancy Barrier with 13mm GIB Braceline. Refer to Engineer documentation & GIB documentation.
IT.03	GBTLAB 60d - GIB Intertenancy Barrier with 13mm GIB Aqualine Plasterboard. Refer to Engineer documentation & GIB documentation.

Fire Rating Legend

-/60/60 — FRR (60)/60/60

Refer to details & specifications for Detailed Fire Rating Requirements

Hierarchy Group.

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

NORTH

Project: Arbor Green - Lot 1-3
Address: 2 - 8 Laina Lane, Arbor Green, Rolleston
No: H2639

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: Detailed Design
Issue Date: 25/02/2026
Drawn By: SB / FM
Checked By: MP / DR
Scale: As indicated @ A1

Sheet Name: Block A - First Floor Plan
Sheet No: A31.02
Rev No: 0

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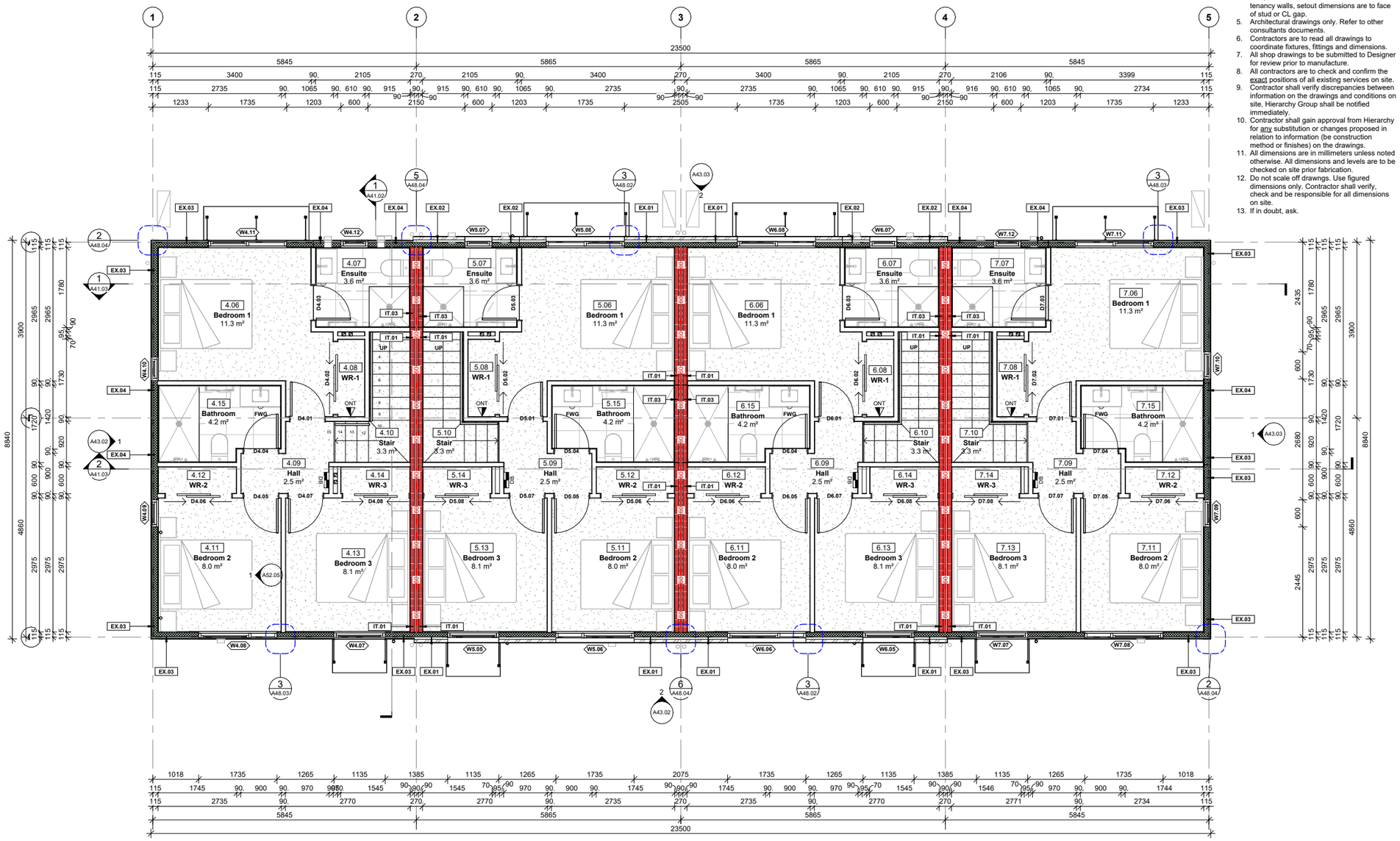

1 A41.02 **First Floor**
Scale 1 : 50 @ A1

General Notes

1. All new and altered building / construction works shall comply with the New Zealand Building Code, especially clauses B1 Structure, B2 Durability, E2 External moisture, E3 Internal moisture, as well as NZS3604 for timber framed construction.
2. The handling and disposal of hazardous materials and construction waste shall comply with New Zealand Building Code clause F1, F2, F3 & F5
3. The contractor shall take all necessary measures to ensure the existing elements remaining are protected from damage during construction.
4. Setout dimensions are to centerline of steel stud, and face of timber stud u.n.o. For tenancy walls, setout dimensions are to face of stud or CL gap.
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9. Contractor shall verify discrepancies between information on the drawings and conditions on site, Hierarchy Group shall be notified immediately.
10. Contractor shall gain approval from Hierarchy for any substitution or changes proposed in relation to information (be construction method or finishes) on the drawings.
11. All dimensions are in millimeters unless noted otherwise. All dimensions and levels are to be checked on site prior fabrication.
12. Do not scale off drawngs. Use figured dimensions only. Contractor shall verify, check and be responsible for all dimensions on site.
13. If in doubt, ask.

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

Room Schedule

No.	Area	Name
4.01	18.0 m²	Living
4.02	7.9 m²	Dining
4.03	12.5 m²	Kitchen
4.04	3.4 m²	Laundry
4.05	1.6 m²	WC
4.06	11.3 m²	Bedroom 1
4.07	3.6 m²	Ensuite
4.08	1.0 m²	WR-1
4.09	2.5 m²	Hall
4.10	3.3 m²	Stair
4.11	8.0 m²	Bedroom 2
4.12	1.0 m²	WR-2
4.13	8.1 m²	Bedroom 3
4.14	0.9 m²	WR-3
4.15	4.2 m²	Bathroom
5.01	18.1 m²	Living
5.02	7.9 m²	Dining
5.03	12.6 m²	Kitchen
5.04	3.4 m²	Laundry
5.05	1.6 m²	WC
5.06	11.3 m²	Bedroom 1
5.07	3.6 m²	Ensuite
5.08	1.0 m²	WR-1
5.09	2.5 m²	Hall
5.10	3.3 m²	Stair
5.11	8.0 m²	Bedroom 2
5.12	1.0 m²	WR-2
5.13	8.1 m²	Bedroom 3
5.14	0.9 m²	WR-3
5.15	4.2 m²	Bathroom
6.01	18.1 m²	Living
6.02	7.9 m²	Dining
6.03	12.6 m²	Kitchen
6.04	3.4 m²	Laundry
6.05	1.6 m²	WC
6.06	11.3 m²	Bedroom 1
6.07	3.6 m²	Ensuite
6.08	1.0 m²	WR-1
6.09	2.5 m²	Hall
6.10	3.3 m²	Stair
6.11	8.0 m²	Bedroom 2
6.12	1.0 m²	WR-2
6.13	8.1 m²	Bedroom 3
6.14	0.9 m²	WR-3
6.15	4.2 m²	Bathroom
7.01	18.0 m²	Living
7.02	7.9 m²	Dining
7.03	12.5 m²	Kitchen
7.04	3.4 m²	Laundry
7.05	1.6 m²	WC
7.06	11.3 m²	Bedroom 1
7.07	3.6 m²	Ensuite
7.08	1.0 m²	WR-1
7.09	2.5 m²	Hall
7.10	3.3 m²	Stair
7.11	8.0 m²	Bedroom 2
7.12	1.0 m²	WR-2
7.13	8.1 m²	Bedroom 3
7.14	0.9 m²	WR-3
7.15	4.2 m²	Bathroom

Wall Schedule - Exterior and IT

Type Mark	Description
Exterior	
EG01	Starke uPVC Standard Size glazing. C4 L/R
EG02	Starke uPVC Non-Standard glazing
EX.01	Midland Brick Tipico Range Brick Veneer with 50mm drained cavity on 115mm Formance Wall Panel. Line internally with 10mm GIB® Standard plasterboard.
EX.02	Midland Brick Tipico Range Brick Veneer with 50mm drained cavity on 115mm Formance Wall Panel. Line internally with 10mm GIB® Aqualine plasterboard.
EX.03	James Hardie Stria™ fibre cement cladding on 20mm drained cavity on 115mm Formance Wall Panel. Line internally with 10mm GIB® Standard plasterboard.
EX.04	James Hardie Stria™ fibre cement cladding on 20mm drained cavity on 115mm Formance Wall Panel. Line internally with 10mm GIB® Aqualine plasterboard.
Interior	
IT.01	GBTLAB 60d - GIB Intertenancy Barrier with 13mm GIB Standard Plasterboard. Refer to Engineer documentation & GIB documentation.
IT.02	GBTLAB 60d - GIB Intertenancy Barrier with 13mm GIB Braceline. Refer to Engineer documentation & GIB documentation.
IT.03	GBTLAB 60d - GIB Intertenancy Barrier with 13mm GIB Aqualine Plasterboard. Refer to Engineer documentation & GIB documentation.

Fire Rating Legend

90 90 30 FRR (60)/60/60

Refer to details & specifications for Detailed Fire Rating Requirements

Hierarchy Group.

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

NORTH

Project: **Arbor Green - Lot 4-7** No: **H2639**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **DR**
Scale: **As indicated @ A1**

Sheet Name: **Block B - First Floor Plan**
Sheet No: **A31.04** Rev No: **0**

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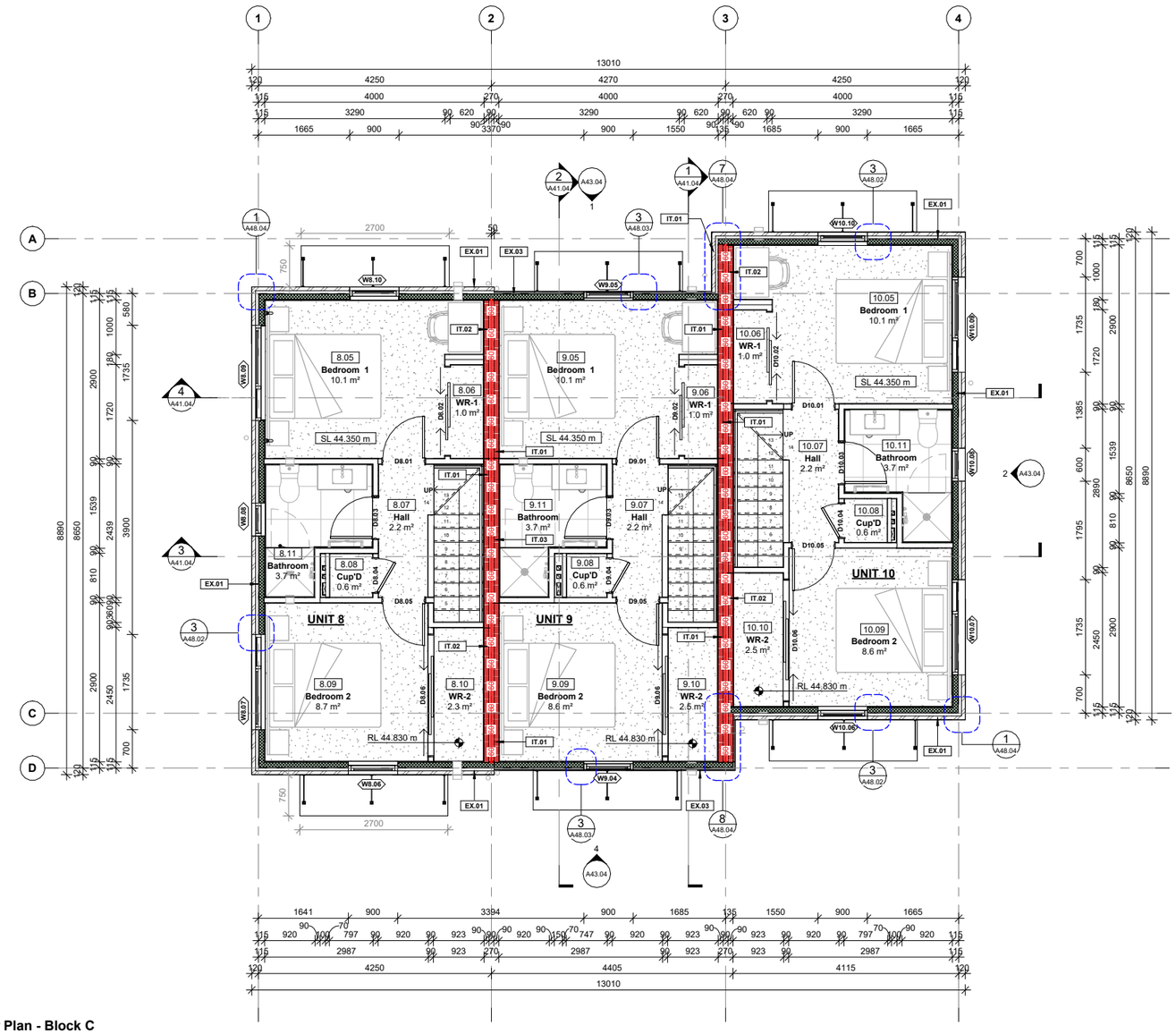

1 A41.04 **First Floor Plan - Block C**
Scale 1 : 50 @ A1

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

General Notes

1. All new and altered building / construction works shall comply with the New Zealand Building Code, especially clauses B1 Structure, B2 Durability, E2 External moisture, E3 Internal moisture, as well as NZS3604 for timber framed construction.
2. The handling and disposal of hazardous materials and construction waste shall comply with New Zealand Building Code clause F1, F2, F3 & F5
3. The contractor shall take all necessary measures to ensure the existing elements remaining are protected from damage during construction.
4. Setout dimensions are to centerline of steel stud, and face of timber stud u.n.o. For tenancy walls, setout dimensions are to face of stud or CL gap.
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12. Do not scale off drawngs. Use figured dimensions only. Contractor shall verify, check and be responsible for all dimensions on site.
13. If in doubt, ask.

Room Schedule

No.	Area	Name
8.01	11.6 m²	Living
8.02	7.8 m²	Kitchen
8.03	9.0 m²	Dining
8.04	1.2 m²	Laundry
8.05	10.1 m²	Bedroom 1
8.06	1.0 m²	WR-1
8.07	2.2 m²	Hall
8.08	0.6 m²	Cup'D
8.09	8.7 m²	Bedroom 2
8.10	2.3 m²	WR-2
8.11	3.7 m²	Bathroom
8.12	1.6 m²	Store
9.01	11.6 m²	Living
9.02	7.8 m²	Kitchen
9.03	10.0 m²	Dining
9.04	1.2 m²	Laundry
9.05	10.1 m²	Bedroom 1
9.06	1.0 m²	WR-1
9.07	2.2 m²	Hall
9.08	0.6 m²	Cup'D
9.09	8.6 m²	Bedroom 2
9.10	2.5 m²	WR-2
9.11	3.7 m²	Bathroom
9.12	1.6 m²	Store
10.01	11.6 m²	Living
10.02	7.8 m²	Kitchen
10.03	9.0 m²	Dining
10.04	1.2 m²	Laundry
10.05	10.1 m²	Bedroom 1
10.06	1.0 m²	WR-1
10.07	2.2 m²	Hall
10.08	0.6 m²	Cup'D
10.09	8.6 m²	Bedroom 2
10.10	2.5 m²	WR-2
10.11	3.7 m²	Bathroom
10.12	1.6 m²	Store

Wall Schedule - Exterior and IT

Type Mark	Description
Exterior	
EG01	Starke uPVC Standard size glazing
EG02	Starke uPVC non-standard glazing
EX.01	Midland Brick Tipico Range Brick Veneer, running bond pattern, with 50mm drained cavity on 115mm Formance Wall Panel with selected wall underlay. Line internally with 10mm GIB® Standard plasterboard.
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Interior	
IT.01	GBTLAB 60d - GIB Intertenancy Barrier with 13mm GIB Standard Plasterboard. Refer to Engineer documentation & GIB documentation.
IT.02	GBTLAB 60d - GIB Intertenancy Barrier with 13mm GIB Braceline. Refer to Engineer documentation & GIB documentation.
IT.03	GBTLAB 60d - GIB Intertenancy Barrier with 13mm GIB Aqualine Plasterboard. Refer to Engineer documentation & GIB documentation.

Fire Rating Legend

-/60/60 — FRR (60)/60/60

Refer to details & specifications for Detailed Fire Rating Requirements

Hierarchy Group.

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

NORTH

Project: **Arbor Green - Lot 8-10**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Block C - First Floor Plan**
Sheet No: **A31.06** Rev No: **0**

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General Notes

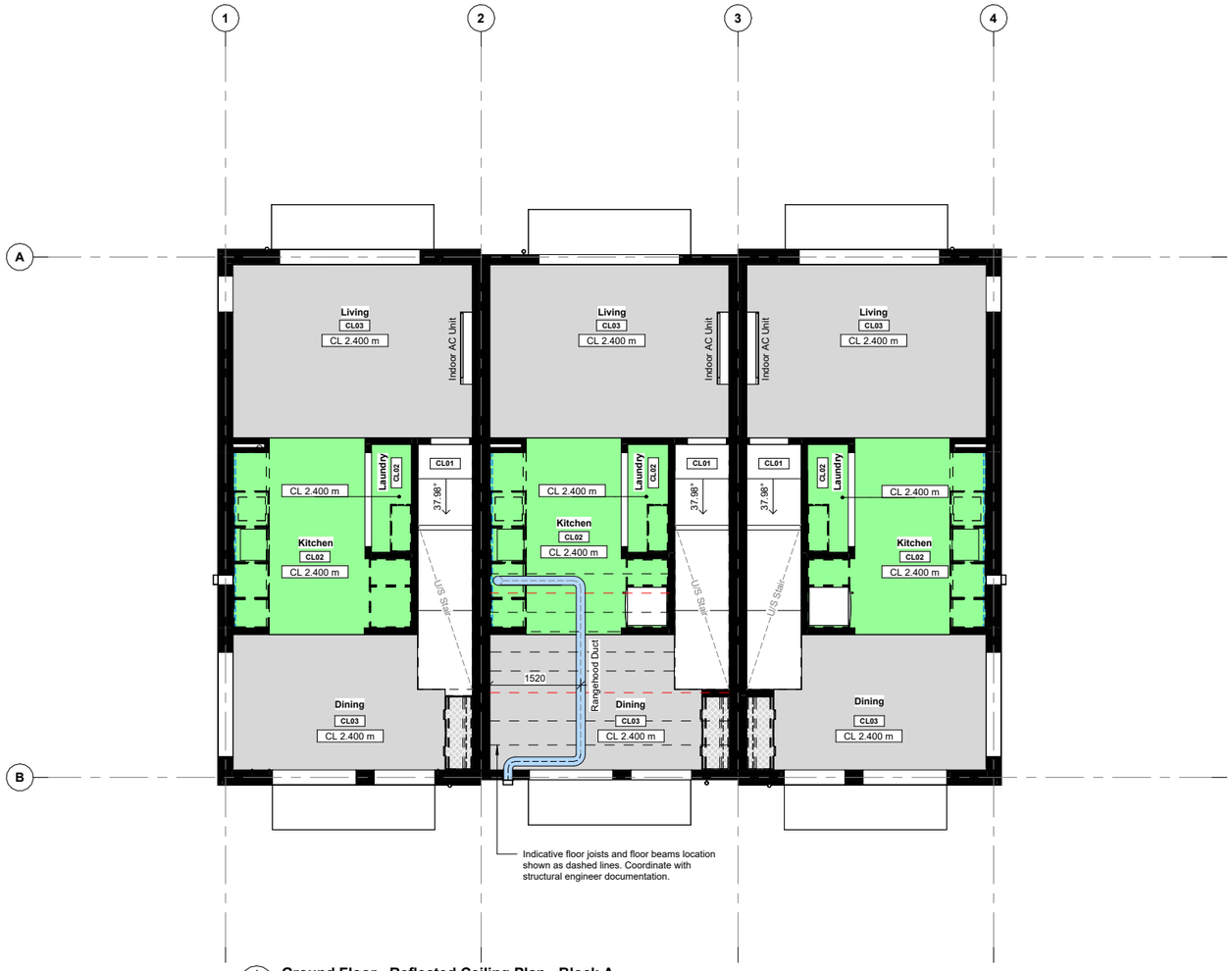
1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

Suspended Ceilings

1. To comply with AS/NZS1170, Suspended ceiling bracing design shall be undertaken by the ceiling [sub] contractor who shall provide **PS1** *Design*, **PS3** *Construction* and **PS4** *Construction Review* statements to the main contractor
2. Allowance is to be made for integration with the ceiling services.
3. Refer to Architectural Specification

Ceiling Schedule

Type	Description
CL01	13mm GIB Standard Plasterboard ceiling on suspended rondo battens fixed to 215 Formance SIP. Paint finish.
CL02	13mm GIB Aqualine plasterboard ondirect fixed rondo battens. Paint finish.
CL03	13mm GIB Plasteboard on direct fixed rondo battens. Paint finish.
CL04	13mm GIB Aqualine plaster board on suspended rondo battens fixed to 215 Formance SIP. Paint finish.



1 - **Ground Floor - Reflected Ceiling Plan - Block A**
Scale 1 : 50 @ A1

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

NORTH

Project: **Arbor Green - Lot 1-3**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Block A - Reflected Ceiling Plan - Ground Floor**
Sheet No: A36.01
Rev No: 0

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General Notes

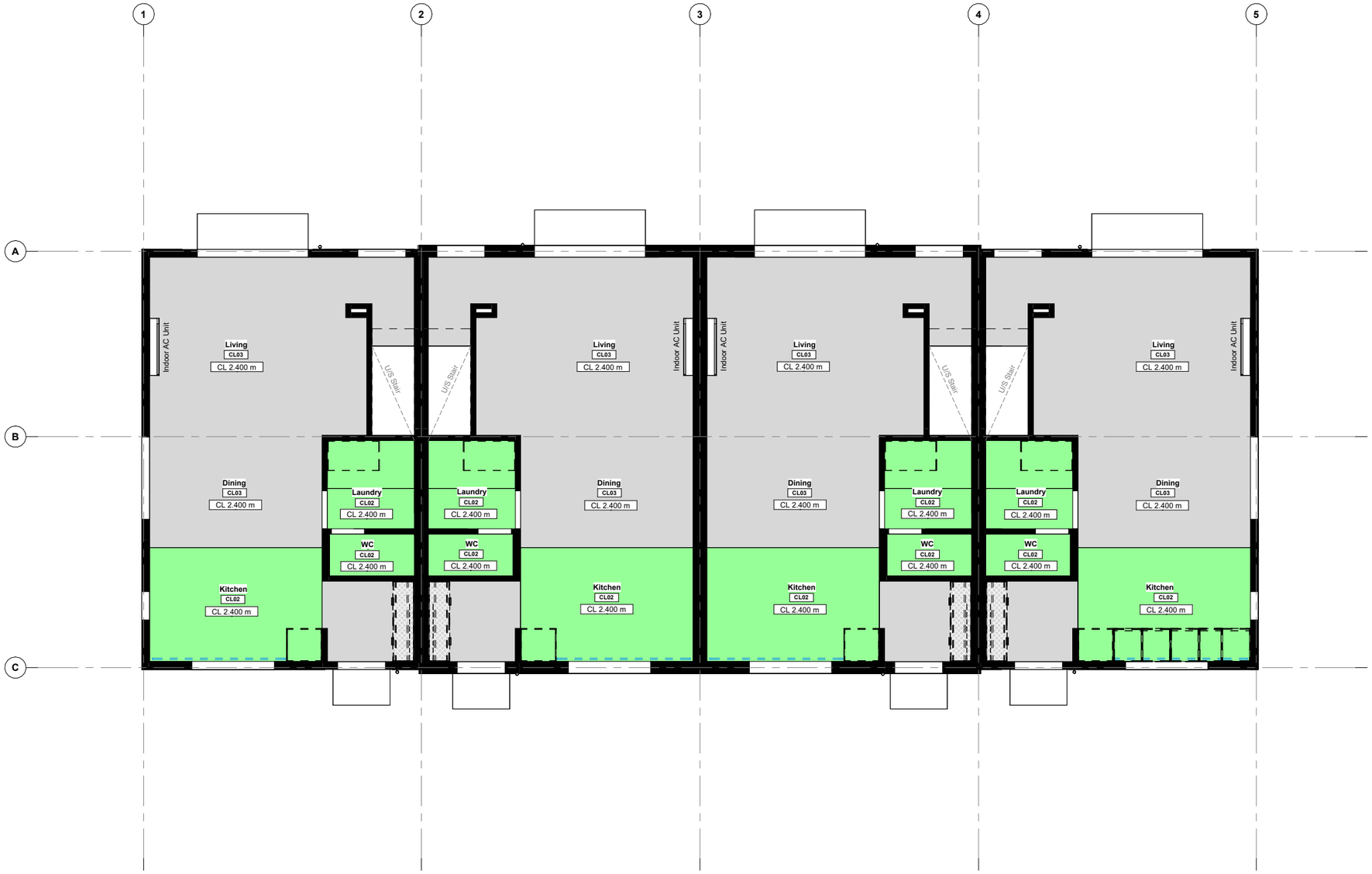
1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

Suspended Ceilings

1. To comply with AS/NZS1170, Suspended ceiling bracing design shall be undertaken by the ceiling [sub] contractor who shall provide **PS1** *Design*, **PS3** *Construction* and **PS4** *Construction Review* statements to the main contractor
2. Allowance is to be made for integration with the ceiling services.
3. Refer to Architectural Specification

Ceiling Schedule

Type	Description
CL01	13mm GIB Standard Plasterboard ceiling on suspended rondo battens fixed to 215 Formance SIP. Paint finish.
CL02	13mm GIB Aqualine Plasteboard on direct fixed rondo battens. Paint finish.
CL03	13mm GIB Plasteboard on direct fixed rondo battens. Paint finish.
CL04	13mm GIB Aqualine Plasteboard on suspended rondo battens fixed to 215 Formance SIP. Paint finish.



1 / A41.02 **Ground Floor - RCP**
Scale 1 : 50 @ A1

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

NORTH

Project: **Arbor Green - Lot 4-7**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **DR**
Scale: **As indicated @ A1**

Sheet Name: **Block B - Reflected Ceiling Plan - Ground Floor**
Sheet No: A36.03
Rev No: 0

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General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

Suspended Ceilings

1. To comply with AS/NZS1170, Suspended ceiling bracing design shall be undertaken by the ceiling [sub] contractor who shall provide **PS1** *Design*, **PS3** *Construction* and **PS4** *Construction Review* statements to the main contractor
2. Allowance is to be made for integration with the ceiling services.
3. Refer to Architectural Specification

Ceiling Schedule

Type	Description
CL01	13mm GIB Standard Plasterboard ceiling on suspended rondo battens fixed to 215 Formance SIP. Paint finish.
CL02	13mm GIB Aqualine Plasterboard on direct fixed rondo battens. Paint finish.
CL03	13mm GIB Plasteboard on direct fixed rondo battens. Paint finish.
CL04	13mm GIB Aqualine Plasterboard on suspended rondo battens fixed to 215 Formance SIP. Paint finish.

1 / A41.04 **Ground Floor - RCP**
Scale 1 : 50 @ A1

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

NORTH

Project: **Arbor Green - Lot 8-10**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Block C - Reflected Ceiling Plan - Ground Floor**
Sheet No: A36.05 Rev No: 0

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General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

Suspended Ceilings

1. To comply with AS/NZS1170, Suspended ceiling bracing design shall be undertaken by the ceiling [sub] contractor who shall provide **PS1** *Design*, **PS3** *Construction* and **PS4** *Construction Review* statements to the main contractor
2. Allowance is to be made for integration with the ceiling services.
3. Refer to Architectural Specification

Ceiling Schedule

Type	Description
CL01	13mm GIB Standard Plasterboard ceiling on suspended rondo battens fixed to 215 Formance SIP. Paint finish.
CL02	13mm GIB Aqualine plasterboard onidirect fixed rondo battens. Paint finish.
CL03	13mm GIB Plasteboard on direct fixed rondo battens. Paint finish.
CL04	13mm GIB Aqualine plaster board on suspended rondo battens fixed to 215 Formance SIP. Paint finish.

1 - **First Floor - Reflected Ceiling Plan - Block A**

Scale 1 : 50 @ A1

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Client: home. CONSTRUCTION

NORTH

Project: **Arbor Green - Lot 1-3**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Block A - Reflected Ceiling Plan - First Floor**
Sheet No: A36.02
Rev No: 0

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General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

Suspended Ceilings

1. To comply with AS/NZS1170. Suspended ceiling bracing design shall be undertaken by the ceiling [sub] contractor who shall provide **PS1** *Design*, **PS3** *Construction* and **PS4** *Construction Review* statements to the main contractor
2. Allowance is to be made for integration with the ceiling services.
3. Refer to Architectural Specification

Ceiling Schedule

Type	Description
CL01	13mm GIB Standard Plasterboard ceiling on suspended rondo battens fixed to 215 Formance SIP. Paint finish.
CL02	13mm GIB Aqualine Plasteboard on direct fixed rondo battens. Paint finish.
CL03	13mm GIB Plasteboard on direct fixed rondo battens. Paint finish.
CL04	13mm GIB Aqualine Plasteboard on suspended rondo battens fixed to 215 Formance SIP. Paint finish.

1 / A41.02 **First Floor Reflected Ceiling Plan - Block B**
Scale 1 : 50 @ A1

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Client: home. CONSTRUCTION

NORTH

Project: **Arbor Green - Lot 4-7**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **DR**
Scale: **As indicated @ A1**

Sheet Name: **Block B - Reflected Ceiling Plan - First Floor**
Sheet No: A36.04
Rev No: 0

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General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

Suspended Ceilings

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2. Allowance is to be made for integration with the ceiling services.
3. Refer to Architectural Specification

Ceiling Schedule

Type	Description
CL01	13mm GIB Standard Plasterboard ceiling on suspended rondo battens fixed to 215 Formance SIP. Paint finish.
CL02	13mm GIB Aqualine Plasterboard on direct fixed rondo battens. Paint finish.
CL03	13mm GIB Plasteboard on direct fixed rondo battens. Paint finish.
CL04	13mm GIB Aqualine Plasterboard on suspended rondo battens fixed to 215 Formance SIP. Paint finish.

1 / A41.04 **First Floor - RCP**
Scale 1 : 50 @ A1

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Client: home. CONSTRUCTION

NORTH

Project: **Arbor Green - Lot 8-10**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Block C - Reflected Ceiling Plan - First Floor**
Sheet No: A36.06
Rev No: 0

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General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

Roof Notes

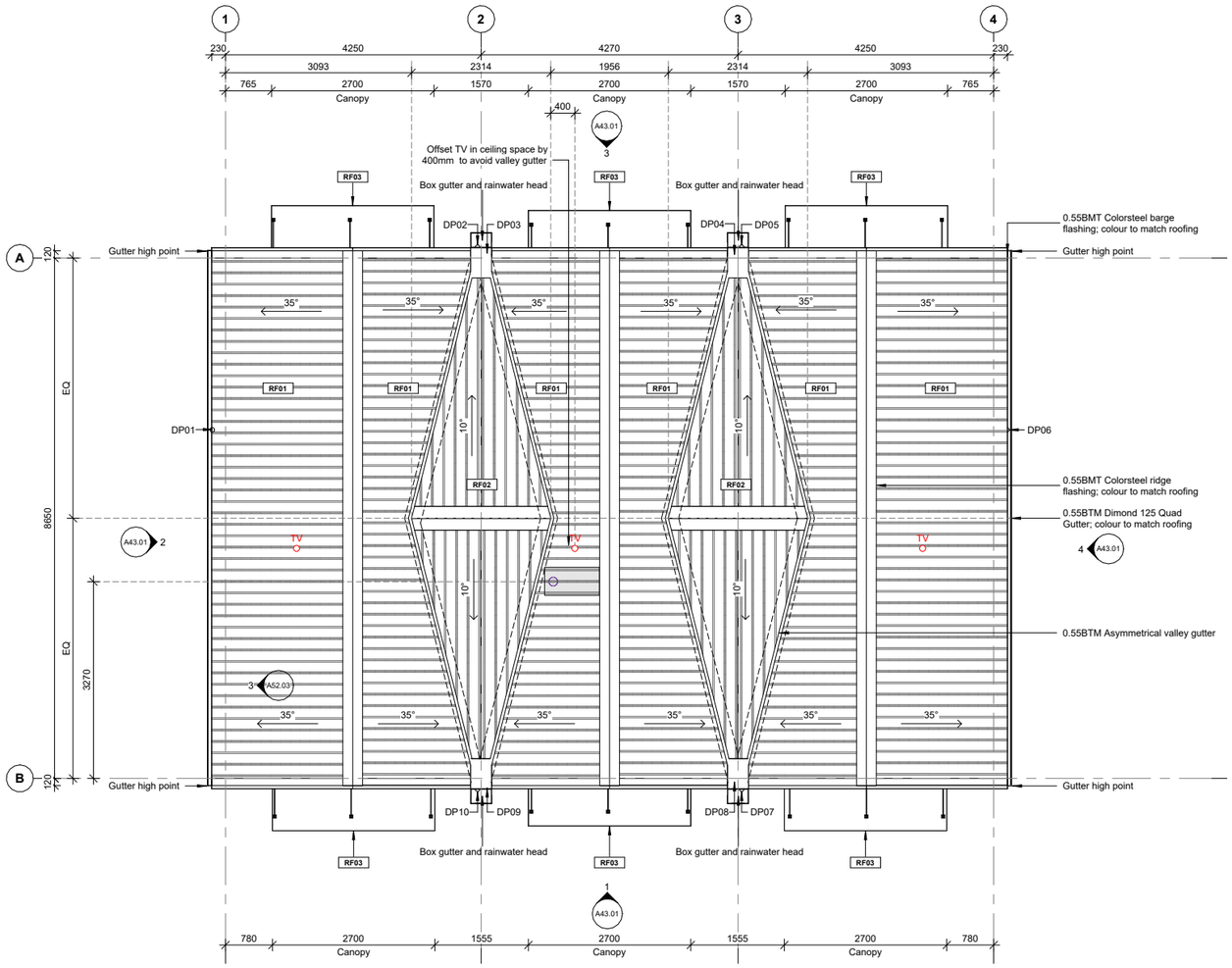
1. All pipe penetrations shall be flashed in accordance with NZBC E2 & Roofing profile technical details.
2. All Mechanical penetrations shall be installed in accordance with NZBC E2 & Roofing profile technical details.

Stormwater Design

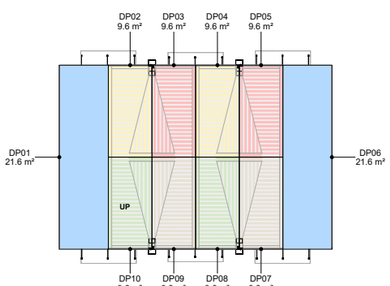
Max roof area per downpipe	=	70m²
Downpipe size	=	80mm Ø
Gutter Profile	=	125 Quad
Gutter depth	=	75mm min.
Gutter slope	=	1:100 internal 1:500 eaves
Gutter width	=	122mm
Gutter Cross Section	=	5670mm²

Roof Schedule

Type	Description
RF01	Dimond Veedek Roofing (COLORSTEEL® FlaxPod) over 215mm Formance SIP Panels
RF02	Dimond Veedek Roofing (COLORSTEEL® FlaxPod) over timber framed roof. Refer to Structural Engineer.
RF03	Aurae Horizon Canopy



1 - Roof Plan - Block A
Scale 1 : 50 @ A1



2 - Roof Catchment
Scale 1 : 150 @ A1

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Client: home. CONSTRUCTION

NORTH

Project: Arbor Green - Lot 1-3
Address: 2 - 8 Laina Lane, Arbor Green, Rolleston
No: H2639

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: Detailed Design
Issue Date: 25/02/2026
Drawn By: SB / FM
Checked By: MP / DR
Scale: As indicated @ A1

Sheet Name: Block A - Roof Plan
Sheet No: A38.01
Rev No: 0

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General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

Roof Notes

1. All pipe penetrations shall be flashed in accordance with NZBC E2 & Roofing profile technical details.
2. All Mechanical penetrations shall be installed in accordance with NZBC E2 & Roofing profile technical details.

Stormwater Design

Max roof area per downpipe	=	70m²
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Gutter Profile	=	125 Quad
Gutter depth	=	75mm min.
Gutter slope	=	1:100 internal 1:500 eaves
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Roof Schedule

Type	Description
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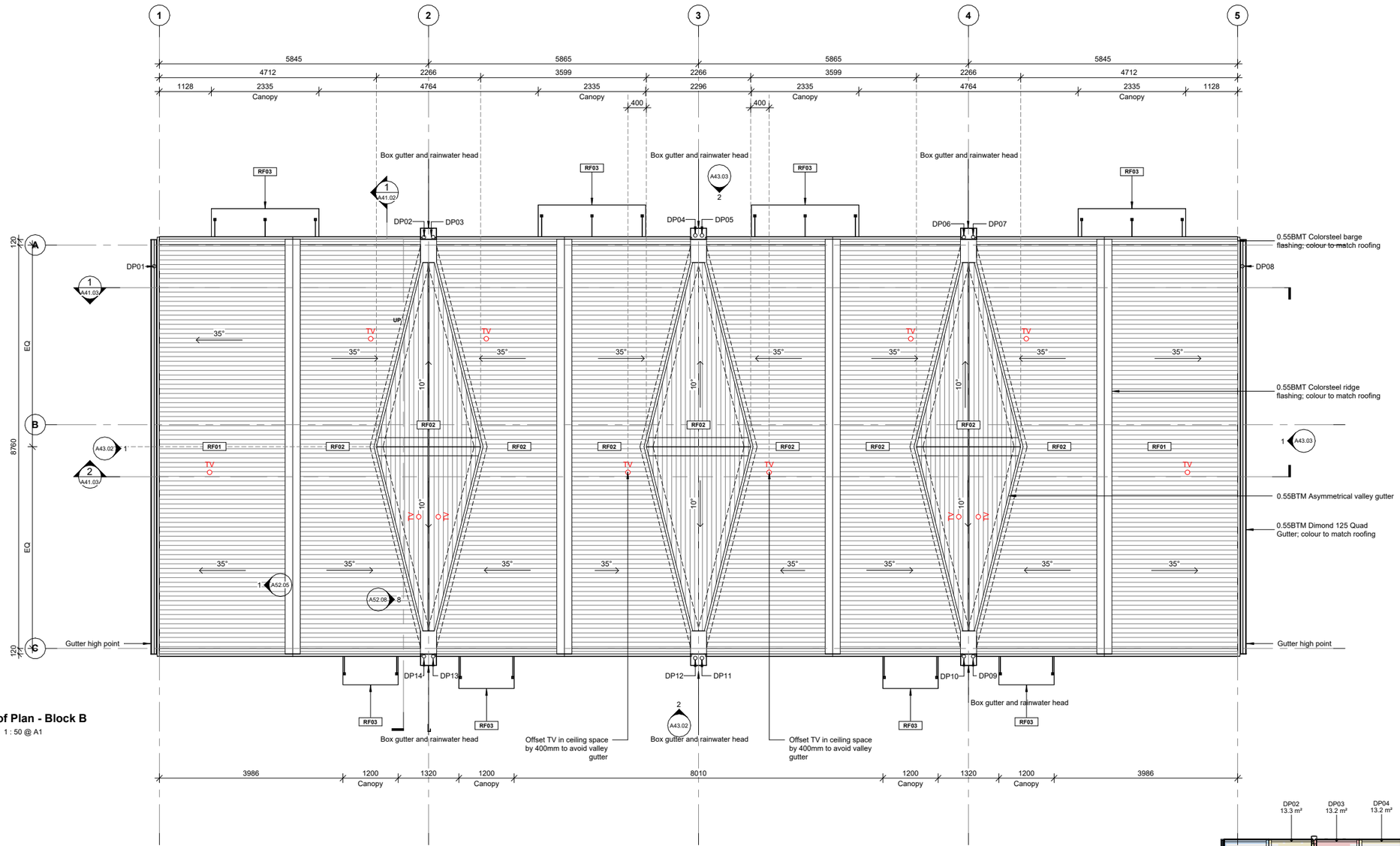
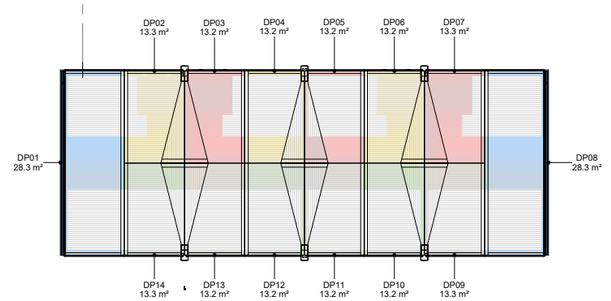


1 A41.02 **Roof Plan - Block B**
Scale 1 : 50 @ A1



2 A41.02 **Roof Catchment**
Scale 1 : 150 @ A1

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Client: home. CONSTRUCTION

NORTH

Project: **Arbor Green - Lot 4-7**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **DR**
Scale: **As indicated @ A1**

Sheet Name: **Block B - Roof Plan**
Sheet No: **A38.02**
Rev No: **0**

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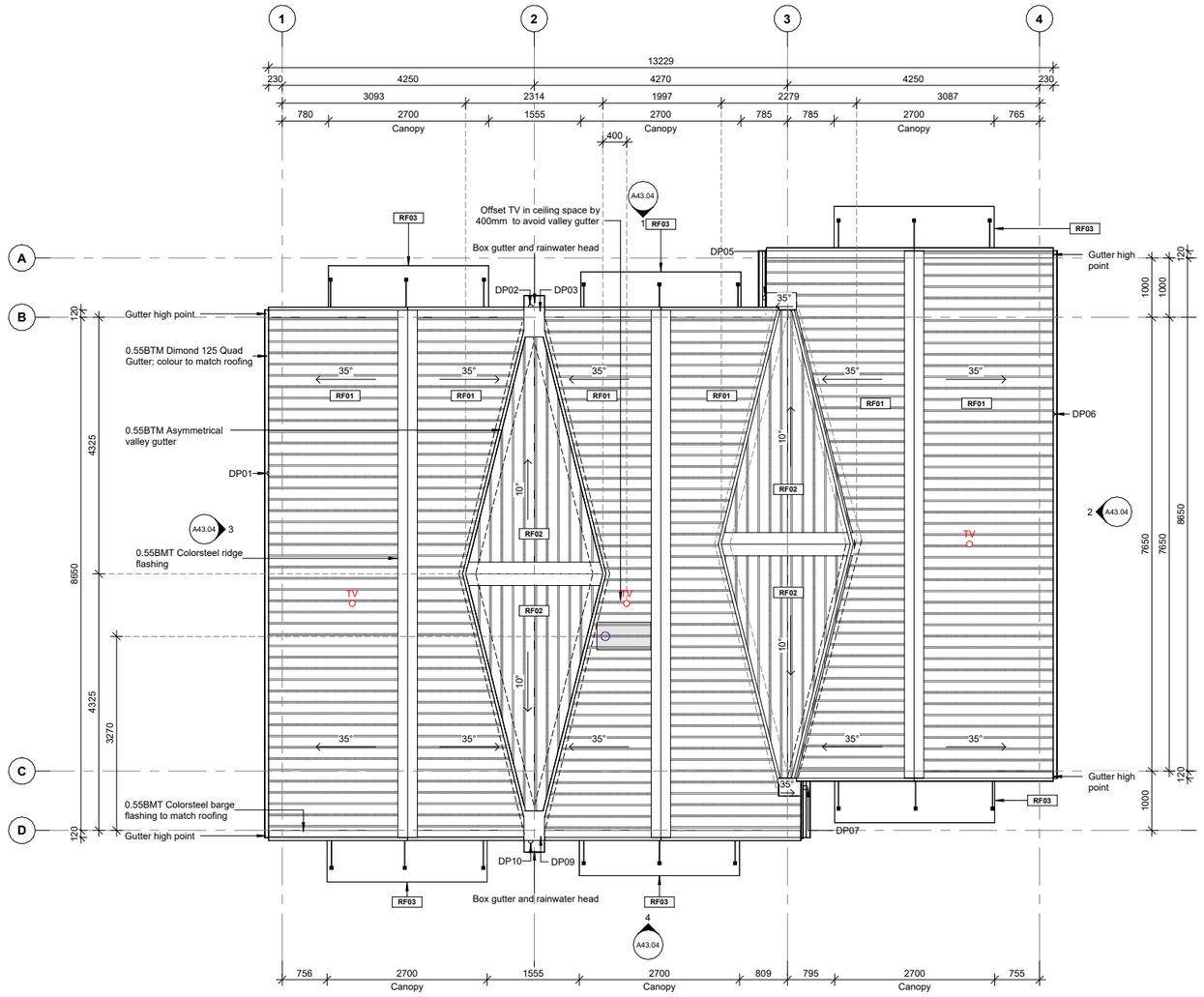

1 A41.04 **Roof Plan - Block C**
Scale 1 : 50 @ A1

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

Roof Notes

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2. All Mechanical penetrations shall be installed in accordance with NZBC E2 & Roofing profile technical details.

Stormwater Design

Max roof area per downpipe	=	70m²
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Type	Description
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RF02	Dimond Veedek Roofing (COLORSTEEL® FlaxPod) over timber framed roof. Refer to Structural Engineer.
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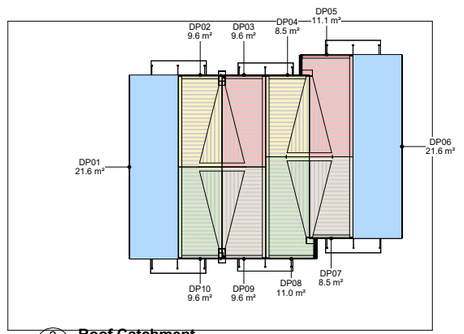

2 A41.04 **Roof Catchment**
Scale 1 : 150 @ A1

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Client: home. CONSTRUCTION

NORTH

Project: Arbor Green - Lot 8-10
Address: 2 - 8 Laina Lane, Arbor Green, Rolleston
No: H2639

Revision Schedule		
Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: Detailed Design
Issue Date: 25/02/2026
Drawn By: SB / FM
Checked By: MP / DR
Scale: As indicated @ A1

Sheet Name: Block C - Roof Plan
Sheet No: A38.03
Rev No: 0

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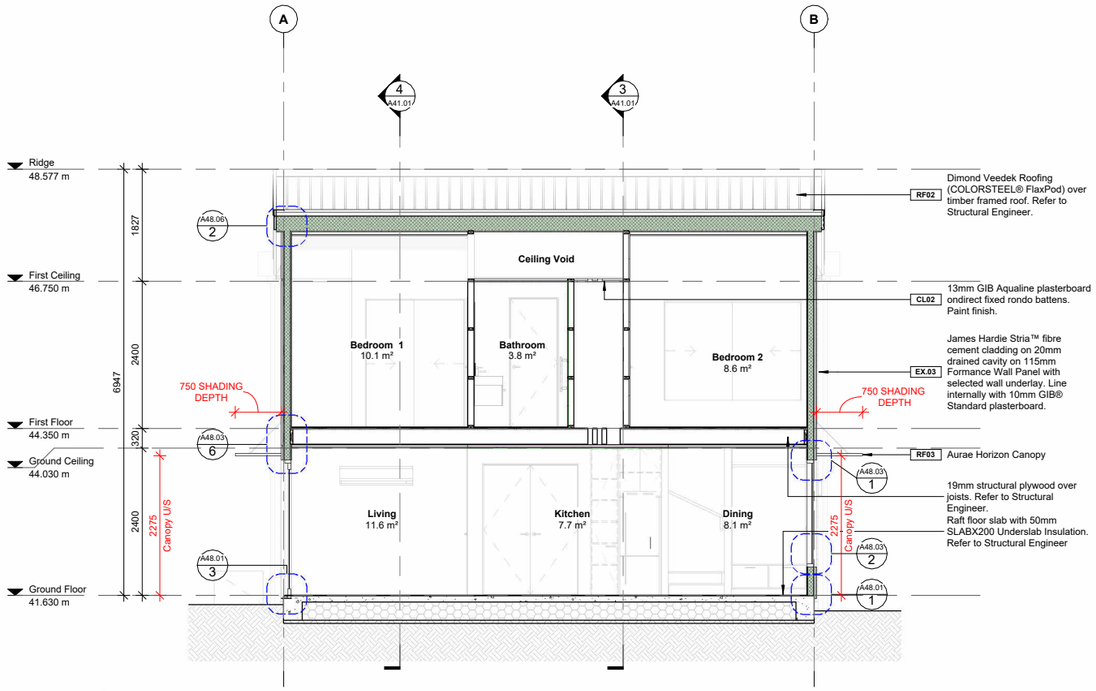
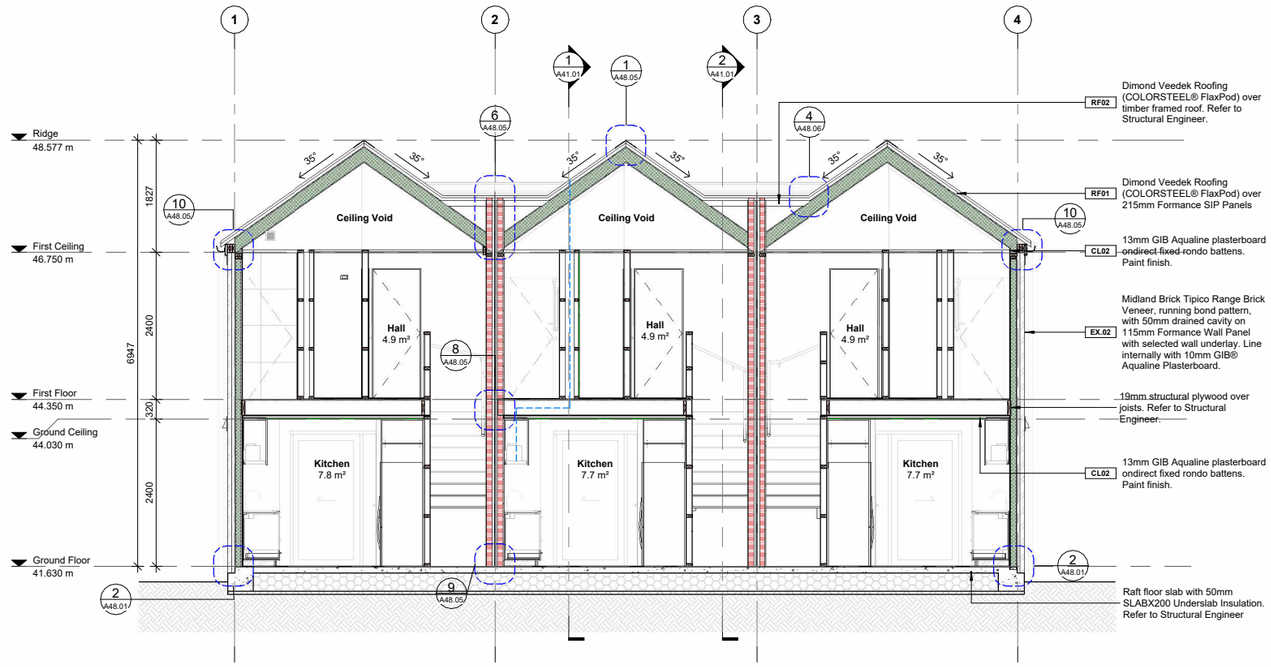
General Notes

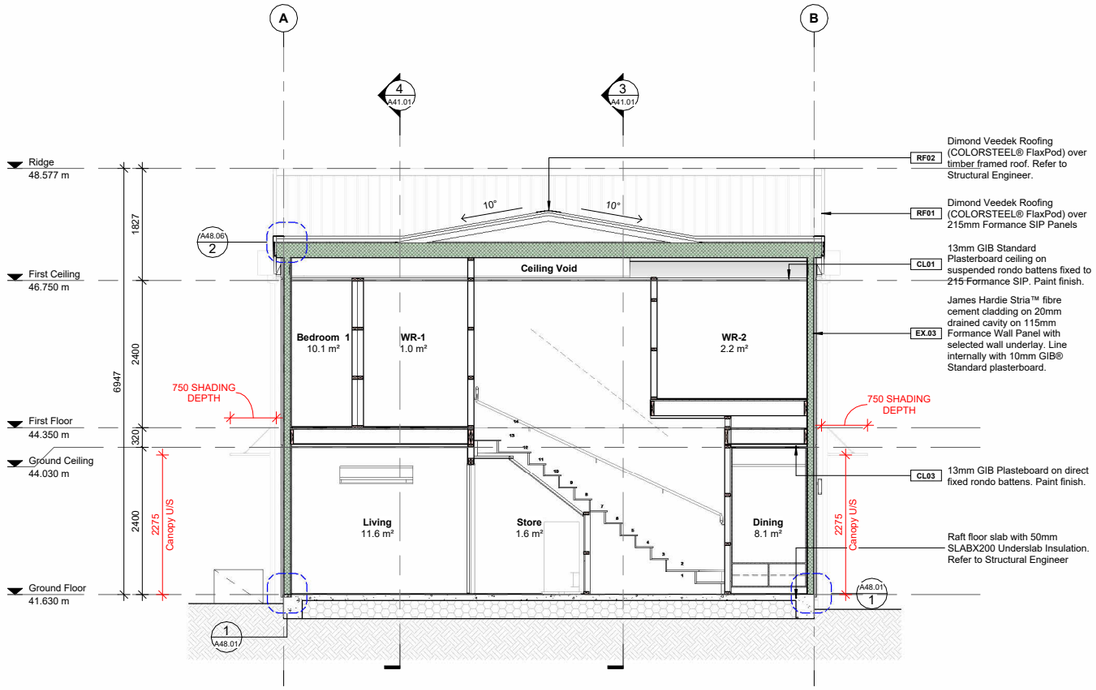
1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule



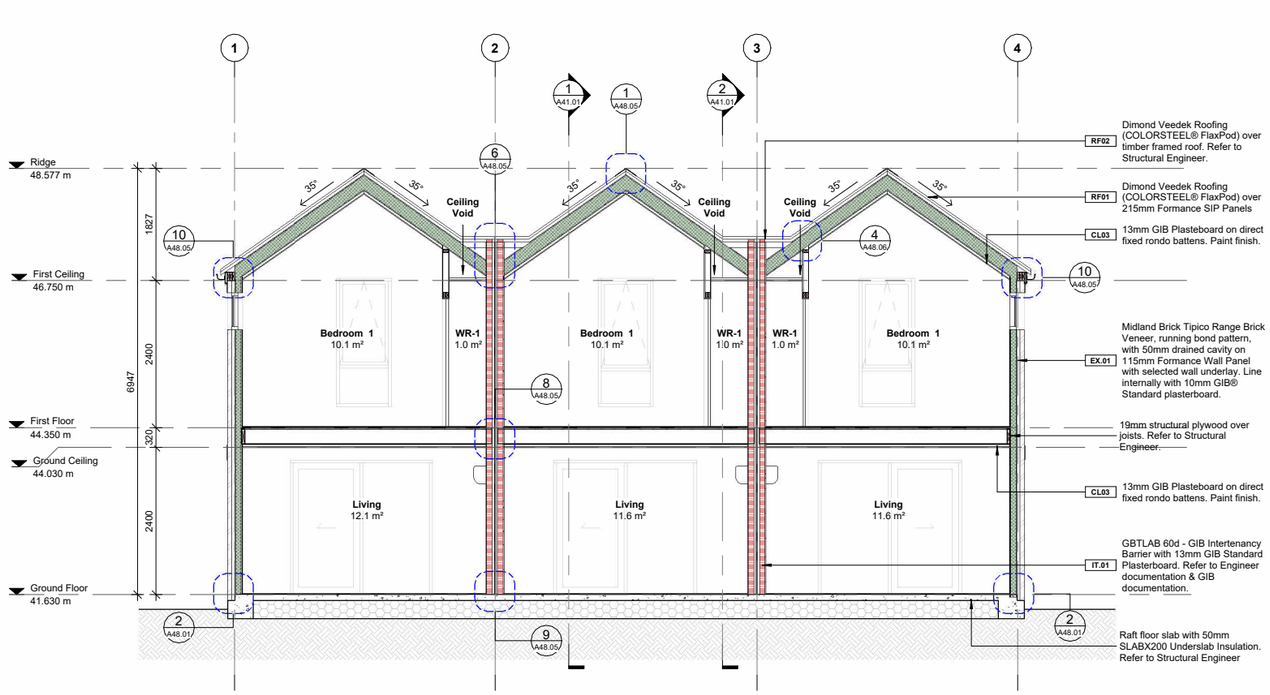
1 - **Block A - Section 1**
Scale 1 : 50 @ A1



3 - **Block A - Section 3**
Scale 1 : 50 @ A1



2 - **Block A - Section 2**
Scale 1 : 50 @ A1



4 - **Block A - Section 4**
Scale 1 : 50 @ A1

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

Project: **Arbor Green - Lot 1-3**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
A	Preliminary Design	21/11/2025
B	30% Detailed Design	04/12/2025
C	60% Detailed Design	19/12/2025
D	100% Detailed Design	20/01/2026

Status: **Detailed Design**
Issue Date: **20/01/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **1 : 50 @ A1**

Sheet Name: **Block A - Building Sections**
Sheet No: **A41.01**
Rev No: **D**

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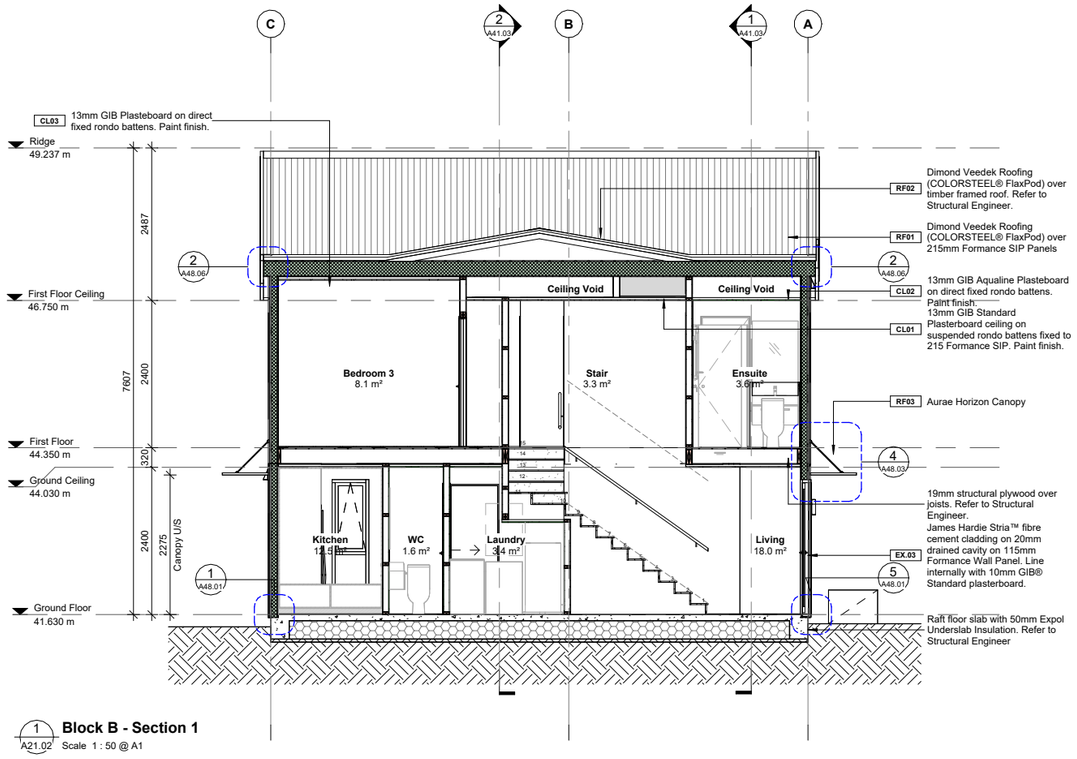
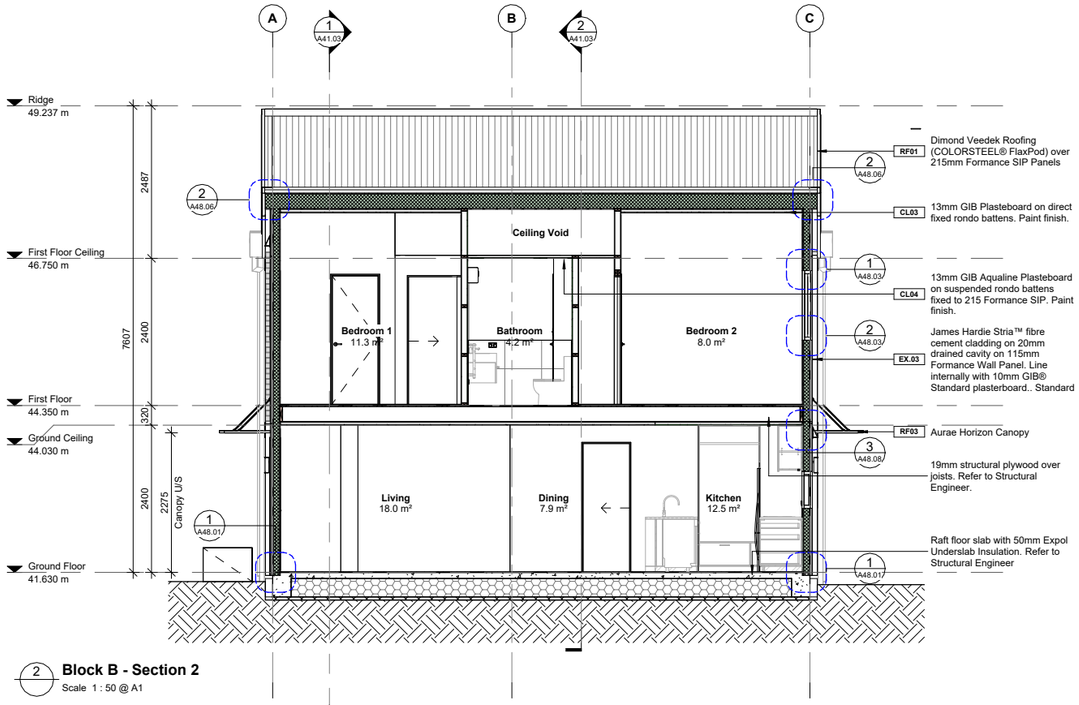
General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule



1 / A21.02 Block B - Section 1
Scale 1 : 50 @ A1



2 Block B - Section 2
Scale 1 : 50 @ A1

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

Project: Arbor Green - Lot 4-7
Address: 2 - 8 Laina Lane, Arbor Green, Rolleston
No: H2639

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **DR**
Scale: **1 : 50 @ A1**

Sheet Name: **Block B - Building Sections**
Sheet No: A41.02 Rev No: 0

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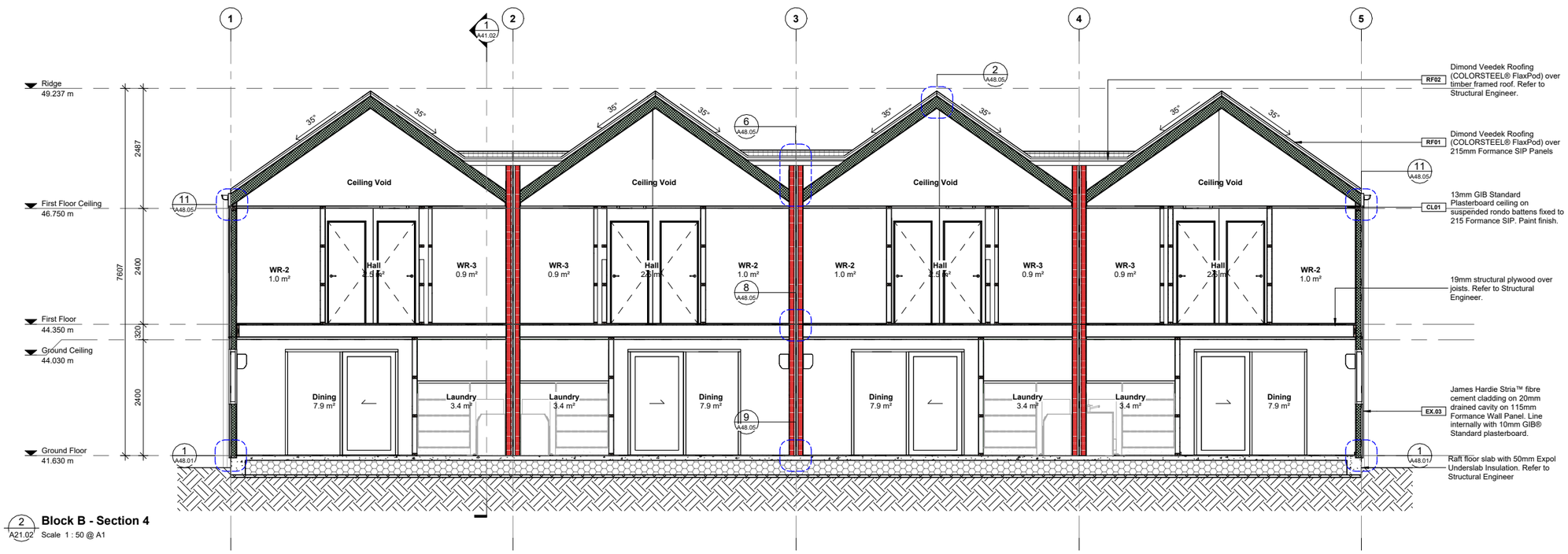
General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

1 Block B - Section 3
A21.02 Scale 1 : 50 @ A1



2 Block B - Section 4
A21.02 Scale 1 : 50 @ A1

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

Project: Arbor Green - Lot 4-7
Address: 2 - 8 Laina Lane, Arbor Green, Rolleston
No: H2639

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **DR**
Scale: **1 : 50 @ A1**

Sheet Name: **Block B - Building Sections**
Sheet No: A41.03 Rev No: 0

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General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
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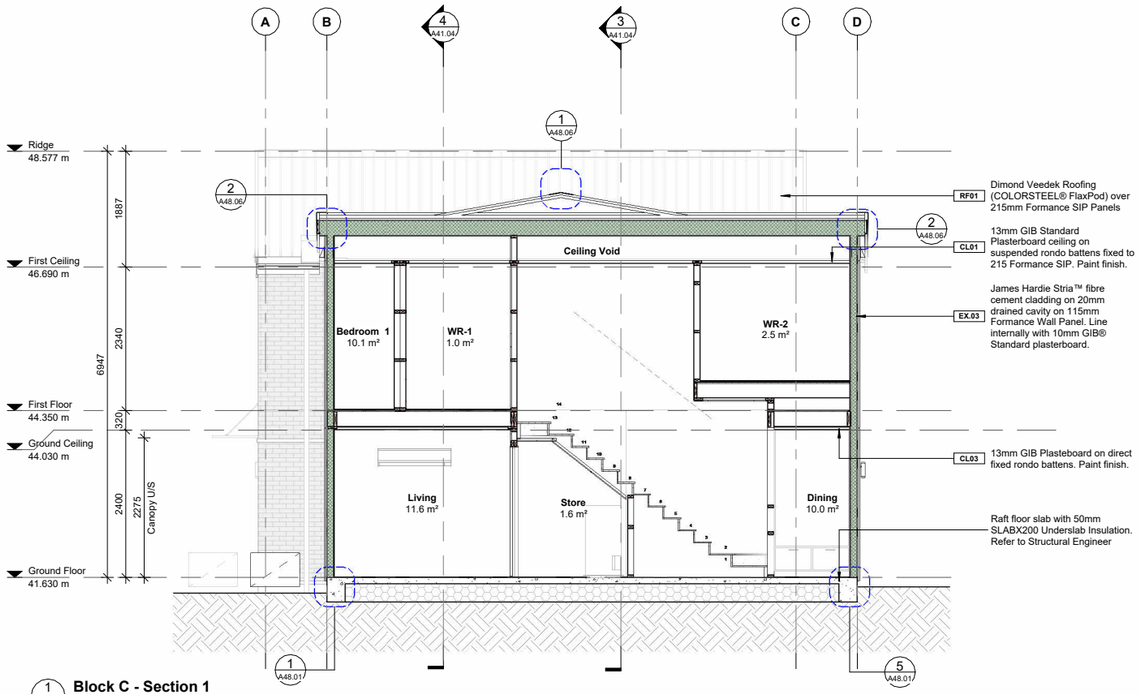
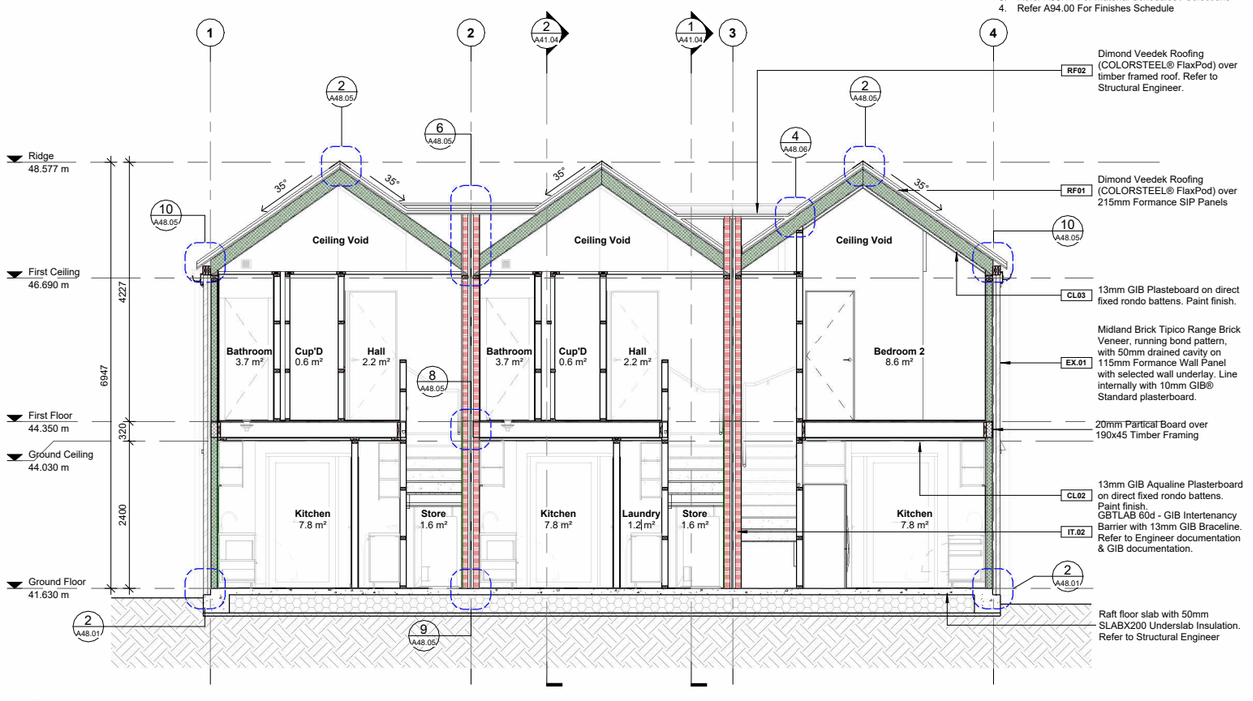
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule



1 A21.03 **Block C - Section 1**
Scale 1 : 50 @ A1



3 A21.03 **Block C - Section 3**
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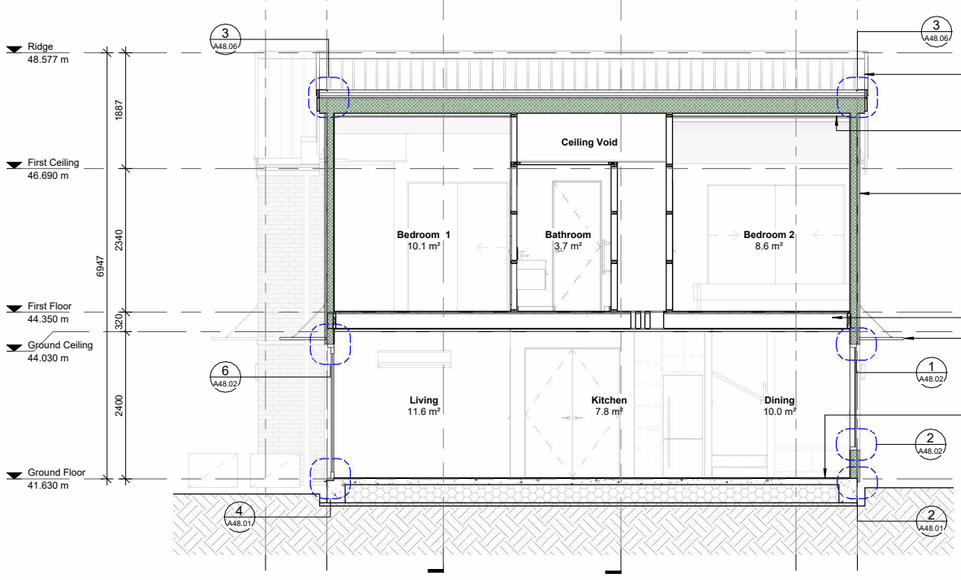

2 A21.03 **Block C - Section 2**
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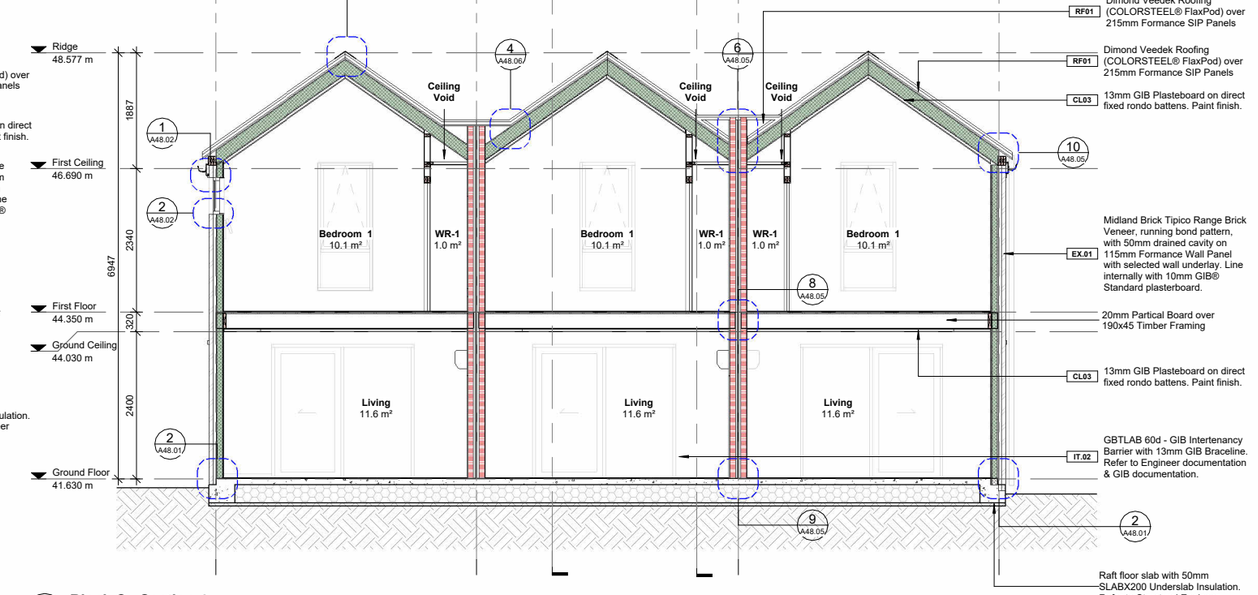

4 A21.03 **Block C - Section 4**
Scale 1 : 50 @ A1

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Client: home. CONSTRUCTION

Project: **Arbor Green - Lot 8-10**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **1 : 50 @ A1**

Sheet Name: **Block C - Building Sections**
Sheet No: **A41.04** Rev No: **0**

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E2 Risk Matrix Assessment

North Elevation

Risk Matrix	Low	Medium	High	V High	Score
Wind Zone:	0	0	1	2	1
Stories:	0	1	2	4	2
Roof / Wall:	0	1	3	5	1
Eave Width:	0	1	2	5	5
Complexity:	0	1	3	6	1
Deck Design:	0	2	4	6	0
Total					10

South Elevation

Risk Matrix	Low	Medium	High	V High	Score
Wind Zone:	0	0	1	2	1
Stories:	0	1	2	4	2
Roof / Wall:	0	1	3	5	1
Eave Width:	0	1	2	5	5
Complexity:	0	1	3	6	1
Deck Design:	0	2	4	6	0
Total					10

East Elevation

Risk Matrix	Low	Medium	High	V High	Score
Wind Zone:	0	0	1	2	1
Stories:	0	1	2	4	2
Roof / Wall:	0	1	3	5	1
Eave Width:	0	1	2	5	5
Complexity:	0	1	3	6	1
Deck Design:	0	2	4	6	0
Total					10

West Elevation

Risk Matrix	Low	Medium	High	V High	Score
Wind Zone:	0	0	1	2	1
Stories:	0	1	2	4	2
Roof / Wall:	0	1	3	5	1
Eave Width:	0	1	2	5	5
Complexity:	0	1	3	6	1
Deck Design:	0	2	4	6	0
Total					10

Cladding Specification

Midland Bricks Tipico Range - Palamino with grey mortar. 230x76x70mm.	
James Hardie Stria Cladding - 325mm wide profile. Resene Element	
Dimond Roofing Veedek® COLORSTEEL® FlaxPod	

Design Note TB1 - LINTELS

MAX. SPAN	LINTEL
up to 3000mm	80x80x6mm

Note: Openings up to and including 2.0m, a seating of 100mm each side is reqired. On opening over 2.0m, a seating of 200mm each side is required. Prop all lintels for a minimum of 7 days.

Legend

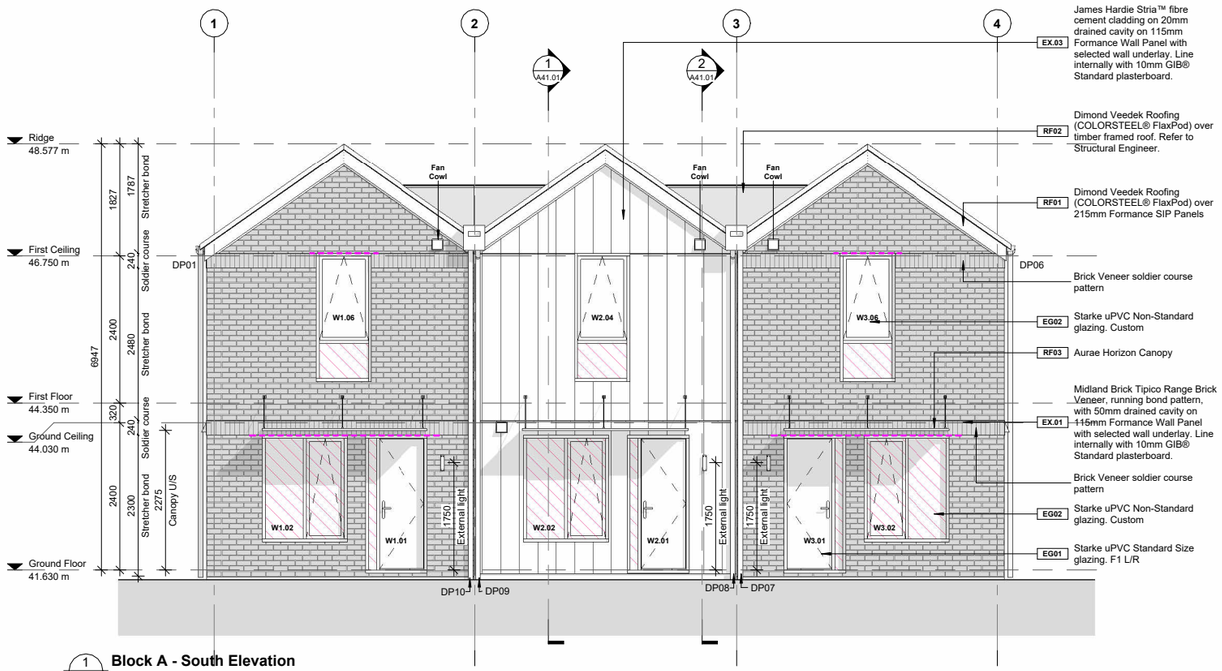
General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

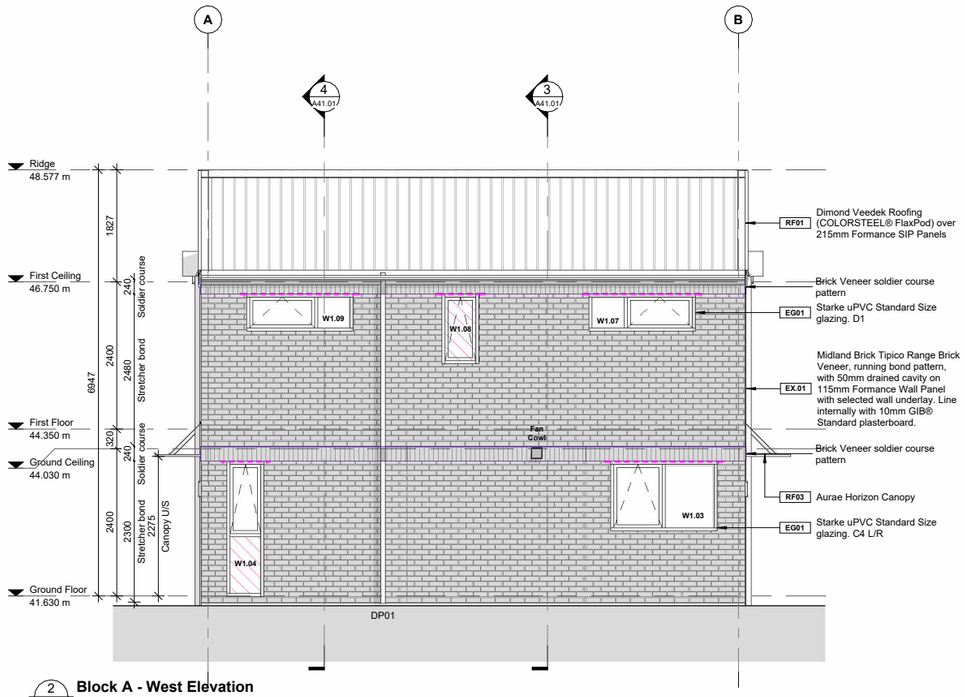
Exterior Wall Schedule

Type Mark	Description
Exterior	
EG01	Starke uPVC Standard Size glazing
EG02	Starke uPVC Non-Standard glazing
EX.01	Midland Brick Tipico Range Brick Veneer, running bond pattern, with 50mm drained cavity on 115mm Formance Wall Panel with selected wall underlay. Line internally with 10mm GIB® Standard plasterboard.
EX.02	Midland Brick Tipico Range Brick Veneer, running bond pattern, with 50mm drained cavity on 115mm Formance Wall Panel with selected wall underlay. Line internally with 10mm GIB® Aqualine Plasterboard.
EX.03	James Hardie Stria™ fibre cement cladding on 20mm drained cavity on 115mm Formance Wall Panel with selected wall underlay. Line internally with 10mm GIB® Standard plasterboard.

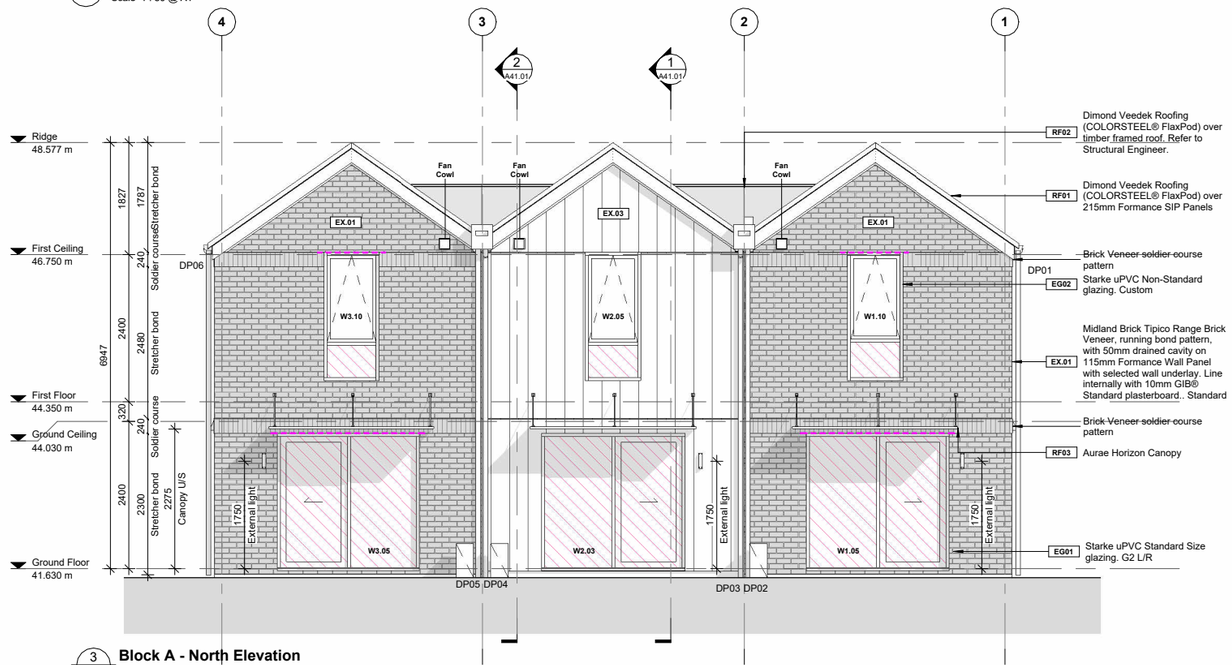
Safety Glazing as per NZS4223.3:2016



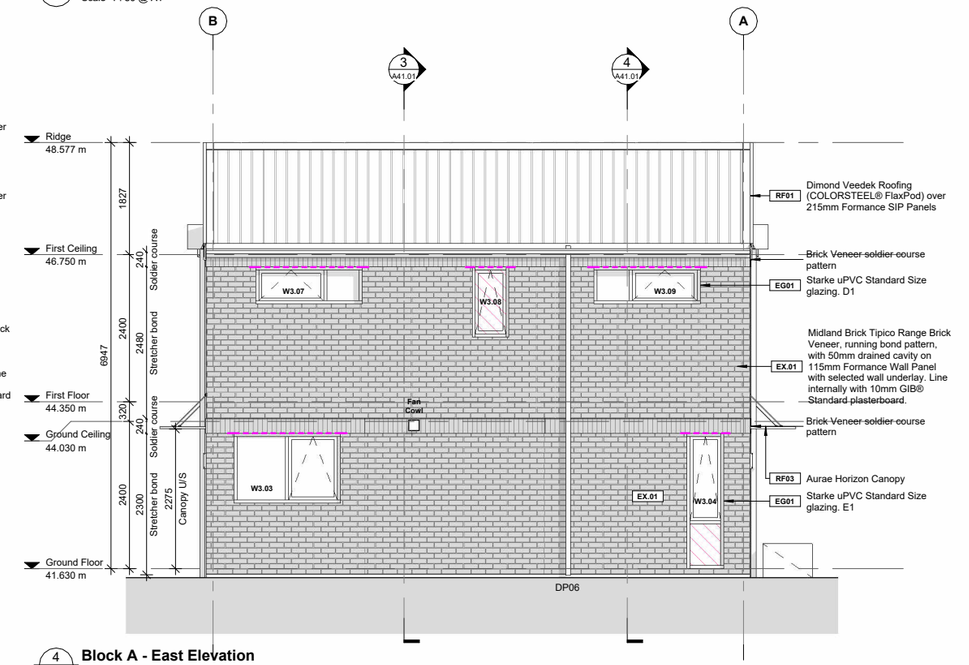
1 - **Block A - South Elevation**
Scale 1 : 50 @ A1



2 - **Block A - West Elevation**
Scale 1 : 50 @ A1



3 - **Block A - North Elevation**
Scale 1 : 50 @ A1



4 - **Block A - East Elevation**
Scale 1 : 50 @ A1

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

Project: **Arbor Green - Lot 1-3**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
A	Preliminary Design	21/11/2025
B	30% Detailed Design	04/12/2025
C	60% Detailed Design	19/12/2025
D	100% Detailed Design	20/01/2026

Status: **Detailed Design**
Issue Date: **20/01/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Block A - Building Elevations**
Sheet No: **A43.01**
Rev No: **D**

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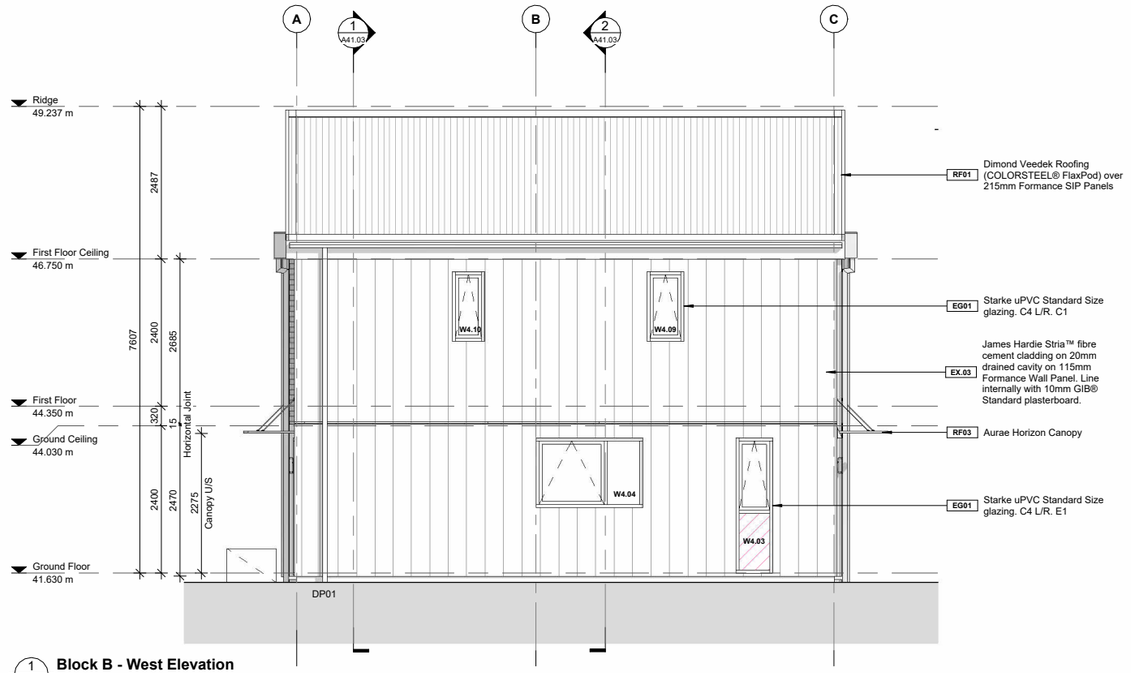
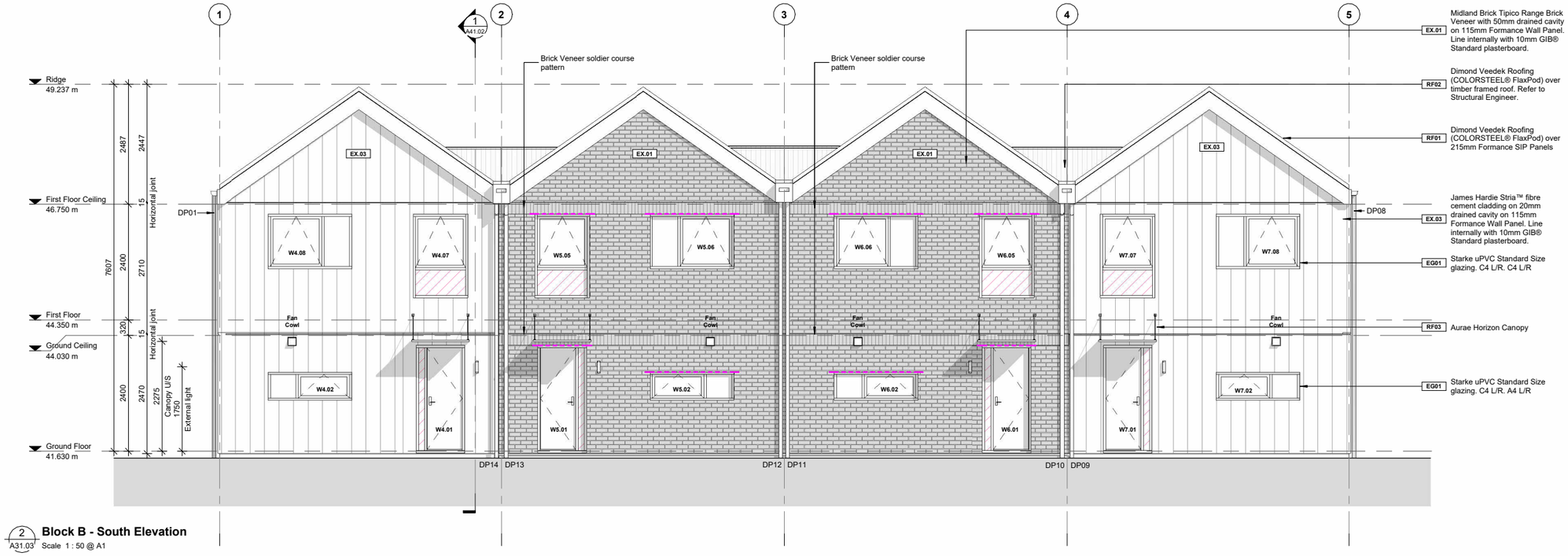


1 A31.03 **Block B - West Elevation**
Scale 1 : 50 @ A1



2 A31.03 **Block B - South Elevation**
Scale 1 : 50 @ A1

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

Exterior Wall Schedule

Type Mark	Description
Exterior	
EG01	Starke uPVC Standard Size glazing. C4 L/R
EG02	Starke uPVC Non-Standard glazing
EX.01	Midland Brick Tipico Range Brick Veneer with 50mm drained cavity on 115mm Formance Wall Panel. Line internally with 10mm GIB® Standard plasterboard.
EX.02	Midland Brick Tipico Range Brick Veneer with 50mm drained cavity on 115mm Formance Wall Panel. Line internally with 10mm GIB® Aqualine plasterboard.
EX.03	James Hardie Stria™ fibre cement cladding on 20mm drained cavity on 115mm Formance Wall Panel. Line internally with 10mm GIB® Standard plasterboard.
EX.04	James Hardie Stria™ fibre cement cladding on 20mm drained cavity on 115mm Formance Wall Panel. Line internally with 10mm GIB® Aqualine plasterboard.

Cladding Specification

Midland Bricks Tipico Range - Bobal with grey mortar. 230x76x70mm.	
James Hardie Stria Cladding - 325mm wide profile. Resene Element	
Dimond Roofing Veedek® COLORSTEEL® FlaxPod	

Design Note TB1 - LINTELS

MAX. SPAN	LINTEL
up to 3000mm	80x80x6mm

Note: Openings up to and including 2.0m, a seating of 100mm each side is reqired. On opening over 2.0m, a seating of 200mm each side is required. Prop all lintels for a minimum of 7 days.

Legend

Safety Glazing as per NZS4223.3:2016

E2 Risk Matrix Assessment

South Elevation

Risk Matrix	Low	Medium	High	V High	Score
Wind Zone:	0	0	1	2	1
Stories:	0	1	2	4	2
Roof / Wall:	0	1	3	5	1
Eave Width:	0	1	2	5	5
Complexity:	0	1	3	6	1
Deck Design:	0	2	4	6	0
Total					**10**

West Elevation

Risk Matrix	Low	Medium	High	V High	Score
Wind Zone:	0	0	1	2	1
Stories:	0	1	2	4	2
Roof / Wall:	0	1	3	5	1
Eave Width:	0	1	2	5	5
Complexity:	0	1	3	6	1
Deck Design:	0	2	4	6	0
Total					**10**

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

Project: **Arbor Green - Lot 4-7**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **DR**
Scale: **As indicated @ A1**

Sheet Name: **Block B - Building Elevations**
Sheet No: **A43.02** Rev No: **0**

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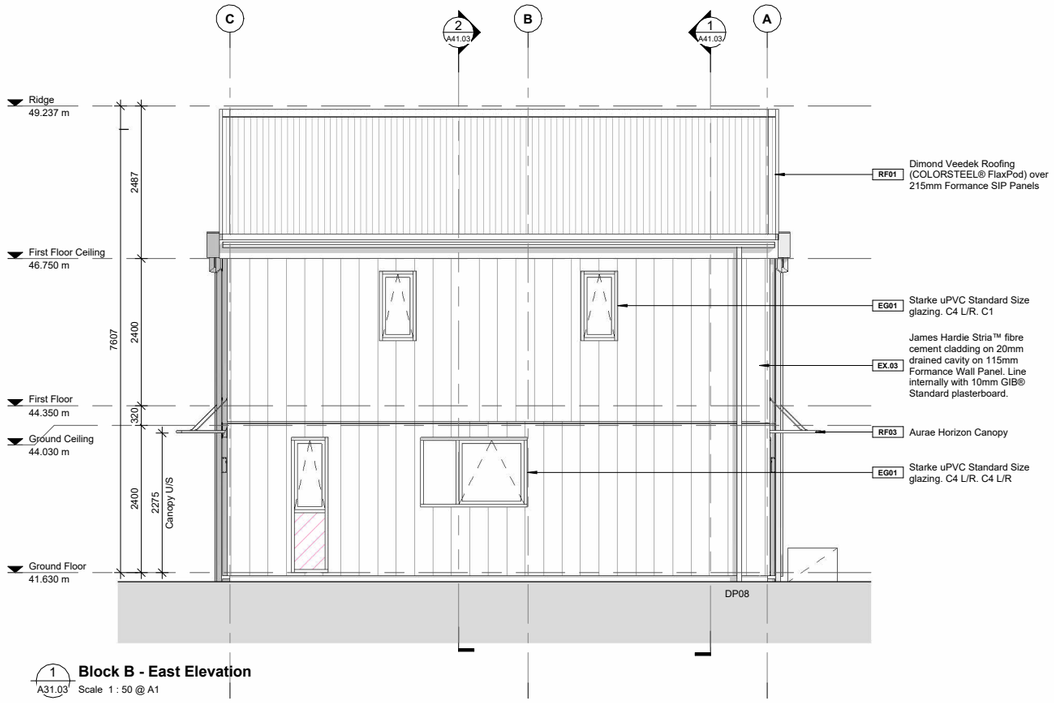

1 A31.03 **Block B - East Elevation**
Scale 1 : 50 @ A1

2 A31.03 **Block B - North Elevation**
Scale 1 : 50 @ A1

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

Exterior Wall Schedule

Type Mark	Description
Exterior	
EG01	Starke uPVC Standard Size glazing. C4 L/R
EG02	Starke uPVC Non-Standard glazing
EX.01	Midland Brick Tipico Range Brick Veneer with 50mm drained cavity on 115mm Formance Wall Panel. Line internally with 10mm GIB® Standard plasterboard.
EX.02	Midland Brick Tipico Range Brick Veneer with 50mm drained cavity on 115mm Formance Wall Panel. Line internally with 10mm GIB® Aqualine plasterboard.
EX.03	James Hardie Stria™ fibre cement cladding on 20mm drained cavity on 115mm Formance Wall Panel. Line internally with 10mm GIB® Standard plasterboard.
EX.04	James Hardie Stria™ fibre cement cladding on 20mm drained cavity on 115mm Formance Wall Panel. Line internally with 10mm GIB® Aqualine plasterboard.

Cladding Specification

Midland Bricks Tipico Range - Bobal with grey mortar. 230x76x70mm.	
James Hardie Stria Cladding - 325mm wide profile. Resene Element	
Dimond Roofing Veedek® COLORSTEEL® FlaxPod	

Design Note TB1 - LINTELS

MAX. SPAN	LINTEL
up to 3000mm	80x80x6mm

Note: Openings up to and including 2.0m, a seating of 100mm each side is reqired. On opening over 2.0m, a seating of 200mm each side is required. Prop all lintels for a minimum of 7 days.

Legend

Safety Glazing as per NZS4223.3:2016

E2 Risk Matrix Assessment

North Elevation

Risk Matrix	Low	Medium	High	V High	Score
Wind Zone:	0	0	1	2	1
Stories:	0	1	2	4	2
Roof / Wall:	0	1	3	5	1
Eave Width:	0	1	2	5	5
Complexity:	0	1	3	6	1
Deck Design:	0	2	4	6	0
Total					**10**

East Elevation

Risk Matrix	Low	Medium	High	V High	Score
Wind Zone:	0	0	1	2	1
Stories:	0	1	2	4	2
Roof / Wall:	0	1	3	5	1
Eave Width:	0	1	2	5	5
Complexity:	0	1	3	6	1
Deck Design:	0	2	4	6	0
Total					**10**

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

Project: **Arbor Green - Lot 4-7**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **DR**
Scale: **As indicated @ A1**

Sheet Name: **Block B - Building Elevations**
Sheet No: **A43.03** Rev No: **0**

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E2 Risk Matrix Assessment

North Elevation

Risk Matrix	Low	Medium	High	V High	Score
Wind Zone:	0	0	1	2	1
Stories:	0	1	2	4	2
Roof / Wall:	0	1	3	5	1
Eave Width:	0	1	2	5	5
Complexity:	0	1	3	6	1
Deck Design:	0	2	4	6	0
Total					10

South Elevation

Risk Matrix	Low	Medium	High	V High	Score
Wind Zone:	0	0	1	2	1
Stories:	0	1	2	4	2
Roof / Wall:	0	1	3	5	1
Eave Width:	0	1	2	5	5
Complexity:	0	1	3	6	1
Deck Design:	0	2	4	6	0
Total					10

East Elevation

Risk Matrix	Low	Medium	High	V High	Score
Wind Zone:	0	0	1	2	1
Stories:	0	1	2	4	2
Roof / Wall:	0	1	3	5	1
Eave Width:	0	1	2	5	5
Complexity:	0	1	3	6	1
Deck Design:	0	2	4	6	0
Total					10

West Elevation

Risk Matrix	Low	Medium	High	V High	Score
Wind Zone:	0	0	1	2	1
Stories:	0	1	2	4	2
Roof / Wall:	0	1	3	5	1
Eave Width:	0	1	2	5	5
Complexity:	0	1	3	6	1
Deck Design:	0	2	4	6	0
Total					10

Cladding Specification

Midland Bricks Tipico Range - Albillo with grey mortar. 230x76x70mm.	
James Hardie Stria Cladding - 325mm wide profile. Resene Element	
Dimond Roofing Veedek® COLORSTEEL® FlaxPod	

Design Note TB1 - LINTELS

MAX. SPAN up to 3000mm	LINTEL 80x80x6mm

Note: Openings up to and including 2.0m, a seating of 100mm each side is reqired. On opening over 2.0m, a seating of 200mm each side is required. Prop all lintels for a minimum of 7 days.

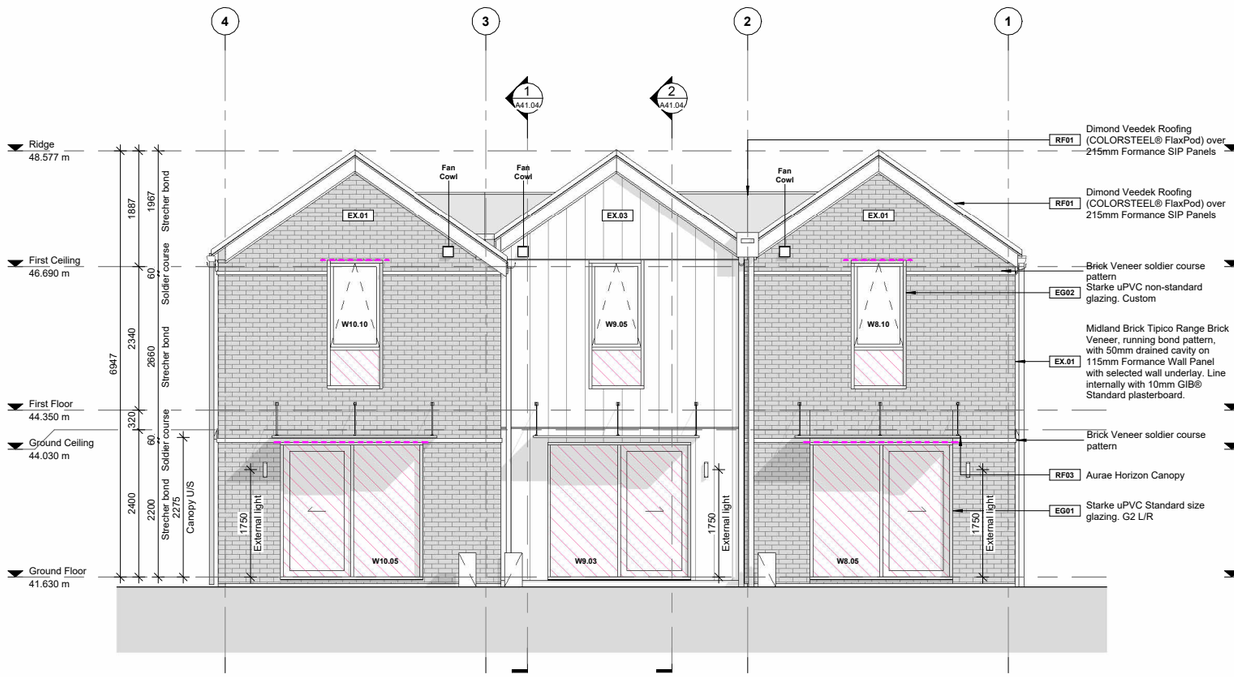
Legend

General Notes

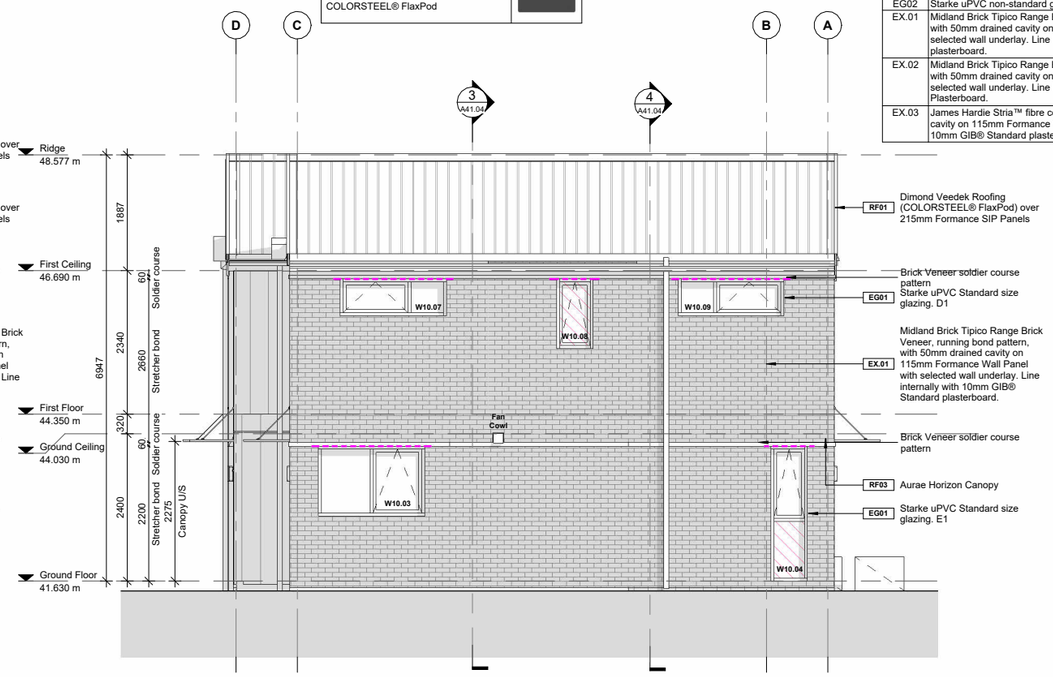
1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

Exterior Wall Schedule

Type Mark	Description
Exterior	
EG01	Starke uPVC Standard size glazing
EG02	Starke uPVC non-standard glazing
EX.01	Midland Brick Tipico Range Brick Veneer, running bond pattern, with 50mm drained cavity on 115mm Formance Wall Panel with selected wall underlay. Line internally with 10mm GIB® Standard plasterboard.
EX.02	Midland Brick Tipico Range Brick Veneer, running bond pattern, with 50mm drained cavity on 115mm Formance Wall Panel with selected wall underlay. Line internally with 10mm GIB® Aqualine Plasterboard.
EX.03	James Hardie Stria™ fibre cement cladding on 20mm drained cavity on 115mm Formance Wall Panel. Line internally with 10mm GIB® Standard plasterboard.

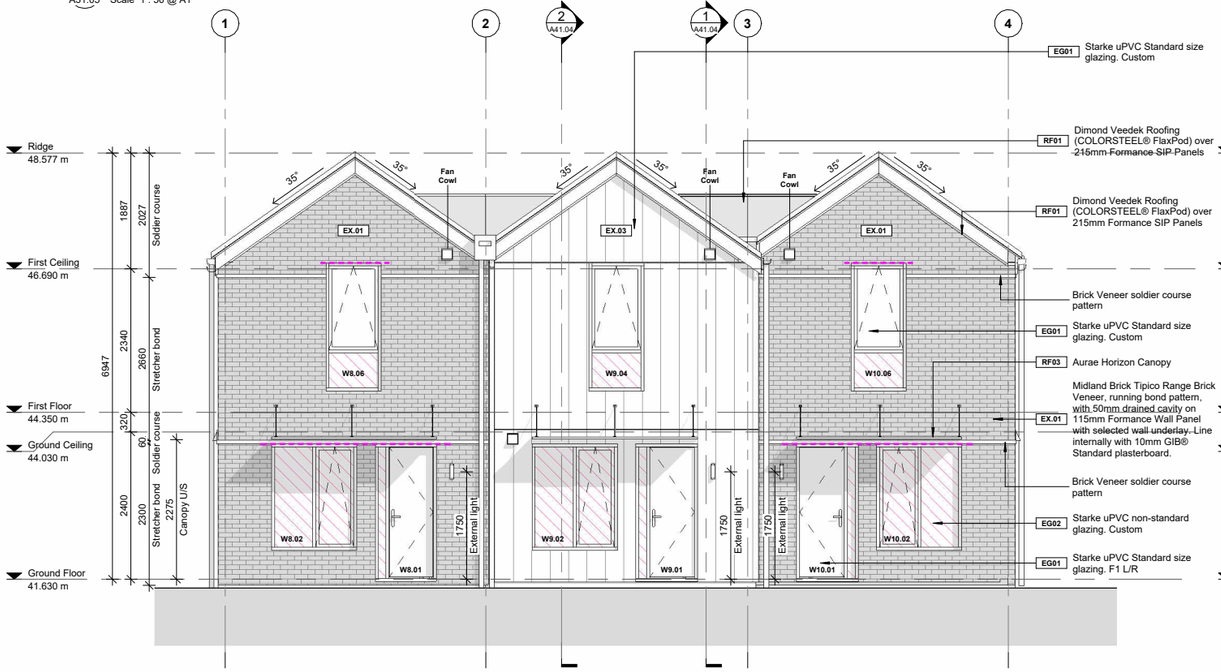


1 A31.05 **Block C - North Elevation**
Scale 1 : 50 @ A1

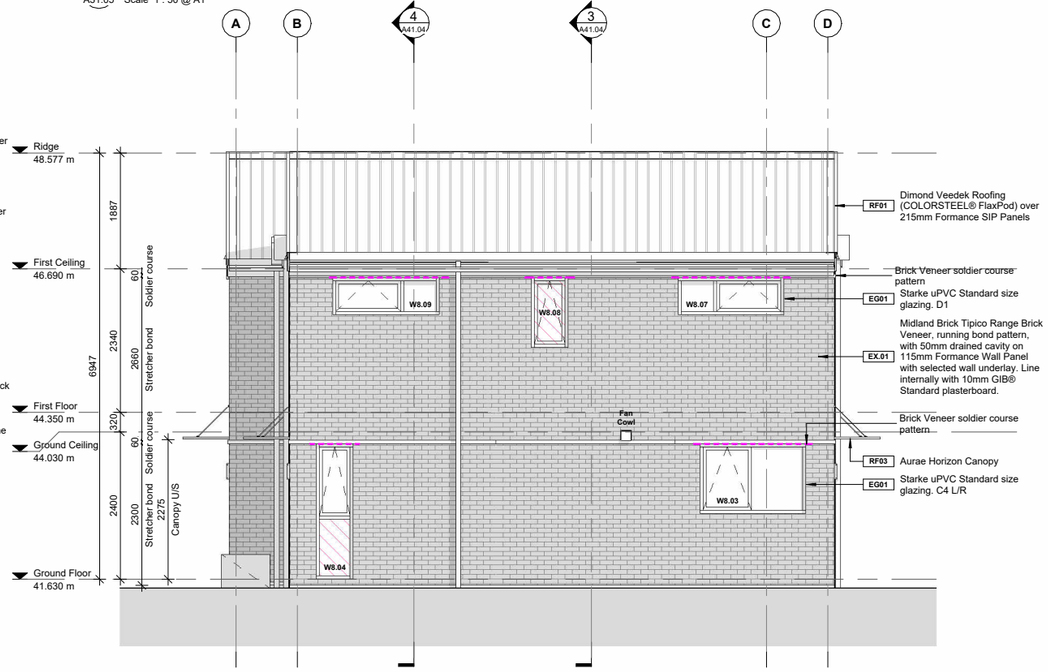


2 A31.05 **Block C - East Elevation**
Scale 1 : 50 @ A1

Safety Glazing as per NZS4223.3:2016



4 A31.05 **Block C - South Elevation**
Scale 1 : 50 @ A1



3 A38.03 **Block C - West Elevation**
Scale 1 : 50 @ A1

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

Project: **Arbor Green - Lot 8-10**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Block C - Building Elevations**
Sheet No: **A43.04** Rev No: **0**

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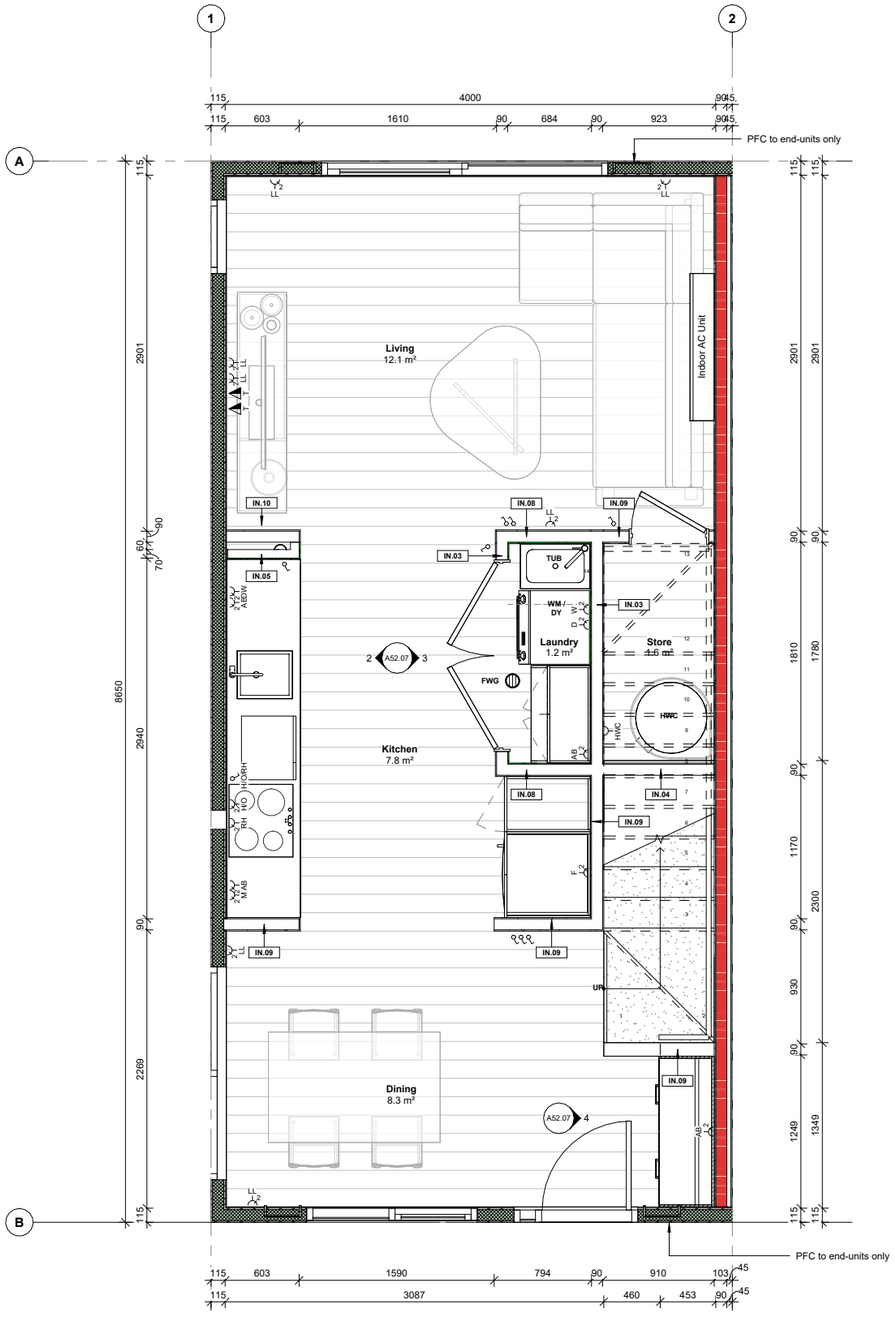

1 - Type A & C - Ground Floor
Scale 1 : 25 @ A1

2 - Type A & C - First Floor
Scale 1 : 25 @ A1

Floor Finishes

- Selected Carpet on Underlay
- Selected Vinyl Plank Flooring on Underlay
- Selected TIle Flooring on adhesive

Notes

All internal dimensions are taken to framing line.

GIB Aqualine® Plasterboard to be used in all wet areas (Bathrooms, WC, Laundry and Kitchen). Where wet areas abutt a double layer system, the top layer shall be GIB Aqualine®.

Painted timber 90 x 10mm Single Bevelled edge skirting boards to all rooms and cupboards unless noted otherwise.

Painted timber 60 x 10mm Single Bevelled edge Architrave to all interior doors unless noted otherwise.

All dimensions are nominal and are to be checked on site before commencing work.

Unless noted otherwise all timbers H1.2 SG8 to NZ3604:2011 and NZS3602:2003.

Impervious splashbacks to be provided to bathroom sink, kitchen sink in accordance with NZBC E3/AS1.

All work to comply with the Relevant Sections of the New Zealand Building Code, Local Authority By-laws & regulations, Drainage & Plumbing Regulations, Electrical Wiring Regulations and all current amendments of the above document.

Walls colored pink are to have 10mm GIB Standard Plasterboard instead of 10mm GIB Braceline on **middle terrace units only.** Refer to Structural Engineer Drawings.

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

General Notes

1. All new and altered building / construction works shall comply with the New Zealand Building Code, especially clauses B1 Structure, B2 Durability, E2 External moisture, E3 Internal moisture, as well as NZS3604 for timber framed construction.
2. The handling and disposal of hazardous materials and construction waste shall comply with New Zealand Building Code clause F1, F2, F3 & F5
3. The contractor shall take all necessary measures to ensure the existing elements remaining are protected from damage during construction.
4. Setout dimensions are to centerline of steel stud, and face of timber stud u.n.o. For tenancy walls, setout dimensions are to face of stud or CL gap.
5. Architectural drawings only. Refer to other consultants documents.
6. Contractors are to read all drawings to coordinate fixtures, fittings and dimensions.
7. All shop drawings to be submitted to Designer for review prior to manufacture.
8. All contractors are to check and confirm the exact positions of all existing services on site.
9. Contractor shall verify discrepancies between information on the drawings and conditions on site, Hierarchy Group shall be notified immediately.
10. Contractor shall gain approval from Hierarchy for any substitution or changes proposed in relation to information (be construction method or finishes) on the drawings.
11. All dimensions are in millimeters unless noted otherwise. All dimensions and levels are to be checked on site prior fabrication.
12. Do not scale off drawngs. Use figured dimensions only. Contractor shall verify, check and be responsible for all dimensions on site.
13. If in doubt, ask.

Wall Schedule - Interior

Type Mark	Description
Interior	
IN.01	90x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined both sides with 10mm GIB® Standard Plasterboard. Linings to be stopped to level 4 and painted. Refer Architectural Specification. To be read in conjunction with Structural Drawings.
IN.02	90x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined with 10mm GIB®Aqualine Plasterboard to both sides. Lining to be stopped to level 4 and painted. Refer Architectural Specification Refer Architectural Specification. To be read in conjunction with Structural Drawings.
IN.03	90x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined with 10mm GIB® Standard Plasterboard to one side and 10mm GIB® Aqualine Plasterboard to the other. Lining to be stopped to level 4 and painted. Refer Architectural Specification. Refer Architectural Specification. To be read in conjunction with Structural Drawings.
IN.04	90x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined with 10mm GIB® Standard Plasterboard to one side. Lining to be stopped to level 4 and painted. Refer Architectural Specification. Refer Architectural Specification. To be read in conjunction with Structural Drawings.
IN.05	<varies>
IN.06	90x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined with 10mm GIB® Aqualine Plasterboard to one side. Lining to be stopped to level 4 and painted. Refer Architectural Specification. Refer Architectural Specification. To be read in conjunction with Structural Drawings.
IN.07	70x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined one side with 10mm GIB® Standard Plasterboard. Lining to be stopped to level 4 and painted. Refer Architectural Specification. Refer Architectural Specification. To be read in conjunction with Structural Drawings.
IN.08	90x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined with 10mm Braceline to one side and GIB® Aqualine Plasterboard to the other. Lining to be stopped to level 4 and painted. Refer Architectural Specification. Refer Architectural Specification. To be read in conjunction with Structural Drawings.
IN.09	90x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined with 10mm GIB® Braceline to one side and 10mm GIB® Standard Plasterboard to the other. Lining to be stopped to level 4 with selected wall tiles. Refer Architectural Specification. Refer Architectural Specification. To be read in conjunction with Structural Drawings.
IN.10	90x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined with 10mm GIB® Braceline to one side and 7mm Structural Plywood to the other. Braceline to be stopped to level 4 and painted. Refer Architectural Specification. Refer Architectural Specification. To be read in conjunction with Structural Drawings.
IN.11	90x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined with 10mm Braceline to one side and GIB® Aqualine Plasterboard to the other with Selected Wall Tiles. Refer Architectural Specification Refer Architectural Specification. To be read in conjunction with Structural Drawings.

Hierarchy Group.

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

NORTH

Project: Arbor Green - Lot 1-3
Address: 2 - 8 Laina Lane, Arbor Green, Rolleston
No: H2639

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Typology Floor Plan - Type A & C**
Sheet No: **A52.01** Rev No: **0**

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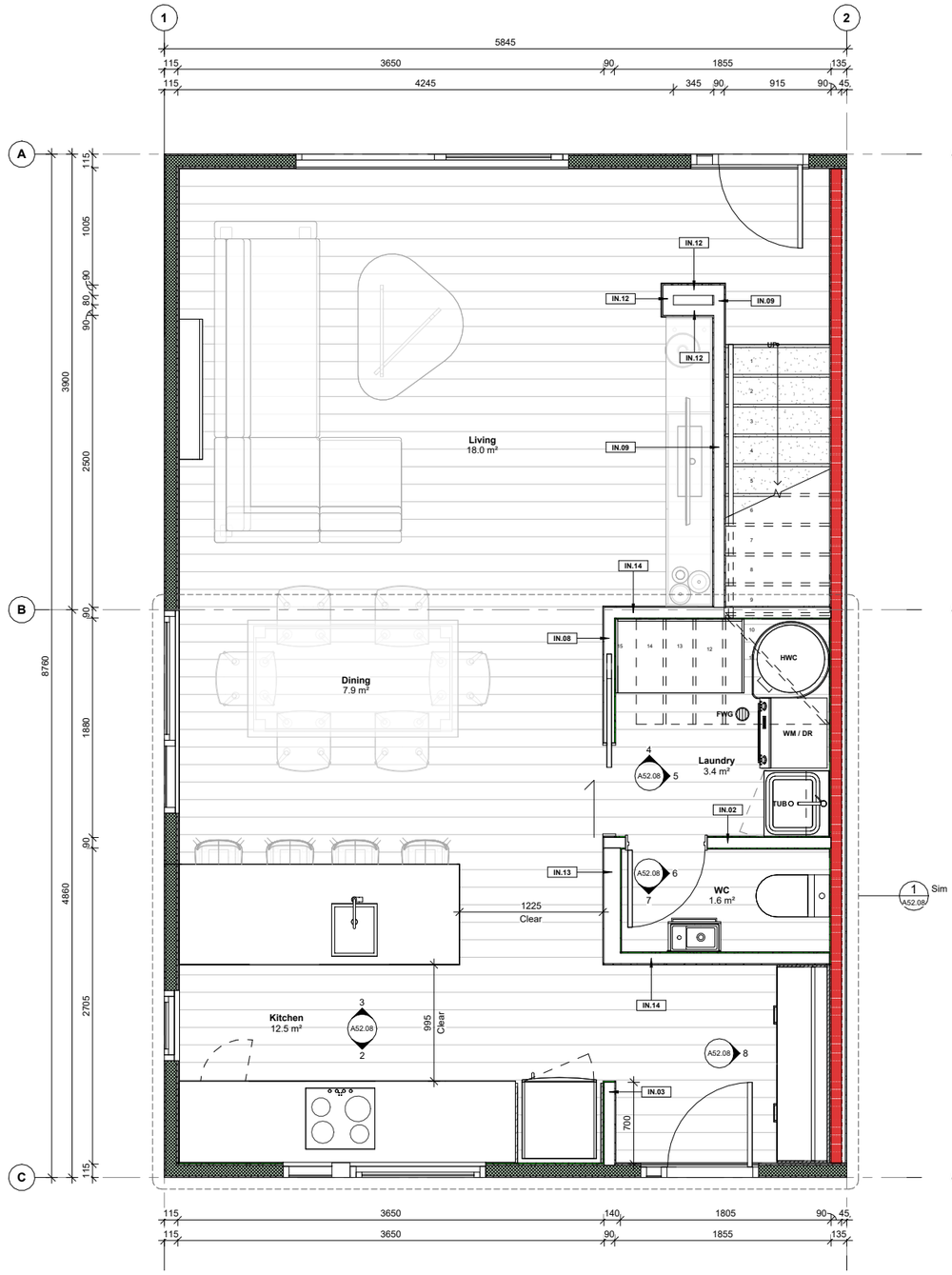
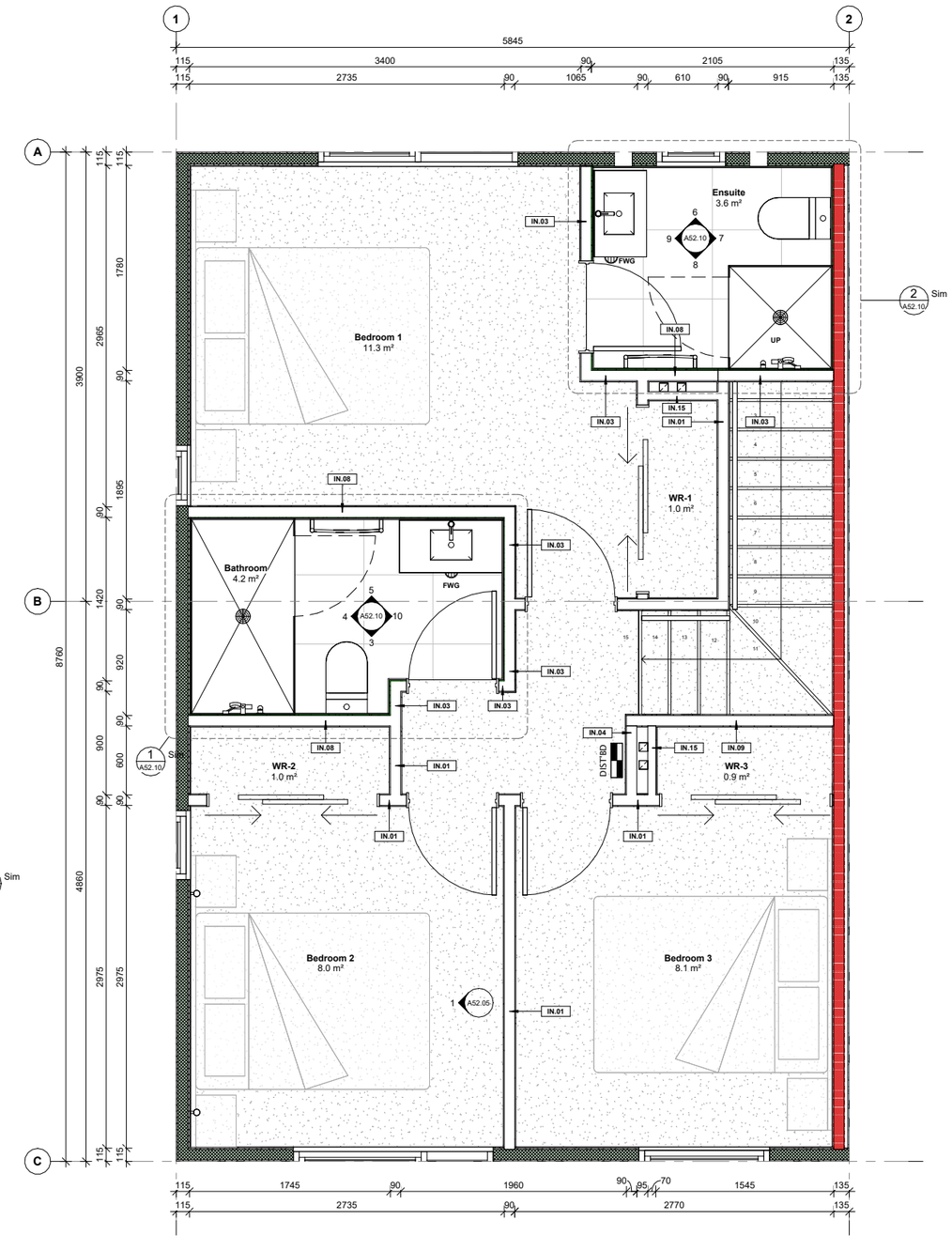


1 Type B - Ground Floor
A41.02 Scale 1 : 25 @ A1



2 Type B - First Floor
A41.02 Scale 1 : 25 @ A1

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

General Notes

1. All new and altered building / construction works shall comply with the New Zealand Building Code, especially clauses B1 Structure, B2 Durability, E2 External moisture, E3 Internal moisture, as well as NZS3604 for timber framed construction.
2. The handling and disposal of hazardous materials and construction waste shall comply with New Zealand Building Code clause F1, F2, F3 & F5
3. The contractor shall take all necessary measures to ensure the existing elements remaining are protected from damage during construction.
4. Setout dimensions are to centerline of steel stud, and face of timber stud u.n.o. For tenancy walls, setout dimensions are to face of stud or CL gap.
5. Architectural drawings only. Refer to other consultants documents.
6. Contractors are to read all drawings to coordinate fixtures, fittings and dimensions.
7. All shop drawings to be submitted to Designer for review prior to manufacture.
8. All contractors are to check and confirm the exact positions of all existing services on site.
9. Contractor shall verify discrepancies between information on the drawings and conditions on site, Hierarchy Group shall be notified immediately.
10. Contractor shall gain approval from Hierarchy for any substitution or changes proposed in relation to information (be construction method or finishes) on the drawings.
11. All dimensions are in millimeters unless noted otherwise. All dimensions and levels are to be checked on site prior fabrication.
12. Do not scale off drawngs. Use figured dimensions only. Contractor shall verify, check and be responsible for all dimensions on site.
13. If in doubt, ask.

Floor Finishes

Selected Carpet on Underlay

Selected Vinyl Plank Flooring on Underlay

Selected TIle Flooring on adhesive

Notes

All internal dimensions are taken to framing line.

GIB Aqualine® Plasterboard to be used in all wet areas (Bathrooms, WC, Laundry and Kitchen). Where wet areas abutt a double layer system, the top layer shall be GIB Aqualine®.

Painted timber 90 x 10mm Single Bevelled edge skirting boards to all rooms and cupboards unless noted otherwise.

Painted timber 60 x 10mm Single Bevelled edge Architrave to all interior doors unless noted otherwise.

All dimensions are nominal and are to be checked on site before commencing work.

Unless noted otherwise all timbers H1.2 SG8 to NZ3604:2011 and NZS3602:2003.

Impervious splashbacks to be provided to bathroom sink, kitchen sink in accordance with NZBC E3/AS1.

All work to comply with the Relevant Sections of the New Zealand Building Code, Local Authority By-laws & regulations, Drainage & Plumbing Regulations, Electrical Wiring Regulations and all current amendments of the above document.

Wall Schedule - Interior

Type Mark	Description
Interior	
IN.01	90x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined both sides with 10mm GIB® Standard Plasterboard, Aqualine to wet areas. Linings to be stopped to level 4 and painted. To be read in conjunction with Structural Drawings.
IN.02	90x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined both sides with 10mm GIB® Aqualine Plasterboard. Linings to be stopped to level 4 and painted. To be read in conjunction with Structural Drawings.
IN.03	90x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined with 10mm GIB® Standard Plasterboard to one side and 10mm GIB® Aqualine Plasterboard to the other. Lining to be stopped to level 4 and painted. To be read in conjunction with Structural Drawings.
IN.04	90x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined with 10mm GIB® Standard Plasterboard to one side. Lining to be stopped to level 4 and painted. To be read in conjunction with Structural Drawings.
IN.08	90x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined with 10mm Braceline to one side and GIB® Aqualine Plasterboard to the other. Lining to be stopped to level 4 and painted. To be read in conjunction with Structural Drawings.
IN.09	90x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined with 10mm GIB®Braceline to one side and 10mm GIB® Standard Plasterboard to the other. To be read in conjunction with Structural Drawings.
IN.12	90x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined with 10mm GIB® Braceline to one side. Linings to be stopped to level 4 and painted. To be read in conjunction with Structural Drawings.
IN.13	140x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined with 10mm GIB® Braceline to one side and 10mm GIB® Aqualine Plasterboard to the other. Linings to be stopped to level 4 and painted. To be read in conjunction with Structural Drawings.
IN.14	90x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined with 7mm Structural Ply to one side and GIB® Aqualine Plasterboard to the other. Lining to be stopped to level 4 and painted. To be read in conjunction with Structural Drawings.
IN.15	70x45mm SG8 timber stud framing @ 400mm crs, nogs @ 800mm crs. Lined one side with 10mm GIB® Standard Plasterboar. Linings to be stopped to level 4 and painted. To be read in conjunction with Structural Drawings.

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

Project: Arbor Green - Lot 4-7
Address: 2 - 8 Laina Lane, Arbor Green, Rolleston
No: H2639

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: Detailed Design
Issue Date: 25/02/2026
Drawn By: SB / FM
Checked By: DR
Scale: As indicated @ A1

Sheet Name: Typology Floor Plan - Type B
Sheet No: A52.02
Rev No: 0

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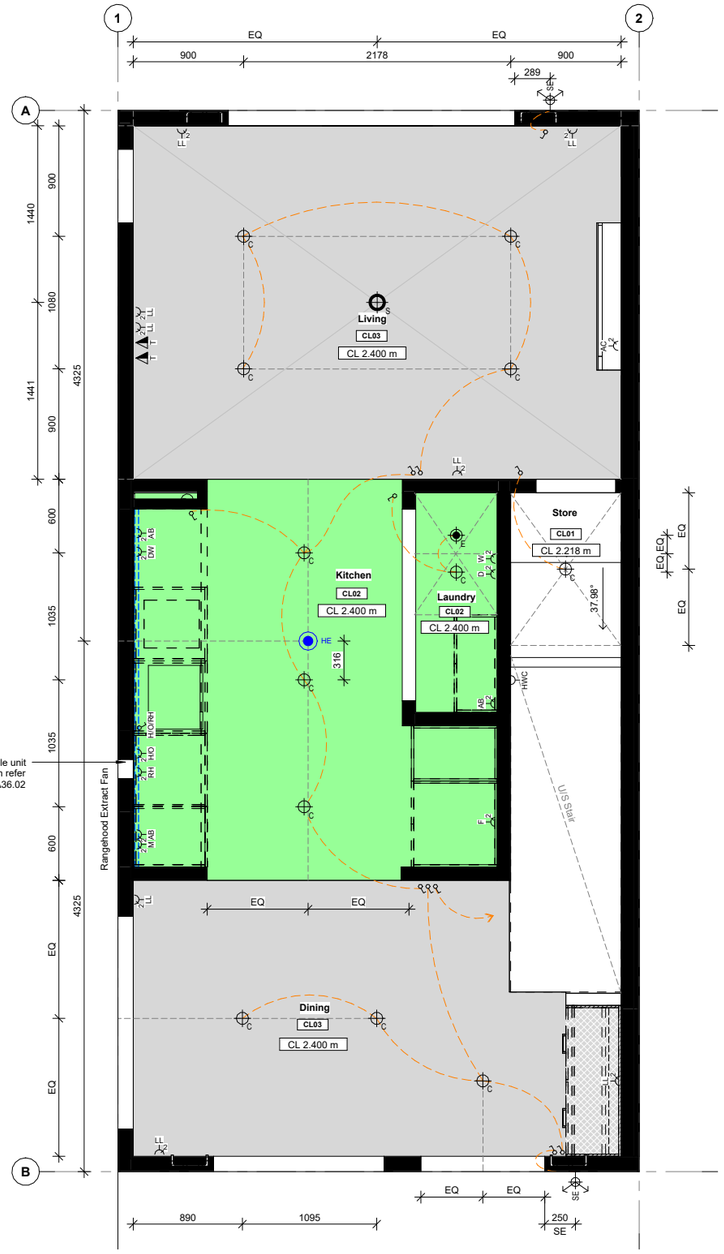
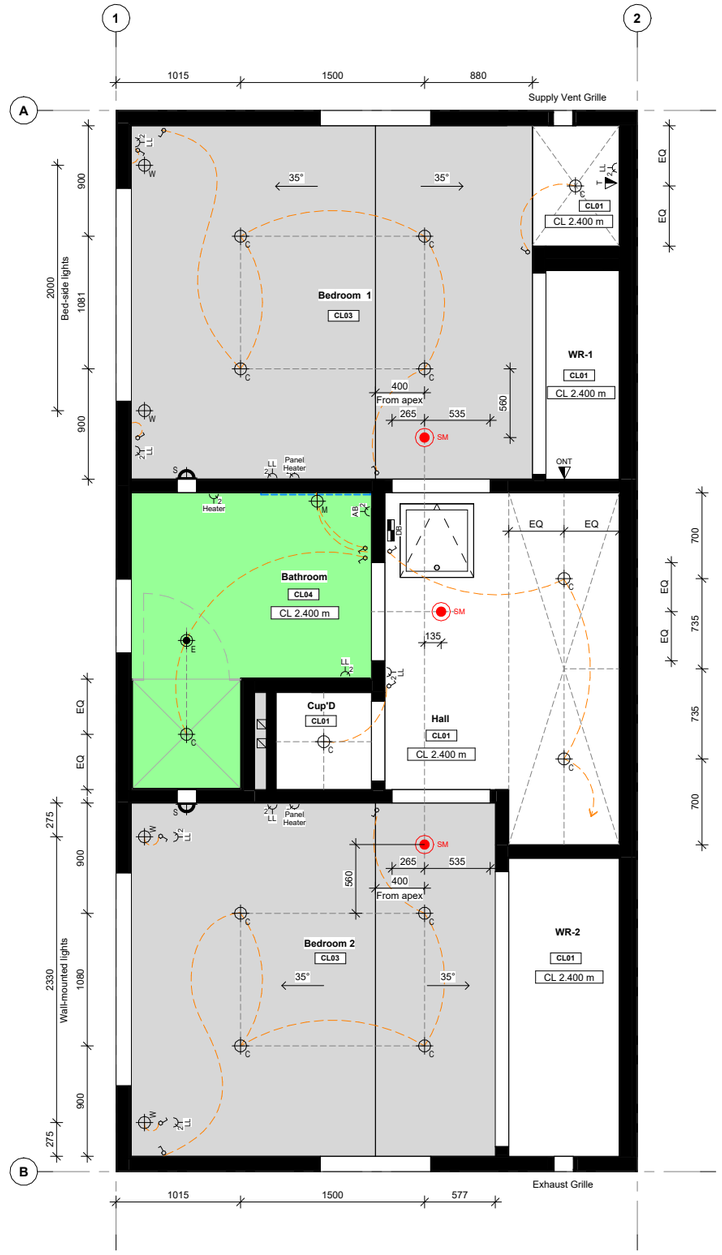
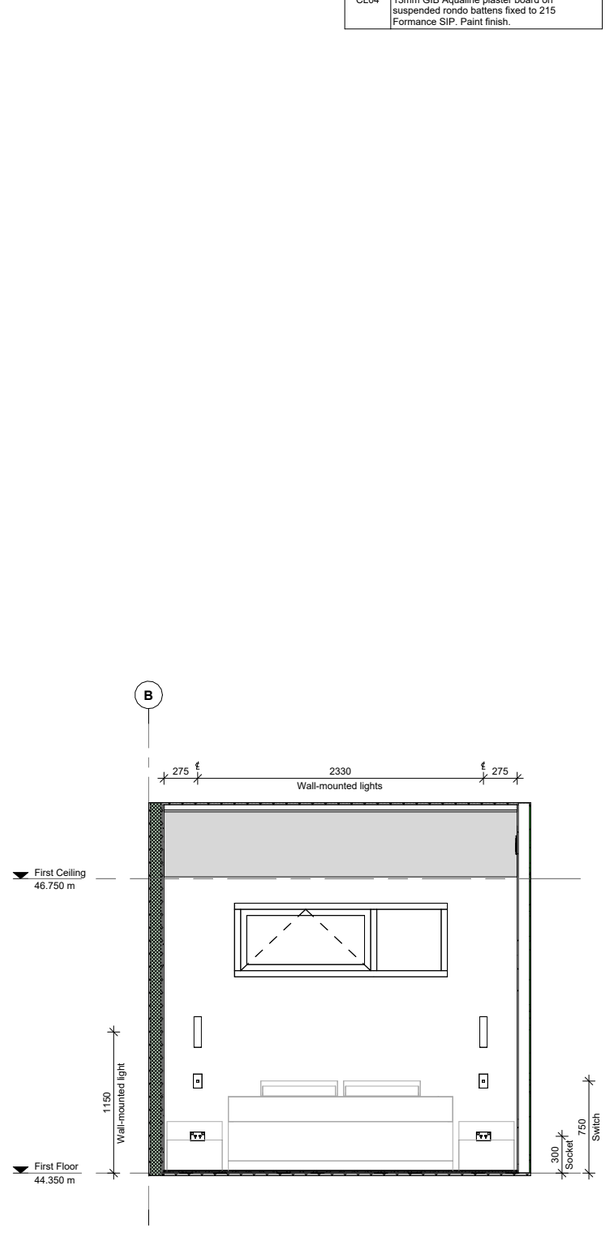


1 - Type A & C - Ground Floor RCP
Scale 1 : 25 @ A1



2 - Type A & C- First Floor RCP
Scale 1 : 25 @ A1



3 - Type A & C - Typical Bedroom Elevation
Scale 1 : 25 @ A1

Ceiling Schedule

Type	Description
CL01	13mm GIB Standard Plasterboard ceiling on suspended rondo battens fixed to 215 Formance SIP. Paint finish.
CL02	13mm GIB Aqualine plasterboard ondirect fixed rondo battens. Paint finish.
CL03	13mm GIB Plasteboard on direct fixed rondo battens. Paint finish.
CL04	13mm GIB Aqualine plaster board on suspended rondo battens fixed to 215 Formance SIP. Paint finish.

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

General Electical Notes

1. All electrical work shall conform to the N.Z. Building Code, esp clauses G8 Artificial lighting & G9 Electricity, as well as the NZ electrical and wiring regulations/rules NZS3000:2007.
2. All luminaries shall comply with NZS 60598.2.1:2014.
3. Allow to supply and install 'CA abutted' or 'IC/IC-F abutted and covered' rated recessed light fittings only.
4. All electrical sockets shall be mounted within the recommended heights dictated by NZS3000:2007.
5. At least 500mm in from any corner and Generally 300mm above floor or 225mm above bench top; and 1200mm from the floor washer/dryer and refrigerator, unless otherwise stated.
6. All power outlets in external and wet areas shall be RCD protected.
7. Any power outlets shall be have a minimal clearance of 1.0m radius from gas ignition source.
8. Allow to work with client onsite to finalise layout of power and controls.
9. Homestar endorsement: ensure all lamps are LED - 8.0 watts.

Services Legend

- Low Level Power Outlet
- Above Bench Power Outlet
- Heated Towel Rail Power Outlet
- Heat Pump Outlet
- Dryer Power Outlet
- Washing Machine Power Outlet
- Dishwasher Power Outlet
- Hob and Oven Power Outlet
- Hob and Oven Power Switch
- Fridge Power Outlet
- Range Hood Power Outlet
- Data Connection
- Smoke Detector
- Distribution Board
- Downlight
- Wall Light
- Mirror Light
- LED Strip Lighting
- HVAC Ceiling Extract Fan
- HVAC Ceiling Supply
- HVAC Wall Supply
- External Sensor Light
- Bathroom Pull-Cord Heater Outlet - 2000 AFFL
- Bedroom Panel Heater Outlet

DOMESTIC SMOKE ALARMS

All smoke alarms are to comply with C/AS1 and F7/AS1

C.2.1 Type 1 – Domestic smoke alarm system

C.2.1.1

A Type 1 is a smoke alarm or multiple interconnected smoke alarm devices, each containing a smoke detector and an alarm sounding feature. The system shall comply with NZS 4514. Smoke alarms shall be installed in every household unit or suite of risk group SH, and risk group SM where a Type 5 is not required by this Acceptable Solution. Connection to a remote receiving centre is not required.

Smoke alarms shall be provided with a 'hush button' to temporarily silence audible alarm signals in the event of nuisance activiation.

Location of smoke alarms:

- General
  - All bedrooms, living spaces, hallways, landings, sleepouts
  - Where a kitchen is separated from the living spaces and hallways by doors that can be closed, an alarm specified by its manufacturer as suitable for a kitchen shall be located in the kitchen e.g. heat alarm or kitchen rated smoke alarm
  - In a multi-level household unit. there shall be at least one smoke alarm on each level
  - Where more than one smoke alarm is needed, these smoke alarms shall be interconnected (wired or wireless) so that when one activates, all smoke alarm devices in the household unit will sound.
- Spacing
  - The distance from any wall to a smoke alarm shall not exceed 5m; and
  - Smoke alarms shall be within 10m of each other in any direction.
- Ceilings
  - Alarms should ideally be installed on the ceiling, at least 200 mm from a wall or a ceiling beam to avoid dead air space. With sloping ceilings the alarm should be 200–500 mm from the apex.
- Exposed framing members
  - Where there are exposed framing members on the ceiling such as a beam, rafter, purlin, or joist, the requirements in NZS 4514 Table 1 shall be applied.

SMOKE ALARM LEGEND

All smoke alarms shall be interconnected either wired or wireless

- SM — Smoke Alarm
- HE — Heat Alarm OR; Kitchen Rated Smoke Alarm

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

NORTH

Project: Arbor Green - Lot 1-3
Address: 2 - 8 Laina Lane, Arbor Green, Rolleston
No: H2639

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: Detailed Design
Issue Date: 25/02/2026
Drawn By: SB / FM Checked By: MP / DR
Scale: As indicated @ A1

Sheet Name: Typology Reflected Ceiling and Electrical Plan - Type A & C
Sheet No: A52.03
Rev No: 0

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Ceiling Schedule

Type	Description
CL01	13mm GIB Standard Plasterboard ceiling on suspended rondo battens fixed to 215 Formance SIP. Paint finish.
CL02	13mm GIB Aqualine Plasteboard on direct fixed rondo battens. Paint finish.
CL03	13mm GIB Plasteboard on direct fixed rondo battens. Paint finish.
CL04	13mm GIB Aqualine Plasteboard on suspended rondo battens fixed to 215 Formance SIP. Paint finish.

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

General Electical Notes

1. All electrical work shall conform to the N.Z. Building Code, esp clauses G8 Artificial lighting & G9 Electricity, as well as the NZ electrical and wiring regulations/rules NZS3000:2007.
2. All luminaries shall comply with NZS 60598.2.1:2014.
3. Allow to supply and install 'CA abutted' or 'IC/IC-F abutted and covered' rated recessed light fittings only.
4. All electrical sockets shall be mounted within the recommended heights dictated by NZS3000:2007;
5. At least 500mm in from any corner and Generally 300mm above floor or 225mm above bench top; and 1200mm from the floor washer/dryer and refrigerator, unless otherwise stated.
6. All power outlets in external and wet areas shall be RCD protected.
7. Any power outlets shall be have a minimal clearance of 1.0m radius from gas ignition source.
8. Allow to work with client onsite to finalise layout of power and controls.
9. Homestar endorsement: ensure all lamps are LED - 8.0 watts.

Services Legend

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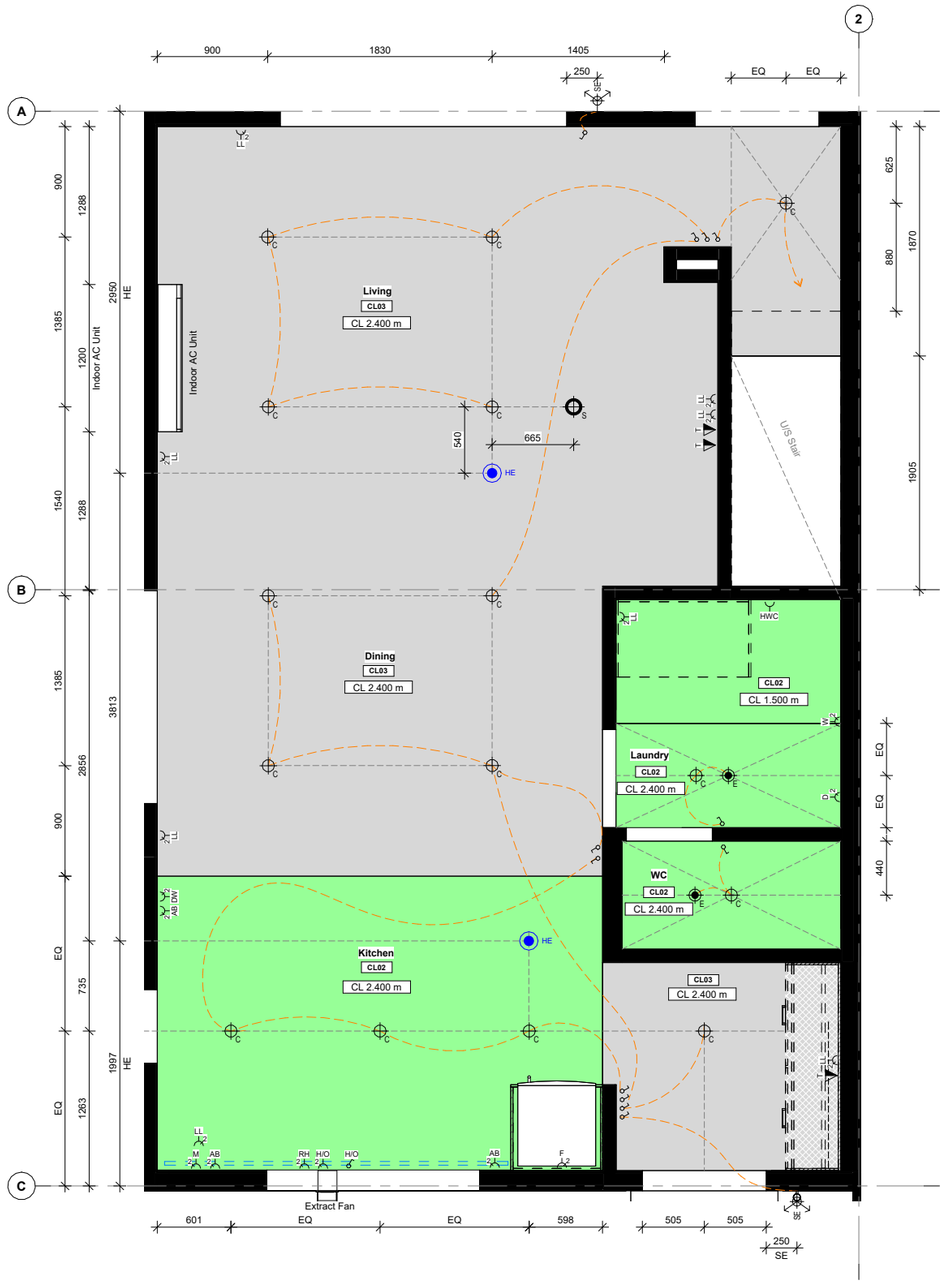
- Heated Towel Rail Power Outlet
- AC
- Dryer Power Outlet
- Washing Machine Power Outlet
- Dishwasher Power Outlet
- Hob and Oven Power Outlet
- Hob and Oven Power Switch
- Fridge Power Outlet
- Range Hood Power Outlet
- Data Connection
- SM / HE Smoke Detector
- DB Distribution Board
- Downlight
- Wall Light
- Mirror Light
- LED Strip Lighting
- HVAC Ceiling Extract Fan
- HVAC Ceiling Supply
- HVAC Wall Supply
- External Sensor Light
- Panel Heater — Bathroom Pull-Cord Heater Outlet - 2000 AFFL
- Heater — Bedroom Panel Heater Outlet



1 A41.02 **Type B - Ground Floor RCP**
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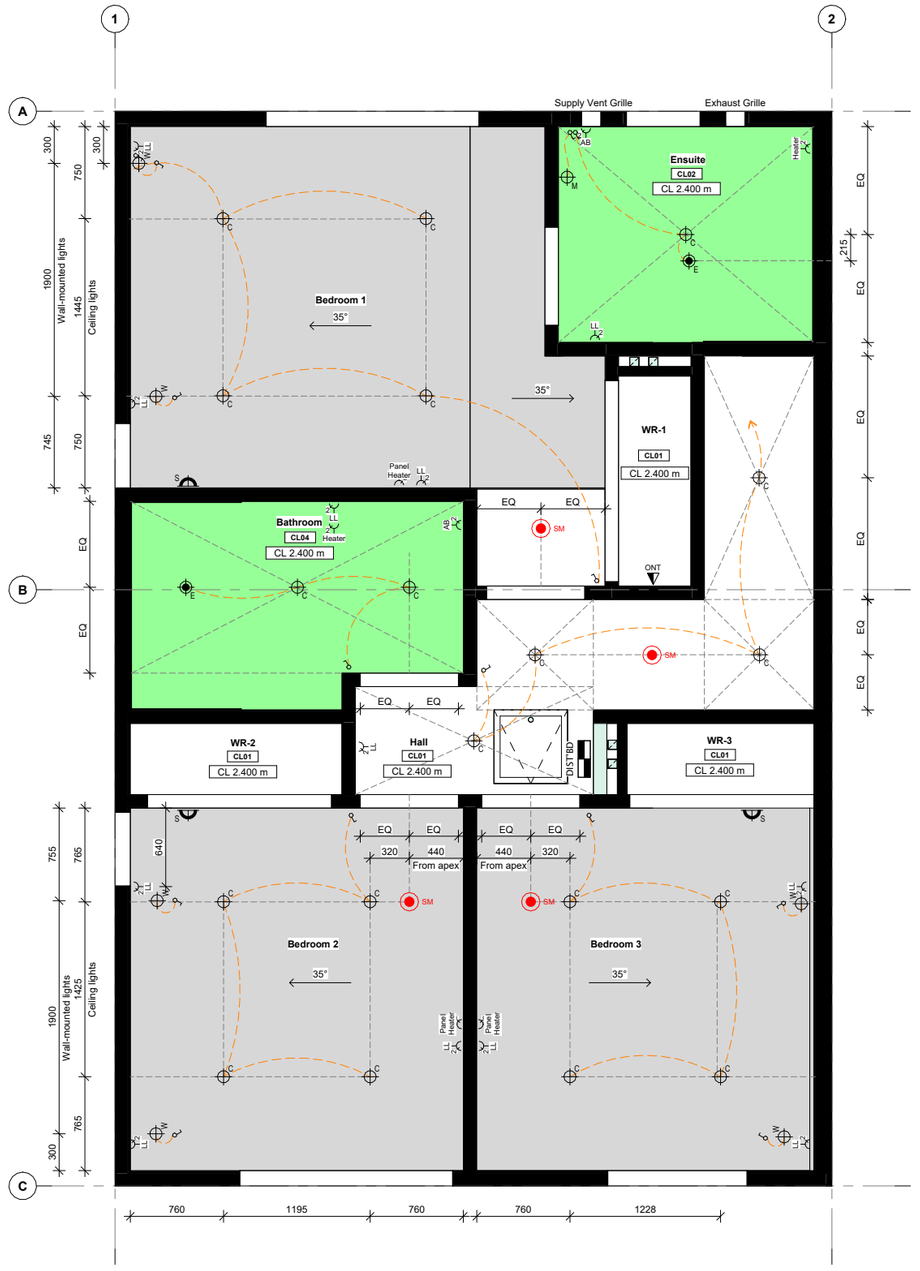

2 A41.02 **Type B - First Floor RCP**
Scale 1 : 25 @ A1

SMOKE ALARM LEGEND

All smoke alarms shall be interconnected either wired or wireless

- SM Smoke Alarm
- HE Heat Alarm OR; Kitchen Rated Smoke Alarm

DOMESTIC SMOKE ALARMS

All smoke alarms are to comply with C/AS1 and F7/AS1

C.2.1 Type 1 – Domestic smoke alarm system
C.2.1.1
A Type 1 is a smoke alarm or multiple interconnected smoke alarm devices, each containing a smoke detector and an alarm sounding feature. The system shall comply with NZS 4514. Smoke alarms shall be installed in every household unit or suite of risk group SH, and risk group SM where a Type 5 is not required by this Acceptable Solution. Connection to a remote receiving centre is not required.

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Location of smoke alarms:

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  - Where more than one smoke alarm is needed, these smoke alarms shall be interconnected (wired or wireless) so that when one activates, all smoke alarm devices in the household unit will sound.
- Spacing
  - The distance from any wall to a smoke alarm shall not exceed 5m; and
  - Smoke alarms shall be within 10m of each other in any direction.
- Ceilings
  - Alarms should ideally be installed on the ceiling, at least 200 mm from a wall or a ceiling beam to avoid dead air space. With sloping ceilings the alarm should be 200–500 mm from the apex.
- Exposed framing members
  - Where there are exposed framing members on the ceiling such as a beam, rafter, purlin, or joist, the requirements in NZS 4514 Table 1 shall be applied.

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

Project: **Arbor Green - Lot 4-7**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **DR**
Scale: **As indicated @ A1**

Sheet Name: **Typology Reflected Ceiling and Electrical Plan - Type B**
Sheet No: **A52.04** Rev No: **0**

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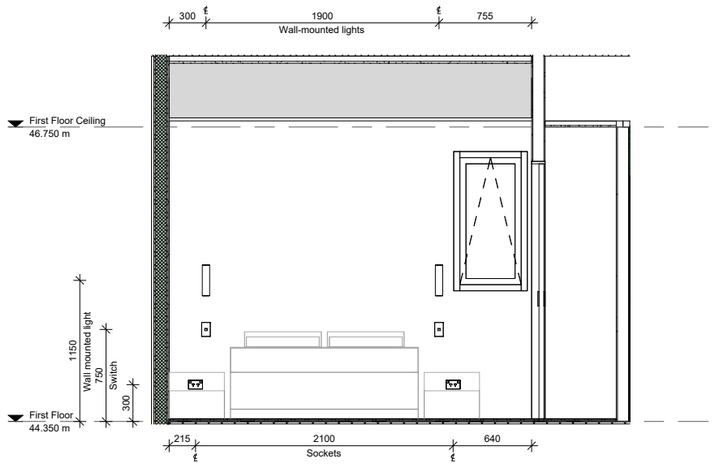
General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule



1 / A31.04 **Type B - Typical Bedroom Elevation**

Scale 1 : 25 @ A1

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

Project: **Arbor Green - Lot 4-7**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule		
Rev.	**Description**	**Date**
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **DR**
Scale: **1 : 25 @ A1**

Sheet Name: **Typology Reflected Ceiling and Electrical Plan - Type B**
Sheet No: A52.04.1 Rev: 0

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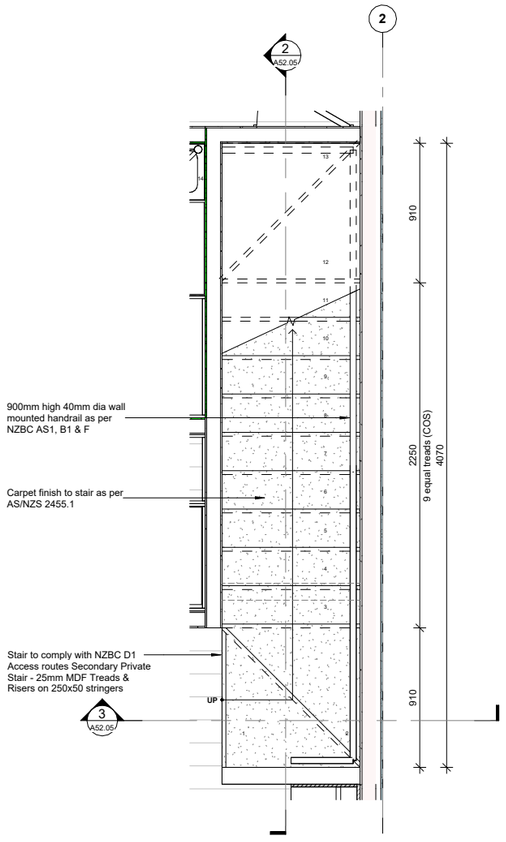
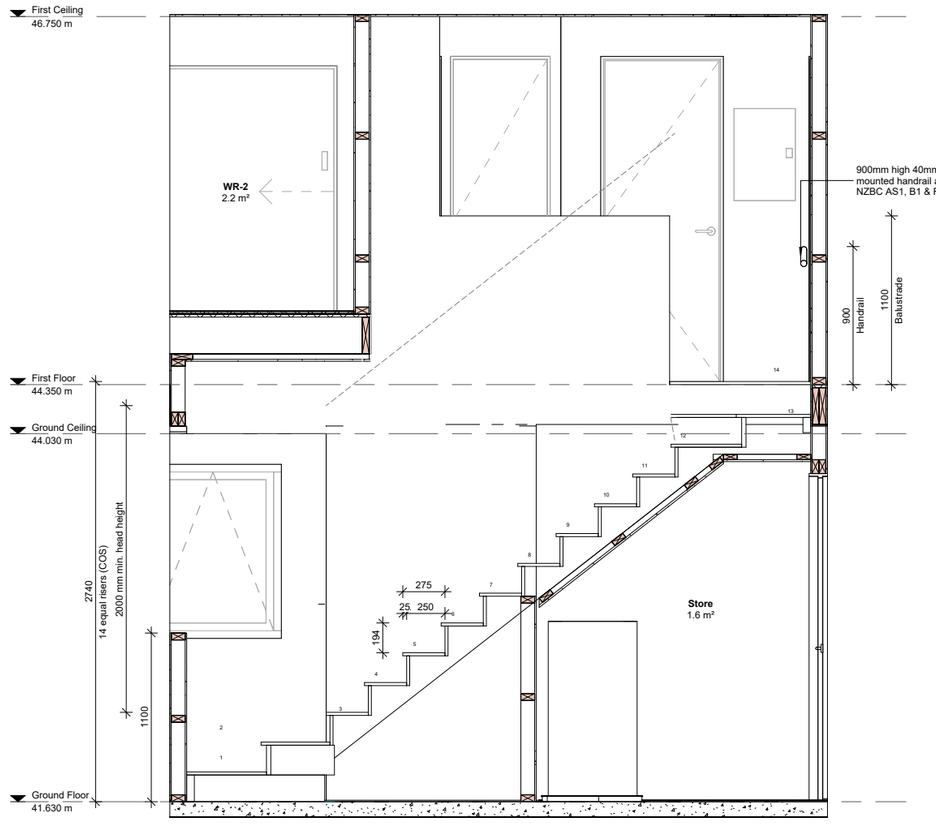
General Notes

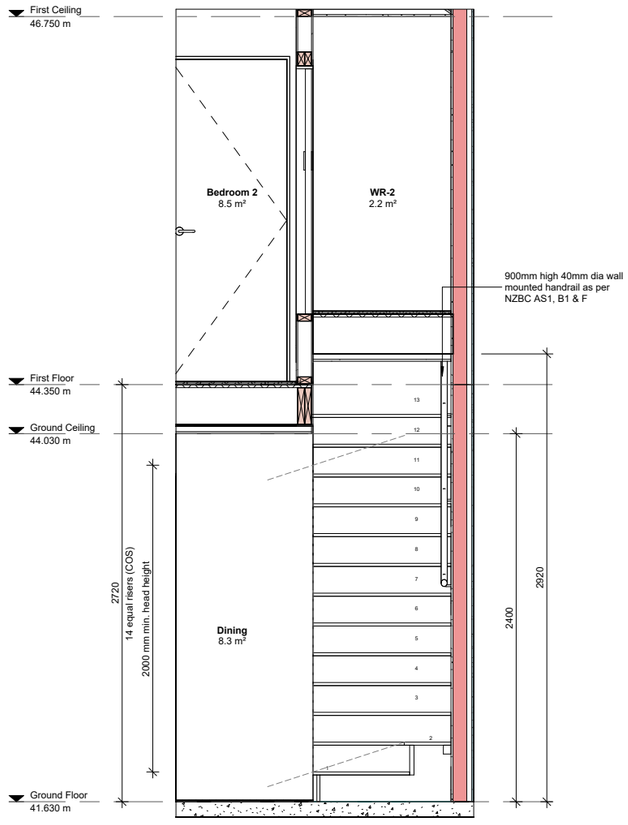
1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule



1 - **Type A & C - Stairs Plan**
Scale 1 : 20 @ A1



2 - **Type A & C - Stairs - Section 1**
Scale 1 : 20 @ A1



3 - **Section 1**
Scale 1 : 20 @ A1

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Client: home. CONSTRUCTION

NORTH

Project: **Arbor Green - Lot 1-3** No: **H2639**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **1 : 20 @ A1**

Sheet Name: **Typology Stair - Type A & C**
Sheet No: A52.05 Rev No: 0

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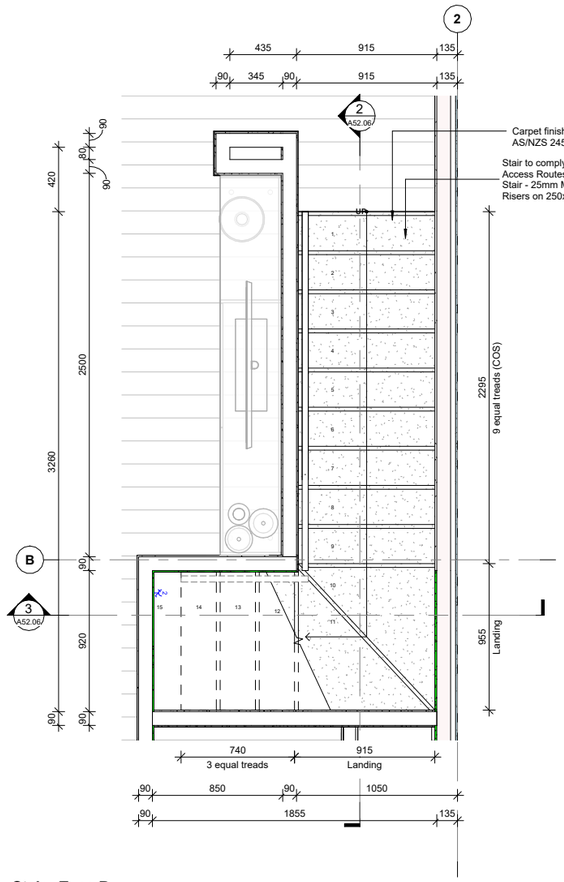
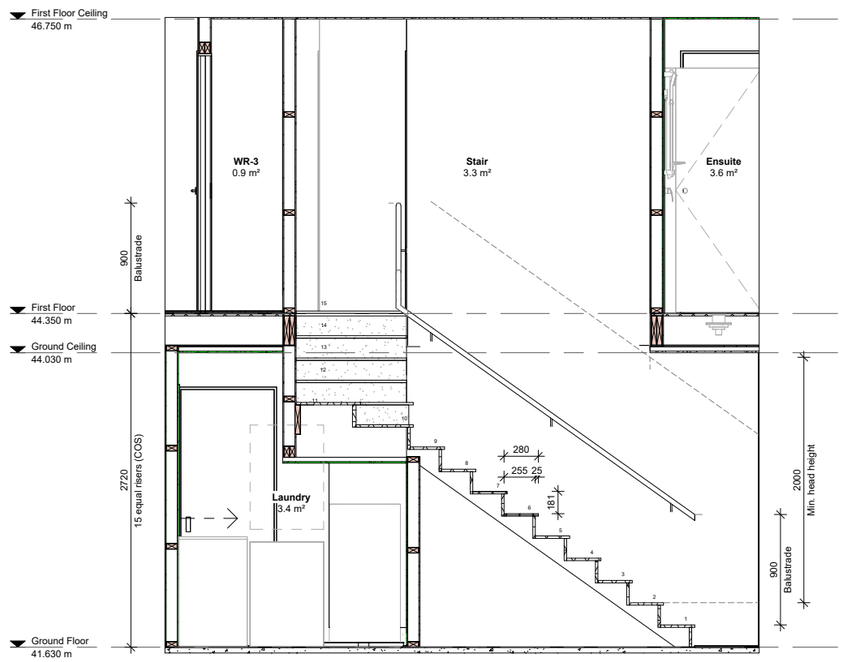
General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule



1 A41.02 **Stair - Type B**
Scale 1 : 20 @ A1



2 A52.06 **Stair Type B Section 1**
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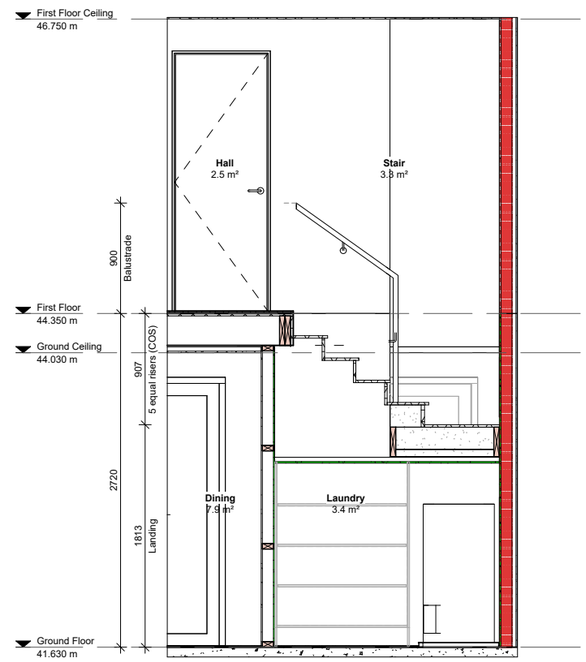

3 A52.06 **Stair Type B Section 2**
Scale 1 : 25 @ A1

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Client: home. CONSTRUCTION

Project: **Arbor Green - Lot 4-7**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **DR**
Scale: **As indicated @ A1**

Sheet Name: **Typology Stair and Bedroom - Type B**
Sheet No: **A52.06** Rev No: **0**

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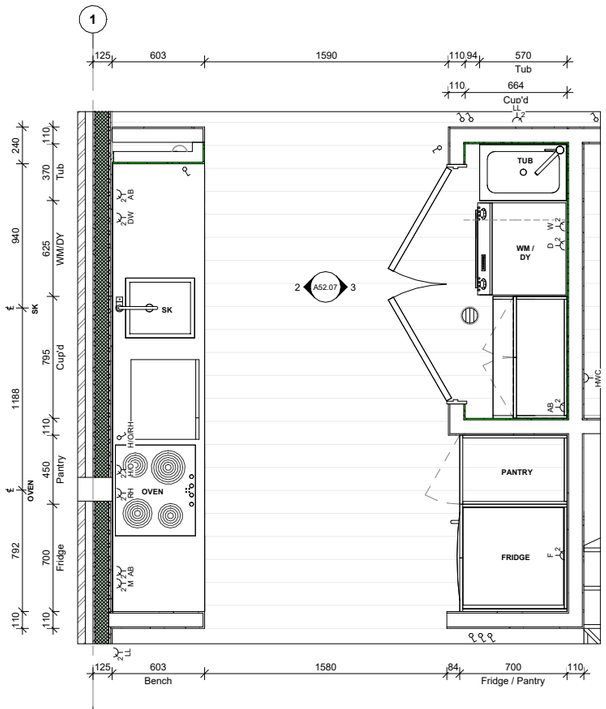
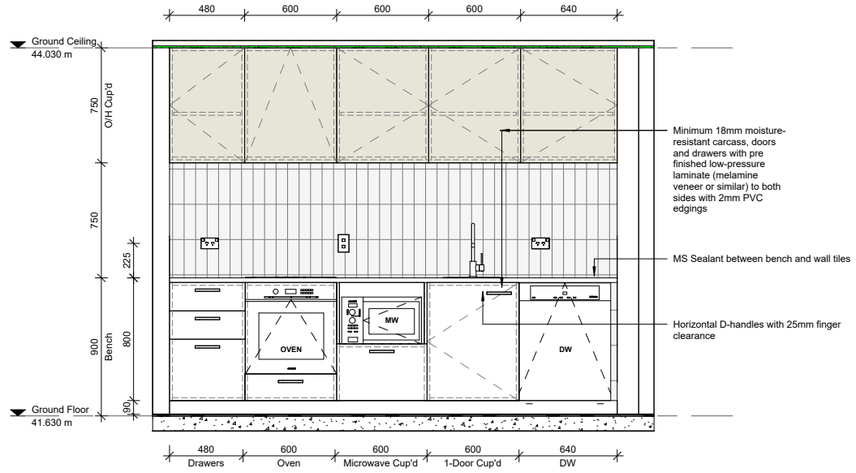
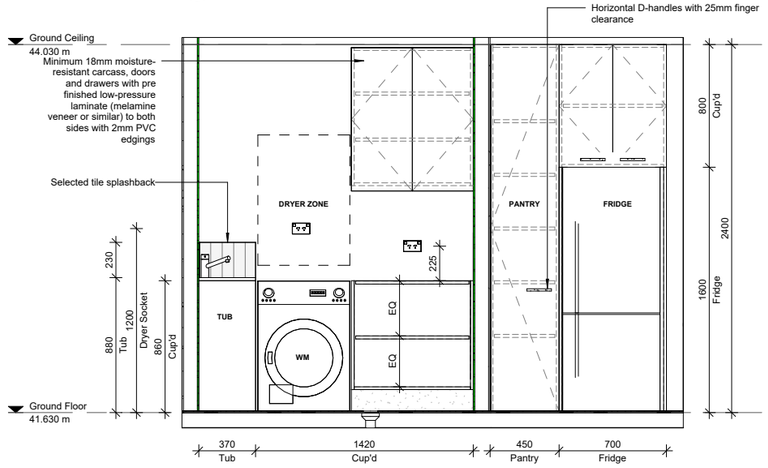


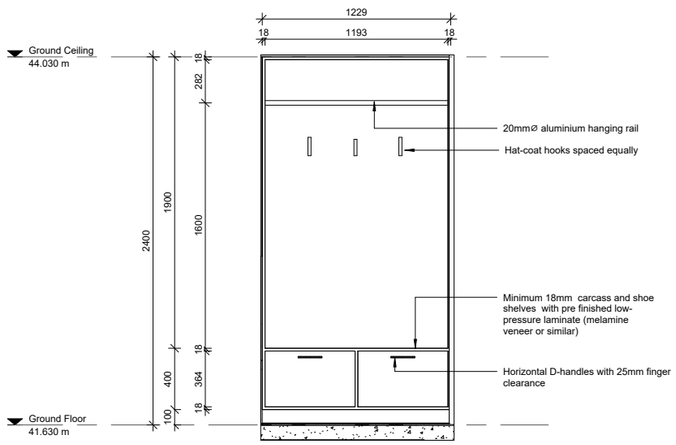
1 - Type A & C - Kitchen and Laundry
Scale 1 : 20 @ A1



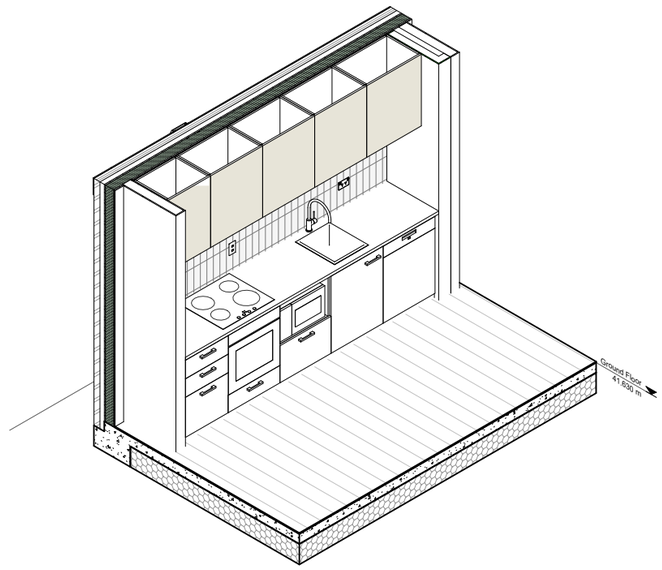
2 - Kitchen - Type A & C - Elevation 1
Scale 1 : 20 @ A1



3 - Kitchen - Type A & C- Elevation 2
Scale 1 : 20 @ A1



4 - Entrance Storage - Type A - Elevation 1
Scale 1 : 20 @ A1



5 - Kitchen 3D
Scale @ A1

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

Joinery Scope Notes

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2. Joiner to provide shop drawings for Hierarchy Group / client approval prior to manufacture.
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7. Setout dimensions are to face of wall linings / substrates and centerlines of fixtures (where applicable) u.n.o.

Homestar Endorsement

1. Kitchen Fixtures:
   - Sink tap flow rate to be 12L/min.
2. Laundry Fixtures:
   - Tub tap flow rate to be 12L/min.
3. Bathroom Fixtures:
   - Basin tap flow rate to be 12L/min.
   - Shower rose flow rate to be 9L/min; (3 Star WELS rated handheld shower).
   - Toilet flow rate to be 4.5L/3L dual flush (4 Star WELS rated).

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

NORTH

Project: Arbor Green - Lot 1-3
Address: 2 - 8 Laina Lane, Arbor Green, Rolleston
No: H2639

Revision Schedule		
Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: Detailed Design
Issue Date: 25/02/2026
Drawn By: SB / FM Checked By: MP / DR
Scale: As indicated @ A1

Sheet Name: Typology Kitchen & Laundry Plan and Elevations - Type A & C
Sheet No: A52.07
Rev No: 0

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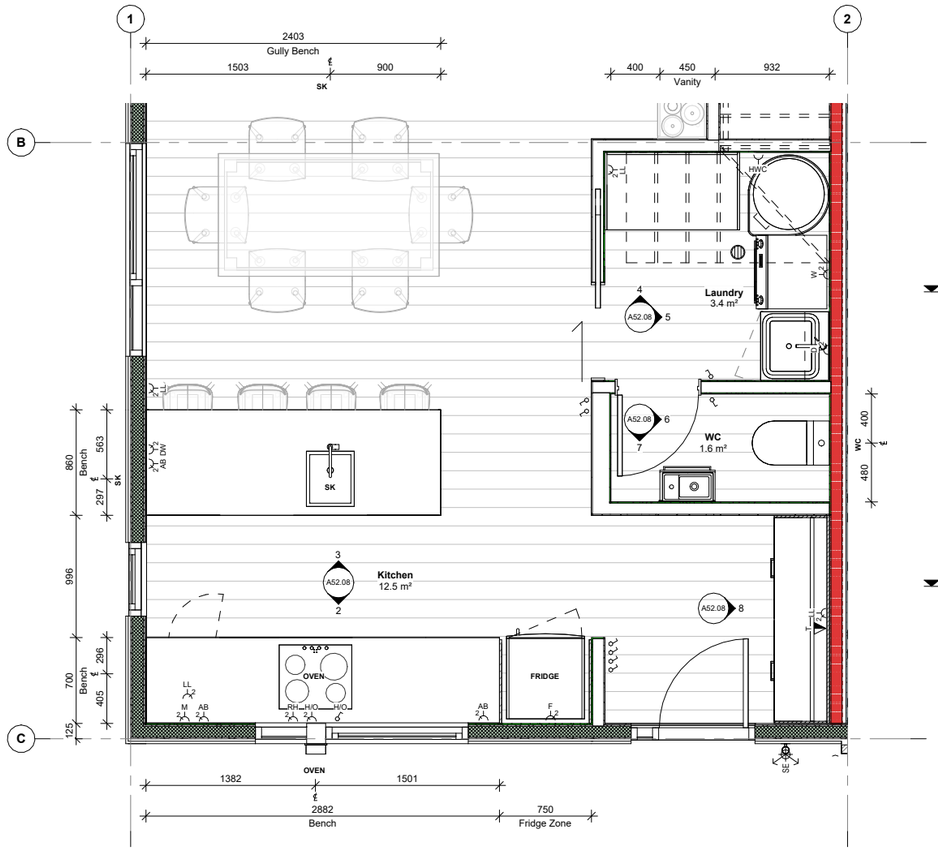
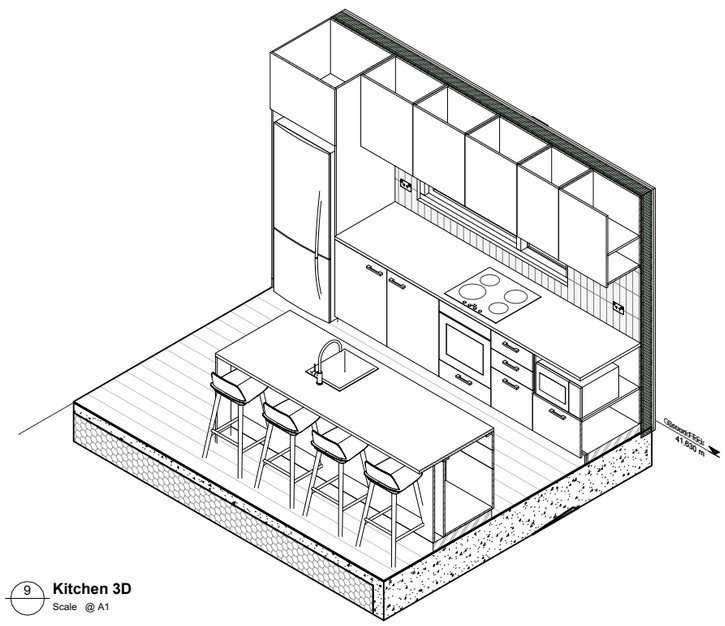


1 A41.02 **Detail Plan - Kitchen, Laundry & WC - Type B**
Scale 1 : 25 @ A1



9 **Kitchen 3D**
Scale @ A1

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

Homestar Endorsement

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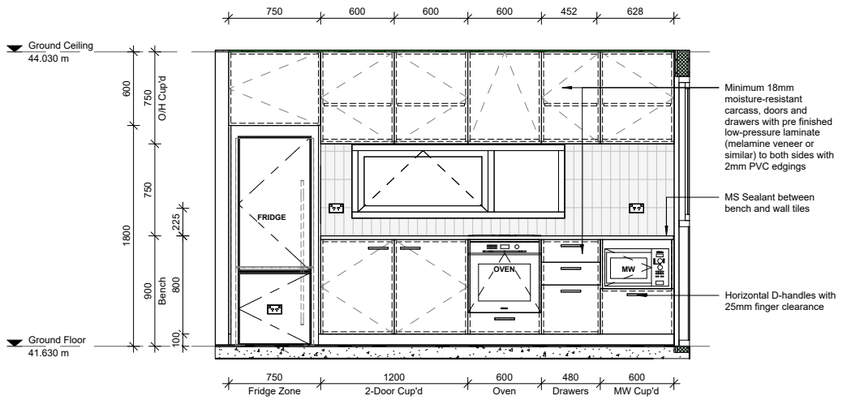
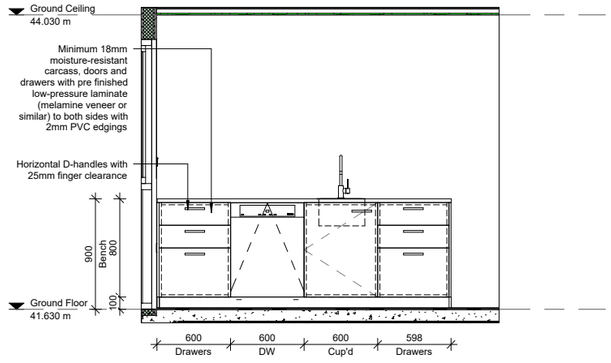
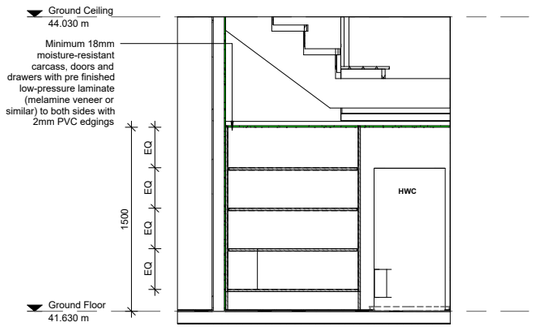


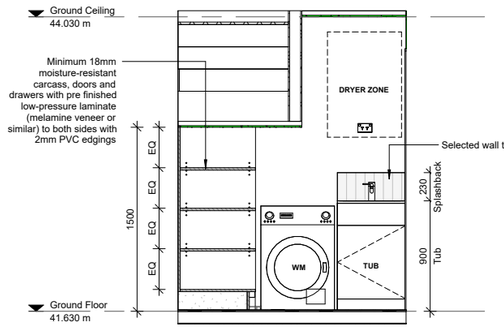
2 A52.02 **Kitchen - Type B - Elevation 1**
Scale 1 : 25 @ A1



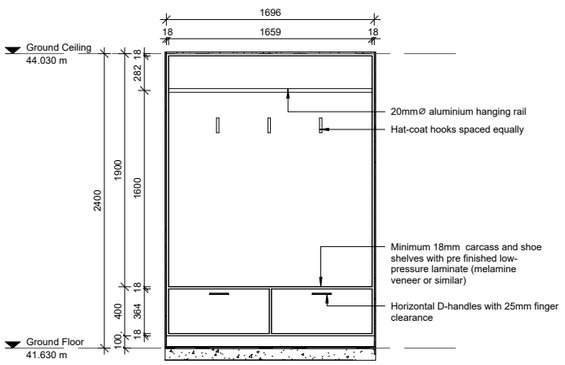
3 A52.02 **Kitchen - Type B - Elevation 2**
Scale 1 : 25 @ A1



4 A52.02 **Laundry - Type B - Elevation 1**
Scale 1 : 25 @ A1



5 A52.02 **Laundry - Type B - Elevation 2**
Scale 1 : 25 @ A1



8 A31.03 **Entrance - Type B - Elevation 1**
Scale 1 : 25 @ A1

6 A52.02 **WC - Type B - Elevation 1**
Scale 1 : 25 @ A1

7 A52.02 **WC - Type B - Elevation 2**
Scale 1 : 25 @ A1

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

Project: **Arbor Green - Lot 4-7**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **DR**
Scale: **As indicated @ A1**

Sheet Name: **Typology Kitchen & Laundry Plan and Elevations - Type B**
Sheet No: **A52.08** Rev No: **0**

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General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

Homestar Endorsement

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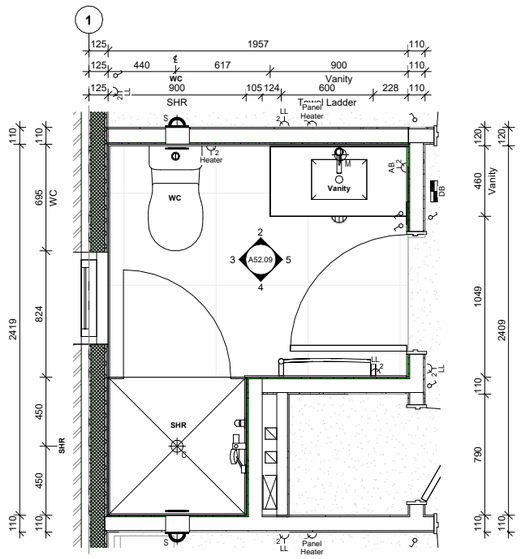
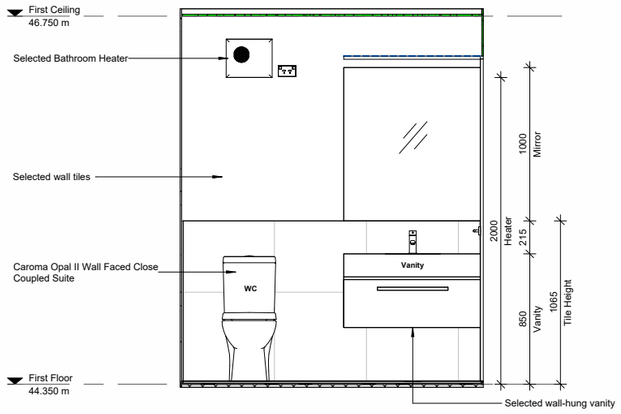


1 - Scale 1 : 20 @ A1

Type A & C - First Floor - Bathroom



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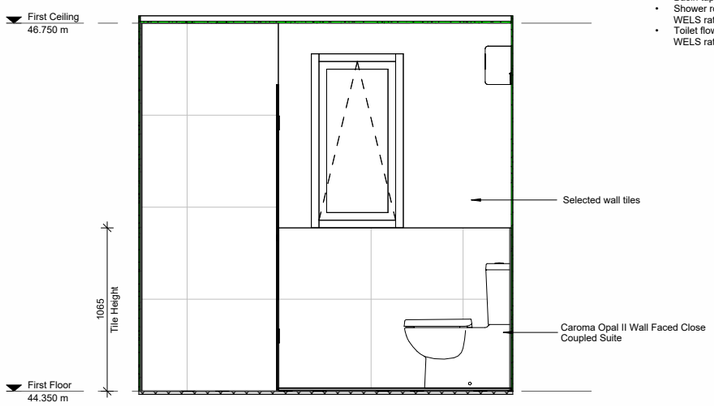
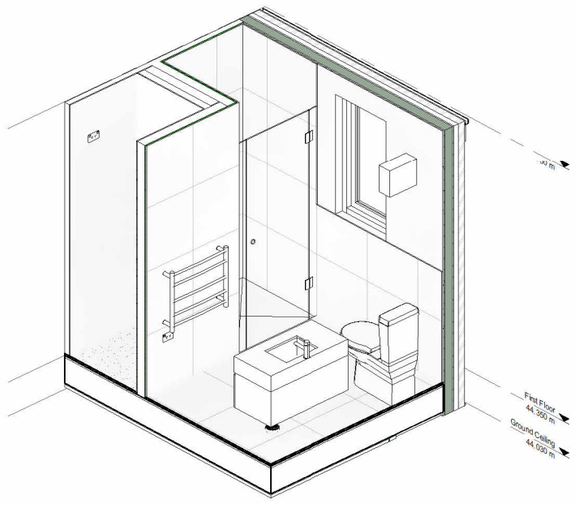
Bathroom - Type A & C - Elevation 1



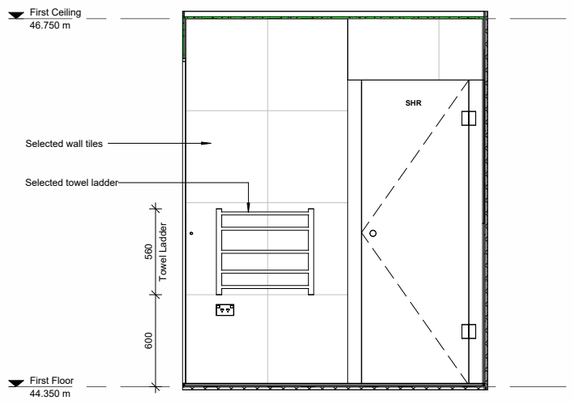
3 - Scale 1 : 20 @ A1

Bathroom - Type A & C - Elevation 2



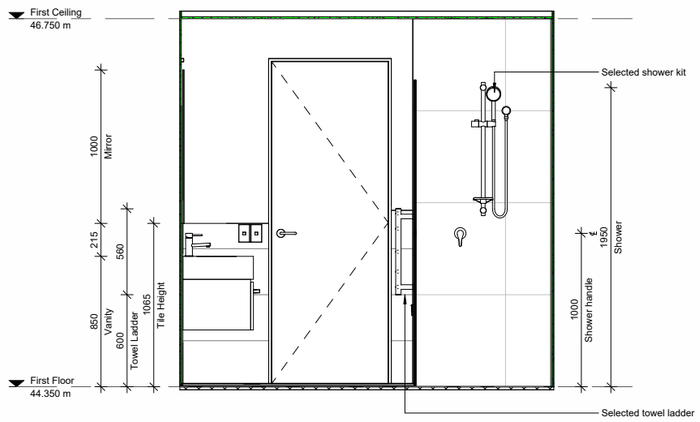
6 - Scale @ A1

Bathroom 3D



4 - Scale 1 : 20 @ A1

Bathroom - Type A & C - Elevation 4



5 - Scale 1 : 20 @ A1

Bathroom - Type A & C - Elevation 3

Joinery Scope Notes

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

NORTH

Project: **Arbor Green - Lot 1-3**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule		
Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Typology Bathrooms Plan and Elevations - Type A & C**
Sheet No: **A52.09** Rev No: **0**

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General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
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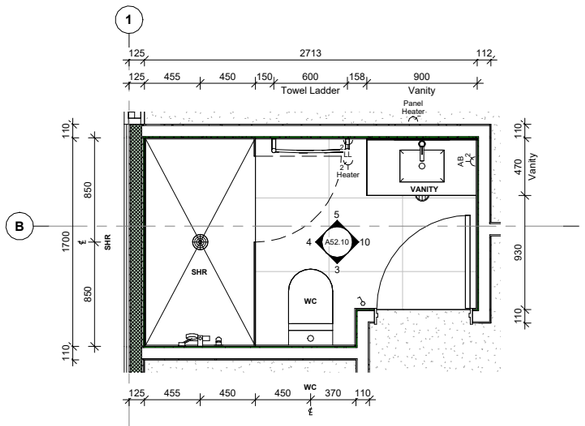
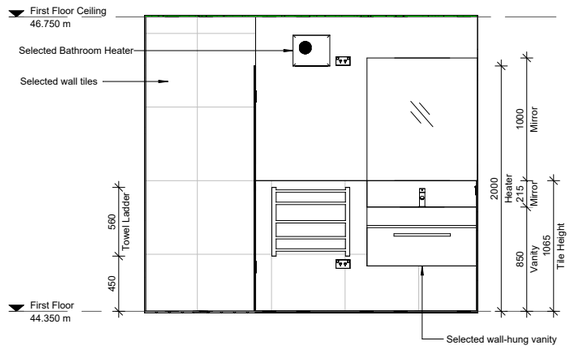
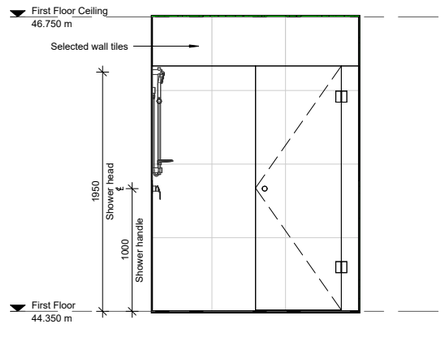


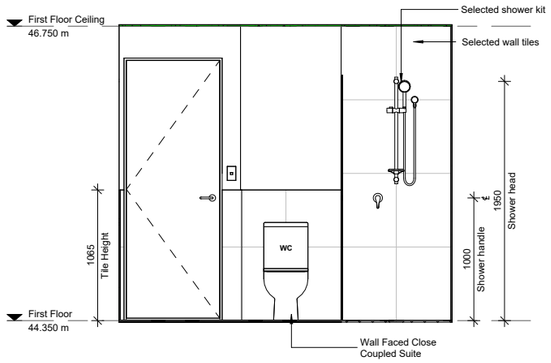
1 A41.02 **Detail Plan - Bathroom - Type B**
Scale 1 : 25 @ A1



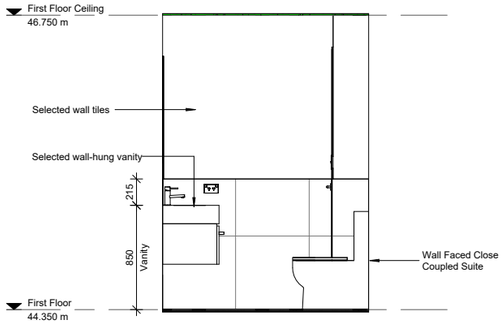
5 A52.02 **Bathroom - Type B - Elevation 1**
Scale 1 : 25 @ A1



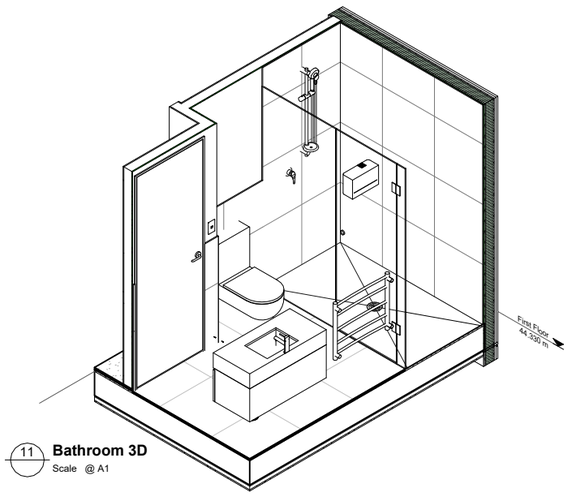
4 A52.02 **Bathroom - Type B - Elevation 2**
Scale 1 : 25 @ A1



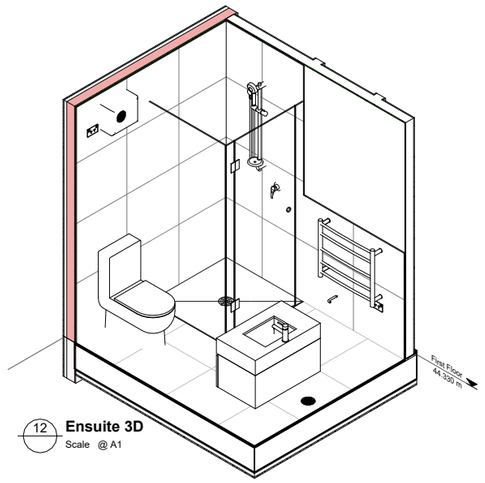
3 A52.02 **Bathroom - Type B - Elevation 3**
Scale 1 : 25 @ A1



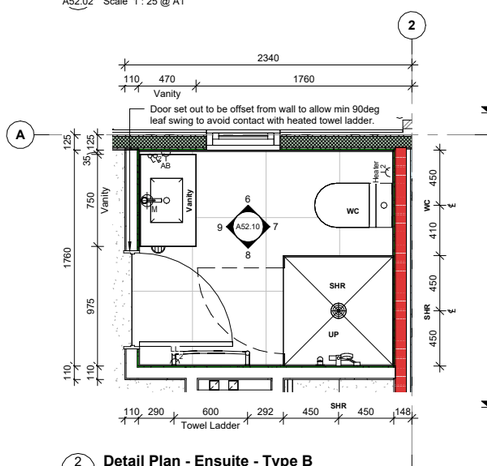
10 A52.02 **Bathroom - Type B - Elevation 4**
Scale 1 : 25 @ A1



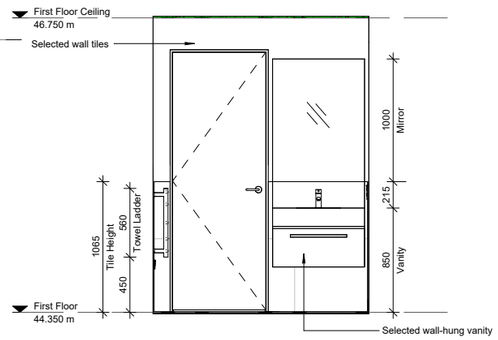
11 **Bathroom 3D**
Scale @ A1



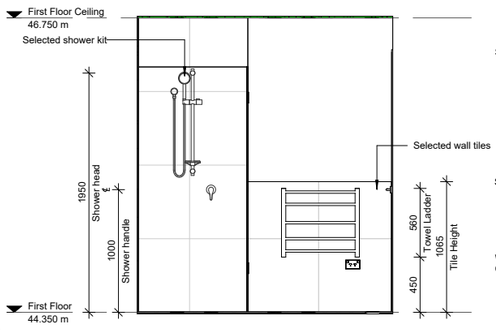
12 **Ensuite 3D**
Scale @ A1



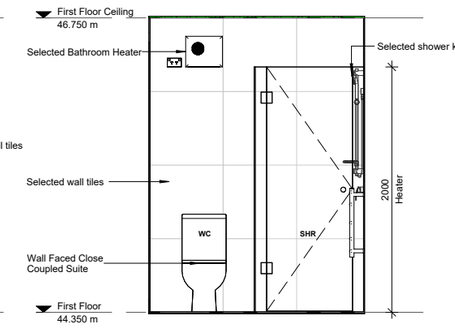
2 A41.02 **Detail Plan - Ensuite - Type B**
Scale 1 : 25 @ A1



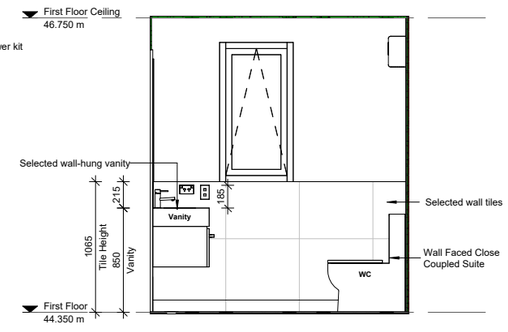
9 A52.02 **Ensuite - Type B - Elevation 1**
Scale 1 : 25 @ A1



8 A52.02 **Ensuite - Type B - Elevation 2**
Scale 1 : 25 @ A1



7 A52.02 **Ensuite - Type B - Elevation 3**
Scale 1 : 25 @ A1



6 A52.02 **Ensuite - Type B - Elevation 4**
Scale 1 : 25 @ A1

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

Project: **Arbor Green - Lot 4-7**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Typology Bathroom Plan and Elevations - Type B**
Sheet No: **A52.10** Rev No: **0**

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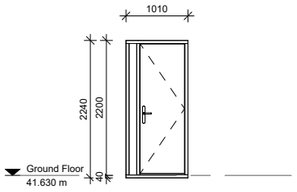
Exterior Glazing Schedule

Number	Type	Width	Height
Ground Floor			
W1.01	F1 L/R	1010	2200
W1.02	Custom	1390	2200
W1.03	C4 L/R	1735	2200
W1.04	E1	600	2200
W1.05	G2 L/R	2335	2200
W2.01	F1 L/R	1010	2200
W2.02	Custom	1390	2200
W2.03	G2 L/R	2335	2200
W3.01	F1 L/R	1010	2200
W3.02	Custom	1390	2200
W3.03	C4 L/R	1735	2200
W3.04	E1	600	2200
W3.05	G2 L/R	2335	2200
First Floor			
W1.06	Custom	900	2440
W1.07	D1	1735	2200
W1.08	C1	600	2200
W1.09	D1	1735	2200
W1.10	Custom	900	2440
W2.04	Custom	900	2440
W2.05	Custom	900	2440
W3.06	Custom	900	2440
W3.07	D1	1735	2200
W3.08	C1	600	2200
W3.09	D1	1735	2200
W3.10	Custom	900	2440



W1.01, W2.01, W3.01

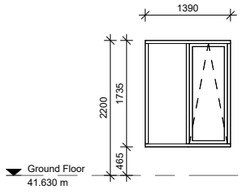
Scale 1 : 50 @ A1

Suite Starke uPVC Standard Size glazing

Type F1 L/R

Glass Ug1.3 Low-E filled (R0.63)

Refer to Elevations for safety glazing requirements.



W1.02, W2.02, W3.02

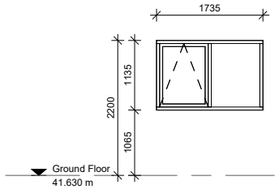
Scale 1 : 50 @ A1

Suite Starke uPVC Non-Standard glazing

Type Custom

Glass Ug1.3 Low-E filled (R0.63)

Refer to Elevations for safety glazing requirements.



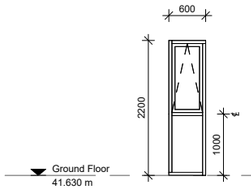
W1.03, W3.03

Scale 1 : 50 @ A1

Suite Starke uPVC Standard Size glazing

Type C4 L/R

Glass Ug1.3 Low-E filled (R0.63)



W1.04, W3.04

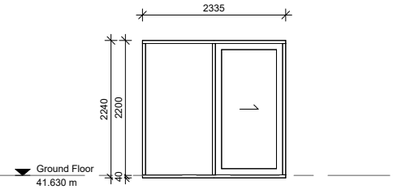
Scale 1 : 50 @ A1

Suite Starke uPVC Standard Size glazing

Type E1

Glass Ug1.3 Low-E filled (R0.63)

Refer to Elevations for safety glazing requirements.



W1.05, W2.03, W3.05

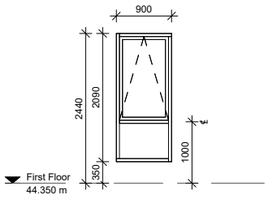
Scale 1 : 50 @ A1

Suite Starke uPVC Standard Size glazing

Type G2 L/R

Glass Ug1.3 Low-E filled (R0.63)

Refer to Elevations for safety glazing requirements.



W1.06, W1.10, W2.04, W2.05, W3.06, W3.10

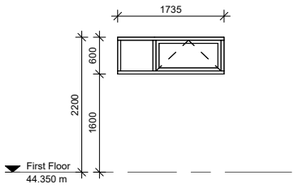
Scale 1 : 50 @ A1

Suite Starke uPVC Non-Standard glazing

Type Custom

Glass Ug1.3 Low-E filled (R0.63)

Refer to Elevations for safety glazing requirements.



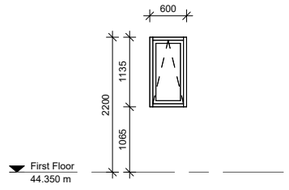
W1.07, W1.09, W3.07, W3.09

Scale 1 : 50 @ A1

Suite Starke uPVC Standard Size glazing

Type D1

Glass Ug1.3 Low-E filled (R0.63)



W1.08, W3.08

Scale 1 : 50 @ A1

Suite Starke uPVC Standard Size glazing

Type C1

Glass Ug1.3 Low-E filled (R0.63)

Refer to Elevations for safety glazing requirements.

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

General Window Notes

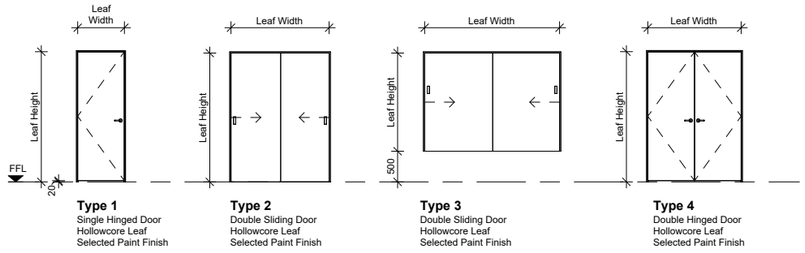
1. All framing shall be uPVC
2. All dimensions are indicative only for pricing purposes
3. All dimensions are to be confirmed on site prior to fabrication or construction
4. All Glazing shall comply with NZS4223:3:2016
5. Refer to Building Elevations for Safety Glazing location
6. Kitchen and Bathroom tiles to wrap into frame of window
7. Refer to Architectural specification for full requirements.
8. Window schedule dimensions are nominal finish sizes. Structural opening dimensions are to be 20mm greater in both width and height.

General Door Notes

1. Check all door sizes on site prior to manufacturer.
2. All door dimensions are to leaf only and not rough opening unless noted otherwise
3. All doors 1980 or higher shall have 3 hinges minimum
4. Hinges to be evenly spaced. Unless specifically required as part of proprietary system for door weight
5. All doors shall be undercut subject to floor finishes and bottom seal conditions
6. Erect door units in position, plumb both ways an securly fix frame all round. Take care not to distort.
7. All Glazing shall comply with NZS4223:3:2016
8. All Manifestation shall be installed in accordance with NZS4223:3:2016 (as required)
   a. Any glazed panel that can be mistaken for a doorway or unimpeded path of travel will require a manifestation.
9. All Acoustic doors shall be Pacific Doors AFD300. Substitution will require modification of installation details
10. All Fire Doors shall be either Pacific Doors F0.5 or VP60a where appropriate. Substitution will require modification of installation details
11. All Fire Doors shall comply with NZS4520:2010
12. Refer to Architectural speficiation for full requirements.
13. External Doors schedule dimensions are nominal finish sizes. Structural opening dimensions are to be 20mm greater in both width and 10mm in height.

Door Schedule

Door Identity		Location		Door Leaf		
Door No.	Type	Room No.	Room Name	Width	Height	Comments
D1.01	Type 1	1.05	Bedroom 1	760	2100	20mm Undercut
D1.02	Type 2	1.05	Bedroom 1	1600	2100	
D1.03	Type 1	1.11	Bathroom	760	2100	20mm Undercut
D1.04	Type 1	1.07	Hall	610	2100	
D1.05	Type 1	1.09	Bedroom 2	760	2100	20mm Undercut
D1.06	Type 3	1.09	Bedroom 2	2200	1600	
D1.07	Type 1	1.12	Store	610	2100	
D1.08	Type 4	1.02	Kitchen	1520	2100	20mm Undercut
D2.01	Type 1	2.05	Bedroom 1	760	2100	20mm Undercut
D2.02	Type 2	2.05	Bedroom 1	1600	2100	
D2.03	Type 1	2.11	Bathroom	760	2100	20mm Undercut
D2.04	Type 1	2.07	Hall	610	2100	
D2.05	Type 1	2.09	Bedroom 2	760	2100	20mm Undercut
D2.06	Type 3	2.09	Bedroom 2	2200	1600	
D2.07	Type 1	2.12	Store	610	2100	
D2.08	Type 4	2.02	Kitchen	1520	2100	20mm Undercut
D3.01	Type 1	3.07	Hall	760	2100	20mm Undercut
D3.02	Type 2	3.06	WR-1	1600	2100	
D3.03	Type 1	3.07	Hall	760	2100	20mm Undercut
D3.04	Type 1	3.08	Cup'D	610	2100	
D3.05	Type 1	3.07	Hall	760	2100	20mm Undercut
D3.06	Type 3	3.10	WR-2	2200	1600	
D3.07	Type 1	3.01	Living	610	2100	
D3.08	Type 4	3.04	Laundry	1520	2100	20mm Undercut



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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

Project: **Arbor Green - Lot 1-3**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Block A - Window and Door Schedule**
Sheet No: A91.01
Rev No: 0

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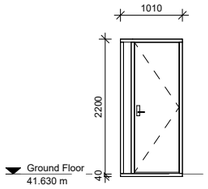
Exterior Glazing Schedule

Number	Type	Width	Height
Ground Floor			
W4.01	F1 L/R	1010	2200
W4.02	A4 L/R	1735	1645
W4.03	E1	600	2200
W4.04	C4 L/R	1735	2200
W4.05	G2 L/R	2335	2200
W4.06	F2 L/R	1010	2200
W5.01	F1 L/R	1010	2200
W5.02	A4 L/R	1735	1645
W5.03	F2 L/R	1010	2200
W5.04	G2 L/R	2335	2200
W6.01	F1 L/R	1010	2200
W6.02	A4 L/R	1735	1645
W6.03	F2 L/R	1010	2200
W6.04	G2 L/R	2335	2200
W7.01	F1 L/R	1010	2200
W7.02	A4 L/R	1735	1645
W7.03	E1	600	2200
W7.04	C4 L/R	1735	2200
W7.05	G2 L/R	2335	2200
W7.06	F2 L/R	1010	2200
First Floor			
W2.03	G2 L/R	2335	2200
W3.05	G2 L/R	2335	2200
W4.07	D3	1135	2200
W4.08	C4 L/R	1735	2200
W4.09	C1	600	2200
W4.10	C1	580	2200
W4.11	C4 L/R	1735	2200
W4.12	C1	600	2200
W5.05	D3	1135	2200
W5.06	C4 L/R	1735	2200
W5.07	C1	600	2200
W5.08	C4 L/R	1735	2200
W6.05	D3	1135	2200
W6.06	C4 L/R	1735	2200
W6.07	C1	600	2200
W6.08	C4 L/R	1735	2200
W7.07	D3	1135	2200
W7.08	C4 L/R	1735	2200
W7.09	C1	600	2200
W7.10	C1	600	2200
W7.11	C4 L/R	1735	2200
W7.12	C1	600	2200
First Floor Ceiling			
W1.10	Custom	900	2440



W4.01, W5.01, W6.01, W7.01

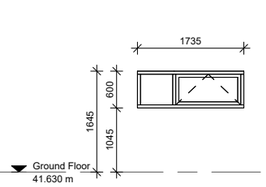
Scale 1 : 50 @ A1

Suite Starke uPVC Standard Size glazing. C4 L/R

Type F1 L/R

Glass Ug1.3 Low-E filled (R0.63)

Refer to Elevations for safety glazing requirements.



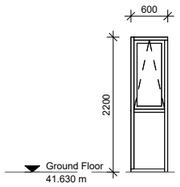
W4.02, W5.02, W6.02, W7.02

Scale 1 : 50 @ A1

Suite Starke uPVC Standard Size glazing. C4 L/R

Type A4 L/R

Glass Ug1.3 Low-E filled (R0.63)



W4.03, W7.03

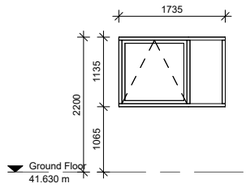
Scale 1 : 50 @ A1

Suite Starke uPVC Standard Size glazing. C4 L/R

Type E1

Glass Ug1.3 Low-E filled (R0.63)

Refer to Elevations for safety glazing requirements.



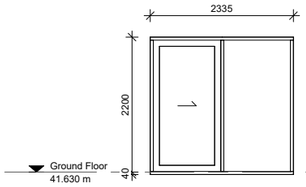
W4.04, W7.04, W4.08, W4.11, W5.06, W5.08, W6.06, W6.08, W7.08, W7.11

Scale 1 : 50 @ A1

Suite Starke uPVC Standard Size glazing. C4 L/R

Type C4 L/R

Glass Ug1.3 Low-E filled (R0.63)



W4.05, W5.04, W6.04, W7.05

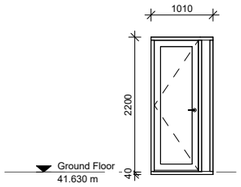
Scale 1 : 50 @ A1

Suite Starke uPVC Standard Size glazing. C4 L/R

Type G2 L/R

Glass Ug1.3 Low-E filled (R0.63)

Refer to Elevations for safety glazing requirements.



W4.06, W5.03, W6.03, W7.06

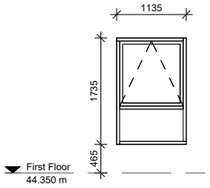
Scale 1 : 50 @ A1

Suite Starke uPVC Standard Size glazing. C4 L/R

Type F2 L/R

Glass Ug1.3 Low-E filled (R0.63)

Refer to Elevations for safety glazing requirements.



W4.07, W5.05, W6.05, W7.07

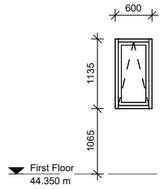
Scale 1 : 50 @ A1

Suite Starke uPVC Standard Size glazing. C4 L/R

Type D3

Glass Ug1.3 Low-E filled (R0.63)

Refer to Elevations for safety glazing requirements.



W4.09, W4.10, W4.12, W5.07, W6.07, W7.09, W7.10, W7.12

Scale 1 : 50 @ A1

Suite Starke uPVC Standard Size glazing. C4 L/R

Type C1

Glass Ug1.3 Low-E filled (R0.63)

Refer to Elevations for safety glazing requirements.

General Notes

1. Refer A01.01 For Drawing List, Drawing Conventions & Project General Notes
2. Refer A03.01 For Element Legends
3. Refer A03.11 For Material Schedules / Selections
4. Refer A94.00 For Finishes Schedule

General Window Notes

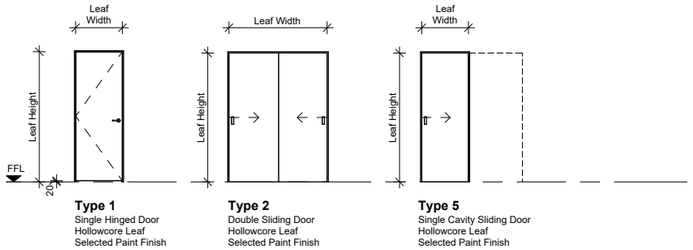
1. All framing shall be uPVC
2. All dimensions are indicative only for pricing purposes
3. All dimensions are to be confirmed on site prior to fabrication or construction
4. All Glazing shall comply with NZS4223:3:2016
5. Refer to Building Elevations for Safety Glazing location
6. Kitchen and Bathroom tiles to wrap into frame of window
7. Refer to Architectural specification for full requirements.
8. Windows schedule dimensions are nominal finish sizes. Structural opening dimensions are to be 20mm greater in both width and height.

General Door Notes

1. Check all door sizes on site prior to manufacturer.
2. All door dimensions are to leaf only and not rough opening unless noted otherwise
3. All doors 1980 or higher shall have 3 hinges minimum
4. Hinges to be evenly spaced. Unless specifically required as part of proprietary system for door weight
5. All doors shall be undercut subject to floor finishes and bottom seal conditions
6. Erect door units in position, plumb both ways an securify fix frame all round. Take care not to distort.
7. All Glazing shall comply with NZS4223:3:2016
8. All Manifestation shall be installed in accordance with NZS4223:3:2016 (as required)
   a. Any glazed panel that can be mistaken for a doorway or unimpeded path of travel will require a manifestation.
9. All Acoustic doors shall be Pacific Doors AFD300. Substitution will require modification of installation details
10. All Fire Doors shall be either Pacific Doors F0.5 or VP60a where appropriate. Substitution will require modification of installation details
11. All Fire Doors shall comply with NZS4520:2010
12. Refer to Architectural speficiation for full requirements.
13. External Doors schedule dimensions are nominal finish sizes. Structural opening dimensions are to be 20mm greater in both width and 10mm in height.

Door Schedule

Door Identity		Location		Door Leaf		
Door No.	Type	Room No.	Room Name	Width	Height	Comments
D4.01	Type 1	4.09	Hall	760	2100	20mm Undercut
D4.02	Type 2	4.08	WR-1	1600	2100	
D4.03	Type 1	4.07	Ensuite	760	2100	
D4.04	Type 1	4.09	Hall	760	2100	20mm Undercut
D4.05	Type 1	4.09	Hall	760	2100	20mm Undercut
D4.06	Type 2	4.12	WR-2	1460	2100	
D4.07	Type 1	4.09	Hall	760	2100	20mm Undercut
D4.08	Type 2	4.13	Bedroom 3	1460	2100	
D4.09	Type 6	4.05	WC	660	2100	20mm Undercut
D4.10	Type 5	4.02	Dining	760	2100	20mm Undercut
D5.01	Type 1	5.06	Bedroom 1	760	2100	20mm Undercut
D5.02	Type 2	5.06	Bedroom 1	1600	2100	
D5.03	Type 1	5.06	Bedroom 1	760	2100	
D5.04	Type 1	5.15	Bathroom	760	2100	20mm Undercut
D5.05	Type 1	5.11	Bedroom 2	760	2100	20mm Undercut
D5.06	Type 2	5.11	Bedroom 2	1460	2100	
D5.07	Type 1	5.13	Bedroom 3	760	2100	20mm Undercut
D5.08	Type 2	5.14	WR-3	1460	2100	
D5.09	Type 6	5.04	Laundry	660	2100	20mm Undercut
D5.10	Type 5	5.04	Laundry	760	2100	20mm Undercut
D6.01	Type 1	6.09	Hall	760	2100	20mm Undercut
D6.02	Type 2	6.08	WR-1	1600	2100	
D6.03	Type 1	6.07	Ensuite	760	2100	
D6.04	Type 1	6.09	Hall	760	2100	20mm Undercut
D6.05	Type 1	6.09	Hall	760	2100	20mm Undercut
D6.06	Type 2	6.12	WR-2	1460	2100	
D6.07	Type 1	6.09	Hall	760	2100	20mm Undercut
D6.08	Type 2	6.13	Bedroom 3	1460	2100	
D6.09	Type 6	6.05	WC	660	2100	20mm Undercut
D6.10	Type 5	6.02	Dining	760	2100	20mm Undercut
D7.01	Type 1	7.06	Bedroom 1	760	2100	20mm Undercut
D7.02	Type 2	7.06	Bedroom 1	1600	2100	
D7.03	Type 1	7.06	Bedroom 1	760	2100	
D7.04	Type 1	7.15	Bathroom	760	2100	20mm Undercut
D7.05	Type 1	7.11	Bedroom 2	760	2100	20mm Undercut
D7.06	Type 2	7.11	Bedroom 2	1460	2100	
D7.07	Type 1	7.13	Bedroom 3	760	2100	20mm Undercut
D7.08	Type 2	7.14	WR-3	1460	2100	
D7.09	Type 6	7.04	Laundry	660	2100	20mm Undercut
D7.10	Type 5	7.04	Laundry	760	2100	20mm Undercut



Type 1
Single Hinged Door
Hollowcore Leaf
Selected Paint Finish

Type 2
Double Sliding Door
Hollowcore Leaf
Selected Paint Finish

Type 5
Single Cavity Sliding Door
Hollowcore Leaf
Selected Paint Finish

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

Project: **Arbor Green - Lot 4-7**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **DR**
Scale: **As indicated @ A1**

Sheet Name: **Block B - Window and Door Schedule**
Sheet No: **A91.02**
Rev No: **0**

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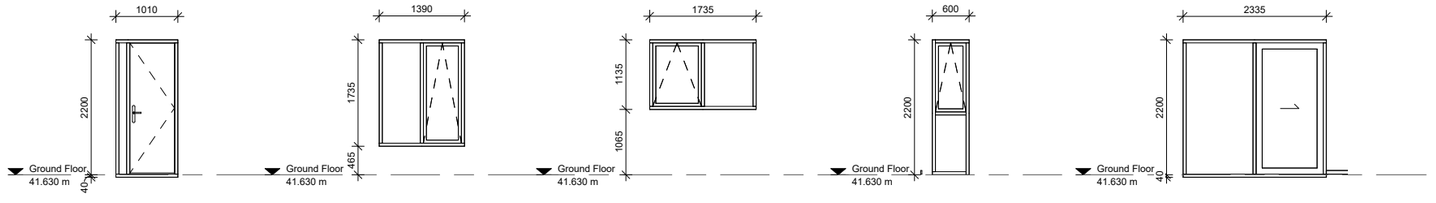
Exterior Glazing Schedule

Number	Type	Width	Height
Ground Floor			
W8.01	F1 L/R	1010	2200
W8.02	Custom	1390	2200
W8.03	C4 L/R	1735	2200
W8.04	E1	600	2200
W8.05	G2 L/R	2335	2200
W9.01	F1 L/R	1010	2200
W9.02	Custom	1390	2200
W9.03	G2 L/R	2335	2200
W10.01	F1 L/R	1010	2200
W10.02	Custom	1390	2200
W10.03	C4 L/R	1735	2200
W10.04	E1	600	2200
W10.05	G2 L/R	2335	2200
First Floor			
W8.06	Custom	900	2440
W8.07	D1	1735	2200
W8.08	C1	600	2200
W8.09	D1	1735	2200
W8.10	Custom	900	2440
W9.04	Custom	900	2440
W9.05	Custom	900	2440
W10.06	Custom	900	2440
W10.07	D1	1735	2200
W10.08	C1	600	2200
W10.09	D1	1735	2200
W10.10	Custom	900	2440



W8.01, W9.01, W10.01

Scale 1 : 50 @ A1

Suite Starke uPVC Standard size glazing

Type F1 L/R

Glass Ug1.3 Low-E filled (R0.63)

Refer to Elevations for safety glazing requirements.

W8.02, W9.02, W10.02

Scale 1 : 50 @ A1

Suite Starke uPVC non-standard glazing

Type Custom

Glass Ug1.3 Low-E filled (R0.63)

Refer to Elevations for safety glazing requirements.

W8.03, W10.03

Scale 1 : 50 @ A1

Suite Starke uPVC Standard size glazing

Type C4 L/R

Glass Ug1.3 Low-E filled (R0.63)

W8.04, W10.04

Scale 1 : 50 @ A1

Suite Starke uPVC Standard size glazing

Type E1

Glass Ug1.3 Low-E filled (R0.63)

Refer to Elevations for safety glazing requirements.

W8.05, W9.03, W10.05

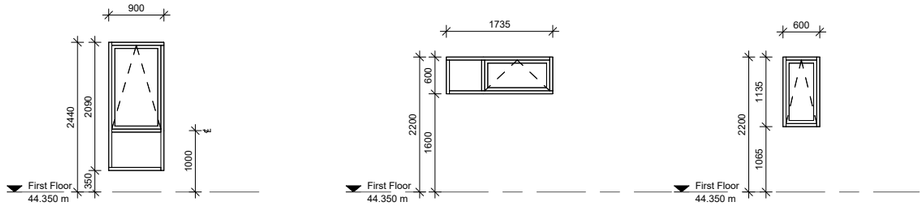
Scale 1 : 50 @ A1

Suite Starke uPVC Standard size glazing

Type G2 L/R

Glass Ug1.3 Low-E filled (R0.63)

Refer to Elevations for safety glazing requirements.



W8.06, W8.10, W9.04, W9.05, W10.06, W10.10

Scale 1 : 50 @ A1

Suite Starke uPVC Standard size glazing

Type Custom

Glass Ug1.3 Low-E filled (R0.63)

Refer to Elevations for safety glazing requirements.

W8.07, W8.09, W10.07, W10.09

Scale 1 : 50 @ A1

Suite Starke uPVC Standard size glazing

Type D1

Glass Ug1.3 Low-E filled (R0.63)

W8.08, W10.08

Scale 1 : 50 @ A1

Suite Starke uPVC Standard size glazing

Type C1

Glass Ug1.3 Low-E filled (R0.63)

Refer to Elevations for safety glazing requirements.

General Notes

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4. Refer A94.00 For Finishes Schedule

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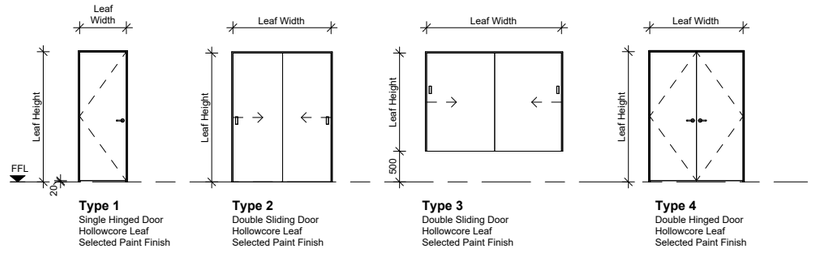
3. All dimensions are to be confirmed on site prior to fabrication or construction
4. All Glazing shall comply with NZS4223:3:2016
5. Refer to Building Elevations for Safety Glazing location
6. Kitchen and Bathroom tiles to wrap into frame of window
7. Refer to Architectural specification for full requirements.
8. Window schedule dimensions are nominal finish sizes. Structural opening dimensions are to be 20mm greater in both width and height.

General Door Notes

1. Check all door sizes on site prior to manufacturer.
2. All door dimensions are to leaf only and not rough opening unless noted otherwise
3. All doors 1980 or higher shall have 3 hinges minimum
4. Hinges to be evenly spaced. Unless specifically required as part of proprietary system for door weight
5. All doors shall be undercut subject to floor finishes and bottom seal conditions
6. Erect door units in position, plumb both ways an securly fix frame all round. Take care not to distort.
7. All Glazing shall comply with NZS4223:3:2016
8. All Manifestation shall be installed in accordance with NZS4223:3:2016 (as required)
   a. Any glazed panel that can be mistaken for a doorway or unimpeded path of travel will require a manifestation.
9. All Acoustic doors shall be Pacific Doors AFD300. Subtitution will require modification of installation details
10. All Fire Doors shall be either Pacific Doors F0.5 or VP60a where appropriate. Substitution will require modification of installation details
11. All Fire Doors shall comply with NZS4520:2010
12. Refer to Architectural speficiation for full requirements.
13. External Doors schedule dimensions are nominal finish sizes. Structural opening dimensions are to be 20mm greater in both width and 10mm in height.

Door Schedule

Door Identity		Location		Door Leaf		
Door No.	Type	Room No.	Room Name	Width	Height	Comments
D8.01	Type 1	8.05	Bedroom 1	760	2100	
D8.02	Type 2	8.05	Bedroom 1	1600	2100	
D8.03	Type 1	8.11	Bathroom	760	2100	20mm Undercut
D8.04	Type 1	8.07	Hall	610	2100	
D8.05	Type 1	8.09	Bedroom 2	760	2100	
D8.06	Type 3	8.09	Bedroom 2	2200	1600	
D8.07	Type 1	8.12	Store	610	2100	
D8.08	Type 4	8.02	Kitchen	1520	2100	20mm Undercut
D9.01	Type 1	9.05	Bedroom 1	760	2100	
D9.02	Type 2	9.05	Bedroom 1	1600	2100	
D9.03	Type 1	9.11	Bathroom	760	2100	20mm Undercut
D9.04	Type 1	9.07	Hall	610	2100	
D9.05	Type 1	9.09	Bedroom 2	760	2100	
D9.06	Type 3	9.09	Bedroom 2	2200	1600	
D9.07	Type 1	9.12	Store	610	2100	
D9.08	Type 4	9.02	Kitchen	1520	2100	20mm Undercut
D10.01	Type 1	10.07	Hall	760	2100	
D10.02	Type 2	10.06	WR-1	1600	2100	
D10.03	Type 1	10.07	Hall	760	2100	20mm Undercut
D10.04	Type 1	10.08	Cup'D	610	2100	
D10.05	Type 1	10.07	Hall	760	2100	
D10.06	Type 3	10.10	WR-2	2200	1600	
D10.07	Type 1	10.01	Living	610	2100	
D10.08	Type 4	10.04	Laundry	1520	2100	20mm Undercut



Type 1
Single Hinged Door
Hollowcore Leaf
Selected Paint Finish

Type 2
Double Sliding Door
Hollowcore Leaf
Selected Paint Finish

Type 3
Double Sliding Door
Hollowcore Leaf
Selected Paint Finish

Type 4
Double Hinged Door
Hollowcore Leaf
Selected Paint Finish

Hierarchy Group.

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ORIGINAL DRAWING IN COLOUR

Client: home. CONSTRUCTION

Project: **Arbor Green - Lot 8-10**
Address: **2 - 8 Laina Lane, Arbor Green, Rolleston**
No: **H2639**

Revision Schedule

Rev.	Description	Date
0	Building Consent Application	25/02/2026

Status: **Detailed Design**
Issue Date: **25/02/2026**
Drawn By: **SB / FM** Checked By: **MP / DR**
Scale: **As indicated @ A1**

Sheet Name: **Block C - Window and Door Schedule**
Sheet No: **A91.03** Rev No: **0**

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ARBOR GREEN DEVELOPMENT

2-8 LAINA LANE, ARBOR GREEN,
ROLLESTON

FOR HOME CONSTRUCTION

PROJECT NUMBER : P25-120

Blueprint
Consulting Engineers

People Driven Innovation

ORIGINAL DRAWING IN COLOUR

STRUCTURAL DRAWING LIST

DRAWING #	DRAWING TITLE	REVISION
S-0-01	DRAWING LIST & CONSTRUCTION MONITORING REQUIREMENTS	D
S-0-11	GENERAL NOTES - SHEET 1	D
S-0-12	GENERAL NOTES - SHEET 2	D
S-0-21	CONCRETE NOTES - SHEET 1	A
S-0-22	CONCRETE NOTES - SHEET 2	A
S-0-23	CONCRETE NOTES - SHEET 3	A
S-0-31	STEEL NOTES - SHEET 1	A
S-0-32	STEEL NOTES - SHEET 2	A
S-0-71	TIMBER NOTES - SHEET 1	A
S-0-80	PRODUCT MANUAL EXTRACTS - SHEET 1	A
S-0-81	PRODUCT MANUAL EXTRACTS - SHEET 2	A
S-0-82	PRODUCT MANUAL EXTRACTS - SHEET 3	A
S-0-83	PRODUCT MANUAL EXTRACTS - SHEET 4	A
S-0-84	PRODUCT MANUAL EXTRACTS - SHEET 5	A
S-1-01	LOT 1-3 - FOUNDATION PLAN	D
S-1-02	LOT 1-3 - GROUND FLOOR PLAN	B
S-1-04	LOT 1- 3 - GROUND FLOOR LINTEL PLAN	D
S-1-05	LOT 1-3 - MIDFLOOR FRAMING PLAN	D
S-1-06	LOT 1-3 - FIRST FLOOR LINTEL PLAN	D
S-1-07	LOT 1-3 - ROOF PLAN	D
S-1-08	LOT 1- 3 - GROUND FLOOR BRACING PLAN	D
S-1-09	LOT 1-3 - FIRST FLOOR BRACING PLAN	D
S-1-20	LOT 4-7 - FOUNDATION PLAN	D
S-1-21	LOT 4-7 - GROUND FLOOR PLAN	B
S-1-24	LOT 4-7 - GROUND FLOOR LINTEL PLAN	D
S-1-25	LOT 4-7 - MIDFLOOR FRAMING PLAN	D
S-1-26	LOT 4-7 - FIRST FLOOR LINTEL PLAN	D
S-1-27	LOT 4-7 - ROOF PLAN	D
S-1-28	LOT 4-7 - GROUND FLOOR BRACING PLAN	D
S-1-29	LOT 4-7 - FIRST FLOOR BRACING PLAN	D
S-1-30	LOT 8-10 - FOUNDATION PLAN	D
S-1-31	LOT 8-10 - GROUND FLOOR PLAN	B
S-1-34	LOT 8-10 - GROUND FLOOR LINTEL PLAN	D
S-1-35	LOT 8-10 - MIDFLOOR FRAMING PLAN	D
S-1-36	LOT 8-10 - FIRST FLOOR LINTEL PLAN	D
S-1-37	LOT 8-10 - ROOF PLAN	D
S-1-38	LOT 8-10 - GROUND FLOOR BRACING PLAN	D

STRUCTURAL DRAWING LIST

DRAWING #	DRAWING TITLE	REVISION
S-1-39	LOT 8-10 - FIRST FLOOR BRACING PLAN	D
S-2-01	BUILDING SECTIONS	B
S-2-02	BUILDING SECTIONS	A
S-3-01	FOUNDATION DETAILS	C
S-3-20	FOUNDATION DETAILS	C
S-3-30	FOUNDATION DETAILS - TYP SERVICES PENETRATIONS & SHOWER REBATES	C
S-5-01	STEEL DETAILS - PORTAL	A
S-7-01	FRAMING DETAILS - SIP	C
S-7-02	FRAMING DETAILS - SIP	A
S-7-05	FRAMING DETAILS - MIDFLOOR	C
S-7-10	FRAMING DETAILS - POST FIRE STABILITY	A

REQUIRED INSPECTIONS

WE RECOMMEND THE FOLLOWING INSPECTIONS OF THE SPECIFIC ENGINEERING DESIGN WORK IS TO BE CARRIED OUT BY SUITABLY COMPETENT PERSONS(S) AS NOTED BELOW AND WITHIN PS1 DESIGN CERTIFICATE. (NOTE: REFER TO THE COUNCIL CONSENT CONDITIONS FOR FINAL INSPECTION REQUIREMENTS)

INSPECTION DESICRIPTION:	CONTACT FOR INSPECTION:
1. SUBGRADE INSPECTION FOLLOWING SITE SCRAPE	BLUEPRINT CONSULTING ENGINEERS
2. PREPOUR INSPECTION AFTER ALL PODS, REINF. AND SERVICES INSTALLED	BLUEPRINT CONSULTING ENGINEERS
3. SED FRAMING INSPECTION	BLUEPRINT CONSULTING ENGINEERS
5. PRE-LINE INSPECTION	BLUEPRINT CONSULTING ENGINEERS

IMPORTANT: WHEN ENGAGED FOR INSPECTIONS, BLUEPRINT CONSULTING ENGINEERS WILL PROVIDE A PS4 CERTIFICATE **ONLY** FOR THE INSPECTIONS THAT HAVE BEEN CARRIED OUT AND CONSTRUCTION WORKS COMPLETED TO THE SATISFACTION OF BLUEPRINT CONSULTING ENGINEERS. NOTE: QA CERTIFICATION MAY BE REQUIRED, REFER BELOW

QA DOCUMENTATION (BY CONTRACTORS)

THE FOLLOWING DOCUMENTATION IS REQUIRED BY BLUEPRINT CONSULTING ENGINEERS PRIOR TO ISSUE OF PS4 CERTIFICATION.

1. ND TESTING BY EXCAVATION CONTRACTOR (1 TEST & 1 ADDITIONAL TEST / 300mm HARDFILL DEPTH)
2. FOUNDATION CONTRACTOR TO PROVIDE CONCRETE SUPPLY DELIVERY RECEIPT
3. LBP FOUNDATION CONTRACTOR TO PROVIDE PS3 ON COMPLETION OF WORKS
4. LBP BUILDING CONTRACTOR TO PROVIDE PS3 ON COMPLETION OF REMAINING STRUCTURAL FRAMING WORKS.

REFERENCE DOCUMENTS

THIS STRUCTURAL ENGINEERING DESIGN HAS BEEN CARRIED OUT IN ACCORDANCE WITH THE FOLLOWING DOCUMENTATION:

ARCHITECTURAL PLANS BY "HIERARCHY GROUP", DATED 30/01/2026, REF: H2639

MIDFLOOR CASSETTE DESIGN BY "CARTERS", DATED 29/01/2026, REF: PRELIMINARY

FORMANCE SIP DESIGN BY "FORMANCE", DATED 02.02.26, REF: 24-0135

GEOTECHNICAL REPORT BY "ENGCO CONSULTING ENGINEERS", DATED 29/10/2025, REF: 25183

TOTAL NUMBER OF DRAWINGS: 48

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
D	03.02.26	TB	BUILDING CONSENT
C	19.12.25	TB	60% DETAILED DESIGN
B	05.12.25	TB	30% DETAILED DESIGN
A	21.11.25	TB	PRELIMINARY DESIGN

Blueprint Consulting Engineers

Auckland **a:** 2/10 Mepal Place, Papatoetoe
p: +64 9 294 8993 PO Box 97607, Manukau
Christchurch **a:** 12 Duke Street,
p: +64 3 928 2258 Christchurch
w: www.bce.nz
e: admin@bce.nz

CLIENT
HOME CONSTRUCTION

PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
DRAWING LIST & CONSTRUCTION MONITORING REQUIREMENTS

SCALE	DRAWN	DESIGN	APPROVED
@ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-0-01	D

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ORIGINAL DRAWING IN COLOUR

GENERAL NOTES

1. **GENERAL REQUIREMENTS**

1.1. DO NOT CONSTRUCT ANY WORKS FROM THE STRUCTURAL DRAWINGS UNLESS THEY ARE MARKED AS BEING 'FOR CONSTRUCTION'. THE CONTRACTOR SHALL ENSURE THEY ARE ALWAYS WORKING FROM THE LATEST REVISIONS OF DOCUMENTATION.

1.2. THE TERM 'OTHER PROJECT DRAWINGS' WHEN USED ON THE STRUCTURAL DRAWINGS SHALL BE TAKEN TO MEAN A REFERENCE TO THE DRAWINGS & SPECIFICATIONS OF OTHER DISCIPLINES (E.G. ARCHITECTURAL, CIVIL, FIRE, SERVICES, PROCESS, ETC) AS APPROPRIATE TO THE PROJECT AND THE CONTEXT IN WHICH IT IS USED.

1.3. THE STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE STRUCTURAL SPECIFICATION AND OTHER PROJECT DRAWINGS. ALL DISCREPANCIES SHALL BE REFERRED TO THE STRUCTURAL ENGINEER AND/OR OTHER DISCIPLINES FOR RESOLUTION PRIOR TO THE CONSTRUCTION OF WORK INCORPORATING ANY DISCREPANCIES.

1.4. MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE NEW ZEALAND BUILDING CODE AND ALL RELEVANT NEW ZEALAND STANDARDS.

1.5. THE STANDARDS REFERRED TO ON THE STRUCTURAL DRAWINGS REFER TO THEIR LATEST ISSUE INCLUDING ANY AMENDMENTS THAT ARE CURRENT AT THE TIME OF PREPARATION OF THE STRUCTURAL DRAWINGS.

1.6. THE PRESENCE, LOCATION AND DETAILS OF NIBS, UPSTANDS, RECESSES, PLINTHS, PENETRATIONS, SUMPS, INSERTS, SLEEVES, CHASES, REBATES, CAST-IN FIXINGS, BRACKETS, HOLES, FLASHINGS, DAMP-PROOFING, WATERPROOFING, FIRE PROTECTION, CORROSION PROTECTION, NON-STRUCTURAL STEELWORK, ETC, ARE NOT NECESSARILY SHOWN OR REFERENCED ON THE STRUCTURAL DRAWINGS. REFER TO THE OTHER PROJECT DRAWINGS FOR FULL DETAILS OF THESE ITEMS AND INCORPORATE INTO THE WORKS AS REQUIRED.

1.7. THE LOCATION, SIZE AND DETAILS OF ALL PENETRATIONS, RECESSES, SLEEVES, HOLES, CHASES, ETC IN STRUCTURAL MEMBERS, MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION COMMENCING UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS. THESE ITEMS SHALL BE CAST-IN, FORMED, OR SHOP FABRICATED AND SHALL NOT BE CUT OR CORED ON SITE UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.

1.8. NO SERVICES SHALL BE ROUTED BELOW FOUNDATIONS UNLESS NOTED OR DETAILED ON THE STRUCTURAL DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER WHERE THE SERVICES DRAWINGS ARE IN CONFLICT WITH THE STRUCTURAL REQUIREMENTS.

1.9. UNLESS NOTED OTHERWISE ANY EXISTING SERVICES SHOWN ON THE STRUCTURAL DRAWINGS ARE INDICATIVE ONLY. THE CONTRACTOR SHOULD CHECK THE LOCATION OF EXISTING BURIED SERVICES PRIOR TO ANY EXCAVATION WORK. THE STRUCTURAL ENGINEER SHALL BE NOTIFIED OF ANY CONFLICTS AND CONTRACTOR SHALL GAIN APPROVAL FROM THE STRUCTURAL ENGINEER BEFORE PROCEEDING. ANYDAMAGE TO EXISTING SERVICES SHALL BE RECTIFIED AT THE CONTRACTOR'S EXPENSE.

1.10. ALL DISTURBED AREAS NOT SUBJECT TO NEW WORKS SHALL BE REINSTATED TO THEIR ORIGINAL CONDITION BY THE CONTRACTOR AT THE COMPLETION OF WORKS.

2. **DRAWING NUMBERING SYSTEM**

2.1. THE DRAWING NUMBERING SYSTEM USED ON THE STRUCTURAL DRAWINGS IS GENERALLY INTERPRETED AS SHOWN IN TABLE G1 BELOW:

TABLE G1 - DRAWING NUMBERING SYSTEM

S-1-0 0 — DRAWING NUMBER DESCRIPTION

	SHEET SERIES
#	2 DIGIT INDIVIDUAL DRAWING NUMBER
0	PRELIMINARY DRAWINGS (DRAWING LISTS, GENERAL NOTES, 3D VIEWS, ETC)
1	PLANS (GA PLANS, REINFORCEMENT PLANS, ETC)
2	ELEVATIONS & SECTIONS (GA ELEVATIONS, FRAME ELEVATIONS & CROSS SECTIONS)
3	GROUND AND SUBSTRUCTURE DETAILS
4	SUPERSTRUCTURE INSITU & PRECAST CONCRETE DETAILS
5	STEEL DETAILS
6	COMPONENTS (STAIRS, LIFTS, BALCONIES, CANOPIES, ETC)
7	TIMBER DETAILS
8	EXTERNAL WORKS DETAILS
9	CONSTRUCTION SKETCHES
S	STRUCTURAL DISCIPLINE

3. **DETAIL AND SECTION REFERENCE AND TITLE EXPLANATION**

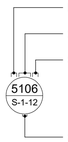
3.1. DETAILS AND SECTIONS ARE TYPICALLY REFERENCED ON THE STRUCTURAL DRAWINGS AS FOLLOWS:

• SECTION REFERENCES

• DETAIL CALLOUT REFERENCES

• SECTION / DETAIL VIEW TITLE REFERENCES

VIEW TITLE UNIQUE IDENTIFIER



DRAWING SHEET SERIES (5 = STEEL, 6 = COMPONENTS, ETC)

2 DIGIT INDIVIDUAL SHEET NUMBER WHERE THE SECTION OR DETAIL IS LOCATED

SECTION OR DETAIL REFERENCE NUMBER (E.G. 1, 2, 3, ETC)

SX-X-XX = SHEET NUMBER REFERENCE.

WHERE SHOWN ON A SECTION OR DETAIL CALLOUT - THIS NUMBER REFERENCES THE SHEET THE DETAIL RESIDES ON.

WHERE SHOWN ON A DETAIL / SECTION VIEW TITLE - THIS NUMBER REFERENCES THE SHEET WHERE THE DETAIL / SECTION ORIGINATES.

OR '--' = A DASH INDICATES THAT THE DETAIL / SECTION IS REFERENCED OFF ANOTHER VIEW ON THE SAME SHEET THAT THE DETAIL RESIDES ON.

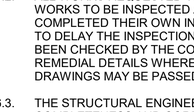
3.2. REVISION AND HOLD CLOUD REFERENCES

REVISION AND HOLD CLOUDS ARE TYPICALLY REFERENCED ON THE STRUCTURAL DRAWINGS AS FOLLOWS:

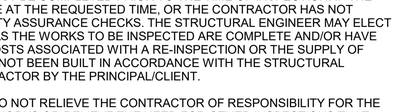
REVISION CLOUDS ON A DRAWING TYPICALLY DENOTE CHANGES OR ADDITIONS THAT HAVE OCCURRED SINCE THE ISSUE OF THE PREVIOUS DRAWING REVISION.

HOLD CLOUDS ON A DRAWINGS TYPICALLY DENOTE INFORMATION THAT IS OUTSTANDING OR REMAIN UNRESOLVED. THE REASON FOR THE HOLD IS TYPICALLY NOTED ADJACENT TO THE HOLD CLOUD.

A) REVISION CLOUD REFERENCE



B) HOLD CLOUD REFERENCE



4. **SETOUT AND DIMENSIONS**

4.1. UNLESS SETOUT INFORMATION IS SPECIFICALLY NOTED ON THE STRUCTURAL DRAWINGS, REFER TO THE OTHER PROJECT DRAWINGS FOR ALL SETOUT INFORMATION (E.G. SETOUT OF GRIDS, LEVELS, SLOPES, OFFSETS, SLAB EDGES, PENETRATIONS, ETC).

4.2. THE ORIENTATION OF STRUCTURAL MEMBERS SHALL BE AS NOTED/DEPICTED ON THE STRUCTURAL DRAWINGS.

4.3. ALL COLUMNS SHALL BE LOCATED CENTRAL ON GRIDS OR GRID INTERSECTIONS UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS OR NOTED OTHERWISE ON OTHER PROJECT DRAWINGS.

4.4. ALL BEAM CENTRELINES SHALL BE LOCATED ON GRIDS AND/OR CENTRAL ON COLUMNS UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS OR NOTED OTHERWISE ON OTHER PROJECT DRAWINGS.

4.5. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING FROM THE STRUCTURAL DRAWINGS. IF IN DOUBT ASK FOR CLARIFICATION.

4.6. UNLESS NOTED OTHERWISE, ALL LEVELS ARE IN METERS AND ALL DIMENSIONS ARE IN MILLIMETRES.

4.7. ALL DIMENSIONS SHALL BE VERIFIED WITH THE REQUIREMENTS OF THE OTHER PROJECT DRAWINGS, AND ALL DIMENSIONS TO EXISTING WORK SHALL ALSO BE VERIFIED BY SITE MEASUREMENT PRIOR TO FABRICATION AND/OR CONSTRUCTION COMMENCING. SHOP DRAWINGS SHOULD INCORPORATE ANY SITE MEASUREMENTS TAKEN.

4.8. ANY DIMENSIONAL DISCREPANCIES SHALL BE REFERRED TO THE STRUCTURAL ENGINEER AND/OR OTHER DISCIPLINES FOR RESOLUTION.

5. **STRUCTURAL MEMBER REFERENCES**

5.1. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS VIA SPECIFIC MEMBER SCHEDULES, STRUCTURAL MEMBERS ARE GENERALLY CALLED UP USING THE FOLLOWING NOTATION:

FOUNDATION PADS/PILE CAPS STRIP FOUNDATIONS	PLAN SIZE x DEPTH DEPTH x WIDTH
CONCRETE BEAMS CONCRETE COLUMNS AND PILES	DEPTH x WIDTH PLAN SIZE
STEEL BEAMS STEEL COLUMNS AND PILES	SECTION DESIGNATION SECTION DESIGNATION
CONCRETE AND MASONRY WALLS SLABS ON GRADE AND SUSPENDED SLABS	STRUCTURAL THICKNESS STRUCTURAL THICKNESS

6. **STRUCTURAL ENGINEERS INSPECTION REQUIREMENTS**

NO INSPECTION = NO PS4

6.1. WHERE ENGINEERING INSPECTIONS ARE REQUIRED TO COMPLY WITH THE CONSENT CONDITIONS, OR AS REQUIRED BY THE PRINCIPAL/CLIENT. THE CONTRACTOR SHALL GIVE A MINIMUM OF 48 HOURS NOTICE TO THE STRUCTURAL ENGINEER PRIOR TO CONCEALING ANY WORK THAT MAY REQUIRE INSPECTION. INSPECTIONS SHALL BE SCHEDULED DURING NORMALWORKING HOURS. SAFE ACCESS TO INSPECT THE WORKS SHALL BE PROVIDED BY THE CONTRACTOR.

6.2. ALL WORKS REQUESTED TO BE INSPECTED MUST BE COMPLETED PRIOR TO THE TIME OF INSPECTION. IF THE WORKS TO BE INSPECTED ARE NOT COMPLETE AT THE REQUESTED TIME, OR THE CONTRACTOR HAS NOT COMPLETED THEIR OWN INDEPENDENT QUALITY ASSURANCE CHECKS. THE STRUCTURAL ENGINEER MAY ELECT TO DELAY THE INSPECTION UNTIL SUCH TIME AS THE WORKS TO BE INSPECTED ARE COMPLETE AND/OR HAVE BEEN CHECKED BY THE CONTRACTOR. ANY COSTS ASSOCIATED WITH A RE-INSPECTION OR THE SUPPLY OF REMEDIAL DETAILS WHERE THE WORKS HAVE NOT BEEN BUILT IN ACCORDANCE WITH THE STRUCTURAL DRAWINGS MAY BE PASSED ONTO THE CONTRACTOR BY THE PRINCIPAL/CLIENT.

6.3. THE STRUCTURAL ENGINEERS INSPECTIONS DO NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR THE COMPLETENESS AND CORRECTNESS OF THE WORKS OR RELIEVE THE NEED FOR OTHER INSPECTIONS THAT MIGHT BE REQUIRED BY THE LOCAL TERRITORIALAUTHORITY. NOR DO LOCAL TERRITORIAL AUTHORITY INSPECTIONS REPLACE THE REQUIREMENT FOR THE NEED FOR INSPECTIONS BY THE STRUCTURAL ENGINEER.

7. **CONTRACTOR SUBSTITUTION OR ALTERNATIVES**

7.1. SUBSTITUTION FOR, OR AMENDMENT OF SPECIFIED DETAILS OR MATERIALS SHALL NOT BE CARRIED OUT WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.

7.2. WHERE PROPRIETARY PRODUCTS ARE SPECIFIED IN THE STRUCTURAL DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE EQUIVALENT PRODUCT FOR ASSESSMENT AND APPROVAL.

7.3. THE STRUCTURAL ENGINEER IS UNDER NO OBLIGATION TO ACCEPT ANY SUBSTITUTIONS OR ALTERNATIVES IF THERE IS NO BENEFITS DEMONSTRATED BY THE CONTRACTOR TO THE PROJECT AND/OR THE PRINCIPAL/CLIENT. COSTS ASSOCIATED WITH THE ASSESSMENT OF ALTERNATIVE DESIGN DETAILS OR PROPRIETARY PRODUCTS MAY BE PASSED ONTO THE CONTRACTOR BY THE PRINCIPAL/CLIENT.

8. **TEMPORARY WORKS REQUIREMENTS**

8.1. UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS, ALL INFORMATION SHOWN ON THE STRUCTURAL DRAWINGS REFLECT DETAILS IN THEIR FINAL CONSTRUCTED FORM AND LOCATION. THE INFORMATION PRESENTED REFLECTS THE DESIGN FOR THE PERMANENT WORKS ONLY AND DOES NOT INCLUDE FOR ANY CONSIDERATION OF LOADING RESULTING FROM ANY CONSTRUCTION LOADING, BACKFILLING & COMPACTION LOADING, CONSTRUCTION STAGING, OR TEMPORARY WORKS.

8.2. WHERE CONSTRUCTION SEQUENCING REQUIREMENTS ARE DETAILED ON THE STRUCTURAL DRAWINGS, THE CONTRACTOR SHALL ENSURE THAT THE SEQUENCING OF THE WORKS IS CONSISTENT WITH THESE REQUIREMENTS.

8.3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ALL TEMPORARY WORKS DEEMED NECESSARY FOR THE EXECUTION OF THE PROJECT. THE TEMPORARY WORKS DESIGN SHALL INCLUDES THOSE DESIGNS, PROGRAMS AND METHODOLOGIES NECESSARY FOR THE SAFE CONSTRUCTION, ERECTION AND REMOVAL OF SUCH TEMPORARY WORKS.

8.4. DURING CONSTRUCTION IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE STABILITY OF THE PERMANENT STRUCTURE AND ANY EXCAVATIONS BE MAINTAINED IN A SAFE AND STABLE CONDITION AT ALL TIMES, NO PARTS OF THE WORKS SHALL BE OVERSTRESSED.

8.5. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY WORKS DEEMED NECESSARY TO KEEP THE WORKS STABLE AT ALL TIMES. WHERE NECESSARY OR WHERE DIRECTED BY THE STRUCTURAL ENGINEER, THE CONTRACTOR SHALL ENGAGE A SUITABLY QUALIFIED STRUCTURAL ENGINEER TO DESIGN AND CERTIFY ANY TEMPORARY WORKS THAT MIGHT BE REQUIRED. IF REQUESTED, EVIDENCE SHALL BE PROVIDED TO THE STRUCTURAL ENGINEER TO DEMONSTRATE THAT ANY TEMPORARY WORKS DESIGN HAS BEEN UNDERTAKEN.

8.6. CONSTRUCTION LOADS APPLIED TO THE PERMANENT STRUCTURE SHALL NOT EXCEED THE DESIGN LOADS INDICATED ON THE STRUCTURAL DRAWINGS. FULL DESIGN LOADS MAY ONLY BE APPLIED AFTER ANY CONCRETE REACHES ITS DESIGN STRENGTH AND/OR PERMANENT BRACING SYSTEMS ARE IN PLACE. DURING CONSTRUCTION, TEMPORARY SUPPORT PROPPING OR TEMPORARY BRACING MAY BE REQUIRED WHERE CONSTRUCTION LOADING, FORMWORK, AND OTHER SUPPORTED ELEMENTS INDUCE LOADS IN A STRUCTURAL ELEMENT WHICH EXCEEDS THE DESIGN LOAD FOR STRENGTH OR SERVICEABILITY AT THE AGE OF LOADING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASSESSING THE NEED FOR AND THE DESIGN OF ANY SUCH TEMPORARY PROPPING OR BRACING THAT MIGHT BE REQUIRED.

9. **SHOP DRAWING SUBMISSIONS AND REVIEW**

9.1. THE STRUCTURAL ENGINEERS SHOP DRAWING REVIEW INDICATES ONLY THAT THE SUPPLIED INTERPRETATION OF THE DESIGN HAS BEEN REVIEWED WITHOUT THE NEED FOR FURTHER MODIFICATION, OTHER THAN THE CORRECTIONS INDICATED ON THE RETURNED SHOP DRAWINGS. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR ENSURING THE CORRECTNESS OF THE DRAWINGS, SITE DIMENSIONS, THE COORDINATION OF OTHER SERVICES AND TRADES, OR FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS. NOR CAN IT BE CONSTRUED AS AUTHORISING DEPARTURES FROM THE CONTRACT DOCUMENTS.

9.2. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS, SHOP DRAWINGS ARE REQUIRED TO BE PREPARED BY THE CONTRACTOR AND SUBMITTED FOR ANY STRUCTURAL ELEMENTS TO BE FABRICATED OFF SITE. THIS INCLUDES BUT IS NOT LIMITED TO PRECAST ELEMENTS (PRECAST FLOORING SYSTEMS, PRECAST PANELS, PRECAST STAIRS, ETC), STRUCTURAL STEELWORK AND STEEL COMPOSITE DECKING SYSTEMS, ETC.

9.3. ANY NOTES, ANNOTATIONS, COMMENTS, CORRECTIONS PROVIDED BY THE STRUCTURAL ENGINEER ON RETURNED SHOP DRAWINGS SHALL BE INCORPORATED INTO THE SHOP DRAWINGS BY THE CONTRACTOR PRIOR TO FABRICATION COMMENCING. IF REQUESTED, SHOP DRAWINGS SHALL BE REVISED AND RESUBMITTED FOR FURTHER REVIEW BY THE STRUCTURAL ENGINEER WHERE THE SHOP DRAWINGS ARE AT VARIANCE WITH THE CONTRACT DOCUMENTS.

9.4. THE CONTRACTOR SHALL ALLOW 10 WORKING DAYS FOR THE STRUCTURAL ENGINEERS INITIAL REVIEW OF EACH INDIVIDUAL SUBMISSION OF SHOP DRAWINGS. THE CONTRACTOR SHALL ALLOW 5 WORKING DAYS FOR ANY RE-REVIEW OF SHOP DRAWINGS SUBMISSIONS.

9.5. UNDER NO CIRCUMSTANCES SHALL ANY FABRICATION PROCEED PRIOR TO THE SHOP DRAWING REVIEW PROCESS BEING CONCLUDED FOR EACH INDIVIDUAL REVIEW SUBMISSION.

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
D	03.02.26	TB	BUILDING CONSENT
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Blueprint
Consulting Engineers
Auckland **a:** 2/10 Mepal Place, Papatoetoe
p: +64 9 294 8993 PO Box 97607, Manukau
Christchurch **a:** 12 Duke Street,
p: +64 3 928 2258 Christchurch
w: www.bce.nz
e: admin@bce.nz

CLIENT
HOME CONSTRUCTION

PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
GENERAL NOTES - SHEET 1

SCALE	DRAWN	DESIGN	APPROVED
1 : 10 @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-0-11	D

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ORIGINAL DRAWING IN COLOUR

10. STANDARD ABBREVIATIONS

ADDNL	ADDITIONAL
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
ALT	ALTERNATE
APPROX	APPROXIMATE/APPROXIMATELY
ARCH	ARCHITECT/ARCHITECTURAL
B or BTM	BOTTOM
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BS	BOTH SIDES
BT	TEE BEAM CUT FROM UB
C, (C)	CENTRAL
C/C	CENTRE TO CENTRE
C/W	COMPLETE WITH
CAR	COVER ALL ROUND
CC#	CONSTRUCTION CATEGORY (# = CONSTRUCTION CATEGORY)
CHS	CIRCULAR HOLLOW SECTION
CIP	CAST IN PLACE, CAST IN PLATE
CJ	CONSTRUCTION JOINT/CONTROL JOINT
CL	CENTRELINE
CLR	CLEAR
CLT	CROSS LAMINATED TIMBER
CNR	CORNER
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS
COS	CHECK ON SITE
CRS	CENTRES
CT	TEE BEAM CUT FROM UC
CVR	COVER
CWB	CUSTOM WELDED BEAM
CWC	CUSTOM WELDED COLUMN
(D)	DEMOLISHED STRUCTURE
D	GRADE 300E DEFORMED REINFORCEMENT
db	BAR DIAMETER
DET	DETAIL
DHS	DIMOND HISPAN PURLIN
DIA or Ø	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIR	DIRECTION
DIST	DISTANCE
DL	DEAD LOAD
DP	DOWNPIPE
DP or D	DEEP/DEPTH
DPC	DAMP PROOF COURSE
DPM	DAMP PROOF MEMBRANE
DRG	DRAWING
EA	EQUAL ANGLE
EB	EQUIVALENT WELDED BEAM (STELTECH)
ECC	ECCENTRIC/ECCENTRICITY
EF	EACH FACE
EJ	EXPANSION JOINT
EL or ELEV	ELEVATION
EQ	EQUAL
ES	EQUAL SPACING/EQUALLY SPACED
EW	EACH WAY
EX	OUT OF
EXT	EXTERNAL/EXTERNAL FACE
EXTG or (E)	EXISTING
FB	FLYBRACE
FB	FOUNDATION BEAM
FDN	FOUNDATION
FF	FAR FACE
FFL	FINISHED FLOOR LEVEL
FIG	FIGURE
FL	FLAT
FLG	FLANGE
FRC	FIBRE REINFORCED CONCRETE
FRR	FIRE RESISTANCE RATING
FSBW	FULL STRENGTH BUTT WELD/COMPLETE PENETRATION BUTT WELD
FTG	FOOTING
FW	FILLET WELD
FWAR	FILLET WELD ALL ROUND
GA	GAUGE
GALV	GALVANISED
GL	GROUND LEVEL
GP	GENERAL PURPOSE CATEGORY WELD
GR	GRADE
HB	HEAVY WELDED BEAM (STELTECH)
HCB	HIGH CAPACITY BEAM (STELTECH)
HCBC	HIGH CAPACITY BEAM-COLUMN (STELTECH)
HCC	HIGH CAPACITY COLUMN (STELTECH)
HD	GRADE 500E DEFORMED REINFORCEMENT
HD BOLT	HOLDING DOWN BOLT
HDG or HD GALV	HOT DIP GALVANISED
HORIZ or (H)	HORIZONTAL
HR	GRADE 500E PLAIN ROUND REINFORCEMENT
HST	STEEL & TUBE HIGH STRENGTH PURLIN
HT	HEIGHT
ID	INSIDE DIAMETER
IL	INVERT LEVEL
INT	INTERNAL/INTERNAL FACE
IP	INTERSECTION POINT
kg/m³	KILOGRAM PER CUBIC METER
kN	KILONEWTON
kPa	KILOPASCAL
L	LENGTH
LAR	LAP AT RANDOM
LAW	LENGTH AFTER WELDING (SHEAR STUDS)
LB	LIGHT WELDED BEAM (STELTECH)
Ld	DEVELOPMENT LENGTH
LG	LONG
LL	LIVE LOAD
LVL	LAMINATED VENEER LUMBER
m	METER
M##	METRIC BOLT (## = BOLT DIAMETER)
MA	MICROALLOYED REINFORCEMENT
MAX	MAXIMUM
MCJ	MASONRY CONTROL JOINT
MH	MANHOLE
MIN	MINIMUM
MIR	MIRRORED
mm	MILLIMETER
MPa	MEGAPASCAL
MS	MILD STEEL
MSS	METALCRAFT PURLIN
(N)	NEW
NA or N/A	NOT APPLICABLE
NB	NOMINAL BORE
NB	NARROW WELDED BEAM (STELTECH)
NDE	NON DESTRUCTIVE EXAMINATION
NF	NEAR FACE
No.	NUMBER OF
NOM	NOMINAL
NTS	NOT TO SCALE
O/A	OVERALL
O/H	OVERHEAD
OD	OUTSIDE DIAMETER
OPP	OPPOSITE
PB	PERIMETER WELDED BEAM (STELTECH)
PC	PRECAST CONCRETE
PCD	PITCH CIRCLE DIAMETER
PFC	PARALLEL FLANGE CHANNEL
PL	PLATE
PPBW	PARTIAL PENETRATION BUTT WELD
PS or PSC	PRESTRESSED CONCRETE
PT or PTC	POST TENSIONED CONCRETE
QT	QUENCHED & TEMPERED REINFORCEMENT
R	GRADE 300E PLAIN ROUND REINF
R##	RADII/RADIUS (WHERE ## = RADIUS DIMENSION)
R.A.D.	REFER TO ARCHITECTURAL DRAWINGS
RB	GRADE 500E 'REIDBAR' REINFORCEMENT
RC	REINFORCED CONCRETE
REF	REFERENCE, REFER
REINF	REINFORCEMENT, REINFORCING
REQD	REQUIRED
RHS	RECTANGULAR HOLLOW SECTION
RL	REDUCED LEVEL
RSA	ROLLED STEEL ANGLE
RSC	ROLLED STEEL CHANNEL
RSJ	ROLLED STEEL JOIST
/S	SNUG TIGHT BOLT
S/S	STAINLESS STEEL
SB	STANDARD WELDED BEAM (STELTECH)
SC	SAW CUT JOINT
SC	STANDARD WELDED COLUMN (STELTECH)
SDL	SUPERIMPOSED DEAD LOAD
SECT	SECTION
SED	SMALL END DIAMETER
SG#	STRUCTURAL GRADE TIMBER (# = TIMBER GRADE)
SHS	SQUARE HOLLOW SECTION
SHT	SHEET
SIM	SIMILAR
SLS	SERVICEABILITY LIMIT STATE
SOG	SLAB ON GRADE
SP	SPLICE
SP	STRUCTURAL PURPOSE CATEGORY WELD
SPEC	SPECIFICATION
SQ	SQUARE
SS	SANITARY SEWER
SSL	STRUCTURAL SLAB LEVEL
STA(S)	STARTER(S)
STD	STANDARD
STG	STAGGER, STAGGERED
STIFF	STIFFENER
STRP(S)	STIRRUP(S)
SW	STORMWATER
SYM	SYMMETRIC/SYMMETRICAL
/TB	TENSION BEARING BOLT
/TF	TENSION FRICTION BOLT
T	TOP
TBA	TO BE ADVISED
TBC	TO BE CONFIRMED
TFB	TAPER FLANGE BEAM
TFC	TAPER FLANGE CHANNEL
THK	THICK/THICKNESS
TOC	TOP OF CONCRETE
TOG	TOP OF GRATING
TORC	TOP OF ROUGH CONCRETE
TOS	TOP OF STEEL
TOW	TOP OF WALL
TRM	TRIMMER BAR/TRIMMER BEAM
TYP	TYPICAL
U/G	UNDERGROUND
U/S	UNDERSIDE
UA	UNEQUAL ANGLE
UB	UNIVERSAL BEAM
UC	UNIVERSAL COLUMN
ULS	ULTIMATE LIMIT STATE
UNO	UNLESS NOTED OTHERWISE
VERT or (V)	VERTICAL
W	WIDE/WIDTH
WB	WELDED BEAM (BHP)
WC	WELDED COLUMN (BHP)
WS	WIDE SECTION WELDED BEAM (STELTECH)

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
D	03.02.26	TB	BUILDING CONSENT
C	19.12.25	TB	60% DETAILED DESIGN
B	05.12.25	TB	30% DETAILED DESIGN
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Blueprint
Consulting Engineers
Auckland **a:** 2/10 Mepal Place, Papatoetoe
p: +64 9 294 8993 PO Box 97607, Manukau
Christchurch **a:** 12 Duke Street,
p: +64 3 928 2258 Christchurch
w: www.bce.nz
e: admin@bce.nz

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PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
GENERAL NOTES - SHEET 2

SCALE	DRAWN	DESIGN	APPROVED
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ORIGINAL DRAWING IN COLOUR

CONCRETE

1. **CONCRETE GENERAL**

1.1. IN ADDITION TO ANY STANDARD AND TYPICAL CONCRETE DRAWINGS AND THE SPECIFICATION REQUIREMENTS, ALL CONCRETE WORK DESCRIBED ON THE STRUCTURAL DRAWINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF NZS3101 AND NZS3109 (INCLUDING ANY REFERENCED STANDARDS). NOTE THAT IN SOME CASES THE REQUIREMENTS OF THE SPECIFICATION AND STRUCTURAL DRAWINGS MAY EXCEED THE MINIMUM REQUIREMENTS FOR CONCRETE CONSTRUCTION DOCUMENTED IN THE NZS3101 AND NZS3109 STANDARDS. IN THESE CASES, THE REQUIREMENTS OF THE SPECIFICATION AND STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER THE PROVISION OF THE STANDARDS.

1.2. A COPY OF NZS3109 (HARDCOPY OR ELECTRONIC) MUST BE MAINTAINED ON SITE AT ALL TIMES FOR THE CONTRACTORS REFERENCE.

1.3. WHERE ENGINEERING INSPECTIONS ARE REQUIRED TO COMPLY WITH THE CONSENT CONDITIONS, OR ARE REQUIRED BY THE PRINCIPAL/CLIENT. NO CONCRETE SHALL BE PLACED UNTIL THE STRUCTURAL ENGINEER HAS HAD THE OPPORTUNITY TO OBSERVE THAT THE STRUCTURAL DRAWINGS AND SPECIFICATIONS HAVE BEEN COMPLIED WITH. REFER GENERAL NOTES SHEET 'STRUCTURAL ENGINEERS INSPECTION REQUIREMENTS' SECTION FOR FURTHER REQUIREMENTS REGARDING STRUCTURAL ENGINEERS INSPECTIONS.

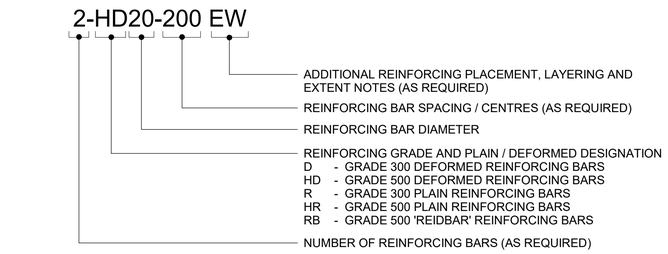
NO INSPECTION = NO PS4

2. **REINFORCEMENT NOTATION AND DESIGNATION EXPLANATION**

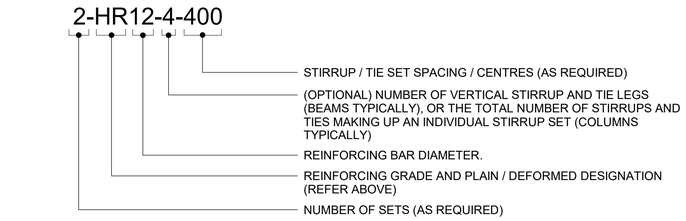
2.1. NOTE THAT REINFORCEMENT MAY BE SHOWN DIAGRAMMATICALLY ON THE STRUCTURAL DRAWINGS FOR CLARITY IN SOME SITUATIONS, DETAIL/FABRICATE REINFORCEMENT BASED ON ACHIEVING SPECIFIED MINIMUM COVERS OR AS OTHERWISE DIMENSIONED (DO NOT SCALE FROM THE DRAWINGS, IF IN DOUBT ASK).

2.2. REINFORCEMENT IS GENERALLY REFERENCED ON THE STRUCTURAL DRAWINGS AS FOLLOWS :

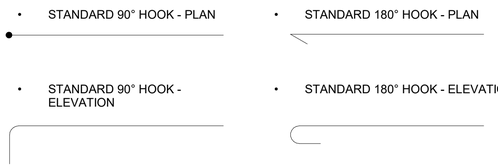
• **TYPICAL MAIN BAR REINFORCEMENT REFERENCE**



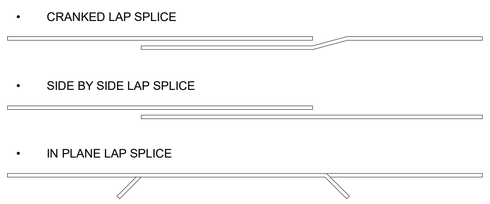
• **TYPICAL STIRRUP AND TIE REINFORCEMENT REFERENCE**



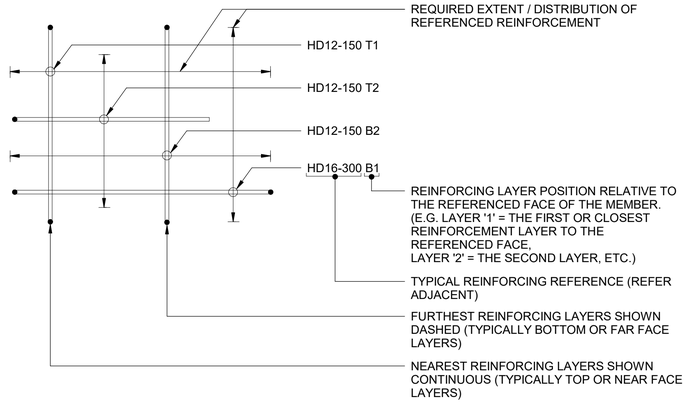
• **TYPICAL HOOK REPRESENTATION**



• **TYPICAL LAP SPLICE REPRESENTATION**



• **TYPICAL EXTENT OF REINFORCEMENT REPRESENTATION**



3. **CONCRETE GRADES, SUPPLY AND PRODUCTION**

3.1. CONCRETE GRADES ARE SPECIFIED AS '28 DAY SPECIFIED COMPRESSIVE STRENGTHS' AS DEFINED IN NZS3109. ALL CONCRETE SUPPLY AND PRODUCTION SHALL BE IN ACCORDANCE WITH NZS3104. ALL CONCRETE SUPPLIED SHALL BE READY-MIXED CONCRETE, SITE-MIXED CONCRETE SHALL NOT BE USED UNLESS APPROVED BY THE STRUCTURAL ENGINEER.

3.2. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS, CONCRETE SHALL BE 'NORMAL' CONCRETE WITH A GRADE OF 30 MPa (19mm MAXIMUM AGGREGATE SIZE), EXCEPT THAT SITE OR BLINDING CONCRETE MAY BE A 'PRESCRIBED MIX' CONCRETE WITH A MINIMUM GRADE OF 10 MPa.

3.3. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS FOR SPECIFIC ELEMENTS OR STRUCTURES, MINIMUM CONCRETE STRENGTHS SHALL BE AS SHOWN IN TABLE C1 BELOW FOR INDIVIDUAL ELEMENTS OR STRUCTURES:

TABLE C1 - CONCRETE MIX REQUIREMENTS

ELEMENT DESCRIPTION	CONCRETE GRADE	NZS3104 GRADE	ADDITIONAL SPECIFIED MIX PERFORMANCE REQUIREMENTS
FOUNDATIONS	25 MPa	NORMAL	NO ADDITIONAL MIX REQUIREMENTS

3.4. THE CONTRACTOR AND THE CONCRETE SUPPLIER SHALL ENSURE THAT THE PROPERTIES OF THE DESIGNED CONCRETE MIX MEETS SITE REQUIREMENTS FOR PLACING, FINISHING, IN ADDITION TO ANY ADDITIONAL SPECIFIED PERFORMANCE REQUIREMENTS.

3.5. WHERE SPECIFIED, THE SUBSTITUTION OF ALTERNATIVE MAXIMUM AGGREGATE SIZES, HIGHER STRENGTH GRADES, OR ALTERNATIVE CONCRETE PERFORMANCE REQUIREMENTS, ETC, SHALL ONLY BE PERMITTED WITH THE APPROVAL OF THE STRUCTURAL ENGINEER.

3.6. NO CONCRETE SHALL BE PLACED ON SITE BEYOND A TIMEFRAME OF 90 MINUTES AFTER INITIAL BATCHING, UNLESS THE MIX DESIGNER SPECIFICALLY TAKES ACCOUNT IN THE MIX DESIGN OF ANY LONGER TIMEFRAME REQUIRED BETWEEN BATCHING AND FINAL PLACEMENT/FINISHING OF THE CONCRETE.

3.7. UNDER NO CIRCUMSTANCES SHALL WATER BE ADDED TO THE CONCRETE MIX FOLLOWING BATCHING UNLESS APPROVED BY THE MIX DESIGNER AND THE STRUCTURAL ENGINEER. IF APPROVED, WATER SHALL ONLY BE ADDED IN ACCORDANCE WITH THE REQUIREMENTS IN NZS3109.

4. **REINFORCEMENT CLASS, MANUFACTURING PROCESS AND RESTRICTIONS**

4.1. ALL REINFORCEMENT BARS SHALL BE GRADE 300E OR GRADE 500E TO AS/NZS4671, ALL WELDED WIRE MESH SHALL BE GRADE 500E 'DUCTILE MESH' TO AS/NZS4671 UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.

4.2. ALL GRADE 500 REINFORCEMENT BARS SHALL BE MANUFACTURED USING THE MICROALLOY (MA) PROCESS, UNLESS SPECIFICALLY APPROVED OTHERWISE BY THE ENGINEER. GRADE 500 MA REINFORCEMENT BARS SHALL NOT BE STRAIGHTENED OR RE-BENT WITHOUT FOLLOWING A RE-BENDING PROCEDURE APPROVED BY THE STRUCTURAL ENGINEER.

4.3. IF THE USE OF GRADE 500 REINFORCEMENT BARS MANUFACTURED USING THE QUENCHED AND TEMPERED (QT) PROCESS IS APPROVED BY THE ENGINEER, THEY SHALL NOT BE WELDED (INCLUDING TACK WELDS), HOT-DIPPED GALVANISED, THREADED, HOT BENT, STRAIGHTENED OR RE-BENT AFTER INITIAL BENDING.

4.4. THE REPLACEMENT OF REINFORCEMENT WHICH HAS BEEN DETAILED ON THE STRUCTURAL DRAWINGS WITH AN EQUIVALENT OR HIGHER STRENGTH WELDED WIRE MESH, OR WITH AN EQUIVALENT OR HIGHER STRENGTH OF REINFORCEMENT BARS (INCREASING OR DECREASING GRADE, SIZE OR SPACING) SHALL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.

4.5. THE REPLACEMENT OF 'DUCTILE MESH' WELDED WIRE MESH WHICH HAS BEEN DETAILED ON THE STRUCTURAL DRAWINGS WITH AN EQUIVALENT STRENGTH 'HARD DRAWN' WELDED WIRE MESH SHALL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.

5. **FORMWORK AND FALSEWORK**

5.1. THE DESIGN, CONSTRUCTION AND PERFORMANCE OF ANY FORMWORK AND FALSEWORK REQUIRED FOR THE CONSTRUCTION OF THE WORKS IS THE RESPONSIBILITY OF THE CONTRACTOR.

5.2. MATERIALS USED FOR FABRICATING FORMWORK SHALL BE CONSISTENT WITH ACHIEVING THE SPECIFIED FINISHES AND TOLERANCES, BE CAPABLE OF RESISTING ANY APPLIED CONSTRUCTION LOADING, CONCRETE PLACEMENT & COMPACTION FORCES, AND ALLOW FOR SEALING AGAINST GROUT LOSS. THE LOCATION OF FORMWORK JOINTS AND TIES SHALL BE DISCUSSED AND AGREED WITH THE ARCHITECT PRIOR TO MANUFACTURE OF ANYFORMWORK.

5.3. THE FABRICATION OF FORMWORK AND FALSEWORK SHALL BE UNDERTAKEN IN A MANNER THAT PERMITS EASY REMOVAL WITHOUT CAUSING DAMAGE TO THE HARDENED CONCRETE.

5.4. MINIMUM FORMWORK STRIPPING TIMES SHALL COMPLY WITH NZS3109 AND NZS3101 UNLESS APPROVED OTHERWISE BY THE STRUCTURAL ENGINEER. CONCRETE MEMBERS SHALL NOT BE ASSUMED TO BE CAPABLE OF SUPPORTING APPLIED LOADING WHEN THE MINIMUM STRIPPING TIMES HAVE ELAPSED AND ANY CONSTRUCTION SUPPORTS HAVE BEEN REMOVED, NOR SHALL CONCRETE MEMBERS BE ASSUMED CAPABLE OF SUPPORTING FULL DESIGN LOADS UNTIL AFTER THE CONCRETE REACHES ITS DESIGN STRENGTH.

5.5. PROVIDE A 20mm x 20mm CHAMFER TO ALL CORNERS UNLESS DETAILED OR NOTED OTHERWISE. PROTECT CORNERS FROM DAMAGE DURING AND AFTER STRIPPING.

5.6. FORMWORK RELEASE AGENTS SHALL NOT BE PERMITTED TO CONTACT REINFORCEMENT, EMBEDDED ITEMS OR HARDENED CONCRETE AGAINST WHICH FRESH CONCRETE IS TO BE PLACED.

6. **CONCRETE SURFACE FINISHES**

6.1. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS OR SHOWN ON OTHER PROJECT DRAWINGS, SURFACE FINISHES SHALL BE AS SHOWN IN TABLE C2 BELOW (REFER NZS3114 FOR DEFINITIONS):

TABLE C2 - SCHEDULE OF SURFACE FINISHES

ELEMENT DESCRIPTION	FINISH
FORMED FOUNDATION SURFACES WHICH WILL BE CONCEALED TO VIEW IN THE FINAL WORKS	F1
FORMED FOUNDATION SURFACES WHICH WILL BE EXPOSED TO VIEW IN THE FINAL WORKS	F5
UNFORMED FOUNDATION SURFACES	U3
FORMED SURFACES OF BEAMS, COLUMNS, WALLS, PANELS, SLAB EDGES, ETC WHICH WILL BE CONCEALED TO VIEW IN THE FINAL WORKS	F3
FORMED SURFACES OF BEAMS, COLUMNS, WALLS, PANELS, SLAB EDGES, ETC WHICH WILL BE EXPOSED TO VIEW IN THE FINAL WORKS	F5
UNFORMED INTERIOR SLAB FINISHES	U3
UNFORMED EXTERIOR SLAB FINISHES	U5
ALL 'TYPE B' CONSTRUCTION JOINTS	SEE BELOW

6.2. SURFACE TOLERANCES (GRADUAL AND ABRUPT SURFACE VARIATIONS), COLOUR VARIATIONS AND IRREGULARITIES ASSOCIATED WITH EACH FORMED AND UNFORMED FINISH TYPE SHALL BE IN ACCORDANCE WITH THE ACCEPTANCE CRITERIA NOTED IN NZS3114 UNLESS AGREED OTHERWISE.

6.3. REFER TO OTHER PROJECT DRAWINGS FOR ANY SPECIALIST CONCRETE SURFACE FINISHES (EXPOSED AGGREGATE, ARCHITECTURAL SURFACE PATTERNS/REBATES, ETC) THAT MAY BE REQUIRED.

6.4. REFER TO OTHER PROJECT DRAWINGS FOR ANY EXTERNALLY APPLIED SURFACE FINISHES, SURFACE HARDENERS, SEALERS OR COATINGS, ETC, THAT MAY BE REQUIRED.

6.5. MINOR SURFACE DEFECTS SHALL BE REPAIRED TO MATCH THE SHADE AND TEXTURE OF THE SURROUNDING CONCRETE WHEN THAT CONCRETE IS EXPOSED TO VIEW IN THE FINAL WORKS.

7. **CONCRETE CONSTRUCTION TOLERANCES**

7.1. UNLESS TIGHTER TOLERANCES ARE SPECIFIED/IMPLIED ON THE STRUCTURAL DRAWINGS, THE TOLERANCES FOR BENDING, SPACING AND POSITIONING OF REINFORCEMENT AND TOLERANCES ON CONCRETE COVERS ARE TO BE IN ACCORDANCE WITH THE RELEVANT REQUIREMENTS SPECIFIED IN NZS3109.

7.2. UNLESS TIGHTER TOLERANCES ARE SPECIFIED/IMPLIED ON THE STRUCTURAL DRAWINGS, THE TOLERANCES FOR PRECAST/CAST IN PLACE CONCRETE ELEMENTS AND ASSOCIATED CAST IN ITEMS, INCLUDING BUT NOT LIMITED TO THEIR LENGTH, WIDTH, THICKNESS, POSITION, PROFILE, STRAIGHTNESS, CAMBER, ETC, ARE TO BE IN ACCORDANCE WITH THE RELEVANT REQUIREMENTS SPECIFIED IN NZS3109.

7.3. DETAILS SHOWN ON THE STRUCTURAL DRAWINGS MAY IMPLY IN SOME CASES INHERENTLY TIGHTER TOLERANCES THAN THE MAXIMUM ALLOWABLE TOLERANCES SPECIFIED IN NZS3109. THE CONTRACTORS CONSTRUCTION METHODOLOGY AND QUALITY ASSURANCE CHECKS SHALL BE SUCH THAT THE IMPLIED TOLERANCES ARE ACHIEVED TO CONSTRUCT THE ELEMENTS AS DETAILED WITHOUT FURTHER MODIFICATION.

7.4. IF FOR ANY REASON THE CONTRACTOR BELIEVES THAT THE TOLERANCES SPECIFIED IN NZS3109 OR AS SPECIFIED/IMPLIED ON THE STRUCTURAL DRAWINGS CANNOT BE ACHIEVED, THIS IS TO BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER FOR RESOLUTION PRIOR TO THE CONSTRUCTION OF ANY AFFECTED ELEMENTS.

7.5. PARTICULAR ATTENTION SHALL BE APPLIED TO THE FOLLOWING SITUATIONS TO ENSURE THAT THE TOLERANCES REQUIRED TO BUILD THE WORKS IN ACCORDANCE WITH THE STRUCTURAL DRAWINGS ARE ACHIEVED:

7.5.1. PARTICULAR ATTENTION SHOULD BE PAID TO ACHIEVING THE REQUIRED TOLERANCES FOR ANY ITEMS CAST INTO THE CONCRETE WHEN ANY FUTURE CONSTRUCTED WORKS ARE RELIANT ON THESE ITEMS BEING PLACED WITHIN A GIVEN TOLERANCE (FOR EXAMPLE, FIXINGS FOR STEEL ELEMENTS OR OTHER PRECAST/CAST IN PLACE CONCRETE ELEMENTS SUCH AS WELD PLATES, CAST IN FIXINGS, POST INSTALLED FIXINGS, REINFORCEMENT STARTERS INTO GROUTED CONNECTIONS, ETC).

7.5.2. PARTICULAR ATTENTION SHOULD BE PAID TO THERE BEING A ZERO TOLERANCE ON THE REDUCTION OF THE MINIMUM CONCRETE COVERS SPECIFIED IN THE 'CONCRETE COVER TO REINFORCEMENT FOR DURABILITY' SECTION. THE MINIMUM CONCRETE COVER REQUIREMENTS TO BE ACHIEVED ARE AFTER CONSIDERATION OF ALL TOLERANCES.

7.5.3. PARTICULAR ATTENTION SHOULD BE PAID TO THERE BEING A ZERO TOLERANCE ON THE REDUCTION OF THE MINIMUM SEATING LENGTH FOR PRECAST FLOORING ELEMENTS SUPPORTED FROM OTHER ELEMENTS. THE SPECIFIED MINIMUM SEATING TO BE ACHIEVED ARE AFTER CONSIDERATION OF ALL TOLERANCES.

7.6. THE CONTRACTOR SHALL MAKE USE OF APPROPRIATE TEMPLATES, BRACING, ETC, AS DEEMED NECESSARY TO HOLD TOLERANCE CRITICAL ITEMS ACCURATELY IN PLACE TO ENSURE THE APPROPRIATE TOLERANCES ARE ACHIEVED AFTER PLACEMENT OF CONCRETE.

7.7. CONCRETE CONSTRUCTION WHERE THE TOLERANCES SPECIFIED IN NZS3109 OR AS SPECIFIED/IMPLIED ON THE STRUCTURAL DRAWINGS HAVE NOT BEEN ACHIEVED SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. REFER 'DEFECTIVE CONCRETE, REPAIRS AND REMEDIATION' SECTION FOR FURTHER REQUIREMENTS.

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
A	03.02.26	TB	BUILDING CONSENT

Blueprint Consulting Engineers
Auckland **a:** 2/10 Mepal Place, Papatoetoe
p: +64 9 294 8993 PO Box 97607, Manukau
Christchurch **a:** 12 Duke Street,
p: +64 3 928 2258 Christchurch
w: www.bce.nz
e: admin@bce.nz

CLIENT
HOME CONSTRUCTION

PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
CONCRETE NOTES - SHEET 1

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-0-21	A

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8. CONSTRUCTION JOINTS

8.1. ALL CONSTRUCTION JOINTS SHALL BE TYPE 'B' CONSTRUCTION JOINTS PREPARED IN ACCORDANCE WITH NZS3109 UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS. WHERE CONCRETE IS PLACED AGAINST PREVIOUSLY HARDENED CONCRETE THE INTERFACE SHALL BE CLEAN, FREE OF LOOSE MATERIAL, AND INTENTIONALLY ROUGHENED TO A FULL AMPLITUDE OF NOT LESS THAN 5 mm OVER THE FULL WIDTH/THICKNESS OF THE CONSTRUCTION JOINT.

8.2. CONSTRUCTION JOINTS SHALL BE MADE EITHER VERTICALLY OR HORIZONTALLY, AND PERPENDICULAR TO THE AXIS OF A MEMBER. IF IT BECOMES NECESSARY TO STOP CONCRETE PLACEMENT FOR ANY REASON BEFORE A SECTION IS COMPLETED, THEN A CONSTRUCTION JOINT SHALL BE FORMED BY THE ADDITION OF STOP ENDS. ANY CONCRETE PLACED BEYOND THE STOP ENDS SHALL BE REMOVED.

8.3. METHODS WHICH AVOID SCABBLING ARE PREFERRED FOR INTENTIONALLY ROUGHENING THE CONCRETE SURFACE AT CONSTRUCTION JOINTS (SUCH AS USING SURFACE RETARDERS).

8.4. MATING SURFACES AT CONSTRUCTION JOINTS SHALL BE IN A SATURATED CONDITION PRIOR TO THE PLACEMENT OF CONCRETE. ALL STANDING WATER SHALL BE REMOVED BEFORE THE PLACEMENT OF CONCRETE COMMENCES.

8.5. WHERE THE LOCATION OF JOINTS HAS NOT BEEN SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS, JOINTS WITHIN SLABS ON GRADE, TOPPINGS, EXPOSED SURFACES, ETC, SHALL BE COORDINATED WITH THE STRUCTURAL ENGINEER AND ARCHITECT AS REQUIRED FOR THE PURPOSES OF DETERMINING ANY EFFECT ON THE AS BUILT STRUCTURE (SUCH AS THE REQUIREMENT FOR LATE POUR STRIPS, ETC) AND ANY ARCHITECTURAL RESTRICTIONS (SUCH AS REFLECTIVE CRACKING IN FLOOR FINISHES AT JOINT LOCATIONS, AESTHETICS OF EXPOSED JOINTS, ETC).

9. CONCRETE COVER TO REINFORCEMENT FOR DURABILITY

9.1. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS, MINIMUM CONCRETE COVER SHALL BE AS FOLLOWS:

9.1.1. THE MINIMUM CONCRETE COVER FOR CONCRETE CAST DIRECTLY ON OR AGAINST THE GROUND SHALL BE 75mm.

9.1.2. THE MINIMUM CONCRETE COVER WHEN A DAMP PROOF MEMBRANE IS USED BETWEEN THE GROUND AND THE CAST CONCRETE SHALL BE 50mm.

9.1.3. THE MINIMUM CONCRETE COVER FOR FORMED (E.G. CAST AGAINST FORMWORK) SURFACES SHALL BE 50mm.

9.1.4. THE MINIMUM CONCRETE COVER FOR FREE SURFACES (E.G. TOP SURFACE OF SLABS, ETC) LOCATED INTERNALLY WITHIN A FINISHED STRUCTURE SHALL BE 30mm.

9.1.5. THE MINIMUM CONCRETE COVER FOR ALL OTHER EXPOSURE SITUATIONS SHALL BE 50mm.

9.2. THE MINIMUM CONCRETE COVER SPECIFIED SHALL BE MEASURED TO THE EDGE OF CHAMFERS, RECESSES, REBATES, ETC, WHERE APPLICABLE.

9.3. NO REINFORCEMENT, METAL SUPPORTS OR WIRE TIES SHALL PROJECT INTO THE MINIMUM CONCRETE COVER THICKNESS SPECIFIED.

9.4. REINFORCEMENT MAY BE DETAILED/FABRICATED NOMINALLY 5mm SMALLER THAN THE APPLICABLE MINIMUM COVERS SPECIFIED ON EACH EXTERNAL FACE TO PROVIDE TOLERANCE FOR PLACEMENT.

10. PLACEMENT AND SUPPORT OF REINFORCEMENT

10.1. REINFORCEMENT SHALL BE CLEAN AND FREE FROM MUD, LOOSE RUST/MILL SCALE, CONCRETE LAITANCE, OIL, ETC AT THE TIME CONCRETE IS PLACED.

10.2. ALL REINFORCEMENT SHALL BE ADEQUATELY SECURED AGAINST DISPLACEMENT AT INTERSECTIONS TO ACHIEVE THE TOLERANCES STATED IN NZS3109 BY THE USE OF ANNEALED IRON WIRE TIES WITH A DIAMETER OF GREATER THAN 1.25mm, OR BY APPROVED CLIPS (REFER 'CONCRETE CONSTRUCTION TOLERANCES' SECTION FOR REQUIREMENTS).

10.3. ADEQUATE SUPPORTS AND TIES SHALL BE USED TO MAINTAIN THE CORRECT POSITION OF THE REINFORCEMENT, PREVENT DISPLACEMENT OF THE REINFORCEMENT AND MAINTAIN CONCRETE COVERS AND LAYER DEPTHS DURING THE PLACEMENT OF CONCRETE, COMPACTION OF CONCRETE, AND UNDER CONSTRUCTION TRAFFIC.

10.4. SUPPORTS SHALL TYPICALLY CONSIST OF PROPRIETARY PLASTIC OR CONCRETE SUPPORTS WHEN USED WITHIN THE COVER CONCRETE. ADDITIONAL STIRRUPS, LINKS OR SPACERS SHALL BE USED TO PROVIDE ADEQUATE SUPPORT BETWEEN SEPARATE REINFORCEMENT LAYERS WITHIN MEMBERS WITH TWO LAYERS OF REINFORCEMENT (SLABS, FOOTINGS, WALLS, BEAMS, ETC). CONCRETE SUPPORTS SHALL HAVE A CONCRETE STRENGTH GREATER THAN THE MAXIMUM OF 40 MPa OR THE SPECIFIED CONCRETE STRENGTH OF THE MEMBER. METAL SUPPORTS PLACED WITHIN THE COVER CONCRETE SHALL NOT BE PERMITTED.

THE NUMBER OF RIGID SUPPORTS SHALL NOT BE LESS THAN:

TABLE C4 - MINIMUM REINFORCEMENT SUPPORT REQUIREMENTS

ELEMENT DESCRIPTION	SUPPORT SPACING
SLAB AND PAD FOOTING REINF	MIN TWO SUPPORTS PER SQUARE METRE
BEAM REINF	ONE LINE OF SUPPORT (CONSISTING OF INDIVIDUAL SUPPORTS AT THE GREATER OF 500mm OR 50 x STIRRUP/LINK BAR DIAMETER SPACING) TO EACH FORMED FACE PER 1000mm SPACING ALONG BEAMS
COLUMN REINF	ONE LINE OF SUPPORT (CONSISTING OF INDIVIDUAL SUPPORTS AT THE GREATER OF 500mm OR 50 x STIRRUP/LINK BAR DIAMETER SPACING) TO EACH FORMED FACE AT 100 x MAIN BAR VERTICAL SPACING ALONG COLUMNS
WALL REINF	ONE LINE OF SUPPORT (CONSISTING OF INDIVIDUAL SUPPORTS AT THE GREATER OF 500mm OR 50 x STIRRUP/LINK/HORIZONTAL BAR DIAMETER SPACING) TO EACH FORMED FACE AT 1000mm VERTICAL SPACING ALONG WALLS

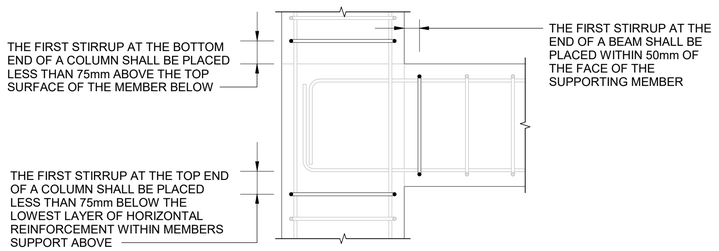
ANY ADDITIONAL SUPPORTS, STIRRUPS, LINKS OR SPACERS REQUIRED TO PROVIDE ADEQUATE SUPPORT BETWEEN REINFORCEMENT LAYERS IN SLABS, FOOTINGS, WALLS, ETC OR TO MAINTAIN CONCRETE COVERS ARE TYPICALLY NOT SHOWN ON THE STRUCTURAL DRAWINGS.

10.5. SPLICING OF REINFORCEMENT, WHETHER BY LAPPING, WELDING OR MECHANICAL SPLICES, SHALL ONLY BE CARRIED OUT AT THE LOCATIONS SHOWN ON THE STRUCTURAL DRAWINGS OR AS SPECIFICALLY APPROVED BY THE ENGINEER.

10.6. WELDED WIRE MESH AND REINFORCEMENT IN SLABS ON GRADE AND IN TOPPINGS SHALL BE SPLICED AS REQUIRED, BUT NOT THROUGH SLAB JOINTS.

10.7. FITTINGS SUCH AS COUPLERS, FOOT PLATES, THREADED INSERTS, ETC, SHALL BE EPOXIED AND INSTALLED ONTO THE REINFORCEMENT IN ACCORDANCE WITH THE MANUFACTURERS GUIDANCE.

10.8. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS, STIRRUPS AT THE ENDS OF BEAMS AND COLUMNS SHALL BE ARRANGED AS FOLLOWS:



11. CONCRETE PLACEMENT & CURING

11.1. CONCRETE SHALL BE TRANSPORTED, HANDLED, PLACED AND COMPACTED IN ACCORDANCE WITH NZS3109 REQUIREMENTS. NO CONCRETE SHALL BE PLACED WHEN UNFAVOURABLE CONDITIONS EXIST ON SITE, E.G. CONCRETE BEING PLACED ON FROZEN GROUND, LOW TEMPERATURES (BELOW +5 DEGREES WITH TEMPERATURE DESCENDING OR BELOW +2 DEGREES WITH TEMPERATURE ASCENDING), EXCESSIVELY HOT CONDITIONS, EXCESSIVELY WET CONDITIONS, OR ANY CONDITIONS THAT MAKE IT IMPRACTICABLE TO WORK AND FINISH THE CONCRETE ADEQUATELY.

11.2. REFER 'CONCRETE GRADES, SUPPLY AND PRODUCTION' SECTION FOR LIMITATIONS ON MAXIMUM PLACEMENT TIME FROM INITIAL CONCRETE BATCHING AND LIMITATIONS REGARDING ADDING WATER ON SITE TO THE MIX.

11.3. IMMEDIATELY PRIOR TO PLACEMENT OF CONCRETE THE FORMS SHALL BE CLEANED OUT, REMOVING ALL RUBBISH, DIRT, SAWDUST, MORTAR, TIE WIRES, ETC.

11.4. VIBRATORS SHALL BE USED FOR THE COMPACTION OF ALL CONCRETE. VIBRATORS SHALL BE MOVED AS FREQUENTLY AS NECESSARY AND POSITIONED TO ENSURE UNIFORM VIBRATION OF THE WHOLE MASS OF CONCRETE TO ACHIEVE FULLY COMPACTED CONCRETE. A SUFFICIENT NUMBER OF VIBRATORS SHALL BE EMPLOYED TO MATCH THE RATE OF CONCRETE PLACEMENT.

11.5. ON NO ACCOUNT SHALL VIBRATORS COME IN CONTACT WITH THE FACE OF THE FORMWORK. VIBRATORS SHALL NOT BE USED TO TRANSFER CONCRETE FROM ONE POSITION TO ANOTHER.

11.6. CONCRETE IN DEEP SECTIONS SHALL BE PLACED IN LAYERS AT NOT MORE THAN 500mm DEPTH, AND EACH LAYER SHALL BE COMPACTED IN PLACE. A SUCCESSIVE LAYER OF CONCRETE SHALL NOT BE PLACED UNLESS RE-VIBRATION AND REWORKING CAUSES THE PRECEDING LAYER TO BECOME PLASTIC. WHERE DELAYS HAVE BECOME TOO GREAT BETWEEN LAYERS, THE SURFACE OF THE PRECEDING LAYER SHALL BE TREATED AS A CONSTRUCTION JOINT.

11.7. FRESHLY CAST CONCRETE SHALL BE PROTECTED FROM THE EFFECTS OF RAIN, RUNNING WATER AND FREEZING OR DRYING PRIOR TO HARDENING. DURING THE INITIAL CURING PERIOD THE CONCRETE SHALL BE PROTECTED FROM FREEZING AND DRYING.

11.8. UNFORMED CONCRETE SURFACES AND FORMED CONCRETE SURFACES (AFTER REMOVAL OF FORMS) SHALL BE CURED FOR AT LEAST 7 DAYS UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS. CURING SHALL BE APPLIED ON COMPLETION OF CONCRETE FINISHING OPERATIONS AS SOON AS IT IS POSSIBLE TO DO SO WITHOUT DAMAGING THE CONCRETE.

11.9. CURING SHALL BE UNDERTAKEN IN ACCORDANCE WITH ONE OF THE FOLLOWING METHODS UNLESS SPECIFICALLY NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS:

11.9.1. PONDING OR CONTINUOUS SPRINKLING OF CONCRETE SURFACES OR THE CONTINUOUS APPLICATION OF A MIST SPRAY TO CONCRETE SURFACES.

11.9.2. APPLICATION OF ABSORPTIVE MATS OR LAYERS OF SAND AND MAINTAINING THESE IN A CONTINUOUSLY WET STATE OR COVERING WITH IMPERMEABLE SHEETING IN SUCH A MANNER TO PREVENT LOSS OF WATER FROM THE CONCRETE SURFACE.

11.9.3. APPLICATION OF A MEMBRANE FORMING CURING COMPOUND. NOTE CURING COMPOUNDS SHALL NOT BE USED ON SURFACES WHICH SUBSEQUENT CONCRETE IS TO BE PLACED AGAINST, UNLESS MEASURES ARE TAKEN TO REMOVE IT COMPLETELY FROM SUCH SURFACES (SAND BLASTING OR SCABBLING). THE CONTRACTOR SHALL ENSURE ANY SUBSEQUENT FINISHES TO BE BONDED TO THE CONCRETE ARE COMPATIBLE WITH THE CURING MEMBRANE SELECTED, OTHERWISE REMOVAL OF THE MEMBRANE AS NOTED ABOVE WILL BE REQUIRED.

12. WELDING OF REINFORCEMENT

12.1. WELDING OF REINFORCEMENT (INCLUDING TACK WELDING) SHALL ONLY BE CARRIED OUT WITH THE APPROVAL OF THE ENGINEER UNLESS SPECIFICALLY NOTED ON THE STRUCTURAL DRAWINGS.

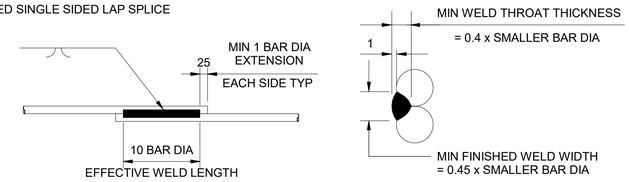
12.2. NO WELDING OF EARTHING OR LIGHTNING PROTECTION TO STRUCTURAL REINFORCEMENT SHALL BE PERMITTED WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.

12.3. WHERE THE WELDING OF REINFORCING HAS BEEN APPROVED OR IS DETAILED ON THE STRUCTURAL DRAWINGS, THE WELDING SHALL USE APPROVED/QUALIFIED WELDING PROCEDURES AND BE CARRIED OUT BY SUITABLY QUALIFIED WELDERS. ALL DETAILS OF THE WELDING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF AS/NZS1554.3.

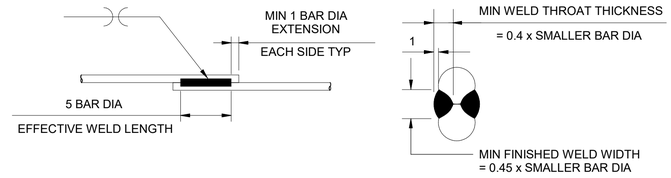
12.4. ALL WELDING OF REINFORCEMENT SHALL BE SP CATEGORY WELDS IN ACCORDANCE WITH AS/NZS1554.3.

12.5. THE MINIMUM WELD SIZE (THROAT THICKNESS), FINISHED WELD WIDTH AND WELD LENGTH FOR SINGLE-SIDED AND DOUBLE-SIDED WELDED LAP SPLICES SUITABLE FOR THE SPLICING OF STIRRUPS, TIES AND SPIRALS (WHERE DETAILED ON THE STRUCTURAL DRAWINGS) SHALL BE AS FOLLOWS:

• WELDED SINGLE SIDED LAP SPLICE



• WELDED DOUBLE SIDED LAP SPLICE



12.6. WELDS SHALL NOT BE LOCATED CLOSER THAN 3 BAR DIAMETERS FROM THE START OF A BEND, OR ANY PORTION OF A BAR WHICH HAS BEEN BENT AND SUBSEQUENTLY RE-STRAIGHTENED.

13. DEFECTIVE CONCRETE, REPAIRS AND REMEDIATION

13.1. 'DEFECTIVE CONCRETE' SHALL INCLUDE BUT NOT BE LIMITED TO DEFECTS SUCH AS CHIPPING, SPALLING, HONEYCOMBING, CRACKING, DAMAGE TO REINFORCEMENT, FAILURE OF FORMWORK/FALSEWORK, DAMAGE ASSOCIATED WITH THE OVERLOADING OF STRUCTURAL MEMBERS AND TOLERANCE RELATED ISSUES FOR REINFORCEMENT, CAST IN ITEMS, CONCRETE COVERS, FINISHES, ETC. ALL CONCRETE DEFECTS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL OF AN APPROPRIATE REPAIR/REMEDIATION STRATEGY.

13.2. ANY COSTS ASSOCIATED WITH REPAIR AND REMEDIATION OF 'DEFECTIVE CONCRETE' UNDERTAKEN TO THE STRUCTURAL ENGINEERS APPROVAL SHALL BE UNDERTAKEN AT NO COST TO THE PRINCIPAL/CLIENT. DEFECTS DEEMED TO BE SIGNIFICANT WILL BE LIABLE FOR COMPLETE REMOVAL AND REINSTATEMENT TO THE ORIGINAL DETAILS AT THE STRUCTURAL ENGINEERS DISCRETION.

13.3. NO REPAIR, REMEDIATION OR MODIFICATION OF 'DEFECTIVE CONCRETE' ELEMENTS SHALL BE UNDERTAKEN WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER. WHERE NECESSARY OR WHERE DIRECTED BY THE STRUCTURAL ENGINEER, THE CONTRACTOR SHALL ENGAGE A SUITABLY QUALIFIED CONCRETE REPAIR SPECIALIST TO UNDERTAKE ANY APPROVED CONCRETE REPAIR WORK.

13.4. IF CONCRETE DEFECTS ARE IDENTIFIED, THE CONTRACTOR SHALL DEMONSTRATE TO THE STRUCTURAL ENGINEER THAT SUFFICIENT QUALITY ASSURANCE MEASURES AND/OR CHANGES IN WORK PRACTICES HAVE BEEN IMPLEMENTED TO PREVENT/MINIMISE THE RISK OF FUTURE REOCCURRENCE OF SIMILAR DEFECTS.

13.5. ANY APPROVED CONCRETE REPAIR WORK THAT REQUIRES REMOVAL OF HARDENED CONCRETE SHALL USE METHODS THAT AVOIDS DAMAGING REINFORCEMENT (SUCH AS HYDRO DEMOLITION).

13.6. ANY APPROVED REPAIR WORK SHALL REINSTATE THE CONCRETE AND/OR REINFORCEMENT TO THE EQUIVALENT STANDARD AS IF IT HAD BEEN POURED MONOLITHICALLY WITH THE ORIGINAL CONCRETE TO THE REQUIRED TOLERANCES AND/OR FINISHES. ANY PROPRIETARY REPAIR MORTARS OR MICRO-CONCRETES SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND SHALL HAVE A CONCRETE STRENGTH GREATER THAN THE MAXIMUM OF 40 MPa OR THE ORIGINAL SPECIFIED CONCRETE STRENGTH OF THE MEMBER.

14. EARTHING AND LIGHTNING PROTECTION

14.1. FOR EARTHING OR LIGHTNING PROTECTION DETAILS WHICH MAY NEED TO BE CAST INTO STRUCTURAL ELEMENTS REFER TO OTHER PROJECT DRAWINGS.

14.2. UNLESS SPECIFICALLY DETAILED OR CONFIRMED ON THE STRUCTURAL DRAWINGS, THE WELDING OF EARTHING OR LIGHTNING PROTECTION TO THE STRUCTURAL REINFORCEMENT SHALL NOT BE PERMITTED (EVEN IF SPECIFICALLY DETAILED ON OTHER PROJECT DRAWINGS). THE CONTRACTOR SHALL PROVIDE A DEDICATED EARTH LOOP FORMED FROM ADDITIONAL BARS SPLICED BY WELDED LAPS, REFER TO OTHER PROJECT DRAWINGS OR DISCIPLINES FOR REQUIREMENTS.

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
A	03.02.26	TB	BUILDING CONSENT

Blueprint Consulting Engineers
Auckland **a:** 2/10 Mepal Place, Papatoetoe
p: +64 9 294 8993 PO Box 97607, Manukau
Christchurch **a:** 12 Duke Street,
p: +64 3 928 2258 Christchurch
w: www.bce.nz
e: admin@bce.nz

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HOME CONSTRUCTION

PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
CONCRETE NOTES - SHEET 2

SCALE	DRAWN	DESIGN	APPROVED
1 : 10 @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-0-22	A

ORIGINAL DRAWING IN COLOUR

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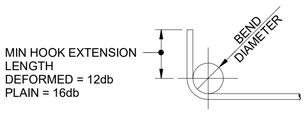
15. BENDING OF REINFORCEMENT

15.1. ALL REINFORCING BARS SHALL BE COLD BENT USING PROPER BENDING TOOLS OF THE CORRECT DIAMETER TO GUARD AGAINST NOTCHING OF BARS OR BENDING TO SMALLER THAN MINIMUM SPECIFIED BEND DIAMETERS.

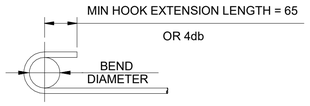
15.2. REINFORCING BARS PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE SITE BENT UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS OR SPECIFICALLY APPROVED BY THE ENGINEER. THIS INCLUDES BENDING BARS TEMPORARILY FOR TRANSPORTATION OR TO FACILITATE ACCESS THROUGH REINFORCEMENT CAGES ON SITE.

15.3. WHERE REINFORCING BARS ARE REQUIRED TO BE BENT AND RE-STRAIGHTENED FOR TRANSPORTATION AND/OR TO AID CONSTRUCTION SEQUENCING, ETC, THE BARS SHALL BE INITIALLY BENT TO A MINIMUM BEND DIAMETER OF TWICE THAT NOTED IN THE TABLES SHOWN BELOW, WITH THE START OF THE BEND BEING A MINIMUM OF THREE BAR DIAMETERS FROM THE MEMBER FACE (REFER 'REINFORCEMENT CLASS, MANUFACTURING PROCESS AND RESTRICTIONS' SECTION FOR RESTRICTIONS AND REQUIREMENTS REGARDING RE-BENDING).

15.4. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS BENDS AND MINIMUM HOOK EXTENSION LENGTHS FOR ALL BARS EXCEPT STIRRUPS, TIES AND SPIRALS SHALL BE AS SHOWN BELOW AND IN TABLE C5 BELOW:



STANDARD 90 DEGREE HOOK



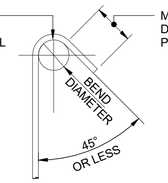
STANDARD 180 DEGREE HOOK

TABLE C5 - STANDARD BAR BENDS - MAIN BARS

REINFORCING GRADE	BAR DIAMETER	MINIMUM BEND DIAMETER
GRADE 300 & 500	6 TO 20	5 BAR DIAMETERS
	25 TO 32	6 BAR DIAMETERS
GRADE 300 & 500 GALVANISED BEFORE OR AFTER BENDING	6 TO 16	5 BAR DIAMETERS
	20 TO 32	8 BAR DIAMETERS

15.5. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS THE BENDS AND MINIMUM HOOK EXTENSION LENGTHS FOR STIRRUPS, TIES AND SPIRALS SHALL BE AS SHOWN BELOW AND IN TABLE C6 BELOW (NOTE 180 DEGREE HOOKS AS SHOWN ABOVE MAY BE SUBSTITUTED FOR 135 DEGREE HOOKS ON STIRRUPS, TIES AND SPIRALS):

UNLESS NOTED OTHERWISE ALL HOOKS ON STIRRUPS, TIES AND SPIRALS MUST BE ANCHORED AND FIT CLOSELY AROUND MAIN BARS, THE DIAMETER OF THE BAR BEND SHALL BE EQUAL TO THAT OF THE ENCLOSED BAR, BUT NOT LESS THAN THE VALUES IN TABLE C6 BELOW



STIRRUP HOOK

TABLE C6 - STANDARD BAR BENDS - STIRRUPS, TIES & SPIRALS

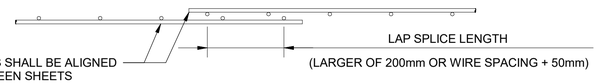
REINFORCING GRADE	BAR DIAMETER	MINIMUM BEND DIAMETER	
		PLAIN BARS	DEFORMED BARS
GRADE 300 & 500	6 TO 20	2 BAR DIAMETERS	4 BAR DIAMETERS
	25 TO 32	3 BAR DIAMETERS	6 BAR DIAMETERS
GRADE 300 & 500 GALVANISED BEFORE OR AFTER BENDING	6 TO 16	2 BAR DIAMETERS	5 BAR DIAMETERS
	20 TO 32	3 BAR DIAMETERS	8 BAR DIAMETERS

16. ANCHORAGE, DEVELOPMENT AND SPLICING OF REINFORCEMENT

16.1. LAP SPLICES OF PLAIN AND DEFORMED WELDED WIRE MESH:

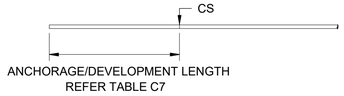
16.1.1. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS, PLAIN OR DEFORMED WELDED WIRE MESH SHALL BE LAP SPLICED AS REQUIRED AT THE ENDS AND SIDES OF SHEETS AS NOTED BELOW. ALL WELDED WIRE MESH SHALL BE LAPPED USING CONTACT LAPS WITH WIRES ALIGNED BETWEEN ADJACENT SHEETS.

i). THE MINIMUM LAP SPLICE LENGTH FOR WELDED WIRE MESH SHALL CONSIST OF A MINIMUM OVERLAP BETWEEN OUTERMOST CROSS WIRES OF THE LARGER OF 200mm OR THE WIRES SPACING + 50mm AS SHOWN BELOW:



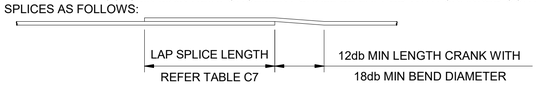
16.2. REINFORCEMENT ANCHORAGE, DEVELOPMENT AND LAP SPLICES WITH DEFORMED STRAIGHT BARS:

16.2.1. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS THE MINIMUM ANCHORAGE LENGTH OR DEVELOPMENT LENGTH FOR STRAIGHT ANCHORAGES PAST THE CRITICAL SECTION (SHOWN CS) SHALL BE AS SHOWN BELOW AND IN TABLE C7 BELOW:



16.2.2. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS THE MINIMUM LAP SPLICE LENGTH AND DETAILING FOR CRANKED AND SIDE BY SIDE LAPS SHALL BE AS SHOWN BELOW AND IN TABLE C7 BELOW:

i). ALL BEAMS AND COLUMN MAIN REINFORCEMENT SHALL BE LAPPED WITH CRANKED CONTACT LAP SPLICES AS FOLLOWS:



ii). ALL OTHER REINFORCEMENT (SLABS, WALLS, ETC) SHALL BE LAPPED WITH SIDE BY SIDE CONTACT LAP SPLICES AS FOLLOWS:

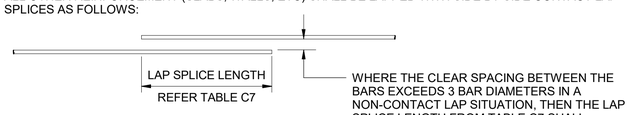


TABLE C7 - STANDARD REINFORCEMENT STRAIGHT LAP/DEVELOPMENT LENGTHS

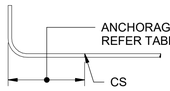
CONCRETE GRADE	REINFORCING GRADE	LAP TYPE	DEFORMED BAR DIAMETER					
			10	12	16	20	25	32
GRADE 20 MPa CONCRETE	GRADE 300	TYPE L1 LAP	500	575	750	925	1150	1450
		TYPE L2 LAP	400	450	600	725	900	1125
	GRADE 500	TYPE L1 LAP	775	925	1225	1500	1875	2375
		TYPE L2 LAP	600	725	950	1175	1450	1850
GRADE 25 MPa CONCRETE	GRADE 300	TYPE L1 LAP	450	525	675	825	1025	1300
		TYPE L2 LAP	350	400	525	650	800	1000
	GRADE 500	TYPE L1 LAP	700	825	1100	1350	1675	2125
		TYPE L2 LAP	550	650	850	1050	1300	1650
GRADE 30 & 35 MPa CONCRETE	GRADE 300	TYPE L1 LAP	400	475	625	775	950	1200
		TYPE L2 LAP	350	375	500	600	725	925
	GRADE 500	TYPE L1 LAP	650	775	1000	1250	1525	1950
		TYPE L2 LAP	500	600	775	975	1200	1525
TYPE L1 LAP		FOR HORIZONTAL REINFORCEMENT (WHEN CAST) WHERE MORE THAN 300mm OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR						
TYPE L2 LAP		FOR ALL OTHER SITUATIONS						

BARS IN CONTACT LAPS SHALL BE TIED TOGETHER OVER THE LAP SPLICE LENGTH, REFER 'PLACEMENT AND SUPPORT OF REINFORCEMENT' SECTION FOR REQUIREMENTS.

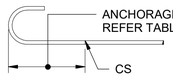
16.3. FOR LAP SPLICES OF BUNDLED BARS, THE INDIVIDUAL SPLICES BETWEEN BARS WITHIN THE BUNDLE SHALL NOT OVERLAP EACH OTHER (STAGGER LAPS A FULL DEVELOPMENT LENGTH). THE MINIMUM LAP SPLICE LENGTH FOR INDIVIDUAL BARS IN 3 BAR BUNDLES SHALL BE INCREASED BY 20%, AND IN 4 BAR BUNDLES SHALL BE INCREASED BY 33% FROM THE VALUES NOTED IN TABLE C7 ABOVE.

16.4. REINFORCEMENT ANCHORAGE, DEVELOPMENT AND LAP SPLICES WITH DEFORMED HOOKED BARS:

16.4.1. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS THE MINIMUM ANCHORAGE LENGTH OR DEVELOPMENT LENGTH FOR HOOKED ANCHORAGES PAST THE CRITICAL SECTION (SHOWN CS) SHALL BE AS SHOWN BELOW AND IN TABLE C8 BELOW:



STANDARD 90 DEGREE HOOK



STANDARD 180 DEGREE HOOK

TABLE C8 - STANDARD HOOK LAP/DEVELOPMENT LENGTHS

CONCRETE GRADE	REINFORCING GRADE	LAP TYPE	DEFORMED BAR DIAMETER					
			10	12	16	20	25	32
GRADE 20 MPa CONCRETE	GRADE 300	TYPE H1 HOOK	175	200	225	275	325	425
		TYPE H2 HOOK	225	250	300	375	450	575
	GRADE 500	TYPE H1 HOOK	250	275	350	425	525	650
		TYPE H2 HOOK	325	375	475	600	725	900
GRADE 25 MPa CONCRETE	GRADE 300	TYPE H1 HOOK	150	175	225	250	300	375
		TYPE H2 HOOK	200	225	275	350	400	525
	GRADE 500	TYPE H1 HOOK	225	250	325	400	475	600
		TYPE H2 HOOK	300	350	425	525	650	825
GRADE 30 & 35 MPa CONCRETE	GRADE 300	TYPE H1 HOOK	150	175	200	225	275	350
		TYPE H2 HOOK	175	200	275	325	375	475
	GRADE 500	TYPE H1 HOOK	200	225	300	350	425	550
		TYPE H2 HOOK	275	325	400	500	600	750
TYPE H1 HOOK		FOR SIDE COVER NORMAL TO THE PLANE OF THE HOOK OF GREATER THAN OR EQUAL TO 60mm, AND WITH END COVER TO THE HOOK EXTENSION OF GREATER THAN OR EQUAL TO 40mm						
TYPE H2 HOOK		FOR ALL OTHER SITUATIONS						

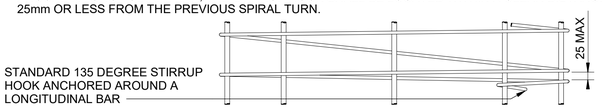
16.5. REINFORCEMENT ANCHORAGE, DEVELOPMENT AND LAP SPLICES WITH PLAIN BARS:

16.5.1. PLAIN BARS SHALL ONLY BE LAPPED OR DEVELOPED WITH STANDARD HOOKS (STRAIGHT LAPPING OR DEVELOPMENT OF PLAIN BARS IS NOT PERMITTED), THE ANCHORAGE, DEVELOPMENT OR LAP SPLICE LENGTH SHALL BE TWO TIMES THE ANCHORAGE LENGTH FOR A DEFORMED STANDARD HOOK AS NOTED IN TABLE C8 ABOVE.

16.6. REINFORCEMENT ANCHORAGE AND LAP SPLICES OF SPIRAL REINFORCEMENT:

16.6.1. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS, ALL SPIRAL REINFORCEMENT SHALL BE ANCHORED AT BOTH FREE ENDS BY ONE OF THE FOLLOWING MEANS:

i). BY ANCHORING THE SPIRAL STIRRUP WITH A STANDARD 135° STIRRUP HOOK WHICH IS ANCHORED AROUND A LONGITUDINAL BAR, THE STIRRUP HOOK SHALL BE LOCATED WITHIN A CLEAR DISTANCE OF 25mm OR LESS FROM THE PREVIOUS SPIRAL TURN.



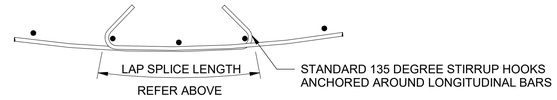
ii). BY ANCHORING THE SPIRAL STIRRUP WITH A WELDED SINGLE-SIDED OR DOUBLE-SIDED LAP SPLICE TO THE PREVIOUS SPIRAL TURN (REFER 'WELDING OF REINFORCEMENT' SECTION FOR RESTRICTIONS AND REQUIREMENTS IF WELDING OF SPIRALS IS APPROVED OR SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS).

16.6.2. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS, WHEN SPLICING OF SPIRAL REINFORCEMENT IS REQUIRED, THE INDIVIDUAL SPIRALS SHALL BE LAP SPLICED USING ONE OF THE FOLLOWING MEANS:

i). BY LAPPING THE SPIRAL STIRRUP WITH A CONTACT LAP SPLICE UTILISING STANDARD 135° STIRRUP HOOKS ANCHORED AROUND A LONGITUDINAL BAR WITH A MINIMUM LAP SPLICE LENGTH AS NOTED BELOW:

a). THE MINIMUM LAP SPLICE LENGTH FOR PLAIN BAR SPIRALS SHALL BE TWO TIMES THE ANCHORAGE LENGTH FOR A 'TYPE H2 HOOK' AS NOTED IN TABLE C8 ABOVE.

b). THE MINIMUM LAP SPLICE LENGTH FOR DEFORMED BAR SPIRALS SHALL BE THE ANCHORAGE LENGTH FOR A 'TYPE H2 HOOK' AS NOTED IN TABLE C8 ABOVE.



ii). BY LAPPING THE SPIRAL STIRRUP WITH A WELDED SINGLE-SIDED OR DOUBLE-SIDED LAP SPLICE (REFER 'WELDING OF REINFORCEMENT' SECTION FOR RESTRICTIONS AND REQUIREMENTS IF WELDING OF SPIRALS IS APPROVED OR SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS).

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
A	03.02.26	TB	BUILDING CONSENT

Blueprint Consulting Engineers
Auckland **a:** 2/10 Mepal Place, Papatoetoe
p: +64 9 294 8993 PO Box 97607, Manukau
Christchurch **a:** 12 Duke Street,
p: +64 3 928 2258 Christchurch
w: www.bce.nz
e: admin@bce.nz

CLIENT
HOME CONSTRUCTION

PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
CONCRETE NOTES - SHEET 3

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-0-23	A

ORIGINAL DRAWING IN COLOUR

STEEL

1. STEEL GENERAL

1.1. IN ADDITION TO ANY STANDARD AND TYPICAL STEEL DRAWINGS AND THE SPECIFICATION REQUIREMENTS, ALL STRUCTURAL STEELWORK DESCRIBED ON THE STRUCTURAL DRAWINGS SHALL BE CONSTRUCTED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE REQUIREMENTS OF NZS3404 AND AS/NZS5131 (INCLUDING ANY REFERENCED STANDARDS). NOTE THAT IN SOME CASES THE REQUIREMENTS OF THE SPECIFICATION AND STRUCTURAL DRAWINGS MAY EXCEED THE MINIMUM REQUIREMENTS FOR STRUCTURAL STEELWORK DOCUMENTED IN THE NZS3404 AND AS/NZS5131 STANDARDS. IN THESE CASES, THE REQUIREMENTS OF THE SPECIFICATION AND STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER THE PROVISION OF THE STANDARDS.

1.2. THE CONSTRUCTION CATEGORY FOR ALL STEELWORK ON THIS PROJECT SHALL BE CC2 IN ACCORDANCE WITH AS/NZS5131 UNLESS NOTED OTHERWISE.

1.3. THE STRUCTURAL STEELWORK FABRICATOR SHALL BE ACCREDITED TO THE ABOVE CONSTRUCTION CATEGORY THROUGH THE STEEL CONSTRUCTION NEW ZEALAND (SCNZ) STEEL FABRICATOR CERTIFICATION (SFC) SCHEME.

1.4. IF THE CONTRACTOR WISHES TO USE A STRUCTURAL STEEL FABRICATOR THAT IS NOT ACCREDITED TO THE SCNZ SFC SCHEME THE FOLLOWING SHALL APPLY:

1.4.1. THE CONTRACTOR SHALL NOMINATE THAT THEY WISH TO USE A FABRICATOR THAT IS NOT ACCREDITED TO THE SCNZ SFC AT THE TIME OF TENDER, AND THEY SHALL ALLOW TO ENGAGE AN INDEPENDENT QUALITY ASSURANCE AUDITOR TO REVIEW ALL ASPECTS OF THE FABRICATORS QUALITY ASSURANCE PROCEDURES FOR THE DURATION OF THE CONTRACT.

1.4.2. ANY COSTS ASSOCIATED WITH THIS INDEPENDENT QUALITY ASSURANCE AUDITING SHALL BE BORNE BY THE CONTRACTOR. THE AUDITOR SHALL HAVE EXPERIENCE WITH THE RELEVANT STANDARDS AND WITH STEELWORK PROJECTS OF A SIMILAR SCALE AND COMPLEXITY TO THE STEELWORK DOCUMENTED ON THE STRUCTURAL DRAWINGS.

1.4.3. ACCEPTANCE OF THE CONTRACTORS NOMINATED INDEPENDENT AUDITOR SHALL BE AT THE SOLE DISCRETION OF THE STRUCTURAL ENGINEER. COSTS ASSOCIATED WITH THE ASSESSMENT OF THE SUITABILITY OF THE NOMINATED AUDITOR AND/OR THE SUITABILITY OF THE FABRICATORS QUALITY PROCEDURES MAY BE PASSED ONTO THE CONTRACTOR BY THE PRINCIPAL/CLIENT.

1.5. WHERE ENGINEERING INSPECTIONS ARE REQUIRED TO COMPLY WITH THE CONSENT CONDITIONS, OR ARE REQUIRED BY THE PRINCIPAL/CLIENT. NO STEELWORK SHALL BE COVERED UP UNTIL THE STRUCTURAL ENGINEER HAS HAD THE OPPORTUNITY TO OBSERVE THAT THE STRUCTURAL DRAWINGS AND SPECIFICATIONS HAVE BEEN COMPLIED WITH. REFER GENERAL NOTES SHEET 'STRUCTURAL ENGINEERS INSPECTION REQUIREMENTS' SECTION FOR FURTHER REQUIREMENTS REGARDING STRUCTURAL ENGINEERS INSPECTIONS.

NO INSPECTION = NO PS4

2. QUALITY ASSURANCE REQUIREMENTS

2.1. THE CONTRACTOR IS TO MAINTAIN A QUALITY PLAN AND QUALITY CONTROL DOCUMENTATION TO THE LEVEL REQUIRED BY AS/NZS5131. ALL INSPECTION AND TESTING AT EACH STAGE OF WORK SHALL BE UNDERTAKEN IN ACCORDANCE WITH A DOCUMENTED INSPECTION AND TEST PLAN (ITP) FOR THAT STAGE USING DOCUMENTED PROCEDURES. THE CONTENTS OF THESE PLANS ARE TO BE MADE AVAILABLE TO THE STRUCTURAL ENGINEER UPON REQUEST.

2.2. UNLESS NOTED OTHERWISE, THE CONTRACTOR SHALL EMPLOY A SUITABLY EXPERIENCED AND QUALIFIED INDEPENDENT WELDING INSPECTOR TO CHECK, TEST, CERTIFY AND REPORT THAT THE WELDING PROCEDURES AND WELDING USED WITHIN THE WORKS COMPLIES WITH THE CONTRACT DOCUMENTS AND THE AS/NZS1554 SERIES OF STANDARDS AND AS/NZS5131 APPENDIX I REQUIREMENTS.

2.2.1. THE WELDING INSPECTOR SHALL HAVE SUITABLE TRAINING AND EXPERIENCE IN THE FABRICATION AND INSPECTION OF WELDED STRUCTURES AND SHALL HOLD QUALIFICATIONS AS OUTLINED IN THE AS/NZS1554 SERIES OF STANDARDS. ACCEPTANCE OF THE CONTRACTORS NOMINATED INDEPENDENT WELDING INSPECTOR SHALL BE AT THE SOLE DISCRETION OF THE STRUCTURAL ENGINEER.

2.2.2. THE WELDING INSPECTOR WILL HAVE FULL AUTHORITY AND RESPONSIBILITY TO ISSUE INSTRUCTIONS TO THE FABRICATOR RELATING TO QUALITY ASSURANCE PROCEDURES AND COMPLIANCE MATTERS.

2.2.3. REFER 'WELDING' SECTION FOR FURTHER INFORMATION ON INSPECTION REQUIREMENTS.

2.3. UNLESS NOTED OTHERWISE, THE CONTRACTOR SHALL EMPLOY A SUITABLY EXPERIENCED AND QUALIFIED INDEPENDENT COATINGS INSPECTOR TO CHECK, TEST, CERTIFY AND PERIODICALLY REPORT THAT THE STEEL COATINGS USED WITHIN THE WORKS COMPLIES WITH THE CONTRACT DOCUMENTS, MANUFACTURERS REQUIREMENTS AND RELEVANT STANDARDS WITH RESPECT TO THE COATING TYPE.

2.3.1. THE COATINGS INSPECTOR SHALL HAVE SUITABLE TRAINING AND EXPERIENCE IN THE APPLICATION AND INSPECTION OF COATINGS TO STEEL STRUCTURES AND SHALL HOLD QUALIFICATIONS AS OUTLINED IN THE AS/NZS2312 SERIES OF STANDARDS. ACCEPTANCE OF THE CONTRACTORS NOMINATED INDEPENDENT COATINGS INSPECTOR SHALL BE AT THE SOLE DISCRETION OF THE STRUCTURAL ENGINEER.

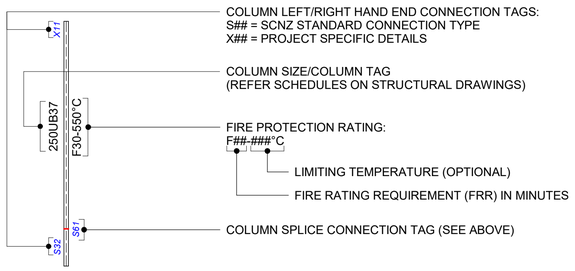
2.3.2. THE COATINGS INSPECTOR WILL HAVE FULL AUTHORITY AND RESPONSIBILITY TO ISSUE INSTRUCTIONS TO THE FABRICATOR AND COATINGS APPLICATOR RELATING TO QUALITY ASSURANCE PROCEDURES AND COMPLIANCE MATTERS.

2.3.3. REFER 'STEELWORK CORROSION PROTECTION' SECTION FOR FURTHER INFORMATION ON INSPECTION REQUIREMENTS.

3. STRUCTURAL STEEL MEMBER REFERENCE NOTATION EXPLANATION

3.1. STRUCTURAL COLUMN REFERENCE:

STRUCTURAL STEEL COLUMN MEMBERS ARE TYPICALLY DENOTED ON THE STRUCTURAL DRAWINGS USING THE FOLLOWING COLUMN TAGS AND REFERENCES:



COLUMN LEFT/RIGHT HAND END CONNECTION TAGS:
S## = SCNZ STANDARD CONNECTION TYPE
X## = PROJECT SPECIFIC DETAILS

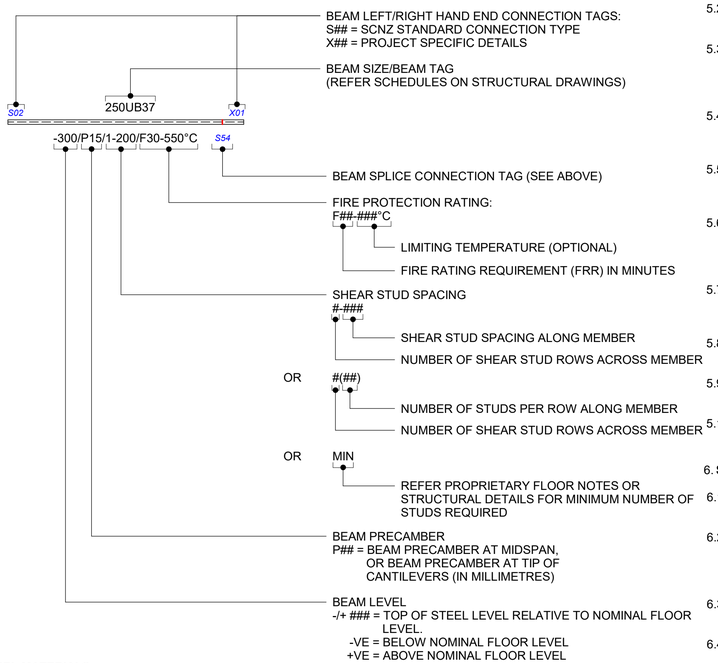
COLUMN SIZE/COLUMN TAG
(REFER SCHEDULES ON STRUCTURAL DRAWINGS)

FIRE PROTECTION RATING:
F##-###°C
- LIMITING TEMPERATURE (OPTIONAL)
- FIRE RATING REQUIREMENT (FRR) IN MINUTES

COLUMN SPLICE CONNECTION TAG (SEE ABOVE)

3.2. STRUCTURAL BEAM REFERENCE:

STRUCTURAL STEEL BEAM MEMBERS ARE TYPICALLY DENOTED ON THE STRUCTURAL DRAWINGS USING THE FOLLOWING BEAM TAGS AND REFERENCES:



BEAM LEFT/RIGHT HAND END CONNECTION TAGS:
S## = SCNZ STANDARD CONNECTION TYPE
X## = PROJECT SPECIFIC DETAILS

BEAM SIZE/BEAM TAG
(REFER SCHEDULES ON STRUCTURAL DRAWINGS)

BEAM SPLICE CONNECTION TAG (SEE ABOVE)

FIRE PROTECTION RATING:
F##-###°C
- LIMITING TEMPERATURE (OPTIONAL)
- FIRE RATING REQUIREMENT (FRR) IN MINUTES

SHEAR STUD SPACING
#-###
- SHEAR STUD SPACING ALONG MEMBER
- NUMBER OF SHEAR STUD ROWS ACROSS MEMBER

OR #(##)
- NUMBER OF STUDS PER ROW ALONG MEMBER
- NUMBER OF SHEAR STUD ROWS ACROSS MEMBER

OR MIN
- REFER PROPRIETARY FLOOR NOTES OR STRUCTURAL DETAILS FOR MINIMUM NUMBER OF STUDS REQUIRED

BEAM PRECAMBER
P## = BEAM PRECAMBER AT MIDSPAN,
OR BEAM PRECAMBER AT TIP OF CANTILEVERS (IN MILLIMETRES)

BEAM LEVEL
-/+ ### = TOP OF STEEL LEVEL RELATIVE TO NOMINAL FLOOR LEVEL.
-VE = BELOW NOMINAL FLOOR LEVEL
+VE = ABOVE NOMINAL FLOOR LEVEL

4. STEEL MATERIALS

4.1. ALL STRUCTURAL STEEL SHALL BE SOURCED FROM MILLS WITH A RELEVANT JOINT ACCREDITATION SYSTEM OF AUSTRALIA AND NEW ZEALAND (JAS-ANZ) ACCREDITED THIRD-PARTY CERTIFICATION SCHEME SUCH AS THE AUSTRALASIAN STANDARDS CERTIFICATION & VERIFICATION OF REINFORCING, PRESTRESSING & STRUCTURAL STEELS COMPLIANCE (ACRS) SCHEME.

4.2. ALTERNATIVE SOURCING OF THIRD-PARTY CERTIFIED STRUCTURAL STEEL SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW, AND MUST BE APPROVED PRIOR TO THE PROCUREMENT OF ANY STRUCTURAL STEEL. COSTS ASSOCIATED WITH THE ASSESSMENT OF THE SUITABILITY OF ALTERNATIVE SOURCES OF STRUCTURAL STEEL MATERIALS MAY BE PASSED ONTO THE CONTRACTOR BY THE PRINCIPAL/CLIENT.

4.3. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS STEEL MATERIALS FOR STRUCTURAL SECTIONS OR SPECIFIC STRUCTURAL ELEMENTS SHALL BE AS FOLLOWS:

TABLE S1 - STEEL MATERIAL GRADES

SECTION/ELEMENT	GRADE	STANDARD
HOT ROLLED SECTIONS	G300L0	AS/NZS3679.1
FLATS	G300	AS/NZS3679.1
PLATE	G300	AS/NZS3678
SHS, RHS SECTIONS	C350L0	AS/NZS1163
CHS SECTIONS	C350L0	AS/NZS1163
PURLINS/GIRTS	<1.5mm G500, >1.5mm G450	AS1397
SHEAR STUDS	MIN 410 MPa UTS	AS/NZS1554.2

4.4. FOR PLATE OR SECTIONS DESIGNATED WITH GUARANTEED IMPACT PROPERTIES (L0 OR L15 GRADE STEEL, ETC) OR PLATE OR SECTIONS DESIGNATED WITH GUARANTEED SEISMIC IMPACT PROPERTIES (S0 GRADE STEEL), THE CONTRACTOR SHALL ENSURE THAT THE MATERIALS SUPPLIED ARE IN ACCORDANCE WITH THE RELEVANT STANDARDS. UNDER NO CIRCUMSTANCES SHALL ANY SUBSTITUTIONS BE UNDERTAKEN WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.

4.5. JOINTS SUSCEPTIBLE TO LAMELLAR TEARING (IF PRESENT) ARE INDICATED ON THE STRUCTURAL DRAWINGS USING THE NOTATION 'LT SUSCEPTIBLE' WITH THE SPECIFIC PLATE WITH HIGH THROUGH-THICKNESS STRESSES BEING INDICATED. THE CONTRACTOR SHALL ENSURE THAT THE SPECIFIC PLATE SUPPLIED IN JOINTS THAT ARE INDICATED AS BEING 'LT SUSCEPTIBLE' ARE ULTRASONICALLY TESTED TO AS1710 (CLASS 1), REFER TO THE STRUCTURAL DRAWINGS FOR THE THROUGH THICKNESS TESTED PLATE GRADE REQUIRED (Z15, Z25, Z35, ETC).

4.6. THE STRUCTURAL STEEL SHOP DRAWINGS SHALL CLEARLY INDICATE FOR ALL ELEMENTS THE MATERIAL GRADE INCLUDING ANY SPECIFIED IMPACT PROPERTIES, SEISMIC GRADE, OR THROUGH THICKNESS TESTED PLATE REQUIREMENTS.

5. STRUCTURAL STEEL FABRICATION

5.1. THE PREPARATION, ASSEMBLY AND FABRICATION OF STEELWORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF AS/NZS5131.

5.2. TOLERANCES FOR THE FABRICATION AND ASSEMBLY SHALL BE AS NOTED IN THE 'STEEL FABRICATION, ASSEMBLY AND ERECTION TOLERANCES' SECTION.

5.3. STRUCTURAL STEEL MEMBERS, COMPONENTS AND FASTENERS SHOULD BE STACKED, HANDLED AND STORED IN ACCORDANCE WITH THE RELEVANT MANUFACTURERS INSTRUCTIONS, IN SUCH A WAY THAT DAMAGE IS NOT CAUSED DURING PREPARATION, FABRICATION AND ASSEMBLY. FABRICATED STEEL MEMBERS, COMPONENTS AND ANY APPLIED COATINGS SHALL BE PROTECTED FROM DAMAGE DURING TRANSPORTATION.

5.4. STRUCTURAL STEEL MEMBER SIZES, PLATE THICKNESS, AND MATERIAL GRADES SHALL BE AS SHOWN ON THE STRUCTURAL DRAWINGS. NO SUBSTITUTION IS PERMITTED WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.

5.5. ALL STRUCTURAL STEELWORK MEMBERS SHALL BE SUPPLIED IN A SINGLE LENGTH, EXCEPT WHERE SPLICES ARE SHOWN ON THE STRUCTURAL DRAWINGS. SPLICES AT OTHER LOCATIONS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO FABRICATION COMMENCING.

5.6. ALL CUTTING, HOLING, SHAPING AND FULL CONTACT BEARING SURFACES OF STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS5131 AND NZS3404. WITHIN ANY DESIGNATED 'YIELDING REGIONS' NOTED THE STRUCTURAL DRAWINGS, THE REQUIREMENTS FOR CUTTING, HOLING AND WIDTH TRANSITIONS SHALL BE IN ACCORDANCE WITH THE ADDITIONAL 'YIELDING REGION' REQUIREMENTS NOTED IN AS/NZS5131.

5.7. NO HARD STAMPING, PUNCHING OR DRILLING OF MARKINGS FOR TRACTABILITY OR IDENTIFICATION SHALL BE PERMITTED IN DESIGNATED 'YIELDING REGIONS'. LOW STRESS TYPE STAMPS MAY BE USED OUTSIDE OF YIELDING REGIONS PROVIDED THESE MARKS ARE NOT EXPOSED TO VIEW IN THE FINAL CONSTRUCTED WORKS.

5.8. STEEL MEMBERS SHALL BE FABRICATED SO THAT ANY NATURAL CAMBER WITHIN THE STRAIGHTNESS TOLERANCES IS ORIENTATED WITH THE NATURAL CAMBER UP.

5.9. THE ENDS OF HOLLOW SECTIONS ARE TO BE CAPPED WITH A 6mm THICK END PLATE WITH CONTINUOUS SEAL FILLET WELD ALL ROUND UNLESS NOTED OTHERWISE.

5.10. VENT AND DRAIN HOLES ARE TO BE PROVIDED IN ACCORDANCE WITH AS/NZS5131 IF HOLLOW SECTION MEMBERS ARE TO BE HOT DIP GALVANISED.

6. STRUCTURAL STEEL ERECTION

6.1. THE ERECTION OF STEELWORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF AS/NZS5131 AND ANY RELEVANT HEALTH AND SAFETY LEGISLATION.

6.2. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF THE STRUCTURAL STEEL ERECTION SEQUENCE METHODOLOGY AND ANY TEMPORARY PROPPING OR BRACING REQUIRED TO ENSURE THE STABILITY OF THE ERECTED STEELWORK. REFER TO GENERAL NOTES SHEET 'TEMPORARY WORKS REQUIREMENTS' SECTION FOR FURTHER REQUIREMENTS REGARDING TEMPORARY WORKS.

6.3. TOLERANCES FOR THE ERECTION OF STRUCTURAL STEELWORK SHALL BE AS NOTED IN THE 'STEEL FABRICATION, ASSEMBLY AND ERECTION TOLERANCES' SECTION.

6.4. FABRICATED STEEL MEMBERS, COMPONENTS AND ANY APPLIED COATINGS SHALL BE PROTECTED FROM DAMAGE DURING STORAGE AND HANDLING ON SITE. PADDED SLINGS SHALL BE USED TO HANDLE ALL CORROSION PROTECTED STEELWORK. ANY DAMAGE TO COATINGS AS A RESULT OF HANDLING, TRANSPORTATION OR ERECTION SHALL BE REPAIRED TO ACHIEVE THE ORIGINAL COATING SPECIFICATION. ANY DAMAGE TO MEMBERS OR COMPONENT SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. REFER 'DEFECTIVE STEELWORK, REPAIRS AND REMEDIATION' SECTION FOR FURTHER REQUIREMENTS.

6.5. SITE MODIFICATIONS TO THE FABRICATED STEEL OR EXISTING STRUCTURES SHALL ONLY BE UNDERTAKEN IF SPECIFICALLY INSTRUCTED BY THE STRUCTURAL ENGINEER OR AS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS. THIS INCLUDES BUT IT IS NOT LIMITED TO THE ENLARGING OF BOLT HOLES, CUTTING HOLES, MODIFICATIONS TO CONNECTION COMPONENTS OR MEMBERS TO ADDRESS TOLERANCE ISSUES, REMOVAL OR MODIFICATION OF ELEMENTS THAT MIGHT OTHERWISE CLASH, ETC. WHERE SITE MODIFICATION OF THE STEELWORK OR OTHER ELEMENTS IS REQUIRED, THE PROPOSED WORK SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. REFER 'DEFECTIVE STEELWORK, REPAIRS AND REMEDIATION' SECTION FOR FURTHER REQUIREMENTS.

6.6. WORK CARRIED OUT ON SITE WHICH INVOLVES CUTTING, HOLING, SHAPING, WELDING, BOLTING, SURFACE PREPARATION AND COATINGS SHALL BE UNDERTAKEN IN ACCORDANCE WITH AS/NZS5131 AND NZS3404, AND IN ACCORDANCE WITH THE APPROPRIATE SECTIONS FOR FABRICATION, BOLTING, WELDING AND COATINGS ON THESE STEEL STANDARD NOTES. ANY SITE WORK OR MODIFICATIONS AS NOTED ABOVE, SHALL BE UNDERTAKEN TO THE EQUIVALENT STANDARD AND BE SUBJECT TO THE SAME QUALITY PROCEDURES AS IF THE WORK HAD BEEN UNDERTAKEN AS PART OF FABRICATION OFF SITE.

6.7. WHERE STEEL MEMBERS ARE INDICATED AS BEING 'PROPPED' ON THE STRUCTURAL DRAWINGS, THESE MEMBERS HAVE BEEN DESIGNED ON THE BASIS OF REQUIRING TEMPORARY PROPPING TO ACHIEVE THE STRUCTURAL DESIGN INTENT. THESE MEMBERS SHALL BE PROPPED DURING CONSTRUCTION BY THE CONTRACTOR, REFER TO GENERAL NOTES SHEET 'TEMPORARY WORKS REQUIREMENTS' SECTION FOR FURTHER REQUIREMENTS REGARDING TEMPORARY WORKS.

7. GROUTING OF STEEL/CONCRETE INTERFACES

7.1. PROPRIETARY NON-SHRINK CEMENTITIOUS GROUT SHALL BE USED TO FILL ALL SPACES BETWEEN CONCRETE OR MASONRY AND STEEL BEARING PLATES (END PLATES, BASEPLATES, ETC). UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS ALLOW A MINIMUM OF 10mm CLEARANCE FOR GROUTING.

7.2. THE GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 50MPa AND BE OF AN APPROPRIATE TYPE FOR THE GAP THICKNESS BEING FILLED.

7.3. SURFACE PREPARATION/WETTING AND GROUT MIXING AND PLACEMENT SHALL BE UNDERTAKEN IN STRICT ACCORDANCE WITH THE GROUT MANUFACTURERS GUIDELINES.

7.4. GROUTING SHALL TAKE PLACE IMMEDIATELY AFTER MEMBERS ARE ALIGNED OR PLUMBED, DO NOT APPLY ADDITIONAL LOADS TO THE STEELWORK UNTIL THE GROUT REACHES SUFFICIENT STRENGTH.

8. PRECAMBERING/PRESET OF STEEL MEMBERS OR ASSEMBLIES

8.1. STEEL MEMBERS OR ASSEMBLIES SHALL NOT BE PRECAMBERED OR PRESET UNLESS SPECIFICALLY NOTED ON THE STRUCTURAL DRAWINGS.

8.2. UNLESS NOTED OTHERWISE, MEMBERS OR ASSEMBLIES WHICH ARE SPECIFIED AS REQUIRING PRECAMBERING, SHALL AS A MINIMUM HAVE 0.7 TIMES THE SPECIFIED PRECAMBER AT QUARTER POINTS AND THE SPECIFIED PRECAMBER AT THE MIDSPAN POINT.

8.3. UNLESS NOTED OTHERWISE, MEMBERS OR ASSEMBLIES WHICH ARE SPECIFIED AS REQUIRING PRESETS, SHALL HAVE THE SPECIFIED PRESET APPLIED BY OFFSETTING THE MEMBER OR ASSEMBLY GEOMETRY (INCLUDING ADJUSTING INTERCONNECTING MEMBERS WHERE DEEMED NECESSARY) TO THE LOCATION WHERE THE PRESET HAS BEEN SPECIFIED.

8.4. THE TOLERANCE ON THE SPECIFIED PRECAMBER OR PRESET SHALL BE +0mm LARGER, -5mm SMALLER THAN SPECIFIED UNLESS APPROVED OTHERWISE.

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
A	03.02.26	TB	BUILDING CONSENT

Blueprint Consulting Engineers
Auckland a: 2/10 Mepal Place, Papatoetoe
p: +64 9 294 8993 PO Box 97607, Manukau
Christchurch a: 12 Duke Street,
p: +64 3 928 2258 Christchurch
w: www.bce.nz
e: admin@bce.nz

CLIENT
HOME CONSTRUCTION

PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
STEEL NOTES - SHEET 1

SCALE	DRAWN	DESIGN	APPROVED
1 : 10 @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-0-31	A

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4/02/2026 5:15:00 pm

ORIGINAL DRAWING IN COLOUR

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9. **FIXING OF TIMBERWORK TO STEELWORK**

9.1. PROVIDE HOLES FOR FIXING TIMBERWORK TO STEELWORK AS REQUIRED. THE DETAILS OF FIXING REQUIREMENTS WHERE NOT SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF NZS3604.

9.2. UNLESS NOTED OTHERWISE PROVIDE M12 BOLTS OR WELDED THREADED ROD AT MAX 900 CENTRES, SLEEVE ALL HOLES THROUGH HOLLOW SECTIONS WITH CHS TUBE.

9.3. CONTRACTOR SHALL COORDINATE THE REQUIREMENTS FOR FIXING TIMBER TO STEELWORK WITH THE ARCHITECTURAL DETAILS. SHOP DRAWINGS SHALL SHOW ALL FIXING HOLES REQUIRED.

10. **STEEL FABRICATION, ASSEMBLY AND ERECTION TOLERANCES**

10.1. UNLESS TIGHTER TOLERANCES ARE SPECIFIED/IMPLIED ON THE STRUCTURAL DRAWINGS, THE TOLERANCES FOR THE FABRICATION, ASSEMBLY AND ERECTION OF STRUCTURAL STEELWORK ARE TO BE IN ACCORDANCE WITH TOLERANCE CLASS 1 WITH THE RELEVANT REQUIREMENTS SPECIFIED IN AS/NZS5131 (INCLUDING ANY REFERENCED STANDARDS).

10.2. DETAILS SHOWN ON THE STRUCTURAL DRAWINGS MAY IMPLY IN SOME CASES INHERENTLY TIGHTER TOLERANCES THAN THE MAXIMUM ALLOWABLE TOLERANCES SPECIFIED IN AS/NZS5131. THE CONTRACTORS CONSTRUCTION METHODOLOGY AND QUALITY ASSURANCE CHECKS SHALL BE SUCH THAT THE IMPLIED TOLERANCES ARE ACHIEVED TO CONSTRUCT THE ELEMENTS AS DETAILED WITHOUT FURTHER MODIFICATION.

10.3. IF FOR ANY REASON THE CONTRACTOR BELIEVES THAT THE TOLERANCES SPECIFIED IN AS/NZS5131 OR AS SPECIFIED/IMPLIED ON THE STRUCTURAL DRAWINGS CANNOT BE ACHIEVED, THIS IS TO BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER FOR RESOLUTION PRIOR TO THE CONSTRUCTION OF ANY AFFECTED ELEMENTS.

10.4. PARTICULAR ATTENTION SHALL BE APPLIED TO THE FOLLOWING SITUATIONS TO ENSURE THAT THE TOLERANCES REQUIRED TO BUILD THE WORKS IN ACCORDANCE WITH THE STRUCTURAL DRAWINGS ARE ACHIEVED:

10.4.1. PARTICULAR ATTENTION SHOULD BE PAID TO ACHIEVING THE REQUIRED TOLERANCES FOR ANY ITEMS INTERFACING WITH ELEMENTS PREVIOUSLY CAST INTO CONCRETE OR CONNECTIONS TO EXISTING STRUCTURAL ELEMENTS WHEN THE STEELWORK IS RELIANT ON THESE ITEMS BEING PLACED WITHIN A GIVEN TOLERANCE (FOR EXAMPLE, FIXINGS FOR STEEL BASEPLATES OR END PLATES TO CONCRETE ELEMENTS, FIXING TO WELD PLATES, CAST IN FIXINGS, POST INSTALLED FIXINGS, ETC).

10.4.2. PARTICULAR ATTENTION SHOULD BE PAID TO THERE BEING A ZERO TOLERANCE ON THE REDUCTION OF THE MINIMUM SEATING LENGTH FOR PRECAST FLOORING OR STEEL COMPOSITE DECK FLOOR ELEMENTS SUPPORTED FROM STEEL ELEMENTS. THE SPECIFIED MINIMUM SEATING TO BE ACHIEVED ARE AFTER CONSIDERATION OF ALL TOLERANCES.

10.4.3. PARTICULAR ATTENTION SHOULD BE PAID TO ACHIEVING THE TOLERANCES ON END BEARING PREPARATION ON CONNECTIONS SPECIFIED WITH FULL CONTACT BEARING SURFACES (REFER STRUCTURAL DRAWINGS OR STANDARD SCNZ CONNECTIONS FOR DETAILS).

10.5. AT TOLERANCE CRITICAL INTERFACES, THE CONTRACTOR MAY ELECT TO SURVEY AND MATCH DRILL CONNECTIONS EITHER DURING FABRICATION OR ON SITE TO ADDRESS MINOR OUT OF TOLERANCE ISSUES FOR FIXINGS. THIS SHALL ONLY BE DONE AT THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER AFTER REVIEW OF THE UPDATED CONFIGURATION AND ASSESSMENT OF ANY DESIGN IMPLICATIONS. IF THE CONTRACTOR WISHES TO ADOPT THIS METHODOLOGY FOR ANY TOLERANCE CRITICAL CONNECTIONS AT THE TIME OF FABRICATION IT SHALL BE SPECIFICALLY NOTED ON THE SHOP DRAWINGS. ANY COATINGS SHALL BE REINSTATED TO THE ORIGINAL SPECIFICATION IF SITE DRILLING OCCURS AFTER COATINGS HAVE BEEN APPLIED. UNDER NO CIRCUMSTANCES SHALL BOLT HOLES BE ENLARGED ON SITE WITHOUT THE APPROVAL OF THE ENGINEER, REFER 'DEFECTIVE STEELWORK, REPAIRS AND REMEDIATION' SECTION FOR FURTHER GUIDANCE.

10.6. THE CONTRACTOR SHALL MAKE USE OF APPROPRIATE TEMPLATES, BRACING, ETC, AS DEEMED NECESSARY TO HOLD TOLERANCE CRITICAL ITEMS ACCURATELY IN PLACE TO ENSURE THE APPROPRIATE TOLERANCES ARE ACHIEVED DURING THE FABRICATION, ASSEMBLY AND ERECTION OF THE STRUCTURAL STEELWORK.

10.7. STRUCTURAL STEELWORK CONSTRUCTION WHERE THE TOLERANCES SPECIFIED IN AS/NZS5131 OR AS SPECIFIED/IMPLIED ON THE STRUCTURAL DRAWINGS HAVE NOT BEEN ACHIEVED SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. REFER 'DEFECTIVE STEELWORK, REPAIRS AND REMEDIATION' SECTION FOR FURTHER REQUIREMENTS.

11. **DEFECTIVE STEELWORK, REPAIRS AND REMEDIATION**

11.1. 'DEFECTIVE STEELWORK' SHALL INCLUDE BUT NOT BE LIMITED TO DEFECTS SUCH AS FABRICATION ERRORS, WELDING DEFECTS, UNAUTHORISED SITE MODIFICATIONS TO STEELWORK, DAMAGE TO CORROSION PROTECTION OR FIRE PROTECTION COATINGS, DAMAGE ASSOCIATED WITH THE OVERLOADING OF STRUCTURAL MEMBERS AND TOLERANCE RELATED ISSUES, ETC. ALL STEELWORK DEFECTS THAT OCCUR OR ARE NOTED FOLLOWING FABRICATION (WHICH HAVE NOT BEEN REPAIRED OR RECTIFIED IN ACCORDANCE WITH AS/NZS5131 REQUIREMENTS DURING FABRICATION) SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL OF AN APPROPRIATE REPAIR/REMEDIATION STRATEGY.

11.2. ANY COSTS ASSOCIATED WITH REPAIR AND REMEDIATION OF 'DEFECTIVE STEELWORK' UNDERTAKEN TO THE STRUCTURAL ENGINEERS APPROVAL SHALL BE UNDERTAKEN AT NO COST TO THE PRINCIPAL/CLIENT. DEFECTS DEEMED TO BE SIGNIFICANT WILL BE LIABLE FOR COMPLETE REMOVAL AND REINSTATEMENT TO THE ORIGINAL DETAILS AT THE STRUCTURAL ENGINEERS DISCRETION.

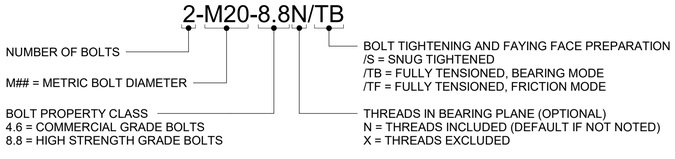
11.3. NO REPAIR, REMEDIATION OR MODIFICATION OF 'DEFECTIVE STEELWORK' ELEMENTS THAT OCCUR OR ARE NOTED FOLLOWING FABRICATION SHALL BE UNDERTAKEN WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER. WHERE NECESSARY OR WHERE DIRECTED BY THE STRUCTURAL ENGINEER, THE CONTRACTOR SHALL ENGAGE THE FABRICATOR TO UNDERTAKE ANY APPROVED STRUCTURAL STEELWORK OR COATINGS REPAIR WORK.

11.4. IF STEEL DEFECTS ARE IDENTIFIED, THE CONTRACTOR SHALL DEMONSTRATE TO THE STRUCTURAL ENGINEER THAT SUFFICIENT QUALITY ASSURANCE MEASURES AND/OR CHANGES IN WORK PRACTICES HAVE BEEN IMPLEMENTED TO PREVENT/MINIMISE THE RISK OF FUTURE REOCCURRENCE OF SIMILAR DEFECTS.

12. **BOLTING**

12.1. THE INSTALLATION OF BOLTS, NUTS, WASHERS AND TENSIONING SHALL COMPLY WITH THE REQUIREMENTS OF AS/NZS5131 AND NZS3404. THE TENSIONING OF BOLTS SHALL BE UNDERTAKEN BY PERSONNEL EXPERIENCED IN THE TENSIONING OF HIGH STRENGTH BOLTS.

12.2. BOLTS ARE TYPICALLY CALLED UP AS FOLLOWS ON THE STRUCTURAL DRAWINGS:



12.3. BOLTS CALLED UP AS PROPERTY CLASS 4.6 ON THE DRAWINGS SHALL BE IN ACCORDANCE WITH AS1111.1 AND BOLTS CALLED UP AS PROPERTY CLASS 8.8 ON THE DRAWINGS SHALL BE IN ACCORDANCE WITH AS/NZS1252.1. UNLESS NOTED OTHERWISE, BOLTS SHALL BE 8.8/S TO THE SIZES NOTED ON THE STRUCTURAL DRAWINGS.

12.4. FOR TENSION BEARING (/TB) AND TENSION FRICTION (/TF) TYPE BOLTING, BOLTS ARE TO BE TIGHTENED USING EITHER THE PART TURN METHOD OR BY THE USE OF LOAD INDICATING WASHERS. UNDER NO CIRCUMSTANCES SHALL A BOLT THAT HAS BEEN PREVIOUSLY TENSIONED BE REUSED IN ANY CONNECTION.

12.4.1. WHERE THE PART TURN METHOD IS USED, THE NUT AND SHANK ARE TO BE CLEARLY MARKED TO ALLOW EASY VISUAL IDENTIFICATION OF THE DEGREE OF TURN. REFER TO AS/NZS5131 FOR THE NUT ROTATION REQUIRED FROM THE SNUG TIGHT CONDITION. THE CONTRACTOR SHALL ENSURE THAT MARKS INDICATING THE DEGREE OF TURN REMAIN IN PLACE TO BE INSPECTED.

12.4.2. WHERE LOAD INDICATING WASHERS ARE USED, PROVIDE MANUFACTURERS DATA TO THE STRUCTURAL ENGINEER TO DEMONSTRATE COMPLIANCE WITH AS/NZS5131 REQUIREMENTS FOR LOAD INDICATING WASHERS. ENSURE ALL WASHERS REQUIRED BY THE MANUFACTURER ARE INSTALLED IN THE CORRECT LOCATION RELATIVE TO THE PART TO BE TURNED PRIOR TO TIGHTENING. THE INSTALLATION PROCEDURE SHALL BE CALIBRATED ON SITE AS NOTED IN AS/NZS5131 TO ENSURE REQUIRED MINIMUM BOLT TENSION IS OBTAINED.

12.5. TENSION FRICTION (/TF) TYPE CONNECTION SURFACES (FAYING FACES) SHALL BE UNCOATED UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS. THE CONNECTION SURFACES IN A TENSION FRICTION CONNECTION SHALL BE IN A CLEAN 'AS ROLLED' CONDITION. THE CONTRACTOR MAY ELECT TO UNDERTAKE TESTS TO ESTABLISH THE EQUIVALENT FRICTION COEFFICIENT FOR ANY COATING COMPARED TO UNCOATED STEEL, ACCEPTANCE OF THIS AS AN ALTERNATIVE WILL BE AT THE DISCRETION OF THE STRUCTURAL ENGINEER.

12.6. THE LENGTH OF A BOLT SHALL BE SUCH THAT:

- FOR SNUG (/S) TYPE BOLTING AT LEAST ONE CLEAR THREAD SHOWS ABOVE THE NUT, AND AT LEAST ONE CLEAR THREAD PLUS THE THREAD RUN OUT IS CLEAR BENEATH THE NUT AFTER TIGHTENING.

- FOR TENSION BEARING (/TB) AND TENSION FRICTION (/TF) TYPE BOLTING, AT LEAST ONE CLEAR THREAD SHOWS ABOVE THE NUT, AND AT LEAST A MINIMUM NUMBER OF CLEAR THREADS EXISTS BENEATH THE NUT AFTER TIGHTENING AS NOTED BELOW:

  - 5 THREADS FOR BOLT LENGTHS UP TO AND INCLUDING 4 DIAMETERS.

  - 7 THREADS FOR BOLT LENGTHS OVER 4 DIAMETERS BUT NOT EXCEEDING 8 DIAMETERS.

  - 10 THREADS FOR BOLT LENGTHS OVER 8 DIAMETERS.

- ADDITIONAL PLATE WASHERS OR UP TO 3 HARDENED WASHERS (UP TO A MAXIMUM THICKNESS OF 12mm) MAY BE INSTALLED AS NOTED IN AS/NZS5131 TO ACHIEVE THE REQUIRED MINIMUM NUMBER OF CLEAR THREADS UNDER THE NUT WITHIN THE GRIP LENGTH AS NOTED ABOVE.

12.7. HOLE DIAMETERS FOR BOLTING SHALL BE:

- FOR BOLT SIZES LESS THAN M30, HOLE DIAMETER SHALL BOLT DIAMETER + 2mm.

- FOR BOLT SIZES M30 AND LARGER, HOLE DIAMETER SHALL BE BOLT DIAMETER + 3mm.

- IN BASEPLATES, HOLE DIAMETER MAY BE 6mm LARGER THAN THE BOLT DIAMETER UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.

- HOLE DIAMETER FOR PINS (INCLUDING PIN CONNECTORS FOR PROPRIETARY BRACING) SHALL BE PIN/BOLT DIAMETER + 1mm.

- ALL HOLE DIAMETERS FOR POST INSTALLED (CHEMICAL OR MECHANICAL) ANCHORS TO CONCRETE, OR FOR HOLLO-BOLTS TO STEEL, SHALL BE SIZED TO THE MANUFACTURERS RECOMMENDED DIAMETERS.

12.8. ALL BOLTS AND NUTS SHALL BE HOT DIP GALVANISED IN ACCORDANCE WITH AS/NZS1214, ALL WASHERS SHALL BE HOT DIP GALVANISED IN ACCORDANCE WITH AS/NZS4680.

13. **WELDING**

13.1. THE WELDING OF STRUCTURAL STEEL SHALL COMPLY WITH THE REQUIREMENTS OF AS/NZS5131 AND NZS3404. THE WELDING OF STRUCTURAL STEEL, SHEAR STUDS AND REINFORCEMENT TO STRUCTURAL STEEL SHALL USE APPROVED/QUALIFIED WELDING PROCEDURES AND BE CARRIED OUT BY SUITABLY QUALIFIED WELDERS.

13.2. ALL DETAILS OF THE WELDING OF STRUCTURAL STEEL SHALL ALSO BE IN ACCORDANCE WITH THE REQUIREMENTS OF AS/NZS1554.1 FOR STRUCTURAL STEEL, AS/NZS1554.2 FOR SHEAR STUDS AND AS/NZS1554.3 FOR REINFORCEMENT.

13.3. THE SELECTION OF WELDING PROCESS, WELDING CONSUMABLES, JOINT PREPARATION, REQUIREMENTS FOR BACKING PLATES, RUN-ON/RUN-OFF TABS, ROOT GAPS, DESIGN THROAT THICKNESS, WELD ACCESS HOLES, ETC FOR WELDED JOINTS ARE TO BE SELECTED BY THE FABRICATOR AND SHALL BE IN ACCORDANCE THE AS/NZS1554 SERIES OF STANDARDS AND THESE NOTES, USING APPROVED/QUALIFIED WELDING PROCEDURES.

13.4. WELDS ARE TYPICALLY CALLED UP ON THE STRUCTURAL DRAWINGS IN TERMS OF THE TYPE OF WELD (FILLET, PLUG, PARTIAL PENETRATION, FULL/COMPLETE PENETRATION, ETC) AND WHERE RELEVANT A WELD LEG LENGTH OR DEPTH OF PREPARATION IS PROVIDED TO SHOW THE WELDING INTENT. WELDING SYMBOLS USED ON THE DRAWINGS ARE IN ACCORDANCE WITH AS1101.3.

13.5. WHERE CONNECTING ELEMENTS ARE NOT JOINED AT 90°, ANY SPECIFIED LEG LENGTH OR DEPTH OF PREPARATION SHALL BE CONVERTED TO AN EQUIVALENT DESIGN THROAT THICKNESS (DTT) BY THE FABRICATOR TO DETERMINE THE ACTUAL REQUIRED WELD GEOMETRY.

13.6. ALL WELDING OF STRUCTURAL STEEL SHALL BE SP CATEGORY WELDS IN ACCORDANCE WITH AS/NZS1554.1 AND AS/NZS1554.3. UNLESS AGREED OR NOTED OTHERWISE, IT SHALL BE ASSUMED THAT ALL WELDS ARE SUBJECT TO THE EARTHQUAKE LOADS AND EFFECTS AND THE HEAT INPUT IN A RUN OF DEPOSITED WELD METAL SHALL NOT EXCEED 2.5 kJ/mm IN ACCORDANCE WITH THE REQUIREMENTS OF AS/NZS5131 AND NZS3404.

13.7. WHERE NO WELD SIZES ARE GIVEN, THE MINIMUM WELD SIZES SHALL BE 6mm FILLET WELD ALL ROUND (FWAR) OR 6mm PARTIAL PENETRATION BUTT WELD (PPBW) UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.

13.8. WHERE NO MINIMUM WELD STRENGTH IS GIVEN, THE WELDING CONSUMABLES SELECTED SHALL HAVE A NOMINAL ULTIMATE TENSILE STRENGTH OF 480MPa MINIMUM UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS. THE WELDING CONSUMABLES SHALL BE SELECTED FOR THE STEEL TYPE BEING WELDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AS/NZS1554 SERIES OF STANDARDS AND NZS3404 REQUIREMENTS. ALL WELDING CONSUMABLES FOR STEEL TYPES 2S, 5S, 3 AND 6 AS NOTED IN AS/NZS1554 SERIES OF STANDARDS AND AS/NZS5131 SHALL HAVE A SHIPS CLASSIFICATION SOCIETIES GRADE 3 APPROVAL.

13.9. WELDS FOR TEMPORARY ATTACHMENTS (INCLUDING TACK WELDS) MADE DURING FABRICATION, ASSEMBLY OR ERECTION SHALL USE APPROVED/QUALIFIED WELDING PROCEDURES AND WELDS SHALL BE TO THE SAME STANDARDS AS FINAL WELDS. TEMPORARY ATTACHMENT WELDS AND TACK WELDS WHERE NOT INCORPORATED INTO A FINAL WELD SHALL BE REMOVED IN ACCORDANCE WITH THE REQUIREMENTS IN AS/NZS5131.

13.10. NO WELDING OF HIGH STRENGTH GRADE 8.8 OR HIGHER BOLTS SHALL BE PERMITTED.

13.11. THE INSPECTION, TESTING AND REINSPECTION OF WELDING SHALL COMPLY WITH THE PROVISIONS OF THE RELEVANT AS/NZS1554 STANDARD APPLICABLE TO THE WELDED COMPONENTS BEING INSPECTED. THE FOLLOWING MINIMUM EXTENT OF INSPECTION NOTED IN TABLE S2 SHALL APPLY UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS:

TABLE S2 - EXTENT OF NON-DESTRUCTIVE EXAMINATION (NDE)

WELD CATEGORY	VISUAL SCANNING	VISUAL EXAMINATION	MAGNETIC PARTICLE OR LIQUID PENETRANT	RADIOGRAPHY OR ULTRASONIC
GP	100%	25%	2%	NIL
SP	100%	25%	10%	10%
SP (YIELDING REGIONS)	100%	100%	25%	25%
NOTE THAT ANY WELDING UNDERTAKEN ON SITE SHALL ALWAYS BE SUBJECT TO 100% VISUAL EXAMINATION IN ADDITION TO THE REQUIREMENTS NOTED ABOVE				

13.12. NOTE THAT WITHIN ANY DESIGNATED 'YIELDING REGIONS' NOTED ON THE STRUCTURAL DRAWINGS THAT A HIGHER EXTENT OF INSPECTION APPLIES. IF APPLICABLE THE REQUIREMENT IN AS/NZS5131 FOR TESTING WITHIN THE K-AREA SHALL ALSO APPLY TO DESIGNATED 'YIELDING REGIONS' IN ADDITION TO THE ABOVE REQUIREMENTS.

13.13. WHERE THE PROPORTION OF NON-DESTRUCTIVE EXAMINATION IS LESS THAN 100%, AND WELDING DEFECTS WHICH DO NOT COMPLY WITH THE ACCEPTANCE CRITERIA WITHIN THE AS/NZS1554 SERIES OF STANDARDS ARE NOTED, THE FREQUENCY OF TESTING ON CONSECUTIVE WELDS SHALL BE INCREASED AS NOTED IN AS/NZS5131 UNTIL COMPLIANCE IS DEMONSTRATED. REFER 'DEFECTIVE STEELWORK, REPAIRS AND REMEDIATION' SECTION FOR FURTHER REQUIREMENTS.

13.14. WELDING DEFECTS WHICH DO NOT COMPLY WITH THE ACCEPTANCE CRITERIA WITHIN THE AS/NZS1554 SERIES OF STANDARDS AND AS/NZS5131 SHALL BE REPAIRED IN ACCORDANCE WITH THE REQUIREMENTS IN THE RELEVANT STANDARD. REPAIRED WELDS SHALL BE REINSPECTED TO THE SAME LEVEL AS THAT SPECIFIED FOR THE ORIGINAL WELD.

13.15. THE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING THE WELDABILITY OF EXISTING STEEL.

14. **ARCHITECTURALLY EXPOSED STRUCTURAL STEELWORK (AESS)**

14.1. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS, REFER TO THE ARCHITECTURAL DRAWINGS FOR ANY SPECIFIC AESS REQUIREMENTS.

14.2. ARCHITECTURALLY EXPOSED STRUCTURAL STEELWORK SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE ADDITIONAL ARCHITECTURALLY EXPOSED STRUCTURAL STEELWORK REQUIREMENTS NOTED IN AS/NZS5131.

15. **STEELWORK CORROSION PROTECTION**

15.1. THE MACROCLIMATE CORROSION CATEGORY FOR THE PROJECT SHALL BE TAKEN TO BE C3 IN ACCORDANCE WITH SNZ TS3404 AND AS/NZS2312.1 AND AS/NZS2312.2 UNLESS NOTED OTHERWISE.

15.2. UNLESS NOTED OTHERWISE ON THE STRUCTURAL OR OTHER PROJECT DRAWINGS, THE TREATMENT GRADE IN ACCORDANCE WITH AS/NZS5131 FOR ALL COATED STRUCTURAL STEELWORK SHALL BE P2. FOR STRUCTURAL STEELWORK DESIGNATED AS ARCHITECTURALLY EXPOSED STRUCTURAL STEELWORK (AESS), THE TREATMENT GRADE IN ACCORDANCE WITH AS/NZS5131 SHALL BE P3.

15.3. UNLESS NOTED OTHERWISE ON THE STRUCTURAL OR OTHER PROJECT DRAWINGS, THE COATING QUALITY LEVEL IN ACCORDANCE WITH AS/NZS5131 FOR ALL COATED STRUCTURAL STEELWORK SHALL BE PC2.

15.4. UNLESS NOTED OTHERWISE ON THE STRUCTURAL OR OTHER PROJECT DRAWINGS, THE CORROSION PROTECTION SYSTEMS FOR STEELWORK SHALL BE DESIGNED AND SPECIFIED BY THE CONTRACTOR IN ACCORDANCE WITH SNZ TS3404, AS/NZS2312.1 & AS/NZS2312.2 TO ACHIEVE THE MINIMUM PERFORMANCE REQUIREMENTS NOTED BELOW AND/OR TO THE REQUIREMENTS OF THE SPECIFIC SYSTEM DESIGNATION NOTED. THE CONTRACTOR SHALL SUBMIT DETAILS OF EACH CORROSION PROTECTION SYSTEM TO THE STRUCTURAL ENGINEER FOR REVIEW TO DEMONSTRATE COMPLIANCE WITH THE REQUIREMENTS PRIOR TO UNDERTAKING ANY APPLICATION OF THE NOMINATED CORROSION PROTECTION SYSTEMS.

TABLE S3 - CORROSION PROTECTION SYSTEMS

STEELWORK ELEMENT, LOCATION OR EXPOSURE	SURFACE SPECIFIC ATMOSPHERIC CORROSIVITY	TIME TO FIRST MAINTENANCE	SYSTEM DESIGNATION
EXPOSED (EXTERNAL, WASHED BY RAIN)	C3	15 YEARS	-
SHELTERED (EXTERNAL, UNWASHED BY RAIN)	C5-M	15 YEARS	-
WET (EXTERNAL, DAMP/WET FOR EXTENDED PERIODS)	C5-M	15 YEARS	-
DRY (INTERNAL ENVIRONMENT)	C1	25 YEARS	-
DAMP (INTERNAL WHERE CONDENSATION MAY OCCUR)	C3	25 YEARS	-
REFER SNZ TS3404, AS/NZS2312.1 AND AS/NZS2312.2 FOR DEFINITIONS			

15.5. THE SELECTION OF INTERNAL CORROSION PROTECTION SYSTEMS BY THE CONTRACTOR SHALL TAKE ACCOUNT OF SITUATIONS WHERE STEELWORK THAT WILL BE ENCLOSED IN AN INTERNAL ENVIRONMENT IN THE FINAL CONSTRUCTED STATE IS EXPOSED TO THE WEATHER DURING CONSTRUCTION FOR EXTENDED PERIODS OF TIME. ANY STEELWORK THAT EXCEEDS THE MANUFACTURERS RECOMMENDED EXPOSURE PERIOD DURING CONSTRUCTION SHALL HAVE THE CORROSION PROTECTION SYSTEMS REAPPLIED AT NO COST TO THE PRINCIPAL/CLIENT.

15.6. IN ADDITION TO THE COATINGS REQUIREMENTS NOTED ABOVE, ALL STEELWORK (INCLUDING GALVANISED STEEL) THAT IS PARTIALLY EMBEDDED IN CONCRETE SHALL BE COATED WITH A SPECIFIC NON CONDUCTIVE COATING LAYER APPLIED A MINIMUM OF 50mm INTO THE CONCRETE AND 100mm ABOVE THE CONCRETE IN ACCORDANCE WITH AS/NZS2312.1.

15.7. THE SURFACE PREPARATION REQUIRED PRIOR TO THE APPLICATION OF GALVANISING AND/OR COATINGS SHALL BE IN ACCORDANCE WITH THE RELEVANT MANUFACTURERS REQUIREMENTS AND AS/NZS5131, SNZ TS3404, AS/NZS2312.1 OR AS/NZS2312.2 REQUIREMENTS AS APPROPRIATE TO THE SYSTEM SPECIFIED OR SELECTED.

15.8. COATINGS DEFECTS WHICH DO NOT COMPLY WITH THE ACCEPTANCE CRITERIA OR REQUIREMENTS WITHIN AS/NZS5131 AND AS/NZS2312 SERIES OF STANDARDS SHALL BE REPAIRED IN ACCORDANCE WITH THE REQUIREMENTS IN THE RELEVANT STANDARD. REPAIRS REQUIRED TO DAMAGED COATING SYSTEMS SHALL REINSTATE THE LEVEL OF CORROSION PROTECTION TO THE ORIGINAL SPECIFICATION OR AS OTHERWISE DEEMED APPROPRIATE BY THE COATINGS MANUFACTURER, OR AS NOTED IN RELEVANT STANDARDS. REFER 'DEFECTIVE STEELWORK, REPAIRS AND REMEDIATION' SECTION FOR FURTHER REQUIREMENTS.

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
A	03.02.26	TB	BUILDING CONSENT

Blueprint Consulting Engineers
Auckland a: 2/10 Mepal Place, Papatoetoe
p: +64 9 294 8993 PO Box 97607, Manukau
Christchurch a: 12 Duke Street,
p: +64 3 928 2258 Christchurch
w: www.bce.nz
e: admin@bce.nz

CLIENT
HOME CONSTRUCTION

PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
STEEL NOTES - SHEET 2

SCALE	DRAWN	DESIGN	APPROVED
1 : 10 @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-0-32	A

ORIGINAL DRAWING IN COLOUR

TIMBER

1. TIMBER GENERAL

1. TIMBER TREATMENT TO COMPLY WITH NZS-3602 AND AS SPECIFIED BY THE ARCHITECT.
2. ALL TIMBER TO BE GRADE SG8 UNO.
3. ALL FIXINGS, CONNECTORS, NAILS, SCREWS, BOLTS, NUTS & WASHERS TO BE AT LEAST HOT DIP GALVANIZED OR STAINLESS STEEL TO COMPLY WITH NZS-3604 DURABILITY REQUIREMENTS APPROPRIATE FOR THE SITE EXPOSURE, UNO
4. SG8 BEARERS AND JOISTS SPECIFICATION AND COMPLIANCE TO NZS-3604 UNO
5. BLOCKING NOT SHOWN FOR CLARITY ON DRAWINGS. PROVIDE TO COMPLY WITH NZS-3604. BLOCKING SHALL BE PROVIDED CONTINUOUSLY BETWEEN JOISTS BELOW WALL FRAMES AND OVER BEARER LINES.

2. TIMBER TO STEEL FIXING NOTES:

TIMBER PACKING & STRINGERS TO STEEL FOR STRUCTURAL COMPONENTS

WHERE TIMBER STRINGERS & FULL DEPTH PACKING ARE REQUIRED, U.N.O;

STRUCTURAL COMPONENTS - TIMBER PACKER / STRINGER DEPTH	
UP TO 190mm	**> 190mm**
M12 BOLTS AT 600 CRS	2-M12 BOLTS AT 600 CRS

TIMBER PACKING TO STEEL FOR NON-STRUCTURAL COMPONENTS

WHERE TIMBER PACKING TO STEEL IS NOT SPECIFICALLY NOTED OR DETAILED, PROVIDE SOLID TIMBER PACKERS TO THE WEB OF STEEL BEAMS AND/OR FLANGES, WHERE REQUIRED FOR FIXINGS OF LININGS, EXTERIOR PLY, CLADDING, ETC AS FOLLOWS

NON-STRUCTURAL COMPONENTS - TIMBER PACKER DEPTH	
UP TO 140mm	**> 140mm UP TO 290mm**
MIN 1 ROW OF 6.3mm Ø WURTH WING-PIAS TIMBER TO METAL SCREWS AT 400 CRS	MIN 2 ROWS OF 6.3mm Ø WURTH WING-PIAS TIMBER TO METAL SCREWS AT 400 CRS

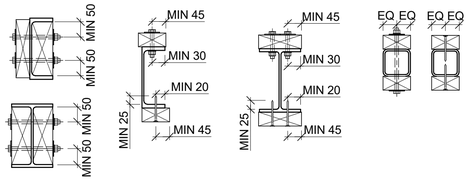
GENERAL

BOLTED FIXINGS:

- TYP. PROVIDE 50SQx3 PL WASHERS TO TIMBER FACES
- BOLT HEADS / WASHERS MAX 15mm REBATE INTO TIMBER WHERE FLUSH FINISH REQUIRED
- STAGGER ROWS WHERE 2 ROWS OF BOLTS ARE REQUIRED

SCREW FIXINGS:

- LENGTH OF SCREW SHALL BE SELECTED TO PENETRATE AND EXTEND MIN. 25mm THROUGH BACK OF STEEL.
- PRE-DRILL HOLES TYP.



IMPORTANT: ALL STEEL PACKING TO BE FULL DEPTH AND HARD TO BOTTOM OF FLANGE(S) OF STEEL

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
A	03.02.26	TB	BUILDING CONSENT

Blueprint
Consulting Engineers
Auckland **a:** 2/10 Mepal Place, Papatoetoe
p: +64 9 294 8993 PO Box 97607, Manukau
Christchurch **a:** 12 Duke Street,
p: +64 3 928 2258 Christchurch
w: www.bce.nz
e: admin@bce.nz

CLIENT
HOME CONSTRUCTION

PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
TIMBER NOTES - SHEET 1

SCALE	DRAWN	DESIGN	APPROVED
1 : 10 @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-0-71	A

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ORIGINAL DRAWING IN COLOUR

Table 3: Minimum Bearing for hyJOIST® I-Beams Transferring Upper Storey Roof or Floor Loads

Load Type	Joist Spacing (mm)	
	450	600
	Minimum Bearing (mm)	
Light Roof and ceiling	30	65[1]
Heavy Roof and ceiling	45	90[2]

1. If web stiffeners installed bearing may be reduced to 45 mm.
2. If web stiffeners installed bearing may be reduced to 65 mm.

- For all cases bearing may be reduced to 30 mm if continuous full depth blocking or compression blocks are installed.
- designIT® for houses software may give a reduced bearing requirement.
- Roof mass allowances are defined in Table 7.

4.3 BEARING SUPPORT FOR LOWER STOREY OF TWO STOREY CONSTRUCTION

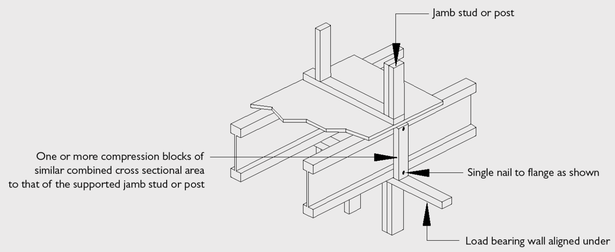
Continuous full depth hyJOIST® blocking should be installed to transfer compression loads from load bearing walls to the supports.

In most cases continuous hyJOIST blocking will be adequate to support the roof, wall and floor loads. Refer to designIT® for houses software for confirmation.

4.4 CONCENTRATED LOADS FROM JAMB STUDS/POSTS

Use compression blocks to transfer loads through to supports as shown.

Figure 5: Concentrated Loads for Jambs Studs/Posts



4.5 WEB HOLES FOR hyJOIST® I-BEAMS

Holes may be cut through the web of hyJOIST provided they are located within the central part of the span as specified below.

For hole sizes other than those stated in Tables 4 and 5 refer to the web hole calculator in designIT for houses software, or the designIT sITe App smartphone application.

For cases involving non-uniform loading or where the possibility of locating the hole closer to supports needs to be assessed, use the web hole option in the floor joist calculator in designIT for houses software.

Figure 6: Web Holes for hyJOIST® I-Beams

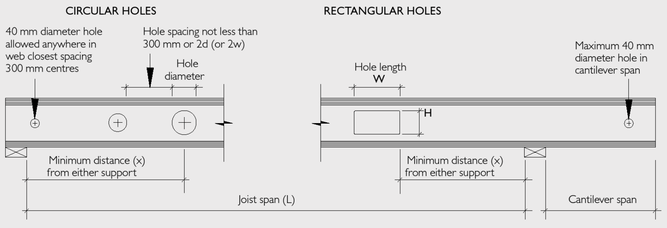


Table 4: Circular Holes for hyJOIST® I-Beams

hyJOIST® Section Code	Maximum Hole Diameter (mm)	Minimum Distance from Support 'X'	Hole Diameter (mm)			
			80	110	125	150
			Circular Holes – Minimum Distance 'X' from support – (m)			
HJ200 45	113	0.34 L[1]	0.16 L	0.28 L	N/A	N/A
HJ240 45	153	0.38 L	0.12 L	0.21 L	0.26 L	0.33 L
HJ240 63						
HJ240 90						
HJ300 45	213	0.41 L	0.10 L*	0.15 L	0.18 L	0.24 L
HJ300 63						
HJ300 90				0.10 L*	0.14 L	0.20 L
HJ360 63	273	0.42 L	0.3 m*	0.08 L*	0.11 L	0.16 L
HJ360 90		0.40 L	0.3 m*	0.3 m*	0.3 m*	0.05 L*
HJ400 90	313	0.40 L	0.3 m*	0.3 m*	0.3 m*	0.08 L*

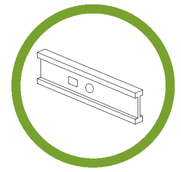
* Minimum distance from any support is 0.3 metres.
1. Example, if actual span 'L'= 4.0 m then minimum distance 'X' from hole to support (see Figure 6) is 0.34 x 4.0 = 1.365 m.

Table 5: Rectangular Holes for hyJOIST® i-Beam

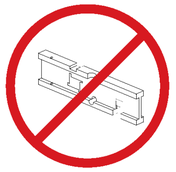
hyJOIST® Section Code	Hole Size		Permitted Locations for Rectangular Holes							
	Height (mm)	Length (mm)		Actual Span 'L' in metres						
				Minimum Distance from the side of the hole to any support – (m)						
HJ200 45	113	250	L	≤ 3.8	4.0	4.2	4.4	4.5		
			X	0.34 L	1.38	1.59	1.80	1.90		
HJ240 45	153	300	L	<=3.5	3.6	3.8	4.0	4.2	4.4	4.6	4.7
			X	0.38 L	1.36	1.50	1.65	1.80	1.95	2.10	2.18
HJ240 63	153	300	L	≤ 3.5	5.5						
			X	0.38 L	2.13						
HJ240 90	153	300	L	≤ 5.8	6.0	6.1					
			X	0.38 L	2.36	2.45					
HJ300 45	213	400	L	<=3.6	3.8	4.0	4.2	4.4	4.6		
			X	0.41 L	1.58	1.71	1.84	1.97	2.10		
HJ300 63	213	400	L	≤ 5.2	5.4	5.6	5.8	6.0	6.2	6.3	
			X	0.41 L	2.25	2.39	2.54	2.69	2.83	2.91	
HJ300 90	213	400	L	≤ 6.4	6.6	6.8	7.0				
			X	0.40 L	2.73	2.88	3.04				
HJ360 63	273	500	L	≤ 5.4	5.6	5.8	6.0	6.2	6.4	6.6	6.8
			X	0.42 L	2.37	2.49	2.62	2.75	2.88	3.02	3.15
HJ360 90	273	500	L	≤ 7.2	7.4	7.6	7.7				
			X	0.40 L	2.97	3.10	3.17				
HJ400 90	313	600	L	≤ 8.0							
			X	0.40 L							

Interpolate to obtain values of 'X' for spans intermediate between the values given.

- Data applies for floor joists or rafters supporting uniform loads (and concentrated live load not exceeding 1.8 kN).
- Hole locations closer to supports may be possible for some load and support conditions; refer to the 'floor joist calculator' in designIT® for houses software.
- Spacing between holes to be not less than 300 mm or twice the width (or twice the diameter) of the larger hole, whichever is greater.
- Not more than three holes with width or diameter greater than 80 mm in any span.
- For cantilever spans holes greater than 40 mm diameter are not permitted.
- Not more than one rectangular (or square) hole per span.



Do cut in web area as specified



Do NOT cut, notch or bore through flange

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

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A	03.02.26	TB	BUILDING CONSENT

Blueprint Consulting Engineers
Auckland **a:** 2/10 Mepal Place, Papatoetoe
p: +64 9 294 8993 PO Box 97607, Manukau
Christchurch **a:** 12 Duke Street,
p: +64 3 928 2258 Christchurch
w: www.bce.nz
e: admin@bce.nz

CLIENT
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PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
PRODUCT MANUAL EXTRACTS - SHEET 1

SCALE	DRAWN	DESIGN	APPROVED
@ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-0-80	A

CONFIRM REFERENCED DOCUMENTS ABOVE ARE THE LATEST VERSIONS AVAILABLE BEFORE USE

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GIB EzyBrace® Systems specification GS1-N

Specification code	Minimum length (m)	Lining requirement
GS1-N	0.4	Any 10mm or 13mm GIB® Standard plasterboard to one side only

WALL FRAMING
Wall framing to comply with;

- NZBC B1 — Structure B1/AS1 Clause 3 Timber (NZS 3604:2011).
- NZBC B2 — Durability B2/AS1 Clause 3.2 Timber (NZS 3602).

Framing dimensions and height as determined by NZS 3604:2011 stud and top plate tables for load bearing and non-bearing walls. The use of kiln dried stress graded timber is recommended.

BOTTOM PLATE FIXING
Timber floor
Pairs of hand driven 100 x 3.75mm nails at 600mm centres; or three power driven 90 x 3.15mm nails at 600mm centres.

Concrete floor
Internal Wall Bracing Lines: In accordance with the requirements of NZS 3604:2011 for internal wall plate fixing or 75 x 3.8mm shot fired fasteners with 16mm discs spaced at 150mm and 300mm from end studs and 600mm centres thereafter.

External Wall Bracing Lines: In accordance with the requirements of NZS 3604:2011 for external wall bottom plate fixing.

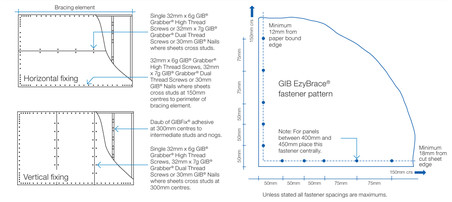
WALL LINING
- Any 10mm or 13mm GIB® plasterboard lining.
- Sheets can be fixed vertically or horizontally.
- Sheet joints shall be touch fitted.
- Use full length sheets where possible.

PERMITTED ALTERNATIVES
For permitted GIB® plasterboard alternatives refer to p. 5 in GIB EzyBrace® Systems literature.

FASTENING THE LINING
Fasteners
32mm x 6g GIB® Grabber® High Thread Screws, 32mm x 7g GIB® Grabber® Dual Thread Screws or 30mm GIB® Nails. If using the GIBFix® Angle use only 32mm x 7g GIB® Grabber® Dual Thread Screws.

Fastener centres
50,100,150, 225, 300mm maximum from each corner and 150mm thereafter around the perimeter of the bracing element. For vertically fixed sheets place fasteners at 300mm maximum centres to intermediate sheet joints. For horizontally fixed sheets place single fasteners to the sheet edge where it crosses the stud. Use daubs of GIBFix® adhesive at 300mm maximum centres to intermediate studs. Place fasteners no closer than 12mm from paper bound sheet edges and 18mm from any sheet end or cut edge.

JOINTING
Joint strength is important in delivering bracing system performance. All fastener heads stopped and all sheet joints GIB® Joint Tape reinforced and stopped in accordance with the GIB® Site Guide.



In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow the specifications. This specification sheet is issued in conjunction with the publication GIB EzyBrace® Systems

GIB EzyBrace® Systems specification BL1-H

Specification code	Minimum length (m)	Lining requirement	Other requirements
BL1-H	0.4	10mm or 13mm GIB Braceline® to one side only	Hold downs

WALL FRAMING
Wall framing to comply with;

- NZBC B1 — Structure B1/AS1 Clause 3 Timber (NZS 3604:2011).
- NZBC B2 — Durability B2/AS1 Clause 3.2 Timber (NZS 3602).

Framing dimensions and height as determined by NZS 3604:2011 stud and top plate tables for load bearing and non-bearing walls. The use of kiln dried stress graded timber is recommended.

BOTTOM PLATE FIXING
Timber floor
Use panel hold downs at each end of the bracing element. The GIB HandiBrac® is recommended. See details in GIB EzyBrace® Systems or GIB® Site Guide.

Pairs of hand driven 100 x 3.75mm nails at 600mm centres; or Three power driven 90 x 3.15mm nails at 600mm centres.

Concrete floor
Use panel hold downs at each end of the bracing element. The GIB HandiBrac® is recommended. See details in GIB EzyBrace® Systems or GIB® Site Guide. Within the length of the bracing element bottom plates are to be fixed in accordance with the requirements of NZS 3604:2011.

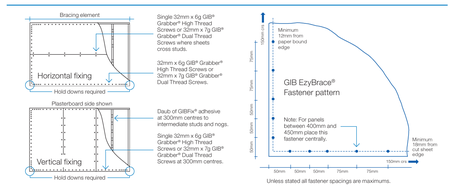
WALL LINING
- A layer of 10mm or 13mm GIB Braceline®
- Sheets can be fixed vertically or horizontally.
- Sheet joints shall be touch fitted.
- Use full length sheets where possible.

PERMITTED ALTERNATIVES
For permitted GIB® plasterboard alternatives refer to p. 5 in GIB EzyBrace® Systems literature.

FASTENING THE LINING
Fasteners
32mm x 6g GIB® Grabber® High Thread Screws or 32mm x 7g GIB® Grabber® Dual Thread Screws. If using the GIBFix® Framing System or if fastening through GIBFix® Angles use only 32mm x 7g GIB® Grabber® Dual Thread Screws.

Fastener centres
50,100,150, 225, 300mm from maximum each corner and 150mm thereafter around the perimeter of the bracing element. For vertically fixed sheets place fasteners at 300mm maximum centres to the sheet joint. For horizontally fixed sheets place single fasteners to the sheet edge where it crosses the stud. Use daubs of GIBFix® adhesive at 300mm maximum centres to intermediate studs. Place fasteners no closer than 12mm from paper bound sheet edges and 18mm from any sheet end or cut edge.

JOINTING
Joint strength is important in delivering bracing system performance. All fastener heads stopped and all sheet joints GIB® Joint Tape reinforced and stopped in accordance with the GIB® Site Guide.



In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow the specifications. This specification sheet is issued in conjunction with the publication GIB EzyBrace® Systems

GIB EzyBrace® Systems specification BLG-H

Specification code	Minimum length (m)	Lining requirement	Other requirements
BLG-H	0.4	10mm or 13mm GIB Braceline® to one side of the frame plus any 10mm or 13mm GIB® plasterboard to the other side	Hold downs

WALL FRAMING
Wall framing to comply with;

- NZBC B1 — Structure B1/AS1 Clause 3 Timber (NZS 3604:2011).
- NZBC B2 — Durability B2/AS1 Clause 3.2 Timber (NZS 3602).

Framing dimensions and height as determined by NZS 3604:2011 stud and top plate tables for load bearing and non-bearing walls. The use of kiln dried stress graded timber is recommended.

BOTTOM PLATE FIXING
Timber floor
Use panel hold downs at each end of the bracing element. The GIB HandiBrac® is recommended. See details in GIB EzyBrace® Systems or GIB® Site Guide. Within the length of the bracing element bottom plates are to be fixed in accordance with the requirements of NZS 3604:2011.

Concrete floor
Use panel hold downs at each end of the bracing element. The GIB HandiBrac® is recommended. See details in GIB EzyBrace® Systems or GIB® Site Guide. Within the length of the bracing element bottom plates are to be fixed in accordance with the requirements of NZS 3604:2011.

WALL LINING
- A layer of 10mm or 13mm GIB Braceline® to one side of the wall plus any 10mm or 13mm GIB® plasterboard lining to the other side.
- Sheets can be fixed vertically or horizontally.
- Sheet joints shall be touch fitted.
- Use full length sheets where possible.

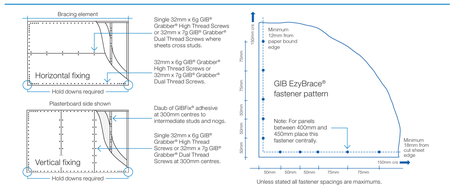
PERMITTED ALTERNATIVES
For permitted GIB® plasterboard alternatives refer to p. 5 in GIB EzyBrace® Systems literature.

FASTENING THE LINING
Fasteners
GIB Braceline® side: 32mm x 6g GIB® Grabber® High Thread Screws or 32mm x 7g GIB® Grabber® Dual Thread Screws.Other side: 32mm x 6g GIB® Grabber® High Thread Screws, 30mm GIB Nails or 32mm x 7g GIB® Grabber® Dual Thread Screws.

If using the GIBFix® Framing System or if fastening through GIBFix® Angles use only 32mm x 7g GIB® Grabber® Dual Thread Screws.

Fastener centres
50,100,150, 225, 300mm maximum from each corner and then 150mm thereafter around the perimeter of the bracing element. For vertically fixed sheets place fasteners at 300mm maximum centres to the sheet edge where it crosses the stud. Use daubs of GIBFix® adhesive at 300mm maximum centres to intermediate studs. Place fasteners no closer than 12mm from paper bound sheet edges and 18mm from any sheet end or cut edge.

JOINTING
Joint strength is important in delivering bracing system performance. All fastener heads stopped and all sheet joints GIB® Joint Tape reinforced and stopped in accordance with the GIB® Site Guide.



In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow the specifications. This specification sheet is issued in conjunction with the publication GIB EzyBrace® Systems

GIB EzyBrace® Systems specification BLP-H

Specification code	Minimum length (m)	Lining requirement	Other requirements
BLP-H	0.4	10mm or 13mm GIB Braceline® to one side of the frame plus minimum 7mm structural plywood manufactured to AS/NZ 2269.0 :2012 to the other side	Hold downs

WALL FRAMING
Wall framing to comply with;

- NZBC B1 — Structure; B1/AS1 Clause 3 Timber (NZS 3604:2011).
- NZBC B2 — Durability B2/AS1 Clause 3.2 Timber (NZS 3602).

Framing dimensions and height as determined by NZS 3604:2011 stud and top plate tables for load bearing and non-bearing walls. The use of kiln dried stress graded timber is recommended.

BOTTOM PLATE FIXING
Timber floor
Use panel hold downs at each end of the bracing element. The GIB® HandiBrac is recommended. See details in GIB EzyBrace® Systems or GIB® Site Guide.

Pairs of hand driven 100 x 3.75mm nails at 600mm centres; or Three power driven 90 x 3.15mm nails at 600mm centres.

Concrete floor
Use panel hold downs at each end of the bracing element. The GIB HandiBrac® is recommended. See details in GIB EzyBrace® Systems or GIB® Site Guide. Within the length of the bracing element bottom plates are to be fixed in accordance with the requirements of AS/NZ 2269/0 :2012.

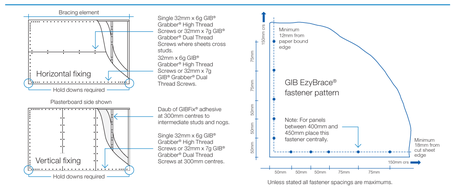
WALL LINING
- A layer of 10mm or 13mm GIB Braceline® to one side of the wall plus minimum 7mm structural plywood manufactured to AS/NZS 2269.0 :2012 to the other side.
- Sheets can be fixed vertically or horizontally.
- Plywood is to be fixed vertically with edges supported.
- Sheet joints shall be touch fitted.
- Use full length sheets where possible.

PERMITTED ALTERNATIVES
For permitted GIB® plasterboard alternatives refer to p. 5 in GIB EzyBrace® Systems literature.

FASTENING THE LINING
Fasteners
GIB Braceline® side: 32mm x 6g GIB® Grabber® High Thread Screws or 32mm x 7g GIB® Grabber® Dual Thread Screws. Plywood: 50 x 2.8mm Galv or Stainless steel annular grooved FH nails. If using the GIBFix® Framing System or if fastening through GIBFix® Angles use only 32mm x 7g GIB® Grabber® Dual Thread Screws.

Fastener centres
GIB® Plasterboard side: 50,100,150, 225, 300mm from each corner and then 150mm thereafter around the perimeter of the bracing element. For vertically fixed sheets place fasteners at 300mm centres to the intermediate sheet joints. For horizontally fixed sheets place single fasteners to the sheet edge where it crosses the stud. Use daubs of GIBFix® adhesive at 300mm centres to intermediate studs. Place fasteners no closer than 12mm from paper bound sheet edges and 18mm from any sheet end or cut edge. Plywood side: 150mm centres to the perimeter of each sheet. GIB® corner fastener pattern does not apply to the plywood side. 300mm centres to intermediate studs.

JOINTING
Joint strength is important in delivering bracing system performance. All fastener heads stopped and all sheet joints GIB® Joint Tape reinforced and stopped in accordance with the GIB® Site Guide.



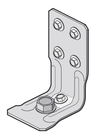
In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow the specifications. This specification sheet is issued in conjunction with the publication GIB EzyBrace® Systems

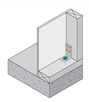
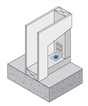
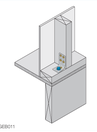
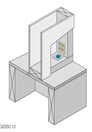
GIB HandiBrac® installation

Developed in conjunction with MiTek™, the GIB HandiBrac® has been designed and tested by Winstone Wallboards for use in GIB EzyBrace® elements that require hold-downs. The GIB HandiBrac® is a substitute for bottom plate hold-down straps.

- Quick and easy to fit.
- May be fitted at any stage before lining.
- Framing face is clear to allow flush lining.
- Easily inspected.

The GIB HandiBrac® with BOWMAC® blue head screw bolt is suitable for timber and concrete floors constructed in accordance with NZS 3604:2011.



Concrete floor		Timber floor	
External walls	Internal walls	External walls	Internal walls
 GEB009	 GEB010	 GEB011	 GEB012
Position GIB HandiBrac® as close as practicable to the internal edge of the bottom plate.	Position GIB HandiBrac® at the stud/plate junction and at mid-width of plate.	Position GIB HandiBrac® flush with the outside stud face, as close as practicable to the centre of the boundary joist.	Position GIB HandiBrac® in the centre of floor joist or full depth solid block.
Hold-down fastener requirements			
A mechanical fastening with a minimum characteristic uplift capacity of 15kN or use supplied BT10/140 screwbolt in GIB HandiBrac® pack.		12 x 150mm galvanised coach screw or use supplied BT10/140 screwbolt in GIB HandiBrac® pack.	

Length of GIB EzyBrace® elements ('N' Type)

The length of GIB EzyBrace® elements with an 'N' extension (requiring standard NZS3604:2011 plate connections) can be taken as the full frame length measured from the outside of the end-stud to the opening face as illustrated in figures 29-32.

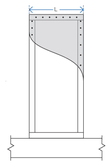
'N' type GIB EzyBrace® elements are identified by GIB® specification numbers GS1-N, GS2-N and GS2-NOM

The dimension 'L' shall not be less than 400mm.

Perimeter bracing fixing for linings of both 'H' and 'N' type elements is along the top and bottom plates, end stud, and doubling stud immediately adjacent to the opening.

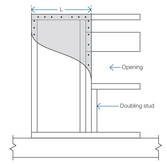
Fastener spacings and diagram scales shown in Figures 29–32 are indicative only. Refer to p.23–30 for construction details.

FIGURE 29: GS BRACING ELEMENTS (OPTION A)



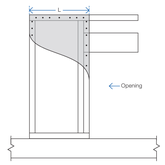
GS1-N, GS2-N elements
'L' indicates the length of the bracing element

FIGURE 30: GS BRACING ELEMENTS (OPTION B)



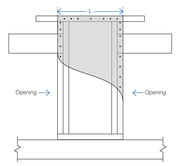
GS1-N, GS2-N elements
'L' indicates the length of the bracing element

FIGURE 31: GS BRACING ELEMENTS (OPTION C)



GS1-N, GS2-N elements
'L' indicates the length of the bracing element

FIGURE 32: GS BRACING ELEMENTS (OPTION D)



GS1-N, GS2-N elements
'L' indicates the length of the bracing element

Length of GIB EzyBrace® elements ('H' Type)

GIB EzyBrace® elements with an 'H' extension (requiring special panel hold-down fixings) can be used when the dimension 'L' as illustrated in figures 33–36 is 400mm or more.

'H' type GIB EzyBrace® elements are identified by GIB® specification numbers GSP-H, BL1-H, BLG-H and BLP-H.

The length of an 'H' type element is not only determined by the sheet material, but also by the placement of the hold-down fixings.

Hold-down fixings cannot be placed closer together than what is shown for the standard panel in figure 33.

Hold-down fixings can be placed under windows provided sill trimming studs beneath the opening are connected to the bracing element using 8/90mm gun nails, as illustrated in figure 34.

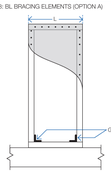
Spike doubling stud to trimming stud using a minimum of 2/90mm gun nails at 600mm centres. Lintel straps (where required for wind uplift) should be checked in and be located away from the bracing element fasteners.

Perimeter bracing fixing for linings of both 'H' and 'N' type elements is along the top and bottom plates, end stud, and doubling stud immediately adjacent to the opening as indicated in figures 34-36.

When using bracing straps, installed in accordance with p.17, fix the strap to the same framing member as shown for the GIB Handibrac® below, and install the adjacent anchor bolt in the same position as the GIB HandiBrac® bolt.

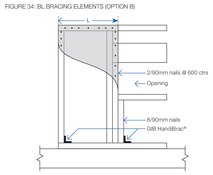
Fastener spacings and diagram scales shown in figures 33–36 are indicative only. Refer to p.23–30 for construction details.

FIGURE 33: BL BRACING ELEMENTS (OPTION A)



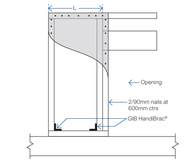
'H' type elements with specific hold downs
'L' indicates the length of the bracing element

FIGURE 34: BL BRACING ELEMENTS (OPTION B)



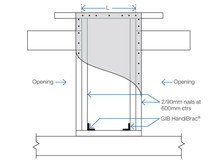
'H' type elements with specific hold downs
'L' indicates the length of the bracing element

FIGURE 35: BL BRACING ELEMENTS (OPTION C)



'H' type elements with specific hold downs
'L' indicates the length of the bracing element

FIGURE 36: BL BRACING ELEMENTS (OPTION D)



'H' type elements with specific hold downs
'L' indicates the length of the bracing element

3.3 ECOPLY® BRACING SPECIFICATION - EPI

Table 10: Singled Sided Structural Plywood Brace

Specification No.	Minimum Wall Length	Lining Requirements	BUs/m Wind	BUs/m Earthquake
EP1_0.4	0.4m	Ecoply® one side	80	95
EP1_0.6	0.6m	Ecoply one side	95	105
EP1_1.2	1.2m	Ecoply one side	120	135

Framing

Wall framing must comply with:

- NZBC B1 - Structure: AS1 Clause 3 Timber (NZS 3604).
- NZBC B2 - Durability: AS1 Clause 3.2 Timber (NZS 3602).

Framing dimensions and height are as determined by the NZS 3604 stud and top plate tables for load bearing and non load bearing walls. Kiln dried verified structural grade timber must be used. Machine stress graded timber, such as Laserframe® of SG8 stress grade minimum, is recommended.

Bottom Plate Fixing

Use GIB Handibrac® hold-down connections at each end of the bracing element. Refer to manufacturer installation instructions supplied with the connectors for correct installation instructions and bolt types to be used for either concrete or timber floors. Within the length of the bracing element, bottom plates are fixed in accordance with the requirements of NZS 3604.

Lining

One layer of 7mm, 9mm or 12mm Ecoply® plywood fixed directly to framing. If part sheets are used, ensure nailing at required centres is carried out around the perimeter of each sheet or part sheet. A 2-3mm expansion gap should be left between sheets.

Fastening the Ecoply® Panels

Fasten with 50 x 2.8mm hot dipped galvanised or stainless steel flat head nails for direct fix. Place fasteners no less than 7mm or 3 fastener diameters from sheet edges. Screws cannot be used. Power driven nails are suitable. Do not overdrive, nails must be full round head.

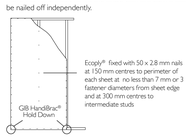
Fasteners for H3.2 CCA Treated Ecoply Panels

Where fasteners are in contact with H3.2 CCA treated timber or plywood, fasteners shall be a minimum of hot dip galvanised.

In certain circumstances stainless steel fasteners may be required. Refer to Table 8 of the Ecoply Specification and Installation Guide for these circumstances and further fastener selection advice. Where stainless steel nails are required, annular grooved nails must be used.

Fastening Centres

Fasteners are placed at 150mm centres around the perimeter of each sheet and 300mm centres to intermediate studs. Where more than one sheet forms the brace element each sheet must be nailed off independently.



Ecoply® Bracing Systems are designed to meet the requirements of the NZBC and have been tested and analysed using the P21 method referenced in NZS 3604:2011 listed as an acceptable solution B1/AS1 Structure. Testing was carried out using Ecoply manufactured by CHH

Plywood and SG8 timber framing, and GIB® products manufactured by Winstone Wallboards Ltd. Substituting materials may compromise performance of the system. GIB® and GIB HandiBrac® are registered trade marks of Fletcher Building Holdings Ltd.

0825/0680 1303

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
A	03.02.26	TB	BUILDING CONSENT

Blueprint Consulting Engineers
Auckland **a:** 2/10 Mepal Place, Papatoetoe
p: +64 9 294 8993 PO Box 97607, Manukau
Christchurch **a:** 12 Duke Street,
p: +64 3 928 2258 Christchurch
w: www.bce.nz
e: admin@bce.nz

CLIENT
HOME CONSTRUCTION

PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
PRODUCT MANUAL EXTRACTS - SHEET 2

SCALE @ A1	DRAWN	DESIGN	APPROVED
	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-0-81	A

CONFIRM REFERENCED DOCUMENTS ABOVE ARE THE LATEST VERSIONS AVAILABLE BEFORE USE

ORIGINAL DRAWING IN COLOUR

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ORIGINAL DRAWING IN COLOUR

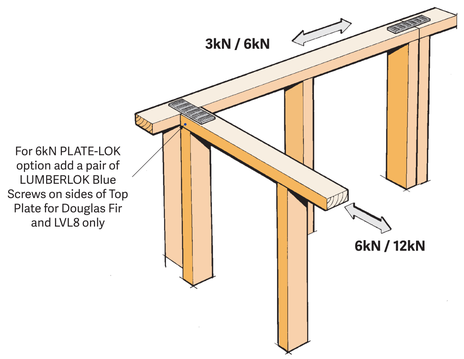
TOP PLATE JOINTING
AS PER CLAUSE 8.7.3 NZS 3604:2011

Top Plates at Right Angles

Connection capacity	LUMBERLOK Connector
6kN	Tylok 6T10 **OR** PLATE-LOK
12kN	2 x Sheet Brace Straps fixed with 6 x LUMBERLOK Product Nails 30mm x 3.15 dia. per end per strap (24 nails total)

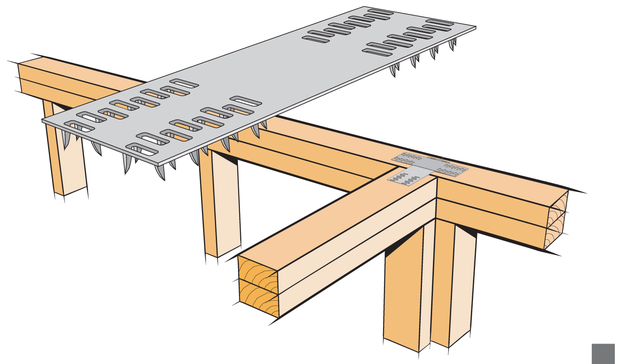
Top Plates in Line

Connection capacity	LUMBERLOK Connector
3kN	Tylok 6T5
6kN	Tylok 6T10 **OR** PLATE-LOK



Available from leading Builders Supply Merchants throughout New Zealand

PLATE-LOK
6kN CAPACITY CONNECTOR

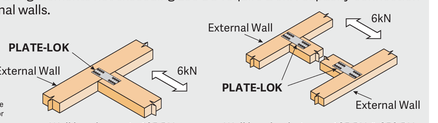


- The LUMBERLOK PLATE-LOK is ideally suited for right angle wall connections with a unique clear centre section to allow easy overlapping
- Suitable for use in SG8 Radiata pine/Douglas fir & LVL8 top plates
- This brochure also provides simple guidelines for the interpretation of Clause 8.7.3 NZS 3604:2011 for top plate connections
- The LUMBERLOK PLATE-LOK also provides a simple solution for a 6kN capacity connection where required by NZS 3604:2011

Code: PLATELOK
Material: 0.95mm G300 Z275 Galvanised Steel 150x50mm
Packed: 100 per Carton

TOP PLATE CONNECTIONS AS REQUIRED BY CLAUSE 8.7.3 NZS 3604:2011

① Top plate joints for walls at right angles to external walls:
(a) Walls with bracing elements not exceeding 125 bracing units (BU) require a 6kN capacity connection to one external wall.
(b) Walls with bracing elements not exceeding 250 BU require a 6kN capacity connection to two external walls.

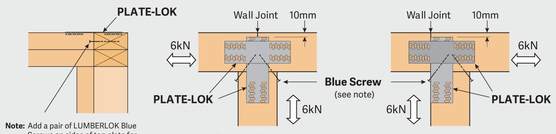


Note: Add a pair of LUMBERLOK Blue Screws on sides of top plate for Douglas Fir and LVL8 only

Wall bracing up to 125 BU

Wall bracing between 125 BU & 250 BU

② Details of top plate joints using LUMBERLOK PLATE-LOK at "T" junction walls are shown below:

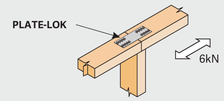


Note: Add a pair of LUMBERLOK Blue Screws on sides of top plate for Douglas Fir and LVL8 only

Centre Wall Joint

Side Wall Joint

③ Top plate joints for all walls in line that have wall bracing elements exceeding 100 BU or have a ceiling diaphragm attached require a 6kN capacity connection as per Figure 8.15 NZS 3604:2011.



④ Top plate joints for walls at right angles and in line that have either no bracing elements or are on a single storey building only with wall bracing demands not exceeding 100 BU require a 3kN capacity connection as per Figure 8.15 & 8.16 NZS 3604:2011.

CONFIRM REFERENCED DOCUMENTS ABOVE ARE THE LATEST VERSIONS AVAILABLE BEFORE USE

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
A	03.02.26	TB	BUILDING CONSENT

Blueprint
Consulting Engineers
Auckland **a:** 2/10 Mepal Place, Papatoetoe
p: +64 9 294 8993 PO Box 97607, Manukau
Christchurch **a:** 12 Duke Street,
p: +64 3 928 2258 Christchurch
w: www.bce.nz
e: admin@bce.nz

CLIENT
HOME CONSTRUCTION

PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
PRODUCT MANUAL EXTRACTS - SHEET 3

SCALE	DRAWN	DESIGN	APPROVED
@ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-0-82	A

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SECTION 5 - FORMANCE WALL AND ROOF/CEILING BRACING

5.1 General

5.1.1 This section sets out the requirements for Formance wall and roof bracing.

5.1.2 Bracing demand and design for buildings using Formance as bracing element is to be established by NZS3604:2011.

5.1.3 Formance wall bracing values are derived from specific P21 tests on Formance panels and cannot be substituted for alternative systems.

5.1.4 Formance bracing systems are compatible with, and can be incorporated into traditional timber framed bracing systems.

5.2 Formance Wall Bracing

5.2.1 Formance wall bracing is based on 115mm and 165mm panels. Wall bracing for panels beyond these thicknesses can be used with SED assessment.

5.2.2 Formance wall bracing is limited to 120BU's/m when supported by a timber substructure and 150BU's/m when supported by a concrete substructure.

5.2.3 There are 4 types of Formance wall braces - see construction details for full description

- **FBW - A** - 15kN hold-down bolt at each end of the brace element with no straps.
- **FBW - B** - 15kN hold-down bolt with 1 'U' shaped strap at each end of the brace element
- **FBW - C** - 15kN hold-down bolt with 2 x 'L' shaped straps at each end of the brace element
- **FBW - D** - **Bottom plate hold downs as per Section 3.6** with 2 x flat straps **at each end onto the timber floor. If being used on an upper storey, the straps need to line up with panel joins on the lower storey**

5.2.4 All brace types are to have reduced nailing centres at the corner of every panel within the bracing element on both sides. Nails are to be 60 x 2.8mm. Refer **Figure 5.1**.

5.2.5 Timber splines are required at each end of all bracing elements. Top plates and bottom plates to be continuous. Panel joins within bracing elements can be joined with thermal splines or timber splines. Refer **Figure 5.1**.

5.2.6 Bracing values of Formance wall panels are as per Table 5.1.

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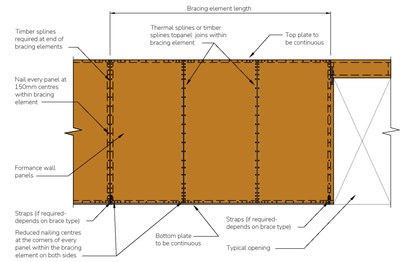
Figure 5.1 | Typical Bracing Element Elevation



5.2.7 Where specific engineering design (SED) of SIP bracing walls is appropriate, characteristic bracing capacities per unit length may be used, as shown in Table 5.1. A common example where SED bracing wall design is used is in the lower level of three storeys, where the bottom storey walls fall outside the scope of, NZS3604 and use of prescriptive bracing design with P21 derived bracing element capacities is not appropriate. Such buildings are outside the scope of this design guide. However, characteristic bracing capacities have been included for SED reference purposes.

5.2.8 Bracing values provided in Table 5.1 are based on a 2.4m height. For walls less than 2.4m, use the same values. To calculate the ratings of walls higher than 2.4m, divide by the wall height (e.g. 2.4/3=0.8) and multiply this factor by the BU's/m stated in the table. The heights of sloping walls can be calculated using the average height.

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5.3 Formance Roof/Ceiling/Floor Diaphragm Bracing

5.3.1 The Formance panel system exceeds the performance requirements of NZS3604:2011 clause 13.5 and clause 7.3 and can be used as diaphragms for ceilings, roofs and floors with the following considerations.

- The conditions for diaphragms within NZS3604:2011 are met.
- The perimeter of the diaphragms is fully fixed using Formance SIP screws @ 300mm centers.
- Any thickness panel can be used.

5.4 Wet Areas

Formance wall panels can be used as bracing in internal wet areas such as in bathrooms and behind showers provided the panel is protected by an sealed impervious lining (eg. pre-finished linings, vinyl, acrylic shower linings, etc) or in the case of tiles, a water proofing membrane that meets the requirements of the NZBC.

5.5 Construction Details

5.5.1 Typical construction details are shown on the following pages.

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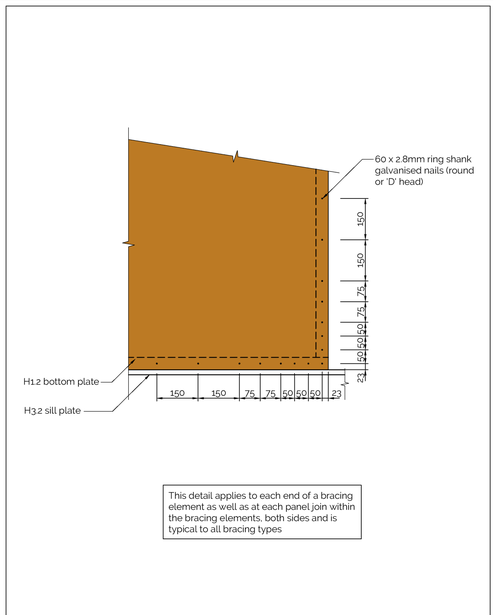

This detail applies to each end of a bracing element as well as at each panel join within the bracing elements, both sides and is typical to all bracing types

FORMANCE

Corner nailing pattern

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Jan 2024	5.01	V1

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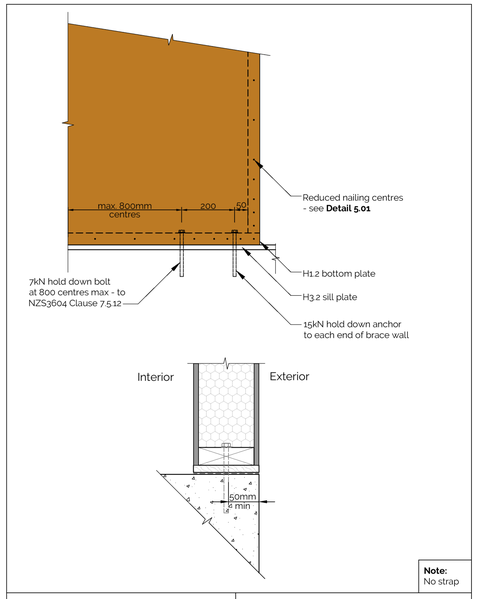

FORMANCE

FBW-A

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Jan 2024	5.02	V1

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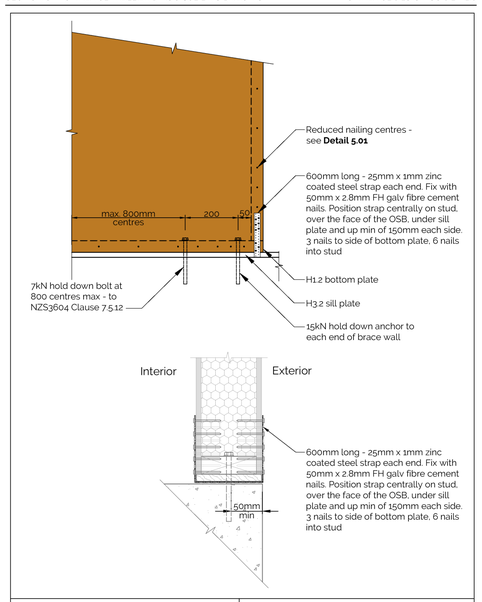

FORMANCE

FBW-B

Date :	Drawing number :	Version :
Jan 2024	5.03	V1

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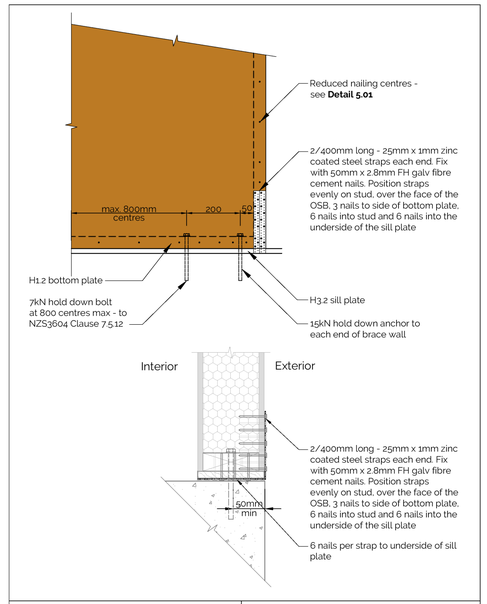

FORMANCE

FBW-C

Date :	Drawing number :	Version :
Jan 2024	5.04	V1

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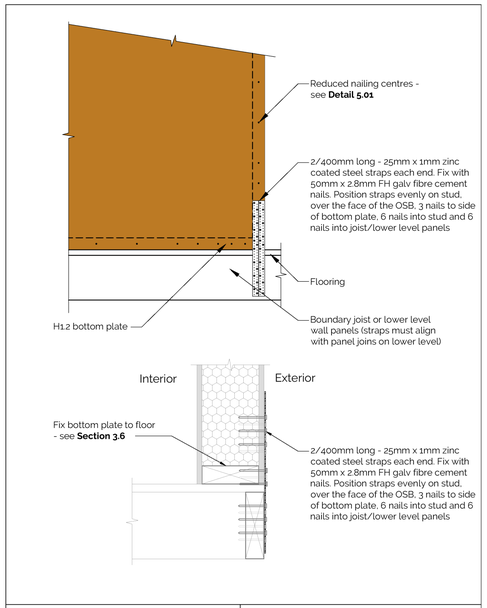

FORMANCE

FBW-D

Date :	Drawing number :	Version :
Jan 2024	5.05	V1

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NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
A	03.02.26	TB	BUILDING CONSENT

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CLIENT
HOME CONSTRUCTION

PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
PRODUCT MANUAL EXTRACTS - SHEET 4

SCALE @ A1	DRAWN	DESIGN	APPROVED
	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-0-83	A

CONFIRM REFERENCED DOCUMENTS ABOVE ARE THE LATEST VERSIONS AVAILABLE BEFORE USE

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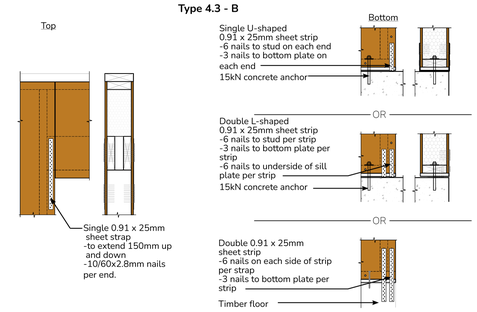
ORIGINAL DRAWING IN COLOUR

Type 4.3 - B



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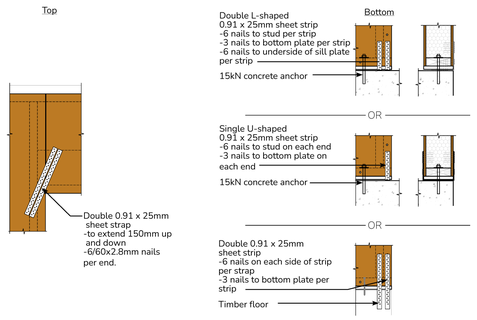

LINTELS

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NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
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TITLE
PRODUCT MANUAL EXTRACTS - SHEET 5

SCALE @ A1	DRAWN	DESIGN	APPROVED
	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-0-84	A

CONFIRM REFERENCED DOCUMENTS ABOVE ARE THE LATEST VERSIONS AVAILABLE BEFORE USE

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ORIGINAL DRAWING IN COLOUR

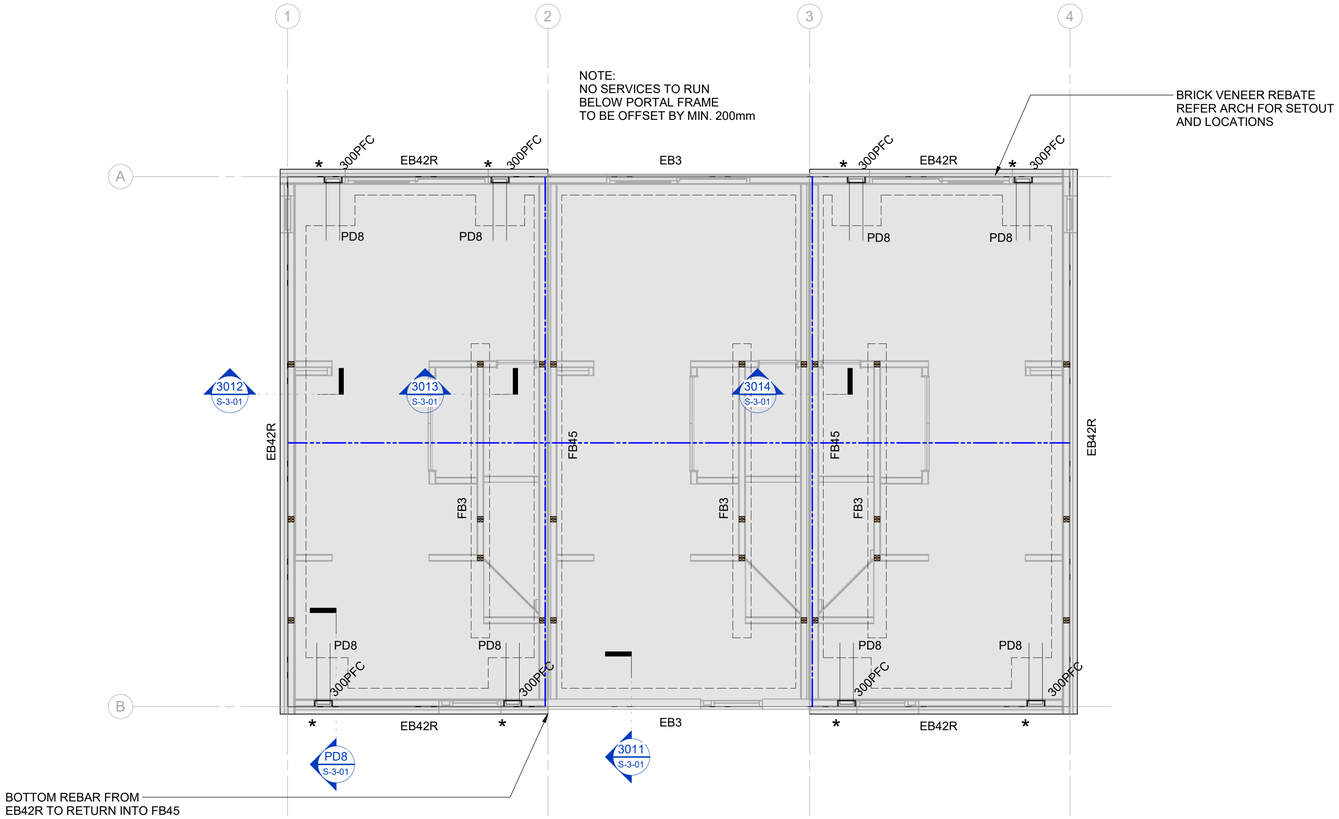
RAFT SLAB LEGEND

TYP. RE-ENTRANT BARS
2-HD12, 1200 LONG

25mm DEEP x 3mm WIDE SAWCUT

* CAST IN BASE CONNECTION
REFER TO DETAILS ON S-5-01

HD10 U-BAR, MIN. 1000 LAP WITH MESH
(TIED TO UNDERSIDE OF MESH)



LOT 1-3 - FOUNDATION PLAN

1 : 50

WAFFLE RAFT SLAB NOTES

1. FOUNDATION NOTES

1.1. CONTRACTOR TO REVIEW BUILDING CONSENT INSPECTION REQUIREMENTS.

1.2. ALL SETOUTS, REBATES SETDOWN DIMENSIONS AND DRAINAGE LOCATIONS SHALL BE TAKEN FROM ARCHITECTURAL DWGS.

1.3. SERVICES SHALL BE ACCOMMODATED AS PER STANDARD DETAILS ATTACHED.

1.4. A SINGLE LAYER DPM VAPOUR BARRIER SHALL BE LAPPED AND TAPED AND COMPLIANT WITH NZS3604 BELOW FOUNDATION SLAB

1.5. PROVIDE SAND BLINDING TO TOP OF PREPARED BASE BELOW DPM.

1.6. IT IS ANTICIPATED ALL GROUND FLOOR LEVEL SERVICES RUN BELOW THE ENTIRE RAFT SYSTEM WITHIN COMPACTED HARDFILL. ANY VARIATION TO THIS SHOULD BE CONFIRMED WITH ENGINEER.

2. SLAB POINT LOADS

2.1. POINT LOADS MUST LAND ON FOUNDATION BEAMS AS SHOWN ON PLAN. CONTRACTOR MUST VERIFY POINT LOAD POSITION. WHERE LOAD BEARING WALL DOES NOT LAND ON INTERNAL THICKENING, CONTACT ENGINEER IMMEDIATELY.

SUBGRADE SPECIFICATION

THE SITE SHALL BE PREPARED IN ACCORDANCE WITH SITE SPECIFIC SOIL INVESTIGATION REPORT AS NOTED IN REFERENCE DOCUMENTS AND AS PER THE BELOW SPECIFICATIONS:

EXCAVATE & REMOVE FILL / TOPSOIL & UNSUITABLE MATERIAL (Hd)	MIN 300 BGL
ULTIMATE BEARING CAPACITY (ubc)	MIN 300kPa AT SUBGRADE LAYER TO BE CONFIRMED ONSITE BY ENGINEER
HARDFILL SPECIFICATION	COMPACTED AP40/AP65 HARDFILL IN 200mm MAX LOOSE LAYERS TO ACHIEVE A 95% OF MAX DRY DENSITY COMPACTION VERIFIED BY ND TESTING
ASSUMED COMPACTED HARDFILL	FOUNDATION DESIGN HAS BEEN BASED ON THE ASSUMPTION OF 150mm MIN. COMPACTED HARDFILL BELOW UNDERSIDE OF RAFT SLAB
HARDFILL EXTENTS (He)	COMPACTED HARDFILL IS TO EXTEND A MIN OF (Hd) + 100mm OR 500mm, WHICHEVER THE GREATER, PAST EXTENT OF FOUNDATION FOOTPRINT

RAFT SLAB SPECIFICATION

CONCRETE:	25MPa CONCRETE COMPRESSIVE STRENGTH
POLY:	200mm KOOLFOAM SOLID ECO POD 1800x1200.SPACES AND BAR CHAIRS - USE PROPRIETARY SYSTEMS (WJ, CONQURA OR EQUIVALENT TO ENSURE ACCURATE RIB WIDTHS AND REBAR POSITIONS).
MESH:	DUCTILITY CLASS 'E' TO NZS 4671. SE72 OR EQUIVALENT. 25 MIN. COVER 2 BAR CHAIRS PER SQUARE METRE, CHAIR HEIGHT 40 MIN
REINFORCING COVER:	MIN. 25 COVER TO SLAB SURFACE MIN. 50 COVER TO BOTTOM OF RIBS / BEAMS MIN. 50 COVER TO SIDES OF EXTERNAL BEAMS
INSULATION:	50 SLABX200 - BELOW FOUNDATION SLAB
SLAB DEPTH (sd)	100
POD DEPTH (pd):	200
OVERALL DEPTH (od)	300

RAFT SLAB BEAM & RIB REINFORCING

TYPE MARK	BOT. REINF (rb)	TOP. REINF (rt)	ADDITIONAL REINF.
EB3	2-HD12	2-HD12	
EB42R	3-HD12	2-HD12	R10 LINKS - 600 CRS - REFER DETAIL
FB3	2-HD12	-	
FB45	3-HD12	2-HD12	

FOUNDATION PAD - FOOTING SCHEDULE

TYPE MARK	REINFORCING	DETAIL REF.
PD8	HD12 U-BAR TOP & BTM. 200 CRS EACH WAY	PD8 / S-3-01

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

UNIT 1-3 UNIT 4-7 UNIT 8-10

KEY PLAN

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
D	03.02.26	TB	BUILDING CONSENT
C	19.12.25	TB	60% DETAILED DESIGN
B	05.12.25	TB	30% DETAILED DESIGN
A	21.11.25	TB	PRELIMINARY DESIGN

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PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
LOT 1-3 - FOUNDATION PLAN

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-1-01	D

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ORIGINAL DRAWING IN COLOUR

TIMBER STUDS LEGEND:

DS — 2 x SG8 STUDS, WIDTH TO SUIT WALL FRAMING & WIDTH TO SUIT FORMANCE PANELS

ANNOTATION LEGEND

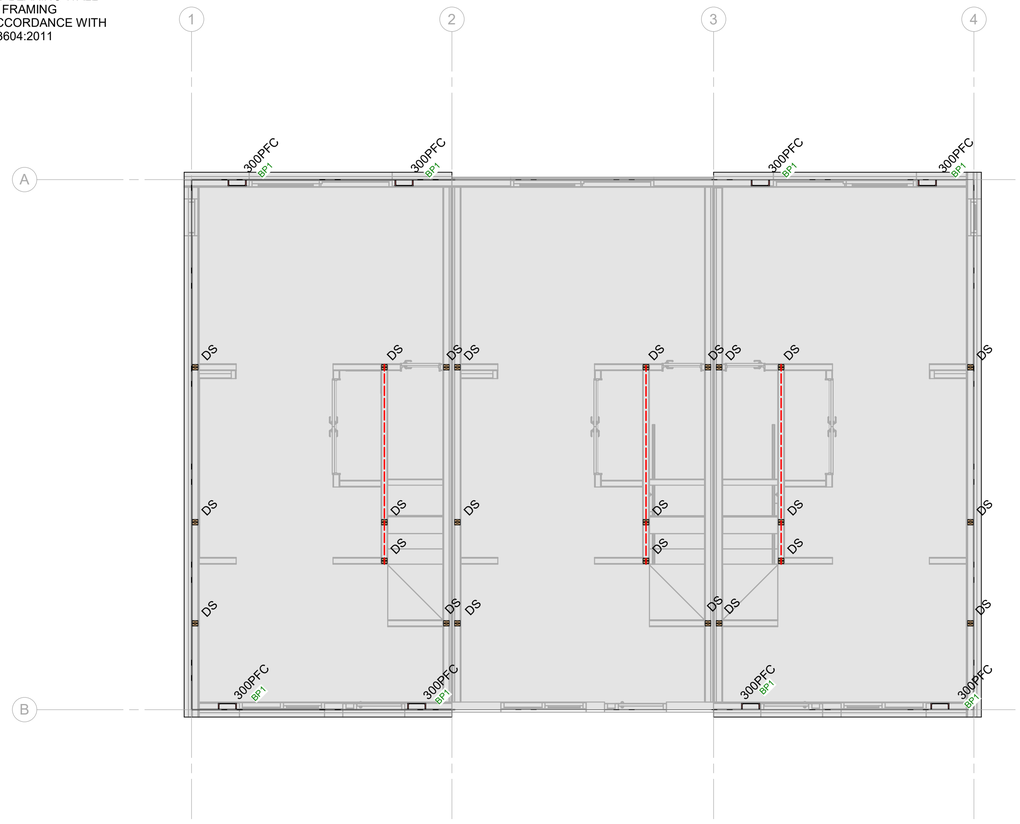
BP## — BASE PLATE TYPE, REFER DRAWING S-5-01 FOR DETAILS

X-## — TYPICAL STEEL CONNECTIONS, REFER DRAWING S-5-01 FOR DETAILS

SH##-# — TIMBER FIXING TAG EXAMPLE, REFER TIMBER FIXINGS LEGEND

LEGEND:

LOAD BEARING WALL LINE FRAMING IN ACCORDANCE WITH NZS3604:2011



LOT 1-3 - GROUND FLOOR PLAN
1 : 50

GROUND FLOOR NOTES

GENERAL
1. ALL WORKS TO COMPLY WITH RELEVANT CLAUSES OF THE NZBC
2. READ DRAWINGS IN CONJUNCTION WITH ARCHITECTS DRAWINGS & SPECIFICATIONS

SLAB REBATES
ALL SLAB REBATES OR RECESSES TO BE SET OUT BY ARCHITECT.
FOR REBATED EDGE BEAMS REFER FOUNDATION PLAN

SERVICES PENETRATIONS
SERVICE PENETRATION THROUGH SLAB - REFER DETAILS ON S-3-30

TIMBER
ALL TIMBER TO BE GRADE SG8 U.N.O.

STUDS
ALL STUD SUPPORTS TO HAVE A MIN. OF 6kN TIE DOWN CONNECTIONS TO GROUND FLOOR AND 12 kN TO L1 DOUBLE STUDS TYP. U.N.O.

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

KEY PLAN

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
B	03.02.26	TB	BUILDING CONSENT
A	19.12.25	TB	60% DETAILED DESIGN

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PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
LOT 1-3 - GROUND FLOOR PLAN

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-1-02	B

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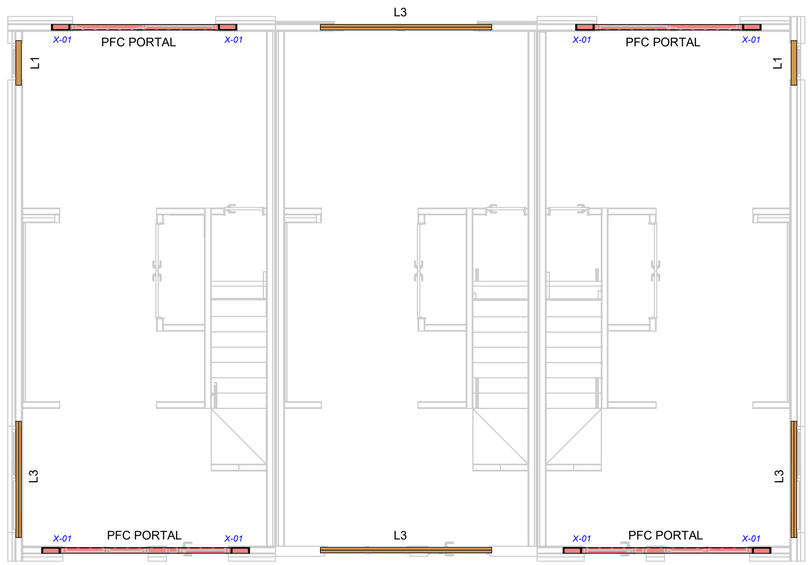
ORIGINAL DRAWING IN COLOUR

ANNOTATION LEGEND

BP## BASE PLATE TYPE, REFER DRAWING S-5-01 FOR DETAILS

X-## TYPICAL STEEL CONNECTIONS, REFER DRAWING S-5-01 FOR DETAILS

SH##-# TIMBER FIXING TAG EXAMPLE, REFER TIMBER FIXINGS LEGEND



NOTE: LINTEL SUPPORTING STUDS, REFER LINTEL SCHEDULE

LINTEL NOTES:

GENERAL

1. U.N.O, ALL BEAMS TO BE FULLY BEARING ON NUMBER OF SUPPORT STUDS SPECIFIED IN LINTEL SCHEDULE
2. TRIMMER STUDS IN ACCORDANCE WITH NZS3604
3. MIN. 6kN TIE DOWN TO SLAB

TIMBER GRADE

1. ALL TIMBER TO BE GRADE SG8 U.N.O

LINTEL SCHEDULE

TYPE MARK	DESCRIPTION	SUPPORTING STUDS	FORMANCE LINTEL FIXING TYPE
L1	2-140x45 SG8	SS SUPPORTS	TYPE 4.3B
L2	2-190x45 SG8	DS SUPPORTS	TYPE 4.3B
L3	2-190x45 LVL13	DS SUPPORTS	TYPE 4.3B
L4	2-240x45 LVL13	DS SUPPORTS	TYPE 4.3B
L5	240hy90	DS SUPPORTS	TYPE 4.3B
L6	200hy90	REFER FORMANCE SIP DESIGN	REFER FORMANCE SIP DESIGN

NOTE: REFER S-0-84 - PRODUCT MANUAL SUPPORTS - SHEET 5 FOR FORMANCE LINTEL FIXING DETAILS.
LINTEL FIXINGS SPECIFIED IN LINTEL SCHEDULE ARE TYPICAL U.N.O

* LINTEL AT CEILING LEVEL TO SUPPORT CEILING VOID

LINTEL STUD SUPPORTS:

SS. DOUBLE STUD SUPPORTS, WIDTH TO SUIT FORMANCE PANEL
MIN. 90x45 SG8 TYP. UNO.

DS DOUBLE STUD SUPPORT, WIDTH TO SUIT FORMANCE PANEL,
MIN 2-90x45 SG8 TYP. UNO.

BRICK LINTELS

ALL HOT DIP GALV
80x6 EA UP TO 3m OPENING
125x75x8 UP TO 4.6m OPENING

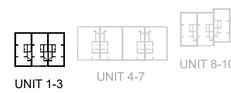
NOTE: FREE FROM FRAMING AND MIN BEARING EACH SIDE OF 100mm OR 200mm WHERE OPENING IS >2.0m

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

LOT 1-3 - GROUND FLOOR LINTEL PLAN

1 : 50



KEY PLAN

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
D	03.02.26	TB	BUILDING CONSENT
C	19.12.25	TB	60% DETAILED DESIGN
B	05.12.25	TB	30% DETAILED DESIGN
A	21.11.25	TB	PRELIMINARY DESIGN

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PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
LOT 1- 3 - GROUND FLOOR LINTEL PLAN

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-1-04	D

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ORIGINAL DRAWING IN COLOUR

ANNOTATION LEGEND

BP## BASE PLATE TYPE, REFER DRAWING S-5-01 FOR DETAILS

X-## TYPICAL STEEL CONNECTIONS, REFER DRAWING S-5-01 FOR DETAILS

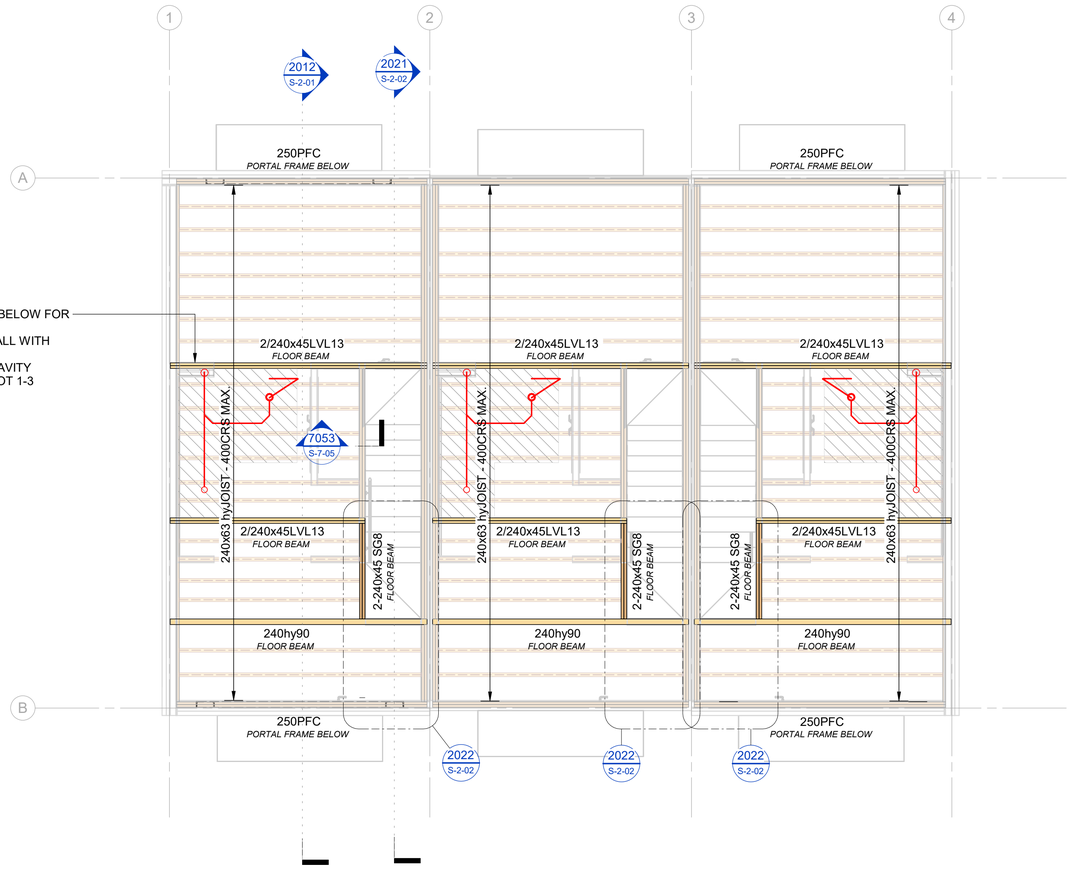
SH##-# TIMBER FIXING TAG EXAMPLE, REFER TIMBER FIXINGS LEGEND

LEGEND:

DS 2 x SG8 STUDS, WIDTH TO SUIT WALL FRAMING (REFER ARCH U.N.O)

TS 3 x SG8 STUDS, WIDTH TO SUIT WALL FRAMING (REFER ARCH U.N.O)

PROPOSED PLUMBING LAYOUT CO-ORDINATE WITH ARCHITECTURAL DRAWINGS



LOT 1-3 - MIDFLOOR FRAMING PLAN

1 : 50

MIDFLOOR FRAMING NOTES:

BOUNDARY JOISTS

1. WALLS PERPENDICULAR TO JOIST SPAN
   PROVIDE 2-240x45 SG8
   TO ALLOW MIN. 45 SEATING OF JOIST ONTO 90 WALL
   BOUNDARY JOISTS ARE INCLUDED IN CASSETTE FLOOR UNITS
   REFER TO CARTERS DOCUMENTATION
2. WALLS PARALLEL TO JOIST SPAN

   DOUBLE BOUNDARY JOISTS TYPICAL. TO SUIT.
   NOTE: OVER PORTAL REDUCED DEPTH OF BOUNDARY JOIST
   REFER TO DETAIL ON S-7-05

JOISTS

1. SETOUT OF JOISTS SHOWN ON DRAWINGS ARE INDICATIVE ONLY, U.N.O. CONTRACTOR TO COORDINATE BEAM LAYOUT WITH FLOOR CASSETTE MANUFACTURER, ARCH AND SERVICES AND DETERMINE FINAL QUANTITIES REQUIRED.
2. NOMINATED CRS ARE MAX SPACING AND MAY BE REDUCED AS REQUIRED TO SUIT FINAL LAYOUT.
3. JOISTS FIXINGS IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS U.N.O

SERVICES & PENETRATIONS

1. NO SERVICE PENETRATIONS TO BE DRILLED THROUGH FLOOR JOIST FLANGES. REFER ARCH DRAWINGS FOR LOCATION & SPECIFICATION OF SERVICES.
2. ALL NOTCHING / CUT BACKS / PENETRATION THROUGH JOIST FLANGES OR WEBS TO BE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS. REFER S-0-80 FOR HYJOIST NOTCHING / CUT BACKS / HOLES WITH HYJOIST GUIDANCE.
3. NO ALLOWANCE FOR PENETRATIONS IN ANY SOLID TIMBER MEMBERS GREATER THAN 50mm. WHERE ANY ADDITIONAL PENETRATIONS REQUIRED, CONTACT ENGINEER PRIOR

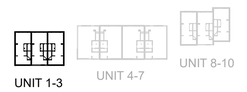
TIMBER NOTES:

GENERAL

1. ALL WORKS TO COMPLY WITH RELEVANT CLAUSES OF THE NZBC
2. READ DRAWINGS IN CONJUNCTION WITH ARCHITECTS DRAWINGS & SPECIFICATIONS
3. ALL TIMBER TO BE GRADE SG8 U.N.O
4. TIMBER TREATMENT TO COMPLY WITH NZS3602 AND AS SPECIFIED BY THE ARCHITECT, U.N.O ON STRUCTURAL DRAWINGS
5. ALL FIXINGS, CONNECTORS, NAILS, SCREWS, BOLTS, NUTS & WASHERS TO BE AT LEAST HOT DIP GALV OR STAINLESS STEEL TO COMPLY WITH NZS3064 DURABILITY REQUIREMENTS APPROPRIATE FOR THE SITE EXPOSURE, U.N.O

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.



KEY PLAN

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A	21.11.25	TB	PRELIMINARY DESIGN

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PROJECT
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2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
LOT 1-3 - MIDFLOOR FRAMING PLAN

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-1-05	D

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ORIGINAL DRAWING IN COLOUR

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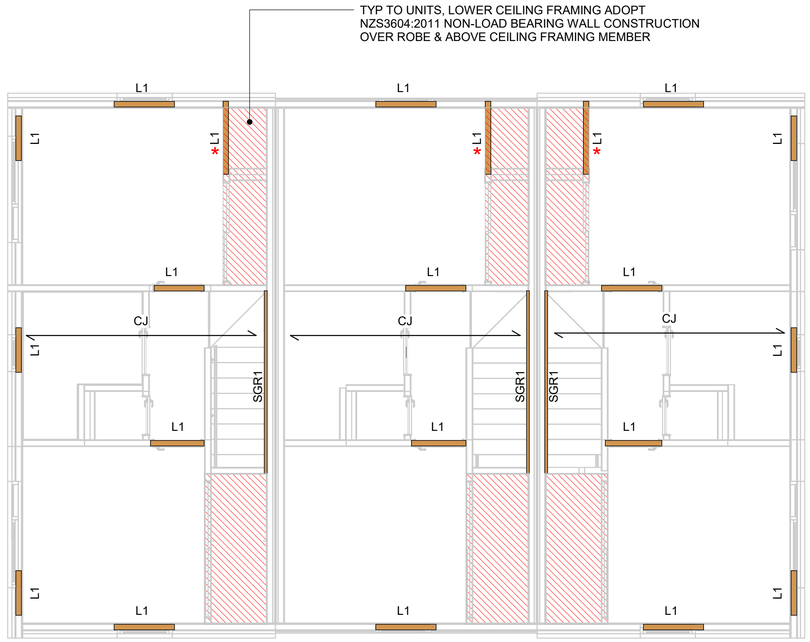

NOTE: LINTEL SUPPORTING STUDS, REFER LINTEL SCHEDULE

LOT 1-3 - FIRST FLOOR LINTEL PLAN

1 : 50

LINTEL NOTES:

GENERAL

1. U.N.O, ALL BEAMS TO BE FULLY BEARING ON NUMBER OF SUPPORT STUDS SPECIFIED IN LINTEL SCHEDULE
2. TRIMMER STUDS IN ACCORDANCE WITH NZS3604
3. MIN. 6kN TIE DOWN TO SLAB

TIMBER GRADE

1. ALL TIMBER TO BE GRADE SG8 U.N.O

LINTEL SCHEDULE

TYPE MARK	DESCRIPTION	SUPPORTING STUDS	FORMANCE LINTEL FIXING TYPE
L1	2-140x45 SG8	SS SUPPORTS	TYPE 4.3B
L2	2-190x45 SG8	DS SUPPORTS	TYPE 4.3B
L3	2-190x45 LVL13	DS SUPPORTS	TYPE 4.3B
L4	2-240x45 LVL13	DS SUPPORTS	TYPE 4.3B
L5	240hy90	DS SUPPORTS	TYPE 4.3B
L6	200hy90	REFER FORMANCE SIP DESIGN	REFER FORMANCE SIP DESIGN

NOTE: REFER S-0-84 - PRODUCT MANUAL SUPPORTS - SHEET 5 FOR FORMANCE LINTEL FIXING DETAILS.
LINTEL FIXINGS SPECIFIED IN LINTEL SCHEDULE ARE TYPICAL U.N.O

* LINTEL AT CEILING LEVEL TO SUPPORT CEILING VOID

LINTEL STUD SUPPORTS:

SS. DOUBLE STUD SUPPORTS, WIDTH TO SUIT FORMANCE PANEL
MIN. 90x45 SG8 TYP. UNO.

DS DOUBLE STUD SUPPORT, WIDTH TO SUIT FORMANCE PANEL,
MIN 2-90x45 SG8 TYP. UNO.

BRICK LINTELS

ALL HOT DIP GALV
80x6 EA UP TO 3m OPENING
125x75x8 UP TO 4.6m OPENING

NOTE: FREE FROM FRAMING AND MIN BEARING EACH SIDE OF 100mm OR 200mm WHERE OPENING IS >2.0m

STRINGER

SGR1 90x45 STRINGER FIXED OFF TO CONTINUOUS I.T. WALL FRAMING STUDS IN ACCORDANCE WITH MITEK STRINGER TYPE K FIXING.

CEILING JOISTS

CJ 90x45 SG8 CEILING JOISTS AT 600 CRS,
CONTINUOUS OVER 2 SPANS, MAX SINGLE SPAN 2m
FIX TO TOP PLATE WITH 3-90x3.15 DIA SKEW NAILS

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

KEY PLAN

FOR BUILDING CONSENT

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HOME CONSTRUCTION

PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
LOT 1-3 - FIRST FLOOR LINTEL PLAN

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-1-06	D

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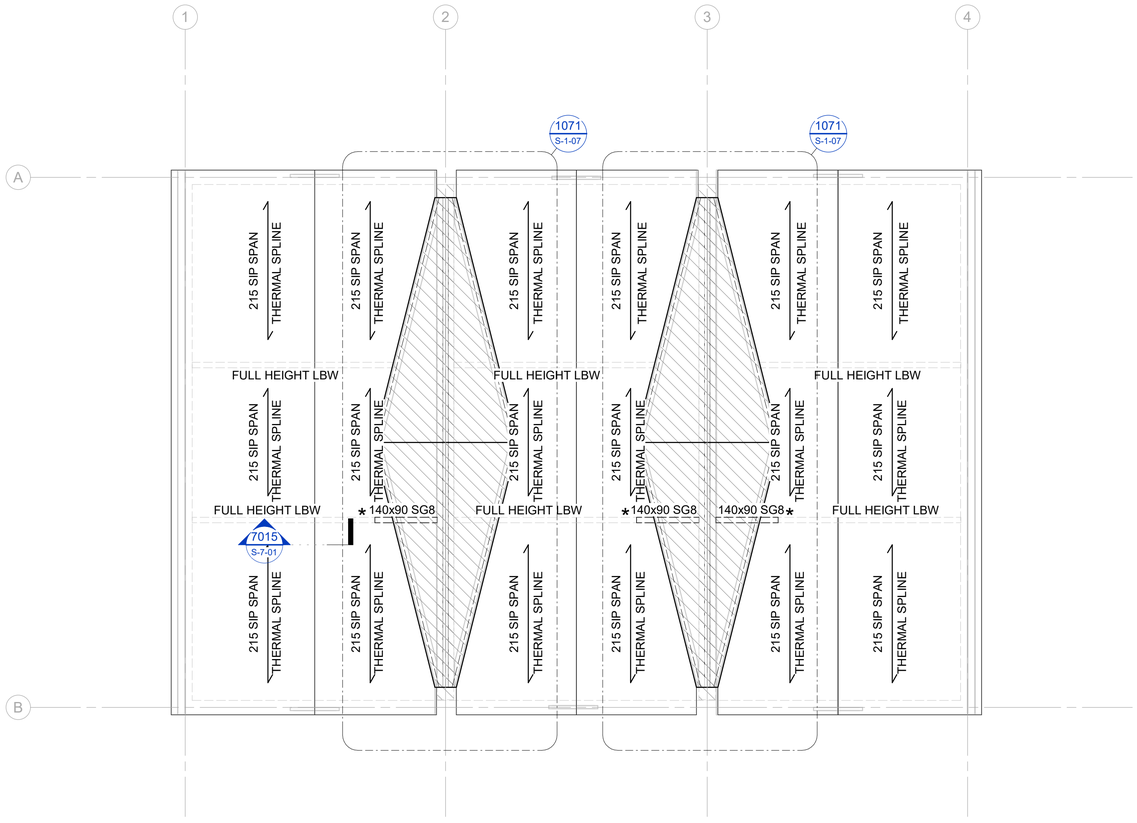


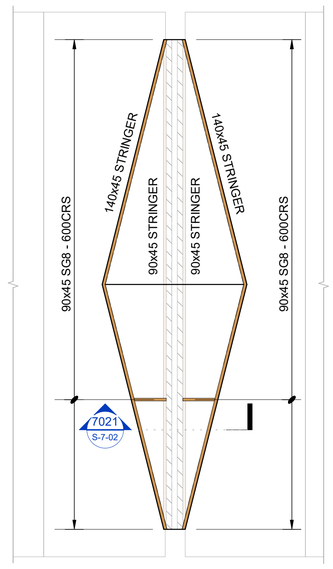
NOTE:

* RAKING BEAM TO UNDERSIDE OF SIP ROOF PANEL

NOTE: ALL CONNECTIONS BETWEEN PANELS AND TO LBW, REFER TO FORMANCE DESIGN GUIDE V2

LOT 1-3 - ROOF PLAN

1 : 50

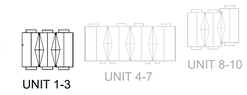


1071 / S-1-07 LOT 1-3 - ROOF PLAN - 10º ROOF AREA

1 : 50

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.



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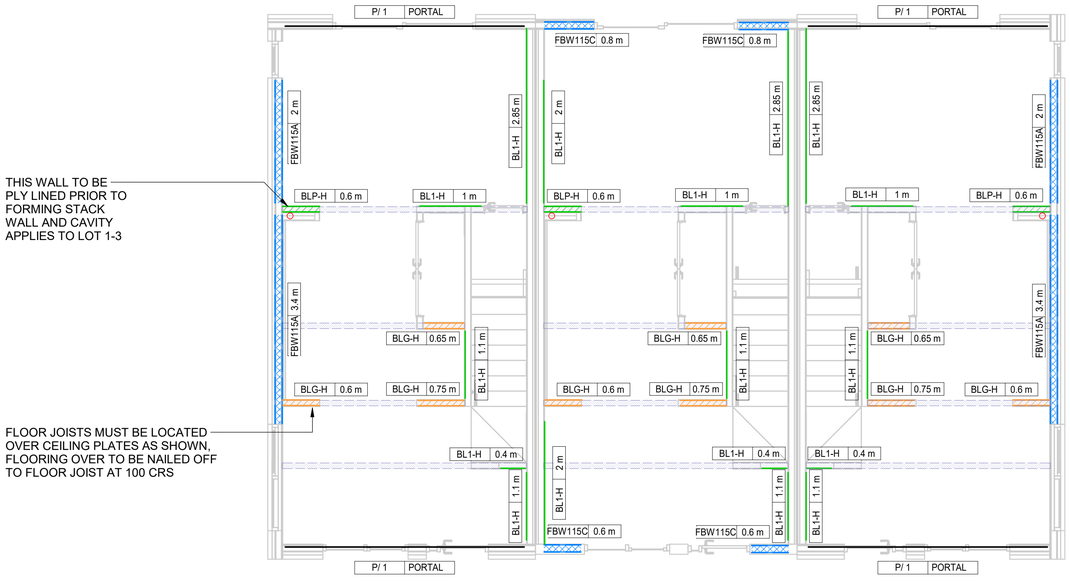


LOT 1-3 - GROUND FLOOR BRACING PLAN

1 : 50

BRACING LEGEND

WALL BRACING REF

BL1-H | 3.5 m

- BRACE LENGTH (m)
- BRACE TYPE

CONTINUOUS TOP / CEILING PLATES

CONTINUOUS CEILING PLATE NAILED OFF TO BRACING WALLS WITH 90 x 3.15Ø NAILS AT MAX 150mm CRS

6kN DENOTES 6kN CAPACITY CONNECTION EITHER TYLOK 6T10 OR PLATE-LOK, REFER S-0-80

12kN DENOTES 12kN CAPACITY CONNECTION, 2 x SHEET BRACE STRAPS FIXED WITH 6 x LUMBERLOK PRODUCT NAILS 30mm x 3.15Ø PER END PER STRAP (24 NAILS TOTAL), REFER S-0-80

NOTE: WHERE NOT INDICATED ON PLAN CEILING PLATE CONNECTIONS FOR TOP PLATES AT RIGHT ANGLES & TOP PLATES IN LINE TO BE MIN 6kN CAPACITY IN ACCORDANCE WITH MITEK LUMBERLOK TOP PLATE JOINTING U.N.O. REFER S-0-80

PACK OUT STUDS WITH 7mm RIPPED TIMBER OR 7mm PLY WITHIN WARDROBE ONLY TO MATCH EP1 - PLYWOOD THICKNESS

WALL BRACING SPECIFICATION

ALL BRACING SYSTEMS TO BE CONSTRUCTED AS PER MANUFACTURER'S SPECIFICATIONS & REQUIREMENTS.

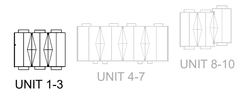
CEILING PLATES INDICATED ON THESE PLANS ARE FOR SPECIFIC ENGINEERING DESIGNED ELEMENTS ONLY. CEILING PLATES FOR THE REMAINDER OF BRACING ELEMENTS & FRAMING SHOULD BE INSTALLED AS PER NZS3604:2011

BRACING ELEMENTS TO BE INSTALLED ON WALL FACES INDICATED ON PLAN.

SPECIFICATION CODE	LINING REQUIREMENT	HOLD DOWNS
BL1-H	10mm OR 13mm GIB BRACELINE TO ONE SIDE ONLY	●
BLG-H	10mm OR 13mm GIB BRACELINE TO ONE SIDE OF THE FRAME PLUS ANY 10mm OR 13mm GIB PLASTERBORAD TO THE OTHER SIDE	●
BLP-H	10mm OR 13mm GIB BRACELINE TO ONE SIDE OF THE FRAME PLUS MINIMUM 7mm STRUCTURAL PLYWOOD MANUFACTURED TO AS/NZ 2269.0 :2012 TO THE OTHER SIDE	●
CS	810x2400 BRACE WALL CAVITY SLIDER INSTALLED AS PER MANUFACTURERS GUIDELINES. MINIMUM BRACING CAPACITY OF 144BU WIND & 149BU EQ.	●
EP1	MIN 7mm ECOPLY PLYWOOD ONE SIDE OF FRAMING WITH HOLD DOWNS AT EACH END OF THE ELEMENT	●
FBW115A	FORMANCE SIP BRACING WALL 115	●
FBW115C	FORMANCE SIP BRACING WALL 115	●
FBW115D	FORMANCE SIP BRACING WALL 115	●
GS1-N	ANY 10mm OR 13mm GIB STANDARD PLASTERBOARD TO ONE SIDE ONLY	
PORTAL	250PFC LINTEL PORTAL WITH 300PFC PORTAL LEGS	●

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.



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TITLE
LOT 1- 3 - GROUND FLOOR BRACING PLAN

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Project No.	Drawing No.	Rev
P25-120	S-1-08	D

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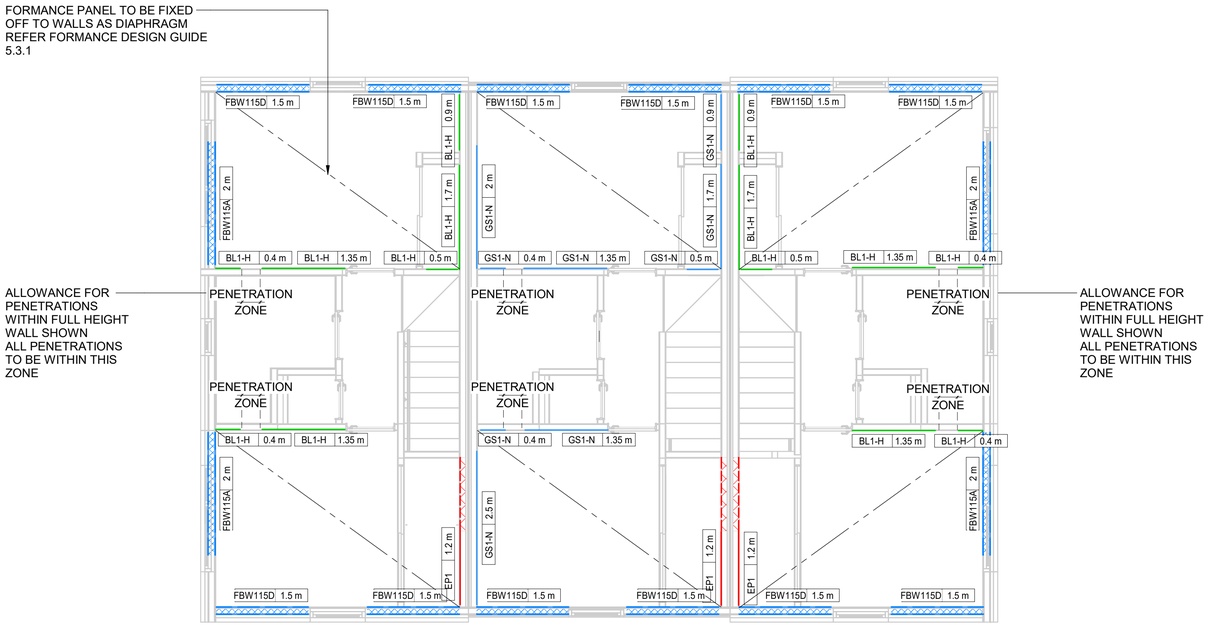

LOT 1-3 - FIRST FLOOR BRACING PLAN

1 : 50

BRACING LEGEND

WALL BRACING REF

BL1-H | 3.5 m

- BRACE LENGTH (m)
- BRACE TYPE

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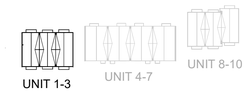

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TITLE
LOT 1-3 - FIRST FLOOR BRACING PLAN

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-1-09	D

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ORIGINAL DRAWING IN COLOUR

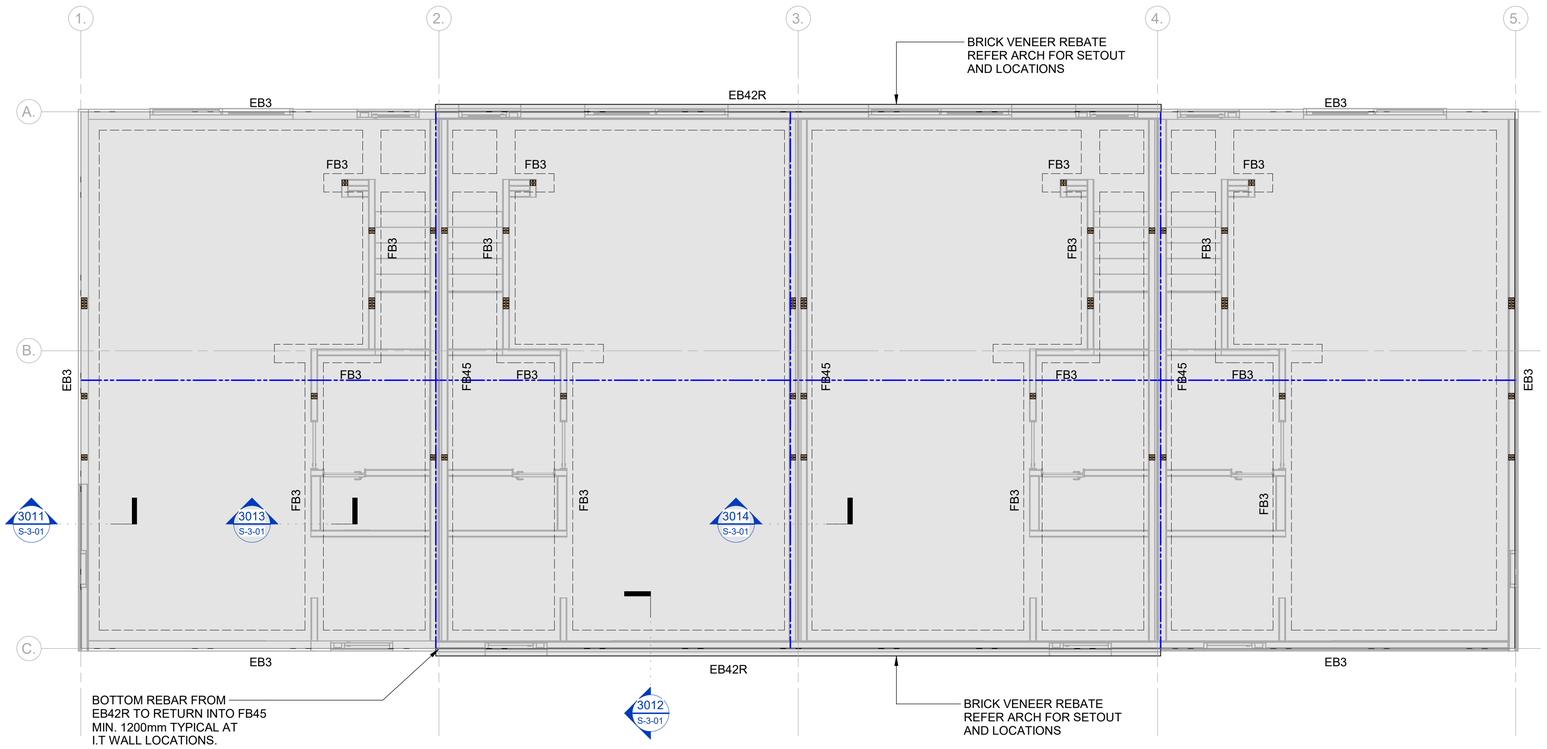
RAFT SLAB LEGEND

TYP. RE-ENTRANT BARS
2-HD12, 1200 LONG

25mm DEEP x 3mm WIDE SAWCUT

* CAST IN BASE CONNECTION
REFER TO DETAILS ON S-5-01

HD10 U-BAR, MIN. 1000 LAP WITH MESH
(TIED TO UNDERSIDE OF MESH)



LOT 4 - 7 FOUNDATION PLAN

1 : 50

WAFFLE RAFT SLAB NOTES

1. FOUNDATION NOTES

1.1. CONTRACTOR TO REVIEW BUILDING CONSENT INSPECTION REQUIREMENTS.

1.2. ALL SETOUTS, REBATES SETDOWN DIMENSIONS AND DRAINAGE LOCATIONS SHALL BE TAKEN FROM ARCHITECTURAL DWGS.

1.3. SERVICES SHALL BE ACCOMMODATED AS PER STANDARD DETAILS ATTACHED.

1.4. A SINGLE LAYER DPM VAPOUR BARRIER SHALL BE LAPPED AND TAPED AND COMPLIANT WITH NZS3604 BELOW FOUNDATION SLAB

1.5. PROVIDE SAND BLINDING TO TOP OF PREPARED BASE BELOW DPM.

1.6. IT IS ANTICIPATED ALL GROUND FLOOR LEVEL SERVICES RUN BELOW THE ENTIRE RAFT SYSTEM WITHIN COMPACTED HARDFILL. ANY VARIATION TO THIS SHOULD BE CONFIRMED WITH ENGINEER.

2. SLAB POINT LOADS

2.1. POINT LOADS MUST LAND ON FOUNDATION BEAMS AS SHOWN ON PLAN. CONTRACTOR MUST VERIFY POINT LOAD POSITION. WHERE LOAD BEARING WALL DOES NOT LAND ON INTERNAL THICKENING, CONTACT ENGINEER IMMEDIATELY.

SUBGRADE SPECIFICATION

THE SITE SHALL BE PREPARED IN ACCORDANCE WITH SITE SPECIFIC SOIL INVESTIGATION REPORT AS NOTED IN REFERENCE DOCUMENTS AND AS PER THE BELOW SPECIFICATIONS:

EXCAVATE & REMOVE FILL / TOPSOIL & UNSUITABLE MATERIAL (Hd)	MIN 300 BGL
ULTIMATE BEARING CAPACITY (ubc)	MIN 300kPa AT SUBGRADE LAYER TO BE CONFIRMED ONSITE BY ENGINEER
HARDFILL SPECIFICATION	COMPACTED AP40/AP65 HARDFILL IN 200mm MAX LOOSE LAYERS TO ACHIEVE A 95% OF MAX DRY DENSITY COMPACTION VERIFIED BY ND TESTING
ASSUMED COMPACTED HARDFILL	FOUNDATION DESIGN HAS BEEN BASED ON THE ASSUMPTION OF 150mm MIN. COMPACTED HARDFILL BELOW UNDERSIDE OF RAFT SLAB
HARDFILL EXTENTS (He)	COMPACTED HARDFILL IS TO EXTEND A MIN OF (Hd) + 100mm OR 500mm, WHICHEVER THE GREATER, PAST EXTENT OF FOUNDATION FOOTPRINT

RAFT SLAB SPECIFICATION

CONCRETE:	25MPa CONCRETE COMPRESSIVE STRENGTH
POLY:	200mm KOOLFOAM SOLID ECO POD 1800x1200.SPACES AND BAR CHAIRS - USE PROPRIETARY SYSTEMS (WJ, CONQURA OR EQUIVALENT TO ENSURE ACCURATE RIB WIDTHS AND REBAR POSITIONS).
MESH:	DUCTILITY CLASS 'E' TO NZS 4671. SE72 OR EQUIVALENT. 25 MIN. COVER 2 BAR CHAIRS PER SQUARE METRE, CHAIR HEIGHT 40 MIN
REINFORCING COVER:	MIN. 25 COVER TO SLAB SURFACE MIN. 50 COVER TO BOTTOM OF RIBS / BEAMS MIN. 50 COVER TO SIDES OF EXTERNAL BEAMS
INSULATION:	50 SLABX200 - BELOW FOUNDATION SLAB
SLAB DEPTH (sd)	100
POD DEPTH (pd):	200
OVERALL DEPTH (od)	300

RAFT SLAB BEAM & RIB REINFORCING

TYPE MARK	BOT. REINF (rb)	TOP. REINF (rt)	ADDITIONAL REINF.
EB3	2-HD12	2-HD12	
EB42R	3-HD12	2-HD12	R10 LINKS - 600 CRS - REFER DETAIL
FB3	2-HD12	-	
FB45	3-HD12	2-HD12	

FOUNDATION PAD - FOOTING SCHEDULE

TYPE MARK	REINFORCING	DETAIL REF.
PD8	HD12 U-BAR TOP & BTM. 200 CRS EACH WAY	PD8 / S-3-01

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

UNIT 1-3 UNIT 4-7 UNIT 8-10

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TITLE
LOT 4-7 - FOUNDATION PLAN

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-1-20	D

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TIMBER STUDS LEGEND:

DS 2 x SG8 STUDS, WIDTH TO SUIT WALL FRAMING & WIDTH TO SUIT FORMANCE PANELS

LEGEND:

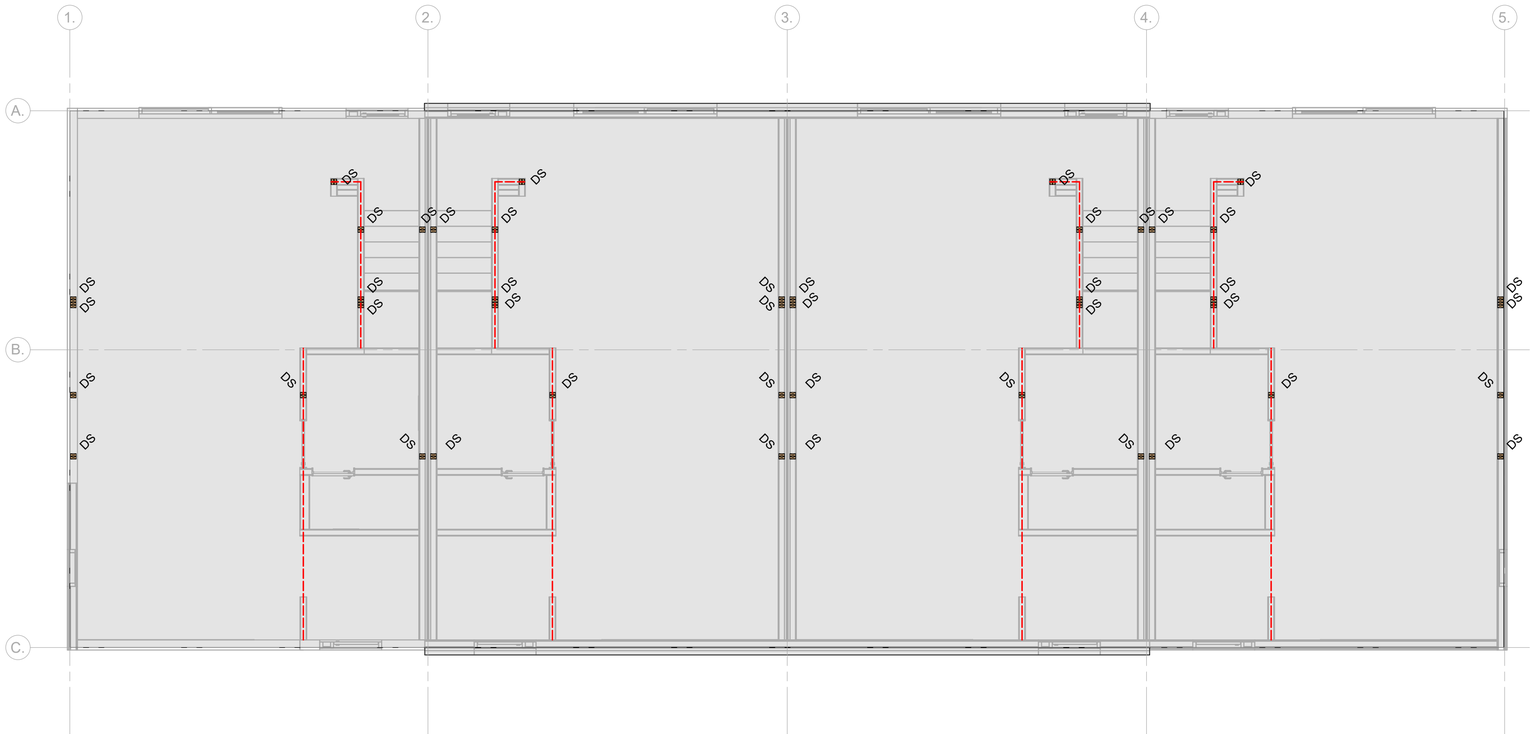
_ _ _ _ _ _ _ _ LOAD BEARING WALL LINE FRAMING IN ACCORDANCE WITH NZS3604:2011

ANNOTATION LEGEND

BP## BASE PLATE TYPE, REFER DRAWING S-5-01 FOR DETAILS

X-## TYPICAL STEEL CONNECTIONS, REFER DRAWING S-5-01 FOR DETAILS

SH##-# TIMBER FIXING TAG EXAMPLE, REFER TIMBER FIXINGS LEGEND



LOT 4 - 7 GROUND FLOOR PLAN

1 : 50

GROUND FLOOR NOTES

GENERAL

1. ALL WORKS TO COMPLY WITH RELEVANT CLAUSES OF THE NZBC
2. READ DRAWINGS IN CONJUNCTION WITH ARCHITECTS DRAWINGS & SPECIFICATIONS

SLAB REBATES

ALL SLAB REBATES OR RECESSES TO BE SET OUT BY ARCHITECT.
FOR REBATED EDGE BEAMS REFER FOUNDATION PLAN

SERVICES PENETRATIONS

SERVICE PENETRATION THROUGH SLAB - REFER DETAILS ON S-3-30

TIMBER

ALL TIMBER TO BE GRADE SG8 U.N.O.

STUDS

ALL STUD SUPPORTS TO HAVE A MIN. OF 6kN TIE DOWN CONNECTIONS TO GROUND FLOOR AND 12 kN TO L1 DOUBLE STUDS TYP. U.N.O.

NOTES

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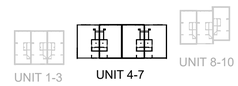

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P25-120	S-1-21	B

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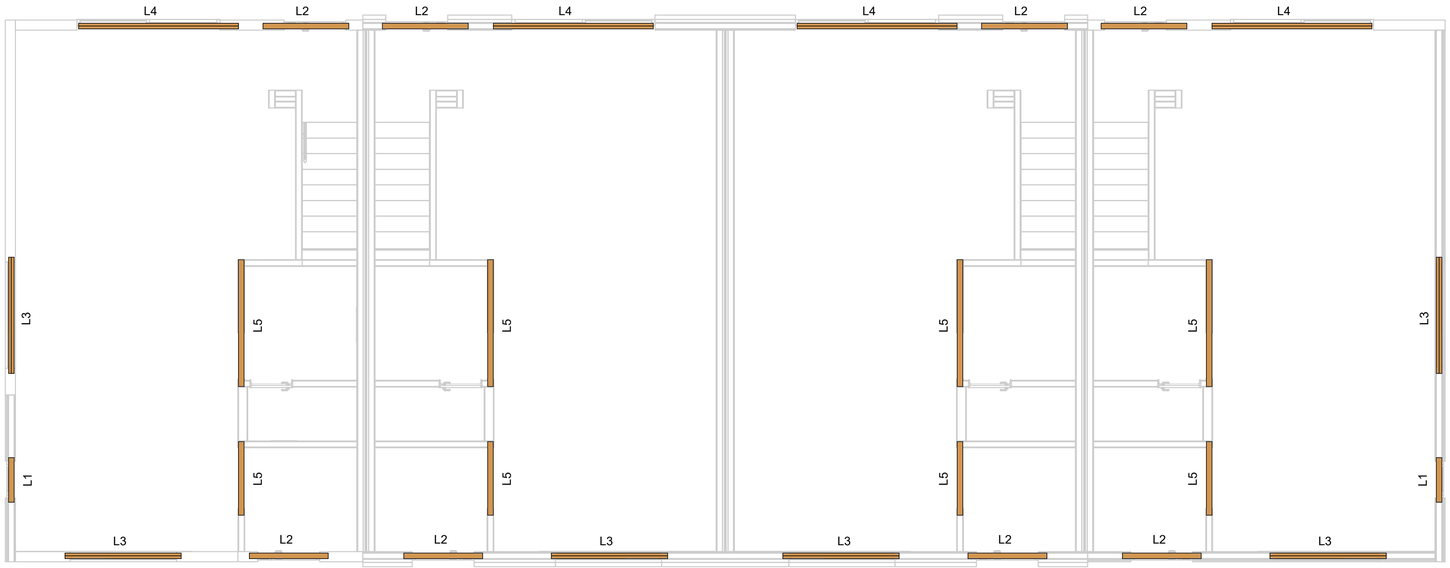

NOTE: LINTEL SUPPORTING STUDS, REFER LINTEL SCHEDULE

LOT 4-7 - GROUND FLOOR LINTEL PLAN

1 : 50

LINTEL NOTES:

GENERAL

1. U.N.O, ALL BEAMS TO BE FULLY BEARING ON NUMBER OF SUPPORT STUDS SPECIFIED IN LINTEL SCHEDULE
2. TRIMMER STUDS IN ACCORDANCE WITH NZS3604
3. MIN. 6kN TIE DOWN TO SLAB

TIMBER GRADE

1. ALL TIMBER TO BE GRADE SG8 U.N.O

LINTEL SCHEDULE

TYPE MARK	DESCRIPTION	SUPPORTING STUDS	FORMANCE LINTEL FIXING TYPE
L1	2-140x45 SG8	SS SUPPORTS	TYPE 4.3B
L2	2-190x45 SG8	DS SUPPORTS	TYPE 4.3B
L3	2-190x45 LVL13	DS SUPPORTS	TYPE 4.3B
L4	2-240x45 LVL13	DS SUPPORTS	TYPE 4.3B
L5	240hy90	DS SUPPORTS	TYPE 4.3B
L6	200hy90	REFER FORMANCE SIP DESIGN	REFER FORMANCE SIP DESIGN

NOTE: REFER S-0-84 - PRODUCT MANUAL SUPPORTS - SHEET 5 FOR FORMANCE LINTEL FIXING DETAILS.
LINTEL FIXINGS SPECIFIED IN LINTEL SCHEDULE ARE TYPICAL U.N.O

* LINTEL AT CEILING LEVEL TO SUPPORT CEILING VOID

LINTEL STUD SUPPORTS:

SS. DOUBLE STUD SUPPORTS, WIDTH TO SUIT FORMANCE PANEL
MIN. 90x45 SG8 TYP. UNO.

DS DOUBLE STUD SUPPORT, WIDTH TO SUIT FORMANCE PANEL,
MIN 2-90x45 SG8 TYP. UNO.

BRICK LINTELS

ALL HOT DIP GALV
80x6 EA UP TO 3m OPENING
125x75x8 UP TO 4.6m OPENING

NOTE: FREE FROM FRAMING AND MIN BEARING EACH SIDE OF 100mm OR 200mm WHERE OPENING IS >2.0m

NOTES

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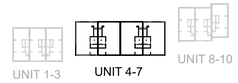

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Project No.	Drawing No.	Rev
P25-120	S-1-24	D

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ORIGINAL DRAWING IN COLOUR

ANNOTATION LEGEND

BP## BASE PLATE TYPE, REFER DRAWING S-5-01 FOR DETAILS

X-## TYPICAL STEEL CONNECTIONS, REFER DRAWING S-5-01 FOR DETAILS

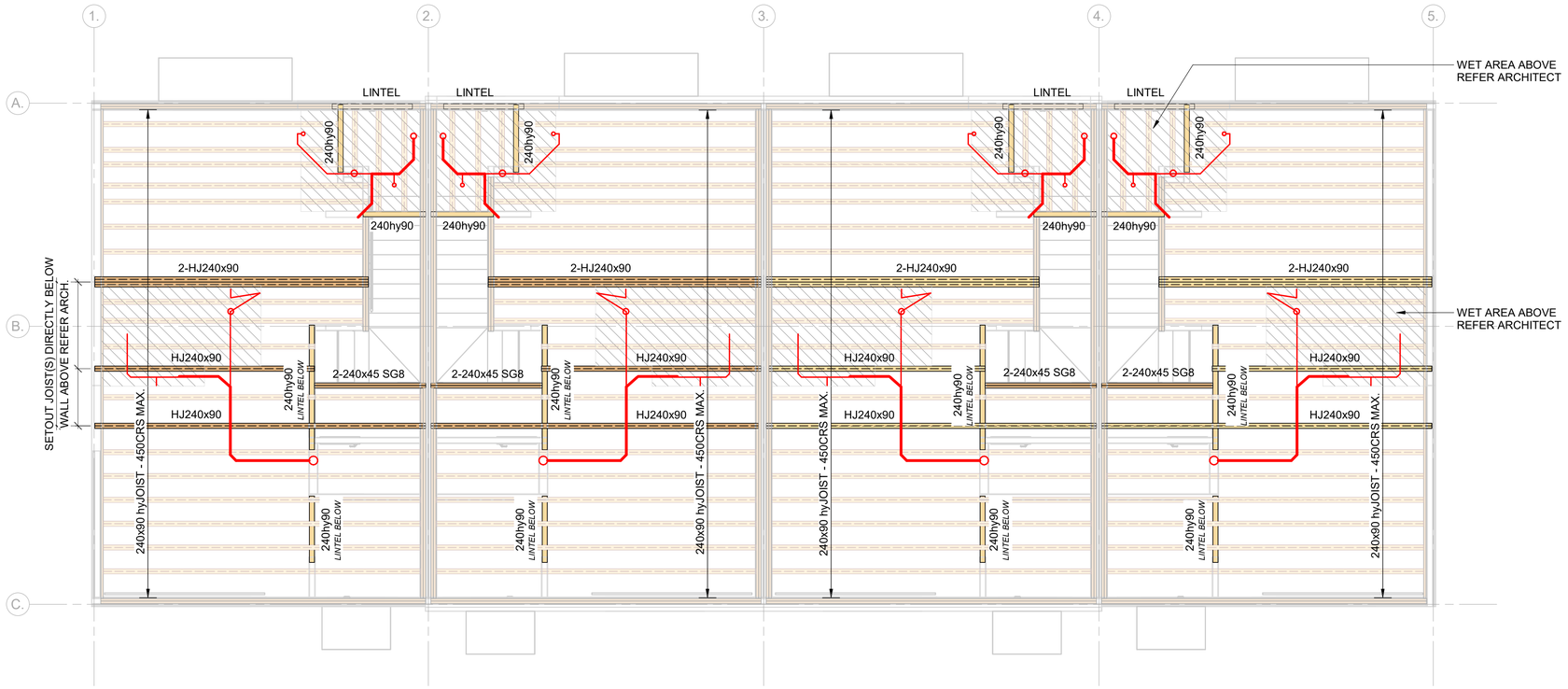
SH##-# TIMBER FIXING TAG EXAMPLE, REFER TIMBER FIXINGS LEGEND

LEGEND:

DS 2 x SG8 STUDS, WIDTH TO SUIT WALL FRAMING (REFER ARCH U.N.O)

TS 3 x SG8 STUDS, WIDTH TO SUIT WALL FRAMING (REFER ARCH U.N.O)

PROPOSED PLUMBING LAYOUT CO-ORDINATE WITH ARCHITECTURAL DRAWINGS



LOT 4-7 - MIDFLOOR FRAMING PLAN

1 : 50

MIDFLOOR FRAMING NOTES:

BOUNDARY JOISTS

1. WALLS PERPENDICULAR TO JOIST SPAN
   PROVIDE 2-240x45 SG8
   TO ALLOW MIN. 45 SEATING OF JOIST ONTO 90 WALL
   BOUNDARY JOISTS ARE INCLUDED IN CASSETTE FLOOR UNITS
   REFER TO CARTERS DOCUMENTATION
2. WALLS PARALLEL TO JOIST SPAN

   DOUBLE BOUNDARY JOISTS TYPICAL. TO SUIT.
   NOTE: OVER PORTAL REDUCED DEPTH OF BOUNDARY JOIST
   REFER TO DETAIL ON S-7-05

JOISTS

1. SETOUT OF JOISTS SHOWN ON DRAWINGS ARE INDICATIVE ONLY, U.N.O. CONTRACTOR TO COORDINATE BEAM LAYOUT WITH FLOOR CASSETTE MANUFACTURER, ARCH AND SERVICES AND DETERMINE FINAL QUANTITIES REQUIRED.
2. NOMINATED CRS ARE MAX SPACING AND MAY BE REDUCED AS REQUIRED TO SUIT FINAL LAYOUT.
3. JOISTS FIXINGS IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS U.N.O

SERVICES & PENETRATIONS

1. NO SERVICE PENETRATIONS TO BE DRILLED THROUGH FLOOR JOIST FLANGES. REFER ARCH DRAWINGS FOR LOCATION & SPECIFICATION OF SERVICES.
2. ALL NOTCHING / CUT BACKS / PENETRATION THROUGH JOIST FLANGES OR WEBS TO BE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS. REFER S-0-80 FOR HYJOIST NOTCHING / CUT BACKS / HOLES WITH HYJOIST GUIDANCE.
3. NO ALLOWANCE FOR PENETRATIONS IN ANY SOLID TIMBER MEMBERS GREATER THAN 50mm. WHERE ANY ADDITIONAL PENETRATIONS REQUIRED, CONTACT ENGINEER PRIOR

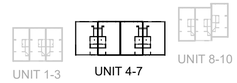
TIMBER NOTES:

GENERAL

1. ALL WORKS TO COMPLY WITH RELEVANT CLAUSES OF THE NZBC
2. READ DRAWINGS IN CONJUNCTION WITH ARCHITECTS DRAWINGS & SPECIFICATIONS
3. ALL TIMBER TO BE GRADE SG8 U.N.O
4. TIMBER TREATMENT TO COMPLY WITH NZS3602 AND AS SPECIFIED BY THE ARCHITECT, U.N.O ON STRUCTURAL DRAWINGS
5. ALL FIXINGS, CONNECTORS, NAILS, SCREWS, BOLTS, NUTS & WASHERS TO BE AT LEAST HOT DIP GALV OR STAINLESS STEEL TO COMPLY WITH NZS3064 DURABILITY REQUIREMENTS APPROPRIATE FOR THE SITE EXPOSURE, U.N.O

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.



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PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
LOT 4-7 - MIDFLOOR FRAMING PLAN

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-1-25	D

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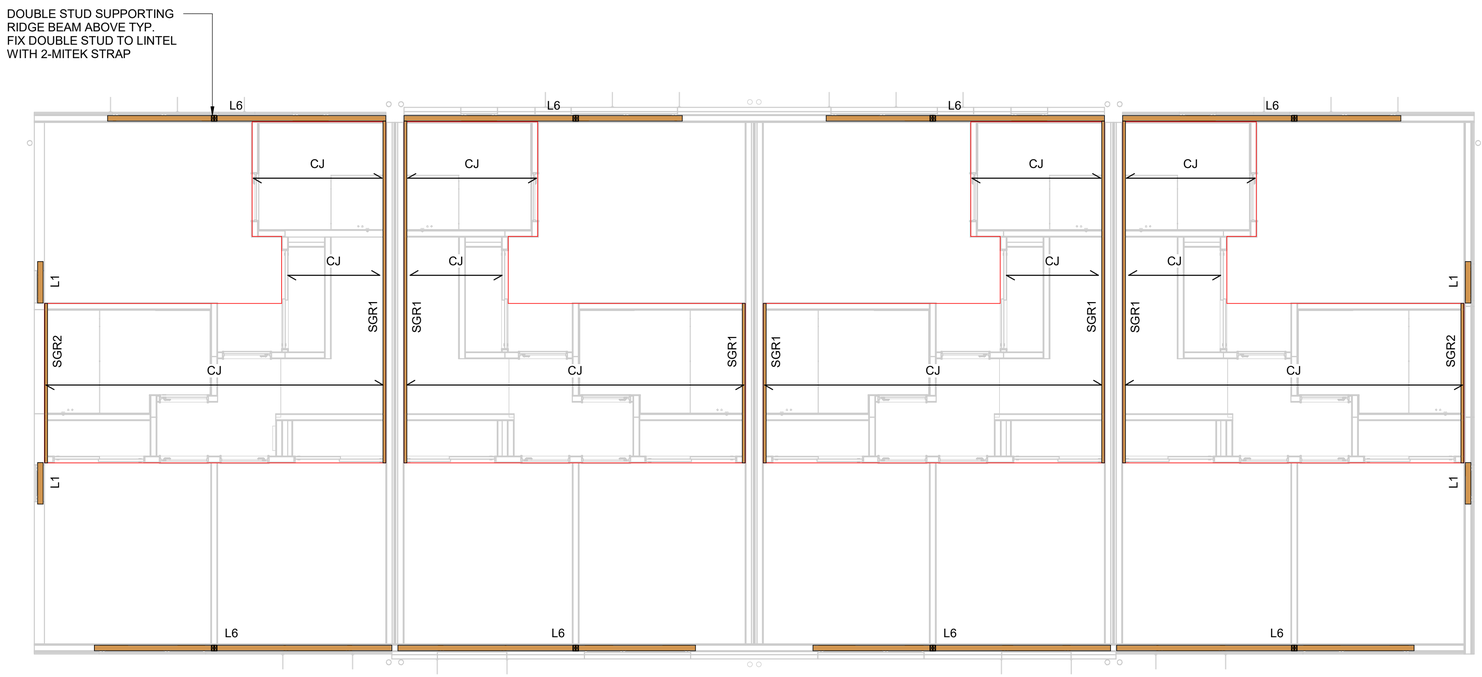
ORIGINAL DRAWING IN COLOUR



NOTE: LINTEL SUPPORTING STUDS, REFER LINTEL SCHEDULE

LOT 4-7 - FIRST FLOOR LINTEL PLAN

1 : 50

LINTEL NOTES:

GENERAL

1. U.N.O, ALL BEAMS TO BE FULLY BEARING ON NUMBER OF SUPPORT STUDS SPECIFIED IN LINTEL SCHEDULE
2. TRIMMER STUDS IN ACCORDANCE WITH NZS3604
3. MIN. 6kN TIE DOWN TO SLAB

TIMBER GRADE

1. ALL TIMBER TO BE GRADE SG8 U.N.O

LINTEL SCHEDULE

TYPE MARK	DESCRIPTION	SUPPORTING STUDS	FORMANCE LINTEL FIXING TYPE
L1	2-140x45 SG8	SS SUPPORTS	TYPE 4.3B
L2	2-190x45 SG8	DS SUPPORTS	TYPE 4.3B
L3	2-190x45 LVL13	DS SUPPORTS	TYPE 4.3B
L4	2-240x45 LVL13	DS SUPPORTS	TYPE 4.3B
L5	240hy90	DS SUPPORTS	TYPE 4.3B
L6	200hy90	REFER FORMANCE SIP DESIGN	REFER FORMANCE SIP DESIGN

NOTE: REFER S-0-84 - PRODUCT MANUAL SUPPORTS - SHEET 5 FOR FORMANCE LINTEL FIXING DETAILS.
LINTEL FIXINGS SPECIFIED IN LINTEL SCHEDULE ARE TYPICAL U.N.O

* LINTEL AT CEILING LEVEL TO SUPPORT CEILING VOID

LINTEL STUD SUPPORTS:

SS. DOUBLE STUD SUPPORTS, WIDTH TO SUIT FORMANCE PANEL
MIN. 90x45 SG8 TYP. UNO.

DS DOUBLE STUD SUPPORT, WIDTH TO SUIT FORMANCE PANEL,
MIN 2-90x45 SG8 TYP. UNO.

BRICK LINTELS

ALL HOT DIP GALV
80x6 EA UP TO 3m OPENING
125x75x8 UP TO 4.6m OPENING

NOTE: FREE FROM FRAMING AND MIN BEARING EACH SIDE OF 100mm OR 200mm WHERE OPENING IS >2.0m

STRINGER

SGR1 90x45 STRINGER FIXED OFF TO CONTINUOUS I.T. WALL FRAMING STUDS IN ACCORDANCE WITH MITEK STRINGER TYPE K FIXING.

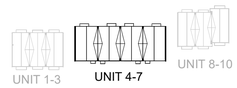
SGR2 140x45 LVL11 STRINGER FIXED OFF TO SIP WALL IN ACCORDANCE WITH FORMANCE GUIDE V2 DETAIL 3.09 FORMANCE SCREW AT 300 CRS

CEILING JOISTS

CJ 140x45 SG8 CEILING JOISTS AT 900 CRS,
CONTINUOUS OVER 2 OR 3 SPANS, MAX SINGLE SPAN 2.8m
FIX TO TOP PLATE WITH 3-90x3.15 DIA SKEW NAILS

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.



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ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
LOT 4-7 - FIRST FLOOR LINTEL PLAN

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-1-26	D

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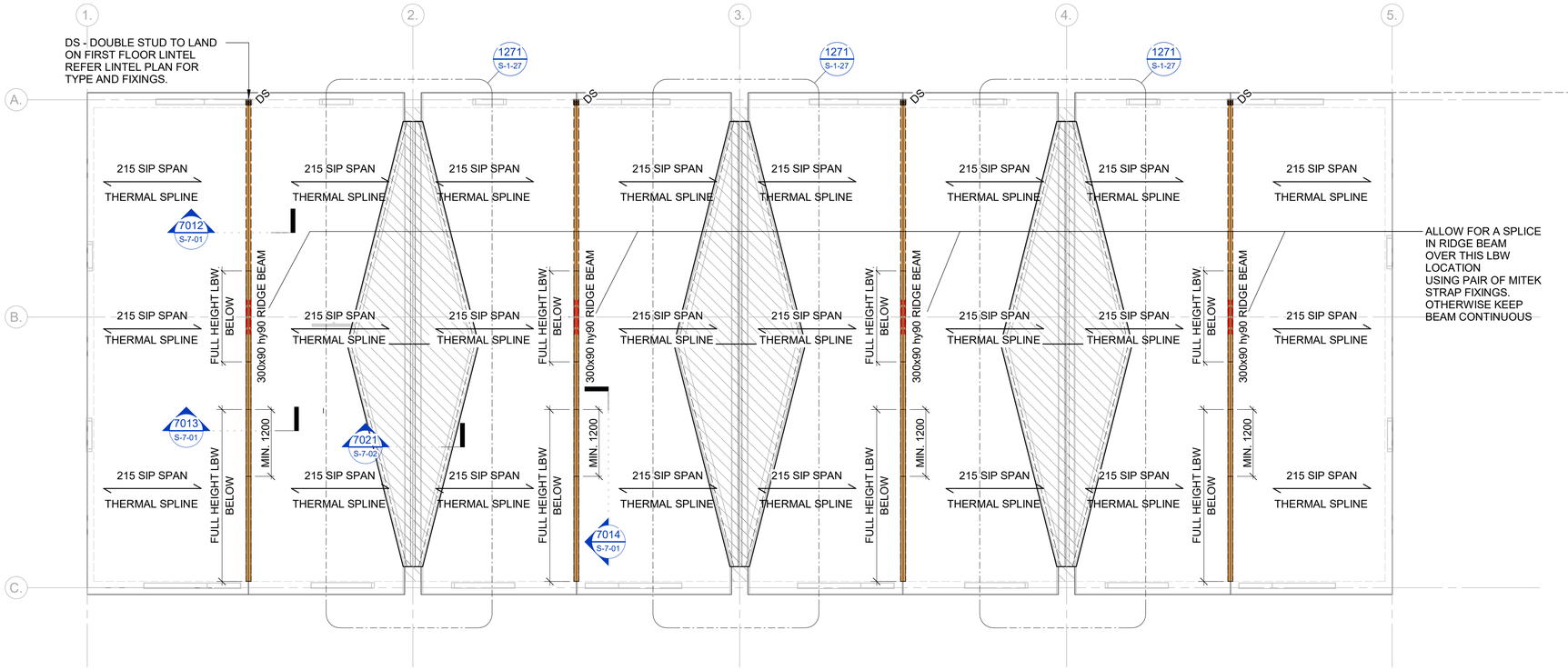
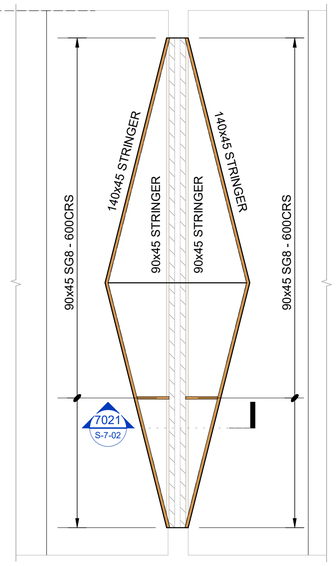
ORIGINAL DRAWING IN COLOUR





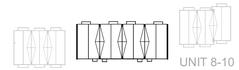
1271 / S-1-27 LOT 4-7 - ROOF PLAN - 10º ROOF AREA
1 : 50

NOTE: ALL CONNECTIONS BETWEEN PANELS AND TO LBW, REFER TO FORMANCE DESIGN GUIDE V2

LOT 4-7 - ROOF PLAN
1 : 50

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.



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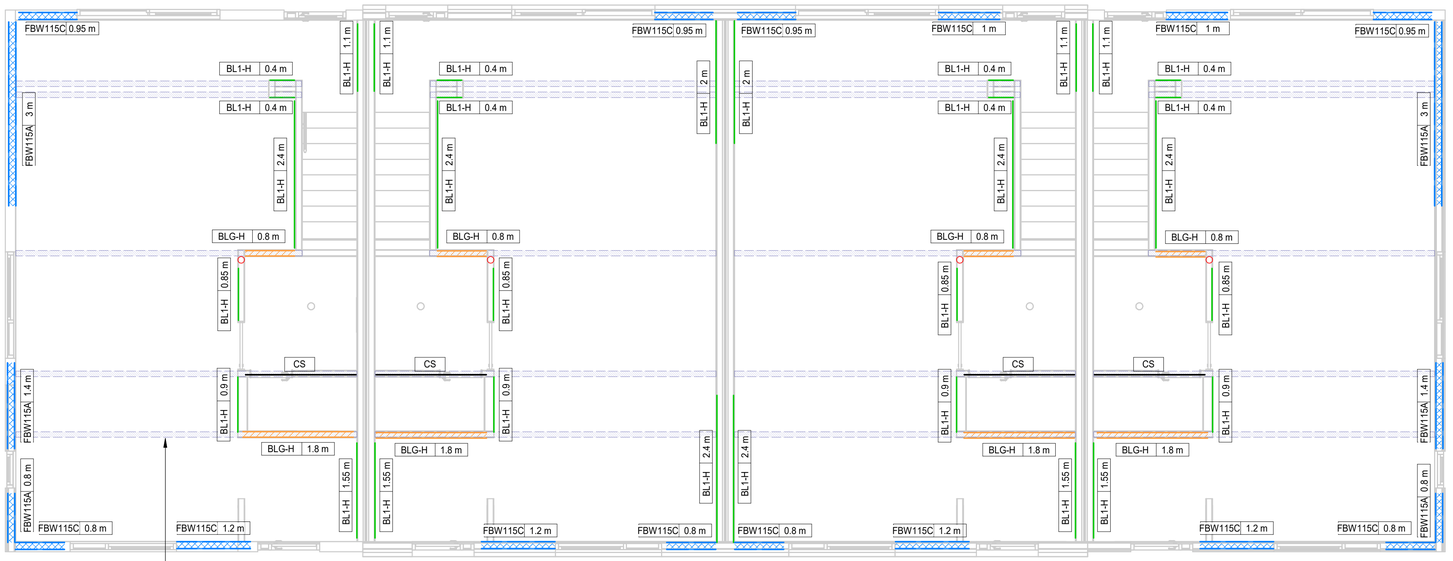


FLOOR JOISTS MUST BE LOCATED OVER CEILING PLATES AS SHOWN, FLOORING OVER TO BE NAILED OFF TO FLOOR JOIST AT 100 CRS

LOT 4-7 - GROUND FLOOR BRACING PLAN

1 : 50

BRACING LEGEND

WALL BRACING REF

BL1-H | 3.5 m

- BRACE LENGTH (m)
- BRACE TYPE

CONTINUOUS TOP / CEILING PLATES

CONTINUOUS CEILING PLATE NAILED OFF TO BRACING WALLS WITH 90 x 3.15Ø NAILS AT MAX 150mm CRS

6kN DENOTES 6kN CAPACITY CONNECTION EITHER TYLOK 6T10 OR PLATE-LOK, REFER S-0-80

12kN DENOTES 12kN CAPACITY CONNECTION, 2 x SHEET BRACE STRAPS FIXED WITH 6 x LUMBERLOK PRODUCT NAILS 30mm x 3.15Ø PER END PER STRAP (24 NAILS TOTAL), REFER S-0-80

NOTE: WHERE NOT INDICATED ON PLAN CEILING PLATE CONNECTIONS FOR TOP PLATES AT RIGHT ANGLES & TOP PLATES IN LINE TO BE MIN 6kN CAPACITY IN ACCORDANCE WITH MITEK LUMBERLOK TOP PLATE JOINTING U.N.O. REFER S-0-80

PACK OUT STUDS WITH 7mm RIPPED TIMBER OR 7mm PLY WITHIN WARDROBE ONLY TO MATCH EP1 - PLYWOOD THICKNESS

WALL BRACING SPECIFICATION

ALL BRACING SYSTEMS TO BE CONSTRUCTED AS PER MANUFACTURER'S SPECIFICATIONS & REQUIREMENTS.

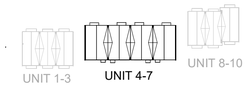
CEILING PLATES INDICATED ON THESE PLANS ARE FOR SPECIFIC ENGINEERING DESIGNED ELEMENTS ONLY. CEILING PLATES FOR THE REMAINDER OF BRACING ELEMENTS & FRAMING SHOULD BE INSTALLED AS PER NZS3604:2011

BRACING ELEMENTS TO BE INSTALLED ON WALL FACES INDICATED ON PLAN.

SPECIFICATION CODE	LINING REQUIREMENT	HOLD DOWNS
BL1-H	10mm OR 13mm GIB BRACELINE TO ONE SIDE ONLY	●
BLG-H	10mm OR 13mm GIB BRACELINE TO ONE SIDE OF THE FRAME PLUS ANY 10mm OR 13mm GIB PLASTERBORAD TO THE OTHER SIDE	●
BLP-H	10mm OR 13mm GIB BRACELINE TO ONE SIDE OF THE FRAME PLUS MINIMUM 7mm STRUCTURAL PLYWOOD MANUFACTURED TO AS/NZ 2269.0 :2012 TO THE OTHER SIDE	●
CS	810x2400 BRACE WALL CAVITY SLIDER INSTALLED AS PER MANUFACTURERS GUIDELINES. MINIMUM BRACING CAPACITY OF 144BU WIND & 149BU EQ.	●
EP1	MIN 7mm ECOPLY PLYWOOD ONE SIDE OF FRAMING WITH HOLD DOWNS AT EACH END OF THE ELEMENT	●
FBW115A	FORMANCE SIP BRACING WALL 115	●
FBW115C	FORMANCE SIP BRACING WALL 115	●
FBW115D	FORMANCE SIP BRACING WALL 115	●
GS1-N	ANY 10mm OR 13mm GIB STANDARD PLASTERBOARD TO ONE SIDE ONLY	
PORTAL	250PFC LINTEL PORTAL WITH 300PFC PORTAL LEGS	●

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.



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2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
LOT 4-7 - GROUND FLOOR BRACING PLAN

SCALE	DRAWN	DESIGN	APPROVED
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Project No.	Drawing No.	Rev
P25-120	S-1-28	D

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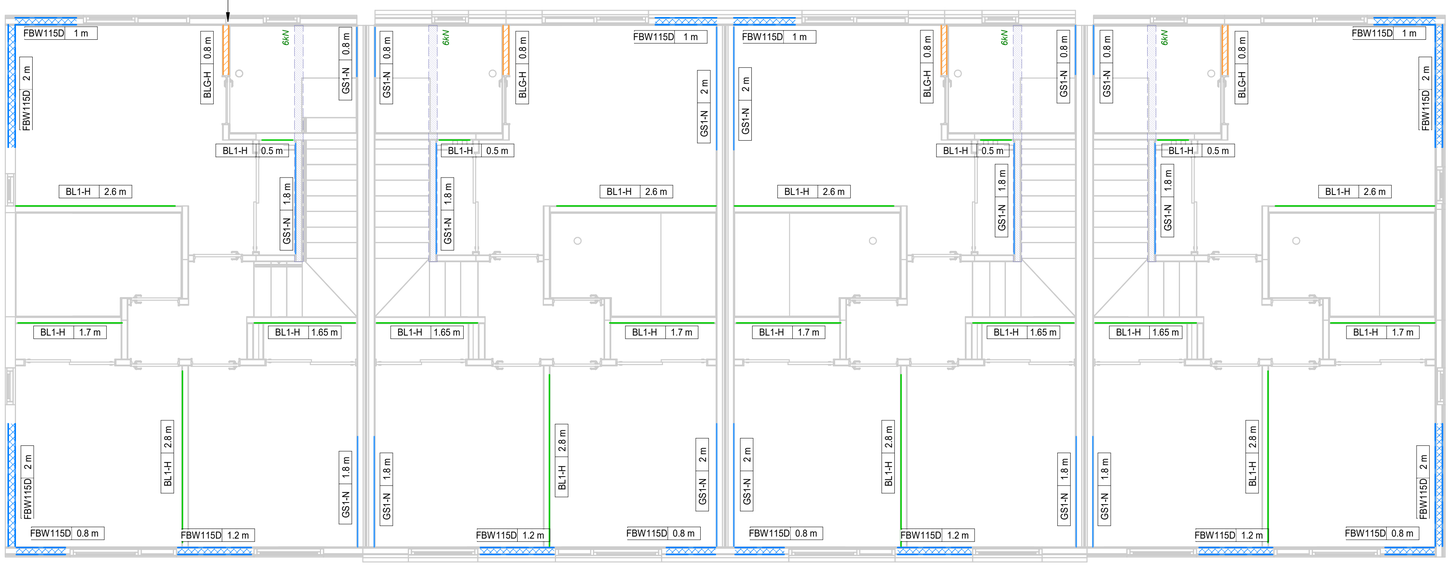
ORIGINAL DRAWING IN COLOUR

NOTE:
ADOPT DWANGS AT LOCATIONS OF SCREW FIXINGS OF EXTERNAL WALL SPLINES, CPC80 FROM TOP AND BOT OF DWANG TO STUD CONNECTED TO SPLINES
DWANGS TO BE CONTINUOUS FULL LENGTH OF BRACING WALL AND GIB BRACING PANEL TO BE SCREWED OFF TO DWANGS AT 50 CRS.
INTERNAL LOWER CEILING TO ADOPT GIB FIX ANGLE CONTINUOUS TO CONNECT ALL DWANGS TOGETHER.

TYP. ALL UNITS 4-7



LOT 4-7 - FIRST FLOOR BRACING PLAN

1 : 50

BRACING LEGEND

WALL BRACING REF

BL1-H 3.5 m
- BRACE LENGTH (m)
- BRACE TYPE

CONTINUOUS TOP / CEILING PLATES

CONTINUOUS CEILING PLATE NAILED OFF TO BRACING WALLS WITH 90 x 3.15Ø NAILS AT MAX 150mm CRS

6kN DENOTES 6kN CAPACITY CONNECTION EITHER TYLOK 6T10 OR PLATE-LOK, REFER S-0-80

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PACK OUT STUDS WITH 7mm RIPPED TIMBER OR 7mm PLY WITHIN WARDROBE ONLY TO MATCH EP1 - PLYWOOD THICKNESS

WALL BRACING SPECIFICATION

ALL BRACING SYSTEMS TO BE CONSTRUCTED AS PER MANUFACTURER'S SPECIFICATIONS & REQUIREMENTS.

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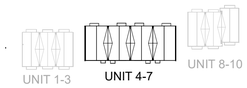
PORTAL	250PFC LINTEL PORTAL WITH 300PFC PORTAL LEGS	●

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.



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2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
LOT 4-7 - FIRST FLOOR BRACING PLAN

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-1-29	D

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4/02/2026 5:16:02 pm

ORIGINAL DRAWING IN COLOUR

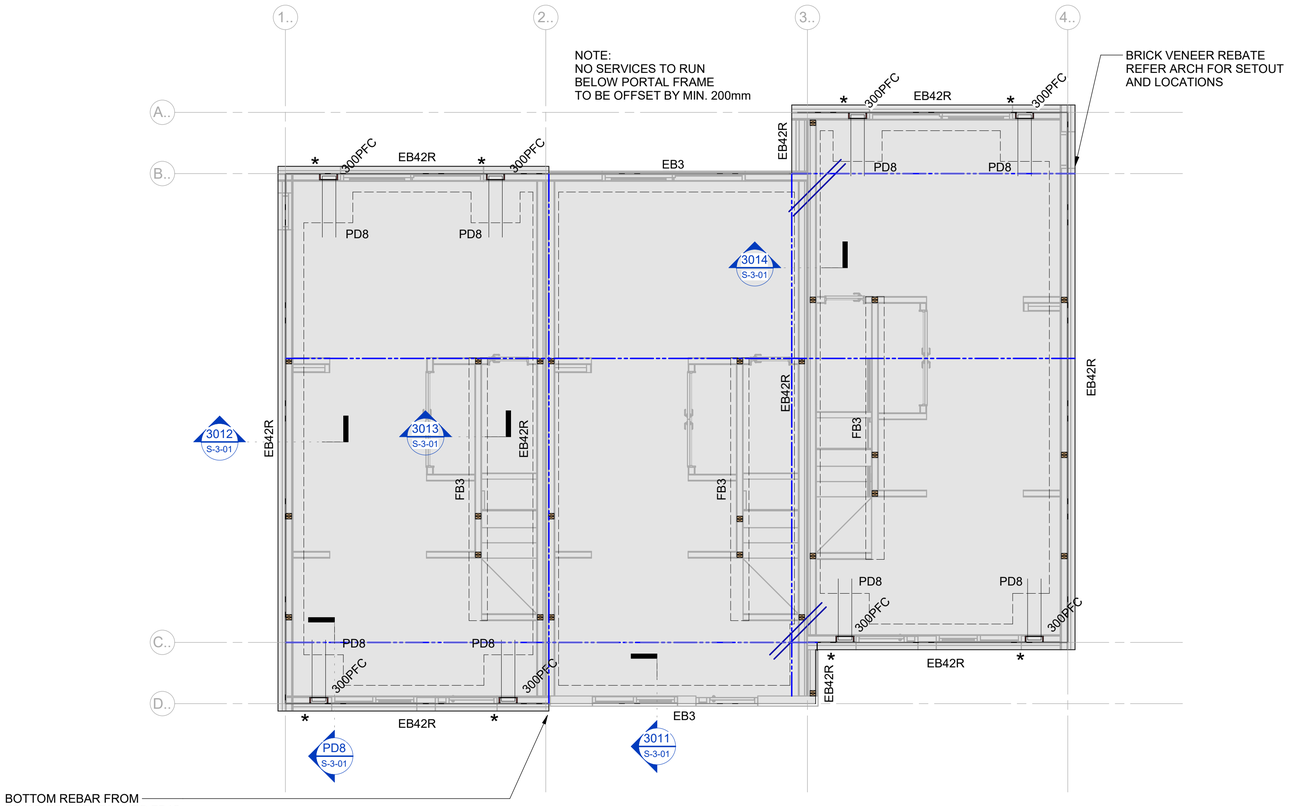
RAFT SLAB LEGEND

TYP. RE-ENTRANT BARS
2-HD12, 1200 LONG

25mm DEEP x 3mm WIDE SAWCUT

* CAST IN BASE CONNECTION
REFER TO DETAILS ON S-5-01

HD10 U-BAR, MIN. 1000 LAP WITH MESH
(TIED TO UNDERSIDE OF MESH)



LOT 8-10 - FOUNDATION PLAN

1 : 50

WAFFLE RAFT SLAB NOTES

1. FOUNDATION NOTES

1.1. CONTRACTOR TO REVIEW BUILDING CONSENT INSPECTION REQUIREMENTS.

1.2. ALL SETOUTS, REBATES SETDOWN DIMENSIONS AND DRAINAGE LOCATIONS SHALL BE TAKEN FROM ARCHITECTURAL DWGS.

1.3. SERVICES SHALL BE ACCOMMODATED AS PER STANDARD DETAILS ATTACHED.

1.4. A SINGLE LAYER DPM VAPOUR BARRIER SHALL BE LAPPED AND TAPED AND COMPLIANT WITH NZS3604 BELOW FOUNDATION SLAB

1.5. PROVIDE SAND BLINDING TO TOP OF PREPARED BASE BELOW DPM.

1.6. IT IS ANTICIPATED ALL GROUND FLOOR LEVEL SERVICES RUN BELOW THE ENTIRE RAFT SYSTEM WITHIN COMPACTED HARDFILL. ANY VARIATION TO THIS SHOULD BE CONFIRMED WITH ENGINEER.

2. SLAB POINT LOADS

2.1. POINT LOADS MUST LAND ON FOUNDATION BEAMS AS SHOWN ON PLAN. CONTRACTOR MUST VERIFY POINT LOAD POSITION. WHERE LOAD BEARING WALL DOES NOT LAND ON INTERNAL THICKENING, CONTACT ENGINEER IMMEDIATELY.

SUBGRADE SPECIFICATION

THE SITE SHALL BE PREPARED IN ACCORDANCE WITH SITE SPECIFIC SOIL INVESTIGATION REPORT AS NOTED IN REFERENCE DOCUMENTS AND AS PER THE BELOW SPECIFICATIONS:

EXCAVATE & REMOVE FILL / TOPSOIL & UNSUITABLE MATERIAL (Hd)	MIN 300 BGL
ULTIMATE BEARING CAPACITY (ubc)	MIN 300kPa AT SUBGRADE LAYER TO BE CONFIRMED ONSITE BY ENGINEER
HARDFILL SPECIFICATION	COMPACTED AP40/AP65 HARDFILL IN 200mm MAX LOOSE LAYERS TO ACHIEVE A 95% OF MAX DRY DENSITY COMPACTION VERIFIED BY ND TESTING
ASSUMED COMPACTED HARDFILL	FOUNDATION DESIGN HAS BEEN BASED ON THE ASSUMPTION OF 150mm MIN. COMPACTED HARDFILL BELOW UNDERSIDE OF RAFT SLAB
HARDFILL EXTENTS (He)	COMPACTED HARDFILL IS TO EXTEND A MIN OF (Hd) + 100mm OR 500mm, WHICHEVER THE GREATER, PAST EXTENT OF FOUNDATION FOOTPRINT

RAFT SLAB SPECIFICATION

CONCRETE:	25MPa CONCRETE COMPRESSIVE STRENGTH
POLY:	200mm KOOLFOAM SOLID ECO POD 1800x1200.SPACES AND BAR CHAIRS - USE PROPRIETARY SYSTEMS (WJ, CONQURA OR EQUIVALENT TO ENSURE ACCURATE RIB WIDTHS AND REBAR POSITIONS).
MESH:	DUCTILITY CLASS 'E' TO NZS 4671. SE72 OR EQUIVALENT. 25 MIN. COVER 2 BAR CHAIRS PER SQUARE METRE, CHAIR HEIGHT 40 MIN
REINFORCING COVER:	MIN. 25 COVER TO SLAB SURFACE MIN. 50 COVER TO BOTTOM OF RIBS / BEAMS MIN. 50 COVER TO SIDES OF EXTERNAL BEAMS
INSULATION:	50 SLABX200 - BELOW FOUNDATION SLAB
SLAB DEPTH (sd)	100
POD DEPTH (pd):	200
OVERALL DEPTH (od)	300

RAFT SLAB BEAM & RIB REINFORCING

TYPE MARK	BOT. REINF (rb)	TOP. REINF (rt)	ADDITIONAL REINF.
EB3	2-HD12	2-HD12	
EB42R	3-HD12	2-HD12	R10 LINKS - 600 CRS - REFER DETAIL
FB3	2-HD12	-	
FB45	3-HD12	2-HD12	

FOUNDATION PAD - FOOTING SCHEDULE

TYPE MARK	REINFORCING	DETAIL REF.
PD8	HD12 U-BAR TOP & BTM. 200 CRS EACH WAY	PD8 / S-3-01

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

UNIT 1-3 UNIT 4-7 UNIT 8-10

KEY PLAN

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
D	03.02.26	TB	BUILDING CONSENT
C	19.12.25	TB	60% DETAILED DESIGN
B	05.12.25	TB	30% DETAILED DESIGN
A	21.11.25	TB	PRELIMINARY DESIGN

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HOME CONSTRUCTION

PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
LOT 8-10 - FOUNDATION PLAN

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-1-30	D

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ORIGINAL DRAWING IN COLOUR

TIMBER STUDS LEGEND:

DS — 2 x SG8 STUDS, WIDTH TO SUIT WALL FRAMING & WIDTH TO SUIT FORMANCE PANELS

ANNOTATION LEGEND

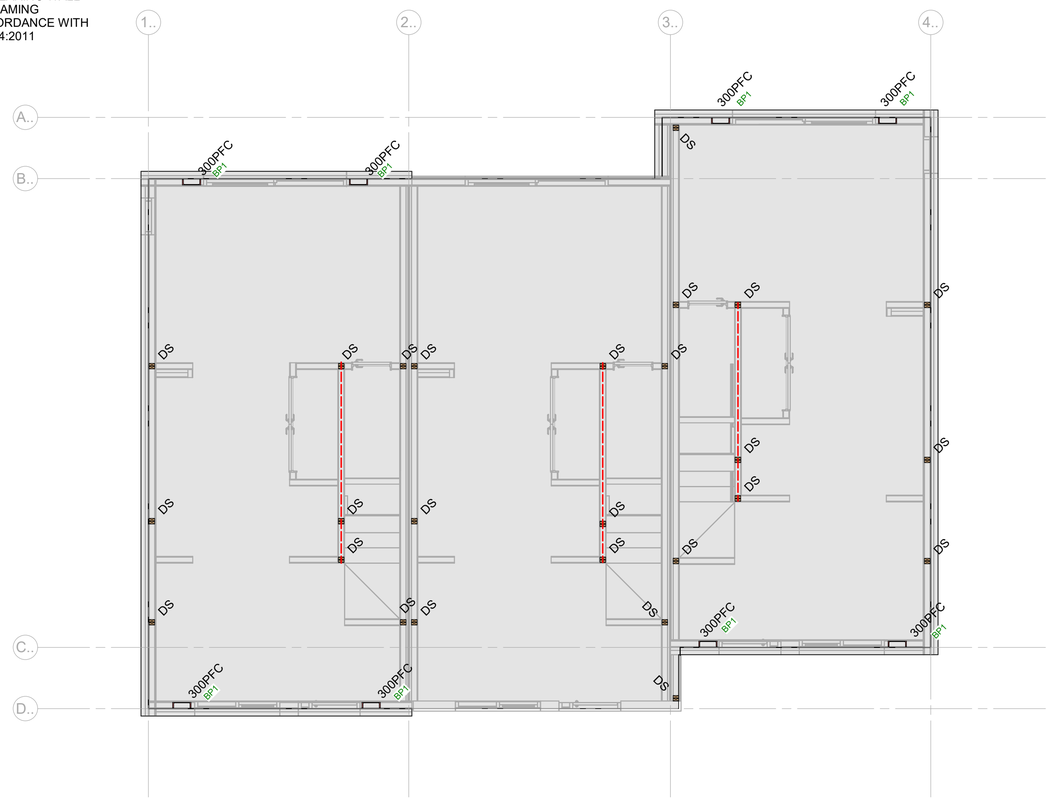
BP## — BASE PLATE TYPE, REFER DRAWING S-5-01 FOR DETAILS

X-## — TYPICAL STEEL CONNECTIONS, REFER DRAWING S-5-01 FOR DETAILS

SH##-# — TIMBER FIXING TAG EXAMPLE, REFER TIMBER FIXINGS LEGEND

LEGEND:

LOAD BEARING WALL LINE FRAMING IN ACCORDANCE WITH NZS3604:2011



LOT 8-10 - GROUND FLOOR PLAN

1 : 50

GROUND FLOOR NOTES

GENERAL
1. ALL WORKS TO COMPLY WITH RELEVANT CLAUSES OF THE NZBC
2. READ DRAWINGS IN CONJUNCTION WITH ARCHITECTS DRAWINGS & SPECIFICATIONS

SLAB REBATES
ALL SLAB REBATES OR RECESSES TO BE SET OUT BY ARCHITECT.
FOR REBATED EDGE BEAMS REFER FOUNDATION PLAN

SERVICES PENETRATIONS
SERVICE PENETRATION THROUGH SLAB - REFER DETAILS ON S-3-30

TIMBER
ALL TIMBER TO BE GRADE SG8 U.N.O.

STUDS
ALL STUD SUPPORTS TO HAVE A MIN. OF 6kN TIE DOWN CONNECTIONS TO GROUND FLOOR AND 12 kN TO L1 DOUBLE STUDS TYP. U.N.O.

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

UNIT 1-3 UNIT 4-7 UNIT 8-10

KEY PLAN

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
B	03.02.26	TB	BUILDING CONSENT
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ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
LOT 8-10 - GROUND FLOOR PLAN

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-1-31	B

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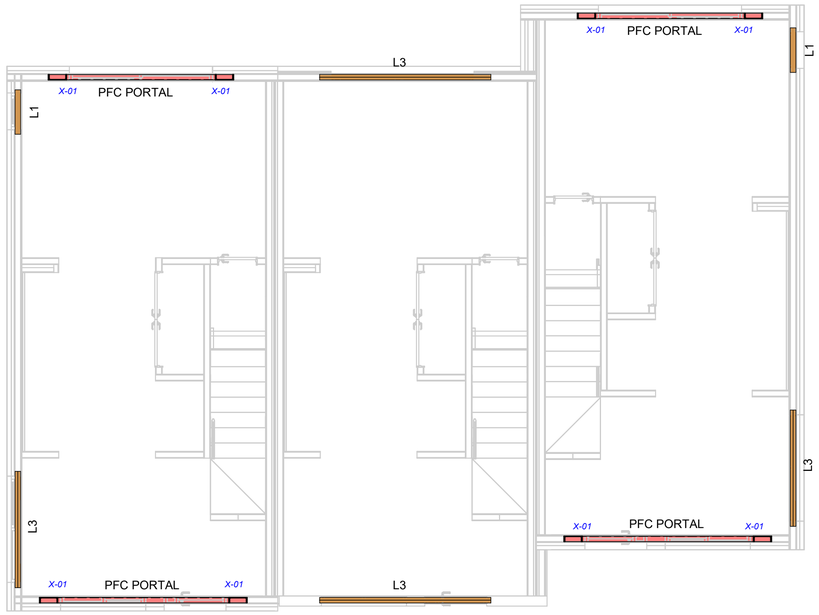
ORIGINAL DRAWING IN COLOUR

ANNOTATION LEGEND

BP## BASE PLATE TYPE, REFER DRAWING S-5-01 FOR DETAILS

X-## TYPICAL STEEL CONNECTIONS, REFER DRAWING S-5-01 FOR DETAILS

SH##-# TIMBER FIXING TAG EXAMPLE, REFER TIMBER FIXINGS LEGEND



NOTE: LINTEL SUPPORTING STUDS, REFER LINTEL SCHEDULE

LINTEL NOTES:

GENERAL

1. U.N.O, ALL BEAMS TO BE FULLY BEARING ON NUMBER OF SUPPORT STUDS SPECIFIED IN LINTEL SCHEDULE
2. TRIMMER STUDS IN ACCORDANCE WITH NZS3604
3. MIN. 6kN TIE DOWN TO SLAB

TIMBER GRADE

1. ALL TIMBER TO BE GRADE SG8 U.N.O

LINTEL SCHEDULE

TYPE MARK	DESCRIPTION	SUPPORTING STUDS	FORMANCE LINTEL FIXING TYPE
L1	2-140x45 SG8	SS SUPPORTS	TYPE 4.3B
L2	2-190x45 SG8	DS SUPPORTS	TYPE 4.3B
L3	2-190x45 LVL13	DS SUPPORTS	TYPE 4.3B
L4	2-240x45 LVL13	DS SUPPORTS	TYPE 4.3B
L5	240hy90	DS SUPPORTS	TYPE 4.3B
L6	200hy90	REFER FORMANCE SIP DESIGN	REFER FORMANCE SIP DESIGN

NOTE: REFER S-0-84 - PRODUCT MANUAL SUPPORTS - SHEET 5 FOR FORMANCE LINTEL FIXING DETAILS.
LINTEL FIXINGS SPECIFIED IN LINTEL SCHEDULE ARE TYPICAL U.N.O

* LINTEL AT CEILING LEVEL TO SUPPORT CEILING VOID

LINTEL STUD SUPPORTS:

SS. DOUBLE STUD SUPPORTS, WIDTH TO SUIT FORMANCE PANEL
MIN. 90x45 SG8 TYP. UNO.

DS DOUBLE STUD SUPPORT, WIDTH TO SUIT FORMANCE PANEL,
MIN 2-90x45 SG8 TYP. UNO.

BRICK LINTELS

ALL HOT DIP GALV
80x6 EA UP TO 3m OPENING
125x75x8 UP TO 4.6m OPENING

NOTE: FREE FROM FRAMING AND MIN BEARING EACH SIDE OF 100mm OR 200mm WHERE OPENING IS >2.0m

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

UNIT 1-3 UNIT 4-7 UNIT 8-10

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TITLE
LOT 8-10 - GROUND FLOOR LINTEL PLAN

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-1-34	D

LOT 8-10 - GROUND FLOOR LINTEL PLAN
1 : 50

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ORIGINAL DRAWING IN COLOUR

ANNOTATION LEGEND

BP## BASE PLATE TYPE, REFER DRAWING S-5-01 FOR DETAILS

X-## TYPICAL STEEL CONNECTIONS, REFER DRAWING S-5-01 FOR DETAILS

SH##-# TIMBER FIXING TAG EXAMPLE, REFER TIMBER FIXINGS LEGEND

LEGEND:

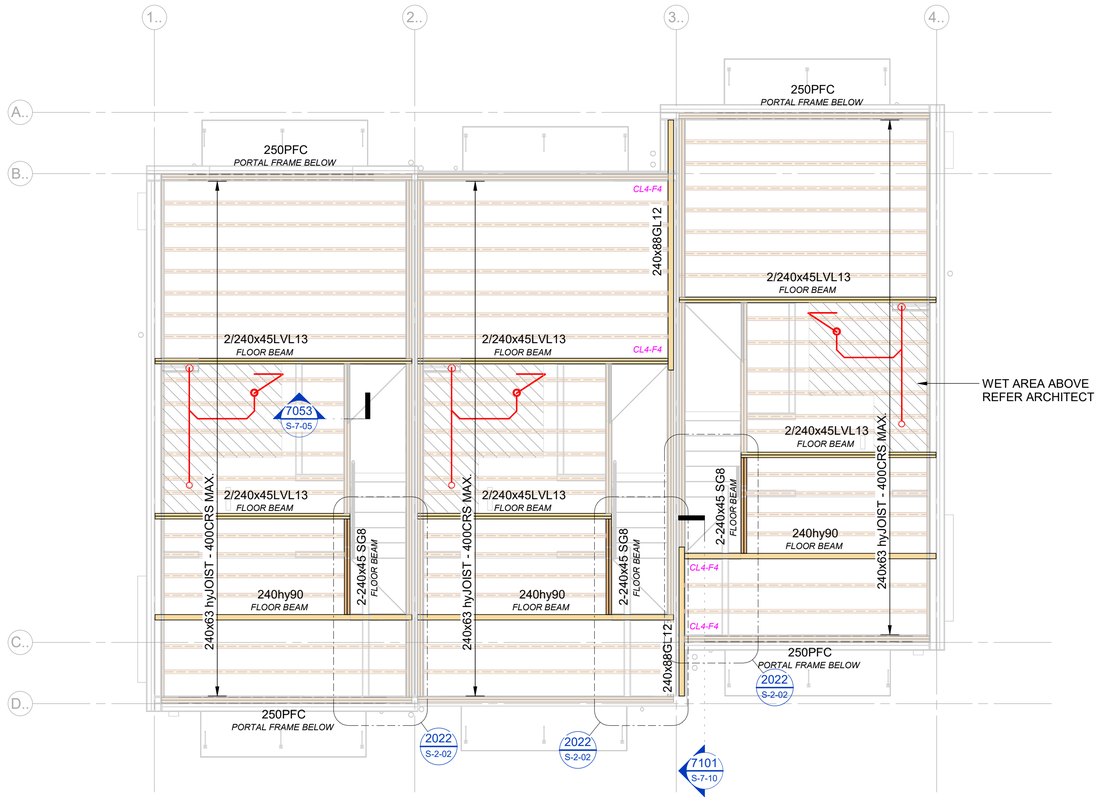
DS 2 x SG8 STUDS, WIDTH TO SUIT WALL FRAMING (REFER ARCH U.N.O)

TS 3 x SG8 STUDS, WIDTH TO SUIT WALL FRAMING (REFER ARCH U.N.O)

PROPOSED PLUMBING LAYOUT CO-ORDINATE WITH ARCHITECTURAL DRAWINGS

TIMBER FIXINGS LEGEND

CL4-F4 PAIR MITEK LUMBERLOK CPC40 TO TOP & BTM OF BEAM (EITHER SIDE).



LOT 8-10 - MIDFLOOR FRAMING PLAN
1 : 50

MIDFLOOR FRAMING NOTES:

BOUNDARY JOISTS

1. WALLS PERPENDICULAR TO JOIST SPAN
   PROVIDE 2-240x45 SG8
   TO ALLOW MIN. 45 SEATING OF JOIST ONTO 90 WALL
   BOUNDARY JOISTS ARE INCLUDED IN CASSETTE FLOOR UNITS
   REFER TO CARTERS DOCUMENTATION
2. WALLS PARALLEL TO JOIST SPAN

   DOUBLE BOUNDARY JOISTS TYPICAL. TO SUIT.
   NOTE: OVER PORTAL REDUCED DEPTH OF BOUNDARY JOIST
   REFER TO DETAIL ON S-7-05

JOISTS

1. SETOUT OF JOISTS SHOWN ON DRAWINGS ARE INDICATIVE ONLY, U.N.O. CONTRACTOR TO COORDINATE BEAM LAYOUT WITH FLOOR CASSETTE MANUFACTURER, ARCH AND SERVICES AND DETERMINE FINAL QUANTITIES REQUIRED.
2. NOMINATED CRS ARE MAX SPACING AND MAY BE REDUCED AS REQUIRED TO SUIT FINAL LAYOUT.
3. JOISTS FIXINGS IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS U.N.O

SERVICES & PENETRATIONS

1. NO SERVICE PENETRATIONS TO BE DRILLED THROUGH FLOOR JOIST FLANGES. REFER ARCH DRAWINGS FOR LOCATION & SPECIFICATION OF SERVICES.
2. ALL NOTCHING / CUT BACKS / PENETRATION THROUGH JOIST FLANGES OR WEBS TO BE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS. REFER S-0-80 FOR HYJOIST NOTCHING / CUT BACKS / HOLES WITH HYJOIST GUIDANCE.
3. NO ALLOWANCE FOR PENETRATIONS IN ANY SOLID TIMBER MEMBERS GREATER THAN 50mm. WHERE ANY ADDITIONAL PENETRATIONS REQUIRED, CONTACT ENGINEER PRIOR

TIMBER NOTES:

GENERAL

1. ALL WORKS TO COMPLY WITH RELEVANT CLAUSES OF THE NZBC
2. READ DRAWINGS IN CONJUNCTION WITH ARCHITECTS DRAWINGS & SPECIFICATIONS
3. ALL TIMBER TO BE GRADE SG8 U.N.O
4. TIMBER TREATMENT TO COMPLY WITH NZS3602 AND AS SPECIFIED BY THE ARCHITECT, U.N.O ON STRUCTURAL DRAWINGS
5. ALL FIXINGS, CONNECTORS, NAILS, SCREWS, BOLTS, NUTS & WASHERS TO BE AT LEAST HOT DIP GALV OR STAINLESS STEEL TO COMPLY WITH NZS3064 DURABILITY REQUIREMENTS APPROPRIATE FOR THE SITE EXPOSURE, U.N.O

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

UNIT 1-3 UNIT 4-7 UNIT 8-10

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2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
LOT 8-10 - MIDFLOOR FRAMING PLAN

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-1-35	D

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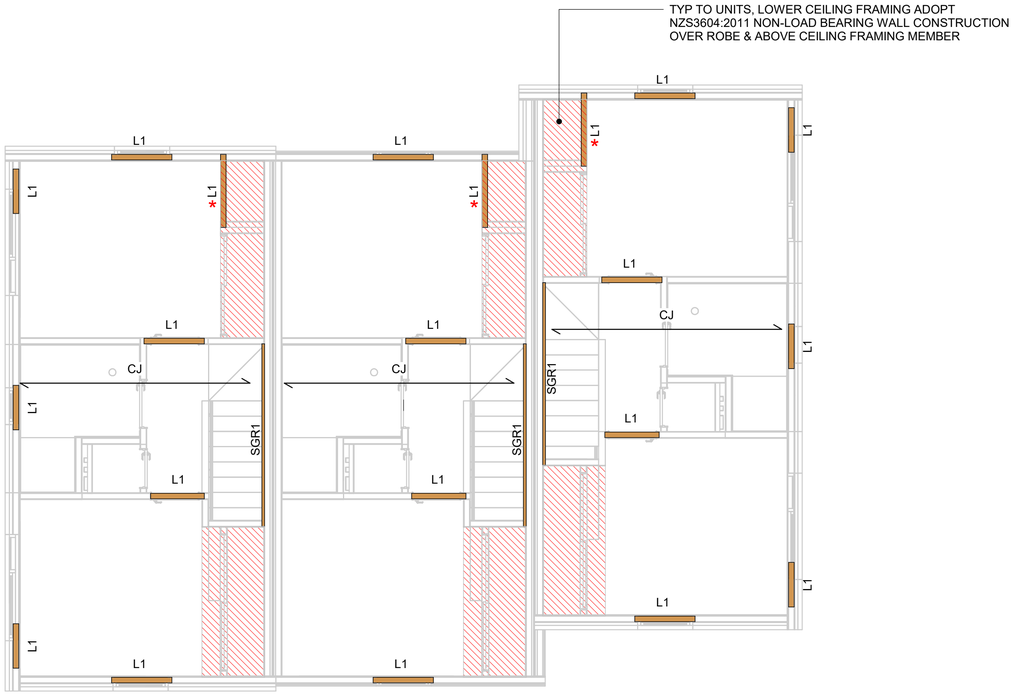

NOTE: LINTEL SUPPORTING STUDS, REFER LINTEL SCHEDULE

LOT 8 -10 - FIRST FLOOR LINTEL PLAN

1 : 50

LINTEL NOTES:

GENERAL

1. U.N.O, ALL BEAMS TO BE FULLY BEARING ON NUMBER OF SUPPORT STUDS SPECIFIED IN LINTEL SCHEDULE
2. TRIMMER STUDS IN ACCORDANCE WITH NZS3604
3. MIN. 6kN TIE DOWN TO SLAB

TIMBER GRADE

1. ALL TIMBER TO BE GRADE SG8 U.N.O

LINTEL SCHEDULE

TYPE MARK	DESCRIPTION	SUPPORTING STUDS	FORMANCE LINTEL FIXING TYPE
L1	2-140x45 SG8	SS SUPPORTS	TYPE 4.3B
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L5	240hy90	DS SUPPORTS	TYPE 4.3B
L6	200hy90	REFER FORMANCE SIP DESIGN	REFER FORMANCE SIP DESIGN

NOTE: REFER S-0-84 - PRODUCT MANUAL SUPPORTS - SHEET 5 FOR FORMANCE LINTEL FIXING DETAILS.
LINTEL FIXINGS SPECIFIED IN LINTEL SCHEDULE ARE TYPICAL U.N.O

* LINTEL AT CEILING LEVEL TO SUPPORT CEILING VOID

LINTEL STUD SUPPORTS:

SS. DOUBLE STUD SUPPORTS, WIDTH TO SUIT FORMANCE PANEL
MIN. 90x45 SG8 TYP. UNO.

DS DOUBLE STUD SUPPORT, WIDTH TO SUIT FORMANCE PANEL,
MIN 2-90x45 SG8 TYP. UNO.

BRICK LINTELS

ALL HOT DIP GALV
80x6 EA UP TO 3m OPENING
125x75x8 UP TO 4.6m OPENING

NOTE: FREE FROM FRAMING AND MIN BEARING EACH SIDE OF 100mm OR 200mm WHERE OPENING IS >2.0m

STRINGER

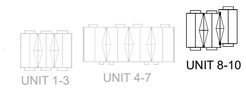
SGR1 90x45 STRINGER FIXED OFF TO CONTINUOUS I.T. WALL FRAMING STUDS IN ACCORDANCE WITH MITEK STRINGER TYPE K FIXING.

CEILING JOISTS

CJ 90x45 SG8 CEILING JOISTS AT 600 CRS,
CONTINUOUS OVER 2 SPANS, MAX SINGLE SPAN 2m
FIX TO TOP PLATE WITH 3-90x3.15 DIA SKEW NAILS

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.



KEY PLAN

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ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
LOT 8-10 - FIRST FLOOR LINTEL PLAN

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-1-36	D

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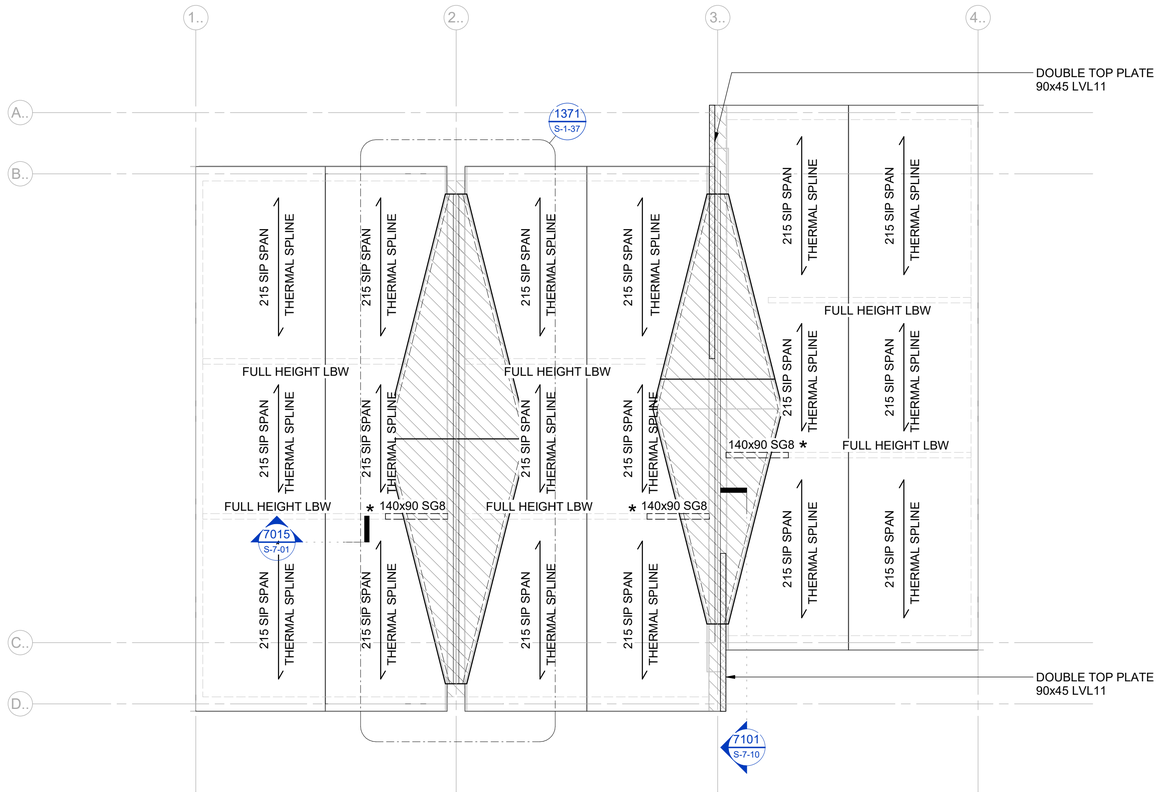
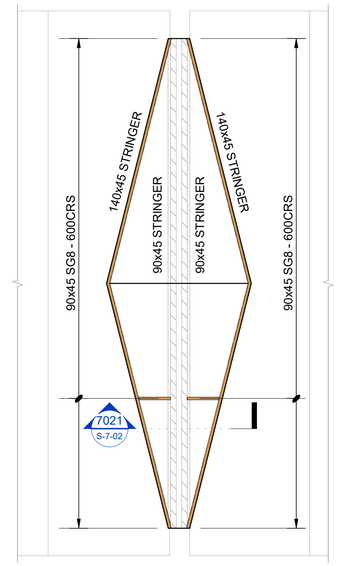


NOTE: ALL CONNECTIONS BETWEEN PANELS AND TO LBW, REFER TO FORMANCE DESIGN GUIDE V2

LOT 8-10 - ROOF PLAN

1 : 50

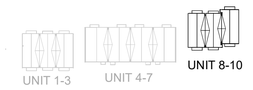


1371 S-1-37 LOT 8-10 - ROOF PLAN - 10º ROOF AREA

1 : 50

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.



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TITLE
LOT 8-10 - ROOF PLAN

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-1-37	D

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ORIGINAL DRAWING IN COLOUR

LOT 8-10 - GROUND FLOOR BRACING PLAN

1 : 50

BRACING LEGEND

WALL BRACING REF

BL1-H | 3.5 m

- BRACE LENGTH (m)
- BRACE TYPE

CONTINUOUS TOP / CEILING PLATES

CONTINUOUS CEILING PLATE NAILED OFF TO BRACING WALLS WITH 90 x 3.15Ø NAILS AT MAX 150mm CRS

6kN DENOTES 6kN CAPACITY CONNECTION EITHER TYLOK 6T10 OR PLATE-LOK, REFER S-0-80

12kN DENOTES 12kN CAPACITY CONNECTION, 2 x SHEET BRACE STRAPS FIXED WITH 6 x LUMBERLOK PRODUCT NAILS 30mm x 3.15Ø PER END PER STRAP (24 NAILS TOTAL), REFER S-0-80

NOTE: WHERE NOT INDICATED ON PLAN CEILING PLATE CONNECTIONS FOR TOP PLATES AT RIGHT ANGLES & TOP PLATES IN LINE TO BE MIN 6kN CAPACITY IN ACCORDANCE WITH MITEK LUMBERLOK TOP PLATE JOINTING U.N.O. REFER S-0-80

PACK OUT STUDS WITH 7mm RIPPED TIMBER OR 7mm PLY WITHIN WARDROBE ONLY TO MATCH EP1 - PLYWOOD THICKNESS

WALL BRACING SPECIFICATION

ALL BRACING SYSTEMS TO BE CONSTRUCTED AS PER MANUFACTURER'S SPECIFICATIONS & REQUIREMENTS.

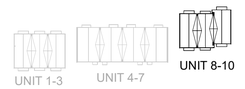
CEILING PLATES INDICATED ON THESE PLANS ARE FOR SPECIFIC ENGINEERING DESIGNED ELEMENTS ONLY. CEILING PLATES FOR THE REMAINDER OF BRACING ELEMENTS & FRAMING SHOULD BE INSTALLED AS PER NZS3604:2011

BRACING ELEMENTS TO BE INSTALLED ON WALL FACES INDICATED ON PLAN.

SPECIFICATION CODE	LINING REQUIREMENT	HOLD DOWNS
BL1-H	10mm OR 13mm GIB BRACELINE TO ONE SIDE ONLY	●
BLG-H	10mm OR 13mm GIB BRACELINE TO ONE SIDE OF THE FRAME PLUS ANY 10mm OR 13mm GIB PLASTERBORAD TO THE OTHER SIDE	●
BLP-H	10mm OR 13mm GIB BRACELINE TO ONE SIDE OF THE FRAME PLUS MINIMUM 7mm STRUCTURAL PLYWOOD MANUFACTURED TO AS/NZ 2269.0 :2012 TO THE OTHER SIDE	●
CS	810x2400 BRACE WALL CAVITY SLIDER INSTALLED AS PER MANUFACTURERS GUIDELINES. MINIMUM BRACING CAPACITY OF 144BU WIND & 149BU EQ.	●
EP1	MIN 7mm ECOPLY PLYWOOD ONE SIDE OF FRAMING WITH HOLD DOWNS AT EACH END OF THE ELEMENT	●
FBW115A	FORMANCE SIP BRACING WALL 115	●
FBW115C	FORMANCE SIP BRACING WALL 115	●
FBW115D	FORMANCE SIP BRACING WALL 115	●
GS1-N	ANY 10mm OR 13mm GIB STANDARD PLASTERBOARD TO ONE SIDE ONLY	
PORTAL	250PFC LINTEL PORTAL WITH 300PFC PORTAL LEGS	●

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.



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PROJECT
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2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
LOT 8-10 - GROUND FLOOR BRACING PLAN

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-1-38	D

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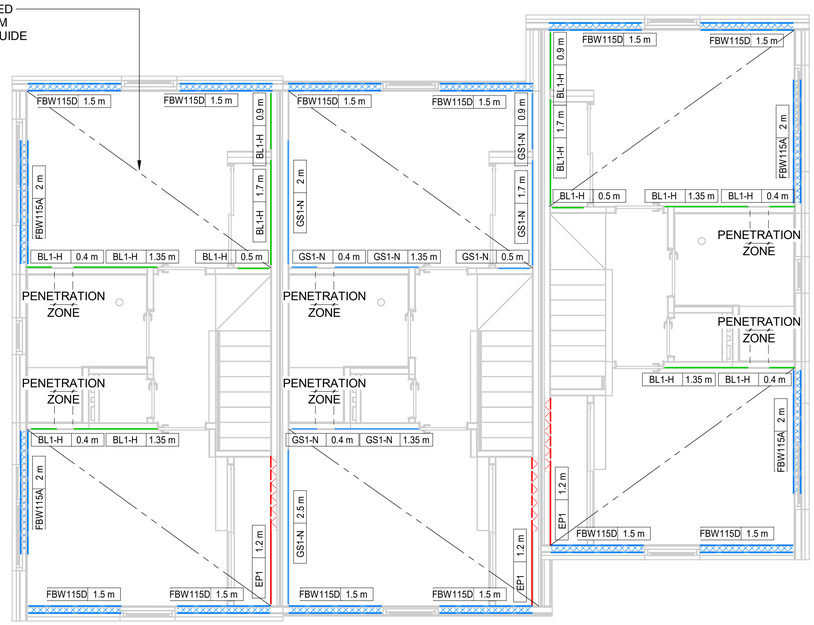
ORIGINAL DRAWING IN COLOUR

FORMANCE PANEL TO BE FIXED OFF TO WALLS AS DIAPHRAGM REFER FORMANCE DESIGN GUIDE 5.3.1

ALLOWANCE FOR PENETRATIONS WITHIN FULL HEIGHT WALL SHOWN
ALL PENETRATIONS TO BE WITHIN THIS ZONE



ALLOWANCE FOR PENETRATIONS WITHIN FULL HEIGHT WALL SHOWN
ALL PENETRATIONS TO BE WITHIN THIS ZONE

LOT 8 -10 - FIRST FLOOR BRACING PLAN

1 : 50

BRACING LEGEND

WALL BRACING REF

BL1-H | 3.5 m

- BRACE LENGTH (m)
- BRACE TYPE

CONTINUOUS TOP / CEILING PLATES

CONTINUOUS CEILING PLATE NAILED OFF TO BRACING WALLS WITH 90 x 3.15Ø NAILS AT MAX 150mm CRS

6kN DENOTES 6kN CAPACITY CONNECTION EITHER TYLOK 6T10 OR PLATE-LOK, REFER S-0-80

12kN DENOTES 12kN CAPACITY CONNECTION, 2 x SHEET BRACE STRAPS FIXED WITH 6 x LUMBERLOK PRODUCT NAILS 30mm x 3.15Ø PER END PER STRAP (24 NAILS TOTAL), REFER S-0-80

NOTE: WHERE NOT INDICATED ON PLAN CEILING PLATE CONNECTIONS FOR TOP PLATES AT RIGHT ANGLES & TOP PLATES IN LINE TO BE MIN 6kN CAPACITY IN ACCORDANCE WITH MITEK LUMBERLOK TOP PLATE JOINTING U.N.O. REFER S-0-80

PACK OUT STUDS WITH 7mm RIPPED TIMBER OR 7mm PLY WITHIN WARDROBE ONLY TO MATCH EP1 - PLYWOOD THICKNESS

WALL BRACING SPECIFICATION

ALL BRACING SYSTEMS TO BE CONSTRUCTED AS PER MANUFACTURER'S SPECIFICATIONS & REQUIREMENTS.

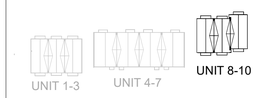
CEILING PLATES INDICATED ON THESE PLANS ARE FOR SPECIFIC ENGINEERING DESIGNED ELEMENTS ONLY. CEILING PLATES FOR THE REMAINDER OF BRACING ELEMENTS & FRAMING SHOULD BE INSTALLED AS PER NZS3604:2011

BRACING ELEMENTS TO BE INSTALLED ON WALL FACES INDICATED ON PLAN.

SPECIFICATION CODE	LINING REQUIREMENT	HOLD DOWNS
BL1-H	10mm OR 13mm GIB BRACELINE TO ONE SIDE ONLY	●
BLG-H	10mm OR 13mm GIB BRACELINE TO ONE SIDE OF THE FRAME PLUS ANY 10mm OR 13mm GIB PLASTERBORAD TO THE OTHER SIDE	●
BLP-H	10mm OR 13mm GIB BRACELINE TO ONE SIDE OF THE FRAME PLUS MINIMUM 7mm STRUCTURAL PLYWOOD MANUFACTURED TO AS/NZ 2269.0 :2012 TO THE OTHER SIDE	●
CS	810x2400 BRACE WALL CAVITY SLIDER INSTALLED AS PER MANUFACTURERS GUIDELINES. MINIMUM BRACING CAPACITY OF 144BU WIND & 149BU EQ.	●
EP1	MIN 7mm ECOPLY PLYWOOD ONE SIDE OF FRAMING WITH HOLD DOWNS AT EACH END OF THE ELEMENT	●
FBW115A	FORMANCE SIP BRACING WALL 115	●
FBW115C	FORMANCE SIP BRACING WALL 115	●
FBW115D	FORMANCE SIP BRACING WALL 115	●
GS1-N	ANY 10mm OR 13mm GIB STANDARD PLASTERBOARD TO ONE SIDE ONLY	
PORTAL	250PFC LINTEL PORTAL WITH 300PFC PORTAL LEGS	●

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.



KEY PLAN

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
D	03.02.26	TB	BUILDING CONSENT
C	19.12.25	TB	60% DETAILED DESIGN
B	05.12.25	TB	30% DETAILED DESIGN
A	21.11.25	TB	PRELIMINARY DESIGN

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PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
LOT 8-10 - FIRST FLOOR BRACING PLAN

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-1-39	D

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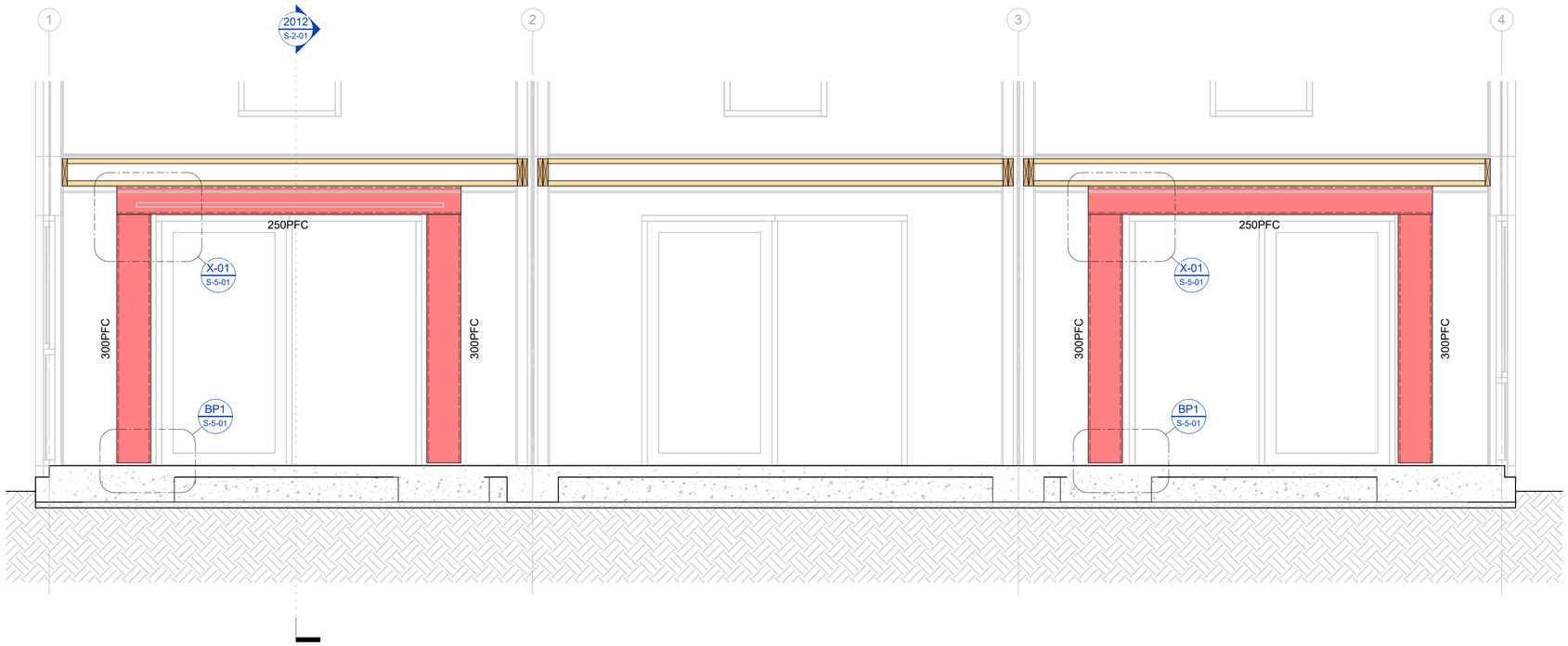
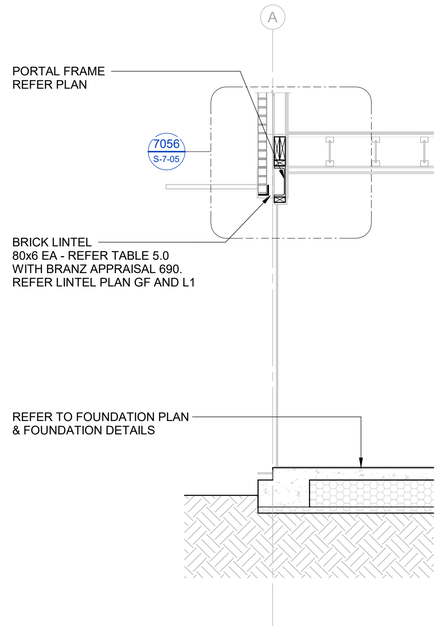


TYP. PORTAL ELEVATION - LOT 1-3 & 8-10 - GRIDS A & B



2012 S-1-05 SECTION - LOT 1-3 & 8-10
1 : 25

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
B	03.02.26	TB	BUILDING CONSENT
A	19.12.25	TB	60% DETAILED DESIGN

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PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
BUILDING SECTIONS

SCALE	DRAWN	DESIGN	APPROVED
1 : 25 @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-2-01	B

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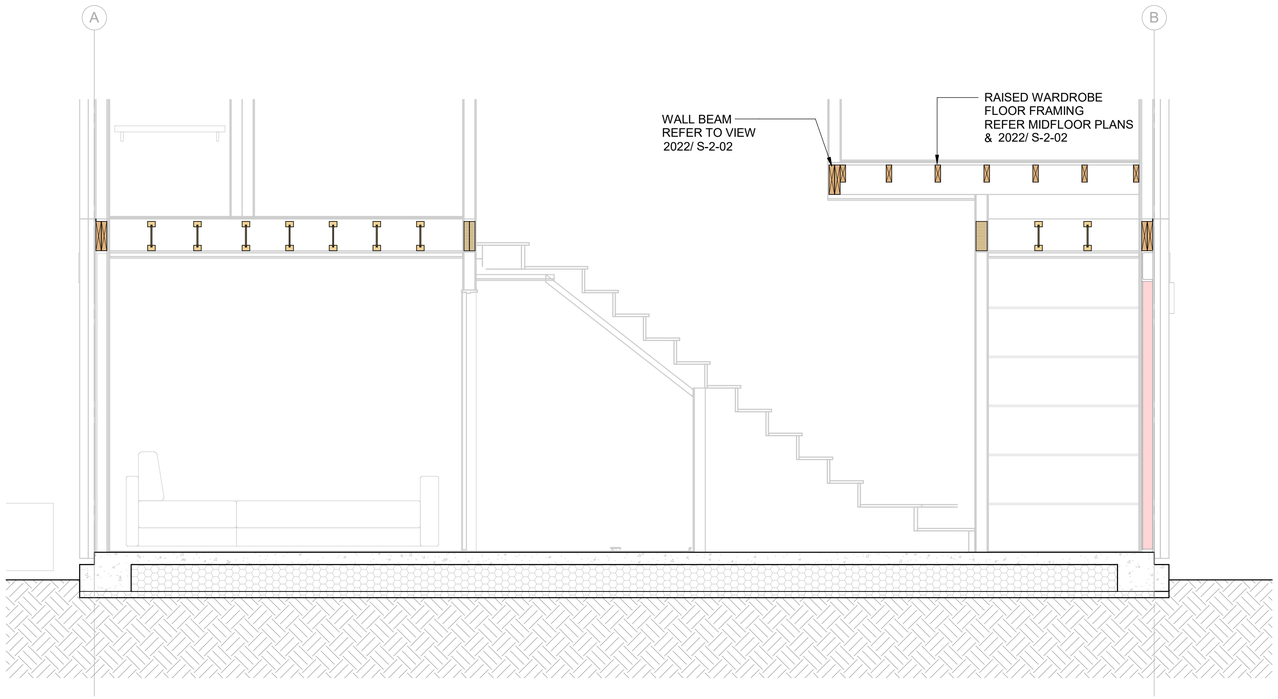
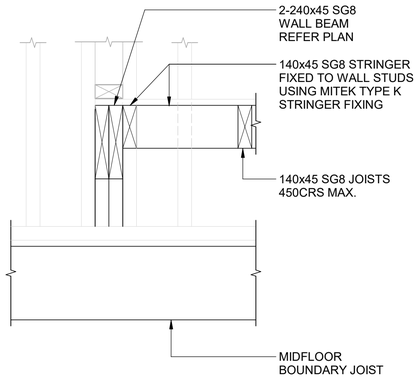


2021 / S-1-05 STAIR MIDFLOOR BUILDING SECTION 1-3 & 8-10
1 : 25

2022 / S-1-05 RAISED FLOOR FRAMING - PLAN VIEW
1 : 25



22A / S-2-02 SECTION AA
1 : 10

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
A	03.02.26	TB	BUILDING CONSENT

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PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
BUILDING SECTIONS

SCALE	DRAWN	DESIGN	APPROVED
As indicated @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-2-02	A

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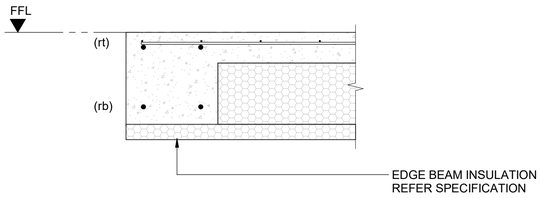
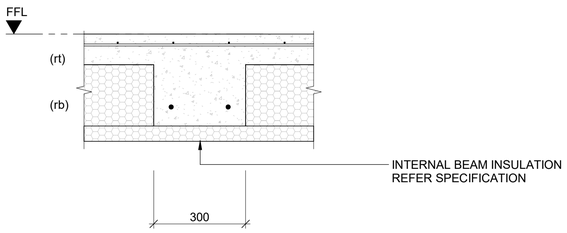
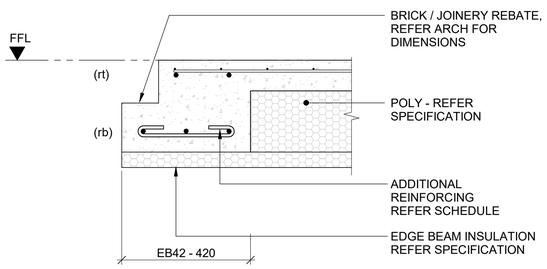


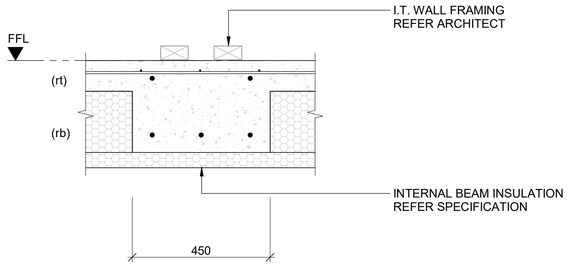
3011 EB3 - EDGE BEAM
S-1-01 1 : 10



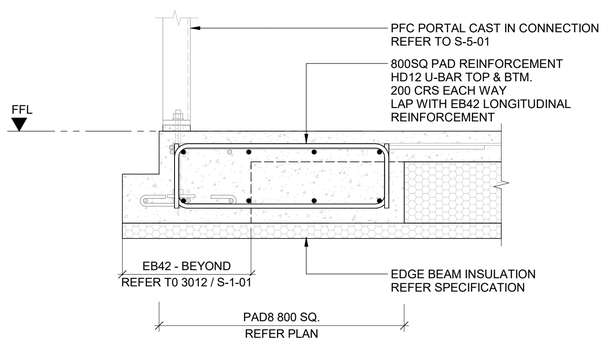
3013 FB3 - INTERNAL BEAM
S-1-01 1 : 10



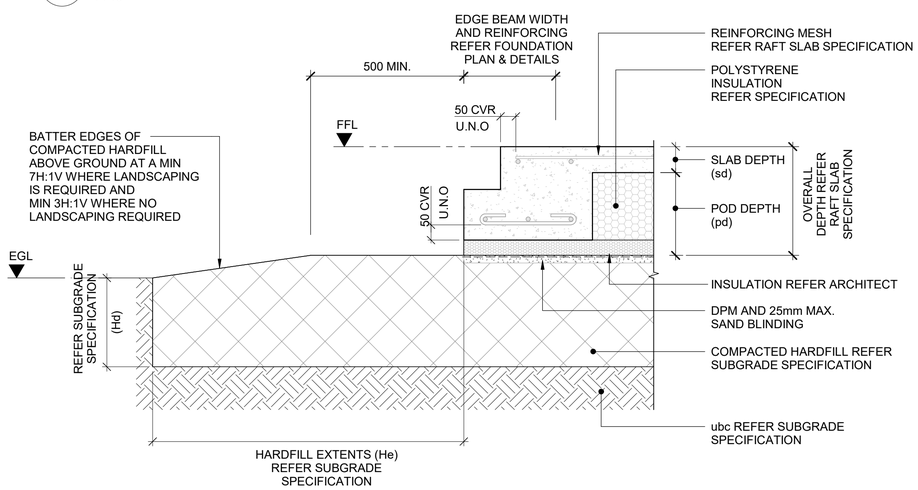
3012 EB42R - EDGE BEAM WITH REBATE
S-1-01 1 : 10



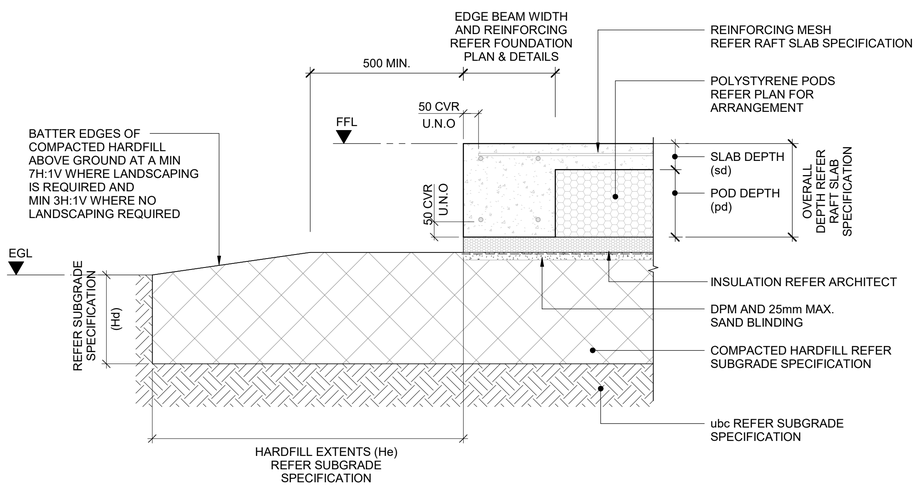
3014 FB45 - I.T. WALL INTERNAL BEAM
S-1-01 1 : 10



PD8 PAD8 - FOUNDATION PAD DETAIL
S-1-01 1 : 10



3018 HARD FILL PLATFORM ABOVE CGL AND SLAB SPECIFICATION REBATE DETAIL
1 : 10



3019 HARD FILL PLATFORM ABOVE CGL AND SLAB SPECIFICATION DETAIL
1 : 10

SUBGRADE SPECIFICATION

THE SITE SHALL BE PREPARED IN ACCORDANCE WITH SITE SPECIFIC SOIL INVESTIGATION REPORT AS NOTED IN REFERENCE DOCUMENTS AND AS PER THE BELOW SPECIFICATIONS:

EXCAVATE & REMOVE FILL / TOPSOIL & UNSUITABLE MATERIAL (Hd)	MIN 300 BGL
ULTIMATE BEARING CAPACITY (ubc)	MIN 300kPa AT SUBGRADE LAYER TO BE CONFIRMED ONSITE BY ENGINEER
HARDFILL SPECIFICATION	COMPACTED AP40/AP65 HARDFILL IN 200mm MAX LOOSE LAYERS TO ACHIEVE A 95% OF MAX DRY DENSITY COMPACTION VERIFIED BY ND TESTING
ASSUMED COMPACTED HARDFILL	FOUNDATION DESIGN HAS BEEN BASED ON THE ASSUMPTION OF 150mm MIN. COMPACTED HARDFILL BELOW UNDERSIDE OF RAFT SLAB
HARDFILL EXTENTS (He)	COMPACTED HARDFILL IS TO EXTEND A MIN OF (Hd) + 100mm OR 500mm, WHICHEVER THE GREATER, PAST EXTENT OF FOUNDATION FOOTPRINT

RAFT SLAB SPECIFICATION

CONCRETE:	25MPa CONCRETE COMPRESSIVE STRENGTH
POLY:	200mm KOOLFOAM SOLID ECO POD 1800x1200.SPACES AND BAR CHAIRS - USE PROPRIETARY SYSTEMS (WJ, CONQURA OR EQUIVALENT TO ENSURE ACCURATE RIB WIDTHS AND REBAR POSITIONS).
MESH:	DUCTILITY CLASS 'E' TO NZS 4671. SE72 OR EQUIVALENT. 25 MIN. COVER 2 BAR CHAIRS PER SQUARE METRE, CHAIR HEIGHT 40 MIN
REINFORCING COVER:	MIN. 25 COVER TO SLAB SURFACE MIN. 50 COVER TO BOTTOM OF RIBS / BEAMS MIN. 50 COVER TO SIDES OF EXTERNAL BEAMS
INSULATION:	50 SLABX200 - BELOW FOUNDATION SLAB
SLAB DEPTH (sd)	100
POD DEPTH (pd):	200
OVERALL DEPTH (od)	300

RAFT SLAB BEAM & RIB REINFORCING

TYPE MARK	BOT. REINF (rb)	TOP. REINF (rt)	ADDITIONAL REINF.
EB3	2-HD12	2-HD12	
EB42R	3-HD12	2-HD12	R10 LINKS - 600 CRS - REFER DETAIL
FB3	2-HD12	-	
FB45	3-HD12	2-HD12	

FOUNDATION PAD - FOOTING SCHEDULE

TYPE MARK	REINFORCING	DETAIL REF.
PD8	HD12 U-BAR TOP & BTM. 200 CRS EACH WAY	PD8 / S-3-01

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

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C	03.02.26	TB	BUILDING CONSENT
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PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
FOUNDATION DETAILS

SCALE	DRAWN	DESIGN	APPROVED
1 : 10 @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-3-01	C

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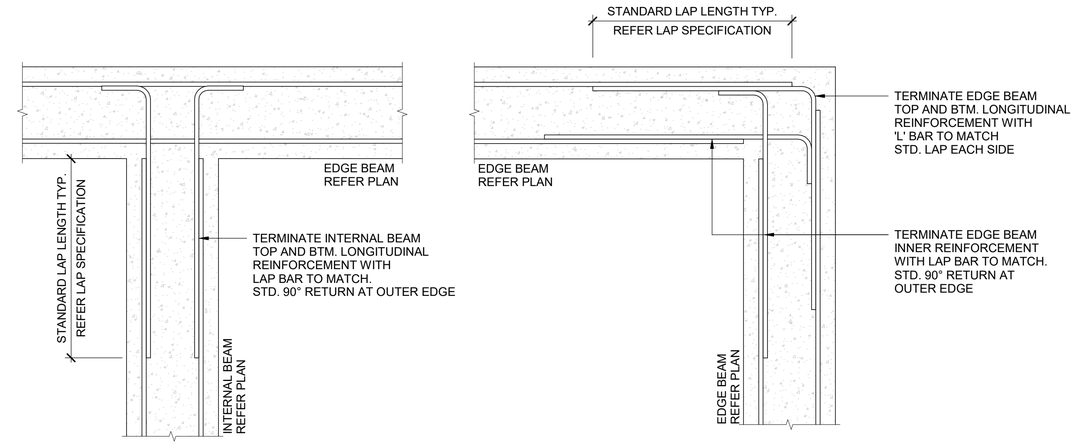
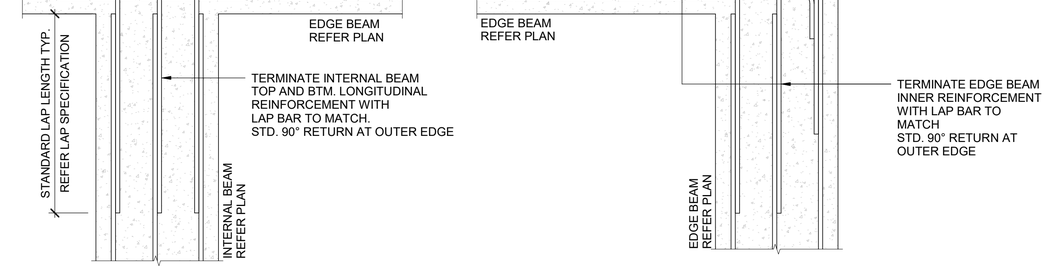


3203 TYP. TEE JOINT BEAM REINFORCING
1 : 10

3204 TYP. CORNER REINFORCING
1 : 10



3201 TYP. TEE JOINT BEAM REINFORCING
1 : 10

3202 TYP. CORNER REINFORCING
1 : 10

SUBGRADE SPECIFICATION

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MESH:	DUCTILITY CLASS 'E' TO NZS 4671. SE72 OR EQUIVALENT. 25 MIN. COVER 2 BAR CHAIRS PER SQUARE METRE, CHAIR HEIGHT 40 MIN
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EB42R	3-HD12	2-HD12	R10 LINKS - 600 CRS - REFER DETAIL
FB3	2-HD12	-	
FB45	3-HD12	2-HD12	

FOUNDATION PAD - FOOTING SCHEDULE

TYPE MARK	REINFORCING	DETAIL REF.
PD8	HD12 U-BAR TOP & BTM. 200 CRS EACH WAY	PD8 / S-3-01

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

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PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
FOUNDATION DETAILS

SCALE	DRAWN	DESIGN	APPROVED
1 : 10 @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-3-20	C

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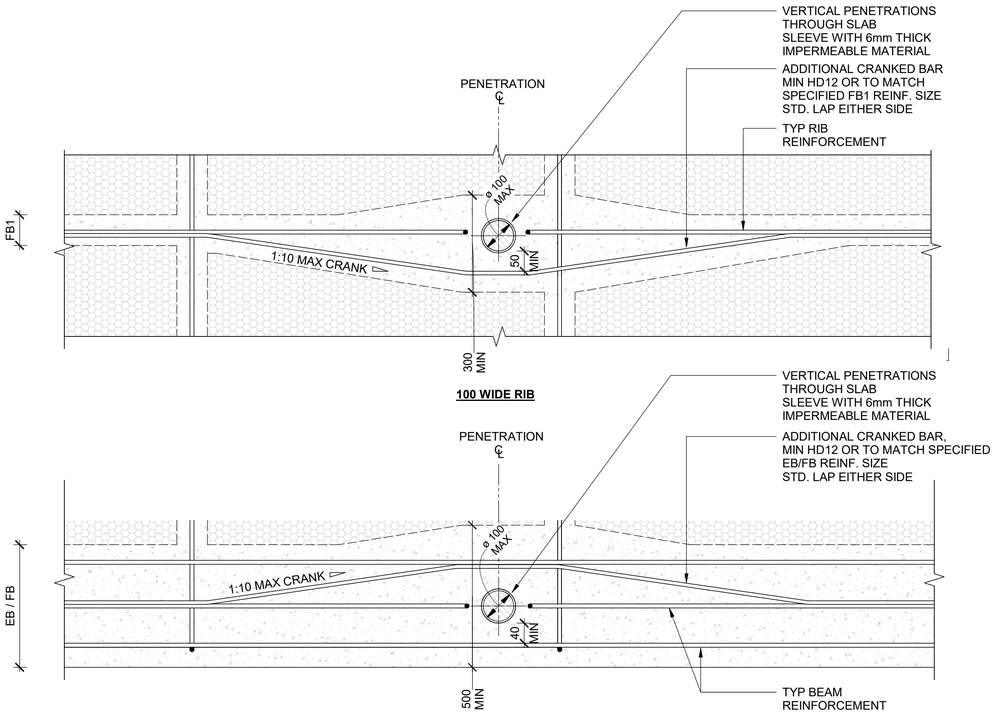
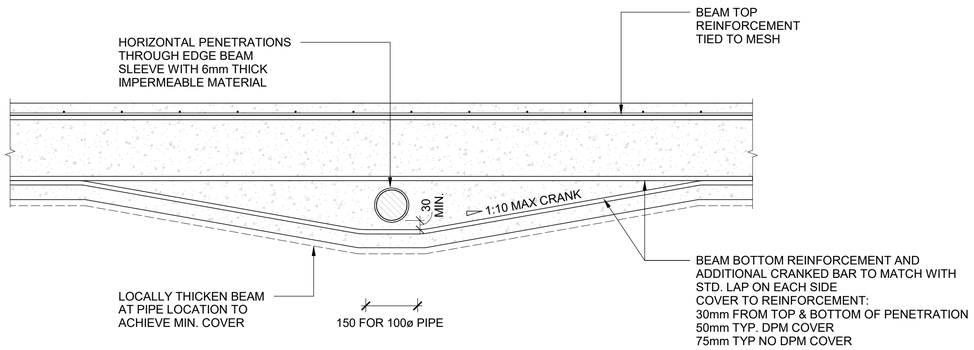
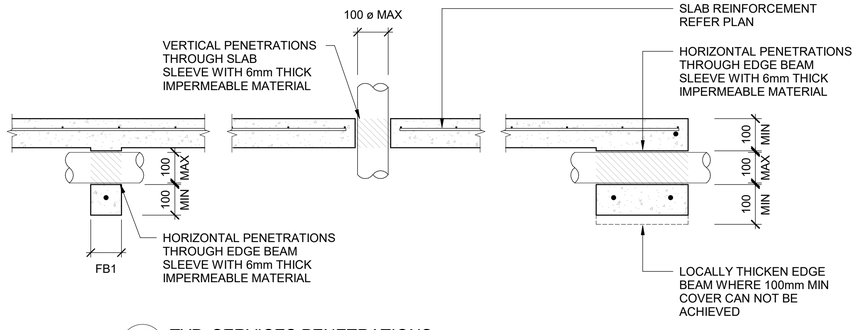


3301 LOCALISED INCREASE TO BEAMS FOR VERTICAL SERVICES
1 : 10



3302 FOUNDATION BEAMS INCREASE FOR SERVICE - ELEVATION
1 : 10



3303 TYP. SERVICES PENETRATIONS
1 : 10

NOTES - WASTE PIPES & SERVICES

1. WASTE PIPES & SERVICES

1.1. CHANGE 1.1 TO: IT IS ANTICIPATED ALL GROUND FLOOR LEVEL SERVICES RUN BELOW THE ENTIRE RAFT SYSTEM WITHIN THE COMPACTED HARDFILL. ANY VARIATION TO THIS SHOULD BE CONFIRMED WITH ENGINEER.
NOTES BELOW APPLICABLE FOR WHERE THE SERVICES RUN WITHIN THE POD, HOWEVER APPROVAL FROM ENGINEER REQUIRED BEFORE ADOPTING THIS APPROACH

1.2. WHEN PIPES RUN HORIZONTALLY WITHIN FLOOR SYSTEM THEN:
SERVICES SHALL NOT RUN ALONG RIBS OR EDGE BEAMS. THE MAXIMUM DIAMETER OF THE SERVICES SHALL BE AS OUTLINED IN TABLE 1.6 BELOW.

1.3. PIPE SHALL NOT RUN THROUGH THE TOPPING SLAB. ALL PIPES SHALL BE WRAPPED WITH DENSO TAPE OR APPROVED SLEEVE TO AVOID ADHESION TO CONCRETE AND PIPEWORK

1.4. WHERE PIPES WITH REQUIRED FALLS EXIT THE BUILDING BENEATH THE UNDERSIDE OF THE FOUNDATION, THEN THE RIB AND BEAM DEPTHS SHALL BE INCREASED TO MAINTAIN 100mm CONCRETE BELOW THE PIPE INVERT ALLOWING BOTTOM BARS TO PASS BELOW. THE BEAM SHALL BE LOWERED OVER 500mm EACH SIDE OF PIPE EXIT POINT.

1.5. AT NO POSITION SHALL THE PIPE EXTEND BELOW THE UNDERSIDE OF THE PODS OR INTERNAL RIBS. WHERE NECESSARY LOWER PODS AND INTERNAL RIBS TO ENSURE THE PIPE IS WITHIN THE RAFT AT ALL TIMES.

1.6. MAXIMUM DIAMETER OF PIPE SERVICES

ELEMENT	VERTICAL SERVICES	HORIZONTAL SERVICES
300 WIDE EDGE BEAM	50mm CENTRAL IN DUCT 50mm LARGER DIAMETER THAN PIPE	50mm IN A DUCT 50mm LARGER DIAMETER THAN PIPE UNLESS DETAILED AS PER NOTE1.7
500 LOCALISED WIDE EDGE BEAM	100mm CENTRAL IN A DUCT 50mm LARGER DIAMETER THAN PIPE	
300 WIDE INTERNAL LOAD BEARING RIB	50mm CENTRAL IN A DUCT 50mm LARGER DIAMETER THAN PIPE	
100 WIDE INTERNAL RIB	NIL	
SLAB	110mm CENTRAL IN A DUCT 50mm LARGER DIAMETER THAN PIPE OR FOR LARGE SERVICES 450mm SQUARE (REFER NOTE 1.8)	NIL

1.7. WHERE HORIZONTAL PIPE WORK REMAINS WITHIN THE RAFT SYSTEM ALONG IT'S ENTIRE LENGTH AND EXITS HORIZONTALLY THROUGH AN EDGE BEAM (I.E. THE PIPE DOES NOT FALL BELOW THE UNDERSIDE OF THE PODS / RIBS AT ANY POINT) THE PIPE MAY BE INCREASED TO A MAXIMUM DIAMETER OF 100mm AND A SERVICE DUCT IS NOT REQUIRED. THE PIPE SHALL BE WRAPPED IN DENSO TAPE WHERE IT PASSES THROUGH CONCRETE ELEMENTS TO PREVENT ADHESION BETWEEN CONCRETE AND PIPE WORK.

1.8. LARGER PENETRATIONS OR VOIDS UP TO 450mm SQUARE (E.G. FOR SHOWER WASTE / TRAPS) ARE PERMITTED THROUGH THE SLAB PROVIDED ALL THE CONDITIONS OF THE FOLLOWING CONDITIONS ARE MET.

- OPENINGS SHALL BE TRIMMED WITH 1-HD12 (GRADE 500E) BAR, 1500 LONG PLACED ALONG EACH SIDE OF THE OPENING, TIED TO MESH.
- ONE SET OF PARALLEL BARS SHALL BE PLACED ON TOP OF THE MESH AND OTHER SET PLACED UNDER THE MESH AND THE POD LOWERED TO ENSURE COVER REQUIREMENTS ARE MAINTAINED.
- OPENINGS SHALL NOT BE PLACED OVER A RIB OR EDGE BEAM. IF NECESSARY, THE RIB SPACING SHALL BE REDUCED OR THE POD LAYOUT ALTERED TO ENSURE THAT THE OPENING OCCURS SOLELY IN THE SLAB ABOVE A POLYSTYRENE POD.
- PENETRATIONS SHALL NOT BE INSTALLED IN GARAGE OR OTHER AREAS WHERE LARGE (>3kN) POINT LOADS COULD BE PRESENT.
- ONLY ONE PENETRATION GREATER THAN 110mm IS PERMITTED IN THE SLAB ABOVE ANY SINGLE OR PART POD.
- WHERE TWO LARGE PENETRATIONS ARE REQUIRED TO BE IN CLOSE PROXIMITY, AN INTERNAL RIB SHALL SEPARATE THEM.

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
C	03.02.26	TB	BUILDING CONSENT
B	19.12.25	TB	60% DETAILED DESIGN
A	05.12.25	TB	30% DETAILED DESIGN

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HOME CONSTRUCTION

PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
FOUNDATION DETAILS - TYP SERVICES PENETRATIONS & SHOWER REBATES

SCALE	DRAWN	DESIGN	APPROVED
1 : 10 @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-3-30	C

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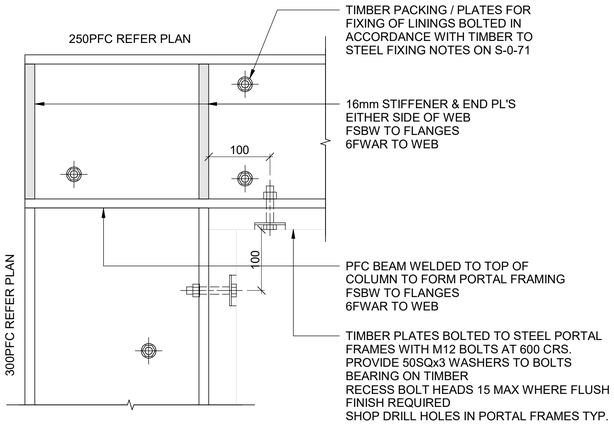
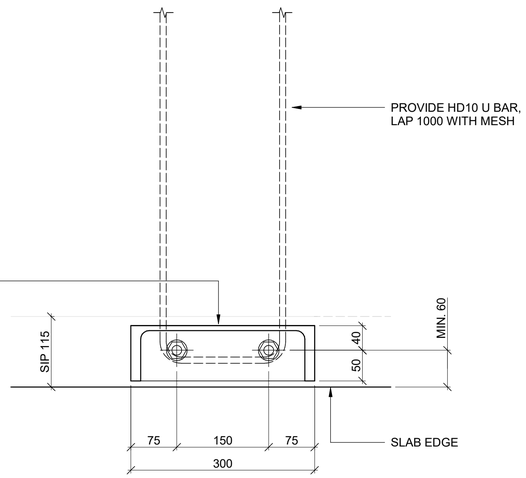
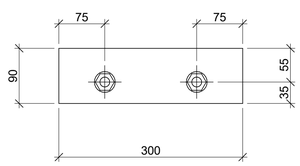


X-01 / S-2-01 250PFC/300PFC PORTAL KNEE
1 : 5

ELEVATION



PLAN - BASE PL



PLAN - WASHER PL

BP1 / S-2-01 300PFC BASE PL INSTALLATION
1 : 5

1A / S-5-01 250PFC BASE PLATE - DETAIL
1 : 5

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
A	03.02.26	TB	BUILDING CONSENT

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PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
STEEL DETAILS - PORTAL

SCALE	DRAWN	DESIGN	APPROVED
1 : 5 @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-5-01	A

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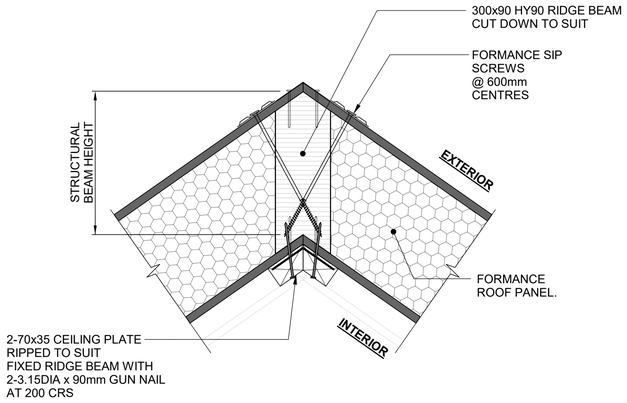
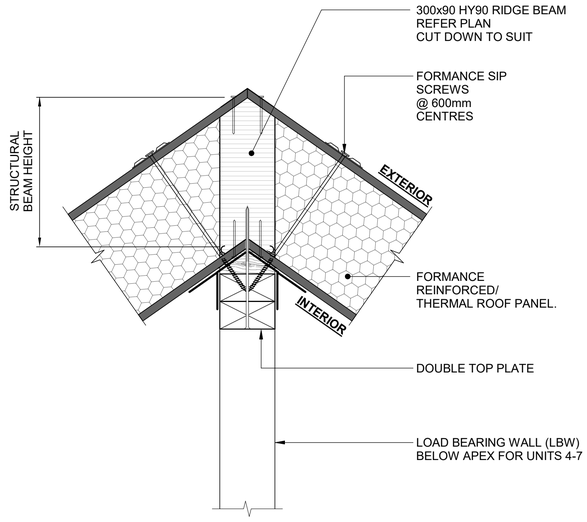
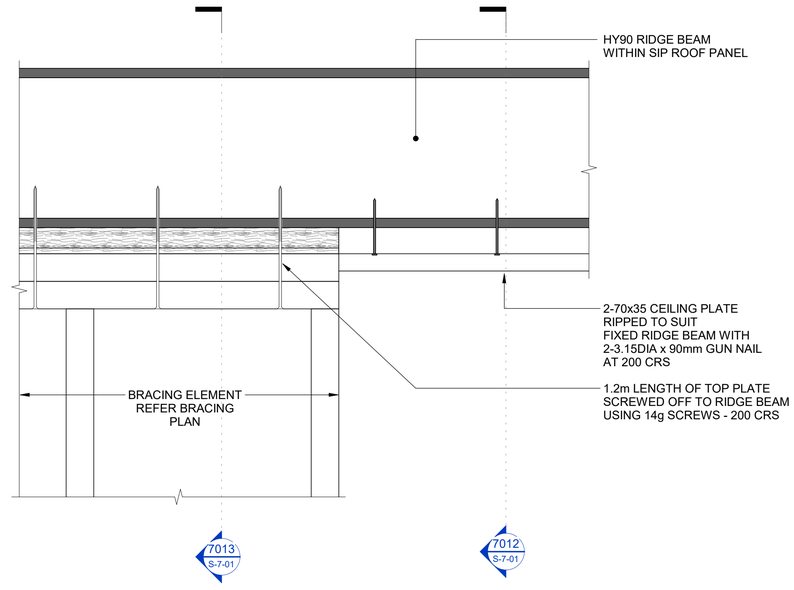


7012 S-1-27 ROOF APEX RIDGE BEAM DETAIL - UNITS 4-7
1 : 5

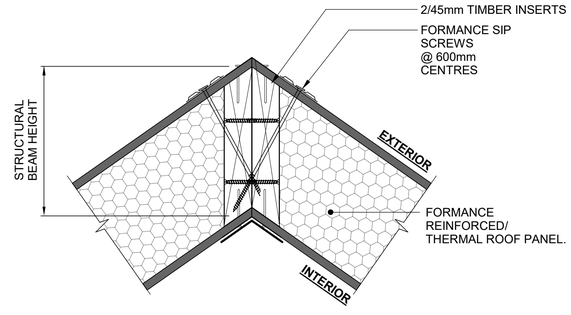
IMPORTANT
ALL FORMANCE DETAILS SHOULD BE READ IN CONJUNCTION WITH FORMANCE DESIGN GUIDE V2 - 2024



7013 S-1-27 ROOF APEX AT LBW DETAIL - UNITS 4-7
1 : 5



7014 S-1-27 ROOF APEX 2 - LBW / CEILING PLATE DETAIL
1 : 5



7015 S-1-07 ROOF APEX DETAIL - UNITS 1-3 & 8-10
1 : 5

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

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A	05.12.25	TB	30% DETAILED DESIGN

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PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
FRAMING DETAILS - SIP

SCALE	DRAWN	DESIGN	APPROVED
1 : 5 @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-7-01	C

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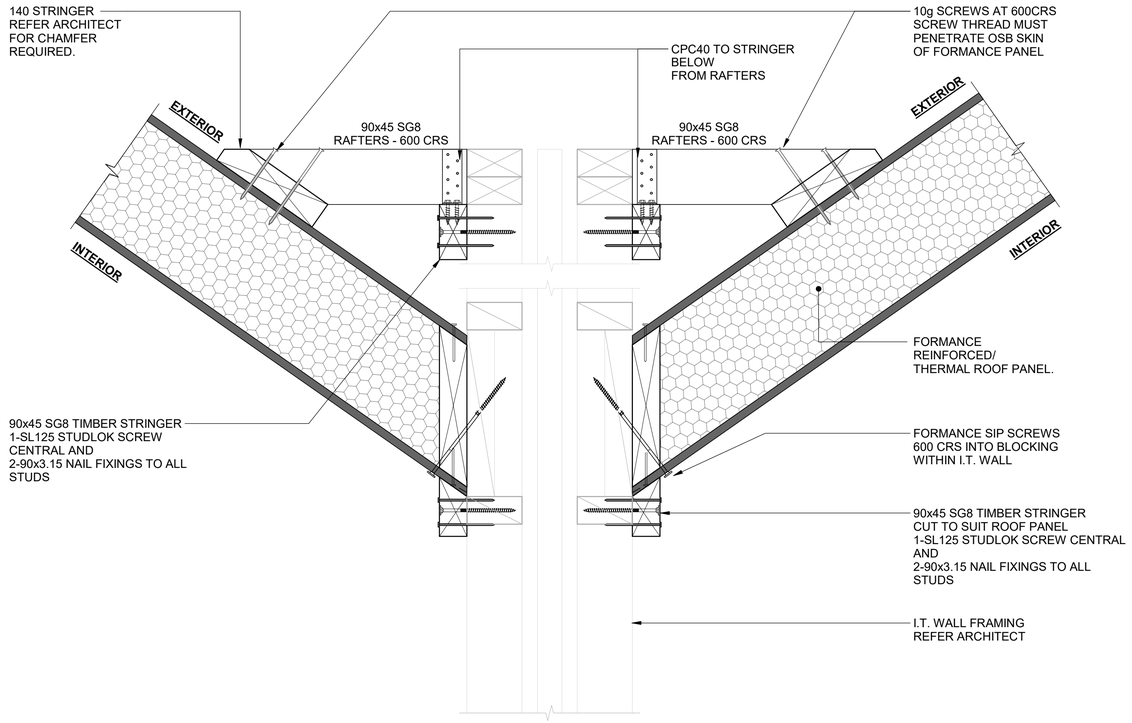
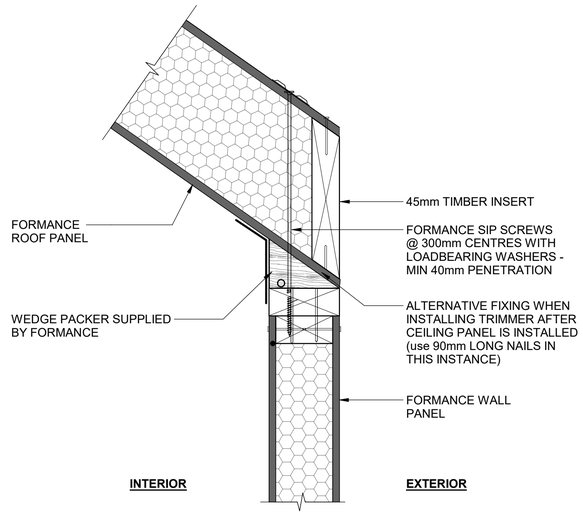


7021 S-1-07 ROOF TO I.T. WALL
1 : 5

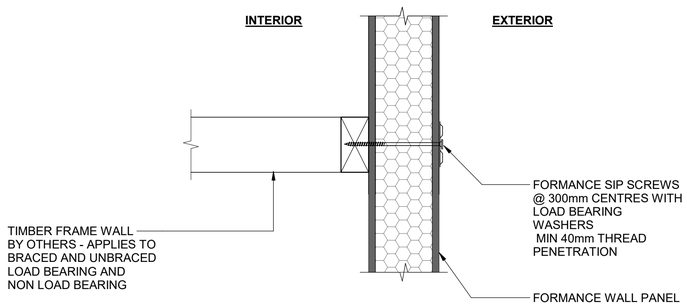
IMPORTANT
ALL FORMANCE DETAILS SHOULD BE READ IN CONJUNCTION WITH FORMANCE DESIGN GUIDE V2 - 2024



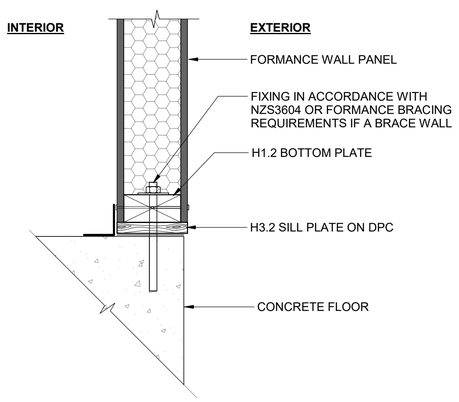
7022 ROOF TO SIP WALL DETAIL
1 : 5

NOTES

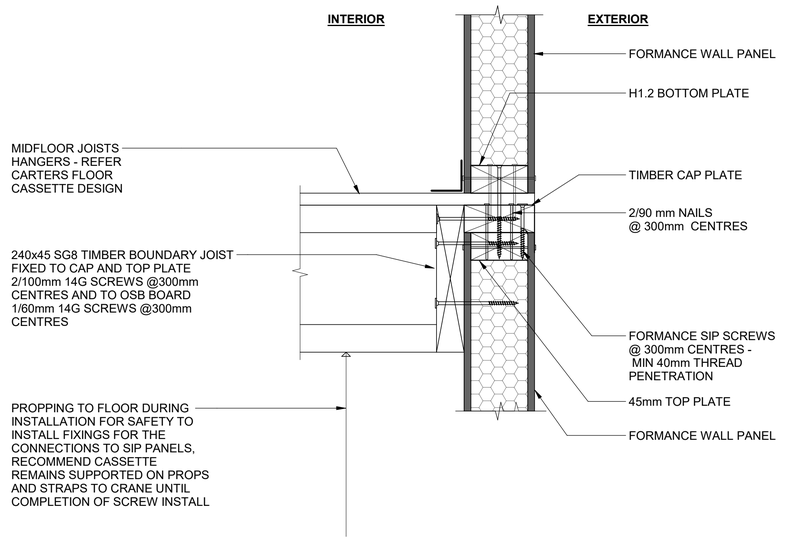
1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.



7025 TIMBER FRAMED WALL TO SIP
1 : 5



7026 TYP. SIP WALL TO GROUND FLOOR
1 : 5



7023 MIDFLOOR TO SIP DETAIL
1 : 5

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
A	03.02.26	TB	BUILDING CONSENT

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PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
FRAMING DETAILS - SIP

SCALE	DRAWN	DESIGN	APPROVED
1 : 5 @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-7-02	A

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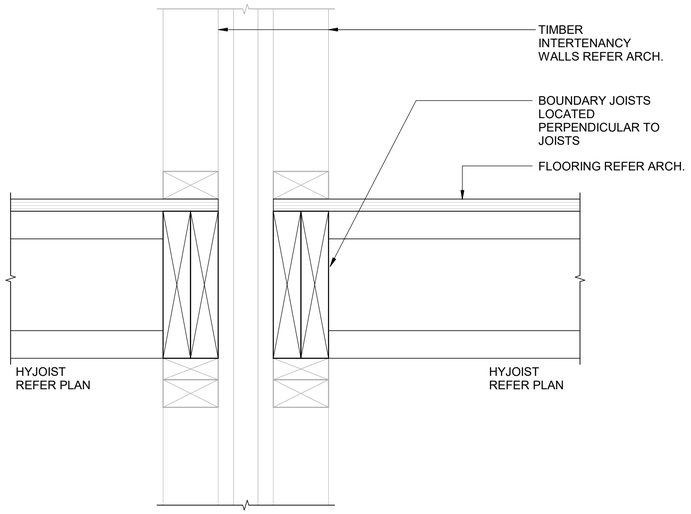
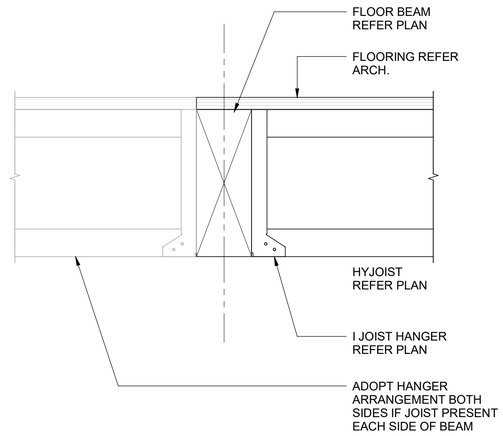
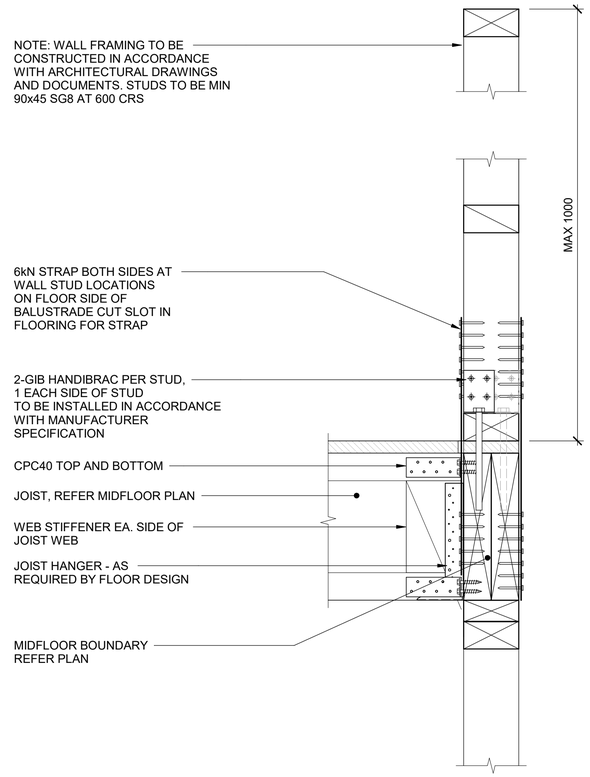


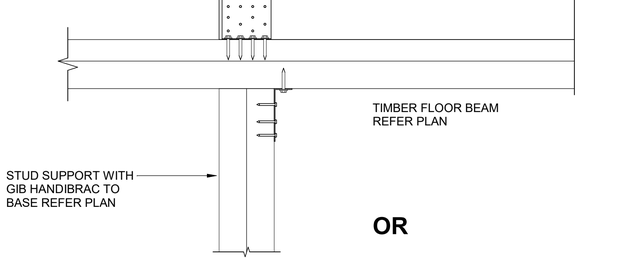
7051 MIDFLOOR TO I.T WALL
1 : 5



7052 TYPICAL FLOOR JOIST TO TIMBER BEAM DETAIL
1 : 5



7053 S-1-05 INTERNAL BALUSTRADE CONNECTION - PREPENDICULAR JOISTS
1 : 5



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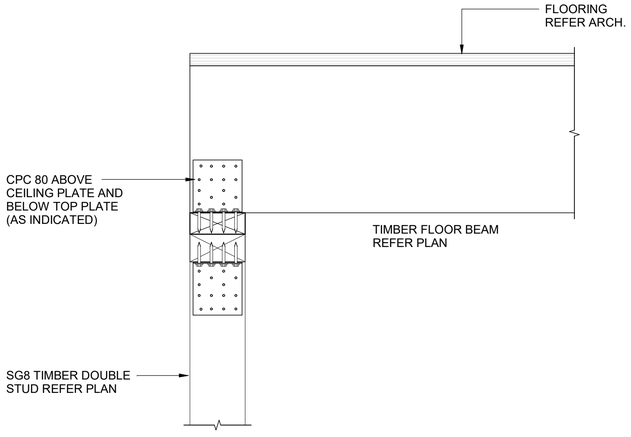
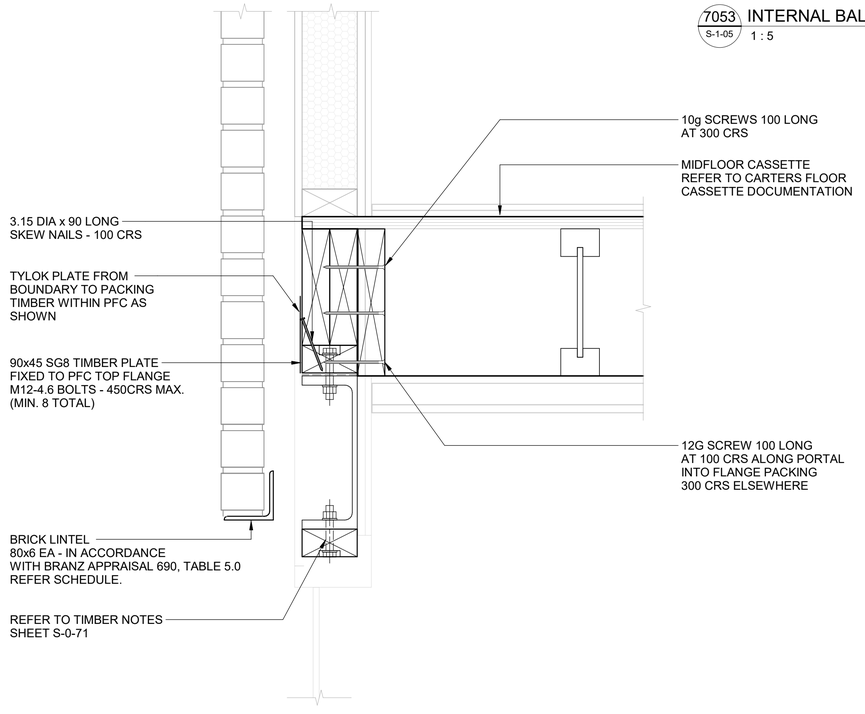


7055 TYPICAL FLOOR BEAM TO SUPPORT DETAIL
1 : 5



7056 S-2-01 PFC PORTAL TO MIDFLOOR DETAIL
1 : 5

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

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A	05.12.25	TB	30% DETAILED DESIGN

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PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
FRAMING DETAILS - MIDFLOOR

SCALE	DRAWN	DESIGN	APPROVED
1 : 5 @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-7-05	C

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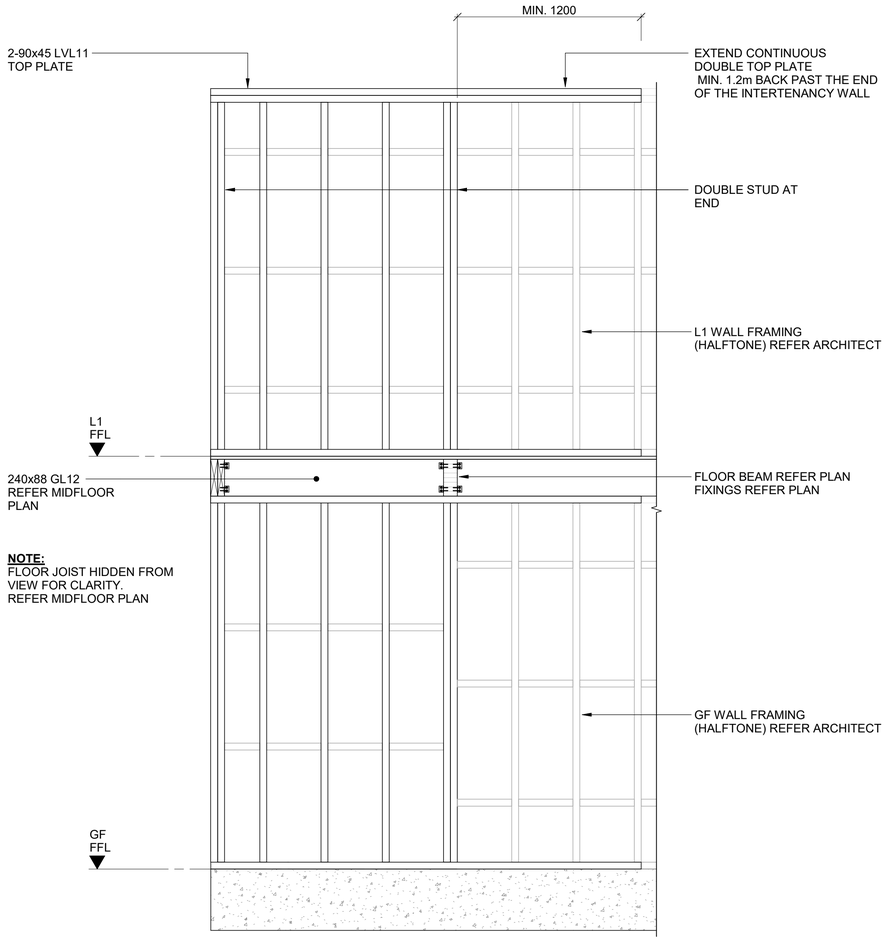

7101 / S-1-35 POST FIRE STABILITY - FRAMING ELEVATION

1 : 20

NOTES

1. REFER DRG S-0-11 FOR PROJECT GENERAL NOTES.

FOR BUILDING CONSENT

NO.	DATE	ISSUED BY	DESCRIPTION
A	03.02.26	TB	BUILDING CONSENT

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PROJECT
ARBOR GREEN DEVELOPMENT
2-8 LAINA LANE, ARBOR GREEN, ROLLESTON

TITLE
FRAMING DETAILS - POST FIRE STABILITY

SCALE	DRAWN	DESIGN	APPROVED
1 : 20 @ A1	TB	HB	JM

Project No.	Drawing No.	Rev
P25-120	S-7-10	A

ORIGINAL DRAWING IN COLOUR

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4/02/2026 5:16:43 pm

Multi-unit Development
2-8 Liana Lane, Arbor Green
Rolleston

24-0135

ISSUED 02.02.26

STRUCTURAL DRAWING LIST				
DRG No.	REV	TITLE	DATE	DESIGN STATUS
S000	1	COVER SHEET	02.02.26	BUILDING CONSENT
S010	1	GENERAL NOTES SHEET 1	02.02.26	BUILDING CONSENT
S050	1	MEMBER SCHEDULE AND NOTES	02.02.26	BUILDING CONSENT
S100	1	BLOCK A - ROOF PLAN	02.02.26	BUILDING CONSENT
S110	1	BLOCK B - ROOF PLAN	02.02.26	BUILDING CONSENT
S120	1	BLOCK C - ROOF PLAN	02.02.26	BUILDING CONSENT
S200	1	BLOCK A&C - GABLE END ELEVATIONS	02.02.26	BUILDING CONSENT
S220	1	BLOCK B - GABLE END ELEVATIONS	02.02.26	BUILDING CONSENT
S700	1	TIMBER FRAMING DETAILS - SHEET 1	02.02.26	BUILDING CONSENT

ALL DIMENSIONS ARE TO BE VERIFIED ON SITE PRIOR TO MAKING ANY SHOP DRAWINGS OR COMMENCING ANY WORK. THE COPYRIGHT OF THIS DRAWING REMAINS WITH ENOVATE CONSULTING ENGINEERS

DRAWING STATUS:

CONSENT

GENERAL:

1. THE STRUCTURAL SPECIFICATION AND DRAWINGS SHALL TAKE PRECEDENCE OVER THESE NOTES AND STANDARD/TYPICAL DETAILS.
2. THE ADEQUACY OF THE STRUCTURAL DESIGN DESCRIBED IN THE STRUCTURAL DRAWINGS IS SUBJECT TO THE REQUIREMENTS/ASSUMPTIONS IN THE STRUCTURAL SPECIFICATION AND/OR DESIGN FEATURES REPORT BEING MET.
3. THESE STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE STRUCTURAL SPECIFICATION AND DESIGN FEATURES REPORT.
4. THESE STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL, CIVIL, MECHANICAL, ELECTRICAL AND ANY OTHER RELEVANT CONSULTANTS DRAWINGS AND SPECIFICATIONS.
5. THESE STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ANY FORMAL INSTRUCTIONS THAT MAY BE ISSUED DURING THE COURSE OF THE CONTRACT.
6. ANY DISCREPANCIES BETWEEN DRAWINGS AND/OR SPECIFICATIONS SHALL BE REFERRED TO THE PROJECT MANAGER AND STRUCTURAL ENGINEER BEFORE PROCEEDING WITH WORK.
7. THE STRUCTURAL DRAWINGS SHOW DESIGN INTENT ONLY. ACCURATE SHOP DRAWING DETAILING IS THE RESPONSIBILITY OF THE CONTRACTOR/FABRICATOR. ALL DIMENSIONS, QUANTITIES, VOLUMES, LENGTHS, SET-OUT AND PREFABRICATION SHALL BE VERIFIED BY THE CONTRACTOR BEFORE COMMENCING CONSTRUCTION AND/OR FABRICATION.
8. REFER TO THE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONAL SET OUT, NIBS, REBATES, SETDOWNS AND THE LIKE.
9. THESE DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION UNTIL ISSUED AS "FOR CONSTRUCTION" BY ENOVATE.
10. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING FROM DRAWINGS.
11. UNLESS OTHERWISE NOTED, ALL LEVELS ARE IN METRES, AND ALL DIMENSIONS ARE IN MILLIMETRES.
12. DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING STRUCTURAL STABILITY AND ENSURE NO ELEMENT OR CONNECTION IS OVERSTRESSED. THIS INCLUDES ALL EXISTING STRUCTURES FORMING PART OF, OR AFFECTED BY, THE WORKS.
13. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, INSTALLATION AND MAINTENANCE OF ALL NECESSARY TEMPORARY WORKS TO ENSURE STRENGTH AND STABILITY OF THE NEW AND EXISTING STRUCTURE AND SERVICES THROUGHOUT THE COURSE OF THE WORKS. THE CONTRACTOR SHALL DESIGN AND PROVIDE PROPPING TO SUPPORT ALL CAST INSITU AND PRECAST CONCRETE WORK UNTIL SUCH CONCRETE HAS REACHED THE REQUIRED STRENGTH TO BE SELF SUPPORTING.
14. WHERE ADDITIONAL CONSTRUCTION LOADS, SUCH AS TEMPORARY SHORING, MOBILE CRANES, ETC, ARE TO BE IMPOSED ON THE STRUCTURE, THE CONTRACTOR SHALL SUBMIT FULL DETAILS OF THE PROPOSED TEMPORARY SUPPORTS TO THE ENGINEER FOR REVIEW. SUCH INFORMATION MUST BE PROVIDED A MINIMUM OF 7 WORKING DAYS PRIOR TO THE PROPOSED WORKS COMMENCING.
15. IF DURING CONSTRUCTION ANY PART OF THE WORKS SHOW SIGNS OF DISTRESS, EXCESSIVE DEFLECTION, CONFLICT OF COMPONENTS AND/OR OTHER PROBLEMS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE STRUCTURAL ENGINEER.
16. THE CONTRACTOR RETAINS RESPONSIBILITY OF THE WORKS EVEN IF THE ENGINEER HAS INSPECTED THE WORKS DURING CONSTRUCTION.
17. SEPARATE INCOMPATIBLE MATERIALS (EG. GALVANISED STEEL, TREATED TIMBER AND STEEL ETC) BY CONCEALED LAYERS OF SUITABLE INERT MATERIALS OF SUITABLE THICKNESS. USE PLASTIC SLEEVES AND WASHERS FOR BOLTS ETC.
18. WHERE PROPRIETARY PRODUCTS ARE SPECIFIED IN THE DOCUMENTS THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE PRODUCT FOR APPROVAL.
19. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS NOTICE FOR ALL INSPECTIONS AND SHALL BE SATISFIED THAT THE WORKS HAS BEEN COMPLETED IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS PRIOR TO REQUESTING AN INSPECTION.
20. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT NEW ZEALAND BUILDING CODE AND CURRENT EDITION OF RELEVANT NEW ZEALAND STANDARDS, INCLUDING ASSOCIATED STANDARDS AND LOCAL AUTHORITY REGULATIONS EXCEPT WHERE VARIED BY THE STRUCTURAL SPECIFICATION AND/OR DRAWINGS.
21. CONSTRUCTION CANNOT COMMENCE UNTIL RELEVANT BUILDING CONSENTS HAVE BEEN ISSUED. ANY PRE-CONSTRUCTION WORK BASED ON THESE DRAWINGS (OR OTHER DOCUMENTATION) PRIOR TO THE ISSUE OF BUILDING CONSENT IS AT THE CONSTRUCTORS OWN RISK.

ABBREVIATIONS AND SYMBOLS:

NUMBER TO BE SPECIFIED	#	METRIC BOLT ISO	M
REIDBAR THREADED INSERT	#RBTI	MAXIMUM	MAX
ALTERNATE	ALT	MANHOLE	MH
APPROXIMATE	APPROX	MINIMUM	MIN
ARCHITECT(S)	ARCH	MILD STEEL	MS
BTM REINFORCEMENT	B	NEAR FACE	N.F.
BTM REINFORCEMENT - TOP LAYER	Bt	NOMINAL	NOM
BTM REINFORCEMENT - BTM LAYER	Bb	NOT TO SCALE	NTS
BUILDING	BLDG	OVERALL	O/A
BOLT(S) AND WASHER(S)	B+W	OUTSIDE DIAMETER	OD
BOTH SIDES	B.S.	PRECAST CONCRETE	PC
BOTTOM	BTM	PARALLEL FLANGE CHANNEL	PFC
CENTRE TO CENTRE	C/C	PARTIAL THREAD	PT
COUNTERSINK	C/S	ROUND BAR - 300 GRADE	R#
CIRCULAR HOLLOW SECTION	CHS	REIDBAR	RB
CAST-IN PLACE	CIP	REINFORCEMENT	REINF
CONSTRUCTION JOINT	CJ	REQUIRED	REQ
CENTRE LINE	CL	RECTANGULAR HOLLOW SECTION	RHS
CROSS-LAMINATED TIMBER	CLT	REDUCED LEVEL	RL
CORNER	CNR	ROLLED STEEL ANGLE	RSA
CONCRETE	CONC	ROLLED STEEL CHANNEL	RSC
CONTINUOUS	CONT	ROLLED STEEL JOIST	RSJ
CHECK ON SITE	COS	STAINLESS STEEL	S/S
COVER	CVR	SQUARE SEISMIC GRADE MESH	SE
CENTRALLY PLACED	CP	STRESS-GRADED TIMBER	SG
CENTRES	CRS	STRESS-GRADED TIMBER GRADE	SG#
DEFORMED BAR - 300 GRADE	D#	SQUARE HOLLOW SECTION	SHS
DIAMETER	DIA	SIMILAR	SIM
DAMP PROOF COURSE	DPC	SETOUT POINT	SOP
DAMP PROOF MEMBRANE	DPM	STRUCTURAL PURPOSE WELD	SP
DRAWING	DRG	SPECIFICATION	SPEC
EQUAL ANGLE	EA	SQUARE	SQ
EACH FACE	E.F.	STANDARD	STD
EACH WAY	E.W.	STAGGERED	STGD
FAR FACE	F.F.	STIRRUP(S)	STP(S)
FINISHED FLOOR LEVEL	FFL	STARTER(S)	STR(S)
FULL STRENGTH BUTT WELD	FSBW	STRUCTURAL FLOOR TYPE	SF#
FULL STRENGTH PLUG WELD	FSPW	TONNE	t
FIRE RESISTANCE RATING	FRR	TOP REINFORCEMENT	T
FULLY THREADED	FT	TOP & BOTTOM	T&B
FILLET WELD ALL AROUND	FWAR	TOP REINFORCEMENT - TOP LAYER	Tt
GALVANISED	GALV	TOP REINFORCEMENT - BTM LAYER	Tb
GLASS FIBRE REINFORCED POLYMER	GFRP	TAPER FLANGE CHANNEL	TFC
GROUND LEVEL	GL	THROUGH	THRU
GLUE-LAMINATED TIMBER GRADE	GL#	TOP OF STEEL	TOS
GENERAL PURPOSE WELD	GP	TYPICAL	TYP
HOLDING DOWN BOLT	HDB	UNDERSIDE	U/S
HIGH GRADE DEFORMED BAR - 500 GRADE	HD#	UNEQUAL ANGLE	UA
HOT DIP GALVANISED	HDG	UNIVERSAL BEAM	UB
HORIZONTAL	HORIZ	UNIVERSAL COLUMN	UC
HIGH GRADE ROUND BAR - 500 GRADE	HR#	UNLESS NOTED OTHERWISE	U.N.O.
INSIDE DIAMETER	ID	VERTICAL	VERT
INVERT LEVEL	IL	WASHER	WSH
LONG	LG	WASHER HEAD	W/H
LAMINATED VENEER LUMBER	LVL	WELD PLATE	WP
LAMINATED VENEER LUMBER GRADE	LVL#		

HEALTH & SAFETY AND SAFETY IN DESIGN:

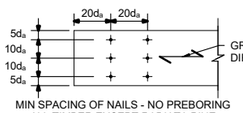
1. ENOVATE IS NOT RESPONSIBLE FOR THE OCCUPATIONAL HEALTH AND SAFETY OF PEOPLE AT THE SITE. THESE OBLIGATIONS RESIDE WITH THE CONTRACTORS AND/OR SUBCONTRACTORS WHO OCCUPY OR HAVE CONTROL OF THE SITE IN ACCORDANCE WITH APPLICABLE OCCUPATIONAL HEALTH AND SAFETY LEGISLATION, CODES OF PRACTICE, GUIDANCE NOTES, NEW ZEALAND STANDARDS AND OTHER RELEVANT DOCUMENTATION.
2. ANY ADVICE OR GUIDANCE CONCERNING OCCUPATIONAL HEALTH AND SAFETY ISSUES ARISING AT THE SITE SHOULD BE DIRECTED TO THE HEALTH AND SAFETY EXECUTIVE, OFFICER OR MANAGER NOMINATED FOR THE PROJECT.
3. ANY HEALTH AND SAFETY RECOMMENDATIONS MADE HEREIN BY ENOVATE ARE NOT EXHAUSTIVE AND DO NOT ACCOUNT FOR ALL CONSTRUCTION, OPERATION, MAINTENANCE, DEMOLITION SAFETY RISKS AND/OR ANY MODIFICATIONS TO THE DESIGN AFTER THESE DRAWINGS HAVE BEEN SUBMITTED. IMPLEMENTATION OF THESE RECOMMENDATIONS ARE AT THE SOLE DISCRETION OF THE HEALTH AND SAFETY EXECUTIVE, OFFICER OR MANAGER NOMINATED FOR THE PROJECT. INCLUSION (OR NOT) OF ANY ITEM DOES NOT REDUCE OR LIMIT OBLIGATIONS OF CONSTRUCTOR, USER, MAINTAINER AND DEMOLISHER TO UNDERTAKE APPROPRIATE RISK MANAGEMENT ACTIVITIES TO REDUCE RISK AND IS NOT AN ADMISSION BY ENVOATE THAT INCLUSION OF ANY HEALTH AND SAFETY ITEM IS THE STRUCTURAL ENGINEERS RESPONSIBILITY.
4. CONSTRUCT BUILDING ELEMENTS THAT CONTRIBUTE TO SAFETY, SUCH AS HANDRAILS, TOE BOARDS, FALL ARREST SYSTEMS, ACCESS STAIRS, ETC, AS EARLY AS POSSIBLE.
5. REVIEW ADEQUACY OF WORKING SPACE AVAILABLE FOR CONSTRUCTION ACTIVITIES. ENSURE SEPARATION OF PLANT, PERSONNEL, LIFTING SLEW AND LAY DOWN AREAS AND TRAFFIC ON SITE.
6. PROVIDE PROTECTION TO PERSONNEL FROM PLANT AND EQUIPMENT, INCLUDING POST-TENSIONED ANCHOR INSTALLATION WORKS AND ELECTRICAL NFRASTRUCTURE. WRITTEN RISK ASSESSMENTS ARE ADVISED FOR ACCESS & RAPID EGRESS TO OPEN EXCAVATIONS.
7. LOCATE STOCKPILES AND HEAVY EQUIPMENT INCLUDING CRANES AWAY FROM BURIED SERVICES AND BUILDING BOUNDARIES WHERE ADJACENT BASEMENTS ARE PRESENT AND SEEK ADVICE FROM SUITABLY QUALIFIED GEOTECHNICAL OR STRUCTURAL ENGINEER PRIOR TO OPERATION OF HEAVY SURFACE PLANT AND EQUIPMENT OR STOCKPILING MATERIAL NEAR OPEN EXCAVATIONS OR EXISTING RETAINING STRUCTURES.
8. SEEK ADVICE FROM SUITABLY QUALIFIED STRUCTURAL ENGINEER BEFORE LAYING SERVICES BELOW EXISTING FOOTING LEVELS.
9. HAVE LOAD CAPACITY OF STRUCTURES VERIFIED BY A SUITABLY QUALIFIED STRUCTURAL ENGINEER BEFORE LOADING OR STORING MATERIALS ON EXISTING OR PARTIALLY COMPLETED STRUCTURAL ELEMENTS.
10. SEEK ADVICE FROM A SUITABLY QUALIFIED STRUCTURAL ENGINEER BEFORE MAKING ANY MODIFICATIONS TO EXISTING STRUCTURES.
11. HAVE A SUITABLY QUALIFIED STRUCTURAL ENGINEER UNDERTAKE STRUCTURAL CHECK OF EXISTING OR NEW STRUCTURES WHERE FIXINGS OF HEAVY PLANT OR EQUIPMENT IS TO BE ATTACHED.
12. INSTRUCT ALL CONTRACTORS THAT UNDER NO CIRCUMSTANCES CAN STRUCTURAL MEMBERS BE CUT, DISCONNECTED, NOTCHED OR DRILLED TO ACCOMMODATE SERVICES WITHOUT APPROVAL FROM THE STRUCTURAL ENGINEER.
13. DEVELOP STEELWORK / PRECAST / TILT UP INSTALLATION SAFE WORK METHOD STATEMENT TO ELIMINATE AND MINIMISE INSTALLATION RISKS, AND HAVE REVIEWED BY SUITABLY QUALIFIED STRUCTURAL ENGINEER PRIOR TO ERECTION.
14. PROVIDE BUCKLING STABILITY TO LONG SPAN BEAMS, TRUSSES, ETC, DURING ERECTION. IF UNSURE, CHECK WITH SUITABLY QUALIFIED STRUCTURAL ENGINEER PRIOR TO LIFTING AND INSTALLATION. MINIMISE SITE BASED TREATMENTS (EG WELDING, CUTTING, SPRAY PAINTING, GRIT BLASTING, ETC) AND PROVIDE ADEQUATE PROTECTION, SCREENING AND VENTILATION TO PERSONNEL IF UNAVOIDABLE.
15. AVOID WORKING IN CONFINED SPACES, HOT WORKS, TOXIC OR POTENTIALLY TOXIC MATERIALS. IF UNAVOIDABLE, PROVIDE A SAFE WORK METHOD STATEMENT ADDRESSING MITIGATION OF RISKS AND OBTAIN ALL APPLICABLE PERMITS.
16. MAKE WORK AREAS SAFE WHERE STRUCTURAL ELEMENTS ARE DAMAGED, CRACKED OR HAVE SUFFERED SIGNIFICANT SECTION LOSS BEFORE ALLOWING GENERAL CONSTRUCTION OR REPAIR ACCESS.
17. REPORT SIGNIFICANT SECTION LOSS, CORROSION AND/OR ROTTING BEFORE STARTING PAINTING, LINING OR REPAIRS. CONSULT SUITABLY QUALIFIED STRUCTURAL ENGINEER IF SECTION LOSS, ROT OR EXTENSIVE CORROSION FLAKING PRESENT BEFORE PROCEEDING WITH WORK.
18. DEVELOP AND IMPLEMENT RISK MITIGATION STRATEGIES BEFORE ALLOWING ACCESS OVER OR ON BRITTLE CLADDING OR CLADDING FINISHES.
19. REPORT LOOSE OR MISSING CONNECTORS ENCOUNTERED DURING DAY TO DAY OPERATIONS.

STRUCTURAL TIMBER:

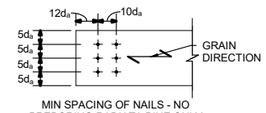
1. THE STRUCTURAL TIMBER MANUFACTURER SHALL BE LICENSED BY THE STANDARDS ASSOCIATION OF NEW ZEALAND TO USE THE NEW ZEALAND CERTIFICATION MARK ON THEIR PRODUCTS.
2. THE STRUCTURAL ENGINEER OR THEIR REPRESENTATIVE WILL INSPECT ALL STRUCTURAL TIMBER PLACED, BEFORE ANY PRE-LINING COMMENCES.
3. STRUCTURAL TIMBER SHALL BE PLANTATION GROWN NZ RADIATA PINE, UNLESS NOTED OTHERWISE.
4. ROUND TIMBER IS TO BE EITHER NORMAL OR HIGH-DENSITY NEW ZEALAND RADIATA PINE IN ACCORDANCE WITH NZS 3603 TIMBER STRUCTURES STANDARD AS SPECIFIED IN STRUCTURAL DRAWINGS.
5. SAWN TIMBER IS TO BE STRESS GRADED AND KILN DRIED IN ACCORDANCE WITH NZS 3622 WITH TIMBER PROPERTIES VERIFIED AS PER NZS 3618.
6. ALL GLUE LAMINATED TIMBER MEMBERS SHALL BE MANUFACTURED BY A REGISTERED MANUFACTURER HOLDING A CURRENT LICENCE NUMBER SHOWING COMPLIANCE WITH AUSTRALIA & NZ STANDARD AS/NZS 1328 GLUED LAMINATED STRUCTURAL TIMBER. THE GLULAM SECTION IS TO BE OF THE GRADE SPECIFIED IN THE STRUCTURAL DRAWINGS CONSISTENT WITH AS/NZS 1328. GLUE LAMINATED TIMBER IS TO BE EITHER GRADE GL8, GL10 OR GL12 NEW ZEALAND RADIATA PINE.
7. STRUCTURAL PLYWOOD IS TO BE MIN C-D GRADE F8 NEW ZEALAND RADIATA PINE IN ACCORDANCE WITH AS/NZS 2269 PLYWOOD – STRUCTURAL OR EQUIVALENT FROM A MANUFACTURER WITH A CURRENT EWPAA CERTIFICATION. THE FOLLOWING VALUES SHOWN IN TABLE 10 ARE CHARACTERISTIC STRENGTHS & ELASTIC MODULUS FOR F8 GRADE STRUCTURAL PLYWOOD.
8. ALL PLYWOOD DIAPHRAGMS TO COMPLY WITH MANUFACTURER'S SPECIFICATIONS U.N.O.
9. LAMINATED VENEER LUMBER IS TO BE NEW ZEALAND RADIATA PINE, AS SPECIFIED IN ACCORDANCE WITH AS/NZS 4357 STRUCTURAL LAMINATED VENEER LUMBER.
10. TIMBER USED TO FABRICATE CROSS-LAMINATED TIMBER (CLT) IS TO BE NZ RADIATA PINE STRESS GRADED AND KILN DRIED SG8 IN ACCORDANCE WITH NZS 3622 UNLESS NOTED OTHERWISE.

STRUCTURAL TIMBER (CONT):

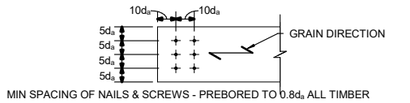
11. CLT PANEL FACE GRAIN ORIENTATION SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
    - WALLS/PIERS — VERTICAL
    - SPANDRELS/LINTELS — HORIZONTAL
    - FLOORS — MATCH SPAN DIRECTION
    - STAIRS SPINE PANELS — MATCH SLOPE OF THE STAIRS
    - STAIRS — MATCH SPAN DIRECTION
12. REFER TO THE ARCHITECTURAL AND FIRE ENGINEERING SPECIFICATION FOR TIMBER SURFACE FINISHES AND COATING REQUIREMENTS (FOR CLT, GLULAM, LVL AND TIMBER PANEL PRODUCTS).
13. ALL TIMBER IS TO BE TREATED IN ACCORDANCE WITH NZBC B2/AS1 AND NZS 3640 INCLUDING RELEVANT PARTS OF AS/NZS 1604.
14. ALL ADHESIVE USED FOR GLUE-LAMINATED TIMBER (INCLUDING CLT) SHALL COMPLY WITH AS/NZS 4364 (AND BE APPROPRIATE TO THE IN-SERVICE ENVIRONMENT). GLUE-LINE THICKNESS SHALL NOT EXCEED 0.5mm.
15. ALL END GRAIN SHALL BE PROTECTED FROM MOISTURE DURING CONSTRUCTION & SERVICE.
16. ALL TIMBER SHALL BE KILN DRIED AND HAVE A MOISTURE CONTENT OF BETWEEN 12% AND 18% DURING DELIVERY AND CONSTRUCTION AND SHALL NOT EXCEED 18% WHEN LINING FRAMING. .
17. BOLTS SHALL BE TO THE SIZES AND POSITIONS AS SHOWN ON THE DRAWINGS. ALLOW TO COUNTERSINK BOLT HEADS AND NUTS AS NECESSARY TO CLEAR LININGS.
18. MIN SPACINGS FASTENER EDGE, END DISTANCES & SPACINGS SHALL BE IN ACCORDANCE WITH NZS 3603



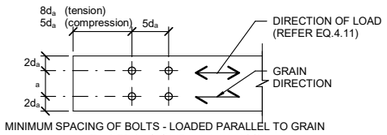
MIN SPACING OF NAILS - NO PREBORING ALL TIMBER EXCEPT RADIATA PINE



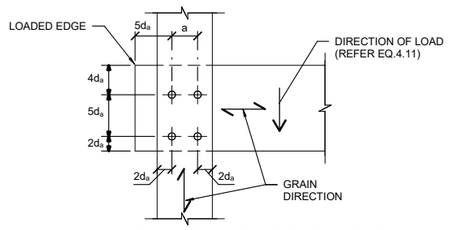
MIN SPACING OF NAILS - NO PREBORING RADIATA PINE ONLY



MIN SPACING OF NAILS & SCREWS - PREBORED TO 0.8da ALL TIMBER



MINIMUM SPACING OF BOLTS - LOADED PARALLEL TO GRAIN ALL TIMBER (a IS GIVEN IN 4.4.1.3 {a})



MINIMUM SPACING OF BOLTS - LOADED PERPENDICULAR TO GRAIN ALL TIMBER (a IS GIVEN IN 4.4.1.3 {b})

d_a = DIAMETER OF FASTENER

19. MINIMUM PLYWOOD SHEET NAIL AND SCREW EDGE DISTANCES FOR FASTENERS SHALL BE 3 TIMES THE FASTENER DIAMETER.
20. THE DIAMETER OF A HOLE FOR A BOLT SHALL NOT BE LESS THAN THE BOLT DIAMETER AND NOT EXCEED IT BY 2.0mm.
21. ALL BOLTS THROUGH TIMBER MEMBERS ARE TO HAVE WASHER AGAINST ANY TIMBER FACES WITH THE FOLLOWING SIZES UNLESS NOTED OTHERWISE:

TIMBER CONNECTION WASHER SIZES		
BOLT	**SQUARE WASHER**	**ROUND WASHER**
M12	50x50x3mm	Ø55x3mm
M16	60x60x4mm	Ø65x4mm
M20	65x65x5mm	Ø75x5mm
≥ M24	75x75x6mm	Ø85x6mm

22. NAILS, SCREWS AND BOLTS SHALL BE OF STEEL AND SHALL BE IN ACCORDANCE WITH NZS 3604 AND NZS 3603 UNLESS NOTED OTHERWISE.
23. MINIMUM PENETRATIONS OF NAILS AND SCREWS SHALL BE 10 TIMES THE FASTENER DIAMETER INTO STRUCTURAL TIMBER (NAIL PENETRATION THROUGH PACKING SHALL BE IGNORED).
24. ALL TIMBER FASTENERS (NAILS, SCREWS, BOLTS, FOLDED METAL ANGLES/NAIL PLATES/JOIST HANGERS, PROPRIETARY AND MISCELLANEOUS) SHALL COMPLY WITH THE DURABILITY REQUIREMENTS OF NZS 3604 AND AS A MINIMUM SHALL BE GALVANISED.
25. ALL FOLDED METAL ANGLES/NAIL PLATES/JOIST HANGERS, PROPRIETARY AND MISCELLANEOUS TIMBER FASTENERS SHALL BE FIXED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
26. BLOCKING NOT SHOWN FOR CLARITY ON DRAWINGS. PROVIDE TO COMPLY WITH NZS 3604. BLOCKING SHALL BE PROVIDED CONTINUOUSLY BETWEEN JOISTS BELOW WALL FRAMES, BEARER LINES AND AT THE MIDSPAN OF THE JOISTS.
27. TIMBER SHALL BE PROVIDED WITH A MINIMUM SEATING OF 45mm.
28. ANY STRINGER OR PLATE FIXED TO CONCRETE OR STEEL SHALL BE PROVIDED WITH M12 BOLTS AT 600mm CENTRES UNLESS NOTED OTHERWISE.
29. TIMBER SHALL BE PROTECTED FROM CONCRETE OR STRUCTURAL STEELWORK WITH A DPC AND OVERHANGING THE EXTERIOR EDGES BY AT LEAST 6mm.
30. ANY HOLES, NOTCHES, RECESSING OF BOLTS / WASHERS, PLANING OR CUTTING TO STRUCTURAL TIMBER MEMBERS THAT ARE NOT SHOWN IN THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO COMMENCING WORK.
31. ALL CUTS AND NOTCHES SHOWN IN THE STRUCTURAL DRAWING IN H5 TREATED ROUNDS SHALL BE TREATED WITH "ENSEAL" OR "METALLEX" TIMBER PRESERVATIVE.
32. ALL BUILT-UP MEMBERS TO BE NAIL LAMINATED TO NZS 3604.
33. REFER TO STRUCTURAL SPECIFICATION FOR FURTHER SPECIFICATIONS & REQUIREMENTS.

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enovate
AON CENTRE, LEVEL 12,
29 CUSTOMS STREET WEST,
AUCKLAND CITY, 1010
NEW ZEALAND

TEL: +64 9 320 3060

EMAIL: contact@enovate.co.nz

WEBSITE: www.enovate.co.nz

CLIENT:

REV	DATE	REVISION DESCRIPTION	ISSUED BY
1	02.02.26	BUILDING CONSENT	HFT

ENGINEERS	HFT
TECHNICIANS	HFT
CHECKED BY	JSD
APPROVED BY	MPN

PROJECT:
Multi Unit Development - SIPs
2-8 Liana Lane, Arbor Green
Rolleston

DRAWING TITLE:
GENERAL NOTES - SHEET 1

REMARKS:

DRAWING STATUS:
CONSENT

PROJECT No.	SHEET No.	REV
24-0135	S010	1

COUNCIL APPROVAL	SHEET SIZE	SCALE
	A3 (297x420)	N/A

GENERAL NOTES

1. THESE DRAWINGS ARE TO BE VIEWED / PRINTED IN COLOUR
2. ARCHITECTURAL UNDERLAYS SHOWN FOR REFERENCE ONLY. DO NOT SCALE OFF DRAWINGS, REFER ARCHITECTURAL DRAWINGS FOR SET OUT.
3. ALL LEVELS, STEPS, NIBS & FALLS REFER TO ARCHITECTURAL DRAWINGS.
4. UNLESS NOTED OTHERWISE, A MINIMUM LEVEL OF CONNECTIVITY BETWEEN TIMBER MEMBERS IS REQUIRED IN ACCORDACE WITH NZS3604.
5. ALL SAWN TIMBER BUILT UP TIMBER ELEMENTS TO BE NAIL LAMINATED AS PER NZS3604.
6. ALL LVL BUILT UP TIMBER ELEMENTS TO BE NAIL/SCREW LAMINATED AS PER FUTUREBUILD LVL RESIDENTIAL DESIGN GUIDE SECTION 5.4.
7. ALL LIGHT GAUGE STEEL STAPS AND PLATES TO TIMBER FRAMING TO BE COUNTERSUNK 5mm.

MEMBER TABLE - ROOF SYSTEMS

MARK	SIZE	REMARKS
RS1	215Dx1220W	FORMANCE SIP PANEL THERMAL SPLINES
RS2	215Dx1220W	FORMANCE SIP PANEL THERMAL SPLINES SUPPORTING VALLEY TRUSSES

MEMBER TABLE - WALL SYSTEMS

MARK	SIZE	REMARKS
WS1	115Dx1220W	FORMANCE SIP PANEL WITH SPLINES AS INDICATED (TC1/TC2/TC3)
WS2	115Dx1220W	FORMANCE SIP PANEL 2/90x45 SG8 SPLINES

MEMBER TABLE - BEAMS

MARK	SIZE	REMARKS
TL1	200x90	hy90 TIMBER WALING BEAM
CP1	90x45	SG8 TIMBER CAP PLATE

MEMBER TABLE - COLUMNS/SPLINES

MARK	SIZE	REMARKS
TC1	4/90x45	LVL13 TIMBER COLUMN/SPLINE
TC2	2/90x45	SG8 TIMBER COLUMN/SPLINE
TC3	90x45	SG8 TIMBER COLUMN/SPLINE

MEMBER TABLE - OTHER

MARK	SIZE	REMARKS
TX1	-	LINTEL/SILL/TRIMMER/SPLINE TO FORMANCE DESIGN GUIDE V2 (NO SED REQUIRED)

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enovate
AON CENTRE, LEVEL 12,
29 CUSTOMS STREET WEST,
AUCKLAND CITY, 1010
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APPROVED BY: MPN

PROJECT:
Multi Unit Development - SIPs
2-8 Liana Lane, Arbor Green
Rolleston

DRAWING TITLE:
MEMBER SCHEDULE AND NOTES

REMARKS:

DRAWING STATUS: CONSENT

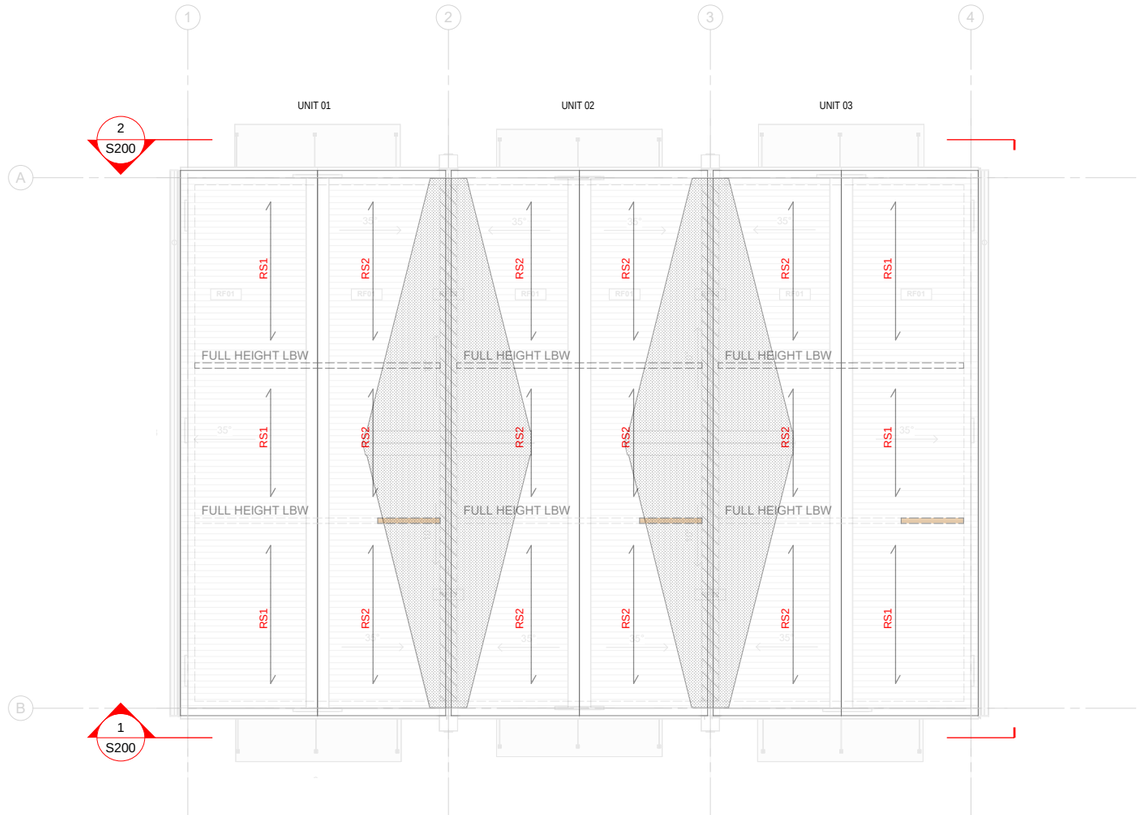
PROJECT No.	SHEET No.	REV
24-0135	S050	1

COUNCIL APPROVAL

SHEET SIZE: A3 (297x420)
SCALE: N/A

MEMBER TABLE - ROOF SYSTEMS		
MARK	SIZE	REMARKS
RS1	215Dx1220W	FORMANCE SIP PANEL THERMAL SPLINES
RS2	215Dx1220W	FORMANCE SIP PANEL THERMAL SPLINES SUPPORTING VALLEY TRUSSES

NOTE: PROVIDE 90x45 SG8 PURLINS ON FLAT AROUND PERIMETER AND AT MAX 900 CRS PERPENDCIULAR TO VALLEY TRUSSES (UNDER TRUSSES). SEE SECTION 9.6 AND FIGURE 9.11 OF FORMANCE DESIGN GUIDE FOR REQUIREMENTS & DETAILS. FIXINGS FROM PURLINS TO TRUSS AND TRUSS DESIGNED BY OTHERS.



NOTE: ALL ROOF PANEL FIXINGS TO SUPPORTING STRUCTURE AND BETWEEN ROOF PANELS IN ACCORDANCE WITH FORMANCE DESIGN GUIDE V2.

1 / - BLOCK A - ROOF PLAN

SCALE 1:100

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29 CUSTOMS STREET WEST,
AUCKLAND CITY, 1010
NEW ZEALAND

TEL: +64 9 320 3060

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Multi Unit Development - SIPs
2-8 Liana Lane, Arbor Green
Rolleston

DRAWING TITLE:
BLOCK A - ROOF PLAN

REMARKS:

DRAWING STATUS:
CONSENT

PROJECT No.	SHEET No.	REV
24-0135	S100	1

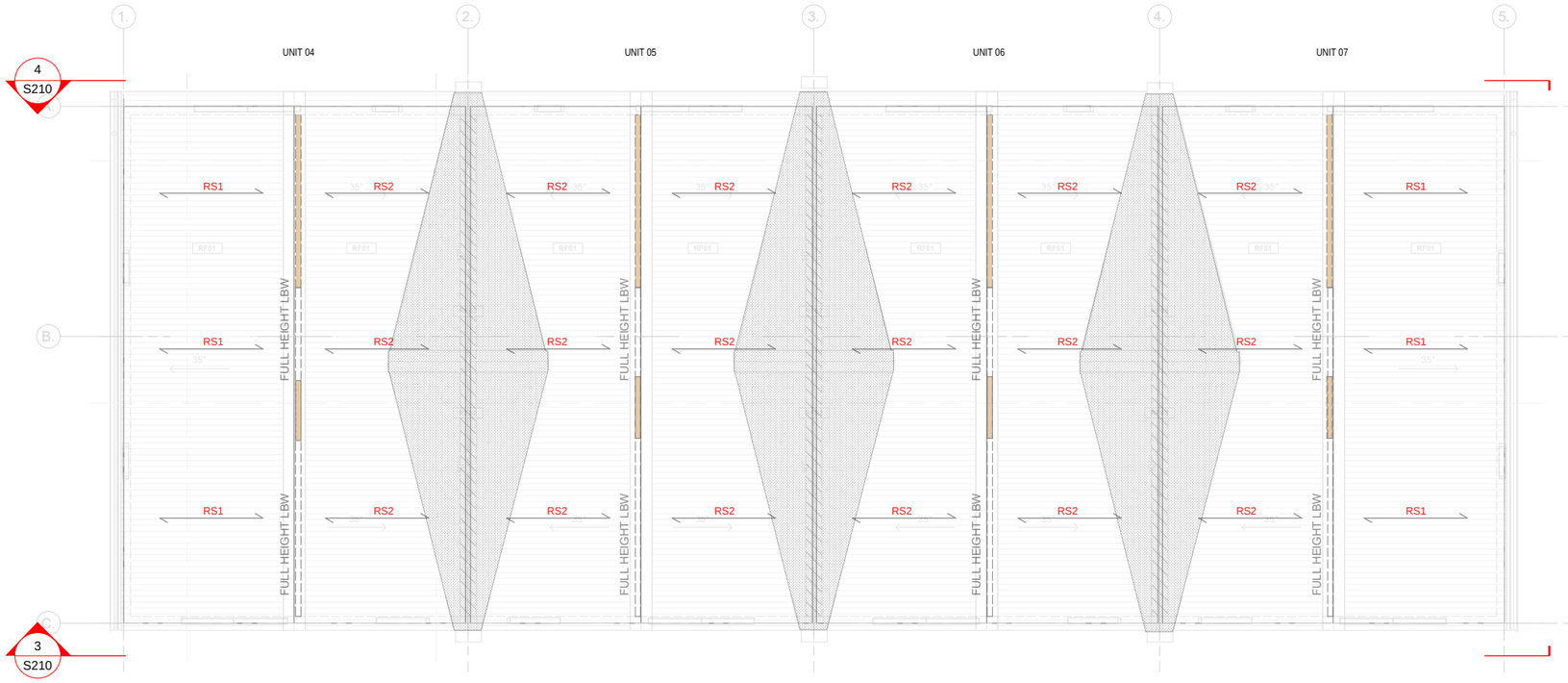
COUNCIL APPROVAL

SHEET SIZE: A3 (297x420)

SCALE: 1 : 100

MEMBER TABLE - ROOF SYSTEMS		
MARK	SIZE	REMARKS
RS1	215Dx1220W	FORMANCE SIP PANEL THERMAL SPLINES
RS2	215Dx1220W	FORMANCE SIP PANEL THERMAL SPLINES SUPPORTING VALLEY TRUSSES

NOTE: PROVIDE 90x45 SG8 PURLINS ON FLAT AROUND PERIMETER AND AT MAX 900 CRS PERPENDCIULAR TO VALLEY TRUSSES (UNDER TRUSSES). SEE SECTION 9.6 AND FIGURE 9.11 OF FORMANCE DESIGN GUIDE FOR REQUIREMENTS & DETAILS. FIXINGS FROM PURLINS TO TRUSS AND TRUSS DESIGNED BY OTHERS.



NOTE: ALL ROOF PANEL FIXINGS TO SUPPORTING STRUCTURE AND BETWEEN ROOF PANELS IN ACCORDANCE WITH FORMANCE DESIGN GUIDE V2.

2 - BLOCK B - ROOF PLAN

SCALE 1:100

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enovate

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29 CUSTOMS STREET WEST,
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PROJECT: Multi Unit Development - SIPs
2-8 Liana Lane, Arbor Green
Rolleston

DRAWING TITLE: ROOF PLAN - BLOCK B

REMARKS:

DRAWING STATUS: CONSENT

PROJECT No.	SHEET No.	REV
24-0135	S110	1

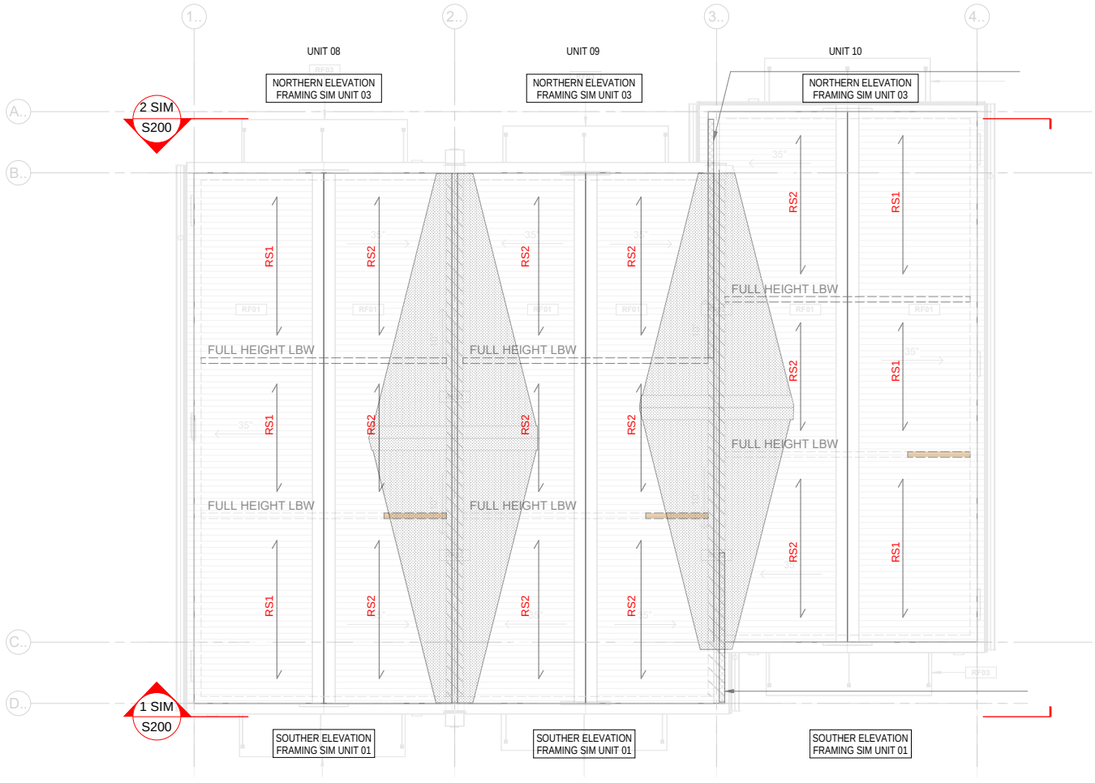
COUNCIL APPROVAL

SHEET SIZE: A3 (297x420)

SCALE: 1 : 100

MEMBER TABLE - ROOF SYSTEMS		
MARK	SIZE	REMARKS
RS1	215Dx1220W	FORMANCE SIP PANEL THERMAL SPLINES
RS2	215Dx1220W	FORMANCE SIP PANEL THERMAL SPLINES SUPPORTING VALLEY TRUSSES

NOTE: PROVIDE 90x45 SG8 PURLINS ON FLAT AROUND PERIMETER AND AT MAX 900 CRS PERPENDCIULAR TO VALLEY TRUSSES (UNDER TRUSSES). SEE SECTION 9.6 AND FIGURE 9.11 OF FORMANCE DESIGN GUIDE FOR REQUIREMENTS & DETAILS. FIXINGS FROM PURLINS TO TRUSS AND TRUSS DESIGNED BY OTHERS.



NOTE: ALL ROOF PANEL FIXINGS TO SUPPORTING STRUCTURE AND BETWEEN ROOF PANELS IN ACCORDANCE WITH FORMANCE DESIGN GUIDE V2.

3 / - BLOCK C - ROOF PLAN

SCALE 1:100

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PROJECT:
Multi Unit Development - SIPs
2-8 Liana Lane, Arbor Green
Rolleston

DRAWING TITLE:
ROOF PLAN - BLOCK B

REMARKS:

DRAWING STATUS:
CONSENT

PROJECT No.	SHEET No.	REV
24-0135	S120	1

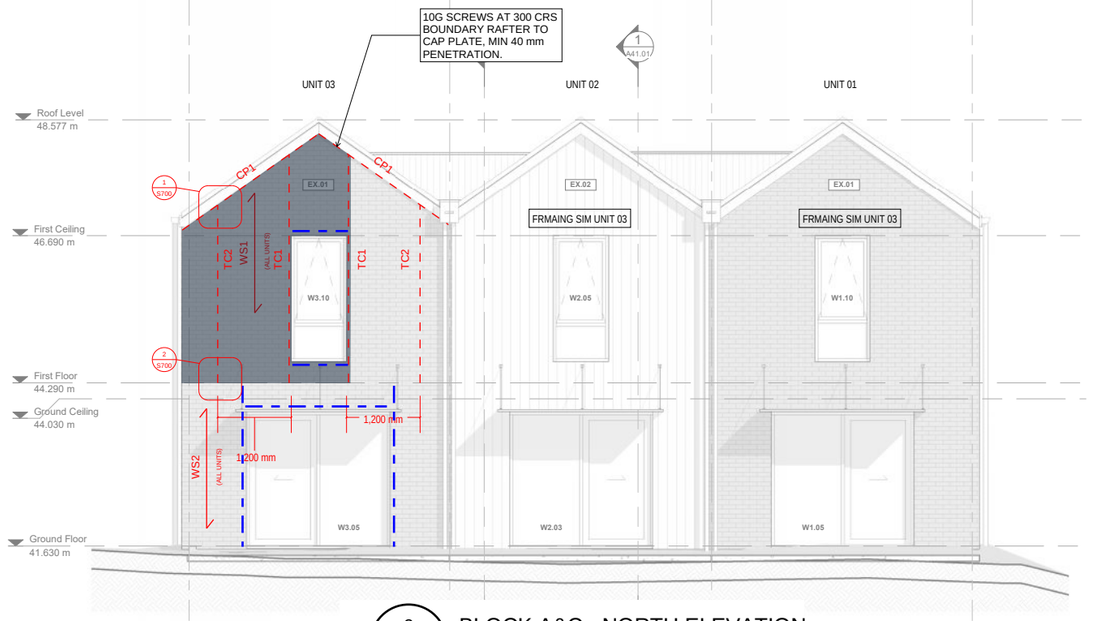
COUNCIL APPROVAL

SHEET SIZE: A3 (297x420)

SCALE: 1 : 100

1 / S100 BLOCK A&C - SOUTH ELEVATION

SCALE 1:100



2 / S100 BLOCK A&C - NORTH ELEVATION

SCALE 1:100

MEMBER TABLE - WALL SYSTEMS

MARK	SIZE	REMARKS
WS1	115Dx1220W	FORMANCE SIP PANEL WITH SPLINES AS INDICATED (TC1/TC2/TC3)
WS2	115Dx1220W	FORMANCE SIP PANEL 2/90x45 SG8 SPLINES

MEMBER TABLE - BEAMS

MARK	SIZE	REMARKS
TL1	200x90	hy90 TIMBER WALING BEAM
CP1	90x45	SG8 TIMBER CAP PLATE

MEMBER TABLE - COLUMNS/SPLINES

MARK	SIZE	REMARKS
TC1	4/90x45	LVL13 TIMBER COLUMN/SPLINE
TC2	2/90x45	SG8 TIMBER COLUMN/SPLINE
TC3	90x45	SG8 TIMBER COLUMN/SPLINE

MEMBER TABLE - OTHER

MARK	SIZE	REMARKS
TX1	-	LINTEL/SILL/TRIMMER/SPLINE TO FORMANCE DESIGN GUIDE V2 (NO SED REQUIRED)

KEY:

NOTE: SED FRAMING MEMBER OR CONNECTION. ALL OTHER PANEL SPLINES, PERIMETER ELEMENTS, LINTELS, OPENING TRIMMERS & CONNECTIONS TO FORMACE SPECIFICATION. SPLINES & TRIMMERS SHALL MATCH OR EXCEED WALL SYSTEM SPEC ON SHEET S050.

TX1 – REFER TO MEMBER TABLE

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enovate
AON CENTRE, LEVEL 12,
29 CUSTOMS STREET WEST,
AUCKLAND CITY, 1010
NEW ZEALAND
TEL: +64 9 320 3060
EMAIL: contact@enovate.co.nz
WEBSITE: www.enovate.co.nz

CLIENT:

REV	DATE	REVISION DESCRIPTION	ISSUED BY
1	02.02.26	BUILDING CONSENT	HFT

ENGINEERS: HFT
TECHNICIANS: HFT
CHECKED BY: JSD
APPROVED BY: MPN

PROJECT:
Multi Unit Development - SIPs
2-8 Liana Lane, Arbor Green
Rolleston

DRAWING TITLE:
BLOCK A&C - GABLE END ELEVATIONS

REMARKS:

DRAWING STATUS: CONSENT

PROJECT No.	SHEET No.	REV
24-0135	S200	1

COUNCIL APPROVAL	SHEET SIZE	SCALE
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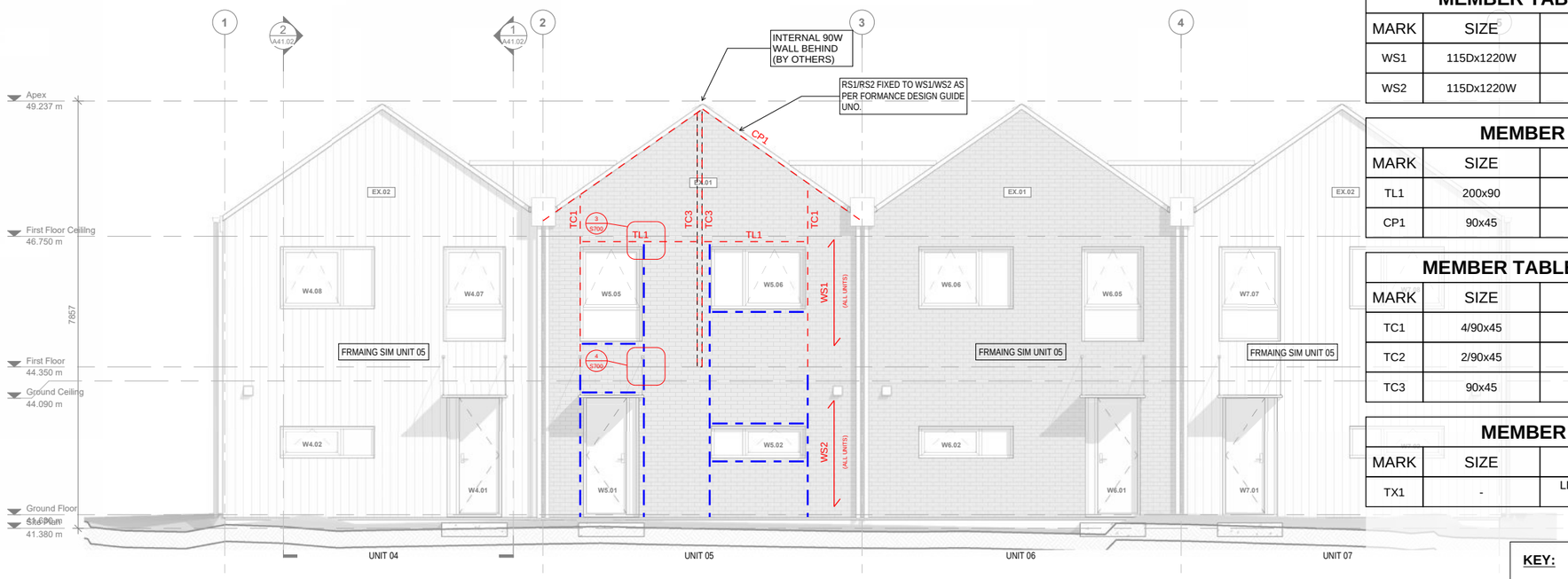


3 / S110 BLOCK B - SOUTH ELEVATION

SCALE 1:100

MEMBER TABLE - WALL SYSTEMS		
MARK	SIZE	REMARKS
WS1	115Dx1220W	FORMANCE SIP PANEL WITH SPLINES AS INDICATED (TC1/TC2/TC3)
WS2	115Dx1220W	FORMANCE SIP PANEL 2/90x45 SG8 SPLINES

MEMBER TABLE - BEAMS		
MARK	SIZE	REMARKS
TL1	200x90	hy90 TIMBER WALING BEAM
CP1	90x45	SG8 TIMBER CAP PLATE

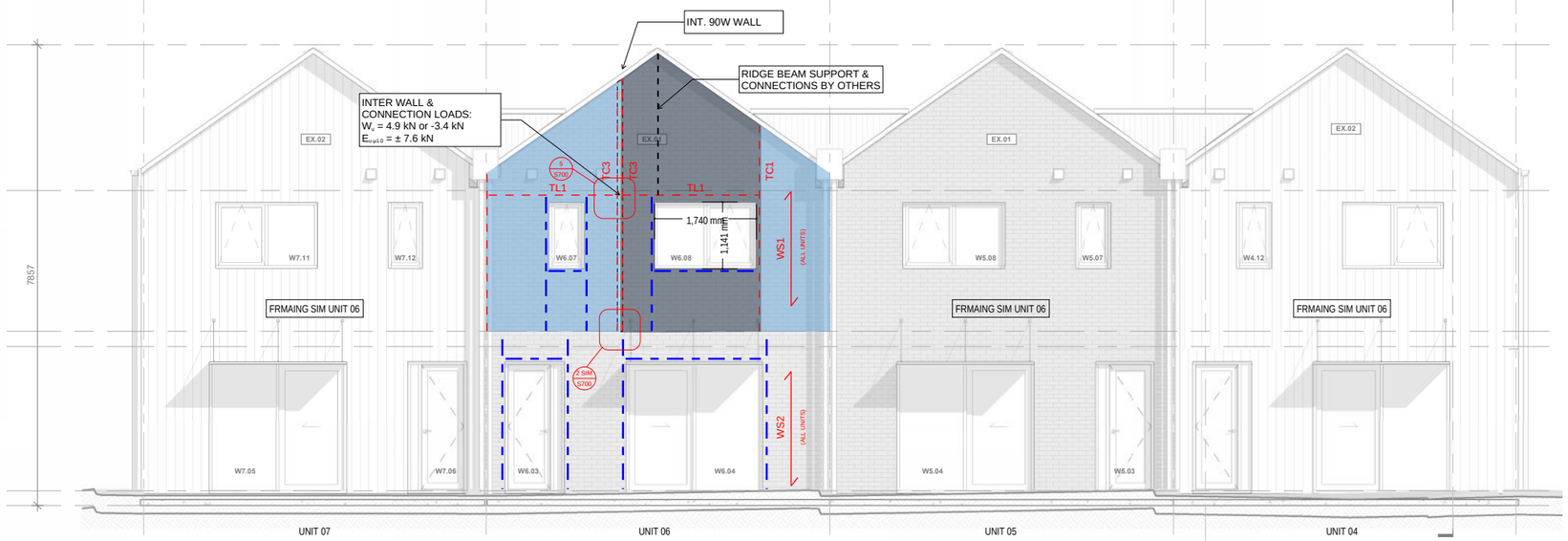
MEMBER TABLE - COLUMNS/SPLINES		
MARK	SIZE	REMARKS
TC1	4/90x45	LVL13 TIMBER COLUMN/SPLINE
TC2	2/90x45	SG8 TIMBER COLUMN/SPLINE
TC3	90x45	SG8 TIMBER COLUMN/SPLINE

MEMBER TABLE - OTHER		
MARK	SIZE	REMARKS
TX1	-	LINTEL/SILL/TRIMMER/SPLINE TO FORMANCE DESIGN GUIDE V2 (NO SED REQUIRED)

KEY:

NOTE: SED FRAMING MEMBER OR CONNECTION. ALL OTHER PANEL SPLINES, PERIMETER ELEMENTS, LINTELS, OPENING TRIMMERS & CONNECTIONS TO FORMACE SPECIFICATION. SPLINES & TRIMMERS SHALL MATCH OR EXCEED WALL SYSTEM SPEC ON SHEET S050.

TX1 – REFER TO MEMBER TABLE



4 / S110 BLOCK B - NORTH ELEVATION

SCALE 1:100

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enovate
AON CENTRE, LEVEL 12,
29 CUSTOMS STREET WEST,
AUCKLAND CITY, 1010
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TECHNICIANS: HFT
CHECKED BY: JSD
APPROVED BY: MPN

PROJECT: Multi Unit Development - SIPs
2-8 Liana Lane, Arbor Green
Rolleston

DRAWING TITLE: BLOCK B - GABLE END ELEVATIONS

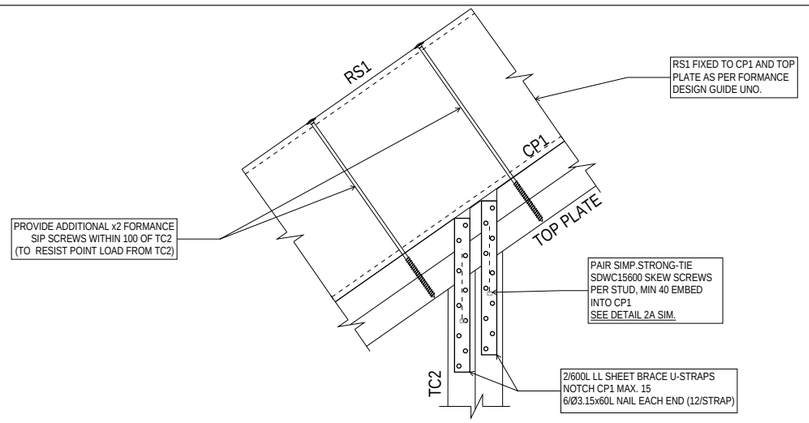
REMARKS:

DRAWING STATUS: CONSENT

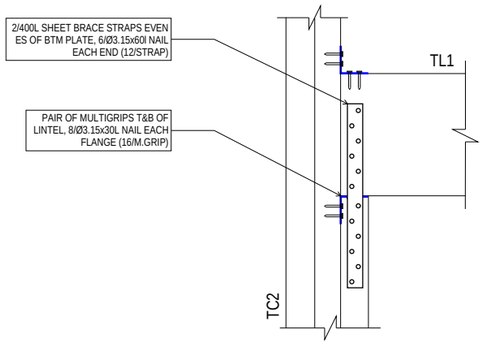
PROJECT No.	SHEET No.	REV
24-0135	S210	1

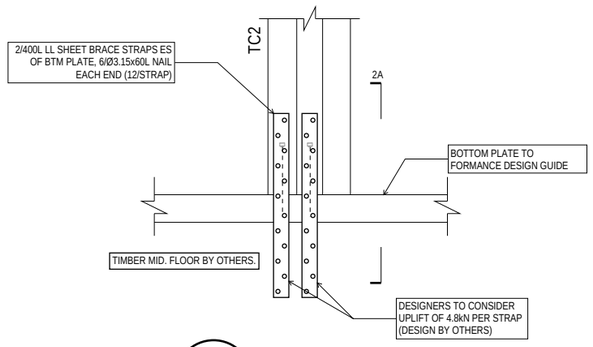
COUNCIL APPROVAL

SHEET SIZE: A3 (297x420)
SCALE: 1 : 100

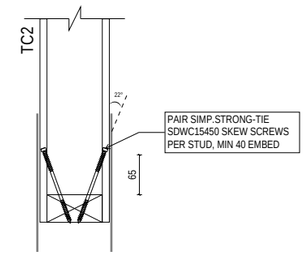


1 S200 TC TOP & LINTEL CONN.
SCALE 1:10





2 S200 TC BASE CONN.
SCALE 1:10



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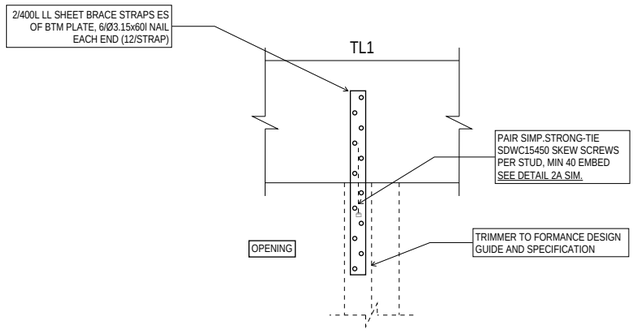
SCALE 1:10



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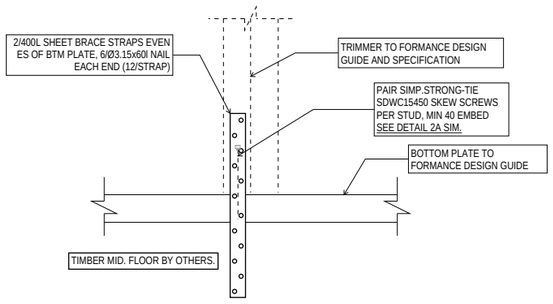

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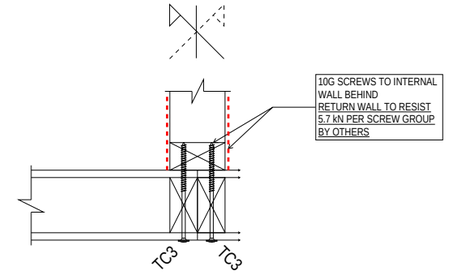
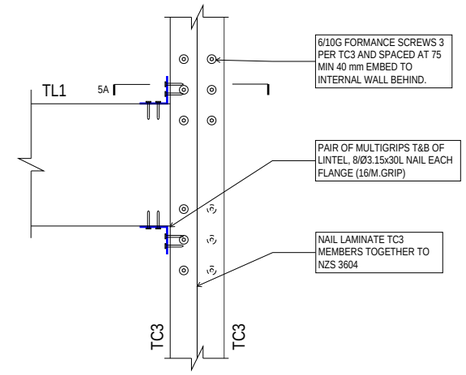
SCALE 1:10



5A - LINTEL-INT. WALL CONN.
SCALE 1:10



5 S210 LINTEL-INT. WALL CONN.
SCALE 1:10

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PROJECT:
Multi Unit Development - SIPs
2-8 Liana Lane, Arbor Green
Rolleston

DRAWING TITLE:
TIMBER FRAMING DETAILS - SHEET 1

REMARKS:

DRAWING STATUS: CONSENT

PROJECT No.	SHEET No.	REV
24-0135	S700	1

COUNCIL APPROVAL	SHEET SIZE	SCALE
	A3 (297x420)	1 : 100

Home Construction Limited

2 - 8 Laina Lane, Arbor Green, Rolleston

File Number: 25183.1

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Consulting Engineers
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CIVIL DRAWINGS

Issue Register

Rev	Date	Description
A	19.12.2025	Detailed Design

Sheet No.	Rev	Date Issued	Sheet Title
C0.0	A	19.12.2025	General Notes
C1.0	A	19.12.2025	Site Plan
C1.2	A	19.12.2025	Pavement Details
C2.0	A	19.12.2025	Drainage Plan
C2.1	A	19.12.2025	Stormwater Long-sections
C2.2	A	19.12.2025	Stormwater Long-sections
C2.3	A	19.12.2025	Wastewater Long-sections
C2.4	A	19.12.2025	Wastewater Long-sections
C2.5	A	19.12.2025	Wastewater Long-sections
C2.6	A	19.12.2025	Drainage Details
C3.0	A	19.12.2025	Earthworks Plan
C4.0	A	19.12.2025	Erosion and Sediment Plan
C4.1	A	19.12.2025	Erosion and Sediment Details

Disclaimer: *All reports, advice, drawings and other deliverables of any kind provided by the consultant ("advice")) are, unless agreed otherwise in writing by the consultant, prepared exclusively for the client's use for the purposes stated in the scope of services in relation to the project. Unless the consultant's prior written consent has been obtained, the client shall not use or rely on the advice (in whole or part) for any other purpose or disclose any of the advice to a third party. The consultant shall have no liability if any of the advice is used or relied on by the client for any unauthorised purpose or by any unauthorised third party.*

REFERENCES
- Survey: Level and Feature Survey – 2-8 Laina Lane, Arbor Green, Rolleston, dated May 2025.
- Architectural: Hierarchy Group., Site Plan, Sheet A11.01, dated 04.12.2025.
- Geotechnical: ENGEO, Geotechnical Investigation- 597 East Maddisons Road, dated 03.09.2020
- Resource Consent: N/A
- Hydraulics: N/A
- Landscape: N/A

GENERAL
All work shall comply with:
- Local Authority Engineering Standards (latest edition)
- NZS 4404:2020 “Land Development and Subdivision Infrastructure”
- NZ Transport Agency (Waka Kotahi) Specifications as applicable
- Pavement in pedestrian areas to be finished per Architect’s requirements.
- All services to be constructed in accordance with Regional Plan and Local Authority Engineering Standards (latest edition).
- Alternative products or proprietary systems must be approved in writing by the Engineer.
- Services within the building envelope are indicative only – refer to Hydraulic, Electrical and Architectural documentation for details.
- NZBC - E1, G12 and G13
- AS/NZS3500 Plumbing and Drainage - Part 1, and 3
- The Contractor is responsible for all site set-out. Ground levels on site and adjacent properties shall be confirmed by survey prior to construction.
- Existing services have been derived from Arbor Green Stage 15 Asbuilt Plan by Davie Lovell-Smith.
- Notify the Engineer at least 48 hours before any inspection. Works not inspected will not be certified and may require remedial work at the Contractor’s cost.

GENERAL EARTHWORKS
Unless stated otherwise, earthworks shall comply with:
- NZS 4431:1989 “Code of Practice for Earthfill for Dams”
- NZS 4404:2020 “Land Development and Subdivision Infrastructure”
- Local Authority Engineering Standards (latest edition)
- Engage a suitably qualified independent testing laboratory or consultant to monitor bulk fill placement and provide certification that compaction meets this specification.
- Cooperate with the Engineer to avoid unnecessary over-excavation.
- Design, install and maintain erosion and sediment controls (ESC) prior to and throughout earthworks. ESC must comply with Regional Plan and Local Authority ESC guidelines. Confine all eroded material within site boundaries.
- Notify the Engineer 48 hours before achieving final cut levels to allow inspection of the exposed subgrade.
- Prior to fill placement, proof-roll subgrade, rectify soft spots as directed by the Engineer, then proof-roll again until stable.
- Submit all Maximum Dry Density (MDD) curves (NZS 4402:1986 Test 4.1.1) and Particle Size Distribution (PSD) graphs (NZS 4407:2015 Test 3.8.1) before placement.
- Spread fill materials in layers ≤ 225 mm thick (uncompacted), conditioned to within ± 3 % of optimum moisture.
- Achieve compaction per NZS 4431 layer-control requirements under Contractor’s chosen method.

FILL MATERIAL PARAMETERS
AP40 & GAP40:
- Compaction: average ≥ 95 % MDD; individual ≥ 92 % MDD
- Air voids: average < 8 %; individual < 10 %
- Moisture: average within ± 3 % OMC; individual within ± 5 % OMC
- CBR: average ≥ 35 %; individual ≥ 33 %

GAP65:
- Compaction: average ≥ 95 % MDD; individual ≥ 92 % MDD
- Air voids: average < 8 %; individual < 10 %
- Moisture: average within ± 3 % OMC; individual within ± 5 % OMC
- CBR: average ≥ 25 %; individual ≥ 23 %

Non-Cohesive Fill:
- Compaction: average ≥ 95 % MDD; individual ≥ 92 % MDD
- Air voids: average < 8 %; individual < 10 %
- Moisture: average within ± 3 % OMC; individual within ± 5 % OMC

Cohesive Fill:
- Compaction: average ≥ 95 % MDD; individual ≥ 92 % MDD
- Air voids: average < 8 %; individual < 10 %
- Moisture: average within ± 3 % OMC; individual within ± 5 % OMC
- Undrained shear strength: average ≥ 140 kPa; individual ≥ 120 kPa

TESTING & FREQUENCY
- In-situ Density (NDM): NZS 4407:1991 Tests 4.2.1 & 4.2.2; ≥ 1 test per 50 m^3 or per 0.5 m thickness (whichever is less).
- Undrained Shear Strength: Hand-held vane per NZ Geotechnical Society Guidelines (2001); ≥ 1 test per 25 m^3 or ≥ 2 per 0.5 m thickness.
- Clegg Impact Test (Basecourse): ≥ 1 test every 10 m (alternate sides) or per 100 m^2.
- Record and submit all test results in tabulated form within 48 hours of testing.

AS-BUILT & HANDOVER
- Provide as-built drawings (CAD & PDF) showing set-out control, layer thicknesses, surface levels, ESC layouts and all test locations/results.
- Submit O&M manuals, independent test certificates, MDD/PSD reports and ESC monitoring logs prior to Practical Completion.

STORMWATER & WASTEWATER
Standards & References
All works shall comply with the latest editions of:
- NZS 4404:2020 “Land Development and Subdivision Infrastructure”
- AS/NZS 3500.3:2025 “Sanitary Plumbing & Drainage”
- AS/NZS 3500.5:2025 “Stormwater Drainage”
- AS/NZS 1254:2010 “PVC-U Pipes & Fittings for Stormwater”
- AS/NZS 1260:2009 “PVC-U Pipes & Fittings for Drain, Waste & Venting”
- AS/NZS 2032:2006 “Installation of PVC Pipe Systems”
- AS/NZS 2566.2:2002 “Buried Flexible Pipelines – Installation”
- AS/NZS 3725:2007 “Reinforced Concrete Pipe Installation”
- NZS 4058:2023 “Precast Concrete Manholes & Structures”
- CPAA Engineering Guideline for Bedding of Steel-Reinforced Concrete Pipe
- Local Authority Engineering Standards (latest edition)
- Regional Plan & NES-Freshwater requirements

Materials & Strength Classes
- PVC-U pipes: SN 10 (stormwater) and SN 16 (wastewater) minimum; solvent-welded joints per AS/NZS 1260.
- Reinforced concrete pipes (RCP): Class 3 minimum; reinforcement and jointing per AS/NZS 3725.
- Manholes: Precast to NZS 4058; 1 050 mm internal diameter unless noted otherwise.
- Bedding & surround: Imported granular material (nominal 10 mm, max 20 mm), free of clay and organic matter; 150 mm under barrel, 100 mm over crown (NZS 4404).

Setting-Out & Alignment
- Set out by survey control to within ±10 mm; verify laser-set grades with conventional reduced-level checks every 50 m.
- Invert levels within ±10 mm of design; grade tolerance ±0.2 %.
- Horizontal alignment within 5 mm offset over any 3 m length.

Installation
- Lay all laterals at least 100 mm diameter unless noted otherwise.
- Minimum trench clearance of 100 mm from pipe to trench wall.
- Surround pipes with compacted granular bedding to 150 mm above the barrel.
- Construct manholes in precast modules with in-situ drop-inverts (half-pipe channels for mains up to 300 mm; mortar-trowelled for larger).
- Install Y-junctions for service connections complete with inspection bends, concrete surround and risers to finished levels.

Testing & Verification
- Pipelines: CCTV inspection prior to backfilling; air-pressure test at 200 kPa ±10 kPa per AS/NZS 2032 or hydrostatic test per Local Authority Standard.
- Manholes: Watertightness test at 0.5 m head for 30 minutes.
- Compaction: Bedding and backfill to at least 95 % NZSProM or Local Authority schedule.
- Record all test results in tabulated form and submit to the engineer within 48 hours.

Environmental Controls
- Erosion and sediment controls per Regional Plan and Erosion & Sediment Control Guidelines.
- Manage dewatering discharges under NES-Freshwater permitted conditions.
- Confirm and protect existing services (Dial Before You Dig).
- Traffic & Pedestrian Management
- Prepare a Temporary Traffic Management (TTM) plan per CoPTTM.
- Maintain safe pedestrian access and signage around all excavation works.

As-Built & Handover
- Provide as-built drawings (CAD and PDF) showing horizontal/vertical control, cover and invert levels.
- Submit operation and maintenance manuals, product data sheets and certified test reports prior to Practical Completion.

WATER SUPPLY
Standards & References
Latest editions of:
- NZS 4404:2020 “Land Development and Subdivision Infrastructure”
- AS/NZS 3500.1:2025 “Water Services”
- AS/NZS 4130:2009 “Polyethylene (PE) Pipes for Pressure Applications”
- NZS 7602:2018 “PE Pipe (Type 5) for Cold Water Services”
- AS/NZS 2033:2008 “Installation of PE Pipe Systems”
- AS/NZS 2566.2:2002 “Buried Flexible Pipelines – Installation”
- BS 750:2012 “Underground Fire Hydrants & Surface Box Frames”
- Local Authority Engineering Standards (latest edition)

Materials & Installation
- Pipes & fittings: PE100 SDR 17 minimum; fused joints per AS/NZS 2033.
- Valves & hydrants: Comply with BS 750; mount on concrete plinths per Local Authority detail.
- Meter boxes: As specified in Local Authority Standard detail.
- Anchor/thrust blocks: Cast-in-situ concrete (17.5 MPa) or precast (30 MPa) per NZS 3109 at all bends, tees, valves, hydrants, reducers and dead ends.
- Backfill: Granular surround to 150 mm above barrel; compact to Local Authority compaction QA requirements.

Testing & Disinfection
- Hydrostatic test: Per Local Authority Standard; ensure no leaks before backfilling.
- Disinfection: Chlorinate per NZS 4404:2020 Appendix C; flush until residual chlorine ≤0.5 mg/L.
- Submit test certificates and disinfection logs within 48 hours.
- Quality & Handover
- Verify alignment and levels as per Section 2.
- Provide as-built drawings (CAD and PDF) with control levels, pipe dimensions and fitting schedules.
- Submit operation manuals and material certificates before Practical Completion.

PAVEMENT WORKS
Standards & References
- All works shall comply with the latest editions of:
- NZS 4404:2020 “Land Development and Subdivision Infrastructure”
- Waka Kotahi NZ Transport Agency (NZTA) Specifications:
- M/3 General All-passing (GAP) 65 mm for sub-base
- M/4 Crushed Basecourse Aggregate (AP40 for sealed areas; AP20 for footpaths)
- M/1 Specification for Roading Bitumens (penetration grade 80/100)
- M/6 Chip-sealing in New Zealand Practice Notes
- M-01-A and M/10 for asphalt pavement (binder “PG 58S”)
- P/9 (and P/9P where wider rolling options required) for asphaltic concrete placement
- NZS 4402 Test 4.1.1 “Method of Determination of Dry Density of Aggregates”
- NZBC and NZS 3104, NZS 3109, NZS 3112, NZS 3114 for concrete works
- AS/NZS 4671:2001 “Steel Reinforcing Materials”
- Local Authority Engineering Standards (latest edition)

Subgrade Preparation
- Bring subgrade to formation levels shown on drawings; compact to ≥ 95 % of maximum dry density (NZS 4402, Test 4.1.1).
- Verify compaction and moisture content with plate-bearing or CBR tests; submit results to Engineer for approval before placing sub-base.
- Tolerances: formation levels within ± 10 mm; grade within ± 0.2 %.

Sub-base Construction
- Material: GAP 65 mm crushed rock, gravel or sand blend to NZTA M/3.
- Place in near-horizontal layers ≤ 225 mm uncompacted thickness; do not place on saturated ground or during wet weather.
- Condition each layer to optimum moisture; compact with appropriate plant to ≥ 95 % maximum dry density.
- Verify compaction by in-situ density testing (e.g. sand replacement); submit test results before placing basecourse.

Basecourse Construction
- Material: crushed rock free of silt/clay and organic matter; grading to NZTA M/4 AP40 (sealed areas) or AP20 (footpaths).
- Place and compact in layers ≤ 225 mm uncompacted thickness, conditioned to correct moisture.
- Compact each layer by multiple passes of a smooth-wheeled roller or equivalent plant to ≥ 95 % maximum dry density (NZS 4402) and to satisfy deflection limits specified in Local Authority Standards.
- Uppermost layer: proof-roll with a smooth steel roller (rear rolls ≥ 500 mm wide, loaded ≥ 6 t/m width).
- Submit compaction and deflection test results to Engineer before surfacing.

Asphalt Surface
- Binder: PG 58S unless noted otherwise.
- Production, transport, spreading and compaction per NZTA P/9 or P/9P.
- Degree of saturation of basecourse prior to surfacing ≤ 65 %.

Chip Seal
- Membrane chip seals with bituminous emulsion per NZTA Chip-sealing Practice Notes and TNZ M/6.

Bitumen
- Penetration grade 80/100 per NZTA M/1.

Concrete Pavements & Reinstatement
- Concrete: normal-grade ready-mix, ≥ 40 MPa at 28 days; max aggregate 20 mm; no calcium chloride, plasticisers or superplasticisers without Engineer’s approval.
- Supplier: member of the Ready-Mixed Concrete Association of NZ or Engineer-approved equivalent with independent audit evidence.
- Formwork: comply with NZS 3109; placing, compaction and vibration per NZS 3109; curing per NZS 3109.
- Kerbs, channels and crossings: ≥ 20 MPa at 28 days, placed per Local Authority Standards.
- Reinforcement: mesh to AS/NZS 4671.
- Reinstatement backfill: NZTA M/4 AP40 or equivalent, compacted to Clegg Impact Values – footpaths/residential crossings 25, commercial crossings/carriageways 35.

Surface Gradients & Tolerances
Minimum finished crossfall (unless noted otherwise):
- Asphalt, chip seal, pedestrian asphalt: 2.0 %
- Concrete: 1.0 %
- Maximum running gradient: 5 %; max crossfall on concrete footpaths 1 %, elsewhere 2 %.
- Surface non-slip rating when wet per NZBC D1.
- Free joints in concrete pavements > 30 m long to Engineer’s detail.
- Thickness and alignment tolerances: ± 5 mm.

Line Markings
- To Waka Kotahi MOTSAM – Part 2 Line Markings & Part 3 Intersection Markings.

Environmental & Site Controls
- Direct stormwater away from unsealed pavement; remove any mud or silt deposits immediately.
- Erosion and sediment controls per Regional Plan and Local Authority Standards.
- Traffic management per CoPTTM; maintain pedestrian routes and signage.

Verification of Existing Services
- Prior to any works, pothole or expose invert, lid and base levels, falls, material and condition of all public infrastructure at key points; record and submit to Engineer.

As-Built & Handover
- Provide as-built drawings (CAD & PDF) showing horizontal/vertical control, pavement layer thicknesses, covers/invert levels and all surface treatments.
- Submit operation & maintenance manuals, material certificates, test records and audit reports prior to Practical Completion.

LEGEND

Existing:
- Boundary
- 27 Major Contour
- Minor Contour
- ×41.25 Existing Level
- Vegetation
- Existing Manhole
- W Existing Water Meter
- H Existing Hydrant
- Existing Water Valve
- Sump / Catch-pit
- P Power Box
- SW Stormwater Pipe
- WW Wastewater Pipe
- W Water Supply Pipe

Proposed:
- Boundary
- 20.0 Major Contour
- Minor Contour
- 41.25 Proposed Level
- Landscaping
- Concrete
- Permeable Concrete
- Asphalt
- Paver
- Decking
- Kerb & Channel
- Nib Kerb
- V-Channel
- Stormwater Manhole
- TD Treatment Device
- Sump / Catch-pit
- Strip Drain
- SW Stormwater Pipe
- Subsoil Drain
- DP Downpipe
- RP Rodding Point
- WW Wastewater Pipe
- RP Wastewater Manhole
- RP Rodding Point
- W Water Supply Pipe
- W Water Meter
- Gate/sluice Valve
- BWM Bulk Water Meter
- Backflow Preventer
- Streetlight
- Overland Flow Path

Purpose of Issue:
Building Consent

ORIGINAL SIZE = A1

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office@engco.nz
www.engco.nz
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Hierarchy Group.

Lot 365 - Arbor Green
2 - 8 Laina Lane, Arbor Green, Rolleston

General Notes

revisions			
	A	2025.12.19	Detailed Design

design N.Razavizadeh
drawn N.Razavizadeh
appvd D.Marais
date 2025.12.19

file 25183.1
dwg C0.0
rev. A

Contractor shall verify all dimensions before commencing work

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Purpose of Issue:
Building Consent

ORIGINAL SIZE = A1

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Lot 365 - Arbor Green

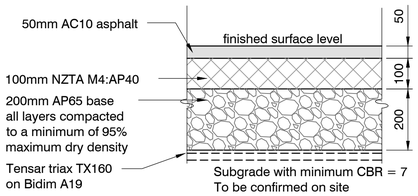
2 - 8 Laina Lane, Arbor Green, Rolleston

Site Plan

revisions			
A	2025.12.19	Detailed Design	

design N.Razavizadeh
drawn N.Razavizadeh
appvd D.Marais
date 2025.12.19

file 25183.1
dwg C1.0
rev. A



ASPHALT PAVEMENT SECTION — A / C1.0

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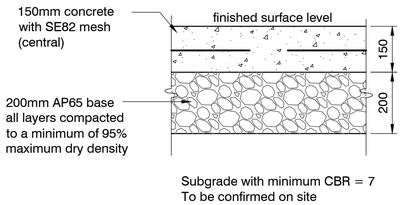

TRAFFICABLE CONCRETE PAVEMENT SECTION — B / C1.0

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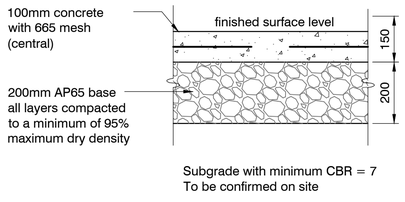

NON-TRAFFICABLE CONCRETE PAVEMENT SECTION — C / C1.0

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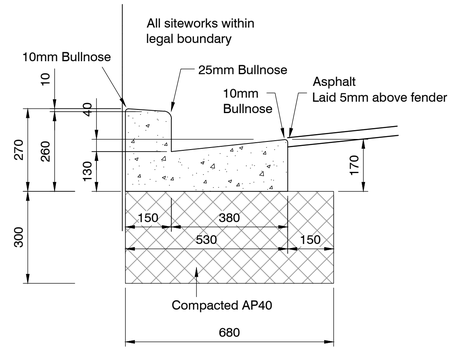
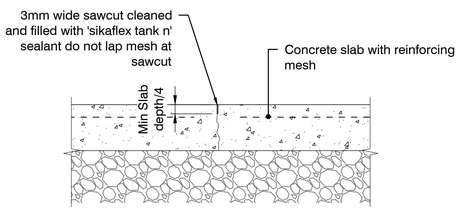


Concrete strength to be 20 MPa at 28 days.
Concrete finish to be Class U3 - NZS3114

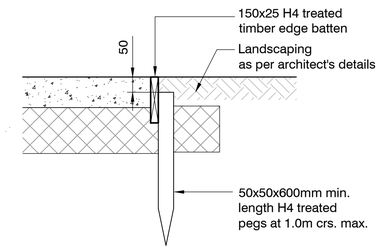
TYPICAL KERB AND CHANNEL (K&C) — D / C1.0

1:10



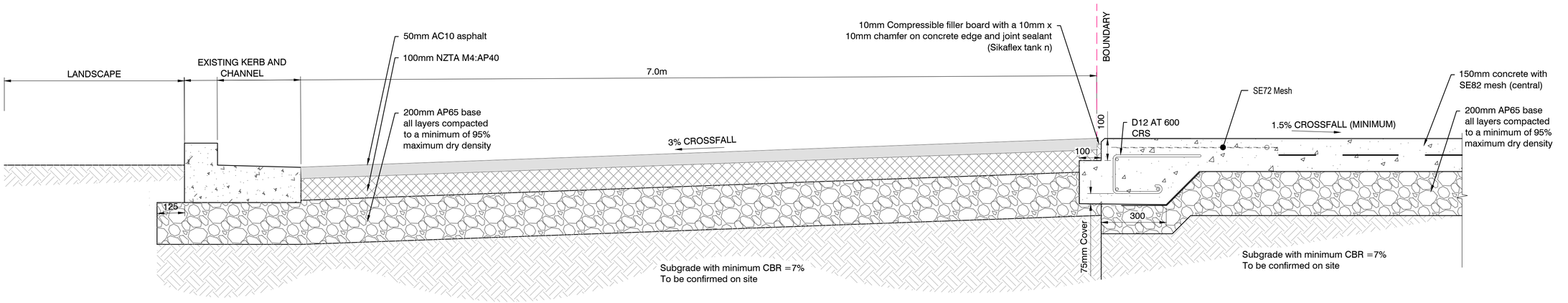
TYPICAL SAWCUT DETAIL — E / C1.0

1:10



TIMBER EDGE AT FOOTPATH (TE) CONCRETE — F / C1.1

1:10



PAVEMENT CROSS SECTION — G / C1.0

1:10

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Purpose of Issue: Building Consent

ORIGINAL SIZE = A1

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Hierarchy Group.

Lot 365 - Arbor Green

2 - 8 Laina Lane, Arbor Green, Rolleston

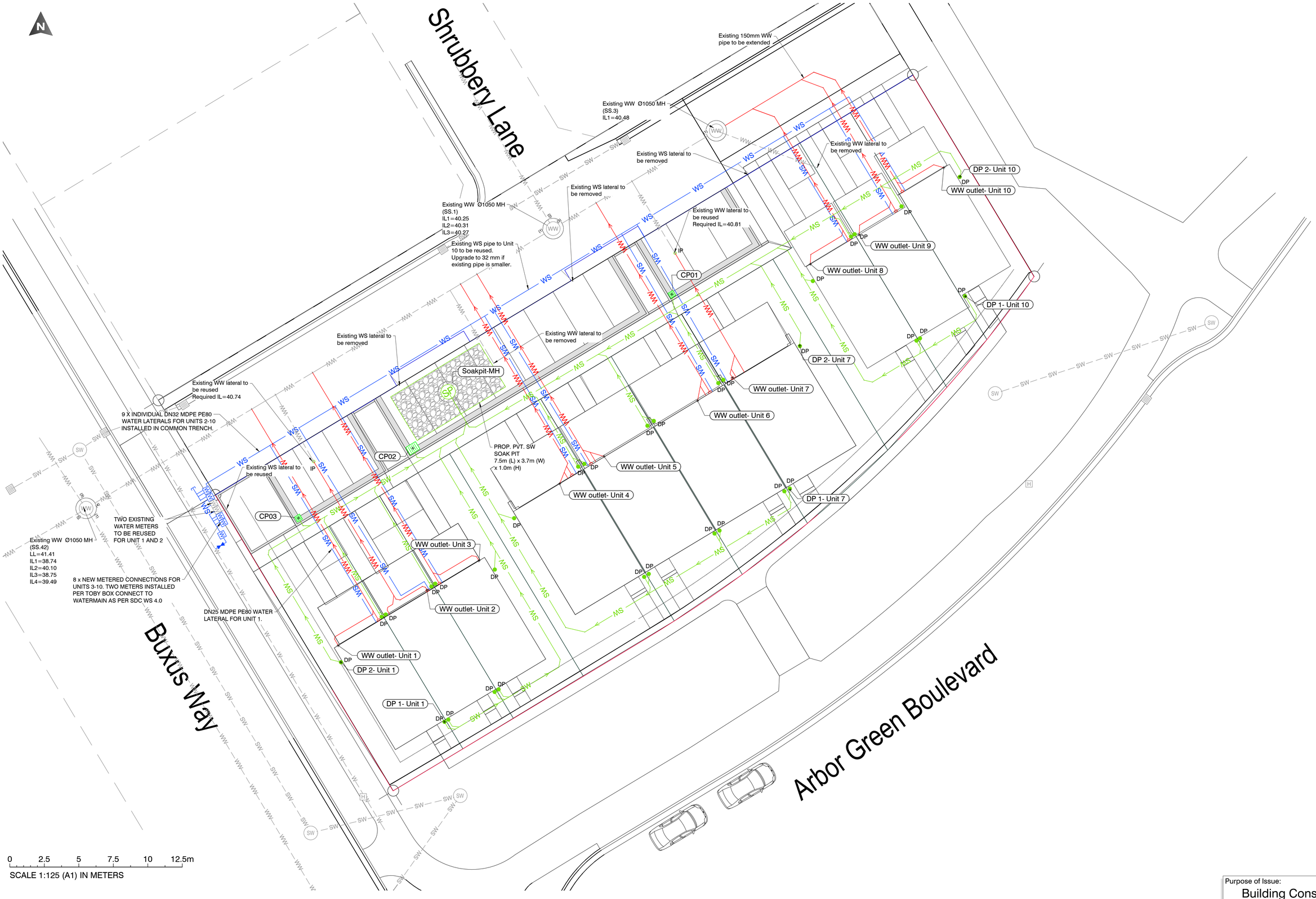
Pavement Details

revisions			
A	2025.12.19	Detailed Design	

design N.Razavizadeh
drawn N.Razavizadeh
appvd D.Marais
date 2025.12.19

file 25183.1
dwg C1.1
rev. A

Contractor shall verify all dimensions before commencing work
This drawing is for discussion purposes only



0 2.5 5 7.5 10 12.5m
SCALE 1:125 (A1) IN METERS

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Lot 365 - Arbor Green

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Drawing: Drainage Plan

revisions			
A	2025.12.19	Detailed Design	

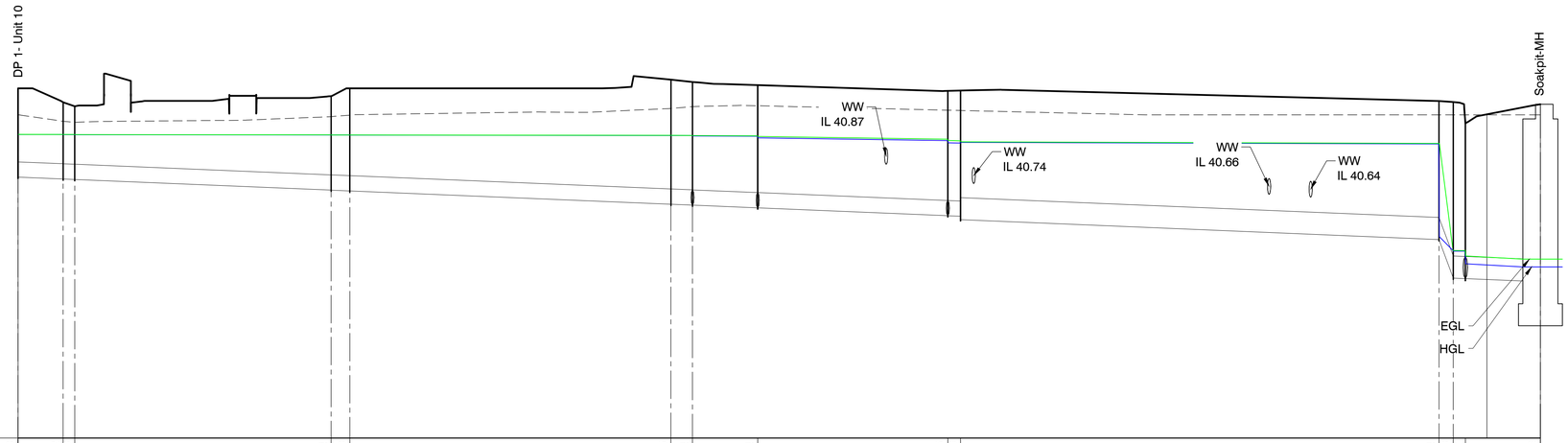
design N.Razavizadeh
drawn N.Razavizadeh
appvd D.Marais
date 2025.12.19

file 25183.1
dwg C2.0
rev. A

Purpose of Issue:
Building Consent

ORIGINAL SIZE = A1

Contractor shall verify all dimensions before commencing work
This drawing is for discussion purposes only

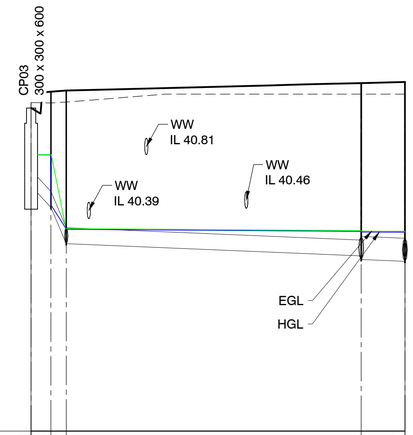


| | | |

Contractor shall verify all dimensions before commencing work
This drawing is for discussion purposes only

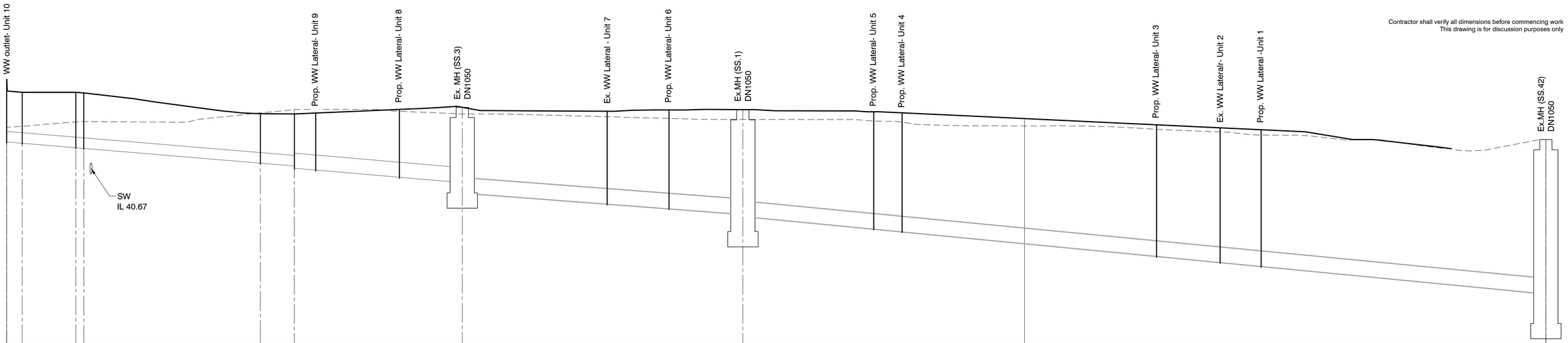
HGL and EGL: for 10% AEP, 10-min duration storm event

HGL: Hydraulic Grade Line
EGL: Energy Grade Line



HAD = 39.00

| | | |

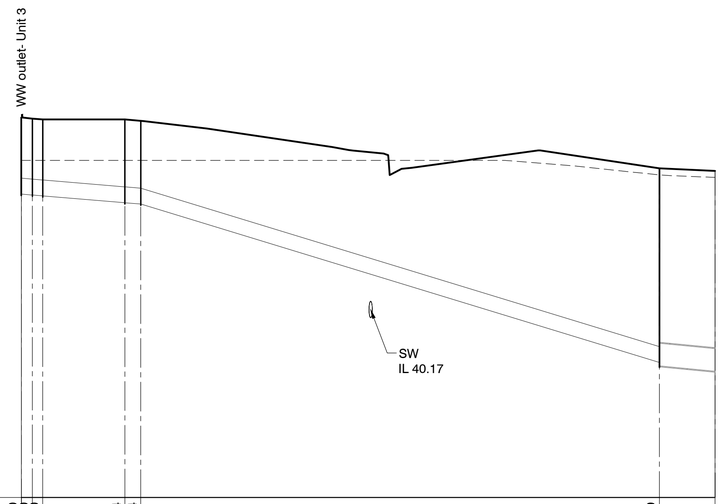


Contractor shall verify all dimensions before commencing work
This drawing is for discussion purposes only

HAD = 39.00

| | | |

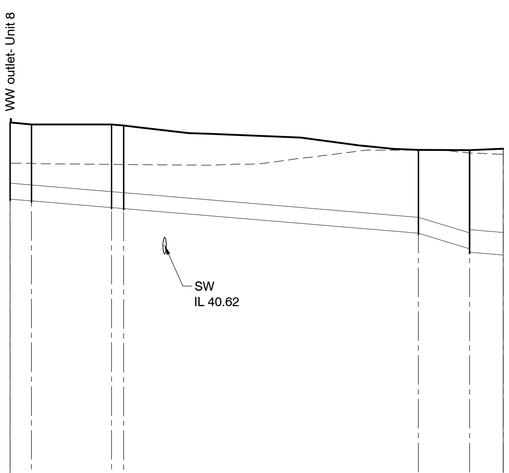
Contractor shall verify all dimensions before commencing work
This drawing is for discussion purposes only



HAD = 39.00

| | | |

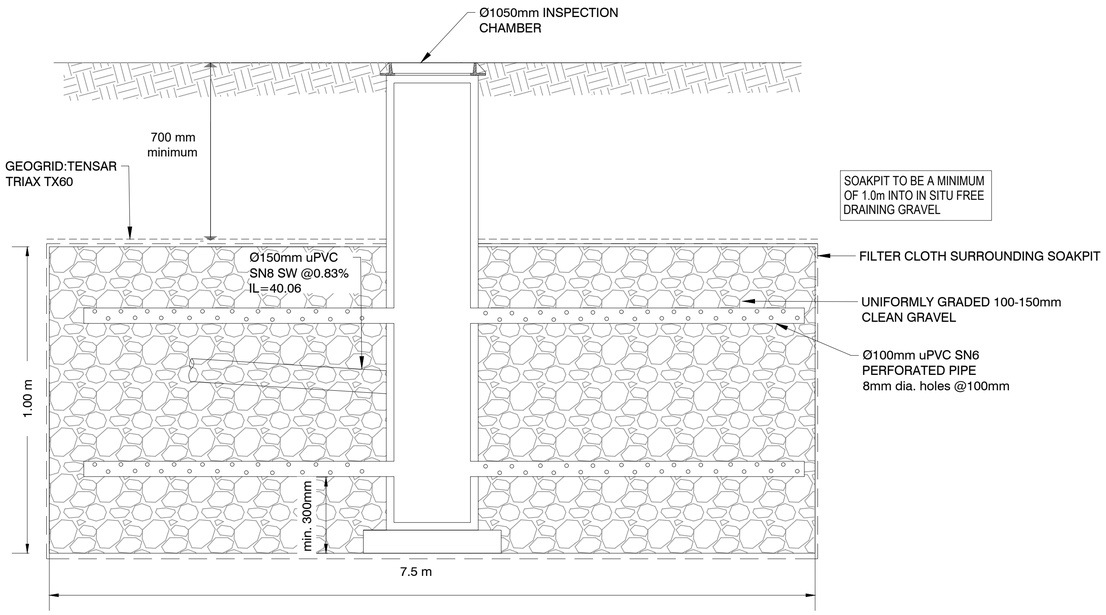
Contractor shall verify all dimensions before commencing work
This drawing is for discussion purposes only



HAD = 39.00

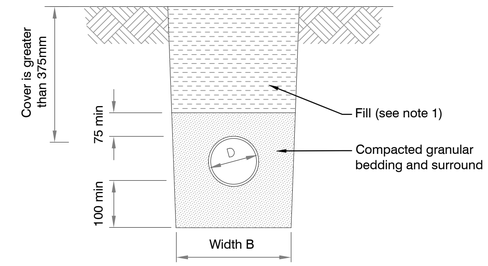
| | | |

Contractor shall verify all dimensions before commencing work
This drawing is for discussion purposes only

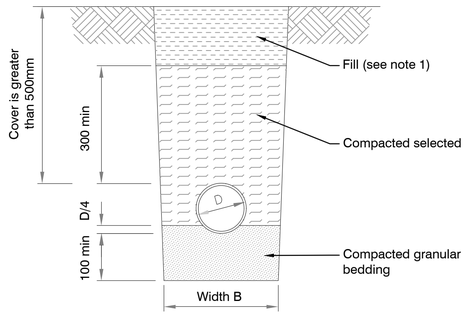


SOAKAGE TRENCH DETAILS — A / 2.0

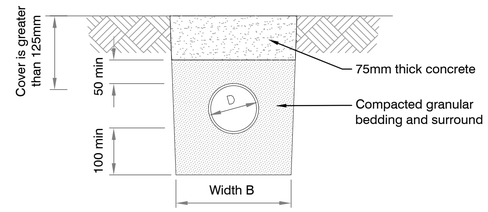
N.T.S



(b) Cover greater than 375mm
Bedding type 'B' of NZS 4452



(a) Cover greater than 500mm
Bedding type 'B' of NZS 4452



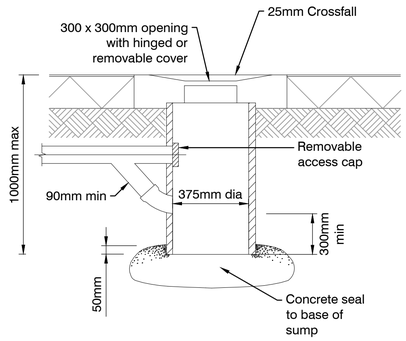
(c) Cover greater than 125mm

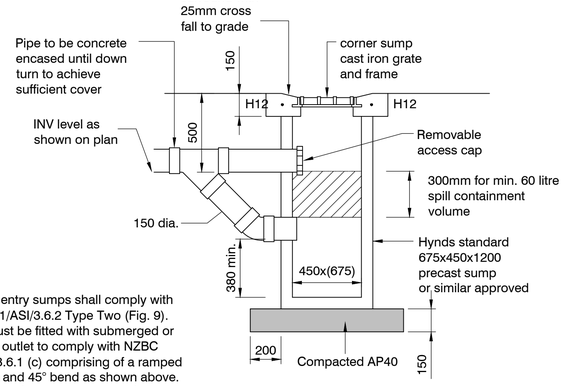
NOTES:
1. Fill shall be:
- Ordinary fill where drains are located below gardens and open country.
- Compacted selected fill where the drains are located below residential driveways and similar areas subjected to light traffic.

2. The width B of the trench shall be no less than the diameter D plus 200mm. Trench width at the top of the pipe shall be no more than 600mm unless the pipe in the trench are covered with concrete.

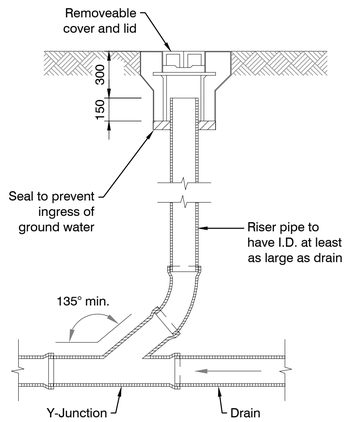
BEDDING AND BACKFILLING — E / C2.0

N.T.S





Surface entry sumps shall comply with NZBC E1/ASI/3.6.2 Type Two (Fig. 9). They must be fitted with submerged or trapped outlet to comply with NZBC E1/ASI/3.6.1 (c) comprising of a ramped junction and 45° bend as shown above. Bends into the sump or, capped tees to form the trap are not permitted.
In certain circumstances, CCC Type SD325 or
SD327 may be used, subject to approval by the engineer. All surface entry sumps shall have a concrete surround



TYPE 1 SURFACE WATER SUMP — B / C2.0

1:20

TYPE 2 SURFACE WATER SUMP — C / C2.0

1:20

TYPICAL RODDING POINT — D / C2.0

1:20

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Lot 365 - Arbor Green

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Drainage Details

revisions			
A	2025.12.19	Detailed Design	

design N.Razavizadeh
drawn N.Razavizadeh
appvd D.Marais
date 2025.06.13

file 25183.1
dwg C2.6
rev. A

Purpose of Issue:
Building Consent

ORIGINAL SIZE = A1

Contractor shall verify all dimensions before commencing work
This drawings is for discussion purposes only

Earthworks Volumes:

8 m³ Cut
182 m³ Fill
Over an area of 959m²

Volumes above are a comparison of existing surface level to finished surface level and does not account for site stripping or excavation required to reach designed subgrade level.

Surface Analysis: Cut & Fill Depth			
Number	Color	Minimum Depth (m)	Maximum Depth (m)
1		-0.300	-0.200
2		-0.200	-0.100
3		-0.100	0.000
4		0.000	0.100
5		0.100	0.200
6		0.200	0.300
7		0.300	0.400
8		0.400	0.500

0 2.5 5 7.5 10 12.5m
SCALE 1:125 (A1) IN METERS

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Lot 365 - Arbor Green

2 - 8 Laina Lane, Arbor Green, Rolleston

Earthworks Plan

revisions			
A	2025.12.19	Detailed Design	

design N.Razavizadeh
drawn N.Razavizadeh
appvd D.Marais
date 2025.12.19

file 25183.1
dwg C3.0
rev. A

Purpose of Issue:
Building Consent

ORIGINAL SIZE = A1

Contractor shall verify all dimensions before commencing work
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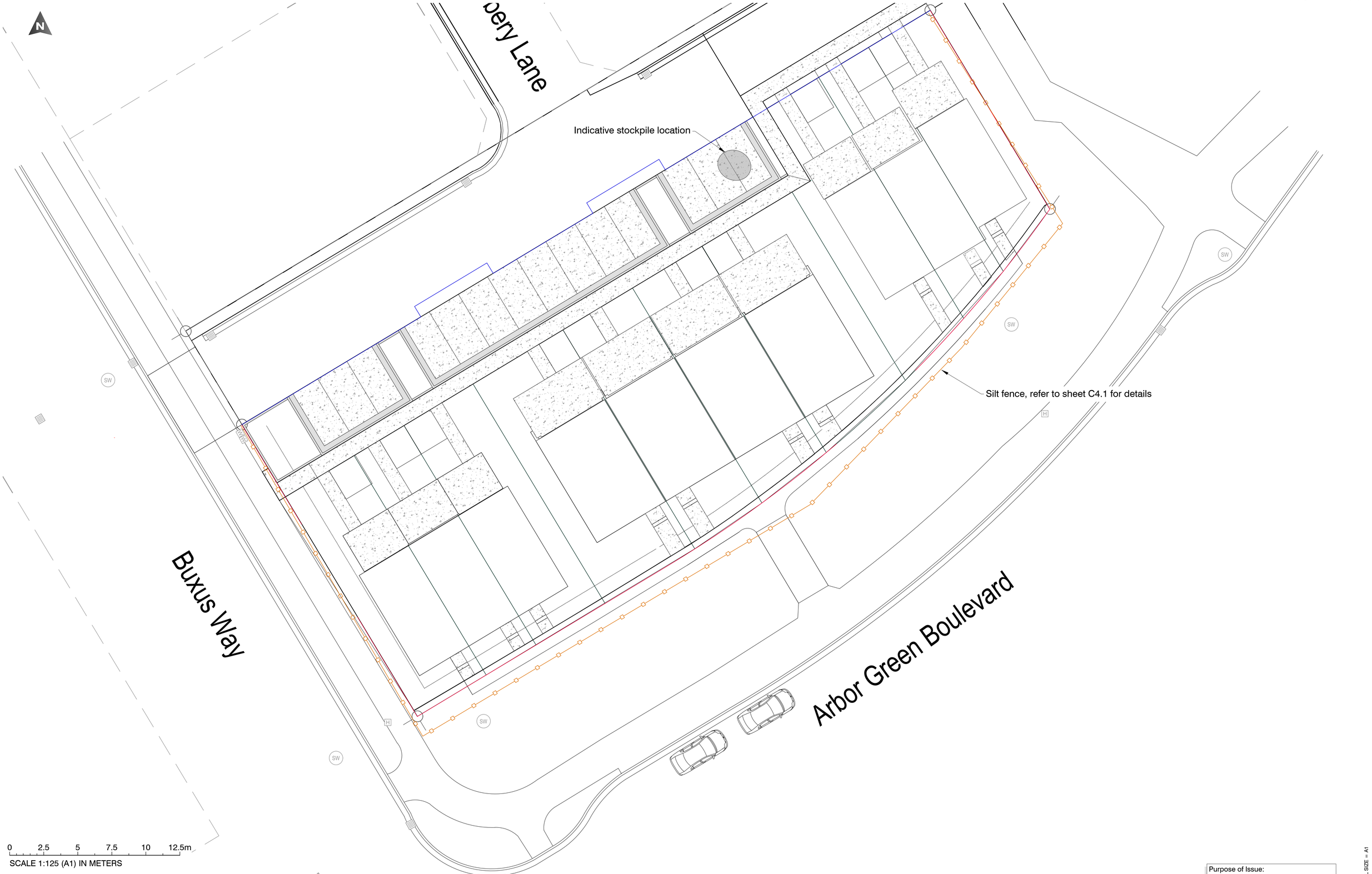

0 2.5 5 7.5 10 12.5m
SCALE 1:125 (A1) IN METERS

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Hierarchy Group.

Lot 365 - Arbor Green

2 - 8 Laina Lane, Arbor Green, Rolleston

ESC Plan

revisions			
	A	2025.12.19	Detailed Design

design N.Razavizadeh
drawn N.Razavizadeh
appvd D.Marais
date 2025.12.19

Purpose of Issue:
Building Consent

file 25183.1
dwg C4.0
rev. A

ORIGINAL SIZE = A1

Contractor shall verify all dimensions before commencing work
This drawings is for discussion purposes only

STEP 1

DIG A 200mm DEEP TRENCH

STEP 2

HAMMER IN 1m WARATAHS OR WOODEN FENCE POST 200mm INTO THE TRENCH, THEREFORE 400mm BELOW ORIGINAL GROUND LEVEL

STEP 3

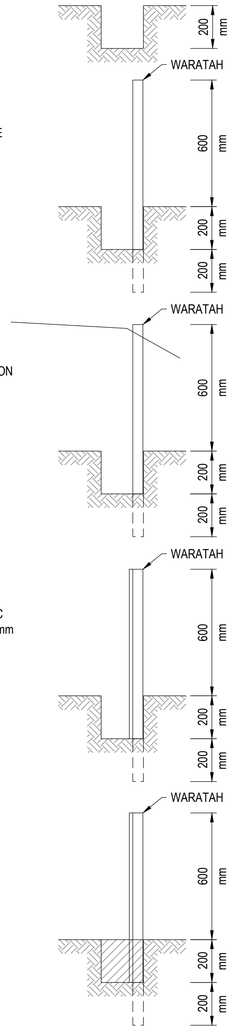
INSTALL SINGLE GALVANISED WIRE AND TENSION IT AT 50m INTERVALS

STEP 4

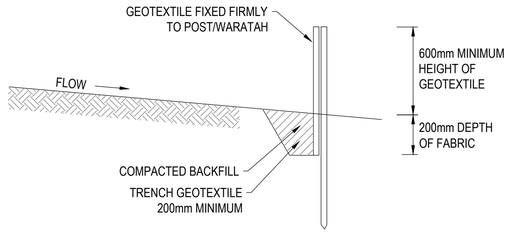
INSTALL SINGLE LAYER OF GEOTEXTILE FABRIC HARD AGAINST THE SIDE OF THE TRENCH (800mm TOTAL HEIGHT)

STEP 5

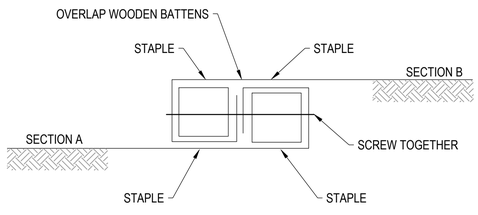
BACK FILL AND COMPACT WELL (CRITICAL)



SILT FENCE DETAIL

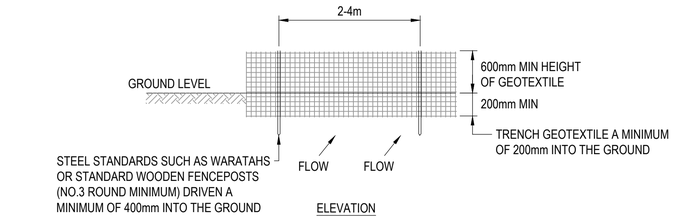


CROSS - SECTION

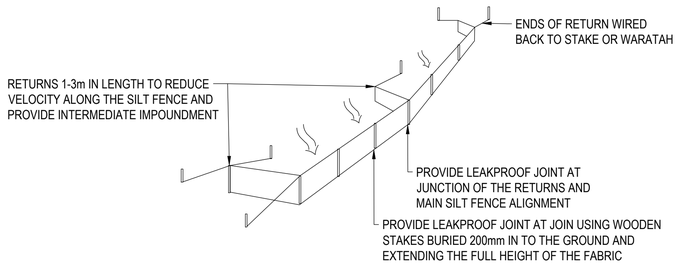


STANDARD FABRIC JOINT

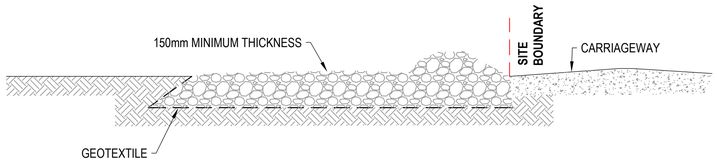
SILT FENCE CROSS-SECTION



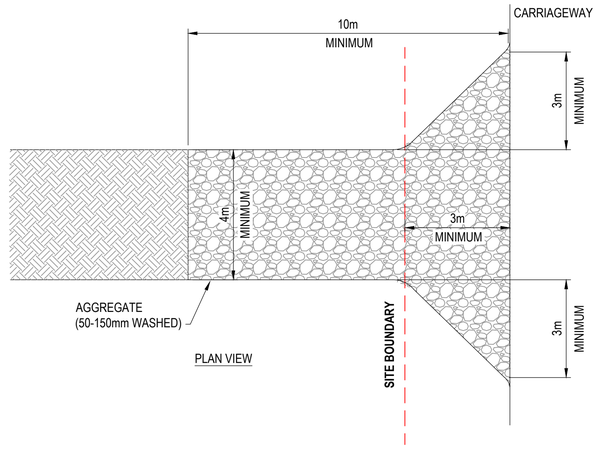
ELEVATION



SILT FENCE LAYOUT SILT FENCE WITH RETURNS AND SUPPORT WIRE

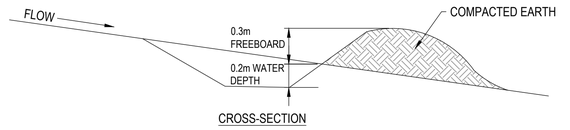


SIDE ELEVATION



PLAN VIEW

STABILISED ENTRANCEWAY



CROSS-SECTION

STANDARD LOW FLOW BANK

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Hierarchy Group.

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2 - 8 Laina Lane, Arbor Green, Rolleston

ESC Details

revisions			
A	2025.12.19	Detailed Design	

design N.Razavizadeh
drawn N.Razavizadeh
appvd D.Marais
date 2025.12.19

Purpose of Issue:
Building Consent

file 25183.1
dwg C4.1
rev. A

ORIGINAL SIZE = A1