


# Unit Development

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### Engineering Drawing Index

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**VISIONENGINEERS**

27 Eighth Street, Adamstown  
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Revision Schedule		
Rev	Date	Description
H	08/03/19	Final Engineering
G	27/02/19	Council Changes
F	20/11/18	Council Changes
E	22/10/18	Council Changes

**Client:**

**Address:**

Date Started: 10/07/2018

Drawing No: 917-6187

Sheet: En00

Scale: @ A3

General Notes:

1.

These drawings shall be read in conjunction with the architectural and other consultants drawings / specifications and with other such written instructions as may be issued during the construction. Any discrepancy shall be referred to the Engineer before commencing the work.
2.

All dimensions are in millimeters, Unless noted otherwise.
3.

These drawings shall not be scaled, refer to dimensions given only or refer to the Architectural drawings.
4.

All levels and setting out dimensions shown on the drawings shall be checked on site prior to the commencement of work.
5.

During construction the structure shall be maintained in a stable condition with no part being overstressed with temporary supports / bracing installed as required.
6.

The engineer shall approve any proposed substitution prior to the commencement of works.

Earthworks:

1.

The earthworks shall be carried out in accordance with the geotechnical report and engineering specifications.
2.

The site shall be stripped a minimum depth of 150mm under pavements and buildings to remove the top soil. Any remaining uncontrolled fill matter, organic material, refuse or roots shall be removed.
3.

If a vibrating type roller is used, consideration shall be given to the effects on adjacent properties.
4.

All filling shall be under the supervision of the project geotechnical engineer who shall provide compaction certificates to the engineer for approval.

Formwork:

1.

All workmanship and materials shall be in accordance with AS3610 & AS3600, except where varied by the project documentation.
2.

The design certification and the performance of the formwork shall be the responsibility of the contractor.
3.

During construction support propping shall be required where there are loads from stacked materials, formwork and other supported slabs. Once the concrete has achieved its nominated 28 days strength, the imposed loads shall not exceed those given in the loading table.
4.

With multistory construction, it is expected that support propping will extend a minimum of 3 levels below the slab being poured. Prop removal is to be programmed so as not to overstress previously cast floors and shall be submitted tot he engineer for approval.
5.

The suspended slabs shall be propped until the 28 days strength has been achieved for the slabs. the formwork may be removed once 20 MPa strength has been achieved, however the slab will need to be back propped until 28 days strength has been achieved. No masonry or partition walls are to be constructed on suspended levels until all propping is removed.
6.

All exposed corners shall have a 20mm chamfer UNO.
7.

All finished shall be in accordance with the architectural specification.

Permanent Metal Formwork:

1.

The permanent metal formwork shall be installed in accordance with the manufacturers recommendations and shall NOT be substituted from the product specified without written approval from the engineer.
2.

The permanent metal formwork shall be suitably propped.
3.

The permanent metal formwork shall not be spliced or joined midspan.
4.

The permanent metal formwork shall have a minimum end bearing of 50mm.
5.

The permanent metal formwork shall be fixed to the supporting structure with spot welds or fasteners, there shall be a minimum of 1 fixing per sheet to the support each end adjacent to the side lap.
6.

The permanent metal formwork may need to have the side lap fastened together midspan, this shall be carried out in accordance with the manufacturers specifications

Reinforced Concrete:

1.

workmanship and materials shall be in accordance with AS3600, except where varied by the project documentation.
2.

Concrete quality shall be as follows  
(Subject to Subgrade being satisfied) :

Element	Slump (mm)	Maximum Aggregate size (mm)	Cement Type	Strength 28 Days (MPa)	Admixture
Footings	80	20	Normal Portland Type A Cement	25	-
Bored Piers & Pile Caps	80	20		25	-
Floor Slabs on Ground	80	20		25	-
Suspended Floor Slabs	80	20		32	-
Hollowcore Floor Slabs	80	20		32	-
Walls & Columns	80	20		32	-
Masonry Piers	150	7-14		20	-
Retaining Walls	80	20		32	-

3.

The engineer shall approve any admixtures to be used in the concrete mix.
4.

The clear concrete cover to all reinforcement shall be as follows UNO:

Exposure Classification to AS3600	Strength 28 Days (MPa)	Against Formwork		Against Ground	
		Interior Surface	Exterior Surface	With Membrane	With no Membrane
A1	20	20	30	30	50
A2	25	40	30	40	50
B1	32	40	40		
B2	40	45	45		

5.

Cover to reinforcement shall be obtained by the use of approved bar chairs placed at maximum 750mm cts in each direction.
6.

All concrete shall be mechanically vibrated and the vibrators SHALL NOT be used to spread the concrete.
7.

Size of the concrete elements do not include thickness of the applied final finishes.
8.

Approval shall be obtained from the engineer prior to the drilling of any holes or cutting in any chases other than those shown on the structural drawings.
9.

Construction joints where not shown on the structural drawings shall be located in accordance with the engineers approval.
10.

Curing of all concrete it to be achieved by keeping surfaces continuously wet for a period of 7 days (10 days in summer months), and prevention of loss of moisture for a total of 10 days followed by gradual drying out. Approved spray on compounds complying with AS3799 may be used provided that they do not interfere with the performance of the proposed floor finishes. Polythene sheeting or wet hessian may be used if protection from wind and traffic.
11.

The suspended slabs shall be propped until 28 day strength has been achieved for slabs. The formwork may be removed once 20 MPa strength has been achieved, however the slab will need to be back propped until 28 days strength has been achieved. No masonry or partition walls are to be constructed on suspended levels until all propping is removed.
12.

Conduits, pipes, etc. shall only be placed in the middle third of the slab depth and spaced at not less than 3 diameters. They shall no be placed within the cover of the reinforcement.
13.

Reinforcement symbols:  
S - Denotes grade 250 S bars to AS1302  
N - Denotes grade 500 normal ductility deformed bars to AS4671  
R - Denotes grade 250 normal ductility round bars to AS4671  
SL - Denoted grade 500 low ductility square welded mesh to AS4671  
RL - Denoted grade 500 low ductility rectangular welded mesh to AS4671  
L - Denoted grade 500 low ductility trench welded mesh to AS4671.
14.

Reinforcement is represented diagrammatically and is not necessarily shown in true projection.
15.

Splices in reinforcement shall be made only in positions shown or otherwise approved by the engineer.

16.

Laps and cogs shall be in accordance with AS3600 and not less than the below:

Minimum Splice Lengths		Minimum Overall Cog Lengths
N12	400mm	200mm
N16	600mm	225mm
N20	800mm	275mm
N24	1100mm	325mm
N28	1400mm	375mm

17.

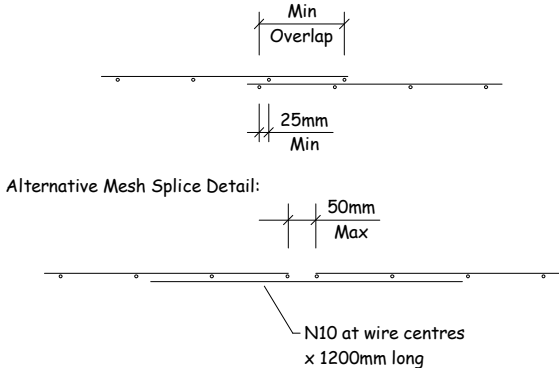
Site bending of deformed reinforcing bars shall be done without heating and using mechanical bending tools.
18.

Welding of the reinforcement shall not be permitted unless shown on the structural drawings or approved by the engineer.
19.

Joggles to the bar shall be 1 bar diameter over a length of 12 bar diameters.
20.

Bundled bars shall be tied together at 30 bar diameter centers with 3 wraps of tie wire.
21.

Mesh shall be lapped 2 transverse wires plus 25mm.



Foundation Maintenance :

1.

All soils are affected by water. Silts are weakened by water and some sands can settle if heavily watered, but most problems arise on clay foundations. Clays swell and shrink due to changes in moisture content and the potential amount of the movement is implied in the site classification in Australian Standard AS2870, which is specified as follows:  

A - Stable (Non-reactive)

S - Slightly Reactive

M - Moderatley Reactive

H - Highly Reavtive

E - Extremely Reavtive
2.

All sites shall be maintained at essentially stable moisture conditions and extremes of wetting and drying prevented. This will require attention to the following.
3.

Site drainage: The site shall be graded or drained so that water cannot pond against or near the house. The ground immediately adjacent to the house shall be graded to a uniform fall of 50mmminimum away from the house over the first meter. The subfloor space for the houses with suspended floors shall be graded or drained to prevent ponding. The site drainage requirements shall be maintained.
4.

Gardens: The gardens shall not interfere with the drainage requirements or the subfloor ventilation and weep holes drainage requirements. Garden beds adjacent to the house should be avoided. Over watering of gardens close to the house shall be avoided.
5.

Restrictions on trees / shrubs: Planting of trees shall be avoided near the footings of the house or neighboring house on reactive sites as they can cause damage due to drying the clay. To minimise the possibility of damage, tree planting should be restricted to a distance from the house of:  
- 1.50 x The mature height for Class E sites.  
- 1.00 x The mature height for Class H sites.  
- 0.75 x The mature height for Class M sites.
6.

Where rows or groups of trees are involved, the distance from the building should be increased. Removal of trees from the site can also cause similar problems.
7.

Repair of leaks: Leaks in plumbing, including stormwater and sewerage drainage should be repaired promptly.



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Sheet: En01

Scale: 1 : 20 @ A3

Masonry:

1. All workmanship and materials shall be in accordance with AS3700.
2. The design strength of masonry shall be:

Exposure Classification to AS3600	Brick Compressive Strength (MPa)	Brick Salt Resistance Grade	Durability Classification of Built in Components	Mortar Mix	
				GP Portland e Cement Lime: Sand	f' c (MPa)
A1 / A2	20	General Purpose	R3 (Galvanised)	1.0 : 1.0 : 6.0	2.8
B1	20			1.0 : 1.0 : 6.0	2.8
B2	20	Exposure	R3 (Stainless)	1.0 : 0.5 : 4.5	2.8

3. All masonry walls supporting concrete slabs and beams shall have a slip joint comprising of two layers of galvanized steel in between the concrete and masonry.
4. All masonry walls supporting or supported by concrete floors shall have vertical joints located to match and control / construction joints in the concrete.
5. Do not construct any masonry walls on suspended slabs until the slab formwork has been stripped and de-propped.
6. Non load bearing masonry walls shall be separated from concrete slab or beam above by 20mm thick compressible filler.
7. Provide vertical control joints at 6m maximum centers, and 4 meters maximum from corners in masonry walls, and between new and existing brickwork. The joint shall have expansion joint ties and suitably sealed with mastic sealant.
8. Masonry retaining walls are to be back filled with either of the following material:
- Coarse grained soil with low silt content
  - Residual Soil Containing Stones
  - Fine silty sand
  - Granular materials with low clay content

Structural Steel:

1. All workmanship and materials shall be in accordance with AS4100 and AS/NZ4600.
2. The structural design has been baised on the following steel grades, UNO:
- Hot rolled universal beams, columns, channels & angles: 300PLUS
  - Circular, square & rectangular hollow sections: C350/C450LOC
  - Cold formed open DuraGal profiles: 350/C450LO
  - Cold formed lipped Cee & Zed Purlins: G550/G500/G450
3. The structural design has been based on MBPMA nominal size Cee & Zed lipped purlins.
4. Qualifications for welding procedures and personnel shall conform to Section 4 of AS 1554.1. Non destructive testing of welds shall include 100% visual inspection and additional testing as shown on the drawings.
5. All welds shall be 6mm continuous fillet type GP, UNO. All butt welds shall be complete penetration in accordance with AS1554.1, UNO.
6. Bolt Designation:
- 4.6/S - Commercial bolts to AS 1111, snug tightened.
  - 8.8/S - High strength structural bolts to AS1562, snug tightened.
  - 8.8/TB - High strength structural bolts to AS1562, full tensioned bearing joint.
  - 8.8/TF - High strength structural bolts to AS1562, fully tensioned friction joint.
7. All bolts shall be M16 8.8/S, with a minimum of 2 bolts per connection UNO.
8. Fin plates shall be a minimum of 10mm thick, grade 300PLUS steel, UNO.
9. Concrete encased steel work shall be wrapped with SL62 mesh and shall have a minimum 50mm of cover, UNO.
10. Steelwork to be encased in concrete shall have the following surface treatment, UNO:

Exposure Classification to AS3600	Steelwork Protection Required
A1 / A2	Power tool clean to AS1627 Class 1, 1 Coat Alkyd Primer (Zinc Phosphate)
B1	Abrasive blast to AS1627 Class 2.5 1 Coat Inorganic Zinc Silicate
B2	Hot Dipped Galvanised to AS1650

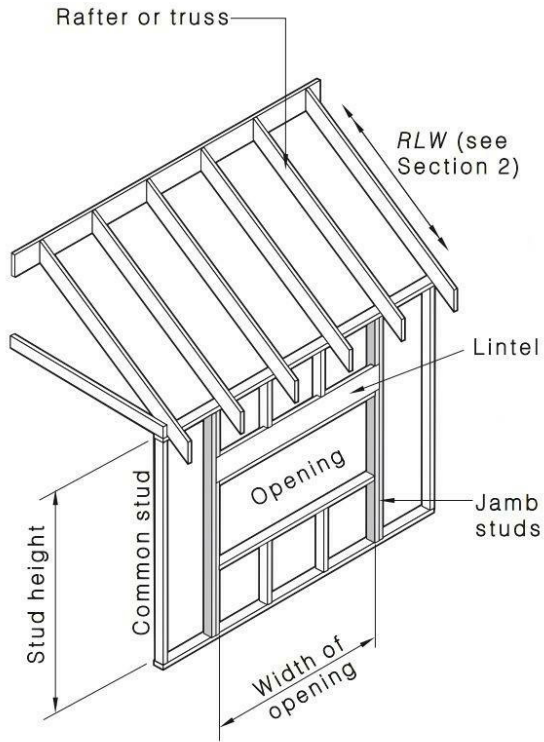
11. Where sealed tube members are hot dipped galvanised, the fabricator shall provide drill holes as neccessary to allow gases to escape.
12. All transport and erection damage, site welds etc., shall be reinstalled to an equivalent finish to adjacent steelwork.
13. If steel beams and posts are designated to be galvanised, then end plates, cap plates, and base plates shall also be galvanised.
14. All nuts and bolts shall be galvanised or marine grade stainless steel.

Timber:

1. All workmanship and materials shall be in accordance with AS1684 and AS1720.
2. AS1684 shall be applied to domestic construction in sheltered locations.
3. Softwood to be a minimum of F7 MGP10 and hardwood to be a minimum of F17 UNO.
4. External timber shall be either hardwood durability class 1 or 2 as per AS1720 or impregnated pine grade F7 MGP10. pressure treated to AS1604 and re-dried prior to use. Supplementary treatment shall be applied to all cut surfaces.
5. Two (2) copies of timber truss shop drawings shall be submitted to the engineer for approval, clearly indicating design loads and point loads applied to the structure.
6. All bolts in timber construction shall be M16 4.6/S UNO. Washers under heads and nuts shall be at least 2.5 times the bolt diameter.
7. All timber joints and notches shall be a minimum on 100mm away from loose knots, severe sloping grain, gum veins or other minor defects.

Blockwork:

1. All workmanship and materials shall be in accordance with AS3700.
2. Reinforced concrete blockwork shall comply with the following, UNO:
- Blocks: Minimum 10 MPa unconfined compressive strength conforming to AS4455.
  - Mortar: 1.0 : 1.0 : 6.0 ratio of cement: Lime: Sand UNO.
  - Blocks shall be either 'H' or 'Double U' configuration.
  - Provide clean out holes at the base of the wall & rod core holes to remove excess mortar.
  - Core filling shall be 20 MPa concrete with maximum 10mm aggregate size with a maximum slump of 120 ±20mm
  - Minimum cover of 55mm from the outside of the blockwork.
3. Masonry retaining walls are to be back filled with either of the following material:
- Coarse grained soil with low silt content
  - Residual Soil Containing Stones
  - Fine silty sand
  - Granular materials with low clay content
4. Vertical control joints shall be provided at max 8m centers. They shall be reinforced with N20-400 dowels 600mm long. One end shall be greased and capped.
5. No admixtures shall be used in the mortar mix or the core fill mix without prior written consent from the engineer.



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I hereby certify that the above mentioned works are structurally adequate for their intended purpose. This certification is limited to the structural elements detailed, and based on the works being carried out in accordance with these structural/civil plans. The structure has been designed in accordance with the following:

- AS/NZS 1170.0:2002: Structural design actions - General principles
- AS/NZS 1170.1:2002: Structural design actions - Permanent, imposed & other actions
- AS/NZS 1170.2:2011: Structural design actions - Wind actions
- AS 4055-2012: Wind Loads For Housing
- AS 4100-1998: Steel Structures
- AS 1163-1991: Structural Steel Hollow Sections
- AS/NZS 1111-1996: ISO Metric Hexagon Commercial Bolts & Screws
- AS 3600-2009: Concrete Structures.
- AS 3700-2011: Masonry Structures
- AS 2870-2011: Residential slabs and footings - Construction
- AS 1684-2010: Residential timber framed construction
- AS 1720.1-2010: Timber Structures - Design Methods
- AS 3959-2009: Construction of buildings in bushfire prone areas
- Building Code of Australia (BCA)

All works to be carried out by a licensed builder in accordance with the current edition of the Building Code of Australia (BCA) and relevant Australian Standards for construction.

Based on the above parameters, I hereby certify that the structural components are adequate under the imposed loading provided that they are constructed in accordance with the relevant Australian Standards. I certify that I am a qualified and practising Structural Engineer in accordance with the requirements of the Building Code of Australia and The Institution of Engineers, Australia.

MPalmer

Murray Palmer  
BEng (Civil & Structural) Hons  
Member No: 3798337  
Senior Engineer



VISIONENGINEERS

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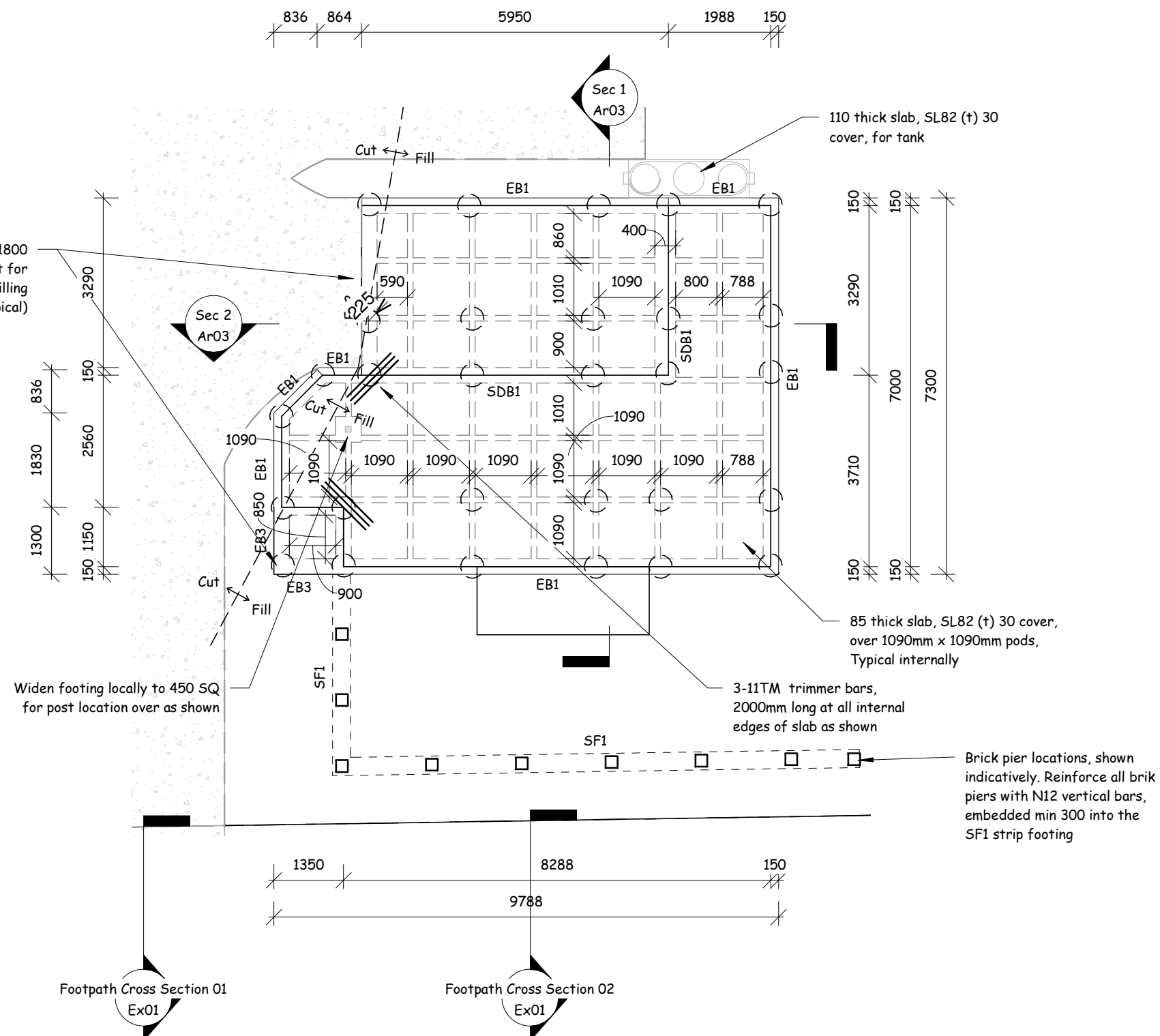
Date Started: 10/07/2018

Drawing No: 917-6187

Sheet: En02

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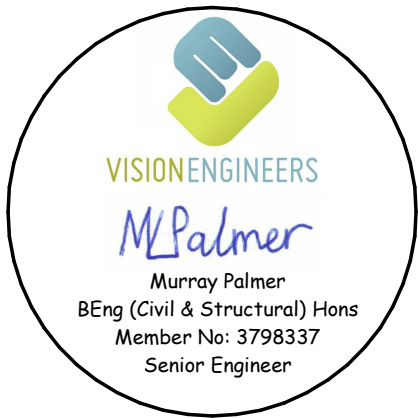




**VISION ENGINEERS FOOTING  
INSPECTIONS ARE REQUIRED:**

1. Piers and trenches prior to reinforcing
2. All steel reinforcement prior to pouring concrete

Contact Vision Engineers minimum 48 hours prior to organise inspections.

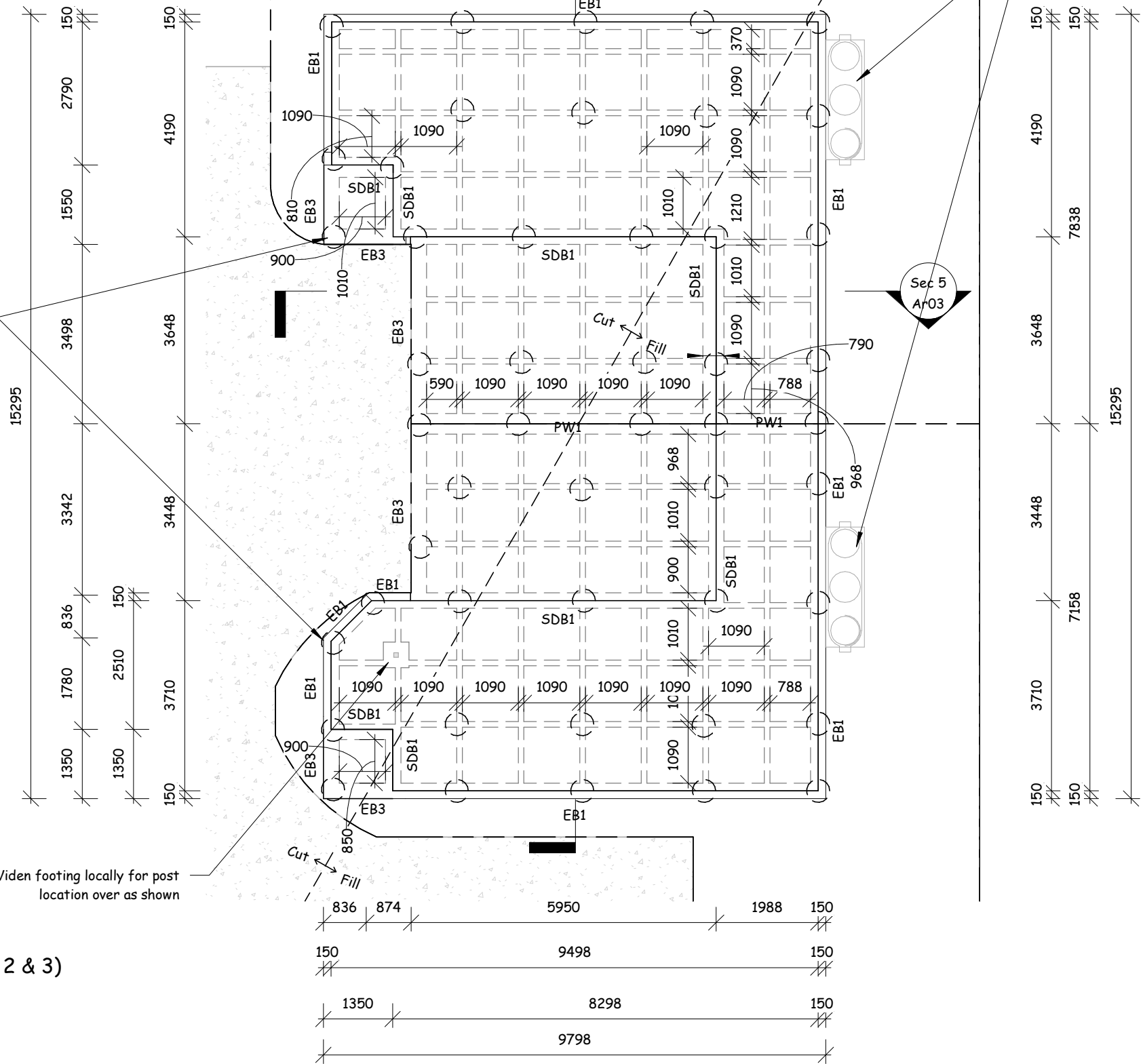
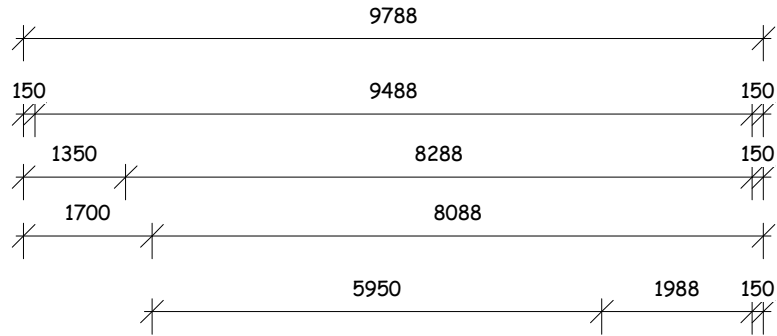


Proposed 400mm diameter piers founded 1800 onto bedrock, refer geotechnical report for approximate depths. Note cutting and filling will vary depths noted in report (typical)

Slab Plan (Units 2 & 3)

1 : 100

Widen footing locally for post location over as shown



**General Notes**

1. Bracing and tie-down details to the engineers details and AS1684.2
2. All timber and steel to be installed and treated to the manufacturers specifications, especially for any exterior applications
3. All white ant protection to be strictly within the guidelines of AS3660 and installed by a qualified licenced pest control consultant



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**BUILDERS NOTE :**

Use Dimensions in preference to scale. Site verify all dimensions before ordering Materials. Footings information shown on these plans may have to be changed if Builders site excavations reveal non-virgin ground. Consultation of Plan Vision Australia Pty Ltd would then be necessary to determine the required changes. Materials are under no circumstances to be ordered direct off plans. Materials to be ordered are only to be ordered from a Builders or applicable product manufacturers separate site confirmed Materials list. Plans are not intended to be the absolute medium for construction information accuracy due to site discrepancies. See schedule of specifications for further details.

Wind Class:N2 (W33N) (Assumed)

Soil Class: 'M' (Assumed)

**SURVEY NOTE :**

Boundary dimensions are assumed only and taken from site information, others or owners information. Confirm boundaries before commencement of construction. Full project specific detailed survey plans have not been supplied to Plan Vision for planning purposes. See schedule of specifications for details.

**Revision Schedule**

22.10.18	Council Changes
20.11.18	Council Changes
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08.03.19	Final Engineering

**Unit Development**

**Client:**

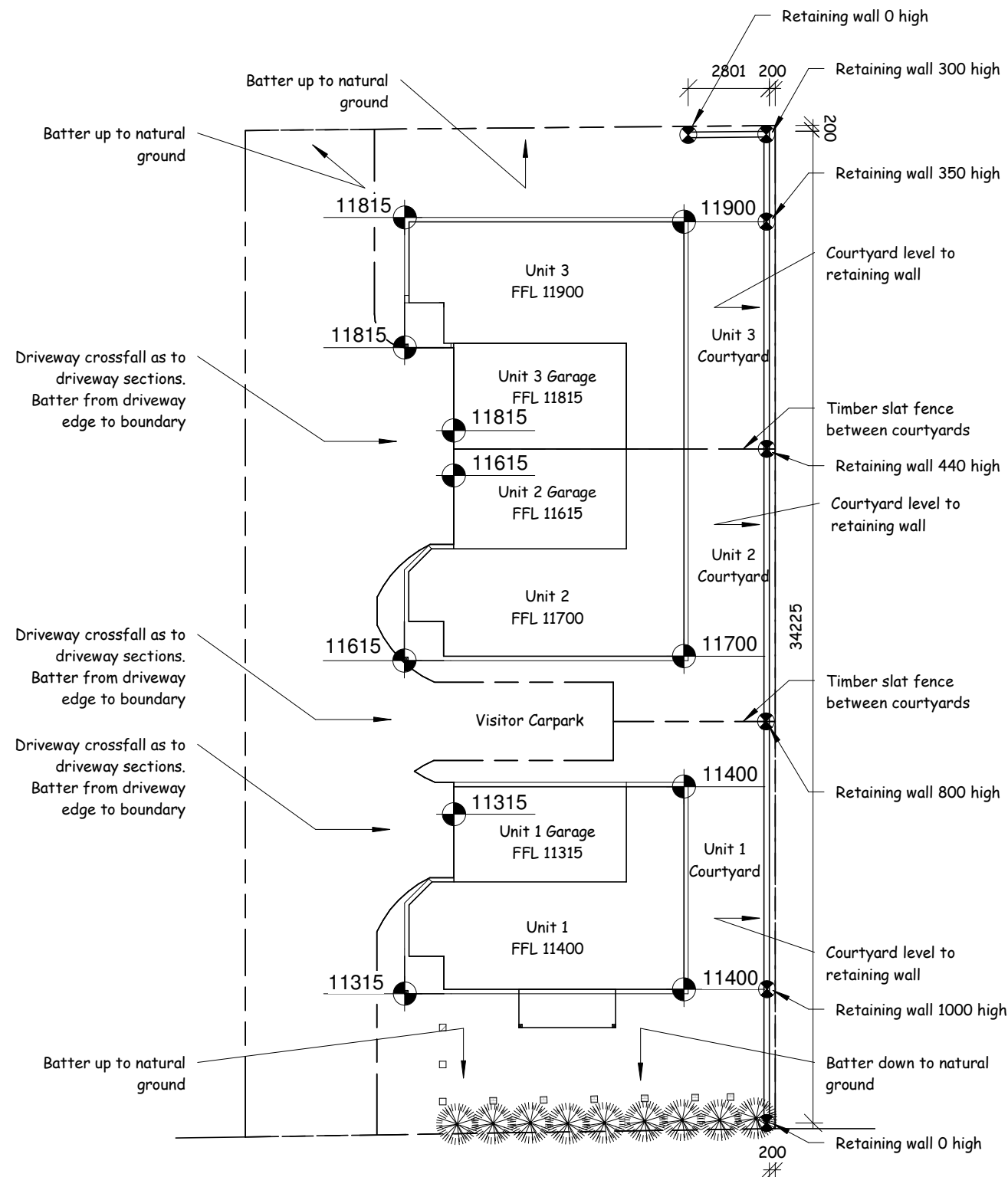
**Address:**

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Scale: As indicated @ A3



## Retaining Wall Plan

1 : 200



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Wind Class: N2 (W33N) (Assumed)

Soil Class: 'M' (Assumed)

### SURVEY NOTE :

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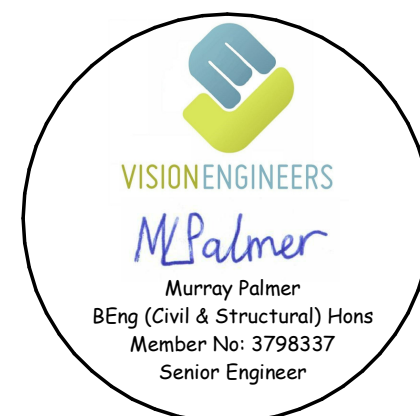
**Address:**

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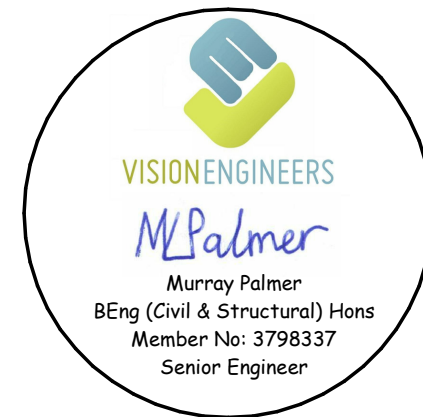
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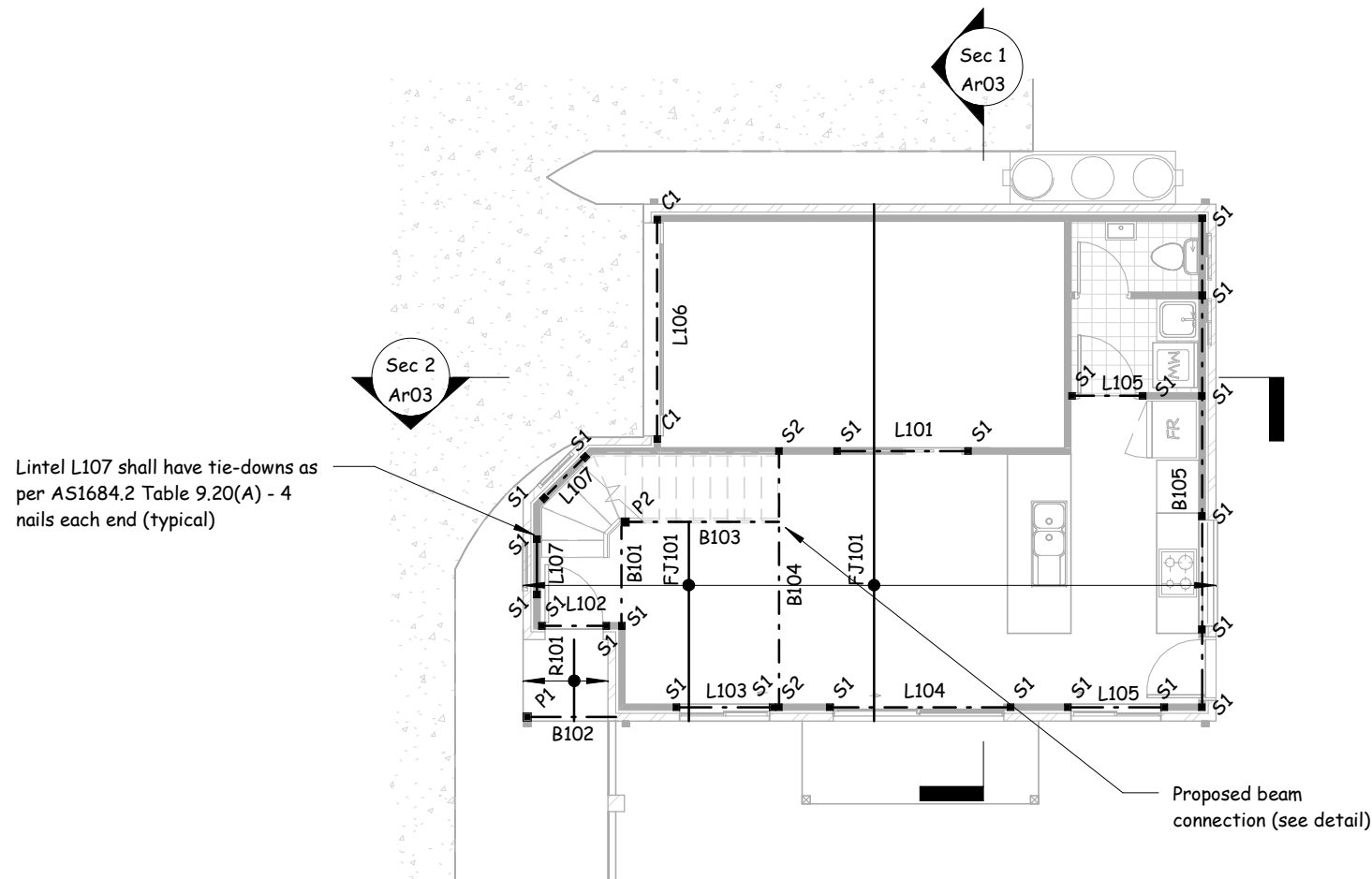


- General Notes**
1. Bracing and tie-down details to the engineers details and AS1684.2
  2. All timber and steel to be installed and treated to the manufacturers specifications, especially for any exterior applications
  3. All white ant protection to be strictly within the guidelines of AS3660 and installed by a qualified licenced pest control consultant



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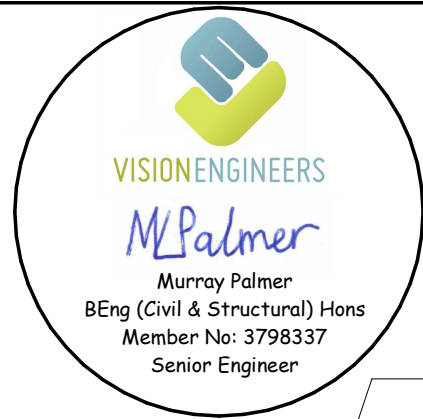
First Floor Joist Layout Plan (Unit 1)

1 : 100

Member Schedule (First Floor Joist) - Unit 1		
Member	Description	Size
S1	Studs	2/90 x 45 MGP10/F7, Nail laminated
S2	Studs	3/90 x 45 MGP10/F7, Nail laminated
P1	Post	90 x 90 F7 K/D T/Pine OR 100 x 100 F11 Hardwood
P2	Post	100 x 100 F11 Hardwood
C1	Column	89 SHS 3.5, HDG or Inorganic Zinc Coating
B101	Beam	300 x 45 HYSPAN LVL
B102	Beam	140 x 45 MGP10 H3 (if not fully clad)
B103	Beam	300 x 45 HYSPAN LVL
B104	Beam	2/300 x 45 HYSPAN LVL, Nail laminated
B105	Beam	300 x 45 HYSPAN LVL
L101	Lintel	200 x 63 HYSPAN LVL
L102	Lintel	Min. 120 x 45 MGP10
L103	Lintel	200 x 63 HYSPAN LVL
L104	Lintel	2/300 x 45 HYSPAN LVL
L105	Lintel	200 x 63 HYSPAN LVL
L106	Lintel	180 PFC + 200 x 10 Base PL, HDG or Inorganic Zinc Coating
L107	Lintel	140 x 45 MGP10
FJ101	Floor Joist	HYJOIST HJ30045 @ Max 600 cts (450 cts for wet areas)
R101	Rafter	90 x 45 MGP10 @ Max 900 cts

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For all lintels in non-loadbearing walls, the fixings shall be nominal as per AS1684.2 Table 9.4

Tie-downs for lintels supporting sheet roof (AS1684.2 Table 9.20)					
RLW	Span				
	Up to 1200	Up to 1800	Up to 2400	Up to 3000	Up to 3600
3000	9.20(A) - 4 Nails	9.20(A) - 4 Nails	9.20(A) - 6 Nails	9.20(A) - 6 Nails	9.20(A) - 4 Nails
4500	9.20(A) - 4 Nails	9.20(A) - 6 Nails	9.20(A) - 4 Nails	9.20(A) - 6 Nails	9.20(A) - 6 Nails

Minimum size for non-loadbearing lintels					
Timber grade	Span				
	Up to 1200	Up to 1800	Up to 2400	Up to 3000	Up to 3600
MGP10/F7	90 x 45	90 x 45	120 x 45	190 x 45	190 x 45
Hyspan	95 x 36	95 x 45	130 x 36	130 x 45	170 x 45
Smart LVL 15	90 x 42	120 x 35	120 x 35	130 x 58	170 x 58

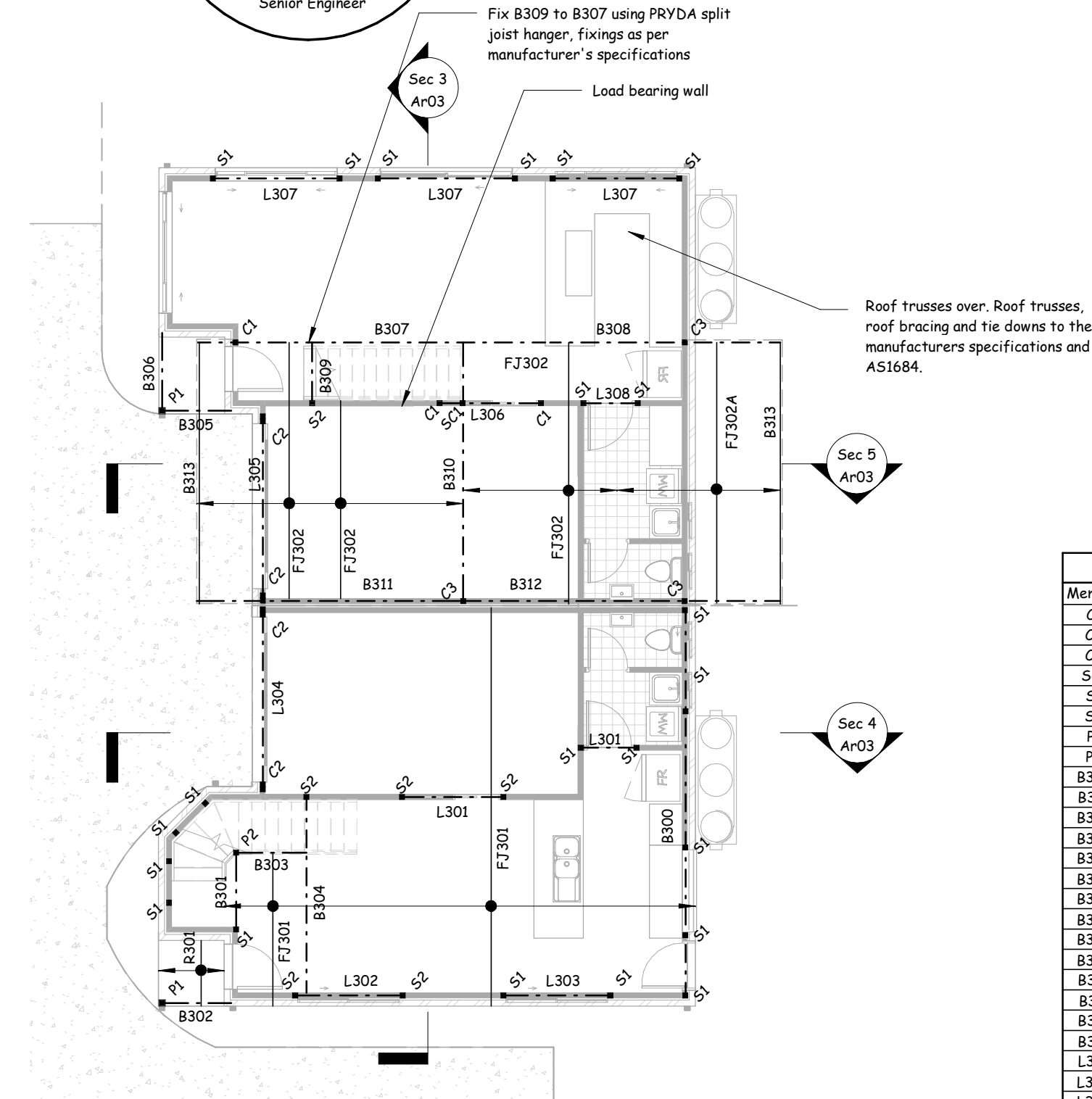
Minimum size for lintels supporting sheet roof up to 3m RLW (N1/N2)					
Timber grade	Span				
	Up to 1200	Up to 1800	Up to 2400	Up to 3000	Up to 3600
MGP10/F7	2/90 x 45	140 x 35	190 x 35	240 x 35	2/240 x 35
Hyspan	95 x 45	130 x 45	150 x 45	200 x 45	240 x 45
Smart LVL 15	120 x 35	120 x 35	150 x 42	170 x 42	240 x 42

Minimum size for lintels supporting sheet roof up to 4.5m RLW (N1/N2)					
Timber grade	Span				
	Up to 1200	Up to 1800	Up to 2400	Up to 3000	Up to 3600
MGP10/F7	120 x 45	190 x 35	190 x 45	240 x 45	2/240 x 45
Hyspan	90 x 45	130 x 45	150 x 63	200 x 63	240 x 63
Smart LVL 15	120 x 35	130 x 42	150 x 42	200 x 58	240 x 58

#### General Notes

- Bracing and tie-down details to the engineers details and AS1684.2
- All timber and steel to be installed and treated to the manufacturers specifications, especially for any exterior applications
- All white ant protection to be strictly within the guidelines of AS3660 and installed by a qualified licenced pest control consultant

Member Schedule (First Floor Joist) - Units 2 & 3		
Member	Description	Size
C1	Column	89 x 89 x 3.5 SHS, HDG or Inorganic Zinc Coating
C2	Column	180 PFC, HDG or Inorganic Zinc Coating
C3	Column	89 x 89 x 5.0 SHS, HDG or Inorganic Zinc Coating
SC1	Stub Column	75 x 75 x 4.0 SHS, HDG or Inorganic Zinc Coating
S1	Studs	2/90 x 45 MGP10/F7, Nail laminated
S2	Studs	3/90 x 45 MGP10/F7, Nail laminated
P1	Post	90 x 90 F7 K/D T/Pine OR 100 x 100 F11 Hardwood
P2	Post	100 x 100 F11 Hardwood
B300	Beam	300 x 45 HYSpan LVL
B301	Beam	300 x 45 HYSpan LVL
B302	Beam	140 x 45 MGP10 H3
B303	Beam	300 x 45 HYSpan LVL
B304	Beam	2/300 x 45 HYSpan LVL, Nail laminated
B305	Beam	140 x 45 MGP10 H3
B306	Beam	140 x 45 MGP10 H3
B307	Beam	2/300 x 45 HYSpan LVL, Nail laminated
B308	Beam	250 PFC, HDG or Inorganic Zinc Coating
B309	Beam	300 x 45 HYSpan LVL
B310	Beam	310 UB 32, HDG or Inorganic Zinc Coating
B311	Beam	2/360 x 45 HYSpan LVL, Nail laminated
B312	Beam	250 PFC, HDG or Inorganic Zinc Coating
B313	Beam	2/360 x 45 HYSpan LVL, Nail laminated
L301	Lintel	200 x 63 HYSpan LVL
L302	Lintel	2/300 x 45 HYSpan LVL, Nail laminated
L303	Lintel	240 x 63 HYSpan LVL
L304	Lintel	200 PFC + 200 x 10 PL, HDG or Inorganic Zinc Coating
L305	Lintel	200 PFC + 200 x 10 PL, HDG or Inorganic Zinc Coating
L306	Lintel	180 PFC, HDG or Inorganic Zinc Coating
L307	Lintel	Refer typical lintel tables for sizes
L308	Lintel	200 x 63 HYSpan LVL
FJ301	Floor Joist	HYJOIST HJ30045 @ Max 600 cts
FJ302	Floor Joist	HYJOIST HJ30090 @ Max 600 cts
FJ302A	Floor Joist	HYJOIST HJ30090 @ Max 450 cts (for wet areas)
R301	Rafter	90 x 45 MGP10 @ Max 900 cts



First Floor Joist Layout Plan (Units 2 & 3)

1 : 100



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Wind Class: N2 (W33N) (Assumed)

Soil Class: 'M' (Assumed)

#### SURVEY NOTE :

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#### Revision Schedule

22.10.18	Council Changes
20.11.18	Council Changes
27.02.19	Council Changes
08.03.19	Final Engineering

#### Unit Development

**Client:**

**Address:**

Date Started: 10/07/2018

Drawing No: 917-6187

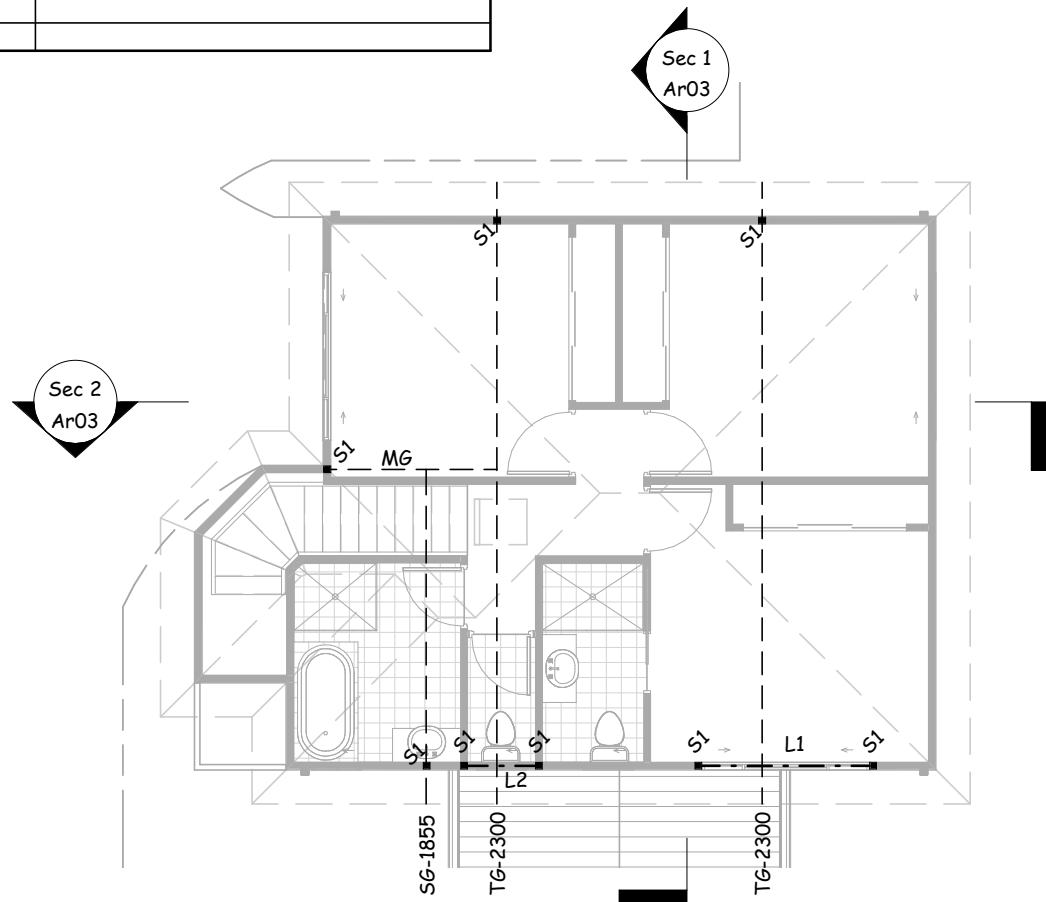
Sheet: En07

Scale: As indicated @ A3



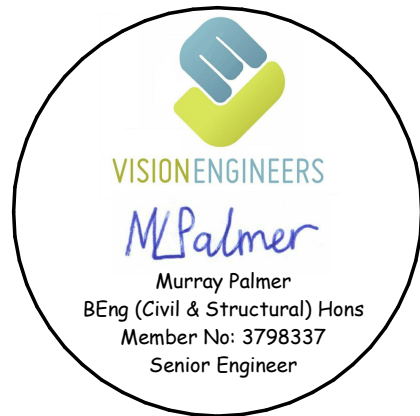


Member Schedule (First Floor Roof) (Unit 1)		
Member	Description	Size
S1	Studs	2/90 x 45 MGP10/F7, Nail laminated
L1	Lintel	240 x 45 HYPAN LVL (supports Girder Truss)
L2	Lintel	140 x 45 MGP10



First Floor Roof Plan (Unit 1)

1 : 100



#### General Notes

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2. All timber and steel to be installed and treated to the manufacturers specifications, especially for any exterior applications
3. All white ant protection to be strictly within the guidelines of AS3660 and installed by a qualified licenced pest control consultant

Typical Sheet Roof Lintels, Jamb and Tie-down Details							
Jamb Stud Sizes							
Jamb Studs A		Jamb Studs B		Jamb Studs C		Jamb Studs D	
2/90 x 35 MGP10		2/90 x 45 MGP10		3/90 x 45 MGP10		2/90 x 63 Hyspan LVL13	
Minimum size for non-loadbearing lintels							
Timber grade	Span						
	Up to 1200	Up to 1800	Up to 2400	Up to 3000	Up to 3600		
MGP10/F7	90 x 45	90 x 45	120 x 45	190 x 45	190 x 45		
Hyspan LVL13	95 x 36	95 x 45	130 x 36	130 x 45	170 x 45		
Smart LVL15	90 x 42	120 x 35	120 x 35	130 x 58	170 x 58		
Jamb Studs	A	A	A	A	A		
Jamb size studs above to be used up to a height of 2750mm							
Single / Upper Storey Lintel (Design wind speed N1/N2) - Sheet Roof with RLW up to 3000mm							
Timber grade	Span						
	Up to 1200	Up to 1800	Up to 2400	Up to 3000	Up to 3600		
MGP10/F7	2/90 x 45*	140 x 35	190 x 35	240 x 35	2/240 x 35*		
Hyspan LVL13	95 x 45	130 x 45	150 x 45	200 x 45	240 x 45		
Smart LVL15	120 x 35	120 x 35	150 x 42	170 x 42	240 x 42		
Jamb Studs	A	A	A	A	B		
* - Denotes nail laminated together as per AS1684.2 Jamb size studs above to be used up to a height of 2750mm							
Single / Upper Storey Lintel (Design wind speed N1/N2) - Sheet Roof with RLW 3001mm up to 4500mm							
Timber grade	Span						
	Up to 1200	Up to 1800	Up to 2400	Up to 3000	Up to 3600		
MGP10/F7	120 x 45	190 x 35	190 x 45	240 x 45	2/240 x 45*		
Hyspan LVL13	90 x 45	130 x 45	150 x 63	200 x 63	240 x 63		
Smart LVL15	120 x 35	130 x 42	150 x 42	200 x 58	240 x 58		
Jamb Studs	A	A	A	B	B		
* - Denotes nail laminated together as per AS1684.2 Jamb size studs above to be used up to a height of 2750mm							
Single / Upper Storey Lintel (Design wind speed N1/N2) - Sheet Roof with RLW 4501mm up to 6000mm							
Timber grade	Span						
	Up to 1200	Up to 1800	Up to 2400	Up to 3000	Up to 3600		
MGP10	190 x 45	2/190 x 45*	2/240 x 45*	2/290 x 45*	-		
Hyspan LVL13	130 x 45	200 x 45	240 x 45	300 x 45	360 x 63		
Smart LVL15	130 x 42	200 x 42	240 x 42	300 x 58	300 x 75		
Jamb Studs	A	A	B	C	C		
* - Denotes nail laminated together as per AS1684.2 Jamb size studs above to be used up to a height of 2750mm							
Single / Upper Storey Lintel (Design wind speed N1/N2) - Sheet Roof with RLW 6001mm upto 7500mm							
Timber grade	Span						
	Up to 1200	Up to 1800	Up to 2400	Up to 3000	Up to 3600		
MGP10	190 x 45	2/190 x 45*	2/240 x 45*	2/290 x 45*	-		
Hyspan LVL13	130 x 45	200 x 45	240 x 45	300 x 63	400 x 63		
Smart LVL15	130 x 42	200 x 42	240 x 58	300 x 58	400 x 75		
Jamb Studs	A	B	B	C	D		
* - Denotes nail laminated together as per AS1684.2 Jamb size studs above to be used up to a height of 2750mm							
Tie-downs for lintels supporting sheet roof (AS1684.2 Table 9.20)							
RLW	Lintel Span						
	Up to 1200	Up to 1800	Up to 2400	Up to 3000	Up to 3600		
Up to 3000	9.20(A) 4 nails	9.20(A) 4 nails	9.20(A) 6 nails	9.20(A) 6 nails	9.20(A) 4 nails		
3001-4500	9.20(A) 4 nails	9.20(A) 6 nails	9.20(A) 6 nails	9.20(A) 6 nails	9.20(A) 6 nails		
4501-6000	9.20(A) 4 nails	9.20(B) 4 nails	9.20(B) 6 nails	9.20(B) 6 nails			
6001-7500	9.20(A) 4 nails	9.20(B) 6 nails	9.20(B) 6 nails	9.20(C) M12			
For all lintels in non-loadbearing walls, the fixings shall be nominal as per AS1684.2 Table 9.4							



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Wind Class: N2 (W33N) (Assumed)

Soil Class: 'M' (Assumed)

#### SURVEY NOTE :

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#### Revision Schedule

22.10.18	Council Changes
20.11.18	Council Changes
27.02.19	Council Changes
08.03.19	Final Engineering

#### Unit Development

**Client:**

**Address:**

Date Started: 10/07/2018

Drawing No: 917-6187

Sheet: En08

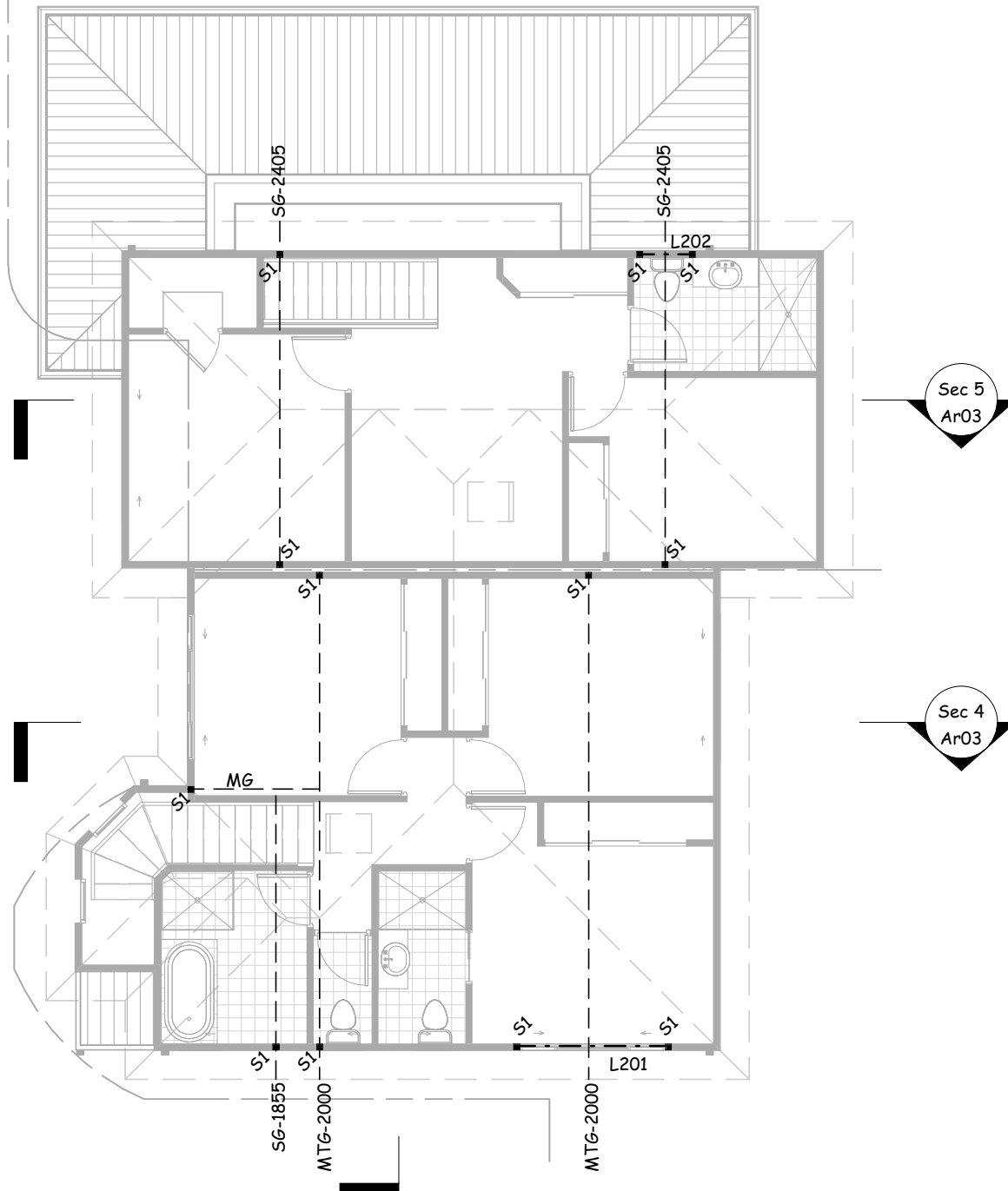
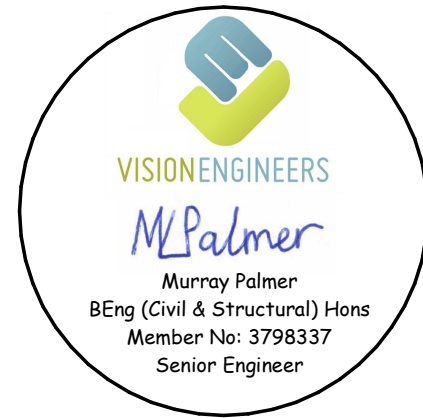
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#### General Notes

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3. All white ant protection to be strictly within the guidelines of AS3660 and installed by a qualified licenced pest control consultant

Sec 3  
Ar03



Sec 5  
Ar03

Sec 4  
Ar03

First Floor Roof Plan (Units 2 & 3)

1 : 100

Member Schedule (First Floor Roof) (Unit 2 & 3)		
Member	Description	Size
S1	Studs	2/90 x 45 MGP10/F7, Nail laminated
L201	Lintel	200 x 63 HYPAN LVL (supports Girder Truss)
L202	Lintel	140 x 45 MGP10

Typical Sheet Roof Lintels, Jamb and Tie-down Details							
Jamb Stud Sizes							
Jamb Studs A		Jamb Studs B		Jamb Studs C		Jamb Studs D	
2/90 x 35 MGP10		2/90 x 45 MGP10		3/90 x 45 MGP10		2/90 x 63 Hyspan LVL13	
Minimum size for non-loadbearing lintels							
Timber grade	Span						
	Up to 1200	Up to 1800	Up to 2400	Up to 3000	Up to 3600		
MGP10/F7	90 x 45	90 x 45	120 x 45	190 x 45	190 x 45		
Hyspan LVL13	95 x 36	95 x 45	130 x 36	130 x 45	170 x 45		
Smart LVL15	90 x 42	120 x 35	120 x 35	130 x 58	170 x 58		
Jamb Studs	A	A	A	A	A		
Jamb size studs above to be used up to a height of 2750mm							
Single / Upper Storey Lintel (Design wind speed N1/N2) - Sheet Roof with RLW up to 3000mm							
Timber grade	Span						
	Up to 1200	Up to 1800	Up to 2400	Up to 3000	Up to 3600		
MGP10/F7	2/90 x 45*	140 x 35	190 x 35	240 x 35	2/240 x 35*		
Hyspan LVL13	95 x 45	130 x 45	150 x 45	200 x 45	240 x 45		
Smart LVL15	120 x 35	120 x 35	150 x 42	170 x 42	240 x 42		
Jamb Studs	A	A	A	A	B		
* - Denotes nail laminated together as per AS1684.2 Jamb size studs above to be used up to a height of 2750mm							
Single / Upper Storey Lintel (Design wind speed N1/N2) - Sheet Roof with RLW 3001mm up to 4500mm							
Timber grade	Span						
	Up to 1200	Up to 1800	Up to 2400	Up to 3000	Up to 3600		
MGP10/F7	120 x 45	190 x 35	190 x 45	240 x 45	2/240 x 45*		
Hyspan LVL13	90 x 45	130 x 45	150 x 63	200 x 63	240 x 63		
Smart LVL15	120 x 35	130 x 42	150 x 42	200 x 58	240 x 58		
Jamb Studs	A	A	A	B	B		
* - Denotes nail laminated together as per AS1684.2 Jamb size studs above to be used up to a height of 2750mm							
Single / Upper Storey Lintel (Design wind speed N1/N2) - Sheet Roof with RLW 4501mm up to 6000mm							
Timber grade	Span						
	Up to 1200	Up to 1800	Up to 2400	Up to 3000	Up to 3600		
MGP10	190 x 45	2/190 x 45*	2/240 x 45*	2/290 x 45*	-		
Hyspan LVL13	130 x 45	200 x 45	240 x 45	300 x 45	360 x 63		
Smart LVL15	130 x 42	200 x 42	240 x 42	300 x 58	300 x 75		
Jamb Studs	A	A	B	C	C		
* - Denotes nail laminated together as per AS1684.2 Jamb size studs above to be used up to a height of 2750mm							
Single / Upper Storey Lintel (Design wind speed N1/N2) - Sheet Roof with RLW 6001mm upto 7500mm							
Timber grade	Span						
	Up to 1200	Up to 1800	Up to 2400	Up to 3000	Up to 3600		
MGP10	190 x 45	2/190 x 45*	2/240 x 45*	2/290 x 45*	-		
Hyspan LVL13	130 x 45	200 x 45	240 x 45	300 x 63	400 x 63		
Smart LVL15	130 x 42	200 x 42	240 x 58	300 x 58	400 x 75		
Jamb Studs	A	B	B	C	D		
* - Denotes nail laminated together as per AS1684.2 Jamb size studs above to be used up to a height of 2750mm							
Tie-downs for lintels supporting sheet roof (AS1684.2 Table 9.20)							
RLW	Lintel Span						
	Up to 1200	Up to 1800	Up to 2400	Up to 3000	Up to 3600		
Up to 3000	9.20(A) 4 nails	9.20(A) 4 nails	9.20(A) 6 nails	9.20(A) 6 nails	9.20(A) 4 nails		
3001-4500	9.20(A) 4 nails	9.20(A) 6 nails	9.20(A) 6 nails	9.20(A) 6 nails	9.20(A) 6 nails		
4501-6000	9.20(A) 4 nails	9.20(B) 4 nails	9.20(B) 6 nails	9.20(B) 6 nails			
6001-7500	9.20(A) 4 nails	9.20(B) 6 nails	9.20(B) 6 nails	9.20(C) M12			
For all lintels in non-loadbearing walls, the fixings shall be nominal as per AS1684.2 Table 9.4							



VISIONENGINEERS

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Wind Class:N2 (W33N) (Assumed)

Soil Class: 'M' (Assumed)

#### SURVEY NOTE :

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#### Revision Schedule

22.10.18	Council Changes
20.11.18	Council Changes
27.02.19	Council Changes
08.03.19	Final Engineering

#### Unit Development

**Client:**

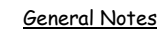
**Address:**


Date Started: 10/07/2018

Drawing No: 917-6187

Sheet: En09

Scale: As indicated @ A3



- 
- VISIONENGINEERS
- MPalmer*
- Murray Palmer  
BEng (Civil & Structural) Hons  
Member No: 3798337  
Senior Engineer



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W/ (02) 49542422 M/ 0414 011 483

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Wind Class:N2 (W33N) (Assumed)

Soil Class: 'M' (Assumed)

SURVEY NOTE :

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See schedule of specifications for details.



Wind Speed = N2

Direction 1:

Wind Pressure (AS1684.2 Table 8.3) = 0.81 kPa

Contributory Surface Area = 49.8 m<sup>2</sup>

Required Wind Bracing Capacity = 40.3 kN

Achieved Bracing Capacity = 40.8 kN

Direction 2:

Wind Pressure (AS1684.2 Table 8.5) = 0.85 kPa

Contributory Surface Area = 37.2 m<sup>2</sup>

Required Wind Bracing Capacity = 31.6 kN

Achieved Bracing Capacity = 32.4 kN

Bracing Units:

$$P_A = 3.4 \text{ kN/m}$$
 $P_B = 6.0 \text{ kN/m}$  $SA = 1.5 \text{ kN/m}$ 
$$S_B = 3.0 \text{ kN/m}$$

### Ground Floor Bracing Plan (Unit 1)

1 : 100

Revision Schedule	
22.10.18	Council Changes
20.11.18	Council Changes
27.02.19	Council Changes
08.03.19	Final Engineering

## Unit Development

**Client:**

**Address:**

Date Started: 10/07/2018

Drawing No: 917-6187

Sheet: En10

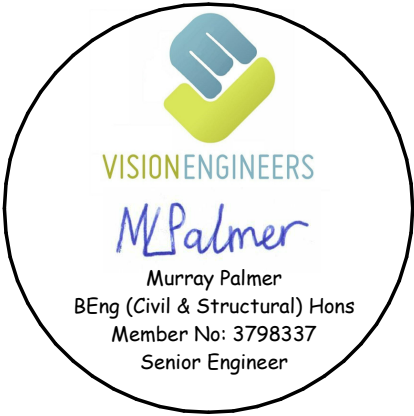
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- General Notes
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  2. All timber and steel to be installed and treated to the manufacturers specifications, especially for any exterior applications
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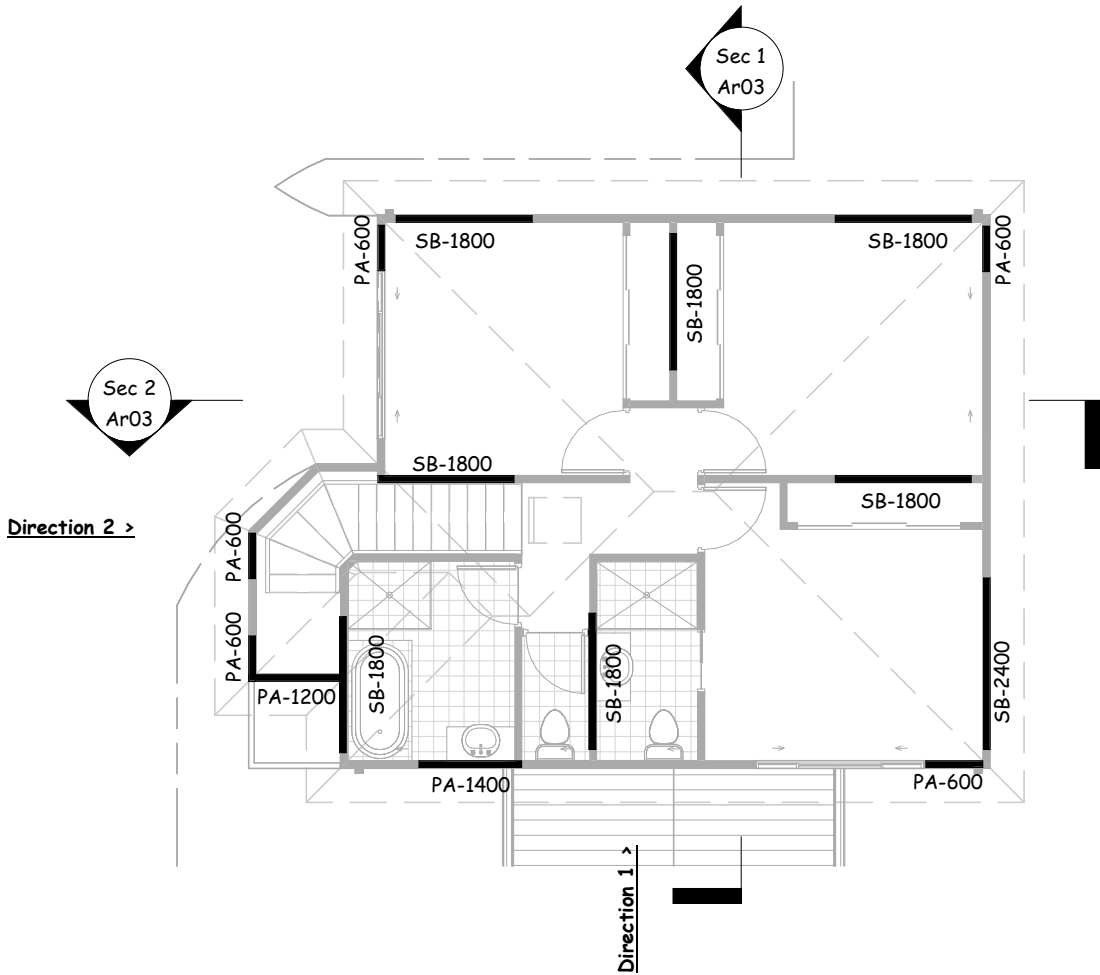




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**BUILDERS NOTE :**  
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Wind Class:N2 (W33N) (Assumed)  
Soil Class: 'M' (Assumed)

**SURVEY NOTE :**  
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See schedule of specifications for details.



**FIRST FLOOR BRACING DETAILS UNIT 1:**  
Wind Speed = N2

Direction 1:  
Wind Pressure (AS1684.2 Table 8.2) = 0.70 kPa  
Contributory Surface Area = 23.3 m2  
Required Wind Bracing Capacity = 16.3 kN  
Achieved Bracing Capacity = 29.5 kN

Direction 2:  
Wind Pressure (AS1684.2 Table 8.4) = 0.77 kPa  
Contributory Surface Area = 17.3 m2  
Required Wind Bracing Capacity = 13.3 kN  
Achieved Bracing Capacity = 32.4 kN

Bracing Units:  
  
PA = 3.4 kN/m  
PB = 6.0kN/m  
SA = 1.5kN/m  
SB = 3.0kN/m

First Floor Bracing Plan (Unit 1)  
  
1 : 100

Revision Schedule	
22.10.18	Council Changes
20.11.18	Council Changes
27.02.19	Council Changes
08.03.19	Final Engineering

Unit Development

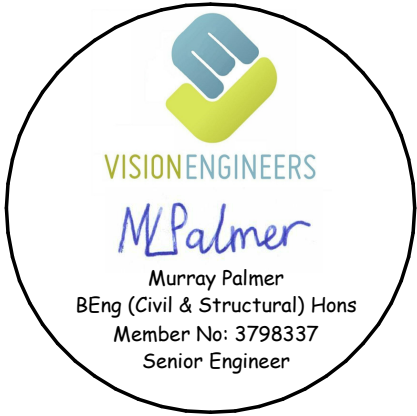
Client:

Address:

Date Started:	10/07/2018
Drawing No:	917-6187
Sheet:	En12
Scale:	As indicated @ A3



- General Notes
- 1. Bracing and tie-down details to the engineers details and AS1684.2
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  - 3. All white ant protection to be strictly within the guidelines of AS3660 and installed by a qualified licenced pest control consultant



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27 Eighth Street, Adamstown  
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Wind Class:N2 (W33N) (Assumed)  
Soil Class: 'M' (Assumed)

SURVEY NOTE :  
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See schedule of specifications for details.

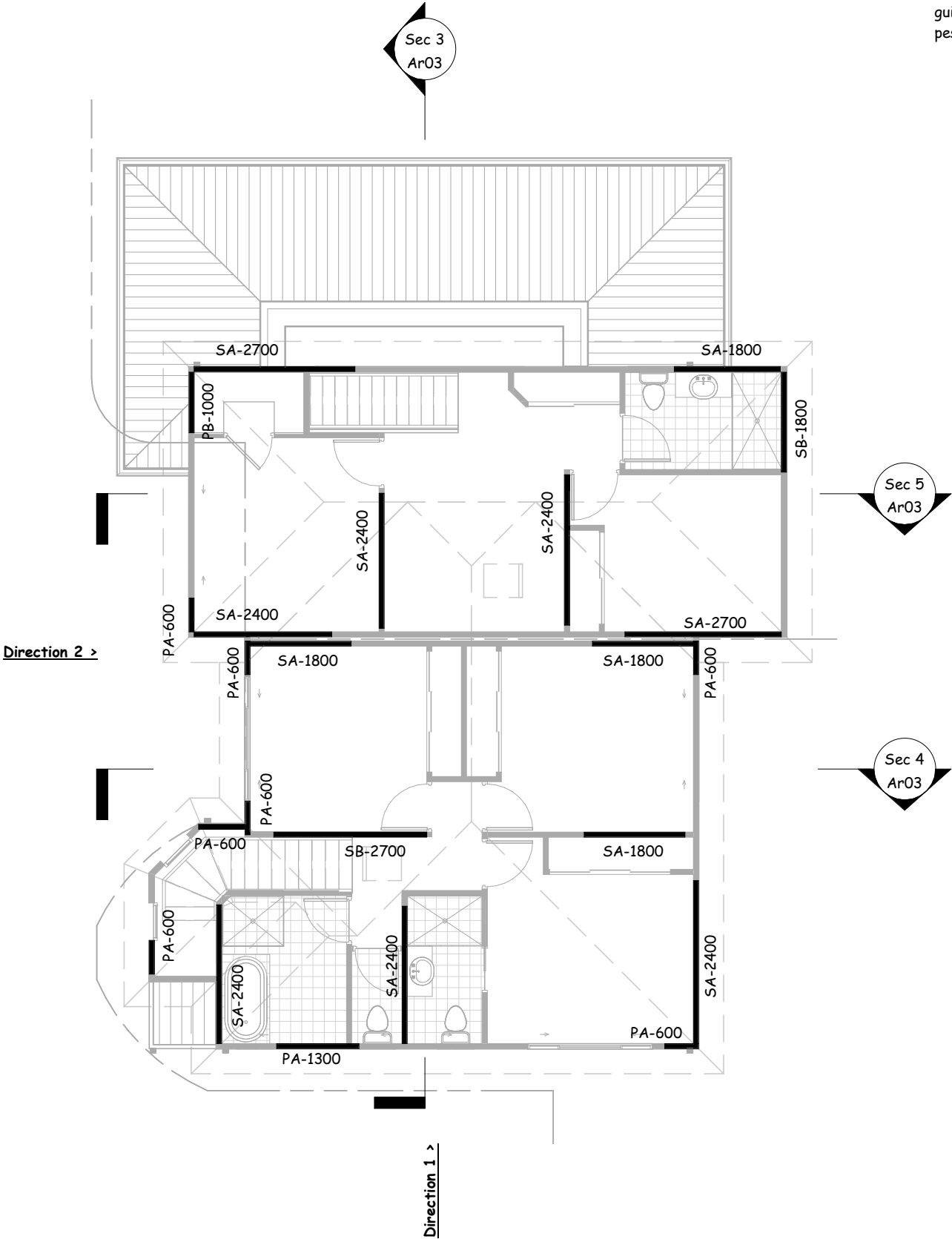
Revision Schedule	
22.10.18	Council Changes
20.11.18	Council Changes
27.02.19	Council Changes
08.03.19	Final Engineering

Unit Development

Client:

Address:

Date Started:	10/07/2018
Drawing No:	917-6187
Sheet:	En13
Scale:	As indicated @ A3



First Floor Bracing Plan (Units 2 & 3)

1 : 100

FIRST FLOOR BRACING DETAILS UNIT 3:  
Wind Speed = N2

Direction 1:  
Wind Pressure (AS1684.2 Table 8.4) = 0.77 kPa  
Contributory Surface Area = 26.8 m2  
Required Wind Bracing Capacity = 10.35 kN (Half Both Units' 20.7 kN)  
Achieved Bracing Capacity = 20.1 kN

Direction 2:  
Wind Pressure (AS1684.2 Table 8.2) = 0.72 kPa  
Contributory Surface Area = 33.4 m2  
Required Wind Bracing Capacity = 12.05 kN (Half Both Units' 24.1 kN)  
Achieved Bracing Capacity = 14.4 kN

FIRST FLOOR BRACING DETAILS UNIT 2:  
Wind Speed = N2

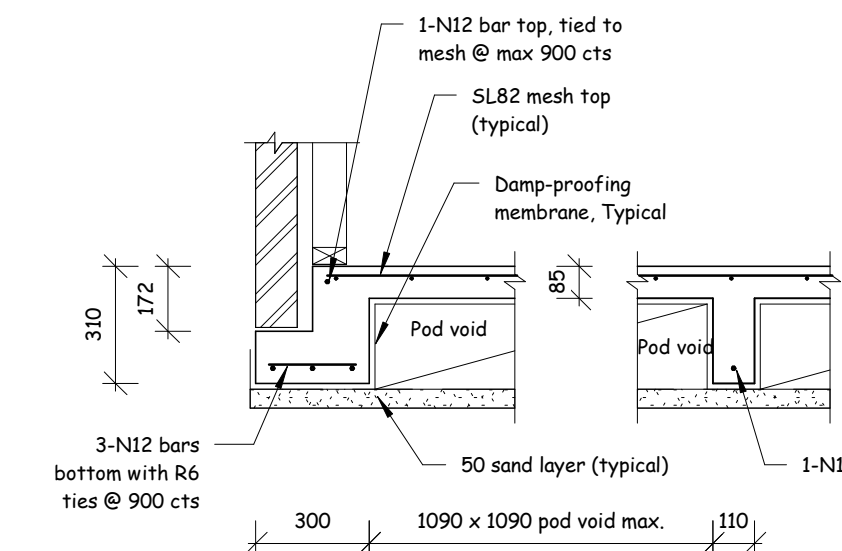
Direction 1:  
Wind Pressure (AS1684.2 Table 8.4) = 0.77 kPa  
Contributory Surface Area = 26.8 m2  
Required Wind Bracing Capacity = 10.35 kN (Half Both Units' 20.7 kN)  
Achieved Bracing Capacity = 15.3 kN

Direction 2:  
Wind Pressure (AS1684.2 Table 8.2) = 0.72 kPa  
Contributory Surface Area = 33.4 m2  
Required Wind Bracing Capacity = 12.05 kN (Half Both Units' 24.1 kN)  
Achieved Bracing Capacity = 23.6 kN

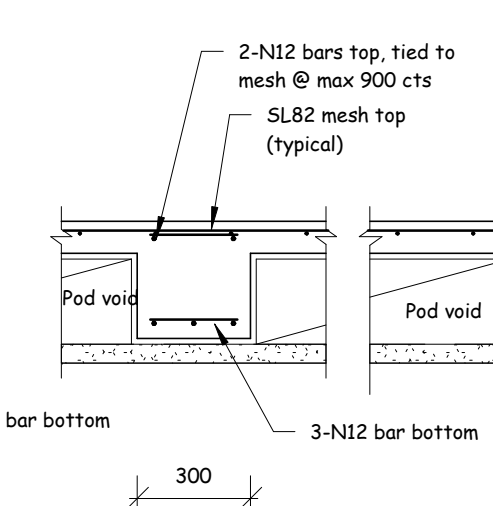
Bracing Units:

PA = 3.4 kN/m  
PB = 6.0kN/m  
SA = 1.5kN/m  
SB = 3.0kN/m

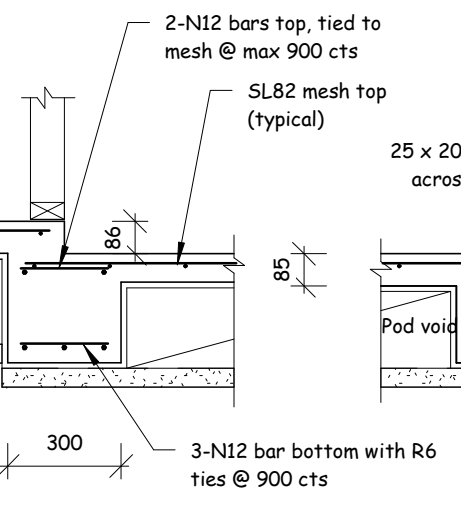




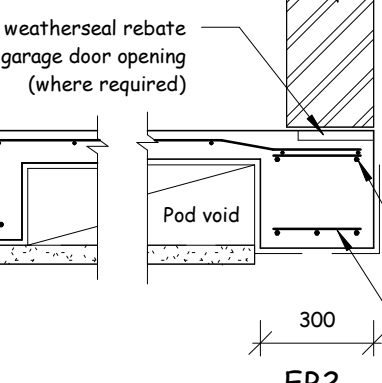
**EB1**  
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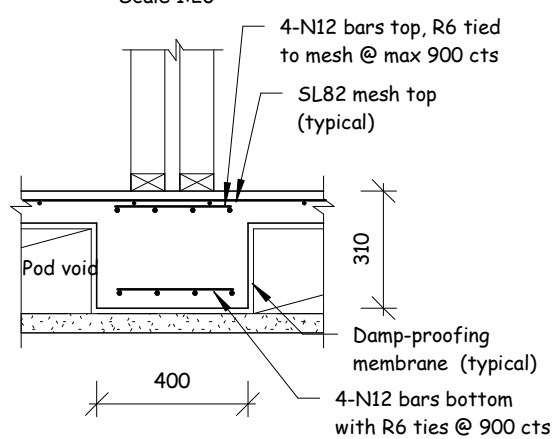
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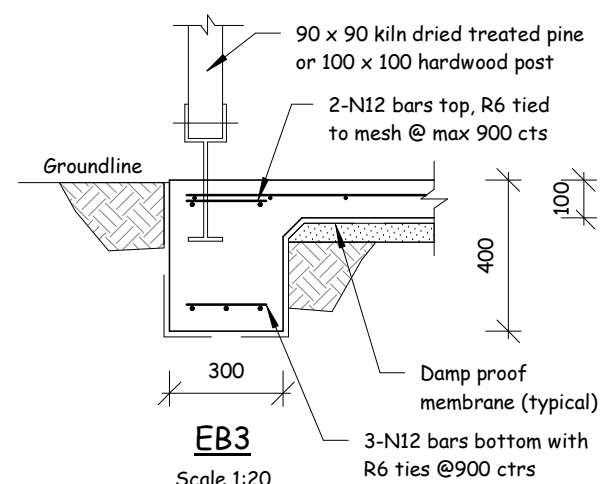
**SDB1**  
Scale 1:20



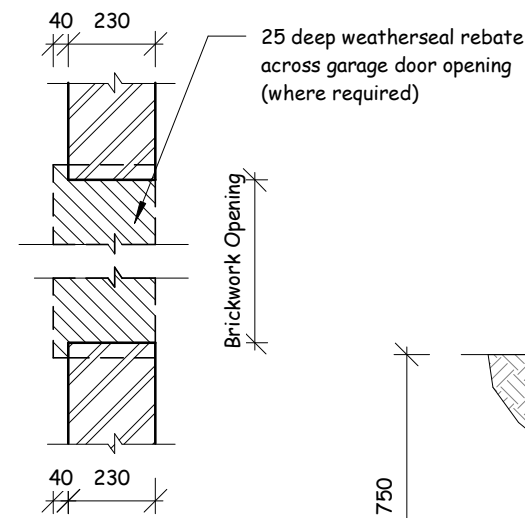
**EB2**  
Scale 1:20



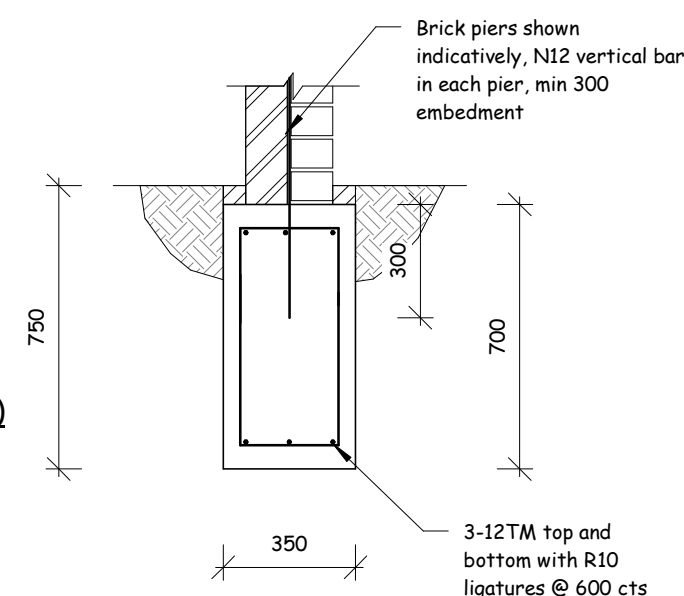
**PW1**  
Scale 1:20



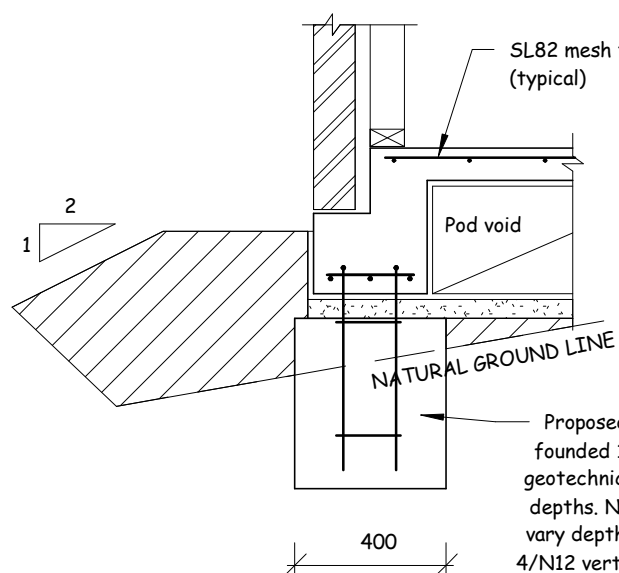
**EB3**  
Scale 1:20



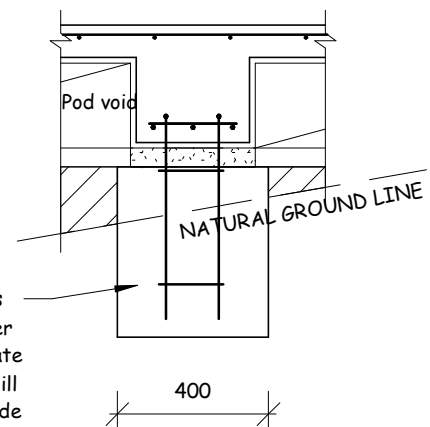
**Weatherseal Rebate Detail (Plan)**  
Scale 1:20



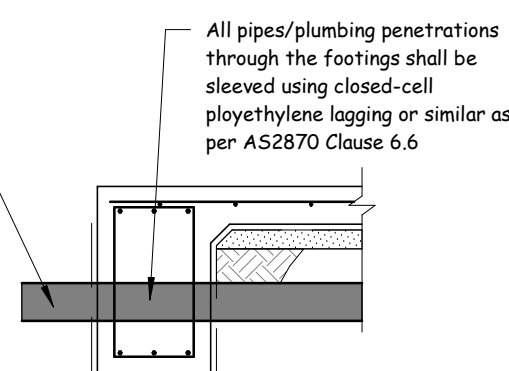
**SF1 Detail**  
Scale 1:20



**Typical Slab Piercing Details**  
Scale 1:20



Provide flexible joints to all plumbing immediately outside the footing, set in the mid position with minimum total movement range of 60mm



**Pipe Penetrations Detail**  
NTS

**General Notes**  
1. Bracing and tie-down details to the engineers details and AS1684.2  
2. All timber and steel to be installed and treated to the manufacturers specifications, especially for any exterior applications  
3. All white ant protection to be strictly within the guidelines of AS3660 and installed by a qualified licenced pest control consultant

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W/ (02) 49542422 M/ 0414 011 483

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Wind Class: N2 (W33N) (Assumed)  
Soil Class: 'M' (Assumed)  
**SURVEY NOTE:**  
Boundary dimensions are assumed only and taken from site information, others or owners information. Confirm boundaries before commencement of construction. Full project specific detailed survey plans have not been supplied to Plan Vision for planning purposes. See schedule of specifications for details.

Revision Schedule	
22.10.18	Council Changes
20.11.18	Council Changes
27.02.19	Council Changes
08.03.19	Final Engineering

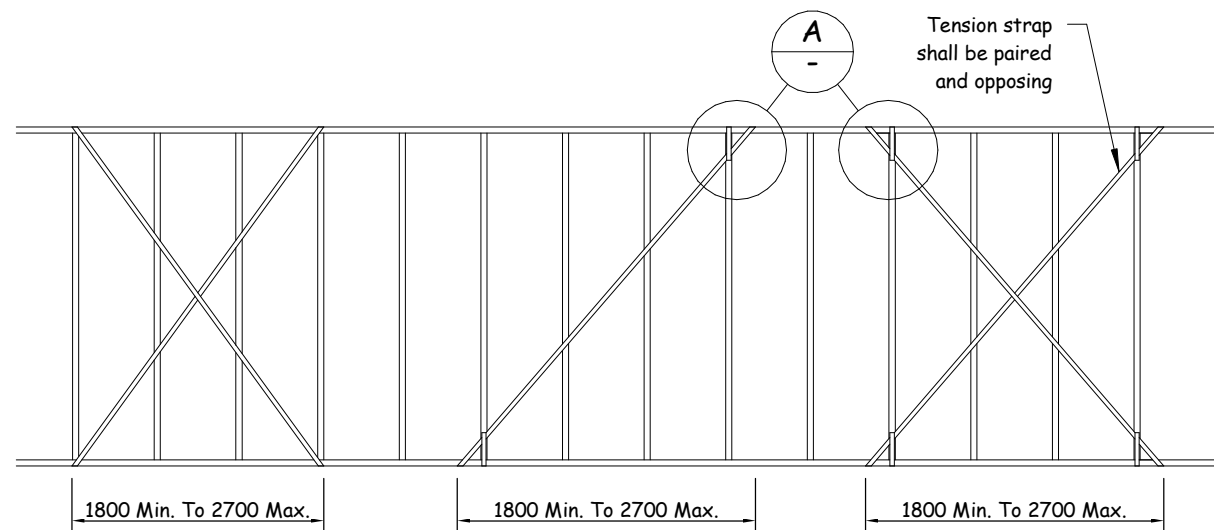
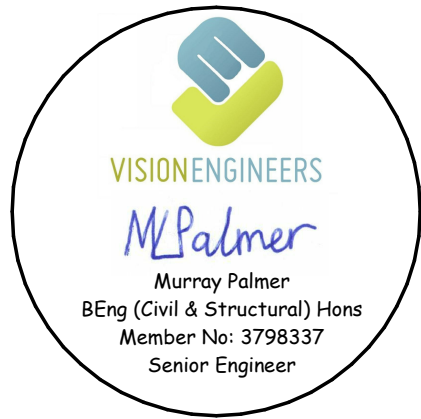
**Unit Development**

**Client:**

**Address:**

**VISIONENGINEERS**  
*MPalmer*  
Murray Palmer  
BEng (Civil & Structural) Hons  
Member No: 3798337  
Senior Engineer

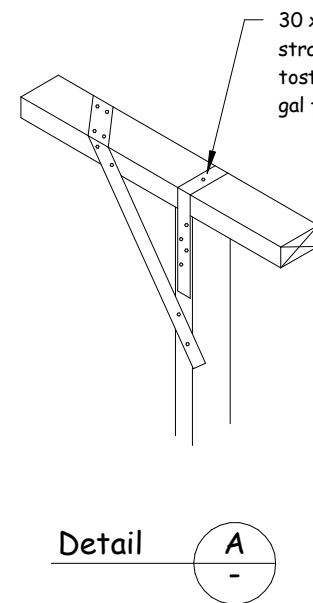
Date Started:	10/07/2018
Drawing No:	917-6187
Sheet:	En14
Scale:	1 : 20 @ A3



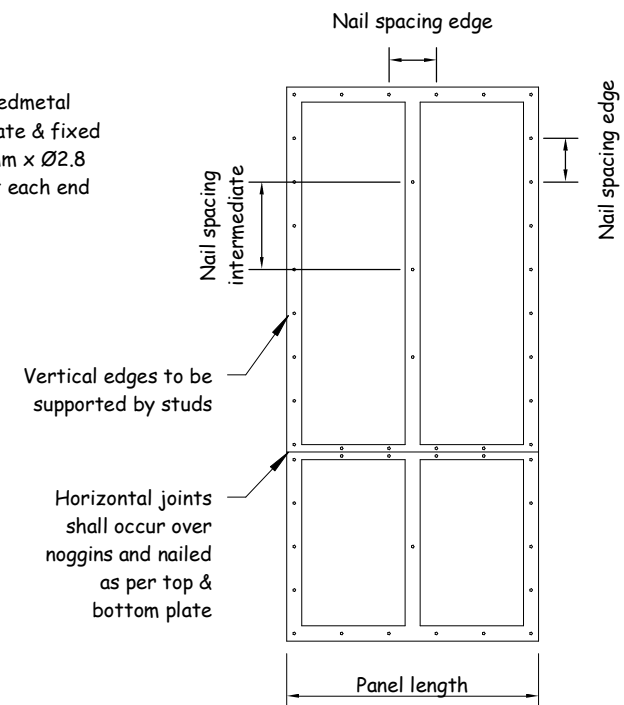
Type A Tension Strap

Type A Metal Angle

Type B Tension Strap



Detail A



Sheet Bracing Details

### Type A - Sheet Bracing (PA) Specifics

Product	Australian Standard	Type / Grade	Minimum Thickness For Stud Spacing (mm)		Panel Length (mm)	Nail Size (mm)	Nail Spacing (mm)		Special Requirements
			450	600			Edge	Intermediate	
Plywood	AS2269	F8	7	9	900	30mm x Ø2.8 Galv.	150	300	No nogging req'd Except at sheet Ends. Nails shall be 7mm from all Edges
		F11	4.5	7					
		F14	4	6					
		F27	3	4.5					
Hardboard (Masonite)	AS2458	G.P.	6.4	6.4	900	30mm x Ø2.8 Galv.	100	300	Nails to be 10mm From vertical Edges & 20mm from Horizontal edges. No nogging req'd Except at sheet Ends.

#### Type A - Sheet Bracing Notes

- Panel lengths greater than those listed above can be considered as a number of bracing units directly proportioned to their installed length I.E. A 1200mm panel of plywood equals 1200 / 900 = 1.33 bracing units.
- Nails should be driven just below the surface of the sheet using the hammer face only. Nails must not be punched
- Plywood panel lengths of 600mm are equivalent to 1/3 of a type a bracing unit.
- For stud spacing of 600mm c/c where noggins are installed and the plywood bracing panels are nailed to the noggins at 1500mm c/c, the plywood thickness may be as for stud spacing at 450mm c/c.
- PA\* indicates full length available.
- Refer to table 1 on the following sheet for top & bottom plate fixing details.

### Type A - Strap Bracing (SA) Specifics

Type Of Diagonal Brace	Material & Size	Nailing Requirements		Special Requirements
		To Each Stud	To Each Plate	
Metal Angle	Galvanised angle, nom. Section 20x18x1.2mm min. Net section 42mm <sup>2</sup>	1x30xØ2.8mm Galv. Flat head nail	2x30xØ2.8mm Galv. Flat head nail	Drill holes if necessary to prevent nail splitting
Tension Strap	Galvanised flat metal tension strapping of min. Thickness 0.8mm & min. Net section of 15.2mm <sup>2</sup>	1x30xØ2.8mm Galv. Flat head nail	3x30xØ2.8mm Galv. Flat head nail	Straps must be properly tensioned

### Type B - Sheet Bracing (PB) Specifics

Product	Australian Standard	Type / Grade	Minimum Thickness For Stud Spacing (mm)		Panel Length (mm)	Nail Size (mm)	Nail Spacing (mm)		Special Requirements
			450	600			Edge	Intermediate	
Plywood	AS2269	F8	7	9	900 / 1200	30mm x Ø2.8 Galv.	50 to plates & 150 to edge studs	300	No nogging req'd except at sheet ends. Nails shall be 7mm from all edges
		F11	6	7					
		F14	4	6					
		F27	4	4.5					
Hardboard (Masonite)	AS2458	G.P.	6.4	6.4	900 / 1200	30mm x Ø2.8 Galv.	50 to plates & 150 to edge studs	300	Nails to be 10mm from vertical edges & 20mm from horizontal edges. No nogging req'd except at sheet ends.

#### Type B - Sheet Bracing Notes

- Panel lengths greater than those listed above can be considered as a number of bracing units directly proportioned to their installed length I.E. A 1200mm panel of plywood equals 1200 / 900 = 1.33 bracing units.
- Nails should be driven just below the surface of the sheet using the hammer face only. Nails must not be punched
- PB\* indicates full length available.
- Refer to table 1 on the following sheet for top & bottom plate fixing details.

### Type B - Strap Bracing (SB) Specifics

Type Of Diagonal Brace	Material & Size	Nailing Requirements		Special Requirements
		To Each Stud	To Each Plate	
Tension Strap	Galvanised flat metal tension strap nom. Size 30x0.8mm & min. Section of 24mm <sup>2</sup>	2/30xØ3.15mm galv. Flat head nail	4/30xØ2.8mm galv. Flat head nail	Straps must be properly tensioned & strap must return over top plate & under the bottom plate. The stud nearest to each end of each diagonal strap shall be fixed to the plates with straps or framing anchors 4x30xØ2.8mm nails at each end.

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Wind Class: N2 (W33N) (Assumed)

Soil Class: 'M' (Assumed)

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#### Revision Schedule

22.10.18	Council Changes
20.11.18	Council Changes
27.02.19	Council Changes
08.03.19	Final Engineering

#### Unit Development

**Client:**

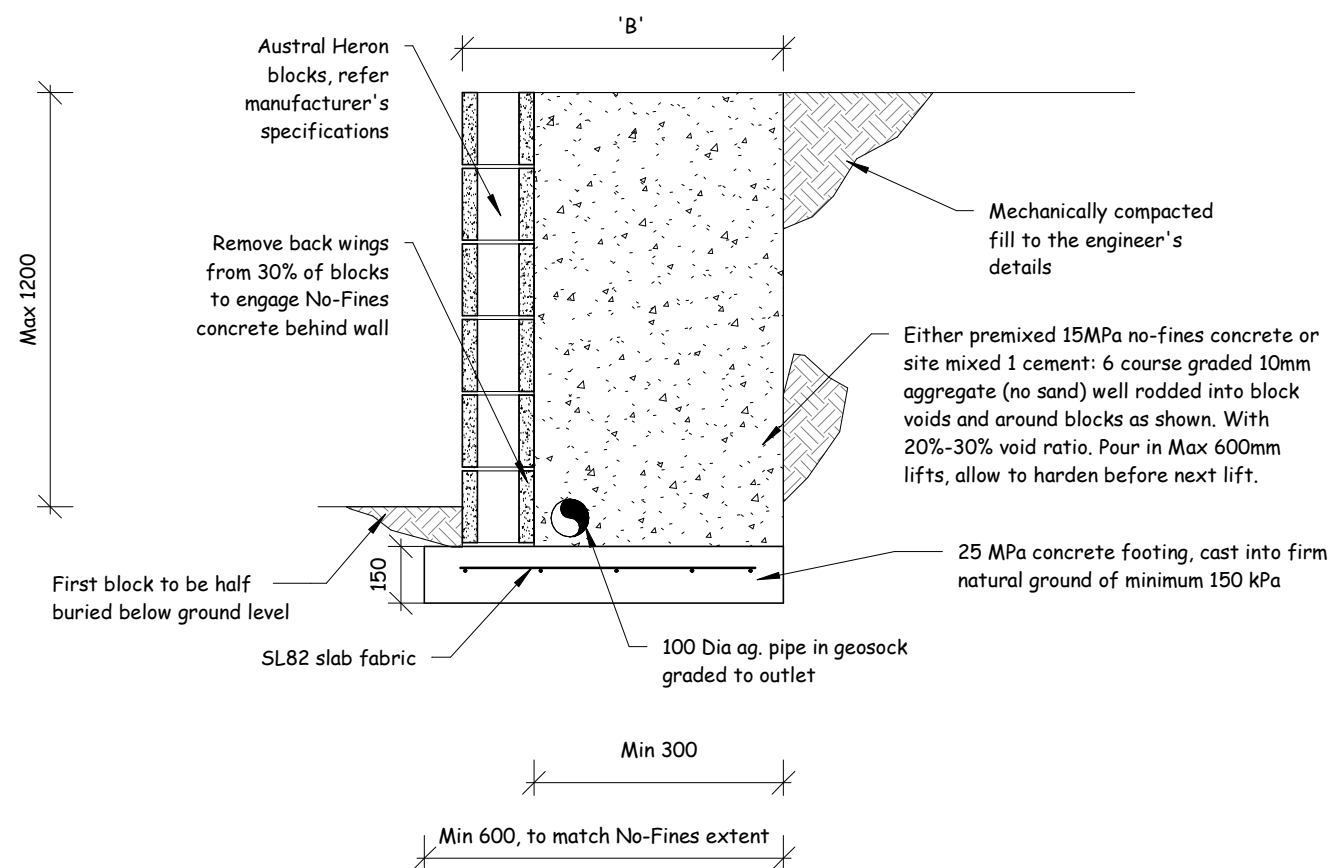
**Address:**

Date Started: 10/07/2018

Drawing No: 917-6187

Sheet: En15

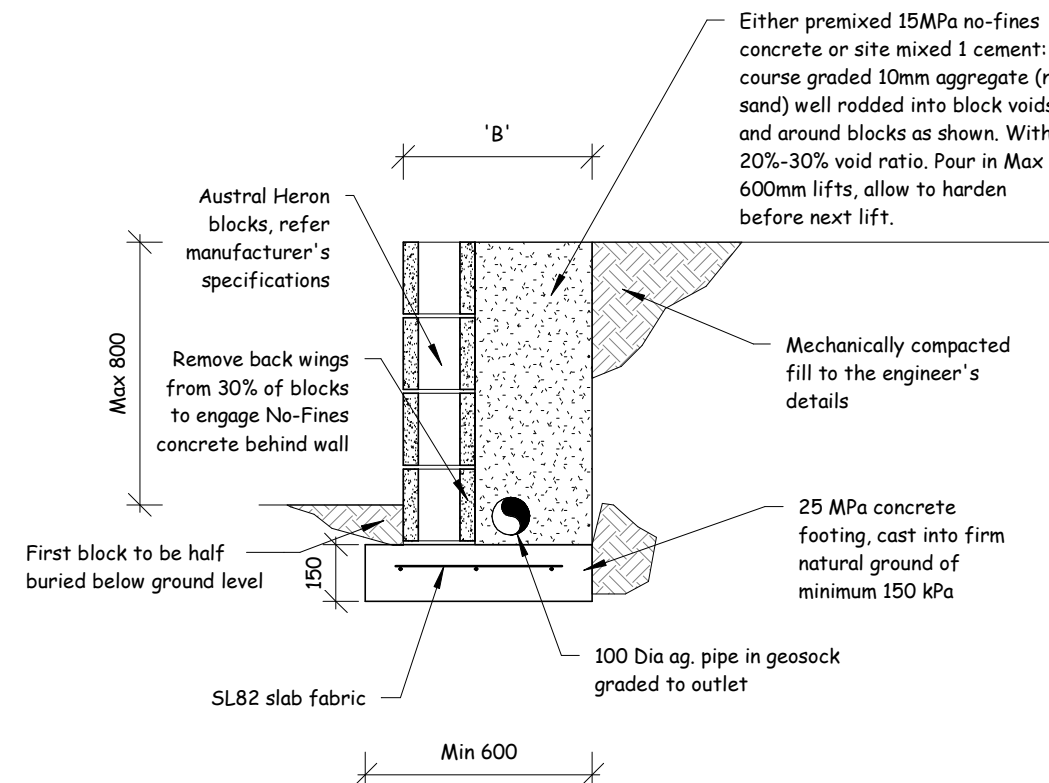
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**Retaining Wall Detail 800-1200mm**

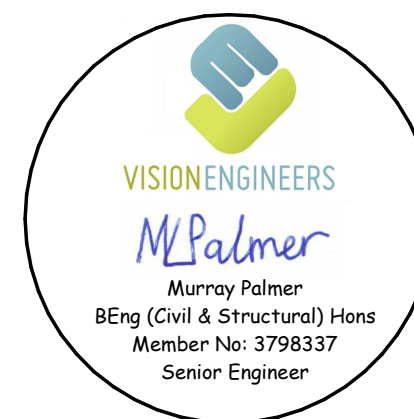
Scale 1:20

RETAINING WALL SCHEDULE FOR MAX. 1200 HIGH	
HEIGHT 'H'	NO FINES 'B'
800	500
1000	650
1200	850



**Retaining Wall Detail < 800mm**

Scale 1:20



**VISIONENGINEERS**

27 Eighth Street, Adamstown  
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08.03.19	Final Engineering

**Unit Development**

**Client:**

**Address:**

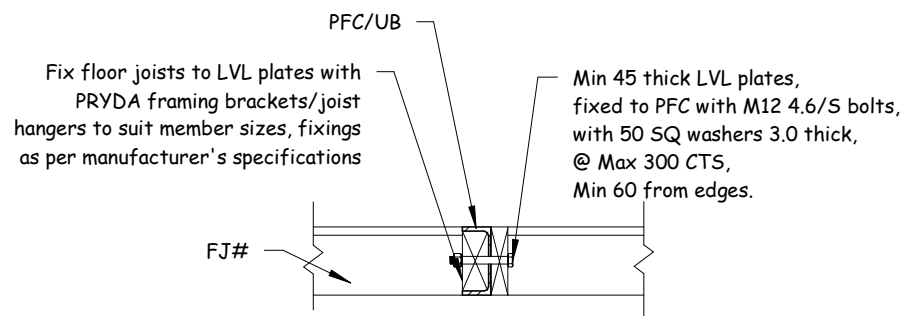
Date Started: 10/07/2018

Drawing No: 917-6187

Sheet: En16

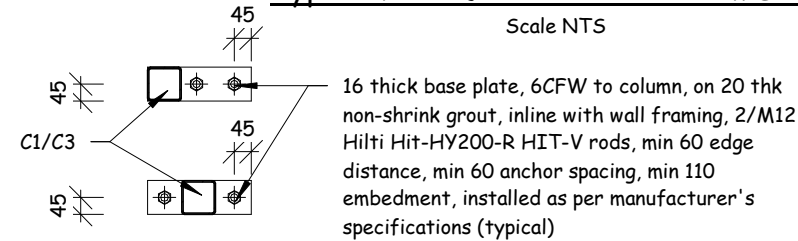
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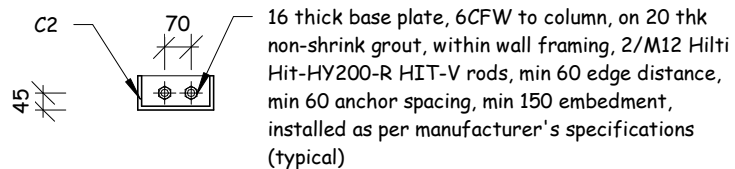
**Typical Floor Joist to Steel Beam Detail**

Scale NTS



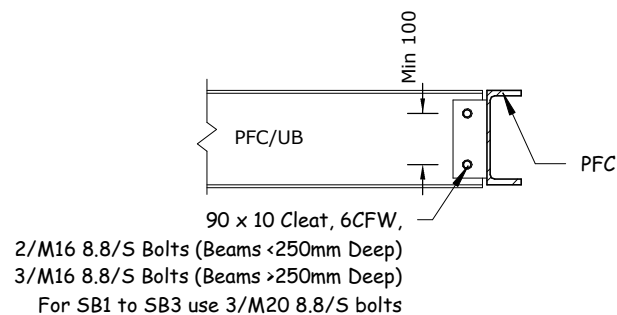
**Typical C1 SHS Base Plate Connection Details**

Scale 1:20



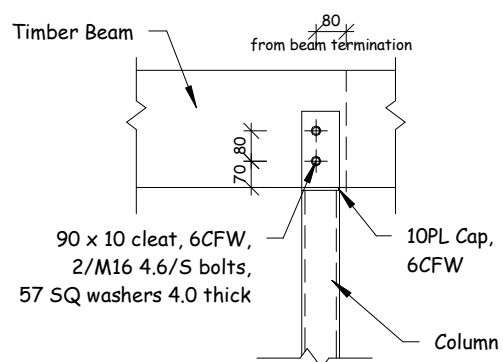
**Typical C2 PFC Base Plate Connection Details**

Scale 1:20



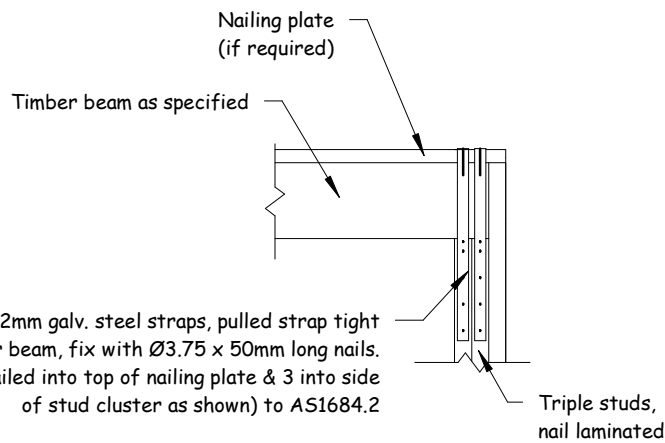
**PFC to PFC/UB CONNECTION DETAIL**

SCALE NTS



**Timber Beam to Column Connection Detail**

Scale NTS

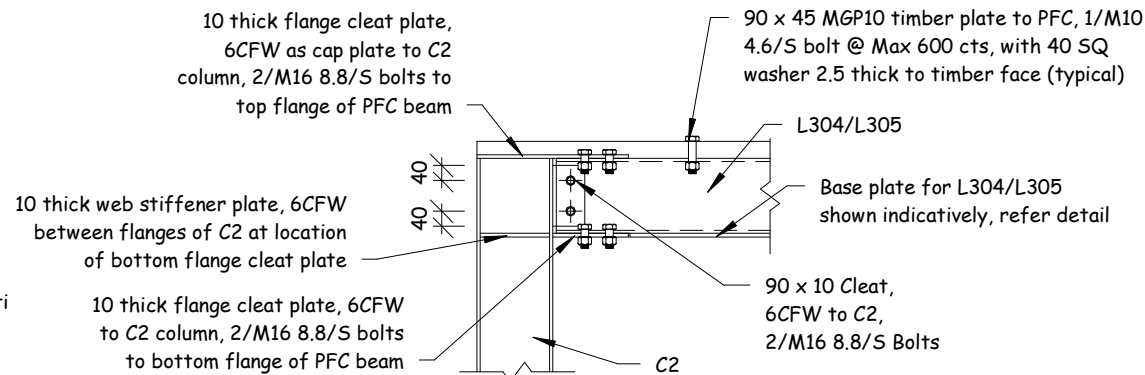


**Typical Cross Section Thru Garage Lintel**

Scale 1:20

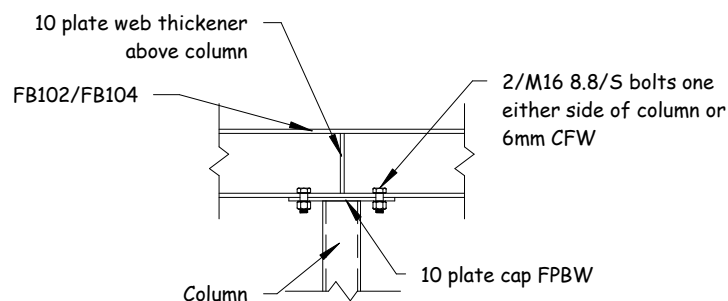
**Typical Timber Beam to Studs Connection Detail**

Scale NTS



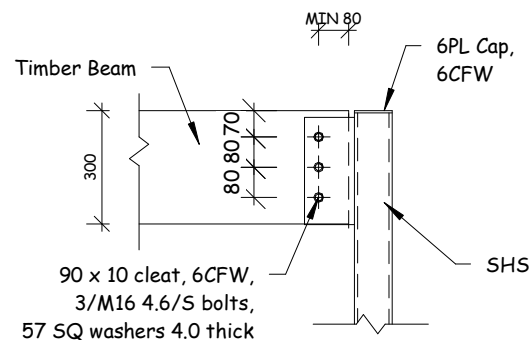
**Typical L304/L305 to C2 Connection Detail**

Scale NTS



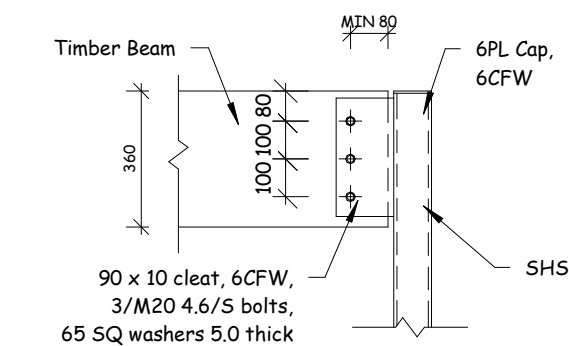
**Typical PFC/UB "Cap" Connection To Column Detail (Continuing Over)**

Scale NTS



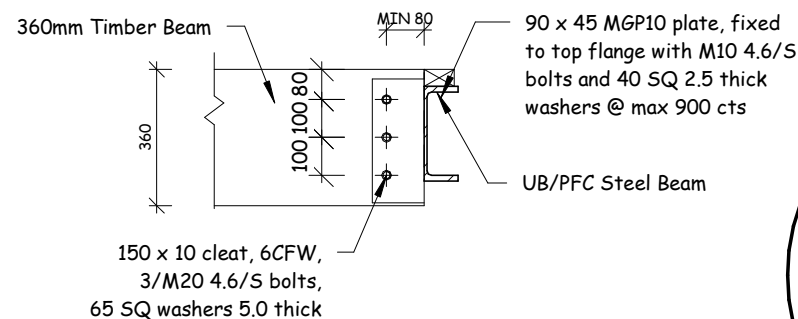
**300mm Timber Beam to Column Connection Detail**

Scale NTS



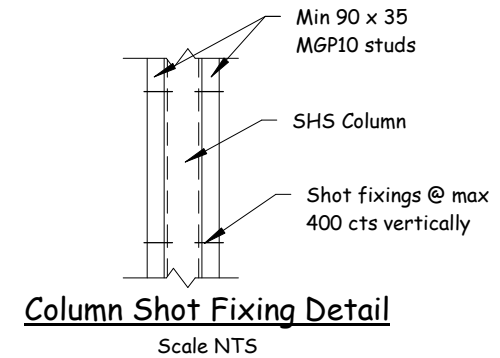
**360mm Timber Beam to Column Connection Detail**

Scale NTS



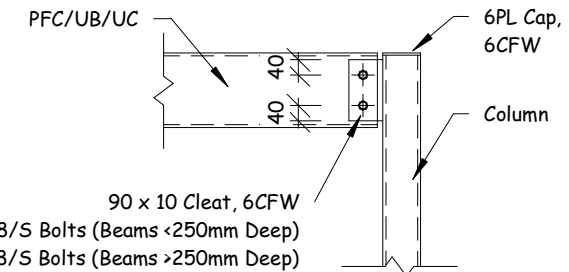
**Timber Beam to PFC Connection Detail 2**

Scale NTS



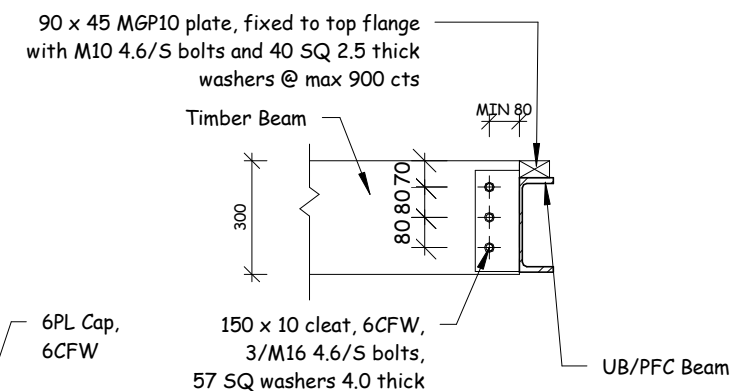
**Column Shot Fixing Detail**

Scale NTS



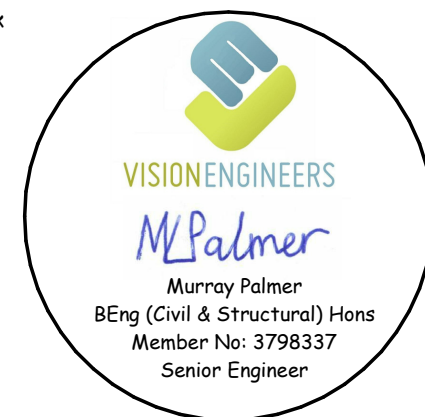
**Typical PFC/UB "Cleat" Connection To SHS Detail**

Scale NTS



**Timber Beam to PFC Connection Detail 1**

**NOTE:** Scale NTS. Timber beam to timber beam connections adopt the relevant "Timber Beam to PFC Connection Detail 1 or 2" to suit the beam sizes and instead of a steel plate welded to the steel beam, use a Min 150 x 150 x 10 EA and connect the two timber beam together.



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Wind Class: N2 (W33N) (Assumed)

Soil Class: 'M' (Assumed)

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Revision Schedule	
22.10.18	Council Changes
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27.02.19	Council Changes
08.03.19	Final Engineering

## Unit Development

**Client:**

**Address:**

Date Started: 10/07/2018

Drawing No: 917-6187

Sheet: En17

Scale: 1 : 20 @ A3



BUILDERS NOTE :

SURVEY NOTE

### Revision Schedule

## Unit Development

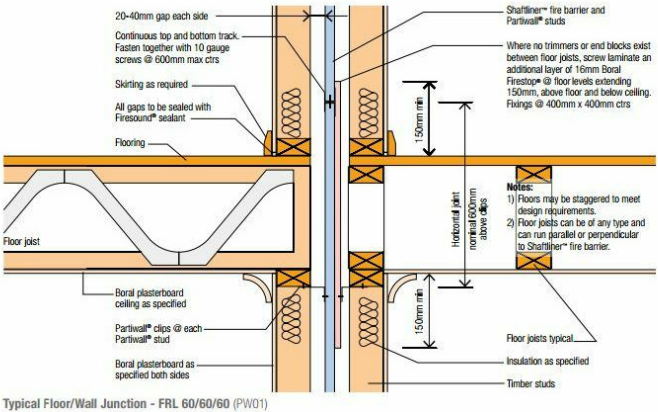
**Address:**

Date Started: 10/07/2018

Drawing No: 917-6187

Sheet: En18

Scale: 1 : 20 @ A3



(or similar by other manufacturers to relevant standards)

NTS

1 : 20



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**Revision Schedule**

22.10.18	Council Changes
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**Unit Development**

**Client:**

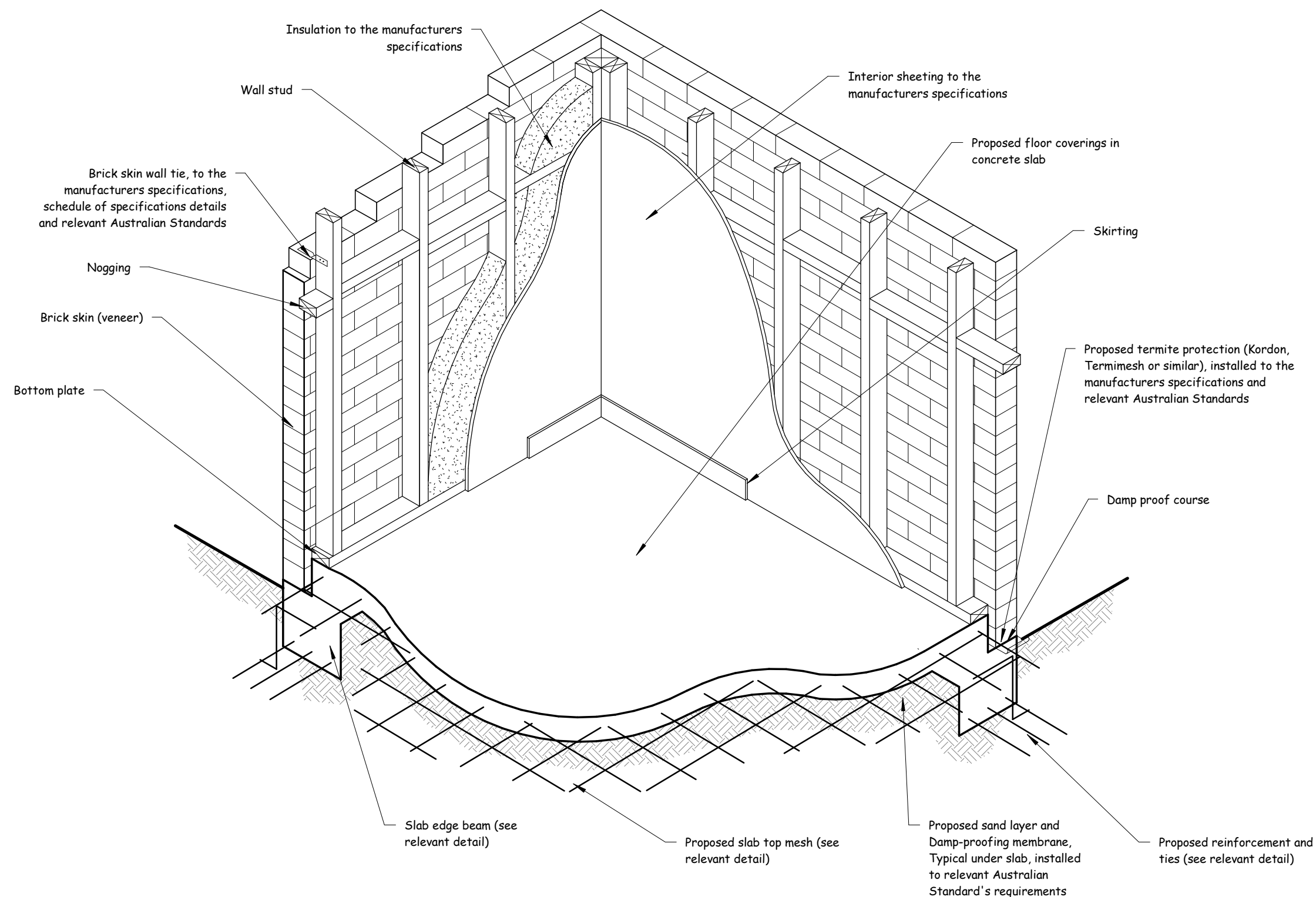
**Address:**

Date Started: 10/07/2018

Drawing No: 917-6187

Sheet: En19

Scale: 1 : 20 @ A3



**Typical 3D Construction Detail - Brick Veneer - Slab**

Scale 1:20

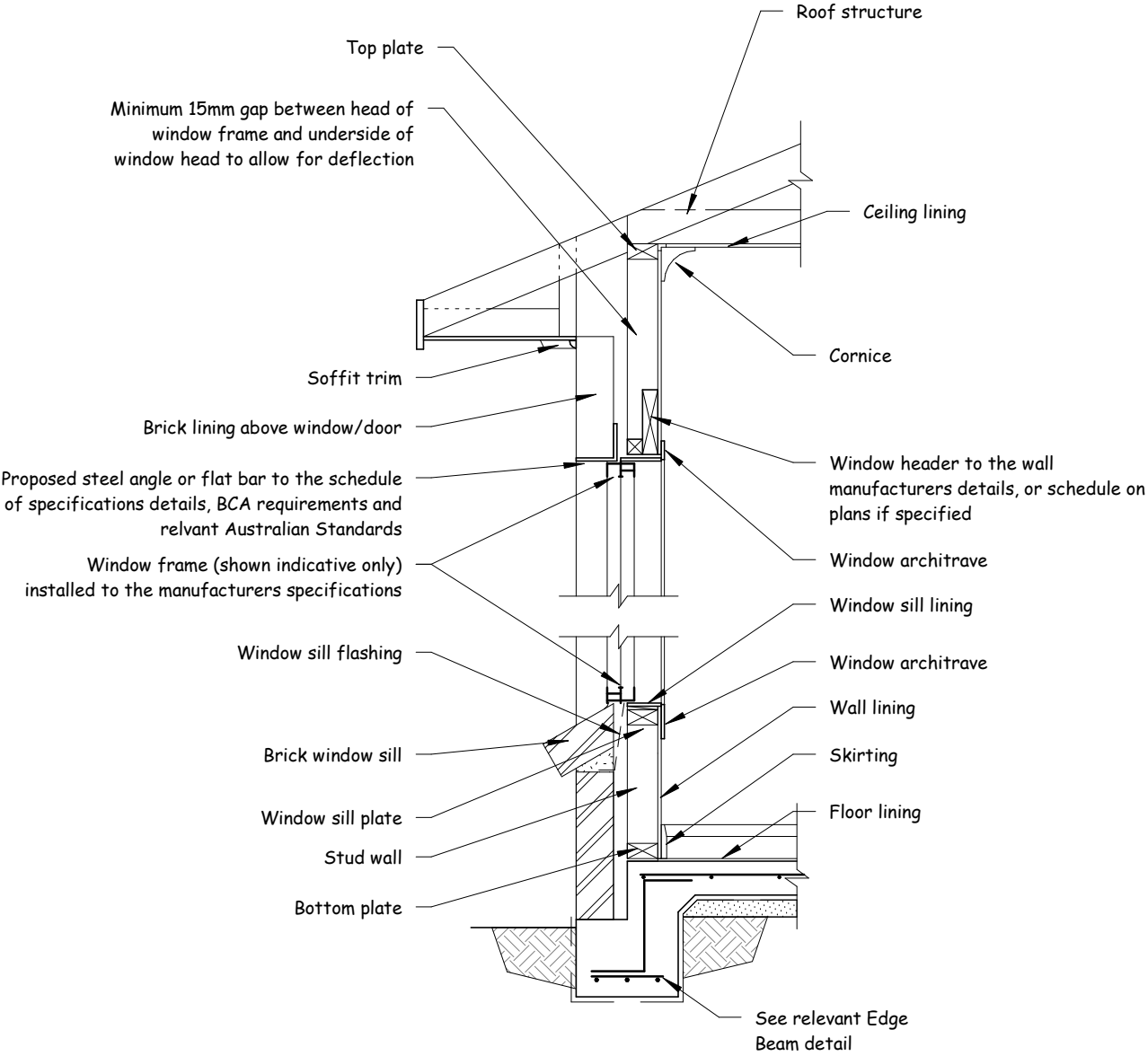




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Soil Class: 'M' (Assumed)  
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Confirm boundaries before commencement of construction.  
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See schedule of specifications for details.



Typical Wall Section - Brick Veneer - Slab

Scale 1:20

Revision Schedule	
22.10.18	Council Changes
20.11.18	Council Changes
27.02.19	Council Changes
08.03.19	Final Engineering

Unit Development

Client:

Address:

Date Started:	10/07/2018
Drawing No:	917-6187
Sheet:	En20
Scale:	1 : 20 @ A3



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08.03.19	Final Engineering

**Unit Development**

**Client:**

**Address:**

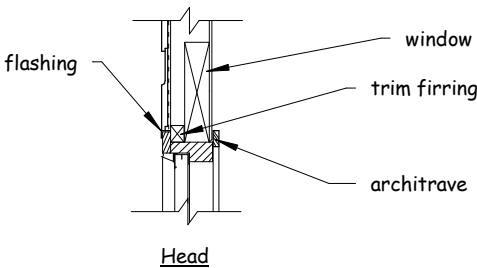
Date Started: 10/07/2018

Drawing No: 917-6187

Sheet: En21

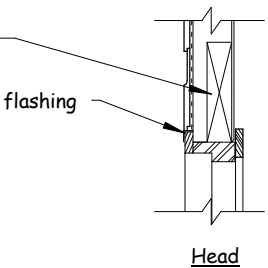
Scale: 1 : 20 @ A3

ALUMINIUM WINDOW

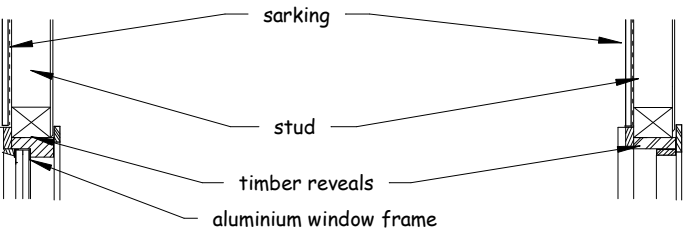


Head

TIMBER WINDOW

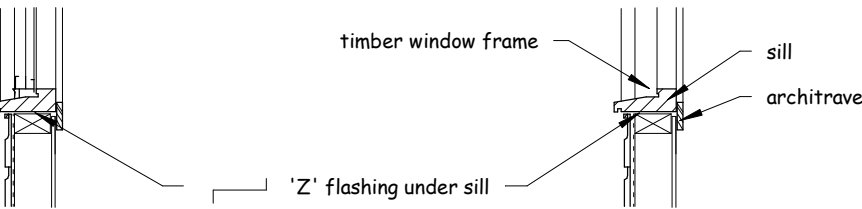


Head



Jamb

Jamb



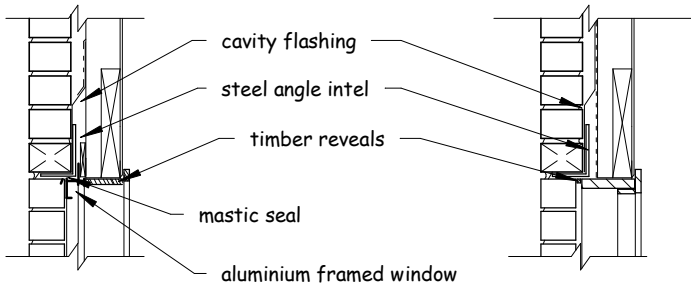
Sill

Sill

Typical Wall/Window Relationship Details - Weatherboard

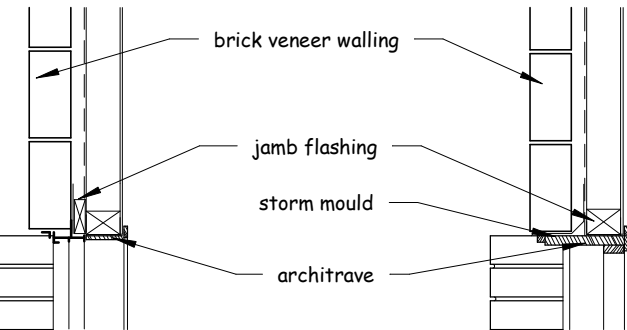
Scale 1:20

ALUMINIUM WINDOWS



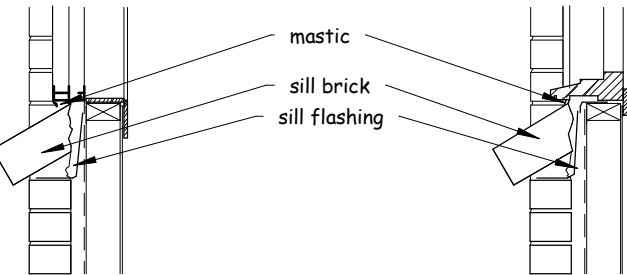
Head

Head



Jamb

Jamb



Sill

Sill

Typical Wall/Window Relationship Details - Brick Veneer

Scale 1:20