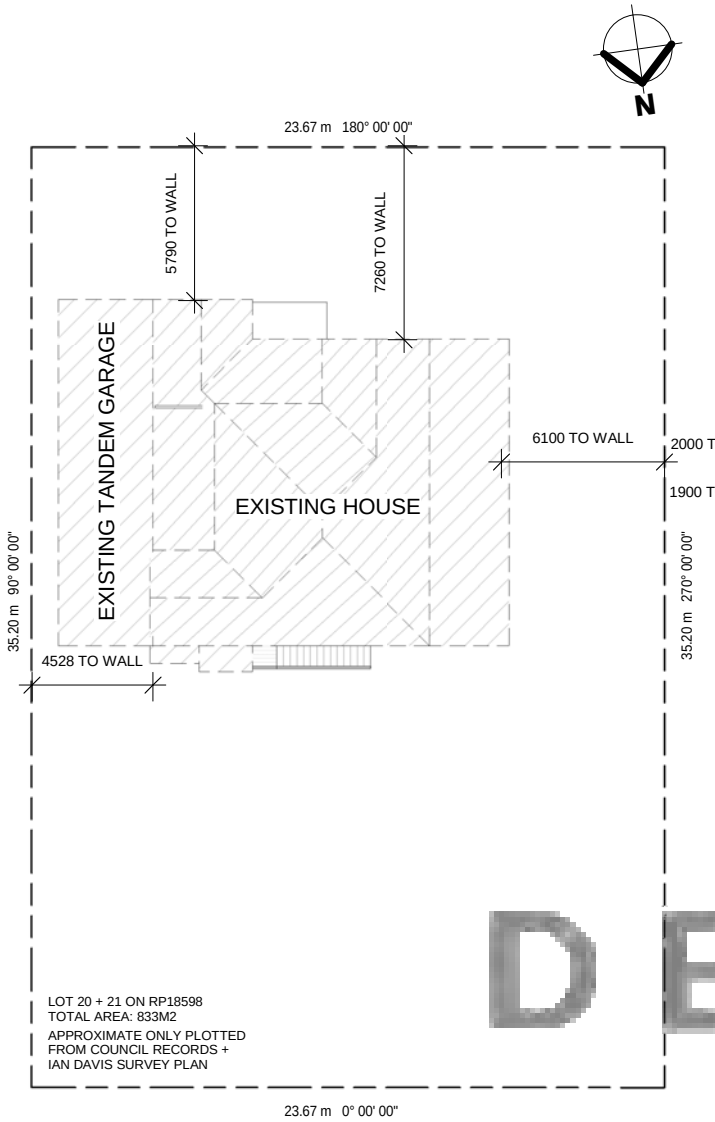
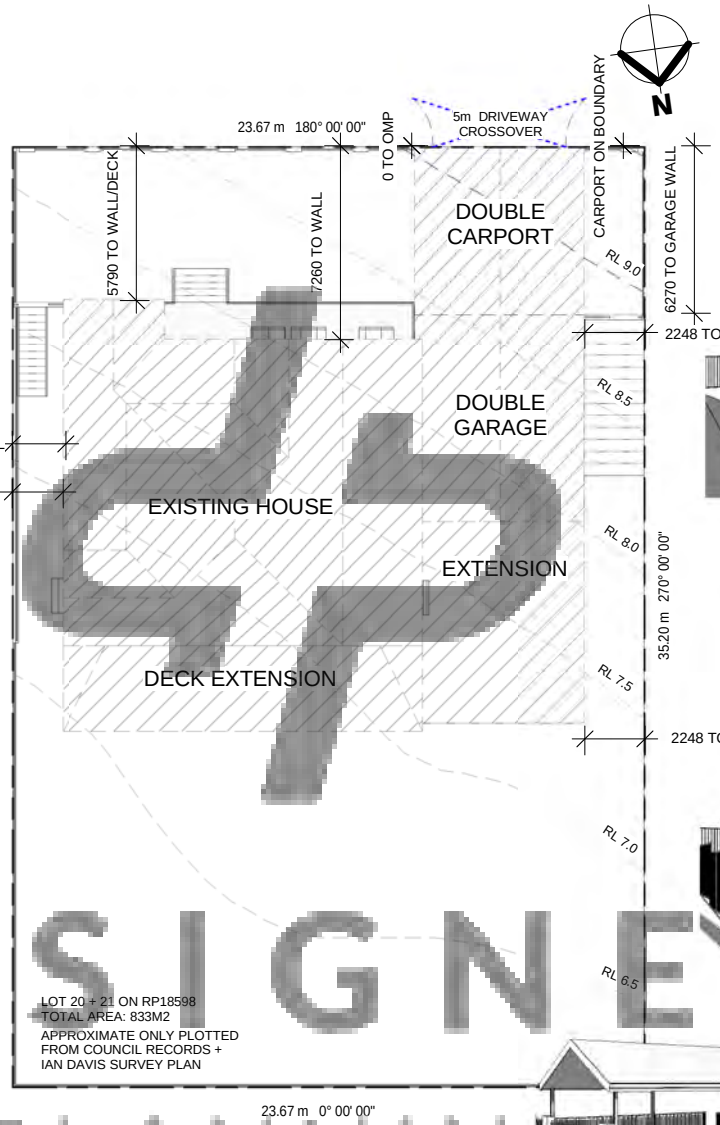
NOTES: GENERAL

1. BUILDING SETBACKS SHOWN ARE TO BE CONFIRMED ON SITE BY SURVEYOR PRIOR TO BUILDING APPROVAL/CONSTRUCTION
2. CONTOURS AND LEVELS SHOWN ARE APPROXIMATE ONLY, PLOTTED FROM COUNCIL RECORDS AND MAY VARY ON SITE



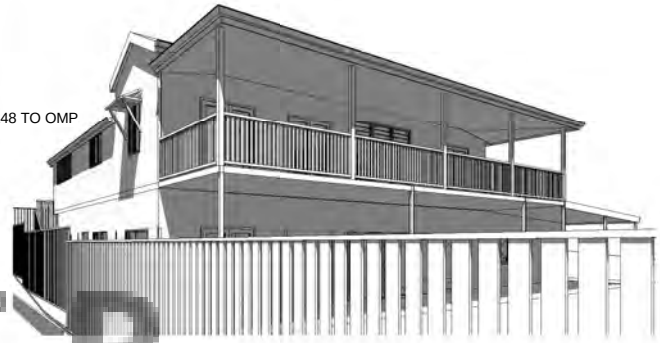
1 EXISTING SITE PLAN

1 : 200



2 PROPOSED SITE PLAN

1 : 200



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27/06/2018 8:46:03 AM

COMPLIANCE NOTES:

1. Stairs are to comply with BCA V2 Part 3.9.1
2. Handrails/Balustrades to comply with BCA V2 Part 3.9.2
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4. All wet areas to comply with BCA V2 Part 3.8.1
5. Lighting to comply with BCA V2 Part 3.8.4
6. Ventilation to comply with BCA V2 Part 3.8.5
7. Termite protection to comply with BCA V2 Part 3.1.3
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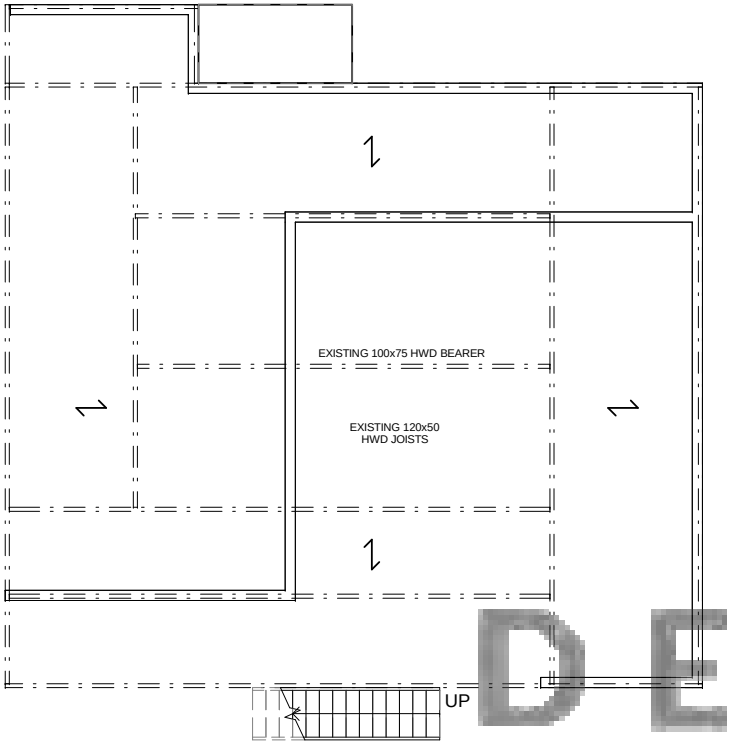
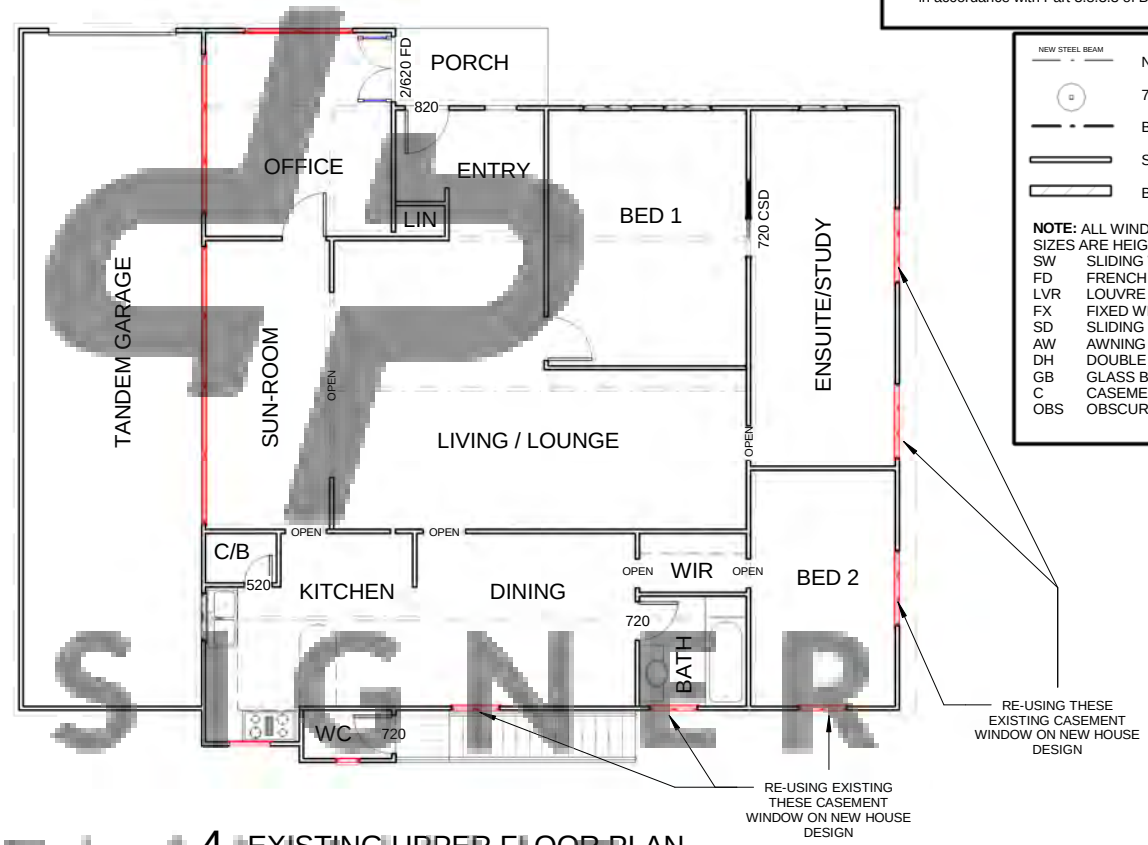


3 EXISTING SUB-FLOOR PLAN

1 : 100



4 EXISTING UPPER FLOOR PLAN

1 : 100

NEW STEEL BEAM — NEW STEEL PFC BEAM

75x75 SHS POST

BEARER AS PER FRAMING PLAN

STUD WALL

BLOCKWORK WALL

NOTE: ALL WINDOW AND SLIDING DOOR SIZES ARE HEIGHT x WIDTH

SW	SLIDING WINDOW
FD	FRENCH DOOR
LVR	LOUVRE WINDOW
FX	FIXED WINDOW
SD	SLIDING DOOR
AW	AWNING WINDOW
DH	DOUBLE HUNG
GB	GLASS BRICKS
C	CASEMENT
OBS	OBSCURE GLASS

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NOT FOR CONSTRUCTION

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COMPLIANCE NOTES:

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NEW STEEL BEAM — NEW STEEL PFC BEAM

75x75 SHS POST

BEARER AS PER FRAMING PLAN

STUD WALL

BLOCKWORK WALL

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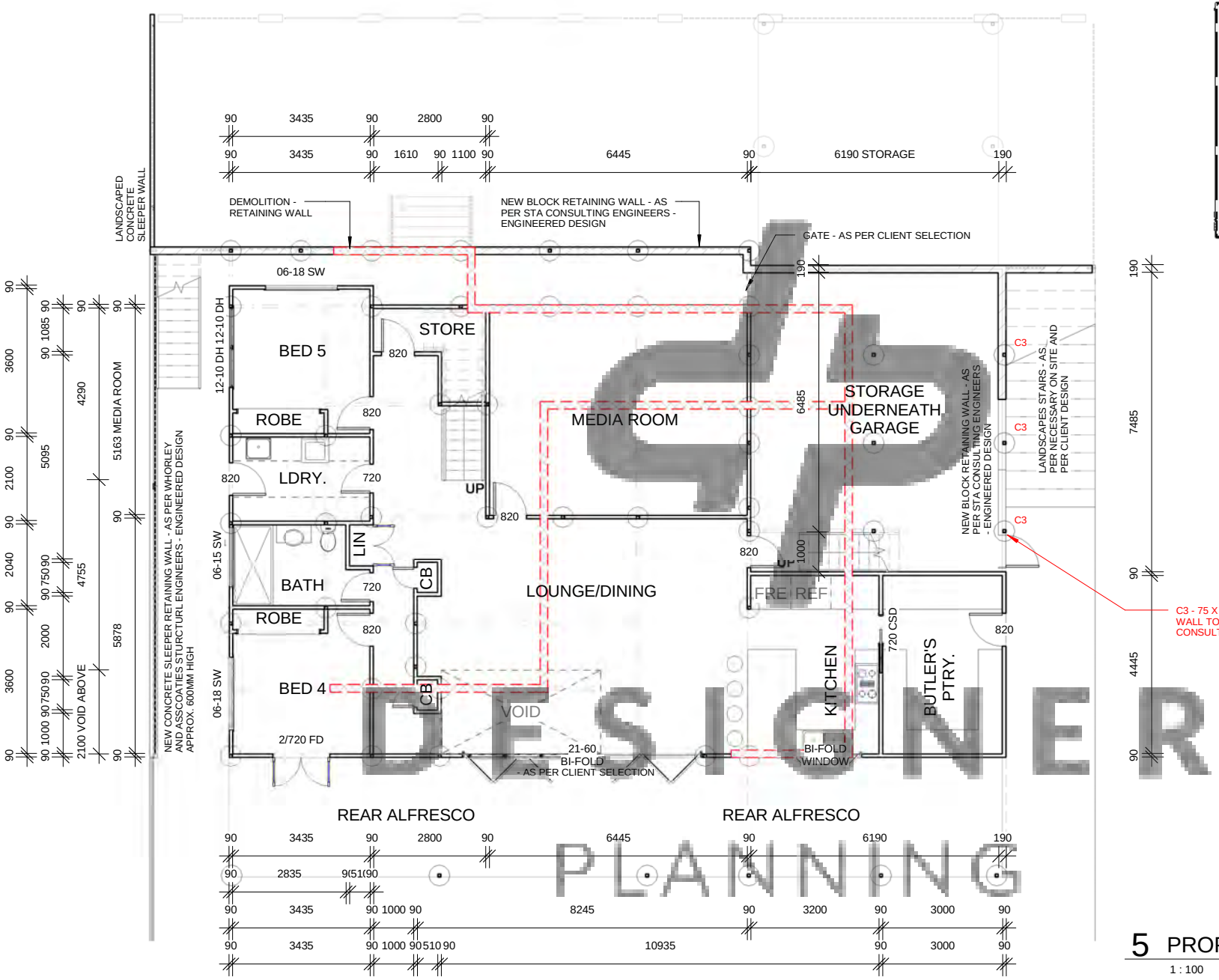
DH	DOUBLE HUNG
GB	GLASS BRICKS
C	CASEMENT
OBS	OBSCURE GLASS



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5 PROPOSED LOWER FLOOR PLAN

1 : 100

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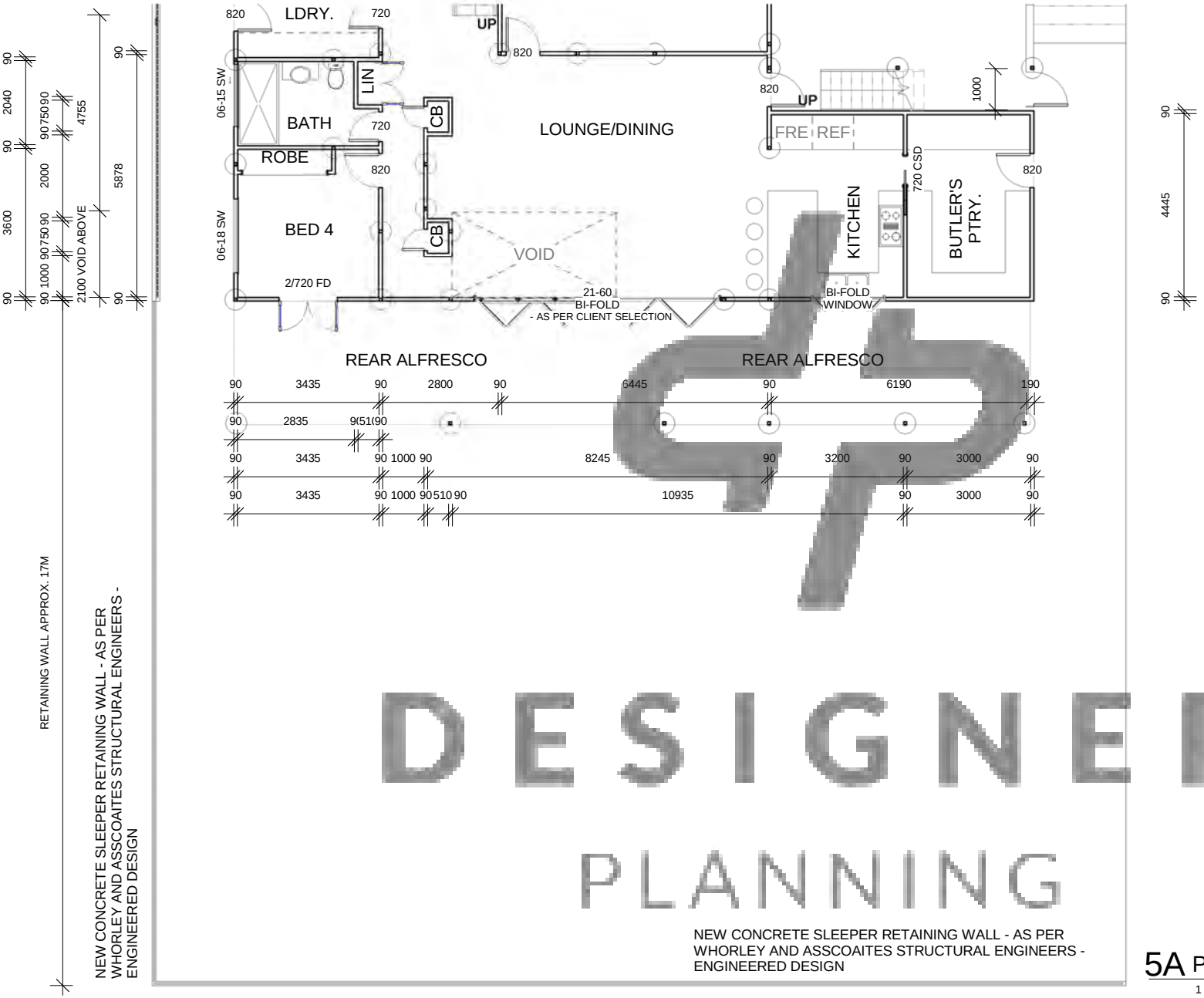

COMPLIANCE NOTES:

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NEW STEEL BEAM — NEW STEEL PFC BEAM

75x75 SHS POST

BEARER AS PER FRAMING PLAN

STUD WALL

BLOCKWORK WALL

NOTE: ALL WINDOW AND SLIDING DOOR SIZES ARE HEIGHT x WIDTH

SW	SLIDING WINDOW
FD	FRENCH DOOR
LVR	LOUVRE WINDOW
FX	FIXED WINDOW
SD	SLIDING DOOR
AW	AWNING WINDOW
DH	DOUBLE HUNG
GB	GLASS BRICKS
C	CASEMENT
OBS	OBSCURE GLASS

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NEW CONCRETE SLEEPER RETAINING WALL - AS PER WHORLEY AND ASSCOAITES STRUCTURAL ENGINEERS - ENGINEERED DESIGN

5A PROPOSED LOWER FLOOR PLAN REAR

1 : 100

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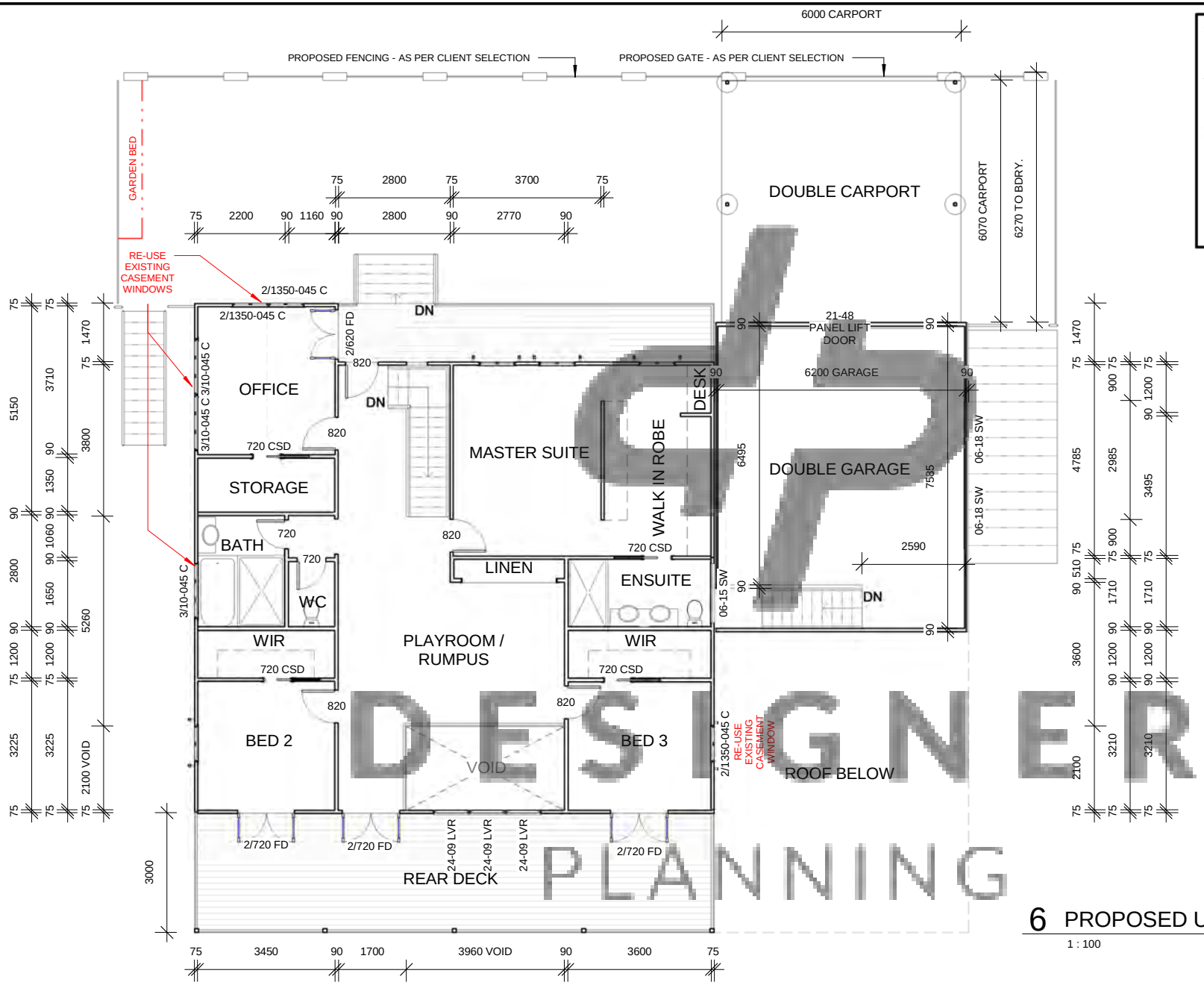

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NEW STEEL BEAM — NEW STEEL PFC BEAM
75x75 SHS POST
BEARER AS PER FRAMING PLAN
STUD WALL
BLOCKWORK WALL

NOTE: ALL WINDOW AND SLIDING DOOR SIZES ARE HEIGHT x WIDTH

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DH	DOUBLE HUNG
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C	CASEMENT
OBS	OBSCURE GLASS

6 PROPOSED UPPER FLOOR PLAN

1 : 100

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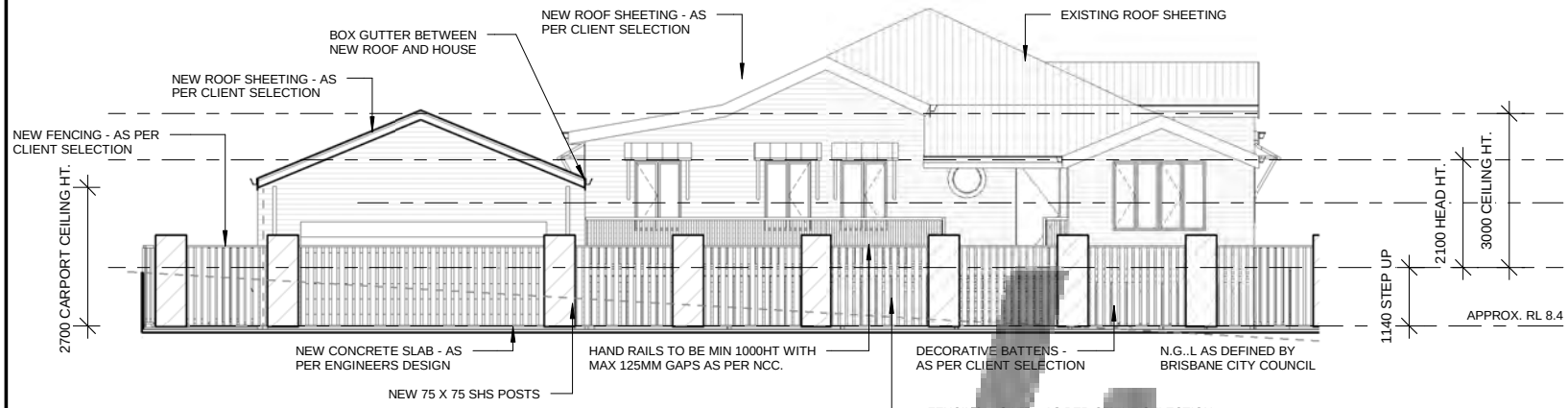

7 FRONT ELEVATION

1 : 100

COMPLIANCE NOTES:

1. Stairs are to comply with BCA V2 Part 3.9.1
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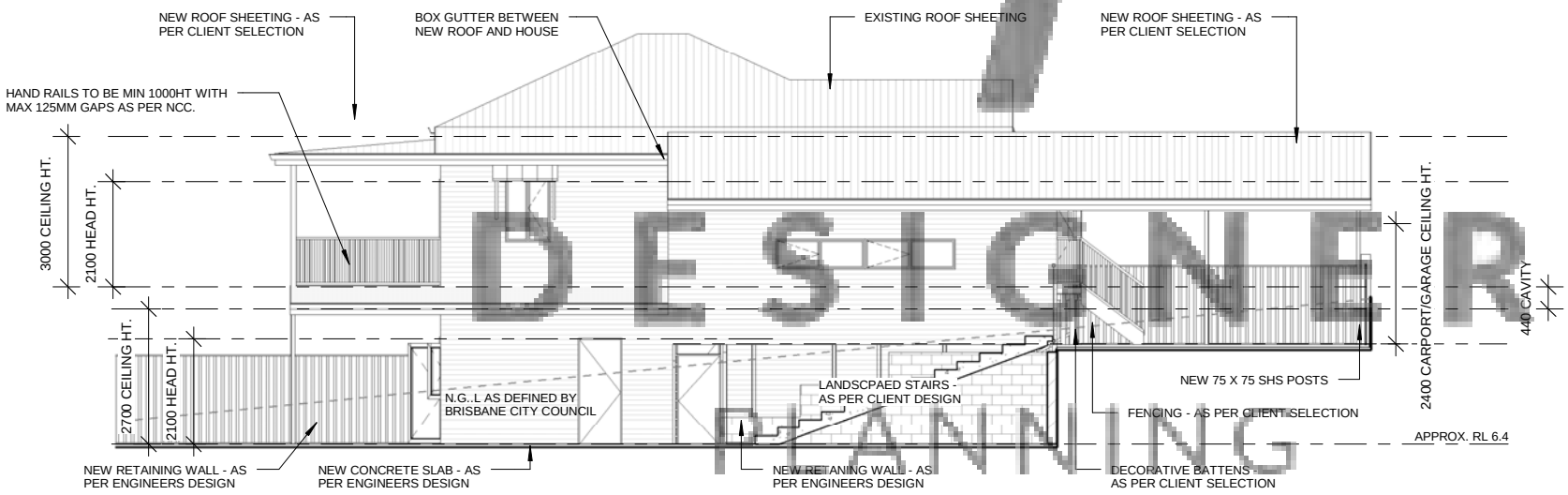

8 LEFT ELEVATION

1 : 100

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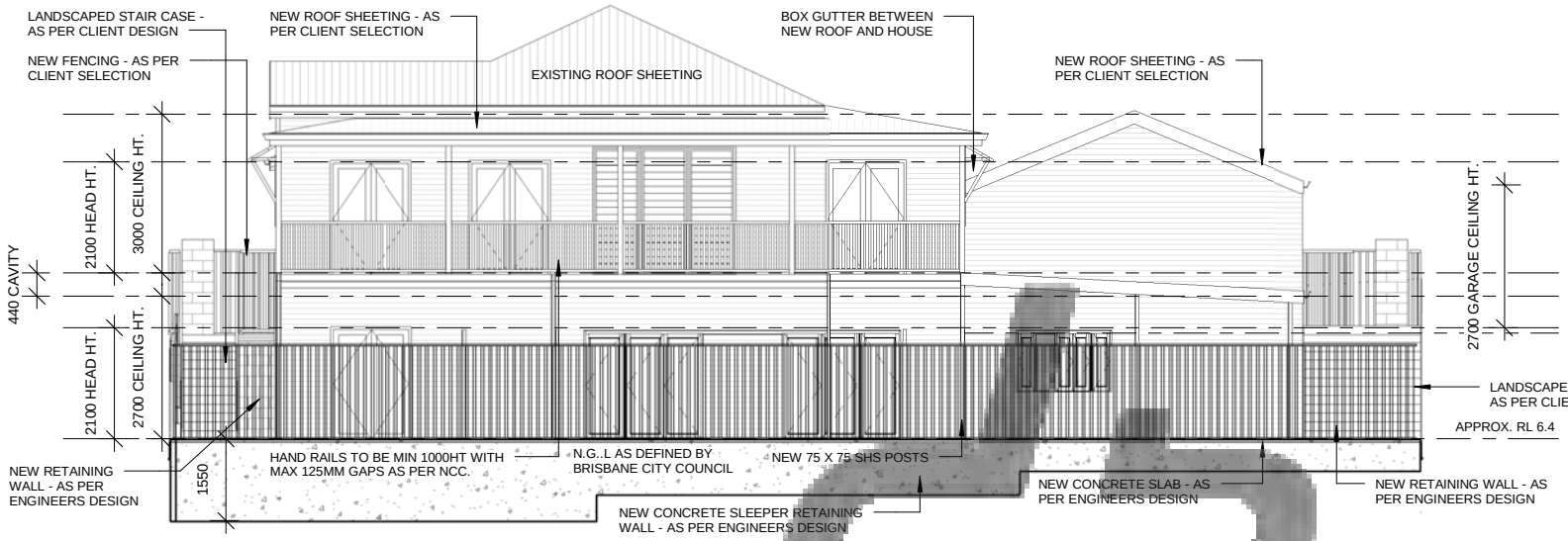

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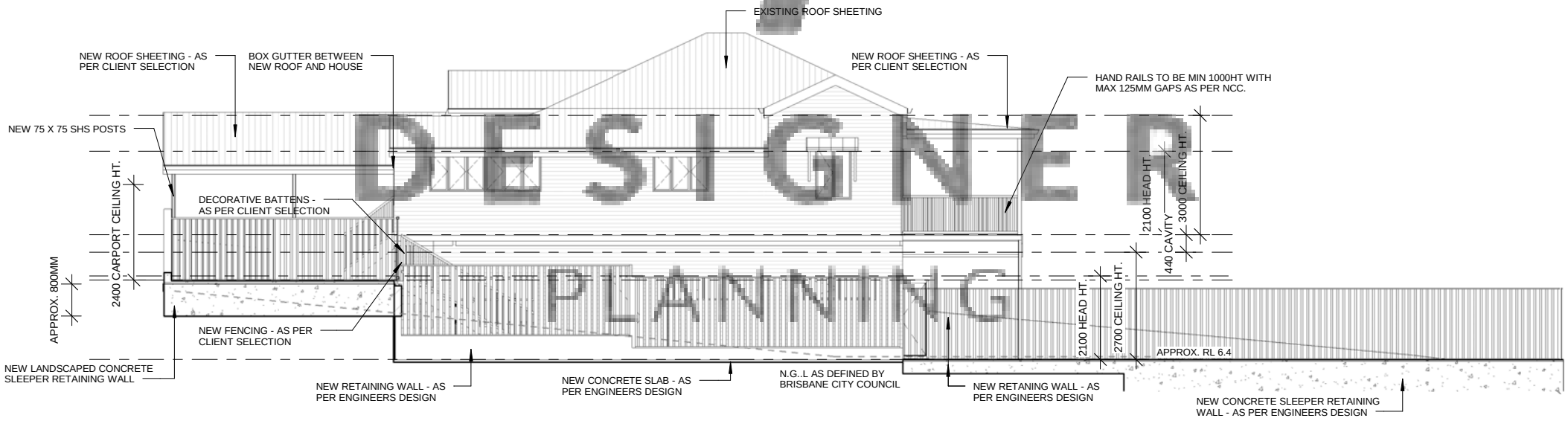
9 REAR ELEVATION

1 : 100

10 RIGHT ELEVATION

1 : 100



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FRAMING NOTES - ALTERNATIVES -
B4 - 200x50 F14 HWD BEARER CONT. SPAN
J4 - 100x50 F14 HWD JOISTS @ 450 CTRS. SINGLE SPAN
PP4 - 100x50 F14 HWD POLE PLATE

B4 - 200x42 SMART LVL15 LOSP H3 BEARERS CONT. SPAN
J4 - 130x42 SMART LVL15 LOSP H3 JOISTS @ 450 CTRS. SINGLE SPAN
PP4 - 130x42 SMART LVL15 LOSP H3 POLE PLATE

J2 - 200x50 F14 HWD JOISTS @ 450 CTRS. SINGLE SPAN
PP2 - 200x50 F14 HWD POLE PLATE

J2 - 200x42 SMART LVL15 LOSP H3 JOISTS @ 450 CTRS. SINGLE SPAN
PP2 - 200x42 SMART LVL15 LOSP H3 POLE PLATE

DIRECTION A
REQUIRED - 62.8 KN
PROVIDED. - 99.0 KN

DIRECTION B
REQUIRED - 72.9 KN
PROVIDED - 99.0 KN

BRACING : WIND SPEED: N2

- PLY. 1200 OR 900 SHEETS AS APPLICABLE. MAY BE SUBSTITUTED FOR M4 OR HARDIEBRACE_TYPE B, NAILED @ 150 CTRS & 50 CTRS TOP & BOTTOM WITH M12 TIEDOWN RODS EACH END, TO MANUFACTURER'S SPECIFICATIONS TO ACHIEVE MIN. 6kN/m

- PLY. 600 LONG BRACING LENGTHS TO BE CLOSE NAILED TO MANUFACTURER'S SPECIFICATIONS, WITH M12 RODS EACH END, TO ACHIEVE 6.4kN/m. DOES NOT REQUIRE M12 COACH SCREWS, AS PER 'PLY ASSOCIATION OF AUSTRALIA - STRUCTURAL PLYWOOD WALL BRACING',(TABLE 9, NOTE 3).

- WHERE REQUIRED BRACING EFFECTS CLADDING SMOOTHNESS AGAINST WALL, THE BUILDER IS TO PROVIDE ADDITIONAL PACKERS TO CLADDING TO ENSURE A SMOOTH FINISH

COMPLIANCE NOTES:
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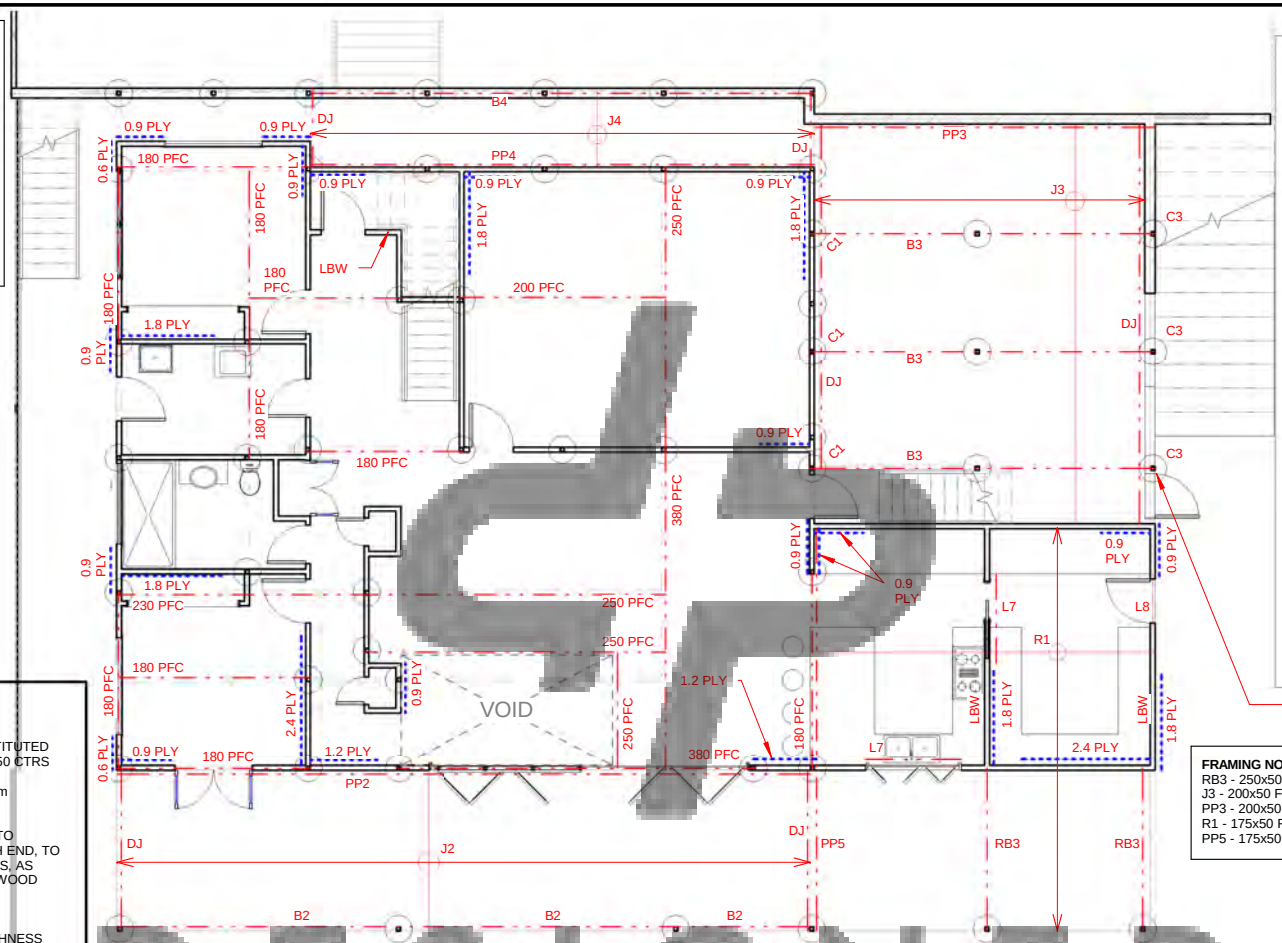

11 PROPOSED LOWER FLOOR FRAMING

1 : 100

FRAMING SPECIFICATIONS

UPPER FLOOR FRAMING:-

STUDS - 3000 HT. (TO MATCH EXISTING)
- 70x35 MGP12 450 CRS. (LOADBEARING WALLS)
- 70x35 MGP12 @ 450 CRS. (NON-LOADBEARING WALLS)

TOP PLATES - 2/70x45 MGP12 (LOADBEARING WALLS)
- 70x35 MGP12 (NON-LOADBEARING WALLS)

BOTTOM PLATES -70x35 MGP12 (LOADBEARING WALLS)
- 70x35 MGP12 (NON-LOADBEARING WALLS)

LOWER FLOOR FRAMING:-

STUDS - 2700 HT.
- 90x35 MGP12 @ 450 CRS. (LOADBEARING WALLS)
- 90x35 MGP12 @ 450 CRS. (NON-LOADBEARING WALLS)

TOP PLATES - 2/90x35 MGP12 (LOADBEARING WALLS)
- 90x35 MGP12 (NON-LOADBEARING WALLS)

BOTTOM PLATES - 90x35 MGP12 (LOADBEARING WALLS)
- 90x35 MGP12 (NON-LOADBEARING WALLS)

- M12 BOLTS FOR TIEDOWN @ 1350 CRS. JAMBS & CORNERS TOP PLATE TO FLOOR FRAME OR G.I. STRAP TOP AND BOTTOM PLATES & M12 BOLT BOTTOM PLATE TO FLOOR FRAME @ 1350 CRS.

- SELECT 10mm PLASTERBOARD CEILING ON METAL BATTENS @ 450 CRS.

- SELECT 10mm PLASTERBOARD TO WALLS.

- ALL FOOTINGS TO ENGINEER'S SPECIFIC DESIGN

- 75x38 F11 BATTENS WITH 1/75mm TYPE 17 No.14 BATTEN SCREW @ 750 end, 900 TYP CRS.

C3 - 75 X 75 SHS POSTS FROM BLOCK WALL TO GARAGE BEARER - AS STA CONSULTING - ENGINEERS DESIGN

FRAMING NOTES - ALTERNATIVES -
RB3 - 250x50 F14 HWD ROOF BEAM SINGLE SPAN
J3 - 200x50 F14 HWD JOISTS @ 350 CTRS. CONT. SPAN
PP3 - 200x50 F14 HWD POLE PLATE
R1 - 175x50 F14 HWD RAFTERS @ 900 CTRS. SINGLE SPAN
PP5 - 175x50 F14 HWD POLE PLATE

NB: THE FOLLOWING NOTE APPLIES TO ALL LOSP H3 TREATMENT ON LVL MEMBERS:
ALL CUTS, NOTCHES AND DRILL HOLES MUST BE PRIMED BEFORE INSTALLATION TO MIMMIZE THE INGRESS OF MOISTURE.
IT IS FURTHER RECOMMENDED THAT ONCE PRIMED, MEMBERS SHOULD HAVE A "MALTHOID" COVER STRIP (OR SIMILAR) APPLIED TO ALL TOP EDGES OF DECK JOISTS/DECK BEARERS TO AGAIN MINIMIZE THE INGRESS OF MOISTURE AND THEN APPLY TWO FINISHED COATS

FRAMING NOTES -

B2 - 230 PFC
J2 - 190x45 MPG12 JOISTS @ 450 CTRS. SINGLE SPAN
PP2 - 190x45 MPG12 POLE PLATE
DJ - DOUBLE JOISTS

C1 - 75x75 SHS POSTS SUPPORTING B3 ONLY
B3 - 230 PFC CONT. SPAN BEARER
J3 - 200x42 SMART LVL15 JOISTS @ 350 CTRS. CONT. SPAN
PP3 - 200x42 SMART LVL15 POLE PLATE

B4 - 190x45 MGP12 BEARERS CONT. SPAN
J4 - 90x45 MGP12 JOISTS @ 450 CTRS. SINGLE SPAN
PP4 - 90x45 MGP12 POLE PLATE

R1 - 130x42 SMART LVL15 RAFTERS CONT. SPAN (EXTERIOR RAFTERS - LOSP H3 TREATED) @ 900 CTRS.
RB3 - 200x42 SMART LVL15 LOPS H3 TREATED ROOF BEAMS SINGLE SPAN
PP5 - 130x42 SMART LVL15 LOSP H3 TREATED POLE PLATE

L7 - 140x35 MGP12 LINTEL WITH 2/90x35 MGP12 JAMB STUDS
L8 - 90x35 MPG12 LINTEL WITH 90x35 MGP12 JAMB STUDS
LBW - LOAD BEARING WALL

NEW STEEL BEAM — NEW STEEL PFC BEAM
75x75 SHS POST
BEARER AS PER FRAMING PLAN
STUD WALL
BLOCKWORK WALL

NOTE: ALL WINDOW AND SLIDING DOOR SIZES ARE HEIGHT x WIDTH

SW	SLIDING WINDOW
FD	FRENCH DOOR
LVR	LOUVRE WINDOW
FX	FIXED WINDOW
SD	SLIDING DOOR
AW	AWNING WINDOW
DH	DOUBLE HUNG
GB	GLASS BRICKS
C	CASEMENT
OBS	OBSCURE GLASS

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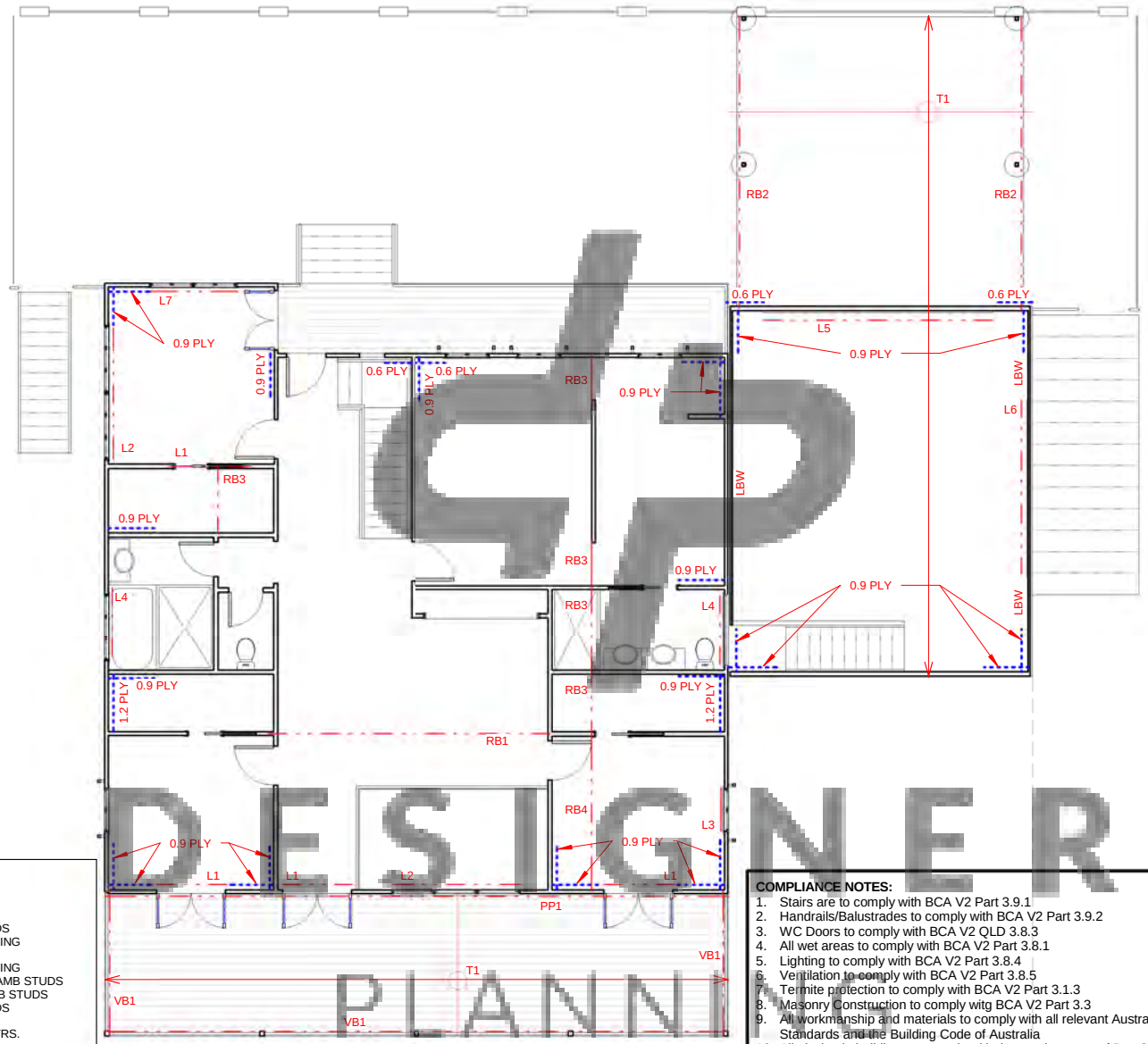

DIRECTION A
REQUIRED - 24.9 KN
PROVIDED. - 51.8 KN

DIRECTION B
REQUIRED - 29.5 KN
PROVIDED - 51.8 KN

FRAMING SPECIFICATIONS

UPPER FLOOR FRAMING:-

STUDS - 3000 HT. (TO MATCH EXISTING)
- 70x35 MGP12 450 CRS. (LOADBEARING WALLS)
- 70x35 MGP12 @ 450 CRS. (NON-LOADBEARING WALLS)

TOP PLATES - 2/70x45 MGP12 (LOADBEARING WALLS)
- 70x35 MGP12 (NON-LOADBEARING WALLS)

BOTTOM PLATES -70x35 MGP12 (LOADBEARING WALLS)
- 70x35 MGP12 (NON-LOADBEARING WALLS)

LOWER FLOOR FRAMING:-

STUDS - 2700 HT.
- 90x35 MGP12 @ 450 CRS. (LOADBEARING WALLS)
- 90x35 MGP12 @ 450 CRS. (NON-LOADBEARING WALLS)

TOP PLATES - 2/90x35 MGP12 (LOADBEARING WALLS)
- 90x35 MGP12 (NON-LOADBEARING WALLS)

BOTTOM PLATES - 90x35 MGP12 (LOADBEARING WALLS)
- 90x35 MGP12 (NON-LOADBEARING WALLS)

- M12 BOLTS FOR TIEDOWN @ 1350 CRS. JAMBS & CORNERS TOP PLATE TO FLOOR FRAME OR G.I. STRAP TOP AND BOTTOM PLATES & M12 BOLT BOTTOM PLATE TO FLOOR FRAME @ 1350 CRS.

- SELECT 10mm PLASTERBOARD CEILING ON METAL BATTENS @ 450 CRS.

- SELECT 10mm PLASTERBOARD TO WALLS.

- ALL FOOTINGS TO ENGINEER'S SPECIFIC DESIGN

- 75x38 F11 BATTENS WITH 1/75mm TYPE 17 No.14 BATTEN SCREW @ 750 end, 900 TYP CRS.

FRAMING NOTES -

RB1 - 260x65 HYNE BEAM 17C ROOF BEAM

L1 - 120x35 MGP12 LINTEL WITH 2/70x45 MGP12 JAMB STUDS
L2 - EXISTING 150x50 HWD LINTEL AND ASSOCIATED FRAMING
L3 - 90x35 MGP12 LINTEL WITH 70x35 MGP12 JAMB STUDS
L4 - EXISTING 150x50 HWD LINTEL AND ASSOCIATED FRAMING
L5 - 230x65 HYNE BEAM 17C LINTEL WITH 3/90x35 MGP12 JAMB STUDS
L6 - 240x42 SMART LVL15 LINTEL WITH 2/90x35 MGP12 JAMB STUDS
L7 - 140x35 MGP12 LINTEL WITH 2/70x45 MGP12 JAMB STUDS

T1 - TRUSSES AS PER MANUFACTURERS SPECS. @ 900 CTRS.
RB2 - 125x75x4.0 RHS ROOF BEAMS
VB1 - 190x45 MGP12 VERANDAH BEAMS SINGLE & CONT. SPAN
PP1 - 190x45 MGP12 POLE PLATE

RB3 - 140x45 MGP12 ROOF BEAM WITH 1/90x35 MGP12 JAMB STUDS
RB4 - 240x42 SMART LVL15 ROOF BEAM WITH 2/90x35 MGP12 JAMB STUDS

12 PROPOSED UPPER FLOOR FRAMING

1 : 100

COMPLIANCE NOTES:

1. Stairs are to comply with BCA V2 Part 3.9.1
2. Handrails/Balustrades to comply with BCA V2 Part 3.9.2
3. WC Doors to comply with BCA V2 QLD 3.8.3
4. All wet areas to comply with BCA V2 Part 3.8.1
5. Lighting to comply with BCA V2 Part 3.8.4
6. Ventilation to comply with BCA V2 Part 3.8.5
7. Termite protection to comply with BCA V2 Part 3.1.3
8. Masonry Construction to comply witg BCA V2 Part 3.3
9. All workmanship and materials to comply with all relevant Australian Standards and the Building Code of Australia
10. All glazing in buildings to comply with the requirements of Part 3.6 BCA Housing Provision and AS 1288/1994. A glazing certificate from the manufacturer for compliance with AS 1288 must be provided on completion
11. Toilet swing doors are to open outwards or be fitted with lift off hinges in accordance with Part 3.8.3.3 of BCA Housing Provision

NEW STEEL BEAM — NEW STEEL PFC BEAM
75x75 SHS POST
BEARER AS PER FRAMING PLAN
STUD WALL
BLOCKWORK WALL

NOTE: ALL WINDOW AND SLIDING DOOR SIZES ARE HEIGHT x WIDTH

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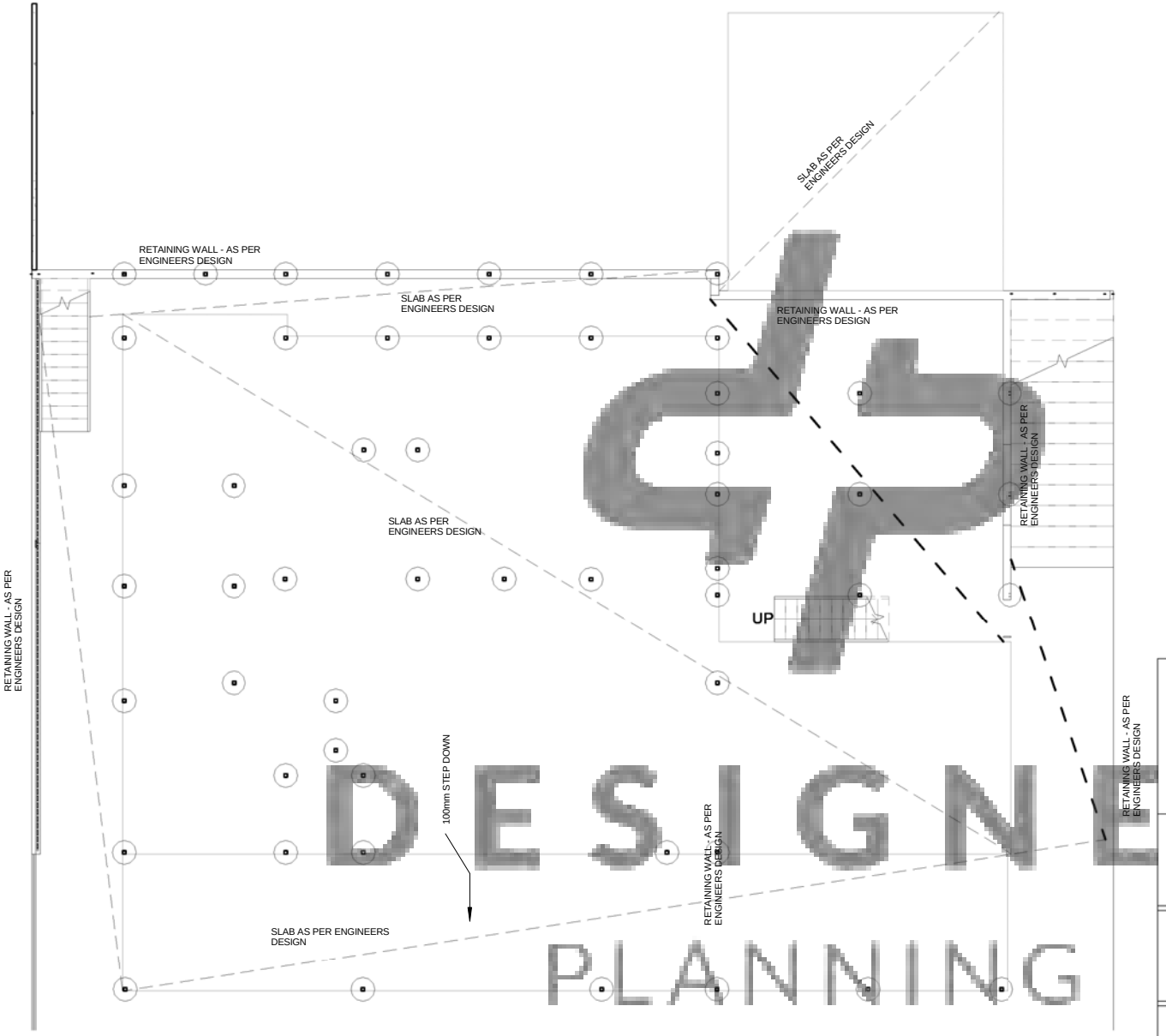

COMPLIANCE NOTES:

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10. All glazing in buildings to comply with the requirements of Part 3.6 BCA Housing Provision and AS 1288/1994. A glazing certificate from the manufacturer for compliance with AS 1288 must be provided on completion
11. Toilet swing doors are to open outwards or be fitted with lift off hinges in accordance with Part 3.8.3.3 of BCA Housing Provision

TERMITE PROTECTION NOTES:

1. Termite protection to comply with BCA 3.1.3 & AS 3660.1.

2. Footings & slabs to be monolithic and comply with AS 2870.

3. All penetrations through concrete slab monolithic (compliant with AS 2870) to have Termimesh system installed in compliance to manufacturer's specification. eg.Steel posts, step downs, retaining walls, control joints, drainage pipes, water supply pipes, electrical conduit, masonry piers, any penetrations through slab.

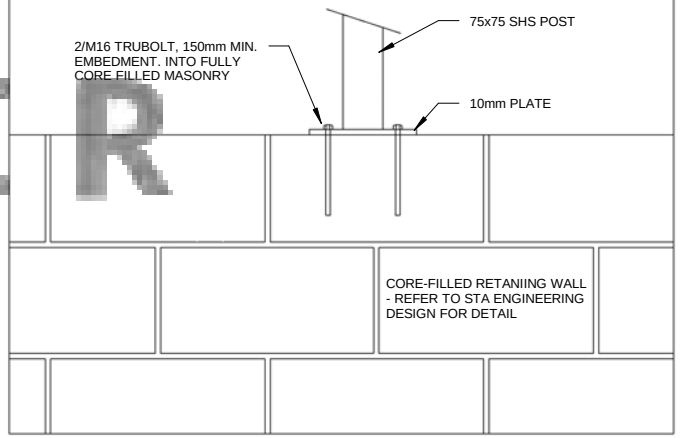
4. Timber framing and timber cladding on a concrete slab that complies with AS 2870 to be minimum of 75mm clear of external concrete path or external finished ground level. Where 75mm clearance to concrete or paved driveway/path is reduced Termimesh is to be fixed to main slab of dwelling with parging as per Termimesh installation details. Perimeter of slab to be protected with Termimesh to surrounding ground levels.

5. Builder to install termite protection notice in electrical meter box and on inside of kitchen cupboard door.

6. Owners are to ensure inspections are carried out in accordance with Termismesh & maintenance schedule. eg annually.

7. Warning piling or raising of garden to reduce the 75mm inspection zone will bridge the visual barrier system and place the structure at great risk of termite infestation and void all warranties.

SHS POST TO BLOCK WALL DETAIL



14 PROPOSED SLAB / POST LAYOUT

1 : 100

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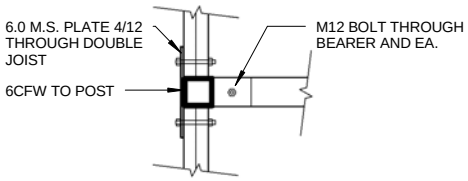
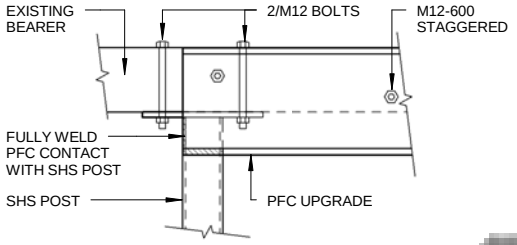


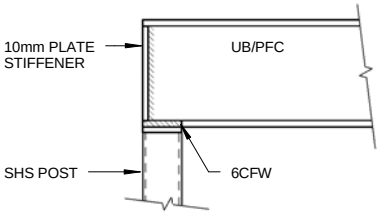
TYPICAL DETAIL

JOIST/BEARER TO POST CONNECTION



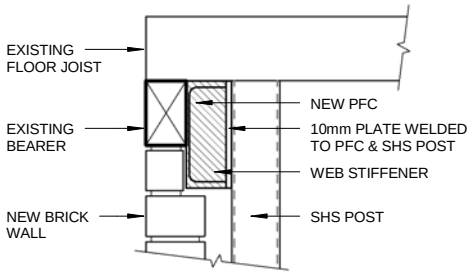
TYPICAL DETAIL

PFC BEARER TO POST CONNECTION



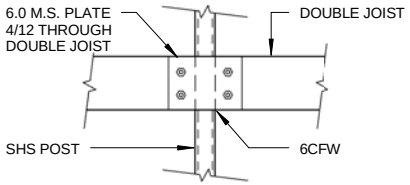
TYPICAL DETAIL

ALTERNATIVE COLUMN TO UB/PFC



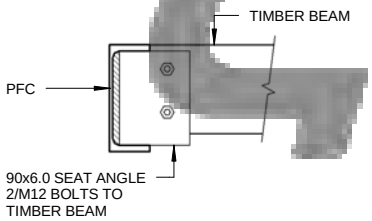
TYPICAL DETAIL

PFC TO SHS CONNECTION - BRICK VENEER



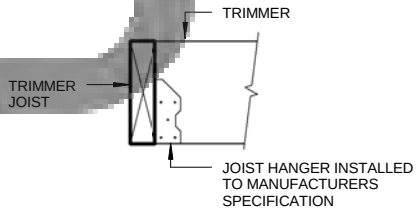
TYPICAL DETAIL

JOIST TO POST CONNECTION



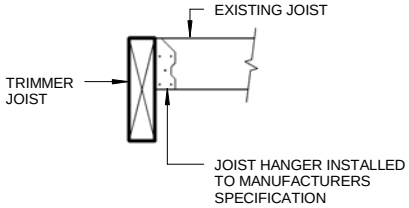
TYPICAL DETAIL

TIMBER BEAM TO PFC



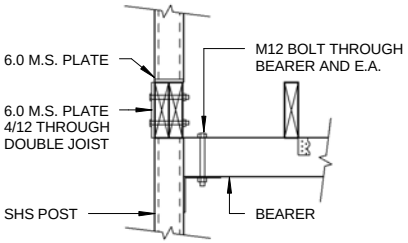
TYPICAL DETAIL

TRIMMER TO TRIMMER JOIST



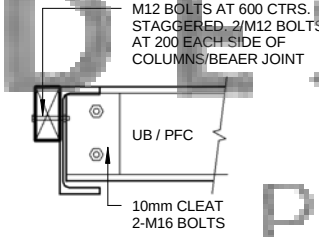
TYPICAL DETAIL

EXISTING JOIST TO TRIMMER JOIST



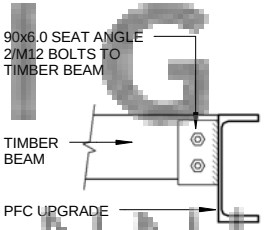
TYPICAL DETAIL

PFC BEARER UPGRADE



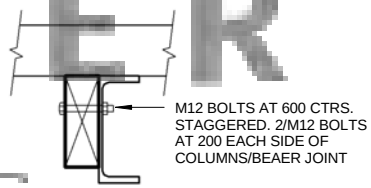
TYPICAL DETAIL

PFC TO PFC CONNECTION



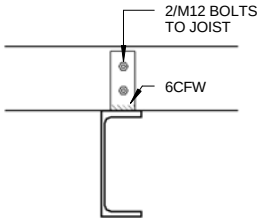
TYPICAL DETAIL

TIMBER BEAM TO PFC



TYPICAL DETAIL

STEEL BEAM TO EXS. BEARER



TYPICAL DETAIL

ALTERNATIVE TIMBER JOIST TO STEEL BEARER

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FALLS, TRIPS , SLIPS

(A) WORKING AT HEIGHTS

DURING CONSTRUCTION

Wherever possible, components for this building should be prefabricated off-site or at ground level to minimise the risk of workers falling more than two metres. However, construction of this building will require workers to be working at heights where a fall in excess of two metres is possible and injury is likely to result from such a fall. The builder should provide a suitable barrier wherever a person is required to work in a situation where falling more than two metres is a possibility.

DURING OPERATION OR MAINTENANCE

For houses or other low-rise buildings where scaffolding is appropriate:
Cleaning and maintenance of windows, walls, roof or other components of this building will require persons to be situated where a fall from a height in excess of two metres is possible. Where this type of activity is required, scaffolding, ladders or trestles should be used in accordance with relevant codes of practice, regulations or legislation.

For buildings where scaffold, ladders, trestles are not appropriate:
Cleaning and maintenance of windows, walls, roof or other components of this building will require persons to be situated where a fall from a height in excess of two metres is possible. Where this type of activity is required, scaffolding, fall barriers or Personal Protective Equipment should be used in accordance with relevant codes of practice, regulations or legislation.

If appropriate, add this note:
Anchorage points for portable scaffold or fall arrest devices have been included in the design for use by maintenance workers. Any persons engaged to work on the building after completion of construction work should be informed about the anchorage points.

b) SLIPPER OR UNEVEN SURFACES
DURING CONSTRUCTION

Wherever possible, components for this building should be prefabricated off-site or at ground level to minimise the risk of workers falling more than two metres. However, construction of this building will require workers to be working at heights where a fall in excess of two metres is possible and injury is likely to result from such a fall. The builder should provide a suitable barrier wherever a person is required to work in a situation where falling more than two metres is a possibility.

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2. FALLING OBJECTS

LOOSE MATERIALS OR SMALL OBJECTS

Construction, maintenance or demolition work on or around this building is likely to involve persons working above ground level or above floor levels. Where this occurs one or more of the following measures should be taken to avoid objects falling from the area where the work is being carried out onto persons below.

1. Prevent or restrict access to areas below where the work is being carried out.
2. Provide toeboards to scaffolding or work platforms.
3. Provide protective structure below the work area.

Ensure that all persons below the work area have Personal Protective Equipment

BUILDING COMPONENTS

During construction, renovation or demolition of this building, parts of the structure including fabricated steelwork, heavy panels and many other components will remain standing prior to or after supporting parts are in place. Contractors should ensure that temporary bracing or other required support is in place at all times when collapse which may injure persons in the area is a possibility.
Mechanical lifting of materials and components during construction, maintenance or demolition presents a risk of falling objects. Contractors should ensure that appropriate lifting devices are used, that loads are properly secured and that access to areas below the load is prevented or restricted.

3. TRAFFIC MANAGEMENT

For building on a major road, narrow road or steeply sloping road:
Parking of vehicles or loading/unloading of vehicles on this roadway may cause a traffic hazard. During construction, maintenance or demolition of this building designated parking for workers and loading areas should be provided. Trained traffic management personnel should be responsible for the supervision of these areas.

For building where on-site loading/unloading is restricted:
Construction of this building will require loading and unloading of materials on the roadway. Deliveries should be well planned to avoid congestion of loading areas and trained traffic management personnel should be used to supervise loading/unloading areas.

For all buildings:
Busy construction and demolition sites present a risk of collision where deliveries and other traffic are moving within the site. A traffic management plan supervised by trained traffic management personnel should be adopted for the work site.

4. SERVICES

Rupture of services during excavation or other activity creates a variety of risks including release of hazardous material. Existing services are located on or around this site. Where known, these are identified on the plans but the exact location and extent of services may vary from that indicated. Services should be located using an appropriate service (such as Dial Before You Dig), appropriate excavation practice should be used and, where necessary, specialist contractors should be used.

In locations with underground power:
Underground power lines are located in or around this site. All underground power lines must be disconnected or carefully located and adequate warning signs used prior to any construction, maintenance or demolition commencing.

In locations with overhead power lines:
Overhead power lines are near or on this site. These pose a risk of electrocution if struck or approached by lifting devices or other plant and persons working above ground level. Where there is a danger of this occurring, power lines should be, where practical, disconnected or relocated. Where this is not practical adequate warning in the form of bright coloured tape or signage should be used or a protective barrier provided.

5. MANUAL TASKS

Components within this design with a mass in excess of 25kg should be lifted by two or more workers or by mechanical lifting device. Where this is not practical, suppliers or fabricators should be required to limit the component mass.
All material packaging, building and maintenance components should clearly show the total mass of packages and where practical all items should be stored on site in a way which minimises bending before lifting. Advice should be provided on safe lifting methods in all areas where lifting may occur.
Construction, maintenance and demolition of this building will require the use of portable tools and equipment. These should be fully maintained in accordance with manufacturer's specifications and not used where faulty or (in the case of electrical equipment) not carrying a current electrical safety tag. All safety guards or devices should be regularly checked and Personal Protective Equipment should be used in accordance with manufacturer's specification.

6. HAZARDOUS MATERIALS

ASBESTOS

For alterations to a building constructed prior to 1990:
This building was constructed prior to 1990 and therefore may contain asbestos either in cladding material or in fire retardant insulation material. The builder should check and, if necessary, take appropriate action before demolishing, cutting, sanding, drilling or otherwise disturbing the existing structure.
For alterations to a building constructed prior to 1986:
This building was constructed prior to 1986 and therefore is likely to contain asbestos either in cladding material or in fire retardant insulation material. The builder should check and, if necessary, take appropriate action before demolishing, cutting, sanding, drilling or otherwise disturbing the existing structure.

POWDERED MATERIALS

Many materials used in the construction of this building can cause harm if inhaled in powdered form. Persons working on or in the building during construction, operational maintenance or demolition should ensure good ventilation and wear Personal Protective Equipment including protection against inhalation while using powdered material or when sanding, drilling, cutting or otherwise disturbing or creating powdered material.

TREATED TIMBER

The design of this building includes provision for the inclusion of treated timber within the structure. Dust or fumes from this material can be harmful. Persons working on or in the building during construction, operational maintenance or demolition should ensure good ventilation and wear Personal Protective Equipment including protection against inhalation of harmful material when sanding, drilling, cutting or using treated timber in any way that may cause harmful material to be released. Do not burn treated timber.

VOLATILE ORGANIC COMPOUNDS

Many types of glue, solvents, spray packs, paints, varnishes and some cleaning materials and disinfectants have dangerous emissions. Areas where these are used should be kept well ventilated while the material is being used and for a period after installation. Personal Protective Equipment may also be required. The manufacturer's recommendations for use must be carefully considered at all times.

SYNTHETIC MINERAL FIBRE

Fibreglass, rockwool, ceramic and other material used for thermal or sound insulation may contain synthetic mineral fibre which may be harmful if inhaled or if it comes in contact with the skin, eyes or other sensitive parts or the body. Personal Protective Equipment including protection against inhalation of harmful material should be used when installing, removing or working near bulk insulation material.

TIMBER FLOORS

This building contains timber floors which have an applied finish. Areas where finishes are applied should be kept well ventilated during sanding and application and for a period after installation. Personal Protective Equipment may also be required. The manufacturer's recommendations for use must be carefully considered at all times.

7. CONFINED SPACES

EXCAVATION

Construction of this building and some maintenance on the building will require excavation and installation of items within excavations. Where practical, installation should be carried out using methods which do not require workers to enter the excavation. Where this is not practical, adequate support for the excavated area should be provided to prevent collapse. Warning signs and barriers to prevent accidental or unauthorised access to all excavations should be provided.

ENCLOSED SPACES

(for buildings with enclosed spaces where maintenance or other access may be required)
Enclosed spaces within this building may present a risk to persons entering for construction, maintenance or any other purpose. The design documentation calls for warning signs and barriers to unauthorised access. These should be maintained throughout the life of the building. Where workers are required to enter enclosed spaces, air testing equipment and Personal Protective Equipment should be provided.

SMALL SPACES

(for buildings with small spaces where maintenance or other access may be required)
Some small spaces within this building will require access by construction or maintenance workers. The design documentation calls for warning signs and barriers to unauthorised access. These should be maintained throughout the life of the building. Where workers are required to enter small spaces they should be scheduled so that access is for short periods. Manual lifting and other manual activity should be restricted in small spaces.

8. PUBLIC ACCESS

Public access to construction and demolition sites and to areas under maintenance causes risk to workers and public. Warning signs and secure barriers to unauthorised access should be provided. Where electrical installations, excavations, plant or loose materials are present they should be secured when not fully supervised.

9. OPERATIONAL USE OF BUILDING

For residential buildings:
This building has been designed as a residential building. If it, at a later date, is used or intended to be used as a workplace, the provisions of the Work Health and Safety Act 2011 or subsequent replacement Act should be applied to the new use.

For non-residential buildings where the end-use has not been identified:
This building has been designed to requirements of the classification identified on the drawings. The specific use of the building is not known at the time of the design and a further assessment of the workplace health and safety issues should be undertaken at the time of fit-out for the end-user.
For non-residential buildings where the end-use is known:
This building has been designed for the specific use as identified on the drawings. Where a change of use occurs at a later date a further assessment of the workplace health and safety issues should be undertaken.

10. OTHER HIGH-RISK ACTIVITY

All electrical work should be carried out in accordance with Code of Practice: Managing Electrical Risks at the Workplace, AS/NZ 3012 and all licensing requirements.
All work using Plant should be carried out in accordance with Code of Practice: Managing Risks of Plant at the Workplace.
All work should be carried out in accordance with Code of Practice: Managing Noise and Preventing Hearing Loss at Work.
Due to the history of serious incidents it is recommended that particular care be exercised when undertaking work involving steel construction and concrete placement. All the above applies.

DESIGNER PLANNING

SAFETY NOTES

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ISSUE	DESCRIPTION	DATE	AUTHOR
4G	REVISED PLANS	25-06-2018	KD

PROJECT:

CLIENT:

SITE ADDRESS:

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SCALE:	1 : 10		
JOB No:			

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All design, construction methods and materials to be in accordance with:
- The Building Code of Australia (BCA);
- The Queensland Development Code (QDC);
- Building Regulations;
- Current issues of Australian Standards & Manufacturer's specifications and installation details for materials used.

27/06/2018 8:46:14 AM

GENERAL REQUIREMENTS:

*NOTE - ANY DETAILED SPECIFICATIONS OR SCHEDULES OVERRIDE THESE NOTES.
*DESIGNED TO BUILDING CODE OF AUST. & REG'D PRODUCTS
*LOCAL AUTHORITY - BRISBANE CITY COUNCIL
*WIND SPEED = N2
* SITE DIMENSIONS ARE APPROX. ONLY AND SUBJECT TO SURVEY
*NOTIFY DESIGNER OF ANY DISCREPANCIES.
*CONTRACTOR TO COMPLY WITH AUST. STANDARD CODES.
*COMPLY WITH ALL 'WORKPLACE, HEALTH & SAFETY REGS. AND ATTACHED SAFE DESIGN REPORT.
*DIMENSIONS ARE TO FACE OF STUD OR MASONRY
*CEILING HEIGHTS, OR OTHER UNDERSIDE DIMENSIONS, ARE CLEAR HEIGHTS TO UNDERSIDE OF FINISHED LININGS.
*DO NOT ORDER STRUCTURAL ITEMS UNTIL APPROVAL.
*** INSTRUCTIONS TO THE BUILDING CERTIFIER.
STRUCTURAL AND MATERIAL SUBSTITUTIONS
- NO SUBSTITUTIONS OF ANY STRUCTURAL ELEMENTS OR MATERIALS AS SHOWN ON THE DRAWINGS WITHOUT WRITTEN APPROVAL FROM THE DESIGNER.

APPROVALS

* EXCAVATIONS/FILLINGS NEED APPROVAL
* RETAINING WALLS ABOVE 1M HIGH NEED AN ENGINEER'S CERTIFICATE AND APPROVAL.
*APPROVED PLANS TO BE ON-SITE DURING CONSTRUCTION.
*CONTRACTOR NOT TO CARRY OUT WORK WHICH IS AUDIBLE:
- ON A SUNDAY OR PUBLIC HOLIDAY AT ANY TIME, ON SATURDAY OR BUSINESS DAY, BEFORE 6.30AM OR AFTER 6.30PM
- NO VISIBLE DUST EMISSIONS AT BOUNDARIES OF SITE DURING EARTHWORKS & CONSTRUCTION ACTIVITIES.

SITE-WORKS:

*CROSS-OVER TO BCC DEPT. OF WORKS 'SUBDIVISION & DEVELOPMENT GUIDELINES'
*GRADE SURFACE AWAY FROM BUILDING AT 1:20 FOR 1m MIN.
*BASE OF BANK OR RETAINING WALL TO HAVE SPOON DRAIN.
*FALL TO FIELD GULLY & STORMWATER SYTEM.
*FENCE ALL POOLS TO AS1926
*DRIVEWAY & CROSSOVER TO KERB - AS PER ENGINEERS DETAILS.

TERMITE PROTECTION NOTES:

1. Termite protection to comply with BCA 3.1.3 & AS 3660.1.
2. Footings & slabs to be monolithic and comply with AS 2870.
3. All penetrations through concrete slab monolithic (compliant with AS 2870) to have Termimesh system installed in compliance to manufacturer's specification. eg.Steel posts, step downs, retaining walls, control joints, drainage pipes, water supply pipes, electrical conduit, masonry piers, any penetrations through slab.
4. Timber framing and timber cladding on a concrete slab that complies with AS 2870 to be minimum of 75mm clear of external concrete path or external finished ground level. Where 75mm clearance to concrete or paved driveway/path is reduced Termimesh is to be fixed to main slab of dwelling with parging as per Terminesh installation details. Perimeter of slab to be protected with Termimesh to surrounding ground levels.
5. Builder to install termite protection notice in electrical meter box and on inside of kitchen cupboard door.
6. Owners are to ensure inspections are carried out in accordance with Termismesh & maintenance schedule. eg annually.
7. Warning piling or raising of garden to reduce the 75mm inspection zone will bridge the visual barrier system and place the structure at great risk of termite infestation and void all warranties.
8.

CONCRETE

IN ACCORDANCE WITH AS3600

*REFER - BCA VOL 2 - PART 3.2 BRISBANE CITY COUNCIL
*ENGINEER'S REPORT SUPERSEDES THESE NOTES.
*USE ARCHITECTURAL PLANS FOR SETOUT.
*ALL CONCRETE TO BE VIBRATED SLAB ON GROUND TO COMPLY WITH AS2870
*VAPOUR BARRIER OF 0.2mm TO U/S, LAP 200, TAPE.
*50mm BEDDING SAND LAYER UNDER VAPOUR BARRIER.
*EXPOSED CONCRETE: CURE FULLY, NON-SLIP FINISH
*ON CLAY SITE REFER CSIRO INFORMATION SHEET NO. 10-91
*INSTALLATION EXPANSION JOINT TO FLOOR AREAS FOR CERAMIC TILES

MASONRY

REFER - BCA VOL 2 - PART 3.3
WATERPROOFING OF SINGLE SKIN CONCRETE BLOCKWORK
*REFER TO MANUFACTURERS SPECIFICATIONS.
*WATER PROOF ALL OF THE EXTERNAL WALL
*INCLUDING WINDOW REVEALS, BEFORE WINDOWS ARE FIXED. BEFORE ANCHOR IS INSERTED FILL HOLE WITH SEALANT.
*ALL MORTAR JOINTS ARE TO BE FILLED TO THE DEPTH OF THE FACE SHELL AND IRONED. THE MORTAR TO BE COMPRESSED WITH IRONING TOOL OF 12mm DIAMETER AND MIN. 450 LONG, LEAVING NO VOIDS.
*ENSURE JOINTS TO WINDOWS AND BULLNOSE BLOCKS ARE PROPERLY FILLED, REPAID ALL FAULTY MORTAR JOINTS. PRIOR TO PAINTING - RUB FACE OF BLOCKS TO REMOVE EXCESS MATERIAL.
*PAINTING - EITHER: 1-3 COATS OF 100% ACRYLIC EXTERIOR GLOSS PAINT, BY BRUSH OR ROLLER, OR 2-1 COAT OF CEMENT BASED PAINT (EG. SILASEC) FOLLOWED BY 2 COATS OF 100% ACRYLIC, AS ABOVE, FOLLOW MANU. SPEC.
*PRECISELY FIX ALL ITEMS GOING OVER WALLS, INCLUDING WINDOWS, AFTER PAINTING COMPLETE.

METALS (&STEEL)

*REFER - BCA VOL 2 - PART 3.4.4.4 CORROSION PROTECTION

WOODWORK/FRAMING

*TO AS1648.2-1999
*PLATED OR LAMINATED TIMBERS - NOT EXPOSED TO WEATHER
*REFER TO BEAM MANU. NOTES
*TERMITE PROTECTION TO AS 3660
*DO NOT AMEND STRUCTURAL ITEMS UNLESS YOU CONFIRM CHANGES WITH THE DESIGNER AND ENGINEER
*STRUCTURAL BRACING - TO CONSULTING ENGINEER SPEC.
*WALL FRAMING - REFER FRAMING SPECS. IN PLANS
*ROOF BATTENS: COMPLY WITH WH&S REGS - REFER FRAMING SPECS. IN PLANS
*CLADDING - REFER MANU. SPECS.

SUSTAINABLE BUILDINGS

QDC PART 29 - ACCEPTABLE SOLUTIONS
DEFINITIONS
ENERGY EFFICIENT LIGHTS - MEANS LIGHTING THAT PRODUCES AT LEAST 50 LUMENS PER WATT AND USES FITTINGS THAT DO NOT ACCEPT LIGHTS THAT DO NOT PRODUCE AT LEAST 50 LUMENS PER WATT.
FLOOR AREA - MEANS THE AREA OF A ROOM MEASURED WITHIN THE FINISHED SURFACES OF THE WALLS, AND INCLUDES THE AREA OCCUPIED BY ANY CUPBOARD OR OTHER BUILT-IN FURNITURE, FIXTURE OR FITTING.

WATER CONSERVATION

A1 - SHOWER ROSES HAVE:
(A) AN AAA RATING WHEN ASSESSED AGAINST AS/NZS 6400:2004; OR
(B) A THREE STAR RATING UNDER THE WATER EFFICIENCY LABELLING SCHEME (WELS)
A2 - (A) THE WATER SUPPLIED TO A NEW CLASS 1 BUILDING DOES NOT EXCEED PRESSURE LEVELS SET OUT IN AS/NZS 3500.1:2003; AND
(B) IF MAINS WATER PRESSURE EXCEEDS OR COULD EXCEED 500kPa, A WATER PRESSURE LIMITING DEVICE IS INSTALLED TO ENSURE THAT THE MAXIMUM OPERATING PRESSURE AT ANY OUTLET, WITHIN A BUILDING DOES NOT EXCEED 500kPa
A3 - TOILET CISTERNS HAVE DUAL FLUSH CAPABILITY THAT DOES NOT EXCEED 6 LITERS ON FULL FLUSH AND 3 LITERS ON HALF FLUSH.

ENERGY EFFICIENT LIGHTING
(A) FLUORESCENT LIGHTS OR EXTERNALLY BALLASTED COMPACT FLUORESCENT LIGHTS ARE USED IN 40% OF THE TOTAL FLOOR AREA OF ALL ROOMS.

FINISHES

PLASTERING/LININGS
*WALL & CEILING LININGS TO BE 10mm PLASTERBOARD UNO
*STEEL BATTENS AT 450 CTRS TO CEILINGS
* WET AREA WALL LININGS - 6mm FC - HARDIES VILLABOARD
*SHOWER LININGS/WATER PROOFING - TO AS3740-2004

PAINTING
*PAINT/STAIN ALL EXPOSED MATERIAL - FRAMING, CLADDING & LININGS.
*PAINT TO BE FROM AN APPROVED MANU. IN LABELED CANS. 1 PRIMER COAT & 2 FINISH COATS. PRIME ALL TIMBER & WINDOW FRAMES BEFORE FIXING.
*PAINT SYSTEM TO COMPRISE SUBSTRATE PREPARATION & UNDERCOATS APPROPRIATE TO THE FINAL COAT TYPE.
*PAINTING OF PLASTERBOARD/LININGS - BRUSH OR ROLLER ONLY.
*NO SPRAY GUN USED UNLESS APPROVED.

ELECTRICAL

*ALLOW FOR INTERNAL INSTALLATION OF SWITCHBOARD
*INSTALL EARTH LEAKAGE CIRCUIT BREAKERS. 'SAFETY SWITCH'.
*METERS - MAX. 2m FROM FRONT OF BUILDING AND BE ACCESSIBLE.
*CONTACT TELSTRA FOR PRE-WIRING PRIOR TO SLAB POUR.
*FIT MAINS POWERED SMOKE ALARM COMPLYING WITH BCA VOL 2, PART 2.4 TO EACH LEVEL OF THE HOUSE, ON THE CEILING.
(AIR-CONDITIONING IF DUCTED - REQUIRES 3 PHASE POWER).

BALUSTRADE

- ALL BALUSTRADES TO BE MIN 1m HIGH ABOVE 'FINISHED' SURFACE LEVELS, WITH MAX 125mm GAPS. THE BUILDER MUST ALLOW FOR ANY FUTURE FLOOR COVERINGS OR TILES IN CALCULATING 1m HEIGHT. HEIGHTS TO ALLOW FLOOR SHAPE & FALLS

- ALL STAIR CONSTRUCTION TO HAVE 125mm GAPS MAXIMUM BETWEEN TREADS AND WITHIN 1m HIGH BALUSTRADES

- BALUSTRADES TO FLOORS 4m OR HIGHER ABOVE THE SURFACE BENEATH ARE TO BE NON-CLIMBABLE BETWEEN 150mm & 760mm ABOVE FINISHED FLOOR LEVEL

- REFER ALSO 'FOREST AND WOOD PRODUCT RESEARCH AND DEVELOPMENT CORPORATION' ' TIMBER INFORMATION BULLETIN 2' FOR ADDITIONAL INFORMATION

- IN WEATHER/MOISTURE EXPOSURE AREAS, ALL TIMBER HAND RAIL AND BALUSTRADE COMPONENTS ARE TO BE NATURALLY DURABLE CLASS 1 or 2, or PRESERVATIVE TREATED TO H3 OR HIGHER IN ACCORDANCE WITH AS1604

- POSTS TO BE MIN 80x80 F5 MIN @ 3600 CRS MAX
- NEWELS TO BE MIN 80x80 F5 MIN @ 1800 CRS MAX

- HARDWOOD INFILLS TO BE MIN 19x19 or □21
- SOFTWOOD INFILLS TO BE MIN 19x42 or □25
- IN WEATHER/MOISTURE EXPOSURE AREAS, ALL METAL CONNECTORS INCLUDING NAILS, SCREWS & BRACKETS TO BE HOT DIPPED GALV, CLASS 3 CORROSION RESISTANT or S.S. FOR MARINE ENVIRONMENTS

- ALL TIMBER TO BE FULLY PROTECTED FROM THE WEATHER WITH APPROPRIATE FINISHES AS PER 'TIMBER INFORMATION BULLETIN 2'.

- REFER 'TIMBER INFORMATION BULLETIN 2' FOR HANDRAIL SPANS, SIZING AND FIXING DETAILS ACCORDING TO CLIENT'S CHOICE OF BALUSTRADE/HANDARIL STYLE

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ISSUE	DESCRIPTION	DATE	AUTHOR
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All design, construction methods and materials to be in accordance with:
- The Building Code of Australia (BCA);
- The Queensland Development Code (QDC);
- Building Regulations;
- Current issues of Australian Standards & Manufacturer's specifications and installation details for materials used.

27/06/2018 8:46:15 AM

Foundation Design Report

Date : 20th April 2018
Project Job Number : ES161117 Amended 20/04/2018
Site Address :
Local Authority : BRISBANE CITY
SP/ RP Number :

The following client supplied information had been made avaliable to STA Consulting for the purpose of the soil test and foundation design :-

Property description and site address	YES	Evidence to ensure site is correct	YES
The contours of the site		The location of trees on the site and adjoining sites	
Location and identification of existing overland flows		The footprint of the proposed dwelling and platform levels	
Location of proposed cut and fill line		All relevant land searches	

STA Consulting Engineers have completed a review of all avaliable information as supplied at the time or writing this report.

1.0 Design Requirements and Specifications

1.01 Supplied Construction Details

Proposed Building Design Details	Proposed Site Preparation Details
(supplied by our client)	(stipulated by our client)
Extension + Lift Up & Build Under	
Cladding	**Cut / Fill**
Sheet Metal Roof	
Concrete Ground Floor & Timber Floors	

1.02 Site preparation

The construction pad is to be cleared of vegetation and loose material. Organic material, highly reactive clays and large rocks are not suitable for use as fill. Fill is to be spread in 150 mm deep layers and extensively track-rolled with a drott. Where trees are removed from the building area, the voids created by their removal must be excavated, back filled and compacted with suitable material. All fill must be placed in a controlled manner. Any fill should be placed to a dry density ratio of 95% Standard AS 1289.5.1.1 for cohesive materials, or a density index of no less than 70% relative to AS 1289 5.5.1 for non-cohesive materials. All earthworks are to be undertaken in accordance with AS3798.

1.03 Edge Beam and Slab

	Founding Material	Embedment Depth
Edge Beam and Slab :	**Natural Weathered Rock**	**200 mm**

Where the depth to suitable founding material is significant, excavated or drilled piers can be adopted. Where the length of drilled footing piers exceeds 2000 mm, they are to be reinforced with 4/N12 bars tied to an R6 spiral @ 150 mm pitch or equivalent & tied into the Edge Beam Footing cage. Alternatively an equivalent pre-fabricated steel cage may be adopted.

1.04 Pad Footings for Posts and Point Loads

Pad footings must be placed under all posts and point loads. The pad footings are to be pierced to the nominated founding material and minimum depth as specified in the above table. Pad footing depths may be reduced where refusal on shallow rock is encountered, providing bracing and tie-down requirements are not adversely affected. When the required bracing and tie-down requirements are not attained rock anchors must be utilised. STA Consulting Engineers must be notified of all load bearing walls and point loads prior to construction.

	Depth
Minimum Overall Pad Footing Depth for Posts & Point Loads :	**900 mm**

	Embedment Depth	Founding Material
Minimum Embedment Depth Within Nominated Founding Material	**300 mm**	**Natural Weathered Rock**

Where the length of drilled pad footing piers exceeds 2000 mm, they are to be reinforced with 4/N12 bars tied to an R6 spiral @ 150 mm pitch or equivalent. Alternatively an equivalent pre-fabricated steel cage may be adopted.

2.0 Results of Site Investigation

2.01 Scope

STA Consulting Engineers have been commissioned to undertake a site investigation (Soil test) and foundation design for the proposed residential construction at the above mentioned site address . The purpose of the site investigation is to provide information on the existing subsurface conditions, collect representative samples to undertake required laboratory testing (where necessary) and determine the site classification in accordance with AS2870. Footing and foundation design requirements to be finalised incorporating the results of the investigation.

2.02Site Description

At the time of the investigation the block had an existing dwelling on it. The vegetation consisted of trees, grass and gardens, the tested area had a moderate slope and the drainage was moderate.

2.03 Fieldwork & Laboratory Testing

Two bore holes were undertaken across the site using a hand auger to a maximum depth of 1200mm. Dynamic Cone Penetrometer (D.C.P) tests and Pocket Penetrometer (P.P) tests were also undertaken at the time of the site investigation.

The bore holes were drilled using solid flight augers fitted with a steel V shaped bit or tungsten carbide bit.

An authorised representative from STA Consulting Engineers set out the bore holes locations from existing site features, directed sampling and logged bore hole profiles. Engineering logs of the bore holes are presented in Section 3 , together with Explanation Sheets defining the terms and symbols used in the preparation of the logs.

Representative samples of residual soil was collected for the purpose of Laboratory testing. These tests include the following :-

- Moisture Contents
- Liquid Limit (LL)
- Linear Shrinkage (LS)
- Shrink /Swell (Iss)

Results of the Laboratory tests are indicated under Section 3.0 Soil Profile and Laboratory Results.

2.04 Subsurface Conditions

The ground conditions encountered were generally a natural silty sand/ sandy gravel underlayed by sandy silty clay and weathered rock.

Note : There is a danger that by simplifying the geological conditions as described above, small-scale variations that may have significant engineering implications can be overlooked. Where specific information is required, the reader should in all instances refer to the bore hole logs in Section 3 of this report.

2.05 Groundwater

Groundwater was not identified at the time of the subsurface investigation. However seepage is likely at the soil / rock interface after prolonged periods of rain.

2.06 Site Classification

After assessing the laboratory test results, on site conditions and surrounding conditions in accordance with AS 2870.

This site has been classified:

Class P.

This site has been classified as a **Class P** due to the following :-

- The disturbed ground caused by the removal of the existing foundations & trees from within the proposed building footprint area and the potential influence on the proposed foundation performance by the change in moisture characteristics.

This report has been classified as a Class P due to that described, however the site characteristics are similar to that of **Class M**

DESIGNER PLANNING

Bore Log Sheet

Bore Hole # 1

Project Job No. ES161117-B

Client:

Drill Method: Power Hand Auger

Depth (m)	SOIL DESCRIPTION	PP Value	D.C.P blows/ 100 mm	N'q (kPa)
0	SILTY SAND (Brown)		4	
	Moist & Medium Dense		4	
	SANDY SILTY CLAY		4	130
	(Brown)		3	
	Moist & Stiff		4	
0.5	Friable		2	80
	Trace of Fine to Medium Gravels		2	
	Dry to Moist & Stiff *Tending to Weathered Rock*		3	
	WEATHERED ROCK (Brown)		8	120
1.0	Dry & Moderately Strong		1 5	
	U.T.P.			
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				
5.0				

Bore Hole Refusal - 0.9 m

Bore Hole # 2

Drill Method: Power Hand Auger

Depth (m)	SOIL DESCRIPTION	PP Value	D.C.P blows/ 100 mm	N'q (kPa)
0	SILTY SAND (Brown)		4	
	Moist & Medium Dense		4	
	SILTY SANDY GRAVEL		8	170
	(Brown)		1 0	
	Dry to Moist & Dense		1 0	
0.5			8	290
	SANDY SILTY CLAY		4	
	(Brown)		4	
	Moist & Stiff		6	130
	Friable		1 1	
	Dry to Moist & Stiff *Tending to Weathered Rock*		1 4	
1.0	WEATHERED ROCK (Brown)		1 5	360
	Dry & Moderately Strong			
	U.T.P.			
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				
5.0				

Bore Hole Refusal - 1.2 m

DESIGNER PLANNING

This line represents the anticipated base level of the recommended founding material nominated on page 1 of this report. This level is to be used as a gauge only.

Terms :-

D.C.P.:- Dynamic Cone Penetrometer
N'q:- Allowable Bearing Capacity (kPa)
PP:- Pocket Penetrometer Strength (kPa)
U.T.P:- Unable to Penetrate
→ Slope Direction

Note : kPa value is allowable bearing pressure caculated in accordance with paper 'Determination of allowable bearing pressure under small structures' by M.J Stockwell (June 1977)

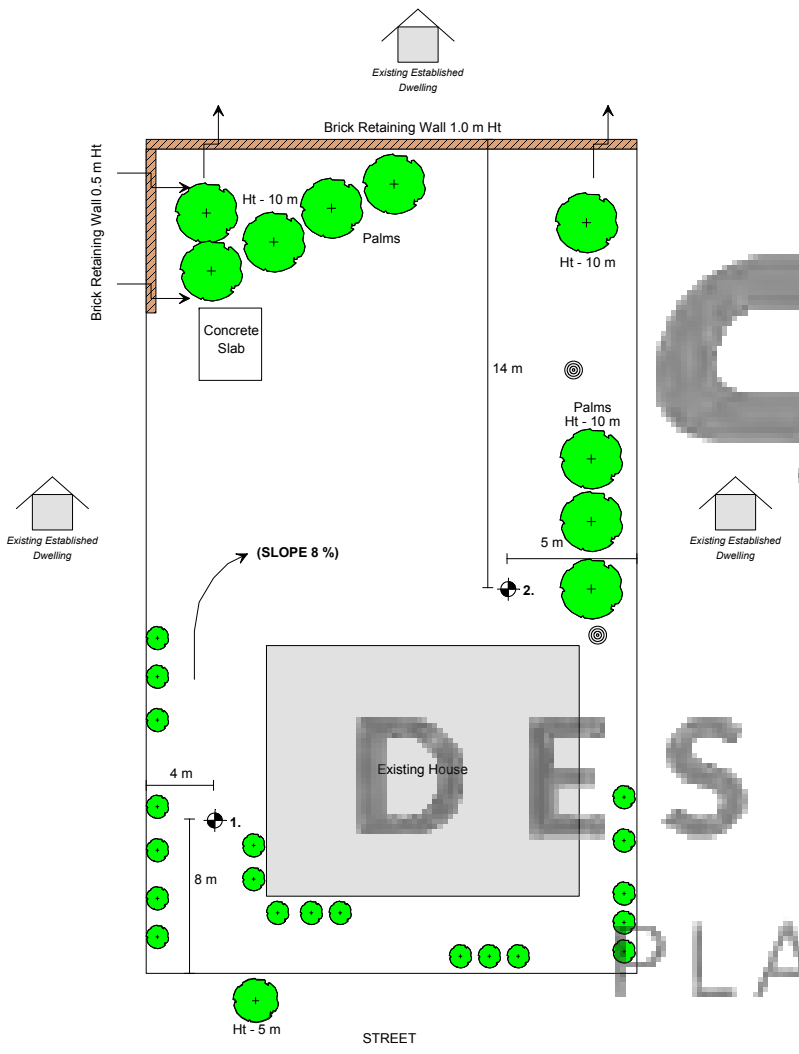
Client

Site Address

Section 3 - Bore Logs & Site Identification

Site Sketch (Not to Scale)

(All Dimensions Shown are Approximate Only)



Note - Tree heights (Ht) nominated are approximate and do not represent the potential mature height of the tree.

Site Identification

Laboratory Test Results

Sample Location:-	**B.H. # 1**
Depth of Sample:-	**600 mm**
Liquid Limit:-	**39 %**
Linear Shrinkage:-	**14.5 %**
Iss:-	**2.9 %**

Calculated Y's Value -	**15 mm**	*Y's - characteristic surface movement determined on soil properties only, does NOT include the effects of trees (refer Design Y's Range)*
Calculated Y't Value -	**1 mm**	*Y't - the calculated potential surface movement due to the tree induced suction change in addition to the normal design suction change.*
Est. Differential Settlement - of Level 1 Controlled Fill	**N/A**	*The estimated differential settlement is the value by which Level 1 controlled fill may further displace and is generally proportionate to the variation in fill heights. Note: The estimated differential settlement values may be re-assessed if predicted settlement figures are provided to STA Consulting Engineers from the company that undertook the fill certification.*
Age of Level 1 - Controlled Fill	**N/A**	

Design Y's Range

Y's + Yt :-	**N/A**	*Note : Not applicable due to the removal of existing structures from proposed building footprint.*

Classification by characteristic surface movement as per AS2780-2011

SITE CLASSIFICATION SYMBOLS	DESIGN Y'S RANGE	GENERALISED DESCRIPTION (Guide Only)
'A'	0 < Ys	Most sand and rock sites with little or no ground movement from moisture changes.
'S'	0 < Ys ≤ 20	Slightly reactive clay sites, which may experience only slight ground movement from moisture changes
'M'	20 < Ys ≤ 40	Moderately reactive clay or silt sites, which may experience moderate ground movement from moisture changes
'H1'	40 < Ys ≤ 60	Highly reactive clay sites, which may experience high ground movement from moisture changes
'H2'	60 < Ys ≤ 75	Highly reactive clay sites, which may experience very high ground movement from moisture changes
'E'	Ys > 75	Extremely reactive clay sites, which may experience extreme ground movement from moisture changes
'P'	N/A	Problem sites which generally have soils associated with uncontrolled fill, abnormal moisture conditions (trees), soft or collapsing soils, landslip etc..
'- D'	N/A	For classes M, H1, H2 and E this further classification may be required, based on the depth of expected moisture change. Applied to sites with deep-seated moisture changes characteristic of dry climates and corresponding to a design depth of suction change (Hs), equal to or greater than 3 metres.

Test Methods: AS1289 3.1.2 (liquid limit), 3.4.1(linear shrinkage), 7.1.1(shrink-swell)

GP DESIGN & PLANNING

Client

Site Address

Issue	Issue Description	Date
A	Original Soil Test & Foundation Design	12/12/2017
B	Amended Retaining Wall Additional Pad Footings	25/01/2018
C	Retaining Walls Amended	05/03/2018
D	Retaining Walls Height Amended	20/04/2018

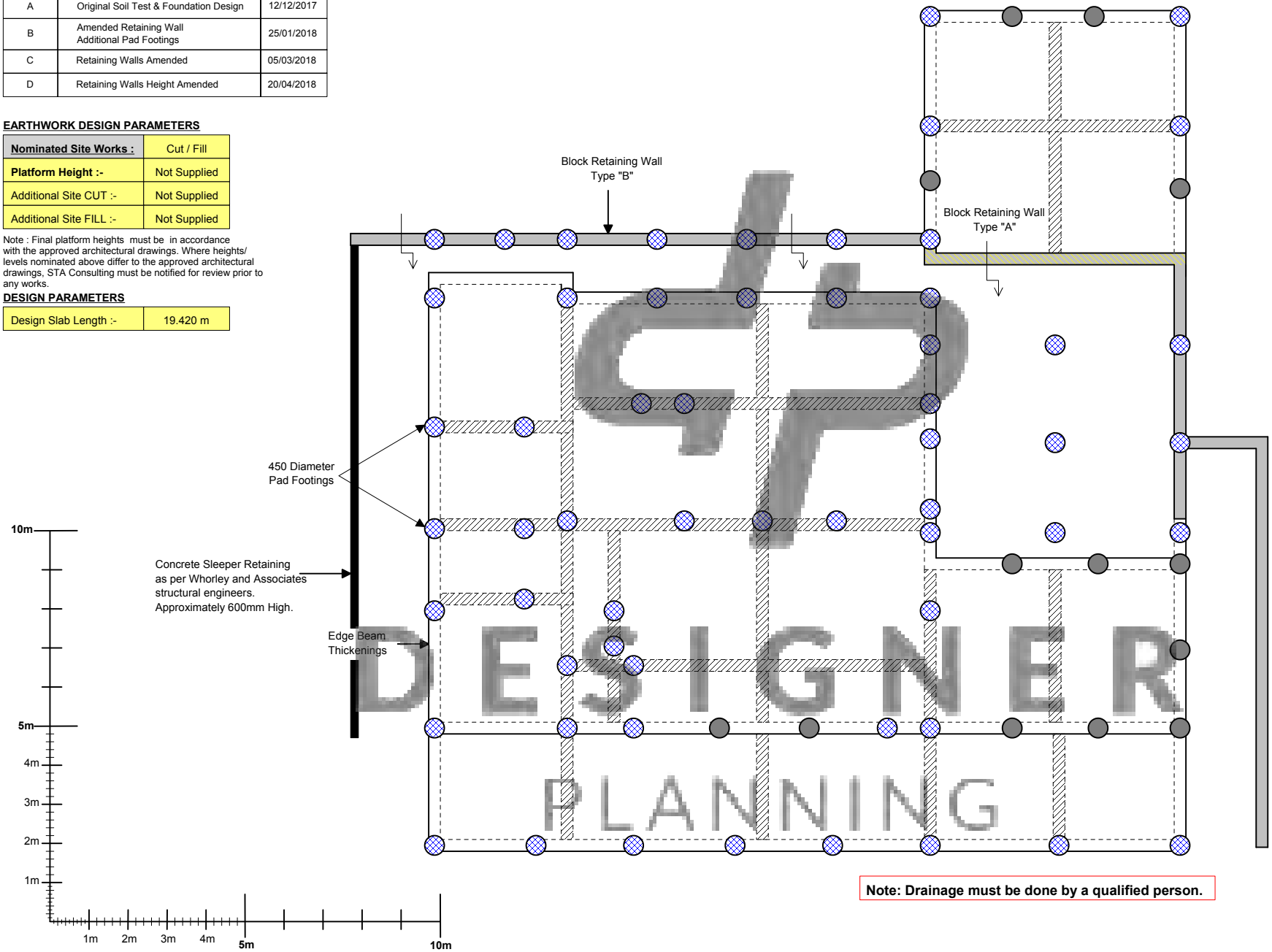
EARTHWORK DESIGN PARAMETERS

Nominated Site Works :	Cut / Fill
Platform Height :-	Not Supplied
Additional Site CUT :-	Not Supplied
Additional Site FILL :-	Not Supplied

Note : Final platform heights must be in accordance with the approved architectural drawings. Where heights/ levels nominated above differ to the approved architectural drawings, STA Consulting must be notified for review prior to any works.

DESIGN PARAMETERS

Design Slab Length :-	19.420 m



Legend :-	MM8
Symbols	Descriptions
	- Edge Beam Reinforcemen 1 x N12 Bar Top 3L12TM Bottom
	- Slab Thickening Beam Reinforcement 3L12TM
	- Slab Thickening Location
	- Slab Thickening required under Load Bearing Wall
	- 450 Dia. Edge Beam Footing Piers
	- 350 Dia. Slab Piers
	- SL 82 Slab Mesh
	- Re-Entry Steel 3 Wires (Trench Mesh) 2.0m Long
	- Re-Entry Steel 6 Wires (Slab Mesh) 2.0m Long
	- Column Locations
	- 450 x 450 Pad Footings
	- 450 Diameter Isolated Pad Footings
	- Load Bearing Wall
	- Min. Slab Thickness 100 mm

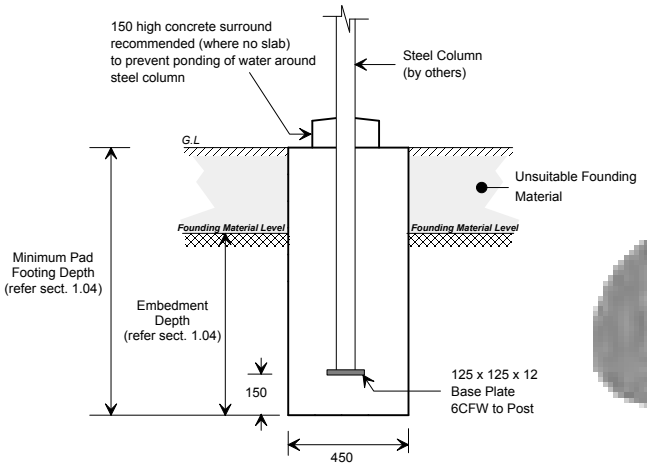
Note: Drainage must be done by a qualified person.

Client

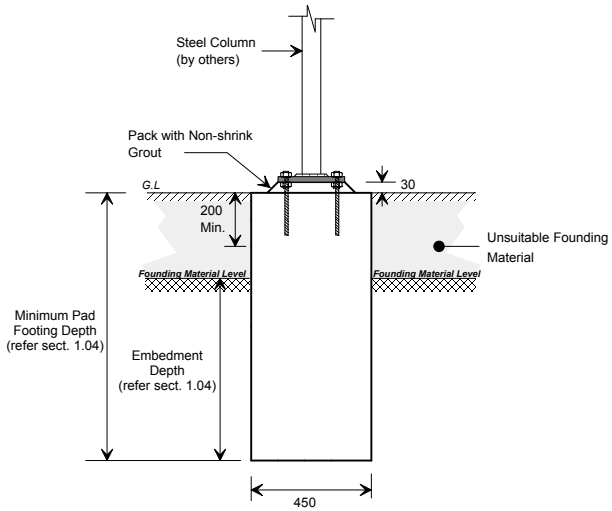
Site Address

Pad Footing Specifications

Steel Columns Option A



Steel Columns Option B

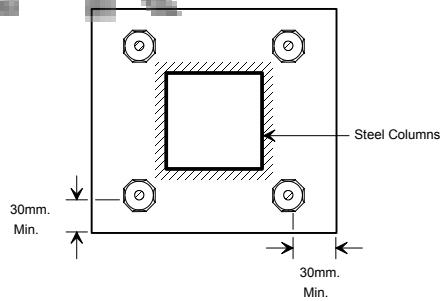


DESIGNER
PLANNING

Note: Post support specifications given are a guide only, in all instances it is the builders responsibility to install post supports in line with the manufacturers specifications specific (if any) structural engineer requirements.

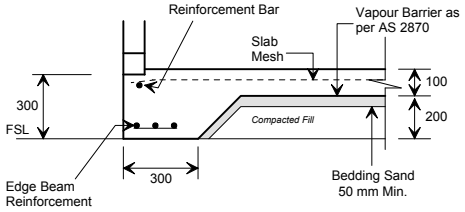
Nominal Plate and Connection Detail

Enlarged Plan View (Not to scale)

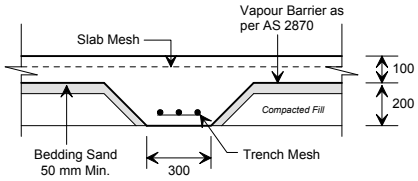


	Client	Site Address

Edge Beam Detail

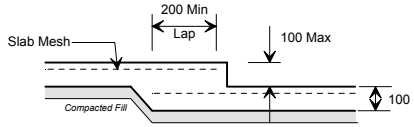


Slab Thickening Detail



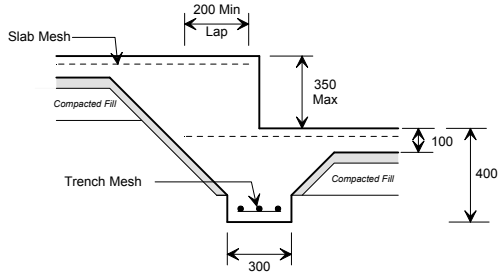
Step Down Details

(100 mm Maximum)



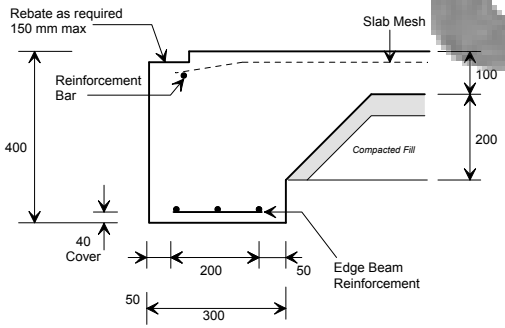
Step Down Details

(350 mm Maximum)



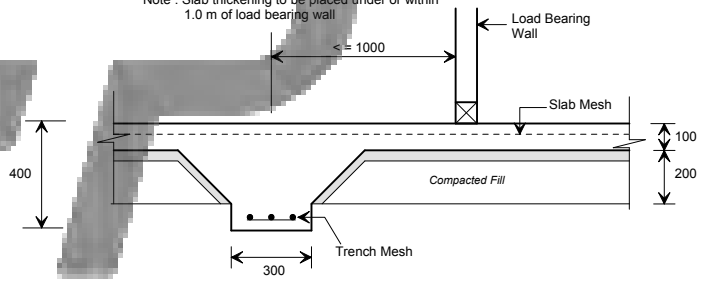
Edge Beam Rebate Dimensions

(Enlarged Drawing)



Typical Load Bearing Wall Detail

Note : Slab thickening to be placed under or within 1.0 m of load bearing wall



DESIGNER PLANNING

Notes :-

1. Bar Chairs are to be placed at 800 centres Maximum.
2. Slab Mesh to have 25 mm Top Cover.
3. Slab Mesh to have 35 mm Edge Cover.
4. Trench Mesh to have 40 mm Bottom Cover.
5. Reinforcement bars to have 40 mm Cover (around entire bar).
6. Slab Edge and Internal ribs MUST be vibrated.

Design Specification Table :

	Product Code	Steel Strength
Slab Reinforcement	SL82	500 Grade
Edge Beam & Thickening Reinforcement	3 L12 TM	500 Grade
Starter Bars	N/A	500 Grade
Reinforcement Bars	N12 Bar	500 Grade

Concrete Strength Table :

Elements	Concrete Strength F'c MPa	Slump (mm)
Bored/ Drilled Piers	**20**	**80 - 100**
Strip Footing	**20**	**80 - 100**
Slab On Ground Garage/ External	**20**	**80 - 100**
Slab On Ground Internal	**20**	**80 - 100**

Design Code : MM8

Client

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Retaining Wall Notes

Introduction:- Reinforced concrete masonry retaining walls consist of a reinforced concrete base which anchors the wall against overturning and sliding, and a stem of blocks. The stem is reinforced with steel bars placed vertically and horizontally, and all cores in the blocks are filled with semi-fluid concrete, known as "Grout"

MATERIAL SPECIFICATION

In calculating these tables, the following material specifications were adopted:

BLOCK	f'uc = 15MPa in accordance with AS3700-2001
MORTAR	Cement 1: Lime 1/2: Sand 4 1/2
CONCRETE FOOTINGS	f'c = 25MPa (for exposure classification A2 in accordance with AS3600-2009
REINFORCEMENT	Grade 500N
GROUT	f'c = 20MPa with a pourable consistency and a cement content not less than 300Kg/m^3

BACKFILL DRAINAGE SYSTEMS

It is essential that steps be taken to prevent the backfill behind the wall from becoming saturated. These steps should include:-

a) Sealing backfill surface - this can be done by covering it with a compacted layer of material with low permeability. The surface should be sloped towards an open drain.

b) A drainage system within the backfill - this should preferably be achieved by placing gravel to a width of approx 300mm immediately behind the wall with a continuous agricultural pipe located at the base of the wall. The outlets to the pipe must be beyond the ends of the wall unless the pipe is connected to a proper storm-water drainage system. For higher walls or in cases where excessive ground water exists it may be necessary to provide another agricultural pipe drain at mid-height of the wall.

If it is not possible to discharge the drains beyond the end of the wall, weep-holes may be provided. In this case, a collecting system (e.g. spoon drain) must discharge the water into a drainage system to prevent saturation of the ground in front of the wall.

WATER PENETRATION

If considered necessary to reduce the passage of water through the wall to a negotiable quantity, for aesthetic or other reasons such as aggressive ground water, the earth face of the wall should be treated using appropriate sealing techniques.

How to Build the Wall

Footings -

1. Form the footing to the required dimensions and levels.
2. Place the footing reinforcement as shown in the diagrams. Securely fix the starter bars for the vertical reinforcement (V-bars) 55mm from the back face of the wall, in the correct positions relative to the block cores to be reinforced.
3. Place the footing concrete, preferably using ready-mixed concrete, and compact thoroughly by rodding, spading or vibrating. Wood float finish any surface to be exposed permanently. Take care not to dislodge reinforcement.

Blocklaying -

Blocklaying procedure follows that of the normal practise for building unreinforced walls.
Recommendations specifically applicable to reinforced masonry retaining walls follow:

1. Cleanout openings should be provided in the bottom course, to permit removal of mortar fins and other debris, and to allow positioning and tying of vertical reinforcement. These openings must be closed before grouting.
2. Weepholes can be formed by leaving out mortar in the vertical joint at the required location.
3. Mortar projection into the cores should be removed, either as the blocks are laid, or by rodding after the mortar has set. Debris should be removed from the cores throughout the cleanout openings.
4. Reinforcement must be positioned accurately and tied securely before placing concrete or grout. Vertical reinforcing bars, including starter bars, should be as close to the back face of the walls as possible, consistent with cover requirements.

Grouting -

1. Close cleanout openings.
2. Place grout. It is recommended that whenever available, ready-mixed grout to workability specification given in AS3700 1988 should be used. Site mixed grout, if used should be mixed thoroughly in a tilting drum type paddle mixer to the same specification as ready-mixed grout.
3. All cores should be filled with grout, whether reinforced or not. This is essential, to bond and protect horizontal reinforcement, and to give maximum weight for stability.
4. The grout should be compacted thoroughly so that voids are not left. Compaction may be by rodding with a plain round bar (do not use main vertical reinforcing bars or other deformed bars) or with a high frequency pencil vibrator, used carefully.

Backfill and Drainage -

1. Backfill should not be placed behind the wall until at least ten days after grouting.
2. Backfill should be placed and compacted in layers not more than 200mm deep. The degree and method of compaction depends on the proposed use of the backfilled area.
3. The drainage system should be installed progressively as the backfill rises.
4. The drainage system behind the wall should be connected to the main drainage system.
5. When using soil backfill, it is advisable to seal off the top surface of the backfill with a semi-impermeable layer of soil or earth. Compact and grade to a gutter to provide surface drainage.

Control Joint -

1. For external block retaining wall which does not form part of the dwelling, a straight wall fully reinforced should have a vertical control joint at 14m maximum spaces and 8m maximum spaces for unreinforced retaining wall.
2. If retaining wall is painted for aesthetic part of dwelling , use a flexible sealing paint over block units or over rendering. Install waterproofing on the other side of wall where fill matierial is going, or under garden soil behind the wall.

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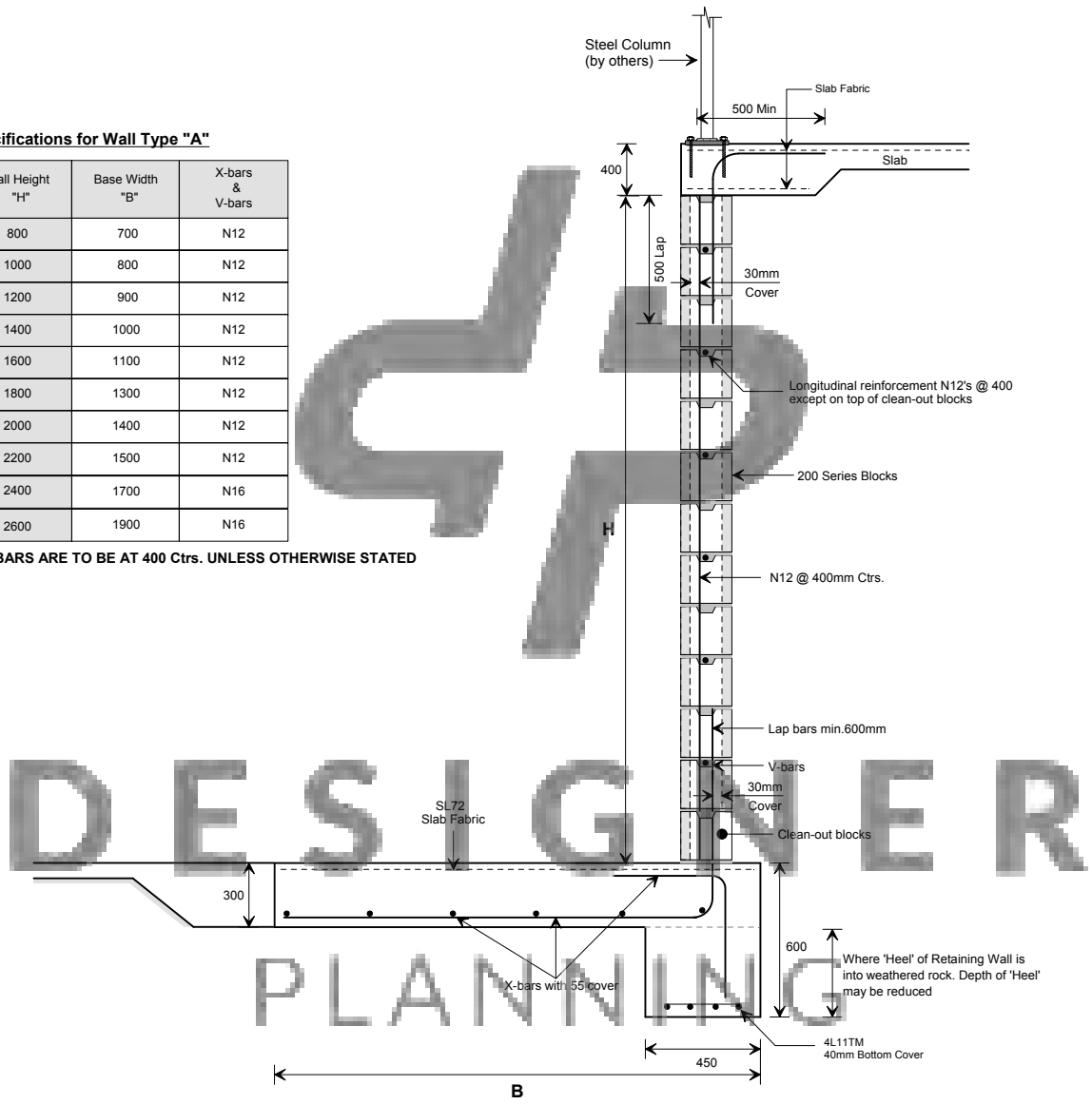
Retaning Wall Type 'A'

Specifications for Wall Type "A"

Wall Height "H"	Base Width "B"	X-bars & V-bars
800	700	N12
1000	800	N12
1200	900	N12
1400	1000	N12
1600	1100	N12
1800	1300	N12
2000	1400	N12
2200	1500	N12
2400	1700	N16
2600	1900	N16

ALL BARS ARE TO BE AT 400 Ctrs. UNLESS OTHERWISE STATED



Walls up to 2m HIGH

DESIGNER PLANNING

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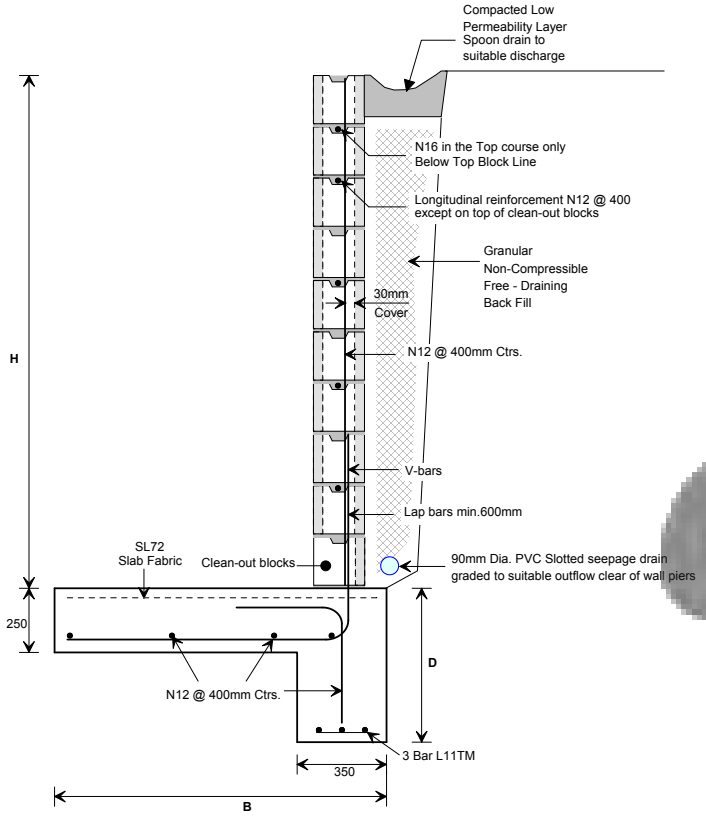
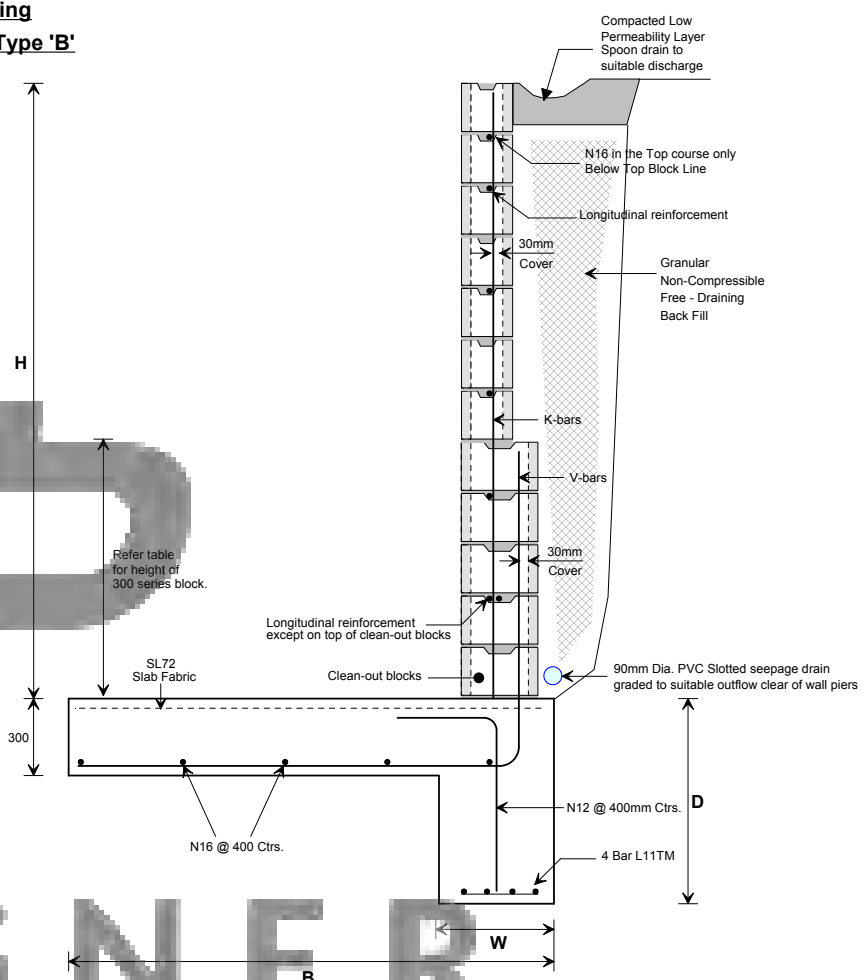
Free Standing Retaning Wall Type 'B'



WALLS OVER 1.2m and up to 2.0m HIGH

(200 Series Blockwork)



WALLS OVER 2.0m and up to 2.6m HIGH

(200 & 300 Series Blockwork)

Specifications for Wall Type "B"

Wall Height "H"	Base Width "B"	Heel Width "W"	Base Depth "D"	Height of block 200 Series	Height of block 300 Series	V-bars	K-bars
800	700	300	500	800		N12	
1000	800	300	500	1000		N12	
1200	900	300	500	1200		N12	
1400	1000	350	600	1400		N12	
1600	1100	350	600	1600		N12	
1800	1300	350	600	1800		N16	
2000	1400	450	700	1400	600	N16	N16
2200	1500	450	700	1400	800	N16	N16
2400	1700	450	800	1600	800	N16	N16
2600	1900	450	800	1600	1000	**N16 @ 200c/c**	**N16 @ 200c/c**

ALL BARS ARE TO BE AT 400 Ctrs. UNLESS OTHERWISE STATED

*** A 5KPA Surcharge Equates to 300mm of Soil**

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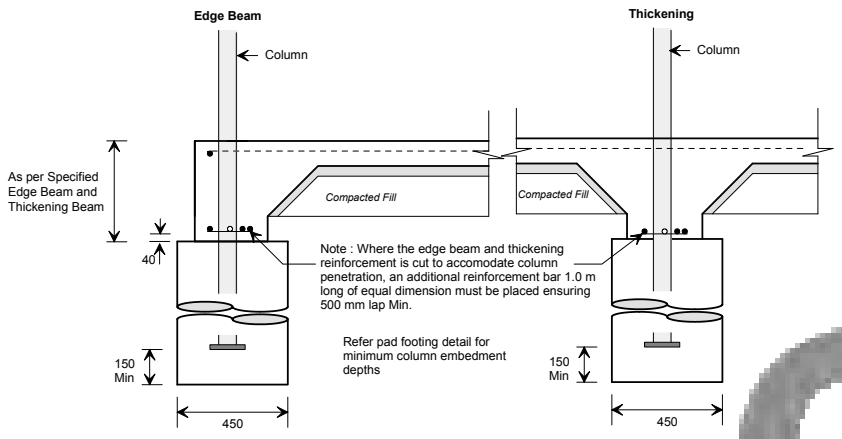
Client

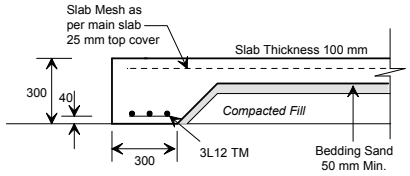
Site Address

TYPICAL DETAILS

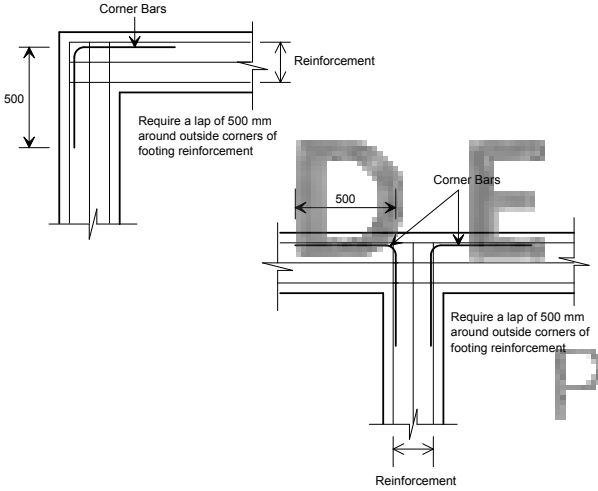
Column Penetration Detail



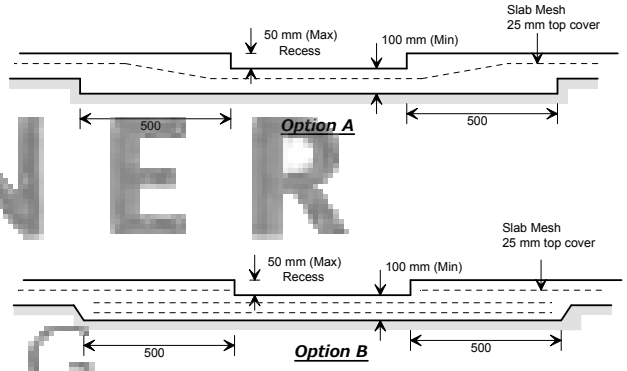
Typical Slab Edge Thickening Detail



N12 Corner Bars



Wet Area Recess Details

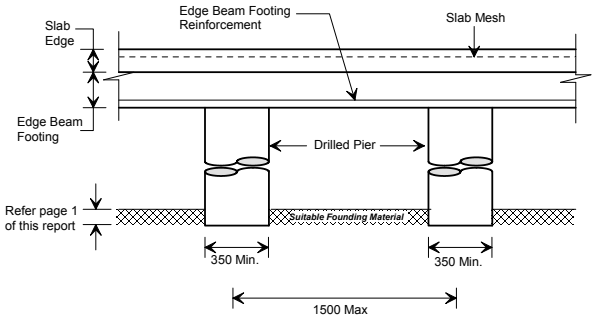


DESIGNER PLANNING

	Client	Site Address

Typical Edge Beam Piering Details

Option A - Bored Piers



Section

Technical Notes

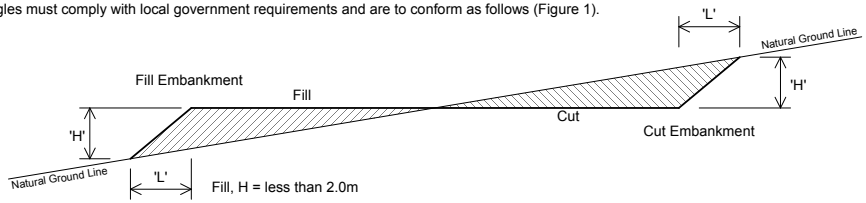
Earth Works Specifications

Batter Angles for Embankments:-

It is the builders responsibility to ensure that the site works do not undermine or place additional surcharge on any existing structures. If this can not be achieved STA Consulting Engineers must be contacted prior to any site works being undertaken.

Batter angles must comply with local government requirements and are to conform as follows (Figure 1).

Figure 1.



	Material Type (Refer Bore Logs)	Stable Rock	Sand	Silt	Clay		Soft Soils
					Firm Clay	Soft Clay	
Embankment Slopes (Height Length)	Compacted Fill	2 : 3	1 : 2	1 : 4	1 : 2	Not Suitable	Not Suitable
	Cutting	8 : 1	2 : 3	1 : 4	1 : 1	2 : 3	Not Suitable

Note: Retaining walls or other forms of soil retaining methods must be adopted where the slope ratio is greater than that indicated in the table above

Fill Material and Compaction:-

Organic material, highly reactive clays and large rocks are not suitable for use as fill. The fill is to be spread in 150 mm layers and extensively track rolled with a drott. All earthworks to be carried out in accordance with the full requirements of AS3798, Guidelines for Earthworks for Commercial and Residential Developments.

NOTE - In the instances where by significant levels of filling are observed, there will always remain the posibility of tilt as a result of differential settlement in the fill. Australian Standard (AS2870-2011) does not cater for tilting of the slab as a result of differential settlement within certified nor does the Australian Standard address the possible occurrence when shallow foundations are adopted.

Drainage:-

The external finished surface surrounding the dwelling must be drained to move surface water away from the building and graded to give a slope of not less than 50 mm over the first 1 m away from the building.

Reinforcement Specifications

Steel wire reinforcing fabric and bars to conform with AS1304 - Hard Drawn Steel Wire Reinforcing Fabric for Concrete) and AS1302 - Steel Reinforceing Bars For Concrete.

Lap Lengths

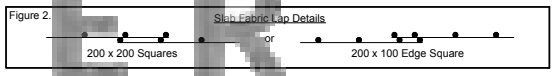
Trench Mesh - 500 mm in a straight line, or to the far face at "T" and "L" intersections

Steel Bars - "N" Bars - 35 times the bar diameter.

Corner Bars - required at all "T" and "L" intersections. Refer to the design drawings for the appropriate construction details.

Slab Fabric - One full panel of the fabric, so as the two outer-most transverse wires of each sheet are overlapped. As shown on the below detail (Figure 2).

Figure 2.



Note :- Where external beams are wider than 300 mm, an extra equivalent bottom reinforcement bar is required for each 100 mm additional width. For example, a 400 mm wide edge beam will require a minimum of 4 bar trench mesh (300 mm wide).

Concrete Specifications

The concrete must have a strength at 28 days of not less than 20MPa unless otherwise specified on the foundation cross section, a 20 mm nominal aggregate size and have a nominal 80 - 100 mm slump. Water must not be added to the mix to increase the slump to a value in excess of that specified. Concrete must be placed and compacted/vibrated with good building practice. In hot and windy conditions concrete must be cured by covering with plastic sheeting, spraying with a liquid membrane curing compound or ponding water on the top surface. The concrete must be manufactured to comply with AS3600 - Concrete Structures.

Shallow Rock, Boulders & Rock Outcrops

The depth of strip footings may be reduced where refusal on shallow rock, on a boulder or partially over a small rock outcrop is encountered. Where this is less than 400 mm, top steel, corner bars and starter bars may be deleted. However before the beam depth becomes less than 400 mm, top steel is to be lapped 500 mm with the bottom steel. It is also required that a minimum edge beam depth of 200 mm be maintained at all times. It is also recommended that the external walls are articulated at the start and end of the rock outcrop.

DESIGNER PLANNING

1)	Housing Site State	QLD
2)	Lower limit Set by Client / Council	-
3)	Wind region	B
	see tab 1.Wind Regions for HELP	
4)	Min number of rows of houses or similar sized structures surrounding the house being considered	2

Permanent heavily wooded areas within 100 m of site provide full shielding; therefore, the effects of roads or other open areas with a distance measured in any direction of less than 100m shall be ignored.

5)	Min number of houses per hectare	10
	Shielding	FS
	Full Shielding is appropriate for:	
	Typical suburban development	

?

6)	H *(height of the hill, ridge or escarpment in meters)*	H ? 10 m
7)	Slope Input Type	Percentage
8)	Maximum Slope	slope < 5%
	** Update Max slope if slope input type changed*	
9)	Site Location	Lower-Third Zone (L) or FLAT
	see tab 2. Topographic Zones for HELP	
	Topographic Classification	T0
	Leave this cell blank >>	-
10)	Terrain Category (TC)	3
	see tab 3. TC for HELP	
11)	Terain Category averaging carried out as per AS1170.2 Cl 4.2.3	NO

Terrain with numerous closely spaced obstructions having heights generally from 3 m to 10 m. The minimum density of obstructions shall be at least the equivalent of 10 house-size obstructions per hectare, e.g. suburban housing or light industrial estates

WIND RATING	N2

Fig. 1. Assessment Criteria.

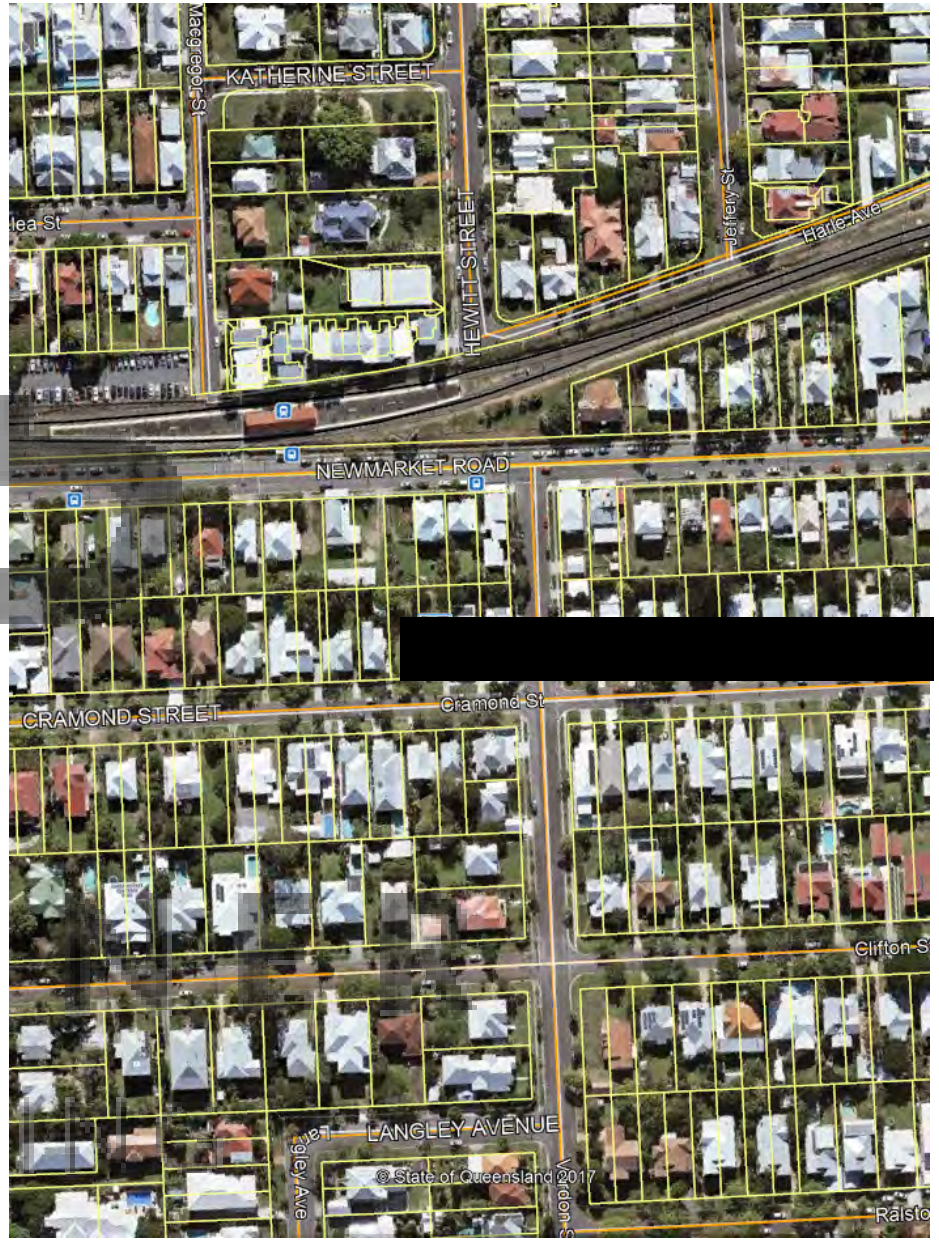


Fig. 2. Google Earth Image.

Client	Site Address

Queensland Government

Department of Housing and Public Works

Form15—Compliance certificate for building design or specification

Version 4 – July 2017

NOTE: This is to be used for the purposes of section 10 of the *Building Act 1975* and/or section 46 of the *Building Regulation 2006*.
RESTRICTION: A building certifier (class B) can only give a compliance certificate about whether building work complies with the BCA or a provision of the Queensland Development Code (QDC). A building certifier (Class B) can not give a certificate regarding QDC boundary clearance and site cover provisions.

1. Property description
This section need only be completed if details of street address and property description are applicable.
EG. In the case of (standard/generic) pool design/shell manufacture and/or patio and carport systems this section may not be applicable.
The description must identify all land the subject of the application.
The lot & plan details (eg. SP / RP) are shown on title documents or a rates notice.
If the plan is not registered by title, provide previous lot and plan details.

Street address *(include no., street, suburb / locality & postcode)*

Lot & plan details *(attach list if necessary)*

In which local government area is the land situated?
BRISBANE CITY

2. Description of Component/s Certified
Clearly describe the extent of work covered by this certificate, e.g. all structural aspects of the steel roof beams.

Foundation Design (including Retaining Walls if incorporated within the report)
Project Job Number ES 161117incorporating pages 1 through to 14.

3. Basis of Certification
Detail the basis for giving the certificate and the extent to which tests, specifications, rules, standards, codes of practice and other publications, were relied upon.

Design Criteria -
- NCC - National Construction Code of Australia.
- AS1170.2-2011 SAA Loading Code.
- AS3600-2009,Concrete Structures.
- SAA HB28-1997 The Design of Residential Slabs and Footings.
- AS2870-2011 Residential Slabs & Footings.
- AS4055-2012 Wind Loads For Housing.
- AS1726-1993 Geotechnical Site Investigations.

4. Reference Documentation
Clearly identify any relevant documentation, e.g. numbered structural engineering plans.

5. Building certifier reference number

Building certifier reference number

6. Competent person details
A competent person for building work, means a person who is assessed by the building certifier for the work as competent to practice in an aspect of the building and specification design, of the building work because of the individuals skill, experience and qualifications in the aspect. The competent person must also be registered or licensed under a law applying in the State to practice the aspect.
If no relevant law requires the individual to be licensed or registered to be able to give the help, the certifier must assess the individual as having appropriate experience, qualifications or skills to be able to give the help.
If the chief executive issues any guidelines for assessing a competent person, the building certifier must use the guidelines when assessing the person.

Name (*in full*)
Company name (*if applicable*) Contact person
Phone no. *business hours* Mobile no. Fax no.
Email address
Postal address
Licence or registration number (*if applicable*)

7. Signature of competent person
This certificate must be signed by the individual assessed by the building certifier as competent.

Signature Date
22 April 2018

The *Building Act 1975* is administered by the Department of Housing and Public Works

Section 7 Certification of Soils and Design Report - Obligations of the Home Owner/ Occupier

The performance of the footings and slab or both is largely depended upon a responsible approach by the builder and owner/occupier towards vegetation and site drainage.

THE DESIGN DOCUMENTATION REFERENCE GUIDE VERSION 6002 2.1. *(Download PDF copy from www.staconsulting.com.au)*

1. Is part of this Foundation Design Report and this Foundation Design Report cannot be relied on without it;
2. Must be read and understood by the builder;
3. Contains requirements and recommendations, and all requirements and recommendations must be complied with by the builder;

THE HOME OWNERS REFERENCE GUIDE VERSION 6002 1.1 *(Download PDF copy from www.staconsulting.com.au)*

1. Is part of this Foundation Design Report for the use of the homeowner/occupier;
2. Must be read and understood where appropriate by the homeowner/occupier;
3. Contains requirements and recommendations, and all requirements and recommendations must be complied with by the homeowner/occupier;

The home owner must also familiarise themselves with the information sheet Foundation Maintenance and Footing Performance : A Home OwnersGuide Building Technology File 18 (Formerly known as Information Sheet 10-91), prepared by JohnLewer FAIB, MIAMA, Partner, Construction Diagnosis and produced by the CSIRO. The following document can be viewed at the following link :-

http://www.publish.csiro.au/Books/download.cfm?ID=3612

Where there is ANY FAILURE of the builder or homeowner/occupier to comply with the above obligations then the RESPONSIBILITY for ANY FAILURE rests with the builder or homeowner/occupier.

Any concerns understanding the information provided within this document, please contact STA Consulting Engineers and a representative will assist in

DESIGNER PLANNING

LOCAL GOVERNMENT USE ONLY

Date received		Reference Number/s	

Client