Site Analysis

1. Where to locate the New Dwelling?

The decision to locate the new dwelling in the area of the existing dwelling (proposed for demolition) was not taken lightly or without due thought.

By locating the new dwelling where proposed, the existing and substantial equine infrastructure can remain and continue throughout the construction works and into the future. Additionally, the existing building services can be re-used and supplemented as required.

The views enjoyed by the existing dwelling will remain.

2. Solar access

The proposed dwelling has located its primary living spaces to the North-East which coincides with the primary views over the paddocks below and the bushland beyond.

These spaces will enjoy wonderful solar gain through the morning even in winter. The provision of covered external areas, and trellised areas will provide shielding from the summer sun.

The proposed dwelling has been located to capture the predominant Northern Beaches north-easterlies. These will be enjoyed by occupants both on the external terrace spaces as well as within the dwelling. The proposed garage building is located to the south of the proposed building works and will provide a buffer to the harsh southerlies.

4. Bushfire

The Bushfire Report captures the recommendations for the site. We have set the northern facade of the Games Room 10m back from the boundary and also located the pool to this boundary to aid potential bushfire threat.

The proposed works effect approximately 20% of the site area. The vast majority of the site will remain untouched and operational. This is an intentional decision based on the owner's request to respect the natural beauty of the existing landscape. An example of an action that demonstrates the owner's desire to 'not clutter their land with stuff' is their decision to commit resources to the burying of the proposed 200KL rain water tank. To bury a tank costs around 3 times the cost of an above ground tank. However, once buried, the land above can be returned to its pre-constructed state as if the tank was not there. Better for the land. Better for the animals. Better for the views both of the owners, the neighbours and the public.

6. Landscape

The site is devoid of any significant trees. A studied effort has been made by the design team, lead by the Landscape Architect Paul Bangay, to enhace the site via a considered and delicate garden design. The use of rock retaining walls, to visually echo and reflect the existing rock escarpment will soften the eastern facade of the building as it addresses the paddocks below.

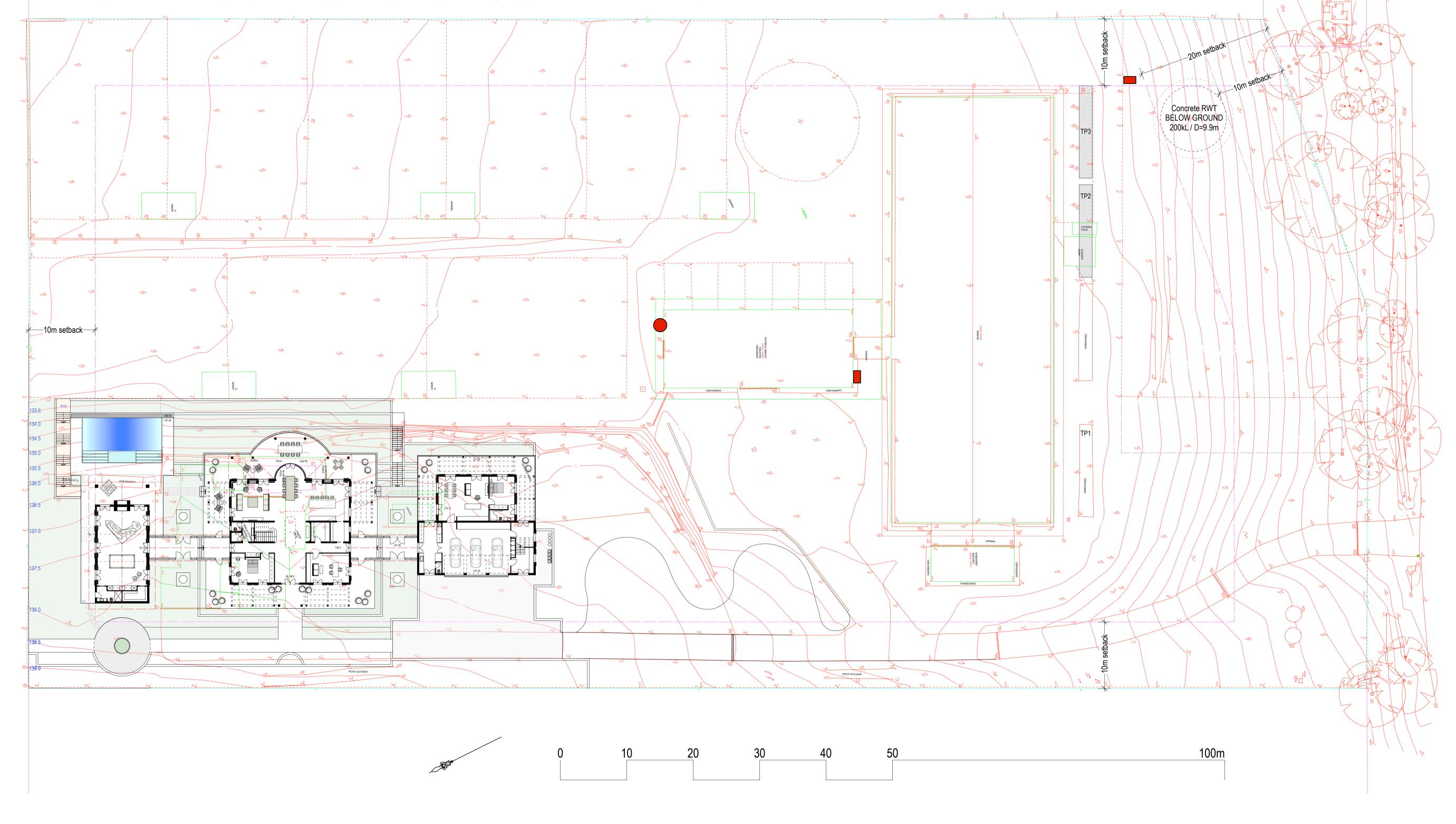
The goal of the landscape works is to create a beautiful natural environment that will be a 'work of art' in itself. We refer you to the significant body of work created by Paul Bangay which can be easily accessed online.

It is our view that the proposed gardens will enhance and compliment the natural beauty of the site.

7. Neighbours

The size of the site and of the neighbouring properties means that the distance between the proposed dwelling and the neighbour to the West is vast.

The shadow diagrams that are attached with this Development Application show that the proposed new dwelling will not cast any shadows on neighbours properties on June 21st between the hours of 9am and 3pm.



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Jenny and David Austin

Austin Residence

13 Morgan Road Belrose

Project Code

AUST01

Development Application

A 9/7/21 DA Issue Drawing

Site Plan

Drawing Number

DA01

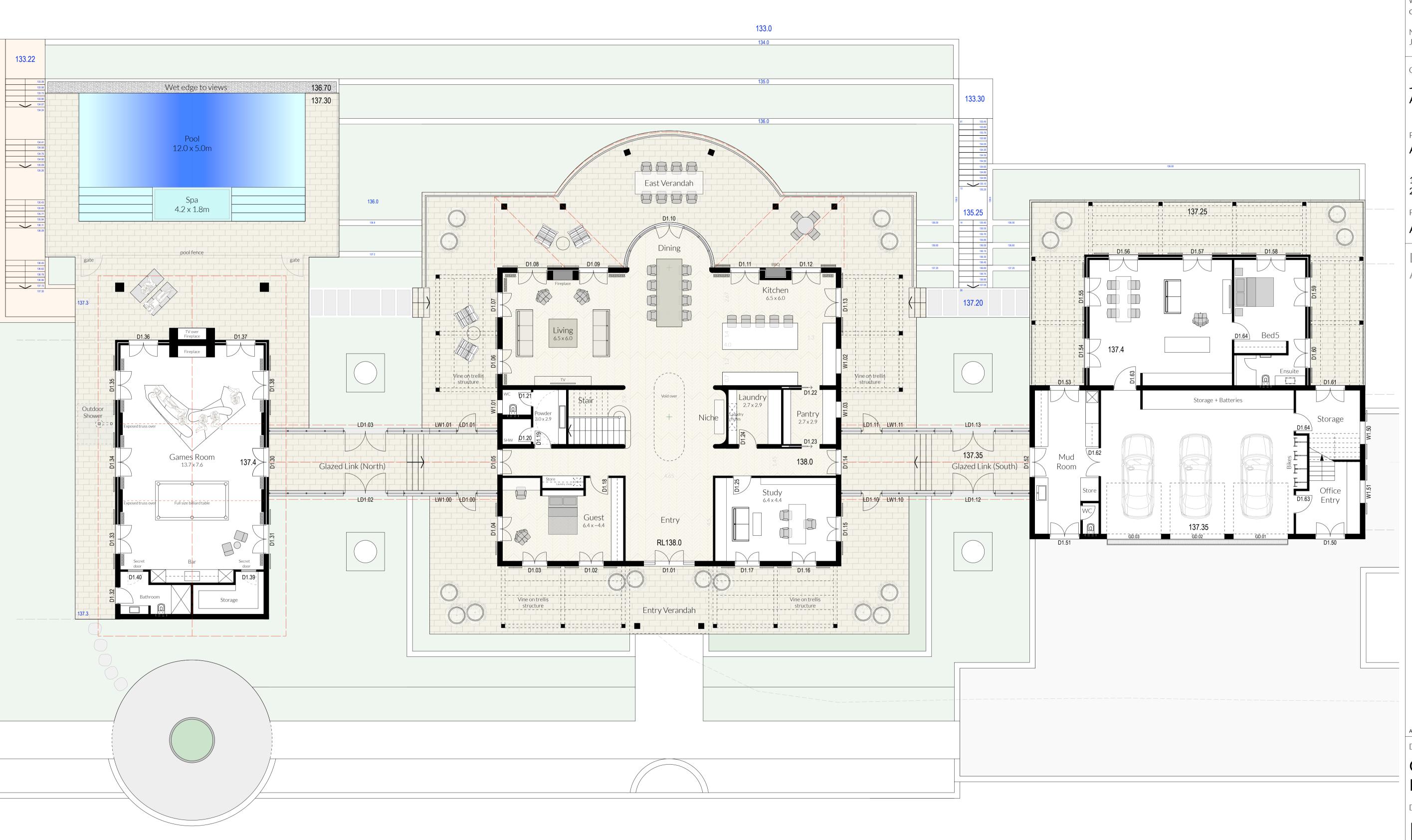
Revision

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Rev Date 9/7/21

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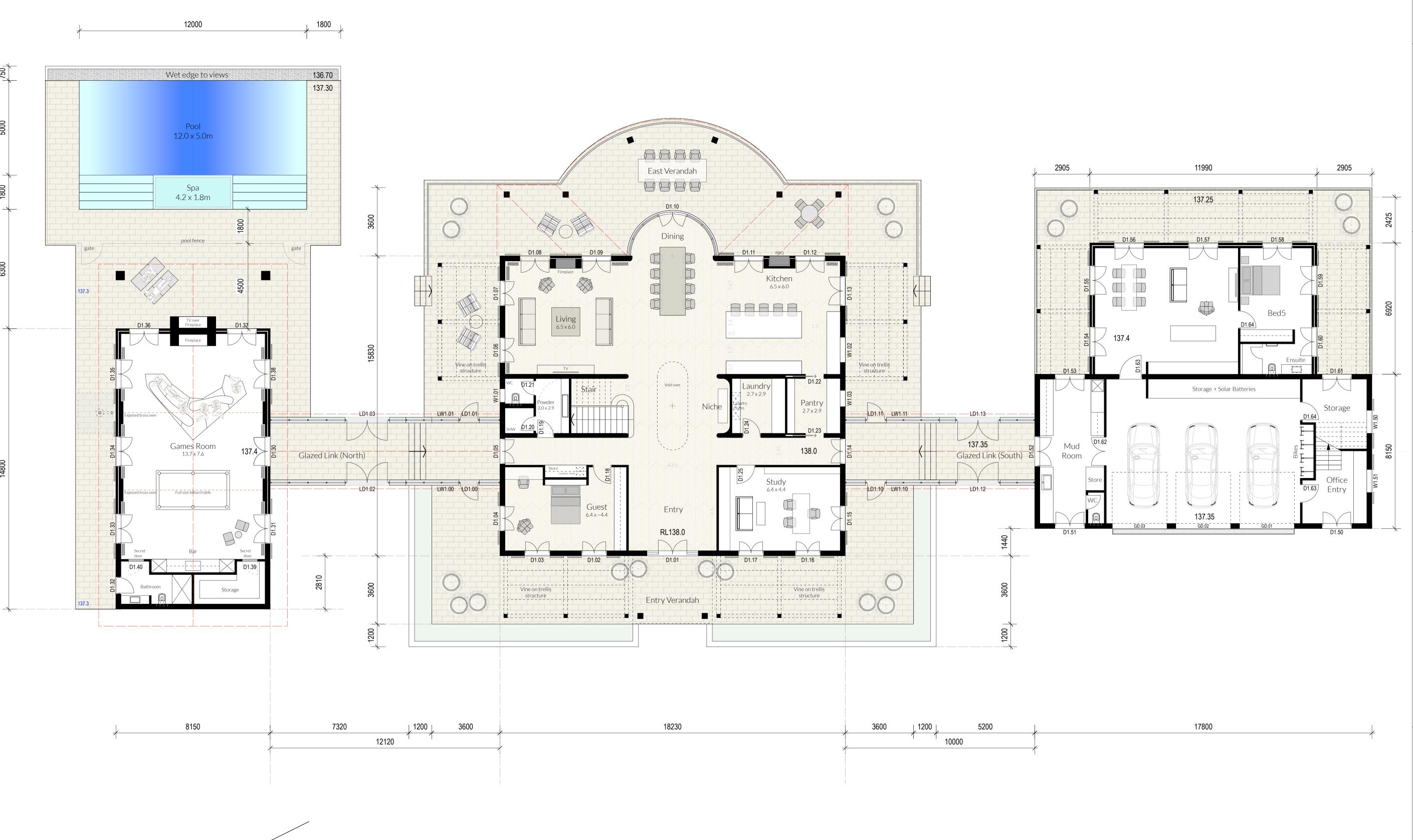
Drawing

Ground Floor Plan & Garden

Drawing Number

DA02.1

Revision
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Scale
1:100 @ A1
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Drawing

Ground Floor Plan

Drawing Number

DA02.2

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Rev Date
9/7/21
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11990 Bed 2 6.4 x 3.9 Library Roof Garden Terrace 141.6 Bed 1 6.4 × 6.0 Ensuite - Void-Utility Room Ensuite 140.6 Study Bed 3 6.4 x 3.9 ---17260-8-8-8 5 5-8-8 5 5-8-8 5 5-8-8 5 5-8-8 5 5-8-8 5 5-8-8 5 5-8-8 5 5-8-8 5 5-8-8 5 5-8-8 5 5-8-8 5 5-8-8 5 5-8-8 8 2 4 2 - 9 28 20 BB 8 B 9 2 5 - 24 0 BB 2 4 4 6 6 7 6 6 7 8 6 8 7 8 8 8 8 6 7 8 8 6 8 8 7 8 8 8 H 5-2-2-3-2-3-3-1 12120 18230 10000 17800 8150

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Drawing

First Floor Plan

Drawing Number

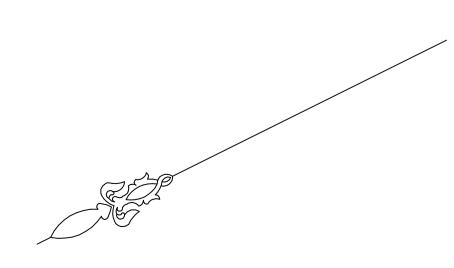
DA03

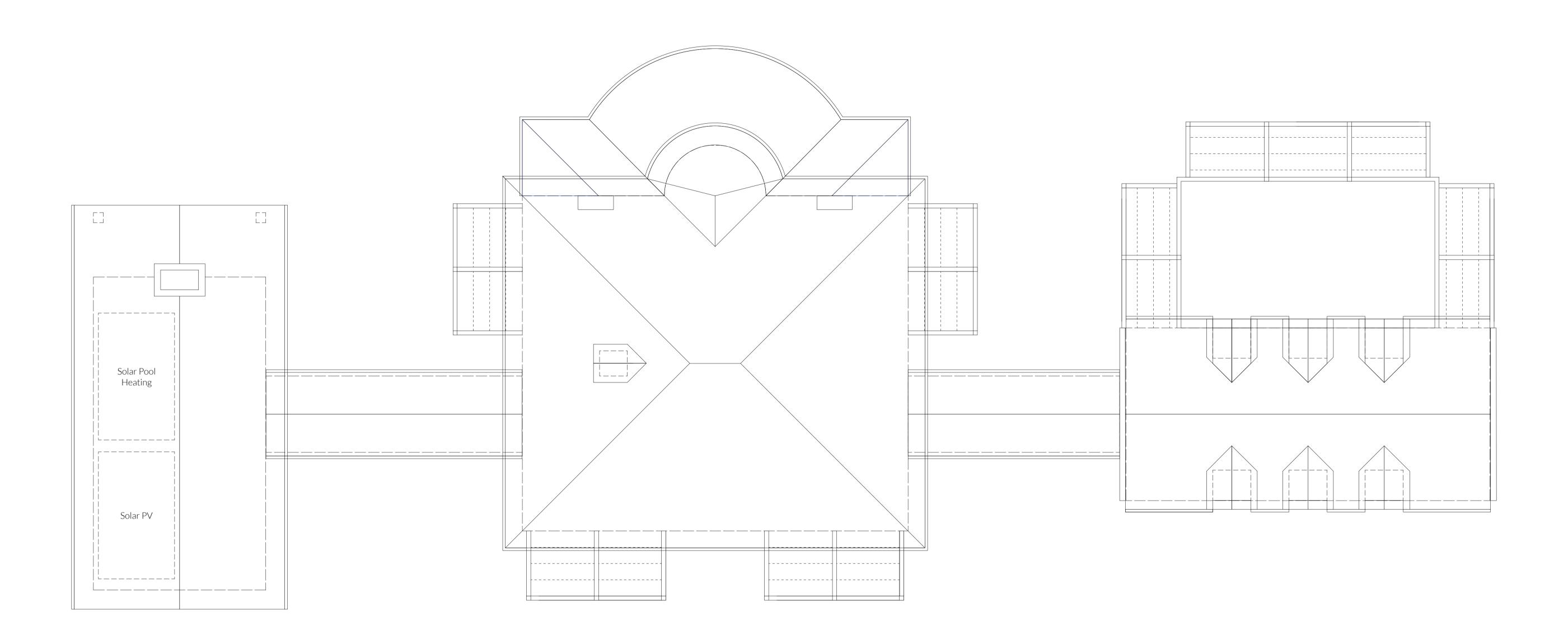
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Drawing

Roof Plan

Drawing Number

DA04

Revision **A**

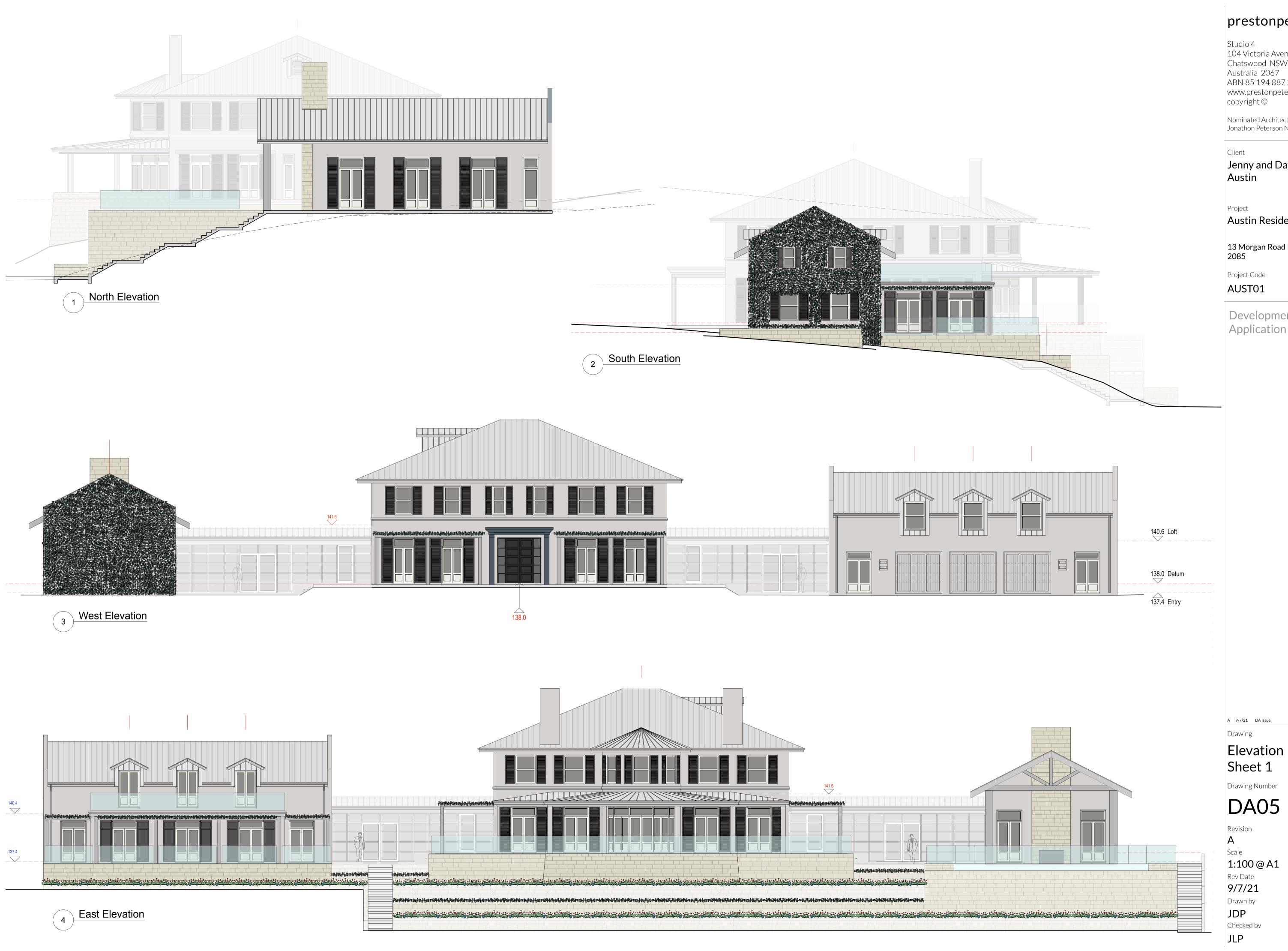
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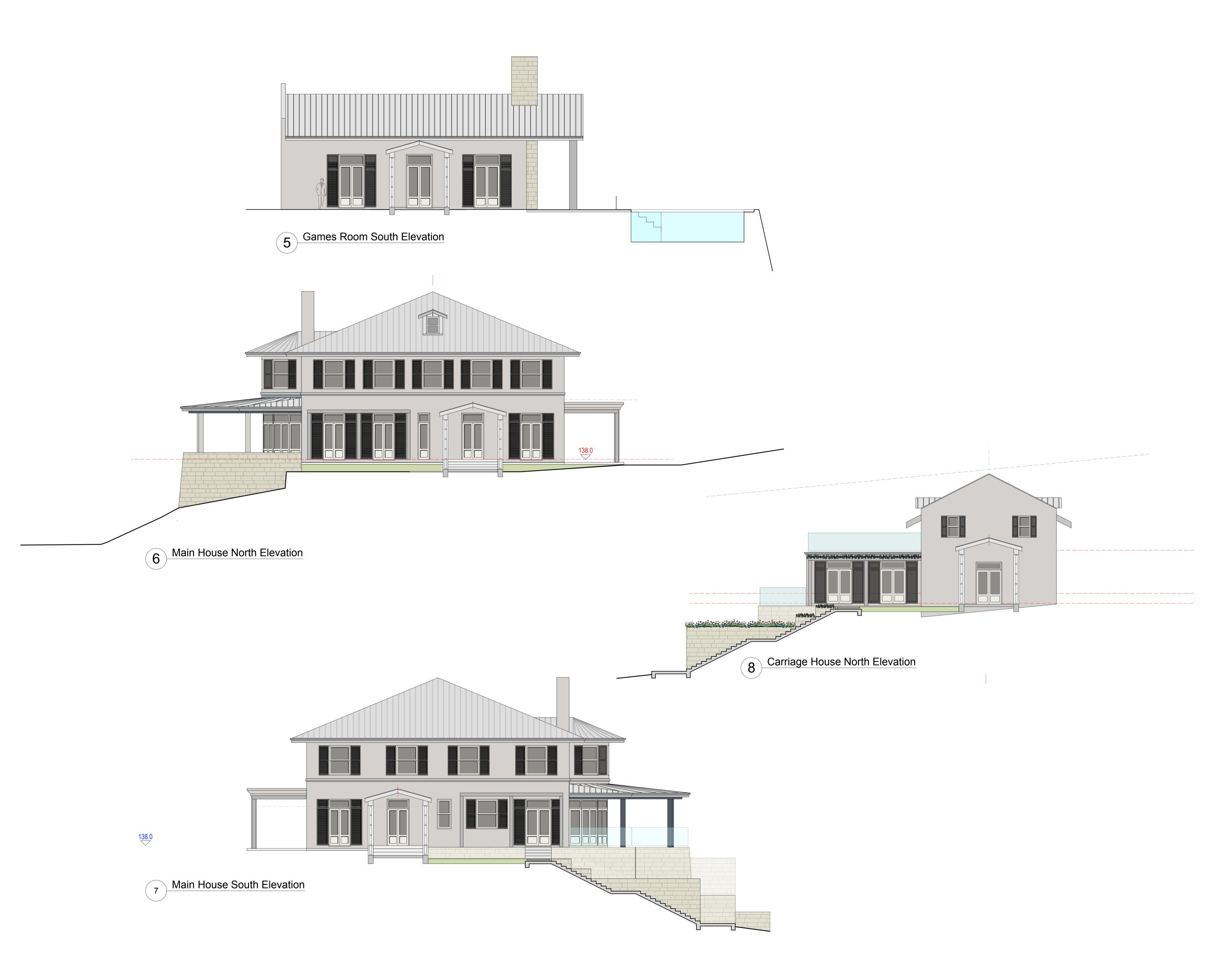
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Drawing

Elevation Sheet 2

Drawing Number

DA06

Revision

Scale

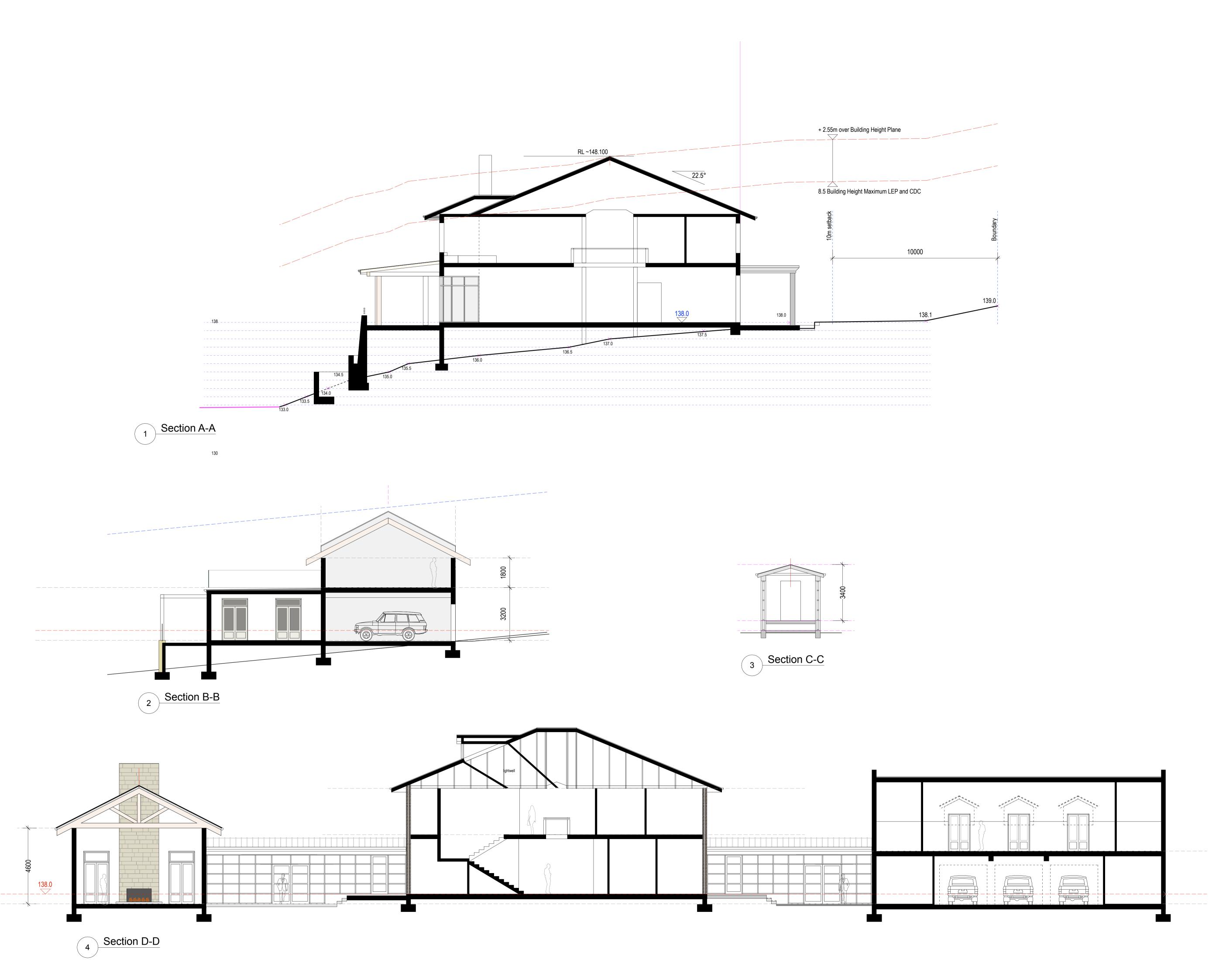
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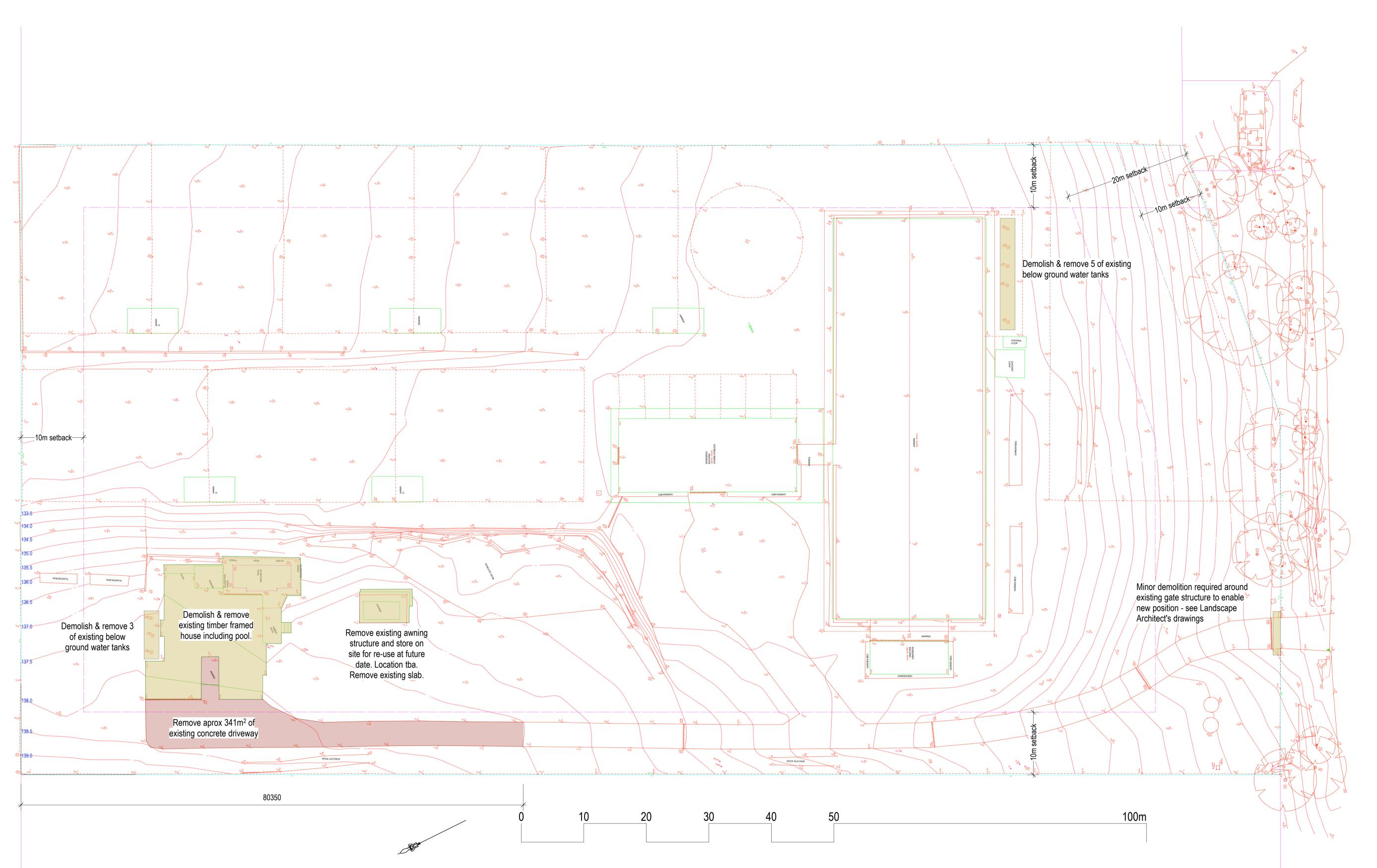
Drawing

Sections

Drawing Number

DA07

Revision
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Drawing

Demolition Plan

Drawing Number

DEM01

Revision

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—10m setback—✓ No change to driveway between Morgan Road and property boundary 80350 100m

It is proposed that approximately 341m² of existing concrete driveway be removed (see Demolition Plan DEM01). The Landscape Architect has proposed that the area westward of the proposed garage structure be surfaced in selected gravel. An image depicting a similar design solution is included in our architectural finishes plan FIN01. Drainage of this area has been considered by the project's hydraulic engineer and documented accordingly.

Minor change to entry gate and supporting structure. See Landscape Architect's plans. Reason: when entering the site, a car + trailer cannot fit between the closed gate and the road pavement. This has potential safety consequences as vehicles travelling eastward have little time to stop from the westward corner. Moving the gate further into the property as proposed will allow for a vehicle and trailer to be fully off the road whilst the gate is opened.

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Development Application

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Drawing

Driveway Plan

Drawing Number

DRV01

Revision

A Scale

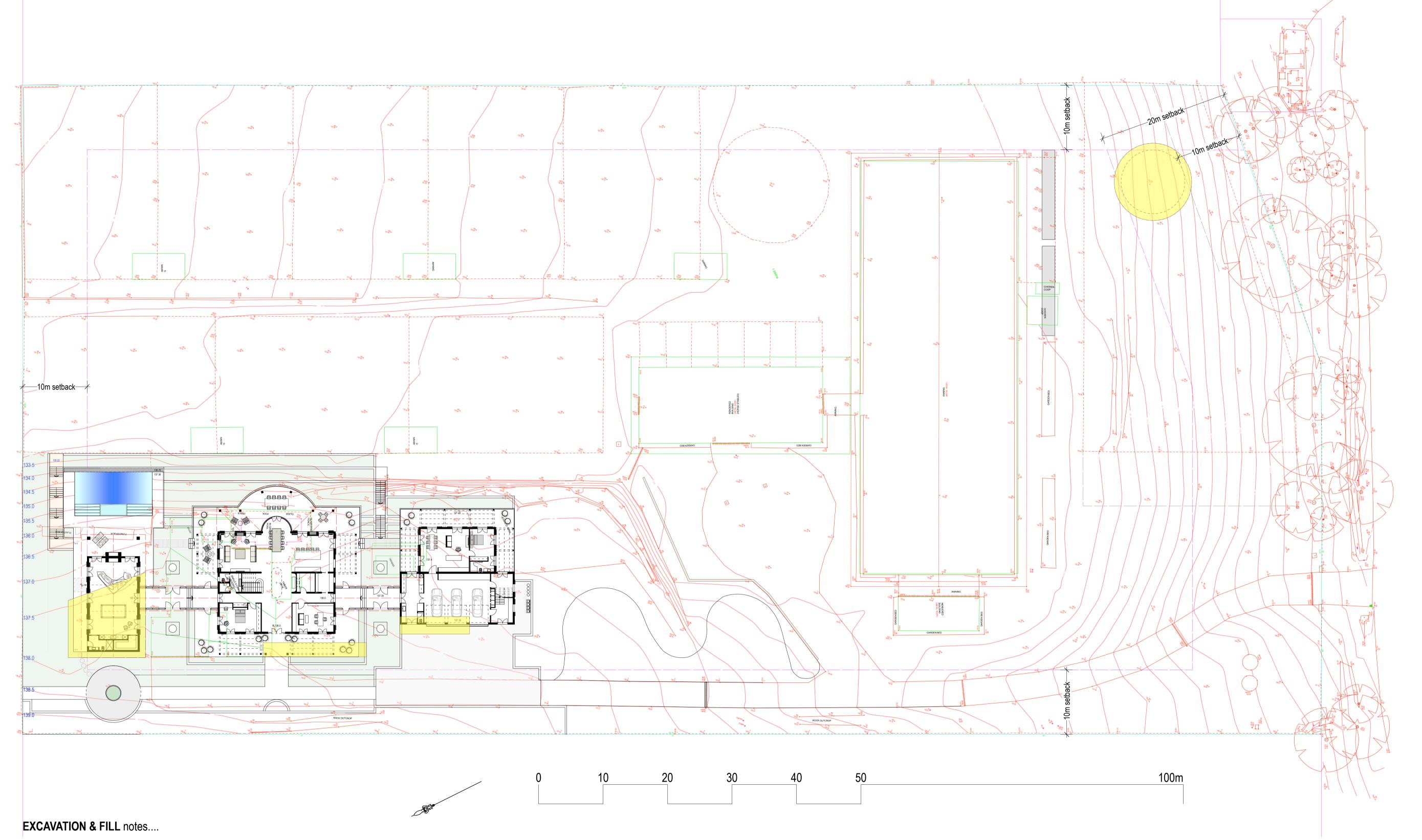
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- Principles informing the design: the design has been undertaken with a view to limit the amount of excavation required to undertake the works. We have done this to a) minimise cost of construction, b) minimise noise pollution during construction, c) minimise disturbance to the land generally and the land's hydrology specifically, d) minimise truck movements to/fro site.
- The most significant excavation will occur to enable the burying of the proposed 200KL concrete water tank. The tank has a diameter of 9.9m. However, it needs a 12m diameter excavation to allow for construction access. The height of the tank is 3.6m. As the tank is located on sloping ground, the contours guide the average depth of excavation to be 4.9m. The volume of excavation is therefore approximately 2120m³. We anticipate that approximately 3/5 of the excavated material will be sandstone (say 1275m³ of sandstone). It is our hope that the quality of this sandstone will be sufficient to use in the copious areas of sandstone clad retaining walls throughout the works. However, this will depend on what we find during excavation. The remaining excavated material will be used as backfill around the tank once it is constructed. Any excess material (either sandstone that is not useable in the new works, or spoil) will be taken away from the site by commercial contractors.
- Games Room the western end of the games room sits below the existing natural ground level. The land is around 700mm above ground at the south-western corner of the Games Room. This will require trimming of the site in this location. The depth of the underlying sandstone shelf in this location has been tested by the project's geotechnical engineer and it sits approximately 200-300mm below ground. Again, it is hoped that any sandstone excavated in this area can be re-used throughout the works but only time will tell as to the quality of what we find.
- Minor other areas to enable works the project's structural engineer will develop the design of the building's footings as part of the design documentation phase of the works. It is hoped that the existence of rock as the underlying base material under the proposed building will result in very little excavation to enable the works.
- Swimming pool it is noted that the swimming pool is unlikely to require any excavation as it has been designed to have a finished level similar to the Games Room, and therefore the floor of the pool will sit above the existing ground level.

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Development **Application**

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Drawing

Excavation & Fill Plan

Drawing Number

EXF01

Revision

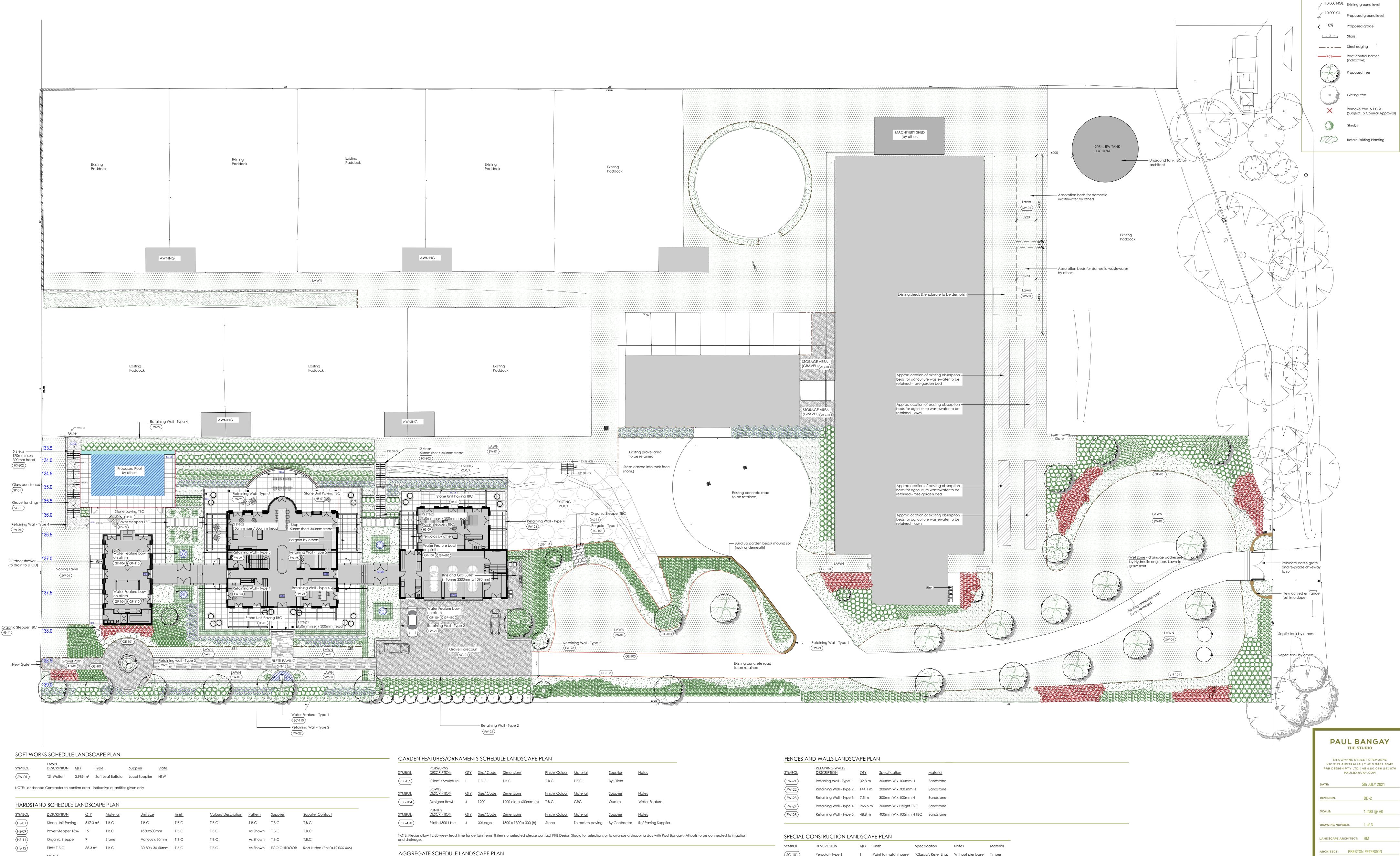
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9/7/21

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SYMBOL

(HS-602)

Stair Treads

28.9 m² To match paving various

Filetti stone typically requires around 30% wastage allowance, dependant on preferred design aesthetic.

INDICATIVE QUANTITIES CONTRACTOR MUST VERIFY ALL QUANTITIES FROM SITE MEASURE PRIOR TO ORDERING STOCK

GE-101 — Steel Edge - Type 1 401.1 m Mild Steel 75x5mm, Grade 300, staked @ 1m centres

GE-103 Steel Edge - Type 2 203.1 m Mild Steel 200x6mm, Grade 300, staked @ 1 m centres. Painted Black (epoxy enamel)

Coping, Capping, Wall Cladding, Stair treads and risers are not included in quantity estimate.

DESCRIPTION QTY Type Specification

GARDEN EDGING SCHEDULE LANDSCAPE PLAN

Colour/ Description Pattern Supplier

To match paving

NOTE: Please allow for 12-20 week lead time for certain items. Where PRB Design's preferred suppliers are not used, a sample of the product is to be provide for approval prior to ordering. It is the contractor's responsibility to ensure that the specified product is available before pouring any slabs. Should a supply issue arise PRB Design is to be contacted immediately for approval of change.

Supplier Contact

Gravel TBS 455.1 m² 7-10mm T.B.C Local Supplier T.B.C Loose

Should a supply issue arise PRB Design is to be contacted immediately for approval of change.

NOTE: Please allow for 12-20 week lead time for certain items. Where PRB Design's preferred suppliers are not used, a sample of the product is to be

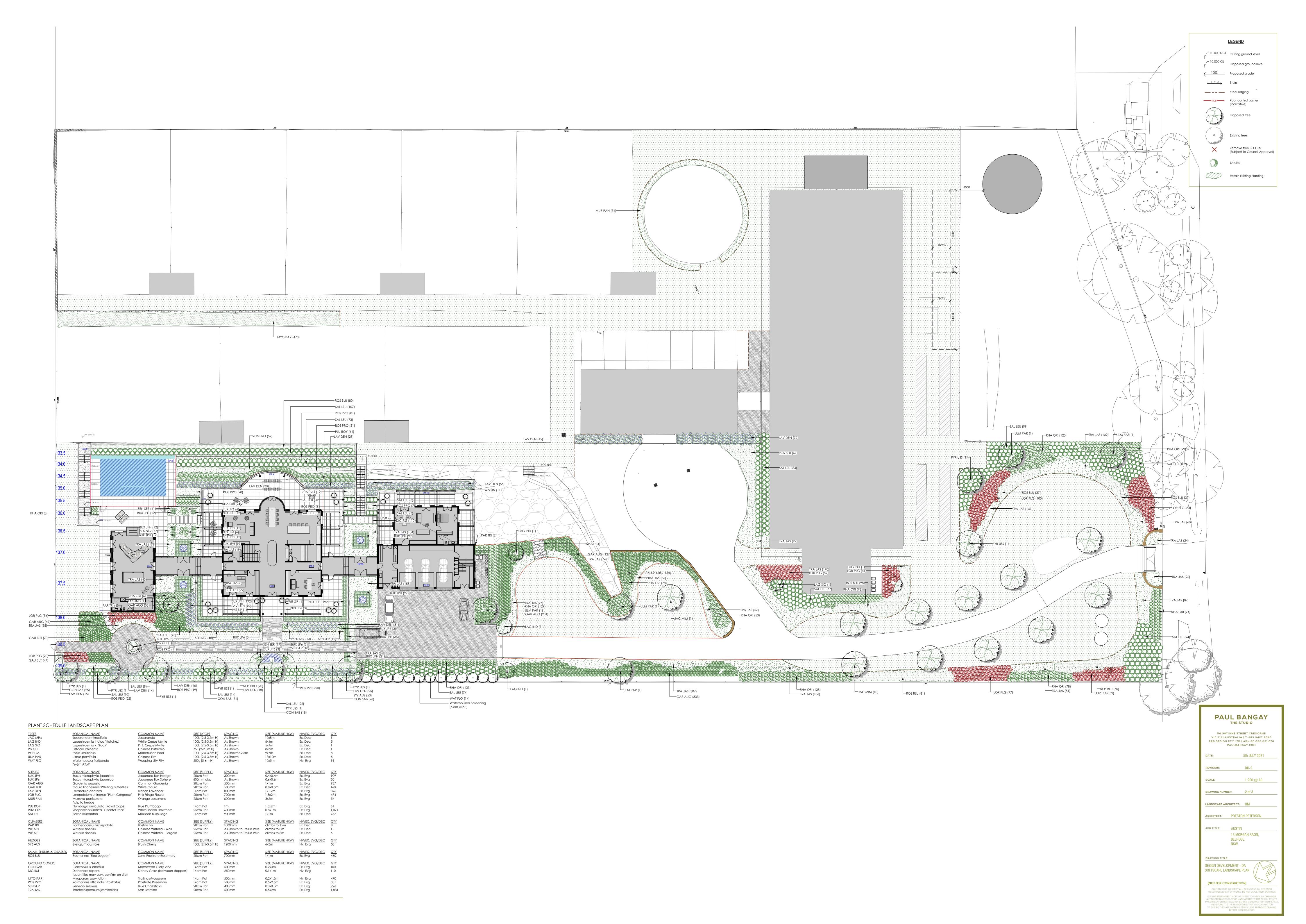
provide for approval prior to ordering. It is the contractor's responsibility to ensure that the specified product is available before pouring any slabs.

1 Paint to match house `Classic`. Refer Eng. Without pier base Timber

Water Feature - Type 1 1 T.B.C

5th JULY 2021 1:200 @ A0 DRAWING NUMBER: 1 of 3 LANDSCAPE ARCHITECT: ARCHITECT: PRESTON PETERSON JOB TITLE: AUSTIN 13 MORGAN RAOD, BELROSE, DRAWING TITLE: DESIGN DEVELOPMENT - DA HARDSCAPE LANDSCAPE PLAN [NOT FOR CONSTRUCTION]

ANY DISCREPANCIES MUST BE MADE AWAPE TO PRE DESIGN P
IMMEDIATELY FOR RECTIFICATION BEFORE CONSTRUCTION COM
THEREFORE IT IS THE RESPONSIBILITY OF THE CONTRACT
TO ENSURE THEY ARE WORKING FROM CLIENT APPROVED DRA
BEFORE CONSTRUCTION



NOTES:

These plans are to be read in conjunction with this project's auxiliary Construction Specification document.

GENERAL OUTLINE OF WORKSAll contractors (and their work) are to comply strictly to all Australian Standards*, Building Codes, Environmental Protection policies, Workplace Health and Safety guidelines, Local Council/Governance regulations and Heritage Council requirements.

*Projects abroad to comply with National Standards.

All relevant permits and approvals are to be obtained by contractor prior to undertaking any works.

Contractor to undertake a full site set-out and verify all dimensions prior to undertaking any works. Ensure any required temporary fences are in place (i.e. Site fence, Temporary pool fencing, Tree Protection Zone fencing, Temporary balustrades etc.)

All contractors must be aware of all existing trees to be retained on site. Refer to Arborist report for Tree Protection Zones (TPZ),

Structural Root Zones (SRT) and Protective Fencing requirements during all building works. Allow for Root Barriers and Deflectors to manufacturers specification at the time of planting (and periodic maintenance thereafter), to assist tree roots to develop away from services, pavements, walls and structures.

Plant supply by PRB Design, unless otherwise advised.

SAFETY IN DESIGN GENERAL NOTE

No part of this design has been identified as posing an abnormal risk to health and safety, within it's intended use.
 PRB Design advises client/contractor to consult qualified WHS Professional/ Building Certifier/ Engineer and/or Architect regarding any items of concern.
 Should any further safety risks be identified within this design, please report to PRB Design immediately.

HARDWORKS - GENERAL TIMBER FENCES

All nondescript fences (i.e. paling boundary fences) to be painted 'Bangay Green' consisting of 1 part Brunswick Green (33797), 1 Part Black (SG6G9) - 50/50 mix.

All walls (retaining, freestanding, etc.) not exempt from planning regulations and NCC to be specified by Engineer and approved by Local Council.

Seek professional advice regarding safe construction and continuing maintenance.

FOOTINGS

For footings in close proximity to shrubs, creepers and ground covers, allow at least 300mm of topsoil over footings. Footings adjacent to proposed tree plantings require 700mm of topsoil cover. This is to ensure adequate soil exists for plantings adjacent to structures (i.e.

walls, pergolas, decks, fences etc.), all footings to be set below finished ground level (GL).

VEGETABLE/HERB GARDENS

Any edging or raised structure to house vegetable or herb gardens is strictly not to be constructed from treated pine. Paul Bangay to be consulted on type of material to be used if not specified on drawings.

WATER FEATURE

manufacturer) with 70mm apertures, secured 50mm below water level for child safety for water deeper than 300mm as per detail. Concrete shell of pond to be detailed by structural engineer. Pond internally waterproofed with fibreglass finish by onsite fibreglasser (from 'Wetseal' or similarly approved). Paint over with 2 coats of vinyl chlorine rubber (colour: matt black). Allow for all services prior to waterproofing/tanking including, 12 volt lighting cable, pump cable & overflow pipe. Install PVC pipe as overflow pipe & connect to storm water system. Cut off pipe at water level & paint in black waterproof paint. It is advisable to install oversized pipes for cables to ensure future replacement is not hindered. A flexible pipe connection should be allowed for to the pump to allow access and servicing of the pump. There should be sufficient power cable length in the pond to allow for removal of the pump for servicing. Contractor to consult with Darryl Hoogeboom of 'Oz Watergardens Nursery' as to required pump size, pipe requirements and water feature design/details. 'Oz Watergardens Nursery' 100 Glen Rd, Silvan VIC 3795 (03) 9737 9663.

specified, relatively

— Ag drainage to LPD

Finished GL

Crushed rock

Garden soil

MASONRY STONE WALL - 300 - 1:20

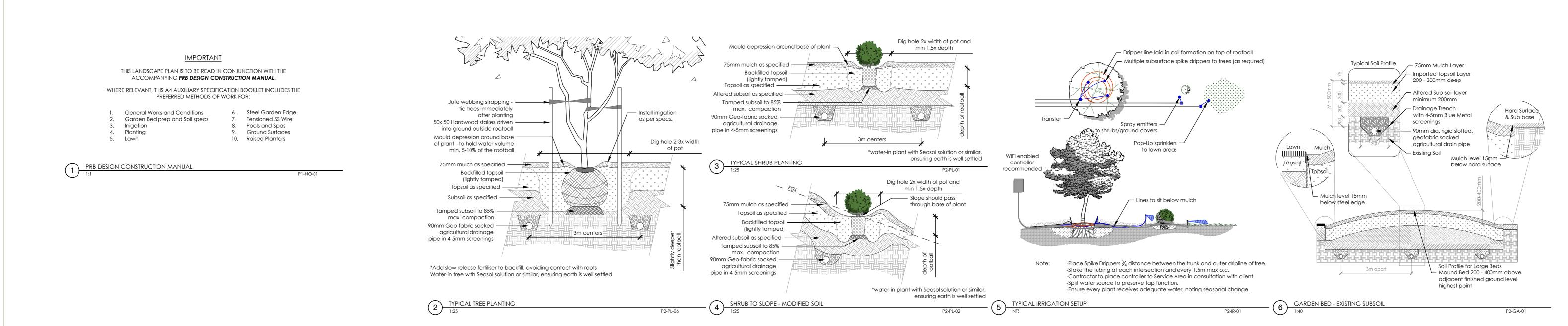
square pieces, dry joint

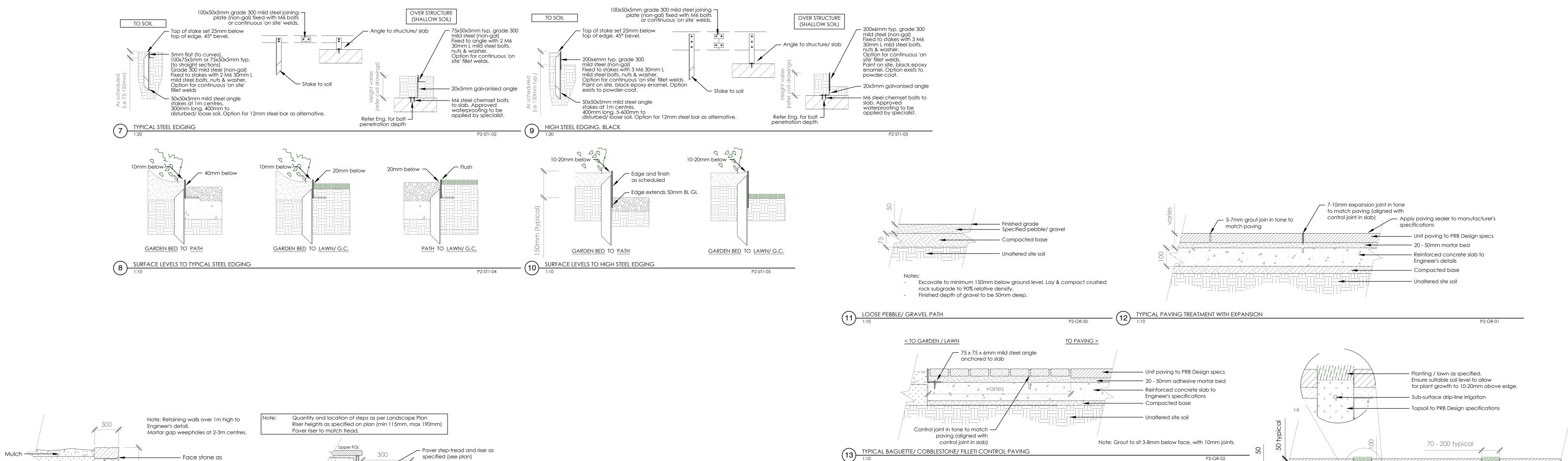
Reinforced concrete base —

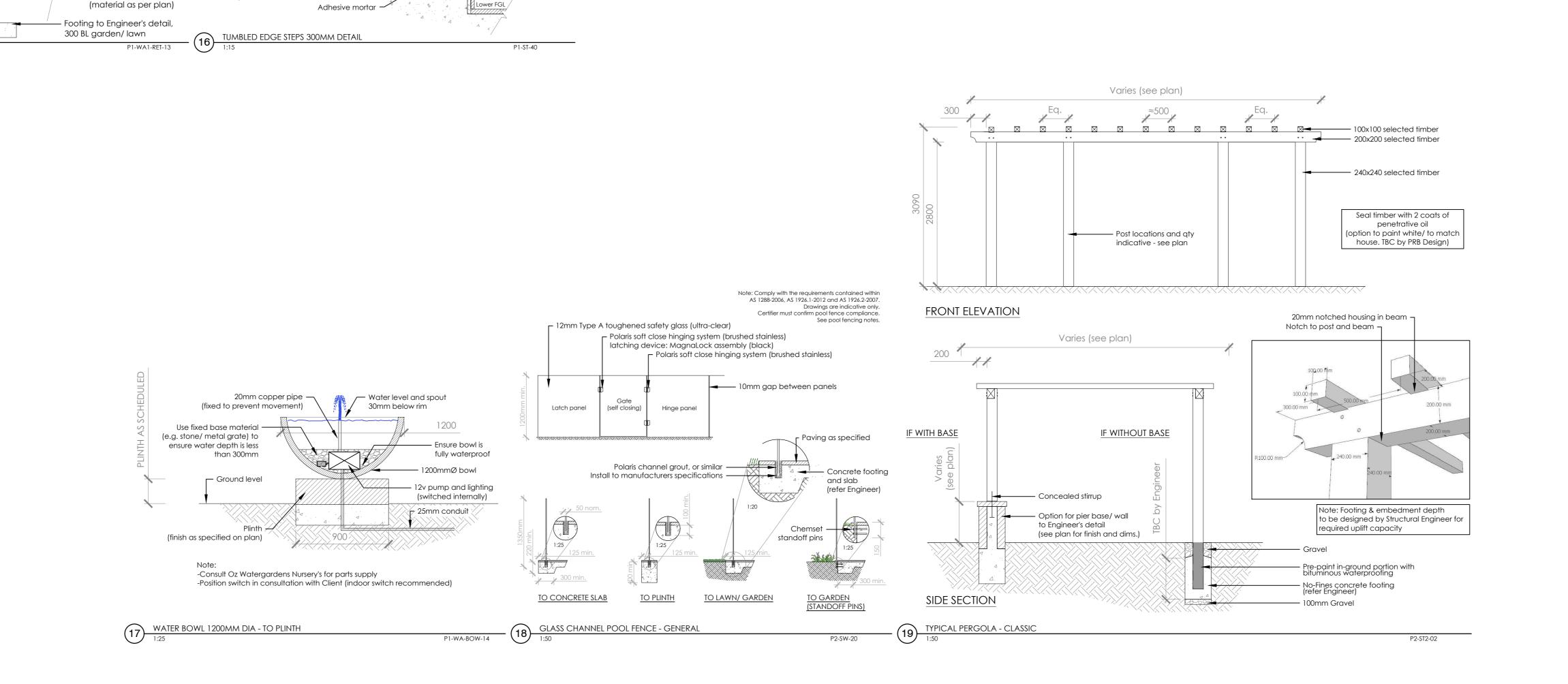
to Engineer's specifications

Caulk joints

Maximum water depth to be ≤300mm unless otherwise stated on detail. Install aluminium mesh (powder coated black by







PAUL BANGAY THE STUDIO **54 GWYNNE STREET CREMORNE** VIC 3121 AUSTRALIA | T+613 9427 9545 PRB DESIGN PTY LTD | ABN 20 066 291 076 PAULBANGAY.COM 5th JULY 2021 REVISION: DRAWING NUMBER: 3 of 3 LANDSCAPE ARCHITECT: HM ARCHITECT: PRESTON PETERSON JOB TITLE: AUSTIN 13 MORGAN RAOD, BELROSE, NSW DRAWING TITLE: **DETAILS** [NOT FOR CONSTRUCTION]

IMMEDIATELY FOR RECTIFICATION BEFORE CONSTRUCTION CON THEREFORE IT IS THE RESPONSIBILITY OF THE CONTRACT TO ENSURE THEY ARE WORKING FROM CLIENT APPROVED DE BEFORE CONSTRUCTION

Pavers as specified

River sand

TYPICAL PAVER STEPPERS TO MORTAR - PLANTING SURROUNDS

Adhesive mortar bed

 20mm crushed rock (roadbase) with fines

Blue Metal drainage

layer with Agi Pipe

P2-GR-100

(refer drainage specifications)

PAUL BANGAY



















Artist's impression

This artist's impression is based on a series of photographs taken from the upper balcony of the western neighbour of 13 Morgan Road Belrose. The artist's impression and computed generated images (3D) are for illustrative purposes only. They are provided in good faith and represent actual measurements and specifications. However changes may occur as the project develops. This illustrations and information are indicative depictions for presentation purposes only.

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AUST01

First Release

A 18/2/21 First Release

Drawing

Neighbour's View

Drawing Number

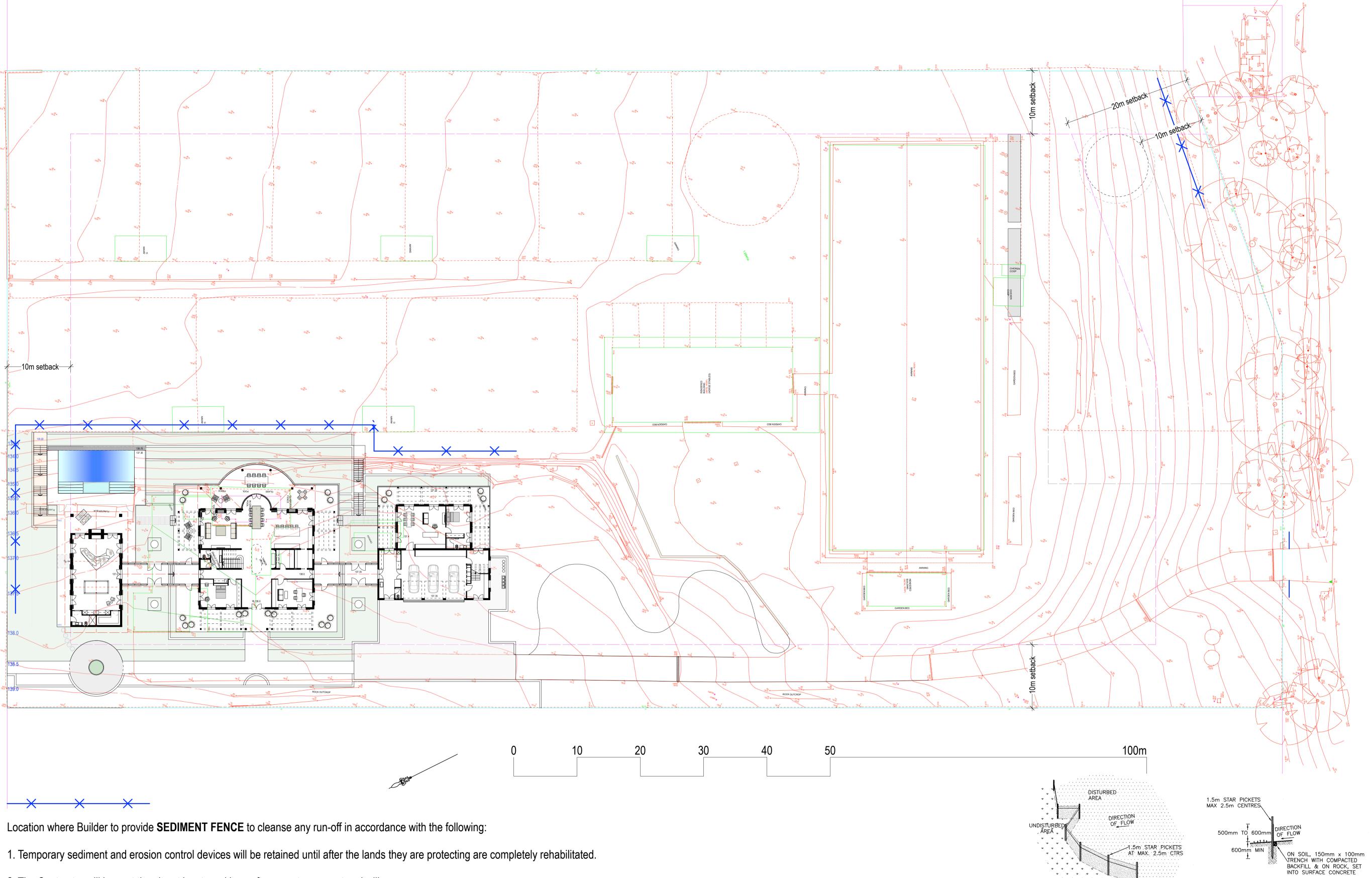
V01

NA

18 Feb 2021 Drawn by

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Checked by JLP



- 2. The Contractor will inspect the site at least weekly or after any storm event and will:
- ensure that drains operate properly and to effect any necessary repairs
- remove spilled sand or other materials from hazard areas (eg: lands closer than five metres from areas of likely concentrated or high velocity flows especially drains, waterways and paved areas)
- remove trapped sediment whenever less than design capacity remains within the structure
- ensure rehabilitated lands have effectively reduced the erosion hazard and to initiate upgrading or repair as appropriate
- construct additional erosion and/or sediment control works as required
- maintain erosion and sediment control measures in a fully functioning condition until all earthwork activities are completed and the site is rehabilitated
- remove temporary erosion and sediment control structures as the last activity in the rehabilitation program.

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Drawing

Sediment & **Erosion Control**

Drawing Number

SEC01

Revision

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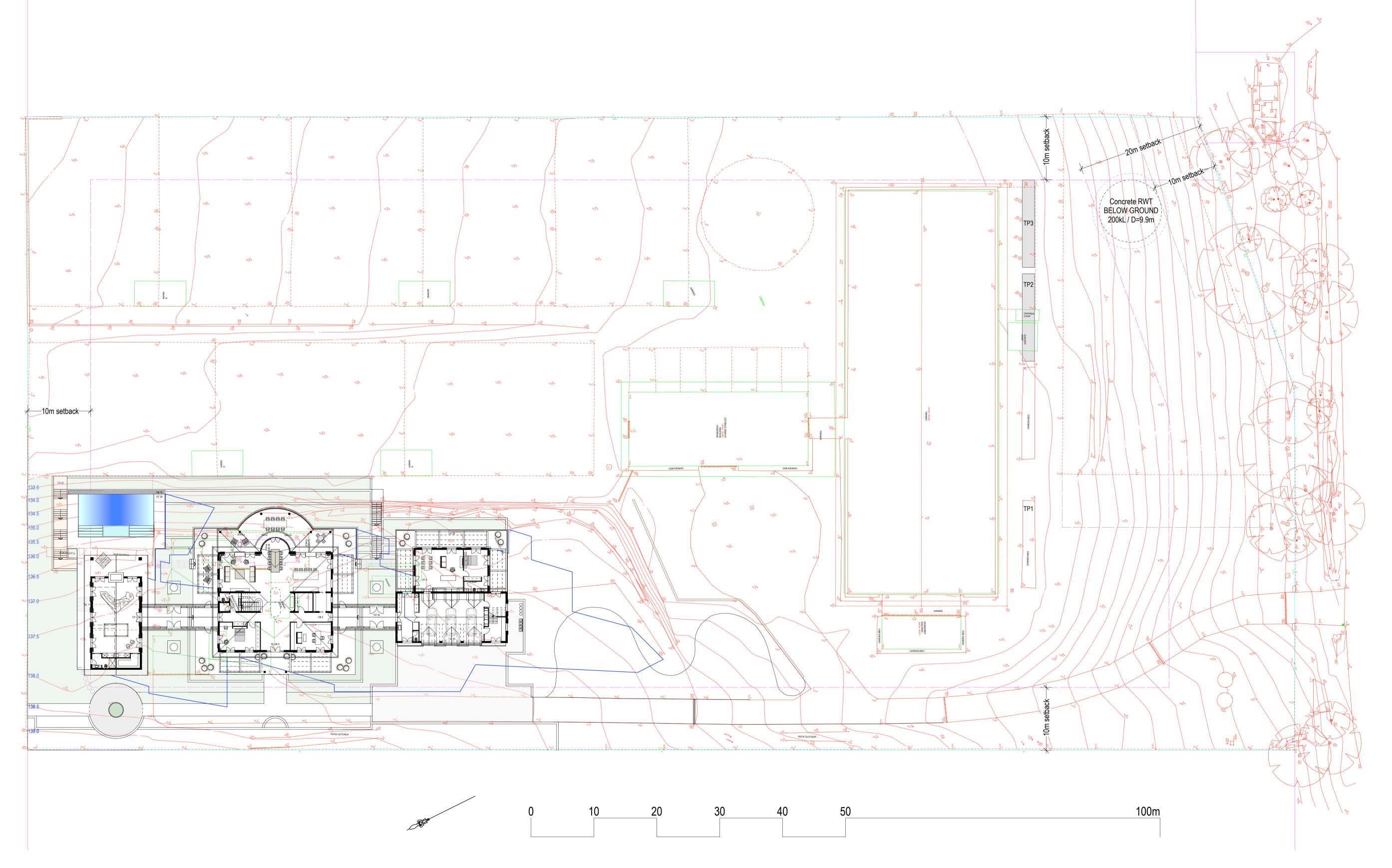
JLP

SEDIMENT FENCE CONSTRUCTION NOTES

- 1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN
- STORM EVENT, USUALLY THE 10YR EVENT. 2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.

SEDIMENT CONTROL FENCE DETAIL

- 3. DRIVE 1.5m LONG STAR PICKETS INTO THE GROUND AT 2.5m INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY
- 4. FIX SELF-SUPPORTING GOETEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES 4. FIX SELF—SUPPORTING GOETEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
 5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
 6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.



This Shadow Diagram has been prepared using Vectorworks 3D CAD software with site modeling based on 500mm contours as surveyed.

I certify that the shadow profiles are accurate.

Analysis: the shadow modeling indicates that the proposed building works do not create shadows that are cast onto any neighbouring property on the 21st June between the hours of 9am and 3pm.

Certified by Jonathon Peterson - Registered Architect in NSW - Registration #5776

April

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Development Application

A 9/7/21 DA Issue

Drawing

Shadow 9am 21st June

Drawing Number

SH_9am

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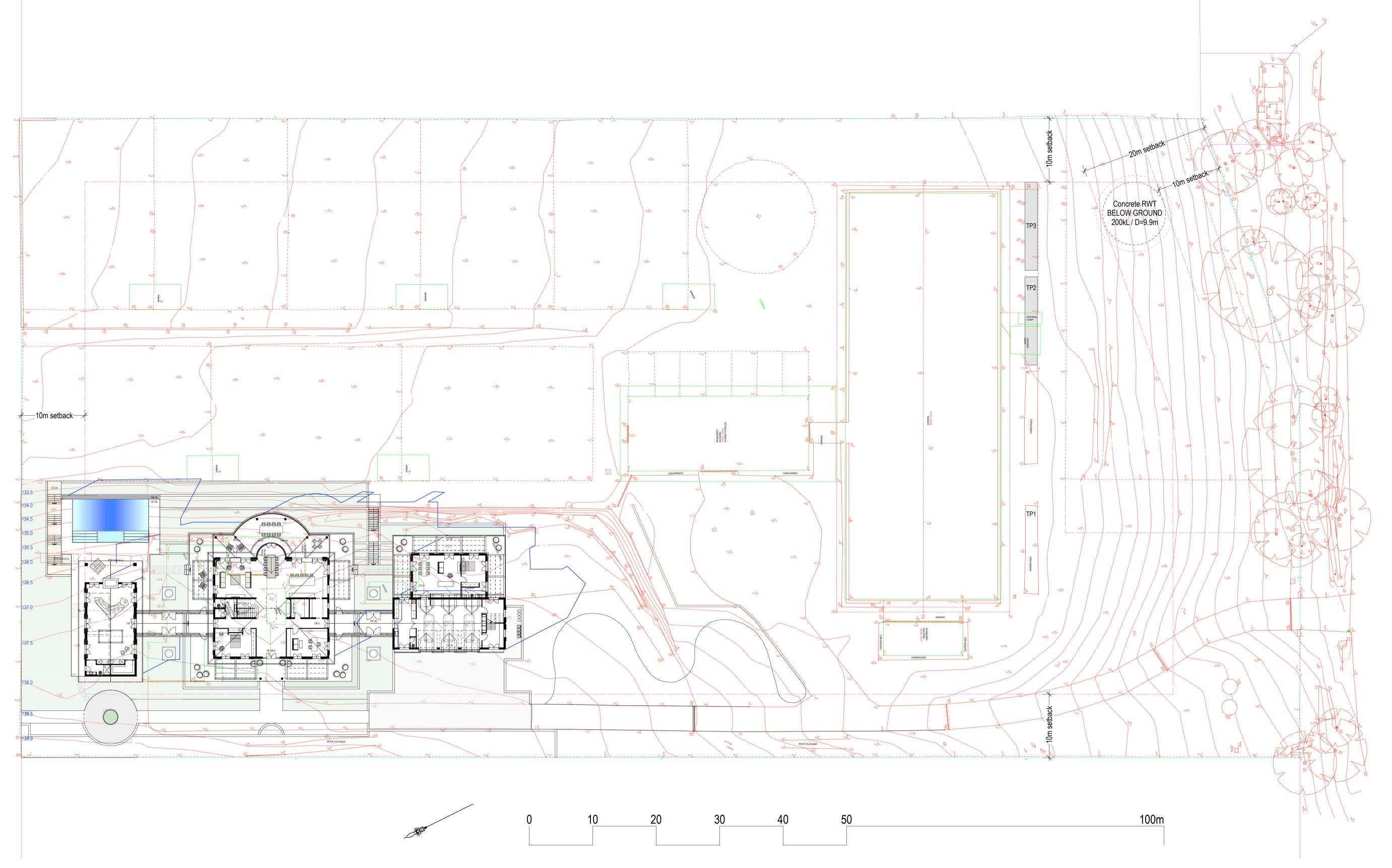
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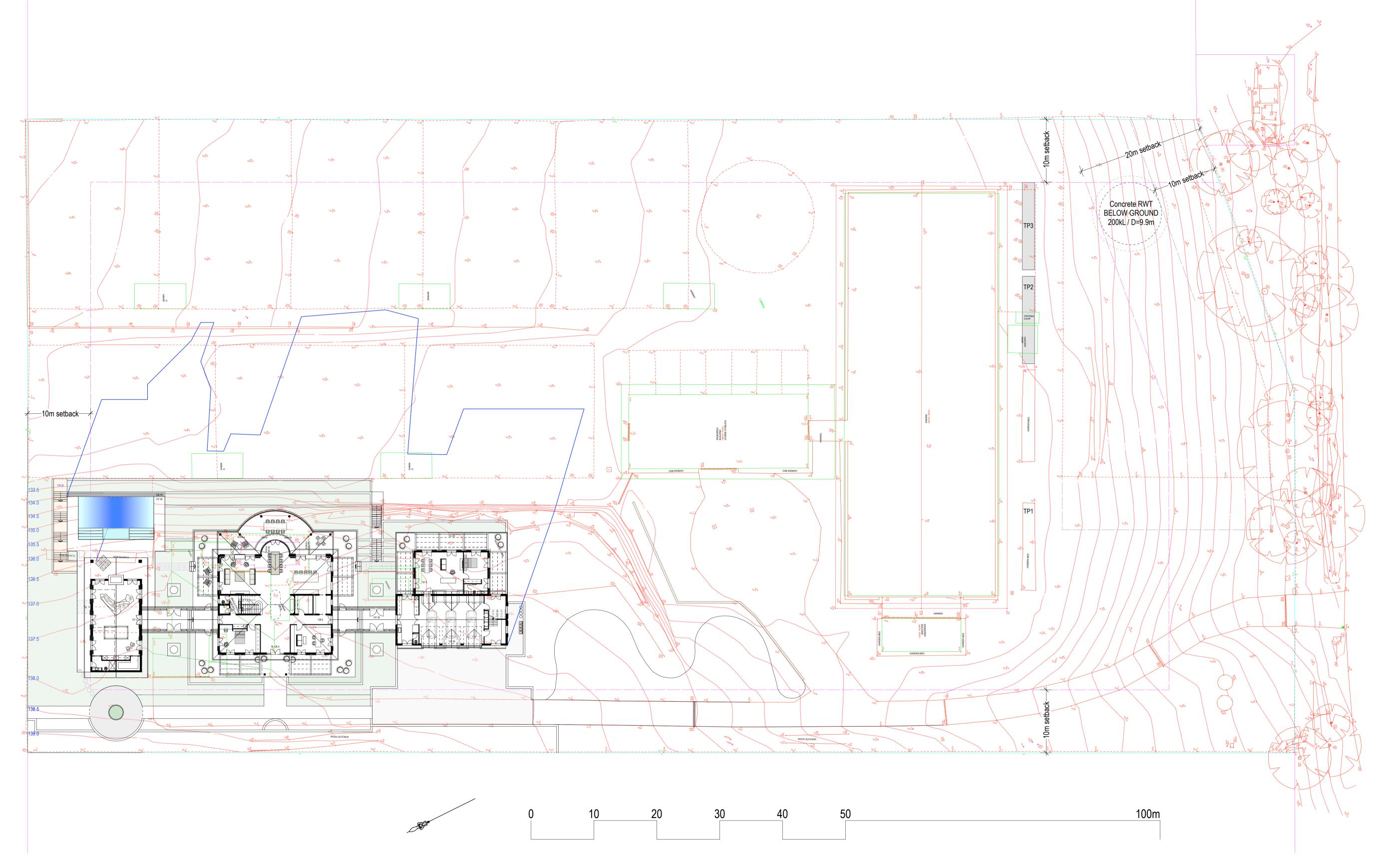
ale

1:300 @ A1

Rev Date **9/7/21**

Drawn by

JDP Checked by



This Shadow Diagram has been prepared using Vectorworks 3D CAD software with site modeling based on 500mm contours as surveyed.

I certify that the shadow profiles are accurate.

Analysis: the shadow modeling indicates that the proposed building works do not create shadows that are cast onto any neighbouring property on the 21st June between the hours of 9am and 3pm.

Certified by Jonathon Peterson - Registered Architect in NSW - Registration #5776

April

prestonpeterson

Studio 4
104 Victoria Avenue
Chatswood NSW
Australia 2067
ABN 85 194 887 260
www.prestonpeterson.com.au
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Nominated Architect
Jonathon Peterson NSW ARB 5776

Clier

Jenny and David Austin

Project

Austin Residence

13 Morgan Road Belrose 2085

Project Code

AUST01

Development Application

A 9/7/21 DA Issue

Drawing

Shadow 3pm 21st June

Drawing Number

SH_3pm

| | Revisio

Λ Revisi

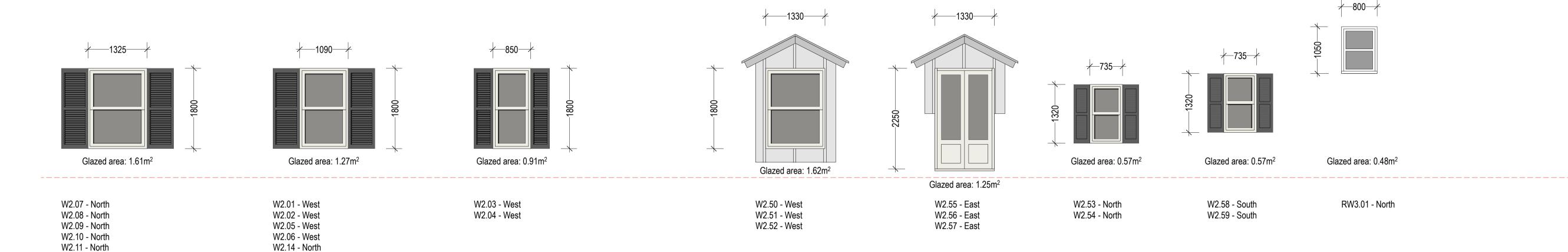
1:300 @ A1

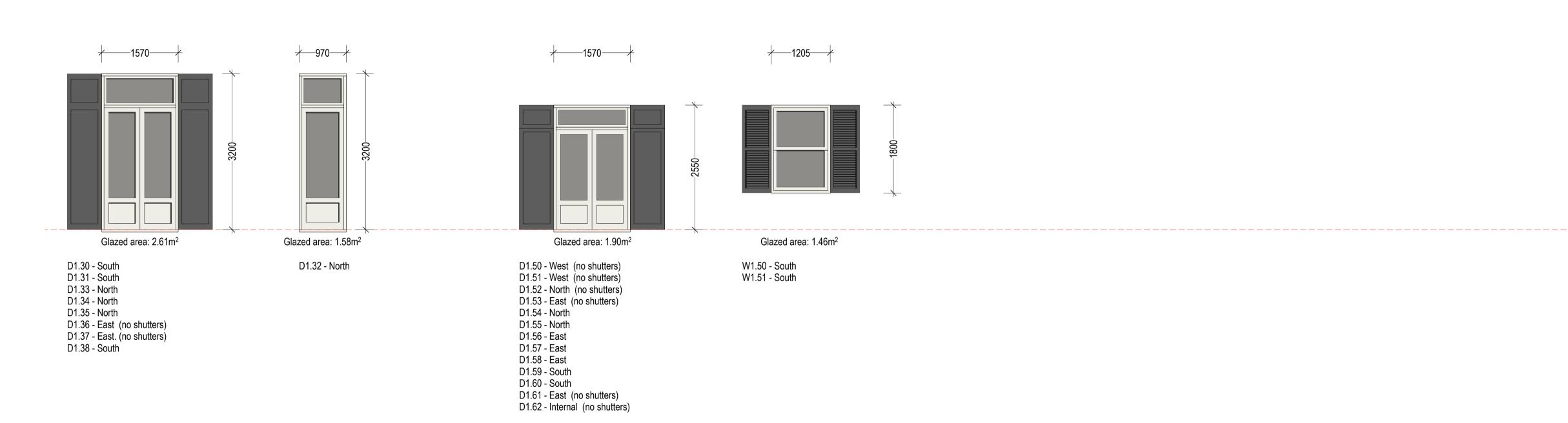
Rev Date **9/7/21**

Drawn by

JDP

Checked by JLP





W2.12 - East

W2.13 - East

W2.17 - East

W2.18 - East W2.19 - South

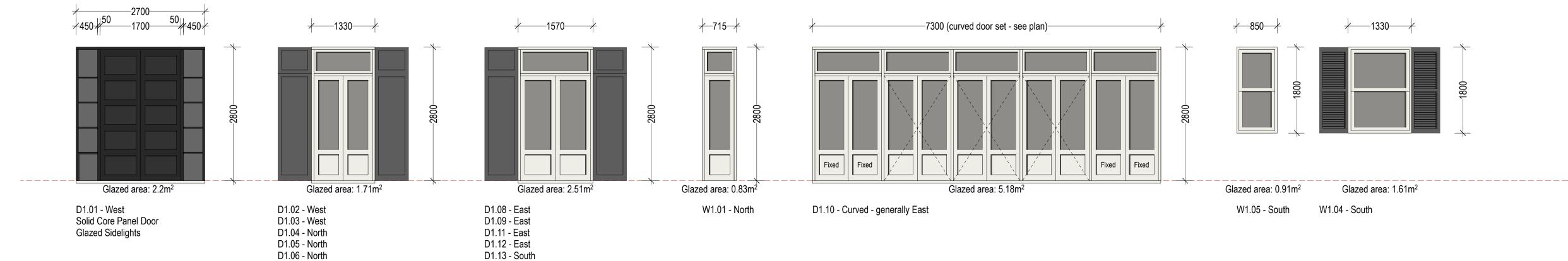
W2.20 - South W2.21 - South W2.22 - South W2.15 - East

W2.16 - South

D1.07 - North

D1.14 - South D1.15 - South

D1.16 - West D1.17 - West



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Nominated Architect
Jonathon Peterson NSW ARB 5776

Client

Jenny and David Austin

Project

Austin Residence

13 Morgan Road Belrose

Project Code

AUST01

Development Application

A 9/7/21 DA Issue

Drawing

Window & Door Schedule

Drawing Number

WD01

Revision

Scale 1:50 @ A1

Rev Date

Drawn by

JDP Checked by

9/7/21

Internal void and rooflight above

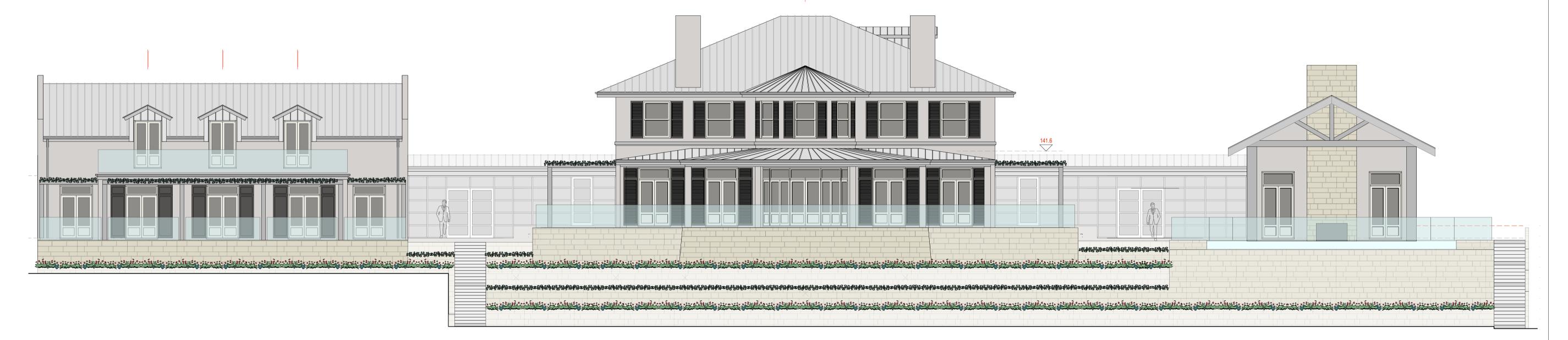


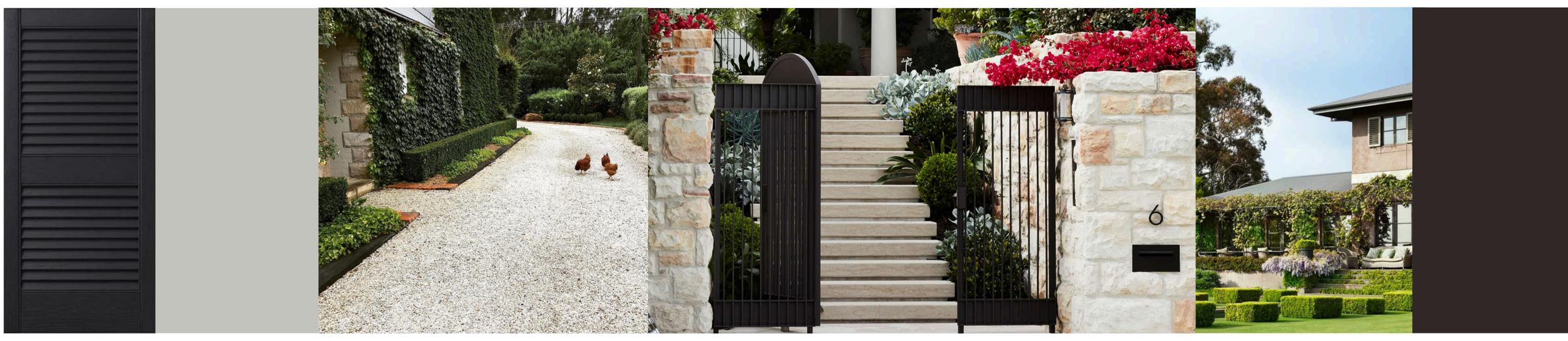
Animals Life is better with them

Steel window & door frames For glazed links between building pavilions

Sandstone retaining walls with beautifully crafted gardens







Operable shutters . Dulux Black

Sandstone steps and retaining walls

External Rendered Walls Mid-tone grey Dulux Silkwort & Flooded Gum

Gravel entry courtyard, ivy and layered gardens

Sandstone walls and stairs Black steel

Beautifully crafted gardens by Paul Bangay

Dulux Black Shutters & steelwork

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Austin

Project Code

AUST01

Development

Application

Nominated Architect

Jenny and David

Austin Residence

13 Morgan Road Belrose

104 Victoria Avenue Chatswood NSW Australia 2067

ABN 85 194 887 260

www.prestonpeterson.com.au

Jonathon Peterson NSW ARB 5776

A 9/7/21 DA Issue

Drawing

External Finishes

Drawing Number

FIN01

Revision 1:100 @ A1 Rev Date 9/7/21 Drawn by JDP Checked by JLP

2. DO NOT SCALE FROM THESE DRAWING.

3. ALL DIMENSIONS ARE TO BE VERIFIED ON SITE BY THE BUILDER BEFORE COMMENCING WITH ASSOCIATED WORK.

STORMWATER NOTES:

A1. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE AUSTRALIAN STANDARDS (LATEST VERSION) AND THE REQUIREMENTS OF THE LOCAL COUNCIL AND ANY APPLICABLE AUTHORITIES. A2. ALL LEVELS SHOWN ARE TO THE AUSTRALIAN HEIGHT DATUM (AHD) UNLESS NOTED OTHERWISE. A3. THE LOCATION OF ALL DRAINAGE ELEMENTS ARE SHOWN INDICATIVELY BASED ON AVAILABLE SURVEY OR OTHER INFORMATION. ALL DRAINAGE ELEMENTS ARE TO BE INSTALLED WITH CONSIDERATION TO SITE CONSTRAINTS AND THE INTENT OF THE DRAINAGE CONCEPT.

A4. ANY MATERIAL VARIATIONS TO THE DRAINAGE CONCEPT OR DETAILED STORMWATER ELEMENTS MUST BE APPROVED BY NORTHERN BEACHES CONSULTING ENGINEERS PTY LTD PRIOR TO COMMENCEMENT

A5. ANY EXCAVATION OR TRENCHING FOR SERVICES ADJACENT TO A STRUCTURE OR PROPERTY BOUNDARY MUST NOT ENCROACH ON THE 'ZONE OF INFLUENCE', REFER TO THE NCC FOR FURTHER DETAILS.

GENERAL CONSTRUCTION NOTES:

BI. CONTRACTORS TO LOCATE ALL EXISTING SERVICES PRIOR TO EXCAVATION AND NOTIFY ENGINEER OF ANY POTENTIAL CLASHES WITH THE PROPOSED STORMWATER DRAINAGE SYSTEM.

B2. ANY ELEMENTS OF THE EXISTING STORMWATER SYSTEM WHICH ARE PROPOSED TO BE RETAINED MUST BE INSPECTED AND APPROVED BY AN ENGINEER PRIOR TO CONSTRUCTION AS BOTH HAVING ADEQUATE CAPACITY TO CATER FOR THE RUNOFF DIRECTED TO IT AND BEING IN ADEQUATE CONDITION FOR USE.

B3. EXISTING STORMWATER SYSTEM ALSO TO BE INSPECTED BY A SUITABLY QUALIFIED PLUMBER PRIOR TO CONSTRUCTION AND UPGRADED AS REQUIRED IN ACCORDANCE WITH AS3500.3.

B4. CARE SHOULD BE TAKEN WHEN UNDERTAKING WORKS IN THE VICINITY OF TREES NOT TO DISTURB THE TREE ROOT SYSTEM. HAND DIGGING OF TRENCHES MAY BE REQUIRED SUBJECT TO THE PROJECT ARBORISTS REQUIREMENTS. REFER TO THE ARBORIST REPORT FOR EXCAVATION REQUIREMENTS SURROUNDING PROTECTED TREE ROOT ZONES.

B5. SWIMMING POOL SURCHARGE OVERFLOW TO BE CONNECTED VIA GRAVITY TO THE SEWER IN ACCORDANCE WITH AS3500. DETAILS AND CERTIFICATION BY OTHERS,

B6. EXTENT, ALIGNMENT, DEPTH AND CONDITION OF ANY COUNCIL STORMWATER PIPELINE WITHIN A DEVELOPMENT SITE MUST BE VERIFIED PRIOR TO CONSTRUCTION AND THE ENGINEER MUST BE NOTIFIED UPON VERIFICATION, ANY NEW CONNECTION TO A COUNCIL STORMWATER PIPELINE WILL BE SUBJECT TO COUNCIL APPROVAL AND MUST BE INSTALLED IN ACCORDANCE WITH THE LOCAL COUNCIL SPECIFICATIONS

PIPEWORK INSTALLATION:

CI. ALL PIPES TO BE MINIMUM 100mm & UNLESS NOTED OTHERWISE.

C2. ALL PIPES TO BE UPVC SEWER GRADE TO AS 1254 UNLESS NOTED OTHERWISE.

C3. ALL PIPES TO BE LAYED AT 1 % MINIMUM GRADE UNLESS NOTED OTHERWISE.

C4. ALL CONNECTIONS INTO EXISTING PIPES MUST BE MADE IN THE DIRECTION OF FLOW

C5. ANY NEW UPVC CONNECTIONS INTO EXISTING R.C. PIPES MUST BE MADE INTO THE TOP HALF OF THE PIPE USING A FLOWCON CONNECTION FITTING U.N.O

C6. ALL PIPES SHALL BE LAID ON A 75mm SAND BED, COMPACTED TO 100% S.M.D.D. BELOW PAVEMENTS. (NO COMPACTION REQUIRED BELOW LANDSCAPING) COVER TO SURFACE FROM TOP OF PIPE TO BE 300mm MINIMUM. BACKFILL TO BE ADEQUATELY CONSOLIDATED AROUND PIPES BY METHOD OF RAMMING AND WATERING IN. TRENCHES TO BE FILLED WITH NO-FINES GRANULAR MATERIAL AS SPECIFIED.

C7. ALL EXISTING EARTHENWARE PIPES TO BE UPGRADED TO UPVC.

C8. MINIMUM PIPE COVER TO ALL IN-GROUND PIPEWORK SHALL BE CARRIED OUT IN ACCORDANCE WITH TABLE 7.1 - AS3500.3.

C9. ALL SUSPENDED PIPE FIXINGS ARE TO BE CARRIED OUT IN ACCORDANCE WITH AS2032. CIO. ENSURE THAT ALL STORMWATER PITS AND PIPES ARE LOCATED CLEAR FROM TREE ROOT

CII. ALL PIPEWORK MUST BE INSTALLED WITHIN THE SITE BOUNDARY OF THE DEVELOPMENT SITE. ANY NEW OR EXISTING PIPEWORK EXTENDING THROUGH PRIVATE PROPERTY BEYOND THE BOUNDARY OF THE DEVELOPMENT SITE MUST BE CONTAINED SOLELY WITHIN A DRAINAGE EASEMENT. IF NO DRAINAGE EASEMENT EXISTS, A NEW DRAINAGE EASEMENT MUST BE SOUGHT AND REGISTERED PRIOR TO UTILISING OR INSTALLING PIPEWORK THROUGH NEIGHBOURING PROPERTIES. CONTACT THE ENGINEER IF A DRAINAGE EASEMENT CANNOT BE OBTAINED.

ROOF DRAINAGE:

DI. ALL DOWN PIPES TO BE 100mm & UNLESS NOTED OTHERWISE.

D2. DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT OF WORK.

D3. PROVIDE CLEANING EYES AT ALL DOWNPIPES.

D4. GUTTER GUARDS MUST BE INSTALLED ON ALL GUTTERS UNLESS NOTED OTHERWISE.

D5. ALL EAVES GUTTER AND VALLEY GUTTER SYSTEMS MUST BE INSTALLED IN ACCORDANCE WITH AS3500.3 REQUIREMENTS.

D6. ALL BOX GUTTER SYSTEMS MUST BE INSTALLED STRICTLY IN ACCORDANCE WITH THE DETAILS SHOWN ON THE APPROVED STORMWATER MANAGEMENT PLAN. IF NO DETAILS ARE SHOWN, THE BOX GUTTER SYSTEM MUST BE INSTALLED IN ACCORDANCE WITH AS3500.3. IF ANY CHANGE TO THE BOX GUTTER SYSTEM CONFIGURATION IS PROPOSED, THE ENGINEER MUST BE NOTIFIED FOR A RE-DESIGN. I THE INSTALLED BOX GUTTER DOES NOT STRICTLY COMPLY WITH THE DESIGN DETAILED ON THE STORMWATER MANAGEMENT PLAN, CERTIFICATION OF THE HYDRAULIC SYSTEM MAY BE REFUSED. D7. ALL GREEN ROOFS, PEBBLED ROOFS AND PLANTERS WITH A CONCRETE BASE MUST BE WATERPROOFED AND HAVE DRAINAGE CELL INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS

SPECIFICATION.

EI. ALL STORMWATER PITS MUST BE INSTALLED IN ACCORDANCE WITH AS3500.3

E2. ALL CONCRETE PITS TO BE CAST INSITU OR, IF PRECAST, APPROVED BY ENGINEER. CAST INSITU PITS TO HAVE 150mm THICK CONCRETE WALLS AND BASE. WALLS TO BE REINFORCED WITH 1 NI2 TOP TIE UNLESS NOTED OTHERWISE. CAST INSITU PITS GREATER THAN 900 DEEP TO BE MINIMUM 900x600 AND TO HAVE 150mm THICK CONCRETE WALLS AND BASE. WALLS TO BE REINFORCED WITH N12 AT 300 EACH WAY UNLESS NOTED OTHERWISE.

E3. MINIMUM INTERNAL DIMENSIONS FOR STORMWATER AND INLET PITS TO BE IN ACCORDANCE WITH TABLE 8.2, AS3500.3.

E4. ALL PITS GREATER THAN 1200mm DEEP SHALL HAVE STEP IRONS INSTALLED. STEP IRON INSTALLATION MUST BE IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARDS



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STRUCTURAL - CIVIL - STORMWATER - REMEDIAL

E5. THE BOUNDARY OR SILT ARRESTOR PIT MUST INCORPORATE A SUMP OF MINIMUM 200mm DEPTH BELOW THE INVERT OF THE OUTLET PIPE AND A MAXI-MESH SCREEN AS PER LOCAL COUNCIL AND THE AUSTRALIAN STANDARD REQUIREMENTS. HOWEVER, UNLESS SPECIFICALLY REQUIRED BY COUNCILS POLICY OR IF THE SITE CONSISTS OF A CLAY OR ROCK SUBGRADE, ALL OTHER DRAINAGE PITS WILL NOT REQUIRE A SUMP.

E6. ALL STORMWATER PITS TO BE LOCATED AT LOW POINTS TO PREVENT PONDED WATER. ET. FOR STORMWATER PITS LOCATED BELOW THE WATER TABLE, CUT INTO ROCK OR IN POORLY DRAINED SOILS, THE PIT SUMP MAY BE FILLED WITH MORTAR AND SCREEDED TOWARDS THE OUTLET AT MINIMUM 1% FALL, SUBJECT TO THE ENGINEERS APPROVAL.

FI. ALL SUBSOIL DRAINAGE TO BE INSTALLED AS REQUIRED IN ACCORDANCE WITH AS3500.3 (SPECIFICALLY SECTION 6, 7 AND APPENDIX M) AND THE NCC.

F2. INSTALLATION OF SUBSOIL DRAINAGE LINES IS GENERALLY REQUIRED WHERE SUBSURFACE WATER MOVEMENT COULD DAMAGE BUILDINGS OR CAUSE LOSS OF AMENITY THROUGH THE BUILD-UP OF EXCESSIVE MOISTURE OR LATERAL WATER PRESSURE. THIS INCLUDES ALONG WALLS THAT IMPEDE THE NATURAL FLOW OF GROUNDWATER, ON THE UPHILL SIDE OF CUT AND FILL SITES, ADJACENT TO DEEP FOOTINGS, BEHIND RETAINING WALLS AND ADJACENT TO BASEMENT WALLS. SUBSOIL DRAINAGE IS GENERALLY ALSO REQUIRED IN SHALLOW LANDSCAPED AREAS OVER ROCK OR POORLY DRAINED SOILS TO PREVENT OVERLY SATURATED LANDSCAPED AREAS.

F3. THE INSTALLATION OF SUBSOIL DRAINAGE MAY REQUIRE TRENCHING THROUGH ROCK

F4. ALL SUBSOIL LINES ARE TO BE 100mm UPVC SLOTTED PIPE (UNSOCKED), LAID AT (MIN.) 0.5% FALL

F5. THE SUBSOIL LINE IS TO BE SURROUNDED BY SELECT FILTER MATERIAL, GENERALLY 10-20mm DIAMETER AGGREGATE

F6. THE TRENCH SHALL BE SIZED TO PROVIDE A MINIMUM 50mm BEDDING AND 100mm COVER ALL AROUND THE SUBSOIL LINE, GENERALLY MINIMUM 300mm WIDE X 300mm DEEP. THE TRENCH IS TO BE WRAPPED ALL-ROUND IN NON-WOVEN, GEOTEXTILE FABRIC OF STRENGTH CLASS A, WITH SUFFICIENT OVERLAP (LESSER OF TRENCH WIDTH OR 500mm).

F7. WHERE THE IN-SITU SOILS HAVE A GRAIN SIZE SMALLER THAN THE GEOTEXTILE FABRIC, COURSE WASHED-SAND SHOULD BE USED AS A FILTER TO PREVENT BLOCKAGE OF THE GEOFABRIC. F8. THE BACKFILL LAYER OVER THE TRENCH SHALL BE NO-FINES COURSE WASHED-SAND. WHERE LANDSCAPED AREAS ARE PROPOSED OVER THE TRENCH, THE TOP 300mm OF BACKFILL MAY BE MIXED

WITH UP TO 20% ORGANIC MATTER. F9. ALL SUBSOIL LINES ARE TO DISCHARGE INTO A GRATED PIT, AT A LEVEL MINIMUM 50mm ABOVE THE PIT OUTLET UNO. THE PROJECT BUILDER IS TO IMPLEMENT APPROPRIATE MEASURES TO PREVENT

SUBSOIL LINE BLOCKAGE OR INFESTATION OF VERMIN. FIO. THE HIGH-END OF THE SUBSOIL LINE IS TO BE TURNED UP AT 45° AND TERMINATE AT GROUND LEVEL WITH AN INSPECTION CAP TO ENABLE FUTURE FLUSH OUT AND MAINTENANCE F11. 100mm ϕ x 3000 LONG TAIL OUT SUBSOIL LINE TO BE PROVIDED ON THE UPSTREAM SIDE OF ALL LARGE PITS OR IN AREAS WITH HIGH SEEPAGE FLOWS. SUBSOIL LINE TO BE COVERED WITH GEOTEXTILE FILTER SOCK FOR THE FULL LENGTH AND END COVERED, BACKFILL MUST BE IN NO-FINES COARSE

WASHED-SAND. CHARGED SYSTEM:

GI. ALL PIPEWORK IN A CHARGED SYSTEM TO BE 100mm & UPVC PRESSURE OR SEWER GRADE PIPES WITH ALL JOINTS PRESSURE SEALED TO A MINIMUM OF 500mm (UNLESS NOTED OTHERWISE) ABOVE THE INLET OF THE DISCHARGE POINT. ALL JOINTS TO BE SOLVENT WELDED IN ACCORDANCE WITH THE AUSTRALIAN STANDARDS.

G2. ALL CHARGED SYSTEMS MUST HAVE A BLEED OUT LINE AT THE LOW POINT IN THE CHARGED SYSTEM WHICH MUST BE CONNECTED TO A FLUSH OUT PIT VIA GRAVITY. THE BLEED LINE MUST BE MAINTAINED AND REGULARLY FLUSHED OUT.

SURFACE DRAINAGE:

JI. WHEN LAND FALLS TOWARDS A BUILDING, INCLUDING LAND UPSLOPE OF THE PROPERTY BOUNDARY GROUND SURFACE LEVELS ADJACENT TO THE BUILDING ARE TO BE REGRADED SUCH THAT THE FIRST METRE HAS MINIMUM 50mm FALL AWAY FROM THE BUILDING, GENERALLY IN ACCORDANCE WITH THE

J2. ANY NEW DEVELOPMENT WORKS MUST NOT CREATE ANY TRAPPED SURFACE AREAS. IN SUCH CASES WHERE TRAPPED AREAS EXIST, SWALE DRAINS OR GRATED PITS WITH PIPED OUTLETS OF ADEQUATE CAPACITY MAY BE REQUIRED TO ROUTE RUNOFF AROUND THE BUILDING TO AN APPROVED DISCHARGE POINT. IF THE TRAPPED AREA IS BELOW THE NATURAL SURFACE LEVEL, A PUMP OUT SYSTEM MAY BE REQUIRED. IN EITHER CASE, THE PROJECT ENGINEER MUST BE CONTACTED FOR DESIGN DETAILS (AS REQUIRED) PRIOR TO CONSTRUCTION.

J3. BUILDER TO PROVIDE A MINIMUM 100mm WIDE x 30mm HIGH OR 50mm DIA OVERFLOW FOR EVERY 6m2 OF EXPOSED AREA THAT IS TRAPPED OR SURROUNDED BY HOBS/BALUSTRADES/WALLS/ETC. THE FULL OVERFLOW DEPTH MUST BE LOCATED BELOW ANY ADJACENT INTERNAL FLOOR LEVELS OR OPENINGS TO PROTECT AGAINST WATER INGRESS DUE TO BLOCKAGE OF THE PRIMARY OUTLET(S).

RAINWATER RE-USE TANKS:

KI: CONSIDERING THE ROOF CATCHMENT AREA, LOCATION OF PROPERTY, INTENDED USE OF RAINWATER AND GARDEN SIZE WE RECOMMEND PROVIDING A RAINWATER TANK FOR USE AS PER BASIX REQUIREMENTS, SYDNEY WATER AND NSW HEALTH REQUIREMENTS FOR NON DRINKING USE ONLY. K2: THE TANKS PROVIDED WILL REDUCE PRESSURE ON COUNCIL'S STORMWATER INFRASTRUCTURE. K3: REFERENCES: COOMBES P.J. & KUCZERA G. (2001), "RAINWATER TANK DESIGN FOR WATER SUPPLY & STORMWATER MANAGEMENT." STORMWATER INDUSTRY ASSOCIATION REGIONAL CONFERENCE. PATRICK DUPONT & STEVE SHACKLE, "RAINWATER" AUSTRALIAN GOVERNMENT (2004), "GUIDANCE ON USE OF RAINWATER TANKS".

K4: ALL CONNECTIONS TO PLUMBING AND RAINWATER TANKS TO BE IN ACCORDANCE WITH SYDNEY WATERS' GUIDE "INSTALLING A RAINWATER TANK" AVAILABLE AT www.sydneywater.com.au K5: PROVIDE A DUAL SUPPLY SYSTEM AND BACKFLOW PREVENTION SYSTEM IN ACCORDANCE WITH 'BASIX-DESIGN GUIDE FOR SINGLE DWELLINGS' BY NSW DEPARTMENT OF INFRASTRUCTURE, PLANING AND NATURAL RESOURCES.

K6: IF NOT SPECIFIED ON PLANS, THE FIRST FLUSH SYSTEM IS TO HAVE A MINIMUM SIZE OF 20L PER 100m2 OF ROOF CATCHMENT AREA PRIOR TO ENTERING THE RAINWATER TANK, INDIVIDUAL SITE ANALYSIS IS REQUIRED IN HEAVILY POLLUTED AREAS TO DETERMINE IF LARGER VOLUMES OF FIRST FLUSH RAINWATER ARE TO BE DIVERTED. IF IN DOUBT, CHECK WITH LOCAL HEALTH AUTHORITIES. K7: SCREENED DOWNPIPE RAINWATER HEAD OR OTHER SUITABLE LEAF AND DEBRIS DEVICE TO BE INSTALLED ON EACH DOWNPIPE. SCREEN MESH TO BE 4-6mm AND DESIGNED TO BE SELF-CLEANING. K8: FIRST FLUSH DEVICES, OR APPROVED ALTERNATIVE, TO BE INSTALLED WITH AN AUTOMATED DIVERSION AND DRAINAGE SYSTEM, THAT IS, NO MANUAL DIVERSION AND DRAINAGE VALVES. REFER TYPICAL FLUSH OUT PIT FOR DETAILS.

K9: BEFORE PURCHASING MATERIALS OR PAINT TO BE USED ON ROOF CATCHMENT AREAS, THE MANUFACTURER'S RECOMMENDATIONS ON LABELS AND BROCHURES FOR RAINWATER TANK SUITABILITY TO BE READ AND ADHERED TO.

KIO: PRE-STORAGE PITS FOR UNDERGROUND RAINWATER STORAGE TANKS AND FLUSH OUT PITS MAY ASSIST IN LIMITING SILT, AND PREVENT VERMIN, INSECTS (INCLUDING MOSQUITOES) AND DEBRIS FROM ENTERING THE RAINWATER STORAGE AREA.

KII: BUILDER/PLUMBER TO ENSURE THE INSTALLATION OF THE RAINWATER TANK SYSTEM IS IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARDS AND THE RAINWATER TANK DESIGN AND INSTALLATION HANDBOOK - HB 230-2008. IF IN DOUBT CONTACT ENGINEER. KI2: RAINWATER TANK TO BE WATER PROOFED IN ACCORDANCE WITH HB 230-200B

DIAL BEFORE YOU DIG NOTE:

NO INVESTIGATION OF UNDERGROUND SERVICES HAS BEEN MADE. ALL RELEVANT AUTHORITIES SHOULD BE NOTIFIED PRIOR TO ANY EXCAVATION ON OR NEAR THE SITE DEVELOPERS \$ EXCAVATORS MAY BE HELD FINANCIALLY RESPONSIBLE BY THE ASSET OWNER SHOULD THEY DAMAGE UNDERGROUND NETWORKS.

CARELESS DIGGING CAN:

- CAUSE DEATH OR SERIOUS INJURY TO WORKERS AND THE GENERAL PUBLIC

- INCONVENIENCE USERS OF ELECTRICITY, GAS, WATER AND COMMUNICATIONS

- LEAD TO CRIMINAL PROSECUTION AND DAMAGES CLAIMS - CAUSE EXPENSIVE FINANCIAL LOSSES TO BUSINESS

- CUT OFF EMERGENCY SERVICES

- DELAY PROJECT COMPLETION TIMES WHILE THE DAMAGE IS REPAIRED



MINIMISE YOUR RISK AND DIAL BEFORE YOU DIG. - TEL. 1100

NORTHERN BEACHES COUNCIL (WARRINGAH AREA) ON-SITE DETENTION SYSTEM CALCULATION SHEET

ADDRESS: 13 MORGAN ROAD, BELROSE

SITE STORMWATER DISPOSAL METHOD

(IN ACCORDANCE WITH NORTHERN BEACHES WATER MANAGEMENT FOR DEVELOPMENT POLICY)

SITE DETAILS

TOTAL SITE AREA

5001 m² APPROX. (25% IMPERVIOUS) PRE DEVELOPMENT IMPERVIOUS AREA POST DEVELOPMENT IMPERVIOUS AREA 5451 m² APPROX. (27% IMPERVIOUS)

INCREASE

OSD REQUIREMENT

STORMWATER SYSTEMA AND BELOW 40% IMPERVIOUS. THEREFORE OSD IS NOT REQUIRED

PERMITTED SITE DISCHARGE

N/A (DIRECT CONNECTION TO COUNCIL SYSTEM)

SITE STORAGE REQUIREMENT

OSD VOLUME REQUIRED

TBC m³ (203 m³ PROVIDED) RAINWATER 'BASIX' REQUIRED

OUTLET CONTROL

METHOD OF DISCHARGE DIRECT CONNECTION TO COUNCIL STORMWATER SYSTEM

DRAWING SCHEDULE: DOI - STORMWATER MANAGEMENT - GENERAL NOTES

DO2 - STORMWATER MANAGEMENT - SITE DRAINAGE PLAN DO3 - STORMWATER MANAGEMENT - DETAILS

ISSUED FOR D.A. SUBMISSION ONLY NOT FOR CONSTRUCTION

IF IN DOUBT ASK

Design:



					DOCUMENT CERTIFICATION
					12-07-2021 A
					Michael Wachjo
5-07-2021	А	ISSUED FOR D.A. SUBMISSION	MC	НО	B.E.(Civil), MIEAust. (Director NB Consulting Engineers)
Date:	Issue:	Description:	Ву:	Review:	The copyright of this drawing remains with Northern Be Consulting Engineers Pty Ltd. Trading as NB Consulting En



Suite 207, 30 Fisher Road Dee Why N.S.W. 2099 Gold Coast: Ph: (07) 5631 4744 Suite 1, 30B Griffith Street Coolangatta QLD 4225 E: nb@nbconsulting.com.au W: www.nbconsulting.com.au

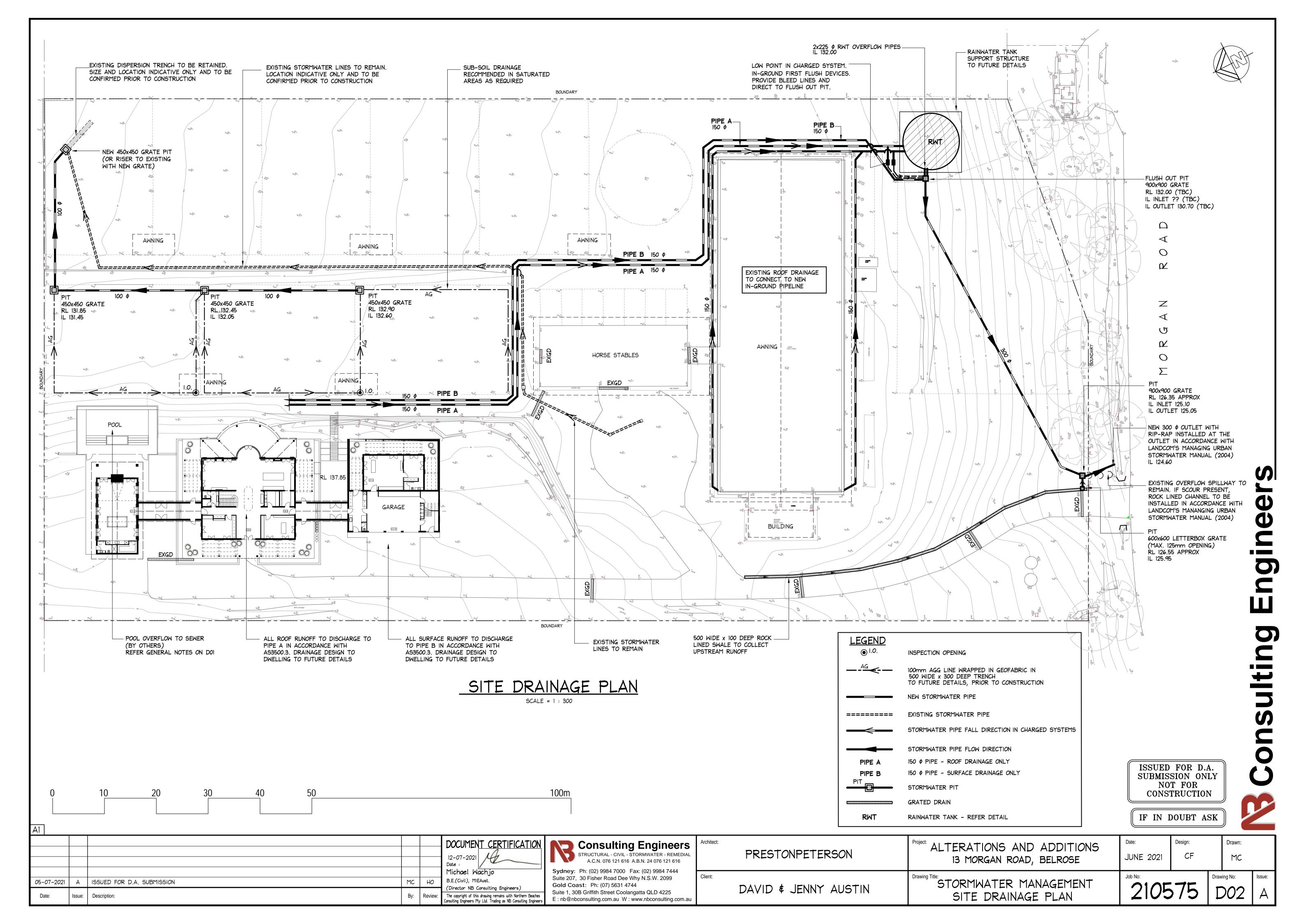
Architect:	PRESTONPETERSON
Client:	
	DAVID & JENNY AUSTIN

ALTERATIONS AND ADDITIONS 13 MORGAN ROAD, BELROSE Drawing Title: STORMWATER MANAGEMENT

GENERAL NOTES AND DRAWING SCHEDULE

JUNE 2021

Drawing No:

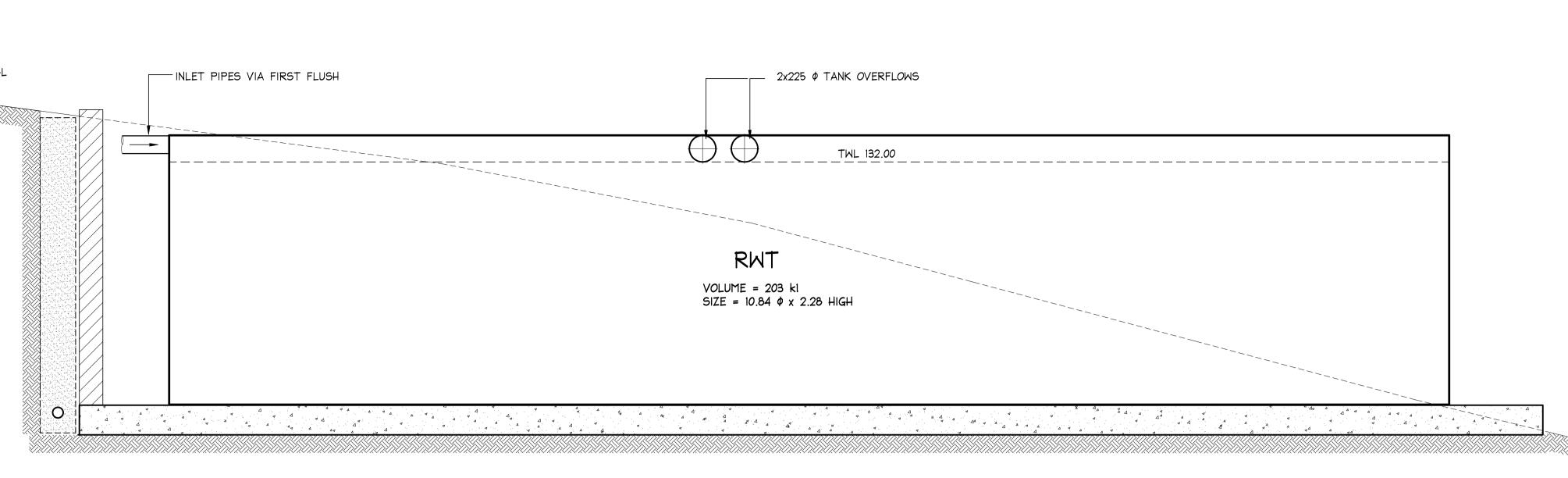




SIGN FOR RWT AND OUTLETS SCALE = N.T.S.

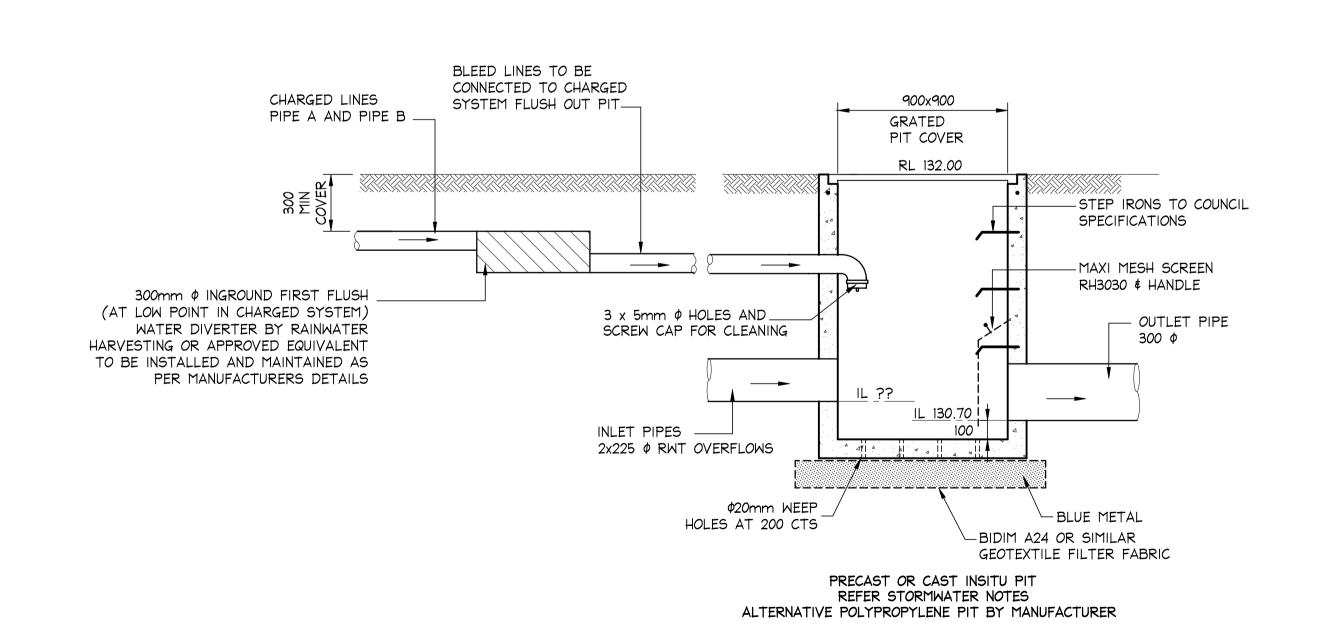
10mm SPANDEX

- MASS CONCRETE



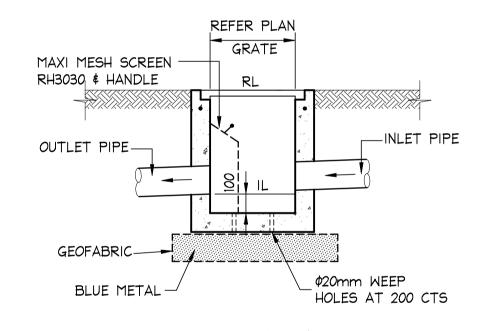
TANK BASE AND RETAINING WALL STRUCTURE TO STRUCTURAL ENGINEERS DETAIL

RAINWATER RE-USE TANK DETAIL SCALE = N.T.S.



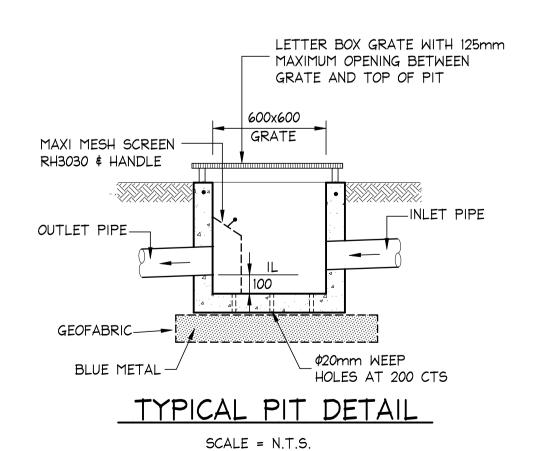
FLUSH OUT PIT DETAIL

SCALE = N.T.S.



PRECAST OR CAST INSITU PIT REFER STORMWATER NOTES ALTERNATIVE POLYPROPYLENE PIT BY MANUFACTURER

TYPICAL PIT DETAIL SCALE = N.T.S.



FALL

OR PRECAST GRATED DRAIN

TYPICAL GRATED DRAIN

ALTERNATIVE POLYPROPYLENE PIT BY MANUFACTURER

SCALE = 1 : 20

ROCK LINED SWALE CHANNEL SCALE = N.T.S.

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IF IN DOUB'

BT ASK		
:	Drawn:	

Al I						
					DOCUMENT CERTIFICATION 12-07-2021 Date:	
					Michael Wachjo	S
05-07-2021	Α	ISSUED FOR D.A. SUBMISSION	MC	HO	B.E.(Civil), MIEAust.	G G
Date:	Issue:	Description:	Ву:	Review:	(Director NB Consulting Engineers) The copyright of this drawing remains with Northern Beaches Consulting Engineers Pty Ltd. Trading as NB Consulting Engineers	ches ineers E

Consulting Engineers
STRUCTURAL - CIVIL - STORMWATER - REMEDIAL A.C.N. 076 121 616 A.B.N. 24 076 121 616

Sydney: Ph: (02) 9984 7000 Fax: (02) 9984 7444 Suite 207, 30 Fisher Road Dee Why N.S.W. 2099 Gold Coast: Ph: (07) 5631 4744 Suite 1, 30B Griffith Street Coolangatta QLD 4225 E: nb@nbconsulting.com.au W: www.nbconsulting.com.au

Architect:	PRESTONPETERSON
Client:	

Project: ALTERATIONS AND ADDITIONS 13 MORGAN ROAD, BELROSE

TRENCH COVER -

JUNE 2021

MC

Drawing No:

Drawing Title: STORMWATER MANAGEMENT DAVID & JENNY AUSTIN DETAILS